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**(136564)∗ 1977 VA**

Discovered 1977 Nov. 7 by E. F. Helin and E. M. Shoemaker at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $M$ | 123.44893 | | | | |
| $n$ | 0.38691696 | $\omega$ | 172.39279 | +0.79843691 | −0.60096963 |
| $a$ | 1.8651948 | $\Omega$ | 224.61414 | +0.54962166 | +0.75229500 |
| $e$ | 0.3947543 | $i$ | 2.98096 | +0.24579370 | +0.26997729 |
| $P$ | 2.55 | $H$ | 19.2 $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.1+ | 1.5− | 2005 09 03 | 198 | 0.0 | 0.0 | 2005 10 30 | 151 | 0.3− | 0.3+ | 2005 08 29 | 143 | 0.2+ | 0.4− | 2005 09 30 | 379 | 0.2+ | 0.1+ | 2005 11 08 | 379 | 1.2+ | 0.2+ |
| 1977 10 11 | 675 | 0.7+ | 0.8− | 2005 09 03 | 198 | 0.1+ | 0.2+ | 2005 10 30 | 151 | 0.5− | 0.2+ | 2005 08 29 | 147 | 0.0 | 1.2− | 2005 10 02 | 699 | 0.1+ | 0.1− | 2005 11 08 | A32 | 0.1− | 0.0 |
| 1977 10 12 | 675 | 1.3+ | 0.0 | 2005 09 04 | 151 | 1.2+ | 0.1+ | 2005 10 30 | 151 | 0.3− | 0.2+ | 2005 08 29 | 599 | 0.2+ | 0.2+ | 2005 10 02 | 699 | 0.1− | 0.0 | 2005 11 08 | A32 | 0.1− | 0.1+ |
| 1977 10 12 | 675 | 2.0+ | 1.4− | 2005 09 04 | 151 | 0.3+ | 0.6+ | 2005 10 30 | 151 | 0.2− | 0.3+ | 2005 08 29 | 113 | 0.1− | 0.1− | 2005 10 02 | 699 | (1.3− | 1.7−) | 2005 11 08 | A32 | 0.1− | 0.1+ |
| 1977 10 16 | 675 | 1.4− | 2.1− | 2005 09 04 | 151 | 0.4+ | 0.7+ | 2005 10 30 | A32 | 0.1+ | 0.1− | 2005 08 29 | 113 | 0.2+ | 0.1− | 2005 10 02 | 699 | 1.3+ | 0.1+ | 2005 11 08 | A32 | 0.0 | 0.1+ |
| 1977 10 16 | 675 | 0.5+ | 1.2− | 2005 09 04 | A41 | 0.6− | 0.2+ | 2005 10 30 | A32 | 0.2+ | 0.3− | 2005 08 29 | 599 | 0.2+ | 0.2+ | 2005 10 05 | 703 | 0.5− | 0.5− | 2005 11 08 | A32 | 0.0 | 0.0 |
| 1977 11 03 | 675 | 1.1− | 0.1+ | 2005 09 04 | A41 | 0.3− | 0.3+ | 2005 10 30 | A32 | 0.2+ | 0.1+ | 2005 08 29 | 147 | 0.1− | 0.7+ | 2005 10 05 | 703 | 0.1− | 0.5− | 2005 11 18 | 699 | 0.4− | 0.7+ |
| 1977 11 04 | 675 | 0.1− | 1.1− | 2005 09 04 | A41 | 0.2− | 0.2+ | 2005 10 30 | A32 | 0.4− | 0.1+ | 2005 08 29 | 113 | 0.3+ | 0.3− | 2005 10 05 | 703 | 0.2− | 0.3− | 2005 11 18 | 699 | 0.1− | 0.2− |
| 1977 11 07 | 675 | 1.0− | 1.1+ | 2005 09 07 | A50 | 0.1− | 0.2− | 2005 10 31 | A32 | 0.1+ | 0.3− | 2005 08 29 | 113 | 0.1− | 0.4− | 2005 10 05 | 703 | 0.4− | 0.6− | 2005 11 18 | 699 | 1.4− | 0.2+ |
| 1977 11 08 | 675 | 0.4+ | 0.0 | 2005 09 07 | A50 | 0.1+ | 0.0 | 2005 10 31 | A32 | 0.6− | 0.4+ | 2005 08 29 | A56 | 0.7+ | 1.0+ | 2005 10 05 | 703 | 0.1− | 0.3− | 2005 11 18 | 699 | 0.1+ | 0.3− |
| 1977 11 08 | 675 | 1.6+ | 1.2− | 2005 09 08 | 379 | 0.7− | 0.6− | 2005 10 31 | A32 | 0.4− | 0.4+ | 2005 08 29 | 599 | 0.1+ | 0.3+ | 2005 10 05 | 703 | 0.3+ | 0.4− | 2005 11 19 | 151 | 0.1+ | 0.2− |
| 1977 11 10 | 688 | (0.7+ | 4.5−) | 2005 09 08 | 379 | 1.0− | 0.2− | 2005 11 01 | 704 | 0.4− | 0.4+ | 2005 08 29 | 113 | 0.0 | 0.5− | 2005 10 05 | 703 | 0.1+ | 0.9− | 2005 11 19 | 151 | 0.1− | 0.1− |
| 1977 11 10 | 675 | 2.1+ | 0.6+ | 2005 09 09 | 704 | 0.2− | 0.3+ | 2005 11 01 | 704 | 0.1+ | 0.1+ | 2005 08 29 | 565 | 0.3+ | 0.0 | 2005 10 05 | 703 | 0.2− | 0.9− | 2005 11 19 | 151 | 0.1− | 0.0 |
| 1977 11 12 | 801 | (0.8− | 3.7+) | 2005 09 09 | 704 | 0.5− | 0.4+ | 2005 11 01 | 704 | 0.5+ | 0.2+ | 2005 08 29 | 461 | 0.3− | 0.3+ | 2005 10 06 | 379 | 0.2+ | 0.2− | 2005 11 19 | 151 | 0.0 | 0.1− |
| 1977 11 13 | 688 | (0.9+ | 4.1−) | 2005 09 09 | 704 | 0.2− | 0.1+ | 2005 11 01 | 704 | 0.0 | 0.4+ | 2005 08 29 | 595 | 1.4+ | 0.4+ | 2005 10 06 | 379 | 0.4+ | 0.2− | 2005 11 19 | 151 | 0.1− | 0.0 |
| 1977 11 16 | 675 | 0.8− | 0.1− | 2005 09 09 | 704 | 0.6− | 0.3− | 2005 11 01 | 703 | 0.5− | 0.1+ | 2005 08 29 | 461 | 0.1− | 0.2+ | 2005 10 08 | 704 | 0.7− | 0.6+ | 2005 11 19 | 151 | 0.1− | 0.2+ |
| 1977 11 17 | 675 | 1.3− | 0.1+ | 2005 09 09 | 704 | 0.6+ | 1.3+ | 2005 11 01 | 703 | 0.0 | 0.1− | 2005 08 29 | 147 | 0.4+ | 0.6− | 2005 10 08 | 704 | 0.8− | 0.4+ | 2005 11 19 | 240 | 0.4− | 0.1+ |
| 1977 11 18 | 801 | 1.2− | 2.0+ | 2005 09 10 | 379 | 0.7− | 0.3− | 2005 11 01 | 704 | 0.2+ | 0.2+ | 2005 08 29 | 599 | 0.2+ | 0.2+ | 2005 10 08 | 704 | 0.7− | 0.4+ | 2005 11 19 | 240 | 0.3− | 0.0 |
| 1977 12 08 | 801 | 0.6+ | 0.4− | 2005 09 10 | 379 | 1.1− | 0.4− | 2005 11 01 | 703 | 0.5− | 0.4− | 2005 08 29 | 461 | 0.1− | 0.3+ | 2005 10 08 | 704 | 0.4− | 0.8+ | 2005 11 19 | 240 | 0.2− | 0.0 |
| 1977 12 12 | 801 | 0.2+ | 0.1− | 2005 09 11 | 608 | 0.2+ | 0.3− | 2005 11 01 | 703 | 1.0+ | 0.2+ | 2005 08 29 | 565 | 0.8− | 0.4+ | 2005 10 08 | 704 | 0.5− | 0.2+ | 2005 11 19 | 240 | 0.0 | 0.2− |
| 1978 01 12 | 801 | (3.7+ | 0.5+) | 2005 09 11 | 608 | 0.1+ | 0.3− | 2005 11 01 | 084 | 0.2− | 0.4− | 2005 08 29 | 151 | 0.1− | 0.1+ | 2005 10 09 | 151 | 0.4− | 0.0 | 2005 11 19 | 240 | 0.3+ | 0.2− |
| 2000 12 05 | 608 | 0.5+ | 0.0 | 2005 09 11 | 608 | 0.2+ | 0.5− | 2005 11 01 | 084 | 0.4− | 0.5+ | 2005 08 29 | 461 | 0.2− | 0.3+ | 2005 10 09 | 151 | 0.0 | 0.0 | 2005 11 19 | 240 | 0.1− | 0.4− |
| 2005 08 26 | 644 | 0.2− | 0.0 | 2005 09 22 | 639 | 0.3− | 0.2+ | 2005 11 01 | 170 | 0.2− | 0.7− | 2005 08 29 | A56 | 0.4+ | 0.3− | 2005 10 09 | 151 | 0.0 | 0.1+ | 2005 11 22 | 084 | 0.8+ | 0.3+ |
| 2005 08 26 | 644 | 0.1− | 0.0 | 2005 09 22 | 639 | 0.1+ | 0.7+ | 2005 11 01 | 170 | 0.1+ | 0.6− | 2005 08 29 | 151 | 0.2− | 0.1+ | 2005 10 09 | 151 | 0.2+ | 0.1+ | 2005 11 29 | 703 | 0.2− | 0.0 |
| 2005 08 26 | 644 | 0.1− | 0.2− | 2005 09 22 | 639 | 0.2− | 0.3+ | 2005 11 01 | 170 | 0.0 | 0.1− | 2005 08 29 | 151 | 0.2− | 0.0 | 2005 10 11 | 639 | 0.5+ | 0.2+ | 2005 11 29 | 703 | 0.1− | 0.4− |
| 2005 08 27 | 699 | 0.1− | 0.0 | 2005 09 22 | 639 | 0.2− | 0.3+ | 2005 11 02 | 704 | 0.5− | 0.7+ | 2005 08 29 | 151 | 0.1− | 0.1+ | 2005 10 11 | 639 | 0.1+ | 0.7+ | 2005 11 29 | 703 | 0.2− | 1.1− |
| 2005 08 27 | 699 | 0.7− | 0.0 | 2005 09 23 | 644 | 0.0 | 0.1− | 2005 11 02 | 704 | 0.2− | 0.3+ | 2005 08 29 | 565 | 0.1− | 1.3+ | 2005 10 18 | A32 | 0.5+ | 0.2+ | 2005 11 29 | 703 | 0.3+ | 0.0 |
| 2005 08 27 | 699 | 0.8+ | 0.7− | 2005 09 23 | 644 | 0.2− | 0.1− | 2005 11 02 | 704 | 0.3− | 0.5+ | 2005 08 29 | 176 | 0.1− | 0.0 | 2005 10 18 | A32 | 0.6+ | 0.1+ | 2005 12 06 | 703 | (0.8+ | 2.4+) |
| 2005 08 27 | 699 | 0.4− | 0.4+ | 2005 09 23 | 644 | 0.0 | 0.0 | 2005 11 02 | 704 | 0.3− | 0.2+ | 2005 08 29 | 176 | 0.0 | 0.1− | 2005 10 18 | A32 | 0.2− | 0.3− | 2005 12 06 | 703 | 0.8+ | 0.3+ |
| 2005 08 29 | 644 | 0.0 | 0.2+ | 2005 09 25 | A41 | 0.2− | 0.1+ | 2005 11 02 | 704 | 0.1− | 0.2+ | 2005 08 29 | 565 | 0.3+ | 0.0 | 2005 10 18 | A32 | 0.2− | 0.2− | 2005 12 06 | 703 | (1.6− | 0.6−) |
| 2005 08 29 | 644 | 0.0 | 0.2+ | 2005 09 25 | A41 | 0.3+ | 0.9+ | 2005 11 02 | 084 | 0.2+ | 0.1− | 2005 08 29 | A56 | 0.3+ | 0.8+ | 2005 10 18 | A32 | 0.1− | 0.2+ | 2005 12 06 | 703 | 0.3+ | 0.3+ |
| 2005 08 29 | 644 | 0.1+ | 0.2+ | 2005 09 25 | A41 | 0.3− | 0.0 | 2005 11 03 | 084 | 0.1+ | 0.4+ | 2005 08 29 | 176 | 0.2+ | 0.3− | 2005 10 25 | 699 | 0.3+ | 0.1+ | 2005 12 06 | 704 | 0.0 | 0.1− |
| 2005 08 29 | 143 | 0.2+ | 0.2− | 2005 09 30 | 379 | 0.1+ | 0.2− | 2005 11 08 | 379 | 0.7+ | 0.8− | 2005 08 29 | 176 | 0.0 | 0.0 | 2005 10 25 | 699 | 0.1+ | 0.3+ | 2005 12 06 | 704 | 0.2+ | 0.1+ |
| 2005 08 29 | 595 | 0.2− | 0.5− | 2005 09 30 | 379 | 0.0 | 0.1+ | 2005 11 08 | 379 | 0.4+ | 0.1− | 2005 08 29 | 176 | 0.2+ | 0.3− | 2005 10 25 | 699 | 0.1+ | 0.1− | 2005 12 06 | 704 | 0.2− | 0.5+ |
| | | | | | | | | | | | | 2005 08 29 | A56 | (0.3+ | 1.7+) | 2005 10 25 | 699 | 0.6+ | 0.0 | 2005 12 06 | 704 | 0.1− | 0.1+ |
| | | | | | | | | | | | | 2005 08 29 | 196 | 0.5− | 0.6+ | 2005 10 27 | 704 | 0.4+ | 0.1+ | 2005 12 06 | 704 | 0.2+ | 0.4+ |
| | | | | | | | | | | | | 2005 08 29 | 196 | 0.5− | 0.2+ | 2005 10 27 | 644 | 0.2− | 0.1− | 2005 12 21 | 703 | 0.3+ | 0.4− |
| | | | | | | | | | | | | 2005 08 29 | 196 | 0.4+ | 0.0 | 2005 10 27 | 704 | 0.1+ | 0.2+ | 2005 12 21 | 703 | 0.2+ | 0.1− |
| | | | | | | | | | | | | 2005 08 30 | 151 | 0.3+ | 0.6+ | 2005 10 27 | 644 | 0.2− | 0.1− | 2005 12 21 | 703 | 0.0 | 0.4− |
| | | | | | | | | | | | | 2005 08 30 | 151 | 0.1− | 0.4+ | 2005 10 27 | 704 | 0.4+ | 0.3+ | 2005 12 21 | 703 | 0.2− | 0.1+ |
| | | | | | | | | | | | | 2005 08 31 | 704 | 0.3+ | 0.2− | 2005 10 27 | 704 | 0.4+ | 0.8+ | 2005 12 27 | 704 | 0.3− | 0.6+ |
| | | | | | | | | | | | | 2005 08 31 | 704 | 0.1+ | 0.2− | 2005 10 27 | 644 | 0.2− | 0.2− | 2005 12 27 | 704 | 0.5+ | 0.9− |
| | | | | | | | | | | | | 2005 08 31 | 704 | 0.3− | 0.6+ | 2005 10 27 | 704 | 0.3+ | 0.1− | 2005 12 27 | 704 | 0.5− | 0.6+ |
| | | | | | | | | | | | | 2005 08 31 | 151 | 0.4− | 0.1+ | 2005 10 29 | 151 | 0.3+ | 0.4− | 2005 12 27 | 704 | 0.6− | 0.1+ |
| | | | | | | | | | | | | 2005 08 31 | 151 | 0.2− | 0.1+ | 2005 10 29 | 151 | 0.1− | 0.4− | 2005 12 27 | 704 | 0.2− | 0.2+ |
| | | | | | | | | | | | | 2005 09 02 | 608 | 0.1− | 0.0 | 2005 10 29 | 151 | 0.3− | 0.3− | 2005 12 30 | 699 | 1.0+ | 0.7− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 02 | 608 | 0.1+ | 0.0 | 2005 10 29 | 151 | 0.4− | 0.3− | 2005 12 30 | 699 | 0.0 | 0.8− |
| 2005 09 02 | 608 | 0.1+ | 0.2− | 2005 10 29 | 639 | 0.3+ | 0.5+ | 2005 12 30 | 699 | 0.7− | 0.9+ |
| 2005 09 03 | 379 | 0.1− | 0.5+ | 2005 10 29 | 639 | 0.3+ | 0.6+ | 2005 12 30 | 699 | 0.7− | 1.1+ |
| 2005 09 03 | 379 | 0.1− | 0.5− | 2005 10 29 | 639 | 0.1+ | 0.4+ | 2006 01 03 | 704 | 0.2+ | 1.1+ |
| 2005 09 03 | 379 | 0.1+ | 0.2− | 2005 10 29 | 639 | (0.3+ | 1.6+) | 2006 01 03 | 704 | 0.2+ | 0.3+ |
| 2005 09 03 | 379 | 0.7+ | 0.1− | 2005 10 30 | 151 | 0.3− | 0.0 | 2006 01 03 | 704 | 0.7+ | 0.4+ |
| 2005 09 03 | 198 | 0.1− | 0.1− | 2005 10 30 | 151 | 0.3− | 0.2+ | | | | |

**(136565)∗ 1977 XF$_3$**

Discovered 1977 Dec. 7 by S. J. Bus at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.55454 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20230867 | $\omega$ | 335.39595 | | +0.64413639 | | −0.70622539 |
| $a$ | 2.8738211 | $\Omega$ | 73.04505 | | +0.74278539 | | +0.48579337 |
| $e$ | 0.2248368 | $i$ | 17.88926 | | +0.18264221 | | +0.51502476 |
| $P$ | 4.87 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 12 07 | 675 | 0.3+ | 0.2− | 2001 10 15 | 704 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.3+ |
| 1977 12 08 | 675 | 0.1+ | 0.1− | 2001 10 15 | 704 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.7+ |
| 2001 08 19 | 704 | 0.3− | 0.4− | 2001 10 15 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2001 08 19 | 704 | 1.0− | 0.0 | 2001 10 15 | 704 | 1.1+ | 0.8+ | 2006 10 21 | 703 | 0.8+ | 0.5+ |
| 2001 08 19 | 704 | 1.1+ | 0.7+ | 2001 10 15 | 704 | 0.2+ | 1.0− | 2006 10 21 | 703 | 0.3− | 0.1+ |
| 2001 08 19 | 704 | 0.4− | 0.5− | 2001 10 18 | 699 | 0.3− | 0.6− | 2006 10 21 | 703 | 0.5+ | 0.7+ |
| 2001 09 11 | 704 | 0.2− | 0.8+ | 2001 10 18 | 699 | 0.4− | 0.4− | 2006 10 21 | 703 | 0.2− | 0.7− |
| 2001 09 11 | 704 | 0.1− | 0.1+ | 2001 10 18 | 699 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.4− |
| 2001 09 11 | 704 | 0.6− | 0.7+ | 2001 10 18 | 699 | 0.9− | 0.9− | 2006 10 28 | 703 | 0.5+ | 0.0 |
| 2001 09 11 | 704 | 0.0 | 0.2− | 2001 12 07 | 608 | 0.3− | 0.6− | 2006 10 28 | 703 | 0.1− | 0.6− |
| 2001 09 22 | 644 | 1.2+ | 0.4− | 2003 02 01 | 644 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.2+ | 0.3− |
| 2001 09 22 | 644 | 0.1− | 0.7+ | 2003 02 01 | 644 | 0.0 | 0.9+ | 2006 11 17 | 703 | 0.8− | 0.8− |
| 2001 09 22 | 644 | 0.1− | 0.6+ | 2003 02 01 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.3+ | 0.5+ |
| 2001 09 26 | 699 | (1.6− | 0.7+) | 2003 02 19 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.6− |
| 2001 09 26 | 699 | 0.6− | 1.2+ | 2003 02 19 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2001 09 26 | 699 | 0.6− | 0.4+ | 2003 02 19 | 644 | 0.2− | 0.4− | | | | |
| 2001 09 26 | 699 | 0.8− | 0.3− | 2006 10 21 | 703 | 1.4+ | 0.4+ | | | | |

**(136566)∗ 1978 VE$_4$ = 2002 RE$_{54}$**

Discovered 1978 Nov. 7 by E. F. Helin and S. J. Bus at Palomar.

Id. A. Doppler (*MPO* 37028), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.98449 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28417851 | $\omega$ | 328.19888 | | +0.93377006 | | −0.35372644 |
| $a$ | 2.2912645 | $\Omega$ | 52.61336 | | +0.34100594 | | +0.83339485 |
| $e$ | 0.1680446 | $i$ | 3.92038 | | +0.10857455 | | +0.42465353 |
| $P$ | 3.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 06 | 675 | 2.4+ | 1.3− | 2002 09 29 | 608 | 0.1+ | 0.4− | 2002 10 30 | 704 | 1.4− | 0.6− |
| 1978 11 07 | 675 | (2.7− | 0.7+) | 2002 09 29 | 608 | 0.0 | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.3+ |
| 1978 11 08 | 675 | 0.9− | 0.8− | 2002 09 29 | 608 | 0.1− | 0.0 | 2004 01 27 | 691 | 0.0 | 0.6+ |
| 1978 11 29 | 675 | 1.6− | 0.6− | 2002 10 01 | 699 | 0.6− | 1.3+ | 2004 01 27 | 691 | 0.6+ | 0.1− |
| 1978 11 29 | 675 | 1.1+ | 0.9− | 2002 10 01 | 699 | 0.6− | 0.9+ | 2004 01 27 | 691 | 0.2− | 0.4+ |
| 1978 11 30 | 675 | 0.3+ | 1.2− | 2002 10 01 | 699 | 0.4− | 0.9+ | 2004 01 27 | 691 | 0.2+ | 0.4+ |
| 2002 09 05 | 704 | 0.4+ | 1.2+ | 2002 10 01 | 699 | 0.6− | 1.1+ | 2004 01 27 | 691 | 0.3+ | 0.5+ |
| 2002 09 05 | 704 | 0.3− | 0.8+ | 2002 10 02 | 704 | 0.1− | 0.1+ | 2004 02 29 | 691 | 0.3+ | 0.4+ |
| 2002 09 05 | 704 | 0.7+ | 0.2− | 2002 10 02 | 704 | 0.6− | 0.9+ | 2004 02 29 | 691 | 0.1− | 0.8+ |
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2002 10 02 | 704 | 0.1− | 0.7+ | 2004 02 29 | 691 | 0.4+ | 0.4+ |
| 2002 09 06 | 704 | 0.2− | 1.3− | 2002 10 02 | 704 | 0.4− | 0.3+ | 2006 09 25 | 691 | 1.0− | 0.4+ |
| 2002 09 06 | 704 | 1.1− | 0.3+ | 2002 10 02 | 704 | 0.7− | 0.3+ | 2006 09 25 | 691 | 1.0+ | 0.1+ |
| 2002 09 06 | 704 | 0.6− | 0.0 | 2002 10 03 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.5+ | 0.2+ |
| 2002 09 06 | 704 | 0.8− | 0.3− | 2002 10 03 | 704 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.4+ | 0.5− |
| 2002 09 13 | 608 | 0.3− | 0.3+ | 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 10 23 | G96 | 0.5− | 0.2− |
| 2002 09 13 | 608 | 0.1+ | 0.2+ | 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2002 09 13 | 608 | 0.4− | 0.2− | 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2002 09 16 | 644 | 0.6+ | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 11 02 | G96 | 0.0 | 0.5− |
| 2002 09 16 | 644 | 0.6+ | 0.0 | 2002 10 11 | 704 | 0.4+ | 0.4− | 2006 11 02 | G96 | 0.4− | 0.1+ |
| 2002 09 16 | 644 | 0.4+ | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.1− | 2006 11 02 | G96 | 0.3− | 0.1+ |
| 2002 09 17 | 608 | (1.4− | 2.3+) | 2002 10 11 | 704 | 0.7+ | 0.6+ | 2006 11 02 | G96 | 0.2− | 0.8− |
| 2002 09 17 | 608 | (2.3− | 2.6+) | 2002 10 30 | 704 | 0.7− | 1.1+ | | | | |
| 2002 09 17 | 608 | (1.5− | 2.4+) | 2002 10 30 | 704 | 0.2− | 0.1− | | | | |

**(136567)∗ 1979 OA$_{11}$ = 2000 SU$_{281}$**

Discovered 1979 July 24 by S. J. Bus at Siding Spring.

Id. A. Doppler (*MPO* 46314)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.46112 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19223408 | $\omega$ | 85.83059 | | +0.78191389 | | +0.61442896 |
| $a$ | 2.9733712 | $\Omega$ | 236.22361 | | −0.61033285 | | +0.72015480 |
| $e$ | 0.0921268 | $i$ | 7.27779 | | −0.12690341 | | +0.32226406 |
| $P$ | 5.13 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 07 24 | 413 | (1.1− | 3.6−) | 2004 05 19 | 704 | 1.1− | 0.1+ | 2005 08 27 | 699 | (1.7− | 0.1+) |
| 1979 07 28 | 413 | 0.0 | 2.1− | 2004 05 19 | 704 | 0.4+ | 1.0+ | 2005 08 27 | 699 | 0.9− | 0.0 |
| 2000 09 01 | 704 | 0.6− | 1.3+ | 2004 05 19 | 704 | 0.2− | 0.0 | 2005 08 27 | 699 | 0.1− | 0.9+ |
| 2000 09 01 | 704 | 0.9− | 0.4− | 2004 06 09 | E12 | 0.0 | 0.4+ | 2005 08 31 | 704 | 0.4− | 0.2− |
| 2000 09 01 | 704 | 0.6+ | 0.8− | 2004 06 09 | E12 | 0.1− | 0.7+ | 2005 08 31 | 704 | 0.7+ | 0.1+ |
| 2000 09 23 | 704 | 0.3+ | 0.8− | 2004 06 09 | E12 | 0.4− | 0.0 | 2005 08 31 | 704 | 0.1− | 0.2+ |
| 2000 09 23 | 704 | 0.6+ | 0.9+ | 2004 06 09 | E12 | 0.2− | 0.8+ | 2005 09 09 | 704 | 0.9− | 0.1− |
| 2000 09 23 | 704 | 0.6− | 0.2+ | 2004 06 12 | E12 | 0.7+ | 0.7+ | 2005 09 09 | 704 | 0.8− | 0.5+ |
| 2000 09 23 | 704 | 0.0 | 0.4− | 2004 06 12 | E12 | 0.1− | 0.3− | 2005 09 09 | 704 | 0.1− | 0.7− |
| 2000 09 23 | 704 | 0.4+ | 0.4+ | 2004 06 12 | E12 | 1.3+ | 0.4+ | 2005 09 09 | 704 | 0.5− | 0.3− |
| 2000 10 03 | 704 | 0.4+ | 0.6+ | 2004 06 12 | E12 | (2.0+ | 0.6+) | 2005 09 09 | 704 | 1.0− | 0.3− |
| 2000 10 03 | 704 | 0.4+ | 0.5+ | 2004 06 14 | 704 | 0.4+ | 0.5+ | 2005 09 14 | 703 | 0.5+ | 0.7+ |
| 2000 10 03 | 704 | 0.3+ | 0.5+ | 2004 06 14 | 704 | 0.6− | 0.4+ | 2005 09 14 | 703 | 0.2+ | 0.8− |
| 2000 10 03 | 704 | 0.2+ | 0.2+ | 2004 06 14 | 704 | 0.9− | 0.5+ | 2005 09 14 | 703 | 1.0+ | 0.2− |
| 2000 10 25 | 704 | 0.5+ | 0.8+ | 2004 06 14 | 704 | 0.3+ | 0.1+ | 2005 09 14 | 703 | 1.2+ | 0.5+ |
| 2000 10 25 | 704 | 0.6+ | 0.4+ | 2004 06 14 | 704 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2000 10 25 | 704 | 0.9− | 0.1+ | 2004 06 17 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2000 10 25 | 704 | 0.5+ | 0.4− | 2004 06 17 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.3− |
| 2002 01 09 | 704 | 0.1− | 0.9+ | 2004 06 17 | 691 | 0.4+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2002 01 09 | 704 | (1.1+ | 1.9+) | 2005 06 12 | 291 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.5+ |
| 2002 01 09 | 704 | 0.1+ | 0.6+ | 2005 06 12 | 291 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 2002 01 09 | 704 | 0.1+ | 1.4+ | 2005 06 12 | 291 | 0.1− | 0.1+ | | | | |
| 2004 05 19 | 704 | 0.2− | 0.2+ | 2005 08 27 | 699 | 0.3− | 0.3+ | | | | |

**(136568)∗ 1980 XB = 1999 VV$_{46}$ = 1999 XN$_{136}$**

Discovered 1980 Dec. 13 by E. A. Harlan at Lick Observatory, Mount Hamilton.

Id. G. V. Williams (MPC 37619)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.58548 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25959813 | $\omega$ | 41.02319 | | −0.32025847 | | −0.86665671 |
| $a$ | 2.4337073 | $\Omega$ | 70.89954 | | +0.72857110 | | −0.48342832 |
| $e$ | 0.3734830 | $i$ | 23.88063 | | +0.60549043 | | +0.12330129 |
| $P$ | 3.80 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1980 12 13 | 662 | 0.2+ | 1.4− | 1999 12 17 | 652 | 0.5+ | 0.3− | 2004 02 14 | 704 | 0.5− | 0.7− |
| 1980 12 14 | 662 | 0.5− | 1.5+ | 1999 12 17 | 652 | 0.6+ | 0.5− | 2004 03 17 | 644 | 0.2− | 0.1+ |
| 1980 12 15 | 662 | 0.6− | 1.7+ | 1999 12 17 | 652 | 0.0 | 0.1− | 2004 03 17 | 644 | 0.1− | 0.1+ |
| 1980 12 16 | 662 | 1.4+ | 1.0− | 1999 12 17 | 652 | 0.4+ | 0.3+ | 2004 03 17 | 644 | 0.2− | 0.1+ |
| 1980 12 16 | 688 | (7.4+ | 7.9−) | 1999 12 17 | 652 | 0.1− | 0.5+ | 2004 03 23 | 703 | 0.0 | 0.3+ |
| 1980 12 16 | 688 | (3.0+ | 2.8−) | 1999 12 17 | 652 | 0.3+ | 0.2+ | 2004 03 23 | 703 | 0.4− | 0.9− |
| 1980 12 30 | 688 | (3.3+ | 2.2−) | 1999 12 17 | 652 | 0.5− | 0.1+ | 2004 03 23 | 703 | 1.3+ | 0.9− |
| 1980 12 30 | 688 | 0.5− | 0.7+ | 1999 12 17 | 652 | 0.2− | 0.0 | 2004 03 23 | 703 | 0.3+ | 0.3+ |
| 1981 01 09 | 662 | 0.3− | 1.3− | 1999 12 22 | 652 | 0.2+ | 0.3+ | 2004 03 29 | 127 | 0.4− | 0.7− |
| 1999 10 10 | 704 | 0.1+ | 0.6− | 1999 12 22 | 652 | 1.2+ | 0.4+ | 2004 03 29 | 127 | 0.1− | 0.4− |
| 1999 10 10 | 704 | 0.6− | 0.4− | 1999 12 22 | 652 | 0.2− | 0.0 | 2004 03 29 | 127 | 0.0 | 0.5− |
| 1999 10 10 | 704 | 0.7− | 0.9+ | 1999 12 22 | 652 | 0.2− | 0.4+ | 2004 03 30 | 704 | 0.4+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6− | 0.5+ | 1999 12 30 | 699 | 0.6+ | 0.5− | 2004 03 30 | 704 | 0.5+ | 0.5+ | | |
| 1999 10 10 | 704 | 0.1− | 1.5+ | 1999 12 30 | 699 | 0.5+ | 0.5− | 2004 03 30 | 704 | 0.5+ | 0.2+ | | |
| 1999 10 21 | 704 | 0.2+ | 0.3− | 1999 12 30 | 699 | 0.6+ | 0.4− | 2004 03 30 | 704 | 0.6+ | 1.2+ | | |
| 1999 10 21 | 704 | 0.6+ | 0.1− | 2000 01 05 | G91 | 0.1− | 0.3+ | 2004 03 30 | 704 | 0.9+ | 1.2+ | | |
| 1999 10 21 | 704 | 0.5+ | 0.5− | 2000 01 05 | 127 | 0.0 | 0.2+ | 2004 03 30 | 127 | 0.5+ | 0.2− | | |
| 1999 10 21 | 704 | 0.8+ | 0.3− | 2000 01 05 | 127 | 0.0 | 0.2+ | 2004 03 30 | 127 | 0.4+ | 0.1+ | | |
| 1999 10 21 | 704 | 0.9+ | 0.5− | 2000 01 05 | 127 | 0.0 | 0.3+ | 2004 03 30 | 127 | 0.3+ | 0.2+ | | |
| 1999 11 01 | G91 | 0.1+ | 0.5+ | 2000 01 11 | 127 | 0.2+ | 0.0 | 2004 03 31 | 704 | 0.2+ | 0.6+ | | |
| 1999 11 03 | 704 | 0.7− | 0.3+ | 2000 01 11 | 127 | 0.2+ | 0.4+ | 2004 03 31 | 704 | 0.1+ | 0.5+ | | |
| 1999 11 03 | 704 | 0.7− | 0.1+ | 2000 01 11 | 127 | 0.3+ | 0.1+ | 2004 03 31 | 704 | 0.1+ | 0.6+ | | |
| 1999 11 03 | 704 | 0.5− | 0.1+ | 2000 01 13 | 611 | 0.2+ | 0.4− | 2004 03 31 | 704 | 0.2+ | 0.6+ | | |
| 1999 11 03 | 704 | 0.1− | 0.9− | 2000 01 25 | 704 | 0.1+ | 0.2+ | 2004 03 31 | 704 | 0.2+ | 0.7+ | | |
| 1999 11 04 | 704 | 0.6− | 0.2+ | 2000 01 25 | 704 | 0.4+ | 0.5+ | 2004 04 12 | 704 | 0.2− | 0.5+ | | |
| 1999 11 04 | 704 | 0.5− | 0.2+ | 2000 01 25 | 704 | 0.5+ | 0.8+ | 2004 04 12 | 704 | 0.0 | 0.6+ | | |
| 1999 11 04 | 704 | 0.4− | 0.0 | 2000 01 25 | 704 | 1.2+ | 0.9+ | 2004 04 12 | 704 | 0.2− | 0.5+ | | |
| 1999 11 04 | 704 | 0.6− | 0.0 | 2000 01 25 | 704 | 1.2+ | 1.6+ | 2004 04 12 | 704 | 0.2− | 0.4+ | | |
| 1999 11 04 | 704 | 0.5− | 0.1+ | 2000 02 19 | 943 | 0.4+ | 0.4− | 2004 04 12 | 704 | 0.0 | 0.5+ | | |
| 1999 11 05 | 704 | 0.6− | 0.1+ | 2000 02 19 | 943 | 0.2+ | 0.5− | 2004 04 27 | 704 | 0.0 | 0.7+ | | |
| 1999 11 05 | 704 | 0.3− | 0.2− | 2000 02 24 | 704 | 0.0 | 0.4+ | 2004 04 27 | 704 | 0.0 | 0.9+ | | |
| 1999 11 05 | 704 | 0.1− | 0.4+ | 2000 02 24 | 704 | 1.4− | 1.3− | 2004 04 27 | 704 | 0.0 | 1.0+ | | |
| 1999 11 05 | 704 | 0.7− | 0.1− | 2000 02 24 | 704 | 0.1− | 0.2+ | 2004 04 27 | 704 | 0.3+ | 0.9+ | | |
| 1999 11 05 | 704 | 0.6− | 0.0 | 2000 02 24 | 704 | 0.6− | 0.2+ | 2004 05 10 | 644 | 0.2− | 0.0 | | |
| 1999 11 16 | 704 | 0.0 | 0.8− | 2000 02 25 | 704 | 0.2+ | 0.1− | 2004 05 10 | 644 | 0.1− | 0.1+ | | |
| 1999 11 16 | 704 | 0.2+ | 0.8− | 2000 02 25 | 704 | 0.2+ | 0.1− | 2004 05 10 | 644 | 0.1− | 0.0 | | |
| 1999 11 16 | 704 | 0.3− | 0.8− | 2000 02 25 | 704 | 0.1+ | 0.4+ | 2004 05 12 | 704 | 0.1+ | 0.5+ | | |
| 1999 11 16 | 704 | 0.1− | 1.1− | 2000 02 25 | 704 | 0.0 | 0.3− | 2004 05 12 | 704 | 0.3− | 0.4+ | | |
| 1999 11 17 | 704 | 0.1+ | 0.8− | 2000 02 25 | 704 | 0.4+ | 0.2+ | 2004 05 12 | 704 | 0.2+ | 0.6+ | | |
| 1999 11 17 | 704 | 0.1− | 0.6− | 2000 02 25 | 704 | 0.1+ | 0.2+ | 2004 05 23 | 703 | 0.2+ | 0.8− | | |
| 1999 11 17 | 704 | 0.1− | 0.4− | 2000 02 25 | 704 | 0.6+ | 0.5− | 2004 05 23 | 703 | 0.1− | 0.2− | | |
| 1999 11 17 | 704 | 0.1− | 0.5− | 2000 02 25 | 704 | 0.5+ | 0.1− | 2004 05 23 | 703 | 0.1− | 0.6− | | |
| 1999 11 17 | 704 | 1.4+ | 0.3+ | 2000 02 25 | 704 | 0.5+ | 0.2− | 2004 05 23 | 703 | 0.4− | 0.5− | | |
| 1999 12 13 | 704 | 0.2− | 0.4− | 2000 03 17 | 704 | 0.2− | 0.1− | 2004 05 31 | 703 | 0.5− | 0.1+ | | |
| 1999 12 13 | 704 | 0.3− | 0.2− | 2000 03 17 | 704 | 0.3+ | 0.2− | 2004 05 31 | 703 | 0.5− | 1.1− | | |
| 1999 12 13 | 704 | 0.1− | 0.1− | 2000 03 17 | 704 | 0.1+ | 0.0 | 2004 05 31 | 703 | 1.1− | 1.0− | | |
| 1999 12 13 | 704 | 0.1− | 0.1+ | 2000 03 25 | 704 | 0.2− | 0.1− | 2004 05 31 | 703 | 0.2− | 1.1− | | |
| 1999 12 13 | 704 | 0.3− | 0.3+ | 2000 03 25 | 704 | 0.3+ | 0.3− | 2004 06 10 | 704 | 0.2+ | 0.1+ | | |
| 1999 12 14 | 704 | 0.3− | 0.2− | 2000 03 25 | 704 | 0.2+ | 0.4− | 2004 06 10 | 704 | 0.4− | 0.2+ | | |
| 1999 12 14 | 704 | 0.3− | 0.3− | 2000 03 25 | 704 | 0.6+ | 0.3− | 2004 06 10 | 704 | 0.2+ | 0.2+ | | |
| 1999 12 14 | 704 | 0.3− | 0.3− | 2000 03 25 | 704 | 0.3+ | 0.3− | 2004 06 10 | 704 | 0.3+ | 0.6+ | | |
| 1999 12 14 | 704 | 0.2− | 0.4− | 2000 04 15 | 704 | 1.9+ | 1.4+ | 2004 06 10 | 704 | 0.0 | 0.3+ | | |
| 1999 12 14 | 704 | 0.4− | 0.4− | 2000 04 15 | 704 | 0.3+ | 0.1− | 2004 06 18 | 703 | 0.8+ | 0.2+ | | |
| 1999 12 14 | 704 | 0.3− | 0.4− | 2000 04 15 | 704 | 1.3− | 0.2+ | 2004 06 18 | 703 | 0.5+ | 1.4− | | |
| 1999 12 14 | 670 | 0.5− | 0.5− | 2000 04 15 | 704 | 0.6+ | 1.5− | 2004 06 18 | 703 | 0.3− | 1.0− | | |
| 1999 12 14 | 704 | 0.3− | 0.1− | 2000 04 15 | 704 | 1.0− | 0.1− | 2004 06 18 | 703 | 0.4+ | 0.8− | | |
| 1999 12 14 | 704 | 0.3− | 0.3− | 2000 04 26 | 704 | 0.0 | 0.4+ | 2004 06 19 | 699 | 0.1+ | 0.1− | | |
| 1999 12 14 | 704 | 1.3+ | 0.8− | 2000 04 26 | 704 | 0.0 | 0.3− | 2004 06 19 | 699 | 0.2+ | 0.0 | | |
| 1999 12 14 | 704 | 1.7+ | 0.7− | 2000 04 26 | 704 | 0.2− | 0.4+ | 2004 06 19 | 699 | 0.4+ | 0.5+ | | |
| 1999 12 14 | 670 | 0.5− | 0.5− | 2000 04 26 | 704 | 0.5− | 0.0 | 2004 06 19 | 699 | 0.4− | 0.9+ | | |
| 1999 12 14 | 557 | 0.2− | 1.4− | 2000 04 26 | 704 | 0.2− | 0.4+ | 2004 06 20 | 699 | 0.1− | 0.9− | | |
| 1999 12 14 | 557 | 0.1− | 0.7+ | 2003 10 23 | 699 | 0.2+ | 0.2+ | 2004 06 20 | 699 | 1.0− | 0.1− | | |
| 1999 12 14 | 557 | 0.2− | 0.7+ | 2003 10 23 | 699 | 1.0+ | 0.5− | 2004 06 20 | 699 | 0.4− | 0.3+ | | |
| 1999 12 14 | 557 | 0.3− | 1.6− | 2003 10 23 | 699 | 0.9+ | 0.1+ | 2004 06 20 | 699 | 0.3− | 0.6− | | |
| 1999 12 14 | 611 | 0.0 | 0.0 | 2003 10 23 | 699 | 0.5+ | 1.0+ | 2006 08 26 | E12 | 0.2+ | 0.7+ | | |
| 1999 12 14 | 611 | 0.1− | 0.6+ | 2003 11 02 | 704 | 0.2+ | 0.3+ | 2006 08 26 | E12 | 0.4− | 1.2+ | | |
| 1999 12 14 | 611 | 0.2− | 0.0 | 2003 11 02 | 704 | 0.5+ | 0.7+ | 2006 08 26 | E12 | 0.1− | 0.9+ | | |
| 1999 12 14 | 611 | 0.1− | 0.2+ | 2003 11 02 | 704 | 0.3+ | 0.4+ | 2006 08 26 | E12 | 0.1− | 1.2+ | | |
| 1999 12 15 | 046 | 0.1+ | 0.4+ | 2003 11 02 | 704 | 0.6+ | 0.9+ | 2006 09 14 | E12 | 0.3− | 0.5+ | | |
| 1999 12 15 | 046 | 0.0 | 0.4+ | 2003 11 02 | 704 | 0.6+ | 0.4+ | 2006 09 14 | E12 | 0.4− | 0.5+ | | |
| 1999 12 15 | 046 | 0.0 | 0.5+ | 2003 11 23 | 704 | 0.7+ | 1.1+ | 2006 09 14 | E12 | 0.7− | 0.8+ | | |
| 1999 12 15 | 046 | 0.0 | 0.4+ | 2003 11 23 | 704 | 0.2− | 0.5+ | 2006 09 22 | E12 | 0.3+ | 0.4+ | | |
| 1999 12 15 | 713 | 0.0 | 0.4+ | 2003 11 23 | 704 | 0.9− | 0.3+ | 2006 09 22 | E12 | 0.6− | 0.1− | | |
| 1999 12 15 | 713 | 0.1+ | 0.7+ | 2003 11 23 | 704 | 0.0 | 0.6+ | 2006 09 22 | E12 | 0.2+ | 0.3+ | | |
| 1999 12 15 | 713 | 0.3− | 0.4+ | 2003 11 23 | 704 | 0.1− | 0.2+ | 2006 09 22 | E12 | 0.4− | 0.3+ | | |
| 1999 12 15 | 713 | 0.4− | 0.6+ | 2003 12 10 | 699 | 0.1+ | 0.4− | 2006 09 29 | E12 | 0.2− | 0.1− | | |
| 1999 12 15 | 713 | 0.4− | 0.4+ | 2003 12 10 | 699 | 0.3− | 0.1+ | 2006 09 29 | E12 | 0.4− | 0.3+ | | |
| 1999 12 15 | 719 | 0.3− | 1.1+ | 2003 12 10 | 699 | 0.2+ | 0.4+ | 2006 09 29 | E12 | 0.3− | 0.8+ | | |
| 1999 12 15 | 713 | 0.3− | 0.6+ | 2003 12 10 | 699 | 0.0 | 0.0 | 2006 09 29 | E12 | 0.0 | 0.8+ | | |
| 1999 12 15 | 704 | 0.1− | 0.0 | 2004 01 20 | 704 | 0.3+ | 0.1+ | 2006 10 07 | E12 | (2.4− | 2.8+) | | |
| 1999 12 15 | 719 | 0.0 | 1.1− | 2004 01 20 | 704 | 0.2+ | 0.1+ | 2006 10 07 | E12 | 0.2+ | 0.4− | | |
| 1999 12 15 | 704 | 0.1− | 0.0 | 2004 01 20 | 704 | 0.6+ | 0.2− | 2006 10 07 | E12 | (0.1+ | 2.7+) | | |
| 1999 12 15 | 704 | 0.1+ | 0.0 | 2004 01 20 | 704 | 0.2+ | 0.0 | 2006 10 14 | E12 | 0.3+ | 0.2+ | | |
| 1999 12 15 | 670 | 0.1− | 0.0 | 2004 01 31 | 704 | 0.6− | 0.0 | 2006 10 14 | E12 | 0.7− | 0.7+ | | |
| 1999 12 15 | 704 | 0.0 | 0.1− | 2004 01 31 | 704 | 0.5+ | 0.7+ | 2006 10 14 | E12 | 0.0 | 0.0 | | |
| 1999 12 15 | 704 | 0.0 | 0.0 | 2004 01 31 | 704 | 0.3+ | 0.4+ | 2006 10 14 | E12 | 0.4− | 0.2+ | | |
| 1999 12 15 | 670 | 0.1− | 0.9− | 2004 01 31 | 704 | 0.4+ | 0.8+ | 2006 11 26 | E12 | 0.3+ | 0.2+ | | |
| 1999 12 15 | 670 | 0.3+ | 0.3+ | 2004 01 31 | 704 | 0.6+ | 0.8+ | 2006 11 26 | E12 | 0.3+ | 0.7+ | | |
| 1999 12 15 | 355 | 0.3+ | 0.2+ | 2004 02 14 | 704 | 1.1− | 0.2+ | 2006 11 26 | E12 | 0.7− | 0.7+ | | |
| 1999 12 15 | 355 | 0.2+ | 0.6+ | 2004 02 14 | 704 | 0.5− | 0.6+ | 2006 11 26 | E12 | 0.3− | 0.7+ | | |
| 1999 12 15 | 355 | 0.2+ | 0.3+ | 2004 02 14 | 704 | 0.6− | 0.1+ | | | | | | |

**(136569)∗ 1981 EN$_2$**

Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.12947 | | (2000.0) | | −0.24694187 | −0.95689357 |
| $n$ | 0.18089207 | $\omega$ | 206.43053 | | +0.91443227 | −0.17789877 |
| $a$ | 3.0963951 | $\Omega$ | 258.18251 | | +0.32067636 | −0.22957946 |
| $e$ | 0.1423035 | $i$ | 8.98626 | | | |
| $P$ | 5.45 | $H$ | 14.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 11 22 | 675 | 2.5+ | 0.3− | 2001 12 20 | 704 | 0.1− | 0.1− | 2005 08 23 | 941 | 0.0 | 0.5− | | |
| 1979 11 24 | 675 | (4.3+ | 0.1+) | 2001 12 20 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.0 | 0.6+ | | |
| 1979 11 25 | 675 | (5.5+ | 0.5+) | 2001 12 20 | 704 | 0.4+ | 0.3− | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 1981 02 02 | 413 | 1.5+ | 0.2+ | 2001 12 20 | 704 | 0.8+ | 0.8− | 2006 10 19 | 703 | 0.3− | 1.1+ | | |
| 1981 03 02 | 413 | 1.1− | 1.7+ | 2001 12 20 | 704 | 0.5+ | 0.4− | 2006 10 19 | 703 | 0.7− | 0.1+ | | |
| 1981 03 02 | 413 | 0.2− | 0.1+ | 2001 12 20 | 704 | 0.4+ | 0.9− | 2006 10 27 | 703 | 0.2− | 0.6+ | | |
| 1981 03 07 | 413 | 0.9+ | 1.0+ | 2001 12 20 | 704 | 0.2+ | 0.9− | 2006 10 27 | 703 | 0.1+ | 0.1+ | | |
| 1981 03 07 | 413 | 0.7− | 0.4+ | 2001 12 21 | 704 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.3− | 0.4− | | |
| 1981 03 12 | 413 | 0.3+ | 0.2− | 2001 12 21 | 704 | 0.3− | 0.6+ | 2006 10 27 | 703 | 0.5+ | 0.1+ | | |
| 1981 04 09 | 413 | 2.0− | 0.9+ | 2001 12 21 | 704 | 0.4− | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.1− | | |
| 1981 04 09 | 413 | 0.3− | 0.3− | 2001 12 21 | 704 | (2.6+ | 0.3+) | 2006 10 27 | 703 | 0.1− | 0.2− | | |
| 1981 04 30 | 413 | (1.9− | 3.0−) | 2002 01 09 | 704 | 0.8+ | 0.0 | 2006 10 27 | 703 | 0.9+ | 0.3− | | |
| 1981 05 02 | 413 | 1.1− | 0.2− | 2002 01 09 | 704 | 0.7+ | 0.9+ | 2006 10 27 | 703 | 0.3+ | 0.7+ | | |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2002 01 09 | 704 | 0.5+ | 1.3+ | 2006 11 08 | 644 | 0.2− | 0.2− | | |
| 2001 11 20 | 704 | 0.4− | 0.2− | 2002 01 09 | 704 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.3− | 0.0 | | |
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2002 01 09 | 704 | 0.8+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.0 | | |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2002 01 13 | 704 | 1.2− | 0.5+ | 2006 11 14 | 703 | 0.5+ | 0.8+ | | |
| 2001 11 21 | 704 | 0.1− | 0.0 | 2002 01 13 | 704 | 1.2− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.3− | | |
| 2001 11 21 | 704 | 0.1− | 0.0 | 2002 01 13 | 704 | 0.6− | 0.6− | 2006 11 14 | 703 | (0.0 | 1.6−) | | |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2002 01 15 | 704 | 0.1− | 0.4− | 2006 11 14 | 703 | 0.2+ | 0.4− | | |
| 2001 11 21 | 704 | 0.1+ | 0.8+ | 2002 01 15 | 704 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.1− | | |
| 2001 11 21 | 704 | (0.1− | 1.6+) | 2002 01 15 | 704 | 0.8+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.3− | | |
| 2001 12 10 | 704 | 0.3+ | 0.3+ | 2002 01 15 | 704 | 0.5+ | 0.6− | 2006 11 16 | 704 | 0.5− | 0.1+ | | |
| 2001 12 10 | 704 | 0.9+ | 0.1− | 2002 01 19 | 704 | (1.1− | 1.5−) | 2006 11 16 | 704 | 0.3+ | 0.9+ | | |
| 2001 12 10 | 704 | 1.2+ | 0.2− | 2002 01 19 | 704 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.4− | | |
| 2001 12 14 | 704 | 0.7+ | 0.4− | 2002 01 19 | 704 | 0.5− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2001 12 14 | 704 | 0.1+ | 0.5+ | 2002 01 19 | 704 | 0.5− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.3− | | |
| 2001 12 14 | 704 | 0.1+ | 0.4− | 2003 03 23 | 644 | 0.5+ | 0.8− | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2001 12 14 | 704 | 0.2+ | 0.6+ | 2003 03 23 | 644 | 0.2+ | 0.5− | 2006 11 22 | 704 | 1.3− | 1.2− | | |
| 2001 12 17 | 704 | 0.7− | 0.6− | 2003 03 23 | 644 | 0.0 | 0.6− | 2006 11 22 | 704 | (1.7− | 1.3−) | | |
| 2001 12 17 | 704 | 0.5− | 0.7− | 2003 05 03 | 691 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.9− | 0.2− | | |
| 2001 12 17 | 704 | 0.7− | 0.8− | 2003 05 03 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3− | 0.3− | | |
| 2001 12 19 | 704 | 0.3− | 0.0 | 2003 05 03 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.0 | 0.2+ | | |
| 2001 12 19 | 704 | 0.6− | 0.2− | 2005 08 23 | 941 | 0.5+ | 0.3+ | 2006 11 27 | 185 | 0.4− | 0.4+ | | |
| 2001 12 19 | 704 | 0.7− | 0.3− | 2005 08 23 | 941 | 0.3+ | 0.1+ | 2006 11 27 | 185 | 0.1− | 0.7− | | |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2005 08 23 | 941 | 0.3+ | 0.2− | 2006 11 27 | 185 | 0.5+ | 0.4− | | |
| 2001 12 20 | 704 | 0.3+ | 0.5− | 2005 08 23 | 941 | 0.2+ | 0.4− | | | | | | |

**(136570)∗ 1981 EB$_3$ = 2001 XM$_{73}$**

Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. G. V. Williams (*MPO* 21943)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 239.09823 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.17848922 | | $\omega$ | 291.30077 | | | −0.93515522 | | | −0.33563222 | | | |
| $a$ | 3.1241225 | | $\Omega$ | 229.27630 | | | +0.35423379 | | | −0.88442577 | | | |
| $e$ | 0.1716878 | | $i$ | 8.59750 | | | +0.00177248 | | | −0.32425619 | | | |
| $P$ | 5.52 | | $H$ | 15.6 | | $G$ | 0.15 | | $U$ | 1 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 02 | 413 | 0.3+ | 0.7− | 2001 12 17 | 704 | 0.2− | 0.7+ | 2006 10 15 | 104 | 0.1− | 0.5+ |
| 1981 02 14 | 413 | 1.6+ | 0.3− | 2001 12 17 | 704 | 0.5− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.2− |
| 1981 03 02 | 413 | 1.4− | 1.5+ | 2001 12 17 | 704 | 0.5− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.2+ |
| 1981 03 02 | 413 | 1.7+ | 0.6− | 2003 03 27 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.3− |
| 1981 03 07 | 413 | 0.5− | 1.5+ | 2003 03 27 | 644 | 0.7+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 1981 03 07 | 413 | 1.7+ | 0.7− | 2003 03 27 | 644 | 0.5+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.2− |
| 1981 03 10 | 413 | 0.3+ | 0.7+ | 2003 03 28 | 699 | 0.3− | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.1− |
| 1981 03 10 | 413 | 0.4+ | 0.4+ | 2003 03 28 | 699 | 1.3+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1981 03 12 | 413 | 1.1− | 0.8+ | 2003 03 28 | 699 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1981 04 09 | 413 | 1.3− | 2.1+ | 2003 03 28 | 699 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1− |
| 1981 04 09 | 413 | 1.0− | 0.8+ | 2003 04 04 | 699 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.0 |
| 1990 11 22 | 691 | 0.4+ | 0.7− | 2003 04 04 | 699 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.7+ | 1.2− |
| 1990 11 22 | 691 | 0.2+ | 0.8− | 2003 04 04 | 699 | 1.1+ | 1.3− | 2006 10 21 | 703 | (0.2+ | 2.5+) |
| 1990 11 22 | 691 | 0.4+ | 0.9− | 2003 04 04 | 699 | 1.1− | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.3+ |
| 2001 12 11 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.4− | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2001 12 11 | 704 | 0.3+ | 1.3+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2001 12 11 | 704 | 0.4− | 0.1− | 2006 10 03 | 691 | 0.7− | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.4+ |
| 2001 12 14 | 704 | 1.0− | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 691 | 0.3+ | 0.2+ |
| 2001 12 14 | 704 | 0.6− | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.2− |
| 2001 12 14 | 704 | 0.9− | 0.2+ | 2006 10 15 | 104 | 0.4+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.2− | 2006 10 15 | 104 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.6+ |
| 2001 12 17 | 704 | 1.1− | 0.3+ | 2006 10 15 | 104 | 0.7− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |

**(136571)∗ 1981 EL$_8$ = 2000 SM$_{13}$**

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. G. V. Williams (*MPO* 4300)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 319.28924 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.18127240 | | $\omega$ | 102.71965 | | | +0.11302019 | | | −0.98916260 | | | |
| $a$ | 3.0920625 | | $\Omega$ | 340.05202 | | | +0.77123280 | | | +0.14680655 | | | |
| $e$ | 0.2052765 | | $i$ | 15.94472 | | | +0.62643947 | | | −0.00227745 | | | |
| $P$ | 5.44 | | $H$ | 14.7 | | $G$ | 0.15 | | $U$ | 2 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 09 | 413 | (4.5+ | 1.2+) | 2001 11 08 | 704 | 0.9+ | 0.2− | 2006 08 12 | 644 | 0.0 | 0.2− |
| 1981 02 13 | 413 | 0.2− | 0.2− | 2001 11 08 | 704 | 0.2+ | 0.3+ | 2006 08 12 | 644 | 0.2− | 0.3+ |
| 1981 03 01 | 413 | 1.2− | 0.2− | 2001 12 11 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.7− | 0.2+ |
| 1981 03 07 | 413 | 1.6− | 0.8− | 2001 12 11 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.6+ |
| 1981 03 07 | 413 | 2.4− | 1.0− | 2001 12 11 | 704 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.2+ | 0.3− |
| 1981 03 11 | 413 | 2.2− | 0.1− | 2001 12 11 | 704 | (2.4+ | 0.1+) | 2006 09 17 | 703 | 0.5− | 0.4+ |
| 1981 03 15 | 413 | 1.3+ | 1.0− | 2001 12 11 | 704 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.2+ | 0.6− |
| 1981 03 15 | 413 | 1.6+ | 1.0− | 2001 12 23 | 644 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 1981 04 12 | 413 | 2.3− | 0.2− | 2001 12 23 | 644 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.8− |
| 1981 04 29 | 413 | (2.9+ | 0.4+) | 2001 12 23 | 644 | 0.4− | 0.1− | 2006 09 28 | 703 | 0.1− | 0.8− |
| 2000 08 29 | 704 | 1.0− | 0.4− | 2001 12 23 | 644 | 0.3+ | 1.0+ | 2006 10 19 | 703 | 0.4+ | 0.9− |
| 2000 08 29 | 704 | 0.6+ | 0.2+ | 2001 12 23 | 644 | 0.3+ | 0.8+ | 2006 10 19 | 703 | 0.0 | 0.5− |
| 2000 08 29 | 704 | 1.4+ | 1.1+ | 2001 12 23 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2000 08 29 | 704 | 0.3+ | 0.3− | 2001 12 23 | 644 | 0.3+ | 1.0+ | 2006 10 19 | 703 | 0.5− | 0.5− |
| 2000 08 31 | 691 | 0.2− | 0.5− | 2001 12 23 | 704 | 0.7+ | 0.3− | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2000 08 31 | 691 | 0.3− | 0.4− | 2001 12 23 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.1− |
| 2000 08 31 | 691 | 0.2− | 0.4− | 2001 12 23 | 704 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.8+ | 0.6− |
| 2000 09 21 | 704 | 1.7+ | 1.1+ | 2002 01 06 | 704 | 0.3+ | 1.0− | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2000 09 21 | 704 | 0.8+ | 0.9+ | 2002 01 06 | 704 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.4− |
| 2000 09 21 | 704 | 1.7+ | 0.8+ | 2002 01 06 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.8− |
| 2000 09 24 | 704 | 0.3− | 0.9− | 2002 01 06 | 704 | 0.3+ | 0.8+ | 2006 10 27 | 703 | 0.3− | 0.4− |
| 2000 09 24 | 704 | 0.8+ | 0.1− | 2002 01 06 | 704 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2000 09 24 | 704 | 0.1+ | 1.2+ | 2002 01 23 | 704 | 0.6+ | 0.2+ | 2006 11 16 | 703 | 0.5+ | 0.6− |
| 2000 09 24 | 704 | 0.1+ | 0.7+ | 2002 01 23 | 704 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.1+ | 0.5− |
| 2000 10 02 | 704 | 1.1+ | 0.5+ | 2002 01 23 | 704 | 1.2+ | 0.3− | 2006 11 16 | 703 | 0.3− | 1.0− |
| 2000 10 02 | 704 | 1.3+ | 0.4+ | 2002 01 23 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.5− |
| 2000 10 02 | 704 | 0.4− | 0.3+ | 2005 07 17 | 644 | 0.5− | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2000 10 02 | 704 | 0.3+ | 0.5+ | 2005 07 17 | 644 | 0.3− | 0.1+ | 2006 11 22 | 703 | 0.5− | 0.7+ |
| 2001 11 08 | 704 | 0.3+ | 0.8− | 2005 07 17 | 644 | 0.2− | 0.1− | 2006 11 22 | 703 | 1.2+ | 0.1− |
| 2001 11 08 | 704 | 0.2+ | 0.7− | 2006 08 12 | 644 | 0.6− | 0.2− | 2006 11 22 | 703 | 0.1− | 0.4+ |

**(136572)∗ 1981 EA$_{14}$ = 2001 KW$_{10}$**

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. G. V. Williams (*MPO* 12835)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 136.92841 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.25181123 | | $\omega$ | 31.09712 | | | −0.53330065 | | | +0.84432315 | | | |
| $a$ | 2.4836248 | | $\Omega$ | 206.77959 | | | −0.79792135 | | | −0.52251541 | | | |
| $e$ | 0.0841155 | | $i$ | 6.63335 | | | −0.28091270 | | | −0.11872686 | | | |
| $P$ | 3.91 | | $H$ | 15.8 | | $G$ | 0.15 | | $U$ | 0 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 12 | 413 | 1.1+ | 0.3+ | 2002 10 03 | 704 | 0.1− | 0.5− | 2006 10 04 | 683 | 0.0 | 0.8− |
| 1981 02 12 | 413 | 1.1+ | 0.4+ | 2002 10 03 | 704 | 0.9− | 0.9− | 2006 10 11 | 691 | 0.2+ | 0.3+ |
| 1981 03 01 | 413 | 0.9+ | 0.9− | 2002 10 03 | 704 | 0.6+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 1981 03 06 | 413 | 0.4+ | 0.9− | 2002 10 03 | 704 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 1981 03 08 | 413 | 0.3− | 0.3− | 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 1981 03 08 | 413 | 0.7+ | 0.0 | 2002 10 03 | 704 | 0.7− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1981 03 12 | 413 | 1.6− | 1.1+ | 2002 10 03 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1981 03 12 | 413 | 1.3+ | 0.5− | 2002 10 03 | 704 | 0.3− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 1981 04 08 | 413 | 1.4− | 0.0 | 2002 10 04 | 644 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1981 04 09 | 413 | 2.3− | 1.9+ | 2002 10 04 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 1981 04 09 | 413 | 0.6+ | 0.6− | 2002 10 04 | 644 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.5+ | 0.1− |
| 1981 05 01 | 413 | 0.0 | 1.7− | 2002 10 07 | 704 | 0.9+ | 0.5− | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 1981 05 03 | 413 | 1.3− | 1.4− | 2002 10 07 | 704 | 0.7− | 0.9− | 2006 10 19 | 644 | 0.5− | 0.3+ |
| 1993 04 24 | 691 | 0.4+ | 0.8+ | 2002 10 07 | 704 | 0.2− | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 1993 04 24 | 691 | 0.2+ | 0.5+ | 2002 10 30 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 1993 04 24 | 691 | 0.3+ | 0.8+ | 2002 10 30 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2001 05 18 | 704 | 1.4+ | 1.0+ | 2002 10 30 | 644 | 0.6− | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2001 05 18 | 704 | 0.4+ | 0.2− | 2004 01 17 | 608 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2001 05 18 | 704 | 0.6− | 0.4+ | 2004 01 17 | 608 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2001 05 18 | 704 | 0.1− | 0.4+ | 2004 01 17 | 608 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 05 21 | 704 | 0.6− | 1.4+ | 2004 02 17 | 704 | 0.4− | 1.0+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 05 21 | 704 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2001 05 21 | 704 | 0.2+ | 0.1− | 2004 02 17 | 704 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 05 21 | 704 | 0.2+ | 0.4+ | 2004 02 17 | 704 | (1.1− | 1.6+) | 2006 10 31 | 691 | 0.5+ | 0.3+ |
| 2001 05 25 | 704 | 0.3− | 0.4+ | 2004 04 14 | 645 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 05 25 | 704 | 0.3− | 1.4+ | 2004 04 14 | 645 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.1+ |
| 2001 05 25 | 704 | 0.5+ | 0.7+ | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.9+ |
| 2001 05 25 | 704 | 1.3− | 0.5− | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.9− | 1.0+ |
| 2001 05 25 | 704 | 0.4− | 1.2+ | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2001 06 15 | 704 | 0.7+ | 0.1− | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2001 06 15 | 704 | 0.5+ | 1.4+ | 2005 07 05 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 1.5− | 0.3− |
| 2001 06 15 | 704 | (1.7+ | 0.3+) | 2005 07 05 | 704 | 0.7− | 1.3+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2001 06 15 | 704 | 0.6+ | 0.9+ | 2005 07 05 | 704 | 1.2− | 0.3+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2002 10 02 | 704 | 0.5− | 0.6− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 2002 10 02 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 13 | 291 | 0.0 | 0.5+ |
| 2002 10 02 | 704 | 0.7− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.6− | 2006 11 13 | 291 | 0.1+ | 0.5+ |
| 2002 10 02 | 599 | 1.0− | 0.5− | 2006 09 24 | 691 | 0.4− | 0.3+ | 2006 11 13 | 291 | 0.1− | 0.4+ |
| 2002 10 02 | 599 | 0.4− | 1.2+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 11 13 | 291 | 0.2+ | 0.6+ |
| 2002 10 02 | 599 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.6− | 0.1− | 2006 11 13 | 291 | 0.3+ | 0.5+ |
| 2002 10 02 | 599 | 0.8− | 0.8− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 13 | 291 | 0.3+ | 0.4+ |
| 2002 10 03 | 704 | 0.8+ | 1.1+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.4− | 0.8+ |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.6− |
| 2002 10 03 | 704 | 0.9− | 0.5− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.5− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.2+ | |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 10 04 | 683 | 0.0 | 0.1− | |

**(136573)∗ 1981 EJ$_{14}$ = 2002 RF$_{146}$**

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. G. V. Williams (*MPO* 34678)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 185.69159 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.25175150 | ω | 221.41767 | | −0.99709103 | +0.02599644 | |
| *a* | 2.4840176 | Ω | 319.90017 | | +0.01105181 | −0.88079192 | |
| *e* | 0.0847275 | *i* | 6.38659 | | −0.07541448 | −0.47278936 | |
| *P* | 3.92 | *H* | 15.6 | *G* | 0.15 | *U* | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 12 | 413 | 0.4+ | 0.1− | 2002 09 13 | 644 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.1+ | 0.1+ | |
| 1981 02 12 | 413 | 1.2+ | 2.1− | 2002 09 13 | 644 | 0.0 | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.1− | |
| 1981 03 01 | 413 | 2.0+ | 2.2+ | 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.7+ | |
| 1981 03 01 | 413 | 1.7+ | 0.1+ | 2002 10 31 | 704 | 0.3− | 0.5+ | 2006 09 17 | 703 | 1.0− | 0.0 | |
| 1981 03 06 | 413 | (3.7− | 1.3+) | 2002 10 31 | 704 | 0.2+ | 0.8− | 2006 09 17 | 703 | 0.7+ | 0.9+ | |
| 1981 03 06 | 413 | 1.2− | 0.8+ | 2002 10 31 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.3+ | |
| 1981 03 08 | 413 | 1.5− | 0.8+ | 2002 10 31 | 704 | 0.8+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.3+ | |
| 1981 03 08 | 413 | 2.0+ | 0.7+ | 2002 11 05 | 291 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.1− | |
| 1981 03 12 | 413 | 1.3+ | 0.6+ | 2002 11 05 | 291 | 0.4+ | 0.0 | 2006 09 19 | 699 | 0.0 | 0.4− | |
| 1981 04 09 | 413 | 1.1− | 0.7+ | 2002 11 05 | 291 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.4− | |
| 1981 04 09 | 413 | 0.7+ | 0.2+ | 2003 12 18 | 704 | (1.7+ | 0.2−) | 2006 09 26 | 691 | 0.1− | 0.0 | |
| 1981 05 01 | 413 | 1.9− | 1.1− | 2003 12 18 | 704 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1− | |
| 1981 05 03 | 413 | 1.2− | 0.2+ | 2003 12 18 | 704 | 1.1− | 0.6− | 2006 09 26 | 691 | 0.1− | 0.1− | |
| 1994 09 01 | 691 | 0.4− | 0.0 | 2003 12 18 | 704 | 0.2+ | 0.0 | 2006 09 27 | 699 | 1.0+ | 0.3− | |
| 1994 09 01 | 691 | 0.5− | 0.2+ | 2003 12 18 | 704 | 0.4− | 1.4− | 2006 09 27 | 699 | 0.5− | 0.8− | |
| 1994 09 01 | 691 | 0.7− | 0.4+ | 2003 12 23 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 699 | 0.4+ | 0.1+ | |
| 1999 12 15 | 704 | 0.5− | 0.5+ | 2003 12 23 | 704 | 0.2− | 0.1+ | 2006 09 27 | 699 | (2.1+ | 0.5+) | |
| 1999 12 15 | 704 | 0.0 | 0.9+ | 2003 12 23 | 704 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.5− | 0.8− | |
| 1999 12 15 | 704 | 0.0 | 0.4− | 2003 12 23 | 704 | (1.7+ | 0.1+) | 2006 10 17 | 703 | 0.2− | 0.7+ | |
| 1999 12 15 | 704 | 0.5− | 0.3− | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 703 | (0.0 | 2.4−) | |
| 1999 12 15 | 704 | 0.8+ | 0.9+ | 2003 12 28 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.9− | |
| 2002 09 06 | 704 | 0.4+ | 0.7+ | 2003 12 28 | 704 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | |
| 2002 09 06 | 704 | 0.3+ | 0.2+ | 2003 12 28 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.5+ | 0.2− | |
| 2002 09 06 | 704 | 0.8+ | 0.8+ | 2003 12 28 | 704 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.5+ | 0.5− | |
| 2002 09 11 | 644 | 0.3− | 0.2+ | 2004 01 22 | 704 | 0.6− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.4− | |
| 2002 09 11 | 644 | 0.1− | 0.3+ | 2004 01 22 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2− | |
| 2002 09 11 | 644 | 0.2+ | 0.5+ | 2004 01 22 | 704 | 0.5+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.2− | |

**(136574)∗ 1981 EW$_{16}$**

Discovered 1981 Mar. 6 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 179.86672 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21482231 | ω | 348.14074 | | −0.78946796 | +0.61280686 | |
| *a* | 2.7611063 | Ω | 229.70823 | | −0.55935237 | −0.74160792 | |
| *e* | 0.2229445 | *i* | 2.61175 | | −0.25271576 | −0.27292022 | |
| *P* | 4.59 | *H* | 16.1 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 12 | 413 | 1.6− | 1.7+ | 2004 03 20 | 699 | 0.0 | 0.4+ | 2004 04 16 | 704 | 0.3+ | 0.5+ | |
| 1981 02 12 | 413 | 1.5+ | 1.5+ | 2004 03 20 | 699 | 0.2− | 0.3+ | 2004 04 16 | 704 | 0.6+ | 0.4+ | |
| 1981 03 06 | 413 | 0.9+ | 0.1− | 2004 03 27 | 699 | (1.5− | 0.7+) | 2004 04 20 | 704 | 0.1− | 0.1− | |
| 1981 03 06 | 413 | (7.9− | 2.7+) | 2004 03 27 | 699 | (2.5− | 1.3−) | 2004 04 20 | 704 | 0.5− | 1.1+ | |
| 1981 03 08 | 413 | 1.7+ | 0.8− | 2004 03 27 | 699 | 0.9− | 0.4− | 2004 04 20 | 704 | 0.3+ | 0.7+ | |
| 1981 03 12 | 413 | 1.9− | 0.8+ | 2004 03 27 | 699 | (0.4− | 1.9−) | 2004 04 20 | 704 | 0.4+ | 1.1+ | |
| 1981 03 12 | 413 | 1.0+ | 1.3− | 2004 03 27 | 704 | 0.5− | 0.2− | 2004 04 20 | 704 | 0.0 | 0.3+ | |
| 1981 04 09 | 413 | 0.2+ | 0.4− | 2004 03 27 | 704 | 0.2+ | 0.9+ | 2005 09 25 | 691 | 0.2− | 1.0+ | |
| 1981 04 09 | 413 | 0.4+ | 0.7− | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2005 09 25 | 691 | 0.1+ | 0.3+ | |
| 1981 05 01 | 413 | 1.1− | 0.4+ | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2005 09 25 | 691 | 0.5− | 0.6+ | |
| 1981 05 03 | 413 | 1.5− | 0.9− | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.2+ | |
| 2004 03 17 | 704 | 0.0 | 0.4+ | 2004 03 31 | 704 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.1+ | |
| 2004 03 17 | 704 | 0.6+ | 0.2− | 2004 03 31 | 704 | 0.5− | 0.6− | 2006 09 27 | G96 | 0.1− | 0.2+ | |
| 2004 03 17 | 704 | 1.0+ | 1.3+ | 2004 03 31 | 704 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.7+ | |
| 2004 03 17 | 704 | 0.3− | 0.1+ | 2004 03 31 | 704 | 0.8− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.4+ | |
| 2004 03 18 | 704 | 0.4+ | 0.2− | 2004 03 31 | 704 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1+ | |
| 2004 03 18 | 704 | 0.2− | 0.7+ | 2004 04 11 | 644 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.5+ | |
| 2004 03 18 | 704 | 0.0 | 0.7− | 2004 04 11 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.0 | |
| 2004 03 18 | 704 | 0.0 | 0.0 | 2004 04 11 | 644 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.4+ | |
| 2004 03 20 | 704 | (1.7+ | 0.3+) | 2004 04 12 | 699 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.4− | 0.6+ | |
| 2004 03 20 | 704 | (0.7+ | 1.7+) | 2004 04 12 | 699 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.3− | 0.2+ | |
| 2004 03 20 | 699 | 0.1− | 0.8+ | 2004 04 12 | 699 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− | |
| 2004 03 20 | 704 | 0.1+ | 0.1− | 2004 04 12 | 699 | (0.3+ | 1.6+) | 2006 11 11 | G96 | 0.2− | 0.3− | |
| 2004 03 20 | 704 | 0.8+ | 0.5+ | 2004 04 16 | 704 | 1.0+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.1+ | |
| 2004 03 20 | 699 | 0.6+ | 0.2+ | 2004 04 16 | 704 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.7+ | 0.4+ | |
| 2004 03 20 | 704 | 1.1+ | 0.8+ | 2004 04 16 | 704 | 0.8+ | 0.6+ | | | | | |

**(136575)∗ 1981 EN$_{28}$ = 1992 EJ$_{37}$ = 2003 ER$_{14}$**

Discovered 1981 Mar. 6 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. G. V. Williams (*MPO* 42887)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 303.98308 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26636400 | ω | 207.87595 | | −0.92314028 | +0.38438542 | |
| *a* | 2.3923187 | Ω | 354.71180 | | −0.33528095 | −0.81473374 | |
| *e* | 0.1151048 | *i* | 4.81582 | | −0.18814544 | −0.43411610 | |
| *P* | 3.70 | *H* | 16.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 03 06 | 413 | 1.5− | 0.2− | 2003 01 27 | 704 | 0.1+ | 0.3+ | 2003 03 06 | 704 | 0.1− | 1.1+ | |
| 1981 03 11 | 413 | (5.5+ | 1.4−) | 2003 01 27 | 704 | 0.6− | 1.9+ | 2003 03 06 | 704 | 0.1+ | 0.3− | |
| 1981 03 15 | 413 | (4.8+ | 0.6−) | 2003 01 27 | 704 | 1.0− | 0.4− | 2003 03 08 | 704 | 0.2+ | 1.3− | |
| 1981 04 05 | 413 | 1.1− | 1.2+ | 2003 01 27 | 704 | 0.3− | 1.7+ | 2003 03 08 | 704 | 0.8+ | 1.8− | |
| 1981 05 01 | 413 | 1.2+ | 0.6− | 2003 01 27 | 704 | 0.0 | 1.2+ | 2003 03 08 | 704 | 0.1− | 1.3− | |
| 1981 05 03 | 413 | 0.1− | 1.4− | 2003 02 04 | 699 | 0.1+ | 0.2− | 2003 03 08 | 704 | 0.5+ | 0.9− | |
| 1992 03 11 | 691 | 0.3+ | 0.1+ | 2003 02 04 | 699 | 0.3− | 0.1− | 2004 08 11 | 704 | 1.1− | 0.0 | |
| 1992 03 11 | 691 | 0.3+ | 0.0 | 2003 02 04 | 699 | 0.2+ | 0.2− | 2004 08 11 | 704 | 0.9− | 0.9+ | |
| 2001 10 19 | 644 | 0.7+ | 1.1+ | 2003 02 04 | 699 | 0.6− | 0.9+ | 2004 08 11 | 704 | 1.4+ | 0.3+ | |
| 2001 10 19 | 644 | 0.7+ | 1.3+ | 2003 02 21 | 644 | 0.5− | 0.3− | 2004 08 11 | 704 | 0.3− | 0.2− | |
| 2001 10 19 | 644 | 0.7+ | 1.2+ | 2003 02 21 | 644 | 0.2+ | 0.7+ | 2005 10 24 | 691 | 0.0 | 0.0 | |
| 2001 10 21 | 704 | 0.6− | 0.1− | 2003 02 21 | 644 | 0.0 | 0.3− | 2005 10 24 | 691 | 0.1− | 0.1− | |
| 2001 10 21 | 704 | 0.5− | 0.3+ | 2003 02 21 | 644 | 0.3+ | 0.7+ | 2005 10 24 | 691 | 0.2− | 0.0 | |
| 2001 10 21 | 704 | 1.2+ | 0.7− | 2003 02 21 | 644 | 0.3− | 0.4− | 2005 10 28 | 691 | 0.0 | 0.4− | |
| 2001 10 26 | 691 | 0.2− | 0.0 | 2003 02 21 | 644 | 0.2+ | 0.8+ | 2005 10 28 | 691 | 0.1− | 0.0 | |
| 2001 10 26 | 691 | 0.2+ | 0.0 | 2003 03 06 | 704 | 1.3+ | 0.8+ | 2005 10 28 | 691 | 0.1− | 0.3− | |
| 2001 10 26 | 691 | 0.2− | 0.1− | 2003 03 06 | 704 | 0.4+ | 0.9− | | | | | |

**(136576)∗ 1981 EN$_{33}$ = 2001 DM$_{63}$**

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. G. V. Williams (*MPO* 10298)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 248.46553 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.29392341 | ω | 179.71741 | | −0.74452250 | −0.66603028 | |
| *a* | 2.2403365 | Ω | 318.40003 | | +0.61237344 | −0.65406135 | |
| *e* | 0.1415112 | *i* | 3.94831 | | +0.26586653 | −0.35861876 | |
| *P* | 3.35 | *H* | 16.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 09 | 413 | 0.0 | 0.3− | 2001 02 22 | 704 | 0.4+ | 0.8+ | 2003 12 23 | 704 | 0.6− | 0.8+ | |
| 1981 02 13 | 413 | (3.8+ | 1.5−) | 2001 02 22 | 704 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.3− | 0.2+ | |
| 1981 03 01 | 413 | 0.0 | 1.5− | 2001 02 22 | 704 | 0.1− | 0.3+ | 2003 12 23 | 704 | 0.4− | 0.4+ | |
| 1981 03 07 | 413 | 0.7− | 0.4− | 2001 03 18 | 704 | 0.2+ | 1.4+ | 2003 12 25 | 691 | 0.1− | 0.9− | |
| 1981 03 07 | 413 | (3.5+ | 1.0−) | 2001 03 18 | 704 | 0.6− | 1.2+ | 2003 12 25 | 691 | 0.0 | 0.8− | |
| 1981 03 11 | 413 | 0.8− | 0.4− | 2001 03 18 | 704 | 0.4− | 1.1+ | 2003 12 25 | 691 | 0.2− | 0.4− | |
| 1981 03 15 | 413 | 1.6− | 1.0− | 2003 11 20 | 704 | 0.0 | 0.6+ | 2003 12 28 | 704 | 0.2+ | 0.7− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 03 15 | 413 | (2.9+ | 2.8−) | 2003 11 20 | 704 | 0.3− | 0.3− | 2003 12 28 | 704 | 0.6+ | 0.0 | | |
| 1981 04 30 | 413 | 0.8+ | 2.2− | 2003 11 20 | 704 | 0.0 | 0.1+ | 2003 12 28 | 704 | 1.3+ | 1.0+ | | |
| 2001 01 21 | 704 | 0.1+ | 0.1+ | 2003 11 20 | 704 | 0.0 | 1.3− | 2003 12 28 | 704 | 1.4+ | 1.1− | | |
| 2001 01 21 | 704 | 0.3+ | 0.4+ | 2003 11 20 | 704 | 0.6+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.0 | | |
| 2001 01 21 | 704 | 0.4+ | 0.2+ | 2003 11 24 | 704 | 0.6+ | 0.4− | 2006 09 27 | 691 | 0.2− | 0.0 | | |
| 2001 01 21 | 704 | 0.1+ | 0.3+ | 2003 11 24 | 704 | (0.1− | 1.6−) | 2006 09 27 | 691 | 0.5− | 0.2+ | | |
| 2001 01 21 | 704 | 0.0 | 0.0 | 2003 11 24 | 704 | 0.0 | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.0 | | |
| 2001 02 02 | 691 | 0.4+ | 0.1− | 2003 11 24 | 704 | 0.1+ | 0.4− | 2006 10 01 | 691 | 0.1− | 0.3+ | | |
| 2001 02 02 | 691 | 0.2+ | 0.2− | 2003 12 04 | 704 | 0.5− | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.1− | | |
| 2001 02 02 | 691 | 0.2+ | 0.1+ | 2003 12 04 | 704 | 1.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2001 02 19 | 704 | 0.4− | 0.2+ | 2003 12 04 | 704 | 1.2+ | 1.5+ | 2006 10 11 | 644 | 0.0 | 0.4+ | | |
| 2001 02 19 | 704 | 0.3− | 0.3+ | 2003 12 04 | 704 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2001 02 19 | 704 | 0.8− | 0.5+ | 2003 12 18 | 704 | 0.3− | 0.7+ | 2006 11 20 | G96 | 0.2− | 0.7− | | |
| 2001 02 19 | 704 | 0.7+ | 0.0 | 2003 12 18 | 704 | (0.8− | 1.5+) | 2006 11 20 | G96 | 1.0+ | 0.8− | | |
| 2001 02 19 | 704 | 0.1− | 0.2+ | 2003 12 18 | 704 | 0.0 | 0.5+ | 2006 11 20 | G96 | 0.3+ | 0.4+ | | |
| 2001 02 22 | 704 | 0.5+ | 0.6+ | 2003 12 23 | 704 | 0.0 | 0.7+ | 2006 11 20 | G96 | 0.9+ | 0.3− | | |
| 2001 02 22 | 704 | 0.1− | 0.5+ | 2003 12 23 | 704 | 0.2− | 0.6+ | | | | | | |

**(136577)∗ 1981 EN$_{38}$**

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.34504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17181143 | $\omega$ | 23.17000 | | −0.75849037 | +0.64836154 | |
| $a$ | 3.2045571 | $\Omega$ | 197.74614 | | −0.62656821 | −0.75326882 | |
| $e$ | 0.0867628 | $i$ | 12.45254 | | −0.17917769 | −0.11051423 | |
| $P$ | 5.74 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 03 01 | 413 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.0 | 0.4+ | 2004 04 24 | E12 | 0.1− | 0.5+ | | |
| 1981 03 06 | 413 | 1.6+ | 1.9− | 2004 03 27 | 704 | 0.2− | 0.9+ | 2004 04 24 | E12 | 0.7+ | 0.8+ | | |
| 1981 03 06 | 413 | 0.9− | 1.2− | 2004 03 27 | 704 | 0.0 | 1.3+ | 2006 09 13 | 644 | 0.3− | 0.5+ | | |
| 1981 03 08 | 413 | 0.8− | 1.7+ | 2004 03 27 | 704 | 0.9+ | 0.6+ | 2006 09 13 | 644 | 0.2+ | 0.5+ | | |
| 1981 03 08 | 413 | 0.3− | 0.8+ | 2004 03 27 | 704 | (1.5− | 0.5+) | 2006 09 13 | 644 | 0.2+ | 0.4+ | | |
| 1981 03 12 | 413 | 1.8+ | 1.6− | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 1.1− | 0.1− | | |
| 1981 04 09 | 413 | 1.4− | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.2+ | | |
| 1981 04 09 | 413 | 0.4− | 0.8− | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.4+ | | |
| 1981 05 01 | 413 | (1.4− | 3.2+) | 2004 03 31 | 704 | 0.2− | 0.2− | 2006 09 19 | 703 | (2.9+ | 0.9+) | | |
| 2000 09 03 | 704 | (1.8− | 2.3+) | 2004 03 31 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.3+ | 0.2+ | | |
| 2000 09 03 | 704 | 0.1− | 1.1+ | 2004 03 31 | 704 | (0.3− | 1.5+) | 2006 09 19 | 699 | 1.4− | 0.6+ | | |
| 2000 09 03 | 704 | 0.8+ | 0.0 | 2004 03 31 | 704 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.9− | 0.3+ | | |
| 2000 10 02 | 645 | 0.0 | 0.2− | 2004 04 11 | 703 | 0.7+ | 0.9− | 2006 09 19 | 699 | 0.2+ | 0.5− | | |
| 2000 10 02 | 645 | 0.1+ | 0.3− | 2004 04 11 | 703 | 1.2− | 0.8− | 2006 10 01 | 703 | 0.0 | 0.3+ | | |
| 2004 03 16 | 703 | 0.1+ | 1.1+ | 2004 04 11 | 703 | 1.1− | 0.8− | 2006 10 01 | 703 | 1.0+ | 0.1+ | | |
| 2004 03 16 | 703 | 0.1− | 1.0+ | 2004 04 11 | 703 | 0.7− | 0.6− | 2006 10 01 | 703 | 0.4+ | 0.7+ | | |
| 2004 03 16 | 703 | 0.5+ | 0.5+ | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 01 | 703 | 0.8+ | 1.1+ | | |
| 2004 03 16 | 703 | 0.2− | 0.8+ | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.3+ | | |
| 2004 03 18 | 704 | 1.4− | 0.1− | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.3+ | | |
| 2004 03 18 | 704 | 1.3− | 0.1+ | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.7+ | 0.4+ | | |
| 2004 03 18 | 704 | 0.9− | 0.2+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.5+ | | |
| 2004 03 18 | 704 | 1.5− | 0.3+ | 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.6+ | | |
| 2004 03 18 | 704 | (2.0− | 1.0+) | 2004 04 21 | 704 | 0.6+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.4+ | | |
| 2004 03 20 | 704 | 0.5− | 0.1− | 2004 04 21 | 704 | 1.3+ | 0.9− | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2004 03 20 | 704 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 691 | 0.2+ | 0.1+ | | |
| 2004 03 20 | 704 | 1.2+ | 1.2− | 2004 04 21 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.2+ | | |
| 2004 03 20 | 704 | 1.3+ | 0.5− | 2004 04 22 | 703 | 0.0 | 0.8− | 2006 10 23 | 691 | 0.0 | 0.4+ | | |
| 2004 03 20 | 704 | 0.9+ | 0.3− | 2004 04 22 | 703 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.5+ | | |
| 2004 03 27 | 699 | 0.0 | 0.1+ | 2004 04 22 | 703 | (1.6+ | 1.2−) | 2006 10 23 | 691 | 0.0 | 0.3+ | | |
| 2004 03 27 | 699 | 0.1+ | 0.3+ | 2004 04 22 | 703 | 0.1− | 0.5+ | 2006 10 24 | 644 | 0.2+ | 0.5+ | | |
| 2004 03 27 | 699 | 0.4+ | 0.3+ | 2004 04 24 | E12 | 0.4+ | 0.7+ | 2006 10 24 | 644 | 0.0 | 0.1+ | | |
| 2004 03 27 | 699 | 0.3− | 0.3− | 2004 04 24 | E12 | (1.6+ | 1.5+) | 2006 10 24 | 644 | 0.3+ | 0.7+ | | |

**(136578)∗ 1981 EL$_{45}$ = 2002 RB$_{203}$**

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. A. Doppler (*MPO* 37030)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.19101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25291160 | $\omega$ | 262.84911 | | −0.94467162 | −0.31499208 | |
| $a$ | 2.4764157 | $\Omega$ | 258.75840 | | +0.32554116 | −0.86609150 | |
| $e$ | 0.0984071 | $i$ | 5.35395 | | +0.04023028 | −0.38815654 | |
| $P$ | 3.90 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 09 | 413 | 0.3− | 0.0 | 2004 01 17 | 608 | 0.2+ | 0.8− | 2006 09 20 | 644 | 0.1+ | 0.1+ | | |
| 1981 02 14 | 413 | 2.2+ | 0.3+ | 2004 01 18 | 644 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.4− | 0.3+ | | |
| 1981 03 01 | 413 | (3.5+ | 0.9−) | 2004 01 18 | 644 | 0.2− | 0.5+ | 2006 09 27 | 703 | 0.8− | 0.3− | | |
| 1981 03 08 | 413 | 1.2− | 1.4+ | 2004 01 18 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.3+ | 1.3+ | | |
| 1981 03 08 | 413 | (4.9+ | 0.3+) | 2004 01 23 | 704 | 0.1− | 0.8+ | 2006 09 27 | 703 | 0.7− | 1.0− | | |
| 1981 03 12 | 413 | 1.5+ | 0.1− | 2004 01 23 | 704 | 0.9− | 0.2+ | 2006 09 30 | 683 | 0.0 | 0.4+ | | |
| 1981 04 09 | 413 | 0.4− | 1.6+ | 2004 01 23 | 704 | 0.2− | 0.4+ | 2006 09 30 | 683 | 1.2− | 0.2+ | | |
| 1981 04 09 | 413 | 0.6+ | 0.0 | 2004 01 23 | 704 | 0.0 | 0.2− | 2006 09 30 | 683 | 1.2− | 0.3+ | | |
| 1981 05 01 | 413 | 0.8− | 0.7− | 2004 01 23 | 704 | 0.4− | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.1+ | | |
| 1981 05 03 | 413 | 0.7− | 0.2+ | 2004 01 26 | 699 | 0.7− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.3+ | | |
| 2000 01 05 | 704 | 0.1+ | 0.1+ | 2004 01 26 | 699 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.6+ | 0.3+ | | |
| 2000 01 05 | 704 | 0.1+ | 0.6− | 2004 01 26 | 699 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.3+ | | |
| 2000 01 05 | 704 | 0.4− | 0.7− | 2004 01 26 | 699 | 0.3− | 0.4− | 2006 10 17 | 703 | (0.1− | 1.5−) | | |
| 2000 01 05 | 704 | 0.2− | 0.7− | 2004 01 30 | 704 | (2.0+ | 1.5+) | 2006 10 17 | 703 | 0.5− | 0.4+ | | |
| 2002 09 13 | 644 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.2− | | |
| 2002 09 13 | 644 | 0.1+ | 0.4+ | 2004 01 30 | 704 | 1.1+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.0 | | |
| 2002 09 13 | 644 | 0.3+ | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2002 09 15 | 608 | 0.5− | 0.5− | 2004 02 17 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2002 09 15 | 608 | 0.3− | 0.3− | 2004 02 17 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 09 15 | 608 | 0.7− | 0.4− | 2004 02 17 | 704 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2002 10 04 | 704 | 1.4+ | 1.1+ | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2− | | |
| 2002 10 04 | 704 | 0.2− | 1.0− | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3− | | |
| 2002 10 04 | 704 | 1.2+ | 0.2+ | 2004 03 19 | 704 | 0.0 | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.2− | | |
| 2002 10 04 | 704 | 0.1+ | 1.3+ | 2004 03 19 | 704 | 0.9+ | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2003 12 23 | 704 | 0.3− | 0.2+ | 2004 03 19 | 704 | 1.2+ | 0.8+ | 2006 10 23 | G96 | 0.1− | 0.2− | | |
| 2003 12 23 | 704 | 0.2+ | 0.1+ | 2004 03 19 | 704 | (1.5+ | 0.0 ) | 2006 10 23 | G96 | 0.3+ | 0.4− | | |
| 2003 12 23 | 704 | 0.2− | 0.5+ | 2004 03 19 | 704 | (1.8+ | 1.5+) | 2006 10 23 | G96 | 0.1− | 0.0 | | |
| 2003 12 23 | 704 | 0.2− | 0.3+ | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.0 | 0.2− | | |
| 2003 12 23 | 704 | 0.1− | 0.0 | 2004 04 13 | 645 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.2− | | |
| 2004 01 17 | 608 | 0.3+ | 0.6− | 2006 09 20 | 644 | 0.6+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.1− | | |
| 2004 01 17 | 608 | 0.1+ | 0.3− | 2006 09 20 | 644 | 0.1− | 0.1+ | | | | | | |

**(136579)∗ 1981 EC$_{48}$ = 1999 JS$_{115}$ = 2004 PH$_{87}$**

Discovered 1981 Mar. 6 by S. J. Bus at Siding Spring in the course of the U.K. Schmidt-Caltech Asteroid Survey.

Id. A. Doppler (*MPO* 88647)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.94025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22301368 | $\omega$ | 9.18136 | | −0.63646856 | +0.76958200 | |
| $a$ | 2.6930746 | $\Omega$ | 221.31348 | | −0.71251453 | −0.61220899 | |
| $e$ | 0.1806812 | $i$ | 4.47335 | | −0.29534862 | −0.18150398 | |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 03 06 | 413 | (3.7+ | 2.5+) | 2001 11 20 | 691 | 0.1+ | 0.3+ | 2004 08 11 | 704 | 0.5+ | 0.2− | | |
| 1981 03 08 | 413 | (3.7+ | 2.3−) | 2001 11 20 | 691 | 0.1− | 0.3− | 2004 08 11 | 704 | 0.4− | 0.9− | | |
| 1981 03 12 | 413 | 1.0− | 1.2+ | 2001 11 20 | 691 | 0.1− | 0.2− | 2004 08 11 | 704 | 0.2+ | 0.4− | | |
| 1992 11 26 | 691 | 0.3− | 0.6− | 2003 02 09 | 608 | 0.1+ | 0.1− | 2004 08 12 | 704 | 0.3+ | 0.1− | | |
| 1992 11 26 | 691 | 0.3+ | 0.1− | 2003 02 09 | 608 | 0.6+ | 0.6− | 2004 08 12 | 704 | 0.3+ | 0.0 | | |
| 1992 11 26 | 691 | 1.3+ | 0.5+ | 2003 02 09 | 608 | 0.6+ | 1.2− | 2004 08 12 | 704 | 0.1− | 0.6− | | |
| 1999 05 13 | 704 | 1.2− | 0.8+ | 2003 03 26 | 644 | 0.1− | 0.5+ | 2004 08 23 | 691 | 0.2− | 0.4+ | | |
| 1999 05 13 | 704 | 0.1+ | 0.4+ | 2003 03 26 | 644 | 0.0 | 0.3+ | 2004 08 23 | 691 | 0.0 | 0.4+ | | |
| 1999 05 13 | 704 | (2.1+ | 0.1−) | 2003 03 26 | 644 | 0.0 | 0.5+ | 2004 08 23 | 691 | 0.0 | 0.2+ | | |
| 1999 05 13 | 704 | 0.4− | 0.5− | 2003 03 31 | 704 | 1.0+ | 0.4− | 2005 09 30 | G96 | 0.5− | 0.1+ | | |
| 1999 05 18 | 704 | 0.2− | 0.6+ | 2003 03 31 | 704 | 0.3+ | 1.7+ | 2005 09 30 | G96 | 0.8− | 0.2− | | |
| 1999 05 18 | 704 | 0.0 | 0.5+ | 2003 03 31 | 704 | 1.1− | 0.8+ | 2005 09 30 | G96 | 0.1− | 0.2− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 704 | 1.4+ | 0.4+ | 2003 03 31 | 704 | 1.0− | 0.4+ | 2005 09 30 | G96 | 0.4− | 0.4− |
| 1999 05 18 | 704 | 1.2− | 0.5+ | 2003 03 31 | 704 | 1.5+ | 1.6+ | 2005 10 30 | 691 | 0.2− | 0.3+ |
| 1999 05 18 | 704 | (2.3− | 0.3+) | 2004 08 11 | 704 | 0.2+ | 1.2+ | 2005 10 30 | 691 | 0.2− | 0.3+ |
| 1999 05 22 | 691 | 0.2+ | 0.5− | 2004 08 11 | 704 | 0.1− | 0.6+ | 2005 10 30 | 691 | 0.6− | 0.3+ |
| 1999 05 22 | 691 | 0.2+ | 0.5− | 2004 08 11 | 704 | (1.5+ | 2.1+) | | | | |
| 1999 05 22 | 691 | (4.3+ | 2.3−) | 2004 08 11 | 704 | 0.5− | 0.0 | | | | |

**(136580)∗ 1984 WL = 2002 QS$_{24}$**

Discovered 1984 Nov. 27 by J. Ciffréo at Caussols.

Id. ?. Micheli (*MPO* 39897)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.80731 | | (2000.0) | | | |
| $n$ | 0.27153247 | $\omega$ | 192.75084 | | +0.07030265 | −0.90821281 |
| $a$ | 2.3618639 | $\Omega$ | 254.39391 | | +0.94869901 | +0.18868534 |
| $e$ | 0.2813197 | $i$ | 25.36310 | | +0.30826566 | −0.37356035 |
| $P$ | 3.63 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1955 12 11 | 261 | 2.4− | 1.2− | 2002 10 29 | 704 | 0.4+ | 0.0 | 2003 01 31 | 699 | 0.8− | 0.1+ |
| 1955 12 11 | 261 | (3.4− | 0.6−) | 2002 10 29 | 704 | 0.4+ | 0.1+ | 2003 01 31 | 704 | 0.5+ | 0.1− |
| 1984 11 27 | 010 | (9.2+ | 0.9−) | 2002 11 07 | 447 | 0.5+ | 0.2+ | 2003 01 31 | 699 | 0.5− | 0.0 |
| 1984 11 28 | 010 | (7.3+ | 1.2−) | 2002 11 07 | 447 | 0.4+ | 0.3− | 2003 01 31 | 704 | 0.3− | 0.3− |
| 1984 12 02 | 675 | 1.1+ | 1.1− | 2002 11 07 | 447 | 0.1+ | 0.2− | 2003 01 31 | 699 | 0.1− | 0.7− |
| 1984 12 03 | 675 | 0.9+ | 0.5− | 2002 11 11 | 704 | 0.1+ | 0.5+ | 2003 01 31 | 704 | 0.9+ | 0.0 |
| 1984 12 14 | 010 | 0.8+ | 1.5− | 2002 11 11 | 704 | 0.2+ | 0.5+ | 2003 01 31 | 704 | 0.2+ | 0.7− |
| 1984 12 14 | 010 | 0.3+ | 1.7+ | 2002 11 11 | 704 | 0.3+ | 0.7+ | 2003 02 19 | 699 | 0.1+ | 0.4+ |
| 1984 12 15 | 675 | 0.4+ | 1.0− | 2002 11 11 | 704 | 0.1+ | 0.3+ | 2003 02 19 | 699 | 0.2− | 0.4+ |
| 1984 12 21 | 801 | 0.5+ | 0.5− | 2002 11 11 | 704 | 0.4+ | 0.3+ | 2003 02 19 | 699 | 0.2+ | 0.4+ |
| 1995 10 24 | 261 | 0.3+ | 0.2+ | 2002 11 15 | 704 | 0.2− | 0.2+ | 2003 02 19 | 699 | 0.1+ | 1.1+ |
| 1995 10 24 | 261 | 0.5− | 0.3+ | 2002 11 15 | 704 | 0.1− | 0.3+ | 2003 02 23 | 699 | 0.5− | 0.2+ |
| 2002 08 27 | 704 | 0.5− | 0.1− | 2002 11 15 | 704 | 0.3− | 0.3+ | 2003 02 23 | 699 | 0.8− | 0.5− |
| 2002 08 27 | 704 | 0.7− | 0.1− | 2002 11 15 | 704 | 0.1− | 0.5+ | 2003 02 23 | 699 | 0.7− | 0.2+ |
| 2002 08 27 | 704 | 0.5− | 0.2− | 2002 11 15 | 704 | 0.3− | 0.5+ | 2003 02 23 | 699 | 0.5+ | 0.9− |
| 2002 08 27 | 704 | 0.6− | 0.0 | 2002 12 10 | 628 | 0.7+ | 0.1− | 2004 06 05 | 644 | 0.2+ | 0.7+ |
| 2002 08 27 | 704 | 0.2− | 0.0 | 2002 12 10 | 628 | 0.4+ | 0.5+ | 2004 06 05 | 644 | 0.1+ | 0.5+ |
| 2002 08 30 | 704 | 0.8− | 0.6+ | 2002 12 11 | 699 | 0.3+ | 0.2+ | 2004 06 05 | 644 | 0.0 | 0.7+ |
| 2002 08 30 | 704 | 0.5+ | 0.5+ | 2002 12 11 | 699 | 0.2− | 0.1+ | 2006 09 18 | 691 | 1.0+ | 0.2− |
| 2002 08 30 | 704 | 0.3+ | 0.8+ | 2002 12 11 | 699 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2002 08 30 | 704 | 0.0 | 1.4+ | 2002 12 11 | 699 | 0.0 | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2002 08 30 | 704 | 0.0 | 1.3+ | 2002 12 20 | 644 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.6− | 1.4+ |
| 2002 09 27 | 704 | 0.4− | 0.3− | 2002 12 20 | 644 | 0.2− | 0.3− | 2006 09 27 | 704 | 1.0+ | 0.1+ |
| 2002 09 27 | 704 | 0.2+ | 0.3− | 2002 12 20 | 644 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.1− | 1.1+ |
| 2002 09 27 | 704 | 1.2− | 0.2− | 2002 12 31 | 704 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.7+ | 0.3− |
| 2002 09 27 | 704 | 0.6− | 0.1− | 2002 12 31 | 704 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.8− | 0.0 |
| 2002 09 27 | 704 | 0.6− | 0.1− | 2002 12 31 | 704 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2002 10 01 | 704 | 0.5− | 0.3− | 2002 12 31 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.8− | 0.3− |
| 2002 10 01 | 704 | 0.3− | 0.4− | 2002 12 31 | 704 | 0.3− | 0.4+ | 2006 10 22 | 704 | (1.7+ | 0.1+) |
| 2002 10 01 | 704 | 0.3− | 0.1− | 2003 01 04 | 704 | (1.7− | 0.4−) | 2006 10 22 | 704 | (3.0+ | 2.9−) |
| 2002 10 01 | 704 | 0.2− | 0.1− | 2003 01 04 | 704 | 1.5− | 0.9− | 2006 10 22 | 704 | 0.7+ | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2003 01 04 | 704 | 1.2− | 0.0 | 2006 10 22 | 704 | (1.6+ | 1.2+) |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2003 01 04 | 704 | 1.1− | 0.1+ | 2006 10 31 | 703 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2003 01 08 | 608 | 0.2+ | 0.6− | 2006 10 31 | 703 | 0.6− | 0.0 |
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2003 01 08 | 608 | 0.1+ | 0.7− | 2006 10 31 | 703 | 0.7− | 0.4− |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2003 01 08 | 608 | 0.0 | 0.4− | 2006 10 31 | 703 | 0.2− | 0.2− |
| 2002 10 04 | 704 | 0.1− | 0.2+ | 2003 01 19 | 608 | 0.5− | 0.7+ | 2006 11 01 | 704 | 0.1− | 0.5− |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2003 01 19 | 608 | 0.5− | 0.7+ | 2006 11 01 | 704 | 0.6+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.5+ | 2003 01 19 | 608 | 0.0 | 0.5+ | 2006 11 01 | 704 | 0.1− | 0.8+ |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2003 01 27 | 704 | 0.2− | 0.2− | 2006 11 01 | 704 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.3− | 0.3+ | 2003 01 27 | 704 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.8+ | 1.2+ |
| 2002 10 05 | 704 | 0.5+ | 0.1− | 2003 01 27 | 704 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.8+ |
| 2002 10 05 | 704 | 0.8+ | 0.1+ | 2003 01 27 | 704 | 0.4− | 0.3− | 2006 11 17 | 703 | 1.1+ | 0.9+ |
| 2002 10 05 | 704 | 0.3− | 0.8+ | 2003 01 27 | 704 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.6+ |
| 2002 10 05 | 704 | 0.1+ | 0.2− | 2003 01 28 | 704 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.3+ |
| 2002 10 05 | 704 | 0.9+ | 0.1− | 2003 01 28 | 704 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.3− | 1.3+ |
| 2002 10 06 | 645 | 0.1+ | 0.2− | 2003 01 28 | 704 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.3− |
| 2002 10 06 | 645 | 0.0 | 0.2− | 2003 01 28 | 704 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.8− | 0.3− |
| 2002 10 29 | 704 | 0.5+ | 0.2+ | 2003 01 31 | 699 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2002 10 29 | 704 | 0.5+ | 0.0 | 2003 01 31 | 704 | 0.6+ | 0.0 | | | | |

**(136581)∗ 1986 GX = 2004 FC$_{65}$**

Discovered 1986 Apr. 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60453)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 180.83774 | | (2000.0) | | | |
| $n$ | 0.22001842 | $\omega$ | 43.09493 | | −0.54122446 | +0.83994702 |
| $a$ | 2.7174612 | $\Omega$ | 194.28650 | | −0.80848610 | −0.53273180 |
| $e$ | 0.2053640 | $i$ | 9.22523 | | −0.23114133 | −0.10337233 |
| $P$ | 4.48 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1986 04 04 | 691 | 1.3− | 0.3− | 2004 04 12 | 699 | 0.3− | 0.3− | 2005 08 25 | 644 | 0.1− | 0.4+ |
| 1986 04 04 | 691 | 1.8− | 0.2− | 2004 04 12 | 699 | 1.0− | 0.7− | 2005 09 22 | 644 | 0.0 | 0.6+ |
| 1986 04 04 | 691 | 1.3− | 0.9− | 2004 04 12 | 699 | 0.3+ | 0.3+ | 2005 09 22 | 644 | 0.2− | 0.7+ |
| 1986 04 05 | 691 | 0.0 | 1.0+ | 2004 04 12 | 699 | 0.5− | 0.8− | 2005 09 22 | 644 | 0.3− | 0.5+ |
| 1986 04 05 | 691 | 0.4− | 1.2+ | 2004 04 20 | 704 | 0.0 | 0.4− | 2005 10 13 | 691 | 0.1− | 1.1+ |
| 1986 04 05 | 691 | 0.5+ | 2.2+ | 2004 04 20 | 704 | 0.1+ | 0.2− | 2005 10 13 | 691 | 0.5− | 0.2+ |
| 1986 04 10 | 691 | 1.4+ | 0.4+ | 2004 04 20 | 704 | 0.1+ | 0.1− | 2005 10 13 | 691 | 0.2+ | 0.2− |
| 1986 04 10 | 691 | 1.3+ | 0.1− | 2004 04 20 | 704 | 0.1− | 0.1− | 2005 10 27 | G96 | 0.2+ | 0.2+ |
| 1986 04 10 | 691 | 1.2+ | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.6− | 2005 10 27 | G96 | 0.1+ | 0.2+ |
| 1986 04 14 | 691 | 0.4− | 0.3+ | 2004 04 22 | 704 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.3− | 0.3+ |
| 1986 04 14 | 691 | 0.4− | 0.1+ | 2004 04 22 | 704 | 0.2− | 0.2− | 2005 10 27 | G96 | 0.1+ | 0.8+ |
| 1986 04 14 | 691 | 1.5+ | 1.2− | 2004 04 22 | 704 | 0.7− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 1995 05 06 | 691 | 0.7− | 0.7− | 2004 04 22 | 704 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 1995 05 06 | 691 | 0.2− | 0.5− | 2004 04 22 | 704 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 1995 05 06 | 691 | 0.7+ | 0.7− | 2004 04 30 | 608 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | 0.2− | 0.8− | 2004 04 30 | 608 | 0.7− | 0.7+ | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2004 03 19 | 704 | 0.2+ | 0.1− | 2004 04 30 | 608 | 0.2− | 0.7+ | 2006 11 22 | G96 | 0.6+ | 0.1− |
| 2004 03 19 | 704 | 0.7+ | 0.4− | 2004 05 10 | 703 | 0.2− | 0.8+ | 2006 11 22 | G96 | 0.4− | 0.1+ |
| 2004 03 19 | 704 | 0.5+ | 0.3+ | 2004 05 10 | 703 | 0.0 | 0.5+ | 2006 11 22 | G96 | 0.1− | 0.3+ |
| 2004 03 19 | 704 | 0.2+ | 1.3+ | 2004 05 10 | 703 | 0.3+ | 0.5+ | 2006 11 22 | G96 | 0.2− | 0.2+ |
| 2004 03 22 | 704 | 0.0 | 0.0 | 2004 05 10 | 703 | 0.6− | 0.1+ | 2006 11 22 | G96 | 0.4− | 0.1+ |
| 2004 03 22 | 704 | 0.1+ | 0.5+ | 2004 05 13 | 699 | 0.7+ | 0.6+ | 2006 11 22 | G96 | 0.5− | 0.1+ |
| 2004 03 22 | 704 | 0.3+ | 0.6+ | 2004 05 13 | 699 | 0.7− | 0.7− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 03 22 | 699 | 0.1+ | 0.5+ | 2004 05 13 | 699 | 0.5− | 0.3− | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2004 03 22 | 704 | 0.8+ | 0.4+ | 2004 05 13 | 699 | 0.9− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2004 03 22 | 699 | 0.5− | 0.5− | 2004 05 14 | 704 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2004 03 22 | 699 | 0.6+ | 0.0 | 2004 05 14 | 704 | 0.4+ | 0.6− | 2006 11 23 | G96 | 0.1− | 0.5+ |
| 2004 03 22 | 699 | 0.1+ | 0.7− | 2004 05 14 | 704 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.4+ |
| 2004 03 25 | 699 | 0.2+ | 0.1+ | 2004 05 14 | 704 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2004 03 25 | 699 | 1.2− | 0.8+ | 2004 05 14 | 704 | 0.3+ | 0.8+ | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 2004 03 25 | 699 | 0.1+ | 0.8− | 2004 05 18 | 704 | 0.5+ | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.3+ |
| 2004 03 25 | 699 | 1.5− | 1.3+ | 2004 05 18 | 704 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.3− | 0.3+ |
| 2004 03 28 | 704 | 1.2+ | 0.2+ | 2004 05 18 | 704 | 0.3+ | 0.5+ | 2006 11 23 | G96 | 0.4− | 0.0 |
| 2004 03 28 | 704 | 1.5+ | 0.1− | 2004 05 18 | 704 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2004 03 28 | 704 | (2.0+ | 0.3+) | 2004 05 18 | 704 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2004 03 28 | 704 | 0.9+ | 0.3− | 2004 05 22 | 704 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.2+ |
| 2004 03 28 | 704 | 1.1+ | 0.1− | 2004 05 22 | 704 | 0.5− | 0.4− | 2006 11 23 | G96 | 0.4− | 0.1+ |
| 2004 03 31 | 704 | 0.3+ | 0.1− | 2004 05 22 | 704 | 0.1− | 1.0+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2004 03 31 | 704 | 0.2− | 0.2− | 2004 05 22 | 704 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.3+ |
| 2004 03 31 | 704 | 0.0 | 0.0 | 2004 05 22 | 704 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2004 03 31 | 704 | 0.2+ | 0.7+ | 2005 08 25 | 644 | 0.0 | 0.7+ | 2006 11 24 | G96 | 0.0 | 0.3+ |
| 2004 03 31 | 704 | 0.4− | 0.1− | 2005 08 25 | 644 | 0.3− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.2+ |

**(136582)∗ 1992 BA = 2000 PN$_3$**

Discovered 1992 Jan. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 3114)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.22368 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.63415442 | $\omega$ | 107.24067 | | −0.37259416 | | +0.92065393 |
| $a$ | 1.3417534 | $\Omega$ | 140.25124 | | −0.90552979 | | −0.33324555 |
| $e$ | 0.0678747 | $i$ | 10.49678 | | −0.20295170 | | −0.20333164 |
| $P$ | 1.55 | $H$ | 20.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 27 | 691 | 0.3+ | 0.7− | 2000 08 04 | 704 | 0.8+ | 0.3+ | 2006 01 10 | 448 | 0.0 | 0.2− |
| 1992 01 27 | 691 | 0.1+ | 0.6− | 2000 08 06 | 608 | (1.1− | 6.1−) | 2006 01 20 | 703 | 0.5− | 0.8+ |
| 1992 01 28 | 691 | 0.3− | 1.4− | 2000 08 06 | 608 | (1.1− | 5.6−) | 2006 01 20 | 703 | 0.3− | 0.7− |
| 1992 01 28 | 691 | 0.2− | 0.2− | 2000 08 06 | 608 | (1.0− | 5.6−) | 2006 01 20 | 703 | 0.5− | 0.7+ |
| 1992 01 28 | 691 | 0.4− | 0.1+ | 2000 09 01 | 711 | 0.6− | 0.2− | 2006 01 20 | 703 | 0.2− | 1.3+ |
| 1992 01 28 | 691 | 0.6+ | 0.5− | 2000 09 01 | 711 | 0.1+ | 0.4− | 2006 02 01 | 683 | 0.5− | 0.5− |
| 1992 01 28 | 691 | 1.8+ | 0.6+ | 2000 09 01 | 711 | 0.5− | 0.5− | 2006 02 01 | 683 | (2.2+ | 1.7−) |
| 1992 01 28 | 691 | 0.5+ | 0.4− | 2003 03 13 | 704 | 0.7+ | 0.2+ | 2006 02 01 | 683 | 0.3+ | 0.5− |
| 1992 01 29 | 691 | 0.2− | 0.1+ | 2003 03 13 | 704 | 1.2+ | 0.3− | 2006 02 03 | G96 | 0.3− | 0.0 |
| 1992 01 29 | 691 | 0.4− | 0.5+ | 2003 03 13 | 704 | 0.4+ | 0.6− | 2006 02 03 | G96 | 0.2+ | 0.1− |
| 1992 01 29 | 691 | 0.9− | 0.2− | 2003 03 13 | 704 | 0.6+ | 0.5+ | 2006 02 03 | G96 | 0.1− | 0.0 |
| 1992 01 30 | 691 | 0.8− | 0.3− | 2003 03 13 | 704 | 0.7+ | 0.8+ | 2006 02 03 | G96 | 0.2− | 0.0 |
| 1992 01 30 | 691 | 0.4− | 0.0 | 2003 04 07 | 670 | (1.7+ | 0.7−) | 2006 02 03 | 704 | 0.5+ | 1.0+ |
| 1992 02 05 | 691 | 0.1+ | 0.5+ | 2003 04 07 | 670 | 0.4− | 0.8+ | 2006 02 03 | 704 | 0.6+ | 1.2+ |
| 1992 02 05 | 691 | 0.3+ | 0.2− | 2003 04 07 | 670 | (2.1− | 0.3+) | 2006 02 03 | 704 | 0.7+ | 1.4+ |
| 1992 02 10 | 691 | 0.6+ | 0.7+ | 2003 04 07 | 670 | 1.0− | 1.5+ | 2006 02 03 | 704 | 0.2− | 1.3+ |
| 1992 02 10 | 691 | 0.4+ | 0.7+ | 2003 04 08 | 644 | 0.2+ | 0.0 | 2006 02 03 | 704 | 0.6+ | 1.3+ |
| 1992 02 10 | 691 | 0.2+ | 0.0 | 2003 04 08 | 644 | 0.5+ | 0.5− | 2006 02 21 | 699 | (1.9+ | 0.0 ) |
| 1992 02 23 | 691 | 0.5+ | 0.3+ | 2003 04 08 | 644 | 0.2+ | 0.8− | 2006 02 21 | 699 | 0.7− | 0.5− |
| 1992 02 23 | 691 | 1.0− | 0.3− | 2003 04 23 | 704 | 0.4+ | 0.5+ | 2006 02 21 | 699 | 0.9− | 0.2+ |
| 1992 02 23 | 691 | 1.2− | 0.3− | 2003 04 23 | 704 | 0.4+ | 0.2− | 2006 02 21 | 699 | 0.4+ | 0.6+ |
| 2000 08 02 | 704 | 0.6− | 0.4− | 2003 04 23 | 704 | 0.5− | 0.1− | 2006 02 28 | 703 | 1.4− | 0.5− |
| 2000 08 02 | 704 | 0.0 | 0.3+ | 2003 04 23 | 704 | 0.1− | 0.1+ | 2006 02 28 | 703 | 0.8− | 0.2+ |
| 2000 08 02 | 704 | 0.3+ | 0.8+ | 2003 04 23 | 704 | 0.2+ | 0.6+ | 2006 02 28 | 703 | 1.0− | 1.2− |
| 2000 08 02 | 704 | 0.9− | 0.6+ | 2005 11 25 | 291 | 0.2+ | 1.3+ | 2006 02 28 | 703 | 1.3− | 0.7− |
| 2000 08 02 | 704 | 0.6− | 0.2+ | 2005 11 25 | 291 | 0.4+ | 0.8+ | 2006 03 19 | 240 | 0.0 | 1.0+ |
| 2000 08 04 | 704 | 0.1− | 0.7+ | 2005 11 25 | 291 | 1.0+ | 0.6+ | 2006 03 19 | 240 | 0.3+ | 0.2+ |
| 2000 08 04 | 704 | 0.3+ | 0.5+ | 2006 01 10 | 448 | 0.2+ | 0.5− | 2006 03 19 | 240 | 0.4+ | 0.2− |
| 2000 08 04 | 704 | 0.4+ | 0.7+ | 2006 01 10 | 448 | 0.5+ | 0.2− | 2006 03 19 | 240 | 0.3+ | 1.1− |

**(136583)∗ 1992 DL$_9$ = 1995 UP$_{28}$ = 2003 FO$_{46}$**

Discovered 1992 Feb. 29 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. A. Doppler (*MPO* 46317)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.24707 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18593861 | $\omega$ | 257.60201 | | +0.21273919 | | −0.97710897 |
| $a$ | 3.0401126 | $\Omega$ | 180.11651 | | +0.94646884 | | +0.20614950 |
| $e$ | 0.1311254 | $i$ | 9.05687 | | +0.24277308 | | +0.05253996 |
| $P$ | 5.30 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 29 | 809 | 1.7− | 1.1− | 2003 03 27 | 644 | 0.6+ | 0.6+ | 2006 09 18 | 703 | 0.7− | 0.5+ |
| 1992 03 03 | 809 | 0.3+ | 1.4− | 2003 03 27 | 644 | 0.4+ | 0.2− | 2006 09 18 | 703 | 0.7+ | 0.3− |
| 1992 03 05 | 809 | 1.5− | 1.8+ | 2003 03 27 | 644 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 1.1+ | 1.1− |
| 1993 05 20 | 691 | 0.3− | 0.3− | 2003 04 01 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | (0.6− | 1.6+) |
| 1993 05 20 | 691 | 0.2+ | 0.3− | 2003 04 01 | 704 | 0.5+ | 0.0 | 2006 09 30 | 703 | (1.6− | 0.5+) |
| 1993 05 20 | 691 | 0.2− | 0.2+ | 2003 04 01 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 1995 10 20 | 691 | 0.2+ | 0.6+ | 2003 04 01 | 704 | (1.6+ | 0.6+) | 2006 09 30 | 703 | 0.5− | 0.2− |
| 1995 10 20 | 691 | 0.3− | 0.1+ | 2003 04 01 | 704 | (1.6+ | 1.5+) | 2006 10 30 | 703 | 1.4− | 0.7− |
| 1995 10 20 | 691 | 0.5− | 0.3+ | 2003 05 05 | 691 | 0.4+ | 0.4+ | 2006 10 30 | 703 | 0.4− | 0.4+ |
| 1995 10 25 | 691 | 0.2+ | 0.4+ | 2003 05 05 | 691 | 0.0 | 0.4+ | 2006 10 30 | 703 | 0.1+ | 0.1− |
| 1995 10 25 | 691 | 0.2+ | 0.6+ | 2003 05 05 | 691 | 0.2+ | 0.4+ | 2006 10 30 | 703 | 0.6− | 0.4− |
| 1995 10 25 | 691 | 0.5+ | 0.2+ | 2005 07 30 | 644 | 0.5− | 0.6+ | 2006 11 19 | 703 | 0.5− | 1.8− |
| 2001 12 11 | 704 | 0.2+ | 0.1+ | 2005 07 30 | 644 | 0.5− | 0.6+ | 2006 11 19 | 703 | 1.4+ | 0.9− |
| 2001 12 11 | 704 | 0.7+ | 0.8+ | 2005 07 30 | 644 | 0.4− | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.6+ |
| 2001 12 11 | 704 | 0.0 | 1.0+ | 2005 10 30 | G96 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.1− | 1.5+ |
| 2001 12 11 | 704 | 0.3+ | 0.3+ | 2005 10 30 | G96 | 0.6− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.8− |
| 2003 03 24 | 691 | 0.0 | 0.3+ | 2005 10 30 | G96 | 0.6− | 0.4+ | 2006 11 20 | 704 | 0.8− | 0.2+ |
| 2003 03 24 | 691 | 0.5+ | 0.3+ | 2005 10 30 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2003 03 24 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.1− |

**(136584)∗ 1992 EE$_{28}$ = 2001 SE$_{187}$**

Discovered 1992 Mar. 8 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPO* 16704)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.57483 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26408930 | $\omega$ | 129.39867 | | −0.47427258 | | −0.87952710 |
| $a$ | 2.4060363 | $\Omega$ | 348.71908 | | +0.73465210 | | −0.37116280 |
| $e$ | 0.1309733 | $i$ | 11.40995 | | +0.48513072 | | −0.29777552 |
| $P$ | 3.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 08 | 809 | 1.1− | 1.3+ | 2003 01 13 | 704 | 0.2− | 0.5+ | 2005 08 29 | 644 | 0.4− | 0.1+ |
| 1992 03 09 | 809 | 0.4− | 0.8+ | 2003 01 13 | 704 | 0.2− | 0.3+ | 2005 08 29 | 644 | 0.5− | 0.1− |
| 1992 03 11 | 691 | 0.2− | 0.4− | 2003 01 13 | 704 | 0.2− | 0.7+ | 2005 08 29 | 644 | 0.4− | 0.0 |
| 1992 03 11 | 691 | 0.3− | 0.1− | 2003 01 13 | 704 | 0.6− | 0.1− | 2005 08 31 | 691 | 0.1− | 0.1− |
| 1992 03 11 | 691 | 0.2+ | 0.6− | 2003 01 13 | 704 | 0.2− | 0.6+ | 2005 08 31 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.2− | 2003 01 13 | 704 | 0.3− | 0.3− | 2005 08 31 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.4+ | 0.3− | 2003 01 25 | 704 | 0.6+ | 0.2− | 2005 09 11 | 704 | 0.8+ | 0.4+ |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2003 01 25 | 704 | 0.2+ | 1.0+ | 2005 09 11 | 704 | 0.2− | 0.8+ |
| 2001 09 19 | 704 | 0.9+ | 0.1+ | 2003 01 25 | 704 | (2.0+ | 2.0−) | 2005 09 11 | 704 | 0.0 | 0.9+ |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2003 01 25 | 704 | 0.8+ | 0.6− | 2005 09 22 | 644 | 0.4− | 0.1− |
| 2001 09 21 | 704 | 0.5+ | 1.0+ | 2003 01 31 | 699 | 0.1+ | 0.1− | 2005 09 22 | 644 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2003 01 31 | 699 | 0.0 | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2003 01 31 | 699 | 0.1+ | 0.3− | 2005 09 23 | 703 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.6− | 0.9− | 2003 01 31 | 699 | 0.2− | 0.1+ | 2005 09 23 | 703 | 0.5− | 0.1− |
| 2002 12 06 | 704 | 1.1+ | 1.1− | 2003 02 06 | 699 | 0.1+ | 0.5+ | 2005 09 23 | 703 | 0.3− | 0.0 |
| 2002 12 06 | 704 | (1.8+ | 0.8−) | 2003 02 06 | 699 | 0.0 | 0.5+ | 2005 09 23 | 703 | 0.3− | 0.5− |
| 2002 12 31 | 645 | 0.2− | 0.4− | 2003 02 06 | 699 | 0.3− | 0.3+ | 2005 09 26 | 644 | 0.2− | 0.3− |
| 2002 12 31 | 645 | 0.1− | 0.4− | 2003 02 06 | 699 | 0.1− | 0.7+ | 2005 09 26 | 644 | 0.3− | 0.0 |
| 2002 12 31 | 704 | 0.9+ | 0.4+ | 2003 02 26 | 704 | 0.4− | 0.4− | 2005 09 26 | 644 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2003 02 26 | 704 | 0.5− | 0.0 | 2005 09 29 | 699 | 0.4+ | 0.1+ |
| 2002 12 31 | 704 | 0.1− | 0.2− | 2003 02 26 | 704 | 0.2+ | 0.1− | 2005 09 29 | 699 | 1.0+ | 1.3− |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2003 02 26 | 704 | 0.1− | 0.7− | 2005 09 29 | 699 | 0.5− | 0.8+ |
| 2002 12 31 | 704 | 0.3+ | 0.6+ | 2003 02 26 | 704 | 1.2+ | 0.3− | 2005 09 29 | 699 | 0.3+ | 0.5− |
| 2002 12 31 | 704 | (0.6− | 1.6+) | 2003 03 05 | 704 | 1.2− | 1.2+ | 2005 10 01 | 703 | 0.7− | 0.2− |
| 2002 12 31 | 704 | 0.1− | 0.7+ | 2003 03 05 | 704 | (1.6+ | 0.6+) | 2005 10 01 | 703 | 0.6− | 0.6+ |
| 2002 12 31 | 704 | 0.0 | 0.7+ | 2003 03 05 | 704 | 0.4− | 0.7+ | 2005 10 01 | 703 | (2.8− | 2.9+) |
| 2002 12 31 | 704 | 0.6+ | 0.7+ | 2003 03 05 | 704 | 0.5+ | 0.3+ | 2005 10 01 | 703 | (1.6+ | 3.1+) |
| 2003 01 05 | 699 | 1.3+ | 0.0 | 2003 03 05 | 704 | 0.0 | 0.6+ | 2005 10 06 | 699 | (2.3− | 1.5+) |
| 2003 01 05 | 699 | 1.0+ | 0.4− | 2003 03 05 | 704 | 1.4+ | 0.5+ | 2005 10 06 | 703 | 0.1− | 1.2− |
| 2003 01 05 | 699 | 1.4+ | 0.3− | 2003 03 05 | 704 | 0.1+ | 1.4+ | 2005 10 06 | 703 | 1.1− | 0.2− |
| 2003 01 05 | 699 | 0.3+ | 0.2− | 2003 03 07 | 644 | 0.2+ | 0.3+ | 2005 10 06 | 699 | 0.1+ | 0.2+ |
| 2003 01 07 | 704 | 0.7− | 0.4+ | 2003 03 07 | 644 | 0.1+ | 0.1+ | 2005 10 06 | 703 | 0.1− | 0.4− |
| 2003 01 07 | 704 | 0.6− | 0.4+ | 2003 03 07 | 644 | 0.0 | 0.1+ | 2005 10 06 | 703 | 0.6− | 0.3− |
| 2003 01 07 | 704 | 1.0− | 0.9+ | 2003 03 07 | 644 | 0.1+ | 0.3+ | 2005 10 06 | 699 | 0.5− | 0.3+ |
| 2003 01 07 | 704 | 0.9− | 0.3+ | 2003 03 07 | 644 | 0.2+ | 0.1+ | 2005 10 06 | 699 | 0.4+ | 0.5− |
| 2003 01 10 | 704 | 0.0 | 0.1+ | 2003 03 07 | 644 | 0.1− | 0.1− | 2005 10 08 | 704 | 0.4+ | 0.1− |
| 2003 01 10 | 704 | 0.2− | 0.1+ | 2003 03 10 | 699 | 0.7+ | 1.3+ | 2005 10 08 | 704 | 0.3+ | 0.3+ |
| 2003 01 10 | 704 | 0.4+ | 0.2− | 2003 03 10 | 699 | (0.2− | 1.6+) | 2005 10 08 | 704 | 0.1+ | 0.6− |
| 2003 01 11 | 704 | 0.1− | 0.4+ | 2003 03 10 | 699 | 0.3+ | 0.1+ | 2005 10 08 | 704 | 1.4+ | 0.4+ |
| 2003 01 11 | 704 | 0.3− | 0.7+ | 2003 03 10 | 699 | 0.3+ | 0.3+ | 2005 10 08 | 704 | 0.6+ | 0.6+ |
| 2003 01 11 | 704 | 0.4+ | 0.5+ | 2003 03 25 | 699 | 0.7+ | 1.1− | 2005 10 08 | 704 | 0.5+ | 0.1− |
| 2003 01 11 | 704 | 0.2− | 0.6+ | 2003 03 25 | 699 | 0.4+ | 0.4− | 2005 10 08 | 704 | 0.6− | 0.0 |
| 2003 01 11 | 704 | 0.2+ | 0.8+ | 2003 03 25 | 699 | 0.4+ | 0.6− | 2005 10 08 | 704 | 0.3+ | 0.2+ |
| 2003 01 12 | 704 | 0.3+ | 0.5+ | 2003 03 25 | 699 | 0.2− | 0.5+ | 2005 10 08 | 704 | 0.5+ | 0.8+ |
| 2003 01 12 | 704 | 0.1+ | 0.3+ | 2003 03 31 | 699 | 0.9+ | 0.9− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2003 01 12 | 704 | 0.3+ | 0.6+ | 2003 03 31 | 699 | 0.4− | 1.5+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2003 01 12 | 704 | 0.0 | 0.6+ | 2003 03 31 | 699 | 1.1+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2003 01 12 | 704 | 0.4+ | 0.9+ | 2003 03 31 | 699 | 0.5+ | 0.4+ | 2006 11 28 | 691 | 0.2+ | 0.0 |
| 2003 01 13 | 704 | 0.1− | 0.3+ | 2005 08 27 | 644 | 0.5− | 0.1− | 2006 11 28 | 691 | 0.1− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 13 | 704 | 0.5− | 0.0 | 2005 08 27 | 644 | 0.4− | 0.2− | 2006 11 28 | 691 | 0.0 | 0.3+ |
| 2003 01 13 | 704 | 0.2− | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.0 | | | | |

**(136585)∗ 1992 SG$_{19}$**

Discovered 1992 Sept. 22 by E. W. Elst at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.24646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21076052 | $\omega$ | 115.57878 | | +0.03837759 | −0.99509434 | |
| $a$ | 2.7964682 | $\Omega$ | 331.76300 | | +0.83367688 | +0.08219317 | |
| $e$ | 0.2337755 | $i$ | 11.11203 | | +0.55091743 | −0.05505947 | |
| $P$ | 4.68 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 22 | 809 | 0.3− | 0.8− | 2002 12 07 | 704 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.8− | 0.6− |
| 1992 09 22 | 809 | 0.8− | 0.6− | 2002 12 07 | 704 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.8− | 0.0 |
| 1992 09 22 | 809 | 0.3+ | 0.8− | 2002 12 07 | 704 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.1+ |
| 1992 09 23 | 809 | 1.5− | 0.3+ | 2002 12 15 | 704 | 0.5+ | 1.0+ | 2006 08 28 | 699 | 0.6− | 0.3− |
| 1992 09 23 | 809 | 0.3+ | 0.4+ | 2002 12 15 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.4+ | 1.1+ |
| 1992 09 23 | 809 | 0.1+ | 0.2− | 2002 12 15 | 704 | 0.5+ | 0.0 | 2006 08 29 | 704 | 0.5− | 0.8+ |
| 1997 10 30 | 566 | 1.1+ | 0.5+ | 2002 12 15 | 704 | 0.1− | 0.6− | 2006 08 29 | 704 | 0.2− | 0.2− |
| 1997 10 30 | 566 | 0.7+ | 0.7+ | 2002 12 15 | 704 | 0.4+ | 0.5− | 2006 08 29 | 704 | 0.8+ | 0.2+ |
| 1997 10 30 | 566 | 0.8+ | 0.1+ | 2002 12 29 | 704 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.0 | 0.5− |
| 2001 08 09 | 644 | 0.8+ | 0.4+ | 2002 12 29 | 704 | 0.5+ | 0.1− | 2006 08 30 | 704 | 0.4− | 0.1+ |
| 2001 08 09 | 644 | 0.6+ | 0.6+ | 2002 12 29 | 704 | 1.4+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.1+ |
| 2001 08 09 | 644 | 0.2+ | 0.2+ | 2002 12 29 | 704 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.2− | 1.1− |
| 2001 08 21 | 608 | 0.2+ | 0.1− | 2002 12 29 | 704 | (0.9+ | 1.8−) | 2006 08 30 | 704 | 0.5− | 0.5+ |
| 2001 08 21 | 608 | 0.4+ | 0.3− | 2003 01 07 | 704 | 0.4+ | 0.6+ | 2006 08 30 | 958 | 1.1− | 1.0+ |
| 2001 08 21 | 608 | 0.4− | 0.5− | 2003 01 07 | 704 | 0.2+ | 0.1− | 2006 08 31 | 958 | 0.1− | 1.1+ |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2003 01 07 | 704 | 0.3+ | 0.7+ | 2006 08 31 | 958 | 0.6− | 0.2− |
| 2002 09 07 | 704 | 0.4+ | 0.2− | 2003 01 07 | 704 | 0.4+ | 0.3− | 2006 09 14 | 703 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.6+ | 0.8− | 2003 01 31 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.5− |
| 2002 09 07 | 704 | 1.0+ | 1.0− | 2003 01 31 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2002 10 01 | 704 | 0.0 | 0.6+ | 2003 01 31 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.8− |
| 2002 10 01 | 704 | 0.4+ | 0.5+ | 2003 03 05 | 704 | 0.1+ | 0.3− | 2006 09 16 | 941 | 0.1+ | 0.5− |
| 2002 10 01 | 704 | 0.8+ | 0.1− | 2003 03 05 | 704 | 0.5+ | 0.7− | 2006 09 16 | 941 | 0.1− | 0.5− |
| 2002 10 01 | 704 | 0.3+ | 0.4− | 2003 03 05 | 704 | (1.0− | 1.5−) | 2006 09 16 | 941 | 0.2− | 0.2− |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2006 08 01 | A50 | 0.6+ | 0.5+ | 2006 09 16 | 941 | 0.2− | 0.3− |
| 2002 10 05 | 704 | 0.1+ | 0.6− | 2006 08 01 | A50 | 0.8+ | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.5− |
| 2002 10 05 | 704 | 0.5− | 0.8− | 2006 08 17 | 958 | (0.4− | 1.6−) | 2006 09 17 | 704 | 0.0 | 0.5− |
| 2002 10 05 | 704 | 0.5− | 0.4− | 2006 08 18 | 958 | (1.4+ | 2.3−) | 2006 09 17 | 704 | 0.6+ | 0.4+ |
| 2002 10 05 | 704 | 0.3+ | 0.0 | 2006 08 18 | 958 | 0.3− | 1.1− | 2006 09 17 | 704 | (1.7+ | 0.7−) |
| 2002 10 05 | 704 | 0.3− | 0.2− | 2006 08 18 | 699 | 0.3− | 1.5+ | 2006 09 17 | 704 | 0.7+ | 0.2− |
| 2002 10 05 | 704 | 0.1+ | 0.6− | 2006 08 18 | 699 | 0.2− | 0.2− | 2006 09 20 | 699 | 1.0+ | 1.5+ |
| 2002 10 05 | 704 | 0.6− | 0.9− | 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 09 20 | 699 | 0.0 | 1.2− |
| 2002 10 14 | 704 | 1.3− | 0.4− | 2006 08 18 | 699 | 0.8+ | 0.9+ | 2006 09 20 | 699 | 0.2+ | 0.2+ |
| 2002 10 14 | 704 | 1.3+ | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.3+ | 0.3− |
| 2002 10 14 | 704 | 0.1+ | 0.0 | 2006 08 18 | 699 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.2+ |
| 2002 10 14 | 704 | 0.2+ | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.3− | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2002 10 14 | 704 | 1.1+ | 0.7+ | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.3− | 1.0+ |
| 2002 10 15 | 704 | 0.6− | 0.7+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.4− | 0.3+ |
| 2002 10 15 | 704 | 0.4− | 0.8+ | 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.7− |
| 2002 10 15 | 704 | 1.2− | 0.3+ | 2006 08 21 | 704 | 0.8+ | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2002 10 30 | 704 | 1.4− | 0.4− | 2006 08 21 | 704 | 0.0 | 0.8+ | 2006 09 28 | G96 | 0.3+ | 0.5− |
| 2002 10 30 | 704 | 1.2− | 0.3− | 2006 08 21 | 704 | 0.5+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 2002 10 30 | 704 | 1.0− | 0.1− | 2006 08 21 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 10 30 | 704 | 1.4− | 0.2− | 2006 08 21 | 704 | (1.5+ | 0.5−) | 2006 11 11 | 703 | 2.3− | 0.4+ |
| 2002 10 30 | 704 | 1.1− | 0.0 | 2006 08 28 | 699 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2002 12 07 | 704 | 0.3− | 0.4+ | 2006 08 28 | 703 | (1.5− | 0.2−) | 2006 11 11 | 703 | 0.5+ | 0.2− |

**(136586)∗ 1992 UC$_7$ = 1999 TC$_{228}$**

Discovered 1992 Oct. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37036)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.98473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28562327 | $\omega$ | 97.41028 | | +0.50609778 | +0.86231504 | |
| $a$ | 2.2835314 | $\Omega$ | 203.01739 | | −0.80716997 | +0.46674690 | |
| $e$ | 0.1678243 | $i$ | 2.44311 | | −0.30387772 | +0.19636727 | |
| $P$ | 3.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 18 | 691 | 0.9− | 0.3− | 2002 08 18 | 608 | 0.4− | 0.1+ | 2005 05 14 | G96 | 0.5− | 0.0 |
| 1992 10 18 | 691 | 0.1+ | 0.5− | 2002 08 18 | 608 | 0.1+ | 0.4+ | 2005 05 14 | G96 | 0.4− | 0.3+ |
| 1992 10 21 | 691 | 0.7+ | 0.5− | 2005 04 02 | G96 | 0.2− | 0.1+ | 2005 05 14 | G96 | 1.2− | 0.8+ |
| 1992 10 21 | 691 | 0.1+ | 0.1− | 2005 04 02 | G96 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.5+ | 0.0 |
| 1992 10 21 | 691 | 0.2− | 0.3− | 2005 04 02 | G96 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.4+ |
| 1999 10 01 | 691 | 0.2+ | 0.8+ | 2005 04 02 | G96 | 0.6− | 0.1+ | 2006 10 12 | 691 | 0.4− | 0.6+ |
| 1999 10 01 | 691 | 0.0 | 0.2+ | 2005 04 11 | G96 | 0.6− | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.7+ |
| 1999 10 01 | 691 | 1.6+ | 0.5+ | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 1999 10 07 | 691 | 0.2− | 0.2+ | 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 1999 10 07 | 691 | 0.0 | 0.4+ | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 1999 10 07 | 691 | 0.2− | 0.5+ | 2005 04 12 | 691 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2002 07 14 | 704 | 0.7+ | 0.0 | 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.6+ | 0.2+ |
| 2002 07 14 | 704 | 0.5− | 0.6+ | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2002 07 14 | 704 | 1.1+ | 0.5+ | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2002 07 14 | 704 | 0.3+ | 0.3+ | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.6+ |
| 2002 07 14 | 704 | 0.9+ | 1.0+ | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.3+ |
| 2002 07 22 | 644 | 0.1− | 0.3+ | 2005 04 17 | 691 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.5− | 0.0 |
| 2002 07 22 | 644 | 0.2− | 0.7+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 1.1− | 2.0− |
| 2002 07 22 | 644 | 0.5− | 0.0 | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.6+ | 0.7− |
| 2002 08 07 | 644 | 1.0− | 0.4+ | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2002 08 07 | 644 | 0.4− | 0.3+ | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2005 05 08 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.3− | 0.3+ |
| 2002 08 14 | 704 | 0.1+ | 0.0 | 2005 05 08 | G96 | 0.2− | 0.4+ | 2006 11 14 | 691 | 0.2+ | 0.6+ |
| 2002 08 14 | 704 | 0.8− | 0.5− | 2005 05 10 | 704 | 1.0+ | 1.2+ | 2006 11 14 | 691 | 0.2− | 0.9+ |
| 2002 08 14 | 704 | (3.0− | 0.8−) | 2005 05 10 | 704 | 0.2+ | 0.2+ | | | | |
| 2002 08 18 | 608 | 0.4− | 0.1+ | 2005 05 10 | 704 | 0.5+ | 0.1+ | | | | |

**(136587)∗ 1993 FM$_4$ = 2004 DX$_{31}$**

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPO* 60456)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.86278 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26890343 | $\omega$ | 107.21251 | | −0.99946322 | +0.01612097 | |
| $a$ | 2.3772334 | $\Omega$ | 73.71838 | | −0.02630352 | −0.91383005 | |
| $e$ | 0.1360515 | $i$ | 1.70260 | | +0.01952954 | −0.40577674 | |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 1.4− | 1.0− | 2004 03 21 | 699 | 0.3− | 0.3− | 2004 03 30 | 683 | 0.3+ | 0.9+ |
| 1993 03 18 | 809 | 0.1+ | 1.2− | 2004 03 21 | 699 | 0.9+ | 0.3− | 2004 03 30 | 683 | 0.6+ | 0.6+ |
| 1993 03 23 | 809 | 0.2− | 0.2− | 2004 03 21 | 699 | 0.3+ | 0.6− | 2004 03 30 | 683 | (2.2− | 2.5+) |
| 2000 01 04 | 704 | 0.2− | 1.0− | 2004 03 21 | 699 | 0.0 | 0.4− | 2004 04 19 | 704 | (1.9− | 2.8−) |
| 2000 01 04 | 704 | 0.4+ | 1.3− | 2004 03 22 | 704 | 0.7+ | 0.7+ | 2004 04 19 | 704 | 1.3− | 1.2− |
| 2000 01 04 | 704 | 0.0 | 1.3− | 2004 03 22 | 704 | 0.8+ | 0.6+ | 2004 04 19 | 704 | (0.7− | 2.7−) |
| 2004 02 17 | 291 | 0.1− | 0.3+ | 2004 03 22 | 704 | 0.3+ | 1.2+ | 2004 04 19 | 704 | (1.5− | 2.6−) |
| 2004 02 17 | 291 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 1.3+ | 1.5+ | 2004 04 22 | 691 | 0.0 | 0.0 |
| 2004 02 17 | 291 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.5− | 0.8+ | 2004 04 22 | 691 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 0.3+ | 2004 03 24 | 699 | 0.7− | 0.6+ | 2004 04 22 | 691 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 0.7+ | 0.7+ | 2004 03 24 | 699 | 0.6+ | 0.7− | 2005 08 05 | 644 | 0.4− | 0.8+ |
| 2004 02 23 | 704 | 0.5− | 0.4+ | 2004 03 24 | 699 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.3− | 0.5+ |
| 2004 03 16 | 704 | 0.4+ | 0.1+ | 2004 03 24 | 699 | 0.9− | 0.6+ | 2005 08 05 | 644 | 0.2+ | 0.6+ |
| 2004 03 16 | 704 | 0.1+ | 0.4+ | 2004 03 26 | 691 | 0.2+ | 0.0 | 2005 08 27 | 644 | 0.6− | 0.6+ |
| 2004 03 16 | 704 | 0.0 | 1.4+ | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.6+ |
| 2004 03 16 | 704 | 0.6− | 0.8+ | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.2− | 0.6+ |
| 2004 03 17 | 333 | 0.4+ | 0.3− | 2004 03 27 | 683 | 0.5+ | 0.8+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2004 03 17 | 333 | 0.3+ | 0.6− | 2004 03 27 | 683 | (2.1+ | 0.4−) | 2006 11 11 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 333 | 0.8+ | 0.7− | 2004 03 27 | 683 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.8+ | 0.8+ |
| 2004 03 17 | 691 | 0.2− | 0.1− | 2004 03 28 | 683 | 1.0− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 691 | 0.5− | 0.1− | 2004 03 28 | 683 | 1.1+ | 1.0− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 691 | 0.1− | 0.2− | 2004 03 28 | 683 | (2.0+ | 0.6−) | 2006 11 15 | 691 | 1.0− | 0.2− |
| 2004 03 19 | 704 | 0.6+ | 0.3− | 2004 03 28 | 704 | 0.5+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2004 03 19 | 704 | 0.9− | 0.2+ | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.6+ | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2004 03 19 | 704 | 0.3+ | 1.1− | 2004 03 28 | 704 | 0.2+ | 0.5+ | | | | |
| 2004 03 19 | 704 | 0.1+ | 0.3− | 2004 03 28 | 704 | 0.2+ | 0.3+ | | | | |

**(136588)∗ 1993 FF$_7$ = 2002 UK$_{24}$**

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPO* 37037)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.57172 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26144776 | $\omega$ | 217.81008 | | −0.29284209 | +0.95490064 |
| $a$ | 2.4222154 | $\Omega$ | 35.23852 | | −0.85521429 | −0.23862702 |
| $e$ | 0.0844686 | $i$ | 4.87909 | | −0.42761200 | −0.17669723 |
| $P$ | 3.77 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.0 | 1.1− | 2004 02 16 | 704 | 0.3− | 1.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 1993 03 18 | 809 | 0.9+ | 0.8− | 2004 02 16 | 704 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 1993 03 19 | 691 | 0.2+ | 0.2+ | 2004 02 16 | 704 | 0.9− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 1993 03 19 | 691 | 0.1− | 0.4+ | 2004 02 16 | 704 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 1993 03 19 | 691 | 0.2− | 0.1+ | 2004 03 18 | 644 | 0.5+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 1993 03 23 | 809 | 0.9− | 0.1+ | 2004 03 18 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.4− |
| 1993 04 16 | 413 | (1.0− | 5.0+) | 2004 03 18 | 644 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.1− |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2005 07 29 | E12 | 0.7− | 0.7+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2005 07 29 | E12 | 0.2+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2002 10 29 | 291 | 0.0 | 0.1+ | 2005 07 29 | E12 | 0.5− | 0.1+ | 2006 11 19 | 704 | (1.3− | 2.3+) |
| 2002 10 29 | 291 | 0.4+ | 0.1+ | 2005 07 29 | E12 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.7− | 1.2+ |
| 2002 10 29 | 291 | 0.2+ | 0.1+ | 2005 08 04 | 644 | 0.1+ | 0.8+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2002 10 31 | 644 | 0.1− | 0.7+ | 2005 08 04 | 644 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2002 10 31 | 644 | 1.1− | 0.9+ | 2005 08 04 | 644 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2002 10 31 | 644 | 0.4− | 0.9+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 20 | 704 | 1.2− | 0.3+ |
| 2004 01 23 | 704 | 0.4+ | 0.2− | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 20 | 704 | 1.3− | 0.5− |
| 2004 01 23 | 704 | 1.0+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 22 | 704 | 1.1− | 0.8− |
| 2004 01 23 | 704 | 0.3+ | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.4+ | 1.3+ |
| 2004 01 23 | 704 | 1.0+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2004 01 23 | 704 | 0.6+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.6+ |
| 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.6− | 0.6− | 2006 11 22 | 704 | 0.4− | 0.1− |
| 2004 02 10 | 644 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 24 | 703 | 0.3− | 1.3− |
| 2004 02 10 | 644 | 0.1+ | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.5− | 2006 11 24 | 703 | 0.2+ | 0.5− |
| 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.5+ | 2006 11 24 | 703 | 1.3− | 0.1+ |
| 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | 2006 11 24 | 703 | 1.1+ | 0.1− |
| 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.2− | | | | |

**(136589)∗ 1993 FD$_8$**

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.77938 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26957118 | $\omega$ | 79.04997 | | −0.88696318 | −0.45870284 |
| $a$ | 2.3733060 | $\Omega$ | 73.62814 | | +0.39884114 | −0.81943885 |
| $e$ | 0.1482198 | $i$ | 3.21090 | | +0.23285630 | −0.34367380 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.4− | 0.1− | 2004 03 28 | 704 | 0.4+ | 0.9+ | 2006 10 29 | G96 | 0.5+ | 0.1+ |
| 1993 03 18 | 809 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 1993 03 23 | 809 | 0.6+ | 0.1+ | 2004 04 14 | 683 | 1.0− | 1.4+ | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 1993 04 16 | 413 | (4.9+ | 2.0+) | 2004 04 14 | 683 | 0.7+ | 0.6− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2000 01 31 | 704 | 0.3− | 0.3+ | 2004 04 14 | 683 | 0.3+ | 0.8− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2000 01 31 | 704 | 0.8+ | 0.2− | 2004 04 15 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.7− |
| 2000 01 31 | 704 | 0.5− | 0.3− | 2004 04 15 | 644 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2000 03 29 | 691 | 0.0 | 0.5− | 2004 04 15 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2000 03 29 | 691 | 0.1+ | 0.8− | 2004 04 15 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2000 03 29 | 691 | 0.3− | 0.7− | 2004 04 15 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2004 03 22 | 704 | 0.5+ | 0.1− | 2004 04 15 | 644 | 0.3+ | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2004 03 22 | 704 | 0.7+ | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 03 22 | 704 | 0.3− | 1.2+ | 2006 09 28 | G96 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 03 22 | 704 | 0.5+ | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 12 01 | 691 | 0.5− | 0.2+ |
| 2004 03 22 | 704 | 0.9− | 0.1− | 2006 09 28 | G96 | 0.4− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2004 03 28 | 704 | 0.1− | 0.3+ | 2006 10 29 | G96 | 0.5+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2004 03 28 | 704 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.5+ | 0.1+ | | | | |
| 2004 03 28 | 704 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.2+ | 0.3− | | | | |

**(136590)∗ 1993 FE$_{14}$ = 2001 TL$_{144}$**

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. M. E. Sansaturio (*MPO* 21956)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.99029 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18926108 | $\omega$ | 29.56131 | | −0.55880514 | −0.82495044 |
| $a$ | 3.0044282 | $\Omega$ | 94.53520 | | +0.74319487 | −0.54353901 |
| $e$ | 0.1833180 | $i$ | 4.88071 | | +0.36796495 | −0.15499070 |
| $P$ | 5.21 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.3− | 0.3+ | 2003 01 05 | 704 | 1.2+ | 0.2− | 2003 02 07 | 704 | 1.0− | 1.4− |
| 1993 03 18 | 809 | 0.2+ | 0.1+ | 2003 01 05 | 704 | 0.4+ | 0.9+ | 2003 02 07 | 704 | (2.3− | 0.7−) |
| 1993 03 23 | 809 | 0.3+ | 0.4+ | 2003 01 09 | 704 | 0.2− | 0.7+ | 2003 03 06 | 704 | 0.4− | 0.2− |
| 2001 10 10 | 644 | 1.0− | 0.6+ | 2003 01 09 | 704 | 0.3+ | 0.2− | 2003 03 06 | 704 | 0.8+ | 0.6+ |
| 2001 10 10 | 644 | 1.0− | 0.2+ | 2003 01 09 | 704 | 0.0 | 0.1+ | 2003 03 06 | 704 | 0.4− | 0.6+ |
| 2001 10 10 | 644 | 1.2− | 0.7+ | 2003 01 09 | 704 | 0.1− | 0.9+ | 2003 03 06 | 704 | 0.3+ | 0.6+ |
| 2001 10 16 | 644 | 0.2− | 1.4+ | 2003 01 17 | 644 | 0.2− | 0.1− | 2003 03 07 | 644 | 0.5+ | 0.2− |
| 2001 10 16 | 644 | (0.1+ | 1.7+) | 2003 01 17 | 644 | 0.0 | 0.0 | 2003 03 07 | 644 | 0.1+ | 0.0 |
| 2001 10 16 | 644 | 0.3+ | 1.5+ | 2003 01 17 | 644 | 0.0 | 0.2+ | 2003 03 07 | 644 | 0.4+ | 0.2+ |
| 2001 10 24 | 644 | 0.1− | 1.4+ | 2003 01 30 | 699 | (1.8+ | 0.2−) | 2003 03 08 | 704 | 0.4+ | 0.4− |
| 2001 10 24 | 644 | 0.2− | 1.4+ | 2003 01 30 | 699 | 0.7+ | 0.3+ | 2003 03 08 | 704 | 1.3− | 1.0− |
| 2001 10 24 | 644 | (0.4− | 1.5+) | 2003 01 30 | 699 | 0.2− | 0.4+ | 2003 03 08 | 704 | 0.3− | 0.4+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 01 30 | 699 | 0.6+ | 0.8+ | 2003 03 08 | 704 | 0.3− | 0.6+ |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2003 02 01 | 704 | 0.1+ | 0.4+ | 2003 03 10 | 699 | 1.0+ | 0.7+ |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2003 02 01 | 704 | 0.2+ | 0.2+ | 2003 03 10 | 699 | (1.2+ | 1.6+) |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.8+ | 0.5− | 2003 03 10 | 699 | 0.5+ | 0.9+ |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.1+ | 0.2− | 2003 03 10 | 699 | 0.3− | 0.3+ |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.6− | 0.8− | 2005 07 07 | 691 | 0.1− | 0.2+ |
| 2001 12 10 | 645 | 0.0 | 0.2− | 2003 02 01 | 608 | 0.1+ | 1.1− | 2005 07 07 | 691 | 0.2− | 0.2+ |
| 2001 12 10 | 645 | 0.1+ | 0.2− | 2003 02 01 | 608 | 0.0 | 0.7− | 2005 07 07 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.7− | 0.3− | 2003 02 01 | 608 | 0.2+ | 0.8− | 2006 09 30 | 703 | 0.0 | 1.0− |
| 2002 12 31 | 704 | 0.3− | 0.2+ | 2003 02 02 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.0 |
| 2002 12 31 | 704 | 0.2+ | 0.1+ | 2003 02 02 | 644 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.3− |
| 2002 12 31 | 704 | 0.1− | 0.4− | 2003 02 02 | 644 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.9+ |
| 2003 01 05 | 699 | 0.3+ | 0.1+ | 2003 02 04 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.5+ |
| 2003 01 05 | 699 | 1.4− | 0.1− | 2003 02 04 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.5+ | 1.3+ |
| 2003 01 05 | 699 | 0.3− | 0.0 | 2003 02 04 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.2+ |
| 2003 01 05 | 699 | 1.1− | 0.4+ | 2003 02 04 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 1.0− | 1.1+ |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2003 02 04 | 704 | 0.0 | 0.1− | 2006 10 16 | 291 | 0.0 | 0.3+ |
| 2003 01 05 | 704 | 0.8+ | 0.2+ | 2003 02 07 | 704 | 1.3− | 0.7− | 2006 10 16 | 291 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.5+ | 1.2+ | 2003 02 07 | 704 | (2.1− | 0.4−) | 2006 10 16 | 291 | 0.1+ | 0.6+ |

**(136591)∗ 1993 FN$_{18}$ = 2001 VX$_{118}$**

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPO* 21957)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 196.75579 | | (2000.0) | | −0.89553939 | +0.42877274 |
| $n$ | 0.18870701 | $\omega$ | 159.52772 | | −0.42769372 | −0.75556665 |
| $a$ | 3.0103063 | $\Omega$ | 46.44793 | | −0.12283032 | −0.49525041 |
| $e$ | 0.0653688 | $i$ | 9.45119 | | | |
| $P$ | 5.22 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 19 | 691 | 0.0 | 0.1− | 2003 02 06 | 704 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 1990 10 19 | 691 | 0.3− | 0.3+ | 2003 02 06 | 704 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1990 10 19 | 691 | 0.5+ | 0.1− | 2003 02 21 | 644 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1993 03 17 | 809 | (0.3+ | 2.3+) | 2003 02 21 | 644 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1993 03 18 | 809 | 0.2+ | 1.1+ | 2003 02 21 | 644 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 1993 03 19 | 691 | 0.1− | 0.3− | 2003 02 28 | 608 | 0.8+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 1993 03 19 | 691 | 0.2− | 0.8− | 2003 02 28 | 608 | 0.1− | 0.8− | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 1993 03 19 | 691 | 0.5− | 0.0 | 2003 02 28 | 608 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1993 03 23 | 809 | 0.4+ | 0.5+ | 2003 03 26 | 704 | (1.9+ | 0.4−) | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 1993 04 16 | 413 | (4.6− | 3.1−) | 2003 03 26 | 704 | 0.6+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.2− |
| 2001 11 12 | 704 | (0.5+ | 2.2−) | 2003 03 26 | 704 | 0.4+ | 1.2+ | 2006 11 11 | 703 | 1.1+ | 1.4+ |
| 2001 11 12 | 704 | 0.7− | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.3− | 0.6+ |
| 2001 11 12 | 704 | 0.3− | 0.8− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | (1.4+ | 1.5−) |
| 2001 11 12 | 704 | 0.9+ | 0.8− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.0− |
| 2001 11 19 | 704 | 0.8+ | 0.1− | 2006 10 13 | 291 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2001 11 19 | 704 | 0.7− | 0.5− | 2006 10 13 | 291 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2001 11 19 | 704 | 0.9− | 0.4− | 2006 10 13 | 291 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2001 12 14 | 644 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2001 12 14 | 644 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2001 12 14 | 644 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 644 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2001 12 14 | 644 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2001 12 14 | 644 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2001 12 15 | 704 | 0.6− | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2001 12 15 | 704 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2001 12 15 | 704 | 0.7− | 1.1+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.5− |
| 2001 12 15 | 704 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.8− | 1.0+ |
| 2003 01 26 | 699 | (1.7− | 0.9+) | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | (2.5− | 0.9−) |
| 2003 01 26 | 699 | 1.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2003 01 26 | 699 | 1.3− | 1.2+ | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.9+ | 0.5+ |
| 2003 01 26 | 699 | 0.1− | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.1− | | | | |
| 2003 02 06 | 704 | 0.9+ | 0.8+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | | | | |

**(136592)∗ 1993 FE$_{19}$ = 1998 FH$_{88}$**

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (MPC 31723)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.80304 | | (2000.0) | | −0.93904102 | −0.33011863 |
| $n$ | 0.18857676 | $\omega$ | 42.67928 | | +0.27884168 | −0.89469789 |
| $a$ | 3.0116923 | $\Omega$ | 117.81122 | | +0.20112005 | −0.30089430 |
| $e$ | 0.0845470 | $i$ | 6.23359 | | | |
| $P$ | 5.23 | $H$ | 14.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.3+ | 0.7+ | 2003 01 30 | 699 | 0.9+ | 0.6+ | 2003 03 13 | 608 | 0.1+ | 0.6− |
| 1993 03 18 | 809 | 0.9+ | 1.1+ | 2003 02 01 | 704 | 0.7− | 0.4+ | 2004 04 20 | 704 | 0.3− | 0.1− |
| 1993 03 23 | 809 | 0.6+ | 0.9+ | 2003 02 01 | 704 | 0.9+ | 1.0+ | 2004 04 20 | 704 | 0.5+ | 0.2− |
| 1993 04 16 | 413 | (6.3− | 1.2+) | 2003 02 01 | 704 | 0.1− | 0.3+ | 2004 04 20 | 704 | 0.7− | 0.2+ |
| 1998 03 24 | 704 | 0.8− | 1.0+ | 2003 02 01 | 704 | 0.1+ | 1.2+ | 2004 06 22 | 691 | 0.2+ | 0.5+ |
| 1998 03 24 | 704 | 1.4− | 0.2− | 2003 02 04 | 699 | 1.1− | 0.1− | 2004 06 22 | 691 | 0.1+ | 0.4+ |
| 1998 03 24 | 704 | 0.5+ | 1.4− | 2003 02 04 | 699 | 0.1− | 0.2− | 2004 06 22 | 691 | 0.1+ | 0.6+ |
| 1998 03 24 | 704 | 1.5− | 0.4− | 2003 02 04 | 699 | 0.4− | 0.3− | 2005 11 06 | G96 | 0.3+ | 0.5+ |
| 1998 03 25 | 704 | 0.2− | 0.4− | 2003 02 04 | 704 | 0.5− | 0.8− | 2005 11 06 | G96 | 0.1− | 0.3+ |
| 1998 03 25 | 704 | 0.2− | 1.3− | 2003 02 04 | 699 | 0.0 | 0.0 | 2005 11 06 | G96 | 0.6+ | 0.7+ |
| 1998 03 25 | 704 | 0.5+ | 0.2+ | 2003 02 04 | 704 | 0.0 | 0.8− | 2005 11 06 | G96 | 0.3− | 0.1+ |
| 1998 03 25 | 704 | (2.8− | 1.6−) | 2003 02 04 | 704 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.7− |
| 2001 12 11 | 704 | 0.3− | 0.2− | 2003 02 04 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.5− |
| 2001 12 11 | 704 | 1.5+ | 0.6− | 2003 02 04 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2001 12 11 | 704 | 0.2− | 0.6− | 2003 02 12 | 608 | 0.0 | 1.1− | 2006 09 30 | 703 | 0.6+ | 0.3+ |
| 2001 12 11 | 704 | 0.7+ | 0.6+ | 2003 02 12 | 608 | (0.1− | 1.8−) | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2003 02 12 | 608 | 0.0 | 1.1− | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2001 12 17 | 704 | 0.3− | 0.4+ | 2003 02 21 | 644 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 1.0+ | 2003 02 21 | 644 | 0.0 | 1.0+ | 2006 10 16 | 703 | 0.1+ | 1.0+ |
| 2001 12 17 | 704 | 1.2− | 0.6+ | 2003 02 21 | 644 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.3+ | 1.0+ |
| 2001 12 17 | 704 | 0.1+ | 0.9+ | 2003 02 23 | 699 | (2.1− | 1.7+) | 2006 10 16 | 703 | 0.9− | 0.9+ |
| 2001 12 17 | 704 | 0.4+ | 0.2+ | 2003 02 23 | 699 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 2001 12 17 | 704 | 0.4+ | 0.3− | 2003 02 23 | 699 | 1.5+ | 0.8+ | 2006 10 22 | 703 | 0.9− | 0.8+ |
| 2001 12 17 | 704 | 0.2− | 0.6+ | 2003 02 23 | 699 | 1.1+ | 0.4− | 2006 10 22 | 703 | 0.9− | 0.9− |
| 2001 12 17 | 704 | 1.0− | 0.3− | 2003 02 24 | 608 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.3+ |
| 2003 01 05 | 704 | 0.5− | 0.2+ | 2003 02 24 | 608 | 0.7− | 0.9− | 2006 10 22 | 703 | 0.9+ | 0.4+ |
| 2003 01 05 | 704 | 0.2+ | 0.8+ | 2003 02 24 | 608 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.4− | 1.0+ | 2003 03 06 | 704 | (1.1+ | 2.3+) | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 1.3− | 0.9+ | 2003 03 06 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 644 | 0.5− | 0.8+ |
| 2003 01 26 | 608 | 1.1+ | 0.1− | 2003 03 06 | 704 | 0.2+ | 0.3− | 2006 10 27 | 122 | 0.1+ | 0.1+ |
| 2003 01 26 | 608 | (1.9+ | 0.3+) | 2003 03 06 | 704 | 0.0 | 1.2+ | 2006 10 27 | 122 | 0.0 | 0.1+ |
| 2003 01 26 | 608 | (1.7+ | 0.2+) | 2003 03 07 | 644 | 0.2+ | 0.3+ | 2006 10 27 | 122 | 0.2− | 0.2− |
| 2003 01 27 | 704 | 0.4− | 0.4− | 2003 03 07 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.2+ |
| 2003 01 27 | 704 | 0.7− | 0.1+ | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 1.3− | 0.5− |
| 2003 01 27 | 704 | 0.2− | 0.3+ | 2003 03 08 | 704 | 1.4+ | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.6+ |
| 2003 01 27 | 704 | 0.3− | 0.6− | 2003 03 08 | 704 | 0.5+ | 0.5+ | 2006 11 19 | 703 | 0.2+ | 0.7− |
| 2003 01 27 | 704 | 0.6− | 0.0 | 2003 03 08 | 704 | 0.7+ | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2003 01 30 | 699 | 0.5− | 0.7− | 2003 03 08 | 704 | 0.2+ | 0.7+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2003 01 30 | 699 | 1.0+ | 0.3+ | 2003 03 13 | 608 | 0.6− | 0.5− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2003 01 30 | 699 | 0.8+ | 0.1− | 2003 03 13 | 608 | 0.7− | 0.9− | 2006 11 23 | G96 | 0.2− | 0.2− |

**(136593)∗ 1993 FX$_{19}$**

Discovered 1993 Mar. 17 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 176.74193 | | (2000.0) | | −0.68825830 | +0.70944352 |
| $n$ | 0.18810512 | $\omega$ | 181.05594 | | −0.66403307 | −0.53189103 |
| $a$ | 3.0167244 | $\Omega$ | 45.47540 | | −0.29216534 | −0.46236546 |
| $e$ | 0.0802199 | $i$ | 12.27910 | | | |
| $P$ | 5.24 | $H$ | 15.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.8− | 1.3− | 2003 02 21 | 644 | 0.4+ | 0.6+ | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 1993 03 18 | 809 | 0.0 | 0.8− | 2003 02 21 | 644 | 0.4+ | 0.4+ | 2006 11 09 | 691 | 0.3+ | 0.1+ |
| 1993 03 23 | 809 | (0.1− | 2.3−) | 2003 02 26 | 704 | 0.6+ | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.0 |
| 1998 03 24 | 704 | 0.6− | 0.1− | 2003 02 26 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 1998 03 24 | 704 | 0.5− | 1.7+ | 2003 02 26 | 704 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1998 03 24 | 704 | (0.4− | 2.8−) | 2003 02 26 | 704 | 0.1− | 0.8+ | 2006 11 09 | 644 | 0.2− | 1.6+ |
| 1998 03 24 | 704 | (2.6− | 4.0−) | 2003 02 26 | 704 | 0.4+ | 1.0+ | 2006 11 11 | 703 | 0.6− | 0.5+ |
| 1998 03 25 | 704 | 1.9+ | 1.8− | 2003 03 08 | 699 | (0.0 | 1.9+) | 2006 11 11 | 703 | (1.2+ | 1.6−) |
| 1998 03 25 | 704 | 1.0+ | 0.4− | 2003 03 08 | 699 | 0.9− | 0.7+ | 2006 11 11 | 703 | 1.0+ | 0.1+ |
| 1998 03 25 | 704 | 0.4+ | 1.1+ | 2003 03 08 | 699 | (1.3− | 1.8+) | 2006 11 11 | 703 | 0.7+ | 1.1− |
| 1998 03 25 | 704 | 0.4− | 1.8− | 2003 03 08 | 699 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 1998 03 25 | 704 | 1.9− | 0.9− | 2004 05 19 | 704 | 0.3+ | 0.3− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2000 11 27 | 645 | 0.1− | 0.1+ | 2004 05 19 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2000 11 27 | 645 | 0.1− | 0.1+ | 2004 05 19 | 704 | 0.4+ | 1.5+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2003 01 26 | 699 | (1.7− | 1.0+) | 2004 05 19 | 704 | 0.5− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2003 01 26 | 699 | (0.3− | 1.7+) | 2004 05 19 | 704 | 1.4+ | 1.3+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2003 01 26 | 699 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.6− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2003 01 26 | 699 | (0.8− | 1.6+) | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2003 01 26 | 699 | 1.3− | 0.9+ | 2006 09 25 | G96 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2003 01 26 | 699 | (0.2+ | 2.6+) | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2003 01 26 | 699 | 0.4+ | 0.7+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2003 01 26 | 699 | (2.5− | 3.6+) | 2006 10 13 | 691 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2003 02 01 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2003 02 01 | 644 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.6− | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2003 02 01 | 644 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.6− | | | | |
| 2003 02 21 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.7− | | | | |

**(136594)∗ 1993 FK$_{28}$ = 2004 BG$_{21}$**

Discovered 1993 Mar. 21 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPO* 55805)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 170.13319 | | (2000.0) | | | |
| $n$ | 0.25906361 | $\omega$ | 5.23265 | | −0.72135532 | +0.69151465 |
| $a$ | 2.4370538 | $\Omega$ | 218.60965 | | −0.63761232 | −0.68460429 |
| $e$ | 0.1711594 | $i$ | 3.50333 | | −0.27036463 | −0.23048743 |
| $P$ | 3.80 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (1.6− | 2.7+) | 2004 02 23 | 704 | 0.1− | 0.6+ | 2005 07 30 | 599 | 0.4+ | 0.2+ |
| 1993 03 22 | 809 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2005 07 30 | 599 | 0.3+ | 0.2+ |
| 1993 03 26 | 809 | 0.7+ | 0.4+ | 2004 04 14 | 645 | 0.1+ | 0.0 | 2005 07 30 | 599 | 0.1+ | 0.5+ |
| 1993 04 17 | 413 | (0.7− | 2.4+) | 2004 04 14 | 645 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 1997 05 07 | 704 | 0.5+ | 0.1− | 2005 05 23 | 644 | 0.7+ | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.3− |
| 1997 05 07 | 704 | 1.2− | 0.2+ | 2005 05 23 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 1997 05 07 | 704 | 0.7− | 0.4+ | 2005 05 23 | 644 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.6− |
| 1997 05 07 | 704 | 1.1+ | 0.3− | 2005 06 27 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2002 10 11 | 644 | 0.6− | 0.9+ | 2005 06 27 | 644 | 0.3+ | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.6+ |
| 2002 10 11 | 644 | 0.5− | 0.3+ | 2005 06 27 | 644 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.2− |
| 2002 10 11 | 644 | 0.2− | 0.5+ | 2005 06 29 | 703 | 0.4− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.4− | 0.6− | 2005 06 29 | 703 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2003 12 23 | 704 | 0.9− | 1.0+ | 2005 06 29 | 703 | 1.2− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.2− |
| 2003 12 23 | 704 | 0.6+ | 0.4+ | 2005 06 29 | 703 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.7+ | 0.4− |
| 2004 01 13 | 699 | 0.4− | 0.9+ | 2005 07 04 | 704 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2004 01 13 | 699 | 0.3+ | 0.1+ | 2005 07 04 | 704 | 0.8− | 0.7+ | 2006 10 27 | G96 | (0.2− | 1.5+) |
| 2004 01 13 | 699 | 0.7− | 0.5− | 2005 07 04 | 704 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2004 01 13 | 699 | 0.5+ | 0.3+ | 2005 07 04 | 704 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2004 01 17 | 691 | 0.2+ | 0.0 | 2005 07 04 | 704 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2004 01 17 | 691 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2004 01 17 | 691 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2004 01 17 | 608 | 0.1+ | 0.2+ | 2005 07 11 | 691 | (3.4− | 1.1+) | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 01 17 | 608 | 0.3− | 0.3+ | 2005 07 12 | 703 | 0.7− | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2004 01 17 | 608 | 0.0 | 0.3+ | 2005 07 12 | G96 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2004 01 19 | 699 | 1.1− | 0.4− | 2005 07 12 | 703 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2004 01 19 | 699 | 1.0− | 0.7+ | 2005 07 12 | G96 | 0.4− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2004 01 19 | 699 | 0.2+ | 0.2+ | 2005 07 12 | 703 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.3− | 0.5+ |
| 2004 01 19 | 699 | 0.9− | 1.1+ | 2005 07 12 | G96 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2004 01 23 | 704 | 0.9+ | 0.7+ | 2005 07 12 | 703 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2004 01 23 | 704 | (1.7+ | 0.3−) | 2005 07 12 | G96 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2004 01 23 | 704 | 1.0+ | 0.4+ | 2005 07 30 | E12 | 0.9+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 0.8− | 0.8+ | 2005 07 30 | E12 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 0.5+ | 0.4+ | 2005 07 30 | E12 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2004 01 30 | 704 | 0.5+ | 0.0 | 2005 07 30 | E12 | 0.0 | 0.1+ | | | | |
| 2004 02 23 | 704 | 0.6− | 0.1− | 2005 07 30 | 599 | 0.4+ | 0.4+ | | | | |

**(136595)∗ 1993 FH$_{29}$ = 2004 GC$_{88}$**

Discovered 1993 Mar. 21 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. A. Doppler (*MPO* 68492)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 212.92554 | | (2000.0) | | | |
| $n$ | 0.18397064 | $\omega$ | 158.45461 | | −0.87371958 | −0.48502516 |
| $a$ | 3.0617545 | $\Omega$ | 352.21777 | | +0.39686886 | −0.66687963 |
| $e$ | 0.1649880 | $i$ | 15.83198 | | +0.28126359 | −0.56570501 |
| $P$ | 5.36 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (3.8− | 1.0−) | 2002 12 28 | 704 | 0.1+ | 0.9+ | 2004 04 21 | E12 | 1.0+ | 0.9− |
| 1993 03 22 | 809 | 0.2− | 0.2− | 2002 12 28 | 704 | 0.8− | 0.4+ | 2004 04 21 | E12 | 0.0 | 0.3+ |
| 1993 03 26 | 809 | 0.6− | 0.2+ | 2002 12 28 | 704 | 0.1− | 1.2+ | 2004 05 14 | 703 | 0.6+ | 0.6+ |
| 1998 03 04 | 704 | 0.1− | 0.8+ | 2002 12 28 | 704 | 0.2+ | 0.3+ | 2004 05 14 | 703 | 1.0− | 0.0 |
| 1998 03 04 | 704 | 1.8+ | 1.4+ | 2003 01 11 | 704 | 0.2− | 0.7− | 2004 05 14 | 703 | 0.0 | 1.4+ |
| 1998 03 04 | 704 | 0.7− | 1.0− | 2003 01 11 | 704 | 0.1− | 0.2− | 2004 05 14 | 703 | (0.9+ | 4.1+) |
| 1998 03 04 | 704 | 0.6+ | 1.5− | 2003 01 11 | 704 | 0.4− | 0.6− | 2006 09 16 | 699 | 1.3+ | 0.6+ |
| 1998 03 04 | 704 | (2.5− | 1.0−) | 2003 01 11 | 704 | 0.5+ | 0.3− | 2006 09 16 | 699 | (1.6+ | 0.6−) |
| 2001 09 28 | 644 | 0.6− | 0.5+ | 2004 04 13 | E12 | 0.1+ | 1.0+ | 2006 09 16 | 699 | 0.8− | 0.0 |
| 2001 09 28 | 644 | 0.7− | 0.4+ | 2004 04 13 | E12 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.3+ | 0.3− |
| 2001 09 28 | 644 | 0.6− | 0.4+ | 2004 04 13 | E12 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.9− | 0.4+ | 2004 04 13 | E12 | 1.0+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.4+ | 0.2+ | 2004 04 21 | E12 | 0.4− | 0.6− | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 2001 10 14 | 704 | 0.4+ | 0.0 | 2004 04 21 | E12 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.2+ |

**(136596)∗ 1993 FG$_{30}$ = 2004 FE$_{46}$**

Discovered 1993 Mar. 21 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. T. B. Spahr (*MPO* 64639)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 119.58498 | | (2000.0) | | | |
| $n$ | 0.17788562 | $\omega$ | 36.78529 | | −0.42476190 | +0.90081311 |
| $a$ | 3.1311857 | $\Omega$ | 208.40482 | | −0.86916291 | −0.43361279 |
| $e$ | 0.2053432 | $i$ | 10.91475 | | −0.25324528 | −0.02270894 |
| $P$ | 5.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (2.4− | 2.9+) | 2004 03 27 | 703 | 0.5+ | 1.0+ | 2006 10 19 | 691 | 0.3− | 0.2− |
| 1993 03 22 | 809 | 0.1+ | 0.2+ | 2004 03 27 | 703 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.5− | 0.1− |
| 1993 03 26 | 809 | 0.0 | 1.9− | 2004 04 19 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.5− |
| 1993 04 17 | 413 | 0.5− | 1.4− | 2004 04 19 | 704 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 1995 09 27 | 691 | 0.1− | 0.2− | 2004 04 19 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 1995 09 27 | 691 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.0 | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 1995 09 27 | 691 | 0.0 | 0.7− | 2005 06 27 | 644 | 0.2− | 0.7+ | 2006 10 27 | 691 | 0.1+ | 0.7+ |
| 2001 10 19 | 691 | 0.0 | 0.0 | 2005 06 27 | 644 | 0.1− | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2001 10 19 | 691 | 0.0 | 0.5+ | 2005 06 27 | 644 | 0.0 | 0.9+ | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2001 10 19 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.8+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2004 03 17 | 704 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.4+ |
| 2004 03 17 | 704 | 0.6− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2004 03 17 | 704 | 0.3− | 1.0+ | 2006 09 28 | 691 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2004 03 17 | 704 | 0.4+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2004 03 17 | 704 | 0.5+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.6− |
| 2004 03 20 | 704 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.4+ | 0.2+ |
| 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.5+ | 0.7− |
| 2004 03 20 | 704 | 0.6+ | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2004 03 27 | 703 | 0.7− | 0.9− | 2006 10 11 | 691 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2004 03 27 | 703 | 0.6− | 0.3− | 2006 10 19 | 691 | 0.2− | 0.5− | 2006 11 11 | G96 | 0.2− | 0.4− |

**(136597)∗ 1993 FA$_{31}$ = 2001 SL$_{237}$**

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. A. Doppler (*MPO* 21958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 269.52986 | | (2000.0) | | | |
| $n$ | 0.18727095 | $\omega$ | 350.23298 | | −0.21214525 | −0.97645138 |
| $a$ | 3.0256761 | $\Omega$ | 112.00687 | | +0.89942783 | −0.21078430 |
| $e$ | 0.1924888 | $i$ | 2.42359 | | +0.38213084 | −0.04596400 |
| $P$ | 5.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.2− | 0.0 | 2001 10 20 | 704 | 0.6+ | 0.5+ | 2004 05 13 | 691 | 0.1+ | 0.3+ |
| 1993 03 20 | 809 | 0.4− | 0.2− | 2001 10 20 | 704 | 0.5+ | 0.3− | 2006 08 27 | 691 | 0.5− | 0.5+ |
| 1993 03 24 | 809 | 1.0− | 0.4− | 2003 02 08 | 608 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.4− | 0.4+ |
| 2001 09 19 | 704 | 0.6+ | 1.0+ | 2003 02 08 | 608 | 0.4+ | 0.1− | 2006 08 27 | 691 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 1.3+ | 2003 02 08 | 608 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.4− | 1.0− |
| 2001 09 19 | 704 | (0.1+ | 2.0+) | 2003 02 09 | 291 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.9+ | 0.7− |
| 2001 09 21 | 704 | (1.9− | 0.3−) | 2003 02 09 | 291 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.5+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.6− | 0.5− | 2003 02 09 | 291 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 1.0− | 0.6− |
| 2001 09 21 | 704 | 0.6− | 1.1− | 2003 02 28 | 608 | 0.2− | 0.7− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 0.5+ | 0.1+ | 2003 02 28 | 608 | 0.2+ | 0.7− | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.2+ | 0.4+ | 2003 02 28 | 608 | 0.1+ | 0.8− | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2001 09 26 | 704 | 0.2− | 1.2+ | 2004 04 28 | 691 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2001 09 26 | 704 | 0.3+ | 0.7+ | 2004 04 28 | 691 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.5− |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 04 28 | 691 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 05 13 | 691 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | 0.6− | 0.6+ | 2004 05 13 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.5− |

**(136598)∗ 1993 FJ$_{31}$ = 2004 CZ$_{35}$**

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPO* 60458)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.29151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26417163 | $\omega$ | 161.42316 | | −0.80760969 | +0.58757874 | |
| $a$ | 2.4055364 | $\Omega$ | 54.66596 | | −0.54855080 | −0.71727484 | |
| $e$ | 0.1569296 | $i$ | 3.52638 | | −0.21646852 | −0.37452374 | |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.1+ | 0.6+ | 2004 02 11 | 644 | 0.4− | 0.5+ | 2004 03 22 | 704 | (2.4+ | 1.2+) |
| 1993 03 20 | 809 | 0.6+ | 0.7+ | 2004 02 14 | 608 | 0.8+ | 0.9− | 2005 07 28 | 644 | 0.3+ | 0.4+ |
| 1993 03 24 | 809 | 0.0 | 0.8− | 2004 02 14 | 608 | 0.4+ | 0.2− | 2005 07 28 | 644 | 0.1− | 0.8+ |
| 1993 04 20 | 691 | 0.4+ | 0.1− | 2004 02 14 | 608 | 0.1+ | 0.6− | 2005 07 28 | 644 | 0.2+ | 0.5+ |
| 1993 04 20 | 691 | 0.0 | 0.3− | 2004 02 17 | 704 | 0.3− | 1.2+ | 2005 08 05 | 644 | 0.3+ | 0.3+ |
| 1993 04 20 | 691 | 0.8− | 0.3− | 2004 02 17 | 704 | 0.4− | 0.7+ | 2005 08 05 | 644 | 0.5+ | 0.4+ |
| 2001 07 18 | 644 | 1.1− | 0.9+ | 2004 02 17 | 704 | 0.7− | 0.6+ | 2005 08 05 | 644 | 0.3+ | 0.5+ |
| 2001 07 18 | 644 | 0.6− | 0.9+ | 2004 02 17 | 704 | 0.1− | 0.9+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 07 18 | 644 | 0.9− | 0.9+ | 2004 03 19 | 644 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2002 11 13 | 291 | 0.3+ | 0.2+ | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.5− | 0.1+ |
| 2002 11 13 | 291 | 0.1− | 0.3− | 2004 03 19 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.4− |
| 2002 11 13 | 291 | 0.2− | 0.1+ | 2004 03 20 | 704 | (0.1− | 1.7+) | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2004 01 23 | 704 | 1.0+ | 0.1− | 2004 03 20 | 704 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2004 01 23 | 704 | 0.8+ | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2004 01 23 | 704 | (0.9+ | 1.7+) | 2004 03 20 | 704 | 0.5+ | 0.9+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2004 02 11 | 644 | 0.2− | 0.1+ | 2004 03 22 | 704 | (1.6+ | 1.6+) | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2004 03 22 | 704 | (2.8+ | 1.3+) | | | | |

**(136599)∗ 1993 FR$_{37}$ = 2001 KX$_{33}$**

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPO* 12842)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.95732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25404548 | $\omega$ | 40.82516 | | −0.85543953 | +0.51784440 | |
| $a$ | 2.4690415 | $\Omega$ | 170.35347 | | −0.48641041 | −0.79818003 | |
| $e$ | 0.1269454 | $i$ | 2.65782 | | −0.17784294 | −0.30780809 | |
| $P$ | 3.88 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | (0.7− | 2.2+) | 2001 06 11 | 691 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.3+ | 0.1+ |
| 1993 03 20 | 809 | 0.1+ | 1.0+ | 2001 06 11 | 691 | 0.2+ | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 1993 03 24 | 809 | 0.1+ | 0.4+ | 2001 06 11 | 691 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 1993 04 18 | 413 | (11.4− | 5.9+) | 2002 09 07 | 704 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 1998 09 12 | 691 | 0.1− | 0.2+ | 2002 09 07 | 704 | 0.8− | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 1998 09 12 | 691 | 0.3− | 0.4+ | 2002 09 07 | 704 | 0.6− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 1998 09 12 | 691 | 0.2− | 0.0 | 2002 09 26 | 644 | 0.9− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2001 05 18 | 704 | 0.2− | 1.1+ | 2002 09 26 | 644 | 0.9− | 0.4+ | 2006 09 26 | G96 | (0.9− | 1.9+) |
| 2001 05 18 | 704 | 1.3− | 0.4− | 2002 09 26 | 644 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2001 05 18 | 704 | 0.6+ | 0.4− | 2002 10 04 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 05 18 | 704 | 1.3+ | 0.8− | 2002 10 04 | 644 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.6− | 0.6+ |
| 2001 05 18 | 608 | 0.2+ | 0.7+ | 2002 10 04 | 644 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 05 18 | 608 | 0.2+ | 0.2+ | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 05 18 | 608 | 0.5+ | 0.3+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.5− | 1.0− |
| 2001 05 21 | 699 | 0.1+ | 0.1− | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.9− |
| 2001 05 21 | 699 | 0.6+ | 0.0 | 2002 10 10 | 645 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.7− | 0.9− |
| 2001 05 21 | 699 | 0.3− | 0.4+ | 2005 06 13 | 599 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2001 05 21 | 699 | 0.7− | 0.6+ | 2005 06 13 | 599 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.1+ |
| 2001 05 21 | 699 | 0.5− | 0.0 | 2005 06 13 | 599 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 05 21 | 699 | 0.0 | 0.5+ | 2005 06 14 | 599 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2001 05 21 | 699 | 0.2− | 0.8+ | 2006 07 21 | G96 | 0.5− | 0.4− | 2006 10 22 | G96 | 0.6− | 0.2− |
| 2001 05 21 | 699 | 0.3+ | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 05 25 | 704 | 0.3− | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2001 05 25 | 704 | 0.0 | 1.2+ | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 05 25 | 704 | 0.5+ | 0.4− | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2001 05 25 | 691 | 0.2− | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.5− |
| 2001 05 25 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.5− |
| 2001 05 25 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.1− |

**(136600)∗ 1993 FL$_{38}$ = 2002 XU$_{7}$**

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. A. Doppler (*MPO* 39902)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.86733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27789087 | $\omega$ | 85.01008 | | −0.67577953 | −0.73629932 | |
| $a$ | 2.3256974 | $\Omega$ | 47.56688 | | +0.65644940 | −0.62242249 | |
| $e$ | 0.1475805 | $i$ | 2.67365 | | +0.33525543 | −0.26543087 | |
| $P$ | 3.55 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 1.8+ | 0.8+ | 2002 11 27 | 699 | 1.0− | 1.4+ | 2005 09 01 | 691 | 0.2− | 0.2+ |
| 1993 03 20 | 809 | 0.8+ | 1.0+ | 2002 11 28 | 699 | (2.3+ | 0.5−) | 2005 09 01 | 691 | 0.4− | 0.1− |
| 1993 03 24 | 809 | (3.3+ | 1.6−) | 2002 11 28 | 699 | 0.4+ | 0.3− | 2005 09 01 | 691 | 0.2− | 0.0 |
| 2000 03 02 | 703 | 0.8− | 1.6+ | 2002 11 28 | 699 | 0.4+ | 0.3− | 2005 09 11 | 691 | 0.2+ | 0.7+ |
| 2000 03 02 | 703 | 0.3− | 0.5+ | 2002 12 02 | 704 | 0.8+ | 0.1+ | 2005 09 11 | 691 | 0.1+ | 0.2+ |
| 2000 03 02 | 703 | 0.9− | 1.6+ | 2002 12 02 | 704 | 0.4+ | 0.1− | 2005 09 11 | 691 | 0.0 | 0.3+ |
| 2000 03 02 | 703 | (3.1− | 2.2+) | 2002 12 02 | 704 | 0.6+ | 0.4+ | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2000 03 12 | 704 | 0.0 | 0.1+ | 2002 12 02 | 704 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2000 03 12 | 704 | 0.2+ | 0.4− | 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2000 03 12 | 704 | 0.6+ | 0.4+ | 2002 12 05 | 704 | 1.0− | 0.1+ | 2006 11 02 | 691 | 0.3− | 0.2+ |
| 2002 11 06 | 704 | 0.2+ | 0.1− | 2002 12 05 | 704 | 0.7− | 0.1+ | 2006 11 02 | 691 | 0.7+ | 0.1+ |
| 2002 11 06 | 704 | 0.6+ | 1.2− | 2002 12 05 | 704 | 0.6− | 0.3− | 2006 11 02 | 691 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.7+ | 0.3− | 2002 12 05 | 704 | 0.2+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | (1.9− | 0.5−) | 2002 12 10 | 704 | 0.6+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | (1.0− | 1.8−) | 2002 12 10 | 704 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.8− |
| 2002 11 14 | 704 | 1.0− | 0.2− | 2002 12 10 | 704 | 0.4− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.6− |
| 2002 11 14 | 704 | 1.0− | 0.3− | 2002 12 10 | 704 | 0.2− | 0.8+ | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2002 11 27 | 699 | 0.4− | 0.5+ | 2005 08 28 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2002 11 27 | 699 | 0.1+ | 0.3− | 2005 08 28 | 691 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2002 11 27 | 699 | 0.7+ | 0.5− | 2005 08 28 | 691 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.4+ |

**(136601)∗ 1993 FC$_{49}$ = 2003 EB$_{14}$**

Discovered 1993 Mar. 19 at the European Southern Observatory in the course of the Uppsala-ESO Survey of Asteroids and Comets.

Id. G. V. Williams (*MPO* 42890)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.77139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19346962 | $\omega$ | 182.46801 | | −0.82486547 | +0.56528256 | |
| $a$ | 2.9606986 | $\Omega$ | 31.95735 | | −0.51844432 | −0.75127934 | |
| $e$ | 0.0279124 | $i$ | 0.78504 | | −0.22541618 | −0.34063907 | |
| $P$ | 5.09 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.0 | 0.7+ | 2002 01 14 | 704 | 1.2+ | 0.3− | 2005 08 24 | 644 | 0.0 | 0.4+ |
| 1993 03 20 | 809 | 0.3+ | 0.3− | 2002 01 14 | 704 | 0.6+ | 0.3+ | 2005 08 24 | 644 | 0.1+ | 0.5+ |
| 1993 03 24 | 809 | 0.3− | 0.7+ | 2002 01 14 | 704 | 0.8+ | 0.0 | 2005 08 24 | 644 | 0.3− | 0.1+ |
| 2000 10 01 | 704 | 0.3− | 1.3+ | 2003 02 22 | 291 | 0.2+ | 0.5+ | 2005 08 29 | 691 | 0.3− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 1.0− | 1.1+ | 2003 02 22 | 291 | 0.0 | 0.4+ | 2005 08 29 | 691 | 0.3− | 0.8+ |
| 2000 10 01 | 704 | 0.4− | 1.1+ | 2003 02 22 | 291 | 0.0 | 0.4+ | 2005 08 29 | 691 | 0.2− | 0.7+ |
| 2000 10 01 | 704 | 0.3− | 1.3+ | 2003 03 06 | 644 | 0.6+ | 0.7+ | 2005 09 12 | 691 | 0.3− | 0.3+ |
| 2000 10 01 | 704 | 0.0 | 1.8+ | 2003 03 06 | 644 | 0.4+ | 0.7+ | 2005 09 12 | 691 | 0.5− | 0.5+ |
| 2001 11 20 | 704 | 0.3− | 0.7− | 2003 03 06 | 644 | 0.7+ | 0.5+ | 2005 09 12 | 691 | 0.3− | 0.4+ |
| 2001 11 20 | 704 | 1.4− | 0.8+ | 2003 03 08 | 291 | 0.4+ | 0.5+ | 2005 10 03 | G96 | 0.3+ | 0.3+ |
| 2001 11 20 | 704 | 1.0− | 0.3+ | 2003 03 08 | 291 | 0.4+ | 0.4+ | 2005 10 03 | G96 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | 0.7− | 0.5+ | 2003 03 08 | 291 | 0.5+ | 0.4+ | 2005 10 03 | G96 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.3− | 0.3− | 2003 03 09 | 704 | 0.4− | 0.3+ | 2005 10 03 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.5− | 0.6− | 2003 03 09 | 704 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2001 12 18 | 704 | 0.1+ | 0.3+ | 2003 03 09 | 704 | 0.7+ | 1.1+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.0 | 0.3− | 2003 03 09 | 704 | (0.2− | 1.5+) | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.2+ | 0.8− | 2003 03 31 | 691 | 0.2+ | 0.7+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2002 01 14 | 704 | 0.8+ | 0.3− | 2003 03 31 | 691 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 01 14 | 704 | 0.8+ | 0.2+ | 2003 03 31 | 691 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |

**(136602)∗ 1993 HT$_2$ = 2000 CO$_{42}$**

Discovered 1993 Apr. 19 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (MPC 39156)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.33531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26583812 | $\omega$ | 286.90009 | | +0.07113940 | | −0.99668170 |
| $a$ | 2.3954726 | $\Omega$ | 158.90065 | | +0.95188164 | | +0.05598307 |
| $e$ | 0.1637013 | $i$ | 6.30873 | | +0.29809484 | | +0.05908887 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.8− | 0.3+ | 2000 02 08 | 704 | 0.8− | 1.3− | 2004 03 22 | 704 | 1.1+ | 0.9+ |
| 1993 04 19 | 691 | 0.6− | 0.4− | 2000 02 08 | 704 | 0.3+ | 1.9− | 2004 03 22 | 704 | (2.3+ | 0.0 ) |
| 1993 04 19 | 691 | 0.3− | 0.9− | 2000 02 29 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.2− |
| 1993 04 21 | 691 | 0.2+ | 1.3+ | 2000 02 29 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.4− | 0.5− |
| 1993 04 21 | 691 | 0.1− | 0.1+ | 2000 02 29 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 1993 04 21 | 691 | 0.2+ | 0.5+ | 2000 02 29 | 704 | 0.6− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 1993 04 22 | 691 | 0.2+ | 0.4− | 2002 09 05 | 645 | 0.1+ | 0.0 | 2006 10 31 | A50 | 0.4− | 0.5+ |
| 1993 04 22 | 691 | 0.8+ | 0.4− | 2002 09 05 | 645 | 0.0 | 0.1− | 2006 10 31 | A50 | 0.2− | 0.6+ |
| 1993 04 22 | 691 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.9− | 0.3+ | 2006 11 01 | 703 | 0.3− | 0.2− |
| 1993 04 22 | 691 | 0.5+ | 0.4+ | 2002 09 15 | 644 | 1.0− | 0.5+ | 2006 11 01 | 703 | 0.0 | 0.5− |
| 1993 04 22 | 691 | 0.5+ | 0.2− | 2002 09 15 | 644 | 0.7− | 0.7+ | 2006 11 01 | 703 | 0.6− | 1.4+ |
| 1993 04 22 | 691 | 0.7− | 0.4− | 2002 10 01 | 699 | 0.3− | 1.1+ | 2006 11 01 | 703 | 0.2+ | 0.6+ |
| 2000 02 02 | 704 | 1.1− | 0.1+ | 2002 10 01 | 699 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2000 02 02 | 704 | 0.3− | 0.4+ | 2002 10 01 | 699 | 0.1+ | 1.5+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2000 02 02 | 704 | 0.3+ | 0.9+ | 2002 10 01 | 699 | 0.6+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2000 02 02 | 704 | 0.9+ | 0.0 | 2004 03 16 | 683 | (2.9− | 0.9+) | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 2000 02 02 | 704 | 0.7− | 0.1+ | 2004 03 16 | 683 | (0.1− | 2.0+) | 2006 11 13 | 703 | 0.1− | 0.2− |
| 2000 02 06 | 704 | 0.9− | 0.1+ | 2004 03 16 | 683 | 0.5− | 0.6+ | 2006 11 13 | 703 | 0.1− | 0.3− |
| 2000 02 06 | 704 | 0.4− | 0.6+ | 2004 03 19 | 704 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.5− | 0.1+ |
| 2000 02 06 | 704 | 0.2− | 1.0− | 2004 03 19 | 704 | 0.2+ | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2000 02 06 | 704 | 1.0+ | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.5+ | 0.0 |
| 2000 02 06 | 704 | 0.0 | 0.6− | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 644 | 0.2+ | 0.3− |
| 2000 02 08 | 704 | 0.9+ | 0.4− | 2004 03 19 | 704 | 0.1− | 1.1+ | | | | |
| 2000 02 08 | 704 | 1.4+ | 0.2− | 2004 03 22 | 704 | (1.9+ | 0.3−) | | | | |

**(136603)∗ 1993 PR$_4$ = 1999 NT$_{22}$ = 2004 BZ$_{67}$**

Discovered 1993 Aug. 15 by E. W. Elst at Caussols.

Id. A. Doppler (*MPO* 68493)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.31601 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.32207070 | $\omega$ | 55.33359 | | +0.93536197 | | +0.34791171 |
| $a$ | 2.1078283 | $\Omega$ | 284.23395 | | −0.34219087 | | +0.84461613 |
| $e$ | 0.1734815 | $i$ | 3.76700 | | −0.08946172 | | +0.40691649 |
| $P$ | 3.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 15 | 010 | (1.5− | 3.4+) | 2001 02 19 | 704 | 0.8− | 0.1− | 2005 02 14 | 809 | 0.2+ | 0.5− |
| 1993 08 15 | 010 | (0.7− | 3.2+) | 2001 02 19 | 704 | 1.2− | 0.8+ | 2005 02 14 | 809 | 0.4+ | 0.5− |
| 1993 08 16 | 010 | 1.0− | 0.6+ | 2003 12 28 | 291 | 0.2− | 0.3+ | 2005 02 14 | 809 | (0.2+ | 1.7−) |
| 1993 08 16 | 010 | (2.4− | 1.1+) | 2003 12 28 | 291 | 0.4− | 0.2+ | 2005 02 14 | 809 | 0.3+ | 0.3− |
| 1993 08 16 | 010 | 0.9− | 1.8+ | 2003 12 28 | 291 | 0.6− | 0.2+ | 2005 02 17 | 809 | 0.2+ | 0.5− |
| 1993 08 19 | 010 | 1.2+ | 1.5− | 2004 01 24 | 704 | 1.2+ | 0.2+ | 2005 02 17 | 809 | 0.1− | 0.5− |
| 1993 08 19 | 010 | 0.5+ | 0.7− | 2004 01 24 | 704 | 0.4− | 0.3− | 2005 02 17 | 809 | 0.2+ | 0.6− |
| 1993 08 20 | 010 | 1.2+ | 1.3− | 2004 01 24 | 704 | 1.5+ | 1.2+ | 2005 02 18 | 809 | 0.4+ | 1.1− |
| 1999 07 14 | 704 | 0.5+ | 0.2+ | 2004 01 24 | 704 | 1.0+ | 0.1+ | 2005 02 18 | 809 | 0.1− | 0.8− |
| 1999 07 14 | 704 | 0.2− | 0.3+ | 2004 01 27 | 704 | 0.8− | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.1+ |
| 1999 07 14 | 704 | 0.1− | 0.1+ | 2004 01 27 | 704 | 0.8+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 1999 07 14 | 704 | 0.2+ | 0.9+ | 2004 01 27 | 704 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.2− |
| 1999 07 16 | 704 | 0.1+ | 0.2+ | 2004 01 27 | 704 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 1999 07 16 | 704 | 1.2− | 1.1+ | 2004 01 30 | 704 | (1.9+ | 0.7−) | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 1999 07 16 | 704 | 0.1− | 0.4+ | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.4− | 0.3− |
| 1999 07 16 | 704 | 0.3− | 0.2+ | 2004 01 30 | 704 | 0.6+ | 0.9− | 2006 11 15 | G96 | 0.1− | 0.7− |
| 1999 07 16 | 704 | 0.5− | 0.8− | 2004 01 30 | 704 | 1.2+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.0 |
| 1999 07 16 | 704 | 0.1− | 0.2+ | 2004 02 23 | 704 | 0.5− | 1.2+ | 2006 11 28 | G96 | 0.1− | 0.2− |
| 1999 07 16 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 1.1+ | 0.4+ | 2006 11 28 | G96 | 0.3+ | 0.1− |
| 1999 07 16 | 704 | 0.4− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.7− | 2006 11 28 | G96 | 0.5− | 0.2+ |
| 2001 02 19 | 704 | 0.5+ | 0.6− | 2004 02 23 | 704 | 0.9+ | 0.3− | 2006 11 28 | G96 | 0.2− | 0.0 |

**(136604)∗ 1993 QD$_1$**

Discovered 1993 Aug. 19 by E. F. Helin at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.77180 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23353154 | $\omega$ | 17.44245 | | +0.99633695 | | +0.03172636 |
| $a$ | 2.6115941 | $\Omega$ | 340.22255 | | −0.07259078 | | +0.80465442 |
| $e$ | 0.2617390 | $i$ | 13.57328 | | +0.04520251 | | +0.59289518 |
| $P$ | 4.22 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 21 | 675 | 0.3− | 0.9+ | 2004 02 26 | 704 | (1.6+ | 0.7+) | 2006 10 02 | 703 | 0.7+ | 0.5+ |
| 1993 07 21 | 675 | 0.4− | 0.4− | 2004 02 26 | 704 | 0.7+ | 0.2+ | 2006 10 02 | 703 | 1.3+ | 0.1− |
| 1993 08 15 | 675 | 0.4+ | 0.2+ | 2004 02 26 | 704 | (2.0+ | 0.8+) | 2006 10 02 | 703 | 0.1+ | 0.2− |
| 1993 08 15 | 675 | 0.4− | 0.4+ | 2004 02 26 | 704 | 1.2+ | 0.3+ | 2006 10 02 | 703 | 0.8− | 0.9+ |
| 1993 08 19 | 675 | 1.2− | 1.7+ | 2004 03 12 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 704 | 0.5− | 0.2+ |
| 1993 08 19 | 675 | 1.8− | 0.7+ | 2004 03 12 | 644 | 0.5+ | 0.6+ | 2006 10 16 | 704 | 0.1+ | 0.1+ |
| 1993 08 22 | 675 | 0.6+ | 0.8+ | 2004 03 12 | 644 | 0.4+ | 0.5+ | 2006 10 16 | 704 | 0.3− | 0.2− |
| 1993 08 22 | 675 | 1.4+ | 1.6+ | 2004 03 18 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 704 | 0.2+ | 0.2− |
| 1993 09 14 | 675 | 1.5− | 0.7− | 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 704 | 0.4+ | 0.4+ |
| 1993 09 14 | 675 | 0.7− | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.5+ | 2006 11 13 | 704 | 0.7− | 0.5+ |
| 2002 10 14 | 704 | (0.7+ | 1.6−) | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 11 13 | 704 | 0.6− | 0.6+ |
| 2002 10 14 | 704 | (1.8+ | 0.1+) | 2005 05 13 | E12 | (0.9− | 2.9+) | 2006 11 13 | 704 | 0.5− | 0.1+ |
| 2002 10 14 | 704 | (2.5+ | 0.5+) | 2005 05 13 | E12 | 0.4+ | 0.2+ | 2006 11 13 | 704 | 0.7− | 0.5+ |
| 2002 12 07 | 704 | 0.3− | 0.5+ | 2005 05 13 | E12 | 0.6+ | 0.1+ | 2006 11 16 | 703 | 0.9− | 0.6− |
| 2002 12 07 | 704 | 0.7+ | 0.2− | 2005 05 13 | E12 | 0.4+ | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.5+ |
| 2002 12 07 | 704 | 1.0+ | 0.2− | 2006 08 23 | 704 | 0.4− | 0.6+ | 2006 11 16 | 703 | 0.1+ | 0.2− |
| 2002 12 07 | 704 | 0.3+ | 0.2+ | 2006 08 23 | 704 | 0.6+ | 0.3+ | 2006 11 20 | 703 | 0.2+ | 0.3− |
| 2002 12 07 | 704 | 0.2+ | 0.4− | 2006 08 23 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 703 | 0.5− | 0.3− |
| 2004 02 17 | 291 | 0.2− | 0.5+ | 2006 08 23 | 704 | 0.3− | 0.1+ | 2006 11 20 | 703 | 0.1+ | 0.3− |
| 2004 02 17 | 291 | 0.1+ | 0.4+ | 2006 09 19 | 704 | 0.4− | 0.4+ | 2006 11 20 | 703 | 0.5− | 0.9− |
| 2004 02 17 | 291 | 0.1+ | 0.6+ | 2006 09 19 | 704 | 0.1+ | 0.3+ | | | | |
| 2004 02 26 | 704 | 0.4− | 1.2+ | 2006 09 19 | 704 | 0.4+ | 0.4+ | | | | |

**(136605)∗ 1993 SC$_8$ = 2002 UY$_{36}$**

Discovered 1993 Sept. 17 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 37039)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.91741 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22461807 | $\omega$ | 203.76387 | | +0.93655408 | | −0.35051461 |
| $a$ | 2.6802353 | $\Omega$ | 176.75197 | | +0.32811441 | | +0.87420767 |
| $e$ | 0.2521326 | $i$ | 2.47109 | | +0.12331826 | | +0.33600663 |
| $P$ | 4.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 17 | 809 | (1.1+ | 2.1−) | 2002 12 10 | 644 | 0.2− | 0.4+ | 2006 08 29 | 704 | 0.0 | 0.4− |
| 1993 09 17 | 809 | (0.2+ | 3.2−) | 2002 12 10 | 644 | 0.1− | 0.3+ | 2006 08 29 | 704 | 0.6+ | 0.8+ |
| 1993 09 17 | 809 | (0.2− | 3.5−) | 2005 04 11 | G96 | 0.4+ | 0.5− | 2006 08 29 | 704 | 0.4+ | 0.1+ |
| 1993 09 18 | 809 | (0.2+ | 2.8−) | 2005 04 11 | G96 | 0.3+ | 0.1− | 2006 08 29 | 704 | 1.2+ | 0.1− |
| 1993 09 18 | 809 | (1.0+ | 2.1−) | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 09 09 | 644 | 0.1+ | 0.1− |
| 1993 09 18 | 809 | (0.1− | 2.5−) | 2005 04 11 | G96 | 0.0 | 0.1− | 2006 09 09 | 644 | 0.1+ | 0.3− |
| 1993 09 22 | 809 | (2.5+ | 2.1−) | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 09 09 | 644 | 0.7+ | 0.3+ |
| 1993 09 22 | 809 | 1.2+ | 0.8− | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 09 14 | 703 | 1.1− | 0.7− |
| 1993 09 22 | 809 | 0.6− | 0.8− | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.0 |
| 2002 10 30 | 608 | 0.3+ | 1.3− | 2005 05 08 | G96 | 0.8− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.9− |
| 2002 10 30 | 608 | 0.4+ | 1.1− | 2006 08 18 | 704 | 0.9+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.9− |
| 2002 10 30 | 608 | 0.3+ | 0.8− | 2006 08 18 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.2− | 0.0 |
| 2002 10 31 | 049 | 0.7− | 0.6− | 2006 08 18 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 699 | 1.3+ | 0.5+ |
| 2002 10 31 | 049 | 0.8− | 0.5− | 2006 08 18 | 704 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.5+ |
| 2002 10 31 | 049 | 1.3− | 0.4− | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.4− |
| 2002 11 02 | 049 | 0.1− | 0.3− | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.4− |
| 2002 11 02 | 049 | 0.7− | 0.7− | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.2− |
| 2002 11 02 | 049 | 0.4− | 0.8− | 2006 08 21 | 704 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.4− |
| 2002 11 11 | 704 | 0.5+ | 0.2− | 2006 08 21 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2002 11 11 | 704 | 0.1+ | 0.0 | 2006 08 21 | 704 | 1.1− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.5+ |
| 2002 11 11 | 704 | 0.3− | 0.6+ | 2006 08 21 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.2+ |
| 2002 11 11 | 704 | 0.1+ | 0.3+ | 2006 08 21 | 704 | 0.8− | 0.2+ | 2006 09 20 | 704 | 0.4− | 1.3− |
| 2002 11 11 | 704 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.6− | 0.3− | 2006 10 16 | G96 | 0.2− | 0.9− |
| 2002 11 23 | 644 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.6− | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.5− |
| 2002 11 23 | 644 | 0.6+ | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.1− | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2002 11 23 | 644 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 2002 12 01 | 704 | (1.9+ | 1.4+) | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 12 01 | 704 | 0.8+ | 1.0+ | 2006 08 28 | 699 | 0.2− | 0.6− | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2002 12 01 | 704 | 0.3+ | 1.3+ | 2006 08 28 | 703 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.0 |
| 2002 12 01 | 704 | 0.6+ | 1.1+ | 2006 08 28 | 703 | 0.7− | 0.9+ | 2006 10 27 | G96 | 1.3− | 1.2+ |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 08 29 | 704 | 1.3+ | 0.4− | | | | |

**(136606)∗ 1993 TD$_6$ = 2005 JU$_{174}$**

Discovered 1993 Oct. 9 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74535)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.45081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22678949 | $\omega$ | 101.50751 | | +0.84443276 | +0.53110375 | |
| $a$ | 2.6630997 | $\Omega$ | 226.45776 | | −0.52128587 | +0.78482297 | |
| $e$ | 0.2247899 | $i$ | 5.52013 | | −0.12326541 | +0.31934575 | |
| $P$ | 4.35 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 691 | 0.2+ | 0.0 | 2005 05 14 | G96 | 0.4− | 0.4+ | 2006 10 20 | 683 | 0.1− | 1.1+ |
| 1993 10 09 | 691 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1993 10 09 | 691 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1993 10 15 | 691 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1993 10 15 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.4− | 0.3+ | 2006 10 22 | 683 | 1.5+ | 0.2+ |
| 1993 10 15 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 699 | 0.4− | 0.8− | 2006 10 22 | 683 | (1.5+ | 0.7+) |
| 1993 10 15 | 691 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.5− | 0.2− | 2006 10 22 | 683 | 0.7+ | 0.1+ |
| 1993 10 15 | 691 | 0.1− | 0.3+ | 2006 09 20 | 699 | 0.7− | 0.0 | 2006 10 27 | 691 | 0.4− | 0.1− |
| 1993 10 15 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 699 | (1.9− | 0.6+) | 2006 10 27 | 691 | 0.3− | 0.1− |
| 1993 10 24 | 691 | 0.8− | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 1993 10 24 | 691 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.1+ | 2006 10 29 | 704 | 0.5+ | 1.3− |
| 1993 10 24 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.2+ | 1.0− | 2006 10 29 | 704 | 0.2− | 0.3− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 09 25 | 704 | 1.5+ | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.8− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.5+ | 2006 10 29 | 704 | 0.2− | 1.0− |
| 2002 12 05 | 704 | 0.5− | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2002 12 05 | 704 | (0.5− | 1.8+) | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 1.1− | 0.6+ | 2006 09 29 | 704 | 0.7+ | 0.1− | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.9+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.8+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 12 10 | 644 | 0.7+ | 0.1+ | 2006 09 29 | 704 | 0.2+ | 0.8− | 2006 11 11 | 703 | (0.6− | 2.3−) |
| 2005 04 11 | 695 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.2+ | 1.2− |
| 2005 04 11 | 695 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2005 05 01 | 644 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.0− |
| 2005 05 01 | 644 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 10 17 | 683 | 0.2+ | 0.8− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 17 | 683 | 0.2+ | 1.0− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 10 17 | 683 | 0.5+ | 0.3+ | 2006 11 17 | G96 | 0.5− | 0.2− |
| 2005 05 01 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 2005 05 11 | 807 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1− | 1.2+ |
| 2005 05 11 | 807 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.9+ |
| 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 20 | 683 | 0.4− | 0.5− | 2006 11 19 | 704 | 0.7− | 0.4− |
| 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 20 | 683 | 0.3+ | 0.0 | | | | |

**(136607)∗ 1993 TW$_{19}$ = 2001 MH$_{19}$ = 2002 VG$_{35}$**

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 39904), A. Doppler (*MPO* 84420)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.48992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22801310 | $\omega$ | 292.34829 | | +0.97905681 | +0.19555263 | |
| $a$ | 2.6535637 | $\Omega$ | 56.41750 | | −0.15264989 | +0.88917462 | |
| $e$ | 0.0534309 | $i$ | 3.89772 | | −0.13470627 | +0.41367579 | |
| $P$ | 4.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.8+ | 1.2− | 2002 12 02 | 704 | 0.7− | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 1993 10 09 | 809 | 1.2+ | 1.9− | 2002 12 02 | 704 | 0.8− | 0.0 | 2006 10 15 | 703 | 0.3− | 0.5− |
| 1993 10 09 | 809 | 0.5+ | 1.4− | 2002 12 02 | 704 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.2+ |
| 1993 10 11 | 809 | 0.4+ | 1.3− | 2002 12 08 | 699 | 0.7− | 0.8+ | 2006 10 15 | 703 | 0.4− | 0.7− |
| 1993 10 11 | 809 | 0.9+ | 0.2− | 2002 12 08 | 699 | 0.5+ | 1.5− | 2006 10 15 | 703 | 0.4− | 0.5− |
| 1993 10 11 | 809 | 1.2+ | 0.0 | 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 1993 10 20 | 809 | (0.9− | 2.6−) | 2002 12 10 | 704 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 1993 10 20 | 809 | (0.4+ | 2.7−) | 2002 12 10 | 704 | 0.2− | 1.3− | 2006 10 17 | G96 | (2.0− | 0.0 ) |
| 1993 10 20 | 809 | (0.3− | 2.5−) | 2002 12 10 | 704 | 1.4+ | 0.1+ | 2006 10 17 | G96 | 0.9+ | 0.7+ |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2001 06 21 | 644 | 0.8− | 0.8+ | 2004 02 17 | 704 | (1.6+ | 0.2+) | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2001 06 21 | 644 | 0.5− | 0.3+ | 2004 02 17 | 704 | 0.9− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 06 21 | 644 | 0.9− | 0.2+ | 2004 02 17 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2001 07 19 | 644 | 0.8− | 0.3+ | 2004 02 23 | 704 | 0.1− | 1.4+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2001 07 19 | 644 | 0.7− | 0.5+ | 2004 02 23 | 704 | 0.5+ | 1.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 07 19 | 644 | 0.6− | 0.5+ | 2004 02 23 | 704 | (0.7+ | 1.7+) | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 11 05 | 704 | 0.1− | 0.6+ | 2004 02 23 | 704 | (0.3− | 1.6+) | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 11 05 | 704 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.8− | 0.7+ | 2006 10 21 | 703 | 1.0+ | 0.9+ |
| 2002 11 05 | 704 | 0.2− | 1.0+ | 2004 02 24 | 049 | 0.7+ | 0.1− | 2006 10 21 | 703 | 1.1+ | 0.2+ |
| 2002 11 05 | 408 | 0.8+ | 0.6+ | 2004 02 24 | 049 | 0.1+ | 0.6+ | 2006 10 21 | 703 | (1.9+ | 1.2+) |
| 2002 11 05 | 408 | 0.9+ | 0.4+ | 2004 02 24 | 049 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.1− | 1.1+ |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2005 01 24 | 809 | 0.9− | 0.3− | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | (0.5− | 1.6+) | 2005 01 24 | 809 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2002 11 06 | 704 | 0.0 | 0.5+ | 2005 01 24 | 809 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.5+ | 0.7+ | 2005 01 24 | 809 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 11 06 | 704 | (0.5− | 1.8+) | 2006 09 18 | 699 | 0.9+ | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 11 06 | 408 | 0.5+ | 1.3− | 2006 09 18 | 699 | 0.1− | 1.0+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 11 06 | 408 | (1.1+ | 1.6−) | 2006 09 18 | 699 | 0.4+ | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 11 07 | 291 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 11 06 | 644 | 0.3− | 0.3+ |
| 2002 11 07 | 291 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 291 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.7+ | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.6− | 0.6− | 2006 11 11 | 691 | 0.4+ | 0.4+ |
| 2002 11 24 | 644 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.9− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.3+ |
| 2002 11 24 | 644 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.5+ | 0.5− |
| 2002 11 24 | 644 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2002 11 24 | 644 | 0.3+ | 0.5− | 2006 09 30 | 703 | 1.3+ | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2002 11 28 | 699 | 0.9− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.5− |
| 2002 11 28 | 699 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 11 28 | 699 | 0.7− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2002 11 28 | 699 | 0.4+ | 0.7− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 12 02 | 704 | 0.1+ | 1.0− | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1− |

**(136608)∗ 1993 TF$_{25}$**

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.96603 | | | (2000.0) | | |
| $n$ | 0.22554446 | $\omega$ | 358.58132 | | +0.89607499 | −0.42821352 |
| $a$ | 2.6728912 | $\Omega$ | 27.72403 | | +0.40970896 | +0.69640134 |
| $e$ | 0.2532191 | $i$ | 14.56277 | | +0.17084550 | +0.57589787 |
| $P$ | 4.37 | $H$ | 15.7 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | (3.5− | 2.2−) | 2004 03 23 | 704 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1993 10 09 | 809 | (3.4− | 2.7−) | 2004 03 23 | 704 | 0.7+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 1993 10 09 | 809 | (2.8− | 3.0−) | 2004 03 23 | 704 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 1993 10 11 | 809 | 0.4− | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 1993 10 11 | 809 | 0.7− | 0.6− | 2006 07 31 | E12 | 0.5+ | 0.5− | 2006 10 19 | 703 | 0.7− | 0.8− |
| 1993 10 11 | 809 | 0.7− | 0.2− | 2006 07 31 | E12 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 1993 10 20 | 809 | 0.9+ | 0.1+ | 2006 07 31 | E12 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.2− |
| 1993 10 20 | 809 | 0.4+ | 0.1− | 2006 07 31 | E12 | 0.2− | 0.9− | 2006 10 19 | 703 | 0.6− | 0.4− |
| 1993 10 20 | 809 | 1.7+ | 0.6− | 2006 09 18 | 703 | 0.6+ | 0.5− | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2002 09 06 | 704 | 0.8− | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 10 19 | 703 | 1.2+ | 1.1+ |
| 2002 09 06 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.8− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.4− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 0.7− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 10 31 | 704 | 0.6+ | 0.6+ | 2006 09 21 | 699 | 0.1− | 0.1− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.3+ | 0.4+ | 2006 09 21 | 699 | 0.5− | 0.5− | 2006 10 24 | 644 | 0.3− | 0.3+ |
| 2002 10 31 | 704 | 1.2+ | 0.7+ | 2006 09 26 | 703 | 0.8− | 0.3− | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 1.0+ | 0.9+ | 2006 09 26 | 703 | 0.4− | 1.1− | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.7− | 2006 09 26 | 703 | 0.2+ | 0.5− | 2006 10 28 | 703 | 1.1+ | 1.4+ |
| 2002 11 07 | 704 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.5− | 0.1− | 2006 10 28 | 703 | (0.5+ | 1.7+) |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2006 10 02 | 703 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2002 11 15 | 704 | 0.2+ | 0.9− | 2006 10 02 | 703 | 0.9− | 0.1+ | 2006 11 14 | 704 | (1.3+ | 2.1+) |
| 2002 11 15 | 704 | 0.2+ | 0.3− | 2006 10 02 | 703 | 0.7− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 1.0+ |
| 2002 11 15 | 704 | 0.4− | 0.6− | 2006 10 02 | 703 | 0.5− | 0.8+ | 2006 11 14 | 704 | (2.0+ | 2.8+) |
| 2002 12 07 | 704 | 0.8− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.6+ | 0.4+ |
| 2002 12 07 | 704 | 0.5− | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 1.1+ | 0.9+ |
| 2002 12 07 | 704 | 0.9− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.1− |
| 2002 12 07 | 704 | 0.6− | 0.6− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.1+ |
| 2002 12 07 | 704 | 0.0 | 1.0− | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.7− | 1.0+ |
| 2002 12 28 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 2.1+ | 0.0 |
| 2002 12 28 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.7− | 0.5+ |
| 2002 12 28 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2002 12 28 | 704 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 1.0+ | 0.6− |

**(136609)∗ 1993 TY$_{30}$ = 2003 BU$_{56}$**

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 39905)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.64561 | | | (2000.0) | | |
| $n$ | 0.23062697 | $\omega$ | 259.78393 | | +0.50900956 | −0.86056821 |
| $a$ | 2.6334758 | $\Omega$ | 159.58702 | | +0.80876350 | +0.47091219 |
| $e$ | 0.1649437 | $i$ | 2.99285 | | +0.29463684 | +0.19407230 |
| $P$ | 4.27 | $H$ | 15.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 19 | 691 | 0.3+ | 0.0 | 2004 05 13 | 691 | 0.7+ | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 1993 09 19 | 691 | 0.3− | 0.1− | 2004 05 13 | 691 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 1993 09 19 | 691 | 0.2− | 0.2+ | 2004 05 13 | 691 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 1993 10 09 | 809 | (4.2+ | 3.3+) | 2004 05 23 | 691 | 0.5+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 1993 10 09 | 809 | 1.2+ | 0.7+ | 2004 05 23 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | (1.5+ | 1.9+) |
| 1993 10 09 | 809 | (3.0+ | 1.7+) | 2004 05 23 | 691 | 0.4− | 1.5+ | 2006 11 17 | 704 | (0.7− | 1.6+) |
| 1993 10 11 | 809 | (0.8+ | 2.0+) | 2006 09 17 | 699 | 1.1+ | 1.1+ | 2006 11 17 | 704 | 0.2+ | 0.9+ |
| 1993 10 11 | 809 | (0.7+ | 2.4+) | 2006 09 17 | 699 | 0.6+ | 0.0 | 2006 11 17 | 704 | 0.0 | 1.4+ |
| 1993 10 11 | 809 | 0.5− | 1.3+ | 2006 09 17 | 699 | (0.3− | 1.9+) | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 1993 10 21 | 809 | (2.6+ | 1.2+) | 2006 09 17 | 699 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 1993 10 21 | 809 | (3.4+ | 2.4+) | 2006 09 30 | 703 | 0.7− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 1993 10 21 | 809 | (2.5+ | 1.6+) | 2006 09 30 | 703 | 1.3− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.5+ |
| 1995 03 09 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 1995 03 09 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 1995 03 09 | 691 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.7+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.3− |
| 1997 08 11 | 691 | 1.0− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 1997 08 11 | 691 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.6− | 0.6+ |
| 1997 08 11 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.6+ |
| 1997 10 11 | 691 | 0.5+ | 0.4− | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.0 | 0.6+ |
| 1997 10 11 | 691 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 1997 10 11 | 691 | 0.2+ | 0.4− | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2002 11 11 | 704 | 0.7+ | 1.1+ | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 11 11 | 704 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 25 | 704 | 0.8+ | 0.1− |
| 2002 11 11 | 704 | 0.1+ | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 25 | 704 | 0.4− | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 25 | 704 | 1.3+ | 0.1− |
| 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 703 | 0.4− | 0.4− | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.5− | 2006 10 20 | 703 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.5− | 0.6+ |
| 2002 12 11 | 704 | 0.6+ | 0.7− | 2006 10 20 | 703 | 0.3+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.2− | 0.5− | 2006 10 20 | 703 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2003 01 27 | 704 | 1.1+ | 0.7− | 2006 11 02 | 703 | 0.4− | 0.9− | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2003 01 27 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.4+ |
| 2003 01 27 | 704 | 0.5+ | 1.5− | 2006 11 02 | 703 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.6+ |
| 2003 01 27 | 704 | 0.3− | 0.2− | 2006 11 02 | 703 | 0.5− | 1.0− | 2006 11 28 | 704 | 0.2+ | 0.8+ |
| 2003 01 31 | 704 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.6+ | 0.3+ | 2006 12 01 | 691 | 0.4− | 0.5− |
| 2003 01 31 | 704 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.3+ | 0.3+ | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2003 01 31 | 704 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.7+ | 2006 12 01 | 691 | 0.4− | 0.0 |
| 2003 01 31 | 704 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.8+ | | | | |
| 2003 01 31 | 704 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.4+ | | | | |

**(136610)∗ 1993 TK$_{31}$ = 2000 HT$_5$**

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Id. M. E. Sansaturio (*MPO* 981)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.79257 | | | (2000.0) | | |
| $n$ | 0.22810357 | $\omega$ | 322.43057 | | +0.81284144 | −0.57960032 |
| $a$ | 2.6528620 | $\Omega$ | 73.08965 | | +0.54802327 | +0.72728116 |
| $e$ | 0.0883186 | $i$ | 3.46939 | | +0.19738107 | +0.36759432 |
| $P$ | 4.32 | $H$ | 16.0 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | (0.1+ | 3.6+) | 2002 12 06 | 704 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.9+ |
| 1993 10 09 | 809 | (0.3+ | 2.3+) | 2002 12 07 | 704 | 0.7− | 0.0 | 2006 09 20 | 699 | 1.3− | 1.0− |
| 1993 10 09 | 809 | (1.5− | 2.6+) | 2002 12 07 | 704 | 0.0 | 0.3− | 2006 09 20 | 699 | (1.7− | 0.9+) |
| 1993 10 11 | 809 | (0.0 | 2.6+) | 2002 12 07 | 704 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1993 10 11 | 809 | (0.5− | 2.6+) | 2002 12 07 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 1993 10 11 | 809 | 1.1− | 1.9+ | 2002 12 10 | 704 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 1993 10 21 | 809 | (0.3+ | 2.4+) | 2002 12 10 | 704 | 0.5+ | 0.5+ | 2006 10 18 | 621 | 0.0 | 0.3+ |
| 1993 10 21 | 809 | 0.3− | 0.7+ | 2002 12 10 | 704 | 0.9+ | 0.4+ | 2006 10 18 | 621 | 0.3+ | 0.1− |
| 1993 10 21 | 809 | 0.8+ | 1.6+ | 2002 12 10 | 704 | 0.4+ | 0.7− | 2006 10 18 | 621 | 0.4− | 0.2− |
| 2000 04 24 | 691 | 0.1− | 0.4+ | 2002 12 10 | 704 | 0.9+ | 0.8− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2000 04 24 | 691 | 0.1− | 0.7+ | 2002 12 11 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2000 04 24 | 691 | 0.0 | 0.7+ | 2002 12 11 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2000 04 29 | 691 | 0.0 | 0.3+ | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 1.1+ |
| 2000 04 29 | 691 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 10 21 | 703 | 1.3+ | 1.2+ |
| 2000 04 29 | 691 | 0.3+ | 0.1+ | 2002 12 31 | 704 | 0.5− | 0.6− | 2006 10 21 | 703 | 0.5+ | 1.4+ |
| 2002 11 06 | 704 | 0.2− | 0.3+ | 2002 12 31 | 704 | 0.7− | 0.6− | 2006 10 21 | 703 | 0.4− | 1.0+ |
| 2002 11 06 | 704 | (0.2+ | 1.6+) | 2002 12 31 | 704 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.5− | 0.0 | 2003 01 05 | 291 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.8− | 0.3+ | 2003 01 05 | 291 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.3− | 0.1− | 2003 01 05 | 291 | 0.7− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.8− | 0.9+ | 2004 02 23 | 704 | 0.9+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2002 11 14 | 704 | 1.0− | 0.0 | 2004 02 23 | 704 | 0.9+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.7− | 2004 03 20 | 704 | 1.0+ | 0.2+ | 2006 11 11 | 703 | (2.3+ | 2.6+) |
| 2002 12 05 | 704 | 0.5− | 0.2− | 2004 03 20 | 704 | 1.2+ | 0.4− | 2006 11 17 | 703 | 0.0 | 1.2− |
| 2002 12 05 | 704 | 0.2+ | 0.7− | 2004 03 20 | 704 | 0.1− | 0.6+ | 2006 11 17 | 703 | 1.8− | 0.6+ |
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2004 03 20 | 704 | 0.4+ | 0.1− | 2006 11 17 | 703 | 1.0− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.4− | 2006 11 17 | 703 | 1.2− | 1.4+ | | |
| 2002 12 06 | 704 | 1.0+ | 1.1+ | 2004 03 30 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.2+ | 1.2+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.4− | 2004 03 30 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.8+ | | |
| 2002 12 06 | 704 | 1.0+ | 0.2− | 2004 03 30 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.4+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.4− | 2006 09 19 | 691 | 1.1− | 1.4− | 2006 11 18 | 704 | 0.6+ | 0.7+ | | |
| 2002 12 06 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.5+ | 1.0− | 2006 11 21 | 704 | 0.9+ | 0.5+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.7+ | | |
| 2002 12 06 | 704 | 0.9+ | 0.3− | 2006 09 20 | 699 | 1.3− | 0.2+ | 2006 11 21 | 704 | 0.9+ | 1.9+ | | |

**(136611)∗ 1993 TB$_{32}$ = 2005 HA$_1$**

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Id. A. Doppler (*MPO* 84421)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.06827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22636504 | $\omega$ | 311.80310 | | +0.96315315 | +0.23109454 | |
| $a$ | 2.6664277 | $\Omega$ | 35.48389 | | −0.11575272 | +0.81794932 | |
| $e$ | 0.2770368 | $i$ | 13.71145 | | −0.24277008 | +0.52683415 | |
| $P$ | 4.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 1.0− | 1.3− | 2006 09 20 | 703 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 1993 10 09 | 809 | 1.1− | 1.5− | 2006 09 20 | 703 | 0.1+ | 0.3+ | 2006 10 22 | 704 | 0.3− | 0.4+ | | |
| 1993 10 09 | 809 | 0.8− | 1.5− | 2006 09 20 | 703 | 0.1+ | 0.5+ | 2006 10 22 | 704 | 0.0 | 0.1+ | | |
| 1993 10 11 | 809 | 1.4+ | 0.3− | 2006 09 20 | 703 | 0.2− | 0.1+ | 2006 10 22 | 704 | 0.1− | 0.1+ | | |
| 1993 10 11 | 809 | 1.1+ | 0.4− | 2006 09 25 | 699 | 0.7− | 0.9− | 2006 10 22 | 704 | 0.7− | 1.1+ | | |
| 1993 10 11 | 809 | 0.9+ | 0.7− | 2006 09 25 | 699 | 0.3− | 0.6− | 2006 10 22 | 703 | 0.2− | 0.3+ | | |
| 1993 10 21 | 809 | 0.9+ | 0.5+ | 2006 09 25 | 699 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.3− | | |
| 1993 10 21 | 809 | 0.8+ | 0.6+ | 2006 09 25 | 699 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.0 | 0.6− | | |
| 1993 10 21 | 809 | 0.9+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.0 | | |
| 2002 12 10 | 704 | (1.7+ | 0.6−) | 2006 09 26 | 703 | 0.1− | 0.1+ | 2006 10 27 | 704 | 1.0− | 0.4+ | | |
| 2002 12 10 | 704 | 1.4− | 1.3+ | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 10 27 | 704 | 0.6− | 0.4+ | | |
| 2002 12 10 | 704 | 0.4− | 0.7− | 2006 09 26 | 703 | 0.0 | 0.3− | 2006 10 27 | 704 | (0.4+ | 2.1+) | | |
| 2002 12 10 | 704 | 0.0 | 0.7+ | 2006 10 02 | 703 | 0.1+ | 0.6+ | 2006 10 27 | 704 | 1.0− | 0.3+ | | |
| 2002 12 10 | 704 | 0.9+ | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.6+ | 2006 11 06 | 644 | 0.0 | 0.1+ | | |
| 2002 12 15 | 704 | 0.1+ | 0.1− | 2006 10 02 | 703 | 0.4− | 0.5+ | 2006 11 06 | 644 | 0.1− | 0.3+ | | |
| 2002 12 15 | 704 | 0.2− | 0.1− | 2006 10 02 | 703 | 1.0− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.3+ | | |
| 2002 12 15 | 704 | 0.6− | 1.1+ | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 10 | 704 | (2.5+ | 0.1+) | | |
| 2002 12 15 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 10 | 704 | 0.9+ | 0.1+ | | |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 10 | 704 | 0.1− | 1.0+ | | |
| 2005 04 04 | G96 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.0 | 0.8+ | | |
| 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.5+ | 2006 11 14 | 704 | 0.0 | 1.5+ | | |
| 2005 04 04 | G96 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.1+ | 0.1− | | |
| 2005 04 16 | 691 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.6+ | 2006 11 14 | 704 | 0.1− | 0.6+ | | |
| 2005 04 16 | 691 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.5− | 0.5+ | | |
| 2005 04 16 | 691 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 1.0− | | |
| 2005 04 17 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.3− | 2006 11 17 | 704 | 1.1+ | 1.0− | | |
| 2005 04 17 | 691 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.9+ | 0.7− | | |
| 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.2+ | | |
| 2005 05 11 | G96 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.1+ | | |
| 2005 05 11 | G96 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2− | 1.0+ | | |
| 2005 05 11 | G96 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.4+ | | |
| 2005 05 11 | G96 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 1.5+ | | |

**(136612)∗ 1993 TW$_{37}$ = 2002 TB$_{51}$**

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 37040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.40132 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22265504 | $\omega$ | 25.42386 | | +0.36423457 | −0.91086984 | |
| $a$ | 2.6959657 | $\Omega$ | 43.94490 | | +0.79958289 | +0.19903270 | |
| $e$ | 0.1916033 | $i$ | 16.23645 | | +0.47749386 | +0.36152747 | |
| $P$ | 4.43 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 1.2+ | 0.4+ | 2002 11 05 | 644 | 0.6− | 0.1+ | 2002 12 06 | 704 | 0.3− | 1.0− | | |
| 1993 10 09 | 809 | 0.1− | 1.3+ | 2002 11 05 | 704 | 0.8− | 0.2+ | 2002 12 07 | 704 | 0.1+ | 0.1− | | |
| 1993 10 09 | 809 | (1.9+ | 2.9+) | 2002 11 05 | 704 | 0.2− | 0.7+ | 2002 12 07 | 704 | 0.2+ | 0.1− | | |
| 1993 10 11 | 809 | 1.3− | 0.3− | 2002 11 05 | 699 | 0.4+ | 0.4− | 2002 12 07 | 704 | 0.5− | 0.3− | | |
| 1993 10 11 | 809 | 1.0− | 1.0+ | 2002 11 05 | 699 | 0.1− | 0.0 | 2002 12 11 | 644 | 0.0 | 0.8+ | | |
| 1993 10 11 | 809 | 1.6− | 0.5+ | 2002 11 05 | 644 | 0.5− | 0.1+ | 2002 12 11 | 644 | 0.1+ | 0.9+ | | |
| 1993 10 21 | 809 | 0.7+ | 0.9+ | 2002 11 05 | 699 | 0.1+ | 0.5+ | 2002 12 11 | 644 | 0.6+ | 0.6+ | | |
| 1993 10 21 | 809 | 0.1− | 0.4+ | 2002 11 05 | 699 | 0.5− | 0.5+ | 2002 12 11 | 704 | 0.3+ | 0.9− | | |
| 1993 10 21 | 809 | 0.4− | 0.6− | 2002 11 05 | 644 | 0.3− | 0.1+ | 2002 12 11 | 704 | 0.2− | 0.2− | | |
| 2002 10 02 | 704 | 0.0 | 0.3+ | 2002 11 08 | 704 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.3− | | |
| 2002 10 02 | 704 | 0.4− | 0.3− | 2002 11 08 | 704 | 0.3+ | 0.1− | 2002 12 11 | 704 | 0.5− | 0.0 | | |
| 2002 10 02 | 704 | 0.6+ | 0.0 | 2002 11 08 | 704 | 0.3− | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.1− | | |
| 2002 10 02 | 704 | 0.4− | 0.4− | 2002 11 08 | 704 | 0.6+ | 0.2+ | 2002 12 13 | 644 | 0.3− | 0.2− | | |
| 2002 10 03 | 704 | 0.5− | 0.7− | 2002 11 12 | 704 | 0.2+ | 0.1− | 2002 12 13 | 644 | 0.2+ | 0.5− | | |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2002 11 12 | 704 | 0.6+ | 0.5+ | 2002 12 13 | 644 | 0.2− | 0.1− | | |
| 2002 10 03 | 704 | 0.5+ | 0.5− | 2002 11 12 | 704 | 0.4+ | 0.3+ | 2002 12 27 | 644 | 0.2+ | 0.8+ | | |
| 2002 10 07 | 704 | 0.1+ | 0.5− | 2002 11 12 | 704 | 1.2+ | 0.7+ | 2002 12 27 | 644 | 0.3+ | 0.8+ | | |
| 2002 10 07 | 704 | 0.0 | 0.8+ | 2002 11 12 | 704 | 0.8+ | 1.0+ | 2002 12 27 | 644 | 0.4+ | 1.0+ | | |
| 2002 10 07 | 704 | 0.0 | 0.4+ | 2002 11 14 | 704 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.3− | 0.6− | | |
| 2002 10 07 | 704 | 0.3− | 0.3+ | 2002 11 14 | 704 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.3− | 0.1+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.7− | 2002 11 14 | 704 | 0.4+ | 0.5− | 2002 12 31 | 704 | 0.2− | 0.0 | | |
| 2002 10 09 | 704 | 0.3− | 0.5− | 2002 11 14 | 704 | 0.2+ | 0.3− | 2004 03 23 | 704 | 1.3+ | 0.5+ | | |
| 2002 10 09 | 704 | 0.5+ | 1.0− | 2002 11 14 | 704 | 0.1− | 0.5− | 2004 03 23 | 704 | 0.4+ | 0.7+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.4− | 2002 11 28 | 699 | 0.4− | 0.1+ | 2004 03 23 | 704 | 0.5− | 0.3+ | | |
| 2002 10 09 | 704 | 1.1+ | 0.4− | 2002 11 28 | 699 | 0.6− | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.5− | 0.3+ | 2002 11 28 | 699 | 1.5− | 1.7− | 2006 08 16 | 644 | 0.4+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2002 11 28 | 699 | 0.5− | 0.5− | 2006 08 16 | 644 | 0.2+ | 0.6+ | | |
| 2002 10 11 | 704 | 0.1− | 0.6+ | 2002 12 01 | 608 | 0.1− | 0.4− | 2006 08 20 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.0 | 0.6+ | 2002 12 01 | 608 | 0.5− | 0.1− | 2006 08 20 | 644 | 0.6+ | 0.1+ | | |
| 2002 10 16 | 699 | 1.1+ | 0.0 | 2002 12 01 | 608 | 0.6− | 0.4− | 2006 08 20 | 644 | 0.4+ | 0.9+ | | |
| 2002 10 16 | 699 | 0.2+ | 0.5− | 2002 12 02 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 1.3− | 0.9− | | |
| 2002 10 16 | 699 | 0.8+ | 0.7+ | 2002 12 02 | 704 | 1.1+ | 0.8− | 2006 09 26 | 703 | 0.2+ | 0.8− | | |
| 2002 10 16 | 699 | 0.8− | 0.8− | 2002 12 02 | 704 | 0.7+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.4− | | |
| 2002 11 01 | 644 | 0.5+ | 0.3+ | 2002 12 02 | 704 | 0.3+ | 0.1− | 2006 09 26 | 703 | 1.0− | 1.3− | | |
| 2002 11 01 | 644 | 0.6+ | 0.2+ | 2002 12 06 | 704 | 0.7+ | 0.4− | 2006 09 28 | E12 | 0.7− | 0.1− | | |
| 2002 11 01 | 644 | 0.3+ | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.9− | 2006 09 28 | E12 | 0.3+ | 0.2+ | | |
| 2002 11 05 | 704 | 1.5− | 1.1+ | 2002 12 06 | 704 | 0.1+ | 0.3− | 2006 09 28 | E12 | 0.4+ | 0.2+ | | |
| 2002 11 05 | 704 | 0.6− | 0.1− | 2002 12 06 | 704 | 0.0 | 0.3− | 2006 09 28 | E12 | 0.5+ | 0.3− | | |

**(136613)∗ 1993 TA$_{38}$ = 2003 AW$_{26}$**

Discovered 1993 Oct. 9 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 39905)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.84691 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23074796 | $\omega$ | 270.77859 | | +0.78996869 | −0.61003705 | |
| $a$ | 2.6325551 | $\Omega$ | 126.81593 | | +0.58873725 | +0.72657084 | |
| $e$ | 0.2157499 | $i$ | 4.41868 | | +0.17128316 | +0.31614808 | |
| $P$ | 4.27 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.7+ | 1.6− | 2003 02 03 | 704 | 0.8+ | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.1− | | |
| 1993 10 09 | 809 | (0.6+ | 2.1−) | 2003 02 03 | 704 | 1.0+ | 0.8− | 2006 11 18 | 704 | 1.3+ | 0.9+ | | |
| 1993 10 09 | 809 | 0.6+ | 0.4− | 2003 02 03 | 704 | 0.4− | 0.8− | 2006 11 18 | 704 | 0.9+ | 0.2+ | | |
| 1993 10 11 | 809 | 1.1+ | 1.3− | 2006 09 16 | 703 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.3+ | | |
| 1993 10 11 | 809 | 0.5− | 1.4− | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 11 18 | 704 | (1.6+ | 1.1+) | | |
| 1993 10 11 | 809 | 0.2+ | 1.2− | 2006 09 16 | 703 | 0.7− | 0.3+ | 2006 11 18 | 704 | 1.2+ | 0.7+ | | |
| 1993 10 21 | 809 | (3.6+ | 1.6+) | 2006 09 16 | 703 | 1.3− | 0.4− | 2006 11 18 | 704 | 0.5− | 0.7+ | | |
| 1993 10 21 | 809 | (2.2+ | 2.2+) | 2006 10 01 | 703 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.3− | | |
| 1993 10 21 | 809 | (1.5+ | 2.5+) | 2006 10 01 | 703 | 1.1− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.7+ | | |
| 1995 02 05 | 691 | 1.1+ | 0.3− | 2006 10 01 | 703 | 0.6− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.2+ | | |
| 1995 02 05 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.0 | | |
| 1995 02 05 | 691 | 0.0 | 1.1− | 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.1+ | | |
| 1995 03 23 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.3+ | | |
| 1995 03 23 | 691 | 0.3+ | 0.5− | 2006 10 23 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.4− | 0.1+ | | |
| 1995 03 23 | 691 | 0.7− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 691 | 1.6− | 1.2+ | 2006 11 02 | 703 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.4− | 0.7+ | |
| 1999 01 23 | 691 | 0.2− | 0.7− | 2006 11 02 | 703 | 0.3+ | 0.4− | 2006 11 20 | 691 | 0.1− | 0.1+ | |
| 1999 01 23 | 691 | 0.1− | 0.6− | 2006 11 02 | 703 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.0 | |
| 2001 07 17 | 644 | 0.0 | 0.4+ | 2006 11 02 | 703 | 0.2− | 0.7− | 2006 11 20 | 704 | 0.4+ | 0.2+ | |
| 2001 07 17 | 644 | 0.1− | 0.4+ | 2006 11 14 | 704 | (0.1+ | 2.1+) | 2006 11 20 | 691 | 0.1+ | 0.0 | |
| 2001 07 17 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | (1.0− | 1.9+) | 2006 11 20 | 704 | 0.2+ | 0.2− | |
| 2002 12 05 | 704 | 0.5− | 0.3− | 2006 11 14 | 704 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.1+ | |
| 2002 12 05 | 704 | 0.7+ | 0.1− | 2006 11 14 | 704 | (1.1− | 1.7+) | 2006 11 20 | 704 | 0.1+ | 0.4− | |
| 2002 12 05 | 704 | 0.2− | 0.7+ | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.3− | |
| 2003 01 04 | 704 | 0.5+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.0 | |
| 2003 01 04 | 704 | 1.0+ | 0.9+ | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.0 | |
| 2003 01 04 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.2− | 2006 11 24 | 691 | 0.2+ | 0.4+ | |
| 2003 01 04 | 704 | 0.4+ | 1.0+ | 2006 11 17 | 704 | 0.4− | 0.4− | 2006 11 28 | 704 | 0.0 | 0.3+ | |
| 2003 01 08 | 704 | 0.9+ | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.6− | |
| 2003 01 08 | 704 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.0 | 2006 11 28 | 704 | 0.4− | 0.2− | |
| 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.6− | 2006 11 28 | 704 | 0.5− | 0.6+ | |
| 2003 01 08 | 704 | (1.6+ | 0.8−) | 2006 11 17 | 644 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.1+ | |
| 2003 02 03 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1− | | | | | |

**(136614)∗ 1993 VA$_6$**

Discovered 1993 Nov. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.77382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21568837 | $\omega$ | 241.07553 | | −0.87937161 | −0.47153023 | |
| $a$ | 2.7537102 | $\Omega$ | 270.72212 | | +0.45661567 | −0.79583865 | |
| $e$ | 0.0992539 | $i$ | 3.78840 | | +0.13493590 | −0.37986852 | |
| $P$ | 4.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 08 | 691 | 0.5+ | 0.0 | 2002 10 04 | 704 | 0.5− | 0.6+ | 2004 02 12 | 691 | 0.1− | 0.4+ | |
| 1993 10 08 | 691 | 0.4+ | 0.0 | 2002 10 04 | 704 | 0.2+ | 0.0 | 2004 02 14 | 691 | 0.0 | 0.3+ | |
| 1993 10 08 | 691 | 0.1+ | 0.0 | 2002 10 04 | 704 | 0.3− | 1.8+ | 2004 02 14 | 691 | 0.1− | 0.1+ | |
| 1993 11 08 | 691 | 0.5− | 0.4− | 2002 10 04 | 704 | 0.3− | 1.1+ | 2004 02 14 | 691 | 0.2+ | 0.1+ | |
| 1993 11 08 | 691 | 1.1+ | 1.3+ | 2002 10 04 | 704 | 0.2− | 1.6+ | 2004 02 22 | 704 | 1.0− | 1.1− | |
| 1993 11 08 | 691 | 0.1+ | 0.1+ | 2003 12 30 | 691 | 0.3+ | 0.1− | 2004 02 22 | 704 | 0.8− | 1.4− | |
| 1993 11 09 | 691 | 0.6− | 0.3− | 2003 12 30 | 691 | 0.2+ | 0.4− | 2004 02 22 | 704 | 0.4− | 1.5− | |
| 1993 11 09 | 691 | 0.1− | 0.2+ | 2003 12 30 | 691 | 0.3+ | 0.1+ | 2004 03 10 | 644 | 0.4+ | 0.4+ | |
| 1993 11 09 | 691 | 0.6− | 0.3− | 2004 01 13 | 699 | 1.8− | 0.3+ | 2004 03 10 | 644 | 0.2+ | 0.6+ | |
| 1993 11 09 | 691 | 0.4− | 1.4− | 2004 01 13 | 699 | 0.1− | 0.4− | 2004 03 10 | 644 | 0.1+ | 0.5+ | |
| 1993 11 09 | 691 | 1.3+ | 0.4− | 2004 01 13 | 699 | 0.3− | 0.2− | 2006 08 28 | 703 | (0.6− | 2.1−) | |
| 1993 11 09 | 691 | 0.7+ | 0.3+ | 2004 01 13 | 699 | 0.9+ | 0.0 | 2006 08 28 | 703 | 0.5+ | 1.5− | |
| 1993 11 10 | 691 | 0.9− | 0.2+ | 2004 01 19 | 703 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.7+ | 1.0+ | |
| 1993 11 10 | 691 | 0.4− | 0.0 | 2004 01 19 | 703 | 0.8− | 1.6− | 2006 08 28 | 703 | 0.4− | 1.1− | |
| 1993 11 10 | 691 | 0.4− | 0.0 | 2004 01 19 | 703 | 0.5− | 0.8+ | 2006 08 29 | 691 | 0.1− | 0.4+ | |
| 2000 04 07 | 704 | 0.1− | 0.0 | 2004 01 19 | 703 | 0.7− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.3+ | |
| 2000 04 07 | 704 | 0.7+ | 0.2+ | 2004 01 24 | 704 | 0.7+ | 1.2+ | 2006 08 29 | 691 | 0.1+ | 0.3+ | |
| 2000 04 07 | 704 | 0.3+ | 0.3+ | 2004 01 24 | 704 | 0.5+ | 1.1+ | 2006 09 28 | G96 | 0.5− | 0.3− | |
| 2001 06 29 | 691 | 0.2− | 0.2+ | 2004 01 24 | 704 | 0.4+ | 0.6+ | 2006 09 28 | G96 | 0.6− | 0.4− | |
| 2001 06 29 | 691 | 0.2− | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.3− | |
| 2001 06 29 | 691 | 0.0 | 0.4+ | 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.6− | |

**(136615)∗ 1994 AP$_{10}$ = 2001 FN$_{93}$**

Discovered 1994 Jan. 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 11467)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.45759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15373464 | $\omega$ | 339.45526 | | +0.02023855 | −0.98410195 | |
| $a$ | 3.4510789 | $\Omega$ | 109.05090 | | +0.94138141 | −0.04068370 | |
| $e$ | 0.0975804 | $i$ | 10.75862 | | +0.33673646 | +0.17288202 | |
| $P$ | 6.41 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.2− | 0.1+ | 2004 09 04 | 644 | 0.4+ | 0.7+ | 2005 11 30 | 699 | 0.0 | 0.9− | |
| 1994 01 08 | 691 | 0.5− | 0.1− | 2004 09 04 | 644 | 0.2+ | 0.2+ | 2005 11 30 | 699 | 0.8+ | 0.7+ | |
| 1994 01 08 | 691 | 0.5− | 0.0 | 2004 09 07 | 704 | 0.0 | 0.2+ | 2005 11 30 | 699 | 0.5− | 0.2+ | |
| 1994 01 11 | 691 | 0.0 | 0.4− | 2004 09 07 | 704 | 1.4− | 1.1+ | 2005 11 30 | 699 | 0.2+ | 0.3+ | |
| 1994 01 11 | 691 | 0.5+ | 0.0 | 2004 09 07 | 704 | 0.2− | 0.2+ | 2005 12 05 | 703 | 0.7− | 0.5+ | |
| 1994 01 11 | 691 | 0.3− | 0.1− | 2004 09 07 | 704 | 0.3+ | 0.7+ | 2005 12 05 | 703 | 0.1+ | 0.2+ | |
| 1994 01 16 | 691 | 0.1− | 0.4− | 2005 10 15 | 224 | 0.5− | 0.3− | 2005 12 05 | 703 | 0.2− | 0.0 | |
| 1994 01 16 | 691 | 1.0+ | 0.1+ | 2005 10 15 | 224 | 0.1− | 0.4− | 2005 12 05 | 703 | 0.4− | 0.2− | |
| 1994 01 16 | 691 | 0.2+ | 0.5− | 2005 10 15 | 224 | 0.2+ | 0.2+ | 2005 12 07 | 704 | 0.2+ | 0.4+ | |
| 2001 03 04 | 704 | 1.0+ | 1.1+ | 2005 10 24 | 644 | 0.7+ | 0.2+ | 2005 12 07 | 704 | 0.2− | 0.2− | |
| 2001 03 04 | 704 | 0.1+ | 0.3+ | 2005 10 24 | 644 | 0.2− | 0.2+ | 2005 12 07 | 704 | 0.4− | 0.2− | |
| 2001 03 04 | 704 | 0.0 | 0.9+ | 2005 10 24 | 644 | 0.0 | 0.3+ | 2005 12 07 | 704 | 0.3− | 0.5+ | |
| 2001 03 04 | 704 | 0.0 | 0.9+ | 2005 10 27 | 703 | 0.6− | 0.0 | 2006 01 02 | 704 | 1.0+ | 0.3+ | |
| 2001 03 16 | 704 | 0.1+ | 0.0 | 2005 10 27 | 703 | 0.3+ | 0.2+ | 2006 01 02 | 704 | 0.2− | 0.3− | |
| 2001 03 16 | 704 | (2.1− | 0.4−) | 2005 10 27 | 703 | 0.4− | 0.4− | 2006 01 02 | 704 | 0.1+ | 0.7+ | |
| 2001 03 16 | 704 | 0.3− | 0.6+ | 2005 10 27 | 703 | 1.1− | 0.3− | 2006 01 02 | 704 | 0.2+ | 0.4+ | |
| 2001 03 16 | 704 | 0.8− | 0.6+ | 2005 11 05 | 704 | 0.2− | 0.9+ | 2006 01 24 | 699 | 0.4+ | 0.0 | |
| 2001 03 18 | 699 | 0.7+ | 0.4+ | 2005 11 05 | 704 | 0.3− | 0.4− | 2006 01 24 | 699 | 0.4+ | 0.9− | |
| 2001 03 18 | 699 | 0.0 | 1.0+ | 2005 11 05 | 704 | 0.1− | 0.5+ | 2006 01 24 | 699 | 0.3− | 0.3− | |
| 2001 03 18 | 699 | 0.6− | 1.3+ | 2005 11 05 | 704 | 0.9+ | 0.0 | 2006 01 24 | 699 | 0.1+ | 0.1+ | |
| 2001 03 18 | 699 | 0.6− | 0.0 | 2005 11 05 | 704 | 0.4− | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.0 | |
| 2001 03 23 | 608 | 0.3+ | 0.2− | 2005 11 21 | 699 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4+ | 0.1− | |
| 2001 03 23 | 608 | 0.0 | 0.3+ | 2005 11 21 | 699 | 1.0− | 0.1− | 2006 10 22 | 691 | 0.6+ | 0.0 | |
| 2001 03 23 | 608 | 0.0 | 0.1+ | 2005 11 21 | 699 | 0.6− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.2+ | |
| 2002 05 18 | 704 | (0.3+ | 1.6+) | 2005 11 26 | 703 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | |
| 2002 05 18 | 704 | 0.7+ | 1.5+ | 2005 11 26 | 703 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.2+ | |
| 2002 05 18 | 704 | (1.7+ | 0.1−) | 2005 11 26 | 703 | 0.2+ | 0.0 | | | | | |
| 2004 09 04 | 644 | 0.0 | 0.6+ | 2005 11 26 | 703 | 0.1+ | 0.3+ | | | | | |

**(136616)∗ 1994 AJ$_{12}$ = 2001 QE$_{290}$**

Discovered 1994 Jan. 11 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 19241)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.01153 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21889709 | $\omega$ | 283.20428 | | +0.84823761 | −0.52589438 | |
| $a$ | 2.7267337 | $\Omega$ | 108.55611 | | +0.50791371 | +0.77423427 | |
| $e$ | 0.1923597 | $i$ | 3.79066 | | +0.15005540 | +0.35213121 | |
| $P$ | 4.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 07 | 691 | 0.2+ | 0.4− | 2003 01 27 | 699 | 1.3− | 1.1− | 2006 10 27 | 704 | 0.2− | 0.9+ | |
| 1994 01 07 | 691 | 0.6+ | 0.6− | 2003 01 27 | 699 | 0.4+ | 0.1− | 2006 10 27 | 704 | 0.2− | 0.5− | |
| 1994 01 07 | 691 | 0.1+ | 0.3− | 2003 01 31 | 704 | 0.1− | 0.8+ | 2006 10 27 | 704 | 0.3+ | 0.3+ | |
| 1994 01 11 | 691 | 0.1+ | 0.0 | 2003 01 31 | 704 | 0.1− | 0.8− | 2006 10 27 | 704 | 0.1+ | 0.9+ | |
| 1994 01 11 | 691 | 0.8− | 0.2+ | 2003 01 31 | 704 | (1.7+ | 0.5−) | 2006 10 27 | 704 | 0.5+ | 0.0 | |
| 1994 01 11 | 691 | 0.2+ | 0.0 | 2003 01 31 | 704 | 0.4+ | 0.5− | 2006 11 01 | 703 | 0.1− | 0.3+ | |
| 1994 01 17 | 691 | 0.8+ | 0.4+ | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 11 01 | 703 | 0.2− | 0.2+ | |
| 1994 01 17 | 691 | 0.0 | 0.0 | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 11 01 | 703 | 0.1− | 0.0 | |
| 1994 01 17 | 691 | 0.3− | 1.8+ | 2004 03 16 | 691 | 0.4− | 0.6+ | 2006 11 01 | 703 | 0.1− | 0.2+ | |
| 1997 10 29 | 704 | (2.7− | 1.2+) | 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.5+ | 0.1− | |
| 1997 10 29 | 704 | 1.0+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.1− | |
| 1997 10 29 | 704 | 0.5− | 0.5− | 2006 08 28 | 703 | 1.3− | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.2− | |
| 1997 10 29 | 704 | 0.4+ | 0.9− | 2006 08 28 | 703 | 0.6− | 0.7− | 2006 11 10 | 644 | 0.0 | 0.1− | |
| 1997 10 30 | 704 | (2.3+ | 0.4+) | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.5+ | 0.1− | |
| 1997 10 30 | 704 | (2.9+ | 1.5−) | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 10 | 644 | 0.3+ | 0.1− | |
| 1997 10 30 | 704 | 0.8+ | 0.5− | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.3− | |
| 1997 10 30 | 704 | (2.4+ | 0.9−) | 2006 10 03 | G96 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.3− | |
| 1997 11 06 | 704 | (1.5− | 2.5+) | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.7− | |
| 1997 11 06 | 704 | 1.3− | 1.5+ | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2− | |
| 1997 11 06 | 704 | 1.7− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.3− | 0.3+ | |
| 1997 11 06 | 704 | 0.4− | 0.8− | 2006 10 16 | 703 | 1.0+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.6+ | |
| 1997 11 06 | 704 | 0.8− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.9+ | |
| 2001 08 15 | 608 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 14 | 704 | 0.3− | 0.6+ | |
| 2001 08 15 | 608 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.6+ | |
| 2001 08 15 | 608 | 0.4+ | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.4− | |
| 2001 08 16 | 704 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.4− | |
| 2001 08 16 | 704 | 0.5− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.5− | |
| 2001 08 16 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.6+ | 0.5− | |
| 2001 08 22 | 608 | 0.3− | 1.5+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.7+ | |
| 2001 08 22 | 608 | 0.5− | 1.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.8− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 608 | 0.2− | 1.0+ | 2006 10 22 | 704 | 1.4− | 0.9− | 2006 11 17 | 704 | 0.4− | 0.5+ | | |
| 2002 12 31 | 704 | (0.7+ | 1.6+) | 2006 10 22 | 704 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.1− | 0.2+ | | |
| 2002 12 31 | 704 | 0.5− | 0.8+ | 2006 10 22 | 704 | 0.9− | 0.8− | 2006 11 17 | 704 | 0.3− | 0.2− | | |
| 2002 12 31 | 704 | 0.2+ | 1.4+ | 2006 10 22 | 704 | 1.5− | 0.2− | 2006 11 20 | 704 | 0.3+ | 1.5+ | | |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2006 10 22 | 704 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.5+ | 0.5− | | |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.7− | | |
| 2003 01 27 | 699 | 0.2+ | 1.4+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.9− | | |
| 2003 01 27 | 699 | 1.4− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.4− | | |

**(136617)∗ 1994 CC**

Discovered 1994 Feb. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.78145 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.47060172 | $\omega$ | 24.71702 | | +0.39752223 | +0.91403024 | |
| $a$ | 1.6369436 | $\Omega$ | 268.79171 | | −0.85474206 | +0.33683713 | |
| $e$ | 0.4169617 | $i$ | 4.63422 | | −0.33375454 | +0.22602981 | |
| $P$ | 2.09 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 09 14 | 675 | 0.2− | 1.0− | 1994 02 19 | 691 | 0.4− | 0.0 | 2003 11 29 | 711 | 0.6+ | 0.7+ | | |
| 1988 09 14 | 675 | 1.2+ | 0.9− | 1994 02 19 | 691 | 0.0 | 0.6+ | 2005 11 25 | 691 | 0.1+ | 0.2+ | | |
| 1988 09 14 | 675 | 1.0− | 0.7+ | 1994 03 18 | 691 | 0.3− | 0.1+ | 2005 11 25 | 691 | 0.2+ | 0.2+ | | |
| 1988 09 14 | 675 | 0.1+ | 0.7+ | 1994 03 18 | 691 | 0.5− | 0.0 | 2005 11 25 | 691 | 0.1+ | 0.1− | | |
| 1988 10 13 | 675 | 0.8− | 0.4− | 1994 03 18 | 691 | 0.3− | 0.1+ | 2005 11 26 | 240 | 0.7− | 1.2+ | | |
| 1988 10 13 | 675 | 0.1+ | 0.4− | 1994 04 02 | 413 | (2.3− | 1.8+) | 2005 11 26 | 240 | 0.6− | 1.0+ | | |
| 1988 10 13 | 675 | 0.0 | 1.0+ | 1994 04 02 | 413 | 0.8− | 1.3+ | 2005 11 26 | 240 | 0.6− | 0.5+ | | |
| 1988 10 13 | 675 | 0.7+ | 0.8+ | 1995 12 26 | 691 | 0.1− | 0.1− | 2005 11 26 | 240 | 0.3− | 0.5+ | | |
| 1994 02 03 | 691 | 0.1− | 0.3+ | 1995 12 26 | 691 | 0.1− | 0.5− | 2005 11 26 | 240 | 0.5− | 0.1+ | | |
| 1994 02 03 | 691 | 0.2− | 0.1+ | 1995 12 26 | 691 | 0.4− | 0.2− | 2005 11 26 | 240 | 1.0− | 0.9− | | |
| 1994 02 03 | 691 | 0.4+ | 0.1− | 1996 01 13 | 691 | 0.3+ | 0.3− | 2005 11 26 | 240 | 1.1− | 0.9− | | |
| 1994 02 04 | 691 | 0.4+ | 0.1+ | 1996 01 13 | 691 | 0.6+ | 0.3− | 2005 11 26 | 240 | 0.4+ | 0.1+ | | |
| 1994 02 04 | 691 | 1.9+ | 0.8+ | 1996 01 20 | 711 | 0.6− | 0.3+ | 2005 12 28 | G96 | 0.4+ | 0.5− | | |
| 1994 02 05 | 691 | 0.1− | 0.1− | 1996 01 20 | 711 | 0.4− | 0.3− | 2005 12 28 | G96 | 0.4− | 0.2+ | | |
| 1994 02 05 | 691 | 0.0 | 0.1+ | 1996 01 21 | 711 | 0.5− | 0.4− | 2005 12 28 | G96 | 0.4+ | 0.7− | | |
| 1994 02 05 | 691 | 0.1− | 0.2+ | 1996 01 21 | 711 | 0.6− | 0.3− | 2005 12 28 | G96 | 1.1+ | 0.8− | | |
| 1994 02 10 | 691 | 0.8− | 0.6+ | 1996 01 26 | 413 | 0.8− | 0.1+ | 2006 01 07 | G96 | 0.5− | 0.0 | | |
| 1994 02 10 | 691 | 0.1+ | 0.3+ | 1996 02 12 | 711 | 0.7− | 0.4+ | 2006 01 07 | G96 | 0.2+ | 0.3+ | | |
| 1994 02 10 | 691 | 0.2− | 0.2− | 1996 02 12 | 711 | 0.1− | 0.3+ | 2006 01 07 | G96 | 0.7+ | 0.3+ | | |
| 1994 02 15 | 691 | 0.0 | 0.2− | 1996 03 09 | 711 | 0.7+ | 0.1− | 2006 01 07 | G96 | 0.3+ | 0.1+ | | |
| 1994 02 15 | 691 | 0.0 | 0.0 | 1996 03 09 | 711 | 0.6+ | 0.4− | 2006 01 21 | G96 | 0.4+ | 0.1+ | | |
| 1994 02 15 | 691 | 0.0 | 0.2− | 1996 03 10 | 711 | 0.4− | 0.2+ | 2006 01 21 | G96 | 0.1− | 0.2− | | |
| 1994 02 16 | 691 | 0.4− | 0.2− | 1996 03 10 | 711 | 0.2+ | 0.7− | 2006 01 21 | G96 | 0.2− | 0.1− | | |
| 1994 02 16 | 691 | 0.1− | 0.3− | 2001 11 20 | 696 | 0.8+ | 0.5− | 2006 01 21 | G96 | 0.3+ | 0.0 | | |
| 1994 02 16 | 691 | 0.2− | 0.2− | 2001 11 20 | 696 | 0.4+ | 0.4− | | | | | | |
| 1994 02 19 | 691 | 0.8+ | 0.6− | 2003 11 29 | 711 | 0.4− | 0.7− | | | | | | |

**(136618)∗ 1994 CN$_2$**

Discovered 1994 Feb. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.26753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.49945240 | $\omega$ | 248.18570 | | +0.97621504 | +0.21538556 | |
| $a$ | 1.5732823 | $\Omega$ | 99.36937 | | −0.18849320 | +0.89961701 | |
| $e$ | 0.3948892 | $i$ | 1.43821 | | −0.10711914 | +0.37986615 | |
| $P$ | 1.97 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 15 | 691 | 0.4− | 0.0 | 1996 05 16 | 695 | 0.3− | 0.6− | 2002 04 15 | 704 | 0.8+ | 0.5+ | | |
| 1994 02 15 | 691 | 0.1− | 0.1− | 1997 12 31 | 711 | 0.6+ | 0.3+ | 2002 04 15 | 704 | 0.8+ | 0.3+ | | |
| 1994 02 15 | 691 | 0.3− | 0.0 | 1997 12 31 | 711 | 0.2+ | 0.2+ | 2002 04 15 | 704 | 0.0 | 0.9+ | | |
| 1994 02 16 | 691 | 0.1+ | 0.1− | 1998 01 01 | 711 | 0.4+ | 0.0 | 2004 02 10 | 649 | 0.4+ | 0.4+ | | |
| 1994 02 16 | 691 | 0.2+ | 0.3− | 1998 01 01 | 711 | 0.7+ | 0.1− | 2004 02 10 | 649 | 0.5+ | 0.1+ | | |
| 1994 02 16 | 691 | 0.5+ | 0.8− | 1998 01 31 | 360 | 0.3− | 0.5− | 2004 02 10 | 649 | 1.0− | 1.1− | | |
| 1994 02 19 | 691 | 0.3− | 0.3− | 1998 01 31 | 360 | 0.6+ | 0.8− | 2004 02 23 | 704 | 0.5+ | 0.1+ | | |
| 1994 02 19 | 691 | 0.4− | 0.4− | 1998 01 31 | 360 | 0.3− | 0.8+ | 2004 02 23 | 704 | 0.4+ | 0.3+ | | |
| 1994 02 19 | 691 | (3.1− | 0.7+) | 1998 02 03 | 711 | 0.5− | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.1+ | | |
| 1994 02 19 | 691 | 0.1+ | 0.3− | 1998 02 03 | 711 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.9+ | 0.5− | | |
| 1994 02 19 | 691 | 0.2+ | 0.7− | 1998 02 05 | 360 | 0.1+ | 0.3− | 2004 02 23 | 704 | 1.0+ | 0.3− | | |
| 1994 02 19 | 691 | 0.1+ | 0.5− | 1998 02 05 | 360 | 0.0 | 0.3− | 2004 02 27 | 695 | 0.6− | 0.3+ | | |
| 1994 02 20 | 413 | 0.3+ | 0.4+ | 1998 02 05 | 360 | 0.2+ | 0.3− | 2004 02 27 | 695 | 0.6− | 0.2+ | | |
| 1994 02 20 | 413 | 0.0 | 0.2+ | 1998 02 06 | 711 | 0.1+ | 0.6− | 2004 02 28 | 170 | 0.0 | 0.3− | | |
| 1994 02 21 | 413 | 1.2− | 0.2− | 1998 02 06 | 711 | 1.7− | 0.3+ | 2004 02 28 | 170 | 0.2− | 0.5− | | |
| 1994 02 21 | 413 | 1.0− | 0.2− | 1998 02 23 | 118 | 0.2+ | 0.2− | 2004 03 15 | 704 | 0.6+ | 0.4+ | | |
| 1994 03 04 | 691 | 0.2− | 0.2− | 1998 02 23 | 118 | 0.0 | 0.3− | 2004 03 15 | 704 | 0.3+ | 0.2− | | |
| 1994 03 04 | 691 | 0.4− | 0.3+ | 1998 03 04 | 704 | (2.8− | 0.7−) | 2004 03 15 | 704 | 0.2− | 0.2+ | | |
| 1994 03 04 | 691 | 0.4− | 0.3+ | 1998 03 04 | 704 | (3.7− | 0.8+) | 2004 03 18 | 691 | 0.1− | 0.3+ | | |
| 1994 03 06 | 658 | 0.4− | 0.0 | 1998 03 04 | 704 | (3.7− | 1.5−) | 2004 03 18 | 691 | 0.2− | 0.1+ | | |
| 1994 03 06 | 658 | (2.2− | 0.1−) | 1998 03 04 | 704 | 1.7− | 0.1+ | 2004 03 18 | 691 | 0.3− | 0.1+ | | |
| 1994 03 06 | 658 | 0.1− | 0.1− | 1998 03 19 | 658 | 0.2− | 0.8− | 2004 04 14 | 621 | 0.1− | 0.3− | | |
| 1994 03 14 | 587 | (0.2− | 2.0−) | 1998 03 19 | 658 | 0.6− | 1.3− | 2004 04 14 | 621 | 0.1+ | 0.2− | | |
| 1994 03 14 | 587 | 0.5− | 0.5− | 1998 03 19 | 658 | 0.5− | 0.7− | 2004 04 14 | 621 | 0.1+ | 0.6− | | |
| 1994 03 14 | 587 | (1.4− | 2.4−) | 2000 02 08 | 711 | 1.0− | 0.3+ | 2004 04 15 | 621 | 0.2+ | 0.3− | | |
| 1994 03 14 | 587 | (2.1− | 2.4−) | 2000 02 12 | 711 | 0.7− | 0.5+ | 2004 04 15 | 621 | 0.2+ | 0.3− | | |
| 1994 03 20 | 413 | 0.1+ | 0.5− | 2000 02 27 | 360 | 0.6+ | 0.5− | 2004 04 15 | 621 | 0.0 | 0.2− | | |
| 1994 03 20 | 413 | 0.1− | 0.3− | 2000 02 27 | 360 | 0.6+ | 0.4− | 2004 04 16 | 621 | 0.1− | 0.4− | | |
| 1994 03 20 | 413 | 0.0 | 0.6− | 2000 02 27 | 360 | 0.1− | 0.0 | 2004 04 16 | 621 | 0.3− | 0.2− | | |
| 1994 05 02 | 413 | 0.8+ | 0.1+ | 2000 02 29 | 704 | 0.2+ | 1.1+ | 2005 10 24 | 568 | 0.0 | 0.4+ | | |
| 1994 05 02 | 413 | 0.5+ | 0.2+ | 2000 02 29 | 704 | 1.0+ | 0.5+ | 2005 10 24 | 568 | 0.1− | 0.5+ | | |
| 1994 05 02 | 413 | 0.6+ | 0.3− | 2000 02 29 | 704 | 0.0 | 0.7− | 2005 10 24 | 568 | 0.1+ | 0.4+ | | |
| 1995 12 20 | 104 | 0.0 | 0.3+ | 2000 02 29 | 704 | 0.1− | 0.0 | 2005 10 31 | 568 | 0.4+ | 0.0 | | |
| 1995 12 20 | 104 | 0.2− | 0.9− | 2000 03 05 | 608 | 0.9+ | 0.3− | 2005 10 31 | 568 | 0.4+ | 0.0 | | |
| 1995 12 20 | 104 | 0.5+ | 1.1− | 2000 03 12 | 704 | 1.2+ | 0.8+ | 2005 10 31 | 568 | 0.4+ | 0.0 | | |
| 1996 01 21 | 695 | 0.3− | 0.4− | 2000 03 12 | 704 | 0.1− | 0.0 | 2006 01 07 | G96 | 0.6− | 0.0 | | |
| 1996 01 21 | 695 | 0.0 | 0.5− | 2000 03 12 | 704 | 0.0 | 0.8+ | 2006 01 07 | G96 | 0.3+ | 0.3− | | |
| 1996 01 21 | 695 | 0.2− | 0.5− | 2000 03 12 | 704 | 0.1+ | 0.7+ | 2006 01 07 | G96 | 0.0 | 0.2− | | |
| 1996 01 22 | 711 | 0.4− | 0.3− | 2000 03 12 | 704 | 0.0 | 1.1+ | 2006 01 07 | G96 | 0.2+ | 0.4− | | |
| 1996 01 22 | 711 | 0.4− | 0.1− | 2001 12 25 | 291 | 0.2− | 0.7+ | 2006 01 26 | G96 | 0.1+ | 0.3+ | | |
| 1996 01 23 | 711 | 0.6+ | 0.2− | 2001 12 25 | 291 | 0.2− | 0.6+ | 2006 01 26 | G96 | 0.2+ | 0.1+ | | |
| 1996 01 23 | 711 | 1.2+ | 0.4− | 2001 12 25 | 291 | 0.2− | 1.0+ | 2006 01 26 | G96 | (1.9− | 2.7+) | | |
| 1996 01 25 | 413 | 0.3+ | 0.4+ | 2002 01 08 | 691 | 0.0 | 0.5+ | 2006 01 26 | G96 | 0.0 | 0.3− | | |
| 1996 01 25 | 413 | 0.4+ | 0.4+ | 2002 01 08 | 691 | 0.1− | 0.3+ | 2006 01 26 | G96 | 0.1− | 0.3− | | |
| 1996 01 25 | 413 | 0.4+ | 0.3+ | 2002 01 08 | 691 | 0.0 | 0.3+ | 2006 01 26 | G96 | 0.1+ | 0.2− | | |
| 1996 01 27 | 413 | 0.5− | 0.5− | 2002 02 07 | 704 | 0.7+ | 0.0 | 2006 01 26 | G96 | 0.0 | 0.2− | | |
| 1996 01 27 | 413 | 0.4− | 0.6− | 2002 02 07 | 704 | 0.5− | 0.0 | 2006 01 27 | 701 | 0.5+ | 1.4+ | | |
| 1996 02 09 | 711 | 1.5+ | 1.3− | 2002 02 07 | 704 | 0.3+ | 0.6+ | 2006 01 27 | 701 | 0.3+ | 0.6+ | | |
| 1996 02 09 | 711 | 0.1+ | 0.1− | 2002 02 07 | 704 | 0.3− | 0.2+ | 2006 01 27 | 701 | 0.7+ | 0.3+ | | |
| 1996 02 10 | 711 | 0.3+ | 0.4− | 2002 02 10 | 704 | 0.8+ | 0.2− | 2006 02 21 | 699 | (1.7− | 0.4+) | | |
| 1996 02 10 | 711 | 0.0 | 0.2− | 2002 02 10 | 704 | 0.6+ | 0.2+ | 2006 02 21 | 699 | 0.6− | 1.1+ | | |
| 1996 02 15 | 691 | 0.7+ | 0.2+ | 2002 02 10 | 704 | 0.9+ | 0.2+ | 2006 02 21 | 699 | 0.6+ | 1.5+ | | |
| 1996 02 15 | 691 | 0.6+ | 0.4+ | 2002 02 10 | 704 | 0.5+ | 0.0 | 2006 02 21 | 699 | 1.1− | 0.4+ | | |
| 1996 02 15 | 691 | 0.6+ | 0.3+ | 2002 02 10 | 704 | 0.4+ | 0.3+ | 2006 02 23 | 691 | 0.1− | 0.1+ | | |
| 1996 02 15 | 608 | 0.4+ | 0.0 | 2002 02 14 | 333 | 1.3+ | 1.2+ | 2006 02 23 | 691 | 0.3+ | 0.2− | | |
| 1996 02 15 | 608 | 0.5+ | 0.1+ | 2002 02 14 | 333 | 1.5+ | 0.7+ | 2006 02 23 | 691 | 0.2+ | 0.4+ | | |
| 1996 02 15 | 360 | 0.1− | 0.5− | 2002 02 14 | 333 | (1.8+ | 1.3+) | 2006 02 27 | 691 | 0.2+ | 0.1+ | | |
| 1996 02 15 | 360 | 0.3+ | 0.2− | 2002 02 24 | 644 | 0.2+ | 0.6+ | 2006 02 27 | 691 | 0.1+ | 0.3+ | | |
| 1996 02 15 | 360 | 0.2+ | 0.6− | 2002 02 24 | 644 | 0.1+ | 0.3+ | 2006 02 27 | 691 | 0.2+ | 0.1+ | | |
| 1996 02 16 | 608 | 0.3+ | 0.1+ | 2002 02 24 | 644 | 0.3+ | 0.3+ | 2006 02 27 | G96 | 0.2− | 0.2− | | |
| 1996 02 16 | 608 | 0.3+ | 0.1+ | 2002 03 09 | 704 | 0.4− | 0.8+ | 2006 02 27 | G96 | 0.2+ | 0.2− | | |
| 1996 02 20 | 566 | 0.2+ | 0.4+ | 2002 03 09 | 704 | (1.3+ | 3.2+) | 2006 02 27 | G96 | 0.3− | 0.1− | | |
| 1996 02 20 | 566 | 0.8− | 0.3+ | 2002 03 09 | 704 | (0.2+ | 1.5+) | 2006 02 27 | G96 | 0.2− | 0.2− | | |
| 1996 02 20 | 566 | 0.2− | 0.7+ | 2002 03 09 | 704 | 0.5+ | 0.1− | 2006 03 09 | 699 | 0.9− | 0.6+ | | |
| 1996 02 21 | 360 | 0.0 | 0.1+ | 2002 03 09 | 704 | 0.8+ | 0.7+ | 2006 03 09 | 699 | 1.2+ | 0.1− | | |
| 1996 02 21 | 360 | 0.5− | 0.1+ | 2002 03 12 | 645 | 0.1− | 0.2− | 2006 03 09 | 699 | 0.5− | 0.1− | | |
| 1996 02 27 | 413 | 0.0 | 0.3− | 2002 03 12 | 645 | 0.1− | 0.2− | 2006 03 09 | 699 | 0.4− | 0.4− | | |
| 1996 02 29 | 658 | 0.7− | 0.5− | 2002 03 12 | 644 | 0.0 | 0.3+ | 2006 03 18 | 198 | 1.0+ | 0.2− | | |
| 1996 02 29 | 658 | 0.9− | 0.0 | 2002 03 12 | 644 | 0.1− | 0.4+ | 2006 03 18 | 198 | 0.9+ | 0.2− | | |
| 1996 02 29 | 658 | 0.2+ | 0.0 | 2002 03 12 | 644 | 0.4+ | 0.2− | 2006 03 18 | 198 | 0.8+ | 0.2− | | |
| 1996 03 09 | 711 | 0.0 | 0.0 | 2002 03 12 | 644 | 0.0 | 0.6+ | 2006 03 18 | 198 | 0.5+ | 0.3− | | |
| 1996 03 09 | 711 | 0.3+ | 0.3+ | 2002 03 12 | 644 | 0.1+ | 0.2+ | 2006 03 19 | 151 | 0.3+ | 0.0 | | |
| 1996 03 10 | 711 | 0.5− | 0.2+ | 2002 03 12 | 644 | 0.3+ | 0.8+ | 2006 03 19 | 151 | (1.5+ | 0.2+) | | |
| 1996 03 10 | 711 | 0.6− | 0.1+ | 2002 03 14 | 704 | 0.2+ | 0.3+ | 2006 03 19 | 151 | (2.2+ | 0.3+) | | |
| 1996 03 14 | 658 | 1.3− | 0.2− | 2002 03 14 | 704 | 1.0+ | 1.0+ | 2006 03 23 | 703 | 0.6− | 1.0+ | | |
| 1996 03 14 | 658 | 1.3− | 0.4− | 2002 03 14 | 704 | 0.2− | 0.3+ | 2006 03 23 | 703 | 1.3− | 0.6− | | |
| 1996 03 14 | 658 | 0.8− | 0.6− | 2002 03 14 | 704 | 0.9− | 0.3+ | 2006 03 23 | 703 | 0.2+ | 0.3+ | | |
| 1996 03 15 | 608 | 0.2+ | 0.0 | 2002 03 16 | 704 | 0.3− | 0.3+ | 2006 03 23 | 703 | 1.4− | 0.6+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 15 | 608 | 0.4+ | 0.2+ | 2002 03 16 | 704 | 0.4− | 0.4− | 2006 03 29 | 691 | 0.1− | 0.0 | | |
| 1996 03 16 | 608 | 0.3+ | 1.2+ | 2002 03 16 | 704 | 0.6− | 0.4+ | 2006 03 29 | 691 | 0.1− | 0.0 | | |
| 1996 03 17 | 608 | 0.4− | 0.3+ | 2002 03 16 | 704 | 0.0 | 0.5− | 2006 03 29 | 691 | 0.1− | 0.1− | | |
| 1996 03 17 | 608 | 0.2− | 0.0 | 2002 03 16 | 704 | 0.1− | 0.0 | 2006 04 02 | 691 | 0.1− | 0.0 | | |
| 1996 03 24 | 566 | 0.3+ | 0.0 | 2002 03 20 | 691 | 0.0 | 0.2+ | 2006 04 02 | 691 | 0.1− | 0.0 | | |
| 1996 03 24 | 566 | 0.1− | 0.1+ | 2002 03 20 | 691 | 0.3+ | 0.3+ | 2006 04 02 | 691 | 0.0 | 0.3− | | |
| 1996 03 24 | 566 | 0.2− | 0.1+ | 2002 03 20 | 691 | 0.0 | 0.2+ | 2006 04 07 | 691 | 0.3+ | 0.2+ | | |
| 1996 03 26 | 413 | 0.1− | 0.1− | 2002 03 20 | 704 | 0.3+ | 0.1− | 2006 04 07 | 691 | 0.3+ | 0.0 | | |
| 1996 03 26 | 413 | 0.1− | 0.2− | 2002 03 20 | 704 | (1.6+ | 0.7+) | 2006 04 07 | 691 | 0.2− | 0.0 | | |
| 1996 03 27 | 413 | 0.0 | 0.4− | 2002 03 20 | 704 | 0.1− | 0.2+ | 2006 04 07 | G96 | 0.2− | 0.1− | | |
| 1996 03 28 | 413 | 0.1− | 0.2− | 2002 03 20 | 704 | 0.9− | 0.6− | 2006 04 07 | G96 | 0.2+ | 0.1+ | | |
| 1996 03 28 | 413 | 0.1+ | 0.1− | 2002 03 21 | 704 | 0.8− | 1.0+ | 2006 04 07 | G96 | 0.4− | 0.3− | | |
| 1996 04 23 | 381 | 1.0− | 0.1+ | 2002 03 21 | 704 | 1.1+ | 0.8− | 2006 04 07 | G96 | 0.3− | 0.5− | | |
| 1996 04 23 | 381 | 0.4− | 1.1+ | 2002 03 21 | 704 | (1.3+ | 3.4−) | 2006 05 28 | G96 | 0.4− | 0.5− | | |
| 1996 04 23 | 381 | 0.3+ | 0.8− | 2002 03 21 | 704 | (1.8+ | 2.5−) | 2006 05 28 | G96 | 0.5− | 0.7− | | |
| 1996 04 23 | 381 | 0.7− | 1.0− | 2002 03 21 | 704 | (0.3+ | 1.9−) | 2006 05 28 | G96 | 0.6− | 0.2− | | |
| 1996 05 16 | 695 | 0.3− | 0.5− | 2002 04 02 | 185 | 0.4+ | 0.2− | 2006 05 28 | G96 | 0.3− | 0.3− | | |
| 1996 05 16 | 695 | 0.3− | 0.4− | 2002 04 02 | 185 | 0.3− | 0.4− | | | | | | |

**(136619)∗ 1994 CH$_{18}$**

Discovered 1994 Feb. 8 by E. W. Elst at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.47951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29365582 | $\omega$ | 63.77132 | | −0.08216329 | −0.99592711 | |
| $a$ | 2.2416973 | $\Omega$ | 31.01068 | | +0.88674103 | −0.09005786 | |
| $e$ | 0.2090984 | $i$ | 4.13246 | | +0.45490608 | −0.00433200 | |
| $P$ | 3.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 08 | 809 | 0.1+ | 0.8− | 2004 01 30 | 704 | 0.3+ | 0.6− | 2006 10 23 | 704 | 0.7− | 0.1+ | | |
| 1994 02 08 | 809 | 1.1− | 1.2− | 2004 02 10 | 644 | 0.0 | 0.1+ | 2006 10 28 | 704 | (1.0+ | 2.3+) | | |
| 1994 02 08 | 809 | 0.4− | 1.3− | 2004 02 10 | 644 | 0.2− | 0.5+ | 2006 10 28 | 704 | 0.9− | 0.0 | | |
| 1994 02 10 | 809 | 1.1+ | 0.6+ | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 10 28 | 704 | 0.2− | 0.8− | | |
| 1994 02 10 | 809 | 1.0+ | 0.7− | 2004 02 15 | 608 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.2+ | 0.9+ | | |
| 1994 02 10 | 809 | 0.0 | 0.0 | 2004 02 15 | 608 | 0.3+ | 0.5− | 2006 10 28 | 704 | 0.9+ | 0.7− | | |
| 1994 02 13 | 809 | 0.6− | 1.3+ | 2004 02 15 | 608 | (2.5+ | 1.7+) | 2006 10 28 | 691 | (2.6+ | 0.2+) | | |
| 1994 02 13 | 809 | 0.9− | 1.1+ | 2004 02 16 | 704 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 1994 02 13 | 809 | 0.9− | 0.7+ | 2004 02 16 | 704 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− | | |
| 1994 03 09 | 010 | 0.0 | 0.8− | 2004 02 16 | 704 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1− | | |
| 1994 03 09 | 010 | 0.8+ | 1.8− | 2004 02 16 | 704 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 1994 03 09 | 010 | (0.5+ | 2.1−) | 2004 02 27 | 608 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 1999 09 14 | 704 | 0.2+ | 0.4− | 2004 02 27 | 608 | 0.6+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 1999 09 14 | 704 | 0.2− | 0.9− | 2004 02 27 | 608 | 0.6+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 1999 09 14 | 704 | 0.4− | 0.4− | 2004 03 14 | 704 | (0.2− | 2.0+) | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 1999 09 14 | 704 | 0.4− | 0.6+ | 2004 03 14 | 704 | 0.6+ | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.1− | | |
| 2001 04 30 | 691 | 0.4+ | 0.5+ | 2004 03 14 | 704 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.0 | | |
| 2001 04 30 | 691 | 0.2+ | 0.4+ | 2004 03 14 | 704 | 0.5+ | 1.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2001 04 30 | 691 | 0.4+ | 0.5+ | 2004 03 14 | 704 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 2003 12 19 | 704 | 0.2+ | 0.3+ | 2004 03 20 | 704 | (0.4+ | 1.7+) | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 2003 12 19 | 704 | 0.2− | 0.7+ | 2004 03 20 | 704 | (0.9− | 2.2+) | 2006 11 10 | 644 | 0.0 | 0.1+ | | |
| 2003 12 19 | 704 | 0.8+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.1− | | |
| 2003 12 19 | 704 | 0.7− | 0.4+ | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.0 | | |
| 2003 12 23 | 704 | 0.8− | 1.1− | 2004 03 20 | 704 | 0.8− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2+ | | |
| 2003 12 23 | 704 | 1.2− | 0.6− | 2004 03 28 | 703 | 1.3− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.3− | | |
| 2003 12 23 | 704 | 0.7+ | 0.2+ | 2004 03 28 | 703 | 0.7− | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.2− | | |
| 2003 12 23 | 704 | (1.7− | 1.0−) | 2004 03 28 | 703 | 0.7− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.2− | | |
| 2003 12 23 | 704 | 0.4− | 1.1− | 2004 03 28 | 703 | 0.9− | 1.3+ | 2006 11 13 | G96 | 0.1+ | 0.3− | | |
| 2003 12 23 | 704 | 0.8− | 0.7− | 2006 08 28 | 703 | 1.0− | 0.3− | 2006 11 13 | G96 | 0.5+ | 0.2− | | |
| 2003 12 23 | 704 | 0.1+ | 1.0+ | 2006 08 28 | 703 | 0.6− | 0.3− | 2006 11 13 | 644 | 0.0 | 0.0 | | |
| 2003 12 23 | 704 | 1.5− | 0.5− | 2006 08 28 | 703 | 0.4+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.1− | | |
| 2003 12 23 | 704 | 0.4+ | 0.1− | 2006 08 28 | 703 | 1.2− | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.1− | | |
| 2003 12 23 | 704 | 0.7+ | 1.3+ | 2006 09 17 | 699 | 0.1+ | 1.1+ | 2006 11 13 | 104 | 0.4− | 0.3− | | |
| 2003 12 28 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.2− | 0.0 | 2006 11 13 | 104 | 0.1− | 0.4− | | |
| 2003 12 28 | 704 | 0.0 | 0.3− | 2006 09 17 | 699 | 0.4− | 0.3+ | 2006 11 16 | 704 | 1.0+ | 1.0+ | | |
| 2003 12 28 | 704 | 0.2+ | 0.1− | 2006 09 17 | 699 | 0.5− | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.2− | | |
| 2003 12 28 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.7+ | 0.1− | 2006 11 16 | 704 | 0.3− | 0.2+ | | |
| 2003 12 28 | 704 | 0.7+ | 0.5+ | 2006 09 20 | 704 | 0.5+ | 1.2− | 2006 11 16 | 704 | 0.4− | 0.4+ | | |
| 2004 01 18 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.3+ | | |
| 2004 01 18 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | (2.9+ | 1.3+) | | |
| 2004 01 18 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.1− | 0.5+ | | |
| 2004 01 19 | 703 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.7+ | 0.2− | | |
| 2004 01 19 | 703 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.5+ | | |
| 2004 01 19 | 703 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.4+ | | |
| 2004 01 19 | 703 | 0.7− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2004 01 23 | 699 | 0.0 | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.4+ | | |
| 2004 01 23 | 699 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.6− | | |
| 2004 01 23 | 699 | 0.4− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.1− | | |
| 2004 01 23 | 704 | (2.8+ | 0.5−) | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.8− | | |
| 2004 01 23 | 704 | (3.0+ | 0.3−) | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.6− | | |
| 2004 01 23 | 699 | 0.6− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.6+ | | |
| 2004 01 23 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.3− | | |
| 2004 01 23 | 704 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.6+ | | |
| 2004 01 23 | 704 | (2.7+ | 0.4−) | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.8+ | | |
| 2004 01 30 | 704 | 0.1+ | 0.8− | 2006 10 23 | 704 | 1.1− | 0.8+ | 2006 11 29 | 704 | 0.1+ | 0.2+ | | |
| 2004 01 30 | 704 | 0.1+ | 0.9− | 2006 10 23 | 704 | 0.7− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.8+ | | |
| 2004 01 30 | 704 | 0.1+ | 0.8− | 2006 10 23 | 704 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.2+ | 1.0+ | | |
| 2004 01 30 | 704 | 0.2+ | 0.4− | 2006 10 23 | 704 | 1.1− | 0.1− | | | | | | |

**(136620)∗ 1994 JC**

Discovered 1994 May 4 by E. F. Helin and K. J. Lawrence at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.99022 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15916408 | $\omega$ | 137.66605 | | −0.93787728 | −0.14753182 | |
| $a$ | 3.3721432 | $\Omega$ | 37.56479 | | −0.13168322 | −0.68602792 | |
| $e$ | 0.5153395 | $i$ | 31.00460 | | +0.32100739 | −0.71246057 | |
| $P$ | 6.19 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 07 02 | 413 | (5.8+ | 4.6+) | 1994 08 15 | 413 | 0.1− | 0.3− | 2000 03 25 | 704 | 0.3+ | 0.7+ | | |
| 1994 05 04 | 675 | 1.7+ | 1.1+ | 1994 08 16 | 413 | 0.9− | 1.2− | 2000 03 25 | 704 | 0.1− | 0.3+ | | |
| 1994 05 04 | 675 | (0.7+ | 2.4−) | 1994 08 16 | 413 | 1.6− | 0.7− | 2000 03 25 | 704 | 0.4− | 0.1+ | | |
| 1994 05 05 | 675 | 0.4− | 2.0+ | 1994 08 17 | 413 | 0.8− | 0.2− | 2000 04 21 | 118 | 0.4− | 0.3+ | | |
| 1994 05 05 | 675 | 0.6+ | 0.7+ | 1994 08 17 | 413 | 1.2− | 0.8− | 2000 04 21 | 118 | 0.2− | 0.2+ | | |
| 1994 05 08 | 675 | (2.1+ | 2.2−) | 1994 08 26 | 413 | 0.3− | 0.4+ | 2000 04 22 | 118 | 0.9+ | 0.3+ | | |
| 1994 05 08 | 675 | 0.1− | 0.7+ | 1994 08 26 | 413 | 0.0 | 1.2+ | 2000 04 22 | 118 | 0.9+ | 0.0 | | |
| 1994 05 10 | 801 | 0.7− | 1.5− | 1994 08 26 | 413 | 0.8− | 0.9+ | 2004 09 11 | 291 | 0.3− | 0.4+ | | |
| 1994 05 10 | 801 | 0.2− | 1.3− | 1999 09 24 | 461 | 0.8+ | 0.5− | 2004 09 11 | 291 | 0.4− | 0.3+ | | |
| 1994 05 10 | 675 | 1.6+ | 1.7− | 1999 09 24 | 461 | 0.4− | 0.2− | 2004 09 11 | 291 | 0.1− | 0.0 | | |
| 1994 05 11 | 801 | 0.5− | 0.6+ | 1999 11 16 | 611 | 0.5− | 0.3− | 2005 10 27 | 448 | 0.2− | 0.6− | | |
| 1994 05 11 | 801 | 0.3− | 1.0+ | 1999 11 16 | 611 | 0.3+ | 1.1− | 2005 11 04 | 461 | 0.1+ | 0.7− | | |
| 1994 05 12 | 360 | 0.2+ | 0.3− | 1999 11 16 | 611 | 0.9− | 1.0+ | 2005 11 04 | 461 | 0.1− | 0.0 | | |
| 1994 05 12 | 360 | 0.3+ | 0.6− | 1999 11 16 | 611 | 1.3+ | 1.5+ | 2005 11 04 | 461 | 0.1− | 0.1− | | |
| 1994 05 13 | 675 | 0.5− | 1.3− | 1999 11 16 | 611 | 1.7− | 1.4− | 2005 11 04 | 461 | 0.1+ | 0.1+ | | |
| 1994 05 13 | 675 | 0.3+ | 1.2− | 1999 12 19 | 704 | 0.0 | 0.6− | 2005 11 04 | 461 | 0.1+ | 0.3− | | |
| 1994 05 15 | 046 | 0.8− | 0.5+ | 1999 12 19 | 704 | 0.9+ | 0.3− | 2005 11 12 | 704 | 0.8+ | 0.8+ | | |
| 1994 05 15 | 046 | 0.8− | 0.2+ | 1999 12 19 | 704 | 0.4+ | 0.2− | 2005 11 12 | 704 | 0.4− | 0.5+ | | |
| 1994 05 16 | 360 | 0.4+ | 0.1− | 1999 12 19 | 704 | 0.8+ | 0.2+ | 2005 11 12 | 704 | 0.3+ | 0.0 | | |
| 1994 05 16 | 360 | 0.0 | 0.1+ | 1999 12 19 | 704 | 0.8+ | 0.1− | 2005 11 22 | 704 | 0.2+ | 0.0 | | |
| 1994 05 17 | 046 | 0.5+ | 0.1− | 1999 12 28 | 704 | 1.1− | 0.5+ | 2005 11 22 | 704 | 0.8+ | 0.8− | | |
| 1994 05 17 | 046 | 0.1+ | 0.0 | 1999 12 28 | 704 | 1.1− | 0.7+ | 2005 11 22 | 704 | 0.2+ | 0.4− | | |
| 1994 05 17 | 046 | 0.2− | 0.2+ | 1999 12 28 | 704 | 1.0− | 0.7+ | 2005 11 22 | 704 | 0.1− | 0.0 | | |
| 1994 05 17 | 046 | 0.0 | 0.8+ | 1999 12 28 | 704 | 1.8− | 0.0 | 2005 12 21 | 704 | 0.1+ | 0.5+ | | |
| 1994 05 31 | 587 | 0.3− | 0.5− | 2000 01 25 | 704 | 1.0+ | 0.6+ | 2005 12 21 | 704 | (2.1+ | 0.9−) | | |
| 1994 05 31 | 587 | (2.7+ | 0.5+) | 2000 01 25 | 704 | 0.8+ | 1.4− | 2005 12 21 | 704 | 0.3+ | 0.1+ | | |
| 1994 06 03 | 360 | 0.7+ | 0.1+ | 2000 01 25 | 704 | (1.8+ | 3.0−) | 2005 12 21 | 704 | 0.6+ | 0.3− | | |
| 1994 06 03 | 360 | 0.7+ | 0.2− | 2000 03 24 | 704 | 0.9− | 0.2+ | 2005 12 21 | 704 | 0.2+ | 0.4− | | |
| 1994 06 17 | 413 | 0.2+ | 0.5+ | 2000 03 24 | 704 | 1.3− | 0.0 | 2006 04 12 | 204 | 0.1− | 0.6− | | |
| 1994 06 17 | 413 | 0.1+ | 0.4+ | 2000 03 24 | 704 | 0.5+ | 0.0 | 2006 04 12 | 204 | 0.3+ | 0.2+ | | |
| 1994 06 20 | 413 | 0.3+ | 0.2+ | 2000 03 25 | 704 | 0.1− | 0.1+ | | | | | | |
| 1994 08 15 | 413 | 0.4− | 0.4+ | 2000 03 25 | 704 | 0.6+ | 0.2+ | | | | | | |

**(136621)∗ 1994 JD$_7$ = 1995 SE$_{49}$**

Discovered 1994 May 5 by Spacewatch at Kitt Peak.

Id. A. Doppler (MPC 34854)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.79087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18673263 | $\omega$ | 150.28821 | | +0.86003581 | +0.51023343 | |
| $a$ | 3.0314883 | $\Omega$ | 179.03198 | | −0.47379961 | +0.79898868 | |
| $e$ | 0.2141661 | $i$ | 1.70467 | | −0.18934714 | +0.31824352 | |
| $P$ | 5.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 05 | 691 | 0.2− | 0.2− | 2000 08 01 | 704 | 0.2+ | 1.2+ | 2006 10 11 | 691 | 0.3− | 0.3+ |
| 1994 05 05 | 691 | 0.5− | 0.1+ | 2000 08 01 | 704 | 0.8+ | 0.6− | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 1994 05 05 | 691 | 0.2− | 0.3− | 2000 08 26 | 704 | 0.8− | 0.3+ | 2006 11 08 | 644 | 0.5− | 0.0 |
| 1994 05 15 | 691 | 0.4− | 0.3+ | 2000 08 26 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 1994 05 15 | 691 | 0.4− | 0.4+ | 2000 08 26 | 704 | 0.7− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 1994 05 15 | 691 | 0.4− | 1.1+ | 2000 08 26 | 704 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.0 |
| 1995 08 20 | 809 | (5.2− | 0.8−) | 2001 11 18 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 1995 08 22 | 809 | (3.4− | 0.5−) | 2001 11 18 | 691 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.5− | 0.2+ |
| 1995 08 25 | 809 | 0.4− | 0.3− | 2001 11 18 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 1995 09 17 | 809 | 0.5+ | 0.1− | 2003 03 27 | 568 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.6− | 0.2+ |
| 1995 09 18 | 809 | 0.5+ | 0.4+ | 2003 03 27 | 568 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 1995 09 20 | 809 | 0.3+ | 0.4− | 2003 03 27 | 568 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (1.8− | 0.8+) |
| 1995 09 22 | 809 | 0.3+ | 0.3− | 2004 03 19 | 291 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.6+ |
| 1995 09 22 | 809 | 0.6+ | 0.9− | 2004 03 19 | 291 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 1995 09 22 | 691 | 0.5− | 0.3+ | 2004 03 19 | 291 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.0 |
| 1995 09 22 | 691 | 0.5− | 0.3+ | 2004 03 23 | 291 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 1995 09 22 | 691 | 0.3− | 0.3+ | 2004 03 23 | 291 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 1995 09 23 | 809 | 1.8+ | 0.3+ | 2004 03 23 | 291 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 1995 09 27 | 691 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 1995 09 27 | 691 | 0.0 | 0.7+ | 2006 07 22 | G96 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.7− |
| 1995 09 27 | 691 | 0.1+ | 0.2+ | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.4− | 0.2+ |
| 1999 03 21 | 691 | 0.6+ | 0.8+ | 2006 07 22 | G96 | 0.4− | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 1999 04 16 | 691 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 1999 04 16 | 691 | 0.7+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.2+ |
| 1999 04 16 | 691 | 0.8+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2000 08 01 | 704 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2000 08 01 | 704 | 1.5+ | 0.0 | 2006 10 11 | 691 | 0.3− | 0.4+ | | | | |
| 2000 08 01 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 691 | 0.2− | 0.4+ | | | | |

**(136622)∗ 1994 $PC_6$ = 2000 $SF_{300}$**

Discovered 1994 Aug. 10 by E. W. Elst at the European Southern Observatory.
Id. G. V. Williams (*MPO* 5404)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.78282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17585188 | $\omega$ | 44.78959 | | +0.91592479 | −0.40054442 | |
| $a$ | 3.1552810 | $\Omega$ | 338.78298 | | +0.34574255 | +0.81959811 | |
| $e$ | 0.1647076 | $i$ | 4.02705 | | +0.20382312 | +0.40966218 | |
| $P$ | 5.60 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | 0.5− | 0.9− | 2000 10 25 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 704 | 1.4− | 0.5− |
| 1994 08 10 | 809 | 1.1− | 0.4− | 2000 10 25 | 704 | 0.2+ | 1.2+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 1994 08 10 | 809 | 0.2− | 0.5+ | 2002 01 14 | 704 | 0.4+ | 1.4+ | 2006 11 17 | G96 | 0.5− | 0.3− |
| 1994 08 11 | 809 | 0.4+ | 1.8− | 2002 01 14 | 704 | 0.1− | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 1994 08 11 | 809 | 0.5− | 1.7− | 2002 01 14 | 704 | 0.2− | 0.6+ | 2006 11 17 | G96 | 0.5− | 0.2− |
| 1994 08 11 | 809 | (0.1+ | 2.6−) | 2002 01 14 | 704 | (0.4− | 1.9+) | 2006 11 18 | 704 | 0.7+ | 0.4+ |
| 1994 09 03 | 809 | (2.3+ | 0.9−) | 2002 02 10 | 704 | 0.2− | 0.1+ | 2006 11 18 | 704 | 1.4+ | 0.1+ |
| 1994 09 03 | 809 | 1.2+ | 0.8+ | 2002 02 10 | 704 | 0.6− | 0.8− | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 1994 09 03 | 809 | 0.1+ | 0.4− | 2002 02 10 | 704 | 0.7+ | 0.7− | 2006 11 18 | 704 | 0.7+ | 1.1− |
| 1994 09 04 | 809 | (3.3+ | 0.6+) | 2002 02 10 | 704 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 1994 09 04 | 809 | (2.7+ | 0.3+) | 2002 02 12 | 704 | (0.2− | 1.5−) | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 1994 09 04 | 809 | (3.0+ | 0.5+) | 2002 02 12 | 704 | (0.4+ | 1.5−) | 2006 11 19 | 704 | 0.3+ | 0.5− |
| 1994 09 08 | 691 | 0.8− | 0.3+ | 2002 02 12 | 704 | (1.0+ | 1.6−) | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 1994 09 08 | 691 | 0.1− | 1.4+ | 2002 02 12 | 704 | 1.3+ | 0.6− | 2006 11 19 | 704 | 0.6− | 0.3− |
| 1994 09 08 | 691 | 0.3− | 1.3+ | 2002 02 13 | 691 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.5− | 0.2− |
| 2000 09 28 | 704 | 0.9− | 0.2− | 2002 02 13 | 691 | 0.2+ | 0.9+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2000 09 28 | 704 | 0.5− | 0.7+ | 2002 02 13 | 691 | 0.1+ | 0.7+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2000 09 28 | 704 | 0.7− | 0.2+ | 2003 03 24 | 691 | 0.7+ | 1.2+ | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2000 09 28 | 704 | 0.4− | 0.5+ | 2003 03 24 | 691 | 0.5+ | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2000 10 03 | 704 | 0.6+ | 1.3+ | 2003 03 24 | 691 | 0.3+ | 1.1+ | 2006 11 22 | 704 | 0.6+ | 0.9− |
| 2000 10 03 | 704 | 0.0 | 0.7+ | 2005 10 25 | G96 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.4− | 1.4− |
| 2000 10 03 | 704 | 0.8− | 1.4+ | 2005 10 25 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.6+ |
| 2000 10 03 | 704 | 0.3+ | 0.1+ | 2005 10 25 | G96 | 0.6+ | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.5− |
| 2000 10 06 | 608 | 1.3− | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.1− | 2006 11 23 | 644 | 0.1− | 0.4+ |
| 2000 10 06 | 608 | 1.0− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.6− | 2006 11 23 | 644 | 0.3− | 0.3− |
| 2000 10 06 | 608 | 1.1− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.7+ | 2006 11 23 | 644 | 0.2− | 0.0 |
| 2000 10 07 | 704 | 0.8+ | 1.6+ | 2006 11 16 | 704 | (1.6+ | 0.9−) | 2006 11 27 | 704 | 0.8− | 0.3− |
| 2000 10 07 | 704 | 0.2− | 1.1+ | 2006 11 16 | 704 | 0.6+ | 0.7− | 2006 11 27 | 704 | 0.8+ | 0.6+ |
| 2000 10 07 | 704 | 0.1+ | 0.9+ | 2006 11 16 | 704 | (1.9+ | 0.1−) | 2006 11 27 | 704 | 0.6− | 0.2− |
| 2000 10 07 | 704 | 0.7+ | 1.1− | 2006 11 17 | 704 | (1.6− | 0.5−) | 2006 11 27 | 704 | 0.0 | 0.5− |
| 2000 10 25 | 704 | 1.0+ | 1.0+ | 2006 11 17 | 704 | 0.2+ | 0.6+ | | | | |
| 2000 10 25 | 704 | 0.0 | 0.9+ | 2006 11 17 | 704 | 0.6− | 0.7− | | | | |

**(136623)∗ 1994 $PS_6$ = 2000 $SZ_{83}$**

Discovered 1994 Aug. 10 by E. W. Elst at the European Southern Observatory.
Id. G. V. Williams (*MPO* 4322)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.58646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17582516 | $\omega$ | 234.08268 | | +0.65574688 | −0.75493872 | |
| $a$ | 3.1556006 | $\Omega$ | 174.91891 | | +0.71844395 | +0.62073222 | |
| $e$ | 0.1860909 | $i$ | 5.16478 | | +0.23202224 | +0.21156332 | |
| $P$ | 5.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | (4.7− | 0.1+) | 2000 10 04 | 704 | 0.3− | 0.3− | 2005 08 25 | 644 | 0.4− | 0.3+ |
| 1994 08 10 | 809 | (5.0− | 0.1−) | 2000 10 04 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 1994 08 10 | 809 | (3.5− | 0.2−) | 2000 10 04 | 704 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1994 08 11 | 809 | 0.0 | 0.7+ | 2000 10 06 | 608 | 1.4+ | 1.3− | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 1994 08 11 | 809 | 0.4+ | 0.9+ | 2000 10 06 | 608 | 1.4+ | 1.5− | 2006 11 02 | 703 | 0.2− | 0.7− |
| 1994 08 11 | 809 | 0.9+ | 0.0 | 2000 10 06 | 608 | 1.0+ | 1.3− | 2006 11 02 | 703 | 0.7− | 0.0 |
| 1994 09 03 | 809 | 1.3+ | 0.7+ | 2000 10 29 | 704 | 1.6− | 0.7+ | 2006 11 02 | 703 | 0.0 | 0.5− |
| 1994 09 03 | 809 | 0.6+ | 0.3+ | 2000 10 29 | 704 | 1.1− | 0.1− | 2006 11 02 | 703 | 0.5− | 0.8− |
| 1994 09 03 | 809 | 1.1+ | 0.2+ | 2000 10 29 | 704 | 0.7− | 0.3− | 2006 11 14 | 704 | 0.3+ | 0.4− |
| 1994 09 04 | 809 | (2.5− | 2.9−) | 2000 10 29 | 704 | 0.2− | 0.9+ | 2006 11 14 | 704 | 0.1+ | 0.0 |
| 1994 09 04 | 809 | (2.8− | 0.9−) | 2000 11 02 | 704 | 1.7+ | 0.6+ | 2006 11 14 | 704 | 0.5+ | 0.6− |
| 1994 09 04 | 809 | 1.1− | 0.1− | 2000 11 02 | 704 | 0.6+ | 0.7+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2000 09 03 | 691 | 0.5+ | 0.5+ | 2000 11 02 | 704 | 0.6+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2000 09 03 | 691 | 0.3− | 0.0 | 2000 11 02 | 704 | 0.7− | 1.5+ | 2006 11 16 | 691 | 0.0 | 0.3− |
| 2000 09 03 | 691 | 0.3− | 0.0 | 2002 01 14 | 608 | 0.5− | 1.0− | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2000 09 24 | 704 | 0.2− | 0.3+ | 2002 01 14 | 608 | 0.3− | 0.8− | 2006 11 17 | 704 | 1.4− | 1.0+ |
| 2000 09 24 | 704 | 0.7− | 0.0 | 2002 01 14 | 608 | 0.4− | 1.4− | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2000 09 24 | 704 | 0.5− | 0.3+ | 2002 02 03 | 608 | 0.5− | 0.7+ | 2006 11 17 | 704 | 0.1− | 0.4− |
| 2000 09 24 | 704 | 0.6− | 0.0 | 2002 02 03 | 608 | 0.4− | 0.7+ | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2000 09 24 | 704 | 0.6+ | 0.1+ | 2002 02 03 | 608 | 0.2− | 0.7+ | 2006 11 17 | 704 | 0.7+ | 0.1+ |
| 2000 09 26 | 704 | 1.5− | 0.5+ | 2002 02 06 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 1.0− | 0.6− |
| 2000 09 26 | 704 | 0.7− | 0.2− | 2002 02 06 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.7+ |
| 2000 09 26 | 704 | (2.4− | 0.4+) | 2002 02 06 | 644 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.7− |
| 2000 09 26 | 704 | 0.8− | 0.3+ | 2002 02 11 | 704 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2000 09 26 | 704 | 0.9− | 0.1+ | 2002 02 11 | 704 | 0.6+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2000 10 02 | 704 | 0.2− | 0.0 | 2002 02 11 | 704 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.0 | 0.2+ | 2002 02 11 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.6+ |
| 2000 10 02 | 704 | 0.0 | 0.4− | 2002 02 11 | 704 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2000 10 02 | 704 | 0.3− | 0.1− | 2002 03 13 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.0 |
| 2000 10 02 | 704 | 0.3− | 0.6+ | 2002 03 13 | 644 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.7+ | 0.8+ |
| 2000 10 03 | 704 | 0.5− | 0.7− | 2002 03 13 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.6+ |
| 2000 10 03 | 704 | 0.1+ | 0.3− | 2003 04 24 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.7+ |
| 2000 10 03 | 704 | 0.0 | 0.6− | 2003 04 24 | 691 | 0.6+ | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2000 10 03 | 704 | 0.3− | 0.1− | 2003 04 24 | 691 | 0.4+ | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2000 10 03 | 704 | 0.6− | 0.4+ | 2003 05 08 | 691 | 0.3− | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2000 10 03 | 704 | 0.7− | 0.2+ | 2003 05 08 | 691 | 0.5− | 0.6+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.6− | 0.0 | 2003 05 08 | 691 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.2− |
| 2000 10 04 | 704 | 0.2+ | 0.2+ | 2005 08 25 | 644 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.8+ |
| 2000 10 04 | 704 | 0.1+ | 0.6+ | 2005 08 25 | 644 | 0.4− | 0.6+ | 2006 11 28 | 704 | 1.0+ | 0.7+ |

**(136624)∗ 1994 $PD_{14}$ = 2000 $QB_{119}$**

Discovered 1994 Aug. 10 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 3129)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.69565 | | (2000.0) | | +0.98539774 | −0.15998568 |
| $n$ | 0.16960080 | $\omega$ | 73.30935 | | +0.12080595 | +0.89810489 |
| $a$ | 3.2323431 | $\Omega$ | 295.86522 | | +0.11998841 | +0.40964885 |
| $e$ | 0.1412005 | $i$ | 3.71318 | | | |
| $P$ | 5.81 | $H$ | 14.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | (2.6+ | 3.5+) | 2000 10 03 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.2− |
| 1994 08 10 | 809 | (2.4+ | 4.7+) | 2000 10 03 | 704 | 0.8− | 0.5+ | 2006 09 19 | H55 | 0.2+ | 0.2− |
| 1994 08 10 | 809 | (0.8+ | 2.9+) | 2000 10 03 | 704 | 0.1+ | 0.1− | 2006 09 19 | H55 | 1.0+ | 0.4− |
| 1994 08 11 | 809 | (1.9+ | 3.1+) | 2000 10 03 | 704 | 0.3− | 0.4− | 2006 09 19 | H55 | 1.1+ | 0.1− |
| 1994 08 11 | 809 | (0.5− | 3.6+) | 2000 10 06 | 704 | 0.3+ | 0.6+ | 2006 09 21 | H55 | 1.1+ | 0.9+ |
| 1994 08 11 | 809 | (0.4+ | 4.4+) | 2000 10 06 | 704 | 0.6− | 0.0 | 2006 09 21 | H55 | 1.3+ | 0.7+ |
| 1994 08 12 | 809 | 1.2+ | 1.7− | 2000 10 06 | 704 | 0.3− | 0.6+ | 2006 09 21 | H55 | 1.4+ | 0.8+ |
| 1994 08 12 | 809 | 0.3− | 1.5− | 2000 10 06 | 704 | 0.0 | 0.7+ | 2006 09 21 | 704 | 0.4− | 0.3− |
| 1994 08 12 | 809 | 0.2+ | 1.3− | 2000 10 06 | 704 | 1.1− | 0.0 | 2006 09 21 | 704 | 0.7− | 0.3+ |
| 1994 09 05 | 809 | 1.4+ | 1.5− | 2000 10 06 | 608 | 0.3− | 0.8− | 2006 09 21 | 704 | 0.1+ | 0.5− |
| 1994 09 05 | 809 | 0.5− | 1.7− | 2000 10 06 | 608 | 0.5− | 1.0− | 2006 09 21 | 704 | 0.1− | 0.5+ |
| 1994 09 05 | 809 | 0.3− | 0.9− | 2000 10 06 | 608 | 0.4− | 1.1− | 2006 09 24 | H55 | (1.8+ | 0.9+) |
| 1994 09 06 | 809 | 0.2+ | 1.3− | 2000 10 07 | 704 | 0.0 | 0.6+ | 2006 09 24 | H55 | (1.8+ | 0.7+) |
| 1994 09 06 | 809 | 0.1+ | 1.7− | 2000 10 07 | 704 | 0.2+ | 0.1− | 2006 09 24 | H55 | (1.8+ | 0.9+) |
| 1994 09 06 | 809 | 0.2− | 1.7− | 2000 10 07 | 704 | 0.6+ | 0.4− | 2006 09 25 | 704 | 0.0 | 0.7+ |
| 2000 08 25 | 704 | 0.1− | 0.2− | 2000 10 07 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.5− | 0.9+ |
| 2000 08 25 | 704 | 0.1+ | 0.6+ | 2000 10 18 | 691 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.7− | 0.3− |
| 2000 08 25 | 704 | 0.1− | 0.4+ | 2000 10 18 | 691 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.2+ |
| 2000 08 25 | 704 | 0.1− | 0.0 | 2000 10 18 | 691 | 0.8+ | 1.6− | 2006 09 25 | 704 | 0.2− | 0.5− |
| 2000 09 01 | 704 | 0.1− | 0.7+ | 2000 10 25 | 704 | 0.7+ | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2000 09 01 | 704 | 0.0 | 0.5+ | 2000 10 25 | 704 | 0.4− | 0.9+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2000 09 01 | 704 | 0.4+ | 1.1+ | 2000 10 25 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2000 09 01 | 704 | 1.3− | 1.2+ | 2000 10 25 | 704 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.4− |
| 2000 09 01 | 704 | 0.1− | 0.6+ | 2000 10 25 | 704 | 1.0+ | 0.8+ | 2006 09 29 | 704 | 0.1− | 0.6− |
| 2000 09 01 | 704 | 0.7− | 0.2− | 2000 10 30 | 691 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.1+ | 0.1− |
| 2000 09 01 | 704 | 0.4+ | 0.3+ | 2000 10 30 | 691 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.1+ | 0.6− |
| 2000 09 01 | 704 | 0.1− | 1.0+ | 2000 10 30 | 691 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.0 | 0.0 |
| 2000 09 01 | 704 | 0.0 | 0.1− | 2001 12 18 | 644 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2000 09 03 | 704 | 0.3− | 0.6+ | 2001 12 18 | 644 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2000 09 03 | 704 | 0.7− | 1.1+ | 2001 12 18 | 644 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2000 09 03 | 704 | 0.4− | 0.8+ | 2001 12 18 | 704 | 0.6− | 1.0− | 2006 10 03 | 704 | 0.6+ | 0.7− |
| 2000 09 03 | 704 | 0.8− | 0.8+ | 2001 12 18 | 704 | 0.5+ | 0.9+ | 2006 10 03 | 704 | 1.2+ | 1.2− |
| 2000 09 03 | 704 | 0.1+ | 1.3+ | 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.3+ | 0.2− |
| 2000 09 21 | 699 | 0.5+ | 0.5+ | 2001 12 18 | 704 | 0.6+ | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.5− |
| 2000 09 21 | 699 | 0.2+ | 0.3+ | 2001 12 19 | 704 | 0.5− | 0.6+ | 2006 10 03 | 704 | 0.6+ | 0.2− |
| 2000 09 21 | 699 | 0.3− | 0.9+ | 2001 12 19 | 704 | 0.0 | 0.8+ | 2006 10 15 | 185 | 0.3− | 0.6− |
| 2000 09 21 | 699 | 0.3− | 0.1+ | 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 10 15 | 185 | 0.5− | 0.5− |
| 2000 09 23 | 704 | 0.4+ | 0.3+ | 2001 12 19 | 704 | 0.0 | 0.6+ | 2006 10 15 | 185 | 0.2− | 1.0− |
| 2000 09 23 | 704 | 0.2+ | 0.3+ | 2002 01 08 | 704 | 0.6+ | 0.7− | 2006 10 15 | 185 | 0.2− | 0.9− |
| 2000 09 23 | 704 | 0.4+ | 0.3+ | 2002 01 08 | 704 | 0.1− | 1.4− | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2000 09 23 | 704 | 0.2+ | 0.3+ | 2002 01 08 | 704 | 0.1− | 1.1− | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2000 09 23 | 704 | 0.4− | 0.3+ | 2003 03 06 | 699 | 0.6+ | 0.3− | 2006 10 17 | 703 | 0.9− | 0.4− |
| 2000 09 26 | 704 | 0.5+ | 1.4+ | 2003 03 06 | 699 | 0.4− | 1.3+ | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2000 09 26 | 704 | 1.0− | 0.0 | 2003 03 06 | 699 | 0.9+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2000 09 26 | 704 | 0.4+ | 0.4+ | 2003 03 06 | 699 | (2.1+ | 0.7−) | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2000 09 26 | 704 | 0.2− | 1.0+ | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2000 09 26 | 704 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 09 26 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2000 09 26 | 704 | 0.0 | 1.0+ | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2000 09 26 | 704 | 0.3− | 0.9+ | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 29 | 704 | 1.3+ | 0.6− |
| 2000 09 26 | 704 | 0.2+ | 1.0+ | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.0 |
| 2000 09 26 | 704 | 0.3− | 0.8+ | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 29 | 704 | 0.6− | 0.5− |
| 2000 09 26 | 704 | 0.2− | 1.2+ | 2006 09 18 | 704 | 0.2+ | 0.5+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2000 09 26 | 704 | 0.6+ | 0.0 | 2006 09 18 | 704 | 0.2− | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2000 09 26 | 704 | 0.4− | 0.4+ | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 11 06 | 644 | 0.3− | 0.1− |
| 2000 09 26 | 704 | 0.4− | 1.2+ | 2006 09 18 | 704 | 0.2− | 1.0+ | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2000 09 26 | 704 | 1.1+ | 0.5+ | 2006 09 18 | 704 | (0.4− | 1.6+) | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2000 10 01 | 699 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.6− | 0.1− | 2006 11 20 | G96 | 0.3− | 0.4− |
| 2000 10 01 | 699 | 0.4+ | 1.0+ | 2006 09 18 | 699 | 0.5− | 0.4+ | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2000 10 01 | 699 | 0.3+ | 1.2+ | 2006 09 18 | 699 | 0.2+ | 0.3+ | | | | |

**(136625)∗ 1994 $PW_{15}$ = 1997 $MZ_1$**

Discovered 1994 Aug. 10 by E. W. Elst at the European Southern Observatory.

Id. A. Gnädig (MPC 31239)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.51063 | | (2000.0) | | +0.79022722 | −0.61262600 |
| $n$ | 0.25628071 | $\omega$ | 231.06666 | | +0.58067130 | +0.74063444 |
| $a$ | 2.4546643 | $\Omega$ | 166.69016 | | +0.19586162 | +0.27595290 |
| $e$ | 0.2176343 | $i$ | 3.77972 | | | |
| $P$ | 3.85 | $H$ | 16.5 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | (3.0+ | 0.4+) | 1998 10 17 | 699 | 1.2+ | 0.1− | 2002 12 01 | 704 | 0.4+ | 0.2+ |
| 1994 08 10 | 809 | 1.8+ | 1.0− | 1998 10 19 | 699 | 0.7+ | 0.3+ | 2002 12 07 | 704 | 0.7− | 0.3+ |
| 1994 08 10 | 809 | 1.2+ | 0.3+ | 1998 10 19 | 699 | 0.4+ | 0.3− | 2002 12 07 | 704 | 0.6− | 0.5+ |
| 1994 08 11 | 809 | (4.4+ | 1.2+) | 1998 10 19 | 699 | 0.6+ | 0.4+ | 2002 12 07 | 704 | 0.6− | 0.4+ |
| 1994 08 11 | 809 | (3.9+ | 0.9+) | 1998 10 29 | 704 | (1.1+ | 2.2−) | 2002 12 07 | 704 | 0.5− | 0.8+ |
| 1994 08 11 | 809 | (3.1+ | 1.4+) | 1998 10 29 | 704 | 0.8− | 0.9− | 2002 12 07 | 704 | 0.1− | 1.2+ |
| 1994 09 03 | 809 | (3.6+ | 0.3−) | 1998 10 29 | 704 | 0.4− | 0.0 | 2002 12 11 | 704 | 0.8− | 0.1+ |
| 1994 09 03 | 809 | (2.5+ | 0.7−) | 1998 10 29 | 704 | (1.6+ | 3.4−) | 2002 12 11 | 704 | 0.9− | 0.1− |
| 1994 09 03 | 809 | (2.8+ | 0.3−) | 2002 09 05 | 704 | 0.4− | 0.2− | 2002 12 11 | 704 | 0.8− | 0.0 |
| 1994 09 04 | 809 | (3.8+ | 1.5−) | 2002 09 05 | 704 | 0.5− | 1.1+ | 2002 12 11 | 704 | 1.2− | 0.4− |
| 1994 09 04 | 809 | (3.9+ | 1.1−) | 2002 09 05 | 704 | 0.4− | 0.9+ | 2002 12 11 | 704 | 1.2− | 0.2− |
| 1994 09 04 | 809 | (3.2+ | 2.7−) | 2002 09 07 | 704 | 0.4− | 0.4+ | 2002 12 30 | 608 | 0.8− | 0.3− |
| 1997 06 26 | 691 | 0.0 | 0.4+ | 2002 09 07 | 704 | (1.7+ | 0.1+) | 2002 12 30 | 608 | 0.9− | 0.3+ |
| 1997 06 26 | 691 | 0.7+ | 0.1+ | 2002 09 07 | 704 | 0.2+ | 0.9+ | 2002 12 30 | 608 | 0.7− | 0.1− |
| 1997 06 26 | 691 | 0.1− | 0.2− | 2002 09 07 | 704 | 0.6− | 1.2+ | 2003 01 02 | 704 | 0.3− | 0.0 |
| 1997 07 02 | 691 | 0.3− | 0.1+ | 2002 10 03 | 704 | 0.4− | 0.2+ | 2003 01 02 | 704 | 0.3+ | 0.2− |
| 1997 07 02 | 691 | 0.1− | 0.5+ | 2002 10 03 | 704 | 0.5+ | 1.1+ | 2003 01 02 | 704 | 0.5+ | 0.2+ |
| 1997 07 02 | 691 | 0.6− | 0.4+ | 2002 10 03 | 704 | 0.8− | 0.1− | 2003 01 03 | 704 | (2.0− | 0.0 ) |
| 1997 07 08 | 691 | 0.3− | 0.5− | 2002 10 03 | 704 | 0.9− | 0.6− | 2003 01 03 | 704 | 0.0 | 0.7+ |
| 1997 07 08 | 691 | 0.4− | 0.5− | 2002 10 09 | 704 | 0.8+ | 0.7+ | 2003 01 03 | 704 | 0.5+ | 0.6− |
| 1997 07 08 | 691 | 0.0 | 0.4− | 2002 10 09 | 704 | 0.8+ | 1.2+ | 2003 01 03 | 704 | 0.6+ | 0.5+ |
| 1998 09 12 | 691 | 0.2+ | 0.4− | 2002 10 09 | 704 | 1.2+ | 0.0 | 2003 01 27 | 644 | 0.1− | 0.4+ |
| 1998 09 12 | 691 | 0.3+ | 0.4− | 2002 10 09 | 704 | (0.4+ | 1.8+) | 2003 01 27 | 644 | 0.1+ | 0.5+ |
| 1998 09 12 | 691 | 0.3+ | 0.1− | 2002 10 09 | 704 | 0.5− | 0.7+ | 2003 01 27 | 644 | 0.1+ | 0.5+ |
| 1998 09 15 | 699 | 0.9+ | 0.9+ | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2004 04 14 | 691 | 0.2+ | 0.5+ |
| 1998 09 15 | 699 | 0.7+ | 1.3+ | 2002 10 11 | 704 | 0.4+ | 0.5− | 2004 04 14 | 691 | 0.5+ | 0.7+ |
| 1998 09 15 | 699 | (2.6+ | 0.9+) | 2002 10 11 | 704 | 0.2+ | 1.1− | 2004 04 14 | 691 | 0.3+ | 0.5+ |
| 1998 09 18 | 704 | 1.3+ | 0.4− | 2002 10 11 | 704 | 0.0 | 0.7− | 2006 11 17 | 704 | 1.0+ | 0.8− |
| 1998 09 18 | 704 | 0.3+ | 1.4+ | 2002 10 11 | 704 | 0.4− | 0.9− | 2006 11 17 | 704 | 1.0+ | 1.4− |
| 1998 09 18 | 704 | 0.7− | 1.6+ | 2002 10 31 | 644 | 0.5− | 0.1+ | 2006 11 17 | 704 | 1.3+ | 0.8− |
| 1998 09 18 | 704 | 1.1− | 1.1− | 2002 10 31 | 644 | 0.4− | 0.0 | 2006 11 17 | 704 | (0.9+ | 1.7−) |
| 1998 09 19 | 691 | 0.3+ | 0.3− | 2002 10 31 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.5+ | 1.0− |
| 1998 09 19 | 691 | 0.1+ | 0.3− | 2002 11 05 | 699 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.7+ | 1.0− |
| 1998 09 19 | 691 | 0.1+ | 0.3− | 2002 11 05 | 699 | 0.2− | 0.1+ | 2006 11 18 | 704 | (1.7+ | 0.5−) |
| 1998 09 25 | 699 | 1.2− | 1.2+ | 2002 11 05 | 699 | 0.2− | 0.3+ | 2006 11 18 | 704 | 1.1+ | 0.6+ |
| 1998 09 25 | 699 | 0.3+ | 0.3+ | 2002 11 05 | 699 | 1.0− | 0.7+ | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 1998 09 25 | 699 | 0.2+ | 1.4+ | 2002 11 07 | 704 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.5− |
| 1998 10 01 | 691 | 0.8− | 0.2− | 2002 11 07 | 704 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.4− |
| 1998 10 01 | 691 | 0.8− | 0.3− | 2002 11 07 | 704 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.6− |
| 1998 10 01 | 691 | 0.4− | 0.5− | 2002 11 07 | 704 | 0.2− | 0.2− | 2006 11 20 | 704 | 1.0+ | 1.2− |
| 1998 10 10 | 699 | 0.4− | 1.1+ | 2002 11 07 | 704 | 0.6− | 0.3+ | 2006 11 20 | 704 | 1.0+ | 0.6− |
| 1998 10 10 | 699 | 0.1+ | 0.3− | 2002 11 11 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.3− |
| 1998 10 10 | 699 | 0.6+ | 0.1+ | 2002 11 11 | 704 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 704 | 0.9+ | 1.5+ | 2002 11 11 | 704 | 0.6+ | 0.6− | 2006 11 20 | 691 | 0.6− | 0.3− |
| 1998 10 14 | 704 | 0.9+ | 1.5+ | 2002 11 11 | 704 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 1998 10 14 | 704 | 1.8− | 1.7+ | 2002 11 11 | 704 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.1− |
| 1998 10 14 | 704 | 0.8+ | 1.7+ | 2002 12 01 | 704 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 1998 10 14 | 704 | (3.0− | 1.8+) | 2002 12 01 | 704 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3− | 0.3− |
| 1998 10 17 | 699 | 0.2+ | 0.3− | 2002 12 01 | 704 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.5− | 0.1+ |
| 1998 10 17 | 699 | 0.2+ | 1.2+ | 2002 12 01 | 704 | 0.0 | 0.2+ | | | | |

**(136626)**∗ **1994 PX$_{18}$ = 1998 QC$_{109}$**

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 3129)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 351.55630 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24302501 | $\omega$ | 2.61073 | | +0.93004274 | +0.35430674 | |
| *a* | 2.5431310 | $\Omega$ | 335.91467 | | −0.34130695 | +0.73476742 | |
| *e* | 0.1846300 | *i* | 13.80835 | | −0.13612522 | +0.57843200 | |
| *P* | 4.06 | *H* | 15.7 | *G* | 0.15 | *U* | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 12 | 809 | 0.3− | 0.6+ | 2002 08 31 | 704 | 0.3− | 1.4− | 2004 01 19 | 704 | 0.3+ | 1.0+ |
| 1994 08 12 | 809 | 0.3+ | 1.0+ | 2002 09 02 | 608 | (2.3+ | 1.5+) | 2006 05 28 | E12 | 0.3+ | 0.3+ |
| 1994 08 12 | 809 | 0.1− | 0.9+ | 2002 09 02 | 608 | (1.7+ | 1.7+) | 2006 05 28 | E12 | 1.1+ | 0.5+ |
| 1994 08 13 | 809 | (1.6+ | 2.8+) | 2002 09 02 | 608 | (1.6+ | 1.1+) | 2006 05 28 | E12 | 0.2+ | 0.9+ |
| 1994 08 13 | 809 | (1.7+ | 2.9+) | 2002 09 05 | 704 | 0.5− | 0.4− | 2006 05 28 | E12 | 0.7− | 0.4+ |
| 1994 08 13 | 809 | (1.6+ | 3.1+) | 2002 09 05 | 704 | 0.2+ | 0.6− | 2006 07 31 | E12 | 0.2− | 0.3+ |
| 1994 09 03 | 809 | (2.3− | 1.1−) | 2002 09 05 | 704 | 0.9− | 0.5− | 2006 07 31 | E12 | 0.1− | 0.3+ |
| 1994 09 03 | 809 | 0.4− | 0.9− | 2002 09 05 | 704 | 0.4− | 0.1− | 2006 07 31 | E12 | 0.2− | 0.3+ |
| 1994 09 03 | 809 | 1.2− | 1.0− | 2002 09 05 | 704 | 0.1+ | 0.2+ | 2006 07 31 | E12 | 0.6− | 0.0 |
| 1994 09 04 | 809 | 1.4+ | 0.5+ | 2002 09 06 | 704 | 0.1+ | 0.4− | 2006 08 13 | 644 | 0.2+ | 0.3+ |
| 1994 09 04 | 809 | 1.5+ | 0.2− | 2002 09 06 | 704 | 0.4− | 0.5− | 2006 08 13 | 644 | 0.1+ | 0.3+ |
| 1994 09 04 | 809 | 1.3+ | 0.3+ | 2002 09 06 | 704 | 0.0 | 0.3− | 2006 08 13 | 644 | 0.1+ | 0.3+ |
| 1994 09 05 | 809 | (2.8− | 0.3+) | 2002 09 06 | 704 | 0.3− | 0.2− | 2006 08 19 | 644 | 1.4+ | 0.4+ |
| 1994 09 05 | 809 | (2.4− | 0.7−) | 2002 09 08 | 608 | 0.0 | 0.2+ | 2006 08 19 | 644 | 0.4+ | 0.3+ |
| 1994 09 05 | 809 | (3.5− | 0.2+) | 2002 09 08 | 608 | 0.2+ | 0.2+ | 2006 08 19 | 644 | 0.4+ | 0.3+ |
| 1994 09 06 | 809 | 0.3+ | 1.1− | 2002 09 08 | 608 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.4+ |
| 1994 09 06 | 809 | 0.7− | 0.7− | 2002 09 13 | 608 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.3+ | 0.5+ |
| 1994 09 06 | 809 | 0.5− | 0.9− | 2002 09 13 | 608 | 0.3+ | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.4+ |
| 1998 08 17 | 704 | 0.4+ | 1.1+ | 2002 09 13 | 608 | 0.3+ | 0.0 | 2006 08 28 | 704 | 0.3+ | 0.4− |
| 1998 08 17 | 704 | (2.0+ | 0.0 ) | 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 08 28 | 704 | 0.8− | 0.9− |
| 1998 08 17 | 704 | 1.6+ | 0.6+ | 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 08 28 | 704 | 0.8− | 0.4− |
| 1998 08 17 | 704 | 0.8+ | 1.3+ | 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 08 28 | 704 | 0.1− | 1.0− |
| 1998 08 17 | 704 | 0.7+ | 0.0 | 2002 10 02 | 608 | 1.1− | 0.9+ | 2006 09 26 | 704 | 0.1− | 1.1+ |
| 1998 08 23 | 699 | 0.2+ | 1.2− | 2002 10 02 | 608 | 0.6− | 1.3+ | 2006 09 26 | 704 | 1.3+ | 0.7+ |
| 1998 08 23 | 699 | 1.2− | 0.3+ | 2002 10 02 | 608 | 1.1− | 0.5+ | 2006 09 26 | 704 | 0.4+ | 0.8+ |
| 1998 08 23 | 699 | 0.5+ | 1.5− | 2002 10 03 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.2− |
| 1998 09 21 | 699 | 0.6− | 0.7+ | 2002 10 03 | 704 | 0.2+ | 0.6+ | 2006 10 10 | E12 | 0.8+ | 0.6− |
| 1998 09 21 | 699 | 1.1+ | 0.2− | 2002 10 03 | 704 | 0.0 | 0.3+ | 2006 10 10 | E12 | 0.4+ | 0.2+ |
| 1998 09 21 | 699 | 1.3+ | 0.2− | 2002 10 03 | 704 | 0.5− | 0.0 | 2006 10 10 | E12 | 0.1+ | 0.2− |
| 2002 08 11 | 644 | 0.3− | 0.1− | 2002 10 03 | 704 | 0.5+ | 0.3+ | 2006 10 10 | E12 | 0.3− | 0.4+ |
| 2002 08 11 | 644 | 0.4− | 0.4− | 2002 10 07 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2002 08 11 | 644 | 0.3− | 0.3− | 2002 10 07 | 704 | 1.2+ | 0.7− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 08 13 | 704 | 0.5− | 0.8− | 2002 10 07 | 704 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2002 08 13 | 704 | 0.7− | 0.2− | 2002 10 11 | 704 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 08 13 | 704 | 0.7− | 0.5− | 2002 10 11 | 704 | 1.5− | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2002 08 13 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.7− | 1.5+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2002 08 19 | 644 | 0.3− | 1.0− | 2002 10 11 | 704 | 1.0− | 0.8+ | 2006 10 28 | G96 | 0.5+ | 0.0 |
| 2002 08 19 | 644 | 0.6− | 0.2− | 2002 10 11 | 704 | 1.4− | 1.1+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.9− | 0.3− | 2003 12 30 | 704 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.0 |
| 2002 08 29 | 644 | 0.2+ | 0.2− | 2003 12 30 | 704 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2002 08 29 | 644 | 0.3+ | 0.1− | 2003 12 30 | 704 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2003 12 30 | 704 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.3+ | 0.2+ |
| 2002 08 31 | 704 | 0.8− | 0.8− | 2004 01 19 | 704 | 0.9− | 1.2+ | | | | |
| 2002 08 31 | 704 | (0.4− | 1.6−) | 2004 01 19 | 704 | 0.5+ | 0.5+ | | | | |

**(136627)**∗ **1994 PM$_{19}$ = 2000 SK$_{199}$**

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. M. E. Sansaturio (*MPO* 14733)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 67.95234 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17149705 | $\omega$ | 142.85180 | | +0.38913985 | +0.92112284 | |
| *a* | 3.2084722 | $\Omega$ | 150.04532 | | −0.84996997 | +0.36328222 | |
| *e* | 0.2024145 | *i* | 1.16408 | | −0.35513551 | +0.13985260 | |
| *P* | 5.75 | *H* | 15.7 | *G* | 0.15 | *U* | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 12 | 809 | (4.4− | 2.9−) | 2004 03 17 | 691 | 0.4+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 1994 08 12 | 809 | (2.4− | 1.7−) | 2004 03 17 | 691 | 0.6+ | 1.0+ | 2006 10 02 | 691 | 0.3+ | 0.3− |
| 1994 08 12 | 809 | 1.7− | 0.8− | 2004 03 17 | 691 | 0.1+ | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 1994 08 13 | 809 | 1.3+ | 1.3+ | 2004 04 25 | 691 | 0.3+ | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.3+ |
| 1994 08 13 | 809 | 0.5+ | 0.2− | 2004 04 25 | 691 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.0 |
| 1994 08 13 | 809 | 0.6+ | 1.6+ | 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 1994 09 05 | 809 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.4− | 0.5− | 2006 10 19 | 691 | 0.2− | 0.1− |
| 1994 09 05 | 809 | 0.5− | 0.2− | 2006 07 21 | G96 | 0.8− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 1994 09 06 | 809 | 0.1+ | 1.2+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1994 09 06 | 809 | 0.7− | 1.3+ | 2006 07 21 | G96 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 1994 09 06 | 809 | 1.4− | 2.0+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2000 09 24 | 704 | 1.6− | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2000 09 24 | 704 | 0.7− | 0.1− | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2000 09 24 | 704 | 0.4− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.7− | 1.0+ | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2000 10 01 | 704 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2000 10 01 | 704 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2000 10 01 | 704 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− |

**(136628)**∗ **1994 PL$_{21}$ = 3067 T-3**

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. A. Gnädig (MPC 32459)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 31.42858 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17116323 | $\omega$ | 213.39574 | | +0.95350409 | +0.30102333 | |
| *a* | 3.2126425 | $\Omega$ | 129.07824 | | −0.27221165 | +0.88107826 | |
| *e* | 0.1418531 | *i* | 1.08207 | | −0.12934748 | +0.36480962 | |
| *P* | 5.76 | *H* | 15.1 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 0.0 | 2.3− | 2000 10 02 | 704 | 1.0− | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 1977 10 16 | 675 | 1.5+ | 1.8− | 2000 10 02 | 704 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1977 10 17 | 675 | 1.3− | 0.3− | 2000 10 02 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 1977 10 17 | 675 | 0.6− | 0.0 | 2002 01 08 | 704 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1977 10 21 | 675 | 0.8+ | 0.6+ | 2002 01 08 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1977 10 21 | 675 | 0.5− | 0.0 | 2002 01 08 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 1994 08 12 | 809 | (2.7+ | 0.8+) | 2003 02 22 | 699 | 0.4− | 0.6− | 2006 10 19 | 691 | 0.0 | 0.0 |
| 1994 08 12 | 809 | (2.1+ | 0.5+) | 2003 02 22 | 699 | 1.0+ | 1.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 1994 08 12 | 809 | 1.5+ | 0.4− | 2003 02 22 | 699 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 1994 08 13 | 809 | 1.7+ | 0.1− | 2003 02 22 | 699 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 1994 08 13 | 809 | 0.5+ | 0.1− | 2003 03 30 | 645 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1994 08 13 | 809 | 1.4+ | 0.2− | 2003 03 30 | 645 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1994 09 05 | 809 | 1.1+ | 1.0− | 2004 04 12 | 644 | 0.7+ | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 1994 09 05 | 809 | (2.6+ | 0.1+) | 2004 04 12 | 644 | 0.3+ | 0.7+ | 2006 10 21 | 703 | 0.6− | 0.6− |
| 1994 09 05 | 809 | 1.5+ | 1.4− | 2004 04 12 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.9− | 0.9+ |
| 1994 09 06 | 809 | (3.3+ | 1.0−) | 2004 04 21 | 704 | 0.7− | 1.0+ | 2006 10 21 | 703 | 0.5+ | 0.4+ |
| 1994 09 06 | 809 | (2.4+ | 0.8−) | 2004 04 21 | 704 | 0.2− | 1.2+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 1994 09 06 | 809 | (2.6+ | 1.0−) | 2004 04 21 | 704 | 1.5− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 04 | 699 | 0.9− | 0.2+ | 2004 04 22 | 691 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2000 09 04 | 699 | 1.0− | 0.3− | 2004 04 22 | 691 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.1+ | |
| 2000 09 04 | 699 | 1.4− | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.8+ | 2006 10 23 | 691 | 0.1+ | 0.4+ | |
| 2000 09 04 | 699 | 1.3− | 0.5− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ | |
| 2000 09 21 | 608 | 0.2− | 0.9− | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2000 09 21 | 608 | 0.3− | 0.5− | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2000 09 21 | 608 | 0.2− | 0.7− | 2006 07 21 | G96 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2000 09 24 | 704 | 0.1− | 0.8+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ | |
| 2000 09 24 | 704 | 0.9+ | 1.7+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.1− | |
| 2000 09 24 | 704 | 0.1+ | 1.6+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.0 | |
| 2000 09 24 | 704 | 0.4− | 1.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 07 | 644 | 0.4− | 0.0 | |
| 2000 09 24 | 704 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 07 | 644 | 0.1− | 0.0 | |
| 2000 09 26 | 704 | 0.7− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 07 | 644 | 0.2+ | 0.4+ | |
| 2000 09 26 | 704 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.8− | |
| 2000 09 26 | 704 | 0.5− | 0.2− | 2006 09 26 | 683 | 1.4+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 1.4− | |
| 2000 09 26 | 704 | 0.0 | 0.4+ | 2006 09 26 | 683 | (0.4− | 2.0−) | 2006 11 11 | 703 | 0.1− | 0.1− | |
| 2000 09 26 | 704 | 0.4− | 0.7+ | 2006 09 26 | 683 | 1.2+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.8− | |
| 2000 09 29 | 327 | 0.1+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.5− | |
| 2000 09 29 | 327 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.6− | 0.9+ | 2006 11 14 | G96 | 0.7+ | 0.5− | |
| 2000 09 29 | 327 | 0.5− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.4− | |
| 2000 10 01 | 704 | 0.3− | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− | |
| 2000 10 01 | 704 | 0.4− | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 1.0− | |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.3− | |
| 2000 10 01 | 704 | 0.4− | 0.7− | 2006 10 03 | 704 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.7+ | 0.4− | |
| 2000 10 01 | 699 | 0.2− | 0.3+ | 2006 10 03 | 704 | 0.1− | 0.7+ | 2006 11 21 | 691 | 0.4− | 0.1+ | |
| 2000 10 01 | 699 | 0.8+ | 0.7+ | 2006 10 03 | 704 | 1.1− | 1.0+ | 2006 11 21 | 691 | 0.4+ | 0.3− | |
| 2000 10 01 | 699 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.5− | 0.3+ | |
| 2000 10 01 | 699 | 0.5+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.2+ | | | | | |
| 2000 10 02 | 704 | 0.4− | 0.7− | 2006 10 11 | 691 | 0.3+ | 0.1+ | | | | | |

**(136629)∗ 1994 PB$_{29}$ = 2002 VP$_{67}$**

Discovered 1994 Aug. 12 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 37042)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.81458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25475858 | $\omega$ | 233.67198 | | +0.94565076 | +0.32066962 | |
| $a$ | 2.4644320 | $\Omega$ | 107.56974 | | −0.27724785 | +0.88183215 | |
| $e$ | 0.2140575 | $i$ | 3.24691 | | −0.16993610 | +0.34574998 | |
| $P$ | 3.87 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.3− | 1.1− | 2002 11 10 | 704 | 0.6+ | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.7− | |
| 1993 03 25 | 691 | 0.0 | 0.8− | 2002 11 10 | 704 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.2− | 0.5− | |
| 1993 03 25 | 691 | 0.5− | 0.5− | 2002 11 11 | 704 | 0.2+ | 0.5− | 2006 11 13 | 703 | (2.2− | 0.3−) | |
| 1994 08 12 | 809 | 0.9− | 0.1+ | 2002 11 11 | 704 | 1.3+ | 0.4− | 2006 11 13 | 703 | 0.3− | 0.3− | |
| 1994 08 12 | 809 | 0.7− | 0.1+ | 2002 11 11 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.4+ | 1.1− | |
| 1994 08 12 | 809 | 1.5− | 0.4+ | 2002 11 11 | 704 | 0.5+ | 0.4− | 2006 11 13 | 703 | 0.2− | 0.7− | |
| 1994 08 13 | 809 | 1.3+ | 0.3+ | 2002 11 11 | 704 | 0.9+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.5+ | |
| 1994 08 13 | 809 | 1.1+ | 0.3− | 2002 11 11 | 704 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.1+ | 0.7+ | |
| 1994 08 13 | 809 | 1.0+ | 0.8− | 2002 11 11 | 704 | 0.2− | 0.5− | 2006 11 14 | 704 | 0.0 | 0.4− | |
| 1994 09 05 | 809 | 0.7+ | 1.1+ | 2002 11 11 | 704 | 0.6− | 1.1− | 2006 11 14 | 704 | 1.0− | 1.3− | |
| 1994 09 05 | 809 | 0.4− | 1.0+ | 2004 02 12 | 691 | 0.3+ | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.2− | |
| 1994 09 05 | 809 | 0.9− | 0.9+ | 2004 02 12 | 691 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.2− | |
| 1994 09 06 | 809 | 0.3+ | 0.4− | 2004 02 12 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.1− | |
| 1994 09 06 | 809 | 0.2− | 1.4− | 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.8+ | |
| 1994 09 06 | 809 | 0.6− | 0.3− | 2005 05 14 | G96 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 1.0+ | |
| 2002 10 11 | 704 | 0.2+ | 1.1− | 2005 05 14 | G96 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.6+ | 0.3+ | |
| 2002 10 11 | 704 | (1.8− | 1.7−) | 2005 05 14 | G96 | 0.2+ | 0.3+ | 2006 11 20 | 704 | (1.6+ | 0.2−) | |
| 2002 10 11 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 695 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.1+ | |
| 2002 10 11 | 704 | (0.3− | 2.6−) | 2006 10 19 | 695 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.5− | 0.2+ | |
| 2002 10 11 | 704 | 0.9+ | 0.8− | 2006 10 22 | G96 | 0.2+ | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.5+ | |
| 2002 10 26 | 608 | 0.1− | 0.8+ | 2006 10 22 | G96 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.7+ | |
| 2002 10 26 | 608 | 0.1− | 1.0+ | 2006 10 22 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.3− | 0.1+ | |
| 2002 10 26 | 608 | 0.5− | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ | |
| 2002 10 31 | 608 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2− | 0.0 | |
| 2002 10 31 | 608 | 0.7− | 1.2− | 2006 11 09 | 644 | 0.5+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2+ | |
| 2002 10 31 | 608 | 0.2+ | 0.7− | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.4+ | |
| 2002 11 07 | 704 | 1.0− | 1.3− | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ | |
| 2002 11 07 | 704 | (2.0− | 0.8+) | 2006 11 09 | 644 | 0.5− | 0.4− | 2006 11 29 | 704 | 0.6− | 1.0+ | |
| 2002 11 07 | 704 | (0.7− | 1.9+) | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.8+ | 0.1− | |
| 2002 11 07 | 704 | 0.3+ | 0.6+ | 2006 11 12 | G96 | 0.3+ | 0.5− | 2006 11 29 | 704 | 0.3− | 1.0+ | |
| 2002 11 10 | 704 | 1.4+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.8− | 2006 11 29 | 704 | 0.1+ | 1.2+ | |

**(136630)∗ 1994 RJ$_5$ = 1998 HB$_{68}$**

Discovered 1994 Sept. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 93684)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.23553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17300916 | $\omega$ | 281.09943 | | −0.51311079 | +0.85708419 | |
| $a$ | 3.1897500 | $\Omega$ | 317.92532 | | −0.75821123 | −0.47777565 | |
| $e$ | 0.1071933 | $i$ | 3.94371 | | −0.40228479 | −0.19270996 | |
| $P$ | 5.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.4+ | 0.9+ | 2001 12 19 | 704 | 0.1+ | 0.3+ | 2005 06 18 | G96 | 0.5+ | 0.3+ | |
| 1994 09 11 | 691 | 0.7+ | 0.0 | 2001 12 19 | 704 | 0.7+ | 1.0+ | 2005 06 18 | G96 | 0.1+ | 0.4+ | |
| 1994 09 11 | 691 | 1.2− | 0.3+ | 2001 12 19 | 704 | 0.8+ | 0.6+ | 2005 08 06 | 644 | 0.4− | 0.0 | |
| 1994 09 12 | 691 | 0.1+ | 1.1− | 2002 12 14 | 645 | 0.1− | 0.1− | 2005 08 06 | 644 | 0.1− | 0.2+ | |
| 1994 09 12 | 691 | 0.1− | 0.6− | 2002 12 14 | 645 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.4− | 0.0 | |
| 1994 09 12 | 691 | 0.2− | 0.1− | 2003 01 05 | 291 | 0.1− | 0.3+ | 2005 08 29 | 699 | 0.0 | 0.6− | |
| 1994 09 13 | 691 | 0.8− | 0.7− | 2003 01 05 | 291 | 0.0 | 0.4+ | 2005 08 29 | 699 | 0.2+ | 1.2+ | |
| 1994 09 13 | 691 | 0.3+ | 0.5+ | 2003 01 05 | 291 | 0.3− | 0.4+ | 2005 08 29 | 699 | 0.7− | 0.6+ | |
| 1994 09 13 | 691 | 0.4+ | 0.1− | 2003 01 27 | 291 | 0.1+ | 0.0 | 2005 08 29 | 699 | 1.2+ | 1.3+ | |
| 1997 02 06 | 691 | 0.1− | 0.8+ | 2003 01 27 | 291 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.0 | |
| 1997 02 06 | 691 | (3.7− | 2.4+) | 2003 01 27 | 291 | 0.6− | 0.0 | 2006 10 04 | G96 | 0.4+ | 0.2− | |
| 1997 02 06 | 691 | 1.0+ | 0.7+ | 2003 01 28 | 645 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1− | |
| 1997 02 14 | 691 | 0.3− | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.0 | 0.5− | |
| 1997 02 14 | 691 | 0.5+ | 0.5− | 2003 03 06 | 644 | 0.7+ | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.3+ | |
| 1997 02 14 | 691 | 0.0 | 0.4− | 2003 03 06 | 644 | 0.7+ | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.3+ | |
| 1998 04 21 | 704 | 1.8+ | 0.0 | 2003 03 06 | 644 | 0.9+ | 0.3+ | 2006 10 13 | 691 | 0.2− | 0.4+ | |
| 1998 04 21 | 704 | 0.2+ | 1.5+ | 2003 03 12 | 644 | 0.4+ | 0.5+ | 2006 10 21 | 691 | 0.9− | 0.3+ | |
| 1998 04 21 | 704 | 0.0 | 0.8− | 2003 03 12 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.3+ | |
| 1998 04 21 | 704 | (2.5− | 0.0 ) | 2003 03 12 | 644 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.0 | |
| 1998 04 21 | 704 | 1.1− | 1.8+ | 2004 05 22 | 704 | 0.7+ | 1.4+ | 2006 11 27 | 291 | 0.1+ | 0.1+ | |
| 1998 04 22 | 704 | 1.0+ | 1.3+ | 2004 05 22 | 704 | (0.2+ | 1.8+) | 2006 11 27 | 291 | 0.2− | 0.2+ | |
| 1998 04 22 | 704 | 0.6+ | 1.5+ | 2004 05 22 | 704 | 0.9+ | 1.0+ | 2006 11 27 | 291 | 0.2+ | 0.3+ | |
| 1998 04 22 | 704 | 0.1− | 1.2+ | 2005 06 18 | G96 | 0.4− | 0.5+ | | | | | |
| 2001 12 19 | 704 | (0.2− | 1.6−) | 2005 06 18 | G96 | 0.3− | 0.4+ | | | | | |

**(136631)∗ 1994 RR$_6$ = 1998 TU$_{28}$**

Discovered 1994 Sept. 12 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 6720)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.43933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25945911 | $\omega$ | 194.48529 | | +0.37545066 | −0.92646479 | |
| $a$ | 2.4345766 | $\Omega$ | 233.46928 | | +0.85360325 | +0.35676172 | |
| $e$ | 0.1705766 | $i$ | 1.88659 | | +0.36110704 | +0.11993355 | |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 691 | 0.2− | 0.0 | 2002 12 05 | 704 | 0.2− | 0.1+ | 2004 04 24 | 691 | 0.1+ | 0.1− | |
| 1994 09 12 | 691 | 0.1+ | 0.2+ | 2002 12 05 | 704 | 0.1+ | 0.6+ | 2004 04 24 | 691 | 0.2− | 0.4+ | |
| 1994 09 12 | 691 | 0.1− | 0.2+ | 2002 12 10 | 704 | (0.6− | 1.6+) | 2004 04 24 | 691 | 0.2+ | 0.4+ | |
| 1994 09 14 | 691 | 0.5− | 0.4+ | 2002 12 10 | 704 | 0.2− | 0.9+ | 2004 05 14 | 691 | 0.2+ | 0.2+ | |
| 1994 09 14 | 691 | 0.4+ | 0.1+ | 2002 12 10 | 704 | 0.1+ | 0.2− | 2004 05 14 | 691 | 0.5+ | 0.0 | |
| 1994 09 14 | 691 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.3− | 0.9+ | 2004 05 14 | 691 | 0.3+ | 0.5+ | |
| 1994 09 27 | 691 | 0.4− | 0.8− | 2002 12 10 | 704 | 0.3− | 0.4+ | 2004 05 23 | 926 | 0.0 | 1.4+ | |
| 1994 09 27 | 691 | 0.2− | 0.2− | 2002 12 10 | 704 | 1.2− | 0.5+ | 2004 05 23 | 926 | (0.2+ | 1.6+) | |
| 1994 09 27 | 691 | 0.3− | 0.5− | 2002 12 13 | 704 | 1.0+ | 0.9+ | 2004 05 23 | 926 | (1.7− | 7.5−) | |
| 1998 10 15 | 691 | 0.5+ | 0.1+ | 2002 12 13 | 704 | 0.5− | 0.1− | 2005 07 07 | 691 | 0.2+ | 0.6+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 15 | 691 | 1.0+ | 0.5+ | 2002 12 13 | 704 | 0.9− | 0.1− | 2005 07 07 | 691 | 0.2− | 0.0 |
| 1998 10 15 | 691 | 0.8+ | 0.4+ | 2002 12 13 | 704 | 0.3+ | 0.2+ | 2005 07 07 | 691 | 0.3− | 0.1+ |
| 1998 10 20 | 691 | 0.5− | 0.3+ | 2002 12 14 | 704 | (0.9− | 2.1+) | 2006 10 21 | G96 | 0.3− | 0.4− |
| 1998 10 20 | 691 | 0.7− | 0.5+ | 2002 12 14 | 704 | (0.1+ | 2.8+) | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 1998 10 20 | 691 | 0.2− | 0.3+ | 2002 12 14 | 704 | (0.1− | 2.6+) | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 1998 11 15 | 691 | 0.1+ | 0.3− | 2002 12 31 | 704 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1998 11 15 | 691 | 0.7− | 0.5− | 2002 12 31 | 704 | 0.6+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 1998 11 15 | 691 | 0.3− | 0.4− | 2002 12 31 | 704 | 0.2− | 0.6− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 1998 11 19 | 691 | 0.5+ | 0.3+ | 2002 12 31 | 704 | 0.4− | 0.1− | 2006 10 22 | G96 | 0.4+ | 1.0+ |
| 1998 11 19 | 691 | 0.9+ | 0.0 | 2002 12 31 | 704 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 1998 11 19 | 691 | 0.4+ | 0.1+ | 2003 01 08 | 704 | 1.3− | 0.1− | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2003 01 08 | 704 | 0.9− | 1.0+ | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2003 01 08 | 704 | 0.3− | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.7− | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.1− |

**(136632)∗ 1994 $SG_5$ = 2000 $CW_{122}$**

Discovered 1994 Sept. 28 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 3131)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 218.35583 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.25982081 | $\omega$ | 177.53110 | −0.93191363 | +0.36203433 | |
| $a$ | 2.4323165 | $\Omega$ | 23.72984 | −0.33366712 | −0.83245687 | |
| $e$ | 0.1621878 | $i$ | 3.08197 | −0.14213807 | −0.41946002 | |
| $P$ | 3.79 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.0 | 0.3+ | 2004 03 11 | 644 | 0.0 | 0.2− | 2004 04 14 | 699 | 0.4− | 0.3− |
| 1994 09 28 | 691 | 0.1+ | 0.1+ | 2004 03 15 | 691 | 0.1− | 0.2+ | 2004 04 24 | 691 | 0.4− | 0.1− |
| 1994 09 28 | 691 | 0.7+ | 0.2+ | 2004 03 15 | 691 | 0.0 | 0.2+ | 2004 04 24 | 691 | 0.4− | 0.1− |
| 1994 09 29 | 691 | 0.3− | 0.3+ | 2004 03 15 | 691 | 0.0 | 0.2+ | 2004 04 24 | 691 | 0.2− | 0.1− |
| 1994 09 29 | 691 | 0.3− | 0.2− | 2004 03 15 | 704 | 0.5− | 0.1− | 2004 05 16 | 704 | 0.6− | 1.4+ |
| 1994 09 29 | 691 | 0.3− | 0.2− | 2004 03 15 | 704 | 0.4− | 0.0 | 2004 05 16 | 704 | 0.2− | 0.1+ |
| 1994 10 04 | 691 | 0.3− | 0.3+ | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2004 05 16 | 704 | 0.5+ | 0.1− |
| 1994 10 04 | 691 | 0.6− | 0.7+ | 2004 03 15 | 704 | 0.1− | 0.5+ | 2004 05 16 | 704 | 0.0 | 0.6+ |
| 1994 10 04 | 691 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.4− | 0.4+ | 2005 08 04 | 644 | 0.2− | 0.6+ |
| 2000 02 03 | 704 | 0.4+ | 0.7− | 2004 03 19 | 704 | 0.8+ | 0.6+ | 2005 08 04 | 644 | 0.2− | 0.6+ |
| 2000 02 03 | 704 | 0.4− | 0.1+ | 2004 03 19 | 704 | 0.7+ | 0.6+ | 2005 08 04 | 644 | 0.1+ | 0.4+ |
| 2000 02 03 | 704 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2005 08 05 | 644 | 0.0 | 0.8+ |
| 2000 02 03 | 704 | 1.1+ | 0.8− | 2004 03 19 | 704 | 0.1+ | 0.3− | 2005 08 05 | 644 | 0.2− | 0.9+ |
| 2000 02 03 | 704 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.2+ | 2005 08 05 | 644 | 0.3− | 0.9+ |
| 2000 02 11 | 704 | 0.1− | 0.3− | 2004 03 20 | 699 | 0.4− | 0.5− | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2000 02 11 | 704 | 0.5+ | 0.4− | 2004 03 20 | 699 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.5− | 0.7− |
| 2000 02 11 | 704 | 0.4− | 0.1+ | 2004 03 20 | 699 | 0.5− | 0.6− | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2000 02 11 | 704 | 0.6+ | 0.4+ | 2004 03 20 | 699 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.5− | 0.7− |
| 2000 02 11 | 704 | 0.4− | 0.7+ | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2000 03 04 | 704 | 0.2+ | 0.1+ | 2004 03 22 | 704 | 0.6+ | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.7− |
| 2000 03 04 | 704 | 0.5− | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.6− |
| 2000 03 04 | 704 | 0.5− | 0.4− | 2004 03 22 | 704 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2000 03 04 | 704 | 0.2− | 0.6− | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 11 01 | G96 | (1.1+ | 1.6−) |
| 2000 03 04 | 704 | 0.1− | 0.7− | 2004 03 28 | 704 | (0.1− | 1.6+) | 2006 11 01 | G96 | 0.2− | 0.6− |
| 2001 08 24 | 644 | 0.6− | 0.6+ | 2004 03 28 | 704 | 0.0 | 1.2+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 08 24 | 644 | 0.0 | 0.3+ | 2004 03 28 | 704 | 0.2+ | 1.3+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2001 08 24 | 644 | 0.3− | 1.1+ | 2004 03 28 | 704 | (0.0 | 1.8+) | 2006 11 10 | 691 | 0.5− | 0.4+ |
| 2004 02 13 | 644 | 0.1+ | 0.3− | 2004 03 28 | 704 | 0.6+ | 1.3+ | 2006 11 10 | 691 | 0.0 | 0.5+ |
| 2004 02 13 | 644 | 0.3+ | 0.1+ | 2004 03 29 | 246 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2004 02 13 | 644 | 0.1+ | 0.6+ | 2004 03 29 | 246 | 0.6+ | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2004 02 16 | 703 | 0.5+ | 0.7− | 2004 03 29 | 246 | 0.5+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2004 02 16 | 703 | (1.6− | 2.0+) | 2004 03 29 | 246 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2004 02 16 | 703 | 0.0 | 0.3+ | 2004 03 29 | 246 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2004 02 16 | 703 | 0.9− | 0.8+ | 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.5+ |
| 2004 02 18 | 704 | 0.4+ | 0.1+ | 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.4+ | 0.3+ |
| 2004 02 18 | 704 | 0.0 | 0.0 | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2004 02 18 | 704 | 0.5+ | 0.1+ | 2004 03 31 | 691 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2004 02 18 | 704 | 0.5+ | 0.1− | 2004 03 31 | 691 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.2− |
| 2004 02 18 | 704 | 1.0+ | 0.2+ | 2004 03 31 | 691 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2004 02 23 | 704 | 0.1+ | 0.1+ | 2004 04 12 | 703 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2004 02 23 | 704 | 0.1− | 0.2+ | 2004 04 12 | 703 | 0.3+ | 0.5+ | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2004 02 23 | 704 | 0.2− | 0.7+ | 2004 04 12 | 703 | 1.1+ | 0.7+ | 2006 11 25 | 691 | 0.2− | 0.2+ |
| 2004 02 23 | 704 | 0.1+ | 0.4− | 2004 04 12 | 703 | 1.0+ | 0.9+ | 2006 11 25 | 691 | 0.2+ | 0.2− |
| 2004 02 23 | 704 | 0.3− | 0.2− | 2004 04 14 | 699 | 0.2− | 0.5+ | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2004 03 11 | 644 | 0.1− | 0.0 | 2004 04 14 | 699 | (1.9+ | 0.9+) | | | | |
| 2004 03 11 | 644 | 0.1+ | 0.2+ | 2004 04 14 | 699 | 0.6− | 0.4+ | | | | |

**(136633)∗ 1994 $SH_6$ = 2000 $TZ_{18}$ = 2003 $JZ_{11}$**

Discovered 1994 Sept. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 46323), A. Doppler (*MPO* 74538)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 260.59880 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.17220373 | $\omega$ | 124.59525 | −0.86631943 | −0.49803993 | |
| $a$ | 3.1996883 | $\Omega$ | 25.59726 | +0.42459516 | −0.77439132 | |
| $e$ | 0.0865204 | $i$ | 5.05095 | +0.26307716 | −0.39022342 | |
| $P$ | 5.72 | $H$ | 15.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 1.2− | 0.0 | 2003 04 05 | 691 | 0.4+ | 1.1+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 1994 09 28 | 691 | 0.5− | 0.2− | 2003 04 05 | 691 | 0.2+ | 1.0+ | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 1994 09 28 | 691 | 0.4− | 0.3− | 2003 04 05 | 691 | 0.0 | 0.9+ | 2006 11 01 | G96 | 0.5− | 0.1+ |
| 1994 10 04 | 691 | 0.4+ | 1.2+ | 2003 05 05 | 291 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.2+ |
| 1994 10 04 | 691 | 0.4− | 0.6+ | 2003 05 05 | 291 | 0.1+ | 0.3+ | 2006 11 07 | A13 | 0.7− | 0.2− |
| 1994 10 11 | 691 | 0.1+ | 0.1+ | 2003 05 05 | 291 | 0.2+ | 0.2+ | 2006 11 07 | A13 | 0.2− | 0.4+ |
| 1994 10 11 | 691 | 0.1+ | 0.7+ | 2003 05 06 | 691 | 0.7+ | 1.0+ | 2006 11 07 | A13 | 0.1+ | 0.5+ |
| 1994 10 11 | 691 | 0.2− | 0.1+ | 2003 05 06 | 691 | 0.9+ | 1.3+ | 2006 11 09 | 691 | 0.4− | 0.3+ |
| 1999 08 15 | I03 | 0.8+ | 0.2+ | 2003 05 06 | 691 | 0.8+ | 1.0+ | 2006 11 09 | 691 | 0.2− | 0.7+ |
| 1999 08 15 | I03 | 0.6− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.3+ | 0.6+ |
| 1999 08 15 | I03 | 1.0+ | 0.9+ | 2006 09 30 | G96 | 0.6− | 0.1+ | 2006 11 11 | 703 | 1.2− | 0.9− |
| 2000 10 01 | 704 | 0.3+ | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.1− | 0.3+ |
| 2000 10 01 | 704 | 0.4+ | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.8+ | 1.2+ |
| 2000 10 01 | 704 | (0.4− | 2.1+) | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2000 11 23 | 691 | 0.5+ | 0.5− | 2006 10 13 | 691 | 0.0 | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2000 11 23 | 691 | 0.6+ | 0.0 | 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.5+ |
| 2000 11 23 | 691 | 0.0 | 0.4+ | 2006 10 17 | 691 | 0.6− | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.6+ |
| 2001 12 15 | 645 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.3− | 0.3+ | | | | |
| 2001 12 15 | 645 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.2− | 0.5+ | | | | |

**(136634)∗ 1994 $SE_7$ = 1992 KY = 1997 $EC_{38}$**

Discovered 1994 Sept. 28 by Spacewatch at Kitt Peak.

Id. A. Doppler (MPC 33244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 201.87726 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.17092390 | $\omega$ | 149.54696 | −0.97389755 | +0.22618959 | |
| $a$ | 3.2156407 | $\Omega$ | 43.53920 | −0.21342835 | −0.88396816 | |
| $e$ | 0.1389725 | $i$ | 1.58237 | −0.07727809 | −0.40919257 | |
| $P$ | 5.77 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 29 | 474 | (1.2− | 2.5+) | 2003 03 06 | 644 | 1.0+ | 0.1− | 2005 08 31 | 691 | 0.0 | 0.7+ |
| 1992 05 29 | 474 | (2.2− | 2.7+) | 2003 03 06 | 644 | 0.4+ | 0.0 | 2005 09 14 | 691 | 0.0 | 1.0+ |
| 1994 09 28 | 691 | 0.4− | 0.1+ | 2003 03 09 | 699 | 0.6+ | 1.0+ | 2005 09 14 | 691 | 0.0 | 0.9+ |
| 1994 09 28 | 691 | 0.5− | 0.1− | 2003 03 09 | 699 | 0.3+ | 0.7+ | 2005 09 14 | 691 | 0.0 | 1.1+ |
| 1994 09 28 | 691 | 0.5− | 0.2− | 2003 03 09 | 704 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.3− |
| 1994 09 29 | 691 | 0.5− | 0.0 | 2003 03 09 | 699 | 0.5+ | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 1994 09 29 | 691 | 0.3− | 0.0 | 2003 03 09 | 704 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 1994 09 29 | 691 | 0.6− | 0.1− | 2003 03 09 | 704 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 1994 10 06 | 691 | 0.9+ | 0.4− | 2003 03 09 | 699 | (1.8+ | 0.8+) | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1994 10 06 | 691 | 0.5+ | 0.5− | 2003 03 09 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 1994 10 06 | 691 | 0.8+ | 0.4− | 2003 03 09 | 704 | 0.6+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1997 03 05 | 704 | 0.3+ | 0.7− | 2003 03 09 | 599 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.0 |
| 1997 03 05 | 704 | 1.0+ | 0.8− | 2003 03 09 | 599 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 1997 03 06 | 704 | 0.6− | 1.5− | 2003 03 09 | 599 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 1997 03 06 | 704 | 0.3+ | 0.1− | 2003 03 10 | 704 | 1.2− | 1.0+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 12 18 | 704 | 1.1+ | 0.6+ | 2003 03 10 | 704 | (0.6+ | 1.9+) | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2001 12 18 | 704 | 1.3+ | 0.8+ | 2003 03 10 | 704 | 0.6+ | 0.5+ | 2006 10 27 | G96 | 0.5− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | (1.9+ | 1.0−) | 2003 03 10 | 704 | 1.4+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.5− | | |
| 2001 12 18 | 704 | 1.1+ | 0.4+ | 2003 03 10 | 704 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.3− | | |
| 2001 12 18 | 704 | (2.1+ | 1.2−) | 2003 03 10 | 291 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2001 12 18 | 704 | 1.1+ | 0.7+ | 2003 03 10 | 291 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.6− | | |
| 2001 12 18 | 704 | 1.0+ | 1.4+ | 2003 03 10 | 291 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2001 12 18 | 704 | 1.0+ | 0.6+ | 2003 03 12 | 291 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2+ | | |
| 2001 12 18 | 704 | 0.4− | 0.3− | 2003 03 12 | 291 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 2001 12 18 | 704 | 0.8− | 0.1+ | 2003 03 12 | 291 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 2001 12 18 | 704 | 0.1+ | 0.4+ | 2003 03 15 | 608 | 0.0 | 0.7− | 2006 10 28 | G96 | 0.3+ | 0.4− | | |
| 2001 12 18 | 704 | 0.3− | 0.1− | 2003 03 15 | 608 | 0.5− | 1.0− | 2006 10 29 | 691 | 0.1− | 0.1+ | | |
| 2001 12 18 | 704 | 0.5− | 0.5+ | 2003 03 15 | 608 | 0.7− | 1.1− | 2006 10 29 | 691 | 0.0 | 0.3+ | | |
| 2001 12 19 | 704 | 0.3− | 0.9− | 2003 03 26 | 699 | 0.5− | 0.6− | 2006 10 29 | 691 | 0.2− | 0.3+ | | |
| 2001 12 19 | 704 | 0.7+ | 0.6+ | 2003 03 26 | 699 | 0.5− | 0.1+ | 2006 11 03 | G96 | 0.0 | 0.6+ | | |
| 2001 12 19 | 704 | 0.6− | 0.4+ | 2003 03 26 | 699 | 0.0 | 0.5− | 2006 11 03 | G96 | 0.0 | 0.1+ | | |
| 2001 12 19 | 704 | 0.8− | 0.4+ | 2003 03 26 | 699 | 1.1− | 0.3− | 2006 11 03 | G96 | 0.0 | 0.3− | | |
| 2001 12 19 | 704 | 0.6− | 0.8+ | 2003 03 27 | 704 | 0.0 | 0.2+ | 2006 11 03 | G96 | 0.0 | 0.1+ | | |
| 2001 12 19 | 704 | 1.5+ | 0.4− | 2003 03 27 | 704 | 0.6− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2001 12 19 | 704 | 1.2+ | 0.6− | 2003 03 27 | 704 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.3+ | | |
| 2001 12 19 | 704 | 1.3+ | 0.4+ | 2003 03 27 | 704 | 0.0 | 0.5+ | 2006 11 10 | 691 | 1.1− | 0.8− | | |
| 2001 12 19 | 704 | 0.4+ | 0.3− | 2003 03 27 | 704 | 0.6− | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.7− | | |
| 2003 02 09 | 608 | 0.3− | 1.2− | 2003 03 31 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− | | |
| 2003 02 09 | 608 | 0.0 | 0.9− | 2003 03 31 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.4− | | |
| 2003 02 09 | 608 | 0.4− | 0.8− | 2003 03 31 | 691 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2003 02 22 | 333 | 0.2+ | 0.2− | 2003 04 09 | 608 | 0.6+ | 0.7− | 2006 11 22 | G96 | 0.6+ | 0.5− | | |
| 2003 02 22 | 333 | 1.3− | 0.3− | 2003 04 09 | 608 | 0.4+ | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.6− | | |
| 2003 02 22 | 333 | 0.0 | 1.0− | 2003 04 09 | 608 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.3+ | 0.5+ | | |
| 2003 03 06 | 699 | 0.5+ | 0.6+ | 2003 04 11 | 691 | 0.6+ | 0.8+ | 2006 11 23 | 691 | 0.2− | 0.2+ | | |
| 2003 03 06 | 699 | 0.6+ | 0.1− | 2003 04 11 | 691 | 0.4+ | 0.9+ | 2006 11 23 | 691 | 0.1+ | 0.3+ | | |
| 2003 03 06 | 699 | 0.9− | 0.1+ | 2003 04 11 | 691 | 0.1+ | 0.9+ | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2003 03 06 | 699 | 0.6+ | 0.5+ | 2005 08 31 | 691 | 0.2− | 0.9+ | | | | | | |
| 2003 03 06 | 644 | 0.6+ | 0.2− | 2005 08 31 | 691 | 0.2+ | 0.6+ | | | | | | |

**(136635)∗ 1994 VA$_1$**

Discovered 1994 Nov. 5 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.84756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.49944368 | $\omega$ | 310.87069 | | −0.99362343 | +0.04243577 | |
| $a$ | 1.5733006 | $\Omega$ | 231.82305 | | −0.00695211 | −0.94776490 | |
| $e$ | 0.1746900 | $i$ | 7.63614 | | −0.11253510 | −0.31613432 | |
| $P$ | 1.97 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 05 | 691 | 0.1− | 0.0 | 1998 10 27 | 658 | 0.8+ | 0.3− | 2003 01 14 | 711 | (1.0+ | 2.9−) | | |
| 1994 11 05 | 691 | 0.4− | 0.3+ | 1998 10 27 | 658 | 0.5− | 0.0 | 2004 10 08 | 696 | 0.5− | 0.6− | | |
| 1994 11 05 | 691 | 0.2− | 0.2+ | 1998 11 16 | 691 | 0.7+ | 0.1+ | 2004 10 08 | 696 | 0.5− | 0.3− | | |
| 1994 11 06 | 691 | 0.6− | 0.5+ | 1998 11 16 | 691 | 0.4+ | 0.2+ | 2004 10 08 | 696 | 0.9− | 0.4− | | |
| 1994 11 06 | 691 | 0.2+ | 0.0 | 1998 11 16 | 691 | 0.2+ | 0.1+ | 2004 11 10 | 691 | 0.0 | 0.3+ | | |
| 1994 11 07 | 691 | 0.3− | 0.1+ | 1998 11 23 | 691 | 0.9+ | 0.2− | 2004 11 10 | 691 | 0.2− | 0.4+ | | |
| 1994 11 07 | 691 | 0.2+ | 0.1+ | 1998 11 23 | 691 | 0.6+ | 0.1− | 2004 11 10 | 691 | 0.2− | 0.2+ | | |
| 1994 11 07 | 691 | 0.2− | 0.3+ | 1998 11 23 | 691 | 0.8+ | 0.0 | 2005 01 11 | 711 | 0.4+ | 0.3− | | |
| 1994 11 09 | 691 | 0.0 | 0.2+ | 1998 11 26 | 691 | 0.1+ | 0.2− | 2005 01 11 | 711 | 0.8− | 0.2− | | |
| 1994 11 09 | 691 | 0.1+ | 0.1− | 1998 11 26 | 691 | 0.1+ | 0.0 | 2005 01 11 | 711 | 0.7− | 0.1+ | | |
| 1994 11 11 | 691 | 0.2− | 0.6− | 1998 11 26 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.4+ | 0.2+ | | |
| 1994 11 11 | 691 | 0.5− | 0.1+ | 2000 12 28 | 711 | 1.4− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 1994 11 11 | 691 | 0.3+ | 0.2+ | 2000 12 28 | 711 | 1.0− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.0 | | |
| 1994 12 01 | 691 | 0.7+ | 0.1+ | 2002 11 13 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 1994 12 01 | 691 | 0.4+ | 0.1+ | 2002 11 13 | 644 | 0.5− | 0.4+ | 2006 11 18 | 691 | 1.0+ | 0.6− | | |
| 1994 12 01 | 691 | 0.8+ | 0.9− | 2002 11 13 | 644 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.2+ | 0.5+ | | |
| 1994 12 02 | 691 | 0.2+ | 0.2− | 2002 11 23 | 644 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 1994 12 02 | 691 | (0.6− | 2.0+) | 2002 11 23 | 644 | 0.1− | 0.6+ | 2006 11 29 | 704 | 1.0− | 1.2+ | | |
| 1994 12 02 | 691 | 0.3+ | 0.2− | 2002 11 23 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 1.6− | 0.2+ | | |
| 1996 12 05 | 691 | 0.4− | 0.0 | 2002 12 01 | 113 | 0.8+ | 0.2− | 2006 11 29 | 704 | 1.2− | 0.1+ | | |
| 1996 12 05 | 691 | 0.4− | 0.6− | 2002 12 01 | 113 | 0.8+ | 0.2− | 2006 11 29 | 704 | 1.2− | 0.0 | | |
| 1996 12 05 | 691 | 0.7− | 0.2− | 2002 12 01 | 113 | 0.6+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.2− | | |
| 1996 12 06 | 691 | 0.5− | 0.5− | 2002 12 10 | 644 | 0.9− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.3− | | |
| 1996 12 06 | 691 | 1.3− | 0.1− | 2002 12 10 | 644 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.3− | | |
| 1996 12 08 | 381 | 0.5− | 0.6+ | 2002 12 10 | 644 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.3− | | |
| 1996 12 08 | 381 | 0.4− | 0.9+ | 2003 01 14 | 711 | (2.3− | 1.1−) | | | | | | |
| 1998 10 27 | 658 | 0.2− | 0.7− | 2003 01 14 | 711 | (1.1+ | 2.3−) | | | | | | |

**(136636)∗ 1994 VE$_4$ = 1998 UZ$_{34}$**

Discovered 1994 Nov. 5 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 33247)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.37328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24407514 | $\omega$ | 189.94591 | | +0.42858841 | −0.89754687 | |
| $a$ | 2.5358313 | $\Omega$ | 234.74825 | | +0.83741271 | +0.43764663 | |
| $e$ | 0.1453069 | $i$ | 7.28452 | | +0.33919306 | +0.05361942 | |
| $P$ | 4.04 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 05 | 691 | 0.3− | 0.4+ | 2002 10 12 | 704 | 0.1+ | 1.0+ | 2006 08 20 | 644 | 0.3− | 0.0 | | |
| 1994 11 05 | 691 | 0.2− | 0.3+ | 2002 10 12 | 704 | 0.3+ | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.4+ | | |
| 1994 11 05 | 691 | 0.0 | 0.2+ | 2002 10 12 | 704 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.8− | 0.3+ | | |
| 1994 11 06 | 691 | 0.1+ | 0.2+ | 2002 10 15 | 704 | 0.0 | 0.5+ | 2006 09 14 | 644 | 0.3− | 0.2+ | | |
| 1994 11 06 | 691 | 0.0 | 0.1− | 2002 10 15 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.3− | | |
| 1994 11 06 | 691 | 0.1− | 0.0 | 2002 10 15 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.0 | 0.1+ | | |
| 1994 11 10 | 691 | 0.3− | 0.2− | 2002 10 15 | 704 | 0.6+ | 0.9+ | 2006 09 16 | 703 | 0.0 | 0.1− | | |
| 1994 11 10 | 691 | 0.2− | 0.2− | 2002 10 15 | 704 | 0.7+ | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.2− | | |
| 1994 11 10 | 691 | 0.3− | 0.3− | 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.3− | | |
| 1998 10 11 | 699 | 1.0+ | 1.7− | 2002 10 30 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 1.0− | 0.2+ | | |
| 1998 10 11 | 699 | 1.3+ | 0.4− | 2002 10 30 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.0 | | |
| 1998 10 11 | 699 | 1.1+ | 0.1+ | 2002 11 01 | 704 | 0.5+ | 0.3− | 2006 09 19 | 699 | 0.5− | 0.3+ | | |
| 1998 10 28 | 704 | 1.0− | 0.1− | 2002 11 01 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 699 | 0.2+ | 0.3− | | |
| 1998 10 28 | 704 | 1.1+ | 0.3− | 2002 11 01 | 704 | 0.5+ | 0.9+ | 2006 09 27 | 699 | 0.4− | 0.4+ | | |
| 1998 10 28 | 704 | (2.4+ | 0.5−) | 2002 11 01 | 704 | 0.7− | 0.2+ | 2006 09 27 | 699 | 0.6+ | 0.1+ | | |
| 1998 10 28 | 704 | 0.3− | 0.7− | 2002 11 08 | 704 | 0.9− | 0.2+ | 2006 09 27 | 703 | 0.8− | 0.4− | | |
| 1998 10 29 | 704 | (2.0+ | 0.3−) | 2002 11 08 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 703 | 0.7− | 0.1− | | |
| 1998 10 29 | 704 | 0.2+ | 1.1− | 2002 11 08 | 704 | 0.3+ | 0.3− | 2006 09 27 | 703 | 0.5− | 1.0− | | |
| 1998 10 29 | 704 | 1.2+ | 1.8− | 2002 11 08 | 704 | 0.5− | 0.9+ | 2006 09 27 | 703 | 0.9− | 0.4− | | |
| 1998 10 29 | 704 | 0.9+ | 1.0− | 2002 11 12 | 704 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.2+ | 0.6− | | |
| 1998 11 11 | 704 | 1.0+ | 1.7− | 2002 11 12 | 704 | 0.1− | 0.0 | 2006 10 03 | 704 | 0.1− | 0.3− | | |
| 1998 11 11 | 704 | (2.2+ | 0.3+) | 2002 11 12 | 704 | 0.0 | 0.6+ | 2006 10 03 | 704 | 0.2− | 0.5+ | | |
| 1998 11 11 | 704 | (3.3+ | 2.0−) | 2002 11 12 | 704 | 0.6+ | 0.2− | 2006 10 03 | 704 | 0.4− | 0.3− | | |
| 1998 11 11 | 704 | 0.2− | 0.2− | 2002 11 12 | 704 | (0.0 | 2.0+) | 2006 10 03 | 704 | 1.0− | 0.1− | | |
| 1999 01 14 | 691 | 0.8− | 0.6− | 2002 11 22 | 644 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.1− | | |
| 1999 01 14 | 691 | 0.2− | 0.1+ | 2002 11 22 | 644 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.1− | | |
| 1999 01 14 | 691 | 0.0 | 0.3− | 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.2− | | |
| 1999 01 18 | 691 | 0.6+ | 0.0 | 2002 12 01 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 683 | (1.8+ | 1.1+) | | |
| 1999 01 18 | 691 | 0.5− | 0.1− | 2002 12 01 | 704 | 0.6+ | 1.0+ | 2006 10 17 | 683 | 0.2+ | 0.9+ | | |
| 2002 09 14 | 557 | 0.7+ | 1.1− | 2002 12 01 | 704 | 0.5− | 0.9+ | 2006 10 17 | 683 | 0.5+ | 0.9+ | | |
| 2002 09 14 | 557 | 1.0+ | 0.5− | 2002 12 01 | 704 | 0.0 | 0.8+ | 2006 10 17 | 703 | 0.0 | 0.3− | | |
| 2002 09 14 | 557 | 0.4+ | 0.2+ | 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.7− | 0.2− | | |
| 2002 09 15 | 608 | (0.3+ | 1.6+) | 2002 12 06 | 704 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.1+ | | |
| 2002 09 15 | 608 | (0.1+ | 1.9+) | 2002 12 06 | 704 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.3+ | 0.1− | | |
| 2002 09 15 | 608 | 0.3+ | 0.9+ | 2002 12 06 | 704 | 0.5− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 09 28 | 608 | (1.9− | 0.5−) | 2002 12 06 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 09 28 | 608 | (1.6− | 1.1−) | 2003 01 01 | 704 | (2.0+ | 1.6+) | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 09 28 | 608 | 1.4− | 1.5− | 2003 01 01 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.5− | | |
| 2002 10 04 | 704 | 0.6+ | 0.1+ | 2003 01 01 | 704 | 0.1− | 1.3+ | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 2002 10 04 | 704 | 0.5+ | 0.0 | 2003 01 01 | 704 | (0.5− | 1.7+) | 2006 11 11 | 703 | 0.8− | 0.5+ | | |
| 2002 10 04 | 704 | 0.1− | 0.3− | 2003 01 04 | 704 | 1.1+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.0 | | |
| 2002 10 04 | 704 | 0.1+ | 0.2− | 2003 01 04 | 704 | (0.4− | 1.6−) | 2006 11 15 | 704 | 0.1− | 0.2− | | |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2003 01 04 | 704 | 1.0− | 1.2− | 2006 11 15 | 704 | 0.3+ | 0.4− | | |
| 2002 10 04 | 644 | 0.5+ | 0.9+ | 2004 03 20 | 704 | 1.0+ | 0.1+ | 2006 11 15 | 704 | 0.0 | 0.2− | | |
| 2002 10 04 | 644 | 0.3+ | 1.2+ | 2004 03 20 | 704 | 0.3− | 0.2− | 2006 11 15 | 704 | 0.6+ | 0.4− | | |
| 2002 10 04 | 644 | 0.3+ | 1.0+ | 2004 03 20 | 704 | (0.3+ | 2.6+) | 2006 11 19 | 704 | 0.6+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.4+ | 0.1+ | 2004 03 20 | 704 | (1.5+ | 1.7+) | 2006 11 19 | 704 | 0.0 | 0.2− | | |
| 2002 10 09 | 704 | 0.4+ | 0.1+ | 2004 04 12 | 703 | 0.1+ | 0.7+ | 2006 11 19 | 704 | 0.6+ | 1.3− | | |
| 2002 10 09 | 704 | 0.4+ | 0.4+ | 2004 04 12 | 703 | 0.0 | 0.9+ | 2006 11 19 | 704 | 0.7+ | 0.9− | | |
| 2002 10 09 | 704 | 0.0 | 0.1+ | 2004 04 12 | 703 | (1.3− | 2.3+) | 2006 11 20 | G96 | 0.3+ | 0.3− | | |
| 2002 10 09 | 704 | 0.3+ | 0.6+ | 2004 04 12 | 703 | 0.4+ | 1.1+ | 2006 11 20 | G96 | 0.1− | 0.4− | | |
| 2002 10 12 | 704 | 0.0 | 1.2+ | 2006 08 20 | 644 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.0 | 0.4− | | |
| 2002 10 12 | 704 | 0.1+ | 1.1+ | 2006 08 20 | 644 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.8− | | |

**(136637)∗ 1994 WA$_5$ = 2002 CZ$_{99}$**

Discovered 1994 Nov. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 24938)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.21478 | | (2000.0) | | | |
| $n$ | 0.17870382 | $\omega$ | 139.29458 | | −0.99401054 | +0.10674410 |
| $a$ | 3.1216209 | $\Omega$ | 46.84951 | | −0.10673803 | −0.90228446 |
| $e$ | 0.1062412 | $i$ | 1.84001 | | −0.02345288 | −0.41771814 |
| $P$ | 5.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.6+ | 0.1− | 2002 02 12 | 704 | 0.5+ | 0.4− | 2004 10 04 | 691 | 0.1+ | 0.3+ |
| 1994 11 28 | 691 | 0.3− | 0.3− | 2002 02 12 | 704 | 0.3+ | 0.5− | 2004 10 04 | 691 | 0.2+ | 0.2+ |
| 1994 11 28 | 691 | 0.2− | 0.3− | 2002 02 13 | 645 | 0.0 | 0.1− | 2005 10 01 | G96 | 0.1− | 0.2− |
| 1994 11 29 | 691 | 0.3+ | 0.3+ | 2002 02 13 | 645 | 0.0 | 0.1− | 2005 10 01 | G96 | 0.2+ | 0.1− |
| 1994 11 29 | 691 | 0.4+ | 0.1+ | 2002 02 24 | 644 | (0.2− | 1.6+) | 2005 10 01 | G96 | 0.0 | 0.1+ |
| 1994 11 29 | 691 | 0.2− | 0.6+ | 2002 02 24 | 644 | 0.0 | 1.4+ | 2005 10 01 | G96 | 0.1− | 0.0 |
| 1994 12 01 | 691 | 0.7− | 0.2− | 2002 02 24 | 644 | 0.3+ | 1.2+ | 2005 10 05 | 691 | 0.2− | 0.5+ |
| 1994 12 01 | 691 | (2.6− | 0.8+) | 2002 02 25 | 644 | 0.3+ | 0.5− | 2005 10 05 | 691 | 0.2+ | 0.6+ |
| 1994 12 01 | 691 | 0.4− | 0.4− | 2002 02 25 | 644 | 0.0 | 0.7− | 2005 10 05 | 691 | 0.2+ | 0.5+ |
| 1994 12 03 | 691 | 0.4+ | 0.4+ | 2002 02 25 | 644 | 0.1+ | 0.2− | 2005 10 12 | 691 | 0.4− | 0.0 |
| 1994 12 03 | 691 | 0.1− | 0.2− | 2002 03 05 | 699 | 0.1− | 0.7+ | 2005 10 12 | 691 | 0.2− | 0.1− |
| 1994 12 03 | 691 | 0.5+ | 0.6+ | 2002 03 05 | 699 | 0.6− | 0.4+ | 2005 10 12 | 691 | 0.5− | 0.4− |
| 1997 05 14 | 691 | 0.1− | 0.6+ | 2002 03 05 | 699 | 0.2− | 0.8+ | 2005 11 04 | 691 | 0.0 | 0.3+ |
| 1997 05 14 | 691 | 0.2− | 0.3+ | 2002 03 05 | 699 | 0.0 | 0.8+ | 2005 11 04 | 691 | 0.4− | 0.2+ |
| 1997 05 14 | 691 | 0.0 | 0.1+ | 2002 03 09 | 704 | 0.4+ | 1.3− | 2005 11 04 | 691 | 0.1+ | 0.0 |
| 1999 09 18 | 691 | 0.2− | 0.2− | 2002 03 09 | 704 | 0.3+ | 0.9+ | 2005 12 02 | G96 | 0.2+ | 0.5− |
| 1999 09 18 | 691 | 0.0 | 0.0 | 2002 03 09 | 704 | 1.4+ | 1.1+ | 2005 12 02 | G96 | 0.1+ | 0.1+ |
| 1999 09 18 | 691 | 0.2− | 0.2− | 2002 03 09 | 704 | 0.3+ | 1.3− | 2005 12 02 | G96 | 0.1+ | 0.1+ |
| 2002 02 07 | 704 | (0.6− | 1.7+) | 2002 03 12 | 644 | 0.5+ | 0.3+ | 2005 12 02 | G96 | 0.4+ | 0.1− |
| 2002 02 07 | 704 | (0.3+ | 1.9+) | 2002 03 12 | 644 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2002 02 07 | 704 | (0.2− | 2.3+) | 2002 03 12 | 644 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 02 07 | 704 | (0.3+ | 3.1+) | 2002 03 14 | 704 | 0.3+ | 0.8+ | 2006 10 22 | G96 | 0.3+ | 0.3+ |
| 2002 02 10 | 704 | (0.6+ | 1.6+) | 2002 03 14 | 704 | 1.0− | 1.1+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2002 02 10 | 704 | 0.2− | 0.4+ | 2002 03 14 | 704 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2002 02 10 | 704 | 1.4+ | 0.5+ | 2002 03 14 | 704 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.6− |
| 2002 02 10 | 704 | 1.5+ | 0.4− | 2002 03 14 | 704 | 0.5− | 0.5+ | 2006 10 31 | G96 | 0.6− | 0.5− |
| 2002 02 10 | 704 | 0.7+ | 0.1− | 2002 03 16 | 704 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.5− | 0.3− |
| 2002 02 11 | 333 | 0.2+ | 0.2+ | 2002 03 16 | 704 | 0.2+ | 0.9+ | 2006 11 21 | G96 | 0.4− | 0.7− |
| 2002 02 11 | 333 | 0.3− | 0.7− | 2002 03 16 | 704 | 0.8− | 1.1+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2002 02 11 | 333 | 0.8+ | 0.1− | 2002 03 16 | 704 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.6− | 0.6− |
| 2002 02 12 | 704 | 0.8+ | 0.4− | 2002 03 16 | 704 | 0.5− | 1.0+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2002 02 12 | 704 | 1.1+ | 0.1− | 2004 10 04 | 691 | 0.1+ | 0.6+ | | | | |

**(136638)∗ 1995 BE$_1$**

Discovered 1995 Jan. 25 by T. Kobayashi at Oizumi.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.63278 | | (2000.0) | | | |
| $n$ | 0.23444194 | $\omega$ | 129.24241 | | +0.02722905 | −0.95045639 |
| $a$ | 2.6048288 | $\Omega$ | 315.96216 | | +0.72354945 | +0.23248341 |
| $e$ | 0.3035867 | $i$ | 26.45360 | | +0.68973529 | −0.20635919 |
| $P$ | 4.20 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 25 | 411 | 0.4− | 1.2+ | 2002 08 16 | 699 | 0.5+ | 0.7− | 2002 11 13 | 704 | 0.7+ | 0.3+ |
| 1995 01 25 | 411 | 0.5− | 0.7+ | 2002 08 16 | 699 | 0.4− | 0.1− | 2002 11 13 | 704 | 0.6+ | 0.5+ |
| 1995 01 26 | 411 | 0.3+ | 0.6+ | 2002 08 16 | 699 | 0.5− | 0.8+ | 2002 12 04 | 704 | 0.5− | 1.0− |
| 1995 01 26 | 411 | 0.5− | 0.0 | 2002 08 16 | 699 | 0.5+ | 0.2− | 2002 12 04 | 704 | 0.4− | 0.6− |
| 1995 01 30 | 411 | 0.1+ | 0.4− | 2002 08 17 | 704 | 0.6+ | 0.8+ | 2002 12 04 | 704 | 0.2− | 0.5− |
| 1995 01 30 | 411 | 0.4+ | 0.3− | 2002 08 17 | 704 | 0.4+ | 0.1− | 2002 12 13 | 704 | 0.2− | 0.2+ |
| 1995 02 05 | 691 | 0.0 | 0.4+ | 2002 08 17 | 704 | 1.2− | 0.5+ | 2002 12 13 | 704 | 0.3− | 0.3+ |
| 1995 02 05 | 691 | 0.1+ | 0.1+ | 2002 08 17 | 704 | (2.9− | 1.0−) | 2002 12 13 | 704 | 0.2+ | 0.4+ |
| 1995 02 05 | 691 | 0.1− | 0.0 | 2002 08 17 | 704 | (2.1− | 0.4−) | 2002 12 29 | 704 | 0.2− | 0.5− |
| 1995 02 06 | 411 | 0.6+ | 0.3− | 2002 08 17 | 704 | (0.2− | 2.7−) | 2002 12 29 | 704 | 0.1− | 0.2− |
| 1995 02 06 | 411 | 0.2+ | 0.3− | 2002 08 28 | 704 | 0.4− | 0.2− | 2002 12 29 | 704 | 0.9− | 0.7− |
| 1995 02 10 | 411 | 0.5+ | 0.1+ | 2002 08 28 | 704 | 0.8+ | 0.3− | 2003 01 13 | 704 | 0.3+ | 0.8− |
| 1995 02 10 | 411 | 0.3− | 0.8− | 2002 08 28 | 704 | 0.1+ | 0.7+ | 2003 01 13 | 704 | 0.1+ | 0.6− |
| 1995 02 17 | 411 | 0.1− | 0.9− | 2002 08 28 | 704 | 0.3− | 0.3− | 2003 01 13 | 704 | 0.5− | 0.9− |
| 1995 02 17 | 411 | 0.3− | 0.6− | 2002 09 25 | 644 | 0.5− | 0.6− | 2003 01 13 | 704 | 0.3+ | 0.3− |
| 1995 02 19 | 411 | 1.2+ | 0.7+ | 2002 09 25 | 644 | 0.5− | 0.6− | 2003 01 13 | 704 | 0.1− | 0.3− |
| 1995 02 19 | 411 | 0.3+ | 0.1+ | 2002 09 25 | 644 | 0.3− | 0.5− | 2003 02 06 | 699 | 0.3− | 0.7− |
| 1998 12 11 | 704 | 0.6− | 0.3+ | 2002 09 30 | 704 | 0.1− | 0.0 | 2003 02 06 | 699 | 0.1+ | 0.2+ |
| 1998 12 11 | 704 | 0.6+ | 0.8− | 2002 09 30 | 704 | 0.4+ | 0.2+ | 2003 02 06 | 699 | 0.0 | 0.9+ |
| 1998 12 11 | 704 | 0.2+ | 0.1− | 2002 09 30 | 704 | 0.1+ | 0.2+ | 2003 02 06 | 699 | 0.9+ | 0.4− |
| 1998 12 11 | 704 | 1.0+ | 0.5− | 2002 09 30 | 704 | 0.1− | 0.9+ | 2006 08 06 | 683 | 0.5+ | 1.0− |
| 1998 12 11 | 704 | 0.5+ | 1.0− | 2002 09 30 | 704 | 0.1+ | 0.3+ | 2006 08 06 | 683 | 0.6− | 0.0 |
| 1999 01 09 | 704 | 0.1+ | 0.2− | 2002 10 07 | 704 | 0.1+ | 0.3+ | 2006 08 06 | 683 | (0.5− | 2.2+) |
| 1999 01 09 | 704 | 0.3− | 0.0 | 2002 10 07 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 699 | 0.2+ | 0.0 |
| 1999 01 09 | 704 | 0.3− | 1.3+ | 2002 10 07 | 704 | 0.5+ | 0.7+ | 2006 08 29 | 699 | 0.0 | 0.1+ |
| 1999 01 09 | 704 | 0.7− | 1.0+ | 2002 10 07 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 699 | 0.7+ | 0.8− |
| 1999 01 09 | 704 | 0.2− | 0.1+ | 2002 10 07 | 704 | 0.6+ | 0.4+ | 2006 08 29 | 699 | 1.1+ | 0.1+ |
| 1999 02 08 | 704 | 0.2− | 0.7+ | 2002 10 29 | 704 | 0.5− | 0.1− | 2006 09 21 | 699 | 0.1− | 0.8− |
| 1999 02 08 | 704 | 1.4− | 1.9− | 2002 10 29 | 704 | 0.6− | 0.1+ | 2006 09 21 | 699 | 0.4+ | 0.6+ |
| 1999 02 08 | 704 | (2.9− | 0.5+) | 2002 10 29 | 704 | 0.5− | 0.4+ | 2006 09 21 | 699 | 0.2− | 0.6+ |
| 1999 02 08 | 704 | 1.1+ | 1.7− | 2002 10 29 | 704 | 0.6− | 0.1− | 2006 09 21 | 699 | 0.1− | 0.2+ |
| 1999 02 08 | 704 | 0.5+ | 0.2+ | 2002 10 29 | 704 | 1.7− | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.1+ |
| 2002 08 01 | 704 | 0.4− | 0.0 | 2002 11 13 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.2+ |
| 2002 08 01 | 704 | 0.8+ | 0.6+ | 2002 11 13 | 704 | 0.4+ | 0.0 | 2006 09 27 | 703 | 0.5− | 0.1− |
| 2002 08 01 | 704 | 0.7− | 0.2+ | 2002 11 13 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.2+ |

**(136639)∗ 1995 CD$_3$ = 1997 TG$_{16}$**

Discovered 1995 Feb. 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 30761)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 208.51962 | | (2000.0) | | | |
| $n$ | 0.22650016 | $\omega$ | 0.88589 | | −0.98483096 | −0.17312541 |
| $a$ | 2.6653671 | $\Omega$ | 169.12361 | | +0.15881637 | −0.92639543 |
| $e$ | 0.0171482 | $i$ | 3.53775 | | +0.06989517 | −0.33439365 |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 15 | 691 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.6− | 0.0 |
| 1991 03 15 | 691 | 0.2− | 0.5− | 2004 03 11 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 1991 03 15 | 691 | 0.0 | 0.0 | 2004 03 11 | 644 | 0.2+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.4+ |
| 1995 02 01 | 691 | 0.6+ | 0.1− | 2004 03 11 | 644 | 0.2+ | 0.7+ | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 1995 02 01 | 691 | 0.4+ | 0.2− | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 1.4+ |
| 1995 02 01 | 691 | 0.2− | 0.2− | 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.7− |
| 1995 02 04 | 691 | 0.3− | 0.2− | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 1.0− | 0.1+ |
| 1995 02 04 | 691 | 0.0 | 0.5− | 2004 03 15 | 704 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 1.5+ |
| 1995 02 04 | 691 | 0.0 | 0.5− | 2004 03 15 | 704 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1995 02 07 | 691 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 1995 02 07 | 691 | 0.4− | 0.3− | 2004 03 15 | 704 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 1995 02 07 | 691 | 0.6− | 1.0− | 2004 03 15 | 704 | 0.6+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 |
| 1997 10 03 | 691 | 0.0 | 0.3+ | 2004 03 15 | 599 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.5+ |
| 1997 10 03 | 691 | 0.1+ | 0.2+ | 2004 03 15 | 599 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 1997 10 03 | 691 | 0.3+ | 0.5+ | 2004 03 15 | 599 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.4− | 0.2− |
| 1997 10 07 | 691 | 0.3+ | 0.5+ | 2004 03 15 | 599 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 1997 10 07 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 1997 10 07 | 691 | 0.0 | 0.6+ | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 1997 10 08 | 691 | 0.1− | 1.4− | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 1997 10 08 | 691 | 0.5+ | 0.8− | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.8− |
| 1997 10 08 | 691 | 0.2+ | 1.0− | 2004 03 18 | 704 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.5− | 0.3+ |
| 1997 10 09 | 691 | 0.3− | 0.3+ | 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1997 10 09 | 691 | 0.4+ | 0.0 | 2004 03 18 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.6− | 0.4+ |
| 1997 10 09 | 691 | 0.7− | 0.0 | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2000 04 05 | 699 | 0.1+ | 1.1− | 2004 03 19 | 688 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.9+ |
| 2000 04 05 | 699 | 0.4− | 0.5− | 2004 03 19 | 688 | 0.6− | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.2+ |
| 2000 04 05 | 699 | 0.7+ | 1.0− | 2004 03 27 | 704 | 0.4− | 0.8+ | 2006 10 21 | 703 | 0.3+ | 1.1+ |
| 2000 04 05 | 699 | 0.1+ | 0.4− | 2004 03 27 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.7− | 0.2+ |
| 2000 04 28 | 691 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2000 04 28 | 691 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.7+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2000 04 28 | 691 | 0.0 | 0.0 | 2004 03 28 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2004 02 26 | 704 | 0.5+ | 0.5+ | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 09 14 | 691 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2004 02 26 | 704 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |

**(136640)∗ 1995 CJ$_3$ = 2002 XH$_3$**

Discovered 1995 Feb. 1 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 39909)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.81883 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22906654 | $\omega$ | 229.45045 | | +0.83016914 | −0.55718878 | |
| $a$ | 2.6454219 | $\Omega$ | 164.38115 | | +0.53043909 | +0.77892463 | |
| $e$ | 0.0950597 | $i$ | 4.04035 | | +0.17162043 | +0.28777958 | |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.7+ | 0.1− | 2002 12 01 | 704 | 1.1− | 0.9+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 1995 02 01 | 691 | 1.1+ | 0.0 | 2002 12 01 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 1995 02 04 | 691 | 0.0 | 0.3− | 2002 12 03 | 608 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.6+ |
| 1995 02 04 | 691 | 0.0 | 0.4− | 2002 12 03 | 608 | 0.1+ | 0.9− | 2006 10 01 | 704 | 0.6+ | 1.2+ |
| 1995 02 04 | 691 | 0.2+ | 0.8− | 2002 12 03 | 608 | 0.3− | 1.1− | 2006 10 01 | 704 | 0.1+ | 0.3+ |
| 1995 02 07 | 691 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.4− | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 1995 02 07 | 691 | 0.2− | 1.1+ | 2004 02 26 | 704 | 0.1+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.5+ |
| 1995 02 07 | 691 | 0.6− | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.5+ |
| 1996 04 14 | 691 | 0.7− | 0.4+ | 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.5+ |
| 1996 04 14 | 691 | 0.4+ | 0.4+ | 2004 03 15 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 1996 04 14 | 691 | (5.3+ | 5.7−) | 2004 03 15 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2002 11 11 | 704 | 0.9− | 0.4− | 2004 03 16 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 2002 11 11 | 704 | 0.5− | 0.3− | 2004 03 16 | 291 | 0.3+ | 0.1− | 2006 10 15 | 703 | 1.2− | 0.9− |
| 2002 11 11 | 704 | (1.6− | 0.1+) | 2004 03 16 | 291 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.2+ |
| 2002 11 16 | 644 | 0.4− | 0.7− | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.6− | 0.3− |
| 2002 11 16 | 644 | 0.5− | 0.4− | 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.1− | 1.3+ |
| 2002 11 16 | 644 | 0.3− | 0.3− | 2004 03 23 | 691 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.2+ |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2004 03 30 | 291 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2004 03 30 | 291 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.4+ |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2004 03 30 | 291 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.3+ |
| 2002 12 01 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.4+ | 0.8− | | | | |

**(136641)∗ 1995 CJ$_6$**

Discovered 1995 Feb. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.03360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21417195 | $\omega$ | 291.60209 | | −0.97330927 | +0.22736400 | |
| $a$ | 2.7666931 | $\Omega$ | 261.55051 | | −0.19715830 | −0.89801161 | |
| $e$ | 0.1579824 | $i$ | 1.80869 | | −0.11746348 | −0.37667062 | |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.3− | 0.1+ | 2000 04 05 | 699 | 0.4+ | 1.6+ | 2005 06 17 | G96 | 0.2+ | 0.3− |
| 1995 02 01 | 691 | 0.8− | 0.1− | 2003 12 21 | 691 | 0.3+ | 0.5+ | 2005 06 26 | G96 | 0.3− | 0.5+ |
| 1995 02 01 | 691 | 0.7− | 0.1+ | 2003 12 21 | 691 | 0.1− | 0.7+ | 2005 06 26 | G96 | 0.1+ | 0.1+ |
| 1995 02 08 | 691 | 0.1+ | 0.1+ | 2003 12 21 | 691 | 0.4− | 0.3+ | 2005 06 26 | G96 | 0.3+ | 0.4+ |
| 1995 02 08 | 691 | 0.3+ | 0.2− | 2004 01 31 | 691 | 0.0 | 0.2+ | 2005 06 26 | G96 | 0.1+ | 0.4+ |
| 1995 02 22 | 691 | 0.4− | 0.8− | 2004 01 31 | 691 | 0.0 | 0.4+ | 2005 06 28 | G96 | 0.4+ | 0.0 |
| 1995 02 22 | 691 | 0.4− | 1.4− | 2004 01 31 | 691 | 0.2+ | 0.4+ | 2005 06 28 | G96 | 0.2+ | 0.0 |
| 1995 02 22 | 691 | 0.4+ | 0.8− | 2005 06 13 | G96 | 1.8− | 0.6+ | 2005 06 28 | G96 | 0.2+ | 0.0 |
| 1995 03 01 | 691 | 0.4+ | 0.6+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2005 06 28 | G96 | 0.0 | 0.4+ |
| 1995 03 01 | 691 | 0.6+ | 0.0 | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.5+ | 0.5+ |
| 1995 03 01 | 691 | 0.7+ | 0.1− | 2005 06 17 | G96 | 0.4− | 0.0 | 2006 08 28 | 691 | 0.3+ | 0.0 |
| 1997 10 04 | 691 | 0.6− | 0.6− | 2005 06 17 | G96 | 0.1+ | 0.2− | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 1997 10 04 | 691 | 0.2+ | 0.0 | 2005 06 17 | G96 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 1997 10 04 | 691 | 0.3− | 0.5− | 2005 06 17 | G96 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.7+ | 0.2+ |
| 2000 04 05 | 699 | 0.5+ | 0.1− | 2005 06 17 | G96 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.5+ | 0.0 |
| 2000 04 05 | 699 | 0.4− | 0.6+ | 2005 06 17 | G96 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.2+ |
| 2000 04 05 | 699 | 0.4+ | 0.1+ | 2005 06 17 | G96 | 0.3− | 0.1− | | | | |

**(136642)∗ 1995 DF$_8$ = 1993 TK$_{18}$**

Discovered 1995 Feb. 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 25073)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 59.58595 | | (2000.0) | | **P** | **Q** | | | | | |
| $n$ | 0.24654687 | $\omega$ | 257.70444 | | +0.61126423 | −0.79105471 | | | | | |
| $a$ | 2.5188543 | $\Omega$ | 154.56607 | | +0.74630518 | +0.56594170 | | | | | |
| $e$ | 0.1341265 | $i$ | 3.23809 | | +0.26340962 | +0.23225511 | | | | | |
| $P$ | 4.00 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 12 | 691 | 0.7− | 0.3+ | 2001 10 13 | 704 | 0.4+ | 0.4+ | 2005 09 29 | 699 | 0.4− | 0.1− |
| 1991 03 12 | 691 | 0.2− | 0.5+ | 2001 10 13 | 704 | 0.2+ | 0.3+ | 2005 10 01 | 704 | 0.2− | 0.5+ |
| 1991 03 12 | 691 | 0.0 | 0.6+ | 2001 10 13 | 704 | 0.3− | 0.4+ | 2005 10 01 | 704 | 0.4− | 0.3+ |
| 1993 10 09 | 809 | (1.7+ | 2.2−) | 2001 10 13 | 704 | 0.5+ | 0.3+ | 2005 10 01 | 704 | 0.2− | 0.3+ |
| 1993 10 09 | 809 | (1.5+ | 2.3−) | 2001 10 13 | 704 | 0.0 | 0.2+ | 2005 10 01 | 691 | 0.2− | 0.0 |
| 1993 10 09 | 809 | 1.4+ | 1.9− | 2001 10 14 | 683 | (2.2− | 0.5+) | 2005 10 01 | 704 | 0.3− | 0.0 |
| 1993 10 11 | 809 | (4.1+ | 1.7−) | 2001 10 14 | 683 | 0.8− | 0.1− | 2005 10 01 | 704 | 0.4− | 0.2+ |
| 1993 10 11 | 809 | (1.7+ | 2.8−) | 2001 10 14 | 683 | 0.8− | 0.0 | 2005 10 01 | 691 | 0.0 | 0.1+ |
| 1993 10 11 | 809 | (0.5+ | 2.5−) | 2001 10 16 | 704 | 0.4+ | 0.0 | 2005 10 01 | 691 | 0.0 | 0.0 |
| 1995 02 24 | 691 | 0.3− | 0.6− | 2001 10 16 | 704 | 0.3+ | 0.4+ | 2005 10 05 | 704 | (0.7− | 2.0+) |
| 1995 02 24 | 691 | 0.3+ | 0.0 | 2001 10 16 | 704 | 0.2+ | 0.4+ | 2005 10 05 | 704 | 1.0+ | 0.9− |
| 1995 02 24 | 691 | 0.2+ | 0.3+ | 2001 10 16 | 704 | 0.5− | 0.3+ | 2005 10 05 | 704 | 0.5− | 1.3+ |
| 1995 03 02 | 691 | 0.1+ | 0.9− | 2001 10 16 | 704 | 0.1− | 0.7+ | 2005 10 05 | 704 | 0.4+ | 1.0+ |
| 1995 03 02 | 691 | 0.2+ | 0.7− | 2001 10 18 | 644 | 0.3− | 0.5+ | 2005 10 06 | 699 | (1.6− | 0.0 ) |
| 1995 03 02 | 691 | 0.1+ | 0.3− | 2001 10 18 | 644 | 0.2− | 0.4+ | 2005 10 06 | 699 | 0.6+ | 0.4− |
| 1995 03 07 | 691 | (0.0 | 2.2−) | 2001 10 18 | 644 | 0.5− | 0.4+ | 2005 10 06 | 699 | 0.4− | 1.4+ |
| 1995 03 07 | 691 | 0.3− | 0.6− | 2001 10 20 | 704 | 0.7+ | 0.9− | 2005 10 06 | 699 | 0.7− | 0.2− |
| 1995 03 07 | 691 | 0.2− | 1.0− | 2001 10 20 | 704 | 0.9+ | 0.9− | 2005 10 10 | A50 | 0.1+ | 0.7− |
| 1995 03 31 | 691 | 0.3− | 0.2+ | 2001 10 20 | 704 | 0.7+ | 1.0− | 2005 10 10 | A50 | (0.0 | 2.9−) |
| 1995 03 31 | 691 | 0.2+ | 0.3+ | 2001 10 20 | 704 | 0.6+ | 1.0− | 2005 10 12 | 691 | 0.1− | 0.0 |
| 1995 03 31 | 691 | 0.1+ | 0.2− | 2001 10 20 | 704 | 0.4+ | 1.0− | 2005 10 12 | 691 | 0.1+ | 0.1− |
| 1997 10 25 | 688 | 0.2+ | 0.8+ | 2001 10 22 | 704 | 0.2− | 0.3− | 2005 10 12 | 691 | 0.0 | 0.1− |
| 1997 10 25 | 688 | 0.1− | 0.9+ | 2001 10 22 | 704 | 0.5− | 0.5− | 2005 10 20 | 644 | 0.1+ | 0.3+ |
| 1997 10 26 | 688 | 0.4+ | 0.2+ | 2001 10 22 | 704 | 0.2− | 0.5− | 2005 10 20 | 644 | 0.1+ | 0.0 |
| 1997 10 26 | 688 | 0.2+ | 0.3− | 2001 10 22 | 704 | 0.0 | 0.4− | 2005 10 20 | 644 | 0.0 | 0.0 |
| 1997 10 30 | 704 | 1.9+ | 0.5− | 2001 10 23 | 704 | 0.3− | 0.3+ | 2005 10 21 | 644 | 0.1+ | 0.1+ |
| 1997 10 30 | 704 | 0.3+ | 0.2− | 2001 10 23 | 704 | 0.3+ | 0.7+ | 2005 10 21 | 644 | 0.1− | 0.2+ |
| 1997 10 30 | 704 | (2.3+ | 0.2+) | 2001 10 23 | 704 | 0.1− | 0.2+ | 2005 10 21 | 644 | 0.0 | 0.0 |
| 1997 10 30 | 704 | (3.6− | 1.2−) | 2001 10 24 | 704 | 0.6+ | 0.5+ | 2005 10 22 | 703 | 0.3+ | 0.1+ |
| 1997 11 02 | 711 | 0.0 | 0.2+ | 2001 10 24 | 704 | 0.7+ | 0.6+ | 2005 10 22 | 703 | 0.4− | 0.2− |
| 1997 11 02 | 711 | 0.1− | 0.2+ | 2001 10 24 | 704 | 0.8+ | 0.9+ | 2005 10 22 | 703 | 0.5+ | 0.0 |
| 1997 11 03 | 711 | (3.6+ | 0.8+) | 2001 10 24 | 704 | 0.9+ | 0.7+ | 2005 10 22 | 703 | 0.4+ | 0.3+ |
| 1997 11 03 | 711 | 0.9− | 0.0 | 2001 10 24 | 704 | 0.8+ | 0.8+ | 2005 10 27 | 699 | 0.1+ | 0.5− |
| 1999 02 08 | 691 | 0.2− | 0.0 | 2001 11 09 | 704 | 0.2+ | 0.9+ | 2005 10 27 | 644 | 0.2+ | 0.1+ |
| 1999 02 08 | 691 | 0.1− | 0.2− | 2001 11 09 | 704 | 0.0 | 0.2− | 2005 10 27 | 699 | 0.4+ | 0.7− |
| 1999 02 08 | 691 | 0.4− | 0.6− | 2001 11 09 | 704 | 0.4+ | 0.2+ | 2005 10 27 | 644 | 0.1+ | 0.1− |
| 1999 02 09 | 691 | 0.3− | 0.2+ | 2001 11 12 | 645 | 0.1+ | 0.3− | 2005 10 27 | 699 | 0.4+ | 0.6− |
| 1999 02 09 | 691 | 0.2− | 0.1+ | 2001 11 12 | 645 | 0.1+ | 0.3− | 2005 10 27 | 644 | 0.3+ | 0.2− |
| 2001 08 16 | 704 | 0.3+ | 0.7+ | 2001 12 15 | 209 | 0.3− | 0.2+ | 2005 10 28 | 704 | 0.6− | 0.1+ |
| 2001 08 16 | 704 | 0.4− | 0.3+ | 2001 12 15 | 209 | 0.0 | 0.1+ | 2005 10 28 | 704 | 0.3− | 0.2+ |
| 2001 08 16 | 704 | (0.0 | 2.0+) | 2001 12 15 | 209 | 0.3+ | 0.0 | 2005 10 28 | 703 | 0.7− | 0.6+ |
| 2001 08 18 | 699 | 0.5+ | 0.2− | 2003 02 01 | 291 | 0.1+ | 0.5+ | 2005 10 28 | 704 | 0.5− | 0.2+ |
| 2001 08 18 | 699 | 0.0 | 1.2+ | 2003 02 01 | 291 | 0.2+ | 0.5+ | 2005 10 28 | 703 | 0.1− | 0.6+ |
| 2001 08 18 | 699 | 0.2+ | 1.2+ | 2003 02 01 | 291 | 0.0 | 0.2+ | 2005 10 28 | 703 | 0.0 | 0.4+ |
| 2001 08 18 | 699 | 1.1− | 0.9+ | 2003 03 10 | 704 | 0.3+ | 0.3+ | 2005 10 28 | 704 | 0.1− | 0.6+ |
| 2001 08 27 | 699 | 1.3− | 0.1− | 2003 03 10 | 704 | 0.3+ | 0.4+ | 2005 10 28 | 703 | 0.0 | 0.5+ |
| 2001 08 27 | 699 | 0.3− | 0.1+ | 2003 03 10 | 704 | 0.9+ | 0.7+ | 2005 10 28 | 704 | 0.0 | 0.7+ |
| 2001 08 27 | 699 | 0.2+ | 0.7+ | 2003 03 10 | 704 | 1.2+ | 0.5+ | 2005 10 31 | 704 | 1.0− | 0.4− |
| 2001 08 27 | 699 | 0.3+ | 0.1+ | 2003 03 10 | 704 | 0.2+ | 0.7+ | 2005 10 31 | 704 | 0.5− | 1.0+ |
| 2001 09 16 | 704 | 0.4− | 0.2− | 2003 03 13 | 291 | 0.3+ | 0.7+ | 2005 10 31 | 704 | 0.3+ | 0.6+ |
| 2001 09 16 | 704 | 0.3− | 0.3− | 2003 03 13 | 291 | 0.4+ | 0.4+ | 2005 10 31 | 704 | 0.5+ | 0.6+ |
| 2001 09 16 | 704 | 0.1+ | 0.1− | 2003 03 13 | 291 | 0.3+ | 0.7+ | 2005 10 31 | 704 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 0.4− | 0.3− | 2003 03 26 | 699 | 0.2+ | 0.7+ | 2005 11 01 | G96 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2003 03 26 | 699 | 0.6+ | 1.1− | 2005 11 01 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.2− | 0.5− | 2003 03 26 | 699 | 0.4+ | 0.3+ | 2005 11 01 | G96 | 0.0 | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6− | 0.2− | 2003 03 26 | 699 | 1.1− | 0.9+ | 2005 11 01 | G96 | 0.1− | 0.5− |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2003 03 30 | 695 | 0.4+ | 0.7+ | 2005 11 03 | 704 | 0.2+ | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2003 03 30 | 695 | 0.2+ | 0.7+ | 2005 11 03 | 704 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2003 03 31 | 691 | 0.2+ | 0.9+ | 2005 11 03 | 704 | 0.3− | 1.1+ |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2003 03 31 | 691 | 0.3+ | 0.4+ | 2005 11 03 | 704 | (0.7− | 1.5−) |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2003 03 31 | 691 | 0.2+ | 0.4+ | 2005 11 28 | 644 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2005 09 15 | 703 | 0.7− | 1.1− | 2005 11 28 | 644 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.6+ | 2005 09 15 | 703 | 0.4− | 0.0 | 2005 11 28 | 644 | 0.3+ | 0.4+ |
| 2001 09 26 | 704 | 0.7− | 0.3+ | 2005 09 15 | 703 | (0.0 | 1.6−) | 2005 11 30 | G96 | 0.1− | 0.4− |
| 2001 09 26 | 704 | 0.3− | 0.0 | 2005 09 15 | 703 | 0.3+ | 0.0 | 2005 11 30 | G96 | 0.1+ | 0.4− |
| 2001 09 26 | 704 | 0.3− | 0.6+ | 2005 09 23 | 691 | 0.4− | 0.1+ | 2005 11 30 | G96 | 0.1− | 0.4− |
| 2001 09 26 | 704 | 0.4− | 0.5+ | 2005 09 23 | 691 | 0.2− | 0.1+ | 2005 12 04 | 699 | 1.3+ | 0.6− |
| 2001 09 26 | 704 | 0.1− | 0.2+ | 2005 09 23 | 691 | 0.3− | 0.0 | 2005 12 04 | 699 | 0.9+ | 1.2+ |
| 2001 09 27 | 644 | 0.6− | 0.6+ | 2005 09 24 | 703 | 0.0 | 0.4+ | 2005 12 04 | 699 | 0.5+ | 0.2− |
| 2001 09 27 | 644 | 0.1− | 1.3+ | 2005 09 24 | 703 | 0.5− | 0.8+ | 2005 12 04 | 699 | 0.1− | 0.5− |
| 2001 09 27 | 644 | 0.2+ | 1.0+ | 2005 09 24 | 703 | (1.6+ | 1.3−) | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2001 10 11 | 644 | 0.4− | 0.1+ | 2005 09 24 | 703 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.1+ |
| 2001 10 11 | 644 | 0.4− | 0.1+ | 2005 09 24 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 10 11 | 644 | 0.2− | 0.1− | 2005 09 24 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.8− | 0.1+ |
| 2001 10 12 | 699 | 0.9− | 0.4+ | 2005 09 24 | 644 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.6− |
| 2001 10 12 | 699 | 0.2− | 0.2+ | 2005 09 29 | 699 | 0.0 | 0.3+ | 2006 11 20 | G96 | 0.5− | 0.6− |
| 2001 10 12 | 699 | 0.5+ | 0.4+ | 2005 09 29 | 699 | 1.2+ | 0.6+ | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2001 10 12 | 699 | 1.1− | 0.9+ | 2005 09 29 | 699 | 0.0 | 0.3− | 2006 11 20 | G96 | 0.8− | 0.3− |

**(136643)∗ 1995 EV$_6$ = 1998 YT$_{15}$ = 2001 QN$_{95}$**

Discovered 1995 Mar. 2 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 34687)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 296.05138 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.22339694 | $\omega$ | 288.68533 | | | +0.03007399 | | −0.99948111 | |
| $a$ | 2.6899935 | $\Omega$ | 159.58094 | | | +0.92907538 | | +0.02369527 | |
| $e$ | 0.0554922 | $i$ | 1.89474 | | | +0.36866583 | | +0.02181837 | |
| $P$ | 4.41 | $H$ | 16.7 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.1− | 0.5+ | 2004 03 23 | 704 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.5− | 0.9− |
| 1995 03 02 | 691 | 0.0 | 0.1− | 2004 04 14 | 691 | 0.0 | 0.6+ | 2006 10 21 | 703 | (1.9+ | 1.4+) |
| 1995 03 02 | 691 | 0.5− | 0.3+ | 2004 04 14 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 1.0− | 0.0 |
| 1995 03 08 | 691 | 0.1+ | 0.1+ | 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 1.3− | 0.6+ |
| 1995 03 08 | 691 | 0.2+ | 0.3+ | 2004 04 19 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 1998 12 22 | 691 | 0.4+ | 0.1+ | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 1998 12 22 | 691 | 0.1+ | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1998 12 22 | 691 | 0.2− | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.3− |
| 1998 12 27 | 691 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.3+ | 2006 10 29 | G96 | 0.3− | 0.1− |
| 1998 12 27 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.5− |
| 1998 12 27 | 691 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.5− | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.4− |
| 1999 01 13 | 691 | (0.1− | 2.2+) | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.1− |
| 1999 01 13 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.1− |
| 1999 01 13 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 2001 08 22 | 691 | 0.1+ | 0.6+ | 2006 10 01 | 691 | 0.3+ | 0.5+ | 2006 10 29 | G96 | 0.0 | 0.1+ |
| 2001 08 22 | 691 | 0.8− | 0.2+ | 2006 10 01 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2001 08 22 | 691 | 0.6− | 0.5+ | 2006 10 13 | D35 | 0.4− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 08 24 | 691 | 0.6+ | 0.3+ | 2006 10 13 | D35 | 0.1+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 08 24 | 691 | 0.0 | 0.6+ | 2006 10 13 | D35 | 0.2− | 0.7+ | 2006 11 11 | 691 | 0.2− | 0.2− |
| 2001 08 24 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2004 03 23 | 704 | 1.0+ | 0.4+ | 2006 10 20 | 644 | 0.6− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2004 03 23 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.2+ | | | | |

**(136644)∗ 1995 FC$_9$**

Discovered 1995 Mar. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 4.61873 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.24516849 | $\omega$ | 94.37227 | | | −0.51532127 | | −0.85116985 | |
| $a$ | 2.5282864 | $\Omega$ | 27.37962 | | | +0.67477619 | | −0.47475950 | |
| $e$ | 0.1170857 | $i$ | 12.52961 | | | +0.52831910 | | −0.22386001 | |
| $P$ | 4.02 | $H$ | 16.9 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.7− | 1.2− | 2001 10 26 | 644 | 0.1− | 0.4+ | 2005 09 29 | G96 | 0.8+ | 0.5− |
| 1995 03 26 | 691 | 0.6− | 1.5− | 2001 10 26 | 644 | 0.3+ | 0.6+ | 2005 09 29 | G96 | 0.8+ | 0.7− |
| 1995 03 26 | 691 | 0.8− | 1.0− | 2001 10 26 | 644 | 0.1+ | 0.5+ | 2005 09 29 | G96 | 0.3+ | 0.7− |
| 1995 04 07 | 691 | 0.3+ | 0.3− | 2003 03 26 | 691 | 0.5+ | 0.3+ | 2005 09 29 | G96 | 0.6+ | 0.3− |
| 1995 04 07 | 691 | 0.7− | 0.6− | 2003 03 26 | 691 | 0.3+ | 0.4+ | 2005 10 08 | 291 | 0.2+ | 0.3− |
| 1995 04 07 | 691 | 0.1− | 0.0 | 2003 03 26 | 691 | 0.0 | 1.1+ | 2005 10 08 | 291 | 0.5+ | 0.3− |
| 1995 04 22 | 691 | 0.7+ | 0.0 | 2003 03 26 | 644 | 0.8+ | 0.5+ | 2005 10 08 | 291 | 0.4+ | 0.1− |
| 1995 04 22 | 691 | 0.5− | 0.2− | 2003 03 26 | 644 | 1.0+ | 0.2+ | 2005 10 27 | G96 | 0.6+ | 0.4− |
| 1995 04 22 | 691 | 0.4− | 0.0 | 2003 03 26 | 644 | 0.8+ | 0.3+ | 2005 10 27 | G96 | 0.4+ | 0.6− |
| 2001 10 14 | 691 | 0.2− | 0.5+ | 2003 04 10 | 691 | 0.2+ | 0.7+ | 2005 10 27 | G96 | 0.3+ | 0.5− |
| 2001 10 14 | 691 | 0.2− | 0.1+ | 2003 04 10 | 691 | 0.4+ | 0.9+ | 2005 10 27 | G96 | 0.7+ | 0.4− |
| 2001 10 14 | 691 | 1.3− | 0.1− | 2003 04 10 | 691 | 0.2+ | 0.4+ | | | | |

**(136645)∗ 1995 FV$_{12}$ = 2004 FY$_{110}$**

Discovered 1995 Mar. 27 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 68501)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 277.15810 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.22110486 | $\omega$ | 103.13064 | | | −0.35564821 | | −0.93457063 | |
| $a$ | 2.7085521 | $\Omega$ | 7.72301 | | | +0.82745823 | | −0.31962742 | |
| $e$ | 0.0741542 | $i$ | 4.09486 | | | +0.43454255 | | −0.15625635 | |
| $P$ | 4.46 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.4− | 0.0 | 2004 03 31 | 704 | 1.2+ | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.1+ |
| 1995 03 27 | 691 | 1.7+ | 0.3− | 2004 03 31 | 704 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.6− | 0.0 |
| 1995 03 27 | 691 | 0.5− | 0.1− | 2004 04 21 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 1995 04 05 | 691 | 0.5− | 0.2− | 2004 04 21 | 704 | (0.7+ | 1.6+) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1995 04 05 | 691 | 0.3− | 0.2− | 2004 04 21 | 704 | 0.6+ | 1.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1995 04 05 | 691 | 0.3− | 0.1− | 2004 04 21 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 1995 04 05 | 104 | 0.4+ | 0.6− | 2004 04 21 | 704 | (0.1+ | 1.6+) | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1995 04 05 | 104 | 0.5− | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1995 04 05 | 104 | 0.4− | 0.5− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.4− | 0.0 |
| 1995 04 05 | 104 | 0.3− | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 1995 04 05 | 104 | 0.6+ | 0.3+ | 2006 07 21 | G96 | 0.5− | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.1− |
| 1999 02 12 | 699 | 0.8− | 1.3+ | 2006 09 18 | 699 | 0.0 | 0.8+ | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 1999 02 12 | 699 | 0.8+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 1.4− | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 1999 02 12 | 699 | 0.5− | 0.4− | 2006 09 18 | 699 | 0.8− | 0.7− | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2002 12 14 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 699 | (4.6− | 0.9−) | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 1.0+ | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 1.3− |
| 2002 12 14 | 704 | 0.4− | 0.8+ | 2006 09 24 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2003 01 05 | 704 | 0.8− | 0.5+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.3− | 1.7−) |
| 2003 01 05 | 704 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2003 01 05 | 704 | 0.2− | 0.7− | 2006 09 28 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | (0.6− | 2.4−) |
| 2003 01 05 | 704 | 0.5+ | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2003 01 05 | 704 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2004 03 25 | 699 | 0.4+ | 0.7+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2004 03 25 | 699 | 0.5− | 1.0− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2004 03 25 | 699 | 1.5− | 1.0+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2004 03 25 | 699 | (0.6− | 1.8+) | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2004 03 27 | 704 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2004 03 27 | 704 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 1.0+ | 1.8+ |
| 2004 03 27 | 704 | 0.2− | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.4+ | 2.1+ |
| 2004 03 31 | 704 | 1.4+ | 0.6− | 2006 10 15 | 691 | 0.1− | 0.1− | | | | |

**(136646)∗ 1995 FW$_{14}$**

Discovered 1995 Mar. 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.55376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22049082 | $\omega$ | 141.97459 | | +0.28744816 | +0.95650179 | |
| $a$ | 2.7135784 | $\Omega$ | 144.65161 | | −0.89849725 | +0.28729015 | |
| $e$ | 0.0858508 | $i$ | 4.93586 | | −0.33177741 | +0.05068237 | |
| $P$ | 4.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.7− | 0.4− | 2002 12 31 | 645 | 0.0 | 0.1+ | 2005 09 05 | 703 | 1.3+ | 0.4+ |
| 1995 03 27 | 691 | 0.5− | 0.3− | 2002 12 31 | 645 | 0.1+ | 0.1+ | 2005 09 05 | 703 | 0.4− | 0.6− |
| 1995 03 27 | 691 | 0.1− | 0.4− | 2004 03 19 | 704 | 0.5+ | 0.8+ | 2005 09 05 | 703 | (1.9− | 0.6−) |
| 1995 04 01 | 691 | 0.3− | 0.6− | 2004 03 19 | 704 | (1.0+ | 1.8+) | 2005 11 03 | G96 | 0.1+ | 0.5− |
| 1995 04 01 | 691 | 0.0 | 0.8− | 2004 03 19 | 704 | 1.4+ | 0.6+ | 2005 11 03 | G96 | 0.2− | 0.2+ |
| 1995 04 01 | 691 | 0.0 | 0.8− | 2004 03 19 | 704 | 1.0+ | 0.5+ | 2005 11 03 | G96 | 0.2− | 0.5− |
| 1995 04 04 | 691 | 0.3− | 0.5− | 2004 04 11 | 644 | 0.5+ | 0.6+ | 2005 11 03 | G96 | 0.1− | 0.2− |
| 1995 04 04 | 691 | 0.5− | 0.5− | 2004 04 11 | 644 | 0.4+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 1995 04 04 | 691 | 0.1+ | 0.5− | 2004 04 11 | 644 | 0.1+ | 0.8+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 1995 04 08 | 691 | 0.3− | 1.0− | 2004 04 20 | 704 | 0.7+ | 0.9+ | 2006 11 20 | 691 | 0.2− | 0.1− |
| 1995 04 08 | 691 | 0.3− | 0.2− | 2004 04 20 | 704 | 0.8+ | 0.9+ | 2006 11 20 | G96 | 1.0+ | 0.1− |
| 1995 04 08 | 691 | 0.0 | 1.0− | 2004 04 20 | 704 | 1.0+ | 0.6+ | 2006 11 20 | G96 | 0.3− | 0.2− |
| 2001 10 10 | 644 | 0.5− | 0.5+ | 2004 04 20 | 704 | 0.5− | 1.5+ | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2001 10 10 | 644 | 0.7− | 0.5+ | 2005 07 28 | 644 | 0.3− | 0.2− | 2006 11 21 | 291 | 0.0 | 0.0 |
| 2001 10 10 | 644 | 0.4− | 0.4+ | 2005 07 28 | 644 | 0.3− | 0.0 | 2006 11 21 | 291 | 0.1− | 0.1+ |
| 2001 10 24 | 644 | 0.1+ | 1.2+ | 2005 07 28 | 644 | 0.4− | 0.1− | 2006 11 21 | 291 | 0.1− | 0.1+ |
| 2001 10 24 | 644 | 0.4+ | 0.9+ | 2005 08 06 | 704 | (2.2− | 0.1−) | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 644 | 0.1− | 1.2+ | 2005 08 06 | 704 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2001 10 25 | 645 | 0.1+ | 0.2− | 2005 08 06 | 704 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 10 25 | 645 | 0.0 | 0.2− | 2005 08 06 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 11 12 | 645 | 0.1+ | 0.3− | 2005 08 06 | 644 | 0.2− | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2001 11 12 | 645 | 0.1+ | 0.3− | 2005 08 06 | 644 | 0.2− | 0.0 | 2006 11 24 | 691 | 0.0 | 0.3+ |
| 2001 11 21 | 691 | 0.5+ | 0.1− | 2005 08 29 | 699 | 0.7+ | 0.0 | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2001 11 21 | 691 | 0.2+ | 0.4+ | 2005 08 29 | 699 | 0.0 | 0.2− | 2006 11 25 | 703 | 0.2− | 0.1− |
| 2001 11 21 | 691 | 0.3+ | 0.0 | 2005 08 29 | 699 | 0.0 | 1.0− | 2006 11 25 | 703 | 0.7− | 1.6− |
| 2001 12 10 | 645 | 0.2+ | 0.2− | 2005 08 29 | 699 | (2.0− | 0.1−) | 2006 11 25 | 703 | 0.4+ | 0.5− |
| 2001 12 10 | 645 | 0.1+ | 0.1− | 2005 09 05 | 703 | 0.0 | 0.2− | 2006 11 25 | 703 | 1.7− | 0.4+ |

**(136647)∗ 1995 FR$_{17}$ = 2002 KM$_{11}$**

Discovered 1995 Mar. 28 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 60466)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.70799 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28875910 | $\omega$ | 256.06397 | | +0.73852462 | +0.66577238 | |
| $a$ | 2.2669691 | $\Omega$ | 62.07533 | | −0.56271273 | +0.69560630 | |
| $e$ | 0.1607899 | $i$ | 6.91874 | | −0.37139704 | +0.26996114 | |
| $P$ | 3.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.8− | 0.3− | 2003 11 30 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.2+ | 0.8+ |
| 1995 03 28 | 691 | 0.7+ | 0.4+ | 2003 12 14 | 691 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.1− | 0.1− |
| 1995 03 28 | 691 | 0.2− | 1.1+ | 2003 12 14 | 691 | 0.2− | 0.5+ | 2006 09 25 | 703 | 0.3− | 0.1+ |
| 1995 04 08 | 691 | 0.1− | 0.1+ | 2003 12 14 | 691 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.2− | 0.1+ |
| 1995 04 08 | 691 | 0.1− | 0.1+ | 2006 07 31 | E12 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 1995 04 08 | 691 | 1.4+ | 0.7+ | 2006 07 31 | E12 | 1.3− | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2002 05 17 | 291 | 0.1+ | 0.2+ | 2006 07 31 | E12 | 0.6+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 05 17 | 291 | 0.2+ | 0.2+ | 2006 07 31 | E12 | 0.5+ | 0.5− | 2006 10 19 | 703 | 0.7− | 0.9+ |
| 2002 05 17 | 291 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.8− | 1.1+ |
| 2002 05 19 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.9− | 1.3+ |
| 2002 05 19 | 644 | 0.4+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 1.3+ | 0.2+ |
| 2002 05 19 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 10 24 | 644 | 0.2− | 0.4+ |
| 2003 11 30 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 10 24 | 644 | 0.4− | 0.3+ |
| 2003 11 30 | 691 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.2− | 2006 10 24 | 644 | 0.2− | 0.0 |

**(136648)∗ 1995 GQ$_2$ = 1997 WY$_{26}$**

Discovered 1995 Apr. 2 by Spacewatch at Kitt Peak.

Id. A. Doppler (MPC 33248)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.80888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23042719 | $\omega$ | 279.96811 | | +0.89998983 | −0.43149784 | |
| $a$ | 2.6349976 | $\Omega$ | 105.61642 | | +0.42087309 | +0.82318713 | |
| $e$ | 0.0495054 | $i$ | 3.68331 | | +0.11350833 | +0.36901567 | |
| $P$ | 4.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 02 | 691 | 0.3− | 0.3− | 2001 10 10 | 644 | 0.1− | 0.3− | 2005 08 26 | 644 | 0.0 | 0.3− |
| 1995 04 02 | 691 | 0.2− | 0.4− | 2001 10 10 | 644 | 0.3+ | 0.0 | 2005 08 28 | 691 | 0.1− | 0.4+ |
| 1995 04 02 | 691 | 0.4− | 0.4+ | 2001 10 15 | 704 | 0.7+ | 0.1− | 2005 08 28 | 691 | 0.1− | 0.2− |
| 1995 04 06 | 691 | 0.6− | 0.6− | 2001 10 15 | 704 | 1.3+ | 0.1− | 2005 08 28 | 691 | 0.0 | 0.1− |
| 1995 04 06 | 691 | 0.2+ | 0.5− | 2001 10 15 | 704 | 0.2− | 1.0− | 2005 09 01 | 691 | 0.2+ | 0.3− |
| 1995 04 06 | 691 | 0.4+ | 0.5− | 2001 10 15 | 704 | 1.0+ | 0.2+ | 2005 09 01 | 691 | 0.1+ | 0.3− |
| 1995 04 08 | 691 | 0.4+ | 0.3− | 2001 10 15 | 704 | 0.1+ | 1.5+ | 2005 09 01 | 691 | 0.1+ | 0.4− |
| 1995 04 08 | 691 | 0.1+ | 0.4− | 2001 10 18 | 291 | 0.2− | 0.0 | 2005 09 11 | 691 | 0.1− | 0.0 |
| 1995 04 08 | 691 | 0.7− | 0.3− | 2001 10 18 | 291 | 0.7− | 1.1+ | 2005 09 11 | 691 | 0.5− | 0.1− |
| 1995 04 22 | 691 | 0.5+ | 0.2+ | 2001 10 18 | 291 | 1.1+ | 0.0 | 2005 09 11 | 691 | 0.5+ | 0.2− |
| 1995 04 22 | 691 | 0.0 | 0.4+ | 2003 02 02 | 644 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.5+ |
| 1995 04 22 | 691 | 0.1+ | 0.7+ | 2003 02 02 | 644 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.6− | 0.2+ |
| 1997 11 28 | 691 | 0.2+ | 0.2− | 2003 02 02 | 644 | 0.2+ | 1.2+ | 2006 10 21 | G96 | 0.3+ | 0.4+ |
| 1997 11 28 | 691 | 0.3+ | 0.3− | 2005 07 30 | 644 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.6+ | 0.2+ |
| 1997 12 05 | 691 | 0.1− | 0.5− | 2005 07 30 | 644 | 0.1− | 0.3− | 2006 10 29 | G96 | 0.4− | 0.0 |
| 1997 12 05 | 691 | 0.4− | 0.4− | 2005 07 30 | 644 | 0.4− | 0.2− | 2006 10 29 | G96 | 0.2+ | 0.1− |
| 1997 12 05 | 691 | 0.3− | 0.4− | 2005 08 26 | 644 | 0.1+ | 0.3− | 2006 10 29 | G96 | 0.5− | 0.3− |
| 2001 10 10 | 644 | 0.1− | 0.0 | 2005 08 26 | 644 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.4+ | 0.1+ |

**(136649)∗ 1995 GA$_4$ = 1999 CH$_{140}$ = 2000 HO$_{38}$**

Discovered 1995 Apr. 4 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 14737)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.34461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21579805 | $\omega$ | 215.22543 | | +0.95577601 | +0.28769776 | |
| $a$ | 2.7527770 | $\Omega$ | 127.93886 | | −0.24895505 | +0.90191397 | |
| $e$ | 0.0945890 | $i$ | 4.43674 | | −0.15656818 | +0.32215088 | |
| $P$ | 4.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.0 | 0.5+ | 2001 09 12 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.8+ |
| 1995 03 27 | 691 | 0.5+ | 0.2− | 2001 09 12 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | (0.5+ | 1.8+) |
| 1995 03 27 | 691 | 0.2+ | 0.0 | 2001 09 12 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.9+ |
| 1995 04 01 | 691 | 0.3− | 0.8+ | 2001 09 12 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.6+ | 0.4+ |
| 1995 04 01 | 691 | 1.1− | 0.3+ | 2001 09 19 | 704 | (1.7+ | 0.0 ) | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 1995 04 01 | 691 | 0.0 | 0.9+ | 2001 09 19 | 704 | 1.0+ | 1.2− | 2006 10 16 | 703 | 0.4− | 0.9− |
| 1995 04 04 | 691 | 0.4− | 0.5− | 2001 09 19 | 704 | (2.0+ | 0.2−) | 2006 10 16 | 703 | (0.7− | 1.7−) |
| 1995 04 04 | 691 | 0.4− | 0.2− | 2001 09 19 | 704 | 1.3+ | 0.3− | 2006 10 18 | 691 | 0.3− | 0.1− |
| 1995 04 04 | 691 | 0.2− | 0.7− | 2001 09 21 | 704 | 0.0 | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 1995 04 08 | 691 | 0.2− | 0.7− | 2001 09 21 | 704 | 0.3+ | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 1995 04 08 | 691 | 0.4− | 0.6− | 2001 09 21 | 704 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 1995 04 08 | 691 | 0.2− | 0.4− | 2001 09 21 | 704 | 0.5+ | 1.2+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 1998 01 29 | 691 | 0.4+ | 0.5− | 2001 10 17 | 644 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 1998 01 29 | 691 | 0.2+ | 0.3− | 2001 10 17 | 644 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 1998 01 29 | 691 | 0.1− | 0.1+ | 2001 10 17 | 644 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.6− | 0.2+ |
| 1999 02 07 | 691 | 0.0 | 0.1− | 2003 01 04 | 704 | (0.1+ | 1.8−) | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 1999 02 07 | 691 | 0.3+ | 0.3− | 2003 01 04 | 704 | 0.7− | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 1999 02 07 | 691 | 0.2+ | 0.1− | 2003 01 04 | 704 | 0.4+ | 1.4+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 1999 02 13 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.9+ | 1.2+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1999 02 13 | 691 | 0.4+ | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.3− | 0.0 |
| 1999 02 13 | 691 | 0.5+ | 0.2+ | 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2000 04 28 | 691 | 0.1− | 0.0 | 2004 03 20 | 704 | 1.1+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2000 04 28 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.3− |
| 2000 04 28 | 691 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.2+ | 2006 11 13 | 703 | 0.3+ | 1.1− |
| 2000 05 04 | 691 | 0.2− | 0.3+ | 2004 03 20 | 704 | 1.2+ | 0.6− | 2006 11 13 | 703 | 0.5+ | 0.2+ |
| 2000 05 04 | 691 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.9+ | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2000 05 04 | 691 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2001 08 11 | 608 | 0.2+ | 0.6− | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 11 13 | 644 | 0.1+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.5− | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 08 11 | 608 | 0.0 | 0.4− | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2001 08 20 | 807 | 0.3− | 0.3+ | 2004 03 22 | 704 | (0.3+ | 1.6+) | 2006 11 20 | 704 | 0.3− | 0.5+ |
| 2001 08 20 | 807 | 0.1− | 0.1+ | 2004 03 22 | 704 | (1.2+ | 1.8+) | 2006 11 20 | 704 | 1.2− | 0.5− |
| 2001 08 25 | 704 | 0.4+ | 0.7+ | 2004 03 23 | 704 | 1.1+ | 0.4+ | 2006 11 20 | 704 | 1.3− | 0.8+ |
| 2001 08 25 | 704 | (1.9− | 0.5+) | 2004 03 23 | 704 | 0.7+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2001 08 25 | 704 | 0.1+ | 1.0− | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 11 20 | 704 | 0.6− | 0.3+ |
| 2001 08 25 | 704 | 0.7− | 1.3+ | 2004 03 23 | 704 | 0.9+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 699 | 0.8+ | 1.2− | 2004 03 23 | 704 | 0.6+ | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2001 09 11 | 699 | 1.2+ | 0.0 | 2004 03 25 | 704 | 0.2− | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2001 09 11 | 699 | 0.5− | 0.0 | 2004 03 25 | 704 | 0.5+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 699 | 0.8+ | 0.2− | 2004 03 25 | 704 | 0.3+ | 0.2+ | | | | |
| 2001 09 12 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.9+ | 1.3+ | | | | |

**(136650)∗ 1995 HK$_2$ = 2001 TO$_{203}$ = 2003 AO$_{45}$**

Discovered 1995 Apr. 25 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 60466)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.02926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21296511 | $\omega$ | 274.69792 | | +0.99429445 | −0.01151046 | |
| $a$ | 2.7771356 | $\Omega$ | 85.98812 | | +0.05349274 | +0.91392311 | |
| $e$ | 0.0426514 | $i$ | 6.10253 | | −0.09228799 | +0.40572412 | |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 25 | 691 | 0.0 | 0.8+ | 2001 10 11 | 704 | 0.6− | 0.7+ | 2004 04 26 | 691 | 0.2+ | 0.2+ |
| 1995 04 25 | 691 | 0.2− | 0.2+ | 2001 10 11 | 704 | 0.6− | 1.2+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 1995 04 25 | 691 | 0.5+ | 0.3+ | 2001 10 11 | 704 | (0.0 | 2.4+) | 2006 10 16 | 703 | 1.3− | 0.5− |
| 1995 04 30 | 691 | 0.3− | 0.3− | 2001 10 17 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 1995 04 30 | 691 | 0.1+ | 0.4− | 2001 10 17 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 1995 04 30 | 691 | 0.1− | 0.0 | 2001 10 17 | 644 | 0.6− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 08 26 | 644 | 0.3+ | 0.3+ | 2003 01 05 | 704 | 1.0+ | 0.3− | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2001 08 26 | 644 | 0.1− | 0.2+ | 2003 01 05 | 704 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2001 08 26 | 644 | 0.2+ | 0.5+ | 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 09 11 | 699 | (0.6− | 1.8+) | 2003 01 09 | 704 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2001 09 11 | 699 | 0.3− | 0.3+ | 2003 01 09 | 704 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2001 09 11 | 699 | 0.1− | 0.3+ | 2003 01 09 | 704 | 0.1+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2001 09 11 | 699 | 0.9− | 0.5+ | 2004 03 26 | 691 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.0 | 1.4+ | 2004 03 26 | 691 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 1.2+ | 2004 03 26 | 691 | 0.1+ | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.1+ | 0.5− | 2004 04 26 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2001 10 11 | 704 | 0.5+ | 1.0+ | 2004 04 26 | 691 | 0.1+ | 0.1+ | | | | |

**(136651)∗ 1995 HT$_3$**

Discovered 1995 Apr. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.69445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20820743 | $\omega$ | 240.55984 | | +0.67069154 | −0.74149530 | |
| $a$ | 2.8192823 | $\Omega$ | 167.26501 | | +0.70678528 | +0.63114678 | |
| $e$ | 0.0750961 | $i$ | 4.92097 | | +0.22500542 | +0.22768062 | |
| $P$ | 4.73 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.2+ | 0.6+ | 2004 03 16 | 599 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 1995 04 26 | 691 | 0.3+ | 1.4+ | 2004 03 16 | 599 | 0.4+ | 0.5+ | 2006 09 22 | D35 | 0.1− | 0.6+ |
| 1995 04 26 | 691 | 0.4+ | 0.1− | 2004 03 31 | 691 | 0.0 | 0.6+ | 2006 09 22 | D35 | 0.2− | 0.4+ |
| 1995 05 01 | 691 | 0.0 | 0.2+ | 2004 03 31 | 691 | 0.1+ | 0.4+ | 2006 09 22 | D35 | 0.1+ | 0.5+ |
| 1995 05 01 | 691 | 0.3− | 0.0 | 2004 03 31 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 1995 05 04 | 691 | 0.6− | 0.3− | 2004 04 25 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 1995 05 04 | 691 | 0.3+ | 0.2− | 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.5+ |
| 1995 05 04 | 691 | 0.3− | 0.3− | 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2000 06 09 | 691 | 0.6− | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2000 06 09 | 691 | 0.0 | 0.4− | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2000 06 09 | 691 | 0.3+ | 0.4− | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.7+ |
| 2001 08 15 | 608 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.7− | 0.1+ |
| 2001 08 15 | 608 | 0.3+ | 0.8− | 2006 09 16 | 699 | 0.5+ | 0.4− | 2006 09 27 | 704 | 0.7− | 1.0− |
| 2001 08 15 | 608 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 08 20 | 807 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.4+ | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2001 08 20 | 807 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2001 08 24 | 644 | 1.2+ | 0.4− | 2006 09 17 | 704 | (0.1− | 2.0+) | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 08 24 | 644 | 0.8+ | 0.5− | 2006 09 17 | 704 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.0 |
| 2001 08 24 | 644 | 1.2+ | 0.3− | 2006 09 17 | 704 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.6− | 0.4+ |
| 2001 09 21 | 704 | (0.4− | 1.9+) | 2006 09 17 | 704 | 1.2− | 0.0 | 2006 10 21 | 644 | 0.6− | 0.1− |
| 2001 09 21 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2001 09 21 | 704 | 0.8− | 0.9+ | 2006 09 20 | 644 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 21 | G96 | 1.0− | 0.2+ |
| 2004 03 16 | 599 | 0.6+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1+ | 1.1+ |
| 2004 03 16 | 599 | 0.4− | 0.3+ | 2006 09 20 | 704 | (0.3− | 2.3+) | 2006 10 21 | G96 | 0.6+ | 0.7+ |

**(136652)∗ 1995 MB$_1$ = 2002 XZ$_{46}$**

Discovered 1995 June 22 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 39910)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.94577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21689661 | $\omega$ | 356.90149 | | −0.37127049 | −0.91373211 | |
| $a$ | 2.7434742 | $\Omega$ | 114.84200 | | +0.85576836 | −0.40571647 | |
| $e$ | 0.1309963 | $i$ | 10.48126 | | +0.36030367 | +0.02208569 | |
| $P$ | 4.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 04 | 691 | 0.3+ | 1.0+ | 2003 01 01 | 704 | 0.1+ | 0.3+ | 2005 07 05 | 691 | 0.1− | 0.1− |
| 1995 06 04 | 691 | 0.4+ | 0.6+ | 2003 01 01 | 704 | 0.3+ | 0.7+ | 2005 07 09 | 691 | 0.3− | 0.0 |
| 1995 06 04 | 691 | 0.1+ | 0.4+ | 2003 01 04 | 704 | 0.3+ | 0.1+ | 2005 07 09 | 691 | 0.2− | 0.3+ |
| 1995 06 22 | 691 | 0.3− | 0.0 | 2003 01 04 | 704 | 0.1− | 0.0 | 2005 07 09 | 691 | 0.1+ | 0.4+ |
| 1995 06 22 | 691 | 0.1− | 0.1+ | 2003 01 04 | 704 | 0.1+ | 0.2+ | 2005 07 16 | 691 | 0.0 | 0.1+ |
| 1995 06 22 | 691 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.4− | 0.4− | 2005 07 16 | 691 | 0.2+ | 0.0 |
| 1995 06 28 | 691 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.5− | 0.5− | 2005 07 16 | 691 | 0.0 | 0.1− |
| 1995 06 28 | 691 | 0.2+ | 0.1− | 2003 01 08 | 704 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 1995 06 28 | 691 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.4− | 0.6− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1995 06 29 | 691 | 0.2+ | 0.0 | 2003 01 08 | 704 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1995 06 29 | 691 | 0.1+ | 0.1+ | 2003 01 08 | 017 | 1.2+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.0 |
| 1995 06 29 | 691 | 0.2− | 0.7− | 2003 01 08 | 017 | 1.0+ | 0.7− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 1995 07 04 | 691 | 0.1− | 0.3− | 2003 01 31 | 704 | 0.7− | 0.8+ | 2006 10 17 | 703 | 0.9− | 0.7+ |
| 1995 07 04 | 691 | 0.1− | 0.1− | 2003 01 31 | 704 | 0.5+ | 0.9+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 1995 07 04 | 691 | 0.2+ | 0.1− | 2003 01 31 | 704 | 0.6− | 0.0 | 2006 10 28 | 703 | 0.3− | 0.1− |
| 2002 12 08 | 608 | (1.0+ | 2.3+) | 2003 01 31 | 704 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.3− |
| 2002 12 08 | 608 | (0.7+ | 2.2+) | 2003 02 03 | 704 | 0.5− | 0.5+ | 2006 10 28 | 703 | 1.3+ | 0.3+ |
| 2002 12 08 | 608 | (1.2+ | 2.1+) | 2003 02 03 | 704 | 0.0 | 1.2+ | 2006 10 28 | 703 | 0.7+ | 0.1+ |
| 2002 12 11 | 704 | 0.2− | 0.3− | 2003 02 03 | 704 | 0.6+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2003 02 03 | 704 | 0.1− | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | 0.8− | 1.3+ | 2004 04 28 | 608 | 0.4+ | 0.3− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2004 04 28 | 608 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2002 12 31 | 704 | 0.2− | 0.1+ | 2004 04 28 | 608 | 0.9+ | 0.6− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.2+ | 0.1− | 2004 05 21 | 703 | (1.8− | 0.1+) | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 12 31 | 704 | 0.4+ | 0.3+ | 2004 05 21 | 703 | 1.4− | 0.0 | 2006 11 16 | 703 | 0.4+ | 0.2+ |
| 2002 12 31 | 704 | 0.2+ | 0.6+ | 2004 05 21 | 703 | 0.4− | 0.7+ | 2006 11 16 | 703 | 0.4− | 0.2+ |
| 2003 01 01 | 704 | 0.3+ | 0.0 | 2004 05 21 | 703 | 1.2+ | 1.1+ | 2006 11 16 | 703 | 0.2− | 0.0 |
| 2003 01 01 | 704 | 0.4− | 0.1+ | 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.4+ |
| 2003 01 01 | 704 | 0.2− | 0.2+ | 2005 07 05 | 691 | 0.0 | 0.1+ | | | | |

**(136653)∗ 1995 MU$_1$**

Discovered 1995 June 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.15156 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20495840 | $\omega$ | 263.55764 | | +0.91235395 | −0.37936006 | |
| $a$ | 2.8489986 | $\Omega$ | 118.64191 | | +0.40920984 | +0.85653583 | |
| $e$ | 0.1470735 | $i$ | 10.10187 | | −0.01255270 | +0.34990330 | |
| $P$ | 4.81 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 31 | 691 | 1.5+ | 0.4− | 2001 10 23 | 644 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 1995 05 31 | 691 | 1.5+ | 0.9− | 2003 01 04 | 291 | 0.7− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.0 |
| 1995 05 31 | 691 | 1.7+ | 0.5− | 2003 01 04 | 291 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.1− |
| 1995 06 23 | 691 | 0.5− | 0.7+ | 2003 01 04 | 291 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 1995 06 23 | 691 | 0.2− | 0.7+ | 2003 01 08 | 704 | 0.8+ | 0.9+ | 2006 09 29 | 699 | 0.8+ | 0.1+ |
| 1995 06 23 | 691 | 0.7− | 0.9+ | 2003 01 08 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 0.5+ | 0.6− |
| 1995 06 30 | 691 | 0.7+ | 0.3− | 2003 01 08 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 699 | 0.1− | 0.7− |
| 1995 06 30 | 691 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 699 | 0.8− | 1.0+ |
| 1995 06 30 | 691 | 0.1− | 0.1− | 2003 01 10 | 291 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.5+ | 0.1− |
| 1995 07 01 | 691 | 0.7− | 0.1+ | 2003 01 10 | 291 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.6+ |
| 1995 07 01 | 691 | 0.7− | 0.2− | 2003 01 10 | 291 | 0.0 | 0.7+ | 2006 09 30 | 704 | 0.5− | 1.0+ |
| 1995 07 01 | 691 | 0.6− | 0.7− | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.9− | 0.8+ |
| 1995 07 01 | 691 | 0.3− | 0.6+ | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.3+ | 0.0 |
| 1995 07 01 | 691 | 0.6− | 0.5+ | 2003 01 31 | 704 | 1.3− | 0.0 | 2006 10 02 | 703 | 0.3− | 0.2− |
| 1995 07 01 | 691 | 0.7− | 0.5+ | 2003 01 31 | 704 | 0.4+ | 0.4+ | 2006 10 02 | 703 | 0.5− | 0.4− |
| 1995 07 05 | 691 | 0.3+ | 0.6+ | 2003 01 31 | 704 | 0.2+ | 0.1− | 2006 10 02 | 703 | 0.3− | 0.7+ |
| 1995 07 05 | 691 | 0.2− | 0.1+ | 2003 01 31 | 704 | 0.1+ | 0.4− | 2006 10 02 | 703 | 0.4− | 0.1+ |
| 1995 07 05 | 691 | 0.1+ | 0.1+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 08 01 | 644 | 0.4+ | 0.1+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2001 08 01 | 644 | 0.2+ | 0.3+ | 2003 02 03 | 704 | 1.1+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 2001 08 01 | 644 | 0.5+ | 0.2− | 2003 02 03 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2001 08 20 | 608 | 0.1+ | 0.1+ | 2003 02 03 | 704 | 0.8− | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2001 08 20 | 608 | 0.2+ | 0.3+ | 2003 02 03 | 704 | 0.9+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 08 20 | 608 | 0.1− | 0.4+ | 2004 03 28 | 703 | 0.1− | 1.4+ | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2001 09 12 | 704 | 0.5− | 0.7+ | 2004 03 28 | 703 | 0.7− | 0.3− | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.7− | 0.6+ | 2004 03 28 | 703 | 0.7+ | 0.8− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.9− | 0.4+ | 2004 03 28 | 703 | 1.4− | 1.3+ | 2006 10 19 | 644 | 0.1− | 0.3− |
| 2001 09 12 | 704 | 0.9− | 0.7+ | 2006 09 19 | 703 | 0.6+ | 0.7− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2006 09 19 | 703 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2001 09 25 | 704 | 0.6− | 0.2− | 2006 09 19 | 703 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2001 09 25 | 704 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2001 09 25 | 704 | 0.4− | 0.1+ | 2006 09 21 | 699 | 0.9− | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.4+ | 0.2+ | 2006 09 21 | 699 | 1.2− | 1.1+ | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2001 09 25 | 704 | 0.4− | 0.6− | 2006 09 21 | 699 | 0.2− | 0.2− | 2006 10 28 | 703 | 0.2+ | 0.2+ |
| 2001 10 15 | 644 | 0.1− | 0.2− | 2006 09 21 | 699 | 1.0+ | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.3− |
| 2001 10 15 | 644 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.2− | 0.8+ | 2006 10 28 | 703 | 0.3+ | 0.4− |
| 2001 10 15 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.6+ | 0.5− |
| 2001 10 23 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.7+ | | | | |
| 2001 10 23 | 644 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.1− | | | | |

### (136654)∗ 1995 $MB_2$ = 2004 $BZ_{93}$

Discovered 1995 June 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55810)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.22373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29172558 | $\omega$ | 249.94319 | | −0.69612853 | −0.70943255 | |
| $a$ | 2.2515748 | $\Omega$ | 244.68027 | | +0.69575534 | −0.62887323 | |
| $e$ | 0.0534114 | $i$ | 6.99271 | | +0.17700164 | −0.31815707 | |
| $P$ | 3.38 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 23 | 691 | 0.6− | 0.3+ | 2004 01 18 | 703 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.9− | 0.1− |
| 1995 06 23 | 691 | 0.1− | 0.0 | 2004 01 18 | 703 | 1.1− | 0.1− | 2006 11 15 | 703 | (0.1− | 1.6+) |
| 1995 06 23 | 691 | 0.3− | 0.2+ | 2004 01 27 | 699 | 0.7− | 0.8+ | 2006 11 15 | 703 | 0.8+ | 0.4− |
| 1995 06 29 | 691 | 0.6+ | 0.3+ | 2004 01 27 | 699 | 0.8+ | 0.2− | 2006 11 15 | 703 | 0.6+ | 0.3+ |
| 1995 06 29 | 691 | 0.2− | 0.2− | 2004 01 27 | 699 | 0.2− | 0.6− | 2006 11 15 | 703 | 0.4+ | 0.6− |
| 1995 07 04 | 691 | 0.2+ | 0.2− | 2004 01 27 | 699 | 1.3+ | 0.7− | 2006 11 15 | 703 | 0.2+ | 0.1+ |
| 1995 07 04 | 691 | 0.2+ | 0.4− | 2004 01 28 | 608 | 0.2+ | 0.3− | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 1995 07 04 | 691 | 0.2+ | 0.1− | 2004 01 28 | 608 | 0.8+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.3+ |
| 2002 09 04 | 644 | 0.2− | 0.4+ | 2004 01 28 | 608 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2002 09 04 | 644 | 0.0 | 0.5+ | 2004 01 29 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 09 04 | 644 | 0.4− | 0.6+ | 2004 01 29 | 704 | (1.6+ | 0.6−) | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2002 09 12 | 644 | 0.5− | 0.7+ | 2004 01 29 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2002 09 12 | 644 | 0.2− | 0.5+ | 2004 01 29 | 704 | 0.4+ | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2002 09 12 | 644 | 0.6− | 0.5+ | 2004 02 18 | 704 | 0.3− | 0.2+ | 2006 11 21 | 704 | (1.1+ | 1.5+) |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 1.1+ | 1.2+ |
| 2002 10 05 | 645 | 0.1− | 0.1− | 2004 02 18 | 704 | 0.4− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.3+ | 0.7+ | 2006 11 23 | 691 | 0.5− | 0.0 |
| 2002 10 10 | 645 | 0.1+ | 0.1+ | 2005 06 13 | 691 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.3− | 0.3+ |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2005 06 13 | 691 | 0.1− | 0.5+ | 2006 11 27 | 691 | 0.5+ | 1.0+ |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2005 06 13 | 691 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.3− |
| 2003 12 29 | 699 | (1.8+ | 0.0 ) | 2006 11 11 | 691 | 0.4− | 0.0 | 2006 11 27 | 691 | 0.4− | 0.4− |
| 2003 12 29 | 699 | 0.5+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2003 12 29 | 699 | 1.4− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.4+ | 0.2+ |
| 2003 12 29 | 699 | 0.4+ | 1.2− | 2006 11 11 | G96 | 0.7− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2004 01 18 | 703 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.3− | | | | |
| 2004 01 18 | 703 | 0.8− | 0.6+ | 2006 11 11 | G96 | 0.6− | 0.2− | | | | |

### (136655)∗ 1995 $MQ_7$

Discovered 1995 June 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.09709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26571063 | $\omega$ | 191.11671 | | +0.95412508 | +0.29321856 | |
| $a$ | 2.3962388 | $\Omega$ | 151.60468 | | −0.26400858 | +0.91933840 | |
| $e$ | 0.1441420 | $i$ | 7.31699 | | −0.14122605 | +0.26237335 | |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 31 | 691 | 1.2+ | 0.6− | 2003 08 25 | 704 | 0.2− | 0.5+ | 2003 09 22 | 608 | 0.2+ | 0.4− |
| 1995 05 31 | 691 | 1.0+ | 0.9− | 2003 08 25 | 704 | 0.0 | 0.2+ | 2003 09 28 | 704 | 0.3− | 0.2+ |
| 1995 05 31 | 691 | 0.7+ | 0.9− | 2003 08 25 | 704 | 0.1− | 0.3− | 2003 09 28 | 704 | 1.5− | 0.5− |
| 1995 06 30 | 691 | 0.4− | 0.0 | 2003 08 25 | 704 | 0.1− | 0.2+ | 2003 09 28 | 704 | 0.3+ | 0.0 |
| 1995 06 30 | 691 | 0.3− | 0.1− | 2003 08 25 | 704 | 0.0 | 0.0 | 2003 09 28 | 704 | 0.6+ | 0.6+ |
| 1995 06 30 | 691 | 0.4− | 0.1− | 2003 08 29 | 704 | 0.3− | 0.0 | 2003 10 01 | 699 | 0.6+ | 0.5+ |
| 1995 07 01 | 691 | 0.3− | 0.3− | 2003 08 29 | 704 | 0.7− | 0.3+ | 2003 10 01 | 699 | 0.2+ | 0.0 |
| 1995 07 01 | 691 | 0.4− | 0.1+ | 2003 08 29 | 704 | 0.1− | 0.2+ | 2003 10 01 | 699 | 1.3+ | 0.8− |
| 1995 07 01 | 691 | 0.1− | 0.2+ | 2003 09 01 | 704 | 0.2− | 0.0 | 2003 10 01 | 699 | 0.6− | 0.8+ |
| 1995 07 05 | 691 | 1.4− | 0.3+ | 2003 09 01 | 704 | 0.3− | 0.1+ | 2005 01 17 | 691 | 0.4+ | 0.0 |
| 1995 07 05 | 691 | 0.2− | 0.2− | 2003 09 01 | 704 | 0.0 | 0.3− | 2005 01 17 | 691 | 0.3+ | 0.0 |
| 1995 07 05 | 691 | 0.1− | 0.1− | 2003 09 01 | 704 | 0.6+ | 0.7− | 2005 01 17 | 691 | 0.1− | 0.4− |
| 1996 11 09 | 691 | 0.0 | 0.5− | 2003 09 01 | 704 | 0.4− | 0.6− | 2005 03 11 | G96 | 0.7− | 0.5+ |
| 1996 11 09 | 691 | 0.0 | 0.4− | 2003 09 04 | 691 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.1− | 0.1− |
| 1996 11 09 | 691 | 0.2− | 0.7− | 2003 09 04 | 691 | 0.0 | 0.2+ | 2005 03 11 | G96 | 0.4− | 0.4− |
| 2003 08 04 | 704 | 0.5− | 0.7+ | 2003 09 04 | 691 | 0.2+ | 0.2− | 2005 03 11 | G96 | 0.3− | 0.3− |
| 2003 08 04 | 704 | 0.4− | 0.9+ | 2003 09 05 | 608 | 0.2+ | 0.1− | 2006 05 05 | G96 | 0.6− | 0.4+ |
| 2003 08 04 | 704 | 0.6+ | 0.0 | 2003 09 05 | 608 | 0.3− | 0.7− | 2006 05 05 | G96 | 0.5− | 0.5+ |
| 2003 08 04 | 704 | 0.1+ | 0.8+ | 2003 09 05 | 608 | 0.2− | 0.5− | 2006 05 05 | G96 | 0.5− | 0.5+ |
| 2003 08 22 | 704 | 0.7+ | 0.8− | 2003 09 17 | 704 | 0.5− | 0.2+ | 2006 05 05 | G96 | 0.6− | 0.3+ |
| 2003 08 22 | 704 | 1.1+ | 0.0 | 2003 09 17 | 704 | 1.2+ | 1.0+ | 2006 05 24 | 699 | 0.3− | 0.7+ |
| 2003 08 22 | 704 | 0.7− | 0.3− | 2003 09 17 | 704 | 0.6− | 1.0+ | 2006 05 24 | 699 | 0.2− | 0.2+ |
| 2003 08 23 | 644 | 0.1− | 0.0 | 2003 09 17 | 704 | 0.2+ | 1.1− | 2006 05 24 | 699 | 1.7+ | 1.0+ |
| 2003 08 23 | 644 | 0.1− | 0.0 | 2003 09 22 | 608 | 0.4+ | 0.1− | 2006 05 24 | 699 | 0.7− | 1.1+ |
| 2003 08 23 | 644 | 0.0 | 0.2+ | 2003 09 22 | 608 | 0.3+ | 0.2+ | | | | |

### (136656)∗ 1995 $OP_2$

Discovered 1995 July 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.73458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28091406 | $\omega$ | 75.30582 | | +0.03567719 | +0.99899232 | |
| $a$ | 2.3089812 | $\Omega$ | 196.81002 | | −0.94931100 | +0.02536269 | |
| $e$ | 0.0942449 | $i$ | 5.40284 | | −0.31230715 | +0.03702817 | |
| $P$ | 3.51 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 20 | 691 | 0.8+ | 0.5+ | 2002 07 12 | 644 | 0.1− | 0.7+ | 2006 09 24 | 691 | 0.1+ | 0.3+ |
| 1992 10 20 | 691 | 0.5− | 0.3− | 2002 07 12 | 644 | 0.4− | 0.8+ | 2006 10 02 | 691 | 0.2+ | 0.5+ |
| 1992 10 20 | 691 | 0.4− | 0.4+ | 2002 08 26 | 644 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1995 06 22 | 691 | 0.6− | 0.4− | 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 1995 06 22 | 691 | 0.6− | 0.4− | 2002 08 26 | 644 | 0.3+ | 0.8+ | 2006 10 11 | 691 | 0.3− | 0.1+ |
| 1995 06 22 | 691 | 0.6− | 0.6− | 2005 03 10 | G96 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 1995 07 22 | 691 | 0.3− | 0.0 | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.6− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 1995 07 27 | 691 | 0.6+ | 0.2+ | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.0 |
| 1995 07 27 | 691 | 0.3+ | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.5− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1995 07 27 | 691 | 0.4+ | 0.1+ | 2005 03 10 | G96 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 1995 08 02 | 691 | 0.5+ | 0.1− | 2005 03 10 | G96 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 1995 08 02 | 691 | 0.2+ | 0.2− | 2005 03 10 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.4− | 0.2− |
| 1995 08 02 | 691 | 0.0 | 0.5− | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 1999 10 04 | 691 | 0.0 | 0.1− | 2005 04 16 | 691 | 0.2+ | 0.7+ | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 1999 10 04 | 691 | 0.3+ | 0.3− | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.6+ | 1.0− |
| 1999 10 04 | 691 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2002 07 12 | 644 | 0.0 | 0.5+ | 2006 09 24 | 691 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.5− |

**(136657)∗ 1995 OX$_4$**

Discovered 1995 July 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.69105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18167446 | $\omega$ | 326.47722 | | +0.96276506 | +0.27025872 | |
| $a$ | 3.0874988 | $\Omega$ | 17.84665 | | −0.24305397 | +0.87603597 | |
| $e$ | 0.1053931 | $i$ | 1.23555 | | −0.11835630 | +0.39940105 | |
| $P$ | 5.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 26 | 691 | 0.1+ | 0.3− | 2001 11 21 | 704 | (1.6− | 0.1−) | 2006 09 12 | 703 | 0.0 | 0.4+ |
| 1990 10 26 | 691 | 0.1+ | 0.2− | 2002 12 31 | 645 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.4− | 0.1− |
| 1990 10 26 | 691 | 0.1+ | 0.3− | 2002 12 31 | 645 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 1.3− | 1.0+ |
| 1995 07 22 | 691 | 0.1+ | 0.5+ | 2003 01 05 | 291 | 0.8− | 0.4− | 2006 09 16 | 699 | (0.8+ | 1.8+) |
| 1995 07 22 | 691 | 0.4+ | 0.2+ | 2003 01 05 | 291 | 0.3− | 0.5+ | 2006 09 16 | 699 | (0.5+ | 2.2+) |
| 1995 07 22 | 691 | 0.5+ | 0.2+ | 2003 01 05 | 291 | 0.4− | 0.2+ | 2006 09 16 | 699 | (0.2− | 1.7+) |
| 1995 07 27 | 691 | 0.4− | 0.1+ | 2004 03 16 | 599 | 0.5+ | 0.6+ | 2006 09 16 | 699 | 0.8+ | 0.7+ |
| 1995 07 27 | 691 | 0.3− | 0.1+ | 2004 03 16 | 599 | 0.3+ | 0.2+ | 2006 09 19 | 703 | (0.3+ | 2.1−) |
| 1995 07 27 | 691 | 0.2− | 0.3− | 2004 03 16 | 599 | 0.4+ | 1.2+ | 2006 09 19 | 703 | 1.1− | 0.6− |
| 1995 08 03 | 691 | 0.5− | 0.1− | 2004 03 16 | 599 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.8− | 1.1− |
| 1995 08 03 | 691 | 0.1− | 0.2− | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 1.1− | 0.8− |
| 1995 08 03 | 691 | 0.4+ | 0.2− | 2004 03 29 | 691 | 0.1− | 0.0 | 2006 09 19 | D35 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | 0.5+ | 0.9+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 09 19 | D35 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2005 02 09 | 809 | 0.4+ | 0.2+ | 2006 09 19 | D35 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | 1.1− | 0.5− | 2005 02 09 | 809 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2001 10 14 | 704 | 1.0+ | 0.5− | 2005 02 09 | 809 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 10 14 | 704 | 0.2− | 0.6− | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 10 14 | 704 | 0.4− | 0.2− | 2006 08 18 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2001 10 14 | 704 | 0.1− | 0.3+ | 2006 08 18 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.6+ | 0.5+ | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2006 08 23 | 644 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.5+ | 0.6+ | 2006 08 23 | 644 | 0.2+ | 0.7+ | 2006 10 20 | G96 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 0.9+ | 1.4+ | 2006 08 28 | 703 | 0.4− | 1.1+ | 2006 11 15 | G96 | 1.1+ | 0.5− |
| 2001 11 21 | 704 | (1.7− | 1.0+) | 2006 08 28 | 703 | 0.8− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | (1.7− | 0.5+) | 2006 08 28 | 703 | 0.5− | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | (2.1− | 0.7+) | 2006 08 28 | 703 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 1.0− | 0.5+ | 2006 09 12 | 703 | (0.7− | 1.7−) | | | | |

**(136658)∗ 1995 OQ$_6$ = 1999 US$_{14}$**

Discovered 1995 July 24 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 6725)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.77954 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27090325 | $\omega$ | 138.78510 | | +0.93351230 | +0.35757451 | |
| $a$ | 2.3655197 | $\Omega$ | 200.30987 | | −0.34564779 | +0.87794789 | |
| $e$ | 0.1598120 | $i$ | 4.35676 | | −0.09530161 | +0.31835196 | |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 04 | 691 | 0.3− | 0.4− | 2005 05 08 | G96 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.1− | 0.3+ |
| 1995 07 04 | 691 | 0.3− | 0.4− | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.3+ |
| 1995 07 04 | 691 | 0.1− | 0.5− | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 703 | (2.1− | 0.1+) |
| 1995 07 24 | 691 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 1995 07 24 | 691 | 0.3+ | 0.1− | 2006 08 18 | 699 | 0.8+ | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 1995 07 24 | 691 | 0.0 | 0.6+ | 2006 08 18 | 699 | 0.2+ | 0.4− | 2006 09 14 | 703 | 1.0− | 0.5+ |
| 1995 07 30 | 691 | 0.3− | 0.0 | 2006 08 18 | 699 | 0.4+ | 0.3− | 2006 09 17 | 291 | 0.1− | 0.0 |
| 1995 07 30 | 691 | 0.2+ | 0.1− | 2006 08 18 | 699 | 0.8− | 0.8+ | 2006 09 17 | 291 | 0.1− | 0.1+ |
| 1995 07 30 | 691 | 0.2+ | 0.3− | 2006 08 21 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 291 | 0.1− | 0.0 |
| 1999 10 10 | 704 | 0.2− | 0.5− | 2006 08 21 | 644 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.5+ |
| 1999 10 10 | 704 | 0.2+ | 0.6− | 2006 08 21 | 644 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.5+ |
| 1999 10 10 | 704 | 0.2+ | 0.6− | 2006 08 24 | 704 | 0.9− | 0.2− | 2006 09 18 | 703 | 1.1− | 0.1− |
| 1999 10 10 | 704 | 0.7− | 0.2+ | 2006 08 24 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.1+ |
| 1999 10 10 | 704 | 0.7+ | 0.1− | 2006 08 24 | 704 | 0.0 | 0.2+ | 2006 09 18 | 704 | (0.8− | 1.8+) |
| 1999 10 29 | 703 | 0.2− | 0.7− | 2006 08 24 | 704 | 0.3+ | 0.1− | 2006 09 18 | 704 | 0.3+ | 1.0+ |
| 1999 10 29 | 703 | 1.2+ | 1.2+ | 2006 08 28 | 703 | 0.5+ | 0.3+ | 2006 09 18 | 704 | 1.2+ | 0.7− |
| 1999 10 29 | 703 | 0.0 | 0.9+ | 2006 08 28 | 703 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.9+ |
| 1999 10 29 | 703 | 1.2− | 0.9− | 2006 08 28 | 699 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.6+ |
| 1999 11 03 | 703 | 0.5+ | 0.6− | 2006 08 28 | 703 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.2+ | 0.2+ |
| 1999 11 03 | 703 | 0.7+ | 0.3− | 2006 08 28 | 703 | 0.6− | 0.9+ | 2006 09 19 | 699 | 1.1− | 0.1+ |
| 1999 11 03 | 703 | 0.0 | 0.7+ | 2006 08 28 | 699 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 1.2− | 0.9− |
| 1999 11 03 | 703 | 0.6− | 0.4− | 2006 08 28 | 699 | 0.2− | 0.4+ | 2006 09 25 | 704 | 0.9− | 0.8− |
| 2005 03 11 | G96 | 0.2− | 0.3+ | 2006 08 30 | 704 | 1.0+ | 0.3− | 2006 09 25 | 704 | 0.1− | 0.7− |
| 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.5+ | 0.4− | 2006 09 25 | 704 | 0.0 | 0.9− |
| 2005 03 11 | G96 | 0.5+ | 0.3− | 2006 08 30 | 704 | 0.8+ | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2005 03 11 | G96 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 1.1+ | 0.1− | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2005 04 05 | G96 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2005 04 05 | G96 | 0.2− | 0.5+ | 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2005 04 05 | G96 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.6+ | 1.4+ | 2006 10 21 | 291 | 0.6− | 0.6+ |
| 2005 04 05 | G96 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 0.9+ | 0.5− | 2006 10 21 | 291 | 0.2− | 0.3+ |
| 2005 04 06 | G96 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.4+ | 0.8− | 2006 10 21 | 291 | 0.2− | 0.9+ |
| 2005 04 06 | G96 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2005 04 06 | G96 | 0.0 | 0.5+ | 2006 09 01 | 704 | 0.8+ | 1.3− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2005 04 06 | G96 | 0.8− | 0.1+ | 2006 09 01 | 704 | 0.3− | 0.6− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2005 04 07 | G96 | 0.2+ | 0.5+ | 2006 09 01 | 704 | 0.1+ | 0.6− | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2005 04 07 | G96 | 0.3− | 0.1+ | 2006 09 01 | 704 | 1.0+ | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2005 04 07 | G96 | 0.1− | 0.7+ | 2006 09 11 | 703 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.6+ | 0.1+ |
| 2005 04 07 | G96 | 0.6+ | 0.4+ | 2006 09 11 | 703 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.5− |
| 2005 05 08 | G96 | 0.2+ | 0.0 | 2006 09 11 | 703 | 1.4− | 1.4− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 11 | 703 | (1.6− | 0.8−) | | | | |
| 2005 05 08 | G96 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.1− | 0.3+ | | | | |

**(136659)∗ 1995 OA$_8$ = 2004 BP$_{88}$**

Discovered 1995 July 25 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 68502)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.43282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28226474 | $\omega$ | 144.35548 | | +0.67684456 | −0.72865478 | |
| $a$ | 2.3016094 | $\Omega$ | 262.79559 | | +0.64858250 | +0.65751381 | |
| $e$ | 0.0930045 | $i$ | 6.05277 | | +0.34816975 | +0.19167108 | |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 23 | 691 | 0.7+ | 0.6− | 2004 01 23 | 704 | 0.3− | 0.8+ | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 1995 07 23 | 691 | 0.7+ | 0.7− | 2004 01 23 | 704 | 0.4− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 1995 07 23 | 691 | 0.6+ | 0.7− | 2004 01 23 | 704 | 0.6− | 0.0 | 2006 11 16 | 704 | 0.6− | 0.9− |
| 1995 07 25 | 691 | 0.4− | 0.3+ | 2004 01 28 | 645 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.7+ |
| 1995 07 25 | 691 | 0.0 | 0.2+ | 2004 01 28 | 645 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.6− | 0.1+ |
| 1995 07 25 | 691 | 0.2− | 0.1+ | 2004 01 29 | 704 | 0.6− | 0.5+ | 2006 11 16 | 704 | 0.8+ | 0.6+ |
| 1995 07 30 | 691 | 0.7− | 0.2− | 2004 01 29 | 704 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 1995 07 30 | 691 | 0.8− | 0.3− | 2004 01 29 | 704 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 1995 07 30 | 691 | 0.3− | 0.1− | 2004 01 29 | 704 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.1− |
| 1999 10 12 | 704 | 0.3+ | 0.5+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 1999 10 12 | 704 | 0.3+ | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.9− |
| 1999 10 12 | 704 | 0.8+ | 0.0 | 2004 02 17 | 704 | 1.0− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 1999 11 03 | 704 | 0.7+ | 0.2− | 2005 06 14 | G96 | 0.8+ | 0.6+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 1999 11 03 | 704 | 1.3+ | 0.2+ | 2005 06 14 | G96 | 0.3+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 1999 11 03 | 704 | 0.9+ | 1.6+ | 2005 06 14 | G96 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 1999 11 03 | 704 | (2.3+ | 0.2+) | 2005 06 14 | G96 | 0.8+ | 0.7+ | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2002 07 12 | 644 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.0 | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2002 07 12 | 644 | 0.1+ | 0.8+ | 2006 10 19 | 703 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.1+ | 0.9+ | 2006 10 19 | 703 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2002 07 23 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2002 07 23 | 644 | 0.2− | 0.6+ | 2006 10 20 | A50 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.4− | 0.5− |
| 2002 07 23 | 644 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.4− |
| 2002 08 05 | 644 | 0.2+ | 1.0+ | 2006 10 27 | 703 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.7− |
| 2002 08 05 | 644 | 0.0 | 0.8+ | 2006 10 27 | 703 | 0.4− | 0.8+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 08 05 | 644 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.7− | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2002 08 26 | 644 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.1− | 0.7+ |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2002 08 26 | 644 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2004 01 23 | 704 | 0.0 | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 1.3− | 0.7− |

**(136660)∗ 1995 OA$_{12}$ = 2006 QL$_{48}$**

Discovered 1995 July 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 103138)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 44.73129 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.27136178 | ω | 174.45730 | | +0.43438030 | | +0.90011869 |
| *a* | 2.3628542 | Ω | 121.28461 | | −0.82788720 | | +0.41348774 |
| *e* | 0.1679536 | *i* | 2.22427 | | −0.35484722 | | +0.13716499 |
| *P* | 3.63 | *H* | 16.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.7+ | 0.5− |
| 1994 03 05 | 691 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.9+ |
| 1994 03 05 | 691 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.9+ | 0.5+ |
| 1995 07 22 | 691 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.1− | 0.3+ |
| 1995 07 22 | 691 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.4+ | 1.1+ |
| 1995 07 22 | 691 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.1+ |
| 1995 07 27 | 691 | 0.4+ | 0.0 | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.2− |
| 1995 07 27 | 691 | 0.4+ | 0.1− | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 1995 08 01 | 691 | 0.1− | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.2+ |
| 1995 08 01 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 0.5− | 0.2+ | 2006 09 26 | 704 | 1.0+ | 0.3− |
| 1995 08 01 | 691 | (0.9+ | 3.7−) | 2006 08 28 | 699 | 0.9+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 0.7− | 0.2+ | 2006 08 28 | 699 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.6+ |
| 1998 04 21 | 704 | 0.7− | 1.6− | 2006 09 12 | 703 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 1998 04 21 | 704 | 1.3+ | 1.5− | 2006 09 12 | 703 | 1.2− | 1.2− | 2006 09 26 | 704 | 0.3+ | 0.2+ |
| 1998 04 21 | 704 | 1.8− | 0.3− | 2006 09 12 | 703 | 0.9− | 0.4− | 2006 09 26 | 704 | 0.6+ | 0.2+ |
| 2003 12 29 | 691 | 0.3− | 0.4− | 2006 09 16 | 704 | 0.2+ | 0.6− | 2006 09 30 | 703 | 1.0+ | 0.8− |
| 2003 12 29 | 691 | 0.2− | 0.1− | 2006 09 16 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2003 12 29 | 691 | 0.4+ | 0.4− | 2006 09 16 | 699 | 0.9− | 0.8+ | 2006 09 30 | 703 | 0.1+ | 0.6+ |
| 2005 03 16 | G96 | 0.2− | 0.2+ | 2006 09 16 | 704 | 0.7+ | 0.6− | 2006 09 30 | 703 | 0.2+ | 0.6+ |
| 2005 03 16 | G96 | 0.2+ | 0.1− | 2006 09 16 | 699 | 0.5+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2005 03 16 | G96 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.8+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2005 03 16 | G96 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 04 13 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2005 04 13 | 691 | 0.1− | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2005 04 13 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.6− | 0.2+ |
| 2005 05 11 | G96 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.5− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2005 05 11 | G96 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2005 05 11 | G96 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2005 05 11 | G96 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2006 08 21 | 704 | 0.9− | 0.2− | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2006 08 21 | 704 | 0.7+ | 0.8+ | 2006 09 22 | 704 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2006 08 21 | 704 | 0.9− | 0.0 | 2006 09 22 | 704 | 0.8+ | 0.5+ | | | | |

**(136661)∗ 1995 OL$_{12}$ = 1999 XV$_{251}$**

Discovered 1995 July 26 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 16728)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 31.97734 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.26968298 | ω | 181.54216 | | +0.78516441 | | +0.61889298 |
| *a* | 2.3726500 | Ω | 140.19467 | | −0.56781489 | | +0.73368941 |
| *e* | 0.1891250 | *i* | 1.97814 | | −0.24719041 | | +0.28048410 |
| *P* | 3.65 | *H* | 17.5 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.4− | 0.2− | 2002 06 11 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 1995 07 24 | 691 | 0.6− | 0.4− | 2005 03 11 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 704 | (0.1+ | 2.0+) |
| 1995 07 24 | 691 | 0.4− | 0.3− | 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | (0.2− | 2.1+) |
| 1995 07 26 | 691 | 0.1− | 0.3− | 2005 03 11 | 691 | 0.5+ | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.2+ |
| 1995 07 26 | 691 | 0.0 | 0.2− | 2005 04 09 | G96 | 0.5+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.7− |
| 1995 07 26 | 691 | 0.1+ | 0.5− | 2005 04 09 | G96 | 0.4− | 0.1+ | 2006 10 01 | 704 | 1.1+ | 0.9− |
| 1995 07 27 | 691 | 0.5− | 0.2− | 2005 04 09 | G96 | 0.5− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.4+ |
| 1995 07 27 | 691 | 0.3− | 0.1− | 2005 04 09 | G96 | 0.9− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 1995 07 27 | 691 | 0.6− | 0.2− | 2005 04 12 | 695 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.6+ |
| 1995 09 19 | 691 | 0.4+ | 0.4+ | 2005 04 12 | 695 | 0.1− | 0.4+ | 2006 10 15 | 106 | 0.3+ | 0.1+ |
| 1995 09 19 | 691 | 0.9+ | 1.6+ | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 10 15 | 106 | 0.9− | 0.0 |
| 1995 09 19 | 691 | 0.5+ | 0.5+ | 2006 08 18 | 644 | 0.6− | 0.0 | 2006 10 15 | 106 | 0.8− | 0.9− |
| 1999 12 09 | 691 | 0.2+ | 0.2+ | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 10 16 | 106 | 0.2− | 1.3− |
| 1999 12 09 | 691 | 0.1− | 0.5− | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 12 09 | 691 | 0.5− | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1999 12 12 | 691 | 0.3+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.6+ | 0.3+ |
| 1999 12 12 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 1999 12 12 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | 1.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 06 11 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 1.3− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 06 11 | 644 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.7+ | | | | |

**(136662)∗ 1995 QZ$_3$ = 2002 PN$_{134}$**

Discovered 1995 Aug. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 34688)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 50.51208 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.27473569 | ω | 354.28025 | | +0.86381016 | | +0.50093536 |
| *a* | 2.3434696 | Ω | 335.42726 | | −0.45696196 | | +0.73401240 |
| *e* | 0.1413518 | *i* | 7.43514 | | −0.21217391 | | +0.45857340 |
| *P* | 3.59 | *H* | 15.9 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 17 | 691 | 0.4− | 0.5− | 2002 08 28 | 644 | 0.2− | 0.4+ | 2006 10 20 | 704 | 0.4− | 1.2+ |
| 1995 08 17 | 691 | 0.2− | 0.4− | 2002 08 28 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 704 | 0.6+ | 0.7+ |
| 1995 08 17 | 691 | 0.4− | 0.5− | 2002 09 05 | 704 | 0.3− | 0.7+ | 2006 10 20 | 704 | 0.1+ | 0.2− |
| 1995 08 20 | 691 | 0.0 | 0.9− | 2002 09 05 | 704 | 0.2− | 0.4− | 2006 10 20 | 704 | 0.4+ | 0.6+ |
| 1995 08 20 | 691 | 0.0 | 0.7− | 2002 09 05 | 704 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.7+ |
| 1995 08 20 | 691 | 0.9+ | 0.9− | 2002 09 05 | 704 | 0.0 | 0.9− | 2006 10 27 | 703 | 0.3− | 0.7+ |
| 1995 08 28 | 691 | 0.4+ | 0.0 | 2002 09 05 | 704 | 0.3− | 0.7− | 2006 10 27 | 703 | 0.4− | 0.4− |
| 1995 08 28 | 691 | 0.7+ | 0.1+ | 2002 09 10 | 608 | 0.8+ | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.0 |
| 1995 08 28 | 691 | 0.4+ | 0.4+ | 2002 09 10 | 608 | 0.7+ | 1.4− | 2006 11 02 | G96 | 0.2− | 0.1+ |
| 1999 12 16 | 704 | 0.9+ | 0.2+ | 2002 09 10 | 608 | 0.2− | 1.0− | 2006 11 02 | G96 | 0.2− | 0.0 |
| 1999 12 16 | 704 | 0.0 | 0.4− | 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 11 02 | G96 | 0.3− | 0.0 |
| 1999 12 16 | 704 | 0.0 | 1.5+ | 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 11 02 | G96 | 0.4− | 0.0 |
| 1999 12 16 | 704 | 0.6− | 0.6− | 2002 09 14 | 644 | 0.0 | 0.5+ | 2006 11 02 | 703 | 0.6− | 0.6+ |
| 1999 12 16 | 704 | 0.7+ | 0.1+ | 2002 10 03 | 704 | 0.5− | 1.3+ | 2006 11 02 | 703 | 0.8− | 0.5+ |
| 2002 08 14 | 704 | 0.5− | 1.2+ | 2002 10 03 | 704 | 0.6− | 1.0+ | 2006 11 02 | 703 | 0.0 | 0.8+ |
| 2002 08 14 | 704 | 0.6− | 0.4+ | 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.4+ |
| 2002 08 14 | 704 | 0.7− | 0.8+ | 2002 10 03 | 704 | 0.8− | 1.0+ | 2006 11 15 | 704 | 1.3+ | 1.4+ |
| 2002 08 14 | 704 | 0.0 | 0.4+ | 2005 05 04 | 644 | 0.2− | 0.2+ | 2006 11 15 | 704 | (0.4+ | 2.0+) |
| 2002 08 14 | 704 | 0.3− | 1.3+ | 2005 05 04 | 644 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.4− | 0.7− |
| 2002 08 17 | 608 | (0.5+ | 1.6+) | 2005 05 04 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.2− |
| 2002 08 17 | 608 | (0.4+ | 1.7+) | 2005 05 12 | 644 | 0.0 | 0.3+ | 2006 11 21 | 703 | 0.9− | 0.5− |
| 2002 08 17 | 608 | 0.4+ | 0.4+ | 2005 05 12 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 703 | 0.1− | 0.2− |
| 2002 08 18 | 644 | 0.2− | 1.1+ | 2005 05 12 | 644 | 0.1+ | 0.5+ | 2006 11 21 | 703 | 0.3− | 0.7+ |
| 2002 08 18 | 644 | 0.2− | 1.1+ | 2005 06 26 | 644 | 0.3+ | 0.4+ | 2006 11 21 | 703 | 0.1+ | 0.7+ |
| 2002 08 18 | 644 | 0.2− | 1.2+ | 2005 06 26 | 644 | 0.1+ | 0.3+ | | | | |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2005 06 26 | 644 | 0.3+ | 0.6+ | | | | |

**(136663)∗ 1995 QL$_5$ = 1998 BO$_{14}$**

Discovered 1995 Aug. 22 by Spacewatch at Kitt Peak.

Id. S. Nakano (MPC 32239)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 195.82912 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.19111946 | $\omega$ | 250.60312 | | −0.98574216 | | −0.05370032 | | |
| $a$ | 2.9849206 | $\Omega$ | 286.06468 | | +0.11891114 | | −0.89283969 | | |
| $e$ | 0.0466440 | $i$ | 9.55207 | | −0.11904848 | | −0.44716167 | | |
| $P$ | 5.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.2− | 0.1+ | 2001 10 12 | 608 | 0.3+ | 0.5− | 2005 06 08 | 691 | 0.1− | 0.1+ |
| 1995 08 22 | 691 | 0.6− | 0.3+ | 2001 10 12 | 608 | 0.6+ | 0.4− | 2005 06 08 | 691 | 0.1− | 0.1− |
| 1995 08 22 | 691 | 0.2− | 0.2+ | 2001 10 12 | 608 | 0.2+ | 0.5− | 2005 06 08 | 691 | 0.1+ | 0.1− |
| 1995 08 28 | 691 | 0.5− | 0.2− | 2002 12 06 | 645 | 0.1− | 0.1− | 2005 06 13 | G96 | 1.1− | 0.8+ |
| 1995 08 28 | 691 | 0.1+ | 0.2− | 2002 12 06 | 645 | 0.1− | 0.2− | 2005 06 13 | G96 | 0.5− | 0.5+ |
| 1995 08 28 | 691 | 0.3− | 0.3− | 2002 12 31 | 704 | 0.1− | 0.7− | 2005 06 13 | G96 | 0.6− | 0.7+ |
| 1995 09 03 | 691 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.2− | 2005 06 13 | G96 | 1.0− | 0.8+ |
| 1995 09 03 | 691 | 0.3− | 0.1− | 2002 12 31 | 704 | 0.3− | 0.1+ | 2005 07 03 | G96 | 0.0 | 0.2+ |
| 1995 09 03 | 691 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2005 07 03 | G96 | 0.1+ | 0.2+ |
| 1998 01 18 | 910 | 1.1+ | 0.4+ | 2003 01 09 | 704 | 0.8− | 1.2+ | 2005 07 03 | G96 | 0.3− | 0.0 |
| 1998 01 18 | 910 | 1.4+ | 0.6+ | 2003 01 09 | 704 | 0.0 | 1.4+ | 2005 07 03 | G96 | 0.2− | 0.4+ |
| 1998 01 18 | 910 | 1.6+ | 0.7+ | 2003 01 09 | 704 | 0.4− | 1.3+ | 2006 09 28 | 703 | (1.7+ | 1.2+) |
| 1998 01 27 | 910 | 0.3+ | 0.2− | 2003 01 09 | 704 | 0.3− | 1.5+ | 2006 09 28 | 703 | (1.5− | 2.0+) |
| 1998 01 27 | 910 | 0.6+ | 0.1− | 2003 01 09 | 704 | (0.3− | 2.2+) | 2006 09 28 | 703 | 0.5− | 0.8+ |
| 1998 01 27 | 910 | 0.7+ | 0.0 | 2003 01 13 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.5+ |
| 2000 07 10 | 691 | 0.8+ | 0.0 | 2003 01 13 | 704 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.5+ | 0.3+ |
| 2000 07 10 | 691 | 0.5+ | 0.0 | 2003 01 13 | 704 | 0.8− | 0.9+ | 2006 10 11 | 644 | 0.5+ | 0.4+ |
| 2000 07 10 | 691 | 0.7+ | 0.1− | 2003 01 13 | 704 | 0.1− | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |

**(136664)∗ 1995 QM$_6$ = 1996 VV$_{33}$**

Discovered 1995 Aug. 22 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 6726)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 45.28306 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18302112 | $\omega$ | 48.81132 | | +0.35662527 | | +0.93117883 | | |
| $a$ | 3.0723350 | $\Omega$ | 242.23141 | | −0.88071589 | | +0.30806696 | | |
| $e$ | 0.1384849 | $i$ | 4.90519 | | −0.31170168 | | +0.19493779 | | |
| $P$ | 5.39 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.3− | 0.2− | 2001 10 14 | 704 | 0.7− | 0.4+ | 2005 05 16 | 644 | 0.0 | 0.2− |
| 1995 08 22 | 691 | 0.3− | 0.1− | 2001 10 17 | 704 | 1.9+ | 1.3+ | 2005 06 14 | G96 | 0.1− | 0.1+ |
| 1995 08 28 | 691 | 0.3+ | 0.1− | 2001 10 17 | 704 | (2.2+ | 0.7+) | 2005 06 14 | G96 | 0.8+ | 0.2+ |
| 1995 08 28 | 691 | 0.2+ | 0.2− | 2001 10 17 | 704 | (2.2+ | 0.6+) | 2005 06 14 | G96 | 0.1+ | 0.3+ |
| 1995 08 28 | 691 | 0.0 | 0.5+ | 2001 10 17 | 704 | 1.4+ | 1.5+ | 2005 06 14 | G96 | 0.1− | 0.3+ |
| 1995 08 29 | 691 | 0.4+ | 0.2− | 2001 10 19 | 644 | 0.1− | 0.8+ | 2006 08 29 | 703 | 1.5− | 0.7− |
| 1995 08 29 | 691 | 0.4+ | 0.2− | 2001 10 19 | 644 | 0.2− | 0.8+ | 2006 08 29 | 703 | (0.9− | 3.0−) |
| 1995 08 29 | 691 | 0.4+ | 0.4− | 2001 10 19 | 644 | 0.5+ | 0.5+ | 2006 08 29 | 703 | (0.9+ | 2.8−) |
| 1995 09 02 | 691 | 0.5− | 0.2+ | 2001 10 21 | 704 | 0.9+ | 1.7+ | 2006 08 29 | 703 | 1.2− | 0.0 |
| 1995 09 02 | 691 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.3+ | 1.3+ | 2006 08 30 | 704 | 1.1+ | 0.8− |
| 1995 09 02 | 691 | 0.2− | 0.2− | 2001 10 21 | 704 | (0.0 | 2.2+) | 2006 08 30 | 704 | 0.4− | 1.5+ |
| 1996 11 06 | 691 | 0.6− | 0.8− | 2001 10 21 | 704 | 0.7+ | 1.9+ | 2006 08 30 | 704 | 0.2− | 0.3− |
| 1996 11 06 | 691 | 0.3− | 0.4− | 2001 10 21 | 704 | 0.5+ | 1.6+ | 2006 08 30 | 704 | 0.2+ | 0.2+ |
| 1996 11 06 | 691 | 0.7− | 0.2− | 2005 05 04 | 644 | 0.2− | 0.2+ | 2006 08 30 | 704 | 1.0− | 0.5+ |
| 1996 11 09 | 691 | 0.3+ | 0.3− | 2005 05 04 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.9− |
| 1996 11 09 | 691 | 0.3+ | 0.5− | 2005 05 04 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 1.3− | 0.7− |
| 2001 09 28 | 644 | 0.2+ | 0.3− | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.7+ |
| 2001 09 28 | 644 | 0.1− | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.4− | 1.6− |
| 2001 09 28 | 644 | 0.2+ | 0.1− | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 20 | 699 | 1.0+ | 0.2− |
| 2001 10 14 | 704 | 0.3− | 0.0 | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.2+ |
| 2001 10 14 | 704 | 0.1+ | 0.1+ | 2005 05 16 | 644 | 0.4+ | 0.3− | 2006 09 20 | 699 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.6− | 1.1+ | 2005 05 16 | 644 | 0.6+ | 0.2− | 2006 09 20 | 699 | 1.1+ | 0.5− |

**(136665)∗ 1995 QB$_9$**

Discovered 1995 Aug. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 89.74005 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18135051 | $\omega$ | 64.03333 | | −0.50118668 | | +0.86521715 | | |
| $a$ | 3.0911745 | $\Omega$ | 175.80138 | | −0.84785177 | | −0.48762996 | | |
| $e$ | 0.0441379 | $i$ | 11.44862 | | −0.17308750 | | −0.11668889 | | |
| $P$ | 5.43 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 28 | 691 | 0.2+ | 0.6− | 2004 02 19 | 704 | 0.6+ | 0.5− | 2005 06 02 | 703 | 0.6− | 0.8+ |
| 1995 06 28 | 691 | 0.2+ | 1.1− | 2004 02 19 | 704 | 0.1+ | 0.3+ | 2005 06 02 | 703 | 0.6+ | 1.4+ |
| 1995 06 28 | 691 | 0.6+ | 0.1− | 2004 02 19 | 704 | (2.9+ | 1.0−) | 2005 06 02 | 703 | 1.6− | 0.6− |
| 1995 08 28 | 691 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.3− | 0.3+ | 2005 06 03 | E12 | 0.8− | 0.2+ |
| 1995 08 28 | 691 | 0.4+ | 0.1− | 2005 05 03 | 691 | 0.0 | 0.1+ | 2005 06 03 | E12 | 0.1− | 0.4+ |
| 1995 08 28 | 691 | 0.0 | 0.5+ | 2005 05 03 | 691 | 0.1+ | 0.1+ | 2005 06 03 | E12 | 0.1+ | 0.0 |
| 1995 09 03 | 691 | 0.3− | 0.4− | 2005 05 03 | 691 | 0.1− | 0.0 | 2005 06 03 | E12 | 0.0 | 0.5− |
| 1995 09 03 | 691 | 0.3− | 0.7− | 2005 05 09 | 703 | 1.0+ | 0.6+ | 2005 06 23 | 644 | 0.2+ | 0.0 |
| 1995 09 03 | 691 | 0.0 | 0.4− | 2005 05 09 | 703 | 1.0− | 1.8− | 2005 06 23 | 644 | 0.2+ | 0.1+ |
| 2001 09 18 | 291 | 0.4− | 0.3+ | 2005 05 09 | 703 | 0.9− | 0.7+ | 2005 06 23 | 644 | 0.4+ | 0.0 |
| 2001 09 18 | 291 | 0.2+ | 0.4+ | 2005 05 09 | 703 | 0.7− | 0.4+ | 2006 08 29 | 703 | 0.4+ | 0.2− |
| 2001 09 18 | 291 | 0.0 | 0.4+ | 2005 05 11 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.2+ | 0.6− |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.5+ | 0.2− |
| 2001 09 21 | 704 | 0.7− | 0.7+ | 2005 05 11 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.8− | 0.7− |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2005 05 12 | 703 | 0.2− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2005 05 12 | 703 | 0.7+ | 0.1− | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2001 09 21 | 704 | 0.6− | 0.8+ | 2005 05 12 | 703 | 0.4− | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.1+ |
| 2001 09 26 | 704 | (1.2− | 3.3+) | 2005 05 12 | 703 | 0.4− | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.5+ |
| 2001 09 26 | 704 | (1.9− | 3.2+) | 2005 05 15 | 691 | (2.7− | 3.3−) | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2001 09 26 | 704 | 0.4− | 1.4+ | 2005 05 15 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2001 09 26 | 704 | 0.5− | 1.8+ | 2005 05 15 | 691 | 0.2+ | 0.3+ | | | | |
| 2004 02 19 | 704 | 0.9+ | 1.0+ | 2005 06 02 | 703 | 1.1− | 0.5+ | | | | |

**(136666)∗ 1995 SE = 2000 AQ$_{28}$**

Discovered 1995 Sept. 17 at Kleť.

Id. M. Tichý (MPC 37645), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 353.49325 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.27748815 | $\omega$ | 342.56280 | | +0.54499431 | | −0.83672332 | | |
| $a$ | 2.3279470 | $\Omega$ | 74.38233 | | +0.77573772 | | +0.47893831 | | |
| $e$ | 0.2162579 | $i$ | 3.19172 | | +0.31813863 | | +0.26554128 | | |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 1.1+ | 0.4+ | 2000 01 04 | 704 | 0.3− | 0.1+ | 2002 09 15 | 608 | 0.7− | 0.7+ |
| 1995 08 31 | 809 | 1.0+ | 0.4− | 2000 01 04 | 704 | 0.1+ | 0.1+ | 2004 02 19 | 704 | 0.3+ | 0.8+ |
| 1995 09 01 | 809 | 0.2− | 1.3− | 2000 01 04 | 688 | 0.0 | 0.5+ | 2004 02 19 | 704 | 0.5+ | 0.2+ |
| 1995 09 17 | 046 | 0.7+ | 0.0 | 2000 01 04 | 704 | 0.8− | 0.5+ | 2004 02 19 | 704 | 0.2+ | 1.1+ |
| 1995 09 17 | 046 | 0.7− | 0.6− | 2000 01 04 | 688 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1995 09 17 | 046 | 0.6− | 0.2+ | 2000 01 06 | 046 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 1995 09 17 | 046 | 0.1+ | 0.4− | 2000 01 06 | 046 | 0.1+ | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 1995 09 17 | 046 | 0.9− | 0.1+ | 2000 01 06 | 046 | 0.4+ | 0.6+ | 2006 11 17 | 704 | 1.2− | 0.6+ |
| 1995 09 17 | 046 | 0.9− | 0.5+ | 2000 01 06 | 046 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.6− | 0.6+ |
| 1995 09 19 | 046 | 0.3− | 0.2+ | 2000 01 06 | 046 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 1995 09 19 | 046 | 0.4− | 0.6+ | 2000 01 06 | 046 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 1995 09 19 | 046 | 0.6+ | 0.5− | 2000 01 06 | 046 | 0.3− | 0.1+ | 2006 11 17 | 704 | 1.1− | 0.8− |
| 1995 09 19 | 046 | 0.9− | 0.2− | 2000 01 30 | 704 | 0.5− | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.3− |
| 1995 09 19 | 046 | 0.1− | 0.4− | 2000 01 30 | 704 | 0.5+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 1995 09 24 | 046 | 0.0 | 1.4− | 2000 01 30 | 704 | 0.7+ | 1.1− | 2006 11 17 | 691 | 0.0 | 0.3− |
| 1995 09 24 | 046 | 0.6+ | 1.4− | 2000 01 30 | 704 | 0.1+ | 0.7+ | 2006 11 18 | 704 | (2.3+ | 2.6+) |
| 1995 09 24 | 046 | (0.5+ | 2.1−) | 2000 01 31 | 704 | 1.1− | 0.3− | 2006 11 18 | 704 | 0.2+ | 1.4+ |
| 1995 09 28 | 046 | 0.3+ | 0.0 | 2000 01 31 | 704 | 0.2− | 0.8+ | 2006 11 18 | 704 | (0.7+ | 4.2+) |
| 1995 09 28 | 046 | 0.7− | 0.6+ | 2000 01 31 | 704 | 0.7+ | 0.9+ | 2006 11 18 | 704 | (0.0 | 3.0+) |
| 1995 09 28 | 046 | 0.5− | 0.2+ | 2002 08 18 | 644 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.7− |
| 1995 10 15 | 046 | 0.5+ | 0.2− | 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.8+ | 1.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 046 | 0.8+ | 1.0− | 2002 08 18 | 644 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.8+ | 1.3− |
| 1995 10 15 | 046 | 0.2+ | 0.8+ | 2002 08 19 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.8− |
| 1995 10 16 | 046 | 0.3+ | 1.0+ | 2002 08 19 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5− | 0.6− |
| 1995 10 16 | 046 | 0.2+ | 1.0+ | 2002 08 19 | 644 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 1995 10 16 | 046 | 0.1− | 1.6+ | 2002 08 29 | 644 | 0.0 | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 1995 10 22 | 046 | 0.2− | 0.8+ | 2002 08 29 | 644 | 0.1− | 0.6+ | 2006 11 21 | 691 | (1.6− | 0.2−) |
| 1995 10 22 | 046 | 0.2− | 0.4+ | 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.1− | 1.2+ |
| 1995 10 22 | 046 | 0.2+ | 0.5+ | 2002 08 30 | 644 | 0.3+ | 0.3− | 2006 11 24 | 691 | 0.1− | 0.0 |
| 1999 12 07 | 691 | 0.3+ | 0.5− | 2002 08 30 | 644 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.1− | 0.1− |
| 1999 12 07 | 691 | 0.4+ | 0.2− | 2002 08 30 | 644 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.6+ | 0.2− |
| 1999 12 07 | 691 | 0.2+ | 0.3− | 2002 09 05 | 704 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.8+ | 0.8+ |
| 2000 01 03 | 704 | 0.3− | 0.9+ | 2002 09 05 | 704 | 1.0+ | 0.3− | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2000 01 03 | 704 | 0.9− | 0.5+ | 2002 09 05 | 704 | 0.3+ | 0.6− | 2006 11 28 | 704 | 0.3− | 0.3− |
| 2000 01 03 | 704 | 0.5− | 0.1− | 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2000 01 03 | 704 | 0.4+ | 1.3− | 2002 09 15 | 644 | 0.5+ | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.0 |
| 2000 01 03 | 704 | 0.2− | 0.2+ | 2002 09 15 | 644 | 0.3− | 0.2− | 2006 12 01 | 704 | 0.2+ | 0.3− |
| 2000 01 04 | 704 | 0.2− | 0.4− | 2002 09 15 | 608 | 0.2− | 0.5+ | 2006 12 01 | 704 | 0.2+ | 0.5− |
| 2000 01 04 | 704 | 0.7− | 0.1+ | 2002 09 15 | 608 | 0.8− | 0.3+ | 2006 12 01 | 704 | 0.3+ | 0.3− |

**(136667)∗ 1995 SZ$_7$ = 2001 WO$_{77}$ = 2004 KJ$_3$**

Discovered 1995 Sept. 17 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 64642), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.60688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19059701 | $\omega$ | 12.17679 | | −0.98676244 | +0.16216507 | |
| $a$ | 2.9903728 | $\Omega$ | 177.15445 | | −0.15126987 | −0.91696287 | |
| $e$ | 0.0448549 | $i$ | 1.77618 | | −0.05845773 | −0.36452926 | |
| $P$ | 5.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.2− | 0.1+ | 2003 01 28 | 645 | 0.1− | 0.1+ | 2006 10 16 | 291 | 0.2− | 0.4+ |
| 1995 09 17 | 691 | 0.3+ | 0.2+ | 2003 01 31 | 704 | (2.4+ | 2.9+) | 2006 10 16 | 291 | 0.0 | 0.4+ |
| 1995 09 17 | 691 | 0.3− | 0.4+ | 2003 01 31 | 704 | (0.5+ | 1.6+) | 2006 10 16 | 291 | 0.3− | 0.4+ |
| 1995 09 22 | 691 | 0.3− | 0.1− | 2003 01 31 | 704 | 0.4+ | 0.8+ | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 1995 09 22 | 691 | 0.0 | 0.0 | 2003 02 11 | 608 | 0.3− | 0.9− | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 1995 09 22 | 691 | 0.1− | 0.1+ | 2003 02 11 | 608 | 0.4+ | 1.0− | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2003 02 11 | 608 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2003 02 22 | 699 | 0.4+ | 1.1+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.4+ | 2003 02 22 | 699 | 0.4+ | 0.5− | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 1.0+ | 2003 02 22 | 699 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2003 02 22 | 699 | 0.3+ | 1.1+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.6+ | 1.1+ | 2004 05 16 | 704 | 0.2− | 1.0+ | 2006 10 27 | 691 | 0.1− | 0.5− |
| 2001 11 20 | 704 | 0.6+ | 0.7+ | 2004 05 16 | 704 | 1.0+ | 1.1+ | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2001 11 21 | 704 | 0.4+ | 0.8− | 2004 05 16 | 704 | (0.4+ | 1.9+) | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2004 05 19 | 704 | 0.5+ | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 2001 11 21 | 704 | 0.1+ | 0.1− | 2004 05 19 | 704 | 0.1− | 0.6+ | 2006 11 13 | G96 | 0.4+ | 0.6− |
| 2001 11 21 | 704 | 0.6+ | 0.2− | 2004 05 19 | 704 | 0.4+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 0.4+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.7− | 2006 11 13 | G96 | 0.9+ | 0.0 |
| 2001 12 14 | 704 | 0.0 | 0.5− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 13 | G96 | 0.1− | 0.8− |
| 2001 12 14 | 704 | 0.2+ | 0.5− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.9− | 0.9− |
| 2001 12 14 | 704 | 0.3+ | 0.5− | 2006 09 26 | G96 | 0.0 | 0.7− | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2002 12 14 | 645 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.3− | 2.0− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.4+ | | | | |

**(136668)∗ 1995 ST$_9$ = 2002 PW$_{38}$**

Discovered 1995 Sept. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 34688)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.46133 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27592409 | $\omega$ | 153.01735 | | +0.68860807 | +0.72508689 | |
| $a$ | 2.3367359 | $\Omega$ | 160.49903 | | −0.66967411 | +0.64026079 | |
| $e$ | 0.1975127 | $i$ | 1.41487 | | −0.27812859 | +0.25360428 | |
| $P$ | 3.57 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.4− | 0.0 | 2002 08 13 | 291 | 0.7− | 0.0 | 2006 10 16 | 691 | 0.6+ | 0.1+ |
| 1995 09 17 | 691 | 0.5− | 0.1− | 2002 08 13 | 291 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.0 |
| 1995 09 17 | 691 | 0.2− | 0.2− | 2002 08 16 | 291 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.3− |
| 1995 09 22 | 691 | 0.1− | 0.1− | 2002 08 16 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.6+ |
| 1995 09 22 | 691 | 0.3− | 0.0 | 2002 08 16 | 291 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 1995 09 22 | 691 | 0.1− | 0.2− | 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.3+ | 0.3+ |
| 1995 09 27 | 691 | 0.5+ | 0.4+ | 2002 08 27 | 644 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1995 09 27 | 691 | 1.0+ | 0.2− | 2002 08 27 | 644 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 1995 09 27 | 691 | 0.3+ | 0.0 | 2005 04 04 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | (0.9− | 3.6−) |
| 2002 07 22 | 644 | 1.2+ | 0.8+ | 2005 04 04 | G96 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2002 07 22 | 644 | 0.3+ | 0.9+ | 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2002 07 22 | 644 | 0.7+ | 0.9+ | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2002 08 06 | 644 | 0.4+ | 0.1+ | 2005 04 10 | 695 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2002 08 06 | 644 | 0.7+ | 0.3+ | 2005 04 10 | 695 | 0.5+ | 0.4+ | 2006 10 28 | 691 | 0.4− | 0.0 |
| 2002 08 06 | 644 | 0.3+ | 0.3+ | 2005 05 10 | G96 | 0.9− | 0.2− | 2006 10 28 | 691 | 0.6− | 0.3− |
| 2002 08 08 | 644 | 0.2+ | 0.3− | 2005 05 10 | G96 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.6− | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.5− | 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2002 08 08 | 644 | 0.2+ | 0.2− | 2005 05 10 | G96 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.2+ |
| 2002 08 12 | 608 | 0.1+ | 0.8− | 2006 09 30 | G96 | 0.5+ | 0.3+ | 2006 11 12 | G96 | 0.7+ | 0.2− |
| 2002 08 12 | 608 | 0.2− | 0.8− | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.3− | 0.0 |
| 2002 08 12 | 608 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.3− | | | | |
| 2002 08 13 | 291 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1− | | | | |

**(136669)∗ 1995 SF$_{11}$**

Discovered 1995 Sept. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.14483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26902411 | $\omega$ | 326.24697 | | −0.86687414 | −0.49852062 | |
| $a$ | 2.3765224 | $\Omega$ | 183.85348 | | +0.46531586 | −0.80729025 | |
| $e$ | 0.0985387 | $i$ | 2.16000 | | +0.17891443 | −0.31584752 | |
| $P$ | 3.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.3+ | 0.5− | 2004 01 24 | 704 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.2+ |
| 1995 09 17 | 691 | 0.1+ | 0.2− | 2004 01 24 | 704 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.3+ | 0.1+ |
| 1995 09 17 | 691 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.6− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.0 |
| 1995 09 22 | 691 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.7− | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.5+ |
| 1995 09 22 | 691 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2006 10 17 | G96 | 0.4− | 0.3− |
| 1995 09 22 | 691 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.2+ |
| 1999 11 29 | 691 | 0.4− | 0.1+ | 2006 09 24 | 688 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4− |
| 1999 11 29 | 691 | 0.4− | 0.3− | 2006 09 24 | 688 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1999 11 29 | 691 | 0.3− | 0.3− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 1999 12 09 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1999 12 09 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 1999 12 09 | 691 | 0.5+ | 0.4− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 1999 12 16 | 691 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.6+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.4+ |
| 1999 12 16 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.3− | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1999 12 16 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 04 23 | 926 | 0.2+ | 1.5+ | 2006 09 26 | G96 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2001 04 23 | 926 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.0 | 2006 10 29 | 291 | 0.2− | 0.3+ |
| 2001 04 23 | 926 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2003 12 19 | 704 | (3.0− | 2.8+) | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 29 | 291 | 0.1− | 0.1+ |
| 2003 12 19 | 704 | (1.1− | 2.3+) | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2003 12 19 | 704 | (2.1− | 2.5+) | 2006 10 03 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2003 12 19 | 704 | (0.5− | 2.4+) | 2006 10 03 | 691 | 0.2− | 1.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.4+ | 0.7− | 2006 10 31 | G96 | 1.2+ | 0.6− |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.5− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2003 12 27 | 691 | 0.2+ | 0.7+ | 2006 10 15 | 703 | 0.6+ | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2003 12 27 | 691 | 0.4+ | 0.3+ | 2006 10 15 | 703 | 0.9− | 1.0− | 2006 11 14 | G96 | 0.7− | 0.1− |
| 2003 12 27 | 691 | 1.1+ | 0.8+ | 2006 10 16 | G96 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.5− |
| 2004 01 24 | 704 | 0.3+ | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.1− | | | | |

**(136670)∗ 1995 SU$_{16}$ = 2001 VK$_{57}$**

Discovered 1995 Sept. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 19258)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.96374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18030027 | $\omega$ | 325.56990 | | +0.75295671 | +0.65789180 | |
| $a$ | 3.1031668 | $\Omega$ | 353.22811 | | −0.57078389 | +0.64132488 | |
| $e$ | 0.1071833 | $i$ | 7.46310 | | −0.32750869 | +0.39481741 | |
| $P$ | 5.47 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 26 | 809 | 0.6+ | 1.0+ | 2004 03 27 | 704 | 1.3+ | 0.5+ | 2006 09 26 | 704 | 0.2+ | 0.6− |
| 1995 09 01 | 809 | 1.4+ | 0.4+ | 2004 03 27 | 704 | (1.0+ | 1.7+) | 2006 09 26 | 704 | 0.4− | 0.1− |
| 1995 09 18 | 809 | 1.6+ | 0.4− | 2004 03 27 | 704 | 0.1− | 1.1+ | 2006 09 27 | 704 | 0.3+ | 0.4− |
| 1995 09 18 | 691 | 0.7− | 0.4+ | 2004 04 21 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.1+ |
| 1995 09 18 | 691 | 0.8− | 0.2+ | 2004 04 21 | 691 | 0.5+ | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.5+ |
| 1995 09 18 | 691 | 0.6− | 0.0 | 2004 04 21 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.2− |
| 1995 09 20 | 809 | 1.5+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.7− | 0.4+ |
| 1995 09 24 | 691 | 0.5− | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 1995 09 24 | 691 | 0.1− | 0.5+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 1995 09 24 | 691 | 0.1− | 0.4+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 1995 09 29 | 691 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.6− |
| 1995 09 29 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 1995 09 29 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.8− | 1.1+ | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2001 11 10 | 704 | 0.3− | 0.8+ | 2006 09 19 | 699 | 0.4− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.5− |
| 2001 11 10 | 704 | 0.5− | 0.2− | 2006 09 19 | 699 | (1.7+ | 0.2−) | 2006 09 29 | 704 | 0.4+ | 0.7− |
| 2001 11 10 | 704 | 1.1− | 0.4+ | 2006 09 19 | 699 | (1.6+ | 1.2−) | 2006 09 29 | 704 | 0.0 | 0.2− |
| 2001 11 12 | 704 | 0.4+ | 0.1− | 2006 09 20 | 704 | 1.1+ | 0.8− | 2006 09 29 | 704 | 0.4+ | 0.2+ |
| 2001 11 12 | 704 | 0.4− | 0.2− | 2006 09 20 | 704 | 0.6+ | 1.4+ | 2006 09 29 | 704 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 1.2+ | 0.2− | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.5− |
| 2001 11 12 | 704 | 0.1− | 1.5+ | 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 10 16 | 703 | 1.7− | 1.5− |
| 2004 03 12 | 644 | 0.4+ | 1.0+ | 2006 09 20 | 704 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2004 03 12 | 644 | 0.5+ | 1.1+ | 2006 09 25 | 699 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.7− |
| 2004 03 12 | 644 | 0.7+ | 0.9+ | 2006 09 25 | 699 | 0.9+ | 0.1− | 2006 10 16 | 703 | 1.4− | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 1.0+ | 2006 09 25 | 699 | 1.4+ | 0.6− | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2004 03 18 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 704 | 0.6+ | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 03 18 | 704 | 0.7+ | 1.1+ | 2006 09 26 | 704 | 1.0− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2004 03 18 | 704 | (1.5+ | 1.7+) | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.3− |

**(136671)**∗ **1995 SN**$_{17}$

Discovered 1995 Sept. 18 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.36740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17401576 | $\omega$ | 242.78483 | | −0.22046491 | +0.97262364 | |
| $a$ | 3.1774373 | $\Omega$ | 15.03322 | | −0.76434226 | −0.12547425 | |
| $e$ | 0.1349690 | $i$ | 16.45548 | | −0.60595060 | −0.19560028 | |
| $P$ | 5.66 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.2+ | 0.3− | 2004 01 17 | 644 | 0.7+ | 0.2− | 2006 08 23 | 644 | 0.1− | 0.6+ |
| 1995 09 18 | 691 | 0.3+ | 0.0 | 2004 01 19 | 691 | 0.1− | 0.2− | 2006 08 23 | 644 | 0.0 | 0.8+ |
| 1995 09 18 | 691 | 0.2− | 0.1− | 2004 01 19 | 691 | 0.1+ | 0.1− | 2006 08 28 | E12 | 0.8− | 0.2+ |
| 1995 09 24 | 691 | 0.2+ | 0.2− | 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 08 28 | E12 | 0.0 | 0.4+ |
| 1995 09 24 | 691 | 0.5+ | 0.4− | 2004 01 30 | 704 | 0.9− | 0.8− | 2006 08 28 | E12 | 0.6− | 0.4− |
| 1995 09 24 | 691 | 0.2+ | 0.5− | 2004 01 30 | 704 | 0.3− | 0.7+ | 2006 08 28 | E12 | 0.6+ | 0.9− |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2004 01 30 | 704 | 0.5− | 0.5− | 2006 09 20 | 703 | 1.0− | 0.3+ |
| 2001 09 20 | 704 | 1.0+ | 0.6− | 2004 01 30 | 704 | 1.1+ | 1.3+ | 2006 09 20 | 703 | 0.2− | 1.1+ |
| 2001 09 20 | 704 | 0.9− | 0.0 | 2004 02 15 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.5− | 0.3+ |
| 2001 10 07 | 644 | 0.3+ | 0.1+ | 2004 02 15 | 704 | 0.1− | 1.4+ | 2006 09 20 | 703 | 1.2− | 0.8− |
| 2001 10 07 | 644 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.6+ | 0.4+ |
| 2001 10 07 | 644 | 0.2− | 0.2− | 2004 02 15 | 704 | (0.3+ | 1.7+) | 2006 09 26 | 703 | 0.6− | 1.5+ |
| 2001 10 14 | 704 | 0.1− | 1.4+ | 2005 01 18 | 809 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.8− |
| 2001 10 14 | 704 | 0.6− | 0.0 | 2005 01 18 | 809 | 0.6+ | 0.2+ | 2006 09 26 | 703 | 0.9+ | 0.3− |
| 2001 10 14 | 704 | 0.5− | 0.7+ | 2005 01 18 | 809 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 10 14 | 704 | 0.8− | 1.3+ | 2006 08 16 | 644 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2001 10 14 | 704 | 0.2− | 1.3+ | 2006 08 16 | 644 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2004 01 17 | 644 | 0.3+ | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.1+ | | | | |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.1− | 0.5+ | | | | |

**(136672)**∗ **1995 SU**$_{18}$ **= 2001 YP**$_{34}$ **= 2005 NY**$_{58}$

Discovered 1995 Sept. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 88651)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.46943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18298939 | $\omega$ | 45.24215 | | +0.87598797 | −0.48231254 | |
| $a$ | 3.0726902 | $\Omega$ | 343.59279 | | +0.43797707 | +0.79925042 | |
| $e$ | 0.0719022 | $i$ | 0.89996 | | +0.20204246 | +0.35857131 | |
| $P$ | 5.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1− | 0.8− | 2004 04 28 | 691 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.5− | 0.3+ |
| 1995 09 18 | 691 | 0.0 | 0.0 | 2004 05 28 | 691 | 0.3+ | 0.7+ | 2006 10 15 | 691 | 0.3− | 0.9+ |
| 1995 09 18 | 691 | 0.7− | 0.3− | 2004 05 28 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.3− |
| 1995 09 22 | 691 | 0.2− | 0.3+ | 2004 05 28 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 1995 09 22 | 691 | 0.0 | 0.0 | 2005 07 09 | 691 | 0.5− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− |
| 1995 09 22 | 691 | 0.2+ | 0.1+ | 2005 07 09 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2− |
| 1995 09 27 | 691 | 0.1+ | 0.1+ | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 1995 09 27 | 691 | 0.6+ | 0.1+ | 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 1995 09 27 | 691 | 0.2+ | 0.2− | 2005 07 12 | G96 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.6+ | 0.2+ |
| 2001 12 18 | 704 | 0.1+ | 0.8+ | 2005 07 12 | G96 | 0.6+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2001 12 18 | 704 | 0.5+ | 0.1+ | 2005 07 12 | G96 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.8+ | 0.5+ | 2005 07 16 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2005 07 16 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.3− | 0.5− | 2005 07 16 | 691 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.6− | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2001 12 19 | 704 | 0.3+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2003 03 10 | 291 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.6− | 0.6− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2003 03 10 | 291 | 0.0 | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.8− | 0.8− |
| 2003 03 10 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.5+ | 0.1− |
| 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.4− | 0.7+ | 2006 11 17 | 703 | 0.3− | 1.8− |
| 2004 04 28 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 1.5− |

**(136673)**∗ **1995 SB**$_{20}$ **= 2002 PS**$_{151}$

Discovered 1995 Sept. 18 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 42891)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.77141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26808468 | $\omega$ | 263.54745 | | +0.37240595 | +0.92799846 | |
| $a$ | 2.3820711 | $\Omega$ | 28.32521 | | −0.84160462 | +0.34291519 | |
| $e$ | 0.1611010 | $i$ | 1.39104 | | −0.39117194 | +0.14569843 | |
| $P$ | 3.68 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1− | 0.1+ | 2002 08 18 | 644 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 1995 09 18 | 691 | 0.2− | 0.2− | 2002 08 18 | 644 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1− |
| 1995 09 18 | 691 | 1.0− | 0.4− | 2002 08 18 | 644 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 1995 09 22 | 691 | 0.4+ | 0.0 | 2005 04 04 | G96 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1995 09 22 | 691 | 0.4+ | 0.1+ | 2005 04 04 | G96 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.2− |
| 1995 09 22 | 691 | 0.6+ | 0.1+ | 2005 04 04 | G96 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 1995 09 27 | 691 | 0.3+ | 0.2− | 2005 04 04 | G96 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 1995 09 27 | 691 | 0.4− | 0.5+ | 2005 05 13 | G96 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 1995 09 27 | 691 | 0.2− | 0.2+ | 2005 05 13 | G96 | 0.7+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2005 05 13 | G96 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.6+ | 0.4− |
| 2002 07 14 | 644 | 0.0 | 0.1+ | 2005 05 13 | G96 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 07 14 | 644 | 0.2− | 0.0 | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.8− | 0.5− |
| 2002 08 08 | 644 | 0.2− | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2002 08 08 | 644 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 08 10 | 807 | 0.0 | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2+ | | | | |
| 2002 08 10 | 807 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.2+ | | | | |

**(136674)**∗ **1995 SH**$_{20}$ **= 1993 FZ**$_{42}$ **= 2003 DQ**$_{3}$

Discovered 1995 Sept. 18 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 46326)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.31302 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19040176 | $\omega$ | 113.92176 | | −0.54567859 | +0.83791137 | |
| $a$ | 2.9924168 | $\Omega$ | 123.00200 | | −0.77387336 | −0.49846933 | |
| $e$ | 0.0837639 | $i$ | 0.80667 | | −0.32148855 | −0.22233502 | |
| $P$ | 5.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 1.4− | 0.3+ | 2003 04 03 | 699 | (0.6− | 2.4+) | 2006 10 19 | G96 | 0.0 | 0.0 |
| 1993 03 20 | 809 | 0.3+ | 0.7− | 2003 04 03 | 699 | 0.5+ | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.3− |
| 1993 03 24 | 809 | 0.5+ | 0.3− | 2003 04 03 | 699 | (1.3− | 1.8+) | 2006 10 19 | G96 | 0.3− | 0.2− |
| 1995 09 18 | 691 | 0.0 | 0.1+ | 2003 04 03 | 699 | (1.5− | 1.0−) | 2006 10 29 | G96 | 0.4+ | 0.2− |
| 1995 09 18 | 691 | 0.7+ | 0.3− | 2005 08 28 | 691 | 0.4+ | 0.3+ | 2006 10 29 | G96 | 0.8+ | 0.3− |
| 1995 09 18 | 691 | 1.1− | 0.2− | 2005 08 28 | 691 | 0.3+ | 0.6+ | 2006 10 29 | G96 | 0.5− | 1.1− |
| 1995 09 22 | 691 | 0.4+ | 0.6− | 2005 08 28 | 691 | 0.2+ | 0.5+ | 2006 10 29 | G96 | 0.2− | 0.5− |
| 1995 09 22 | 691 | 0.2+ | 0.2− | 2005 09 01 | 691 | 0.9− | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.4− |
| 1995 09 22 | 691 | 0.3+ | 0.2− | 2005 09 01 | 691 | 0.4− | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 1995 09 27 | 691 | 0.3+ | 0.2− | 2005 09 01 | 691 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 1995 09 27 | 691 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 1995 09 27 | 691 | 0.2+ | 0.3− | 2005 09 11 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.8− | 0.5+ | 2005 09 11 | 691 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 1.0− | 0.2+ | 2005 09 23 | 703 | 0.1− | 0.4+ | 2006 11 22 | H07 | 0.4− | 0.8+ |
| 2001 12 17 | 704 | (1.3− | 1.7+) | 2005 09 23 | 703 | (1.6+ | 1.1+) | 2006 11 22 | H07 | (0.5− | 2.2+) |
| 2001 12 17 | 704 | 0.5− | 0.3+ | 2005 09 23 | 703 | 1.0− | 0.6+ | 2006 11 22 | H07 | (0.6− | 2.1+) |
| 2003 02 22 | 644 | 1.0+ | 1.1+ | 2005 09 23 | 703 | (1.8+ | 0.6+) | 2006 11 22 | H07 | 0.3− | 0.4+ |
| 2003 02 22 | 644 | 0.2+ | 0.7+ | 2005 10 01 | G96 | 0.3+ | 0.0 | 2006 11 23 | H07 | 0.5− | 0.6+ |
| 2003 02 22 | 644 | 0.8+ | 0.7+ | 2005 10 01 | G96 | 0.3− | 0.2− | 2006 11 23 | H07 | 0.2+ | 0.6+ |
| 2003 02 23 | 291 | 0.1− | 0.1− | 2005 10 01 | G96 | 0.2+ | 0.1+ | 2006 11 23 | H07 | 0.3+ | 1.1+ |
| 2003 02 23 | 291 | 0.1+ | 0.5+ | 2005 10 01 | G96 | 0.0 | 0.1+ | 2006 11 27 | 291 | 0.4− | 0.1− |
| 2003 02 23 | 291 | 0.2− | 0.0 | 2005 12 01 | G96 | 0.0 | 0.0 | 2006 11 27 | 291 | 0.3− | 0.0 |
| 2003 02 25 | 599 | 0.0 | 0.6+ | 2005 12 01 | G96 | 0.7+ | 0.0 | 2006 11 27 | 291 | 0.4− | 0.0 |
| 2003 02 25 | 599 | 0.4+ | 0.3+ | 2005 12 01 | G96 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2003 02 25 | 599 | 0.3+ | 0.3+ | 2005 12 01 | G96 | 0.3+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2003 02 25 | 599 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2003 02 26 | 599 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.3+ | 2006 12 01 | 691 | 0.6+ | 0.3− |
| 2003 02 26 | 599 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.5− | 0.9+ |
| 2003 02 26 | 599 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 12 01 | 691 | 0.2− | 0.3− |
| 2003 02 27 | 599 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.0 | | | | |

**(136675)∗ 1995 $SA_{23}$ = 1999 $XX_{252}$ = 1999 $XF_{260}$**

Discovered 1995 Sept. 19 by Spacewatch at Kitt Peak.
Id. M. E. Sansaturio (*MPO* 3136), A. Doppler (d, *MPO* 11472)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.78175 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26713226 | $\omega$ | 359.78199 | | −0.06826034 | −0.99681998 | |
| $a$ | 2.3877297 | $\Omega$ | 94.13189 | | +0.91540445 | −0.07896560 | |
| $e$ | 0.1468150 | $i$ | 2.36253 | | +0.39670545 | +0.01069356 | |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.4− | 0.1+ | 2004 01 17 | 644 | 0.2− | 0.4+ | 2004 02 23 | 704 | 0.5− | 0.5+ |
| 1995 09 19 | 691 | 0.2− | 0.3+ | 2004 01 17 | 644 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.3− | 0.4− |
| 1995 09 19 | 691 | 0.3− | 0.2+ | 2004 01 19 | 703 | 1.0+ | 0.9+ | 2004 04 15 | 645 | 0.1− | 0.1− |
| 1995 09 24 | 691 | 0.1− | 0.2+ | 2004 01 19 | 703 | 0.1+ | 0.7+ | 2004 04 15 | 645 | 0.1− | 0.1− |
| 1995 09 24 | 691 | 0.7− | 0.1+ | 2004 01 19 | 703 | 0.1− | 1.2+ | 2004 04 16 | 645 | 0.0 | 0.1+ |
| 1995 09 24 | 691 | 0.1− | 0.3+ | 2004 01 19 | 703 | 0.2− | 1.1+ | 2004 04 16 | 645 | 0.1− | 0.0 |
| 1999 11 04 | 704 | 1.0+ | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.9+ | 2005 06 16 | G96 | 0.5+ | 0.6+ |
| 1999 11 04 | 704 | 0.1− | 0.3− | 2004 01 22 | 704 | 0.1− | 0.5+ | 2005 06 16 | G96 | 0.0 | 0.4+ |
| 1999 11 04 | 704 | 0.8+ | 0.4+ | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2005 06 16 | G96 | 0.0 | 0.4+ |
| 1999 12 08 | 704 | 0.1+ | 0.3− | 2004 01 22 | 704 | 0.4+ | 0.2+ | 2005 06 16 | G96 | 0.1− | 0.9− |
| 1999 12 08 | 704 | 0.4− | 0.8− | 2004 01 22 | 704 | 0.1− | 0.8+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 1999 12 08 | 704 | 0.1+ | 0.4− | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.3− | 0.2+ |
| 1999 12 12 | 691 | 0.5+ | 0.2− | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.6− | 0.0 |
| 1999 12 12 | 691 | 0.5+ | 0.3− | 2004 01 28 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.8+ |
| 1999 12 12 | 691 | 0.5+ | 0.2− | 2004 01 30 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 703 | 0.5+ | 0.8+ |
| 1999 12 17 | 691 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.3+ |
| 1999 12 17 | 691 | 0.4+ | 0.5− | 2004 01 30 | 704 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.5+ | 0.9+ |
| 1999 12 17 | 691 | 0.4+ | 0.4− | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.6+ | 0.2+ |
| 2000 01 11 | 691 | 0.2− | 0.2− | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.1+ |
| 2000 01 11 | 691 | 0.1− | 0.1− | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.2+ |
| 2000 01 11 | 691 | 0.2− | 0.1− | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.7+ |
| 2001 04 14 | 691 | 0.3+ | 0.3+ | 2004 02 15 | 704 | 1.0− | 0.4+ | 2006 09 19 | 703 | (2.3+ | 1.7+) |
| 2001 04 14 | 691 | 0.3+ | 0.2+ | 2004 02 15 | 704 | 0.1− | 1.2+ | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 2001 04 14 | 691 | 0.3+ | 0.1+ | 2004 02 15 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2004 01 13 | 699 | 0.2− | 1.1+ | 2004 02 15 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.8+ |
| 2004 01 13 | 699 | 1.1+ | 0.9+ | 2004 02 17 | 608 | 0.8+ | 1.3+ | 2006 11 17 | G96 | 0.0 | 1.1+ |
| 2004 01 13 | 699 | 0.3+ | 0.2+ | 2004 02 17 | 608 | (0.2+ | 1.9+) | 2006 11 17 | G96 | 0.1− | 0.8+ |
| 2004 01 13 | 699 | 0.3− | 0.4− | 2004 02 17 | 608 | (0.2+ | 1.8+) | 2006 11 17 | G96 | 0.6− | 0.5+ |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.8+ |

**(136676)∗ 1995 $ST_{24}$ = 1999 $VC_{147}$**

Discovered 1995 Sept. 19 by Spacewatch at Kitt Peak.
Id. M. E. Sansaturio (*MPO* 1900)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.96877 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26826815 | $\omega$ | 213.69097 | | +0.65382584 | +0.75598676 | |
| $a$ | 2.3809849 | $\Omega$ | 97.16079 | | −0.68700187 | +0.61060696 | |
| $e$ | 0.2151641 | $i$ | 1.82256 | | −0.31708074 | +0.23588804 | |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.3+ | 0.0 | 2005 03 16 | G96 | 1.4− | 0.0 | 2006 09 28 | 704 | 0.2− | 0.0 |
| 1995 09 19 | 691 | 0.2+ | 0.1+ | 2005 03 16 | G96 | 1.1− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 1995 09 19 | 691 | 0.3+ | 0.0 | 2005 03 16 | G96 | 0.8− | 0.8+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 1995 09 25 | 691 | 0.0 | 0.2+ | 2005 03 16 | G96 | 0.6− | 0.2− | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 1995 09 25 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 10 09 | 644 | 0.4+ | 0.5+ |
| 1995 09 25 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 1.0− | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 1995 09 30 | 691 | 1.2− | 0.5− | 2006 08 28 | 703 | 0.3+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1995 09 30 | 691 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 1995 09 30 | 691 | 0.1− | 0.0 | 2006 09 12 | 703 | (0.7− | 2.1+) | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 1997 01 09 | 691 | 0.5+ | 0.6+ | 2006 09 12 | 703 | (0.6+ | 3.0+) | 2006 10 10 | 644 | 0.3+ | 0.4+ |
| 1997 01 09 | 691 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.7− | 0.2+ | 2006 10 11 | 104 | 1.0− | 0.8+ |
| 1997 01 09 | 691 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.4− | 0.1− | 2006 10 11 | 104 | 0.5− | 0.7+ |
| 1998 05 23 | 691 | 0.0 | 1.6+ | 2006 09 18 | 699 | 0.7+ | 0.1+ | 2006 10 11 | 104 | 0.5− | 0.3+ |
| 1998 05 23 | 691 | 1.6+ | 0.8+ | 2006 09 18 | 699 | 0.5+ | 0.4+ | 2006 10 11 | 104 | 0.4− | 0.6+ |
| 1998 05 23 | 691 | 0.1+ | 1.3+ | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 1.2− | 0.4− | 2006 09 18 | 699 | (1.2+ | 1.8+) | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.8+ | 0.4− | 2006 09 19 | 704 | 1.1+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 1999 11 09 | 704 | 0.6+ | 0.2− | 2006 09 19 | 704 | 0.9+ | 1.1− | 2006 10 12 | 104 | 0.5− | 0.0 |
| 1999 11 12 | 704 | 0.7− | 0.2+ | 2006 09 19 | 704 | (1.8+ | 1.1+) | 2006 10 12 | 104 | (1.6+ | 1.2−) |
| 1999 11 12 | 704 | 0.6− | 0.5+ | 2006 09 19 | 704 | 1.4+ | 0.1+ | 2006 10 12 | 104 | 0.6− | 0.4+ |
| 1999 11 12 | 704 | 0.2− | 0.5+ | 2006 09 20 | 691 | 0.1+ | 0.0 | 2006 10 12 | 104 | 0.2− | 0.3− |
| 1999 11 12 | 704 | 1.1+ | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.0+ | 0.7+ |
| 1999 11 15 | 704 | 0.2− | 0.1− | 2006 09 20 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 1999 11 15 | 704 | 0.6− | 0.7− | 2006 09 22 | 704 | 0.6+ | 1.0− | 2006 10 16 | 703 | 0.7− | 0.9+ |
| 1999 11 15 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 1999 11 28 | 691 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 1999 11 28 | 691 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.4− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 1999 11 28 | 691 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 1999 12 13 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 1999 12 13 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 1999 12 13 | 691 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.4− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 02 21 | 691 | 0.6+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.2+ | 1.4+ |
| 2001 02 21 | 691 | 0.4+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2001 02 21 | 691 | 0.3+ | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.4− | 2006 10 22 | 703 | 1.7− | 0.9+ |
| 2005 03 11 | 691 | 0.2+ | 0.3− | 2006 09 28 | 704 | 0.6− | 0.4+ | 2006 10 22 | 703 | 1.5− | 1.7+ |
| 2005 03 11 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.4+ | | | | |
| 2005 03 11 | 691 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.1+ | | | | |

**(136677)∗ 1995 SW$_{24}$ = 2002 QW$_{44}$**

Discovered 1995 Sept. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 34688)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.19567 | | (2000.0) | | | |
| $n$ | 0.27450771 | $\omega$ | 41.05519 | | +0.46171044 | −0.88581994 |
| $a$ | 2.3447669 | $\Omega$ | 21.57154 | | +0.77736307 | +0.37891801 |
| $e$ | 0.0760153 | $i$ | 7.23926 | | +0.42723544 | +0.26785103 |
| $P$ | 3.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.3− | 0.0 | 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.6− | 0.2+ |
| 1995 09 19 | 691 | 0.3− | 0.0 | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 1995 09 19 | 691 | 0.1− | 0.0 | 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 1995 09 25 | 691 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.1− | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 1995 09 25 | 691 | 0.3+ | 0.1− | 2004 02 15 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 1995 09 25 | 691 | 0.1− | 0.0 | 2004 02 15 | 704 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 1995 09 30 | 691 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1995 09 30 | 691 | 0.2+ | 0.1− | 2004 03 20 | 704 | 1.1+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 1995 09 30 | 691 | 0.3+ | 0.1− | 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2002 08 19 | 644 | 0.3− | 0.5+ | 2004 03 20 | 704 | (2.0+ | 0.0 ) | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 08 19 | 644 | 0.1− | 0.9+ | 2004 03 20 | 704 | 0.6+ | 1.5+ | 2006 11 11 | 703 | 0.1− | 0.8+ |
| 2002 08 19 | 644 | 0.2− | 1.1+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 1.1− |
| 2002 08 30 | 644 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.8+ | 1.1+ |
| 2002 08 30 | 644 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2002 08 30 | 644 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.4+ | 0.0 |
| 2002 08 31 | 735 | 0.3− | 0.8+ | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2− | 0.4− |
| 2002 08 31 | 735 | 0.6+ | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.7+ | 1.1+ |
| 2002 08 31 | 735 | 0.3− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.6− | 1.4+ |
| 2002 09 13 | 704 | (1.9− | 0.4+) | 2006 10 17 | 691 | 1.3− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2002 09 13 | 704 | (2.0− | 0.7+) | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 09 13 | 704 | 0.3− | 1.1+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2002 09 16 | 644 | 0.7− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.3− | 1.0− |
| 2002 09 16 | 644 | 0.5− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.5+ | 1.1+ |
| 2002 09 16 | 644 | 0.6− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2004 01 30 | 704 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.9+ | 1.3+ |
| 2004 01 30 | 704 | 0.5+ | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2004 01 30 | 704 | 0.1+ | 0.6− | 2006 10 27 | 703 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.9+ | 0.9+ |

**(136678)∗ 1995 SG$_{25}$ = 2004 EM$_{84}$**

Discovered 1995 Sept. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60468)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.71866 | | (2000.0) | | | |
| $n$ | 0.27478792 | $\omega$ | 30.31708 | | −0.20970976 | −0.97654504 |
| $a$ | 2.3431726 | $\Omega$ | 71.82537 | | +0.88645167 | −0.21094926 |
| $e$ | 0.1371350 | $i$ | 2.94424 | | +0.41258363 | −0.04312993 |
| $P$ | 3.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.1+ | 2004 03 15 | 703 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.4− |
| 1995 09 19 | 691 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.2+ | 1.2+ | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 1995 09 19 | 691 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.9+ | 0.5+ | 2006 11 13 | G96 | 0.7+ | 1.0− |
| 1995 09 25 | 691 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 1995 09 25 | 691 | 0.4− | 0.6+ | 2004 03 20 | 704 | 0.5+ | 0.6− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 1995 09 25 | 691 | 0.0 | 0.0 | 2004 07 15 | 807 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (2.4− | 1.6−) |
| 1995 09 30 | 691 | 0.2+ | 0.3+ | 2004 07 16 | 807 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.7− |
| 1995 09 30 | 691 | 0.1− | 0.4+ | 2006 10 18 | 691 | 0.5− | 0.2+ | 2006 11 17 | 703 | (2.1+ | 0.7−) |
| 1995 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.2− |
| 1999 12 07 | 704 | 0.6+ | 0.5− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 1999 12 07 | 704 | 0.4+ | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 1999 12 07 | 704 | 0.1+ | 0.7− | 2006 11 01 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 1999 12 15 | 703 | 1.3+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.4− | 0.0 |
| 1999 12 15 | 703 | 0.3− | 0.2− | 2006 11 02 | 703 | 0.6+ | 0.8− | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 1999 12 15 | 703 | 0.4− | 0.3− | 2006 11 02 | 703 | 0.2− | 0.1+ | 2006 11 21 | 704 | (1.0− | 1.9+) |
| 1999 12 15 | 703 | 1.1− | 0.2− | 2006 11 02 | 703 | 1.2− | 0.2+ | 2006 11 21 | 704 | (0.0 | 2.8+) |
| 2004 02 15 | 703 | 0.6− | 0.0 | 2006 11 02 | 703 | 0.0 | 0.5+ | 2006 11 21 | 704 | (0.7− | 2.0+) |
| 2004 02 15 | 703 | 1.0+ | 0.9+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 704 | (1.7− | 0.3+) |
| 2004 02 15 | 703 | 0.7− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.5− |
| 2004 02 15 | 703 | 0.5− | 1.4+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.3− |
| 2004 03 15 | 704 | 1.1+ | 1.3+ | 2006 11 10 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.6− |
| 2004 03 15 | 703 | 0.1+ | 0.7+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.6− | 0.3+ |
| 2004 03 15 | 703 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.7− |
| 2004 03 15 | 704 | (0.0 | 1.8+) | 2006 11 11 | 703 | 0.6+ | 0.1+ | 2006 11 29 | 704 | 1.4+ | 0.6− |
| 2004 03 15 | 703 | 0.1+ | 1.1+ | 2006 11 11 | 703 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.0 |
| 2004 03 15 | 704 | (0.1− | 1.7+) | 2006 11 11 | 703 | 0.0 | 0.6+ | 2006 11 29 | 704 | 0.3− | 1.1+ |

**(136679)∗ 1995 SK$_{26}$ = 2002 RS$_{191}$**

Discovered 1995 Sept. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37048)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 233.56127 | | (2000.0) | | | |
| $n$ | 0.26920700 | $\omega$ | 144.42420 | | −0.89021835 | −0.45536439 |
| $a$ | 2.3754459 | $\Omega$ | 8.51478 | | +0.39610312 | −0.78726685 |
| $e$ | 0.1345973 | $i$ | 4.81655 | | +0.22497469 | −0.41575735 |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.1− | 2003 12 23 | 704 | 0.3− | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1995 09 19 | 691 | 0.0 | 0.2− | 2003 12 23 | 704 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1995 09 19 | 691 | 0.1+ | 0.4− | 2003 12 23 | 704 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1995 09 24 | 691 | 0.5+ | 0.4− | 2003 12 28 | 704 | 0.1− | 1.1− | 2006 09 26 | 691 | 0.7− | 0.3+ |
| 1995 09 24 | 691 | 0.3+ | 0.4− | 2003 12 28 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 691 | 0.5− | 0.4+ |
| 1995 09 24 | 691 | 0.4+ | 0.5− | 2003 12 28 | 704 | 0.7+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 1995 09 30 | 691 | 0.1− | 0.1+ | 2003 12 28 | 704 | 0.1+ | 0.5− | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 1995 09 30 | 691 | 0.0 | 0.0 | 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.0 |
| 1995 09 30 | 691 | 0.0 | 0.1− | 2003 12 29 | 704 | 0.1− | 0.7− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 08 20 | 644 | 0.3− | 0.7+ | 2003 12 29 | 704 | 0.7+ | 0.8− | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2002 08 20 | 644 | 0.2− | 0.9+ | 2003 12 29 | 704 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2002 08 20 | 644 | 0.7− | 0.6+ | 2003 12 29 | 704 | 0.4+ | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.2+ |
| 2002 08 29 | 644 | 0.2+ | 1.1+ | 2003 12 29 | 704 | (0.5− | 9.0+) | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 1.0+ | 2004 01 16 | 703 | 0.6− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | 0.2+ | 1.3+ | 2004 01 16 | 703 | 0.3− | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2002 09 12 | 644 | 0.4− | 0.2+ | 2004 01 16 | 703 | 0.5− | 0.4+ | 2006 10 15 | 691 | 0.5+ | 0.0 |
| 2002 09 12 | 644 | 0.2− | 0.2+ | 2004 01 16 | 703 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.3− |
| 2002 09 12 | 644 | 0.5− | 0.4+ | 2004 03 19 | 704 | (0.4+ | 2.6+) | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.4− | 0.0 | 2004 03 19 | 704 | 0.9− | 1.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2004 03 19 | 704 | (0.1+ | 1.6+) | 2006 10 16 | 691 | 0.3+ | 0.2− |
| 2002 09 15 | 644 | 0.5− | 0.1+ | 2004 03 19 | 704 | 0.4− | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2003 12 17 | 703 | (0.4+ | 2.5−) | 2004 03 19 | 704 | 0.3− | 0.9+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2003 12 17 | 699 | 0.7− | 0.5− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2003 12 17 | 699 | 0.2− | 1.1− | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2003 12 17 | 703 | (2.3− | 0.1−) | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2003 12 17 | 699 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2003 12 17 | 703 | 0.5+ | 0.2− | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2003 12 17 | 699 | 0.7− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2003 12 17 | 703 | 0.9+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2003 12 18 | 704 | 0.4+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2003 12 18 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2003 12 18 | 704 | 1.1+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 12 23 | 704 | 0.1+ | 1.2+ | 2006 09 26 | 691 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2003 12 23 | 704 | 0.0 | 1.0+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.4− |

**(136680)∗ 1995 SW$_{27}$ = 2001 YE$_{69}$**

Discovered 1995 Sept. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 21975)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.29790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18356896 | $\omega$ | 36.38404 | | +0.48740617 | −0.87309981 | |
| $a$ | 3.0662193 | $\Omega$ | 24.45193 | | +0.79443228 | +0.43795392 | |
| $e$ | 0.1824883 | $i$ | 1.59021 | | +0.36237079 | +0.21422673 | |
| $P$ | 5.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.3+ | 2003 04 08 | 691 | 0.3+ | 0.0 | 2006 11 09 | 691 | 0.1− | 0.4+ |
| 1995 09 19 | 691 | 0.4+ | 0.6+ | 2003 04 08 | 691 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 1995 09 19 | 691 | 0.1− | 0.4+ | 2003 04 25 | 691 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 1995 09 25 | 691 | 0.4+ | 0.0 | 2003 04 25 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.6+ |
| 1995 09 25 | 691 | 0.2− | 0.2+ | 2003 04 25 | 691 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.9− |
| 1995 09 25 | 691 | 0.6+ | 0.2− | 2005 07 09 | 691 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.7+ |
| 1995 09 30 | 691 | 0.1− | 0.4− | 2005 07 09 | 691 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 1995 09 30 | 691 | 0.0 | 0.5− | 2005 07 09 | 691 | 0.5− | 0.6+ | 2006 11 11 | 703 | 0.6+ | 0.0 |
| 1995 09 30 | 691 | 0.0 | 0.4− | 2005 10 28 | G96 | (1.9− | 0.4−) | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 1995 10 15 | 691 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.6− | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.4+ |
| 1995 10 15 | 691 | 0.0 | 0.1− | 2005 10 28 | G96 | 0.3− | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 1995 10 15 | 691 | 0.3− | 0.1+ | 2005 10 28 | G96 | 0.6+ | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2001 12 18 | 644 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2001 12 18 | 644 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.7− | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 18 | 704 | (1.0+ | 1.8+) |
| 2001 12 18 | 704 | 0.9− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | (0.8+ | 1.6+) |
| 2001 12 18 | 644 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.9+ | 1.4+ |
| 2001 12 18 | 704 | 0.6+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | (0.1− | 1.7+) |
| 2001 12 18 | 704 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.8− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.5− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2001 12 19 | 704 | 0.5− | 0.7− | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2002 01 08 | 704 | 0.9− | 0.3− | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.7− | 0.3+ |
| 2002 01 08 | 704 | 0.6− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.8− | 0.0 |
| 2002 01 08 | 704 | 0.8− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2002 01 08 | 704 | 0.8− | 0.3+ | 2006 10 31 | G96 | 0.9− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 04 04 | 691 | 0.9+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2003 04 04 | 691 | 0.8+ | 0.4+ | 2006 10 31 | G96 | 1.1+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2003 04 04 | 691 | 0.9+ | 0.2+ | 2006 11 09 | 691 | 0.5+ | 0.7+ | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2003 04 08 | 691 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.2+ | | | | |

**(136681)∗ 1995 SE$_{29}$ = 2001 TW$_{193}$**

Discovered 1995 Sept. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 19259)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.50420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17559614 | $\omega$ | 338.89364 | | +0.99991137 | −0.01194846 | |
| $a$ | 3.1583438 | $\Omega$ | 21.79346 | | +0.01330622 | +0.91144717 | |
| $e$ | 0.1752448 | $i$ | 0.90628 | | −0.00043897 | +0.41124360 | |
| $P$ | 5.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1− | 0.3+ | 2001 10 21 | 291 | 0.8+ | 0.4− | 2001 11 24 | 691 | 0.1− | 0.5− |
| 1995 09 20 | 691 | 0.4+ | 0.0 | 2001 10 21 | 704 | 0.0 | 0.1+ | 2001 11 24 | 691 | 0.1+ | 0.1− |
| 1995 09 20 | 691 | 0.2+ | 0.1+ | 2001 10 21 | 291 | 0.9+ | 0.5− | 2001 12 20 | 291 | 0.5+ | 0.7+ |
| 1995 09 25 | 691 | 0.4− | 0.2+ | 2001 10 21 | 291 | 0.6+ | 0.5− | 2001 12 20 | 291 | 0.2+ | 0.2+ |
| 1995 09 25 | 691 | 0.2− | 0.3− | 2001 10 23 | 704 | 0.4− | 0.2+ | 2001 12 20 | 291 | 0.1+ | 0.4+ |
| 1995 09 25 | 691 | 0.2− | 0.2− | 2001 10 23 | 704 | 1.2− | 0.3+ | 2003 01 05 | 291 | 0.4− | 0.1+ |
| 1995 10 01 | 691 | 0.1− | 0.1− | 2001 10 23 | 704 | 0.8− | 0.7+ | 2003 01 05 | 291 | 0.2− | 0.0 |
| 1995 10 01 | 691 | 0.0 | 0.3+ | 2001 10 23 | 704 | 0.3− | 0.7+ | 2003 01 05 | 291 | 0.0 | 0.4+ |
| 1995 10 01 | 691 | 0.0 | 0.2+ | 2001 10 23 | 704 | (1.9− | 0.0 ) | 2004 01 30 | 568 | 0.3+ | 0.4+ |
| 2001 09 20 | 704 | 0.9− | 0.3+ | 2001 10 24 | 704 | 1.5− | 0.3− | 2004 01 30 | 568 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.9− | 0.7+ | 2001 10 24 | 704 | 0.8− | 0.0 | 2004 01 30 | 568 | 0.3+ | 0.4+ |
| 2001 09 20 | 704 | 0.8− | 0.6+ | 2001 10 24 | 704 | 0.5− | 0.1+ | 2004 03 16 | 291 | 0.5+ | 0.3+ |
| 2001 09 20 | 704 | 0.8− | 0.0 | 2001 10 24 | 704 | 0.6− | 0.6+ | 2004 03 16 | 291 | 0.2+ | 0.4+ |
| 2001 10 07 | 644 | 0.4+ | 1.0+ | 2001 10 24 | 704 | 0.3− | 0.4+ | 2004 03 16 | 291 | 0.3+ | 0.2+ |
| 2001 10 07 | 644 | 0.6+ | 0.7+ | 2001 10 25 | 704 | (2.1− | 0.0 ) | 2005 05 09 | G96 | 0.2− | 0.3+ |
| 2001 10 07 | 644 | 0.6+ | 0.6+ | 2001 10 25 | 644 | 0.5− | 0.3− | 2005 05 09 | G96 | 0.5+ | 0.6+ |
| 2001 10 15 | 704 | 0.6+ | 0.1− | 2001 10 25 | 704 | 0.7− | 0.3− | 2005 05 09 | G96 | 0.0 | 0.4+ |
| 2001 10 15 | 704 | 0.6+ | 0.0 | 2001 10 25 | 704 | 0.5+ | 0.1+ | 2005 05 09 | G96 | 0.1− | 0.6+ |
| 2001 10 15 | 704 | 0.4− | 0.0 | 2001 10 25 | 644 | 0.5− | 0.1− | 2005 05 11 | 691 | 0.2− | 0.2− |
| 2001 10 15 | 704 | 0.1− | 0.8+ | 2001 10 25 | 704 | 0.5− | 0.5+ | 2005 05 11 | 691 | 0.4+ | 0.3+ |
| 2001 10 18 | 644 | 0.3+ | 1.0+ | 2001 10 25 | 704 | 1.3+ | 1.3− | 2005 05 11 | 691 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.7+ | 0.9+ | 2001 10 25 | 644 | 0.6− | 0.2+ | 2006 07 19 | D35 | 0.3− | 0.7+ |
| 2001 10 18 | 644 | 0.0 | 1.4+ | 2001 10 25 | 704 | 1.2− | 0.9+ | 2006 07 19 | D35 | 0.2+ | 0.7+ |
| 2001 10 19 | 644 | 0.4− | 0.2+ | 2001 10 25 | 704 | 0.0 | 0.7+ | 2006 07 19 | D35 | 0.0 | 0.4+ |
| 2001 10 19 | 644 | 0.4− | 0.1+ | 2001 10 25 | 704 | 1.0− | 1.3− | 2006 10 23 | G96 | 0.6− | 0.5+ |
| 2001 10 19 | 644 | 0.6− | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.8− | 2006 10 23 | G96 | 0.5− | 0.3− |
| 2001 10 21 | 704 | 0.8− | 0.1+ | 2001 11 21 | 704 | 0.3+ | 0.5+ | 2006 10 23 | G96 | 0.5− | 0.1+ |
| 2001 10 21 | 704 | 0.3+ | 0.2− | 2001 11 21 | 704 | 0.6− | 0.5− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.5− | 0.2− | 2001 11 21 | 704 | 0.3− | 0.0 | | | | |
| 2001 10 21 | 704 | 0.1+ | 0.2+ | 2001 11 24 | 691 | 0.0 | 0.1+ | | | | |

**(136682)∗ 1995 SC$_{31}$ = 2006 QB$_{42}$**

Discovered 1995 Sept. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 103138)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.62200 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26753874 | $\omega$ | 289.03439 | | +0.31002061 | +0.95072879 | |
| $a$ | 2.3853106 | $\Omega$ | 359.02274 | | −0.83816969 | +0.27261461 | |
| $e$ | 0.1370105 | $i$ | 4.75101 | | −0.44873021 | +0.14763485 | |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.4+ | 0.5+ | 1999 11 03 | 691 | 0.0 | 0.3− | 2006 08 17 | 644 | 0.0 | 0.5+ |
| 1995 09 20 | 691 | 0.2+ | 0.1+ | 2003 11 21 | 691 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.5+ |
| 1995 09 20 | 691 | 0.4+ | 0.3+ | 2003 11 21 | 691 | 0.8− | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 1995 09 20 | 691 | 0.2− | 0.0 | 2003 11 21 | 691 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.5+ |
| 1995 09 20 | 691 | 0.1− | 0.2− | 2003 12 18 | 691 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.3+ |
| 1995 09 20 | 691 | 0.3− | 0.2− | 2003 12 18 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.6− | 0.2+ |
| 1995 09 20 | 691 | 0.3+ | 0.0 | 2003 12 18 | 691 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 1995 09 20 | 691 | 0.4+ | 0.1− | 2005 03 03 | 691 | 0.2− | 0.0 | 2006 08 24 | 644 | 0.4− | 0.1+ |
| 1995 09 20 | 691 | 0.4+ | 0.1− | 2005 03 03 | 691 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.7+ |
| 1995 09 25 | 691 | 0.6− | 0.2+ | 2005 03 03 | 691 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.6− | 0.0 |
| 1995 09 25 | 691 | 0.4− | 0.1+ | 2005 03 03 | 703 | 1.2+ | 1.2+ | 2006 08 28 | 699 | 0.1+ | 1.4+ |
| 1995 09 25 | 691 | 0.3− | 0.2+ | 2005 03 03 | 703 | 0.8+ | 1.1+ | 2006 08 28 | 699 | 0.2− | 0.2− |
| 1995 10 01 | 691 | 0.2− | 0.8− | 2005 03 03 | 703 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.8+ | 0.9+ |
| 1995 10 01 | 691 | 0.5− | 0.0 | 2005 03 03 | 703 | 1.0+ | 0.5− | 2006 08 31 | 704 | 1.0+ | 0.6− |
| 1995 10 01 | 691 | 0.2+ | 0.1− | 2005 04 04 | 691 | 0.1+ | 0.5+ | 2006 08 31 | 704 | (2.4+ | 1.8−) |
| 1999 10 13 | 704 | 0.1− | 0.5+ | 2005 04 04 | 691 | 0.3+ | 0.3+ | 2006 08 31 | 704 | (2.9+ | 1.0−) |
| 1999 10 13 | 704 | 0.3+ | 0.4+ | 2005 04 04 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.7+ |
| 1999 10 13 | 704 | 0.7− | 0.6+ | 2005 04 04 | G96 | 0.4− | 0.2+ | 2006 09 14 | 703 | (2.5− | 0.2−) |
| 1999 10 13 | 704 | 0.4+ | 1.4+ | 2005 04 04 | G96 | 0.6− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 1999 10 13 | 704 | 0.0 | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.1− | 0.8+ |
| 1999 10 13 | 704 | 1.0+ | 0.1− | 2005 04 04 | G96 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.7− | 0.1+ |
| 1999 10 13 | 704 | 1.0+ | 0.5+ | 2005 05 04 | G96 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.6− | 0.4− |
| 1999 10 13 | 704 | 0.7+ | 1.7+ | 2005 05 04 | G96 | 0.6+ | 0.7− | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 1999 11 03 | 691 | 0.0 | 0.3− | 2005 05 04 | G96 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 1999 11 03 | 691 | 0.1+ | 0.5− | 2005 05 04 | G96 | 0.2− | 0.5+ | | | | |

**(136683)∗ 1995 SG$_{34}$ = 1999 UG$_{58}$**

Discovered 1995 Sept. 22 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 9038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.59794 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27121354 | $\omega$ | 268.43895 | | +0.23883744 | +0.97103531 | |
| $a$ | 2.3637151 | $\Omega$ | 15.38423 | | −0.88032720 | +0.21949889 | |
| $e$ | 0.1743202 | $i$ | 1.48239 | | −0.40985448 | +0.09439629 | |
| $P$ | 3.63 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.9− | 0.5+ | 2002 07 08 | 644 | 0.0 | 0.0 | 2005 05 13 | G96 | 0.4− | 0.1− |
| 1995 09 22 | 691 | 0.8− | 0.4+ | 2002 07 08 | 644 | 0.3+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 1995 09 22 | 691 | 0.2− | 0.2+ | 2005 03 09 | G96 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 1995 09 27 | 691 | 0.4− | 0.5+ | 2005 03 09 | G96 | 0.6− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 1995 09 27 | 691 | 0.1− | 0.5+ | 2005 03 09 | G96 | 0.5− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1995 09 27 | 691 | 0.3− | 0.3+ | 2005 03 09 | G96 | 1.0− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 1998 06 01 | 691 | 1.1+ | 0.3+ | 2005 03 12 | 691 | 0.3+ | 1.0+ | 2006 09 19 | 691 | 0.1− | 0.2− |
| 1998 06 01 | 691 | 0.7+ | 0.5+ | 2005 03 12 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 1998 06 01 | 691 | (1.5+ | 4.6−) | 2005 03 12 | 691 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 1999 10 30 | 691 | 0.4+ | 0.0 | 2005 03 16 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1999 10 30 | 691 | 0.4+ | 0.0 | 2005 03 16 | 691 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1999 10 30 | 691 | 0.1+ | 0.0 | 2005 03 16 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 1999 11 09 | 691 | 0.7+ | 0.5+ | 2005 04 02 | G96 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 1999 11 09 | 691 | 0.1− | 0.4+ | 2005 04 02 | G96 | 0.5− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.2− |
| 1999 11 09 | 691 | 0.2− | 0.5+ | 2005 04 02 | G96 | 0.8− | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2001 02 01 | 691 | 0.1+ | 0.3+ | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.8+ | 0.6− |
| 2001 02 01 | 691 | 0.1+ | 0.2+ | 2005 05 13 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4+ |
| 2001 02 01 | 691 | 0.0 | 0.5+ | 2005 05 13 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2002 07 08 | 644 | 0.0 | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.6− |

**(136684)∗ 1995 SD$_{35}$ = 2003 EJ$_{25}$**

Discovered 1995 Sept. 22 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 42891)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.51305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17918286 | $\omega$ | 67.48411 | | +0.09743027 | | −0.99083210 |
| $a$ | 3.1160547 | $\Omega$ | 17.70891 | | +0.76203070 | | +0.01378153 |
| $e$ | 0.1368633 | $i$ | 17.91939 | | +0.64016917 | | +0.13439429 |
| $P$ | 5.50 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.2− | 0.1− | 2003 03 26 | 699 | 0.2− | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.1+ |
| 1995 09 22 | 691 | 0.5+ | 0.8+ | 2003 03 26 | 699 | 0.5+ | 0.2+ | 2006 09 29 | 691 | 0.4− | 0.2+ |
| 1995 09 22 | 691 | 0.3− | 0.0 | 2003 03 26 | 699 | 0.5− | 1.1+ | 2006 10 03 | 691 | 0.1− | 0.1+ |
| 1995 09 27 | 691 | 0.2− | 0.0 | 2003 03 26 | 699 | 0.4− | 0.2− | 2006 10 03 | 691 | 0.2− | 0.2+ |
| 1995 09 27 | 691 | 0.2− | 0.1+ | 2003 04 01 | 704 | 0.3+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 1995 09 27 | 691 | 0.2− | 0.0 | 2003 04 01 | 704 | 0.1− | 0.5+ | 2006 10 17 | 703 | 1.2− | 0.1+ |
| 1995 10 15 | 691 | 0.2+ | 0.5− | 2003 04 01 | 704 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.7− |
| 1995 10 15 | 691 | 0.3+ | 0.5− | 2003 04 01 | 704 | 0.1− | 0.7− | 2006 10 17 | 703 | 0.7− | 0.2− |
| 1995 10 15 | 691 | 0.5+ | 0.5− | 2003 04 01 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 1995 10 20 | 010 | (3.4+ | 1.7+) | 2003 04 05 | 699 | 0.6− | 1.0+ | 2006 10 19 | G96 | 0.3− | 0.4− |
| 1995 10 20 | 010 | (2.7+ | 2.2+) | 2003 04 05 | 699 | 0.9− | 0.1− | 2006 10 19 | G96 | 0.4− | 0.5− |
| 1995 10 20 | 010 | (3.2+ | 2.6+) | 2003 04 05 | 699 | 0.8− | 0.5− | 2006 10 19 | G96 | 0.0 | 0.4− |
| 1995 10 23 | 010 | (0.7− | 2.4+) | 2003 04 05 | 699 | 1.0+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 1995 10 23 | 010 | (6.8− | 3.1+) | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1995 10 23 | 010 | (4.3− | 0.6+) | 2006 09 06 | 644 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.9+ | 0.2− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.2− | 1.4− | 2006 09 06 | 644 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.1− | 0.7− | 2006 09 06 | 644 | 0.9+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.7− | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 10 25 | 704 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.8− | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.2+ |
| 2001 10 25 | 704 | 0.1− | 0.7− | 2006 09 14 | 703 | 0.9− | 1.3+ | 2006 10 29 | 704 | 1.2− | 0.1+ |
| 2001 10 25 | 704 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.0 | 0.9+ | 2006 10 29 | 704 | 1.1+ | 0.2− |
| 2001 10 25 | 704 | 1.0− | 0.8− | 2006 09 14 | 703 | 0.7− | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.0 |
| 2001 10 25 | 704 | 0.8− | 0.4− | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.4− | 0.5− |
| 2001 12 08 | 704 | 0.6+ | 0.0 | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 12 08 | 704 | 0.1+ | 0.9− | 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2001 12 08 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.7+ | 1.0+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 12 08 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.9+ | 0.0 | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2001 12 08 | 704 | 0.4+ | 0.4− | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2001 12 23 | 704 | (0.1− | 1.6+) | 2006 09 17 | 704 | 0.3+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2001 12 23 | 704 | 1.3+ | 1.0+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.5− | 0.1− |
| 2001 12 23 | 704 | 1.5+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.1− | 0.2+ |
| 2003 02 12 | 608 | 0.4+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.3− | 0.7− |
| 2003 02 12 | 608 | 0.7+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.1+ | 0.1− |
| 2003 02 12 | 608 | 0.5+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 11 16 | 704 | 1.4+ | 1.1+ |
| 2003 03 06 | 699 | 0.7+ | 0.7+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.2− | 0.0 |
| 2003 03 06 | 699 | 0.8+ | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.1− | 0.0 |
| 2003 03 06 | 699 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.7+ |
| 2003 03 06 | 699 | 0.7+ | 0.9+ | 2006 09 25 | 691 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2003 03 07 | 699 | 0.7+ | 0.2− | 2006 09 27 | 704 | 0.4− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2003 03 07 | 699 | 1.2+ | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2003 03 07 | 699 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 1.0− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2003 03 07 | 699 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.8− |
| 2003 03 11 | 644 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2003 03 11 | 644 | 0.7+ | 1.0+ | 2006 09 29 | 704 | 1.0+ | 0.8− | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2003 03 11 | 644 | 0.6+ | 0.7+ | 2006 09 29 | 704 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.9+ |
| 2003 03 12 | 644 | 0.7+ | 0.6+ | 2006 09 29 | 704 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2003 03 12 | 644 | 0.6+ | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.3− | | | | |
| 2003 03 12 | 644 | 0.7+ | 0.4+ | 2006 09 29 | 691 | 0.0 | 0.2+ | | | | |

**(136685)∗ 1995 SJ$_{35}$**

Discovered 1995 Sept. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.15598 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17844149 | $\omega$ | 85.25307 | | −0.27101383 | | −0.95883910 |
| $a$ | 3.1246796 | $\Omega$ | 21.07309 | | +0.76304527 | | −0.26766095 |
| $e$ | 0.1246052 | $i$ | 13.62985 | | +0.58678226 | | −0.09479026 |
| $P$ | 5.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.1+ | 0.1− | 2003 03 11 | 644 | 0.8+ | 1.3+ | 2006 10 15 | 703 | (1.2+ | 2.3+) |
| 1995 09 22 | 691 | 0.0 | 0.1− | 2003 03 23 | 645 | 0.1+ | 0.3− | 2006 10 15 | 703 | (0.0 | 2.0−) |
| 1995 09 22 | 691 | 0.2+ | 0.1+ | 2003 03 23 | 645 | 0.1+ | 0.3− | 2006 10 15 | 703 | 0.7− | 0.6− |
| 1995 09 27 | 691 | 0.1− | 0.0 | 2003 03 25 | 644 | 0.7+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 1995 09 27 | 691 | 0.3− | 0.0 | 2003 03 25 | 644 | 0.7+ | 0.4+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 1995 09 27 | 691 | 0.0 | 0.2+ | 2003 03 25 | 644 | 0.8+ | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2001 11 11 | 704 | 0.7+ | 0.1− | 2003 04 04 | 691 | 0.2− | 0.9+ | 2006 10 16 | G96 | 0.5− | 0.1− |
| 2001 11 11 | 704 | 1.0+ | 0.8− | 2003 04 04 | 691 | 0.2+ | 0.4+ | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2001 11 11 | 704 | 0.4− | 0.1− | 2003 04 04 | 691 | 0.1− | 0.7+ | 2006 10 29 | 291 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.1+ | 0.3− | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 29 | 291 | 0.1− | 0.3+ |
| 2001 12 22 | 704 | 0.4+ | 0.8− | 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2001 12 22 | 704 | 0.4+ | 0.7− | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2001 12 22 | 704 | 0.7− | 1.0+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2001 12 22 | 704 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.5− |
| 2003 01 13 | 291 | 0.4− | 0.2+ | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 01 13 | 291 | 0.5− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 01 13 | 291 | 0.7− | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2003 03 11 | 644 | 0.8+ | 1.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2003 03 11 | 644 | 1.0+ | 1.2+ | 2006 10 15 | 703 | 1.4+ | 0.9− | | | | |

**(136686)∗ 1995 SQ$_{35}$**

Discovered 1995 Sept. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.85054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27214660 | $\omega$ | 235.37474 | | +0.48603323 | | −0.87391957 |
| $a$ | 2.3583093 | $\Omega$ | 185.55519 | | +0.82081436 | | +0.45884331 |
| $e$ | 0.2041111 | $i$ | 3.56741 | | +0.30005913 | | +0.16039762 |
| $P$ | 3.62 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.0 | 0.2− | 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 1995 09 18 | 691 | 0.7− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 1995 09 18 | 691 | 0.1+ | 0.2− | 2006 09 18 | 699 | 1.5− | 0.4− | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 1995 09 23 | 691 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 291 | 0.0 | 0.2+ |
| 1995 09 23 | 691 | 0.2− | 0.7+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 291 | 0.1+ | 0.4+ |
| 1995 09 23 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.9− | 0.8+ | 2006 10 21 | 291 | 0.1+ | 0.4+ |
| 1995 09 27 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.6− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 1995 09 27 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.9− | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 1995 09 27 | 691 | 0.3+ | 0.4− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.5− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 2.1− |
| 2002 07 22 | 644 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.6− |
| 2002 08 07 | 644 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.6+ | 1.3− |
| 2002 08 07 | 644 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.7− | 1.4− |
| 2002 08 07 | 644 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 08 11 | 644 | 0.5+ | 0.8− | 2006 10 03 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 08 11 | 644 | 0.4+ | 0.5− | 2006 10 03 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2002 08 11 | 644 | 0.1+ | 0.4− | 2006 10 03 | 691 | 0.8− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 08 16 | 644 | 0.2+ | 0.6− | 2006 10 15 | 703 | 0.5+ | 0.7+ | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2002 08 16 | 644 | 0.1+ | 0.8+ | 2006 10 15 | 703 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 08 16 | 644 | 0.1+ | 0.6+ | 2006 10 15 | 703 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2004 03 17 | 691 | 0.4+ | 0.3+ | 2006 10 15 | 703 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 03 17 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.1− | | | | |

**(136687)∗ 1995 SH$_{36}$ = 2002 RL$_{39}$**

Discovered 1995 Sept. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 34689)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.88487 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27842060 | $\omega$ | 290.20679 | | +0.43518899 | | +0.90032665 |
| $a$ | 2.3227465 | $\Omega$ | 5.59741 | | −0.80683900 | | +0.39232601 |
| $e$ | 0.2406200 | $i$ | 2.78613 | | −0.39952643 | | +0.18839383 |
| $P$ | 3.54 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 809 | 0.7+ | 0.1+ | 2002 09 04 | 644 | 0.2+ | 0.0 | 2005 03 17 | 691 | 0.1− | 0.5+ |
| 1995 09 23 | 691 | 0.1+ | 0.2+ | 2002 09 04 | 644 | 0.1+ | 0.2− | 2005 03 17 | 691 | 0.2+ | 0.1+ |
| 1995 09 23 | 691 | 0.2− | 0.4+ | 2002 09 04 | 644 | 0.1+ | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.5+ |
| 1995 09 23 | 691 | 0.2− | 0.4+ | 2002 09 05 | 704 | 0.6+ | 0.2+ | 2005 05 13 | 691 | 0.3+ | 0.7+ |
| 1995 09 27 | 691 | 0.0 | 0.1+ | 2002 09 05 | 704 | 0.2+ | 0.4− | 2005 05 13 | 691 | 0.3+ | 0.6+ |
| 1995 09 27 | 691 | 0.3− | 0.1− | 2002 09 05 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.4+ |
| 1995 09 27 | 691 | (0.6− | 2.7+) | 2002 09 05 | 704 | 0.5− | 0.8+ | 2006 10 19 | 695 | 0.4− | 0.0 |
| 2002 08 15 | 699 | 0.4− | 0.2+ | 2002 09 06 | 704 | 0.3+ | 1.2+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2002 08 15 | 699 | 0.1− | 1.0+ | 2002 09 06 | 704 | 0.6+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2002 08 15 | 699 | (0.3+ | 1.9−) | 2002 09 06 | 704 | 0.6+ | 0.4+ | 2006 10 23 | 691 | 0.7− | 0.1+ |
| 2002 08 15 | 699 | 0.1+ | 0.8− | 2002 09 11 | 608 | 1.0− | 0.5− | 2006 10 27 | 691 | 0.2− | 0.4+ |
| 2002 08 18 | 644 | 0.4+ | 0.2+ | 2002 09 11 | 608 | 0.5− | 0.7− | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2002 09 11 | 608 | 0.5− | 1.3− | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2002 09 15 | 644 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2002 09 15 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2005 03 17 | 691 | 0.2+ | 0.3− | | | | |

**(136688)∗ 1995 SA$_{37}$ = 2000 SW$_{224}$**

Discovered 1995 Sept. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 14739)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.21878 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20558609 | $\omega$ | 35.57843 | | +0.60436257 | | +0.79655429 |
| $a$ | 2.8431967 | $\Omega$ | 271.60973 | | −0.73455813 | | +0.54946723 |
| $e$ | 0.0445355 | $i$ | 0.90113 | | −0.30849674 | | +0.25216468 |
| $P$ | 4.79 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.2− | 0.2+ | 2003 03 24 | 691 | 0.2+ | 0.4+ | 2005 10 30 | 703 | 0.2− | 0.6+ |
| 1995 09 24 | 691 | 0.3− | 0.2+ | 2003 04 01 | 704 | 0.8+ | 0.8+ | 2005 10 30 | 703 | (0.5− | 1.6+) |
| 1995 09 24 | 691 | 0.1− | 0.2+ | 2003 04 01 | 704 | 0.7+ | 0.8+ | 2005 10 30 | 703 | 0.1− | 0.0 |
| 1995 09 29 | 691 | 0.3− | 0.4+ | 2003 04 01 | 704 | 0.3+ | 0.7+ | 2005 10 30 | 703 | 0.2+ | 0.7+ |
| 1995 09 29 | 691 | 0.2− | 0.8+ | 2003 04 01 | 704 | 0.8+ | 1.0+ | 2005 11 26 | G96 | 0.1− | 0.0 |
| 1995 09 29 | 691 | 0.1− | 0.7+ | 2003 04 01 | 704 | 0.2+ | 1.2+ | 2005 11 26 | G96 | 0.1− | 0.2− |
| 1996 12 09 | 327 | 0.3− | 0.3− | 2003 04 07 | 291 | 0.4+ | 0.5+ | 2005 11 26 | G96 | 0.1− | 0.1+ |
| 1996 12 09 | 327 | 0.2− | 0.1− | 2003 04 07 | 291 | 0.2+ | 0.7+ | 2005 11 26 | G96 | 0.1− | 0.1− |
| 1996 12 09 | 327 | 0.3− | 0.3− | 2003 04 07 | 291 | 0.3+ | 0.5+ | 2005 12 28 | G96 | 0.1+ | 0.1− |
| 2000 09 27 | 704 | 0.0 | 0.0 | 2004 07 15 | E12 | 0.9− | 0.4− | 2005 12 28 | G96 | 0.4+ | 0.2− |
| 2000 09 27 | 704 | 0.3− | 1.2+ | 2004 07 15 | E12 | 0.5+ | 0.1− | 2005 12 28 | G96 | 0.0 | 0.2− |
| 2000 09 27 | 704 | 0.4− | 0.3+ | 2004 07 15 | E12 | 0.4− | 0.1− | 2005 12 28 | G96 | 0.5− | 0.4+ |
| 2000 09 27 | 704 | 0.3− | 0.1− | 2004 07 15 | E12 | 0.3+ | 0.4− | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2000 10 01 | 704 | 0.9+ | 0.7+ | 2004 07 15 | 599 | 0.2+ | 0.9− | 2006 09 25 | G96 | 0.2− | 0.6+ |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2004 07 15 | 599 | 0.3+ | 0.6− | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2000 10 01 | 704 | 0.7+ | 0.4+ | 2004 07 15 | 599 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2000 10 01 | 704 | 0.1− | 0.3+ | 2005 10 02 | G96 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.4+ |
| 2000 10 01 | 704 | 0.0 | 0.4+ | 2005 10 02 | G96 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.5− | 0.1+ |
| 2003 03 24 | 691 | 0.1− | 0.4− | 2005 10 02 | G96 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2003 03 24 | 691 | 0.1− | 0.2+ | 2005 10 02 | G96 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.2+ |

**(136689)∗ 1995 SF$_{38}$ = 1999 YL$_{25}$ = 2004 FT$_{131}$**

Discovered 1995 Sept. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 8010, *MPO* 74545)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.77916 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27775588 | $\omega$ | 213.00419 | | +0.61986133 | | −0.78470490 |
| $a$ | 2.3264508 | $\Omega$ | 198.69044 | | +0.72209507 | | +0.57198346 |
| $e$ | 0.1360477 | $i$ | 0.56950 | | +0.30716550 | | +0.23889985 |
| $P$ | 3.55 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 809 | 0.6+ | 0.7+ | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.5+ | 1.3+ |
| 1995 09 20 | 809 | 0.8+ | 0.5+ | 2004 03 14 | 691 | 0.2+ | 0.9+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 1995 09 24 | 691 | 0.3− | 0.4+ | 2004 03 14 | 691 | 0.1− | 0.6+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 1995 09 24 | 691 | 0.4− | 0.2+ | 2004 03 23 | 291 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 1995 09 24 | 691 | 0.2− | 0.1+ | 2004 03 23 | 291 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 1995 09 29 | 691 | 0.4− | 0.3+ | 2004 03 23 | 291 | 0.2+ | 0.8+ | 2006 11 21 | 704 | 1.0− | 0.3+ |
| 1995 09 29 | 691 | 0.7− | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.4− | 2006 11 22 | H07 | 0.1+ | 0.4− |
| 1999 12 27 | 691 | 0.2+ | 0.5− | 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 22 | H07 | 0.1− | 0.2+ |
| 1999 12 27 | 691 | 0.5+ | 0.4− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 22 | H07 | 0.2− | 0.1− |
| 1999 12 27 | 691 | 0.3+ | 0.5− | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 22 | H07 | 0.2− | 0.2− |
| 2000 01 05 | 691 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.5− | 0.4− | 2006 11 23 | H07 | 0.9+ | 0.2− |
| 2000 01 05 | 691 | 0.1+ | 0.5− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 23 | H07 | 0.3− | 0.2− |
| 2000 01 05 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.3− | 0.3− | 2006 11 23 | H07 | 0.3− | 0.4+ |
| 2002 08 15 | 291 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 11 23 | H07 | 0.4+ | 0.7− |
| 2002 08 15 | 291 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 08 15 | 291 | 0.5+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2002 09 04 | 644 | 0.3− | 0.7− | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2002 09 04 | 644 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.5+ | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2002 09 04 | 644 | 0.1+ | 0.6− | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.1+ | 0.3− | 2006 11 18 | 704 | 1.1− | 0.1− | 2006 12 01 | 704 | 0.2− | 0.6+ |
| 2002 09 14 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | (2.1− | 1.8+) | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.8− | 0.3− | 2006 12 01 | 704 | 1.3+ | 1.2− |
| 2002 09 16 | 644 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 1.0+ | 2006 12 01 | 704 | 0.3− | 0.6+ |
| 2002 09 16 | 644 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.1+ | 2006 12 01 | 704 | 1.1− | 0.2+ |
| 2002 09 16 | 644 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.1+ | | | | |

**(136690)∗ 1995 SE$_{41}$ = 2002 PK$_{158}$**

Discovered 1995 Sept. 25 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 46326)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.77629 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27189654 | $\omega$ | 288.52383 | | +0.77514409 | | −0.63071172 |
| $a$ | 2.3597551 | $\Omega$ | 110.59580 | | +0.59346931 | | +0.70692133 |
| $e$ | 0.1926899 | $i$ | 2.25314 | | +0.21666986 | | +0.32010150 |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.3− | 0.1+ | 2002 08 18 | 644 | 0.5− | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.3− |
| 1993 01 29 | 691 | 0.1+ | 0.2− | 2002 08 18 | 644 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 1993 01 29 | 691 | 0.4+ | 0.3+ | 2002 08 29 | 644 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.3+ |
| 1993 01 29 | 691 | 0.2+ | 0.3+ | 2002 08 29 | 644 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.2− | 0.0 |
| 1993 01 29 | 691 | 0.3+ | 0.0 | 2002 08 29 | 644 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.9− | 0.2− |
| 1993 01 29 | 691 | 0.3+ | 0.1+ | 2002 09 15 | 644 | 0.7− | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 1995 09 19 | 691 | 0.1+ | 0.4− | 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.2+ | 1.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.3+ | 0.3− | 2002 09 15 | 644 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.1+ | 1.3+ |
| 1995 09 19 | 691 | 0.3+ | 0.2− | 2004 02 19 | 704 | 0.8+ | 0.5− | 2006 11 14 | 704 | 0.4− | 0.8+ |
| 1995 09 23 | 327 | 1.7+ | 0.8+ | 2004 02 19 | 704 | 0.9+ | 0.9+ | 2006 11 14 | 704 | 0.4− | 0.1+ |
| 1995 09 23 | 327 | 0.9+ | 1.1+ | 2004 02 19 | 704 | 1.1− | 1.2+ | 2006 11 14 | 704 | 0.4− | 0.4+ |
| 1995 09 23 | 327 | 1.3− | 0.5− | 2004 03 17 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 1995 09 23 | 327 | 1.1+ | 0.7+ | 2004 03 17 | 691 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 1995 09 25 | 691 | 0.1− | 0.4− | 2004 03 17 | 691 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 1995 09 25 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.5− |
| 1995 09 25 | 691 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.6+ | 0.4− | 2006 11 17 | 704 | 0.8+ | 1.2+ |
| 1995 09 30 | 691 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 11 17 | 704 | (0.6+ | 1.7−) |
| 1995 09 30 | 691 | 0.6− | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 17 | 704 | 0.1+ | 0.6+ |
| 1995 09 30 | 691 | 0.6− | 0.2+ | 2006 10 16 | 683 | 0.8− | 0.2− | 2006 11 17 | 704 | 0.3− | 1.0− |
| 2000 01 05 | 704 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.6− | 1.1+ |
| 2000 01 05 | 704 | 0.6− | 1.2− | 2006 10 16 | 703 | (0.7− | 1.6−) | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2000 01 05 | 704 | 0.8+ | 1.5− | 2006 10 16 | 683 | 0.3+ | 1.2+ | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 2002 07 29 | 644 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.5+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2002 07 29 | 644 | 0.4− | 0.3+ | 2006 10 16 | 683 | 1.2− | 1.0+ | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2002 07 29 | 644 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 08 08 | 644 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.4− |
| 2002 08 08 | 644 | 0.4+ | 1.1+ | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.1− |
| 2002 08 08 | 644 | 0.5+ | 0.9+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 1.3− | 0.4+ |
| 2002 08 08 | 644 | 0.4+ | 0.8+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.3+ |
| 2002 08 08 | 644 | 0.6+ | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2002 08 08 | 644 | 0.4+ | 0.8+ | 2006 10 22 | 691 | 0.2− | 0.0 | | | | |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.0 | | | | |

**(136691)∗ 1995 SC$_{44}$ = 2002 AF$_1$**

Discovered 1995 Sept. 25 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 21976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.49262 | | (2000.0) | | | |
| $n$ | 0.17912586 | $\omega$ | 210.28841 | | +0.65630627 | −0.75202313 |
| $a$ | 3.1167157 | $\Omega$ | 198.91439 | | +0.72449774 | +0.65072611 |
| $e$ | 0.1222683 | $i$ | 10.85007 | | +0.21063023 | +0.10496068 |
| $P$ | 5.50 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 20 | 691 | 0.6+ | 0.4− | 2002 01 04 | 209 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 1993 05 20 | 691 | 0.3− | 0.2+ | 2006 08 30 | 699 | 0.3− | 1.5+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 1993 05 20 | 691 | 0.3− | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.3− | 2006 10 15 | 703 | 0.0 | 0.4− |
| 1995 09 20 | 691 | 0.2+ | 0.1− | 2006 08 30 | 699 | 1.2− | 0.5+ | 2006 10 15 | 703 | 0.3− | 0.5+ |
| 1995 09 20 | 691 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.4+ | 0.6− |
| 1995 09 20 | 691 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 15 | 703 | 0.2+ | 0.1− |
| 1995 09 25 | 691 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.3− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 1995 09 25 | 691 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.0 | 0.5+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 1995 09 25 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.5− | 2006 10 16 | G96 | 0.1− | 0.2− |
| 1995 09 30 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | (2.2+ | 0.5−) | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 1995 09 30 | 691 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 1995 09 30 | 691 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2001 10 17 | 704 | 0.8+ | 1.0− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.6− | 0.1+ |
| 2001 10 17 | 704 | 0.5+ | 0.6− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.8− | 0.3− | 2006 09 15 | 691 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.6+ |
| 2001 12 05 | 608 | 0.0 | 0.2− | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2001 12 05 | 608 | 0.1− | 0.5− | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 12 05 | 608 | 0.5− | 0.4− | 2006 09 16 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 12 11 | 704 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 12 11 | 704 | 0.5− | 0.3+ | 2006 09 18 | 704 | 0.7+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.7+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.3+ | 1.1− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 0.7− | 0.8+ | 2006 09 18 | 699 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2001 12 11 | 704 | (3.6+ | 0.4+) | 2006 09 18 | 699 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2001 12 11 | 704 | (1.9+ | 0.5+) | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2001 12 11 | 704 | (3.0+ | 0.1−) | 2006 09 18 | 699 | 1.0+ | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2001 12 11 | 704 | (2.7+ | 0.3−) | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.5− | 0.8+ |
| 2001 12 11 | 704 | (1.8+ | 0.6−) | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 2.8− | 1.3− |
| 2001 12 23 | 209 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.7− | 0.2+ |
| 2001 12 23 | 209 | 0.2− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.6− | 0.6− |
| 2001 12 23 | 209 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 01 02 | 209 | 0.8+ | 0.7− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2002 01 02 | 209 | 0.5+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 01 02 | 209 | 1.1+ | 0.3+ | 2006 09 27 | 704 | 0.6+ | 0.7+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 01 04 | 209 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.0 | | | | |
| 2002 01 04 | 209 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.5+ | 0.1− | | | | |

**(136692)∗ 1995 SC$_{45}$ = 2001 YU$_{37}$**

Discovered 1995 Sept. 25 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 21976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.81068 | | (2000.0) | | | |
| $n$ | 0.18142306 | $\omega$ | 94.23449 | | −0.19381578 | −0.98103712 |
| $a$ | 3.0903504 | $\Omega$ | 6.94145 | | +0.89587808 | −0.17751720 |
| $e$ | 0.1384159 | $i$ | 0.60022 | | +0.39979733 | −0.07780620 |
| $P$ | 5.43 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.5− | 2001 12 18 | 704 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.7+ |
| 1995 09 20 | 691 | 0.1− | 0.1− | 2001 12 18 | 704 | 0.2+ | 0.3+ | 2006 11 14 | 701 | 0.8+ | 1.0− |
| 1995 09 20 | 691 | 0.0 | 0.3− | 2001 12 19 | 704 | 0.0 | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1995 09 25 | 691 | 0.4+ | 0.0 | 2001 12 19 | 704 | 0.5− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 1995 09 25 | 691 | 0.2+ | 0.4+ | 2001 12 19 | 704 | 0.3− | 1.4+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 1995 09 25 | 691 | 0.8+ | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 701 | 0.5+ | 0.7− |
| 1995 10 01 | 691 | 0.1− | 0.7− | 2006 09 25 | G96 | 0.0 | 0.6− | 2006 11 14 | G96 | 0.0 | 0.6− |
| 1995 10 01 | 691 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 11 14 | 701 | 0.1− | 0.7− |
| 1995 10 01 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.0 |
| 1995 10 15 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 11 22 | G96 | 0.5− | 0.3− |
| 1995 10 15 | 691 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 1.2− | 0.6+ |
| 1995 10 15 | 691 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 1997 02 14 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.3− | 0.0 |
| 1997 02 14 | 691 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1997 02 14 | 691 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.5− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.3− | 1.3− | 2006 10 20 | 691 | 0.2− | 0.5− | 2006 11 24 | 291 | 0.7+ | 0.5+ |
| 2001 11 20 | 704 | 0.7+ | 1.2− | 2006 10 29 | 691 | 0.2− | 0.2− | 2006 11 24 | 291 | 0.5+ | 0.9+ |
| 2001 11 20 | 704 | (0.2+ | 2.5−) | 2006 10 29 | 691 | 1.2− | 1.2+ | 2006 11 24 | 291 | 0.6+ | 0.4+ |
| 2001 12 18 | 704 | 0.4+ | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.5+ | 0.4+ |
| 2001 12 18 | 704 | 0.2− | 1.0− | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.5+ | 0.1+ |
| 2001 12 18 | 704 | 0.8− | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.3− | 0.5+ |

**(136693)∗ 1995 SE$_{45}$**

Discovered 1995 Sept. 25 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.72045 | | (2000.0) | | | |
| $n$ | 0.26837762 | $\omega$ | 262.94977 | | +0.19706490 | +0.98012514 |
| $a$ | 2.3803374 | $\Omega$ | 18.46330 | | −0.86866853 | +0.18534548 |
| $e$ | 0.1837293 | $i$ | 4.12966 | | −0.45451117 | +0.07072319 |
| $P$ | 3.67 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.9+ | 0.7− | 2002 08 29 | 644 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.8− | 0.1+ |
| 1995 09 19 | 691 | 0.3+ | 0.2− | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.2+ |
| 1995 09 19 | 691 | 0.1+ | 1.0+ | 2005 03 10 | G96 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.0 |
| 1995 09 25 | 691 | 0.2+ | 0.2− | 2005 03 10 | G96 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 1995 09 25 | 691 | 0.3− | 0.2− | 2005 03 10 | G96 | 0.7− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 1995 09 25 | 691 | 0.4+ | 0.3− | 2005 04 04 | G96 | (2.1+ | 1.0+) | 2006 10 17 | G96 | 0.9− | 1.0− |
| 1995 09 30 | 691 | 0.2− | 0.7− | 2005 04 04 | G96 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.5+ | 0.1+ |
| 1995 09 30 | 691 | 0.1− | 0.8− | 2005 04 04 | G96 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.6− | 0.5− |
| 1995 09 30 | 691 | 0.5+ | 0.3− | 2005 04 04 | G96 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.9+ | 0.3− |
| 1995 10 15 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.3+ |
| 1995 10 15 | 691 | 0.2− | 0.0 | 2006 09 14 | 691 | 1.4− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 1995 10 15 | 691 | 0.2− | 0.1− | 2006 09 14 | 691 | 0.7+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1− | 1.1+ |
| 2002 08 17 | 644 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2002 08 29 | 644 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.5− | 0.2− | 2006 11 15 | G96 | 1.1− | 0.4+ |

**(136694)∗ 1995 $SS_{49}$ = 2002 $PL_{108}$**

Discovered 1995 Sept. 25 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33004)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.51995 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27071507 | $\omega$ | 240.66927 | | +0.11386468 | | +0.99288166 |
| $a$ | 2.3666158 | $\Omega$ | 35.92123 | | −0.88961583 | | +0.11755262 |
| $e$ | 0.1825284 | $i$ | 3.41439 | | −0.44228782 | | +0.01916734 |
| $P$ | 3.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.0 | 2002 08 15 | 644 | 0.4− | 0.3− | 2005 05 09 | G96 | 0.3− | 0.2− |
| 1995 09 19 | 691 | 0.2+ | 0.4+ | 2002 08 15 | 644 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 1995 09 19 | 691 | 0.4+ | 0.0 | 2002 08 15 | 644 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 1995 09 25 | 691 | 0.6− | 0.5+ | 2005 03 11 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 1995 09 25 | 691 | 0.2− | 0.1− | 2005 03 11 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.9+ | 0.8− |
| 1995 09 30 | 691 | 0.0 | 0.3+ | 2005 03 11 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.5+ |
| 1995 09 30 | 691 | 0.3− | 0.4+ | 2005 03 12 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 1995 09 30 | 691 | 0.1− | 0.0 | 2005 03 12 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.6+ |
| 2002 07 15 | 644 | 0.0 | 0.1− | 2005 03 12 | 691 | 0.6+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 07 15 | 644 | 0.0 | 0.1+ | 2005 04 09 | G96 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2002 07 15 | 644 | 0.1− | 0.2− | 2005 04 09 | G96 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2002 08 13 | 704 | 0.4+ | 0.2+ | 2005 04 09 | G96 | 0.4− | 0.9− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 08 13 | 704 | (1.9+ | 0.3+) | 2005 04 09 | G96 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.9− |
| 2002 08 13 | 704 | 0.2− | 0.1+ | 2005 05 09 | G96 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2002 08 13 | 704 | 0.9+ | 1.0+ | 2005 05 09 | G96 | 0.5− | 0.1+ | 2006 11 14 | G96 | 1.0+ | 1.0− |
| 2002 08 13 | 704 | 0.4− | 0.4+ | 2005 05 09 | G96 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.5− | 0.7− |

**(136695)∗ 1995 $SP_{50}$**

Discovered 1995 Sept. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.34286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26805474 | $\omega$ | 153.03203 | | +0.99796608 | | −0.06043036 |
| $a$ | 2.3822485 | $\Omega$ | 210.45329 | | +0.04884073 | | +0.92941547 |
| $e$ | 0.2444645 | $i$ | 2.29483 | | +0.04096682 | | +0.36405364 |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.8+ | 0.7− |
| 1995 09 26 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 1995 09 26 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 704 | 0.5+ | 0.5+ | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 1995 10 01 | 691 | 0.2− | 0.2− | 2006 09 15 | 704 | 0.4+ | 0.9+ | 2006 10 01 | 704 | 0.5− | 0.1+ |
| 1995 10 01 | 691 | 0.2− | 0.1− | 2006 09 15 | 704 | 0.2− | 0.6+ | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 1995 10 01 | 691 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.9+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.3+ |
| 1995 10 20 | 010 | 1.2+ | 1.9− | 2006 09 17 | 704 | 0.9+ | 0.5− | 2006 10 01 | 704 | 0.2− | 0.3+ |
| 1995 10 20 | 010 | (0.6+ | 2.7−) | 2006 09 17 | 704 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 1995 10 20 | 010 | (1.2+ | 2.4−) | 2006 09 17 | 704 | 0.4+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 1995 10 23 | 010 | 0.4+ | 1.8− | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 1995 10 23 | 010 | 0.5+ | 1.7− | 2006 09 17 | 703 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.7− |
| 1995 10 23 | 010 | (2.3+ | 0.5−) | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2001 03 27 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2001 03 27 | 691 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2001 03 27 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 1.3+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2005 03 11 | G96 | 0.8− | 0.5+ | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2005 03 11 | G96 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.1− | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 2005 03 11 | G96 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.6− | 0.4− | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2005 03 11 | G96 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2005 04 05 | G96 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 09 21 | 704 | 1.0− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2005 04 05 | G96 | 0.2− | 0.0 | 2006 09 21 | 704 | 0.9+ | 0.3+ | 2006 10 23 | 704 | 0.4− | 0.4+ |
| 2005 04 05 | G96 | 0.4− | 0.2+ | 2006 09 21 | 704 | 0.2+ | 0.0 | 2006 10 23 | 704 | 1.2+ | 0.5+ |
| 2005 05 04 | 568 | 0.4+ | 0.1− | 2006 09 21 | A50 | 0.6− | 0.5− | 2006 10 23 | 704 | (2.1+ | 0.8+) |
| 2005 05 04 | 568 | 0.4+ | 0.2− | 2006 09 21 | A50 | 0.4+ | 0.3− | 2006 10 23 | 704 | 0.5− | 0.4+ |
| 2005 05 04 | 568 | 0.4+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2005 05 05 | 568 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2005 05 08 | G96 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.2− | 0.8+ |
| 2005 05 08 | G96 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.3+ | 2006 11 18 | 704 | 1.3− | 1.5+ |
| 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 1.1− | 0.5− | 2006 11 18 | 704 | 2.0− | 0.6− |
| 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 1.2+ |
| 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.9+ | 0.6+ |
| 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.9− | 1.1+ |

**(136696)∗ 1995 $SC_{52}$ = 2002 $RU_{163}$**

Discovered 1995 Sept. 26 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 60469)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.30824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27352753 | $\omega$ | 75.72684 | | +0.10114344 | | +0.99485410 |
| $a$ | 2.3503652 | $\Omega$ | 200.08105 | | −0.91932081 | | +0.09117715 |
| $e$ | 0.1771803 | $i$ | 0.99192 | | −0.38028839 | | +0.04418205 |
| $P$ | 3.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.2+ | 0.1− | 2005 03 10 | G96 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.4− | 0.6+ |
| 1995 09 26 | 691 | 0.5+ | 0.0 | 2005 04 02 | G96 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.4+ | 1.1− |
| 1995 09 26 | 691 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.6− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3− |
| 1995 10 01 | 691 | 0.2+ | 0.3− | 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 1995 10 01 | 691 | 0.4− | 0.4− | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.6+ |
| 1995 10 01 | 691 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2002 08 16 | 291 | 0.1− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 2002 08 16 | 291 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2002 08 16 | 291 | 0.2+ | 0.0 | 2005 05 10 | G96 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.5+ | 0.1+ |
| 2002 09 12 | 644 | 0.6− | 0.6+ | 2005 05 14 | 644 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2002 09 12 | 644 | 0.3− | 0.6+ | 2005 05 14 | 644 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.3+ |
| 2002 09 12 | 644 | 0.9+ | 1.1+ | 2005 05 14 | 644 | 0.5+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.6+ |
| 2002 09 14 | 644 | 0.6− | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2002 09 14 | 644 | 0.5− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2002 09 14 | 644 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.5− | 0.3+ |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.3− | 0.7− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2005 03 10 | G96 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.6− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |

**(136697)∗ 1995 $SN_{60}$ = 2001 $FN_{186}$**

Discovered 1995 Sept. 25 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 15573)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.85834 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27101502 | $\omega$ | 168.89951 | | −0.91127317 | | +0.41056658 |
| $a$ | 2.3648693 | $\Omega$ | 35.39506 | | −0.38191131 | | −0.81363574 |
| $e$ | 0.1210617 | $i$ | 3.15510 | | −0.15402908 | | −0.41162115 |
| $P$ | 3.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.0 | 0.3− | 2001 03 03 | 704 | 0.1− | 0.6+ | 2005 05 12 | 644 | 0.1+ | 0.3+ |
| 1995 09 19 | 691 | 0.0 | 0.1+ | 2001 03 03 | 704 | 0.8+ | 0.9+ | 2005 05 12 | 644 | 0.0 | 0.4+ |
| 1995 09 19 | 691 | 0.0 | 0.1− | 2001 03 03 | 704 | 0.2+ | 0.3− | 2005 05 12 | 644 | 0.2+ | 0.0 |
| 1995 09 25 | 691 | 0.2+ | 0.1+ | 2001 03 18 | 699 | 1.0+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 1995 09 25 | 691 | 0.2− | 0.0 | 2001 03 18 | 699 | 0.2− | 0.5+ | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 1995 09 25 | 691 | 0.2− | 0.0 | 2001 03 18 | 699 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.5− | 0.0 |
| 1996 12 08 | 691 | 0.2− | 0.2+ | 2001 03 18 | 699 | 0.5+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 1996 12 08 | 691 | 0.2− | 0.0 | 2001 03 19 | 704 | 0.2− | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 08 | 691 | 0.6− | 0.3+ | 2001 03 19 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 691 | 0.2− | 0.1− |
| 1996 12 13 | 691 | 0.1− | 0.5− | 2001 03 19 | 704 | 0.9+ | 1.0+ | 2006 09 25 | 691 | 0.2− | 0.4+ |
| 1996 12 13 | 691 | 0.3− | 0.2− | 2001 03 19 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.4+ |
| 1996 12 13 | 691 | 0.1− | 0.6− | 2001 03 19 | 704 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.5+ |
| 1999 10 10 | 691 | 0.3− | 0.2+ | 2001 03 19 | 704 | 1.3+ | 0.8− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 1999 10 10 | 691 | 0.1+ | 0.1+ | 2001 03 19 | 704 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1999 10 10 | 691 | 0.0 | 0.1− | 2001 03 19 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 1999 11 17 | 691 | 0.7+ | 0.2+ | 2001 03 19 | 704 | 1.3− | 0.9+ | 2006 10 21 | G96 | 0.6− | 0.1− |
| 1999 11 17 | 691 | 0.6+ | 0.2+ | 2001 03 19 | 704 | 0.7+ | 0.7+ | 2006 11 14 | G96 | 0.3− | 0.4+ |
| 1999 11 17 | 691 | 0.4+ | 0.6+ | 2003 12 27 | 704 | 0.2+ | 1.1+ | 2006 11 14 | G96 | 0.5− | 0.5− |
| 2001 03 03 | 704 | 0.8+ | 0.2+ | 2003 12 27 | 704 | (0.5+ | 2.0+) | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2001 03 03 | 704 | 0.0 | 0.4+ | 2003 12 27 | 704 | (0.4+ | 1.8+) | 2006 11 14 | G96 | 0.1+ | 0.3+ |

**(136698)∗ 1995 SO$_{63}$**

Discovered 1995 Sept. 25 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.38353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27391313 | $\omega$ | 118.56336 | | +0.82384112 | +0.56672376 | |
| $a$ | 2.3481589 | $\Omega$ | 206.91860 | | −0.52780584 | +0.76025816 | |
| $e$ | 0.3391024 | $i$ | 1.32739 | | −0.20665623 | +0.31754011 | |
| $P$ | 3.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.1− | 2002 07 14 | 704 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.5+ | 0.7+ |
| 1995 09 20 | 691 | 0.0 | 0.0 | 2002 08 31 | 704 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 1995 09 20 | 691 | 0.1− | 0.1+ | 2002 08 31 | 704 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1995 09 25 | 691 | 0.3− | 0.4+ | 2002 08 31 | 704 | 0.6− | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1995 09 25 | 691 | 0.1− | 0.5+ | 2002 08 31 | 704 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.3− | 1.3+ |
| 1995 09 25 | 691 | 0.5− | 0.3+ | 2002 08 31 | 704 | 0.4− | 0.2− | 2006 11 18 | 704 | (0.1+ | 1.6+) |
| 1995 09 30 | 691 | 0.1+ | 0.2− | 2002 09 05 | 704 | (1.4− | 2.2+) | 2006 11 18 | 704 | 0.5− | 1.1− |
| 1995 09 30 | 691 | 0.1+ | 0.3− | 2002 09 05 | 704 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 1995 09 30 | 691 | 0.1+ | 0.2− | 2002 09 05 | 704 | 0.8− | 0.1+ | 2006 11 23 | 691 | 0.6− | 0.1+ |
| 1995 10 20 | 010 | 1.2+ | 1.7− | 2004 01 27 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 1995 10 20 | 010 | 0.7+ | 1.3− | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.3+ |
| 1995 10 20 | 010 | 1.1+ | 1.0− | 2004 01 27 | 691 | 0.5+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 06 18 | 704 | 0.3+ | 1.2+ | 2005 03 17 | 691 | 0.0 | 0.6+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 06 18 | 704 | 0.1+ | 0.4+ | 2005 03 17 | 691 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2002 06 18 | 704 | 0.6− | 0.7+ | 2005 03 17 | 691 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2002 06 18 | 704 | 1.0− | 0.6+ | 2006 10 29 | G96 | 0.0 | 0.5− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2002 06 18 | 704 | 1.3− | 0.4+ | 2006 10 29 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.4+ | 0.8+ |
| 2002 07 05 | 704 | 0.9+ | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.5− | 0.3− |
| 2002 07 05 | 704 | 1.1+ | 0.4− | 2006 10 29 | G96 | 0.6+ | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2002 07 05 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.0 |
| 2002 07 05 | 704 | 0.8+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2002 07 05 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2002 07 14 | 704 | 0.5− | 0.6+ | 2006 11 15 | 703 | 0.5+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2002 07 14 | 704 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.5− | 0.5− | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2002 07 14 | 704 | 1.3+ | 0.7− | 2006 11 15 | 703 | 0.5− | 0.3+ | | | | |

**(136699)∗ 1995 SD$_{71}$ = 1995 UL$_{46}$**

Discovered 1995 Sept. 18 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (d, *MPO* 21976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.34652 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17985566 | $\omega$ | 126.21615 | | −0.79760317 | −0.59647582 | |
| $a$ | 3.1082789 | $\Omega$ | 17.73354 | | +0.41416060 | −0.64967808 | |
| $e$ | 0.1707307 | $i$ | 17.12683 | | +0.43852045 | −0.47131199 | |
| $P$ | 5.48 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.2− | 0.2+ | 2003 01 10 | 704 | 0.3− | 0.1+ | 2003 05 08 | 608 | 0.1+ | 0.2− |
| 1995 09 18 | 691 | 0.2− | 0.1+ | 2003 01 10 | 704 | 1.1+ | 0.5− | 2003 05 25 | 699 | 1.0+ | 0.0 |
| 1995 09 18 | 691 | 1.1− | 0.2− | 2003 02 12 | 608 | 0.2− | 0.1+ | 2003 05 25 | 699 | 0.7+ | 0.9+ |
| 1995 09 24 | 691 | 1.7+ | 0.5− | 2003 02 12 | 608 | 0.2− | 0.3− | 2003 05 25 | 699 | (1.7− | 0.1−) |
| 1995 09 24 | 691 | 0.1+ | 1.5− | 2003 02 12 | 608 | 0.2+ | 0.0 | 2003 05 25 | 699 | 1.1− | 0.9+ |
| 1995 09 24 | 691 | 0.1+ | 0.4− | 2003 02 23 | 608 | 0.4+ | 0.8− | 2005 08 08 | E12 | 0.6− | 0.8+ |
| 1995 09 30 | 691 | 0.1+ | 0.2− | 2003 02 23 | 608 | 0.4+ | 0.9− | 2005 08 08 | E12 | 1.2+ | 1.0+ |
| 1995 09 30 | 691 | 0.0 | 0.2+ | 2003 02 23 | 608 | 0.2+ | 0.1− | 2005 08 08 | E12 | 0.4− | 0.9+ |
| 1995 09 30 | 691 | 0.1+ | 0.1+ | 2003 02 28 | 704 | 0.4− | 1.0+ | 2005 08 08 | E12 | 0.6− | 1.4+ |
| 1995 10 15 | 691 | 0.2− | 0.0 | 2003 02 28 | 704 | 0.7− | 1.1+ | 2006 09 14 | 703 | 0.2− | 0.0 |
| 1995 10 15 | 691 | 0.2− | 0.3+ | 2003 02 28 | 704 | 0.7− | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 1995 10 15 | 691 | 0.0 | 0.3+ | 2003 02 28 | 704 | 0.6− | 1.1+ | 2006 09 14 | 703 | 1.1− | 0.2− |
| 1995 10 20 | 010 | (3.3+ | 0.5+) | 2003 03 03 | 704 | 0.0 | 0.2− | 2006 09 14 | 703 | 1.0− | 0.1− |
| 1995 10 20 | 010 | (2.7+ | 1.0−) | 2003 03 03 | 704 | 0.7− | 0.2+ | 2006 09 15 | 691 | 0.6− | 0.2+ |
| 1995 10 20 | 010 | 1.6+ | 0.7+ | 2003 03 03 | 704 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 2001 10 19 | 704 | 0.3+ | 0.2− | 2003 03 03 | 704 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 2001 10 19 | 704 | 0.0 | 1.1− | 2003 03 16 | 608 | 0.7+ | 1.2+ | 2006 09 16 | 644 | 0.3+ | 0.3+ |
| 2001 10 19 | 704 | 0.0 | 1.4− | 2003 03 16 | 608 | 0.7+ | 0.8+ | 2006 09 16 | 644 | 0.0 | 0.2− |
| 2001 10 25 | 704 | 1.2− | 0.8− | 2003 03 16 | 608 | 1.1+ | 0.6+ | 2006 09 16 | 644 | 0.7− | 0.5+ |
| 2001 10 25 | 704 | 0.1+ | 1.0− | 2003 03 26 | 699 | 0.6− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 10 25 | 704 | 0.6+ | 0.7− | 2003 03 26 | 699 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.5+ |
| 2001 10 25 | 704 | 0.9+ | 0.5+ | 2003 03 26 | 699 | 0.4− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 0.2+ | 0.4+ | 2003 03 26 | 699 | 0.6− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2003 04 01 | 704 | 0.1− | 0.7+ | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2001 11 11 | 704 | 0.4+ | 0.1− | 2003 04 01 | 704 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.4+ |
| 2001 11 11 | 704 | 0.0 | 0.3− | 2003 04 01 | 704 | 0.0 | 0.9+ | 2006 10 15 | 691 | 0.3− | 0.0 |
| 2001 11 11 | 704 | 0.8+ | 0.7− | 2003 04 01 | 704 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 2001 12 09 | 704 | 0.5− | 0.2− | 2003 04 01 | 704 | 0.0 | 0.8+ | 2006 10 15 | 691 | 0.2− | 0.0 |
| 2001 12 09 | 704 | 0.3+ | 0.5+ | 2003 04 01 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.1+ | 1.0− |
| 2001 12 09 | 704 | 0.5+ | 0.4+ | 2003 04 01 | 704 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.5− | 0.5+ |
| 2001 12 09 | 704 | 0.0 | 0.4+ | 2003 04 01 | 704 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2001 12 09 | 704 | 0.1+ | 0.5+ | 2003 04 01 | 704 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2001 12 22 | 704 | 0.7+ | 0.6− | 2003 04 01 | 704 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2001 12 22 | 704 | 0.4+ | 0.6− | 2003 04 09 | 704 | 0.6+ | 0.5− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2001 12 22 | 704 | (1.7+ | 1.0−) | 2003 04 09 | 704 | 0.6+ | 0.5− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 12 22 | 704 | 1.2+ | 0.2+ | 2003 04 09 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2002 01 05 | 644 | 0.4+ | 0.3+ | 2003 04 09 | 704 | 0.5− | 0.7− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 01 05 | 644 | 0.3+ | 0.1+ | 2003 04 26 | 704 | 1.5+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 01 05 | 644 | 0.3+ | 0.4+ | 2003 04 26 | 704 | (1.6+ | 0.3+) | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 704 | (1.7+ | 0.7+) | 2003 04 26 | 704 | (1.7+ | 0.8+) | 2006 10 27 | 691 | 0.3− | 0.1− |
| 2003 01 04 | 704 | (2.5+ | 0.6+) | 2003 04 26 | 704 | (1.8+ | 0.9+) | 2006 10 27 | 691 | 0.5− | 0.3− |
| 2003 01 04 | 704 | 1.0+ | 0.7+ | 2003 04 26 | 704 | (1.6+ | 0.4+) | 2006 11 11 | 703 | 0.1− | 1.6+ |
| 2003 01 07 | 704 | 0.6+ | 0.5+ | 2003 05 01 | 704 | 0.5+ | 0.4− | 2006 11 11 | 703 | 0.7− | 0.8+ |
| 2003 01 07 | 704 | 0.4+ | 0.2− | 2003 05 01 | 704 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 2.3+ |
| 2003 01 07 | 704 | 0.2+ | 0.2− | 2003 05 01 | 704 | 0.5+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2003 01 07 | 704 | 0.5+ | 0.1+ | 2003 05 01 | 704 | 0.1+ | 0.8+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2003 01 07 | 704 | 0.2+ | 0.4− | 2003 05 01 | 704 | 0.8+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2003 01 10 | 704 | 1.0+ | 0.3+ | 2003 05 08 | 608 | 0.4+ | 0.4− | 2006 11 17 | G96 | 0.5− | 0.3− |
| 2003 01 10 | 704 | 0.6+ | 0.3+ | 2003 05 08 | 608 | 0.5+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.1− |

**(136700)∗ 1995 SM$_{79}$ = 2002 SF$_{59}$**

Discovered 1995 Sept. 21 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37049)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.10746 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28464616 | $\omega$ | 292.75346 | | −0.24799103 | +0.96867475 | |
| $a$ | 2.2887543 | $\Omega$ | 322.88021 | | −0.88071654 | −0.23103301 | |
| $e$ | 0.0346773 | $i$ | 1.23683 | | −0.40353293 | −0.09106582 | |
| $P$ | 3.46 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.1− | 0.1− | 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 1995 09 21 | 691 | 0.2+ | 0.3− | 2004 01 19 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 1995 09 21 | 691 | 0.4+ | 0.2− | 2004 01 24 | 704 | 0.8+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 1995 09 26 | 691 | 0.1− | 0.4− | 2004 01 24 | 704 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 1995 09 26 | 691 | 0.0 | 0.6− | 2004 01 24 | 704 | 0.0 | 0.7− | 2006 11 10 | 691 | 0.6+ | 0.2+ |
| 1995 09 26 | 691 | 0.0 | 0.1− | 2004 01 24 | 704 | (0.4− | 1.7+) | 2006 11 10 | 691 | 0.3− | 0.0 |
| 1995 10 02 | 691 | 0.1− | 0.3− | 2004 01 26 | 699 | 0.8+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 1995 10 02 | 691 | 0.5+ | 0.4− | 2004 01 26 | 699 | 0.3+ | 1.3+ | 2006 11 14 | 691 | 0.2+ | 0.2− |
| 1995 10 02 | 691 | 0.1+ | 0.4− | 2004 01 26 | 699 | 0.6− | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2002 08 16 | 291 | 0.4− | 0.7+ | 2004 01 26 | 699 | 0.9+ | 0.6+ | 2006 11 15 | 703 | 1.1− | 0.3− |
| 2002 08 16 | 291 | 0.1− | 0.4+ | 2004 01 30 | 691 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.5− | 1.0− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 291 | 0.1+ | 0.5+ | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.8− | 0.2+ |
| 2002 08 29 | 291 | 0.2− | 0.4+ | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.7− |
| 2002 08 29 | 291 | 0.1− | 0.5+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2002 08 29 | 291 | 0.2− | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 09 16 | 291 | 0.1− | 0.5+ | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 09 16 | 291 | 0.0 | 0.7+ | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2002 09 16 | 291 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.5− | 0.6− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 09 17 | 608 | 1.2− | 0.6− | 2006 10 20 | G96 | 0.3− | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2002 09 17 | 608 | (1.7− | 0.6−) | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 09 17 | 608 | 1.3− | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.1+ |

**(136701)∗ 1995 $SY_{79}$ = 2001 $VC_{52}$**

Discovered 1995 Sept. 21 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 19262)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.20645 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18089122 | $\omega$ | 44.63476 | | +0.82980607 | −0.55686196 | |
| $a$ | 3.0964047 | $\Omega$ | 349.03174 | | +0.44340914 | +0.69755948 | |
| $e$ | 0.1179270 | $i$ | 11.03647 | | +0.33883657 | +0.45090523 | |
| $P$ | 5.45 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.3+ | 0.3− | 2001 11 18 | 704 | 0.1− | 0.2− | 2006 09 17 | 704 | 1.0+ | 0.2+ |
| 1995 09 21 | 691 | 0.1+ | 0.2− | 2001 12 07 | 644 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.8+ | 0.1− |
| 1995 09 21 | 691 | 0.1+ | 0.5− | 2001 12 07 | 644 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.6+ | 0.1+ |
| 1995 09 26 | 691 | 0.2+ | 0.7− | 2001 12 07 | 644 | 0.5+ | 0.2− | 2006 09 17 | 704 | 0.1+ | 1.4+ |
| 1995 09 26 | 691 | 0.4+ | 1.1− | 2003 02 04 | 699 | 1.1+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.6+ |
| 1995 09 26 | 691 | 0.3+ | 0.5− | 2003 02 04 | 699 | 0.7− | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.3+ |
| 1995 10 02 | 691 | 0.6+ | 0.0 | 2003 02 04 | 699 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.0 |
| 1995 10 02 | 691 | 0.1− | 0.2+ | 2003 02 04 | 699 | 1.1− | 0.2− | 2006 09 19 | 699 | 0.3− | 0.3− |
| 1995 10 02 | 691 | 0.0 | 0.1+ | 2003 02 26 | 246 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 1.3− | 0.1+ |
| 2001 09 25 | 704 | 0.6+ | 0.0 | 2003 02 26 | 246 | 0.4+ | 1.0+ | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2001 09 25 | 704 | 1.1+ | 0.9+ | 2003 02 26 | 246 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.6+ |
| 2001 09 25 | 704 | 0.6− | 1.2− | 2003 02 26 | 246 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.4− | 0.1+ |
| 2001 09 25 | 704 | 0.2+ | 1.1+ | 2003 02 26 | 246 | 1.0+ | 0.1− | 2006 09 19 | 699 | 0.9− | 0.6+ |
| 2001 09 25 | 704 | 0.3+ | 1.4+ | 2003 02 26 | 246 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.5+ |
| 2001 10 13 | 644 | 0.1− | 0.8− | 2003 03 06 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.3− | 0.9+ |
| 2001 10 13 | 644 | 0.0 | 0.3− | 2003 03 06 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.2− |
| 2001 10 13 | 644 | 0.1− | 0.4− | 2003 03 06 | 704 | 0.8− | 0.9+ | 2006 09 20 | 704 | 0.3− | 0.6− |
| 2001 10 19 | 704 | 0.1− | 0.0 | 2003 03 06 | 704 | 0.9+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.4− |
| 2001 10 19 | 704 | 0.6+ | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.8− | 0.8+ |
| 2001 10 19 | 704 | 0.4+ | 0.9− | 2006 08 22 | 644 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.1− |
| 2001 11 10 | 704 | 0.3+ | 0.4− | 2006 08 22 | 644 | 0.0 | 0.9+ | 2006 09 25 | 699 | 0.3− | 1.3+ |
| 2001 11 10 | 704 | 0.4− | 0.6− | 2006 08 23 | 644 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.1− |
| 2001 11 10 | 704 | 0.5− | 0.2− | 2006 08 23 | 644 | 0.1− | 0.5+ | 2006 09 27 | 704 | 1.0− | 0.4+ |
| 2001 11 10 | 704 | 0.4− | 0.1− | 2006 08 23 | 644 | 0.5− | 0.7+ | 2006 09 27 | 704 | 0.5− | 1.0+ |
| 2001 11 11 | 699 | 0.5+ | 0.0 | 2006 08 27 | 699 | 0.1− | 0.4− | 2006 09 27 | 704 | 0.1− | 1.0+ |
| 2001 11 11 | 699 | 0.2+ | 0.8− | 2006 08 27 | 699 | 0.5+ | 0.6+ | 2006 09 27 | 704 | 0.4+ | 1.1+ |
| 2001 11 11 | 699 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.7− | 1.0− | 2006 09 27 | 704 | 0.0 | 1.0+ |
| 2001 11 11 | 699 | 0.4+ | 0.1+ | 2006 08 27 | 699 | 0.3− | 1.4+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2001 11 11 | 644 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.7− | 0.5− | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2001 11 11 | 644 | 0.0 | 0.5+ | 2006 08 28 | 703 | 1.0− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2001 11 11 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.5− | 0.0 |
| 2001 11 12 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.7− | 1.0+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2001 11 12 | 704 | 0.0 | 1.4− | 2006 09 12 | 703 | 1.5+ | 0.8− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.1− | 0.4− | 2006 09 12 | 703 | 0.1− | 0.8− | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2001 11 12 | 704 | 0.6+ | 0.1− | 2006 09 12 | 703 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.8+ |
| 2001 11 18 | 704 | 0.2− | 0.3− | 2006 09 16 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 11 18 | 704 | 0.1+ | 0.9− | 2006 09 16 | 699 | 0.4+ | 1.0+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 11 18 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 699 | 0.0 | 0.8+ | | | | |
| 2001 11 18 | 704 | 0.8− | 0.1− | 2006 09 16 | 699 | 0.9− | 0.1+ | | | | |

**(136702)∗ 1995 $SU_{85}$ = 2001 $YZ_{48}$**

Discovered 1995 Sept. 25 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 21977)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.45995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17889954 | $\omega$ | 17.35844 | | +0.71486093 | −0.69907438 | |
| $a$ | 3.1193437 | $\Omega$ | 27.01699 | | +0.63720467 | +0.64157801 | |
| $e$ | 0.2050854 | $i$ | 2.06865 | | +0.28800011 | +0.31570978 | |
| $P$ | 5.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.4+ | 0.7− | 2001 12 19 | 704 | 0.2− | 0.4− | 2006 10 15 | 703 | 0.1− | 0.5− |
| 1995 09 25 | 691 | 0.5+ | 0.8− | 2002 01 13 | 691 | 0.3+ | 0.1− | 2006 10 15 | 703 | 0.8− | 0.2+ |
| 1995 09 25 | 691 | 0.6+ | 0.6− | 2002 01 13 | 691 | 0.2+ | 0.2− | 2006 10 15 | 703 | (0.9− | 3.0−) |
| 1995 09 30 | 691 | 0.1− | 0.9− | 2002 01 13 | 691 | 0.2+ | 0.0 | 2006 10 15 | 703 | 1.0+ | 0.6− |
| 1995 09 30 | 691 | 0.0 | 0.6− | 2002 01 14 | 704 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.4+ |
| 1995 09 30 | 691 | 0.1+ | 0.8− | 2002 01 14 | 704 | 0.1− | 0.7+ | 2006 10 16 | G96 | 0.1+ | 0.3+ |
| 1995 10 15 | 691 | 0.3+ | 0.1+ | 2002 01 14 | 704 | 0.1+ | 1.2+ | 2006 10 16 | G96 | 0.3+ | 0.5+ |
| 1995 10 15 | 691 | 0.2− | 0.1+ | 2002 01 14 | 704 | 0.3− | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 1995 10 15 | 691 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1995 10 23 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 1995 10 23 | 691 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 1995 10 23 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2000 08 27 | 807 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.5− | 0.0 |
| 2000 08 27 | 807 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.7− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.9− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2001 12 18 | 704 | 1.2− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.4− |
| 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.8− | 0.7− |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.3+ | | | | |
| 2001 12 19 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 691 | 0.4− | 0.4+ | | | | |

**(136703)∗ 1995 $SJ_{88}$**

Discovered 1995 Sept. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.95351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18250655 | $\omega$ | 50.91958 | | −0.14250368 | +0.98903763 | |
| $a$ | 3.0781073 | $\Omega$ | 210.95317 | | −0.92976648 | −0.14716614 | |
| $e$ | 0.0841012 | $i$ | 4.31455 | | −0.33945102 | −0.01211178 | |
| $P$ | 5.40 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 1.2+ | 0.1− | 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.6− | 0.8− |
| 1995 09 26 | 691 | 0.3− | 0.0 | 2004 04 22 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.5− | 0.7+ |
| 1995 09 26 | 691 | 0.0 | 0.2+ | 2004 05 13 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 1995 10 01 | 691 | 0.4− | 0.0 | 2004 05 13 | 691 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.9+ | 0.0 |
| 1995 10 01 | 691 | 0.1− | 0.1− | 2004 05 13 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 1995 10 01 | 691 | 0.4− | 0.1− | 2004 05 23 | 691 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.3+ |
| 2000 08 28 | 807 | 0.2− | 0.1+ | 2004 05 23 | 691 | 0.8+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2000 08 28 | 807 | 0.0 | 0.2+ | 2004 05 23 | 691 | 0.6+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.6+ |
| 2004 03 23 | 291 | 0.2− | 0.6+ | 2005 07 10 | 691 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.6+ |
| 2004 03 23 | 291 | 0.3− | 0.3+ | 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.7+ |
| 2004 03 23 | 291 | 0.1− | 0.1+ | 2005 07 10 | 691 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.8− | 0.0 |
| 2004 04 16 | 644 | 0.2− | 0.4+ | 2005 08 29 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2004 04 16 | 644 | 0.8− | 0.1+ | 2005 08 29 | 691 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2004 04 16 | 644 | 0.2+ | 0.8+ | 2005 08 29 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.4+ |
| 2004 04 22 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3+ | | | | |

**(136704)∗ 1995 TW = 2001 $XD_{81}$**

Discovered 1995 Oct. 13 by T. B. Spahr at Kitt Peak.

Id. G. V. Williams (*MPO* 21977)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.88836 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18273904 | $\omega$ | 165.85127 | | +0.61835716 | −0.70410874 | |
| $a$ | 3.0754959 | $\Omega$ | 244.69183 | | +0.67828012 | +0.70250211 | |
| $e$ | 0.1447328 | $i$ | 22.71544 | | +0.39695151 | −0.10354547 | |
| $P$ | 5.39 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 13 | 695 | 0.8+ | 0.2+ | 2001 12 11 | 704 | 1.3− | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.5− | |
| 1995 10 13 | 695 | 0.8+ | 0.2− | 2001 12 11 | 704 | 0.0 | 1.1− | 2006 10 27 | 703 | 0.1− | 0.3− | |
| 1995 10 13 | 695 | 0.8+ | 0.3+ | 2001 12 14 | 704 | 0.2+ | 0.3− | 2006 10 27 | 703 | 0.4− | 0.4− | |
| 1995 10 16 | 695 | 0.2− | 0.2+ | 2001 12 14 | 704 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.2− | 0.1+ | |
| 1995 10 16 | 695 | 0.1− | 0.4+ | 2001 12 14 | 704 | 1.1− | 0.1+ | 2006 10 29 | 703 | 1.0− | 0.7+ | |
| 1995 10 28 | 658 | 1.0− | 0.2+ | 2001 12 14 | 704 | (1.9− | 0.7+) | 2006 10 29 | 703 | 0.1− | 1.1+ | |
| 1995 10 28 | 658 | 1.0− | 0.2+ | 2001 12 14 | 704 | 0.4− | 0.4+ | 2006 10 29 | 703 | 0.3+ | 0.3+ | |
| 1995 10 28 | 658 | 1.2− | 0.1− | 2004 06 11 | 691 | 0.0 | 0.1− | 2006 10 29 | 703 | 0.3+ | 0.0 | |
| 1995 10 29 | 658 | 0.4− | 0.3− | 2004 06 11 | 691 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.5− | 0.4+ | |
| 1995 10 29 | 658 | 0.3− | 0.3− | 2004 06 11 | 691 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.2− | |
| 1995 10 29 | 658 | 0.4− | 0.3− | 2004 06 17 | 691 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.3+ | |
| 1995 12 23 | 693 | 0.9+ | 0.2− | 2004 06 17 | 691 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.1+ | |
| 1995 12 23 | 693 | 1.0+ | 0.2− | 2004 06 17 | 691 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.2+ | 0.9− | |
| 1995 12 23 | 693 | 1.1+ | 0.3− | 2006 10 03 | 703 | 0.6+ | 0.1− | 2006 11 22 | 703 | 0.2+ | 0.2− | |
| 2001 11 17 | 704 | 1.0+ | 0.4+ | 2006 10 03 | 703 | 0.1+ | 0.9− | 2006 11 22 | 703 | 0.7− | 0.4+ | |
| 2001 11 17 | 704 | 0.7+ | 0.6+ | 2006 10 03 | 703 | 0.1+ | 0.5− | 2006 11 22 | 703 | 0.7− | 0.1+ | |
| 2001 11 17 | 704 | 0.7+ | 0.6+ | 2006 10 03 | 703 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.3− | |
| 2001 11 17 | 704 | 0.6+ | 0.8+ | 2006 10 23 | 703 | 0.2+ | 0.7− | 2006 12 01 | 704 | 0.4+ | 0.6+ | |
| 2001 12 11 | 704 | 0.7− | 0.8+ | 2006 10 23 | 703 | 0.9+ | 0.4+ | 2006 12 01 | 704 | 1.3+ | 0.6+ | |
| 2001 12 11 | 704 | 0.2+ | 0.9− | 2006 10 23 | 703 | 0.8− | 0.0 | 2006 12 01 | 704 | 0.5− | 0.3− | |
| 2001 12 11 | 704 | 0.5+ | 0.5− | 2006 10 23 | 703 | 0.3+ | 0.0 | | | | | |

**(136705)∗ 1995 TY$_1$ = 2002 PR$_{84}$**

Discovered 1995 Oct. 14 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPO* 33004)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.13954 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27662132 | $\omega$ | 348.38326 | | +0.96595402 | +0.25867237 | |
| $a$ | 2.3328077 | $\Omega$ | 356.61488 | | −0.23064374 | +0.85290612 | |
| $e$ | 0.1744797 | $i$ | 4.49629 | | −0.11720192 | +0.45347520 | |
| $P$ | 3.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 14 | 327 | 0.4− | 0.1+ | 2002 09 06 | 704 | 0.2− | 0.8+ | 2005 05 12 | 703 | 0.7+ | 0.4+ | |
| 1995 10 14 | 327 | 0.3− | 0.1− | 2002 09 12 | 608 | 0.5− | 0.2− | 2005 05 12 | 703 | 0.5− | 1.0+ | |
| 1995 10 15 | 327 | 0.1+ | 0.4+ | 2002 09 12 | 608 | 0.6− | 0.5− | 2006 11 13 | 691 | 0.0 | 0.2+ | |
| 1995 10 15 | 327 | 0.2+ | 0.1+ | 2002 09 12 | 608 | 0.8− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.0 | |
| 1995 10 15 | 327 | 0.3− | 0.0 | 2002 09 13 | 704 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.4− | 0.2+ | |
| 1995 10 18 | 691 | 0.7+ | 0.1− | 2002 09 13 | 704 | 0.2+ | 0.3+ | 2006 11 15 | 704 | (0.7− | 1.9+) | |
| 1995 10 18 | 691 | 0.7+ | 0.3− | 2002 09 13 | 704 | 0.3− | 0.2− | 2006 11 15 | 704 | 0.7− | 1.4+ | |
| 1995 10 18 | 691 | 0.9+ | 0.4− | 2002 09 13 | 704 | 0.4− | 0.4+ | 2006 11 15 | 704 | (2.1− | 0.1+) | |
| 1995 10 23 | 691 | 0.2− | 0.1− | 2002 09 15 | 644 | 0.5− | 0.2+ | 2006 11 15 | 704 | 0.5− | 0.1− | |
| 1995 10 23 | 691 | 0.2− | 0.3− | 2002 09 15 | 644 | 0.6− | 0.2+ | 2006 11 16 | 704 | 0.7− | 0.8+ | |
| 1995 10 23 | 691 | 0.0 | 0.4− | 2002 09 15 | 644 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.8+ | |
| 1995 10 28 | 691 | 0.3− | 0.8− | 2002 09 16 | 644 | 0.8− | 0.3+ | 2006 11 16 | 704 | (0.4+ | 1.6+) | |
| 1995 10 28 | 691 | 0.1+ | 0.7− | 2002 09 16 | 644 | 0.8− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.6+ | |
| 1995 10 28 | 691 | 0.0 | 0.2− | 2002 09 16 | 644 | 0.7− | 0.3+ | 2006 11 16 | 704 | 0.9− | 0.5+ | |
| 2002 08 10 | 704 | 0.2+ | 0.2− | 2002 10 03 | 704 | 0.3+ | 0.1+ | 2006 11 17 | 691 | 0.2− | 0.0 | |
| 2002 08 10 | 704 | 0.1+ | 0.1− | 2002 10 03 | 704 | 0.0 | 0.4+ | 2006 11 17 | 691 | 0.3− | 0.1+ | |
| 2002 08 10 | 704 | 0.7− | 0.1− | 2002 10 03 | 704 | 0.4+ | 1.3+ | 2006 11 17 | 691 | 0.4− | 0.0 | |
| 2002 08 10 | 704 | 0.3− | 0.4− | 2002 10 03 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.6− | |
| 2002 08 12 | 608 | 0.3+ | 0.3+ | 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 11 19 | 704 | (1.6+ | 0.7+) | |
| 2002 08 12 | 608 | 0.1+ | 0.1+ | 2002 10 05 | 704 | 1.1+ | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.8+ | |
| 2002 08 12 | 608 | 0.1+ | 0.1+ | 2002 10 05 | 704 | 1.0+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.1− | |
| 2002 08 14 | 704 | 1.0+ | 0.0 | 2002 10 05 | 704 | 0.9+ | 0.1+ | 2006 11 21 | 691 | 1.1+ | 0.4− | |
| 2002 08 14 | 704 | 0.2+ | 0.1+ | 2002 10 05 | 704 | 0.6+ | 0.8+ | 2006 11 21 | 691 | 0.1+ | 0.1− | |
| 2002 08 14 | 704 | 0.1+ | 0.3− | 2002 10 05 | 704 | 1.0+ | 0.5+ | 2006 11 22 | 704 | 0.6+ | 0.9+ | |
| 2002 08 14 | 704 | 0.1+ | 0.4+ | 2002 10 11 | 704 | (1.8+ | 0.1−) | 2006 11 22 | 704 | 0.6+ | 0.8+ | |
| 2002 08 14 | 704 | 0.3− | 0.3+ | 2002 10 11 | 704 | 1.3− | 1.2− | 2006 11 22 | 704 | 0.9+ | 1.3+ | |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2002 10 11 | 704 | 1.2+ | 1.2+ | 2006 11 22 | 704 | 0.4+ | 0.2+ | |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2002 10 11 | 704 | (1.9− | 2.8+) | 2006 11 22 | 704 | 0.3+ | 0.1+ | |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2002 11 03 | 608 | 0.6− | 0.8+ | 2006 11 23 | 644 | 0.3+ | 0.3+ | |
| 2002 09 05 | 704 | 0.5− | 0.6+ | 2002 11 03 | 608 | 0.6− | 0.8+ | 2006 11 23 | 644 | 0.4− | 0.0 | |
| 2002 09 05 | 704 | 0.4− | 0.9+ | 2002 11 03 | 608 | 1.1− | 0.2+ | 2006 11 23 | 644 | 0.2− | 0.4+ | |
| 2002 09 05 | 704 | 0.6− | 0.4+ | 2004 02 11 | 691 | 0.4+ | 0.4+ | 2006 11 25 | 691 | 0.9− | 0.5+ | |
| 2002 09 05 | 704 | 0.2− | 1.2+ | 2004 02 11 | 691 | 0.2+ | 0.5+ | 2006 11 25 | 691 | 0.0 | 0.1+ | |
| 2002 09 05 | 704 | 0.7− | 0.2+ | 2004 02 11 | 691 | 0.4+ | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.2− | |
| 2002 09 06 | 704 | 0.6+ | 1.1+ | 2004 02 26 | 695 | 0.0 | 0.3+ | 2006 11 27 | 704 | 0.2+ | 1.0− | |
| 2002 09 06 | 704 | 0.4− | 0.3+ | 2004 02 26 | 695 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.8− | 0.6− | |
| 2002 09 06 | 704 | 0.2+ | 1.1+ | 2005 05 12 | 703 | 0.5− | 1.3+ | 2006 11 27 | 704 | 0.3+ | 0.3− | |
| 2002 09 06 | 704 | 0.1− | 0.8+ | 2005 05 12 | 703 | 0.5− | 0.5− | 2006 11 27 | 704 | 0.5+ | 0.0 | |

**(136706)∗ 1995 TT$_4$ = 2001 XX$_{167}$**

Discovered 1995 Oct. 15 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 60470)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.28479 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18586404 | $\omega$ | 286.16783 | | −0.70282223 | −0.71103621 | |
| $a$ | 3.0409256 | $\Omega$ | 208.52402 | | +0.66875760 | −0.65004866 | |
| $e$ | 0.1878506 | $i$ | 2.59774 | | +0.24249574 | −0.26807508 | |
| $P$ | 5.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1+ | 0.3+ | 2001 12 14 | 704 | (2.0− | 0.7−) | 2006 10 17 | G96 | 1.1+ | 0.7− | |
| 1995 10 02 | 691 | 0.5+ | 1.1+ | 2001 12 14 | 704 | 1.2− | 0.9− | 2006 10 17 | G96 | 0.2+ | 0.2− | |
| 1995 10 02 | 691 | 0.0 | 0.4+ | 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.0 | |
| 1995 10 15 | 691 | 0.3− | 0.4− | 2001 12 17 | 704 | 1.2− | 1.2+ | 2006 10 17 | G96 | 0.2+ | 0.4− | |
| 1995 10 15 | 691 | 0.0 | 0.5− | 2001 12 17 | 704 | 0.2− | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.1+ | |
| 1995 10 15 | 691 | 0.3− | 0.3− | 2001 12 17 | 704 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.2+ | |
| 1995 10 21 | 691 | 0.3− | 0.1+ | 2001 12 17 | 704 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.1+ | |
| 1995 10 21 | 691 | 0.1− | 0.2− | 2003 04 26 | 691 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.2+ | |
| 1995 10 21 | 691 | 0.2+ | 0.1− | 2003 04 26 | 691 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1− | |
| 1997 02 16 | 691 | 0.0 | 0.1− | 2003 04 26 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | |
| 1997 02 16 | 691 | (4.5+ | 1.6−) | 2003 05 03 | 691 | 0.1− | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.4+ | |
| 1997 02 16 | 691 | 0.4− | 0.7− | 2003 05 03 | 691 | 0.6+ | 0.6+ | 2006 11 14 | 691 | 0.1− | 0.5+ | |
| 1997 03 02 | 691 | 0.2+ | 0.0 | 2003 05 03 | 691 | 0.6+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.1+ | |
| 1997 03 02 | 691 | 0.6+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.3+ | |
| 1997 03 02 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.1+ | |
| 2001 12 14 | 704 | 1.2− | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.3+ | 0.0 | |
| 2001 12 14 | 704 | (1.8− | 0.2+) | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.2+ | |

**(136707)∗ 1995 TE$_6$**

Discovered 1995 Oct. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.30308 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17651428 | $\omega$ | 352.71757 | | +0.94120841 | −0.32705821 | |
| $a$ | 3.1473822 | $\Omega$ | 26.85432 | | +0.31862811 | +0.77619160 | |
| $e$ | 0.1308243 | $i$ | 10.79615 | | +0.11226247 | +0.53903574 | |
| $P$ | 5.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.3+ | 0.3+ | 2004 03 26 | 695 | (1.7− | 0.6+) | 2006 09 28 | 704 | 0.3+ | 1.1+ | |
| 1995 10 15 | 691 | 0.2+ | 0.4+ | 2004 03 26 | 695 | (1.9− | 0.5+) | 2006 09 28 | 704 | 0.0 | 1.2+ | |
| 1995 10 15 | 691 | 0.0 | 0.2+ | 2004 03 26 | 695 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.0 | |
| 1995 10 27 | 691 | 0.2− | 0.3+ | 2004 03 26 | 695 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.4+ | |
| 1995 10 27 | 691 | 0.6− | 0.3+ | 2004 03 26 | 695 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 1.1+ | 0.6− | |
| 1995 10 27 | 691 | 0.2− | 0.5+ | 2004 03 26 | 695 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1− | |
| 1995 11 14 | 691 | 0.0 | 0.1+ | 2004 03 27 | 695 | 0.0 | 0.3+ | 2006 09 30 | 704 | 1.3− | 0.3+ | |
| 1995 11 14 | 691 | 0.5− | 0.3+ | 2004 03 27 | 695 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.4− | 0.6+ | |
| 1995 11 14 | 691 | 0.5− | 0.4+ | 2004 03 29 | 695 | 0.6− | 0.8+ | 2006 09 30 | 704 | 0.4− | 0.5+ | |
| 1995 11 19 | 691 | 0.5+ | 1.1− | 2004 03 29 | 695 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.0 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.7+ | 0.8− | 2004 03 29 | 695 | (1.6+ | 0.1−) | 2006 09 30 | 703 | 0.8− | 0.8+ |
| 1995 11 19 | 691 | 0.5+ | 1.1− | 2004 03 29 | 695 | (2.1+ | 0.1+) | 2006 09 30 | 703 | 0.1+ | 1.0+ |
| 2001 11 24 | 704 | (0.7+ | 1.9+) | 2004 04 16 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 2001 11 24 | 704 | 0.7+ | 0.5− | 2004 04 16 | 691 | 0.7+ | 0.6+ | 2006 10 02 | G96 | 0.3− | 0.1− |
| 2001 11 24 | 704 | (0.8+ | 2.6+) | 2004 04 16 | 691 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.0 |
| 2001 11 24 | 704 | 0.9− | 1.3+ | 2006 09 18 | 703 | 0.6+ | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2001 12 09 | 704 | 0.7− | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2001 12 09 | 704 | 0.0 | 1.2+ | 2006 09 18 | 703 | 0.5+ | 1.2− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2001 12 09 | 704 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.7− | 1.1− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2004 03 21 | 807 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.8+ | 0.1− | 2006 10 12 | 644 | 0.5− | 0.1− |
| 2004 03 21 | 807 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2004 03 21 | 807 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2004 03 26 | 695 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2004 03 26 | 695 | 0.5+ | 0.3+ | 2006 09 28 | 704 | (2.1+ | 1.2+) | 2006 10 16 | 703 | 0.2+ | 0.3+ |

**(136708)∗ 1995 TY$_7$ = 2002 PU$_{97}$**

Discovered 1995 Oct. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33005)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.13412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27150247 | $\omega$ | 286.50143 | | +0.67396051 | +0.73741909 | |
| $a$ | 2.3620379 | $\Omega$ | 26.04127 | | −0.63312779 | +0.60765238 | |
| $e$ | 0.2242971 | $i$ | 5.83245 | | −0.38069204 | +0.29490959 | |
| $P$ | 3.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1− | 0.3− | 2002 10 05 | 704 | 0.2− | 0.3+ | 2005 05 23 | 644 | 0.1+ | 0.6+ |
| 1995 10 15 | 691 | 0.2− | 0.2− | 2002 10 11 | 704 | 0.8− | 0.8+ | 2006 09 16 | 703 | 0.4+ | 0.2− |
| 1995 10 15 | 691 | 0.1− | 0.4− | 2002 10 11 | 704 | 0.9− | 0.3+ | 2006 09 16 | 703 | 0.7− | 0.4+ |
| 1995 10 22 | 691 | 0.6+ | 0.4− | 2002 10 11 | 704 | 0.1+ | 1.4+ | 2006 09 16 | 703 | 1.2− | 1.0+ |
| 1995 10 22 | 691 | 0.3+ | 0.3− | 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 09 16 | 703 | 0.8− | 1.1+ |
| 1995 10 22 | 691 | 0.5+ | 0.0 | 2002 10 29 | 704 | 0.4+ | 0.8+ | 2006 09 30 | G96 | 0.7+ | 0.2+ |
| 1995 11 17 | 691 | 0.5− | 0.3+ | 2002 10 29 | 704 | 0.0 | 0.9+ | 2006 09 30 | G96 | 0.6+ | 0.0 |
| 1995 11 17 | 691 | 0.5− | 0.4+ | 2002 10 29 | 704 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.6+ | 0.2− |
| 1995 11 17 | 691 | 0.7− | 0.4+ | 2002 10 29 | 704 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 1995 11 23 | 691 | 0.3+ | 0.3+ | 2002 10 29 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 1995 11 23 | 691 | 0.1+ | 0.4+ | 2005 04 02 | G96 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 1995 11 23 | 691 | 0.0 | 0.2+ | 2005 04 02 | G96 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.9− |
| 1995 11 30 | 691 | 0.3− | 0.6+ | 2005 04 02 | G96 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.4+ | 0.6− |
| 1995 11 30 | 691 | 0.3− | 0.6+ | 2005 04 02 | G96 | 0.1+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 1995 11 30 | 691 | 0.4− | 0.7+ | 2005 04 04 | 704 | (1.6+ | 1.1+) | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 07 09 | 704 | 0.5− | 1.3+ | 2005 04 04 | 704 | (1.6+ | 1.0+) | 2006 10 19 | 691 | 0.0 | 0.5+ |
| 2002 07 09 | 704 | 0.1− | 0.6+ | 2005 04 04 | 704 | 1.3+ | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2002 07 09 | 704 | 0.4+ | 0.6+ | 2005 04 04 | 704 | 1.1+ | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 07 09 | 704 | 0.6+ | 0.1− | 2005 04 05 | 699 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 08 14 | 704 | 0.8− | 0.4+ | 2005 04 05 | 699 | (0.2− | 1.7+) | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2002 08 14 | 704 | 0.1− | 0.4+ | 2005 04 05 | 699 | (0.6+ | 2.3+) | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | 0.4− | 0.1+ | 2005 04 05 | 699 | (0.4+ | 1.7+) | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2002 08 14 | 704 | 0.2+ | 0.4− | 2005 04 05 | 703 | (0.4+ | 1.8+) | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 08 14 | 704 | 0.3− | 0.2− | 2005 04 05 | 703 | (1.6− | 0.4+) | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 08 15 | 699 | 0.3− | 0.4+ | 2005 04 05 | 703 | 1.1+ | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 08 15 | 699 | 0.1− | 0.2+ | 2005 04 05 | 703 | 0.0 | 0.6− | 2006 11 02 | 691 | 0.6+ | 0.5− |
| 2002 08 15 | 699 | 0.2− | 0.1− | 2005 04 07 | 704 | 0.6+ | 0.2− | 2006 11 02 | 691 | 0.1− | 0.1+ |
| 2002 08 15 | 699 | 0.9− | 0.3+ | 2005 04 07 | 704 | 0.1+ | 0.2− | 2006 11 02 | 691 | 0.1− | 0.1+ |
| 2002 08 16 | 608 | 0.0 | 0.9+ | 2005 04 07 | 704 | 1.3+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 08 16 | 608 | 0.2− | 0.9+ | 2005 04 09 | 691 | 0.4+ | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 08 16 | 608 | 0.2− | 0.7+ | 2005 04 09 | 691 | 0.4+ | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 08 30 | 557 | 0.3+ | 0.1+ | 2005 04 09 | 691 | (1.7+ | 2.0+) | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2002 08 30 | 557 | 0.8− | 0.5+ | 2005 04 11 | 699 | 0.7+ | 1.3+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2002 08 30 | 557 | 0.9+ | 0.0 | 2005 04 11 | 699 | 0.2+ | 1.2+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 08 30 | 557 | 0.7− | 0.2+ | 2005 04 11 | 699 | (1.9− | 0.8+) | 2006 11 14 | 703 | 0.3− | 0.2+ |
| 2002 08 30 | 557 | 0.7− | 0.5+ | 2005 04 11 | 699 | 1.4+ | 0.6+ | 2006 11 14 | 703 | 0.3− | 0.1− |
| 2002 08 30 | 557 | 0.1+ | 0.5+ | 2005 04 12 | 704 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.4− | 0.5+ |
| 2002 08 30 | 557 | 0.6− | 0.0 | 2005 04 12 | 704 | 0.4+ | 1.4+ | 2006 11 14 | 703 | 0.5+ | 1.1− |
| 2002 08 30 | 557 | 0.7− | 0.4− | 2005 04 12 | 704 | 0.3+ | 0.9+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2002 09 02 | 557 | 0.1+ | 0.6− | 2005 04 12 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2002 09 09 | 608 | 0.7− | 0.8− | 2005 04 12 | 704 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2002 09 09 | 608 | 0.7− | 0.8− | 2005 04 15 | 699 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.5− | 0.2+ |
| 2002 09 09 | 608 | 0.8− | 0.7− | 2005 04 15 | 699 | 0.3+ | 0.6+ | 2006 11 15 | 704 | 0.4− | 0.0 |
| 2002 09 13 | 704 | 0.2− | 0.3+ | 2005 04 15 | 699 | 0.5+ | 0.8+ | 2006 11 15 | 704 | 0.3− | 0.6+ |
| 2002 09 13 | 704 | 0.2+ | 0.3− | 2005 04 15 | 699 | 0.3− | 0.6+ | 2006 11 15 | 704 | 0.4− | 0.3+ |
| 2002 09 13 | 704 | 0.5+ | 0.4− | 2005 04 17 | 691 | 0.1+ | 0.9+ | 2006 11 16 | 704 | (0.7+ | 1.5+) |
| 2002 09 13 | 699 | 0.3+ | 0.2− | 2005 04 17 | 691 | 0.0 | 0.8+ | 2006 11 16 | 704 | 0.5+ | 1.0+ |
| 2002 09 13 | 704 | 0.4+ | 0.5− | 2005 04 17 | 691 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 2002 09 13 | 699 | 0.6− | 0.3− | 2005 04 18 | 704 | (1.3− | 3.1+) | 2006 11 16 | 704 | 0.6+ | 1.0+ |
| 2002 09 13 | 704 | 0.5+ | 0.2− | 2005 04 18 | 704 | (1.7+ | 0.6+) | 2006 11 16 | 704 | (1.9− | 1.3−) |
| 2002 09 13 | 699 | 0.2− | 0.2+ | 2005 04 18 | 704 | (2.4+ | 0.2−) | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2002 09 13 | 699 | 0.3− | 0.4− | 2005 05 09 | 699 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2002 09 14 | 608 | 0.0 | 0.6+ | 2005 05 09 | 699 | 0.8+ | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2002 09 14 | 608 | 0.3+ | 1.4+ | 2005 05 09 | 699 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 09 14 | 608 | 0.1+ | 0.8+ | 2005 05 09 | 699 | 0.7+ | 1.2+ | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2002 10 01 | 608 | 0.8+ | 0.7+ | 2005 05 12 | 699 | (0.4+ | 2.0+) | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2002 10 01 | 608 | 0.6+ | 0.8+ | 2005 05 12 | 699 | 0.8− | 0.4+ | 2006 11 22 | 704 | 0.1− | 1.0− |
| 2002 10 01 | 608 | 1.0+ | 0.3+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.5− | 1.0− |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2005 05 12 | 699 | 1.1+ | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.6+ |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.7− | 0.4+ |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2005 05 12 | 699 | 1.1+ | 0.1+ | 2006 11 28 | 704 | 1.1− | 1.2+ |
| 2002 10 05 | 704 | 0.5− | 0.0 | 2005 05 12 | G96 | 0.1− | 0.3+ | 2006 11 28 | 704 | 2.0− | 0.4+ |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2005 05 23 | 644 | 0.1+ | 0.3+ | | | | |
| 2002 10 05 | 704 | 0.2− | 0.2+ | 2005 05 23 | 644 | 0.3+ | 0.2+ | | | | |

**(136709)∗ 1995 TE$_9$ = 2002 PP$_3$**

Discovered 1995 Oct. 1 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 33005)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.92894 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27625295 | $\omega$ | 176.63277 | | +0.96780078 | +0.25067807 | |
| $a$ | 2.3348811 | $\Omega$ | 168.77009 | | −0.23360104 | +0.92825488 | |
| $e$ | 0.1836884 | $i$ | 6.73841 | | −0.09376679 | +0.27477878 | |
| $P$ | 3.57 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.7+ | 0.2+ | 2002 07 09 | 704 | 0.1− | 0.2− | 2006 11 01 | 703 | 0.4− | 1.1+ |
| 1994 04 02 | 691 | 0.4− | 0.6+ | 2002 07 21 | 644 | 0.0 | 0.9+ | 2006 11 01 | 703 | (1.6− | 0.2−) |
| 1994 04 02 | 691 | 0.4+ | 0.4+ | 2002 07 21 | 644 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 0.7− | 0.6− |
| 1995 07 25 | 691 | 0.6− | 0.1+ | 2002 07 21 | 644 | 0.1+ | 0.7+ | 2006 11 01 | 703 | (1.9− | 0.4−) |
| 1995 07 25 | 691 | 0.7− | 0.1− | 2002 08 03 | 644 | 0.2− | 0.5− | 2006 11 01 | 703 | 0.6+ | 1.2+ |
| 1995 07 25 | 691 | 0.6− | 0.0 | 2002 08 03 | 644 | 0.8− | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.7+ |
| 1995 09 26 | 691 | 0.1+ | 0.1− | 2002 08 03 | 644 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.5+ |
| 1995 09 26 | 691 | 0.2− | 0.1− | 2002 08 05 | 644 | 0.1+ | 0.9+ | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 1995 09 26 | 691 | 0.1+ | 0.4− | 2002 08 05 | 644 | 0.1− | 1.0+ | 2006 11 09 | 644 | 0.5+ | 0.4+ |
| 1995 10 01 | 691 | 0.2− | 0.3+ | 2002 08 05 | 644 | 0.2+ | 0.9+ | 2006 11 09 | 644 | 0.3+ | 0.5+ |
| 1995 10 01 | 691 | 0.2− | 0.6+ | 2002 08 16 | 644 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 1995 10 01 | 691 | 0.2− | 0.4+ | 2002 08 16 | 644 | 0.1+ | 0.6+ | 2006 11 11 | 644 | 0.1− | 0.3+ |
| 1995 10 03 | 691 | 0.9+ | 0.1− | 2002 08 16 | 644 | 0.5+ | 0.9+ | 2006 11 11 | 644 | 0.1− | 0.9+ |
| 1995 10 03 | 691 | 0.5+ | 0.1− | 2005 04 15 | 691 | 0.1− | 0.3+ | 2006 11 11 | 644 | 0.3− | 0.7+ |
| 1995 10 03 | 691 | 0.6+ | 0.1− | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.5+ |
| 2001 02 21 | 691 | 0.6+ | 0.4+ | 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2001 02 21 | 691 | 0.5+ | 0.2+ | 2006 10 03 | 704 | (0.4+ | 2.1+) | 2006 11 13 | 703 | 0.4− | 0.1− |
| 2001 02 21 | 691 | 0.2+ | 0.6+ | 2006 10 03 | 704 | 1.1+ | 0.5+ | 2006 11 13 | 703 | 0.6+ | 0.7+ |
| 2001 03 26 | 691 | 0.0 | 0.5− | 2006 10 03 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2001 03 26 | 691 | 0.5− | 0.5+ | 2006 10 03 | 704 | 0.9+ | 0.2+ | 2006 11 19 | 703 | 1.1− | 0.9+ |
| 2001 03 26 | 691 | 0.4− | 0.2+ | 2006 11 01 | 703 | 1.0− | 0.4+ | 2006 11 19 | 703 | 1.2− | 0.6+ |
| 2002 07 09 | 704 | 0.1+ | 0.5− | 2006 11 01 | 703 | 1.1+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.3+ |
| 2002 07 09 | 704 | 0.1+ | 0.1+ | 2006 11 01 | 703 | 0.7− | 1.1− | | | | |

**(136710)∗ 1995 UU$_{10}$ = 2002 NP$_{49}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33005)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.04781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27397283 | $\omega$ | 42.48752 | | +0.99239481 | +0.12144933 | |
| $a$ | 2.3478177 | $\Omega$ | 310.52545 | | −0.11883922 | +0.90277231 | |
| $e$ | 0.2326497 | $i$ | 1.51262 | | −0.03209017 | +0.41261630 | |
| $P$ | 3.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.4− | 0.0 | 2002 08 18 | 608 | 0.6+ | 1.1+ | 2006 10 31 | 691 | 0.4+ | 0.0 | |
| 1995 10 17 | 691 | 0.1− | 0.1− | 2002 08 18 | 608 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.0 | |
| 1995 10 17 | 691 | 0.1− | 0.0 | 2002 08 18 | 608 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.1− | |
| 1995 10 23 | 691 | 0.5+ | 0.5− | 2002 08 27 | 644 | (1.4− | 2.2+) | 2006 11 11 | 703 | 0.2+ | 0.4− | |
| 1995 10 23 | 691 | 0.4+ | 0.1− | 2002 08 27 | 644 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.6− | 0.3+ | |
| 1995 10 23 | 691 | 0.3+ | 0.2+ | 2002 08 27 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1+ | 1.0− | |
| 1995 10 27 | 691 | 0.0 | 0.3− | 2002 08 31 | 704 | 1.1− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2+ | |
| 1995 10 27 | 691 | 0.2− | 0.2− | 2002 08 31 | 704 | 1.0− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.0 | |
| 1995 10 27 | 691 | 0.2+ | 0.1− | 2002 08 31 | 704 | 1.1− | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.1− | |
| 2001 03 27 | 691 | (1.9+ | 1.0−) | 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 704 | 0.0 | 0.3− | |
| 2001 03 27 | 691 | 0.1+ | 0.6+ | 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 11 15 | 704 | 0.8+ | 1.3− | |
| 2001 03 27 | 691 | 0.2+ | 0.2− | 2002 10 03 | 704 | 0.2− | 1.2+ | 2006 11 15 | 704 | 0.6+ | 0.2+ | |
| 2002 07 14 | 644 | 0.1+ | 0.1− | 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.0 | |
| 2002 07 14 | 644 | 0.1− | 0.3− | 2004 01 30 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.8+ | 1.5+ | |
| 2002 07 14 | 644 | 0.1+ | 0.1− | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.1+ | |
| 2002 07 18 | 644 | 0.4− | 0.7+ | 2004 02 11 | 291 | 0.4− | 0.2− | 2006 11 16 | 704 | (1.7+ | 0.5−) | |
| 2002 07 18 | 644 | 0.4− | 0.8+ | 2004 02 11 | 291 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.5− | 0.8+ | |
| 2002 07 18 | 644 | 0.3− | 0.8+ | 2004 02 11 | 291 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.5+ | 0.8− | |
| 2002 07 28 | 608 | 0.7+ | 0.7− | 2005 04 14 | 691 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.1+ | |
| 2002 07 28 | 608 | 0.9+ | 0.6− | 2005 04 14 | 691 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.8+ | |
| 2002 07 28 | 608 | 0.6+ | 0.9− | 2005 04 14 | 691 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.5+ | |
| 2002 08 07 | 511 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.4− | |
| 2002 08 07 | 511 | 0.1− | 0.0 | 2005 04 14 | 691 | 0.1− | 1.5+ | 2006 11 16 | 704 | (1.7− | 0.1−) | |
| 2002 08 07 | 511 | 0.1+ | 0.1+ | 2005 04 14 | 691 | 0.1− | 0.5+ | 2006 11 16 | 704 | 1.1− | 0.5+ | |
| 2002 08 07 | 511 | 0.2+ | 0.1+ | 2006 09 18 | 703 | (1.1− | 1.6−) | 2006 11 18 | 691 | 0.0 | 0.1+ | |
| 2002 08 08 | 511 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.6− | 2006 11 18 | 691 | 0.0 | 0.2+ | |
| 2002 08 10 | 511 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1+ | |
| 2002 08 10 | 511 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.4+ | 1.3+ | |
| 2002 08 10 | 511 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.7+ | |
| 2002 08 10 | 511 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.0 | 1.1+ | |
| 2002 08 14 | 704 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.4− | 1.1+ | |
| 2002 08 14 | 704 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.1− | 1.3+ | |
| 2002 08 14 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 1.0+ | 2006 11 20 | 704 | 0.6− | 0.3+ | |
| 2002 08 14 | 704 | (0.9+ | 1.6+) | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.7− | 0.6+ | |
| 2002 08 14 | 704 | (2.4− | 0.6+) | 2006 10 19 | 691 | 0.8− | 0.0 | 2006 11 20 | 704 | 0.6− | 0.2+ | |
| 2002 08 15 | 699 | 0.7− | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.5− | 0.0 | |
| 2002 08 15 | 699 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3− | 0.2+ | |
| 2002 08 15 | 699 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.3− | 0.1− | |
| 2002 08 15 | 699 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.0 | |
| 2002 08 17 | 644 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.8− | 0.5+ | |
| 2002 08 17 | 644 | 0.2− | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.5+ | |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | | | | | |

**(136711)∗ 1995 UC$_{11}$ = 2002 NL$_{52}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33005)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.17001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27194334 | $\omega$ | 32.67677 | | +0.62190096 | +0.78285910 | |
| $a$ | 2.3594843 | $\Omega$ | 275.78568 | | −0.72256927 | +0.56418006 | |
| $e$ | 0.1977426 | $i$ | 1.10906 | | −0.30188219 | +0.26235947 | |
| $P$ | 3.62 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.4+ | 1.4+ | 2002 07 18 | 644 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.4+ | |
| 1994 04 02 | 691 | 0.6+ | 1.1+ | 2002 07 18 | 644 | (1.9− | 0.6+) | 2006 10 20 | 691 | 0.6− | 0.3+ | |
| 1994 04 02 | 691 | 0.3+ | 1.0+ | 2002 08 06 | 644 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.5− | 0.2+ | |
| 1995 10 17 | 691 | 1.0+ | 0.8+ | 2002 08 06 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.1+ | |
| 1995 10 17 | 691 | 0.0 | 0.1+ | 2002 08 06 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.3+ | |
| 1995 10 17 | 691 | 0.1+ | 0.1+ | 2002 08 07 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.5+ | |
| 1995 10 22 | 691 | 0.2− | 0.1− | 2002 08 07 | 644 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 1995 10 22 | 691 | 0.8+ | 0.6− | 2002 08 07 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 1995 10 22 | 691 | 0.5− | 0.2− | 2002 08 14 | 704 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 1995 10 27 | 691 | 0.6− | 0.4− | 2002 08 14 | 704 | 0.1+ | 0.4− | 2006 10 29 | 691 | 0.0 | 0.4+ | |
| 1995 10 27 | 691 | 0.5− | 0.2− | 2002 08 14 | 704 | 0.7+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.2+ | |
| 1995 10 27 | 691 | 0.5− | 0.1− | 2002 08 17 | 644 | 0.4− | 0.3− | 2006 10 29 | 691 | 0.0 | 0.2+ | |
| 1997 02 04 | 691 | 0.1+ | 0.3− | 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.2− | |
| 1997 02 04 | 691 | 0.3+ | 0.6− | 2002 08 17 | 644 | 0.4− | 0.3+ | 2006 11 11 | 703 | (0.6+ | 1.6−) | |
| 1997 02 04 | 691 | 0.2+ | 0.1− | 2005 04 30 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.2− | |
| 2002 07 04 | 644 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.6+ | |
| 2002 07 04 | 644 | 0.1+ | 0.1+ | 2005 04 30 | 691 | 0.2+ | 0.8+ | 2006 11 15 | 691 | 1.2+ | 0.4+ | |
| 2002 07 04 | 644 | 0.3− | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2+ | |
| 2002 07 14 | 704 | 0.2− | 0.6− | 2005 05 12 | G96 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.2+ | |
| 2002 07 14 | 704 | 0.5+ | 0.2+ | 2005 05 12 | G96 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 2002 07 14 | 704 | 0.1− | 0.1− | 2005 05 12 | G96 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.2+ | |
| 2002 07 14 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.4+ | |
| 2002 07 14 | 704 | 0.6− | 0.9− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.3+ | |
| 2002 07 14 | 644 | 0.1+ | 1.0+ | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.3+ | |
| 2002 07 14 | 644 | 0.2+ | 1.0+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.2+ | |
| 2002 07 14 | 644 | 0.2+ | 1.0+ | 2006 10 16 | 691 | 0.5− | 0.2+ | | | | | |
| 2002 07 18 | 644 | 0.4− | 0.6+ | 2006 10 16 | 691 | 0.4− | 0.3+ | | | | | |

**(136712)∗ 1995 UE$_{11}$ = 2000 QC$_{1}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 3138)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.54600 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18312762 | $\omega$ | 214.79497 | | +0.56982587 | −0.82027250 | |
| $a$ | 3.0711437 | $\Omega$ | 200.60609 | | +0.78228227 | +0.55991368 | |
| $e$ | 0.0835668 | $i$ | 8.08743 | | +0.25166033 | +0.11683191 | |
| $P$ | 5.38 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 691 | 0.1− | 0.0 | 2003 03 07 | 704 | 0.3− | 1.0+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | |
| 1995 08 27 | 691 | 0.2+ | 0.2− | 2003 03 07 | 704 | 0.8+ | 0.5− | 2006 10 19 | 644 | 0.2+ | 0.5+ | |
| 1995 08 27 | 691 | 0.1+ | 0.3− | 2003 03 07 | 704 | 0.3− | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.2+ | |
| 1995 10 17 | 691 | 0.4+ | 0.6+ | 2003 03 07 | 704 | 1.0+ | 1.0+ | 2006 10 21 | 703 | 0.0 | 0.3− | |
| 1995 10 17 | 691 | 0.0 | 0.3− | 2003 03 07 | 704 | 0.2+ | 0.7− | 2006 10 21 | 703 | 0.1− | 0.2− | |
| 1995 10 17 | 691 | 0.3+ | 0.0 | 2003 03 07 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 703 | 0.4+ | 0.3− | |
| 1995 10 22 | 691 | 0.0 | 0.6− | 2003 03 07 | 704 | (1.1+ | 2.0−) | 2006 10 21 | 703 | 0.1− | 0.2− | |
| 1995 10 22 | 691 | 0.2− | 0.1− | 2003 03 07 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 1995 10 27 | 691 | 0.3+ | 0.6− | 2003 03 07 | 704 | 0.8+ | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | |
| 1995 10 27 | 691 | 0.4+ | 0.4− | 2003 03 07 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 1995 10 27 | 691 | 0.2+ | 0.2− | 2003 03 07 | 704 | 0.8+ | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.1− | |
| 1998 03 20 | 704 | 1.5− | 0.3+ | 2005 07 05 | 644 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.0 | |
| 1998 03 20 | 704 | 0.2− | 0.1− | 2005 07 05 | 644 | 0.5− | 0.7+ | 2006 10 23 | 704 | (0.4− | 2.0+) | |
| 1998 03 20 | 704 | 1.3+ | 0.7− | 2005 07 05 | 644 | 0.5− | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.0 | |
| 1998 03 20 | 704 | (0.9− | 2.0+) | 2005 07 09 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 704 | 0.3− | 1.1− | |
| 2000 08 22 | 557 | 1.1− | 1.0+ | 2005 07 09 | 691 | 0.2− | 0.4+ | 2006 10 23 | 704 | 0.1− | 0.3+ | |
| 2000 08 23 | 557 | 0.6− | 0.8+ | 2005 07 09 | 691 | 0.1− | 0.3+ | 2006 10 23 | 704 | 0.6− | 0.6+ | |
| 2000 08 23 | 557 | 0.3− | 0.2− | 2006 09 20 | 699 | 0.2− | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.2+ | |
| 2000 08 23 | 557 | 0.5− | 0.6− | 2006 09 20 | 699 | (0.4− | 1.6+) | 2006 10 28 | 691 | 0.1+ | 0.3+ | |
| 2000 08 23 | 557 | 0.3− | 0.8+ | 2006 09 20 | 699 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | |
| 2000 08 24 | 557 | 0.6− | 0.1− | 2006 09 20 | 699 | 0.6+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | |
| 2000 08 24 | 557 | 0.2− | 0.9+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− | |
| 2000 08 24 | 557 | 0.8− | 1.3+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 2001 11 17 | 704 | 0.1+ | 0.9− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | (2.0− | 0.3+) | |
| 2001 11 17 | 704 | 0.4− | 0.6− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 1.0− | 1.5+ | |
| 2001 11 17 | 704 | 0.2− | 0.4− | 2006 09 28 | 683 | 0.9− | 0.9− | 2006 11 11 | 703 | 0.1− | 0.5+ | |
| 2001 11 17 | 704 | 0.1− | 0.7− | 2006 09 28 | 683 | 0.3+ | 1.4− | 2006 11 11 | 703 | 0.2− | 0.1+ | |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2006 09 28 | 683 | 1.3− | 0.4− | 2006 11 16 | G96 | 0.0 | 0.2− | |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2006 10 03 | 704 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1− | |
| 2001 11 20 | 704 | 0.1− | 1.2+ | 2006 10 03 | 704 | (0.7+ | 1.7+) | 2006 11 16 | G96 | 0.1+ | 0.2− | |
| 2001 11 20 | 704 | 0.4+ | 0.0 | 2006 10 03 | 704 | 0.5+ | 0.8+ | 2006 11 16 | G96 | 0.3− | 0.3− | |
| 2001 11 20 | 704 | 0.4+ | 0.9+ | 2006 10 03 | 704 | 1.1+ | 1.3+ | 2006 11 17 | 704 | 0.2+ | 0.5+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 699 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.5+ | 0.2− | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2001 12 08 | 699 | 0.9− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.5+ |
| 2001 12 08 | 699 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.5− | 0.6+ |
| 2001 12 08 | 699 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.7+ |
| 2001 12 11 | 704 | 0.9− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 1.2+ |
| 2001 12 11 | 704 | 1.0− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.7− | 0.5− |
| 2001 12 11 | 704 | 1.2− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 2001 12 11 | 704 | 1.0− | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.6+ |
| 2001 12 11 | 704 | 0.8− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.9+ | 0.0 |
| 2001 12 18 | 704 | 1.0+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.9+ | 0.1+ |
| 2001 12 18 | 704 | 0.7− | 1.1− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2001 12 18 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2001 12 18 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.3+ | 0.1+ |
| 2003 03 07 | 704 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.5+ | 0.1+ |
| 2003 03 07 | 704 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 26 | 704 | 0.5− | 0.2+ |

**(136713)∗ 1995 US$_{12}$ = 2000 AO$_{61}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 37649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.17249 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27815807 | $\omega$ | 70.65714 | | +0.12271543 | | −0.99239419 |
| $a$ | 2.3242077 | $\Omega$ | 12.30612 | | +0.89255333 | | +0.10607182 |
| $e$ | 0.1841482 | $i$ | 2.61685 | | +0.43392335 | | +0.06247030 |
| $P$ | 3.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.0 | 0.1+ | 2002 09 30 | 704 | 0.4+ | 0.6+ | 2002 10 31 | 704 | 0.4+ | 0.2+ |
| 1995 10 17 | 691 | 0.2− | 0.1− | 2002 09 30 | 704 | 0.5− | 0.8+ | 2002 10 31 | 704 | 0.3− | 0.1+ |
| 1995 10 17 | 691 | 0.2+ | 0.2− | 2002 09 30 | 704 | 0.6+ | 0.8+ | 2002 11 06 | 704 | 0.7+ | 0.4− |
| 1995 10 22 | 691 | 0.2+ | 0.1+ | 2002 09 30 | 608 | (0.8+ | 2.2+) | 2002 11 06 | 704 | 0.0 | 0.5+ |
| 1995 10 22 | 691 | 0.1+ | 0.2− | 2002 09 30 | 608 | 0.4+ | 0.4+ | 2002 11 06 | 704 | 0.3− | 0.0 |
| 1995 10 22 | 691 | 0.2+ | 0.4− | 2002 09 30 | 608 | 0.8+ | 0.3+ | 2002 11 06 | 704 | 0.5+ | 0.8+ |
| 1995 10 28 | 691 | 0.4+ | 0.4− | 2002 10 02 | 704 | 0.4− | 0.6+ | 2002 12 05 | 704 | 0.3+ | 0.4+ |
| 1995 10 28 | 691 | 0.1+ | 0.4− | 2002 10 02 | 704 | 0.1+ | 0.3+ | 2002 12 05 | 704 | 0.3− | 0.0 |
| 1995 10 28 | 691 | 0.0 | 0.5− | 2002 10 02 | 704 | 0.2+ | 0.9+ | 2002 12 05 | 704 | 1.0+ | 0.4− |
| 2000 01 04 | 704 | 0.1− | 0.2− | 2002 10 02 | 704 | 0.3+ | 0.1− | 2002 12 05 | 704 | 0.3− | 0.8+ |
| 2000 01 04 | 704 | 0.2+ | 0.7+ | 2002 10 03 | 704 | 0.0 | 0.1− | 2004 04 09 | E12 | 0.2− | 0.7− |
| 2000 01 04 | 704 | 0.3+ | 0.2− | 2002 10 03 | 704 | (0.7+ | 1.7+) | 2004 04 09 | E12 | (1.9+ | 1.1−) |
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2002 10 03 | 704 | (0.3− | 2.0+) | 2004 04 09 | E12 | 1.5+ | 0.7+ |
| 2000 01 04 | 704 | 0.2+ | 0.0 | 2002 10 03 | 704 | 0.5+ | 0.9+ | 2004 04 09 | E12 | 1.4+ | 1.3− |
| 2000 01 06 | 704 | 0.5− | 1.1+ | 2002 10 03 | 704 | (3.0+ | 0.9−) | 2004 05 24 | 691 | 0.2+ | 0.7+ |
| 2000 01 06 | 704 | 0.1− | 0.1− | 2002 10 05 | 644 | 0.3− | 1.1+ | 2004 05 24 | 691 | 0.0 | 0.5+ |
| 2000 01 06 | 704 | 0.9+ | 0.2− | 2002 10 05 | 644 | 0.0 | 1.2+ | 2004 05 24 | 691 | 0.2− | 0.6+ |
| 2000 01 06 | 704 | 0.1− | 0.7+ | 2002 10 05 | 644 | 0.3− | 1.1+ | 2006 10 02 | 691 | 0.3+ | 0.3+ |
| 2000 02 11 | 704 | 0.3− | 0.3− | 2002 10 07 | 699 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2000 02 11 | 704 | 0.2− | 0.2− | 2002 10 07 | 699 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.7+ | 0.2− |
| 2000 02 11 | 704 | 0.4+ | 0.0 | 2002 10 07 | 699 | (1.6− | 0.3−) | 2006 11 02 | G96 | 0.4− | 0.3− |
| 2000 02 11 | 704 | 0.6+ | 0.6+ | 2002 10 07 | 699 | 0.5+ | 0.3+ | 2006 11 02 | G96 | 0.6− | 0.3− |
| 2000 02 11 | 704 | 0.6− | 0.9+ | 2002 10 07 | 704 | 0.4+ | 0.8+ | 2006 11 02 | G96 | 0.3− | 0.5− |
| 2002 09 07 | 704 | 0.2− | 0.2+ | 2002 10 07 | 704 | 0.6+ | 1.0+ | 2006 11 02 | G96 | 0.5− | 0.1− |
| 2002 09 07 | 704 | 0.6+ | 0.0 | 2002 10 07 | 704 | 0.2− | 1.0+ | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 0.6− | 2002 10 07 | 704 | 0.7+ | 1.1+ | 2006 11 17 | 644 | 0.5− | 0.0 |
| 2002 09 07 | 704 | 0.5− | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.4+ |
| 2002 09 07 | 704 | 0.3− | 0.5+ | 2002 10 11 | 704 | 1.3− | 0.1− | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 2002 09 14 | 608 | (2.7− | 0.3−) | 2002 10 11 | 704 | 0.6− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 1.3+ |
| 2002 09 14 | 608 | 0.6− | 0.0 | 2002 10 11 | 704 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.8+ |
| 2002 09 14 | 608 | 0.5− | 0.1− | 2002 10 11 | 704 | 0.9− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2002 09 15 | 291 | 0.5− | 0.1+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.0 | 1.0+ |
| 2002 09 15 | 291 | 0.5− | 0.1− | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.5− | 0.6+ |
| 2002 09 15 | 291 | 0.5− | 0.0 | 2002 10 31 | 704 | 0.4− | 0.5− | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2002 09 30 | 704 | 0.8− | 1.4+ | 2002 10 31 | 704 | 0.6− | 0.5+ | 2006 11 22 | 704 | (1.2− | 1.8+) |
| 2002 09 30 | 704 | 0.2− | 0.8+ | 2002 10 31 | 704 | 0.7− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.2− |

**(136714)∗ 1995 UX$_{13}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.05990 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26698111 | $\omega$ | 139.23530 | | −0.95385287 | | −0.29667411 |
| $a$ | 2.3886308 | $\Omega$ | 23.62895 | | +0.23659910 | | −0.83763523 |
| $e$ | 0.0544611 | $i$ | 6.64187 | | +0.18489337 | | −0.45864115 |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.2+ | 0.2− | 2002 09 08 | 608 | 0.1+ | 0.1− | 2006 10 17 | 703 | (0.5− | 1.9−) |
| 1995 10 17 | 691 | 0.1+ | 0.3− | 2002 09 16 | 644 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.6− |
| 1995 10 17 | 691 | 0.2− | 0.0 | 2002 09 16 | 644 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.5− |
| 1995 10 22 | 691 | 0.7+ | 1.7+ | 2002 09 16 | 644 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 1995 10 22 | 691 | 0.4− | 0.3− | 2002 10 07 | 608 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 1995 10 22 | 691 | 0.5+ | 0.9+ | 2002 10 07 | 608 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1995 10 28 | 691 | 0.6− | 0.4− | 2006 09 14 | 691 | 0.3− | 0.2− | 2006 11 02 | G96 | 0.3+ | 0.4+ |
| 1995 10 28 | 691 | 0.4− | 0.7− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.4+ |
| 1995 10 28 | 691 | 0.0 | 0.6− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.1− | 1.3+ |
| 2001 04 27 | 608 | 0.4+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 11 02 | G96 | 0.2+ | 0.5+ |
| 2001 04 27 | 608 | 0.2+ | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.1+ | 0.3+ |
| 2001 04 27 | 608 | 0.3+ | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 11 02 | G96 | 0.3− | 0.3+ |
| 2002 08 19 | 644 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.2− | 0.7+ |
| 2002 08 19 | 644 | 0.2+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.0 | 0.2+ |
| 2002 08 19 | 644 | 0.4+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2002 08 30 | 644 | 0.6− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 08 30 | 644 | 0.5− | 0.1− | 2006 10 16 | G96 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2002 08 30 | 644 | 0.6− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.8− | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2002 09 08 | 608 | 0.4+ | 0.5− | 2006 10 16 | G96 | 0.4+ | 0.2− | | | | |
| 2002 09 08 | 608 | 0.2+ | 0.4− | 2006 10 17 | 703 | (2.1+ | 0.4+) | | | | |

**(136715)∗ 1995 UO$_{14}$ = 2001 XJ$_{75}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 21978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.42035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17463014 | $\omega$ | 229.19159 | | −0.14329788 | | −0.98459390 |
| $a$ | 3.1699804 | $\Omega$ | 229.33852 | | +0.94313826 | | −0.10517381 |
| $e$ | 0.0993224 | $i$ | 7.59060 | | +0.29992657 | | −0.13969009 |
| $P$ | 5.64 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.4+ | 0.2− | 2001 12 11 | 704 | 0.4+ | 0.1− | 2005 07 09 | 691 | 0.1− | 0.2+ |
| 1995 10 17 | 691 | 0.5− | 0.3+ | 2001 12 14 | 704 | 0.0 | 0.6+ | 2005 07 09 | 691 | 0.0 | 0.4+ |
| 1995 10 22 | 691 | 0.5− | 0.2− | 2001 12 14 | 704 | 0.3+ | 0.1− | 2006 09 25 | 683 | 0.1− | 0.9+ |
| 1995 10 22 | 691 | 0.0 | 0.7+ | 2001 12 14 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 683 | (1.8+ | 0.9−) |
| 1995 10 22 | 691 | 0.6+ | 0.5+ | 2001 12 14 | 704 | 0.9+ | 0.0 | 2006 09 25 | 683 | (0.4+ | 2.5+) |
| 1995 10 23 | 691 | 0.1− | 0.1− | 2001 12 14 | 704 | 0.7− | 0.3+ | 2006 09 28 | 683 | 1.2− | 0.4− |
| 1995 10 23 | 691 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 683 | 0.2− | 0.7+ |
| 1995 10 23 | 691 | 0.2− | 0.2+ | 2001 12 17 | 704 | 0.8+ | 0.1− | 2006 09 28 | 683 | (1.6− | 0.0 ) |
| 1995 11 16 | 691 | 0.0 | 0.1− | 2001 12 17 | 704 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 1995 11 16 | 691 | 0.3+ | 0.3− | 2001 12 17 | 704 | 1.0+ | 0.3− | 2006 10 02 | G96 | 0.5+ | 0.1− |
| 1995 11 16 | 691 | 0.2+ | 0.4− | 2001 12 17 | 704 | 0.6+ | 0.6− | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 1998 05 28 | 691 | 0.1− | 0.5+ | 2001 12 18 | 704 | (1.5− | 2.4+) | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 1998 05 28 | 691 | 0.0 | 0.5+ | 2001 12 18 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | (0.2+ | 2.2−) |
| 1998 05 28 | 691 | 0.3+ | 0.4+ | 2001 12 18 | 704 | 0.1+ | 1.0+ | 2006 10 17 | 703 | 1.1+ | 1.3− |
| 2001 11 17 | 049 | 0.1+ | 0.1− | 2001 12 18 | 704 | 0.5− | 1.0+ | 2006 10 17 | 703 | (3.7+ | 1.1+) |
| 2001 11 17 | 049 | 0.3+ | 0.4− | 2001 12 18 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 1.1+ | 0.9− |
| 2001 11 18 | 049 | 0.9+ | 0.3+ | 2001 12 20 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.6+ |
| 2001 11 20 | 704 | 0.5− | 0.4+ | 2001 12 20 | 704 | 0.2− | 1.4+ | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2001 11 20 | 704 | 0.4− | 0.7+ | 2001 12 20 | 704 | 1.0− | 1.5+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.2− | 0.9+ | 2001 12 20 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.5− | 0.3+ | 2001 12 20 | 704 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.6+ | 2002 01 08 | 644 | 0.2− | 1.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2002 01 08 | 644 | 0.5− | 0.8− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2002 01 08 | 644 | 0.3− | 0.9− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 11 21 | 704 | 0.6− | 0.4+ | 2003 03 10 | 699 | 0.3+ | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.9− | 0.7+ | 2003 03 10 | 699 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.3+ | 1.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.6+ | 1.2− | 2003 03 10 | 699 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2003 03 10 | 699 | (1.9+ | 0.3+) | 2006 11 11 | 703 | 1.8− | 0.5− |
| 2001 12 11 | 704 | 0.1+ | 0.2+ | 2005 07 09 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 1.5− |

**(136716)∗ 1995 UA$_{15}$ = 2002 TR$_{262}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37051)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.39049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27763382 | $\omega$ | 237.26123 | | −0.16342897 | +0.98531795 | |
| $a$ | 2.3271326 | $\Omega$ | 23.48287 | | −0.85860521 | −0.11739760 | |
| $e$ | 0.0846980 | $i$ | 7.12019 | | −0.48588895 | −0.12396105 | |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1+ | 0.1− | 2001 05 24 | 699 | 0.5− | 0.5− | 2005 07 10 | E12 | 0.4+ | 0.5+ |
| 1995 10 17 | 691 | 0.4+ | 0.1− | 2001 05 24 | 699 | 0.0 | 0.6− | 2005 07 10 | E12 | 0.3− | 0.8+ |
| 1995 10 17 | 691 | 0.3+ | 0.1+ | 2001 05 24 | 699 | 0.1+ | 0.5+ | 2005 07 10 | E12 | 0.3− | 0.4+ |
| 1995 10 23 | 691 | 0.3+ | 0.2− | 2002 10 10 | 644 | 0.1+ | 0.3+ | 2005 07 10 | E12 | 0.2+ | 0.3+ |
| 1995 10 23 | 691 | 0.5+ | 0.3− | 2002 10 10 | 644 | 0.2+ | 0.4+ | 2005 08 12 | E12 | 0.6− | 0.6− |
| 1995 10 23 | 691 | 0.3+ | 0.1+ | 2002 10 10 | 644 | 0.4+ | 0.3+ | 2005 08 12 | E12 | (2.5+ | 1.0−) |
| 1995 11 17 | 691 | 0.9− | 0.0 | 2002 10 11 | 704 | 0.2− | 0.4− | 2005 08 12 | E12 | 0.2− | 0.6+ |
| 1995 11 17 | 691 | 0.2+ | 0.0 | 2002 10 11 | 704 | 0.8− | 0.0 | 2005 08 12 | E12 | 0.4+ | 0.1+ |
| 1995 11 17 | 691 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.5− |
| 1995 11 23 | 691 | 0.5− | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.3− |
| 1995 11 23 | 691 | 0.3− | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.3+ |
| 1995 11 23 | 691 | 0.6− | 0.4+ | 2004 02 13 | 691 | 0.7+ | 0.9+ | 2006 11 21 | 691 | 0.2− | 0.2− |
| 1997 03 07 | 691 | 0.5− | 0.3− | 2004 02 15 | 704 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.3+ | 0.1− |
| 1997 03 07 | 691 | 0.0 | 0.3− | 2004 02 15 | 704 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 1997 03 07 | 691 | 0.1+ | 0.2− | 2004 02 15 | 704 | 0.3+ | 0.0 | | | | |
| 2001 05 24 | 699 | 0.7− | 0.3− | 2004 02 15 | 704 | 0.1+ | 1.0+ | | | | |

**(136717)∗ 1995 UM$_{17}$ = 2002 RJ$_{47}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 34690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.75577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27168199 | $\omega$ | 238.34225 | | +0.95346118 | +0.29608947 | |
| $a$ | 2.3609972 | $\Omega$ | 104.38212 | | −0.25289415 | +0.88815823 | |
| $e$ | 0.2190237 | $i$ | 3.37024 | | −0.16418380 | +0.35143419 | |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1− | 0.1+ | 2002 09 13 | 704 | 0.8+ | 0.1+ | 2005 05 17 | G96 | 0.5− | 0.2+ |
| 1995 10 17 | 691 | 0.1− | 0.1+ | 2002 09 13 | 704 | 0.2− | 0.2+ | 2005 05 17 | G96 | 0.2− | 0.0 |
| 1995 10 17 | 691 | 0.1− | 0.3− | 2002 09 16 | 644 | 0.2+ | 0.9+ | 2005 05 17 | G96 | 0.1− | 0.1+ |
| 1995 10 23 | 691 | 0.4+ | 0.1+ | 2002 09 16 | 644 | 0.5+ | 1.1+ | 2005 05 19 | G96 | 0.4− | 0.0 |
| 1995 10 23 | 691 | 0.3+ | 0.1− | 2002 09 16 | 644 | 0.4+ | 1.0+ | 2005 05 19 | G96 | 0.1− | 0.1+ |
| 1995 10 23 | 691 | 0.1+ | 0.0 | 2002 09 17 | 608 | 0.6− | 1.1− | 2005 05 19 | G96 | 0.0 | 0.0 |
| 1995 10 28 | 691 | 0.2− | 0.0 | 2002 09 17 | 608 | 0.6− | 1.1− | 2005 05 19 | G96 | 0.0 | 0.1− |
| 1995 10 28 | 691 | 0.0 | 0.0 | 2002 09 17 | 608 | 0.8− | 0.7− | 2006 11 02 | G96 | 0.5− | 0.1+ |
| 1995 10 28 | 691 | 0.2+ | 0.1+ | 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 11 02 | G96 | 0.5− | 0.1+ |
| 2000 01 15 | 691 | 0.3− | 0.6+ | 2002 10 03 | 704 | 0.8+ | 0.2+ | 2006 11 02 | G96 | 0.5− | 0.1− |
| 2000 01 15 | 691 | 0.0 | 0.6+ | 2002 10 03 | 704 | 0.4+ | 0.1− | 2006 11 02 | G96 | 0.1− | 0.3+ |
| 2000 01 15 | 691 | 0.2− | 0.5+ | 2002 10 03 | 704 | 0.8+ | 0.2+ | 2006 11 02 | 703 | 0.5+ | 0.9+ |
| 2002 07 09 | 704 | 0.1− | 1.1+ | 2002 10 03 | 704 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 0.1− | 1.1− |
| 2002 07 09 | 704 | 0.1+ | 0.5+ | 2002 10 05 | 704 | 0.2+ | 0.5+ | 2006 11 02 | 703 | 0.1+ | 0.2+ |
| 2002 07 09 | 704 | 0.3+ | 0.8+ | 2002 10 05 | 704 | 0.5+ | 0.0 | 2006 11 02 | 703 | 0.7− | 0.7+ |
| 2002 08 12 | 704 | 0.5+ | 0.1− | 2002 10 05 | 704 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.2+ | 0.0 | 2002 10 05 | 704 | 0.0 | 0.6− | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2002 08 12 | 704 | 0.4+ | 0.3− | 2002 10 05 | 704 | 0.5+ | 0.3− | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2002 08 12 | 704 | 0.3− | 0.1− | 2002 10 11 | 704 | 1.2+ | 0.4+ | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2002 09 05 | 699 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 1.2+ | 0.1− | 2006 11 12 | D35 | 0.3+ | 0.3+ |
| 2002 09 05 | 704 | 1.4− | 0.2+ | 2002 10 11 | 704 | 0.9+ | 0.9− | 2006 11 12 | D35 | 0.1+ | 0.2+ |
| 2002 09 05 | 699 | 0.5− | 0.3− | 2002 10 11 | 704 | 0.3− | 0.0 | 2006 11 12 | D35 | 0.1+ | 0.3+ |
| 2002 09 05 | 704 | 1.3− | 0.2+ | 2002 11 11 | 704 | 1.3− | 1.3+ | 2006 11 17 | 704 | 0.8+ | 0.6− |
| 2002 09 05 | 699 | 0.4− | 0.3+ | 2002 11 11 | 704 | 1.2− | 0.3+ | 2006 11 17 | 704 | (1.4+ | 1.9+) |
| 2002 09 05 | 704 | 1.5− | 0.1+ | 2002 11 11 | 704 | 0.8− | 0.9+ | 2006 11 17 | 704 | 1.1− | 1.0− |
| 2002 09 05 | 699 | 0.2− | 0.1− | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.7− | 0.7+ |
| 2002 09 05 | 704 | 1.0− | 0.8+ | 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 1.3− | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.5− | 0.3+ | 2005 05 09 | 699 | 1.0− | 0.6− | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2002 09 06 | 704 | 0.5− | 0.5+ | 2005 05 09 | 699 | (0.1− | 1.8−) | 2006 11 20 | 704 | 0.9+ | 0.1+ |
| 2002 09 06 | 704 | 0.7− | 0.4+ | 2005 05 09 | 699 | 0.1− | 1.2+ | 2006 11 20 | 704 | 1.2+ | 0.4+ |
| 2002 09 06 | 704 | 0.8− | 0.5+ | 2005 05 09 | 699 | 1.4− | 0.8+ | 2006 11 20 | 704 | 0.3− | 0.5− |
| 2002 09 06 | 704 | 0.8− | 0.6+ | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.8+ |
| 2002 09 10 | 608 | 0.5+ | 0.2− | 2005 05 10 | 691 | 0.4+ | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.5+ |
| 2002 09 10 | 608 | 0.0 | 0.5− | 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.1+ |
| 2002 09 10 | 608 | 0.2+ | 0.1− | 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.9+ |
| 2002 09 13 | 704 | 0.4+ | 0.2+ | 2005 05 16 | 691 | 0.6+ | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.8+ |
| 2002 09 13 | 704 | 0.5+ | 0.1− | 2005 05 16 | 691 | 0.4+ | 0.2+ | | | | |
| 2002 09 13 | 704 | 0.5+ | 0.4+ | 2005 05 17 | G96 | (1.0+ | 1.5+) | | | | |

**(136718)∗ 1995 UP$_{18}$ = 1998 FJ$_{139}$**

Discovered 1995 Oct. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 32240)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.80278 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18347144 | $\omega$ | 75.96603 | | +0.16104649 | −0.98685820 | |
| $a$ | 3.0673057 | $\Omega$ | 4.82525 | | +0.83394740 | +0.12890145 | |
| $e$ | 0.0487752 | $i$ | 9.04643 | | +0.52782171 | +0.09744393 | |
| $P$ | 5.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 23 | 327 | 0.3− | 0.3+ | 2001 12 10 | 446 | 0.9+ | 0.2− | 2006 10 01 | 291 | 0.3− | 0.1− |
| 1995 08 23 | 327 | 0.8+ | 0.2+ | 2001 12 10 | 446 | 0.4− | 0.2− | 2006 10 01 | 291 | 0.3− | 0.1− |
| 1995 08 23 | 327 | 0.5+ | 0.5+ | 2001 12 14 | 446 | 0.1+ | 0.0 | 2006 10 01 | 291 | 0.3− | 0.0 |
| 1995 08 23 | 327 | 0.1+ | 1.0+ | 2001 12 22 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 1995 10 18 | 691 | 0.0 | 0.0 | 2001 12 22 | 704 | 1.4+ | 0.7+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1995 10 18 | 691 | 0.1− | 0.5+ | 2001 12 22 | 704 | (1.7+ | 1.9+) | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 1995 10 18 | 691 | 0.1− | 0.1− | 2001 12 23 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1995 10 23 | 691 | 0.3+ | 0.1+ | 2001 12 23 | 704 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 1995 10 23 | 691 | 0.1+ | 0.1+ | 2001 12 23 | 704 | 1.0− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1995 10 23 | 691 | 0.2− | 0.1− | 2001 12 23 | 704 | 0.4− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 1995 10 28 | 691 | 0.9− | 0.2+ | 2001 12 23 | 704 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.4− | 0.3− |
| 1995 10 28 | 691 | 0.5− | 0.1− | 2003 01 28 | 645 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 1995 10 28 | 691 | 0.4− | 0.1+ | 2003 01 28 | 645 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1998 03 28 | 704 | 0.9+ | 1.3− | 2003 02 28 | 704 | 0.7+ | 1.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 1998 03 28 | 704 | (1.2− | 2.3−) | 2003 02 28 | 704 | 0.4+ | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1998 03 28 | 704 | (2.5− | 1.2+) | 2003 02 28 | 704 | 0.1− | 0.9+ | 2006 11 19 | 704 | 0.2+ | 0.6− |
| 1998 03 28 | 704 | 0.5− | 1.7− | 2003 02 28 | 704 | 1.3+ | 1.4+ | 2006 11 19 | 704 | 1.0− | 0.3+ |
| 1998 03 29 | 704 | 1.2+ | 1.0+ | 2003 02 28 | 704 | 1.3+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 1998 03 29 | 704 | (2.4+ | 1.3−) | 2003 03 07 | 644 | 0.2+ | 1.0+ | 2006 11 22 | 704 | 1.2+ | 0.6+ |
| 1998 03 29 | 704 | 0.5+ | 0.3− | 2003 03 07 | 644 | 0.3+ | 0.6+ | 2006 11 22 | 704 | 0.2− | 0.7− |
| 1998 03 29 | 704 | (2.6+ | 1.1+) | 2003 03 07 | 644 | 0.3+ | 0.5+ | 2006 11 22 | 704 | (1.6+ | 1.7+) |
| 1998 03 29 | 704 | (0.1− | 2.7+) | 2003 03 11 | 291 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2001 12 09 | 704 | 0.4+ | 0.5− | 2003 03 11 | 291 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.4+ | 1.0+ |
| 2001 12 09 | 704 | 0.0 | 0.0 | 2003 03 11 | 291 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2001 12 09 | 704 | 0.5+ | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.5+ | 0.5− |
| 2001 12 09 | 704 | 0.9+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2001 12 10 | 446 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.4− |

**(136719)∗ 1995 UT$_{18}$**

Discovered 1995 Oct. 18 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.62061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27501652 | $\omega$ | 269.44825 | | −0.51559974 | −0.85511747 | |
| $a$ | 2.3418740 | $\Omega$ | 211.77607 | | +0.82133977 | −0.47525948 | |
| $e$ | 0.0716165 | $i$ | 5.90090 | | +0.24404487 | −0.20712926 | |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 691 | 0.3+ | 0.4+ | 2006 09 24 | 701 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 1995 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 24 | 701 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1995 08 29 | 691 | 0.0 | 0.1+ | 2006 09 24 | 701 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.6− | 0.1+ |
| 1995 10 18 | 691 | 0.4− | 0.0 | 2006 09 25 | 701 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.4− | 0.1− |
| 1995 10 18 | 691 | 0.3− | 0.1+ | 2006 09 25 | 701 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1995 10 23 | 691 | 0.1− | 0.1− | 2006 09 25 | 701 | 0.7+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 1995 10 23 | 691 | 0.6− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 1995 10 23 | 691 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 1995 10 27 | 691 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 1995 10 27 | 691 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | (2.3− | 2.4−) |
| 1995 10 27 | 691 | 0.3+ | 0.0 | 2006 09 25 | 701 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 1.4− |
| 2001 05 17 | 691 | 0.2+ | 0.9+ | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | (3.3+ | 0.3+) |
| 2001 05 17 | 691 | 0.3+ | 1.0+ | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2001 05 17 | 691 | 0.1+ | 1.3+ | 2006 10 12 | 691 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2004 02 11 | 644 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.3− | 1.1+ |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2004 02 11 | 644 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.3− | 1.3+ |
| 2004 03 11 | 644 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 1.4+ | 0.3+ |
| 2004 03 11 | 644 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.8+ | 0.2+ |
| 2004 03 11 | 644 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.6+ | 1.1+ |
| 2004 03 15 | 291 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2004 03 15 | 291 | 0.9− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.8− | 1.2+ |
| 2004 03 15 | 291 | (1.7− | 0.0 ) | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.2+ |
| 2004 03 16 | 291 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 27 | 703 | 1.5+ | 0.3− |
| 2004 03 16 | 291 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.1− | 1.2+ |
| 2004 03 16 | 291 | 0.7+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 27 | 703 | 1.7− | 0.4+ |
| 2006 09 24 | 701 | 0.2+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.2− | | | | |

**(136720)∗ 1995 UD$_{24}$**

Discovered 1995 Oct. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.78715 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17707194 | $\omega$ | 316.74608 | | +0.36516251 | | +0.93077534 |
| $a$ | 3.1407707 | $\Omega$ | 334.65605 | | −0.84245146 | | +0.32229681 |
| $e$ | 0.0418776 | $i$ | 2.37109 | | −0.39614628 | | +0.17257473 |
| $P$ | 5.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.4+ | 0.3− | 2004 05 14 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 1995 10 19 | 691 | 0.8+ | 0.1− | 2004 05 14 | 691 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 1995 10 19 | 691 | 0.1+ | 0.6− | 2004 05 14 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 1995 10 24 | 691 | 0.1+ | 0.0 | 2004 05 23 | 691 | 0.2+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 1995 10 24 | 691 | 0.2+ | 0.1+ | 2004 05 23 | 691 | 0.2− | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 1995 10 24 | 691 | 0.0 | 0.2− | 2004 05 23 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 1995 11 23 | 691 | 0.3− | 0.1+ | 2005 07 09 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1995 11 23 | 691 | 0.2− | 0.1+ | 2005 07 09 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 1995 11 23 | 691 | 0.2− | 0.5+ | 2005 07 09 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 1995 11 30 | 691 | 0.9− | 0.2− | 2005 07 16 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.4− | 0.0 |
| 1995 11 30 | 691 | 0.2− | 0.7+ | 2005 07 16 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.1− |
| 1995 11 30 | 691 | 0.1− | 0.4+ | 2005 07 16 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.5− | 0.4+ |
| 2000 09 28 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2000 09 28 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2000 09 28 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2003 02 03 | 644 | (4.1− | 1.2+) | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.5+ | 0.3− |
| 2003 02 03 | 644 | (2.5− | 1.7+) | 2006 10 03 | 691 | 0.2+ | 0.4− | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2003 02 03 | 644 | (1.7− | 1.5+) | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.4+ |

**(136721)∗ 1995 UC$_{25}$ = 2001 KU$_{14}$**

Discovered 1995 Oct. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 12849)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.15285 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26498238 | $\omega$ | 127.44760 | | −0.77925013 | | +0.62212047 |
| $a$ | 2.4006272 | $\Omega$ | 91.15147 | | −0.59626568 | | −0.69875199 |
| $e$ | 0.1687579 | $i$ | 4.34417 | | −0.19296753 | | −0.35314556 |
| $P$ | 3.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.3− | 0.5− | 2001 05 25 | 704 | 0.0 | 1.1+ | 2004 01 27 | 691 | 0.2+ | 0.1− |
| 1995 10 19 | 691 | 0.5− | 0.0 | 2001 05 25 | 704 | 0.5+ | 1.2+ | 2004 01 27 | 691 | 0.2+ | 0.1+ |
| 1995 10 19 | 691 | 0.4− | 0.2− | 2001 05 25 | 704 | 0.4+ | 0.8+ | 2004 01 27 | 691 | 0.2+ | 0.1+ |
| 1995 10 25 | 691 | 0.3+ | 0.3+ | 2001 06 11 | 699 | 0.8+ | 0.9+ | 2004 01 31 | 691 | 0.2+ | 0.2+ |
| 1995 10 25 | 691 | 0.4+ | 0.3+ | 2001 06 11 | 699 | (0.5+ | 1.5+) | 2004 01 31 | 691 | 0.1− | 0.4+ |
| 1995 10 25 | 691 | 0.5+ | 0.0 | 2001 06 11 | 699 | 0.3− | 0.1− | 2004 01 31 | 691 | 0.3+ | 0.4+ |
| 2001 04 23 | 704 | 0.6− | 0.3− | 2001 06 11 | 699 | 0.5− | 0.0 | 2006 10 18 | 691 | 0.5− | 0.5+ |
| 2001 04 23 | 704 | 0.2+ | 0.9+ | 2001 06 20 | 699 | 1.4+ | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.7+ |
| 2001 04 23 | 704 | 0.7+ | 0.0 | 2001 06 20 | 699 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.7+ |
| 2001 04 23 | 704 | 0.3+ | 0.4+ | 2001 06 20 | 699 | 0.1− | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2001 05 18 | 704 | 0.1+ | 0.2+ | 2001 06 20 | 699 | 0.7− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.4+ |
| 2001 05 18 | 704 | 0.3+ | 0.8+ | 2002 09 30 | 704 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.5+ |
| 2001 05 18 | 704 | 0.7+ | 0.8+ | 2002 09 30 | 704 | 0.3+ | 1.1+ | 2006 10 21 | G96 | 0.3+ | 0.3+ |
| 2001 05 18 | 704 | 0.2− | 0.7+ | 2002 09 30 | 704 | (2.1+ | 0.8+) | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2001 05 18 | 704 | 0.1− | 0.9+ | 2003 12 29 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2001 05 22 | 704 | 0.6− | 0.2− | 2003 12 29 | 691 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2001 05 22 | 704 | 0.2− | 1.4+ | 2003 12 29 | 691 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.2+ |
| 2001 05 22 | 704 | 0.3− | 0.1− | 2004 01 22 | 704 | 0.4− | 0.7+ | 2006 11 01 | G96 | 0.3+ | 0.3+ |
| 2001 05 22 | 704 | 1.3+ | 1.5+ | 2004 01 22 | 704 | 0.6+ | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.3+ |
| 2001 05 25 | 704 | 0.9+ | 0.4+ | 2004 01 22 | 704 | 1.4+ | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.3+ |
| 2001 05 25 | 704 | 0.7+ | 1.2+ | 2004 01 22 | 704 | 0.9− | 0.2+ | | | | |

**(136722)∗ 1995 UO$_{27}$**

Discovered 1995 Oct. 20 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.41893 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17670596 | $\omega$ | 59.14345 | | +0.09456927 | | −0.99274115 |
| $a$ | 3.1451058 | $\Omega$ | 25.74629 | | +0.84496442 | | +0.04057518 |
| $e$ | 0.0745301 | $i$ | 9.84968 | | +0.52639508 | | +0.11321956 |
| $P$ | 5.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.0 | 0.6− | 1998 03 25 | 691 | 0.6+ | 0.4+ | 2004 04 24 | 691 | 0.3+ | 0.5+ |
| 1995 10 01 | 691 | 0.0 | 0.3− | 1998 04 04 | 691 | 0.5+ | 0.0 | 2004 04 24 | 691 | 0.3− | 0.5+ |
| 1995 10 01 | 691 | 0.1− | 0.1− | 1998 04 04 | 691 | 0.2+ | 0.1− | 2004 04 24 | 691 | 0.5− | 0.1+ |
| 1995 10 20 | 691 | 0.2+ | 0.1− | 1998 04 04 | 691 | 0.5+ | 0.3− | 2006 08 29 | 691 | 0.2+ | 0.3+ |
| 1995 10 20 | 691 | 0.1− | 0.2− | 2001 10 18 | 691 | 0.1− | 0.3− | 2006 08 29 | 691 | 0.0 | 0.4+ |
| 1995 10 20 | 691 | 0.1− | 0.1− | 2001 10 18 | 691 | 0.3− | 0.5− | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 1995 10 26 | 691 | 0.6+ | 0.3− | 2001 10 18 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.1− |
| 1995 10 26 | 691 | 0.3+ | 0.1− | 2001 10 21 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.3+ | 1.4+ |
| 1995 10 26 | 691 | 0.1+ | 0.1− | 2001 10 21 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.6− |
| 1998 03 18 | 691 | 0.7− | 0.6− | 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.5− |
| 1998 03 18 | 691 | 0.5− | 0.8− | 2001 10 21 | 704 | 1.6− | 1.9+ | 2006 10 03 | G96 | 0.4+ | 0.2− |
| 1998 03 18 | 691 | 0.6− | 0.4− | 2001 11 12 | 704 | 0.8− | 0.6+ | 2006 10 03 | G96 | 0.3+ | 0.4− |
| 1998 03 25 | 691 | 0.3− | 0.0 | 2001 11 12 | 704 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 1998 03 25 | 691 | 0.3+ | 0.1+ | 2001 11 12 | 704 | 1.2− | 1.3+ | 2006 10 03 | G96 | 0.6+ | 0.1+ |

**(136723)∗ 1995 UC$_{31}$ = 2002 RF$_{14}$**

Discovered 1995 Oct. 20 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 34691)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.73626 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26939289 | $\omega$ | 149.59047 | | +0.55868778 | | +0.82914044 |
| $a$ | 2.3743530 | $\Omega$ | 154.35870 | | −0.76987802 | | +0.52736121 |
| $e$ | 0.2107450 | $i$ | 2.62940 | | −0.30847333 | | +0.18551627 |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.1− | 0.0 | 2002 09 11 | 644 | 0.0 | 0.5+ | 2005 04 18 | 691 | 0.2+ | 0.2+ |
| 1995 10 18 | 691 | 0.4+ | 0.0 | 2002 09 13 | 644 | 0.1− | 0.2+ | 2005 04 18 | 691 | 0.1+ | 0.5+ |
| 1995 10 18 | 691 | 0.6+ | 0.0 | 2002 09 13 | 644 | 0.1− | 0.3+ | 2005 04 18 | 691 | 0.1+ | 0.2+ |
| 1995 10 20 | 691 | 0.5+ | 0.1− | 2002 09 13 | 644 | 0.2+ | 0.4+ | 2005 05 13 | 691 | 0.3+ | 0.2+ |
| 1995 10 20 | 691 | 0.8− | 0.2− | 2002 09 15 | 608 | 1.0− | 0.5− | 2005 05 13 | 691 | 0.0 | 0.2+ |
| 1995 10 20 | 691 | 0.9− | 0.2− | 2002 09 15 | 608 | 0.8− | 0.3− | 2005 05 13 | 691 | 0.1− | 0.2+ |
| 1995 10 25 | 691 | 0.0 | 0.5− | 2002 09 15 | 608 | 0.8− | 0.4− | 2006 10 16 | 703 | (4.2+ | 1.5−) |
| 1995 10 25 | 691 | 0.3− | 0.0 | 2002 09 28 | 608 | (2.2− | 1.8−) | 2006 10 16 | 703 | (1.7+ | 0.9+) |
| 1995 10 25 | 691 | 0.2− | 0.2+ | 2002 09 28 | 608 | (1.9− | 1.8−) | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 1997 01 31 | 691 | 0.6+ | 0.3− | 2002 09 28 | 608 | (1.8− | 1.5−) | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 1997 01 31 | 691 | 0.4+ | 0.2+ | 2002 10 03 | 704 | 0.2− | 1.1+ | 2006 10 17 | G96 | 0.3+ | 0.1+ |
| 1997 01 31 | 691 | 0.1+ | 0.1+ | 2002 10 03 | 704 | 0.1+ | 1.1+ | 2006 10 17 | G96 | 0.5+ | 0.1− |
| 2002 08 31 | 699 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.5− | 0.2+ | 2006 10 17 | G96 | 0.5− | 0.3+ |
| 2002 08 31 | 699 | 0.4+ | 0.7+ | 2002 10 03 | 704 | 0.5− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2002 08 31 | 699 | 1.1+ | 0.5+ | 2002 10 03 | 704 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2002 08 31 | 699 | 0.2− | 0.1+ | 2002 10 04 | 704 | 0.2− | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2002 09 04 | 699 | 0.6+ | 0.6+ | 2002 10 04 | 704 | 0.0 | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.2− | 0.1− | 2002 10 04 | 704 | 0.3− | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 09 04 | 699 | 0.5+ | 0.5+ | 2002 10 04 | 704 | 0.9− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.4+ |
| 2002 09 04 | 699 | 0.5+ | 0.9+ | 2002 10 11 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2002 09 05 | 704 | 0.8− | 0.4− | 2002 10 11 | 704 | 0.6− | 0.5+ | 2006 11 12 | G96 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.7+ | 0.2− | 2002 10 11 | 704 | 0.7+ | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.8+ | 1.0− | 2005 04 10 | 691 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.5+ | 1.3− | 2005 04 10 | 691 | 0.0 | 0.4+ | 2006 11 12 | G96 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.0 | 0.3− | 2005 04 10 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 09 07 | 704 | 1.0+ | 0.1− | 2005 04 11 | G96 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 09 07 | 704 | 0.4+ | 0.4− | 2005 04 11 | G96 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 09 11 | 644 | 0.3− | 0.4+ | 2005 04 11 | G96 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2002 09 11 | 644 | 0.1− | 0.6+ | 2005 04 11 | G96 | 0.1− | 0.1− | | | | |

**(136724)∗ 1995 UK$_{33}$**

Discovered 1995 Oct. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.83448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17806866 | $\omega$ | 350.00016 | | +0.72005020 | −0.67422926 | |
| $a$ | 3.1290396 | $\Omega$ | 53.69848 | | +0.64990163 | +0.57232642 | |
| $e$ | 0.2254950 | $i$ | 11.75179 | | +0.24321922 | +0.46675193 | |
| $P$ | 5.53 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.2− | 0.1+ | 2001 12 09 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.2− |
| 1995 10 21 | 691 | 0.1+ | 0.2+ | 2001 12 09 | 704 | 0.3− | 0.6− | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 1995 10 21 | 691 | 0.0 | 0.3+ | 2001 12 19 | 644 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 1995 10 26 | 691 | 0.1− | 0.1− | 2001 12 19 | 644 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 1995 10 26 | 691 | 0.1− | 0.1− | 2001 12 19 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 1995 10 26 | 691 | 0.0 | 0.2− | 2001 12 22 | 704 | 0.5− | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 1995 11 14 | 691 | 0.4− | 0.3− | 2001 12 22 | 704 | 0.1− | 1.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1995 11 14 | 691 | 0.3− | 0.3− | 2001 12 22 | 704 | 0.5− | 1.5+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 1995 11 14 | 691 | 0.4− | 0.3− | 2003 03 31 | 645 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 1995 11 19 | 691 | 0.5+ | 0.5− | 2003 03 31 | 645 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 1995 11 19 | 691 | 1.1+ | 0.1+ | 2004 04 28 | 691 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 1995 11 19 | 691 | 0.2+ | 0.3− | 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 1995 11 20 | 691 | 0.6+ | 0.8− | 2004 04 28 | 691 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.3+ |
| 1995 11 20 | 691 | 0.3+ | 0.8− | 2004 05 19 | 291 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.9− | 0.1+ |
| 1995 11 20 | 691 | 0.4+ | 0.8− | 2004 05 19 | 291 | 0.5+ | 0.8+ | 2006 10 28 | 703 | 0.6− | 0.0 |
| 1998 04 17 | 691 | 0.3+ | 0.3+ | 2004 05 19 | 291 | 0.5+ | 0.6+ | 2006 10 28 | 703 | 0.4− | 0.3− |
| 1998 04 17 | 691 | 0.1− | 0.8+ | 2006 09 18 | 703 | 0.9− | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.3− |
| 1998 04 17 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 11 10 | 704 | 0.7+ | 0.7+ |
| 1998 04 25 | 691 | 0.2+ | 0.6− | 2006 09 18 | 703 | 0.5− | 0.3− | 2006 11 10 | 704 | 0.1+ | 0.9+ |
| 1998 04 25 | 691 | 0.6+ | 0.9− | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 11 10 | 704 | 0.1− | 1.4+ |
| 1998 04 25 | 691 | 0.1− | 1.0− | 2006 09 21 | 699 | 0.5+ | 0.1+ | 2006 11 10 | 704 | 0.7+ | 0.5+ |
| 1998 04 27 | 691 | 0.8+ | 0.4− | 2006 09 21 | 699 | 0.2− | 0.8+ | 2006 11 14 | 704 | 0.2+ | 0.1− |
| 1998 04 27 | 691 | 0.0 | 0.4+ | 2006 09 21 | 699 | 0.9− | 0.3+ | 2006 11 14 | 704 | (1.5+ | 2.1+) |
| 1998 04 27 | 691 | 0.2+ | 0.5− | 2006 09 25 | 699 | 0.8− | 1.1+ | 2006 11 14 | 704 | 0.1− | 1.2+ |
| 1998 05 02 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.1− | 2006 11 14 | 704 | (0.2− | 1.6+) |
| 1998 05 02 | 691 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.6− | 0.3+ | 2006 11 14 | 704 | 1.4+ | 0.7+ |
| 1998 05 02 | 691 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2001 11 10 | 644 | 0.3+ | 1.3+ | 2006 09 26 | 704 | 0.1+ | 0.9+ | 2006 11 17 | 704 | 1.1− | 0.4− |
| 2001 11 10 | 644 | 0.2+ | 1.2+ | 2006 09 26 | 704 | 0.5− | 0.5+ | 2006 11 17 | 704 | 0.9− | 0.4− |
| 2001 11 10 | 644 | 0.3+ | 1.3+ | 2006 09 26 | 704 | 0.7− | 0.5+ | 2006 11 17 | 704 | 1.1− | 0.3− |
| 2001 11 11 | 704 | 0.8− | 1.0+ | 2006 09 26 | 704 | 0.5+ | 0.6+ | 2006 11 17 | 704 | 0.8− | 0.5+ |
| 2001 11 11 | 704 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2001 11 11 | 704 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2001 11 11 | 704 | (2.2+ | 1.8−) | 2006 09 26 | 703 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2001 11 24 | 704 | 0.9+ | 0.4− | 2006 09 26 | 703 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2001 11 24 | 704 | 1.5+ | 0.6+ | 2006 09 29 | 699 | 0.1+ | 0.8+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2001 11 24 | 704 | 1.0+ | 0.5+ | 2006 09 29 | 699 | 0.1+ | 0.9+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2001 11 24 | 704 | 0.6− | 0.8+ | 2006 09 29 | 699 | 0.7− | 1.4+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2001 12 09 | 704 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.5− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.2− | | | | |

**(136725)∗ 1995 UP$_{40}$**

Discovered 1995 Oct. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.48969 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17057722 | $\omega$ | 214.06775 | | +0.54281753 | −0.83842902 | |
| $a$ | 3.2199962 | $\Omega$ | 203.17283 | | +0.79556148 | +0.53195928 | |
| $e$ | 0.0317059 | $i$ | 7.13050 | | +0.26913019 | +0.11855845 | |
| $P$ | 5.78 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 24 | 691 | 0.1+ | 0.0 | 1995 10 27 | 691 | 0.9− | 0.1+ | 2004 03 26 | 704 | 0.6− | 0.6+ |
| 1993 04 24 | 691 | 0.4+ | 0.4+ | 1995 10 27 | 691 | 0.8− | 0.0 | 2004 03 26 | 704 | 0.5− | 0.3+ |
| 1993 04 24 | 691 | 0.6− | 0.6− | 1995 10 27 | 691 | 0.8− | 0.7+ | 2004 03 26 | 704 | 0.2− | 0.2− |
| 1993 05 24 | 691 | 0.3+ | 0.1+ | 2001 10 07 | 644 | 0.5− | 0.6+ | 2004 03 26 | 704 | 0.7− | 1.5+ |
| 1993 05 24 | 691 | 0.4+ | 0.4+ | 2001 10 07 | 644 | 0.5− | 0.5+ | 2004 03 27 | 704 | 1.2+ | 0.0 |
| 1993 05 24 | 691 | 0.2− | 0.6+ | 2001 10 07 | 644 | 0.4− | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.7+ |
| 1995 08 22 | 691 | 0.3+ | 0.1− | 2001 10 23 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.1− | 1.0+ |
| 1995 08 22 | 691 | 0.0 | 0.1− | 2001 10 23 | 704 | 0.6+ | 0.9+ | 2004 04 15 | 691 | 0.1+ | 0.4+ |
| 1995 08 22 | 691 | 0.2+ | 0.1− | 2001 10 23 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 691 | 0.1+ | 0.1+ |
| 1995 08 27 | 691 | 0.2− | 0.1+ | 2001 10 23 | 704 | 0.1+ | 0.7+ | 2004 04 15 | 691 | 0.4+ | 0.2− |
| 1995 08 27 | 691 | 0.2+ | 0.1− | 2001 10 24 | 704 | 0.3− | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.7+ |
| 1995 08 27 | 691 | 0.2+ | 0.3− | 2001 10 24 | 704 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.3+ | 0.6+ |
| 1995 10 18 | 691 | 0.6+ | 0.0 | 2001 10 24 | 704 | 0.0 | 0.8+ | 2006 08 16 | 644 | 0.1+ | 0.2+ |
| 1995 10 18 | 691 | 0.4+ | 0.0 | 2004 03 26 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.2− | 0.0 |
| 1995 10 18 | 691 | 0.5+ | 0.0 | 2004 03 26 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.6+ |
| 1995 10 23 | 691 | 0.1+ | 0.3+ | 2004 03 26 | 704 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.3+ |
| 1995 10 23 | 691 | 0.2− | 0.2− | 2004 03 26 | 704 | 0.4− | 0.3+ | 2006 09 14 | 703 | 1.9− | 1.3− |
| 1995 10 23 | 691 | 0.2− | 0.0 | 2004 03 26 | 704 | 0.5− | 0.2+ | | | | |

**(136726)∗ 1995 UH$_{41}$ = 1993 FW$_{66}$**

Discovered 1995 Oct. 23 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 16731)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.31675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18164229 | $\omega$ | 110.58431 | | +0.71527743 | +0.69581885 | |
| $a$ | 3.0878634 | $\Omega$ | 205.46129 | | −0.68415041 | +0.67826731 | |
| $e$ | 0.0778757 | $i$ | 8.68525 | | −0.14253563 | +0.23619819 | |
| $P$ | 5.43 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (1.7− | 3.2+) | 2004 04 13 | 691 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1993 03 22 | 809 | 0.2+ | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.2+ |
| 1995 08 28 | 691 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.3− | 1.4+ | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 1995 08 28 | 691 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.5− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 1995 08 28 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.8+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1995 10 23 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 1.3− | 0.5− | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 1995 10 23 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.2− |
| 1995 10 23 | 691 | 0.4− | 0.4− | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 1995 10 28 | 691 | 0.4− | 0.3− | 2006 09 15 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 1995 10 28 | 691 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 1998 03 23 | 691 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 1998 03 23 | 691 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 1998 03 23 | 691 | 0.5+ | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.7− |
| 2001 12 11 | 704 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.9− |
| 2001 12 11 | 704 | 0.9− | 0.2+ | 2006 09 19 | 691 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2001 12 11 | 704 | 0.0 | 0.9+ | 2006 10 11 | 691 | 1.3− | 0.2+ | 2006 11 11 | 703 | 1.3+ | 0.8− |
| 2004 03 27 | 704 | 0.6+ | 1.2+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.5− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2004 03 27 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.5− | 0.0 |
| 2004 04 12 | 699 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2004 04 12 | 699 | 0.5− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2004 04 12 | 699 | 1.2+ | 1.1+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2004 04 12 | 699 | (0.8+ | 1.8+) | 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.5+ | | | | |

**(136727)∗ 1995 $UB_{51}$ = 2002 $RW_{156}$**

Discovered 1995 Oct. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37051)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.18964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27164537 | $\omega$ | 52.29168 | | −0.14093280 | +0.98987874 | |
| $a$ | 2.3612094 | $\Omega$ | 209.61938 | | −0.91861145 | −0.13702944 | |
| $e$ | 0.1754886 | $i$ | 1.93334 | | −0.36917604 | −0.03691888 | |
| $P$ | 3.63 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 11 | 691 | 0.1− | 0.1+ | 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.5− | 0.6− |
| 1994 04 11 | 691 | 0.2− | 0.0 | 2005 04 02 | G96 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1− |
| 1994 04 11 | 691 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.6− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.1+ |
| 1995 10 19 | 691 | 0.1− | 0.1+ | 2005 04 02 | G96 | 0.3− | 0.3− | 2006 10 04 | G96 | 0.3− | 0.1− |
| 1995 10 19 | 691 | 0.0 | 0.2+ | 2005 04 07 | 691 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 1995 10 19 | 691 | 0.2+ | 0.1− | 2005 04 07 | 691 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1− |
| 1995 10 22 | 691 | 0.1+ | 0.0 | 2005 04 07 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.0 |
| 1995 10 22 | 691 | 0.2+ | 0.3− | 2005 04 29 | 185 | 0.4− | 0.6+ | 2006 10 12 | 691 | 0.3− | 0.0 |
| 1995 10 22 | 691 | 0.2+ | 0.5+ | 2005 04 29 | 185 | (2.0− | 0.1+) | 2006 10 20 | 691 | 0.4− | 0.1+ |
| 1995 10 28 | 691 | 0.3− | 0.6− | 2005 04 29 | 185 | 0.8− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.1− |
| 1995 10 28 | 691 | 0.4+ | 0.2− | 2005 04 30 | 185 | 0.3− | 1.2− | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2005 05 04 | E12 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 05 04 | E12 | 0.7− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 09 11 | 644 | 0.3+ | 0.7+ | 2005 05 04 | E12 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.4+ |
| 2002 09 11 | 644 | 0.0 | 0.4+ | 2005 05 04 | E12 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2002 09 11 | 644 | 0.2− | 0.5+ | 2005 05 09 | 699 | 0.8+ | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.3+ |
| 2002 09 14 | 644 | 0.6− | 0.5+ | 2005 05 09 | 699 | 0.7+ | 1.2− | 2006 10 29 | 691 | 0.2− | 0.4+ |
| 2002 09 14 | 644 | 0.6− | 0.6+ | 2005 05 09 | 699 | 0.9− | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.5+ |
| 2002 09 14 | 644 | 0.7− | 0.4+ | 2005 05 09 | 699 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.1− | 0.3+ |
| 2002 09 17 | 644 | 0.3− | 0.7+ | 2005 05 13 | 704 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2002 09 17 | 644 | 0.6− | 0.6+ | 2005 05 13 | 704 | 1.0+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2002 09 17 | 644 | 0.1− | 0.7+ | 2005 05 13 | 704 | 0.8+ | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2005 03 11 | G96 | 0.1+ | 0.5+ | 2005 05 13 | 704 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2005 03 11 | G96 | 0.3− | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.3+ |
| 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.2+ |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.4− | 2006 11 22 | G96 | 0.1− | 0.1− |

**(136728)∗ 1995 $UW_{52}$ = 2001 $XK_{35}$**

Discovered 1995 Oct. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 21978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.52073 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18039325 | $\omega$ | 84.57389 | | −0.02551970 | −0.99939366 | |
| $a$ | 3.1021004 | $\Omega$ | 7.02065 | | +0.82320176 | −0.03445193 | |
| $e$ | 0.0997281 | $i$ | 11.17408 | | +0.56717512 | +0.00503665 | |
| $P$ | 5.46 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.9+ | 0.0 | 2001 12 23 | 704 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1995 10 18 | 691 | 0.8+ | 0.1+ | 2001 12 23 | 704 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 1995 10 18 | 691 | 0.7+ | 0.1+ | 2001 12 23 | 704 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 1995 10 23 | 691 | 0.4− | 0.2+ | 2003 02 07 | 333 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 1995 10 23 | 691 | 0.3− | 0.4− | 2003 02 07 | 333 | 0.8− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 1995 10 23 | 691 | 0.3− | 0.1− | 2003 02 07 | 333 | 0.0 | 0.5− | 2006 10 17 | 703 | 0.4− | 0.7− |
| 1995 10 28 | 691 | 0.7− | 0.1+ | 2003 02 07 | 333 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.8− | 0.1− |
| 1995 10 28 | 691 | 0.5− | 0.2− | 2003 02 28 | 704 | 1.0+ | 1.1− | 2006 10 17 | 703 | 0.5− | 0.5− |
| 1995 10 28 | 691 | 0.6− | 0.6+ | 2003 02 28 | 704 | 0.9+ | 0.5+ | 2006 10 17 | 703 | 0.6+ | 1.0− |
| 2001 10 15 | 704 | 0.6− | 0.1− | 2003 02 28 | 704 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.4+ |
| 2001 10 15 | 704 | 0.0 | 0.5+ | 2003 02 28 | 704 | 1.0+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2001 10 15 | 704 | 0.2− | 0.5+ | 2003 03 06 | 699 | 0.9+ | 0.8+ | 2006 10 17 | 703 | 1.1+ | 0.4+ |
| 2001 10 15 | 704 | 1.0− | 0.2+ | 2003 03 06 | 699 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2001 10 15 | 704 | 0.2+ | 1.3+ | 2003 03 06 | 699 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.5+ | 0.1+ |
| 2001 11 11 | 704 | 0.1− | 0.0 | 2003 03 06 | 699 | 0.7+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.4+ | 0.2+ | 2003 03 07 | 699 | 0.2+ | 1.5+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2001 11 11 | 704 | 0.3− | 0.4+ | 2003 03 07 | 699 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.3+ | 0.3+ |
| 2001 11 11 | 704 | 0.3− | 0.2+ | 2003 03 07 | 699 | 1.2− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2001 11 11 | 704 | 0.3− | 0.1+ | 2003 03 07 | 699 | 0.7− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2001 12 09 | 704 | 0.5+ | 0.7− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2001 12 09 | 704 | 0.3+ | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2001 12 09 | 704 | 1.0+ | 0.7− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2001 12 09 | 704 | 1.0+ | 0.5− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.4− | 0.3+ |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.8+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.6− | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2001 12 22 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 12 22 | 704 | 1.1+ | 0.7− | 2006 09 20 | 704 | 1.3+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 12 22 | 704 | 0.7− | 0.5− | 2006 09 20 | 704 | 0.9+ | 0.9− | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2001 12 22 | 704 | 0.3− | 0.5− | 2006 09 20 | 704 | 0.2+ | 0.1+ | | | | |
| 2001 12 23 | 704 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1− | | | | |

**(136729)∗ 1995 $UR_{57}$ = 2000 $RQ_{89}$**

Discovered 1995 Oct. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 16732)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.47835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18918076 | $\omega$ | 189.86234 | | +0.83582686 | −0.54802075 | |
| $a$ | 3.0052786 | $\Omega$ | 203.45961 | | +0.50911593 | +0.79600172 | |
| $e$ | 0.1772929 | $i$ | 4.70589 | | +0.20541283 | +0.25701073 | |
| $P$ | 5.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 15 | 691 | 0.0 | 0.2− | 2002 01 14 | 704 | 0.6− | 0.4− | 2005 09 03 | 644 | 0.0 | 0.3+ |
| 1990 11 15 | 691 | 0.3+ | 0.1+ | 2002 01 14 | 704 | 0.4− | 0.8+ | 2005 09 03 | 644 | 0.1+ | 0.2+ |
| 1990 11 15 | 691 | 0.0 | 0.0 | 2002 01 14 | 704 | 0.5+ | 1.1+ | 2005 10 03 | 291 | 0.2+ | 0.5+ |
| 1995 10 17 | 691 | 0.2+ | 0.0 | 2005 06 29 | 644 | 0.2− | 0.4+ | 2005 10 03 | 291 | 0.8+ | 0.3+ |
| 1995 10 17 | 691 | 0.9+ | 0.6− | 2005 06 29 | 644 | 0.1+ | 0.4+ | 2005 10 03 | 291 | 0.5+ | 0.4+ |
| 1995 10 17 | 691 | 0.2+ | 0.2− | 2005 06 29 | 644 | 0.3− | 0.4+ | 2005 10 05 | 291 | 0.5+ | 0.4+ |
| 1995 10 22 | 691 | 0.4+ | 0.2− | 2005 07 29 | 644 | 0.1− | 0.5+ | 2005 10 05 | 291 | 0.5+ | 0.5+ |
| 1995 10 22 | 691 | 0.2+ | 0.1− | 2005 07 29 | 644 | 0.1− | 0.2+ | 2005 10 05 | 291 | 0.6+ | 0.4+ |
| 1995 10 22 | 691 | 0.9+ | 0.6− | 2005 07 29 | 644 | 0.2− | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.7− |
| 1995 10 27 | 691 | 0.9− | 0.3− | 2005 08 06 | 644 | 0.2− | 0.3+ | 2005 10 30 | G96 | 0.2− | 0.3− |
| 1995 10 27 | 691 | 0.0 | 1.0− | 2005 08 06 | 644 | 0.1− | 0.3+ | 2005 10 30 | G96 | 0.1+ | 0.0 |
| 1995 10 27 | 691 | 0.2+ | 0.1− | 2005 08 06 | 644 | 0.3− | 0.4+ | 2005 10 30 | G96 | 0.1− | 0.1− |
| 2000 09 03 | 704 | 0.3+ | 1.0+ | 2005 08 11 | A50 | 0.8− | 0.1− | 2006 11 24 | 691 | 0.6+ | 1.1+ |
| 2000 09 03 | 704 | 1.3+ | 0.7+ | 2005 08 11 | A50 | 1.1− | 0.6+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2000 09 03 | 704 | 0.1− | 1.3+ | 2005 08 11 | A50 | 1.4− | 0.6− | 2006 11 24 | 691 | 0.5+ | 0.0 |
| 2000 09 03 | 704 | 0.0 | 0.1+ | 2005 08 11 | A50 | 0.5− | 0.1− | 2006 11 28 | 691 | 0.6− | 0.8+ |
| 2000 09 07 | 691 | 1.3− | 0.1− | 2005 08 24 | 644 | 0.2− | 0.2+ | 2006 11 28 | 691 | 0.1+ | 0.0 |
| 2000 09 07 | 691 | 1.2− | 0.1+ | 2005 08 24 | 644 | 0.2− | 0.1+ | 2006 11 28 | 691 | 0.1+ | 0.0 |
| 2000 09 07 | 691 | 1.2− | 0.2− | 2005 08 24 | 644 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 1.4− | 0.2+ |
| 2002 01 09 | 704 | 1.3+ | 0.3+ | 2005 08 24 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 1.0− | 1.1+ |
| 2002 01 09 | 704 | 0.2− | 0.7+ | 2005 08 24 | 644 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.8− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.2+ | 0.8+ | 2005 08 24 | 644 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 1.0− | 0.0 |
| 2002 01 14 | 704 | 1.2− | 0.1+ | 2005 09 03 | 644 | 0.1+ | 0.1− | | | | |

**(136730)∗ 1995 UE$_{59}$ = 2002 NJ$_{42}$**

Discovered 1995 Oct. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 33006)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.77114 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26653182 | $\omega$ | 259.21512 | | +0.96081244 | | +0.27051988 |
| $a$ | 2.3913144 | $\Omega$ | 85.06921 | | −0.22464733 | | +0.88773049 |
| $e$ | 0.2038937 | $i$ | 3.48055 | | −0.16239776 | | +0.37249640 |
| $P$ | 3.70 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.2− | 0.6− | 2002 09 15 | 644 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 1995 10 18 | 691 | 0.1− | 0.6− | 2002 09 15 | 644 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 1995 10 18 | 691 | 0.0 | 0.5− | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1995 10 20 | 691 | 0.1+ | 0.2+ | 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 1995 10 20 | 691 | 0.1− | 0.4+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 1995 10 20 | 691 | 0.0 | 0.2+ | 2005 04 11 | G96 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 1995 10 25 | 691 | 0.1+ | 0.2− | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |
| 1995 10 25 | 691 | 0.1+ | 0.4− | 2005 04 11 | G96 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 1995 10 25 | 691 | 0.5+ | 0.4− | 2005 04 11 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 07 14 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 07 14 | 644 | 0.0 | 0.2− | 2006 09 30 | 703 | 1.2+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 07 14 | 644 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 07 15 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 07 15 | 644 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.1+ |
| 2002 07 15 | 644 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2002 07 23 | 644 | 0.6− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 07 23 | 644 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 07 23 | 644 | 0.8− | 0.3− | 2006 10 11 | 644 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2002 08 13 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2002 08 13 | 704 | 0.6+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 1.1− |
| 2002 08 13 | 704 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2002 08 13 | 704 | 0.3− | 1.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.8− | 1.0+ |
| 2002 08 13 | 704 | 0.5+ | 0.6+ | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.1+ |
| 2002 08 18 | 644 | 0.3− | 0.4− | 2006 10 16 | 703 | 1.0+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 17 | 703 | 1.9− | 0.1+ |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.4− | 1.2− |
| 2002 08 29 | 644 | 0.5+ | 0.4− | 2006 10 16 | 703 | 1.1+ | 0.8− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2002 08 29 | 644 | 0.6+ | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2002 08 31 | 704 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.9+ | 1.3+ |
| 2002 08 31 | 704 | 0.6+ | 0.7− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.5− | 1.1+ |
| 2002 08 31 | 704 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.5+ | 2.0+ |
| 2002 09 15 | 644 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | | | |

**(136731)∗ 1995 US$_{59}$ = 2005 EW$_{252}$ = 2005 GF$_{70}$**

Discovered 1995 Oct. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74549)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.36870 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26979814 | $\omega$ | 53.49927 | | +0.19010886 | | +0.98172307 |
| $a$ | 2.3719748 | $\Omega$ | 227.46237 | | −0.90454971 | | +0.17164335 |
| $e$ | 0.1739050 | $i$ | 0.68870 | | −0.38163914 | | +0.08220935 |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.5+ | 0.2− | 2002 09 04 | 644 | 1.2+ | 0.6+ | 2006 09 26 | G96 | 0.4+ | 0.5− |
| 1995 10 19 | 691 | 0.3+ | 0.1+ | 2002 09 04 | 644 | 0.2− | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1995 10 19 | 691 | 0.7+ | 0.0 | 2005 03 10 | G96 | 0.5− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 1995 10 22 | 691 | 0.2+ | 0.4− | 2005 03 10 | G96 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 1995 10 22 | 691 | 0.3− | 0.1− | 2005 03 10 | G96 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 1995 10 22 | 691 | 0.1− | 0.5+ | 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1995 10 28 | 691 | 0.3− | 0.5− | 2005 04 04 | 691 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 1995 10 28 | 691 | 0.4− | 0.3− | 2005 04 04 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 1995 10 28 | 691 | 0.2− | 0.4− | 2005 04 04 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2002 08 12 | 699 | 1.0− | 0.2− | 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2002 08 12 | 699 | 0.8− | 0.8− | 2005 04 09 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2002 08 12 | 699 | 1.0− | 0.2− | 2005 04 09 | 691 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.4− | 0.5+ |
| 2002 08 12 | 699 | 0.1− | 0.7+ | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.4+ |
| 2002 08 18 | 608 | 0.1+ | 0.5+ | 2005 05 08 | G96 | 0.6− | 0.0 | 2006 11 18 | 691 | 0.5− | 0.6+ |
| 2002 08 18 | 608 | 0.1+ | 0.4+ | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.4+ |
| 2002 08 18 | 608 | 0.0 | 0.4+ | 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2002 09 04 | 644 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 20 | 691 | 0.0 | 0.7+ |

**(136732)∗ 1995 UV$_{60}$ = 2001 UF$_{95}$**

Discovered 1995 Oct. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 19265)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.88921 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17462403 | $\omega$ | 0.66167 | | +0.87019180 | | −0.48579499 |
| $a$ | 3.1700544 | $\Omega$ | 28.86688 | | +0.45126900 | | +0.71877070 |
| $e$ | 0.0848912 | $i$ | 9.81249 | | +0.19779414 | | +0.49736496 |
| $P$ | 5.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 30 | 691 | 0.1− | 0.4+ | 2001 10 22 | 644 | 0.1− | 0.2+ | 2001 12 20 | 644 | 0.3+ | 0.5+ |
| 1995 09 30 | 691 | 0.1+ | 0.1− | 2001 10 22 | 644 | 0.3− | 0.1+ | 2001 12 20 | 644 | 0.1− | 0.5+ |
| 1995 09 30 | 691 | 0.1− | 0.1+ | 2001 10 26 | 644 | 0.4− | 0.5+ | 2003 01 29 | 645 | 0.0 | 0.0 |
| 1995 10 19 | 691 | 0.2− | 0.3+ | 2001 10 26 | 644 | 0.5− | 0.7+ | 2003 01 29 | 645 | 0.0 | 0.0 |
| 1995 10 19 | 691 | 0.3− | 0.1+ | 2001 10 26 | 644 | 0.5− | 0.5+ | 2003 02 01 | 645 | 0.0 | 0.0 |
| 1995 10 19 | 691 | 0.2+ | 0.6− | 2001 11 19 | 704 | 0.4+ | 0.3+ | 2003 02 01 | 645 | 0.1− | 0.0 |
| 1995 10 24 | 691 | 0.2− | 0.5+ | 2001 11 19 | 704 | 0.2+ | 0.9+ | 2004 03 16 | 691 | 0.3+ | 0.0 |
| 1995 10 24 | 691 | 0.1− | 0.3− | 2001 11 19 | 704 | 0.0 | 1.5+ | 2004 03 16 | 691 | 0.4+ | 0.2+ |
| 1995 10 24 | 691 | 0.1− | 0.3+ | 2001 11 19 | 704 | 0.6+ | 0.1+ | 2004 03 16 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.3+ | 0.4+ | 2001 11 24 | 704 | 1.3− | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.4+ |
| 2001 10 14 | 704 | 0.5+ | 0.1+ | 2001 11 24 | 704 | 0.3+ | 0.6− | 2004 04 13 | 691 | 0.6+ | 0.5+ |
| 2001 10 14 | 704 | 0.3− | 0.2+ | 2001 11 24 | 704 | 0.6+ | 0.6− | 2004 04 13 | 691 | 0.1+ | 0.6+ |
| 2001 10 14 | 704 | 0.2− | 0.2+ | 2001 11 24 | 704 | 1.0− | 0.0 | 2006 09 20 | 703 | 0.8− | 0.3− |
| 2001 10 19 | 644 | 0.6+ | 0.1+ | 2001 12 10 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.7− | 0.8− |
| 2001 10 19 | 644 | 0.3+ | 0.0 | 2001 12 10 | 704 | 1.7+ | 0.7− | 2006 09 20 | 703 | 0.7− | 0.9+ |
| 2001 10 19 | 644 | 0.1+ | 0.3+ | 2001 12 10 | 704 | 0.0 | 0.9− | 2006 09 20 | 703 | 0.8− | 0.6+ |
| 2001 10 21 | 704 | 0.5− | 0.5+ | 2001 12 10 | 704 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.6+ | 1.3+ |
| 2001 10 21 | 704 | 0.7+ | 0.2− | 2001 12 15 | 704 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.4− |
| 2001 10 21 | 704 | 0.6− | 0.3− | 2001 12 15 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.6+ | 0.3− |
| 2001 10 21 | 704 | 0.3− | 0.8− | 2001 12 15 | 704 | 0.7+ | 0.4− | 2006 09 26 | 703 | 0.5− | 0.2− |
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2001 12 15 | 704 | 0.8+ | 0.1+ | | | | |
| 2001 10 22 | 644 | 0.5− | 0.0 | 2001 12 20 | 644 | 0.0 | 0.6+ | | | | |

**(136733)∗ 1995 UE$_{61}$ = 2001 VJ$_{95}$**

Discovered 1995 Oct. 24 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 21979)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.39535 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17826862 | $\omega$ | 302.03751 | | −0.54093822 | | −0.84105887 |
| $a$ | 3.1266993 | $\Omega$ | 180.72344 | | +0.82162784 | | −0.52782376 |
| $e$ | 0.0401597 | $i$ | 11.01030 | | +0.17975966 | | −0.11841471 |
| $P$ | 5.53 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.2+ | 0.3+ | 2003 01 28 | 704 | (0.1+ | 2.1+) | 2006 09 18 | 291 | 0.1+ | 0.4− |
| 1995 10 20 | 691 | 0.1+ | 0.4+ | 2003 01 28 | 704 | 0.0 | 1.2+ | 2006 09 18 | 291 | 0.3+ | 0.3− |
| 1995 10 20 | 691 | 0.2+ | 0.4+ | 2003 01 28 | 704 | (0.6+ | 1.7+) | 2006 09 26 | 691 | 0.0 | 0.2− |
| 1995 10 24 | 691 | 0.3− | 0.3− | 2003 02 03 | 608 | 1.3+ | 1.2+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 1995 10 24 | 691 | 0.3− | 0.4− | 2003 02 03 | 608 | (1.3+ | 1.6+) | 2006 09 26 | 691 | 0.1− | 0.3− |
| 1995 10 24 | 691 | 0.2− | 0.2− | 2003 02 03 | 608 | 1.3+ | 1.0+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 1998 03 29 | 704 | 0.7− | 0.2− | 2003 02 09 | 608 | 0.7+ | 0.7− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 1998 03 29 | 704 | 1.6− | 0.3+ | 2003 02 09 | 608 | 0.5+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | (2.6− | 2.3+) | 2003 02 09 | 608 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.5− | 0.3− | | |
| 1998 03 29 | 704 | (0.2+ | 2.0+) | 2003 02 19 | 644 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.7+ | | |
| 2000 09 29 | 691 | 0.1+ | 0.7+ | 2003 02 19 | 644 | 0.2− | 0.5+ | 2006 10 01 | 704 | 0.7+ | 0.6+ | | |
| 2000 09 29 | 691 | 0.2+ | 0.4+ | 2003 02 19 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.7− | 0.3+ | | |
| 2000 09 29 | 691 | 0.2− | 0.2+ | 2004 04 11 | 644 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.5+ | | |
| 2001 11 15 | 704 | 0.3+ | 0.3+ | 2004 04 11 | 644 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2001 11 15 | 704 | 0.4+ | 0.1− | 2004 04 11 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.1− | | |
| 2001 11 15 | 704 | 0.8+ | 0.4+ | 2004 05 23 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2001 11 15 | 704 | 0.4+ | 0.4+ | 2004 05 23 | 704 | 1.4+ | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 2001 11 18 | 704 | 0.9+ | 0.7− | 2004 05 23 | 704 | 1.0+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 11 18 | 704 | 0.7+ | 0.1− | 2004 05 23 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2001 11 18 | 704 | 0.3− | 0.6+ | 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 10 21 | 703 | 1.4− | 1.0+ | | |
| 2001 11 20 | 699 | (0.9+ | 2.0+) | 2006 07 22 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.0 | 2.0+ | | |
| 2001 11 20 | 699 | 0.1+ | 0.5− | 2006 07 22 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2001 11 20 | 699 | 0.2− | 0.2− | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 11 20 | 699 | 0.3− | 1.0− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 1.6− | 1.0+ | | |
| 2003 01 16 | 644 | 0.5− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 2.5− | 1.0− | | |
| 2003 01 16 | 644 | 0.6− | 0.8+ | 2006 09 18 | 691 | 0.1+ | 0.2− | | | | | | |
| 2003 01 16 | 644 | 1.4− | 1.1+ | 2006 09 18 | 291 | 0.2+ | 0.3− | | | | | | |

**(136734)∗ 1995 VF$_6$ = 2002 TM$_{338}$**

Discovered 1995 Nov. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 49640)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.42764 | | (2000.0) | | +0.79956610 | +0.59303112 |
| $n$ | 0.27104563 | $\omega$ | 268.20724 | | −0.49494270 | +0.74016511 |
| $a$ | 2.3646912 | $\Omega$ | 55.40814 | | −0.34018491 | +0.31696955 |
| $e$ | 0.0628185 | $i$ | 6.62053 | | | |
| $P$ | 3.64 | $H$ | 17.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.0 | 0.0 | 2002 10 02 | 704 | 0.9− | 1.4− | 2006 10 19 | G96 | 0.2− | 0.0 | | |
| 1995 11 14 | 691 | 0.1+ | 0.2− | 2002 10 02 | 704 | (1.3− | 1.6+) | 2006 10 19 | G96 | 0.4+ | 0.5− | | |
| 1995 11 14 | 691 | 0.0 | 0.0 | 2002 10 02 | 704 | 0.4− | 0.7− | 2006 10 29 | G96 | 0.3− | 0.2− | | |
| 1995 11 16 | 691 | 0.1− | 0.5+ | 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.9+ | 0.0 | | |
| 1995 11 16 | 691 | 0.1+ | 0.2+ | 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.4− | 0.5− | | |
| 1995 11 16 | 691 | 0.4− | 0.0 | 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.4− | | |
| 1995 11 19 | 691 | 0.6+ | 0.2− | 2002 10 10 | 645 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.0 | | |
| 1995 11 19 | 691 | 0.2+ | 0.4− | 2002 10 11 | 645 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.4− | 0.6+ | | |
| 1995 11 19 | 691 | 0.1− | 0.4− | 2002 10 11 | 645 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2001 04 16 | 691 | 0.2+ | 0.7+ | 2004 02 13 | 691 | 0.1− | 0.7+ | 2006 11 14 | 691 | 0.0 | 0.3+ | | |
| 2001 04 16 | 691 | 0.0 | 0.6+ | 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | | |
| 2001 04 16 | 691 | 0.3+ | 0.5+ | 2004 02 13 | 691 | 0.2− | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | | |
| 2001 05 26 | 691 | 0.4+ | 0.9+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.2+ | | |
| 2001 05 26 | 691 | 0.6+ | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.3− | 0.1+ | | |
| 2001 05 26 | 691 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.4+ | | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.2− | 0.2+ | | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1+ | | |
| 2002 10 02 | 704 | 0.7− | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.8+ | 0.1+ | | |

**(136735)∗ 1995 VP$_{10}$ = 2000 SO$_{14}$**

Discovered 1995 Nov. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 4330)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.82412 | | (2000.0) | | +0.81040296 | +0.57350531 |
| $n$ | 0.18067675 | $\omega$ | 120.48193 | | −0.58577208 | +0.79695052 |
| $a$ | 3.0988546 | $\Omega$ | 205.13210 | | +0.01086804 | +0.18963528 |
| $e$ | 0.1990325 | $i$ | 16.37638 | | | |
| $P$ | 5.46 | $H$ | 15.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.4+ | 0.1− | 2000 09 25 | 699 | 0.0 | 1.3− | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 1995 11 15 | 691 | 0.1+ | 0.0 | 2000 09 25 | 699 | 0.4− | 0.8− | 2006 09 30 | G96 | 0.2+ | 0.0 | | |
| 1995 11 15 | 691 | 0.2+ | 0.0 | 2000 09 25 | 699 | 1.5− | 0.7− | 2006 09 30 | G96 | 0.3− | 0.1− | | |
| 1995 11 19 | 691 | 0.5+ | 0.5− | 2000 09 25 | 699 | 0.8− | 1.4+ | 2006 09 30 | G96 | 0.4+ | 0.1− | | |
| 1995 11 19 | 691 | 0.4− | 0.3+ | 2000 09 26 | 704 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.0 | | |
| 1995 11 19 | 691 | 0.1− | 0.2− | 2000 09 26 | 704 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.1− | | |
| 1995 11 25 | 691 | 0.0 | 0.4− | 2000 09 26 | 704 | 0.5+ | 1.5+ | 2006 09 30 | G96 | 0.0 | 0.0 | | |
| 1995 11 25 | 691 | 0.3− | 0.2− | 2000 09 26 | 608 | 0.1+ | 0.9− | 2006 09 30 | G96 | 0.2+ | 0.0 | | |
| 1995 11 25 | 691 | 0.4− | 0.4− | 2000 09 26 | 608 | 0.3+ | 1.4− | 2006 10 18 | 691 | 0.2+ | 0.0 | | |
| 2000 08 05 | 608 | 0.3− | 0.9− | 2000 09 26 | 608 | 0.7+ | 1.3− | 2006 10 18 | 691 | 0.2+ | 0.2+ | | |
| 2000 08 05 | 608 | 0.4− | 0.7− | 2000 09 30 | 704 | 0.6+ | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ | | |
| 2000 08 05 | 608 | 0.7− | 0.5− | 2000 09 30 | 704 | 1.0+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2000 09 01 | 704 | 0.2+ | 0.0 | 2000 09 30 | 704 | 0.1+ | 1.0− | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2000 09 01 | 704 | 0.4− | 0.5+ | 2000 09 30 | 704 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.4+ | | |
| 2000 09 01 | 704 | 1.1+ | 0.8− | 2000 09 30 | 704 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.4+ | | |
| 2000 09 01 | 704 | 0.0 | 0.0 | 2000 10 02 | 704 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.3+ | | |
| 2000 09 01 | 704 | 0.3− | 1.0+ | 2000 10 02 | 704 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2000 09 23 | 704 | 0.2+ | 0.7− | 2000 10 02 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.3+ | | |
| 2000 09 23 | 704 | 0.3+ | 0.2+ | 2000 10 02 | 704 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.2− | | |
| 2000 09 23 | 704 | 0.2− | 0.0 | 2005 06 09 | 704 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.1+ | | |
| 2000 09 23 | 704 | 0.1− | 0.2+ | 2005 06 09 | 704 | 0.4− | 0.2− | 2006 11 13 | 703 | 0.0 | 0.4− | | |
| 2000 09 24 | 704 | 0.2+ | 0.2+ | 2005 06 09 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.6− | 0.5+ | | |
| 2000 09 24 | 704 | 0.4− | 0.2+ | 2005 07 28 | 704 | 0.0 | 0.8+ | 2006 11 17 | 704 | 0.3− | 0.8+ | | |
| 2000 09 24 | 704 | 0.1+ | 0.1− | 2005 07 28 | 704 | 0.2− | 0.2− | 2006 11 17 | 704 | (0.9− | 1.7+) | | |
| 2000 09 24 | 704 | 0.1− | 0.3+ | 2005 07 28 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 704 | (0.2− | 1.5+) | | |
| 2000 09 24 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.5− | 2006 11 24 | G96 | 0.3+ | 0.1− | | |
| 2000 09 24 | 704 | 0.3− | 0.9+ | 2006 09 30 | 703 | (1.1− | 2.3+) | 2006 11 24 | G96 | 0.1+ | 0.0 | | |
| 2000 09 24 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 703 | 0.7− | 0.7+ | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2000 09 24 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.3+ | 1.1+ | 2006 11 24 | G96 | 0.2+ | 0.0 | | |

**(136736)∗ 1995 VW$_{10}$**

Discovered 1995 Nov. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.09119 | | (2000.0) | | +0.74749286 | +0.65462592 |
| $n$ | 0.17290853 | $\omega$ | 248.65324 | | −0.55640376 | +0.70976671 |
| $a$ | 3.1909875 | $\Omega$ | 70.26813 | | −0.36286260 | +0.26018478 |
| $e$ | 0.1384575 | $i$ | 6.88144 | | | |
| $P$ | 5.70 | $H$ | 15.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 15 | 691 | 0.5− | 1.0− | 2001 10 25 | 644 | (25.1+ | 13.0+) | 2001 12 19 | 691 | 0.1− | 1.0− | | |
| 1993 04 15 | 691 | 0.1− | 0.4− | 2001 10 25 | 644 | (25.6+ | 10.3+) | 2004 03 18 | 691 | 0.1+ | 0.4+ | | |
| 1993 04 15 | 691 | 0.1− | 0.7− | 2001 10 25 | 644 | (25.0+ | 8.3+) | 2004 03 18 | 691 | 0.0 | 0.3+ | | |
| 1995 10 26 | 691 | 0.8+ | 0.6+ | 2001 11 09 | 704 | 0.4+ | 0.2− | 2004 03 18 | 691 | 0.2+ | 0.4+ | | |
| 1995 10 26 | 691 | 0.6+ | 0.7+ | 2001 11 09 | 704 | 0.0 | 0.8− | 2005 06 14 | G96 | 0.2+ | 0.3+ | | |
| 1995 10 26 | 691 | 0.6+ | 0.9− | 2001 11 09 | 704 | 0.1+ | 0.1− | 2005 06 14 | G96 | 0.3− | 0.1+ | | |
| 1995 11 15 | 691 | 0.0 | 0.3− | 2001 11 09 | 704 | 0.8− | 1.2+ | 2005 06 14 | G96 | 0.3+ | 0.3+ | | |
| 1995 11 15 | 691 | 0.0 | 0.1− | 2001 11 14 | 691 | 0.2+ | 0.2− | 2005 06 14 | G96 | 0.2− | 0.3+ | | |
| 1995 11 15 | 691 | 0.8− | 0.3+ | 2001 11 14 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.5− | | |
| 1995 11 20 | 691 | 0.2+ | 0.5− | 2001 11 14 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.4− | | |
| 1995 11 20 | 691 | 0.2− | 0.3− | 2001 12 13 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.4− | | |
| 1995 11 20 | 691 | 0.1+ | 0.3− | 2001 12 13 | 644 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.2+ | 0.4− | | |
| 1995 11 27 | 691 | 0.3+ | 0.6− | 2001 12 13 | 644 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.5+ | | |
| 1995 11 27 | 691 | 0.2− | 0.2− | 2001 12 14 | 704 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.5+ | | |
| 1995 11 27 | 691 | 1.8− | 1.2+ | 2001 12 14 | 704 | 0.7− | 0.4+ | 2006 09 14 | 644 | 0.5+ | 0.1+ | | |
| 2000 08 01 | 704 | 0.7− | 0.5+ | 2001 12 14 | 704 | 0.4+ | 1.2+ | 2006 10 02 | 703 | 0.4− | 0.2+ | | |
| 2000 08 01 | 704 | 0.2+ | 0.0 | 2001 12 14 | 704 | (0.0 | 2.5+) | 2006 10 02 | 703 | 1.8+ | 1.1− | | |
| 2000 08 01 | 704 | 0.2+ | 0.6+ | 2001 12 19 | 691 | 0.0 | 0.3− | 2006 10 02 | 703 | 0.8+ | 0.7− | | |
| 2000 08 01 | 704 | 0.2− | 0.2− | 2001 12 19 | 691 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.1+ | | |

**(136737)∗ 1995 VA$_{12}$ = 2002 NM$_{52}$**

Discovered 1995 Nov. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33006)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.25349 | | (2000.0) | | +0.99770821 | +0.01522018 |
| $n$ | 0.26679753 | $\omega$ | 254.30459 | | +0.01106478 | +0.92455725 |
| $a$ | 2.3897264 | $\Omega$ | 104.78844 | | −0.06675259 | +0.38073908 |
| $e$ | 0.1837563 | $i$ | 3.90993 | | | |
| $P$ | 3.69 | $H$ | 16.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.2− | 0.1+ | 2004 01 22 | 704 | (0.6− | 1.8+) | 2006 09 26 | 704 | (0.8− | 1.6−) |
| 1995 11 15 | 691 | 0.0 | 0.2− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | (3.6− | 1.3−) |
| 1995 11 15 | 691 | 0.1+ | 0.3− | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | (5.7− | 2.1+) |
| 1995 11 20 | 691 | 0.1− | 0.1− | 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.2− | 0.8+ |
| 1995 11 20 | 691 | 0.1− | 0.1− | 2004 02 09 | 926 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.2− | 1.1+ |
| 1995 11 20 | 691 | 0.1+ | 0.1− | 2004 02 09 | 926 | 0.6+ | 0.4− | 2006 09 29 | 699 | 0.8− | 0.1+ |
| 1995 11 26 | 691 | 0.1+ | 0.2− | 2004 02 09 | 926 | 0.4+ | 0.3+ | 2006 09 29 | 699 | 0.2− | 0.4− |
| 1995 11 26 | 691 | 0.1+ | 0.7+ | 2004 02 14 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.4− |
| 1995 11 26 | 691 | 0.4+ | 0.4− | 2004 02 14 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2002 07 14 | 644 | 0.4− | 0.2+ | 2004 02 14 | 691 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2002 07 14 | 644 | 0.5− | 0.2− | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.7+ |
| 2002 07 18 | 644 | 0.0 | 0.4+ | 2005 04 02 | 691 | 0.4+ | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2002 07 18 | 644 | 0.2− | 0.5+ | 2005 04 02 | 691 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.1+ | 0.7+ |
| 2002 07 18 | 644 | 0.3− | 0.6+ | 2005 04 02 | 691 | 0.3+ | 0.7+ | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 2002 07 28 | 608 | 0.5+ | 1.4− | 2006 08 19 | 699 | 0.8+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2002 07 28 | 608 | (1.0+ | 1.6−) | 2006 08 19 | 699 | 0.6− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 07 28 | 608 | (0.7+ | 1.6−) | 2006 08 19 | 699 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.3− | 0.0 | 2006 08 19 | 699 | 1.2+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 08 13 | 704 | 0.3+ | 0.4− | 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 08 13 | 704 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.5+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 08 13 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.2− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.7− |
| 2002 08 13 | 704 | 0.1− | 0.4− | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2002 08 13 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2002 08 18 | 644 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2002 08 18 | 644 | 0.5− | 0.4+ | 2006 09 20 | 644 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.6− |
| 2002 08 18 | 644 | 0.4− | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2002 08 29 | 644 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 09 21 | 699 | 0.1− | 1.2+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 31 | 704 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 08 31 | 704 | 0.7+ | 0.1− | 2006 09 21 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 08 31 | 704 | 0.4− | 0.0 | 2006 09 22 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 08 31 | 704 | 0.6+ | 1.2− | 2006 09 22 | 704 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 1.3− | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2003 12 22 | 704 | 0.3− | 0.3+ | 2006 09 22 | 704 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 1.3+ | 0.6− | 2006 09 25 | 699 | 1.1− | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 01 17 | 644 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2004 01 17 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.6+ | 2006 10 22 | 704 | 0.7+ | 0.6− |
| 2004 01 17 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.5− | 2006 10 22 | 704 | 0.4+ | 0.2+ |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.1+ | 1.2− | 2006 10 22 | 704 | 0.2− | 0.1− |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 704 | 0.2+ | 0.5+ |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.6− | 1.0+ | 2006 10 22 | 704 | 0.4− | 0.9+ |
| 2004 01 22 | 704 | (2.5− | 1.6+) | 2006 09 26 | 704 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.1+ | 1.5+ | 2006 09 26 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2004 01 22 | 704 | 0.8− | 1.2+ | 2006 09 26 | 704 | (1.6+ | 2.4+) | 2006 10 22 | 703 | 1.0− | 0.5+ |
| 2004 01 22 | 704 | 0.4− | 0.9+ | 2006 09 26 | 704 | (2.4+ | 0.4−) | 2006 10 22 | 703 | 0.1+ | 1.2+ |

## (136738)∗ 1995 VV$_{12}$ = 2003 YX$_{120}$

Discovered 1995 Nov. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55812)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.41856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26819120 | $\omega$ | 76.33669 | | −0.78306294 | −0.61249068 | |
| $a$ | 2.3814403 | $\Omega$ | 65.78351 | | +0.51498737 | −0.73592352 | |
| $e$ | 0.0858072 | $i$ | 6.80203 | | +0.34871256 | −0.28856843 | |
| $P$ | 3.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.0 | 0.0 | 2003 12 28 | 704 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.4+ |
| 1995 11 15 | 691 | 0.2+ | 0.0 | 2003 12 28 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 1995 11 15 | 691 | 0.0 | 0.1+ | 2003 12 29 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | (1.5− | 0.3+) |
| 1995 11 20 | 691 | 0.2+ | 0.2− | 2003 12 29 | 704 | 0.9+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 1995 11 20 | 691 | 0.5− | 0.2− | 2003 12 29 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 1995 11 20 | 691 | 0.1+ | 0.0 | 2003 12 29 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 1995 11 28 | 691 | 1.0+ | 0.9− | 2003 12 29 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.3+ |
| 1995 11 28 | 691 | 0.1+ | 0.1− | 2003 12 29 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 1995 11 28 | 691 | 0.3− | 0.0 | 2003 12 29 | 704 | 0.6− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 1999 12 07 | 704 | 0.6− | 1.6− | 2003 12 29 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 1999 12 07 | 704 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2004 01 31 | 704 | 0.5− | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 1999 12 07 | 704 | 0.8+ | 0.8− | 2004 01 31 | 704 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2001 05 24 | 704 | 0.1− | 0.1− | 2004 01 31 | 704 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 05 24 | 704 | 0.3+ | 0.7+ | 2004 01 31 | 704 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 05 24 | 704 | 0.1+ | 0.5− | 2004 02 09 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2001 05 24 | 704 | 1.2+ | 0.8+ | 2004 02 09 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.6− | 0.2+ |
| 2001 06 01 | 691 | 0.1+ | 0.7+ | 2004 02 09 | 644 | 0.5+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 2001 06 01 | 691 | 0.1+ | 0.3+ | 2004 02 13 | 699 | 0.1− | 0.5− | 2006 11 17 | 704 | (2.5− | 2.5+) |
| 2001 06 01 | 691 | 0.0 | 0.1+ | 2004 02 13 | 699 | 0.4+ | 0.7− | 2006 11 17 | 704 | (1.3− | 2.3+) |
| 2003 12 19 | 704 | 1.1+ | 0.0 | 2004 02 13 | 699 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 1.2+ |
| 2003 12 19 | 704 | 0.8+ | 0.7+ | 2004 02 13 | 699 | 0.1+ | 0.3+ | 2006 11 17 | 704 | (0.0 | 1.6+) |
| 2003 12 19 | 704 | 0.2− | 0.3+ | 2004 02 14 | 704 | 0.5+ | 0.8+ | 2006 11 17 | 703 | 1.1− | 0.4+ |
| 2003 12 19 | 704 | 1.1+ | 0.8+ | 2004 02 14 | 704 | 0.3− | 0.6+ | 2006 11 17 | 703 | 1.3− | 0.9+ |
| 2003 12 19 | 704 | 0.9+ | 1.0+ | 2004 02 14 | 704 | 0.6− | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.7+ |
| 2003 12 27 | 704 | 0.4− | 0.8+ | 2004 02 14 | 704 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2003 12 27 | 704 | 1.3+ | 0.6+ | 2004 02 14 | 704 | 0.2− | 0.3+ | 2006 11 18 | 621 | 0.2− | 0.1− |
| 2003 12 27 | 704 | 0.4− | 0.1+ | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 11 18 | 621 | 0.1+ | 0.4+ |
| 2003 12 27 | 704 | 0.7− | 0.4+ | 2004 02 17 | 645 | 0.1− | 0.3− | 2006 11 18 | 621 | 0.0 | 0.3− |
| 2003 12 28 | 704 | 0.9+ | 0.3+ | 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 621 | 0.1− | 0.1+ |
| 2003 12 28 | 704 | 0.3+ | 1.0+ | 2004 02 18 | 691 | 0.1+ | 0.2+ | | | | |
| 2003 12 28 | 704 | 0.1+ | 0.0 | 2004 02 18 | 691 | 0.1+ | 0.0 | | | | |

## (136739)∗ 1995 VD$_{13}$

Discovered 1995 Nov. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.60367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17930830 | $\omega$ | 78.81442 | | −0.71032603 | +0.70292076 | |
| $a$ | 3.1146012 | $\Omega$ | 145.82874 | | −0.66854817 | −0.65750054 | |
| $e$ | 0.0707078 | $i$ | 3.73590 | | −0.22018236 | −0.27128481 | |
| $P$ | 5.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.3− | 0.2+ | 2002 12 14 | 645 | 0.1+ | 0.1− | 2004 05 22 | 704 | 0.3− | 0.5+ |
| 1995 10 15 | 691 | 0.5− | 0.2+ | 2002 12 14 | 645 | 0.1+ | 0.1− | 2004 05 22 | 704 | 0.3− | 0.3+ |
| 1995 10 15 | 691 | 0.0 | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.1− | 2004 05 22 | 704 | 0.5− | 1.2+ |
| 1995 11 15 | 691 | 0.2+ | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.2− | 2004 05 22 | 704 | 0.3+ | 0.2+ |
| 1995 11 15 | 691 | 0.1+ | 0.3− | 2003 01 30 | 291 | 0.3− | 0.5+ | 2004 05 22 | 704 | 0.6− | 0.6+ |
| 1995 11 15 | 691 | 0.3+ | 0.2+ | 2003 01 30 | 291 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 1995 11 20 | 691 | 0.1+ | 0.1− | 2003 01 30 | 291 | 0.1+ | 0.6+ | 2006 10 03 | G96 | 0.5− | 0.0 |
| 1995 11 20 | 691 | 0.2+ | 0.1+ | 2003 02 22 | 699 | 0.3− | 0.8+ | 2006 10 03 | G96 | 0.4− | 0.1+ |
| 1995 11 20 | 691 | 0.4+ | 0.0 | 2003 02 22 | 699 | 0.9+ | 0.4+ | 2006 10 03 | G96 | 0.5− | 0.1+ |
| 1995 11 27 | 691 | 0.5− | 0.0 | 2003 02 22 | 699 | 0.4− | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 1995 11 27 | 691 | 0.5+ | 0.3− | 2003 02 22 | 699 | 1.3− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 1995 11 27 | 691 | 0.4− | 0.4− | 2004 05 15 | 704 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.8+ | 0.0 | 2004 05 15 | 704 | 0.0 | 1.2− | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.4+ | 0.8+ | 2004 05 15 | 704 | 0.5+ | 1.2+ | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.7− | 0.2+ | 2004 05 15 | 704 | 0.3− | 1.3− | 2006 10 21 | G96 | 0.1− | 0.4+ |
| 2001 11 20 | 704 | 0.7+ | 0.2− | 2004 05 21 | 704 | 1.0+ | 1.2+ | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 2001 12 17 | 704 | 0.7− | 0.4+ | 2004 05 21 | 704 | 0.6+ | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 12 17 | 704 | 0.2− | 0.8− | 2004 05 21 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.7− | 2004 05 21 | 704 | 0.2+ | 0.8− | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 0.5+ | 0.9+ | 2004 05 21 | 704 | 0.5+ | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.3− |

## (136740)∗ 1995 VW$_{14}$

Discovered 1995 Nov. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.32975 | | (2000.0) | | | |
| $n$ | 0.18141002 | $\omega$ | 202.38426 | | +0.19439530 | −0.97894223 |
| $a$ | 3.0904985 | $\Omega$ | 236.45822 | | +0.91092488 | +0.20372428 |
| $e$ | 0.1389104 | $i$ | 4.28738 | | +0.36390428 | +0.01298213 |
| $P$ | 5.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.2+ | 0.1+ | 2001 12 17 | 704 | 1.1+ | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 1995 11 15 | 691 | 0.0 | 0.3− | 2002 01 08 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1995 11 15 | 691 | 0.2− | 0.0 | 2002 01 08 | 644 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1995 11 19 | 691 | 0.1+ | 0.2− | 2002 01 08 | 644 | 0.0 | 0.3− | 2006 11 15 | 703 | (1.6+ | 0.6+) |
| 1995 11 19 | 691 | 0.2+ | 0.3− | 2002 01 09 | 704 | 0.3− | 0.6+ | 2006 11 15 | 703 | 0.5− | 0.4+ |
| 1995 11 19 | 691 | 0.2+ | 0.0 | 2002 01 09 | 704 | 0.4− | 0.4− | 2006 11 15 | 703 | 0.5− | 0.0 |
| 1995 11 27 | 691 | 0.0 | 0.2+ | 2002 01 09 | 704 | 1.0− | 0.5− | 2006 11 15 | 703 | 0.1− | 0.7− |
| 1995 11 27 | 691 | 0.1+ | 0.1+ | 2002 01 09 | 704 | 0.6− | 0.3− | 2006 11 15 | 691 | 1.3+ | 0.3+ |
| 1995 11 27 | 691 | 0.2+ | 0.0 | 2002 01 09 | 704 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 1995 12 18 | 691 | 0.0 | 0.2+ | 2002 01 14 | 704 | 1.0+ | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.5− |
| 1995 12 18 | 691 | 0.5− | 0.6− | 2002 01 14 | 704 | 1.1+ | 0.7− | 2006 11 19 | 691 | 0.8− | 1.1− |
| 1995 12 18 | 691 | 0.0 | 0.0 | 2002 01 14 | 704 | 0.6− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 1996 01 13 | 691 | 0.4+ | 0.5− | 2002 02 06 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 1996 01 13 | 691 | 0.1− | 0.2− | 2002 02 06 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.4+ | 0.0 |
| 1996 01 13 | 691 | 0.2− | 0.1+ | 2002 02 06 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2000 09 26 | 691 | 0.2− | 0.2+ | 2002 02 16 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.8− | 0.6+ |
| 2000 09 26 | 691 | 0.4− | 0.4+ | 2002 02 16 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2000 09 26 | 691 | 0.5− | 0.3+ | 2002 02 16 | 644 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2000 10 03 | 704 | 1.1− | 0.7+ | 2003 04 29 | 691 | 0.2− | 0.8+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2000 10 03 | 704 | 1.5+ | 0.0 | 2003 04 29 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.6+ |
| 2000 10 03 | 704 | 0.6− | 1.8+ | 2003 04 29 | 691 | 0.1+ | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2000 10 03 | 704 | 0.9+ | 0.4+ | 2003 05 05 | 691 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2001 12 14 | 704 | 0.2+ | 1.1+ | 2003 05 05 | 691 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2001 12 14 | 704 | 0.3− | 0.6+ | 2003 05 05 | 691 | 0.5+ | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.9− | 0.1+ | 2005 08 06 | 644 | 0.1− | 0.6+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2001 12 14 | 704 | 0.4− | 0.3+ | 2005 08 06 | 644 | 0.4− | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2001 12 14 | 704 | 0.0 | 1.2+ | 2005 08 06 | 644 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.6+ | 0.3− | 2006 10 28 | G96 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.4− | 0.1− | 2006 12 01 | 691 | 0.5− | 0.0 |
| 2001 12 17 | 704 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.3− | 0.4+ |

**(136741)∗ 1995 VL$_{16}$**

Discovered 1995 Nov. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.25763 | | (2000.0) | | | |
| $n$ | 0.27630579 | $\omega$ | 141.78669 | | +0.99248728 | −0.12065567 |
| $a$ | 2.3345834 | $\Omega$ | 225.15640 | | +0.10403484 | +0.91948458 |
| $e$ | 0.2295157 | $i$ | 1.63889 | | +0.06438758 | +0.37415280 |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 03 | 691 | 0.0 | 0.3+ | 2002 10 07 | 704 | 0.1+ | 0.3− | 2002 11 11 | 644 | 0.2− | 0.1+ |
| 1994 05 03 | 691 | 0.0 | 0.3+ | 2002 10 07 | 704 | 0.1+ | 0.4− | 2002 11 11 | 644 | 0.1− | 0.2+ |
| 1994 05 03 | 691 | 0.1− | 0.4+ | 2002 10 07 | 704 | 0.3− | 0.2− | 2002 11 11 | 644 | 0.0 | 0.2+ |
| 1995 11 15 | 691 | 0.0 | 0.3− | 2002 10 08 | 704 | 1.0− | 0.8+ | 2002 12 01 | 704 | 0.4− | 0.7+ |
| 1995 11 15 | 691 | 0.1− | 0.0 | 2002 10 08 | 704 | (2.1− | 1.5+) | 2002 12 01 | 704 | 0.5+ | 0.5+ |
| 1995 11 15 | 691 | 0.2− | 0.3− | 2002 10 08 | 704 | (1.8− | 1.6+) | 2002 12 01 | 704 | 0.2+ | 0.5+ |
| 1995 11 19 | 691 | 0.1+ | 0.3− | 2002 10 09 | 704 | 0.8− | 0.3+ | 2002 12 02 | 608 | 0.5− | 0.6+ |
| 1995 11 19 | 691 | 0.0 | 0.4− | 2002 10 09 | 704 | 0.5− | 0.2+ | 2002 12 02 | 608 | 0.9− | 0.8+ |
| 1995 11 19 | 691 | 0.5+ | 0.5− | 2002 10 09 | 704 | 0.9− | 0.4+ | 2002 12 02 | 608 | 0.7− | 0.5+ |
| 1995 11 27 | 691 | 0.2+ | 0.2− | 2002 10 09 | 704 | 0.9− | 0.3+ | 2002 12 10 | 704 | 0.2− | 0.7+ |
| 1995 11 27 | 691 | 0.0 | 0.2− | 2002 10 09 | 704 | 0.3− | 0.1+ | 2002 12 10 | 704 | 0.2− | 0.6+ |
| 1995 11 27 | 691 | 0.2+ | 0.5− | 2002 10 11 | 704 | 0.1− | 0.2− | 2002 12 10 | 704 | 0.9− | 1.1+ |
| 1995 12 18 | 691 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.1+ | 2004 03 16 | 599 | 1.0+ | 0.7+ |
| 1995 12 18 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.2+ | 2004 03 16 | 599 | (2.8− | 2.1−) |
| 1995 12 18 | 691 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.1+ | 2004 03 16 | 599 | 0.6+ | 0.5+ |
| 1995 12 23 | 691 | 0.4− | 0.4+ | 2002 10 11 | 704 | 0.1+ | 0.3+ | 2004 03 16 | 599 | 0.1− | 0.5+ |
| 1995 12 23 | 691 | 0.4+ | 0.7+ | 2002 10 12 | 704 | 0.4+ | 0.3− | 2004 03 18 | 691 | 0.1+ | 0.3+ |
| 1995 12 23 | 691 | 0.1+ | 0.0 | 2002 10 12 | 704 | 0.2+ | 0.2+ | 2004 03 18 | 691 | 0.0 | 0.3+ |
| 2000 02 03 | 704 | 0.0 | 0.3+ | 2002 10 12 | 704 | (2.4+ | 0.2−) | 2004 03 18 | 691 | 0.2+ | 0.5+ |
| 2000 02 03 | 704 | 0.7+ | 1.0+ | 2002 10 12 | 704 | 1.0− | 0.3+ | 2005 07 04 | 644 | 0.6+ | 0.4+ |
| 2000 02 03 | 704 | 0.1− | 1.2− | 2002 10 30 | 644 | 0.1+ | 0.1+ | 2005 07 04 | 644 | 0.6+ | 0.2− |
| 2002 09 29 | 608 | 0.1+ | 0.3− | 2002 10 30 | 644 | 0.2+ | 0.0 | 2005 07 04 | 644 | 0.1+ | 0.0 |
| 2002 09 29 | 608 | 0.3− | 0.7+ | 2002 10 30 | 644 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.7+ | 0.8+ |
| 2002 09 29 | 608 | 0.0 | 0.4+ | 2002 11 01 | 704 | 0.1− | 1.2− | 2006 09 24 | 691 | 0.4− | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2002 11 01 | 704 | 0.3+ | 0.2− | 2006 09 24 | 691 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.1− | 0.0 | 2002 11 01 | 704 | 0.1− | 0.8− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.1+ | 2002 11 01 | 704 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2002 11 03 | 608 | 0.4+ | 0.6− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2002 10 02 | 704 | 0.2+ | 0.4+ | 2002 11 03 | 608 | 0.1+ | 0.7− | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2002 10 02 | 608 | 1.1+ | 0.9+ | 2002 11 03 | 608 | 0.1+ | 0.5− | 2006 10 28 | G96 | 0.6− | 0.1− |
| 2002 10 02 | 608 | 0.5+ | 1.4+ | 2002 11 06 | 704 | 0.3− | 0.9+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 10 02 | 608 | 1.0+ | 0.4+ | 2002 11 06 | 704 | 0.4− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2002 11 06 | 704 | 0.2+ | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2002 11 06 | 704 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2002 11 06 | 704 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.6+ | 0.7+ | 2002 11 10 | 704 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2002 11 10 | 704 | (1.5− | 0.7+) | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 10 07 | 704 | 0.1− | 0.2+ | 2002 11 10 | 704 | 0.1+ | 0.1+ | | | | |
| 2002 10 07 | 704 | 0.5− | 0.5− | 2002 11 10 | 704 | 0.4− | 0.6+ | | | | |

**(136742)∗ 1995 VA$_{17}$ = 2005 UW$_{154}$**

Discovered 1995 Nov. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 88653)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 187.71685 | | (2000.0) | | | |
| $n$ | 0.19763941 | $\omega$ | 40.40951 | | +0.33055241 | +0.94341806 |
| $a$ | 2.9189077 | $\Omega$ | 248.90751 | | −0.87304350 | +0.29502565 |
| $e$ | 0.0173620 | $i$ | 1.62204 | | −0.35851103 | +0.15140089 |
| $P$ | 4.99 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.1− | 0.1− | 2004 08 20 | 691 | 0.0 | 0.2+ | 2005 11 21 | 691 | 0.2+ | 0.2+ |
| 1995 11 15 | 691 | 0.4− | 0.0 | 2004 08 20 | 691 | 0.0 | 0.3+ | 2005 11 21 | 691 | 0.5− | 0.4+ |
| 1995 11 15 | 691 | 0.5− | 0.3− | 2004 09 11 | 691 | 0.0 | 0.4+ | 2005 11 26 | G96 | 0.3+ | 0.2+ |
| 1995 11 20 | 691 | 0.0 | 0.1+ | 2004 09 11 | 691 | 0.1− | 0.3+ | 2005 11 26 | G96 | 0.4+ | 0.0 |
| 1995 11 20 | 691 | 0.6+ | 0.1− | 2004 09 11 | 691 | 0.4− | 0.1+ | 2005 11 26 | G96 | 0.2+ | 0.1+ |
| 1995 11 20 | 691 | 0.1+ | 0.1− | 2005 10 26 | 691 | 0.1+ | 0.3− | 2005 11 26 | G96 | 0.2+ | 0.1+ |
| 1995 11 27 | 691 | 0.0 | 0.7− | 2005 10 26 | 691 | 0.1− | 0.5− | 2005 11 29 | 699 | 0.8+ | 1.3+ |
| 1995 11 27 | 691 | 0.1− | 0.1+ | 2005 10 26 | 691 | 0.1+ | 0.4− | 2005 11 29 | 699 | 0.1− | 0.9+ |
| 1995 11 27 | 691 | 0.1+ | 0.1+ | 2005 10 27 | G96 | 0.1+ | 0.0 | 2005 11 29 | 699 | 0.1+ | 0.3+ |
| 2002 02 11 | 704 | 0.6+ | 1.4+ | 2005 10 27 | G96 | 0.1− | 0.2− | 2005 11 29 | 699 | 0.1− | 1.1+ |
| 2002 02 11 | 704 | 0.4+ | 0.2+ | 2005 10 27 | G96 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.9− | 0.2+ |
| 2002 02 11 | 704 | 0.5+ | 1.1+ | 2005 10 27 | G96 | 0.1− | 0.1− | 2006 10 21 | G96 | 1.0− | 1.1− |
| 2002 02 11 | 704 | 0.9+ | 0.8+ | 2005 10 30 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2002 02 11 | 704 | 0.7+ | 0.9+ | 2005 10 30 | 691 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.5− | 0.4+ |
| 2002 02 21 | 704 | 0.1− | 0.2− | 2005 10 30 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2002 02 21 | 704 | 1.0+ | 0.1+ | 2005 11 12 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2002 02 21 | 704 | 0.1+ | 0.9+ | 2005 11 12 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 1.6− | 0.0 |
| 2002 02 21 | 704 | 0.8+ | 0.5+ | 2005 11 12 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.5+ |
| 2004 08 20 | 691 | 0.1− | 0.2+ | 2005 11 21 | 691 | 0.2− | 0.4+ | | | | |

**(136743)∗ 1995 WW$_1$ = 2000 DX$_{31}$**

Discovered 1995 Nov. 16 by N. Sato and T. Urata at Chichibu.

Id. A. Doppler (*MPO* 6731)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.62243 | | (2000.0) | | | |
| $n$ | 0.27545918 | $\omega$ | 161.61946 | | +0.68979350 | −0.72373604 |
| $a$ | 2.3393644 | $\Omega$ | 244.76138 | | +0.66149031 | +0.64109982 |
| $e$ | 0.2353955 | $i$ | 1.25275 | | +0.29430511 | +0.25533736 |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 369 | 0.6− | 0.3+ | 2002 10 04 | 704 | 0.4− | 0.1+ | 2002 11 19 | 644 | 0.7+ | 1.5+ |
| 1995 11 16 | 369 | 0.7− | 0.2+ | 2002 10 04 | 704 | 0.3− | 0.1− | 2002 11 19 | 644 | 1.3− | 1.2+ |
| 1995 11 16 | 369 | 0.5− | 0.3+ | 2002 10 04 | 704 | 0.4− | 0.2+ | 2002 11 21 | 644 | 0.1+ | 0.3+ |
| 1995 11 18 | 369 | 0.1− | 0.3− | 2002 10 04 | 704 | 0.2− | 0.4− | 2002 11 21 | 644 | 0.1+ | 0.2+ |
| 1995 11 21 | 691 | 0.3− | 0.3− | 2002 10 04 | 704 | 0.4− | 0.3+ | 2002 11 21 | 644 | 0.0 | 0.3+ |
| 1995 11 21 | 691 | 0.1− | 0.4− | 2002 10 04 | 704 | 0.0 | 0.6− | 2002 12 05 | 704 | 0.8+ | 1.2+ |
| 1995 11 21 | 691 | 0.1− | 0.2− | 2002 10 04 | 704 | 0.1− | 0.8+ | 2002 12 05 | 704 | 0.5− | 0.5+ |
| 1995 11 24 | 369 | 0.2+ | 0.3− | 2002 10 04 | 704 | 0.2− | 0.7− | 2002 12 05 | 704 | 0.4+ | 0.4+ |
| 1995 11 24 | 369 | 0.3+ | 0.2− | 2002 10 06 | 644 | 0.3− | 0.1+ | 2002 12 05 | 704 | 0.1+ | 0.1− |
| 1995 11 24 | 369 | 0.2+ | 0.5− | 2002 10 06 | 644 | 0.3− | 0.1+ | 2003 01 04 | 704 | 0.9− | 0.5+ |
| 1995 11 27 | 691 | 0.1+ | 0.4+ | 2002 10 06 | 644 | 0.3− | 0.3+ | 2003 01 04 | 704 | 1.2− | 0.3+ |
| 1995 11 27 | 691 | 0.2+ | 0.3+ | 2002 10 07 | 699 | 0.3+ | 0.1− | 2003 01 04 | 704 | 1.1− | 0.3+ |
| 1995 11 27 | 691 | 0.4+ | 0.4+ | 2002 10 07 | 699 | 0.6+ | 0.8+ | 2003 01 04 | 704 | 0.5− | 0.9+ |
| 1998 06 16 | 691 | 0.5− | 0.0 | 2002 10 07 | 699 | 0.8+ | 0.5− | 2004 03 29 | 691 | 0.3+ | 0.5+ |
| 1998 06 16 | 691 | 0.0 | 0.7+ | 2002 10 07 | 699 | 0.9+ | 0.5+ | 2004 03 29 | 691 | 0.6+ | 0.6+ |
| 1998 06 16 | 691 | 0.8− | 0.5+ | 2002 10 07 | 704 | 0.2+ | 0.9+ | 2004 03 29 | 691 | 0.6+ | 0.3+ |
| 2000 02 29 | 704 | 0.9− | 1.2+ | 2002 10 07 | 704 | 0.1+ | 1.0+ | 2006 10 17 | G96 | 0.2− | 0.0 |
| 2000 02 29 | 704 | 0.4− | 0.7− | 2002 10 07 | 704 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 0.4− | 0.2+ |
| 2000 02 29 | 704 | 0.1+ | 0.3− | 2002 10 07 | 704 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.3+ |
| 2000 03 03 | 704 | 0.7+ | 0.9+ | 2002 10 07 | 704 | 0.1+ | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.9+ | 0.8+ | 2002 10 10 | 291 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2000 03 03 | 704 | 0.6+ | 0.5+ | 2002 10 10 | 291 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 1.0+ | 0.2+ | 2002 10 10 | 291 | 0.7+ | 0.3− | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2002 09 07 | 704 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.2− | 0.8+ | 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.6− | 0.1+ |
| 2002 09 07 | 704 | 0.9− | 0.3+ | 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.9− | 0.2+ |
| 2002 10 02 | 704 | 0.7− | 0.3+ | 2002 10 11 | 704 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.6− | 0.0 |
| 2002 10 02 | 704 | 0.3− | 0.2+ | 2002 10 11 | 704 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2002 10 28 | 608 | 0.0 | 0.3+ | 2006 11 22 | 704 | 1.0+ | 0.5+ |
| 2002 10 02 | 704 | 0.1+ | 0.5+ | 2002 10 28 | 608 | 0.0 | 0.8+ | 2006 11 22 | 704 | 0.3+ | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2002 10 28 | 608 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.5− | 2002 10 31 | 704 | (0.4+ | 1.6+) | 2006 11 27 | G96 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2002 10 31 | 704 | (0.6+ | 1.7+) | 2006 11 27 | G96 | 0.4− | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2002 10 31 | 704 | (1.2+ | 1.7+) | 2006 11 27 | G96 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.8− | 2002 10 31 | 704 | (1.0+ | 2.3+) | 2006 11 27 | G96 | 0.4− | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2002 10 31 | 704 | (1.0+ | 2.1+) | | | | |
| 2002 10 04 | 704 | 0.4− | 0.0 | 2002 11 19 | 644 | 0.4+ | 0.0 | | | | |

**(136744)∗ 1995 WP$_7$ = 2002 TL$_{17}$**

Discovered 1995 Nov. 27 by T. Kobayashi at Oizumi.

Id. A. Doppler (*MPO* 39914)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.14394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27237854 | $\omega$ | 131.89410 | | +0.71829726 | −0.69534410 | |
| $a$ | 2.3569704 | $\Omega$ | 272.17508 | | +0.63120447 | +0.66542668 | |
| $e$ | 0.2336718 | $i$ | 1.33945 | | +0.29262599 | +0.27148466 | |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 27 | 411 | 0.2− | 0.6+ | 2002 10 07 | 699 | 0.5+ | 0.4+ | 2002 11 21 | 644 | 0.4− | 0.7+ |
| 1995 11 27 | 411 | 0.1+ | 0.0 | 2002 10 07 | 699 | 0.2− | 1.0+ | 2004 04 12 | 691 | 0.3+ | 0.6+ |
| 1995 11 28 | 411 | 0.6− | 1.1+ | 2002 10 07 | 699 | 0.1+ | 0.7+ | 2004 04 12 | 691 | 0.2+ | 0.4+ |
| 1995 11 28 | 411 | 0.3+ | 1.5+ | 2002 10 07 | 704 | 0.3− | 0.4+ | 2004 04 12 | 691 | 0.2+ | 0.3+ |
| 1995 12 01 | 411 | 1.1− | 0.3− | 2002 10 07 | 704 | 0.2+ | 1.0+ | 2004 04 19 | 691 | 0.1+ | 0.4+ |
| 1995 12 01 | 411 | 0.0 | 0.0 | 2002 10 07 | 704 | 0.2+ | 0.6+ | 2004 04 19 | 691 | 0.0 | 0.7+ |
| 2000 01 08 | 691 | 0.1+ | 0.2− | 2002 10 07 | 704 | 0.2− | 0.6+ | 2004 04 19 | 691 | 0.3− | 0.3+ |
| 2000 01 08 | 691 | 0.2+ | 0.2− | 2002 10 07 | 704 | 0.7− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2000 01 08 | 691 | 0.0 | 0.3− | 2002 10 11 | 704 | 0.5+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2000 03 03 | 704 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2000 03 03 | 704 | 0.9+ | 0.2− | 2002 10 11 | 704 | 0.6− | 1.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2000 03 03 | 704 | 0.6+ | 1.3− | 2002 10 11 | 704 | 0.6+ | 0.5+ | 2006 10 29 | G96 | 0.3+ | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.4− | 2002 10 11 | 704 | 0.4− | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.5+ | 0.2− | 2002 10 12 | 704 | 0.5− | 0.3− | 2006 10 29 | G96 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.5+ | 0.4− | 2002 10 12 | 704 | 0.3− | 0.8− | 2006 10 29 | G96 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.5− | 2002 10 12 | 704 | 0.5− | 0.7− | 2006 11 13 | G96 | 0.8+ | 0.3− |
| 2002 10 02 | 704 | 0.3+ | 0.1− | 2002 10 12 | 704 | 0.6− | 0.8− | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.7+ | 0.2− | 2002 10 12 | 704 | 0.6− | 1.0− | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.9+ | 0.0 | 2002 10 31 | 704 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2002 10 31 | 704 | 0.3− | 0.8− | 2006 11 17 | 703 | 1.3− | 0.6+ |
| 2002 10 03 | 704 | 0.4− | 0.6+ | 2002 10 31 | 704 | 0.5+ | 1.2− | 2006 11 17 | 703 | 0.6− | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2002 10 31 | 704 | 0.6+ | 0.2− | 2006 11 17 | 703 | 0.9− | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2002 10 31 | 704 | 0.6− | 0.4+ | 2006 11 17 | 703 | 0.6− | 1.3− |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2002 11 21 | 644 | 0.4− | 0.7+ | | | | |
| 2002 10 07 | 699 | 0.1− | 0.7+ | 2002 11 21 | 644 | 0.2− | 0.5+ | | | | |

**(136745)∗ 1995 WL$_8$**

Discovered 1995 Nov. 29 by C. Pollas at Caussols.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.93607 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27077798 | $\omega$ | 131.55217 | | +0.90859103 | −0.30701379 | |
| $a$ | 2.3662492 | $\Omega$ | 248.10446 | | +0.22998535 | +0.93371834 | |
| $e$ | 0.4833131 | $i$ | 17.77150 | | +0.34866757 | +0.18415372 | |
| $P$ | 3.64 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 675 | (4.8− | 8.9+) | 1995 12 04 | 709 | 0.0 | 0.0 | 1996 01 17 | 658 | 0.7− | 0.9+ |
| 1995 10 18 | 675 | (5.0− | 10.2+) | 1995 12 04 | 709 | 0.0 | 0.1+ | 1996 01 27 | 413 | 0.4− | 0.3+ |
| 1995 10 25 | 675 | 0.4− | 0.9− | 1995 12 04 | 709 | 0.1+ | 0.2+ | 1996 01 27 | 413 | 0.5− | 0.3+ |
| 1995 10 25 | 675 | 0.6+ | 0.1+ | 1995 12 08 | 413 | 0.0 | 0.2+ | 1996 01 28 | 413 | 0.4+ | 0.1− |
| 1995 11 29 | 010 | (0.3+ | 3.0−) | 1995 12 08 | 413 | 0.1+ | 0.1+ | 1996 01 28 | 413 | 0.2+ | 0.2+ |
| 1995 11 29 | 010 | 0.7+ | 0.7− | 1995 12 10 | 587 | 0.7− | 0.6− | 2002 05 12 | 950 | 0.4+ | 0.3− |
| 1995 11 29 | 010 | (0.3− | 3.6−) | 1995 12 10 | 587 | 1.4− | 0.5+ | 2002 05 12 | 950 | 0.4+ | 0.2− |
| 1995 11 29 | 010 | 0.2+ | 0.2+ | 1995 12 12 | 897 | 1.6+ | 0.7+ | 2002 05 12 | 950 | 0.4+ | 0.1− |
| 1995 11 29 | 010 | 0.2− | 1.3− | 1995 12 12 | 897 | 1.2+ | 1.1− | 2002 05 13 | 950 | 0.4+ | 0.0 |
| 1995 11 29 | 010 | (1.6+ | 4.9+) | 1995 12 12 | 897 | (2.2+ | 0.7+) | 2002 05 13 | 950 | 0.3+ | 0.1+ |
| 1995 12 01 | 010 | 0.2+ | 1.8− | 1995 12 19 | 897 | 0.9+ | 0.5+ | 2002 05 13 | 950 | 0.4+ | 0.0 |
| 1995 12 01 | 010 | 0.0 | 0.2+ | 1995 12 19 | 897 | (0.2− | 2.2−) | 2006 05 23 | 291 | 0.1+ | 0.4− |
| 1995 12 01 | 010 | 0.2+ | 1.5− | 1995 12 19 | 897 | (0.2+ | 2.1−) | 2006 05 23 | 291 | 1.1− | 1.3+ |
| 1995 12 01 | 010 | 0.9+ | 1.7+ | 1995 12 19 | 010 | 0.6− | 0.2− | 2006 05 23 | 291 | 0.3− | 0.1− |
| 1995 12 01 | 010 | 0.1+ | 1.4− | 1995 12 19 | 010 | (0.3+ | 2.4+) | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 1995 12 01 | 010 | 0.5+ | 1.6+ | 1995 12 19 | 010 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 1995 12 02 | 709 | 0.1− | 0.1+ | 1995 12 19 | 010 | 0.7− | 1.2+ | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 1995 12 02 | 709 | 0.0 | 0.1+ | 1995 12 21 | 010 | 1.3− | 1.6− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 1995 12 02 | 709 | 0.2− | 0.1+ | 1995 12 21 | 010 | 0.1− | 0.3− | 2006 10 29 | G96 | 0.2+ | 0.0 |
| 1995 12 02 | 709 | 0.1− | 0.1+ | 1995 12 21 | 010 | 0.2+ | 1.7+ | 2006 10 29 | G96 | 0.3+ | 0.2− |
| 1995 12 02 | 709 | 0.0 | 0.1+ | 1996 01 10 | 413 | 0.1− | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.1− |
| 1995 12 02 | 709 | 0.1+ | 0.3+ | 1996 01 10 | 413 | 0.4− | 0.1− | 2006 10 29 | G96 | 0.4+ | 0.1− |
| 1995 12 04 | 709 | 0.0 | 0.3− | 1996 01 12 | 658 | 0.3− | 0.9− | 2006 11 28 | 704 | 1.0+ | 0.3+ |
| 1995 12 04 | 709 | 0.0 | 0.1− | 1996 01 12 | 658 | 0.4− | 0.7+ | 2006 11 28 | 704 | 0.1+ | 0.9+ |
| 1995 12 04 | 709 | 0.1− | 0.1− | 1996 01 12 | 658 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.0 |
| 1995 12 04 | 709 | 0.0 | 0.1+ | 1996 01 17 | 658 | 0.9− | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 1995 12 04 | 709 | 0.0 | 0.1− | 1996 01 17 | 658 | 1.4− | 0.6+ | 2006 11 28 | 704 | 0.2+ | 0.1− |

**(136746)∗ 1995 WJ$_{17}$**

Discovered 1995 Nov. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.91046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17313746 | $\omega$ | 233.95824 | | −0.71612881 | −0.69510817 | |
| $a$ | 3.1881741 | $\Omega$ | 261.91140 | | +0.65913007 | −0.64376286 | |
| $e$ | 0.1383120 | $i$ | 3.65534 | | +0.22958024 | −0.31999065 | |
| $P$ | 5.69 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.8+ | 0.3− | 1997 03 04 | 691 | 0.1+ | 0.5− | 2001 12 18 | 704 | 0.1− | 0.2− |
| 1995 10 19 | 691 | 0.3+ | 0.6− | 1997 03 04 | 691 | 0.2− | 0.6− | 2001 12 18 | 704 | 0.0 | 0.4− |
| 1995 10 19 | 691 | 0.2− | 0.3− | 1997 03 04 | 691 | 0.0 | 0.7− | 2001 12 18 | 704 | 1.0− | 0.3− |
| 1995 10 24 | 691 | 0.4+ | 0.1+ | 1997 03 12 | 691 | 0.1+ | 0.1+ | 2001 12 18 | 704 | 0.3+ | 0.9− |
| 1995 10 24 | 691 | 0.3+ | 0.1− | 1997 03 12 | 691 | 0.0 | 0.1+ | 2003 03 07 | 704 | 0.4+ | 0.4+ |
| 1995 10 24 | 691 | 0.4+ | 0.3− | 1997 03 12 | 691 | 0.1+ | 0.1+ | 2003 03 07 | 704 | 0.9+ | 0.9+ |
| 1995 11 17 | 691 | 0.3− | 0.3+ | 2000 09 20 | 695 | 0.2+ | 0.2+ | 2003 03 07 | 704 | 0.4− | 0.9+ |
| 1995 11 17 | 691 | 1.1− | 0.5+ | 2000 09 20 | 695 | 0.0 | 0.1+ | 2003 03 07 | 704 | 0.5+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.5− | 0.1+ | 2000 10 02 | 645 | 0.1+ | 0.1− | 2003 03 26 | 644 | 0.0 | 1.0+ |
| 1995 11 23 | 691 | 0.1− | 0.2+ | 2000 10 02 | 645 | 0.0 | 0.1− | 2003 03 26 | 644 | 0.2− | 0.4+ |
| 1995 11 23 | 691 | 0.1− | 0.6+ | 2001 11 12 | 691 | 0.4+ | 0.3+ | 2003 03 26 | 644 | 0.2− | 0.7+ |
| 1995 11 23 | 691 | 0.5− | 0.3+ | 2001 11 12 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 1996 11 12 | 691 | 0.1− | 0.1+ | 2001 11 12 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.5+ | 0.1+ |
| 1996 11 12 | 691 | 0.1− | 0.5+ | 2001 11 21 | 704 | 0.6− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1+ |
| 1996 11 12 | 691 | 0.0 | 0.3− | 2001 11 21 | 704 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.5− | 0.0 |
| 1997 01 03 | 691 | 0.3− | 0.5− | 2001 11 21 | 704 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 1997 01 03 | 691 | (2.6− | 2.1+) | 2001 11 21 | 704 | 0.7− | 0.5− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 1997 01 03 | 691 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.6− | 0.2+ | | | | |

**(136747)∗ 1995 WD$_{18}$ = 2001 VA$_{34}$**

Discovered 1995 Nov. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 19266)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.25710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17309075 | $\omega$ | 162.40609 | | +0.65546947 | −0.75255098 | |
| $a$ | 3.1887476 | $\Omega$ | 246.58826 | | +0.68432263 | +0.62737845 | |
| $e$ | 0.1628728 | $i$ | 3.96516 | | +0.31947192 | +0.20015818 | |
| $P$ | 5.69 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 15 | 691 | 0.5+ | 0.9+ | 2001 11 27 | 704 | 0.9+ | 0.4− | 2006 09 06 | 644 | 0.4− | 0.4+ |
| 1991 01 15 | 691 | 0.0 | 1.0+ | 2001 12 10 | 704 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.5− | 1.2− |
| 1991 01 15 | 691 | 0.2+ | 0.9+ | 2001 12 10 | 704 | 0.6+ | 0.5+ | 2006 09 12 | 703 | 0.9− | 0.3+ |
| 1995 10 24 | 691 | 0.3+ | 0.3− | 2001 12 10 | 704 | 0.2+ | 1.0+ | 2006 09 12 | 703 | 0.2− | 1.5+ |
| 1995 10 24 | 691 | 0.3+ | 0.3− | 2001 12 14 | 704 | 0.1+ | 0.4− | 2006 09 12 | 703 | 0.8− | 1.1− |
| 1995 10 24 | 691 | 0.2+ | 0.3− | 2001 12 14 | 704 | 0.2+ | 0.2− | 2006 09 16 | 699 | (2.3− | 1.5+) |
| 1995 11 17 | 691 | 0.5− | 0.1− | 2001 12 14 | 704 | 0.3+ | 0.3− | 2006 09 16 | 699 | 0.5+ | 1.5+ |
| 1995 11 17 | 691 | 0.2− | 0.1+ | 2001 12 17 | 704 | 1.3− | 1.5− | 2006 09 16 | 699 | 0.6+ | 0.7+ |
| 1995 11 17 | 691 | 0.2− | 0.1+ | 2001 12 17 | 704 | 0.5− | 0.9− | 2006 09 16 | 699 | 0.4+ | 0.5+ |
| 1995 11 23 | 691 | 0.2− | 0.2+ | 2001 12 17 | 704 | 0.5− | 0.9− | 2006 09 18 | 704 | 0.2+ | 0.2− |
| 1995 11 23 | 691 | 0.3− | 0.1+ | 2001 12 17 | 704 | 0.8− | 0.8− | 2006 09 18 | 704 | 1.6− | 0.5+ |
| 1995 11 23 | 691 | 0.1− | 0.5+ | 2001 12 17 | 704 | 0.6− | 0.5− | 2006 09 18 | 704 | 0.1+ | 0.8+ |
| 1995 11 28 | 691 | 0.1+ | 0.3− | 2001 12 18 | 691 | 0.4− | 0.4− | 2006 09 18 | 704 | 0.2− | 0.7+ |
| 1995 11 28 | 691 | 0.2+ | 0.1− | 2001 12 18 | 691 | 0.3− | 0.3− | 2006 09 18 | 704 | 0.2− | 0.5+ |
| 1995 11 28 | 691 | 0.1− | 0.2− | 2001 12 18 | 691 | 0.4− | 0.0 | 2006 09 19 | 699 | (0.2− | 2.4+) |
| 1995 12 26 | 691 | 0.6+ | 0.9− | 2001 12 20 | 704 | (2.1+ | 0.7+) | 2006 09 19 | 703 | 0.4− | 0.3− |
| 1995 12 26 | 691 | 0.3+ | 1.0− | 2001 12 20 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 699 | 0.1+ | 1.5+ |
| 1995 12 26 | 691 | 0.7+ | 0.7− | 2001 12 20 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 703 | 0.3− | 0.3+ |
| 2001 11 09 | 704 | 0.1− | 0.2+ | 2001 12 20 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.5+ |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2001 12 23 | 691 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.7− | 0.2+ |
| 2001 11 09 | 704 | 0.4− | 0.2+ | 2001 12 23 | 691 | 0.5+ | 0.4− | 2006 09 19 | 699 | 0.3− | 0.8+ |
| 2001 11 12 | 704 | 1.2− | 0.4+ | 2001 12 23 | 691 | 0.7+ | 0.2− | 2006 09 20 | 691 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.7− | 0.6+ | 2006 08 29 | 703 | 0.2− | 1.4+ | 2006 09 20 | 691 | 0.3− | 0.2+ |
| 2001 11 12 | 704 | 0.2− | 0.9+ | 2006 08 29 | 703 | 0.0 | 0.3− | 2006 09 20 | 691 | 0.1− | 0.3+ |
| 2001 11 12 | 704 | 0.1− | 0.8+ | 2006 08 29 | 703 | 0.5− | 0.3− | 2006 09 25 | 699 | 1.4+ | 0.6+ |
| 2001 11 12 | 704 | 0.9− | 1.2+ | 2006 08 29 | 703 | 0.3− | 1.2+ | 2006 09 25 | 699 | 0.5+ | 0.3+ |
| 2001 11 25 | 704 | 0.8+ | 1.2+ | 2006 08 30 | 704 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.3− |
| 2001 11 25 | 704 | 0.8+ | 1.0+ | 2006 08 30 | 704 | 0.3− | 0.2+ | 2006 09 25 | 699 | 1.3+ | 0.2+ |
| 2001 11 25 | 704 | 0.8+ | 1.1+ | 2006 08 30 | 704 | 0.1+ | 0.8− | 2006 10 01 | 703 | 0.7+ | 0.2+ |
| 2001 11 27 | 704 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 0.4+ | 1.1+ | 2006 10 01 | 703 | 0.2− | 1.2− |
| 2001 11 27 | 704 | 0.5+ | 0.6+ | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 01 | 703 | 1.2− | 1.6− |
| 2001 11 27 | 704 | 0.3− | 1.2+ | 2006 09 06 | 644 | 0.1+ | 0.8+ | 2006 10 01 | 703 | 0.7+ | 2.1− |

**(136748)∗ 1995 WG$_{23}$ = 1995 WW$_{43}$ = 2005 GK$_{130}$**

Discovered 1995 Nov. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74550)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.85305 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26941709 | $\omega$ | 265.73917 | | +0.48761451 | +0.87039487 | |
| $a$ | 2.3742109 | $\Omega$ | 33.71994 | | −0.74440135 | +0.45527699 | |
| $e$ | 0.1207300 | $i$ | 7.05193 | | −0.45617838 | +0.18744500 | |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.1+ | 0.0 | 2005 04 14 | 691 | 0.3+ | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 1995 11 18 | 691 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.4+ | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 1995 11 18 | 691 | 0.3+ | 0.3− | 2005 04 14 | 691 | 0.4+ | 0.8+ | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 1995 11 24 | 691 | 0.3− | 0.1− | 2005 05 09 | 704 | 0.1− | 0.7− | 2006 10 29 | 691 | 0.2+ | 0.5+ |
| 1995 11 24 | 691 | 0.2+ | 0.0 | 2005 05 09 | 704 | 0.5+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 1995 11 24 | 691 | 0.0 | 0.0 | 2005 05 09 | 704 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 1995 11 30 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 1995 11 30 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 1995 11 30 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.0 | 0.1+ |
| 2002 08 12 | 608 | 0.8− | 1.3− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2002 08 12 | 608 | 0.3− | 1.1− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2002 08 12 | 608 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.7− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.5− | 0.7+ |
| 2002 08 19 | 644 | 0.1− | 0.8+ | 2006 10 20 | 691 | 0.9− | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2002 08 30 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2002 08 30 | 644 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.4+ |
| 2002 08 30 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2005 04 07 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2005 04 07 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.0 | 0.4+ |
| 2005 04 07 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.4+ | 0.3+ |

**(136749)∗ 1995 WM$_{23}$ = 2004 BV$_{63}$**

Discovered 1995 Nov. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 74550)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.09706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26712644 | $\omega$ | 134.99923 | | −0.90225451 | −0.43110162 | |
| $a$ | 2.3877643 | $\Omega$ | 19.46922 | | +0.38727377 | −0.81972003 | |
| $e$ | 0.1257894 | $i$ | 1.61464 | | +0.18962023 | −0.37710804 | |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.2+ | 0.5− | 2003 12 27 | 704 | 0.9− | 0.6+ | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 1995 09 29 | 691 | 0.3+ | 0.4− | 2004 01 16 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.7− | 0.1− |
| 1995 09 29 | 691 | 0.2+ | 0.1− | 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1− |
| 1995 11 18 | 691 | 0.3− | 0.3− | 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 1.2− | 0.3− |
| 1995 11 18 | 691 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.5− |
| 1995 11 18 | 691 | 0.2− | 0.1− | 2004 01 22 | 704 | 1.3− | 0.6− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 1995 11 24 | 691 | 0.1− | 0.5− | 2004 01 22 | 704 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 1995 11 24 | 691 | 0.4+ | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1995 11 24 | 691 | 0.4+ | 0.0 | 2004 01 22 | 704 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.9+ |
| 1997 04 03 | 704 | 0.8+ | 0.0 | 2004 01 27 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.4+ | 0.5+ |
| 1997 04 03 | 704 | 0.9+ | 0.0 | 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3− |
| 1997 04 30 | 691 | 0.8− | 0.7− | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 1997 04 30 | 691 | 0.1− | 0.4− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 1997 04 30 | 691 | (0.9− | 6.0−) | 2004 02 23 | 704 | 0.4+ | 0.8+ | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2003 12 21 | 691 | 0.2+ | 0.1− | 2004 02 23 | 704 | (0.3+ | 2.0+) | 2006 11 11 | G96 | 0.6+ | 0.6− |
| 2003 12 21 | 691 | 0.3+ | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2003 12 21 | 691 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2003 12 27 | 704 | 1.0− | 0.2+ | 2006 09 19 | 691 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2003 12 27 | 704 | (0.5+ | 1.9−) | 2006 09 30 | 691 | 0.5+ | 0.1+ | | | | |
| 2003 12 27 | 704 | 0.7+ | 0.8+ | 2006 09 30 | 691 | 0.3+ | 0.1− | | | | |

**(136750)∗ 1995 YL$_{5}$ = 1999 TA$_{234}$**

Discovered 1995 Dec. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 16733)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.17025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23133658 | $\omega$ | 278.35569 | | +0.82596287 | −0.56280009 | |
| $a$ | 2.6280876 | $\Omega$ | 115.89981 | | +0.53029927 | +0.75629555 | |
| $e$ | 0.1671631 | $i$ | 2.05586 | | +0.19122767 | +0.33357622 | |
| $P$ | 4.26 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.4+ | 0.1+ | 1999 10 09 | 704 | 0.1− | 0.5+ | 2005 01 19 | 691 | 0.2+ | 0.5+ |
| 1995 12 16 | 691 | 0.3+ | 0.3− | 1999 10 09 | 704 | 0.6− | 1.0+ | 2005 01 19 | 691 | 0.2+ | 0.5+ |
| 1995 12 16 | 691 | 0.1− | 0.2− | 2002 05 19 | 291 | 0.1+ | 0.2+ | 2005 01 19 | 691 | 0.0 | 0.4+ |
| 1995 12 22 | 691 | 0.7+ | 0.3− | 2002 05 19 | 291 | 0.4+ | 0.4+ | 2005 03 04 | G96 | 0.2− | 0.2− |
| 1995 12 22 | 691 | 0.3− | 0.0 | 2002 05 19 | 291 | 0.7− | 0.1− | 2005 03 04 | G96 | 0.4− | 0.1+ |
| 1995 12 22 | 691 | 0.6− | 0.1− | 2003 07 24 | 644 | 0.0 | 0.4+ | 2005 03 04 | G96 | 0.1+ | 0.0 |
| 1996 01 13 | 691 | 0.2− | 0.7+ | 2003 07 24 | 644 | 0.5+ | 0.8+ | 2005 03 04 | G96 | 0.2− | 0.1− |
| 1996 01 13 | 691 | 0.2− | 0.1+ | 2003 07 24 | 644 | 0.1+ | 0.3+ | 2006 04 02 | 691 | 0.5+ | 0.4+ |
| 1996 01 13 | 691 | 0.1− | 0.1+ | 2003 10 01 | 691 | 0.3− | 0.5+ | 2006 04 02 | 691 | 0.5+ | 0.1− |
| 1999 10 03 | 691 | 0.1+ | 0.1+ | 2003 10 01 | 691 | 0.0 | 0.1+ | 2006 04 02 | 691 | 0.2+ | 0.7+ |
| 1999 10 03 | 691 | 0.1− | 0.1+ | 2003 10 01 | 691 | 0.3− | 0.3+ | 2006 04 07 | 691 | 0.0 | 0.2+ |
| 1999 10 03 | 691 | 0.1− | 0.0 | 2004 12 18 | G96 | 0.2+ | 0.0 | 2006 04 07 | 691 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.8− | 1.1+ | 2004 12 18 | G96 | 0.2+ | 0.1− | 2006 04 07 | 691 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.1− | 0.6− | 2004 12 18 | G96 | 0.2− | 0.2+ | | | | |
| 1999 10 09 | 704 | 0.1+ | 1.2+ | 2004 12 18 | G96 | 0.2− | 0.2+ | | | | |

**(136751)∗ 1995 YN$_5$**

Discovered 1995 Dec. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.22667 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17039393 | $\omega$ | 294.62193 | | +0.97810338 | −0.10178762 | |
| $a$ | 3.2223049 | $\Omega$ | 71.64080 | | +0.17409939 | +0.87808641 | |
| $e$ | 0.1956672 | $i$ | 11.02662 | | −0.11403151 | +0.46755057 | |
| $P$ | 5.78 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.3+ | 0.2− | 2001 12 15 | 704 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.2− |
| 1995 12 16 | 691 | 0.3+ | 0.7− | 2001 12 15 | 704 | 0.1+ | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.0 |
| 1995 12 16 | 691 | 0.0 | 0.5− | 2001 12 15 | 704 | 0.3− | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.1− |
| 1995 12 22 | 691 | 0.2+ | 0.4+ | 2001 12 18 | 704 | 1.0− | 0.3− | 2006 08 17 | 644 | 0.2+ | 0.1− |
| 1995 12 22 | 691 | 0.4− | 0.5+ | 2001 12 18 | 704 | 0.2+ | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.3− |
| 1995 12 22 | 691 | 0.4− | 0.4+ | 2001 12 18 | 704 | 0.6+ | 0.4− | 2006 08 18 | 644 | 0.2+ | 0.0 |
| 1995 12 28 | 691 | 0.2− | 0.1− | 2001 12 18 | 704 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.2+ | 0.2− |
| 1995 12 28 | 691 | 0.1− | 0.2− | 2001 12 18 | 704 | 0.5+ | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.2+ |
| 1995 12 28 | 691 | 0.0 | 0.1− | 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.0 |
| 1996 01 12 | 691 | 0.0 | 0.2+ | 2001 12 19 | 704 | 0.2− | 0.6+ | 2006 08 20 | 644 | 0.1+ | 0.2− |
| 1996 01 12 | 691 | 0.1+ | 0.3− | 2001 12 19 | 704 | 0.3− | 0.9− | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 1996 01 12 | 691 | 0.5+ | 0.1+ | 2001 12 19 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.4− | 2001 12 19 | 704 | 0.3+ | 1.0+ | 2006 09 26 | 703 | 0.5+ | 0.6− |
| 2001 11 20 | 704 | 0.4+ | 0.1− | 2005 06 14 | G96 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.1− |
| 2001 11 20 | 704 | 0.8+ | 0.4− | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.3− |
| 2001 11 20 | 704 | 0.3+ | 0.9+ | 2005 06 14 | G96 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.8+ |
| 2001 11 20 | 704 | 0.6− | 0.7+ | 2005 06 14 | G96 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 0.7− | 0.1− | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.3− | 0.2− | 2006 08 14 | 644 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.7− | 1.1+ |
| 2001 11 21 | 704 | 0.3− | 0.6+ | 2006 08 14 | 644 | 0.1− | 0.1+ | | | | |
| 2001 11 21 | 704 | 0.5− | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.2+ | | | | |

**(136752)∗ 1995 YD$_{11}$ = 2002 RU$_{55}$**

Discovered 1995 Dec. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 34693)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.64583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26158923 | $\omega$ | 165.77026 | | +0.45661707 | −0.88636808 | |
| $a$ | 2.4213421 | $\Omega$ | 257.01309 | | +0.80838159 | +0.44927055 | |
| $e$ | 0.1956765 | $i$ | 4.50290 | | +0.37151050 | +0.11183738 | |
| $P$ | 3.77 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 01 | 691 | 0.1− | 0.5+ | 2002 10 04 | 704 | 0.3− | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 1992 01 01 | 691 | 0.6− | 0.8+ | 2002 10 05 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.6− |
| 1992 01 01 | 691 | 0.3+ | 1.2+ | 2002 10 05 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 1995 12 18 | 691 | 0.0 | 0.0 | 2002 10 05 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 1995 12 18 | 691 | 0.0 | 0.4− | 2002 11 12 | 291 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.4− |
| 1995 12 18 | 691 | 0.2+ | 0.2− | 2002 11 12 | 291 | 0.4+ | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 1995 12 25 | 691 | 0.5− | 0.2− | 2002 11 12 | 291 | 0.0 | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 1995 12 25 | 691 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.2− |
| 1995 12 25 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 1996 01 22 | 557 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.5+ | 0.2− |
| 1996 01 22 | 557 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.2− | 2006 11 15 | 704 | (1.7+ | 0.1−) |
| 1996 01 22 | 557 | 0.7+ | 1.1+ | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 15 | 704 | 1.5+ | 0.1− |
| 2002 09 05 | 699 | (0.6− | 1.9+) | 2006 10 19 | G96 | 0.1− | 0.5− | 2006 11 15 | 704 | 0.7+ | 0.2− |
| 2002 09 05 | 699 | 0.0 | 0.9+ | 2006 10 19 | 703 | 0.6− | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.4− |
| 2002 09 05 | 699 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.1− |
| 2002 09 05 | 699 | 1.1+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.4− |
| 2002 09 06 | 704 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 16 | 704 | 0.5+ | 0.3− |
| 2002 09 06 | 704 | 0.7+ | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.4+ | 0.0 |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.5− | 0.5+ |
| 2002 09 06 | 704 | 0.6+ | 0.8− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.3− |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.4+ | 0.3− |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.6− |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2002 09 16 | 608 | 1.3− | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2002 09 16 | 608 | 1.3− | 0.2− | 2006 10 27 | 703 | 0.2+ | 1.3− | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2002 09 16 | 608 | 1.4− | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.9− | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2002 09 20 | 644 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2002 09 20 | 644 | 0.4− | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2002 09 20 | 644 | 0.1− | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.5− | 1.4+ |
| 2002 09 28 | 608 | (2.0− | 1.1−) | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 1.2+ | 0.3+ |
| 2002 09 28 | 608 | (1.9− | 1.2−) | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2002 09 28 | 608 | (2.0− | 1.3−) | 2006 10 31 | 691 | 0.3+ | 1.2+ | 2006 11 22 | 704 | (0.4− | 2.3+) |
| 2002 10 04 | 704 | 0.3− | 0.7− | 2006 10 31 | 691 | 0.2− | 0.1+ | 2006 12 01 | 704 | 0.4+ | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.3− | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.9+ |
| 2002 10 04 | 704 | 0.5− | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.4− | 2006 12 01 | 704 | 0.4− | 1.1− |
| 2002 10 04 | 704 | 0.3− | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.3− | | | | |

**(136753)∗ 1995 YJ$_{17}$**

Discovered 1995 Dec. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.40807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18007111 | $\omega$ | 11.18812 | | −0.03211235 | −0.99363854 | |
| $a$ | 3.1057991 | $\Omega$ | 80.71795 | | +0.90836062 | −0.07406672 | |
| $e$ | 0.1363364 | $i$ | 6.27918 | | +0.41695297 | +0.08483265 | |
| $P$ | 5.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.9+ | 0.3+ | 2002 01 08 | 704 | 0.0 | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.9+ |
| 1995 12 16 | 691 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.1+ | 0.4− | 2006 11 02 | 703 | 0.2− | 0.1− |
| 1995 12 16 | 691 | 0.4+ | 0.0 | 2002 01 08 | 704 | (0.1− | 2.8−) | 2006 11 02 | 703 | 0.1− | 0.4− |
| 1995 12 22 | 691 | 0.6− | 0.4+ | 2002 01 20 | 699 | 0.6+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 1995 12 22 | 691 | 0.0 | 0.4+ | 2002 01 20 | 699 | 0.2+ | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1995 12 22 | 691 | 0.4− | 0.6+ | 2002 01 20 | 699 | 0.6− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1995 12 28 | 691 | 0.1− | 0.1− | 2002 01 20 | 699 | 0.8− | 0.2− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1995 12 28 | 691 | 0.1+ | 0.1+ | 2002 02 04 | 644 | 0.1− | 0.3− | 2006 11 12 | 703 | 0.3− | 0.1+ |
| 1995 12 28 | 691 | 0.6− | 0.1− | 2002 02 04 | 644 | 0.8+ | 0.2+ | 2006 11 12 | 703 | 0.5+ | 0.4− |
| 1996 01 12 | 691 | 0.1− | 0.1− | 2002 02 04 | 644 | 0.5+ | 0.0 | 2006 11 12 | 703 | 0.3+ | 0.2+ |
| 1996 01 12 | 691 | 0.3− | 0.0 | 2002 02 06 | 704 | 0.8− | 1.3− | 2006 11 12 | 703 | 0.1+ | 0.6− |
| 1996 01 12 | 691 | 0.1+ | 0.1+ | 2002 02 06 | 704 | 0.1+ | 1.2− | 2006 11 21 | 704 | (1.7− | 0.3−) |
| 1996 01 24 | 691 | 0.0 | 0.3− | 2002 02 06 | 704 | 0.3− | 0.8− | 2006 11 21 | 704 | 0.7− | 1.1+ |
| 1996 01 24 | 691 | 0.1+ | 0.4− | 2002 02 06 | 704 | 0.3− | 0.2− | 2006 11 21 | 704 | (1.0+ | 1.6+) |
| 1996 01 24 | 691 | 0.1− | 0.4+ | 2002 02 06 | 704 | 0.5+ | 1.1− | 2006 11 21 | 704 | 0.4+ | 0.8+ |
| 2001 12 18 | 704 | 0.2+ | 0.0 | 2003 04 30 | 691 | 0.0 | 0.7+ | 2006 11 27 | 703 | 0.6+ | 0.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.6+ | 2003 04 30 | 691 | 0.4+ | 0.4+ | 2006 11 27 | 703 | 0.0 | 0.6− |
| 2001 12 18 | 704 | 0.6+ | 0.8+ | 2003 04 30 | 691 | 0.3+ | 0.6+ | 2006 11 27 | 703 | 0.5+ | 0.2− |
| 2001 12 18 | 704 | 0.7+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.6− | 0.7+ |
| 2002 01 05 | 699 | 0.5− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 1.5− | 1.6+ |
| 2002 01 05 | 699 | (1.6− | 0.0 ) | 2006 10 22 | G96 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.5− | 0.5+ |
| 2002 01 05 | 699 | 0.6− | 0.5− | 2006 10 22 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 1.7+ | 0.0 |
| 2002 01 05 | 699 | 0.8− | 0.7− | 2006 11 02 | 703 | 0.8− | 0.7− | 2006 11 29 | 704 | 0.2− | 1.3+ |

**(136754)∗ 1996 $AA_6$ = 1998 $QY_{100}$ = 2002 $XD_{79}$**

Discovered 1996 Jan. 12 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 21981), G. V. Williams (*MPO* 39915), M. Micheli (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.94240 | | (2000.0) | | | |
| $n$ | 0.27604023 | $\omega$ | 20.48012 | | +0.88138427 | −0.47236284 |
| $a$ | 2.3360805 | $\Omega$ | 7.71563 | | +0.42704422 | +0.79133557 |
| $e$ | 0.2141015 | $i$ | 2.52964 | | +0.20197771 | +0.38815121 |
| $P$ | 3.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 12 | 691 | 0.3− | 0.0 | 2002 12 30 | 704 | 0.4+ | 0.1+ | 2005 08 29 | 704 | 0.1− | 0.2+ |
| 1996 01 12 | 691 | 0.0 | 0.1− | 2002 12 30 | 704 | 0.3+ | 0.5+ | 2005 08 29 | 704 | 0.1+ | 0.5+ |
| 1996 01 12 | 691 | 0.2+ | 0.2+ | 2003 01 05 | 704 | 0.7+ | 0.6+ | 2005 08 29 | 704 | 0.3− | 0.1− |
| 1996 01 18 | 691 | 0.2− | 0.2− | 2003 01 05 | 704 | 0.8+ | 0.7+ | 2005 08 29 | 704 | 0.3− | 0.4+ |
| 1996 01 18 | 691 | 0.1− | 0.3− | 2003 01 05 | 704 | 0.4+ | 0.7+ | 2005 09 01 | 644 | 0.1− | 0.3+ |
| 1996 01 18 | 691 | 0.1+ | 0.0 | 2003 01 05 | 704 | 0.3+ | 0.2+ | 2005 09 01 | 644 | 0.1− | 0.1+ |
| 1996 01 25 | 691 | 0.2− | 0.5+ | 2003 01 09 | 704 | 0.9+ | 1.2− | 2005 09 01 | 644 | 0.0 | 0.2+ |
| 1996 01 25 | 691 | 0.2− | 0.0 | 2003 01 09 | 704 | 0.1− | 0.3− | 2005 09 08 | E12 | 0.1+ | 0.1− |
| 1996 01 25 | 691 | 0.2− | 0.3+ | 2003 01 09 | 704 | 0.3+ | 0.6+ | 2005 09 08 | E12 | 0.1− | 0.0 |
| 1998 08 26 | 809 | (3.6+ | 0.5−) | 2003 01 09 | 704 | (3.4+ | 0.9+) | 2005 09 08 | E12 | 0.6− | 0.4− |
| 1998 08 26 | 809 | (3.9+ | 0.9−) | 2004 03 23 | 291 | 0.1− | 0.3+ | 2005 09 08 | E12 | 0.2+ | 0.2− |
| 1998 08 26 | 809 | (3.7+ | 1.9−) | 2004 03 23 | 291 | 0.5+ | 0.3+ | 2005 09 24 | 644 | 0.5− | 0.1− |
| 1998 08 27 | 809 | (0.8+ | 2.0−) | 2004 03 23 | 291 | 0.8+ | 0.3+ | 2005 09 24 | 644 | 0.2− | 0.1+ |
| 1998 08 27 | 809 | (0.9+ | 2.8−) | 2005 07 04 | 644 | 0.0 | 0.4+ | 2005 09 24 | 644 | 0.2− | 0.3+ |
| 1998 08 27 | 809 | (1.9+ | 2.1−) | 2005 07 04 | 644 | 0.1− | 0.3+ | 2005 10 05 | 704 | 0.9− | 0.4− |
| 1998 10 10 | 699 | 1.4+ | 1.5+ | 2005 07 04 | 644 | 0.0 | 0.4+ | 2005 10 05 | 704 | 0.6− | 0.6+ |
| 1998 10 10 | 699 | 0.2+ | 0.2− | 2005 07 27 | 644 | 0.1+ | 0.2+ | 2005 10 05 | 704 | 0.1+ | 0.6+ |
| 1998 10 10 | 699 | 0.9+ | 0.3+ | 2005 07 27 | 644 | 0.0 | 0.1+ | 2005 10 05 | 704 | 0.4− | 0.3+ |
| 2000 03 11 | 704 | 0.6− | 0.8− | 2005 07 27 | 644 | 0.1− | 0.3+ | 2005 10 05 | 704 | 0.0 | 0.2− |
| 2000 03 11 | 704 | 0.9+ | 0.7+ | 2005 08 02 | 704 | 0.6− | 0.0 | 2005 10 25 | G96 | 0.1+ | 0.1− |
| 2000 03 11 | 704 | 0.0 | 0.8+ | 2005 08 02 | 704 | 0.6− | 0.9+ | 2005 10 25 | G96 | 0.3− | 0.6− |
| 2000 03 11 | 704 | 0.2− | 0.9+ | 2005 08 02 | 704 | 0.5+ | 0.2− | 2005 10 25 | G96 | 0.0 | 0.0 |
| 2000 03 11 | 704 | 0.2− | 0.6+ | 2005 08 06 | 704 | 0.3+ | 0.0 | 2005 10 25 | G96 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2005 08 06 | 704 | 0.3− | 0.0 | 2005 10 28 | G96 | 0.1+ | 0.2+ |
| 2002 12 06 | 704 | 0.2+ | 1.1+ | 2005 08 06 | 704 | 0.4− | 0.3+ | 2005 10 28 | G96 | 0.3+ | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 0.5+ | 2005 08 06 | 704 | 0.2− | 0.3− | 2005 10 28 | G96 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.1− | 0.2+ | 2005 08 22 | E12 | 0.1− | 0.7− | 2005 10 28 | G96 | 0.5+ | 0.0 |
| 2002 12 11 | 704 | 0.1− | 0.2+ | 2005 08 22 | E12 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.6− | 0.1− |
| 2002 12 11 | 704 | 0.3− | 0.1+ | 2005 08 22 | E12 | (1.6+ | 0.9−) | 2006 11 01 | G96 | 0.5− | 0.2+ |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2005 08 22 | E12 | 0.2− | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2005 08 25 | 644 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3+ |
| 2002 12 14 | 704 | 0.4− | 0.1+ | 2005 08 25 | 644 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.6− |
| 2002 12 14 | 704 | 0.6− | 0.4+ | 2005 08 25 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2005 08 27 | E12 | 0.2− | 0.8+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 12 14 | 704 | 0.3− | 0.3− | 2005 08 27 | E12 | 0.4− | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.8− |
| 2002 12 14 | 704 | 0.6− | 0.2+ | 2005 08 27 | E12 | 0.0 | 0.8+ | 2006 11 19 | 691 | 0.2− | 0.5+ |
| 2002 12 30 | 704 | 0.6+ | 0.0 | 2005 08 27 | E12 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.4+ |
| 2002 12 30 | 704 | 0.1+ | 0.2+ | 2005 08 29 | 704 | 0.1− | 0.2+ | 2006 11 19 | 691 | 1.0+ | 0.3+ |

**(136755)∗ 1996 $AH_{10}$ = 2000 $AT_{56}$**

Discovered 1996 Jan. 13 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (MPC 38452)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 175.68564 | | (2000.0) | | | |
| $n$ | 0.23918005 | $\omega$ | 246.41717 | | −0.98404572 | −0.14268312 |
| $a$ | 2.5703134 | $\Omega$ | 285.24369 | | +0.17456799 | −0.88966381 |
| $e$ | 0.1528652 | $i$ | 6.32432 | | −0.03435178 | −0.43375088 |
| $P$ | 4.12 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.4+ | 0.2+ | 2000 01 06 | 704 | 0.3− | 1.0+ | 2003 12 22 | 704 | 0.1+ | 0.1− |
| 1996 01 13 | 691 | 0.1− | 0.3+ | 2000 01 06 | 704 | 0.5− | 0.1− | 2003 12 22 | 704 | 0.2+ | 0.8− |
| 1996 01 13 | 691 | 0.0 | 0.2+ | 2000 01 08 | 691 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.5+ | 0.2− |
| 1996 01 20 | 691 | 0.4+ | 0.1+ | 2000 01 08 | 691 | 0.0 | 0.3− | 2004 01 21 | 704 | 0.1− | 0.2− |
| 1996 01 20 | 691 | 0.3+ | 0.3+ | 2000 01 08 | 691 | 0.2+ | 0.7− | 2004 01 21 | 704 | 0.6+ | 0.4− |
| 1996 01 20 | 691 | 0.4+ | 0.3+ | 2000 01 13 | 691 | 0.2+ | 0.2− | 2004 01 21 | 704 | 0.4+ | 0.3+ |
| 1996 01 27 | 691 | 0.2+ | 0.3+ | 2000 01 13 | 691 | 0.2− | 0.1+ | 2004 01 21 | 704 | 0.9+ | 1.4− |
| 1996 01 27 | 691 | 0.1− | 0.1+ | 2000 01 13 | 691 | 0.1− | 0.1+ | 2004 02 22 | 704 | 0.4− | 0.5+ |
| 1996 01 27 | 691 | 0.4− | 0.2− | 2000 02 03 | 704 | 0.6− | 0.5+ | 2004 02 22 | 704 | 0.6− | 0.4− |
| 1999 12 08 | 704 | 0.6− | 0.6− | 2000 02 03 | 704 | 0.0 | 0.1+ | 2004 02 22 | 704 | 0.5− | 0.5− |
| 1999 12 08 | 704 | 1.0− | 0.3− | 2000 02 03 | 704 | 0.9− | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.4+ |
| 1999 12 08 | 704 | 0.3+ | 0.0 | 2002 09 13 | 644 | 0.1− | 0.3− | 2006 09 13 | 644 | 0.5+ | 0.5+ |
| 2000 01 03 | 691 | 0.0 | 0.0 | 2002 09 13 | 644 | 0.0 | 0.5− | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2000 01 03 | 691 | 0.1− | 0.1− | 2002 09 13 | 644 | 0.1+ | 0.3− | 2006 09 13 | A13 | 0.6− | 0.9+ |
| 2000 01 03 | 691 | 0.1+ | 0.0 | 2002 10 05 | 644 | 0.4− | 0.2+ | 2006 09 13 | A13 | 1.3− | 0.4− |
| 2000 01 04 | 704 | 0.7− | 0.6+ | 2002 10 05 | 644 | 0.1− | 0.8+ | 2006 09 18 | 703 | 1.2− | 0.4− |
| 2000 01 04 | 704 | 0.8− | 0.3− | 2002 10 05 | 644 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.3+ |
| 2000 01 04 | 704 | 0.6+ | 0.1− | 2003 12 18 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 1.2+ | 0.4+ |
| 2000 01 04 | 704 | 0.3− | 1.5+ | 2003 12 18 | 704 | 0.4+ | 0.5− | 2006 09 18 | 703 | 0.0 | 1.2+ |
| 2000 01 06 | 704 | 0.0 | 0.5+ | 2003 12 18 | 704 | 0.3+ | 0.3+ | | | | |
| 2000 01 06 | 704 | 0.7− | 0.8+ | 2003 12 18 | 704 | 0.3+ | 0.1− | | | | |

**(136756)∗ 1996 $AO_{18}$ = 1995 $WG_{36}$ = 1999 $XD_{224}$**

Discovered 1996 Jan. 14 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 993)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.28265 | | (2000.0) | | | |
| $n$ | 0.26593661 | $\omega$ | 281.07914 | | +0.94335191 | −0.32122967 |
| $a$ | 2.3948811 | $\Omega$ | 97.69871 | | +0.32763066 | +0.86232444 |
| $e$ | 0.2547509 | $i$ | 4.80782 | | +0.05239588 | +0.39141802 |
| $P$ | 3.71 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.4+ | 0.2− | 2006 08 19 | 699 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.7+ |
| 1995 11 16 | 691 | 0.5+ | 0.5− | 2006 08 19 | 699 | 1.3+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 1.0+ |
| 1995 11 16 | 691 | 0.3+ | 0.1− | 2006 08 19 | 699 | 0.7+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.5+ |
| 1995 11 21 | 691 | 0.2− | 0.3− | 2006 08 19 | 699 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1995 11 21 | 691 | 0.3+ | 0.2− | 2006 08 23 | 704 | 1.1− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1995 11 21 | 691 | 0.3+ | 0.2− | 2006 08 23 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 1995 11 28 | 691 | 0.4+ | 0.4− | 2006 08 23 | 704 | 0.3− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1995 11 28 | 691 | 0.0 | 0.4− | 2006 08 23 | 704 | 1.4− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1995 11 28 | 691 | 1.3− | 0.4− | 2006 09 19 | 704 | 1.2− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1996 01 14 | 691 | 0.3− | 0.4+ | 2006 09 19 | 704 | 1.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1996 01 14 | 691 | 0.1− | 0.3+ | 2006 09 19 | 704 | 0.8− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1996 01 14 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 704 | 1.0+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1996 01 24 | 691 | 0.2+ | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 1996 01 24 | 691 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.2− | 0.0 |
| 1996 01 24 | 691 | 0.4− | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 1999 12 03 | 691 | 0.0 | 0.4− | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 1999 12 03 | 691 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 1999 12 03 | 691 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 1999 12 13 | 691 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.6− | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 1999 12 13 | 691 | 0.0 | 0.0 | 2006 09 21 | 699 | (1.7− | 1.1+) | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 1999 12 13 | 691 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 1999 12 17 | 691 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 1999 12 17 | 691 | 0.4− | 0.2− | 2006 09 26 | 704 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.4+ | 0.5+ |
| 1999 12 17 | 691 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.9− | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.1− |
| 2002 07 05 | 644 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.8− | 0.4− | 2006 10 28 | 703 | 0.5− | 0.4+ |
| 2002 07 05 | 644 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.4− | 2006 10 28 | 703 | 0.3− | 0.6+ |
| 2002 07 05 | 644 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.4− | 2006 11 10 | 704 | 0.1+ | 0.0 |
| 2002 07 14 | 644 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 11 10 | 704 | 1.5− | 0.0 |
| 2002 07 14 | 644 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.5− | 0.1− | 2006 11 10 | 704 | 0.2− | 0.2− |
| 2002 07 14 | 644 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.6+ | 0.1+ | 2006 11 10 | 704 | (1.5− | 1.4+) |
| 2002 08 13 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.4+ | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 2002 08 13 | 704 | 1.3+ | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.3− |
| 2002 08 13 | 704 | 0.1− | 0.5− | 2006 09 29 | 699 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.6+ | 0.7+ |
| 2002 08 29 | 644 | 0.5− | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.9+ |
| 2002 08 29 | 644 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.7+ |
| 2002 08 29 | 644 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.8+ | 0.9+ |
| 2005 05 04 | 691 | 0.2+ | 0.7+ | 2006 09 30 | 704 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.4− | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 691 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.5− | 0.6+ | |
| 2005 05 04 | 691 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 1.0+ | 1.2+ | 2006 11 20 | 704 | 0.1− | 0.6+ | |

**(136757)∗ 1996 BV$_{15}$ = 2002 OJ$_3$**

Discovered 1996 Jan. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33007)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.47493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23790474 | $\omega$ | 16.77333 | | +0.66210359 | +0.72957026 | |
| $a$ | 2.5794908 | $\Omega$ | 295.04879 | | −0.70745350 | +0.53306972 | |
| $e$ | 0.1784862 | $i$ | 10.89977 | | −0.24724153 | +0.42844360 | |
| $P$ | 4.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.1+ | 0.5+ | 2002 09 03 | 644 | 0.0 | 0.3− | 2006 07 21 | 703 | 0.3− | 0.0 | |
| 1996 01 13 | 691 | 0.1− | 0.4+ | 2002 09 03 | 644 | 0.3− | 0.4− | 2006 07 21 | 703 | 0.1+ | 0.1− | |
| 1996 01 20 | 691 | 0.2+ | 0.1+ | 2002 09 03 | 644 | 0.0 | 0.3− | 2006 07 21 | 703 | 0.5+ | 0.5− | |
| 1996 01 20 | 691 | 0.7+ | 0.1+ | 2002 09 03 | 049 | 0.5− | 0.0 | 2006 07 21 | 644 | 0.1+ | 0.1+ | |
| 1996 01 20 | 691 | 0.2+ | 0.1+ | 2002 09 03 | 049 | 1.1− | 0.4− | 2006 07 21 | 644 | 0.0 | 0.1+ | |
| 1996 01 27 | 691 | 0.5− | 0.3+ | 2002 09 03 | 049 | 1.3− | 0.5− | 2006 07 21 | 644 | 0.2− | 0.1− | |
| 1996 01 27 | 691 | 0.2+ | 0.5+ | 2002 09 11 | 644 | 0.4− | 0.2− | 2006 08 27 | 699 | 0.1− | 0.1+ | |
| 1996 01 27 | 691 | 0.2+ | 0.2+ | 2002 09 11 | 644 | 0.4− | 0.2− | 2006 08 27 | 699 | 0.6+ | 0.8− | |
| 2000 01 07 | 691 | 0.0 | 0.1− | 2002 09 11 | 644 | 0.2− | 0.2− | 2006 08 27 | 699 | 0.2− | 0.2− | |
| 2000 01 07 | 691 | 0.1+ | 0.3− | 2002 10 03 | 644 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.0 | 0.2+ | |
| 2000 01 07 | 691 | 0.0 | 0.6− | 2002 10 03 | 644 | 0.2+ | 0.2− | 2006 08 29 | 704 | 0.1− | 0.1− | |
| 2002 07 17 | 704 | 1.1+ | 0.7+ | 2002 10 03 | 644 | 0.4+ | 0.4− | 2006 08 29 | 704 | 0.3− | 1.4− | |
| 2002 07 17 | 704 | 0.1− | 0.8+ | 2002 10 06 | 704 | 0.0 | 1.0− | 2006 08 29 | 704 | (1.0− | 1.7−) | |
| 2002 07 17 | 704 | 0.2− | 0.3+ | 2002 10 06 | 704 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.1+ | 0.1− | |
| 2002 07 18 | 704 | 0.1+ | 1.0+ | 2002 10 06 | 704 | 0.1+ | 1.1− | 2006 08 30 | 699 | 0.5− | 0.0 | |
| 2002 07 18 | 704 | 0.7− | 0.8+ | 2002 10 06 | 704 | 0.1+ | 0.8− | 2006 08 30 | 699 | 1.0+ | 0.4− | |
| 2002 07 18 | 704 | 0.7+ | 1.4+ | 2002 10 06 | 704 | 0.2+ | 0.8− | 2006 09 14 | 691 | 0.5− | 1.2+ | |
| 2002 08 04 | 704 | 0.1+ | 0.3− | 2002 10 09 | 704 | 0.2+ | 0.4− | 2006 09 14 | 691 | 0.1+ | 0.3+ | |
| 2002 08 04 | 704 | 0.2− | 0.3− | 2002 10 09 | 704 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.3+ | |
| 2002 08 04 | 704 | 1.0+ | 0.1− | 2002 10 09 | 704 | 0.5+ | 0.9+ | 2006 09 16 | 691 | 0.0 | 0.2+ | |
| 2002 08 04 | 704 | 0.3− | 0.7− | 2002 10 09 | 704 | 0.7+ | 0.2+ | 2006 09 16 | 691 | 0.1− | 0.2+ | |
| 2002 08 13 | 704 | 0.1+ | 0.1+ | 2002 10 09 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 691 | 0.0 | 0.2+ | |
| 2002 08 13 | 704 | 0.9+ | 0.8+ | 2004 01 27 | 691 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.2+ | |
| 2002 08 13 | 704 | 1.0+ | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.5− | 1.2+ | |
| 2002 08 13 | 704 | 0.9+ | 0.5+ | 2004 01 27 | 691 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2+ | |
| 2002 08 13 | 704 | 1.1+ | 0.0 | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.2− | 0.1− | |
| 2002 08 16 | 704 | 0.2+ | 0.3− | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.3− | |
| 2002 08 16 | 704 | 0.4+ | 1.2− | 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.6+ | |
| 2002 08 16 | 704 | 0.3− | 0.7− | 2006 06 20 | 703 | 1.1− | 0.2− | 2006 09 19 | 699 | 0.3+ | 0.3+ | |
| 2002 08 16 | 704 | 0.4− | 1.0− | 2006 06 20 | 703 | 1.1− | 0.4− | 2006 10 16 | 703 | 0.6− | 0.1− | |
| 2002 09 03 | 644 | 0.4− | 0.4− | 2006 06 20 | 703 | 1.1− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.8− | |
| 2002 09 03 | 644 | 0.1+ | 0.1− | 2006 06 20 | 703 | 1.2+ | 0.9− | 2006 10 16 | 703 | 0.1+ | 0.9− | |
| 2002 09 03 | 644 | 0.3− | 0.5− | 2006 07 21 | 703 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.5+ | 1.1− | |

**(136758)∗ 1996 EC$_6$ = 2000 CQ$_{51}$**

Discovered 1996 Mar. 11 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (MPC 39170)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.56958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24270301 | $\omega$ | 286.67442 | | −0.18890781 | −0.98192469 | |
| $a$ | 2.5453799 | $\Omega$ | 174.17657 | | +0.93928472 | −0.18416505 | |
| $e$ | 0.2029229 | $i$ | 6.64227 | | +0.28645778 | −0.04367076 | |
| $P$ | 4.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.2− | 0.1− | 2000 04 10 | 012 | 0.3− | 0.1+ | 2004 03 07 | 715 | 0.2− | 0.2− | |
| 1996 03 11 | 691 | 0.3− | 0.3− | 2002 09 14 | 644 | 0.9− | 0.3+ | 2004 03 10 | 608 | 0.0 | 0.6− | |
| 1996 03 11 | 691 | 0.2− | 0.0 | 2002 09 14 | 644 | 0.3− | 0.6+ | 2004 03 10 | 608 | 0.1+ | 0.3− | |
| 1996 03 18 | 691 | 0.3+ | 0.1+ | 2002 09 14 | 644 | 0.6− | 0.4+ | 2004 03 10 | 608 | 0.3− | 0.1− | |
| 1996 03 18 | 691 | 0.3+ | 0.1+ | 2003 12 22 | 704 | 0.3+ | 1.0− | 2004 03 15 | 704 | 1.4+ | 0.6+ | |
| 1996 03 18 | 691 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.7+ | 0.4− | 2004 03 15 | 704 | 0.5+ | 0.1+ | |
| 2000 02 02 | 704 | 0.5− | 0.2− | 2003 12 22 | 704 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 0.6+ | 0.9+ | |
| 2000 02 02 | 704 | (0.5− | 2.4−) | 2003 12 22 | 704 | 0.6+ | 0.2− | 2004 03 15 | 704 | 1.1+ | 0.0 | |
| 2000 02 02 | 704 | 0.4− | 0.0 | 2004 01 14 | 644 | 0.7− | 0.3+ | 2004 03 15 | 704 | 0.2+ | 0.1− | |
| 2000 02 06 | 704 | 0.0 | 0.5+ | 2004 01 14 | 644 | 0.5− | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.1+ | |
| 2000 02 06 | 704 | 0.2− | 0.3+ | 2004 01 14 | 644 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.4− | 0.4+ | |
| 2000 02 06 | 704 | 0.4− | 0.5+ | 2004 01 23 | 704 | 1.0+ | 0.1− | 2004 03 18 | 704 | 0.3− | 0.4+ | |
| 2000 02 29 | 704 | 0.1− | 0.2− | 2004 01 23 | 704 | 0.8+ | 0.2− | 2004 03 18 | 704 | 0.6− | 0.4+ | |
| 2000 02 29 | 704 | 0.1− | 0.0 | 2004 01 23 | 704 | 1.2+ | 0.2+ | 2004 03 20 | 691 | 0.1+ | 0.1− | |
| 2000 02 29 | 704 | 0.1− | 0.2− | 2004 01 23 | 704 | 0.4+ | 0.2+ | 2004 03 20 | 691 | 0.1− | 0.1− | |
| 2000 02 29 | 704 | 0.1− | 0.1+ | 2004 01 23 | 704 | 1.1+ | 0.5+ | 2004 03 20 | 691 | 0.2+ | 0.2− | |
| 2000 02 29 | 704 | 0.5+ | 0.3+ | 2004 01 29 | 704 | 1.1+ | 0.4− | 2004 03 20 | 704 | 0.2− | 0.0 | |
| 2000 03 03 | 704 | (0.2+ | 2.8+) | 2004 01 29 | 704 | (1.6+ | 0.5+) | 2004 03 20 | 704 | 0.0 | 0.5− | |
| 2000 03 03 | 704 | 1.2+ | 0.2− | 2004 01 29 | 704 | 0.7+ | 0.0 | 2004 03 20 | 704 | 0.1+ | 0.3+ | |
| 2000 03 03 | 704 | 1.5+ | 0.1+ | 2004 01 29 | 704 | 0.5+ | 0.1− | 2004 03 20 | 704 | 0.6− | 0.1+ | |
| 2000 03 03 | 704 | 0.6+ | 0.3+ | 2004 02 11 | 644 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.9+ | |
| 2000 03 03 | 704 | 1.7+ | 0.5− | 2004 02 11 | 644 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.6+ | |
| 2000 03 11 | 704 | 0.4− | 1.7+ | 2004 02 11 | 644 | 0.3− | 0.1+ | 2006 08 28 | 703 | (0.7+ | 1.6+) | |
| 2000 03 11 | 704 | 0.3− | 0.6− | 2004 02 13 | 333 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.3+ | 1.3+ | |
| 2000 03 11 | 704 | 0.2+ | 0.0 | 2004 02 13 | 333 | 0.0 | 0.2− | 2006 08 28 | 703 | 1.1+ | 0.8+ | |
| 2000 03 11 | 704 | 0.8+ | 0.3− | 2004 02 13 | 333 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.0 | |
| 2000 03 11 | 699 | 0.1− | 0.6− | 2004 02 14 | 699 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.6+ | |
| 2000 03 11 | 704 | 0.1+ | 0.3− | 2004 02 14 | 699 | 1.1− | 0.6− | 2006 09 27 | G96 | 0.2− | 0.4+ | |
| 2000 03 11 | 699 | 0.4− | 0.2− | 2004 02 14 | 699 | 1.0− | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.4+ | |
| 2000 03 11 | 699 | 0.5+ | 0.4+ | 2004 02 14 | 699 | 0.9− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.7+ | |
| 2000 03 11 | 699 | 0.4− | 1.1+ | 2004 02 18 | 704 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.3− | |
| 2000 03 27 | 699 | 0.2+ | 0.4+ | 2004 02 18 | 704 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4+ | |
| 2000 03 27 | 699 | 0.1− | 0.5+ | 2004 02 18 | 704 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.3− | |
| 2000 03 27 | 699 | 0.6+ | 0.9+ | 2004 02 18 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.2− | |
| 2000 03 27 | 699 | 0.4+ | 0.6+ | 2004 02 18 | 704 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.4− | 0.3− | |
| 2000 04 04 | 699 | 0.1+ | 0.7− | 2004 02 18 | 704 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.5− | 0.6− | |
| 2000 04 04 | 699 | 1.1+ | 1.2+ | 2004 02 18 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2+ | |
| 2000 04 04 | 699 | 0.1+ | 0.6+ | 2004 02 18 | 691 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.2− | |
| 2000 04 04 | 699 | 0.5− | 0.4+ | 2004 02 27 | 715 | 0.5− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1− | |
| 2000 04 10 | 012 | 0.9− | 0.4− | 2004 02 27 | 715 | 0.5− | 0.4− | 2006 11 16 | G96 | 0.6− | 0.0 | |
| 2000 04 10 | 012 | 0.2− | 0.7− | 2004 02 27 | 715 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.0 | |
| 2000 04 10 | 012 | 0.8− | 0.2− | 2004 03 07 | 715 | 0.2− | 0.0 | | | | | |
| 2000 04 10 | 012 | 0.6− | 0.5− | 2004 03 07 | 715 | 0.0 | 0.4− | | | | | |

**(136759)∗ 1996 FB$_2$ = 2004 ET$_{33}$**

Discovered 1996 Mar. 20 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 60477)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.68701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24170391 | $\omega$ | 351.24591 | | −0.99494434 | −0.09689494 | |
| $a$ | 2.5523894 | $\Omega$ | 183.53185 | | +0.09600548 | −0.99483035 | |
| $e$ | 0.0958878 | $i$ | 25.37887 | | −0.02947397 | +0.03039654 | |
| $P$ | 4.08 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.2− | 0.0 | 2004 02 02 | 703 | 0.1− | 0.1− | 2006 09 18 | 703 | 1.2+ | 0.0 | |
| 1996 03 20 | 691 | 0.1− | 0.1+ | 2004 02 02 | 703 | 1.1− | 0.1+ | 2006 09 18 | 703 | 0.7+ | 0.4− | |
| 1996 03 20 | 691 | 0.2− | 0.1− | 2004 02 02 | 703 | 0.7+ | 0.9+ | 2006 09 18 | 703 | 0.6+ | 0.6− | |
| 1996 03 20 | 566 | 0.4+ | 0.0 | 2004 02 02 | 703 | 0.5+ | 0.4− | 2006 09 18 | 703 | 0.6+ | 1.3+ | |
| 1996 03 20 | 566 | 0.7+ | 0.2− | 2004 02 21 | 608 | 0.9+ | 0.3− | 2006 09 29 | 699 | (1.8+ | 0.6+) | |
| 1996 03 20 | 566 | 0.5+ | 0.3− | 2004 02 21 | 608 | 1.0+ | 0.2− | 2006 09 29 | 699 | 0.1+ | 0.2+ | |
| 1996 03 21 | 566 | 0.1+ | 0.3+ | 2004 02 21 | 608 | 0.6+ | 0.9− | 2006 09 29 | 699 | 1.0+ | 1.0+ | |
| 1996 03 21 | 566 | 0.4− | 0.1− | 2004 03 10 | 608 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.1+ | 1.0+ | |
| 1996 03 21 | 566 | 0.0 | 0.4+ | 2004 03 10 | 608 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1+ | |
| 1996 03 21 | 566 | 0.1− | 0.0 | 2004 03 10 | 608 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.3− | 0.0 | |
| 1996 03 21 | 566 | 0.0 | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.0 | |
| 1996 03 21 | 566 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.4+ | 1.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− | |
| 1996 03 24 | 566 | 0.7− | 0.9+ | 2004 03 16 | 704 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− | |
| 1996 03 24 | 566 | 0.2− | 0.8+ | 2004 03 16 | 704 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.4− | |
| 1996 03 24 | 566 | 0.4+ | 0.7+ | 2004 03 16 | 704 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.7− | 0.7− | |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2004 03 19 | E12 | 0.4+ | 0.8− | 2006 10 16 | 703 | (1.7+ | 0.1+) | |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2004 03 19 | E12 | 0.3− | 0.8− | 2006 10 16 | 703 | 0.1− | 0.1− | |
| 2000 03 09 | 704 | 0.1+ | 0.1+ | 2004 03 19 | E12 | 0.8− | 0.1− | 2006 10 16 | 703 | (0.3+ | 1.5+) | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.7+ | 0.1+ | 2004 03 19 | E12 | 0.9− | 0.9− | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2000 03 09 | 704 | 0.6+ | 0.8+ | 2004 03 19 | E12 | 0.1− | 1.1− | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2000 03 09 | 704 | 0.6+ | 0.1+ | 2004 03 19 | E12 | 0.1− | 0.8− | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2000 03 09 | 704 | 0.2− | 0.7+ | 2004 03 19 | E12 | 1.3− | 0.3− | 2006 10 22 | 703 | 0.2− | 0.7− |
| 2000 04 02 | 699 | 0.4− | 0.1+ | 2004 03 19 | E12 | 0.1− | 0.6− | 2006 10 28 | 703 | 0.4− | 1.2+ |
| 2000 04 02 | 699 | 0.1− | 0.4+ | 2004 03 20 | E12 | 0.7− | 0.4− | 2006 10 28 | 703 | 0.5− | 1.1+ |
| 2000 04 02 | 699 | 0.2− | 0.4+ | 2004 03 20 | E12 | 0.3− | 0.5− | 2006 10 28 | 703 | 0.6− | 0.2+ |
| 2000 04 02 | 699 | 0.1+ | 0.8− | 2004 03 20 | E12 | 0.5− | 0.1+ | 2006 10 28 | 703 | 0.4+ | 1.4+ |
| 2002 10 15 | 644 | 0.3− | 0.3+ | 2004 03 20 | E12 | 0.5− | 0.6− | 2006 11 17 | 703 | 0.2+ | 0.7+ |
| 2002 10 15 | 644 | 0.1− | 0.5+ | 2004 04 19 | 704 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2002 10 15 | 644 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.9− |
| 2004 01 16 | 644 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2004 01 16 | 644 | 0.6+ | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.2− | | | | |
| 2004 01 16 | 644 | 0.2+ | 0.7+ | 2004 04 19 | 704 | 0.4− | 0.6+ | | | | |

**(136760)∗ 1996 $FX_9$ = 2000 $EP_{200}$**

Discovered 1996 Mar. 20 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 4332)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.79269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24442607 | $\omega$ | 284.43329 | | −0.51110478 | | −0.85893361 |
| $a$ | 2.5334035 | $\Omega$ | 196.41935 | | +0.82547445 | | −0.48024947 |
| $e$ | 0.1780957 | $i$ | 6.43931 | | +0.23950750 | | −0.17774563 |
| $P$ | 4.03 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.4− | 0.0 | 2002 10 03 | 704 | (1.6− | 0.0 ) | 2004 03 20 | 704 | 0.7+ | 0.4− |
| 1996 03 20 | 691 | 0.3− | 0.2+ | 2002 10 03 | 704 | 0.6− | 0.5+ | 2004 03 20 | 704 | 0.7+ | 0.4− |
| 1996 03 20 | 691 | 0.5− | 0.1− | 2002 10 31 | 645 | 0.1+ | 0.1− | 2004 03 27 | 704 | (1.8+ | 0.0 ) |
| 1996 03 21 | 691 | 0.1− | 0.7− | 2002 10 31 | 645 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.1+ | 1.2+ |
| 1996 03 21 | 691 | 0.0 | 0.6− | 2002 11 08 | 645 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.4+ |
| 1996 03 21 | 691 | 0.3+ | 0.6− | 2002 11 08 | 645 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.3+ | 0.8+ |
| 1996 03 22 | 691 | 0.4+ | 0.5− | 2004 02 19 | 704 | 0.7+ | 0.6+ | 2004 03 27 | 704 | 1.5+ | 1.1+ |
| 1996 03 22 | 691 | 0.4+ | 0.6− | 2004 02 19 | 704 | 0.4+ | 0.6− | 2006 09 27 | H55 | (0.6− | 3.2+) |
| 1996 03 22 | 691 | 0.2+ | 0.3− | 2004 02 19 | 704 | 0.5− | 0.1− | 2006 09 27 | H55 | (0.4− | 2.6+) |
| 1996 03 28 | 691 | 0.4− | 0.3− | 2004 02 19 | 704 | 0.1− | 0.8− | 2006 09 27 | H55 | (0.0 | 3.2+) |
| 1996 03 28 | 691 | 0.2− | 0.5− | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 09 27 | G96 | 0.7+ | 0.0 |
| 1996 03 28 | 691 | 0.1− | 0.3− | 2004 02 26 | 704 | 0.4− | 0.4+ | 2006 09 27 | G96 | 0.4+ | 0.0 |
| 2000 03 01 | 703 | 0.9+ | 1.5+ | 2004 02 26 | 704 | 0.7− | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2000 03 01 | 703 | 0.1− | 0.1− | 2004 02 26 | 704 | 0.3− | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2000 03 01 | 703 | 1.8+ | 0.8+ | 2004 02 26 | 704 | 1.4− | 0.4− | 2006 09 28 | 691 | 0.1− | 0.6+ |
| 2000 03 01 | 703 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.5+ |
| 2000 03 08 | 704 | 1.7− | 0.9+ | 2004 03 01 | 704 | 0.0 | 0.5− | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2000 03 08 | 704 | 0.1+ | 0.2− | 2004 03 01 | 704 | 0.2+ | 1.0+ | 2006 09 29 | H55 | 0.5− | 0.1− |
| 2000 03 08 | 704 | 1.1− | 0.3+ | 2004 03 01 | 704 | 0.1+ | 0.2+ | 2006 09 29 | H55 | 0.8− | 0.3− |
| 2000 03 08 | 704 | 1.2− | 0.5− | 2004 03 01 | 704 | 0.9− | 1.0+ | 2006 09 29 | H55 | 0.8− | 0.1− |
| 2000 03 08 | 704 | 0.8− | 0.9+ | 2004 03 01 | 704 | 1.0+ | 0.5+ | 2006 09 29 | H55 | 1.0− | 0.2− |
| 2000 04 05 | 704 | 0.4+ | 0.7+ | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 10 02 | H55 | (1.7− | 0.8+) |
| 2000 04 05 | 704 | 1.0− | 0.1− | 2004 03 16 | 704 | 0.1− | 0.8+ | 2006 10 02 | H55 | 0.8− | 0.3+ |
| 2000 04 05 | 704 | 0.6− | 0.6+ | 2004 03 16 | 704 | 0.1− | 0.2+ | 2006 10 02 | H55 | (1.8− | 0.1−) |
| 2000 04 05 | 704 | 0.1− | 1.1+ | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2000 04 05 | 704 | 0.8− | 0.6+ | 2004 03 18 | 704 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.7− | 0.4+ | 2004 03 20 | 704 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2002 10 03 | 704 | 1.4− | 0.6+ | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 1.4− | 0.3− | 2004 03 20 | 704 | 0.7+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.2− |

**(136761)∗ 1996 $GH_{14}$ = 2006 $KW_{19}$**

Discovered 1996 Apr. 12 by Spacewatch at Kitt Peak.

Id. K. E. Smalley (*MPO* 99883)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.94827 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20525719 | $\omega$ | 296.60580 | | +0.87732721 | | +0.46992567 |
| $a$ | 2.8462331 | $\Omega$ | 35.60250 | | −0.35896049 | | +0.77717629 |
| $e$ | 0.1373610 | $i$ | 9.62115 | | −0.31850328 | | +0.41852943 |
| $P$ | 4.80 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.0 | 0.6+ | 2002 10 01 | 608 | 0.1− | 1.0+ | 2005 03 11 | 703 | 1.5− | 0.1− |
| 1996 04 12 | 691 | 0.1− | 0.5+ | 2002 10 01 | 608 | 0.3+ | 1.1+ | 2006 05 17 | E12 | 0.2+ | 0.8+ |
| 1996 04 12 | 691 | 0.3− | 0.7+ | 2002 10 01 | 608 | 0.1+ | 0.9+ | 2006 05 17 | E12 | 0.4− | 0.4+ |
| 1996 04 24 | 691 | 1.2+ | 0.1+ | 2003 11 19 | 704 | 0.3+ | 0.1+ | 2006 05 17 | E12 | 0.2− | 0.2− |
| 1996 04 24 | 691 | 0.8+ | 0.5+ | 2003 11 19 | 704 | 0.8+ | 0.8+ | 2006 05 17 | E12 | 0.2+ | 0.7− |
| 2002 08 14 | 704 | 0.6+ | 0.3− | 2003 11 19 | 704 | 0.0 | 0.5+ | 2006 05 22 | E12 | 0.5− | 0.4+ |
| 2002 08 14 | 704 | 0.2+ | 0.2− | 2003 11 19 | 704 | 0.1− | 0.1+ | 2006 05 22 | E12 | 0.3− | 0.4− |
| 2002 08 14 | 704 | 0.3+ | 0.4+ | 2003 12 03 | 704 | 0.2− | 0.6+ | 2006 05 22 | E12 | 0.4− | 0.2+ |
| 2002 08 14 | 704 | 0.8− | 1.9+ | 2003 12 03 | 704 | 0.2+ | 0.6+ | 2006 05 22 | E12 | 0.2+ | 0.3+ |
| 2002 08 14 | 704 | 0.3− | 2.0+ | 2003 12 03 | 704 | 0.8+ | 0.6+ | 2006 06 06 | E12 | 0.4+ | 0.3− |
| 2002 08 20 | 644 | 0.0 | 0.3+ | 2003 12 03 | 704 | 0.1− | 0.8+ | 2006 06 06 | E12 | 0.3+ | 0.4− |
| 2002 08 20 | 644 | 0.1− | 0.4+ | 2003 12 17 | 704 | 0.3− | 0.6+ | 2006 06 06 | E12 | 0.3+ | 0.5+ |
| 2002 08 20 | 644 | 0.0 | 0.3+ | 2003 12 17 | 704 | 0.6+ | 1.1+ | 2006 06 06 | E12 | 0.5− | 1.5− |
| 2002 09 09 | 644 | 0.3− | 0.0 | 2003 12 17 | 704 | 0.2+ | 0.7+ | 2006 06 27 | E12 | 0.2+ | 0.9− |
| 2002 09 09 | 644 | 0.6− | 0.2+ | 2003 12 17 | 704 | 0.4+ | 0.7+ | 2006 06 27 | E12 | 0.8+ | 0.1+ |
| 2002 09 09 | 644 | 0.4− | 0.1− | 2003 12 17 | 704 | 0.4− | 0.9+ | 2006 06 27 | E12 | 0.9+ | 0.3− |
| 2002 09 17 | 608 | 1.1− | 0.9− | 2005 03 11 | 703 | 1.9− | 1.6− | 2006 06 27 | E12 | 0.0 | 0.2+ |
| 2002 09 17 | 608 | 0.9− | 1.4− | 2005 03 11 | 703 | 0.9− | 0.7− | | | | |
| 2002 09 17 | 608 | 1.0− | 0.9− | 2005 03 11 | 703 | 1.0− | 0.2+ | | | | |

**(136762)∗ 1996 $GC_{21}$ = 2000 $FD_{63}$**

Discovered 1996 Apr. 14 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 3143)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.89426 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23139913 | $\omega$ | 82.02858 | | +0.34362417 | | +0.93091791 |
| $a$ | 2.6276140 | $\Omega$ | 209.04139 | | −0.93031905 | | +0.31945457 |
| $e$ | 0.1197150 | $i$ | 14.76911 | | −0.12817523 | | +0.17703282 |
| $P$ | 4.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.2− | 0.0 | 2001 08 11 | 644 | 0.4− | 0.4− | 2004 03 01 | 703 | 0.8+ | 0.6+ |
| 1996 04 14 | 691 | 0.3− | 0.4− | 2001 08 11 | 644 | 0.2− | 0.3− | 2004 03 01 | 703 | 0.1+ | 0.7+ |
| 1996 04 14 | 691 | 0.7− | 0.1− | 2001 08 17 | 644 | 0.3+ | 0.7+ | 2004 03 16 | 704 | (1.7+ | 0.3+) |
| 1996 04 18 | 557 | 0.1+ | 1.0− | 2001 08 17 | 644 | 0.3+ | 0.5+ | 2004 03 16 | 704 | (1.8+ | 0.8+) |
| 1996 04 18 | 557 | 0.5+ | 0.2− | 2001 08 17 | 644 | 0.5+ | 0.6+ | 2004 03 16 | 704 | 0.0 | 1.3+ |
| 1996 04 19 | 557 | 0.9+ | 0.7− | 2001 08 18 | 644 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.8+ |
| 2000 03 27 | 699 | 0.2− | 0.0 | 2001 08 18 | 644 | 0.2+ | 0.0 | 2004 03 16 | 704 | 0.2+ | 0.3+ |
| 2000 03 27 | 699 | 0.2+ | 1.1+ | 2001 08 18 | 644 | 0.4+ | 0.3− | 2005 06 06 | 704 | 0.6+ | 0.0 |
| 2000 03 27 | 699 | 0.3− | 0.7+ | 2001 08 24 | 699 | 0.4+ | 0.0 | 2005 06 06 | 704 | 0.6− | 0.6+ |
| 2000 03 27 | 699 | 0.1− | 0.2− | 2001 08 24 | 699 | 0.6− | 0.1+ | 2005 06 06 | 704 | 0.6− | 0.1+ |
| 2000 04 07 | 704 | 1.3+ | 1.4− | 2001 08 24 | 699 | 0.5− | 0.3− | 2005 06 06 | 704 | 0.7− | 0.6+ |
| 2000 04 07 | 704 | 0.4+ | 0.6+ | 2001 08 24 | 699 | 0.6− | 0.3− | 2005 06 06 | 704 | 0.0 | 0.1+ |
| 2000 04 07 | 704 | 0.4+ | 0.7− | 2001 09 25 | 704 | 0.3− | 0.4− | 2006 11 15 | 703 | (3.7− | 1.9+) |
| 2000 04 07 | 704 | 1.1+ | 0.2+ | 2001 09 25 | 704 | 0.0 | 0.3− | 2006 11 15 | 703 | (1.9+ | 4.9+) |
| 2001 07 22 | 699 | 0.7+ | 0.5+ | 2001 09 25 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 1.1− | 0.4− |
| 2001 07 22 | 699 | 0.3− | 0.1− | 2001 09 25 | 704 | 0.4− | 0.7− | 2006 11 15 | 703 | 0.9− | 0.7− |
| 2001 07 22 | 699 | 0.8+ | 0.4+ | 2001 10 16 | 704 | 0.4+ | 1.0+ | 2006 11 19 | 703 | 0.6+ | 0.9− |
| 2001 07 22 | 699 | (2.4+ | 0.5+) | 2001 10 16 | 704 | 0.7+ | 0.6+ | 2006 11 19 | 703 | 0.3+ | 0.1− |
| 2001 08 01 | 644 | 0.1− | 0.4+ | 2001 10 16 | 704 | 1.2+ | 0.8+ | 2006 11 19 | 703 | 0.7− | 0.3+ |
| 2001 08 01 | 644 | 0.3− | 0.4+ | 2001 10 16 | 704 | (2.6+ | 0.4−) | 2006 11 19 | 703 | 0.6− | 0.4+ |
| 2001 08 01 | 644 | 0.2+ | 0.5+ | 2004 03 01 | 703 | 0.2+ | 0.1+ | | | | |
| 2001 08 11 | 644 | 0.2− | 0.5− | 2004 03 01 | 703 | 0.2− | 0.0 | | | | |

**(136763)∗ 1996 $HU_4$ = 2000 $EY_{163}$**

Discovered 1996 Apr. 18 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 8013)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.53150 | | (2000.0) | | | |
| $n$ | 0.23639483 | $\omega$ | 91.22894 | | −0.52965739 | +0.84731328 |
| $a$ | 2.5904630 | $\Omega$ | 146.69491 | | −0.80374993 | −0.48666027 |
| $e$ | 0.1647861 | $i$ | 4.07593 | | −0.27101495 | −0.21265461 |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 30 | 691 | 0.6− | 0.3+ | 2000 03 11 | 699 | 1.2− | 0.1− | 2005 07 06 | 691 | 0.2− | 0.3+ | |
| 1992 04 30 | 691 | 0.0 | 0.1− | 2004 01 30 | 291 | 0.5− | 0.7+ | 2005 07 06 | 691 | 0.1− | 0.5+ | |
| 1992 04 30 | 691 | 0.3− | 0.2− | 2004 01 30 | 291 | 0.1+ | 1.0+ | 2005 07 06 | 691 | 0.0 | 0.6+ | |
| 1996 04 18 | 691 | 0.3− | 0.2− | 2004 01 30 | 291 | 0.5+ | 0.8+ | 2005 07 18 | 644 | 0.1+ | 0.4+ | |
| 1996 04 18 | 691 | 0.2− | 0.2− | 2004 02 29 | 691 | 0.1− | 0.4+ | 2005 07 18 | 644 | 0.3− | 0.3+ | |
| 1996 04 18 | 691 | 0.0 | 0.3− | 2004 02 29 | 691 | 0.1− | 0.6+ | 2005 07 18 | 644 | 0.3− | 0.5+ | |
| 1996 04 23 | 691 | 0.4+ | 0.4− | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2005 08 31 | 691 | 0.0 | 0.2+ | |
| 1996 04 23 | 691 | 0.5+ | 0.5− | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2005 08 31 | 691 | 0.3− | 0.2+ | |
| 1996 04 23 | 691 | 0.3+ | 0.7− | 2004 03 18 | 691 | 0.1+ | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.2+ | |
| 2000 03 03 | 704 | 1.4+ | 1.3+ | 2004 03 18 | 691 | 0.2+ | 0.2+ | 2005 10 03 | G96 | 0.0 | 0.1+ | |
| 2000 03 03 | 704 | 0.1+ | 0.5+ | 2004 03 27 | 691 | 0.4− | 0.0 | 2005 10 03 | G96 | 0.2− | 0.0 | |
| 2000 03 03 | 704 | 1.1+ | 0.1+ | 2004 03 27 | 691 | 0.2− | 0.3+ | 2005 10 03 | G96 | 0.0 | 0.4+ | |
| 2000 03 03 | 704 | 0.0 | 1.0− | 2004 03 27 | 691 | 0.2+ | 0.3+ | 2005 10 03 | G96 | 0.3− | 0.5+ | |
| 2000 03 03 | 704 | 0.5− | 0.3+ | 2005 06 30 | 644 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.3− | |
| 2000 03 11 | 704 | 0.6+ | 0.8+ | 2005 06 30 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.0 | |
| 2000 03 11 | 699 | 0.5− | 0.3+ | 2005 06 30 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.1+ | |
| 2000 03 11 | 704 | 0.8+ | 1.1− | 2005 07 01 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− | |
| 2000 03 11 | 699 | 0.1+ | 1.4+ | 2005 07 01 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.0 | |
| 2000 03 11 | 704 | 0.8+ | 0.3− | 2005 07 01 | 691 | 0.1− | 0.7+ | 2006 11 17 | G96 | 0.4+ | 0.2− | |
| 2000 03 11 | 704 | 0.5− | 0.8− | 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.1+ | |
| 2000 03 11 | 699 | 0.5− | 0.6+ | 2005 07 05 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.1+ | |
| 2000 03 11 | 704 | 0.4+ | 0.0 | 2005 07 05 | 644 | 0.1− | 0.5+ | | | | | |

**(136764)∗ 1996 HM$_{23}$ = 2000 LY$_{26}$**

Discovered 1996 Apr. 20 by E. W. Elst at the European Southern Observatory.

Id. A. Doppler (*MPO* 1907)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 221.07047 | | (2000.0) | | | |
| $n$ | 0.24328739 | $\omega$ | 69.09998 | | −0.92595293 | +0.37593992 |
| $a$ | 2.5413022 | $\Omega$ | 132.96313 | | −0.36210308 | −0.85696717 |
| $e$ | 0.1330755 | $i$ | 2.80268 | | −0.10720325 | −0.35252866 |
| $P$ | 4.05 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 1.0− | 0.3− | 2001 09 21 | 704 | 0.4− | 0.9+ | 2004 04 11 | 703 | 0.3− | 0.8+ | |
| 1996 04 14 | 691 | 0.4− | 0.6− | 2001 09 21 | 704 | 0.1− | 0.8+ | 2004 04 11 | 703 | 1.0+ | 0.3+ | |
| 1996 04 14 | 691 | 0.5− | 0.5− | 2004 01 22 | 704 | 0.0 | 1.3+ | 2004 04 11 | 703 | 0.7+ | 0.6− | |
| 1996 04 20 | 809 | (2.8+ | 1.8+) | 2004 01 22 | 704 | 1.1− | 0.4+ | 2004 04 12 | 699 | 0.9− | 0.6+ | |
| 1996 04 20 | 809 | (2.9+ | 1.7+) | 2004 01 22 | 704 | (2.4− | 0.5+) | 2004 04 12 | 699 | 0.3− | 0.7− | |
| 1996 04 20 | 809 | (3.5+ | 1.4+) | 2004 02 29 | 291 | 0.1+ | 0.5+ | 2004 04 12 | 699 | 0.2+ | 0.1+ | |
| 1996 04 21 | 809 | (3.7+ | 0.8−) | 2004 02 29 | 291 | 0.0 | 0.6+ | 2004 04 12 | 699 | 0.6+ | 0.2− | |
| 1996 04 21 | 809 | (3.4+ | 0.9−) | 2004 02 29 | 291 | 0.4+ | 0.7− | 2004 04 16 | 704 | 0.2+ | 0.6− | |
| 1996 04 21 | 809 | (2.8+ | 0.2−) | 2004 03 14 | 644 | 0.0 | 0.1+ | 2004 04 16 | 704 | 0.1− | 0.2+ | |
| 2000 04 07 | 704 | 0.9+ | 0.0 | 2004 03 14 | 644 | 0.0 | 0.1+ | 2004 04 16 | 704 | 0.1+ | 0.3+ | |
| 2000 04 07 | 704 | 0.5+ | 0.3+ | 2004 03 14 | 644 | 0.1− | 0.2+ | 2004 04 16 | 644 | 0.2− | 0.2+ | |
| 2000 04 07 | 704 | 0.8+ | 1.9+ | 2004 03 19 | 704 | (1.5+ | 0.3+) | 2004 04 16 | 704 | 0.4+ | 0.3− | |
| 2000 04 07 | 704 | 0.5+ | 0.9+ | 2004 03 19 | 704 | 0.2+ | 0.0 | 2004 04 16 | 704 | 0.2− | 0.3+ | |
| 2000 04 07 | 704 | 0.6− | 1.2+ | 2004 03 19 | 704 | 1.0+ | 0.2− | 2004 04 16 | 644 | 0.3− | 0.1+ | |
| 2000 04 24 | 699 | 0.5+ | 0.3− | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2004 04 16 | 644 | 0.0 | 0.0 | |
| 2000 04 24 | 699 | 0.4+ | 0.1+ | 2004 03 19 | 704 | (1.6+ | 0.2+) | 2004 04 17 | 699 | 0.0 | 0.1− | |
| 2000 04 24 | 699 | 0.9+ | 1.1− | 2004 03 19 | 704 | 0.0 | 1.4+ | 2004 04 17 | 699 | 0.2+ | 0.1− | |
| 2000 04 24 | 699 | 0.7+ | 0.2+ | 2004 03 19 | 704 | (1.6+ | 0.8+) | 2004 04 17 | 699 | 0.3− | 0.0 | |
| 2000 04 27 | 704 | 1.3− | 0.2+ | 2004 03 19 | 704 | 1.2− | 0.5+ | 2004 04 17 | 699 | 0.4− | 0.3− | |
| 2000 04 27 | 704 | 1.7+ | 0.4− | 2004 03 19 | 704 | (1.7+ | 0.4+) | 2004 04 19 | 704 | 0.3− | 0.3+ | |
| 2000 04 27 | 704 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.9− | 0.3+ | 2004 04 19 | 704 | 0.0 | 0.6+ | |
| 2000 04 27 | 704 | 0.4+ | 1.4− | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2004 04 19 | 704 | 0.5− | 0.6+ | |
| 2000 05 05 | 704 | 1.7− | 0.6− | 2004 03 22 | 704 | 0.0 | 0.6+ | 2004 04 19 | 704 | 0.7− | 0.4+ | |
| 2000 05 05 | 704 | 0.8+ | 0.0 | 2004 03 22 | 704 | 0.1− | 0.7+ | 2004 04 19 | 704 | 0.7− | 0.2+ | |
| 2000 05 05 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.9− | 0.2+ | 2004 04 22 | 704 | 0.7+ | 0.2− | |
| 2000 05 05 | 704 | 0.7+ | 0.8− | 2004 03 22 | 699 | 0.4+ | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.0 | |
| 2000 05 05 | 704 | 0.7+ | 0.7+ | 2004 03 22 | 704 | 0.9− | 0.5+ | 2004 04 22 | 704 | 0.5+ | 0.3− | |
| 2000 05 22 | 699 | 0.2+ | 0.3− | 2004 03 22 | 699 | 0.5+ | 0.2+ | 2004 04 22 | 704 | 0.3+ | 0.1− | |
| 2000 05 22 | 699 | 1.1+ | 0.7+ | 2004 03 22 | 699 | 0.4− | 0.2+ | 2004 04 22 | 704 | 0.5+ | 0.1+ | |
| 2000 05 22 | 699 | 0.0 | 0.0 | 2004 03 22 | 699 | 0.8− | 1.0+ | 2004 05 10 | 703 | 0.4+ | 0.7− | |
| 2000 05 22 | 699 | 0.2+ | 0.9+ | 2004 03 27 | 699 | 0.1+ | 0.4+ | 2004 05 10 | 703 | (0.3− | 1.8−) | |
| 2000 06 05 | 699 | 1.1+ | 0.5+ | 2004 03 27 | 699 | 0.4− | 0.1+ | 2004 05 10 | 703 | (0.1− | 2.1−) | |
| 2000 06 05 | 699 | 0.4+ | 0.0 | 2004 03 27 | 699 | 1.0+ | 0.2− | 2004 05 10 | 703 | 0.3− | 1.0− | |
| 2000 06 05 | 699 | 1.0+ | 0.2− | 2004 03 27 | 699 | 0.2+ | 0.3− | 2004 05 17 | 704 | 0.8+ | 0.5+ | |
| 2000 06 05 | 699 | 0.7+ | 0.4− | 2004 03 27 | 699 | 0.1+ | 1.0− | 2004 05 17 | 704 | 0.2+ | 0.3+ | |
| 2000 06 06 | 699 | 0.3− | 0.9− | 2004 03 27 | 699 | 0.4− | 0.4+ | 2004 05 17 | 704 | 0.2+ | 0.7− | |
| 2000 06 06 | 699 | 0.1+ | 1.0+ | 2004 03 27 | 699 | 0.3+ | 0.5+ | 2005 08 28 | 691 | 0.0 | 0.0 | |
| 2000 06 06 | 699 | 1.5+ | 0.9− | 2004 03 27 | 699 | (2.0− | 1.0+) | 2005 08 28 | 691 | 0.2+ | 0.1− | |
| 2000 06 06 | 699 | 1.2− | 0.0 | 2004 03 28 | 704 | 0.3− | 0.2+ | 2005 08 28 | 691 | 0.3− | 0.3− | |
| 2001 09 12 | 704 | 0.2− | 0.4+ | 2004 03 28 | 704 | 0.1− | 0.2+ | 2005 09 01 | 691 | 0.1− | 0.1+ | |
| 2001 09 12 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.3− | 0.0 | 2005 09 01 | 691 | 0.1− | 0.1+ | |
| 2001 09 12 | 704 | 0.0 | 0.5+ | 2004 03 28 | 704 | 0.1− | 0.4+ | 2005 09 01 | 691 | 0.1− | 0.3+ | |
| 2001 09 12 | 704 | 0.1− | 0.9+ | 2004 03 28 | 704 | 0.1− | 0.3+ | 2005 09 11 | 691 | (0.7− | 2.0+) | |
| 2001 09 12 | 704 | 0.3+ | 0.8+ | 2004 03 31 | 704 | 0.8+ | 0.7− | 2005 09 11 | 691 | 0.3− | 0.0 | |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2004 03 31 | 704 | 0.5+ | 0.8− | 2005 09 11 | 691 | 0.1− | 0.2− | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2004 03 31 | 704 | 0.4+ | 0.7− | 2006 11 16 | G96 | 0.4− | 0.3+ | |
| 2001 09 19 | 704 | 0.6+ | 0.9− | 2004 03 31 | 704 | 0.6− | 0.0 | 2006 11 16 | G96 | 0.5− | 0.2+ | |
| 2001 09 19 | 704 | 0.7+ | 0.5− | 2004 03 31 | 704 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.3+ | |
| 2001 09 20 | 691 | 0.2+ | 0.3+ | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.5− | 0.6+ | |
| 2001 09 20 | 691 | 0.3− | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | 1.0+ | 0.3+ | |
| 2001 09 20 | 691 | 0.1+ | 0.4+ | 2004 03 31 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.9+ | 0.3+ | |
| 2001 09 21 | 704 | (0.8− | 1.7+) | 2004 04 11 | 703 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.3− | 0.1+ | |

**(136765)∗ 1996 JA = 2000 EO$_{117}$**

Discovered 1996 May 5 by A. Galád and A. Pravda at the Astronomical and Geophysical Observatory, Modra.

Id. G. V. Williams (MPC 39970)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.36327 | | (2000.0) | | | |
| $n$ | 0.22929194 | $\omega$ | 191.06284 | | −0.28617750 | +0.94176133 |
| $a$ | 2.6436879 | $\Omega$ | 62.51154 | | −0.86321593 | −0.17340132 |
| $e$ | 0.1509228 | $i$ | 11.48295 | | −0.41588544 | −0.28812771 |
| $P$ | 4.30 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 05 | 118 | 1.4+ | 1.4+ | 2000 03 12 | 704 | 0.1− | 1.6+ | 2006 09 16 | 699 | 0.6+ | 1.1+ | |
| 1996 05 05 | 118 | 1.2+ | 1.3+ | 2002 10 31 | 644 | 0.3+ | 0.7+ | 2006 09 16 | 699 | 0.7+ | 0.6− | |
| 1996 05 06 | 118 | 0.1− | 1.0+ | 2002 10 31 | 644 | 0.2− | 0.3+ | 2006 09 16 | 699 | (1.8− | 0.7+) | |
| 1996 05 06 | 118 | 0.4+ | 1.4+ | 2002 10 31 | 644 | 0.4− | 0.6+ | 2006 09 18 | 703 | 1.0+ | 0.2+ | |
| 1996 05 06 | 118 | 0.0 | 0.9+ | 2002 11 07 | 704 | 0.4− | 0.0 | 2006 09 18 | 703 | (2.2+ | 1.0+) | |
| 1996 05 10 | 118 | 0.5+ | 0.1+ | 2002 11 07 | 704 | 0.1− | 0.4− | 2006 09 18 | 703 | 0.5− | 0.9+ | |
| 1996 05 15 | 118 | 0.0 | 0.3− | 2002 11 07 | 704 | 1.3+ | 1.0− | 2006 09 18 | 703 | 0.1+ | 0.9+ | |
| 1996 05 15 | 118 | 0.5+ | 0.1− | 2002 11 07 | 704 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.9+ | |
| 1996 05 15 | 118 | 0.3− | 1.0− | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 09 26 | 703 | 1.1− | 0.1+ | |
| 1996 05 16 | 118 | 0.2− | 0.0 | 2003 12 21 | 645 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.0 | 1.0− | |
| 1996 05 16 | 118 | 0.1+ | 0.3− | 2003 12 28 | 704 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.8− | |
| 1996 05 17 | 118 | 1.1+ | 0.5− | 2003 12 28 | 704 | 0.9+ | 0.8+ | 2006 10 16 | 703 | 0.8− | 0.4+ | |
| 1996 05 17 | 118 | 0.5+ | 0.1+ | 2003 12 28 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.8+ | |
| 1996 06 14 | 118 | (0.2− | 2.1−) | 2003 12 28 | 704 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.4− | |
| 1996 06 14 | 118 | 0.7− | 0.6− | 2003 12 28 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.1+ | |
| 1996 06 14 | 118 | 0.8− | 0.7+ | 2003 12 30 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.9− | 0.4+ | |
| 1996 06 15 | 118 | (1.1− | 3.5−) | 2003 12 30 | 704 | 0.3+ | 0.3− | 2006 10 22 | 703 | 1.7− | 0.3+ | |
| 1996 06 15 | 118 | 0.2+ | 1.8− | 2003 12 30 | 704 | 1.0+ | 1.0− | 2006 10 22 | 703 | 0.5− | 0.4+ | |
| 2000 03 04 | 704 | 0.0 | 0.5+ | 2003 12 30 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.2+ | |
| 2000 03 04 | 704 | 0.0 | 0.4− | 2004 01 18 | 703 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.5− | 0.7+ | |
| 2000 03 04 | 704 | 0.9− | 0.0 | 2004 01 18 | 703 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.6+ | |
| 2000 03 11 | 699 | 1.4− | 0.6+ | 2004 01 18 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.7+ | |
| 2000 03 11 | 699 | 0.5− | 0.6+ | 2004 01 18 | 703 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.8− | 0.0 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.7− | 0.2+ | 2004 02 11 | 704 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.6− | 0.4+ |
| 2000 03 11 | 699 | 1.4− | 1.1− | 2004 02 11 | 704 | 0.8+ | 1.0− | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2000 03 12 | 704 | 0.2− | 0.5+ | 2004 02 11 | 704 | 0.9+ | 0.5+ | 2006 10 28 | 703 | 0.6+ | 0.6+ |
| 2000 03 12 | 704 | 0.0 | 0.8+ | 2004 02 11 | 704 | 0.5− | 0.5− | 2006 10 28 | 703 | 0.1− | 0.6− |
| 2000 03 12 | 704 | 0.2+ | 0.6+ | 2004 02 11 | 704 | 0.0 | 0.6+ | 2006 10 28 | 703 | 1.1+ | 0.9− |
| 2000 03 12 | 704 | 0.6+ | 0.6+ | 2006 09 16 | 699 | 1.1+ | 1.2− | | | | |

**(136766)∗ 1996 JD$_4$ = 2002 TB$_{131}$**

Discovered 1996 May 9 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 39916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.66259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23740818 | $\omega$ | 32.91524 | | −0.07798805 | −0.98151749 | |
| $a$ | 2.5830864 | $\Omega$ | 62.10288 | | +0.86661765 | −0.15339877 | |
| $e$ | 0.1628862 | $i$ | 11.40484 | | +0.49284046 | +0.11442129 | |
| $P$ | 4.15 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 09 | 691 | 0.0 | 0.4+ | 2002 11 11 | 704 | 0.3+ | 0.1+ | 2004 03 25 | 704 | 0.7− | 1.0+ |
| 1996 05 09 | 691 | 0.2− | 0.0 | 2002 11 11 | 704 | 1.1− | 0.1+ | 2004 03 28 | 703 | (2.5+ | 0.2+) |
| 1996 05 09 | 691 | 0.4+ | 0.2− | 2002 11 11 | 704 | 0.4− | 0.4+ | 2004 03 28 | 703 | 0.4− | 0.2− |
| 1996 05 22 | 691 | 0.2− | 0.1− | 2002 11 11 | 704 | 0.5− | 0.2− | 2004 03 28 | 703 | 1.1+ | 0.8− |
| 1996 05 22 | 691 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.6+ | 1.3+ | 2004 03 28 | 703 | 0.2+ | 0.4+ |
| 1996 05 22 | 691 | 0.1+ | 0.4+ | 2004 03 15 | 704 | 1.4− | 1.3+ | 2004 03 30 | 704 | 0.8+ | 0.7+ |
| 1998 12 07 | 910 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.9+ | 0.3+ | 2004 03 30 | 704 | 0.4+ | 0.1− |
| 1998 12 07 | 910 | 0.2+ | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2004 03 30 | 704 | (0.1− | 1.7−) |
| 1998 12 07 | 910 | 0.2− | 0.5− | 2004 03 22 | 699 | (0.1+ | 2.1+) | 2006 09 20 | 703 | 1.3− | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 1.3+ | 2004 03 22 | 699 | 0.5− | 0.0 | 2006 09 20 | 703 | 0.9− | 0.4+ |
| 2002 10 04 | 704 | 1.0+ | 0.3+ | 2004 03 22 | 699 | 0.3− | 1.0+ | 2006 09 20 | 703 | 1.0− | 1.3+ |
| 2002 10 04 | 704 | (0.3+ | 1.7+) | 2004 03 22 | 699 | 0.7+ | 1.5− | 2006 09 20 | 703 | 0.3+ | 0.8+ |
| 2002 10 05 | 704 | 0.1− | 1.3+ | 2004 03 23 | 704 | 0.5+ | 0.6+ | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2002 10 05 | 704 | 0.3− | 1.2+ | 2004 03 23 | 704 | 0.1− | 1.2− | 2006 10 11 | 644 | 0.5− | 0.3+ |
| 2002 10 05 | 704 | 0.5− | 0.6− | 2004 03 23 | 704 | 1.1+ | 0.8+ | 2006 10 11 | 644 | 0.7− | 0.5+ |
| 2002 10 31 | 704 | (2.1− | 0.3+) | 2004 03 23 | 704 | 1.1+ | 0.6− | 2006 10 28 | 703 | 1.6+ | 1.7− |
| 2002 10 31 | 704 | 0.9+ | 1.4+ | 2004 03 23 | 704 | 1.1+ | 0.8− | 2006 10 28 | 703 | 2.2+ | 1.9− |
| 2002 10 31 | 704 | 1.5− | 1.2+ | 2004 03 25 | 704 | 0.6− | 0.4+ | 2006 10 28 | 703 | 1.1− | 0.4+ |
| 2002 10 31 | 704 | 0.3− | 0.9+ | 2004 03 25 | 704 | 1.3− | 1.2+ | 2006 10 28 | 703 | 0.1+ | 0.3− |

**(136767)∗ 1996 JA$_9$ = 2005 JD$_{100}$**

Discovered 1996 May 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74552)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.74750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22070645 | $\omega$ | 195.06157 | | +0.96862811 | +0.24120976 | |
| $a$ | 2.7118106 | $\Omega$ | 150.77075 | | −0.21346893 | +0.93080296 | |
| $e$ | 0.1058711 | $i$ | 7.03574 | | −0.12724231 | +0.27463375 | |
| $P$ | 4.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 12 | 691 | 0.4− | 0.0 | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.4+ |
| 1996 05 12 | 691 | 0.6− | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.3+ |
| 1996 05 12 | 691 | 0.0 | 0.3− | 2005 05 09 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.6+ |
| 1996 05 17 | 691 | 0.3+ | 0.0 | 2005 05 09 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 1.2− | 1.5+ |
| 1996 05 17 | 691 | 0.7+ | 0.1− | 2005 05 09 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | (1.7− | 0.1−) |
| 1996 05 24 | 691 | 0.2− | 0.3+ | 2005 05 13 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.3+ |
| 1996 05 24 | 691 | 0.5+ | 0.2− | 2005 05 13 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.1+ | 1.1+ |
| 1996 05 24 | 691 | 0.1− | 0.3+ | 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2005 05 20 | G96 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2005 05 20 | G96 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.6+ | 0.6+ |
| 2002 11 25 | 644 | 0.1− | 0.7+ | 2005 05 20 | G96 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.6− | 0.1+ |
| 2002 11 25 | 644 | 0.1− | 0.8+ | 2005 05 20 | G96 | 0.4− | 0.1− | 2006 09 30 | 704 | 1.0+ | 1.2+ |
| 2002 11 25 | 644 | 0.1+ | 0.7+ | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 704 | (0.9+ | 2.0+) |
| 2004 02 11 | 291 | 0.1+ | 0.6+ | 2005 06 05 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 704 | (0.7+ | 2.4+) |
| 2004 02 11 | 291 | 0.0 | 0.3+ | 2005 06 05 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 704 | (0.6+ | 2.1+) |
| 2004 02 11 | 291 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2004 02 19 | 704 | (0.9+ | 1.6−) | 2006 09 12 | 703 | 1.1+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2004 02 19 | 704 | 0.6+ | 1.2− | 2006 09 12 | 703 | 1.0− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2004 02 19 | 704 | 0.3+ | 0.3+ | 2006 09 12 | 703 | 0.3− | 0.9+ | 2006 10 16 | 703 | 1.7− | 0.3− |
| 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.5+ | | | | |

**(136768)∗ 1996 JY$_9$ = 1995 BL$_{12}$**

Discovered 1996 May 13 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (MPC 39970)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.53107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23120092 | $\omega$ | 310.63623 | | +0.48306531 | −0.87440362 | |
| $a$ | 2.6291156 | $\Omega$ | 110.42319 | | +0.81726420 | +0.43165186 | |
| $e$ | 0.1141335 | $i$ | 2.78020 | | +0.31420873 | +0.22157387 | |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | 0.0 | 0.4− | 2002 11 16 | 644 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.2+ |
| 1995 01 31 | 691 | 0.6− | 0.3+ | 2002 11 16 | 644 | 0.5+ | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 1995 01 31 | 691 | 0.1+ | 0.7− | 2002 11 25 | 644 | 0.3+ | 0.8+ | 2006 09 17 | 691 | 0.2+ | 0.0 |
| 1995 02 05 | 691 | 0.1+ | 0.3− | 2002 11 25 | 644 | 0.5+ | 0.8+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 1995 02 05 | 691 | 0.0 | 0.6− | 2002 11 25 | 644 | 0.5+ | 1.0+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1995 02 05 | 691 | 0.0 | 0.1− | 2002 12 01 | 704 | 1.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 1996 05 13 | 691 | 1.1+ | 0.5+ | 2002 12 01 | 704 | 1.4− | 0.9− | 2006 09 27 | 691 | 0.2− | 0.0 |
| 1996 05 13 | 691 | 0.4+ | 0.5+ | 2002 12 01 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | (1.2− | 1.6−) |
| 1996 05 13 | 691 | 0.9+ | 0.0 | 2002 12 01 | 704 | 1.4− | 0.3+ | 2006 09 30 | 703 | (0.0 | 1.5−) |
| 1996 05 21 | 691 | 0.9− | 0.4+ | 2002 12 01 | 704 | 1.1− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.9− |
| 1996 05 21 | 691 | 0.9− | 0.4− | 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.9− |
| 1996 05 21 | 691 | 0.6− | 0.1+ | 2002 12 05 | 704 | 1.0− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2000 04 27 | 691 | 0.0 | 0.2+ | 2002 12 05 | 704 | 0.3− | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 04 27 | 691 | 0.3+ | 0.0 | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 04 27 | 691 | 0.2+ | 0.3+ | 2002 12 10 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2000 05 07 | 691 | 0.2+ | 0.4− | 2002 12 10 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2000 05 07 | 691 | 0.0 | 0.1+ | 2002 12 10 | 704 | 0.7− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2000 05 07 | 691 | 0.2− | 0.0 | 2002 12 10 | 644 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.1− | 0.5− |
| 2002 11 07 | 704 | 0.3+ | 0.5− | 2002 12 10 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | 0.5+ | 0.1+ | 2002 12 10 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2002 11 07 | 704 | 0.0 | 1.2+ | 2002 12 10 | 644 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.9− | 0.6− |
| 2002 11 14 | 704 | 0.4+ | 0.1− | 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 11 14 | 704 | 0.3+ | 1.1+ | 2004 04 16 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | 0.9+ | 0.1− | 2004 04 16 | 691 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 0.8− | 1.1+ | 2004 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.3− | 0.8+ | 2004 04 21 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2002 11 16 | 644 | 0.0 | 0.3+ | 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 11 16 | 644 | 0.5+ | 0.1+ | 2004 04 21 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2002 11 16 | 644 | 0.2− | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2002 11 16 | 644 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.3− | 0.5+ | | | | |

**(136769)∗ 1996 OD**

Discovered 1996 July 18 by P. G. Comba at Prescott.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.40831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21019769 | $\omega$ | 351.81235 | | −0.02527447 | +0.97483215 | |
| $a$ | 2.8014579 | $\Omega$ | 276.53525 | | −0.90409608 | −0.11683899 | |
| $e$ | 0.0955766 | $i$ | 12.88245 | | −0.42658115 | +0.18987083 | |
| $P$ | 4.69 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 07 18 | 684 | 0.2+ | 0.0 | 2001 09 10 | 704 | 0.2− | 0.1+ | 2004 03 16 | 704 | 0.7+ | 0.7− |
| 1996 07 18 | 684 | 0.1+ | 0.2− | 2001 09 18 | 645 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.5− | 0.6+ |
| 1996 07 19 | 684 | 0.3− | 0.1+ | 2001 09 18 | 645 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.7− | 0.3+ |
| 1996 07 19 | 684 | 0.1− | 0.2+ | 2001 10 17 | 704 | 1.1+ | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.1+ |
| 1996 07 19 | 684 | 0.1+ | 0.0 | 2001 10 17 | 704 | 1.0+ | 0.7+ | 2006 09 28 | 703 | 0.3− | 0.6+ |
| 1996 07 20 | 684 | 0.2+ | 0.4− | 2001 10 17 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.4+ | 1.3+ |
| 1996 07 20 | 684 | 0.2+ | 0.2+ | 2002 12 11 | 704 | 0.4− | 0.4− | 2006 09 28 | 703 | 0.5+ | 0.8+ |
| 1996 07 22 | 684 | 0.3+ | 0.1− | 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.9− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 07 22 | 684 | 0.1− | 0.3+ | 2002 12 11 | 704 | 0.7+ | 1.2− | 2006 10 19 | 703 | 0.1− | 0.7− |
| 1996 08 06 | 684 | 0.1+ | 0.6+ | 2002 12 15 | 704 | 1.3− | 0.7+ | 2006 10 19 | 703 | 0.6− | 0.7− |
| 1996 08 06 | 684 | 0.4− | 0.5+ | 2002 12 15 | 704 | 0.9− | 0.7+ | 2006 10 19 | 703 | 0.6− | 0.1− |
| 1996 08 07 | 684 | 0.7− | 0.1+ | 2002 12 15 | 704 | 0.2+ | 0.7+ | 2006 10 27 | 703 | 0.9+ | 0.6− |
| 1996 08 07 | 684 | 0.3− | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.8+ | 0.8+ |
| 2001 07 22 | 699 | (2.3− | 0.2+) | 2003 01 05 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.6− | 0.8+ |
| 2001 07 22 | 699 | (1.9− | 1.2+) | 2003 01 05 | 704 | 0.4+ | 0.8− | 2006 10 27 | 703 | 0.6− | 0.6+ |
| 2001 07 22 | 699 | 0.9− | 1.0+ | 2003 01 05 | 704 | 0.2+ | 0.4− | 2006 10 27 | 703 | 0.2− | 0.5+ |
| 2001 07 22 | 699 | (0.1+ | 2.0+) | 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 10 27 | 703 | 0.1− | 1.1− |
| 2001 09 10 | 704 | 0.0 | 0.4+ | 2004 02 19 | 704 | 0.9+ | 1.0+ | 2006 10 27 | 703 | 0.1+ | 0.5− |
| 2001 09 10 | 704 | 0.0 | 0.2− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 10 27 | 703 | 0.7+ | 0.3− |
| 2001 09 10 | 704 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.0 | 0.4+ | | | | |
| 2001 09 10 | 704 | 0.1+ | 0.5− | 2004 02 19 | 704 | 0.5+ | 0.6+ | | | | |

**(136770)∗ 1996 PC$_1$**

Discovered 1996 Aug. 11 by R. H. McNaught at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.80789 | $\omega$ | 45.79532 | | +0.94007549 | −0.24684744 |
| $n$ | 0.39502808 | $\Omega$ | 326.34569 | | +0.02018042 | +0.72890910 |
| $a$ | 1.8395746 | $i$ | 25.11464 | | +0.34036865 | +0.63855921 |
| $P$ | 2.50 | $H$ | 20.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 11 | 413 | 0.6+ | 0.4+ | 1996 08 21 | 897 | 1.4+ | 0.4+ | 2001 07 26 | 474 | 0.1+ | 0.0 |
| 1996 08 11 | 413 | (3.0− | 1.3+) | 1996 08 21 | 557 | 0.0 | 0.0 | 2001 07 26 | 474 | 0.1+ | 0.1− |
| 1996 08 12 | 413 | 0.6+ | 0.3− | 1996 08 21 | 557 | 0.2+ | 0.3− | 2001 08 13 | 670 | 0.0 | 0.9+ |
| 1996 08 12 | 413 | 1.5− | 1.1− | 1996 08 21 | 557 | 0.0 | 0.0 | 2001 08 13 | 670 | 0.9− | 0.4− |
| 1996 08 13 | 422 | 0.7− | 0.3+ | 1996 08 21 | 557 | 0.1+ | 0.5− | 2001 08 13 | 215 | 0.3+ | 0.7+ |
| 1996 08 13 | 422 | 1.0− | 0.1+ | 1996 08 21 | 966 | 0.1+ | 0.2+ | 2001 08 13 | 215 | 0.5+ | 0.5+ |
| 1996 08 14 | 566 | 0.0 | 0.6− | 1996 08 21 | 966 | 0.2− | 0.8+ | 2001 08 13 | 215 | 0.2+ | 0.9+ |
| 1996 08 14 | 566 | 0.1− | 0.8− | 1996 08 21 | 966 | 0.0 | 0.3+ | 2001 08 13 | 215 | 0.4− | 1.3+ |
| 1996 08 14 | 422 | 0.3+ | 2.0− | 1996 08 21 | 118 | 0.2− | 0.0 | 2001 08 13 | 215 | 0.3+ | 0.6− |
| 1996 08 14 | 566 | 0.0 | 0.6− | 1996 08 21 | 118 | 0.0 | 0.4− | 2001 08 15 | 151 | (0.2− | 2.0+) |
| 1996 08 14 | 422 | 1.2− | 1.7− | 1996 08 21 | 966 | 0.2+ | 0.1+ | 2001 08 15 | 151 | 0.5+ | 0.2− |
| 1996 08 14 | 422 | 0.7− | 1.2− | 1996 08 21 | 118 | 0.0 | 0.3− | 2001 08 15 | 151 | 1.0+ | 0.9− |
| 1996 08 14 | 422 | 0.2− | 1.7− | 1996 08 21 | 118 | 0.1+ | 0.1− | 2001 08 15 | 151 | (2.2− | 0.3+) |
| 1996 08 14 | 422 | 1.6− | 1.5− | 1996 08 21 | 118 | 0.0 | 0.0 | 2001 08 16 | 704 | 0.4− | 0.5+ |
| 1996 08 14 | 422 | (1.6− | 3.0−) | 1996 08 21 | 118 | 0.1− | 0.1− | 2001 08 16 | 704 | 0.7− | 0.6+ |
| 1996 08 14 | 422 | 0.3+ | 0.8− | 1996 08 22 | 711 | 0.4+ | 0.0 | 2001 08 16 | 704 | 0.8− | 0.7+ |
| 1996 08 14 | 422 | 0.7− | 0.7− | 1996 08 22 | 711 | 0.3+ | 0.0 | 2001 08 16 | 704 | 0.6− | 1.0+ |
| 1996 08 14 | 413 | 0.1− | 0.2− | 1996 08 22 | 608 | 1.6+ | 0.6− | 2001 08 16 | 704 | 0.8− | 0.9+ |
| 1996 08 14 | 413 | (0.6+ | 5.0−) | 1996 08 22 | 608 | 0.5+ | 1.1− | 2001 08 18 | 151 | 0.4− | 0.5− |
| 1996 08 15 | 897 | 1.1+ | 0.3− | 1996 08 22 | 608 | 0.4+ | 1.0− | 2001 08 18 | 151 | 0.5− | 0.6+ |
| 1996 08 15 | 897 | 0.6− | 0.2− | 1996 08 22 | 900 | 0.8+ | 1.4+ | 2001 08 18 | 151 | 0.2− | 0.1+ |
| 1996 08 15 | 897 | 0.3+ | 1.5+ | 1996 08 22 | 900 | 0.5+ | 0.4+ | 2001 08 18 | 151 | 0.3− | 0.1− |
| 1996 08 15 | 046 | 1.0− | 0.9+ | 1996 08 22 | 557 | 0.5+ | 0.1− | 2001 08 18 | 151 | 0.3− | 0.4+ |
| 1996 08 15 | 046 | 0.7− | 0.8+ | 1996 08 22 | 557 | 0.4+ | 0.3− | 2001 08 18 | 151 | 0.2− | 0.5+ |
| 1996 08 15 | 046 | 0.7− | 0.1+ | 1996 08 22 | 557 | 0.4+ | 0.3− | 2001 08 21 | 151 | 0.0 | 0.3+ |
| 1996 08 15 | 046 | 0.9− | 0.7+ | 1996 08 22 | 557 | 0.2+ | 0.4− | 2001 08 21 | 151 | 0.2+ | 0.1+ |
| 1996 08 16 | 108 | 1.3− | 0.8− | 1996 08 22 | 587 | 0.1− | 0.2− | 2001 08 21 | 151 | 0.2+ | 0.0 |
| 1996 08 16 | 108 | (0.9− | 2.2−) | 1996 08 22 | 587 | 0.2+ | 0.8− | 2001 08 21 | 151 | 0.4− | 0.3+ |
| 1996 08 16 | 608 | 1.3− | 0.5− | 1996 08 22 | 587 | 0.2+ | 0.4− | 2001 08 21 | 151 | 0.1+ | 0.1+ |
| 1996 08 17 | 422 | 0.2+ | 0.5+ | 1996 08 22 | 118 | 0.4+ | 0.1− | 2001 08 21 | 151 | 0.4+ | 0.3+ |
| 1996 08 17 | 422 | 0.3+ | 0.2+ | 1996 08 22 | 118 | 0.4+ | 0.3+ | 2001 08 22 | 704 | 0.8− | 0.2+ |
| 1996 08 17 | 422 | 0.4+ | 1.0+ | 1996 08 22 | 118 | 0.5+ | 0.1+ | 2001 08 22 | 704 | 0.6− | 0.0 |
| 1996 08 17 | 422 | 0.1+ | 0.0 | 1996 08 22 | 118 | 0.4+ | 0.1− | 2001 08 22 | 704 | 0.5+ | 0.4− |
| 1996 08 17 | 422 | 0.1+ | 0.3+ | 1996 08 22 | 118 | 0.6+ | 0.1+ | 2001 08 22 | 704 | 0.2− | 0.1+ |
| 1996 08 17 | 422 | 0.6+ | 0.1+ | 1996 08 23 | 658 | 0.2− | 0.5+ | 2001 08 22 | 704 | 0.4+ | 0.4− |
| 1996 08 17 | 900 | 0.6+ | 0.7+ | 1996 08 23 | 658 | 0.0 | 0.1− | 2001 08 23 | 151 | 0.1+ | 0.1− |
| 1996 08 17 | 900 | 0.3− | 0.1− | 1996 08 23 | 658 | 0.0 | 0.6+ | 2001 08 23 | 151 | 0.1+ | 0.1− |
| 1996 08 18 | 816 | 0.6+ | 1.0+ | 1996 08 23 | 108 | 0.2− | 1.4− | 2001 08 23 | 151 | 0.5+ | 0.1+ |
| 1996 08 18 | 816 | 0.7+ | 1.3+ | 1996 08 23 | 108 | 0.5+ | 0.2+ | 2001 08 23 | 151 | 0.2− | 0.3+ |
| 1996 08 18 | 816 | 1.0+ | 0.6+ | 1996 08 23 | 108 | 0.9+ | 0.2+ | 2001 08 23 | 151 | 0.5+ | 0.1− |
| 1996 08 18 | 816 | 0.1− | 0.2+ | 1996 08 23 | 108 | 0.7− | 1.5− | 2001 08 23 | 151 | 0.3− | 0.1+ |
| 1996 08 18 | 360 | 0.0 | 0.2− | 1996 08 24 | 118 | 0.0 | 0.8− | 2001 08 24 | 670 | 0.1+ | 0.4− |
| 1996 08 18 | 360 | 0.0 | 0.5− | 1996 08 24 | 118 | 0.1− | 0.4− | 2001 08 24 | 670 | 0.1+ | 0.0 |
| 1996 08 18 | 360 | 0.1− | 0.1− | 1996 08 24 | 118 | 0.2− | 0.2− | 2001 08 24 | 670 | 0.4− | 0.2− |
| 1996 08 18 | 900 | 0.3+ | 0.3+ | 1996 08 24 | 118 | 0.0 | 0.4− | 2001 08 25 | 151 | 0.1− | 0.1+ |
| 1996 08 18 | 900 | 0.4− | 0.0 | 1996 08 24 | 658 | 0.6− | 0.1− | 2001 08 25 | 151 | 0.4− | 0.0 |
| 1996 08 18 | 104 | 0.7+ | 0.4+ | 1996 08 24 | 658 | 0.6− | 0.1− | 2001 08 25 | 151 | 0.3+ | 0.0 |
| 1996 08 18 | 104 | 0.6+ | 1.0− | 1996 08 24 | 658 | 0.5− | 0.5− | 2001 08 25 | 151 | 0.1− | 0.3+ |
| 1996 08 18 | 104 | 1.0− | 0.3− | 1996 08 28 | 608 | 0.1− | 0.5+ | 2001 08 25 | 151 | 0.1+ | 0.2+ |
| 1996 08 18 | 104 | (1.2− | 2.7+) | 1996 08 28 | 608 | 0.8+ | 0.8− | 2001 08 25 | 151 | 0.1− | 0.6+ |
| 1996 08 18 | 104 | 1.8− | 1.8+ | 1996 08 29 | 608 | 0.1+ | 0.2+ | 2001 08 25 | 151 | 0.5+ | 0.2− |
| 1996 08 18 | 046 | 0.1+ | 0.1+ | 1996 08 29 | 608 | 0.7+ | 0.4− | 2001 08 25 | 151 | 0.2+ | 0.0 |
| 1996 08 18 | 046 | 0.0 | 0.1− | 1996 09 02 | 360 | 0.1− | 0.5+ | 2001 08 26 | 151 | 0.1+ | 0.1− |
| 1996 08 18 | 046 | 0.0 | 0.2+ | 1996 09 02 | 360 | 1.4+ | 0.8+ | 2001 08 26 | 151 | 0.4− | 0.7+ |
| 1996 08 18 | 046 | 0.1+ | 0.0 | 1996 09 02 | 360 | 0.3+ | 0.4+ | 2001 08 26 | 151 | 0.2+ | 0.0 |
| 1996 08 19 | 557 | 0.3+ | 0.2+ | 1996 09 06 | 587 | 0.6− | 0.2+ | 2001 08 26 | 151 | 0.2+ | 0.2+ |
| 1996 08 19 | 557 | 0.3− | 0.1+ | 1996 09 06 | 587 | 1.5− | 0.5− | 2001 08 26 | 151 | 0.1+ | 0.5+ |
| 1996 08 19 | 557 | 0.2+ | 0.0 | 1996 09 06 | 587 | 0.9− | 0.0 | 2001 08 26 | 151 | 0.1− | 0.2− |
| 1996 08 19 | 566 | 0.0 | 0.2+ | 1996 09 07 | 381 | 0.1− | 0.1+ | 2006 07 28 | E12 | 0.3− | 0.2− |
| 1996 08 19 | 566 | 0.0 | 0.1+ | 1996 09 07 | 381 | 0.1− | 0.2− | 2006 07 28 | E12 | 0.1− | 0.6+ |
| 1996 08 19 | 566 | 0.6+ | 0.5+ | 1996 09 21 | 696 | 1.1+ | 0.3− | 2006 07 28 | E12 | 0.0 | 0.3+ |
| 1996 08 19 | 360 | 0.5+ | 0.3− | 1996 09 21 | 696 | 0.6+ | 0.3− | 2006 07 28 | E12 | 0.2− | 0.6− |
| 1996 08 19 | 360 | 0.6+ | 0.5− | 1996 09 21 | 696 | 0.8+ | 0.3+ | 2006 08 24 | 198 | 0.4− | 0.3+ |
| 1996 08 19 | 360 | 0.3+ | 0.5− | 1996 10 11 | 711 | 0.1− | 0.2− | 2006 08 24 | 198 | 0.6− | 0.1+ |
| 1996 08 19 | 046 | 0.1− | 0.2+ | 1996 10 11 | 711 | 0.0 | 0.0 | 2006 08 24 | 198 | 0.9− | 0.1+ |
| 1996 08 19 | 046 | 0.0 | 0.1− | 1996 10 12 | 711 | 0.5− | 0.6+ | 2006 08 24 | 198 | 1.0− | 0.2+ |
| 1996 08 19 | 046 | 0.1+ | 0.3− | 1996 10 12 | 711 | 1.6− | 1.5− | 2006 08 25 | H45 | 0.2− | 0.2− |
| 1996 08 19 | 046 | 0.0 | 0.0 | 2001 07 25 | 474 | 0.0 | 0.4− | 2006 08 25 | H45 | 0.1+ | 0.8+ |
| 1996 08 21 | 711 | 0.8− | 0.4− | 2001 07 25 | 474 | 0.1+ | 0.4− | 2006 08 25 | H45 | 0.1+ | 0.3+ |
| 1996 08 21 | 711 | 0.4− | 0.2− | 2001 07 25 | 474 | 0.0 | 0.6− | 2006 08 25 | H45 | 0.1− | 0.1+ |
| 1996 08 21 | 367 | (0.4− | 2.6+) | 2001 07 25 | 474 | 0.0 | 0.6− | 2006 08 25 | H45 | 0.1− | 1.1+ |
| 1996 08 21 | 367 | (1.1− | 2.2+) | 2001 07 25 | 474 | 0.0 | 0.5− | 2006 08 25 | H45 | 0.1+ | 0.0 |
| 1996 08 21 | 897 | 0.6+ | 0.0 | 2001 07 25 | 474 | 0.1+ | 0.5− | 2006 08 31 | 151 | 0.1+ | 0.7+ |
| 1996 08 21 | 897 | 0.7+ | 0.3− | 2001 07 26 | 474 | 0.2− | 0.1− | 2006 08 31 | 151 | 0.3− | 0.6+ |
| 1996 08 21 | 897 | 0.3− | 0.5+ | 2001 07 26 | 474 | 0.2− | 0.1− | 2006 08 31 | 151 | 0.6− | 0.1− |
| 1996 08 21 | 897 | 0.7+ | 1.0+ | 2001 07 26 | 474 | 0.2− | 0.1− | | | | |

**(136771)∗ 1996 PA$_2$**

Discovered 1996 Aug. 13 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.78553 | $\omega$ | 33.08321 | | +0.98831058 | +0.13901021 |
| $n$ | 0.30601347 | $\Omega$ | 318.78172 | | −0.15216069 | +0.87397284 |
| $a$ | 2.1809331 | $i$ | 5.45119 | | −0.00945080 | +0.46566902 |
| $P$ | 3.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 07 20 | 327 | 0.2+ | 0.4+ | 2003 12 27 | 704 | 0.2− | 0.4− | 2006 10 02 | 704 | 0.1+ | 0.2+ |
| 1996 07 20 | 327 | 0.7− | 0.6+ | 2003 12 27 | 704 | 0.2− | 0.2+ | 2006 10 29 | 703 | 0.3− | 0.1+ |
| 1996 07 20 | 327 | 0.5− | 0.2− | 2003 12 27 | 704 | 0.4− | 0.1− | 2006 10 29 | 703 | 0.1+ | 0.3− |
| 1996 07 20 | 327 | 0.6− | 0.2+ | 2003 12 28 | 704 | 0.4+ | 0.1− | 2006 10 29 | 703 | (1.8− | 1.2−) |
| 1996 08 13 | 566 | 0.1+ | 0.6+ | 2003 12 28 | 704 | 0.2+ | 0.1− | 2006 10 29 | 703 | 1.4− | 1.1− |
| 1996 08 13 | 566 | 0.5− | 0.4+ | 2003 12 28 | 704 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 1996 08 13 | 566 | 0.3− | 0.1+ | 2003 12 28 | 704 | 0.4− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 1996 08 14 | 566 | 0.4+ | 0.5+ | 2003 12 28 | 704 | 1.2− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 1996 08 14 | 566 | 0.2+ | 0.4+ | 2003 12 28 | 704 | 1.2− | 0.5− | 2006 11 15 | 704 | 0.1+ | 0.3− |
| 1996 08 14 | 566 | 0.2+ | 0.3+ | 2003 12 28 | 704 | (2.0− | 0.7−) | 2006 11 15 | 704 | 0.5+ | 0.7− |
| 2001 01 04 | 691 | 0.1+ | 0.0 | 2003 12 28 | 704 | 1.4− | 0.7− | 2006 11 15 | 704 | 0.0 | 0.4+ |
| 2001 01 04 | 691 | 0.1− | 0.1− | 2003 12 28 | 704 | 0.5− | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.7+ |
| 2001 01 04 | 691 | 0.0 | 0.3− | 2003 12 30 | 704 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2001 01 21 | 704 | 0.9+ | 0.2+ | 2003 12 30 | 704 | 0.8− | 1.3+ | 2006 11 17 | 644 | 0.2+ | 0.1+ |
| 2001 01 21 | 704 | 0.2− | 1.2+ | 2003 12 30 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 2001 01 21 | 704 | 1.0− | 0.7+ | 2003 12 30 | 704 | 0.7+ | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.1− |
| 2001 01 21 | 704 | (1.0+ | 2.0+) | 2003 12 30 | 704 | 0.7+ | 0.2− | 2006 11 22 | 703 | 0.3− | 0.1− |
| 2003 12 04 | 704 | 0.0 | 1.5+ | 2004 01 16 | 644 | 0.3+ | 0.9+ | 2006 11 22 | 703 | 0.2− | 0.8− |
| 2003 12 04 | 704 | 1.1+ | 0.1− | 2004 01 16 | 644 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.3− |
| 2003 12 04 | 704 | 0.4+ | 0.1+ | 2004 01 16 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2003 12 14 | 691 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.5+ | 1.0+ | 2006 11 29 | 704 | 0.9+ | 0.2− |
| 2003 12 14 | 691 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.9− | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.9+ |
| 2003 12 14 | 691 | 0.2+ | 0.1− | 2004 01 22 | 704 | 0.5+ | 0.8+ | 2006 11 29 | 704 | 0.9+ | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.8+ | 0.4− | 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.2+ |
| 2003 12 23 | 704 | 0.9+ | 0.3+ | 2005 05 01 | 644 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2003 12 23 | 704 | 1.1+ | 0.6+ | 2005 05 01 | 644 | 0.5+ | 0.6+ | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2003 12 23 | 704 | 0.6+ | 0.4+ | 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 0.3− | 0.8− |
| 2003 12 23 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 704 | (0.9+ | 2.1+) | 2006 11 29 | 704 | 0.9− | 0.3+ |
| 2003 12 27 | 704 | 0.3+ | 0.7+ | 2006 10 02 | 704 | (1.7− | 1.5+) | 2006 11 29 | 704 | 0.1− | 0.4− |
| 2003 12 27 | 704 | 0.3− | 0.4− | 2006 10 02 | 704 | 1.4− | 0.4+ | | | | |

**(136772)∗ 1996 RK$_{20}$**

Discovered 1996 Sept. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.80960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21310649 | $\omega$ | 313.76480 | | +0.30591957 | −0.95172472 | |
| $a$ | 2.7759072 | $\Omega$ | 118.40606 | | +0.88150845 | +0.27316618 | |
| $e$ | 0.0506816 | $i$ | 1.63943 | | +0.35966105 | +0.14000104 | |
| $P$ | 4.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 14 | 691 | 0.0 | 0.3+ | 2001 10 20 | 704 | 0.7− | 0.6+ | 2005 06 13 | G96 | 0.2− | 0.1+ |
| 1996 09 14 | 691 | 0.1+ | 0.3+ | 2001 10 20 | 704 | 0.2− | 1.5+ | 2005 06 13 | G96 | 0.1− | 0.0 |
| 1996 09 15 | 691 | 0.2− | 0.2+ | 2003 01 26 | 291 | 0.1− | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.3+ |
| 1996 09 15 | 691 | 0.7− | 0.2− | 2003 01 26 | 291 | 0.1− | 0.3+ | 2005 06 13 | G96 | 0.3− | 0.4+ |
| 1996 09 15 | 691 | 0.9+ | 0.8− | 2003 01 26 | 291 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.1− |
| 1996 09 15 | 691 | 0.0 | 0.1− | 2003 01 27 | 704 | 0.0 | 0.4− | 2006 09 28 | G96 | 0.3− | 0.4− |
| 1996 09 15 | 691 | 0.9+ | 0.3− | 2003 01 27 | 704 | (2.2+ | 0.9+) | 2006 09 28 | G96 | 0.2− | 0.4− |
| 1996 09 21 | 691 | 0.3− | 0.3+ | 2003 01 27 | 704 | 0.8+ | 1.0− | 2006 09 28 | G96 | 0.6− | 0.4− |
| 1996 09 21 | 691 | 0.3− | 0.1+ | 2003 01 27 | 704 | 0.9+ | 0.1− | 2006 10 19 | 695 | 0.3− | 0.0 |
| 1996 09 21 | 691 | 0.2− | 0.5+ | 2003 01 27 | 704 | 0.3+ | 0.6− | 2006 10 20 | 695 | 0.3− | 0.1− |
| 2001 09 26 | 704 | 1.1+ | 0.6− | 2003 01 30 | 291 | 0.0 | 0.2+ | 2006 10 20 | 695 | 0.3− | 0.1− |
| 2001 09 26 | 704 | 0.3+ | 0.2− | 2003 01 30 | 291 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2001 09 26 | 704 | 0.4+ | 0.5− | 2003 01 30 | 291 | 0.4− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 10 18 | I03 | 0.2− | 0.7+ | 2003 01 31 | 644 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2001 10 18 | I03 | 0.9− | 0.4+ | 2003 01 31 | 644 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 10 18 | I03 | 0.1+ | 0.6+ | 2003 01 31 | 644 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.6− | 0.4+ |
| 2001 10 18 | 644 | 0.2+ | 0.7+ | 2004 04 28 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.2− | 1.3+ |
| 2001 10 18 | 644 | 0.3− | 0.4+ | 2004 04 28 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 0.6+ | 1.5+ |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2004 04 28 | 691 | 0.3+ | 0.5+ | 2006 11 27 | 703 | 0.1− | 1.0+ |
| 2001 10 20 | 704 | 0.9− | 0.4+ | 2004 05 13 | 691 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 1.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.8− | 0.5− | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 1.4+ | 0.1+ |
| 2001 10 20 | 704 | 1.1− | 0.2+ | 2004 05 13 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.8− |

**(136773)∗ 1996 TR$_{6}$**

Discovered 1996 Oct. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.89750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.49396036 | $\omega$ | 117.57756 | | +0.67562281 | +0.72958592 | |
| $a$ | 1.5849223 | $\Omega$ | 196.36773 | | −0.73591036 | +0.67604531 | |
| $e$ | 0.1802314 | $i$ | 22.09780 | | +0.04438204 | +0.10328181 | |
| $P$ | 2.00 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 09 | 691 | 0.4+ | 0.3− | 1996 11 01 | 413 | 0.9− | 0.1+ | 2000 11 05 | 046 | 1.2+ | 1.3+ |
| 1996 10 09 | 691 | 0.2+ | 0.3− | 1996 11 01 | 413 | 0.3− | 0.3+ | 2000 11 05 | 046 | 0.1+ | 0.2+ |
| 1996 10 09 | 691 | 0.3+ | 0.4− | 1996 11 02 | 413 | 0.6− | 0.2− | 2000 11 05 | 046 | 0.2− | 0.8+ |
| 1996 10 10 | 691 | 0.6− | 0.2− | 1996 11 02 | 413 | 0.7− | 0.0 | 2002 09 29 | 696 | 0.2− | 0.4+ |
| 1996 10 10 | 691 | 0.5− | 0.1− | 1996 11 04 | 557 | 0.7− | 0.6+ | 2002 09 29 | 696 | 0.1− | 0.6+ |
| 1996 10 10 | 691 | 0.5− | 0.2− | 1996 11 04 | 557 | 0.4− | 1.0− | 2002 10 09 | 699 | 0.8+ | 0.2+ |
| 1996 10 11 | 691 | 1.0− | 0.2− | 1996 11 07 | 691 | 0.7− | 0.3+ | 2002 10 09 | 699 | (1.7− | 0.9+) |
| 1996 10 11 | 691 | 0.4− | 0.3+ | 1996 11 07 | 691 | 0.8− | 0.7+ | 2002 10 09 | 699 | (2.6− | 0.5−) |
| 1996 10 11 | 691 | 0.8− | 0.3− | 1996 11 07 | 691 | 0.8− | 0.5+ | 2002 10 09 | 699 | 0.2− | 0.8+ |
| 1996 10 11 | 691 | 0.2+ | 0.2+ | 1996 11 12 | 599 | (1.1+ | 3.1+) | 2002 10 09 | 644 | 0.3− | 0.5+ |
| 1996 10 11 | 691 | 0.3+ | 0.2− | 1996 11 12 | 599 | 0.1− | 0.7+ | 2002 10 09 | 644 | 0.3− | 0.6+ |
| 1996 10 11 | 691 | 0.0 | 0.0 | 1996 11 17 | 711 | 1.5+ | 0.7− | 2002 10 09 | 644 | 0.3− | 0.6+ |
| 1996 10 11 | 557 | 0.9+ | 0.5+ | 1996 11 17 | 711 | 1.3+ | 0.7− | 2002 11 15 | 644 | 0.5− | 0.1− |
| 1996 10 11 | 557 | 0.1+ | 1.2+ | 1996 11 18 | 711 | 1.1+ | 1.1− | 2002 11 21 | 644 | 0.7+ | 0.6+ |
| 1996 10 11 | 557 | 0.8+ | 1.1+ | 1996 11 18 | 711 | 1.3+ | 1.0− | 2004 09 21 | 734 | 0.7− | 0.0 |
| 1996 10 11 | 557 | 1.0+ | 0.2− | 1996 12 05 | 711 | 0.0 | 0.6− | 2004 09 21 | 734 | 0.5− | 0.3− |
| 1996 10 11 | 046 | 0.9+ | 0.2+ | 1996 12 05 | 711 | 0.1+ | 0.4− | 2004 11 06 | E17 | 0.2− | 0.7+ |
| 1996 10 13 | 046 | 0.6+ | 0.4− | 1996 12 06 | 711 | 0.7+ | 0.4− | 2004 11 06 | E17 | (1.6+ | 0.0 ) |
| 1996 10 13 | 046 | 0.6− | 0.2− | 1996 12 06 | 711 | 0.1+ | 0.7− | 2004 11 06 | E17 | 0.4− | 0.7− |
| 1996 10 13 | 046 | 0.2− | 0.8+ | 1998 09 25 | 046 | 0.2+ | 0.3− | 2004 11 11 | 703 | 1.0+ | 0.8− |
| 1996 10 13 | 046 | 0.3+ | 0.2− | 1998 09 25 | 046 | 1.3− | 0.4+ | 2004 11 11 | 703 | 0.5+ | 0.5+ |
| 1996 10 13 | 046 | 0.3+ | 0.7+ | 1998 09 25 | 046 | 0.5+ | 0.5− | 2004 11 11 | 703 | 0.9+ | 0.5+ |
| 1996 10 14 | 673 | 2.0+ | 0.4− | 1998 09 25 | 046 | 1.1− | 0.8+ | 2004 11 11 | 703 | 0.1+ | 0.2+ |
| 1996 10 14 | 673 | 1.2+ | 0.6− | 1998 09 26 | 046 | 0.4− | 0.6− | 2004 11 13 | E17 | (0.4− | 2.5−) |
| 1996 10 15 | 046 | 0.9+ | 0.4− | 1998 09 26 | 046 | 1.0+ | 0.3+ | 2004 11 13 | E17 | 1.1− | 1.2− |
| 1996 10 15 | 046 | 0.3+ | 0.7− | 1998 09 26 | 046 | 0.2+ | 0.1+ | 2004 11 13 | E17 | (1.8+ | 2.3+) |
| 1996 10 20 | 422 | 0.8− | 0.9− | 1998 09 26 | 046 | 0.3− | 0.3+ | 2006 05 26 | 291 | 0.4− | 0.1+ |
| 1996 10 20 | 422 | 0.1+ | 0.2− | 1998 10 16 | 691 | 0.2− | 0.1+ | 2006 05 26 | 291 | 0.4− | 0.0 |
| 1996 10 21 | 691 | 0.4+ | 0.4− | 1998 10 16 | 691 | 0.3+ | 0.1+ | 2006 05 26 | 291 | 0.7+ | 0.3+ |
| 1996 10 21 | 691 | 0.7+ | 0.5− | 1998 10 16 | 691 | 0.5+ | 0.2− | 2006 10 17 | 113 | 0.1+ | 0.3− |
| 1996 10 21 | 691 | 0.6+ | 1.5+ | 2000 09 26 | 608 | 0.2+ | 1.5− | 2006 10 17 | 113 | 0.0 | 0.2− |
| 1996 10 31 | 118 | 0.3− | 0.4− | 2000 09 26 | 608 | 0.0 | 1.1− | 2006 10 17 | 113 | 0.0 | 0.2− |
| 1996 10 31 | 118 | 0.0 | 0.1+ | 2000 09 26 | 608 | 0.2+ | 0.6− | 2006 10 17 | 113 | 0.4− | 0.1− |
| 1996 11 01 | 118 | 0.2− | 0.4− | 2000 11 05 | 046 | 0.2+ | 0.5+ | | | | |

**(136774)∗ 1996 TC$_{12}$ = 1998 BV$_{20}$**

Discovered 1996 Oct. 3 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. A. Doppler (MPC 34199)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.13917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21067286 | $\omega$ | 230.67085 | | +0.99419333 | +0.10733333 | |
| $a$ | 2.7972438 | $\Omega$ | 123.16624 | | −0.09568585 | +0.91448289 | |
| $e$ | 0.0861804 | $i$ | 0.52653 | | −0.04923245 | +0.39012896 | |
| $P$ | 4.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 03 | 327 | 0.7+ | 0.2+ | 2001 10 24 | 704 | 0.8+ | 0.7+ | 2005 07 28 | 644 | 0.2− | 0.2+ |
| 1996 10 03 | 327 | 0.3− | 1.0+ | 2001 10 24 | 704 | 0.1+ | 0.0 | 2005 07 28 | 644 | 0.2− | 0.2+ |
| 1996 10 03 | 327 | 0.5+ | 1.0+ | 2001 11 09 | 704 | 0.1+ | 0.7− | 2005 07 28 | 644 | 0.5− | 0.1− |
| 1996 10 05 | 327 | 1.2+ | 1.1+ | 2001 11 09 | 704 | 0.4+ | 0.2− | 2005 07 28 | 644 | 0.2− | 0.2+ |
| 1996 10 05 | 327 | 0.0 | 1.5+ | 2001 11 09 | 704 | 0.4+ | 0.0 | 2005 07 28 | 644 | 0.0 | 0.0 |
| 1996 10 05 | 327 | 0.5+ | 0.7+ | 2001 11 09 | 704 | 0.9+ | 0.0 | 2005 07 28 | 644 | 0.1+ | 0.0 |
| 1996 10 14 | 327 | 0.5− | 1.2− | 2001 11 09 | 704 | 0.4− | 0.5− | 2005 08 04 | 644 | 0.0 | 0.1+ |
| 1996 10 14 | 327 | 0.1+ | 1.6− | 2001 11 12 | 291 | 0.1− | 0.3+ | 2005 08 04 | 644 | 0.0 | 0.1− |
| 1996 10 14 | 327 | 0.4− | 1.0− | 2001 11 12 | 291 | 0.2− | 0.4+ | 2005 08 04 | 644 | 0.1+ | 0.1+ |
| 1998 01 22 | 691 | 0.1− | 1.0+ | 2001 11 12 | 291 | 0.3− | 0.5+ | 2005 08 04 | 644 | 0.2− | 0.1− |
| 1998 01 22 | 691 | 0.1− | 0.3− | 2001 11 20 | 704 | 0.2− | 0.8+ | 2005 08 04 | 644 | 0.3− | 0.2− |
| 1998 01 22 | 691 | 0.2− | 0.3− | 2001 11 20 | 704 | 0.2− | 1.5+ | 2005 08 04 | 644 | 0.0 | 0.2− |
| 1998 01 29 | 691 | 0.3− | 0.2+ | 2001 11 20 | 704 | (1.6− | 0.5+) | 2005 08 05 | 644 | 0.1− | 0.2− |
| 1998 01 29 | 691 | 0.0 | 0.3+ | 2001 11 20 | 704 | 0.4− | 0.9+ | 2005 08 05 | 644 | 0.1− | 0.1− |
| 1998 01 29 | 691 | 0.3− | 0.0 | 2001 11 20 | 704 | 0.3− | 0.6+ | 2005 08 05 | 644 | 0.0 | 0.0 |
| 1999 04 15 | 691 | (17.7+ | 4.6−) | 2004 05 16 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2− | 0.0 |
| 1999 04 15 | 691 | 0.1+ | 0.2+ | 2004 05 16 | 691 | 0.5+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.9− | 0.2+ | 2004 05 16 | 691 | 0.3+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 0.6− | 0.7− | 2005 07 11 | G96 | 0.5− | 0.7− | 2006 11 25 | 691 | 1.1+ | 1.8− |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2005 07 11 | G96 | 0.5− | 0.5− | 2006 11 25 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | (1.6+ | 0.5−) | 2005 07 11 | G96 | 0.8− | 0.4− | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.7+ | 0.5− | 2005 07 11 | G96 | 0.1− | 0.6− | | | | |

**(136775)∗ 1996 TF$_{21}$ = 2004 HZ$_{46}$**

Discovered 1996 Oct. 5 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 68510)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.77636 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19456939 | $\omega$ | 352.31305 | | −0.90212860 | +0.43055494 | |
| $a$ | 2.9495315 | $\Omega$ | 213.23490 | | −0.39309121 | −0.84694898 | |
| $e$ | 0.0735406 | $i$ | 2.93295 | | −0.17788561 | −0.31192926 | |
| $P$ | 5.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.3+ | 0.6+ | 2004 04 22 | 704 | 0.5+ | 1.4+ | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 1996 10 05 | 691 | 1.1+ | 0.1− | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.6− |
| 1996 10 05 | 691 | 0.2− | 0.0 | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 1996 10 06 | 691 | 0.5+ | 0.0 | 2004 04 24 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.5− | 0.1− |
| 1996 10 06 | 691 | 0.1− | 0.2+ | 2004 04 25 | 703 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 1996 10 06 | 691 | 0.3+ | 0.1− | 2004 04 25 | 703 | (1.6− | 0.2−) | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 1996 10 08 | 691 | 0.6− | 0.1+ | 2004 04 25 | 703 | 1.2− | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 1996 10 08 | 691 | 0.8− | 0.4+ | 2004 04 25 | 703 | 0.1+ | 1.1− | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 1996 10 08 | 691 | 0.8− | 0.4+ | 2004 05 27 | 691 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2000 08 01 | 807 | 0.4− | 0.2+ | 2004 05 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2000 08 01 | 807 | 0.6− | 0.1− | 2004 05 27 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.6− | 0.3+ |
| 2001 11 21 | 691 | 0.2+ | 0.2− | 2005 06 30 | 644 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2001 11 21 | 691 | 0.0 | 0.3+ | 2005 06 30 | 644 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 691 | 0.1− | 0.0 | 2005 06 30 | 644 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2005 07 09 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.7+ | 0.3− |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2005 07 09 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.1+ |
| 2003 01 28 | 291 | (0.1− | 2.0+) | 2005 07 09 | 691 | 0.1− | 0.5+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2003 01 28 | 291 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.4+ | 0.2− |
| 2003 01 28 | 291 | 0.4+ | 0.8+ | 2006 09 18 | 691 | 0.5− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2004 04 12 | 644 | 0.3+ | 0.8+ | 2006 09 18 | 691 | 0.7− | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2004 04 12 | 644 | 0.2+ | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.7+ | 0.1− |
| 2004 04 12 | 644 | 0.2+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.2− |
| 2004 04 22 | 704 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 04 22 | 704 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.3− | | | | |
| 2004 04 22 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.5− | 0.6+ | | | | |

**(136776)∗ 1996 TB$_{22}$ = 2005 ET$_{209}$**

Discovered 1996 Oct. 6 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74554)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.28193 | | (2000.0) | | | |
| $n$ | 0.28879491 | $\omega$ | 46.44839 | | +0.68093701 | +0.73208496 |
| $a$ | 2.2667817 | $\Omega$ | 266.47921 | | −0.67739001 | +0.61955290 |
| $e$ | 0.0732750 | $i$ | 1.11377 | | −0.27832995 | +0.28320630 |
| $P$ | 3.41 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.1+ | 0.2+ | 2005 03 04 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | (2.8− | 3.0+) |
| 1996 10 06 | 691 | 0.1+ | 0.2+ | 2005 03 13 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.7− | 0.6+ |
| 1996 10 06 | 691 | 0.2+ | 0.0 | 2005 03 13 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.3+ |
| 1996 10 10 | 691 | 1.0− | 0.2+ | 2005 03 13 | 691 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.1− |
| 1996 10 10 | 691 | 0.9− | 0.3+ | 2005 04 06 | G96 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.5+ |
| 1996 10 10 | 691 | 0.6− | 0.2+ | 2005 04 06 | G96 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 1.4− | 0.3− |
| 1996 10 16 | 691 | 0.3+ | 0.4− | 2005 04 06 | G96 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.4− | 0.1+ |
| 1996 10 16 | 691 | 0.7+ | 0.8− | 2005 04 06 | G96 | 0.1+ | 0.1− | 2006 09 14 | 703 | (0.7+ | 1.8−) |
| 1996 10 16 | 691 | 0.9+ | 0.0 | 2005 04 12 | G96 | 0.2− | 0.0 | 2006 09 14 | 703 | (1.9+ | 0.0 ) |
| 1999 08 03 | 691 | 0.2+ | 0.3+ | 2005 04 12 | G96 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.6+ |
| 1999 08 03 | 691 | 0.3+ | 0.3+ | 2005 04 12 | G96 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.5+ |
| 1999 08 03 | 691 | (0.8+ | 6.3−) | 2005 04 12 | G96 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.0 |
| 1999 08 08 | 691 | 0.1+ | 0.2+ | 2005 05 08 | G96 | 0.5− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.2− |
| 1999 08 08 | 691 | 0.6− | 0.1− | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.5+ | 0.3− |
| 1999 08 08 | 691 | 0.1+ | 0.3− | 2005 05 08 | G96 | 0.7− | 0.3− | 2006 09 27 | G96 | 0.5+ | 0.0 |
| 2003 11 16 | 691 | 0.1+ | 0.6+ | 2005 05 08 | G96 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2003 11 16 | 691 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2003 11 16 | 691 | 0.0 | 0.1− | 2006 08 21 | 644 | 0.5+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2005 03 04 | 691 | 0.3+ | 0.1+ | 2006 08 21 | 644 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.8− | 0.0 |
| 2005 03 04 | 691 | 0.5− | 0.3− | 2006 08 28 | 699 | 0.3− | 0.8− | | | | |

**(136777)∗ 1996 TN$_{27}$ = 2001 QN$_{211}$**

Discovered 1996 Oct. 7 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 16742)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 274.44140 | | (2000.0) | | | |
| $n$ | 0.18722759 | $\omega$ | 264.79410 | | +0.16838877 | −0.98560154 |
| $a$ | 3.0261433 | $\Omega$ | 175.42572 | | +0.96329244 | +0.16124017 |
| $e$ | 0.1507814 | $i$ | 11.07796 | | +0.20907630 | +0.05090387 |
| $P$ | 5.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 02 | 691 | 0.2+ | 0.2+ | 2001 09 11 | 699 | 0.5+ | 0.0 | 2001 10 24 | 704 | 0.7− | 1.4+ |
| 1994 07 02 | 691 | 0.1+ | 0.1− | 2001 09 11 | 699 | 0.8− | 0.3+ | 2004 04 20 | 704 | 0.2+ | 0.5+ |
| 1994 07 02 | 691 | 0.4− | 0.3− | 2001 09 11 | 699 | 0.4− | 0.9+ | 2004 04 20 | 704 | 0.7− | 1.2+ |
| 1996 10 07 | 691 | 0.7− | 0.2− | 2001 09 11 | 699 | 0.7− | 1.1+ | 2004 04 20 | 704 | 0.2− | 0.4+ |
| 1996 10 07 | 691 | 0.7− | 0.0 | 2001 09 16 | 704 | 0.3+ | 0.0 | 2004 04 20 | 704 | 1.1+ | 1.7+ |
| 1996 10 07 | 691 | 0.8− | 0.3− | 2001 09 16 | 704 | 0.3− | 0.6+ | 2004 04 20 | 704 | 0.6+ | 0.5+ |
| 1996 10 09 | 691 | 0.3− | 0.7− | 2001 09 16 | 704 | 0.3+ | 0.9+ | 2004 04 22 | 704 | 0.3+ | 0.5+ |
| 1996 10 09 | 691 | 0.3− | 0.3− | 2001 09 19 | 704 | 0.3+ | 0.1+ | 2004 04 22 | 704 | 1.1+ | 0.4+ |
| 1996 10 09 | 691 | 0.4− | 0.2− | 2001 09 19 | 704 | 0.5+ | 0.1− | 2004 04 22 | 704 | 0.1+ | 1.6+ |
| 1996 10 11 | 691 | 0.2+ | 0.3+ | 2001 09 19 | 704 | 0.4+ | 0.5+ | 2004 04 22 | 704 | (2.3+ | 0.3+) |
| 1996 10 11 | 691 | 0.1+ | 0.4+ | 2001 09 19 | 704 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.1− |
| 1996 10 11 | 691 | 0.5+ | 0.6+ | 2001 09 19 | 704 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.1− |
| 1996 10 13 | 691 | 0.2+ | 0.3+ | 2001 09 19 | 644 | 0.6− | 0.1− | 2006 08 16 | 644 | 0.1− | 0.2− |
| 1996 10 13 | 691 | 0.3+ | 0.1− | 2001 09 19 | 644 | 0.9− | 0.4− | 2006 08 21 | 644 | 0.1+ | 0.2+ |
| 1996 10 13 | 691 | 0.0 | 0.0 | 2001 09 19 | 644 | 0.7− | 0.5− | 2006 08 21 | 644 | 0.4− | 0.2− |
| 1996 10 17 | 691 | 0.1− | 0.2+ | 2001 09 21 | 704 | 0.6+ | 0.7+ | 2006 08 21 | 644 | 0.2− | 0.1− |
| 1996 10 17 | 691 | 0.6+ | 0.3+ | 2001 09 21 | 704 | 0.2− | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 1996 10 17 | 691 | 0.4+ | 0.4+ | 2001 09 21 | 704 | 0.2− | 1.0+ | 2006 08 29 | 691 | 0.1− | 0.0 |
| 1996 10 18 | 566 | 1.2− | 0.4− | 2001 09 24 | 644 | 0.2− | 0.0 | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 1996 10 18 | 566 | 0.8+ | 0.5− | 2001 09 24 | 644 | 0.6− | 0.2− | 2006 08 30 | 704 | 0.1− | 0.6− |
| 1996 10 18 | 566 | 0.1+ | 0.1− | 2001 09 24 | 644 | 0.2− | 0.4+ | 2006 08 30 | 704 | 0.5− | 1.0+ |
| 2001 08 23 | 699 | 1.6+ | 0.7+ | 2001 09 25 | 704 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.4+ | 0.4− |
| 2001 08 23 | 699 | 0.8+ | 0.2− | 2001 09 25 | 704 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.6− | 0.2+ |
| 2001 08 23 | 699 | 0.8+ | 0.2+ | 2001 09 25 | 704 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.9− | 0.5+ |
| 2001 08 23 | 699 | 0.5− | 1.0− | 2001 09 25 | 704 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.7− | 0.4− |
| 2001 08 24 | 704 | 1.8+ | 0.1− | 2001 09 25 | 704 | 0.5− | 0.9− | 2006 09 14 | 703 | 0.3− | 1.0− |
| 2001 08 24 | 704 | 1.5+ | 0.8− | 2001 10 23 | 704 | 0.7+ | 1.0+ | 2006 09 14 | 703 | 1.1− | 0.6− |
| 2001 08 24 | 704 | 1.8+ | 0.5− | 2001 10 23 | 704 | 1.0+ | 1.4+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2001 08 24 | 704 | 1.9+ | 0.4+ | 2001 10 23 | 704 | 0.5+ | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2001 08 24 | 704 | 1.5+ | 0.4− | 2001 10 24 | 704 | 0.9+ | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2001 08 25 | 691 | 0.1+ | 0.2− | 2001 10 24 | 704 | 0.9+ | 1.4+ | 2006 09 28 | G96 | 0.5− | 0.3− |
| 2001 08 25 | 691 | 0.1+ | 0.2− | 2001 10 24 | 704 | 0.5+ | 0.3+ | | | | |
| 2001 08 25 | 691 | 0.1− | 0.3− | 2001 10 24 | 704 | 0.2− | 0.8+ | | | | |

**(136778)∗ 1996 TN$_{37}$ = 1999 JE$_{13}$**

Discovered 1996 Oct. 12 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 14748)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.77634 | | (2000.0) | | | |
| $n$ | 0.20193397 | $\omega$ | 229.22606 | | +0.19472300 | −0.98080307 |
| $a$ | 2.8773749 | $\Omega$ | 209.55026 | | +0.90615677 | +0.18394410 |
| $e$ | 0.0408436 | $i$ | 1.20909 | | +0.37545021 | +0.06472954 |
| $P$ | 4.88 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 04 | 691 | 0.3− | 0.1+ | 2001 11 21 | 704 | 0.7+ | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.8− |
| 1994 05 04 | 691 | 0.1− | 0.3+ | 2001 11 21 | 704 | 0.6+ | 0.7+ | 2006 10 19 | G96 | 0.5− | 0.2+ |
| 1994 05 04 | 691 | 0.3− | 0.6+ | 2001 11 21 | 704 | 0.4− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 1996 10 12 | 691 | 0.3+ | 0.4+ | 2001 11 24 | 644 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 1996 10 12 | 691 | 0.5+ | 0.1− | 2001 11 24 | 644 | 0.5+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 1996 10 12 | 691 | 0.3+ | 0.2+ | 2001 11 24 | 644 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.4+ | 0.5− |
| 1996 10 18 | 691 | 0.3− | 0.2+ | 2003 02 23 | 699 | 0.5− | 0.2− | 2006 10 29 | G96 | 0.0 | 0.8− |
| 1996 10 18 | 691 | 0.2− | 0.1+ | 2003 02 23 | 699 | 0.8+ | 0.1− | 2006 10 29 | G96 | 0.0 | 0.3− |
| 1996 10 18 | 691 | 0.5− | 0.1+ | 2003 02 23 | 699 | 0.2− | 0.2− | 2006 10 29 | G96 | 0.0 | 0.1+ |
| 1999 05 15 | 691 | 0.1+ | 0.5+ | 2003 02 23 | 699 | 0.1+ | 0.8− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 1999 05 15 | 691 | 0.5+ | 0.4+ | 2003 02 26 | 599 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 1999 05 18 | 691 | 0.4− | 0.1+ | 2003 02 26 | 599 | 0.6+ | 0.2− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 1999 05 18 | 691 | 0.5+ | 0.2+ | 2003 02 26 | 599 | 0.2+ | 0.1+ | 2006 11 21 | 704 | (1.2− | 2.1−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.2+ | 0.7+ | 2003 02 26 | 599 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2001 11 14 | 291 | 0.3− | 0.3+ | 2003 03 10 | 291 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.7− |
| 2001 11 14 | 291 | 0.5− | 0.3+ | 2003 03 10 | 291 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2001 11 14 | 291 | 0.2− | 0.4+ | 2003 03 10 | 291 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.4+ | 0.4+ | 2005 09 30 | G96 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.1− | 0.7+ | 2005 09 30 | G96 | 0.4+ | 0.3+ | 2006 11 24 | H07 | 0.3− | 0.4+ |
| 2001 11 20 | 704 | 0.6+ | 0.9+ | 2005 09 30 | G96 | 0.1− | 1.0+ | 2006 11 24 | H07 | 0.8+ | 0.3+ |
| 2001 11 20 | 704 | 0.1− | 0.8+ | 2005 09 30 | G96 | 0.1+ | 0.3+ | 2006 11 24 | H07 | 0.8+ | 0.7+ |
| 2001 11 20 | 704 | 0.5+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.6− | 2006 11 27 | 291 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 0.1+ | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 27 | 291 | 0.4− | 0.1+ |
| 2001 11 21 | 704 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 27 | 291 | 0.3− | 0.1+ |

**(136779)∗ 1996 $TO_{68}$ = 2002 $JO_{93}$**

Discovered 1996 Oct. 8 by C.-I. Lagerkvist at the European Southern Observatory.

Id. G. V. Williams (*MPO* 28956)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.19563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30514392 | $\omega$ | 324.21659 | | +0.92967896 | +0.36834223 | |
| $a$ | 2.1850744 | $\Omega$ | 14.17214 | | −0.33346706 | +0.84681526 | |
| $e$ | 0.2223513 | $i$ | 1.07338 | | −0.15651439 | +0.38370290 | |
| $P$ | 3.23 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 15 | 691 | 0.0 | 0.3− | 2002 05 11 | 704 | 0.7− | 0.7− | 2006 11 15 | 703 | 0.7+ | 0.7+ |
| 1996 09 15 | 691 | 0.0 | 0.4+ | 2002 05 11 | 704 | 0.7− | 0.7− | 2006 11 15 | 703 | 0.5− | 0.2− |
| 1996 09 15 | 691 | 0.1− | 0.4+ | 2002 05 13 | 704 | (1.9+ | 0.3−) | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 1996 09 19 | 691 | 0.6+ | 0.1− | 2002 05 13 | 704 | (3.1+ | 0.1−) | 2006 11 15 | 703 | 1.0+ | 0.7− |
| 1996 09 19 | 691 | 0.4+ | 0.2− | 2002 05 13 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.1− |
| 1996 09 19 | 691 | 0.7+ | 0.1− | 2002 05 13 | 704 | 1.0+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.2− |
| 1996 09 22 | 691 | 0.3− | 0.1+ | 2003 12 22 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 1996 09 22 | 691 | 0.4− | 0.3+ | 2003 12 22 | 704 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 1996 09 22 | 691 | 0.3− | 0.4+ | 2003 12 22 | 704 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 1996 10 08 | 809 | 1.1− | 1.9− | 2003 12 29 | 691 | 1.2− | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 1996 10 09 | 809 | 0.5− | 1.3− | 2003 12 29 | 691 | 0.4+ | 0.0 | 2006 11 30 | 918 | 0.7+ | 0.2− |
| 2002 04 06 | 807 | 0.1+ | 0.2− | 2003 12 29 | 691 | 0.4+ | 0.1− | 2006 11 30 | 691 | 0.0 | 0.1− |
| 2002 04 06 | 807 | 0.3− | 0.4− | 2005 03 10 | G96 | 0.3+ | 0.1+ | 2006 11 30 | 918 | 0.1− | 0.4− |
| 2002 05 09 | 644 | 0.2+ | 0.1+ | 2005 03 10 | G96 | 0.5− | 0.2− | 2006 11 30 | 691 | 0.1− | 0.2+ |
| 2002 05 09 | 644 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.2+ | 0.0 | 2006 11 30 | 691 | 0.2− | 0.2+ |
| 2002 05 09 | 644 | 0.4+ | 0.2+ | 2005 03 10 | G96 | 0.3− | 0.1− | 2006 11 30 | 918 | 0.4− | 0.7− |
| 2002 05 11 | 704 | 0.8− | 0.6− | 2005 04 09 | 691 | 0.4+ | 0.2− | 2006 11 30 | 918 | 0.5+ | 0.0 |
| 2002 05 11 | 704 | 1.3− | 0.0 | 2005 04 09 | 691 | 0.2+ | 0.5+ | | | | |
| 2002 05 11 | 704 | 1.3− | 0.3− | 2005 04 09 | 691 | 0.2+ | 0.2− | | | | |

**(136780)∗ 1996 $VV_{11}$ = 1999 $TB_{275}$ = 2001 $CC_{15}$**

Discovered 1996 Nov. 4 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 10310)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.37332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29152698 | $\omega$ | 200.47211 | | −0.98700448 | +0.15894666 | |
| $a$ | 2.2525972 | $\Omega$ | 348.59665 | | −0.12573590 | −0.85544891 | |
| $e$ | 0.1029869 | $i$ | 6.86259 | | −0.10006322 | −0.49289261 | |
| $P$ | 3.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 04 | 691 | 0.7+ | 0.5− | 2001 02 22 | 699 | 0.1− | 0.1− | 2003 12 27 | 704 | 0.3+ | 0.4− |
| 1996 11 04 | 691 | 0.3+ | 0.4− | 2001 02 22 | 699 | 0.0 | 0.4+ | 2005 01 19 | 809 | 0.2− | 0.5+ |
| 1996 11 04 | 691 | 0.4+ | 0.5− | 2001 03 03 | 704 | 0.8+ | 1.2+ | 2005 01 19 | 809 | 0.1− | 0.2+ |
| 1996 11 10 | 691 | 0.2− | 0.7− | 2001 03 03 | 704 | 0.5− | 0.1+ | 2005 01 19 | 809 | 0.1− | 0.3+ |
| 1996 11 10 | 691 | 0.3− | 1.2− | 2001 03 03 | 704 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.8− |
| 1996 11 10 | 691 | 0.4− | 0.2− | 2001 03 03 | 704 | 0.7+ | 0.9+ | 2006 09 20 | 699 | 0.5− | 0.1+ |
| 1999 10 06 | 704 | 0.1+ | 0.5+ | 2001 03 03 | 704 | 1.2− | 1.0+ | 2006 09 20 | 699 | 0.3+ | 0.9+ |
| 1999 10 06 | 704 | 0.2+ | 0.6+ | 2001 03 13 | 699 | 0.3− | 0.1− | 2006 09 20 | 699 | (0.6− | 1.6+) |
| 1999 10 06 | 704 | 0.1+ | 0.7+ | 2001 03 13 | 699 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.2+ | 0.6+ | 2001 03 13 | 699 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 1999 10 06 | 704 | 0.2+ | 1.0+ | 2001 03 13 | 699 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.5+ | 0.5+ | 2001 03 19 | 704 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 0.4− | 0.1+ | 2001 03 19 | 704 | 0.5− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 1999 10 13 | 704 | 0.3+ | 0.7+ | 2001 03 19 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 691 | 0.1− | 0.5+ |
| 1999 10 13 | 704 | 0.6+ | 0.5− | 2001 03 19 | 704 | 0.4− | 0.2+ | 2006 10 15 | 104 | 0.0 | 1.1+ |
| 1999 10 13 | 704 | 1.0+ | 0.8+ | 2001 03 20 | 699 | 0.9+ | 0.7+ | 2006 10 15 | 104 | 1.3+ | 0.5+ |
| 2001 01 04 | 704 | 1.3+ | 0.6+ | 2001 03 20 | 699 | 1.3+ | 1.0+ | 2006 10 15 | 104 | 0.6− | 0.2+ |
| 2001 01 04 | 704 | 0.6+ | 0.1− | 2001 03 20 | 699 | (2.1+ | 0.8−) | 2006 10 17 | 703 | 0.2− | 0.9− |
| 2001 01 04 | 704 | 0.0 | 0.6− | 2001 03 20 | 699 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2001 01 04 | 704 | 0.3+ | 0.1+ | 2002 07 15 | 644 | 0.5− | 0.7+ | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2001 01 04 | 704 | 0.1+ | 0.5+ | 2002 07 15 | 644 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2001 01 19 | 704 | 0.6+ | 0.3+ | 2002 07 15 | 644 | 0.8− | 0.5+ | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2001 01 19 | 704 | 0.2− | 0.0 | 2002 08 13 | 644 | 0.2− | 0.6+ | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2001 01 19 | 704 | 0.6+ | 0.4− | 2002 08 13 | 704 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 01 19 | 704 | 0.3+ | 0.5+ | 2002 08 13 | 704 | 0.7− | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 01 19 | 704 | 0.4+ | 0.5+ | 2002 08 13 | 704 | 1.2− | 0.7− | 2006 10 19 | 644 | 0.9− | 0.3+ |
| 2001 02 01 | 704 | 0.4+ | 0.1− | 2002 08 13 | 704 | 0.9+ | 0.4− | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2001 02 01 | 704 | 0.0 | 0.4− | 2002 08 13 | 644 | 0.0 | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 02 01 | 704 | 0.2+ | 0.1+ | 2002 08 13 | 704 | 0.5+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 02 02 | 699 | 0.2+ | 0.2+ | 2002 08 13 | 644 | 0.4− | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2001 02 02 | 699 | 0.3− | 0.7+ | 2002 08 29 | 644 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 02 02 | 699 | 0.1− | 0.1+ | 2002 08 29 | 644 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 02 02 | 699 | 0.7− | 0.1− | 2002 08 29 | 644 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2001 02 03 | 704 | 0.3− | 0.2− | 2003 12 17 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2001 02 03 | 704 | 0.3− | 0.4+ | 2003 12 17 | 704 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 02 03 | 704 | 0.1− | 0.5− | 2003 12 17 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.5− | 1.1+ |
| 2001 02 03 | 704 | 0.7− | 0.7+ | 2003 12 17 | 704 | 0.6− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.8+ |
| 2001 02 17 | 704 | 0.8+ | 0.3− | 2003 12 17 | 704 | 0.2+ | 0.5+ | 2006 10 31 | 703 | 0.8+ | 1.1− |
| 2001 02 17 | 704 | 0.6+ | 0.4+ | 2003 12 21 | 704 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 0.3− | 0.1+ |
| 2001 02 17 | 704 | 0.3− | 0.5− | 2003 12 21 | 704 | 0.9+ | 0.0 | 2006 10 31 | 703 | 0.5+ | 0.3− |
| 2001 02 17 | 704 | 0.0 | 0.7− | 2003 12 21 | 704 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 0.6− | 0.3− |
| 2001 02 17 | 704 | 0.3− | 1.0− | 2003 12 22 | 704 | (1.7+ | 1.9−) | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2001 02 21 | 699 | (0.1+ | 2.0+) | 2003 12 22 | 704 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2001 02 21 | 699 | 0.8+ | 0.6+ | 2003 12 22 | 704 | (1.6+ | 0.6+) | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 02 21 | 699 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.5+ | 1.1+ |
| 2001 02 22 | 699 | 0.1+ | 0.6− | 2003 12 27 | 704 | 0.3− | 0.8− | 2006 11 22 | 704 | 0.9+ | 0.5+ |
| 2001 02 22 | 699 | 0.8− | 0.5+ | 2003 12 27 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.4+ |

**(136781)∗ 1996 $VA_{17}$**

Discovered 1996 Nov. 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.68211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20202596 | $\omega$ | 355.10577 | | +0.65099959 | −0.75799308 | |
| $a$ | 2.8765015 | $\Omega$ | 54.27069 | | +0.69812563 | +0.57688525 | |
| $e$ | 0.0693270 | $i$ | 2.86471 | | +0.29802708 | +0.30438445 | |
| $P$ | 4.88 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 02 | 691 | 0.8− | 0.3− | 2001 11 21 | 704 | (1.7− | 0.2+) | 2005 08 28 | E12 | 0.2+ | 0.6− |
| 1991 11 02 | 691 | 0.4− | 0.5− | 2001 11 21 | 704 | (1.6− | 0.0 ) | 2005 08 28 | E12 | 0.5− | 0.2+ |
| 1991 11 02 | 691 | 0.2+ | 0.3− | 2001 11 21 | 704 | 0.7− | 0.7− | 2005 08 28 | E12 | 0.4+ | 0.2− |
| 1996 10 07 | 691 | 0.7− | 0.0 | 2001 11 21 | 704 | 1.5− | 0.3− | 2005 08 28 | E12 | 0.4+ | 0.2+ |
| 1996 10 07 | 691 | 0.3− | 0.1+ | 2001 11 21 | 704 | 1.1− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.5− |
| 1996 10 07 | 691 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.8− | 1.3+ | 2006 09 27 | G96 | 0.3− | 0.6+ |
| 1996 11 06 | 691 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.1− | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.4− |
| 1996 11 06 | 691 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.4− | 0.8− | 2006 09 27 | G96 | 0.1− | 0.6− |
| 1996 11 06 | 691 | 0.0 | 0.1− | 2001 12 07 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 1996 11 13 | 691 | 0.2+ | 0.5+ | 2001 12 07 | 691 | 0.1+ | 0.8+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 1996 11 13 | 691 | 0.9+ | 0.6+ | 2001 12 07 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 1996 11 13 | 691 | 0.8+ | 0.5+ | 2001 12 13 | 644 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2000 07 29 | 807 | 0.3− | 0.0 | 2001 12 13 | 644 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.5− | 0.1+ |
| 2000 07 29 | 807 | 0.4− | 0.0 | 2001 12 13 | 644 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.3− | 0.4− |
| 2001 11 09 | 704 | 0.3+ | 0.7− | 2001 12 15 | 704 | 0.5+ | 1.1− | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 0.7+ | 0.2+ | 2001 12 15 | 704 | 1.1+ | 0.8− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.3− | 0.5+ | 2001 12 15 | 704 | (1.6+ | 0.1−) | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 11 17 | 291 | 0.3+ | 0.2+ | 2001 12 15 | 704 | 0.8+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 11 17 | 291 | 0.4+ | 0.1+ | 2001 12 18 | 704 | 0.9+ | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.4+ | 0.2− | 2001 12 18 | 704 | 1.1+ | 0.1− | 2006 11 20 | 691 | 0.8+ | 0.4+ |
| 2001 11 19 | 699 | 0.9− | 0.5+ | 2001 12 18 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2001 11 19 | 699 | 0.8− | 0.6− | 2001 12 18 | 704 | 0.3+ | 0.0 | 2006 11 21 | 704 | (2.9− | 1.2+) |
| 2001 11 19 | 699 | (1.5− | 0.8+) | 2001 12 18 | 704 | 0.1+ | 0.3− | 2006 11 21 | 704 | (1.5− | 0.2+) |
| 2001 11 19 | 699 | 0.0 | 1.4− | 2003 03 12 | 291 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.2− | 0.4+ |
| 2001 11 20 | 704 | (1.9− | 0.4−) | 2003 03 12 | 291 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.5− |
| 2001 11 20 | 704 | (1.6− | 0.3−) | 2003 03 12 | 291 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.7− | 0.1+ |
| 2001 11 20 | 704 | (2.0− | 0.5−) | 2005 07 29 | 644 | 0.2− | 0.6+ | 2006 11 30 | 691 | 0.5− | 0.2+ |
| 2001 11 20 | 704 | 1.1− | 0.0 | 2005 07 29 | 644 | 0.4+ | 0.2+ | 2006 11 30 | 691 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | (1.9− | 0.2+) | 2005 07 29 | 644 | 0.3− | 0.1+ | 2006 11 30 | 691 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 1.3− | 0.0 | 2005 08 01 | E12 | 0.2− | 0.5+ | 2006 12 01 | 704 | 0.2+ | 0.4− |
| 2001 11 21 | 704 | (2.0− | 0.2+) | 2005 08 01 | E12 | 0.0 | 0.5+ | 2006 12 01 | 704 | 0.4+ | 0.1+ |
| 2001 11 21 | 704 | (1.9− | 0.4−) | 2005 08 01 | E12 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.3− | 1.8+ |
| 2001 11 21 | 704 | 0.8− | 0.4− | 2005 08 01 | E12 | (1.8− | 0.1−) | | | | |

**(136782)∗ 1996 VJ$_{26}$ = 2001 DD$_{67}$**

Discovered 1996 Nov. 11 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 11480)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.98428 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29302121 | $\omega$ | 131.23042 | | −0.13911785 | −0.98862680 | |
| $a$ | 2.2449328 | $\Omega$ | 326.63696 | | +0.87465421 | −0.09562037 | |
| $e$ | 0.1257215 | $i$ | 5.96234 | | +0.46435572 | −0.11607669 | |
| $P$ | 3.36 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | 0.1+ | 0.0 | 2001 02 22 | 704 | 0.7+ | 0.0 | 2006 09 16 | 644 | 0.4+ | 0.4+ |
| 1996 11 11 | 691 | 0.2+ | 0.1− | 2003 11 19 | 704 | (0.6+ | 1.6+) | 2006 09 16 | 644 | 0.3− | 0.6+ |
| 1996 11 11 | 691 | 0.2+ | 0.1+ | 2003 11 19 | 704 | 0.3+ | 0.4− | 2006 09 16 | 644 | 0.1+ | 0.2+ |
| 1996 11 13 | 691 | 0.3− | 0.1+ | 2003 11 19 | 704 | 0.1+ | 0.3− | 2006 09 27 | 699 | 0.6− | 0.6+ |
| 1996 11 13 | 691 | 0.1− | 0.2+ | 2003 11 19 | 704 | 0.6+ | 0.3− | 2006 09 27 | 699 | 0.3− | 0.8− |
| 1996 11 13 | 691 | 0.5− | 0.5+ | 2003 11 19 | 704 | 0.5+ | 0.5+ | 2006 09 27 | 699 | 0.1− | 0.1− |
| 2001 01 26 | 704 | 0.6+ | 0.5+ | 2003 12 03 | 704 | 0.1− | 0.5+ | 2006 09 27 | 699 | 0.1+ | 0.8+ |
| 2001 01 26 | 704 | 0.6+ | 0.2+ | 2003 12 03 | 704 | 0.1− | 0.9− | 2006 10 02 | G96 | 0.7+ | 0.8− |
| 2001 01 26 | 704 | 0.6− | 0.5− | 2003 12 03 | 704 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 02 19 | 699 | 0.2− | 0.3+ | 2003 12 03 | 704 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 02 19 | 699 | 0.3− | 1.3+ | 2003 12 03 | 704 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 02 19 | 699 | 0.2− | 0.3+ | 2003 12 17 | 704 | 0.7+ | 0.1− | 2006 10 09 | 644 | 0.2− | 0.7+ |
| 2001 02 19 | 704 | 0.4+ | 0.3− | 2003 12 17 | 704 | 0.5+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.6+ |
| 2001 02 19 | 699 | 0.1− | 0.8+ | 2003 12 17 | 704 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2001 02 19 | 704 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.9− | 0.8− | 2006 10 17 | 703 | 1.2+ | 0.1− |
| 2001 02 19 | 704 | 0.6− | 1.1+ | 2003 12 27 | 704 | 0.8− | 0.4− | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2001 02 19 | 704 | 0.7− | 0.5− | 2003 12 27 | 704 | 0.4− | 0.6− | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2001 02 19 | 704 | 0.5+ | 0.4− | 2003 12 27 | 704 | 0.3− | 0.7− | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2001 02 22 | 704 | 0.3− | 0.7− | 2006 09 16 | 703 | 0.1+ | 0.7− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 02 22 | 704 | 0.9+ | 0.5− | 2006 09 16 | 703 | 0.0 | 1.0− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 02 22 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 703 | (1.8− | 0.3+) | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 02 22 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 1.3− | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.2− |

**(136783)∗ 1996 VR$_{26}$ = 2001 SL$_{239}$ = 2004 EV$_{114}$ = 2005 JY$_{156}$**

Discovered 1996 Nov. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 103141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.08412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18038747 | $\omega$ | 166.29226 | | +0.99314294 | +0.11484769 | |
| $a$ | 3.1021667 | $\Omega$ | 187.22006 | | −0.11676554 | +0.96531213 | |
| $e$ | 0.0608263 | $i$ | 10.00854 | | −0.00573593 | +0.23448348 | |
| $P$ | 5.46 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | 0.6+ | 0.2+ | 2001 09 21 | 704 | (2.5− | 0.2+) | 2005 06 13 | 691 | 0.4+ | 0.0 |
| 1996 11 11 | 691 | 0.6+ | 0.2− | 2001 09 21 | 704 | 0.4− | 0.3+ | 2005 06 13 | 691 | 0.5+ | 0.2+ |
| 1996 11 11 | 691 | 0.8+ | 0.1+ | 2001 10 20 | 704 | 0.1+ | 0.2+ | 2005 06 13 | 691 | 0.4+ | 0.2+ |
| 1996 11 11 | 691 | 0.2− | 0.0 | 2001 10 20 | 704 | 0.0 | 0.1+ | 2006 08 29 | 703 | 1.3− | 0.8+ |
| 1996 11 11 | 691 | 0.4− | 0.4+ | 2001 10 20 | 704 | 1.3− | 0.1− | 2006 08 29 | 703 | 0.5− | 0.0 |
| 1996 11 11 | 691 | 0.6+ | 0.6+ | 2001 10 20 | 704 | 0.5+ | 1.5+ | 2006 08 29 | 703 | 0.1− | 1.8− |
| 1996 11 12 | 691 | 0.3− | 0.2+ | 2001 10 20 | 704 | 0.6+ | 1.4+ | 2006 08 29 | 703 | 0.8− | 0.2+ |
| 1996 11 12 | 691 | 0.9− | 0.1+ | 2001 11 12 | 645 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.3− |
| 1996 11 12 | 691 | 0.6− | 0.0 | 2001 11 12 | 645 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1− |
| 1996 11 19 | 691 | 0.2+ | 0.1− | 2004 03 13 | 644 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 1996 11 19 | 691 | 0.2− | 0.0 | 2004 03 13 | 644 | 0.4+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 1996 11 19 | 691 | 0.1− | 0.1+ | 2004 03 13 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.1+ | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 1.0+ | 1.4+ | 2004 03 21 | 691 | 0.0 | 0.4+ | 2006 09 23 | 691 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.9− | 1.2+ | 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 291 | 0.5+ | 0.0 | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.9− | 1.0+ | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.4− |
| 2001 09 19 | 291 | 0.1+ | 0.1+ | 2005 05 04 | 691 | 0.4− | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 291 | 0.1+ | 0.0 | 2005 05 13 | 691 | 0.2− | 0.7+ | 2006 09 23 | 691 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.9− | 0.1− | 2005 05 13 | 691 | 0.3− | 0.3+ | | | | |
| 2001 09 21 | 704 | 0.6− | 1.1+ | 2005 05 13 | 691 | 0.4− | 0.6+ | | | | |

**(136784)∗ 1996 WT$_1$ = 1992 AW$_6$**

Discovered 1996 Nov. 30 by T. Kobayashi at Oizumi.

Id. G. V. Williams (MPC 28869)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.18093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19075265 | $\omega$ | 214.02030 | | +0.64286757 | −0.76596911 | |
| $a$ | 2.9887459 | $\Omega$ | 195.97468 | | +0.70561211 | +0.59400274 | |
| $e$ | 0.3362863 | $i$ | 0.73964 | | +0.29804839 | +0.24587004 | |
| $P$ | 5.17 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 09 | 691 | 1.3− | 0.3+ | 2001 11 17 | 704 | 0.4− | 0.4− | 2006 09 17 | 704 | 0.8+ | 0.0 |
| 1992 01 09 | 691 | 1.0− | 0.3+ | 2001 11 17 | 704 | 0.6− | 0.5− | 2006 09 17 | 704 | 0.7+ | 0.6+ |
| 1992 01 09 | 691 | 1.3− | 0.0 | 2001 11 19 | 704 | (0.3+ | 1.6+) | 2006 09 17 | 704 | 0.2− | 1.0− |
| 1992 02 01 | 691 | 0.1− | 0.6− | 2001 11 19 | 704 | 0.1− | 0.9+ | 2006 09 17 | 704 | 0.1+ | 0.1− |
| 1992 02 01 | 691 | 0.4+ | 0.1− | 2001 11 19 | 704 | 0.3− | 1.0+ | 2006 09 19 | 699 | 0.3− | 0.6+ |
| 1992 02 01 | 691 | 0.4+ | 0.3− | 2001 11 19 | 704 | 0.3− | 0.9+ | 2006 09 19 | 699 | 0.8− | 0.4− |
| 1996 11 30 | 411 | 0.6+ | 0.2+ | 2001 11 19 | 704 | 0.9− | 1.0+ | 2006 09 19 | 699 | 0.1+ | 0.7+ |
| 1996 11 30 | 411 | 0.5+ | 0.0 | 2001 11 20 | 699 | 0.3− | 1.1+ | 2006 09 20 | 704 | 1.0− | 0.1− |
| 1996 12 01 | 411 | (0.1+ | 2.1+) | 2001 11 20 | 699 | 0.3− | 0.7+ | 2006 09 20 | 704 | 1.2− | 0.2− |
| 1996 12 01 | 411 | 0.4− | 1.0+ | 2001 11 20 | 699 | 0.4− | 0.9+ | 2006 09 20 | 704 | 1.1− | 0.4− |
| 1996 12 06 | 411 | 0.6+ | 0.2+ | 2001 11 20 | 699 | 0.2− | 0.8+ | 2006 09 20 | 704 | 1.2− | 0.3− |
| 1996 12 06 | 411 | 0.4+ | 0.1+ | 2001 11 21 | 704 | 1.1+ | 0.6+ | 2006 09 20 | 704 | 1.2− | 0.4− |
| 1996 12 14 | 411 | 0.7+ | 0.4+ | 2001 11 21 | 704 | 0.4+ | 0.3− | 2006 09 22 | A50 | 0.5− | 0.2− |
| 1996 12 14 | 411 | 0.6+ | 0.0 | 2001 11 21 | 704 | 0.1− | 0.2− | 2006 09 22 | A50 | 0.1+ | 0.3+ |
| 1996 12 19 | 411 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.1+ |
| 1996 12 19 | 411 | 0.4+ | 0.8− | 2001 11 21 | 704 | 1.2− | 0.3− | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 1996 12 28 | 411 | 0.0 | 1.5− | 2001 11 22 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 1996 12 28 | 411 | 0.5+ | 1.2− | 2001 11 22 | 691 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1996 12 29 | 327 | 0.3− | 0.2− | 2001 11 22 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 1996 12 29 | 327 | 0.3+ | 0.3− | 2001 11 24 | 644 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 1996 12 29 | 327 | 0.0 | 0.2+ | 2001 11 24 | 644 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.2+ |
| 2001 08 16 | 704 | 0.2+ | 0.3+ | 2001 11 24 | 644 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2001 08 16 | 704 | 0.8+ | 0.3+ | 2001 12 11 | 704 | 0.7− | 0.8− | 2006 09 26 | 704 | 0.3− | 0.2− |
| 2001 08 16 | 704 | 0.6− | 0.6+ | 2001 12 11 | 704 | 0.6− | 0.8− | 2006 09 26 | 704 | 0.5− | 0.3+ |
| 2001 08 16 | 704 | 0.0 | 0.1− | 2001 12 11 | 704 | 0.0 | 1.0− | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2001 08 16 | 704 | 0.6− | 0.5+ | 2001 12 11 | 704 | 0.3+ | 1.3− | 2006 09 26 | 704 | 0.5− | 0.0 |
| 2001 08 18 | 704 | 0.2+ | 0.6− | 2001 12 11 | 704 | 1.0+ | 0.5− | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 2001 08 18 | 704 | 0.4− | 0.5+ | 2001 12 15 | 704 | 0.2− | 0.4− | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2001 08 18 | 704 | 1.2− | 0.8+ | 2001 12 15 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.0 |
| 2001 08 18 | 704 | 0.9− | 0.7+ | 2001 12 15 | 704 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.0 | 0.3+ |
| 2001 08 24 | 704 | (0.1+ | 1.6+) | 2001 12 15 | 704 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.2− | 0.4+ |
| 2001 08 24 | 704 | 0.5− | 1.2+ | 2001 12 15 | 704 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.3+ |
| 2001 08 24 | 704 | (0.5+ | 2.0+) | 2001 12 18 | 704 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.3− | 0.1+ |
| 2001 08 24 | 704 | (0.2− | 2.4+) | 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.1+ |
| 2001 08 28 | 699 | 0.2+ | 0.3+ | 2001 12 18 | 704 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.5+ |
| 2001 08 28 | 699 | 0.4− | 0.1+ | 2001 12 18 | 704 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.5− | 0.2+ |
| 2001 08 28 | 699 | 0.4− | 0.4− | 2001 12 18 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.6− |
| 2001 08 28 | 699 | 0.8− | 0.7+ | 2001 12 19 | 704 | 0.1− | 0.5+ | 2006 09 30 | 691 | 0.3− | 0.5− |
| 2001 08 30 | 644 | 0.5+ | 0.4+ | 2001 12 19 | 704 | 0.1− | 0.7+ | 2006 09 30 | 691 | 0.2− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 30 | 644 | 0.6+ | 0.5+ | 2001 12 19 | 704 | 0.4− | 0.8+ | 2006 09 30 | 704 | 0.4+ | 0.3+ |
| 2001 08 30 | 644 | 0.4+ | 0.4+ | 2001 12 19 | 704 | 0.1− | 1.2+ | 2006 09 30 | 704 | 0.2− | 0.3+ |
| 2001 09 04 | 644 | 0.5+ | 0.9+ | 2001 12 19 | 704 | 0.3− | 1.3+ | 2006 09 30 | 704 | 0.3+ | 0.7+ |
| 2001 09 04 | 644 | 0.5+ | 0.7+ | 2002 01 07 | 699 | (0.4+ | 1.8+) | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2001 09 04 | 644 | 0.7+ | 0.9+ | 2002 01 07 | 699 | 1.0+ | 0.4+ | 2006 09 30 | 704 | 0.4+ | 0.8+ |
| 2001 09 10 | 704 | 0.5+ | 0.3+ | 2002 01 07 | 699 | 0.5− | 1.1+ | 2006 10 01 | 703 | 0.1+ | 0.4+ |
| 2001 09 10 | 704 | 0.1− | 0.7+ | 2002 01 07 | 699 | 0.4− | 0.8+ | 2006 10 01 | 703 | 0.3+ | 0.3− |
| 2001 09 10 | 704 | 0.2+ | 0.0 | 2002 01 09 | 704 | 1.0− | 0.2− | 2006 10 01 | 703 | 0.2− | 0.3− |
| 2001 09 10 | 704 | 0.0 | 0.3− | 2002 01 09 | 704 | 1.3− | 0.7+ | 2006 10 01 | 703 | 0.5− | 0.0 |
| 2001 09 10 | 704 | 1.3+ | 0.2+ | 2002 01 09 | 704 | 1.0− | 0.4− | 2006 10 09 | 644 | 0.4− | 0.1− |
| 2001 10 11 | 644 | 0.1− | 0.8+ | 2002 01 09 | 704 | 0.9− | 0.3− | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2001 10 11 | 644 | 0.0 | 0.7+ | 2002 01 09 | 704 | (1.6− | 0.2−) | 2006 10 09 | 644 | 0.4− | 0.2− |
| 2001 10 11 | 644 | 0.1− | 0.6+ | 2002 01 21 | 704 | 1.3+ | 0.4− | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2001 10 13 | 704 | (0.4− | 2.9−) | 2002 01 21 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.3− |
| 2001 10 13 | 704 | (0.0 | 1.6−) | 2002 01 21 | 704 | 0.6+ | 0.8− | 2006 10 16 | 703 | 0.1+ | 0.6− |
| 2001 10 13 | 704 | 0.1+ | 1.1− | 2002 02 07 | 704 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.1− | 0.9− |
| 2001 10 13 | 704 | (0.0 | 1.7−) | 2002 02 07 | 704 | 0.4+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.5− |
| 2001 10 16 | 291 | 0.5+ | 0.6− | 2002 02 07 | 704 | 0.4− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.6− |
| 2001 10 16 | 291 | 0.1− | 0.5− | 2002 02 07 | 704 | 0.7+ | 0.5+ | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2001 10 16 | 291 | 1.4+ | 0.5− | 2003 03 07 | 699 | 0.7+ | 1.3+ | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 2001 10 17 | 704 | 0.5− | 0.7− | 2003 03 07 | 699 | (1.9+ | 1.5+) | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2003 03 07 | 699 | 0.6+ | 0.9+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2001 10 17 | 704 | 0.5− | 0.8− | 2003 03 07 | 699 | 1.3+ | 1.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2001 10 17 | 704 | 0.3− | 0.9− | 2003 03 24 | 691 | 0.3+ | 1.3+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2001 10 17 | 704 | (0.1+ | 1.9−) | 2003 03 24 | 691 | 0.6+ | 1.2+ | 2006 11 06 | 644 | 0.4− | 0.0 |
| 2001 10 18 | 644 | 0.3+ | 1.1+ | 2003 03 24 | 691 | 0.9+ | 0.9+ | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 2001 10 18 | 644 | 0.3+ | 1.2+ | 2004 04 28 | 291 | 0.2− | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2001 10 18 | 644 | 0.5+ | 1.1+ | 2004 04 28 | 291 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.0 | 0.4− | 2004 04 28 | 291 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2001 10 20 | 704 | 0.1− | 0.5− | 2004 05 09 | 691 | 0.7+ | 0.1− | 2006 11 10 | 704 | 0.8+ | 0.5− |
| 2001 10 20 | 704 | 0.1− | 0.4− | 2004 05 09 | 691 | 0.4+ | 0.0 | 2006 11 10 | 704 | (1.2+ | 1.6+) |
| 2001 10 20 | 704 | 0.2+ | 0.6− | 2004 05 09 | 691 | 0.1− | 0.3− | 2006 11 10 | 704 | 1.3+ | 0.7− |
| 2001 10 22 | 704 | 0.2+ | 0.2+ | 2006 07 25 | G96 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2001 10 22 | 704 | 0.3− | 0.5+ | 2006 07 25 | G96 | 0.1+ | 0.3− | 2006 11 10 | 704 | (2.0+ | 0.1+) |
| 2001 10 22 | 704 | 0.0 | 0.5+ | 2006 07 25 | G96 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 10 22 | 704 | 0.1− | 0.7+ | 2006 07 25 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2001 10 23 | 704 | 0.0 | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.3+ | 0.6+ | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 0.2+ | 0.8+ | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 1.3+ |
| 2001 10 23 | 704 | 0.4+ | 1.0+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1− | 0.8+ |
| 2001 10 23 | 704 | 0.3+ | 1.0+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5+ | 1.1+ |
| 2001 10 25 | 704 | 0.2− | 0.2+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 11 18 | 703 | 0.7− | 0.5− |
| 2001 10 25 | 704 | 0.3− | 0.1+ | 2006 08 25 | 704 | 1.0+ | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2001 10 25 | 704 | 0.0 | 0.1− | 2006 08 25 | 704 | 0.1− | 1.1+ | 2006 11 18 | 703 | 0.8− | 0.5− |
| 2001 10 25 | 644 | 0.3+ | 1.2+ | 2006 08 25 | 704 | 0.5− | 0.7+ | 2006 11 18 | 703 | 0.8− | 1.1− |
| 2001 10 25 | 704 | 0.2+ | 0.1− | 2006 08 25 | 704 | 0.1− | 0.7+ | 2006 11 18 | 704 | (0.2+ | 1.8+) |
| 2001 10 25 | 704 | 0.1+ | 0.3− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 11 18 | 703 | 0.3− | 1.1− |
| 2001 10 25 | 644 | 0.4+ | 1.3+ | 2006 08 28 | 691 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2001 10 25 | 644 | 0.4+ | 1.2+ | 2006 08 28 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2001 10 26 | 704 | 0.5+ | 0.3− | 2006 09 01 | 704 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.9+ |
| 2001 10 26 | 704 | 0.7+ | 0.1− | 2006 09 01 | 704 | (1.5− | 0.6+) | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2001 10 26 | 704 | 0.5+ | 0.5− | 2006 09 01 | 704 | 1.0− | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2001 10 26 | 704 | 0.2+ | 1.0− | 2006 09 01 | 704 | 0.9− | 0.3+ | 2006 11 22 | 704 | 1.3− | 0.4+ |
| 2001 10 26 | 704 | 0.6+ | 0.6− | 2006 09 01 | 704 | 1.0− | 0.6+ | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2001 11 09 | 704 | 0.1+ | 0.5− | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2001 11 09 | 704 | 0.0 | 0.5− | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.6− |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2006 09 14 | 644 | 0.3− | 0.2− | 2006 11 27 | 703 | 1.4− | 0.3− |
| 2001 11 09 | 704 | 0.1− | 0.5− | 2006 09 16 | 699 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 0.4− | 0.0 |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 0.6− | 0.4− |
| 2001 11 17 | 704 | 0.3+ | 0.1− | 2006 09 16 | 699 | 0.6+ | 0.4+ | 2006 11 27 | 703 | 0.2− | 0.3+ |
| 2001 11 17 | 704 | 0.1− | 0.5− | 2006 09 16 | 699 | 0.3+ | 0.6+ | | | | |
| 2001 11 17 | 704 | 0.1− | 0.5− | 2006 09 17 | 704 | 0.3+ | 0.9− | | | | |

**(136785)∗ 1996 XC$_2$ = 2003 WR$_{133}$**

Discovered 1996 Dec. 3 by P. G. Comba at Prescott.

Id. G. V. Williams (*MPO* 55817)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.99940 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28502211 | $\omega$ | 194.50536 | | −0.02193295 | +0.99087735 | |
| $a$ | 2.2867412 | $\Omega$ | 74.37028 | | −0.90295571 | +0.03746141 | |
| $e$ | 0.1001232 | $i$ | 7.93651 | | −0.42917354 | −0.12945546 | |
| $P$ | 3.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 03 | 684 | 0.2− | 0.1− | 2003 12 14 | 691 | 0.0 | 0.0 | 2005 04 09 | 699 | 0.2+ | 0.8+ |
| 1996 12 03 | 684 | 0.2+ | 0.3− | 2003 12 14 | 691 | 0.1− | 0.0 | 2005 04 09 | 699 | 1.2− | 0.2+ |
| 1996 12 03 | 684 | 0.1+ | 0.4− | 2003 12 14 | 691 | 0.2− | 0.0 | 2005 04 09 | 699 | 0.1+ | 0.2+ |
| 1996 12 04 | 684 | 0.4− | 0.5− | 2003 12 19 | 704 | (0.2− | 1.9+) | 2005 05 03 | 703 | (2.0− | 0.5+) |
| 1996 12 04 | 684 | 0.1+ | 0.4− | 2003 12 19 | 691 | 0.0 | 0.0 | 2005 05 03 | 703 | (0.8− | 1.7+) |
| 1996 12 05 | 684 | 1.3+ | 0.4+ | 2003 12 19 | 704 | 0.4+ | 0.5+ | 2005 05 03 | 703 | 1.3− | 1.1+ |
| 1996 12 05 | 684 | 0.3+ | 0.6− | 2003 12 19 | 704 | 0.5+ | 0.9+ | 2005 05 03 | 703 | (0.7+ | 2.0+) |
| 1996 12 05 | 684 | 0.0 | 0.3− | 2003 12 19 | 691 | 0.1− | 0.2− | 2006 09 17 | 699 | 0.8− | 0.7+ |
| 1996 12 08 | 684 | 0.3− | 0.5− | 2003 12 19 | 704 | 0.8− | 0.8+ | 2006 09 17 | 699 | (2.2− | 1.0+) |
| 1996 12 08 | 684 | 0.1− | 0.4− | 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 09 17 | 699 | 1.0− | 0.8+ |
| 2001 01 18 | 704 | 0.3− | 1.1− | 2005 03 18 | 703 | (0.1+ | 1.6+) | 2006 09 17 | 699 | 1.2+ | 0.3+ |
| 2001 01 18 | 704 | 1.1+ | 0.2− | 2005 03 18 | 703 | 0.6− | 1.4− | 2006 09 19 | 703 | 0.1+ | 0.1− |
| 2001 01 18 | 704 | 0.0 | 0.9− | 2005 03 18 | 703 | 0.0 | 1.1+ | 2006 09 19 | 703 | 0.2− | 0.1+ |
| 2001 01 18 | 704 | 0.1+ | 0.5+ | 2005 03 18 | 703 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2003 11 21 | 704 | 0.0 | 0.2+ | 2005 03 30 | 703 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.3− | 0.0 |
| 2003 11 21 | 704 | 0.5+ | 0.3+ | 2005 03 30 | 703 | 0.4+ | 0.2− | 2006 09 26 | 703 | 0.6− | 1.5− |
| 2003 11 21 | 704 | 0.4+ | 0.4− | 2005 03 30 | 703 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.7+ |
| 2003 11 21 | 704 | 0.8+ | 0.2+ | 2005 03 30 | 703 | 0.2− | 1.1− | 2006 09 26 | 703 | 0.8− | 0.9− |
| 2003 11 21 | 704 | 0.1+ | 0.4+ | 2005 04 05 | 699 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2003 11 23 | 704 | 0.8− | 0.7− | 2005 04 05 | 699 | 0.8+ | 0.5+ | 2006 10 21 | 703 | 2.6+ | 0.7+ |
| 2003 11 23 | 704 | 0.2− | 0.3− | 2005 04 05 | 699 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.1+ |
| 2003 11 23 | 704 | 0.6+ | 0.6+ | 2005 04 05 | 699 | 1.0+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.8+ |
| 2003 11 23 | 704 | 0.7− | 0.9+ | 2005 04 06 | 703 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.6+ |
| 2003 11 26 | 704 | 0.9− | 0.7+ | 2005 04 06 | 703 | 0.5− | 0.9− | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2003 11 26 | 704 | 0.5− | 1.3+ | 2005 04 06 | 703 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.8+ | 1.0+ |
| 2003 11 26 | 704 | 1.0− | 0.6+ | 2005 04 06 | 703 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.5− |
| 2003 11 26 | 704 | 0.3+ | 0.2+ | 2005 04 09 | 699 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.5+ | 1.0− |

**(136786)∗ 1996 XX$_4$ = 1999 RE$_{52}$**

Discovered 1996 Dec. 6 by Spacewatch at Kitt Peak.

Id. A. Doppler (MPC 36343)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.70897 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28832615 | $\omega$ | 339.47720 | | +0.93771207 | +0.34741327 | |
| $a$ | 2.2692379 | $\Omega$ | 0.19449 | | −0.30416265 | +0.82141734 | |
| $e$ | 0.1502369 | $i$ | 5.40632 | | −0.16787246 | +0.45230252 | |
| $P$ | 3.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 06 | 691 | 0.4− | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.5− | 2006 09 27 | 704 | 0.7− | 0.3+ |
| 1996 12 06 | 691 | 0.3− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 1996 12 06 | 691 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.7+ | 1.0+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 1996 12 07 | 691 | 0.3− | 0.2+ | 2006 09 12 | 703 | (1.4+ | 2.3+) | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 1996 12 07 | 691 | 0.2− | 0.2− | 2006 09 12 | 703 | 0.8+ | 0.9+ | 2006 09 29 | 704 | 0.1+ | 0.5+ |
| 1996 12 07 | 691 | 0.5− | 0.3− | 2006 09 12 | 703 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.3+ |
| 1996 12 08 | 691 | 0.7+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.0 | 0.6+ |
| 1996 12 08 | 691 | 0.7+ | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.2− | 0.3+ |
| 1996 12 08 | 691 | 0.7+ | 0.0 | 2006 09 13 | 644 | 0.7+ | 0.2− | 2006 09 29 | 704 | 0.0 | 1.0+ |
| 1996 12 13 | 691 | 0.3+ | 0.1− | 2006 09 16 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.3+ |
| 1996 12 13 | 691 | 0.3+ | 0.0 | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.5+ |
| 1996 12 13 | 691 | 0.0 | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.2+ |
| 1999 09 07 | 704 | 0.7− | 1.0− | 2006 09 17 | 704 | 0.4+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.3+ |
| 1999 09 07 | 704 | 0.5− | 0.6+ | 2006 09 17 | 704 | 0.1+ | 0.9+ | 2006 10 01 | 704 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 1.2− | 0.2− | 2006 09 17 | 704 | 0.4− | 0.7− | 2006 10 14 | 958 | 0.0 | 0.2− |
| 1999 09 07 | 704 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.6+ | 0.4− | 2006 10 14 | 958 | 0.7− | 1.1− |
| 1999 09 07 | 704 | 0.7− | 0.5+ | 2006 09 17 | 704 | 0.3+ | 0.3+ | 2006 10 14 | 958 | 0.1+ | 0.2− |
| 1999 09 11 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.8− |
| 1999 09 11 | 704 | 0.7+ | 1.0+ | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.4+ | 1.6+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 1999 09 11 | 704 | 0.2− | 0.9+ | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.2− |
| 1999 09 11 | 704 | 0.7− | 0.8+ | 2006 09 20 | 704 | 0.2+ | 0.5− | 2006 10 17 | 106 | 0.2− | 0.4− |
| 2003 12 03 | 704 | 0.3− | 1.4+ | 2006 09 20 | 704 | 0.2− | 0.6− | 2006 10 17 | 106 | 0.1+ | 0.0 |
| 2003 12 03 | 704 | 0.6+ | 1.0+ | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 10 17 | 106 | 0.2+ | 0.2− |
| 2003 12 03 | 704 | 0.2+ | 1.2+ | 2006 09 20 | 704 | 0.1− | 0.6− | 2006 10 17 | 106 | 0.2+ | 0.6− |
| 2003 12 17 | 704 | (1.8− | 0.5+) | 2006 09 24 | 106 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2003 12 17 | 704 | 1.1− | 0.3+ | 2006 09 24 | 106 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2003 12 17 | 704 | 1.3− | 0.0 | 2006 09 24 | 106 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.8− | 0.4+ | 2006 09 24 | 106 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.2− | 1.4+ | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2003 12 23 | 704 | (0.5− | 2.1+) | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2005 04 02 | 644 | 0.2+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2005 04 02 | 644 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2005 04 02 | 644 | 0.6+ | 0.4+ | 2006 09 26 | 704 | 1.2+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2005 04 05 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.2+ | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2005 04 05 | G96 | 0.1+ | 0.1− | 2006 09 26 | 704 | 1.0+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 04 05 | G96 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2005 04 05 | G96 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.6+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2005 05 12 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2005 05 12 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 18 | 703 | 0.6− | 0.8− |
| 2005 05 12 | G96 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 18 | 703 | 0.0 | 0.7− |
| 2005 05 12 | G96 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 18 | 703 | 0.1+ | 0.7+ |
| 2006 08 21 | 704 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.5− | 0.8+ | 2006 11 18 | 703 | 0.9− | 0.3+ |
| 2006 08 21 | 704 | 0.6− | 0.5+ | 2006 09 27 | 704 | 0.7− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2006 08 21 | 704 | (1.6− | 0.5−) | 2006 09 27 | 704 | 0.8− | 0.8− | 2006 11 21 | 704 | 0.5+ | 1.7+ |
| 2006 08 22 | 644 | 0.6− | 0.0 | 2006 09 27 | 704 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.9+ |

### (136787)∗ 1996 $XG_{10}$ = 1999 $RP_{229}$

Discovered 1996 Dec. 1 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 1913)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.55467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29189168 | $\omega$ | 252.11212 | | +0.96190897 | +0.25024932 | |
| $a$ | 2.2507205 | $\Omega$ | 93.28504 | | −0.18989803 | +0.90121138 | |
| $e$ | 0.1529752 | $i$ | 6.32743 | | −0.19664657 | +0.35382669 | |
| $P$ | 3.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.3− | 0.0 | 2003 12 23 | 704 | 0.8+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.1− |
| 1996 12 01 | 691 | 0.3− | 0.1+ | 2003 12 23 | 704 | 1.3+ | 1.0− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 1996 12 01 | 691 | 0.4− | 0.2+ | 2005 04 02 | 644 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1996 12 08 | 691 | 0.4+ | 0.3− | 2005 04 02 | 644 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1996 12 08 | 691 | 0.3+ | 0.2− | 2005 04 02 | 644 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1996 12 08 | 691 | 0.6+ | 0.1− | 2005 05 13 | 691 | 0.1− | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.0 |
| 1996 12 09 | 691 | 0.5− | 0.5− | 2005 05 13 | 691 | 0.4− | 0.3+ | 2006 11 13 | 703 | 0.9+ | 0.0 |
| 1996 12 09 | 691 | 0.2− | 0.4− | 2005 05 13 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.1+ |
| 1996 12 09 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.8+ |
| 1999 09 07 | 699 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 11 14 | 704 | 0.6+ | 0.9+ |
| 1999 09 07 | 699 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 11 14 | 704 | 0.4+ | 0.1+ |
| 1999 09 07 | 699 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 1999 09 11 | 704 | 0.8− | 0.7− | 2006 10 01 | 704 | 1.2− | 0.3− | 2006 11 14 | 704 | 0.4+ | 1.2+ |
| 1999 09 11 | 704 | 0.6+ | 0.3− | 2006 10 01 | 704 | 1.5− | 1.1+ | 2006 11 14 | 704 | 0.6+ | 0.7+ |
| 1999 09 11 | 704 | 0.7− | 0.5− | 2006 10 01 | 704 | (0.5− | 1.6+) | 2006 11 17 | 704 | 0.8+ | 0.0 |
| 1999 09 11 | 704 | 0.7+ | 0.4+ | 2006 10 01 | 704 | (1.6− | 1.7+) | 2006 11 17 | 704 | 0.9− | 0.6+ |
| 1999 09 11 | 704 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.8− | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.4− |
| 1999 09 30 | 704 | 0.8+ | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.1− |
| 1999 09 30 | 704 | 1.2+ | 0.9+ | 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 11 19 | 703 | 0.9− | 0.6− |
| 1999 09 30 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 19 | 703 | 1.2+ | 0.8− |
| 2001 02 16 | 704 | 1.4+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.4− | 0.2− |
| 2001 02 16 | 704 | 0.6+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.2+ |
| 2001 02 16 | 704 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2001 02 16 | 704 | 1.3+ | 0.3− | 2006 10 22 | 703 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2003 12 18 | 704 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 1.1+ |
| 2003 12 18 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.8− | 0.9+ |
| 2003 12 18 | 704 | 0.8− | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | (0.2+ | 1.5+) |
| 2003 12 18 | 704 | 0.0 | 1.2+ | 2006 10 31 | 704 | 0.5− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2003 12 18 | 704 | 0.4− | 0.4+ | 2006 10 31 | 704 | 0.5+ | 0.7+ | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2003 12 23 | 704 | 1.1+ | 0.6− | 2006 10 31 | 704 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2003 12 23 | 704 | 1.0+ | 1.5− | 2006 10 31 | 704 | 0.6− | 0.8+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2003 12 23 | 704 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.3− | 0.0 | | | | |

### (136788)∗ 1996 $XG_{11}$ = 1998 $HF_{95}$ = 2001 $DE_{25}$

Discovered 1996 Dec. 2 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 15580)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.79071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29145424 | $\omega$ | 80.55449 | | −0.87285059 | +0.48565734 | |
| $a$ | 2.2529720 | $\Omega$ | 128.48546 | | −0.46819662 | −0.80593621 | |
| $e$ | 0.0519832 | $i$ | 3.48864 | | −0.13756371 | −0.33853178 | |
| $P$ | 3.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 12 | 691 | 0.4− | 0.6+ | 2001 01 21 | 704 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.0 | 0.9+ |
| 1991 03 12 | 691 | 0.2− | 0.2+ | 2001 02 17 | 704 | (1.8+ | 0.0 ) | 2003 12 23 | 704 | 0.2+ | 0.1− |
| 1991 03 12 | 691 | 0.1− | 0.0 | 2001 02 17 | 704 | 0.4+ | 0.7+ | 2003 12 23 | 704 | 1.0− | 0.3+ |
| 1996 12 02 | 691 | 0.0 | 0.6+ | 2001 02 17 | 704 | 0.7+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.3+ |
| 1996 12 02 | 691 | 0.0 | 0.2− | 2001 02 17 | 704 | 0.6+ | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 1996 12 02 | 691 | 0.4+ | 0.2− | 2001 02 17 | 704 | (0.2+ | 1.6+) | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 1996 12 09 | 691 | 1.4− | 0.1+ | 2001 02 20 | 704 | 0.0 | 0.5+ | 2006 10 03 | G96 | 0.2− | 0.2− |
| 1996 12 09 | 691 | 0.3− | 0.2− | 2001 02 20 | 704 | 1.0− | 0.4− | 2006 10 03 | G96 | 0.4− | 0.3− |
| 1996 12 09 | 691 | 0.4− | 0.2− | 2001 02 20 | 704 | 0.5− | 0.1− | 2006 10 03 | G96 | 0.2− | 0.0 |
| 1996 12 12 | 691 | 1.2+ | 0.4− | 2001 02 20 | 704 | 0.1− | 0.5− | 2006 10 03 | G96 | 0.3− | 0.2− |
| 1996 12 12 | 691 | 1.0+ | 0.5− | 2001 02 20 | 704 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 1996 12 12 | 691 | 1.0+ | 0.4− | 2002 07 07 | 291 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.6+ |
| 1998 04 21 | 704 | (1.8− | 2.3−) | 2002 07 07 | 291 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 1998 04 21 | 704 | 0.7− | 0.3+ | 2002 07 07 | 291 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 1998 04 21 | 704 | 0.5+ | 1.5− | 2002 08 18 | 644 | 0.2− | 1.0+ | 2006 11 13 | 703 | 0.8− | 0.5− |
| 1998 04 22 | 704 | (2.3+ | 2.1−) | 2002 08 18 | 644 | 0.1+ | 1.1+ | 2006 11 13 | 703 | 0.9− | 0.1− |
| 1998 04 22 | 704 | 0.9+ | 1.2− | 2002 08 18 | 644 | (0.4+ | 1.6+) | 2006 11 13 | 703 | 0.3− | 0.2+ |
| 1998 04 22 | 704 | 0.3− | 0.3− | 2003 12 19 | 704 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 1998 04 22 | 704 | 0.8+ | 1.7− | 2003 12 19 | 704 | 0.5− | 0.9+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2001 01 21 | 704 | 1.2+ | 0.7+ | 2003 12 19 | 704 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2001 01 21 | 704 | 0.5+ | 0.9+ | 2003 12 19 | 704 | 0.5+ | 0.9+ | 2006 11 23 | G96 | 0.3− | 0.1− |

### (136789)∗ 1996 $XV_{11}$

Discovered 1996 Dec. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.39102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27428509 | $\omega$ | 244.49289 | | +0.91491406 | +0.37418570 | |
| $a$ | 2.3460355 | $\Omega$ | 93.22566 | | −0.29397378 | +0.87469109 | |
| $e$ | 0.1496490 | $i$ | 8.72111 | | −0.27660746 | +0.30805935 | |
| $P$ | 3.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 29 | 691 | 0.1− | 0.2− | 2003 12 14 | 291 | 0.1− | 0.2+ | 2005 05 09 | 703 | 1.4− | 0.7− |
| 1992 11 29 | 691 | 0.4+ | 0.0 | 2003 12 14 | 291 | 0.2− | 0.1+ | 2005 05 09 | 703 | 0.2+ | 0.9− |
| 1992 11 29 | 691 | 0.1+ | 0.1+ | 2003 12 21 | 704 | 1.1+ | 0.5+ | 2006 07 31 | E12 | 0.1− | 0.1+ |
| 1996 12 04 | 691 | 0.0 | 0.2− | 2003 12 21 | 704 | 0.5+ | 0.5+ | 2006 07 31 | E12 | 0.5+ | 0.6− |
| 1996 12 04 | 691 | 0.4+ | 0.4− | 2003 12 21 | 704 | 0.9+ | 0.5+ | 2006 07 31 | E12 | 0.0 | 0.1+ |
| 1996 12 09 | 691 | 0.0 | 0.1+ | 2003 12 21 | 704 | 0.7+ | 0.3+ | 2006 07 31 | E12 | 0.7+ | 0.3− |
| 1996 12 09 | 691 | 0.4− | 0.2+ | 2003 12 21 | 704 | 0.6+ | 0.8− | 2006 09 14 | 644 | 0.1+ | 0.1+ |
| 1996 12 09 | 691 | 0.1− | 0.1− | 2005 03 18 | 703 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.1− |
| 1996 12 14 | 691 | 0.0 | 0.1− | 2005 03 18 | 703 | 0.1− | 0.7+ | 2006 09 14 | 644 | 0.3+ | 0.2− |
| 1996 12 14 | 691 | 0.4− | 0.4− | 2005 03 18 | 703 | 0.2+ | 0.7+ | 2006 09 17 | 699 | 0.3+ | 0.2− |
| 1996 12 14 | 691 | 0.5− | 0.0 | 2005 03 18 | 703 | 1.0+ | 0.7+ | 2006 09 17 | 699 | 0.1+ | 0.1− |
| 1999 10 02 | 704 | 1.3+ | 0.7− | 2005 04 06 | 703 | 0.4+ | 0.2− | 2006 09 17 | 699 | 0.0 | 0.5+ |
| 1999 10 02 | 704 | 0.8+ | 0.1− | 2005 04 06 | 703 | 0.5+ | 0.1− | 2006 09 17 | 699 | 0.8− | 0.8+ |
| 1999 10 02 | 704 | 0.5+ | 1.5+ | 2005 04 06 | 703 | 0.3− | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.0 |
| 1999 10 02 | 704 | 1.3+ | 0.1+ | 2005 04 06 | 703 | 0.5+ | 0.6+ | 2006 09 20 | 703 | 0.3− | 0.4+ |
| 1999 10 09 | 704 | 0.0 | 0.4− | 2005 04 08 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 703 | 0.2+ | 0.3+ |
| 1999 10 09 | 704 | 0.4− | 0.2− | 2005 04 08 | 704 | (0.9+ | 2.3+) | 2006 09 20 | 703 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.5− | 0.3+ | 2005 04 08 | 704 | 1.3+ | 1.3+ | 2006 09 26 | 703 | 0.4− | 0.1− |
| 1999 10 09 | 704 | 0.7− | 0.1+ | 2005 04 08 | 704 | 0.9+ | 0.7+ | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.1− | 1.0+ | 2005 04 09 | 699 | 0.8+ | 0.7+ | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 1999 11 02 | 703 | (3.4− | 0.3−) | 2005 04 09 | 699 | 0.9− | 0.6− | 2006 09 26 | 703 | 0.0 | 0.0 |
| 1999 11 02 | 703 | 1.3− | 0.7+ | 2005 04 09 | 699 | 0.4− | 0.6+ | 2006 11 27 | 703 | 2.2− | 1.7+ |
| 1999 11 02 | 703 | 0.8− | 0.0 | 2005 04 09 | 699 | (0.5+ | 1.9+) | 2006 11 27 | 703 | 0.9− | 0.5− |
| 1999 11 02 | 703 | 1.0− | 0.3+ | 2005 05 09 | 703 | 0.8+ | 0.8+ | 2006 11 27 | 703 | 0.6− | 0.1− |
| 2003 12 14 | 291 | 0.0 | 0.2+ | 2005 05 09 | 703 | 0.8− | 0.2− | 2006 11 27 | 703 | 0.6+ | 0.2− |

**(136790)∗ 1996 YV$_2$**

Discovered 1996 Dec. 29 by N. Sato at Chichibu.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 261.27050 | (2000.0) | **P** | **Q** | |
| $n$ | 0.27821983 | $\omega$ | 176.05556 | −0.42161495 | −0.90542012 |
| $a$ | 2.3238638 | $\Omega$ | 298.87493 | +0.83039377 | −0.36357237 |
| $e$ | 0.1809489 | $i$ | 3.24383 | +0.36426230 | −0.21915643 |
| $P$ | 3.54 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 29 | 369 | 0.2+ | 0.0 | 2003 11 24 | 704 | 0.1+ | 0.1− | 2004 02 22 | 704 | 0.4+ | 0.7+ |
| 1996 12 29 | 369 | 0.2+ | 0.4+ | 2003 11 24 | 704 | 0.2− | 0.1− | 2004 02 22 | 704 | 0.4+ | 0.1− |
| 1996 12 29 | 369 | 0.4+ | 0.5+ | 2003 11 24 | 704 | 0.1− | 0.2− | 2004 02 22 | 704 | 0.4+ | 0.3− |
| 1996 12 30 | 369 | 1.2+ | 1.2+ | 2003 11 24 | 704 | 0.1− | 0.5− | 2004 02 22 | 704 | 0.1+ | 0.1− |
| 1996 12 30 | 369 | 0.3+ | 1.1+ | 2003 12 04 | 704 | 0.4− | 0.1+ | 2004 02 26 | 704 | 1.1+ | 0.5+ |
| 1997 01 02 | 369 | 0.6+ | 0.5− | 2003 12 04 | 704 | 0.8− | 0.7+ | 2004 02 26 | 704 | 0.6+ | 0.6+ |
| 1997 01 02 | 369 | 0.1+ | 0.6− | 2003 12 04 | 704 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.5− |
| 1997 01 06 | 369 | 0.4− | 0.0 | 2003 12 18 | 704 | 0.8− | 0.1− | 2004 02 26 | 704 | (1.5+ | 0.5+) |
| 1997 01 06 | 369 | (2.0− | 0.9−) | 2003 12 18 | 704 | 0.9− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.5+ |
| 1997 01 09 | 369 | 0.8− | 0.5+ | 2003 12 18 | 704 | 0.9− | 0.3− | 2006 08 29 | 703 | 1.1− | 0.5− |
| 1997 01 10 | 261 | 0.4− | 0.4− | 2003 12 18 | 704 | 0.5− | 0.6− | 2006 08 29 | 703 | 0.4− | 1.1− |
| 1997 01 10 | 261 | 0.6+ | 0.3+ | 2003 12 18 | 704 | 0.3− | 0.3− | 2006 08 29 | 703 | 0.4+ | 0.2+ |
| 1997 01 10 | 566 | 0.5+ | 0.1+ | 2003 12 22 | 704 | 0.2− | 1.3− | 2006 09 12 | 703 | 0.1+ | 0.4− |
| 1997 01 10 | 566 | 0.6− | 0.2− | 2003 12 22 | 704 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.4− | 0.6+ |
| 1997 01 10 | 566 | 0.3− | 0.2+ | 2003 12 22 | 704 | 0.6+ | 0.3− | 2006 09 12 | 703 | 0.3− | 0.3− |
| 1997 01 30 | 369 | 0.3− | 0.0 | 2003 12 22 | 704 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.3− | 0.5− |
| 1997 01 30 | 369 | 0.6+ | 0.4− | 2003 12 22 | 704 | 0.1− | 0.7− | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 1999 10 10 | 704 | 0.3+ | 0.6− | 2003 12 27 | 704 | 0.3+ | 0.5− | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 1999 10 10 | 704 | 0.6+ | 0.4− | 2003 12 27 | 704 | 0.6− | 0.4+ | 2006 09 14 | 644 | 0.4+ | 0.3+ |
| 1999 10 10 | 704 | 0.4+ | 0.9− | 2003 12 27 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.1+ |
| 1999 10 10 | 704 | 0.1− | 0.9− | 2003 12 27 | 704 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 1.5− | 0.6− | 2003 12 27 | 704 | 0.2+ | 0.0 | 2006 09 18 | 704 | (0.6+ | 1.8+) |
| 2001 04 16 | 699 | 0.0 | 0.2− | 2004 01 13 | 691 | 0.2− | 0.1+ | 2006 09 18 | 704 | 0.6+ | 0.3+ |
| 2001 04 16 | 699 | 0.5+ | 0.7+ | 2004 01 13 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2001 04 16 | 699 | 0.5− | 0.8+ | 2004 01 13 | 691 | 0.9+ | 0.3+ | 2006 09 19 | 703 | 1.2− | 0.5+ |
| 2001 04 16 | 699 | 0.3+ | 0.9+ | 2004 01 21 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.5+ | 1.1+ |
| 2002 08 07 | 644 | 0.5− | 0.5+ | 2004 01 21 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.6− |
| 2002 08 07 | 644 | 0.0 | 0.0 | 2004 01 21 | 704 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.5+ | 0.1− |
| 2002 08 07 | 644 | 0.2− | 0.6+ | 2004 01 21 | 704 | 0.3+ | 0.3− | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2003 11 20 | 704 | 1.1− | 0.4+ | 2004 01 28 | 691 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2003 11 20 | 704 | 0.0 | 0.6+ | 2004 01 28 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2003 11 20 | 704 | 0.1− | 0.3+ | 2004 01 28 | 691 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2003 11 20 | 704 | 0.6− | 0.4+ | 2004 02 15 | 704 | 0.9+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2003 11 20 | 704 | 0.4− | 1.2+ | 2004 02 15 | 704 | 0.6+ | 0.0 | | | | |
| 2003 11 24 | 704 | 0.5− | 0.4− | 2004 02 15 | 704 | 0.6− | 0.0 | | | | |

**(136791)∗ 1997 AF$_8$**

Discovered 1997 Jan. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 265.09907 | (2000.0) | **P** | **Q** | |
| $n$ | 0.18392070 | $\omega$ | 257.39269 | −0.98587042 | −0.15997848 |
| $a$ | 3.0623088 | $\Omega$ | 273.38600 | +0.16640254 | −0.90129120 |
| $e$ | 0.2339698 | $i$ | 2.85162 | +0.01922761 | −0.40259293 |
| $P$ | 5.36 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.3+ | 0.6+ | 1997 01 17 | 691 | 0.3− | 0.2− | 2001 12 17 | 704 | 0.1+ | 0.3+ |
| 1995 10 24 | 691 | 0.5+ | 0.5− | 1997 01 17 | 691 | 0.7− | 0.1− | 2001 12 17 | 704 | 0.2+ | 0.5+ |
| 1995 10 24 | 691 | 0.2+ | 0.2− | 1997 01 17 | 691 | 0.5− | 0.0 | 2001 12 17 | 704 | 0.1− | 0.2− |
| 1995 11 23 | 691 | 0.1− | 0.2+ | 1997 03 02 | 691 | 0.6− | 0.3+ | 2002 01 15 | 704 | 0.3+ | 0.5+ |
| 1995 11 23 | 691 | 0.4− | 0.1− | 1997 03 02 | 691 | 0.5− | 0.3+ | 2002 01 15 | 704 | 0.4− | 0.0 |
| 1995 11 23 | 691 | 0.2− | 0.1+ | 1997 03 02 | 691 | 0.5− | 0.5+ | 2002 01 15 | 704 | 0.0 | 0.4+ |
| 1995 11 30 | 691 | (0.3− | 2.8+) | 1997 03 10 | 691 | 0.2− | 0.3+ | 2002 01 15 | 704 | 0.3− | 0.6+ |
| 1995 11 30 | 691 | 0.3− | 0.2+ | 1997 03 10 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 1995 11 30 | 691 | 0.1− | 0.4+ | 1997 03 10 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 1997 01 02 | 691 | 0.0 | 0.3− | 1997 05 01 | 691 | 0.3+ | 0.5− | 2006 10 31 | 691 | 0.3+ | 0.3− |
| 1997 01 02 | 691 | 0.3+ | 0.3− | 1997 05 01 | 691 | 0.1− | 0.6− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 1997 01 02 | 691 | 0.3+ | 0.1+ | 1997 05 01 | 691 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.3− | 0.4+ |
| 1997 01 10 | 691 | 0.7+ | 0.2− | 2000 10 05 | 691 | 0.1− | 0.5− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 1997 01 10 | 691 | 0.9+ | 0.6− | 2000 10 05 | 691 | 0.1+ | 0.6− | | | | |
| 1997 01 10 | 691 | 0.7+ | 0.3− | 2000 10 05 | 691 | 0.1+ | 0.4− | | | | |

**(136792)∗ 1997 AU$_{16}$**

Discovered 1997 Jan. 14 by T. Kobayashi at Oizumi.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 291.59587 | (2000.0) | **P** | **Q** | |
| $n$ | 0.17872475 | $\omega$ | 330.76414 | +0.09501269 | −0.86718155 |
| $a$ | 3.1213772 | $\Omega$ | 109.91507 | +0.98412660 | +0.00788301 |
| $e$ | 0.3235055 | $i$ | 31.32805 | +0.14989138 | +0.49792973 |
| $P$ | 5.51 | $H$ | 14.3 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.2+ | 0.2+ | 2002 01 05 | 704 | 1.4+ | 1.2− | 2003 04 01 | 644 | 0.2+ | 0.0 |
| 1996 12 07 | 691 | 0.3+ | 0.2+ | 2002 01 05 | 704 | 0.8+ | 1.3− | 2003 04 01 | 644 | 0.6+ | 0.1+ |
| 1996 12 07 | 691 | 0.3+ | 0.2+ | 2002 01 05 | 704 | 0.6+ | 1.3− | 2003 04 01 | 644 | 0.5+ | 0.2+ |
| 1997 01 14 | 411 | 1.0− | 0.1+ | 2002 01 05 | 704 | 1.2+ | 0.8− | 2003 04 08 | 644 | 0.4+ | 1.0− |
| 1997 01 14 | 411 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.3+ | 1.2+ | 2003 04 08 | 644 | 0.1+ | 0.9− |
| 1997 01 15 | 411 | 0.7− | 0.2− | 2002 12 31 | 704 | 0.5+ | 1.1+ | 2003 04 08 | 644 | 0.3+ | 0.6− |
| 1997 01 15 | 411 | 0.7− | 0.8+ | 2002 12 31 | 704 | 0.4+ | 1.0+ | 2003 04 22 | 704 | 0.4+ | 0.1+ |
| 1997 01 16 | 599 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.7+ | 2003 04 22 | 704 | 0.3− | 0.1− |
| 1997 01 17 | 599 | 0.3− | 0.1+ | 2002 12 31 | 704 | 0.1+ | 0.6+ | 2003 04 22 | 704 | 0.3+ | 0.3− |
| 1997 01 26 | 411 | 1.1+ | 1.8− | 2003 01 11 | 704 | 0.2− | 0.8+ | 2003 04 22 | 704 | 0.2− | 0.8+ |
| 1997 01 26 | 411 | 0.5+ | 0.9− | 2003 01 11 | 704 | 1.0+ | 1.6+ | 2003 04 22 | 704 | 0.6+ | 0.7+ |
| 1997 02 12 | 411 | (2.1− | 1.3−) | 2003 01 11 | 704 | 0.4+ | 0.7+ | 2003 04 26 | 645 | 0.1− | 0.3− |
| 1997 02 12 | 411 | 0.7− | 0.1− | 2003 01 11 | 704 | 0.6− | 0.9+ | 2003 04 26 | 645 | 0.0 | 0.3− |
| 1997 04 08 | 261 | (2.5− | 0.8+) | 2003 01 11 | 704 | 1.0+ | 1.0+ | 2006 07 29 | E12 | 0.3+ | 0.5+ |
| 1997 04 08 | 261 | 1.6− | 0.9+ | 2003 02 06 | 699 | 0.9− | 0.8+ | 2006 07 29 | E12 | 0.2− | 0.3+ |
| 2001 08 23 | 644 | 0.7− | 0.9+ | 2003 02 06 | 699 | 0.1− | 0.2+ | 2006 07 29 | E12 | 0.1− | 0.1− |
| 2001 08 23 | 644 | 0.7− | 0.6+ | 2003 02 06 | 699 | 0.0 | 1.0+ | 2006 07 29 | E12 | 0.2+ | 0.1+ |
| 2001 08 23 | 644 | 0.7− | 0.6+ | 2003 02 06 | 699 | 0.5+ | 0.4+ | 2006 08 23 | E12 | 0.3− | 0.5− |
| 2001 09 26 | 644 | 0.4− | 0.8+ | 2003 03 13 | 699 | 0.6− | 1.3+ | 2006 08 23 | E12 | 0.4− | 0.2+ |
| 2001 09 26 | 644 | 0.2− | 1.2+ | 2003 03 13 | 699 | 0.2+ | 0.6− | 2006 08 23 | E12 | 0.0 | 0.4+ |
| 2001 09 26 | 644 | 0.1− | 0.7+ | 2003 03 13 | 699 | 0.7− | 0.2+ | 2006 08 23 | E12 | 0.4+ | 0.1− |
| 2001 10 26 | 860 | 1.2− | 0.0 | 2003 03 13 | 699 | 0.0 | 1.2+ | 2006 09 28 | E12 | 0.3− | 1.1+ |
| 2001 10 26 | 860 | 0.4− | 0.4+ | 2003 03 24 | 704 | 0.4+ | 0.8+ | 2006 09 28 | E12 | 0.9− | 1.0+ |
| 2001 10 26 | 860 | 0.6+ | 1.1− | 2003 03 24 | 704 | 0.8+ | 0.0 | 2006 09 28 | E12 | 0.0 | 0.8+ |
| 2001 12 09 | 644 | 0.5− | 0.5+ | 2003 03 24 | 704 | 0.2+ | 0.6+ | 2006 09 28 | E12 | 1.0+ | 0.2+ |
| 2001 12 09 | 644 | 0.5+ | 0.2− | 2003 03 24 | 704 | 0.4+ | 0.4+ | | | | |
| 2001 12 09 | 644 | 0.0 | 0.1− | 2003 03 24 | 704 | 0.1+ | 0.6+ | | | | |

**(136793)∗ 1997 AQ$_{18}$**

Discovered 1997 Jan. 15 at Farra d'Isonzo.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 57.18227 | (2000.0) | **P** | **Q** | |
| $n$ | 0.80227676 | $\omega$ | 36.95242 | +0.86865263 | +0.41687638 |
| $a$ | 1.1470612 | $\Omega$ | 296.33155 | −0.49505966 | +0.70974898 |
| $e$ | 0.4652052 | $i$ | 17.37821 | −0.01893527 | +0.56786483 |
| $P$ | 1.23 | $H$ | 18.3 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 15 | 595 | 0.4− | 0.4− | 1997 01 27 | 658 | 0.3− | 0.4+ | 1998 01 22 | 696 | 0.8+ | 1.0+ |
| 1997 01 15 | 595 | 0.1− | 0.1− | 1997 01 27 | 658 | 0.5− | 1.4+ | 1998 01 22 | 696 | 0.8+ | 1.1+ |
| 1997 01 16 | 595 | 0.9− | 0.4− | 1997 01 27 | 658 | 0.3− | 0.3+ | 2000 12 05 | 693 | 0.6+ | 0.2− |
| 1997 01 16 | 595 | 0.1+ | 0.5− | 1997 01 27 | 595 | 0.4+ | 0.4+ | 2000 12 05 | 693 | 0.4+ | 0.3− |
| 1997 01 16 | 595 | 0.2+ | 0.0 | 1997 01 27 | 595 | 0.5+ | 0.2− | 2001 02 01 | 474 | 0.4− | 1.0− |
| 1997 01 16 | 595 | 0.4+ | 0.6− | 1997 01 28 | 595 | 0.0 | 0.3− | 2001 02 01 | 474 | 0.4− | 0.1− |
| 1997 01 16 | 104 | 0.8+ | 0.6− | 1997 01 28 | 595 | 0.6+ | 0.9− | 2001 02 01 | 474 | 0.0 | 0.3+ |
| 1997 01 16 | 104 | 0.0 | 0.9− | 1997 01 28 | 595 | 0.5− | 0.6− | 2001 02 23 | 474 | 0.3− | 0.1+ |
| 1997 01 16 | 104 | 0.1+ | 0.5− | 1997 01 28 | 587 | 0.1− | 0.1+ | 2001 02 23 | 474 | 0.3− | 0.6+ |
| 1997 01 16 | 104 | 1.2+ | 0.1− | 1997 01 28 | 587 | 0.3− | 0.0 | 2001 03 03 | 474 | 0.9− | 0.1+ |
| 1997 01 16 | 104 | 0.5+ | 0.2+ | 1997 01 28 | 587 | 0.5− | 0.7+ | 2001 03 03 | 474 | 0.4− | 0.6+ |
| 1997 01 16 | 104 | 1.6+ | 0.7− | 1997 01 29 | 897 | 1.0+ | 0.8+ | 2001 03 03 | 474 | 0.5− | 0.4+ |
| 1997 01 16 | 104 | 0.2+ | 0.1− | 1997 01 29 | 897 | 1.0+ | 1.7− | 2001 04 11 | 413 | 0.5+ | 0.2− |
| 1997 01 16 | 599 | 0.0 | 0.1− | 1997 01 30 | 360 | 0.3+ | 0.2+ | 2001 04 11 | 413 | 0.4+ | 0.1− |
| 1997 01 16 | 104 | 0.3− | 0.4− | 1997 01 30 | 360 | 0.1− | 0.3+ | 2001 04 11 | 413 | 0.1+ | 0.1− |
| 1997 01 16 | 599 | 0.5+ | 0.5− | 1997 01 30 | 360 | 0.1+ | 0.1+ | 2002 01 13 | 595 | 0.0 | 0.9+ |
| 1997 01 16 | 104 | 0.1+ | 0.1+ | 1997 01 30 | 595 | 0.4− | 1.0+ | 2002 01 13 | 595 | 0.0 | 0.5+ |
| 1997 01 16 | 108 | 0.5− | 1.9− | 1997 01 30 | 595 | 0.7− | 0.7+ | 2002 01 13 | 595 | 0.6− | 0.3+ |
| 1997 01 16 | 108 | 0.7+ | 0.4− | 1997 01 30 | 595 | 0.8− | 0.6− | 2002 01 13 | 413 | 0.2+ | 0.4+ |
| 1997 01 16 | 104 | 0.3+ | 0.6+ | 1997 01 31 | 587 | 0.0 | 0.2+ | 2002 01 13 | 413 | 0.2+ | 0.3+ |
| 1997 01 16 | 108 | (0.3+ | 3.3+) | 1997 01 31 | 587 | 0.8− | 0.1+ | 2002 01 13 | 413 | 0.4+ | 0.6+ |
| 1997 01 16 | 595 | 0.1− | 0.9− | 1997 02 02 | 595 | 0.7− | 0.1− | 2002 01 16 | 595 | 0.1− | 0.7+ |
| 1997 01 16 | 595 | 0.3− | 0.7− | 1997 02 02 | 595 | 1.1− | 0.5− | 2002 01 17 | 595 | 0.2− | 1.1+ |
| 1997 01 16 | 595 | 0.1− | 0.1− | 1997 02 02 | 595 | 1.5− | 0.9− | 2002 02 08 | 644 | 0.5+ | 0.4− |
| 1997 01 17 | 599 | 1.9+ | 1.6+ | 1997 02 02 | 595 | 0.0 | 0.8+ | 2002 02 08 | 644 | 0.3+ | 0.2− |
| 1997 01 17 | 599 | 0.5− | 0.9+ | 1997 02 06 | 473 | 1.4+ | 0.1+ | 2002 02 08 | 644 | 0.3+ | 0.6− |
| 1997 01 17 | 046 | 0.6− | 0.2+ | 1997 02 06 | 473 | 1.1+ | 0.1− | 2002 03 11 | 696 | 0.4+ | 0.1+ |
| 1997 01 17 | 046 | 1.1− | 0.2− | 1997 02 08 | 595 | 0.5− | 0.1− | 2002 03 11 | 696 | 0.3+ | 0.1+ |
| 1997 01 17 | 046 | 0.1− | 0.1+ | 1997 02 08 | 595 | 0.5− | 1.0+ | 2002 12 31 | 704 | 0.3− | 0.4− |
| 1997 01 17 | 046 | 0.7− | 0.4+ | 1997 02 08 | 595 | 0.9− | 0.9− | 2002 12 31 | 704 | 1.4− | 0.7+ |
| 1997 01 18 | 360 | 0.4− | 0.1− | 1997 02 09 | 360 | 0.6+ | 0.3− | 2002 12 31 | 704 | 0.2− | 0.5− |
| 1997 01 18 | 360 | 0.4− | 0.4+ | 1997 02 09 | 360 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.5− | 0.5+ |
| 1997 01 18 | 360 | 0.9− | 0.0 | 1997 02 09 | 360 | 0.3+ | 0.6− | 2006 04 18 | 423 | 0.0 | 0.2− |
| 1997 01 18 | 360 | 0.7− | 0.3+ | 1997 02 09 | 046 | 1.1+ | 0.7− | 2006 04 18 | 423 | 0.8+ | 0.1− |
| 1997 01 19 | 422 | 0.1+ | 0.8+ | 1997 02 09 | 046 | 0.0 | 0.4− | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 1997 01 19 | 422 | 1.0− | 0.3− | 1997 02 12 | 711 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.3+ |
| 1997 01 21 | 118 | 0.1+ | 0.9− | 1997 02 12 | 711 | 0.2− | 1.5+ | 2006 11 20 | G96 | 0.1− | 0.5+ |
| 1997 01 21 | 118 | 0.2− | 1.0− | 1997 02 13 | 711 | 0.0 | 0.3− | 2006 11 20 | G96 | 0.2− | 0.0 |
| 1997 01 26 | 595 | 0.4− | 1.2+ | 1997 02 13 | 711 | 0.5− | 0.0 | 2006 11 21 | 691 | 1.0+ | 0.0 |
| 1997 01 26 | 595 | (2.0− | 1.3−) | 1997 02 24 | 658 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.4+ | 0.1+ |
| 1997 01 26 | 595 | 0.2− | 0.8− | 1997 02 24 | 658 | 0.5+ | 0.2+ | 2006 11 21 | 691 | 0.6+ | 0.3+ |
| 1997 01 26 | 118 | 0.3− | 0.4+ | 1997 02 24 | 658 | 0.4+ | 0.3− | | | | |
| 1997 01 27 | 118 | 0.3− | 0.3+ | 1998 01 22 | 696 | 0.9+ | 1.0+ | | | | |

**(136794)∗ 1997 AS$_{19}$ = 1998 MM$_6$**

Discovered 1997 Jan. 10 by Spacewatch at Kitt Peak.

Id. A. Doppler (MPC 33256)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.73797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26848579 | $\omega$ | 293.32181 | | −0.93400636 | +0.35534902 | |
| $a$ | 2.3796980 | $\Omega$ | 267.50954 | | −0.31281896 | −0.86330791 | |
| $e$ | 0.1212762 | $i$ | 2.11481 | | −0.17255845 | −0.35836646 | |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 09 | 691 | 0.5− | 0.3− | 1998 06 25 | 691 | 0.7+ | 0.4+ | 2003 12 18 | 704 | 1.2+ | 0.3+ |
| 1991 09 09 | 691 | 0.4− | 0.4− | 1998 06 25 | 691 | 0.2+ | 0.5+ | 2003 12 21 | 704 | 0.1+ | 1.2+ |
| 1991 09 09 | 691 | 0.4− | 0.3− | 2001 03 23 | 704 | 0.8+ | 1.5+ | 2003 12 21 | 704 | 0.4− | 1.2+ |
| 1997 01 02 | 691 | 0.1+ | 0.3− | 2001 03 23 | 704 | 0.6+ | 1.0+ | 2003 12 21 | 704 | 0.8+ | 0.1+ |
| 1997 01 02 | 691 | 0.2+ | 0.4− | 2001 03 23 | 704 | 0.1− | 0.1+ | 2003 12 21 | 704 | 0.4+ | 0.3+ |
| 1997 01 02 | 691 | 0.1+ | 0.4− | 2001 03 24 | 704 | 0.8− | 0.5+ | 2003 12 21 | 704 | 0.4− | 0.7+ |
| 1997 01 10 | 691 | 0.6− | 0.2− | 2001 03 24 | 704 | 0.2+ | 0.4− | 2003 12 21 | 704 | 0.4− | 0.2+ |
| 1997 01 10 | 691 | 0.7− | 0.3− | 2001 03 24 | 704 | 0.3− | 0.1+ | 2003 12 21 | 704 | (0.1− | 1.9+) |
| 1997 01 11 | 691 | 0.7+ | 0.6+ | 2001 03 24 | 704 | 0.4+ | 1.2+ | 2005 06 04 | 704 | (0.5− | 1.8+) |
| 1997 01 11 | 691 | 0.3+ | 0.8+ | 2001 03 24 | 704 | 0.7− | 0.2+ | 2005 06 04 | 704 | 0.4− | 0.9+ |
| 1997 01 11 | 691 | 0.7+ | 0.8+ | 2001 03 29 | 699 | 1.0− | 0.1+ | 2005 06 04 | 704 | 0.3+ | 1.0+ |
| 1997 01 17 | 691 | 0.1+ | 0.4− | 2001 03 29 | 699 | 0.1+ | 0.7+ | 2005 06 04 | 704 | 0.2− | 0.6+ |
| 1997 01 17 | 691 | 0.2− | 0.3− | 2001 03 29 | 699 | 0.4+ | 0.5+ | 2005 06 04 | 704 | 0.3− | 0.5+ |
| 1997 01 17 | 691 | 0.0 | 0.3− | 2001 03 29 | 699 | 0.5− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.6+ |
| 1997 02 15 | 691 | 0.1− | 0.4+ | 2001 04 24 | 699 | 0.7− | 0.7− | 2006 09 19 | 691 | 0.3− | 0.4+ |
| 1997 02 15 | 691 | 0.1+ | 0.4+ | 2001 04 24 | 699 | (0.1+ | 2.2+) | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 1997 02 15 | 691 | 0.1+ | 0.5+ | 2001 04 24 | 699 | 0.9− | 1.5+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 1997 03 02 | 691 | 0.1+ | 0.2+ | 2001 04 24 | 699 | 0.8+ | 1.0+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 1997 03 02 | 691 | 0.1+ | 0.1+ | 2002 09 14 | 644 | 0.9− | 0.9+ | 2006 10 11 | 644 | 0.6− | 0.6+ |
| 1998 06 20 | 691 | 0.1+ | 0.3+ | 2002 09 14 | 644 | 0.9− | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.6+ |
| 1998 06 20 | 691 | 0.2+ | 0.3+ | 2002 09 14 | 644 | 1.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.8+ |
| 1998 06 20 | 691 | 0.2+ | 0.8+ | 2003 12 18 | 704 | 0.8+ | 1.3+ | 2006 10 21 | 644 | 0.5− | 0.5+ |
| 1998 06 25 | 691 | 0.5+ | 0.2+ | 2003 12 18 | 704 | (1.0+ | 1.8+) | | | | |

**(136795)∗ 1997 BQ**

Discovered 1997 Jan. 16 by T. Hasegawa at the Kiso Station of the Tokyo Astronomical Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.12136 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.42741640 | $\omega$ | 147.33869 | | −0.94545480 | +0.29078997 | |
| $a$ | 1.7454280 | $\Omega$ | 50.28093 | | −0.32451152 | −0.80144405 | |
| $e$ | 0.4787588 | $i$ | 11.00404 | | −0.02841650 | −0.52261710 | |
| $P$ | 2.31 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 16 | 381 | 0.3+ | 1.0− | 1997 01 31 | 670 | 0.6+ | 0.3+ | 1997 03 09 | 557 | 0.1+ | 0.0 |
| 1997 01 16 | 381 | 1.1+ | 1.6+ | 1997 01 31 | 670 | 0.4− | 0.1+ | 1997 03 09 | 557 | 0.1+ | 0.5+ |
| 1997 01 16 | 381 | 0.3− | 0.0 | 1997 02 01 | 540 | 1.4− | 0.6+ | 1997 03 10 | 557 | 0.5+ | 0.3− |
| 1997 01 16 | 381 | 0.1− | 0.9+ | 1997 02 01 | 540 | 1.1− | 0.1− | 1997 03 10 | 557 | 0.7+ | 0.3+ |
| 1997 01 16 | 381 | 0.1− | 0.6+ | 1997 02 01 | 540 | (2.2− | 0.3+) | 1997 03 10 | 557 | 0.6+ | 0.2− |
| 1997 01 16 | 381 | 0.4− | 0.1+ | 1997 02 01 | 540 | 0.1+ | 0.1+ | 1997 03 12 | 557 | 0.5+ | 0.2+ |
| 1997 01 16 | 381 | 0.2+ | 1.8+ | 1997 02 02 | 540 | 0.6+ | 0.4− | 1997 03 12 | 557 | 0.1+ | 0.4+ |
| 1997 01 16 | 381 | 1.9+ | 1.7+ | 1997 02 02 | 540 | 0.4+ | 0.2+ | 1997 03 12 | 557 | 0.3+ | 0.1+ |
| 1997 01 16 | 381 | 1.5− | 1.4− | 1997 02 02 | 540 | 0.3+ | 0.2+ | 1997 03 12 | 557 | 0.8+ | 0.6+ |
| 1997 01 16 | 381 | 0.0 | 1.0+ | 1997 02 03 | 557 | 0.1+ | 0.5+ | 1997 06 19 | 422 | 1.9− | 0.1+ |
| 1997 01 20 | 327 | 0.6+ | 0.3+ | 1997 02 03 | 557 | 0.2+ | 0.6+ | 1997 06 27 | 422 | 1.0− | 0.3− |
| 1997 01 20 | 327 | 1.5+ | 0.5+ | 1997 02 03 | 557 | 0.0 | 0.7+ | 1997 06 27 | 422 | 0.0 | 0.5− |
| 1997 01 20 | 327 | 0.7+ | 0.2+ | 1997 02 03 | 557 | 0.1+ | 0.6+ | 1997 06 27 | 422 | 0.6+ | 0.1− |
| 1997 01 20 | 327 | 0.8+ | 0.5+ | 1997 02 05 | 402 | 0.1− | 0.3+ | 1997 06 29 | 360 | 0.2− | 0.1+ |
| 1997 01 21 | 046 | 0.1+ | 0.1+ | 1997 02 05 | 402 | 0.5− | 0.1+ | 1997 06 29 | 360 | 0.1+ | 0.2+ |
| 1997 01 21 | 046 | 0.4− | 0.4− | 1997 02 05 | 402 | 0.3− | 0.6+ | 1997 06 29 | 360 | 0.1− | 0.5+ |
| 1997 01 21 | 046 | 0.0 | 0.1+ | 1997 02 05 | 402 | 0.4− | 0.2+ | 1998 11 11 | 709 | 0.2+ | 0.3− |
| 1997 01 21 | 046 | 0.3− | 0.4+ | 1997 02 06 | 657 | 0.7+ | 0.1− | 1998 11 11 | 709 | 0.1+ | 0.1− |
| 1997 01 21 | 046 | 0.2− | 0.4− | 1997 02 06 | 657 | 1.3+ | 0.8+ | 1998 11 11 | 709 | 0.3+ | 0.0 |
| 1997 01 22 | 817 | 0.7− | 0.0 | 1997 02 06 | 657 | 0.2+ | 0.5− | 1998 11 11 | 709 | 0.9+ | 0.2− |
| 1997 01 24 | 817 | 0.5− | 0.5− | 1997 02 06 | 657 | 0.2+ | 0.3+ | 1998 11 11 | 709 | 0.2+ | 0.4+ |
| 1997 01 24 | 817 | 0.6+ | 0.3− | 1997 02 06 | 657 | 0.1− | 0.4− | 1998 11 11 | 658 | 0.7− | 0.2− |
| 1997 01 24 | 817 | 0.3− | 0.7− | 1997 02 06 | 557 | 0.3− | 0.2+ | 1998 11 11 | 658 | 0.4+ | 0.7− |
| 1997 01 24 | 658 | 0.7− | 1.3− | 1997 02 06 | 557 | 0.3− | 0.3+ | 1998 11 11 | 658 | 0.1− | 0.0 |
| 1997 01 24 | 658 | 0.8− | 1.1− | 1997 02 06 | 557 | 0.2− | 0.3+ | 1998 11 14 | 709 | 0.2+ | 1.5− |
| 1997 01 24 | 658 | 1.1− | 1.5− | 1997 02 06 | 540 | 0.3+ | 0.3+ | 1998 11 14 | 709 | 0.2− | 1.2− |
| 1997 01 25 | 355 | 0.8+ | 1.0+ | 1997 02 06 | 540 | 0.2− | 0.3+ | 1998 11 14 | 709 | 1.1− | 1.9− |
| 1997 01 25 | 355 | 0.1− | 0.6+ | 1997 02 06 | 540 | 0.3+ | 0.6+ | 1998 11 19 | 691 | 0.1− | 0.2+ |
| 1997 01 25 | 355 | 0.3+ | 0.9+ | 1997 02 08 | 566 | 0.4+ | 0.2+ | 1998 11 19 | 691 | 0.1+ | 0.3− |
| 1997 01 25 | 355 | 1.5+ | 0.9+ | 1997 02 08 | 566 | 0.3+ | 0.2+ | 1998 11 19 | 691 | 1.2− | 0.1+ |
| 1997 01 25 | 355 | 0.5+ | 0.0 | 1997 02 08 | 566 | 0.3+ | 0.1+ | 1998 11 26 | 691 | 0.0 | 0.1+ |
| 1997 01 25 | 557 | 0.2− | 0.4− | 1997 02 09 | 360 | 0.5− | 0.3+ | 1998 11 26 | 691 | 0.2+ | 0.0 |
| 1997 01 25 | 557 | 0.1− | 0.4− | 1997 02 09 | 360 | 0.5− | 0.3+ | 1998 11 26 | 691 | 0.5+ | 0.3− |
| 1997 01 25 | 557 | 0.4− | 0.7− | 1997 02 09 | 360 | 0.5− | 0.2+ | 2002 09 29 | 291 | 0.0 | 0.9+ |
| 1997 01 26 | 355 | 1.1+ | 1.4+ | 1997 02 10 | 046 | 0.8− | 0.0 | 2002 09 29 | 291 | 0.2− | 0.8+ |
| 1997 01 26 | 355 | (2.7+ | 2.4+) | 1997 02 10 | 046 | 0.6− | 0.1− | 2002 09 29 | 291 | 0.1− | 0.1− |
| 1997 01 26 | 046 | 0.0 | 0.2− | 1997 02 19 | 360 | 0.6− | 0.1+ | 2003 10 29 | 291 | 0.1+ | 0.0 |
| 1997 01 26 | 046 | 0.4+ | 0.1+ | 1997 02 19 | 360 | 0.7− | 0.1+ | 2003 10 29 | 291 | (1.9− | 1.0+) |
| 1997 01 26 | 046 | 0.4+ | 0.0 | 1997 02 19 | 360 | 0.6− | 0.2+ | 2003 10 29 | 291 | 0.4+ | 0.4+ |
| 1997 01 26 | 046 | 0.4+ | 0.2+ | 1997 02 21 | 118 | 0.6− | 0.2+ | 2004 01 02 | 704 | 0.3+ | 0.3+ |
| 1997 01 27 | 557 | 0.2+ | 0.1+ | 1997 02 21 | 118 | 0.1− | 0.3− | 2004 01 02 | 704 | 0.5− | 0.6+ |
| 1997 01 27 | 557 | 0.1+ | 0.1− | 1997 02 21 | 118 | 0.4− | 0.2+ | 2004 01 02 | 704 | 0.0 | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 27 | 557 | 0.2+ | 0.0 | 1997 02 22 | 360 | 0.7− | 0.7− | 2004 01 02 | 704 | 0.3− | 1.0+ | |
| 1997 01 27 | 557 | 0.2+ | 0.0 | 1997 02 22 | 360 | 0.7− | 0.5− | 2004 01 28 | 704 | 0.3+ | 0.5+ | |
| 1997 01 28 | 402 | 0.1− | 0.2− | 1997 02 22 | 360 | 0.5− | 0.5− | 2004 01 28 | 704 | 0.1+ | 0.0 | |
| 1997 01 28 | 587 | 0.2+ | 0.1+ | 1997 02 23 | 658 | 0.5− | 0.0 | 2004 01 28 | 704 | 1.4+ | 0.8+ | |
| 1997 01 28 | 587 | 0.3− | 0.2+ | 1997 02 23 | 658 | 0.3− | 0.2+ | 2004 01 28 | 704 | 0.3+ | 0.5+ | |
| 1997 01 28 | 587 | 0.5+ | 0.5− | 1997 02 23 | 658 | 0.5− | 0.0 | 2004 01 28 | 704 | 0.1− | 0.9+ | |
| 1997 01 29 | 900 | 0.5− | 0.0 | 1997 02 23 | 658 | 0.3− | 0.3+ | 2004 07 10 | 474 | 0.3+ | 0.3− | |
| 1997 01 29 | 900 | 0.2− | 1.1− | 1997 02 23 | 658 | 0.5− | 0.1− | 2004 07 10 | 474 | 0.1+ | 0.3+ | |
| 1997 01 29 | 355 | 0.3− | 0.3− | 1997 02 24 | 658 | 0.3− | 0.3+ | 2004 07 10 | 474 | 0.7− | 0.4+ | |
| 1997 01 29 | 355 | 0.4− | 0.2− | 1997 02 24 | 658 | 0.0 | 0.1− | 2004 07 10 | 474 | 0.0 | 1.0+ | |
| 1997 01 29 | 355 | 0.8− | 0.0 | 1997 02 24 | 658 | 0.3− | 0.3− | 2004 08 21 | E17 | 0.2+ | 0.2− | |
| 1997 01 30 | 670 | 0.5− | 0.7− | 1997 02 24 | 658 | 1.0− | 0.4+ | 2004 08 21 | E17 | 0.5+ | 0.2+ | |
| 1997 01 30 | 670 | 0.4− | 1.1+ | 1997 02 24 | 658 | 0.9− | 0.2+ | 2005 11 26 | 711 | 1.3+ | 0.0 | |
| 1997 01 30 | 670 | 0.2+ | 0.3− | 1997 03 01 | 118 | 0.9+ | 0.2− | 2005 11 26 | 711 | 0.2− | 0.3− | |
| 1997 01 30 | 670 | 1.7+ | 0.2+ | 1997 03 01 | 118 | 0.7+ | 0.1− | 2005 11 26 | 711 | 0.7+ | 0.0 | |
| 1997 01 30 | 897 | 0.4+ | 0.6− | 1997 03 01 | 118 | 0.4+ | 0.2− | 2006 01 05 | 291 | (1.6+ | 0.3+) | |
| 1997 01 30 | 897 | 0.2− | 0.2+ | 1997 03 01 | 557 | 0.4+ | 0.1− | 2006 01 05 | 291 | 0.6+ | 0.1+ | |
| 1997 01 30 | 897 | 0.3+ | 0.2+ | 1997 03 01 | 557 | 0.2+ | 0.0 | 2006 01 05 | 291 | 0.6+ | 0.7− | |
| 1997 01 30 | 355 | 0.6− | 0.9− | 1997 03 05 | 557 | 0.2+ | 1.2− | 2006 01 06 | 291 | 0.1+ | 0.1+ | |
| 1997 01 30 | 355 | 0.2− | 0.8− | 1997 03 05 | 557 | 0.2+ | 1.2− | 2006 01 06 | 291 | 0.6− | 0.1+ | |
| 1997 01 30 | 355 | 0.4− | 0.6− | 1997 03 05 | 557 | 0.2+ | 1.1− | 2006 01 06 | 291 | 0.2+ | 0.1+ | |

**(136796)∗ 1997 $BO_6$ = 2000 $VG_{21}$**

Discovered 1997 Jan. 30 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Id. G. V. Williams (*MPO* 5428)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.07006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21144301 | $\omega$ | 43.34897 | | −0.72455128 | −0.68602429 | |
| $a$ | 2.7904473 | $\Omega$ | 93.20848 | | +0.61283069 | −0.68527726 | |
| $e$ | 0.0968855 | $i$ | 3.80766 | | +0.31537911 | −0.24447036 | |
| $P$ | 4.66 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.2− | 0.3+ | 2002 02 07 | 704 | 0.4− | 1.2+ | 2005 12 01 | 704 | 0.1− | 0.2+ | |
| 1995 10 19 | 691 | 0.4− | 0.1+ | 2002 02 20 | 704 | 0.4+ | 0.1+ | 2005 12 01 | 704 | 0.0 | 0.2− | |
| 1995 10 19 | 691 | 0.1− | 0.1+ | 2002 02 20 | 704 | 0.7+ | 0.3+ | 2005 12 01 | 704 | 0.3− | 0.2− | |
| 1997 01 30 | 683 | 0.2− | 0.2+ | 2002 02 20 | 704 | 0.1+ | 0.6+ | 2005 12 04 | 691 | 0.4− | 0.1+ | |
| 1997 01 30 | 683 | 0.0 | 0.2− | 2002 02 20 | 704 | 0.2− | 0.0 | 2005 12 04 | 691 | 0.1+ | 0.1+ | |
| 1997 01 30 | 683 | 0.2+ | 0.5− | 2002 03 05 | 699 | 0.1− | 0.4+ | 2005 12 04 | 691 | 0.3+ | 0.3− | |
| 1997 01 30 | 683 | 0.3− | 0.1− | 2002 03 05 | 699 | 0.1+ | 0.6+ | 2005 12 06 | 704 | 1.1− | 0.2+ | |
| 1997 01 31 | 683 | 0.0 | 0.6− | 2002 03 05 | 699 | 0.0 | 0.3− | 2005 12 06 | 704 | 0.5− | 0.2− | |
| 1997 01 31 | 683 | 0.0 | 0.5− | 2002 03 05 | 699 | 0.2− | 0.0 | 2005 12 06 | 704 | 0.1+ | 0.8+ | |
| 1997 01 31 | 683 | 0.4+ | 0.4− | 2002 03 05 | 291 | 0.1+ | 0.0 | 2005 12 06 | 704 | 1.0+ | 0.4+ | |
| 1997 02 01 | 683 | 0.3+ | 0.5− | 2002 03 05 | 291 | 0.1+ | 0.1− | 2005 12 06 | 704 | 1.3+ | 0.1− | |
| 1997 02 01 | 683 | 0.1− | 0.4− | 2002 03 05 | 291 | 0.2+ | 0.1+ | 2005 12 08 | 691 | 0.0 | 0.0 | |
| 1997 02 01 | 683 | 0.3+ | 0.3− | 2002 03 11 | 644 | 1.2+ | 0.6+ | 2005 12 08 | 691 | 0.0 | 0.1− | |
| 1997 02 06 | 683 | 0.4− | 0.6− | 2002 03 11 | 644 | 0.8+ | 0.3+ | 2005 12 08 | 691 | 0.1+ | 0.0 | |
| 1997 02 06 | 683 | 0.7− | 0.6− | 2002 03 11 | 644 | 1.2+ | 0.4+ | 2005 12 25 | G96 | 0.4− | 0.4− | |
| 1997 02 06 | 683 | 1.0− | 0.4− | 2002 04 02 | 644 | 0.6+ | 0.6+ | 2005 12 25 | G96 | 0.2− | 0.6− | |
| 2000 11 01 | 704 | 1.1+ | 0.2− | 2002 04 02 | 644 | 1.4+ | 0.1+ | 2005 12 25 | G96 | 0.0 | 0.5− | |
| 2000 11 01 | 704 | 0.7+ | 1.3+ | 2002 04 02 | 644 | 1.1+ | 1.0+ | 2005 12 25 | G96 | 0.3+ | 0.6− | |
| 2000 11 01 | 704 | 0.1− | 0.9+ | 2004 09 09 | 704 | 0.4− | 0.6+ | 2006 01 05 | 704 | 0.3− | 0.5+ | |
| 2000 11 02 | 704 | 0.2+ | 0.8+ | 2004 09 09 | 704 | 1.0− | 1.2+ | 2006 01 05 | 704 | 0.1− | 0.1+ | |
| 2000 11 02 | 704 | (2.0− | 2.5+) | 2004 09 09 | 704 | 0.7− | 0.8+ | 2006 01 05 | 704 | 0.1+ | 0.0 | |
| 2000 11 02 | 704 | 0.5− | 0.7+ | 2004 09 09 | 704 | 0.1+ | 0.6+ | 2006 01 05 | 704 | 1.7+ | 0.8− | |
| 2000 11 02 | 704 | 0.1+ | 1.8+ | 2005 11 29 | 704 | 1.2− | 1.2− | 2006 01 07 | 704 | 0.6+ | 1.5+ | |
| 2002 02 06 | 608 | 0.8− | 0.2+ | 2005 11 29 | 704 | 0.1+ | 0.5− | 2006 01 07 | 704 | (0.3− | 2.1+) | |
| 2002 02 06 | 608 | 0.2− | 0.1+ | 2005 11 29 | 704 | 0.3+ | 0.1+ | 2006 01 07 | 704 | 0.4− | 1.4+ | |
| 2002 02 06 | 608 | 0.4− | 0.1+ | 2005 11 30 | 691 | 0.1− | 0.1− | 2006 01 07 | 704 | 1.2− | 1.8+ | |
| 2002 02 07 | 704 | 0.9− | 1.0+ | 2005 11 30 | 691 | 0.1+ | 0.2− | 2006 02 20 | G96 | 0.0 | 0.3− | |
| 2002 02 07 | 704 | 0.3− | 0.9+ | 2005 11 30 | 691 | 0.3− | 0.4− | 2006 02 20 | G96 | 0.1+ | 0.3− | |
| 2002 02 07 | 704 | 0.9− | 1.6+ | 2005 12 01 | 704 | 0.3+ | 0.6+ | 2006 02 20 | G96 | 0.0 | 0.1− | |
| 2002 02 07 | 704 | 0.1+ | 1.2+ | 2005 12 01 | 704 | 0.1− | 0.1− | 2006 02 20 | G96 | 0.0 | 0.4− | |

**(136797)∗ 1997 $CF_1$ = 2000 $AO_{74}$**

Discovered 1997 Feb. 1 by T. Kobayashi at Oizumi.

Id. A. Doppler (*MPO* 6751)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.76251 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29921943 | $\omega$ | 340.62433 | | −0.10760806 | −0.98615751 | |
| $a$ | 2.2138228 | $\Omega$ | 115.38393 | | +0.92959052 | −0.14479596 | |
| $e$ | 0.1415050 | $i$ | 8.02648 | | +0.35253648 | +0.08079291 | |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 411 | 0.5+ | 0.9− | 2002 09 17 | 608 | 0.8− | 1.4− | 2002 11 21 | 644 | 0.1− | 0.6+ | |
| 1997 02 01 | 411 | 1.6+ | 0.0 | 2002 09 17 | 608 | 1.1− | 1.2− | 2002 11 21 | 644 | 0.3+ | 0.2+ | |
| 1997 02 03 | 411 | 0.8− | 0.6− | 2002 09 17 | 608 | 1.4− | 0.4− | 2002 11 21 | 644 | 0.2+ | 0.5+ | |
| 1997 02 03 | 411 | 0.5− | 1.2− | 2002 10 06 | 704 | 0.3− | 0.1+ | 2005 08 28 | E12 | 0.8− | 1.3+ | |
| 1997 02 11 | 411 | 0.1− | 0.6+ | 2002 10 06 | 704 | 0.3+ | 0.0 | 2005 08 28 | E12 | 0.0 | 1.0+ | |
| 1997 02 11 | 411 | 1.1− | 0.6+ | 2002 10 06 | 704 | 0.8− | 0.3+ | 2005 08 28 | E12 | (1.9+ | 0.9−) | |
| 1999 12 06 | 704 | 1.2− | 0.0 | 2002 10 06 | 704 | 0.5− | 0.5+ | 2005 08 30 | 699 | 0.9+ | 0.1− | |
| 1999 12 06 | 704 | 0.3− | 0.9− | 2002 10 06 | 704 | 0.9+ | 0.2− | 2005 08 30 | 699 | 0.5− | 0.1+ | |
| 1999 12 06 | 704 | 1.3+ | 0.0 | 2002 10 15 | 644 | 0.1+ | 0.2+ | 2005 08 30 | 699 | 0.2− | 0.5+ | |
| 1999 12 06 | 704 | 0.5+ | 0.3− | 2002 10 15 | 644 | 0.1− | 0.3+ | 2005 08 30 | 699 | 0.7− | 1.1+ | |
| 1999 12 06 | 704 | 0.8− | 0.6− | 2002 10 15 | 644 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.2− | |
| 2000 01 05 | 704 | 0.5− | 0.2− | 2002 10 28 | 644 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.4− | |
| 2000 01 05 | 704 | 0.1+ | 0.0 | 2002 10 28 | 644 | 0.7+ | 1.3+ | 2006 11 01 | G96 | 0.2− | 0.1− | |
| 2000 01 05 | 704 | 1.1+ | 0.1+ | 2002 10 28 | 644 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.6− | 0.2− | |
| 2000 01 05 | 704 | 0.3− | 0.7− | 2002 10 29 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.3+ | |
| 2000 01 05 | 704 | 0.2− | 0.9+ | 2002 10 29 | 704 | 0.6− | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.6+ | |
| 2000 01 06 | 704 | 0.3+ | 0.7− | 2002 10 29 | 704 | 0.5− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1+ | |
| 2000 01 06 | 704 | 0.5+ | 0.4+ | 2002 10 29 | 704 | 0.4− | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.4+ | |
| 2000 01 06 | 704 | 0.1− | 0.3− | 2002 11 04 | 608 | 1.0− | 1.3+ | 2006 11 22 | 691 | 0.0 | 0.5+ | |
| 2002 09 05 | 645 | 0.2+ | 0.2− | 2002 11 04 | 608 | 0.8− | 1.2+ | 2006 11 22 | 691 | 0.3+ | 0.0 | |
| 2002 09 05 | 645 | 0.2+ | 0.2− | 2002 11 04 | 608 | 1.2− | 0.8+ | | | | | |

**(136798)∗ 1997 $CG_2$ = 1999 $VP_{158}$**

Discovered 1997 Feb. 2 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.00327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27109979 | $\omega$ | 17.13834 | | +0.94065371 | +0.33890082 | |
| $a$ | 2.3643763 | $\Omega$ | 323.03641 | | −0.31473092 | +0.85154520 | |
| $e$ | 0.1335715 | $i$ | 1.69629 | | −0.12694505 | +0.40002125 | |
| $P$ | 3.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.4− | 0.6+ | 2005 04 05 | 699 | 1.3+ | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.4− | |
| 1997 02 02 | 691 | 0.6− | 0.4− | 2005 04 05 | 699 | (0.5− | 2.1+) | 2006 09 19 | 699 | 0.4+ | 0.1+ | |
| 1997 02 02 | 691 | 0.3− | 0.6− | 2005 04 05 | 699 | 0.5− | 1.0+ | 2006 09 19 | 699 | 0.0 | 0.5+ | |
| 1997 02 03 | 691 | 0.4+ | 0.1+ | 2006 08 20 | 644 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.1− | 1.5+ | |
| 1997 02 03 | 691 | 0.2− | 0.2− | 2006 08 20 | 644 | 0.9− | 0.3− | 2006 09 20 | 704 | 0.8− | 1.3+ | |
| 1997 02 03 | 691 | 0.5− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.6− | 0.8+ | |
| 1997 02 07 | 691 | 0.2+ | 0.2− | 2006 08 21 | 704 | 0.6− | 0.7+ | 2006 09 20 | 704 | 0.6− | 0.8+ | |
| 1997 02 07 | 691 | 0.0 | 0.5− | 2006 08 21 | 704 | 0.6+ | 0.7+ | 2006 09 20 | 704 | 0.2+ | 0.1+ | |
| 1997 02 07 | 691 | 0.9− | 0.2− | 2006 08 21 | 704 | 0.4− | 0.3− | 2006 09 23 | 691 | 0.3− | 0.0 | |
| 1999 10 13 | 704 | 0.8+ | 0.3− | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.3− | 0.3+ | |
| 1999 10 13 | 704 | 0.4− | 1.4− | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.3+ | |
| 1999 10 13 | 704 | 0.0 | 1.5− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.2− | 1.0+ | |
| 1999 10 13 | 704 | 0.3+ | 1.9− | 2006 08 23 | 644 | 0.4− | 0.1− | 2006 09 25 | 699 | 0.1+ | 1.1+ | |
| 1999 10 13 | 704 | (0.3− | 2.2−) | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.3+ | |
| 1999 11 04 | 704 | 0.5+ | 0.4+ | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.5− | 0.3+ | |
| 1999 11 04 | 704 | 0.5+ | 0.4+ | 2006 08 25 | 704 | 0.6− | 0.6+ | 2006 09 27 | 704 | 0.2− | 1.1+ | |
| 1999 11 04 | 704 | 0.4+ | 0.6+ | 2006 08 25 | 704 | 0.4− | 0.5− | 2006 09 27 | 704 | 1.1+ | 0.8+ | |
| 1999 11 04 | 704 | 0.1− | 1.8+ | 2006 08 25 | 704 | 0.6− | 0.3− | 2006 09 27 | 704 | 0.5+ | 0.7+ | |
| 1999 11 14 | 704 | 1.1+ | 0.7− | 2006 08 25 | 704 | 0.3− | 1.1+ | 2006 09 29 | 704 | 0.3+ | 0.8+ | |
| 1999 11 14 | 704 | 0.4+ | 0.2+ | 2006 08 27 | 699 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.1+ | 0.6+ | |
| 1999 11 14 | 704 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.2− | 2006 09 29 | 704 | (0.4− | 1.6+) | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.8− | 1.1+ | 2006 08 27 | 699 | 0.5− | 0.3− | 2006 09 30 | 704 | 0.7+ | 0.2+ |
| 1999 11 14 | 703 | 1.8− | 1.4+ | 2006 08 27 | 699 | 0.6− | 0.4− | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 1999 11 14 | 703 | 1.0+ | 1.2+ | 2006 09 01 | 704 | 0.3− | 1.0− | 2006 09 30 | 704 | 0.3− | 1.3+ |
| 1999 11 14 | 703 | 0.6+ | 0.5+ | 2006 09 01 | 704 | 0.6− | 0.9− | 2006 10 01 | 703 | (3.3+ | 0.9+) |
| 1999 11 14 | 703 | 0.2− | 0.4+ | 2006 09 01 | 704 | (0.4− | 1.6−) | 2006 10 01 | 703 | 0.9+ | 0.2+ |
| 1999 11 16 | 704 | 0.2− | 1.2+ | 2006 09 01 | 704 | 0.1− | 0.2− | 2006 10 01 | 703 | 0.5− | 0.0 |
| 1999 11 16 | 704 | 0.5+ | 0.2− | 2006 09 12 | 703 | 0.8− | 0.2− | 2006 10 01 | 703 | 0.7+ | 0.2− |
| 1999 11 16 | 704 | 0.7+ | 0.3+ | 2006 09 12 | 703 | 1.1− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3− |
| 1999 11 16 | 704 | 0.8− | 0.7+ | 2006 09 12 | 703 | 0.9− | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2001 01 19 | 691 | 0.6+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.4− | 0.3− |
| 2001 01 19 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2001 01 19 | 691 | 0.6+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.1+ |
| 2001 02 20 | 645 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 1.1− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2001 02 20 | 645 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.9− |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.5− | 1.4+ |
| 2005 03 13 | 691 | 0.3+ | 0.6+ | 2006 09 16 | 699 | 0.3− | 0.7+ | 2006 11 13 | G96 | 1.2− | 0.1− |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.4− |
| 2005 04 04 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.8+ | 0.5+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2005 04 04 | 691 | 0.1− | 0.7+ | 2006 09 17 | 704 | 0.5+ | 0.2+ | 2006 11 13 | G96 | 0.6− | 0.3+ |
| 2005 04 04 | 691 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.0 | | | | |
| 2005 04 05 | 699 | 0.5+ | 1.4+ | 2006 09 17 | 704 | 0.2+ | 0.6+ | | | | |

**(136799)∗ 1997 $CP_5$ = 2004 $BT_{23}$**

Discovered 1997 Feb. 6 by P. G. Comba at Prescott.

Id. M. Kretlow (*MPO* 60483)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.21260 | | (2000.0) | | +0.32502068 | −0.94468779 |
| $n$ | 0.27906853 | $\omega$ | 287.43983 | | +0.89326447 | +0.29142576 |
| $a$ | 2.3191498 | $\Omega$ | 143.49959 | | +0.31054813 | +0.15045266 |
| $e$ | 0.1777480 | $i$ | 4.23169 | | | |
| $P$ | 3.53 | $H$ | 17.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 691 | 0.4+ | 0.4− | 2004 01 23 | 704 | (1.5+ | 0.0 ) | 2004 02 29 | 691 | 0.1+ | 0.3+ |
| 1997 02 01 | 691 | 0.2− | 0.5− | 2004 01 24 | 704 | 0.4+ | 0.2− | 2004 02 29 | 691 | 0.2+ | 0.1+ |
| 1997 02 01 | 691 | 0.6− | 0.9− | 2004 01 24 | 704 | 0.1− | 1.1− | 2006 09 25 | 699 | 0.4+ | 0.1− |
| 1997 02 06 | 684 | 0.4− | 0.6− | 2004 01 24 | 704 | 0.7− | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 1997 02 06 | 684 | 0.8− | 0.5− | 2004 01 24 | 704 | 1.1+ | 0.2+ | 2006 09 25 | 699 | 1.3+ | 0.4+ |
| 1997 02 06 | 684 | 0.3− | 0.3− | 2004 02 03 | 608 | 0.6− | 1.1+ | 2006 09 25 | 699 | 0.1+ | 0.3− |
| 1997 02 07 | 684 | 0.6− | 0.7− | 2004 02 03 | 608 | 0.7− | 0.9+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 1997 02 07 | 684 | 0.3+ | 0.6− | 2004 02 03 | 608 | 0.1+ | 1.2+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.0 | 0.7− | 2004 02 16 | 704 | 0.5− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 1999 10 13 | 704 | 0.5+ | 0.0 | 2004 02 16 | 704 | 0.1− | 0.5− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 1999 10 13 | 704 | 0.0 | 0.2+ | 2004 02 16 | 704 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 1999 10 13 | 704 | 0.1+ | 0.3− | 2004 02 16 | 704 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 1999 10 13 | 704 | 0.3− | 0.0 | 2004 02 19 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 1999 11 07 | 704 | 0.5+ | 1.4+ | 2004 02 19 | 704 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.3− | 0.8− |
| 1999 11 07 | 704 | 0.7− | 0.1− | 2004 02 19 | 704 | 0.6− | 0.7+ | 2006 10 16 | 703 | 0.4+ | 0.5− |
| 1999 11 07 | 704 | 0.5+ | 1.4− | 2004 02 19 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2004 01 18 | 608 | 0.6+ | 0.7+ | 2004 02 19 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2004 01 18 | 608 | 0.2− | 0.7+ | 2004 02 22 | 704 | 1.0+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.7− |
| 2004 01 18 | 608 | 0.0 | 0.5+ | 2004 02 22 | 704 | 0.6− | 0.2+ | 2006 10 20 | 644 | 0.9− | 0.5− |
| 2004 01 21 | 704 | 0.6+ | 0.2− | 2004 02 22 | 704 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.8− | 0.9− |
| 2004 01 21 | 704 | 0.1+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2004 01 21 | 704 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2004 01 23 | 704 | 0.4+ | 0.6− | 2004 02 26 | 704 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2004 01 23 | 704 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.7+ | 0.2+ | | | | |
| 2004 01 23 | 704 | 0.4+ | 0.5− | 2004 02 29 | 691 | 0.1+ | 1.4+ | | | | |

**(136800)∗ 1997 $CS_{13}$ = 2000 $SR_{28}$**

Discovered 1997 Feb. 4 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 5429)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.39388 | | (2000.0) | | +0.93850651 | −0.33349268 |
| $n$ | 0.17368400 | $\omega$ | 76.77900 | | +0.26115650 | +0.85501648 |
| $a$ | 3.1814823 | $\Omega$ | 302.63581 | | +0.22583801 | +0.39715166 |
| $e$ | 0.0487641 | $i$ | 6.09246 | | | |
| $P$ | 5.67 | $H$ | 15.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 04 | 691 | 0.1− | 0.4− | 2003 02 22 | 644 | 0.7+ | 0.9+ | 2006 09 19 | 699 | (2.0− | 0.6+) |
| 1997 02 04 | 691 | 0.1− | 0.3− | 2003 03 06 | 644 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.8− | 0.1+ |
| 1997 02 04 | 691 | 0.3− | 0.3− | 2003 03 06 | 644 | 0.7+ | 0.7+ | 2006 09 27 | 699 | 1.2+ | 0.0 |
| 1997 02 09 | 691 | 0.1− | 0.2− | 2003 03 06 | 644 | 0.7+ | 1.1+ | 2006 09 27 | 699 | (1.7− | 0.2−) |
| 1997 02 09 | 691 | 0.1− | 0.2− | 2003 03 12 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 699 | 0.7− | 1.0+ |
| 1997 02 09 | 691 | 0.0 | 0.3− | 2003 03 12 | 644 | 0.5+ | 0.6+ | 2006 09 27 | 699 | (0.1− | 2.2+) |
| 1997 02 14 | 691 | 0.1+ | 0.0 | 2003 03 12 | 644 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 1997 02 14 | 691 | 0.3− | 0.2− | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 1997 02 14 | 691 | 0.0 | 0.3− | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2000 09 23 | 704 | 0.9+ | 1.4+ | 2006 08 29 | 699 | (0.6+ | 2.1+) | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2000 09 23 | 704 | 0.9+ | 0.4+ | 2006 08 29 | 699 | 1.1− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.6+ |
| 2000 09 23 | 704 | 0.5+ | 0.1− | 2006 08 29 | 699 | 1.3+ | 0.4− | 2006 10 17 | 703 | 0.3+ | 1.4+ |
| 2000 09 25 | 704 | 0.5+ | 0.9− | 2006 08 29 | 699 | (1.8− | 0.2+) | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2000 09 25 | 704 | 0.2+ | 1.0− | 2006 09 16 | 703 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2000 09 25 | 704 | 1.0+ | 0.1− | 2006 09 16 | 703 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 02 22 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2003 02 22 | 644 | 0.6+ | 0.8+ | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.4+ |

**(136801)∗ 1997 $CC_{25}$ = 2002 $RW_{230}$**

Discovered 1997 Feb. 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.95195 | | (2000.0) | | +0.23650256 | +0.97084488 |
| $n$ | 0.26728209 | $\omega$ | 238.89776 | | −0.87151569 | +0.22974134 |
| $a$ | 2.3868373 | $\Omega$ | 44.83716 | | −0.42956600 | +0.06840419 |
| $e$ | 0.1691384 | $i$ | 3.17675 | | | |
| $P$ | 3.69 | $H$ | 16.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 02 | 691 | 0.1+ | 0.5+ | 2005 04 12 | 691 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 1994 05 02 | 691 | 0.1+ | 0.4+ | 2005 04 12 | 691 | 0.7+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 1994 05 02 | 691 | 0.2− | 0.4+ | 2005 04 12 | 704 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 1997 02 03 | 691 | 0.2− | 0.3+ | 2005 04 12 | 691 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1997 02 03 | 691 | 0.8− | 0.2+ | 2005 04 12 | 704 | 0.2+ | 1.5+ | 2006 10 29 | G96 | 0.0 | 0.2− |
| 1997 02 13 | 691 | 0.4+ | 0.0 | 2005 04 12 | 704 | 0.3− | 1.2+ | 2006 10 29 | G96 | 0.1− | 0.1− |
| 1997 02 13 | 691 | 0.1+ | 0.4− | 2005 04 12 | 704 | 0.5+ | 0.8+ | 2006 10 29 | G96 | 0.6− | 0.1+ |
| 1997 02 13 | 691 | 0.4+ | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.3+ |
| 1997 02 15 | 691 | 0.2+ | 0.2− | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.1− | 0.3+ |
| 1997 02 15 | 691 | 0.2+ | 0.3− | 2005 05 08 | G96 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.3+ | 1.2+ |
| 1997 02 15 | 691 | 0.3+ | 0.3+ | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.9− | 0.1+ |
| 2002 09 15 | 644 | 0.2+ | 0.4+ | 2005 05 14 | 644 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.4− | 0.1+ |
| 2002 09 15 | 644 | 0.1+ | 0.5+ | 2005 05 14 | 644 | 0.5+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2002 09 15 | 644 | 0.4+ | 0.5+ | 2005 05 14 | 644 | 0.4+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.4− |
| 2002 09 17 | 608 | (1.5− | 1.5+) | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.4+ | 0.7+ |
| 2002 09 17 | 608 | 1.0− | 1.1+ | 2005 06 13 | G96 | 0.1+ | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 2002 09 17 | 608 | 0.9− | 0.9+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.6− | 0.4+ |
| 2002 10 01 | 699 | 1.4+ | 1.1+ | 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.7− |
| 2002 10 01 | 699 | 0.0 | 0.6− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.7− | 0.4− |
| 2002 10 01 | 699 | (1.8− | 0.4+) | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2002 10 01 | 699 | 0.1+ | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2005 04 04 | G96 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2005 04 04 | G96 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.5+ |
| 2005 04 04 | G96 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | | | | |

**(136802)∗ 1997 $CB_{27}$ = 1995 $WP_{14}$**

Discovered 1997 Feb. 15 by Spacewatch at Kitt Peak.

Id. S. Nakano (MPC 29642)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 209.43116 | | (2000.0) | | | |
| $n$ | 0.26353284 | $\omega$ | 142.62349 | | −0.97523708 | −0.21517396 |
| $a$ | 2.4094221 | $\Omega$ | 25.09488 | | +0.16238504 | −0.85357454 |
| $e$ | 0.2184180 | $i$ | 6.92224 | | +0.15014574 | −0.47445829 |
| $P$ | 3.74 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.1+ | 0.4− | 2003 11 20 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | (1.6+ | 0.3−) |
| 1995 11 17 | 691 | 0.2+ | 0.2− | 2003 11 20 | 704 | (1.6+ | 0.3+) | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 1995 11 17 | 691 | 0.1+ | 0.3− | 2003 11 24 | 704 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.0 |
| 1995 11 20 | 691 | 0.4− | 0.6− | 2003 11 24 | 704 | 0.7− | 1.0+ | 2006 09 18 | 691 | 0.2− | 0.7+ |
| 1995 11 20 | 691 | 0.5− | 0.5− | 2003 11 24 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.2+ |
| 1995 11 20 | 691 | 0.5− | 0.5− | 2003 11 24 | 704 | 0.8− | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.8− |
| 1995 11 27 | 691 | 0.7+ | 0.1+ | 2003 11 24 | 704 | 0.5− | 1.1+ | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 1995 11 27 | 691 | 0.8+ | 0.0 | 2003 12 03 | 704 | 0.4− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 1995 11 27 | 691 | 0.7+ | 0.2− | 2003 12 03 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 1997 02 15 | 691 | 0.1− | 0.1+ | 2003 12 03 | 704 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 1997 02 15 | 691 | 0.2− | 0.0 | 2003 12 17 | 704 | 0.0 | 0.3+ | 2006 09 27 | 291 | 0.1− | 0.2+ |
| 1997 02 15 | 691 | 0.5+ | 0.2− | 2003 12 17 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 291 | 0.1− | 0.4+ |
| 1997 02 16 | 691 | 0.0 | 0.2− | 2003 12 17 | 704 | 0.1− | 0.4+ | 2006 09 27 | 291 | 0.2− | 0.2+ |
| 1997 02 16 | 691 | 0.1− | 0.2+ | 2003 12 17 | 704 | 0.5− | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 1997 02 16 | 691 | 0.1+ | 0.0 | 2003 12 17 | 704 | 0.2+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.3+ |
| 1997 04 03 | 400 | 1.7+ | 0.6+ | 2003 12 24 | 106 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.4− | 0.2+ |
| 1997 04 03 | 400 | 0.1− | 0.3+ | 2003 12 24 | 106 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.3+ |
| 1997 04 04 | 400 | 1.2+ | 1.2+ | 2003 12 24 | 106 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 1997 04 11 | 704 | 0.1− | 1.3+ | 2003 12 25 | 106 | 0.3− | 0.4− | 2006 09 28 | G96 | 0.4− | 0.2− |
| 1997 04 11 | 704 | 0.7− | 1.9+ | 2003 12 25 | 106 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.4− | 0.1− |
| 1999 11 03 | 621 | 0.4+ | 0.0 | 2003 12 25 | 106 | 0.6− | 0.4− | 2006 09 28 | G96 | 0.5− | 0.3− |
| 1999 11 03 | 621 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1999 11 03 | 621 | 0.0 | 0.2+ | 2003 12 27 | 704 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 1999 11 04 | 621 | 0.1+ | 0.0 | 2003 12 27 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 1999 11 04 | 621 | 0.0 | 0.0 | 2003 12 27 | 704 | 0.8− | 0.9+ | 2006 10 01 | 704 | 0.4− | 0.7− |
| 1999 11 05 | 621 | 0.3− | 0.3+ | 2003 12 27 | 704 | 1.0+ | 0.4+ | 2006 10 01 | 704 | (1.9− | 0.9−) |
| 1999 11 05 | 621 | 0.1− | 0.0 | 2003 12 29 | 704 | 0.6+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 1.1+ |
| 1999 11 16 | 704 | 1.2+ | 0.1− | 2003 12 29 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 704 | 0.5− | 0.3− |
| 1999 11 16 | 704 | 0.1+ | 1.6− | 2003 12 29 | 704 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.5− | 0.5− |
| 1999 11 16 | 704 | 1.3+ | 0.2− | 2004 03 20 | 704 | 0.6+ | 1.5− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2003 11 20 | 704 | 0.4− | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2003 11 20 | 704 | 0.2+ | 0.6+ | 2004 03 20 | 704 | (0.5+ | 1.5+) | 2006 11 14 | G96 | 0.0 | 0.2+ |

**(136803)∗ 1997 $EC_3$ = 1999 $TO_{211}$**

Discovered 1997 Mar. 6 by J. Bruton at Chinle.

Id. M. E. Sansaturio (*MPO* 1001)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 206.33700 | | (2000.0) | | | |
| $n$ | 0.26805976 | $\omega$ | 172.45305 | | −0.94080652 | −0.32598701 |
| $a$ | 2.3822187 | $\Omega$ | 347.28359 | | +0.28476647 | −0.61168892 |
| $e$ | 0.2371112 | $i$ | 24.93996 | | +0.18382368 | −0.72081144 |
| $P$ | 3.68 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 06 | 700 | 0.1+ | 0.8+ | 2002 08 30 | 644 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.7− |
| 1997 03 06 | 700 | 0.7− | 0.4− | 2002 08 30 | 644 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.4− | 0.1+ |
| 1997 03 07 | 700 | 0.6+ | 0.9− | 2002 08 30 | 644 | 0.3− | 0.7+ | 2006 09 12 | 703 | (1.6− | 0.3+) |
| 1997 03 07 | 700 | 0.7+ | 1.2+ | 2002 08 30 | 644 | 0.2− | 0.5+ | 2006 09 12 | 703 | 0.2+ | 0.1− |
| 1997 03 07 | 700 | 0.5+ | 0.3− | 2002 08 30 | 644 | 0.4+ | 0.8+ | 2006 09 19 | 699 | 1.1− | 0.9+ |
| 1997 03 08 | 700 | 0.2− | 1.2+ | 2002 09 02 | 599 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.5− |
| 1997 03 08 | 700 | 0.2+ | 0.4− | 2002 09 02 | 599 | 0.3+ | 0.4+ | 2006 09 19 | 699 | (1.7− | 1.3+) |
| 1997 03 08 | 700 | 0.3− | 0.1+ | 2002 09 02 | 599 | 0.2+ | 1.1+ | 2006 09 19 | 703 | 0.0 | 0.0 |
| 1997 03 08 | 700 | (1.7− | 3.1−) | 2004 02 03 | 704 | 0.4− | 1.2+ | 2006 09 19 | 703 | 0.4+ | 0.9+ |
| 1997 03 09 | 700 | 0.8+ | 0.2− | 2004 02 03 | 704 | 1.0+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 1997 03 09 | 700 | 0.1+ | 0.1+ | 2004 02 03 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.2− |
| 1997 03 09 | 700 | 0.0 | 0.7+ | 2004 02 03 | 704 | (1.6− | 0.2+) | 2006 09 19 | 699 | 0.8− | 0.3− |
| 1997 03 11 | 700 | 0.6+ | 0.7+ | 2004 02 10 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 1.1− |
| 1997 03 11 | 700 | 1.2+ | 0.6+ | 2004 02 10 | 704 | 0.8+ | 0.5+ | 2006 09 25 | 699 | (2.3− | 1.4+) |
| 1997 03 11 | 700 | 1.1− | 1.9+ | 2004 02 10 | 704 | 0.5+ | 0.2− | 2006 09 25 | 699 | 0.7− | 0.9+ |
| 1999 10 15 | 704 | 0.8+ | 1.0− | 2004 02 10 | 704 | 0.0 | 0.2− | 2006 09 25 | 699 | (3.2+ | 1.2−) |
| 1999 10 15 | 704 | 0.2+ | 0.3− | 2005 05 14 | E12 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | (2.5+ | 0.3+) | 2005 05 14 | E12 | 0.4+ | 0.1+ | 2006 10 18 | 691 | 0.4− | 0.3− |
| 1999 10 15 | 704 | 0.8+ | 0.1− | 2005 05 14 | E12 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.2− | 0.0 |
| 1999 10 16 | 704 | 1.3+ | 0.5− | 2005 05 14 | E12 | 0.3+ | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 1999 10 16 | 704 | 0.4+ | 0.6− | 2006 08 19 | 691 | 0.0 | 1.3− | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 1999 10 16 | 704 | 0.0 | 0.4− | 2006 08 19 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1999 10 16 | 704 | 0.6+ | 0.1− | 2006 08 19 | 691 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 08 13 | 644 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2002 08 13 | 644 | 0.7− | 0.2− | 2006 08 29 | 703 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2002 08 13 | 644 | 0.4− | 0.5− | 2006 08 29 | 703 | 0.4− | 0.9− | | | | |
| 2002 08 30 | 644 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.9+ | 0.6+ | | | | |

**(136804)∗ 1997 $EQ_5$**

Discovered 1997 Mar. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 194.40501 | | (2000.0) | | | |
| $n$ | 0.25915042 | $\omega$ | 156.95438 | | −0.95684987 | −0.29054772 |
| $a$ | 2.4365095 | $\Omega$ | 6.16010 | | +0.25963049 | −0.86179713 |
| $e$ | 0.1090081 | $i$ | 2.40935 | | +0.13050033 | −0.41579771 |
| $P$ | 3.80 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.6+ | 0.2+ | 2002 08 18 | 644 | 0.6+ | 0.4+ | 2005 02 10 | 809 | 0.2+ | 0.3+ |
| 1997 03 04 | 691 | 0.5+ | 0.2+ | 2002 08 18 | 644 | 0.2+ | 0.2+ | 2005 02 10 | 809 | 0.0 | 0.5+ |
| 1997 03 04 | 691 | 0.4+ | 0.0 | 2002 08 18 | 644 | 0.4+ | 0.0 | 2005 02 10 | 809 | 0.4+ | 0.4+ |
| 1997 03 07 | 691 | 0.1− | 0.1+ | 2002 08 29 | 644 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.7− | 0.1− |
| 1997 03 07 | 691 | 0.3− | 0.2− | 2002 08 29 | 644 | 0.3+ | 0.3− | 2006 09 19 | 703 | 1.4+ | 0.8+ |
| 1997 03 07 | 691 | 0.1+ | 0.1− | 2002 08 29 | 644 | 0.0 | 0.3− | 2006 09 19 | 703 | (1.9+ | 1.8+) |
| 1997 03 13 | 691 | 0.9+ | 0.3− | 2002 09 04 | 644 | 0.1− | 0.6− | 2006 09 19 | 703 | (0.2+ | 1.7−) |
| 1997 03 13 | 691 | 0.5+ | 0.3− | 2002 09 04 | 644 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 1997 03 13 | 691 | 0.5+ | 0.1− | 2002 09 04 | 644 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 1997 03 14 | 691 | 0.6− | 0.2+ | 2002 09 15 | 644 | 0.0 | 0.8− | 2006 09 25 | G96 | 0.1− | 0.5− |
| 1997 03 14 | 691 | 0.0 | 0.3− | 2002 09 15 | 644 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.6+ | 0.4− |
| 1997 03 14 | 691 | 0.3− | 0.0 | 2003 11 20 | 695 | 0.5− | 0.1+ | 2006 10 16 | G96 | 0.6− | 1.0− |
| 1997 04 07 | 691 | 0.4− | 0.1− | 2003 11 20 | 695 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.8− |
| 1997 04 07 | 691 | 0.3− | 0.0 | 2003 12 22 | 704 | 0.3+ | 1.1− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 1997 04 07 | 691 | 0.7− | 0.1+ | 2003 12 22 | 704 | 0.1+ | 1.2− | 2006 10 16 | G96 | 0.3− | 0.2− |
| 1997 04 12 | 691 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.5+ | 0.4− | 2006 11 21 | G96 | 0.1− | 0.7− |
| 1997 04 12 | 691 | 0.2− | 0.1− | 2003 12 22 | 704 | 0.1+ | 0.9− | 2006 11 21 | G96 | 0.1− | 0.6− |
| 1997 04 12 | 691 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 1997 04 16 | 691 | 0.6− | 0.1− | 2003 12 27 | 704 | 0.0 | 0.9+ | 2006 11 21 | G96 | 0.5+ | 0.5− |
| 1997 04 16 | 691 | 0.2− | 0.0 | 2003 12 27 | 704 | 0.4+ | 1.1+ | | | | |
| 1997 04 16 | 691 | 0.5− | 0.2− | 2003 12 27 | 704 | 0.1+ | 0.4+ | | | | |

**(136805)∗ 1997 $EM_{30}$ = 2002 $RT_{146}$**

Discovered 1997 Mar. 13 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 39920)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.49263 | | (2000.0) | | | |
| $n$ | 0.25358879 | $\omega$ | 130.27590 | | +0.58780594 | +0.80900045 |
| $a$ | 2.4720050 | $\Omega$ | 175.72468 | | −0.74845724 | +0.54454696 |
| $e$ | 0.1420329 | $i$ | 1.20032 | | −0.30707644 | +0.22132979 |
| $P$ | 3.89 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 13 | 691 | 0.1− | 0.3− | 2002 10 08 | 291 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 1997 03 13 | 691 | 0.3+ | 0.5− | 2002 10 08 | 291 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 1997 03 13 | 691 | 0.1− | 0.3− | 2002 10 08 | 291 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 1997 03 14 | 691 | 0.5− | 0.5− | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 14 | 691 | 0.6− | 0.4− | 2003 12 21 | 645 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 1997 03 14 | 691 | 0.8− | 0.8− | 2005 04 17 | 691 | 0.4+ | 0.6+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 1998 09 12 | 691 | 0.3+ | 0.3− | 2005 04 17 | 691 | 0.5+ | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.6− |
| 1998 09 12 | 691 | 0.1− | 0.4− | 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 1998 09 12 | 691 | 0.1− | 0.2− | 2005 05 04 | 568 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 1998 09 18 | 691 | 0.4+ | 0.1− | 2005 05 04 | 568 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1− | 0.0 |
| 1998 09 18 | 691 | 0.5+ | 0.4− | 2005 05 04 | 568 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |
| 1998 09 18 | 691 | 0.3+ | 0.3− | 2005 05 05 | 568 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 09 11 | 644 | 0.8− | 1.2+ | 2005 06 13 | G96 | 0.0 | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 09 11 | 644 | 0.4− | 1.2+ | 2005 06 13 | G96 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 09 11 | 644 | 0.4− | 0.7− | 2005 06 13 | G96 | 0.6− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2002 09 13 | 644 | 0.6− | 0.6+ | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2002 09 13 | 644 | 0.9− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.5− | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.7+ | 2006 07 21 | G96 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2006 07 21 | G96 | 0.3− | 0.1− | | | | |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− | | | | |

**(136806)∗ 1997 EG$_{32}$**

Discovered 1997 Mar. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.42822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26374520 | $\omega$ | 80.91062 | | +0.06994721 | +0.99754830 | |
| $a$ | 2.4081286 | $\Omega$ | 193.10093 | | −0.91897999 | +0.06358558 | |
| $e$ | 0.1563170 | $i$ | 0.55240 | | −0.38805046 | +0.02922774 | |
| $P$ | 3.74 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 11 | 691 | 0.6+ | 0.1− | 1998 09 17 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.4− |
| 1997 03 11 | 691 | 0.1+ | 0.1+ | 1998 10 16 | 691 | 0.7+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 1997 03 11 | 691 | 0.0 | 0.1+ | 1998 10 16 | 691 | 1.0+ | 0.8− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 1997 03 15 | 691 | 0.3− | 0.2+ | 1998 10 16 | 691 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 1997 03 15 | 691 | 0.0 | 0.1+ | 1998 10 28 | 691 | 0.1− | 0.4− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 1997 03 15 | 691 | 0.2+ | 0.5− | 1998 10 28 | 691 | 0.4− | 0.5− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 1997 04 02 | 691 | 0.1− | 0.3− | 1998 10 28 | 691 | 1.2− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 1997 04 02 | 691 | 1.1+ | 0.6− | 2001 05 02 | 691 | 0.2+ | 0.4− | 2006 11 23 | 291 | 0.1− | 0.3+ |
| 1997 04 02 | 691 | (2.9− | 0.0 ) | 2001 05 02 | 691 | 0.0 | 0.7+ | 2006 11 23 | 291 | 0.2− | 0.2+ |
| 1997 04 07 | 691 | 0.1− | 0.3− | 2001 05 02 | 691 | 0.1− | 0.8+ | 2006 11 23 | 291 | 0.1− | 0.3+ |
| 1997 04 07 | 691 | 0.7− | 0.5− | 2001 05 30 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 1997 04 07 | 691 | 0.0 | 0.6− | 2001 05 30 | 691 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 1997 04 12 | 691 | 0.5− | 0.5− | 2001 05 30 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 1997 04 12 | 691 | 0.5− | 0.2− | 2004 01 28 | 691 | 0.5+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 1997 04 12 | 691 | 0.7− | 0.5− | 2004 01 28 | 691 | 0.2− | 0.8+ | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 1997 04 16 | 691 | 0.3− | 0.3− | 2004 01 28 | 691 | 0.4+ | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 1997 04 16 | 691 | 0.5− | 0.8− | 2006 10 19 | G96 | 0.2− | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 1997 04 16 | 691 | 0.6− | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.5− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 1998 09 17 | 691 | 0.3+ | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.9− | | | | |
| 1998 09 17 | 691 | 0.2+ | 0.5− | 2006 10 19 | G96 | 0.3+ | 0.7− | | | | |

**(136807)∗ 1997 EQ$_{38}$**

Discovered 1997 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.00987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16772770 | $\omega$ | 199.92707 | | −0.97689321 | −0.21327934 | |
| $a$ | 3.2563633 | $\Omega$ | 327.74844 | | +0.19944019 | −0.88639312 | |
| $e$ | 0.2573450 | $i$ | 1.48627 | | +0.07683273 | −0.41087609 | |
| $P$ | 5.88 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 30 | 098 | 0.0 | 0.2+ | 2001 12 19 | 704 | 0.1+ | 0.3+ | 2003 03 09 | 704 | 0.7+ | 0.0 |
| 1997 01 31 | 098 | 1.6− | 0.2− | 2001 12 19 | 704 | 0.2− | 0.6+ | 2003 03 09 | 704 | 0.5+ | 0.5− |
| 1997 02 07 | 098 | 1.6− | 1.3− | 2002 01 07 | 691 | 0.3− | 0.2− | 2003 03 13 | 644 | 0.2+ | 0.7+ |
| 1997 02 07 | 098 | 0.4− | 0.9− | 2002 01 07 | 691 | 0.2− | 0.1− | 2003 03 13 | 644 | 0.3+ | 0.7+ |
| 1997 02 07 | 098 | 0.5− | 0.1+ | 2002 01 07 | 691 | 0.2− | 0.2− | 2003 03 13 | 644 | 0.4+ | 1.0+ |
| 1997 02 07 | 098 | 0.8− | 0.3+ | 2003 01 01 | 291 | 0.3− | 0.3+ | 2003 03 21 | 608 | 1.2+ | 1.1+ |
| 1997 02 08 | 910 | (3.3− | 1.1+) | 2003 01 01 | 291 | 0.4− | 0.3+ | 2003 03 21 | 608 | 0.7+ | 0.9+ |
| 1997 02 08 | 910 | (3.2− | 1.1+) | 2003 01 01 | 291 | 0.4− | 0.4+ | 2003 03 21 | 608 | 0.7+ | 0.6+ |
| 1997 02 08 | 910 | (3.3− | 1.0+) | 2003 01 01 | 704 | 0.3− | 0.3+ | 2003 03 25 | 608 | 1.0+ | 0.2+ |
| 1997 03 03 | 098 | (0.3− | 2.2−) | 2003 01 01 | 704 | 0.6− | 0.4+ | 2003 03 25 | 608 | 0.9+ | 0.7+ |
| 1997 03 03 | 098 | 0.1+ | 1.6− | 2003 01 01 | 704 | 0.8− | 1.2− | 2003 03 25 | 608 | 1.1+ | 0.8+ |
| 1997 03 05 | 704 | (2.8+ | 1.0−) | 2003 01 04 | 704 | 0.5+ | 0.2+ | 2003 03 26 | 699 | 0.2− | 0.1− |
| 1997 03 05 | 704 | 1.2+ | 0.4+ | 2003 01 04 | 704 | 1.2+ | 0.6+ | 2003 03 26 | 699 | 0.1− | 0.3+ |
| 1997 03 06 | 704 | 1.3+ | 0.1− | 2003 01 04 | 704 | 0.2+ | 0.1+ | 2003 03 26 | 699 | 0.3− | 0.6+ |
| 1997 03 06 | 704 | 1.1+ | 0.0 | 2003 01 04 | 704 | 0.3+ | 0.0 | 2003 03 26 | 699 | 0.3+ | 0.2− |
| 1997 03 07 | 098 | 0.0 | 0.0 | 2003 01 04 | 704 | 1.2+ | 0.6+ | 2003 03 27 | 704 | 0.6+ | 0.1+ |
| 1997 03 07 | 098 | 1.2− | 0.5− | 2003 01 08 | 704 | 1.0− | 0.4− | 2003 03 27 | 704 | 0.1+ | 0.9− |
| 1997 03 10 | 098 | 0.2+ | 0.4− | 2003 01 08 | 704 | 0.9+ | 0.4− | 2003 03 27 | 704 | 0.2+ | 0.4− |
| 1997 03 10 | 098 | 0.3− | 1.6− | 2003 01 08 | 704 | (1.2+ | 1.8−) | 2003 03 27 | 704 | 0.2− | 0.2+ |
| 1997 03 12 | 098 | 1.2+ | 1.2− | 2003 01 28 | 291 | 0.5− | 0.2+ | 2003 04 01 | 704 | 0.5+ | 0.4− |
| 1997 03 12 | 098 | 1.9− | 1.2− | 2003 01 28 | 291 | 0.4− | 0.1+ | 2003 04 01 | 704 | 0.4+ | 0.8+ |
| 2001 10 21 | 704 | 0.2+ | 0.4− | 2003 01 28 | 291 | 0.5− | 0.4+ | 2003 04 01 | 704 | 0.1+ | 0.9+ |
| 2001 10 21 | 704 | 0.6+ | 0.7− | 2003 01 31 | 699 | 0.0 | 0.5− | 2003 04 01 | 704 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 1.4+ | 0.7− | 2003 01 31 | 704 | 1.0+ | 0.5− | 2003 04 01 | 704 | 0.4− | 0.4+ |
| 2001 10 21 | 704 | 0.4− | 0.5+ | 2003 01 31 | 699 | 0.1+ | 0.6− | 2003 04 03 | 699 | 0.6− | 0.4+ |
| 2001 11 16 | 644 | 0.4− | 0.5+ | 2003 01 31 | 704 | 1.0+ | 0.3+ | 2003 04 03 | 699 | 1.3− | 0.0 |
| 2001 11 16 | 644 | 0.0 | 1.0+ | 2003 01 31 | 699 | 0.3− | 0.2+ | 2003 04 03 | 699 | 0.0 | 0.1− |
| 2001 11 16 | 644 | 0.4+ | 0.2+ | 2003 01 31 | 699 | 0.4− | 0.0 | 2003 04 03 | 699 | 0.6− | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.5− | 2003 01 31 | 704 | 0.1− | 0.2− | 2003 04 29 | 704 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.6+ | 0.8− | 2003 02 03 | 699 | 0.3+ | 0.3+ | 2003 04 29 | 704 | 0.6+ | 0.6+ |
| 2001 11 19 | 704 | 0.1+ | 0.5− | 2003 02 03 | 699 | 0.1− | 0.2+ | 2003 04 29 | 704 | 1.4+ | 0.2+ |
| 2001 11 19 | 704 | 1.3+ | 0.6+ | 2003 02 03 | 699 | 0.0 | 0.1− | 2003 04 29 | 704 | 0.3+ | 0.2− |
| 2001 11 19 | 704 | 0.5+ | 0.1+ | 2003 02 03 | 699 | 0.1− | 0.7− | 2006 09 15 | 691 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.9− | 0.5− | 2003 02 22 | 333 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.3− | 2003 02 22 | 333 | 0.5− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.7− | 0.3− | 2003 02 22 | 333 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.5− | 0.2+ |
| 2001 11 21 | 704 | 0.5− | 0.7− | 2003 02 22 | 333 | 0.5− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.4− | 0.2+ | 2003 02 22 | 333 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2001 12 15 | 704 | 0.5− | 0.2+ | 2003 02 22 | 333 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.0 | 0.5+ |
| 2001 12 15 | 704 | 0.5+ | 0.5+ | 2003 02 23 | 699 | 0.2+ | 0.3+ | 2006 09 24 | 691 | 0.4− | 0.1+ |
| 2001 12 15 | 704 | 0.1+ | 0.7+ | 2003 02 23 | 699 | 0.2− | 0.2− | 2006 09 24 | 691 | 0.2− | 0.1+ |
| 2001 12 15 | 704 | 1.1+ | 0.1− | 2003 02 23 | 699 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2001 12 15 | 704 | 0.2+ | 0.2− | 2003 02 23 | 699 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2001 12 18 | 704 | 0.0 | 0.1+ | 2003 03 05 | 704 | 0.1− | 1.1− | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2001 12 18 | 704 | (1.6+ | 0.9+) | 2003 03 05 | 704 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 2001 12 18 | 704 | 0.3+ | 0.1+ | 2003 03 05 | 704 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 2001 12 18 | 704 | 0.8+ | 0.2+ | 2003 03 05 | 704 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2001 12 18 | 704 | 0.9+ | 0.4+ | 2003 03 06 | 699 | 0.9+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 644 | 0.8− | 0.1+ | 2003 03 06 | 699 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.2+ |
| 2001 12 19 | 704 | 1.0+ | 0.5+ | 2003 03 06 | 699 | 1.1+ | 0.1− | 2006 10 19 | G96 | 0.3− | 0.2+ |
| 2001 12 19 | 644 | 0.3− | 0.4− | 2003 03 06 | 699 | 1.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 12 19 | 644 | 0.3− | 0.4+ | 2003 03 06 | 644 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.5+ | 0.1− |
| 2001 12 19 | 704 | 1.2+ | 0.1− | 2003 03 06 | 644 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2003 03 06 | 644 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.3− | 2003 03 09 | 704 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 12 19 | 704 | 0.3− | 0.5+ | 2003 03 09 | 704 | 0.7+ | 0.2− | | | | |
| 2001 12 19 | 704 | 0.5− | 0.2− | 2003 03 09 | 704 | 0.3+ | 0.1− | | | | |

**(136808)∗ 1997 EN$_{47}$ = 2001 KT$_4$**

Discovered 1997 Mar. 12 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 12857)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.80540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25984853 | $\omega$ | 356.80811 | | −0.95248571 | +0.30433852 | |
| $a$ | 2.4321436 | $\Omega$ | 200.92279 | | −0.27868707 | −0.88697653 | |
| $e$ | 0.1339435 | $i$ | 1.95912 | | −0.12290034 | −0.34734810 | |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 22 | 691 | 0.3+ | 0.8+ | 2001 05 24 | 704 | 0.1− | 0.6+ | 2006 09 25 | 691 | 0.4+ | 0.2+ |
| 1995 12 22 | 691 | 0.0 | 0.8+ | 2001 05 24 | 704 | 0.0 | 1.2+ | 2006 09 29 | 691 | 0.0 | 0.0 |
| 1995 12 22 | 691 | 0.6− | 0.4+ | 2001 05 24 | 704 | 0.1+ | 0.0 | 2006 09 29 | 691 | 0.3+ | 0.1− |
| 1997 03 12 | 809 | (2.9+ | 2.0−) | 2001 05 24 | 704 | 0.3− | 0.1− | 2006 09 29 | 691 | 0.3− | 0.9+ |
| 1997 03 12 | 809 | (3.8+ | 1.2−) | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 1997 03 12 | 809 | (3.4+ | 2.5−) | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 1997 03 13 | 809 | (3.7+ | 1.1−) | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 1997 03 13 | 809 | (4.2+ | 1.7−) | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1997 03 13 | 809 | (3.2+ | 3.2−) | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 1997 04 01 | 809 | (1.3+ | 2.9+) | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 1997 04 01 | 809 | (1.0+ | 2.3+) | 2005 01 19 | 809 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.2− |
| 1997 04 01 | 809 | 0.2+ | 1.5+ | 2005 01 19 | 809 | 1.4+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 2001 05 17 | 704 | 0.0 | 0.9+ | 2005 01 19 | 809 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 05 17 | 704 | 0.0 | 0.6+ | 2005 02 10 | 809 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.3− |
| 2001 05 17 | 704 | 0.0 | 0.2− | 2005 02 10 | 809 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2001 05 17 | 704 | 0.1− | 0.2+ | 2005 02 10 | 809 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2001 05 17 | 704 | 0.0 | 0.7+ | 2005 02 10 | 809 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.2− |
| 2001 05 21 | 704 | 0.7+ | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 05 21 | 704 | 0.9− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2001 05 21 | 704 | 1.0+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.4− | 0.4− |
| 2001 05 21 | 704 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.4− | 0.1+ |
| 2001 05 21 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.5− | 0.3− |

**(136809)∗ 1997 GB$_1$ = 1999 XF$_{249}$**

Discovered 1997 Apr. 2 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 4346)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.11962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27661146 | $\omega$ | 233.43073 | | +0.39655336 | −0.91782112 | |
| $a$ | 2.3328632 | $\Omega$ | 193.24471 | | +0.86618883 | +0.38083845 | |
| $e$ | 0.1744682 | $i$ | 4.68266 | | +0.30407621 | +0.11210029 | |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 02 | 691 | 0.1− | 0.5− | 2006 09 30 | G96 | 0.2− | 0.6− | 2006 11 14 | 704 | 0.1+ | 0.8− |
| 1997 04 02 | 691 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.9+ | 0.2+ |
| 1997 04 02 | 691 | 0.8− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 11 17 | 704 | 0.3− | 0.1− |
| 1997 04 07 | 691 | 0.1+ | 0.6− | 2006 10 12 | 691 | 0.4+ | 0.2− | 2006 11 17 | 704 | 0.4− | 0.1− |
| 1997 04 07 | 691 | 0.3+ | 0.3− | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.4− |
| 1997 04 07 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.2− |
| 1997 04 12 | 691 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 1997 04 12 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2− | 0.8− | 2006 11 19 | 704 | 0.6− | 0.2+ |
| 1997 04 12 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.6− |
| 1999 12 06 | 704 | 0.2− | 1.0− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 1.2− | 0.2+ |
| 1999 12 06 | 704 | 0.3− | 0.8− | 2006 10 18 | 691 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.4− | 0.2− |
| 1999 12 06 | 704 | 0.2− | 1.0− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.6− | 0.0 |
| 1999 12 14 | 704 | 0.8+ | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.4− | 0.5+ |
| 1999 12 14 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.6− | 0.3+ |
| 1999 12 14 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.4− | 0.6+ |
| 2000 01 05 | 704 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.6+ | 1.4+ |
| 2000 01 05 | 704 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 22 | 683 | 0.0 | 0.1+ |
| 2000 01 05 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 22 | 683 | 0.1+ | 0.1+ |
| 2000 01 05 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 22 | 683 | (1.5+ | 1.2+) |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.5− | 0.1+ | 2006 11 23 | 683 | 0.8+ | 0.5+ |
| 2002 08 26 | 644 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.5− | 1.4− | 2006 11 23 | 683 | (0.4+ | 2.4+) |
| 2002 08 26 | 644 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.4− | 0.7− | 2006 11 23 | 683 | 0.3+ | 0.7+ |
| 2002 08 27 | 644 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.1+ | 0.5+ | 2006 11 25 | 683 | 2.2+ | 0.5− |
| 2002 08 27 | 644 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 25 | 683 | (3.9+ | 0.9−) |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 25 | 683 | 1.3+ | 0.1+ |
| 2004 03 12 | 644 | 0.7+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.0 | 0.9+ |
| 2004 03 12 | 644 | 0.7+ | 1.1+ | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 25 | 704 | 0.4+ | 0.2− |
| 2004 03 12 | 644 | 0.6+ | 1.3+ | 2006 11 10 | 644 | 0.3+ | 0.1− | 2006 11 25 | 704 | 1.1+ | 0.3− |
| 2004 03 16 | 704 | (3.5+ | 0.2−) | 2006 11 10 | 644 | 0.8+ | 0.2− | 2006 11 25 | 704 | 0.8+ | 0.4+ |
| 2004 03 16 | 704 | (0.8+ | 1.8+) | 2006 11 13 | 703 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.1− | 0.4+ |
| 2004 03 16 | 704 | 0.2+ | 1.2+ | 2006 11 13 | 703 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.2+ | 0.2− |
| 2006 07 22 | G96 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.6+ | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.3+ |
| 2006 07 22 | G96 | 0.2− | 0.7− | 2006 11 13 | 703 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.1− |
| 2006 07 22 | G96 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.8− | 0.7+ | 2006 11 28 | 704 | 0.6− | 0.0 |
| 2006 07 22 | G96 | 0.3− | 0.6− | 2006 11 14 | 704 | 0.2− | 1.2+ | | | | |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 14 | 704 | 0.4+ | 0.5+ | | | | |

**(136810)∗ 1997 GZ$_8$**

Discovered 1997 Apr. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.93743 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36924915 | $\omega$ | 204.58222 | | +0.78099248 | −0.61768707 | |
| $a$ | 1.9242273 | $\Omega$ | 194.72332 | | +0.61607326 | +0.78619503 | |
| $e$ | 0.0897666 | $i$ | 21.28726 | | +0.10249138 | −0.01897504 | |
| $P$ | 2.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.1+ | 0.6− | 2005 04 09 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.8− |
| 1997 04 03 | 704 | 0.3− | 0.9− | 2005 04 09 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 699 | 0.4+ | 0.3+ |
| 1997 04 06 | 704 | 0.4− | 0.1+ | 2005 04 12 | 704 | 1.0+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.5− |
| 1997 04 06 | 704 | 0.6− | 0.7− | 2005 04 12 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 1997 04 07 | 704 | 0.1+ | 0.0 | 2005 04 12 | 704 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.5+ | 0.3+ |
| 1997 04 07 | 704 | 1.0+ | 1.5+ | 2005 04 12 | 704 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2003 09 20 | 704 | 0.8− | 0.4+ | 2005 05 08 | 703 | 0.1+ | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2003 09 20 | 704 | 0.6+ | 1.5+ | 2005 05 08 | 703 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2003 09 20 | 704 | 0.2− | 0.8+ | 2005 05 08 | 703 | 0.6− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2003 11 20 | 691 | 0.2+ | 0.2+ | 2005 05 08 | 703 | (2.1− | 0.3−) | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2003 11 20 | 691 | 0.2− | 0.2+ | 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 2003 11 20 | 691 | 0.1+ | 0.3+ | 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.9+ |
| 2005 03 09 | 691 | 0.1− | 0.1+ | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.5+ |
| 2005 03 09 | 691 | 0.2− | 0.0 | 2006 08 19 | 291 | 0.3− | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.5+ |
| 2005 03 09 | 691 | 0.0 | 0.2+ | 2006 08 19 | 291 | 0.5− | 0.2− | 2006 10 29 | 106 | 0.3+ | 0.2+ |
| 2005 03 17 | 704 | 1.3+ | 0.6+ | 2006 08 19 | 291 | 0.2− | 0.2+ | 2006 10 30 | 106 | 0.6− | 0.4+ |
| 2005 03 17 | 704 | 0.8+ | 0.7− | 2006 08 28 | 703 | 0.1+ | 0.2+ | 2006 10 30 | 106 | 0.1+ | 0.6+ |
| 2005 03 17 | 704 | 1.1+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 10 30 | 106 | 1.2+ | 0.1− |
| 2005 03 17 | 704 | 0.1− | 0.6+ | 2006 08 28 | 703 | (2.0+ | 0.2−) | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2005 04 02 | 644 | 0.0 | 0.4+ | 2006 08 28 | 703 | 1.3− | 1.5+ | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2005 04 02 | 644 | 0.1+ | 0.6+ | 2006 09 21 | 683 | (2.0− | 0.9+) | 2006 11 07 | 644 | 0.4+ | 0.1− |
| 2005 04 02 | 644 | 0.0 | 0.7+ | 2006 09 21 | 683 | (2.3− | 2.1+) | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2005 04 04 | 704 | 0.2+ | 0.2− | 2006 09 21 | 683 | (1.7− | 0.6+) | 2006 11 17 | 703 | 0.6− | 0.0 |
| 2005 04 04 | 704 | 1.1− | 0.2+ | 2006 09 26 | 704 | 0.8+ | 1.0+ | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2005 04 04 | 704 | 0.3− | 0.9+ | 2006 09 26 | 704 | 0.9+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2005 04 05 | G96 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.1− | 2006 11 24 | 703 | 0.1− | 0.4+ |
| 2005 04 05 | G96 | 0.5− | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.6+ | 2006 11 24 | 703 | 0.1+ | 0.2+ |
| 2005 04 05 | G96 | 0.3− | 0.2+ | 2006 09 30 | 699 | 0.2+ | 0.3+ | 2006 11 24 | 703 | 0.1− | 0.2+ |
| 2005 04 05 | G96 | 0.4− | 0.0 | 2006 09 30 | 699 | 0.2− | 0.8+ | 2006 11 24 | 703 | 0.1+ | 0.8+ |
| 2005 04 09 | 704 | (1.7+ | 0.3−) | 2006 09 30 | 699 | 0.2+ | 1.0+ | | | | |
| 2005 04 09 | 704 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.5− | | | | |

**(136811)∗ 1997 GG$_{13}$ = 2001 MR = 2002 SV$_5$**

Discovered 1997 Apr. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37063, *MPO* 39920)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.47509 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27179592 | $\omega$ | 311.69241 | | −0.84231438 | −0.53819942 | |
| $a$ | 2.3603375 | $\Omega$ | 195.81695 | | +0.52079620 | −0.79878158 | |
| $e$ | 0.0514320 | $i$ | 6.13266 | | +0.13884455 | −0.26886682 | |
| $P$ | 3.63 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.6+ | 0.4− | 2002 10 07 | 704 | 0.5− | 0.1+ | 2004 02 23 | 704 | 0.8+ | 0.7+ |
| 1997 04 03 | 704 | 0.5+ | 0.3− | 2002 10 07 | 704 | 1.1− | 0.2− | 2004 02 25 | 683 | 0.3− | 0.7− |
| 1997 04 05 | 704 | 0.2− | 1.1+ | 2002 10 11 | 704 | 0.2− | 1.1+ | 2004 02 25 | 683 | 0.6+ | 0.2− |
| 1997 04 05 | 704 | 0.5+ | 0.0 | 2002 10 11 | 704 | 0.3+ | 1.5+ | 2004 02 25 | 683 | 0.8+ | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 06 | 704 | 0.2− | 0.6− | 2002 10 11 | 704 | 0.8− | 1.4+ | 2004 02 26 | 704 | 0.4+ | 0.0 |
| 1997 04 06 | 704 | 0.5− | 0.3− | 2002 10 11 | 704 | 0.5+ | 0.7+ | 2004 02 26 | 704 | 0.2− | 0.3+ |
| 1997 04 07 | 704 | 0.1+ | 1.5+ | 2004 01 29 | 704 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.5+ | 0.1+ |
| 1997 04 07 | 704 | 0.8+ | 0.9+ | 2004 01 29 | 704 | 0.4− | 0.2+ | 2004 03 15 | 704 | 0.2+ | 1.4+ |
| 2001 06 17 | 644 | (0.1− | 2.5+) | 2004 01 29 | 704 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.5+ |
| 2001 06 17 | 644 | (0.3− | 2.3+) | 2004 01 29 | 699 | 1.2+ | 0.4+ | 2004 03 15 | 704 | 0.5+ | 1.0+ |
| 2001 06 17 | 644 | (0.1− | 2.3+) | 2004 01 29 | 699 | 0.3+ | 0.6+ | 2004 03 15 | 704 | 0.5+ | 0.4+ |
| 2001 06 18 | 644 | 0.5+ | 0.4+ | 2004 01 29 | 699 | 0.4+ | 0.2− | 2004 03 15 | 704 | 0.3+ | 0.7+ |
| 2001 06 18 | 644 | 0.3− | 0.8+ | 2004 01 29 | 699 | 0.8+ | 0.2+ | 2005 06 15 | 691 | 0.1− | 0.4+ |
| 2001 06 18 | 644 | 0.3− | 0.6+ | 2004 01 30 | 699 | 0.4+ | 1.2+ | 2005 06 15 | 691 | 0.1+ | 0.5+ |
| 2002 09 27 | 644 | 0.4− | 1.2+ | 2004 01 30 | 699 | (1.6+ | 0.6+) | 2005 06 15 | 691 | 0.1− | 0.9+ |
| 2002 09 27 | 644 | 0.4− | 1.1+ | 2004 01 30 | 699 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.6+ | 0.3− |
| 2002 09 27 | 644 | 0.4− | 1.0+ | 2004 01 30 | 699 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.4+ | 0.4− |
| 2002 09 28 | 644 | 0.5− | 1.0+ | 2004 02 12 | 644 | 0.4− | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2002 09 28 | 644 | 0.3− | 0.7+ | 2004 02 12 | 644 | 0.4− | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2002 09 28 | 644 | 0.6− | 1.1+ | 2004 02 12 | 644 | 0.1− | 0.8+ | 2006 11 14 | 704 | (1.0− | 3.9+) |
| 2002 10 02 | 704 | 0.1+ | 0.8+ | 2004 02 15 | 703 | 1.4− | 0.2− | 2006 11 14 | 704 | 1.0− | 0.5− |
| 2002 10 02 | 704 | 0.0 | 0.9+ | 2004 02 15 | 703 | 0.8− | 0.1− | 2006 11 14 | 704 | 1.4+ | 1.3+ |
| 2002 10 02 | 704 | 0.3+ | 0.3+ | 2004 02 15 | 703 | 1.3− | 0.2+ | 2006 11 14 | 704 | 1.4− | 0.7+ |
| 2002 10 02 | 704 | (0.2− | 2.0+) | 2004 02 15 | 703 | (1.9− | 0.7−) | 2006 11 17 | 704 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.3− | 2004 02 17 | 608 | 0.1− | 0.5− | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.4+ | 1.4+ | 2004 02 17 | 608 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 1.1+ | 0.6+ | 2004 02 17 | 608 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.6+ | 0.4− | 2004 02 19 | 704 | 0.8+ | 0.8+ | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2002 10 05 | 704 | 0.7− | 0.5+ | 2004 02 19 | 704 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2002 10 05 | 704 | 0.0 | 1.3+ | 2004 02 19 | 704 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2002 10 05 | 704 | 0.3− | 0.4+ | 2004 02 19 | 704 | 0.4− | 0.5+ | 2006 11 24 | G96 | 0.6+ | 0.2− |
| 2002 10 05 | 704 | 0.3− | 0.3+ | 2004 02 23 | 704 | 1.3+ | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 10 06 | 291 | 0.5− | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.7+ | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2002 10 06 | 291 | 0.3− | 0.2− | 2004 02 23 | 704 | 1.1+ | 0.8+ | 2006 11 28 | 704 | 0.1− | 0.7+ |
| 2002 10 06 | 291 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.2− | 1.1+ | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2002 10 07 | 704 | 0.2+ | 0.9− | 2004 02 23 | 704 | 1.1− | 0.6− | 2006 11 28 | 704 | 0.7+ | 0.1− |
| 2002 10 07 | 704 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.6− | 1.0− | 2006 11 28 | 704 | 0.4− | 0.1− |

**(136812)∗ 1997 $GH_{17}$ = 2004 $BW_{140}$**

Discovered 1997 Apr. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68512)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.51860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26505989 | $\omega$ | 300.18020 | | −0.61643659 | +0.78692606 | |
| $a$ | 2.4001592 | $\Omega$ | 291.73790 | | −0.71188911 | −0.57187448 | |
| $e$ | 0.1716319 | $i$ | 1.69321 | | −0.33648155 | −0.23174763 | |
| $P$ | 3.72 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.2− | 0.3+ | 2005 06 29 | 644 | 0.1+ | 0.3+ | 2005 07 27 | 644 | 0.1+ | 0.1+ |
| 1997 04 03 | 704 | 0.3− | 0.6− | 2005 06 29 | 644 | 0.1+ | 0.1+ | 2005 08 31 | 691 | 0.2+ | 0.4+ |
| 1997 04 05 | 704 | 1.7+ | 1.3− | 2005 06 29 | 644 | 0.1+ | 0.1+ | 2005 08 31 | 691 | 0.1+ | 0.2+ |
| 1997 04 05 | 704 | 0.9− | 0.8+ | 2005 06 30 | 691 | (0.7− | 1.7+) | 2005 08 31 | 691 | 0.0 | 0.1+ |
| 1997 04 07 | 704 | 0.8+ | 1.8+ | 2005 06 30 | 691 | 0.1− | 0.2+ | 2005 09 01 | 291 | 0.4− | 0.6+ |
| 1997 04 07 | 704 | 0.5− | 0.4+ | 2005 06 30 | 691 | 0.1+ | 0.4+ | 2005 09 01 | 291 | 0.3− | 0.6+ |
| 2004 01 19 | 691 | 0.1− | 0.3+ | 2005 07 05 | 644 | 0.3− | 0.6+ | 2005 09 01 | 291 | 0.8− | 0.5+ |
| 2004 01 19 | 691 | 0.0 | 0.3+ | 2005 07 05 | 644 | 0.6− | 0.8+ | 2006 10 21 | 691 | 0.4+ | 0.0 |
| 2004 01 19 | 691 | 0.1− | 0.4+ | 2005 07 05 | 644 | 0.5+ | 0.5+ | 2006 10 21 | 691 | 0.3+ | 0.3+ |
| 2004 01 30 | 691 | 0.1+ | 0.4+ | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.4+ |
| 2004 01 30 | 691 | 0.2+ | 0.6+ | 2005 07 05 | 644 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2004 01 30 | 691 | 0.3+ | 0.4+ | 2005 07 05 | 644 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2004 02 14 | 691 | 0.3+ | 0.4+ | 2005 07 11 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2004 02 14 | 691 | 0.1+ | 0.4+ | 2005 07 11 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 02 14 | 691 | 0.2+ | 0.4+ | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2004 04 13 | 645 | 0.1+ | 0.1+ | 2005 07 15 | G96 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2004 04 13 | 645 | 0.0 | 0.1+ | 2005 07 15 | G96 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2005 06 13 | G96 | 0.1+ | 0.2− | 2005 07 15 | G96 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.5− | 0.1− |
| 2005 06 13 | G96 | 0.0 | 0.0 | 2005 07 15 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2005 06 13 | G96 | 0.1+ | 0.0 | 2005 07 27 | 644 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2005 06 13 | G96 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.1+ | 0.1+ | | | | |

**(136813)∗ 1997 $GM_{35}$ = 2004 $DE_{10}$**

Discovered 1997 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 60488)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.90109 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27183383 | $\omega$ | 39.94465 | | −0.99578972 | +0.08711340 | |
| $a$ | 2.3601180 | $\Omega$ | 145.02158 | | −0.09153822 | −0.92850178 | |
| $e$ | 0.1455503 | $i$ | 2.85286 | | −0.00485707 | −0.36096496 | |
| $P$ | 3.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 06 | 704 | 0.3− | 0.9+ | 2004 03 14 | 703 | 0.3+ | 0.6− | 2004 04 09 | 644 | 0.1+ | 0.1+ |
| 1997 04 06 | 704 | 0.4+ | 0.6− | 2004 03 14 | 703 | 0.2− | 0.5+ | 2004 04 09 | 644 | 0.0 | 0.1+ |
| 1997 04 11 | 704 | 1.0+ | 0.4− | 2004 03 14 | 703 | 0.4+ | 0.1+ | 2004 04 09 | 644 | 0.2− | 0.3− |
| 1997 04 11 | 704 | 0.4+ | 0.1+ | 2004 03 14 | 691 | 0.1− | 0.2+ | 2004 04 12 | 703 | (2.1− | 1.1−) |
| 1997 04 30 | 704 | 0.3− | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2004 04 12 | 703 | 0.4− | 0.5+ |
| 1997 04 30 | 704 | 0.4+ | 0.1− | 2004 03 15 | 704 | (0.2− | 1.8+) | 2004 04 12 | 703 | 0.4− | 1.2− |
| 1997 04 30 | 704 | 0.2− | 0.8+ | 2004 03 15 | 704 | (0.8+ | 1.7+) | 2004 04 12 | 703 | 1.0− | 0.5+ |
| 1997 04 30 | 704 | 0.7− | 0.7+ | 2004 03 15 | 704 | (0.0 | 2.4+) | 2005 07 28 | 644 | 0.2− | 0.5+ |
| 1997 04 30 | 704 | 0.2+ | 0.2+ | 2004 03 15 | 704 | (0.2+ | 2.2+) | 2005 07 28 | 644 | 0.3− | 0.5+ |
| 1997 04 30 | 704 | 0.4+ | 0.4− | 2004 03 15 | 704 | (0.3− | 1.7+) | 2005 07 28 | 644 | 0.0 | 0.4+ |
| 1997 04 30 | 704 | (3.1− | 0.6−) | 2004 03 19 | 704 | 0.7+ | 0.2+ | 2005 08 04 | 644 | 0.1− | 0.3+ |
| 1997 04 30 | 704 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.1+ | 0.5− | 2005 08 04 | 644 | 0.2− | 0.5+ |
| 1997 05 01 | 704 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.7− | 2005 08 04 | 644 | 0.1+ | 0.6+ |
| 1997 05 01 | 704 | 0.5+ | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.1+ | 2005 08 05 | 644 | 0.2− | 0.4+ |
| 1997 05 01 | 704 | 0.5− | 0.4+ | 2004 03 19 | 704 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.2− | 0.5+ |
| 1997 05 01 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 699 | 0.4+ | 0.1+ | 2005 08 05 | 644 | 0.1− | 0.7+ |
| 2004 02 14 | 703 | (4.0+ | 1.5+) | 2004 03 20 | 699 | 0.1+ | 0.2− | 2005 08 27 | 644 | 0.1− | 0.6+ |
| 2004 02 14 | 703 | 1.1− | 0.6+ | 2004 03 20 | 699 | 0.3+ | 0.0 | 2005 08 27 | 644 | 0.1− | 0.4+ |
| 2004 02 14 | 703 | 1.1+ | 0.0 | 2004 03 20 | 699 | 0.2+ | 0.2− | 2005 08 27 | 644 | 0.4− | 0.3+ |
| 2004 02 14 | 703 | 0.4+ | 0.5− | 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.3− | 0.1+ |
| 2004 02 16 | 333 | 1.1− | 0.3+ | 2004 03 21 | 691 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.5− | 0.2+ |
| 2004 02 16 | 333 | 0.2+ | 0.1− | 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.1+ | 0.0 |
| 2004 02 16 | 333 | 0.8+ | 0.4− | 2004 03 22 | 704 | 0.8+ | 0.4− | 2006 11 02 | G96 | 1.0− | 0.1− |
| 2004 02 18 | 704 | 0.4+ | 0.6+ | 2004 03 22 | 704 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2004 02 18 | 704 | 0.6+ | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2004 02 18 | 704 | 0.6+ | 0.4+ | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2004 02 18 | 704 | 0.4+ | 0.1− | 2004 03 22 | 704 | 0.3− | 0.3+ | 2006 11 24 | 691 | 0.2+ | 0.3+ |
| 2004 02 22 | 333 | 0.8+ | 0.9− | 2004 03 28 | 691 | 0.3− | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2004 02 22 | 333 | 0.2− | 0.0 | 2004 03 28 | 691 | 0.4− | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.3+ |
| 2004 02 22 | 333 | 0.1+ | 0.1+ | 2004 03 28 | 691 | 0.5− | 0.1+ | 2006 12 01 | G96 | 0.9− | 0.2− |
| 2004 03 10 | 608 | 0.3− | 0.4− | 2004 03 28 | 704 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.5− | 0.0 |
| 2004 03 10 | 608 | 0.8− | 0.2− | 2004 03 28 | 704 | 0.2− | 0.7+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2004 03 10 | 608 | 0.4+ | 0.0 | 2004 03 28 | 704 | 1.4+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2004 03 14 | 703 | 0.3+ | 0.4− | 2004 03 28 | 704 | (0.1+ | 1.7+) | | | | |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.6+ | | | | |

**(136814)∗ 1997 $HB_3$ = 2001 $HN_{51}$**

Discovered 1997 Apr. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 12859)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.84274 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25501247 | $\omega$ | 38.30788 | | −0.32057932 | +0.94719487 | |
| $a$ | 2.4627960 | $\Omega$ | 212.99590 | | −0.87225336 | −0.29813166 | |
| $e$ | 0.1549674 | $i$ | 0.74971 | | −0.36932772 | −0.11806518 | |
| $P$ | 3.86 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 28 | 691 | 0.1+ | 0.3− | 2001 04 23 | 704 | 0.5− | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 1997 04 28 | 691 | 0.1+ | 0.4− | 2001 04 26 | 691 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.5+ | 0.2− |
| 1997 04 28 | 691 | 0.1+ | 0.3− | 2001 04 26 | 691 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 30 | 691 | 0.3− | 0.3+ | 2001 04 26 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.2− |
| 1997 04 30 | 691 | 0.3− | 0.0 | 2001 05 26 | 691 | 0.4+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.5+ |
| 1997 04 30 | 691 | 0.2+ | 0.1− | 2001 05 26 | 691 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 1997 05 03 | 691 | 0.5− | 0.1+ | 2001 05 26 | 691 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 1997 05 03 | 691 | 0.5− | 0.1− | 2005 05 04 | G96 | 0.2− | 0.7− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 1997 05 03 | 691 | 0.4− | 0.1+ | 2005 05 04 | G96 | 0.5− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.2− |
| 1997 05 09 | 691 | 0.0 | 0.1+ | 2005 05 04 | G96 | 0.4− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 1997 05 09 | 691 | 0.2+ | 0.6− | 2005 05 04 | G96 | 0.6− | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.3+ |
| 1997 05 09 | 691 | 0.0 | 0.5− | 2005 06 13 | G96 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 1998 09 28 | 691 | 0.2+ | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 1998 09 28 | 691 | 0.6+ | 0.2+ | 2005 06 13 | G96 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 1998 09 28 | 691 | 0.5+ | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 1998 10 12 | 691 | 0.6− | 0.6− | 2005 06 17 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.6+ | 0.1+ |
| 1998 10 12 | 691 | 0.0 | 0.2− | 2005 06 17 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 1998 10 12 | 691 | 0.5− | 0.3− | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 1.0− | 0.7− |
| 2001 04 23 | 704 | 0.3+ | 0.1+ | 2005 06 17 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.2− | 0.1− |
| 2001 04 23 | 704 | 0.0 | 0.5+ | 2005 06 17 | 691 | 0.2+ | 0.4− | 2006 11 13 | G96 | 0.6+ | 0.2+ |
| 2001 04 23 | 704 | 0.1+ | 0.7+ | 2005 06 17 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 1.4− | 0.9− |

**(136815)∗ 1997 HL$_3$**

Discovered 1997 Apr. 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.77291 | | (2000.0) | | | |
| $n$ | 0.27139743 | $\omega$ | 158.65249 | | −0.97147979 | −0.23695313 |
| $a$ | 2.3626473 | $\Omega$ | 7.65728 | | +0.20666054 | −0.86459632 |
| $e$ | 0.1667232 | $i$ | 3.85433 | | +0.11626878 | −0.44308736 |
| $P$ | 3.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 809 | 1.8+ | 1.7+ | 2004 01 30 | 704 | 0.2− | 0.6− | 2004 04 19 | 704 | 0.0 | 0.3− |
| 1997 03 10 | 809 | 1.7+ | 0.8+ | 2004 01 30 | 704 | 0.1− | 0.3− | 2004 04 19 | 704 | (1.7+ | 1.1+) |
| 1997 03 10 | 809 | 1.3+ | 1.0+ | 2004 01 30 | 704 | 0.5+ | 0.0 | 2004 04 19 | 704 | (2.0+ | 0.6+) |
| 1997 03 11 | 809 | 0.9+ | 0.3+ | 2004 01 30 | 704 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.1− |
| 1997 03 11 | 809 | 1.1+ | 0.3+ | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 1997 03 11 | 809 | 0.5+ | 0.1+ | 2004 02 10 | 703 | 0.3+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 1997 04 27 | 691 | 0.3− | 0.2− | 2004 02 10 | 703 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 1997 04 27 | 691 | 0.3− | 0.2− | 2004 02 10 | 703 | 0.4− | 0.0 | 2006 10 15 | 691 | 0.3− | 0.3+ |
| 1997 04 27 | 691 | 0.2− | 0.1− | 2004 02 10 | 644 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 1997 05 05 | 691 | 0.3− | 0.2+ | 2004 02 10 | 703 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 1997 05 05 | 691 | 0.4− | 0.2− | 2004 02 10 | 644 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.4− | 0.3+ |
| 1997 05 05 | 691 | 0.6− | 0.1− | 2004 02 10 | 644 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2002 09 14 | 644 | 0.7− | 0.5+ | 2004 02 13 | 699 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.4− | 0.3+ |
| 2002 09 14 | 644 | 0.3− | 0.7+ | 2004 02 13 | 699 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2002 09 14 | 644 | 0.4− | 0.7+ | 2004 02 13 | 699 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 10 05 | 645 | 0.1− | 0.1+ | 2004 02 13 | 699 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.6+ | 0.3− |
| 2002 10 05 | 645 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2004 01 05 | 703 | 0.7− | 1.1+ | 2004 02 15 | 704 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.6+ | 0.4− |
| 2004 01 05 | 703 | 0.8+ | 0.3− | 2004 02 15 | 704 | 0.2− | 0.1+ | 2006 11 09 | 691 | 0.5+ | 0.0 |
| 2004 01 05 | 703 | (3.7+ | 1.6−) | 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.3+ | 0.3− |
| 2004 01 05 | 703 | 0.5+ | 0.2+ | 2004 02 17 | 644 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2004 01 13 | 699 | 0.1+ | 0.5− | 2004 02 17 | 644 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2004 01 13 | 699 | 0.2− | 0.8− | 2004 02 23 | 608 | 0.4− | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2004 01 13 | 699 | 0.2− | 1.1− | 2004 02 23 | 608 | 0.5− | 0.2+ | 2006 11 22 | 691 | 0.5− | 0.0 |
| 2004 01 13 | 699 | 0.0 | 0.5+ | 2004 02 23 | 608 | 0.3+ | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2004 01 16 | 644 | 0.1+ | 0.1− | 2004 03 26 | 704 | 0.5+ | 0.9+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2004 01 16 | 644 | 0.2+ | 0.3− | 2004 03 26 | 704 | 0.5− | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2004 01 16 | 644 | 0.4+ | 0.1− | 2004 03 26 | 704 | 0.5+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2004 01 17 | 644 | 0.2+ | 0.2− | 2004 03 26 | 704 | 0.3+ | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2004 01 17 | 644 | 0.4+ | 0.2− | 2004 03 26 | 704 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2004 01 17 | 644 | 0.2+ | 0.3− | 2004 03 26 | 704 | 0.7+ | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2004 01 27 | 704 | 0.2+ | 0.0 | 2004 03 26 | 704 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2004 01 27 | 704 | 0.2− | 0.2− | 2004 03 26 | 704 | 0.8− | 0.4+ | | | | |
| 2004 01 27 | 704 | 0.4+ | 0.1+ | 2004 03 26 | 704 | 0.5− | 0.3− | | | | |

**(136816)∗ 1997 HL$_8$**

Discovered 1997 Apr. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.56349 | | (2000.0) | | | |
| $n$ | 0.23871528 | $\omega$ | 29.19175 | | −0.79810624 | +0.60246321 |
| $a$ | 2.5736485 | $\Omega$ | 187.86955 | | −0.56355607 | −0.75114777 |
| $e$ | 0.0770552 | $i$ | 3.36315 | | −0.21314546 | −0.26984276 |
| $P$ | 4.13 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.7− | 0.3+ | 2003 12 14 | 691 | 0.4+ | 0.4+ | 2005 04 04 | 703 | 0.2− | 0.2+ |
| 1994 10 08 | 691 | 0.8− | 0.4+ | 2003 12 14 | 691 | 0.4+ | 0.4+ | 2005 04 04 | 704 | 0.8+ | 0.6− |
| 1994 10 08 | 691 | 0.5− | 0.4+ | 2005 03 01 | 691 | 0.2+ | 0.1− | 2005 04 05 | G96 | 0.3− | 0.2+ |
| 1997 04 06 | 704 | 0.5+ | 0.2− | 2005 03 01 | 691 | 0.1+ | 0.0 | 2005 04 05 | G96 | 0.3− | 0.1+ |
| 1997 04 06 | 704 | 0.6+ | 0.2+ | 2005 03 01 | 691 | 0.2+ | 0.3+ | 2005 04 05 | G96 | 0.3− | 0.0 |
| 1997 04 30 | 704 | 1.2+ | 0.4− | 2005 03 11 | G96 | 0.4− | 0.1+ | 2005 04 05 | G96 | 0.4− | 0.0 |
| 1997 04 30 | 704 | 0.1+ | 0.8− | 2005 03 11 | G96 | 0.5− | 0.2+ | 2005 04 09 | E12 | 0.0 | 0.0 |
| 1997 04 30 | 704 | 0.3+ | 0.4− | 2005 03 11 | G96 | 0.7− | 0.2+ | 2005 04 09 | E12 | 0.4− | 0.6− |
| 1997 04 30 | 704 | 0.3− | 0.9+ | 2005 03 11 | G96 | 0.5− | 0.1+ | 2005 04 09 | E12 | 0.8− | 0.3+ |
| 1997 04 30 | 704 | 0.8+ | 0.9+ | 2005 03 13 | 691 | 0.1+ | 0.4+ | 2005 04 09 | E12 | 0.3+ | 0.2+ |
| 1997 04 30 | 704 | 0.6− | 0.0 | 2005 03 13 | 703 | 0.5− | 0.5− | 2006 07 20 | A50 | 0.6− | 0.7+ |
| 1997 04 30 | 704 | 0.6+ | 1.2+ | 2005 03 13 | 691 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.1+ |
| 1997 04 30 | 704 | 0.6+ | 0.2− | 2005 03 13 | 703 | 1.2− | 0.3− | 2006 08 14 | 644 | 0.3− | 0.6+ |
| 1997 04 30 | 704 | 1.7− | 0.5+ | 2005 03 13 | 703 | 0.6− | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.5+ |
| 1997 05 05 | 704 | 0.9+ | 0.0 | 2005 03 13 | 703 | 1.4− | 0.2+ | 2006 08 14 | E12 | 0.6+ | 0.5− |
| 1997 05 05 | 704 | 0.4+ | 0.5− | 2005 03 13 | 691 | 0.0 | 0.4+ | 2006 08 14 | E12 | 0.1− | 0.2+ |
| 1997 05 05 | 704 | 0.7+ | 0.2− | 2005 03 17 | 691 | 0.0 | 0.4+ | 2006 08 14 | E12 | 0.9+ | 0.2+ |
| 1997 05 05 | 704 | 0.5+ | 0.3− | 2005 03 17 | 691 | 0.3+ | 0.1+ | 2006 08 14 | E12 | 0.4+ | 0.2+ |
| 1997 05 05 | 704 | 0.7+ | 0.9− | 2005 03 17 | 691 | 0.0 | 0.3+ | 2006 08 14 | E12 | 0.3− | 0.4+ |
| 2001 03 29 | 608 | 0.1+ | 0.4− | 2005 04 04 | 704 | 0.6− | 0.0 | 2006 08 15 | 644 | 0.2− | 0.3+ |
| 2001 03 29 | 608 | 0.3+ | 0.6− | 2005 04 04 | 703 | 0.0 | 0.4+ | 2006 08 15 | 644 | 0.5+ | 0.5+ |
| 2001 03 29 | 608 | 0.4+ | 0.4− | 2005 04 04 | 704 | 0.5+ | 0.7+ | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2001 04 18 | 704 | 1.1+ | 0.6+ | 2005 04 04 | 703 | 0.8− | 0.6+ | 2006 10 19 | G96 | 0.9+ | 0.0 |
| 2001 04 18 | 704 | 0.2− | 1.5+ | 2005 04 04 | 704 | 1.3+ | 1.2− | 2006 10 19 | G96 | 0.1+ | 0.5+ |
| 2001 04 18 | 704 | 0.5− | 0.9+ | 2005 04 04 | 703 | 1.0− | 0.1+ | 2006 10 19 | G96 | 0.5− | 0.1+ |
| 2003 12 14 | 691 | 0.4+ | 0.5+ | 2005 04 04 | 704 | 0.8+ | 0.2− | 2006 10 19 | G96 | 0.3− | 0.5+ |

**(136817)∗ 1997 JR$_5$ = 1998 VE$_{56}$ = 2002 TN$_{144}$**

Discovered 1997 May 1 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 39921)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.94427 | | (2000.0) | | | |
| $n$ | 0.24254915 | $\omega$ | 255.57180 | | +0.96021630 | +0.01454563 |
| $a$ | 2.5464562 | $\Omega$ | 103.01269 | | +0.07922927 | +0.94341736 |
| $e$ | 0.2226456 | $i$ | 16.63230 | | −0.26778234 | +0.33128855 |
| $P$ | 4.06 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 01 | 691 | 0.1− | 0.4− | 2002 10 06 | 608 | 0.0 | 0.6+ | 2005 04 13 | 703 | 0.5− | 0.7+ |
| 1997 05 01 | 691 | 0.6+ | 0.6+ | 2002 10 29 | 704 | 0.3+ | 0.1− | 2005 04 13 | 703 | 0.0 | 1.1+ |
| 1997 05 01 | 691 | 0.0 | 0.1− | 2002 10 29 | 704 | 0.3− | 0.5− | 2005 04 13 | 703 | 0.5− | 0.6+ |
| 1997 05 08 | 691 | 0.1+ | 0.6+ | 2002 10 29 | 704 | 0.6− | 1.0− | 2006 09 22 | 703 | 0.5+ | 0.5+ |
| 1997 05 08 | 691 | 0.1+ | 0.1+ | 2002 10 29 | 704 | 0.1+ | 0.5− | 2006 09 22 | 703 | 0.3− | 0.4+ |
| 1997 05 08 | 691 | 0.4− | 0.2+ | 2002 10 29 | 704 | 0.0 | 0.7− | 2006 09 22 | 703 | 0.6+ | 0.2+ |
| 1998 11 13 | 704 | 0.4+ | 0.2− | 2002 11 05 | 644 | 0.2+ | 0.4+ | 2006 09 22 | 703 | 0.3+ | 0.5− |
| 1998 11 13 | 704 | 0.3+ | 0.1+ | 2002 11 05 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.1+ | 0.4+ |
| 1998 11 13 | 704 | 0.8+ | 0.4+ | 2002 11 05 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 1998 11 13 | 704 | 0.7+ | 0.3− | 2002 12 06 | 699 | 0.8− | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.1+ |
| 1998 11 13 | 704 | (4.7− | 2.9+) | 2002 12 06 | 699 | 0.7− | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.0 |
| 1998 11 21 | 703 | 0.2+ | 1.0+ | 2002 12 06 | 699 | 0.6− | 0.6+ | 2006 10 25 | E12 | 0.1− | 0.3− |
| 1998 11 21 | 703 | 0.4− | 1.0+ | 2002 12 06 | 699 | 0.9− | 0.3− | 2006 10 25 | E12 | 0.1− | 0.4+ |
| 1998 11 21 | 703 | 0.9− | 0.7+ | 2002 12 06 | 644 | 0.4− | 0.0 | 2006 10 25 | E12 | 0.3− | 0.3+ |
| 2002 08 12 | 704 | 0.2+ | 0.5− | 2002 12 06 | 644 | 0.3− | 0.2− | 2006 10 25 | E12 | 0.2+ | 0.2+ |
| 2002 08 12 | 704 | 0.4+ | 0.2+ | 2002 12 06 | 644 | 0.3− | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.6+ | 0.4+ | 2003 01 02 | 704 | 1.2− | 0.9− | 2006 11 06 | 644 | 0.3+ | 0.1− | | |
| 2002 10 05 | 704 | 0.2+ | 0.2− | 2003 01 02 | 704 | 0.8− | 0.5+ | 2006 11 06 | 644 | 0.2+ | 0.1− | | |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2003 01 02 | 704 | 0.5− | 0.4− | 2006 11 24 | 703 | 0.3+ | 0.3+ | | |
| 2002 10 05 | 704 | 0.1+ | 0.1+ | 2003 01 02 | 704 | 0.5− | 0.3+ | 2006 11 24 | 703 | 0.1− | 0.6− | | |
| 2002 10 05 | 704 | 0.2− | 0.2+ | 2003 01 02 | 704 | 0.7− | 0.4− | 2006 11 24 | 703 | 0.1+ | 0.8− | | |
| 2002 10 05 | 704 | 0.3+ | 0.5+ | 2004 04 16 | 645 | 0.1+ | 0.0 | 2006 11 24 | 703 | 0.1+ | 0.1− | | |
| 2002 10 06 | 608 | 0.2− | 0.8+ | 2004 04 16 | 645 | 0.1+ | 0.0 | | | | | | |
| 2002 10 06 | 608 | 0.1− | 0.9+ | 2005 04 13 | 703 | 0.2− | 0.9− | | | | | | |

**(136818)∗ 1997 MW$_1$**

Discovered 1997 June 29 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.81773 | | (2000.0) | | **P** | **Q** | |
| $n$ | 1.08571597 | $\omega$ | 203.71350 | | −0.22827724 | −0.94892540 | |
| $a$ | 0.9375445 | $\Omega$ | 260.05982 | | +0.92489398 | −0.14149991 | |
| $e$ | 0.3463833 | $i$ | 12.77386 | | +0.30407339 | −0.28199000 | |
| $P$ | 0.91 | $H$ | 19.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 29 | 683 | (1.2− | 2.7+) | 1997 07 08 | 587 | 0.2+ | 0.4− | 1998 07 27 | 683 | 0.3+ | 0.3+ | | |
| 1997 06 29 | 683 | 0.6+ | 1.0+ | 1997 07 08 | 587 | 0.0 | 0.8− | 1998 07 27 | 683 | 0.1+ | 0.1+ | | |
| 1997 06 30 | 683 | 0.9+ | 1.0− | 1997 07 08 | 557 | 0.0 | 0.3− | 1998 07 27 | 683 | 1.1+ | 0.1+ | | |
| 1997 06 30 | 683 | 0.4− | 1.3+ | 1997 07 08 | 557 | 0.2+ | 0.4− | 1998 07 27 | 683 | 0.7+ | 0.2+ | | |
| 1997 06 30 | 402 | 1.3+ | 0.7+ | 1997 07 08 | 557 | 0.3− | 0.3− | 1998 07 27 | 683 | 0.4+ | 1.0+ | | |
| 1997 06 30 | 402 | 1.7+ | 0.4− | 1997 07 09 | 046 | 0.2+ | 0.4− | 1998 07 27 | 683 | 1.1+ | 0.3− | | |
| 1997 06 30 | 402 | 1.6+ | 0.9− | 1997 07 09 | 046 | 0.1− | 0.6− | 1998 08 14 | 046 | 0.1− | 0.4+ | | |
| 1997 07 01 | 683 | 1.4− | 0.9+ | 1997 07 09 | 046 | 0.2+ | 0.1− | 1998 08 14 | 046 | 0.1− | 0.4+ | | |
| 1997 07 01 | 683 | 1.6+ | 0.4− | 1997 07 09 | 599 | 0.5+ | 0.2+ | 1998 08 14 | 046 | 0.6+ | 0.4+ | | |
| 1997 07 01 | 683 | 1.1− | 0.5+ | 1997 07 09 | 599 | 1.6− | 1.5+ | 1998 08 14 | 046 | 0.2− | 0.3− | | |
| 1997 07 01 | 683 | 0.4+ | 0.1+ | 1997 07 09 | 599 | 1.0− | 0.7+ | 1998 08 15 | 557 | 0.6− | 0.4+ | | |
| 1997 07 01 | 691 | 0.2− | 0.6+ | 1997 07 09 | 599 | 1.2− | 0.3− | 1998 08 15 | 557 | 0.2− | 0.3− | | |
| 1997 07 01 | 691 | 0.7− | 1.2+ | 1997 07 09 | 118 | 0.1+ | 0.5− | 1998 08 15 | 557 | 0.3− | 1.7− | | |
| 1997 07 01 | 422 | 1.2+ | 1.0− | 1997 07 09 | 118 | 0.2− | 0.7− | 1998 08 20 | 360 | 0.1− | 0.2− | | |
| 1997 07 01 | 422 | (2.6+ | 2.1+) | 1997 07 11 | 696 | 0.6+ | 0.1+ | 1998 08 20 | 360 | 0.3− | 0.1− | | |
| 1997 07 01 | 422 | 1.0+ | 1.1− | 1997 07 11 | 696 | 0.4+ | 0.3− | 1998 08 20 | 360 | 0.5− | 0.7+ | | |
| 1997 07 01 | 422 | 0.1+ | 0.2− | 1997 07 11 | 696 | 0.5+ | 0.3− | 1998 08 26 | 683 | 0.2− | 0.0 | | |
| 1997 07 01 | 422 | 0.3+ | 0.2− | 1997 07 11 | 046 | 0.5+ | 0.6− | 1998 08 26 | 683 | 0.1+ | 0.2+ | | |
| 1997 07 01 | 355 | 1.8+ | 0.4− | 1997 07 11 | 046 | 1.1+ | 0.4− | 1998 08 26 | 683 | 0.1− | 0.1+ | | |
| 1997 07 01 | 355 | 1.5− | 1.0+ | 1997 07 11 | 046 | 1.3+ | 0.7− | 1998 08 27 | 683 | 0.1+ | 0.2− | | |
| 1997 07 01 | 046 | 0.8− | 1.5+ | 1997 07 11 | 046 | 0.3+ | 0.2− | 1998 08 27 | 683 | 0.3− | 0.1+ | | |
| 1997 07 01 | 046 | 0.4+ | 0.7+ | 1997 07 12 | 046 | 0.2− | 0.5− | 1998 08 27 | 683 | 0.1+ | 0.5− | | |
| 1997 07 01 | 046 | 0.6+ | 0.5+ | 1997 07 12 | 046 | 0.2+ | 1.1− | 1998 08 27 | 683 | 0.2− | 0.2− | | |
| 1997 07 01 | 557 | 0.1+ | 0.3+ | 1997 07 12 | 046 | 0.1+ | 0.2− | 1999 07 08 | 568 | 0.2+ | 0.5+ | | |
| 1997 07 01 | 557 | 0.1+ | 0.2+ | 1997 07 12 | 046 | 0.4+ | 0.7− | 1999 07 08 | 568 | 0.0 | 0.3+ | | |
| 1997 07 01 | 108 | (0.5+ | 2.1+) | 1997 07 13 | 696 | 0.4+ | 0.9− | 1999 07 10 | 568 | 0.1+ | 0.0 | | |
| 1997 07 01 | 108 | 0.8− | 0.2+ | 1997 07 13 | 696 | 0.4+ | 0.9− | 1999 07 10 | 568 | 0.1+ | 0.1+ | | |
| 1997 07 02 | 683 | 0.5− | 0.3+ | 1997 07 13 | 696 | 0.5+ | 0.9− | 2000 07 30 | 568 | 0.0 | 0.5+ | | |
| 1997 07 02 | 683 | (2.0− | 1.3+) | 1997 07 14 | 696 | 0.1+ | 0.3− | 2000 07 31 | 568 | 0.1+ | 0.4+ | | |
| 1997 07 02 | 683 | 0.0 | 0.1+ | 1997 07 14 | 696 | 0.0 | 0.4− | 2000 07 31 | 568 | 0.1+ | 0.4+ | | |
| 1997 07 02 | 355 | 0.3+ | 0.2− | 1997 07 14 | 696 | 0.1+ | 0.2− | 2005 06 18 | G96 | 0.5− | 0.7+ | | |
| 1997 07 02 | 355 | 0.8+ | 0.9+ | 1997 07 16 | 568 | 0.0 | 0.3− | 2005 06 18 | G96 | 0.8− | 0.5+ | | |
| 1997 07 03 | 658 | 1.3− | 0.2− | 1997 07 16 | 568 | 0.1+ | 0.5− | 2005 06 18 | G96 | 0.6− | 0.1+ | | |
| 1997 07 03 | 658 | 0.9− | 0.1− | 1997 07 17 | 568 | 0.4− | 0.3− | 2005 06 18 | G96 | 0.3− | 0.7+ | | |
| 1997 07 03 | 658 | 0.8− | 0.3− | 1997 07 17 | 568 | 0.3− | 0.3− | 2005 07 12 | 695 | 0.0 | 0.1+ | | |
| 1997 07 03 | 658 | 0.5− | 0.3− | 1997 07 23 | 360 | 0.3+ | 0.4+ | 2005 07 12 | 695 | 0.1+ | 0.1+ | | |
| 1997 07 03 | 568 | 0.0 | 0.0 | 1997 07 23 | 360 | 0.2+ | 0.0 | 2005 07 12 | 695 | 0.3− | 0.1+ | | |
| 1997 07 03 | 568 | 0.5− | 0.1+ | 1997 07 23 | 360 | 0.2+ | 0.3+ | 2006 05 04 | E12 | 0.0 | 1.0+ | | |
| 1997 07 03 | 568 | 0.7+ | 0.3− | 1997 07 29 | 658 | 0.7− | 0.2− | 2006 05 04 | E12 | 0.3− | 0.9+ | | |
| 1997 07 03 | 422 | 1.3+ | 0.1− | 1997 07 29 | 658 | 0.3− | 0.1− | 2006 05 04 | E12 | 0.8− | 0.9+ | | |
| 1997 07 03 | 422 | 0.7+ | 0.0 | 1997 07 29 | 658 | 0.2− | 0.5− | 2006 05 04 | E12 | 0.1− | 1.3+ | | |
| 1997 07 03 | 422 | 0.9+ | 0.4− | 1997 07 29 | 557 | 0.2+ | 0.1+ | 2006 05 19 | 808 | (2.1− | 0.6−) | | |
| 1997 07 03 | 422 | 1.2+ | 0.6+ | 1997 07 30 | 360 | 0.7+ | 0.6− | 2006 05 19 | 808 | 0.1+ | 0.8+ | | |
| 1997 07 03 | 104 | 0.0 | 0.2+ | 1997 07 30 | 360 | 0.5+ | 0.3− | 2006 05 19 | 808 | 0.2− | 0.0 | | |
| 1997 07 03 | 104 | 0.8+ | 0.3+ | 1997 07 30 | 360 | 0.3+ | 0.5− | 2006 05 21 | 808 | 0.2− | 0.0 | | |
| 1997 07 03 | 104 | 1.3+ | 0.1+ | 1997 08 05 | 557 | 0.4+ | 0.5− | 2006 05 21 | 808 | (2.8− | 1.8−) | | |
| 1997 07 03 | 046 | 1.3− | 0.5− | 1997 08 10 | 557 | 0.3− | 0.4− | 2006 05 24 | 844 | (2.3+ | 0.6+) | | |
| 1997 07 03 | 046 | 1.3− | 0.4+ | 1997 08 10 | 557 | 0.2+ | 0.2− | 2006 05 24 | 844 | 1.0+ | 0.6+ | | |
| 1997 07 03 | 046 | 0.3− | 0.5− | 1997 08 12 | 658 | 0.2− | 0.5− | 2006 05 24 | 844 | 1.2+ | 0.2+ | | |
| 1997 07 03 | 473 | 0.7− | 1.7− | 1997 08 12 | 658 | 0.1+ | 0.4− | 2006 05 24 | 844 | 1.3+ | 0.2+ | | |
| 1997 07 03 | 473 | (2.3+ | 1.2−) | 1997 08 12 | 658 | 0.4− | 0.4− | 2006 05 24 | 844 | (1.8+ | 0.5+) | | |
| 1997 07 03 | 557 | 0.1− | 0.3− | 1997 08 24 | 360 | 0.7− | 0.5− | 2006 05 24 | 844 | 0.4+ | 0.5− | | |
| 1997 07 03 | 557 | 0.0 | 0.2− | 1997 08 24 | 360 | 0.1− | 0.9− | 2006 05 24 | 844 | 1.4+ | 0.1− | | |
| 1997 07 04 | 568 | 0.4− | 0.2− | 1997 08 24 | 360 | 0.4− | 1.1− | 2006 05 27 | E12 | 0.1− | 0.1+ | | |
| 1997 07 04 | 568 | 0.0 | 0.4− | 1997 10 20 | 658 | 1.0+ | 0.6− | 2006 05 27 | E12 | 0.3− | 0.1+ | | |
| 1997 07 04 | 568 | 0.0 | 0.3− | 1997 10 20 | 658 | 0.5− | 0.8− | 2006 05 27 | E12 | 0.1+ | 0.1− | | |
| 1997 07 04 | 402 | 0.1− | 0.1− | 1998 06 17 | 696 | 0.2− | 0.4+ | 2006 05 27 | E12 | 0.2− | 0.1− | | |
| 1997 07 04 | 402 | 0.0 | 0.1− | 1998 06 17 | 696 | 0.6+ | 0.9+ | 2006 05 30 | 683 | 0.5− | 0.4− | | |
| 1997 07 04 | 402 | 0.3− | 0.0 | 1998 06 17 | 696 | 0.1+ | 0.7+ | 2006 05 30 | 683 | 0.4+ | 0.3+ | | |
| 1997 07 04 | 620 | 1.2+ | 0.3+ | 1998 06 18 | 696 | 0.1− | 0.1+ | 2006 05 30 | 683 | 0.3+ | 0.1− | | |
| 1997 07 04 | 620 | 1.1+ | 0.3+ | 1998 06 18 | 696 | 0.2− | 0.1+ | 2006 05 30 | 683 | 0.1− | 0.4+ | | |
| 1997 07 04 | 620 | 0.9+ | 0.0 | 1998 07 02 | 683 | 0.0 | 1.3+ | 2006 05 31 | 683 | 0.2+ | 0.4− | | |
| 1997 07 05 | 360 | 0.0 | 0.4− | 1998 07 02 | 683 | 0.5+ | 0.3− | 2006 05 31 | 683 | 0.2+ | 0.3− | | |
| 1997 07 05 | 360 | 0.0 | 0.5− | 1998 07 02 | 683 | 0.5− | 1.4+ | 2006 05 31 | 683 | 0.1− | 0.2− | | |
| 1997 07 05 | 360 | 0.1+ | 0.3− | 1998 07 03 | 683 | 0.0 | 0.3+ | 2006 05 31 | 683 | 0.0 | 0.3− | | |
| 1997 07 06 | 402 | 0.1− | 0.8− | 1998 07 03 | 683 | 0.6− | 0.8+ | 2006 05 31 | 683 | 0.0 | 0.2+ | | |
| 1997 07 06 | 402 | 0.2− | 0.3− | 1998 07 03 | 683 | 0.2− | 1.1+ | 2006 05 31 | E12 | 0.1− | 0.1− | | |
| 1997 07 06 | 402 | 0.1− | 0.7− | 1998 07 05 | 402 | 0.3− | 0.3+ | 2006 05 31 | E12 | 0.2+ | 0.1− | | |
| 1997 07 06 | 104 | 0.9− | 0.7+ | 1998 07 05 | 402 | 0.2− | 2.0+ | 2006 05 31 | E12 | 0.3+ | 0.2+ | | |
| 1997 07 06 | 104 | 0.0 | 0.9+ | 1998 07 05 | 402 | 0.3− | 1.7+ | 2006 05 31 | E12 | 0.0 | 0.0 | | |
| 1997 07 06 | 104 | 0.3+ | 1.0+ | 1998 07 18 | 402 | 0.5+ | 0.2− | 2006 06 20 | 683 | 0.5+ | 0.1− | | |
| 1997 07 06 | 046 | 0.3− | 0.1− | 1998 07 18 | 402 | 0.9+ | 0.0 | 2006 06 20 | 683 | 0.1− | 0.1− | | |
| 1997 07 06 | 046 | 1.6− | 0.9− | 1998 07 18 | 402 | 0.5+ | 0.2− | 2006 06 20 | 683 | 0.2+ | 0.1− | | |
| 1997 07 06 | 046 | 0.6− | 0.9− | 1998 07 20 | 046 | 0.3+ | 1.2+ | 2006 06 20 | 683 | 0.2− | 0.0 | | |
| 1997 07 06 | 046 | 0.9− | 1.3− | 1998 07 20 | 046 | 0.1+ | 0.6+ | 2006 06 20 | 683 | 0.1+ | 0.1+ | | |
| 1997 07 06 | 046 | 0.3− | 0.5− | 1998 07 20 | 046 | 0.2− | 0.2+ | 2006 06 21 | 683 | (0.7− | 2.0−) | | |
| 1997 07 07 | 422 | 0.5− | 0.4− | 1998 07 20 | 046 | 0.7− | 0.4− | 2006 06 21 | 683 | 1.2+ | 0.2+ | | |
| 1997 07 07 | 422 | 0.1− | 1.3− | 1998 07 20 | 046 | 0.2− | 0.6+ | 2006 06 21 | 683 | 0.1+ | 0.1+ | | |
| 1997 07 07 | 422 | 0.8− | 0.9− | 1998 07 20 | 046 | 0.1+ | 0.8− | 2006 06 27 | E12 | 0.4+ | 0.2+ | | |
| 1997 07 08 | 046 | 0.2+ | 0.9− | 1998 07 20 | 046 | 0.5− | 0.9+ | 2006 06 27 | E12 | 0.6+ | 0.0 | | |
| 1997 07 08 | 046 | 0.5− | 0.6− | 1998 07 26 | 683 | 0.1− | 0.1− | 2006 06 27 | E12 | 0.3+ | 0.6+ | | |
| 1997 07 08 | 046 | 0.5− | 0.5− | 1998 07 26 | 683 | 0.2+ | 1.1+ | | | | | | |
| 1997 07 08 | 587 | 0.3− | 0.4− | 1998 07 26 | 683 | 0.4+ | 0.7+ | | | | | | |

**(136819)∗ 1997 MG$_7$ = 2005 LT$_7$**

Discovered 1997 June 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74559)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.38853 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23620655 | $\omega$ | 50.31850 | | +0.05339328 | +0.99289823 | |
| $a$ | 2.5918394 | $\Omega$ | 223.10962 | | −0.95718783 | +0.02055718 | |
| $e$ | 0.1781370 | $i$ | 8.94953 | | −0.28450066 | +0.11717725 | |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 26 | 691 | 0.2− | 0.1+ | 2005 06 05 | 704 | 0.7+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.0 | | |
| 1997 06 26 | 691 | 0.4− | 0.1+ | 2005 06 06 | 691 | 0.6− | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.5+ | | |
| 1997 06 26 | 691 | 0.6− | 0.1+ | 2005 06 06 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ | | |
| 1997 07 05 | 691 | 0.5− | 0.0 | 2005 06 06 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ | | |
| 1997 07 05 | 691 | 0.2+ | 0.7+ | 2005 06 10 | 704 | 0.5+ | 0.7− | 2006 10 19 | 691 | 0.1− | 0.1+ | | |
| 1997 07 05 | 691 | 0.5+ | 0.5− | 2005 06 10 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.6− | 0.2+ | | |
| 1997 07 09 | 691 | 0.3+ | 0.3− | 2005 06 10 | 704 | 0.2− | 0.7+ | 2006 10 23 | 691 | 0.6− | 0.0 | | |
| 1997 07 09 | 691 | 0.1+ | 0.0 | 2005 06 10 | 704 | 0.0 | 0.8− | 2006 10 23 | 691 | 0.2+ | 0.3+ | | |
| 1997 07 09 | 691 | 0.4+ | 0.2− | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.2+ | | |
| 2000 02 08 | 645 | 0.0 | 0.2+ | 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 2000 02 08 | 645 | 0.1+ | 0.0 | 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.5+ | | |
| 2005 02 10 | 809 | 0.4+ | 0.5+ | 2005 06 24 | 644 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.4+ | 0.2− | | |
| 2005 02 10 | 809 | 0.7− | 0.3+ | 2005 06 24 | 644 | 0.2− | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.0 | | |
| 2005 02 10 | 809 | 0.1− | 0.4+ | 2005 06 24 | 644 | 0.1− | 0.4+ | 2006 11 09 | 691 | 0.3+ | 0.4+ | | |
| 2005 05 20 | G96 | 0.3− | 0.1+ | 2005 06 28 | 691 | 0.5+ | 0.8− | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 2005 05 20 | G96 | 0.4− | 0.2− | 2005 06 28 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 2005 05 20 | G96 | 0.9− | 0.6+ | 2005 06 28 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2005 05 20 | G96 | 0.8+ | 0.1− | 2005 07 01 | 691 | 1.0− | 0.1+ | 2006 11 13 | 691 | 0.4− | 0.2+ | | |
| 2005 06 02 | E12 | 0.4− | 0.6+ | 2005 07 01 | 691 | 0.4+ | 0.7− | 2006 11 13 | 691 | 0.0 | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 02 | E12 | (1.6− | 0.2−) | 2005 07 01 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 2005 06 02 | E12 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.4− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.5− | | |
| 2005 06 02 | E12 | 1.0− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 22 | G96 | 0.0 | 0.4− | | |
| 2005 06 05 | 704 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.2− | | |
| 2005 06 05 | 704 | 0.4+ | 0.7+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.1− | | |
| 2005 06 05 | 704 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | | | | | | |

**(136820)∗ 1997 MF$_9$ = 2002 VP$_{10}$**

Discovered 1997 June 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37068)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.77712 | | (2000.0) | | | |
| $n$ | 0.24056794 | $\omega$ | 252.77854 | | −0.99385649 | +0.08283405 |
| $a$ | 2.5604181 | $\Omega$ | 291.92344 | | −0.04412039 | −0.90475812 |
| $e$ | 0.0603911 | $i$ | 4.53819 | | −0.10150204 | −0.41779332 |
| $P$ | 4.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 30 | 691 | 0.1− | 0.1− | 2004 02 19 | 704 | 0.4− | 0.7+ | 2005 07 15 | G96 | 0.3+ | 0.3+ |
| 1997 06 30 | 691 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 0.2+ | 0.9+ | 2005 07 15 | G96 | 0.2+ | 0.4+ |
| 1997 06 30 | 691 | 0.2− | 0.1+ | 2004 02 20 | 608 | 0.4− | 0.1+ | 2005 07 15 | G96 | 0.2+ | 0.3+ |
| 1997 07 01 | 691 | 0.1− | 0.3+ | 2004 02 20 | 608 | 0.2+ | 0.2− | 2005 07 15 | G96 | 0.4+ | 0.5+ |
| 1997 07 01 | 691 | 0.3− | 0.2+ | 2004 02 20 | 608 | 0.3+ | 0.3− | 2006 09 19 | 703 | (2.1+ | 1.8+) |
| 1997 07 01 | 691 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.6− | 1.3+ |
| 1997 07 07 | 691 | 0.1− | 0.5+ | 2004 02 26 | 704 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3− | 1.1− |
| 1997 07 07 | 691 | 0.3− | 0.5+ | 2004 02 26 | 704 | 0.6+ | 1.1− | 2006 09 19 | 703 | 1.0− | 0.4+ |
| 1997 07 07 | 691 | 0.5− | 0.1− | 2004 02 26 | 704 | 0.4− | 0.5− | 2006 10 04 | G96 | 0.4− | 0.3− |
| 1997 07 12 | 691 | 0.7+ | 0.1− | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 1997 07 12 | 691 | 0.3− | 0.1+ | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 1997 07 12 | 691 | 0.3+ | 0.1− | 2004 03 13 | 644 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2002 10 12 | 704 | 1.0+ | 1.3+ | 2004 03 14 | 703 | 0.7− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2002 10 12 | 704 | 0.1− | 0.7+ | 2004 03 14 | 703 | 1.0+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.5+ |
| 2002 10 12 | 704 | 0.4+ | 0.5+ | 2004 03 14 | 703 | 1.2− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 11 01 | 644 | (0.8+ | 1.6+) | 2004 03 14 | 703 | (0.8+ | 1.8−) | 2006 10 13 | 691 | 0.2− | 0.2+ |
| 2002 11 01 | 644 | 0.4+ | 1.4+ | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 13 | 691 | 0.0 | 0.1− |
| 2002 11 01 | 644 | 0.9+ | 1.0+ | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.3+ |
| 2002 11 05 | 704 | 0.4− | 1.2+ | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2002 11 05 | 704 | (1.6+ | 0.7+) | 2004 03 16 | 704 | 1.0+ | 0.7+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2002 11 05 | 704 | (1.6+ | 0.5−) | 2004 03 16 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 02 | 704 | 0.9− | 0.5− | 2004 03 16 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 12 02 | 704 | 0.5− | 0.2− | 2004 03 16 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2002 12 02 | 704 | (2.5− | 0.2−) | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 12 11 | 644 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2002 12 11 | 644 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 644 | 0.1+ | 0.3+ | 2004 03 19 | 704 | 0.6+ | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 12 27 | 644 | 0.3− | 0.5+ | 2004 03 19 | 704 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2002 12 27 | 644 | 0.0 | 0.2+ | 2005 06 28 | G96 | 0.4− | 0.5+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 12 27 | 644 | 0.4− | 0.0 | 2005 06 28 | G96 | 0.2− | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2004 02 19 | 704 | 0.3+ | 0.7+ | 2005 06 28 | G96 | 0.0 | 0.3+ | | | | |
| 2004 02 19 | 704 | (2.1+ | 1.0+) | 2005 06 28 | G96 | 0.2+ | 0.9+ | | | | |

**(136821)∗ 1997 NR$_3$ = 2004 FH$_{19}$ = 2005 ME$_{44}$**

Discovered 1997 July 6 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 84445)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 101.02204 | | (2000.0) | | | |
| $n$ | 0.24509934 | $\omega$ | 31.64445 | | +0.62431051 | +0.77863709 |
| $a$ | 2.5287620 | $\Omega$ | 277.06405 | | −0.72929916 | +0.55208721 |
| $e$ | 0.0896877 | $i$ | 3.63586 | | −0.27992699 | +0.29820126 |
| $P$ | 4.02 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 24 | 691 | 0.0 | 0.6+ | 2002 12 05 | 704 | 0.1− | 1.2+ | 2005 05 20 | 644 | 0.5+ | 0.1− |
| 1993 07 24 | 691 | 0.6+ | 1.2+ | 2002 12 05 | 704 | 0.7+ | 0.5− | 2005 06 27 | 644 | 0.2+ | 0.5+ |
| 1993 07 24 | 691 | 0.3− | 0.8+ | 2002 12 05 | 704 | 0.6− | 0.9− | 2005 06 27 | 644 | 0.2− | 0.2+ |
| 1997 06 29 | 691 | 0.3− | 0.3+ | 2004 03 16 | 703 | (1.7− | 1.9+) | 2005 06 27 | 644 | 0.4− | 0.1+ |
| 1997 06 29 | 691 | 0.2− | 0.0 | 2004 03 16 | 703 | (1.4− | 2.1+) | 2005 07 04 | G96 | 0.2− | 0.1+ |
| 1997 06 29 | 691 | (1.3− | 5.4−) | 2004 03 16 | 703 | 0.8− | 0.8− | 2005 07 04 | G96 | 0.1− | 0.2− |
| 1997 07 06 | 691 | 0.1− | 0.5− | 2004 03 16 | 703 | 0.2− | 0.6+ | 2005 07 04 | G96 | 0.0 | 0.1− |
| 1997 07 06 | 691 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.1− | 1.1+ | 2005 07 04 | G96 | 0.3− | 0.4− |
| 1997 07 06 | 691 | 0.2+ | 0.5− | 2004 03 18 | 704 | 0.4+ | 0.4+ | 2005 07 15 | G96 | 0.5+ | 0.0 |
| 1997 07 10 | 691 | 0.3− | 0.3− | 2004 03 18 | 704 | 0.0 | 0.6+ | 2005 07 15 | G96 | 0.5+ | 0.1+ |
| 1997 07 10 | 691 | 0.2− | 0.6− | 2004 03 18 | 704 | 0.0 | 1.0+ | 2005 07 15 | G96 | 0.9+ | 0.2+ |
| 1997 07 10 | 691 | 0.1− | 0.5− | 2004 03 18 | 704 | 0.6+ | 1.1+ | 2005 07 15 | G96 | 0.4+ | 0.0 |
| 2001 07 26 | 104 | 0.9− | 0.9+ | 2004 03 20 | 704 | 0.3+ | 0.7+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2001 07 26 | 104 | (0.7− | 1.9+) | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2001 07 26 | 104 | (1.2− | 2.9−) | 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2001 08 16 | 704 | (2.8+ | 0.9−) | 2004 03 20 | 704 | 0.7+ | 0.8+ | 2006 11 24 | 691 | 0.2− | 0.3+ |
| 2001 08 16 | 704 | (1.7+ | 0.0 ) | 2004 03 20 | 704 | 1.2+ | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.1− |
| 2001 08 16 | 704 | 0.5− | 1.3+ | 2005 05 20 | 644 | 0.5+ | 0.5+ | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2001 08 16 | 704 | 1.1+ | 0.6+ | 2005 05 20 | 644 | 0.1− | 0.0 | | | | |

**(136822)∗ 1997 PW$_4$ = 2005 QK$_{94}$**

Discovered 1997 Aug. 10 by A. Galád and A. Pravda at the Astronomical and Geophysical Observatory, Modra.

Id. G. V. Williams (*MPO* 84446)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.43473 | | (2000.0) | | | |
| $n$ | 0.12450648 | $\omega$ | 175.63281 | | +0.87716311 | +0.47960045 |
| $a$ | 3.9719895 | $\Omega$ | 155.66294 | | −0.44230167 | +0.82628058 |
| $e$ | 0.1380823 | $i$ | 3.31620 | | −0.18696019 | +0.29537062 |
| $P$ | 7.92 | $H$ | 14.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 10 | 118 | 0.2+ | 0.7− | 2005 08 29 | 699 | 0.5+ | 0.3+ | 2006 10 16 | 703 | (1.6− | 0.1+) |
| 1997 08 10 | 118 | 0.3− | 0.5− | 2005 08 29 | 699 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.9− | 1.5− |
| 1997 08 10 | 118 | 0.1+ | 1.4− | 2005 09 22 | 644 | 0.2+ | 0.8+ | 2006 10 18 | 691 | 0.0 | 0.0 |
| 1997 08 11 | 118 | 0.9− | 0.6+ | 2005 09 22 | 644 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1− |
| 1997 08 11 | 118 | 0.2− | 0.6+ | 2005 09 22 | 644 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 1997 08 11 | 118 | 0.1− | 0.6+ | 2005 09 23 | 699 | (0.1− | 2.4+) | 2006 10 22 | 691 | 0.4− | 0.1− |
| 1997 08 12 | 118 | 0.1+ | 0.1+ | 2005 09 23 | 699 | (2.6− | 0.3+) | 2006 10 22 | 691 | 0.0 | 0.1− |
| 1997 08 12 | 118 | 0.4− | 0.4− | 2005 09 23 | 699 | (2.3− | 1.0+) | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1997 08 12 | 118 | 0.0 | 0.3− | 2005 09 23 | 699 | 0.5− | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1997 08 12 | 118 | 0.4− | 0.3− | 2005 09 28 | 644 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 1997 08 14 | 118 | 0.4− | 1.2− | 2005 09 28 | 644 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 1997 08 14 | 118 | 0.5− | 0.9− | 2005 09 28 | 644 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 1997 08 14 | 118 | 0.1− | 0.6− | 2005 10 03 | G96 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 1997 08 22 | 118 | 0.1+ | 0.5− | 2005 10 03 | G96 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1997 08 22 | 118 | 1.1+ | 0.8− | 2005 10 03 | G96 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1997 08 24 | 118 | 0.3+ | 0.7+ | 2005 10 03 | G96 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 1997 08 24 | 118 | 0.9+ | 0.2− | 2005 10 29 | G96 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.7− | 0.5+ |
| 1997 09 01 | 118 | 0.3+ | 1.1− | 2005 10 29 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1997 09 01 | 118 | 0.1+ | 0.0 | 2005 10 29 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | (0.5− | 1.7−) |
| 1997 09 02 | 118 | 0.6− | 0.3+ | 2005 10 29 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 1997 09 02 | 118 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.3− | 1.2+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 1997 09 02 | 118 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.4− |
| 1998 10 20 | 699 | 1.4+ | 1.2+ | 2006 09 30 | 703 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 1998 10 20 | 699 | (2.9+ | 0.0 ) | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 1998 10 20 | 699 | 0.7+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2003 05 29 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.8− |
| 2003 05 29 | 691 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.4+ |
| 2003 05 29 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.2+ | 1.5− |
| 2005 08 06 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.7+ | 0.4+ |
| 2005 08 06 | 644 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | (1.9− | 2.4−) |
| 2005 08 06 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2005 08 27 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2005 08 27 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2005 08 27 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.7+ | 1.4+ |
| 2005 08 29 | 699 | 1.0− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.2− | | | | |
| 2005 08 29 | 699 | 0.1+ | 1.4+ | 2006 10 16 | 703 | 0.5− | 0.6− | | | | |

**(136823)∗ 1997 QR**

Discovered 1997 Aug. 26 by L. Šarounová at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.42475 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23250784 | $\omega$ | 111.71659 | | +0.83658551 | −0.54266548 | |
| $a$ | 2.6192542 | $\Omega$ | 281.22137 | | +0.47008546 | +0.78146748 | |
| $e$ | 0.2716304 | $i$ | 4.39062 | | +0.28132604 | +0.30793303 | |
| $P$ | 4.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 26 | 557 | 0.5− | 0.1− | 1997 10 10 | 557 | 0.6+ | 0.5− | 2003 01 08 | 704 | (0.9+ | 1.9+) |
| 1997 08 26 | 557 | 0.1− | 0.4+ | 1997 10 19 | 557 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.9+ | 0.6+ |
| 1997 08 26 | 557 | 0.1− | 0.1+ | 1997 10 19 | 557 | 0.8− | 0.4+ | 2003 01 27 | 699 | 0.5+ | 0.1+ |
| 1997 08 26 | 557 | 0.0 | 0.4+ | 1997 11 20 | 557 | 0.5− | 0.3− | 2003 01 27 | 699 | 0.7+ | 0.6+ |
| 1997 08 26 | 557 | 0.1+ | 0.0 | 1997 11 20 | 557 | 0.4− | 0.4+ | 2003 01 27 | 699 | 0.7− | 1.0+ |
| 1997 08 26 | 557 | 0.1+ | 0.2− | 2001 07 15 | 557 | 0.2− | 0.7+ | 2003 01 27 | 699 | 0.3+ | 0.6+ |
| 1997 08 27 | 557 | 0.4+ | 0.3+ | 2001 07 15 | 557 | 0.2+ | 0.5+ | 2003 02 08 | 704 | 1.2+ | 0.1− |
| 1997 08 27 | 557 | 0.3− | 0.3+ | 2001 07 18 | 557 | 0.4+ | 0.1− | 2003 02 08 | 704 | 0.2+ | 0.4− |
| 1997 08 27 | 557 | 0.4+ | 0.3+ | 2001 07 18 | 557 | 0.1− | 0.1− | 2003 02 08 | 704 | 1.0+ | 1.1+ |
| 1997 08 30 | 557 | 0.3− | 0.1− | 2001 07 18 | 557 | 0.1+ | 0.5+ | 2003 02 08 | 704 | (1.6+ | 0.0 ) |
| 1997 08 30 | 557 | 0.2− | 1.0− | 2001 07 19 | 608 | 0.3− | 0.8− | 2003 02 09 | 608 | 0.2+ | 0.7− |
| 1997 09 04 | 557 | 0.2− | 0.1− | 2001 07 19 | 608 | 0.4− | 0.8− | 2003 02 09 | 608 | 0.3+ | 0.3− |
| 1997 09 04 | 557 | 0.4− | 0.5+ | 2001 07 19 | 608 | 0.3− | 0.8+ | 2003 02 09 | 608 | 0.0 | 0.3− |
| 1997 09 09 | 557 | 0.0 | 0.2+ | 2001 07 22 | 557 | 0.3+ | 0.1+ | 2003 02 22 | 644 | 0.0 | 0.7+ |
| 1997 09 09 | 557 | 0.1+ | 0.2+ | 2001 07 22 | 557 | 0.5+ | 0.3− | 2003 02 22 | 644 | 0.2+ | 0.8+ |
| 1997 09 20 | 557 | 0.1− | 0.2− | 2001 07 23 | 557 | 0.2− | 0.3− | 2003 02 22 | 644 | 0.0 | 0.6+ |
| 1997 09 20 | 557 | 0.2+ | 0.1+ | 2001 07 23 | 557 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.7+ | 0.2− |
| 1997 09 20 | 557 | 0.0 | 0.1− | 2001 07 30 | 557 | 0.7− | 1.4+ | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 1997 09 21 | 557 | 0.2+ | 0.2− | 2001 07 30 | 557 | 0.5+ | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 1997 09 21 | 557 | 0.1− | 0.1− | 2001 07 31 | 557 | 0.2− | 0.4− | 2006 10 23 | G96 | 0.4+ | 0.1+ |
| 1997 09 21 | 557 | 0.2+ | 0.2− | 2001 07 31 | 557 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.1− |
| 1997 09 21 | 557 | 0.2+ | 0.1− | 2001 08 16 | 704 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.6− | 0.1− |
| 1997 09 21 | 557 | 0.3+ | 0.6+ | 2001 08 16 | 704 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.8− | 0.1− |
| 1997 09 22 | 557 | 0.1− | 0.4− | 2001 08 16 | 704 | 0.2+ | 1.3+ | 2006 11 14 | G96 | 0.4− | 0.3− |
| 1997 09 22 | 557 | 0.4+ | 0.2− | 2001 08 16 | 704 | 0.9− | 1.3+ | 2006 11 14 | G96 | 0.6− | 0.1− |
| 1997 10 05 | 557 | 0.3+ | 0.3+ | 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 1997 10 05 | 557 | 0.1− | 0.0 | 2002 12 14 | 645 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.6− | 0.3− |
| 1997 10 10 | 557 | 0.0 | 0.1+ | 2003 01 08 | 704 | (1.6+ | 1.4+) | | | | |

**(136824)∗ 1997 RJ$_5$ = 2002 XS$_{41}$**

Discovered 1997 Sept. 8 by H. Abe at Yatsuka.

Id. G. V. Williams (*MPO* 39923)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.25250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22040008 | $\omega$ | 49.03649 | | +0.97874024 | −0.20072770 | |
| $a$ | 2.7143232 | $\Omega$ | 322.48705 | | +0.16118102 | +0.87979731 | |
| $e$ | 0.1758318 | $i$ | 3.96834 | | +0.12683935 | +0.43088871 | |
| $P$ | 4.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 367 | 0.3+ | 0.3− | 2006 08 17 | 644 | 0.5− | 0.1− | 2006 09 12 | 703 | 0.7+ | 0.7+ |
| 1997 09 08 | 367 | 0.1+ | 0.2− | 2006 08 17 | 644 | 0.5− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 1997 09 09 | 367 | 1.6+ | 1.2− | 2006 08 17 | 644 | 0.5− | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.2− |
| 1997 09 09 | 367 | 1.0− | 0.7+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.2− |
| 1997 09 09 | 402 | 0.1− | 0.6− | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.0 | 0.1+ |
| 1997 09 09 | 402 | 0.4− | 0.4− | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.5− | 0.3+ |
| 1997 09 10 | 402 | 0.5+ | 0.2− | 2006 08 18 | 699 | 0.6− | 0.3+ | 2006 09 16 | 699 | 0.1+ | 0.7+ |
| 1997 09 10 | 402 | 0.1+ | 0.0 | 2006 08 18 | 699 | 0.6− | 0.0 | 2006 09 16 | 699 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2006 08 18 | 699 | 0.3− | 0.2+ | 2006 09 18 | 704 | (2.5− | 0.3−) |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2006 08 18 | 699 | 0.3− | 0.5+ | 2006 09 18 | 704 | (3.0− | 0.7−) |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.3− | 0.9+ | 2006 09 18 | 704 | (3.3− | 0.9−) |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 18 | 704 | (2.8− | 0.2−) |
| 2002 12 06 | 704 | 0.3− | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 09 18 | 704 | (3.2− | 1.1−) |
| 2002 12 10 | 704 | 0.8+ | 0.1− | 2006 08 21 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.5+ | 0.3+ | 2006 08 21 | 704 | 0.2− | 0.0 | 2006 09 20 | 691 | 0.3− | 0.1+ |
| 2002 12 10 | 704 | 0.3+ | 0.0 | 2006 08 21 | 704 | 0.5+ | 0.2− | 2006 09 20 | 691 | 0.2− | 0.1− |
| 2002 12 10 | 704 | 1.0+ | 0.8− | 2006 08 21 | 704 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.4− | 0.3+ |
| 2002 12 10 | 704 | 0.3+ | 0.6− | 2006 08 24 | 704 | (0.0 | 1.6+) | 2006 09 25 | 704 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 08 24 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 699 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 08 24 | 704 | 0.1+ | 1.2+ | 2006 09 25 | 704 | (0.1− | 1.7+) |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.2− | 0.3− |
| 2002 12 12 | 704 | 1.5− | 1.0+ | 2006 08 25 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.5+ | 0.6+ |
| 2002 12 12 | 704 | 0.2+ | 0.9− | 2006 08 25 | 704 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 2002 12 12 | 704 | 0.7+ | 0.2+ | 2006 08 27 | 699 | 0.5+ | 0.1− | 2006 09 25 | 699 | 0.5− | 0.8− |
| 2002 12 14 | 704 | 0.4− | 0.5− | 2006 08 27 | 699 | 0.8+ | 0.1+ | 2006 09 26 | 704 | (1.2+ | 2.2+) |
| 2002 12 14 | 704 | 0.3+ | 0.5+ | 2006 08 27 | 699 | 0.7+ | 0.1− | 2006 09 26 | 704 | 1.4+ | 0.6+ |
| 2002 12 14 | 704 | 0.7− | 0.8− | 2006 08 27 | 699 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.6− | 1.3+ |
| 2002 12 14 | 704 | 0.7+ | 0.0 | 2006 08 28 | 704 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.9+ | 0.2− |
| 2003 01 05 | 704 | 1.0− | 0.7− | 2006 08 28 | 704 | 0.5+ | 0.5− | 2006 09 29 | 704 | 1.1+ | 0.5+ |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 08 28 | 704 | 0.3+ | 0.3− | 2006 09 29 | 704 | 0.1− | 0.9+ |
| 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 08 28 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 2003 01 05 | 704 | 0.2− | 1.4+ | 2006 08 28 | 704 | 0.6+ | 0.8− | 2006 09 29 | 704 | 0.1− | 0.6+ |
| 2003 01 05 | 704 | 0.8− | 0.7+ | 2006 08 29 | 703 | 0.9+ | 0.5− | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2004 02 23 | 704 | 0.1− | 0.9+ | 2006 08 29 | 703 | 0.3+ | 0.2− | 2006 10 01 | 703 | 0.7− | 0.1− |
| 2004 02 23 | 704 | (0.6+ | 1.8+) | 2006 08 29 | 703 | 0.7+ | 0.6− | 2006 10 01 | 703 | 0.5− | 0.2− |
| 2004 02 23 | 704 | (1.6+ | 1.7+) | 2006 08 29 | 703 | 0.4− | 1.0− | 2006 10 01 | 703 | 0.2− | 0.3− |
| 2004 02 23 | 704 | (1.6+ | 1.3+) | 2006 08 30 | 704 | 0.3− | 0.5+ | 2006 10 01 | 703 | 1.0− | 0.7− |
| 2004 02 23 | 704 | (0.5− | 1.9+) | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 1.3+ | 0.5+ | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.5+ |
| 2004 02 26 | 704 | 0.8+ | 0.8+ | 2006 08 30 | 704 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.2− | 0.6+ |
| 2004 02 26 | 704 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.4− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 2004 02 26 | 704 | 1.4+ | 1.1+ | 2006 09 01 | 704 | 0.2+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.6+ | 0.6+ | 2006 09 01 | 704 | 0.4− | 1.1− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2004 03 18 | 691 | 0.2+ | 0.6+ | 2006 09 01 | 704 | 0.7− | 1.0− | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 09 01 | 704 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.2− |
| 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 09 01 | 704 | 1.4− | 1.0+ | 2006 11 19 | 704 | 1.0− | 0.2− |
| 2005 05 11 | 644 | 0.2+ | 1.0+ | 2006 09 12 | 703 | 0.7+ | 0.4+ | 2006 11 19 | 704 | 0.9− | 0.1+ |
| 2005 05 11 | 644 | 0.0 | 0.8+ | 2006 09 12 | 703 | 0.0 | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2005 05 11 | 644 | 0.1+ | 0.9+ | 2006 09 12 | 703 | 1.0+ | 0.3+ | | | | |

**(136825)∗ 1997 SX$_3$**

Discovered 1997 Sept. 26 at Kleť.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.36928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23542566 | $\omega$ | 273.39341 | | +0.87487875 | −0.47840178 | |
| $a$ | 2.5975675 | $\Omega$ | 115.19989 | | +0.47091962 | +0.80369805 | |
| $e$ | 0.2565459 | $i$ | 4.79424 | | +0.11323372 | +0.35383778 | |
| $P$ | 4.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 26 | 046 | 0.1+ | 0.4+ | 2001 07 27 | 699 | 0.4+ | 0.2− | 2003 01 08 | 704 | 0.6− | 0.1+ |
| 1997 09 26 | 046 | 0.1+ | 0.4+ | 2001 08 07 | 608 | 0.0 | 0.9− | 2003 01 08 | 704 | 0.9− | 0.4+ |
| 1997 09 26 | 046 | 0.7− | 0.4+ | 2001 08 07 | 608 | 0.3+ | 1.1− | 2003 01 08 | 704 | 0.6+ | 0.2+ |
| 1997 09 26 | 046 | 0.3+ | 0.4+ | 2001 08 07 | 608 | 0.2+ | 0.9− | 2003 01 08 | 608 | 0.2+ | 0.3− |
| 1997 09 26 | 046 | 0.0 | 0.7+ | 2001 08 07 | 608 | 0.1− | 1.0− | 2003 01 08 | 608 | 0.2+ | 0.3− |
| 1997 09 27 | 046 | 0.3− | 0.6+ | 2001 08 07 | 608 | 0.2− | 1.3− | 2003 01 08 | 608 | 0.0 | 0.6− |
| 1997 09 27 | 046 | 0.6− | 0.9+ | 2001 08 07 | 608 | 0.5− | 1.0− | 2003 01 17 | 644 | 0.3+ | 0.1+ |
| 1997 09 27 | 046 | 0.2+ | 0.6+ | 2001 08 12 | 608 | (1.8+ | 0.4−) | 2003 01 17 | 644 | 0.4+ | 0.5+ |
| 1997 09 27 | 046 | 0.2− | 0.5+ | 2001 08 12 | 608 | 0.3− | 0.5− | 2003 01 17 | 644 | 0.0 | 0.5+ |
| 1997 09 27 | 046 | 0.1− | 0.7+ | 2001 08 12 | 608 | 0.7− | 0.5− | 2003 01 27 | 704 | 0.2+ | 0.2+ |
| 1997 09 28 | 046 | 0.1− | 0.5+ | 2001 08 16 | 704 | 0.9+ | 0.0 | 2003 01 27 | 704 | 0.1− | 0.4− |
| 1997 09 28 | 046 | 0.3− | 0.2+ | 2001 08 16 | 704 | 0.8+ | 1.3− | 2003 01 27 | 704 | 0.4− | 1.3+ |
| 1997 09 28 | 046 | 0.2− | 0.2+ | 2001 08 16 | 704 | 0.3+ | 1.2− | 2003 01 27 | 704 | 1.2+ | 0.5+ |
| 1997 10 05 | 046 | 0.1− | 0.2+ | 2001 08 16 | 704 | 0.4+ | 0.2− | 2003 01 27 | 704 | 0.3+ | 0.5+ |
| 1997 10 05 | 046 | 0.3− | 0.4+ | 2001 08 16 | 704 | (0.5+ | 1.6−) | 2003 01 30 | 699 | 1.2+ | 0.2+ |
| 1997 10 05 | 046 | 0.1+ | 0.3+ | 2001 08 19 | 704 | (0.9+ | 2.1−) | 2003 01 30 | 699 | 1.3− | 1.5+ |
| 1997 10 06 | 046 | 0.2+ | 0.3+ | 2001 08 19 | 704 | 0.6+ | 0.1− | 2003 01 30 | 699 | 1.0− | 0.5− |
| 1997 10 06 | 046 | 0.2+ | 0.2+ | 2001 08 19 | 704 | 0.9− | 1.3+ | 2003 01 30 | 699 | 0.6+ | 0.4+ |
| 1997 10 06 | 046 | 0.2− | 0.6+ | 2001 08 24 | 704 | 0.2+ | 0.4− | 2003 02 03 | 704 | 0.2− | 0.1+ |
| 1997 10 21 | 046 | 0.2+ | 0.2− | 2001 08 24 | 704 | 0.5+ | 0.6− | 2003 02 03 | 704 | 1.0+ | 0.3− |
| 1997 10 21 | 046 | 0.2+ | 0.4+ | 2001 08 24 | 704 | 0.0 | 0.2− | 2003 02 03 | 704 | 0.3+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 22 | 046 | 0.4− | 0.7+ | 2001 08 24 | 704 | 0.0 | 0.1− | 2003 02 03 | 704 | 0.2+ | 0.1+ | | |
| 1997 10 22 | 046 | 0.2− | 0.0 | 2001 08 24 | 704 | 0.3+ | 0.2+ | 2004 04 23 | 691 | 0.3+ | 0.6+ | | |
| 1997 10 22 | 046 | 0.2+ | 0.2+ | 2001 08 24 | 608 | 0.1+ | 1.1+ | 2004 04 23 | 691 | 0.1+ | 0.4+ | | |
| 1997 10 22 | 046 | 0.3− | 0.1+ | 2001 08 24 | 608 | 0.4− | 1.4+ | 2004 04 23 | 691 | 0.0 | 0.7+ | | |
| 1997 10 24 | 046 | 0.5− | 0.4+ | 2001 08 24 | 608 | 0.2− | 1.0+ | 2006 11 01 | G96 | 0.4− | 0.6− | | |
| 1997 10 24 | 046 | 0.4− | 0.7+ | 2001 08 24 | 608 | (0.4− | 1.7+) | 2006 11 01 | G96 | 0.1− | 0.6− | | |
| 1997 10 24 | 046 | 0.1− | 0.2+ | 2001 08 24 | 608 | 0.4− | 1.1+ | 2006 11 01 | G96 | 0.6+ | 0.2− | | |
| 2001 07 18 | 608 | 0.5− | 0.6− | 2001 08 24 | 608 | 0.7− | 0.7+ | 2006 11 01 | G96 | 0.8− | 0.3− | | |
| 2001 07 18 | 608 | 0.1− | 0.2− | 2002 12 31 | 704 | 1.1+ | 1.3+ | 2006 11 18 | G96 | 0.2− | 0.9− | | |
| 2001 07 18 | 608 | 0.1− | 0.4− | 2002 12 31 | 704 | 0.4− | 1.0+ | 2006 11 18 | G96 | 0.5+ | 1.1− | | |
| 2001 07 27 | 699 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.4+ | 0.3− | 2006 11 18 | G96 | 0.3− | 1.2− | | |
| 2001 07 27 | 699 | 0.3+ | 0.4+ | 2003 01 08 | 704 | 0.4− | 0.1+ | | | | | | |
| 2001 07 27 | 699 | 0.5+ | 1.1+ | 2003 01 08 | 704 | 0.5− | 0.6+ | | | | | | |

**(136826)∗ 1997 $SM_4$ = 2001 $MA_7$**

Discovered 1997 Sept. 27 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPO* 14109)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.99256 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22207941 | $\omega$ | 92.95229 | | +0.63484974 | | +0.76836950 |
| $a$ | 2.7006223 | $\Omega$ | 216.86538 | | −0.75166740 | | +0.58992858 |
| $e$ | 0.2718829 | $i$ | 7.76724 | | −0.17877898 | | +0.24817852 |
| $P$ | 4.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 411 | 0.9− | 0.8+ | 2005 04 15 | 691 | 0.8+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 1997 09 27 | 411 | 0.5− | 0.4+ | 2005 04 18 | 703 | 1.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 1997 09 28 | 411 | 1.1+ | 0.2+ | 2005 04 18 | 703 | 1.5− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 1997 09 28 | 411 | 0.7− | 0.2+ | 2005 04 18 | 703 | 0.2− | 0.7− | 2006 10 28 | 704 | 0.9+ | 0.4+ |
| 1997 09 30 | 411 | 0.1− | 0.4+ | 2005 04 18 | 703 | 0.8− | 0.1+ | 2006 10 28 | 704 | 0.4− | 0.5+ |
| 1997 09 30 | 411 | 0.7− | 0.1− | 2005 05 12 | 699 | 0.2+ | 0.3− | 2006 10 28 | 704 | 1.0+ | 0.0 |
| 1997 10 05 | 411 | 0.3− | 0.5+ | 2005 05 12 | 699 | 1.4+ | 0.2+ | 2006 10 28 | 704 | 0.3+ | 0.7+ |
| 1997 10 05 | 411 | 0.2− | 0.1+ | 2005 05 12 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 1997 10 12 | 411 | 0.5− | 0.2− | 2005 05 12 | 699 | 0.5+ | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 1997 10 12 | 411 | 0.8+ | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 1997 10 26 | 411 | 0.6+ | 1.3− | 2005 05 12 | G96 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.1− | 0.6+ |
| 1997 10 26 | 411 | 0.7− | 0.2+ | 2005 05 12 | 699 | 0.1+ | 0.7+ | 2006 11 10 | 644 | 0.4− | 0.1+ |
| 2000 03 04 | 645 | 0.1+ | 0.1+ | 2005 05 12 | G96 | 0.4− | 0.1− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.8+ | 1.1− |
| 2001 06 21 | 704 | 0.5+ | 0.3+ | 2005 06 13 | G96 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.8+ | 0.1+ |
| 2001 06 21 | 704 | 1.0+ | 0.5+ | 2005 06 13 | G96 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 2001 06 21 | 704 | 0.3+ | 0.6+ | 2005 06 13 | G96 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2001 06 21 | 704 | 0.0 | 0.9+ | 2005 06 25 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 2001 06 21 | 704 | 0.6+ | 0.1− | 2005 06 25 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 06 24 | 704 | 0.4− | 0.4+ | 2005 06 25 | 644 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2001 06 24 | 704 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.7− | 1.4− | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2001 06 24 | 704 | 0.8− | 0.1+ | 2006 08 30 | 699 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2001 06 24 | 704 | 0.1− | 0.8+ | 2006 08 30 | 699 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2002 12 12 | 644 | 0.4− | 0.4+ | 2006 08 30 | 699 | 1.0− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.9+ |
| 2002 12 12 | 644 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.7− | 0.0 |
| 2002 12 12 | 644 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 2005 03 17 | G96 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.7+ |
| 2005 03 17 | G96 | 0.2− | 0.4+ | 2006 10 04 | 703 | 0.5− | 0.3+ | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2005 03 17 | G96 | 0.1− | 0.0 | 2006 10 04 | 703 | 1.3− | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 2005 03 17 | G96 | 0.2− | 0.1+ | 2006 10 04 | 703 | 0.6− | 1.0+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2005 04 11 | 691 | 0.3+ | 0.4+ | 2006 10 04 | 703 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2005 04 11 | 691 | 0.1− | 0.5+ | 2006 10 13 | 118 | 0.8+ | 0.3− | 2006 11 19 | 704 | 1.5− | 0.4− |
| 2005 04 11 | 699 | 0.2− | 0.8+ | 2006 10 13 | 118 | 0.5+ | 0.6+ | 2006 11 21 | 704 | 1.0+ | 1.2+ |
| 2005 04 11 | 691 | 0.1+ | 0.4+ | 2006 10 13 | 118 | 0.3− | 0.9+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2005 04 11 | 699 | 1.1− | 0.3− | 2006 10 13 | 118 | 0.9− | 0.6+ | 2006 11 21 | 704 | 0.8+ | 1.2+ |
| 2005 04 11 | 699 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2005 04 11 | 699 | 0.7− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2005 04 14 | 608 | 0.6+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.4+ | 2006 11 25 | 703 | 0.2− | 1.1− |
| 2005 04 14 | 608 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 25 | 703 | 0.4− | 0.2+ |
| 2005 04 14 | 608 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.1− | 0.3− |
| 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 25 | 703 | 0.2− | 0.0 |
| 2005 04 15 | 691 | 0.3− | 1.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− | | | | |

**(136827)∗ 1997 $SC_{23}$ = 2001 $UE_{61}$**

Discovered 1997 Sept. 29 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 22003)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.24136 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24292131 | $\omega$ | 224.91944 | | −0.89955121 | | −0.43624336 |
| $a$ | 2.5438547 | $\Omega$ | 289.20420 | | +0.40712329 | | −0.81876848 |
| $e$ | 0.1153491 | $i$ | 1.35592 | | +0.15829798 | | −0.37324243 |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 29 | 691 | 0.7+ | 0.1− | 2003 02 01 | 608 | 0.8− | 0.5− | 2003 03 06 | 644 | 0.3+ | 0.1+ |
| 1997 09 29 | 691 | 0.4+ | 0.2− | 2003 02 03 | 699 | 0.7− | 0.8− | 2003 03 06 | 644 | 0.2+ | 0.3+ |
| 1997 09 29 | 691 | 0.6+ | 0.0 | 2003 02 03 | 699 | 0.7− | 0.6− | 2005 10 03 | 703 | 0.5− | 0.6+ |
| 1997 10 04 | 691 | 0.3− | 0.2− | 2003 02 03 | 699 | 0.5+ | 0.6− | 2005 10 03 | 703 | 0.1− | 0.8− |
| 1997 10 04 | 691 | 0.7− | 0.4− | 2003 02 03 | 699 | 0.0 | 0.3+ | 2005 10 03 | 703 | (0.6− | 1.6−) |
| 1997 10 04 | 691 | 0.4− | 0.2− | 2003 02 08 | 704 | 0.7+ | 0.7+ | 2005 10 03 | 703 | 0.4+ | 0.2+ |
| 1999 03 19 | 699 | 0.4− | 0.4+ | 2003 02 08 | 704 | 0.2− | 0.3− | 2005 10 30 | G96 | 0.3− | 0.1− |
| 1999 03 19 | 699 | 0.4− | 0.5+ | 2003 02 08 | 704 | 0.5+ | 0.4+ | 2005 10 30 | G96 | 0.2− | 1.0+ |
| 1999 03 19 | 699 | 0.4− | 0.6− | 2003 02 08 | 704 | 0.4− | 0.1+ | 2005 10 30 | G96 | 0.5− | 0.1+ |
| 2001 10 17 | 704 | 0.4+ | 0.9+ | 2003 02 08 | 704 | 0.2+ | 0.1− | 2005 10 30 | G96 | 0.1+ | 0.2− |
| 2001 10 17 | 704 | 0.1+ | 0.5+ | 2003 02 20 | 608 | 0.3+ | 1.0+ | 2005 11 04 | 691 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | (0.0 | 2.6+) | 2003 02 20 | 608 | 1.0+ | 0.6− | 2005 11 04 | 691 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 1.3+ | 2003 02 20 | 608 | 0.7+ | 0.5+ | 2005 11 04 | 691 | 0.3− | 0.1+ |
| 2001 10 21 | 704 | 0.3− | 0.6+ | 2003 02 22 | 644 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.9− | 0.4− |
| 2001 10 21 | 704 | 0.3− | 0.9+ | 2003 02 22 | 644 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.7− | 0.2− |
| 2001 10 21 | 704 | 0.6+ | 0.3+ | 2003 02 22 | 644 | 0.2+ | 0.6+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.2+ | 0.7+ | 2003 02 28 | 608 | 0.2+ | 0.7− | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2001 10 21 | 704 | (0.2− | 1.6+) | 2003 02 28 | 608 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2003 01 26 | 608 | 0.4− | 1.0− | 2003 02 28 | 608 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3− | 0.1+ |
| 2003 01 26 | 608 | 0.0 | 1.1− | 2003 03 05 | 704 | 0.5+ | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.9− |
| 2003 01 26 | 608 | 0.3− | 0.7− | 2003 03 05 | 704 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2003 01 31 | 704 | 0.6+ | 0.0 | 2003 03 05 | 704 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 1.0− |
| 2003 01 31 | 704 | 0.0 | 1.4+ | 2003 03 06 | 699 | 0.5+ | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2003 01 31 | 704 | 0.0 | 0.8+ | 2003 03 06 | 699 | 1.1+ | 1.5+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 01 31 | 704 | 0.4− | 1.1+ | 2003 03 06 | 699 | 1.0− | 0.5− | 2006 11 15 | G96 | 0.4− | 0.1+ |
| 2003 02 01 | 608 | 0.0 | 0.1− | 2003 03 06 | 699 | 0.3+ | 0.0 | | | | |
| 2003 02 01 | 608 | 0.6− | 0.4− | 2003 03 06 | 644 | 0.1+ | 0.3+ | | | | |

**(136828)∗ 1997 $ST_{23}$ = 1995 $EL_7$**

Discovered 1997 Sept. 29 by Spacewatch at Kitt Peak.

Id. A. Gnädig (MPC 31988)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.59170 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22268847 | $\omega$ | 334.12449 | | +0.97144269 | | +0.23713022 |
| $a$ | 2.6956959 | $\Omega$ | 12.16689 | | −0.21031799 | | +0.87668608 |
| $e$ | 0.0786836 | $i$ | 2.24808 | | −0.10984277 | | +0.41855796 |
| $P$ | 4.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.0 | 0.1+ | 2001 09 11 | 704 | 0.2+ | 1.1+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 1995 03 02 | 691 | 0.1− | 0.5− | 2001 09 11 | 704 | 1.4− | 1.1+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 1995 03 02 | 691 | 0.5+ | 0.2− | 2001 09 19 | 704 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 1995 03 08 | 691 | 0.0 | 0.1− | 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 1995 03 08 | 691 | 0.3− | 0.1+ | 2001 09 19 | 704 | 0.5+ | 0.7+ | 2006 11 02 | G96 | 0.1+ | 0.6− |
| 1995 03 08 | 691 | 0.1+ | 0.1+ | 2001 09 19 | 704 | 0.8+ | 0.5+ | 2006 11 02 | 691 | 0.2− | 0.2+ |
| 1997 09 29 | 691 | 0.4− | 0.6− | 2001 09 21 | 704 | 0.3+ | 0.4+ | 2006 11 02 | G96 | 0.0 | 0.4− |
| 1997 09 29 | 691 | 0.0 | 0.4− | 2001 09 21 | 704 | 1.2+ | 0.5+ | 2006 11 02 | 691 | 0.1+ | 0.1− |
| 1997 09 29 | 691 | 0.1− | 0.0 | 2001 09 21 | 704 | 0.5+ | 0.2− | 2006 11 02 | G96 | 0.1+ | 0.6− |
| 1997 10 04 | 691 | 0.6− | 0.4− | 2004 03 26 | 691 | 0.5+ | 0.2− | 2006 11 02 | 691 | 0.1− | 0.2− |
| 1997 10 04 | 691 | 0.3− | 0.2− | 2004 03 26 | 691 | 0.4+ | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.5− |
| 1997 10 04 | 691 | 0.6− | 0.4− | 2004 03 26 | 691 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 1997 10 10 | 691 | 0.2+ | 0.5− | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.3− |
| 1997 10 10 | 691 | 0.2+ | 0.5− | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.1− |
| 1997 10 10 | 691 | 0.4+ | 0.6− | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.4− | 0.1− |
| 1997 10 21 | 691 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1997 10 21 | 691 | 0.3+ | 0.9+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 1997 10 31 | 910 | 1.0+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.0 |
| 1997 10 31 | 910 | 1.3+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.9+ |
| 1997 10 31 | 910 | 0.6+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2000 05 24 | 691 | 0.5− | 0.7− | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 1.3+ | 0.4− |
| 2000 05 24 | 691 | 0.7− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.5− |
| 2000 05 24 | 691 | 1.1− | 0.4− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.6+ | 0.0 |
| 2001 09 11 | 704 | 0.0 | 1.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.1− |

**(136829)∗ 1997 SL$_{32}$ = 2002 VV$_{108}$**

Discovered 1997 Sept. 30 by S. Ueda and H. Kaneda at Uenohara.

Id. G. V. Williams (*MPO* 39924)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 307.64731 | | (2000.0) | | +0.60574925 | −0.79537679 |
| *n* | 0.21245509 | ω | 33.64869 | | +0.71507540 | +0.53260298 |
| *a* | 2.7815783 | Ω | 19.09561 | | +0.34890546 | +0.28932651 |
| *e* | 0.1205383 | *i* | 3.69135 | | | |
| *P* | 4.64 | *H* | 15.3 | *G* 0.15 | *U* 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 376 | 0.8− | 1.0− | 2002 12 31 | 704 | 0.3− | 0.1+ | 2006 08 28 | 703 | 1.1+ | 0.8+ |
| 1997 09 30 | 376 | 1.6+ | 1.2− | 2002 12 31 | 704 | 0.8− | 0.9− | 2006 08 28 | 703 | 0.1+ | 0.7+ |
| 1997 09 30 | 376 | 1.2− | 0.7+ | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 08 28 | 703 | (0.3+ | 1.8+) |
| 1997 10 08 | 376 | 0.4+ | 1.8+ | 2002 12 31 | 704 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.2+ |
| 1997 10 08 | 376 | 0.2− | 1.0− | 2002 12 31 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 1.0+ |
| 1997 10 11 | 900 | 0.6− | 0.6− | 2004 02 23 | 704 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.6+ |
| 1997 10 11 | 900 | 0.3− | 0.3+ | 2004 02 23 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.3− |
| 1997 10 12 | 402 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.5+ | 1.4+ | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 1997 10 12 | 402 | 0.4+ | 0.3+ | 2004 02 26 | 695 | 0.1− | 0.2+ | 2006 09 16 | 704 | 0.4− | 0.2− |
| 1997 10 12 | 402 | 0.7+ | 0.1+ | 2004 02 26 | 695 | 0.0 | 0.3+ | 2006 09 16 | 704 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 703 | (1.6− | 0.2+) | 2006 09 16 | 704 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2004 03 15 | 703 | 0.4− | 0.1− | 2006 09 16 | 704 | 0.1+ | 1.2+ |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2004 03 15 | 703 | 0.8− | 0.7+ | 2006 09 18 | 699 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.3+ | 0.2+ | 2004 03 15 | 703 | (2.4− | 0.2+) | 2006 09 18 | 699 | 0.8+ | 0.4+ |
| 2002 11 12 | 704 | 0.2+ | 0.4+ | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 1.0+ |
| 2002 11 12 | 704 | 0.2− | 0.4− | 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 1.2+ |
| 2002 11 12 | 704 | 1.1+ | 0.0 | 2004 03 19 | 704 | (0.8+ | 2.2−) | 2006 09 26 | 704 | 1.4− | 0.1+ |
| 2002 11 12 | 704 | 0.0 | 0.5+ | 2004 03 19 | 704 | 0.9+ | 0.5− | 2006 09 26 | 704 | 1.3− | 1.0+ |
| 2002 11 14 | 704 | 0.5− | 0.4− | 2004 03 19 | 704 | 0.1+ | 0.3− | 2006 09 26 | 704 | (0.1− | 1.5+) |
| 2002 11 14 | 704 | 0.5− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 1.2− | 1.0− |
| 2002 11 14 | 704 | 0.5− | 0.1+ | 2004 03 22 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.6− | 1.1+ |
| 2002 11 14 | 704 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2002 11 14 | 704 | 0.4+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 1.2+ | 2006 09 30 | 703 | 1.0+ | 0.6− |
| 2002 11 24 | 644 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.1+ | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.3+ |
| 2002 11 24 | 644 | 0.1+ | 0.6+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.7+ |
| 2002 11 24 | 644 | 0.0 | 0.5+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2004 04 21 | 691 | 0.2+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.6− | 2004 04 21 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.2+ |
| 2002 12 06 | 704 | (1.8− | 0.6−) | 2004 04 21 | 691 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.4− | 0.8+ | 2006 10 20 | G96 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 0.0 | 0.5− | 2006 08 24 | 644 | 0.5− | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.3− | 0.9+ | 2006 08 24 | 644 | 0.4− | 0.6+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2002 12 14 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 704 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 1.3+ | 1.0+ | 2006 08 28 | 704 | 0.7− | 0.9+ | | | | |
| 2002 12 14 | 704 | (1.2− | 1.6+) | 2006 08 28 | 704 | (0.2+ | 1.8+) | | | | |

**(136830)∗ 1997 SM$_{34}$ = 2001 RX$_{114}$**

Discovered 1997 Sept. 27 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 34698)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 225.14519 | | (2000.0) | | −0.99963943 | +0.02671827 |
| *n* | 0.22750604 | ω | 182.44149 | | −0.02095688 | −0.83854343 |
| *a* | 2.6575050 | Ω | 359.07675 | | −0.01678744 | −0.54417925 |
| *e* | 0.0568936 | *i* | 9.54789 | | | |
| *P* | 4.33 | *H* | 15.7 | *G* 0.15 | *U* 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 1.1− | 0.2− | 2004 03 20 | 699 | 0.7+ | 0.1+ | 2005 07 03 | 644 | 0.2− | 0.0 |
| 1997 09 27 | 691 | 0.9− | 0.4− | 2004 03 20 | 699 | 0.5+ | 0.8+ | 2005 09 01 | 644 | 0.2− | 0.1+ |
| 1997 09 29 | 691 | 0.4+ | 0.1+ | 2004 03 20 | 699 | (1.7+ | 0.4+) | 2005 09 01 | 644 | 0.0 | 0.2− |
| 1997 09 29 | 691 | 0.6+ | 0.1− | 2004 03 20 | 699 | 0.0 | 0.0 | 2005 09 01 | 644 | 0.6+ | 0.5− |
| 1997 09 29 | 691 | 0.5+ | 0.0 | 2004 04 17 | 704 | 0.3− | 0.4− | 2005 09 03 | 644 | 0.4− | 0.4+ |
| 1997 10 04 | 691 | 0.5+ | 0.0 | 2004 04 17 | 704 | 0.3− | 0.6+ | 2005 09 03 | 644 | 0.3− | 0.5+ |
| 1997 10 04 | 691 | 0.1− | 0.2− | 2004 04 17 | 704 | 0.8+ | 0.5− | 2005 09 03 | 644 | 0.6− | 0.1− |
| 1997 10 04 | 691 | 0.1+ | 0.1− | 2004 04 17 | 704 | 0.2− | 0.3+ | 2006 10 27 | 703 | (0.3− | 1.6+) |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2004 04 17 | 644 | 0.1− | 0.4+ | 2006 10 27 | 703 | (1.0+ | 1.8+) |
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2004 04 17 | 644 | 0.2− | 0.0 | 2006 10 27 | 703 | 1.3− | 1.1+ |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2004 04 17 | 644 | 0.7− | 0.2+ | 2006 10 27 | 703 | 1.3− | 0.7+ |
| 2001 09 12 | 704 | 0.3+ | 0.6− | 2004 04 25 | 704 | 0.2− | 0.0 | 2006 11 02 | G96 | 0.5+ | 0.0 |
| 2001 09 12 | 704 | 0.4+ | 0.4+ | 2004 04 25 | 704 | 0.9+ | 0.2+ | 2006 11 02 | G96 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 1.5+ | 2004 04 25 | 704 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.6− | 0.8+ | 2004 04 25 | 704 | 0.6− | 0.3+ | 2006 11 02 | G96 | 0.3+ | 0.3+ |
| 2001 09 19 | 704 | 0.2+ | 1.5+ | 2004 04 25 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.4+ | 0.1− |
| 2001 09 19 | 704 | (0.5− | 1.7+) | 2004 04 25 | 704 | 0.1+ | 0.8+ | 2006 11 15 | 703 | 0.0 | 1.4+ |
| 2001 09 19 | 704 | 0.7− | 1.4+ | 2004 04 25 | 704 | (0.3+ | 1.6+) | 2006 11 15 | 703 | 0.4− | 1.2+ |
| 2004 03 19 | 704 | 0.1+ | 1.4+ | 2004 04 25 | 704 | 0.5+ | 1.1− | 2006 11 15 | 703 | 0.3− | 0.2+ |
| 2004 03 19 | 704 | 0.8+ | 1.0+ | 2005 07 03 | 644 | 0.2− | 0.5− | | | | |
| 2004 03 19 | 704 | 1.3+ | 0.6+ | 2005 07 03 | 644 | 0.0 | 0.5− | | | | |

**(136831)∗ 1997 TA$_1$ = 2003 AV$_{37}$**

Discovered 1997 Oct. 3 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 39924)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 16.79708 | | (2000.0) | | +0.94367676 | −0.33086837 |
| *n* | 0.23248417 | ω | 198.78579 | | +0.31053958 | +0.88626320 |
| *a* | 2.6194319 | Ω | 180.53662 | | +0.11418996 | +0.32413524 |
| *e* | 0.2620554 | *i* | 3.33937 | | | |
| *P* | 4.24 | *H* | 15.8 | *G* 0.15 | *U* 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 910 | 0.3− | 0.3+ | 2003 01 28 | 291 | 0.4− | 0.2− | 2006 11 17 | 704 | 0.3− | 0.2+ |
| 1997 10 01 | 910 | 0.3− | 0.4+ | 2003 01 28 | 291 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 1997 10 01 | 910 | 0.5− | 0.3+ | 2003 01 28 | 291 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.6− | 0.1+ |
| 1997 10 03 | 910 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.5+ |
| 1997 10 03 | 910 | 0.2+ | 0.5+ | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 1997 10 03 | 910 | 0.1− | 0.8+ | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 1997 10 04 | 910 | 0.1+ | 0.8+ | 2004 03 30 | 291 | 0.6− | 0.5+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 1997 10 04 | 910 | 0.0 | 0.6+ | 2004 03 30 | 291 | 0.7− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 1997 10 04 | 910 | 0.3− | 0.4+ | 2004 03 30 | 291 | 0.8− | 0.5+ | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2000 05 02 | 691 | 0.3+ | 0.1+ | 2004 04 23 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.0 |
| 2000 05 02 | 691 | 0.2+ | 0.2− | 2004 04 23 | 691 | 0.5+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2000 05 02 | 691 | 0.5+ | 0.0 | 2004 04 23 | 691 | 0.4+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 12 27 | 699 | 0.3+ | 0.9+ | 2006 08 29 | 703 | 1.2− | 1.3+ | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2002 12 27 | 699 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.9− | 0.9+ | 2006 11 18 | 691 | (0.3− | 1.8+) |
| 2002 12 27 | 699 | 0.0 | 1.1+ | 2006 08 29 | 703 | (1.6− | 0.4+) | 2006 11 18 | 691 | 0.3+ | 0.1− |
| 2002 12 27 | 699 | 0.9− | 1.0+ | 2006 08 29 | 703 | (1.8− | 1.3+) | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2003 01 07 | 704 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.7− | 0.5+ | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2003 01 07 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 11 18 | 704 | 1.1− | 0.3− |
| 2003 01 07 | 704 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2003 01 07 | 704 | 0.3+ | 0.5− | 2006 09 16 | 703 | 0.2− | 0.9− | 2006 11 20 | 704 | 0.5− | 1.0− |
| 2003 01 07 | 704 | 0.3− | 0.4+ | 2006 09 27 | 704 | 1.2+ | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.4− |
| 2003 01 08 | 704 | 0.1+ | 0.9− | 2006 09 27 | 704 | 0.9+ | 1.0+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2003 01 08 | 704 | 0.2− | 1.3− | 2006 09 27 | 704 | 1.3− | 0.5+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 0.7+ | 0.9− | 2006 10 27 | D35 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2003 01 09 | 608 | 0.3− | 0.0 | 2006 10 27 | D35 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 09 | 608 | 0.2− | 0.9+ | 2006 10 27 | D35 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.2− |
| 2003 01 09 | 608 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.7+ | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2003 01 27 | 704 | 0.6+ | 0.8+ | 2006 11 14 | 704 | 0.8+ | 0.8+ | 2006 11 29 | 704 | 2.4+ | 0.1+ |
| 2003 01 27 | 704 | (1.9+ | 0.8+) | 2006 11 14 | 704 | 0.0 | 1.2+ | | | | |
| 2003 01 27 | 704 | 0.0 | 1.3+ | 2006 11 14 | 704 | 0.3+ | 1.4+ | | | | |

**(136832)∗ 1997 TH$_{27}$ = 2001 PZ$_{54}$**

Discovered 1997 Oct. 4 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 16767)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 348.55089 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21343800 | $\omega$ | 335.83024 | | +0.92983227 | −0.36193025 | |
| *a* | 2.7730321 | $\Omega$ | 45.56252 | | +0.35096432 | +0.81793935 | |
| *e* | 0.1332410 | *i* | 5.34169 | | +0.11061640 | +0.44719315 | |
| *P* | 4.62 | *H* | 15.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 910 | 1.2+ | 0.2− | 2001 08 19 | 704 | 0.5− | 1.4− | 2006 09 18 | 699 | 0.8+ | 0.2+ |
| 1997 10 04 | 910 | 1.1+ | 0.2− | 2001 08 26 | 608 | (1.1− | 1.7+) | 2006 09 18 | 699 | 0.2+ | 0.2− |
| 1997 10 04 | 910 | 0.8+ | 0.2− | 2001 08 26 | 608 | (1.9− | 1.4+) | 2006 09 26 | 704 | 0.6− | 0.5+ |
| 1997 10 05 | 910 | 0.3− | 0.4− | 2001 08 26 | 608 | 1.1− | 0.5+ | 2006 09 26 | 704 | 0.3− | 1.4+ |
| 1997 10 05 | 910 | 0.3− | 0.3− | 2001 09 11 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | (0.1+ | 2.0+) |
| 1997 10 05 | 910 | 0.3− | 0.5− | 2001 09 11 | 704 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.7+ | 1.0+ |
| 1997 10 29 | 704 | 1.1− | 0.1− | 2001 09 11 | 704 | 0.2+ | 0.9− | 2006 09 26 | 704 | 0.5+ | 0.1+ |
| 1997 10 29 | 704 | (2.3− | 2.7−) | 2001 09 11 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 1.3− | 1.3− |
| 1997 10 29 | 704 | (3.3− | 1.1−) | 2001 09 11 | 704 | 0.5− | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.2+ |
| 1997 10 29 | 704 | (2.2− | 1.6−) | 2003 01 05 | 704 | 0.8+ | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.6+ |
| 1997 11 06 | 704 | 0.5− | 0.7+ | 2003 01 05 | 704 | 0.8+ | 0.1− | 2006 09 28 | 704 | 0.4− | 0.2+ |
| 1997 11 06 | 704 | 0.2+ | 0.9− | 2003 01 05 | 704 | 1.0+ | 0.5+ | 2006 09 30 | 704 | 0.1− | 0.0 |
| 1997 11 06 | 704 | 0.7− | 0.1+ | 2003 01 05 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.2− |
| 1997 11 06 | 704 | 0.8− | 0.5− | 2004 03 15 | 704 | (2.2+ | 0.5+) | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2000 04 25 | 691 | 0.4+ | 0.9− | 2004 03 15 | 704 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.2− |
| 2000 04 25 | 691 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.2− |
| 2000 04 25 | 691 | 0.5− | 0.2+ | 2004 03 15 | 704 | 0.2+ | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2000 05 30 | 691 | 0.2− | 0.0 | 2004 03 15 | 704 | 0.7+ | 1.1+ | 2006 10 19 | 644 | 0.4− | 0.1− |
| 2000 05 30 | 691 | 0.1− | 0.2− | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2000 05 30 | 691 | 0.1− | 0.2+ | 2004 03 30 | 691 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2001 07 31 | 644 | 0.5+ | 0.5+ | 2004 03 30 | 691 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2001 07 31 | 644 | 0.4+ | 0.7+ | 2006 09 12 | 703 | 0.8− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2001 07 31 | 644 | 0.3+ | 0.4+ | 2006 09 12 | 703 | 1.3− | 0.2− | 2006 10 21 | 703 | (1.2− | 1.6+) |
| 2001 08 14 | 608 | 0.5+ | 0.6+ | 2006 09 12 | 703 | (1.6− | 0.6+) | 2006 10 21 | 703 | (0.9− | 2.1+) |
| 2001 08 14 | 608 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 1.0− | 0.6+ | 2006 10 21 | 703 | (0.2+ | 2.2+) |
| 2001 08 14 | 608 | 0.4+ | 0.0 | 2006 09 18 | 703 | (2.0− | 0.5+) | 2006 10 21 | 703 | (1.7− | 0.5+) |
| 2001 08 19 | 704 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 08 19 | 704 | 0.9+ | 0.1+ | 2006 09 18 | 703 | 0.4− | 1.1+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2001 08 19 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | (2.2+ | 1.2+) | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 08 19 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.2− |

**(136833)∗ 1997 UP = 2002 CN$_{312}$**

Discovered 1997 Oct. 19 at Kleť.

Id. K. E. Smalley (*MPO* 60492)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 230.84618 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.29218302 | $\omega$ | 193.25736 | | +0.89590027 | −0.44346325 | |
| *a* | 2.2492241 | $\Omega$ | 193.16411 | | +0.41747991 | +0.86081055 | |
| *e* | 0.1407455 | *i* | 6.68592 | | +0.15189875 | +0.24969090 | |
| *P* | 3.37 | *H* | 16.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.5+ | 0.8+ | 1997 10 30 | 704 | 0.7− | 0.0 | 2004 12 18 | 704 | 0.1− | 0.2− |
| 1996 04 13 | 691 | 0.6− | 0.1+ | 1997 11 02 | 046 | 0.5− | 0.6+ | 2004 12 18 | 704 | 0.1− | 0.2− |
| 1996 04 13 | 691 | 1.0− | 0.5+ | 1997 11 02 | 046 | 0.4− | 0.1− | 2005 01 17 | 703 | 1.0− | 0.2− |
| 1996 05 22 | 691 | 0.2− | 0.1− | 1997 11 02 | 046 | 0.0 | 0.3− | 2005 01 17 | 703 | 0.9− | 0.7+ |
| 1996 05 22 | 691 | 0.1− | 0.2+ | 1999 04 12 | 691 | 0.2+ | 0.5− | 2005 01 17 | 703 | 0.9− | 0.4− |
| 1996 05 22 | 691 | 0.7+ | 0.1+ | 1999 04 12 | 691 | 0.1+ | 0.6− | 2005 01 17 | 703 | 1.9− | 0.1+ |
| 1997 10 19 | 046 | 0.1+ | 0.5+ | 1999 04 12 | 691 | 0.0 | 0.5− | 2006 03 24 | G96 | 0.5− | 0.2+ |
| 1997 10 19 | 046 | 0.6+ | 0.4+ | 1999 04 20 | 691 | 0.0 | 1.1− | 2006 03 24 | G96 | 0.0 | 0.1+ |
| 1997 10 19 | 046 | 0.3+ | 0.4+ | 1999 04 20 | 691 | 0.6− | 1.0− | 2006 03 24 | G96 | 0.4− | 0.5+ |
| 1997 10 19 | 046 | 0.5+ | 0.3+ | 1999 04 20 | 691 | 0.7− | 0.8− | 2006 03 24 | G96 | 0.4− | 0.3+ |
| 1997 10 19 | 046 | 0.6+ | 0.1+ | 2002 02 07 | 644 | 0.2+ | 0.8+ | 2006 03 25 | 691 | 0.1+ | 0.2+ |
| 1997 10 19 | 046 | 0.4+ | 0.4+ | 2002 02 07 | 644 | 0.3+ | 0.6+ | 2006 03 25 | 691 | 0.3+ | 0.2+ |
| 1997 10 23 | 046 | 0.1+ | 0.2+ | 2002 02 07 | 644 | 0.2+ | 0.8+ | 2006 03 25 | 691 | 0.4+ | 0.1+ |
| 1997 10 23 | 046 | 0.4+ | 0.0 | 2002 02 16 | 644 | 0.0 | 0.4+ | 2006 03 26 | G96 | 0.1− | 0.2+ |
| 1997 10 23 | 046 | 0.1− | 0.3+ | 2002 02 16 | 644 | 0.1+ | 0.8+ | 2006 03 26 | G96 | 0.1+ | 0.0 |
| 1997 10 23 | 046 | 0.5+ | 0.3+ | 2002 02 16 | 644 | 0.4+ | 0.6+ | 2006 03 26 | G96 | 0.6− | 0.0 |
| 1997 10 24 | 046 | 0.1− | 0.2− | 2002 02 17 | 644 | 0.6+ | 0.3+ | 2006 03 26 | G96 | 0.0 | 0.2+ |
| 1997 10 24 | 046 | 0.6− | 0.6+ | 2002 02 17 | 644 | 0.5+ | 0.6+ | 2006 04 09 | 691 | 0.2+ | 1.0+ |
| 1997 10 24 | 046 | 0.1+ | 0.6+ | 2002 02 17 | 644 | 0.5+ | 0.1+ | 2006 04 09 | 691 | 0.5+ | 0.4+ |
| 1997 10 30 | 704 | 0.2− | 0.6− | 2004 12 18 | 704 | 0.7+ | 0.2+ | 2006 04 09 | 691 | 0.2+ | 0.4+ |
| 1997 10 30 | 704 | (2.9− | 2.1−) | 2004 12 18 | 704 | 0.3+ | 0.4+ | 2006 04 26 | 807 | 0.0 | 0.4+ |
| 1997 10 30 | 704 | 0.5− | 1.6− | 2004 12 18 | 704 | 0.4+ | 1.0+ | 2006 04 26 | 807 | 0.1+ | 0.2+ |

**(136834)∗ 1997 UD$_1$ = 2001 UO$_{21}$ = 2003 BY$_{24}$**

Discovered 1997 Oct. 21 by P. Pravec at Ondřejov.

Id. G. V. Williams (*MPO* 19298), A. Doppler (*MPO* 42894)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 26.70219 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.23555583 | $\omega$ | 148.70587 | | +0.51803786 | −0.84233484 | |
| *a* | 2.5966105 | $\Omega$ | 269.70583 | | +0.75084701 | +0.53108467 | |
| *e* | 0.0944857 | *i* | 8.55115 | | +0.40971398 | +0.09176645 | |
| *P* | 4.18 | *H* | 15.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 557 | 0.4+ | 0.6+ | 2001 10 19 | 704 | 0.1− | 0.7+ | 2003 03 22 | 557 | 0.9+ | 0.2− |
| 1997 10 21 | 557 | 0.3− | 0.1+ | 2001 10 19 | 704 | 0.7− | 0.3+ | 2003 03 23 | 557 | 0.3+ | 0.2+ |
| 1997 10 21 | 557 | 0.0 | 0.0 | 2001 10 19 | 608 | 0.7− | 0.8− | 2003 03 23 | 557 | 0.1+ | 0.3+ |
| 1997 10 22 | 557 | 0.3− | 0.4− | 2001 10 19 | 608 | 0.4− | 0.8− | 2003 03 23 | 557 | 0.1− | 0.4+ |
| 1997 10 22 | 557 | 0.6+ | 1.0− | 2001 10 19 | 608 | 0.4− | 0.7− | 2005 08 29 | 644 | 0.2− | 0.0 |
| 1997 10 22 | 557 | 0.3+ | 0.1+ | 2001 11 11 | 699 | 0.4− | 0.2− | 2005 08 29 | 644 | 0.3− | 0.0 |
| 1997 10 22 | 557 | 0.8− | 0.1− | 2001 11 11 | 699 | 0.1− | 0.5− | 2005 08 29 | 644 | 0.4− | 0.1+ |
| 1997 10 22 | 557 | 0.0 | 0.4+ | 2001 11 11 | 699 | 0.5− | 0.6+ | 2005 09 09 | 704 | 0.6− | 0.1− |
| 1997 10 28 | 557 | 0.5+ | 0.9− | 2001 11 11 | 699 | 0.2+ | 0.5− | 2005 09 09 | 704 | 0.8+ | 0.4− |
| 1997 10 28 | 557 | 0.4+ | 0.9− | 2001 11 11 | 557 | 1.2− | 0.2− | 2005 09 09 | 704 | 0.4+ | 0.4+ |
| 1997 11 02 | 557 | 0.1+ | 0.8− | 2001 11 11 | 557 | 0.6− | 0.2+ | 2005 09 09 | 704 | 0.2+ | 1.0− |
| 1997 11 02 | 557 | 0.2+ | 0.8− | 2001 11 11 | 557 | (1.9− | 0.9−) | 2005 09 24 | 699 | 1.4− | 0.6− |
| 2001 09 10 | 699 | (1.6+ | 1.5+) | 2001 11 17 | 704 | 0.9− | 0.4− | 2005 09 24 | 699 | (1.6− | 0.3−) |
| 2001 09 10 | 699 | 1.1+ | 1.5+ | 2001 11 17 | 704 | 0.1− | 0.7+ | 2005 09 24 | 699 | 0.0 | 0.7+ |
| 2001 09 10 | 699 | 0.2− | 0.8+ | 2001 11 17 | 704 | 0.9− | 0.2− | 2005 09 24 | 699 | 0.1+ | 0.9− |
| 2001 09 10 | 699 | 0.2− | 0.1+ | 2001 11 17 | 704 | 0.0 | 0.2+ | 2005 09 26 | 703 | 0.4+ | 1.3+ |
| 2001 09 25 | 704 | 0.3− | 0.6+ | 2003 01 25 | 644 | 0.6+ | 0.7+ | 2005 09 26 | 703 | 0.0 | 0.5+ |
| 2001 09 25 | 704 | (2.0− | 0.9−) | 2003 01 25 | 644 | 0.3+ | 1.0+ | 2005 09 26 | 703 | 0.9− | 0.6+ |
| 2001 09 25 | 704 | 0.4+ | 1.0+ | 2003 01 25 | 644 | 0.9+ | 1.5+ | 2005 09 26 | 703 | 0.9+ | 1.2+ |
| 2001 09 25 | 704 | 0.3− | 1.0+ | 2003 01 28 | 704 | (0.3− | 1.8+) | 2005 10 27 | 644 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.5− | 1.1+ | 2003 01 28 | 704 | 0.6− | 0.7+ | 2005 10 27 | 644 | 0.3+ | 0.5+ |
| 2001 09 29 | 644 | 0.5− | 0.5+ | 2003 01 28 | 704 | (0.5− | 1.7−) | 2005 10 27 | 644 | 0.3+ | 0.3+ |
| 2001 09 29 | 644 | 0.2− | 0.4+ | 2003 01 28 | 704 | 0.5− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2001 09 29 | 644 | 0.6− | 0.1− | 2003 02 02 | 699 | 1.3− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.7− |
| 2001 10 17 | 704 | 0.2+ | 0.0 | 2003 02 02 | 699 | 0.9+ | 0.6+ | 2006 09 25 | G96 | 0.4− | 0.5− |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2003 02 02 | 699 | 0.8− | 0.5− | 2006 09 25 | G96 | 0.3− | 0.5− |
| 2001 10 17 | 704 | 0.7+ | 0.3+ | 2003 02 02 | 699 | (0.7− | 1.8+) | 2006 10 21 | G96 | 0.5− | 0.3− |
| 2001 10 17 | 704 | 0.7+ | 0.3+ | 2003 02 05 | 608 | 1.3+ | 1.4+ | 2006 10 21 | G96 | 0.6− | 1.1− |
| 2001 10 17 | 704 | 0.8+ | 0.2− | 2003 02 05 | 608 | 1.1+ | 1.1+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 10 19 | 704 | 0.5+ | 0.3− | 2003 02 05 | 608 | 0.8+ | 0.7+ | 2006 10 21 | G96 | 0.5− | 0.9− |
| 2001 10 19 | 704 | 1.4+ | 0.6+ | 2003 03 22 | 557 | 0.4+ | 0.3+ | | | | |

**(136835)∗ 1997 UL$_{19}$**

Discovered 1997 Oct. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.94253 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12676606 | $\omega$ | 45.89886 | | −0.88691855 | | −0.45828434 |
| $a$ | 3.9246482 | $\Omega$ | 106.74609 | | +0.40466529 | | −0.83128352 |
| $e$ | 0.0903930 | $i$ | 3.46570 | | +0.22275879 | | −0.31455234 |
| $P$ | 7.78 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 28 | 691 | 0.9− | 0.5− | 2005 10 31 | G96 | 0.3+ | 0.1+ | 2005 12 01 | 695 | 0.3− | 0.1+ |
| 1997 10 28 | 691 | 0.6− | 0.3− | 2005 10 31 | G96 | 0.1− | 0.3+ | 2005 12 01 | 695 | 0.0 | 0.4+ |
| 1997 10 28 | 691 | 0.6− | 0.7− | 2005 10 31 | G96 | 0.2+ | 0.2+ | 2005 12 01 | 695 | 0.2− | 0.4+ |
| 1997 11 02 | 691 | 0.1+ | 0.3− | 2005 11 01 | G96 | 0.2+ | 0.5+ | 2006 02 25 | G96 | 0.1− | 0.7+ |
| 1997 11 02 | 691 | 0.6+ | 0.3− | 2005 11 01 | G96 | 0.1− | 0.4+ | 2006 02 25 | G96 | 0.5− | 0.4+ |
| 1997 11 02 | 691 | 0.2+ | 0.4+ | 2005 11 01 | G96 | 0.1+ | 0.5+ | 2006 02 25 | G96 | 0.1+ | 0.6+ |
| 1997 11 20 | 691 | 0.4+ | 0.2− | 2005 11 01 | G96 | 0.3+ | 0.5+ | 2006 02 25 | G96 | 0.2− | 0.4+ |
| 1997 11 20 | 691 | 0.8+ | 0.2− | 2005 11 02 | G96 | 0.3+ | 0.7− | 2006 09 25 | G96 | 0.2+ | 0.4+ |
| 1997 11 20 | 691 | 0.7+ | 0.7− | 2005 11 02 | G96 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.7− | 0.1− |
| 2001 05 31 | 691 | 0.1+ | 0.1+ | 2005 11 02 | G96 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.7− | 0.9+ |
| 2001 05 31 | 691 | 0.1− | 0.2− | 2005 11 02 | G96 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.2+ |
| 2001 05 31 | 691 | (0.2+ | 2.1+) | 2005 11 28 | 703 | 1.2+ | 0.2+ | 2006 09 28 | G96 | 0.5+ | 0.3+ |
| 2004 10 12 | 691 | 0.2− | 0.0 | 2005 11 28 | 703 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.2+ |
| 2004 10 12 | 691 | 0.1− | 0.1− | 2005 11 28 | 703 | 0.9− | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2004 10 12 | 691 | 0.1− | 0.4+ | 2005 11 28 | 703 | 1.4− | 0.6− | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2004 11 05 | 691 | 0.3− | 0.6+ | 2005 11 30 | G96 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.6+ |
| 2004 11 05 | 691 | 0.1− | 0.0 | 2005 11 30 | G96 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.1+ |
| 2004 11 05 | 691 | 0.1+ | 0.3+ | 2005 11 30 | G96 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2005 10 31 | G96 | 0.4+ | 0.1+ | 2005 11 30 | G96 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.2− |

**(136836)∗ 1997 VO$_5$ = 2001 OE$_{23}$**

Discovered 1997 Nov. 8 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPO* 14755)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.78467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22353052 | $\omega$ | 271.95631 | | +0.89511978 | | +0.39499091 |
| $a$ | 2.6889218 | $\Omega$ | 64.82923 | | −0.26052283 | | +0.83974474 |
| $e$ | 0.2871148 | $i$ | 13.20492 | | −0.36178508 | | +0.37257341 |
| $P$ | 4.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 08 | 411 | 0.7+ | 0.5+ | 2001 08 17 | 644 | 0.3+ | 0.2+ | 2001 11 18 | 608 | 0.0 | 0.2+ |
| 1997 11 08 | 411 | 0.1+ | 0.3+ | 2001 08 17 | 644 | 0.2+ | 0.1+ | 2001 12 05 | 704 | 0.1+ | 1.3+ |
| 1997 11 09 | 411 | 0.5− | 0.7+ | 2001 08 19 | 704 | 0.2+ | 0.8+ | 2001 12 05 | 704 | 0.7+ | 0.6+ |
| 1997 11 09 | 411 | 0.2+ | 0.1− | 2001 08 19 | 704 | 1.3+ | 0.2− | 2001 12 05 | 704 | 0.7+ | 0.8+ |
| 1997 11 23 | 411 | 0.2+ | 0.1− | 2001 08 19 | 704 | (2.6+ | 1.5+) | 2001 12 05 | 704 | 0.7+ | 0.6+ |
| 1997 11 23 | 411 | 0.7+ | 1.3+ | 2001 08 19 | 704 | 0.5+ | 0.7+ | 2001 12 05 | 704 | 0.2+ | 0.7+ |
| 1997 11 29 | 704 | 1.4− | 0.4+ | 2001 08 19 | 704 | (0.9+ | 1.7−) | 2001 12 15 | 704 | 1.1− | 1.5+ |
| 1997 11 29 | 704 | (2.2− | 1.4+) | 2001 08 23 | 608 | 0.5+ | 0.6+ | 2001 12 15 | 704 | 0.5− | 1.0+ |
| 1997 11 29 | 704 | 1.4− | 1.6− | 2001 08 23 | 608 | 0.7+ | 0.4+ | 2001 12 15 | 704 | 1.1− | 0.4− |
| 1997 11 29 | 704 | 0.8− | 1.3− | 2001 08 23 | 608 | 0.5+ | 0.4+ | 2001 12 15 | 704 | (1.7− | 0.7+) |
| 1997 12 03 | 411 | 0.6+ | 0.5+ | 2001 08 24 | 608 | 0.4+ | 0.2+ | 2001 12 15 | 704 | 0.9− | 0.9+ |
| 1997 12 03 | 411 | 0.9+ | 0.7+ | 2001 08 24 | 608 | 0.5+ | 0.0 | 2001 12 17 | 699 | 0.4− | 1.2+ |
| 2000 04 27 | 699 | 0.8+ | 0.6+ | 2001 08 24 | 608 | 0.4+ | 0.0 | 2001 12 17 | 699 | 0.4+ | 0.1+ |
| 2000 04 27 | 699 | 1.0+ | 1.1+ | 2001 09 11 | 704 | 0.3− | 0.5− | 2001 12 17 | 699 | 0.1− | 1.0+ |
| 2000 04 27 | 699 | 1.5+ | 1.3+ | 2001 09 11 | 704 | 0.3− | 0.8− | 2001 12 17 | 699 | 0.3− | 0.3+ |
| 2000 04 27 | 699 | 0.1+ | 0.2− | 2001 09 11 | 704 | 0.5− | 0.6− | 2001 12 18 | 704 | 0.5+ | 0.4+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2001 09 11 | 704 | 0.5− | 0.2− | 2001 12 18 | 704 | 0.6+ | 0.6+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2001 09 11 | 704 | 0.6− | 0.8− | 2001 12 18 | 704 | (0.1− | 1.5+) |
| 2001 07 21 | 644 | 0.5− | 0.6− | 2001 09 27 | 644 | (0.2− | 1.6−) | 2004 03 27 | 704 | 0.4+ | 1.5+ |
| 2001 07 21 | 644 | 0.5− | 0.6− | 2001 09 27 | 644 | (0.3− | 1.6−) | 2004 03 27 | 704 | 0.0 | 0.2+ |
| 2001 07 21 | 644 | 0.4− | 0.8− | 2001 09 27 | 644 | (0.1− | 1.8−) | 2004 03 27 | 704 | 0.2− | 0.4− |
| 2001 07 23 | 644 | 0.1+ | 1.1+ | 2001 10 14 | 644 | 0.2+ | 0.4− | 2004 03 27 | 704 | 1.0+ | 1.3+ |
| 2001 07 23 | 644 | 0.1− | 1.2+ | 2001 10 14 | 644 | 0.1− | 0.1+ | 2004 03 27 | 704 | (0.2+ | 2.7+) |
| 2001 07 23 | 644 | 0.0 | 1.1+ | 2001 10 14 | 644 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2001 07 30 | 704 | 0.4− | 0.2+ | 2001 10 15 | 704 | 0.3+ | 0.9− | 2006 11 16 | 704 | 0.8− | 0.2+ |
| 2001 07 30 | 704 | 0.2− | 0.2− | 2001 10 15 | 704 | 0.2+ | 0.9− | 2006 11 16 | 704 | 0.5− | 0.7+ |
| 2001 07 30 | 704 | 0.8− | 0.1− | 2001 10 15 | 704 | 0.3+ | 1.0− | 2006 11 16 | 704 | 0.3− | 0.7− |
| 2001 07 30 | 704 | 0.9− | 0.5+ | 2001 10 15 | 704 | 0.2+ | 1.1− | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 2001 07 30 | 704 | 0.5− | 0.1− | 2001 10 15 | 704 | 0.1− | 1.2− | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2001 08 03 | 644 | 0.9− | 0.2− | 2001 11 07 | 704 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 08 03 | 644 | 0.9− | 0.3− | 2001 11 07 | 704 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2001 08 03 | 644 | 1.0− | 0.3− | 2001 11 07 | 704 | 0.1− | 0.4+ | 2006 11 27 | 704 | 0.5+ | 0.0 |
| 2001 08 04 | 608 | 0.4− | 1.0+ | 2001 11 07 | 704 | 0.3− | 0.8+ | 2006 11 27 | 704 | 0.3+ | 0.3− |
| 2001 08 04 | 608 | 0.1+ | 0.8+ | 2001 11 07 | 704 | 0.5− | 0.3+ | 2006 11 27 | 704 | 0.3− | 0.1− |
| 2001 08 04 | 608 | 0.4− | 0.7+ | 2001 11 18 | 608 | 0.2− | 0.0 | | | | |
| 2001 08 17 | 644 | 0.2+ | 0.3+ | 2001 11 18 | 608 | 0.2− | 0.0 | | | | |

**(136837)∗ 1997 VV$_7$ = 2000 JQ$_{42}$**

Discovered 1997 Nov. 2 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPO* 189)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.74076 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22037829 | $\omega$ | 291.24688 | | +0.90787605 | | +0.38700821 |
| $a$ | 2.7145020 | $\Omega$ | 46.39323 | | −0.25169428 | | +0.81065278 |
| $e$ | 0.1632320 | $i$ | 12.86328 | | −0.33527759 | | +0.43939358 |
| $P$ | 4.47 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 327 | 0.1+ | 0.3− | 2000 05 30 | 691 | 0.4− | 0.1− | 2003 01 13 | 704 | 0.9+ | 0.2+ |
| 1997 11 02 | 327 | 0.1+ | 0.0 | 2000 05 30 | 691 | 0.1− | 0.4− | 2003 01 13 | 704 | 0.4− | 0.8+ |
| 1997 11 02 | 327 | 0.4+ | 0.1− | 2000 06 04 | 691 | 0.4− | 0.4− | 2003 01 13 | 704 | 0.1− | 0.8+ |
| 1997 11 06 | 327 | 1.1+ | 0.2+ | 2000 06 04 | 691 | 0.5− | 0.6− | 2004 03 12 | 644 | 0.6+ | 0.4+ |
| 1997 11 06 | 327 | 0.6+ | 0.4− | 2000 06 04 | 691 | 0.5− | 0.5− | 2004 03 12 | 644 | 0.6+ | 0.4+ |
| 1997 11 06 | 327 | 0.3+ | 0.2+ | 2001 08 29 | 644 | 0.5− | 0.8+ | 2004 03 12 | 644 | (1.6+ | 0.2+) |
| 1997 11 07 | 327 | 0.1+ | 0.2+ | 2001 08 29 | 644 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.3− | 0.1− |
| 1997 11 07 | 327 | 0.1− | 0.0 | 2001 08 29 | 644 | 0.5− | 0.8+ | 2004 03 15 | 704 | 0.3+ | 0.4+ |
| 1997 11 07 | 327 | 0.2− | 0.3+ | 2001 09 11 | 699 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.2− | 0.1+ |
| 1997 12 01 | 327 | 0.5− | 0.0 | 2001 09 11 | 699 | 0.7− | 0.4+ | 2004 03 15 | 704 | 0.6+ | 0.1+ |
| 1997 12 01 | 327 | 1.2− | 0.3+ | 2001 09 11 | 699 | 0.7+ | 0.6+ | 2004 03 15 | 704 | 0.3− | 1.4+ |
| 1997 12 01 | 327 | 0.3− | 0.1− | 2001 09 11 | 699 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.5+ | 0.9+ |
| 1997 12 29 | 327 | 0.0 | 0.5− | 2001 09 12 | 704 | 0.1− | 0.4+ | 2004 03 23 | 704 | 1.4+ | 0.4+ |
| 1997 12 29 | 327 | 0.1− | 0.2− | 2001 09 12 | 704 | 0.7+ | 0.4+ | 2004 03 23 | 704 | 0.5+ | 0.6+ |
| 1997 12 29 | 327 | 0.1+ | 0.6− | 2001 09 12 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.9+ | 0.5+ |
| 2000 04 29 | 704 | 0.9+ | 0.3− | 2001 09 12 | 704 | 0.3+ | 1.0+ | 2004 03 23 | 704 | 0.7+ | 0.7+ |
| 2000 04 29 | 704 | 0.2− | 0.6+ | 2001 09 27 | 644 | 0.6− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2000 04 29 | 704 | 1.2+ | 0.8− | 2001 09 27 | 644 | 0.6− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2000 05 07 | 704 | 0.7+ | 0.2+ | 2001 09 27 | 644 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2000 05 07 | 704 | 0.7+ | 0.5+ | 2001 10 11 | 704 | 0.3− | 0.1+ | 2006 11 15 | 704 | (0.6− | 1.6+) |
| 2000 05 07 | 704 | 0.6+ | 0.4+ | 2001 10 11 | 704 | 0.6− | 0.4+ | 2006 11 15 | 704 | 0.6+ | 0.4+ |
| 2000 05 07 | 704 | 0.9+ | 0.4+ | 2001 10 11 | 704 | 0.6− | 0.2+ | 2006 11 15 | 704 | 1.0− | 0.1− |
| 2000 05 07 | 704 | 0.9+ | 0.2+ | 2001 10 19 | 699 | 0.6− | 0.3− | 2006 11 15 | 704 | 0.8− | 1.0− |
| 2000 05 10 | 704 | 0.4+ | 0.0 | 2001 10 19 | 699 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.4− | 0.0 |
| 2000 05 10 | 704 | 0.2+ | 0.8+ | 2001 10 19 | 699 | 0.9+ | 0.4+ | 2006 11 16 | 704 | 0.3− | 1.3+ |
| 2000 05 10 | 704 | 0.2+ | 1.1+ | 2001 10 19 | 699 | 0.9− | 0.1− | 2006 11 16 | 704 | 1.3+ | 0.2+ |
| 2000 05 10 | 704 | 0.5+ | 1.0+ | 2001 10 20 | 704 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.4+ | 0.7+ |
| 2000 05 10 | 704 | 0.7+ | 1.2+ | 2001 10 20 | 704 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2000 05 11 | 691 | 0.1+ | 0.3+ | 2001 10 20 | 704 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.0 |
| 2000 05 11 | 691 | 0.3+ | 0.3+ | 2001 10 20 | 704 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2000 05 11 | 691 | 0.3+ | 0.2+ | 2001 10 20 | 704 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2000 05 24 | 691 | 0.2− | 0.1+ | 2001 10 23 | 644 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2000 05 24 | 691 | 0.2− | 0.2+ | 2001 10 23 | 644 | 0.5− | 0.5+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2000 05 24 | 691 | 0.2− | 0.1+ | 2001 10 23 | 644 | 0.4− | 0.4+ | 2006 11 19 | 704 | 1.1− | 0.5+ |
| 2000 05 28 | 704 | 0.7+ | 1.0+ | 2001 11 08 | 644 | 0.1− | 1.1+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2000 05 28 | 704 | 1.2+ | 1.5+ | 2001 11 08 | 644 | 0.2− | 0.8+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2000 05 28 | 704 | 0.9+ | 0.9+ | 2001 11 08 | 644 | 0.4− | 0.6+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2000 05 28 | 704 | 0.2+ | 0.4+ | 2001 11 18 | 608 | 0.6− | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2000 05 28 | 704 | 0.0 | 0.1+ | 2001 11 18 | 608 | (0.6− | 1.6+) | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2000 05 29 | 704 | 0.2− | 0.4+ | 2001 11 18 | 608 | 0.4− | 0.4+ | 2006 11 22 | 704 | 0.6− | 0.1+ |
| 2000 05 29 | 704 | 0.4+ | 0.4+ | 2003 01 10 | 704 | 0.5− | 0.8+ | 2006 11 22 | 704 | 0.6− | 0.8+ |
| 2000 05 29 | 704 | 0.9+ | 0.3+ | 2003 01 10 | 704 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2000 05 29 | 704 | 0.6+ | 0.9+ | 2003 01 10 | 704 | 0.2+ | 1.1− | 2006 11 27 | 704 | 0.5+ | 0.0 |
| 2000 05 29 | 704 | 0.2− | 0.0 | 2003 01 13 | 704 | 0.8+ | 0.9+ | 2006 11 27 | 704 | 0.4+ | 0.4+ |
| 2000 05 30 | 691 | 0.5− | 0.0 | 2003 01 13 | 704 | 0.6+ | 0.2+ | 2006 11 27 | 704 | 0.4+ | 0.1− |

**(136838)∗ 1997 WG$_{22}$**

Discovered 1997 Nov. 28 by BAO Schmidt CCD Asteroid Program at Xinglong.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.42932 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20586005 | $\omega$ | 201.22456 | | −0.32753990 | | +0.92042330 |
| $a$ | 2.8406735 | $\Omega$ | 50.31711 | | −0.82203400 | | −0.16625695 |
| $e$ | 0.0968605 | $i$ | 16.09837 | | −0.46580866 | | −0.35380727 |
| $P$ | 4.79 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.0 | 0.2− | 2004 03 15 | 704 | 0.4+ | 0.5− | 2004 04 14 | 703 | 0.4− | 0.3+ |
| 1992 11 26 | 691 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.6− |
| 1992 11 26 | 691 | 0.6− | 0.0 | 2004 03 15 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.2+ | 0.4− |
| 1997 11 01 | 327 | 0.2− | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.9+ | 0.7+ |
| 1997 11 01 | 327 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.3− | 2006 09 18 | 703 | 0.1+ | 1.3+ |
| 1997 11 01 | 327 | 0.7+ | 0.3+ | 2004 03 15 | 704 | 1.0− | 0.6− | 2006 09 21 | 699 | 0.6− | 0.4− |
| 1997 11 28 | 327 | 0.4+ | 0.5+ | 2004 03 15 | 704 | 0.1− | 0.4− | 2006 09 21 | 699 | 0.8+ | 0.7+ |
| 1997 11 28 | 327 | 0.5+ | 0.5+ | 2004 03 15 | 704 | 0.6+ | 0.3− | 2006 09 21 | 699 | 0.8− | 1.2+ |
| 1997 11 28 | 327 | 0.9+ | 0.4+ | 2004 03 15 | 106 | 0.1− | 0.4− | 2006 09 21 | 699 | 0.5+ | 0.1+ |
| 1997 12 01 | 327 | 0.6+ | 0.5− | 2004 03 15 | 106 | 0.6− | 0.0 | 2006 09 25 | 699 | 0.6+ | 1.3− |
| 1997 12 01 | 327 | 0.6+ | 0.5− | 2004 03 15 | 106 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.1+ | 0.4+ |
| 1997 12 01 | 327 | 0.6+ | 0.2+ | 2004 03 15 | 106 | 0.1− | 0.3+ | 2006 09 25 | 699 | 1.4− | 0.1− |
| 1999 02 18 | 704 | (1.5+ | 4.0+) | 2004 03 15 | 106 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 1999 02 18 | 704 | 0.3− | 0.1− | 2004 03 15 | 106 | 0.3− | 0.3− | 2006 09 26 | 703 | (3.9+ | 1.5+) |
| 1999 02 18 | 704 | 0.2− | 0.7− | 2004 03 16 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.6+ |
| 1999 02 18 | 704 | 0.8+ | 1.2− | 2004 03 16 | 704 | (1.5+ | 1.0−) | 2006 09 26 | 703 | 0.0 | 0.0 |
| 2001 10 19 | 699 | 0.9− | 0.4+ | 2004 03 16 | 704 | 0.5+ | 0.5− | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2001 10 19 | 699 | (0.3+ | 2.4+) | 2004 03 16 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2001 10 19 | 699 | (0.0 | 2.0+) | 2004 03 17 | 704 | 1.3− | 0.1− | 2006 10 16 | 703 | 1.0+ | 0.6− |
| 2001 10 19 | 699 | 0.2− | 0.8+ | 2004 03 17 | 704 | 0.5− | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2001 10 23 | 644 | 0.3− | 0.5+ | 2004 03 17 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2001 10 23 | 644 | 0.2− | 1.0+ | 2004 03 17 | 704 | 0.2+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.5+ |
| 2001 10 23 | 644 | 0.2− | 0.8+ | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.7− |
| 2003 01 04 | 704 | 0.2− | 0.6− | 2004 03 28 | 704 | 0.7+ | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2003 01 04 | 704 | 0.3− | 0.1− | 2004 03 28 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 1.6− | 1.1− |
| 2003 01 04 | 704 | 0.9− | 0.4− | 2004 03 28 | 704 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2004 01 30 | 704 | (1.5− | 0.7+) | 2004 03 28 | 704 | 1.0+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2004 01 30 | 704 | 0.8− | 0.1+ | 2004 04 14 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2004 01 30 | 704 | 0.2+ | 0.7+ | 2004 04 14 | 704 | 0.9+ | 0.5− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2004 01 30 | 704 | 0.4− | 0.1+ | 2004 04 14 | 704 | 0.2− | 1.2+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2004 03 14 | 704 | 0.0 | 0.0 | 2004 04 14 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2004 03 14 | 704 | 1.0− | 0.1− | 2004 04 14 | 704 | 0.1+ | 0.5− | 2006 10 28 | 703 | 0.0 | 0.3− |
| 2004 03 14 | 704 | 0.7+ | 0.8+ | 2004 04 14 | 703 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.9+ | 0.1+ |
| 2004 03 14 | 704 | 0.3+ | 0.6+ | 2004 04 14 | 703 | 0.6+ | 0.2− | 2006 10 28 | 703 | 0.4+ | 0.1+ |
| 2004 03 14 | 704 | 0.3+ | 0.3+ | 2004 04 14 | 703 | 0.6+ | 0.5− | 2006 10 28 | 703 | 0.9− | 0.5− |

**(136839)∗ 1997 WT$_{22}$**

Discovered 1997 Nov. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.55706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.54425984 | $\omega$ | 74.63695 | | −0.82620437 | | −0.54694832 |
| $a$ | 1.4857025 | $\Omega$ | 72.03030 | | +0.44694300 | | −0.78226983 |
| $e$ | 0.3059053 | $i$ | 8.16114 | | +0.34296981 | | −0.29816346 |
| $P$ | 1.81 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 12 13 | 261 | 0.4+ | 0.7+ | 1997 12 27 | 658 | 0.8− | 0.3− | 1998 03 17 | 658 | 0.6− | 0.1− |
| 1988 12 13 | 261 | 0.1+ | 0.1+ | 1997 12 27 | 658 | 0.4− | 1.7− | 1998 03 19 | 658 | 0.4+ | 0.1− |
| 1997 11 29 | 704 | 0.4− | 0.7− | 1997 12 27 | 658 | 0.6− | 0.7− | 1998 03 19 | 658 | 0.5+ | 0.7+ |
| 1997 11 29 | 704 | 0.8+ | 0.6− | 1997 12 27 | 587 | 0.0 | 0.5+ | 1998 03 19 | 658 | 1.0+ | 0.1+ |
| 1997 11 29 | 704 | 0.5+ | 0.4− | 1997 12 30 | 566 | 0.5− | 1.2+ | 1998 03 23 | 557 | 0.3− | 0.6− |
| 1997 11 29 | 704 | 0.4+ | 0.5− | 1997 12 30 | 566 | 0.6− | 1.3+ | 1998 03 23 | 557 | 0.3− | 0.1− |
| 1997 11 29 | 704 | 0.9+ | 0.1+ | 1997 12 30 | 566 | 0.5− | 1.5+ | 1998 03 23 | 557 | 0.9− | 0.5− |
| 1997 11 30 | 360 | 0.5+ | 0.9+ | 1997 12 31 | 046 | 0.0 | 0.3+ | 1998 03 23 | 118 | 0.2− | 0.4− |
| 1997 11 30 | 360 | 0.2+ | 0.2− | 1997 12 31 | 046 | 0.1+ | 0.3+ | 1998 03 23 | 118 | 0.3− | 0.4− |
| 1997 11 30 | 360 | 0.3+ | 0.0 | 1997 12 31 | 046 | 0.3+ | 0.4+ | 1998 03 28 | 658 | 1.1− | 0.2+ |
| 1997 12 02 | 658 | 0.4+ | 0.5− | 1998 01 10 | 658 | 0.2− | 0.0 | 1998 03 28 | 658 | 0.7− | 0.1+ |
| 1997 12 02 | 658 | 0.2+ | 0.4− | 1998 01 10 | 658 | 0.2− | 0.1− | 1998 03 28 | 658 | 1.0− | 0.2− |
| 1997 12 02 | 658 | 0.5+ | 0.3− | 1998 01 10 | 658 | 0.5− | 1.1− | 1998 04 08 | 557 | 0.0 | 0.1+ |
| 1997 12 03 | 658 | 0.2+ | 0.3− | 1998 01 10 | 557 | 0.1− | 0.0 | 1998 04 08 | 557 | 0.3+ | 0.1+ |
| 1997 12 03 | 658 | 0.4+ | 0.2− | 1998 01 10 | 557 | 0.5+ | 0.0 | 1998 04 08 | 557 | 0.5+ | 0.4− |
| 1997 12 03 | 658 | 0.5+ | 0.0 | 1998 01 10 | 118 | 0.6+ | 0.2+ | 1998 04 08 | 557 | 0.9− | 0.3− |
| 1997 12 04 | 704 | 0.4− | 0.2− | 1998 01 10 | 557 | 0.2− | 0.0 | 1998 04 09 | 046 | 0.4− | 0.2+ |
| 1997 12 04 | 704 | 0.5− | 0.5+ | 1998 01 10 | 118 | 0.6+ | 0.5+ | 1998 04 09 | 046 | 0.0 | 0.6− |
| 1997 12 04 | 704 | 0.4+ | 0.6− | 1998 01 10 | 118 | 0.4+ | 0.3+ | 1998 04 09 | 046 | 0.4+ | 0.2− |
| 1997 12 04 | 704 | 0.4− | 0.6− | 1998 01 11 | 658 | 0.7− | 0.3− | 1998 04 09 | 046 | 0.2− | 0.0 |
| 1997 12 04 | 704 | 0.5− | 0.7− | 1998 01 11 | 658 | 0.1− | 0.5− | 1998 04 09 | 046 | 0.2− | 0.2+ |
| 1997 12 04 | 402 | 0.6− | 0.0 | 1998 01 11 | 658 | 0.1− | 0.0 | 1998 04 09 | 118 | 0.0 | 0.3+ |
| 1997 12 04 | 402 | 0.6− | 0.0 | 1998 01 15 | 118 | 0.8+ | 0.4− | 1998 04 09 | 118 | 0.1− | 0.9+ |
| 1997 12 04 | 402 | 0.5− | 0.2− | 1998 01 15 | 118 | 0.6+ | 0.4− | 1998 04 16 | 658 | 0.7− | 0.8− |
| 1997 12 05 | 658 | 0.6− | 0.5− | 1998 01 15 | 118 | 0.6+ | 0.4− | 1998 04 16 | 658 | (3.2− | 0.6+) |
| 1997 12 05 | 658 | 0.6− | 0.5− | 1998 01 18 | 118 | 0.3+ | 0.1+ | 1998 04 16 | 658 | 1.5− | 0.2− |
| 1997 12 05 | 658 | 0.8− | 0.4− | 1998 01 18 | 118 | 0.3+ | 0.2+ | 1998 04 22 | 566 | 0.9+ | 0.3+ |
| 1997 12 05 | 046 | 0.6− | 0.1+ | 1998 01 18 | 118 | 0.9+ | 0.5+ | 1998 04 22 | 566 | 0.8+ | 0.7+ |
| 1997 12 05 | 046 | 0.3− | 0.5− | 1998 01 24 | 566 | 0.1− | 0.2+ | 1998 04 22 | 566 | 0.7+ | 0.3+ |
| 1997 12 05 | 046 | 0.3− | 1.2− | 1998 01 24 | 566 | 0.1− | 0.1− | 1998 04 29 | 557 | 0.4+ | 0.1− |
| 1997 12 05 | 046 | 0.4− | 0.1− | 1998 01 24 | 566 | 0.1− | 0.2− | 1998 04 30 | 402 | (3.3+ | 2.2−) |
| 1997 12 05 | 118 | 0.6− | 0.4− | 1998 01 24 | 118 | 0.1+ | 0.8− | 1998 04 30 | 402 | 1.4+ | 1.0− |
| 1997 12 06 | 118 | 0.3− | 0.6− | 1998 01 24 | 118 | 0.2+ | 0.7− | 1998 04 30 | 402 | 0.4− | 0.5− |
| 1997 12 06 | 587 | 0.5− | 0.3+ | 1998 01 24 | 118 | 0.2+ | 0.4− | 1998 05 18 | 611 | (2.4+ | 1.6−) |
| 1997 12 06 | 587 | 0.1− | 0.1− | 1998 01 26 | 118 | 0.7+ | 0.5+ | 2002 07 29 | 644 | 0.3− | 0.0 |
| 1997 12 07 | 910 | (3.0+ | 1.8−) | 1998 01 26 | 118 | 0.2+ | 0.2+ | 2004 09 02 | 568 | 0.3+ | 0.5+ |
| 1997 12 07 | 910 | (2.9+ | 1.7−) | 1998 01 27 | 360 | 0.4+ | 0.1+ | 2004 09 02 | 568 | 0.4+ | 0.5+ |
| 1997 12 07 | 910 | (3.0+ | 1.5−) | 1998 01 27 | 360 | 0.4− | 0.1+ | 2004 09 18 | 568 | 0.0 | 0.0 |
| 1997 12 18 | 658 | 0.4− | 0.6+ | 1998 01 27 | 360 | 0.3+ | 0.4+ | 2004 09 18 | 568 | 0.1− | 0.0 |
| 1997 12 18 | 658 | 0.5− | 0.9+ | 1998 01 28 | 566 | 0.0 | 0.4+ | 2006 10 17 | 703 | 1.5+ | 0.3+ |
| 1997 12 18 | 658 | 0.1+ | 0.7+ | 1998 01 28 | 566 | 0.3− | 0.2− | 2006 10 17 | 703 | (0.0 | 1.9+) |
| 1997 12 18 | 046 | 0.3+ | 0.5+ | 1998 02 01 | 046 | 1.3+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 1997 12 18 | 046 | 0.5− | 0.3+ | 1998 02 01 | 046 | 1.2+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.6+ |
| 1997 12 18 | 046 | 0.2− | 0.1− | 1998 02 01 | 046 | (2.0+ | 0.7+) | 2006 10 17 | 113 | 0.1− | 0.3− |
| 1997 12 21 | 360 | 0.1− | 0.1− | 1998 02 01 | 557 | 0.8+ | 0.3+ | 2006 10 17 | 113 | 0.4− | 0.2− |
| 1997 12 21 | 360 | 0.2− | 0.0 | 1998 02 01 | 557 | 1.2+ | 0.3+ | 2006 10 17 | 113 | 0.5− | 0.1+ |
| 1997 12 21 | 360 | 0.0 | 0.0 | 1998 02 08 | 046 | 0.2+ | 0.7+ | 2006 10 17 | 113 | 0.3− | 0.0 |
| 1997 12 21 | 046 | 0.1− | 0.3+ | 1998 02 08 | 046 | 0.7− | 0.5+ | 2006 10 28 | 703 | 0.8− | 0.7− |
| 1997 12 21 | 046 | 0.3− | 0.1+ | 1998 02 08 | 046 | 0.3+ | 1.8+ | 2006 10 28 | 703 | 0.1+ | 0.8− |
| 1997 12 21 | 046 | 0.1+ | 0.2+ | 1998 02 08 | 046 | 0.2+ | 1.1+ | 2006 10 28 | 703 | 0.2− | 0.4+ |
| 1997 12 22 | 658 | 0.1+ | 0.0 | 1998 02 23 | 557 | 0.8+ | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 1997 12 22 | 658 | 0.0 | 0.0 | 1998 02 23 | 557 | 0.1+ | 0.2− | 2006 11 10 | 704 | 0.2+ | 0.6+ |
| 1997 12 22 | 658 | 0.0 | 0.1− | 1998 02 27 | 118 | 0.7+ | 0.2+ | 2006 11 10 | 704 | 0.6− | 0.7+ |
| 1997 12 24 | 104 | 0.1+ | 0.0 | 1998 02 27 | 118 | 0.8+ | 0.1− | 2006 11 10 | 704 | 1.4+ | 0.1− |
| 1997 12 24 | 104 | 0.5+ | 0.5+ | 1998 03 03 | 711 | 0.7+ | 0.2+ | 2006 11 10 | 704 | 0.8− | 0.5+ |
| 1997 12 24 | 104 | 0.2− | 0.1− | 1998 03 04 | 711 | 0.3+ | 1.0+ | 2006 11 10 | 704 | 0.5− | 0.7+ |
| 1997 12 25 | 566 | 0.5− | 0.0 | 1998 03 04 | 711 | 0.4+ | 1.2+ | 2006 11 16 | 703 | 0.1− | 0.4− |
| 1997 12 25 | 566 | 0.2− | 0.2+ | 1998 03 05 | 711 | 0.0 | 0.7+ | 2006 11 16 | 703 | 0.5+ | 0.1− |
| 1997 12 25 | 566 | 0.6− | 0.3− | 1998 03 11 | 118 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.2+ | 0.0 |
| 1997 12 25 | 402 | 0.2+ | 0.2− | 1998 03 11 | 118 | 1.2+ | 0.1− | 2006 11 16 | 703 | 0.2− | 0.1− |
| 1997 12 25 | 402 | 0.3+ | 0.6− | 1998 03 17 | 658 | 0.4− | 0.0 | | | | |
| 1997 12 25 | 402 | 0.1+ | 0.5− | 1998 03 17 | 658 | 0.9− | 0.1− | | | | |

**(136840)∗ 1997 WN$_{28}$ = 2000 KA$_{11}$**

Discovered 1997 Nov. 30 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 1927)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.21755 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21832397 | $\omega$ | 141.75875 | | +0.91069158 | | −0.22827995 |
| $a$ | 2.7315036 | $\Omega$ | 234.97259 | | +0.19082105 | | +0.97166023 |
| $e$ | 0.1419205 | $i$ | 24.86173 | | +0.36637163 | | +0.06135683 |
| $P$ | 4.51 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 06 03 | 691 | 0.3+ | 0.7+ | 2001 09 10 | 704 | 1.0+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 1991 06 03 | 691 | 0.1+ | 0.6+ | 2001 09 10 | 704 | 1.4+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 1991 06 03 | 691 | 0.1+ | 0.6+ | 2001 09 10 | 704 | (2.1+ | 0.4−) | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 1997 11 29 | 704 | 0.2− | 0.3+ | 2001 09 10 | 704 | 1.2+ | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.3+ |
| 1997 11 29 | 704 | 0.8+ | 0.8− | 2001 09 10 | 704 | 0.7+ | 0.1− | 2006 11 09 | 691 | 0.1− | 0.3+ |
| 1997 11 29 | 704 | 0.8+ | 0.9− | 2001 10 18 | 704 | (1.7− | 0.9−) | 2006 11 09 | 691 | 0.3− | 0.3+ |
| 1997 11 29 | 704 | 0.2− | 1.4− | 2001 10 18 | 704 | (0.0 | 1.6−) | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1997 11 30 | 691 | 0.1− | 0.1− | 2001 10 18 | 704 | 1.1− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1997 11 30 | 691 | 0.2− | 0.2− | 2001 10 18 | 704 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 1997 11 30 | 691 | 0.1+ | 0.0 | 2001 10 18 | 704 | 1.0− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 1997 12 04 | 704 | 0.1− | 0.8+ | 2001 11 17 | 704 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 1997 12 04 | 704 | 0.4− | 0.6− | 2001 11 17 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 1997 12 04 | 704 | 0.1+ | 0.1+ | 2001 11 17 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 1997 12 04 | 704 | 0.1+ | 0.3− | 2004 04 12 | E12 | 0.6− | 1.2+ | 2006 11 13 | 691 | 0.3+ | 0.3+ |
| 1997 12 04 | 704 | 0.8− | 0.8− | 2004 04 12 | E12 | 0.9+ | 0.3− | 2006 11 13 | 691 | 0.6+ | 0.5+ |
| 1997 12 05 | 691 | 0.3− | 0.2− | 2004 04 12 | E12 | 0.8+ | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 1997 12 05 | 691 | 0.3− | 0.3− | 2004 04 12 | E12 | 0.4+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 1997 12 05 | 691 | 0.0 | 0.3− | 2004 04 23 | E12 | 0.5+ | 0.3− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2000 05 07 | 704 | 0.0 | 1.5− | 2004 04 23 | E12 | 0.9+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2000 05 07 | 704 | 0.5− | 0.1+ | 2004 04 23 | E12 | 0.2+ | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2000 05 07 | 704 | 0.7− | 0.3− | 2004 04 23 | E12 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2000 05 07 | 704 | 0.6− | 0.1+ | 2004 04 24 | E12 | (0.4+ | 1.9+) | 2006 11 16 | 691 | 0.4+ | 0.2+ |
| 2000 05 24 | 691 | 0.4− | 0.1− | 2004 04 24 | E12 | (0.7+ | 2.2+) | 2006 11 16 | 704 | 0.5+ | 0.2+ |
| 2000 05 24 | 691 | 0.5− | 0.2− | 2004 04 24 | E12 | (1.0+ | 1.6+) | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2000 05 24 | 691 | 0.4− | 0.3− | 2004 04 24 | E12 | (0.4+ | 2.1+) | 2006 11 16 | 704 | 0.4+ | 0.4+ |
| 2000 05 28 | 704 | 0.1− | 0.3+ | 2005 07 28 | 704 | 0.5+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2000 05 28 | 704 | 0.5+ | 0.9+ | 2005 07 28 | 704 | 0.4− | 0.4− | 2006 11 16 | 704 | 0.4+ | 0.5+ |
| 2000 05 28 | 704 | 1.5+ | 0.2+ | 2005 07 28 | 704 | 0.5+ | 0.8+ | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 2000 05 28 | 704 | 0.6+ | 0.7+ | 2005 07 28 | 704 | 0.7− | 0.2− | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2000 05 29 | 704 | 1.3+ | 0.4+ | 2006 10 19 | 704 | (0.8+ | 1.7+) | 2006 11 17 | 704 | 0.8+ | 0.1+ |
| 2000 05 29 | 704 | 0.7+ | 0.6+ | 2006 10 19 | 704 | 0.2+ | 1.4+ | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 2000 05 29 | 704 | 0.5+ | 0.0 | 2006 10 19 | 704 | 0.3+ | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2000 05 29 | 704 | 1.3+ | 1.0+ | 2006 10 19 | 703 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2000 06 02 | 691 | 0.5− | 1.1+ | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2000 06 02 | 691 | 0.8− | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2000 06 02 | 691 | 0.6− | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2001 06 23 | 644 | 0.3+ | 0.3− | 2006 10 20 | 704 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2001 06 23 | 644 | 0.2− | 0.3− | 2006 10 20 | 704 | 0.6+ | 0.7+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2001 06 23 | 644 | 0.1+ | 0.1− | 2006 10 20 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 0.8− | 0.8+ |
| 2001 06 27 | 644 | 0.2− | 0.5− | 2006 10 20 | 704 | 0.3+ | 0.9+ | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2001 06 27 | 644 | 0.2− | 0.4− | 2006 10 20 | 704 | 0.5+ | 1.1+ | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2001 06 27 | 644 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2001 07 25 | 644 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2001 07 25 | 644 | 0.2+ | 1.1+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 27 | 703 | 0.4+ | 0.2+ |
| 2001 07 25 | 644 | 0.5+ | 0.0 | 2006 10 27 | 703 | 0.7+ | 1.1+ | 2006 11 27 | 703 | 0.3+ | 0.1− |
| 2001 07 25 | 644 | 0.2+ | 0.9+ | 2006 10 27 | 703 | 0.5+ | 0.8+ | 2006 11 27 | 703 | 0.3+ | 0.1+ |
| 2001 07 25 | 644 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.8− |
| 2001 07 25 | 644 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.1− | 1.2+ | 2006 11 29 | 704 | 0.4+ | 1.2− |
| 2001 08 11 | 644 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.0 | 1.5− |
| 2001 08 11 | 644 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.3− | 1.0− |
| 2001 08 11 | 644 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.7− |
| 2001 08 23 | 704 | 0.5− | 0.4− | 2006 10 29 | 704 | 0.4− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2001 08 23 | 704 | 0.4+ | 0.6− | 2006 10 29 | 704 | 0.5− | 0.8+ | 2006 12 01 | G96 | 0.2− | 0.2+ |
| 2001 08 23 | 704 | 1.1+ | 0.6− | 2006 10 29 | 704 | 0.7− | 0.6+ | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2001 08 23 | 704 | 0.1+ | 0.4− | 2006 10 29 | 704 | 0.5− | 0.8+ | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2001 08 23 | 704 | 0.6− | 0.9− | 2006 10 29 | 704 | 0.7− | 0.4+ | | | | |

**(136841)∗ 1997 WU$_{50}$ = 2003 AJ$_{78}$**

Discovered 1997 Nov. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74563)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.55818 | | (2000.0) | | | |
| $n$ | 0.21716959 | $\omega$ | 304.04053 | | +0.96180525 | −0.20469253 |
| $a$ | 2.7411746 | $\Omega$ | 68.35949 | | +0.26687663 | +0.84888580 |
| $e$ | 0.3789043 | $i$ | 11.27555 | | −0.06088938 | +0.48733343 |
| $P$ | 4.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 0.2− | 0.9− | 2003 01 13 | 704 | 0.7+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 1997 11 29 | 704 | 0.1− | 1.0− | 2003 01 31 | 699 | 0.5− | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.2− |
| 1997 11 29 | 704 | 0.7+ | 1.4− | 2003 01 31 | 699 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.1− |
| 1997 11 29 | 704 | 0.5+ | 1.9− | 2003 01 31 | 699 | 0.5− | 1.0+ | 2006 10 28 | 703 | 0.2− | 0.1+ |
| 1997 11 29 | 704 | 0.6+ | 1.2− | 2003 01 31 | 699 | 0.1− | 0.7+ | 2006 10 28 | 703 | 0.2− | 0.2− |
| 1997 12 04 | 704 | 0.2+ | 0.8− | 2005 04 04 | G96 | 0.2− | 0.3+ | 2006 11 10 | 704 | 1.2− | 1.1+ |
| 1997 12 04 | 704 | (0.2+ | 2.4−) | 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 11 10 | 704 | 1.1− | 1.0+ |
| 1997 12 04 | 704 | 1.7+ | 1.3− | 2005 04 04 | G96 | 0.5− | 0.3+ | 2006 11 10 | 704 | 1.0− | 1.0+ |
| 1997 12 04 | 704 | 0.1+ | 0.4− | 2005 04 04 | G96 | 0.1− | 0.9+ | 2006 11 10 | 704 | 0.4− | 0.9+ |
| 1997 12 04 | 704 | (2.7+ | 0.5+) | 2006 08 05 | E12 | 0.0 | 0.4+ | 2006 11 10 | 704 | 0.0 | 0.6+ |
| 1997 12 15 | 327 | 0.0 | 0.4+ | 2006 08 05 | E12 | 0.5− | 0.3+ | 2006 11 16 | 703 | 0.3− | 0.1− |
| 1997 12 15 | 327 | 0.2− | 0.1+ | 2006 08 05 | E12 | 0.5− | 0.0 | 2006 11 16 | 703 | 0.1− | 0.0 |
| 1997 12 15 | 327 | 0.2+ | 0.2+ | 2006 08 05 | E12 | 0.7+ | 0.2− | 2006 11 16 | 703 | 0.0 | 0.2− |
| 2002 11 22 | 644 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.8+ | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2002 11 22 | 644 | 0.3− | 0.5+ | 2006 08 30 | 704 | 0.2− | 0.4+ | 2006 11 21 | 704 | (1.8− | 0.3+) |
| 2002 11 22 | 644 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.3+ | 0.5+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2003 01 10 | 704 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.1− | 0.8+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2003 01 10 | 704 | 0.7+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.6+ | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2003 01 10 | 704 | 0.0 | 1.2+ | 2006 10 02 | 703 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2003 01 10 | 704 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.3+ | 0.1− | 2006 12 03 | 644 | 0.6+ | 0.1+ |
| 2003 01 10 | 704 | 0.2− | 0.5+ | 2006 10 02 | 703 | 0.3+ | 0.1− | 2006 12 03 | 644 | 0.2+ | 0.2− |
| 2003 01 13 | 704 | 0.9+ | 0.9+ | 2006 10 02 | 703 | 0.0 | 0.0 | 2006 12 03 | 644 | 0.2+ | 0.0 |
| 2003 01 13 | 704 | 1.2+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | | | |
| 2003 01 13 | 704 | 1.0+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | | | |

**(136842)∗ 1997 XN$_9$ = 2001 VW$_{87}$**

Discovered 1997 Dec. 6 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Id. G. V. Williams (*MPO* 19310)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.27293 | | (2000.0) | | | |
| $n$ | 0.22815742 | $\omega$ | 21.45430 | | −0.18133923 | −0.90566372 |
| $a$ | 2.6524446 | $\Omega$ | 80.64910 | | +0.83629410 | −0.34706843 |
| $e$ | 0.0523712 | $i$ | 22.85640 | | +0.51742464 | +0.24355027 |
| $P$ | 4.32 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 04 | 413 | 0.8+ | 1.0+ | 1998 01 18 | 683 | 0.7+ | 0.0 | 2003 03 24 | 645 | 0.1+ | 0.0 |
| 1992 09 04 | 413 | 1.7+ | 0.3+ | 2001 10 11 | 704 | 0.7− | 0.4− | 2003 03 24 | 704 | 0.8+ | 0.6− |
| 1997 11 29 | 704 | 1.1− | 1.4+ | 2001 10 11 | 704 | 0.8− | 0.5− | 2003 03 24 | 704 | (2.0+ | 0.1+) |
| 1997 11 29 | 704 | (2.2− | 0.3−) | 2001 10 11 | 704 | 0.7− | 1.0+ | 2003 03 24 | 704 | (2.1+ | 0.3+) |
| 1997 11 29 | 704 | 1.9− | 1.6− | 2001 10 11 | 704 | 0.9− | 0.3+ | 2003 03 24 | 704 | (1.9+ | 1.0+) |
| 1997 11 29 | 704 | (2.9− | 0.6+) | 2001 10 20 | 608 | 0.3+ | 0.2− | 2004 06 14 | 704 | 0.8− | 1.0+ |
| 1997 12 04 | 704 | 1.4+ | 1.3− | 2001 10 20 | 608 | 0.0 | 0.0 | 2004 06 14 | 704 | 0.3+ | 0.5+ |
| 1997 12 04 | 704 | 0.9+ | 1.8− | 2001 10 20 | 608 | 0.5+ | 0.5− | 2004 06 14 | 704 | 0.5− | 1.2+ |
| 1997 12 04 | 704 | 1.0+ | 0.8− | 2001 10 23 | 699 | 1.0− | 0.3− | 2006 01 22 | 291 | 0.0 | 0.5+ |
| 1997 12 04 | 704 | 1.0+ | 0.3− | 2001 10 23 | 699 | 0.3− | 0.4+ | 2006 01 22 | 291 | 0.1− | 0.3+ |
| 1997 12 06 | 683 | 1.2− | 1.2+ | 2001 10 23 | 699 | 0.7− | 1.4+ | 2006 01 22 | 291 | 0.1− | 0.3+ |
| 1997 12 06 | 683 | 0.9− | 1.0+ | 2001 10 23 | 699 | (1.6− | 0.3−) | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1997 12 06 | 683 | 0.8− | 0.5+ | 2001 11 12 | 608 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.4+ | 0.2− |
| 1997 12 08 | 683 | 0.0 | 0.1+ | 2001 11 12 | 608 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.5+ | 0.4+ |
| 1997 12 08 | 683 | 0.1+ | 0.0 | 2001 11 12 | 608 | 0.7+ | 0.3+ | 2006 11 03 | G96 | 0.1+ | 0.9+ |
| 1997 12 17 | 683 | 0.9− | 0.3− | 2001 11 18 | 608 | 0.4+ | 0.7+ | 2006 11 03 | G96 | 0.1+ | 1.0+ |
| 1997 12 17 | 683 | 0.3+ | 0.2+ | 2001 11 18 | 608 | 0.3− | 0.7+ | 2006 11 03 | G96 | 0.3+ | 0.9+ |
| 1997 12 17 | 683 | 0.4− | 0.3− | 2001 11 18 | 608 | 0.0 | 0.6+ | 2006 11 03 | G96 | 0.2+ | 0.8+ |
| 1997 12 26 | 683 | 0.3+ | 0.0 | 2002 01 08 | 645 | 0.0 | 0.1− | 2006 11 15 | 703 | 1.4− | 1.5− |
| 1997 12 26 | 683 | 0.3+ | 0.3− | 2002 01 08 | 645 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.6+ | 1.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 26 | 683 | 0.7− | 1.0− | 2002 01 13 | 645 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.7+ | 0.3− |
| 1997 12 27 | 683 | 0.4+ | 0.1+ | 2002 01 13 | 645 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.0 | 0.9+ |
| 1997 12 27 | 683 | 0.7+ | 0.1+ | 2002 01 14 | 645 | 0.1+ | 0.1− | 2006 11 21 | 703 | 0.7− | 0.3+ |
| 1998 01 16 | 683 | 0.5+ | 0.3+ | 2002 01 14 | 645 | 0.1+ | 0.1− | 2006 11 21 | 703 | 0.6− | 0.3− |
| 1998 01 16 | 683 | (2.1− | 1.6−) | 2003 01 11 | 704 | 0.0 | 1.1+ | 2006 11 21 | 703 | 0.5− | 0.4+ |
| 1998 01 16 | 683 | 0.4− | 0.6+ | 2003 01 11 | 704 | 0.2− | 1.1+ | 2006 11 21 | 703 | 0.4− | 0.5+ |
| 1998 01 18 | 683 | 0.4− | 0.7− | 2003 01 11 | 704 | 0.1− | 0.9+ | | | | |
| 1998 01 18 | 683 | 0.5− | 0.5− | 2003 03 24 | 645 | 0.1+ | 0.1− | | | | |

**(136843)∗ 1997 YX$_5$**

Discovered 1997 Dec. 25 by T. Kobayashi at Oizumi.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.23337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20137986 | $\omega$ | 155.22467 | | +0.03263491 | −0.99268610 | |
| $a$ | 2.8826508 | $\Omega$ | 292.72851 | | +0.89470669 | +0.08084680 | |
| $e$ | 0.1839594 | $i$ | 7.23937 | | +0.44546033 | −0.08965547 | |
| $P$ | 4.89 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 25 | 411 | 0.3+ | 1.7− | 2002 12 11 | 704 | 0.2− | 1.5− | 2003 03 06 | 704 | 0.3− | 0.3+ |
| 1997 12 25 | 411 | 0.1− | 1.0− | 2002 12 28 | 291 | 0.4− | 0.0 | 2003 03 06 | 704 | 0.3+ | 0.4+ |
| 1997 12 27 | 411 | 0.1− | 0.8− | 2002 12 28 | 291 | 0.3− | 0.7+ | 2003 03 06 | 704 | 0.4+ | 0.4+ |
| 1997 12 27 | 411 | 0.6− | 0.0 | 2002 12 28 | 291 | 0.3− | 0.1+ | 2003 03 06 | 704 | (1.8+ | 1.5−) |
| 1997 12 30 | 566 | 0.5− | 0.5+ | 2003 01 01 | 704 | 0.9− | 0.6+ | 2003 03 07 | 704 | 0.1+ | 0.3+ |
| 1997 12 30 | 566 | 0.9− | 0.3+ | 2003 01 01 | 704 | 0.6+ | 0.2+ | 2003 03 07 | 704 | 0.0 | 0.5+ |
| 1997 12 30 | 566 | 0.6− | 0.0 | 2003 01 01 | 704 | 0.9+ | 0.1− | 2003 03 07 | 704 | 0.3− | 0.4− |
| 1998 01 03 | 411 | 0.9− | 0.3− | 2003 01 01 | 704 | 0.1− | 0.1+ | 2003 03 07 | 704 | 0.2− | 0.7+ |
| 1998 01 03 | 411 | 0.4− | 1.8− | 2003 01 01 | 704 | 0.4+ | 0.2+ | 2003 03 07 | 704 | 0.7− | 0.6+ |
| 1998 01 03 | 411 | 0.6− | 1.0− | 2003 01 04 | 704 | 0.5+ | 0.6+ | 2006 09 16 | 703 | 0.7+ | 0.4+ |
| 1998 01 16 | 411 | 0.7+ | 0.5− | 2003 01 04 | 704 | 0.5− | 0.4+ | 2006 09 16 | 703 | 0.8+ | 1.2+ |
| 1998 01 16 | 411 | 0.1− | 1.0− | 2003 01 04 | 704 | 0.2− | 0.1+ | 2006 09 16 | 703 | 1.1+ | 1.4+ |
| 1998 01 26 | 566 | 0.3− | 0.3− | 2003 01 04 | 704 | 0.0 | 0.3+ | 2006 09 16 | 703 | (3.8− | 7.2+) |
| 1998 01 26 | 566 | 0.0 | 0.4− | 2003 01 04 | 704 | 0.6− | 0.4+ | 2006 09 16 | 703 | 1.1+ | 0.0 |
| 1998 01 26 | 566 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.2− | 1.1− |
| 1998 01 28 | 411 | 0.4− | 1.6− | 2003 01 08 | 704 | 0.7+ | 0.5− | 2006 09 16 | 703 | 1.4− | 0.1− |
| 1998 01 28 | 411 | 0.2+ | 0.4− | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.1− |
| 2001 08 17 | 704 | 0.4+ | 0.1− | 2003 01 08 | 704 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 2001 08 17 | 704 | 0.4+ | 0.1+ | 2003 01 08 | 704 | 0.3− | 0.9− | 2006 09 19 | 699 | 0.6− | 0.0 |
| 2001 08 17 | 704 | 0.0 | 0.5+ | 2003 01 10 | 291 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.8− | 0.4− |
| 2001 08 17 | 704 | 0.2− | 0.3+ | 2003 01 10 | 291 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.9+ | 0.6− |
| 2001 08 17 | 704 | 0.1− | 1.4+ | 2003 01 10 | 291 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.1+ | 0.1− |
| 2001 09 10 | 699 | 0.9− | 0.2+ | 2003 01 27 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.4− | 0.2− |
| 2001 09 10 | 699 | 0.2+ | 0.6− | 2003 01 27 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.0 | 0.7− |
| 2001 09 10 | 699 | 0.8− | 0.4+ | 2003 01 27 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 1.1− | 0.6+ |
| 2001 09 10 | 699 | 0.8− | 0.1+ | 2003 01 27 | 699 | 0.2+ | 0.1− | 2006 09 27 | 703 | 1.1− | 0.3+ |
| 2001 09 16 | 704 | (0.6+ | 2.6+) | 2003 01 27 | 704 | 0.2+ | 0.9+ | 2006 09 27 | 703 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | (1.3+ | 2.1+) | 2003 01 27 | 699 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.7+ | 0.4+ |
| 2001 09 16 | 704 | (0.4+ | 1.8+) | 2003 01 27 | 704 | 0.3+ | 0.8+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2001 09 16 | 704 | 1.0+ | 0.8+ | 2003 01 27 | 699 | 0.6− | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.7+ | 0.0 | 2003 01 27 | 699 | 0.3− | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2001 09 18 | 699 | 0.2+ | 0.8+ | 2003 01 29 | 291 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 09 18 | 699 | 0.4+ | 0.3+ | 2003 01 29 | 291 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.1+ | 0.7+ | 2003 01 29 | 291 | 1.1+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2003 01 30 | 699 | 0.8+ | 1.3+ | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2003 01 30 | 699 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.7+ | 0.1+ | 2003 01 30 | 699 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2003 01 30 | 699 | 0.1− | 0.1− | 2006 10 16 | 683 | (1.1− | 2.5+) |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2003 02 02 | 608 | (2.0+ | 1.2−) | 2006 10 16 | 683 | 0.5− | 1.4+ |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2003 02 02 | 608 | (1.9+ | 1.5−) | 2006 10 16 | 683 | (1.1− | 2.6+) |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2003 02 02 | 608 | (2.0+ | 0.1−) | 2006 10 17 | 703 | 0.6+ | 0.4− |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2003 02 03 | 704 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.0 | 2003 02 03 | 704 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2003 02 03 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2001 09 25 | 704 | 0.5− | 0.3+ | 2003 02 03 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.4− |
| 2001 09 25 | 704 | 0.5− | 0.2− | 2003 02 03 | 704 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2001 09 25 | 704 | 0.6− | 0.2+ | 2003 02 03 | 644 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.8− | 0.5+ | 2003 02 03 | 644 | 1.0+ | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2003 02 03 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2001 10 05 | 644 | 0.2− | 0.1+ | 2003 02 22 | 699 | 0.0 | 0.5− | 2006 10 23 | 644 | 0.1− | 0.4− |
| 2001 10 05 | 644 | 0.4− | 0.1− | 2003 02 22 | 699 | 0.4− | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2001 10 05 | 644 | 0.4− | 0.5− | 2003 02 22 | 699 | 0.3+ | 0.2− | 2006 10 23 | 703 | 0.6− | 0.1− |
| 2001 10 21 | 704 | 0.7+ | 1.1+ | 2003 02 22 | 699 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.7− | 0.7+ | 2003 02 28 | 704 | 0.7+ | 0.4− | 2006 10 23 | 703 | 0.3− | 0.9− |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2003 02 28 | 704 | 0.0 | 1.1+ | 2006 10 23 | 703 | 0.6− | 0.7− |
| 2001 10 21 | 704 | 0.3+ | 1.3+ | 2003 02 28 | 704 | 0.1− | 0.8+ | 2006 10 23 | 703 | 0.2− | 0.0 |
| 2002 12 11 | 704 | (2.6+ | 0.9−) | 2003 02 28 | 704 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 1.1+ | 1.2− | 2003 02 28 | 704 | 0.4+ | 0.3− | | | | |

**(136844)∗ 1997 YA$_{11}$ = 2001 SN$_{44}$**

Discovered 1997 Dec. 25 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 16783)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.03575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21917426 | $\omega$ | 330.13990 | | +0.02343408 | −0.99757181 | |
| $a$ | 2.7244344 | $\Omega$ | 118.44741 | | +0.93136953 | −0.00205651 | |
| $e$ | 0.2876666 | $i$ | 4.27772 | | +0.36332030 | +0.06961503 | |
| $P$ | 4.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 25 | 566 | 0.5+ | 0.2− | 2001 09 21 | 704 | 0.1+ | 0.6− | 2005 07 18 | 644 | 0.2+ | 0.5+ |
| 1997 12 25 | 566 | 0.5+ | 0.1− | 2001 09 21 | 704 | (0.6+ | 1.7−) | 2005 07 18 | 644 | 0.3− | 1.0+ |
| 1997 12 25 | 566 | 0.3− | 0.3+ | 2001 10 08 | 644 | 0.4− | 0.2+ | 2005 11 06 | G96 | 0.3− | 0.3− |
| 1997 12 30 | 566 | 0.5+ | 0.2− | 2001 10 08 | 644 | 0.4− | 0.3+ | 2005 11 06 | G96 | 0.7− | 0.7− |
| 1997 12 30 | 566 | 0.6+ | 0.4− | 2001 10 08 | 644 | 0.6− | 0.3+ | 2005 11 06 | G96 | 0.1− | 0.0 |
| 1997 12 30 | 566 | 1.0+ | 0.3− | 2001 10 13 | 704 | 0.1− | 0.9+ | 2005 11 06 | G96 | 0.6− | 0.9− |
| 1998 01 22 | 704 | 0.0 | 0.5+ | 2001 10 13 | 704 | 1.2+ | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 1998 01 22 | 704 | 1.1− | 0.5+ | 2001 10 13 | 704 | (1.1− | 2.9+) | 2006 11 01 | G96 | 0.0 | 0.4− |
| 1998 01 22 | 704 | 0.0 | 1.0+ | 2001 10 13 | 704 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 1998 01 22 | 704 | 0.3+ | 0.7+ | 2001 10 16 | 644 | (0.1+ | 1.5+) | 2006 11 01 | G96 | 0.1− | 0.2− |
| 1998 01 22 | 691 | 0.1+ | 0.3+ | 2001 10 16 | 644 | (0.0 | 1.7+) | 2006 11 16 | 703 | (0.5− | 4.2−) |
| 1998 01 22 | 691 | 0.0 | 0.0 | 2001 10 16 | 644 | (0.1+ | 1.9+) | 2006 11 16 | 703 | 0.6− | 0.3− |
| 1998 01 22 | 691 | 0.0 | 0.0 | 2001 10 19 | 699 | 0.2+ | 0.6+ | 2006 11 16 | 703 | 0.1− | 0.6− |
| 1998 01 26 | 566 | 0.1+ | 0.6+ | 2001 10 19 | 699 | 0.5+ | 1.2+ | 2006 11 16 | 703 | (1.0+ | 1.8+) |
| 1998 01 26 | 566 | 0.6+ | 0.0 | 2001 10 19 | 699 | 0.4− | 0.9+ | 2006 11 18 | 704 | (1.7+ | 0.5+) |
| 1998 01 26 | 566 | 0.2+ | 0.6+ | 2001 10 19 | 699 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 1998 01 29 | 691 | 0.1+ | 0.7+ | 2001 10 24 | 644 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.6+ |
| 1998 01 29 | 691 | 0.4− | 0.4− | 2001 10 24 | 644 | 0.5− | 0.5+ | 2006 11 18 | 704 | (2.1+ | 0.3+) |
| 1998 01 29 | 691 | 0.4− | 0.4− | 2001 10 24 | 644 | 0.6− | 0.6+ | 2006 11 21 | 704 | (1.7+ | 0.1−) |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2001 11 05 | 704 | 0.6− | 1.2+ | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2001 09 16 | 704 | 1.0− | 0.3− | 2001 11 05 | 704 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.8+ |
| 2001 09 16 | 704 | 0.1− | 0.9+ | 2001 11 05 | 704 | 0.0 | 0.8+ | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.7+ | 0.7+ | 2003 03 26 | 644 | 0.6+ | 0.5+ | 2006 11 21 | 704 | 0.6− | 0.5+ |
| 2001 09 18 | 699 | 0.1+ | 0.0 | 2003 03 26 | 644 | 0.3+ | 0.3+ | 2006 11 24 | 644 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | 0.9+ | 1.2+ | 2003 03 26 | 644 | 0.3+ | 0.6+ | 2006 11 24 | 644 | 0.2+ | 0.1− |
| 2001 09 18 | 699 | (1.7− | 0.4+) | 2003 04 03 | 699 | 1.3+ | 0.4+ | 2006 11 24 | 644 | 0.2− | 0.0 |
| 2001 09 18 | 699 | 1.2− | 0.2+ | 2003 04 03 | 699 | 1.3− | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.5− |
| 2001 09 19 | 704 | (0.3− | 2.0+) | 2003 04 03 | 699 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.8− |
| 2001 09 19 | 704 | 0.3− | 1.1+ | 2003 04 03 | 699 | 0.6+ | 0.5+ | 2006 11 27 | 703 | 0.1− | 0.8− |
| 2001 09 19 | 704 | 1.1− | 1.0+ | 2003 04 09 | 691 | 0.3+ | 0.6+ | 2006 11 27 | 703 | 0.3− | 1.0− |
| 2001 09 19 | 704 | (1.6− | 1.6+) | 2003 04 09 | 691 | 0.2+ | 1.0+ | 2006 11 29 | 704 | 0.1− | 1.0− |
| 2001 09 21 | 704 | (0.8+ | 1.6−) | 2003 04 09 | 691 | 0.4+ | 0.8+ | 2006 11 29 | 704 | 0.8+ | 0.8+ |
| 2001 09 21 | 704 | 0.8− | 0.1− | 2005 07 18 | 644 | 0.0 | 0.7+ | 2006 11 29 | 704 | 0.4+ | 0.5+ |

**(136845)∗ 1997 YU$_{14}$ = 2001 WB$_{18}$**

Discovered 1997 Dec. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 22022)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.83343 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22287404 | $\omega$ | 161.20916 | | −0.14297205 | −0.98954495 | |
| $a$ | 2.6941994 | $\Omega$ | 297.00694 | | +0.90530692 | −0.12300816 | |
| $e$ | 0.1895312 | $i$ | 1.21988 | | +0.39997296 | −0.07529790 | |
| $P$ | 4.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 28 | 691 | 0.8+ | 0.2+ | 2001 11 19 | 704 | 0.1− | 0.2− | 2005 09 13 | 691 | 0.1+ | 0.0 |
| 1997 12 28 | 691 | 0.0 | 1.1− | 2001 11 19 | 704 | 0.4− | 0.1− | 2005 09 13 | 691 | 0.0 | 0.1+ |
| 1997 12 28 | 691 | 0.0 | 0.2+ | 2001 11 19 | 704 | 0.2− | 0.1− | 2005 09 13 | 691 | 0.0 | 0.1+ |
| 1998 01 02 | 691 | 0.4− | 0.1+ | 2001 11 19 | 704 | 0.5− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.5− |
| 1998 01 02 | 691 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.7+ | 0.6+ | 2006 10 04 | G96 | 0.7− | 0.1+ |
| 1998 01 02 | 691 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.8− | 0.1− |
| 1998 01 06 | 691 | 0.1− | 0.4− | 2001 11 21 | 704 | 0.6+ | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.2+ |
| 1998 01 06 | 691 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.9+ | 0.9− | 2006 10 23 | G96 | 0.3− | 0.2− |
| 1998 01 06 | 691 | 0.2− | 0.1− | 2003 03 24 | 291 | 0.6+ | 0.4+ | 2006 10 23 | G96 | 0.6− | 0.2− |
| 2001 10 19 | 644 | 0.1+ | 0.9+ | 2003 03 24 | 291 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.2+ |
| 2001 10 19 | 644 | 0.1+ | 0.9+ | 2003 03 24 | 291 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.9− | 0.1+ |
| 2001 10 19 | 644 | 0.1− | 0.9+ | 2003 03 27 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.4+ | 0.6+ |
| 2001 10 21 | 704 | 1.3− | 0.2− | 2003 03 27 | 691 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.4+ |
| 2001 10 21 | 704 | 0.1+ | 0.7+ | 2003 03 27 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.4+ |
| 2001 10 21 | 704 | 0.3− | 0.2− | 2005 08 27 | 644 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2001 10 21 | 704 | 0.4− | 0.2+ | 2005 08 27 | 644 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.3− | 0.7+ | 2005 08 27 | 644 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.3+ |
| 2001 11 17 | 704 | 0.3+ | 0.4+ | 2005 08 30 | 691 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2001 11 17 | 704 | 0.9− | 0.2+ | 2005 08 30 | 691 | 0.0 | 0.3+ | | | | |
| 2001 11 19 | 704 | 0.4− | 0.5− | 2005 08 30 | 691 | 0.1− | 0.1+ | | | | |

**(136846)∗ 1997 YV$_{14}$ = 2003 UO$_{257}$**

Discovered 1997 Dec. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55824)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.28758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30274079 | $\omega$ | 268.42964 | | −0.86661657 | +0.49779714 | |
| $a$ | 2.1966225 | $\Omega$ | 301.42348 | | −0.44035324 | −0.79528794 | |
| $e$ | 0.0947619 | $i$ | 2.30092 | | −0.23465877 | −0.34599871 | |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 28 | 691 | 0.9+ | 0.8+ | 2003 11 24 | 704 | 0.7− | 1.3+ | 2005 05 09 | 699 | 0.8+ | 0.3+ |
| 1997 12 28 | 691 | 0.4+ | 0.9+ | 2005 03 17 | 704 | 0.9+ | 0.5+ | 2005 05 09 | 699 | 1.0+ | 0.2+ |
| 1997 12 28 | 691 | 0.7+ | 0.3− | 2005 03 17 | 704 | 0.9+ | 0.5− | 2005 05 12 | 699 | 1.2+ | 0.9+ |
| 1998 01 02 | 691 | 0.1− | 0.2+ | 2005 03 17 | 704 | 0.5− | 1.2+ | 2005 05 12 | 699 | 0.9+ | 0.5+ |
| 1998 01 02 | 691 | 0.3− | 0.3− | 2005 04 03 | E12 | 0.8− | 0.4+ | 2005 05 12 | 699 | (1.6+ | 0.2+) |
| 1998 01 02 | 691 | 0.5− | 0.2− | 2005 04 03 | E12 | 0.1− | 0.2+ | 2005 05 12 | 699 | (1.8+ | 0.5+) |
| 1998 01 06 | 691 | 0.2− | 0.0 | 2005 04 03 | E12 | 0.0 | 0.8+ | 2005 05 23 | 644 | 0.1− | 0.0 |
| 1998 01 06 | 691 | 0.8− | 0.9− | 2005 04 03 | E12 | 0.4− | 0.4− | 2005 05 23 | 644 | 0.4− | 0.6+ |
| 1998 01 06 | 691 | 0.4+ | 0.1+ | 2005 04 05 | 699 | 0.1− | 0.2+ | 2005 05 23 | 644 | 0.0 | 0.2+ |
| 2000 11 20 | 704 | 0.4− | 0.2− | 2005 04 05 | 699 | 0.5− | 0.5+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2000 11 20 | 704 | 0.5− | 0.3− | 2005 04 05 | 699 | 0.6+ | 0.9+ | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2000 11 20 | 704 | 0.4− | 0.1+ | 2005 04 05 | 699 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2000 11 20 | 704 | 1.3− | 0.3+ | 2005 04 11 | 699 | 0.5− | 0.6+ | 2006 09 21 | A50 | 0.5+ | 0.1− |
| 2000 12 23 | 691 | 0.1+ | 0.0 | 2005 04 11 | 699 | 0.2− | 0.9+ | 2006 09 22 | A50 | 0.4− | 0.0 |
| 2000 12 23 | 691 | 0.0 | 0.1+ | 2005 04 11 | 699 | 0.3+ | 0.7+ | 2006 09 25 | 691 | 0.2− | 0.6+ |
| 2000 12 23 | 691 | 0.0 | 0.1− | 2005 04 11 | 699 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2003 10 25 | 704 | (2.9+ | 0.9+) | 2005 04 15 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.4− | 0.6+ |
| 2003 10 25 | 704 | (1.5+ | 0.3+) | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.8+ |
| 2003 10 25 | 704 | 0.3+ | 0.5+ | 2005 04 15 | 691 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.9− |
| 2003 10 25 | 704 | (1.8+ | 0.8−) | 2005 04 19 | 699 | 0.6+ | 1.0− | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2003 10 29 | 704 | 0.4+ | 0.1+ | 2005 04 19 | 699 | 1.3− | 1.1+ | 2006 10 17 | 703 | 1.0+ | 0.2− |
| 2003 10 29 | 704 | 0.5− | 1.0+ | 2005 04 19 | 699 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2003 10 29 | 704 | 0.2+ | 0.7+ | 2005 04 19 | 699 | 0.5+ | 1.0+ | 2006 10 20 | 644 | 0.4+ | 0.7+ |
| 2003 10 30 | 704 | 0.6− | 1.2+ | 2005 05 01 | 644 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2003 10 30 | 704 | 0.7− | 0.7+ | 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2003 10 30 | 704 | (1.9− | 0.5+) | 2005 05 01 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2003 11 20 | 704 | (0.7+ | 2.9+) | 2005 05 09 | 699 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2003 11 20 | 704 | 0.4− | 0.3− | 2005 05 09 | 703 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2003 11 20 | 704 | 0.5+ | 0.1− | 2005 05 09 | 703 | 0.4+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2003 11 24 | 704 | 0.1+ | 0.7+ | 2005 05 09 | 703 | 1.0− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2003 11 24 | 704 | 0.7− | 0.9+ | 2005 05 09 | 699 | 1.2+ | 0.6+ | | | | |
| 2003 11 24 | 704 | 0.2− | 0.4+ | 2005 05 09 | 703 | 0.2− | 0.0 | | | | |

**(136847)∗ 1998 BC$_4$ = 2002 YP**

Discovered 1998 Jan. 20 by Y. Shimizu and T. Urata at Nachi-Katsuura Observatory.

Id. G. V. Williams (*MPO* 39928)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.46544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19249456 | $\omega$ | 22.00910 | | −0.48176599 | −0.87450362 | |
| $a$ | 2.9706882 | $\Omega$ | 96.83055 | | +0.79533537 | −0.46322461 | |
| $e$ | 0.2010986 | $i$ | 3.23783 | | +0.36789017 | −0.14375806 | |
| $P$ | 5.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 14 | 327 | 0.3− | 0.1+ | 2002 12 30 | 926 | 0.0 | 0.3+ | 2003 02 04 | 704 | 0.2+ | 0.3− |
| 1996 10 14 | 327 | 0.3− | 0.1− | 2002 12 30 | 926 | 0.8− | 0.5+ | 2003 02 04 | 704 | 0.2− | 0.4− |
| 1996 10 14 | 327 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.0 | 0.4+ | 2003 02 04 | 704 | 0.2+ | 0.9− |
| 1996 10 14 | 327 | 0.0 | 0.3− | 2002 12 31 | 704 | 0.2− | 0.4+ | 2003 02 04 | 704 | 0.5+ | 1.1− |
| 1997 10 03 | 691 | 0.2− | 0.2− | 2002 12 31 | 704 | 0.2− | 0.5+ | 2003 02 08 | 704 | 0.2+ | 0.4+ |
| 1997 10 03 | 691 | 0.7+ | 0.3− | 2002 12 31 | 704 | 0.3− | 0.0 | 2003 02 08 | 704 | 0.6− | 0.4+ |
| 1997 10 03 | 691 | 0.7− | 0.5− | 2002 12 31 | 926 | 0.4− | 0.2+ | 2003 02 08 | 704 | 0.4− | 1.0+ |
| 1998 01 20 | 905 | 0.7− | 1.8− | 2002 12 31 | 926 | 0.1− | 0.7+ | 2003 02 08 | 704 | 0.4+ | 1.1+ |
| 1998 01 20 | 905 | 0.2+ | 0.3− | 2002 12 31 | 926 | 0.3+ | 0.2− | 2003 04 01 | 704 | 0.8− | 1.8+ |
| 1998 01 24 | 566 | 0.1− | 1.2− | 2003 01 04 | 704 | 0.1− | 0.4+ | 2003 04 01 | 704 | 0.1− | 0.6+ |
| 1998 01 24 | 566 | 0.2− | 0.6− | 2003 01 04 | 704 | 0.4+ | 0.2+ | 2003 04 01 | 704 | 0.2+ | 0.7+ |
| 1998 01 24 | 566 | 0.0 | 0.7− | 2003 01 04 | 704 | 0.2+ | 0.5+ | 2004 05 12 | 699 | 0.6+ | 0.6− |
| 1998 01 24 | 385 | 0.7+ | 0.6− | 2003 01 04 | 704 | 0.4− | 0.7+ | 2004 05 12 | 699 | 0.1+ | 1.3− |
| 1998 01 24 | 385 | 0.6+ | 0.7− | 2003 01 08 | 704 | 0.3+ | 0.1+ | 2004 05 12 | 699 | 1.5− | 1.5+ |
| 1998 01 29 | 886 | 0.9− | 0.2+ | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2004 05 12 | 699 | 0.2+ | 0.7+ |
| 1998 01 29 | 886 | 0.6+ | 0.9− | 2003 01 08 | 704 | 0.2+ | 0.0 | 2004 05 21 | 691 | 0.2+ | 0.5+ |
| 1998 01 30 | 385 | 0.4− | 0.4+ | 2003 01 08 | 704 | 0.7+ | 0.4− | 2004 05 21 | 691 | 0.0 | 0.3+ |
| 1998 01 30 | 385 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.2+ | 0.2− | 2004 05 21 | 691 | 0.2+ | 0.5+ |
| 1998 02 06 | 385 | 0.6+ | 0.7− | 2003 01 09 | 704 | 0.1+ | 0.2− | 2006 09 03 | A79 | 0.1− | 1.2+ |
| 1998 02 06 | 385 | 0.5− | 0.7− | 2003 01 09 | 704 | 0.3+ | 0.2− | 2006 09 03 | A79 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.9− | 1.0+ | 2003 01 09 | 704 | 0.0 | 0.1+ | 2006 09 03 | A79 | 0.3+ | 0.0 |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2003 01 09 | 704 | 0.3+ | 0.0 | 2006 09 03 | A79 | 0.9+ | 0.3+ |
| 2001 09 12 | 704 | 0.6− | 0.3+ | 2003 01 09 | 704 | 0.7+ | 0.2− | 2006 09 03 | A79 | 0.2+ | 0.6+ |
| 2001 09 12 | 704 | 0.4− | 0.1+ | 2003 01 30 | 608 | 0.3− | 0.4+ | 2006 09 03 | A79 | 0.4− | 0.9+ |
| 2002 12 10 | 704 | 0.4+ | 0.7+ | 2003 01 30 | 608 | 0.2− | 0.3+ | 2006 09 03 | A79 | 1.1− | 1.6+ |
| 2002 12 10 | 704 | 0.3− | 0.5+ | 2003 01 30 | 608 | 0.1− | 0.3+ | 2006 09 04 | A79 | 0.5− | 1.3− |
| 2002 12 10 | 704 | 0.1− | 0.7+ | 2003 01 31 | 704 | 0.1− | 0.9+ | 2006 09 04 | A79 | 0.8+ | 1.0− |
| 2002 12 27 | 699 | 0.2+ | 0.3− | 2003 01 31 | 704 | 0.1+ | 0.8+ | 2006 09 04 | A79 | 0.6+ | 1.4− |
| 2002 12 27 | 699 | 0.5+ | 0.2− | 2003 01 31 | 704 | 0.4− | 1.5+ | 2006 09 04 | A79 | 0.9+ | 0.7− |
| 2002 12 27 | 699 | 0.0 | 0.2+ | 2003 01 31 | 704 | 0.2+ | 0.3+ | 2006 09 04 | A79 | 0.1+ | 0.4+ |
| 2002 12 27 | 699 | 0.4− | 0.1+ | 2003 01 31 | 704 | 0.5− | 0.2+ | 2006 09 04 | A79 | 0.3+ | 0.1− |
| 2002 12 28 | 699 | 0.5− | 0.7+ | 2003 02 03 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.8+ |
| 2002 12 28 | 699 | 0.4− | 0.4+ | 2003 02 03 | 704 | 0.7+ | 0.3− | 2006 09 14 | 703 | 0.6− | 0.1+ |
| 2002 12 28 | 699 | 0.2− | 0.1− | 2003 02 03 | 704 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 2002 12 28 | 699 | 0.7− | 0.4− | 2003 02 03 | 704 | 0.8+ | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.7+ |
| 2002 12 30 | 926 | 0.2− | 0.2+ | 2003 02 03 | 704 | 0.2− | 0.0 | | | | |

**(136848)∗ 1998 BF$_{44}$**

Discovered 1998 Jan. 25 by U. Munari and M. Tombelli at Cima Ekar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.85612 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21300630 | $\omega$ | 17.45965 | | −0.44704004 | −0.87935110 | |
| $a$ | 2.7767775 | $\Omega$ | 99.35836 | | +0.79958687 | −0.47502013 | |
| $e$ | 0.2912167 | $i$ | 9.56781 | | +0.40101875 | −0.03312884 | |
| $P$ | 4.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 03 | 910 | 1.2− | 1.8− | 2003 03 12 | 704 | 1.4+ | 0.4+ | 2003 05 03 | 608 | 0.1+ | 0.3+ |
| 1997 12 04 | 910 | 1.1− | 1.4− | 2003 03 12 | 704 | 0.2+ | 0.6− | 2003 05 03 | 608 | (0.2+ | 2.4+) |
| 1997 12 04 | 910 | 1.0− | 1.3− | 2003 03 12 | 704 | 0.8+ | 0.2− | 2005 09 01 | 644 | 0.0 | 0.5+ |
| 1998 01 25 | 098 | 1.0+ | 1.4− | 2003 03 12 | 704 | 0.6+ | 0.0 | 2005 09 01 | 644 | 0.5− | 0.2+ |
| 1998 01 25 | 098 | (1.7+ | 3.5−) | 2003 03 13 | 049 | 0.0 | 0.0 | 2005 09 01 | 644 | 0.4− | 0.3+ |
| 1998 01 26 | 098 | 0.4+ | 0.5− | 2003 03 13 | 049 | 0.2+ | 0.4+ | 2006 09 22 | 104 | 0.5+ | 0.0 |
| 1998 01 26 | 098 | 0.4+ | 0.3− | 2003 03 13 | 049 | 0.3− | 0.5− | 2006 09 22 | 104 | 0.5+ | 0.2− |
| 1998 02 02 | 098 | 0.2+ | 0.3+ | 2003 03 24 | 608 | 0.6+ | 0.3+ | 2006 09 22 | 104 | 0.0 | 0.1− |
| 1998 02 02 | 098 | 0.4− | 0.8− | 2003 03 24 | 608 | 0.7+ | 0.6+ | 2006 11 05 | 644 | 0.8− | 1.0+ |
| 1998 02 03 | G91 | 0.5+ | 0.2− | 2003 03 24 | 608 | 0.9+ | 0.2+ | 2006 11 05 | 644 | 0.2+ | 0.2+ |
| 1998 02 20 | 108 | 0.1− | 0.4+ | 2003 03 26 | 644 | 0.4+ | 0.6− | 2006 11 05 | 644 | 0.0 | 0.3+ |
| 1998 02 20 | 108 | 0.3− | 0.9+ | 2003 03 26 | 644 | 0.3+ | 0.5− | 2006 11 13 | 683 | 1.0− | 0.8− |
| 1998 02 20 | 108 | 0.1− | 1.7− | 2003 03 26 | 644 | 0.4+ | 0.6− | 2006 11 13 | 683 | (1.7− | 1.9−) |
| 1998 02 20 | 108 | 1.0+ | 0.8+ | 2003 03 27 | 704 | 0.6+ | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.0 |
| 1998 02 20 | 108 | 0.6− | 0.3+ | 2003 03 27 | 704 | 0.8+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.1− | 0.8+ | 2003 03 27 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.0 | 0.4− | 2003 03 27 | 704 | 0.1+ | 0.3− | 2006 11 15 | 703 | 0.5+ | 0.5+ |
| 2001 09 25 | 704 | 0.6− | 0.8+ | 2003 03 27 | 704 | 0.3+ | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2001 09 25 | 704 | 1.0− | 1.0+ | 2003 04 01 | 645 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2001 10 11 | 704 | 0.3+ | 0.6+ | 2003 04 01 | 645 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2001 10 11 | 704 | 1.0− | 0.3+ | 2003 04 04 | 699 | 0.2+ | 1.2− | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2001 10 11 | 704 | 0.2+ | 0.4+ | 2003 04 04 | 699 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2001 10 11 | 704 | 0.7+ | 0.7− | 2003 04 04 | 699 | 0.7+ | 0.3− | 2006 11 25 | 704 | 0.8+ | 0.2+ |
| 2001 10 19 | 699 | 0.2− | 0.6+ | 2003 04 04 | 699 | 0.4− | 0.1− | 2006 11 25 | 704 | 0.4+ | 0.6+ |
| 2001 10 19 | 699 | 0.3− | 0.1+ | 2003 04 09 | 704 | 0.5+ | 0.4+ | 2006 11 25 | 704 | 0.0 | 0.4+ |
| 2001 10 19 | 699 | 0.0 | 0.4− | 2003 04 09 | 704 | 0.7+ | 0.5+ | 2006 11 25 | 704 | 0.1+ | 0.6+ |
| 2001 10 19 | 699 | 0.1+ | 0.4+ | 2003 04 09 | 704 | 0.2+ | 0.6+ | 2006 11 25 | 704 | 0.2− | 0.6+ |
| 2001 10 23 | 644 | 0.1+ | 0.3+ | 2003 04 09 | 704 | 0.9+ | 0.7+ | 2006 11 25 | 703 | 0.6− | 0.5+ |
| 2001 10 23 | 644 | 0.3− | 0.2+ | 2003 04 09 | 704 | 0.1+ | 0.7+ | 2006 11 25 | 703 | 0.0 | 0.4+ |
| 2001 10 23 | 644 | 0.2− | 0.5+ | 2003 04 26 | 704 | (2.5+ | 0.2+) | 2006 11 25 | 703 | 0.0 | 0.5+ |
| 2003 03 03 | 704 | 0.5+ | 1.3+ | 2003 04 26 | 704 | 1.1+ | 0.4+ | 2006 11 25 | 703 | 0.0 | 0.5+ |
| 2003 03 03 | 704 | 0.0 | 1.0+ | 2003 04 26 | 704 | (2.1+ | 0.1+) | 2006 11 25 | 703 | 0.2− | 0.4+ |
| 2003 03 03 | 704 | 1.3+ | 0.5+ | 2003 04 28 | 699 | 1.0− | 0.6+ | 2006 11 25 | 703 | 0.1+ | 0.2+ |
| 2003 03 03 | 704 | 0.4+ | 0.5+ | 2003 04 28 | 699 | (1.7− | 1.1+) | 2006 11 25 | 703 | 0.9− | 0.2+ |
| 2003 03 09 | 704 | 0.2+ | 1.1+ | 2003 04 28 | 699 | 0.2+ | 0.8− | 2006 11 25 | 703 | (3.1− | 2.3−) |
| 2003 03 09 | 704 | 0.1+ | 0.5+ | 2003 04 28 | 699 | 0.1+ | 0.6− | 2006 11 28 | 704 | 0.5+ | 0.3+ |
| 2003 03 09 | 704 | 0.3+ | 0.6+ | 2003 05 02 | 704 | (0.4− | 1.8+) | 2006 11 28 | 704 | 0.1+ | 0.8+ |
| 2003 03 09 | 704 | 0.5+ | 0.4+ | 2003 05 02 | 704 | (0.3− | 1.7+) | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2003 03 09 | 704 | 0.2+ | 1.2+ | 2003 05 02 | 704 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 0.3+ | 0.2+ |
| 2003 03 12 | 704 | 1.4+ | 0.8− | 2003 05 03 | 608 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.3+ |

**(136849)∗ 1998 CS$_1$**

Discovered 1998 Feb. 9 by the Beijing Schmidt CCD Asteroid Program at Xinglong.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.00345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.54032596 | $\omega$ | 97.40652 | | −0.87135485 | +0.47401325 | |
| $a$ | 1.4929050 | $\Omega$ | 110.96105 | | −0.48642871 | −0.80074280 | |
| $e$ | 0.5785686 | $i$ | 7.79769 | | −0.06424823 | −0.36622726 | |
| $P$ | 1.82 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 09 | 327 | 1.1− | 0.1− | 1998 02 14 | 046 | 1.0− | 0.2− | 2002 09 29 | 291 | 0.3+ | 0.3+ |
| 1998 02 09 | 327 | 1.3− | 0.0 | 1998 02 15 | 327 | 0.6− | 0.2− | 2002 09 29 | 291 | 1.0+ | 0.7+ |
| 1998 02 09 | 327 | 0.3− | 0.2+ | 1998 02 15 | 327 | 1.3− | 0.3− | 2002 10 05 | 645 | 0.0 | 0.0 |
| 1998 02 10 | 046 | 0.5+ | 0.6− | 1998 02 15 | 327 | 0.1− | 0.3+ | 2002 10 05 | 645 | 0.0 | 0.0 |
| 1998 02 10 | 046 | 0.3+ | 0.3− | 1998 02 15 | 587 | 0.5+ | 0.5− | 2002 10 11 | 645 | 0.0 | 0.2− |
| 1998 02 10 | 046 | 0.3− | 0.4− | 1998 02 15 | 587 | 0.1+ | 0.7− | 2002 10 11 | 645 | 0.0 | 0.1− |
| 1998 02 10 | 046 | 0.1− | 0.2+ | 1998 02 15 | 587 | 1.9− | 1.1− | 2002 10 28 | 291 | 0.4+ | 0.2− |
| 1998 02 10 | 046 | 0.8+ | 0.2+ | 1998 02 17 | 046 | 0.0 | 0.7− | 2002 10 28 | 291 | 0.3+ | 0.6− |
| 1998 02 11 | 360 | 0.5+ | 0.2− | 1998 02 17 | 046 | 0.6− | 0.2− | 2002 10 28 | 291 | 0.2+ | 0.6− |
| 1998 02 11 | 327 | 0.2− | 1.0+ | 1998 02 17 | 046 | 0.2− | 0.1+ | 2002 10 29 | 291 | 0.2− | 0.6+ |
| 1998 02 11 | 360 | 0.3+ | 0.8+ | 1998 02 17 | 046 | 1.0+ | 1.0+ | 2002 10 29 | 291 | 0.1− | 0.2+ |
| 1998 02 11 | 327 | (2.3− | 0.5+) | 1998 02 18 | 104 | 1.4+ | 0.1+ | 2002 10 29 | 291 | 0.2− | 0.6+ |
| 1998 02 11 | 360 | 0.2+ | 0.7− | 1998 02 18 | 104 | (2.3+ | 0.1−) | 2004 10 07 | 696 | 0.3+ | 0.1+ |
| 1998 02 11 | 360 | 0.9− | 0.1+ | 1998 02 18 | 104 | 1.3+ | 0.1− | 2004 10 07 | 696 | 0.4− | 0.1− |
| 1998 02 11 | 104 | 1.2− | 0.4+ | 1998 02 18 | 104 | 0.1+ | 0.1− | 2004 10 07 | 696 | 0.3+ | 0.4+ |
| 1998 02 11 | 104 | 0.1+ | 0.8+ | 1998 02 20 | 046 | 0.1− | 0.2+ | 2004 11 09 | F65 | 0.9+ | 0.6+ |
| 1998 02 11 | 104 | 0.7+ | 0.4+ | 1998 02 20 | 557 | 0.3− | 0.9+ | 2004 11 09 | F65 | 0.2+ | 0.1+ |
| 1998 02 11 | 104 | (1.1+ | 2.0+) | 1998 02 20 | 046 | 1.0+ | 0.4+ | 2004 11 09 | F65 | 0.0 | 0.2+ |
| 1998 02 11 | 104 | (2.2+ | 1.7+) | 1998 02 20 | 046 | 0.2− | 0.5+ | 2004 11 19 | F65 | 0.1− | 0.2+ |
| 1998 02 13 | 402 | (2.9+ | 0.3−) | 1998 02 20 | 557 | 1.0− | 0.2+ | 2004 11 19 | F65 | 0.0 | 0.1+ |
| 1998 02 13 | 402 | 1.0+ | 0.1+ | 1998 02 20 | 046 | 0.5+ | 0.7+ | 2006 10 20 | 711 | 0.3− | 0.7+ |
| 1998 02 13 | 402 | 1.6+ | 0.1− | 1998 02 20 | 557 | 0.4− | 0.8− | 2006 10 20 | 711 | (3.7+ | 1.1+) |
| 1998 02 13 | 402 | 0.7+ | 0.2+ | 1998 02 20 | 046 | 1.2− | 0.1− | 2006 10 20 | 711 | 0.1− | 0.2− |
| 1998 02 13 | 327 | 1.5+ | 0.4+ | 1998 02 20 | 557 | 0.1− | 0.5− | 2006 11 15 | 703 | 0.6+ | 0.4+ |
| 1998 02 13 | 327 | 0.4+ | 0.1− | 1998 02 20 | 557 | 0.9+ | 0.6− | 2006 11 15 | 703 | 0.3− | 0.6− |
| 1998 02 13 | 327 | 0.5− | 1.0− | 1998 07 25 | 598 | 0.9− | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.8+ |
| 1998 02 13 | 104 | 1.2− | 0.5− | 1998 07 25 | 598 | 0.4− | 1.1− | 2006 11 15 | 703 | 0.3+ | 0.6− |
| 1998 02 13 | 104 | 1.1− | 0.1− | 1998 07 25 | 598 | 0.2− | 0.0 | 2006 11 18 | 151 | (2.4− | 0.2+) |
| 1998 02 13 | 104 | 0.8− | 0.0 | 1998 07 25 | 598 | 0.4− | 1.1− | 2006 11 18 | 151 | 1.3− | 0.0 |
| 1998 02 13 | 104 | 0.6− | 0.2+ | 1998 07 25 | 598 | 0.4− | 0.2− | 2006 11 18 | 151 | 0.5− | 0.1− |
| 1998 02 14 | 587 | 0.7+ | 0.1+ | 1998 08 20 | 360 | 0.8− | 0.3− | 2006 11 18 | 151 | 0.6− | 0.1+ |
| 1998 02 14 | 587 | 1.8+ | 0.3− | 1998 08 20 | 360 | 1.0− | 0.7− | 2006 11 18 | 151 | 0.4− | 1.0+ |
| 1998 02 14 | 587 | 0.1+ | 0.1− | 1998 08 20 | 360 | 0.9− | 1.3− | 2006 11 18 | 151 | 0.5− | 0.6+ |
| 1998 02 14 | 587 | 0.2+ | 0.8− | 2000 09 03 | 413 | 0.4− | 0.0 | 2006 11 18 | 151 | 0.7− | 0.1+ |
| 1998 02 14 | 046 | 0.1+ | 0.5− | 2000 09 03 | 413 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 1998 02 14 | 046 | 0.3+ | 0.0 | 2000 09 03 | 413 | 0.5+ | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.8+ |
| 1998 02 14 | 046 | 0.6− | 0.1+ | 2000 09 03 | 413 | 0.2+ | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 1998 02 14 | 046 | 0.4− | 0.4− | 2002 09 29 | 291 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.2− |

**(136850)∗ 1998 DX$_2$ = 2001 TL$_{65}$**

Discovered 1998 Feb. 17 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPO* 19318)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.78132 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21304489 | $\omega$ | 57.82332 | | −0.13044245 | −0.98509061 | |
| $a$ | 2.7764421 | $\Omega$ | 40.15296 | | +0.84099247 | −0.16985266 | |
| $e$ | 0.2716459 | $i$ | 10.01738 | | +0.52508707 | +0.02732342 | |
| $P$ | 4.63 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 17 | 327 | 0.5− | 0.1− | 2001 11 17 | 704 | 0.8− | 0.3+ | 2002 01 09 | 704 | 0.3− | 0.8− |
| 1998 02 17 | 327 | 0.6− | 0.5− | 2001 11 17 | 704 | 0.9− | 0.1+ | 2002 01 09 | 704 | 0.6+ | 1.2− |
| 1998 02 17 | 327 | 0.8− | 0.1+ | 2001 11 17 | 704 | 1.1− | 0.1+ | 2002 01 09 | 704 | 1.0− | 0.3+ |
| 1998 02 21 | 327 | 0.2+ | 0.3− | 2001 11 17 | 704 | 0.7− | 0.1− | 2002 02 08 | 704 | 0.3− | 0.1− |
| 1998 02 21 | 327 | 0.1− | 0.0 | 2001 11 17 | 704 | 0.9− | 0.1− | 2002 02 08 | 704 | 0.2+ | 0.2− |
| 1998 02 21 | 327 | 0.0 | 0.1+ | 2001 11 18 | 704 | 0.1− | 0.1+ | 2002 02 08 | 704 | 0.5− | 0.7− |
| 1998 02 23 | 327 | 0.3+ | 0.4− | 2001 11 18 | 704 | 0.1− | 0.2+ | 2002 02 08 | 704 | 0.3− | 0.6+ |
| 1998 02 23 | 327 | 0.0 | 0.1− | 2001 11 18 | 704 | 0.5− | 0.5− | 2002 02 08 | 704 | 0.6− | 0.6+ |
| 1998 02 23 | 327 | 0.4+ | 0.3− | 2001 11 18 | 704 | 0.3− | 0.1+ | 2003 03 26 | 699 | 0.7+ | 0.8+ |
| 1998 02 27 | 566 | 0.9+ | 0.4− | 2001 11 18 | 704 | 0.0 | 0.0 | 2003 03 26 | 699 | 0.2− | 0.7− |
| 1998 02 27 | 566 | 0.9+ | 0.1− | 2001 11 18 | 704 | 0.0 | 0.5+ | 2003 03 26 | 699 | 1.5+ | 1.0− |
| 1998 02 27 | 566 | 0.7+ | 0.4− | 2001 11 18 | 704 | 0.8− | 0.5− | 2003 03 26 | 699 | 0.1+ | 0.4− |
| 1998 03 01 | 327 | 0.5+ | 0.3+ | 2001 11 18 | 704 | 0.1+ | 0.3+ | 2003 04 02 | 704 | 0.5+ | 0.0 |
| 1998 03 01 | 327 | 0.1− | 0.4+ | 2001 11 18 | 704 | 0.4− | 0.2− | 2003 04 02 | 704 | 0.2+ | 1.0+ |
| 1998 03 01 | 327 | 0.3+ | 0.5+ | 2001 11 18 | 704 | 0.7− | 1.2− | 2003 04 02 | 704 | 0.1+ | 0.2+ |
| 1998 03 25 | 704 | 0.3− | 0.2− | 2001 11 19 | 704 | 0.2− | 0.0 | 2003 04 02 | 704 | (1.9+ | 0.6+) |
| 1998 03 25 | 704 | 0.2− | 0.0 | 2001 11 19 | 704 | 0.6− | 0.0 | 2003 04 04 | 699 | 0.7+ | 0.3− |
| 1998 03 25 | 704 | 0.2+ | 0.2+ | 2001 11 19 | 704 | 0.4− | 0.1− | 2003 04 04 | 699 | 0.3+ | 0.1+ |
| 1998 03 25 | 704 | 0.6− | 1.0+ | 2001 11 19 | 704 | 0.7− | 0.0 | 2003 04 04 | 691 | 0.1− | 0.7+ |
| 1998 03 25 | 704 | 0.7− | 0.2− | 2001 11 19 | 704 | 0.2− | 0.3− | 2003 04 04 | 699 | 0.4− | 0.8+ |
| 2001 09 17 | 699 | 0.3+ | 0.1+ | 2001 11 19 | 704 | 0.9− | 0.0 | 2003 04 04 | 699 | 0.7+ | 0.3+ |
| 2001 09 17 | 699 | 0.1+ | 0.6+ | 2001 11 19 | 704 | 0.2+ | 0.3− | 2003 04 04 | 691 | 0.0 | 0.8+ |
| 2001 09 17 | 699 | (1.9+ | 0.3+) | 2001 11 19 | 704 | 1.1− | 0.2− | 2003 04 04 | 691 | 0.1− | 0.9+ |
| 2001 09 17 | 699 | 0.7+ | 0.7+ | 2001 11 19 | 704 | 0.1− | 0.3− | 2003 04 11 | 333 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.7− | 0.2+ | 2001 11 19 | 704 | 0.8− | 0.1+ | 2003 04 11 | 333 | 0.8− | 0.3+ |
| 2001 09 26 | 704 | 0.3− | 0.1+ | 2001 11 20 | 704 | 0.0 | 0.4− | 2003 04 25 | 691 | (1.7+ | 2.0+) |
| 2001 09 26 | 704 | 0.6− | 0.1+ | 2001 11 20 | 704 | 0.3+ | 0.0 | 2003 04 25 | 691 | (1.4+ | 2.1+) |
| 2001 09 26 | 704 | 0.3− | 0.2+ | 2001 11 20 | 704 | 0.4+ | 0.3− | 2003 04 25 | 691 | (1.7+ | 2.1+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.7− | 0.6+ | 2001 11 20 | 704 | 0.2+ | 0.3− | 2003 04 25 | 699 | 0.8− | 0.4− | 1998 02 23 | 691 | 0.3− | 0.2+ |
| 2001 09 27 | 644 | 0.3+ | 0.0 | 2001 11 20 | 704 | 0.7+ | 0.3− | 2003 04 25 | 699 | 0.9− | 0.4− | 1998 02 24 | 691 | 0.7+ | 0.1+ |
| 2001 09 27 | 644 | 0.6+ | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.3− | 2003 04 25 | 699 | 0.7− | 0.6+ | 1998 02 24 | 691 | 0.6+ | 0.2+ |
| 2001 09 27 | 644 | 0.5+ | 0.2+ | 2001 11 21 | 704 | 0.1− | 0.2+ | 2003 04 25 | 699 | 0.5− | 1.3+ | 1998 02 24 | 691 | 0.7+ | 0.3+ |
| 2001 10 13 | 704 | 0.3+ | 0.0 | 2001 11 21 | 704 | 0.1− | 0.0 | 2003 04 28 | 704 | 0.1− | 0.2− | 1998 03 02 | 691 | 0.4− | 0.0 |
| 2001 10 13 | 704 | 0.4+ | 0.3+ | 2001 11 21 | 704 | 0.1+ | 0.2− | 2003 04 28 | 704 | 0.6+ | 0.4+ | 1998 03 02 | 691 | 0.4− | 0.2+ |
| 2001 10 13 | 704 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.2− | 0.0 | 2003 04 28 | 704 | 0.3+ | 1.2+ | 1998 03 02 | 691 | 0.2− | 0.3− |
| 2001 10 13 | 704 | 0.5− | 0.3+ | 2001 11 21 | 704 | 0.3− | 0.1+ | 2003 05 05 | 704 | 0.1+ | 0.2− | 2000 08 27 | 807 | 0.1+ | 0.1+ |
| 2001 10 13 | 704 | 0.3− | 0.4+ | 2001 11 21 | 704 | 0.6− | 0.4− | 2003 05 05 | 704 | 0.1− | 0.4+ | 2000 08 27 | 807 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.9− | 0.4− | 2001 11 21 | 704 | 0.2− | 0.0 | 2003 05 05 | 704 | 0.9+ | 0.5+ | 2001 11 16 | 291 | 0.3+ | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 0.6− | 2001 11 21 | 704 | 0.2+ | 0.0 | 2003 05 05 | 704 | 1.1+ | 0.7+ | 2001 11 16 | 291 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | 1.1− | 0.0 | 2001 11 21 | 704 | 0.5− | 0.4+ | 2003 05 10 | 691 | 1.1+ | 0.7+ | 2001 11 16 | 291 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.7− | 0.2− | 2001 11 24 | 644 | 0.1+ | 0.8+ | 2003 05 10 | 691 | 0.8+ | 0.9+ | 2001 12 19 | 704 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | 0.5− | 0.4− | 2001 11 24 | 644 | 0.2− | 0.6+ | 2003 05 10 | 691 | 1.0+ | 0.7+ | 2001 12 19 | 704 | 0.0 | 0.4− |
| 2001 10 18 | 644 | 0.2− | 0.3− | 2001 11 24 | 644 | 0.1+ | 0.9+ | 2005 08 28 | E12 | 1.3+ | 0.6+ | 2001 12 19 | 704 | 1.4+ | 0.4+ |
| 2001 10 18 | 644 | 0.1− | 0.2− | 2001 12 05 | 608 | 0.5+ | 0.7+ | 2005 08 28 | E12 | 0.3− | 0.6− | 2002 12 14 | 645 | 0.1+ | 0.0 |
| 2001 10 18 | 644 | 0.1− | 0.4− | 2001 12 05 | 608 | 0.9+ | 0.0 | 2005 08 28 | E12 | 0.3− | 0.3+ | 2002 12 14 | 645 | 0.1+ | 0.0 |
| 2001 10 20 | 704 | 0.6− | 0.0 | 2001 12 05 | 608 | 0.5+ | 0.6+ | 2005 08 28 | E12 | 0.6− | 0.0 | 2003 01 28 | 645 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.6− | 0.4+ | 2001 12 11 | 704 | 0.5+ | 0.2+ | 2005 09 03 | 644 | 0.3− | 0.7+ | 2003 01 28 | 645 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2001 12 11 | 704 | 0.6+ | 0.1+ | 2005 09 03 | 644 | 0.2+ | 0.5+ | 2004 06 09 | E12 | 0.2− | 0.1− |
| 2001 10 20 | 704 | 0.7− | 0.8+ | 2001 12 11 | 704 | 0.1− | 0.0 | 2005 09 03 | 644 | 0.4− | 0.8+ | | | | |
| 2001 10 20 | 704 | 0.4− | 0.2+ | 2001 12 11 | 704 | 0.6+ | 0.2+ | 2006 09 29 | 704 | 1.2+ | 0.7− | | | | |
| 2001 10 22 | 704 | 0.3+ | 0.2+ | 2001 12 11 | 704 | 0.9+ | 0.7+ | 2006 09 29 | 704 | 0.3− | 0.4− | | | | |
| 2001 10 22 | 704 | 0.4+ | 0.0 | 2001 12 15 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.6+ | 1.2− | | | | |
| 2001 10 22 | 704 | 0.3+ | 0.0 | 2001 12 15 | 704 | 0.1− | 1.0+ | 2006 09 29 | 704 | 0.4+ | 0.5− | | | | |
| 2001 10 22 | 704 | 0.3+ | 0.1− | 2001 12 15 | 704 | (0.3− | 1.6+) | 2006 10 20 | 704 | 1.6+ | 0.4+ | | | | |
| 2001 10 22 | 704 | 0.1− | 1.1− | 2001 12 15 | 704 | (2.0+ | 1.9+) | 2006 10 20 | 704 | 0.8+ | 0.9+ | | | | |
| 2001 10 23 | 704 | 0.2− | 0.6+ | 2001 12 15 | 704 | (0.4+ | 2.4+) | 2006 10 20 | 704 | 0.2+ | 0.4+ | | | | |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2001 12 18 | 704 | 0.0 | 0.6− | 2006 11 15 | 704 | 0.8+ | 0.1− | | | | |
| 2001 10 23 | 704 | 0.0 | 0.4+ | 2001 12 18 | 704 | 0.6+ | 0.5− | 2006 11 15 | 703 | 0.2+ | 1.0− | | | | |
| 2001 10 23 | 704 | 0.0 | 0.2+ | 2001 12 18 | 704 | 0.5+ | 0.2− | 2006 11 15 | 704 | 0.2− | 0.5+ | | | | |
| 2001 10 23 | 704 | 0.4+ | 0.2+ | 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.8− | | | | |
| 2001 10 24 | 704 | 0.1− | 0.6+ | 2001 12 18 | 704 | 0.6+ | 0.7+ | 2006 11 15 | 703 | 0.5− | 0.3− | | | | |
| 2001 10 24 | 704 | 0.2− | 0.4+ | 2001 12 19 | 704 | 0.2+ | 0.4− | 2006 11 15 | 704 | 0.1− | 0.6+ | | | | |
| 2001 10 24 | 704 | 0.5− | 0.3+ | 2001 12 19 | 704 | 0.8+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.1− | | | | |
| 2001 10 24 | 704 | 0.1+ | 0.7+ | 2001 12 19 | 704 | 1.1+ | 0.2+ | 2006 11 15 | 704 | 0.3+ | 0.3+ | | | | |
| 2001 10 24 | 704 | 0.1− | 0.8+ | 2001 12 19 | 704 | 0.9+ | 0.3+ | 2006 11 15 | 704 | 0.3− | 0.3− | | | | |
| 2001 10 25 | 644 | 0.6− | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 644 | 0.0 | 0.1− | | | | |
| 2001 10 25 | 644 | 0.4− | 0.1+ | 2001 12 19 | 699 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.1+ | | | | |
| 2001 10 25 | 644 | 0.6− | 0.2+ | 2001 12 19 | 699 | 0.8− | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.0 | | | | |
| 2001 10 26 | 704 | 0.6− | 0.7+ | 2001 12 19 | 699 | 0.1− | 0.5+ | 2006 11 17 | 644 | 0.1− | 0.0 | | | | |
| 2001 10 26 | 704 | 0.3− | 0.7+ | 2001 12 19 | 699 | 0.4− | 0.4+ | 2006 11 17 | 644 | 0.1+ | 0.0 | | | | |
| 2001 10 26 | 704 | 0.2− | 0.7+ | 2001 12 20 | 704 | 0.9+ | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.0 | | | | |
| 2001 10 26 | 704 | 0.2− | 1.1+ | 2001 12 20 | 704 | 0.7+ | 1.5+ | 2006 11 21 | 703 | 0.3− | 0.2− | | | | |
| 2001 10 26 | 704 | 0.3− | 0.9+ | 2001 12 20 | 704 | (2.1+ | 0.8−) | 2006 11 21 | 703 | 0.3+ | 0.5− | | | | |
| 2001 11 09 | 704 | 0.6− | 0.6+ | 2001 12 20 | 704 | (2.3+ | 1.4−) | 2006 11 21 | 703 | 0.0 | 0.8− | | | | |
| 2001 11 09 | 704 | 0.4+ | 0.3+ | 2001 12 20 | 704 | (0.3+ | 1.8+) | 2006 11 21 | 703 | 0.2− | 0.4− | | | | |
| 2001 11 09 | 704 | 0.5− | 0.8+ | 2002 01 06 | 699 | 0.7− | 0.3+ | 2006 12 01 | 704 | 1.4− | 1.4− | | | | |
| 2001 11 09 | 704 | 0.2− | 0.7+ | 2002 01 06 | 699 | 0.5− | 0.6+ | 2006 12 01 | 704 | 0.2+ | 0.7+ | | | | |
| 2001 11 09 | 704 | 0.0 | 0.9+ | 2002 01 06 | 699 | 0.5− | 0.2+ | 2006 12 01 | 704 | 0.9− | 0.8− | | | | |
| 2001 11 16 | 691 | 0.1+ | 0.2+ | 2002 01 06 | 699 | 0.0 | 1.2+ | 2006 12 01 | 704 | 1.0− | 1.4+ | | | | |
| 2001 11 16 | 691 | 0.4+ | 0.2+ | 2002 01 09 | 704 | 0.2+ | 0.4− | | | | | | | | |
| 2001 11 16 | 691 | 0.2+ | 0.2+ | 2002 01 09 | 704 | 0.7+ | 0.2− | | | | | | | | |

### (136851)∗ 1998 DY$_8$ = 2005 QT$_{62}$

Discovered 1998 Feb. 23 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 84448)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.21811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19475548 | $\omega$ | 245.62223 | | +0.04808454 | +0.99871790 | |
| $a$ | 2.9476524 | $\Omega$ | 27.14821 | | −0.90339660 | +0.05024303 | |
| $e$ | 0.0653931 | $i$ | 1.98753 | | −0.42610147 | +0.00618048 | |
| $P$ | 5.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.5− | 0.0 | 2004 06 09 | E12 | 0.6+ | 0.9+ | 2005 12 01 | G96 | 0.3+ | 0.3− | 1998 02 23 | 691 | 0.3− | 0.2+ |
| 1998 02 23 | 691 | 0.3− | 0.1+ | 2004 06 09 | E12 | 0.3+ | 0.5− | 2006 09 28 | G96 | 0.0 | 0.4− | 2004 06 09 | E12 | 0.6+ | 0.1+ |
| | | | | | | | | | | | | 2005 07 30 | 644 | 0.4− | 0.1+ |
| | | | | | | | | | | | | 2005 07 30 | 644 | 0.6− | 0.1+ |
| | | | | | | | | | | | | 2005 07 30 | 644 | 0.2− | 0.4+ |
| | | | | | | | | | | | | 2005 08 26 | 644 | 0.3− | 0.0 |
| | | | | | | | | | | | | 2005 08 26 | 644 | 0.2− | 0.1− |
| | | | | | | | | | | | | 2005 08 26 | 644 | 0.5− | 0.3− |
| | | | | | | | | | | | | 2005 08 30 | 691 | 0.3− | 0.3+ |
| | | | | | | | | | | | | 2005 08 30 | 691 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2005 08 30 | 691 | 0.1− | 0.5+ |
| | | | | | | | | | | | | 2005 09 14 | 691 | 0.3− | 0.1+ |
| | | | | | | | | | | | | 2005 09 14 | 691 | 0.2+ | 0.0 |
| | | | | | | | | | | | | 2005 09 14 | 691 | 0.0 | 0.3+ |
| | | | | | | | | | | | | 2005 10 06 | G96 | 0.1− | 0.1− |
| | | | | | | | | | | | | 2005 10 06 | G96 | 0.1+ | 0.2+ |
| | | | | | | | | | | | | 2005 10 06 | G96 | 0.1− | 0.1+ |
| | | | | | | | | | | | | 2005 10 06 | G96 | 0.2+ | 0.1+ |
| | | | | | | | | | | | | 2005 12 01 | G96 | 0.1+ | 0.2+ |
| | | | | | | | | | | | | 2005 12 01 | G96 | 0.1+ | 0.2+ |
| | | | | | | | | | | | | 2005 12 01 | G96 | 0.7− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 28 | G96 | 0.3+ | 0.4− | 2005 03 04 | 704 | 0.4+ | 0.9+ | 2005 04 06 | 699 | 0.3− | 0.6− |
| 2006 09 28 | G96 | 0.1+ | 0.9− | 2005 03 04 | 704 | 0.6+ | 0.7+ | 2005 04 06 | 699 | 1.6− | 0.7− |
| 2006 09 28 | G96 | 0.1− | 0.8− | 2005 03 04 | 704 | 0.5+ | 0.7+ | 2005 04 06 | 703 | 0.5− | 0.2+ |
| 2006 11 01 | G96 | 0.4− | 0.4− | 2005 03 04 | 704 | 0.4+ | 0.6+ | 2005 04 06 | 703 | 0.2− | 0.5− |
| 2006 11 01 | G96 | 0.0 | 0.4− | 2005 03 08 | 699 | 0.1+ | 0.1+ | 2005 04 06 | 703 | 0.5+ | 0.6− |
| 2006 11 01 | G96 | 0.3+ | 0.6− | 2005 03 08 | 699 | 0.5+ | 0.2+ | 2005 04 06 | 703 | 1.4− | 0.8− |
| 2006 11 01 | G96 | 0.1+ | 0.5− | 2005 03 08 | 699 | 0.5+ | 0.6+ | 2005 04 13 | 691 | 0.3+ | 0.2+ |
| 2006 11 10 | 691 | 0.1+ | 0.1+ | 2005 03 08 | 699 | 0.5+ | 0.3− | 2005 04 13 | 691 | 0.1+ | 0.2+ |
| 2006 11 10 | 691 | 0.3− | 0.3+ | 2005 03 09 | 699 | 1.1− | 0.5− | 2005 04 13 | 691 | 0.0 | 0.0 |
| 2006 11 10 | 691 | 0.1− | 0.0 | 2005 03 09 | 699 | 0.4− | 0.9− | 2006 06 22 | 691 | 0.0 | 0.3+ |
| 2006 11 14 | 691 | 0.5− | 0.1+ | 2005 03 09 | 699 | 0.2− | 0.0 | 2006 06 22 | 691 | 0.0 | 0.1+ |
| 2006 11 14 | 691 | 0.0 | 0.2− | 2005 03 09 | 704 | 0.3+ | 0.3− | 2006 06 22 | 691 | 0.1− | 0.3+ |
| 2006 11 14 | 691 | 0.2− | 0.0 | 2005 03 09 | 704 | 0.2+ | 0.6− | 2006 08 16 | 644 | 0.3+ | 0.1− |
| 2006 11 20 | 691 | 0.1+ | 0.3+ | 2005 03 09 | 699 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.1− |
| 2006 11 20 | 691 | 0.1− | 0.3+ | 2005 03 09 | 704 | 0.4+ | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.1− |
| 2006 11 20 | 691 | 0.1− | 0.1+ | 2005 03 09 | 704 | 1.2+ | 0.6− | 2006 08 17 | 644 | 0.6+ | 0.0 |
| 2006 11 24 | 691 | 0.0 | 0.3+ | 2005 03 09 | 704 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.4+ | 0.0 |
| 2006 11 24 | 691 | 0.3+ | 0.0 | 2005 03 12 | 704 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.1− |
| 2006 11 24 | 691 | 0.2+ | 0.4− | 2005 03 12 | 704 | 0.7+ | 0.6+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| | | | | 2005 03 12 | 704 | 0.3+ | 0.8+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| | | | | 2005 03 12 | 704 | 0.0 | 0.3− | 2006 08 20 | 644 | 0.3− | 0.2− |
| | | | | 2005 03 12 | 704 | 0.4+ | 0.4+ | 2006 08 21 | 807 | 0.1+ | 0.0 |
| | | | | 2005 03 16 | 704 | 0.4+ | 0.0 | 2006 08 21 | 807 | 0.1+ | 0.2− |
| | | | | 2005 03 16 | 704 | 1.0+ | 1.2− | 2006 09 26 | G96 | (2.4− | 0.7−) |
| | | | | 2005 03 16 | 704 | 1.1+ | 0.5− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| | | | | 2005 03 16 | 704 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| | | | | 2005 04 06 | 699 | 1.8− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.1− |
| | | | | 2005 04 06 | 699 | 0.0 | 0.9− | | | | |

### (136852)∗ 1998 DQ$_{18}$ = 2002 LX$_{60}$ = 2005 EJ$_{14}$

Discovered 1998 Feb. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 74564), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.06052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28578136 | $\omega$ | 332.17571 | | −0.35987619 | −0.93196256 | |
| $a$ | 2.2826892 | $\Omega$ | 138.87468 | | +0.86794899 | −0.35170844 | |
| $e$ | 0.0628630 | $i$ | 3.83482 | | +0.34227718 | −0.08801682 | |
| $P$ | 3.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 24 | 691 | 0.2+ | 0.0 | 2005 03 04 | 704 | 0.4+ | 0.9+ | 2005 04 06 | 699 | 0.3− | 0.6− |
| 1998 02 24 | 691 | 0.2+ | 0.1− | 2005 03 04 | 704 | 0.6+ | 0.7+ | 2005 04 06 | 699 | 1.6− | 0.7− |
| 1998 02 24 | 691 | 0.0 | 0.1+ | 2005 03 04 | 704 | 0.5+ | 0.7+ | 2005 04 06 | 703 | 0.5− | 0.2+ |
| 1998 02 28 | 691 | 0.2+ | 0.3− | 2005 03 04 | 704 | 0.4+ | 0.6+ | 2005 04 06 | 703 | 0.2− | 0.5− |
| 1998 02 28 | 691 | 0.0 | 0.3− | 2005 03 08 | 699 | 0.1+ | 0.1+ | 2005 04 06 | 703 | 0.5+ | 0.6− |
| 1998 02 28 | 691 | 0.3− | 0.4− | 2005 03 08 | 699 | 0.5+ | 0.2+ | 2005 04 06 | 703 | 1.4− | 0.8− |
| 1998 03 04 | 704 | (4.2− | 1.3−) | 2005 03 08 | 699 | 0.5+ | 0.6+ | 2005 04 13 | 691 | 0.3+ | 0.2+ |
| 1998 03 04 | 704 | (4.1− | 2.2−) | 2005 03 08 | 699 | 0.5+ | 0.3− | 2005 04 13 | 691 | 0.1+ | 0.2+ |
| 1998 03 04 | 704 | (2.3− | 0.0 ) | 2005 03 09 | 699 | 1.1− | 0.5− | 2005 04 13 | 691 | 0.0 | 0.0 |
| 1998 03 04 | 704 | (8.4− | 0.5+) | 2005 03 09 | 699 | 0.4− | 0.9− | 2006 06 22 | 691 | 0.0 | 0.3+ |
| 2000 11 27 | 704 | 0.7− | 0.2− | 2005 03 09 | 699 | 0.2− | 0.0 | 2006 06 22 | 691 | 0.0 | 0.1+ |
| 2000 11 27 | 704 | 1.3− | 0.0 | 2005 03 09 | 704 | 0.3+ | 0.3− | 2006 06 22 | 691 | 0.1− | 0.3+ |
| 2000 11 27 | 704 | 0.2− | 0.2− | 2005 03 09 | 704 | 0.2+ | 0.6− | 2006 08 16 | 644 | 0.3+ | 0.1− |
| 2000 11 27 | 704 | 0.6+ | 0.3+ | 2005 03 09 | 699 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.1− |
| 2002 05 03 | 291 | 0.2− | 0.3− | 2005 03 09 | 704 | 0.4+ | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.1− |
| 2002 05 03 | 291 | 0.4− | 0.1− | 2005 03 09 | 704 | 1.2+ | 0.6− | 2006 08 17 | 644 | 0.6+ | 0.0 |
| 2002 05 03 | 291 | 0.2− | 0.2− | 2005 03 09 | 704 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.4+ | 0.0 |
| 2002 06 11 | 704 | 0.0 | 0.6+ | 2005 03 12 | 704 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.1− |
| 2002 06 11 | 704 | 0.4+ | 0.5+ | 2005 03 12 | 704 | 0.7+ | 0.6+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2002 06 11 | 704 | 0.2+ | 0.4+ | 2005 03 12 | 704 | 0.3+ | 0.8+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2005 03 03 | 691 | 0.7− | 0.8+ | 2005 03 12 | 704 | 0.0 | 0.3− | 2006 08 20 | 644 | 0.3− | 0.2− |
| 2005 03 03 | 691 | 0.1+ | 0.1+ | 2005 03 12 | 704 | 0.4+ | 0.4+ | 2006 08 21 | 807 | 0.1+ | 0.0 |
| 2005 03 03 | 691 | 0.1+ | 0.2+ | 2005 03 16 | 704 | 0.4+ | 0.0 | 2006 08 21 | 807 | 0.1+ | 0.2− |
| 2005 03 03 | 703 | 0.6− | 0.3− | 2005 03 16 | 704 | 1.0+ | 1.2− | 2006 09 26 | G96 | (2.4− | 0.7−) |
| 2005 03 03 | 703 | 0.8− | 0.7− | 2005 03 16 | 704 | 1.1+ | 0.5− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2005 03 03 | 703 | 0.5− | 0.3− | 2005 03 16 | 704 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2005 03 03 | 703 | 0.1− | 1.6+ | 2005 04 06 | 699 | 1.8− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2005 03 04 | 704 | 0.7+ | 0.6+ | 2005 04 06 | 699 | 0.0 | 0.9− | | | | |

### (136853)∗ 1998 DM$_{19}$ = 2005 GO$_{69}$

Discovered 1998 Feb. 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.55029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29003805 | $\omega$ | 149.88555 | | −0.95258333 | −0.30408373 | |
| $a$ | 2.2602999 | $\Omega$ | 12.42569 | | +0.26812125 | −0.85573913 | |
| $e$ | 0.1395589 | $i$ | 2.89468 | | +0.14386101 | −0.41862111 | |
| $P$ | 3.40 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 24 | 691 | 0.1− | 0.0 | 2005 04 04 | 704 | 0.5+ | 0.5− | 2005 04 17 | 691 | 0.0 | 0.4− |
| 1998 02 24 | 691 | 0.0 | 0.3+ | 2005 04 09 | 691 | 0.3+ | 0.2+ | 2005 04 18 | 703 | 0.0 | 0.9+ |
| 1998 02 24 | 691 | 0.1− | 0.1+ | 2005 04 09 | 691 | 0.1− | 0.3+ | 2005 04 18 | 703 | (2.2+ | 0.1+) |
| 1998 02 28 | 691 | 0.4+ | 0.3+ | 2005 04 09 | 691 | 0.0 | 0.1+ | 2005 04 18 | 703 | 0.2− | 0.3+ |
| 1998 02 28 | 691 | 0.1+ | 0.3+ | 2005 04 09 | 691 | 0.0 | 0.2+ | 2005 04 18 | 703 | 0.5+ | 1.0+ |
| 1998 02 28 | 691 | 0.3+ | 0.2+ | 2005 04 09 | 691 | 0.2+ | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.3− |
| 1998 03 03 | 704 | 1.1− | 0.2− | 2005 04 09 | 691 | 0.0 | 0.1+ | 2005 05 12 | G96 | 0.5− | 0.3− |
| 1998 03 03 | 704 | 0.2+ | 0.4+ | 2005 04 09 | G96 | 0.6− | 0.1+ | 2005 05 12 | G96 | 0.8− | 0.9− |
| 1998 03 03 | 704 | (2.3+ | 1.6+) | 2005 04 09 | G96 | 0.5− | 0.3+ | 2005 05 12 | G96 | 0.2− | 0.5− |
| 1998 03 03 | 704 | (0.9+ | 3.1−) | 2005 04 09 | G96 | 0.2+ | 0.1+ | 2006 08 21 | 691 | 0.1+ | 0.3+ |
| 2003 09 28 | 691 | 0.1− | 0.2+ | 2005 04 09 | G96 | 0.3− | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.0 |
| 2003 09 28 | 691 | 0.0 | 0.1+ | 2005 04 11 | 699 | 0.3+ | 0.4+ | 2006 08 21 | 691 | 0.0 | 0.4+ |
| 2003 09 28 | 691 | 0.2− | 0.4+ | 2005 04 11 | 699 | 0.4− | 0.5− | 2006 08 23 | 807 | 0.4− | 0.0 |
| 2003 10 16 | 691 | 0.2− | 0.6+ | 2005 04 11 | 699 | 0.1+ | 0.9− | 2006 08 23 | 807 | 0.3− | 0.2+ |
| 2003 10 16 | 691 | 0.2− | 0.6+ | 2005 04 11 | 699 | 0.8− | 0.0 | 2006 08 28 | 691 | 0.2− | 0.5+ |
| 2003 10 16 | 691 | 0.3− | 0.6+ | 2005 04 12 | 704 | 1.8+ | 0.7+ | 2006 08 28 | 691 | 0.1+ | 0.7+ |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2005 04 12 | 704 | 1.0+ | 0.4− | 2006 08 28 | 691 | 0.3− | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.2+ | 2005 04 12 | 704 | 0.1− | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2005 03 13 | 691 | 0.3+ | 0.4+ | 2005 04 12 | 704 | (1.1+ | 3.3+) | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2005 04 03 | 644 | 0.5+ | 0.6+ | 2005 04 15 | 699 | 1.2− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2005 04 03 | 644 | 0.4+ | 0.2+ | 2005 04 15 | 699 | 0.7− | 0.8− | 2006 09 30 | G96 | 0.4− | 0.4− |
| 2005 04 03 | 644 | 0.7+ | 0.7+ | 2005 04 15 | 699 | 1.3− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2005 04 04 | 704 | 0.7+ | 1.9+ | 2005 04 15 | 699 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2005 04 04 | 704 | 0.1− | 0.3+ | 2005 04 17 | 691 | 0.1+ | 0.6− | 2006 09 30 | G96 | 0.5− | 0.2− |
| 2005 04 04 | 704 | 0.6− | 1.0+ | 2005 04 17 | 691 | 0.6+ | 0.5+ | 2006 09 30 | G96 | 0.3− | 0.3+ |

**(136854)∗ 1998 DM$_{28}$**

Discovered 1998 Feb. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.03497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29656549 | $\omega$ | 303.89604 | | −0.07624367 | −0.99575111 | |
| $a$ | 2.2270107 | $\Omega$ | 150.34776 | | +0.94581445 | −0.08862004 | |
| $e$ | 0.0632725 | $i$ | 5.99133 | | +0.31562941 | +0.02502427 | |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 691 | 0.4+ | 0.6− | 2003 11 30 | 704 | 0.1− | 0.9− | 2006 09 18 | 703 | 0.6+ | 1.1+ |
| 1998 02 26 | 691 | 0.4+ | 0.3+ | 2003 11 30 | 704 | 0.0 | 0.9− | 2006 09 19 | 703 | 0.7+ | 0.0 |
| 1998 02 26 | 691 | 0.7+ | 0.1− | 2003 12 01 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.5+ |
| 1998 03 03 | 691 | 0.5− | 0.2− | 2003 12 01 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 703 | 0.8+ | 1.1+ |
| 1998 03 03 | 691 | 0.6− | 0.2− | 2003 12 01 | 704 | 0.2− | 0.4+ | 2006 09 19 | 703 | (1.7+ | 0.9+) |
| 1998 03 03 | 691 | 0.8− | 0.2+ | 2003 12 01 | 704 | 0.4− | 1.0+ | 2006 09 20 | 691 | 0.2− | 0.2+ |
| 1998 03 24 | 566 | 0.4+ | 0.3+ | 2003 12 01 | 704 | 0.4− | 0.2− | 2006 09 20 | 691 | 0.3− | 0.3− |
| 1998 03 24 | 566 | 0.2− | 0.1+ | 2003 12 01 | 704 | 0.4+ | 0.9+ | 2006 09 20 | 691 | 0.4− | 0.3+ |
| 1998 03 24 | 566 | 1.6+ | 0.4+ | 2003 12 01 | 704 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.4+ | 0.7+ |
| 1998 03 29 | 704 | 0.1+ | 0.7+ | 2003 12 01 | 704 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.5− |
| 1998 03 29 | 704 | 1.0− | 0.1+ | 2003 12 01 | 704 | 0.9+ | 0.9− | 2006 09 26 | 704 | 1.1+ | 0.3− |
| 1998 03 29 | 704 | 0.5− | 1.3− | 2003 12 01 | 704 | 0.6− | 0.5+ | 2006 09 26 | 704 | 1.1+ | 1.0+ |
| 1998 03 29 | 704 | (3.5− | 1.2−) | 2003 12 20 | 704 | (1.3+ | 2.0+) | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 2001 01 03 | 704 | 0.6+ | 1.3+ | 2003 12 20 | 704 | 1.0− | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2001 01 03 | 704 | 0.9+ | 0.3+ | 2003 12 20 | 704 | (0.2− | 1.7+) | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2001 01 03 | 704 | 0.5+ | 0.5+ | 2003 12 20 | 704 | (0.3− | 1.6+) | 2006 10 02 | G96 | 0.5+ | 0.2− |
| 2003 10 27 | 704 | 0.8+ | 0.7− | 2003 12 21 | 691 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2003 10 27 | 704 | 0.7+ | 0.3+ | 2003 12 21 | 691 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.3− |
| 2003 10 27 | 704 | 0.5+ | 0.3+ | 2003 12 21 | 691 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.5+ |
| 2003 10 27 | 704 | 0.9+ | 0.5− | 2004 02 11 | 644 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2003 11 05 | 699 | (2.6+ | 0.5+) | 2004 02 11 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2003 11 05 | 699 | 0.5− | 1.4+ | 2004 02 11 | 644 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2003 11 05 | 699 | 0.6− | 0.4− | 2005 05 10 | 691 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2003 11 05 | 699 | 0.7+ | 0.3− | 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2003 11 19 | 703 | 1.3− | 0.4− | 2005 05 10 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.3− |
| 2003 11 19 | 703 | (3.1− | 6.6+) | 2005 05 14 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 1.2− |
| 2003 11 19 | 703 | 0.6+ | 0.1+ | 2005 05 14 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.4− |
| 2003 11 19 | 703 | 1.0− | 0.6− | 2005 05 14 | 691 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2003 11 26 | 691 | 0.0 | 0.2+ | 2005 05 14 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2003 11 26 | 691 | 0.3− | 0.3+ | 2005 05 14 | 644 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 1.7+ |
| 2003 11 26 | 691 | 0.2− | 0.2+ | 2005 05 14 | 644 | 0.4+ | 0.0 | 2006 10 22 | 703 | 1.3− | 0.7− |
| 2003 11 30 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 1.7− | 1.7+ |
| 2003 11 30 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 1.4− | 1.3− | 2006 10 22 | 703 | 0.9− | 0.4− |
| 2003 11 30 | 704 | 0.5− | 1.3− | 2006 09 18 | 703 | 0.7+ | 1.2+ | | | | |

**(136855)∗ 1998 EE$_5$**

Discovered 1998 Mar. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.90150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17325834 | $\omega$ | 326.66847 | | +0.44068429 | +0.89659529 | |
| $a$ | 3.1866909 | $\Omega$ | 329.41301 | | −0.80365404 | +0.37235017 | |
| $e$ | 0.1484933 | $i$ | 4.93253 | | −0.39992192 | +0.23973366 | |
| $P$ | 5.69 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 01 | 691 | 0.3+ | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.5+ | 0.4+ |
| 1998 03 01 | 691 | 0.1− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.3+ | 0.2+ |
| 1998 03 01 | 691 | 0.1+ | 0.4− | 2006 08 19 | A50 | 0.0 | 0.0 | 2006 09 01 | 704 | (1.8+ | 0.1+) |
| 1998 03 04 | 691 | 0.3− | 0.1+ | 2006 08 19 | A50 | 0.0 | 0.7− | 2006 09 11 | 703 | 0.3+ | 0.0 |
| 1998 03 04 | 691 | 0.2− | 0.2− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 11 | 703 | 0.1− | 1.4− |
| 1998 03 04 | 691 | 0.3− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.3− | 0.2+ |
| 2000 08 27 | 807 | 0.3+ | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 09 11 | 703 | 0.6+ | 0.4− |
| 2000 08 27 | 807 | 0.3+ | 0.2− | 2006 08 23 | 104 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.8+ | 0.4+ | 2006 08 23 | 104 | 0.2+ | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 1.2− | 0.9+ | 2006 08 24 | 104 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.2− |
| 2001 10 14 | 704 | 0.7− | 0.2+ | 2006 08 25 | 704 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.6− |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2006 08 25 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 704 | (1.6+ | 0.1+) |
| 2001 11 12 | 704 | 0.8+ | 0.9+ | 2006 08 25 | 704 | 0.7+ | 0.2− | 2006 09 17 | 704 | 1.0+ | 0.6− |
| 2001 11 12 | 704 | 0.1− | 0.9+ | 2006 08 25 | 704 | 0.5− | 0.2− | 2006 09 17 | 703 | 0.4+ | 0.5− |
| 2001 11 12 | 704 | 0.5+ | 0.6− | 2006 08 27 | 691 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.3− |
| 2004 02 16 | 691 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.3− |
| 2004 02 16 | 691 | 0.3+ | 0.6+ | 2006 08 27 | 691 | 0.4− | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.3+ |
| 2004 02 16 | 691 | 0.8− | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.2+ | 2006 09 17 | 703 | (0.7+ | 1.8−) |
| 2004 02 26 | 704 | 1.2+ | 1.0+ | 2006 08 27 | 699 | 0.5− | 0.3− | 2006 09 17 | 703 | 0.7+ | 0.5− |
| 2004 02 26 | 704 | 0.1− | 0.5+ | 2006 08 27 | 699 | (1.7− | 0.3−) | 2006 09 20 | 704 | (0.9− | 2.5+) |
| 2004 02 26 | 704 | 1.2+ | 0.1+ | 2006 08 27 | 699 | 0.8+ | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.3− |
| 2004 03 15 | 704 | (1.6+ | 0.9−) | 2006 08 28 | 703 | 0.8− | 1.0− | 2006 09 20 | 704 | 1.0− | 0.4+ |
| 2004 03 15 | 704 | (2.5+ | 0.5+) | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.0 |
| 2004 03 15 | 704 | (1.9+ | 1.4+) | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.0 |
| 2004 03 18 | 704 | 1.0− | 0.9− | 2006 08 28 | 703 | (0.1+ | 2.5−) | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.1+ | 0.8− | 2006 08 30 | 704 | 0.2− | 1.0+ | 2006 09 27 | G96 | 0.4− | 0.0 |
| 2004 03 18 | 704 | 0.4− | 1.1− | 2006 08 30 | 704 | 0.6− | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.3− |
| 2004 03 18 | 704 | 0.9+ | 1.3− | 2006 08 30 | 704 | 0.0 | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2004 03 30 | 691 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2004 03 30 | 691 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 06 26 | 644 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2005 06 26 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2005 06 26 | 644 | 0.1+ | 0.9+ | 2006 09 01 | 704 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |

**(136856)∗ 1998 FA$_6$ = 2003 EC$_{25}$**

Discovered 1998 Mar. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 46336)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.06675 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19065643 | $\omega$ | 149.26781 | | −0.96564213 | | −0.25386950 |
| $a$ | 2.9897514 | $\Omega$ | 16.30795 | | +0.17944016 | | −0.80596563 |
| $e$ | 0.0789730 | $i$ | 11.40951 | | +0.18798008 | | −0.53476133 |
| $P$ | 5.17 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.5− | 0.2+ | 2001 12 22 | 704 | 0.6+ | 1.2+ | 2003 03 26 | 699 | 0.5+ | 0.7+ |
| 1995 09 24 | 691 | 0.1− | 0.3− | 2001 12 22 | 704 | 0.4− | 0.8+ | 2003 03 26 | 699 | 0.2− | 0.5+ |
| 1995 09 24 | 691 | 0.4− | 0.2− | 2001 12 22 | 704 | 0.3− | 0.0 | 2003 03 26 | 699 | 0.1− | 0.8+ |
| 1998 03 18 | 691 | 0.9− | 0.6− | 2001 12 22 | 704 | 0.8+ | 0.7− | 2003 03 26 | 699 | 0.4− | 1.0+ |
| 1998 03 18 | 691 | 0.5− | 0.6− | 2003 02 11 | 608 | 0.5− | 1.0− | 2003 04 08 | 691 | 0.3− | 0.6+ |
| 1998 03 18 | 691 | 0.5− | 0.7− | 2003 02 11 | 608 | 0.0 | 0.3− | 2003 04 08 | 691 | 0.4− | 0.4+ |
| 1998 03 20 | 704 | (3.2+ | 0.7−) | 2003 02 11 | 608 | 0.3− | 0.6− | 2003 04 08 | 691 | 0.2− | 0.5+ |
| 1998 03 20 | 704 | (0.1+ | 2.3−) | 2003 02 22 | 644 | 0.4+ | 1.5+ | 2005 07 29 | 644 | 0.3+ | 0.4+ |
| 1998 03 20 | 704 | 1.0+ | 1.3+ | 2003 02 22 | 644 | 0.3+ | 1.6+ | 2005 07 29 | 644 | 0.4+ | 0.6+ |
| 1998 03 20 | 704 | 1.6− | 0.5+ | 2003 02 22 | 644 | 0.8+ | 1.4+ | 2005 07 29 | 644 | 0.0 | 0.4+ |
| 1998 03 22 | 704 | 0.3− | 1.5+ | 2003 03 06 | 699 | (0.7− | 1.7+) | 2005 08 27 | 644 | 0.2− | 0.3+ |
| 1998 03 22 | 704 | 0.8+ | 0.2− | 2003 03 06 | 699 | 0.9+ | 0.2+ | 2005 08 27 | 644 | 0.3− | 0.4+ |
| 1998 03 22 | 704 | 0.4+ | 0.8− | 2003 03 06 | 699 | 0.5− | 0.6+ | 2005 08 27 | 644 | 0.3− | 0.8+ |
| 1998 03 22 | 704 | 0.5+ | 0.2+ | 2003 03 06 | 699 | 0.3+ | 0.0 | 2006 11 02 | G96 | 0.4+ | 0.3− |
| 1998 03 25 | 691 | 0.3+ | 0.3− | 2003 03 07 | 699 | (0.6− | 1.7+) | 2006 11 02 | G96 | 0.4+ | 0.4− |
| 1998 03 25 | 691 | 0.4+ | 0.3− | 2003 03 07 | 699 | 0.2+ | 0.2+ | 2006 11 02 | G96 | 0.7+ | 0.2− |
| 1998 03 25 | 691 | 0.6+ | 0.0 | 2003 03 07 | 699 | 0.7+ | 0.4+ | 2006 11 02 | G96 | 0.5+ | 0.2− |
| 1998 03 29 | 704 | 0.2− | 0.1− | 2003 03 07 | 699 | 0.1− | 0.4+ | 2006 11 21 | 703 | 0.7+ | 0.2− |
| 1998 03 29 | 704 | (1.8+ | 2.7−) | 2003 03 15 | 608 | 0.2+ | 0.5− | 2006 11 21 | 703 | 1.0− | 0.6+ |
| 1998 03 29 | 704 | 1.5+ | 0.8− | 2003 03 15 | 608 | 0.7+ | 0.4− | 2006 11 21 | 703 | 0.6+ | 0.8− |
| 1998 03 29 | 704 | 0.7+ | 1.2− | 2003 03 15 | 608 | 0.7+ | 0.0 | 2006 11 21 | 703 | 0.8+ | 0.3− |

**(136857)∗ 1998 FD$_7$ = 1993 FC$_{47}$**

Discovered 1998 Mar. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 31746)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.14226 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18908337 | $\omega$ | 140.39056 | | −0.91421945 | | −0.40509735 |
| $a$ | 3.0063105 | $\Omega$ | 15.72102 | | +0.36185158 | | −0.82717884 |
| $e$ | 0.1475823 | $i$ | 2.10372 | | +0.18239032 | | −0.38945001 |
| $P$ | 5.21 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.1+ | 0.2+ | 2001 10 21 | 704 | 0.2− | 0.1+ | 2003 02 21 | 699 | 0.2+ | 0.1+ |
| 1993 03 20 | 809 | 0.2+ | 0.2+ | 2001 10 21 | 704 | 0.0 | 1.1+ | 2003 02 21 | 699 | 0.1+ | 1.0+ |
| 1993 03 24 | 809 | 0.7+ | 0.4+ | 2001 10 21 | 704 | 0.3− | 0.7+ | 2003 02 25 | 049 | 0.6− | 1.3− |
| 1998 03 03 | 704 | (2.9+ | 3.3+) | 2001 11 15 | 691 | 0.0 | 0.2+ | 2003 02 25 | 049 | 1.5− | 0.3+ |
| 1998 03 03 | 704 | (2.0− | 2.6+) | 2001 11 15 | 691 | 0.2+ | 0.4− | 2003 02 25 | 049 | 0.7− | 0.2− |
| 1998 03 03 | 704 | (0.2+ | 2.4+) | 2001 11 15 | 691 | 0.0 | 0.0 | 2003 03 08 | 704 | 1.1+ | 0.8+ |
| 1998 03 03 | 704 | (3.2− | 0.6+) | 2003 01 27 | 699 | 0.2+ | 0.6+ | 2003 03 08 | 704 | 0.2+ | 0.3+ |
| 1998 03 04 | 704 | (2.6− | 0.0 ) | 2003 01 27 | 699 | 0.3+ | 0.0 | 2003 03 08 | 704 | 0.7− | 0.1− |
| 1998 03 04 | 704 | 1.5− | 1.3+ | 2003 01 27 | 699 | 0.1+ | 0.0 | 2003 03 08 | 704 | (1.6− | 0.8+) |
| 1998 03 04 | 704 | (2.0− | 1.9−) | 2003 01 27 | 699 | 0.3+ | 0.2+ | 2004 07 16 | 807 | 0.3− | 0.3+ |
| 1998 03 04 | 704 | 0.8− | 1.9− | 2003 01 28 | 608 | 0.0 | 0.5− | 2004 07 16 | 807 | 0.3− | 0.3+ |
| 1998 03 20 | 691 | 0.6− | 0.1− | 2003 01 28 | 608 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.1− | 0.1− |
| 1998 03 20 | 691 | 0.4− | 0.1− | 2003 01 28 | 608 | 0.1+ | 0.2− | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 1998 03 20 | 691 | 0.9− | 0.1− | 2003 01 31 | 644 | (1.6+ | 1.5+) | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 1998 03 25 | 691 | 0.5+ | 0.1+ | 2003 01 31 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.3+ |
| 1998 03 25 | 691 | 0.4+ | 0.1− | 2003 01 31 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.9− |
| 1998 03 25 | 691 | 0.5+ | 0.0 | 2003 02 01 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 691 | 0.2+ | 0.2− |
| 1998 04 03 | 691 | 0.3+ | 0.2− | 2003 02 01 | 704 | 0.6+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 1998 04 03 | 691 | 0.1+ | 0.3− | 2003 02 01 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 1998 04 03 | 691 | 0.2− | 0.0 | 2003 02 04 | 704 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 1998 04 23 | 691 | 0.2− | 0.1− | 2003 02 04 | 704 | 0.3− | 0.6− | 2006 10 13 | A50 | 0.3+ | 0.3+ |
| 1998 04 23 | 691 | 0.3− | 0.3− | 2003 02 04 | 704 | 0.0 | 0.8+ | 2006 10 13 | A50 | 0.1− | 0.0 |
| 1998 04 23 | 691 | 0.9+ | 0.2− | 2003 02 04 | 704 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.6+ |
| 2001 10 13 | 691 | 0.0 | 0.5− | 2003 02 04 | 704 | 0.6+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.4+ |
| 2001 10 13 | 691 | 0.1− | 0.1− | 2003 02 21 | 699 | 0.6+ | 0.3+ | 2006 10 16 | 691 | 0.5+ | 0.1− |
| 2001 10 13 | 691 | 0.2− | 0.2− | 2003 02 21 | 699 | 0.8− | 0.6+ | | | | |

**(136858)∗ 1998 FW$_{10}$ = 2000 YF$_{131}$**

Discovered 1998 Mar. 24 by the OCA-DLR Asteroid Survey at Caussols.

Id. M. E. Sansaturio (*MPO* 10316)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.66048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29315550 | $\omega$ | 148.78828 | | −0.54200788 | | −0.84018196 |
| $a$ | 2.2442472 | $\Omega$ | 334.01917 | | +0.76234172 | | −0.48258664 |
| $e$ | 0.1077194 | $i$ | 2.34665 | | +0.35364184 | | −0.24739527 |
| $P$ | 3.36 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 691 | 0.5− | 0.9+ | 2000 12 30 | 704 | 0.9+ | 0.5+ | 2003 11 18 | 644 | 0.4− | 0.0 |
| 1998 03 24 | 691 | 0.7− | 0.3+ | 2000 12 30 | 704 | 0.7− | 0.3+ | 2003 11 18 | 644 | 0.2− | 0.1+ |
| 1998 03 24 | 691 | 0.4− | 0.8+ | 2000 12 30 | 704 | 0.1− | 0.7− | 2003 11 19 | 699 | 0.5+ | 0.0 |
| 1998 03 24 | 910 | 1.3+ | 0.2− | 2000 12 31 | 691 | 0.4− | 0.1+ | 2003 11 19 | 699 | 0.6− | 0.7+ |
| 1998 03 25 | 910 | 0.9+ | 0.3− | 2000 12 31 | 691 | 0.3− | 0.1+ | 2003 11 19 | 699 | 0.6+ | 1.1− |
| 1998 03 25 | 910 | 1.6+ | 0.1− | 2000 12 31 | 691 | 0.5− | 0.1+ | 2003 11 19 | 699 | 0.5− | 0.2+ |
| 1998 03 25 | 910 | 1.5+ | 0.3− | 2001 01 19 | 704 | 0.3− | 0.7+ | 2003 11 20 | 704 | 0.5+ | 1.0+ |
| 1998 03 25 | 910 | 1.3+ | 0.3− | 2001 01 19 | 704 | 0.2− | 0.1− | 2003 11 20 | 704 | 0.9− | 0.4+ |
| 1998 03 26 | 910 | 1.6+ | 0.5− | 2001 01 19 | 704 | 0.4− | 0.3+ | 2003 11 20 | 704 | 1.4− | 0.0 |
| 1998 03 28 | 704 | 1.9+ | 0.2+ | 2001 01 19 | 704 | 0.4+ | 0.5+ | 2003 11 20 | 704 | 0.3+ | 0.8− |
| 1998 03 28 | 704 | 0.7+ | 0.1− | 2001 02 21 | 691 | 0.2+ | 0.1+ | 2003 11 21 | 691 | 0.1− | 0.1+ |
| 1998 03 28 | 704 | 0.3+ | 0.6+ | 2001 02 21 | 691 | 0.5+ | 0.2− | 2003 11 21 | 691 | 0.2− | 0.3+ |
| 1998 03 28 | 704 | 0.3+ | 0.6+ | 2001 02 21 | 691 | 0.1+ | 0.1+ | 2003 11 21 | 691 | 0.0 | 0.2+ |
| 1998 03 28 | 704 | (5.5− | 0.4−) | 2003 10 18 | 699 | 0.4+ | 0.4+ | 2003 11 24 | 699 | 1.2+ | 0.2+ |
| 1998 03 29 | 704 | 1.0+ | 0.5+ | 2003 10 18 | 699 | 0.5− | 1.3− | 2003 11 24 | 699 | 0.1− | 0.1− |
| 1998 03 29 | 704 | 1.6− | 1.1+ | 2003 10 18 | 699 | 0.0 | 0.8− | 2003 11 24 | 699 | 0.0 | 0.5+ |
| 1998 03 29 | 704 | 0.4− | 0.1− | 2003 10 18 | 699 | 0.4+ | 0.8+ | 2003 11 24 | 699 | 1.0+ | 0.6+ |
| 1998 03 29 | 704 | (0.3− | 2.5+) | 2003 10 25 | 704 | 0.1+ | 0.4− | 2006 09 16 | 699 | 0.9− | 1.3+ |
| 1998 04 01 | 704 | (1.0+ | 2.4−) | 2003 10 25 | 704 | 0.4+ | 0.4− | 2006 09 16 | 699 | 0.2− | 1.0− |
| 1998 04 01 | 704 | (2.2+ | 1.2+) | 2003 10 25 | 704 | 0.8+ | 0.5+ | 2006 09 16 | 699 | 0.9+ | 0.8− |
| 1998 04 01 | 704 | 0.9+ | 0.8− | 2003 10 25 | 704 | 0.9+ | 0.3− | 2006 09 16 | 699 | 0.8− | 0.6+ |
| 1998 04 01 | 704 | (2.8+ | 1.1−) | 2003 10 25 | 704 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.7+ |
| 1998 04 01 | 704 | (3.5− | 1.3−) | 2003 11 02 | 704 | 0.9+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.4+ |
| 1999 09 08 | 691 | 0.0 | 0.3+ | 2003 11 02 | 704 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.3− | 0.2+ |
| 1999 09 08 | 691 | 0.1− | 0.7+ | 2003 11 02 | 704 | 0.7− | 0.5+ | 2006 10 19 | G96 | 0.3− | 0.6− |
| 1999 09 08 | 691 | 0.6− | 0.7+ | 2003 11 02 | 704 | 0.6− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2000 12 30 | 704 | 0.5+ | 0.7+ | 2003 11 02 | 704 | 0.9+ | 0.9− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2000 12 30 | 704 | 0.7+ | 0.4+ | 2003 11 18 | 644 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.6− |

**(136859)∗ 1998 FS$_{32}$ = 2001 AW$_{47}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 9066)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.10132 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29980567 | $\omega$ | 162.28423 | | −0.91003789 | | −0.41433801 |
| $a$ | 2.2109359 | $\Omega$ | 353.19876 | | +0.36645792 | | −0.79010922 |
| $e$ | 0.0743331 | $i$ | 6.03548 | | +0.19375145 | | −0.45172052 |
| $P$ | 3.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.0 | 0.5− | 2001 02 03 | 704 | 0.5− | 1.2+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 1998 03 20 | 704 | 0.0 | 0.3+ | 2001 02 03 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 1998 03 20 | 704 | 0.3+ | 0.2+ | 2001 02 03 | 704 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 1998 03 20 | 704 | 0.9+ | 0.9+ | 2001 02 18 | 918 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 1998 03 20 | 704 | 1.0− | 0.2− | 2001 02 18 | 918 | 0.5− | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.2+ |
| 1998 03 22 | 704 | 1.0− | 0.3+ | 2001 02 18 | 918 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 1998 03 22 | 704 | 0.5− | 0.2+ | 2001 02 18 | 918 | 1.4+ | 0.7+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 1998 03 22 | 704 | 1.2− | 2.0+ | 2002 06 13 | 644 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.1− |
| 1998 03 22 | 704 | 1.3+ | 0.5− | 2002 06 13 | 644 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.1− | 0.0 |
| 1998 03 22 | 704 | 0.5+ | 0.9− | 2002 06 13 | 644 | 0.1+ | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 566 | 0.8+ | 0.1+ | 2002 07 12 | 644 | 0.3− | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.1− |
| 1998 03 24 | 566 | 0.1+ | 0.2+ | 2002 07 12 | 644 | 0.1− | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.3− |
| 1998 03 24 | 566 | 0.2− | 0.1+ | 2002 07 12 | 644 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.5+ | 0.0 |
| 1998 03 29 | 704 | 1.3− | 1.3− | 2002 07 15 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 1998 03 29 | 704 | 0.1− | 1.0+ | 2002 07 15 | 644 | 0.5+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.2− |
| 1998 03 29 | 704 | (2.2− | 1.3+) | 2002 07 15 | 644 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 1998 03 29 | 704 | 1.1+ | 0.4+ | 2003 11 19 | 704 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2000 12 19 | 704 | 0.2+ | 0.3− | 2003 11 19 | 704 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2000 12 19 | 704 | 0.5− | 0.4+ | 2003 11 19 | 704 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.8− | 0.6− |
| 2000 12 19 | 704 | 0.3+ | 1.3+ | 2003 11 19 | 704 | 0.5+ | 0.8− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 01 05 | 704 | 1.0− | 0.3+ | 2003 11 19 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 01 05 | 704 | (1.0− | 1.6−) | 2003 12 03 | 704 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 01 05 | 704 | (1.7− | 0.2−) | 2003 12 03 | 704 | 0.1− | 0.6− | 2006 11 14 | 703 | 0.4+ | 0.4− |
| 2001 01 05 | 704 | 0.1+ | 0.7− | 2003 12 03 | 704 | 0.2− | 0.4− | 2006 11 14 | 703 | 1.3− | 0.1+ |
| 2001 01 15 | 704 | (0.5− | 1.8+) | 2003 12 03 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.8− | 0.3− |
| 2001 01 15 | 704 | 0.4+ | 0.0 | 2003 12 17 | 704 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.3− | 1.1+ |
| 2001 01 15 | 704 | 0.5+ | 0.1− | 2003 12 17 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 1.2+ | 0.4+ |
| 2001 01 15 | 704 | 0.4− | 0.3− | 2003 12 17 | 704 | 0.6− | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2001 01 15 | 704 | 0.3+ | 0.8+ | 2003 12 29 | 704 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 1.3+ | 0.9+ |
| 2001 01 15 | 704 | 0.1+ | 0.7+ | 2003 12 29 | 704 | 1.0+ | 0.8− | 2006 11 19 | 704 | 1.0− | 0.6+ |
| 2001 01 15 | 704 | 0.0 | 0.8+ | 2003 12 29 | 704 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.8+ |
| 2001 01 15 | 704 | 0.3− | 0.0 | 2003 12 29 | 704 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5− | 1.5+ |
| 2001 01 15 | 704 | 0.2− | 0.7+ | 2003 12 29 | 704 | 0.3+ | 0.2− | 2006 11 22 | 704 | (0.4+ | 1.6+) |
| 2001 01 15 | 704 | 0.0 | 0.5− | 2004 01 17 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.0− | 1.3+ |
| 2001 01 18 | 704 | 0.1+ | 0.4+ | 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.7− |
| 2001 01 18 | 704 | 0.1+ | 0.2− | 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.6− |
| 2001 01 18 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 699 | 0.8− | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.6− |
| 2001 01 18 | 704 | 1.2+ | 1.0− | 2006 09 20 | 699 | (1.0− | 1.5−) | 2006 11 25 | G96 | 0.3+ | 0.6− |
| 2001 01 18 | 704 | 0.1− | 0.4− | 2006 09 20 | 699 | 0.1+ | 0.9+ | | | | |
| 2001 02 03 | 704 | 1.1+ | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.8+ | | | | |

**(136860)∗ 1998 FQ$_{34}$ = 2001 YL$_{137}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.51945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21838708 | $\omega$ | 194.54781 | | −0.99905223 | +0.03370059 | |
| $a$ | 2.7309773 | $\Omega$ | 347.28740 | | −0.01510570 | −0.86199726 | |
| $e$ | 0.1802650 | $i$ | 7.19146 | | −0.04082231 | −0.50579145 | |
| $P$ | 4.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 1.2+ | 0.4+ | 2001 12 19 | 644 | 0.6− | 0.2− | 2002 02 08 | 704 | 0.2+ | 0.1+ |
| 1998 03 20 | 704 | 0.6− | 1.0− | 2001 12 19 | 644 | 0.4− | 0.2− | 2002 02 08 | 704 | 0.1+ | 0.4+ |
| 1998 03 20 | 704 | 0.4+ | 0.8+ | 2001 12 19 | 644 | 0.2− | 0.2− | 2002 02 08 | 704 | 0.2+ | 0.4− |
| 1998 03 20 | 704 | 0.7+ | 0.6− | 2001 12 22 | 704 | 0.3+ | 0.1+ | 2004 08 12 | 807 | 0.0 | 0.3− |
| 1998 03 22 | 704 | 0.4− | 0.3+ | 2001 12 22 | 704 | 0.7+ | 0.7− | 2004 08 12 | 807 | 0.1− | 0.2− |
| 1998 03 22 | 704 | 0.1− | 0.3+ | 2001 12 22 | 704 | 0.4+ | 0.7− | 2004 09 07 | 691 | 0.1+ | 0.3+ |
| 1998 03 22 | 704 | 1.1− | 0.1− | 2001 12 22 | 704 | 0.0 | 0.8− | 2004 09 07 | 691 | 0.2− | 0.0 |
| 1998 03 22 | 704 | 0.5− | 0.1+ | 2001 12 22 | 704 | 0.6− | 0.5− | 2004 09 07 | 691 | 0.1+ | 0.3+ |
| 1998 03 29 | 704 | 0.6+ | 1.3+ | 2001 12 23 | 704 | 0.2+ | 0.3− | 2005 10 29 | 703 | 0.7− | 1.0− |
| 1998 03 29 | 704 | 0.3− | 0.2− | 2001 12 23 | 704 | 0.4+ | 0.2+ | 2005 10 29 | 703 | 0.3+ | 1.3− |
| 1998 03 29 | 704 | 0.6− | 0.2− | 2001 12 23 | 704 | 0.2− | 0.0 | 2005 10 29 | 703 | (0.7+ | 1.8−) |
| 1998 03 29 | 704 | 0.8+ | 0.7− | 2001 12 23 | 704 | 0.0 | 0.3− | 2005 10 29 | 703 | (0.3− | 2.0−) |
| 1998 03 29 | 704 | 0.6− | 0.5− | 2001 12 23 | 704 | 0.1− | 0.1− | 2005 11 21 | 703 | 0.6− | 0.7+ |
| 2001 12 09 | 704 | (2.3− | 0.7+) | 2002 01 04 | 644 | 0.0 | 0.2− | 2005 11 21 | 703 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.2+ | 0.7+ | 2002 01 04 | 644 | 0.1+ | 0.2+ | 2005 11 21 | 703 | 1.0− | 0.1+ |
| 2001 12 09 | 704 | 1.4+ | 0.2+ | 2002 01 04 | 644 | 0.1− | 0.1− | 2005 11 21 | 703 | 0.7+ | 0.2+ |
| 2001 12 09 | 704 | 0.4− | 1.2+ | 2002 01 21 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.4+ | 0.0 |
| 2001 12 09 | 704 | 1.4+ | 0.1− | 2002 01 21 | 704 | 0.3− | 1.2+ | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2001 12 13 | 704 | 1.0+ | 1.0− | 2002 01 21 | 704 | 1.3− | 0.1+ | 2006 11 19 | 691 | 0.6+ | 0.5+ |
| 2001 12 13 | 704 | 0.7− | 0.4+ | 2002 01 21 | 704 | 0.6− | 0.4+ | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2001 12 13 | 704 | 0.9+ | 0.4+ | 2002 01 21 | 704 | 0.7− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2001 12 13 | 704 | (2.4+ | 0.5−) | 2002 02 08 | 704 | 0.4+ | 0.5− | 2006 11 22 | 691 | 0.5− | 0.1+ |
| 2001 12 13 | 704 | (1.7+ | 1.1−) | 2002 02 08 | 704 | 0.7− | 1.0− | | | | |

**(136861)∗ 1998 FJ$_{39}$ = 2005 EE$_{45}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74567)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.24514 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27748090 | $\omega$ | 43.70274 | | −0.92465923 | +0.38014861 | |
| $a$ | 2.3279875 | $\Omega$ | 158.60990 | | −0.36395851 | −0.86513778 | |
| $e$ | 0.1180367 | $i$ | 3.48798 | | −0.11197999 | −0.32714471 | |
| $P$ | 3.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 1.0+ | 1.3+ | 2005 02 02 | 704 | 0.7+ | 0.3− | 2005 03 17 | 704 | 0.2− | 0.2− |
| 1998 03 20 | 704 | 1.0− | 0.2− | 2005 02 02 | 703 | 0.2− | 1.4+ | 2005 03 17 | 704 | 0.9+ | 0.4+ |
| 1998 03 20 | 704 | 1.2+ | 0.3− | 2005 02 02 | 703 | (0.6+ | 1.7+) | 2005 04 02 | G96 | 0.2+ | 0.0 |
| 1998 03 20 | 704 | 0.3− | 0.1− | 2005 02 02 | 703 | 0.4− | 1.1+ | 2005 04 02 | G96 | 0.1+ | 0.3− |
| 1998 03 22 | 704 | 1.0− | 0.3− | 2005 02 02 | 703 | 1.3+ | 0.9+ | 2005 04 02 | G96 | 0.3+ | 0.3− |
| 1998 03 22 | 704 | 0.8+ | 1.0− | 2005 02 09 | 704 | (0.6− | 2.0+) | 2005 04 02 | G96 | 0.0 | 0.4− |
| 1998 03 22 | 704 | (0.0 | 3.3+) | 2005 02 09 | 704 | 0.6+ | 0.7+ | 2005 04 12 | 695 | 0.3− | 0.1+ |
| 1998 03 22 | 704 | 0.6+ | 0.6+ | 2005 02 09 | 704 | (2.3+ | 0.4−) | 2005 04 12 | 695 | 0.3− | 0.2+ |
| 1998 03 22 | 704 | 0.4− | 1.0− | 2005 03 03 | 703 | (1.9− | 1.5−) | 2006 07 28 | A50 | 0.2+ | 0.2− |
| 1998 03 29 | 704 | 0.3+ | 1.1− | 2005 03 03 | 703 | 0.7− | 0.9− | 2006 08 13 | 644 | 0.5− | 0.8+ |
| 1998 03 29 | 704 | 0.4+ | 0.1+ | 2005 03 03 | 703 | 0.3− | 0.1+ | 2006 08 13 | 644 | 0.2+ | 0.4+ |
| 1998 03 29 | 704 | 1.2+ | 1.3+ | 2005 03 03 | 703 | 0.7− | 0.2+ | 2006 08 13 | 644 | 0.2− | 0.7+ |
| 1998 03 29 | 704 | (4.4− | 3.7+) | 2005 03 08 | 704 | 0.2− | 0.8+ | 2006 08 16 | 644 | 0.2− | 0.5+ |
| 1998 04 02 | 809 | 0.7− | 0.1+ | 2005 03 08 | 704 | 0.1− | 1.1− | 2006 08 16 | 644 | 0.6− | 0.7+ |
| 1998 04 02 | 809 | 1.4− | 0.4+ | 2005 03 08 | 704 | 0.3− | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.8+ |
| 1998 04 02 | 809 | 0.6− | 1.0− | 2005 03 08 | 704 | 0.5+ | 0.7+ | 2006 08 19 | 699 | 0.4+ | 0.6+ |
| 1998 04 03 | 809 | 0.4− | 0.7+ | 2005 03 08 | G96 | 0.7− | 0.1− | 2006 08 19 | 699 | (1.1+ | 1.8+) |
| 1998 04 03 | 809 | 0.0 | 0.3+ | 2005 03 08 | 704 | 0.2+ | 0.8+ | 2006 08 19 | 699 | 0.0 | 0.8+ |
| 1998 04 03 | 809 | (2.6− | 0.1−) | 2005 03 08 | G96 | 0.4− | 0.1− | 2006 08 19 | 699 | 0.9− | 0.1+ |
| 2003 09 29 | 691 | 0.1− | 0.3+ | 2005 03 08 | G96 | 0.3− | 0.1− | 2006 08 28 | 703 | (1.1+ | 1.8−) |
| 2003 09 29 | 691 | 0.0 | 0.0 | 2005 03 08 | G96 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.7+ | 0.2+ |
| 2003 09 29 | 691 | 0.3+ | 0.0 | 2005 03 09 | 704 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.4+ | 0.6− |
| 2003 10 20 | 691 | 0.1− | 0.0 | 2005 03 09 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.5+ |
| 2003 10 20 | 691 | 0.3− | 0.0 | 2005 03 09 | 704 | 0.0 | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.4+ |
| 2003 10 20 | 691 | 0.2+ | 0.0 | 2005 03 09 | 704 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2004 12 20 | G96 | 0.7− | 0.2− | 2005 03 09 | 704 | 0.6+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2004 12 20 | G96 | 0.1− | 0.3− | 2005 03 16 | 704 | 0.3+ | 0.6− | 2006 09 26 | G96 | 0.2− | 0.3+ |
| 2004 12 20 | G96 | 0.4− | 0.3− | 2005 03 16 | 704 | (2.3+ | 0.3−) | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2004 12 20 | G96 | 0.4− | 0.2− | 2005 03 16 | 704 | (0.5+ | 1.7+) | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2005 02 02 | 704 | 0.2+ | 0.9− | 2005 03 16 | 704 | (0.4+ | 2.6−) | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2005 02 02 | 704 | 1.3+ | 0.8+ | 2005 03 16 | 704 | 0.7+ | 1.6+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2005 02 02 | 704 | (1.8+ | 0.3−) | 2005 03 17 | 704 | (2.8− | 1.4+) | | | | |

**(136862)∗ 1998 FW$_{40}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.40552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27414314 | $\omega$ | 181.60281 | | −0.93791231 | +0.34535155 | |
| $a$ | 2.3468453 | $\Omega$ | 18.70093 | | −0.31711271 | −0.81577742 | |
| $e$ | 0.1636671 | $i$ | 5.80815 | | −0.14057035 | −0.46393913 | |
| $P$ | 3.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 26 | 691 | 0.1− | 0.2+ | 2003 10 21 | 644 | 0.2+ | 0.0 | 2005 02 01 | 703 | (1.8+ | 0.1+) |
| 1998 01 26 | 691 | 0.2+ | 0.2− | 2003 10 21 | 704 | 0.1− | 0.6+ | 2005 02 01 | 703 | 0.9− | 0.9− |
| 1998 01 26 | 691 | 0.1− | 0.1+ | 2003 10 21 | 704 | 0.0 | 0.9− | 2005 02 01 | 703 | 0.7− | 0.3− |
| 1998 03 20 | 704 | (2.2+ | 0.4−) | 2003 10 21 | 644 | 0.1− | 0.3+ | 2005 03 09 | 703 | 0.1− | 0.5− |
| 1998 03 20 | 704 | (2.1+ | 1.1−) | 2003 10 21 | 704 | 0.4− | 0.1+ | 2005 03 09 | 703 | 0.1− | 0.3− |
| 1998 03 20 | 704 | (3.0+ | 0.6−) | 2003 10 21 | 644 | 0.2+ | 0.2+ | 2005 03 09 | 703 | 0.2+ | 0.0 |
| 1998 03 20 | 704 | (3.0+ | 0.6−) | 2003 10 21 | 704 | 0.3+ | 1.1+ | 2005 03 09 | 703 | 0.2+ | 0.3+ |
| 1998 03 22 | 704 | 0.5+ | 0.6− | 2003 10 24 | 704 | 1.2+ | 0.2+ | 2005 04 02 | 703 | (1.1+ | 1.6+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | 0.0 | 0.2− | 2003 10 24 | 704 | 0.2− | 0.9+ | 2005 04 02 | 703 | 1.3+ | 1.0+ |
| 1998 03 22 | 704 | 0.4− | 0.3+ | 2003 10 24 | 704 | 0.0 | 0.7+ | 2005 04 02 | 703 | 1.2− | 0.3+ |
| 1998 03 22 | 704 | 0.7+ | 0.0 | 2003 10 24 | 704 | 0.9− | 0.7+ | 2005 04 02 | 703 | 1.0+ | 0.5+ |
| 1998 03 22 | 704 | 0.4+ | 0.1+ | 2003 10 24 | 704 | 0.0 | 0.4− | 2005 04 09 | 703 | 0.2+ | 0.0 |
| 1998 03 26 | 566 | 0.2+ | 0.2+ | 2003 11 21 | 695 | 0.1− | 0.1− | 2005 04 09 | 703 | 0.5− | 1.1+ |
| 1998 03 26 | 566 | 0.4+ | 0.1+ | 2003 11 21 | 695 | 0.3− | 0.1− | 2005 04 09 | 703 | 0.6− | 0.7− |
| 1998 03 26 | 566 | 0.0 | 0.2+ | 2005 01 07 | 704 | 0.4+ | 0.5+ | 2005 04 09 | 703 | 0.1+ | 0.4− |
| 1998 04 19 | 704 | 0.5+ | 0.9+ | 2005 01 07 | 704 | 0.9+ | 0.4− | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 1998 04 19 | 704 | 0.9− | 0.1− | 2005 01 07 | 704 | 0.4+ | 0.1− | 2006 08 24 | 644 | 0.1− | 0.4+ |
| 1998 04 19 | 704 | 1.2− | 1.6− | 2005 01 07 | 704 | 0.9+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.4+ |
| 1998 04 19 | 704 | 0.5− | 1.4+ | 2005 01 07 | 704 | 0.3+ | 1.2+ | 2006 10 19 | 695 | 0.1− | 0.3+ |
| 1998 04 19 | 704 | 0.2+ | 0.1− | 2005 01 12 | 201 | 0.3+ | 0.4− | 2006 10 20 | 695 | 0.1− | 0.2+ |
| 2003 10 16 | 691 | 0.2− | 0.2− | 2005 01 12 | 201 | 0.0 | 0.3− | 2006 10 20 | 695 | 0.1− | 0.4+ |
| 2003 10 16 | 691 | 0.1+ | 0.2− | 2005 01 12 | 201 | 0.0 | 0.8− | | | | |
| 2003 10 16 | 691 | 0.0 | 0.3− | 2005 02 01 | 703 | 1.3− | 1.1+ | | | | |

**(136863)∗ 1998 FA$_{41}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.37402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28378039 | $\omega$ | 14.10641 | | −0.97669572 | +0.21461482 | |
| $a$ | 2.2934070 | $\Omega$ | 178.28087 | | −0.20396010 | −0.92454809 | |
| $e$ | 0.0838211 | $i$ | 4.66425 | | −0.06682624 | −0.31488302 | |
| $P$ | 3.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.2+ | 0.5− | 2005 03 07 | 704 | 0.1+ | 0.6+ | 2005 05 15 | 644 | 0.0 | 0.6+ |
| 1998 03 20 | 704 | 0.1− | 0.4+ | 2005 03 07 | 704 | 0.2− | 1.2+ | 2005 05 15 | 644 | 0.2− | 0.3+ |
| 1998 03 20 | 704 | 0.2− | 0.3+ | 2005 03 07 | 704 | 1.0+ | 1.3+ | 2006 08 19 | A50 | 0.7+ | 0.0 |
| 1998 03 20 | 704 | 0.1+ | 1.3+ | 2005 03 07 | 704 | 0.2+ | 0.8+ | 2006 08 19 | A50 | 0.0 | 0.3+ |
| 1998 03 20 | 704 | 0.3− | 0.3+ | 2005 03 07 | 704 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.0 | 0.4+ |
| 1998 03 22 | 704 | 1.1− | 0.0 | 2005 03 09 | 699 | (1.6− | 0.8+) | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 1998 03 22 | 704 | 0.5− | 0.1+ | 2005 03 09 | 699 | 1.3+ | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.5+ |
| 1998 03 22 | 704 | 0.2+ | 0.1− | 2005 03 09 | 699 | 0.4+ | 0.7+ | 2006 08 25 | 704 | 0.3+ | 0.7+ |
| 1998 03 22 | 704 | 0.6− | 0.6− | 2005 03 09 | 699 | (1.1+ | 1.9+) | 2006 08 25 | 704 | 0.8+ | 0.5+ |
| 1998 03 26 | 566 | 0.6+ | 1.9− | 2005 03 31 | 699 | 0.2− | 0.8− | 2006 08 25 | 704 | 0.5+ | 0.9+ |
| 1998 03 26 | 566 | 0.7+ | 1.5− | 2005 03 31 | 699 | 0.6− | 0.5+ | 2006 08 27 | 691 | 0.6− | 0.3− |
| 1998 03 26 | 566 | 0.8+ | 1.6− | 2005 03 31 | 699 | 0.4− | 0.3− | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 1998 03 28 | 704 | 0.0 | 0.6− | 2005 03 31 | 699 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 1998 03 28 | 704 | 0.4+ | 0.4+ | 2005 04 04 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 703 | 0.1+ | 1.0+ |
| 1998 03 28 | 704 | 1.2− | 1.0− | 2005 04 04 | 704 | 0.9+ | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.1+ |
| 1998 03 28 | 704 | 0.6+ | 1.1− | 2005 04 04 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 1.4+ | 1.0+ |
| 1998 03 29 | 704 | 0.2− | 1.4− | 2005 04 04 | 704 | 0.3+ | 0.8+ | 2006 08 28 | 703 | 0.7+ | 0.0 |
| 1998 03 29 | 704 | (0.1− | 2.0+) | 2005 04 07 | 704 | (0.1+ | 1.7+) | 2006 09 20 | 704 | 0.3− | 0.6+ |
| 1998 03 29 | 704 | 0.3− | 1.2− | 2005 04 07 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.3− | 0.6+ |
| 1998 03 29 | 704 | 0.3− | 0.8− | 2005 04 07 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.7− |
| 1998 04 19 | 704 | 0.7+ | 0.0 | 2005 04 09 | 704 | 1.1+ | 0.4− | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 1998 04 19 | 704 | 1.8− | 0.8− | 2005 04 09 | 704 | 0.2+ | 1.3+ | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 1998 04 19 | 704 | 0.1+ | 1.7− | 2005 04 09 | 704 | 0.6− | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 1998 04 19 | 704 | 1.9− | 1.5+ | 2005 04 09 | 704 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 2001 01 19 | 704 | 0.4+ | 1.4+ | 2005 04 09 | 704 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.4− | 0.3− |
| 2001 01 19 | 704 | 0.5+ | 0.3− | 2005 04 12 | 704 | 0.4+ | 0.7+ | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2001 01 19 | 704 | 0.6+ | 0.6+ | 2005 04 12 | 704 | 0.2− | 0.5− | 2006 10 16 | G96 | 0.5+ | 0.0 |
| 2001 01 19 | 704 | 0.6− | 0.3+ | 2005 04 12 | 704 | 0.4+ | 0.3− | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2003 10 23 | 691 | 0.0 | 0.3+ | 2005 04 12 | 704 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.6− | 0.2− |
| 2003 10 23 | 691 | 0.2− | 0.1+ | 2005 04 12 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2003 10 23 | 691 | 0.2− | 0.1+ | 2005 04 13 | 704 | 0.0 | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2003 10 25 | 704 | 0.2+ | 0.0 | 2005 04 13 | 704 | 0.6+ | 0.3− | 2006 10 27 | G96 | 0.7− | 0.3− |
| 2003 10 25 | 704 | 0.2+ | 0.9+ | 2005 04 13 | 704 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2003 10 25 | 704 | 1.0+ | 0.3+ | 2005 04 13 | 704 | 0.1− | 0.8+ | 2006 11 17 | G96 | 0.1+ | 0.8+ |
| 2003 10 28 | 704 | 0.8− | 0.2+ | 2005 04 13 | 704 | 0.6+ | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2003 10 28 | 704 | 0.7− | 0.1− | 2005 04 14 | 704 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2003 10 28 | 704 | 0.1− | 0.4+ | 2005 04 14 | 704 | 0.1− | 0.6+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2005 03 03 | 704 | 1.0− | 0.1− | 2005 04 14 | 704 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.7− | 0.7− |
| 2005 03 03 | 704 | 0.8− | 0.5+ | 2005 04 14 | 704 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2005 03 03 | 704 | 1.0+ | 0.7+ | 2005 04 14 | 704 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2005 03 04 | G96 | 0.7− | 0.1− | 2005 04 18 | 704 | (0.2− | 1.5+) | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2005 03 04 | G96 | 0.6− | 0.0 | 2005 04 18 | 704 | 0.7+ | 0.4+ | 2006 11 21 | G96 | 0.7− | 0.0 |
| 2005 03 04 | G96 | 0.7− | 0.2+ | 2005 04 18 | 704 | 0.6+ | 1.3+ | 2006 11 21 | G96 | 0.5+ | 0.5− |
| 2005 03 04 | G96 | 0.6− | 0.2− | 2005 05 15 | 644 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.5− | 0.5− |

**(136864)∗ 1998 FB$_{41}$ = 2002 OW$_9$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33018)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.50003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27826774 | $\omega$ | 72.98447 | | −0.32772324 | +0.94476890 | |
| $a$ | 2.3235970 | $\Omega$ | 177.87767 | | −0.89499017 | −0.30942400 | |
| $e$ | 0.2887748 | $i$ | 4.69937 | | −0.30263852 | −0.10802092 | |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 566 | 1.2+ | 1.3− | 2002 08 12 | 704 | 0.6− | 0.0 | 2005 03 11 | 704 | 0.0 | 0.4+ |
| 1998 02 26 | 566 | 0.2+ | 1.3− | 2002 08 12 | 704 | 1.1− | 0.3+ | 2005 03 11 | 704 | 0.2+ | 0.1+ |
| 1998 02 26 | 566 | 0.2− | 0.9− | 2002 08 12 | 704 | 0.9− | 0.0 | 2005 03 11 | 704 | 0.1+ | 0.6+ |
| 1998 03 20 | 704 | 0.3+ | 0.8+ | 2002 08 12 | 704 | 0.8− | 0.4− | 2005 03 17 | 704 | 0.9+ | 1.0+ |
| 1998 03 20 | 704 | 0.2− | 0.6− | 2002 08 16 | 608 | 0.2− | 0.1− | 2005 03 17 | 704 | 0.9+ | 1.1+ |
| 1998 03 20 | 704 | 0.8− | 0.0 | 2002 08 16 | 608 | 0.1− | 0.2− | 2005 03 17 | 704 | (1.9+ | 0.0 ) |
| 1998 03 20 | 704 | 0.2− | 0.2+ | 2002 08 16 | 608 | 0.6+ | 0.4− | 2005 03 17 | 704 | 1.0+ | 0.4+ |
| 1998 03 20 | 704 | 0.1− | 0.6+ | 2002 08 17 | 644 | 0.0 | 1.1+ | 2005 03 17 | 704 | 0.8+ | 0.3− |
| 1998 03 22 | 704 | 0.1+ | 0.9− | 2002 08 17 | 644 | 0.2− | 0.6+ | 2005 04 04 | 704 | 1.0+ | 0.3+ |
| 1998 03 22 | 704 | 0.6− | 0.9− | 2002 08 17 | 644 | 0.0 | 0.5+ | 2005 04 04 | 704 | 0.2+ | 0.8+ |
| 1998 03 22 | 704 | 0.4− | 0.2+ | 2002 08 27 | 644 | 0.1− | 0.4− | 2005 04 04 | 704 | 0.4+ | 0.3+ |
| 1998 03 22 | 704 | 0.8− | 0.1− | 2002 08 27 | 644 | 0.0 | 0.3− | 2005 04 04 | 704 | 0.8+ | 0.8+ |
| 1998 03 22 | 704 | 1.1− | 0.4+ | 2002 08 27 | 644 | 0.0 | 0.4− | 2005 04 04 | 704 | 0.2+ | 0.5+ |
| 1998 03 26 | 566 | 0.8− | 0.6− | 2002 09 05 | 704 | 0.4+ | 1.0+ | 2005 04 06 | 699 | 0.7+ | 1.3+ |
| 1998 03 26 | 566 | 0.4− | 0.5− | 2002 09 05 | 704 | 0.0 | 0.5+ | 2005 04 06 | 699 | 0.4− | 0.3+ |
| 1998 03 26 | 566 | 0.7− | 0.7− | 2002 09 05 | 704 | 0.0 | 1.1+ | 2005 04 06 | 699 | 1.2+ | 0.9+ |
| 1998 03 28 | 704 | 1.3+ | 0.9− | 2002 09 05 | 704 | 0.4+ | 0.6+ | 2005 04 06 | 699 | 0.6+ | 1.0+ |
| 1998 03 28 | 704 | 1.1+ | 0.5− | 2002 09 05 | 704 | 0.1+ | 1.2+ | 2005 05 10 | G96 | 0.2− | 0.1+ |
| 1998 03 28 | 704 | 0.6+ | 0.6− | 2002 09 06 | 704 | (1.9+ | 0.3+) | 2005 05 10 | G96 | 0.5− | 0.2+ |
| 1998 03 28 | 704 | 0.7+ | 0.8+ | 2002 09 06 | 704 | 0.7+ | 0.0 | 2005 05 10 | G96 | 0.3− | 0.1+ |
| 1998 03 28 | 704 | 0.6− | 0.7− | 2002 09 06 | 704 | 1.1+ | 0.3+ | 2005 05 10 | G96 | 0.3− | 0.0 |
| 1998 03 29 | 704 | 0.5+ | 1.5− | 2002 09 06 | 704 | 0.9+ | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.3− |
| 1998 03 29 | 704 | 0.0 | 0.0 | 2002 09 13 | 704 | 0.0 | 1.0− | 2006 07 21 | G96 | 0.2− | 0.2− |
| 1998 03 29 | 704 | 0.0 | 0.6− | 2002 09 13 | 704 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.2+ |
| 1998 03 29 | 704 | 0.8− | 0.1+ | 2002 09 13 | 704 | 0.1− | 0.6− | 2006 07 21 | G96 | 0.4+ | 0.1− |
| 1998 03 29 | 704 | 1.7− | 0.0 | 2002 09 13 | 704 | 1.5− | 0.3− | 2006 09 23 | 691 | 0.2+ | 0.0 |
| 1998 04 19 | 704 | 1.1+ | 0.8+ | 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 1998 04 19 | 704 | (0.0 | 2.6+) | 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 1998 04 19 | 704 | (3.5+ | 0.1−) | 2002 09 14 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 1998 04 19 | 704 | 0.6− | 0.2+ | 2005 02 09 | 704 | 1.3− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1998 04 19 | 704 | (3.3− | 1.0−) | 2005 02 09 | 704 | 0.1− | 0.7+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2002 07 14 | 704 | (1.6+ | 0.3+) | 2005 02 09 | 704 | 0.4− | 1.0+ | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 2002 07 14 | 704 | (1.8+ | 0.1+) | 2005 02 09 | 704 | 0.6− | 1.1+ | 2006 10 01 | 691 | 0.3+ | 0.4+ |
| 2002 07 14 | 704 | 0.1− | 0.6+ | 2005 03 03 | 703 | 0.5+ | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2002 07 21 | 644 | 0.2− | 0.4+ | 2005 03 03 | 703 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2002 07 21 | 644 | 0.2− | 0.4+ | 2005 03 03 | 703 | 0.6− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2002 07 21 | 644 | 0.1− | 0.3+ | 2005 03 03 | 703 | 0.6− | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 07 22 | 644 | 0.1− | 0.5+ | 2005 03 03 | 704 | 0.6− | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2002 07 22 | 644 | 0.3+ | 0.6+ | 2005 03 03 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 07 22 | 644 | 0.6− | 0.8+ | 2005 03 03 | 704 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.2+ | 0.6+ |
| 2002 08 06 | 644 | 0.2− | 0.1− | 2005 03 08 | 699 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 08 06 | 644 | 0.1− | 0.0 | 2005 03 08 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 08 06 | 644 | 0.2− | 0.0 | 2005 03 08 | 699 | 1.1+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 08 08 | 699 | 0.0 | 0.5+ | 2005 03 08 | 704 | 0.6+ | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2002 08 08 | 699 | 0.4+ | 0.1+ | 2005 03 08 | 704 | 0.1+ | 1.3+ | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2002 08 08 | 699 | 0.2− | 0.1− | 2005 03 08 | 704 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 08 08 | 699 | 0.2+ | 0.4− | 2005 03 08 | 704 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2002 08 08 | 644 | 0.2+ | 0.1+ | 2005 03 08 | 704 | 0.2+ | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2005 03 11 | G96 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.4− | | | |
| 2002 08 09 | 704 | 0.0 | 0.4+ | 2005 03 11 | G96 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.5− | 0.1+ | | | |
| 2002 08 09 | 704 | 0.8+ | 0.3+ | 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.4− | | | |
| 2002 08 09 | 704 | 0.6− | 0.3+ | 2005 03 11 | 704 | 0.8+ | 0.4+ | | | | | | | |
| 2002 08 09 | 704 | 0.2− | 0.8+ | 2005 03 11 | 704 | 0.6+ | 0.1+ | | | | | | | |

**(136865)∗ 1998 FE$_{41}$ = 2001 BO$_{58}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 9067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 290.71106 | | (2000.0) | | | |
| *n* | 0.30456802 | $\omega$ | 299.31034 | | −0.36377407 | −0.93145525 |
| *a* | 2.1878281 | $\Omega$ | 172.01032 | | +0.87272435 | −0.34370951 |
| *e* | 0.0377600 | *i* | 3.18256 | | +0.32560808 | −0.11939388 |
| *P* | 3.24 | *H* | 15.9 | *G* | 0.15 | *U* 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.1− | 0.7− | 2001 02 20 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.2− | | | |
| 1998 03 20 | 704 | 0.6+ | 0.2− | 2001 02 20 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.4+ | 0.1− | | | |
| 1998 03 20 | 704 | 0.2− | 0.3− | 2001 02 22 | 704 | 0.2+ | 0.9+ | 2006 10 18 | 691 | 0.2+ | 0.2− | | | |
| 1998 03 20 | 704 | 0.3+ | 0.5− | 2001 02 22 | 699 | 0.9+ | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.2− | | | |
| 1998 03 20 | 704 | 0.4+ | 0.5− | 2001 02 22 | 704 | 0.3− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | | | |
| 1998 03 22 | 704 | 1.1− | 1.4+ | 2001 02 22 | 699 | 0.7+ | 0.1− | 2006 10 20 | 644 | 0.5− | 0.3− | | | |
| 1998 03 22 | 704 | 0.3+ | 0.9− | 2001 02 22 | 699 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.2− | | | |
| 1998 03 22 | 704 | 0.3− | 1.1− | 2001 02 22 | 704 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.1− | | | |
| 1998 03 22 | 704 | 1.2− | 0.1− | 2001 02 22 | 699 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.1− | | | |
| 1998 03 22 | 704 | 1.4− | 0.3− | 2001 02 22 | 704 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.2− | | | |
| 1998 03 28 | 704 | 0.6+ | 1.4− | 2001 02 22 | 704 | 0.3− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1− | | | |
| 1998 03 28 | 704 | 0.2+ | 1.7+ | 2001 03 20 | 699 | (0.5+ | 1.7+) | 2006 11 02 | 703 | 0.2+ | 1.0− | | | |
| 1998 03 28 | 704 | 1.8− | 1.8− | 2001 03 20 | 699 | 1.1− | 0.3− | 2006 11 02 | 703 | 0.7− | 0.5− | | | |
| 1998 03 28 | 704 | 0.2+ | 0.2+ | 2001 03 20 | 699 | 0.5− | 1.2+ | 2006 11 02 | 703 | 1.1− | 1.3− | | | |
| 1998 03 29 | 704 | 1.4− | 0.9− | 2001 03 20 | 699 | 1.3+ | 1.3− | 2006 11 02 | 703 | 0.1+ | 0.4+ | | | |
| 1998 03 29 | 704 | 1.0+ | 1.0− | 2002 07 14 | 704 | 0.1− | 0.6+ | 2006 11 14 | 704 | 0.1− | 0.7+ | | | |
| 1998 03 29 | 704 | 0.1+ | 1.0− | 2002 07 14 | 704 | 0.6+ | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.0 | | | |
| 1998 03 29 | 704 | 0.7− | 1.1− | 2002 07 14 | 704 | 0.2+ | 0.4− | 2006 11 14 | 704 | 0.3+ | 1.2+ | | | |
| 1999 08 22 | 703 | (0.0 | 2.8+) | 2002 07 14 | 704 | 0.6+ | 0.1+ | 2006 11 14 | 704 | 0.7+ | 0.3+ | | | |
| 1999 08 22 | 703 | 0.4+ | 1.1+ | 2002 07 14 | 704 | 0.7+ | 0.3− | 2006 11 14 | 704 | 0.3+ | 0.5+ | | | |
| 1999 08 22 | 703 | 0.8− | 0.8+ | 2002 07 15 | 644 | 0.9− | 0.7+ | 2006 11 15 | G96 | 0.3+ | 0.6− | | | |
| 1999 08 22 | 703 | 0.4− | 1.2+ | 2002 07 15 | 644 | 0.8− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.6− | | | |
| 2001 01 21 | 704 | 0.0 | 0.4+ | 2002 07 15 | 644 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.4− | | | |
| 2001 01 21 | 704 | 0.3+ | 0.8+ | 2003 12 19 | 704 | 0.9− | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.4− | | | |
| 2001 01 21 | 704 | 0.6+ | 0.1− | 2003 12 19 | 704 | 0.8− | 0.4− | 2006 11 16 | 691 | 0.0 | 0.0 | | | |
| 2001 01 21 | 704 | 0.0 | 0.6+ | 2003 12 19 | 704 | 0.5− | 0.7− | 2006 11 16 | 691 | 0.1+ | 0.1− | | | |
| 2001 01 29 | 704 | 1.2+ | 0.3− | 2003 12 19 | 704 | 1.0− | 0.2− | 2006 11 16 | 691 | 0.0 | 0.0 | | | |
| 2001 01 29 | 704 | 0.2+ | 0.5− | 2003 12 19 | 704 | 0.8− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.5+ | | | |
| 2001 01 29 | 704 | 0.5+ | 0.2+ | 2003 12 21 | 704 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.5− | 0.5+ | | | |
| 2001 01 29 | 704 | 0.8+ | 0.6− | 2003 12 21 | 704 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.3+ | | | |
| 2001 01 31 | 704 | 0.3+ | 0.3+ | 2003 12 21 | 704 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.3+ | | | |
| 2001 01 31 | 704 | 0.1+ | 0.6+ | 2003 12 21 | 704 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.7− | 0.5+ | | | |
| 2001 01 31 | 704 | 0.6− | 0.9+ | 2003 12 23 | 704 | 0.6+ | 0.4− | 2006 11 18 | 704 | 0.8− | 0.8+ | | | |
| 2001 01 31 | 704 | 0.2− | 0.1− | 2003 12 23 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.4+ | | | |
| 2001 01 31 | 704 | 0.6− | 0.3+ | 2003 12 23 | 704 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.7− | | | |
| 2001 02 16 | 699 | 0.1+ | 0.7+ | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.1− | | | |
| 2001 02 16 | 699 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 1.1+ | 0.7+ | 2006 11 20 | 704 | 0.7+ | 0.8+ | | | |
| 2001 02 16 | 699 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.7− | 2006 11 20 | 704 | (0.6− | 2.0+) | | | |
| 2001 02 16 | 699 | 0.3+ | 0.2+ | 2006 09 16 | 703 | 0.7+ | 0.8− | 2006 11 20 | 704 | 1.1+ | 0.4+ | | | |
| 2001 02 19 | 704 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.1+ | | | |
| 2001 02 19 | 704 | 0.4+ | 0.5− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.8+ | 0.3+ | | | |
| 2001 02 19 | 704 | 0.6+ | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.3− | 0.4− | | | |
| 2001 02 19 | 704 | 0.5+ | 0.7+ | 2006 09 30 | G96 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1− | | | |
| 2001 02 19 | 704 | 0.4+ | 1.0+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− | | | |
| 2001 02 20 | 704 | 0.3− | 0.7+ | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 11 25 | 704 | 1.3+ | 1.6+ | | | |
| 2001 02 20 | 704 | 0.1− | 0.8+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 25 | 704 | 0.3− | 0.1+ | | | |
| 2001 02 20 | 704 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 25 | 704 | 0.3+ | 1.8+ | | | |

**(136866)∗ 1998 FB$_{46}$ = 2001 TA$_{85}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 19323)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 237.38978 | | (2000.0) | | | |
| *n* | 0.18124001 | $\omega$ | 112.10050 | | −0.71205845 | −0.70092645 |
| *a* | 3.0924309 | $\Omega$ | 23.46183 | | +0.60034488 | −0.63803286 |
| *e* | 0.1560871 | *i* | 5.89995 | | +0.36408624 | −0.31877294 |
| *P* | 5.44 | *H* | 15.2 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 08 | 327 | 0.2− | 0.2− | 2001 10 17 | 704 | 0.7+ | 1.0− | 2003 02 04 | 704 | 0.5+ | 0.4− | | | |
| 1998 03 08 | 327 | 0.2+ | 0.1+ | 2001 10 21 | 704 | (1.7+ | 0.1+) | 2003 02 04 | 704 | 0.9+ | 0.3+ | | | |
| 1998 03 08 | 327 | 0.3+ | 0.5− | 2001 10 21 | 704 | 0.5+ | 0.8+ | 2003 02 04 | 704 | (3.6+ | 1.0−) | | | |
| 1998 03 20 | 704 | 0.8− | 0.4− | 2001 10 21 | 704 | 0.1− | 0.1− | 2003 02 23 | 699 | 0.2+ | 0.8+ | | | |
| 1998 03 20 | 704 | 1.0− | 0.6+ | 2001 11 09 | 704 | 0.5+ | 0.0 | 2003 02 23 | 699 | 0.8+ | 0.4− | | | |
| 1998 03 20 | 704 | 0.0 | 0.0 | 2001 11 09 | 704 | 0.9− | 0.6− | 2003 02 23 | 699 | 0.7+ | 0.3− | | | |
| 1998 03 20 | 704 | 1.1+ | 0.2+ | 2001 11 09 | 704 | 0.2− | 0.4+ | 2003 02 23 | 699 | 1.3+ | 0.0 | | | |
| 1998 03 22 | 704 | 0.5+ | 1.4− | 2001 11 09 | 704 | (2.0− | 1.5−) | 2003 03 03 | 644 | 0.4+ | 0.1+ | | | |
| 1998 03 22 | 704 | 0.0 | 0.6− | 2002 12 31 | 704 | 0.8− | 0.1− | 2003 03 03 | 644 | 0.0 | 0.1− | | | |
| 1998 03 22 | 704 | 1.1+ | 0.2+ | 2002 12 31 | 704 | 1.2− | 1.3+ | 2003 03 03 | 644 | 0.1+ | 0.0 | | | |
| 1998 03 22 | 704 | 0.0 | 1.3+ | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2003 03 07 | 644 | 0.4+ | 0.1− | | | |
| 1998 03 29 | 704 | 1.4− | 0.3+ | 2002 12 31 | 704 | 0.6− | 0.8+ | 2003 03 07 | 644 | 0.1+ | 0.2+ | | | |
| 1998 03 29 | 704 | (2.1+ | 1.3+) | 2003 01 10 | 704 | 0.4− | 0.4+ | 2003 03 07 | 644 | 0.1+ | 0.2+ | | | |
| 1998 03 29 | 704 | 0.6+ | 1.4− | 2003 01 10 | 704 | 0.7− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.0 | | | |
| 1998 03 29 | 704 | 1.7− | 0.3− | 2003 01 10 | 704 | 0.2+ | 0.4− | 2006 08 27 | 691 | 0.3− | 0.4+ | | | |
| 1998 03 29 | 704 | 0.4− | 0.4− | 2003 01 10 | 704 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.0 | 0.4+ | | | |
| 2001 10 14 | 704 | (2.1+ | 0.8−) | 2003 01 31 | 704 | 0.3− | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.7+ | | | |
| 2001 10 14 | 704 | 0.7+ | 0.6− | 2003 01 31 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.5+ | | | |
| 2001 10 14 | 704 | 0.6+ | 0.7+ | 2003 01 31 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.9+ | 0.4− | | | |
| 2001 10 16 | 691 | 0.1+ | 0.3− | 2003 01 31 | 704 | 0.7− | 0.2+ | 2006 09 18 | 703 | 1.2− | 0.5+ | | | |
| 2001 10 16 | 691 | 0.2+ | 0.3− | 2003 02 02 | 644 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.4+ | 0.2− | | | |
| 2001 10 16 | 691 | 0.1+ | 0.4− | 2003 02 02 | 644 | 0.2+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.3− | | | |
| 2001 10 17 | 704 | 0.2− | 0.0 | 2003 02 02 | 644 | 0.4+ | 0.7+ | 2006 10 20 | G96 | 0.3− | 0.4+ | | | |
| 2001 10 17 | 704 | 0.2− | 1.1− | 2003 02 04 | 704 | (1.6+ | 0.3−) | 2006 10 20 | G96 | 0.5− | 0.1− | | | |

**(136867)∗ 1998 FW$_{48}$ = 2003 EC$_{7}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 42896)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 168.52426 | | (2000.0) | | | |
| *n* | 0.18639745 | $\omega$ | 41.22985 | | −0.33776408 | +0.94057909 |
| *a* | 3.0351214 | $\Omega$ | 209.08011 | | −0.88135241 | −0.32911625 |
| *e* | 0.1614716 | *i* | 4.13189 | | −0.33035339 | −0.08362692 |
| *P* | 5.29 | *H* | 15.5 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 05 | 691 | 0.2− | 0.3− | 2000 10 07 | 691 | 0.1+ | 0.3− | 2005 10 03 | 644 | 0.7− | 0.1+ | | | |
| 1992 02 05 | 691 | 0.0 | 0.2− | 2003 03 06 | 699 | 0.0 | 0.5− | 2005 10 05 | 691 | 0.1− | 0.0 | | | |
| 1992 02 05 | 691 | 0.1− | 0.2− | 2003 03 06 | 699 | 0.2− | 0.1+ | 2005 10 05 | 691 | 0.2− | 0.1− | | | |
| 1998 03 20 | 704 | (2.3− | 1.5+) | 2003 03 06 | 699 | 0.2+ | 0.3+ | 2005 10 05 | 691 | 0.0 | 0.1− | | | |
| 1998 03 20 | 704 | 0.4+ | 1.1− | 2003 03 06 | 699 | 0.1− | 0.2+ | 2005 10 06 | 699 | 0.7− | 0.7+ | | | |
| 1998 03 20 | 704 | 0.8+ | 0.9+ | 2003 03 07 | 704 | 1.3+ | 0.9+ | 2005 10 06 | 699 | 1.0− | 1.0− | | | |
| 1998 03 20 | 704 | 1.0− | 0.5+ | 2003 03 07 | 704 | 0.6+ | 0.1+ | 2005 10 06 | 699 | 0.5+ | 0.5+ | | | |
| 1998 03 20 | 704 | (3.4− | 0.3−) | 2003 03 07 | 704 | 0.7+ | 0.2+ | 2005 10 06 | 699 | 0.3+ | 0.8+ | | | |
| 1998 03 22 | 704 | 1.2− | 1.5+ | 2003 03 07 | 704 | 0.4− | 0.6+ | 2005 10 10 | 291 | 0.2+ | 0.0 | | | |
| 1998 03 22 | 704 | 0.6− | 1.2− | 2003 03 07 | 704 | 1.1+ | 0.4+ | 2005 10 10 | 291 | 0.3+ | 0.0 | | | |
| 1998 03 22 | 704 | (2.2− | 0.6+) | 2005 08 29 | 644 | 0.5+ | 0.1+ | 2005 10 10 | 291 | 0.7+ | 0.2+ | | | |
| 1998 03 22 | 704 | 1.1− | 1.4+ | 2005 08 29 | 644 | 0.2+ | 0.3+ | 2005 10 25 | 691 | 0.4+ | 0.1− | | | |
| 1998 03 22 | 704 | (3.3− | 2.0+) | 2005 08 29 | 644 | 0.0 | 0.1+ | 2005 10 25 | 691 | 0.2+ | 0.2+ | | | |
| 1998 03 29 | 704 | 0.1− | 0.1− | 2005 09 22 | 644 | 0.1− | 0.2+ | 2005 10 25 | 691 | 0.1+ | 0.3− | | | |
| 1998 03 29 | 704 | 0.4+ | 1.3+ | 2005 09 22 | 644 | 0.2− | 0.1+ | 2005 10 31 | 691 | 0.2− | 0.1− | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | (0.4+ | 2.0+) | 2005 09 22 | 644 | 0.5− | 0.1+ | 2005 10 31 | 691 | 0.2− | 0.4+ | | |
| 1998 03 29 | 704 | 1.7+ | 0.6− | 2005 09 26 | 691 | 0.2− | 0.2+ | 2005 10 31 | 691 | 0.2− | 0.1+ | | |
| 1998 03 29 | 704 | 1.7+ | 0.7+ | 2005 09 26 | 691 | 0.2− | 0.2+ | 2005 11 03 | 691 | 0.3− | 0.1+ | | |
| 1998 04 01 | 704 | 0.1− | 0.7+ | 2005 09 26 | 691 | 0.0 | 0.2+ | 2005 11 03 | 691 | 0.1− | 0.5+ | | |
| 1998 04 01 | 704 | 1.5+ | 1.0+ | 2005 09 27 | 691 | 0.3− | 0.0 | 2005 11 03 | 691 | 0.4− | 0.1− | | |
| 1998 04 01 | 704 | 1.3− | 0.8+ | 2005 09 27 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.4+ | | |
| 1998 04 01 | 704 | (4.1− | 2.2−) | 2005 09 27 | 691 | 1.2− | 0.7+ | 2006 10 21 | G96 | 0.3− | 0.2+ | | |
| 1998 04 19 | 704 | (2.2+ | 0.9−) | 2005 09 29 | 699 | (1.9− | 1.4+) | 2006 10 21 | G96 | 0.3− | 0.4− | | |
| 1998 04 19 | 704 | (2.2+ | 1.3−) | 2005 09 29 | 699 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.4− | 0.4− | | |
| 1998 04 19 | 704 | 1.3− | 1.3+ | 2005 09 29 | 699 | 0.7− | 0.4+ | 2006 11 18 | 691 | 0.4− | 0.0 | | |
| 1998 04 19 | 704 | (1.3− | 2.2−) | 2005 09 29 | 699 | 0.8+ | 0.4+ | 2006 11 18 | 691 | 0.3− | 0.2+ | | |
| 1999 07 13 | 704 | 0.5+ | 0.7+ | 2005 10 02 | G96 | 0.3+ | 0.6− | 2006 11 18 | 691 | 1.5+ | 0.9+ | | |
| 1999 07 13 | 704 | 1.4+ | 0.0 | 2005 10 02 | G96 | 0.6+ | 0.1− | 2006 11 22 | 691 | 0.2− | 0.2− | | |
| 1999 07 13 | 704 | 0.6− | 0.7− | 2005 10 02 | G96 | 0.6+ | 0.3− | 2006 11 22 | 691 | 0.0 | 0.2− | | |
| 1999 07 13 | 704 | 1.0+ | 0.8+ | 2005 10 02 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.2− | | |
| 2000 10 07 | 691 | 0.2+ | 0.2− | 2005 10 03 | 644 | 0.4− | 0.1+ | | | | | | |
| 2000 10 07 | 691 | 0.3+ | 0.3− | 2005 10 03 | 644 | 0.2− | 0.2+ | | | | | | |

**(136868)∗ 1998 FC$_{49}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.79895 | | (2000.0) | | | |
| $n$ | 0.21724999 | $\omega$ | 214.42312 | | −0.88375947 | +0.46766019 |
| $a$ | 2.7404983 | $\Omega$ | 353.39792 | | −0.39131858 | −0.75761357 |
| $e$ | 0.1529401 | $i$ | 8.11112 | | −0.25659105 | −0.45531927 |
| $P$ | 4.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.0 | 0.1+ | 2001 12 22 | 704 | 0.2+ | 0.2+ | 2004 09 10 | 691 | 0.0 | 0.1− | | |
| 1998 03 20 | 704 | 0.0 | 0.1+ | 2001 12 22 | 704 | 0.2− | 0.8+ | 2004 09 10 | 691 | 0.1+ | 0.1− | | |
| 1998 03 20 | 704 | 0.3− | 0.7+ | 2001 12 22 | 704 | 0.6− | 1.0− | 2004 09 10 | 691 | 0.1+ | 0.1− | | |
| 1998 03 20 | 704 | 1.1− | 0.4+ | 2002 01 08 | 704 | 0.2+ | 0.3− | 2004 09 13 | 699 | 0.6− | 1.1− | | |
| 1998 03 20 | 704 | 0.5− | 0.5+ | 2002 01 08 | 704 | 0.7+ | 0.3+ | 2004 09 13 | 699 | 0.8− | 0.1+ | | |
| 1998 03 22 | 704 | 0.0 | 0.1− | 2002 01 08 | 704 | 0.1+ | 0.5− | 2004 09 13 | 699 | (2.4+ | 0.7+) | | |
| 1998 03 22 | 704 | 0.4− | 0.0 | 2002 01 08 | 704 | 0.0 | 0.3− | 2004 09 13 | 699 | 1.4+ | 1.2+ | | |
| 1998 03 22 | 704 | 0.2− | 0.5+ | 2002 01 08 | 704 | 0.2− | 0.9− | 2004 09 15 | 691 | 0.1+ | 0.0 | | |
| 1998 03 22 | 704 | 0.1+ | 0.1+ | 2002 01 11 | 699 | 0.8+ | 0.0 | 2004 09 15 | 691 | 0.0 | 0.1− | | |
| 1998 03 22 | 704 | 0.8+ | 0.5− | 2002 01 11 | 699 | 0.3− | 0.4− | 2004 09 15 | 691 | 0.2+ | 0.2− | | |
| 1998 03 28 | 704 | 0.4+ | 1.4+ | 2002 01 11 | 699 | 0.5− | 0.7− | 2004 09 16 | 691 | 0.1+ | 0.1− | | |
| 1998 03 28 | 704 | 0.4+ | 0.5+ | 2002 01 11 | 699 | 0.4+ | 0.9− | 2004 09 16 | 691 | 0.1+ | 0.1+ | | |
| 1998 03 28 | 704 | 1.2− | 0.9− | 2002 01 21 | 704 | 1.1− | 0.2+ | 2004 09 16 | 691 | 0.3+ | 0.2+ | | |
| 1998 03 28 | 704 | 0.3− | 0.5+ | 2002 01 21 | 704 | 0.3+ | 0.4− | 2004 09 17 | 704 | 0.9+ | 0.1+ | | |
| 1998 03 28 | 704 | 1.3− | 0.6− | 2002 01 21 | 704 | 0.4− | 0.4+ | 2004 09 17 | 704 | 0.2− | 0.1− | | |
| 1998 03 29 | 704 | 0.6+ | 0.6+ | 2002 01 21 | 704 | 0.4− | 0.8+ | 2004 09 17 | 704 | 0.4− | 1.5+ | | |
| 1998 03 29 | 704 | 0.2− | 1.8+ | 2002 01 21 | 704 | 0.5− | 0.0 | 2004 09 17 | 704 | 0.2+ | 0.5+ | | |
| 1998 03 29 | 704 | 0.5+ | 0.3+ | 2002 02 03 | 699 | 0.1+ | 0.3+ | 2004 09 17 | 704 | 0.4− | 0.2− | | |
| 1998 03 29 | 704 | 0.1− | 0.5+ | 2002 02 03 | 644 | 0.1− | 0.4− | 2004 09 17 | A50 | (0.7− | 2.4−) | | |
| 1998 03 29 | 704 | 1.2+ | 0.2− | 2002 02 03 | 644 | 0.3+ | 0.1+ | 2004 09 17 | A50 | (1.1− | 2.7−) | | |
| 1998 04 01 | 704 | 1.2+ | 0.2− | 2002 02 03 | 699 | 0.2− | 0.6+ | 2004 09 17 | A50 | 0.8− | 1.1− | | |
| 1998 04 01 | 704 | 1.1− | 1.3+ | 2002 02 03 | 644 | 0.3− | 0.1+ | 2004 09 17 | A50 | 1.2− | 0.5− | | |
| 1998 04 01 | 704 | 0.2− | 0.4+ | 2002 02 03 | 644 | 0.2+ | 0.1+ | 2004 09 22 | 691 | 0.0 | 0.4+ | | |
| 1998 04 01 | 704 | 0.5− | 0.7+ | 2002 02 03 | 699 | 0.7+ | 0.3+ | 2004 09 22 | 691 | 0.2− | 0.4+ | | |
| 1998 04 01 | 704 | 1.2+ | 0.4+ | 2002 02 03 | 644 | 0.1+ | 0.0 | 2004 09 22 | 691 | 0.0 | 0.3+ | | |
| 1998 04 18 | 704 | 0.4+ | 0.8− | 2002 02 03 | 644 | 0.3+ | 0.0 | 2004 09 24 | 291 | 0.1− | 0.2+ | | |
| 1998 04 18 | 704 | 0.3+ | 0.4+ | 2002 02 03 | 699 | 0.2− | 0.5+ | 2004 09 24 | 291 | 0.3− | 0.3+ | | |
| 1998 04 18 | 704 | (2.6+ | 1.4−) | 2002 02 08 | 704 | 1.4+ | 0.0 | 2004 09 24 | 291 | 0.2− | 0.2+ | | |
| 1998 04 18 | 704 | 0.1+ | 1.7− | 2002 02 08 | 704 | (2.7+ | 0.1+) | 2004 10 12 | 691 | 0.0 | 0.2+ | | |
| 1998 04 18 | 704 | 1.1+ | 1.8− | 2002 02 08 | 704 | (3.0+ | 0.8−) | 2004 10 12 | 691 | 0.0 | 0.2+ | | |
| 1998 04 19 | 704 | 0.5− | 0.3− | 2002 02 12 | 704 | 0.8+ | 0.0 | 2004 10 12 | 691 | 0.3+ | 0.1− | | |
| 1998 04 19 | 704 | 0.1+ | 1.5− | 2002 02 12 | 704 | 0.3+ | 0.2+ | 2005 12 24 | 704 | 0.4+ | 0.8− | | |
| 1998 04 19 | 704 | 0.5+ | 0.1− | 2002 02 12 | 704 | 0.3− | 0.3− | 2005 12 24 | 704 | 0.5+ | 1.2− | | |
| 1998 04 19 | 704 | 0.5− | 0.6− | 2002 02 12 | 704 | 0.3− | 0.2− | 2005 12 24 | 704 | 0.9− | 0.7− | | |
| 1998 04 19 | 704 | 0.2+ | 1.3− | 2002 02 12 | 704 | 0.6− | 0.2− | 2005 12 24 | 704 | 0.1+ | 0.1+ | | |
| 1998 04 21 | 261 | 1.2+ | 1.9+ | 2002 02 13 | 644 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.4+ | | |
| 1998 04 21 | 261 | 1.0+ | 1.9+ | 2002 02 13 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 12 09 | 704 | 0.8+ | 0.1+ | 2002 02 13 | 644 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.5+ | | |
| 2001 12 09 | 704 | 0.3+ | 0.8+ | 2004 09 08 | 704 | 1.0− | 0.7+ | 2006 11 24 | 691 | 0.0 | 0.2+ | | |
| 2001 12 09 | 704 | 0.6− | 0.2+ | 2004 09 08 | 704 | 0.2− | 1.3+ | 2006 11 24 | 691 | 0.3+ | 0.1+ | | |
| 2001 12 09 | 704 | 0.3+ | 0.5+ | 2004 09 08 | 704 | 1.4− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.3+ | | |
| 2001 12 09 | 704 | 0.1+ | 0.2− | 2004 09 08 | 704 | 0.9− | 0.5− | 2006 11 26 | 691 | 0.5+ | 0.4− | | |
| 2001 12 19 | 644 | 0.2+ | 0.3+ | 2004 09 09 | 704 | 0.4+ | 0.1− | 2006 11 26 | 691 | 0.2+ | 0.1+ | | |
| 2001 12 19 | 644 | 0.1− | 0.4+ | 2004 09 09 | 704 | 1.4− | 0.1+ | 2006 11 26 | 691 | 0.0 | 0.3+ | | |
| 2001 12 19 | 644 | 0.2− | 0.3+ | 2004 09 09 | 704 | 0.3− | 0.3− | | | | | | |

**(136869)∗ 1998 FB$_{55}$ = 2005 EE$_{69}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74567)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.56643 | | (2000.0) | | | |
| $n$ | 0.28350313 | $\omega$ | 250.85157 | | −0.11776362 | +0.99280940 |
| $a$ | 2.2949020 | $\Omega$ | 12.44386 | | −0.86954224 | −0.09264869 |
| $e$ | 0.1458868 | $i$ | 5.71994 | | −0.47961237 | −0.07580055 |
| $P$ | 3.48 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.7+ | 0.9− | 2002 07 27 | 644 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | | |
| 1998 03 20 | 704 | 1.0− | 0.5− | 2002 07 27 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.4+ | | |
| 1998 03 20 | 704 | 1.0+ | 0.6+ | 2002 07 27 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 691 | (0.3+ | 1.6+) | | |
| 1998 03 20 | 704 | 0.7− | 1.2− | 2005 03 07 | 704 | 1.1+ | 1.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | | |
| 1998 03 20 | 704 | (4.3− | 0.7+) | 2005 03 07 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.2+ | | |
| 1998 03 22 | 704 | 0.7− | 1.3− | 2005 03 07 | 704 | 0.4+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.5+ | | |
| 1998 03 22 | 704 | 0.7− | 1.1+ | 2005 03 07 | 704 | (1.8+ | 1.1+) | 2006 09 26 | 691 | 0.2− | 0.2+ | | |
| 1998 03 22 | 704 | (2.0− | 3.2+) | 2005 03 07 | 704 | 1.2+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.2+ | | |
| 1998 03 22 | 704 | (2.6− | 1.4−) | 2005 03 08 | G96 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.0 | | |
| 1998 03 24 | 704 | 0.2+ | 1.0− | 2005 03 08 | G96 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.3+ | | |
| 1998 03 24 | 704 | 1.0− | 0.3+ | 2005 03 08 | G96 | 0.3− | 0.0 | 2006 10 10 | 644 | 0.5− | 0.2− | | |
| 1998 03 24 | 704 | 0.7+ | 1.2− | 2005 03 08 | G96 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.4− | 0.0 | | |
| 1998 03 24 | 704 | 0.8− | 0.9− | 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 1998 03 24 | 704 | 1.2− | 0.9+ | 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | | |
| 1998 03 24 | 704 | 1.2+ | 1.5− | 2005 03 12 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.4+ | | |
| 1998 03 24 | 704 | 0.3− | 0.3− | 2005 04 09 | 704 | (0.6+ | 1.8+) | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 1998 03 24 | 704 | 0.4+ | 0.2+ | 2005 04 09 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.7+ | 0.1− | | |
| 1998 03 24 | 704 | 0.3− | 0.0 | 2005 04 09 | 704 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.1− | 0.1− | | |
| 1998 03 29 | 704 | (2.2− | 0.0 ) | 2005 04 09 | 704 | 0.4− | 0.7+ | 2006 10 21 | 703 | 0.4− | 1.0− | | |
| 1998 03 29 | 704 | 0.3− | 0.9+ | 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 1.0+ | | |
| 1998 03 29 | 704 | 1.8+ | 0.5− | 2005 05 02 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.2+ | | |
| 1998 03 29 | 704 | 0.4− | 1.7− | 2005 05 02 | 691 | 0.5+ | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 1998 03 29 | 704 | 1.1+ | 1.3− | 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 1998 04 20 | 704 | 0.2− | 1.0+ | 2005 05 10 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.1− | | |
| 1998 04 20 | 704 | 1.1− | 1.3+ | 2005 05 10 | 691 | 0.0 | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.2+ | | |
| 1998 04 20 | 704 | 1.3+ | 0.8+ | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 1998 04 20 | 704 | 0.1+ | 1.8+ | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 1998 04 20 | 704 | 1.6− | 0.6+ | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.5− | 0.1− | | |
| 2002 07 06 | 644 | 0.0 | 0.5− | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.4− | 0.2− | | |
| 2002 07 06 | 644 | 0.0 | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.3− | 0.2+ | | |
| 2002 07 06 | 644 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.3+ | | | | | | |

**(136870)∗ 1998 FC$_{55}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 141.24632 | | (2000.0) | | | |
| $n$ | 0.29692993 | $\omega$ | 139.52476 | | −0.16958633 | +0.98546691 |
| $a$ | 2.2251881 | $\Omega$ | 120.70938 | | −0.90710120 | −0.15221035 |
| $e$ | 0.1359227 | $i$ | 0.65104 | | −0.38523746 | −0.07541201 |
| $P$ | 3.32 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 05 | 691 | 0.7+ | 0.4− | 1998 04 20 | 704 | (6.2− | 0.8−) | 2002 09 05 | 704 | 0.8− | 0.3− | | |
| 1996 12 05 | 691 | 0.9+ | 0.0 | 1999 10 19 | 704 | 0.3+ | 0.1+ | 2002 09 05 | 704 | 0.4− | 0.7+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 05 | 691 | 1.8− | 0.5+ | 1999 10 19 | 704 | 1.0+ | 0.7− | 2002 09 05 | 704 | 0.1+ | 0.6+ |
| 1998 03 20 | 704 | (1.4− | 2.0−) | 1999 10 19 | 704 | 0.3+ | 0.9+ | 2002 09 05 | 704 | (0.9− | 1.9+) |
| 1998 03 20 | 704 | 0.9− | 0.3+ | 1999 10 19 | 704 | 0.5− | 0.2+ | 2002 09 05 | 704 | 1.1− | 0.5+ |
| 1998 03 20 | 704 | 0.5+ | 1.0+ | 2001 01 04 | 608 | 0.6− | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.0 |
| 1998 03 20 | 704 | 0.9− | 1.7− | 2001 01 04 | 608 | 0.7− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.3− |
| 1998 03 22 | 704 | 0.9− | 0.6− | 2001 01 04 | 608 | 0.2− | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 1998 03 22 | 704 | 0.4+ | 0.4+ | 2002 08 06 | 599 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.3− |
| 1998 03 22 | 704 | (2.9− | 0.7−) | 2002 08 06 | 599 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.3− | 0.3+ |
| 1998 03 22 | 704 | 0.6+ | 1.5− | 2002 08 06 | 599 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 1998 03 24 | 704 | 0.6+ | 0.6+ | 2002 08 08 | 599 | 0.4+ | 0.1− | 2006 10 19 | G96 | 0.5− | 0.2− |
| 1998 03 24 | 704 | 0.6− | 0.1− | 2002 08 08 | 599 | 0.6+ | 1.1+ | 2006 10 19 | G96 | (4.0− | 2.1−) |
| 1998 03 24 | 704 | 0.5+ | 0.3+ | 2002 08 08 | 599 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.4− | 0.4− |
| 1998 03 24 | 704 | 0.3− | 0.2+ | 2002 08 12 | 699 | 1.3− | 0.3− | 2006 10 29 | G96 | 0.2+ | 0.5− |
| 1998 03 24 | 704 | 1.1− | 0.4− | 2002 08 12 | 699 | 0.7+ | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.6− |
| 1998 03 28 | 704 | (2.7+ | 2.2−) | 2002 08 12 | 699 | 1.2− | 0.5− | 2006 10 29 | G96 | 0.2− | 0.1− |
| 1998 03 28 | 704 | 0.9+ | 0.0 | 2002 08 12 | 699 | 0.3− | 1.2− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 1998 03 28 | 704 | 0.1+ | 1.2+ | 2002 08 17 | 644 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1998 03 28 | 704 | 1.5+ | 0.1+ | 2002 08 17 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1998 03 28 | 704 | 0.2+ | 1.2− | 2002 08 17 | 644 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 1998 03 29 | 704 | 0.6+ | 1.4+ | 2002 08 27 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 1998 03 29 | 704 | 1.1+ | 0.2− | 2002 08 27 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.6+ | 0.8+ |
| 1998 03 29 | 704 | 0.1− | 0.4− | 2002 08 27 | 644 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 1998 03 29 | 704 | 1.5+ | 0.9+ | 2002 08 29 | 644 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 1998 03 29 | 704 | (1.8+ | 2.1+) | 2002 08 29 | 644 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 1998 04 20 | 704 | 0.8− | 0.2+ | 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.3− | 0.3+ |
| 1998 04 20 | 704 | 0.2− | 0.7+ | 2002 09 04 | 644 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 1998 04 20 | 704 | 0.6− | 2.0+ | 2002 09 04 | 644 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.2− |
| 1998 04 20 | 704 | (3.0− | 1.6+) | 2002 09 04 | 644 | 0.2− | 0.2+ | | | | |

## (136871)∗ 1998 FO$_{57}$

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.94661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29642528 | $\omega$ | 182.51831 | | −0.99778044 | −0.06514650 | |
| $a$ | 2.2277129 | $\Omega$ | 353.69656 | | +0.06307974 | −0.85836023 | |
| $e$ | 0.1808773 | $i$ | 7.21464 | | +0.02133400 | −0.50889454 | |
| $P$ | 3.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 31 | 910 | 0.2− | 0.6+ | 2000 12 19 | 704 | 0.2+ | 1.3+ | 2003 11 20 | 704 | (0.5− | 1.7+) |
| 1998 01 31 | 910 | 0.5− | 0.5+ | 2001 01 05 | 704 | 0.9− | 0.1− | 2003 11 20 | 704 | 0.5+ | 0.6+ |
| 1998 01 31 | 910 | 0.4− | 0.6+ | 2001 01 05 | 704 | 0.2− | 0.4− | 2003 11 20 | 704 | (1.8+ | 0.4+) |
| 1998 03 20 | 704 | 0.3− | 0.4− | 2001 01 05 | 704 | 0.7− | 0.5− | 2003 11 20 | 704 | (0.0 | 2.0+) |
| 1998 03 20 | 704 | 0.5+ | 0.1+ | 2001 01 05 | 704 | 0.3− | 0.8− | 2003 12 01 | 691 | 0.0 | 0.2− |
| 1998 03 20 | 704 | 0.5+ | 0.1− | 2001 01 05 | 704 | 0.2− | 0.6− | 2003 12 01 | 691 | 0.1− | 1.2+ |
| 1998 03 20 | 704 | 0.6+ | 0.6− | 2001 02 13 | 704 | 0.7− | 0.7− | 2003 12 01 | 691 | 0.2+ | 0.3− |
| 1998 03 20 | 704 | 0.2− | 0.6− | 2001 02 13 | 704 | 1.3− | 0.8+ | 2003 12 03 | 699 | 0.9+ | 0.2+ |
| 1998 03 22 | 704 | 0.5+ | 0.4− | 2001 02 13 | 704 | 0.2+ | 0.8− | 2003 12 03 | 699 | 0.0 | 0.2− |
| 1998 03 22 | 704 | 0.4+ | 0.1+ | 2001 02 13 | 704 | 0.9− | 1.1+ | 2003 12 03 | 699 | 0.1+ | 0.7+ |
| 1998 03 22 | 704 | 0.1+ | 0.2+ | 2001 02 13 | 704 | 0.7+ | 0.1+ | 2003 12 03 | 699 | 0.4− | 0.5+ |
| 1998 03 22 | 704 | 0.6+ | 0.5+ | 2001 03 19 | 704 | 0.0 | 0.8− | 2003 12 17 | 644 | 0.3− | 0.1+ |
| 1998 03 22 | 704 | 0.2+ | 0.3− | 2001 03 19 | 704 | 0.0 | 0.7+ | 2003 12 17 | 644 | 0.1− | 0.5+ |
| 1998 03 23 | 691 | 0.4+ | 1.3+ | 2001 03 19 | 704 | 0.5+ | 1.3− | 2003 12 17 | 644 | 0.4+ | 0.1− |
| 1998 03 23 | 691 | 0.5+ | 0.7+ | 2001 03 19 | 704 | 0.1+ | 1.2− | 2006 07 22 | G96 | 0.6− | 0.4+ |
| 1998 03 23 | 691 | 0.6+ | 0.7+ | 2001 03 26 | 704 | 0.1− | 0.1+ | 2006 07 22 | G96 | 0.7− | 0.6+ |
| 1998 03 28 | 704 | 1.0+ | 0.0 | 2001 03 26 | 704 | 0.8− | 0.1+ | 2006 07 22 | G96 | 0.8− | 0.1+ |
| 1998 03 28 | 704 | 0.1+ | 0.3+ | 2001 03 26 | 704 | 0.3− | 0.1+ | 2006 07 22 | G96 | 0.8− | 0.8+ |
| 1998 03 28 | 704 | 0.4− | 0.9+ | 2002 08 11 | 644 | 0.0 | 0.7+ | 2006 09 17 | 691 | 0.3− | 0.4+ |
| 1998 03 28 | 704 | 0.6+ | 0.9+ | 2002 08 11 | 644 | 0.0 | 0.7+ | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 1998 03 28 | 704 | 1.1+ | 0.5+ | 2002 08 11 | 644 | 0.3+ | 0.6+ | 2006 09 17 | 691 | 0.3− | 0.4+ |
| 1998 03 29 | 704 | 0.2+ | 0.1− | 2002 08 13 | 704 | 1.3− | 0.5− | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 1998 03 29 | 704 | (0.9+ | 3.6+) | 2002 08 13 | 704 | 1.0− | 0.2− | 2006 10 01 | 691 | 0.2− | 0.5+ |
| 1998 03 29 | 704 | 0.4− | 0.9+ | 2002 08 13 | 704 | 0.8− | 1.2− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1998 03 29 | 704 | 0.2− | 1.2+ | 2002 08 29 | 644 | 0.1− | 1.0+ | 2006 10 10 | 644 | 0.3− | 0.6+ |
| 1998 03 29 | 704 | 0.1− | 1.0+ | 2002 08 29 | 644 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 1998 04 01 | 704 | 0.3+ | 0.4+ | 2002 08 29 | 644 | 0.2− | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.6+ |
| 1998 04 01 | 704 | 0.2+ | 0.0 | 2002 08 30 | 644 | 0.0 | 1.3+ | 2006 10 11 | 644 | 0.5− | 0.4+ |
| 1998 04 01 | 704 | 0.4+ | 0.7− | 2002 08 30 | 644 | 0.2− | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 1998 04 01 | 704 | 0.9+ | 0.1− | 2002 08 30 | 644 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.4+ |
| 1998 04 01 | 704 | 0.4+ | 0.6+ | 2003 10 18 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 1998 04 18 | 704 | 0.2+ | 0.2+ | 2003 10 18 | 644 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.4− | 0.3+ |
| 1998 04 18 | 704 | 0.6− | 0.6+ | 2003 10 18 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 1998 04 18 | 704 | 0.3− | 0.6+ | 2003 10 19 | 644 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.6− | 0.5+ |
| 1998 04 18 | 704 | 0.2− | 0.2+ | 2003 10 19 | 644 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 1998 04 19 | 704 | 0.2+ | 0.9+ | 2003 10 19 | 644 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 1998 04 19 | 704 | 0.0 | 1.4+ | 2003 10 19 | 644 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1998 04 19 | 704 | 0.0 | 0.6+ | 2003 10 19 | 644 | 0.4+ | 0.0 | 2006 10 20 | 683 | 1.4+ | 1.4+ |
| 1998 04 19 | 704 | 0.4+ | 1.1+ | 2003 10 19 | 644 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.6− | 0.5+ |
| 1998 04 19 | 704 | 0.7+ | 0.7+ | 2003 11 03 | 704 | 0.2+ | 0.3− | 2006 10 20 | 683 | (0.6− | 1.6+) |
| 1998 04 20 | 704 | 0.4+ | 0.1− | 2003 11 03 | 704 | 0.9+ | 0.3− | 2006 10 20 | 683 | (3.0− | 1.9+) |
| 1998 04 20 | 704 | 0.9+ | 0.7+ | 2003 11 03 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.4− | 0.5+ |
| 1998 04 20 | 704 | 0.7+ | 0.6+ | 2003 11 03 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1998 04 20 | 704 | 0.2− | 0.8+ | 2003 11 03 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1998 04 20 | 704 | 0.8+ | 1.3− | 2003 11 18 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2000 12 04 | 704 | 0.4− | 0.4− | 2003 11 18 | 691 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.6+ | 1.3+ |
| 2000 12 04 | 704 | 0.4− | 0.5+ | 2003 11 18 | 691 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.0 |
| 2000 12 04 | 704 | 0.3− | 0.4− | 2003 11 19 | 644 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.7− | 2.3+ |
| 2000 12 04 | 704 | 0.1− | 0.1− | 2003 11 19 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 1.2− | 0.9+ |
| 2000 12 06 | 704 | 0.0 | 0.1− | 2003 11 19 | 704 | 1.3− | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2000 12 06 | 704 | 0.9− | 0.2− | 2003 11 19 | 704 | 0.6− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2000 12 06 | 704 | (2.5− | 0.2−) | 2003 11 19 | 704 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2000 12 19 | 704 | 1.3+ | 1.4− | 2003 11 19 | 704 | 0.6− | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2000 12 19 | 704 | 0.5+ | 0.0 | 2003 11 19 | 644 | 0.0 | 0.0 | | | | |
| 2000 12 19 | 704 | 0.1+ | 0.6− | 2003 11 20 | 704 | 0.5+ | 1.4+ | | | | |

## (136872)∗ 1998 FZ$_{66}$

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.22941 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27284615 | $\omega$ | 133.27197 | | −0.07323246 | +0.99659395 | |
| $a$ | 2.3542767 | $\Omega$ | 132.48756 | | −0.92926470 | −0.05438400 | |
| $e$ | 0.1999644 | $i$ | 2.94715 | | −0.36208304 | −0.06199102 | |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.4+ | 0.6− | 2002 07 05 | 704 | 1.1+ | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.7+ |
| 1998 03 20 | 704 | 0.4+ | 0.5+ | 2002 07 05 | 704 | 0.5+ | 0.7− | 2006 08 22 | 644 | 0.0 | 0.3+ |
| 1998 03 20 | 704 | 0.5+ | 1.9+ | 2005 02 09 | 704 | 0.8− | 1.4+ | 2006 08 22 | 644 | 0.1− | 0.1+ |
| 1998 03 20 | 704 | 0.5− | 2.0− | 2005 02 09 | 704 | 0.5− | 1.1− | 2006 09 18 | 699 | 0.2− | 1.4+ |
| 1998 03 22 | 704 | 1.3− | 0.4+ | 2005 02 09 | 704 | 0.0 | 1.2+ | 2006 09 18 | 699 | 0.7+ | 0.1+ |
| 1998 03 22 | 704 | (1.9+ | 2.5−) | 2005 02 09 | 704 | (1.1− | 2.3−) | 2006 09 18 | 699 | 0.4− | 0.3− |
| 1998 03 22 | 704 | 0.9− | 0.2+ | 2005 03 03 | 703 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.2− | 0.3+ |
| 1998 03 22 | 704 | 1.1− | 0.4+ | 2005 03 03 | 703 | 0.5− | 0.0 | 2006 09 22 | 704 | 0.1+ | 0.6+ |
| 1998 03 22 | 704 | (4.9− | 0.7−) | 2005 03 03 | 703 | 0.5− | 0.1− | 2006 09 22 | 704 | 0.4+ | 0.2+ |
| 1998 04 18 | 691 | 0.5+ | 0.5+ | 2005 03 03 | 703 | (2.1− | 0.3−) | 2006 09 22 | 704 | 0.9+ | 1.0− |
| 1998 04 18 | 691 | 0.3+ | 0.2+ | 2005 03 09 | 704 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.4+ | 0.2+ |
| 1998 04 18 | 691 | 0.3+ | 0.3+ | 2005 03 09 | 704 | 0.8+ | 0.7+ | 2006 09 22 | 704 | 0.3+ | 0.0 |
| 1998 04 19 | 704 | 0.4+ | 0.6+ | 2005 03 09 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.3+ |
| 1998 04 19 | 704 | 1.1+ | 0.1+ | 2005 03 09 | 704 | 0.8− | 0.3+ | 2006 09 26 | 704 | 0.8+ | 0.4− |
| 1998 04 19 | 704 | 0.8+ | 0.1+ | 2005 03 09 | 704 | 0.7+ | 1.1+ | 2006 09 26 | 704 | 0.6− | 0.8+ |
| 1998 04 19 | 704 | 1.7+ | 0.1+ | 2005 03 10 | G96 | 0.1− | 0.3− | 2006 09 28 | 704 | 0.2+ | 0.2− |
| 1998 04 20 | 704 | 1.3− | 1.6− | 2005 03 10 | G96 | 0.3− | 0.4− | 2006 09 28 | 704 | 0.6− | 0.2+ |
| 1998 04 20 | 704 | 0.2+ | 0.8+ | 2005 03 10 | G96 | 0.3− | 0.4− | 2006 09 28 | 704 | 0.3− | 1.3+ |
| 1998 04 20 | 704 | (2.2+ | 0.4−) | 2005 03 10 | G96 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.7− | 0.8+ |
| 1998 04 20 | 704 | 0.4+ | 1.6− | 2005 03 12 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.7+ |
| 1998 04 22 | 704 | 0.7− | 0.3− | 2005 03 12 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 704 | 0.4− | 0.1− |
| 1998 04 22 | 704 | 0.6− | 1.1− | 2005 03 12 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 1998 04 22 | 704 | 0.2− | 1.0− | 2005 03 12 | 704 | 0.8− | 0.1− | 2006 09 30 | 704 | 0.0 | 1.3+ |
| 1998 04 22 | 704 | 0.2+ | 1.7+ | 2005 03 12 | 704 | 0.5+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 1998 04 22 | 704 | 0.4− | 0.9+ | 2005 03 16 | 704 | 1.3+ | 0.8+ | 2006 09 30 | 703 | 1.0+ | 0.0 |
| 1998 04 28 | 691 | 0.2− | 0.1− | 2005 03 16 | 704 | 0.8+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 1998 04 28 | 691 | 0.3− | 0.0 | 2005 03 16 | 704 | 1.0+ | 1.2− | 2006 09 30 | 704 | 1.5− | 1.0+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 691 | 0.3− | 0.1− | | 2005 03 16 | G96 | 0.2− | 0.4− | | 2006 09 30 | G96 | 0.1− | 0.3− | |
| 2002 06 08 | 704 | 0.8− | 0.2− | | 2005 03 16 | G96 | 0.4− | 0.1− | | 2006 09 30 | G96 | 0.3− | 0.1− | |
| 2002 06 08 | 704 | 0.5− | 0.9− | | 2005 03 16 | G96 | 0.5− | 0.3+ | | 2006 10 09 | 644 | 0.1+ | 0.1+ | |
| 2002 06 08 | 704 | 1.2− | 1.3− | | 2005 03 16 | G96 | 0.4− | 0.1+ | | 2006 10 09 | 644 | 0.2− | 0.1+ | |
| 2002 06 18 | 704 | (0.0 | 2.0+) | | 2005 03 17 | 704 | (1.0+ | 4.0+) | | 2006 10 09 | 644 | 0.0 | 0.1− | |
| 2002 06 18 | 704 | 0.4− | 1.3+ | | 2005 03 17 | 704 | (3.1+ | 5.1+) | | 2006 11 23 | G96 | 0.5+ | 0.6− | |
| 2002 06 18 | 704 | 0.1− | 1.1+ | | 2005 03 17 | 704 | (1.6+ | 4.3+) | | 2006 11 23 | G96 | 0.2− | 0.7− | |
| 2002 06 18 | 704 | (0.4− | 1.9+) | | 2005 03 17 | 704 | (4.7+ | 5.1+) | | 2006 11 23 | G96 | 0.2− | 0.6− | |
| 2002 06 18 | 704 | (1.0+ | 3.5+) | | 2006 08 17 | 644 | 0.2− | 0.1− | | 2006 11 23 | G96 | 0.3+ | 0.8− | |
| 2002 07 05 | 704 | (1.6+ | 0.5−) | | 2006 08 17 | 644 | 0.0 | 0.2+ | | | | | | |
| 2002 07 05 | 704 | 1.0+ | 0.1− | | 2006 08 17 | 644 | 0.3− | 0.2− | | | | | | |

**(136873)∗ 1998 FY$_{68}$ = 2001 WF$_{68}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 24967)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.87167 | | (2000.0) | | | |
| $n$ | 0.18181955 | $\omega$ | 299.03282 | | −0.93999035 | −0.33811920 |
| $a$ | 3.0858560 | $\Omega$ | 221.25181 | | +0.33219102 | −0.87628830 |
| $e$ | 0.1827405 | $i$ | 3.97910 | | +0.07789270 | −0.34321163 |
| $P$ | 5.42 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.6+ | 0.0 | | 2001 10 21 | 704 | 0.1+ | 0.8+ | | 2003 02 02 | 704 | 0.7− | 0.6+ | |
| 1995 10 18 | 691 | 0.6+ | 0.0 | | 2001 10 21 | 704 | 0.3+ | 0.4− | | 2003 02 02 | 704 | 0.4+ | 0.7+ | |
| 1995 10 18 | 691 | 0.6+ | 0.1+ | | 2001 10 21 | 704 | (1.7− | 0.1−) | | 2003 02 03 | 699 | 0.3+ | 0.5+ | |
| 1998 03 20 | 704 | 0.8− | 1.7+ | | 2001 11 20 | 704 | 0.4− | 0.7− | | 2003 02 03 | 699 | 0.7+ | 0.3+ | |
| 1998 03 20 | 704 | 1.2− | 0.8+ | | 2001 11 20 | 704 | 0.8− | 0.0 | | 2003 02 03 | 699 | 0.8+ | 0.2+ | |
| 1998 03 20 | 704 | 0.4+ | 0.2+ | | 2001 11 20 | 704 | 0.1+ | 0.9− | | 2003 02 03 | 699 | 0.4+ | 0.5+ | |
| 1998 03 20 | 704 | 0.7+ | 1.5− | | 2001 11 20 | 704 | 0.1− | 0.4− | | 2003 02 04 | 608 | 0.0 | 0.8− | |
| 1998 03 22 | 704 | 1.1− | 0.8+ | | 2001 11 20 | 704 | 0.6− | 0.1+ | | 2003 02 04 | 608 | 0.0 | 1.2− | |
| 1998 03 22 | 704 | 0.6− | 2.0+ | | 2001 11 21 | 704 | 0.3− | 0.1+ | | 2003 02 04 | 608 | 0.2− | 0.7− | |
| 1998 03 22 | 704 | (1.5− | 2.1+) | | 2001 11 21 | 704 | 0.2− | 0.4− | | 2003 02 22 | 644 | 0.5+ | 0.3− | |
| 1998 03 22 | 704 | (2.4− | 1.0+) | | 2001 11 21 | 704 | 0.7+ | 0.2− | | 2003 02 22 | 644 | 0.5+ | 0.1+ | |
| 1998 03 29 | 704 | 1.8− | 1.4− | | 2001 11 21 | 704 | 0.8− | 0.1+ | | 2003 02 22 | 644 | 0.3+ | 0.0 | |
| 1998 03 29 | 704 | (2.5− | 1.0−) | | 2001 11 22 | 644 | 0.1+ | 0.5+ | | 2003 02 22 | 644 | 0.6+ | 0.0 | |
| 1998 03 29 | 704 | (2.5− | 1.3+) | | 2001 11 22 | 644 | 0.0 | 0.4+ | | 2003 02 22 | 644 | 0.4+ | 0.0 | |
| 1998 03 29 | 704 | (4.9− | 0.3+) | | 2001 11 22 | 644 | 0.2+ | 0.7+ | | 2003 02 22 | 644 | 0.4+ | 0.0 | |
| 1998 04 18 | 704 | 0.7+ | 1.7+ | | 2001 12 14 | 704 | 0.2− | 0.8+ | | 2004 06 12 | 926 | 0.2− | 0.7+ | |
| 1998 04 18 | 704 | 0.4+ | 1.1− | | 2001 12 14 | 704 | (0.3− | 1.9+) | | 2004 06 12 | 926 | 0.0 | 0.7+ | |
| 1998 04 18 | 704 | 0.1− | 0.7− | | 2001 12 14 | 704 | 0.6− | 0.9+ | | 2006 09 27 | 691 | 0.2+ | 0.0 | |
| 1998 04 18 | 704 | 0.7− | 0.3− | | 2001 12 14 | 704 | 0.7− | 0.0 | | 2006 09 27 | 691 | 0.2+ | 0.2− | |
| 1998 04 22 | 704 | (1.6+ | 2.4+) | | 2002 12 07 | 645 | 0.0 | 0.1− | | 2006 09 27 | 691 | 0.1− | 0.1− | |
| 1998 04 22 | 704 | 0.2+ | 0.5+ | | 2002 12 07 | 645 | 0.0 | 0.1− | | 2006 10 01 | 691 | 0.0 | 0.1+ | |
| 1998 04 22 | 704 | 0.8+ | 1.5− | | 2003 01 16 | 644 | 0.1+ | 0.5+ | | 2006 10 01 | 691 | 0.0 | 0.1+ | |
| 1998 04 22 | 704 | (3.0+ | 0.8+) | | 2003 01 16 | 644 | 0.1+ | 0.6+ | | 2006 10 01 | 691 | 0.1− | 0.0 | |
| 2001 10 13 | 291 | 0.8− | 0.2+ | | 2003 01 16 | 644 | 0.0 | 0.0 | | 2006 10 19 | G96 | 0.5+ | 0.1− | |
| 2001 10 13 | 291 | 1.2− | 0.6+ | | 2003 02 02 | 704 | 0.3− | 0.2+ | | 2006 10 19 | G96 | 0.1+ | 0.5− | |
| 2001 10 13 | 291 | (2.1− | 0.0 ) | | 2003 02 02 | 704 | 0.3+ | 0.1+ | | 2006 10 19 | G96 | 0.3− | 0.4− | |
| 2001 10 21 | 704 | 1.0+ | 1.1− | | 2003 02 02 | 704 | 0.4+ | 0.2− | | 2006 10 19 | G96 | 0.0 | 0.2− | |

**(136874)∗ 1998 FH$_{74}$ = 2001 FM$_{31}$**

Discovered 1998 Mar. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 11491)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.20115 | | (2000.0) | | | |
| $n$ | 0.30158228 | $\omega$ | 193.22882 | | +0.86274021 | −0.49350058 |
| $a$ | 2.2022443 | $\Omega$ | 197.67776 | | +0.49065048 | +0.86970995 |
| $e$ | 0.8846553 | $i$ | 21.27161 | | +0.12223518 | −0.00786030 |
| $P$ | 3.27 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 04 | 691 | 0.3+ | 0.6− | | 1998 04 04 | 402 | 0.2+ | 0.4− | | 2001 03 25 | 859 | 0.5+ | 0.3+ | |
| 1995 05 04 | 691 | 0.2+ | 0.1− | | 1998 04 04 | 402 | 0.0 | 0.1+ | | 2001 03 26 | 428 | 0.9+ | 0.1+ | |
| 1995 05 04 | 691 | 0.3+ | 0.3− | | 1998 04 04 | 402 | 0.1− | 0.6− | | 2001 03 26 | 428 | 0.6+ | 0.5+ | |
| 1998 03 31 | 704 | 0.5+ | 0.2− | | 1998 04 06 | 046 | 0.7− | 1.4+ | | 2001 03 27 | 670 | 0.1− | 0.0 | |
| 1998 03 31 | 704 | 1.4+ | 1.9− | | 1998 04 06 | 046 | 0.0 | 0.0 | | 2001 03 27 | 670 | 0.1+ | 0.3+ | |
| 1998 03 31 | 704 | 0.9+ | 0.2+ | | 1998 04 06 | 046 | 0.3− | 1.1+ | | 2001 03 28 | 176 | 1.5− | 1.3− | |
| 1998 03 31 | 704 | 0.7− | 0.2− | | 1998 04 15 | 658 | 0.6− | 0.2− | | 2001 03 28 | 176 | 0.2+ | 0.3+ | |
| 1998 03 31 | 557 | 0.1+ | 0.6+ | | 1998 04 15 | 658 | 0.9− | 0.5− | | 2001 03 28 | 176 | 0.5− | 0.7− | |
| 1998 03 31 | 557 | 0.5− | 0.3− | | 1998 04 15 | 658 | 0.7− | 0.2− | | 2001 03 30 | 670 | 0.2− | 0.1+ | |
| 1998 03 31 | 587 | 0.9− | 0.7+ | | 1998 04 16 | 658 | (2.6− | 1.0−) | | 2001 04 01 | 046 | 0.3− | 0.0 | |
| 1998 03 31 | 587 | 1.3+ | 0.5+ | | 1998 04 16 | 658 | (1.5− | 2.2−) | | 2001 04 01 | 118 | 0.5+ | 0.1+ | |
| 1998 03 31 | 587 | 0.2− | 0.2− | | 1998 04 18 | 704 | 0.6− | 0.7+ | | 2001 04 01 | 046 | 0.1+ | 0.2+ | |
| 1998 03 31 | 106 | (3.0− | 2.0+) | | 1998 04 18 | 704 | 1.0+ | 0.6− | | 2001 04 01 | 118 | 0.1+ | 0.2+ | |
| 1998 03 31 | 106 | 0.5− | 0.5+ | | 1998 04 18 | 704 | 0.3+ | 0.5+ | | 2001 04 01 | 046 | 0.0 | 0.1+ | |
| 1998 03 31 | 106 | 0.6+ | 1.0− | | 1998 04 18 | 704 | 0.6− | 0.7− | | 2001 04 01 | 118 | 0.4+ | 0.2+ | |
| 1998 03 31 | 046 | 0.2+ | 1.8+ | | 1998 04 19 | 360 | 0.4− | 0.2+ | | 2001 04 03 | 611 | 0.3+ | 0.5− | |
| 1998 03 31 | 046 | 0.3+ | 1.0+ | | 1998 04 19 | 360 | 0.1+ | 0.0 | | 2001 04 03 | 611 | 1.3+ | 1.0− | |
| 1998 03 31 | 046 | 0.5+ | 0.7+ | | 1998 04 19 | 360 | 0.2− | 0.4− | | 2001 04 03 | 611 | 0.5− | 0.8− | |
| 1998 03 31 | 046 | 0.7+ | 0.9+ | | 2001 03 22 | 704 | 0.5+ | 0.2− | | 2001 04 05 | 699 | 0.2+ | 0.3+ | |
| 1998 03 31 | 557 | 0.1− | 0.2+ | | 2001 03 22 | 704 | 0.6+ | 0.5− | | 2001 04 05 | 699 | 0.2+ | 0.4+ | |
| 1998 03 31 | 557 | 0.8− | 0.2+ | | 2001 03 22 | 704 | 0.0 | 0.5− | | 2001 04 05 | 699 | 0.1− | 0.1+ | |
| 1998 04 01 | 104 | 0.4− | 0.1− | | 2001 03 22 | 704 | 0.5+ | 0.1+ | | 2001 04 05 | 699 | 0.3+ | 0.2+ | |
| 1998 04 01 | 104 | 0.7− | 1.1− | | 2001 03 23 | 704 | 0.2+ | 0.1+ | | 2001 04 08 | 649 | 0.3− | 1.5+ | |
| 1998 04 01 | 104 | 1.9− | 0.7− | | 2001 03 23 | 704 | 0.4+ | 0.2+ | | 2001 04 08 | 649 | (1.2− | 1.8+) | |
| 1998 04 01 | 104 | 0.2− | 0.9− | | 2001 03 23 | 649 | 0.4− | 0.4− | | 2001 04 08 | 649 | (1.6− | 1.3+) | |
| 1998 04 01 | 557 | 0.4− | 0.5+ | | 2001 03 23 | 649 | 0.1+ | 0.5− | | 2001 04 08 | 649 | (4.3− | 0.2+) | |
| 1998 04 01 | 557 | 0.9+ | 0.4− | | 2001 03 23 | 649 | 0.1+ | 0.5− | | 2001 04 11 | 670 | 0.1− | 0.6+ | |
| 1998 04 02 | 704 | 0.2− | 0.7+ | | 2001 03 23 | 704 | 0.9+ | 0.2+ | | 2001 04 11 | 670 | 0.2− | 0.3+ | |
| 1998 04 02 | 704 | 1.5+ | 0.0 | | 2001 03 23 | 649 | 0.2− | 0.6− | | 2001 04 11 | 670 | 0.3+ | 0.4+ | |
| 1998 04 02 | 704 | 0.8− | 0.4+ | | 2001 03 23 | 704 | 0.5− | 1.1+ | | 2001 04 19 | 808 | 0.1+ | 1.4+ | |
| 1998 04 02 | 426 | 0.1− | 0.1+ | | 2001 03 23 | 165 | 0.5− | 0.6+ | | 2001 04 19 | 808 | 0.5− | 1.0+ | |
| 1998 04 02 | 426 | 0.2+ | 0.3− | | 2001 03 23 | 165 | 0.9− | 0.1+ | | 2001 04 19 | 360 | 0.2+ | 0.0 | |
| 1998 04 02 | 426 | 0.6− | 0.3− | | 2001 03 23 | 165 | 1.5− | 0.0 | | 2001 04 19 | 360 | 0.2+ | 0.1+ | |
| 1998 04 02 | 402 | 0.6+ | 0.2+ | | 2001 03 23 | 176 | 0.6+ | 0.0 | | 2001 04 19 | 360 | 0.0 | 0.0 | |
| 1998 04 02 | 402 | 0.6+ | 0.4− | | 2001 03 23 | 176 | 1.1− | 0.0 | | 2001 04 25 | 808 | 0.4+ | 0.7− | |
| 1998 04 03 | 704 | (0.7+ | 2.1−) | | 2001 03 23 | 176 | 0.3+ | 0.7− | | 2001 04 25 | 808 | 0.5+ | 0.2− | |
| 1998 04 03 | 704 | 0.2+ | 1.0− | | 2001 03 23 | 176 | 0.4− | 0.6+ | | 2001 04 26 | 808 | (0.2+ | 2.5+) | |
| 1998 04 03 | 704 | (2.3− | 0.2−) | | 2001 03 24 | 808 | (0.5+ | 2.6+) | | 2001 04 27 | 808 | (0.2+ | 2.4+) | |
| 1998 04 03 | 704 | (4.0− | 1.8+) | | 2001 03 24 | 808 | 0.3− | 1.2+ | | 2002 04 09 | 807 | 0.2+ | 0.5+ | |
| 1998 04 03 | 704 | 0.6− | 0.9− | | 2001 03 24 | 808 | 0.1+ | 0.7+ | | 2002 04 09 | 807 | 0.6+ | 0.5+ | |
| 1998 04 03 | 704 | 0.6+ | 0.8+ | | 2001 03 24 | 808 | 0.6− | 1.5+ | | 2005 04 09 | G96 | 0.2− | 0.1+ | |
| 1998 04 03 | 704 | 0.8− | 1.9− | | 2001 03 24 | 808 | (0.3− | 1.8−) | | 2005 04 09 | G96 | 0.1+ | 0.1+ | |
| 1998 04 03 | 704 | 0.6− | 0.6+ | | 2001 03 24 | 808 | 0.2− | 0.8− | | 2005 04 09 | G96 | 0.4− | 0.0 | |
| 1998 04 03 | 561 | 0.4− | 0.3− | | 2001 03 24 | 850 | 0.1− | 0.0 | | 2005 04 09 | G96 | 0.3− | 0.6+ | |
| 1998 04 03 | 561 | 0.4+ | 0.2− | | 2001 03 24 | 850 | 0.0 | 0.1+ | | 2006 04 21 | 691 | (1.9− | 4.0−) | |
| 1998 04 03 | 561 | 0.3− | 0.0 | | 2001 03 24 | 854 | 1.0− | 1.3− | | 2006 04 21 | 691 | 0.2+ | 0.2+ | |
| 1998 04 04 | 691 | 0.3− | 0.1− | | 2001 03 24 | 854 | 1.0+ | 1.0− | | 2006 04 21 | 691 | (3.8− | 2.1+) | |
| 1998 04 04 | 691 | 0.2− | 0.2− | | 2001 03 24 | 428 | 0.1+ | 0.2− | | 2006 04 25 | 691 | 0.5− | 0.2+ | |
| 1998 04 04 | 691 | 0.2+ | 0.2+ | | 2001 03 24 | 428 | 0.3+ | 0.0 | | 2006 04 25 | 691 | 0.2− | 0.1+ | |
| 1998 04 04 | 426 | 0.5+ | 0.1+ | | 2001 03 25 | 859 | 0.4+ | 0.2− | | 2006 04 25 | 691 | 0.5+ | 0.3− | |
| 1998 04 04 | 426 | 0.2− | 0.1− | | 2001 03 25 | 859 | 0.3− | 0.3− | | | | | | |
| 1998 04 04 | 426 | 0.8+ | 0.2+ | | 2001 03 25 | 859 | 0.3+ | 0.2− | | | | | | |

**(136875)∗ 1998 FV$_{76}$**

Discovered 1998 Mar. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 212.20212 | | (2000.0) | | | |
| $n$ | 0.18229940 | $\omega$ | 82.41448 | | −0.99668018 | +0.05264497 |
| $a$ | 3.0804386 | $\Omega$ | 100.58837 | | −0.07264133 | −0.91949542 |
| $e$ | 0.2149616 | $i$ | 3.62245 | | +0.03676760 | −0.38955959 |
| $P$ | 5.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 31 | 691 | 0.3+ | 0.3− | 1998 05 03 | 691 | 0.3+ | 0.4− | 2003 02 04 | 704 | 1.1− | 1.1− |
| 1991 12 31 | 691 | 0.1+ | 0.0 | 1998 05 03 | 691 | 0.6+ | 0.4+ | 2003 02 09 | 608 | (1.7+ | 1.2+) |
| 1991 12 31 | 691 | 0.5− | 0.2− | 2001 11 21 | 704 | 0.5− | 0.0 | 2003 02 09 | 608 | 1.2+ | 0.9+ |
| 1998 03 22 | 704 | 1.7− | 1.0− | 2001 11 21 | 704 | 0.7+ | 0.1+ | 2003 02 09 | 608 | 0.9+ | 1.3+ |
| 1998 03 22 | 704 | 0.8+ | 0.3+ | 2001 11 21 | 704 | 0.7− | 0.4− | 2003 02 19 | 644 | 0.3+ | 0.7+ |
| 1998 03 22 | 704 | 0.3− | 0.5− | 2003 01 26 | 699 | 1.1+ | 0.4+ | 2003 02 19 | 644 | 0.2+ | 0.6+ |
| 1998 03 22 | 704 | 0.9− | 1.1− | 2003 01 26 | 699 | 0.1− | 0.0 | 2003 02 19 | 644 | 0.3+ | 0.8+ |
| 1998 03 22 | 704 | (5.7− | 0.3−) | 2003 01 26 | 699 | 0.6+ | 0.5+ | 2003 02 21 | 699 | 0.3− | 0.6+ |
| 1998 03 24 | 704 | 0.1− | 1.4− | 2003 01 26 | 699 | 0.2+ | 1.4+ | 2003 02 21 | 699 | 0.5− | 0.6+ |
| 1998 03 24 | 704 | (2.1− | 0.5+) | 2003 01 27 | 704 | 0.7+ | 0.5+ | 2003 02 21 | 699 | 0.7− | 0.7+ |
| 1998 03 24 | 704 | 0.2+ | 0.8+ | 2003 01 27 | 704 | 0.1+ | 0.1+ | 2003 02 21 | 699 | 0.6− | 0.2+ |
| 1998 03 24 | 704 | (3.1− | 0.3−) | 2003 01 27 | 704 | 0.1+ | 0.3− | 2005 08 31 | 691 | 0.1− | 0.7+ |
| 1998 03 25 | 704 | 1.8− | 1.4− | 2003 01 27 | 704 | 0.3+ | 0.2+ | 2005 08 31 | 691 | 0.5− | 0.1+ |
| 1998 03 25 | 704 | 1.1− | 1.5+ | 2003 01 27 | 704 | 0.6+ | 0.4+ | 2005 08 31 | 691 | 0.2− | 0.4+ |
| 1998 03 25 | 704 | 1.7− | 0.7+ | 2003 02 01 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.5+ | 0.1+ |
| 1998 03 25 | 704 | (2.3− | 0.4+) | 2003 02 01 | 704 | 0.2+ | 1.1− | 2006 09 27 | 691 | 0.3+ | 0.0 |
| 1998 03 25 | 704 | (7.4− | 0.6+) | 2003 02 01 | 704 | 0.5+ | 0.4− | 2006 09 27 | 691 | 0.7+ | 0.3− |
| 1998 03 29 | 704 | 0.4− | 0.8− | 2003 02 01 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 1998 03 29 | 704 | 0.5− | 0.8+ | 2003 02 01 | 704 | 0.1+ | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 1998 03 29 | 704 | 0.5+ | 0.2− | 2003 02 02 | 644 | 0.6− | 0.4+ | 2006 10 21 | G96 | 0.5+ | 0.4− |
| 1998 03 29 | 704 | 1.2+ | 1.6− | 2003 02 02 | 644 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.7+ | 0.1+ |
| 1998 03 29 | 704 | (4.9− | 0.4−) | 2003 02 02 | 644 | 0.6− | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.2− |
| 1998 04 22 | 704 | 0.6+ | 0.9− | 2003 02 02 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.3− |
| 1998 04 22 | 704 | (2.4+ | 0.9+) | 2003 02 02 | 644 | 0.5− | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1998 04 22 | 704 | 0.0 | 0.0 | 2003 02 02 | 644 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 1998 04 22 | 704 | (5.5− | 1.2−) | 2003 02 04 | 699 | 0.5− | 0.9− | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 1998 04 27 | 691 | 0.7− | 0.3+ | 2003 02 04 | 699 | 0.3− | 0.6− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 1998 04 27 | 691 | 0.9− | 0.1+ | 2003 02 04 | 699 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 1998 04 27 | 691 | 0.5− | 0.1+ | 2003 02 04 | 704 | 1.0− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 1998 04 28 | 691 | 0.3+ | 0.2− | 2003 02 04 | 699 | 0.1− | 1.4− | 2006 11 18 | G96 | 0.2+ | 0.6− |
| 1998 04 28 | 691 | 0.6+ | 0.4− | 2003 02 04 | 704 | 0.9+ | 0.2+ | 2006 11 18 | G96 | 0.4− | 0.6− |
| 1998 04 28 | 691 | 0.6+ | 0.1− | 2003 02 04 | 704 | 0.8+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 1998 05 03 | 691 | 0.5+ | 0.2− | 2003 02 04 | 704 | 1.1− | 0.6+ | | | | |

## (136876)∗ 1998 $FM_{93}$ = 2001 $WC_{10}$

Discovered 1998 Mar. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46338)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 279.04242 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19683896 | $\omega$ | 34.11496 | | −0.80721654 | −0.56545409 |
| $a$ | 2.9268155 | $\Omega$ | 110.55877 | | +0.49315626 | −0.80369941 |
| $e$ | 0.0636888 | $i$ | 10.41740 | | +0.32434298 | −0.18528070 |
| $P$ | 5.01 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.4+ | 0.6− | 2001 12 11 | 704 | 1.0− | 0.7+ | 2005 10 03 | 703 | 0.0 | 1.5+ |
| 1998 03 24 | 704 | 0.8+ | 0.3− | 2003 02 28 | 704 | 0.3− | 1.1+ | 2006 11 15 | 703 | 0.6+ | 1.1− |
| 1998 03 24 | 704 | 0.2+ | 1.3+ | 2003 02 28 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 1998 03 24 | 704 | (2.2− | 0.2+) | 2003 02 28 | 704 | 0.6− | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.6+ |
| 1998 03 25 | 704 | 0.5+ | 1.5− | 2003 02 28 | 704 | 0.6+ | 0.6+ | 2006 11 15 | 703 | 1.0− | 0.0 |
| 1998 03 25 | 704 | 0.7+ | 0.0 | 2003 03 08 | 644 | 0.4− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 1998 03 25 | 704 | 0.6+ | 0.0 | 2003 03 08 | 644 | 0.5− | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 1998 03 25 | 704 | (3.8− | 1.1−) | 2003 03 08 | 644 | 0.4− | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.3+ | 1.0− | 2003 04 09 | 644 | 0.4− | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.2+ |
| 2001 11 17 | 704 | 0.3− | 0.2+ | 2003 04 09 | 644 | 0.4− | 0.2+ | 2006 11 25 | 703 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.3− | 0.0 | 2003 04 09 | 644 | 0.4− | 0.4+ | 2006 11 25 | 703 | 0.1− | 1.0− |
| 2001 11 17 | 704 | 0.8− | 0.9+ | 2005 08 06 | E12 | 1.1− | 0.3+ | 2006 11 25 | 703 | 1.1+ | 0.8− |
| 2001 11 18 | 704 | 0.2− | 0.3− | 2005 08 06 | E12 | 0.4+ | 0.3+ | 2006 11 25 | 703 | 0.2+ | 0.1− |
| 2001 11 18 | 704 | 0.9− | 0.5− | 2005 08 06 | E12 | 0.3− | 0.9+ | 2006 11 28 | 704 | 1.6+ | 0.9+ |
| 2001 11 18 | 704 | 0.3− | 0.4+ | 2005 08 06 | E12 | 0.9− | 0.9+ | 2006 11 28 | 704 | 1.1+ | 0.0 |
| 2001 12 11 | 704 | 0.4− | 1.0+ | 2005 10 03 | 703 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.6+ | 0.1− |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2005 10 03 | 703 | (2.2− | 0.3+) | | | | |
| 2001 12 11 | 704 | 0.8− | 0.3+ | 2005 10 03 | 703 | 1.3+ | 1.0− | | | | |

## (136877)∗ 1998 $FB_{102}$ = 2000 $QN_{234}$

Discovered 1998 Mar. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 4393)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 186.55753 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17740892 | $\omega$ | 200.63391 | | −0.97729054 | +0.20534587 |
| $a$ | 3.1367921 | $\Omega$ | 350.73756 | | −0.11802216 | −0.73248982 |
| $e$ | 0.1358264 | $i$ | 18.96497 | | −0.17599422 | −0.64906990 |
| $P$ | 5.56 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 566 | 0.8− | 0.1+ | 2003 01 10 | 704 | 0.6+ | 0.5− | 2003 04 26 | 645 | 0.0 | 0.1− |
| 1998 03 24 | 566 | 1.1− | 0.6+ | 2003 01 10 | 704 | 0.5− | 0.1+ | 2005 07 03 | 644 | 0.2− | 0.6+ |
| 1998 03 24 | 566 | 1.0− | 0.0 | 2003 01 13 | 704 | 0.2− | 0.8+ | 2005 07 03 | 644 | 0.4− | 0.6+ |
| 1998 03 31 | 704 | 1.2+ | 0.9+ | 2003 01 13 | 704 | 0.4+ | 0.3+ | 2005 07 03 | 644 | 0.7− | 0.5+ |
| 1998 03 31 | 704 | (1.4− | 2.1+) | 2003 01 13 | 704 | 0.0 | 0.2− | 2005 09 01 | 644 | 0.4− | 0.2+ |
| 1998 03 31 | 704 | 0.4− | 0.1+ | 2003 01 13 | 704 | 0.1+ | 0.1− | 2005 09 01 | 644 | 0.5− | 0.3+ |
| 1998 03 31 | 704 | 0.4+ | 1.2+ | 2003 01 13 | 704 | 0.1− | 0.3− | 2005 09 01 | 644 | 0.3+ | 0.3+ |
| 1998 04 01 | 704 | 0.2+ | 1.3+ | 2003 01 14 | 704 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.1− | 0.8− |
| 1998 04 01 | 704 | 0.4− | 0.8+ | 2003 01 14 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 703 | (2.1− | 2.5+) |
| 1998 04 01 | 704 | 0.4+ | 1.3+ | 2003 01 14 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.7− |
| 1998 04 01 | 704 | (6.0− | 2.5+) | 2003 01 14 | 704 | 0.1+ | 0.8+ | 2006 09 16 | 703 | 1.2− | 0.8+ |
| 1998 04 18 | 704 | 0.8+ | 0.3− | 2003 01 14 | 704 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.6+ | 0.9+ |
| 1998 04 18 | 704 | 1.0+ | 0.5+ | 2003 01 25 | 704 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.6+ | 0.8− |
| 1998 04 18 | 704 | (2.6+ | 0.9+) | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.3+ |
| 1998 04 18 | 704 | 1.8− | 1.0− | 2003 01 25 | 645 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.7+ | 0.5− |
| 1998 04 19 | 704 | 0.3+ | 0.1− | 2003 01 25 | 704 | 0.1+ | 1.0+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 1998 04 19 | 704 | 1.6+ | 0.8+ | 2003 01 25 | 704 | 0.0 | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1998 04 19 | 704 | (2.1+ | 1.7+) | 2003 01 25 | 704 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.3− | 0.5− |
| 1998 04 19 | 704 | 1.2+ | 1.4− | 2003 01 25 | 704 | 0.3− | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1998 04 19 | 704 | 1.8+ | 1.1− | 2003 01 31 | 699 | 1.0− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2000 08 25 | 807 | 0.5− | 0.4+ | 2003 01 31 | 699 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2000 08 25 | 807 | 0.5− | 0.4+ | 2003 01 31 | 699 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2000 08 27 | 807 | 0.1− | 0.1+ | 2003 01 31 | 699 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1− | 1.0+ |
| 2000 08 27 | 807 | 0.3− | 0.1+ | 2003 03 08 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.3− | 0.1− |
| 2000 10 02 | 704 | 0.2− | 0.4+ | 2003 03 08 | 644 | 0.3+ | 0.5+ | 2006 10 17 | 703 | (0.6+ | 1.6+) |
| 2000 10 02 | 704 | 0.1− | 0.3+ | 2003 03 08 | 644 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2003 03 08 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2000 10 02 | 704 | 0.1+ | 0.1+ | 2003 03 08 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2003 01 05 | 699 | 0.7+ | 0.1+ | 2003 03 08 | 644 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2003 01 05 | 699 | 0.2+ | 0.1− | 2003 03 25 | 704 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2003 01 05 | 699 | 0.6+ | 0.3− | 2003 03 25 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2003 01 05 | 699 | 0.3+ | 0.0 | 2003 03 25 | 704 | 0.9+ | 0.0 | | | | |
| 2003 01 10 | 704 | 0.3− | 0.4+ | 2003 04 26 | 645 | 0.0 | 0.0 | | | | |

## (136878)∗ 1998 $FD_{122}$

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 153.33701 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27934329 | $\omega$ | 51.46420 | | −0.99992927 | −0.00026391 |
| $a$ | 2.3176288 | $\Omega$ | 128.51745 | | −0.00438312 | −0.92120696 |
| $e$ | 0.1484610 | $i$ | 0.87075 | | +0.01105614 | −0.38907284 |
| $P$ | 3.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 1.4− | 0.4− | 2005 03 03 | 926 | 0.1− | 0.2+ | 2005 04 01 | 333 | 0.2+ | 0.2− |
| 1998 03 20 | 704 | 1.8+ | 0.0 | 2005 03 03 | 926 | 0.3+ | 0.5+ | 2005 04 01 | 333 | 0.2+ | 0.2+ |
| 1998 03 20 | 704 | 0.4+ | 0.7− | 2005 03 03 | 704 | 0.9+ | 0.2− | 2005 04 01 | 185 | 0.1+ | 0.2− |
| 1998 03 20 | 704 | 1.6+ | 1.5− | 2005 03 03 | 703 | 1.3− | 1.4− | 2005 04 01 | 185 | 0.9− | 0.4− |
| 1998 03 22 | 704 | 0.5− | 0.9+ | 2005 03 03 | 704 | 0.1+ | 0.3− | 2005 04 01 | 185 | 0.7+ | 0.1− |
| 1998 03 22 | 704 | 1.7− | 0.2+ | 2005 03 03 | 703 | 1.2− | 1.2− | 2005 04 04 | 704 | 0.6− | 1.3+ |
| 1998 03 22 | 704 | 0.8+ | 0.1+ | 2005 03 03 | 926 | 0.5+ | 0.5+ | 2005 04 04 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | (0.5− | 2.4−) | 2005 03 03 | 704 | 1.0+ | 0.4+ | 2005 04 04 | 703 | 0.0 | 0.5+ |
| 1998 03 28 | 704 | 0.0 | 0.3+ | 2005 03 03 | 703 | 1.1− | 0.2+ | 2005 04 04 | 704 | 0.4+ | 0.6+ |
| 1998 03 28 | 704 | 0.4− | 0.5+ | 2005 03 03 | 703 | 1.1− | 1.4− | 2005 04 04 | G96 | 0.3+ | 0.0 |
| 1998 03 28 | 704 | (0.0 | 2.2−) | 2005 03 04 | G96 | 0.0 | 0.2− | 2005 04 04 | 703 | 0.1+ | 0.4− |
| 1998 03 28 | 704 | (2.7− | 2.8−) | 2005 03 04 | G96 | 0.0 | 0.4− | 2005 04 04 | 704 | 1.0+ | 0.6+ |
| 1998 03 29 | 704 | 2.0− | 0.9− | 2005 03 04 | G96 | 0.0 | 0.5− | 2005 04 04 | G96 | 0.1+ | 0.0 |
| 1998 03 29 | 704 | 0.1+ | 0.5+ | 2005 03 04 | G96 | 0.1− | 0.4− | 2005 04 04 | 703 | 0.7− | 0.2+ |
| 1998 03 29 | 704 | 1.6+ | 1.1− | 2005 03 08 | 699 | 0.5+ | 0.1− | 2005 04 04 | G96 | 0.1+ | 0.5+ |
| 1998 03 29 | 704 | 0.2+ | 0.8+ | 2005 03 08 | 699 | 0.2− | 0.4+ | 2005 04 04 | 704 | 0.4+ | 0.7+ |
| 1998 03 29 | 704 | (3.3− | 2.6+) | 2005 03 08 | 699 | 0.3+ | 0.0 | 2005 04 04 | 703 | 1.0+ | 0.6+ |
| 1998 04 19 | 704 | 1.4− | 0.2+ | 2005 03 09 | 699 | 0.1+ | 0.6− | 2005 04 04 | 704 | 0.0 | 1.2+ |
| 1998 04 19 | 704 | 0.7− | 0.6− | 2005 03 09 | 699 | 0.5+ | 1.2− | 2005 04 09 | 699 | 0.5− | 0.6+ |
| 1998 04 19 | 704 | 1.6− | 1.7+ | 2005 03 09 | 699 | 0.1− | 0.0 | 2005 04 09 | 699 | 1.0+ | 0.2+ |
| 1998 04 19 | 704 | 0.3+ | 0.3+ | 2005 03 09 | 699 | 0.7+ | 0.3+ | 2005 04 09 | 699 | 0.3+ | 0.8+ |
| 1998 04 20 | 704 | 1.1− | 0.6+ | 2005 03 12 | 691 | 0.3+ | 0.2+ | 2005 04 09 | 699 | 1.6+ | 0.9+ |
| 1998 04 20 | 704 | (2.4+ | 2.0+) | 2005 03 12 | 691 | 0.2+ | 0.3+ | 2005 05 06 | G96 | 0.3− | 0.2− |
| 1998 04 20 | 704 | (2.6− | 0.5−) | 2005 03 12 | 691 | 0.3+ | 0.4+ | 2005 05 06 | G96 | 0.2− | 0.3− |
| 1998 04 20 | 704 | 1.4+ | 1.6+ | 2005 03 16 | 691 | 0.2+ | 0.3+ | 2005 05 06 | G96 | 0.2− | 0.2− |
| 1998 04 22 | 704 | 0.4− | 0.9− | 2005 03 16 | 691 | 0.2+ | 0.2+ | 2005 05 06 | G96 | 0.4− | 0.2− |
| 1998 04 22 | 704 | 1.6+ | 1.5− | 2005 03 16 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.3+ |
| 1998 04 22 | 704 | 0.3+ | 0.9+ | 2005 03 17 | 703 | 0.6− | 0.2− | 2006 08 28 | 691 | 0.2+ | 0.9+ |
| 1998 04 22 | 704 | 1.3+ | 0.5− | 2005 03 17 | 703 | 0.6− | 0.2+ | 2006 08 28 | 691 | 0.3− | 0.6+ |
| 2003 10 18 | 691 | 0.2− | 0.5+ | 2005 03 17 | 703 | 0.6− | 0.3− | 2006 08 28 | 703 | 0.0 | 0.4− |
| 2003 10 18 | 691 | 0.1− | 0.4+ | 2005 03 17 | 703 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.3+ | 0.3+ |
| 2003 10 18 | 691 | 0.0 | 0.6+ | 2005 03 21 | 683 | 0.8− | 1.6+ | 2006 08 28 | 703 | 0.6+ | 1.1+ |
| 2003 10 19 | 291 | 0.4− | 0.5+ | 2005 03 21 | 683 | 1.2− | 0.4+ | 2006 08 28 | 703 | 1.2− | 0.7+ |
| 2003 10 19 | 291 | 0.2− | 0.4+ | 2005 03 21 | 683 | 0.1+ | 1.0+ | 2006 08 29 | 704 | 0.1− | 1.1+ |
| 2003 10 19 | 291 | 0.1− | 0.4+ | 2005 03 30 | 333 | 0.5− | 0.1+ | 2006 08 29 | 704 | 0.7− | 1.0+ |
| 2005 02 14 | 926 | 0.3+ | 0.0 | 2005 03 30 | 333 | 0.1− | 0.1− | 2006 08 29 | 704 | 0.4+ | 1.2+ |
| 2005 02 14 | 926 | 0.3+ | 0.4+ | 2005 03 30 | 333 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2005 02 14 | 926 | 0.5+ | 0.0 | 2005 03 30 | 333 | 0.4− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.6− |
| 2005 02 14 | 926 | 0.1+ | 0.2− | 2005 03 30 | 333 | 1.0− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2005 03 03 | 691 | 0.3+ | 0.1+ | 2005 03 30 | 333 | 0.3− | 0.2− | 2006 09 30 | G96 | 1.3− | 0.9− |
| 2005 03 03 | 691 | 0.3+ | 0.2+ | 2005 03 31 | 333 | 0.0 | 0.1+ | | | | |
| 2005 03 03 | 691 | 0.0 | 0.8+ | 2005 03 31 | 333 | 0.2+ | 0.1+ | | | | |

**(136879)∗ 1998 FH$_{124}$ = 2001 WT$_{78}$**

Discovered 1998 Mar. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 24968)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.47520 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18813831 | $\omega$ | 112.74205 | | −0.96495350 | +0.25453554 |
| $a$ | 3.0163696 | $\Omega$ | 82.05120 | | −0.25815539 | −0.87705547 |
| $e$ | 0.1577764 | $i$ | 3.69620 | | −0.04712260 | −0.40741302 |
| $P$ | 5.24 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | (2.8+ | 2.4+) | 2003 01 26 | 608 | 1.0+ | 0.8− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 1998 03 24 | 704 | 0.3+ | 0.7+ | 2003 01 26 | 608 | 0.6+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 1998 03 24 | 704 | 1.4+ | 1.2+ | 2003 02 01 | 704 | 0.7− | 0.8+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 1998 03 25 | 704 | 0.4− | 0.3− | 2003 02 01 | 704 | 0.4+ | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.4+ |
| 1998 03 25 | 704 | 0.2− | 0.6− | 2003 02 01 | 704 | 0.6+ | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1998 03 25 | 704 | 0.3+ | 0.3+ | 2003 02 01 | 704 | 1.3+ | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 1998 03 25 | 704 | 0.6+ | 1.0− | 2003 02 04 | 699 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 1998 03 25 | 704 | 0.7+ | 1.1− | 2003 02 04 | 699 | 0.1+ | 1.2− | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 1998 04 02 | 809 | 0.2− | 0.1− | 2003 02 04 | 699 | 0.2+ | 1.0− | 2006 10 03 | G96 | 0.1− | 0.2− |
| 1998 04 02 | 809 | 0.2− | 0.1− | 2003 02 04 | 704 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.5− | 0.4− |
| 1998 04 02 | 809 | 0.3− | 0.7+ | 2003 02 04 | 699 | 0.1− | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1998 04 03 | 809 | 0.7− | 0.1− | 2003 02 04 | 704 | 0.4+ | 0.7− | 2006 10 03 | G96 | 0.3+ | 0.4− |
| 1998 04 03 | 809 | 0.8− | 0.4+ | 2003 02 04 | 704 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 1998 04 03 | 809 | 0.2− | 1.1+ | 2003 02 04 | 704 | 0.7+ | 0.4− | 2006 10 11 | 691 | 0.7+ | 0.3− |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2003 02 09 | 644 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 1.0+ | 0.0 | 2003 02 09 | 644 | 0.6+ | 0.1− | 2006 10 15 | 691 | 0.7− | 1.0− |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2003 02 09 | 644 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.5+ | 0.2+ |
| 2001 11 20 | 704 | 0.4+ | 0.8+ | 2003 02 19 | 644 | 0.3+ | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.3− | 0.2+ | 2003 02 19 | 644 | 0.5+ | 0.3− | 2006 10 16 | 703 | 1.0− | 0.0 |
| 2001 11 21 | 704 | 1.4− | 0.1− | 2003 02 19 | 644 | 0.2+ | 0.3− | 2006 10 16 | 703 | 1.1− | 1.2+ |
| 2001 11 21 | 704 | 0.7− | 0.4+ | 2003 03 06 | 704 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.3+ | 0.5+ |
| 2001 12 13 | 644 | 0.1+ | 0.1+ | 2003 03 06 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | (2.9− | 0.0 ) |
| 2001 12 13 | 644 | 0.5+ | 0.3+ | 2003 03 06 | 704 | 0.2− | 0.9+ | 2006 10 19 | 691 | 0.3+ | 0.2+ |
| 2001 12 13 | 644 | 0.9+ | 0.2+ | 2003 03 06 | 704 | 0.9− | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2001 12 14 | 704 | 0.2− | 1.3− | 2003 03 06 | 704 | 1.0− | 0.3+ | 2006 10 19 | 691 | 0.3+ | 0.4+ |
| 2001 12 14 | 704 | 0.4− | 0.6− | 2003 03 07 | 644 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2001 12 14 | 704 | 0.3+ | 0.2− | 2003 03 07 | 644 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 2001 12 14 | 704 | 0.3− | 0.0 | 2003 03 07 | 644 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2003 01 26 | 699 | 0.7− | 0.6− | 2003 03 08 | 704 | 1.0− | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2003 01 26 | 699 | 0.9− | 1.1+ | 2003 03 08 | 704 | 1.0− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 01 26 | 699 | (1.7− | 0.2−) | 2003 03 08 | 704 | 0.4− | 0.6+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2003 01 26 | 699 | 0.6− | 0.7− | 2003 03 08 | 704 | 0.7− | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 01 26 | 608 | 0.3+ | 0.3− | 2003 03 08 | 704 | 0.0 | 0.7+ | | | | |

**(136880)∗ 1998 FR$_{130}$ = 2005 CE$_{49}$**

Discovered 1998 Mar. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 71963)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.38691 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27247938 | $\omega$ | 41.28395 | | −0.69942958 | +0.71469717 |
| $a$ | 2.3563888 | $\Omega$ | 184.33697 | | −0.66407846 | −0.65117439 |
| $e$ | 0.1566280 | $i$ | 1.89020 | | −0.26419325 | −0.25530349 |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | 0.9− | 0.4+ | 2005 02 02 | 704 | 0.3− | 0.9+ | 2005 04 05 | G96 | 0.0 | 0.1− |
| 1998 03 22 | 704 | 0.7+ | 1.9− | 2005 02 02 | 703 | 0.0 | 0.2+ | 2005 04 05 | G96 | 0.3+ | 0.1+ |
| 1998 03 22 | 704 | (0.2+ | 2.3+) | 2005 02 02 | 704 | 0.2− | 0.7+ | 2005 04 05 | G96 | 0.0 | 0.3− |
| 1998 03 22 | 704 | 1.5− | 0.9+ | 2005 02 02 | 704 | 0.2+ | 1.3+ | 2005 04 06 | G96 | 0.2− | 0.0 |
| 1998 03 24 | 704 | 0.9+ | 0.1+ | 2005 02 04 | 699 | 1.0+ | 1.2+ | 2005 04 06 | G96 | 0.2− | 0.0 |
| 1998 03 24 | 704 | 0.3− | 1.1− | 2005 02 04 | 699 | 0.3+ | 0.3− | 2005 04 06 | G96 | 0.2− | 0.1− |
| 1998 03 24 | 704 | (2.2− | 1.3+) | 2005 02 04 | 699 | 0.0 | 0.7+ | 2005 04 06 | G96 | 0.0 | 0.0 |
| 1998 03 24 | 704 | 0.2+ | 0.7− | 2005 02 04 | 699 | (0.4+ | 2.4+) | 2006 08 13 | 644 | 0.1− | 0.5+ |
| 1998 03 24 | 704 | 0.5− | 0.2− | 2005 02 09 | 704 | (0.8+ | 1.7+) | 2006 08 13 | 644 | 0.1+ | 0.7+ |
| 1998 03 29 | 704 | 1.7+ | 1.1+ | 2005 02 09 | 699 | 0.1+ | 0.4+ | 2006 08 13 | 644 | 0.4+ | 0.7+ |
| 1998 03 29 | 704 | 0.8− | 0.7+ | 2005 02 09 | 704 | 1.2+ | 0.6+ | 2006 08 15 | 644 | 0.2− | 0.4+ |
| 1998 03 29 | 704 | 0.0 | 0.2− | 2005 02 09 | 699 | 1.0+ | 0.0 | 2006 08 15 | 644 | 0.3+ | 0.4+ |
| 1998 03 29 | 704 | 1.7+ | 0.2+ | 2005 02 09 | 704 | 1.1+ | 0.5+ | 2006 08 15 | 644 | 0.3− | 0.2+ |
| 1998 03 29 | 704 | 1.2+ | 0.7+ | 2005 02 09 | 704 | (1.5+ | 0.8+) | 2006 08 19 | 691 | 0.1− | 0.5+ |
| 1998 04 01 | 704 | 0.7− | 0.5− | 2005 02 09 | 699 | 0.3+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.4+ |
| 1998 04 01 | 704 | (1.7− | 3.7−) | 2005 02 09 | 699 | 0.1− | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.5+ |
| 1998 04 01 | 704 | 0.7+ | 1.1+ | 2005 03 08 | 704 | 1.0+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 1998 04 01 | 704 | 0.6+ | 1.6− | 2005 03 08 | 704 | 1.1+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2+ |
| 1998 04 01 | 704 | (3.9− | 1.0−) | 2005 03 08 | 704 | 0.6+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.0 |
| 1998 04 20 | 704 | 0.9− | 1.0− | 2005 03 08 | 704 | 1.0+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1998 04 20 | 704 | 0.0 | 0.9− | 2005 03 09 | G96 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 1998 04 20 | 704 | 1.8− | 0.3+ | 2005 03 09 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 1998 04 20 | 704 | 1.7− | 0.8− | 2005 03 09 | G96 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2003 10 02 | 691 | 0.1+ | 0.6− | 2005 03 09 | G96 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2003 10 02 | 691 | 0.2+ | 0.0 | 2005 03 16 | 703 | 1.4− | 0.8− | 2006 10 27 | G96 | 0.6− | 1.2− |
| 2003 10 02 | 691 | 0.1− | 0.5− | 2005 03 16 | 703 | (1.7− | 0.2−) | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2005 02 02 | 703 | 0.1− | 1.0+ | 2005 03 16 | 703 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.9− |
| 2005 02 02 | 703 | 1.4− | 0.4− | 2005 03 16 | 703 | 0.8− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2005 02 02 | 703 | 1.4− | 0.2+ | 2005 04 05 | G96 | 0.2− | 0.2− | | | | |

**(136881)∗ 1998 FL$_{133}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.24101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30207078 | $\omega$ | 203.98874 | | −0.62307428 | +0.78174762 | |
| $a$ | 2.1998694 | $\Omega$ | 27.49123 | | −0.70839922 | −0.55020569 | |
| $e$ | 0.1412558 | $i$ | 3.16389 | | −0.33158557 | −0.29350358 | |
| $P$ | 3.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.1+ | 0.4− | 2001 01 04 | 704 | (1.7+ | 1.0+) | 2005 06 27 | 644 | 0.0 | 0.1+ |
| 1998 03 20 | 704 | 1.6+ | 1.6− | 2001 01 04 | 704 | (0.4+ | 1.6+) | 2005 06 27 | 644 | 0.1− | 0.2+ |
| 1998 03 20 | 704 | 0.2+ | 1.9− | 2001 01 19 | 704 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.5+ | 0.0 |
| 1998 03 26 | 704 | 1.5+ | 0.5+ | 2001 01 19 | 704 | (0.0 | 1.6+) | 2006 09 27 | G96 | 0.4− | 0.1− |
| 1998 03 26 | 704 | 0.3− | 0.8+ | 2001 01 19 | 704 | 0.0 | 1.0+ | 2006 09 27 | G96 | 0.1− | 0.1+ |
| 1998 03 26 | 704 | 1.0− | 1.7+ | 2001 01 19 | 704 | 0.0 | 1.0+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 1998 03 29 | 704 | 0.7− | 1.6− | 2002 08 11 | 644 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 1998 03 29 | 704 | 0.4+ | 0.3− | 2002 08 11 | 644 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 1998 03 29 | 704 | 0.5− | 0.9+ | 2002 08 18 | 644 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 1998 03 29 | 704 | 0.3+ | 0.0 | 2002 08 18 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 1998 03 29 | 704 | 0.9− | 0.7− | 2002 08 18 | 644 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 1998 04 02 | 809 | (1.1− | 3.5+) | 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.4− | 0.3− |
| 1998 04 02 | 809 | (0.6− | 3.2+) | 2002 08 29 | 644 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 1998 04 02 | 809 | 0.3− | 2.0+ | 2002 08 29 | 644 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 1998 04 03 | 809 | (0.4− | 5.0+) | 2002 08 30 | 644 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 1998 04 03 | 809 | (0.6− | 4.6+) | 2002 08 30 | 644 | 0.2− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.3− |
| 1998 04 03 | 809 | (0.4+ | 4.8+) | 2002 09 15 | 644 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2000 12 19 | 691 | 0.2− | 0.0 | 2002 09 15 | 644 | 0.5− | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.2− |
| 2000 12 19 | 691 | 0.4− | 0.3− | 2003 12 18 | 704 | 1.0− | 0.5+ | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 2000 12 19 | 691 | 0.3− | 0.0 | 2003 12 18 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.7+ | 0.2− |
| 2001 01 04 | 704 | 1.3+ | 0.7+ | 2003 12 18 | 704 | 0.6+ | 0.0 | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2001 01 04 | 704 | 0.5+ | 0.5+ | 2003 12 18 | 704 | 0.2+ | 0.5+ | 2006 11 25 | 691 | 1.2− | 0.6+ |
| 2001 01 04 | 704 | 0.8+ | 0.8+ | 2005 06 27 | 644 | 0.1− | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.2+ |

**(136882)∗ 1998 FE$_{134}$**

Discovered 1998 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.82058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18045380 | $\omega$ | 63.22602 | | −0.98456322 | +0.17337279 | |
| $a$ | 3.1014065 | $\Omega$ | 126.74852 | | −0.16934481 | −0.90887541 | |
| $e$ | 0.1463291 | $i$ | 1.71810 | | −0.04424477 | −0.37932489 | |
| $P$ | 5.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.9+ | 1.1− | 2001 12 17 | 704 | 0.9+ | 0.2+ | 2003 02 21 | 644 | 0.1+ | 0.6+ |
| 1998 03 20 | 704 | 0.7− | 0.1+ | 2001 12 17 | 704 | 0.1− | 0.2− | 2003 02 22 | 699 | 0.1+ | 1.0+ |
| 1998 03 20 | 704 | 0.7+ | 1.0− | 2001 12 17 | 704 | 0.4− | 0.9+ | 2003 02 22 | 699 | 1.0+ | 0.6+ |
| 1998 03 20 | 704 | 1.1− | 0.9− | 2002 12 14 | 645 | 0.0 | 0.2− | 2003 02 22 | 699 | 0.5+ | 0.8+ |
| 1998 03 24 | 704 | 0.4− | 1.3− | 2002 12 14 | 645 | 0.1− | 0.3− | 2003 02 22 | 699 | 0.8+ | 0.4+ |
| 1998 03 24 | 704 | 0.6+ | 0.3− | 2003 01 26 | 699 | 0.5− | 0.9+ | 2003 02 24 | 608 | 0.3− | 0.2− |
| 1998 03 24 | 704 | 0.8+ | 1.4− | 2003 01 26 | 291 | 0.1+ | 0.3+ | 2003 02 24 | 608 | 0.9− | 0.5− |
| 1998 03 24 | 704 | 0.6− | 0.9+ | 2003 01 26 | 699 | 0.6− | 0.2+ | 2003 02 24 | 608 | 0.2− | 0.2− |
| 1998 03 24 | 704 | 0.6+ | 0.4− | 2003 01 26 | 699 | 0.3− | 0.6− | 2003 03 05 | 704 | 1.3+ | 0.2+ |
| 1998 03 24 | 704 | 1.7+ | 1.9+ | 2003 01 26 | 291 | 0.0 | 0.2+ | 2003 03 05 | 704 | 0.9+ | 0.7+ |
| 1998 03 24 | 704 | (2.2− | 0.7+) | 2003 01 26 | 699 | 0.5+ | 0.0 | 2003 03 05 | 704 | 0.7+ | 1.1+ |
| 1998 03 24 | 704 | 1.2− | 1.7+ | 2003 01 26 | 291 | 0.0 | 0.2+ | 2003 03 05 | 704 | 0.8+ | 0.5+ |
| 1998 03 25 | 704 | 0.2− | 0.9+ | 2003 01 28 | 645 | 0.1− | 0.3− | 2003 03 06 | 644 | 0.4+ | 0.1+ |
| 1998 03 25 | 704 | 1.1+ | 0.8+ | 2003 01 28 | 645 | 0.1− | 0.2− | 2003 03 06 | 644 | 0.9+ | 0.2+ |
| 1998 03 25 | 704 | 0.3+ | 0.3− | 2003 01 30 | 699 | 0.5− | 0.4+ | 2003 03 06 | 644 | 0.3+ | 0.0 |
| 1998 03 25 | 704 | (5.3− | 0.8−) | 2003 01 30 | 699 | 0.0 | 0.6+ | 2003 03 12 | 644 | 0.2+ | 0.1+ |
| 1998 03 29 | 704 | 0.0 | 0.4− | 2003 01 30 | 699 | 1.5− | 0.7+ | 2003 03 12 | 644 | 0.2+ | 0.1+ |
| 1998 03 29 | 704 | 0.8− | 1.1+ | 2003 01 30 | 699 | 1.4− | 0.2− | 2003 03 12 | 644 | 0.2+ | 0.3+ |
| 1998 03 29 | 704 | 1.7− | 0.3+ | 2003 01 31 | 291 | 0.2+ | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.7+ |
| 1998 03 29 | 704 | (2.2+ | 0.5−) | 2003 01 31 | 291 | 0.1− | 0.3+ | 2005 08 06 | 644 | 0.3− | 0.5+ |
| 1998 03 29 | 704 | 1.1+ | 1.2− | 2003 01 31 | 291 | 0.2− | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.5+ |
| 1998 04 21 | 704 | (2.4− | 1.3+) | 2003 02 03 | 704 | (2.3+ | 0.2−) | 2005 10 01 | G96 | 0.0 | 0.0 |
| 1998 04 21 | 704 | 0.1− | 0.7+ | 2003 02 03 | 704 | (1.8+ | 0.7+) | 2005 10 01 | G96 | 0.1− | 0.1+ |
| 1998 04 21 | 704 | 1.3− | 0.1+ | 2003 02 03 | 704 | (1.7+ | 1.7+) | 2005 10 01 | G96 | 0.2+ | 0.2+ |
| 1998 04 21 | 704 | (2.1+ | 0.3+) | 2003 02 03 | 704 | 0.8+ | 0.5− | 2005 10 01 | G96 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | 0.2+ | 0.4+ | 2003 02 08 | 704 | 0.2+ | 0.5− | 2006 09 30 | G96 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.1− | 0.9+ | 2003 02 08 | 704 | (0.0 | 2.3−) | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 0.4+ | 0.6+ | 2003 02 08 | 704 | 0.6+ | 0.8− | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.7+ | 1.4+ | 2003 02 08 | 704 | 0.7+ | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.6− |
| 2001 12 07 | 644 | 0.7− | 0.2+ | 2003 02 08 | 704 | 0.7+ | 1.0+ | 2006 11 09 | 691 | 0.0 | 0.4− |
| 2001 12 07 | 644 | 1.0− | 0.1+ | 2003 02 12 | 608 | 0.6− | 1.0+ | 2006 11 09 | 691 | 0.2− | 0.1− |
| 2001 12 07 | 644 | 0.5− | 0.2+ | 2003 02 12 | 608 | (0.5− | 1.8+) | 2006 11 09 | 691 | 0.0 | 0.4− |
| 2001 12 11 | 691 | 0.1− | 0.1+ | 2003 02 12 | 608 | 0.3+ | 0.9+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2001 12 11 | 691 | 0.2+ | 0.1+ | 2003 02 21 | 644 | 0.0 | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2001 12 11 | 691 | 0.3− | 0.7+ | 2003 02 21 | 644 | 0.2− | 0.8+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |

**(136883)∗ 1998 FB$_{147}$ = 1998 HH$_{57}$ = 2002 QK$_5$**

Discovered 1998 Mar. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 6441), G. V. Williams (*MPO* 33020)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.51351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28579619 | $\omega$ | 65.92544 | | +0.11040432 | +0.99286779 | |
| $a$ | 2.2826102 | $\Omega$ | 210.51831 | | −0.94102619 | +0.08985807 | |
| $e$ | 0.1719480 | $i$ | 5.08323 | | −0.31981339 | +0.07835223 | |
| $P$ | 3.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 1.8− | 0.7+ | 2002 10 07 | 704 | 0.8− | 0.2− | 2005 05 26 | 699 | 0.6+ | 0.6+ |
| 1998 03 25 | 704 | 0.3+ | 1.0− | 2002 10 07 | 704 | 0.6− | 1.0− | 2005 05 26 | 699 | 0.4+ | 0.1− |
| 1998 03 25 | 704 | 0.5− | 1.7+ | 2002 10 07 | 704 | 0.2+ | 0.6− | 2005 05 30 | 699 | 0.1+ | 0.4− |
| 1998 03 25 | 704 | 0.1− | 0.0 | 2005 03 11 | G96 | 0.4− | 0.0 | 2005 05 30 | 699 | 0.1+ | 0.4− |
| 1998 03 29 | 704 | 1.2− | 0.0 | 2005 03 11 | G96 | 0.5− | 0.1− | 2005 05 30 | 699 | 0.2− | 0.2+ |
| 1998 03 29 | 704 | 1.4+ | 0.6− | 2005 03 11 | G96 | 0.3− | 0.1+ | 2005 05 30 | 699 | 0.2+ | 0.6− |
| 1998 03 29 | 704 | 1.3+ | 1.1− | 2005 03 11 | G96 | 0.3− | 0.0 | 2005 06 04 | 703 | (1.7− | 1.7−) |
| 1998 03 29 | 704 | 1.4− | 0.7+ | 2005 04 11 | G96 | 0.4− | 0.3+ | 2005 06 04 | 703 | 1.2− | 0.0 |
| 1998 03 29 | 704 | 1.5− | 1.6− | 2005 04 11 | G96 | 0.2− | 0.2+ | 2005 06 04 | 703 | 1.2− | 1.4− |
| 1998 04 21 | 704 | 0.8+ | 1.2+ | 2005 04 11 | G96 | 0.2− | 0.1+ | 2005 06 04 | 703 | (1.9− | 0.3+) |
| 1998 04 21 | 704 | 0.0 | 0.3+ | 2005 04 11 | G96 | 0.4− | 0.1+ | 2005 06 05 | 704 | 0.7+ | 0.3+ |
| 1998 04 21 | 704 | 0.9− | 0.4− | 2005 04 17 | 703 | 0.8− | 0.7− | 2005 06 05 | 704 | 0.5+ | 0.5+ |
| 1998 04 21 | 704 | 0.4− | 0.1− | 2005 04 17 | 703 | 1.2− | 0.2− | 2005 06 05 | 704 | 0.8+ | 1.0+ |
| 1998 04 21 | 704 | 1.4+ | 1.1+ | 2005 04 17 | 703 | (1.5− | 0.7−) | 2005 06 10 | 704 | 0.3+ | 0.1+ |
| 1998 04 22 | 704 | 1.0+ | 1.6+ | 2005 04 17 | 703 | (1.7− | 0.3−) | 2005 06 10 | 704 | 1.5+ | 0.0 |
| 1998 04 22 | 704 | 0.7+ | 1.1+ | 2005 05 03 | 691 | 0.1+ | 0.1+ | 2005 06 10 | 704 | 0.3+ | 1.1+ |
| 1998 04 22 | 704 | 0.2+ | 0.4+ | 2005 05 03 | 691 | 0.1+ | 0.3+ | 2005 06 28 | 644 | 0.3+ | 0.1+ |
| 1998 04 22 | 704 | 0.6+ | 0.3− | 2005 05 03 | 691 | 0.1− | 0.1+ | 2005 06 28 | 644 | 0.1+ | 0.2− |
| 1998 04 22 | 704 | 0.1+ | 1.3+ | 2005 05 04 | 699 | 0.4− | 0.7+ | 2005 06 28 | 644 | 0.1+ | 0.1− |
| 1998 04 25 | 699 | 1.1+ | 0.2− | 2005 05 04 | 699 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 1998 04 25 | 699 | 0.4+ | 0.0 | 2005 05 04 | 704 | 0.6− | 0.5− | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 1998 04 25 | 699 | 0.3− | 0.7− | 2005 05 04 | 699 | 0.4− | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2002 08 12 | 704 | 0.0 | 0.6+ | 2005 05 04 | 704 | 0.5− | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2002 08 12 | 704 | 0.4+ | 0.0 | 2005 05 04 | 699 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2002 08 12 | 704 | 0.1− | 0.3+ | 2005 05 04 | 704 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2002 08 12 | 704 | 0.1− | 0.3+ | 2005 05 04 | 704 | 0.1− | 0.8+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2002 08 12 | 704 | 0.0 | 0.2+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2002 08 13 | 699 | 0.1− | 0.6+ | 2005 05 08 | 699 | 0.5− | 0.8+ | 2006 11 01 | 691 | 0.2+ | 0.5+ |
| 2002 08 13 | 699 | 0.3− | 0.6+ | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2002 08 13 | 699 | 0.2− | 0.3+ | 2005 05 08 | 691 | (2.0+ | 0.7+) | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2002 08 13 | 699 | 0.1+ | 0.5+ | 2005 05 08 | 699 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2002 08 16 | 644 | 0.0 | 0.3+ | 2005 05 08 | 699 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.7+ |
| 2002 08 16 | 644 | 0.1− | 0.3+ | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.5− | 0.1− |
| 2002 08 16 | 644 | 0.1+ | 0.3+ | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.6+ |
| 2002 08 17 | 608 | 0.4− | 0.5− | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.5+ |
| 2002 08 17 | 608 | 0.5− | 0.4− | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.6+ |
| 2002 08 17 | 608 | 0.6− | 0.8− | 2005 05 09 | 704 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2002 09 01 | 608 | 0.5+ | 0.3− | 2005 05 09 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2002 09 01 | 608 | 0.2− | 0.0 | 2005 05 09 | 704 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.1+ |
| 2002 09 01 | 608 | 0.3+ | 0.1+ | 2005 05 09 | 704 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2002 09 05 | 699 | 0.4+ | 0.7+ | 2005 05 11 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.3+ | 1.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 0.0 | 0.4+ | 2005 05 11 | G96 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.2+ | 1.1+ |
| 2002 09 05 | 699 | 0.4− | 0.8+ | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 11 17 | 704 | (0.0 | 2.6+) |
| 2002 09 05 | 699 | 0.3− | 0.0 | 2005 05 11 | G96 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.9+ |
| 2002 09 06 | 704 | 0.6+ | 0.3− | 2005 05 12 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 09 06 | 704 | 0.9+ | 0.2− | 2005 05 12 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.9+ |
| 2002 09 06 | 704 | 1.3+ | 0.3− | 2005 05 12 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2002 09 06 | 704 | 0.9+ | 0.9− | 2005 05 13 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | (0.7+ | 2.1−) |
| 2002 09 06 | 704 | 0.4+ | 1.0− | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2002 09 13 | 644 | 0.9− | 0.1− | 2005 05 13 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2002 09 13 | 644 | 0.8− | 0.0 | 2005 05 14 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2002 09 13 | 644 | 0.9− | 0.1− | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2002 09 15 | 608 | 0.5− | 0.1− | 2005 05 14 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.4+ | 1.4+ |
| 2002 09 15 | 608 | 0.3− | 0.1+ | 2005 05 16 | 704 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2002 09 15 | 608 | 0.3− | 0.2+ | 2005 05 16 | 704 | 0.7+ | 0.2− | 2006 11 20 | 704 | 0.9+ | 0.6+ |
| 2002 10 04 | 704 | (2.8+ | 0.0 ) | 2005 05 16 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2002 10 04 | 704 | 0.5+ | 1.0+ | 2005 05 16 | 704 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2002 10 04 | 704 | 0.3− | 1.1+ | 2005 05 16 | 704 | 1.0+ | 1.0+ | | | | |
| 2002 10 07 | 704 | 0.5+ | 0.5+ | 2005 05 26 | 699 | 0.3+ | 1.1+ | | | | |

**(136884)∗ 1998 $FC_{148}$ = 2003 $BL_{33}$**

Discovered 1998 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 39932)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.70980 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18168541 | $\omega$ | 313.88153 | | −0.52527640 | | −0.84933367 |
| $a$ | 3.0873747 | $\Omega$ | 167.49675 | | +0.83333651 | | −0.52584146 |
| $e$ | 0.0355169 | $i$ | 13.93187 | | +0.17214811 | | −0.04607687 |
| $P$ | 5.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | 0.7− | 0.7− | 2003 01 28 | 704 | (1.5+ | 1.7−) | 2004 04 16 | 704 | 0.2+ | 0.2+ |
| 1998 03 22 | 704 | 1.8+ | 1.0+ | 2003 01 28 | 704 | (1.4+ | 1.5−) | 2004 04 16 | 704 | 0.1+ | 0.8+ |
| 1998 03 22 | 704 | 1.1− | 1.6− | 2003 01 28 | 704 | (1.8+ | 2.3−) | 2004 04 16 | 704 | 0.1+ | 0.8+ |
| 1998 03 22 | 704 | 1.4− | 1.5− | 2003 01 28 | 704 | (3.7+ | 1.9−) | 2004 04 21 | 703 | (2.1+ | 0.5−) |
| 1998 03 29 | 704 | 0.6+ | 1.6− | 2003 02 01 | 699 | 0.4− | 0.7+ | 2004 04 21 | 703 | 1.0− | 0.9− |
| 1998 03 29 | 704 | 0.2+ | 1.9− | 2003 02 01 | 699 | 0.6− | 0.2− | 2004 04 21 | 703 | 0.7+ | 0.8− |
| 1998 03 29 | 704 | 0.2− | 0.8− | 2003 02 01 | 699 | 0.5+ | 0.7+ | 2004 04 21 | 703 | 1.1+ | 0.5− |
| 1998 03 29 | 704 | 0.2− | 0.8− | 2003 02 01 | 699 | 0.0 | 0.6+ | 2004 05 12 | 683 | 1.4+ | 0.9− |
| 1998 03 29 | 704 | 0.6− | 0.3+ | 2003 02 08 | 608 | 0.9+ | 0.3− | 2004 05 12 | 683 | 0.2+ | 0.4− |
| 1998 04 02 | 809 | 1.2− | 0.1− | 2003 02 08 | 608 | 0.6+ | 0.5− | 2004 05 12 | 683 | 0.3− | 0.7− |
| 1998 04 02 | 809 | (2.4− | 1.5+) | 2003 02 08 | 608 | 0.7+ | 0.4− | 2006 09 18 | 699 | (0.9+ | 1.5+) |
| 1998 04 02 | 809 | (3.2− | 1.8+) | 2003 02 19 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.5− | 0.3− |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2003 02 19 | 644 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2003 02 19 | 644 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.5+ |
| 2001 10 16 | 704 | 0.9− | 0.4− | 2003 02 24 | 599 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.3+ |
| 2001 10 16 | 704 | 0.2− | 0.3+ | 2003 02 24 | 599 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.3+ |
| 2001 10 16 | 704 | 0.1+ | 0.3+ | 2003 02 24 | 599 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.1+ |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2003 02 26 | 599 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.8+ | 0.3+ |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2003 02 26 | 599 | 0.3− | 0.4+ | 2006 09 30 | 703 | (2.1− | 7.3+) |
| 2001 12 07 | 704 | (0.7− | 1.7+) | 2003 02 26 | 599 | (2.9− | 0.2−) | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2001 12 07 | 704 | 0.1+ | 0.9+ | 2003 03 07 | 704 | 0.8− | 0.6− | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2001 12 07 | 704 | 0.0 | 0.7− | 2003 03 07 | 704 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.7+ | 1.0− |
| 2002 01 08 | 645 | 0.1+ | 0.1− | 2003 03 07 | 704 | 1.1− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2002 01 08 | 645 | 0.0 | 0.0 | 2003 03 07 | 704 | (0.1+ | 1.5−) | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2003 03 07 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.9− | 0.4− |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2003 03 07 | 704 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2003 01 02 | 699 | (2.7+ | 0.1−) | 2003 03 07 | 608 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2003 01 02 | 699 | 0.2− | 1.1+ | 2003 03 07 | 608 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2003 01 02 | 699 | 0.3+ | 1.0+ | 2003 03 07 | 608 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2003 01 02 | 699 | 1.2− | 1.3+ | 2004 04 11 | 644 | 0.5+ | 1.1+ | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 2003 01 27 | 608 | 0.4+ | 0.1+ | 2004 04 11 | 644 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2003 01 27 | 608 | 0.2+ | 0.1+ | 2004 04 11 | 644 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.6− | 0.1− |
| 2003 01 27 | 608 | 0.4+ | 0.2+ | 2004 04 16 | 704 | 0.5− | 0.9+ | | | | |

**(136885)∗ 1998 $GO_2$ = 1998 $KS_9$**

Discovered 1998 Apr. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. S. Nakano (d, MPC 33590)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.91546 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27505983 | $\omega$ | 104.02892 | | −0.89528558 | | +0.41769672 |
| $a$ | 2.3416282 | $\Omega$ | 100.84837 | | −0.44473094 | | −0.81766561 |
| $e$ | 0.1804428 | $i$ | 9.07435 | | −0.02604083 | | −0.39617220 |
| $P$ | 3.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 566 | 0.8+ | 0.5+ | 2004 12 15 | 704 | 1.0+ | 0.3− | 2005 02 03 | 704 | 0.1+ | 0.8− |
| 1998 02 26 | 566 | 0.1− | 0.0 | 2004 12 15 | 704 | 1.4+ | 0.6− | 2005 03 01 | 703 | 0.4+ | 1.1− |
| 1998 02 26 | 566 | 0.1+ | 0.2+ | 2004 12 15 | 704 | 0.5+ | 0.6− | 2005 03 01 | 703 | 0.1− | 0.1+ |
| 1998 04 02 | 704 | 0.9− | 1.1− | 2004 12 15 | 704 | 1.2+ | 0.3+ | 2005 03 01 | 703 | 0.0 | 0.0 |
| 1998 04 02 | 704 | (2.6− | 1.6+) | 2005 01 07 | 704 | 0.1+ | 1.2+ | 2005 03 01 | 703 | 0.7− | 0.7− |
| 1998 04 02 | 704 | 0.2+ | 0.3− | 2005 01 07 | 704 | 0.4− | 1.0+ | 2005 03 09 | 703 | 0.2− | 0.0 |
| 1998 04 02 | 704 | 0.8− | 0.4+ | 2005 01 07 | 704 | 0.8− | 0.9+ | 2005 03 09 | 703 | 0.2− | 0.2+ |
| 1998 04 02 | 704 | 0.5− | 0.6+ | 2005 01 07 | 704 | 0.8− | 1.0+ | 2005 03 09 | 703 | 0.7− | 0.2− |
| 1998 04 03 | 704 | 0.2+ | 1.6+ | 2005 01 07 | 704 | 0.3− | 0.8+ | 2005 03 09 | 703 | 1.0− | 0.1− |
| 1998 04 03 | 704 | 0.5+ | 0.2+ | 2005 01 12 | 704 | 0.9+ | 0.1+ | 2005 03 12 | 699 | 0.8+ | 0.0 |
| 1998 04 03 | 704 | (1.1− | 3.3+) | 2005 01 12 | 704 | 0.0 | 0.2− | 2005 03 12 | 699 | 0.4+ | 0.2+ |
| 1998 04 03 | 704 | (1.9+ | 2.4+) | 2005 01 12 | 704 | 0.8− | 0.2− | 2005 03 12 | 699 | 0.3+ | 0.9+ |
| 1998 05 20 | 327 | 0.5− | 0.1+ | 2005 01 12 | 704 | 0.1+ | 0.4− | 2005 03 12 | 699 | 0.8+ | 1.1+ |
| 1998 05 20 | 327 | 0.0 | 0.4+ | 2005 01 12 | 704 | 0.6+ | 0.1+ | 2006 08 16 | E12 | 0.1+ | 0.5+ |
| 1998 05 20 | 327 | 0.3+ | 0.3− | 2005 01 18 | 703 | 0.0 | 0.2− | 2006 08 16 | E12 | 0.3− | 0.7+ |
| 1998 05 24 | 327 | 0.6+ | 0.4− | 2005 01 18 | 703 | 0.7− | 0.0 | 2006 08 16 | E12 | 0.7− | 0.9+ |
| 1998 05 24 | 327 | 1.0+ | 0.1+ | 2005 01 18 | 703 | 0.2+ | 0.4+ | 2006 08 16 | E12 | 0.4− | 0.9+ |
| 1998 05 24 | 327 | 0.2+ | 0.2− | 2005 01 18 | 703 | 0.4+ | 0.6+ | 2006 08 20 | 644 | 0.5− | 0.6+ |
| 1998 05 24 | 327 | 0.1− | 0.2+ | 2005 01 20 | 699 | 0.7+ | 0.5+ | 2006 08 20 | 644 | 0.2− | 0.3+ |
| 2000 12 30 | 704 | 0.5− | 0.4+ | 2005 01 20 | 699 | 1.2+ | 0.1− | 2006 08 20 | 644 | 0.2+ | 0.5+ |
| 2000 12 30 | 704 | 0.2+ | 0.1− | 2005 01 20 | 699 | 0.6+ | 0.3+ | 2006 08 24 | 644 | 0.2− | 1.0+ |
| 2000 12 30 | 704 | 1.6+ | 0.9− | 2005 01 20 | 699 | 0.2+ | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.6+ |
| 2000 12 30 | 704 | 0.4− | 0.1+ | 2005 02 01 | 703 | 1.4− | 0.2+ | 2006 08 24 | 644 | 0.4− | 0.6+ |
| 2004 12 09 | 703 | 1.0− | 0.5− | 2005 02 01 | 703 | 0.6− | 0.3− | 2006 09 14 | 644 | 0.2+ | 0.3+ |
| 2004 12 09 | 703 | 0.3− | 0.5− | 2005 02 01 | 703 | 0.3− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.5+ |
| 2004 12 09 | 703 | 1.1− | 0.3− | 2005 02 01 | 703 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.6+ |
| 2004 12 09 | 703 | 0.0 | 0.2− | 2005 02 03 | 704 | 0.5+ | 0.3+ | | | | |
| 2004 12 15 | 704 | 0.2+ | 0.5+ | 2005 02 03 | 704 | 0.5+ | 1.7+ | | | | |

**(136886)∗ 1998 $GL_{12}$ = 1993 $FJ_{41}$ = 2001 $XM_{125}$**

Discovered 1998 Apr. 2 by E. W. Elst at the European Southern Observatory.

Id. A. Doppler (*MPO* 24969), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.90053 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19063391 | $\omega$ | 104.67000 | | −0.99664332 | | +0.06938796 |
| $a$ | 2.9899868 | $\Omega$ | 79.32281 | | −0.08105857 | | −0.91075947 |
| $e$ | 0.1142902 | $i$ | 2.53386 | | +0.01147190 | | −0.40706571 |
| $P$ | 5.17 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | (2.1− | 0.2−) | 2001 12 14 | 704 | 0.0 | 0.5+ | 2005 08 26 | 644 | 0.4− | 0.5+ |
| 1993 03 20 | 809 | 0.9− | 1.1− | 2001 12 14 | 704 | 0.3+ | 0.4− | 2005 08 26 | 644 | 0.2− | 0.5+ |
| 1993 03 24 | 809 | 0.1+ | 0.6+ | 2001 12 14 | 704 | 0.6− | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.6− |
| 1993 04 29 | 691 | 0.3− | 0.1+ | 2001 12 17 | 691 | 0.8− | 1.0+ | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 1993 04 29 | 691 | 0.1+ | 0.7− | 2001 12 17 | 704 | 0.5− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 1993 04 29 | 691 | 0.2− | 0.8− | 2001 12 17 | 704 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 1998 03 29 | 704 | 0.3+ | 0.2− | 2001 12 17 | 691 | 0.6+ | 0.4− | 2006 10 12 | 691 | 0.0 | 0.5+ |
| 1998 03 29 | 704 | 1.4+ | 0.0 | 2001 12 17 | 704 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 1998 03 29 | 704 | 0.7+ | 0.3+ | 2001 12 17 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.0 |
| 1998 03 29 | 704 | 0.2+ | 0.5+ | 2002 12 14 | 645 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.2− |
| 1998 03 29 | 704 | 0.5− | 0.8+ | 2002 12 14 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3− |
| 1998 04 02 | 809 | (2.6+ | 2.0+) | 2003 02 26 | 608 | (1.4+ | 2.1+) | 2006 10 16 | 691 | 0.5+ | 0.0 |
| 1998 04 02 | 809 | (2.2+ | 2.5+) | 2003 02 26 | 608 | (0.8+ | 1.5+) | 2006 10 20 | 691 | 0.2− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 02 | 809 | (0.5+ | 2.6+) | 2003 02 26 | 608 | 0.9+ | 1.4+ | 2006 10 20 | 691 | 0.1− | 0.4− |
| 1998 04 03 | 809 | (1.7+ | 3.4+) | 2003 03 06 | 699 | 0.8+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.4− |
| 1998 04 03 | 809 | (0.5+ | 3.3+) | 2003 03 06 | 699 | 0.4+ | 0.5+ | 2006 10 28 | G96 | 0.4+ | 0.3− |
| 1998 04 03 | 809 | (0.4+ | 2.6+) | 2003 03 06 | 699 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2001 11 18 | 291 | 0.4− | 0.1+ | 2003 03 06 | 699 | 0.5+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.7− |
| 2001 11 18 | 291 | 0.2− | 0.1+ | 2003 03 06 | 704 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.9− | 0.4− |
| 2001 11 18 | 291 | 0.0 | 0.2+ | 2003 03 06 | 704 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.4− |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2003 03 06 | 704 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.3+ | 0.7− | 2003 03 06 | 704 | 0.5− | 1.0+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.2− | 2003 03 06 | 704 | 0.3− | 0.8+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.4+ | 2003 03 07 | 699 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.6− | 2003 03 07 | 699 | (0.0 | 1.8+) | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2003 03 07 | 699 | 0.5+ | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 0.4+ | 2003 03 07 | 699 | 0.5− | 0.8+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.4− | 0.4+ | 2003 03 14 | 608 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.6+ | 0.4+ | 2003 03 14 | 608 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2003 03 14 | 608 | 0.5− | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.3− |
| 2001 12 14 | 704 | 0.3− | 0.0 | 2005 08 26 | 644 | 0.4− | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.1+ |

**(136887)∗ 1998 HQ$_9$ = 2001 YX$_{78}$**

Discovered 1998 Apr. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 24971)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 141.15627 | | (2000.0) | | +0.09345581 | +0.96514639 |
| $n$ | 0.17866551 | $\omega$ | 189.14739 | | −0.89728039 | +0.18804744 |
| $a$ | 3.1220671 | $\Omega$ | 86.49323 | | −0.43145558 | −0.18201814 |
| $e$ | 0.0757344 | $i$ | 14.17675 | | | |
| $P$ | 5.52 | $H$ | 14.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 18 | 691 | 0.2+ | 0.2+ | 2002 01 08 | 704 | 0.4+ | 1.2− | 2005 09 26 | 704 | 0.0 | 1.2+ |
| 1998 04 18 | 691 | 0.3+ | 0.1+ | 2002 01 08 | 704 | (0.6− | 3.0−) | 2005 09 26 | 704 | 0.3+ | 0.5+ |
| 1998 04 18 | 691 | 0.0 | 0.1− | 2002 01 08 | 704 | (0.0 | 2.3−) | 2005 09 26 | 704 | 1.1+ | 0.0 |
| 1998 04 23 | 704 | 1.3+ | 0.9− | 2002 01 08 | 704 | (0.4− | 1.7−) | 2005 09 26 | 704 | 0.1− | 0.0 |
| 1998 04 23 | 704 | 0.1+ | 0.4+ | 2003 03 08 | 704 | 0.3− | 0.2+ | 2005 09 26 | 704 | 0.2− | 0.2− |
| 1998 04 23 | 704 | 0.1− | 1.3− | 2003 03 08 | 704 | 1.1+ | 0.1+ | 2005 10 05 | 703 | 0.5− | 1.1+ |
| 1998 04 23 | 704 | (5.1− | 0.7−) | 2003 03 08 | 704 | (0.1− | 1.8+) | 2005 10 05 | 703 | 0.2− | 0.4+ |
| 1998 04 24 | 704 | 1.0+ | 0.4− | 2003 03 08 | 704 | 0.7− | 0.3+ | 2005 10 05 | 703 | 0.2− | 0.3− |
| 1998 04 24 | 704 | 0.2− | 0.5− | 2003 03 26 | 704 | 0.2+ | 0.5+ | 2005 10 05 | 703 | 0.7− | 0.1− |
| 1998 04 24 | 704 | 0.6+ | 0.6− | 2003 03 26 | 704 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.6− |
| 1998 04 25 | 691 | 0.4− | 0.7− | 2003 03 26 | 704 | (0.3+ | 1.6+) | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 1998 04 25 | 691 | 0.7− | 0.1+ | 2003 03 26 | 704 | 0.6− | 1.5+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 1998 04 25 | 691 | 0.4− | 0.1+ | 2003 04 03 | 608 | 0.6− | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2000 11 26 | 704 | 0.3− | 1.7+ | 2003 04 03 | 608 | 0.1+ | 0.6+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2000 11 26 | 704 | 0.9− | 0.5+ | 2003 04 03 | 608 | 0.1+ | 0.5+ | 2006 11 18 | 691 | 0.7− | 0.6− |
| 2000 11 26 | 704 | 1.3− | 0.5− | 2003 04 05 | 699 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 12 18 | 644 | 0.3− | 0.0 | 2003 04 05 | 699 | 0.1− | 0.7− | 2006 11 20 | 704 | 0.6− | 0.9− |
| 2001 12 18 | 644 | 0.1− | 0.3+ | 2003 04 05 | 699 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2001 12 18 | 644 | 0.2− | 0.1+ | 2003 04 05 | 699 | 0.7− | 0.1− | 2006 11 20 | 704 | 1.1+ | 0.5+ |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2003 04 09 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.9+ | 0.1− |
| 2001 12 18 | 704 | 0.5− | 0.4+ | 2003 04 09 | 644 | 0.3+ | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2003 04 09 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 1.2+ | 2003 04 10 | 704 | 0.6+ | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.7+ | 0.8+ | 2003 04 10 | 704 | 1.0+ | 0.3+ | 2006 11 29 | 704 | 0.8+ | 0.8− |
| 2001 12 19 | 704 | 0.1+ | 0.3+ | 2003 04 10 | 704 | 0.3− | 0.6+ | 2006 11 29 | 704 | 0.5+ | 0.7− |
| 2001 12 19 | 704 | 0.3+ | 0.2+ | 2003 04 10 | 704 | 0.7+ | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.2+ |
| 2001 12 19 | 704 | 0.1+ | 0.7+ | 2004 07 14 | 704 | 0.1+ | 1.1+ | 2006 11 29 | 704 | 1.1− | 0.4+ |
| 2001 12 19 | 704 | 0.4+ | 0.8+ | 2004 07 14 | 704 | 0.8+ | 0.6+ | 2006 11 29 | 704 | 0.4− | 0.2+ |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2004 07 14 | 704 | 0.3− | 0.6+ | | | | |
| 2002 01 08 | 704 | (0.7+ | 2.7−) | 2004 07 14 | 704 | 0.2+ | 0.4+ | | | | |

**(136888)∗ 1998 HR$_{10}$ = 1999 VW$_{127}$**

Discovered 1998 Apr. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 37680)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 159.92400 | | (2000.0) | | −0.58110138 | +0.81263203 |
| $n$ | 0.29403842 | $\omega$ | 164.57617 | | −0.75156315 | −0.51503150 |
| $a$ | 2.2397523 | $\Omega$ | 69.87633 | | −0.31220831 | −0.27271182 |
| $e$ | 0.1701187 | $i$ | 2.69587 | | | |
| $P$ | 3.35 | $H$ | 17.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 1.9− | 1.0+ | 1998 05 01 | 691 | 0.7− | 0.5− | 2006 10 16 | 691 | 0.1− | 0.1− |
| 1998 03 20 | 704 | 0.7− | 0.2+ | 1998 05 16 | 691 | 0.5+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.1− |
| 1998 03 20 | 704 | 1.0− | 0.9+ | 1998 05 16 | 691 | 0.5+ | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 1998 03 20 | 704 | 0.6− | 0.2+ | 1998 05 16 | 691 | 0.5+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 1998 03 24 | 566 | 0.0 | 0.2− | 1999 11 09 | 691 | 0.4+ | 0.6− | 2006 10 20 | 691 | 0.5− | 0.5− |
| 1998 03 24 | 566 | 0.5− | 0.7− | 1999 11 09 | 691 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.5− | 0.1− |
| 1998 03 24 | 566 | 0.9− | 0.3+ | 1999 11 09 | 691 | 0.3+ | 0.7− | 2006 10 28 | G96 | (1.1− | 1.5−) |
| 1998 03 25 | 704 | 0.9− | 0.2+ | 1999 11 13 | 691 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 1998 03 25 | 704 | 0.5+ | 0.8− | 1999 11 13 | 691 | 0.1+ | 0.8− | 2006 10 28 | G96 | (1.6− | 2.0−) |
| 1998 03 25 | 704 | 0.3+ | 1.9− | 1999 11 13 | 691 | 0.0 | 0.5− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 1998 03 25 | 704 | 0.2+ | 0.1− | 2000 12 30 | 691 | 0.7− | 0.5+ | 2006 10 28 | G96 | 0.7+ | 0.4− |
| 1998 03 25 | 704 | (3.5− | 0.3−) | 2000 12 30 | 691 | 0.6− | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 1998 04 17 | 691 | 0.5+ | 0.0 | 2000 12 30 | 691 | 0.8− | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.4− |
| 1998 04 17 | 691 | 0.6+ | 0.3− | 2001 01 01 | 691 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.7+ | 0.3− |
| 1998 04 17 | 691 | 1.0+ | 0.3− | 2001 01 01 | 691 | 0.4+ | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 1998 04 19 | 704 | 0.0 | 0.2+ | 2001 01 01 | 691 | 0.6+ | 0.4+ | 2006 10 29 | G96 | 0.3+ | 0.3− |
| 1998 04 19 | 704 | 0.8− | 1.0+ | 2001 01 21 | 704 | 0.8− | 0.6+ | 2006 10 29 | G96 | 0.1+ | 0.0 |
| 1998 04 19 | 704 | 1.1− | 1.4− | 2001 01 21 | 704 | 0.9+ | 0.2− | 2006 10 29 | G96 | 0.0 | 0.2− |
| 1998 04 19 | 704 | 0.6+ | 0.3+ | 2001 01 21 | 704 | 0.7+ | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.0 |
| 1998 04 20 | 704 | 0.7+ | 0.2+ | 2001 01 21 | 704 | 0.1+ | 1.0+ | 2006 10 29 | G96 | 0.3+ | 0.1+ |
| 1998 04 20 | 704 | 1.5+ | 0.3− | 2001 02 11 | 209 | 1.3+ | 0.5+ | 2006 10 29 | G96 | 0.1+ | 0.3+ |
| 1998 04 20 | 704 | 0.9+ | 0.7− | 2001 02 11 | 209 | 1.1+ | 0.5+ | 2006 10 30 | G96 | 0.5+ | 0.0 |
| 1998 04 20 | 704 | (2.1+ | 0.3+) | 2001 02 11 | 209 | 0.4− | 0.5+ | 2006 10 30 | G96 | 0.2+ | 0.1− |
| 1998 04 22 | 704 | (2.0+ | 1.5+) | 2002 08 29 | 644 | 0.3+ | 0.5+ | 2006 10 30 | G96 | 0.7+ | 0.0 |
| 1998 04 22 | 704 | 0.2+ | 0.8− | 2002 08 29 | 644 | 0.3+ | 0.8+ | 2006 10 30 | G96 | 0.3+ | 0.1− |
| 1998 04 22 | 704 | 1.5− | 0.4+ | 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1998 04 22 | 704 | 0.3+ | 1.2+ | 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 1998 04 24 | 691 | 0.3− | 0.2− | 2002 09 15 | 644 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 1998 04 24 | 691 | 0.7− | 0.4− | 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.5− |
| 1998 04 24 | 691 | 0.5− | 0.4− | 2004 01 13 | 691 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 1998 05 01 | 691 | 1.0− | 0.5− | 2004 01 13 | 691 | 1.0+ | 1.3− | 2006 11 21 | G96 | 0.7+ | 0.4− |
| 1998 05 01 | 691 | 1.0− | 0.4− | 2004 01 13 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.5− |

**(136889)∗ 1998 HR$_{17}$**

Discovered 1998 Apr. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.54066 | | (2000.0) | | −0.65651368 | −0.75379517 |
| $n$ | 0.18245027 | $\omega$ | 139.51782 | | +0.63482768 | −0.53210795 |
| $a$ | 3.0787402 | $\Omega$ | 351.38684 | | +0.40741086 | −0.38555671 |
| $e$ | 0.1749566 | $i$ | 10.76605 | | | |
| $P$ | 5.40 | $H$ | 14.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 809 | 0.9+ | 1.2+ | 2003 01 18 | 644 | 0.2+ | 0.6+ | 2003 03 30 | 704 | 0.0 | 0.8+ |
| 1998 03 08 | 696 | 0.2+ | 0.1− | 2003 01 18 | 644 | 0.5+ | 0.7− | 2003 03 30 | 704 | 0.2− | 0.8+ |
| 1998 03 25 | 704 | 0.5+ | 0.3+ | 2003 01 18 | 644 | 0.2+ | 0.4+ | 2003 03 30 | 704 | 0.1− | 0.5− |
| 1998 03 25 | 704 | 1.2+ | 0.9+ | 2003 01 18 | 644 | 0.2+ | 0.3− | 2003 04 24 | 699 | 0.3+ | 0.2− |
| 1998 03 25 | 704 | 1.5− | 0.3+ | 2003 01 18 | 644 | 0.2+ | 0.3+ | 2003 04 24 | 699 | 0.6+ | 0.4− |
| 1998 03 25 | 704 | 0.4+ | 0.6+ | 2003 01 26 | 699 | 1.3− | 0.7+ | 2003 04 24 | 699 | 0.8+ | 0.8+ |
| 1998 03 25 | 704 | 0.2− | 0.7+ | 2003 01 26 | 699 | 0.1− | 0.3+ | 2003 04 24 | 699 | 0.8− | 0.8+ |
| 1998 04 01 | 704 | 0.1+ | 0.5− | 2003 01 26 | 699 | 0.7− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.2− |
| 1998 04 01 | 704 | 1.7− | 1.4+ | 2003 01 26 | 699 | 0.4− | 0.6− | 2006 08 28 | 703 | 0.5+ | 0.3+ |
| 1998 04 01 | 704 | 1.1+ | 0.7+ | 2003 01 26 | 608 | 0.0 | 0.9− | 2006 08 28 | 703 | 0.3− | 0.6+ |
| 1998 04 01 | 704 | 0.6− | 0.0 | 2003 01 26 | 608 | 0.1+ | 1.1− | 2006 08 28 | 703 | 1.1− | 1.1+ |
| 1998 04 18 | 704 | 0.5+ | 0.3+ | 2003 01 26 | 608 | 0.1− | 0.7− | 2006 09 16 | 644 | 0.0 | 0.2− |
| 1998 04 18 | 704 | 0.7+ | 0.3+ | 2003 01 27 | 704 | 0.1+ | 0.0 | 2006 09 16 | 644 | 0.3− | 0.0 |
| 1998 04 18 | 704 | 0.9+ | 0.5+ | 2003 01 27 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 18 | 704 | 0.5− | 0.6+ | 2003 01 27 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 0.4+ | 1.0+ |
| 1998 04 19 | 704 | 0.0 | 0.8+ | 2003 01 27 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.8+ | 0.1+ |
| 1998 04 19 | 704 | 1.4+ | 0.9+ | 2003 01 27 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.8+ | 1.1+ |
| 1998 04 19 | 704 | 1.0+ | 0.2− | 2003 02 01 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.8+ | 0.9+ |
| 1998 04 19 | 704 | 0.6+ | 0.4+ | 2003 02 01 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 699 | 1.1+ | 1.2+ |
| 2001 08 22 | 704 | 0.2+ | 0.5− | 2003 02 01 | 704 | 0.7− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.6+ |
| 2001 08 22 | 704 | 0.6− | 0.5− | 2003 02 01 | 704 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2001 08 22 | 704 | 0.0 | 0.2− | 2003 02 01 | 704 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.5− | 0.5+ |
| 2001 08 22 | 704 | 0.7− | 0.8+ | 2003 02 01 | 608 | (1.6− | 1.5+) | 2006 09 25 | 704 | 0.3+ | 0.4+ |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2003 02 01 | 608 | (1.0− | 1.6+) | 2006 09 25 | 704 | (2.6− | 0.1−) |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2003 02 01 | 608 | (1.6− | 0.3+) | 2006 09 25 | 704 | 0.0 | 0.4+ |
| 2001 09 25 | 704 | 0.3− | 0.4− | 2003 02 04 | 699 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.2− | 0.9− |
| 2001 09 25 | 704 | 0.5− | 0.5+ | 2003 02 04 | 699 | 0.3− | 0.7+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2001 09 25 | 704 | 0.5− | 0.0 | 2003 02 04 | 699 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2001 10 13 | 699 | 0.2+ | 1.3− | 2003 02 04 | 699 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2001 10 13 | 699 | 0.5− | 0.3+ | 2003 02 04 | 704 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.0 | 0.2+ |
| 2001 10 13 | 699 | 0.8− | 0.3− | 2003 02 04 | 704 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.4+ | 0.5+ |
| 2001 10 13 | 699 | 0.7− | 0.7− | 2003 02 04 | 704 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.7+ | 0.0 |
| 2001 10 18 | 704 | 0.3− | 0.2+ | 2003 02 04 | 704 | 0.3− | 0.5− | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2001 10 18 | 704 | 0.3− | 0.5+ | 2003 02 04 | 704 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.5− | 0.2+ |
| 2001 10 18 | 704 | 0.2+ | 0.0 | 2003 02 25 | 608 | 1.3+ | 0.9+ | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2001 10 18 | 704 | 0.2+ | 0.4+ | 2003 02 25 | 608 | 1.1+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2001 10 18 | 704 | 0.0 | 0.5+ | 2003 02 25 | 608 | 1.1+ | 0.9+ | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2001 11 10 | 704 | (1.9− | 0.5−) | 2003 03 06 | 699 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.8− | 0.3− |
| 2001 11 10 | 704 | (2.5− | 0.9−) | 2003 03 06 | 699 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2001 11 10 | 704 | 1.3− | 0.3− | 2003 03 06 | 699 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 11 10 | 704 | 0.4+ | 0.1+ | 2003 03 06 | 699 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 11 11 | 644 | 0.0 | 0.3− | 2003 03 06 | 704 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2001 11 11 | 644 | 0.0 | 0.1− | 2003 03 06 | 704 | 0.2+ | 0.1− | 2006 10 17 | 703 | 1.0− | 0.2+ |
| 2001 11 11 | 644 | 0.1+ | 0.1− | 2003 03 06 | 704 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.7− | 0.5+ |
| 2001 11 12 | 704 | 0.2+ | 0.2− | 2003 03 06 | 704 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 2001 11 12 | 704 | 0.0 | 0.5− | 2003 03 06 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.1− | 0.6− | 2003 03 07 | 699 | 0.5+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2003 03 07 | 699 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.1+ | 0.3+ | 2003 03 07 | 699 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 11 20 | 699 | 0.8+ | 0.2− | 2003 03 07 | 699 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.9+ | 1.3+ |
| 2001 11 20 | 699 | 1.1+ | 0.0 | 2003 03 07 | 644 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 11 20 | 699 | 1.2+ | 1.1+ | 2003 03 07 | 644 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2001 11 20 | 699 | 0.0 | 0.4− | 2003 03 07 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2001 12 07 | 644 | 0.3+ | 0.3− | 2003 03 20 | 049 | 0.5− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 12 07 | 644 | 0.3+ | 0.2− | 2003 03 20 | 049 | 0.8− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 12 07 | 644 | 0.4+ | 0.5− | 2003 03 20 | 049 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2003 01 18 | 644 | 0.0 | 0.2− | 2003 03 30 | 704 | (2.2+ | 0.3+) | | | | |

**(136890)∗ 1998 HO$_{20}$ = 2001 UT$_{169}$**

Discovered 1998 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19331)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 237.06165 | | (2000.0) | | | |
| $n$ | 0.18729618 | $\omega$ | 131.80133 | | −0.92425530 | −0.37313578 |
| $a$ | 3.0254044 | $\Omega$ | 26.59157 | | +0.27432034 | −0.79620353 |
| $e$ | 0.2965298 | $i$ | 10.39382 | | +0.26551927 | −0.47626635 |
| $P$ | 5.26 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 691 | 0.6− | 0.1+ | 2002 11 23 | 644 | 0.3+ | 0.4+ | 2003 03 03 | 644 | 0.1− | 0.6+ |
| 1998 03 22 | 691 | 0.4− | 0.2− | 2002 12 06 | 704 | 0.2+ | 0.4+ | 2003 03 08 | 644 | 0.2+ | 0.1+ |
| 1998 03 22 | 691 | 0.8− | 1.1− | 2002 12 06 | 704 | 0.9− | 0.1− | 2003 03 08 | 644 | 0.3+ | 0.5+ |
| 1998 04 19 | 704 | 0.0 | 0.0 | 2002 12 06 | 704 | 0.5+ | 1.4+ | 2003 03 08 | 644 | 0.1+ | 0.2− |
| 1998 04 19 | 704 | 0.9+ | 0.3− | 2002 12 06 | 704 | 0.1+ | 0.6+ | 2003 03 12 | 704 | 0.7− | 0.4+ |
| 1998 04 19 | 704 | 0.5+ | 0.3+ | 2002 12 06 | 704 | 0.5+ | 0.5+ | 2003 03 12 | 704 | 0.7− | 0.5+ |
| 1998 04 19 | 704 | 0.1− | 0.3− | 2002 12 14 | 704 | 0.3+ | 0.3− | 2003 03 12 | 704 | 0.7− | 0.2+ |
| 1998 04 20 | 704 | 0.1− | 0.0 | 2002 12 14 | 704 | 0.2− | 0.5+ | 2003 03 12 | 704 | 0.5− | 0.1− |
| 1998 04 20 | 704 | 0.3− | 0.3+ | 2002 12 14 | 704 | 0.2− | 1.1− | 2003 03 12 | 704 | 1.1− | 0.3+ |
| 1998 04 20 | 704 | 0.1− | 0.1+ | 2002 12 14 | 704 | 0.2+ | 0.1+ | 2003 03 25 | 704 | (0.3− | 1.6+) |
| 1998 04 20 | 704 | 0.1+ | 0.7− | 2002 12 14 | 704 | 0.2+ | 0.1− | 2003 03 25 | 704 | (0.3− | 1.5+) |
| 1998 04 20 | 691 | 0.5+ | 0.9− | 2003 01 07 | 704 | (2.1+ | 0.2−) | 2003 03 25 | 704 | (0.3− | 2.0+) |
| 1998 04 20 | 704 | (2.3− | 0.4+) | 2003 01 07 | 704 | (1.9+ | 0.2−) | 2003 03 25 | 704 | (0.3− | 2.2+) |
| 1998 04 20 | 691 | 0.0 | 0.2− | 2003 01 07 | 704 | (1.9+ | 0.2−) | 2003 03 25 | 704 | (0.5− | 1.6+) |
| 1998 04 20 | 691 | 0.2+ | 0.3− | 2003 01 10 | 704 | 0.0 | 0.1+ | 2003 03 31 | 704 | 0.1+ | 0.1− |
| 1998 04 22 | 704 | 0.7− | 0.5− | 2003 01 10 | 704 | 0.2− | 0.2+ | 2003 03 31 | 704 | 1.3+ | 0.1+ |
| 1998 04 22 | 704 | 1.2− | 0.5+ | 2003 01 10 | 704 | 0.1+ | 0.5+ | 2003 03 31 | 704 | 0.3+ | 0.3+ |
| 1998 04 22 | 704 | 0.1− | 0.1− | 2003 01 10 | 704 | 0.3+ | 0.7+ | 2003 03 31 | 704 | 0.6+ | 0.2− |
| 1998 04 22 | 704 | 0.2− | 0.3+ | 2003 01 10 | 644 | 0.2− | 0.2− | 2003 03 31 | 704 | 0.7+ | 0.5+ |
| 1998 04 22 | 704 | 0.1− | 0.5+ | 2003 01 10 | 644 | 0.2− | 0.2− | 2003 04 03 | 704 | 0.5− | 0.2+ |
| 2001 10 11 | 644 | 0.2− | 0.1− | 2003 01 10 | 644 | 0.0 | 0.1+ | 2003 04 03 | 704 | 0.1− | 0.1+ |
| 2001 10 11 | 644 | 0.0 | 0.2+ | 2003 01 24 | 644 | 0.1− | 0.3− | 2003 04 03 | 704 | 0.2− | 0.3+ |
| 2001 10 11 | 644 | 0.0 | 0.1+ | 2003 01 24 | 644 | 0.3+ | 0.2− | 2003 04 03 | 704 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.2− | 0.4+ | 2003 01 24 | 644 | 0.1+ | 0.3− | 2003 04 24 | 704 | (0.0 | 2.4+) |
| 2001 10 21 | 704 | 0.2− | 0.2− | 2003 01 25 | 704 | 0.2− | 0.4− | 2003 04 24 | 704 | 1.0+ | 1.0+ |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2003 01 25 | 704 | 0.2− | 0.5− | 2003 04 24 | 704 | 0.0 | 0.6+ |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2003 01 25 | 704 | 0.3+ | 0.5− | 2003 04 24 | 704 | 0.3− | 0.8+ |
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2003 01 25 | 704 | 0.6+ | 0.6− | 2003 04 24 | 704 | 0.9+ | 1.2+ |
| 2001 10 25 | 704 | 0.4− | 1.0− | 2003 01 25 | 704 | 0.2+ | 0.8− | 2003 05 02 | 704 | 0.2+ | 0.3+ |
| 2001 10 25 | 704 | 0.1− | 0.3− | 2003 01 29 | 644 | 0.2− | 0.2− | 2003 05 02 | 704 | 0.3+ | 0.3+ |
| 2001 10 25 | 704 | 0.0 | 0.4− | 2003 01 29 | 644 | 0.0 | 0.1− | 2003 05 02 | 704 | 1.5+ | 0.8+ |
| 2001 11 12 | 691 | 0.2− | 0.4− | 2003 01 29 | 644 | 0.7+ | 0.0 | 2003 05 02 | 704 | 0.2− | 1.0+ |
| 2001 11 12 | 691 | 0.2− | 0.4− | 2003 02 01 | 644 | 0.5− | 0.0 | 2003 05 02 | 704 | (0.3+ | 1.9+) |
| 2001 11 12 | 691 | 0.7+ | 0.1− | 2003 02 01 | 644 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.5+ | 0.5− | 2003 02 01 | 644 | 0.6− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2003 02 01 | 644 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.2− | 0.2− |
| 2001 11 19 | 704 | (1.0− | 2.6−) | 2003 02 01 | 644 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2001 11 19 | 704 | (1.1+ | 2.0−) | 2003 02 01 | 644 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.5+ |
| 2001 11 21 | 704 | 0.9+ | 0.1− | 2003 02 08 | 699 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 1.2+ | 1.2− | 2003 02 08 | 699 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.5+ | 0.8− | 2003 02 08 | 699 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.3+ | 0.4− | 2003 02 08 | 699 | 0.6− | 0.0 | 2006 10 22 | G96 | 0.6+ | 0.1− |
| 2002 11 14 | 704 | (0.8+ | 2.0+) | 2003 02 26 | 704 | 0.4+ | 0.7− | 2006 10 22 | G96 | 0.6+ | 0.1− |
| 2002 11 14 | 704 | 0.7+ | 0.9+ | 2003 02 26 | 704 | 0.3+ | 1.4− | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2002 11 14 | 704 | 0.8− | 0.5+ | 2003 02 26 | 704 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.8+ | 0.5− |
| 2002 11 14 | 704 | 0.9+ | 0.2− | 2003 02 26 | 704 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.2+ |
| 2002 11 23 | 644 | 0.1+ | 0.1+ | 2003 03 03 | 644 | 0.1− | 0.6+ | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2002 11 23 | 644 | 0.4+ | 0.0 | 2003 03 03 | 644 | 0.1− | 0.7+ | | | | |

**(136891)∗ 1998 HK$_{23}$**

Discovered 1998 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.08699 | | (2000.0) | | | |
| $n$ | 0.29616018 | $\omega$ | 210.18058 | | −0.15038754 | +0.98723870 |
| $a$ | 2.2290421 | $\Omega$ | 51.22135 | | −0.89308254 | −0.11294033 |
| $e$ | 0.1543712 | $i$ | 3.85242 | | −0.42401316 | −0.11226859 |
| $P$ | 3.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.0 | 0.3− | 2001 03 19 | 704 | 0.5− | 0.2+ | 2003 12 27 | 704 | 0.2− | 0.6+ |
| 1998 03 20 | 704 | 0.6− | 0.2+ | 2001 03 19 | 704 | 0.1− | 0.8+ | 2003 12 27 | 704 | 0.8− | 1.0+ |
| 1998 03 20 | 704 | 0.6− | 0.6+ | 2001 03 19 | 704 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.5− |
| 1998 03 20 | 704 | (2.8− | 0.8+) | 2002 08 04 | G78 | 0.6+ | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.5− |
| 1998 03 20 | 704 | 1.9− | 1.1+ | 2002 08 04 | G78 | 0.6+ | 1.0+ | 2006 09 27 | G96 | 0.2+ | 0.6− |
| 1998 03 20 | 327 | 0.8− | 0.4− | 2002 08 04 | G78 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 1998 03 20 | 327 | 0.9− | 0.6− | 2002 08 14 | 704 | (3.5+ | 0.2−) | 2006 11 01 | G96 | 0.0 | 0.6− |
| 1998 03 20 | 327 | 1.1− | 1.3− | 2002 08 14 | 704 | (3.3+ | 0.7−) | 2006 11 01 | G96 | 0.2− | 0.6− |
| 1998 03 20 | 327 | 0.2− | 0.8− | 2002 08 14 | 704 | (3.9+ | 1.2−) | 2006 11 01 | G96 | 0.0 | 0.7− |
| 1998 03 22 | 704 | 1.7− | 1.2+ | 2002 08 14 | 704 | (3.4+ | 1.8−) | 2006 11 01 | G96 | 0.2− | 0.6− |
| 1998 03 22 | 704 | 1.5+ | 1.9− | 2002 08 16 | 608 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 1998 03 22 | 704 | 1.7− | 0.5+ | 2002 08 16 | 608 | 0.2− | 0.5− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 1998 03 22 | 704 | 1.3− | 0.6+ | 2002 08 16 | 608 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.4+ | 0.3− |
| 1998 03 22 | 704 | (6.9− | 1.8+) | 2002 09 05 | 704 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.8− | 0.2− |
| 1998 03 24 | 699 | 1.3− | 0.4+ | 2002 09 05 | 704 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.3− |
| 1998 03 24 | 699 | 0.0 | 0.6− | 2002 09 05 | 704 | 0.6− | 1.1+ | 2006 11 15 | 703 | 0.0 | 1.4− |
| 1998 03 24 | 699 | 1.2+ | 0.2+ | 2002 09 05 | 704 | 0.1− | 0.8+ | 2006 11 15 | 703 | 0.1− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.2+ | 0.2+ | 2002 09 05 | 704 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2− |
| 1998 03 25 | 704 | 0.7− | 0.8+ | 2002 09 06 | 704 | 0.5+ | 0.8+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 1998 03 25 | 704 | 0.2+ | 1.1− | 2002 09 06 | 704 | 0.5+ | 1.1+ | 2006 11 16 | 691 | 0.3+ | 0.1− |
| 1998 03 25 | 704 | 0.4− | 0.3− | 2002 09 06 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 691 | 0.3+ | 0.0 |
| 1998 03 25 | 704 | 0.1+ | 1.9+ | 2002 09 09 | 608 | 0.5− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 1998 04 19 | 704 | 0.8+ | 0.1+ | 2002 09 09 | 608 | 0.6− | 0.5− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 1998 04 19 | 704 | 1.0+ | 1.4+ | 2002 09 09 | 608 | 0.7− | 0.7− | 2006 11 21 | 704 | 0.5− | 0.5− |
| 1998 04 19 | 704 | 0.3+ | 0.1− | 2002 09 13 | 704 | 0.6− | 0.0 | 2006 11 21 | 704 | 0.7− | 0.6+ |
| 1998 04 19 | 704 | 0.6+ | 0.5− | 2002 09 13 | 704 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.2− | 1.0− |
| 1998 04 20 | 704 | 1.9+ | 0.5− | 2002 09 13 | 704 | 0.9− | 0.1+ | 2006 11 22 | 704 | 1.4+ | 0.0 |
| 1998 04 20 | 704 | 1.1+ | 0.4− | 2002 09 13 | 704 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.1− |
| 1998 04 20 | 704 | 0.3+ | 0.9− | 2002 09 14 | 608 | 0.7− | 0.5− | 2006 11 22 | 704 | (2.4+ | 1.1−) |
| 1998 04 20 | 704 | 0.2+ | 1.4− | 2002 09 14 | 608 | 0.5− | 0.7− | 2006 11 22 | 704 | 0.7− | 0.1− |
| 1998 04 20 | 704 | 0.7− | 0.0 | 2002 09 14 | 608 | 0.4− | 0.7− | 2006 11 24 | 691 | 1.3− | 0.6− |
| 1998 04 22 | 704 | 0.0 | 0.5+ | 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 11 24 | 691 | 0.7− | 0.3− |
| 1998 04 22 | 704 | 1.8+ | 0.8− | 2002 09 15 | 644 | 0.5− | 0.3+ | 2006 11 24 | 691 | 0.5− | 0.8+ |
| 1998 04 22 | 704 | 1.5+ | 0.6+ | 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 11 26 | H07 | 0.1+ | 0.1− |
| 1998 04 22 | 704 | (2.2+ | 1.7+) | 2002 09 16 | 644 | 0.1+ | 0.0 | 2006 11 26 | H07 | 0.1− | 0.1− |
| 1998 04 22 | 704 | (2.7+ | 0.5+) | 2002 09 16 | 644 | 0.0 | 0.3− | 2006 11 26 | H07 | 0.5+ | 0.2+ |
| 2001 02 02 | 699 | (1.5+ | 0.6+) | 2002 09 16 | 644 | 0.2+ | 0.2− | 2006 11 27 | H07 | 0.0 | 1.0+ |
| 2001 02 02 | 699 | 0.8+ | 0.6+ | 2002 10 01 | 608 | 0.4+ | 0.5− | 2006 11 27 | H07 | 0.8+ | 1.8− |
| 2001 02 02 | 699 | 0.1− | 0.2+ | 2002 10 01 | 608 | (0.2− | 1.6−) | 2006 11 27 | H07 | 1.3+ | 0.5+ |
| 2001 02 02 | 699 | 0.5+ | 0.3− | 2002 10 01 | 608 | 0.0 | 0.6− | 2006 11 27 | H07 | 0.1− | 0.7+ |
| 2001 02 03 | 704 | 0.3+ | 0.8+ | 2002 10 03 | 704 | 1.0+ | 0.3+ | 2006 11 27 | H07 | 1.2+ | 0.6+ |
| 2001 02 03 | 704 | 0.5− | 0.2− | 2002 10 03 | 704 | 0.3+ | 0.3+ | 2006 11 27 | H07 | 0.5− | 0.4− |
| 2001 02 03 | 704 | 0.5+ | 1.2+ | 2002 10 03 | 704 | 0.2− | 1.5+ | 2006 11 27 | H07 | 0.8− | 0.1− |
| 2001 02 03 | 704 | 0.8− | 0.4+ | 2002 11 04 | 644 | 0.4+ | 0.7+ | 2006 11 27 | H07 | 0.0 | 1.1+ |
| 2001 02 03 | 704 | 0.4+ | 0.5+ | 2002 11 04 | 644 | 0.4+ | 0.8+ | 2006 11 28 | H07 | 1.0− | 0.2+ |
| 2001 02 17 | 704 | 1.4− | 0.8+ | 2002 11 04 | 644 | 0.2+ | 0.7+ | 2006 11 28 | H07 | 0.3+ | 0.8− |
| 2001 02 17 | 704 | 1.0+ | 0.8− | 2003 12 18 | 704 | 1.5+ | 0.1− | 2006 11 28 | H07 | 0.5+ | 0.3− |
| 2001 02 17 | 704 | 0.6− | 0.9− | 2003 12 18 | 704 | 0.3+ | 0.2− | 2006 12 01 | H07 | 0.8+ | 0.2− |
| 2001 02 17 | 704 | 0.4− | 0.2+ | 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 12 01 | H07 | 0.1− | 0.2+ |
| 2001 02 17 | 704 | 0.2+ | 0.4− | 2003 12 22 | 704 | 0.9+ | 0.3+ | 2006 12 01 | H07 | 0.5+ | 0.2+ |
| 2001 03 19 | 704 | 1.3+ | 0.8+ | 2003 12 22 | 704 | 0.3+ | 0.8+ | 2006 12 01 | 704 | 0.2+ | 0.6+ |
| 2001 03 19 | 704 | 0.8+ | 0.1− | 2003 12 22 | 704 | 0.3+ | 0.6+ | 2006 12 01 | 704 | 1.0+ | 0.4+ |
| 2001 03 19 | 704 | 0.6+ | 0.6+ | 2003 12 22 | 704 | 0.8+ | 1.1+ | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.2− | 0.0 | 2003 12 27 | 704 | 1.1− | 0.1+ | | | | |
| 2001 03 19 | 704 | 0.1− | 0.7+ | 2003 12 27 | 704 | 0.7+ | 0.6+ | | | | |

**(136892)∗ 1998 HD$_{24}$ = 2005 LQ$_{31}$**

Discovered 1998 Apr. 28 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 88661)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.33910 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28913764 | $\omega$ | 270.31312 | | −0.14481274 | −0.98935125 | |
| $a$ | 2.2649900 | $\Omega$ | 188.05751 | | +0.94421521 | −0.13376284 | |
| $e$ | 0.0382751 | $i$ | 5.98190 | | +0.29578185 | −0.05737254 | |
| $P$ | 3.41 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 691 | 0.3+ | 0.2+ | 2002 08 03 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 1998 04 20 | 691 | 0.2+ | 0.2+ | 2002 08 03 | 644 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 1998 04 20 | 688 | 0.1+ | 0.0 | 2002 08 03 | 644 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 1998 04 20 | 691 | 0.1+ | 0.3+ | 2003 12 01 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 1998 04 20 | 688 | 0.1− | 0.3− | 2003 12 01 | 704 | 0.6+ | 1.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1998 04 20 | 688 | 0.0 | 0.4− | 2003 12 01 | 704 | (0.0 | 2.1+) | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1998 04 28 | 691 | 1.4− | 0.3+ | 2003 12 01 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.3− |
| 1998 04 28 | 691 | 1.0− | 0.3+ | 2005 06 08 | 691 | 0.6− | 0.4− | 2006 10 22 | 691 | 0.6− | 0.1− |
| 1998 04 28 | 691 | 1.1− | 0.4+ | 2005 06 08 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.5− | 0.2− |
| 1998 04 29 | 691 | 1.5+ | 0.4− | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.8+ | 0.2+ |
| 1998 04 29 | 691 | 1.0+ | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.9+ | 0.1+ |
| 1998 04 29 | 691 | 0.3+ | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.7+ | 0.1+ |
| 1999 10 09 | 704 | 0.3+ | 0.3− | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.1+ |
| 1999 10 09 | 704 | 0.2+ | 0.5+ | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.5− | 0.1+ |
| 1999 10 09 | 704 | 0.5− | 0.1+ | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.4− | 0.6+ |
| 1999 10 09 | 704 | 0.1+ | 1.0− | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.5+ | 0.6+ | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.5− | 0.2+ |
| 2001 03 02 | 699 | (0.7− | 2.6+) | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.3− | 0.4+ |
| 2001 03 02 | 699 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.8+ | 0.5+ |
| 2001 03 02 | 699 | 1.0+ | 0.9+ | 2006 07 21 | G96 | 0.4− | 0.6− | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2001 03 02 | 699 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.8+ | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2002 07 12 | 644 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 1.1− | 0.3− | 2006 11 13 | 703 | 0.4+ | 1.0− |
| 2002 07 12 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.7+ | 2006 11 13 | 703 | 0.1+ | 0.1− |
| 2002 07 12 | 644 | 0.1+ | 0.2− | 2006 09 30 | 703 | 1.2+ | 0.9+ | 2006 11 22 | G96 | 0.5− | 0.3+ |
| 2002 07 21 | 644 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.4+ |
| 2002 07 21 | 644 | 0.6− | 0.2− | 2006 10 18 | 691 | 0.0 | 0.6+ | 2006 11 22 | G96 | 0.5− | 0.2+ |
| 2002 07 21 | 644 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.5+ |

**(136893)∗ 1998 HK$_{25}$**

Discovered 1998 Apr. 18 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.29205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18921279 | $\omega$ | 23.80701 | | −0.33046064 | −0.94169836 | |
| $a$ | 3.0049394 | $\Omega$ | 85.53894 | | +0.85543308 | −0.32715370 | |
| $e$ | 0.1338571 | $i$ | 3.63714 | | +0.39878567 | −0.07857893 | |
| $P$ | 5.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 18 | 691 | 0.3− | 0.1− | 2001 12 10 | 691 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 1998 04 18 | 691 | 0.2− | 0.6− | 2001 12 10 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.2− |
| 1998 04 18 | 691 | 0.4− | 0.4− | 2001 12 10 | 691 | 0.2− | 0.5− | 2006 10 18 | 691 | 0.5+ | 0.2− |
| 1998 04 28 | 691 | 0.2+ | 0.6− | 2001 12 13 | 644 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 1998 04 28 | 691 | 0.2− | 0.4− | 2001 12 13 | 644 | 0.4− | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.3− |
| 1998 04 28 | 691 | 0.1− | 0.7− | 2001 12 13 | 644 | 0.9+ | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2001 11 14 | 691 | 0.2+ | 0.3− | 2003 03 11 | 644 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2001 11 14 | 691 | 0.3+ | 0.1− | 2003 03 11 | 644 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.6− |
| 2001 11 14 | 691 | 0.3+ | 0.1+ | 2003 03 11 | 644 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2003 03 25 | 644 | 0.1+ | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2003 03 25 | 644 | 0.2− | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.1− | 0.6+ | 2003 03 25 | 644 | 0.7+ | 1.0+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2001 11 21 | 704 | 0.8− | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.6− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.7− | 1.3+ | 2006 10 02 | G96 | 0.3+ | 0.2− | | | | |
| 2001 11 21 | 704 | 0.8− | 0.2+ | 2006 10 02 | G96 | (3.1− | 1.2−) | | | | |

**(136894)∗ 1998 HC$_{35}$**

Discovered 1998 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.76029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29177067 | $\omega$ | 143.99063 | | −0.85904526 | +0.50516268 | |
| $a$ | 2.2513428 | $\Omega$ | 66.55268 | | −0.48823068 | −0.75994031 | |
| $e$ | 0.1644187 | $i$ | 5.17664 | | −0.15385722 | −0.40902493 | |
| $P$ | 3.38 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.4− | 0.7− | 1998 05 16 | 704 | 1.3− | 1.0− | 2003 12 14 | 691 | 0.2+ | 0.0 |
| 1998 03 24 | 704 | 0.2+ | 1.6+ | 2001 01 19 | 704 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 1998 03 24 | 704 | 1.3− | 0.7− | 2001 01 19 | 704 | 0.9+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 1998 03 24 | 704 | 0.5− | 0.3− | 2001 01 19 | 704 | 0.7+ | 0.1− | 2006 10 02 | G96 | 0.5+ | 0.4− |
| 1998 03 24 | 704 | (1.5− | 2.5−) | 2001 01 19 | 704 | 0.1+ | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 1998 04 20 | 704 | 1.8+ | 0.0 | 2001 02 21 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.8+ | 0.0 |
| 1998 04 20 | 704 | 1.0+ | 0.3− | 2001 02 21 | 645 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 1998 04 20 | 704 | 2.0− | 0.6− | 2001 02 22 | 645 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 1998 04 20 | 704 | 0.7− | 1.0− | 2001 02 22 | 645 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1− | 0.5− |
| 1998 04 22 | 704 | 0.2− | 0.1− | 2003 11 24 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 1998 04 22 | 704 | 0.2+ | 0.2− | 2003 11 24 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 1998 04 22 | 704 | 0.4+ | 0.3− | 2003 11 24 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 1998 04 22 | 704 | 0.5+ | 0.4− | 2003 11 30 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.3− | 0.7− |
| 1998 04 22 | 704 | 0.7− | 0.5− | 2003 11 30 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.7− |
| 1998 05 16 | 704 | 0.5− | 0.7+ | 2003 11 30 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 16 | 704 | 1.8+ | 1.6− | 2003 12 14 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 1998 05 16 | 704 | 0.8− | 0.5− | 2003 12 14 | 691 | 0.1+ | 0.0 | | | | |

**(136895)∗ 1998 HP$_{38}$ = 2001 XZ$_{7}$**

Discovered 1998 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 34708)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.92551 | | (2000.0) | | +0.15112659 | −0.98113972 |
| $n$ | 0.18496304 | $\omega$ | 60.84879 | | +0.75349852 | +0.03541947 |
| $a$ | 3.0507931 | $\Omega$ | 21.48992 | | +0.63984431 | +0.19002714 |
| $e$ | 0.1151684 | $i$ | 19.20762 | | | |
| $P$ | 5.33 | $H$ | 14.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.0− | 1.7+ | 2003 02 27 | 608 | 0.2+ | 0.7− | 2006 10 04 | G96 | 0.3− | 0.3− |
| 1998 03 29 | 704 | (1.1− | 2.1+) | 2003 02 28 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1998 03 29 | 704 | (0.0 | 2.3+) | 2003 02 28 | 704 | 0.2+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 1998 03 29 | 704 | (1.6+ | 2.6+) | 2003 02 28 | 704 | 1.0+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1998 03 29 | 704 | 0.2+ | 0.9+ | 2003 03 23 | 645 | 0.1− | 0.0 | 2006 10 13 | 691 | 0.0 | 0.1− |
| 1998 04 01 | 704 | 0.2+ | 0.7− | 2003 03 23 | 645 | 0.1− | 0.1− | 2006 10 13 | 691 | 0.3− | 0.0 |
| 1998 04 01 | 704 | 1.3+ | 0.6− | 2003 03 25 | 644 | 0.5+ | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.1− |
| 1998 04 01 | 704 | 1.0+ | 0.5− | 2003 03 25 | 644 | 0.3+ | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 1998 04 01 | 704 | 1.3− | 0.3− | 2003 03 25 | 644 | 0.6+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 1998 04 20 | 704 | (1.5− | 2.2−) | 2003 03 25 | 644 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1998 04 20 | 704 | (1.9+ | 2.3−) | 2003 03 25 | 644 | 0.7+ | 0.4+ | 2006 10 21 | 704 | 0.5+ | 0.0 |
| 1998 04 20 | 704 | (2.0+ | 0.2+) | 2003 03 25 | 644 | 0.6+ | 0.6+ | 2006 10 21 | 704 | 0.3− | 0.1+ |
| 1998 04 20 | 704 | 0.7− | 0.7− | 2003 03 27 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 704 | 0.4+ | 0.5− |
| 1998 04 20 | 704 | (5.1− | 0.1−) | 2003 03 27 | 704 | 0.1− | 0.9− | 2006 10 21 | 704 | 0.5− | 0.1+ |
| 1998 04 21 | 704 | 1.7− | 0.3− | 2003 03 27 | 704 | 0.2+ | 0.0 | 2006 10 21 | 704 | 0.4+ | 0.2− |
| 1998 04 21 | 704 | 1.2+ | 0.5− | 2003 03 27 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1998 04 21 | 704 | 0.1− | 0.5− | 2003 03 27 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1998 04 21 | 704 | 0.9− | 0.8− | 2003 04 01 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 1998 04 21 | 704 | 1.3− | 1.0− | 2003 04 01 | 704 | 0.7+ | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 1998 04 22 | 704 | 1.3− | 0.8+ | 2003 04 01 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 1998 04 22 | 704 | 0.5− | 0.8+ | 2003 04 01 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1998 04 22 | 704 | 0.3+ | 1.7− | 2003 04 01 | 704 | (0.5+ | 2.4+) | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 1998 04 22 | 704 | 0.2+ | 0.3+ | 2003 04 01 | 704 | 0.7− | 0.3+ | 2006 10 22 | 644 | 0.5+ | 0.1+ |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2003 04 01 | 704 | 0.9− | 0.6+ | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2001 09 25 | 704 | 1.2− | 1.0− | 2003 04 01 | 704 | 1.0+ | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.5− |
| 2001 09 25 | 704 | 1.0− | 0.2− | 2003 04 01 | 704 | 0.1+ | 1.0+ | 2006 10 27 | 703 | 0.2+ | 0.7− |
| 2001 09 25 | 704 | 0.6− | 0.1− | 2005 07 05 | E12 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.7− |
| 2001 12 08 | 704 | 0.9− | 0.3+ | 2005 07 05 | E12 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.4− | 0.6− |
| 2001 12 08 | 704 | 0.2+ | 0.5− | 2005 07 05 | E12 | 0.4− | 1.3+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 12 08 | 704 | 0.2− | 0.2+ | 2005 07 05 | E12 | 1.2− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2001 12 08 | 704 | 0.5− | 0.1− | 2005 08 05 | E12 | 0.5+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2001 12 10 | 704 | 0.6+ | 0.7+ | 2005 08 05 | E12 | 0.7+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.5− |
| 2001 12 10 | 704 | 1.1+ | 0.3+ | 2005 08 05 | E12 | 0.6− | 0.8+ | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2001 12 10 | 704 | 0.5+ | 0.7+ | 2005 08 05 | E12 | 0.1− | 0.8+ | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2001 12 10 | 704 | (1.9+ | 1.2+) | 2006 08 30 | 704 | 0.8− | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2001 12 10 | 704 | 0.9+ | 0.9+ | 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2001 12 11 | 704 | 0.5+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.3+ |
| 2001 12 11 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.3− | 0.5− | 2006 11 28 | 704 | 0.4+ | 0.8+ |
| 2001 12 11 | 704 | 0.6+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2001 12 11 | 704 | (2.2+ | 1.1+) | 2006 09 25 | 704 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.5+ | 0.8+ | 2006 09 25 | 704 | 0.5+ | 0.6+ | 2006 11 28 | 704 | 1.1− | 0.3+ |
| 2002 01 06 | 704 | 0.4− | 0.8− | 2006 09 25 | 704 | 1.0− | 0.3+ | 2006 12 01 | 704 | 0.3+ | 0.1− |
| 2002 01 06 | 704 | 0.4− | 1.0− | 2006 09 25 | 704 | 0.4+ | 0.2− | 2006 12 01 | 704 | 0.9+ | 0.8+ |
| 2002 01 06 | 704 | (0.5− | 1.7−) | 2006 09 25 | 704 | 0.2− | 0.5+ | 2006 12 01 | 704 | 0.3+ | 0.2+ |
| 2002 01 06 | 704 | (0.1+ | 1.6−) | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 12 01 | 704 | 0.1+ | 0.2− |
| 2003 02 27 | 608 | 0.3− | 1.0− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.2− |
| 2003 02 27 | 608 | 0.6+ | 1.0− | 2006 10 04 | G96 | 0.3+ | 0.3− | | | | |

**(136896)∗ 1998 HO$_{39}$ = 2001 TK$_{114}$**

Discovered 1998 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19332)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 257.42316 | | (2000.0) | | −0.66300007 | −0.74093851 |
| $n$ | 0.18180051 | $\omega$ | 105.45179 | | +0.56429067 | −0.58851664 |
| $a$ | 3.0860715 | $\Omega$ | 27.02622 | | +0.49194201 | −0.32350933 |
| $e$ | 0.1397529 | $i$ | 13.61487 | | | |
| $P$ | 5.42 | $H$ | 14.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.4− | 0.4− | 2001 11 24 | 704 | 1.4+ | 0.5+ | 2003 04 06 | 699 | 0.2− | 0.2− |
| 1998 03 25 | 704 | 0.2+ | 0.1+ | 2001 11 24 | 704 | 0.9+ | 0.1− | 2003 04 06 | 699 | 0.3− | 0.2+ |
| 1998 03 25 | 704 | 0.8+ | 0.2+ | 2001 11 24 | 704 | 0.3+ | 0.7+ | 2003 04 06 | 699 | 0.3− | 0.5+ |
| 1998 03 25 | 704 | 0.0 | 0.1− | 2001 11 24 | 704 | 1.1+ | 0.3+ | 2003 04 06 | 699 | 0.4− | 0.0 |
| 1998 03 25 | 704 | (3.2− | 0.2+) | 2001 11 24 | 704 | 1.0+ | 0.6+ | 2003 04 09 | 608 | 0.6+ | 0.7+ |
| 1998 03 29 | 704 | 0.2− | 0.6+ | 2001 12 10 | 704 | 0.9+ | 0.3+ | 2003 04 09 | 608 | 1.1+ | 0.5+ |
| 1998 03 29 | 704 | 0.6+ | 0.4+ | 2001 12 10 | 704 | 1.0+ | 0.2− | 2003 04 09 | 608 | 0.5+ | 0.9+ |
| 1998 03 29 | 704 | 0.6+ | 0.3+ | 2001 12 10 | 704 | 0.3− | 0.2+ | 2003 05 02 | 704 | 0.2− | 1.0+ |
| 1998 03 29 | 704 | 0.6− | 0.1+ | 2001 12 10 | 704 | 0.3+ | 0.2− | 2003 05 02 | 704 | 0.6+ | 0.1+ |
| 1998 03 29 | 704 | 0.5+ | 0.1− | 2001 12 10 | 704 | 1.5− | 1.4+ | 2003 05 02 | 704 | 0.3− | 0.9+ |
| 1998 04 20 | 704 | 0.1+ | 0.5+ | 2001 12 18 | 699 | 0.4− | 0.1− | 2003 05 02 | 704 | 1.0+ | 0.0 |
| 1998 04 20 | 704 | 1.1− | 1.2+ | 2001 12 18 | 699 | 0.0 | 0.8− | 2003 05 05 | 704 | 1.3− | 1.4+ |
| 1998 04 20 | 704 | 2.0+ | 0.7+ | 2001 12 18 | 699 | 0.2+ | 0.1− | 2003 05 05 | 704 | 0.2− | 1.4+ |
| 1998 04 20 | 704 | 0.3− | 0.3+ | 2001 12 18 | 699 | 0.2− | 0.1− | 2003 05 05 | 704 | 0.2+ | 0.1− |
| 1998 04 20 | 704 | 1.1− | 1.9− | 2002 02 06 | 704 | 1.0+ | 1.2− | 2003 05 05 | 704 | 0.0 | 0.7+ |
| 1998 04 21 | 704 | 0.5+ | 1.3− | 2002 02 06 | 704 | 1.3+ | 0.8− | 2003 05 05 | 704 | 1.3− | 1.1+ |
| 1998 04 21 | 704 | 1.2+ | 0.7− | 2002 02 06 | 704 | (1.7+ | 0.3−) | 2005 07 03 | 644 | 0.0 | 1.0+ |
| 1998 04 21 | 704 | 0.6− | 1.7+ | 2002 02 06 | 704 | 0.0 | 0.3− | 2005 07 03 | 644 | 0.1+ | 1.2+ |
| 1998 04 21 | 704 | 0.5− | 1.5− | 2003 01 26 | 704 | 1.1+ | 0.7+ | 2005 07 03 | 644 | 0.2− | 1.1+ |
| 1998 04 21 | 704 | 0.2− | 0.3− | 2003 01 26 | 704 | 1.3+ | 0.6− | 2005 07 03 | 644 | 0.1− | 1.4+ |
| 1998 04 22 | 704 | 0.1+ | 1.6− | 2003 01 26 | 704 | 1.2+ | 0.6− | 2005 07 03 | 644 | 0.0 | 1.1+ |
| 1998 04 22 | 704 | 0.7− | 0.8− | 2003 01 26 | 704 | 0.2+ | 0.6+ | 2005 07 03 | 644 | 0.3− | 1.0+ |
| 1998 04 22 | 704 | 0.8+ | 1.1− | 2003 02 02 | 699 | 0.2− | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.4+ |
| 1998 04 22 | 704 | 0.6− | 0.2+ | 2003 02 02 | 699 | 0.3+ | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.4+ |
| 1998 04 22 | 704 | 0.7− | 0.6− | 2003 02 02 | 699 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.3− | 0.2+ |
| 1998 05 16 | 704 | 1.2− | 1.9+ | 2003 02 02 | 699 | 0.2− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.7+ |
| 1998 05 16 | 704 | 1.5− | 1.0+ | 2003 02 02 | 704 | 1.2− | 0.3− | 2006 09 16 | 644 | 0.0 | 0.5+ |
| 1998 05 16 | 704 | 1.4− | 0.2+ | 2003 02 02 | 704 | 0.4− | 0.2− | 2006 09 16 | 644 | 0.5− | 0.6+ |
| 1998 05 16 | 704 | 0.5+ | 1.6+ | 2003 02 02 | 704 | 1.1− | 0.8− | 2006 09 17 | 691 | 0.4− | 0.3+ |
| 2001 08 28 | 644 | 0.7− | 0.4+ | 2003 02 07 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 691 | 0.5− | 0.4+ |
| 2001 08 28 | 644 | 0.7− | 0.1+ | 2003 02 07 | 704 | 0.0 | 0.6+ | 2006 09 17 | 691 | 0.6− | 0.4+ |
| 2001 08 28 | 644 | 0.9− | 0.1+ | 2003 02 07 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.5+ |
| 2001 09 24 | 704 | 0.1+ | 0.6− | 2003 02 07 | 704 | (0.1− | 1.5+) | 2006 09 20 | 644 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | 0.2+ | 0.4+ | 2003 03 01 | 608 | 0.4− | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2001 09 24 | 704 | 0.0 | 0.2+ | 2003 03 01 | 608 | 0.0 | 0.3+ | 2006 09 27 | 704 | 1.3− | 0.3+ |
| 2001 09 24 | 704 | 0.0 | 0.5+ | 2003 03 01 | 608 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.8− | 0.6+ |
| 2001 09 24 | 704 | 0.1+ | 0.8+ | 2003 03 08 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.6+ |
| 2001 10 14 | 704 | 1.3+ | 0.3− | 2003 03 08 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 704 | 0.9− | 0.4+ |
| 2001 10 14 | 704 | 0.8+ | 0.0 | 2003 03 08 | 704 | 1.0+ | 0.4+ | 2006 09 27 | 704 | 0.6− | 1.4+ |
| 2001 10 14 | 704 | 0.5+ | 0.1+ | 2003 03 08 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.6+ |
| 2001 10 14 | 704 | 0.1− | 0.7− | 2003 03 08 | 704 | 0.5+ | 0.3− | 2006 09 27 | 691 | 0.3− | 0.4+ |
| 2001 10 18 | 704 | 0.4+ | 1.2+ | 2003 03 12 | 704 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2001 10 18 | 704 | 0.8− | 1.1− | 2003 03 12 | 704 | 0.4− | 0.0 | 2006 10 15 | 703 | 0.8− | 0.6+ |
| 2001 10 18 | 704 | 0.1+ | 0.3+ | 2003 03 12 | 704 | 0.6− | 1.0− | 2006 10 15 | 703 | 0.5− | 0.7− |
| 2001 10 18 | 704 | 0.6+ | 1.1− | 2003 03 12 | 704 | 0.2− | 0.8− | 2006 10 15 | 703 | 0.8− | 0.3− |
| 2001 10 21 | 704 | 0.8+ | 0.0 | 2003 03 23 | 644 | 0.2+ | 0.0 | 2006 10 15 | 703 | 0.6− | 0.9+ |
| 2001 10 21 | 704 | 0.5+ | 0.7− | 2003 03 23 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2003 03 23 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 10 21 | 704 | 0.4+ | 0.0 | 2003 03 26 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2003 03 26 | 704 | 0.6+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2001 11 10 | 644 | 0.1+ | 0.1− | 2003 03 26 | 704 | 0.7+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2001 11 10 | 644 | 0.2+ | 0.2− | 2003 03 26 | 704 | 0.8+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2001 11 10 | 644 | 0.4+ | 0.1+ | 2003 03 26 | 704 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.3+ |
| 2001 11 11 | 699 | 0.2− | 0.1− | 2003 03 30 | 644 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 11 11 | 699 | 0.8− | 0.3+ | 2003 03 30 | 644 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 11 11 | 699 | 0.5− | 0.3− | 2003 03 30 | 644 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 11 11 | 699 | 0.6− | 0.1− | 2003 03 31 | 704 | 0.2+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.0 | 2003 03 31 | 704 | 0.0 | 0.7+ | 2006 11 06 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2003 03 31 | 704 | 0.6+ | 0.4+ | 2006 11 06 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 12 | 704 | 0.0 | 0.1− | 2003 03 31 | 704 | 0.4− | 0.5+ | 2006 11 06 | 644 | 0.2− | 0.2+ | | |
| 2001 11 12 | 704 | 0.3+ | 0.5+ | 2003 03 31 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.0 | | |
| 2001 11 12 | 704 | 0.1+ | 0.3+ | 2003 04 03 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.1− | | |
| 2001 11 17 | 644 | 0.0 | 0.9− | 2003 04 03 | 704 | 0.7+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.1+ | | |
| 2001 11 17 | 644 | 0.1− | 1.1− | 2003 04 03 | 704 | 0.8+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.0 | | |
| 2001 11 17 | 644 | 0.1− | 1.4− | 2003 04 03 | 704 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.3− | | |
| 2001 11 19 | 699 | 0.4− | 0.1+ | 2003 04 03 | 704 | 1.0+ | 0.1+ | 2006 11 14 | G96 | 0.5− | 0.3− | | |
| 2001 11 19 | 699 | 0.4− | 0.5− | 2003 04 03 | 704 | 1.2+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.1− | | |
| 2001 11 19 | 699 | 0.2− | 0.1+ | 2003 04 03 | 704 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.1− | | |
| 2001 11 19 | 699 | 0.0 | 0.4− | 2003 04 03 | 704 | 1.1+ | 0.5+ | 2006 11 27 | G96 | 0.8+ | 0.5− | | |
| 2001 11 21 | 704 | 0.2+ | 0.8− | 2003 04 03 | 704 | 0.7+ | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.6− | | |
| 2001 11 21 | 704 | 0.2− | 0.5− | 2003 04 03 | 704 | 0.5+ | 0.9+ | 2006 11 27 | G96 | 0.7+ | 0.4− | | |
| 2001 11 21 | 704 | 0.4− | 0.1− | 2003 04 04 | 608 | 0.1− | 0.7+ | 2006 11 27 | G96 | 0.5+ | 0.3− | | |
| 2001 11 21 | 704 | 0.6− | 0.6− | 2003 04 04 | 608 | 0.0 | 0.1+ | | | | | | |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2003 04 04 | 608 | (1.5− | 1.2−) | | | | | | |

**(136897)∗ 1998 HJ$_{41}$**

Discovered 1998 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.39036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.61917005 | $\omega$ | 120.08951 | | +0.78161977 | +0.52822656 | |
| $a$ | 1.3633146 | $\Omega$ | 211.90654 | | −0.49753620 | +0.84873542 | |
| $e$ | 0.1247430 | $i$ | 38.87675 | | +0.37620243 | +0.02499789 | |
| $P$ | 1.59 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 704 | (2.5+ | 2.3−) | 1998 05 26 | 557 | 0.7+ | 0.1+ | 2006 04 30 | 198 | 0.3− | 0.6− | | |
| 1998 04 28 | 704 | 0.3+ | 1.8− | 1998 05 26 | 557 | 0.2− | 0.5− | 2006 05 11 | A13 | (0.6+ | 1.8+) | | |
| 1998 04 28 | 704 | 1.0+ | 1.6− | 1998 05 29 | 118 | 1.3− | 0.4+ | 2006 05 11 | A13 | 0.1− | 1.3+ | | |
| 1998 04 28 | 704 | 1.1+ | 0.2− | 1998 05 29 | 118 | 0.6− | 0.4+ | 2006 05 11 | A13 | (0.0 | 1.6+) | | |
| 1998 04 28 | 704 | 0.9+ | 0.8− | 1998 05 29 | 118 | 1.0− | 0.1− | 2006 05 14 | A13 | 0.2− | 0.8+ | | |
| 1998 04 30 | 046 | 0.7− | 1.2− | 1998 05 31 | 557 | 0.2− | 0.7− | 2006 05 14 | A13 | (0.0 | 1.6+) | | |
| 1998 04 30 | 046 | 0.1+ | 0.0 | 1998 05 31 | 557 | 0.2− | 0.4− | 2006 05 14 | A13 | 0.7− | 0.7+ | | |
| 1998 04 30 | 046 | 0.6+ | 1.2− | 1998 06 01 | 557 | 0.1+ | 1.0− | 2006 05 14 | A13 | 0.0 | 1.0+ | | |
| 1998 04 30 | 557 | 0.3− | 0.5+ | 1998 06 02 | 557 | 0.5− | 0.3+ | 2006 05 18 | A13 | 0.1+ | 1.4+ | | |
| 1998 04 30 | 557 | 0.0 | 0.5− | 1998 06 02 | 557 | 0.6+ | 0.0 | 2006 05 18 | A13 | 0.7− | 1.2+ | | |
| 1998 04 30 | 557 | 0.5− | 0.3− | 1998 06 02 | 046 | 0.8+ | 0.2+ | 2006 05 18 | A13 | 0.2− | 1.4+ | | |
| 1998 05 01 | 046 | 0.3− | 0.4− | 1998 06 02 | 046 | 0.2+ | 0.6− | 2006 06 04 | H45 | 0.0 | 0.8+ | | |
| 1998 05 01 | 046 | 0.0 | 0.3− | 1998 06 02 | 046 | 0.5− | 0.2− | 2006 06 04 | H45 | 0.1+ | 0.3− | | |
| 1998 05 01 | 557 | 0.3− | 0.6+ | 1998 06 06 | 658 | 0.1− | 0.1− | 2006 06 04 | H45 | 0.2+ | 0.5+ | | |
| 1998 05 01 | 557 | 0.1− | 0.2− | 1998 06 06 | 658 | 0.2+ | 0.1+ | 2006 06 04 | H45 | 0.6+ | 0.1+ | | |
| 1998 05 01 | 557 | 0.8− | 0.1− | 1998 06 06 | 658 | 0.5− | 0.0 | 2006 06 06 | H55 | 0.4− | 0.2+ | | |
| 1998 05 01 | 557 | 0.3+ | 0.3+ | 1998 06 07 | 658 | 0.2− | 0.4− | 2006 06 06 | H55 | 0.3− | 0.2+ | | |
| 1998 05 01 | 046 | 0.8− | 1.0+ | 1998 06 07 | 658 | 0.1− | 0.0 | 2006 06 06 | H55 | 0.7+ | 1.4− | | |
| 1998 05 01 | 046 | 0.6− | 0.7+ | 1998 06 07 | 658 | 0.4− | 0.6− | 2006 06 26 | H45 | 0.4+ | 0.1− | | |
| 1998 05 01 | 046 | 0.2− | 0.1− | 1998 06 14 | 658 | 0.4+ | 0.1− | 2006 06 26 | H45 | 0.1+ | 0.8− | | |
| 1998 05 01 | 046 | 0.4− | 0.3+ | 1998 06 14 | 658 | 0.7− | 0.1− | 2006 06 26 | H45 | 0.3− | 0.5− | | |
| 1998 05 03 | 360 | 0.1− | 0.2− | 1998 06 14 | 658 | 0.7− | 0.3+ | 2006 06 26 | H45 | 0.2+ | 0.1+ | | |
| 1998 05 03 | 360 | 0.3+ | 0.6− | 1998 06 14 | 046 | 0.4+ | 0.8+ | 2006 06 26 | H45 | 0.4+ | 0.1+ | | |
| 1998 05 03 | 360 | 0.1− | 0.4− | 1998 06 14 | 557 | 0.6− | 0.5+ | 2006 06 27 | H45 | 0.5+ | 0.2− | | |
| 1998 05 04 | 402 | 0.1+ | 0.6− | 1998 06 14 | 557 | 0.2− | 0.7+ | 2006 06 27 | H45 | 0.1+ | 0.7− | | |
| 1998 05 04 | 402 | 0.1− | 0.5− | 1998 06 28 | 711 | 0.3− | 0.6+ | 2006 06 27 | H45 | 0.3+ | 0.5− | | |
| 1998 05 04 | 402 | 0.3+ | 0.7+ | 1998 06 28 | 711 | 0.3− | 0.8+ | 2006 06 27 | H45 | 0.4− | 0.2+ | | |
| 1998 05 07 | 046 | 0.4+ | 0.1− | 1998 06 29 | 711 | 0.9− | 0.1+ | 2006 06 27 | H45 | 0.1+ | 0.4+ | | |
| 1998 05 07 | 046 | 0.6+ | 0.3− | 1998 06 29 | 711 | 0.4− | 0.6+ | 2006 06 29 | H45 | 0.5+ | 0.1+ | | |
| 1998 05 07 | 046 | 0.6+ | 0.0 | 1998 07 19 | 557 | 0.4− | 0.6+ | 2006 06 29 | H45 | 0.6− | 0.2+ | | |
| 1998 05 07 | 104 | 1.6+ | 0.8+ | 1998 07 19 | 557 | 0.0 | 0.9− | 2006 06 29 | H45 | 0.3+ | 0.2− | | |
| 1998 05 07 | 104 | 0.7+ | 0.8− | 1998 07 19 | 557 | 0.1− | 1.1− | 2006 06 29 | H45 | 0.2+ | 0.2− | | |
| 1998 05 07 | 104 | 0.8+ | 0.4+ | 1998 07 19 | 557 | 0.1+ | 0.5+ | 2006 06 29 | H45 | 0.2− | 0.3− | | |
| 1998 05 07 | 104 | 0.5+ | 0.1− | 1998 08 28 | 658 | 0.1+ | 0.7+ | 2006 07 18 | H45 | 0.6+ | 0.1− | | |
| 1998 05 07 | 104 | 0.1+ | 0.2− | 1998 08 28 | 658 | 0.4+ | 0.4− | 2006 07 18 | H45 | 0.4+ | 0.1+ | | |
| 1998 05 08 | 104 | 0.6+ | 0.9− | 1998 08 28 | 658 | 0.4+ | 0.2+ | 2006 07 18 | H45 | 0.4− | 0.2+ | | |
| 1998 05 08 | 104 | 1.0+ | 1.0+ | 1998 09 22 | 658 | 0.1+ | 1.4− | 2006 09 19 | H45 | 0.1+ | 0.0 | | |
| 1998 05 11 | 118 | 0.5− | 0.6+ | 1998 09 22 | 658 | 1.4− | 0.2+ | 2006 09 19 | H45 | 0.3+ | 0.5+ | | |
| 1998 05 11 | 118 | 0.4+ | 0.7+ | 1998 09 22 | 658 | 0.3− | 1.8− | 2006 09 19 | H45 | 0.3+ | 0.3+ | | |
| 1998 05 16 | 046 | 0.8+ | 0.2− | 1998 09 23 | 658 | 0.7− | 0.2− | 2006 10 09 | 198 | 0.6− | 0.2− | | |
| 1998 05 16 | 046 | 0.4− | 1.7+ | 1998 09 23 | 658 | 1.5− | 0.1+ | 2006 10 09 | 198 | 0.9− | 0.4− | | |
| 1998 05 16 | 046 | 0.1− | 0.6+ | 1998 10 19 | 658 | (2.3+ | 1.5−) | 2006 10 09 | 198 | 0.5− | 0.6− | | |
| 1998 05 16 | 046 | 0.9+ | 0.1+ | 1998 10 19 | 658 | 0.3+ | 0.3+ | 2006 10 25 | 113 | 0.5+ | 1.3− | | |
| 1998 05 16 | 046 | 0.5+ | 1.4+ | 2001 03 13 | 413 | 0.1− | 0.3+ | 2006 10 25 | 113 | 0.0 | 0.7− | | |
| 1998 05 20 | 118 | 0.3+ | 0.0 | 2001 04 05 | 413 | 0.1− | 0.1− | 2006 10 25 | 113 | 0.7− | 0.2− | | |
| 1998 05 20 | 118 | 0.2+ | 0.2+ | 2001 04 05 | 413 | 0.4− | 0.6− | 2006 10 26 | 198 | 0.4+ | 0.5− | | |
| 1998 05 21 | 360 | 0.1− | 0.5+ | 2001 04 05 | 413 | 0.6+ | 0.0 | 2006 10 26 | 198 | 0.3+ | 0.4− | | |
| 1998 05 21 | 360 | 0.3+ | 0.2+ | 2001 04 06 | 413 | 0.7− | 0.2+ | 2006 10 26 | 198 | 0.3+ | 0.4− | | |
| 1998 05 21 | 360 | 0.1− | 0.2+ | 2001 04 06 | 413 | 0.4+ | 0.5+ | 2006 10 26 | 198 | 0.3+ | 0.3− | | |
| 1998 05 22 | 587 | 0.5− | 0.6+ | 2001 04 06 | 413 | 0.1− | 0.2− | 2006 10 26 | 198 | 0.1− | 0.1− | | |
| 1998 05 22 | 587 | 1.3− | 0.5− | 2003 11 09 | 859 | 0.2+ | 0.7− | 2006 11 16 | 703 | 1.0+ | 0.1+ | | |
| 1998 05 22 | 587 | 1.7− | 1.1− | 2003 11 09 | 859 | 0.2+ | 0.6− | 2006 11 16 | 703 | 0.4− | 1.3+ | | |
| 1998 05 25 | 118 | 0.6+ | 0.6− | 2006 03 25 | 448 | 0.2+ | 0.1− | 2006 11 16 | 703 | 1.5+ | 1.1+ | | |
| 1998 05 25 | 118 | 0.6+ | 0.6− | 2006 03 25 | 448 | 0.1− | 0.5− | 2006 11 16 | 703 | 0.0 | 0.0 | | |
| 1998 05 25 | 118 | 0.7+ | 0.8− | 2006 04 30 | 198 | 0.1− | 0.2− | | | | | | |
| 1998 05 26 | 557 | 0.1− | 0.1+ | 2006 04 30 | 198 | 0.3− | 0.4− | | | | | | |

**(136898)∗ 1998 HM$_{43}$**

Discovered 1998 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.85827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18881374 | $\omega$ | 334.40433 | | −0.90951174 | −0.41566465 | |
| $a$ | 3.0091718 | $\Omega$ | 181.05211 | | +0.40586984 | −0.88627545 | |
| $e$ | 0.1299351 | $i$ | 10.54821 | | +0.08976676 | −0.20430056 | |
| $P$ | 5.22 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.9+ | 1.9− | 2003 03 07 | 704 | 0.8+ | 0.6+ | 2005 09 25 | 691 | 0.0 | 0.6+ | | |
| 1998 03 25 | 704 | (0.8− | 2.7−) | 2003 03 07 | 704 | 0.9− | 0.4+ | 2005 09 25 | 691 | 0.2+ | 0.8+ | | |
| 1998 03 25 | 704 | 1.0− | 1.3− | 2003 03 09 | 704 | 0.2+ | 0.1− | 2005 09 25 | 691 | 0.1+ | 0.5+ | | |
| 1998 03 25 | 704 | 1.2− | 0.1+ | 2003 03 09 | 704 | 0.0 | 0.5+ | 2005 11 30 | G96 | 0.7+ | 0.2+ | | |
| 1998 03 25 | 704 | 0.6+ | 0.7− | 2003 03 09 | 704 | 0.3+ | 0.3+ | 2005 11 30 | G96 | 0.4− | 0.1+ | | |
| 1998 03 29 | 704 | 0.3− | 0.5− | 2003 03 23 | 691 | 0.1− | 0.6+ | 2005 11 30 | G96 | 1.0− | 0.2− | | |
| 1998 03 29 | 704 | 0.6+ | 1.6− | 2003 03 23 | 691 | 0.2− | 0.5+ | 2005 11 30 | G96 | 0.0 | 0.8+ | | |
| 1998 03 29 | 704 | 0.4− | 1.1− | 2003 03 23 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.3− | | |
| 1998 03 29 | 704 | 0.3+ | 0.8+ | 2003 03 25 | 699 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.8+ | | |
| 1998 03 29 | 704 | 0.6+ | 0.2− | 2003 03 25 | 699 | (1.6− | 0.2−) | 2006 09 30 | 703 | 0.6− | 0.2− | | |
| 1998 04 20 | 704 | (2.5− | 0.2−) | 2003 03 25 | 699 | 0.9+ | 0.0 | 2006 09 30 | 703 | (2.1− | 0.6+) | | |
| 1998 04 20 | 704 | 0.9+ | 0.0 | 2003 03 25 | 699 | 0.8− | 0.8+ | 2006 10 22 | 703 | 0.5+ | 1.0+ | | |
| 1998 04 20 | 704 | 0.0 | 0.1+ | 2003 04 01 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 703 | 0.2− | 0.3+ | | |
| 1998 04 20 | 704 | 0.9− | 0.3+ | 2003 04 01 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.6− | 0.1+ | | |
| 1998 04 22 | 704 | 0.2− | 1.5− | 2003 04 01 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.5+ | | |
| 1998 04 22 | 704 | 0.1+ | 0.5− | 2003 04 01 | 704 | 0.2− | 0.0 | 2006 11 01 | 703 | 1.1− | 0.9− | | |
| 1998 04 22 | 704 | (2.3+ | 0.2+) | 2003 04 01 | 704 | 0.4− | 0.3+ | 2006 11 01 | 703 | 0.5− | 0.5+ | | |
| 1998 04 22 | 704 | 1.1− | 0.6− | 2003 04 03 | 699 | 0.4+ | 0.8+ | 2006 11 01 | 703 | 0.7+ | 0.5+ | | |
| 1998 04 22 | 704 | 0.9− | 1.8− | 2003 04 03 | 699 | 0.0 | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.6− | | |
| 2000 09 27 | 691 | 0.1− | 0.3+ | 2003 04 03 | 699 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2000 09 27 | 691 | 0.4− | 0.2+ | 2003 04 03 | 699 | 0.3+ | 0.6− | 2006 11 08 | 644 | 0.2− | 0.0 | | |
| 2000 09 27 | 691 | 0.1− | 0.1+ | 2003 04 04 | 704 | 0.8+ | 0.9+ | 2006 11 08 | 644 | 0.1+ | 0.3− | | |
| 2001 12 19 | 704 | 1.0+ | 0.6+ | 2003 04 04 | 704 | 0.7+ | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2001 12 19 | 704 | 0.7+ | 1.0+ | 2003 04 04 | 704 | (1.5+ | 2.4+) | 2006 11 08 | 644 | 0.5− | 0.2+ | | |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2003 04 04 | 704 | 1.4+ | 1.0− | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 2001 12 19 | 704 | 0.2+ | 0.4− | 2003 04 06 | 691 | 0.2− | 0.0 | 2006 11 13 | 703 | 1.0+ | 0.8− | | |
| 2001 12 19 | 704 | 0.6− | 0.5− | 2003 04 06 | 691 | 0.3− | 0.2− | 2006 11 13 | 703 | (2.4− | 0.4+) | | |
| 2003 03 05 | 704 | 0.6− | 0.2+ | 2003 04 06 | 691 | 1.0+ | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.7− | | |
| 2003 03 05 | 704 | 0.3− | 1.1+ | 2003 04 09 | 704 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.4− | 0.0 | | |
| 2003 03 05 | 704 | 0.6− | 0.9+ | 2003 04 09 | 704 | 0.5− | 1.0+ | 2006 11 19 | 703 | 0.3+ | 1.4+ | | |
| 2003 03 05 | 704 | 1.0− | 0.8+ | 2003 04 09 | 704 | 0.1− | 0.8+ | 2006 11 19 | 703 | (0.7− | 1.9−) | | |
| 2003 03 05 | 704 | 0.1+ | 0.7+ | 2003 04 09 | 704 | 0.5− | 1.2+ | 2006 11 19 | 703 | 0.9− | 0.0 | | |
| 2003 03 06 | 699 | 0.7+ | 0.6+ | 2003 04 09 | 704 | 0.1− | 1.2+ | 2006 11 19 | 703 | 0.1− | 0.1+ | | |
| 2003 03 06 | 699 | 1.0+ | 0.4+ | 2005 08 24 | 644 | 0.1+ | 0.8+ | 2006 11 19 | 703 | 0.8+ | 1.1− | | |
| 2003 03 06 | 699 | 0.0 | 1.0+ | 2005 08 24 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.9− | | |
| 2003 03 06 | 699 | (2.0− | 1.4−) | 2005 08 24 | 644 | 0.1− | 0.5+ | 2006 11 19 | 703 | (1.3+ | 2.0+) | | |
| 2003 03 07 | 704 | 0.2− | 0.7+ | 2005 08 30 | 691 | 0.1− | 0.3+ | 2006 11 19 | 703 | (1.9− | 0.8−) | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 704 | 0.0 | 0.1+ | 2005 08 30 | 691 | 0.1− | 0.6+ | |
| 2003 03 07 | 704 | 0.3+ | 0.5+ | 2005 08 30 | 691 | 0.1− | 0.4+ | |

**(136899)∗ 1998 HH$_{44}$**

Discovered 1998 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.83991 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26777225 | $\omega$ | 187.85154 | | −0.73001914 | +0.68024509 | |
| $a$ | 2.3839237 | $\Omega$ | 35.30357 | | −0.62067556 | −0.61956107 | |
| $e$ | 0.1926526 | $i$ | 6.54466 | | −0.28606628 | −0.39167679 | |
| $P$ | 3.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 691 | 0.6− | 0.0 | 1998 04 22 | 704 | 0.8− | 0.4− | 2005 01 31 | 644 | 0.9+ | 0.3+ | |
| 1998 03 22 | 691 | 0.4− | 0.0 | 1998 04 24 | 699 | (0.6+ | 2.9+) | 2005 01 31 | 644 | 0.2+ | 0.1+ | |
| 1998 03 22 | 691 | 0.4− | 0.1+ | 1998 04 24 | 699 | 0.1− | 1.4+ | 2005 01 31 | 644 | 0.4+ | 0.3+ | |
| 1998 03 25 | 704 | 0.5+ | 0.4+ | 1998 04 24 | 699 | 0.9− | 1.7+ | 2005 02 02 | 704 | 0.5+ | 0.3− | |
| 1998 03 25 | 704 | 0.3− | 0.8+ | 1998 04 25 | 699 | 1.7+ | 1.5+ | 2005 02 02 | 704 | 1.1− | 0.5+ | |
| 1998 03 25 | 704 | 0.7+ | 0.3+ | 1998 04 25 | 699 | (0.2+ | 2.4+) | 2005 02 02 | 704 | 0.7+ | 0.4+ | |
| 1998 03 25 | 704 | 0.6− | 0.9+ | 1998 04 25 | 699 | 1.4+ | 0.3− | 2005 02 02 | 704 | 0.1+ | 0.2+ | |
| 1998 03 25 | 704 | 0.1+ | 1.4+ | 1998 05 16 | 704 | 0.1− | 0.3− | 2005 02 02 | 704 | 0.4− | 1.5− | |
| 1998 03 29 | 704 | 0.3+ | 0.9+ | 1998 05 16 | 704 | 0.4+ | 0.7− | 2005 02 03 | 704 | 0.4− | 0.1+ | |
| 1998 03 29 | 704 | 0.6− | 1.2+ | 1998 05 16 | 704 | 0.3+ | 1.1− | 2005 02 03 | 704 | 0.7− | 0.0 | |
| 1998 03 29 | 704 | 0.3+ | 0.9+ | 1998 05 16 | 704 | 0.6+ | 1.6− | 2005 02 03 | 704 | 0.3− | 0.2+ | |
| 1998 03 29 | 704 | 1.1+ | 0.8+ | 2003 10 02 | 691 | 0.2+ | 0.0 | 2005 02 06 | 644 | 0.0 | 0.1+ | |
| 1998 03 29 | 704 | 0.7+ | 0.1− | 2003 10 02 | 691 | 0.1+ | 0.0 | 2005 02 06 | 644 | 0.1− | 0.1+ | |
| 1998 04 20 | 704 | 0.2− | 0.6− | 2003 10 02 | 691 | 0.1− | 0.1+ | 2005 02 06 | 644 | 0.3− | 0.0 | |
| 1998 04 20 | 704 | 0.4+ | 1.1− | 2003 10 21 | 691 | 0.2− | 0.1− | 2005 03 01 | 703 | 0.7− | 0.5− | |
| 1998 04 20 | 704 | 0.5− | 0.0 | 2003 10 21 | 691 | 0.1+ | 0.2+ | 2005 03 01 | 703 | 0.1+ | 0.1+ | |
| 1998 04 20 | 704 | 0.8+ | 0.1− | 2003 10 21 | 691 | 0.0 | 0.4+ | 2005 03 01 | 703 | 0.7− | 0.1+ | |
| 1998 04 20 | 704 | 0.1− | 0.2− | 2003 10 25 | 291 | 0.1− | 0.1+ | 2005 03 01 | 703 | 0.2− | 0.9− | |
| 1998 04 21 | 704 | 0.4+ | 0.4− | 2003 10 25 | 291 | 0.2− | 0.1+ | 2006 08 17 | 644 | 0.5− | 0.6+ | |
| 1998 04 21 | 704 | 0.5+ | 0.0 | 2003 10 25 | 291 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.3− | 0.5+ | |
| 1998 04 21 | 704 | 0.4+ | 0.1+ | 2003 10 28 | 704 | 0.5+ | 0.6+ | 2006 08 17 | 644 | 0.1− | 0.1+ | |
| 1998 04 21 | 704 | 1.0+ | 0.2+ | 2003 10 28 | 704 | 0.6− | 0.8+ | 2006 08 24 | 644 | 0.5− | 0.1+ | |
| 1998 04 21 | 704 | 0.5− | 0.4− | 2003 10 28 | 704 | 1.0− | 0.6+ | 2006 08 24 | 644 | 0.5− | 0.5+ | |
| 1998 04 22 | 704 | 0.4+ | 0.3+ | 2003 10 28 | 704 | 0.7− | 0.3− | 2006 08 24 | 644 | 0.1− | 0.1− | |
| 1998 04 22 | 704 | 1.0+ | 0.8+ | 2005 01 08 | 704 | 0.9+ | 0.6+ | 2006 09 13 | 644 | 0.0 | 0.4+ | |
| 1998 04 22 | 704 | 0.9− | 1.0+ | 2005 01 08 | 704 | 1.0+ | 0.8+ | 2006 09 13 | 644 | 0.2+ | 0.4+ | |
| 1998 04 22 | 704 | 0.8+ | 1.7− | 2005 01 08 | 704 | 0.8+ | 0.4− | 2006 09 13 | 644 | 0.1− | 0.5+ | |

**(136900)∗ 1998 HL$_{49}$**

Discovered 1998 Apr. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.29936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.42857845 | $\omega$ | 238.69327 | | +0.09117968 | −0.99217246 | |
| $a$ | 1.7422715 | $\Omega$ | 206.48017 | | +0.96629676 | +0.10886296 | |
| $e$ | 0.6361687 | $i$ | 11.03192 | | +0.24074225 | −0.06117729 | |
| $P$ | 2.30 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 30 | 691 | 0.6+ | 0.0 | 1998 05 30 | 711 | 1.0− | 0.0 | 2005 05 14 | 691 | 0.1+ | 0.2+ | |
| 1998 04 30 | 691 | 0.6+ | 0.1+ | 1998 05 30 | 711 | 0.5+ | 0.2− | 2005 05 14 | 691 | 0.0 | 0.1+ | |
| 1998 04 30 | 691 | 0.3+ | 0.1− | 2000 03 27 | 691 | 0.8+ | 1.7+ | 2005 05 17 | G96 | 0.1− | 0.1− | |
| 1998 05 01 | 046 | 0.1− | 0.9+ | 2000 03 27 | 691 | 0.7+ | 1.5+ | 2005 05 17 | G96 | 0.2− | 0.0 | |
| 1998 05 01 | 046 | (3.1− | 0.8+) | 2000 03 27 | 691 | (0.9+ | 2.8+) | 2005 05 17 | G96 | 0.1+ | 0.3− | |
| 1998 05 01 | 046 | 0.8− | 0.4+ | 2000 04 04 | 691 | 0.2+ | 1.3+ | 2005 05 17 | G96 | 0.0 | 0.0 | |
| 1998 05 01 | 046 | 0.2+ | 0.7− | 2000 04 04 | 691 | (0.6+ | 2.3+) | 2005 05 20 | G96 | 0.1+ | 0.2+ | |
| 1998 05 01 | 691 | 0.3− | 0.1− | 2000 04 04 | 691 | (1.2+ | 2.3+) | 2005 05 20 | G96 | 0.2− | 0.0 | |
| 1998 05 01 | 691 | 0.2+ | 0.1− | 2000 05 31 | 691 | 0.5+ | 1.4− | 2005 05 20 | G96 | 0.1+ | 0.1+ | |
| 1998 05 01 | 691 | 0.5− | 0.1− | 2000 05 31 | 691 | 0.5+ | 0.5− | 2005 05 20 | G96 | 0.3− | 0.1+ | |
| 1998 05 02 | 691 | 0.6− | 0.1+ | 2003 06 24 | 696 | 0.8+ | 0.7+ | 2005 06 05 | 691 | 0.6+ | 0.3+ | |
| 1998 05 02 | 691 | 0.3− | 0.4− | 2003 06 24 | 696 | 0.1+ | 0.2− | 2005 06 05 | 691 | 0.3+ | 0.1− | |
| 1998 05 02 | 691 | 0.6− | 0.1− | 2004 08 17 | 704 | 0.6− | 0.8+ | 2005 06 05 | 691 | 0.1− | 0.3+ | |
| 1998 05 04 | 696 | 0.7− | 0.0 | 2004 08 17 | 704 | 1.1− | 1.2+ | 2005 06 13 | 691 | 0.5+ | 0.2+ | |
| 1998 05 04 | 696 | 0.7− | 0.1+ | 2004 08 17 | 704 | (0.7− | 3.2+) | 2005 06 13 | 691 | 0.4+ | 0.1+ | |
| 1998 05 04 | 696 | 0.6− | 0.0 | 2004 08 17 | 704 | 1.0− | 1.3+ | 2005 06 13 | 691 | 0.3+ | 0.1+ | |
| 1998 05 04 | 691 | 0.5− | 0.3− | 2004 08 17 | 704 | 1.3− | 1.4+ | 2005 06 13 | 691 | 0.1+ | 0.6+ | |
| 1998 05 04 | 691 | 0.1+ | 0.1+ | 2005 04 30 | 691 | 0.0 | 0.5+ | 2005 06 13 | 691 | 0.1+ | 0.1+ | |
| 1998 05 04 | 691 | 0.7− | 0.2− | 2005 04 30 | 691 | 0.1− | 0.7− | 2005 06 13 | 691 | 0.3+ | 0.1− | |
| 1998 05 17 | 691 | 0.3− | 0.2+ | 2005 04 30 | 691 | 0.7+ | 0.4− | 2006 05 27 | 691 | 1.0− | 0.8− | |
| 1998 05 17 | 691 | 0.3− | 0.2+ | 2005 05 10 | 691 | 0.3+ | 0.0 | 2006 05 27 | 691 | 0.5+ | 0.4+ | |
| 1998 05 17 | 691 | 0.4− | 0.1+ | 2005 05 10 | 691 | 0.0 | 0.3+ | 2006 05 27 | 691 | 0.6+ | 0.8+ | |
| 1998 05 29 | 711 | 0.0 | 0.7− | 2005 05 10 | 691 | 0.0 | 0.5+ | 2006 06 01 | 691 | 0.2− | 1.0+ | |
| 1998 05 29 | 711 | 1.1− | 0.1− | 2005 05 14 | 691 | 0.5+ | 0.1+ | 2006 06 01 | 691 | 0.0 | 0.3+ | |

**(136901)∗ 1998 HT$_{49}$ = 2005 GA$_{112}$**

Discovered 1998 Apr. 25 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 74571)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.51128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27271784 | $\omega$ | 211.32754 | | +0.72290710 | +0.66951579 | |
| $a$ | 2.3550151 | $\Omega$ | 105.62931 | | −0.59159380 | +0.72743147 | |
| $e$ | 0.2582882 | $i$ | 10.21259 | | −0.35696234 | +0.15030655 | |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 1.0+ | 0.4+ | 2002 08 20 | 644 | 0.0 | 0.2− | 2005 04 12 | 699 | 0.5− | 0.7+ | |
| 1998 04 24 | 704 | 1.2− | 1.3+ | 2002 08 20 | 644 | 0.1+ | 0.0 | 2005 04 17 | 703 | 1.3+ | 1.5+ | |
| 1998 04 24 | 704 | (4.5− | 1.5−) | 2002 08 20 | 644 | 0.1+ | 0.2− | 2005 04 17 | 703 | 0.5+ | 0.1+ | |
| 1998 04 25 | 691 | 0.0 | 0.1+ | 2002 09 13 | 699 | 0.3− | 0.5+ | 2005 04 17 | 703 | 1.2− | 0.7− | |
| 1998 04 25 | 691 | 0.3− | 0.4− | 2002 09 13 | 699 | 0.3+ | 0.4+ | 2005 04 17 | 703 | 0.3− | 0.7− | |
| 1998 04 25 | 691 | 0.4+ | 0.1− | 2002 09 13 | 699 | 0.2− | 0.8+ | 2006 10 22 | 703 | 0.1+ | 0.1− | |
| 1998 05 03 | 691 | 0.2− | 0.3− | 2002 09 13 | 699 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.2− | |
| 1998 05 03 | 691 | 0.0 | 0.2− | 2003 12 19 | 691 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.1+ | |
| 1998 05 03 | 691 | 0.1− | 0.1− | 2003 12 19 | 691 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.8+ | |
| 1998 05 23 | 704 | 0.0 | 1.9− | 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.3− | 0.4+ | |
| 1998 05 23 | 704 | 1.0− | 0.1+ | 2004 01 15 | 691 | 0.3− | 0.5+ | 2006 10 30 | 703 | 0.9+ | 0.7− | |
| 1998 05 23 | 704 | 1.6+ | 0.2+ | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 10 30 | 703 | 0.8− | 0.1− | |
| 1998 05 23 | 704 | 1.2− | 1.5+ | 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.0 | 0.4− | |
| 2002 07 05 | 704 | 0.3− | 0.5+ | 2005 03 18 | 703 | 0.7− | 0.4− | 2006 11 13 | 703 | 0.5+ | 0.2+ | |
| 2002 07 05 | 704 | 0.2+ | 0.9+ | 2005 03 18 | 703 | (1.2− | 1.9+) | 2006 11 13 | 703 | 0.1− | 0.6− | |
| 2002 07 05 | 704 | 0.7+ | 0.6+ | 2005 03 18 | 703 | (1.6− | 0.0 ) | 2006 11 13 | 703 | 0.3− | 0.2− | |
| 2002 08 13 | 704 | 0.0 | 0.5− | 2005 03 18 | 703 | 0.2− | 1.0+ | 2006 11 13 | 703 | 0.5− | 0.4+ | |
| 2002 08 13 | 704 | 0.3− | 0.6− | 2005 04 06 | 703 | 1.0+ | 0.4+ | 2006 11 19 | 703 | 1.3+ | 0.2− | |
| 2002 08 13 | 704 | 0.7− | 0.3− | 2005 04 06 | 703 | 0.6− | 0.8+ | 2006 11 19 | 703 | 0.8+ | 0.7− | |
| 2002 08 13 | 704 | 0.8− | 0.5+ | 2005 04 06 | 703 | (1.2+ | 2.5+) | 2006 11 19 | 703 | 0.7− | 0.6− | |
| 2002 08 13 | 704 | 0.5− | 0.7+ | 2005 04 06 | 703 | 0.8+ | 1.3+ | 2006 11 20 | 704 | 0.0 | 0.7+ | |
| 2002 08 13 | 644 | 0.4+ | 0.1− | 2005 04 12 | 699 | 0.2+ | 0.4− | 2006 11 20 | 704 | 1.0− | 0.8+ | |
| 2002 08 13 | 644 | 0.4+ | 0.1− | 2005 04 12 | 699 | 0.7+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.6+ | |
| 2002 08 13 | 644 | 0.6+ | 0.1+ | 2005 04 12 | 699 | 0.3+ | 0.8+ | 2006 11 20 | 704 | 0.9− | 0.1+ | |

**(136902)∗ 1998 HL$_{55}$ = 2001 YL$_{94}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34709)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.13911 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18344923 | $\omega$ | 128.33455 | | −0.91505859 | −0.38967588 | |
| $a$ | 3.0675533 | $\Omega$ | 29.16384 | | +0.27004073 | −0.78351395 | |
| $e$ | 0.1794231 | $i$ | 12.32527 | | +0.29957600 | −0.48400268 | |
| $P$ | 5.37 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 1.8+ | 0.4− | 2003 01 26 | 704 | 0.4+ | 0.4− | 2003 04 04 | 608 | 0.1+ | 0.7+ | |
| 1998 03 25 | 704 | 1.3+ | 0.7+ | 2003 01 26 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | |
| 1998 03 25 | 704 | 0.3− | 1.7+ | 2003 02 02 | 699 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | |
| 1998 03 25 | 704 | (1.3+ | 2.6+) | 2003 02 02 | 699 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.2+ | |
| 1998 03 25 | 704 | (4.4− | 0.1+) | 2003 02 02 | 699 | 0.0 | 0.5− | 2006 09 23 | 691 | 0.1− | 0.7+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.6− | 0.2− | 2003 02 02 | 699 | 0.0 | 0.3− | 2006 09 23 | 691 | 0.3− | 0.4+ |
| 1998 03 29 | 704 | 0.5− | 0.2− | 2003 03 01 | 608 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.3− | 0.5+ |
| 1998 03 29 | 704 | 1.0− | 0.6+ | 2003 03 01 | 608 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 1998 03 29 | 704 | 0.7− | 1.4+ | 2003 03 01 | 608 | 0.3+ | 0.5− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1998 03 29 | 704 | 1.2− | 1.0+ | 2003 03 08 | 704 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 1998 04 21 | 704 | 1.3+ | 1.1− | 2003 03 08 | 704 | 0.3− | 0.6− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 1998 04 21 | 704 | 0.5+ | 0.5+ | 2003 03 08 | 704 | (0.3+ | 2.0+) | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 1998 04 21 | 704 | 1.5+ | 0.5− | 2003 03 08 | 704 | 0.8+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 1998 04 21 | 704 | 1.3+ | 0.1− | 2003 03 08 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 703 | 0.1− | 0.9+ |
| 1998 04 21 | 704 | 0.9+ | 0.1+ | 2003 03 08 | 704 | 0.0 | 0.2+ | 2006 10 20 | 703 | 0.6− | 0.2+ |
| 1998 04 22 | 704 | 0.1− | 0.1− | 2003 03 08 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 703 | 0.7− | 0.6+ |
| 1998 04 22 | 704 | 0.5− | 1.7+ | 2003 03 08 | 704 | 0.1+ | 0.3− | 2006 10 20 | 703 | (1.8− | 0.5+) |
| 1998 04 22 | 704 | (1.0+ | 2.0+) | 2003 03 08 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 1998 04 22 | 704 | 0.3− | 0.1− | 2003 03 08 | 644 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 1.0+ |
| 1998 04 22 | 704 | (2.2− | 0.3+) | 2003 03 08 | 644 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.5+ |
| 2001 10 14 | 704 | 0.9− | 0.5− | 2003 03 08 | 644 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.1− |
| 2001 10 14 | 704 | 0.7− | 0.5− | 2003 03 12 | 704 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2001 10 14 | 704 | 0.5+ | 0.6− | 2003 03 12 | 704 | 0.9− | 0.5+ | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2001 10 26 | 644 | 0.1− | 0.6− | 2003 03 12 | 704 | 0.3− | 1.1+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 10 26 | 644 | 0.1− | 0.4+ | 2003 03 12 | 704 | 1.0− | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2001 10 26 | 644 | 0.6− | 0.3− | 2003 03 23 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2001 11 11 | 699 | 0.2− | 0.7+ | 2003 03 23 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 11 11 | 699 | 0.0 | 0.2+ | 2003 03 23 | 644 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2001 11 11 | 699 | 0.3− | 0.4− | 2003 03 26 | 704 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 11 11 | 699 | 0.7− | 0.1− | 2003 03 26 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.2+ | 1.1− | 2003 03 26 | 704 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 11 12 | 704 | 0.7− | 0.6− | 2003 03 26 | 704 | 0.6+ | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 11 12 | 704 | (0.5− | 1.6−) | 2003 03 26 | 704 | 1.1+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2001 12 10 | 704 | 0.7+ | 0.2− | 2003 03 30 | 644 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 12 10 | 704 | 0.4+ | 0.6+ | 2003 03 30 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2001 12 10 | 704 | 0.1− | 0.4+ | 2003 03 30 | 644 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2001 12 10 | 704 | 1.0+ | 1.4− | 2003 03 31 | 704 | (0.7− | 1.7+) | 2006 11 10 | 691 | 0.2− | 0.5− |
| 2001 12 19 | 291 | 0.3+ | 0.5− | 2003 03 31 | 704 | 0.5+ | 1.3+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 12 19 | 291 | 0.2+ | 0.1+ | 2003 03 31 | 704 | 1.0− | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 12 19 | 291 | 0.0 | 0.1− | 2003 03 31 | 704 | 1.0− | 0.6− | 2006 11 19 | 691 | 0.3+ | 0.3+ |
| 2001 12 20 | 291 | 0.3+ | 0.2− | 2003 04 03 | 704 | 0.8+ | 0.4+ | 2006 11 20 | G96 | 0.3− | 0.0 |
| 2001 12 20 | 291 | 0.4+ | 0.2− | 2003 04 03 | 704 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.7+ | 0.5− |
| 2001 12 20 | 291 | 0.8+ | 0.3− | 2003 04 03 | 704 | 0.1− | 0.7+ | 2006 11 20 | G96 | 0.3+ | 0.2+ |
| 2003 01 26 | 704 | 0.2− | 0.1− | 2003 04 04 | 608 | 0.8+ | 1.0+ | 2006 11 20 | G96 | 0.3− | 0.6− |
| 2003 01 26 | 704 | 0.4− | 0.4− | 2003 04 04 | 608 | 1.4+ | 0.1+ | | | | |

**(136903)∗ 1998 HR$_{58}$ = 2005 EH$_{209}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 93722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.73309 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26799101 | $\omega$ | 147.50465 | | −0.20370733 | +0.97890518 | |
| $a$ | 2.3826261 | $\Omega$ | 110.73734 | | −0.90180404 | −0.18135290 | |
| $e$ | 0.2610983 | $i$ | 0.96479 | | −0.38112044 | −0.09410513 | |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 15 | 691 | 0.1− | 0.0 | 2002 07 09 | 644 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.3− | 0.8+ |
| 1994 02 15 | 691 | 0.1− | 0.2− | 2002 07 09 | 644 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 1994 02 15 | 691 | 0.0 | 0.5− | 2002 07 14 | 644 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1995 09 26 | 691 | 0.0 | 0.2− | 2002 07 14 | 644 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 1995 09 26 | 691 | 0.3+ | 0.1− | 2002 07 14 | 644 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.3− | 0.4− |
| 1995 09 26 | 691 | 0.0 | 0.5− | 2002 07 22 | 644 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 1998 03 29 | 704 | 0.2+ | 0.4+ | 2002 07 22 | 644 | 0.1− | 0.7+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1998 03 29 | 704 | 0.0 | 0.0 | 2002 07 22 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 1998 03 29 | 704 | 1.2− | 0.5− | 2002 08 13 | 704 | (0.5+ | 1.6−) | 2006 09 30 | 691 | 0.1− | 0.0 |
| 1998 03 29 | 704 | (0.1− | 3.5+) | 2002 08 13 | 704 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 1998 04 21 | 704 | (3.3+ | 0.0 ) | 2002 08 13 | 704 | 0.5+ | 0.6− | 2006 09 30 | G96 | 0.5− | 0.2− |
| 1998 04 21 | 704 | 1.9+ | 1.4− | 2002 08 13 | 704 | 0.2− | 0.9− | 2006 09 30 | G96 | 0.0 | 0.4− |
| 1998 04 21 | 704 | 1.2+ | 0.1− | 2002 08 13 | 704 | (0.5− | 1.6−) | 2006 09 30 | G96 | 0.5− | 0.4− |
| 1998 04 21 | 704 | 0.0 | 0.2+ | 2003 11 30 | 291 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.1− |
| 1998 04 22 | 704 | 0.6+ | 1.7+ | 2003 11 30 | 291 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.2+ |
| 1998 04 22 | 704 | 0.6+ | 0.6+ | 2003 11 30 | 291 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.0 | 0.6− |
| 1998 04 22 | 704 | 0.4− | 0.3− | 2005 03 04 | G96 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 1998 04 22 | 704 | 1.3− | 1.4− | 2005 03 04 | G96 | 0.1+ | 0.1− | 2006 10 20 | G96 | 1.5+ | 0.6+ |
| 1998 04 22 | 704 | 0.6− | 1.9+ | 2005 03 04 | G96 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.5+ |
| 2002 07 05 | 704 | 0.2+ | 0.5+ | 2005 03 04 | G96 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2002 07 05 | 704 | 1.1− | 1.1− | 2005 03 10 | G96 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2002 07 05 | 704 | 0.2+ | 0.9− | 2005 03 10 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2002 07 05 | 704 | 0.0 | 0.7− | 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2002 07 05 | 704 | (0.6+ | 3.0−) | 2005 03 10 | G96 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2002 07 09 | 644 | 0.9− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.6+ | 0.0 |

**(136904)∗ 1998 HY$_{59}$ = 2004 GN$_{8}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60497)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.10625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16971880 | $\omega$ | 224.12355 | | −0.19195436 | +0.96709108 | |
| $a$ | 3.2308447 | $\Omega$ | 35.79754 | | −0.80269251 | −0.05680604 | |
| $e$ | 0.1099172 | $i$ | 16.58901 | | −0.56465765 | −0.24800791 | |
| $P$ | 5.81 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.4+ | 1.0+ | 2004 04 30 | 608 | 0.4+ | 0.4− | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 1998 03 25 | 704 | 0.4− | 0.2+ | 2004 04 30 | 608 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 1998 03 25 | 704 | 0.2+ | 1.7+ | 2004 04 30 | 608 | 0.5+ | 0.4− | 2006 10 11 | 691 | 0.3− | 0.1+ |
| 1998 03 25 | 704 | 0.1+ | 0.6+ | 2004 05 11 | 699 | 0.4+ | 0.6− | 2006 10 15 | 691 | 0.1− | 0.8− |
| 1998 04 20 | 704 | (3.0+ | 0.2+) | 2004 05 11 | 699 | 0.3+ | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.8+ |
| 1998 04 20 | 704 | 1.1− | 1.4− | 2004 05 11 | 699 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.0 |
| 1998 04 20 | 704 | 1.3− | 1.0− | 2004 05 11 | 699 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.2+ |
| 1998 04 20 | 704 | 0.8+ | 0.5− | 2004 05 13 | 644 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 1998 04 21 | 704 | (0.6+ | 2.3−) | 2004 05 13 | 644 | 0.5+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 1998 04 21 | 704 | 0.8+ | 1.7− | 2004 05 13 | 644 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 1998 04 21 | 704 | 0.6− | 1.1− | 2004 05 15 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 1998 04 22 | 704 | 0.8+ | 0.5− | 2004 05 15 | 704 | 1.0− | 0.7− | 2006 10 20 | 644 | 0.4+ | 0.5− |
| 1998 04 22 | 704 | 1.0− | 0.3− | 2004 05 15 | 704 | 0.5− | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 1998 04 22 | 704 | 0.5− | 0.3+ | 2004 05 15 | 704 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1998 04 22 | 704 | 1.4+ | 0.9+ | 2004 05 16 | 704 | 1.2+ | 1.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1998 04 22 | 704 | 0.4+ | 1.6+ | 2004 05 16 | 704 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 2004 04 12 | 644 | 0.1− | 0.7+ | 2004 05 16 | 704 | 1.1+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 2004 04 12 | 644 | 0.1− | 0.6+ | 2004 05 16 | 704 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2004 04 12 | 644 | 0.0 | 0.4+ | 2004 05 16 | 704 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2004 04 13 | 644 | 0.2+ | 0.5+ | 2004 05 18 | 704 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2004 04 13 | 644 | 0.4+ | 0.6+ | 2004 05 18 | 704 | 1.0+ | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2004 04 13 | 644 | 0.3+ | 0.9+ | 2004 05 18 | 704 | (0.7+ | 1.7−) | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2004 04 15 | 699 | 0.3− | 0.1+ | 2004 05 23 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2004 04 15 | 699 | 0.3− | 0.1+ | 2004 05 23 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 04 15 | 699 | 0.2+ | 0.6+ | 2004 05 23 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2004 04 15 | 699 | 0.4+ | 1.3+ | 2004 06 06 | 644 | 0.4+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2004 04 20 | 704 | 0.6+ | 0.7+ | 2004 06 06 | 644 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 04 20 | 704 | 0.9+ | 0.5+ | 2004 06 06 | 644 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.6+ |
| 2004 04 20 | 704 | 0.9+ | 0.6+ | 2004 07 05 | E12 | 0.8− | 0.5− | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2004 04 20 | 704 | 0.8+ | 0.9+ | 2004 07 05 | E12 | 0.6+ | 0.6− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2004 04 20 | 704 | 0.6+ | 0.7+ | 2004 07 05 | E12 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.3+ |
| 2004 04 25 | 704 | (1.9+ | 1.2+) | 2004 07 05 | E12 | 0.0 | 0.9+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 04 25 | 704 | (1.0+ | 2.2+) | 2005 09 06 | E12 | 0.7+ | 0.9− | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2004 04 25 | 704 | 0.2− | 0.8+ | 2005 09 06 | E12 | 0.1+ | 0.7− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2004 04 25 | 704 | 0.4+ | 0.1+ | 2005 09 06 | E12 | 0.6+ | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2004 04 25 | 704 | 0.2+ | 0.2+ | 2005 09 06 | E12 | 0.6− | 0.8− | 2006 11 13 | G96 | 0.0 | 1.0− |
| 2004 04 26 | 699 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2004 04 26 | 699 | 0.1− | 0.7+ | 2006 09 30 | 703 | 1.3− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.4+ |
| 2004 04 26 | 699 | 0.6+ | 0.5− | 2006 09 30 | 703 | 0.6− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2004 04 26 | 699 | 0.1− | 0.3+ | 2006 09 30 | 703 | (1.0+ | 1.5−) | | | | |

**(136905)∗ 1998 HF$_{78}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 279.30417 | (2000.0) | | | |
| $n$ | 0.17400524 | $\omega$ | 235.64456 | −0.03832748 | −0.97378445 |
| $a$ | 3.1775654 | $\Omega$ | 218.53009 | +0.99353420 | −0.01313866 |
| $e$ | 0.1316942 | $i$ | 21.09698 | +0.10686810 | −0.22709298 |
| $P$ | 5.66 | $H$ | 14.8 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.0− | 0.1+ | 2001 11 24 | 704 | 0.6− | 0.0 | 2003 01 30 | 704 | 0.5− | 1.2+ | |
| 1998 04 21 | 704 | (2.8− | 0.3+) | 2001 11 24 | 704 | 0.0 | 0.5+ | 2003 01 30 | 704 | 0.3+ | 0.1− | |
| 1998 04 21 | 704 | (0.8− | 2.9+) | 2001 11 24 | 704 | 0.9− | 0.7+ | 2003 01 30 | 704 | 0.1− | 0.5− | |
| 1998 04 22 | 704 | 0.5+ | 0.7+ | 2001 11 24 | 704 | 0.3− | 0.3+ | 2004 05 11 | 699 | 0.3− | 0.1− | |
| 1998 04 22 | 704 | 0.7− | 0.6− | 2001 11 24 | 704 | 0.5− | 0.6+ | 2004 05 11 | 699 | 0.3+ | 0.1+ | |
| 1998 04 22 | 704 | (1.7− | 2.8+) | 2001 11 24 | 704 | 0.2− | 0.2+ | 2004 05 11 | 699 | 1.2+ | 0.3+ | |
| 1998 04 22 | 704 | 1.2+ | 1.7+ | 2001 11 24 | 704 | 0.6+ | 0.1− | 2004 05 11 | 699 | 1.0+ | 0.9− | |
| 1998 04 22 | 704 | 0.1+ | 0.4+ | 2001 11 24 | 704 | 0.5− | 0.2− | 2004 06 09 | 691 | 0.2− | 0.6+ | |
| 2000 09 01 | 704 | 0.7+ | 0.2+ | 2001 11 24 | 704 | 0.2+ | 0.5+ | 2004 06 09 | 691 | 0.2− | 0.7+ | |
| 2000 09 01 | 704 | 0.5+ | 0.7+ | 2001 11 24 | 704 | 0.2+ | 0.7+ | 2004 06 09 | 691 | 0.2− | 0.5+ | |
| 2000 09 01 | 704 | 1.0+ | 1.1+ | 2001 12 07 | 704 | 1.0+ | 1.0+ | 2006 08 29 | 699 | 0.3− | 1.0+ | |
| 2000 09 30 | 645 | 0.1− | 0.2− | 2001 12 07 | 704 | 0.4+ | 0.2+ | 2006 08 29 | 699 | 0.3+ | 1.2+ | |
| 2000 09 30 | 645 | 0.0 | 0.2− | 2001 12 07 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 699 | (1.9+ | 0.3+) | |
| 2001 11 09 | 704 | 0.7+ | 0.2− | 2001 12 07 | 704 | 0.8− | 0.0 | 2006 08 29 | 699 | 0.5+ | 0.7+ | |
| 2001 11 09 | 704 | 0.3− | 0.8− | 2001 12 07 | 704 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 1.4− | 0.3+ | |
| 2001 11 09 | 704 | 0.7+ | 1.5− | 2001 12 15 | 704 | 0.8− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.1+ | |
| 2001 11 09 | 704 | (0.0 | 1.6+) | 2001 12 15 | 704 | 0.3− | 0.6+ | 2006 09 28 | 703 | 0.6− | 0.3− | |
| 2001 11 15 | 644 | 0.2− | 0.2+ | 2001 12 15 | 704 | 0.9+ | 1.0+ | 2006 09 28 | 703 | 0.0 | 0.2− | |
| 2001 11 15 | 644 | 0.2− | 0.3+ | 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 10 23 | 703 | 0.8− | 0.2+ | |
| 2001 11 15 | 644 | 0.2− | 0.3+ | 2001 12 18 | 704 | (0.0 | 2.0−) | 2006 10 23 | 703 | (2.1− | 0.2+) | |
| 2001 11 19 | 699 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.4− | 0.2+ | 2006 10 23 | 703 | 0.7− | 0.4+ | |
| 2001 11 19 | 699 | 0.2+ | 0.7+ | 2001 12 18 | 704 | 0.6+ | 0.5− | 2006 10 23 | 703 | 0.0 | 1.3+ | |
| 2001 11 19 | 699 | 0.4− | 0.4− | 2001 12 19 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 683 | 0.3+ | 0.4− | |
| 2001 11 19 | 699 | 0.5− | 0.2− | 2001 12 19 | 704 | 0.2+ | 0.3− | 2006 10 28 | 683 | 0.2+ | 1.6+ | |
| 2001 11 24 | 704 | 0.5− | 0.6− | 2001 12 19 | 704 | 0.8+ | 1.0+ | 2006 10 28 | 683 | 1.0+ | 1.1+ | |
| 2001 11 24 | 704 | 0.0 | 0.1+ | 2001 12 19 | 704 | 1.2+ | 0.8− | | | | | |
| 2001 11 24 | 704 | 0.2− | 0.4+ | 2001 12 19 | 704 | 0.8+ | 0.5+ | | | | | |

**(136906)∗ 1998 HX$_{83}$ = 2002 RN$_{28}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 37076)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 107.05257 | (2000.0) | | | |
| $n$ | 0.28204549 | $\omega$ | 193.15481 | +0.11339400 | +0.99129780 |
| $a$ | 2.3028021 | $\Omega$ | 83.38576 | −0.90536269 | +0.13081237 |
| $e$ | 0.2509579 | $i$ | 3.85948 | −0.40921902 | −0.01472418 |
| $P$ | 3.49 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.7+ | 0.6+ | 2002 09 08 | 658 | 1.1− | 1.0+ | 2005 05 11 | 699 | 0.6+ | 0.7+ | |
| 1998 04 21 | 704 | 0.1− | 0.9+ | 2002 09 08 | 658 | 0.2− | 1.2+ | 2005 05 11 | 699 | 0.3− | 0.6+ | |
| 1998 04 21 | 704 | (2.3+ | 3.3−) | 2002 09 08 | 658 | 0.5+ | 0.5+ | 2005 05 11 | 699 | 0.4− | 0.7+ | |
| 1998 04 21 | 704 | 0.5− | 0.2− | 2002 09 29 | 608 | 0.1− | 0.1+ | 2005 05 12 | 704 | 0.7+ | 0.3+ | |
| 1998 04 21 | 704 | 1.4− | 0.9+ | 2002 09 29 | 608 | 0.3− | 0.2− | 2005 05 12 | 704 | 0.1− | 0.4+ | |
| 1998 04 22 | 704 | 0.3− | 0.5+ | 2002 09 29 | 608 | 0.7− | 0.2− | 2005 05 12 | 704 | 1.4+ | 0.3− | |
| 1998 04 22 | 704 | 0.0 | 0.1− | 2005 04 05 | 703 | 0.3− | 1.3− | 2005 05 14 | 644 | 0.2− | 0.1+ | |
| 1998 04 22 | 704 | 1.5− | 0.9− | 2005 04 05 | 703 | 1.2− | 0.5− | 2005 05 14 | 644 | 0.0 | 0.3+ | |
| 1998 04 22 | 704 | 0.2+ | 0.2− | 2005 04 05 | 703 | (2.2− | 0.4+) | 2005 05 14 | 644 | 0.1+ | 0.0 | |
| 1998 04 22 | 704 | 0.5+ | 1.6− | 2005 04 05 | 703 | (1.7− | 0.3−) | 2005 06 01 | 699 | 0.3+ | 0.2− | |
| 1998 05 01 | 704 | 0.2+ | 0.8+ | 2005 04 12 | 691 | 0.6+ | 0.8+ | 2005 06 01 | 699 | 1.4+ | 0.8− | |
| 1998 05 01 | 704 | 0.8+ | 0.9+ | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2005 06 01 | 699 | 0.1+ | 0.5− | |
| 1998 05 01 | 704 | 0.7+ | 0.9− | 2005 04 12 | 691 | 0.1+ | 0.4+ | 2005 06 01 | 699 | 1.2+ | 0.5+ | |
| 1998 05 01 | 704 | 0.4+ | 0.5+ | 2005 04 13 | 699 | 0.1+ | 0.6+ | 2005 06 22 | 644 | 0.0 | 0.3+ | |
| 1998 05 01 | 704 | 0.2− | 0.7+ | 2005 04 13 | 699 | 0.3− | 0.8+ | 2005 06 22 | 644 | 0.0 | 0.3+ | |
| 1999 11 30 | 691 | 0.3+ | 0.1− | 2005 04 13 | 699 | 0.4− | 0.8+ | 2005 06 22 | 644 | 0.2− | 0.1+ | |
| 1999 11 30 | 691 | 0.5+ | 0.0 | 2005 04 13 | 704 | 0.0 | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.2− | |
| 1999 11 30 | 691 | 0.4+ | 0.1− | 2005 04 13 | 704 | (1.5+ | 0.5+) | 2006 10 21 | G96 | 0.4− | 0.0 | |
| 2002 09 04 | 699 | 0.3− | 0.0 | 2005 04 13 | 704 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.2+ | |
| 2002 09 04 | 699 | (1.9− | 1.0+) | 2005 04 13 | 704 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.1− | |
| 2002 09 04 | 699 | 0.6+ | 0.1− | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.4+ | |
| 2002 09 04 | 699 | 0.4− | 0.4+ | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.4− | 0.5+ | |
| 2002 09 05 | 557 | 0.9− | 0.2+ | 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.5+ | |
| 2002 09 06 | 557 | 0.6− | 0.0 | 2005 05 03 | 704 | 0.5+ | 1.0+ | 2006 11 19 | 691 | 0.0 | 0.3+ | |
| 2002 09 07 | 734 | 0.5− | 0.9+ | 2005 05 03 | 704 | 0.7+ | 0.6+ | 2006 11 19 | 691 | 0.1− | 0.5+ | |
| 2002 09 07 | 734 | 0.1+ | 0.7+ | 2005 05 03 | 704 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.6− | 0.7+ | |
| 2002 09 07 | 734 | 0.3− | 1.0+ | 2005 05 03 | 704 | 0.7+ | 0.7+ | 2006 11 23 | 691 | 0.1− | 0.6+ | |
| 2002 09 07 | 658 | 0.8− | 0.4+ | 2005 05 07 | 703 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.4+ | |
| 2002 09 07 | 658 | 0.3− | 0.7+ | 2005 05 07 | 703 | 0.5− | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.7+ | |
| 2002 09 07 | 658 | 0.3− | 0.5+ | 2005 05 07 | 703 | 1.4− | 0.8+ | 2006 11 27 | 691 | 0.5− | 0.2+ | |
| 2002 09 08 | 658 | 0.1+ | 0.9+ | 2005 05 07 | 703 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.5+ | |
| 2002 09 08 | 658 | 0.1− | 1.0+ | 2005 05 11 | 699 | 0.9+ | 1.3+ | 2006 11 27 | 691 | 0.2− | 0.3+ | |

**(136907)∗ 1998 HS$_{86}$ = 2002 PM$_{89}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34709)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 72.58350 | (2000.0) | | | |
| $n$ | 0.27406087 | $\omega$ | 66.25026 | +0.35087739 | +0.93027037 |
| $a$ | 2.3473149 | $\Omega$ | 224.75079 | −0.90500448 | +0.30748612 |
| $e$ | 0.2515797 | $i$ | 8.75461 | −0.24052433 | +0.20012330 |
| $P$ | 3.60 | $H$ | 16.9 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.2+ | 1.0− | 2002 08 15 | 704 | 0.7− | 0.9+ | 2005 04 05 | 599 | 0.1− | 0.5+ | |
| 1998 04 21 | 704 | 0.3− | 0.7+ | 2002 08 15 | 704 | 0.0 | 0.8+ | 2005 04 05 | 599 | 0.1+ | 0.3+ | |
| 1998 04 21 | 704 | 0.5+ | 0.4− | 2002 08 15 | 704 | 0.2− | 1.3+ | 2006 09 30 | G96 | 0.5+ | 0.3− | |
| 1998 04 21 | 704 | 0.2+ | 0.8− | 2002 08 16 | 848 | 0.5+ | 0.5− | 2006 09 30 | G96 | 0.3+ | 0.0 | |
| 1998 04 21 | 704 | 0.4+ | 0.4+ | 2002 08 16 | 848 | 0.1+ | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− | |
| 1998 04 22 | 704 | 0.0 | 0.7+ | 2002 08 16 | 848 | 1.1− | 1.4+ | 2006 09 30 | G96 | 0.1− | 0.3− | |
| 1998 04 22 | 704 | 0.8+ | 0.2+ | 2002 09 03 | 644 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 | |
| 1998 04 22 | 704 | 0.8− | 0.6− | 2002 09 03 | 644 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.1− | |
| 1998 04 22 | 704 | 1.1+ | 0.7− | 2002 09 03 | 644 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | |
| 1998 04 22 | 704 | 1.5− | 0.5+ | 2002 09 04 | 699 | 0.4− | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.2− | |
| 1998 05 01 | 704 | 0.6+ | 0.7− | 2002 09 04 | 699 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1− | |
| 1998 05 01 | 704 | 0.1− | 0.2− | 2002 09 04 | 699 | 0.9+ | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.3− | |
| 1998 05 01 | 704 | 0.3+ | 0.8+ | 2002 09 04 | 699 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1− | |
| 1998 05 01 | 704 | 2.0− | 0.1+ | 2002 09 04 | 644 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | |
| 1998 05 01 | 704 | 0.5− | 1.3− | 2002 09 04 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1− | |
| 1998 05 01 | 566 | 0.0 | 0.2− | 2002 09 04 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | |
| 1998 05 01 | 566 | 0.3− | 0.1− | 2002 09 11 | 644 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 | |
| 1998 05 01 | 566 | 0.1− | 0.3− | 2002 09 11 | 644 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2002 07 20 | 644 | 0.1− | 0.7− | 2002 09 11 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.4+ | |
| 2002 07 20 | 644 | 0.2+ | 0.6− | 2002 09 12 | 644 | 0.2− | 0.6− | 2006 11 08 | 644 | 0.0 | 0.4+ | |
| 2002 07 20 | 644 | 0.1+ | 0.7− | 2002 09 12 | 644 | 0.0 | 0.5− | 2006 11 08 | 644 | 0.0 | 0.5+ | |
| 2002 08 03 | 644 | 0.1+ | 0.1+ | 2002 09 12 | 644 | 0.1+ | 0.7− | 2006 11 10 | 644 | 0.2+ | 0.3+ | |
| 2002 08 03 | 644 | 0.1+ | 0.2+ | 2002 09 13 | 683 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.4− | 0.2+ | |
| 2002 08 03 | 644 | 0.1− | 0.2+ | 2002 09 13 | 683 | 1.2+ | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.5+ | |
| 2002 08 11 | 704 | 0.1+ | 0.1+ | 2002 09 13 | 683 | (0.8− | 1.9−) | 2006 11 11 | 703 | 0.7− | 0.0 | |
| 2002 08 11 | 704 | 0.5− | 0.2+ | 2002 09 30 | 704 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− | |
| 2002 08 11 | 704 | 0.5+ | 0.2+ | 2002 09 30 | 704 | 0.3+ | 0.7− | 2006 11 11 | 703 | (1.6− | 0.4+) | |
| 2002 08 11 | 704 | 0.3− | 0.4− | 2002 09 30 | 704 | 0.6− | 0.3+ | 2006 11 11 | G96 | 0.6+ | 0.1− | |
| 2002 08 11 | 704 | 0.0 | 0.3+ | 2002 10 05 | 704 | 0.7− | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.2− | |
| 2002 08 11 | 704 | 0.0 | 0.3− | 2002 10 05 | 704 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− | |
| 2002 08 11 | 704 | 0.2+ | 0.4+ | 2002 10 05 | 704 | 0.0 | 1.0+ | 2006 11 11 | 703 | 1.1− | 1.0− | |
| 2002 08 11 | 704 | 0.5+ | 0.2− | 2002 10 05 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.8− | |
| 2002 08 11 | 704 | (1.7+ | 0.0 ) | 2002 10 05 | 704 | 0.6− | 0.4− | 2006 11 18 | 704 | 0.3− | 0.3+ | |
| 2002 08 11 | 704 | 0.2+ | 0.0 | 2002 10 11 | 645 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.6− | 0.8+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 699 | 0.4+ | 0.6− | 2002 10 11 | 645 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2+ | 1.2+ | | |
| 2002 08 13 | 699 | 0.6+ | 0.1− | 2005 03 17 | 704 | 0.3+ | 0.7+ | 2006 11 18 | 704 | (2.3+ | 0.6+) | | |
| 2002 08 13 | 699 | 1.0+ | 0.3+ | 2005 03 17 | 704 | 0.9+ | 1.4+ | 2006 11 21 | G96 | 0.2− | 0.3− | | |
| 2002 08 13 | 699 | 1.2+ | 0.2+ | 2005 03 17 | 704 | (0.6+ | 2.3+) | 2006 11 21 | G96 | 0.7− | 0.0 | | |
| 2002 08 15 | 704 | 0.6+ | 0.3+ | 2005 04 05 | 599 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2002 08 15 | 704 | 0.5− | 1.1+ | 2005 04 05 | 599 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.1− | | |

**(136908)∗ 1998 HV$_{92}$ = 1999 TQ$_{318}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 1942)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 137.48775 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28763994 | $\omega$ | 216.53023 | | −0.34581740 | | +0.93757242 | | |
| $a$ | 2.2728456 | $\Omega$ | 33.28343 | | −0.84412799 | | −0.29365349 | | |
| $e$ | 0.1254731 | $i$ | 3.86492 | | −0.40970509 | | −0.18634801 | | |
| $P$ | 3.43 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.1− | 0.6+ | 1999 10 13 | 645 | 0.0 | 0.0 | 2002 08 30 | 644 | 0.3+ | 0.6+ | | |
| 1998 04 21 | 704 | 1.5− | 0.7− | 1999 10 13 | 645 | 0.1− | 0.0 | 2002 08 30 | 644 | 0.0 | 0.4+ | | |
| 1998 04 21 | 704 | 0.4− | 0.2− | 1999 10 19 | 691 | 0.0 | 0.1− | 2005 05 22 | 644 | 0.5− | 0.5− | | |
| 1998 04 21 | 704 | (5.0− | 0.1+) | 1999 10 19 | 691 | 0.1− | 0.3− | 2005 05 22 | 644 | 0.6− | 0.6− | | |
| 1998 04 22 | 704 | 0.7− | 1.7− | 1999 10 19 | 691 | 0.1+ | 0.4− | 2005 05 22 | 644 | 0.4− | 0.3− | | |
| 1998 04 22 | 704 | 1.3− | 0.7− | 1999 10 30 | 691 | 0.1− | 0.7+ | 2006 09 25 | G96 | 0.3− | 0.1− | | |
| 1998 04 22 | 704 | (2.5− | 1.0+) | 1999 10 30 | 691 | 0.8− | 0.6+ | 2006 09 25 | G96 | 0.3+ | 0.0 | | |
| 1998 05 01 | 704 | 0.6+ | 0.1+ | 1999 10 30 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.4+ | 0.2+ | | |
| 1998 05 01 | 704 | (3.2− | 0.2−) | 2002 08 18 | 644 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.6− | 0.3− | | |
| 1998 05 01 | 704 | (0.2+ | 2.1+) | 2002 08 18 | 644 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.3− | 0.0 | | |
| 1998 05 01 | 704 | 1.5− | 0.2− | 2002 08 18 | 644 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.3+ | | |
| 1998 05 01 | 704 | (2.5− | 2.0+) | 2002 08 18 | 608 | 0.1+ | 1.1− | 2006 09 27 | G96 | 0.2+ | 0.0 | | |
| 1998 05 26 | 691 | 0.4+ | 0.0 | 2002 08 18 | 608 | (0.2− | 1.6−) | 2006 09 27 | G96 | 0.2+ | 0.0 | | |
| 1998 05 26 | 691 | 0.4+ | 0.4+ | 2002 08 18 | 608 | 0.1− | 0.6− | 2006 10 12 | 691 | 0.4+ | 0.5+ | | |
| 1998 05 26 | 691 | 0.1+ | 0.4− | 2002 08 19 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.6+ | | |
| 1998 05 27 | 691 | 0.2+ | 0.2− | 2002 08 19 | 644 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1+ | | |
| 1998 05 27 | 691 | 0.3+ | 0.9+ | 2002 08 19 | 644 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.9+ | | |
| 1998 05 27 | 691 | 0.4+ | 0.2+ | 2002 08 19 | 644 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 1998 05 31 | 691 | 0.6+ | 0.7+ | 2002 08 19 | 644 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.6− | 0.6+ | | |
| 1998 05 31 | 691 | 0.1− | 0.5+ | 2002 08 19 | 644 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.4− | | |
| 1998 05 31 | 691 | 0.4+ | 0.2+ | 2002 08 29 | 644 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.3− | 0.7− | | |
| 1999 10 12 | 691 | 0.2+ | 0.3− | 2002 08 29 | 644 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.7− | 0.3+ | | |
| 1999 10 12 | 691 | 0.4+ | 0.4− | 2002 08 29 | 644 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 1999 10 12 | 691 | 0.2+ | 0.2− | 2002 08 30 | 644 | 0.8+ | 0.4+ | | | | | | |

**(136909)∗ 1998 HJ$_{93}$ = 2005 EP$_{258}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74572)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 73.30022 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27378696 | $\omega$ | 34.29491 | | +0.05890126 | | +0.99448018 | | |
| $a$ | 2.3488802 | $\Omega$ | 239.22412 | | −0.93704920 | | +0.02508868 | | |
| $e$ | 0.1000474 | $i$ | 5.80047 | | −0.34419390 | | +0.10188096 | | |
| $P$ | 3.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.0 | 0.0 | 2002 07 05 | 704 | 0.0 | 0.6+ | 2006 09 15 | 704 | 0.0 | 0.0 | | |
| 1992 11 27 | 691 | 0.8− | 0.6+ | 2002 07 05 | 704 | 0.9− | 0.6+ | 2006 09 15 | 704 | 0.2+ | 1.0+ | | |
| 1992 11 27 | 691 | 0.4− | 0.5+ | 2002 07 05 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 704 | 0.2+ | 0.2+ | | |
| 1998 04 21 | 704 | 0.4+ | 1.4− | 2002 07 05 | 704 | 1.0− | 0.8+ | 2006 09 16 | 704 | 0.1− | 0.3− | | |
| 1998 04 21 | 704 | 0.3− | 1.8− | 2005 03 11 | 699 | (0.5− | 1.7+) | 2006 09 16 | 704 | 0.3− | 0.5− | | |
| 1998 04 21 | 704 | 0.7+ | 0.6− | 2005 03 11 | 699 | 0.3− | 0.7+ | 2006 09 17 | 703 | 0.1+ | 0.2− | | |
| 1998 04 21 | 704 | (2.4− | 0.0 ) | 2005 03 11 | 699 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.3+ | | |
| 1998 04 22 | 704 | 0.0 | 0.0 | 2005 03 11 | 699 | 0.3+ | 1.1+ | 2006 09 17 | 703 | 0.6− | 0.2+ | | |
| 1998 04 22 | 704 | 1.9+ | 0.0 | 2005 03 17 | 704 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.3− | | |
| 1998 04 22 | 704 | 0.7− | 1.1− | 2005 03 17 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 704 | (1.0+ | 1.7−) | | |
| 1998 04 22 | 704 | 0.1− | 0.1− | 2005 03 17 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 704 | 0.2− | 0.2+ | | |
| 1998 04 22 | 704 | 1.2− | 0.9+ | 2005 03 17 | 704 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.6− | 0.3+ | | |
| 1998 05 01 | 704 | 0.8− | 1.6− | 2005 03 17 | 704 | 0.5− | 0.7+ | 2006 09 18 | 704 | 0.7+ | 0.2− | | |
| 1998 05 01 | 704 | (0.7− | 3.5−) | 2005 04 07 | 704 | (1.1+ | 1.8+) | 2006 09 18 | 704 | 0.1+ | 0.7+ | | |
| 1998 05 01 | 704 | 1.2+ | 1.7− | 2005 04 07 | 704 | 1.2+ | 0.6+ | 2006 09 20 | 699 | 0.5+ | 0.4+ | | |
| 1998 05 01 | 704 | 1.1− | 0.3+ | 2005 04 07 | 704 | (1.8+ | 0.1+) | 2006 09 20 | 699 | 0.2+ | 0.1+ | | |
| 1998 05 31 | 691 | 0.7+ | 0.3+ | 2005 04 13 | 699 | 0.5− | 0.3+ | 2006 09 20 | 699 | 0.4+ | 0.3− | | |
| 1998 05 31 | 691 | 0.7− | 0.4+ | 2005 04 13 | 699 | 0.6+ | 0.8+ | 2006 09 20 | 699 | 0.1+ | 0.4+ | | |
| 1998 05 31 | 691 | 0.4+ | 0.3− | 2005 04 13 | 699 | 0.3− | 0.2− | 2006 09 24 | 106 | 1.0+ | 0.3− | | |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2005 04 13 | 699 | 0.1− | 1.1+ | 2006 09 24 | 106 | 0.8+ | 1.2− | | |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2005 05 02 | I10 | (1.7− | 0.5+) | 2006 09 24 | 106 | 0.0 | 0.4+ | | |
| 1999 10 21 | 704 | 0.6+ | 0.7− | 2005 05 02 | I10 | (0.4− | 2.5+) | 2006 09 24 | 106 | 0.1− | 0.0 | | |
| 1999 10 21 | 704 | 0.7+ | 0.0 | 2005 05 02 | I10 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.4− | 0.1+ | | |
| 1999 10 21 | 704 | 0.8− | 0.1+ | 2005 05 02 | I10 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.1− | | |
| 1999 10 21 | 704 | 0.8+ | 0.5− | 2006 08 25 | D35 | 0.1+ | 0.7+ | 2006 09 29 | 699 | (1.9− | 0.3+) | | |
| 2001 01 27 | 608 | (1.6+ | 2.4+) | 2006 08 25 | D35 | 0.2+ | 0.5+ | 2006 09 29 | 699 | 0.3+ | 0.2+ | | |
| 2001 01 27 | 608 | (2.2+ | 2.6+) | 2006 08 25 | D35 | 0.3+ | 0.6+ | 2006 10 01 | 703 | 0.6+ | 0.3− | | |
| 2001 01 27 | 608 | (1.7+ | 2.0+) | 2006 08 31 | 704 | 0.1+ | 0.7+ | 2006 10 01 | 703 | 0.1− | 1.2− | | |
| 2001 02 17 | 704 | (0.4+ | 2.1+) | 2006 08 31 | 704 | 0.6− | 0.7+ | 2006 10 01 | 703 | 0.2+ | 0.5− | | |
| 2001 02 17 | 704 | (0.6− | 1.6+) | 2006 08 31 | 704 | 0.0 | 0.0 | 2006 10 01 | 703 | 1.0− | 0.8− | | |
| 2001 02 17 | 704 | 0.6+ | 0.8+ | 2006 08 31 | 704 | 1.2− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.2+ | | |
| 2001 02 17 | 608 | (1.4+ | 5.4+) | 2006 09 01 | 704 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2001 02 17 | 608 | (1.5+ | 4.9+) | 2006 09 01 | 704 | 1.2− | 1.2+ | 2006 10 10 | 644 | 0.2+ | 0.2− | | |
| 2001 02 17 | 608 | (1.5+ | 5.0+) | 2006 09 01 | 704 | (1.8− | 0.3+) | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2002 06 03 | 644 | 0.5+ | 0.1+ | 2006 09 01 | 704 | 0.8+ | 1.2− | 2006 10 12 | 644 | 0.3− | 0.1+ | | |
| 2002 06 03 | 644 | 0.7+ | 0.2− | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.2+ | | |
| 2002 06 03 | 644 | 0.8+ | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 23 | 703 | 0.9− | 0.6− | | |
| 2002 06 10 | 704 | 0.3− | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 23 | 703 | 0.1− | 1.2− | | |
| 2002 06 10 | 704 | 1.0− | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.3+ | 2006 10 23 | 703 | 0.1+ | 0.2− | | |
| 2002 06 10 | 704 | 1.2− | 0.5+ | 2006 09 15 | 704 | 0.5+ | 0.3+ | 2006 10 23 | 703 | 0.8− | 0.6− | | |
| 2002 06 10 | 704 | 1.1− | 0.5+ | 2006 09 15 | 704 | 0.1− | 0.3+ | | | | | | |

**(136910)∗ 1998 HN$_{93}$ = 2002 PX$_{122}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33021)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 130.24596 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28707238 | $\omega$ | 9.12293 | | −0.27924304 | | +0.95551763 | | |
| $a$ | 2.2758403 | $\Omega$ | 244.70930 | | −0.88747363 | | −0.29456567 | | |
| $e$ | 0.0779670 | $i$ | 6.02601 | | −0.36662497 | | −0.01473544 | | |
| $P$ | 3.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.3− | 1.0− | 2002 08 26 | 644 | 0.1− | 1.1+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | | |
| 1998 04 21 | 704 | 0.8+ | 0.2− | 2005 05 11 | 644 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 1998 04 21 | 704 | 0.9− | 0.5+ | 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.2+ | | |
| 1998 04 21 | 704 | (3.1− | 0.7+) | 2005 05 11 | 644 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.1+ | | |
| 1998 04 22 | 704 | 0.3+ | 1.1+ | 2005 06 06 | 691 | 1.3+ | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.9− | | |
| 1998 04 22 | 704 | 0.3− | 0.1− | 2005 06 06 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.1+ | | |
| 1998 04 22 | 704 | 0.6− | 0.6− | 2005 06 06 | 691 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.2− | 0.5+ | | |
| 1998 04 22 | 704 | 0.9+ | 0.5− | 2005 06 10 | 691 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.5− | 0.0 | | |
| 1998 04 22 | 704 | 1.4− | 0.5+ | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.1− | | |
| 1998 05 01 | 704 | 0.8+ | 1.2+ | 2005 06 10 | 691 | 0.5− | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.2+ | | |
| 1998 05 01 | 704 | 0.6+ | 1.1+ | 2005 06 10 | 691 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 1998 05 01 | 704 | (3.0+ | 0.9+) | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.1+ | | |
| 1998 05 01 | 704 | 0.9+ | 0.6+ | 2005 06 10 | 691 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.2− | | |
| 1998 05 01 | 704 | 0.5+ | 0.3+ | 2005 06 11 | 703 | (1.5− | 0.5−) | 2006 11 01 | G96 | 0.8+ | 0.2+ | | |
| 2000 12 23 | 645 | 0.2+ | 0.1+ | 2005 06 11 | 703 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 2000 12 23 | 645 | 0.0 | 0.5+ | 2005 06 11 | 703 | 1.0− | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.2+ | | |
| 2002 07 21 | 644 | 0.1− | 0.3+ | 2005 06 11 | 703 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.4+ | | |
| 2002 07 21 | 644 | 0.2− | 0.5+ | 2005 06 13 | G96 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.2+ | | |
| 2002 07 21 | 644 | 0.2+ | 1.4+ | 2005 06 13 | G96 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.4− | 0.1− | | |
| 2002 08 15 | 644 | 0.4− | 0.0 | 2005 06 13 | G96 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.1+ | | |
| 2002 08 15 | 644 | 0.5− | 0.1− | 2005 06 13 | G96 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 0.5− | 0.2+ | 2005 06 17 | 691 | 0.0 | 0.7− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2002 08 16 | 644 | 0.1− | 0.9+ | 2005 06 17 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2002 08 16 | 644 | 0.2− | 1.0+ | 2005 06 17 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2002 08 16 | 644 | 0.4− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.4− |
| 2002 08 25 | 644 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2002 08 25 | 644 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2002 08 25 | 644 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.5− |
| 2002 08 26 | 644 | 0.2− | 1.2+ | 2006 10 13 | 691 | 0.0 | 0.1+ | | | | |
| 2002 08 26 | 644 | 0.1− | 1.0+ | 2006 10 13 | 691 | 0.2− | 0.5+ | | | | |

**(136911)∗ 1998 HQ$_{95}$ = 2001 BM$_{60}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 60497)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.18318 | | (2000.0) | | | |
| $n$ | 0.27883182 | $\omega$ | 14.80196 | | −0.88674838 | +0.46166808 |
| $a$ | 2.3204622 | $\Omega$ | 192.76935 | | −0.43407518 | −0.84892419 |
| $e$ | 0.0845171 | $i$ | 6.03445 | | −0.15892151 | −0.25727476 |
| $P$ | 3.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.3+ | 0.8− | 2005 04 05 | G96 | 0.7− | 0.1− | 2005 04 18 | 703 | 0.8− | 0.0 |
| 1998 04 21 | 704 | 0.1+ | 1.4− | 2005 04 05 | G96 | 0.5− | 0.1+ | 2005 04 18 | 703 | 0.9− | 0.7+ |
| 1998 04 21 | 704 | 0.1+ | 1.0− | 2005 04 06 | G96 | 0.6− | 0.8− | 2005 04 18 | 703 | 0.5− | 0.3+ |
| 1998 04 21 | 704 | (3.5− | 0.7+) | 2005 04 06 | G96 | 0.5− | 0.1− | 2005 05 04 | 691 | 0.1+ | 0.1− |
| 1998 04 22 | 704 | 0.5− | 0.6− | 2005 04 06 | G96 | 0.2− | 0.2− | 2005 05 04 | 691 | 0.2+ | 0.1− |
| 1998 04 22 | 704 | (0.5− | 2.2−) | 2005 04 06 | G96 | 0.2− | 0.0 | 2005 05 04 | 691 | 0.1+ | 0.0 |
| 1998 04 22 | 704 | 0.7− | 0.4− | 2005 04 07 | G96 | 0.3− | 0.1− | 2005 05 08 | 703 | 0.5− | 0.7+ |
| 1998 05 01 | 704 | 0.3− | 0.1+ | 2005 04 07 | G96 | 0.2− | 0.3− | 2005 05 08 | 703 | 0.1+ | 0.3+ |
| 1998 05 01 | 704 | 0.8− | 0.5+ | 2005 04 07 | G96 | 0.0 | 0.6− | 2005 05 08 | 703 | 0.0 | 0.2+ |
| 1998 05 01 | 704 | 1.3+ | 0.8+ | 2005 04 07 | G96 | 0.4− | 0.1− | 2005 05 08 | 703 | 0.5− | 0.5+ |
| 1998 05 01 | 704 | 1.3− | 0.8+ | 2005 04 09 | 691 | 0.3+ | 0.1+ | 2005 05 13 | 703 | (1.5− | 0.1+) |
| 1999 10 11 | 704 | 0.7+ | 0.6+ | 2005 04 09 | 691 | 0.6− | 0.2− | 2005 05 13 | 703 | 0.9− | 0.8+ |
| 1999 10 11 | 704 | 0.4− | 0.0 | 2005 04 09 | 691 | 0.4+ | 0.3+ | 2005 05 13 | 703 | 0.3− | 0.5− |
| 1999 10 11 | 704 | 0.1− | 0.5− | 2005 04 10 | 691 | 0.2+ | 0.1+ | 2005 05 13 | 703 | 0.4− | 0.9+ |
| 1999 10 11 | 704 | 0.2− | 0.0 | 2005 04 10 | 691 | 0.3+ | 0.0 | 2006 08 21 | 691 | 0.0 | 0.1+ |
| 1999 10 11 | 704 | 0.6+ | 0.3− | 2005 04 10 | 691 | 0.2+ | 0.1+ | 2006 08 21 | 691 | 0.1+ | 0.0 |
| 2001 01 25 | 608 | 0.0 | 0.1− | 2005 04 11 | 691 | 0.4+ | 0.0 | 2006 08 21 | 691 | 0.6− | 0.1− |
| 2001 01 25 | 608 | 0.4+ | 0.4− | 2005 04 11 | 691 | 0.3+ | 0.0 | 2006 09 20 | 691 | 0.0 | 0.5+ |
| 2001 01 25 | 608 | 0.4+ | 0.4− | 2005 04 11 | 691 | 0.5+ | 0.0 | 2006 09 20 | 691 | 0.0 | 0.4+ |
| 2001 01 30 | 608 | 0.3− | 0.9+ | 2005 04 11 | 699 | 0.6+ | 0.1+ | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2001 01 30 | 608 | 0.2+ | 0.2+ | 2005 04 11 | 699 | 0.9− | 0.4+ | 2006 09 20 | 704 | 0.5+ | 0.1+ |
| 2001 01 30 | 608 | 0.2− | 0.1+ | 2005 04 11 | 699 | 1.2+ | 0.4− | 2006 09 20 | 704 | 0.5− | 0.6+ |
| 2003 12 22 | 691 | 0.3− | 0.3+ | 2005 04 11 | 699 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.0 | 1.0+ |
| 2003 12 22 | 691 | 0.2− | 0.7+ | 2005 04 12 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 291 | 0.1− | 0.4+ |
| 2003 12 22 | 691 | 0.0 | 0.6+ | 2005 04 12 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 291 | 0.1− | 0.3+ |
| 2005 04 01 | 699 | 0.3− | 0.6+ | 2005 04 12 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 291 | 0.0 | 0.3+ |
| 2005 04 01 | 699 | 0.8+ | 0.2+ | 2005 04 12 | 704 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2005 04 01 | 699 | 0.8− | 0.3− | 2005 04 15 | 699 | 0.9+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2005 04 01 | 699 | 0.2+ | 0.8+ | 2005 04 15 | 699 | 0.5− | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2005 04 04 | 704 | 0.6− | 0.2+ | 2005 04 15 | 699 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.5− | 0.3− |
| 2005 04 04 | 704 | 0.3− | 1.1+ | 2005 04 15 | 699 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2005 04 04 | 704 | 0.4+ | 0.5+ | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2005 04 04 | 704 | (0.9+ | 1.5+) | 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2005 04 05 | G96 | 0.7− | 0.2+ | 2005 04 18 | 691 | 0.6+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2005 04 05 | G96 | 0.5− | 0.1− | 2005 04 18 | 703 | 0.6− | 1.3+ | | | | |

**(136912)∗ 1998 HP$_{96}$ = 2002 QG$_{7}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34710)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.58880 | | (2000.0) | | | |
| $n$ | 0.27324097 | $\omega$ | 180.27189 | | −0.11305269 | +0.99154774 |
| $a$ | 2.3520083 | $\Omega$ | 83.23735 | | −0.91147904 | −0.07799448 |
| $e$ | 0.2076266 | $i$ | 3.67533 | | −0.39550608 | −0.10368188 |
| $P$ | 3.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.2+ | 1.1− | 2002 08 18 | 644 | 0.1+ | 0.1− | 2005 03 30 | 703 | 0.7− | 0.8+ |
| 1998 04 21 | 704 | 0.8− | 0.5− | 2002 08 19 | 644 | 0.1− | 0.6+ | 2005 03 30 | 703 | 0.6+ | 0.4+ |
| 1998 04 21 | 704 | 1.2+ | 1.4+ | 2002 08 19 | 644 | 0.0 | 0.7+ | 2005 04 11 | 699 | 0.3+ | 0.3− |
| 1998 04 21 | 704 | 0.4− | 0.1+ | 2002 08 19 | 644 | 0.1+ | 1.1+ | 2005 04 11 | 699 | 0.3+ | 0.5+ |
| 1998 04 21 | 704 | 0.7− | 0.7− | 2002 08 29 | 644 | 0.0 | 0.2− | 2005 04 11 | 699 | 0.1+ | 1.4+ |
| 1998 04 22 | 704 | 0.6− | 0.5+ | 2002 08 29 | 644 | 0.1+ | 0.1− | 2005 04 11 | 699 | 0.8+ | 0.5+ |
| 1998 04 22 | 704 | (1.1+ | 2.3+) | 2002 08 29 | 644 | 0.1+ | 0.1− | 2005 05 11 | G96 | 0.6− | 0.2− |
| 1998 04 22 | 704 | 1.4− | 0.6− | 2002 08 30 | 644 | 0.2− | 0.8+ | 2005 05 11 | G96 | 0.5− | 0.0 |
| 1998 04 22 | 704 | 0.4+ | 0.7+ | 2002 08 30 | 644 | 0.3+ | 0.7+ | 2005 05 11 | G96 | 0.6− | 0.0 |
| 1998 05 01 | 704 | 0.4+ | 0.2− | 2002 08 30 | 644 | 0.2+ | 0.7+ | 2005 05 11 | G96 | 0.4− | 0.0 |
| 1998 05 01 | 704 | 0.5− | 0.3− | 2002 08 31 | 704 | 0.6− | 0.2− | 2006 09 18 | 699 | 1.1− | 0.8− |
| 1998 05 01 | 704 | 1.0+ | 0.9− | 2002 08 31 | 704 | 0.5− | 1.3− | 2006 09 18 | 699 | (0.4+ | 1.8+) |
| 1998 05 01 | 704 | 0.5+ | 0.6+ | 2002 08 31 | 704 | 0.4− | 1.4− | 2006 09 18 | 699 | 0.2+ | 0.0 |
| 1998 05 22 | 704 | (0.9+ | 2.5+) | 2005 03 03 | 703 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.9− |
| 1998 05 22 | 704 | 0.2+ | 0.1− | 2005 03 03 | 703 | 0.8− | 0.6+ | 2006 10 01 | 691 | 0.2+ | 0.4+ |
| 1998 05 22 | 704 | 2.0+ | 0.1+ | 2005 03 03 | 703 | 0.4+ | 0.6− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1998 05 22 | 704 | 0.9− | 0.3+ | 2005 03 03 | 703 | 1.0− | 0.7− | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 1998 05 24 | 704 | 0.5− | 1.3− | 2005 03 10 | 699 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 1998 05 24 | 704 | (2.3+ | 0.7−) | 2005 03 10 | 699 | 1.2− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 1998 05 24 | 704 | 0.7+ | 0.1+ | 2005 03 10 | 699 | 1.3+ | 0.6− | 2006 10 11 | 644 | 0.3− | 0.7+ |
| 1998 05 24 | 704 | 1.1− | 0.7+ | 2005 03 10 | 699 | 0.1− | 0.3+ | 2006 10 15 | 703 | 0.3− | 0.5− |
| 1998 05 24 | 704 | (3.6− | 1.0+) | 2005 03 12 | 704 | 0.4+ | 0.1− | 2006 10 15 | 703 | 0.8− | 0.1− |
| 2002 08 11 | 644 | 0.2− | 0.7+ | 2005 03 12 | 704 | 0.6+ | 0.2− | 2006 10 15 | 703 | (0.3+ | 1.8−) |
| 2002 08 11 | 644 | 0.1− | 0.8+ | 2005 03 12 | 704 | 0.8+ | 0.4+ | 2006 10 15 | 703 | 0.8+ | 0.2+ |
| 2002 08 11 | 644 | 0.1− | 0.9+ | 2005 03 12 | 704 | 1.3+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2002 08 12 | 807 | 0.5− | 0.2− | 2005 03 12 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2002 08 12 | 807 | 0.2− | 0.0 | 2005 03 16 | 704 | 0.6+ | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2002 08 13 | 704 | 0.8+ | 1.1− | 2005 03 16 | 704 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2002 08 13 | 704 | 0.4− | 0.5+ | 2005 03 16 | 704 | 0.6+ | 0.7+ | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 2002 08 13 | 704 | 0.2+ | 1.4+ | 2005 03 16 | 704 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2002 08 13 | 704 | (1.6+ | 0.7−) | 2005 03 16 | 704 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2002 08 16 | 644 | 0.2− | 0.4− | 2005 03 18 | 704 | 0.4+ | 1.1+ | 2006 11 23 | G96 | 0.6− | 0.2− |
| 2002 08 16 | 644 | 0.1− | 0.0 | 2005 03 18 | 704 | 0.3+ | 1.0+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2002 08 16 | 644 | 0.1− | 0.2− | 2005 03 18 | 704 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2005 03 30 | 703 | 1.0− | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2005 03 30 | 703 | (1.5− | 0.7+) | | | | |

**(136913)∗ 1998 HB$_{100}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 173.72701 | | (2000.0) | | | |
| $n$ | 0.29432458 | $\omega$ | 166.56729 | | −0.60988591 | +0.78118073 |
| $a$ | 2.2383003 | $\Omega$ | 65.68640 | | −0.73995161 | −0.50105822 |
| $e$ | 0.1607069 | $i$ | 8.41746 | | −0.28374423 | −0.37242090 |
| $P$ | 3.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.6+ | 0.1+ | 2001 02 16 | 704 | 1.0+ | 0.2+ | 2005 08 05 | E12 | 0.5− | 0.0 |
| 1998 04 21 | 704 | 1.1− | 1.7+ | 2001 02 16 | 704 | 0.7+ | 0.6− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 1998 04 21 | 704 | 0.0 | 0.0 | 2001 03 18 | 699 | 0.0 | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 1998 04 21 | 704 | (2.2+ | 0.3+) | 2001 03 18 | 699 | 0.5− | 0.8+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 1998 04 22 | 704 | 0.5− | 1.4+ | 2001 03 18 | 699 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3− | 0.2− |
| 1998 04 22 | 704 | 0.3− | 0.7+ | 2001 03 18 | 699 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.3+ | 0.3+ |
| 1998 04 22 | 704 | (0.1+ | 3.5+) | 2002 09 17 | 644 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1998 05 01 | 704 | 1.0+ | 0.4− | 2002 09 17 | 644 | 0.6− | 1.3+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 1998 05 01 | 704 | 0.6+ | 1.4+ | 2002 09 17 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 1998 05 01 | 704 | 0.5− | 0.6− | 2002 09 17 | 644 | 0.1− | 1.4+ | 2006 11 15 | 691 | 0.2− | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.7− | 1.9+ | 2002 09 17 | 644 | 0.5− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1998 05 01 | 704 | 0.1+ | 0.2− | 2002 09 17 | 644 | 0.3− | 0.9+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 1998 05 24 | 704 | (2.4+ | 0.2+) | 2005 07 05 | E12 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 1998 05 24 | 704 | 0.7+ | 0.3− | 2005 07 05 | E12 | 0.1+ | 0.7+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 1998 05 24 | 704 | 1.5+ | 0.7+ | 2005 07 05 | E12 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 1998 05 24 | 704 | (2.8+ | 0.9+) | 2005 07 05 | E12 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.4− | 0.1+ |
| 1998 05 24 | 704 | 0.1+ | 1.9− | 2005 08 05 | E12 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 02 16 | 704 | (2.1− | 0.9+) | 2005 08 05 | E12 | 0.1+ | 0.3+ | | | | |
| 2001 02 16 | 704 | 1.0+ | 1.0+ | 2005 08 05 | E12 | 0.8+ | 0.2+ | | | | |

**(136914)∗ 1998 HA$_{103}$**

Discovered 1998 Apr. 25 by E. W. Elst at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.37688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18094272 | $\omega$ | 275.36633 | | −0.73252685 | −0.67222169 | |
| $a$ | 3.0958172 | $\Omega$ | 222.45704 | | +0.67041522 | −0.68503638 | |
| $e$ | 0.2850033 | $i$ | 9.14986 | | +0.11810106 | −0.28079024 | |
| $P$ | 5.45 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 25 | 809 | (0.6+ | 2.3+) | 2001 11 16 | 691 | 0.6+ | 0.2+ | 2003 04 02 | 704 | 0.3+ | 0.3+ |
| 1998 04 25 | 809 | 0.8+ | 1.3+ | 2001 11 17 | 704 | 0.1− | 0.4+ | 2003 04 07 | 704 | 0.2+ | 0.1+ |
| 1998 04 25 | 809 | 0.8+ | 1.4+ | 2001 11 17 | 704 | 0.1+ | 0.4+ | 2003 04 07 | 704 | 1.2+ | 0.6+ |
| 1998 04 28 | 809 | (1.7+ | 2.2+) | 2001 11 17 | 704 | 0.1+ | 0.8+ | 2003 04 07 | 704 | 0.6+ | 0.1+ |
| 1998 04 28 | 809 | (3.4+ | 3.4+) | 2001 11 17 | 704 | 0.0 | 0.4+ | 2003 04 07 | 704 | 0.3+ | 0.2− |
| 1998 04 28 | 809 | (3.4+ | 1.9+) | 2001 11 17 | 704 | 0.4+ | 0.4+ | 2003 04 07 | 704 | 0.7+ | 0.1+ |
| 1998 05 05 | 699 | 0.1− | 0.1+ | 2001 11 18 | 704 | 0.4− | 0.7+ | 2003 04 07 | 704 | 0.3+ | 0.2+ |
| 1998 05 05 | 699 | 0.8+ | 0.1+ | 2001 11 18 | 704 | 0.6− | 0.3+ | 2003 04 07 | 704 | 0.3+ | 0.2− |
| 1998 05 05 | 699 | 1.3+ | 0.8− | 2001 11 18 | 704 | 0.0 | 0.2+ | 2003 04 07 | 704 | 0.3+ | 0.2+ |
| 1998 05 22 | 704 | 0.3+ | 1.5− | 2001 11 18 | 704 | 0.7− | 0.7+ | 2003 04 07 | 704 | 0.0 | 0.1+ |
| 1998 05 22 | 704 | 0.9− | 0.6+ | 2001 11 18 | 704 | 0.5+ | 0.5+ | 2003 04 07 | 704 | 0.4− | 0.5+ |
| 1998 05 22 | 704 | (2.2− | 1.1−) | 2001 11 18 | 704 | 0.4− | 0.9+ | 2003 04 27 | 704 | 0.6+ | 0.1− |
| 1998 05 22 | 704 | 1.4+ | 1.4− | 2001 11 18 | 704 | (1.0− | 1.7+) | 2003 04 27 | 704 | 0.4+ | 0.7+ |
| 1998 05 24 | 704 | 1.9− | 0.8+ | 2001 11 18 | 704 | 0.5− | 0.5+ | 2003 04 27 | 704 | 0.2+ | 0.1− |
| 1998 05 24 | 704 | 0.1− | 0.1− | 2001 11 18 | 704 | 0.3− | 1.5+ | 2003 04 27 | 704 | 1.0+ | 0.8+ |
| 1998 05 24 | 704 | 0.8+ | 1.4+ | 2001 11 18 | 704 | 0.3− | 0.1− | 2003 04 27 | 704 | 0.0 | 0.8+ |
| 1998 05 24 | 704 | (0.3− | 3.2−) | 2001 11 19 | 704 | 0.3− | 0.2+ | 2003 05 01 | 704 | 0.5+ | 0.7+ |
| 1998 05 24 | 704 | 1.8− | 0.5− | 2001 11 19 | 704 | 0.1− | 0.7+ | 2003 05 01 | 704 | 1.0+ | 0.7+ |
| 1998 05 31 | 426 | 0.2− | 0.3+ | 2001 11 19 | 704 | 0.2+ | 0.3+ | 2003 05 01 | 704 | 0.6+ | 0.9+ |
| 1998 05 31 | 426 | 0.5− | 0.0 | 2001 11 19 | 704 | 0.0 | 0.5+ | 2003 05 01 | 704 | 0.9+ | 0.7+ |
| 1998 05 31 | 426 | 0.4+ | 0.3+ | 2001 11 19 | 704 | 0.2+ | 0.9+ | 2003 05 01 | 704 | 0.1− | 1.4+ |
| 1998 06 02 | 426 | 0.1− | 0.3+ | 2001 11 21 | 704 | 0.4− | 0.2+ | 2003 05 05 | 699 | 0.2− | 0.3+ |
| 1998 06 02 | 426 | 0.3− | 0.2+ | 2001 11 21 | 704 | 0.7− | 0.2+ | 2003 05 05 | 699 | 0.3− | 0.7+ |
| 2001 09 21 | 699 | (1.6+ | 0.3−) | 2001 11 21 | 704 | 1.0− | 0.4+ | 2003 05 05 | 699 | 0.7+ | 1.0+ |
| 2001 09 21 | 699 | (2.4+ | 1.6−) | 2001 11 21 | 704 | 1.0− | 0.1+ | 2003 05 05 | 699 | 0.1+ | 0.6+ |
| 2001 09 21 | 699 | 0.7− | 0.2+ | 2001 11 21 | 704 | 0.5− | 0.2+ | 2003 05 06 | 704 | 0.2+ | 0.7+ |
| 2001 09 21 | 699 | (0.4+ | 1.7−) | 2001 11 21 | 704 | 1.2− | 0.1+ | 2003 05 06 | 704 | 0.0 | 0.0 |
| 2001 10 11 | 644 | 0.1− | 1.0− | 2001 11 21 | 704 | 0.8− | 1.0− | 2003 05 06 | 704 | 1.4+ | 0.3+ |
| 2001 10 11 | 644 | 0.1+ | 0.8− | 2001 11 21 | 704 | 0.3− | 0.1− | 2003 05 06 | 704 | 0.5+ | 1.2+ |
| 2001 10 11 | 644 | 0.1− | 0.7− | 2001 11 21 | 704 | 0.0 | 0.7− | 2003 05 08 | 703 | 0.4+ | 0.3− |
| 2001 10 13 | 704 | 0.7− | 0.9+ | 2001 11 21 | 704 | (1.5− | 0.4−) | 2003 05 08 | 703 | 0.3− | 0.1− |
| 2001 10 13 | 704 | 0.7− | 0.8+ | 2001 11 24 | 644 | 0.0 | 0.4+ | 2003 05 08 | 703 | 0.5+ | 0.6+ |
| 2001 10 13 | 704 | 0.6− | 1.2+ | 2001 11 24 | 644 | 0.0 | 0.0 | 2003 05 08 | 703 | 0.4− | 0.5+ |
| 2001 10 13 | 699 | 0.6− | 0.1+ | 2001 11 24 | 644 | 0.1− | 0.3+ | 2003 05 15 | 608 | 0.3− | 0.3− |
| 2001 10 13 | 704 | 0.0 | 1.1+ | 2001 12 05 | 608 | 0.0 | 0.2− | 2003 05 15 | 608 | 0.3− | 0.1+ |
| 2001 10 13 | 704 | 0.5− | 0.8+ | 2001 12 05 | 608 | 0.4+ | 0.0 | 2003 05 15 | 608 | 0.2− | 0.0 |
| 2001 10 13 | 699 | 0.2+ | 0.4+ | 2001 12 05 | 608 | 0.1− | 0.1+ | 2005 07 30 | 644 | 0.2− | 0.8+ |
| 2001 10 13 | 699 | 0.4+ | 0.1− | 2001 12 11 | 704 | 0.2+ | 0.2+ | 2005 07 30 | 644 | 0.1− | 0.8+ |
| 2001 10 13 | 699 | 0.1− | 0.1− | 2001 12 11 | 704 | 0.3+ | 0.1− | 2005 07 30 | 644 | 0.1− | 0.8+ |
| 2001 10 14 | 946 | (0.7+ | 1.8+) | 2001 12 11 | 704 | 0.2+ | 0.0 | 2005 07 30 | 644 | 0.2− | 0.7+ |
| 2001 10 14 | 946 | 0.4+ | 0.1+ | 2001 12 11 | 704 | 0.1− | 0.2− | 2005 07 30 | 644 | 0.3− | 0.9+ |
| 2001 10 14 | 946 | 0.9+ | 0.6+ | 2001 12 11 | 704 | 0.9− | 0.3− | 2005 07 30 | 644 | 0.3− | 0.8+ |
| 2001 10 14 | 946 | 0.2− | 0.9− | 2001 12 14 | 704 | 0.8+ | 0.6+ | 2005 09 02 | 644 | 0.2− | 0.5+ |
| 2001 10 16 | 333 | 0.1+ | 0.0 | 2001 12 14 | 704 | 1.0+ | 0.9+ | 2005 09 02 | 644 | 0.1− | 0.5+ |
| 2001 10 16 | 333 | 0.1− | 0.3− | 2001 12 14 | 704 | (1.6+ | 0.1−) | 2005 09 02 | 644 | 0.2− | 0.7+ |
| 2001 10 16 | 333 | 0.3− | 0.4− | 2001 12 14 | 704 | 1.0+ | 0.3+ | 2006 08 29 | 699 | 0.9+ | 0.6− |
| 2001 10 17 | 704 | 0.4+ | 0.1+ | 2001 12 14 | 704 | 0.5+ | 0.6− | 2006 08 29 | 699 | 0.3− | 0.9− |
| 2001 10 17 | 704 | 1.1+ | 0.8+ | 2002 12 14 | 608 | 0.4+ | 1.3− | 2006 08 29 | 699 | 1.2− | 0.9− |
| 2001 10 17 | 704 | 0.2+ | 0.1− | 2002 12 14 | 608 | 0.0 | 1.2− | 2006 08 29 | 699 | 0.8− | 0.1+ |
| 2001 10 18 | 946 | 0.7+ | 0.1− | 2002 12 14 | 608 | 0.4+ | 1.1− | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 2001 10 19 | 946 | 0.5+ | 0.1− | 2003 01 05 | 704 | 0.5− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.5+ |
| 2001 10 19 | 644 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.2+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.5+ |
| 2001 10 19 | 644 | 0.1− | 0.0 | 2003 01 05 | 704 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.6+ |
| 2001 10 19 | 644 | 0.2− | 0.1− | 2003 01 09 | 704 | 0.4+ | 1.1− | 2006 09 19 | 699 | 0.3− | 0.3+ |
| 2001 10 21 | 704 | 0.1+ | 0.7− | 2003 01 09 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | (1.7− | 0.6+) |
| 2001 10 21 | 704 | 0.3+ | 0.6− | 2003 01 09 | 704 | (0.7+ | 2.0−) | 2006 09 19 | 699 | 0.2− | 1.0+ |
| 2001 10 21 | 704 | 0.0 | 0.7− | 2003 01 09 | 704 | (0.1+ | 1.9−) | 2006 09 22 | 106 | 0.4+ | 0.3− |
| 2001 10 21 | 704 | 0.6+ | 0.4− | 2003 02 23 | 699 | 0.7− | 0.4+ | 2006 09 22 | 106 | 0.2+ | 0.6+ |
| 2001 10 21 | 704 | 0.4+ | 0.0 | 2003 02 23 | 699 | 0.6− | 0.3+ | 2006 09 22 | 106 | 0.2− | 0.1+ |
| 2001 10 26 | 704 | 0.1+ | 0.2+ | 2003 02 23 | 699 | 0.3− | 0.5+ | 2006 09 22 | 106 | 0.7+ | 0.1+ |
| 2001 10 26 | 704 | 0.1+ | 0.6+ | 2003 02 23 | 699 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.7+ |
| 2001 10 26 | 704 | 0.7+ | 0.9+ | 2003 03 02 | 704 | 0.6− | 0.0 | 2006 09 25 | 704 | 0.9− | 0.6+ |
| 2001 10 26 | 644 | 0.2− | 0.5+ | 2003 03 02 | 704 | 0.5− | 0.5− | 2006 09 25 | 704 | 0.5− | 0.4+ |
| 2001 10 26 | 644 | 0.0 | 0.6+ | 2003 03 02 | 704 | 0.0 | 0.4+ | 2006 09 25 | 704 | (0.5− | 1.5+) |
| 2001 10 26 | 704 | 0.1− | 0.3+ | 2003 03 02 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 704 | 0.4+ | 0.8+ |
| 2001 10 26 | 644 | 0.2− | 0.4+ | 2003 03 02 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.8+ |
| 2001 10 26 | 185 | 0.3− | 0.1+ | 2003 03 11 | 704 | 0.6− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2001 10 26 | 185 | (0.0 | 1.9+) | 2003 03 11 | 704 | 0.6− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 10 26 | 185 | (1.3− | 2.1+) | 2003 03 11 | 704 | 1.3− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2001 10 26 | 185 | (0.0 | 2.7+) | 2003 03 11 | 704 | 0.7− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.4− | 0.5− | 2003 03 11 | 704 | 0.8− | 0.8+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2001 11 09 | 704 | 0.2− | 0.0 | 2003 03 30 | 704 | 0.4+ | 1.0+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 0.3− | 0.1− | 2003 03 30 | 704 | 0.2+ | 1.4+ | 2006 10 17 | 703 | 0.1+ | 1.1+ |
| 2001 11 09 | 704 | 0.3− | 0.4+ | 2003 03 30 | 704 | 0.4+ | 1.3+ | 2006 10 17 | 703 | (1.9− | 2.1+) |
| 2001 11 09 | 704 | 0.2− | 0.3− | 2003 03 30 | 704 | 0.5+ | 1.3+ | 2006 10 17 | 703 | (0.6− | 2.2+) |
| 2001 11 14 | 644 | 0.2− | 0.1+ | 2003 03 30 | 704 | 0.7+ | 1.2+ | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2001 11 14 | 644 | 0.7− | 0.4+ | 2003 04 02 | 704 | 0.3+ | 1.2+ | 2006 10 22 | 644 | 0.2− | 0.6+ |
| 2001 11 14 | 644 | 0.6− | 0.1+ | 2003 04 02 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2001 11 15 | 691 | 0.2− | 0.1− | 2003 04 02 | 704 | 0.6+ | 0.8+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2001 11 15 | 691 | 0.2− | 0.1− | 2003 04 02 | 704 | 0.1+ | 0.9+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2001 11 15 | 691 | 0.3− | 0.1− | 2003 04 02 | 704 | 0.3+ | 1.0+ | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2001 11 16 | 691 | 0.3+ | 0.3+ | 2003 04 02 | 704 | 0.0 | 0.7+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2001 11 16 | 691 | 0.5+ | 0.2+ | 2003 04 02 | 704 | 0.4− | 1.1+ | | | | |

**(136915)∗ 1998 HM$_{109}$ = 2001 UC$_{76}$**

Discovered 1998 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19335)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.10078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18347539 | $\omega$ | 95.82203 | | −0.81721678 | −0.47606032 | |
| $a$ | 3.0672617 | $\Omega$ | 56.18575 | | +0.23546847 | −0.79024834 | |
| $e$ | 0.1562257 | $i$ | 23.01544 | | +0.52603359 | −0.38584210 | |
| $P$ | 5.37 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.6+ | 0.4+ | 2001 11 14 | 291 | 0.6− | 0.2+ | 2002 12 14 | 704 | 0.2− | 0.6− |
| 1998 04 23 | 704 | 1.6+ | 0.1− | 2001 11 20 | 704 | 0.8+ | 0.2+ | 2002 12 14 | 704 | (2.1+ | 1.7−) |
| 1998 04 23 | 704 | 1.4+ | 0.5+ | 2001 11 20 | 704 | 0.4+ | 0.3+ | 2003 01 11 | 704 | 0.2+ | 0.2+ |
| 1998 04 23 | 704 | 0.2− | 1.8+ | 2001 11 20 | 704 | 0.1+ | 0.2− | 2003 01 11 | 704 | 0.0 | 0.4+ |
| 1998 04 23 | 704 | 1.3+ | 0.7+ | 2001 11 20 | 704 | 0.6+ | 0.3+ | 2003 01 11 | 704 | 0.6+ | 0.2− |
| 1998 04 24 | 704 | 0.2− | 0.7+ | 2001 11 20 | 704 | 0.2+ | 0.6+ | 2003 01 11 | 704 | 0.3+ | 0.1+ |
| 1998 04 24 | 704 | 0.5− | 0.1− | 2001 11 21 | 704 | 0.2− | 0.1+ | 2003 01 11 | 704 | 0.8+ | 0.4+ |
| 1998 04 24 | 704 | 0.2− | 0.7− | 2001 11 21 | 704 | 0.4− | 0.0 | 2003 01 13 | 704 | 0.2− | 0.8+ |
| 1998 04 24 | 704 | 0.5− | 1.0− | 2001 11 21 | 704 | 0.7− | 0.3− | 2003 01 13 | 704 | 0.6+ | 0.5+ |
| 1998 04 24 | 704 | 0.6− | 0.4+ | 2001 11 21 | 704 | 0.8− | 0.4− | 2003 01 13 | 704 | 0.1− | 0.7+ |
| 1998 04 24 | 566 | 0.3+ | 0.7− | 2001 11 24 | 644 | 1.4− | 0.5+ | 2003 02 06 | 699 | 0.1− | 0.4+ |
| 1998 04 24 | 566 | 0.6+ | 0.1− | 2001 11 24 | 644 | 0.6− | 0.0 | 2003 02 06 | 699 | 0.5+ | 0.2+ |
| 1998 04 24 | 566 | 0.8+ | 0.5− | 2001 11 24 | 644 | 0.1− | 0.1− | 2003 02 06 | 699 | 0.3+ | 0.1− |
| 1998 05 28 | 704 | 0.5+ | 1.0+ | 2001 11 24 | 644 | 0.4+ | 0.0 | 2003 02 06 | 699 | 0.1+ | 0.1− |
| 1998 05 28 | 704 | 0.1− | 1.2+ | 2001 11 24 | 644 | 0.0 | 0.5+ | 2003 02 11 | 704 | 0.5− | 0.5+ |
| 1998 05 28 | 704 | 0.7− | 0.3+ | 2001 11 24 | 644 | 0.1+ | 0.7− | 2003 02 11 | 704 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 28 | 704 | 1.1− | 0.6+ | 2001 11 27 | 704 | 0.1+ | 1.2− | 2003 02 11 | 704 | 0.4+ | 0.0 |
| 1998 05 28 | 704 | (4.6− | 1.9+) | 2001 11 27 | 704 | 0.1+ | 0.8− | 2003 02 11 | 704 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 1.0− | 0.3+ | 2001 11 27 | 704 | 0.7− | 0.6− | 2003 03 10 | 644 | 0.2− | 0.8− |
| 2001 10 17 | 704 | 0.4− | 0.8+ | 2001 12 10 | 704 | 0.4+ | 1.0− | 2003 03 10 | 644 | 0.4− | 0.9− |
| 2001 10 17 | 704 | 0.6− | 0.7+ | 2001 12 10 | 704 | 0.1− | 1.2− | 2003 03 10 | 644 | 0.4− | 0.8− |
| 2001 10 17 | 704 | 0.2+ | 1.1+ | 2001 12 10 | 704 | 0.1− | 1.3− | 2003 03 21 | 644 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2001 12 10 | 704 | (0.2− | 1.9−) | 2003 03 21 | 644 | 0.2+ | 0.3+ |
| 2001 10 22 | 704 | 0.3+ | 0.4− | 2001 12 15 | 704 | 0.4+ | 0.3− | 2003 03 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 22 | 704 | 0.3+ | 0.2− | 2001 12 15 | 704 | 0.0 | 0.4− | 2003 03 24 | 704 | 0.4− | 0.4− |
| 2001 10 22 | 704 | 0.5+ | 0.1+ | 2001 12 15 | 704 | 0.1+ | 0.1+ | 2003 03 24 | 704 | 0.2− | 0.2+ |
| 2001 10 22 | 704 | 0.1− | 0.3+ | 2001 12 15 | 704 | 0.4− | 0.1+ | 2003 03 24 | 704 | 0.1− | 0.0 |
| 2001 10 23 | 333 | 0.0 | 0.4− | 2001 12 15 | 704 | 0.0 | 0.2− | 2003 03 24 | 704 | 0.7− | 0.1+ |
| 2001 10 23 | 333 | 0.3− | 0.5− | 2001 12 18 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | (0.6+ | 1.6+) |
| 2001 10 23 | 333 | 0.2− | 0.6− | 2001 12 18 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.7+ |
| 2001 10 23 | 333 | 0.9+ | 0.4− | 2001 12 18 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.0 |
| 2001 10 23 | 333 | (0.6+ | 1.6−) | 2001 12 18 | 704 | 0.2− | 0.9+ | 2006 09 18 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 333 | 0.9+ | 0.6− | 2001 12 18 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 1.2− | 0.1− |
| 2001 10 23 | 704 | 0.1− | 0.3+ | 2001 12 19 | 704 | 1.0+ | 0.7− | 2006 09 26 | 703 | 0.5− | 0.2+ |
| 2001 10 23 | 704 | 0.1+ | 0.4− | 2001 12 19 | 704 | 1.2+ | 1.3− | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2001 10 23 | 704 | 0.8− | 0.3− | 2001 12 19 | 704 | 1.2+ | 1.5− | 2006 09 26 | 703 | 1.1− | 0.5− |
| 2001 10 23 | 704 | 0.1+ | 0.5− | 2001 12 19 | 704 | 0.8+ | 1.2− | 2006 09 29 | 699 | (1.7− | 0.8−) |
| 2001 10 23 | 704 | 0.8− | 0.1− | 2001 12 19 | 704 | (3.5+ | 2.5−) | 2006 09 29 | 699 | 0.2− | 0.4+ |
| 2001 10 24 | 704 | 0.7− | 0.4+ | 2001 12 19 | 644 | 0.3+ | 0.9+ | 2006 09 29 | 699 | 0.3+ | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2001 12 19 | 644 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 0.1+ | 0.6− |
| 2001 10 24 | 704 | 0.1− | 0.2− | 2001 12 19 | 644 | 0.3+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | 0.3− | 0.1+ | 2001 12 20 | 644 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.1− | 0.1+ | 2001 12 20 | 644 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2001 10 26 | 704 | 1.3+ | 0.3+ | 2001 12 20 | 644 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2001 10 26 | 704 | (2.6+ | 1.1+) | 2002 01 06 | 644 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.5− | 0.6+ |
| 2001 10 26 | 704 | (1.6+ | 0.7−) | 2002 01 06 | 644 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 10 26 | 704 | 0.4+ | 0.2− | 2002 01 06 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.7+ | 1.2− |
| 2001 10 26 | 704 | (1.8+ | 0.2−) | 2002 01 07 | 699 | 0.2− | 0.4+ | 2006 10 17 | 703 | (1.6+ | 0.3+) |
| 2001 11 09 | 704 | 0.8− | 0.7+ | 2002 01 07 | 699 | 1.1+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2001 11 09 | 704 | 0.7− | 0.1+ | 2002 01 07 | 699 | 0.7+ | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2002 01 07 | 699 | 0.1+ | 1.3+ | 2006 10 17 | 703 | (0.3− | 2.6−) |
| 2001 11 09 | 704 | (0.8− | 1.5+) | 2002 01 09 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2001 11 09 | 704 | 0.8− | 1.4+ | 2002 01 09 | 704 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 1.3+ |
| 2001 11 12 | 704 | 0.1+ | 1.4+ | 2002 01 09 | 704 | 1.2+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.9+ |
| 2001 11 12 | 704 | 0.6− | 0.4− | 2002 01 09 | 704 | 0.8+ | 0.4+ | 2006 11 16 | 703 | 1.6+ | 0.3− |
| 2001 11 12 | 704 | (2.0− | 0.6−) | 2002 01 09 | 704 | 0.3− | 0.0 | 2006 11 16 | 703 | 0.6+ | 0.3− |
| 2001 11 12 | 704 | 0.6− | 0.8+ | 2002 12 14 | 704 | 0.2− | 1.3− | 2006 11 16 | 703 | 0.2+ | 0.1+ |
| 2001 11 14 | 291 | (0.5− | 2.8−) | 2002 12 14 | 704 | 0.7− | 0.1+ | 2006 11 16 | 703 | 0.8− | 0.8− |
| 2001 11 14 | 291 | 0.5− | 0.1+ | 2002 12 14 | 704 | 0.4+ | 0.8− | | | | |

**(136916)∗ 1998 HW$_{115}$ = 2003 EK$_{27}$**

Discovered 1998 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46340)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.45572 | | (2000.0) | | | |
| $n$ | 0.18510323 | $\omega$ | 9.49164 | | −0.95600999 | −0.28267749 |
| $a$ | 3.0492525 | $\Omega$ | 153.67685 | | +0.25620834 | −0.93473581 |
| $e$ | 0.1147150 | $i$ | 10.17666 | | +0.14283618 | −0.21531933 |
| $P$ | 5.32 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.5− | 0.9− | 2003 03 09 | 704 | 0.4+ | 0.6+ | 2003 04 09 | 704 | 0.2+ | 0.3+ |
| 1998 04 21 | 704 | 1.0− | 1.4− | 2003 03 09 | 704 | 0.0 | 0.9+ | 2003 04 09 | 704 | (0.4− | 2.0+) |
| 1998 04 21 | 704 | (0.3+ | 2.6−) | 2003 03 10 | 599 | 0.3− | 0.2+ | 2003 04 24 | 608 | 0.5+ | 0.5− |
| 1998 04 21 | 704 | 0.5+ | 1.0− | 2003 03 10 | 599 | 0.0 | 0.4+ | 2003 04 24 | 608 | 0.0 | 0.1+ |
| 1998 04 23 | 704 | (1.4− | 2.3−) | 2003 03 10 | 599 | 0.0 | 0.3+ | 2003 04 24 | 608 | 0.4− | 0.0 |
| 1998 04 23 | 704 | 0.7+ | 0.1+ | 2003 03 10 | 599 | 0.1− | 0.3+ | 2005 08 30 | 691 | 0.2+ | 0.5+ |
| 1998 04 23 | 704 | 0.2− | 1.8− | 2003 03 22 | 608 | (0.9− | 1.7+) | 2005 08 30 | 691 | 0.1+ | 0.5+ |
| 1998 04 23 | 704 | 1.7+ | 0.9− | 2003 03 22 | 608 | 0.3− | 1.1+ | 2005 08 30 | 691 | 0.0 | 0.6+ |
| 1998 04 23 | 704 | 0.1+ | 1.3− | 2003 03 22 | 608 | 0.4− | 1.2+ | 2005 09 14 | 691 | 0.1+ | 0.7+ |
| 1998 04 24 | 704 | 0.3− | 1.5− | 2003 03 26 | 644 | 0.4+ | 0.5+ | 2005 09 14 | 691 | 0.1+ | 0.8+ |
| 1998 04 24 | 704 | 0.4− | 0.9+ | 2003 03 26 | 699 | 0.4+ | 0.7− | 2005 09 14 | 691 | 1.1− | 0.1− |
| 1998 04 24 | 704 | 0.8− | 0.9− | 2003 03 26 | 644 | 0.4− | 0.5+ | 2005 09 22 | 644 | 0.3− | 0.6+ |
| 1998 04 24 | 704 | 1.7− | 0.0 | 2003 03 26 | 699 | 0.6+ | 0.6− | 2005 09 22 | 644 | 0.3− | 0.8+ |
| 2000 10 02 | 704 | 0.3+ | 1.3+ | 2003 03 26 | 699 | 0.0 | 0.1+ | 2005 09 22 | 644 | 0.2+ | 0.7+ |
| 2000 10 02 | 704 | 0.3− | 1.0+ | 2003 03 26 | 644 | 0.1− | 0.7+ | 2005 10 01 | 699 | 0.2− | 0.3+ |
| 2000 10 02 | 704 | 1.8− | 1.9+ | 2003 03 26 | 699 | 0.6− | 0.5+ | 2005 10 01 | 699 | (2.5+ | 1.3+) |
| 2001 12 11 | 704 | 0.2− | 0.1+ | 2003 03 26 | 644 | 0.0 | 0.7+ | 2005 10 01 | 699 | (0.6+ | 2.0−) |
| 2001 12 11 | 704 | 0.2+ | 0.2+ | 2003 03 26 | 644 | 0.3+ | 0.7+ | 2005 10 01 | 699 | 0.7+ | 1.3− |
| 2001 12 11 | 704 | 0.3+ | 0.5− | 2003 03 26 | 644 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2001 12 11 | 704 | 0.6+ | 1.2− | 2003 03 27 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.5− |
| 2001 12 11 | 704 | 0.1− | 0.5− | 2003 03 27 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.4+ |
| 2003 02 12 | 608 | 0.4+ | 0.1+ | 2003 03 27 | 704 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.7+ | 0.7− |
| 2003 02 12 | 608 | 0.3+ | 0.3+ | 2003 03 27 | 704 | 0.5+ | 0.6+ | 2006 10 28 | 703 | 0.4+ | 0.7+ |
| 2003 02 12 | 608 | 0.2+ | 0.2− | 2003 03 27 | 704 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.5+ | 0.7+ |
| 2003 02 23 | 683 | (0.8− | 2.8+) | 2003 03 30 | 704 | 0.7− | 0.6+ | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2003 02 23 | 683 | 0.2− | 0.8+ | 2003 03 30 | 704 | 0.8− | 1.1+ | 2006 10 28 | 703 | 0.7− | 0.8+ |
| 2003 02 23 | 683 | 0.1+ | 1.1+ | 2003 03 30 | 704 | 0.6− | 1.3+ | 2006 11 13 | 703 | 0.6+ | 0.4− |
| 2003 03 06 | 704 | (0.3− | 1.6+) | 2003 03 30 | 704 | (0.4− | 1.6+) | 2006 11 13 | 703 | 0.2− | 0.6+ |
| 2003 03 06 | 704 | 0.5+ | 0.4+ | 2003 03 30 | 704 | 0.4− | 1.2+ | 2006 11 13 | 703 | 0.5+ | 0.3− |
| 2003 03 06 | 704 | 0.2+ | 0.8+ | 2003 04 02 | 608 | 1.1+ | 0.5+ | 2006 11 13 | 703 | 0.2+ | 0.7− |
| 2003 03 06 | 704 | 0.6+ | 1.3+ | 2003 04 02 | 608 | 1.3+ | 0.2+ | 2006 11 19 | 703 | 1.0− | 0.1+ |
| 2003 03 06 | 704 | 0.7+ | 0.1+ | 2003 04 02 | 608 | 0.8+ | 0.2+ | 2006 11 19 | 703 | 1.6− | 0.5+ |
| 2003 03 09 | 704 | 1.0+ | 0.0 | 2003 04 09 | 704 | 0.7− | 0.4+ | 2006 11 19 | 703 | 0.0 | 1.2− |
| 2003 03 09 | 704 | 1.0+ | 0.3+ | 2003 04 09 | 704 | 0.5− | 0.9+ | 2006 11 19 | 703 | 0.5+ | 0.8− |
| 2003 03 09 | 704 | 0.4+ | 0.5+ | 2003 04 09 | 704 | 0.4− | 0.1− | | | | |

**(136917)∗ 1998 HB$_{127}$ = 2005 EV$_{67}$**

Discovered 1998 Apr. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74573)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.67975 | | (2000.0) | | | |
| $n$ | 0.27958165 | $\omega$ | 254.25628 | | −0.30902019 | +0.95104314 |
| $a$ | 2.3163114 | $\Omega$ | 357.72632 | | −0.81914205 | −0.26874293 |
| $e$ | 0.1064706 | $i$ | 7.01337 | | −0.48323165 | −0.15262431 |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 01 | 704 | 0.4− | 0.1+ | 2005 03 13 | 703 | 1.3− | 0.8− | 2005 04 12 | 704 | 0.7− | 1.5+ |
| 1998 04 01 | 704 | 0.1− | 0.8− | 2005 03 13 | 703 | 0.9− | 0.2+ | 2005 04 12 | 704 | (1.9+ | 0.2+) |
| 1998 04 01 | 704 | (2.7− | 2.1+) | 2005 03 13 | 703 | 0.8− | 0.6− | 2005 04 12 | 704 | 0.4+ | 0.3+ |
| 1998 04 01 | 704 | 0.7− | 0.4+ | 2005 03 13 | 703 | 0.5− | 1.4− | 2005 04 13 | 699 | 0.3+ | 0.2− |
| 1998 04 01 | 704 | (3.4− | 1.3−) | 2005 03 17 | 691 | 0.3+ | 0.4+ | 2005 04 13 | 699 | 0.2− | 0.3+ |
| 1998 04 18 | 704 | 0.5− | 0.2+ | 2005 03 17 | 691 | 0.3+ | 0.3+ | 2005 04 13 | 699 | 1.0+ | 0.6+ |
| 1998 04 18 | 704 | 1.0+ | 0.5+ | 2005 03 17 | 691 | 0.3+ | 0.4+ | 2005 04 13 | 699 | 0.1− | 0.3+ |
| 1998 04 18 | 704 | 0.1+ | 1.1− | 2005 03 31 | 699 | 0.9+ | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.1− |
| 1998 04 18 | 704 | (2.6+ | 0.7+) | 2005 03 31 | 699 | 0.7+ | 0.2− | 2006 08 28 | 703 | (2.3+ | 0.0 ) |
| 1998 04 20 | 704 | 1.1+ | 0.9+ | 2005 03 31 | 699 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.4− | 0.2+ |
| 1998 04 20 | 704 | 0.2− | 0.6+ | 2005 03 31 | 699 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.2+ | 1.2− |
| 1998 04 20 | 704 | 0.8− | 0.4+ | 2005 04 04 | 704 | (1.6+ | 0.5+) | 2006 09 16 | 691 | 0.1− | 0.5+ |
| 1998 04 20 | 704 | 0.8− | 0.0 | 2005 04 04 | 704 | 0.6− | 0.7− | 2006 09 16 | 691 | 0.0 | 0.4+ |
| 1998 04 20 | 704 | (5.2− | 1.4+) | 2005 04 04 | 704 | (1.6+ | 0.7−) | 2006 09 16 | 691 | 0.1− | 0.4+ |
| 1998 04 22 | 704 | 1.1+ | 1.0+ | 2005 04 04 | 704 | (1.7+ | 0.9−) | 2006 09 24 | 106 | (2.3− | 0.6−) |
| 1998 04 22 | 704 | 0.8+ | 0.3− | 2005 04 05 | 703 | 0.1− | 1.4+ | 2006 09 24 | 106 | 0.2− | 0.4− |
| 1998 04 22 | 704 | 1.1+ | 1.1+ | 2005 04 05 | 703 | (1.5− | 1.6+) | 2006 09 24 | 106 | 0.4− | 0.5− |
| 1998 04 22 | 704 | 1.0+ | 1.2+ | 2005 04 05 | 703 | 0.6+ | 0.6+ | 2006 09 24 | 106 | 0.0 | 0.0 |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2005 04 05 | 703 | 0.9− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2003 11 20 | 691 | 0.1− | 0.0 | 2005 04 07 | 704 | (2.1+ | 0.2−) | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2003 11 20 | 691 | 0.2− | 0.2+ | 2005 04 07 | 704 | 1.1+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2003 12 28 | 691 | 0.1− | 0.4+ | 2005 04 07 | 704 | 1.0+ | 0.7+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 2003 12 28 | 691 | 0.1− | 0.1+ | 2005 04 07 | 704 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.3− | 0.5+ |
| 2003 12 28 | 691 | 0.1+ | 0.2+ | 2005 04 09 | 704 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.4+ |
| 2005 03 04 | G96 | 0.4− | 0.1− | 2005 04 09 | 704 | 0.7+ | 0.1− | 2006 09 28 | 691 | 0.4− | 0.5+ |
| 2005 03 04 | G96 | 1.0− | 0.8− | 2005 04 09 | 704 | 1.0+ | 0.0 | 2006 10 16 | 703 | 1.8+ | 0.4+ |
| 2005 03 04 | G96 | 0.8− | 0.2− | 2005 04 09 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2005 03 04 | G96 | 0.6− | 0.4− | 2005 04 09 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 1.0− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 699 | 0.3+ | 0.2− | 2005 04 12 | G96 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.6+ | | |
| 2005 03 08 | 699 | 0.2+ | 1.0+ | 2005 04 12 | G96 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2005 03 08 | 699 | 0.2+ | 0.1+ | 2005 04 12 | G96 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.3− | 0.1− | | |
| 2005 03 08 | 699 | 0.8+ | 0.1− | 2005 04 12 | G96 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.0 | | |
| 2005 03 10 | 695 | 0.0 | 0.0 | 2005 04 12 | 704 | 0.5+ | 1.1+ | 2006 10 20 | G96 | 0.4− | 0.1+ | | |
| 2005 03 10 | 695 | 0.0 | 0.0 | 2005 04 12 | 704 | (0.3+ | 2.2+) | | | | | | |

**(136918)∗ 1998 HT$_{133}$**

Discovered 1998 Apr. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.18534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27179388 | $\omega$ | 203.63543 | | +0.16247433 | +0.98229006 | |
| $a$ | 2.3603492 | $\Omega$ | 75.81992 | | −0.88924905 | +0.18675388 | |
| $e$ | 0.2230219 | $i$ | 5.52333 | | −0.42759587 | −0.01513998 | |
| $P$ | 3.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.6+ | 0.3− | 2005 03 02 | 703 | 0.0 | 0.4+ | 2006 09 22 | 704 | (0.7+ | 1.6+) | | |
| 1998 03 24 | 704 | (2.3− | 1.7+) | 2005 03 02 | 703 | 0.4+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.5+ | | |
| 1998 03 24 | 704 | 1.1− | 0.3− | 2005 03 02 | 703 | 0.8+ | 0.2+ | 2006 09 22 | 704 | 0.1+ | 0.8+ | | |
| 1998 03 24 | 704 | 1.0+ | 1.2+ | 2005 03 11 | 703 | 0.5− | 0.2− | 2006 09 22 | 704 | 0.2− | 0.8+ | | |
| 1998 03 24 | 704 | 0.3+ | 1.9+ | 2005 03 11 | 703 | 0.3− | 0.5− | 2006 09 22 | 704 | 0.4+ | 0.3+ | | |
| 1998 03 25 | 704 | 1.0+ | 1.0+ | 2005 03 11 | 703 | 0.1− | 0.8− | 2006 09 26 | 703 | 0.0 | 0.4+ | | |
| 1998 03 25 | 704 | 1.0+ | 0.1− | 2005 03 11 | 703 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.1− | | |
| 1998 03 25 | 704 | (0.1− | 2.9−) | 2005 03 11 | 699 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.5− | 0.6+ | | |
| 1998 03 25 | 704 | 1.4+ | 1.0− | 2005 03 11 | 699 | 0.7+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.6+ | | |
| 1998 03 25 | 704 | (3.0− | 2.9−) | 2005 03 11 | 699 | 0.6+ | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.4+ | | |
| 1998 04 19 | 704 | 0.5− | 0.6+ | 2005 03 11 | 699 | 1.0+ | 0.5+ | 2006 10 02 | 703 | 0.4+ | 0.3+ | | |
| 1998 04 19 | 704 | 0.5+ | 1.0+ | 2005 04 02 | 703 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.2+ | | |
| 1998 04 19 | 704 | 1.9− | 1.9+ | 2005 04 02 | 703 | 0.4+ | 0.2+ | 2006 10 02 | 703 | 0.5+ | 0.1− | | |
| 1998 04 19 | 704 | 0.4+ | 0.7− | 2005 04 02 | 703 | 1.3− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 1998 04 20 | 704 | 0.1+ | 0.2+ | 2005 04 02 | 703 | (0.5+ | 1.8+) | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 1998 04 20 | 704 | 0.2+ | 0.0 | 2006 08 28 | 704 | (1.0+ | 1.7+) | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 1998 04 20 | 704 | 0.7+ | 1.4− | 2006 08 28 | 704 | 1.0+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 1998 04 20 | 704 | 0.5+ | 0.0 | 2006 08 28 | 704 | 0.8+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 1998 04 24 | 704 | (1.2− | 6.7−) | 2006 08 28 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 1998 04 24 | 704 | 0.2+ | 0.4− | 2006 08 28 | 704 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.4+ | | |
| 1998 04 24 | 704 | 1.4− | 0.4+ | 2006 08 30 | 704 | (1.2+ | 3.0+) | 2006 10 12 | 644 | 0.2+ | 0.3+ | | |
| 1998 04 24 | 704 | 1.2− | 0.5+ | 2006 08 30 | 704 | 0.8− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.6+ | | |
| 1998 04 24 | 704 | 0.6+ | 1.1+ | 2006 08 30 | 704 | 1.4− | 0.9− | 2006 10 16 | 703 | 0.6+ | 0.4+ | | |
| 1999 10 10 | 704 | 0.7+ | 0.1+ | 2006 08 30 | 704 | 0.9− | 0.8− | 2006 10 16 | 703 | 0.0 | 0.3− | | |
| 1999 10 10 | 704 | 0.1− | 1.1+ | 2006 09 12 | 703 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.3+ | | |
| 1999 10 10 | 704 | 0.6− | 0.2+ | 2006 09 12 | 703 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.1− | 0.3− | | |
| 2002 06 08 | 704 | 0.4− | 0.8+ | 2006 09 12 | 703 | 0.9− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.2+ | | |
| 2002 06 08 | 704 | 0.1− | 1.0+ | 2006 09 12 | 703 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.2− | | |
| 2002 06 08 | 704 | (2.4− | 2.2+) | 2006 09 18 | 699 | (0.4+ | 1.6+) | 2006 10 16 | 703 | 0.0 | 0.6+ | | |
| 2002 06 08 | 704 | 0.3+ | 1.4+ | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.4+ | | |
| 2003 11 26 | 691 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.8− | 0.6+ | 2006 10 22 | 703 | 0.3+ | 0.7− | | |
| 2003 11 26 | 691 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.3+ | | |
| 2003 11 26 | 691 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.7− | | |
| 2005 03 02 | 703 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.6− | | |

**(136919)∗ 1998 HZ$_{138}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.97427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18037606 | $\omega$ | 55.28880 | | −0.23351282 | −0.94686574 | |
| $a$ | 3.1022976 | $\Omega$ | 49.80560 | | +0.77029972 | −0.31895005 | |
| $e$ | 0.1944666 | $i$ | 16.83074 | | +0.59338867 | +0.04142621 | |
| $P$ | 5.46 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.4+ | 0.1− | 2001 11 15 | 644 | 0.1− | 0.4+ | 2003 02 11 | 704 | (0.5+ | 1.7−) | | |
| 1998 03 24 | 704 | 0.5+ | 0.9− | 2001 11 18 | 704 | 0.4− | 0.2+ | 2003 02 11 | 704 | (0.8+ | 1.8−) | | |
| 1998 03 24 | 704 | 1.3− | 0.2− | 2001 11 18 | 704 | 0.1+ | 0.1+ | 2003 02 19 | 644 | 0.2− | 0.0 | | |
| 1998 03 24 | 704 | 0.3− | 1.1− | 2001 11 18 | 704 | 0.2− | 0.1+ | 2003 02 19 | 644 | 0.0 | 0.1+ | | |
| 1998 03 24 | 704 | (0.3+ | 2.9+) | 2001 11 18 | 704 | 0.9− | 0.4+ | 2003 02 19 | 644 | 0.2− | 0.1+ | | |
| 1998 04 21 | 704 | 0.7+ | 0.2− | 2001 11 18 | 704 | 0.2− | 0.5+ | 2003 02 26 | 704 | 0.6− | 0.1− | | |
| 1998 04 21 | 704 | 0.1− | 1.5+ | 2001 11 20 | 704 | 0.2+ | 0.3+ | 2003 02 26 | 704 | 0.5− | 0.5+ | | |
| 1998 04 21 | 704 | 1.2+ | 0.7− | 2001 11 20 | 704 | 0.0 | 0.2+ | 2003 02 26 | 704 | 0.5− | 0.2+ | | |
| 1998 04 21 | 704 | 0.7− | 1.2− | 2001 11 20 | 704 | 0.1+ | 0.6− | 2003 02 26 | 704 | 0.2− | 0.1+ | | |
| 1998 04 24 | 704 | 0.3− | 0.4+ | 2001 11 20 | 704 | 0.4+ | 0.2+ | 2003 02 26 | 704 | 0.5− | 0.1− | | |
| 1998 04 24 | 704 | 0.0 | 1.0+ | 2001 11 21 | 608 | 0.2− | 0.0 | 2003 02 26 | 704 | 0.6− | 0.3− | | |
| 1998 04 24 | 704 | 1.1+ | 1.3+ | 2001 11 21 | 608 | 0.2+ | 0.6+ | 2003 02 26 | 704 | 1.1− | 0.2+ | | |
| 1998 04 24 | 704 | 0.8+ | 0.2− | 2001 11 21 | 608 | 0.3− | 0.4+ | 2003 02 26 | 704 | 0.5− | 0.0 | | |
| 1998 04 24 | 704 | 0.9− | 0.6+ | 2001 12 07 | 704 | 0.5− | 0.2+ | 2003 03 08 | 699 | 0.5+ | 0.0 | | |
| 2001 09 13 | 644 | 0.3− | 0.2+ | 2001 12 07 | 704 | 0.6− | 0.2+ | 2003 03 08 | 699 | 0.2+ | 0.6+ | | |
| 2001 09 13 | 644 | 0.1+ | 0.6+ | 2001 12 07 | 704 | 0.9− | 0.9+ | 2003 03 08 | 699 | 0.0 | 0.5+ | | |
| 2001 09 13 | 644 | 0.2− | 0.8+ | 2001 12 07 | 704 | 0.2− | 0.5+ | 2003 03 08 | 699 | 0.3+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.8− | 2001 12 07 | 704 | 0.6− | 0.0 | 2003 03 09 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.4− | 0.3− | 2001 12 14 | 704 | 0.4− | 0.1− | 2003 03 09 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 16 | 704 | 0.4− | 0.2− | 2001 12 14 | 704 | 0.3− | 0.1− | 2003 03 09 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.5− | 0.8− | 2001 12 14 | 704 | 0.4− | 0.2− | 2003 03 13 | 704 | 0.4+ | 1.0+ | | |
| 2001 09 25 | 704 | 0.4− | 0.3+ | 2001 12 14 | 704 | 0.2− | 0.5+ | 2003 03 13 | 704 | 0.1− | 0.5+ | | |
| 2001 09 25 | 704 | 0.5− | 0.6+ | 2001 12 17 | 704 | 0.2− | 0.7− | 2003 03 13 | 704 | 0.1+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2001 12 17 | 704 | 0.1− | 0.7− | 2003 03 13 | 704 | (0.3+ | 1.5+) | | |
| 2001 09 25 | 704 | 0.4− | 0.3− | 2001 12 17 | 704 | 0.4− | 0.2− | 2003 03 13 | 704 | 0.4+ | 0.8+ | | |
| 2001 09 25 | 704 | 0.1− | 0.4− | 2001 12 17 | 704 | 0.0 | 0.5− | 2003 03 21 | 644 | 0.3+ | 0.2+ | | |
| 2001 10 10 | 644 | 0.6+ | 0.0 | 2001 12 17 | 704 | 0.5− | 0.6− | 2003 03 21 | 644 | 0.1+ | 0.0 | | |
| 2001 10 10 | 644 | 0.5+ | 0.5− | 2001 12 19 | 704 | 0.4+ | 0.3− | 2003 03 21 | 644 | 0.0 | 0.1+ | | |
| 2001 10 10 | 644 | 0.3+ | 0.4− | 2001 12 19 | 704 | 0.5+ | 0.5− | 2003 03 25 | 704 | 0.1+ | 0.1− | | |
| 2001 10 14 | 699 | 0.2− | 0.4+ | 2001 12 19 | 699 | 0.1+ | 0.5− | 2003 03 25 | 704 | 0.5+ | 0.6− | | |
| 2001 10 14 | 699 | 0.1− | 0.2+ | 2001 12 19 | 704 | 0.9+ | 0.3− | 2003 03 25 | 704 | 0.2+ | 0.5− | | |
| 2001 10 14 | 699 | 0.5+ | 0.3+ | 2001 12 19 | 699 | 0.4+ | 0.3+ | 2003 04 01 | 644 | 0.2+ | 0.0 | | |
| 2001 10 14 | 699 | 0.1− | 0.1− | 2001 12 19 | 704 | 0.5+ | 0.4− | 2003 04 01 | 644 | 0.3+ | 0.1+ | | |
| 2001 10 16 | 704 | 0.1+ | 0.3− | 2001 12 19 | 699 | 0.2+ | 0.6+ | 2003 04 01 | 644 | 0.4+ | 0.0 | | |
| 2001 10 16 | 704 | 0.4+ | 0.4+ | 2001 12 19 | 699 | 1.1− | 0.5+ | 2004 04 30 | 691 | 0.1+ | 0.6+ | | |
| 2001 10 16 | 704 | (2.0+ | 0.2−) | 2002 12 14 | 704 | 0.2− | 0.0 | 2004 04 30 | 691 | 0.3+ | 0.4+ | | |
| 2001 10 16 | 644 | 0.3− | 0.2− | 2002 12 14 | 704 | 0.8− | 0.7+ | 2004 04 30 | 691 | 0.2+ | 0.5+ | | |
| 2001 10 16 | 644 | 0.2− | 0.3− | 2002 12 14 | 704 | 0.9− | 1.1+ | 2004 05 15 | 704 | 1.0− | 0.6+ | | |
| 2001 10 16 | 644 | 0.4− | 0.2− | 2002 12 14 | 704 | 0.1− | 1.1+ | 2004 05 15 | 704 | 0.4− | 0.2+ | | |
| 2001 10 20 | 704 | 0.0 | 0.1+ | 2003 01 11 | 704 | 1.2+ | 0.0 | 2004 05 15 | 704 | 0.7+ | 0.6+ | | |
| 2001 10 20 | 704 | 0.4+ | 0.2+ | 2003 01 11 | 704 | 1.1+ | 0.2+ | 2004 05 15 | 704 | 0.1+ | 1.2+ | | |
| 2001 10 20 | 704 | 0.2+ | 0.0 | 2003 01 11 | 704 | (1.6+ | 0.3−) | 2004 05 15 | 704 | 0.1+ | 0.7− | | |
| 2001 10 20 | 704 | 0.2+ | 0.1− | 2003 01 11 | 704 | 1.2+ | 0.1− | 2006 08 14 | 644 | 0.5− | 0.2+ | | |
| 2001 10 20 | 704 | 0.8+ | 0.4+ | 2003 01 11 | 704 | (2.1+ | 0.4−) | 2006 08 14 | 644 | 0.2− | 0.4+ | | |
| 2001 10 22 | 704 | 0.3+ | 0.5+ | 2003 01 19 | 644 | 0.4+ | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 22 | 704 | 0.5+ | 0.4+ | 2003 01 19 | 644 | 0.3+ | 0.2− | 2006 08 21 | 644 | 0.4− | 0.6+ | | |
| 2001 10 22 | 704 | 0.1− | 0.2+ | 2003 01 19 | 644 | 0.3+ | 0.0 | 2006 08 21 | 644 | 0.2− | 0.2+ | | |
| 2001 10 22 | 704 | 0.8+ | 0.3+ | 2003 01 26 | 699 | 0.2− | 0.2− | 2006 08 21 | 644 | 0.3− | 0.5+ | | |
| 2001 10 24 | 704 | (1.6− | 1.6−) | 2003 01 26 | 699 | 0.2+ | 0.2− | 2006 09 28 | E12 | 0.4− | 0.3+ | | |
| 2001 10 24 | 704 | 1.1− | 0.2− | 2003 01 26 | 699 | 0.1+ | 0.3− | 2006 09 28 | E12 | 0.1− | 0.7+ | | |
| 2001 10 24 | 704 | (2.0− | 1.6−) | 2003 01 26 | 699 | 0.2+ | 0.1− | 2006 09 28 | E12 | 0.3− | 0.8+ | | |
| 2001 10 24 | 704 | (2.1− | 1.8−) | 2003 02 01 | 644 | 0.5+ | 0.8+ | 2006 09 28 | E12 | 0.2+ | 0.7+ | | |
| 2001 10 24 | 644 | 0.5− | 0.5+ | 2003 02 01 | 644 | 0.4+ | 0.9+ | 2006 10 12 | E12 | 0.6+ | 0.0 | | |
| 2001 10 24 | 644 | 0.3− | 0.4+ | 2003 02 01 | 644 | 0.3+ | 0.8+ | 2006 10 12 | E12 | 0.0 | 0.3− | | |
| 2001 10 24 | 644 | 0.3− | 0.4+ | 2003 02 11 | 704 | 0.1+ | 1.2− | 2006 10 12 | E12 | 0.2− | 0.3+ | | |
| 2001 11 15 | 644 | 0.4− | 0.3+ | 2003 02 11 | 704 | (1.5+ | 2.1−) | 2006 10 12 | E12 | 0.0 | 0.9+ | | |
| 2001 11 15 | 644 | 0.0 | 0.5+ | 2003 02 11 | 704 | 0.8+ | 1.4− | | | | | | |

**(136920)∗ 1998 HN$_{145}$ = 2003 DG$_{15}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 42897)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 230.01076 | | (2000.0) | | | |
| $n$ | 0.17423896 | $\omega$ | 99.60609 | | −0.87646156 | −0.41650544 |
| $a$ | 3.1747232 | $\Omega$ | 56.15669 | | +0.24081294 | −0.81362099 |
| $e$ | 0.0765337 | $i$ | 16.90625 | | +0.41692237 | −0.40564037 |
| $P$ | 5.66 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.3+ | 1.5− | 2003 01 11 | 704 | 0.5− | 0.0 | 2004 06 17 | 704 | 0.0 | 0.8+ |
| 1998 04 21 | 704 | 0.4− | 1.2− | 2003 01 11 | 704 | 0.3+ | 0.1− | 2005 08 05 | E12 | 0.6+ | 0.3+ |
| 1998 04 21 | 704 | 0.1− | 0.8− | 2003 02 21 | 644 | 0.1− | 0.2− | 2005 08 05 | E12 | 0.1− | 0.4+ |
| 1998 04 21 | 704 | 0.0 | 0.4− | 2003 02 21 | 644 | 0.1− | 0.1− | 2005 08 05 | E12 | 0.1+ | 1.0+ |
| 1998 04 21 | 704 | 1.5− | 0.2− | 2003 02 21 | 644 | 0.2+ | 0.1− | 2005 08 05 | E12 | 0.4+ | 1.1+ |
| 1998 04 23 | 704 | 0.1− | 0.9− | 2003 02 26 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.6+ | 0.2− |
| 1998 04 23 | 704 | 0.4− | 0.9− | 2003 02 26 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 1.2− | 0.5+ |
| 1998 04 23 | 704 | 1.2− | 0.4− | 2003 02 26 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 1.3+ |
| 1998 04 23 | 704 | 0.6+ | 0.0 | 2003 02 26 | 704 | 0.4+ | 1.1+ | 2006 09 18 | 703 | 0.0 | 0.7+ |
| 1998 05 01 | 704 | 0.9− | 0.7+ | 2003 02 28 | 704 | 0.0 | 0.1− | 2006 09 21 | 699 | 0.4+ | 0.6− |
| 1998 05 01 | 704 | 1.3+ | 0.3− | 2003 02 28 | 704 | 0.7+ | 0.1− | 2006 09 21 | 699 | 1.2− | 0.1− |
| 1998 05 01 | 704 | 1.3+ | 1.0+ | 2003 02 28 | 704 | 0.1− | 0.5+ | 2006 09 21 | 699 | (1.7+ | 2.1+) |
| 1998 05 01 | 704 | 1.1− | 1.9+ | 2003 02 28 | 704 | 0.1− | 0.3− | 2006 09 21 | 699 | (0.7− | 2.3+) |
| 2001 10 18 | 704 | 0.0 | 0.6− | 2003 02 28 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.6− |
| 2001 10 18 | 704 | 0.9− | 0.9− | 2003 03 09 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.2− | 1.1+ |
| 2001 10 18 | 704 | 0.5+ | 0.1− | 2003 03 09 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.6+ |
| 2001 11 12 | 704 | 0.8+ | 1.5− | 2003 03 09 | 644 | 0.2− | 0.2+ | 2006 09 26 | 703 | (0.9− | 1.6+) |
| 2001 11 12 | 704 | 1.2+ | 1.4− | 2003 03 13 | 704 | 1.2+ | 0.1− | 2006 09 29 | 699 | 0.2− | 0.8+ |
| 2001 11 12 | 704 | (0.3+ | 1.5−) | 2003 03 13 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 1.1+ | 0.4+ |
| 2001 11 12 | 704 | (0.3+ | 1.7−) | 2003 03 13 | 704 | 0.7+ | 0.2− | 2006 09 29 | 699 | (1.5+ | 2.3+) |
| 2001 11 12 | 704 | (0.5+ | 1.7−) | 2003 03 13 | 704 | 0.2+ | 0.7+ | 2006 09 29 | 699 | (0.9− | 1.9+) |
| 2001 11 24 | 704 | 0.1+ | 0.9+ | 2003 03 22 | 644 | 0.2+ | 0.9+ | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2001 11 24 | 704 | (0.5+ | 1.8+) | 2003 03 22 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2001 11 24 | 704 | 0.7+ | 1.4+ | 2003 03 22 | 644 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2001 11 24 | 704 | (0.8+ | 2.6+) | 2003 04 07 | 644 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.3− | 1.2− |
| 2001 11 24 | 704 | 0.2+ | 1.1+ | 2003 04 07 | 644 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.3+ | 0.6+ |
| 2001 12 17 | 704 | 0.6− | 0.4+ | 2003 04 07 | 644 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 0.5− | 0.2+ | 2003 04 10 | 704 | 0.4− | 0.3− | 2006 10 23 | 644 | 0.4+ | 0.5+ |
| 2001 12 17 | 704 | 0.6− | 0.3+ | 2003 04 10 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 1.4− | 1.4− |
| 2001 12 17 | 704 | 1.1− | 0.0 | 2003 04 10 | 704 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.5− |
| 2001 12 17 | 704 | 0.3− | 0.1+ | 2004 05 16 | 704 | 0.7+ | 0.7+ | 2006 10 28 | 703 | 0.1− | 0.5+ |
| 2002 12 31 | 704 | 1.0+ | 1.3+ | 2004 05 16 | 704 | 0.2+ | 1.1+ | 2006 10 28 | 703 | 0.6− | 0.3− |
| 2002 12 31 | 704 | (1.7+ | 1.6+) | 2004 05 16 | 704 | 0.0 | 0.5+ | 2006 11 07 | 644 | 0.2− | 0.1− |
| 2002 12 31 | 704 | (0.6+ | 2.7+) | 2004 05 17 | 428 | 0.1− | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.4+ |
| 2003 01 11 | 704 | 0.7− | 0.5− | 2004 05 17 | 428 | 0.7− | 0.5+ | 2006 11 07 | 644 | 0.1+ | 0.5+ |
| 2003 01 11 | 704 | 0.2+ | 0.8+ | 2004 06 17 | 704 | 0.0 | 0.8+ | | | | |
| 2003 01 11 | 704 | 0.1− | 0.1− | 2004 06 17 | 704 | 0.8+ | 1.2+ | | | | |

**(136921)∗ 1998 HV$_{147}$**

Discovered 1998 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.04414 | | (2000.0) | | | |
| $n$ | 0.27737944 | $\omega$ | 225.75338 | | +0.03210972 | +0.94429707 |
| $a$ | 2.3285552 | $\Omega$ | 49.15339 | | −0.74836829 | +0.23992530 |
| $e$ | 0.1926631 | $i$ | 25.65604 | | −0.66250575 | −0.22525294 |
| $P$ | 3.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.2− | 0.2− | 1999 12 07 | 691 | 0.3− | 0.1+ | 2005 05 12 | 704 | 0.6+ | 0.1− |
| 1998 04 21 | 704 | 0.1− | 0.6+ | 1999 12 07 | 691 | 0.1− | 0.1+ | 2005 05 12 | 704 | 1.0+ | 0.8− |
| 1998 04 21 | 704 | 0.6− | 1.6− | 2005 03 13 | 703 | 0.2− | 0.0 | 2005 05 12 | 704 | 0.6+ | 0.4+ |
| 1998 04 21 | 704 | 0.6+ | 1.1+ | 2005 03 13 | 703 | 0.6− | 0.2+ | 2005 05 13 | 704 | 0.8+ | 0.1+ |
| 1998 04 21 | 704 | 0.6− | 0.5− | 2005 03 13 | 703 | 1.2− | 0.3+ | 2005 05 13 | 704 | 0.1+ | 1.4+ |
| 1998 04 24 | 704 | 0.9+ | 0.6+ | 2005 03 13 | 703 | 0.7− | 0.1− | 2005 05 13 | 704 | (0.2+ | 2.6+) |
| 1998 04 24 | 704 | 0.4+ | 0.8− | 2005 04 06 | 703 | 0.7− | 1.0+ | 2005 05 13 | 704 | 0.8+ | 0.3− |
| 1998 04 24 | 704 | 0.4+ | 0.2+ | 2005 04 06 | 703 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.4− | 0.1− |
| 1998 04 24 | 704 | 0.2+ | 0.4− | 2005 04 06 | 703 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.7− | 0.1− |
| 1998 05 22 | 704 | (2.4+ | 0.9+) | 2005 04 06 | 703 | 0.9− | 0.2+ | 2006 10 12 | 644 | 0.5− | 0.8+ |
| 1998 05 22 | 704 | 0.1− | 1.3+ | 2005 04 06 | 703 | 0.1− | 0.7+ | 2006 10 16 | 703 | (0.7+ | 2.7+) |
| 1998 05 22 | 704 | 0.5− | 0.8− | 2005 04 06 | 703 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 1998 05 22 | 704 | 0.8+ | 0.2− | 2005 04 06 | 703 | 0.6+ | 0.6− | 2006 10 16 | 703 | 0.9− | 0.5+ |
| 1998 05 23 | 704 | 0.2− | 1.9+ | 2005 04 06 | 703 | 0.5− | 0.4+ | 2006 10 16 | 703 | 1.1+ | 0.7+ |
| 1998 05 23 | 704 | 1.4− | 0.1+ | 2005 04 11 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | (0.8+ | 1.9+) |
| 1998 05 23 | 704 | 0.8+ | 1.9+ | 2005 04 11 | 704 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 1998 05 23 | 704 | 1.1+ | 0.6+ | 2005 04 11 | 704 | 0.7+ | 0.6− | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 1998 05 23 | 704 | (3.2− | 0.6−) | 2005 04 11 | 704 | 0.1− | 0.4− | 2006 10 22 | 703 | (1.3+ | 2.0+) |
| 1998 05 24 | 704 | 0.3+ | 0.5− | 2005 04 11 | 704 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 1998 05 24 | 704 | 0.1+ | 0.0 | 2005 04 12 | 699 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1998 05 24 | 704 | 0.1+ | 1.7− | 2005 04 12 | 699 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.5− | 0.2+ |
| 1998 05 24 | 704 | 1.6− | 0.6− | 2005 04 12 | 699 | 0.0 | 0.6− | 2006 11 13 | 703 | 0.8+ | 0.2− |
| 1998 05 24 | 704 | 0.7− | 0.9− | 2005 04 30 | 699 | 0.5+ | 0.3− | 2006 11 13 | 703 | (1.0− | 1.7+) |
| 1999 11 13 | 691 | 0.3+ | 0.1+ | 2005 04 30 | 699 | 0.1− | 0.9+ | 2006 11 13 | 703 | 1.0− | 1.4+ |
| 1999 11 13 | 691 | 0.1− | 0.0 | 2005 04 30 | 699 | 0.5+ | 0.6− | 2006 11 13 | 703 | (1.6− | 0.4−) |
| 1999 11 13 | 691 | 0.2+ | 0.1− | 2005 04 30 | 699 | 1.4+ | 0.6+ | | | | |
| 1999 12 07 | 691 | 0.1+ | 0.2− | 2005 05 12 | 704 | 0.9+ | 0.5+ | | | | |

**(136922)∗ 1998 HB$_{152}$ = 1999 XS$_{70}$ = 2006 PH$_1$**

Discovered 1998 Apr. 19 by M. W. Buie at the Anderson Mesa Station of the Lowell Observatory.

Id. A. Doppler (*MPO* 103143)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.65867 | | (2000.0) | | | |
| $n$ | 0.26998816 | $\omega$ | 95.20198 | | +0.89371993 | +0.44199651 |
| $a$ | 2.3708618 | $\Omega$ | 238.58675 | | −0.43896669 | +0.82620975 |
| $e$ | 0.2530584 | $i$ | 5.16545 | | −0.09259011 | +0.34930866 |
| $P$ | 3.65 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 19 | 688 | 0.7− | 0.8+ | 2006 08 25 | 704 | 0.5− | 0.0 | 2006 10 19 | 704 | 0.1+ | 0.3+ |
| 1998 04 19 | 688 | 1.0− | 1.4+ | 2006 08 25 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 1998 04 19 | 688 | 0.5− | 1.0+ | 2006 08 25 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 0.9+ | 0.8− | 2006 08 25 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 0.0 | 1.0+ | 2006 08 30 | 704 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1998 04 21 | 704 | 1.0+ | 0.2+ | 2006 08 30 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1998 04 21 | 704 | 1.5+ | 0.8+ | 2006 08 30 | 704 | (0.7+ | 2.3−) | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1998 05 01 | 704 | 1.0+ | 0.0 | 2006 08 30 | 704 | 1.1+ | 0.2− | 2006 10 24 | 704 | 0.3+ | 0.0 |
| 1998 05 01 | 704 | 0.5− | 0.5− | 2006 08 30 | 704 | 1.3+ | 0.6+ | 2006 10 24 | 704 | 0.5+ | 0.6+ |
| 1998 05 01 | 704 | 0.5− | 1.0+ | 2006 08 30 | 699 | 0.1+ | 0.2+ | 2006 10 24 | 704 | 0.3+ | 0.8+ |
| 1998 05 01 | 704 | 1.2+ | 1.7− | 2006 08 30 | 699 | 1.0+ | 1.1+ | 2006 10 26 | 704 | 0.6+ | 0.0 |
| 1999 12 07 | 704 | 1.7− | 0.3− | 2006 08 30 | 699 | 0.2+ | 0.0 | 2006 10 26 | 704 | 1.1+ | 0.3+ |
| 1999 12 07 | 704 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.7+ | 2006 10 26 | 704 | 0.2+ | 0.6− |
| 1999 12 07 | 704 | 0.0 | 0.9− | 2006 08 30 | 699 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.1+ |
| 1999 12 07 | 704 | 0.5+ | 1.4− | 2006 08 30 | 699 | 0.2+ | 0.6+ | 2006 10 29 | 704 | 0.3− | 0.3+ |
| 1999 12 08 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 699 | 0.1+ | 0.2− | 2006 10 29 | 704 | 1.0− | 0.3+ |
| 1999 12 08 | 704 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.8+ | 0.8+ | 2006 10 29 | 704 | 0.9− | 0.1+ |
| 1999 12 08 | 704 | 0.6− | 0.4− | 2006 09 18 | 704 | 0.7+ | 0.1− | 2006 10 29 | 704 | 0.3− | 0.5+ |
| 1999 12 08 | 704 | 0.1+ | 0.8− | 2006 09 18 | 704 | 1.1+ | 0.6− | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.1− | 0.3− | 2006 09 18 | 704 | 0.1+ | 0.7+ | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2001 02 18 | 608 | 0.5+ | 0.1+ | 2006 09 18 | 704 | 0.9− | 0.4− | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2001 02 18 | 608 | 0.5+ | 0.8+ | 2006 09 20 | 699 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2001 02 18 | 608 | 0.6+ | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.5− | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2002 06 10 | 704 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2002 06 10 | 704 | 0.3− | 1.2+ | 2006 09 20 | 699 | 0.3+ | 0.1− | 2006 11 16 | 704 | 1.4− | 1.0+ |
| 2002 06 10 | 704 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.5+ |
| 2003 12 22 | 704 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.7− | 0.6+ | 2006 11 16 | 704 | (1.5− | 3.9−) |
| 2003 12 22 | 704 | 0.1+ | 0.7− | 2006 09 22 | 704 | 0.6− | 0.5+ | 2006 11 17 | G96 | 0.6+ | 0.5− |
| 2003 12 22 | 704 | 0.3+ | 0.6+ | 2006 09 22 | 704 | 1.0− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2003 12 22 | 704 | 0.8+ | 1.5+ | 2006 09 25 | 704 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2005 03 09 | 691 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2005 03 09 | 691 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.5− | 2006 11 19 | 704 | (0.6+ | 2.7+) |
| 2005 03 09 | 691 | 0.1− | 0.6+ | 2006 09 25 | 704 | 0.7− | 0.1+ | 2006 11 19 | 704 | 0.0 | 1.8+ |
| 2005 04 03 | 644 | 0.4+ | 0.6+ | 2006 09 25 | 704 | 0.0 | 1.1− | 2006 11 19 | 704 | (2.2+ | 2.5+) |
| 2005 04 03 | 644 | 0.3+ | 1.0+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 03 | 644 | 0.0 | 1.0+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.5− | 0.4+ |
| 2005 04 13 | 699 | 0.8+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.8+ |
| 2005 04 13 | 699 | 1.1+ | 0.6+ | 2006 09 29 | 704 | 0.9− | 1.2+ | 2006 11 19 | 704 | 0.8− | 1.8− |
| 2005 04 13 | 699 | 0.3+ | 0.7+ | 2006 09 29 | 704 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.9− |
| 2005 04 13 | 699 | 0.4− | 0.7+ | 2006 09 29 | 704 | 1.1− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.9− |
| 2006 06 04 | 703 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.0 | 0.6− | 2006 11 21 | 704 | 0.6+ | 1.2+ |
| 2006 06 04 | 703 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.7− | 0.4− | 2006 11 21 | 704 | 1.2+ | 0.5+ |
| 2006 06 04 | 703 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2006 06 04 | 703 | 1.0+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2006 07 24 | 704 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.6− | 2006 11 21 | 704 | 0.4+ | 0.4− |
| 2006 07 24 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.6+ |
| 2006 07 24 | 704 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2006 07 24 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.4− | 0.3− |
| 2006 08 06 | 699 | 0.3− | 0.7+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.8+ | 0.1+ |
| 2006 08 06 | 699 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.3+ | 1.7− |
| 2006 08 06 | 699 | 0.2− | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | (0.4− | 2.5+) |
| 2006 08 06 | 699 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.4− | 2006 11 22 | 704 | 1.1+ | 1.5+ |
| 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.9− |
| 2006 08 12 | 644 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.3− | 2006 11 28 | 704 | 1.2− | 2.1+ |
| 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.4− | 1.8+ |
| 2006 08 12 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 704 | (0.1− | 2.5+) | 2006 11 28 | 704 | 1.3+ | 1.7+ |
| 2006 08 12 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 1.3− | 0.7+ | 2006 11 28 | 704 | 0.5− | 0.2− |
| 2006 08 12 | 644 | 0.1− | 0.4+ | 2006 10 19 | 704 | 0.1+ | 0.4− | | | | |
| 2006 08 25 | 704 | 0.5− | 0.4+ | 2006 10 19 | 704 | 0.0 | 0.2− | | | | |

**(136923)∗ 1998 JH$_2$**

Discovered 1998 May 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.98427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31622727 | $\omega$ | 286.93885 | | +0.92397101 | +0.37171897 | |
| $a$ | 2.1337154 | $\Omega$ | 51.33306 | | −0.29212888 | +0.83782167 | |
| $e$ | 0.4422663 | $i$ | 6.62012 | | −0.24685680 | +0.39984980 | |
| $P$ | 3.12 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1986 11 02 | 261 | 0.1+ | 0.4− | 2002 11 21 | 644 | (1.8− | 0.2−) | 2005 10 07 | 703 | 0.4− | 0.1− |
| 1986 11 02 | 261 | 0.1+ | 0.1+ | 2003 01 10 | 704 | 0.4+ | 0.2− | 2005 10 07 | 703 | 0.4+ | 1.5− |
| 1992 05 30 | 260 | 1.3− | 0.9+ | 2003 01 10 | 704 | 0.4+ | 0.2+ | 2005 10 26 | 703 | 0.6+ | 0.5+ |
| 1992 05 30 | 260 | 1.5− | 0.6+ | 2003 01 10 | 704 | 0.0 | 1.0+ | 2005 10 26 | 703 | 0.4− | 0.9− |
| 1997 01 14 | 566 | 0.4− | 0.2− | 2003 01 10 | 704 | 0.4− | 0.4+ | 2005 10 26 | 703 | 0.1− | 0.8+ |
| 1997 01 14 | 566 | 0.4− | 0.5+ | 2003 01 10 | 704 | (0.8+ | 1.5+) | 2005 10 26 | 703 | (2.3+ | 0.0 ) |
| 1998 05 01 | 691 | 0.6− | 0.1− | 2003 01 11 | 858 | 0.7− | 0.6− | 2005 11 01 | 704 | 0.4+ | 0.5+ |
| 1998 05 01 | 691 | 0.9− | 0.1− | 2003 01 11 | 858 | 0.2+ | 0.5+ | 2005 11 01 | 704 | 0.4+ | 0.7+ |
| 1998 05 01 | 691 | 0.3− | 0.4− | 2003 01 11 | 704 | 0.4+ | 0.0 | 2005 11 01 | 704 | 1.0+ | 0.1− |
| 1998 05 02 | 691 | 0.1− | 0.2− | 2003 01 11 | 858 | 0.7+ | 0.9+ | 2005 11 28 | 703 | 0.2+ | 0.8− |
| 1998 05 02 | 691 | 0.2+ | 0.4− | 2003 01 11 | 704 | 0.5− | 0.5− | 2005 11 28 | 703 | 0.6− | 0.7− |
| 1998 05 02 | 691 | 0.2+ | 0.3− | 2003 01 11 | 704 | 0.7+ | 0.0 | 2005 11 28 | 703 | 0.5+ | 0.9+ |
| 1998 05 03 | 691 | 1.2+ | 0.2− | 2003 01 11 | 704 | 0.7+ | 0.6− | 2005 11 28 | 703 | 0.2+ | 0.4+ |
| 1998 05 03 | 691 | 0.7+ | 0.4− | 2003 01 12 | 246 | 0.0 | 0.0 | 2005 12 05 | 704 | 0.3− | 0.0 |
| 1998 05 03 | 691 | 0.4+ | 1.5− | 2003 01 12 | 246 | 0.1+ | 0.4− | 2005 12 05 | 704 | 1.2− | 1.2− |
| 1998 05 04 | 696 | 0.0 | 0.1− | 2003 01 12 | 246 | 0.6+ | 1.1− | 2005 12 05 | 704 | (2.3− | 1.7+) |
| 1998 05 04 | 696 | 0.2− | 0.1+ | 2003 01 12 | 246 | 0.1− | 0.1+ | 2005 12 05 | 704 | 1.3− | 0.2+ |
| 1998 05 04 | 696 | 0.1+ | 0.3− | 2003 01 12 | 557 | 0.2+ | 0.2+ | 2005 12 24 | 704 | 0.3+ | 1.3− |
| 1998 05 17 | 691 | 0.2+ | 0.4− | 2003 01 12 | 557 | 0.7− | 0.4+ | 2005 12 24 | 704 | 0.6− | 0.3+ |
| 1998 05 17 | 691 | 0.8+ | 0.4− | 2003 01 12 | 557 | 0.9− | 0.7+ | 2005 12 24 | 704 | 1.2− | 0.2+ |
| 1998 05 17 | 691 | 0.3+ | 0.1− | 2003 01 12 | 858 | 0.5+ | 0.1+ | 2005 12 24 | 704 | 0.0 | 1.4− |
| 1998 05 19 | 691 | 0.6− | 0.5− | 2003 01 12 | 858 | 0.3+ | 0.1− | 2005 12 29 | 704 | 0.5+ | 1.2− |
| 1998 05 19 | 691 | 0.2− | 0.5− | 2004 03 20 | 691 | 0.1+ | 0.5+ | 2005 12 29 | 704 | 1.3+ | 1.4− |
| 1998 05 19 | 691 | 0.4− | 0.9− | 2004 03 20 | 691 | 0.1+ | 0.4+ | 2005 12 29 | 704 | 1.1− | 0.8− |
| 2001 03 26 | 608 | 0.8+ | 0.5+ | 2004 03 20 | 691 | 0.4+ | 0.3+ | 2005 12 29 | 704 | 0.5+ | 1.3− |
| 2001 03 26 | 608 | 0.4− | 0.9+ | 2004 03 20 | 704 | 0.4− | 0.2+ | 2005 12 29 | 704 | (0.5+ | 1.6−) |
| 2001 03 26 | 608 | 0.5− | 0.3+ | 2004 03 20 | 704 | 0.8+ | 1.0+ | 2006 01 07 | 704 | 0.7+ | 0.8+ |
| 2001 04 16 | 645 | 0.1− | 0.3+ | 2004 03 20 | 704 | 0.8+ | 1.3+ | 2006 01 07 | 704 | 0.3+ | 0.3+ |
| 2001 04 16 | 645 | 0.1− | 0.3+ | 2004 03 20 | 704 | 0.3+ | 1.1+ | 2006 01 07 | 704 | 0.2+ | 0.5+ |
| 2001 04 19 | 608 | 0.7− | 0.1− | 2005 10 07 | 703 | 1.5− | 0.1− | 2006 01 07 | 704 | 0.3+ | 0.2− |
| 2001 04 27 | 608 | 0.1− | 0.3− | 2005 10 07 | 703 | 0.7− | 0.3+ | | | | |

**(136924)∗ 1998 KX$_5$ = 1999 XP$_{44}$**

Discovered 1998 May 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 8043)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.49741 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27623627 | $\omega$ | 51.83748 | | +0.62835057 | +0.77553939 | |
| $a$ | 2.3349751 | $\Omega$ | 257.20153 | | −0.73185815 | +0.56276024 | |
| $e$ | 0.1913408 | $i$ | 3.58315 | | −0.26374080 | +0.28607614 | |
| $P$ | 3.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | (0.4− | 2.7−) | 2002 07 09 | 704 | 0.7− | 1.1+ | 2006 10 13 | 691 | 0.2− | 0.1+ |
| 1998 04 22 | 704 | (2.7+ | 0.4−) | 2002 07 09 | 704 | 0.7− | 0.9+ | 2006 10 13 | 691 | 0.2− | 0.3+ |
| 1998 04 22 | 704 | (1.5+ | 2.4−) | 2002 07 14 | 704 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 1998 04 22 | 704 | 1.8+ | 0.2− | 2002 07 14 | 704 | 0.0 | 0.6+ | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 1998 04 22 | 704 | (3.1− | 2.4−) | 2002 07 14 | 704 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 1998 05 16 | 691 | 0.5+ | 0.6+ | 2002 07 14 | 704 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 1998 05 16 | 691 | 0.4+ | 0.4+ | 2002 07 14 | 704 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 1998 05 16 | 691 | 0.5+ | 0.3− | 2002 07 22 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 1998 05 24 | 691 | 0.8− | 0.2+ | 2002 07 22 | 644 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 1998 05 24 | 691 | 1.5− | 0.3+ | 2002 07 22 | 644 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.8+ |
| 1998 05 26 | 691 | 0.7+ | 0.7+ | 2002 08 05 | 599 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 1998 05 26 | 691 | 1.0+ | 0.5+ | 2002 08 05 | 599 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 1998 05 26 | 691 | 0.9+ | 0.8+ | 2002 08 05 | 599 | 0.4− | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 1998 05 31 | 691 | 0.6− | 0.2+ | 2002 08 06 | 644 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 1998 05 31 | 691 | 0.5− | 0.6+ | 2002 08 06 | 644 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 1998 05 31 | 691 | 0.7− | 0.2+ | 2002 08 06 | 644 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1999 10 15 | 704 | 0.1− | 0.4− | 2002 08 07 | 644 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1999 10 15 | 704 | 0.9+ | 0.2− | 2002 08 07 | 644 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 0.3− | 0.5− | 2002 08 07 | 644 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 1999 11 03 | 704 | 0.7+ | 0.4+ | 2002 08 07 | 599 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.0 |
| 1999 11 03 | 704 | 0.0 | 0.9+ | 2002 08 07 | 599 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 1999 11 03 | 704 | 0.7+ | 0.9+ | 2002 08 07 | 599 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.8+ |
| 1999 12 07 | 704 | 0.2− | 0.1− | 2002 08 14 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 1999 12 07 | 704 | 0.8+ | 1.2+ | 2002 08 14 | 704 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.6− | 0.1− |
| 1999 12 07 | 704 | 0.2+ | 0.0 | 2002 08 14 | 704 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 1999 12 08 | 704 | 1.2− | 0.4+ | 2002 08 14 | 704 | 0.9+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 1999 12 08 | 704 | 0.3+ | 0.9+ | 2002 08 14 | 704 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 1999 12 08 | 704 | 0.2+ | 1.1+ | 2002 08 17 | 608 | (3.4− | 0.8−) | 2006 11 16 | 704 | 1.5− | 0.3+ |
| 2000 02 05 | 695 | 0.1− | 0.3+ | 2002 08 17 | 608 | (3.4− | 0.5−) | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2000 02 05 | 695 | 0.5− | 0.6+ | 2002 08 17 | 608 | (3.2− | 0.6−) | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2002 05 24 | 644 | 0.2+ | 1.2+ | 2002 08 26 | 644 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.8− | 0.5+ |
| 2002 05 24 | 644 | 0.1− | 1.3+ | 2002 08 26 | 644 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2002 05 24 | 644 | 0.5+ | 1.4+ | 2002 08 26 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 1.0+ |
| 2002 06 06 | 704 | 0.4− | 0.3+ | 2002 09 13 | 704 | 1.0+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2002 06 06 | 704 | 0.4− | 0.1+ | 2002 09 13 | 704 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2002 06 06 | 704 | 0.6− | 0.5+ | 2002 09 13 | 704 | 0.4+ | 0.7− | 2006 11 19 | 704 | 1.2− | 0.9+ |
| 2002 06 06 | 704 | 1.1− | 0.7+ | 2005 03 09 | 691 | 0.4+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2002 06 16 | 644 | 0.1+ | 0.1+ | 2005 03 09 | 691 | 0.4+ | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.8+ |
| 2002 06 16 | 644 | 0.0 | 0.0 | 2005 03 09 | 691 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 0.4+ | 0.7+ |
| 2002 06 16 | 644 | 0.1+ | 0.1− | 2006 08 29 | 703 | 1.2− | 0.8− | 2006 11 22 | 704 | 0.6+ | 1.3+ |
| 2002 06 25 | 644 | 0.1+ | 1.3− | 2006 08 29 | 703 | 0.5− | 0.9− | 2006 11 22 | 704 | (0.7+ | 3.6+) |
| 2002 06 25 | 644 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.6+ | 1.1− | 2006 11 22 | 104 | 0.2+ | 0.3+ |
| 2002 06 25 | 644 | 0.1− | 0.8+ | 2006 08 29 | 703 | 0.3− | 0.4− | 2006 11 22 | 104 | (1.9− | 0.0 ) |
| 2002 07 04 | 644 | 0.2+ | 1.2+ | 2006 09 25 | 704 | 0.6+ | 0.0 | 2006 11 22 | 104 | 0.6− | 0.9+ |
| 2002 07 04 | 644 | 0.3+ | 0.8+ | 2006 09 25 | 704 | 0.9+ | 0.0 | 2006 11 29 | 704 | 1.9+ | 0.5+ |
| 2002 07 04 | 644 | 0.5+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.6+ | 0.1+ |
| 2002 07 06 | 699 | 0.3− | 0.1− | 2006 09 25 | 704 | (0.2− | 1.7−) | 2006 11 29 | 704 | 0.5+ | 0.7− |
| 2002 07 06 | 699 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 1.1+ | 1.0+ |
| 2002 07 06 | 699 | 0.4+ | 0.7− | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.6+ |
| 2002 07 06 | 699 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.2− | | | | |
| 2002 07 09 | 704 | 0.3− | 1.4− | 2006 10 13 | 691 | 0.4− | 0.1+ | | | | |

**(136925)∗ 1998 ME**

Discovered 1998 June 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.72676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18167970 | $\omega$ | 272.25375 | | −0.70580796 | −0.68548088 | |
| $a$ | 3.0874394 | $\Omega$ | 224.54444 | | +0.70779536 | −0.67193292 | |
| $e$ | 0.2061404 | $i$ | 14.76309 | | +0.02934011 | −0.28039635 | |
| $P$ | 5.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 16 | 691 | 1.5− | 0.1+ | 2001 12 11 | 704 | 0.9+ | 0.6− | 2006 10 20 | 644 | 0.1− | 0.3+ | |
| 1998 06 16 | 691 | 0.9− | 0.4+ | 2001 12 11 | 704 | (0.1− | 2.1+) | 2006 10 20 | 644 | 0.3− | 0.3+ | |
| 1998 06 16 | 691 | 1.4− | 0.8+ | 2001 12 15 | 704 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.3+ | |
| 1998 06 18 | 691 | 1.1+ | 1.1− | 2001 12 15 | 704 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− | |
| 1998 06 18 | 691 | 0.4+ | 0.5+ | 2001 12 15 | 704 | (1.4− | 2.1+) | 2006 10 21 | 691 | 0.4− | 0.2− | |
| 1998 06 18 | 691 | 0.9+ | 0.0 | 2001 12 15 | 704 | 1.4− | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.1− | |
| 1998 06 23 | 691 | 0.3− | 0.1+ | 2001 12 20 | 644 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.0 | |
| 1998 06 23 | 691 | 0.0 | 0.0 | 2001 12 20 | 644 | 0.0 | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.0 | |
| 1998 06 23 | 691 | 0.6− | 0.0 | 2001 12 20 | 644 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.6− | 0.4− | |
| 1998 06 30 | 691 | 0.6+ | 0.4+ | 2003 03 29 | 699 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.5+ | |
| 1998 06 30 | 691 | 1.0+ | 0.4+ | 2003 03 29 | 699 | 0.8+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.1− | |
| 1998 06 30 | 691 | 0.9+ | 0.0 | 2003 03 29 | 699 | 0.4− | 0.3− | 2006 11 15 | 691 | 0.3+ | 1.0+ | |
| 2001 11 17 | 704 | 0.9+ | 0.5− | 2003 03 29 | 699 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.1− | |
| 2001 11 17 | 704 | 0.5− | 0.8− | 2003 04 07 | 704 | (0.4+ | 1.6+) | 2006 11 17 | 691 | 0.2+ | 0.0 | |
| 2001 11 17 | 704 | 0.5+ | 0.2− | 2003 04 07 | 704 | 0.1− | 0.7+ | 2006 11 17 | 691 | 0.0 | 0.4+ | |
| 2001 11 17 | 704 | 1.3+ | 0.3− | 2003 04 07 | 704 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.0 | |
| 2001 12 08 | 699 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.0 | |
| 2001 12 08 | 699 | 0.3− | 1.3+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1− | |
| 2001 12 08 | 699 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.1− | |
| 2001 12 08 | 699 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.1+ | |
| 2001 12 11 | 704 | 0.2+ | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.4+ | 0.0 | |
| 2001 12 11 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.0 | | | | | |

**(136926)∗ 1998 MY**

Discovered 1998 June 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.44359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26310638 | $\omega$ | 90.60513 | | +0.64959726 | +0.75516724 | |
| $a$ | 2.4120250 | $\Omega$ | 220.36043 | | −0.74036465 | +0.60200851 | |
| $e$ | 0.3452259 | $i$ | 7.81088 | | −0.17286870 | +0.25943823 | |
| $P$ | 3.75 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.1+ | 0.2+ | 2002 10 04 | 699 | 0.5+ | 0.3+ | 2002 11 08 | 704 | (1.8− | 0.0 | ) |
| 1991 11 06 | 691 | 0.0 | 0.3+ | 2002 10 04 | 699 | 0.6+ | 0.1+ | 2002 11 08 | 704 | (1.6− | 0.3+) | |
| 1991 11 06 | 691 | 0.0 | 0.1+ | 2002 10 04 | 699 | 0.4+ | 0.5+ | 2005 03 08 | 691 | 0.7+ | 0.5+ | |
| 1998 05 05 | 699 | 1.4+ | 0.9− | 2002 10 05 | 704 | 0.0 | 0.2− | 2005 03 08 | 691 | 0.5+ | 0.5+ | |
| 1998 05 05 | 699 | 0.0 | 1.5+ | 2002 10 05 | 704 | 0.6+ | 0.1− | 2005 03 08 | 691 | 0.7+ | 0.4+ | |
| 1998 05 05 | 699 | 0.2+ | 0.8+ | 2002 10 05 | 704 | 0.7+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.2+ | |
| 1998 05 22 | 704 | (1.3− | 2.6+) | 2002 10 05 | 704 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.1− | |
| 1998 05 22 | 704 | 0.9− | 1.9+ | 2002 10 05 | 704 | 0.7+ | 0.1− | 2006 08 28 | 703 | 0.6+ | 1.5− | |
| 1998 05 22 | 704 | 1.9− | 0.4+ | 2002 10 05 | 704 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.4+ | |
| 1998 05 22 | 704 | (4.4− | 0.6+) | 2002 10 05 | 704 | 0.7+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.2− | |
| 1998 05 22 | 699 | 0.9− | 0.8+ | 2002 10 05 | 704 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.6− | 0.2− | |
| 1998 05 22 | 699 | 1.1− | 0.3− | 2002 10 05 | 704 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.2− | 0.3− | |
| 1998 05 22 | 699 | 0.8− | 0.4+ | 2002 10 05 | 704 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− | |
| 1998 05 24 | 704 | 0.5− | 1.0+ | 2002 10 05 | 704 | 0.9+ | 0.1− | 2006 09 27 | 704 | 0.9− | 0.3− | |
| 1998 05 24 | 704 | 1.3− | 0.2− | 2002 10 05 | 704 | 0.4− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.3− | |
| 1998 05 24 | 704 | 0.1+ | 0.2− | 2002 10 05 | 704 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.2− | |
| 1998 05 24 | 704 | (2.5− | 0.6−) | 2002 10 05 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 1.1− | 1.1− | |
| 1998 05 24 | 704 | 0.3− | 1.6− | 2002 10 05 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.5+ | |
| 1998 06 03 | 704 | 0.4+ | 0.0 | 2002 10 05 | 704 | 0.8+ | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | |
| 1998 06 03 | 704 | 1.4− | 1.9+ | 2002 10 05 | 704 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.3+ | |
| 1998 06 03 | 704 | 0.0 | 1.2+ | 2002 10 05 | 704 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | |
| 1998 06 03 | 704 | 0.1− | 1.3+ | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ | |
| 1998 06 16 | 704 | 0.4− | 0.5+ | 2002 10 05 | 704 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | |
| 1998 06 16 | 704 | 0.8+ | 0.7− | 2002 10 05 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | |
| 1998 06 16 | 704 | 1.8+ | 0.4+ | 2002 10 05 | 704 | 0.7+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | |
| 1998 06 16 | 704 | (2.1+ | 1.9−) | 2002 10 05 | 704 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | |
| 1998 06 18 | 704 | (2.4+ | 0.5−) | 2002 10 05 | 704 | 0.4+ | 0.2+ | 2006 11 02 | 703 | 0.2+ | 0.1− | |
| 1998 06 18 | 704 | 0.5− | 0.5− | 2002 10 05 | 704 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.7− | 0.4+ | |
| 1998 06 18 | 704 | 0.7+ | 0.5− | 2002 10 05 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.0 | |
| 1998 06 18 | 704 | 0.7+ | 0.5− | 2002 10 05 | 704 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 0.0 | 0.1− | |
| 1998 07 01 | 699 | 0.3+ | 0.6− | 2002 10 05 | 644 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 1998 07 01 | 699 | 0.4+ | 0.6+ | 2002 10 05 | 704 | 1.0+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3+ | |
| 1998 07 01 | 699 | 0.6+ | 0.3+ | 2002 10 05 | 704 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 2002 06 09 | 608 | 0.2− | 0.9+ | 2002 10 05 | 704 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.3+ | |
| 2002 06 09 | 608 | 0.1− | 1.0+ | 2002 10 05 | 704 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ | |
| 2002 06 09 | 608 | 0.2+ | 1.0+ | 2002 10 05 | 704 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.5+ | |
| 2002 06 10 | 704 | 0.2+ | 0.8+ | 2002 10 05 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.5+ | |
| 2002 06 10 | 704 | 0.9+ | 0.6+ | 2002 10 05 | 704 | 0.5+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.1+ | |
| 2002 06 10 | 704 | 0.5+ | 0.5+ | 2002 10 05 | 704 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.4+ | |
| 2002 06 10 | 704 | 0.1+ | 0.9+ | 2002 10 05 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.0 | |
| 2002 06 11 | 704 | 0.3− | 0.2− | 2002 10 05 | 704 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ | |
| 2002 06 11 | 704 | 0.2− | 0.1+ | 2002 10 05 | 704 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | |
| 2002 06 11 | 704 | 0.1− | 0.4+ | 2002 10 05 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.3+ | |
| 2002 06 11 | 704 | 0.2− | 0.3+ | 2002 10 05 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.1− | |
| 2002 06 11 | 704 | 1.1− | 0.2− | 2002 10 05 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.2− | |
| 2002 06 14 | 704 | 0.1+ | 0.2− | 2002 10 05 | 644 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1− | |
| 2002 06 14 | 704 | 0.9− | 0.2− | 2002 10 06 | 644 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.0 | |
| 2002 06 14 | 704 | 0.2+ | 0.4− | 2002 10 06 | 644 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1+ | |
| 2002 06 14 | 704 | 0.0 | 0.2+ | 2002 10 06 | 644 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.1− | |
| 2002 07 13 | 704 | 0.9− | 0.2+ | 2002 10 09 | 704 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.3− | |
| 2002 07 13 | 704 | 0.7+ | 0.1− | 2002 10 09 | 704 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.1− | |
| 2002 07 13 | 704 | 0.2+ | 0.2− | 2002 10 09 | 704 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.7− | |
| 2002 07 13 | 704 | 0.5+ | 0.0 | 2002 10 09 | 704 | 0.3+ | 0.7− | 2006 11 17 | 703 | 0.4− | 0.4− | |
| 2002 08 04 | 704 | 0.0 | 0.3− | 2002 10 09 | 704 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.3+ | 1.0− | |
| 2002 08 04 | 704 | 0.5− | 0.3− | 2002 10 12 | 704 | 0.5− | 0.3+ | 2006 11 18 | 704 | (1.0− | 1.9+) | |
| 2002 08 04 | 704 | 0.1− | 0.4− | 2002 10 12 | 704 | 0.1− | 0.6− | 2006 11 18 | 704 | 0.9− | 1.5+ | |
| 2002 08 04 | 704 | 0.2− | 0.1− | 2002 10 12 | 704 | 0.4− | 0.6− | 2006 11 18 | 704 | 0.2+ | 1.3+ | |
| 2002 08 04 | 704 | 0.3− | 0.5+ | 2002 10 12 | 704 | 0.9− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 1.1+ | |
| 2002 08 15 | 704 | 1.2+ | 0.4+ | 2002 10 30 | 608 | 0.8− | 0.9+ | 2006 11 18 | 704 | (0.1+ | 1.7+) | |
| 2002 08 15 | 704 | 0.1+ | 0.1+ | 2002 10 30 | 608 | 1.2− | 1.1+ | 2006 11 18 | 704 | 0.5+ | 1.2+ | |
| 2002 08 15 | 704 | (1.6− | 0.6−) | 2002 10 30 | 608 | 0.8− | 0.6+ | 2006 11 18 | 704 | 0.6− | 0.4− | |
| 2002 09 03 | 644 | 0.3− | 0.1+ | 2002 10 31 | 704 | 0.8+ | 0.5− | 2006 11 18 | 704 | (1.7− | 2.3+) | |
| 2002 09 03 | 644 | 0.3− | 0.2+ | 2002 10 31 | 704 | 0.0 | 0.5+ | 2006 11 18 | 704 | (0.8− | 2.0+) | |
| 2002 09 03 | 644 | 0.5− | 0.2+ | 2002 10 31 | 704 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.5+ | |
| 2002 09 04 | G78 | 0.1− | 0.5− | 2002 10 31 | 704 | 0.5+ | 1.2+ | 2006 11 21 | 704 | 0.2− | 0.5+ | |
| 2002 09 04 | G78 | 0.1+ | 0.6− | 2002 10 31 | 704 | 0.2+ | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.5+ | |
| 2002 09 04 | G78 | 0.0 | 0.3− | 2002 11 04 | 608 | 0.1− | 1.0− | 2006 11 21 | 704 | 0.4− | 0.5+ | |
| 2002 09 04 | 644 | 0.2− | 0.5− | 2002 11 04 | 608 | (0.2+ | 2.0−) | 2006 11 21 | 704 | 0.2− | 0.5+ | |
| 2002 09 04 | 644 | 0.2− | 0.5− | 2002 11 04 | 608 | 0.4− | 0.4− | 2006 11 28 | 704 | 0.6− | 0.1+ | |
| 2002 09 04 | 644 | 0.1− | 0.4− | 2002 11 05 | 699 | 1.2− | 1.1+ | 2006 11 28 | 704 | 0.1+ | 0.3+ | |
| 2002 09 12 | 644 | 0.5− | 0.1+ | 2002 11 05 | 699 | 1.0− | 0.7− | 2006 11 28 | 704 | 0.5− | 0.0 | |
| 2002 09 12 | 644 | 0.5− | 0.0 | 2002 11 05 | 699 | 0.5+ | 0.8+ | 2006 11 28 | 704 | 0.3+ | 0.1+ | |
| 2002 09 12 | 644 | 0.4− | 0.1− | 2002 11 05 | 699 | 0.4+ | 0.5− | 2006 11 28 | 704 | 0.1− | 0.0 | |
| 2002 10 04 | 699 | 0.5+ | 0.1− | 2002 11 08 | 704 | 1.0− | 0.0 | | | | | |

**(136927)∗ 1998 MA$_3$ = 2004 BC$_5$**

Discovered 1998 June 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55830)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.99654 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27817766 | $\omega$ | 265.12986 | | +0.98649196 | −0.10748447 | |
| $a$ | 2.3240986 | $\Omega$ | 101.00224 | | +0.14652861 | +0.91636682 | |
| $e$ | 0.1541138 | $i$ | 7.23445 | | −0.07323234 | +0.38564094 | |
| $P$ | 3.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 16 | 691 | 0.5− | 0.1− | 2004 01 17 | 644 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 0.1+ | 0.1− | |
| 1998 06 16 | 691 | 0.0 | 0.0 | 2004 01 17 | 644 | 0.9+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.0 | |
| 1998 06 16 | 691 | 0.0 | 0.5+ | 2004 01 17 | 644 | 1.1+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.2+ | |
| 1998 06 22 | 691 | 0.2+ | 0.3+ | 2004 01 26 | 699 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.9− | 0.2− | |
| 1998 06 22 | 691 | 0.1+ | 0.6+ | 2004 01 26 | 699 | 1.1− | 0.8− | 2006 10 22 | 703 | 0.5− | 1.3+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 22 | 691 | 0.5+ | 0.1+ | 2004 01 26 | 699 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 1998 06 29 | 691 | 0.5− | 0.0 | 2004 01 26 | 699 | 0.9− | 0.6+ | 2006 10 22 | 703 | 0.7− | 0.6− |
| 1998 06 29 | 691 | 0.5− | 0.3+ | 2004 01 30 | 704 | 0.6+ | 0.7− | 2006 11 01 | 703 | 0.8− | 0.3+ |
| 1998 06 29 | 691 | 0.4− | 0.6+ | 2004 01 30 | 704 | 0.8+ | 0.4+ | 2006 11 01 | 703 | 0.5− | 1.1− |
| 2002 07 05 | 644 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.8+ | 0.0 | 2006 11 01 | 703 | 0.1− | 0.1+ |
| 2002 07 05 | 644 | 0.1+ | 0.4+ | 2004 01 30 | 704 | 1.3+ | 0.1− | 2006 11 01 | 703 | 0.8− | 0.5− |
| 2002 07 05 | 644 | 0.2+ | 0.1+ | 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.1− | 0.0 |
| 2002 07 15 | 644 | 0.4+ | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 1.1− | 0.7+ |
| 2002 07 15 | 644 | 0.1+ | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.3+ |
| 2002 07 15 | 644 | 0.6+ | 0.9+ | 2005 05 14 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.4+ |
| 2002 08 13 | 704 | 0.9+ | 0.7− | 2005 05 14 | 691 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.4− | 0.7+ |
| 2002 08 13 | 704 | 1.5+ | 0.5+ | 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.9+ |
| 2002 08 13 | 704 | 0.4+ | 0.5+ | 2005 05 14 | 644 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.3+ | 1.0+ |
| 2002 08 13 | 704 | 0.6+ | 0.0 | 2005 05 14 | 644 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.8− | 0.6+ |
| 2002 08 13 | 704 | 0.8+ | 0.7− | 2005 05 14 | 644 | 0.5+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.2+ |
| 2004 01 16 | 644 | 0.6+ | 0.3+ | 2005 06 01 | 461 | 0.3− | 0.6− | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2004 01 16 | 644 | 1.0+ | 0.0 | 2005 06 01 | 461 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2004 01 16 | 644 | 0.9+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.1+ |

**(136928)∗ 1998 $MO_{15}$ = 2004 $CE_{85}$ = 2004 $DU_{77}$**

Discovered 1998 June 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60498), A. Doppler (d, *MPO* 74574)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.90346 | | (2000.0) | | | |
| $n$ | 0.30412919 | $\omega$ | 17.07754 | | −0.12484316 | −0.98791913 |
| $a$ | 2.1899321 | $\Omega$ | 80.16687 | | +0.89907271 | −0.15178024 |
| $e$ | 0.0990892 | $i$ | 5.34680 | | +0.41962180 | +0.03128181 |
| $P$ | 3.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.0 | 0.2+ | 2002 08 30 | 644 | 0.3+ | 0.8+ | 2004 03 15 | 704 | 0.8+ | 0.5− |
| 1997 01 09 | 691 | 0.1+ | 0.2+ | 2002 09 16 | 644 | 0.4− | 0.2+ | 2004 03 15 | 704 | 0.1− | 0.2− |
| 1997 01 09 | 691 | 0.0 | 0.1+ | 2002 09 16 | 644 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.6+ | 0.5− |
| 1998 06 20 | 691 | 0.1+ | 0.0 | 2002 09 16 | 644 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.3− | 0.1+ |
| 1998 06 20 | 691 | 0.3+ | 0.3+ | 2003 12 28 | 704 | 0.8− | 1.3+ | 2004 03 17 | 691 | 0.1+ | 0.1+ |
| 1998 06 20 | 691 | 0.1− | 0.0 | 2003 12 28 | 704 | 1.0+ | 1.4+ | 2004 03 17 | 691 | 0.0 | 0.1+ |
| 1998 06 27 | 691 | 0.8+ | 0.0 | 2003 12 28 | 704 | 0.1+ | 1.2+ | 2004 03 17 | 691 | 0.0 | 0.2+ |
| 1998 06 27 | 691 | 0.4+ | 0.5+ | 2003 12 28 | 704 | (0.3+ | 1.7+) | 2004 03 23 | 704 | 0.5+ | 0.0 |
| 1998 06 27 | 691 | 0.9+ | 0.5− | 2004 02 13 | 691 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.5+ | 0.1− |
| 1998 07 01 | 691 | 1.5− | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.1+ |
| 1998 07 01 | 691 | 1.6− | 0.8+ | 2004 02 13 | 691 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.4+ |
| 1998 07 01 | 691 | 1.0− | 0.6+ | 2004 02 17 | 704 | 0.4+ | 0.6+ | 2004 03 23 | 704 | 0.0 | 0.3+ |
| 2001 05 22 | 807 | 0.2− | 0.3− | 2004 02 17 | 704 | 0.7+ | 0.0 | 2004 03 26 | 703 | 0.3+ | 0.2+ |
| 2001 05 22 | 807 | 0.0 | 0.0 | 2004 02 17 | 704 | 1.4+ | 0.3− | 2004 03 26 | 703 | 1.4+ | 0.7− |
| 2001 05 24 | 645 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.6− | 0.2+ | 2004 03 26 | 703 | 0.3+ | 0.4+ |
| 2001 05 24 | 645 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.2− | 0.7+ | 2004 03 26 | 703 | 0.7− | 0.3− |
| 2002 08 19 | 644 | 0.4− | 1.0+ | 2004 02 17 | 703 | 0.3+ | 0.7+ | 2006 09 24 | 691 | 0.4− | 0.3+ |
| 2002 08 19 | 644 | 0.2− | 1.1+ | 2004 02 17 | 703 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.9− | 0.4+ |
| 2002 08 19 | 644 | 0.4− | 0.8+ | 2004 02 17 | 703 | 0.7− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.1+ |
| 2002 08 30 | 644 | 0.0 | 0.7+ | 2004 02 17 | 703 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2002 08 30 | 644 | 0.6+ | 0.7+ | 2004 02 17 | 608 | 0.0 | 0.4− | 2006 11 25 | G96 | 0.4− | 0.0 |
| 2002 08 30 | 644 | 0.3+ | 0.9+ | 2004 02 17 | 608 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.3− | 0.2+ |
| 2002 08 30 | 644 | 0.0 | 0.9+ | 2004 02 17 | 608 | 0.5+ | 0.1− | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.8+ | 2004 03 15 | 704 | 0.2+ | 0.7+ | | | | |

**(136929)∗ 1998 $MA_{16}$ = 1999 $XS_{80}$**

Discovered 1998 June 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 37155)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.20546 | | (2000.0) | | | |
| $n$ | 0.26289315 | $\omega$ | 112.32900 | | +0.97905921 | +0.19475573 |
| $a$ | 2.4133290 | $\Omega$ | 236.48736 | | −0.20292187 | +0.91031627 |
| $e$ | 0.2088873 | $i$ | 4.07664 | | −0.01630280 | +0.36523212 |
| $P$ | 3.75 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 14 | 691 | 0.2− | 0.1+ | 2006 07 09 | 941 | 0.3+ | 0.3− | 2006 09 01 | 704 | 0.0 | 0.1+ |
| 1994 04 14 | 691 | 0.1+ | 0.5− | 2006 07 09 | 941 | 0.5+ | 0.4− | 2006 09 01 | 704 | (1.6+ | 0.8+) |
| 1994 04 14 | 691 | 0.3− | 0.1+ | 2006 07 09 | 941 | 0.4+ | 0.4− | 2006 09 11 | 703 | 0.1− | 0.5+ |
| 1995 10 22 | 691 | 0.2− | 0.8+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 11 | 703 | 0.2− | 0.0 |
| 1995 10 22 | 691 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.3+ | 0.3+ |
| 1995 10 22 | 691 | 0.4+ | 0.3− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 11 | 703 | 0.3− | 0.2+ |
| 1998 06 20 | 691 | 0.1+ | 0.1+ | 2006 08 18 | 704 | 0.7− | 0.0 | 2006 09 18 | 704 | 0.2+ | 0.3− |
| 1998 06 20 | 691 | 0.1− | 0.1− | 2006 08 18 | 704 | 0.0 | 0.5+ | 2006 09 18 | 704 | 0.2+ | 0.7+ |
| 1998 06 20 | 691 | 0.1− | 0.0 | 2006 08 18 | 704 | 0.2− | 0.9+ | 2006 09 18 | 704 | 1.0+ | 0.0 |
| 1998 06 28 | 691 | 0.0 | 0.7− | 2006 08 24 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 704 | 0.3− | 0.5+ |
| 1998 06 28 | 691 | 0.5+ | 0.3− | 2006 08 24 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.7+ | 0.0 |
| 1998 06 28 | 691 | 0.8+ | 0.1− | 2006 08 24 | 704 | 0.6+ | 0.0 | 2006 09 19 | 699 | 0.4− | 0.8+ |
| 1998 07 02 | 691 | 0.6− | 0.4− | 2006 08 24 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.4− |
| 1998 07 02 | 691 | 0.4− | 0.1− | 2006 08 24 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.8− | 0.0 |
| 1998 07 02 | 691 | 0.7− | 0.5− | 2006 08 27 | 699 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.4− | 0.8− |
| 1999 11 09 | 704 | 0.3− | 1.2− | 2006 08 27 | 699 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.4+ |
| 1999 11 09 | 704 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.6+ | 0.9− |
| 1999 11 09 | 704 | 0.2+ | 0.9− | 2006 08 27 | 699 | 0.6− | 0.7+ | 2006 09 25 | 704 | 0.6+ | 0.5+ |
| 1999 11 09 | 704 | 0.3+ | 0.8− | 2006 08 29 | 703 | 0.3− | 0.9− | 2006 09 25 | 704 | (0.1+ | 1.9+) |
| 1999 11 09 | 704 | 0.6− | 0.5− | 2006 08 29 | 704 | 0.4+ | 0.2− | 2006 09 29 | 699 | 0.1+ | 0.3− |
| 1999 12 07 | 704 | 1.8− | 1.2− | 2006 08 29 | 703 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.4− | 0.4+ |
| 1999 12 07 | 704 | 0.1+ | 1.4− | 2006 08 29 | 703 | 0.3+ | 0.8− | 2006 09 29 | 699 | 0.0 | 0.1− |
| 1999 12 07 | 704 | 0.0 | 0.5− | 2006 08 29 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 0.4− | 0.5− |
| 1999 12 07 | 704 | 1.0+ | 0.0 | 2006 08 29 | 703 | 0.2− | 0.5− | 2006 09 29 | 699 | 0.1+ | 0.3− |
| 1999 12 08 | 704 | 1.0− | 0.2− | 2006 08 29 | 704 | 0.1− | 0.9+ | 2006 09 29 | 704 | 0.2+ | 0.2+ |
| 1999 12 08 | 704 | 1.0− | 0.3− | 2006 08 29 | 703 | 1.1− | 1.5− | 2006 09 29 | 699 | (1.7− | 1.3−) |
| 1999 12 08 | 704 | 1.5+ | 0.4− | 2006 08 29 | 703 | 0.8− | 1.3− | 2006 10 20 | 703 | 0.5− | 0.4+ |
| 2005 05 10 | 691 | 0.7+ | 0.7+ | 2006 08 29 | 703 | 0.5− | 1.0− | 2006 10 20 | 703 | 0.5− | 1.2+ |
| 2005 05 10 | 691 | 0.9+ | 0.8+ | 2006 08 29 | 703 | 0.4+ | 1.1− | 2006 10 20 | 703 | 0.8+ | 0.3+ |
| 2005 05 10 | 691 | 0.0 | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 703 | 0.7− | 1.3+ |
| 2005 05 14 | G96 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.7+ | 0.8+ |
| 2005 05 14 | G96 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.0 | 0.4+ | 2006 10 21 | 703 | 1.7− | 0.8+ |
| 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 10 21 | 703 | 1.5− | 1.6+ |
| 2005 05 14 | G96 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 1.1− | 0.6+ |
| 2006 07 09 | 941 | 0.2+ | 0.4− | 2006 09 01 | 704 | 0.7+ | 0.4− | | | | |
| 2006 07 09 | 941 | 0.2+ | 0.6− | 2006 09 01 | 704 | 0.3− | 0.8− | | | | |

**(136930)∗ 1998 $OT_3$ = 2002 $VZ_{87}$**

Discovered 1998 July 24 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 37079)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.03886 | | (2000.0) | | | |
| $n$ | 0.28108134 | $\omega$ | 63.08809 | | +0.95953597 | +0.26387681 |
| $a$ | 2.3080650 | $\Omega$ | 281.47880 | | −0.28054768 | +0.86592625 |
| $e$ | 0.1719123 | $i$ | 5.75587 | | −0.02416019 | +0.42490089 |
| $P$ | 3.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 24 | 910 | 0.4+ | 0.5− | 2002 12 13 | 704 | 0.4− | 0.4+ | 2005 08 30 | 704 | 0.6+ | 0.2+ |
| 1998 07 24 | 910 | 0.4+ | 0.6− | 2002 12 13 | 704 | 0.7+ | 0.3+ | 2005 08 30 | 704 | 0.0 | 0.2+ |
| 1998 07 24 | 910 | 0.3+ | 0.7− | 2002 12 13 | 704 | 0.4− | 0.1− | 2005 08 30 | 704 | 0.3− | 0.2+ |
| 1998 07 27 | 910 | 1.3+ | 0.2− | 2002 12 13 | 704 | 0.8− | 0.4+ | 2005 08 30 | 704 | 0.6− | 0.5− |
| 1998 07 27 | 910 | 1.2+ | 0.1− | 2002 12 13 | 704 | 0.4+ | 0.9+ | 2005 08 30 | 704 | 0.6− | 0.5− |
| 1998 07 27 | 910 | 1.3+ | 0.1− | 2002 12 14 | 704 | 0.8+ | 0.4− | 2005 09 17 | 644 | 0.3+ | 0.2+ |
| 1998 07 28 | 910 | 0.1+ | 1.0− | 2002 12 14 | 704 | 0.4− | 0.4+ | 2005 09 17 | 644 | 0.4+ | 0.0 |
| 1998 07 28 | 910 | 0.4+ | 0.6− | 2002 12 14 | 704 | 0.0 | 0.8+ | 2005 09 17 | 644 | 0.3+ | 0.5+ |
| 1998 07 28 | 910 | 0.4+ | 0.6− | 2002 12 27 | 644 | 0.6+ | 0.4+ | 2005 09 19 | 644 | 0.0 | 0.1− |
| 1998 08 17 | 704 | 1.3− | 1.0− | 2002 12 27 | 644 | 0.4+ | 0.2+ | 2005 09 19 | 644 | 0.0 | 0.0 |
| 1998 08 17 | 704 | 1.3− | 0.4+ | 2002 12 27 | 644 | 0.4+ | 0.2+ | 2005 09 19 | 644 | 0.5− | 0.1+ |
| 1998 08 17 | 704 | (0.3+ | 2.9−) | 2002 12 31 | 704 | 0.3+ | 0.9+ | 2005 09 19 | 644 | 0.2+ | 0.1+ |
| 1998 08 17 | 704 | (0.2− | 2.5−) | 2002 12 31 | 704 | 0.2+ | 0.0 | 2005 09 19 | 644 | 0.0 | 0.1− |
| 1998 08 23 | 704 | 0.4+ | 0.9− | 2002 12 31 | 704 | 0.8− | 0.2− | 2005 09 19 | 644 | 0.1− | 0.1+ |
| 1998 08 23 | 704 | 0.4− | 1.2− | 2002 12 31 | 704 | 0.7− | 0.1− | 2005 09 19 | 644 | 0.1+ | 0.2+ |
| 1998 08 23 | 704 | 1.0− | 0.8− | 2002 12 31 | 704 | 0.4− | 0.4+ | 2005 09 19 | 644 | 0.2+ | 0.0 |
| 1998 08 23 | 704 | 0.0 | 1.3− | 2003 01 05 | 704 | 0.2− | 0.7+ | 2005 09 19 | 644 | 0.4− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 23 | 704 | 1.4+ | 0.1+ | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2005 09 19 | 644 | 0.2+ | 0.2− |
| 2002 11 08 | 704 | 0.1− | 0.8+ | 2003 01 05 | 704 | 0.1− | 0.4− | 2005 09 19 | 644 | 0.0 | 0.0 |
| 2002 11 08 | 704 | 0.4− | 0.3+ | 2003 01 05 | 704 | 0.5− | 0.0 | 2005 09 19 | 644 | 0.2+ | 0.0 |
| 2002 11 08 | 704 | 0.3− | 1.3+ | 2003 01 05 | 704 | 0.6− | 0.4+ | 2005 09 19 | 644 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.5+ | 0.4− | 2005 05 20 | 644 | 0.3− | 0.4− | 2005 09 19 | 644 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2005 05 20 | 644 | 0.1− | 0.2+ | 2005 09 19 | 644 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.8+ | 0.1+ | 2005 05 20 | 644 | 0.1− | 0.1− | 2005 09 19 | 644 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | 0.3+ | 1.2− | 2005 06 20 | 644 | 0.2− | 0.1+ | 2005 09 19 | 644 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.4+ | 1.0− | 2005 06 20 | 644 | 0.0 | 0.1− | 2005 09 19 | 644 | 0.2− | 0.2− |
| 2002 11 14 | 704 | (0.2+ | 2.1−) | 2005 06 20 | 644 | 0.2+ | 0.1− | 2005 10 08 | 704 | 0.8+ | 0.4− |
| 2002 11 14 | 704 | 0.5+ | 0.4− | 2005 06 27 | 691 | 0.1− | 0.3+ | 2005 10 08 | 704 | 0.6− | 0.0 |
| 2002 11 14 | 704 | 0.4+ | 0.6− | 2005 06 27 | 691 | 0.1− | 0.4+ | 2005 10 08 | 704 | 0.4+ | 0.5− |
| 2002 11 14 | 704 | 0.7+ | 0.7+ | 2005 06 27 | 691 | 0.1− | 0.3+ | 2005 10 08 | 703 | 0.0 | 0.4+ |
| 2002 11 14 | 704 | 1.0− | 0.4− | 2005 07 03 | 704 | 0.0 | 0.3+ | 2005 10 08 | 703 | 0.4− | 0.6+ |
| 2002 11 16 | 644 | 0.1− | 0.3− | 2005 07 03 | 704 | 0.2+ | 1.4+ | 2005 10 08 | 704 | 0.3+ | 0.0 |
| 2002 11 16 | 644 | 0.2+ | 0.0 | 2005 07 03 | 704 | 0.8− | 0.9+ | 2005 10 08 | 703 | 1.2+ | 0.5− |
| 2002 11 16 | 644 | 0.4+ | 0.2− | 2005 07 03 | 704 | 0.2− | 0.4+ | 2005 10 08 | 703 | 1.2− | 0.4+ |
| 2002 11 27 | 699 | 0.0 | 1.3+ | 2005 07 07 | 691 | 0.1+ | 0.2+ | 2005 10 25 | 704 | 0.8+ | 0.3+ |
| 2002 11 27 | 699 | 1.1− | 0.7− | 2005 07 07 | 691 | 0.1+ | 0.2+ | 2005 10 25 | 704 | 0.7+ | 0.2− |
| 2002 11 27 | 699 | 1.4− | 0.6− | 2005 07 07 | 691 | 0.1+ | 0.2+ | 2005 10 25 | 704 | 0.4+ | 0.1+ |
| 2002 11 27 | 699 | 1.3+ | 1.1− | 2005 07 11 | G96 | 0.1+ | 0.1− | 2005 10 26 | 704 | 0.5− | 1.3+ |
| 2002 12 05 | 699 | 0.7+ | 0.6− | 2005 07 11 | G96 | 0.3− | 0.3− | 2005 10 26 | 704 | (2.5− | 0.9+) |
| 2002 12 05 | 699 | (1.6− | 0.4+) | 2005 07 11 | G96 | 0.1− | 0.4− | 2005 10 26 | 704 | 0.8− | 0.4− |
| 2002 12 05 | 699 | 0.8− | 0.0 | 2005 07 11 | G96 | 0.5− | 0.4− | 2005 10 26 | 704 | 0.4+ | 1.5+ |
| 2002 12 05 | 699 | 0.9− | 1.0− | 2005 07 15 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2005 07 15 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2005 07 15 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2005 07 18 | 644 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.5+ | 2005 07 18 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2002 12 11 | 704 | 0.3− | 0.5+ | 2005 07 18 | 644 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.4− | 0.4− |
| 2002 12 11 | 704 | 0.3− | 0.1+ | 2005 07 30 | E12 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | (2.9+ | 0.4+) | 2005 07 30 | E12 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2005 07 30 | E12 | 0.3− | 0.0 | 2006 11 28 | G96 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 0.4+ | 0.7+ | 2005 07 30 | E12 | 0.0 | 0.5− | 2006 11 28 | G96 | 0.3+ | 0.1− |
| 2002 12 11 | 644 | 1.1+ | 0.2+ | 2005 08 24 | 608 | 0.6− | 0.4+ | 2006 11 28 | G96 | 0.2− | 0.2− |
| 2002 12 11 | 644 | 0.2− | 0.6+ | 2005 08 24 | 608 | 0.9− | 0.3+ | 2006 11 28 | G96 | 0.0 | 1.2− |
| 2002 12 11 | 644 | 0.1− | 0.3+ | 2005 08 24 | 608 | 0.7− | 0.0 | | | | |

**(136931)∗ 1998 OE$_6$ = 1991 RH$_{13}$**

Discovered 1998 July 30 at Višnjan.

Id. G. V. Williams (MPC 32489)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.08729 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27485948 | $\omega$ | 39.14392 | | +0.89439933 | | +0.44119509 |
| $a$ | 2.3427659 | $\Omega$ | 294.52872 | | −0.42796447 | | +0.79643990 |
| $e$ | 0.2180764 | $i$ | 4.63167 | | −0.12998559 | | +0.41355820 |
| $P$ | 3.59 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 13 | 675 | 0.5+ | 1.3− | 1998 08 26 | 120 | 0.2− | 0.5− | 2002 11 27 | 699 | 0.6− | 0.0 |
| 1991 09 13 | 675 | (0.0 | 2.7−) | 1998 08 26 | 120 | 0.7− | 0.2− | 2002 11 27 | 699 | 0.4− | 0.2− |
| 1991 09 15 | 675 | 0.7+ | 0.6− | 1998 08 27 | 699 | 0.2− | 0.2− | 2002 11 27 | 699 | 0.4− | 0.3+ |
| 1991 09 15 | 675 | 0.2− | 1.0− | 1998 08 27 | 699 | 0.0 | 0.0 | 2002 12 02 | 704 | 0.1− | 0.4− |
| 1993 02 16 | 691 | 0.1− | 0.8− | 1998 08 27 | 699 | 0.3− | 0.3+ | 2002 12 02 | 704 | 0.3− | 0.3− |
| 1993 02 16 | 691 | 0.2− | 0.6− | 2001 04 26 | 699 | 0.6− | 0.6+ | 2002 12 02 | 704 | 0.2+ | 0.5− |
| 1993 02 16 | 691 | 0.2− | 0.5− | 2001 04 26 | 699 | 1.1− | 0.2+ | 2002 12 02 | 704 | 0.3− | 0.0 |
| 1998 07 30 | 120 | 0.4− | 0.5+ | 2001 04 26 | 699 | 0.8− | 0.2− | 2002 12 02 | 704 | 0.1+ | 0.5− |
| 1998 07 30 | 120 | 0.8− | 0.4+ | 2001 04 26 | 699 | 1.1− | 0.8+ | 2002 12 06 | 704 | 0.0 | 0.5+ |
| 1998 07 30 | 120 | 0.1− | 0.2+ | 2002 09 06 | 704 | 0.3+ | 1.0− | 2002 12 06 | 704 | 0.6− | 0.4+ |
| 1998 07 30 | 120 | 0.4− | 0.8+ | 2002 09 06 | 704 | 0.0 | 0.3− | 2002 12 06 | 704 | 0.5− | 0.7+ |
| 1998 07 31 | 120 | (2.6− | 1.8+) | 2002 09 06 | 704 | 0.2+ | 0.1− | 2002 12 06 | 704 | 0.4− | 0.3− |
| 1998 07 31 | 120 | 0.1+ | 0.0 | 2002 09 06 | 704 | 0.1+ | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.5+ |
| 1998 07 31 | 120 | 1.6+ | 0.2+ | 2002 09 06 | 704 | 0.0 | 0.5+ | 2002 12 11 | 644 | 0.3+ | 0.7+ |
| 1998 07 31 | 120 | 1.2+ | 0.6+ | 2002 10 10 | 704 | 0.3+ | 0.9+ | 2002 12 11 | 704 | 0.3− | 0.3− |
| 1998 08 01 | 120 | 0.7+ | 0.4+ | 2002 10 10 | 704 | 0.2+ | 0.2+ | 2002 12 11 | 644 | 0.3+ | 0.7+ |
| 1998 08 01 | 120 | 0.8+ | 0.5− | 2002 10 10 | 704 | 0.2+ | 0.8+ | 2002 12 11 | 704 | 0.3− | 0.4+ |
| 1998 08 01 | 120 | 0.1+ | 0.2− | 2002 10 12 | 704 | 0.1+ | 0.4+ | 2002 12 11 | 644 | 0.3+ | 0.7+ |
| 1998 08 01 | 120 | 0.6− | 0.8+ | 2002 10 12 | 704 | 0.2− | 0.1− | 2002 12 11 | 704 | 0.5− | 0.5+ |
| 1998 08 02 | 120 | 0.6+ | 0.5− | 2002 10 12 | 704 | 0.0 | 0.4− | 2002 12 11 | 704 | 0.1+ | 0.6+ |
| 1998 08 02 | 120 | 0.2− | 0.3+ | 2002 10 12 | 704 | 0.8+ | 1.1− | 2002 12 27 | 644 | 0.1+ | 0.3+ |
| 1998 08 02 | 120 | 1.0+ | 0.2− | 2002 10 12 | 704 | 0.9+ | 0.2+ | 2002 12 27 | 644 | 0.0 | 0.3+ |
| 1998 08 02 | 120 | 0.1+ | 0.6+ | 2002 11 08 | 704 | 0.2− | 0.2− | 2002 12 27 | 644 | 0.3− | 0.4+ |
| 1998 08 02 | 120 | 0.4+ | 0.4− | 2002 11 08 | 704 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.4+ | 0.8+ |
| 1998 08 02 | 120 | 1.1+ | 0.4+ | 2002 11 08 | 704 | 0.6− | 0.1− | 2004 03 15 | 704 | 0.9+ | 0.0 |
| 1998 08 17 | 704 | 0.2− | 0.9+ | 2002 11 12 | 704 | 1.3+ | 0.1+ | 2004 03 15 | 704 | 0.3+ | 0.1+ |
| 1998 08 17 | 704 | 0.4− | 0.5− | 2002 11 12 | 704 | 0.4− | 0.7− | 2004 03 15 | 704 | 0.8+ | 0.3+ |
| 1998 08 17 | 704 | 0.5+ | 1.4+ | 2002 11 12 | 704 | 0.2− | 0.0 | 2004 03 15 | 704 | 0.7+ | 1.1+ |
| 1998 08 17 | 704 | (0.6+ | 2.2−) | 2002 11 12 | 704 | 0.9− | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.8+ |
| 1998 08 17 | 704 | 0.4− | 1.6− | 2002 11 14 | 704 | 1.4+ | 0.7− | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 1998 08 23 | 704 | 0.3− | 1.9− | 2002 11 14 | 704 | 1.3+ | 0.6− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1998 08 23 | 704 | 0.0 | 0.3− | 2002 11 14 | 704 | 0.9− | 1.2− | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 1998 08 23 | 704 | 0.9− | 1.5+ | 2002 11 14 | 704 | (1.6+ | 0.2−) | 2006 09 25 | 691 | 0.7+ | 0.0 |
| 1998 08 23 | 704 | (2.3− | 1.0+) | 2002 11 14 | 704 | 0.5− | 1.3− | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 1998 08 25 | 120 | 0.1− | 0.2− | 2002 11 14 | 704 | 1.1− | 0.7− | 2006 10 23 | G96 | 0.8+ | 0.3− |
| 1998 08 25 | 120 | 0.1+ | 0.4− | 2002 11 24 | 644 | 0.5− | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.3+ |
| 1998 08 25 | 120 | 0.2− | 0.3− | 2002 11 24 | 644 | 0.5− | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 1998 08 25 | 120 | 0.6− | 0.0 | 2002 11 24 | 644 | 0.5− | 0.3+ | 2006 10 23 | G96 | 0.4− | 0.6− |
| 1998 08 26 | 120 | 0.2− | 0.3+ | 2002 11 27 | 699 | (1.8− | 0.0 ) | | | | |

**(136932)∗ 1998 OB$_7$ = 2002 PD$_{37}$**

Discovered 1998 July 28 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPO* 33024)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.03200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25901220 | $\omega$ | 10.05200 | | +0.54429653 | | +0.83306876 |
| $a$ | 2.4373762 | $\Omega$ | 292.98786 | | −0.77691997 | | +0.45621478 |
| $e$ | 0.2783065 | $i$ | 6.15349 | | −0.31644376 | | +0.31283304 |
| $P$ | 3.81 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 28 | 327 | 1.3+ | 0.2+ | 2002 08 09 | 704 | 0.3− | 0.4+ | 2005 04 06 | 699 | 0.0 | 1.3+ |
| 1998 07 28 | 327 | 1.0+ | 0.2+ | 2002 08 09 | 704 | 0.2+ | 0.3+ | 2005 04 14 | 703 | 0.7− | 0.1− |
| 1998 07 28 | 327 | 1.0+ | 0.0 | 2002 08 09 | 704 | 0.1− | 0.6+ | 2005 04 14 | 703 | (1.9− | 1.8−) |
| 1998 07 28 | 327 | 0.9+ | 0.1+ | 2002 09 07 | 704 | 0.6+ | 1.0− | 2005 04 14 | 703 | 0.4+ | 0.1− |
| 1998 07 29 | 327 | 0.4+ | 0.2+ | 2002 09 07 | 704 | 0.8+ | 1.4− | 2005 04 14 | 703 | 0.4− | 0.9+ |
| 1998 07 29 | 327 | 0.5+ | 0.4+ | 2002 09 07 | 704 | 0.5+ | 0.7− | 2006 08 29 | 703 | 0.5− | 0.9+ |
| 1998 07 29 | 327 | 0.6+ | 0.2+ | 2002 09 07 | 704 | (0.9+ | 1.5−) | 2006 08 29 | 703 | (2.1+ | 0.1−) |
| 1998 08 04 | 699 | 0.3+ | 0.5− | 2002 09 07 | 704 | 0.2+ | 0.2− | 2006 08 29 | 703 | 1.3+ | 0.2+ |
| 1998 08 04 | 699 | 0.2+ | 0.5+ | 2002 10 03 | 644 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.5− | 0.6− |
| 1998 08 04 | 699 | 0.8+ | 0.6+ | 2002 10 03 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 1.2+ | 0.4− |
| 1998 08 13 | 327 | 0.3− | 0.0 | 2002 10 03 | 644 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 1998 08 13 | 327 | 0.1+ | 0.1+ | 2002 10 05 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.5− |
| 1998 08 13 | 327 | 0.1+ | 0.1+ | 2002 10 05 | 704 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.7+ |
| 1998 08 17 | 704 | 0.3− | 0.4+ | 2002 10 05 | 704 | 0.5− | 0.4+ | 2006 10 19 | D35 | 0.0 | 0.0 |
| 1998 08 17 | 704 | 0.5+ | 0.1− | 2002 10 05 | 704 | 0.1− | 0.7+ | 2006 10 19 | D35 | 0.1− | 0.0 |
| 1998 08 17 | 704 | (3.1+ | 1.2+) | 2002 10 05 | 704 | 0.1− | 0.2+ | 2006 10 19 | D35 | 0.2− | 0.1− |
| 1998 08 17 | 704 | 0.5− | 0.2+ | 2002 10 09 | 704 | 0.9− | 0.6+ | 2006 10 19 | A50 | 0.2+ | 0.1+ |
| 1998 08 23 | 704 | 0.3− | 0.2− | 2002 10 09 | 704 | 0.1+ | 0.2+ | 2006 10 20 | A50 | 0.4+ | 0.4+ |
| 1998 08 23 | 704 | 0.2+ | 1.2− | 2002 10 09 | 704 | 0.6− | 0.6+ | 2006 10 27 | 703 | (1.0+ | 3.6+) |
| 1998 08 23 | 704 | 0.6− | 0.2− | 2002 10 09 | 704 | 0.2− | 0.7+ | 2006 10 27 | 703 | (0.1+ | 1.5+) |
| 1998 08 23 | 704 | 0.5− | 0.5− | 2002 10 09 | 704 | 0.2− | 0.8+ | 2006 10 27 | 703 | 0.5+ | 0.2+ |
| 1998 08 23 | 704 | 0.2− | 0.0 | 2002 10 12 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.2+ |
| 1998 08 26 | 699 | 0.3+ | 1.2+ | 2002 10 12 | 704 | 1.3+ | 0.5+ | 2006 11 02 | 703 | 0.8− | 0.4+ |
| 1998 08 26 | 699 | 0.5− | 0.0 | 2002 10 12 | 704 | 1.0+ | 0.0 | 2006 11 02 | 703 | 1.1− | 0.6− |
| 1998 08 26 | 699 | 0.5− | 0.2+ | 2002 10 12 | 704 | 0.2+ | 0.9+ | 2006 11 02 | 703 | (2.3− | 0.2−) |
| 1998 08 26 | 327 | 0.5− | 0.2− | 2002 10 12 | 704 | 0.7+ | 0.5+ | 2006 11 02 | 703 | 0.7− | 0.9+ |
| 1998 08 26 | 327 | 0.5− | 0.2− | 2002 11 06 | 704 | 0.4− | 0.0 | 2006 11 11 | 703 | 1.2− | 0.0 |
| 1998 08 26 | 327 | 0.3− | 0.1− | 2002 11 06 | 704 | 1.2+ | 0.5+ | 2006 11 11 | 703 | (1.7− | 0.8−) |
| 1998 08 27 | 327 | 0.5− | 0.2− | 2002 11 06 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.9− |
| 1998 08 27 | 327 | 0.4− | 0.2− | 2002 11 06 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.0 |
| 1998 08 27 | 327 | 0.5− | 0.4− | 2003 12 19 | 691 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.2− | 0.2+ |
| 1998 08 31 | 327 | 0.4− | 0.2− | 2003 12 19 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 644 | 0.5− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 31 | 327 | 0.3− | 0.3− | 2003 12 19 | 691 | 0.3− | 0.2− | 2006 11 17 | 644 | 0.5− | 0.3+ |
| 1998 08 31 | 327 | 0.4− | 0.2− | 2003 12 21 | 691 | 0.5− | 0.1− | 2006 11 22 | 703 | 0.3− | 0.9+ |
| 1998 10 11 | 699 | 1.3− | 0.9+ | 2003 12 21 | 691 | 0.3+ | 0.4− | 2006 11 22 | 703 | 0.7− | 0.5− |
| 1998 10 11 | 699 | 0.6− | 0.4− | 2003 12 21 | 691 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.5− | 1.0+ |
| 1998 10 11 | 699 | 1.0− | 0.4+ | 2005 04 05 | 644 | 0.4+ | 0.2+ | 2006 11 22 | 703 | (0.5− | 2.0+) |
| 2002 08 04 | 704 | 0.9+ | 1.2− | 2005 04 05 | 644 | 0.8+ | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2002 08 04 | 704 | 0.0 | 0.8− | 2005 04 05 | 644 | 1.0+ | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 08 04 | 704 | 0.1+ | 0.0 | 2005 04 06 | 699 | (1.7+ | 1.3+) | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2002 08 04 | 704 | 0.2− | 1.1− | 2005 04 06 | 699 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.6− | 1.6− |
| 2002 08 04 | 704 | 0.6+ | 1.0− | 2005 04 06 | 699 | 0.7+ | 1.2+ | | | | |

**(136933)∗ 1998 QX$_4$ = 2000 CT$_{43}$**

Discovered 1998 Aug. 22 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (MPC 38474)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.10400 | | | | | |
| $n$ | 0.26910671 | $\omega$ | 145.42807 | | +0.89487997 | −0.43806569 |
| $a$ | 2.3760361 | $\Omega$ | 240.77234 | | +0.38421816 | +0.85348772 |
| $e$ | 0.1373424 | $i$ | 5.61400 | | +0.22708203 | +0.28223602 |
| $P$ | 3.66 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 22 | 327 | 0.3− | 0.0 | 2002 10 04 | 704 | 0.1− | 0.5+ | 2002 11 14 | 704 | 0.6− | 0.1− |
| 1998 08 22 | 327 | 0.3− | 0.1+ | 2002 10 04 | 704 | 0.5− | 0.3+ | 2002 11 14 | 704 | 0.7− | 0.2− |
| 1998 08 22 | 327 | 0.6− | 0.2+ | 2002 10 04 | 704 | 0.6− | 0.6+ | 2002 12 01 | 704 | 0.3+ | 0.9− |
| 1998 08 22 | 327 | 0.5− | 0.1− | 2002 10 04 | 699 | 0.5− | 0.2− | 2002 12 01 | 704 | 0.3+ | 0.4− |
| 1998 08 23 | 327 | 0.3− | 0.2+ | 2002 10 04 | 699 | 0.1− | 0.9+ | 2002 12 01 | 704 | 0.1+ | 1.1− |
| 1998 08 23 | 327 | 0.5− | 0.1+ | 2002 10 04 | 699 | 0.2− | 1.1+ | 2002 12 01 | 704 | 0.3+ | 0.6− |
| 1998 08 23 | 327 | 0.4− | 0.1− | 2002 10 04 | 699 | 0.7− | 0.9+ | 2002 12 01 | 704 | 0.8+ | 0.9− |
| 1998 08 24 | 704 | 0.6− | 0.2+ | 2002 10 10 | 704 | 0.3− | 0.1+ | 2002 12 05 | 704 | 0.2− | 0.2− |
| 1998 08 24 | 704 | 0.3− | 0.3− | 2002 10 10 | 704 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.2+ | 0.1+ |
| 1998 08 24 | 704 | 1.4− | 0.0 | 2002 10 10 | 704 | 0.3− | 0.3+ | 2002 12 05 | 704 | 0.1− | 0.1+ |
| 1998 08 24 | 704 | (4.2− | 0.6−) | 2002 10 10 | 704 | 0.3+ | 0.4+ | 2002 12 05 | 704 | 0.1− | 0.3+ |
| 1998 08 25 | 327 | 0.5− | 0.3+ | 2002 10 10 | 704 | 0.1− | 0.3+ | 2002 12 05 | 704 | 0.1− | 0.0 |
| 1998 08 25 | 327 | 0.7− | 0.3+ | 2002 10 12 | 704 | 0.8+ | 0.0 | 2002 12 10 | 644 | 0.3− | 0.2+ |
| 1998 08 25 | 327 | 0.4− | 0.1+ | 2002 10 12 | 704 | 0.7+ | 0.2+ | 2002 12 10 | 644 | 0.2− | 0.2+ |
| 1998 08 26 | 699 | 0.1− | 0.6+ | 2002 10 12 | 704 | 0.6+ | 0.5+ | 2002 12 10 | 644 | 0.4− | 0.1+ |
| 1998 08 26 | 699 | 1.2+ | 0.9+ | 2002 10 12 | 704 | 1.0+ | 0.5+ | 2002 12 10 | 704 | 0.2+ | 0.1− |
| 1998 08 26 | 699 | 1.0+ | 0.1+ | 2002 10 12 | 704 | 1.0+ | 0.7+ | 2002 12 10 | 704 | 0.7+ | 0.2− |
| 1998 08 27 | 704 | 0.2+ | 0.5− | 2002 10 15 | 704 | 0.9− | 0.4+ | 2002 12 10 | 704 | 0.3+ | 0.8− |
| 1998 08 27 | 704 | 0.7+ | 1.1− | 2002 10 15 | 704 | 0.5+ | 0.3+ | 2002 12 10 | 704 | 0.2− | 0.8− |
| 1998 08 27 | 704 | 0.6+ | 0.0 | 2002 10 15 | 704 | 0.0 | 0.6+ | 2002 12 10 | 704 | 0.5+ | 0.7− |
| 1998 08 27 | 704 | 0.2− | 1.0+ | 2002 10 15 | 704 | 0.2− | 0.2+ | 2003 01 01 | 704 | (0.8− | 1.6+) |
| 1998 08 27 | 704 | 0.7− | 1.5+ | 2002 10 15 | 704 | 0.4− | 0.2− | 2003 01 01 | 704 | 0.0 | 0.6+ |
| 1998 08 27 | 327 | 0.1− | 0.0 | 2002 10 16 | 699 | 0.5− | 0.9+ | 2003 01 01 | 704 | 0.3− | 0.5+ |
| 1998 08 27 | 327 | 0.2− | 0.0 | 2002 10 16 | 699 | 0.4− | 0.5− | 2003 01 04 | 704 | 0.8+ | 0.1+ |
| 1998 08 27 | 327 | 0.2− | 0.1+ | 2002 10 16 | 699 | 0.2− | 0.1+ | 2003 01 04 | 704 | 0.6+ | 0.9+ |
| 1998 08 31 | 327 | 0.2− | 0.3− | 2002 10 16 | 699 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.1+ | 0.8+ |
| 1998 08 31 | 327 | 0.0 | 0.2− | 2002 10 26 | 608 | 0.5+ | 0.5− | 2003 01 04 | 704 | 0.4+ | 0.4+ |
| 1998 08 31 | 327 | 0.4− | 0.0 | 2002 10 26 | 608 | 1.0+ | 0.7− | 2003 01 04 | 704 | 0.0 | 0.3+ |
| 1998 09 14 | 704 | 0.2− | 0.0 | 2002 10 26 | 608 | 0.4+ | 1.1− | 2003 01 05 | 699 | 0.9− | 0.2+ |
| 1998 09 14 | 704 | 1.2+ | 0.8+ | 2002 10 31 | 699 | 1.0− | 0.1+ | 2003 01 05 | 699 | 1.2− | 0.3+ |
| 1998 09 14 | 704 | 0.4− | 0.8+ | 2002 10 31 | 699 | 0.3− | 0.4+ | 2003 01 05 | 699 | 0.5− | 0.2− |
| 1998 09 14 | 704 | 0.6+ | 0.6+ | 2002 10 31 | 699 | 0.3− | 0.1+ | 2003 01 05 | 699 | 0.7− | 0.1− |
| 1998 09 14 | 704 | 1.3+ | 0.5+ | 2002 10 31 | 699 | 0.7− | 0.4+ | 2004 03 19 | 704 | 0.2+ | 0.3+ |
| 1998 09 18 | 704 | 1.3+ | 1.5− | 2002 11 01 | 608 | 1.1+ | 0.0 | 2004 03 19 | 704 | 1.1+ | 0.9+ |
| 1998 09 18 | 704 | 0.7− | 1.0− | 2002 11 01 | 608 | 0.7+ | 0.5− | 2004 03 19 | 704 | 0.8+ | 0.4+ |
| 1998 09 18 | 704 | 0.3+ | 0.6− | 2002 11 01 | 608 | 1.3+ | 0.4− | 2004 03 19 | 704 | 0.8+ | 0.6+ |
| 1998 09 18 | 704 | 0.1+ | 0.1− | 2002 11 05 | 704 | 0.6+ | 0.1+ | 2004 03 19 | 704 | 0.6− | 0.5+ |
| 1998 09 18 | 704 | (2.2− | 0.4+) | 2002 11 05 | 704 | 0.1+ | 0.8+ | 2004 03 19 | 704 | 0.3+ | 0.2+ |
| 1998 09 23 | I02 | 0.2+ | 0.3− | 2002 11 05 | 704 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.5+ | 0.9+ |
| 2000 02 02 | 704 | 1.1− | 1.4+ | 2002 11 05 | 704 | 0.2+ | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.9+ |
| 2000 02 02 | 704 | 0.3+ | 1.2− | 2002 11 06 | 608 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 1.0+ | 0.4+ |
| 2000 02 02 | 704 | 0.7− | 0.8− | 2002 11 06 | 608 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.2+ |
| 2000 02 02 | 704 | 0.1+ | 0.4− | 2002 11 06 | 608 | 0.6+ | 0.5+ | 2004 03 19 | 704 | 0.6+ | 0.0 |
| 2000 02 06 | 704 | 0.6− | 0.5+ | 2002 11 08 | 704 | 0.5+ | 0.0 | 2004 03 19 | 704 | 1.0+ | 0.6− |
| 2000 02 06 | 704 | 0.4+ | 0.1− | 2002 11 08 | 704 | 0.3+ | 0.0 | 2004 03 26 | 699 | 0.9+ | 0.3+ |
| 2000 02 06 | 704 | 0.2− | 0.6+ | 2002 11 08 | 704 | 0.4+ | 0.0 | 2004 03 26 | 699 | 0.2− | 0.8+ |
| 2000 02 06 | 704 | 0.7+ | 0.7+ | 2002 11 08 | 704 | 0.4+ | 0.0 | 2004 03 26 | 699 | 0.7− | 0.9+ |
| 2000 02 06 | 704 | 0.4+ | 0.8+ | 2002 11 08 | 704 | 0.0 | 0.5− | 2004 03 26 | 699 | 1.3+ | 0.0 |
| 2002 08 30 | 704 | 0.2+ | 0.2− | 2002 11 12 | 704 | 0.1− | 0.8+ | 2004 03 27 | 703 | 1.1+ | 1.5+ |
| 2002 08 30 | 704 | 0.8− | 0.7− | 2002 11 12 | 704 | 0.1− | 0.2+ | 2004 03 27 | 703 | 1.3− | 1.0+ |
| 2002 08 30 | 704 | 1.1+ | 0.6+ | 2002 11 12 | 704 | 0.3− | 0.2+ | 2004 03 27 | 703 | 1.4− | 1.4+ |
| 2002 08 30 | 704 | 0.3− | 0.5+ | 2002 11 12 | 644 | 0.3− | 0.4+ | 2004 03 27 | 703 | (1.3+ | 2.0+) |
| 2002 09 06 | 704 | 1.0− | 0.7+ | 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.4+ |
| 2002 09 06 | 704 | 1.0− | 0.3+ | 2002 11 12 | 704 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.5− | 0.2− |
| 2002 09 06 | 704 | 0.3− | 0.2− | 2002 11 12 | 644 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2002 09 06 | 704 | 0.5− | 0.0 | 2002 11 12 | 644 | 0.4+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 1.9− |
| 2002 09 06 | 704 | 0.4− | 0.1− | 2002 11 14 | 704 | 0.2− | 0.4− | 2006 11 29 | 704 | 0.0 | 2.0− |
| 2002 10 04 | 704 | 0.4− | 0.4+ | 2002 11 14 | 704 | 0.9− | 0.1− | 2006 11 29 | 704 | 0.6− | 0.6− |
| 2002 10 04 | 704 | 0.6− | 0.3+ | 2002 11 14 | 704 | 0.6− | 0.2+ | 2006 11 29 | 704 | 1.1− | 0.0 |

**(136934)∗ 1998 QP$_5$**

Discovered 1998 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.02760 | | | | | |
| $n$ | 0.37531492 | $\omega$ | 124.58312 | | +0.17975547 | −0.95591091 |
| $a$ | 1.9034384 | $\Omega$ | 313.23368 | | +0.76545477 | +0.28418832 |
| $e$ | 0.0975083 | $i$ | 18.58580 | | +0.61787294 | −0.07396842 |
| $P$ | 2.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 19 | 704 | 1.0− | 1.1− | 2001 12 23 | 704 | 0.8− | 0.7+ | 2005 04 07 | 644 | 0.6+ | 0.3+ |
| 1998 08 19 | 704 | 0.0 | 0.5− | 2001 12 23 | 704 | 0.6− | 0.5+ | 2005 04 07 | 644 | 0.4+ | 0.2+ |
| 1998 08 19 | 704 | 1.5+ | 1.7+ | 2002 01 23 | 704 | 0.1+ | 1.2− | 2005 04 10 | E12 | 0.7+ | 0.0 |
| 1998 08 19 | 704 | 0.8− | 0.5− | 2002 01 23 | 704 | 0.6+ | 0.3− | 2005 04 10 | E12 | 0.1+ | 0.2+ |
| 1998 08 19 | 704 | 0.7− | 0.4+ | 2002 01 23 | 704 | 0.9+ | 1.4− | 2005 04 10 | E12 | 0.1− | 0.3+ |
| 1998 08 24 | 704 | 0.4+ | 0.7− | 2002 01 23 | 704 | (0.5+ | 2.0−) | 2005 04 10 | E12 | 0.1− | 0.1+ |
| 1998 08 24 | 704 | (2.1+ | 0.2−) | 2002 02 08 | 704 | 0.0 | 0.5+ | 2006 09 24 | 113 | 0.4+ | 0.0 |
| 1998 08 24 | 704 | 1.4+ | 0.4+ | 2002 02 08 | 704 | 0.4− | 0.5− | 2006 09 24 | 113 | 0.6+ | 0.0 |
| 1998 08 24 | 704 | (0.3+ | 2.2−) | 2002 02 08 | 704 | 0.6− | 1.1− | 2006 09 24 | 113 | 0.6+ | 0.0 |
| 1998 08 27 | 704 | 0.1− | 0.6+ | 2002 02 08 | 704 | 0.2+ | 0.7− | 2006 10 02 | 703 | 0.1− | 0.3+ |
| 1998 08 27 | 704 | 1.2+ | 0.3+ | 2002 02 08 | 704 | 0.3− | 1.0− | 2006 10 02 | 703 | 0.2+ | 0.2+ |
| 1998 08 27 | 704 | (2.9− | 1.3−) | 2005 03 12 | E12 | 0.3+ | 0.1+ | 2006 10 02 | 703 | 0.3− | 0.4− |
| 1998 08 27 | 704 | (2.2− | 0.4−) | 2005 03 12 | E12 | 0.6+ | 0.5− | 2006 10 23 | 703 | 0.3+ | 0.6+ |
| 1998 09 19 | 704 | 0.2+ | 1.3− | 2005 03 12 | E12 | 0.1− | 0.2+ | 2006 10 23 | 703 | 0.0 | 0.3+ |
| 1998 09 19 | 704 | 1.9− | 1.5+ | 2005 03 12 | E12 | 0.3− | 0.1+ | 2006 10 23 | 703 | 0.1+ | 0.2+ |
| 1998 09 19 | 704 | 0.3+ | 0.6+ | 2005 03 13 | E12 | 0.2+ | 0.0 | 2006 10 23 | 703 | 0.2− | 0.1− |
| 1998 09 19 | 704 | 1.1− | 0.7+ | 2005 03 13 | E12 | 0.4+ | 0.2+ | 2006 11 01 | 703 | 0.4− | 0.1− |
| 1998 09 19 | 704 | 0.3+ | 0.4− | 2005 03 13 | E12 | 0.3+ | 0.9+ | 2006 11 01 | 703 | (1.7− | 0.5−) |
| 2001 11 11 | 699 | 0.2+ | 1.1+ | 2005 03 13 | E12 | 0.2− | 0.6+ | 2006 11 01 | 703 | 1.4− | 0.6− |
| 2001 11 11 | 699 | 0.8+ | 1.4+ | 2005 04 01 | E12 | (1.0− | 1.7+) | 2006 11 01 | 703 | 0.1− | 0.1− |
| 2001 11 11 | 699 | 0.6+ | 0.7+ | 2005 04 01 | E12 | 0.3+ | 0.5+ | 2006 11 21 | 703 | 0.5− | 0.1+ |
| 2001 11 11 | 699 | 1.1+ | 0.2+ | 2005 04 01 | E12 | 0.2+ | 0.2+ | 2006 11 21 | 703 | 0.3+ | 0.1− |
| 2001 12 23 | 704 | 0.4− | 0.6+ | 2005 04 01 | E12 | 0.2− | 0.6+ | 2006 11 21 | 703 | 0.4− | 0.5+ |
| 2001 12 23 | 704 | 0.6− | 0.4+ | 2005 04 07 | 644 | 0.7+ | 0.2+ | 2006 11 21 | 703 | 0.0 | 0.3+ |

**(136935)∗ 1998 QK$_6$ = 1998 TF$_{37}$**

Discovered 1998 Aug. 24 by the OCA-DLR Asteroid Survey at Caussols.

Id. M. E. Sansaturio (d, *MPO* 35668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.36310 | | | | | |
| $n$ | 0.12393178 | $\omega$ | 146.10062 | | +0.98938648 | +0.13688216 |
| $a$ | 3.9842593 | $\Omega$ | 206.16173 | | −0.14524554 | +0.94144929 |
| $e$ | 0.1827564 | $i$ | 6.34952 | | +0.00425794 | +0.30811769 |
| $P$ | 7.95 | $H$ | 13.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 910 | 0.7+ | 0.6− | 2005 08 29 | 699 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 1998 08 24 | 910 | 0.3+ | 0.6− | 2005 08 29 | 699 | 0.6− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 1998 08 24 | 910 | 0.3− | 0.5− | 2005 08 29 | 699 | 0.3+ | 0.9− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1998 08 25 | 910 | 0.0 | 0.5+ | 2005 08 30 | 704 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 1998 08 25 | 910 | 0.7− | 0.4+ | 2005 08 30 | 704 | 0.6+ | 0.8− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1998 08 25 | 910 | 0.9− | 0.2+ | 2005 08 30 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 1998 09 24 | 910 | 0.5+ | 0.3+ | 2005 08 30 | 704 | 0.9+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 1998 09 24 | 910 | 0.7+ | 0.2+ | 2005 09 07 | 699 | 1.0− | 1.4− | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 1998 09 24 | 910 | 0.6+ | 0.1+ | 2005 09 07 | 699 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 1998 10 14 | 699 | 0.5+ | 1.2+ | 2005 09 07 | 699 | 1.2− | 0.8− | 2006 11 11 | 703 | (2.6− | 0.5−) |
| 1998 10 14 | 699 | 0.3+ | 1.4+ | 2005 09 07 | 699 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.5− |
| 1998 10 14 | 699 | 0.0 | 0.2+ | 2005 11 01 | G96 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 1998 10 20 | 699 | 0.6+ | 0.8+ | 2005 11 01 | G96 | 0.2+ | 0.0 | 2006 11 14 | 683 | 0.7+ | 0.5− |
| 1998 10 20 | 699 | 0.8+ | 0.0 | 2005 11 01 | G96 | 0.1+ | 0.3− | 2006 11 14 | 683 | 0.3− | 0.5− |
| 1998 10 20 | 699 | 0.5− | 0.7+ | 2005 11 01 | G96 | 0.0 | 0.3− | 2006 11 14 | 683 | 1.4+ | 0.3+ |
| 1998 11 10 | 704 | 0.2+ | 0.7− | 2005 11 01 | 703 | (1.8− | 1.0−) | 2006 11 15 | 683 | 0.1− | 0.1− |
| 1998 11 10 | 704 | (2.3+ | 1.6−) | 2005 11 01 | 703 | 0.4+ | 0.8− | 2006 11 15 | 683 | 0.2+ | 1.5− |
| 1998 11 10 | 704 | 1.0− | 1.3− | 2005 11 01 | 703 | 0.0 | 0.8− | 2006 11 15 | 683 | 0.3− | 0.8− |
| 1998 11 10 | 704 | 0.5+ | 0.5− | 2005 11 01 | 703 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 1998 11 11 | 704 | 0.5+ | 0.3− | 2005 11 03 | 704 | 0.5+ | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 1998 11 11 | 704 | 0.4+ | 1.1+ | 2005 11 03 | 704 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 1998 11 11 | 704 | 1.0− | 1.8− | 2005 11 03 | 704 | 0.4+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 1998 11 11 | 704 | 0.2− | 0.4− | 2005 12 04 | 704 | 0.9− | 0.4+ | 2006 11 17 | 703 | 0.5− | 0.6− |
| 1998 11 14 | 699 | 0.2− | 0.4− | 2005 12 04 | 704 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.3+ | 0.3− |
| 1998 11 14 | 699 | 0.6− | 0.5+ | 2005 12 04 | 704 | 0.6+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.3− |
| 1998 11 14 | 699 | 1.1− | 0.5− | 2005 12 04 | 704 | 1.0+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2002 04 06 | 807 | (2.0− | 1.0+) | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.9− | 0.7+ |
| 2002 04 06 | 807 | (1.7− | 0.0 ) | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | (0.5− | 2.7+) |
| 2003 05 11 | 691 | 0.7+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 18 | 704 | (1.6+ | 0.9+) |
| 2003 05 11 | 691 | 0.6+ | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 1.3+ | 0.2− |
| 2003 05 11 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 1.1+ | 0.2+ | 2006 11 19 | 704 | (3.1+ | 1.5+) |
| 2003 05 25 | 691 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 19 | 704 | (2.8+ | 0.7−) |
| 2003 05 25 | 691 | 0.3− | 0.5+ | 2006 09 30 | 703 | 1.3+ | 1.3− | 2006 11 19 | 704 | (2.0+ | 1.7+) |
| 2003 05 25 | 691 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.9+ | 1.0+ | 2006 11 19 | 704 | (4.0+ | 0.4+) |
| 2004 06 16 | 704 | 0.7− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2+ | 1.3+ |
| 2004 06 16 | 704 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | (0.7+ | 1.8+) |
| 2004 06 16 | 704 | 0.8− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | (1.3+ | 2.0+) |
| 2005 06 23 | 644 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2005 06 23 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2005 06 23 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 22 | 683 | 0.9+ | 0.7− |
| 2005 07 29 | 699 | 0.7− | 0.3+ | 2006 10 27 | 704 | (1.2− | 1.7+) | 2006 11 22 | 683 | (1.5− | 1.6−) |
| 2005 07 29 | 699 | 0.2− | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.4+ | 2006 11 22 | 683 | 0.0 | 1.2− |
| 2005 07 29 | 699 | 0.4− | 1.3+ | 2006 10 27 | 704 | (0.8− | 1.9+) | 2006 11 25 | 683 | 0.4+ | 1.3+ |
| 2005 07 29 | 699 | 0.6+ | 0.3+ | 2006 10 27 | 704 | 0.7− | 0.7+ | 2006 11 25 | 683 | 1.5− | 0.9+ |
| 2005 08 24 | 644 | 0.3− | 0.4− | 2006 10 27 | 691 | 0.2− | 0.4+ | 2006 11 25 | 683 | 2.9− | 0.6+ |
| 2005 08 24 | 644 | 0.3− | 0.3− | 2006 10 27 | 704 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.6+ | 0.7+ |
| 2005 08 24 | 644 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.4− |
| 2005 08 28 | 608 | 0.3+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.3+ | 0.4− |
| 2005 08 28 | 608 | 0.5+ | 1.1+ | 2006 10 31 | 691 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.1+ |
| 2005 08 28 | 608 | 0.5+ | 0.8+ | 2006 10 31 | 691 | 0.1+ | 0.3+ | | | | |
| 2005 08 29 | 699 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.0 | | | | |

**(136936)∗ 1998 QO$_{20}$ = 2002 RO$_{97}$**

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37083)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.15467 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25758084 | $\omega$ | 152.86186 | | +0.90930460 | +0.41612274 |
| $a$ | 2.4463974 | $\Omega$ | 182.55251 | | −0.39176646 | +0.85390226 |
| $e$ | 0.2218200 | $i$ | 3.40766 | | −0.14030034 | +0.31255847 |
| $P$ | 3.83 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 691 | 1.1− | 0.6− | 2002 10 02 | 608 | 0.8− | 0.2+ | 2005 04 30 | 691 | 0.4+ | 0.5+ |
| 1997 04 07 | 691 | 0.1− | 0.0 | 2002 10 02 | 608 | 0.6− | 0.2+ | 2005 04 30 | 691 | 0.2+ | 0.3+ |
| 1997 04 07 | 691 | 0.2− | 0.4+ | 2002 10 03 | 704 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.3+ | 0.4+ |
| 1998 08 17 | 704 | 0.6+ | 0.6− | 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 07 22 | G96 | 0.4− | 0.1+ |
| 1998 08 17 | 704 | 1.7+ | 1.7− | 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 07 22 | G96 | 0.1+ | 0.3− |
| 1998 08 17 | 704 | 0.4+ | 0.3− | 2002 10 03 | 704 | 0.6− | 0.6+ | 2006 07 22 | G96 | 0.8− | 0.1− |
| 1998 08 17 | 704 | (2.3+ | 0.8−) | 2002 10 03 | 704 | 0.3− | 0.1− | 2006 07 22 | G96 | 0.5− | 0.3− |
| 1998 08 23 | 704 | 1.3+ | 0.8− | 2002 10 07 | 704 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 1998 08 23 | 704 | 0.7+ | 0.3− | 2002 10 07 | 704 | 0.7− | 0.5+ | 2006 10 16 | 703 | 1.3+ | 0.3+ |
| 1998 08 23 | 704 | 0.1− | 0.4+ | 2002 10 07 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 1998 08 23 | 704 | 0.5− | 1.2+ | 2002 10 07 | 704 | 0.9− | 0.7+ | 2006 10 16 | 703 | 0.6+ | 0.8+ |
| 1998 08 23 | 704 | 0.1+ | 1.6+ | 2002 10 07 | 704 | 0.0 | 0.1+ | 2006 10 17 | 621 | 0.1+ | 0.4− |
| 1998 08 26 | 699 | 0.2+ | 1.4+ | 2002 10 09 | 704 | 0.0 | 0.1+ | 2006 10 17 | 621 | 0.0 | 0.5− |
| 1998 08 26 | 699 | 0.3+ | 0.0 | 2002 10 09 | 704 | 0.2− | 0.0 | 2006 10 17 | 621 | 0.4+ | 0.5− |
| 1998 08 26 | 699 | 0.0 | 0.6− | 2002 10 09 | 704 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.6− |
| 2002 08 11 | 704 | 0.5− | 0.3− | 2002 10 10 | 704 | 0.8− | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.5− |
| 2002 08 11 | 704 | 1.4− | 0.3− | 2002 10 10 | 704 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2002 08 11 | 704 | 0.1+ | 0.6+ | 2002 10 10 | 704 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | 0.4+ | 0.2+ | 2002 10 10 | 704 | 0.3− | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.3− |
| 2002 09 05 | 704 | 1.3− | 0.1+ | 2002 10 10 | 704 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.8− | 2002 10 11 | 704 | 0.5+ | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.8− | 0.4− | 2002 10 11 | 704 | 0.0 | 0.7− | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2002 09 05 | 704 | 1.0− | 0.3− | 2002 10 11 | 704 | 0.7+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.4− |
| 2002 09 07 | 704 | 0.2+ | 0.7+ | 2002 10 11 | 704 | 0.2− | 1.2− | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2002 09 07 | 704 | 0.1+ | 0.5− | 2002 10 11 | 704 | 0.4+ | 0.4− | 2006 11 02 | 703 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.5− | 0.1− | 2002 10 31 | 704 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 0.6+ | 0.9− |
| 2002 09 07 | 704 | 1.0− | 0.1− | 2002 10 31 | 704 | 0.6− | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.2− |
| 2002 10 01 | 699 | 0.5+ | 0.1− | 2002 10 31 | 704 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 0.1+ | 0.6+ |
| 2002 10 01 | 699 | 0.8+ | 0.9+ | 2002 10 31 | 704 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.4− | 0.7+ |
| 2002 10 01 | 699 | 0.7+ | 0.1− | 2002 10 31 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2002 10 01 | 699 | 0.8+ | 0.9+ | 2004 01 30 | 691 | 0.5+ | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.6+ |
| 2002 10 02 | 704 | 0.0 | 0.5+ | 2004 01 30 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2002 10 02 | 704 | 0.8− | 0.3+ | 2004 01 30 | 691 | 0.4+ | 0.3+ | 2006 11 14 | 704 | 0.8+ | 1.0+ |
| 2002 10 02 | 704 | 0.1− | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.7+ | 2006 11 28 | 704 | 1.2+ | 1.9+ |
| 2002 10 02 | 704 | 0.5− | 0.0 | 2005 04 06 | G96 | 0.1− | 1.5+ | 2006 11 28 | 704 | 0.4+ | 0.8− |
| 2002 10 02 | 704 | 0.3+ | 0.4+ | 2005 04 06 | G96 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 1.1+ |
| 2002 10 02 | 608 | 0.5− | 0.0 | 2005 04 06 | G96 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.6+ | 0.1− |

**(136937)∗ 1998 QT$_{28}$ = 2002 RJ$_{187}$**

Discovered 1998 Aug. 22 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPO* 37084)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.93500 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25917656 | $\omega$ | 20.99224 | | +0.29091879 | +0.95294360 |
| $a$ | 2.4363457 | $\Omega$ | 265.99901 | | −0.88952503 | +0.23659931 |
| $e$ | 0.0993326 | $i$ | 4.90143 | | −0.35229459 | +0.18952376 |
| $P$ | 3.80 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 22 | 327 | 0.2− | 0.2− | 2002 10 07 | 699 | 0.7− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1998 08 22 | 327 | 0.1+ | 0.1+ | 2002 10 07 | 699 | 1.1− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1998 08 22 | 327 | 0.1+ | 0.1− | 2002 10 07 | 699 | 0.3− | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 1998 08 26 | 327 | 0.4+ | 0.2+ | 2003 12 21 | 691 | 0.3− | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 1998 08 26 | 327 | 0.0 | 0.5+ | 2003 12 21 | 691 | 0.5+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1998 08 26 | 327 | 0.5− | 0.0 | 2003 12 21 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 1998 08 30 | 327 | 0.4+ | 0.0 | 2005 05 04 | 644 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 1.0− | 0.4+ |
| 1998 08 30 | 327 | 1.2− | 0.5− | 2005 05 04 | 644 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 1998 08 30 | 327 | 0.0 | 0.2− | 2005 05 04 | 644 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.8+ |
| 2002 09 06 | 704 | 0.4+ | 0.6− | 2005 05 04 | 644 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2002 09 06 | 704 | 0.5+ | 0.4− | 2005 05 04 | 644 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2002 09 06 | 704 | (2.0+ | 0.7+) | 2005 05 04 | 644 | 0.3+ | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2002 09 06 | 704 | 0.4+ | 0.5+ | 2005 05 11 | 644 | 0.1+ | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2005 05 11 | 644 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2005 05 11 | 644 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2− | 0.1+ | 2005 05 11 | 644 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.7− | 0.4+ | |
| 2002 09 14 | 699 | 0.2+ | 0.1− | 2005 05 11 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2002 09 14 | 699 | 0.1+ | 0.2+ | 2005 05 11 | 644 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2002 09 14 | 699 | 0.1− | 0.4+ | 2005 05 12 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.6+ | |
| 2002 09 14 | 699 | 0.3+ | 0.5− | 2005 05 12 | 644 | 0.0 | 0.6+ | 2006 10 29 | 691 | 0.1− | 0.6+ | |
| 2002 10 04 | 704 | 0.6+ | 1.2+ | 2005 05 12 | 644 | 0.0 | 0.5+ | 2006 10 29 | 691 | 0.3− | 0.5+ | |
| 2002 10 04 | 704 | 0.7+ | 0.2+ | 2006 09 20 | 699 | 0.8+ | 0.3+ | 2006 10 29 | 691 | 0.2− | 0.7+ | |
| 2002 10 04 | 704 | 0.2+ | 0.6− | 2006 09 20 | 699 | 0.7+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.4− | |
| 2002 10 04 | 704 | (1.5+ | 1.7−) | 2006 09 20 | 699 | 0.2+ | 1.0− | 2006 11 25 | G96 | 0.4− | 0.4− | |
| 2002 10 04 | 704 | 1.2+ | 0.5+ | 2006 09 20 | 699 | 0.4− | 0.3− | 2006 11 25 | G96 | 0.2− | 0.5− | |
| 2002 10 07 | 699 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.4− | 0.6− | |

**(136938)∗ 1998 QA$_{37}$ = 2002 SA$_{36}$**

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37084)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.28257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25596328 | $\omega$ | 118.12092 | | +0.65552669 | +0.75473904 | |
| $a$ | 2.4566933 | $\Omega$ | 192.93677 | | −0.72673253 | +0.62127401 | |
| $e$ | 0.2856214 | $i$ | 6.55795 | | −0.20529148 | +0.21068364 | |
| $P$ | 3.85 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.9− | 0.6+ | 2002 10 01 | 699 | 0.1+ | 0.2+ | 2005 03 12 | 691 | 0.3+ | 0.7+ | |
| 1998 08 17 | 704 | 0.4+ | 0.5+ | 2002 10 02 | 704 | 0.9− | 1.2+ | 2005 03 12 | 691 | 0.2+ | 0.5+ | |
| 1998 08 17 | 704 | 1.3− | 0.7+ | 2002 10 02 | 704 | 0.3+ | 0.7+ | 2005 03 12 | 691 | 0.2+ | 0.7+ | |
| 1998 08 17 | 704 | 0.2− | 0.1+ | 2002 10 02 | 704 | 1.1+ | 0.2− | 2005 05 06 | G96 | 0.5− | 0.1− | |
| 1998 08 17 | 704 | 0.4+ | 0.4− | 2002 10 02 | 704 | 0.4+ | 1.0− | 2005 05 06 | G96 | 0.1− | 0.5− | |
| 1998 08 23 | 704 | 1.1− | 1.2− | 2002 10 02 | 704 | 0.2+ | 0.8− | 2005 05 06 | G96 | 0.3− | 0.1− | |
| 1998 08 23 | 704 | (2.7− | 1.9+) | 2002 10 03 | 704 | 0.7+ | 0.4+ | 2005 05 06 | G96 | 0.2+ | 0.0 | |
| 1998 08 23 | 704 | (2.1+ | 2.0−) | 2002 10 03 | 704 | 0.0 | 0.1+ | 2005 05 10 | 691 | 0.0 | 0.5+ | |
| 1998 08 23 | 704 | 0.1− | 0.0 | 2002 10 03 | 704 | 0.3+ | 1.3+ | 2005 05 10 | 691 | 0.1+ | 0.2+ | |
| 1998 08 23 | 704 | 1.5+ | 1.9+ | 2002 10 03 | 704 | 0.5+ | 0.1+ | 2005 05 10 | 691 | 0.3+ | 0.4+ | |
| 1998 08 30 | 699 | 1.0− | 0.6− | 2002 10 07 | 704 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.0 | 0.1− | |
| 1998 08 30 | 699 | 0.5+ | 0.5+ | 2002 10 07 | 704 | 0.0 | 0.9− | 2006 09 30 | G96 | 0.4+ | 0.2− | |
| 1998 08 30 | 699 | 0.3+ | 0.9+ | 2002 10 07 | 704 | 0.2+ | 1.1− | 2006 09 30 | G96 | 0.1− | 0.0 | |
| 2002 09 02 | 049 | 1.3− | 0.3− | 2002 10 07 | 704 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− | |
| 2002 09 02 | 049 | 1.3− | 0.4+ | 2002 10 08 | 291 | 0.1− | 0.4+ | 2006 10 18 | 691 | 0.6+ | 1.0+ | |
| 2002 09 02 | 049 | 0.1− | 0.5− | 2002 10 08 | 291 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.4+ | 0.2+ | |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2002 10 08 | 291 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.3+ | 0.0 | |
| 2002 09 07 | 704 | 0.1+ | 0.9+ | 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.9− | 0.0 | |
| 2002 09 07 | 704 | 1.4+ | 0.1− | 2002 10 11 | 704 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.5− | 0.3− | |
| 2002 09 07 | 704 | 0.7+ | 0.8+ | 2002 10 11 | 704 | 0.0 | 0.2− | 2006 10 22 | 691 | 1.0− | 0.0 | |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.5− | 0.0 | 2006 11 08 | 644 | 0.5− | 0.5+ | |
| 2002 09 16 | 608 | 0.5− | 1.2− | 2002 10 11 | 704 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | |
| 2002 09 16 | 608 | 0.2− | 1.4− | 2002 10 31 | 704 | (0.3+ | 1.7+) | 2006 11 08 | 644 | 0.2− | 0.4+ | |
| 2002 09 16 | 608 | 0.6+ | 0.5− | 2002 10 31 | 704 | 0.1− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.4+ | |
| 2002 09 29 | 608 | 0.1+ | 0.6− | 2002 10 31 | 704 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.4+ | 0.4+ | |
| 2002 09 29 | 608 | 0.2+ | 0.6− | 2002 10 31 | 704 | 0.6− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 2002 09 29 | 608 | 0.2− | 0.4− | 2002 10 31 | 704 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.1+ | |
| 2002 10 01 | 699 | 0.3− | 0.7− | 2004 01 19 | 691 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.0 | |
| 2002 10 01 | 699 | 1.0+ | 0.3+ | 2004 01 19 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.7+ | 0.0 | |
| 2002 10 01 | 699 | 0.1+ | 0.6− | 2004 01 19 | 691 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.5+ | 0.0 | |

**(136939)∗ 1998 QV$_{43}$**

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.85725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26461726 | $\omega$ | 323.07813 | | +0.89701227 | −0.43901057 | |
| $a$ | 2.4028349 | $\Omega$ | 63.03819 | | +0.41805789 | +0.80492899 | |
| $e$ | 0.2268853 | $i$ | 3.30393 | | +0.14351512 | +0.39919800 | |
| $P$ | 3.72 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.7− | 0.3+ | 2002 11 06 | 704 | 0.2+ | 0.1+ | 2002 12 31 | 704 | (2.4+ | 0.1+) | |
| 1998 08 17 | 704 | (0.1− | 2.1+) | 2002 11 06 | 704 | 0.5+ | 0.1− | 2002 12 31 | 704 | (2.2+ | 0.9+) | |
| 1998 08 17 | 704 | 1.8− | 0.0 | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2002 12 31 | 704 | (2.9+ | 0.8+) | |
| 1998 08 17 | 704 | (2.2− | 1.8+) | 2002 11 06 | 704 | 0.2+ | 0.4+ | 2002 12 31 | 704 | (2.7+ | 1.5+) | |
| 1998 08 17 | 704 | 0.2− | 1.8+ | 2002 11 07 | 704 | 1.1− | 0.5+ | 2002 12 31 | 704 | (2.8+ | 1.4+) | |
| 1998 08 23 | 704 | 1.2+ | 0.0 | 2002 11 07 | 704 | 0.6− | 0.6+ | 2003 01 04 | 704 | 0.6+ | 0.3+ | |
| 1998 08 23 | 704 | (0.3+ | 2.3+) | 2002 11 07 | 704 | 0.4− | 0.8+ | 2003 01 04 | 704 | 0.2− | 0.2+ | |
| 1998 08 23 | 704 | (0.3− | 2.1+) | 2002 11 07 | 704 | 0.4− | 0.9+ | 2003 01 04 | 704 | 0.2+ | 0.1− | |
| 1998 08 23 | 704 | (0.6− | 2.1+) | 2002 11 07 | 704 | 0.1− | 0.8+ | 2003 01 04 | 704 | 0.4+ | 0.0 | |
| 1998 09 14 | 704 | 0.4+ | 0.0 | 2002 11 10 | 704 | 0.4− | 0.3+ | 2003 01 04 | 704 | 0.0 | 0.1− | |
| 1998 09 14 | 704 | 0.0 | 0.8− | 2002 11 10 | 704 | 0.9− | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.1− | |
| 1998 09 14 | 704 | 0.1− | 1.7− | 2002 11 10 | 704 | 0.5− | 0.2− | 2003 01 08 | 704 | 0.5− | 0.2+ | |
| 1998 09 14 | 704 | 0.5− | 1.1− | 2002 11 10 | 704 | 0.6− | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.3+ | |
| 1998 09 16 | 699 | 0.8− | 1.5+ | 2002 11 10 | 704 | 1.0− | 0.4− | 2003 01 08 | 704 | 0.8+ | 0.3− | |
| 1998 09 16 | 699 | 0.0 | 0.2+ | 2002 11 10 | 704 | 0.6− | 0.3+ | 2003 01 08 | 704 | 0.7− | 0.5+ | |
| 1998 09 16 | 699 | 0.5− | 1.1+ | 2002 11 14 | 704 | 1.0+ | 0.0 | 2003 01 19 | 644 | 0.2− | 0.1− | |
| 1998 09 18 | 704 | 1.3+ | 1.2− | 2002 11 14 | 704 | 0.6+ | 0.4− | 2003 01 19 | 644 | 0.1− | 0.2+ | |
| 1998 09 18 | 704 | 1.8+ | 0.6− | 2002 11 14 | 704 | 0.8+ | 0.5− | 2003 01 19 | 644 | 0.1− | 0.1+ | |
| 1998 09 18 | 704 | 0.9+ | 1.1− | 2002 11 14 | 704 | 0.8+ | 0.6− | 2004 03 20 | 704 | (1.2+ | 2.6+) | |
| 1998 09 18 | 704 | 0.4− | 1.0+ | 2002 11 14 | 704 | 1.2+ | 1.0− | 2004 03 20 | 704 | (1.4+ | 1.9+) | |
| 1998 09 18 | 704 | 1.3− | 0.2+ | 2002 11 23 | 644 | 0.0 | 0.1+ | 2004 03 20 | 704 | (0.9+ | 1.7+) | |
| 2002 09 05 | 704 | 0.9− | 0.4− | 2002 11 23 | 644 | 0.1− | 0.0 | 2004 03 22 | 704 | 0.8− | 0.1+ | |
| 2002 09 05 | 704 | 0.1− | 0.4+ | 2002 11 23 | 644 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.4− | 0.0 | |
| 2002 09 05 | 704 | 1.2+ | 0.7− | 2002 11 27 | 699 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.2− | 0.8+ | |
| 2002 09 05 | 704 | 0.8+ | 0.3+ | 2002 11 27 | 699 | 0.0 | 0.3+ | 2004 03 22 | 704 | (2.2+ | 0.6+) | |
| 2002 09 05 | 704 | 0.9+ | 0.5+ | 2002 11 27 | 699 | 0.1− | 0.2+ | 2004 04 16 | 691 | 0.3+ | 0.1+ | |
| 2002 09 07 | 704 | (0.9− | 1.9+) | 2002 11 27 | 699 | (0.6− | 2.2+) | 2004 04 16 | 691 | 0.2+ | 0.0 | |
| 2002 09 07 | 704 | 1.0− | 0.8− | 2002 12 02 | 704 | 0.1− | 0.1+ | 2004 04 16 | 691 | 0.0 | 0.2+ | |
| 2002 09 07 | 704 | 0.1+ | 0.2− | 2002 12 02 | 704 | 0.5+ | 0.2− | 2004 04 21 | 691 | 0.2+ | 0.1+ | |
| 2002 09 07 | 704 | 0.3− | 0.1+ | 2002 12 02 | 704 | 0.4+ | 0.1+ | 2004 04 21 | 691 | 0.2+ | 0.3+ | |
| 2002 09 07 | 704 | 0.6− | 1.2− | 2002 12 02 | 704 | 0.2+ | 0.0 | 2004 04 21 | 691 | 0.1+ | 0.1+ | |
| 2002 09 22 | 608 | 0.4+ | 0.2− | 2002 12 02 | 704 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.6− | 0.3− | |
| 2002 09 22 | 608 | 1.5+ | 0.5+ | 2002 12 05 | 704 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2− | 0.4− | |
| 2002 09 22 | 608 | 0.3+ | 0.6+ | 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.4− | |
| 2002 10 16 | 699 | 0.2+ | 0.2+ | 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.3− | |
| 2002 10 16 | 699 | 0.1− | 0.3+ | 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.6− | |
| 2002 10 16 | 699 | 0.1+ | 0.6+ | 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.5− | |
| 2002 10 16 | 699 | (0.8− | 2.5+) | 2002 12 10 | 644 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.4− | |
| 2002 10 30 | 608 | 0.2− | 0.2− | 2002 12 10 | 644 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.5− | |
| 2002 10 30 | 608 | 0.3− | 0.3− | 2002 12 10 | 644 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.5− | |
| 2002 10 30 | 608 | 0.2− | 0.3− | 2002 12 10 | 704 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.4− | 0.6− | |
| 2002 10 31 | 644 | 0.2+ | 1.2+ | 2002 12 10 | 704 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.6− | |
| 2002 10 31 | 644 | 0.2+ | 1.0+ | 2002 12 10 | 704 | 0.1− | 0.3− | 2006 12 01 | G96 | 0.0 | 0.6− | |
| 2002 10 31 | 644 | 0.1+ | 1.0+ | 2002 12 10 | 704 | 1.0− | 0.1− | | | | | |
| 2002 11 06 | 704 | 0.4+ | 0.0 | 2002 12 10 | 704 | 1.1− | 0.2− | | | | | |

**(136940)∗ 1998 QG$_{45}$**

Discovered 1998 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.58797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26510741 | $\omega$ | 133.09986 | | +0.96978963 | −0.23741213 | |
| $a$ | 2.3998724 | $\Omega$ | 240.70671 | | +0.20095837 | +0.90781156 | |
| $e$ | 0.2066695 | $i$ | 3.68598 | | +0.13828886 | +0.34570747 | |
| $P$ | 3.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.5+ | 0.3+ | 2002 11 06 | 704 | 0.5− | 0.1− | 2002 12 10 | 704 | 0.2+ | 0.2+ | |
| 1998 08 17 | 704 | 0.8+ | 0.7− | 2002 11 06 | 704 | 0.4− | 0.6− | 2002 12 10 | 704 | 0.0 | 1.2+ | |
| 1998 08 17 | 704 | 0.7+ | 0.4+ | 2002 11 06 | 704 | 0.1− | 0.1+ | 2002 12 10 | 704 | 0.1+ | 0.4+ | |
| 1998 08 17 | 704 | 0.6+ | 1.4+ | 2002 11 06 | 704 | 0.4− | 0.1+ | 2002 12 10 | 704 | 0.4+ | 0.5+ | |
| 1998 08 17 | 704 | 0.2+ | 1.3+ | 2002 11 06 | 704 | 0.0 | 0.3+ | 2002 12 10 | 704 | 0.1+ | 0.3+ | |
| 1998 08 23 | 704 | 1.3+ | 1.2− | 2002 11 06 | 704 | 0.9− | 0.4+ | 2002 12 27 | 644 | 0.1− | 0.1− | |
| 1998 08 23 | 704 | 0.5− | 0.0 | 2002 11 06 | 704 | 0.6− | 0.7+ | 2002 12 27 | 644 | 0.1− | 0.0 | |
| 1998 08 23 | 704 | (2.2− | 2.3−) | 2002 11 06 | 704 | 0.3− | 0.2− | 2002 12 27 | 644 | 0.1− | 0.2− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 23 | 704 | 1.8− | 1.1+ | 2002 11 06 | 704 | 0.0 | 0.8+ | 2003 01 03 | 291 | 0.2+ | 0.0 | |
| 1998 08 30 | 699 | 0.0 | 1.2+ | 2002 11 07 | 704 | 0.2+ | 0.2+ | 2003 01 03 | 291 | 0.2+ | 0.0 | |
| 1998 08 30 | 699 | 0.5− | 0.9+ | 2002 11 07 | 704 | 0.5+ | 0.0 | 2003 01 03 | 291 | 0.1+ | 0.3+ | |
| 1998 08 30 | 699 | 0.6− | 0.5+ | 2002 11 07 | 704 | 0.1+ | 0.1+ | 2003 01 08 | 704 | (1.1− | 2.3+) | |
| 1998 08 31 | 691 | 0.2− | 0.1− | 2002 11 07 | 704 | 0.0 | 0.0 | 2003 01 08 | 704 | (0.3− | 2.4+) | |
| 1998 08 31 | 691 | 0.2− | 0.2− | 2002 11 07 | 704 | 0.1+ | 0.4− | 2003 01 08 | 704 | 0.3− | 0.8+ | |
| 1998 08 31 | 691 | 0.4− | 0.0 | 2002 11 13 | 644 | 0.5− | 0.2+ | 2004 02 16 | 703 | (2.5+ | 0.8+) | |
| 1998 09 14 | 704 | 0.8− | 0.7− | 2002 11 13 | 644 | 0.5− | 0.3+ | 2004 02 16 | 703 | (1.0+ | 1.7+) | |
| 1998 09 14 | 704 | 0.2− | 0.2+ | 2002 11 13 | 644 | 0.3− | 0.1+ | 2004 02 16 | 703 | 0.2− | 0.8+ | |
| 1998 09 14 | 704 | 0.2+ | 0.2− | 2002 11 14 | 704 | 0.3+ | 0.9− | 2004 02 16 | 703 | 0.6+ | 0.6+ | |
| 1998 09 14 | 704 | 0.0 | 0.6− | 2002 11 14 | 704 | 0.3− | 0.2− | 2004 03 16 | 691 | 0.2− | 0.1+ | |
| 1998 09 16 | 699 | 0.4+ | 0.5+ | 2002 11 14 | 704 | 0.3+ | 0.5− | 2004 03 16 | 691 | 0.1− | 0.4+ | |
| 1998 09 16 | 699 | 1.4+ | 0.2− | 2002 11 14 | 704 | 0.2+ | 0.5− | 2004 03 16 | 691 | 0.2− | 0.2+ | |
| 1998 09 16 | 699 | 1.3+ | 0.4+ | 2002 11 14 | 704 | 0.1+ | 0.0 | 2004 03 18 | 704 | 1.1+ | 0.6+ | |
| 1998 09 18 | 704 | 1.0+ | 0.2+ | 2002 11 27 | 699 | 0.3+ | 0.2− | 2004 03 18 | 704 | (1.9+ | 0.3+) | |
| 1998 09 18 | 704 | 0.4− | 1.1− | 2002 11 27 | 699 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.3+ | 0.8+ | |
| 1998 09 18 | 704 | 0.1− | 0.1− | 2002 11 27 | 699 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.5− | 1.0+ | |
| 1998 09 18 | 704 | 0.2+ | 0.3− | 2002 11 27 | 699 | 0.4+ | 0.5− | 2004 03 20 | 704 | (0.4+ | 1.8+) | |
| 1998 09 18 | 704 | 0.1+ | 0.3+ | 2002 11 28 | 699 | 0.3+ | 0.0 | 2004 03 20 | 608 | 0.4− | 0.5+ | |
| 1998 10 11 | 699 | 0.8− | 0.7+ | 2002 11 28 | 699 | 0.3+ | 0.4− | 2004 03 20 | 704 | 0.4− | 0.4+ | |
| 1998 10 11 | 699 | 0.3+ | 0.0 | 2002 11 28 | 699 | 0.3− | 0.0 | 2004 03 20 | 608 | 0.3+ | 0.6+ | |
| 1998 10 11 | 699 | 0.3− | 0.8+ | 2002 11 28 | 699 | 0.7+ | 0.3+ | 2004 03 20 | 704 | (1.9+ | 0.2+) | |
| 2002 09 06 | 704 | 0.6− | 0.3+ | 2002 12 02 | 704 | 0.4− | 0.1− | 2004 03 20 | 608 | 0.3+ | 0.2+ | |
| 2002 09 06 | 704 | 0.5− | 0.2+ | 2002 12 02 | 704 | 0.5− | 0.0 | 2004 03 20 | 704 | 1.1+ | 0.4+ | |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2002 12 02 | 704 | 0.9− | 0.0 | 2004 04 21 | 691 | 0.1+ | 0.1+ | |
| 2002 10 16 | 699 | 1.1− | 1.1+ | 2002 12 02 | 608 | 1.0+ | 0.1+ | 2004 04 21 | 691 | 0.1+ | 0.2+ | |
| 2002 10 16 | 699 | 0.0 | 0.4+ | 2002 12 02 | 608 | 0.9+ | 0.6+ | 2004 04 21 | 691 | 0.3+ | 0.1− | |
| 2002 10 16 | 699 | 1.4− | 1.4+ | 2002 12 02 | 608 | 0.7+ | 0.5+ | 2006 10 29 | G96 | 0.2+ | 0.6− | |
| 2002 10 16 | 699 | (2.1− | 0.5+) | 2002 12 04 | 333 | 0.2− | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.6− | |
| 2002 10 30 | 608 | 0.2− | 0.1+ | 2002 12 04 | 333 | 0.3− | 0.3− | 2006 10 29 | G96 | (0.6+ | 3.0−) | |
| 2002 10 30 | 608 | 0.0 | 0.3+ | 2002 12 04 | 333 | 0.3− | 0.4− | 2006 11 01 | G96 | 0.2− | 0.5− | |
| 2002 10 30 | 608 | 0.1− | 0.3+ | 2002 12 05 | 333 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.8+ | 0.1+ | |
| 2002 10 31 | 699 | 0.3+ | 0.6+ | 2002 12 05 | 333 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.4− | |
| 2002 10 31 | 699 | 0.5− | 0.3− | 2002 12 05 | 333 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.5− | |
| 2002 10 31 | 699 | 1.0− | 0.3+ | 2002 12 05 | 704 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.0 | 0.5− | |
| 2002 10 31 | 699 | 0.2− | 0.4+ | 2002 12 05 | 704 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.5− | |
| 2002 11 05 | 704 | 0.2+ | 0.1− | 2002 12 05 | 704 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.6− | |
| 2002 11 05 | 704 | 0.3+ | 0.2+ | 2002 12 05 | 704 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.3− | 0.7− | |
| 2002 11 05 | 704 | 0.5+ | 0.0 | 2002 12 05 | 704 | 0.3− | 0.7− | 2006 11 23 | 644 | 0.3+ | 0.1− | |
| 2002 11 05 | 704 | 0.5+ | 0.1− | 2002 12 07 | 333 | 0.3− | 0.2− | 2006 11 23 | 644 | 0.5+ | 0.1− | |
| 2002 11 05 | 704 | 0.3+ | 0.3+ | 2002 12 07 | 333 | 0.7− | 0.1+ | 2006 11 23 | 644 | 0.4+ | 0.3− | |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2002 12 07 | 333 | 0.4− | 0.2− | | | | | |

**(136941)∗ 1998 QT$_{57}$**

Discovered 1998 Aug. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.04001 | | (2000.0) | | | |
| $n$ | 0.25383632 | $\omega$ | 180.53753 | | +0.85519955 | −0.51827555 |
| $a$ | 2.4703977 | $\Omega$ | 210.68071 | | +0.47556588 | +0.78842675 |
| $e$ | 0.1901163 | $i$ | 0.55219 | | +0.20608450 | +0.33132115 |
| $P$ | 3.88 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 11 | 809 | 0.8+ | 0.7+ | 2002 10 06 | 704 | 0.5− | 0.8− | 2006 11 09 | 644 | 0.0 | 0.2+ | |
| 1994 08 11 | 809 | 1.2+ | 0.7+ | 2002 10 06 | 704 | 0.5− | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.4+ | |
| 1994 08 11 | 809 | 1.6+ | 1.8+ | 2002 10 06 | 704 | 0.2− | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.1− | |
| 1994 09 02 | 691 | 0.1+ | 0.3+ | 2002 10 07 | 644 | 0.3− | 0.4− | 2006 11 10 | 644 | 0.1+ | 0.1− | |
| 1994 09 02 | 691 | 0.4+ | 0.6− | 2002 10 07 | 644 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.0 | 0.7+ | |
| 1994 09 02 | 691 | 0.3+ | 0.9− | 2002 10 07 | 704 | 0.7− | 0.6− | 2006 11 11 | 703 | 0.1− | 0.2+ | |
| 1998 08 30 | 691 | 0.4− | 0.2+ | 2002 10 07 | 704 | (1.8+ | 0.4−) | 2006 11 11 | 703 | 0.4+ | 1.0− | |
| 1998 08 30 | 691 | 0.5− | 0.3+ | 2002 10 07 | 704 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.2− | 1.1+ | |
| 1998 08 30 | 691 | 0.4− | 0.5+ | 2002 10 07 | 704 | 0.5+ | 0.1− | 2006 11 12 | G96 | 0.2− | 0.5− | |
| 1998 08 31 | 691 | 0.9− | 0.0 | 2002 10 07 | 704 | 0.7− | 0.5+ | 2006 11 12 | G96 | 0.5+ | 0.5− | |
| 1998 08 31 | 691 | 0.5− | 0.2+ | 2002 10 07 | 704 | 0.6+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.5− | |
| 1998 08 31 | 691 | 0.5− | 0.2+ | 2002 10 07 | 644 | 0.2− | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.2− | |
| 1998 09 14 | 704 | 0.0 | 1.0+ | 2002 10 07 | 704 | 1.1− | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.0 | |
| 1998 09 14 | 704 | 0.4+ | 0.7− | 2002 10 11 | 704 | 0.4− | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.2+ | |
| 1998 09 14 | 704 | (2.0+ | 1.7+) | 2002 10 11 | 704 | 1.0− | 0.7+ | 2006 11 13 | 644 | 0.4− | 0.1− | |
| 1998 09 14 | 704 | 1.2+ | 0.9+ | 2002 10 11 | 704 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.3− | |
| 1998 09 16 | 699 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.9− | 0.8+ | 2006 11 17 | 703 | 0.8+ | 0.7− | |
| 1998 09 16 | 699 | 0.2− | 0.8+ | 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 1.2− | |
| 1998 09 16 | 699 | 0.5+ | 0.6+ | 2002 10 11 | 704 | 0.4− | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.2− | |
| 1998 09 18 | 704 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.6− | 0.3− | 2006 11 18 | 704 | (0.4− | 2.1+) | |
| 1998 09 18 | 704 | 1.0− | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (2.3+ | 0.8−) | |
| 1998 09 18 | 704 | 1.5− | 0.3+ | 2002 10 11 | 704 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.9+ | |
| 1998 09 18 | 704 | 0.6− | 0.3+ | 2002 10 11 | 704 | 0.5− | 0.4+ | 2006 11 18 | 704 | 1.1+ | 0.5− | |
| 1998 09 19 | 645 | 0.4+ | 0.2− | 2002 10 12 | 704 | 0.4+ | 1.2+ | 2006 11 18 | 704 | 0.4+ | 0.9+ | |
| 1998 09 19 | 645 | 0.4+ | 0.1− | 2002 10 12 | 704 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.3− | |
| 1998 09 28 | 691 | 0.9− | 0.2+ | 2002 10 12 | 704 | 0.4− | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.4− | |
| 1998 09 28 | 691 | 0.8− | 0.3+ | 2002 10 12 | 704 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.6+ | |
| 1998 09 28 | 691 | 0.8− | 0.1+ | 2002 10 12 | 704 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.2− | |
| 2000 03 04 | 691 | 0.2+ | 1.0− | 2002 10 30 | 644 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.4− | |
| 2000 03 04 | 691 | 0.0 | 0.2+ | 2002 10 30 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.3+ | |
| 2000 03 04 | 691 | 0.3− | 0.3+ | 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.6+ | |
| 2002 10 02 | 704 | 0.7+ | 0.8+ | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.4− | |
| 2002 10 02 | 704 | 0.5+ | 0.4− | 2004 03 14 | 691 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 0.3+ | 0.2+ | |
| 2002 10 02 | 704 | 1.0+ | 0.4− | 2004 03 14 | 691 | 0.3+ | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.3− | |
| 2002 10 02 | 704 | 0.1+ | 0.2− | 2004 03 17 | 291 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.0 | |
| 2002 10 02 | 704 | (1.2+ | 1.9−) | 2004 03 17 | 291 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1− | |
| 2002 10 02 | 608 | 1.1− | 0.1− | 2004 03 17 | 291 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.1− | |
| 2002 10 02 | 608 | 0.8− | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.3− | |
| 2002 10 02 | 608 | 0.7− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.2− | |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.2− | 0.3− | |
| 2002 10 03 | 704 | 0.5− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.5+ | 2006 11 22 | G96 | 0.4+ | 0.4− | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.7+ | 0.1+ | |
| 2002 10 03 | 704 | 0.9+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.1− | 0.0 | |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.7+ | 0.4− | |
| 2002 10 06 | 704 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.0 | 0.1− | |

**(136942)∗ 1998 QK$_{70}$**

Discovered 1998 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.58155 | | (2000.0) | | | |
| $n$ | 0.25850128 | $\omega$ | 161.31252 | | +0.69443726 | −0.69134685 |
| $a$ | 2.4405868 | $\Omega$ | 244.13100 | | +0.62869566 | +0.71781984 |
| $e$ | 0.2219708 | $i$ | 12.80930 | | +0.34999809 | +0.08230555 |
| $P$ | 3.81 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 19 | 704 | 0.8+ | 0.6+ | 2002 11 13 | 644 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.4+ | 0.7− | |
| 1998 08 19 | 704 | 0.2+ | 1.4+ | 2002 11 13 | 644 | 0.8− | 0.9+ | 2006 09 18 | 704 | 0.4+ | 0.1− | |
| 1998 08 19 | 704 | 0.0 | 1.1+ | 2002 11 14 | 704 | 0.8− | 0.1+ | 2006 09 18 | 704 | 0.9+ | 0.0 | |
| 1998 08 19 | 704 | 0.2− | 0.7+ | 2002 11 14 | 704 | 1.1− | 0.2− | 2006 09 18 | 704 | 0.3+ | 0.2+ | |
| 1998 08 19 | 704 | 0.4− | 0.6+ | 2002 11 14 | 704 | 0.9− | 0.1− | 2006 09 18 | 704 | 0.5− | 0.8− | |
| 1998 08 24 | 704 | 0.2− | 0.2− | 2002 11 14 | 704 | 1.1− | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.7+ | |
| 1998 08 24 | 704 | 0.6− | 0.3− | 2002 11 14 | 704 | 1.0− | 0.3− | 2006 09 25 | 704 | 0.4+ | 0.7+ | |
| 1998 08 24 | 704 | 0.3+ | 0.4− | 2002 12 01 | 704 | (1.7− | 0.1+) | 2006 09 25 | 704 | 0.8+ | 1.2+ | |
| 1998 08 24 | 704 | 0.3+ | 0.3+ | 2002 12 01 | 704 | 1.1− | 0.4− | 2006 09 25 | 704 | 0.6+ | 0.6+ | |
| 1998 08 27 | 704 | (0.7− | 2.4−) | 2002 12 01 | 704 | 1.3− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.8+ | |
| 1998 08 27 | 704 | 0.8+ | 0.3+ | 2002 12 01 | 704 | 1.0− | 0.2+ | 2006 10 15 | 291 | 0.8− | 0.2− | |
| 1998 08 27 | 704 | 1.6+ | 1.6− | 2002 12 01 | 704 | (1.5− | 0.4+) | 2006 10 15 | 291 | 0.8− | 0.1− | |
| 1998 08 27 | 704 | 0.4+ | 0.5− | 2002 12 06 | 704 | 0.8+ | 0.8+ | 2006 10 15 | 291 | 0.7− | 0.2− | |
| 1998 09 19 | 704 | 0.3+ | 0.4+ | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 704 | (2.3− | 0.0 ) | |
| 1998 09 19 | 704 | 0.2+ | 0.9− | 2002 12 06 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 704 | 0.5− | 0.4+ | |
| 1998 09 19 | 704 | 0.7− | 0.7+ | 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 704 | 0.3+ | 0.2+ | |
| 1998 09 19 | 704 | 0.3+ | 0.9− | 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 704 | 0.4+ | 0.1+ | |
| 1998 09 23 | 704 | 0.8− | 0.6− | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 10 20 | 704 | 0.9− | 0.2− | |
| 1998 09 23 | 704 | 0.1+ | 0.0 | 2002 12 11 | 704 | 0.2− | 0.4− | 2006 10 27 | 703 | 0.3− | 0.1+ | |
| 1998 09 23 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.4− | |
| 1998 09 23 | 704 | 0.4+ | 0.2+ | 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.1− | |
| 1998 10 16 | 699 | 0.2− | 1.2+ | 2002 12 11 | 704 | 0.7− | 0.8+ | 2006 10 27 | 703 | 0.5− | 1.4− | |
| 1998 10 16 | 699 | 0.8− | 0.9+ | 2002 12 12 | 704 | 0.3− | 0.2+ | 2006 10 29 | 704 | (1.5+ | 0.2−) | |
| 1998 10 16 | 699 | 0.2− | 0.4+ | 2002 12 12 | 704 | 0.4− | 0.5+ | 2006 10 29 | 704 | (2.5+ | 1.0+) | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 699 | 0.8− | 1.1+ | 2002 12 12 | 704 | 0.1− | 0.8+ | 2006 10 29 | 704 | (2.4+ | 0.8+) | | |
| 1998 10 18 | 699 | 0.0 | 0.2+ | 2002 12 12 | 704 | 0.4+ | 1.4+ | 2006 10 29 | 704 | (2.4+ | 1.1+) | | |
| 1998 10 18 | 699 | 0.6− | 0.8+ | 2002 12 12 | 704 | 1.4+ | 0.7+ | 2006 10 29 | 704 | (1.6+ | 1.1+) | | |
| 2001 05 22 | 807 | 1.0− | 0.3+ | 2002 12 19 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.5+ | 0.0 | | |
| 2001 05 22 | 807 | 0.7− | 0.0 | 2002 12 19 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.1− | | |
| 2002 08 01 | 704 | 0.6+ | 0.4+ | 2002 12 19 | 644 | 0.0 | 0.6+ | 2006 11 10 | 691 | 0.2− | 0.2− | | |
| 2002 08 01 | 704 | 1.2− | 0.9− | 2003 01 01 | 704 | 0.4− | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.2− | | |
| 2002 08 01 | 704 | 0.1+ | 0.2− | 2003 01 01 | 704 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2002 08 01 | 704 | 0.1+ | 0.2+ | 2003 01 01 | 704 | 0.6− | 0.5+ | 2006 11 15 | 691 | (1.0+ | 2.5−) | | |
| 2002 08 01 | 704 | 0.3− | 0.0 | 2003 01 01 | 704 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.1+ | | |
| 2002 09 27 | 644 | 0.2− | 0.2− | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.2+ | | |
| 2002 09 27 | 644 | 0.3− | 0.1− | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.5− | | |
| 2002 09 27 | 644 | 0.2− | 0.0 | 2003 01 05 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.3− | | |
| 2002 10 06 | 704 | 0.2+ | 0.1− | 2003 01 05 | 704 | 1.0− | 0.6− | 2006 11 17 | 704 | 0.4+ | 0.5− | | |
| 2002 10 06 | 704 | 0.1+ | 0.3− | 2003 01 05 | 704 | 0.9− | 0.4− | 2006 11 18 | 704 | (2.1+ | 0.4+) | | |
| 2002 10 06 | 704 | 0.1+ | 0.3− | 2003 01 08 | 704 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.2− | | |
| 2002 10 06 | 704 | 0.1+ | 0.5− | 2003 01 08 | 704 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 0.1+ | 0.1− | | |
| 2002 10 06 | 704 | 0.2+ | 0.4− | 2003 01 08 | 704 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.0 | | |
| 2002 10 06 | 699 | 0.6+ | 0.2− | 2003 01 08 | 704 | 0.1− | 1.2+ | 2006 11 18 | 704 | 0.5+ | 0.3− | | |
| 2002 10 06 | 699 | 0.2+ | 0.2+ | 2003 01 08 | 704 | 0.5+ | 1.0+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2002 10 06 | 699 | 0.1+ | 0.1− | 2003 01 08 | 608 | 0.0 | 0.6− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2002 10 06 | 699 | 0.5+ | 0.1+ | 2003 01 08 | 608 | 0.2+ | 0.5− | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2002 10 10 | 704 | 0.4+ | 0.2− | 2003 01 08 | 608 | (0.0 | 2.3+) | 2006 11 21 | 704 | 0.1+ | 0.6− | | |
| 2002 10 10 | 704 | 0.8+ | 0.4− | 2004 03 15 | 644 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.4+ | 0.4+ | | |
| 2002 10 10 | 704 | 1.2+ | 0.8− | 2004 03 15 | 644 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.2+ | 0.1− | | |
| 2002 10 10 | 704 | 0.2− | 0.6− | 2004 03 15 | 644 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.2+ | | |
| 2002 10 10 | 704 | 0.5+ | 0.9− | 2004 03 26 | 704 | (0.3+ | 3.4+) | 2006 11 24 | G96 | 0.3+ | 0.2− | | |
| 2002 10 15 | 704 | 0.3− | 0.5− | 2004 03 26 | 704 | 0.6+ | 1.4+ | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2002 10 15 | 704 | 0.2− | 0.2− | 2004 03 26 | 704 | 0.2+ | 0.8+ | 2006 11 24 | G96 | 0.2− | 0.2− | | |
| 2002 10 15 | 704 | 0.3+ | 0.2− | 2004 03 26 | 704 | 0.5+ | 1.0+ | 2006 11 24 | G96 | 0.3+ | 0.1− | | |
| 2002 10 15 | 704 | 0.1− | 0.1− | 2004 03 26 | 704 | (1.7+ | 0.4+) | 2006 11 27 | 704 | 0.2− | 0.6+ | | |
| 2002 10 15 | 704 | 0.2− | 0.1+ | 2006 08 24 | 704 | 0.8+ | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2002 11 07 | 704 | 0.5− | 0.6+ | 2006 08 24 | 704 | 0.3+ | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2002 11 07 | 704 | 0.6− | 0.8+ | 2006 08 24 | 704 | 0.3− | 0.4− | 2006 11 27 | 704 | 0.2+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.3+ | 0.9+ | 2006 08 24 | 704 | 0.8− | 0.4− | 2006 11 27 | 704 | 0.2+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.1− | 2006 09 18 | 704 | 1.4+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2002 11 07 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.1+ | | | | | | |
| 2002 11 13 | 644 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.2− | 0.2− | | | | | | |

**(136943)∗ 1998 QH$_{73}$ = 2002 TM$_{27}$**

Discovered 1998 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37086)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.75297 | | (2000.0) | | | |
| $n$ | 0.25974443 | $\omega$ | 88.08682 | | +0.43054297 | +0.90053492 |
| $a$ | 2.4327933 | $\Omega$ | 207.66724 | | −0.87127053 | +0.39715373 |
| $e$ | 0.2898475 | $i$ | 7.49618 | | −0.23562770 | +0.17693435 |
| $P$ | 3.79 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 704 | 0.1+ | 0.2+ | 2002 10 10 | 644 | 0.1− | 0.3+ | 2005 04 03 | 644 | 0.6+ | 0.4+ | | |
| 1998 08 24 | 704 | 1.1+ | 1.0+ | 2002 10 10 | 704 | (2.6+ | 0.7−) | 2005 04 03 | 644 | 0.3+ | 0.5+ | | |
| 1998 08 24 | 704 | 1.1+ | 0.0 | 2002 10 10 | 704 | (1.0+ | 2.3−) | 2005 04 03 | 644 | 0.3+ | 0.6+ | | |
| 1998 08 24 | 704 | 1.1− | 1.0− | 2002 10 10 | 704 | (0.6+ | 1.5−) | 2005 04 04 | 704 | 0.3− | 1.4+ | | |
| 1998 08 24 | 704 | 0.9− | 0.7− | 2002 10 10 | 704 | 0.6+ | 0.2+ | 2005 04 04 | 704 | 0.3+ | 0.1− | | |
| 1998 08 27 | 704 | 0.4− | 0.1+ | 2002 10 10 | 644 | 0.1− | 0.1+ | 2005 04 04 | 704 | 0.9+ | 0.5− | | |
| 1998 08 27 | 704 | 0.1− | 0.5+ | 2002 10 11 | 704 | 0.4+ | 0.3+ | 2005 04 05 | 699 | 0.8+ | 0.1+ | | |
| 1998 08 27 | 704 | 0.3+ | 0.1+ | 2002 10 11 | 704 | (1.8+ | 2.2+) | 2005 04 05 | 699 | 0.2+ | 1.3+ | | |
| 1998 08 27 | 704 | 1.3+ | 0.7− | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2005 04 05 | 699 | 1.3+ | 1.3+ | | |
| 1998 08 27 | 704 | 1.1+ | 0.0 | 2002 10 11 | 704 | (0.4+ | 2.2+) | 2005 04 05 | 699 | 0.1+ | 0.8+ | | |
| 1998 08 30 | 699 | 0.9− | 0.5+ | 2002 10 11 | 704 | 0.6− | 0.4+ | 2005 04 14 | 703 | 0.9+ | 1.0+ | | |
| 1998 08 30 | 699 | 0.1+ | 1.0+ | 2002 10 11 | 704 | 0.4− | 0.2+ | 2005 04 14 | 703 | 0.3+ | 0.3+ | | |
| 1998 08 30 | 699 | 0.1− | 0.3+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2005 04 14 | 703 | 0.7− | 0.8+ | | |
| 1998 10 11 | 699 | 0.8− | 1.2+ | 2002 10 11 | 704 | 0.1− | 1.5+ | 2005 04 14 | 703 | 0.9− | 1.1+ | | |
| 1998 10 11 | 699 | 0.4− | 1.9+ | 2002 10 11 | 704 | 0.1− | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.3+ | | |
| 1998 10 11 | 699 | 1.3− | 1.2+ | 2002 10 11 | 291 | 0.2+ | 0.0 | 2005 05 08 | G96 | 0.5− | 0.1+ | | |
| 2002 10 02 | 704 | 0.3+ | 0.2− | 2002 10 11 | 291 | 0.4+ | 0.0 | 2005 05 08 | G96 | 0.2− | 0.2+ | | |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2002 10 11 | 291 | (1.2+ | 2.0−) | 2005 05 08 | G96 | 0.2− | 0.4+ | | |
| 2002 10 02 | 704 | 0.8+ | 0.4− | 2002 10 12 | 704 | 0.6+ | 0.6+ | 2005 05 10 | 691 | 0.4+ | 0.6+ | | |
| 2002 10 02 | 704 | 0.2− | 0.6+ | 2002 10 12 | 704 | 1.2− | 1.1+ | 2005 05 10 | 691 | 0.2+ | 0.8+ | | |
| 2002 10 02 | 704 | 0.1+ | 1.1+ | 2002 10 12 | 704 | 0.8+ | 1.0+ | 2005 05 10 | 691 | 0.1+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.9− | 1.2+ | 2002 10 12 | 704 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.6− | | |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2002 10 15 | 704 | 0.3− | 0.9+ | 2006 09 30 | G96 | 0.3+ | 0.6− | | |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2002 10 15 | 704 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.4− | | |
| 2002 10 03 | 704 | 0.2+ | 1.1+ | 2002 10 15 | 704 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2002 10 15 | 704 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 04 | 599 | 0.2+ | 0.2− | 2002 10 30 | 291 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.4+ | 0.0 | | |
| 2002 10 04 | 599 | 0.2+ | 1.0− | 2002 10 30 | 291 | 0.6− | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.4+ | | |
| 2002 10 04 | 599 | 0.2+ | 0.2+ | 2002 10 30 | 291 | 0.9− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 06 | 599 | 0.4+ | 0.0 | 2002 10 31 | 699 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2− | | |
| 2002 10 06 | 599 | 0.4+ | 0.0 | 2002 10 31 | 699 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 1.5+ | | |
| 2002 10 06 | 599 | 0.2− | 0.1+ | 2002 10 31 | 699 | (1.6− | 0.4+) | 2006 10 22 | 691 | 0.7− | 0.2+ | | |
| 2002 10 07 | 704 | 0.4− | 0.4− | 2002 10 31 | 699 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.1− | | |
| 2002 10 07 | 704 | 0.3− | 0.0 | 2005 03 09 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.0 | | |
| 2002 10 07 | 704 | 0.0 | 0.0 | 2005 03 09 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2002 10 07 | 704 | 1.1− | 0.5− | 2005 03 09 | 691 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2002 10 07 | 704 | 0.4+ | 1.4+ | 2005 03 13 | 703 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2002 10 09 | 704 | 0.2− | 0.6− | 2005 03 13 | 703 | 0.8+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2002 10 09 | 704 | 0.1+ | 0.2− | 2005 03 13 | 703 | 0.8− | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.2+ | | |
| 2002 10 09 | 704 | 0.1+ | 0.5− | 2005 03 13 | 703 | (1.1− | 2.4+) | 2006 11 20 | 704 | 1.5+ | 0.9− | | |
| 2002 10 09 | 704 | 0.8− | 0.1− | 2005 03 17 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.5+ | 1.1− | | |
| 2002 10 09 | 704 | 0.1− | 0.3− | 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 1.2− | | |
| 2002 10 10 | 644 | 0.1− | 0.1+ | 2005 03 17 | 691 | 0.3+ | 0.0 | | | | | | |

**(136944)∗ 1998 QK$_{81}$ = 2002 PP$_{131}$**

Discovered 1998 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33030)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.11844 | | (2000.0) | | | |
| $n$ | 0.25283729 | $\omega$ | 119.32105 | | +0.98348718 | +0.03062190 |
| $a$ | 2.4769009 | $\Omega$ | 239.44832 | | −0.08272094 | +0.95266397 |
| $e$ | 0.1830505 | $i$ | 11.95381 | | +0.16096650 | +0.30247919 |
| $P$ | 3.90 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 06 | 691 | 0.2+ | 0.0 | 2002 09 11 | 644 | 0.6− | 0.0 | 2006 09 28 | 703 | 0.6+ | 0.4− | | |
| 1994 06 06 | 691 | 0.3+ | 0.2− | 2002 09 14 | 699 | 0.1− | 0.4− | 2006 09 28 | 703 | 0.2− | 0.2− | | |
| 1994 06 06 | 691 | 0.1+ | 0.5− | 2002 09 14 | 699 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.6− | | |
| 1998 08 19 | 699 | 0.5+ | 1.1− | 2002 09 14 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 704 | (1.9+ | 0.7+) | | |
| 1998 08 19 | 699 | 0.1− | 0.1+ | 2002 09 14 | 699 | 0.6− | 0.2+ | 2006 09 30 | 704 | (1.5+ | 0.9+) | | |
| 1998 08 19 | 699 | 0.7− | 0.4+ | 2002 10 03 | 644 | 0.3− | 0.5+ | 2006 09 30 | 704 | 0.9+ | 0.1− | | |
| 1998 08 24 | 704 | 0.4+ | 1.1+ | 2002 10 03 | 644 | 0.4− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 1998 08 24 | 704 | 0.5− | 0.4+ | 2002 10 03 | 644 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.0 | | |
| 1998 08 24 | 704 | 0.1− | 0.8+ | 2002 10 06 | 704 | 0.3− | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.2− | | |
| 1998 08 24 | 704 | 0.2− | 0.9+ | 2002 10 06 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.3− | | |
| 1998 08 27 | 704 | 1.3+ | 0.4− | 2002 10 06 | 704 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.3− | | |
| 1998 08 27 | 704 | 0.1− | 1.5− | 2002 10 06 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 1998 08 27 | 704 | 1.1− | 0.1− | 2002 10 06 | 704 | 0.8− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.3− | | |
| 1998 08 27 | 704 | 0.2− | 1.3− | 2002 10 09 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2− | | |
| 1998 09 18 | 699 | 0.3− | 1.1+ | 2002 10 09 | 704 | 0.6+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 1998 09 18 | 699 | 0.0 | 0.2+ | 2002 10 09 | 704 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.2− | | |
| 1998 09 18 | 699 | 0.0 | 1.2+ | 2002 10 09 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 1.0− | 1.2− | | |
| 2002 07 13 | 704 | 0.1+ | 0.9+ | 2002 10 09 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1− | 0.3− | | |
| 2002 07 13 | 704 | 0.8+ | 0.5+ | 2002 12 05 | 704 | (2.0− | 0.5+) | 2006 10 17 | 703 | 0.5+ | 0.1+ | | |
| 2002 07 13 | 704 | 0.9− | 0.0 | 2002 12 05 | 704 | 0.6− | 1.4+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2002 07 13 | 704 | 0.4+ | 0.8+ | 2002 12 05 | 704 | 0.6− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2002 08 15 | 704 | 0.5+ | 0.2− | 2004 01 28 | 704 | 0.8+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 15 | 704 | 0.4− | 0.0 | 2004 01 28 | 704 | 0.7+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2002 08 15 | 704 | 0.2+ | 0.1− | 2004 01 28 | 704 | 0.7+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.1− | | |
| 2002 08 15 | 704 | 0.3− | 0.9+ | 2004 02 19 | 704 | 0.5+ | 1.1+ | 2006 10 22 | 644 | 0.2+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 699 | 0.5− | 0.7− | 2004 02 19 | 704 | 0.2− | 1.3+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2002 08 17 | 699 | 0.2− | 0.5+ | 2004 02 19 | 704 | 1.2− | 0.8− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 08 17 | 699 | 0.6− | 0.1+ | 2004 02 19 | 704 | 0.3− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 08 17 | 699 | 0.2+ | 0.4− | 2006 09 17 | 703 | 0.4− | 1.0− | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2002 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.8− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2002 08 22 | 644 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2002 08 22 | 644 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.8− | 2006 11 14 | 703 | 0.1+ | 0.6− |
| 2002 09 03 | 644 | 0.4− | 0.4+ | 2006 09 22 | 699 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2002 09 03 | 644 | 0.2− | 0.5+ | 2006 09 22 | 699 | 0.4+ | 0.4− | 2006 11 14 | 703 | 0.3− | 0.1− |
| 2002 09 03 | 644 | 0.0 | 0.4+ | 2006 09 22 | 699 | 0.6+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.7− |
| 2002 09 11 | 644 | 0.6− | 0.0 | 2006 09 22 | 699 | 0.8+ | 0.7− | | | | |
| 2002 09 11 | 644 | 0.6− | 0.0 | 2006 09 28 | 703 | 0.4+ | 0.8− | | | | |

**(136945)∗ 1998 QD$_{86}$ = 2002 TH$_{282}$**

Discovered 1998 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37087)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.37513 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25927470 | $\omega$ | 166.65042 | | +0.62504042 | −0.75801060 | |
| $a$ | 2.4357308 | $\Omega$ | 244.33344 | | +0.69584475 | +0.64927153 | |
| $e$ | 0.2369912 | $i$ | 11.93511 | | +0.35372949 | +0.06218050 | |
| $P$ | 3.80 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 704 | 1.0+ | 0.3+ | 2002 11 06 | 699 | 0.1− | 0.2+ | 2003 01 27 | 704 | 0.7− | 0.3+ |
| 1998 08 24 | 704 | 0.7− | 0.7+ | 2002 11 11 | 704 | 0.3− | 0.2− | 2003 01 27 | 704 | 0.0 | 0.5+ |
| 1998 08 24 | 704 | 0.9+ | 0.0 | 2002 11 11 | 704 | 0.2− | 0.2− | 2003 01 27 | 704 | 0.1+ | 0.1− |
| 1998 08 24 | 704 | 0.5− | 0.6− | 2002 11 11 | 704 | 0.1+ | 0.4− | 2003 01 27 | 704 | 0.9− | 0.2− |
| 1998 08 24 | 704 | 1.1− | 1.3− | 2002 11 11 | 704 | 0.1+ | 0.8− | 2003 01 27 | 704 | 0.2+ | 0.5− |
| 1998 08 27 | 704 | 0.1− | 0.5− | 2002 11 11 | 704 | 0.2+ | 0.8− | 2003 01 31 | 704 | 0.6+ | 0.4− |
| 1998 08 27 | 704 | 0.4− | 0.4− | 2002 11 13 | 644 | 0.3− | 0.3+ | 2003 01 31 | 704 | 1.1− | 0.1− |
| 1998 08 27 | 704 | 0.2+ | 0.1− | 2002 11 13 | 644 | 0.3− | 0.4+ | 2003 01 31 | 704 | 1.0+ | 0.1+ |
| 1998 08 27 | 704 | 0.0 | 0.1− | 2002 11 13 | 644 | 0.3− | 0.4+ | 2003 01 31 | 704 | 0.1− | 0.4+ |
| 1998 08 27 | 704 | 0.7+ | 0.5+ | 2002 11 14 | 704 | 0.0 | 0.5+ | 2003 02 02 | 644 | 0.0 | 0.2+ |
| 1998 09 19 | 704 | 0.0 | 1.0− | 2002 11 14 | 704 | 0.0 | 0.3+ | 2003 02 02 | 644 | 0.3+ | 0.4+ |
| 1998 09 19 | 704 | 0.3− | 0.2+ | 2002 11 14 | 704 | 0.1− | 0.5+ | 2003 02 02 | 644 | 0.2− | 0.0 |
| 1998 09 19 | 704 | 0.3+ | 1.3+ | 2002 11 14 | 704 | 0.1− | 0.9+ | 2003 02 02 | 644 | 0.7+ | 0.4+ |
| 1998 09 19 | 704 | 1.4+ | 0.6+ | 2002 11 14 | 704 | 0.1+ | 0.8+ | 2003 02 02 | 644 | 0.4− | 0.1− |
| 1998 09 19 | 704 | 0.9− | 0.7+ | 2002 11 23 | 644 | 0.8− | 0.1− | 2003 02 02 | 644 | 0.3+ | 0.2+ |
| 1998 09 20 | 699 | 0.9+ | 0.1+ | 2002 11 23 | 644 | 0.7− | 0.1− | 2004 03 15 | 644 | 0.0 | 0.2+ |
| 1998 09 20 | 699 | 0.3− | 0.3+ | 2002 11 23 | 644 | 0.8− | 0.1− | 2004 03 15 | 644 | 0.3+ | 0.2+ |
| 1998 09 20 | 699 | 0.2+ | 1.4+ | 2002 12 02 | 704 | 0.0 | 0.2− | 2004 03 15 | 644 | 0.8+ | 0.2+ |
| 1998 09 23 | 704 | 1.0+ | 0.0 | 2002 12 02 | 704 | 0.1+ | 0.1+ | 2004 03 26 | 704 | 0.7− | 0.3− |
| 1998 09 23 | 704 | 0.0 | 0.2+ | 2002 12 02 | 704 | 0.2+ | 0.0 | 2004 03 26 | 704 | 0.5− | 0.2+ |
| 1998 09 23 | 704 | 0.2− | 0.2+ | 2002 12 02 | 704 | 0.1+ | 0.3− | 2004 03 26 | 704 | 0.5− | 0.0 |
| 1998 09 23 | 704 | 0.6− | 1.3− | 2002 12 02 | 704 | 0.2+ | 0.1− | 2004 03 27 | 699 | (0.6− | 2.9−) |
| 2002 10 05 | 704 | 0.4+ | 0.0 | 2002 12 06 | 704 | 0.7+ | 0.1− | 2004 03 27 | 699 | 0.7+ | 0.0 |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.0 | 2004 03 27 | 699 | 1.3− | 0.3− |
| 2002 10 05 | 704 | 0.0 | 0.1+ | 2002 12 06 | 704 | 0.1+ | 0.2+ | 2004 03 27 | 699 | (0.5− | 2.4+) |
| 2002 10 05 | 704 | 0.8− | 0.1− | 2002 12 06 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.8+ |
| 2002 10 05 | 704 | 0.8− | 1.1− | 2002 12 06 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.2− | 1.4+ |
| 2002 10 10 | 704 | 0.2+ | 0.1+ | 2002 12 06 | 608 | 0.7+ | 0.1− | 2006 09 27 | 704 | 0.3− | 1.1+ |
| 2002 10 10 | 704 | 0.7+ | 0.2+ | 2002 12 06 | 608 | 0.8+ | 0.4− | 2006 10 28 | 704 | (0.0 | 2.8+) |
| 2002 10 10 | 704 | 0.1+ | 0.1+ | 2002 12 06 | 608 | 1.1+ | 0.7− | 2006 10 28 | 704 | (0.9+ | 2.1+) |
| 2002 10 10 | 704 | 0.5+ | 0.2+ | 2002 12 09 | 678 | 0.5− | 0.8− | 2006 10 28 | 704 | (1.1+ | 1.9+) |
| 2002 10 10 | 704 | 0.6+ | 0.0 | 2002 12 09 | 678 | (0.4− | 2.8−) | 2006 10 28 | 704 | (0.7+ | 2.5+) |
| 2002 10 12 | 704 | 0.2+ | 0.3− | 2002 12 09 | 678 | 0.9− | 1.3− | 2006 11 14 | 704 | 0.3− | 0.4− |
| 2002 10 12 | 704 | 1.3+ | 0.8− | 2002 12 11 | 704 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | (0.4− | 1.6−) | 2002 12 11 | 704 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.5− |
| 2002 10 12 | 704 | 0.2− | 0.3− | 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.4− |
| 2002 10 30 | 333 | 0.1− | 0.3− | 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.4− |
| 2002 10 30 | 333 | 0.2− | 0.1− | 2003 01 01 | 704 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.6− | 0.6− |
| 2002 10 30 | 333 | 0.0 | 0.1− | 2003 01 01 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 0.2+ |
| 2002 11 01 | 644 | 0.1− | 0.8+ | 2003 01 01 | 704 | 0.4− | 0.4+ | 2006 11 17 | 704 | 0.9+ | 0.1+ |
| 2002 11 01 | 644 | 0.2− | 0.6+ | 2003 01 01 | 704 | 0.4− | 0.5− | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2002 11 01 | 644 | 0.0 | 0.8+ | 2003 01 01 | 704 | 0.1− | 1.0− | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2002 11 03 | 704 | 0.1+ | 0.1− | 2003 01 04 | 704 | 0.4− | 1.1− | 2006 11 17 | 704 | 0.2− | 0.8− |
| 2002 11 03 | 704 | 0.1− | 0.1− | 2003 01 04 | 704 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.2+ |
| 2002 11 03 | 704 | 0.1+ | 0.2− | 2003 01 04 | 704 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.8+ |
| 2002 11 03 | 704 | 0.4+ | 0.5+ | 2003 01 04 | 704 | (1.5+ | 0.5−) | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2002 11 03 | 704 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 0.6+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2002 11 06 | 704 | 0.8− | 0.1+ | 2003 01 05 | 699 | 0.6+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.7− | 0.1− | 2003 01 05 | 699 | 0.4− | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.6− | 0.1− | 2003 01 05 | 699 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.8− | 0.3+ |
| 2002 11 06 | 699 | 0.3+ | 0.0 | 2003 01 05 | 699 | 0.5+ | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.5− | 0.1− | 2003 01 08 | 704 | 0.4− | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.3+ |
| 2002 11 06 | 699 | 0.1− | 0.3− | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.5+ |
| 2002 11 06 | 704 | 0.5− | 0.1− | 2003 01 08 | 704 | 0.6− | 0.8+ | 2006 11 29 | 704 | 1.8+ | 1.4− |
| 2002 11 06 | 699 | 0.4− | 0.7− | 2003 01 08 | 704 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.3− |

**(136946)∗ 1998 QY$_{99}$ = 2001 GG$_2$**

Discovered 1998 Aug. 26 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (*MPO* 12880)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.19527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26441084 | $\omega$ | 265.49467 | | +0.42831869 | +0.90330759 | |
| $a$ | 2.4040853 | $\Omega$ | 29.90293 | | −0.80875536 | +0.39508594 | |
| $e$ | 0.2095177 | $i$ | 2.76534 | | −0.40306063 | +0.16716009 | |
| $P$ | 3.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 809 | 0.2+ | 1.2+ | 2002 10 31 | 699 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 1998 08 26 | 809 | 0.1+ | 0.8+ | 2002 10 31 | 699 | 0.9+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 1998 08 26 | 809 | 0.4− | 0.7+ | 2002 10 31 | 699 | 0.7+ | 1.1+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 1998 08 27 | 809 | (0.9+ | 3.1+) | 2002 10 31 | 699 | 0.4− | 0.1− | 2006 11 01 | G96 | 0.0 | 0.5− |
| 1998 08 27 | 809 | (1.0+ | 3.1+) | 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.4− | 0.1+ |
| 1998 08 27 | 809 | (2.2+ | 3.3+) | 2004 01 30 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.6− | 0.2+ |
| 1998 09 14 | 704 | 0.4+ | 1.1+ | 2004 01 30 | 691 | 0.4+ | 0.3− | 2006 11 10 | 691 | 0.3− | 0.5+ |
| 1998 09 14 | 704 | 0.4− | 1.9− | 2004 01 30 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 1998 09 14 | 704 | 1.1− | 0.4− | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.5+ |
| 1998 09 14 | 704 | 1.0− | 0.5− | 2004 01 30 | 691 | 0.4+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.5+ |
| 1998 09 18 | 704 | (0.1− | 4.4+) | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 1998 09 18 | 704 | 1.2− | 0.1− | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 1998 09 18 | 704 | 0.1− | 1.7+ | 2005 05 29 | E12 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 1998 09 24 | 699 | (0.6+ | 2.3+) | 2005 05 29 | E12 | 0.3− | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.6− |
| 1998 09 24 | 699 | 0.5+ | 1.9+ | 2005 05 29 | E12 | 0.3+ | 0.9+ | 2006 11 22 | H07 | 0.6− | 0.9+ |
| 1998 09 24 | 699 | 0.7− | 1.4+ | 2005 05 29 | E12 | (2.6+ | 6.2+) | 2006 11 22 | H07 | 0.3− | 1.0+ |
| 2001 04 14 | 691 | 0.3− | 0.4+ | 2005 06 26 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2001 04 14 | 691 | 0.2+ | 0.4+ | 2005 06 26 | 644 | 0.2+ | 0.5+ | 2006 11 22 | H07 | (0.8− | 2.2+) |
| 2001 04 14 | 691 | 0.0 | 0.5+ | 2005 06 26 | 644 | 0.2+ | 0.5+ | 2006 11 22 | H07 | (0.1− | 2.2+) |
| 2001 04 16 | 699 | 1.3+ | 0.8+ | 2006 09 28 | G96 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.4+ |
| 2001 04 16 | 691 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.4+ |
| 2001 04 16 | 691 | 0.2+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 23 | H07 | 0.1− | 1.1+ |
| 2001 04 16 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 23 | H07 | (1.2− | 1.9+) |
| 2001 04 16 | 699 | 0.5+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 23 | H07 | 0.8− | 0.9− |
| 2001 04 16 | 699 | 1.1+ | 0.8− | 2006 10 20 | G96 | 0.5+ | 0.4− | 2006 11 23 | H07 | 0.3− | 0.2+ |
| 2001 04 16 | 699 | 1.3+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.6− | | | | |

**(136947)∗ 1998 QS$_{100}$**

Discovered 1998 Aug. 26 by E. W. Elst at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.26895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26576367 | $\omega$ | 305.31626 | | +0.96049575 | −0.27281854 | |
| $a$ | 2.3959200 | $\Omega$ | 70.57094 | | +0.27048600 | +0.86874155 | |
| $e$ | 0.2223508 | $i$ | 3.33956 | | +0.06546177 | +0.41334993 | |
| $P$ | 3.71 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 20 | 691 | 0.6− | 0.2− | 2002 10 03 | 704 | 0.7− | 0.3+ | 2002 12 09 | 291 | 1.0+ | 0.1+ |
| 1995 12 20 | 691 | 0.6− | 0.1− | 2002 10 03 | 704 | 0.4− | 0.3+ | 2002 12 10 | 704 | 0.2+ | 0.4+ |
| 1995 12 20 | 691 | 0.7− | 0.0 | 2002 10 11 | 704 | 0.1− | 0.3− | 2002 12 10 | 704 | 0.2+ | 0.3+ |
| 1996 02 16 | 691 | 0.8+ | 0.8+ | 2002 10 11 | 704 | 0.0 | 0.4− | 2002 12 10 | 704 | 0.1− | 0.2+ |
| 1996 02 16 | 691 | 0.2+ | 0.5+ | 2002 10 11 | 704 | 0.6− | 0.5− | 2002 12 10 | 704 | 0.4+ | 0.6+ |
| 1996 02 16 | 691 | 0.9+ | 0.9+ | 2002 10 11 | 704 | 0.2− | 0.6− | 2002 12 10 | 704 | 0.3+ | 0.6+ |
| 1998 08 26 | 809 | 1.3− | 0.5− | 2002 11 05 | 704 | 0.4− | 0.3− | 2002 12 27 | 644 | 0.0 | 0.3+ |
| 1998 08 26 | 809 | (2.2− | 1.0−) | 2002 11 05 | 704 | 0.2− | 0.6− | 2002 12 27 | 644 | 0.1+ | 0.3+ |
| 1998 08 26 | 809 | (2.7− | 0.3−) | 2002 11 05 | 704 | 0.0 | 0.0 | 2002 12 27 | 644 | 0.0 | 0.7+ |
| 1998 08 27 | 809 | (3.3− | 0.4+) | 2002 11 05 | 704 | 0.5− | 0.2− | 2002 12 28 | 699 | (3.3− | 0.2−) |
| 1998 08 27 | 809 | (3.6− | 0.2+) | 2002 11 05 | 704 | 0.5− | 0.3− | 2002 12 28 | 699 | 0.2+ | 1.3− |
| 1998 08 27 | 809 | (3.0− | 1.1+) | 2002 11 06 | 704 | 0.1+ | 0.4− | 2002 12 28 | 699 | 0.2− | 0.0 |
| 1998 09 14 | 704 | 0.0 | 0.4− | 2002 11 06 | 704 | 0.0 | 0.4− | 2002 12 28 | 699 | 0.3− | 0.9− |
| 1998 09 14 | 704 | 0.1+ | 0.5+ | 2002 11 06 | 704 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.2− |
| 1998 09 14 | 704 | 1.2− | 0.2− | 2002 11 06 | 704 | 0.1+ | 0.2− | 2002 12 31 | 704 | 0.2+ | 0.7− |
| 1998 09 18 | 704 | 0.1− | 0.6− | 2002 11 06 | 704 | 0.1+ | 0.3− | 2002 12 31 | 704 | 0.2+ | 0.2− |
| 1998 09 18 | 704 | 0.9− | 0.4+ | 2002 11 14 | 704 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.6+ | 0.0 |
| 1998 09 18 | 704 | 0.3− | 0.4+ | 2002 11 14 | 704 | 0.4+ | 0.2+ | 2002 12 31 | 704 | 0.5+ | 0.1− |
| 1998 09 18 | 704 | 0.1+ | 0.3− | 2002 11 14 | 704 | 0.3+ | 0.1− | 2003 01 25 | 699 | 1.0− | 0.8+ |
| 1998 09 18 | 704 | 1.3− | 1.2+ | 2002 11 14 | 704 | 0.0 | 0.7+ | 2003 01 25 | 699 | 0.4− | 0.1+ |
| 1998 09 26 | 704 | 0.0 | 0.2− | 2002 11 14 | 704 | 0.6+ | 0.7+ | 2003 01 25 | 699 | 0.1+ | 0.6+ |
| 1998 09 26 | 704 | 0.7− | 0.2− | 2002 11 24 | 644 | 0.0 | 0.1+ | 2003 01 25 | 699 | 0.7+ | 0.5+ |
| 1998 09 26 | 704 | 1.1− | 1.1+ | 2002 11 24 | 644 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.7+ | 0.7+ |
| 1998 09 26 | 704 | 1.0− | 1.4+ | 2002 11 24 | 644 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.4+ | 1.1+ |
| 1998 09 27 | 704 | 0.4+ | 0.0 | 2002 12 02 | 704 | 0.2+ | 0.1− | 2004 03 19 | 704 | (0.5+ | 2.1+) |
| 1998 09 27 | 704 | 0.3− | 0.2+ | 2002 12 02 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 1998 09 27 | 704 | 0.1− | 1.0+ | 2002 12 02 | 704 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 1998 09 27 | 699 | 1.9+ | 1.6+ | 2002 12 02 | 704 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 1998 09 27 | 704 | 0.7+ | 0.0 | 2002 12 05 | 704 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.0 |
| 1998 09 27 | 699 | 0.1+ | 0.5+ | 2002 12 05 | 704 | 0.3+ | 0.8− | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 1998 09 27 | 699 | 0.6+ | 0.7− | 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.4− |
| 1998 10 12 | 699 | 0.3+ | 0.4− | 2002 12 05 | 704 | 0.4+ | 0.5− | 2006 09 28 | G96 | 0.4− | 0.0 |
| 1998 10 12 | 699 | 0.6+ | 0.4+ | 2002 12 05 | 704 | 1.0+ | 0.7− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 1998 10 12 | 699 | 0.6+ | 0.3+ | 2002 12 07 | 333 | (1.9− | 0.2+) | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2002 10 02 | 704 | 0.5− | 0.2+ | 2002 12 07 | 333 | 1.2− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 10 02 | 704 | 0.5+ | 0.2+ | 2002 12 07 | 333 | 0.8− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2002 12 08 | 333 | (1.8− | 1.6+) | 2006 11 21 | G96 | 0.5− | 0.0 |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2002 12 08 | 333 | 0.7− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2002 12 08 | 333 | 0.5− | 0.4− | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2002 12 09 | 291 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.1− | 1.2+ | 2002 12 09 | 291 | 0.1+ | 0.2− | | | | |

**(136948)∗ 1998 QO$_{106}$**

Discovered 1998 Aug. 25 by E. W. Elst at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.72004 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26130846 | $\omega$ | 315.12689 | | +0.93096591 | +0.36244114 | |
| $a$ | 2.4230762 | $\Omega$ | 23.72816 | | −0.29669324 | +0.82128776 | |
| $e$ | 0.1317109 | $i$ | 6.28225 | | −0.21278063 | +0.44059372 | |
| $P$ | 3.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 01 | 809 | (1.9+ | 3.7+) | 2002 10 03 | 704 | 0.2− | 0.3− | 2004 03 16 | 691 | 0.4+ | 0.3+ |
| 1997 04 01 | 809 | (1.7+ | 3.4+) | 2002 10 03 | 704 | 0.1− | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.3+ |
| 1997 04 01 | 809 | (2.6+ | 3.8+) | 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.5− |
| 1998 08 25 | 809 | (3.5+ | 4.2+) | 2002 10 07 | 704 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 1998 08 25 | 809 | (2.2+ | 4.3+) | 2002 10 07 | 704 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.5− |
| 1998 08 25 | 809 | (1.8+ | 3.7+) | 2002 10 07 | 704 | 0.3+ | 0.2− | 2006 10 04 | G96 | 0.6+ | 0.5− |
| 1998 08 26 | 809 | (1.3+ | 5.1+) | 2002 10 07 | 704 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.8+ |
| 1998 08 26 | 809 | (1.2+ | 5.2+) | 2002 10 09 | 704 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.5− |
| 1998 08 26 | 809 | (1.6+ | 4.9+) | 2002 10 09 | 704 | 0.5− | 1.0+ | 2006 10 27 | 703 | 1.2− | 0.3+ |
| 1998 09 14 | 704 | 1.0− | 2.0− | 2002 10 09 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 1998 09 14 | 704 | 0.9+ | 0.5+ | 2002 10 09 | 704 | 0.4+ | 0.3+ | 2006 11 15 | 704 | (2.1+ | 0.7−) |
| 1998 09 14 | 704 | 1.7− | 0.9− | 2002 10 09 | 704 | 0.9+ | 0.9+ | 2006 11 15 | 704 | 0.1− | 0.6− |
| 1998 09 14 | 704 | 0.4+ | 0.4− | 2002 10 11 | 704 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.4− | 0.9− |
| 1998 09 18 | 704 | 0.6− | 0.6− | 2002 10 11 | 704 | 0.6− | 0.1− | 2006 11 15 | 704 | 1.1+ | 0.0 |
| 1998 09 18 | 704 | 0.1+ | 1.1+ | 2002 10 11 | 704 | 0.7− | 0.0 | 2006 11 16 | 704 | 0.9+ | 1.3+ |
| 1998 09 18 | 704 | (0.8+ | 2.6+) | 2002 10 11 | 704 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.2− |
| 1998 09 18 | 704 | 0.4− | 0.7+ | 2002 10 31 | 699 | 0.1− | 0.1− | 2006 11 16 | 704 | 1.0+ | 0.5− |
| 1998 09 27 | 699 | 0.4+ | 0.5+ | 2002 10 31 | 699 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.5+ |
| 1998 09 27 | 699 | 0.8+ | 0.5+ | 2002 10 31 | 699 | 0.7+ | 0.0 | 2006 11 19 | 704 | (0.4+ | 1.5−) |
| 1998 09 27 | 699 | 0.2+ | 0.7+ | 2002 10 31 | 699 | 0.4+ | 0.6− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 1998 10 10 | 699 | 0.0 | 1.7+ | 2002 10 31 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.6− |
| 1998 10 10 | 699 | 0.3− | 0.4+ | 2002 10 31 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.6− |
| 1998 10 10 | 699 | 0.2+ | 0.0 | 2002 10 31 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 1998 10 12 | 699 | 0.6+ | 0.8+ | 2002 10 31 | 608 | 0.8− | 0.9− | 2006 11 21 | 691 | 0.5− | 0.1− |
| 1998 10 12 | 699 | 1.3− | 0.1− | 2002 10 31 | 608 | 0.8− | 1.0− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 1998 10 12 | 699 | 0.2− | 0.8+ | 2002 10 31 | 608 | 0.4− | 0.7− | 2006 11 21 | 691 | 0.4− | 0.1+ |
| 2001 04 26 | 699 | 0.6− | 0.7+ | 2002 11 04 | 049 | (1.3− | 1.8−) | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2001 04 26 | 699 | 1.2+ | 0.5+ | 2002 11 04 | 049 | (1.1− | 2.0−) | 2006 11 22 | 704 | 0.3+ | 1.1+ |
| 2001 04 26 | 699 | (1.6+ | 1.4+) | 2002 11 04 | 049 | 1.2− | 1.3− | 2006 11 22 | 704 | 0.4+ | 0.7+ |
| 2001 04 26 | 699 | 0.2+ | 1.3+ | 2002 11 08 | 704 | 0.5+ | 1.0+ | 2006 11 22 | 704 | 0.8+ | 1.0+ |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2002 11 08 | 704 | 0.6+ | 0.2− | 2006 11 22 | 704 | 0.2− | 1.1+ |
| 2002 10 02 | 704 | 0.3− | 0.7+ | 2002 11 08 | 704 | 0.6+ | 0.3− | 2006 11 25 | 691 | 1.0− | 0.6− |
| 2002 10 02 | 704 | 0.3+ | 0.5+ | 2004 02 16 | 691 | 0.3− | 0.2+ | 2006 11 25 | 691 | 0.2+ | 0.4− |
| 2002 10 02 | 704 | 0.2+ | 0.4+ | 2004 02 16 | 691 | 0.3+ | 0.1+ | 2006 11 25 | 691 | 0.4+ | 0.1− |
| 2002 10 02 | 608 | 0.7− | 0.7+ | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.4+ | 0.7− |
| 2002 10 02 | 608 | 0.7− | 0.9+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 11 27 | 704 | 1.0+ | 0.9− |
| 2002 10 02 | 608 | 0.5− | 0.1+ | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2004 02 16 | 691 | 0.0 | 0.2+ | | | | |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.2+ | | | | |

**(136949)∗ 1998 QE$_{110}$ = 2002 RJ$_3$**

Discovered 1998 Aug. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34720)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.32708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25362291 | $\omega$ | 270.04467 | | +0.94274401 | −0.32849767 | |
| $a$ | 2.4717833 | $\Omega$ | 109.13303 | | +0.32510245 | +0.86654727 | |
| $e$ | 0.2169261 | $i$ | 3.49813 | | +0.07444542 | +0.37574607 | |
| $P$ | 3.89 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 06 | 691 | 0.7+ | 0.0 | 2002 10 05 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.1+ |
| 1994 07 06 | 691 | 0.4+ | 0.8+ | 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.1+ | 1.1+ |
| 1994 07 06 | 691 | 0.0 | 0.6+ | 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.3+ |
| 1998 08 17 | 704 | 0.4− | 1.1− | 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.5+ | 0.4− |
| 1998 08 17 | 704 | 1.2+ | 1.0− | 2002 10 11 | 704 | 1.3− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.6+ |
| 1998 08 17 | 704 | 0.9+ | 0.7+ | 2002 11 18 | 644 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.5− | 1.0+ |
| 1998 08 17 | 704 | 1.8− | 0.3− | 2002 11 18 | 644 | 0.6− | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 1998 08 23 | 704 | 0.2− | 0.9+ | 2002 11 18 | 644 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.8+ |
| 1998 08 23 | 704 | 0.2+ | 1.2+ | 2004 02 17 | 691 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 1998 08 23 | 704 | (0.7+ | 2.1+) | 2004 02 17 | 691 | 0.0 | 0.6+ | 2006 10 01 | 704 | 0.1− | 0.1− |
| 1998 08 23 | 704 | (3.0− | 1.0+) | 2004 02 17 | 691 | 0.0 | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.2− |
| 1998 08 27 | 699 | 0.1+ | 0.5− | 2004 02 23 | 704 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.1− |
| 1998 08 27 | 699 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 0.1− |
| 1998 08 27 | 699 | 0.4+ | 0.6+ | 2004 02 23 | 704 | 0.7+ | 0.8+ | 2006 10 04 | G96 | 0.8− | 1.1− |
| 2002 09 04 | 699 | 0.4− | 0.3− | 2004 02 29 | 691 | 0.0 | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.5− |
| 2002 09 04 | 699 | 0.5− | 0.4+ | 2004 02 29 | 691 | 0.3+ | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.6− |
| 2002 09 04 | 699 | 0.1− | 0.1+ | 2004 02 29 | 691 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2002 09 04 | 699 | 0.6− | 0.9− | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2005 05 10 | G96 | 1.1− | 1.1− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2005 05 10 | G96 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.2+ | 2006 08 19 | 699 | (2.4− | 0.1−) | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 09 05 | 608 | 0.6− | 0.6+ | 2006 08 19 | 699 | 0.8− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2002 09 05 | 608 | 0.4− | 0.7+ | 2006 08 19 | 699 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 09 05 | 608 | 0.6− | 0.6+ | 2006 08 19 | 699 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.6− | 0.7+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.8− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.2− | 1.1− | 2006 09 06 | 644 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2002 09 06 | 704 | 0.2− | 0.8+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.6− | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 09 11 | 608 | 0.7− | 0.5+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 09 11 | 608 | 0.7− | 0.8+ | 2006 09 16 | 644 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 09 11 | 608 | 0.8− | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 704 | (0.2− | 1.6+) | | |
| 2002 09 15 | 644 | 0.6− | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 704 | 0.7+ | 0.5+ | | |
| 2002 09 15 | 644 | 0.5− | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 704 | 0.3+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.5− | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 22 | 704 | 0.4+ | 0.7− | | |
| 2002 09 15 | 608 | 0.9− | 0.8− | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 10 22 | 704 | (2.5+ | 0.1−) | | |
| 2002 09 15 | 608 | 1.1− | 0.6− | 2006 09 21 | 699 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.7+ | 0.1+ | | |
| 2002 09 15 | 608 | 0.9− | 0.8− | 2006 09 21 | 699 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.9− | | |
| 2002 09 16 | 644 | 0.4− | 0.4− | 2006 09 21 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.7− | | |
| 2002 09 16 | 644 | 0.6− | 0.1− | 2006 09 21 | 699 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.1− | 0.2− | | |
| 2002 09 16 | 644 | 0.4− | 0.7− | 2006 09 22 | 704 | 0.6− | 0.2− | 2006 10 27 | 704 | 0.7− | 1.0− | | |
| 2002 10 01 | 699 | (1.8− | 1.6+) | 2006 09 22 | 704 | 1.4+ | 0.2− | 2006 10 27 | 704 | 0.3+ | 1.1+ | | |
| 2002 10 01 | 699 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.9+ | 0.4+ | 2006 10 27 | 704 | 1.4− | 0.5− | | |
| 2002 10 01 | 699 | 0.5− | 0.6+ | 2006 09 22 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 704 | 0.7− | 0.9+ | | |
| 2002 10 01 | 699 | 0.4− | 0.0 | 2006 09 22 | 704 | 0.2− | 0.4+ | 2006 10 31 | 704 | (2.3− | 1.6+) | | |
| 2002 10 03 | 704 | 1.1+ | 0.5− | 2006 09 25 | 699 | 0.5+ | 0.8+ | 2006 10 31 | 704 | 0.7− | 1.1− | | |
| 2002 10 03 | 704 | 0.1− | 0.8− | 2006 09 25 | 699 | 0.0 | 0.8+ | 2006 10 31 | 704 | 0.7+ | 0.5− | | |
| 2002 10 03 | 704 | 0.1+ | 0.6− | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 11 14 | 704 | 0.5+ | 0.1− | | |
| 2002 10 03 | 704 | 0.1− | 1.4− | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.6+ | 0.0 | | |
| 2002 10 03 | 704 | 0.6+ | 0.2− | 2006 09 26 | 704 | (1.6+ | 0.1−) | 2006 11 14 | 704 | 0.0 | 0.0 | | |
| 2002 10 05 | 704 | 0.7+ | 0.1− | 2006 09 26 | 704 | 1.2+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.5− | | |
| 2002 10 05 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.9+ | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2002 10 05 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.5+ | 0.3+ | 2006 11 24 | G96 | 0.4+ | 0.4− | | |
| 2002 10 05 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 1.3+ | 0.6+ | 2006 11 24 | G96 | 0.2+ | 0.3− | | |

**(136950)∗ 1998 RT$_1$ = 1994 RZ$_{24}$**

Discovered 1998 Sept. 14 by the Catalina Sky Survey.

Id. G. V. Williams (MPC 32724)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.99104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24587335 | $\omega$ | 259.51826 | | −0.68580574 | +0.71648761 | |
| $a$ | 2.5234522 | $\Omega$ | 326.02636 | | −0.54567986 | −0.62235596 | |
| $e$ | 0.0205539 | $i$ | 13.21359 | | −0.48156409 | −0.31514848 | |
| $P$ | 4.01 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 327 | 1.1− | 0.1− | 2002 10 05 | 704 | 0.3+ | 1.1+ | 2004 01 31 | 704 | 0.2+ | 0.1+ | | |
| 1994 09 12 | 327 | 0.6− | 0.3− | 2002 10 05 | 704 | 0.0 | 0.8+ | 2004 01 31 | 704 | 0.1− | 0.1− | | |
| 1994 09 12 | 327 | 1.4+ | 0.0 | 2002 10 05 | 704 | 0.1+ | 1.0+ | 2004 02 13 | 106 | 0.2− | 0.0 | | |
| 1994 09 12 | 327 | 0.3− | 0.7− | 2002 10 05 | 704 | (0.1+ | 1.6+) | 2004 02 13 | 106 | 0.0 | 0.4− | | |
| 1994 09 12 | 327 | 0.3+ | 0.1− | 2002 10 07 | 699 | 1.0− | 0.4+ | 2004 02 13 | 106 | 0.8+ | 0.1− | | |
| 1994 09 12 | 327 | 0.5− | 0.1− | 2002 10 07 | 699 | 0.6− | 1.1+ | 2004 02 15 | 704 | 0.4+ | 0.8− | | |
| 1994 09 12 | 327 | 0.5− | 0.4− | 2002 10 07 | 699 | 1.0− | 0.4− | 2004 02 15 | 704 | 0.3− | 0.3− | | |
| 1994 09 12 | 327 | 0.1+ | 1.1− | 2002 10 07 | 699 | 1.4− | 0.7+ | 2004 02 15 | 704 | 0.2+ | 0.1− | | |
| 1994 09 12 | 327 | 0.1+ | 0.1+ | 2002 10 09 | 704 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.1+ | 0.6− | | |
| 1994 09 12 | 327 | 0.6− | 0.2+ | 2002 10 09 | 704 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.4+ | 0.1− | | |
| 1994 09 14 | 327 | (4.5+ | 0.1+) | 2002 10 09 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.3− | 0.1− | | |
| 1994 09 14 | 327 | (2.4+ | 0.1+) | 2002 10 09 | 704 | 0.4− | 0.1− | 2004 03 19 | 704 | 0.5− | 0.1+ | | |
| 1994 09 14 | 327 | (2.1− | 0.2−) | 2002 10 09 | 704 | 0.2+ | 0.2− | 2004 03 19 | 704 | 1.1+ | 0.6+ | | |
| 1994 09 14 | 327 | (3.2+ | 0.9−) | 2002 10 31 | 644 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.2− | | |
| 1998 09 14 | 703 | (2.2+ | 0.1−) | 2002 10 31 | 644 | 0.1− | 0.1+ | 2006 08 29 | 699 | 1.2+ | 0.2+ | | |
| 1998 09 14 | 703 | 1.9− | 0.5+ | 2002 10 31 | 644 | 0.3− | 0.1+ | 2006 08 29 | 699 | 0.3+ | 0.4− | | |
| 1998 09 14 | 703 | 0.3+ | 0.5+ | 2003 12 17 | 644 | 0.3+ | 0.3+ | 2006 08 29 | 699 | 0.0 | 0.3+ | | |
| 1998 09 15 | 703 | 0.3+ | 0.0 | 2003 12 17 | 644 | 0.4+ | 0.1+ | 2006 08 29 | 699 | 0.1− | 0.2− | | |
| 1998 09 15 | 703 | 1.4− | 0.5+ | 2003 12 17 | 644 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.1− | | |
| 1998 09 19 | 699 | 0.9+ | 0.6− | 2003 12 18 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.1− | | |
| 1998 09 19 | 699 | 1.2− | 0.3− | 2003 12 18 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1− | | |
| 1998 09 19 | 699 | 1.0+ | 0.2+ | 2003 12 18 | 704 | 0.3+ | 1.3+ | 2006 09 16 | 703 | 0.0 | 0.2− | | |
| 1998 09 25 | 699 | 0.5− | 0.9− | 2003 12 18 | 704 | 0.0 | 0.6+ | 2006 09 16 | 703 | 0.2+ | 0.4− | | |
| 1998 09 25 | 699 | 0.4+ | 0.1+ | 2003 12 18 | 704 | 0.0 | 0.6− | 2006 09 16 | 703 | 0.3+ | 0.1− | | |
| 1998 09 25 | 699 | 0.1− | 0.1− | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.5− | | |
| 1998 10 18 | 704 | 1.0+ | 0.5+ | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.2− | 0.4+ | | |
| 1998 10 18 | 704 | 1.0+ | 0.8+ | 2003 12 27 | 704 | 0.3− | 0.7+ | 2006 09 19 | 699 | 0.4+ | 0.2+ | | |
| 1998 10 18 | 704 | 1.2+ | 0.8− | 2003 12 27 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.3+ | | |
| 1998 10 18 | 704 | 1.5+ | 0.4− | 2003 12 27 | 704 | 0.1− | 0.5+ | 2006 09 19 | 699 | 1.0− | 0.1− | | |
| 1998 10 18 | 704 | (1.5+ | 2.1−) | 2003 12 27 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 106 | 0.6− | 0.0 | | |
| 2000 01 03 | 704 | 0.2+ | 1.2+ | 2003 12 27 | 704 | 0.0 | 0.1− | 2006 09 20 | 106 | 0.4− | 0.2− | | |
| 2000 01 03 | 704 | 1.3− | 1.0− | 2003 12 29 | 704 | 0.0 | 0.1− | 2006 09 20 | 106 | 0.4+ | 0.4− | | |
| 2000 01 03 | 704 | 0.7+ | 0.5− | 2003 12 29 | 704 | 0.1+ | 0.2− | 2006 09 20 | 106 | 0.3+ | 0.8− | | |
| 2000 01 03 | 704 | 0.1+ | 0.7− | 2003 12 29 | 704 | 0.3− | 0.5+ | 2006 09 27 | 699 | 0.7+ | 0.3+ | | |
| 2000 02 11 | 704 | 0.2− | 0.8+ | 2003 12 29 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 699 | 0.8− | 0.3+ | | |
| 2000 02 11 | 704 | 0.2− | 0.6+ | 2003 12 29 | 704 | 0.1− | 0.2+ | 2006 09 27 | 699 | 1.1− | 0.2+ | | |
| 2000 02 11 | 704 | 0.1+ | 0.3− | 2004 01 13 | 699 | (1.5+ | 1.4+) | 2006 09 27 | 699 | 0.8+ | 0.9− | | |
| 2000 02 11 | 704 | 1.0+ | 0.1− | 2004 01 13 | 699 | 0.6+ | 0.1− | 2006 09 27 | 703 | 0.2− | 0.5− | | |
| 2000 02 11 | 704 | 0.4− | 0.7− | 2004 01 13 | 699 | 0.3+ | 0.3− | 2006 09 27 | 703 | (0.8− | 1.8−) | | |
| 2002 08 04 | 704 | 1.1+ | 0.2− | 2004 01 13 | 699 | 0.2− | 0.4+ | 2006 09 27 | 703 | 0.8+ | 1.2− | | |
| 2002 08 04 | 704 | (1.6+ | 0.6+) | 2004 01 13 | 699 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.3− | 0.5− | | |
| 2002 08 04 | 704 | 1.2+ | 0.3+ | 2004 01 13 | 699 | 0.9− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.1− | | |
| 2002 08 04 | 704 | 1.5+ | 0.4+ | 2004 01 13 | 699 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.2− | | |
| 2002 09 03 | 644 | 0.0 | 0.2+ | 2004 01 13 | 699 | 0.8− | 0.5+ | 2006 10 09 | 644 | 0.3+ | 0.0 | | |
| 2002 09 03 | 644 | 0.1+ | 0.2+ | 2004 01 20 | 704 | (1.8+ | 0.3−) | 2006 10 17 | 703 | 0.0 | 0.8− | | |
| 2002 09 03 | 644 | 0.1− | 0.2+ | 2004 01 20 | 704 | (1.9+ | 0.2+) | 2006 10 17 | 703 | 0.1− | 0.6− | | |
| 2002 09 07 | 704 | 0.3− | 0.1− | 2004 01 20 | 704 | (2.4+ | 0.4−) | 2006 10 17 | 703 | 0.1+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.1+ | 0.2− | 2004 01 26 | 699 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.1+ | | |
| 2002 09 07 | 704 | 0.3− | 0.2+ | 2004 01 26 | 699 | 0.3+ | 0.1− | 2006 10 23 | 703 | 0.1+ | 0.5− | | |
| 2002 09 07 | 704 | 0.4+ | 0.4+ | 2004 01 26 | 699 | 0.5− | 0.4+ | 2006 10 23 | 703 | (1.5+ | 1.6−) | | |
| 2002 10 04 | 644 | 0.0 | 0.8+ | 2004 01 26 | 699 | 0.0 | 0.0 | 2006 10 23 | 703 | 0.2− | 0.2− | | |
| 2002 10 04 | 644 | 0.1− | 0.7+ | 2004 01 31 | 704 | 0.7+ | 0.0 | 2006 10 23 | 703 | 0.2+ | 0.3+ | | |
| 2002 10 04 | 644 | 0.2− | 1.0+ | 2004 01 31 | 704 | 0.1+ | 0.2− | | | | | | |
| 2002 10 05 | 704 | 0.4− | 0.1+ | 2004 01 31 | 704 | 0.4+ | 0.0 | | | | | | |

**(136951)∗ 1998 RQ$_3$ = 2005 GK$_9$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 88665)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.43889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37213767 | $\omega$ | 92.18045 | | +0.23831191 | −0.96719642 | |
| $a$ | 1.9142572 | $\Omega$ | 343.22174 | | +0.72498241 | +0.23743677 | |
| $e$ | 0.1219932 | $i$ | 17.74252 | | +0.64622592 | +0.09030424 | |
| $P$ | 2.65 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 1.7− | 1.3+ | 2005 04 04 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.5+ | | |
| 1998 09 14 | 704 | 0.5− | 1.1+ | 2005 04 04 | 704 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.6+ | 0.7+ | | |
| 1998 09 14 | 704 | 1.4+ | 0.8− | 2005 04 04 | 704 | 0.3+ | 0.5− | 2006 09 19 | 699 | 0.2− | 0.6+ | | |
| 1998 09 14 | 704 | 0.5− | 0.3+ | 2005 04 04 | 704 | (1.9+ | 1.0−) | 2006 09 24 | 106 | 0.0 | 0.2− | | |
| 1998 09 18 | 704 | 0.9+ | 0.2− | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 09 24 | 106 | 1.3− | 0.1− | | |
| 1998 09 18 | 704 | 0.0 | 1.6+ | 2006 08 17 | 644 | 0.4− | 0.2− | 2006 09 24 | 106 | 0.0 | 0.4− | | |
| 1998 09 18 | 704 | 1.6− | 1.1− | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 24 | 106 | 0.0 | 0.4− | | |
| 1998 09 18 | 704 | 0.6+ | 1.6+ | 2006 08 18 | 699 | 0.7+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.4+ | | |
| 1998 09 18 | 704 | 1.6− | 1.6+ | 2006 08 18 | 699 | 0.8+ | 0.5+ | 2006 09 27 | 703 | 0.0 | 0.7+ | | |
| 1998 09 19 | 645 | 0.1+ | 0.2− | 2006 08 18 | 699 | 0.3+ | 0.0 | 2006 09 27 | 703 | 0.4− | 0.0 | | |
| 1998 09 19 | 645 | 0.1+ | 0.2− | 2006 08 18 | 699 | 0.7+ | 0.2− | 2006 09 27 | 703 | 0.3+ | 0.9+ | | |
| 1998 09 25 | 704 | (0.5+ | 2.3−) | 2006 08 29 | 703 | 1.0− | 0.1− | 2006 09 29 | 699 | 0.9+ | 0.7+ | | |
| 1998 09 25 | 704 | 1.0− | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.6− | 2006 09 29 | 699 | 0.0 | 0.7+ | | |
| 1998 09 25 | 704 | 1.1+ | 0.7+ | 2006 08 29 | 703 | 1.1− | 0.8− | 2006 09 29 | 699 | 0.0 | 0.2+ | | |
| 1998 09 25 | 704 | 0.9− | 0.4+ | 2006 08 29 | 703 | 0.6− | 0.4− | 2006 10 03 | 704 | 0.6− | 0.6+ | | |
| 2001 11 27 | 704 | 0.9− | 0.1+ | 2006 08 30 | 704 | (1.4+ | 2.0−) | 2006 10 03 | 704 | 0.2+ | 0.2+ | | |
| 2001 11 27 | 704 | 0.1− | 0.8+ | 2006 08 30 | 704 | 0.3+ | 0.6− | 2006 10 03 | 704 | 0.2− | 0.8+ | | |
| 2001 11 27 | 704 | 0.2+ | 0.3− | 2006 08 30 | 704 | 0.6+ | 0.5− | 2006 10 03 | 704 | 0.4+ | 0.4+ | | |
| 2001 11 27 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | (1.9− | 1.0+) | 2006 10 03 | 704 | 0.0 | 0.6+ | | |
| 2001 11 27 | 704 | 1.1− | 0.6− | 2006 08 30 | 704 | 0.5+ | 0.7+ | 2006 10 20 | 703 | 0.9− | 0.3− | | |
| 2002 03 05 | 704 | 1.3+ | 0.2− | 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 10 20 | 703 | 0.1− | 0.7− | | |
| 2002 03 05 | 704 | 1.1+ | 0.0 | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 20 | 703 | 0.3+ | 0.8− | | |
| 2002 03 05 | 704 | (2.1+ | 1.9−) | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 20 | 703 | 0.8− | 0.6− | | |
| 2005 03 11 | 699 | 0.6+ | 0.0 | 2006 09 16 | 703 | 0.8− | 0.4− | 2006 10 26 | 703 | 0.4− | 0.1− | | |
| 2005 03 11 | 699 | 1.0− | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.1− | 2006 10 26 | 703 | 0.9+ | 0.4− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | 699 | 1.3+ | 0.4− | 2006 09 16 | 683 | (1.9− | 0.2+) | 2006 10 26 | 703 | 0.4+ | 0.2− |
| 2005 03 11 | 699 | 0.0 | 0.9+ | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 26 | 703 | 0.2+ | 0.4+ |
| 2005 04 03 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 11 25 | 703 | 0.2− | 0.0 |
| 2005 04 03 | 704 | 0.2− | 0.0 | 2006 09 16 | 683 | 0.1+ | 0.8+ | 2006 11 25 | 703 | 0.8− | 0.6+ |
| 2005 04 03 | 704 | 0.4+ | 1.2+ | 2006 09 16 | 683 | (2.7− | 0.7+) | 2006 11 25 | 703 | 0.9− | 0.2+ |
| 2005 04 03 | 704 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.3+ | 2006 11 25 | 703 | 0.5+ | 0.0 |

**(136952)∗ 1998 RY$_3$ = 2002 RV$_{190}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37090)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 358.33866 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.24490661 | $\omega$ | 347.04003 | +0.98719351 | +0.15871853 | |
| $a$ | 2.5300885 | $\Omega$ | 3.93498 | −0.11737546 | +0.79077481 | |
| $e$ | 0.2237864 | $i$ | 13.52045 | −0.10803693 | +0.59117140 | |
| $P$ | 4.02 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 25 | 691 | 0.5+ | 0.5− | 2002 10 11 | 704 | 0.5− | 0.9+ | 2006 09 19 | 704 | 0.5+ | 0.3+ |
| 1990 09 25 | 691 | 0.3+ | 0.2− | 2002 10 11 | 704 | 0.1− | 1.1+ | 2006 09 19 | 704 | 0.2+ | 0.7− |
| 1990 09 25 | 691 | 0.4+ | 0.2− | 2002 10 30 | 608 | 0.3− | 1.1− | 2006 09 19 | 704 | 0.4+ | 1.1− |
| 1998 09 14 | 704 | 0.6− | 0.4− | 2002 10 30 | 608 | 0.2+ | 0.6− | 2006 09 19 | 704 | 0.7+ | 0.2− |
| 1998 09 14 | 704 | 1.3− | 0.6− | 2002 10 30 | 608 | 0.4− | 1.0− | 2006 09 19 | 704 | 0.5+ | 1.1− |
| 1998 09 14 | 704 | 0.9− | 1.1− | 2002 10 31 | 704 | 0.3− | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 1998 09 14 | 704 | 1.1− | 1.9− | 2002 10 31 | 704 | 1.2− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.0 |
| 1998 09 18 | 704 | 0.0 | 0.4− | 2002 10 31 | 704 | (0.3− | 1.8+) | 2006 09 20 | 644 | 0.0 | 0.0 |
| 1998 09 18 | 704 | 0.9+ | 0.4+ | 2002 10 31 | 704 | 0.3− | 0.4− | 2006 09 22 | 704 | 0.2+ | 0.1− |
| 1998 09 18 | 704 | 0.4+ | 0.6+ | 2002 11 01 | 704 | 0.1− | 0.5+ | 2006 09 22 | 704 | 0.5− | 0.9+ |
| 1998 09 18 | 704 | 0.6− | 0.8+ | 2002 11 01 | 704 | 0.5− | 0.0 | 2006 09 22 | 704 | 0.0 | 0.0 |
| 1998 09 18 | 704 | 0.3− | 0.6+ | 2002 11 01 | 704 | 0.3+ | 1.2+ | 2006 09 22 | 704 | 0.1− | 0.2− |
| 1998 09 24 | 699 | 0.7+ | 0.3− | 2002 11 01 | 704 | 0.6− | 0.7+ | 2006 09 22 | 704 | 0.3− | 0.7+ |
| 1998 09 24 | 699 | 0.8+ | 0.7+ | 2002 11 06 | 704 | (2.1− | 0.2+) | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 1998 09 24 | 699 | 0.4+ | 0.2+ | 2002 11 06 | 704 | (2.0− | 0.6−) | 2006 09 25 | 699 | 0.5+ | 0.6+ |
| 2002 08 16 | 608 | 0.4+ | 0.5− | 2002 11 06 | 704 | (2.3− | 0.6−) | 2006 09 25 | 699 | 0.4+ | 0.1+ |
| 2002 08 16 | 608 | 0.4+ | 0.2− | 2002 11 06 | 704 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.2+ | 0.2− |
| 2002 08 16 | 608 | 0.1+ | 0.3− | 2002 11 06 | 704 | (2.1− | 0.1−) | 2006 09 26 | 704 | 0.2+ | 0.0 |
| 2002 09 13 | 704 | 0.0 | 0.1+ | 2002 12 06 | 704 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.4− | 0.2− |
| 2002 09 13 | 704 | 0.2− | 0.0 | 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.3+ |
| 2002 09 13 | 704 | 0.2+ | 0.4− | 2002 12 06 | 704 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2002 09 13 | 704 | 0.2+ | 0.8+ | 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.1− |
| 2002 09 13 | 704 | 0.3+ | 0.2+ | 2004 01 17 | 644 | 0.2+ | 0.8+ | 2006 09 28 | 704 | 0.0 | 0.4− |
| 2002 09 16 | 644 | (0.0 | 1.6+) | 2004 01 17 | 644 | 0.4+ | 0.6+ | 2006 09 28 | 704 | 0.6+ | 0.2− |
| 2002 09 16 | 644 | 0.0 | 1.5+ | 2004 01 17 | 644 | 0.4+ | 0.6+ | 2006 09 28 | 704 | 0.4+ | 0.8+ |
| 2002 09 16 | 644 | (0.1− | 1.6+) | 2005 04 06 | 691 | 0.5+ | 0.4+ | 2006 09 28 | 704 | 0.5− | 0.1− |
| 2002 09 17 | 608 | (1.6− | 0.1−) | 2005 04 06 | 691 | 0.3+ | 0.5+ | 2006 09 28 | 704 | 0.7+ | 0.6− |
| 2002 09 17 | 608 | 1.3− | 0.1+ | 2005 04 06 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.4− |
| 2002 09 17 | 608 | (1.7− | 0.1−) | 2006 08 07 | E12 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.9− | 0.5− |
| 2002 09 25 | 608 | 0.3− | 1.2+ | 2006 08 07 | E12 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.3− |
| 2002 09 25 | 608 | 0.9− | 1.5+ | 2006 08 07 | E12 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2002 09 25 | 608 | (0.5− | 1.8+) | 2006 08 07 | E12 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 2002 09 30 | 557 | 0.2− | 0.4− | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2002 09 30 | 557 | 0.2− | 0.3− | 2006 08 16 | 644 | 0.2+ | 0.4− | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.4− | 0.0 | 2006 08 19 | 644 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2006 08 19 | 644 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.1− | 2006 08 19 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.6− | 0.1− | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.4− |
| 2002 10 05 | 704 | 0.7− | 0.1+ | 2006 08 21 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2002 10 05 | 704 | 0.5− | 0.3+ | 2006 08 30 | 699 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2002 10 05 | 704 | 0.8− | 0.4+ | 2006 08 30 | 699 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2002 10 05 | 704 | 0.3− | 0.5+ | 2006 08 30 | 699 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2002 10 06 | 704 | 0.2− | 1.1+ | 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2002 10 06 | 704 | (0.1+ | 1.7+) | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 11 18 | 703 | 0.3− | 0.2− |
| 2002 10 06 | 704 | 0.2− | 1.3+ | 2006 09 14 | 703 | 0.2+ | 0.6− | 2006 11 18 | 703 | 0.3− | 0.8− |
| 2002 10 06 | 704 | 0.7− | 1.2+ | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 11 18 | 703 | 0.2+ | 1.0− |
| 2002 10 06 | 704 | 0.4− | 1.2+ | 2006 09 16 | 704 | 0.2+ | 1.1+ | 2006 11 18 | 703 | 0.2+ | 0.1+ |
| 2002 10 07 | 704 | 0.3− | 0.2+ | 2006 09 16 | 704 | 1.1+ | 1.1+ | 2006 11 21 | 704 | 0.6+ | 0.4− |
| 2002 10 07 | 704 | 0.5− | 0.5+ | 2006 09 16 | 704 | 0.8+ | 1.3+ | 2006 11 21 | 704 | 1.8+ | 0.8+ |
| 2002 10 07 | 704 | 1.0− | 0.7+ | 2006 09 16 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 1.5+ | 0.2+ |
| 2002 10 07 | 704 | 1.0− | 0.7+ | 2006 09 16 | 704 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.7+ | 1.4− |
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 11 21 | 704 | 1.4+ | 0.1− |
| 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | | | | |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.4− | 0.3− | | | | |

**(136953)∗ 1998 RP$_4$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 284.83562 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.36640357 | $\omega$ | 253.55487 | +0.23621383 | −0.97149705 | |
| $a$ | 1.9341772 | $\Omega$ | 183.00411 | +0.97140544 | +0.23659786 | |
| $e$ | 0.0736901 | $i$ | 22.33094 | +0.02396857 | −0.01466090 | |
| $P$ | 2.69 | $H$ | 16.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 28 | 704 | 0.7+ | 1.0− | 2005 03 07 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.3− |
| 1998 08 28 | 704 | 0.3− | 0.9− | 2005 03 07 | 704 | 0.2− | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.3− |
| 1998 08 28 | 704 | 1.3− | 0.7+ | 2005 03 07 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 1998 08 28 | 704 | 0.0 | 0.0 | 2005 03 10 | 699 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.2+ |
| 1998 08 28 | 704 | (5.4− | 0.7−) | 2005 03 10 | 699 | 0.8+ | 0.9+ | 2006 09 19 | 703 | 0.1− | 0.1− |
| 1998 09 14 | 704 | 0.7− | 0.5− | 2005 03 10 | 699 | 0.6+ | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 1998 09 14 | 704 | 0.8− | 0.1+ | 2005 03 10 | 699 | 0.6+ | 0.9+ | 2006 09 25 | 704 | 0.3− | 0.9− |
| 1998 09 14 | 704 | 1.2− | 0.1+ | 2005 05 11 | G96 | 0.5− | 0.2− | 2006 09 25 | 704 | (0.9− | 1.7−) |
| 1998 09 15 | 699 | 0.3− | 0.2+ | 2005 05 11 | G96 | 0.4− | 0.1− | 2006 09 25 | 704 | 1.2− | 0.9− |
| 1998 09 15 | 699 | 0.7− | 0.3+ | 2005 05 11 | G96 | 0.4− | 0.0 | 2006 09 25 | 704 | (0.7− | 1.7−) |
| 1998 09 15 | 699 | 0.1+ | 1.2+ | 2005 05 11 | G96 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.2− | 0.6− |
| 1998 09 18 | 704 | 0.3+ | 1.5− | 2006 08 10 | 644 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.1+ |
| 1998 09 18 | 704 | 1.8+ | 1.1− | 2006 08 10 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.5− |
| 1998 09 18 | 704 | 1.7+ | 0.1+ | 2006 08 10 | 644 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.1− | 1.0− |
| 1998 09 18 | 704 | 1.7+ | 1.9− | 2006 08 27 | 683 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.7− |
| 1998 09 18 | 704 | 1.2+ | 0.0 | 2006 08 27 | 683 | 0.2+ | 1.4+ | 2006 09 29 | 704 | 0.8+ | 0.2− |
| 1998 09 25 | 699 | 0.1− | 0.9+ | 2006 08 27 | 683 | 0.3− | 1.4+ | 2006 09 29 | 704 | 0.5− | 0.3+ |
| 1998 09 25 | 699 | 0.8− | 0.9+ | 2006 08 29 | 699 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.5+ |
| 1998 09 25 | 699 | 0.5+ | 0.6+ | 2006 08 29 | 699 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.7+ |
| 1998 09 26 | 704 | 0.4− | 1.1+ | 2006 08 29 | 699 | 0.3+ | 0.9+ | 2006 09 30 | 704 | 0.1− | 0.2+ |
| 1998 09 26 | 704 | 1.2+ | 0.8− | 2006 08 31 | 704 | 0.2− | 0.5+ | 2006 09 30 | 699 | 0.1+ | 0.7+ |
| 1998 09 26 | 704 | 0.1− | 1.7− | 2006 08 31 | 704 | 1.1− | 0.1− | 2006 09 30 | 704 | 0.7+ | 0.8+ |
| 1998 09 26 | 704 | 0.3− | 0.8− | 2006 08 31 | 704 | 1.2− | 0.5+ | 2006 09 30 | 699 | 0.5− | 0.0 |
| 1998 09 26 | 704 | (1.4+ | 2.1−) | 2006 08 31 | 704 | 0.6− | 0.4− | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 1998 09 27 | 704 | 0.0 | 0.6+ | 2006 08 31 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 699 | 0.5+ | 0.2− |
| 1998 09 27 | 704 | 0.0 | 0.9+ | 2006 09 14 | 703 | 0.8+ | 0.4− | 2006 09 30 | 704 | 0.2+ | 0.8+ |
| 1998 09 27 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.9+ | 0.8+ | 2006 09 30 | 699 | 0.6+ | 0.2+ |
| 1998 09 27 | 704 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 1998 09 27 | 704 | 1.1− | 0.3− | 2006 09 14 | 703 | 0.4+ | 0.4− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2002 01 08 | 608 | (0.2+ | 2.3+) | 2006 09 15 | 704 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.4− | 0.2− |
| 2002 01 08 | 608 | 0.2+ | 1.3+ | 2006 09 15 | 704 | 0.6− | 0.9+ | 2006 10 02 | G96 | 0.2− | 0.6− |
| 2002 01 08 | 608 | 0.4+ | 0.8+ | 2006 09 15 | 704 | 0.3+ | 0.1+ | 2006 10 03 | 291 | 0.0 | 0.1+ |
| 2002 01 14 | 608 | 0.5− | 0.1− | 2006 09 15 | 704 | 0.2+ | 0.1+ | 2006 10 03 | 291 | 0.1+ | 0.2+ |
| 2002 01 14 | 608 | 0.9− | 0.1− | 2006 09 15 | 704 | 0.3− | 0.3+ | 2006 10 03 | 291 | 0.0 | 0.2+ |
| 2002 01 14 | 608 | 0.5− | 0.0 | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2003 06 30 | 704 | 0.6+ | 1.1+ | 2006 09 16 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2003 06 30 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 2003 06 30 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2003 06 30 | 704 | 0.2− | 0.5+ | 2006 09 19 | 291 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2003 06 30 | 704 | 0.1− | 0.2+ | 2006 09 19 | 291 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2005 03 07 | 704 | 0.1− | 0.4+ | 2006 09 19 | 291 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2005 03 07 | 704 | 0.0 | 1.2+ | 2006 09 19 | 703 | 0.4− | 0.0 | | | | |

**(136954)∗ 1998 RX$_4$ = 2000 JH$_3$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 215)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.51924 | | (2000.0) | | | |
| $n$ | 0.36602812 | $\omega$ | 221.49051 | | +0.69385094 | −0.71944102 |
| $a$ | 1.9354996 | $\Omega$ | 184.88571 | | +0.71859950 | +0.69455140 |
| $e$ | 0.0888994 | $i$ | 21.51337 | | +0.04675080 | +0.00172280 |
| $P$ | 2.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.4+ | 0.4− | 2001 12 23 | 608 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 1998 09 14 | 704 | 0.9− | 0.2− | 2002 01 02 | 608 | 0.3− | 0.5− | 2006 09 14 | 703 | 0.5− | 0.5− |
| 1998 09 14 | 704 | 0.7− | 0.7+ | 2002 01 02 | 608 | 0.1− | 0.1+ | 2006 09 15 | 704 | (0.3− | 1.5+) |
| 1998 09 18 | 704 | 0.8+ | 0.4− | 2002 01 02 | 608 | 0.1− | 0.3− | 2006 09 15 | 704 | 0.8− | 0.6+ |
| 1998 09 18 | 704 | 1.6− | 1.0+ | 2002 01 05 | 704 | 0.7+ | 0.0 | 2006 09 15 | 704 | 0.6+ | 0.3− |
| 1998 09 18 | 704 | 0.1+ | 1.1− | 2002 01 05 | 704 | 0.3+ | 0.3+ | 2006 09 15 | 704 | 0.6+ | 0.7+ |
| 1998 09 18 | 704 | 0.0 | 0.9+ | 2002 01 05 | 704 | 0.6− | 0.5+ | 2006 09 20 | 699 | 0.0 | 0.2+ |
| 1998 09 18 | 704 | 0.7+ | 0.9− | 2002 01 05 | 704 | 1.4+ | 0.4− | 2006 09 20 | 699 | 0.1− | 0.1− |
| 1998 09 25 | 699 | 1.1− | 0.2+ | 2005 03 07 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 699 | 0.6− | 0.1− |
| 1998 09 25 | 699 | 0.3+ | 0.1− | 2005 03 07 | 704 | 0.8+ | 0.9+ | 2006 09 20 | 699 | 0.2+ | 0.6+ |
| 1998 09 25 | 699 | 0.3− | 0.3+ | 2005 03 07 | 704 | 0.8+ | 0.7+ | 2006 09 25 | 704 | 0.3+ | 0.5− |
| 1998 09 26 | 704 | 0.3− | 0.6− | 2005 03 07 | 704 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.1− | 0.3+ |
| 1998 09 26 | 704 | 1.0+ | 1.7− | 2005 03 07 | 704 | 0.8+ | 0.7+ | 2006 09 25 | 704 | 0.6− | 0.8+ |
| 1998 09 26 | 704 | 0.2+ | 0.1+ | 2005 03 10 | 699 | 0.1+ | 0.8+ | 2006 09 25 | 704 | 0.1+ | 0.7− |
| 1998 09 26 | 704 | 0.6+ | 0.1+ | 2005 03 10 | 699 | 0.4+ | 0.8+ | 2006 09 25 | 704 | 0.1+ | 0.3+ |
| 1998 09 26 | 704 | 0.3+ | 0.0 | 2005 03 10 | 699 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.5+ |
| 1998 09 27 | 704 | 0.5+ | 1.8+ | 2005 03 10 | 699 | 0.6+ | 0.2+ | 2006 09 26 | 704 | 1.4+ | 0.4+ |
| 1998 09 27 | 704 | 0.4+ | 0.2+ | 2005 03 13 | 703 | 1.0− | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.7+ |
| 1998 09 27 | 704 | 0.0 | 0.8+ | 2005 03 13 | 703 | 1.0− | 0.1− | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 1998 09 27 | 704 | 0.7− | 0.6− | 2005 03 13 | 703 | 1.2− | 0.2− | 2006 09 29 | 704 | 0.7+ | 0.1+ |
| 1998 09 27 | 704 | 0.0 | 0.4− | 2005 03 13 | 703 | 1.3− | 0.0 | 2006 09 29 | 704 | 1.4+ | 0.7− |
| 1998 10 17 | 699 | 0.7− | 0.3+ | 2005 04 06 | 699 | 0.4− | 0.3+ | 2006 09 29 | 704 | 1.4+ | 0.4+ |
| 1998 10 17 | 699 | 0.1+ | 1.4+ | 2005 04 06 | 699 | 1.2+ | 0.9+ | 2006 09 29 | 704 | (1.6+ | 0.3−) |
| 1998 10 17 | 699 | 0.5+ | 0.8− | 2005 04 06 | 699 | 0.0 | 0.7+ | 2006 09 30 | 699 | 0.3− | 0.6+ |
| 2000 05 03 | 704 | 0.1+ | 0.4− | 2005 04 06 | 699 | 0.1− | 0.7+ | 2006 09 30 | 699 | 0.0 | 0.1+ |
| 2000 05 03 | 704 | 0.3+ | 0.7− | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 30 | 699 | 0.6− | 0.2− |
| 2000 05 03 | 704 | 0.8+ | 0.1− | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 30 | 699 | 0.0 | 0.2+ |
| 2000 05 03 | 704 | 0.6− | 0.3+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2000 05 03 | 704 | 0.7− | 1.1+ | 2005 05 10 | G96 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2000 05 05 | 704 | 0.3− | 0.2+ | 2006 08 31 | 704 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2000 05 05 | 704 | 0.3+ | 0.7+ | 2006 08 31 | 704 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2000 05 05 | 704 | 0.4− | 0.5+ | 2006 08 31 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2000 05 05 | 704 | 0.0 | 0.3− | 2006 08 31 | 704 | 0.5− | 1.1− | 2006 10 16 | 703 | 0.8+ | 0.1+ |
| 2000 05 05 | 704 | 0.9+ | 0.2− | 2006 08 31 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 12 23 | 608 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 12 23 | 608 | 0.1+ | 0.5− | 2006 09 14 | 703 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.3+ |

**(136955)∗ 1998 RJ$_5$ = 2001 HY$_{27}$**

Discovered 1998 Sept. 15 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 12882)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 139.19610 | | (2000.0) | | | |
| $n$ | 0.26052859 | $\omega$ | 205.47952 | | −0.39483035 | +0.91267102 |
| $a$ | 2.4279093 | $\Omega$ | 41.49190 | | −0.81332974 | −0.29377741 |
| $e$ | 0.1777863 | $i$ | 9.16719 | | −0.42732157 | −0.28412400 |
| $P$ | 3.78 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 910 | 0.0 | 0.2− | 2001 04 29 | 704 | (0.1+ | 1.7+) | 2003 12 29 | 704 | (0.0 | 1.8+) |
| 1998 09 15 | 910 | 0.0 | 0.2+ | 2001 04 30 | 704 | 0.0 | 0.1− | 2003 12 29 | 704 | (0.6+ | 1.6+) |
| 1998 09 16 | 910 | 0.4+ | 0.3+ | 2001 04 30 | 704 | 0.5+ | 0.4+ | 2003 12 29 | 704 | 0.2+ | 0.6− |
| 1998 09 17 | 910 | 0.3− | 0.0 | 2001 04 30 | 704 | 0.4+ | 0.3+ | 2003 12 29 | 704 | 0.1− | 1.3+ |
| 1998 09 18 | 910 | 0.3+ | 0.2− | 2001 04 30 | 704 | 0.2− | 0.6− | 2006 09 26 | G96 | 0.4− | 0.4− |
| 1998 09 18 | 910 | 0.1+ | 0.1− | 2001 04 30 | 704 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 1998 09 19 | 910 | 0.0 | 0.5− | 2001 04 30 | 557 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− |
| 1998 09 19 | 910 | 0.0 | 0.5− | 2001 04 30 | 557 | 0.5+ | 0.5− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1998 09 20 | 910 | 0.1− | 0.2− | 2001 05 12 | 699 | 0.3+ | 0.3+ | 2006 10 12 | 291 | 0.1− | 0.2+ |
| 1998 09 22 | 910 | 0.7+ | 0.2− | 2001 05 12 | 699 | 0.4+ | 0.5+ | 2006 10 12 | 291 | 0.1+ | 0.3+ |
| 1998 09 23 | 910 | 0.5+ | 0.1− | 2001 05 12 | 699 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 1998 09 23 | 910 | 0.5+ | 0.0 | 2001 05 12 | 699 | 0.7+ | 0.2+ | 2006 10 12 | 291 | 0.1+ | 0.2+ |
| 2001 03 24 | 704 | 0.0 | 0.9+ | 2001 05 17 | 704 | 0.7+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.5+ |
| 2001 03 24 | 704 | 0.5− | 0.7+ | 2001 05 17 | 704 | 0.7+ | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.4+ |
| 2001 03 24 | 704 | 0.7+ | 1.3+ | 2001 05 17 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2001 03 24 | 704 | 0.4+ | 0.8+ | 2001 05 17 | 704 | 0.6+ | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2001 04 01 | 704 | 0.5− | 0.0 | 2001 05 17 | 704 | 1.3+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2001 04 01 | 704 | 0.2+ | 0.2+ | 2001 05 22 | 608 | 0.8+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2001 04 01 | 704 | 0.4− | 0.3+ | 2001 05 22 | 608 | 0.1− | 0.6− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 04 01 | 704 | 0.8+ | 0.2− | 2001 05 22 | 608 | 0.3− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 04 01 | 704 | 0.3− | 0.2− | 2001 05 24 | 699 | 0.6+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 04 16 | 919 | 0.4− | 0.2− | 2001 05 24 | 699 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2001 04 16 | 919 | 0.4− | 0.5+ | 2001 05 24 | 699 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.5− | 0.3+ |
| 2001 04 16 | 919 | 0.0 | 0.9+ | 2001 05 24 | 699 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.3+ |
| 2001 04 18 | 704 | 0.3+ | 0.8− | 2001 05 24 | 704 | 0.8− | 0.6+ | 2006 11 10 | 644 | 0.4− | 0.0 |
| 2001 04 18 | 704 | 0.8+ | 0.1+ | 2001 05 24 | 704 | 0.5− | 0.3− | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2001 04 18 | 704 | 0.1+ | 0.6+ | 2001 05 24 | 704 | 0.3+ | 1.2− | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2001 04 18 | 704 | 0.6+ | 0.2− | 2001 05 27 | 704 | 0.4+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.4+ |
| 2001 04 18 | 704 | (0.3+ | 1.8+) | 2001 05 27 | 704 | 0.6+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2001 04 25 | 608 | 0.4− | 1.2− | 2001 05 27 | 704 | 0.2+ | 0.5− | 2006 11 10 | 644 | 0.4− | 0.3− |
| 2001 04 25 | 608 | 0.3− | 1.0− | 2001 05 27 | 704 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.4+ |
| 2001 04 25 | 608 | 0.7− | 1.2− | 2001 05 27 | 704 | 0.3− | 0.1− | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 2001 04 26 | 699 | 0.6− | 0.6+ | 2001 06 10 | 608 | 0.5− | 0.6− | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2001 04 26 | 699 | 0.2+ | 0.4+ | 2001 06 10 | 608 | 0.5− | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2001 04 26 | 699 | 0.0 | 0.3+ | 2001 06 10 | 608 | 0.6− | 0.6− | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2001 04 26 | 699 | 0.4− | 1.0+ | 2001 07 10 | 644 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2001 04 27 | 704 | 0.4− | 1.4+ | 2001 07 10 | 644 | 0.5+ | 0.6+ | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2001 04 27 | 704 | 0.4− | 0.4+ | 2001 07 10 | 644 | 1.0+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2001 04 27 | 704 | 0.2− | 0.2− | 2002 10 11 | 644 | 0.6− | 0.6+ | 2006 11 13 | G96 | 0.1+ | 0.2+ |
| 2001 04 27 | 704 | (0.5− | 2.3−) | 2002 10 11 | 644 | 0.8− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 04 27 | 704 | 0.9+ | 0.6+ | 2002 10 11 | 704 | (1.9− | 1.0−) | 2006 11 13 | 104 | 0.6− | 0.0 |
| 2001 04 27 | 704 | 0.4− | 0.3− | 2002 10 11 | 704 | 0.6− | 0.1− | 2006 11 13 | 104 | 0.4− | 0.4+ |
| 2001 04 27 | 704 | 0.6+ | 0.6+ | 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 11 13 | 104 | 0.3+ | 1.0+ |
| 2001 04 27 | 704 | 0.4− | 0.1+ | 2002 10 11 | 644 | 0.8− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2001 04 27 | 691 | 0.1+ | 0.5+ | 2002 10 30 | 644 | 0.5− | 0.4+ | 2006 11 18 | 704 | (1.7− | 0.4+) |
| 2001 04 27 | 691 | 0.1− | 0.5+ | 2002 10 30 | 644 | 0.2− | 0.5+ | 2006 11 18 | 704 | 1.5− | 0.6− |
| 2001 04 27 | 691 | 0.1+ | 0.4+ | 2002 10 30 | 644 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2001 04 29 | 704 | 0.7− | 0.4+ | 2003 12 29 | 703 | 0.4− | 0.9− | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2001 04 29 | 704 | 0.4− | 0.8+ | 2003 12 29 | 703 | 1.1+ | 0.4− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2001 04 29 | 704 | 0.4+ | 0.0 | 2003 12 29 | 703 | 0.4− | 0.9− | 2006 11 21 | 704 | (1.9− | 0.3+) |
| 2001 04 29 | 704 | 0.2− | 0.8+ | 2003 12 29 | 703 | 0.1+ | 0.9+ | | | | |

**(136956)∗ 1998 RV$_6$**

Discovered 1998 Sept. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.16272 | | (2000.0) | | | |
| $n$ | 0.26244344 | $\omega$ | 295.69661 | | +0.25765624 | +0.96610952 |
| $a$ | 2.4160851 | $\Omega$ | 349.19934 | | −0.85382387 | +0.22005666 |
| $e$ | 0.1728511 | $i$ | 4.79785 | | −0.45232517 | +0.13493504 |
| $P$ | 3.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 12 | 691 | 0.4− | 0.0 | 2002 10 09 | 704 | 0.6+ | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1998 09 12 | 691 | 0.1+ | 0.0 | 2002 10 09 | 704 | (0.2− | 1.7+) | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 1998 09 12 | 691 | 0.4+ | 0.2− | 2005 01 20 | 809 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 1998 09 18 | 691 | 0.1− | 0.1− | 2005 01 20 | 809 | 0.1− | 0.3− | 2006 10 25 | D35 | 1.0+ | 0.7+ |
| 1998 09 18 | 691 | 0.1− | 0.0 | 2005 01 20 | 809 | 1.0+ | 0.3+ | 2006 10 25 | D35 | 0.2− | 0.2+ |
| 1998 09 18 | 691 | 0.1+ | 0.0 | 2005 06 26 | 644 | 0.3+ | 0.5+ | 2006 10 25 | D35 | 0.2− | 0.6+ |
| 1998 09 24 | 691 | 0.3− | 0.2+ | 2005 06 26 | 644 | 0.2+ | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.4+ |
| 1998 09 24 | 691 | 0.2− | 0.0 | 2005 06 26 | 644 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 1998 09 24 | 691 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.3+ |
| 1998 10 28 | 691 | 0.5+ | 0.2− | 2006 10 04 | G96 | 0.6+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 28 | 691 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 1998 10 28 | 691 | 0.1+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2002 10 03 | 599 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 02 | 691 | 0.1− | 0.3− |
| 2002 10 03 | 599 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.0 | 2006 11 02 | 691 | 0.2− | 0.3− |
| 2002 10 03 | 599 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 02 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 599 | (0.1− | 1.6+) | 2006 10 19 | G96 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 10 05 | 599 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2002 10 05 | 599 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2002 10 09 | 704 | 0.3− | 1.4+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.4− |

**(136957)∗ 1998 RQ$_8$ = 2002 RH$_{17}$**

Discovered 1998 Sept. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 34722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.26724 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25800086 | $\omega$ | 19.59748 | | +0.99974941 | | +0.01185396 |
| $a$ | 2.4437416 | $\Omega$ | 339.69525 | | −0.01905881 | | +0.89569073 |
| $e$ | 0.1290257 | $i$ | 3.13699 | | +0.01174259 | | +0.44451952 |
| $P$ | 3.82 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.1− | 0.4− | 2002 10 06 | 704 | 0.5− | 0.2− | 2006 09 25 | 704 | 0.4− | 0.6+ |
| 1998 08 17 | 704 | 0.0 | 0.5+ | 2002 10 07 | 704 | (1.6+ | 0.3+) | 2006 09 25 | 704 | (1.0− | 1.7+) |
| 1998 08 17 | 704 | 0.4+ | 0.7− | 2002 10 07 | 704 | (2.1+ | 0.3+) | 2006 09 25 | 704 | 1.0− | 0.6− |
| 1998 08 17 | 704 | 0.3+ | 0.9+ | 2002 10 07 | 704 | 1.2+ | 0.8− | 2006 09 29 | 704 | 0.3+ | 0.8+ |
| 1998 08 17 | 704 | 0.5+ | 1.0+ | 2002 10 07 | 704 | 1.5+ | 0.6− | 2006 09 29 | 704 | 0.3+ | 1.2− |
| 1998 09 13 | 691 | 0.4− | 0.8+ | 2002 10 07 | 704 | (2.3+ | 0.5+) | 2006 09 29 | 704 | 0.5− | 0.2− |
| 1998 09 13 | 691 | 0.5− | 0.3+ | 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.8+ | 0.6+ |
| 1998 09 13 | 691 | 0.5− | 0.3+ | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 10 03 | 704 | 0.7+ | 1.0+ |
| 1998 09 18 | 691 | 0.5− | 1.0+ | 2002 10 11 | 704 | 0.2− | 0.1+ | 2006 10 03 | 704 | 0.2+ | 1.4+ |
| 1998 09 18 | 691 | 0.5− | 0.6+ | 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 10 03 | 704 | 0.4+ | 0.8+ |
| 1998 09 18 | 691 | 0.0 | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 1998 09 28 | 691 | 0.4+ | 0.3+ | 2003 12 27 | 291 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.7− |
| 1998 09 28 | 691 | (0.0 | 2.6+) | 2003 12 27 | 291 | 0.2− | 0.8+ | 2006 10 17 | 703 | 1.1− | 0.1− |
| 1998 09 28 | 691 | 0.6− | 1.1+ | 2003 12 27 | 291 | 0.4− | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.8− |
| 2002 08 30 | 699 | (0.5− | 1.5−) | 2004 01 22 | 704 | 0.5+ | 1.0+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 08 30 | 699 | 0.6− | 0.7+ | 2004 01 22 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 2002 08 30 | 699 | (0.4− | 1.7+) | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 08 30 | 699 | 0.0 | 1.1+ | 2004 01 22 | 704 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2002 09 04 | 699 | 1.2+ | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2002 09 04 | 699 | 0.7+ | 0.3+ | 2004 01 30 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.5− |
| 2002 09 04 | 699 | 0.7+ | 0.9+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 683 | 0.7− | 0.4− |
| 2002 09 04 | 699 | 0.3+ | 0.2+ | 2004 01 30 | 691 | 1.0+ | 0.1− | 2006 10 22 | 683 | (0.1− | 1.5−) |
| 2002 09 05 | 704 | 0.1+ | 0.3− | 2004 02 11 | 691 | 0.2+ | 0.5+ | 2006 10 22 | 683 | 0.9− | 1.0− |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2004 02 11 | 691 | 0.4+ | 0.3+ | 2006 10 23 | 683 | (0.7− | 2.2−) |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2004 02 11 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 683 | (0.1+ | 2.8−) |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.4− | 1.1+ | 2006 10 23 | 683 | 0.6+ | 1.3− |
| 2002 09 05 | 704 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.5− | 1.5+ | 2006 10 29 | 704 | 0.1− | 0.4+ |
| 2002 09 07 | 704 | 0.2− | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.6+ | 2006 10 29 | 704 | 0.6− | 0.8− |
| 2002 09 07 | 704 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.0 | 0.4+ | 2006 10 29 | 704 | 0.0 | 0.3+ |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2005 05 11 | 644 | 0.4+ | 0.9+ | 2006 10 29 | 704 | 0.6− | 1.0− |
| 2002 09 07 | 704 | 0.1+ | 0.1+ | 2005 05 11 | 644 | 0.3+ | 0.2+ | 2006 10 31 | 683 | (2.1+ | 1.0−) |
| 2002 09 07 | 704 | 0.2− | 0.6+ | 2005 05 11 | 644 | 0.2− | 0.7+ | 2006 10 31 | 683 | (1.6+ | 0.4+) |
| 2002 09 12 | 644 | 0.7− | 0.7− | 2005 05 12 | 644 | 0.0 | 0.8+ | 2006 10 31 | 683 | (1.7+ | 1.4+) |
| 2002 09 12 | 644 | 0.7− | 0.6− | 2005 05 12 | 644 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2002 09 12 | 644 | 0.6− | 0.5− | 2005 05 12 | 644 | 0.3+ | 0.6+ | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.5− | 0.1+ | 2006 08 06 | 699 | 0.7− | 0.5+ | 2006 11 06 | 644 | 0.2− | 0.5− |
| 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 08 06 | 699 | 0.9+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.5− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 08 06 | 699 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 09 16 | 291 | 0.0 | 0.1− | 2006 08 06 | 699 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2002 09 16 | 291 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 09 16 | 291 | 0.2− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.8+ | 0.5+ | 2006 09 18 | 699 | (0.2+ | 1.8−) | 2006 11 19 | 704 | (0.5+ | 2.1+) |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.1− | 1.4− | 2006 11 19 | 704 | 1.0− | 0.6+ |
| 2002 10 06 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.6− | 0.4+ |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8− | 0.7+ |
| 2002 10 06 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1− | | | | |
| 2002 10 06 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.5− | | | | |

**(136958)∗ 1998 RN$_9$ = 2005 JP$_{38}$**

Discovered 1998 Sept. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74580)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.99440 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25702249 | $\omega$ | 249.41618 | | −0.41389056 | | +0.91032610 |
| $a$ | 2.4499392 | $\Omega$ | 356.13392 | | −0.82960037 | | −0.37763849 |
| $e$ | 0.1415395 | $i$ | 0.84801 | | −0.37477704 | | −0.16939765 |
| $P$ | 3.83 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 13 | 691 | 0.3+ | 0.0 | 2005 05 09 | 704 | 0.3+ | 0.2− | 2006 09 14 | 691 | 0.3− | 0.0 |
| 1998 09 13 | 691 | 0.1+ | 0.0 | 2005 05 09 | 704 | 0.2− | 0.9− | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 1998 09 13 | 691 | 0.2+ | 0.1− | 2005 05 09 | 704 | 0.9+ | 0.5− | 2006 09 18 | 691 | 0.5− | 0.2− |
| 1998 09 19 | 691 | 0.5+ | 0.2− | 2005 05 10 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.3− |
| 1998 09 19 | 691 | 0.2− | 0.2+ | 2005 05 10 | 704 | 0.8+ | 0.5− | 2006 09 18 | 691 | 0.3− | 0.1− |
| 1998 09 19 | 691 | 0.6+ | 0.3− | 2005 05 10 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 1998 09 25 | 691 | 0.9− | 0.2− | 2005 05 10 | 704 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.3− | 0.4+ |
| 1998 09 25 | 691 | 0.3− | 0.4+ | 2005 05 10 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.4+ |
| 1998 09 25 | 691 | 0.6− | 0.3− | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 03 04 | 691 | 0.5− | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 03 04 | 691 | 0.4− | 0.1− | 2005 05 10 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2001 03 04 | 691 | 0.3− | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2001 03 14 | 691 | 0.5+ | 0.2+ | 2005 05 16 | G96 | 0.1− | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.3+ |
| 2001 03 14 | 691 | 0.4+ | 0.4− | 2005 05 16 | G96 | 0.3− | 0.1+ | 2006 10 03 | 691 | 0.2− | 0.6+ |
| 2001 03 14 | 691 | 0.4+ | 0.1− | 2005 05 16 | G96 | 0.2− | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.7+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2005 05 16 | G96 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2005 05 19 | 644 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.1+ |
| 2005 03 11 | G96 | 0.4− | 0.2+ | 2005 05 19 | 644 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.5− | 0.8− |
| 2005 03 11 | G96 | 0.5− | 0.0 | 2005 05 19 | 644 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.3− |
| 2005 03 11 | G96 | 0.5− | 0.1− | 2005 05 19 | 644 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2005 03 11 | G96 | 0.1+ | 0.2+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2005 04 17 | 691 | 0.0 | 0.0 | 2005 05 19 | 644 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2005 04 17 | 691 | 0.1+ | 0.0 | 2005 05 30 | 699 | 0.8+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 04 17 | 691 | 0.1+ | 0.0 | 2005 05 30 | 699 | 1.1+ | 1.0+ | 2006 10 31 | G96 | 0.7− | 0.5− |
| 2005 05 07 | 691 | 0.3− | 0.8− | 2005 05 30 | 699 | 1.2− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.6− |
| 2005 05 07 | 691 | 0.1− | 0.0 | 2005 05 30 | 699 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.6− |
| 2005 05 07 | 691 | 0.1− | 0.0 | 2005 06 14 | G96 | 1.0+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2005 05 08 | E12 | 0.1− | 0.6+ | 2005 06 14 | G96 | 0.4+ | 0.1+ | 2006 11 23 | 291 | 0.4+ | 0.1− |
| 2005 05 08 | E12 | 0.2+ | 0.2+ | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 23 | 291 | 0.1− | 0.4+ |
| 2005 05 08 | E12 | 0.0 | 0.4+ | 2005 06 14 | G96 | 0.2− | 0.1− | 2006 11 23 | 291 | 0.0 | 0.0 |
| 2005 05 08 | E12 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.1− | 0.6+ | | | | |

**(136959)∗ 1998 RJ$_{15}$ = 1997 ES$_3$**

Discovered 1998 Sept. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (MPC 32991)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.05895 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26557157 | $\omega$ | 94.71956 | | +0.07055708 | | +0.99750765 |
| $a$ | 2.3970752 | $\Omega$ | 179.32597 | | −0.92912197 | | +0.06587733 |
| $e$ | 0.1341676 | $i$ | 2.10212 | | −0.36297941 | | +0.02527182 |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.0 | 0.1− | 2001 04 26 | 699 | 0.8+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 1997 03 02 | 691 | 0.2+ | 0.5− | 2001 04 26 | 699 | 0.1+ | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.7− |
| 1997 03 02 | 691 | 0.0 | 0.3− | 2001 04 30 | 704 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 1997 03 07 | 691 | 0.9+ | 0.3− | 2001 04 30 | 704 | 0.4+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 1997 03 07 | 691 | 0.1− | 0.4− | 2001 04 30 | 704 | 1.1− | 1.2+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 1997 03 07 | 691 | 0.3− | 0.4− | 2001 04 30 | 704 | (0.9+ | 1.7+) | 2006 10 21 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 09 | 691 | 0.5− | 0.0 | 2001 04 30 | 704 | 1.2+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 1997 03 09 | 691 | 0.4− | 0.1+ | 2001 05 03 | 608 | 0.1− | 1.1+ | 2006 11 11 | 691 | 0.3− | 0.6+ |
| 1997 03 09 | 691 | 0.5− | 0.0 | 2001 05 03 | 608 | 0.1− | 1.2+ | 2006 11 11 | 691 | 0.3− | 0.3+ |
| 1998 08 27 | 691 | 1.2+ | 0.1+ | 2001 05 03 | 608 | 0.2− | 1.1+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 1998 08 27 | 691 | 0.9+ | 0.4+ | 2001 05 17 | 704 | 0.4− | 1.2+ | 2006 11 12 | 703 | 0.4− | 0.0 |
| 1998 08 27 | 691 | 1.0+ | 0.1− | 2001 05 17 | 704 | 0.5− | 1.0+ | 2006 11 12 | 703 | 0.2+ | 0.0 |
| 1998 09 15 | 691 | 0.2− | 0.1− | 2001 05 17 | 704 | 0.9− | 0.5+ | 2006 11 12 | 703 | 1.1− | 0.5− |
| 1998 09 15 | 691 | 0.0 | 0.1− | 2001 05 17 | 704 | 0.4+ | 1.3+ | 2006 11 12 | 703 | 0.2+ | 0.5+ |
| 1998 09 15 | 691 | 0.0 | 0.0 | 2001 05 22 | 704 | 1.1− | 0.2− | 2006 11 13 | 291 | 0.4− | 0.3+ |
| 1998 09 20 | 691 | 0.0 | 0.0 | 2001 05 22 | 704 | 0.8+ | 0.4+ | 2006 11 13 | 291 | 0.4− | 0.3+ |
| 1998 09 20 | 691 | 0.1+ | 0.0 | 2001 05 22 | 704 | 1.3+ | 0.4− | 2006 11 13 | 291 | 0.1− | 0.2+ |
| 1998 09 21 | 691 | (3.8− | 2.1+) | 2001 05 24 | 704 | 0.7+ | 1.2+ | 2006 11 13 | 291 | 0.4− | 0.3+ |
| 1998 09 21 | 691 | 0.4− | 0.2+ | 2001 05 24 | 704 | 0.1+ | 1.3+ | 2006 11 13 | 291 | 0.3− | 0.5+ |
| 1998 09 21 | 691 | 0.4− | 0.1+ | 2001 05 24 | 704 | (0.7− | 1.6+) | 2006 11 13 | 291 | 0.3− | 0.0 |
| 1998 09 23 | 691 | 0.7− | 0.3+ | 2001 05 24 | 704 | (3.0− | 0.5+) | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 1998 09 23 | 691 | 0.6− | 0.2+ | 2001 05 30 | 691 | 0.7+ | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 1998 09 23 | 691 | 1.1− | 0.4+ | 2001 05 30 | 691 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.5+ | 0.1− |
| 1998 09 26 | 691 | 0.1+ | 0.3+ | 2001 05 30 | 691 | 0.3+ | 0.6+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 1998 09 26 | 691 | 0.4− | 0.4− | 2002 10 03 | 704 | (1.7+ | 1.2+) | 2006 11 15 | 691 | 0.4+ | 0.1+ |
| 1998 09 26 | 691 | 0.2− | 0.2− | 2002 10 03 | 704 | 0.7+ | 0.4− | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2001 04 23 | 919 | 0.2+ | 0.7− | 2002 10 03 | 704 | (1.1− | 2.5−) | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 04 23 | 919 | 0.2+ | 0.8− | 2002 10 31 | 608 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2001 04 23 | 704 | 0.5− | 0.4+ | 2002 10 31 | 608 | 0.5+ | 0.7− | 2006 11 19 | 691 | 0.4+ | 0.5+ |
| 2001 04 23 | 704 | 0.1− | 0.7+ | 2002 10 31 | 608 | 0.5+ | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2001 04 23 | 919 | 0.1− | 0.5− | 2004 01 30 | 704 | 0.5+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2001 04 23 | 704 | (1.1+ | 1.6+) | 2004 01 30 | 704 | 0.6+ | 0.8+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 04 23 | 704 | (0.0 | 2.1+) | 2004 01 30 | 704 | 0.1+ | 0.9+ | 2006 11 27 | 691 | 0.1− | 0.6+ |
| 2001 04 25 | 919 | 0.8− | 0.9+ | 2004 02 17 | 644 | 0.3+ | 1.4+ | 2006 11 27 | 703 | 1.0+ | 0.7+ |
| 2001 04 25 | 919 | 0.2− | 0.2− | 2004 02 17 | 644 | 0.4+ | 1.1+ | 2006 11 27 | 703 | 0.0 | 0.6+ |
| 2001 04 26 | 699 | 0.7+ | 0.5+ | 2004 02 17 | 644 | 0.3+ | 1.0+ | 2006 11 27 | 703 | 0.4− | 0.3+ |
| 2001 04 26 | 699 | 0.2+ | 1.1+ | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.3− |

**(136960)∗ 1998 RD$_{27}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.05731 | | (2000.0) | | | |
| $n$ | 0.26264520 | $\omega$ | 122.71574 | | +0.56269366 | +0.82665865 |
| $a$ | 2.4148477 | $\Omega$ | 181.53889 | | −0.79418745 | +0.53945250 |
| $e$ | 0.1087688 | $i$ | 7.19678 | | −0.22943874 | +0.16008271 |
| $P$ | 3.75 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 13 | 691 | 0.0 | 0.2− | 2001 05 15 | 699 | 0.2− | 0.8+ | 2004 02 23 | 704 | 0.3+ | 1.3+ |
| 1997 04 13 | 691 | 0.0 | 0.3− | 2001 05 15 | 699 | 0.4+ | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.1− |
| 1997 04 13 | 691 | 0.4− | 0.1− | 2002 09 14 | 608 | 1.1− | 0.7− | 2006 11 13 | 703 | 0.1+ | 0.5+ |
| 1998 08 17 | 704 | 0.4+ | 0.4+ | 2002 09 14 | 608 | 1.0− | 0.5− | 2006 11 13 | 703 | 0.2− | 0.2− |
| 1998 08 17 | 704 | 0.4− | 0.0 | 2002 09 14 | 608 | 1.1− | 0.8− | 2006 11 13 | 703 | 0.4− | 0.6+ |
| 1998 08 17 | 704 | 0.7− | 0.3− | 2002 10 01 | 699 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.8− | 0.3+ |
| 1998 08 17 | 704 | 1.4− | 0.7+ | 2002 10 01 | 699 | 0.8− | 0.7+ | 2006 11 19 | 703 | 0.2+ | 1.0+ |
| 1998 09 14 | 704 | 0.6− | 1.3− | 2002 10 01 | 699 | 1.1+ | 0.2− | 2006 11 19 | 703 | 0.7− | 0.2+ |
| 1998 09 14 | 704 | 0.2− | 0.3+ | 2002 10 01 | 699 | 0.1− | 0.2− | 2006 11 19 | 703 | 0.5− | 0.0 |
| 1998 09 14 | 704 | 0.1+ | 1.4+ | 2002 10 11 | 704 | 1.2+ | 0.1+ | 2006 11 19 | 703 | 0.7− | 0.7− |
| 1998 09 14 | 704 | 0.9+ | 1.2+ | 2002 10 11 | 704 | 0.4− | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 1998 09 15 | 699 | 0.1+ | 0.6+ | 2002 10 11 | 704 | 0.3− | 0.2− | 2006 11 20 | G96 | 0.5+ | 0.1+ |
| 1998 09 15 | 699 | 0.6+ | 0.1+ | 2002 10 31 | 699 | 0.1+ | 0.5+ | 2006 11 20 | G96 | 0.4− | 0.1+ |
| 1998 09 15 | 699 | 0.2+ | 0.3+ | 2002 10 31 | 704 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.0 |
| 1998 09 18 | 704 | (0.3− | 2.4−) | 2002 10 31 | 699 | 0.9+ | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.1+ |
| 1998 09 18 | 704 | 0.6+ | 1.1− | 2002 10 31 | 704 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.1− | 0.1+ |
| 1998 09 18 | 704 | 0.1− | 0.0 | 2002 10 31 | 699 | (1.6+ | 1.6−) | 2006 11 20 | G96 | 0.5+ | 0.1+ |
| 2001 04 24 | 704 | 0.2+ | 0.3+ | 2002 10 31 | 704 | 0.4+ | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.0 |
| 2001 04 24 | 704 | 0.7− | 0.1− | 2002 10 31 | 699 | 0.8+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2001 04 24 | 704 | 0.2− | 0.5+ | 2002 10 31 | 704 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2001 05 15 | 699 | 1.3+ | 0.3+ | 2002 10 31 | 704 | 0.4+ | 0.9− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2001 05 15 | 699 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 1.1+ | 1.3+ | 2006 11 23 | G96 | 0.4+ | 0.1+ |

**(136961)∗ 1998 RP$_{29}$ = 2002 RX$_{106}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34723)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.52037 | | (2000.0) | | | |
| $n$ | 0.26974953 | $\omega$ | 308.58612 | | +0.82302025 | −0.56647108 |
| $a$ | 2.3722598 | $\Omega$ | 85.95641 | | +0.53330601 | +0.74530074 |
| $e$ | 0.1867907 | $i$ | 2.40229 | | +0.19550541 | +0.35162101 |
| $P$ | 3.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.8− | 1.0− | 2002 11 05 | 704 | 0.1− | 0.7− | 2002 12 31 | 704 | 0.6+ | 0.2+ |
| 1993 02 26 | 691 | (0.3− | 2.3−) | 2002 11 05 | 704 | 0.4− | 0.6− | 2002 12 31 | 699 | 0.1− | 0.2+ |
| 1993 02 26 | 691 | 0.9− | 1.8− | 2002 11 05 | 704 | 0.5+ | 0.2− | 2002 12 31 | 704 | 0.4− | 0.1+ |
| 1998 08 30 | 699 | 0.9+ | 0.1− | 2002 11 05 | 704 | 0.2− | 0.5− | 2002 12 31 | 699 | 0.6+ | 1.2+ |
| 1998 08 30 | 699 | 0.1− | 0.6+ | 2002 11 05 | 704 | 0.2− | 0.3− | 2002 12 31 | 704 | 0.1+ | 0.5− |
| 1998 08 30 | 699 | 0.9− | 1.1− | 2002 11 06 | 704 | 0.0 | 0.1− | 2002 12 31 | 699 | 0.5− | 0.3+ |
| 1998 09 14 | 704 | 0.2− | 0.1− | 2002 11 06 | 704 | 0.1− | 0.4− | 2003 01 19 | 644 | 0.2+ | 0.3+ |
| 1998 09 14 | 704 | 0.0 | 0.0 | 2002 11 06 | 704 | 0.1+ | 0.3+ | 2003 01 19 | 644 | 0.2+ | 0.3+ |
| 1998 09 14 | 704 | 0.8− | 0.3− | 2002 11 06 | 704 | 0.5+ | 0.3− | 2003 01 19 | 644 | 0.1− | 0.0 |
| 1998 09 14 | 704 | 0.6− | 0.5− | 2002 11 06 | 704 | 0.0 | 0.1− | 2004 03 16 | 691 | 0.3+ | 0.5+ |
| 1998 09 18 | 699 | 0.4+ | 0.5+ | 2002 11 07 | 695 | 0.4+ | 0.3− | 2004 03 16 | 691 | 0.3+ | 0.5+ |
| 1998 09 18 | 699 | 0.6+ | 0.9+ | 2002 11 07 | 695 | 0.4+ | 0.3− | 2004 03 16 | 691 | 0.2+ | 0.6+ |
| 1998 09 18 | 704 | 0.8− | 1.2+ | 2002 11 14 | 704 | 0.1+ | 0.3− | 2004 04 13 | 691 | 0.5+ | 0.5+ |
| 1998 09 18 | 699 | 0.3+ | 0.5+ | 2002 11 14 | 704 | 0.6+ | 0.1+ | 2004 04 13 | 691 | 0.6+ | 0.6+ |
| 1998 09 18 | 704 | 0.3+ | 0.6+ | 2002 11 14 | 704 | 0.6+ | 0.3− | 2004 04 13 | 691 | 0.4+ | 1.0+ |
| 1998 09 18 | 704 | 1.7+ | 0.2+ | 2002 11 14 | 704 | 0.3+ | 0.3+ | 2005 06 08 | 691 | 0.4− | 0.4− |
| 1998 09 18 | 704 | 0.9+ | 0.4+ | 2002 11 14 | 704 | (1.8+ | 0.4+) | 2005 06 08 | 691 | 0.1+ | 0.5− |
| 1998 09 18 | 704 | 0.9− | 0.4− | 2002 11 24 | 644 | 0.1+ | 0.5+ | 2005 06 08 | 691 | 0.1+ | 0.2− |
| 1998 10 12 | 699 | 0.2− | 0.7+ | 2002 11 24 | 644 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.6− |
| 1998 10 12 | 699 | 0.3− | 0.3− | 2002 11 24 | 644 | 0.2+ | 0.8+ | 2006 09 25 | G96 | 0.7+ | 0.8− |
| 1998 10 12 | 699 | 0.2+ | 0.0 | 2002 11 28 | 699 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2002 11 28 | 699 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.6− | 0.8− |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2002 11 28 | 699 | 0.2− | 0.4+ | 2006 10 03 | G96 | 0.9+ | 0.3+ |
| 2002 09 05 | 704 | 0.6− | 1.0+ | 2002 11 28 | 699 | 0.9− | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.4+ | 0.8+ | 2002 12 03 | 608 | 0.5+ | 0.4+ | 2006 10 03 | G96 | 0.3− | 0.5− |
| 2002 09 05 | 704 | 0.2− | 0.6+ | 2002 12 03 | 608 | 0.1− | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.6− |
| 2002 09 07 | 704 | 0.2− | 0.1+ | 2002 12 03 | 608 | 0.1− | 1.0+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2002 09 07 | 704 | 0.3− | 0.2+ | 2002 12 04 | 333 | 0.5− | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | 0.4+ | 0.5+ | 2002 12 04 | 333 | 1.1− | 0.6+ | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2002 12 05 | 704 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2002 10 03 | 704 | 0.0 | 0.4− | 2002 12 05 | 704 | 0.3+ | 0.4− | 2006 11 15 | 703 | (0.8+ | 2.5−) |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.6+ | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.7− | 0.3+ |
| 2002 10 03 | 704 | 0.5− | 0.7− | 2002 12 05 | 704 | 0.4+ | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2002 10 07 | 704 | (1.6− | 0.4+) | 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.6− |
| 2002 10 07 | 704 | 0.8− | 0.4− | 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2002 10 07 | 704 | 0.8− | 0.2+ | 2002 12 10 | 704 | 0.4− | 0.5− | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2002 10 07 | 704 | 1.1− | 0.7− | 2002 12 10 | 704 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 10 09 | 704 | (2.1− | 1.3+) | 2002 12 27 | 644 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.2+ |
| 2002 10 09 | 704 | 0.1− | 0.6+ | 2002 12 27 | 644 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 10 09 | 704 | (2.4− | 0.3+) | 2002 12 27 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 10 09 | 704 | 1.3− | 0.7+ | 2002 12 28 | 699 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | (1.0+ | 1.8−) | 2002 12 28 | 699 | 0.6+ | 1.2− | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2002 10 11 | 704 | 0.5+ | 0.7− | 2002 12 28 | 699 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 1.2− | 2002 12 28 | 699 | 1.1− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2002 10 11 | 704 | (0.9+ | 1.6−) | 2002 12 31 | 699 | 0.8+ | 0.8+ | 2006 11 22 | G96 | 0.2+ | 1.2− |

**(136962)∗ 1998 RV$_{30}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.43698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26020613 | $\omega$ | 131.06730 | | +0.86975624 | −0.49263941 | |
| $a$ | 2.4299147 | $\Omega$ | 258.46524 | | +0.44348245 | +0.80591277 | |
| $e$ | 0.1973370 | $i$ | 1.68544 | | +0.21644261 | +0.32834588 | |
| $P$ | 3.79 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 01 | 691 | 0.1+ | 0.9− | 2002 10 04 | 704 | 0.5− | 0.2+ | 2002 11 11 | 049 | 0.6− | 0.3− |
| 1992 01 01 | 691 | 0.1+ | 0.3− | 2002 10 09 | 704 | 0.0 | 0.6+ | 2002 11 11 | 049 | 0.4− | 0.5− |
| 1992 01 01 | 691 | 0.2− | 0.2− | 2002 10 09 | 704 | 0.5− | 0.0 | 2002 11 11 | 049 | 0.3− | 0.1− |
| 1995 11 19 | 691 | 0.4− | 0.5− | 2002 10 09 | 704 | 0.4+ | 0.9+ | 2002 11 12 | 644 | 0.0 | 0.1+ |
| 1995 11 19 | 691 | 0.2− | 0.6− | 2002 10 09 | 704 | 0.7+ | 0.1+ | 2002 11 12 | 644 | 0.1+ | 0.2+ |
| 1995 11 19 | 691 | 0.8− | 0.1− | 2002 10 09 | 704 | 0.4+ | 0.1+ | 2002 11 12 | 644 | 0.0 | 0.2− |
| 1998 08 17 | 704 | 1.2− | 1.1− | 2002 10 12 | 704 | 0.4− | 0.5+ | 2002 11 22 | 644 | 0.3+ | 0.5+ |
| 1998 08 17 | 704 | 1.2+ | 1.6− | 2002 10 12 | 704 | 0.1+ | 0.5− | 2002 11 22 | 644 | 0.1− | 0.4+ |
| 1998 08 17 | 704 | 0.8+ | 0.8− | 2002 10 12 | 704 | 0.1+ | 0.7+ | 2002 11 22 | 644 | 0.1− | 0.4+ |
| 1998 08 17 | 704 | (1.3+ | 2.1−) | 2002 10 12 | 704 | 0.3+ | 0.2− | 2004 04 13 | 691 | 0.1+ | 0.3+ |
| 1998 09 14 | 704 | 0.9+ | 0.4+ | 2002 10 12 | 704 | 0.1− | 0.0 | 2004 04 13 | 691 | 0.2+ | 0.5+ |
| 1998 09 14 | 704 | 0.6+ | 0.5− | 2002 10 16 | 644 | 0.1− | 0.4+ | 2004 04 13 | 691 | 0.4− | 0.3+ |
| 1998 09 14 | 704 | 0.4+ | 1.4− | 2002 10 16 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1998 09 14 | 704 | 0.3+ | 0.0 | 2002 10 16 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1998 09 18 | 704 | (2.9− | 0.9+) | 2002 10 31 | 699 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 1998 09 18 | 704 | (2.1− | 0.6+) | 2002 10 31 | 699 | 0.8− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 1998 09 18 | 704 | 1.1− | 0.5+ | 2002 10 31 | 699 | 0.5− | 0.0 | 2006 11 16 | 691 | 0.5+ | 1.0+ |
| 1998 09 18 | 704 | 0.0 | 0.5+ | 2002 10 31 | 699 | 0.9− | 0.1+ | 2006 11 16 | 691 | 0.4− | 0.0 |
| 1998 09 18 | 704 | 1.2+ | 0.4+ | 2002 11 03 | 704 | 0.2− | 0.4+ | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 1.1+ | 0.7− | 2002 11 03 | 704 | 0.3+ | 0.5+ | 2006 11 24 | 691 | 0.0 | 0.3− |
| 2000 03 03 | 704 | 0.1+ | 0.3+ | 2002 11 03 | 704 | 0.3− | 0.2+ | 2006 11 24 | 691 | 0.2+ | 0.3− |
| 2000 03 03 | 704 | 0.4+ | 0.5+ | 2002 11 08 | 704 | 0.7− | 0.1+ | 2006 12 01 | 704 | 0.4+ | 0.4− |
| 2000 03 03 | 704 | 0.7+ | 0.1+ | 2002 11 08 | 704 | 0.2− | 0.6− | 2006 12 01 | 704 | 0.3+ | 1.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2002 11 08 | 704 | 0.2− | 0.5− | 2006 12 01 | 704 | 0.4+ | 0.8+ |
| 2002 10 04 | 704 | 0.7+ | 0.0 | 2002 11 08 | 704 | 0.4− | 0.4− | 2006 12 01 | 704 | 0.1+ | 0.8+ |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2002 11 08 | 704 | 0.2− | 0.8− | 2006 12 01 | 704 | 0.8+ | 1.2+ |

**(136963)∗ 1998 RR$_{31}$ = 2001 KM$_2$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29014)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.05981 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25800126 | $\omega$ | 159.70497 | | +0.86328772 | −0.49893786 | |
| $a$ | 2.4437390 | $\Omega$ | 230.45862 | | +0.44837742 | +0.82740338 | |
| $e$ | 0.1227804 | $i$ | 5.66529 | | +0.23171536 | +0.25780740 | |
| $P$ | 3.82 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 699 | 0.2+ | 0.9+ | 2002 11 08 | 704 | 0.9− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2− |
| 1998 08 30 | 699 | 0.1+ | 0.9+ | 2002 11 08 | 704 | 0.6− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1− |
| 1998 08 30 | 699 | 0.0 | 0.1+ | 2002 11 08 | 704 | 0.9− | 0.4− | 2006 10 21 | 691 | 0.0 | 0.3− |
| 1998 09 14 | 704 | 1.4+ | 1.1+ | 2002 11 11 | 644 | 0.3− | 0.6− | 2006 10 23 | 704 | 0.6− | 0.2+ |
| 1998 09 14 | 704 | 1.6+ | 0.9+ | 2002 11 11 | 644 | 0.1− | 0.7− | 2006 10 23 | 704 | 0.4− | 0.5+ |
| 1998 09 14 | 704 | 0.8+ | 0.1− | 2002 11 11 | 644 | 0.1− | 0.6− | 2006 10 23 | 704 | (1.9− | 0.3−) |
| 1998 09 14 | 704 | (0.3+ | 2.3+) | 2002 11 12 | 704 | 0.5− | 0.2− | 2006 10 23 | 704 | 0.2− | 0.8− |
| 1998 09 16 | 699 | 0.5+ | 1.3+ | 2002 11 12 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.3− | 0.7+ |
| 1998 09 16 | 699 | 0.3− | 1.3+ | 2002 11 12 | 704 | 0.2− | 0.4+ | 2006 10 28 | 704 | 0.2− | 0.0 |
| 1998 09 16 | 699 | 0.3− | 1.5+ | 2002 11 12 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.2+ | 0.5+ |
| 1998 09 18 | 704 | (2.5− | 1.1+) | 2002 11 12 | 704 | 0.3− | 0.7+ | 2006 10 28 | 704 | 0.3+ | 0.2− |
| 1998 09 18 | 704 | 0.7− | 0.1+ | 2002 11 22 | 644 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.5− |
| 1998 09 18 | 704 | 0.9− | 1.7− | 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 1998 09 18 | 704 | 0.4+ | 1.4− | 2002 11 22 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 1998 09 27 | 699 | 0.1+ | 0.4+ | 2002 12 01 | 704 | 0.9− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 1998 09 27 | 699 | 0.5+ | 1.7+ | 2002 12 01 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.9− |
| 1998 09 27 | 699 | 1.1− | 0.1− | 2002 12 01 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2000 02 02 | 704 | 0.7− | 0.0 | 2002 12 01 | 704 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2000 02 02 | 704 | 0.4+ | 0.4− | 2002 12 05 | 704 | 1.2− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2000 02 02 | 704 | 0.4+ | 0.6+ | 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2000 02 02 | 704 | 0.3+ | 0.5− | 2002 12 05 | 704 | 0.7− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2001 05 19 | 649 | 0.2+ | 0.1− | 2002 12 05 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2001 05 19 | 649 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2001 05 19 | 649 | 0.0 | 0.7+ | 2002 12 07 | 644 | 0.1− | 0.1+ | 2006 11 12 | 703 | 0.1+ | 0.1− |
| 2001 05 22 | 649 | 0.1− | 0.2+ | 2002 12 07 | 644 | 0.4− | 0.3+ | 2006 11 12 | 703 | 0.2+ | 0.3+ |
| 2001 05 22 | 649 | 0.8− | 1.0+ | 2002 12 07 | 644 | 0.2+ | 0.5+ | 2006 11 12 | 703 | 0.1− | 0.4+ |
| 2001 05 22 | 649 | 0.5+ | 1.0− | 2002 12 10 | 704 | 0.2− | 0.5− | 2006 11 12 | 703 | 0.8+ | 0.4− |
| 2002 10 01 | 699 | 0.2− | 0.4+ | 2002 12 10 | 704 | 0.6− | 1.2+ | 2006 11 16 | 703 | 0.0 | 0.3− |
| 2002 10 01 | 699 | 0.2− | 0.0 | 2002 12 10 | 704 | 0.5+ | 1.2+ | 2006 11 16 | 703 | 0.0 | 0.3− |
| 2002 10 01 | 699 | 0.1− | 0.6+ | 2003 01 04 | 704 | 1.2− | 0.1− | 2006 11 16 | 703 | 0.2− | 0.2− |
| 2002 10 01 | 699 | 0.0 | 1.0+ | 2003 01 04 | 704 | 1.3− | 1.4+ | 2006 11 16 | 703 | 0.2− | 0.3− |
| 2002 10 04 | 704 | 0.5+ | 0.3+ | 2003 01 04 | 704 | (1.1− | 1.6+) | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 2002 10 04 | 704 | 0.1+ | 0.7+ | 2003 01 04 | 704 | (0.6− | 1.9+) | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.3− | 1.0+ | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.9+ | 2004 02 26 | 704 | 1.4+ | 0.9+ | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2002 10 04 | 704 | 0.8− | 0.7+ | 2004 02 26 | 704 | 0.7− | 0.5− | 2006 11 18 | 704 | 0.8+ | 0.7+ |
| 2002 10 04 | 644 | 0.0 | 0.9− | 2004 02 26 | 704 | 1.2+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.9+ |
| 2002 10 04 | 644 | 0.1+ | 0.9− | 2004 02 26 | 704 | (0.9+ | 1.8−) | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 2002 10 04 | 644 | 0.2+ | 0.9− | 2004 03 16 | 691 | 0.3+ | 0.8+ | 2006 11 18 | 704 | 1.4− | 0.2+ |
| 2002 10 07 | 704 | (0.8+ | 1.6+) | 2004 03 16 | 704 | 0.7− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2002 10 07 | 704 | 0.6− | 1.1− | 2004 03 16 | 691 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2002 10 07 | 704 | 0.1+ | 0.3+ | 2004 03 16 | 704 | 0.0 | 0.7+ | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2002 10 07 | 704 | 0.0 | 1.3+ | 2004 03 16 | 704 | 0.6+ | 1.1+ | 2006 11 21 | 704 | 0.9+ | 0.6+ |
| 2002 10 07 | 704 | 0.5+ | 0.6+ | 2004 03 16 | 691 | 0.1+ | 0.7+ | 2006 11 21 | 704 | 0.5+ | 0.6− |
| 2002 10 09 | 704 | 0.0 | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.1+ | 0.2+ | 2004 03 16 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 0.2+ | 0.9− |
| 2002 10 09 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 703 | 0.7+ | 0.8+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2002 10 09 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.8+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.2+ |
| 2002 10 09 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.5− |
| 2002 10 09 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 699 | (1.2+ | 1.5−) | 2006 11 22 | 704 | 0.0 | 0.3− |
| 2002 10 09 | 704 | 0.1− | 0.1+ | 2006 09 17 | 699 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.6− |
| 2002 10 09 | 704 | 0.3− | 0.3+ | 2006 09 17 | 699 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2002 10 09 | 704 | 0.5− | 0.6+ | 2006 09 17 | 699 | 0.0 | 1.1+ | 2006 11 22 | 704 | 0.2+ | 0.5− |
| 2002 10 12 | 704 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 26 | 704 | 0.3+ | 0.0 |
| 2002 10 12 | 704 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 26 | 704 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 26 | 704 | 0.9+ | 0.1− |
| 2002 10 12 | 704 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 29 | 704 | 0.6+ | 0.3+ |
| 2002 11 01 | 704 | 0.9− | 0.3− | 2006 10 16 | 703 | 1.5− | 1.4− | 2006 11 29 | 704 | 0.4+ | 0.6− |
| 2002 11 01 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2002 11 01 | 704 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2002 11 01 | 704 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2002 11 03 | 608 | 0.8− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2002 11 03 | 608 | 0.7+ | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2002 11 03 | 608 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2002 11 08 | 704 | 0.7− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.3− | | | | |
| 2002 11 08 | 704 | 0.7− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1− | | | | |

**(136964)∗ 1998 RG$_{36}$ = 2000 DU$_{53}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 60502)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.21221 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28394740 | $\omega$ | 90.14587 | | +0.59341319 | −0.80235342 | |
| $a$ | 2.2925076 | $\Omega$ | 323.21040 | | +0.68947500 | +0.54770654 | |
| $e$ | 0.0917118 | $i$ | 6.13004 | | +0.41531315 | +0.23716353 | |
| $P$ | 3.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.0 | 0.5− | 2005 08 29 | 691 | 0.0 | 0.2+ | 2005 10 08 | 704 | (1.4− | 2.1+) |
| 1998 09 14 | 704 | 0.6+ | 0.3− | 2005 08 29 | 691 | 0.2− | 0.1+ | 2005 10 21 | 644 | 0.1+ | 0.3− |
| 1998 09 14 | 704 | 0.5− | 1.1− | 2005 08 29 | 699 | (1.0− | 1.6+) | 2005 10 21 | 644 | 0.1+ | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | (1.4− | 2.9+) | 2005 08 29 | 699 | 0.1+ | 0.8− | 2005 10 21 | 644 | 0.3− | 0.1− | |
| 1998 09 18 | 704 | 0.2− | 0.1− | 2005 08 29 | 699 | 0.4− | 0.3+ | 2006 10 30 | G96 | 1.1− | 0.2− | |
| 1998 09 18 | 704 | 0.3− | 0.9+ | 2005 08 29 | 699 | 0.4+ | 0.5+ | 2006 10 30 | G96 | 0.1+ | 0.1− | |
| 1998 09 18 | 704 | 0.1− | 0.5+ | 2005 08 30 | 704 | 1.0+ | 0.7+ | 2006 10 30 | G96 | 0.4− | 0.3− | |
| 1998 09 18 | 704 | (0.6− | 2.7−) | 2005 08 30 | 704 | 0.0 | 0.9+ | 2006 10 30 | G96 | 0.2+ | 0.3− | |
| 1998 09 18 | 704 | 0.7+ | 1.5+ | 2005 08 30 | 704 | 0.3− | 1.2+ | 2006 11 01 | G96 | 0.2+ | 0.1− | |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2005 08 30 | 704 | 0.4− | 0.9+ | 2006 11 01 | G96 | 0.8− | 0.5− | |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2005 09 09 | 704 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1− | |
| 2000 02 29 | 704 | (0.1+ | 2.3+) | 2005 09 09 | 704 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.5− | 0.1− | |
| 2000 02 29 | 704 | 1.2+ | 0.5+ | 2005 09 09 | 704 | 0.0 | 0.6+ | 2006 11 01 | G96 | 0.5− | 0.5+ | |
| 2000 02 29 | 704 | 0.3+ | 0.1− | 2005 09 09 | 704 | 0.3− | 1.1+ | 2006 11 01 | G96 | 0.9− | 0.3− | |
| 2000 03 03 | 704 | 0.9+ | 1.1+ | 2005 09 09 | 704 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.5− | 0.2− | |
| 2000 03 03 | 704 | 0.5+ | 0.9+ | 2005 09 23 | 699 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.8− | 0.4− | |
| 2000 03 03 | 704 | 0.9+ | 1.1+ | 2005 09 23 | 699 | 0.8+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1− | |
| 2000 03 03 | 704 | 0.5+ | 1.3+ | 2005 09 23 | 699 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.7− | 0.4− | |
| 2000 03 03 | 704 | 0.6+ | 1.5+ | 2005 09 23 | 699 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.3− | |
| 2002 12 05 | 704 | 0.1− | 0.4− | 2005 09 24 | 703 | 0.3+ | 0.5− | 2006 11 01 | G96 | 0.7+ | 0.2− | |
| 2002 12 05 | 704 | 0.3+ | 0.5− | 2005 09 24 | 703 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.3− | 0.2− | |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2005 09 24 | 703 | 0.2+ | 1.2− | 2006 11 20 | G96 | 0.1− | 0.3− | |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2005 09 24 | 703 | 0.2− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.4− | |
| 2002 12 05 | 704 | 0.2− | 0.9+ | 2005 10 01 | 703 | (2.7− | 1.6+) | 2006 11 20 | G96 | 0.2− | 0.1− | |
| 2003 01 05 | 704 | 0.9+ | 0.3+ | 2005 10 01 | 703 | 0.4− | 1.4+ | 2006 12 01 | G96 | 0.5− | 0.1+ | |
| 2003 01 05 | 704 | 0.3− | 1.0+ | 2005 10 01 | 703 | 1.1− | 1.2− | 2006 12 01 | G96 | 0.1− | 0.5− | |
| 2003 01 05 | 704 | 0.9+ | 0.4− | 2005 10 01 | 703 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.4− | |
| 2003 01 05 | 704 | 0.6− | 0.1+ | 2005 10 08 | 704 | 1.2− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.7− | |
| 2005 08 29 | 691 | 0.0 | 0.2+ | 2005 10 08 | 704 | 0.0 | 0.4+ | | | | | |

**(136965)∗ 1998 RA$_{38}$ = 2002 RU$_{89}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34723)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.55134 | | (2000.0) | | | |
| $n$ | 0.24681040 | $\omega$ | 107.01244 | | +0.82954726 | −0.55779687 |
| $a$ | 2.5170610 | $\Omega$ | 286.89867 | | +0.50114694 | +0.76470268 |
| $e$ | 0.1103741 | $i$ | 1.60027 | | +0.24637996 | +0.32263363 |
| $P$ | 3.99 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.5− | 0.2− | 2004 01 24 | 704 | 0.3− | 0.7+ | 2006 09 01 | 704 | 0.5− | 0.2− | |
| 1995 11 18 | 691 | 0.1+ | 0.6− | 2004 01 24 | 704 | 0.1− | 0.8− | 2006 09 12 | 703 | 0.0 | 0.7− | |
| 1995 11 18 | 691 | (3.8− | 1.7−) | 2004 01 24 | 704 | 0.4+ | 0.3− | 2006 09 12 | 703 | (0.0 | 1.6−) | |
| 1998 09 14 | 704 | 0.4+ | 0.1− | 2004 01 24 | 704 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.6+ | 0.2− | |
| 1998 09 14 | 704 | 0.3+ | 0.8− | 2004 01 24 | 704 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.7+ | 0.5− | |
| 1998 09 14 | 704 | 0.3+ | 1.1− | 2004 01 29 | 704 | (2.1+ | 0.8−) | 2006 09 15 | 691 | 0.2− | 0.2+ | |
| 1998 09 14 | 704 | 0.5+ | 0.7+ | 2004 01 29 | 704 | (1.0+ | 1.7+) | 2006 09 15 | 691 | 0.2− | 0.2+ | |
| 1998 09 16 | 691 | 0.1− | 0.4− | 2004 01 29 | 704 | 0.8+ | 0.0 | 2006 09 15 | 691 | 0.4− | 0.3+ | |
| 1998 09 16 | 691 | 0.1+ | 0.1− | 2004 01 29 | 704 | (2.0+ | 0.9−) | 2006 09 16 | 699 | (0.3− | 2.3+) | |
| 1998 09 16 | 691 | 0.2+ | 0.5− | 2004 01 31 | 691 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.9− | 0.0 | |
| 1998 09 18 | 704 | 0.1+ | 0.3+ | 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.2− | 0.5+ | |
| 1998 09 18 | 704 | 1.4+ | 0.1+ | 2004 01 31 | 691 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.1− | |
| 1998 09 18 | 704 | 1.4− | 0.2− | 2004 02 11 | 644 | 0.2+ | 0.6+ | 2006 09 17 | 704 | 0.4− | 0.2− | |
| 1998 09 18 | 704 | 0.3+ | 0.3− | 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.3− | 0.6+ | |
| 2000 01 27 | 691 | 0.4+ | 0.4− | 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 09 17 | 704 | 0.3+ | 0.2+ | |
| 2000 01 27 | 691 | 0.3+ | 0.6− | 2004 02 17 | 704 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.2+ | |
| 2000 01 27 | 691 | 0.2+ | 0.5− | 2004 02 17 | 704 | 0.3+ | 0.9+ | 2006 09 17 | 704 | 0.3− | 0.8+ | |
| 2000 02 27 | 691 | 0.4− | 0.2− | 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 699 | 0.6− | 0.6+ | |
| 2000 02 27 | 691 | 0.1− | 0.3− | 2004 02 17 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 699 | 0.8− | 0.2+ | |
| 2000 02 27 | 691 | 0.2− | 0.2− | 2004 02 19 | 704 | 1.0+ | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.2− | |
| 2002 08 12 | 704 | 0.1+ | 0.3+ | 2004 02 19 | 704 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.2+ | |
| 2002 08 12 | 704 | 0.2+ | 0.8+ | 2004 02 19 | 704 | 0.4− | 0.6+ | 2006 09 20 | 704 | 1.1+ | 1.0+ | |
| 2002 08 12 | 704 | 0.6− | 0.0 | 2004 02 19 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 704 | (0.2− | 1.6−) | |
| 2002 08 12 | 704 | 0.6− | 0.5+ | 2004 02 22 | 704 | 0.9+ | 1.0+ | 2006 09 20 | 704 | 0.6− | 0.3− | |
| 2002 08 21 | 644 | 0.1− | 0.5+ | 2004 02 22 | 704 | 0.3+ | 1.0+ | 2006 09 20 | 704 | 0.7+ | 0.1− | |
| 2002 08 21 | 644 | 0.4+ | 0.3+ | 2004 02 22 | 704 | 0.5+ | 0.8+ | 2006 09 20 | 704 | 1.0− | 0.5+ | |
| 2002 08 21 | 644 | 0.1+ | 0.5+ | 2004 02 26 | 704 | 0.4− | 0.5− | 2006 09 23 | 691 | 0.0 | 0.1+ | |
| 2002 08 30 | 699 | 0.3− | 0.8+ | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 09 23 | 691 | 1.3+ | 0.3+ | |
| 2002 08 30 | 699 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.6− | 1.4+ | 2006 09 23 | 691 | 0.0 | 0.0 | |
| 2002 08 30 | 699 | 1.0+ | 0.3− | 2004 02 26 | 704 | 0.2+ | 1.2+ | 2006 09 24 | 106 | 0.4− | 0.1− | |
| 2002 08 30 | 699 | 1.0+ | 0.5− | 2004 02 26 | 704 | 0.5− | 0.8+ | 2006 09 24 | 106 | 0.5− | 0.2− | |
| 2002 09 05 | 704 | (2.4− | 0.6−) | 2006 08 15 | 644 | 0.2+ | 0.3+ | 2006 09 24 | 106 | 0.7+ | 1.0+ | |
| 2002 09 05 | 645 | 0.1− | 0.2− | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 09 24 | 106 | 0.7+ | 0.1+ | |
| 2002 09 05 | 645 | 0.0 | 0.2− | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.1− | 0.2− | |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2006 08 21 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 699 | 0.5+ | 0.1+ | |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2006 08 21 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.1+ | |
| 2002 09 07 | 704 | 0.7− | 1.0+ | 2006 08 21 | 704 | 0.6+ | 0.3− | 2006 09 25 | 699 | 0.3− | 0.2+ | |
| 2002 09 07 | 704 | 0.4+ | 0.9+ | 2006 08 22 | 958 | 0.1− | 0.6+ | 2006 09 27 | 704 | 0.3+ | 0.1− | |
| 2002 09 07 | 704 | 0.1+ | 0.8+ | 2006 08 22 | 958 | 0.4− | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.4− | |
| 2002 09 07 | 704 | 0.3− | 0.6+ | 2006 08 22 | 958 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.4− | 0.0 | |
| 2002 09 07 | 704 | 0.2− | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 1.4− | 0.2− | |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 704 | (1.9− | 0.5+) | |
| 2002 09 14 | 644 | 0.5− | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.5+ | 2006 09 29 | 704 | 1.3− | 1.4+ | |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 08 23 | 644 | 0.4− | 0.1+ | 2006 09 29 | 704 | 0.2+ | 1.2+ | |
| 2002 09 15 | 699 | 0.9− | 1.1+ | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.3− | |
| 2002 09 15 | 699 | 0.0 | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.8+ | 0.1+ | |
| 2002 09 15 | 699 | 0.6− | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 01 | 703 | 0.4− | 0.0 | |
| 2002 09 15 | 699 | 0.7− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.4+ | 2006 10 01 | 703 | 0.3+ | 0.1+ | |
| 2002 09 17 | 608 | 0.2− | 1.0+ | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 10 01 | 703 | 0.4+ | 0.9+ | |
| 2002 09 17 | 608 | 0.3− | 0.6+ | 2006 08 25 | 704 | 0.9− | 0.2+ | 2006 10 01 | 703 | 0.5− | 0.1− | |
| 2002 09 17 | 608 | 0.3− | 0.5+ | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.5− | |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 08 25 | 704 | 0.2− | 0.8− | 2006 10 20 | G96 | 0.0 | 0.3− | |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.3− | |
| 2002 10 03 | 704 | 0.3+ | 0.3− | 2006 08 27 | 699 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.2− | |
| 2002 10 03 | 704 | 0.1+ | 0.3− | 2006 08 27 | 699 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ | |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2006 08 27 | 699 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2002 10 07 | 704 | 0.2− | 0.7− | 2006 08 27 | 699 | 1.0+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2002 10 07 | 704 | 0.3− | 1.1− | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.3− | |
| 2002 10 07 | 704 | 0.7− | 0.7− | 2006 08 28 | 703 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.3− | |
| 2002 10 07 | 704 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.7− | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1− | |
| 2002 10 11 | 704 | 1.2+ | 0.6− | 2006 08 28 | 703 | 0.4− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.4− | |
| 2002 10 11 | 704 | 1.1+ | 0.8+ | 2006 09 01 | 704 | (0.4+ | 1.8−) | 2006 11 14 | G96 | 0.0 | 0.6− | |
| 2002 10 11 | 704 | (2.0+ | 0.4+) | 2006 09 01 | 704 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.1− | 0.6− | |
| 2002 10 11 | 704 | (1.5+ | 1.6+) | 2006 09 01 | 704 | 1.0+ | 0.7− | 2006 11 14 | G96 | 0.1− | 0.3− | |
| 2002 10 11 | 704 | 1.0+ | 1.2+ | 2006 09 01 | 704 | 0.2+ | 0.6− | | | | | |

**(136966)∗ 1998 RL$_{39}$ = 2000 DW$_{50}$ = 2000 EM$_{206}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 26887, d, *MPO* 74582)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.10284 | | (2000.0) | | | |
| $n$ | 0.27002557 | $\omega$ | 236.06314 | | +0.98405847 | −0.17259479 |
| $a$ | 2.3706428 | $\Omega$ | 133.83413 | | +0.17639029 | +0.91640528 |
| $e$ | 0.1866651 | $i$ | 3.40909 | | +0.02270222 | +0.36112658 |
| $P$ | 3.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 699 | 0.1+ | 1.3+ | 2000 03 03 | 704 | 1.0+ | 1.1+ | 2002 12 05 | 608 | 0.8+ | 0.3− | |
| 1998 08 30 | 699 | 0.1+ | 1.0+ | 2002 11 07 | 704 | 0.2+ | 0.2+ | 2002 12 05 | 608 | 0.7+ | 0.2− | |
| 1998 08 30 | 699 | 0.0 | 1.3+ | 2002 11 07 | 704 | 0.7+ | 0.4+ | 2002 12 05 | 608 | 0.7+ | 0.2− | |
| 1998 09 14 | 704 | 0.0 | 1.1− | 2002 11 07 | 704 | 0.3− | 0.2+ | 2002 12 11 | 704 | 0.4+ | 0.1+ | |
| 1998 09 14 | 704 | 0.1+ | 0.1+ | 2002 11 07 | 704 | 0.1+ | 0.6+ | 2002 12 11 | 704 | (2.0+ | 0.9−) | |
| 1998 09 14 | 704 | 1.3− | 0.8− | 2002 11 07 | 704 | 0.0 | 0.0 | 2002 12 11 | 704 | 0.2+ | 0.2+ | |
| 1998 09 14 | 704 | 1.0+ | 1.9− | 2002 11 07 | 704 | 1.1+ | 0.5− | 2002 12 11 | 704 | 0.2+ | 0.0 | |
| 1998 09 18 | 704 | 0.4− | 1.3− | 2002 11 07 | 704 | 0.3+ | 0.6− | 2002 12 11 | 704 | 0.6+ | 0.2− | |
| 1998 09 18 | 704 | 1.1− | 0.1− | 2002 11 07 | 704 | 0.4− | 1.3+ | 2002 12 31 | 699 | 0.0 | 0.3+ | |
| 1998 09 18 | 704 | 0.0 | 1.1+ | 2002 11 07 | 704 | 0.8− | 0.7− | 2002 12 31 | 699 | 0.8− | 0.4− | |
| 1998 09 18 | 704 | (1.3+ | 2.4+) | 2002 11 07 | 704 | 0.6+ | 0.5+ | 2002 12 31 | 699 | 0.9− | 0.3− | |
| 1998 09 27 | 699 | 0.5+ | 0.7+ | 2002 11 11 | 704 | 0.6− | 0.6− | 2002 12 31 | 699 | 0.3− | 0.6+ | |
| 1998 09 27 | 699 | 0.3+ | 1.4+ | 2002 11 11 | 704 | 0.5− | 0.3− | 2004 03 17 | 621 | 0.4+ | 0.2− | |
| 1998 09 27 | 699 | 0.1+ | 0.2+ | 2002 11 11 | 704 | 0.7− | 0.4− | 2004 03 17 | 621 | 0.8+ | 1.3− | |
| 1998 10 10 | 699 | 1.1+ | 0.2− | 2002 11 11 | 704 | 0.6− | 0.6+ | 2004 03 17 | 621 | 0.4+ | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 10 | 699 | 0.4+ | 0.3− | 2002 11 11 | 704 | 0.9− | 1.3+ | 2004 03 17 | 621 | 0.5+ | 0.0 |
| 1998 10 10 | 699 | 1.6− | 1.3+ | 2002 11 18 | 644 | 0.3− | 0.2+ | 2004 03 18 | 621 | 0.6+ | 0.7+ |
| 1998 10 12 | 699 | 0.5− | 0.6+ | 2002 11 18 | 644 | 0.6− | 0.1− | 2004 03 26 | 691 | 0.1− | 0.3+ |
| 1998 10 12 | 699 | 0.4− | 0.1− | 2002 11 18 | 644 | 0.3− | 0.4+ | 2004 03 26 | 691 | 0.1− | 0.5+ |
| 1998 10 12 | 699 | 0.1− | 0.6+ | 2002 11 24 | 644 | 0.1− | 0.1+ | 2004 03 26 | 691 | 0.1+ | 0.5+ |
| 2000 01 10 | 691 | 0.0 | 0.3− | 2002 11 24 | 644 | 0.3+ | 1.0+ | 2006 10 21 | G96 | 0.6− | 0.3− |
| 2000 01 10 | 691 | 0.8− | 0.3+ | 2002 11 24 | 644 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.8− |
| 2000 01 10 | 691 | 0.0 | 0.5− | 2002 11 28 | 608 | 0.7+ | 1.5+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2000 02 29 | 704 | 0.3+ | 0.8+ | 2002 11 28 | 608 | (0.2+ | 2.0+) | 2006 10 21 | G96 | 0.4+ | 1.0− |
| 2000 02 29 | 704 | 1.6+ | 0.6+ | 2002 11 28 | 608 | (0.3+ | 1.6+) | 2006 11 18 | G96 | 0.5− | 0.4− |
| 2000 02 29 | 704 | 0.5+ | 0.3− | 2002 12 01 | 704 | 0.1+ | 0.7− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 0.2− | 0.7− | 2002 12 01 | 704 | 0.1− | 0.5− | 2006 11 18 | G96 | 0.6− | 0.5+ |
| 2000 03 03 | 704 | 0.1+ | 0.7+ | 2002 12 01 | 704 | 0.5+ | 0.2− | 2006 11 18 | G96 | 0.7− | 0.2− |
| 2000 03 03 | 704 | 0.1+ | 1.3+ | 2002 12 01 | 704 | 0.6+ | 0.5− | | | | |

**(136967)∗ 1998 RQ$_{39}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.43134 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25426997 | $\omega$ | 301.86900 | | +0.94052453 | −0.33525314 | |
| $a$ | 2.4675881 | $\Omega$ | 77.76857 | | +0.32759094 | +0.85214905 | |
| $e$ | 0.1937864 | $i$ | 3.22293 | | +0.08998765 | +0.40180508 | |
| $P$ | 3.88 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 23 | 704 | 1.5− | 0.2+ | 2002 11 11 | 704 | 1.0− | 1.0+ | 2006 10 22 | 704 | 0.6− | 0.3+ |
| 1998 08 23 | 704 | 0.2+ | 0.3− | 2002 11 30 | 704 | 0.1+ | 0.6− | 2006 10 22 | 704 | 0.3+ | 0.1+ |
| 1998 08 23 | 704 | 0.0 | 1.6+ | 2002 11 30 | 704 | 0.4+ | 0.8− | 2006 10 22 | 704 | 0.1− | 0.2+ |
| 1998 08 23 | 704 | (2.6− | 1.3+) | 2002 11 30 | 704 | 0.6− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 1998 08 23 | 704 | (3.5− | 0.6+) | 2002 12 01 | 608 | 0.1− | 0.6− | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 1998 08 30 | 699 | 0.7− | 0.3− | 2002 12 01 | 608 | 0.6− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1998 08 30 | 699 | 0.4+ | 1.2+ | 2002 12 01 | 608 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 1998 08 30 | 699 | 0.5+ | 0.4+ | 2002 12 07 | 704 | 0.5− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 1998 09 14 | 704 | 0.3+ | 0.4− | 2002 12 07 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 1998 09 14 | 704 | 0.5+ | 1.5+ | 2002 12 07 | 704 | 0.7− | 0.5+ | 2006 10 27 | 704 | 0.2− | 0.4+ |
| 1998 09 14 | 704 | 0.3+ | 0.1+ | 2002 12 10 | 704 | 0.1− | 0.2− | 2006 10 27 | 704 | 0.4− | 0.4− |
| 1998 09 14 | 704 | 0.0 | 1.1+ | 2002 12 10 | 704 | 0.0 | 0.6+ | 2006 10 27 | 704 | 0.3− | 0.0 |
| 1998 09 18 | 704 | 1.0+ | 0.1− | 2002 12 10 | 704 | 0.2− | 0.8+ | 2006 10 27 | 704 | 0.1+ | 1.2+ |
| 1998 09 18 | 704 | 1.5− | 0.2− | 2002 12 18 | 608 | 1.1− | 0.9+ | 2006 10 27 | 704 | 1.0+ | 0.3+ |
| 1998 09 18 | 704 | (0.9+ | 2.7+) | 2002 12 18 | 608 | 0.7− | 0.9+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 1998 09 18 | 704 | 0.1− | 0.9+ | 2002 12 18 | 608 | 0.7− | 0.6+ | 2006 10 27 | 691 | 0.5+ | 0.1− |
| 1998 09 27 | 699 | 0.3+ | 0.7+ | 2003 01 04 | 704 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.6+ | 0.0 |
| 1998 09 27 | 699 | 1.3− | 0.9− | 2003 01 04 | 704 | 0.2− | 0.1+ | 2006 10 31 | 683 | 1.5+ | 1.0− |
| 1998 09 27 | 699 | 0.5− | 1.0+ | 2003 01 04 | 704 | 0.2− | 1.4+ | 2006 10 31 | 683 | (1.9+ | 0.9−) |
| 1998 10 12 | 699 | 0.2− | 1.5+ | 2004 02 17 | 704 | 1.1+ | 0.8+ | 2006 10 31 | 683 | 1.4+ | 0.0 |
| 1998 10 12 | 699 | 0.6− | 0.4− | 2004 02 17 | 704 | 1.1+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 1998 10 12 | 699 | 1.0− | 0.4+ | 2004 02 17 | 704 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 08 05 | 704 | 1.1+ | 0.5+ | 2004 02 19 | 704 | 0.1− | 1.2+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 08 05 | 704 | (1.6+ | 0.6−) | 2004 02 19 | 704 | 0.1− | 1.1+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2002 08 05 | 704 | 0.3+ | 0.6+ | 2004 02 19 | 704 | 0.9− | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 08 05 | 704 | 1.4+ | 0.8+ | 2004 02 19 | 704 | 1.1− | 1.0+ | 2006 11 08 | 644 | 0.3− | 0.2− |
| 2002 08 05 | 704 | 0.4+ | 0.8+ | 2004 02 19 | 704 | (1.2− | 1.6+) | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 08 13 | 683 | 0.8+ | 0.0 | 2004 02 23 | 704 | 0.6+ | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.3− |
| 2002 08 13 | 683 | 1.1+ | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 08 13 | 683 | (0.5+ | 1.6−) | 2004 02 23 | 704 | 0.5+ | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 08 14 | 683 | 0.1+ | 0.7− | 2004 02 23 | 704 | 0.7+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 08 14 | 683 | 0.8− | 0.3+ | 2004 02 23 | 704 | 0.6− | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 08 14 | 683 | 0.6+ | 1.4+ | 2004 02 23 | 704 | 0.9+ | 0.9− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 08 15 | 683 | 0.2− | 1.5+ | 2004 02 23 | 704 | 0.4− | 1.3+ | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2002 08 15 | 683 | (2.0− | 0.3−) | 2004 02 23 | 704 | 0.7+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2002 08 15 | 683 | (1.1+ | 2.6+) | 2004 02 23 | 704 | 0.5− | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 09 11 | 608 | 0.7− | 1.0− | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2002 09 11 | 608 | 0.7− | 0.6− | 2004 03 15 | 704 | 1.2+ | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 09 11 | 608 | 0.6− | 0.4− | 2004 03 15 | 703 | 0.3+ | 1.4+ | 2006 11 11 | 683 | 0.6+ | 0.7− |
| 2002 09 13 | 683 | 0.1− | 1.5+ | 2004 03 15 | 704 | 1.0+ | 0.6− | 2006 11 11 | 683 | 0.5+ | 0.5+ |
| 2002 09 13 | 683 | 0.1+ | 0.0 | 2004 03 15 | 704 | (0.1+ | 1.7+) | 2006 11 11 | 683 | 0.1+ | 0.8+ |
| 2002 09 13 | 683 | 1.5− | 0.2+ | 2004 03 15 | 703 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2002 09 14 | 683 | (0.0 | 2.0+) | 2004 03 15 | 704 | 1.1+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2002 09 14 | 683 | 0.1+ | 0.5+ | 2004 03 15 | 703 | 0.7+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2002 09 14 | 683 | (2.1− | 0.2−) | 2004 03 15 | 703 | 0.7− | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2002 09 30 | 704 | 0.7− | 0.4+ | 2005 06 06 | 691 | 0.4− | 0.5+ | 2006 11 14 | 683 | 0.0 | 1.0+ |
| 2002 09 30 | 704 | 0.9− | 0.6+ | 2005 06 06 | 691 | 0.3− | 0.2+ | 2006 11 14 | 683 | 1.2+ | 0.6+ |
| 2002 09 30 | 704 | 1.1− | 0.6+ | 2005 06 06 | 691 | 0.1− | 0.4+ | 2006 11 15 | 683 | 0.2+ | 0.5− |
| 2002 09 30 | 704 | 0.7− | 0.6+ | 2005 06 10 | 691 | 0.1+ | 0.5+ | 2006 11 15 | 683 | 1.1− | 1.0+ |
| 2002 09 30 | 704 | 0.6− | 0.3+ | 2005 06 10 | 691 | 0.1− | 0.6+ | 2006 11 15 | 683 | 0.3− | 0.8+ |
| 2002 10 01 | 699 | 0.2+ | 0.2+ | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 10 01 | 699 | 0.7+ | 0.6+ | 2005 06 17 | 691 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 10 01 | 699 | 0.1+ | 0.4+ | 2005 06 17 | 691 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 10 01 | 699 | 0.4+ | 0.5+ | 2005 06 17 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 0.8+ | 0.2− | 2005 06 17 | 691 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 2002 10 02 | 704 | 1.2+ | 0.4− | 2005 06 17 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 1.0+ | 0.2− | 2005 06 17 | 691 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 1.2+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.6+ | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.2− | 0.7− | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.6− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.5− | 2006 09 14 | 703 | 0.8− | 1.0− | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2002 10 10 | 645 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.1+ | 1.1+ | 2006 11 19 | 704 | (0.1+ | 3.6+) |
| 2002 10 10 | 645 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.5− | 0.2+ | 2006 11 19 | 704 | (0.5− | 2.5+) |
| 2002 10 11 | 704 | 0.8− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 1.2− | 1.3+ |
| 2002 10 11 | 704 | 0.8− | 0.4+ | 2006 09 20 | 644 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.9− | 1.4+ |
| 2002 10 11 | 704 | 0.9− | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 19 | 704 | (1.8− | 0.8+) |
| 2002 10 11 | 704 | 0.6− | 0.0 | 2006 10 03 | 704 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 10 03 | 704 | 1.0+ | 0.8+ | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2002 10 15 | 644 | 0.5− | 0.0 | 2006 10 03 | 704 | (0.1− | 2.3+) | 2006 11 21 | 704 | (1.4+ | 1.9+) |
| 2002 10 15 | 644 | 0.5− | 0.1+ | 2006 10 03 | 704 | 1.2− | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2002 10 15 | 644 | 0.4− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 22 | 683 | 1.0− | 0.1− |
| 2002 10 31 | 645 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 22 | 683 | (1.4− | 1.5+) |
| 2002 10 31 | 645 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 22 | 683 | (3.0− | 0.4−) |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 23 | 683 | 0.0 | 0.7+ |
| 2002 10 31 | 704 | 0.6− | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 23 | 683 | 0.3− | 1.2+ |
| 2002 10 31 | 704 | 0.1− | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 23 | 683 | 0.0 | 1.3+ |
| 2002 10 31 | 704 | 0.0 | 0.7+ | 2006 10 16 | 185 | 0.2+ | 0.2− | 2006 11 26 | 704 | 0.3− | 0.4− |
| 2002 10 31 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 185 | 0.1+ | 0.2− | 2006 11 26 | 704 | 0.6− | 0.5+ |
| 2002 11 02 | 608 | 0.9+ | 0.9+ | 2006 10 16 | 185 | 0.1+ | 0.1− | 2006 11 26 | 704 | 0.0 | 0.4+ |
| 2002 11 02 | 608 | 1.0+ | 1.3+ | 2006 10 16 | 185 | 0.4+ | 0.0 | 2006 11 26 | 704 | 1.1− | 0.7+ |
| 2002 11 02 | 608 | 0.6+ | 1.0+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 28 | 683 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 1.5+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 28 | 683 | 0.8− | 0.3+ |
| 2002 11 07 | 704 | 0.5− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.3− |
| 2002 11 07 | 704 | (1.7− | 1.3+) | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 28 | 683 | 1.3− | 1.3+ |
| 2002 11 11 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.3+ |
| 2002 11 11 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2002 11 11 | 704 | 0.3− | 0.4− | 2006 10 22 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.6− | 0.7− |
| 2002 11 11 | 704 | 0.1+ | 1.0+ | 2006 10 22 | 704 | 0.9− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.7+ |

**(136968)∗ 1998 RY$_{40}$ = 2002 PJ$_{56}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33037)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.77083 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24130676 | $\omega$ | 190.32184 | | +0.97380090 | +0.21582297 | |
| $a$ | 2.5551892 | $\Omega$ | 156.83432 | | −0.19349923 | +0.95191595 | |
| $e$ | 0.2286099 | $i$ | 10.49257 | | −0.11945648 | +0.21743154 | |
| $P$ | 4.08 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | (1.5+ | 3.3−) | 2002 08 12 | 704 | 0.2+ | 0.5+ | 2006 07 05 | A50 | 1.0+ | 0.3+ |
| 1998 09 14 | 704 | 0.0 | 1.2− | 2002 08 12 | 704 | 0.2+ | 0.7+ | 2006 07 21 | 703 | 0.8− | 0.5+ |
| 1998 09 14 | 704 | 0.1− | 1.6− | 2002 08 12 | 704 | 0.0 | 0.4+ | 2006 07 21 | 703 | 0.5− | 0.8− |
| 1998 09 14 | 704 | 0.8+ | 0.6− | 2002 08 12 | 704 | 0.5+ | 1.0+ | 2006 07 21 | 703 | 0.3− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 704 | 0.4− | 0.5− | 2002 08 12 | 704 | 0.5+ | 0.6+ | 2006 07 21 | 703 | 0.4+ | 0.3− |
| 1998 09 18 | 704 | 0.7− | 0.2+ | 2002 08 13 | 699 | 0.5+ | 0.1+ | 2006 07 24 | 704 | 0.3+ | 1.0+ |
| 1998 09 18 | 704 | 0.6+ | 0.2+ | 2002 08 13 | 699 | 1.0+ | 0.1+ | 2006 07 24 | 704 | 0.4− | 0.0 |
| 1998 09 18 | 704 | 1.3− | 0.5− | 2002 08 13 | 699 | 0.4+ | 0.1+ | 2006 07 24 | 704 | 0.1− | 0.9+ |
| 1998 09 18 | 704 | 0.6+ | 1.0− | 2002 08 13 | 699 | 0.5+ | 0.3+ | 2006 08 18 | 644 | 0.7− | 0.1+ |
| 1998 09 24 | 699 | 0.3− | 0.7− | 2002 08 17 | 644 | 0.3+ | 0.4+ | 2006 08 18 | 644 | 0.5− | 0.0 |
| 1998 09 24 | 699 | 0.3+ | 0.5+ | 2002 08 17 | 644 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 1998 09 24 | 699 | 0.0 | 0.3+ | 2002 08 17 | 644 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 1.4− | 0.5− |
| 1998 09 26 | 704 | 1.1− | 1.7+ | 2002 08 28 | 644 | 0.1− | 0.4+ | 2006 08 29 | 703 | 0.6− | 0.1− |
| 1998 09 26 | 704 | 1.2− | 1.6+ | 2002 08 28 | 644 | 0.4+ | 0.4− | 2006 08 29 | 703 | (1.4− | 4.1−) |
| 1998 09 26 | 704 | 1.5− | 0.1+ | 2002 08 28 | 644 | 0.0 | 0.5+ | 2006 08 29 | 703 | (0.6− | 3.2−) |
| 1998 09 27 | 704 | 0.7+ | 0.8− | 2002 09 05 | 704 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.4− | 0.1+ |
| 1998 09 27 | 704 | 1.0+ | 0.8+ | 2002 09 05 | 704 | 0.2+ | 0.8+ | 2006 08 30 | 704 | 0.9+ | 0.0 |
| 1998 09 27 | 704 | 0.6− | 0.1+ | 2002 09 05 | 704 | 0.1− | 0.2− | 2006 08 30 | 704 | 1.1− | 0.4+ |
| 1998 09 27 | 704 | 0.7− | 0.2− | 2002 09 05 | 704 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.5− | 0.2− |
| 1998 09 27 | 699 | 1.0+ | 0.0 | 2002 09 05 | 704 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.7− | 0.5− |
| 1998 09 27 | 704 | 0.1+ | 0.7− | 2002 09 11 | 608 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.1− | 0.7− |
| 1998 09 27 | 699 | 0.3− | 0.4+ | 2002 09 11 | 608 | 0.2+ | 0.1− | 2006 09 20 | 704 | (0.6− | 1.5+) |
| 1998 09 27 | 699 | 0.6− | 0.5+ | 2002 09 11 | 608 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.7+ |
| 1998 10 12 | 699 | 0.1+ | 0.2− | 2002 09 13 | 704 | 0.4+ | 1.0+ | 2006 09 20 | 704 | 0.3+ | 0.9+ |
| 1998 10 12 | 699 | 0.1− | 0.5− | 2002 09 13 | 704 | 0.6+ | 1.3+ | 2006 09 20 | 704 | 0.2− | 0.4− |
| 1998 10 12 | 699 | 0.7− | 0.3+ | 2002 09 13 | 704 | (0.1+ | 1.6+) | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2002 07 09 | 704 | 0.9− | 0.0 | 2002 09 15 | 644 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2002 07 09 | 704 | 0.3+ | 0.9− | 2002 09 15 | 644 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2002 07 09 | 704 | 0.5− | 0.9− | 2002 09 15 | 644 | 0.5− | 0.1− | 2006 09 26 | G96 | 0.6− | 0.4− |
| 2002 07 30 | 608 | 0.7+ | 0.9− | 2002 10 10 | 699 | 0.5− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2002 07 30 | 608 | 0.1+ | 1.0− | 2002 10 10 | 699 | 0.3− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.4− |
| 2002 07 30 | 608 | 0.3+ | 1.1− | 2002 10 10 | 699 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.7+ | 1.5− |
| 2002 08 09 | 704 | 0.5+ | 0.0 | 2002 10 10 | 699 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 1.2+ | 0.1+ |
| 2002 08 09 | 704 | 0.7+ | 0.1+ | 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2002 08 09 | 704 | 0.1+ | 0.1+ | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 08 09 | 704 | 0.7+ | 0.1− | 2006 06 21 | 644 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2002 08 09 | 608 | 1.2+ | 0.0 | 2006 06 21 | 644 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.6− | 0.4− |
| 2002 08 09 | 608 | 1.1+ | 0.1+ | 2006 06 21 | 644 | 0.1− | 0.5+ | | | | |
| 2002 08 09 | 608 | 0.6+ | 0.3+ | 2006 07 05 | A50 | 1.1+ | 0.1+ | | | | |

**(136969)∗ 1998 RG$_{41}$ = 1998 QO$_{111}$ = 2002 TF$_{268}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37093)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.78937 | | (2000.0) | | +0.74368131 | +0.66724229 |
| $n$ | 0.25928654 | $\omega$ | 340.39786 | | −0.59791331 | +0.63603877 |
| $a$ | 2.4356567 | $\Omega$ | 337.58288 | | −0.29906149 | +0.38761116 |
| $e$ | 0.1385806 | $i$ | 6.25411 | | | |
| $P$ | 3.80 | $H$ | 15.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 23 | 704 | 1.0− | 1.0− | 2002 10 31 | 644 | 0.1− | 0.8+ | 2005 06 26 | 644 | 0.4+ | 0.5+ |
| 1998 08 23 | 704 | 1.8− | 1.1+ | 2002 10 31 | 644 | 0.3− | 0.9+ | 2005 06 26 | 644 | 0.2+ | 0.8+ |
| 1998 08 23 | 704 | 1.1− | 0.4− | 2002 10 31 | 644 | 0.3− | 0.7+ | 2005 06 26 | 644 | 0.4+ | 0.5+ |
| 1998 08 23 | 704 | 0.2+ | 1.3− | 2002 11 08 | 704 | 0.5+ | 0.7+ | 2006 08 29 | 703 | 0.1− | 0.6+ |
| 1998 08 27 | 691 | 0.3− | 0.7+ | 2002 11 08 | 704 | 0.7+ | 0.3− | 2006 08 29 | 703 | 0.3+ | 0.7− |
| 1998 08 27 | 691 | 0.0 | 0.3+ | 2002 11 08 | 704 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.1− | 0.1− |
| 1998 08 27 | 691 | 0.2+ | 0.2+ | 2002 11 08 | 704 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.3+ | 1.4− |
| 1998 09 14 | 704 | 0.2− | 0.8− | 2002 11 08 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.2− |
| 1998 09 14 | 704 | 0.8− | 0.4− | 2004 01 22 | 704 | 1.1− | 0.2+ | 2006 10 19 | 703 | 0.8+ | 0.8− |
| 1998 09 14 | 704 | 1.1+ | 0.6− | 2004 01 22 | 704 | (1.8+ | 0.4−) | 2006 10 19 | 703 | 0.2− | 0.2+ |
| 1998 09 14 | 704 | 1.3+ | 1.0− | 2004 01 22 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.6− | 1.2− |
| 1998 09 18 | 704 | (2.1− | 0.2−) | 2004 01 22 | 704 | 0.8+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.8− |
| 1998 09 18 | 704 | 0.5+ | 1.1− | 2004 01 30 | 704 | 0.8+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.5− |
| 1998 09 18 | 704 | 0.0 | 0.8− | 2004 01 30 | 704 | (2.2+ | 0.4+) | 2006 10 19 | 703 | 0.4− | 0.6− |
| 1998 09 18 | 704 | 0.1− | 0.7+ | 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.7− | 1.0− |
| 1998 09 18 | 704 | 0.2+ | 0.2− | 2004 01 30 | 704 | 1.2+ | 0.3− | 2006 10 20 | 704 | 0.6+ | 0.3− |
| 1998 09 25 | 699 | 0.6+ | 1.0+ | 2004 01 31 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 704 | 0.4− | 0.3+ |
| 1998 09 25 | 699 | 0.6+ | 0.6+ | 2004 01 31 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 704 | 0.3− | 0.2− |
| 1998 09 25 | 699 | 0.1− | 0.1+ | 2004 01 31 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 704 | 0.5− | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2004 02 11 | 691 | 0.7+ | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2002 09 06 | 704 | 0.5+ | 0.7+ | 2004 02 11 | 699 | (1.3− | 1.6−) | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.6+ | 0.9+ | 2004 02 11 | 699 | 0.2+ | 1.0+ | 2006 10 22 | 644 | 0.5+ | 0.5+ |
| 2002 09 06 | 704 | 0.5− | 0.6+ | 2004 02 11 | 691 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2002 09 06 | 704 | 1.3+ | 0.7+ | 2004 02 11 | 699 | 0.8− | 0.5+ | 2006 10 27 | 703 | 0.6+ | 0.4− |
| 2002 09 14 | 608 | 0.4− | 0.6− | 2004 02 11 | 691 | 0.5+ | 0.3− | 2006 10 27 | 703 | 0.0 | 0.5+ |
| 2002 09 14 | 608 | 0.3− | 0.3− | 2004 02 11 | 699 | 0.4− | 1.3− | 2006 10 27 | 703 | 0.7− | 0.7− |
| 2002 09 14 | 608 | 0.5− | 0.3− | 2004 02 12 | 291 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2002 09 17 | 608 | 0.3− | 0.2+ | 2004 02 12 | 291 | 0.3− | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.1− |
| 2002 09 17 | 608 | 0.4− | 0.1− | 2004 02 12 | 291 | 0.3− | 0.1+ | 2006 11 02 | G96 | 0.4+ | 0.2− |
| 2002 09 17 | 608 | 0.5− | 0.0 | 2004 02 13 | 291 | 0.3− | 0.1− | 2006 11 02 | 703 | 0.2+ | 0.2+ |
| 2002 09 21 | 644 | 0.2− | 0.7+ | 2004 02 13 | 291 | 0.2− | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.2− |
| 2002 09 21 | 644 | 0.3− | 0.7+ | 2004 02 13 | 291 | 0.4− | 0.0 | 2006 11 02 | 703 | 0.8− | 0.3− |
| 2002 09 21 | 644 | 0.1− | 0.5+ | 2004 02 13 | 291 | 0.3− | 0.1− | 2006 11 02 | 703 | 0.9− | 0.1+ |
| 2002 09 21 | 644 | 0.0 | 0.7+ | 2004 02 13 | 291 | 0.5− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 09 21 | 644 | 0.2− | 0.8+ | 2004 02 13 | 291 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 09 21 | 644 | 0.1− | 0.8+ | 2004 02 13 | 291 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.3− |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2004 02 13 | 291 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.6+ | 0.8+ | 2004 02 14 | 291 | 0.2+ | 0.2− | 2006 11 15 | 703 | 0.5+ | 0.5− |
| 2002 10 04 | 704 | 0.9− | 1.3+ | 2004 02 14 | 291 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 1.0− |
| 2002 10 04 | 704 | 0.2+ | 1.0+ | 2004 02 14 | 291 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.2+ | 1.5− |
| 2002 10 04 | 704 | 0.7+ | 1.1+ | 2004 02 23 | 704 | 0.8− | 0.7+ | 2006 11 15 | 704 | 0.1+ | 1.2− |
| 2002 10 09 | 704 | 1.3− | 1.4+ | 2004 02 23 | 704 | 0.5− | 1.3+ | 2006 11 15 | 704 | (1.8+ | 1.4−) |
| 2002 10 09 | 704 | 0.8− | 0.9+ | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 704 | 0.7+ | 1.5− |
| 2002 10 09 | 704 | (1.9− | 0.8+) | 2004 02 23 | 704 | 0.1− | 0.9+ | 2006 11 15 | 704 | 1.0+ | 0.3+ |
| 2002 10 09 | 704 | 0.6− | 1.3+ | 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 703 | 1.0− | 1.0− |
| 2002 10 09 | 704 | 0.1+ | 1.3+ | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 703 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.1+ | 0.4− | 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 11 21 | 703 | 0.6− | 0.2− |
| 2002 10 12 | 704 | 0.4− | 0.3− | 2005 05 30 | E12 | 0.7− | 0.5− | 2006 11 21 | 703 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 0.5− | 0.6− | 2005 05 30 | E12 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 1.8+ | 1.4+ |
| 2002 10 12 | 704 | 0.3− | 0.6− | 2005 05 30 | E12 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.3− | 1.6+ |
| 2002 10 12 | 704 | 0.2− | 0.7− | 2005 05 30 | E12 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 1.1− | 0.9+ |
| 2002 10 30 | 608 | 0.1+ | 1.0− | 2005 06 26 | 644 | 0.5+ | 0.6+ | 2006 11 28 | 704 | 0.7− | 1.0+ |
| 2002 10 30 | 608 | 0.0 | 0.6− | 2005 06 26 | 644 | 0.2+ | 0.7+ | | | | |
| 2002 10 30 | 608 | 0.1− | 0.8− | 2005 06 26 | 644 | 0.0 | 0.5+ | | | | |

**(136970)∗ 1998 RS$_{44}$ = 2003 AY$_{86}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 42898)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.62449 | | (2000.0) | | +0.70193029 | −0.70876541 |
| $n$ | 0.28022969 | $\omega$ | 259.39185 | | +0.69248339 | +0.65602240 |
| $a$ | 2.3127389 | $\Omega$ | 145.67691 | | +0.16661521 | +0.25939585 |
| $e$ | 0.1556143 | $i$ | 7.16454 | | | |
| $P$ | 3.52 | $H$ | 16.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 13 | 699 | 0.3− | 0.4− | 2003 01 01 | 704 | 0.2+ | 0.2− | 2005 09 01 | 608 | 0.3− | 0.5− |
| 1998 09 13 | 699 | 0.5+ | 0.6+ | 2003 01 07 | 704 | 0.0 | 0.0 | 2005 09 07 | A50 | 0.0 | 0.0 |
| 1998 09 13 | 699 | 0.2+ | 0.2− | 2003 01 07 | 704 | 0.7+ | 0.0 | 2005 09 07 | A50 | 0.0 | 0.1+ |
| 1998 09 14 | 704 | 0.8− | 0.6− | 2003 01 07 | 704 | 0.8− | 1.4+ | 2005 09 14 | 691 | 0.1+ | 0.0 |
| 1998 09 14 | 704 | 1.0− | 0.2+ | 2003 01 07 | 704 | 1.1+ | 0.4+ | 2005 09 14 | 691 | 0.1+ | 0.2− |
| 1998 09 14 | 704 | 1.0− | 0.3− | 2003 01 27 | 704 | 0.6− | 0.4+ | 2005 09 14 | 691 | 0.1+ | 0.0 |
| 1998 09 14 | 704 | 1.1− | 0.2+ | 2003 01 27 | 704 | 1.0− | 1.2+ | 2005 09 22 | 644 | 0.0 | 0.2− |
| 1998 09 18 | 704 | 0.9− | 0.1+ | 2003 01 27 | 704 | (1.7− | 1.0+) | 2005 09 22 | 644 | 0.1+ | 0.2− |
| 1998 09 18 | 704 | 1.0+ | 0.8− | 2003 01 27 | 704 | 0.8− | 0.2+ | 2005 09 22 | 644 | 0.1+ | 0.1− |
| 1998 09 18 | 704 | 0.0 | 1.2− | 2004 04 23 | 704 | 1.1+ | 1.1+ | 2005 09 24 | 644 | 0.1− | 0.3− |
| 1998 09 18 | 704 | 0.6+ | 1.8+ | 2004 04 23 | 704 | 0.1− | 0.5+ | 2005 09 24 | 644 | 0.0 | 0.1− |
| 1998 09 24 | 699 | 0.4+ | 0.0 | 2004 04 23 | 704 | (0.6+ | 2.1+) | 2005 09 24 | 644 | 0.1+ | 0.1− |
| 1998 09 24 | 699 | 0.7+ | 1.1+ | 2004 04 23 | 704 | (1.9+ | 1.7+) | 2005 09 27 | 704 | 0.8+ | 0.3+ |
| 1998 09 24 | 699 | 0.6+ | 1.3+ | 2004 04 23 | 704 | 0.0 | 0.9+ | 2005 09 27 | 704 | 0.3+ | 0.5+ |
| 1998 09 26 | 704 | 0.0 | 0.9− | 2005 07 30 | 644 | 0.1+ | 0.1+ | 2005 09 27 | 704 | 0.8+ | 0.4− |
| 1998 09 26 | 704 | 1.4− | 1.3+ | 2005 07 30 | 644 | 0.1+ | 0.2+ | 2005 09 27 | 704 | 0.0 | 0.1+ |
| 1998 09 26 | 704 | (2.7− | 0.4−) | 2005 07 30 | 644 | 0.1+ | 0.0 | 2005 09 27 | 704 | 0.3+ | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.6− | 1.6+ | 2005 08 02 | 704 | 0.2+ | 0.4+ | 2005 10 03 | 703 | 0.7+ | 0.4− |
| 1998 09 27 | 704 | 0.2− | 0.7− | 2005 08 02 | 704 | 0.5+ | 0.2+ | 2005 10 03 | 703 | 0.3− | 0.6− |
| 1998 09 27 | 704 | 1.4+ | 0.4+ | 2005 08 02 | 704 | 0.9+ | 0.2− | 2005 10 03 | 703 | 0.7− | 0.2− |
| 1998 09 27 | 704 | 0.1+ | 0.5− | 2005 08 26 | 699 | 0.6− | 0.2− | 2005 10 03 | 703 | 0.4+ | 0.8− |
| 1998 09 27 | 704 | 0.8+ | 0.2+ | 2005 08 26 | 699 | 0.1− | 0.4+ | 2005 10 10 | 703 | 0.3+ | 1.1− |
| 1998 09 27 | 699 | 0.8+ | 1.1+ | 2005 08 26 | 699 | 1.3− | 0.6+ | 2005 10 10 | 703 | 0.8− | 0.9− |
| 1998 09 27 | 704 | 0.1− | 1.1− | 2005 08 26 | 699 | 1.1− | 0.7+ | 2005 10 10 | 703 | 1.0− | 0.4− |
| 1998 09 27 | 699 | 0.2− | 0.5+ | 2005 08 28 | 699 | 1.0− | 0.6+ | 2005 10 10 | 703 | 0.0 | 0.9− |
| 1998 09 27 | 699 | 0.9− | 0.1− | 2005 08 28 | 699 | (1.6− | 0.4+) | 2005 11 30 | 704 | 0.3+ | 0.4+ |
| 2000 03 11 | 699 | 0.1− | 0.8+ | 2005 08 28 | 699 | 0.3+ | 0.2− | 2005 11 30 | 704 | 0.3+ | 1.3+ |
| 2000 03 11 | 699 | 0.7+ | 0.4− | 2005 08 28 | 699 | 0.6− | 0.1− | 2005 11 30 | 704 | 0.1− | 0.0 |
| 2000 03 11 | 699 | 0.3+ | 0.5+ | 2005 08 29 | 704 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 1.0+ |
| 2000 03 11 | 699 | 0.1− | 0.9+ | 2005 08 29 | 704 | 0.2+ | 0.9+ | 2006 10 27 | G96 | 0.8− | 0.0 |
| 2002 11 11 | 704 | 0.1− | 0.2+ | 2005 08 29 | 704 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2002 11 11 | 704 | 0.6− | 1.2− | 2005 08 29 | 704 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2002 11 11 | 704 | 0.2+ | 0.2− | 2005 08 29 | 704 | 0.1− | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2002 11 11 | 704 | (0.1+ | 1.9−) | 2005 08 30 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2003 01 01 | 704 | 0.6+ | 0.9+ | 2005 08 30 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 01 01 | 704 | 0.3+ | 0.3− | 2005 08 30 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.5− | 0.3− |
| 2003 01 01 | 704 | 0.0 | 0.2+ | 2005 09 01 | 608 | 0.0 | 0.1+ | | | | |
| 2003 01 01 | 704 | 0.6+ | 0.1− | 2005 09 01 | 608 | 0.1− | 0.4− | | | | |

**(136971)∗ 1998 RA$_{48}$ = 2000 CM$_{131}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 1967)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.85855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25895018 | $\omega$ | 53.86434 | | +0.98625724 | −0.15668850 | |
| $a$ | 2.4377654 | $\Omega$ | 315.08380 | | +0.11741915 | +0.88785255 | |
| $e$ | 0.1161089 | $i$ | 4.25573 | | +0.11622997 | +0.43262750 | |
| $P$ | 3.81 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.5+ | 1.5− | 2000 03 03 | 704 | 1.3+ | 0.6− | 2004 03 18 | 704 | 1.0+ | 0.4+ |
| 1998 09 14 | 704 | (0.8+ | 2.2−) | 2000 03 03 | 704 | 0.3+ | 0.9+ | 2004 03 18 | 704 | 1.4+ | 0.5− |
| 1998 09 14 | 704 | 0.9− | 0.1− | 2000 03 03 | 704 | 0.6− | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.9− |
| 1998 09 14 | 704 | 1.1− | 0.5+ | 2002 10 04 | 704 | 0.2− | 0.6− | 2006 10 27 | 703 | (0.4− | 1.7−) |
| 1998 09 16 | 699 | 0.6+ | 0.7− | 2002 10 04 | 704 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 1.0+ |
| 1998 09 16 | 699 | 0.1− | 0.8− | 2002 10 04 | 704 | 0.1+ | 1.4+ | 2006 11 16 | 704 | 0.6+ | 0.3+ |
| 1998 09 16 | 699 | 0.6+ | 0.5− | 2002 11 01 | 644 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.4+ | 0.1− |
| 1998 09 18 | 704 | 1.0− | 0.2− | 2002 11 01 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.7+ |
| 1998 09 18 | 704 | 1.2+ | 0.6− | 2002 11 01 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 1.4− |
| 1998 09 18 | 704 | 0.1− | 0.6− | 2002 11 05 | 699 | 0.6− | 0.4+ | 2006 11 17 | 691 | 0.2− | 0.3− |
| 1998 09 18 | 704 | 1.4+ | 0.8− | 2002 11 05 | 699 | (1.6− | 0.1+) | 2006 11 17 | 691 | 0.1− | 0.2− |
| 1998 09 18 | 704 | 0.8− | 0.8− | 2002 11 05 | 699 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 1998 09 26 | 704 | 1.3+ | 1.3+ | 2002 11 05 | 699 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 1998 09 26 | 704 | 0.6+ | 0.5+ | 2002 11 05 | 704 | 0.2− | 1.1+ | 2006 11 19 | 704 | 1.1+ | 0.1− |
| 1998 09 26 | 704 | 1.4− | 0.8+ | 2002 11 05 | 704 | 0.6− | 1.1+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 1998 09 26 | 704 | 0.8+ | 0.5+ | 2002 11 05 | 704 | (0.2− | 1.7+) | 2006 11 19 | 704 | 1.0− | 0.0 |
| 1998 09 26 | 704 | 0.2− | 0.2+ | 2002 11 05 | 704 | 0.4− | 1.0+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 1998 09 27 | 699 | 0.3+ | 0.6+ | 2002 11 05 | 704 | 0.2− | 1.4+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 1998 09 27 | 699 | 0.5+ | 0.7+ | 2002 11 12 | 704 | 0.0 | 0.7− | 2006 11 21 | 691 | 0.3− | 0.1− |
| 1998 09 27 | 704 | 0.5− | 1.0+ | 2002 11 12 | 704 | (1.9+ | 0.5−) | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 1998 09 27 | 699 | 0.1− | 0.3+ | 2002 11 12 | 704 | 0.6− | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.8+ |
| 1998 09 27 | 704 | (2.3− | 0.9−) | 2002 11 12 | 704 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.3+ | 1.3+ |
| 1998 09 27 | 704 | 0.3+ | 0.9− | 2002 11 12 | 704 | 0.5+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 1998 09 27 | 704 | 0.3+ | 1.6− | 2002 11 13 | 644 | 0.7− | 0.3+ | 2006 11 22 | 704 | 0.5+ | 1.3+ |
| 2000 02 03 | 691 | 0.2+ | 0.1− | 2002 11 13 | 644 | 0.5− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.2+ |
| 2000 02 03 | 691 | 0.2+ | 0.2− | 2002 11 13 | 644 | 0.4− | 0.1− | 2006 11 25 | 691 | 0.1− | 0.3− |
| 2000 02 03 | 691 | 0.0 | 0.0 | 2002 11 14 | 704 | 0.6+ | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.3− |
| 2000 02 04 | 691 | 0.4− | 0.3− | 2002 11 14 | 704 | 0.5+ | 0.8+ | 2006 11 27 | 704 | 0.0 | 0.0 |
| 2000 02 04 | 691 | 0.6− | 0.0 | 2002 11 14 | 704 | 0.2− | 0.2+ | 2006 11 27 | 704 | 0.2+ | 0.1− |
| 2000 02 04 | 691 | 0.4− | 0.3− | 2004 02 17 | 291 | 0.2+ | 0.5+ | 2006 11 27 | 704 | 1.2+ | 0.2− |
| 2000 02 11 | 691 | 0.2+ | 0.1− | 2004 02 17 | 291 | 0.1+ | 0.6+ | 2006 11 27 | 704 | 0.1− | 0.7− |
| 2000 02 11 | 691 | 0.0 | 0.2− | 2004 02 17 | 291 | 0.3− | 0.2+ | | | | |
| 2000 02 11 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | (2.4+ | 0.4+) | | | | |

**(136972)∗ 1998 RA$_{49}$ = 1994 SQ$_{9}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 1967)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.29756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24324978 | $\omega$ | 157.54135 | | +0.93582706 | +0.35244285 | |
| $a$ | 2.5415642 | $\Omega$ | 181.83228 | | −0.33747683 | +0.89319793 | |
| $e$ | 0.2590042 | $i$ | 6.15492 | | −0.10167156 | +0.27925167 | |
| $P$ | 4.05 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 19 | 691 | 0.0 | 0.3+ | 2002 08 28 | 644 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.4+ |
| 1990 10 19 | 691 | 0.1− | 0.3+ | 2002 08 28 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.5− |
| 1990 10 19 | 691 | 0.1+ | 1.2+ | 2002 08 28 | 644 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.0 | 0.1+ |
| 1994 09 28 | 691 | 0.2− | 0.0 | 2002 08 28 | 644 | 0.3+ | 0.6+ | 2006 08 30 | 704 | 0.1− | 0.4+ |
| 1994 09 28 | 691 | 0.2− | 0.1− | 2002 08 28 | 644 | 0.5+ | 0.9+ | 2006 08 30 | 704 | 0.2− | 0.3− |
| 1994 09 28 | 691 | 0.4− | 0.0 | 2002 09 05 | 699 | 1.4− | 0.8+ | 2006 08 30 | 704 | 0.7+ | 0.2− |
| 1994 10 06 | 691 | 0.6+ | 0.1+ | 2002 09 05 | 699 | 0.5− | 0.2+ | 2006 09 12 | 699 | 0.3+ | 0.3− |
| 1994 10 06 | 691 | 0.3+ | 0.4− | 2002 09 05 | 699 | 0.4− | 0.4+ | 2006 09 12 | 699 | 0.1− | 0.4+ |
| 1994 10 06 | 691 | 0.7+ | 0.2− | 2002 09 05 | 699 | (1.7− | 0.2+) | 2006 09 12 | 699 | 0.3+ | 0.0 |
| 1998 09 14 | 704 | 0.0 | 1.3− | 2002 09 06 | 704 | 0.1− | 0.2+ | 2006 09 12 | 699 | 0.6+ | 0.1+ |
| 1998 09 14 | 704 | 0.9+ | 1.4− | 2002 09 06 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.7+ |
| 1998 09 14 | 704 | 0.2+ | 0.5+ | 2002 09 06 | 704 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.0 |
| 1998 09 14 | 704 | 0.6− | 0.2− | 2002 09 06 | 704 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.7+ |
| 1998 09 15 | 691 | 0.3− | 0.4− | 2002 09 06 | 704 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.1+ | 0.1+ |
| 1998 09 15 | 691 | 0.4− | 0.5− | 2002 09 17 | 608 | 0.7− | 0.2− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 1998 09 15 | 691 | 0.3− | 0.4− | 2002 09 17 | 608 | 0.8− | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 1998 09 16 | 699 | 0.4+ | 1.0+ | 2002 09 17 | 608 | 0.8− | 0.4− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 1998 09 16 | 699 | 0.4− | 0.1− | 2002 10 01 | 608 | 0.6− | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.6− |
| 1998 09 16 | 699 | 0.5− | 0.3+ | 2002 10 01 | 608 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.4− | 0.3− |
| 1998 09 18 | 704 | 0.6− | 0.6− | 2002 10 01 | 608 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.1− |
| 1998 09 18 | 704 | 1.2− | 0.2− | 2002 10 03 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 704 | 0.4− | 0.4+ |
| 1998 09 18 | 704 | 2.0− | 0.9− | 2002 10 03 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 699 | 0.6+ | 0.1+ |
| 1998 09 18 | 704 | 0.8− | 1.2− | 2002 10 03 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 704 | 0.7+ | 0.3− |
| 1998 09 18 | 704 | 1.2− | 1.2+ | 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.1− |
| 1998 09 19 | 645 | 0.2+ | 0.0 | 2002 10 03 | 704 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.2+ | 0.2− |
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 0.4− | 0.5+ |
| 1998 09 25 | 645 | 0.2+ | 0.1− | 2002 10 11 | 704 | 0.1+ | 0.3− | 2006 09 24 | 699 | 0.3+ | 0.0 |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 09 24 | 699 | 0.7+ | 0.1− |
| 1998 09 28 | 691 | 0.5− | 0.2+ | 2002 10 11 | 704 | 0.4+ | 0.1− | 2006 09 24 | 699 | 0.3+ | 0.7+ |
| 1998 09 28 | 691 | 0.5− | 0.4+ | 2005 05 12 | G96 | 1.1− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.1− |
| 1998 09 28 | 691 | 0.4− | 0.3+ | 2005 05 12 | G96 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.2− |
| 1998 10 12 | 910 | 0.4+ | 0.5+ | 2005 05 12 | G96 | 0.8− | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 1998 10 12 | 910 | 0.1− | 0.3+ | 2005 05 12 | G96 | 0.6+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 1998 10 12 | 910 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2001 04 15 | 691 | 0.3+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 04 15 | 691 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 04 15 | 691 | 0.2− | 0.0 | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 10 19 | G96 | 1.1+ | 0.4+ |
| 2002 08 12 | 704 | 0.3− | 0.0 | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2002 08 12 | 704 | 0.5− | 0.5− | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 08 12 | 704 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.3+ | 0.9+ | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2002 08 12 | 704 | 0.5+ | 0.6− | 2006 08 28 | 699 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2002 08 12 | 699 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2002 08 12 | 699 | 1.1− | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 1.1− |
| 2002 08 12 | 699 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.6− | 0.1+ |
| 2002 08 12 | 699 | 0.7− | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2002 08 12 | 608 | 1.2+ | 0.5+ | 2006 08 30 | 704 | (2.2+ | 0.2+) | 2006 11 16 | G96 | 0.3− | 0.3+ |
| 2002 08 12 | 608 | (1.2+ | 1.7+) | 2006 08 30 | 704 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 08 12 | 608 | 1.0+ | 0.9+ | 2006 08 30 | 704 | 0.3+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.5+ | | | | |

**(136973)*** **1998 RM$_{50}$ = 2002 RL$_{101}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34725)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.70755 | | (2000.0) | | | |
| $n$ | 0.25766626 | $\omega$ | 338.73712 | | +0.97348841 | +0.22859674 |
| $a$ | 2.4458567 | $\Omega$ | 8.06091 | | −0.20078281 | +0.87073356 |
| $e$ | 0.2015027 | $i$ | 3.26683 | | −0.10957456 | +0.43539247 |
| $P$ | 3.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.1− | 0.3+ | 2002 10 04 | 704 | 0.5− | 0.2+ | 2004 03 18 | 691 | 0.5+ | 0.4− |
| 1993 04 17 | 691 | 0.4− | 1.0− | 2002 10 04 | 704 | (0.2+ | 1.5−) | 2004 03 18 | 691 | 0.2+ | 0.1− |
| 1993 04 17 | 691 | 0.5− | 0.2− | 2002 10 04 | 704 | 0.5+ | 0.4− | 2005 06 26 | 644 | 0.6+ | 0.8+ |
| 1998 09 14 | 704 | 1.2+ | 1.3− | 2002 10 04 | 704 | 0.5− | 0.3− | 2005 06 26 | 644 | 0.1+ | 0.3+ |
| 1998 09 14 | 704 | 0.5+ | 0.5− | 2002 10 04 | 704 | 0.6+ | 0.7− | 2005 06 26 | 644 | 0.7+ | 0.4+ |
| 1998 09 14 | 704 | 0.3− | 0.1− | 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.3− |
| 1998 09 14 | 704 | 0.9+ | 0.4− | 2002 10 07 | 704 | 0.8+ | 0.9+ | 2006 10 04 | G96 | 0.5− | 0.3− |
| 1998 09 14 | 704 | 0.1− | 0.2+ | 2002 10 07 | 704 | 1.0+ | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.4− |
| 1998 09 17 | 699 | 0.1+ | 0.0 | 2002 10 07 | 704 | 0.9+ | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 1998 09 17 | 699 | 0.2+ | 0.2+ | 2002 10 08 | 699 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.8− |
| 1998 09 17 | 699 | 1.1− | 0.4− | 2002 10 08 | 699 | 0.9− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.5− |
| 1998 09 18 | 704 | 0.6+ | 0.5− | 2002 10 08 | 699 | 0.5+ | 0.8+ | 2006 10 27 | 703 | 0.2− | 0.2− |
| 1998 09 18 | 704 | 1.0− | 1.9− | 2002 10 08 | 699 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.1− | 1.2− |
| 1998 09 18 | 704 | 0.1− | 0.5− | 2002 10 09 | 704 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 1998 09 18 | 704 | 0.1− | 1.8− | 2002 10 09 | 704 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 1998 09 18 | 704 | 0.1− | 0.3− | 2002 10 09 | 704 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.2− |
| 1998 09 26 | 704 | 0.4− | 0.7+ | 2002 10 09 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 1998 09 26 | 704 | 0.8− | 1.2− | 2002 10 09 | 704 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.3− |
| 1998 09 26 | 704 | 1.3− | 0.4+ | 2002 10 11 | 704 | 0.5− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 1998 09 26 | 704 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.6− | 0.2+ |
| 1998 09 26 | 704 | 0.1+ | 1.3+ | 2002 10 11 | 704 | 1.1+ | 0.8+ | 2006 11 15 | 704 | (0.0 | 1.7+) |
| 1998 09 26 | 691 | 0.5− | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.7+ | 2006 11 15 | 704 | 0.4− | 1.3+ |
| 1998 09 26 | 691 | 0.6− | 0.3− | 2002 10 11 | 704 | 0.7+ | 0.7+ | 2006 11 15 | 704 | (0.7− | 1.7+) |
| 1998 09 26 | 691 | 0.6− | 0.3− | 2002 10 13 | 291 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.2− |
| 1998 09 27 | 704 | 0.2− | 0.8− | 2002 10 13 | 291 | 0.2− | 0.1− | 2006 11 16 | 704 | (1.6− | 1.4−) |
| 1998 09 27 | 704 | 0.2+ | 0.7+ | 2002 10 13 | 291 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.0 |
| 1998 09 27 | 704 | 0.6+ | 0.4− | 2002 10 16 | 644 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.5− | 1.1+ |
| 1998 09 27 | 704 | 0.9+ | 0.5− | 2002 10 16 | 644 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 1.2− | 1.1+ |
| 1998 09 27 | 704 | 0.5− | 0.4+ | 2002 10 16 | 644 | 0.4+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.2− |
| 1998 09 30 | 691 | 0.0 | 0.0 | 2002 10 31 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 1998 09 30 | 691 | 0.2+ | 0.3+ | 2002 10 31 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 1998 09 30 | 691 | 0.1+ | 0.1+ | 2002 10 31 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 1998 10 12 | 910 | 0.6+ | 0.1+ | 2002 11 06 | 333 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.5− | 0.1− |
| 1998 10 12 | 910 | 0.6+ | 0.7+ | 2002 11 06 | 333 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.4− |
| 1998 10 12 | 910 | 0.5+ | 0.6+ | 2002 11 06 | 333 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.7− | 0.7− |
| 1998 10 14 | 910 | 0.9+ | 0.2+ | 2002 11 06 | 333 | 0.6− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.5− |
| 1998 10 14 | 910 | 0.7+ | 0.2+ | 2002 11 08 | 704 | 1.0+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.6− |
| 1998 10 14 | 910 | 0.7+ | 0.2+ | 2002 11 08 | 704 | 1.1+ | 0.8+ | 2006 11 21 | G96 | 0.4− | 0.6− |
| 2001 05 22 | 807 | 0.8+ | 0.4+ | 2002 11 08 | 704 | 1.2+ | 0.8+ | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2001 05 23 | 807 | 0.6+ | 0.3+ | 2002 11 08 | 704 | (1.6+ | 1.4+) | 2006 11 22 | 691 | 0.1− | 0.4− |
| 2002 09 05 | 704 | 0.7− | 0.5+ | 2002 11 08 | 704 | 0.8+ | 1.0+ | 2006 11 22 | 691 | 0.1+ | 0.4− |
| 2002 09 05 | 704 | 0.8− | 0.6+ | 2002 11 12 | 644 | 0.4+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.3− |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2002 11 12 | 704 | 0.9+ | 1.3+ | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.6− | 0.6+ | 2002 11 12 | 644 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2002 09 07 | 704 | 0.0 | 0.9+ | 2002 11 12 | 704 | 0.0 | 0.6+ | 2006 11 22 | 704 | 0.4− | 0.2+ |
| 2002 09 07 | 704 | 0.8− | 0.5+ | 2002 11 12 | 704 | 0.1− | 1.0+ | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2002 09 07 | 704 | 0.0 | 1.0+ | 2002 11 12 | 644 | 0.3+ | 0.0 | 2006 11 27 | 704 | 0.4− | 0.1+ |
| 2002 09 07 | 704 | 0.2− | 0.4+ | 2002 11 12 | 704 | 0.5+ | 0.9+ | 2006 11 27 | 704 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.2− | 0.5+ | 2002 11 12 | 704 | 0.4+ | 0.0 | 2006 11 27 | 704 | 0.4+ | 0.2+ |
| 2002 10 02 | 704 | (1.2− | 2.5−) | 2004 02 22 | 691 | 0.1+ | 0.8+ | 2006 11 27 | 704 | 0.1− | 0.3+ |
| 2002 10 02 | 704 | (2.4− | 0.2+) | 2004 02 22 | 691 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | 0.5− | 1.3− | 2004 02 22 | 691 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.4− | 1.1+ |
| 2002 10 02 | 704 | (2.4− | 0.8−) | 2004 03 18 | 691 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 1.3− | 0.0 |

**(136974)*** **1998 RO$_{50}$ = 2002 YN$_{16}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 39945)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.33482 | | (2000.0) | | | |
| $n$ | 0.26870510 | $\omega$ | 1.10039 | | +0.89341383 | −0.44908237 |
| $a$ | 2.3784030 | $\Omega$ | 25.59458 | | +0.41195763 | +0.80861926 |
| $e$ | 0.1951694 | $i$ | 1.55120 | | +0.17917211 | +0.38007884 |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 691 | 0.4− | 0.2+ | 1998 09 27 | 704 | 0.8− | 0.9+ | 2002 12 31 | 704 | 0.2+ | 0.9+ |
| 1993 04 18 | 691 | 0.3+ | 0.8− | 1998 09 27 | 704 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.1− | 1.2+ |
| 1993 04 18 | 691 | 0.4− | 0.5− | 2000 03 03 | 704 | 0.3+ | 0.4+ | 2002 12 31 | 704 | 0.2+ | 1.0+ |
| 1995 12 22 | 691 | 0.3− | 0.5− | 2000 03 03 | 704 | 1.4+ | 1.0+ | 2002 12 31 | 704 | 0.2− | 0.7− |
| 1995 12 22 | 691 | 0.5− | 0.2− | 2000 03 03 | 704 | 0.0 | 1.1+ | 2003 01 04 | 704 | 0.4+ | 0.4+ |
| 1995 12 22 | 691 | 0.5− | 1.2− | 2000 03 03 | 704 | 0.2− | 0.6+ | 2003 01 04 | 704 | 0.4+ | 0.2+ |
| 1995 12 27 | 691 | 0.1− | 0.5− | 2000 03 03 | 704 | 0.2− | 1.9+ | 2003 01 04 | 704 | 0.6+ | 1.1+ |
| 1995 12 27 | 691 | 0.2+ | 0.3− | 2002 11 14 | 704 | 0.4+ | 0.2+ | 2003 01 04 | 704 | 0.2+ | 0.8+ |
| 1995 12 27 | 691 | 0.0 | 0.7− | 2002 11 14 | 291 | 0.4− | 0.2+ | 2003 01 04 | 704 | 0.3+ | 0.9+ |
| 1998 09 14 | 704 | 1.6+ | 1.4− | 2002 11 14 | 704 | 0.4+ | 0.8+ | 2003 01 31 | 704 | 0.5+ | 0.7− |
| 1998 09 14 | 704 | 1.1+ | 0.8− | 2002 11 14 | 291 | 0.0 | 0.2+ | 2003 01 31 | 704 | 0.3− | 0.9+ |
| 1998 09 14 | 704 | 1.0+ | 0.4+ | 2002 11 14 | 704 | 0.3− | 0.3− | 2003 01 31 | 704 | 0.4− | 0.5+ |
| 1998 09 14 | 704 | 0.5+ | 0.9− | 2002 11 14 | 704 | 0.1+ | 0.2− | 2004 04 20 | 691 | 0.5+ | 0.4+ |
| 1998 09 14 | 704 | 0.3+ | 0.3− | 2002 11 14 | 291 | 0.2− | 0.1+ | 2004 04 20 | 691 | 0.3+ | 0.1+ |
| 1998 09 17 | 699 | 0.2+ | 0.2+ | 2002 11 14 | 704 | 0.8+ | 0.4+ | 2004 04 20 | 691 | 0.3+ | 0.4+ |
| 1998 09 17 | 699 | 0.3+ | 0.8+ | 2002 12 05 | 704 | 0.5− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 1998 09 17 | 699 | 0.7+ | 1.6+ | 2002 12 05 | 704 | 0.5− | 0.4+ | 2006 10 04 | G96 | 0.6− | 0.1− |
| 1998 09 18 | 704 | 0.8− | 0.1− | 2002 12 05 | 704 | 0.7− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.3− |
| 1998 09 18 | 704 | 0.4+ | 1.1− | 2002 12 05 | 704 | 0.5− | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.4− |
| 1998 09 18 | 704 | 0.2+ | 1.9− | 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.6− | 0.2− |
| 1998 09 18 | 704 | 0.1− | 0.1− | 2002 12 10 | 704 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.8− | 0.2− |
| 1998 09 18 | 704 | 0.2+ | 0.3+ | 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.6− | 0.3− |
| 1998 09 26 | 704 | 1.0− | 0.3− | 2002 12 10 | 644 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.8− | 0.5− |
| 1998 09 26 | 704 | (2.0− | 0.4+) | 2002 12 10 | 704 | 0.6+ | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 1998 09 26 | 704 | 1.6− | 0.6− | 2002 12 10 | 704 | 0.5+ | 0.2− | 2006 11 22 | G96 | 0.8− | 0.4− |
| 1998 09 26 | 704 | 0.6− | 0.0 | 2002 12 10 | 704 | 0.5+ | 0.2+ | 2006 11 22 | G96 | 0.7− | 0.5− |
| 1998 09 26 | 704 | 0.6− | 0.9− | 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.1− |
| 1998 09 27 | 704 | (1.3− | 2.3+) | 2002 12 10 | 644 | 0.2− | 0.1+ | | | | |
| 1998 09 27 | 704 | (1.2− | 2.3+) | 2002 12 31 | 704 | 1.2+ | 0.8+ | | | | |

**(136975)*** **1998 RS$_{51}$ = 2002 TA$_{31}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37094)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 49.75937 | | (2000.0) | | | |
| $n$ | 0.25929744 | $\omega$ | 306.64647 | | +0.92077086 | +0.38709586 |
| $a$ | 2.4355884 | $\Omega$ | 30.66478 | | −0.32078724 | +0.82185159 |
| $e$ | 0.1642040 | $i$ | 5.44000 | | −0.22198326 | +0.41799134 |
| $P$ | 3.80 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 691 | 0.2+ | 1.0− | 2002 10 11 | 704 | 0.0 | 0.8− | 2006 09 27 | G96 | 0.1− | 0.4− |
| 1993 03 20 | 691 | 0.9− | 0.0 | 2002 10 11 | 704 | 0.5− | 0.4− | 2006 09 27 | G96 | 0.0 | 0.1− |
| 1993 03 20 | 691 | 0.1+ | 0.4− | 2002 10 11 | 704 | 0.7+ | 0.6− | 2006 09 27 | G96 | 0.0 | 0.5− |
| 1998 09 14 | 704 | (1.8− | 2.5−) | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.6− |
| 1998 09 14 | 704 | 0.4− | 1.1+ | 2002 10 11 | 704 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.6− |
| 1998 09 14 | 704 | 1.0− | 0.2+ | 2002 10 11 | 704 | 0.4− | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.6− |
| 1998 09 18 | 704 | (2.3− | 0.7−) | 2002 10 11 | 704 | 0.2+ | 1.0+ | 2006 10 20 | G96 | 0.3− | 0.8+ |
| 1998 09 18 | 704 | (0.0 | 2.9−) | 2002 10 11 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 1998 09 18 | 704 | (2.4− | 1.8−) | 2002 10 11 | 291 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.3+ |
| 1998 09 27 | 699 | 0.9+ | 0.5− | 2002 10 11 | 291 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 699 | (2.2+ | 1.4+) | 2002 10 11 | 291 | 0.4− | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.0 | |
| 1998 09 27 | 699 | 0.2+ | 0.0 | 2002 10 31 | 699 | 0.5+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.1− | |
| 2002 10 02 | 704 | 0.7− | 0.3+ | 2002 10 31 | 699 | 0.2− | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.0 | |
| 2002 10 02 | 704 | 0.2− | 1.0+ | 2002 10 31 | 699 | 0.3− | 0.9+ | 2006 11 17 | 691 | 0.1− | 0.0 | |
| 2002 10 02 | 704 | 0.8+ | 1.1− | 2002 10 31 | 699 | 0.5− | 0.5− | 2006 11 17 | 691 | 0.4+ | 0.2− | |
| 2002 10 02 | 704 | 0.2− | 0.5− | 2002 11 06 | 704 | 1.1+ | 0.3− | 2006 11 17 | 691 | 0.0 | 0.2+ | |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2002 11 06 | 704 | 0.5− | 0.8+ | 2006 11 19 | 704 | 0.4− | 0.5+ | |
| 2002 10 03 | 704 | 1.0− | 0.3− | 2002 11 06 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | (0.3+ | 1.9+) | |
| 2002 10 03 | 704 | 0.7+ | 0.4+ | 2002 11 06 | 704 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.9+ | |
| 2002 10 03 | 704 | 0.9− | 0.4− | 2002 11 22 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.4+ | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2002 11 22 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.5+ | |
| 2002 10 07 | 704 | 1.0− | 1.4+ | 2002 11 22 | 644 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.1− | |
| 2002 10 07 | 704 | (1.2− | 1.5+) | 2004 02 13 | 691 | 0.2+ | 0.8+ | 2006 11 21 | 691 | 0.1− | 0.1− | |
| 2002 10 07 | 704 | (0.1− | 1.5+) | 2004 02 13 | 691 | 0.1− | 0.7+ | 2006 11 21 | 691 | (0.4+ | 3.6−) | |
| 2002 10 07 | 704 | 0.2+ | 0.9+ | 2004 02 13 | 691 | 0.7+ | 0.6+ | 2006 11 22 | 704 | 0.3+ | 0.2+ | |
| 2002 10 07 | 704 | (0.7+ | 1.6+) | 2004 03 17 | 184 | 0.3+ | 1.2+ | 2006 11 22 | 704 | 0.0 | 0.2+ | |
| 2002 10 10 | 704 | 0.4+ | 1.4+ | 2004 03 17 | 184 | 0.3− | 0.8+ | 2006 11 22 | 704 | 0.3− | 0.1+ | |
| 2002 10 10 | 704 | 0.0 | 0.3+ | 2005 05 19 | 644 | 0.3+ | 0.9+ | 2006 11 25 | 691 | 0.4− | 0.4− | |
| 2002 10 10 | 704 | 1.0+ | 0.6+ | 2005 05 19 | 644 | 0.0 | 0.5+ | 2006 11 25 | 691 | 0.3+ | 0.4− | |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2005 05 19 | 644 | 0.3+ | 0.6+ | 2006 11 25 | 691 | 0.2− | 0.5− | |
| 2002 10 11 | 704 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.1− | 0.4− | | | | | |

## (136976)∗ 1998 $RA_{61}$ = 2003 $RC_{14}$

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 52439)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.94063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19229876 | $\omega$ | 328.02482 | | +0.72193243 | +0.69081417 | |
| $a$ | 2.9727045 | $\Omega$ | 348.02024 | | −0.58751082 | +0.58149951 | |
| $e$ | 0.1218824 | $i$ | 11.07345 | | −0.36557435 | +0.42969071 | |
| $P$ | 5.13 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.1+ | 0.2− | 2003 09 18 | 704 | 0.5− | 1.0+ | 2003 10 24 | 704 | 0.3− | 1.1+ | |
| 1996 03 20 | 691 | 0.2− | 0.1+ | 2003 09 18 | 644 | 0.1− | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.1− | |
| 1996 03 20 | 691 | 0.3− | 0.3+ | 2003 09 18 | 644 | 0.1− | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.1− | |
| 1998 09 14 | 704 | 1.4− | 1.0− | 2003 09 18 | 644 | 0.1+ | 0.5+ | 2003 10 24 | 704 | 0.0 | 0.9+ | |
| 1998 09 14 | 704 | (2.6− | 0.6−) | 2003 09 22 | 699 | 0.3− | 0.8+ | 2003 11 20 | 645 | 0.0 | 0.2− | |
| 1998 09 18 | 704 | 1.2+ | 1.1+ | 2003 09 22 | 699 | 0.0 | 0.5+ | 2003 11 20 | 645 | 0.0 | 0.1− | |
| 1998 09 18 | 704 | 0.3+ | 0.6− | 2003 09 22 | 699 | 0.1− | 0.1+ | 2006 01 23 | 691 | 0.3+ | 0.1+ | |
| 1998 09 18 | 704 | (0.7− | 2.2−) | 2003 09 22 | 699 | 0.3− | 0.4+ | 2006 01 23 | 691 | 0.2+ | 0.0 | |
| 1998 09 18 | 704 | (0.9+ | 3.1−) | 2003 09 23 | 644 | 0.1− | 0.3+ | 2006 01 23 | 691 | 0.4+ | 0.1+ | |
| 1998 09 18 | 704 | 1.7+ | 0.9− | 2003 09 23 | 644 | 0.1− | 0.4+ | 2006 01 26 | 703 | 0.6− | 1.3− | |
| 1998 09 26 | 704 | 1.2+ | 1.1− | 2003 09 23 | 644 | 0.0 | 0.3+ | 2006 01 26 | 703 | 0.5− | 0.6− | |
| 1998 09 26 | 704 | 0.7+ | 0.4+ | 2003 09 28 | 645 | 0.1− | 0.0 | 2006 01 26 | 703 | 0.2+ | 0.8− | |
| 1998 09 26 | 704 | (2.8+ | 2.4−) | 2003 09 28 | 645 | 0.1− | 0.0 | 2006 01 26 | 703 | 0.3− | 1.9+ | |
| 1998 09 27 | 704 | 0.1+ | 0.1+ | 2003 09 29 | 704 | 0.1+ | 0.7+ | 2006 02 20 | 691 | 0.3+ | 0.2+ | |
| 1998 09 27 | 704 | 0.6+ | 0.7− | 2003 09 29 | 704 | 0.3+ | 0.7+ | 2006 02 20 | 691 | 0.1+ | 0.0 | |
| 1998 09 27 | 704 | 0.6+ | 0.5+ | 2003 09 29 | 704 | 0.1+ | 0.2+ | 2006 02 20 | 691 | 0.2+ | 0.2+ | |
| 1998 09 27 | 704 | 1.6− | 0.2+ | 2003 09 29 | 704 | 0.4− | 0.6+ | 2006 02 21 | 699 | 0.1+ | 0.1− | |
| 2003 08 22 | 704 | 1.4+ | 1.1+ | 2003 09 29 | 704 | 0.5+ | 0.5+ | 2006 02 21 | 699 | 0.2− | 0.1+ | |
| 2003 08 22 | 704 | 0.0 | 0.9+ | 2003 10 15 | 699 | 0.3+ | 0.7+ | 2006 02 21 | 699 | 1.0− | 0.8+ | |
| 2003 08 22 | 704 | 0.4+ | 1.5+ | 2003 10 15 | 699 | 0.8− | 0.6− | 2006 02 21 | 699 | 0.3− | 0.1− | |
| 2003 08 22 | 704 | 0.2+ | 0.5+ | 2003 10 15 | 699 | 0.8− | 0.1− | 2006 02 24 | 691 | 0.0 | 0.4+ | |
| 2003 09 02 | 704 | 0.1− | 0.8+ | 2003 10 15 | 699 | 0.1− | 0.0 | 2006 02 24 | 691 | 0.0 | 0.3+ | |
| 2003 09 02 | 704 | 0.4− | 0.6+ | 2003 10 16 | 644 | 0.3+ | 0.1+ | 2006 02 24 | 691 | 0.0 | 0.2+ | |
| 2003 09 02 | 704 | 0.4− | 0.2+ | 2003 10 16 | 644 | 0.0 | 0.4+ | 2006 03 03 | 699 | 0.8+ | 0.2+ | |
| 2003 09 02 | 704 | 0.0 | 0.6+ | 2003 10 16 | 644 | 0.0 | 0.5+ | 2006 03 03 | 699 | 0.5− | 0.5− | |
| 2003 09 02 | 704 | 0.1− | 1.3+ | 2003 10 17 | 645 | 0.0 | 0.1− | 2006 03 03 | 699 | 0.3+ | 0.1+ | |
| 2003 09 15 | 608 | 0.2− | 0.0 | 2003 10 17 | 645 | 0.1− | 0.1− | 2006 03 03 | 699 | 0.8+ | 0.0 | |
| 2003 09 15 | 608 | 0.5− | 0.1+ | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 03 24 | 691 | 0.2+ | 0.3+ | |
| 2003 09 15 | 608 | 0.4− | 0.2− | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 03 24 | 691 | 0.2+ | 0.1− | |
| 2003 09 16 | 691 | 0.2− | 0.4+ | 2003 10 22 | 691 | 0.2+ | 0.2+ | 2006 03 24 | 691 | 0.0 | 0.1+ | |
| 2003 09 16 | 691 | 0.2− | 0.4+ | 2003 10 22 | 691 | 0.4+ | 0.2+ | 2006 05 03 | G96 | 0.1− | 0.4− | |
| 2003 09 16 | 691 | 0.0 | 0.4+ | 2003 10 22 | 691 | 0.3+ | 0.3+ | 2006 05 03 | G96 | 0.1− | 0.1− | |
| 2003 09 18 | 704 | 0.2− | 0.6+ | 2003 10 22 | 645 | 0.0 | 0.2− | 2006 05 03 | G96 | 0.2− | 0.1+ | |
| 2003 09 18 | 704 | 0.1− | 0.3+ | 2003 10 22 | 645 | 0.1− | 0.2− | 2006 05 03 | G96 | 0.2− | 0.1+ | |
| 2003 09 18 | 704 | 0.3− | 0.8+ | 2003 10 24 | 704 | 1.0+ | 0.6+ | | | | | |
| 2003 09 18 | 704 | 0.4− | 0.4− | 2003 10 24 | 704 | 0.2+ | 1.5+ | | | | | |

## (136977)∗ 1998 $RM_{61}$ = 2002 $SW_{36}$

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37096)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.30130 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25307424 | $\omega$ | 111.41479 | | +0.61707212 | +0.78618042 | |
| $a$ | 2.4753546 | $\Omega$ | 196.82221 | | −0.75829647 | +0.58261160 | |
| $e$ | 0.2001065 | $i$ | 6.70676 | | −0.21025808 | +0.20611666 | |
| $P$ | 3.89 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 1.2+ | 0.3− | 2002 10 03 | 704 | 0.2− | 0.3+ | 2005 04 18 | 704 | 0.9+ | 0.1+ | |
| 1998 09 14 | 704 | 0.8− | 0.5+ | 2002 10 03 | 704 | 0.2+ | 0.2− | 2005 04 18 | 704 | 0.1+ | 0.4+ | |
| 1998 09 14 | 704 | 0.6− | 0.3+ | 2002 10 03 | 704 | 0.1− | 0.1− | 2005 04 18 | 704 | 0.7+ | 0.9+ | |
| 1998 09 15 | 699 | 0.4− | 0.1+ | 2002 10 03 | 704 | 0.6− | 0.1− | 2005 04 18 | 704 | 0.7+ | 0.3+ | |
| 1998 09 15 | 699 | 0.5+ | 0.1+ | 2002 10 07 | 704 | 0.9− | 0.2− | 2005 05 09 | 699 | 0.5+ | 0.8− | |
| 1998 09 15 | 699 | 0.4− | 1.1+ | 2002 10 07 | 704 | 0.6− | 0.5+ | 2005 05 09 | 699 | 0.3+ | 0.7− | |
| 1998 09 16 | 699 | 0.5+ | 0.0 | 2002 10 07 | 704 | 0.8− | 0.2+ | 2005 05 09 | 699 | 0.7− | 0.5− | |
| 1998 09 16 | 699 | 0.8+ | 1.6+ | 2002 10 07 | 704 | 0.6− | 1.2+ | 2005 05 09 | 699 | 0.0 | 0.9− | |
| 1998 09 16 | 699 | 1.1+ | 0.8+ | 2002 10 11 | 704 | 0.7+ | 0.2+ | 2005 05 12 | 691 | 0.2+ | 0.2+ | |
| 1998 09 18 | 704 | 0.7− | 0.5+ | 2002 10 11 | 704 | 0.8+ | 0.4+ | 2005 05 12 | 691 | 1.4− | 0.1− | |
| 1998 09 18 | 704 | 1.6− | 1.0− | 2002 10 11 | 704 | 0.4+ | 0.2+ | 2005 05 12 | 691 | 0.2+ | 0.2+ | |
| 1998 09 18 | 704 | (2.3+ | 0.9+) | 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.3+ | |
| 1998 09 18 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 1998 09 18 | 704 | 1.0− | 1.3− | 2002 10 12 | 704 | 1.3+ | 1.1− | 2006 10 11 | 644 | 0.1− | 0.2− | |
| 1998 09 26 | 704 | (0.2+ | 2.1−) | 2002 10 12 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | |
| 1998 09 26 | 704 | 0.2− | 1.0− | 2002 10 12 | 704 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.3+ | |
| 1998 09 26 | 704 | 0.6+ | 0.1+ | 2002 10 12 | 704 | 1.3+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 | |
| 1998 09 26 | 704 | 0.5− | 0.5+ | 2002 10 30 | 644 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.3− | |
| 1998 09 27 | 704 | 0.4− | 0.5− | 2002 10 30 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.2− | |
| 1998 09 27 | 704 | 0.3− | 1.0+ | 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.0 | |
| 1998 09 27 | 704 | 0.2− | 0.5+ | 2002 10 31 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.3− | |
| 1998 09 27 | 704 | 0.2+ | 0.4− | 2002 10 31 | 704 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.0 | |
| 1998 09 27 | 704 | 0.5+ | 0.4− | 2002 10 31 | 704 | 0.0 | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.0 | |
| 1998 10 24 | 691 | 0.2+ | 0.1− | 2002 10 31 | 704 | 0.2+ | 0.8+ | 2006 10 17 | G96 | 0.5+ | 0.0 | |
| 1998 10 24 | 691 | 0.2+ | 0.1− | 2002 10 31 | 704 | 0.1− | 0.9+ | 2006 10 17 | G96 | 0.1− | 0.1+ | |
| 1998 10 24 | 691 | 0.2+ | 0.2− | 2002 11 06 | 704 | 0.4+ | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.3+ | |
| 1998 10 28 | 691 | 0.2+ | 0.1+ | 2002 11 06 | 704 | 0.6+ | 0.8+ | 2006 10 18 | 691 | 0.0 | 0.4+ | |
| 1998 10 28 | 691 | 0.1+ | 0.1− | 2002 11 06 | 704 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.4+ | |
| 1998 10 28 | 691 | 0.0 | 0.1− | 2005 04 02 | 699 | 0.7+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1− | |
| 1998 11 19 | 691 | 0.7− | 0.0 | 2005 04 02 | 699 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.1+ | |
| 1998 11 19 | 691 | 0.1− | 0.8− | 2005 04 02 | 699 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ | |
| 1998 11 19 | 691 | 0.2+ | 0.9− | 2005 04 02 | 699 | (0.0 | 1.9+) | 2006 10 31 | G96 | 0.0 | 0.1− | |
| 2002 09 07 | 704 | 0.2− | 0.0 | 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.1− | |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2005 04 04 | G96 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− | |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2005 04 04 | G96 | 0.5− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1+ | |
| 2002 09 07 | 704 | 0.5− | 0.5+ | 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.6+ | |
| 2002 09 07 | 704 | 0.2− | 0.3− | 2005 04 06 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | |
| 2002 09 29 | 608 | 0.9− | 0.8− | 2005 04 06 | 691 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.4+ | |
| 2002 09 29 | 608 | 0.6− | 0.9− | 2005 04 06 | 691 | 0.7+ | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.5− | |
| 2002 09 29 | 608 | 0.7− | 0.9− | 2005 04 11 | G96 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.1+ | |
| 2002 10 01 | 699 | 1.2+ | 0.6+ | 2005 04 11 | G96 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.4− | |
| 2002 10 01 | 699 | 1.2− | 1.3+ | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.1+ | |
| 2002 10 01 | 699 | 0.4+ | 0.3+ | 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.4+ | |
| 2002 10 01 | 699 | 0.5− | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.2+ | 0.2+ | |
| 2002 10 02 | 704 | 0.2− | 0.5+ | 2005 04 17 | 691 | 0.2+ | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.5+ | |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.2+ | |
| 2002 10 02 | 704 | 0.2− | 0.4+ | 2005 04 18 | 703 | 0.3− | 1.0+ | 2006 11 22 | G96 | 0.1+ | 0.0 | |
| 2002 10 02 | 704 | 0.4+ | 0.2+ | 2005 04 18 | 703 | 0.0 | 0.1− | 2006 11 22 | G96 | 1.0− | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.4− | 0.4+ | 2005 04 18 | 703 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.4+ | 0.2− | 2005 04 18 | 703 | 1.2− | 0.5+ | | | | |

**(136978)∗ 1998 $RH_{65}$ = 2000 $ES_{53}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 217)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 358.88143 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.24658764 | $\omega$ | 16.48288 | +0.99607675 | −0.08841324 | |
| $a$ | 2.5185767 | $\Omega$ | 348.58747 | +0.07888932 | +0.90646801 | |
| $e$ | 0.1710707 | $i$ | 1.09172 | +0.04009475 | +0.41291506 | |
| $P$ | 4.00 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 25 | 691 | 0.0 | 0.1+ | 2002 09 26 | 644 | 0.6− | 0.4− | 2006 08 24 | 644 | 0.1+ | 0.3− |
| 1990 09 25 | 691 | 0.2− | 0.1+ | 2002 09 28 | 683 | 0.1+ | 1.2+ | 2006 08 24 | 644 | 0.2− | 0.0 |
| 1990 09 25 | 691 | 0.0 | 0.1+ | 2002 09 28 | 683 | 0.4− | 0.3− | 2006 08 24 | 644 | 0.0 | 0.0 |
| 1994 09 28 | 691 | 0.1− | 1.0− | 2002 09 28 | 683 | 0.6+ | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.2− |
| 1994 09 28 | 691 | 0.3− | 0.5− | 2002 09 30 | 683 | (2.8− | 2.1−) | 2006 09 12 | 703 | 0.7− | 1.0+ |
| 1994 09 28 | 691 | 0.1− | 0.7− | 2002 09 30 | 683 | (1.4+ | 1.6−) | 2006 09 12 | 703 | 0.6− | 0.0 |
| 1994 09 29 | 691 | 0.5+ | 0.2+ | 2002 09 30 | 704 | 0.7− | 0.1− | 2006 09 12 | 703 | 0.7− | 0.3− |
| 1994 09 29 | 691 | 0.4+ | 0.3+ | 2002 09 30 | 683 | 0.8+ | 1.3− | 2006 09 15 | 691 | 0.2+ | 0.2− |
| 1994 09 29 | 691 | 0.4+ | 0.2+ | 2002 09 30 | 704 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.5− |
| 1998 09 14 | 704 | 0.0 | 0.3+ | 2002 09 30 | 704 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.3− |
| 1998 09 14 | 704 | 1.8− | 1.4− | 2002 09 30 | 704 | 0.5− | 0.1− | 2006 09 16 | 644 | 0.1− | 0.0 |
| 1998 09 14 | 704 | 0.6− | 0.0 | 2002 09 30 | 704 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.3− | 0.2− |
| 1998 09 18 | 704 | 0.6+ | 0.1− | 2002 10 02 | 704 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.2− | 0.1− |
| 1998 09 18 | 704 | 1.2+ | 1.3− | 2002 10 02 | 704 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.4+ | 0.5+ |
| 1998 09 18 | 704 | 0.6− | 1.3+ | 2002 10 02 | 704 | 0.3+ | 0.7− | 2006 09 17 | 704 | 0.8+ | 0.1− |
| 1998 09 18 | 704 | 0.3+ | 1.1+ | 2002 10 02 | 704 | 0.4− | 0.2+ | 2006 09 17 | 704 | 0.2+ | 0.6− |
| 1998 09 18 | 704 | 1.1+ | 0.0 | 2002 10 03 | 704 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.9− | 0.0 |
| 1998 09 25 | 699 | 0.5+ | 1.4+ | 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.7− | 0.7+ |
| 1998 09 25 | 699 | 0.3+ | 0.3+ | 2002 10 03 | 704 | 0.6− | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.3+ |
| 1998 09 25 | 699 | 1.0+ | 0.9+ | 2002 10 03 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.9+ | 0.5+ |
| 1998 09 26 | 704 | 0.2− | 1.0− | 2002 10 03 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.5− |
| 1998 09 26 | 704 | 0.6− | 0.1− | 2002 10 04 | 644 | 0.0 | 0.5− | 2006 09 20 | 704 | 0.6+ | 0.3+ |
| 1998 09 26 | 704 | 1.3− | 0.4− | 2002 10 04 | 644 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.0 | 0.8+ |
| 1998 09 26 | 704 | 1.4− | 1.1− | 2002 10 04 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.4− | 1.4+ |
| 1998 09 26 | 704 | 1.4− | 0.9− | 2002 10 06 | 608 | (2.7− | 0.3−) | 2006 09 20 | 704 | 0.3+ | 1.3+ |
| 1998 09 27 | 704 | 0.2+ | 0.7− | 2002 10 06 | 608 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.3+ | 1.0+ |
| 1998 09 27 | 704 | 0.6+ | 0.3− | 2002 10 06 | 608 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 1998 09 27 | 704 | 0.4+ | 0.1− | 2002 10 07 | 704 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.3+ | 0.6+ |
| 1998 09 27 | 704 | 0.3− | 0.5+ | 2002 10 07 | 704 | 0.2+ | 1.2+ | 2006 09 27 | 704 | 0.4+ | 0.1+ |
| 1998 09 27 | 704 | 0.1− | 0.5− | 2002 10 07 | 704 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.2+ |
| 1998 10 14 | 699 | 1.8+ | 0.6+ | 2002 10 07 | 704 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.6+ |
| 1998 10 14 | 699 | 0.5+ | 0.1+ | 2002 10 07 | 704 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.3− |
| 1998 10 14 | 699 | 0.5− | 1.0+ | 2002 10 11 | 704 | 0.6− | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.3+ |
| 2000 02 04 | 691 | 0.3− | 0.4− | 2002 10 11 | 704 | 0.8− | 0.7+ | 2006 09 29 | 704 | 0.0 | 0.0 |
| 2000 02 04 | 691 | 0.2− | 0.4− | 2002 10 11 | 704 | 0.5− | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.2+ |
| 2000 02 04 | 691 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.8− | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.6− |
| 2000 02 05 | 691 | 0.1− | 0.3− | 2002 10 11 | 704 | 0.5− | 0.6+ | 2006 10 01 | 704 | 0.4− | 0.2− |
| 2000 02 05 | 691 | 0.0 | 0.0 | 2002 10 28 | 608 | 0.8− | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2000 02 05 | 691 | 0.1+ | 0.2− | 2002 10 28 | 608 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.7− |
| 2000 03 09 | 691 | 1.0+ | 0.6− | 2002 10 28 | 608 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.2− |
| 2000 03 09 | 691 | 0.2+ | 0.0 | 2002 10 31 | 699 | (0.0 | 1.6+) | 2006 10 01 | 704 | 0.1− | 1.1− |
| 2000 03 09 | 691 | 0.3+ | 0.0 | 2002 10 31 | 699 | (0.0 | 2.9+) | 2006 10 02 | G96 | 0.3− | 0.3− |
| 2000 03 11 | 691 | 0.6− | 0.2− | 2002 10 31 | 704 | 0.3+ | 0.9+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2000 03 11 | 691 | 0.5+ | 0.2− | 2002 10 31 | 699 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2000 03 11 | 691 | 0.6− | 0.6+ | 2002 10 31 | 704 | 1.1+ | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2002 09 05 | 704 | 0.3+ | 0.0 | 2002 10 31 | 699 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.6+ | 2002 10 31 | 704 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.4+ |
| 2002 09 05 | 704 | 1.2− | 0.9+ | 2002 10 31 | 704 | 0.5+ | 0.6+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2003 10 24 | 291 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.6− | 0.6+ | 2003 10 24 | 291 | 0.5− | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 09 07 | 704 | 0.3− | 1.3+ | 2003 10 24 | 291 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.7− | 1.2+ | 2004 01 30 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 14 | 291 | 0.1+ | 0.1− | 2004 01 30 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 09 14 | 291 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 09 14 | 291 | 0.4+ | 0.1− | 2004 02 11 | 644 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2004 02 11 | 644 | 0.5+ | 0.8+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.1− | 2005 04 17 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2002 09 17 | 608 | 0.0 | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 09 17 | 608 | 0.1+ | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 09 17 | 608 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2002 09 26 | 644 | 0.4− | 0.3− | 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 09 26 | 644 | 0.5− | 0.3− | 2006 08 24 | 644 | 0.3− | 0.0 | | | | |

**(136979)∗ 1998 $RX_{76}$ = 2002 $US_{29}$**

Discovered 1998 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37097)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 8.93198 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26415323 | $\omega$ | 289.30740 | +0.43951166 | −0.89555152 | |
| $a$ | 2.4056481 | $\Omega$ | 134.41622 | +0.85628750 | +0.39439585 | |
| $e$ | 0.1840678 | $i$ | 5.57610 | +0.27129546 | +0.20600823 | |
| $P$ | 3.73 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.5+ | 0.9+ | 2002 11 05 | 704 | 0.1− | 0.5+ | 2002 12 15 | 608 | 0.6− | 0.2− |
| 1998 09 14 | 704 | 0.4− | 1.1− | 2002 11 05 | 704 | 0.6− | 0.5+ | 2002 12 15 | 608 | 0.1− | 0.3− |
| 1998 09 14 | 704 | 1.4− | 0.3+ | 2002 11 05 | 704 | 0.3− | 0.4+ | 2002 12 15 | 608 | 0.2− | 0.2+ |
| 1998 09 18 | 704 | 0.4− | 0.3− | 2002 11 05 | 699 | 0.3+ | 0.2− | 2004 04 13 | 691 | 0.3+ | 0.4+ |
| 1998 09 18 | 704 | 0.7+ | 1.9+ | 2002 11 05 | 704 | 0.2− | 0.2+ | 2004 04 13 | 691 | 0.2+ | 0.4+ |
| 1998 09 18 | 704 | 1.7− | 0.0 | 2002 11 05 | 699 | 0.1− | 0.1+ | 2004 04 13 | 691 | 0.3+ | 0.5+ |
| 1998 09 18 | 704 | (0.5− | 2.5+) | 2002 11 05 | 699 | 0.4+ | 0.1+ | 2004 04 20 | 704 | 1.2+ | 0.7+ |
| 1998 09 26 | 704 | (2.4+ | 1.0+) | 2002 11 05 | 699 | 0.1+ | 0.3+ | 2004 04 20 | 704 | 0.7− | 0.3+ |
| 1998 09 26 | 704 | 1.7+ | 0.6+ | 2002 11 12 | 704 | 0.5+ | 1.3+ | 2004 04 20 | 704 | 0.0 | 1.4+ |
| 1998 09 26 | 704 | 0.7+ | 0.3+ | 2002 11 12 | 704 | 0.3+ | 0.3+ | 2004 04 20 | 704 | (1.8+ | 0.1−) |
| 1998 09 26 | 704 | 0.3− | 0.1− | 2002 11 12 | 704 | 0.7+ | 0.7+ | 2005 07 04 | G96 | 0.0 | 0.6+ |
| 1998 09 27 | 704 | 1.3− | 1.9+ | 2002 11 12 | 704 | 0.1+ | 0.1− | 2005 07 04 | G96 | 0.0 | 0.8+ |
| 1998 09 27 | 704 | 1.0− | 1.1− | 2002 11 12 | 644 | 0.7+ | 0.4− | 2005 07 04 | G96 | 0.3− | 0.4+ |
| 1998 09 27 | 704 | 1.3+ | 0.3− | 2002 11 12 | 644 | 0.4+ | 0.5+ | 2005 07 04 | G96 | 0.0 | 0.3+ |
| 1998 09 27 | 704 | 1.8− | 0.0 | 2002 11 12 | 644 | 0.9+ | 0.4+ | 2006 11 02 | 703 | 0.9− | 0.4+ |
| 2002 10 04 | 704 | 0.3− | 0.4− | 2002 11 15 | 644 | 0.3+ | 1.0+ | 2006 11 02 | 703 | 0.0 | 0.2− |
| 2002 10 04 | 704 | (1.9− | 0.3−) | 2002 11 15 | 644 | 0.7+ | 0.9+ | 2006 11 02 | 703 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.7− | 0.6− | 2002 11 15 | 644 | 0.1+ | 1.3+ | 2006 11 02 | 703 | 0.5− | 0.3+ |
| 2002 10 09 | 704 | 0.2− | 0.5− | 2002 11 28 | 699 | 0.1− | 0.3+ | 2006 11 05 | 644 | 0.2− | 0.0 |
| 2002 10 09 | 704 | 0.1+ | 0.3− | 2002 11 28 | 699 | 0.7+ | 0.0 | 2006 11 05 | 644 | 0.4− | 0.2+ |
| 2002 10 09 | 704 | 0.6+ | 0.0 | 2002 11 28 | 699 | 0.1+ | 0.4+ | 2006 11 05 | 644 | 0.2− | 0.2− |
| 2002 10 09 | 704 | 0.1+ | 0.0 | 2002 11 28 | 699 | 0.0 | 0.0 | 2006 11 24 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 608 | 0.0 | 0.3− | 2002 12 01 | 704 | 0.0 | 0.4+ | 2006 11 24 | 644 | 0.2− | 0.1− |
| 2002 10 31 | 608 | 0.2+ | 0.7− | 2002 12 01 | 704 | 0.9+ | 0.3− | 2006 11 24 | 644 | 0.3− | 0.1− |
| 2002 10 31 | 608 | 0.0 | 0.4− | 2002 12 01 | 704 | 0.4+ | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2002 11 01 | 704 | 0.3− | 0.1+ | 2002 12 01 | 704 | 0.3+ | 0.6− | 2006 11 28 | 704 | 0.9− | 0.9+ |
| 2002 11 01 | 704 | 0.4− | 0.5+ | 2002 12 03 | 608 | 0.6− | 0.7− | 2006 11 28 | 704 | 0.0 | 1.3+ |
| 2002 11 01 | 704 | 0.3+ | 0.3− | 2002 12 03 | 608 | 0.6− | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2002 11 05 | 704 | 0.8− | 0.2+ | 2002 12 03 | 608 | 0.7− | 0.9− | | | | |

**(136980)∗ 1998 SR = 2000 $EK_{63}$**

Discovered 1998 Sept. 16 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPO* 219)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 301.84622 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.24655013 | $\omega$ | 65.82137 | −0.01016162 | −0.99975779 | |
| $a$ | 2.5188322 | $\Omega$ | 24.78463 | +0.89970761 | −0.01766091 | |
| $e$ | 0.1258111 | $i$ | 2.66913 | +0.43637478 | +0.01313205 | |
| $P$ | 4.00 | $H$ | 16.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 18 | 691 | 0.1+ | 0.3− | 2002 10 10 | 644 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.2+ |
| 1990 10 18 | 691 | 0.1+ | 0.3+ | 2002 10 10 | 644 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 1990 10 18 | 691 | 0.3+ | 0.5− | 2002 10 11 | 704 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 1998 09 16 | 910 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.8− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 1998 09 16 | 910 | 0.1− | 0.3+ | 2002 10 11 | 704 | 1.4− | 0.4− | 2006 10 20 | 703 | 0.8+ | 0.7+ |
| 1998 09 16 | 910 | 0.6+ | 0.8− | 2002 10 11 | 704 | 0.1− | 0.8− | 2006 10 20 | 703 | 0.4− | 0.7+ |
| 1998 09 18 | 910 | 0.0 | 0.4− | 2004 02 23 | 704 | 1.0+ | 0.1+ | 2006 10 20 | 703 | 0.5− | 0.9+ |
| 1998 09 18 | 910 | 0.7+ | 0.2− | 2004 02 23 | 704 | 0.8+ | 0.2− | 2006 10 21 | 703 | 1.4− | 0.1+ |
| 1998 09 18 | 910 | 0.4+ | 0.4− | 2004 02 23 | 704 | 0.5+ | 0.9+ | 2006 10 21 | 703 | 0.3+ | 0.4+ |
| 1998 09 20 | 910 | 1.2+ | 0.5− | 2004 03 15 | 703 | 0.7− | 0.1+ | 2006 10 21 | 703 | (2.0+ | 0.5+) |
| 1998 09 20 | 910 | 0.3+ | 0.1+ | 2004 03 15 | 703 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 1998 09 20 | 910 | 0.4+ | 0.3+ | 2004 03 15 | 703 | 1.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 03 10 | 704 | 0.1− | 0.8− | 2004 03 15 | 703 | 0.5− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2000 03 10 | 704 | 0.5− | 0.5− | 2004 03 16 | 704 | (2.2+ | 0.5−) | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2000 03 10 | 704 | 0.8+ | 0.5− | 2004 03 16 | 704 | 0.8+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2000 03 10 | 704 | 0.5+ | 0.4− | 2004 03 16 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.4− |
| 2000 03 10 | 704 | 0.6+ | 0.2− | 2004 03 16 | 704 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2000 03 11 | 704 | 0.5+ | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2000 03 11 | 704 | 0.3+ | 0.2+ | 2004 03 17 | 704 | 0.4+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2004 03 17 | 704 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2000 03 11 | 704 | 0.0 | 0.7− | 2004 03 17 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2000 03 11 | 704 | 0.1+ | 1.0− | 2004 03 17 | 704 | 1.3+ | 0.1− | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2000 03 26 | 699 | 0.6+ | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2000 03 26 | 699 | 0.5+ | 0.6+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2000 03 26 | 699 | 0.3+ | 0.2+ | 2004 03 17 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2000 03 26 | 699 | 0.7− | 1.1− | 2004 03 18 | 704 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2000 04 05 | 704 | 0.5+ | 0.8+ | 2004 03 18 | 704 | 0.7+ | 0.8− | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2000 04 05 | 704 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2000 04 05 | 704 | 0.3+ | 0.7+ | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.5+ | 0.1− |
| 2000 04 11 | 691 | 0.5− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2000 04 11 | 691 | 0.3− | 0.3+ | 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2000 04 11 | 691 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2000 04 25 | 691 | 0.5− | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2000 04 25 | 691 | 0.5− | 0.1− | 2004 03 18 | 704 | 0.0 | 0.8+ | 2006 11 10 | 691 | 1.1− | 1.4− |
| 2000 04 25 | 691 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2000 05 03 | 691 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.6− | 0.8+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2000 05 03 | 691 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.5+ | 1.0+ |
| 2000 05 03 | 691 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 1.2+ | 2004 03 20 | 704 | 1.3+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2002 10 03 | 704 | 0.1− | 1.0+ | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.9+ | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2004 03 28 | 704 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2002 10 03 | 291 | 0.5− | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.0 |
| 2002 10 03 | 704 | 0.8+ | 0.6+ | 2004 03 29 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 1.0+ | 0.5− |
| 2002 10 03 | 291 | 0.0 | 0.1− | 2004 03 29 | 691 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 2002 10 03 | 291 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.1− | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2002 10 07 | 704 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2002 10 07 | 704 | 0.6− | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2002 10 07 | 704 | (2.0+ | 2.3+) | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2002 10 07 | 704 | (1.0− | 1.7+) | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 1.0+ | 0.2+ |
| 2002 10 09 | 704 | 1.0− | 1.0+ | 2006 09 18 | 699 | 1.4− | 0.3+ | 2006 11 21 | 704 | (0.6+ | 1.6+) |
| 2002 10 09 | 704 | 0.5− | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.9+ | 1.1+ |
| 2002 10 09 | 704 | 0.6− | 0.3− | 2006 09 24 | 691 | 0.3− | 0.1+ | | | | |
| 2002 10 10 | 644 | 0.3− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.1+ | | | | |

**(136981)∗ 1998 SF$_3$ = 2002 TY$_{224}$**

Discovered 1998 Sept. 17 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 37097)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.22923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25717682 | $\omega$ | 278.29674 | | +0.74228445 | +0.66550150 | |
| $a$ | 2.4489589 | $\Omega$ | 40.03533 | | −0.55691679 | +0.67763453 | |
| $e$ | 0.1539104 | $i$ | 6.98624 | | −0.37263587 | +0.31292042 | |
| $P$ | 3.83 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 06 | 691 | 0.6− | 0.3+ | 2002 10 31 | 699 | 0.7− | 1.0+ | 2006 10 21 | 691 | 0.3− | 0.2− |
| 1994 09 06 | 691 | 0.6− | 0.3+ | 2002 10 31 | 699 | 1.1− | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 1994 09 06 | 691 | 0.9− | 0.5+ | 2002 10 31 | 699 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 1998 09 17 | 910 | 1.7+ | 0.2− | 2002 11 06 | 704 | 0.2− | 1.4− | 2006 10 31 | G96 | 0.1− | 0.5− |
| 1998 09 18 | 910 | 1.8+ | 0.3− | 2002 11 06 | 704 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 1998 09 18 | 910 | 1.6+ | 0.2− | 2002 11 06 | 704 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 1998 09 19 | 910 | 0.9+ | 0.4− | 2002 11 06 | 704 | 1.4+ | 1.0+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 1998 09 19 | 910 | 1.2+ | 0.6− | 2002 11 22 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 1998 09 19 | 910 | 1.3+ | 0.4− | 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 1998 09 22 | 910 | 1.1+ | 0.3− | 2002 11 22 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | (0.7+ | 1.6+) |
| 1998 09 23 | 910 | 0.9+ | 0.2− | 2004 03 17 | 645 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 1998 09 23 | 910 | 0.9+ | 0.4− | 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.2+ |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2002 10 03 | 704 | 1.1+ | 0.2− | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 0.1− | 1.4+ | 2005 05 30 | E12 | 0.3+ | 1.1+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 1.2+ | 2005 05 30 | E12 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 1.2+ | 0.1− | 2005 05 30 | E12 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2002 10 08 | 699 | 0.1− | 1.0+ | 2005 05 30 | E12 | 1.2+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.8− |
| 2002 10 08 | 699 | 1.0− | 0.3+ | 2006 10 17 | G96 | (2.2+ | 0.2−) | 2006 11 19 | 704 | 0.4+ | 1.4− |
| 2002 10 08 | 699 | 0.6+ | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 1.0− | 0.4+ |
| 2002 10 08 | 699 | 1.4− | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 1.1+ | 0.2− |
| 2002 10 09 | 704 | 0.1− | 0.1− | 2006 10 17 | G96 | (0.7− | 1.7−) | 2006 11 22 | 704 | 0.4+ | 1.4+ |
| 2002 10 09 | 704 | 0.5− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2002 10 09 | 704 | 0.8− | 0.9+ | 2006 10 17 | 691 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2002 10 31 | 699 | 0.3− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.5− | 0.2− |

**(136982)∗ 1998 SK$_3$ = 1997 GB$_{41}$ = 2004 DR$_4$**

Discovered 1998 Sept. 17 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (MPC 33014), G. V. Williams (*MPO* 60505)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.29553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26895370 | $\omega$ | 140.25871 | | −0.87219857 | +0.47907593 | |
| $a$ | 2.3769372 | $\Omega$ | 68.63034 | | −0.47142793 | −0.76941626 | |
| $e$ | 0.1753412 | $i$ | 6.08847 | | −0.13048125 | −0.42247470 | |
| $P$ | 3.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 809 | 0.5− | 1.3− | 2004 01 30 | 699 | 0.0 | 0.3− | 2004 05 22 | 704 | 1.3− | 0.4+ |
| 1997 04 07 | 809 | 0.6− | 1.7− | 2004 01 30 | 699 | 0.0 | 0.3− | 2004 05 22 | 704 | 0.1+ | 0.5+ |
| 1997 04 07 | 809 | 0.5− | 0.7− | 2004 01 30 | 704 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 1997 04 08 | 809 | (0.4− | 2.0−) | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 1997 04 08 | 809 | 0.2− | 1.9− | 2004 01 30 | 704 | 1.1− | 1.0+ | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 1997 04 08 | 809 | (0.1+ | 2.1−) | 2004 01 30 | 704 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 1997 04 11 | 809 | (2.2+ | 3.1+) | 2004 01 30 | 704 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1997 04 11 | 809 | (1.2+ | 3.0+) | 2004 02 16 | 704 | 0.7− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1997 04 11 | 809 | (2.0+ | 2.9+) | 2004 02 16 | 704 | 0.7− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 1997 04 12 | 809 | (1.6+ | 2.8+) | 2004 02 16 | 704 | 0.5− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 1997 04 12 | 809 | 0.9+ | 1.8+ | 2004 02 16 | 704 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1997 04 12 | 809 | 0.7+ | 2.0+ | 2004 02 17 | 608 | (1.7+ | 0.9+) | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 1998 09 17 | 910 | 0.2+ | 0.1− | 2004 02 17 | 608 | (1.6+ | 0.2+) | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 1998 09 18 | 910 | 0.2+ | 0.3− | 2004 02 17 | 608 | (1.7+ | 0.4+) | 2006 11 11 | G96 | 0.2− | 0.2− |
| 1998 09 18 | 910 | 0.5− | 0.0 | 2004 02 22 | 608 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.0 |
| 1998 09 19 | 910 | 0.1+ | 0.2− | 2004 02 22 | 608 | 0.1+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1998 09 19 | 910 | 0.1+ | 0.2+ | 2004 02 22 | 608 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 1998 09 20 | 910 | 0.2− | 0.0 | 2004 03 09 | 644 | 1.0+ | 0.6− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 1998 09 22 | 910 | 0.0 | 0.2− | 2004 03 09 | 644 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 1998 09 23 | 910 | 0.2+ | 0.1− | 2004 03 09 | 644 | 0.4+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2− |
| 1998 09 23 | 910 | 0.2+ | 0.0 | 2004 03 14 | 704 | 0.2− | 0.0 | 2006 11 18 | A79 | 0.3− | 0.5− |
| 2000 01 04 | 704 | 0.7− | 1.2− | 2004 03 14 | 704 | 0.3− | 0.3+ | 2006 11 18 | A79 | 0.2+ | 0.6− |
| 2000 01 04 | 704 | (0.6+ | 2.2−) | 2004 03 14 | 704 | 0.2− | 0.0 | 2006 11 18 | A79 | 0.3− | 0.0 |
| 2000 01 04 | 704 | 0.4− | 1.6− | 2004 03 14 | 704 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 10 16 | 644 | 0.2− | 0.3− | 2004 03 18 | 644 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2002 10 16 | 644 | 0.1− | 0.2− | 2004 03 18 | 644 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2002 10 16 | 644 | 0.5− | 0.1− | 2004 03 18 | 644 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 703 | (1.6+ | 0.6−) | 2004 03 23 | 704 | 0.3+ | 0.5− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2003 12 18 | 703 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2003 12 18 | 703 | (2.2− | 1.0−) | 2004 03 23 | 704 | 0.1− | 0.8− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2003 12 18 | 703 | 0.3− | 0.5− | 2004 03 23 | 704 | 0.4− | 0.2− | 2006 11 27 | 703 | 0.8+ | 0.8− |
| 2003 12 23 | 704 | 1.1+ | 0.5− | 2004 03 23 | 704 | 0.7− | 0.4− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2003 12 23 | 704 | 0.3+ | 0.5− | 2004 03 26 | 703 | 0.1− | 0.7+ | 2006 11 27 | 703 | 0.9− | 0.0 |
| 2003 12 23 | 704 | (1.5+ | 0.4+) | 2004 03 26 | 703 | 0.7+ | 0.8+ | 2006 11 27 | 703 | 0.7− | 0.2+ |
| 2003 12 28 | 704 | 1.4+ | 0.4+ | 2004 03 26 | 703 | 0.8+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2003 12 28 | 704 | 1.4+ | 0.3− | 2004 03 26 | 703 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.4− | 0.0 |
| 2003 12 28 | 704 | 1.1+ | 0.6+ | 2004 04 14 | 644 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2003 12 28 | 704 | 1.2+ | 0.3+ | 2004 04 14 | 644 | 0.4− | 0.8− | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2003 12 28 | 704 | 0.9+ | 0.1+ | 2004 04 14 | 644 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2004 01 19 | 703 | 0.2+ | 0.1− | 2004 04 14 | 704 | 0.6− | 0.1+ | 2006 12 01 | 704 | 1.0− | 1.5+ |
| 2004 01 19 | 703 | 0.7+ | 0.1+ | 2004 04 14 | 704 | 0.4− | 0.7− | 2006 12 01 | 691 | 0.3+ | 0.1+ |
| 2004 01 19 | 703 | 0.2− | 0.8+ | 2004 04 14 | 704 | 0.6− | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.2− |
| 2004 01 19 | 703 | 1.3+ | 0.7+ | 2004 04 14 | 704 | 0.6+ | 0.4− | 2006 12 01 | 704 | 0.5+ | 0.6− |
| 2004 01 30 | 699 | 0.6− | 0.3− | 2004 05 22 | 704 | 0.3− | 0.1+ | | | | |
| 2004 01 30 | 699 | 0.7− | 0.3− | 2004 05 22 | 704 | 1.3− | 0.5+ | | | | |

**(136983)∗ 1998 SN$_4$ = 2001 KN$_{64}$**

Discovered 1998 Sept. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 12893)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.27847 | | (2000.0) | | | |
| $n$ | 0.26741294 | $\omega$ | 281.24151 | | +0.92692448 | +0.37392050 |
| $a$ | 2.3860586 | $\Omega$ | 56.80804 | | −0.32790703 | +0.84797975 |
| $e$ | 0.1970696 | $i$ | 2.15962 | | −0.18244996 | +0.37565117 |
| $P$ | 3.69 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 13 | 691 | 0.0 | 0.3− | 1998 10 19 | 699 | 0.3+ | 0.9+ | 2002 12 05 | 704 | 0.0 | 0.5+ |
| 1991 12 13 | 691 | (2.6+ | 3.3+) | 1998 10 28 | 704 | 1.4+ | 0.9− | 2002 12 05 | 704 | 0.3− | 0.3+ |
| 1998 09 14 | 704 | 1.1+ | 0.6− | 1998 10 28 | 704 | (2.4+ | 0.6−) | 2002 12 05 | 704 | 0.0 | 0.5+ |
| 1998 09 14 | 704 | 1.5+ | 0.5− | 1998 10 28 | 704 | 1.3+ | 1.1− | 2002 12 08 | 333 | 0.5− | 0.1+ |
| 1998 09 14 | 704 | 0.9+ | 0.3− | 1998 10 28 | 704 | 0.2− | 0.0 | 2002 12 08 | 333 | 0.7− | 0.2+ |
| 1998 09 17 | 699 | 0.8+ | 1.2+ | 1998 10 29 | 704 | 0.8− | 1.0− | 2002 12 08 | 333 | 0.7− | 0.2− |
| 1998 09 17 | 699 | (1.3+ | 2.5+) | 1998 10 29 | 704 | 0.9− | 0.8− | 2002 12 10 | 704 | 0.3− | 0.9+ |
| 1998 09 17 | 699 | 1.5+ | 1.9+ | 1998 10 29 | 704 | (2.1+ | 2.4−) | 2002 12 10 | 704 | 0.2− | 0.1+ |
| 1998 09 17 | 691 | 0.7− | 0.1− | 2001 05 21 | 704 | 0.4− | 0.0 | 2002 12 10 | 704 | 0.5+ | 0.7+ |
| 1998 09 17 | 691 | 0.5− | 0.1− | 2001 05 21 | 704 | 0.1− | 0.1− | 2002 12 10 | 704 | 0.5− | 0.4+ |
| 1998 09 17 | 691 | 0.6− | 0.0 | 2001 05 21 | 704 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.2− | 0.4+ |
| 1998 09 18 | 691 | 0.1+ | 0.2+ | 2001 05 21 | 704 | 0.5+ | 0.2− | 2003 01 05 | 704 | 0.3+ | 0.6− |
| 1998 09 18 | 691 | 0.0 | 0.0 | 2001 05 24 | 699 | 0.5− | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.0 |
| 1998 09 18 | 691 | 0.0 | 0.1+ | 2001 05 24 | 699 | 0.0 | 0.2− | 2003 01 05 | 704 | 0.4+ | 1.4+ |
| 1998 09 18 | 704 | 1.0− | 0.4+ | 2001 05 24 | 699 | 0.6+ | 0.2+ | 2004 02 23 | 704 | (1.1+ | 1.5+) |
| 1998 09 18 | 704 | 1.2− | 0.9− | 2001 05 24 | 699 | 0.1+ | 0.9− | 2004 02 23 | 704 | 1.2+ | 1.3+ |
| 1998 09 18 | 704 | 0.7− | 0.2− | 2001 05 26 | 291 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 1.3+ | 0.6+ |
| 1998 09 18 | 704 | 0.8− | 0.1− | 2001 05 26 | 291 | 0.3− | 1.3+ | 2004 03 15 | 704 | 0.9+ | 0.2− |
| 1998 09 18 | 704 | 1.0− | 0.3− | 2001 05 26 | 291 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 1.0− | 1.1+ |
| 1998 09 26 | 704 | 1.0+ | 0.3+ | 2001 05 28 | 608 | (1.6+ | 1.1+) | 2004 03 15 | 704 | 0.0 | 0.3+ |
| 1998 09 26 | 704 | 1.0+ | 0.2+ | 2001 05 28 | 608 | 1.5+ | 1.3+ | 2004 03 15 | 704 | 0.9− | 0.1+ |
| 1998 09 26 | 704 | 1.6− | 0.8− | 2001 05 28 | 608 | 1.3+ | 1.3+ | 2005 06 11 | 704 | 0.0 | 0.3+ |
| 1998 09 26 | 704 | 1.0− | 0.7− | 2002 11 05 | 704 | 0.6+ | 0.6+ | 2005 06 11 | 704 | 0.3− | 0.1+ |
| 1998 09 27 | 704 | 0.3+ | 0.2+ | 2002 11 05 | 704 | (0.2+ | 1.8+) | 2005 06 11 | 704 | 0.4+ | 0.2+ |
| 1998 09 27 | 704 | 0.2+ | 0.4+ | 2002 11 05 | 704 | 0.7+ | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 1998 09 27 | 704 | 0.9+ | 0.6+ | 2002 11 05 | 704 | 0.5+ | 1.2+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 1998 09 27 | 704 | 1.1+ | 0.3+ | 2002 11 14 | 704 | (0.5− | 2.0−) | 2006 10 23 | G96 | 0.1− | 0.1− |
| 1998 09 27 | 704 | 0.0 | 0.1+ | 2002 11 14 | 704 | 0.4− | 1.3− | 2006 10 23 | G96 | 0.1− | 0.0 |
| 1998 10 17 | 699 | 0.9− | 0.6+ | 2002 11 14 | 704 | (0.5− | 1.8−) | 2006 12 01 | G96 | 0.7− | 0.2− |
| 1998 10 17 | 699 | 0.2− | 1.5+ | 2002 11 25 | 644 | 0.0 | 1.2+ | 2006 12 01 | G96 | 0.8− | 1.4− |
| 1998 10 17 | 699 | 0.6+ | 0.9+ | 2002 11 25 | 644 | 0.0 | 1.5+ | 2006 12 01 | G96 | (1.6+ | 2.2−) |
| 1998 10 19 | 699 | 0.2+ | 1.0+ | 2002 11 25 | 644 | 0.3+ | 1.2+ | | | | |
| 1998 10 19 | 699 | 1.2+ | 0.3− | 2002 12 05 | 704 | 0.0 | 0.7+ | | | | |

**(136984)∗ 1998 SW$_{10}$ = 2002 RE$_{99}$**

Discovered 1998 Sept. 21 by P. Pravec at Ondřejov.

Id. G. V. Williams (*MPO* 34729)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.93124 | | (2000.0) | | | |
| $n$ | 0.23859658 | $\omega$ | 152.51591 | | +0.91177354 | +0.41050302 |
| $a$ | 2.5745020 | $\Omega$ | 183.32365 | | −0.40515902 | +0.89408980 |
| $e$ | 0.2987463 | $i$ | 12.45236 | | −0.06719506 | +0.17913878 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 557 | 0.2− | 0.3− | 2002 10 04 | 683 | 0.1+ | 0.9− | 2006 08 28 | 704 | 0.1− | 0.1+ |
| 1998 09 21 | 557 | 0.2− | 0.5− | 2002 10 04 | 683 | 1.0+ | 0.2− | 2006 08 28 | 704 | 0.7− | 0.5+ |
| 1998 09 21 | 557 | 0.7− | 1.2− | 2002 10 05 | 683 | (1.9+ | 0.7+) | 2006 08 28 | 704 | 0.7− | 0.4+ |
| 1998 09 22 | 557 | 0.4+ | 0.5− | 2002 10 05 | 683 | 1.0+ | 0.7+ | 2006 08 30 | 699 | 0.4− | 0.2+ |
| 1998 09 23 | 557 | 0.7+ | 0.1− | 2002 10 05 | 683 | (1.6+ | 2.0−) | 2006 08 30 | 699 | 0.0 | 0.4+ |
| 1998 09 25 | 557 | 0.2− | 0.4− | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 08 30 | 699 | 0.3+ | 0.0 |
| 1998 09 25 | 557 | 0.2+ | 0.3− | 2002 10 11 | 704 | 0.6+ | 0.8+ | 2006 09 11 | 703 | 0.4− | 0.1− |
| 1998 09 25 | 557 | 0.4+ | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.9+ | 2006 09 11 | 703 | 0.4+ | 0.6− |
| 1998 09 25 | 557 | 0.6+ | 0.6− | 2002 10 11 | 704 | 0.0 | 1.0+ | 2006 09 11 | 703 | 0.1+ | 0.5− |
| 1998 09 25 | 557 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.0 | 0.8+ | 2006 09 11 | 703 | 0.3− | 0.4− |
| 1998 09 26 | 557 | 0.1− | 0.4− | 2002 10 11 | 608 | 0.3− | 0.9+ | 2006 09 17 | 703 | 0.5− | 0.4− |
| 1998 09 26 | 557 | 0.8− | 0.6− | 2002 10 11 | 608 | 0.9− | 0.8+ | 2006 09 17 | 703 | 0.3− | 0.1− |
| 1998 10 13 | 557 | 0.2+ | 0.1− | 2002 10 11 | 608 | 0.1+ | 1.1+ | 2006 09 17 | 703 | 0.6− | 0.2− |
| 1998 10 13 | 557 | 0.3− | 0.1− | 2002 10 15 | 644 | 0.2+ | 0.6− | 2006 09 17 | 703 | 0.2− | 0.0 |
| 1998 11 11 | 557 | 0.2+ | 0.3− | 2002 10 15 | 644 | 0.1+ | 0.6− | 2006 09 18 | 704 | 0.4− | 0.2− |
| 1998 11 11 | 557 | 0.6− | 0.5+ | 2002 10 15 | 644 | 0.3+ | 0.6− | 2006 09 18 | 704 | 0.4− | 0.3+ |
| 1998 11 13 | 704 | 1.1+ | 0.3− | 2002 10 30 | 704 | 0.1− | 1.0+ | 2006 09 18 | 704 | 0.0 | 0.3− |
| 1998 11 13 | 704 | 1.5+ | 1.0+ | 2002 10 30 | 704 | 0.0 | 0.6+ | 2006 09 18 | 704 | 0.2− | 0.6+ |
| 1998 11 13 | 704 | 0.5− | 0.0 | 2002 10 30 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.3+ | 0.4+ |
| 1998 11 13 | 704 | 1.9− | 0.3+ | 2002 10 30 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.2+ |
| 1998 11 19 | 683 | (2.1− | 0.5−) | 2002 10 30 | 704 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.2+ |
| 1998 11 19 | 683 | 0.9− | 0.1− | 2002 10 31 | 704 | 0.5− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.1− |
| 1998 11 19 | 683 | 0.7− | 0.7− | 2002 10 31 | 704 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.5− |
| 1998 11 19 | 699 | 1.2+ | 0.4− | 2002 10 31 | 704 | 0.1− | 0.3− | 2006 09 25 | 704 | 1.0+ | 0.0 |
| 1998 11 19 | 699 | 0.4+ | 0.2− | 2002 10 31 | 704 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.5+ | 0.0 |
| 1998 11 19 | 699 | 1.2− | 0.4− | 2002 10 31 | 704 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.6+ | 0.4− |
| 1998 11 21 | 557 | 0.7− | 0.7− | 2002 11 03 | 608 | 0.7− | 0.1− | 2006 09 26 | 704 | 0.4+ | 0.2+ |
| 1998 12 11 | 557 | 0.2+ | 0.7+ | 2002 11 03 | 608 | 0.5− | 0.5− | 2006 09 26 | 704 | 0.5+ | 0.1− |
| 1998 12 11 | 557 | 0.1− | 0.2+ | 2002 11 03 | 608 | 1.2− | 1.2− | 2006 09 26 | 704 | 0.4+ | 0.5− |
| 1998 12 11 | 557 | 0.3− | 0.5+ | 2002 11 06 | 644 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.6+ | 0.1+ |
| 1998 12 18 | 557 | 0.3− | 0.2− | 2002 11 06 | 644 | 0.1+ | 0.7+ | 2006 09 27 | G92 | 0.1− | 0.1+ |
| 1998 12 18 | 557 | 0.2+ | 0.3− | 2002 11 06 | 644 | 0.1− | 0.9+ | 2006 09 27 | G92 | 0.1− | 0.3+ |
| 2002 08 04 | 704 | 0.4+ | 0.7+ | 2002 11 21 | 644 | 0.3− | 0.0 | 2006 09 27 | G92 | 0.1+ | 0.2+ |
| 2002 08 04 | 704 | 0.1+ | 0.7+ | 2002 11 21 | 644 | 0.1− | 0.2+ | 2006 09 28 | G92 | 0.0 | 0.2− |
| 2002 08 04 | 704 | 0.1− | 1.2+ | 2002 11 21 | 644 | 0.3− | 0.1+ | 2006 09 28 | G92 | 0.1− | 0.1− |
| 2002 08 04 | 704 | 0.4− | 0.3+ | 2005 03 08 | G96 | 0.5− | 0.5+ | 2006 09 28 | G92 | 0.1− | 0.3− |
| 2002 08 04 | 704 | 0.1− | 0.9+ | 2005 03 08 | G96 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 1.1+ | 0.7+ | 2005 03 08 | G96 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.1+ |
| 2002 09 05 | 704 | 1.3+ | 0.2− | 2005 03 08 | G96 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2002 09 05 | 704 | 0.3+ | 0.6− | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.6+ | 0.5+ | 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.2− |
| 2002 09 05 | 704 | (1.7+ | 1.9+) | 2005 03 11 | G96 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.5− |
| 2002 09 07 | 704 | 0.4− | 0.6− | 2005 03 11 | G96 | 0.3+ | 0.6+ | 2006 09 30 | 704 | 0.1+ | 0.1− |
| 2002 09 07 | 704 | 0.8− | 0.2− | 2005 04 09 | G98 | 0.9+ | 0.4+ | 2006 09 30 | 699 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.1− | 0.1− | 2005 04 09 | G98 | 0.9+ | 1.0+ | 2006 09 30 | 704 | 0.0 | 0.2+ |
| 2002 09 07 | 704 | 0.1+ | 0.1+ | 2005 04 09 | G98 | 1.3+ | 1.0+ | 2006 09 30 | 699 | 0.7− | 0.3− |
| 2002 09 07 | 704 | 0.1− | 0.1+ | 2005 04 12 | 695 | 0.1− | 0.8+ | 2006 09 30 | 704 | 0.4+ | 0.3− |
| 2002 09 09 | 557 | 0.7+ | 0.5− | 2005 04 12 | 695 | 0.4+ | 0.5+ | 2006 09 30 | 699 | 1.0− | 0.1− |
| 2002 09 09 | 557 | 0.2+ | 0.2− | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.0 | 0.4+ |
| 2002 09 09 | 557 | 0.4+ | 0.4− | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 30 | 699 | (1.8− | 0.2−) |
| 2002 10 02 | 704 | (2.5+ | 1.7+) | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | (2.1+ | 1.9+) | 2006 08 19 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | (2.3+ | 1.4+) | 2006 08 19 | 644 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 10 02 | 704 | (2.6+ | 2.2+) | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 10 23 | 704 | 0.1− | 0.0 |
| 2002 10 02 | 608 | 0.2− | 0.7+ | 2006 08 19 | 644 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.1+ | 0.8+ |
| 2002 10 02 | 608 | 0.9− | 0.9+ | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 10 23 | 704 | 0.5− | 0.2− |
| 2002 10 02 | 608 | 0.7− | 0.9+ | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 10 23 | 704 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2006 08 27 | 699 | 0.4− | 0.1+ | 2006 11 11 | 703 | 1.0+ | 2.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.4+ | 0.3− | 2006 08 27 | 699 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.1− | 0.1− | 2006 08 27 | 699 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.1− | | |
| 2002 10 03 | 704 | 0.6+ | 0.4− | 2006 08 27 | 699 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.4− | 0.3− | | |
| 2002 10 03 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 704 | 0.1− | 0.3+ | | | | | | |
| 2002 10 04 | 683 | 0.5− | 0.3− | 2006 08 28 | 704 | 1.2− | 0.7+ | | | | | | |

**(136985)∗ 1998 SD$_{12}$**

Discovered 1998 Sept. 22 by the OCA-DLR Asteroid Survey at Caussols.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.35339 | | (2000.0) | | | |
| $n$ | 0.24242254 | $\omega$ | 174.39059 | | +0.96403502 | −0.24058746 |
| $a$ | 2.5473427 | $\Omega$ | 200.62563 | | +0.22967776 | +0.96796062 |
| $e$ | 0.2143027 | $i$ | 18.69915 | | +0.13373336 | +0.07190213 |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 22 | 910 | 0.3+ | 0.4+ | 2002 10 31 | 704 | 0.1+ | 1.1+ | 2006 09 27 | 703 | 0.3− | 0.3− | | |
| 1998 09 22 | 910 | 0.1+ | 0.4+ | 2002 10 31 | 704 | 0.1+ | 1.0+ | 2006 09 27 | 683 | 0.5− | 0.9+ | | |
| 1998 09 22 | 910 | 0.3+ | 0.3+ | 2002 10 31 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.1− | 0.4− | | |
| 1998 09 23 | 910 | 1.2− | 0.5+ | 2002 11 03 | 608 | (0.0 | 1.6−) | 2006 09 27 | 703 | 0.4− | 0.3− | | |
| 1998 09 23 | 910 | 1.1− | 0.5+ | 2002 11 03 | 608 | 0.2− | 1.5− | 2006 09 27 | 683 | 0.6− | 1.0+ | | |
| 1998 09 23 | 910 | 1.0− | 0.7+ | 2002 11 03 | 608 | (0.4+ | 1.5−) | 2006 09 27 | 703 | 0.1− | 0.6− | | |
| 1998 09 29 | 704 | 0.9+ | 0.3− | 2002 11 07 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.0 | 0.4− | | |
| 1998 09 29 | 704 | 1.9+ | 2.0+ | 2002 11 07 | 704 | 0.2+ | 1.1+ | 2006 09 27 | 703 | 0.0 | 0.4− | | |
| 1998 09 29 | 704 | 0.6− | 0.3− | 2002 11 07 | 704 | 0.2− | 0.8+ | 2006 09 27 | 703 | 0.2− | 0.2− | | |
| 1998 09 29 | 704 | 0.2+ | 0.4− | 2002 11 07 | 704 | 0.2+ | 1.2+ | 2006 09 27 | 703 | 0.2− | 0.3− | | |
| 1998 10 29 | 704 | 0.2+ | 0.6+ | 2002 11 07 | 704 | 0.4+ | 0.8+ | 2006 09 28 | 704 | 0.9+ | 0.1+ | | |
| 1998 10 29 | 704 | 0.6− | 0.2− | 2002 11 08 | 645 | 0.2+ | 0.3− | 2006 09 28 | 704 | 0.4+ | 0.5− | | |
| 1998 10 29 | 704 | 0.5− | 0.4− | 2002 11 08 | 645 | 0.2+ | 0.2− | 2006 09 28 | 704 | 0.7+ | 0.0 | | |
| 1998 10 29 | 704 | 0.9+ | 0.6− | 2002 11 11 | 704 | (0.6+ | 1.7−) | 2006 10 09 | 644 | 0.2+ | 0.2− | | |
| 1998 10 29 | 704 | 0.7− | 0.1− | 2002 11 11 | 704 | 1.1+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.1+ | | |
| 1998 11 13 | 704 | 1.1+ | 0.4− | 2002 11 11 | 704 | 0.7+ | 0.5− | 2006 10 09 | 644 | 0.0 | 0.3− | | |
| 1998 11 13 | 704 | 0.5+ | 1.2+ | 2002 11 11 | 704 | 0.4− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 1998 11 13 | 704 | 0.6− | 1.3+ | 2002 11 21 | 644 | 0.2− | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 1998 11 13 | 704 | (1.0− | 2.2+) | 2002 11 21 | 644 | 0.2+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 1998 11 13 | 704 | 0.5− | 1.5− | 2002 11 21 | 644 | 0.2+ | 1.0+ | 2006 10 17 | 703 | 0.5+ | 0.2− | | |
| 2002 09 06 | 704 | 0.3− | 0.2− | 2005 05 06 | 703 | 1.3+ | 0.5− | 2006 10 17 | 703 | 0.5− | 0.5+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2005 05 06 | 703 | (0.8+ | 1.6+) | 2006 10 17 | 703 | 0.0 | 0.8− | | |
| 2002 09 06 | 704 | 0.1− | 0.2+ | 2005 05 06 | 703 | 1.2− | 1.1+ | 2006 10 17 | 703 | 0.1+ | 0.7− | | |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2005 05 06 | 703 | 1.0− | 0.2− | 2006 10 19 | 704 | 0.3+ | 0.8+ | | |
| 2002 09 06 | 704 | 0.2+ | 1.0+ | 2005 05 15 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 704 | 1.3− | 0.4+ | | |
| 2002 09 16 | 608 | 0.6− | 1.1− | 2005 05 15 | 644 | 0.3+ | 0.6+ | 2006 10 19 | 704 | (1.6− | 1.6+) | | |
| 2002 09 16 | 608 | 0.3− | 1.1− | 2005 05 15 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 704 | (1.0+ | 2.2+) | | |
| 2002 09 16 | 608 | 0.4− | 0.4− | 2005 05 15 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.8− | 0.9− | | |
| 2002 10 02 | 704 | 0.4+ | 0.4+ | 2005 05 15 | 644 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2002 10 02 | 704 | 0.6+ | 0.6+ | 2005 05 15 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 10 02 | 704 | 0.4+ | 0.3+ | 2006 09 01 | 704 | 0.5+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.5− | | |
| 2002 10 02 | 704 | 0.4+ | 0.2+ | 2006 09 01 | 704 | 0.2− | 1.2− | 2006 10 22 | G96 | 0.5+ | 0.4− | | |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2006 09 01 | 704 | (0.4+ | 1.6−) | 2006 10 22 | G96 | 0.3+ | 0.5− | | |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 10 29 | H51 | 0.4+ | 0.6− | | |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 10 29 | H51 | 0.6+ | 0.3− | | |
| 2002 10 03 | 704 | 0.7− | 0.4+ | 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 10 29 | H51 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 29 | H51 | 0.6− | 0.0 | | |
| 2002 10 07 | 704 | 1.0− | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 11 10 | 704 | 0.6− | 0.7+ | | |
| 2002 10 07 | 704 | 1.1− | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.5− | 1.1+ | | |
| 2002 10 07 | 704 | 0.6− | 0.4+ | 2006 09 16 | 703 | 0.2+ | 0.3− | 2006 11 10 | 704 | 0.4− | 0.7+ | | |
| 2002 10 07 | 704 | 1.1− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.3− | 2006 11 10 | 704 | 1.2− | 1.1+ | | |
| 2002 10 07 | 704 | 1.1− | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 11 10 | 704 | 0.0 | 1.4+ | | |
| 2002 10 09 | 704 | 0.6− | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.6− | 2006 11 14 | G96 | 0.4− | 0.7− | | |
| 2002 10 09 | 704 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.6− | | |
| 2002 10 09 | 704 | 0.9− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.3− | 0.7− | | |
| 2002 10 09 | 704 | 1.1− | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.5+ | 2006 11 14 | G96 | 0.2− | 0.6− | | |
| 2002 10 11 | 704 | 0.1− | 0.4− | 2006 09 19 | 699 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2002 10 11 | 704 | 0.3− | 0.4− | 2006 09 21 | 106 | 0.5+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.4− | | |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2006 09 21 | 106 | 0.9+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.5− | | |
| 2002 10 11 | 704 | 0.0 | 0.1− | 2006 09 21 | 106 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2006 09 21 | 106 | 0.4+ | 0.5− | 2006 11 18 | 704 | 0.3− | 1.4+ | | |
| 2002 10 29 | 683 | (0.8− | 2.4−) | 2006 09 25 | 683 | (2.4− | 1.7−) | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 2002 10 29 | 683 | 0.0 | 0.8− | 2006 09 25 | 683 | (2.3− | 2.6−) | 2006 11 18 | 704 | 0.3− | 0.4+ | | |
| 2002 10 29 | 683 | 0.5− | 1.4− | 2006 09 25 | 683 | (2.0− | 2.2−) | 2006 11 18 | 704 | 0.4− | 1.1+ | | |
| 2002 10 30 | 683 | 0.5− | 0.1+ | 2006 09 26 | 683 | 0.7+ | 0.8− | 2006 11 18 | 704 | 1.2+ | 0.9+ | | |
| 2002 10 30 | 683 | (2.1− | 0.6−) | 2006 09 26 | 683 | 1.1+ | 0.6− | 2006 11 21 | 704 | 1.1− | 0.7+ | | |
| 2002 10 30 | 683 | 0.0 | 0.6− | 2006 09 26 | 683 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.0 | | |
| 2002 10 31 | 683 | 0.1+ | 0.6+ | 2006 09 27 | 699 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.4+ | | |
| 2002 10 31 | 683 | (1.8+ | 3.2+) | 2006 09 27 | 699 | 0.4+ | 0.0 | 2006 11 21 | 704 | 1.2+ | 0.1+ | | |
| 2002 10 31 | 683 | (1.4− | 2.3−) | 2006 09 27 | 699 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 1.1+ | | |
| 2002 10 31 | 704 | 0.2− | 0.6+ | 2006 09 27 | 699 | 0.3− | 0.7+ | | | | | | |
| 2002 10 31 | 704 | 0.3+ | 1.0+ | 2006 09 27 | 683 | 0.4− | 0.3− | | | | | | |

**(136986)∗ 1998 SX$_{15}$ = 2002 RW$_{164}$**

Discovered 1998 Sept. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37098)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.62998 | | (2000.0) | | | |
| $n$ | 0.24535705 | $\omega$ | 97.10662 | | +0.10126636 | +0.99485785 |
| $a$ | 2.5269910 | $\Omega$ | 178.70172 | | −0.94017444 | +0.09626664 |
| $e$ | 0.1207095 | $i$ | 4.36511 | | −0.32529547 | +0.03147353 |
| $P$ | 4.02 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 691 | 0.8− | 0.9+ | 2002 09 05 | 645 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.0 | | |
| 1998 08 30 | 691 | 0.4− | 0.4+ | 2002 09 12 | 644 | 0.3− | 0.7− | 2006 08 28 | 691 | 0.2− | 0.3− | | |
| 1998 08 30 | 691 | 0.6− | 0.3+ | 2002 09 12 | 644 | 0.3− | 0.3− | 2006 08 28 | 691 | 0.0 | 0.1+ | | |
| 1998 09 16 | 691 | (1.3+ | 2.6+) | 2002 09 12 | 644 | 0.4− | 0.7− | 2006 09 12 | 703 | 0.4+ | 0.8− | | |
| 1998 09 16 | 691 | 0.9− | 0.3+ | 2002 09 14 | 644 | 0.1+ | 0.5+ | 2006 09 12 | 703 | 0.2− | 0.1− | | |
| 1998 09 16 | 691 | 0.9− | 0.4+ | 2002 09 14 | 644 | 0.1+ | 0.3+ | 2006 09 12 | 703 | (2.9− | 0.7+) | | |
| 1998 09 21 | 691 | 1.1+ | 0.4− | 2002 09 14 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.8− | 1.0+ | | |
| 1998 09 21 | 691 | 1.0+ | 0.4− | 2005 03 12 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1− | | |
| 1998 09 21 | 691 | 1.2+ | 0.0 | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | | |
| 1998 09 23 | 691 | 0.7− | 0.4+ | 2005 03 12 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.3− | | |
| 1998 09 23 | 691 | 0.2− | 0.2+ | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.5− | | |
| 1998 09 23 | 691 | 0.4− | 0.4+ | 2005 05 13 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.5− | | |
| 1998 09 26 | 691 | 0.0 | 0.4+ | 2005 05 13 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.1− | 0.2− | | |
| 1998 09 26 | 691 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.3+ | 0.2− | 2006 10 16 | G96 | 0.7+ | 0.5− | | |
| 1998 09 26 | 691 | 0.2+ | 0.4+ | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.2− | 0.2− | | |
| 2002 09 05 | 645 | 0.2+ | 0.2− | 2006 08 19 | 691 | 0.0 | 0.3− | | | | | | |

**(136987)∗ 1998 SV$_{20}$ = 2002 RM$_{158}$**

Discovered 1998 Sept. 21 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.77618 | | (2000.0) | | | |
| $n$ | 0.24091453 | $\omega$ | 180.84904 | | +0.96215974 | −0.27196219 |
| $a$ | 2.5579618 | $\Omega$ | 194.96494 | | +0.25038495 | +0.90687112 |
| $e$ | 0.0961956 | $i$ | 3.74981 | | +0.10749891 | +0.32190269 |
| $P$ | 4.09 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 07 | 691 | 0.6− | 0.0 | 2002 09 14 | 644 | 0.6− | 0.2+ | 2005 04 16 | 691 | (0.04+ | 0.01−) | | |
| 1994 10 07 | 691 | 0.0 | 0.6− | 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 05 11 | G96 | 0.1− | 0.0 | | |
| 1994 10 07 | 691 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.2− | 0.1+ | 2005 05 11 | G96 | 0.1− | 0.2− | | |
| 1994 11 01 | 691 | 0.4+ | 0.5+ | 2002 09 14 | 644 | 0.5− | 0.2+ | 2005 05 11 | G96 | 0.2− | 0.2− | | |
| 1994 11 01 | 691 | 0.4+ | 0.5+ | 2002 09 14 | 644 | 0.5− | 0.2+ | 2005 05 11 | G96 | 0.2− | 0.2+ | | |
| 1994 11 01 | 691 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.7− | 0.4+ | 2005 05 14 | G96 | 0.0 | 0.1− | | |
| 1998 09 20 | 691 | 0.8+ | 0.1− | 2002 09 15 | 608 | 0.5− | 1.2− | 2005 05 14 | G96 | 0.2+ | 0.4+ | | |
| 1998 09 20 | 691 | 0.9+ | 0.1+ | 2002 09 15 | 608 | 1.0− | 1.2− | 2005 05 14 | G96 | 0.2+ | 0.2− | | |
| 1998 09 20 | 691 | 0.9+ | 0.1+ | 2002 09 15 | 608 | 0.8− | 1.3− | 2005 05 14 | G96 | 0.0 | 0.0 | | |
| 1998 09 21 | 691 | (0.5− | 2.2+) | 2002 09 17 | 644 | 0.0 | 0.2+ | 2006 08 19 | A50 | 0.1− | 0.0 | | |
| 1998 09 21 | 691 | 0.3+ | 0.2− | 2002 09 17 | 644 | 0.4− | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | | |
| 1998 09 21 | 691 | 0.2+ | 0.4− | 2002 09 17 | 644 | 0.4− | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.0 | | |
| 1998 09 23 | 691 | 0.5− | 0.1+ | 2002 09 30 | 704 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.3+ | 0.1+ | | |
| 1998 09 23 | 691 | 0.7− | 0.6− | 2002 09 30 | 704 | 0.6+ | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 23 | 691 | 0.6− | 0.1− | 2002 09 30 | 704 | 1.2− | 1.2+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2005 03 10 | 699 | 0.7+ | 0.6+ |
| 1998 09 26 | 704 | 1.1− | 0.3+ | 2002 09 30 | 704 | 0.3+ | 0.9+ | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2005 03 10 | 699 | 0.2+ | 0.1− |
| 1998 09 26 | 704 | 0.5− | 1.3− | 2002 10 01 | 699 | 0.4− | 0.7+ | 2006 09 09 | A44 | 0.1− | 0.1− | 2005 03 10 | 699 | 0.1− | 0.7+ |
| 1998 09 26 | 704 | 2.0− | 1.1− | 2002 10 01 | 699 | 0.4+ | 1.0− | 2006 09 09 | A44 | 0.1+ | 0.0 | 2005 03 10 | 699 | 0.3+ | 0.5+ |
| 1998 09 26 | 704 | 0.8+ | 0.7− | 2002 10 01 | 699 | 0.3− | 0.3+ | 2006 09 09 | A44 | 0.3+ | 0.1− | 2005 03 10 | 152 | 0.4+ | 0.6+ |
| 1998 09 27 | 704 | 0.4+ | 0.3− | 2002 10 01 | 699 | 1.1+ | 0.2− | 2006 09 17 | 703 | 1.4− | 1.1− | 2005 03 10 | 152 | 0.7− | 0.3+ |
| 1998 09 27 | 704 | 0.1− | 1.6− | 2002 10 03 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.5− | 0.1+ | 2005 03 10 | 152 | 0.5+ | 0.5+ |
| 1998 09 27 | 704 | 0.7− | 1.6+ | 2002 10 03 | 704 | 0.0 | 0.6+ | 2006 09 17 | 703 | 0.5+ | 0.7− | 2005 03 10 | 152 | 0.5+ | 0.2+ |
| 1998 09 27 | 691 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.6− | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.8− | 2005 03 13 | 152 | 0.2+ | 0.2+ |
| 1998 09 27 | 704 | 0.3+ | 1.0+ | 2002 10 03 | 704 | 0.2− | 0.7+ | 2006 09 28 | G96 | 0.5− | 0.8− | 2005 03 13 | 152 | 0.2− | 0.1+ |
| 1998 09 27 | 691 | 0.1− | 0.1+ | 2002 10 03 | 704 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.8+ | 0.7− | 2005 03 13 | 152 | 0.1+ | 0.5+ |
| 1998 09 27 | 691 | 0.1+ | 0.2+ | 2002 10 04 | 291 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.2− | 0.3− | 2005 03 13 | 152 | 0.1− | 0.4+ |
| 2001 05 25 | 691 | 0.1+ | 0.0 | 2002 10 04 | 291 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2005 03 16 | 703 | 0.5+ | 0.2+ |
| 2001 05 25 | 691 | 0.1− | 0.1+ | 2002 10 04 | 291 | 0.2+ | 0.1+ | 2006 09 30 | 699 | 0.8+ | 0.8+ | 2005 03 16 | 703 | 0.2+ | 0.9+ |
| 2001 05 25 | 691 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.7− | 0.5+ | 2006 09 30 | 699 | (0.0 | 1.8+) | 2005 03 16 | 703 | 0.1− | 0.7− |
| 2002 09 07 | 704 | 0.5+ | 0.4− | 2002 10 11 | 704 | 0.4− | 1.3+ | 2006 09 30 | 699 | (1.6+ | 0.5+) | 2005 03 16 | 703 | 0.6− | 0.4+ |
| 2002 09 07 | 704 | 0.3+ | 0.0 | 2002 10 11 | 704 | 0.0 | 0.9+ | 2006 09 30 | 699 | 0.9+ | 0.9+ | 2005 03 30 | 703 | (1.8− | 1.6+) |
| 2002 09 07 | 704 | 0.5− | 0.4− | 2002 10 11 | 704 | 0.4− | 0.9− | 2006 11 21 | G96 | 0.3+ | 0.4− | 2005 03 30 | 703 | 0.1− | 0.3+ |
| 2002 09 11 | 644 | 0.7− | 0.1− | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1− | 2005 03 30 | 703 | 0.8+ | 0.7− |
| 2002 09 11 | 644 | 0.4− | 0.2+ | 2005 04 16 | 691 | (0.04+ | 0.01−) | 2006 11 21 | G96 | 0.8+ | 0.0 | 2005 03 30 | 703 | 0.1+ | 1.1+ |
| 2002 09 11 | 644 | (1.0− | 1.7+) | 2005 04 16 | 691 | (0.04+ | 0.01−) | 2006 11 21 | G96 | 0.0 | 0.1− | 2005 04 11 | 704 | 1.5+ | 0.2− |
| | | | | | | | | | | | | 2005 04 11 | 704 | 0.6+ | 1.0+ |
| | | | | | | | | | | | | 2005 04 11 | 704 | 1.2+ | 0.7− |
| | | | | | | | | | | | | 2005 04 11 | 704 | 0.1− | 0.3+ |
| | | | | | | | | | | | | 2005 05 04 | G96 | 0.4+ | 0.1+ |
| | | | | | | | | | | | | 2005 05 04 | G96 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.0 | | | | | | |
| 2006 09 15 | 704 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.5− | | | | | | |
| 2006 09 15 | 704 | 0.2− | 0.6− | 2006 10 17 | 703 | 0.7− | 1.1− | | | | | | |
| 2006 09 15 | 704 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.5− | | | | | | |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.7− | | | | | | |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 22 | 704 | 0.2+ | 0.8− | | | | | | |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 22 | 704 | 0.2+ | 0.2− | | | | | | |
| 2006 09 16 | 644 | 0.1+ | 0.3− | 2006 10 22 | 704 | 0.7+ | 0.2− | | | | | | |
| 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 22 | 704 | 1.2− | 0.1+ | | | | | | |
| 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 704 | 0.6+ | 0.3− | | | | | | |
| 2006 09 17 | 704 | (1.6+ | 0.8+) | 2006 10 22 | 644 | 0.3+ | 0.0 | | | | | | |
| 2006 09 17 | 704 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.1+ | | | | | | |
| 2006 09 17 | 704 | 1.2+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.1+ | | | | | | |
| 2006 09 17 | 704 | 1.0+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− | | | | | | |
| 2006 09 18 | 691 | 0.4− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1+ | | | | | | |
| 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1+ | | | | | | |
| 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 31 | 703 | 0.1− | 0.0 | | | | | | |
| 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 31 | 703 | 0.8− | 0.1+ | | | | | | |
| 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 10 31 | 703 | 0.0 | 0.4+ | | | | | | |
| 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.9+ | 0.6+ | | | | | | |
| 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.9+ | 1.0+ | | | | | | |
| 2006 09 20 | 704 | 0.5− | 0.6+ | 2006 11 17 | 704 | 1.6+ | 1.2+ | | | | | | |
| 2006 09 20 | 704 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.3+ | | | | | | |
| 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.6+ | | | | | | |
| 2006 09 20 | 704 | 0.0 | 0.1+ | | | | | | | | | | |
| 2006 09 20 | 704 | 0.1− | 0.1− | | | | | | | | | | |

**(136988)∗ 1998 $SO_{33}$ = 1998 $SF_{166}$ = 2002 $CP_6$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 9938), T. B. Spahr (*MPO* 24976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.02496 | | (2000.0) | | | |
| $n$ | 0.37302581 | $\omega$ | 16.31445 | | +0.92264199 | −0.38347453 |
| $a$ | 1.9112176 | $\Omega$ | 6.67933 | | +0.30262092 | +0.65402443 |
| $e$ | 0.1077699 | $i$ | 20.62774 | | +0.23906556 | +0.65207310 |
| $P$ | 2.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 704 | 0.0 | 0.5− | 2005 05 04 | G96 | 0.3+ | 0.2+ | 2006 09 21 | 608 | (2.8+ | 5.7+) | 2002 02 01 | 704 | 1.3+ | 0.2− |
| 1998 09 18 | 704 | 0.2− | 0.4+ | 2005 05 04 | G96 | 0.1+ | 0.1+ | 2006 09 21 | 608 | (3.0+ | 5.4+) | 2002 02 01 | 704 | 0.9+ | 1.4− |
| 1998 09 18 | 704 | 0.5+ | 0.9− | 2006 08 19 | 699 | 0.3− | 0.8+ | 2006 09 21 | 608 | (2.6+ | 5.3+) | 2002 02 01 | 704 | 0.4+ | 0.4− |
| 1998 09 18 | 704 | 0.9+ | 0.2+ | 2006 08 19 | 699 | 0.4− | 0.4+ | 2006 09 25 | 704 | 0.2− | 1.0+ | 2002 02 01 | 704 | 0.1− | 0.4+ |
| 1998 09 18 | 704 | 0.9+ | 0.7+ | 2006 08 19 | 699 | 0.5− | 0.8+ | 2006 09 25 | 704 | (0.3− | 2.0+) | 2002 02 06 | 704 | 0.7− | 0.3+ |
| 1998 09 24 | 699 | 0.8− | 0.0 | 2006 08 19 | 699 | 0.4+ | 0.8+ | 2006 09 25 | 704 | 1.0− | 1.3+ | 2002 02 06 | 704 | 0.4− | 0.4+ |
| 1998 09 24 | 699 | 0.3− | 0.4− | 2006 08 23 | 704 | 0.4+ | 0.7+ | 2006 09 25 | 704 | (0.1+ | 1.8+) | 2002 02 06 | 704 | 0.3− | 0.2− |
| 1998 09 24 | 699 | 0.2− | 1.0− | 2006 08 23 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.7− | 1.2+ | 2002 02 06 | 704 | 0.1− | 1.1+ |
| 1998 09 26 | 704 | 0.9+ | 0.8− | 2006 08 23 | 704 | 0.2+ | 0.3− | 2006 09 26 | 683 | 1.3+ | 0.7− | 2002 02 06 | 704 | 0.8− | 0.2− |
| 1998 09 26 | 704 | 1.3− | 0.3− | 2006 08 28 | 704 | 1.1− | 0.3+ | 2006 09 26 | 683 | 0.7+ | 0.4− | | | | |
| 1998 09 26 | 704 | 1.6+ | 0.3− | 2006 08 28 | 704 | 0.0 | 0.5+ | 2006 09 26 | 683 | 1.0+ | 0.7− | | | | |
| 1998 09 26 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 704 | 0.9− | 0.2− | 2006 09 27 | 683 | 0.2+ | 0.2− | | | | |
| 1998 09 26 | 704 | 0.8+ | 0.4− | 2006 08 28 | 704 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.0 | | | | |
| 1998 09 27 | 704 | 0.1− | 0.2− | 2006 08 28 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 683 | 0.4+ | 0.5− | | | | |
| 1998 09 27 | 704 | 0.5− | 0.7+ | 2006 08 28 | 704 | (0.5− | 1.6+) | 2006 09 27 | 683 | 0.3+ | 0.3+ | | | | |
| 1998 09 27 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 704 | 0.9− | 1.5− | 2006 09 27 | 691 | 0.3− | 0.0 | | | | |
| 1998 09 27 | 704 | 1.3− | 0.5+ | 2006 08 28 | 704 | 0.4− | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.0 | | | | |
| 1998 09 27 | 704 | 0.9− | 0.1+ | 2006 08 28 | 704 | (2.0+ | 0.9+) | 2006 09 28 | 683 | (1.6− | 2.2−) | | | | |
| 1998 10 15 | 704 | 0.9− | 1.8+ | 2006 08 31 | 704 | (1.6− | 0.7+) | 2006 09 28 | 683 | (1.1− | 2.9−) | | | | |
| 1998 10 15 | 704 | (2.1− | 1.5−) | 2006 08 31 | 704 | 0.3− | 0.1− | 2006 09 28 | 683 | (2.8− | 2.5−) | | | | |
| 1998 10 15 | 704 | (4.8− | 4.2−) | 2006 08 31 | 704 | 1.2− | 0.2+ | 2006 09 29 | 704 | 0.7+ | 0.0 | | | | |
| 1998 10 15 | 704 | (5.1− | 1.7−) | 2006 08 31 | 704 | (1.8− | 0.1−) | 2006 09 29 | 704 | 0.0 | 0.1+ | | | | |
| 2002 02 01 | 704 | 1.3+ | 0.2− | 2006 08 31 | 704 | 1.4− | 0.3+ | 2006 09 29 | 704 | 0.5− | 0.1− | | | | |
| 2002 02 01 | 704 | 0.9+ | 1.4− | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.5− | 0.1+ | | | | |
| 2002 02 01 | 704 | 0.4+ | 0.4− | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.1− | | | | |
| 2002 02 01 | 704 | 0.1− | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 03 | 704 | 0.3− | 0.6+ | | | | |
| 2002 02 01 | 704 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 10 03 | 704 | 0.3+ | 1.0+ | | | | |
| 2002 02 06 | 704 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.3− | 0.6+ | | | | |
| 2002 02 06 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.4− | 2006 10 03 | 704 | 0.3+ | 0.5+ | | | | |
| 2002 02 06 | 704 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.9− | 0.4− | 2006 10 03 | 704 | 0.0 | 0.4+ | | | | |
| 2002 02 06 | 704 | 0.1− | 1.1+ | 2006 09 14 | 691 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | | | | |
| 2002 02 06 | 704 | 0.8− | 0.2− | 2006 09 14 | 691 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.0 | | | | |

**(136989)∗ 1998 $SX_{33}$ = 2000 $GX_2$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 40004)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.53240 | | (2000.0) | | | |
| $n$ | 0.37034745 | $\omega$ | 298.67804 | | +0.59380414 | +0.80285511 |
| $a$ | 1.9204211 | $\Omega$ | 8.37812 | | −0.55021555 | +0.45333377 |
| $e$ | 0.0967556 | $i$ | 21.37560 | | −0.58707707 | +0.38718493 |
| $P$ | 2.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 704 | 0.3+ | 0.1− | 2000 04 08 | 704 | 0.1+ | 1.3+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2002 02 01 | 704 | 0.7+ | 0.2+ |
| 1998 09 21 | 704 | 0.0 | 0.2− | 2000 04 08 | 704 | 1.3+ | 1.0+ | 2006 09 30 | 703 | 0.6− | 0.6+ | 2002 02 01 | 704 | 0.9+ | 1.4− |
| 1998 09 21 | 704 | 1.0+ | 0.6+ | 2000 04 08 | 704 | 0.6+ | 1.3+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2002 02 01 | 704 | 0.4+ | 0.4− |
| 1998 09 21 | 704 | 0.4− | 1.8+ | 2000 04 08 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 704 | 0.6− | 0.0 | 2002 02 01 | 704 | 0.1− | 0.4+ |
| 1998 09 21 | 704 | 0.6− | 0.1− | 2001 12 23 | 704 | 0.3− | 1.0+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2002 02 06 | 704 | 0.7− | 0.3+ |
| 1998 09 26 | 704 | 0.6− | 0.5+ | 2001 12 23 | 704 | 0.3− | 0.8+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2002 02 06 | 704 | 0.4− | 0.4+ |
| 1998 09 26 | 704 | 1.0− | 0.9− | 2001 12 23 | 704 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.8− | 2002 02 06 | 704 | 0.3− | 0.2− |
| 1998 09 26 | 704 | 0.6+ | 0.5− | 2001 12 23 | 704 | 0.1− | 0.4− | 2006 09 30 | 703 | 0.0 | 0.2− | 2002 02 06 | 704 | 0.1− | 1.1+ |
| 1998 09 26 | 704 | 0.2+ | 0.9− | 2006 08 29 | D35 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2002 02 06 | 704 | 0.8− | 0.2− |
| 1998 09 26 | 704 | 0.6− | 1.1− | 2006 08 29 | D35 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.3− | | | | |
| 1998 09 27 | 699 | 0.1− | 0.6− | 2006 08 29 | D35 | 0.4− | 0.5+ | 2006 10 17 | 106 | 0.3+ | 0.5− | | | | |
| 1998 09 27 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.5+ | 0.7− | 2006 10 17 | 106 | 0.5+ | 0.6− | | | | |
| 1998 09 27 | 699 | 0.3+ | 0.6− | 2006 09 16 | 704 | 0.0 | 0.7+ | 2006 10 17 | 106 | 0.5+ | 0.1− | | | | |
| 1998 09 27 | 704 | 1.4+ | 0.4+ | 2006 09 16 | 704 | 0.1+ | 0.4− | 2006 10 17 | 106 | 0.1+ | 0.4− | | | | |
| 1998 09 27 | 699 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.1+ | | | | |
| 1998 09 27 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.2+ | | | | |
| 1998 09 27 | 704 | 0.3+ | 1.4+ | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.0 | | | | |
| 1998 09 27 | 704 | 0.7+ | 0.2− | 2006 09 18 | 699 | 1.0− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.2− | | | | |
| 1998 09 29 | 704 | 1.9− | 0.2− | 2006 09 18 | 699 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− | | | | |
| 1998 09 29 | 704 | (2.3− | 0.9−) | 2006 09 19 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2− | | | | |
| 1998 09 29 | 704 | (2.1− | 1.7−) | 2006 09 19 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | (2.0+ | 4.8+) | | | | |
| 1998 09 29 | 704 | (2.2− | 1.1+) | 2006 09 19 | 704 | 0.1− | 1.3+ | 2006 10 22 | 703 | 0.4+ | 1.2− | | | | |
| 1998 09 29 | 704 | 0.6− | 1.3+ | 2006 09 19 | 704 | (1.7+ | 0.6+) | 2006 10 22 | 703 | 0.0 | 1.0− | | | | |
| 1998 09 29 | 704 | 1.9− | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2+ | | | | |
| 1998 09 29 | 704 | 0.4− | 1.1− | 2006 09 20 | 644 | 0.5− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2+ | | | | |
| 1998 09 29 | 704 | 2.0− | 1.0+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.7+ | 1.1+ | | | | |
| 1998 09 29 | 704 | (2.5− | 0.9−) | 2006 09 22 | 704 | 0.4− | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.5− | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 10 | 120 | 0.2+ | 1.2+ | 2006 09 22 | 704 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.5− |
| 1998 10 10 | 120 | 1.1+ | 0.4+ | 2006 09 22 | 704 | 0.7− | 0.6− | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2000 03 12 | 703 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.5− |
| 2000 03 12 | 703 | 1.2+ | 0.9+ | 2006 09 26 | 704 | 0.3− | 0.1− | 2006 10 29 | 703 | 0.8+ | 0.4− |
| 2000 03 12 | 703 | 1.5+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 10 29 | 703 | 0.3+ | 0.2+ |
| 2000 03 12 | 703 | 0.4+ | 1.2+ | 2006 09 26 | 704 | 0.3− | 0.3− | 2006 10 29 | 703 | 0.4− | 1.2− |
| 2000 03 26 | 699 | 0.6+ | 1.5+ | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 29 | 703 | (0.4− | 1.6−) |
| 2000 03 26 | 699 | 0.8+ | 0.6+ | 2006 09 26 | 704 | 0.2− | 0.5+ | 2006 11 13 | 703 | 0.3− | 1.1+ |
| 2000 03 26 | 699 | 0.8+ | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.6+ | 2006 11 13 | 703 | 0.3− | 0.5+ |
| 2000 03 26 | 699 | 1.2+ | 0.8+ | 2006 09 28 | 704 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.8+ |
| 2000 04 05 | 704 | 0.8+ | 0.7+ | 2006 09 28 | 704 | 0.7− | 0.3+ | 2006 11 13 | 703 | 0.8+ | 0.9+ |
| 2000 04 05 | 704 | 0.7+ | 0.7+ | 2006 09 28 | 704 | 0.5− | 0.7+ | 2006 11 15 | 704 | 0.0 | 0.2− |
| 2000 04 05 | 704 | 0.8+ | 0.8+ | 2006 09 28 | 704 | 0.4− | 1.1+ | 2006 11 15 | 704 | 0.5+ | 0.2+ |
| 2000 04 05 | 704 | 0.8+ | 0.1− | 2006 09 30 | 704 | 0.8− | 0.8+ | 2006 11 15 | 704 | 0.4− | 0.0 |
| 2000 04 05 | 704 | 0.9+ | 0.6+ | 2006 09 30 | 704 | (1.9− | 0.2−) | 2006 11 15 | 704 | 0.6+ | 0.7− |
| 2000 04 06 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.3− |
| 2000 04 06 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 704 | (1.9− | 0.4+) | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2000 04 06 | 704 | 0.8+ | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.4− | | | | |
| 2000 04 06 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.8− | 0.7+ | | | | |

**(136990)∗ 1998 SW$_{34}$ = 2005 GC$_{128}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74585)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 146.07136 | | (2000.0) | | | |
| $n$ | 0.37276455 | $\omega$ | 213.83788 | | −0.67542312 | +0.73263278 |
| $a$ | 1.9121105 | $\Omega$ | 14.30819 | | −0.57865668 | −0.45595735 |
| $e$ | 0.0626065 | $i$ | 19.86561 | | −0.45712149 | −0.50532376 |
| $P$ | 2.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.4+ | 0.8− | 2005 03 14 | 703 | (1.7− | 1.2+) | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1998 09 26 | 704 | 0.8+ | 1.0− | 2005 03 14 | 703 | 0.7− | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.2+ |
| 1998 09 26 | 704 | 1.3+ | 0.4+ | 2005 03 14 | 703 | (2.7+ | 1.8−) | 2006 10 03 | 691 | 0.3− | 0.1+ |
| 1998 09 26 | 704 | 1.6+ | 1.7− | 2005 04 01 | 703 | 0.3− | 0.2+ | 2006 10 03 | 691 | 0.2− | 0.1+ |
| 1998 09 26 | 704 | (2.2+ | 1.9−) | 2005 04 01 | 703 | 0.0 | 0.2+ | 2006 10 03 | 691 | 0.5− | 0.2+ |
| 1998 09 27 | 691 | 0.3− | 0.0 | 2005 04 01 | 703 | 0.9− | 1.1− | 2006 10 17 | 703 | 0.5− | 0.0 |
| 1998 09 27 | 704 | 0.8− | 0.2+ | 2005 04 01 | 703 | 1.0+ | 0.9+ | 2006 10 17 | 703 | 0.2− | 0.2− |
| 1998 09 27 | 691 | 0.6− | 0.0 | 2005 04 10 | 703 | 1.0− | 0.5− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 1998 09 27 | 704 | 0.5+ | 0.3− | 2005 04 10 | 703 | 0.2− | 0.3− | 2006 10 17 | 703 | (4.3+ | 4.8+) |
| 1998 09 27 | 691 | 0.4− | 0.1− | 2005 04 10 | 703 | 0.2+ | 1.0− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1998 09 27 | 704 | 0.8+ | 1.1+ | 2005 04 10 | 703 | 1.1− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.6− |
| 1998 09 27 | 704 | 0.6+ | 1.1− | 2005 04 13 | 704 | 0.0 | 1.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1998 09 27 | 704 | 0.1− | 1.4− | 2005 04 13 | 704 | 0.8+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1998 10 10 | 699 | 0.7+ | 1.0+ | 2005 04 13 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1998 10 10 | 699 | 0.6+ | 0.2+ | 2005 04 13 | 704 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 1998 10 10 | 699 | 0.6+ | 0.0 | 2006 08 30 | 699 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1998 10 14 | 699 | 0.4+ | 0.2− | 2006 08 30 | 699 | 1.0− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1998 10 14 | 699 | 0.7+ | 0.2+ | 2006 08 30 | 699 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 1998 10 14 | 699 | 0.3+ | 0.4+ | 2006 08 30 | 699 | (3.0+ | 1.1+) | 2006 10 31 | 703 | 0.8+ | 0.1+ |
| 2002 01 08 | 704 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 31 | 703 | 0.3− | 0.8− |
| 2002 01 08 | 704 | 0.7+ | 1.4− | 2006 09 14 | 703 | (0.2+ | 1.9+) | 2006 10 31 | 703 | 0.3− | 0.4− |
| 2002 01 08 | 704 | (1.3+ | 1.6−) | 2006 09 14 | 703 | 0.7+ | 0.6+ | 2006 10 31 | 703 | 0.2+ | 0.2− |
| 2005 02 28 | 703 | 0.1− | 0.8− | 2006 09 14 | 703 | 0.0 | 0.9+ | 2006 11 14 | 703 | 0.4+ | 0.8− |
| 2005 02 28 | 703 | 0.6− | 0.1− | 2006 09 15 | 703 | 0.7+ | 1.0− | 2006 11 14 | 703 | (0.9+ | 2.4−) |
| 2005 02 28 | 703 | 0.1− | 0.0 | 2006 09 15 | 703 | 1.1− | 1.3+ | 2006 11 14 | 703 | 0.1+ | 0.6− |
| 2005 02 28 | 703 | 0.1− | 0.2+ | 2006 09 15 | 703 | 0.3− | 1.1− | 2006 11 14 | 703 | 0.9− | 1.3+ |
| 2005 03 08 | 704 | 1.1+ | 0.0 | 2006 09 15 | 703 | 0.6− | 1.1− | 2006 11 23 | 703 | 0.6+ | 0.1+ |
| 2005 03 08 | 704 | 0.6+ | 0.4− | 2006 09 25 | 704 | 0.6+ | 1.4+ | 2006 11 23 | 703 | 0.5− | 1.0+ |
| 2005 03 08 | 704 | 0.5+ | 0.2− | 2006 09 25 | 704 | (0.2+ | 1.6+) | 2006 11 23 | 703 | 0.0 | 0.5+ |
| 2005 03 08 | 704 | 0.4+ | 0.2− | 2006 09 25 | 704 | (0.6+ | 1.9+) | 2006 11 23 | 703 | 0.9+ | 1.2+ |
| 2005 03 08 | 704 | 0.8+ | 0.6+ | 2006 09 25 | 704 | 0.6+ | 0.8+ | | | | |
| 2005 03 14 | 703 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.2+ | | | | |

**(136991)∗ 1998 SA$_{36}$ = 2002 TL$_3$**

Discovered 1998 Sept. 28 by P. G. Comba at Prescott.

Id. A. Doppler (*MPO* 37101), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.43887 | | (2000.0) | | | |
| $n$ | 0.24451494 | $\omega$ | 316.11423 | | +0.94931920 | +0.31312926 |
| $a$ | 2.5327896 | $\Omega$ | 25.67517 | | −0.26823777 | +0.85231092 |
| $e$ | 0.1869598 | $i$ | 3.60729 | | −0.16383390 | +0.41894648 |
| $P$ | 4.03 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 809 | (3.9+ | 1.4−) | 2002 10 11 | 704 | 0.5− | 0.3− | 2006 09 17 | 704 | 0.2− | 0.3+ |
| 1998 09 18 | 809 | (2.2+ | 1.2−) | 2002 10 11 | 704 | 0.6− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 1998 09 18 | 809 | (2.4+ | 3.0−) | 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.0 |
| 1998 09 20 | 809 | (2.6+ | 1.1+) | 2002 10 11 | 704 | 0.6− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 |
| 1998 09 20 | 809 | (2.6+ | 0.6−) | 2002 10 30 | 644 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.9+ | 0.4− |
| 1998 09 20 | 809 | 1.8+ | 0.3+ | 2002 10 30 | 644 | 0.3− | 0.0 | 2006 09 20 | 704 | 1.2+ | 0.0 |
| 1998 09 28 | 684 | 0.2+ | 0.1− | 2002 10 30 | 644 | 0.5− | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.0 |
| 1998 09 28 | 684 | 0.2− | 0.2− | 2002 11 01 | 704 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.8+ |
| 1998 09 29 | 684 | 0.2+ | 0.1− | 2002 11 01 | 704 | 0.5+ | 0.8+ | 2006 09 27 | 704 | 0.0 | 0.4+ |
| 1998 09 29 | 684 | 0.2+ | 0.2− | 2002 11 01 | 704 | 0.6+ | 0.6− | 2006 09 27 | 704 | 0.1− | 0.9+ |
| 1998 10 16 | 684 | 0.1− | 0.5− | 2002 11 03 | 608 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.3− | 0.1− |
| 1998 10 16 | 684 | 0.2− | 0.5− | 2002 11 03 | 608 | 0.1− | 1.2+ | 2006 09 27 | 704 | 0.2− | 0.7+ |
| 1998 10 17 | 699 | 1.1+ | 0.5− | 2002 11 03 | 608 | 0.2− | 1.1+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 1998 10 17 | 684 | 0.2− | 0.2− | 2002 11 05 | 699 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.1− | 0.2− |
| 1998 10 17 | 684 | 0.9− | 0.6− | 2002 11 05 | 699 | 0.7+ | 0.7− | 2006 10 01 | 704 | 0.9+ | 0.3− |
| 1998 10 17 | 699 | 0.0 | 0.6+ | 2002 11 05 | 699 | 0.9+ | 0.4+ | 2006 10 01 | 704 | 0.4+ | 0.4− |
| 1998 10 17 | 699 | 0.4+ | 0.3+ | 2002 11 05 | 699 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 05 26 | 291 | (5.1− | 1.8+) | 2002 11 06 | 704 | 0.8− | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2001 05 26 | 291 | (5.0− | 1.9+) | 2002 11 06 | 704 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.6+ | 0.7− | 2002 11 06 | 704 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.4+ | 0.5+ |
| 2002 09 07 | 704 | 0.5+ | 1.5+ | 2002 11 06 | 704 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2002 09 07 | 704 | 0.5− | 0.7− | 2002 11 06 | 704 | 1.3− | 1.5+ | 2006 10 17 | 703 | 0.6− | 0.7− |
| 2002 09 07 | 704 | 0.1− | 0.9+ | 2002 11 21 | 644 | 0.7− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2002 10 01 | 699 | (1.9+ | 0.9+) | 2002 11 21 | 644 | 0.8− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 10 01 | 699 | 1.2+ | 0.5+ | 2002 11 21 | 644 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 10 01 | 699 | 0.6+ | 0.8+ | 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 01 | 699 | 1.1+ | 0.9+ | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.3− | 0.4+ | 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.5+ | 0.3+ |
| 2002 10 02 | 704 | 0.5− | 0.2− | 2005 04 14 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2005 04 14 | 691 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 608 | 1.2− | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 608 | 1.0− | 0.8+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 23 | 704 | 1.1+ | 0.2− |
| 2002 10 02 | 608 | 1.1− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 23 | 704 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 23 | 704 | (1.7+ | 0.6−) |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 23 | 704 | (2.3+ | 1.2+) |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2006 09 14 | 703 | (0.1− | 2.5−) | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.9+ | 0.0 | 2006 09 14 | 703 | (0.8+ | 1.8−) | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 703 | (2.9+ | 1.7−) | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 10 07 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 10 07 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2002 10 07 | 704 | 0.3+ | 0.1− | 2006 09 16 | 644 | 0.3− | 0.1− | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2002 10 07 | 704 | 0.1+ | 1.0+ | 2006 09 16 | 644 | 0.4− | 0.1− | 2006 11 06 | 644 | 0.6+ | 0.4− |
| 2002 10 08 | 291 | 0.4− | 0.0 | 2006 09 17 | 704 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2002 10 08 | 291 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.5+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 10 08 | 291 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.4− | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 10 11 | 704 | 1.0− | 0.3+ | 2006 09 17 | 704 | 0.6− | 0.7− | 2006 11 24 | G96 | 0.0 | 0.2− |

**(136992)∗ 1998 SL$_{45}$ = 1994 SJ$_{12}$ = 2000 AC$_{133}$**

Discovered 1998 Sept. 25 by Spacewatch at Kitt Peak.

Id. A. Doppler (MPC 33278), M. E. Sansaturio (MPC 38504)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.84544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24812282 | $\omega$ | 156.45651 | | −0.99331909 | −0.11153472 | |
| $a$ | 2.5081774 | $\Omega$ | 17.21820 | | +0.08342724 | −0.87137845 | |
| $e$ | 0.0571946 | $i$ | 5.74236 | | +0.07973137 | −0.47776521 | |
| $P$ | 3.97 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.1+ | 0.0 | 2002 10 10 | 704 | 0.3+ | 0.8+ | 2006 09 14 | 691 | 0.2+ | 0.1+ |
| 1994 09 29 | 691 | 0.1− | 0.1− | 2002 10 10 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 1.2− | 0.4+ |
| 1994 09 29 | 691 | 0.3+ | 0.1+ | 2002 10 10 | 704 | 0.6+ | 1.2+ | 2006 09 14 | 703 | 0.6+ | 0.8− |
| 1994 09 30 | 691 | 0.1+ | 0.1+ | 2002 10 10 | 704 | 0.7− | 1.1+ | 2006 09 14 | 703 | 0.6− | 0.5− |
| 1994 09 30 | 691 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.5+ |
| 1994 09 30 | 691 | 0.3+ | 0.3+ | 2002 10 11 | 704 | (2.0+ | 1.0+) | 2006 09 14 | 703 | 0.1+ | 0.8− |
| 1998 09 25 | 691 | 0.2− | 0.5− | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 1.0+ | 0.1+ |
| 1998 09 25 | 691 | 0.7− | 0.4− | 2002 10 11 | 704 | (2.6+ | 1.0+) | 2006 09 18 | 691 | 0.1+ | 0.2+ |
| 1998 09 25 | 691 | 0.7− | 0.5− | 2002 10 11 | 704 | 0.6+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.0 |
| 1998 09 26 | 704 | 1.7+ | 0.7− | 2002 10 11 | 704 | 0.9+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 1998 09 26 | 704 | (0.6− | 2.8−) | 2002 10 11 | 704 | 0.7− | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.4+ |
| 1998 09 26 | 704 | 0.0 | 0.4− | 2002 10 11 | 704 | 0.2+ | 0.5− | 2006 09 18 | 699 | 1.0+ | 0.1− |
| 1998 09 27 | 704 | 0.9− | 1.4+ | 2002 10 11 | 704 | 0.9+ | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.9+ |
| 1998 09 27 | 704 | 0.7+ | 0.4+ | 2002 10 12 | 704 | 0.4− | 1.3+ | 2006 09 18 | 699 | 0.5− | 0.6+ |
| 1998 09 27 | 704 | (2.2+ | 0.6+) | 2002 10 12 | 704 | 1.2+ | 0.8+ | 2006 09 20 | 704 | 0.2− | 0.6− |
| 1998 09 27 | 704 | 0.8− | 0.1+ | 2002 10 12 | 704 | 0.5+ | 1.3+ | 2006 09 20 | 704 | 1.0+ | 0.7+ |
| 1998 09 27 | 704 | 0.7+ | 0.2− | 2002 10 12 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.1+ |
| 1998 09 30 | 691 | 0.1− | 0.8− | 2002 10 12 | 704 | 0.8+ | 0.7+ | 2006 09 20 | 704 | 0.1+ | 0.6+ |
| 1998 09 30 | 691 | 0.2− | 0.4− | 2002 10 31 | 704 | 0.7+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 1998 09 30 | 691 | 0.2+ | 0.7− | 2002 10 31 | 704 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 2000 01 03 | 704 | 0.9+ | 0.2− | 2002 10 31 | 704 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2000 01 03 | 704 | 0.6+ | 0.8− | 2002 10 31 | 704 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.8+ | 0.1− |
| 2000 01 03 | 704 | 0.1+ | 0.6− | 2002 10 31 | 704 | 0.3+ | 0.7− | 2006 09 26 | G96 | 0.1− | 0.5− |
| 2000 01 03 | 704 | 0.4− | 0.1+ | 2002 11 06 | 291 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2000 01 03 | 704 | 0.2− | 1.5− | 2002 11 06 | 291 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.6− |
| 2000 01 08 | 704 | 0.2− | 0.5− | 2002 11 06 | 291 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.3− |
| 2000 01 08 | 704 | 0.6+ | 0.4− | 2002 11 06 | 608 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.2− |
| 2000 01 08 | 704 | 0.1+ | 0.3− | 2002 11 06 | 608 | 0.3− | 0.7+ | 2006 09 27 | 704 | 0.1+ | 0.5− |
| 2000 01 08 | 704 | 0.4+ | 0.7− | 2002 11 06 | 608 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 0.7+ | 0.7+ |
| 2000 01 08 | 704 | 0.3− | 0.8− | 2002 11 13 | 291 | 0.2+ | 0.7+ | 2006 09 29 | 704 | 0.4+ | 0.1+ |
| 2000 02 11 | 704 | 0.0 | 0.7− | 2002 11 13 | 291 | 0.6+ | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.4+ |
| 2000 02 11 | 704 | 0.3+ | 1.0+ | 2002 11 13 | 291 | 0.4+ | 0.8− | 2006 09 29 | 704 | 0.1+ | 0.6+ |
| 2000 02 11 | 704 | 0.9+ | 0.3+ | 2003 11 21 | 644 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.5+ |
| 2000 02 11 | 704 | 1.2− | 0.6+ | 2003 11 21 | 644 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.4+ | 0.1+ | 2003 11 21 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.4+ | 2003 11 21 | 644 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.4− | 0.7+ | 2003 11 21 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.6+ | 2003 11 21 | 644 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 09 07 | 704 | (2.1+ | 2.2−) | 2003 12 28 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.8+ | 0.6− | 2003 12 28 | 704 | 0.9− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.7− |
| 2002 09 07 | 704 | (1.7+ | 3.2−) | 2003 12 28 | 704 | 0.4+ | 0.6+ | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2002 09 07 | 704 | (1.7+ | 0.2−) | 2003 12 28 | 704 | 0.5+ | 0.6+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 09 27 | 644 | 0.5− | 0.5− | 2004 01 13 | 699 | 0.5− | 0.8+ | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2002 09 27 | 644 | 0.7− | 0.0 | 2004 01 13 | 699 | 0.4+ | 0.4− | 2006 10 17 | 703 | (0.6− | 2.5−) |
| 2002 09 27 | 644 | 0.5− | 0.1− | 2004 01 13 | 699 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2002 09 28 | 644 | 0.7− | 0.2+ | 2004 01 13 | 699 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2002 09 28 | 644 | 0.7− | 0.0 | 2004 01 26 | 699 | 0.1− | 0.4− | 2006 10 17 | 703 | 1.3− | 0.7− |
| 2002 09 28 | 644 | 0.3− | 0.1+ | 2004 01 26 | 699 | 0.3− | 0.7− | 2006 10 19 | 644 | 0.1− | 0.6− |
| 2002 09 29 | 291 | 0.1− | 0.2+ | 2004 01 26 | 699 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 09 29 | 291 | 0.8− | 0.3+ | 2004 01 26 | 699 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2002 09 29 | 291 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.1− | 0.2− | 2004 01 31 | 704 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.5− | 0.5+ | 2004 01 31 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 10 02 | 704 | 0.4− | 0.1+ | 2004 01 31 | 704 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.2+ | 0.3+ | 2004 01 31 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2004 02 10 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2004 02 10 | 644 | 0.2− | 0.1− | 2006 10 26 | 104 | 0.8− | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2004 02 10 | 644 | 0.2+ | 0.3− | 2006 10 26 | 104 | 0.8+ | 0.8− |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2004 02 13 | 699 | 0.4− | 0.1− | 2006 10 26 | 104 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2004 02 13 | 699 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2002 10 05 | 704 | 0.5− | 0.5− | 2004 02 13 | 699 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 10 05 | 704 | 0.4− | 0.2− | 2004 02 13 | 699 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 10 05 | 704 | 0.4− | 0.7− | 2004 02 15 | 704 | 0.6− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.6− |
| 2002 10 06 | 291 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.3− | 0.0 | 2006 11 02 | G96 | 0.0 | 0.1− |
| 2002 10 06 | 291 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.4− | 0.1− | 2006 11 02 | G96 | 0.0 | 0.1+ |
| 2002 10 06 | 291 | 0.3− | 0.1+ | 2004 02 15 | 704 | 0.5+ | 0.1− | 2006 11 02 | G96 | 0.5+ | 0.3+ |
| 2002 10 07 | 699 | 0.2− | 0.7− | 2004 02 15 | 704 | 0.7− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.5+ |
| 2002 10 07 | 699 | 1.2− | 0.2− | 2004 03 25 | 704 | 0.2+ | 0.6+ | 2006 11 02 | G96 | 0.1+ | 0.5− |
| 2002 10 07 | 699 | 0.0 | 1.1+ | 2004 03 25 | 704 | 0.3− | 0.3− | 2006 11 02 | G96 | 0.2+ | 0.4− |
| 2002 10 07 | 699 | 1.3+ | 0.7− | 2004 03 25 | 704 | 0.6+ | 0.5− | 2006 11 02 | G96 | 0.1− | 0.7− |
| 2002 10 07 | 704 | 0.3+ | 0.4− | 2004 03 25 | 704 | 0.2− | 0.3− | 2006 11 02 | G96 | 0.6+ | 0.4− |
| 2002 10 07 | 704 | 0.1+ | 0.8+ | 2005 01 19 | 809 | 0.4+ | 0.3+ | 2006 11 02 | G96 | 0.6− | 0.4− |
| 2002 10 07 | 704 | 0.2− | 0.1− | 2005 01 19 | 809 | 0.2+ | 0.5+ | 2006 11 02 | G96 | 0.3− | 0.4− |
| 2002 10 07 | 704 | 0.2+ | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2002 10 09 | 704 | 0.1− | 0.2+ | 2006 09 06 | 644 | 0.4− | 0.4− | 2006 11 02 | G96 | 0.1+ | 0.6− |
| 2002 10 09 | 704 | 0.8− | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.5+ |
| 2002 10 09 | 704 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 10 09 | 704 | 0.7− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2002 10 09 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.5+ | 1.2− | 2006 11 11 | 703 | 2.5− | 1.7− |
| 2002 10 10 | 704 | (1.9− | 1.9+) | 2006 09 14 | 703 | (2.5− | 0.3−) | | | | |

**(136993)∗ 1998 ST$_{49}$**

Discovered 1998 Sept. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.97473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28097297 | $\omega$ | 47.48261 | | +0.42482647 | −0.89532094 | |
| $a$ | 2.3086585 | $\Omega$ | 18.73400 | | +0.65906551 | +0.20450286 | |
| $e$ | 0.5937916 | $i$ | 24.63481 | | +0.62060868 | +0.39570064 | |
| $P$ | 3.51 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 29 | 704 | 0.6− | 1.5− | 2005 09 27 | 844 | 0.1− | 0.2+ | 2005 10 11 | 084 | 0.1+ | 0.3− |
| 1998 09 29 | 704 | 0.7− | 0.3− | 2005 09 27 | 844 | 0.2+ | 0.4+ | 2005 10 11 | 084 | 0.3− | 0.6− |
| 1998 09 29 | 704 | 1.4− | 1.0− | 2005 09 27 | 844 | 0.1+ | 0.5+ | 2005 10 11 | 084 | 0.1− | 0.3− |
| 1998 09 29 | 704 | 0.9+ | 0.4+ | 2005 09 27 | 844 | 0.2− | 0.4+ | 2005 10 11 | 084 | 0.2− | 0.5− |
| 1998 09 30 | 557 | 0.6+ | 0.0 | 2005 09 27 | 844 | 0.2− | 0.1+ | 2005 10 11 | 084 | 0.1+ | 0.2− |
| 1998 09 30 | 557 | 0.6+ | 0.1+ | 2005 09 27 | 844 | 0.5+ | 0.5+ | 2005 10 11 | 084 | 0.1− | 0.6− |
| 1998 09 30 | 557 | 0.6+ | 0.2− | 2005 09 27 | 844 | 0.3+ | 0.4+ | 2005 10 11 | 084 | 0.1− | 0.5− |
| 1998 09 30 | 557 | 0.4+ | 0.0 | 2005 09 27 | 844 | 0.4+ | 0.4+ | 2005 10 11 | 084 | 0.2− | 0.6− |
| 1998 09 30 | 046 | 0.1+ | 0.2− | 2005 09 29 | 844 | 0.2+ | 0.6+ | 2005 10 12 | 379 | 0.4− | 1.1− |
| 1998 09 30 | 046 | 0.3+ | 0.1− | 2005 09 29 | 844 | 0.1+ | 0.6+ | 2005 10 12 | 379 | 0.7− | 0.6− |
| 1998 09 30 | 046 | 0.3+ | 0.2− | 2005 09 29 | 844 | 0.1− | 0.5+ | 2005 10 12 | 379 | 0.8− | 0.6− |
| 1998 09 30 | 046 | 0.6+ | 0.1− | 2005 09 29 | 844 | 0.2+ | 0.5+ | 2005 10 12 | 379 | 0.5− | 1.0− |
| 1998 09 30 | 046 | 0.7+ | 0.0 | 2005 09 29 | 844 | 0.2− | 0.3+ | 2005 10 12 | 379 | 0.6− | 0.9− |
| 1998 09 30 | 046 | 0.8+ | 0.0 | 2005 09 29 | 844 | 0.3+ | 0.2+ | 2005 10 12 | 379 | 0.6− | 1.0− |
| 1998 10 01 | 422 | 0.1− | 0.2+ | 2005 09 29 | 844 | 0.8− | 0.0 | 2005 10 12 | A32 | 0.4+ | 0.4+ |
| 1998 10 01 | 422 | 1.0− | 0.8− | 2005 09 29 | 844 | 0.0 | 0.2+ | 2005 10 12 | A32 | 0.3+ | 0.3+ |
| 1998 10 01 | 422 | 0.2+ | 0.4− | 2005 09 29 | 844 | 0.0 | 0.4+ | 2005 10 12 | A32 | 0.5+ | 0.3+ |
| 1998 10 01 | 422 | 0.0 | 0.6− | 2005 09 29 | 844 | 0.4− | 0.2+ | 2005 10 12 | A32 | 0.4+ | 0.5+ |
| 1998 10 02 | 704 | 0.2+ | 0.3− | 2005 09 29 | 379 | 0.3− | 0.6− | 2005 10 12 | A32 | 0.7+ | 0.2+ |
| 1998 10 02 | 704 | 0.6+ | 1.0− | 2005 09 29 | 379 | 0.1− | 0.3− | 2005 10 13 | 699 | 0.0 | 0.0 |
| 1998 10 02 | 704 | 0.2− | 0.4+ | 2005 09 29 | 379 | 0.0 | 0.5− | 2005 10 13 | 699 | 0.2+ | 0.2− |
| 1998 10 02 | 704 | 0.4− | 0.6− | 2005 09 29 | 379 | 0.2− | 0.6− | 2005 10 13 | 699 | 0.3+ | 0.1− |
| 1998 10 02 | 704 | 0.0 | 0.9− | 2005 09 29 | 379 | 0.0 | 0.5− | 2005 10 16 | A32 | (1.7+ | 0.9+) |
| 1998 10 02 | 704 | 0.7− | 1.1− | 2005 09 29 | 379 | 0.2+ | 0.2− | 2005 10 16 | A32 | (1.7+ | 0.7+) |
| 1998 10 02 | 704 | 0.2− | 0.0 | 2005 09 29 | 379 | 0.1+ | 0.2− | 2005 10 16 | A32 | (2.0+ | 0.5+) |
| 1998 10 02 | 704 | 0.1+ | 0.1− | 2005 09 29 | 379 | 0.0 | 0.4− | 2005 10 16 | A32 | (1.6+ | 0.8+) |
| 1998 10 02 | 704 | (0.2− | 2.0+) | 2005 09 29 | 379 | 0.3− | 0.6− | 2005 10 16 | A32 | (1.7+ | 0.6+) |
| 1998 10 02 | 704 | (4.9− | 0.1+) | 2005 09 29 | 379 | 0.2− | 0.5− | 2005 10 18 | 084 | 0.5+ | 0.0 |
| 1998 10 02 | 411 | 0.8− | 1.5− | 2005 09 29 | 379 | 0.1− | 0.5− | 2005 10 18 | 084 | 0.7− | 0.2− |
| 1998 10 02 | 411 | 0.6+ | 0.1− | 2005 10 01 | 703 | 0.1+ | 0.1− | 2005 10 18 | 084 | 0.6+ | 0.1+ |
| 1998 10 02 | 411 | 0.8+ | 1.1− | 2005 10 01 | 703 | 0.1− | 0.1+ | 2005 10 18 | 084 | 0.2+ | 0.4+ |
| 1998 10 02 | 422 | 0.3+ | 0.1− | 2005 10 01 | 703 | 0.2− | 0.1+ | 2005 10 18 | A32 | 0.8+ | 0.2+ |
| 1998 10 02 | 422 | 0.5+ | 0.1− | 2005 10 01 | 379 | 0.3− | 0.6− | 2005 10 18 | A32 | 0.1+ | 0.4+ |
| 1998 10 02 | 422 | 0.5+ | 0.4+ | 2005 10 01 | 379 | 0.1− | 0.5− | 2005 10 19 | A32 | 0.7+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 02 | 422 | 0.9+ | 0.4+ | 2005 10 01 | 379 | 0.5− | 0.8− | 2005 10 19 | A32 | 1.0+ | 1.3+ |
| 1998 10 02 | 900 | 0.9+ | 0.5+ | 2005 10 01 | 379 | 0.5− | 0.6− | 2005 10 19 | A32 | 0.6+ | 0.6+ |
| 1998 10 02 | 900 | 0.7+ | 0.4+ | 2005 10 01 | 379 | 0.5− | 0.6− | 2005 10 20 | 084 | 0.4− | 0.1+ |
| 1998 10 14 | 557 | 0.0 | 0.5− | 2005 10 01 | 379 | 0.2− | 0.6− | 2005 10 20 | 084 | 0.5− | 0.7+ |
| 1998 10 14 | 557 | 0.1+ | 0.6− | 2005 10 03 | A32 | 0.1+ | 0.6+ | 2005 10 20 | 084 | 0.8− | 0.5+ |
| 1998 10 14 | 557 | 0.1− | 0.5− | 2005 10 03 | A32 | 0.2− | 0.4+ | 2005 10 20 | 084 | 0.2− | 0.0 |
| 1998 10 14 | 557 | 0.4− | 0.6− | 2005 10 03 | A32 | 0.3− | 0.3+ | 2005 10 22 | 704 | 0.0 | 0.2+ |
| 1998 10 20 | 557 | 0.3+ | 0.1− | 2005 10 03 | A32 | 0.1+ | 0.7+ | 2005 10 22 | 704 | 0.1− | 0.3+ |
| 1998 10 20 | 557 | 0.2− | 0.3− | 2005 10 03 | A32 | 0.1− | 0.4+ | 2005 10 22 | 704 | 0.1+ | 0.2+ |
| 1998 10 20 | 557 | 0.0 | 0.7− | 2005 10 03 | 683 | 0.4− | 0.3− | 2005 10 26 | A32 | 0.2− | 0.2+ |
| 1998 10 20 | 557 | 0.0 | 1.0− | 2005 10 03 | 683 | 0.1− | 0.1+ | 2005 10 26 | A32 | 0.1− | 0.3+ |
| 1999 01 22 | 561 | 0.7+ | 0.2+ | 2005 10 03 | A32 | 0.4+ | 0.6+ | 2005 10 26 | A32 | 0.1+ | 0.1+ |
| 1999 01 22 | 561 | 0.7+ | 0.2+ | 2005 10 03 | A32 | 0.2+ | 0.3+ | 2005 10 26 | A32 | 0.4+ | 0.3− |
| 1999 01 22 | 561 | 0.9+ | 0.4+ | 2005 10 03 | A32 | 0.1+ | 0.1+ | 2005 10 28 | 084 | 0.7− | 0.2+ |
| 1999 01 23 | 561 | 0.7+ | 0.0 | 2005 10 03 | A32 | 0.2+ | 0.4+ | 2005 10 28 | 084 | 1.0− | 0.6+ |
| 1999 01 23 | 561 | 0.4+ | 0.0 | 2005 10 03 | A32 | 0.3+ | 0.3+ | 2005 10 28 | 084 | 0.2+ | 0.3− |
| 1999 01 23 | 561 | 0.4+ | 0.1+ | 2005 10 05 | 704 | 0.3− | 0.1− | 2005 12 24 | 704 | 0.1− | 0.3− |
| 1999 01 23 | 711 | 0.1+ | 0.1− | 2005 10 05 | 704 | 0.0 | 0.1− | 2005 12 24 | 704 | 0.1− | 0.3+ |
| 1999 01 23 | 711 | 0.2+ | 0.2− | 2005 10 05 | 704 | 0.0 | 0.0 | 2005 12 24 | 704 | 0.1+ | 0.1− |
| 1999 02 19 | 711 | 1.0+ | 1.2+ | 2005 10 06 | A32 | 0.3+ | 0.7+ | 2005 12 24 | 704 | (1.1− | 2.1−) |
| 1999 02 19 | 711 | 1.0+ | 1.3+ | 2005 10 06 | A32 | 0.4+ | 0.7+ | 2005 12 24 | 704 | 0.6− | 0.3− |
| 1999 02 20 | 711 | 0.7− | 0.9+ | 2005 10 06 | A32 | 0.2+ | 0.6+ | 2006 02 06 | 704 | 1.0+ | 0.1− |
| 1999 02 20 | 711 | 1.7− | 1.0+ | 2005 10 06 | A32 | 0.2+ | 0.4+ | 2006 02 06 | 704 | 0.5+ | 0.9+ |
| 1999 03 14 | 711 | 0.1+ | 0.2− | 2005 10 06 | A32 | 0.1+ | 0.4+ | 2006 02 06 | 704 | 1.2+ | 0.2+ |
| 1999 03 14 | 711 | 0.1+ | 0.3− | 2005 10 07 | 704 | 0.0 | 0.3+ | 2006 02 06 | 704 | 1.0+ | 0.1+ |
| 2003 01 29 | 809 | 0.1+ | 0.1− | 2005 10 07 | 704 | 0.0 | 0.5+ | 2006 02 06 | 704 | 0.7− | 0.7+ |
| 2003 01 29 | 809 | 0.0 | 0.1− | 2005 10 07 | 704 | 0.2+ | 0.7+ | 2006 02 27 | A13 | 0.4− | 0.4− |
| 2003 01 29 | 809 | 0.0 | 0.1+ | 2005 10 08 | 704 | 0.8− | 0.1+ | 2006 02 27 | A13 | 0.6− | 0.6− |
| 2003 01 30 | 809 | 0.3+ | 0.4− | 2005 10 08 | 704 | 1.0− | 0.1+ | 2006 03 03 | 703 | 0.5+ | 0.8+ |
| 2003 01 30 | 809 | 0.1− | 0.1− | 2005 10 08 | 704 | 0.6− | 0.3− | 2006 03 03 | 703 | 0.2− | 0.2− |
| 2003 01 30 | 809 | 0.1+ | 0.3− | 2005 10 08 | 704 | 0.7− | 0.3+ | 2006 03 03 | 703 | 0.2− | 0.7− |
| 2005 07 28 | 734 | 1.0− | 0.0 | 2005 10 08 | 704 | 0.7− | 0.1+ | 2006 03 03 | 703 | 0.0 | 0.1− |
| 2005 07 28 | 734 | 0.1+ | 0.3− | 2005 10 09 | A32 | 0.0 | 0.1+ | 2006 03 18 | 198 | 0.2+ | 0.1+ |
| 2005 07 28 | 734 | 0.4− | 0.2+ | 2005 10 09 | A32 | 0.2+ | 0.4+ | 2006 03 18 | 198 | 0.2+ | 0.0 |
| 2005 09 15 | 703 | 0.2− | 0.2+ | 2005 10 09 | A32 | 0.3+ | 0.2+ | 2006 03 18 | 198 | 0.2+ | 0.0 |
| 2005 09 15 | 703 | 0.2− | 0.1− | 2005 10 09 | A32 | 0.3+ | 0.3+ | 2006 03 19 | A13 | 0.4− | 0.5− |
| 2005 09 15 | 703 | 0.6− | 1.0+ | 2005 10 09 | A32 | 0.4+ | 0.5+ | 2006 03 19 | A13 | 0.1− | 0.7− |
| 2005 09 24 | J68 | 0.7− | 1.0− | 2005 10 11 | A32 | 0.4+ | 0.7+ | 2006 03 19 | A13 | 0.4− | 0.4− |
| 2005 09 24 | I77 | 0.6+ | 0.0 | 2005 10 11 | A32 | 0.6+ | 0.8+ | 2006 03 24 | 703 | 0.0 | 1.0− |
| 2005 09 24 | I77 | 0.6+ | 0.0 | 2005 10 11 | A32 | 0.7+ | 0.8+ | 2006 03 24 | 703 | 0.3− | 1.0− |
| 2005 09 27 | 844 | 0.1+ | 0.2+ | 2005 10 11 | A32 | 0.2+ | 0.3+ | 2006 03 24 | 703 | (1.9− | 0.3−) |
| 2005 09 27 | 844 | 0.0 | 0.4+ | 2005 10 11 | A32 | 0.3+ | 0.4+ | 2006 03 24 | 703 | 0.5− | 0.5− |

**(136994)∗ 1998 SX$_{56}$ = 2000 EP$_{70}$**

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (MPC 39241)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.60033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26724438 | $\omega$ | 25.88232 | | +0.63931477 | −0.76862899 | |
| $a$ | 2.3870618 | $\Omega$ | 24.39609 | | +0.69590074 | +0.56614924 | |
| $e$ | 0.2472341 | $i$ | 3.05983 | | +0.32710669 | +0.29779946 | |
| $P$ | 3.69 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.1+ | 0.1+ | 2000 03 10 | 704 | 0.7+ | 0.2+ | 2002 12 11 | 704 | 0.5+ | 0.7− |
| 1998 09 14 | 704 | 0.5+ | 0.2− | 2000 03 10 | 704 | 1.7− | 0.7+ | 2002 12 11 | 704 | 0.7+ | 0.1− |
| 1998 09 14 | 704 | 0.3+ | 0.2+ | 2000 03 11 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 1.4+ | 1.0+ |
| 1998 09 17 | I02 | 0.1− | 0.7+ | 2000 03 11 | 704 | 0.1− | 0.5+ | 2002 12 14 | 704 | 0.4− | 0.4− |
| 1998 09 17 | 699 | 0.2+ | 0.0 | 2000 03 11 | 704 | 0.1+ | 0.3− | 2002 12 14 | 704 | 0.4− | 0.5− |
| 1998 09 17 | 699 | 0.7+ | 0.1+ | 2000 04 05 | 704 | 0.4+ | 0.5− | 2002 12 14 | 704 | 0.2− | 0.4− |
| 1998 09 17 | 699 | 0.1+ | 0.2− | 2000 04 05 | 704 | 0.1+ | 0.6− | 2002 12 14 | 704 | 0.5− | 0.4− |
| 1998 09 18 | 704 | 0.5+ | 0.5− | 2000 04 05 | 704 | 0.7+ | 0.2+ | 2002 12 14 | 704 | 0.4− | 0.4− |
| 1998 09 18 | 704 | 0.3+ | 0.8− | 2000 04 05 | 704 | 0.2− | 0.8+ | 2002 12 30 | 704 | 0.2− | 0.3− |
| 1998 09 18 | 704 | 0.3− | 0.6− | 2000 04 06 | 704 | 0.4+ | 0.2+ | 2002 12 30 | 704 | 0.3− | 0.1− |
| 1998 09 18 | 704 | 0.2+ | 0.4+ | 2000 04 06 | 704 | 0.2+ | 0.5− | 2002 12 30 | 704 | 0.0 | 0.2− |
| 1998 09 18 | 704 | 0.2+ | 0.3− | 2000 04 06 | 704 | 0.4+ | 0.8− | 2003 01 05 | 704 | 1.1− | 0.7+ |
| 1998 09 18 | 704 | 1.3+ | 0.3− | 2002 09 05 | 704 | 0.4− | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.2− |
| 1998 09 18 | 704 | 0.7+ | 1.5− | 2002 09 05 | 704 | 0.5− | 0.2+ | 2003 01 05 | 704 | 0.1− | 0.0 |
| 1998 09 18 | 704 | 0.5+ | 0.3+ | 2002 09 05 | 704 | 0.7− | 0.1− | 2003 01 05 | 704 | 0.1− | 0.2− |
| 1998 09 18 | 704 | 0.3− | 0.1− | 2002 09 05 | 704 | 0.1− | 0.3+ | 2003 01 05 | 704 | 0.2− | 0.0 |
| 1998 09 18 | 704 | 0.9+ | 0.6+ | 2002 09 05 | 704 | 0.2− | 0.2+ | 2003 02 01 | 704 | 0.3− | 0.2+ |
| 1998 09 25 | I02 | 0.1− | 0.1+ | 2002 10 03 | 704 | 0.3+ | 0.1− | 2003 02 01 | 704 | 0.0 | 0.2+ |
| 1998 09 25 | 699 | 0.2+ | 0.2− | 2002 10 03 | 704 | 1.2+ | 0.7+ | 2003 02 01 | 704 | 0.1+ | 0.3+ |
| 1998 09 25 | 699 | 0.3− | 0.1+ | 2002 10 03 | 704 | 0.9+ | 0.7+ | 2003 02 01 | 704 | 0.2+ | 0.9+ |
| 1998 09 25 | 699 | 0.2− | 0.1+ | 2002 10 10 | 704 | 0.1+ | 0.2+ | 2003 02 01 | 704 | 0.3+ | 0.8+ |
| 1998 09 26 | 704 | 0.3− | 1.2− | 2002 10 10 | 704 | 0.3− | 0.1+ | 2003 02 04 | 704 | 0.1− | 0.1− |
| 1998 09 26 | 704 | 0.8− | 0.1− | 2002 10 10 | 704 | 0.4+ | 0.4− | 2003 02 04 | 704 | 0.1− | 0.1+ |
| 1998 09 26 | 704 | 0.2− | 1.4− | 2002 10 11 | 704 | 0.4− | 0.1− | 2003 02 04 | 704 | 0.2− | 0.2+ |
| 1998 09 26 | 704 | 0.6− | 0.7− | 2002 10 11 | 704 | 0.5− | 0.4− | 2003 02 04 | 704 | 0.2+ | 0.7+ |
| 1998 09 26 | 704 | 0.4+ | 0.2− | 2002 10 11 | 704 | (1.6− | 0.3+) | 2003 02 04 | 704 | 0.5+ | 0.8+ |
| 1998 09 27 | 704 | 0.7− | 0.6+ | 2002 10 11 | 704 | 1.1− | 0.8− | 2004 03 27 | 704 | 0.8− | 1.4− |
| 1998 09 27 | 704 | 0.4− | 0.7+ | 2002 10 11 | 704 | 0.3− | 1.1− | 2004 03 27 | 704 | (1.7− | 0.6−) |
| 1998 09 27 | 704 | 0.5− | 0.5+ | 2002 11 12 | 704 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.0 | 0.1+ |
| 1998 09 27 | 704 | 0.6− | 0.6+ | 2002 11 12 | 704 | 0.3− | 0.2+ | 2004 03 27 | 704 | (1.7− | 0.2+) |
| 1998 09 27 | 704 | 0.2+ | 0.2− | 2002 11 12 | 704 | 0.2− | 0.1+ | 2004 04 12 | 699 | 0.8+ | 0.9− |
| 1998 10 17 | 699 | 0.1− | 0.9+ | 2002 11 12 | 704 | 0.4− | 0.6+ | 2004 04 12 | 699 | 0.2+ | 0.9+ |
| 1998 10 17 | 699 | (0.3+ | 2.5+) | 2002 11 12 | 704 | 0.0 | 0.4+ | 2004 04 12 | 699 | 1.1− | 0.7+ |
| 1998 10 17 | 699 | (0.4− | 2.1+) | 2002 11 14 | 704 | 0.2+ | 0.2− | 2004 04 12 | 699 | 0.3+ | 1.3+ |
| 1998 11 10 | 699 | 0.0 | 0.4+ | 2002 11 14 | 704 | 1.1+ | 0.2− | 2006 10 20 | 703 | 1.1+ | 1.4− |
| 1998 11 10 | 699 | 0.0 | 0.9+ | 2002 11 14 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 703 | 0.6− | 0.7+ |
| 1998 11 10 | 699 | 0.2− | 1.0+ | 2002 11 14 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 703 | 0.9+ | 0.7+ |
| 1998 11 25 | 699 | 1.1− | 0.5+ | 2002 11 14 | 704 | 0.2+ | 0.1− | 2006 10 20 | 703 | 0.7− | 0.5+ |
| 1998 11 25 | 699 | 0.2+ | 1.0+ | 2002 12 07 | 704 | 0.3− | 0.7− | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 1998 11 25 | 699 | 0.2− | 0.2+ | 2002 12 07 | 704 | 0.4− | 0.6− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1998 12 09 | 704 | 0.5+ | 0.5+ | 2002 12 07 | 704 | 0.6− | 0.8− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1998 12 09 | 704 | 1.3− | 0.7+ | 2002 12 07 | 704 | 0.5− | 1.0− | 2006 11 27 | G96 | 0.3− | 0.5− |
| 1998 12 09 | 704 | 1.4+ | 1.0− | 2002 12 07 | 704 | 0.3− | 0.7− | 2006 11 27 | G96 | 0.3− | 0.6− |
| 1998 12 09 | 704 | 1.9− | 1.1+ | 2002 12 11 | 704 | 0.6+ | 0.1+ | 2006 11 27 | G96 | 0.4− | 0.5− |
| 2000 03 10 | 704 | 0.9− | 0.2− | 2002 12 11 | 704 | 0.9+ | 0.7+ | 2006 11 27 | G96 | 0.4− | 0.6− |

**(136995)∗ 1998 SD$_{57}$ = 2002 TC$_4$**

Discovered 1998 Sept. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37103)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.39040 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25525266 | $\omega$ | 182.87408 | | +0.64830360 | +0.76076715 | |
| $a$ | 2.4612508 | $\Omega$ | 127.54197 | | −0.69778252 | +0.60974548 | |
| $e$ | 0.1905356 | $i$ | 2.21104 | | −0.30463420 | +0.22235960 | |
| $P$ | 3.86 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 17 | 699 | 1.2+ | 1.6− | 2002 10 31 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 1998 09 17 | 699 | 1.1+ | 0.2+ | 2002 10 31 | 704 | 0.2− | 1.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1998 09 17 | 699 | 1.2+ | 1.1+ | 2002 10 31 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 1998 09 25 | 699 | 1.0+ | 0.6− | 2002 10 31 | 704 | 0.3− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 1998 09 25 | 699 | 0.4− | 0.6+ | 2004 01 16 | 691 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 1998 09 25 | 699 | 0.9+ | 1.1+ | 2004 01 16 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 1998 09 26 | 704 | 1.1− | 1.7− | 2004 01 16 | 691 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.3− |
| 1998 09 26 | 704 | 0.8− | 0.1− | 2004 01 24 | 704 | 1.0− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.3− |
| 1998 09 26 | 704 | 0.2− | 1.4− | 2004 01 24 | 704 | 0.7+ | 0.4− | 2006 10 23 | 644 | 0.7+ | 0.9− |
| 1998 09 26 | 704 | 0.6− | 0.2+ | 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 1998 09 27 | 704 | 1.5− | 1.0− | 2004 01 28 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 1998 09 27 | 704 | 1.9− | 0.6+ | 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 1998 09 27 | 704 | 1.8− | 0.0 | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 1998 09 27 | 704 | 1.2− | 0.5− | 2005 04 30 | 691 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 1999 12 15 | 691 | 0.3+ | 0.5− | 2005 04 30 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 1999 12 15 | 691 | 0.3+ | 0.2− | 2005 04 30 | 691 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 1999 12 15 | 691 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 10 01 | 699 | 0.2+ | 0.8+ | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2002 10 01 | 704 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 08 | 644 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2002 10 01 | 699 | 1.4+ | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 10 01 | 704 | 0.5+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2002 10 01 | 699 | 0.5+ | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.7− | 1.4− |
| 2002 10 01 | 704 | (1.7− | 2.7+) | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | (1.2+ | 3.6−) |
| 2002 10 01 | 699 | 0.3+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.6− | 0.6− |
| 2002 10 02 | 704 | 0.7+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.6− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 10 02 | 704 | 0.9+ | 0.9+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 10 02 | 704 | 0.9+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2002 10 02 | 704 | 1.0+ | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 10 02 | 704 | 1.0− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.3− |
| 2002 10 07 | 704 | 0.8+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 1.2− |
| 2002 10 07 | 704 | 0.4+ | 0.6− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.9− |
| 2002 10 07 | 704 | 0.0 | 0.8+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 1.2− |
| 2002 10 07 | 704 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.3+ | 0.6− | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2002 10 11 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4− | 0.5+ | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2002 10 11 | 704 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.2− | 0.9− |
| 2002 10 31 | 704 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.7+ | | | | |

**(136996)∗ 1998 SJ$_{63}$**

Discovered 1998 Sept. 26 by BAO Schmidt CCD Asteroid Program at Xinglong.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.99212 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25415577 | $\omega$ | 97.26741 | | +0.82343101 | −0.56478544 |
| $a$ | 2.4683272 | $\Omega$ | 297.13469 | | +0.49339462 | +0.76019338 |
| $e$ | 0.3237645 | $i$ | 3.51605 | | +0.28021977 | +0.32112837 |
| $P$ | 3.88 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 31 | 704 | 1.9− | 1.2+ | 2002 08 13 | 699 | 0.6− | 1.0+ | 2003 02 07 | 704 | 0.2− | 0.4− |
| 1998 08 31 | 704 | 0.5+ | 0.5− | 2002 08 13 | 699 | 0.6− | 0.6+ | 2003 02 07 | 704 | 0.3+ | 0.8+ |
| 1998 08 31 | 704 | 0.4+ | 0.9+ | 2002 08 13 | 699 | 0.3− | 0.7+ | 2003 02 07 | 704 | 0.1+ | 0.2+ |
| 1998 08 31 | 704 | (2.5+ | 1.1−) | 2002 08 13 | 699 | 0.5+ | 0.0 | 2003 02 08 | 704 | 0.2+ | 0.0 |
| 1998 08 31 | 704 | 0.4+ | 1.7+ | 2002 09 06 | 704 | 1.0− | 1.1− | 2003 02 08 | 704 | 0.5+ | 0.6+ |
| 1998 09 26 | 327 | 0.3− | 0.4− | 2002 09 06 | 704 | 0.0 | 0.4+ | 2003 02 08 | 704 | 0.1− | 0.6+ |
| 1998 09 26 | 327 | 0.7− | 0.4− | 2002 09 06 | 704 | 0.1− | 0.7+ | 2003 02 08 | 704 | 0.3+ | 0.2+ |
| 1998 09 26 | 327 | 0.6− | 0.2− | 2002 09 06 | 704 | 0.3− | 0.6+ | 2003 02 08 | 704 | 0.7+ | 0.6+ |
| 1998 09 30 | G91 | 0.0 | 0.1− | 2002 09 06 | 704 | 0.3− | 0.4+ | 2003 03 26 | 704 | 0.6+ | 0.3+ |
| 1998 09 30 | 327 | 1.4− | 0.3− | 2002 10 04 | 704 | 0.2+ | 0.6+ | 2003 03 26 | 704 | 0.1+ | 0.8+ |
| 1998 09 30 | 327 | 1.6− | 0.2− | 2002 10 04 | 704 | 0.1+ | 0.7+ | 2003 03 26 | 704 | 0.3+ | 0.5+ |
| 1998 09 30 | 327 | 1.7− | 0.1− | 2002 10 04 | 704 | 0.1− | 0.2+ | 2003 03 26 | 704 | 0.7+ | 0.9+ |
| 1998 10 12 | 699 | 0.7+ | 0.2+ | 2002 10 04 | 704 | 0.2− | 0.4+ | 2004 04 16 | 644 | 0.5+ | 0.5+ |
| 1998 10 12 | 699 | 0.8+ | 0.2+ | 2002 10 04 | 704 | 0.3+ | 0.6+ | 2004 04 16 | 644 | 0.1+ | 0.4+ |
| 1998 10 12 | 699 | 1.0+ | 0.3+ | 2002 10 10 | 704 | (2.3− | 1.0+) | 2004 04 16 | 644 | 0.3− | 0.2+ |
| 1998 10 13 | 327 | 0.6+ | 0.1− | 2002 10 10 | 704 | (2.5− | 0.6+) | 2006 08 24 | 704 | (2.2− | 2.9+) |
| 1998 10 13 | 327 | 0.5+ | 0.1+ | 2002 10 10 | 704 | (2.3− | 0.6+) | 2006 08 24 | 704 | 0.2− | 1.2+ |
| 1998 10 13 | 327 | 0.6+ | 0.1+ | 2002 10 10 | 704 | (2.1− | 0.5+) | 2006 08 24 | 704 | 1.0+ | 1.0+ |
| 1998 10 14 | 327 | 0.5+ | 0.1+ | 2002 10 10 | 704 | (2.5− | 0.4+) | 2006 08 30 | 704 | 0.1+ | 0.2− |
| 1998 10 14 | 327 | 0.5+ | 0.1+ | 2002 10 12 | 704 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.3− | 0.1+ |
| 1998 10 14 | 327 | 0.5+ | 0.1+ | 2002 10 12 | 704 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.4+ |
| 1998 10 15 | 327 | 0.7+ | 0.4+ | 2002 10 12 | 704 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.3− |
| 1998 10 15 | 327 | 0.9+ | 0.5+ | 2002 10 12 | 704 | 0.2+ | 0.1− | 2006 09 25 | 704 | 1.0− | 0.2+ |
| 1998 10 15 | 327 | 0.4+ | 0.3+ | 2002 10 12 | 704 | 0.1+ | 0.0 | 2006 09 25 | 704 | (1.2− | 2.5+) |
| 1998 10 19 | 327 | 0.2− | 0.2+ | 2002 11 08 | 704 | 0.5− | 0.2+ | 2006 09 25 | 704 | (0.2+ | 1.6+) |
| 1998 10 19 | 327 | 0.1− | 0.2+ | 2002 11 08 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.5− | 0.6+ |
| 1998 10 19 | 327 | 0.0 | 0.1+ | 2002 11 08 | 704 | (3.0− | 0.8−) | 2006 09 25 | 704 | 0.8− | 0.2+ |
| 1998 11 07 | 619 | 0.1− | 0.4− | 2002 11 12 | 704 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.1+ | 1.3− |
| 1998 11 07 | 619 | 0.6− | 0.6− | 2002 11 12 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.1− | 0.2− |
| 1998 11 07 | 619 | 0.7− | 0.5− | 2002 11 12 | 704 | 0.4+ | 0.5+ | 2006 09 29 | 704 | 0.5− | 0.5− |
| 1998 11 08 | 619 | 0.6− | 0.1+ | 2002 11 12 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.2− |
| 1998 11 08 | 619 | 0.2− | 0.4− | 2002 11 12 | 704 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.2− | 0.6− |
| 1998 11 08 | 619 | 0.1− | 1.0− | 2002 12 02 | 704 | 0.3+ | 0.2− | 2006 10 19 | 704 | 0.7+ | 0.7− |
| 1998 11 08 | 619 | 0.0 | 0.6− | 2002 12 02 | 704 | 0.1+ | 0.1− | 2006 10 19 | 704 | 1.4− | 0.0 |
| 1998 11 10 | 704 | 0.1+ | 0.2+ | 2002 12 02 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 704 | 1.3− | 1.1− |
| 1998 11 10 | 704 | 0.3+ | 1.0+ | 2002 12 06 | 704 | 0.1+ | 0.8− | 2006 10 19 | 704 | 1.3+ | 0.2− |
| 1998 11 10 | 704 | 1.3− | 0.2− | 2002 12 06 | 704 | 0.6− | 0.3− | 2006 10 19 | 704 | 0.2+ | 0.5− |
| 1998 11 10 | 704 | 0.8− | 1.4− | 2002 12 06 | 704 | 0.1− | 0.7− | 2006 10 20 | H51 | 0.7+ | 0.3− |
| 1998 11 11 | 704 | 0.7+ | 0.1+ | 2002 12 06 | 704 | 0.1+ | 0.7− | 2006 10 20 | 704 | 0.5− | 0.2− |
| 1998 11 11 | 704 | 0.5+ | 0.3− | 2002 12 06 | 704 | 0.0 | 0.9− | 2006 10 20 | H51 | 0.7− | 0.0 |
| 1998 11 11 | 704 | 1.4+ | 0.9+ | 2002 12 11 | 704 | 0.5− | 0.3+ | 2006 10 20 | 704 | 0.4− | 0.2+ |
| 1998 11 11 | 704 | 0.9+ | 0.2+ | 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 10 20 | H51 | (3.5+ | 0.1+) |
| 1998 11 11 | 704 | 0.5− | 0.9− | 2002 12 11 | 704 | 0.2− | 0.5+ | 2006 10 20 | 704 | 0.3− | 0.1+ |
| 1998 11 17 | 699 | 0.7+ | 0.2+ | 2002 12 11 | 704 | 0.0 | 1.0+ | 2006 10 20 | 704 | 0.6− | 0.2+ |
| 1998 11 17 | 699 | 0.5+ | 0.5+ | 2002 12 11 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 704 | 0.5− | 0.2− |
| 1998 11 17 | 699 | 0.5+ | 0.1+ | 2002 12 14 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 704 | 0.6− | 0.4− |
| 1998 12 09 | 704 | 0.3+ | 0.7− | 2002 12 14 | 704 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.0 | 0.4− |
| 1998 12 09 | 704 | 0.0 | 0.7− | 2002 12 14 | 704 | 0.2+ | 0.1+ | 2006 10 29 | 704 | 0.1+ | 0.3+ |
| 1998 12 09 | 704 | 1.1+ | 1.7− | 2002 12 14 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.6− |
| 1998 12 09 | 704 | 0.7+ | 0.7− | 2002 12 14 | 704 | 0.0 | 0.3+ | 2006 10 29 | 704 | 0.5− | 1.0− |
| 1998 12 09 | 704 | 0.1+ | 2.0− | 2002 12 31 | 704 | 0.1− | 1.0+ | 2006 11 02 | G96 | 0.1− | 0.3− |
| 1998 12 15 | 699 | 1.2− | 0.0 | 2002 12 31 | 704 | 0.5+ | 0.0 | 2006 11 02 | G96 | 0.5− | 0.3− |
| 1998 12 15 | 699 | 0.5− | 0.4− | 2002 12 31 | 704 | 1.1+ | 0.5− | 2006 11 02 | G96 | 0.4− | 0.3− |
| 1998 12 15 | 699 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.8+ | 0.5− | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 1999 01 06 | 699 | 1.2− | 0.9+ | 2002 12 31 | 704 | 0.3− | 0.8− | 2006 11 06 | 644 | 0.2− | 0.1− |
| 1999 01 06 | 699 | 0.2− | 0.2− | 2003 01 05 | 704 | 0.0 | 0.7+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 1999 01 06 | 699 | 0.7− | 0.9+ | 2003 01 05 | 704 | 0.4− | 0.3+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 1999 01 08 | 704 | 1.2− | 1.0− | 2003 01 05 | 704 | 0.2+ | 0.6+ | 2006 11 15 | 704 | 0.8− | 0.8+ |
| 1999 01 08 | 704 | 0.3+ | 0.1+ | 2003 01 05 | 704 | 1.2+ | 0.6+ | 2006 11 15 | 704 | (0.4+ | 1.8+) |
| 1999 01 08 | 704 | 0.3− | 0.9+ | 2003 01 05 | 704 | 0.6+ | 0.5− | 2006 11 15 | 704 | 0.1+ | 0.0 |
| 1999 01 08 | 704 | 0.5+ | 0.3− | 2003 01 31 | 704 | 0.4− | 0.2+ | 2006 11 15 | 704 | 1.0+ | 0.1− |
| 1999 01 08 | 704 | 1.2− | 0.1− | 2003 01 31 | 704 | 0.3− | 0.2− | 2006 11 15 | 704 | 1.0+ | 0.3− |
| 1999 02 02 | 699 | (2.2− | 0.3−) | 2003 01 31 | 704 | 0.0 | 0.9+ | 2006 11 29 | 951 | 0.5− | 0.1− |
| 1999 02 02 | 699 | 1.4− | 0.4− | 2003 01 31 | 704 | 0.1+ | 0.8+ | 2006 11 29 | 951 | 0.2− | 0.3+ |
| 1999 02 02 | 699 | 0.9− | 0.6− | 2003 01 31 | 704 | 0.1+ | 0.9+ | 2006 11 29 | 951 | 0.3− | 0.3+ |

**(136997)∗ 1998 SP$_{72}$ = 1998 UR$_{37}$**

Discovered 1998 Sept. 21 by E. W. Elst at the European Southern Observatory.

Id. G. V. Williams (d, MPC 34339)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.45857 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25849385 | $\omega$ | 315.43332 | | +0.89895063 | −0.43645483 |
| $a$ | 2.4406335 | $\Omega$ | 70.47818 | | +0.41215370 | +0.81384623 |
| $e$ | 0.1969376 | $i$ | 2.27106 | | +0.14838161 | +0.38361635 |
| $P$ | 3.81 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 14 | 691 | 0.0 | 0.0 | 2002 10 03 | 704 | 0.4− | 0.1+ | 2002 12 08 | 049 | 0.1− | 0.5+ |
| 1996 02 14 | 691 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.2− | 2002 12 09 | 291 | 0.1+ | 0.4− |
| 1996 02 14 | 691 | 0.0 | 0.0 | 2002 10 03 | 704 | 0.0 | 0.5− | 2002 12 09 | 291 | 0.1+ | 0.4− |
| 1998 09 21 | 809 | 0.2+ | 1.4− | 2002 10 07 | 704 | 0.7− | 1.0+ | 2002 12 09 | 291 | 0.1+ | 0.3− |
| 1998 09 21 | 809 | 1.3− | 1.5− | 2002 10 07 | 704 | 0.6− | 0.3− | 2002 12 10 | 704 | 0.2− | 0.9+ |
| 1998 09 21 | 809 | 0.2− | 0.9− | 2002 10 07 | 704 | 1.3− | 0.6+ | 2002 12 10 | 704 | 0.2− | 0.3+ |
| 1998 09 23 | 809 | 1.1− | 1.1− | 2002 10 11 | 704 | 0.8− | 0.7− | 2002 12 10 | 704 | 0.3− | 0.3+ |
| 1998 09 23 | 809 | 0.9− | 1.3− | 2002 10 11 | 704 | 1.3− | 0.5+ | 2002 12 10 | 704 | 0.2− | 0.4+ |
| 1998 09 23 | 809 | 1.6− | 0.4− | 2002 10 11 | 704 | 0.6− | 0.1− | 2002 12 10 | 704 | 0.2+ | 0.9+ |
| 1998 10 10 | 699 | 0.5+ | 1.1+ | 2002 10 11 | 704 | 0.6− | 0.5+ | 2002 12 10 | 704 | 0.1+ | 0.4+ |
| 1998 10 10 | 699 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.2+ | 1.0+ | 2002 12 10 | 704 | 0.3− | 0.6+ |
| 1998 10 10 | 699 | 0.6+ | 0.5+ | 2002 10 31 | 608 | 0.4− | 0.7+ | 2002 12 10 | 704 | 0.1− | 0.2+ |
| 1998 10 28 | 704 | 0.3+ | 0.1+ | 2002 10 31 | 608 | 0.8− | 0.9+ | 2002 12 10 | 704 | 0.6+ | 0.6− |
| 1998 10 28 | 704 | (2.5+ | 0.1+) | 2002 10 31 | 608 | 0.3− | 0.5+ | 2002 12 10 | 704 | 0.1+ | 0.2+ |
| 1998 10 28 | 704 | 0.4+ | 0.5+ | 2002 11 05 | 704 | 0.1− | 0.2+ | 2002 12 27 | 644 | 0.6− | 0.0 |
| 1998 10 28 | 704 | 0.9+ | 0.1+ | 2002 11 05 | 704 | 0.1+ | 0.2+ | 2002 12 27 | 644 | 0.2+ | 0.2− |
| 1998 10 29 | 704 | 0.3+ | 0.6+ | 2002 11 05 | 704 | 0.1− | 0.1− | 2002 12 27 | 644 | 0.6+ | 0.2+ |
| 1998 10 29 | 704 | 1.1+ | 0.7+ | 2002 11 05 | 704 | 1.0+ | 0.1+ | 2002 12 28 | 699 | 0.1+ | 0.8− |
| 1998 10 29 | 704 | 0.9+ | 0.1− | 2002 11 05 | 704 | 0.5+ | 0.4− | 2002 12 28 | 699 | 1.4− | 0.1− |
| 1998 10 29 | 704 | 0.4+ | 0.2+ | 2002 11 06 | 704 | 0.3− | 0.3+ | 2002 12 28 | 699 | 0.6− | 0.2+ |
| 1998 10 29 | 704 | 0.3+ | 0.5− | 2002 11 06 | 704 | 0.2+ | 0.2+ | 2002 12 28 | 699 | 0.5− | 0.0 |
| 1998 11 10 | 704 | 0.3− | 0.8− | 2002 11 06 | 704 | 0.3− | 0.2− | 2002 12 31 | 704 | 0.5+ | 0.4+ |
| 1998 11 10 | 704 | 0.7− | 0.6+ | 2002 11 06 | 704 | 0.0 | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.2− |
| 1998 11 10 | 704 | 0.9− | 0.2+ | 2002 11 06 | 704 | 0.1− | 0.3− | 2002 12 31 | 704 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 10 | 704 | 0.4− | 0.3+ | 2002 11 14 | 704 | 0.3+ | 0.6+ | 2002 12 31 | 704 | 0.1− | 0.5− |
| 1998 11 14 | 699 | 0.4+ | 1.9+ | 2002 11 14 | 704 | 0.6+ | 0.6+ | 2003 01 04 | 704 | 1.1+ | 0.0 |
| 1998 11 14 | 699 | 1.3+ | 0.3+ | 2002 11 14 | 704 | 0.1+ | 0.3+ | 2003 01 04 | 704 | 1.3+ | 0.9− |
| 1998 11 14 | 699 | 1.2+ | 0.5+ | 2002 11 14 | 704 | 0.6+ | 0.1+ | 2003 01 04 | 704 | 0.1+ | 1.4− |
| 1998 11 23 | 699 | 0.4− | 0.6− | 2002 11 14 | 704 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.8− |
| 1998 11 23 | 699 | 0.2− | 0.2+ | 2002 11 24 | 644 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 1998 11 23 | 699 | 0.6+ | 0.4+ | 2002 11 24 | 644 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.5− |
| 1998 12 09 | 699 | 0.3− | 0.6+ | 2002 11 24 | 644 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1998 12 09 | 699 | 0.6− | 0.1− | 2002 12 02 | 704 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 1998 12 09 | 699 | 0.3+ | 0.4− | 2002 12 02 | 704 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2000 03 11 | 699 | 0.2− | 0.7− | 2002 12 02 | 704 | 0.6+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2000 03 11 | 699 | 0.2− | 0.4+ | 2002 12 04 | 333 | 0.5− | 0.5− | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2000 03 11 | 699 | 0.4+ | 0.8+ | 2002 12 04 | 333 | 0.6+ | 0.3− | 2006 11 27 | G96 | 0.0 | 0.6− |
| 2000 03 11 | 699 | 0.2+ | 1.2+ | 2002 12 04 | 333 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.0 | 0.7− |
| 2002 10 02 | 704 | 0.2− | 0.2− | 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.7− |
| 2002 10 02 | 704 | 0.2− | 0.0 | 2002 12 05 | 704 | 0.3+ | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2002 10 02 | 704 | 0.9− | 0.1+ | 2002 12 05 | 704 | 0.2+ | 0.3− | 2006 12 01 | 704 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.2− | 0.1+ | 2002 12 05 | 704 | 0.6+ | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2002 10 02 | 704 | 0.7− | 0.4+ | 2002 12 05 | 704 | 0.3+ | 0.1− | 2006 12 01 | 704 | 0.7+ | 0.5+ |
| 2002 10 03 | 704 | 0.4− | 0.8− | 2002 12 08 | 049 | 0.1− | 0.6+ | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2002 12 08 | 049 | 0.3− | 0.9+ | | | | |

**(136998)∗ 1998 SG$_{75}$**

Discovered 1998 Sept. 21 by E. W. Elst at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.84112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24613113 | $\omega$ | 244.10778 | | +0.97610208 | −0.21193249 | |
| $a$ | 2.5216899 | $\Omega$ | 128.09026 | | +0.21475561 | +0.90691305 | |
| $e$ | 0.1694933 | $i$ | 3.50059 | | +0.03323802 | +0.36413369 | |
| $P$ | 4.00 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 19 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 1990 10 19 | 691 | 0.2− | 0.1− | 2002 10 11 | 704 | 0.9− | 0.1− | 2006 10 02 | G96 | 0.9+ | 0.6− |
| 1990 10 19 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.7− | 0.7+ | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 1998 09 21 | 809 | (2.6+ | 0.1+) | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 1998 09 21 | 809 | (2.7+ | 1.8−) | 2002 10 30 | 683 | (3.6+ | 0.9+) | 2006 10 11 | 644 | 0.2− | 0.2− |
| 1998 09 21 | 809 | (2.4+ | 1.4−) | 2002 10 30 | 683 | (3.4+ | 1.0−) | 2006 10 11 | 644 | 0.1− | 0.1− |
| 1998 09 23 | 809 | (3.2+ | 0.7+) | 2002 10 30 | 683 | (5.6+ | 0.5+) | 2006 10 15 | 703 | 0.2+ | 0.6− |
| 1998 09 23 | 809 | (2.7+ | 1.0−) | 2002 10 31 | 704 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.6− | 0.4− |
| 1998 09 23 | 809 | 1.6+ | 0.0 | 2002 10 31 | 704 | 0.3+ | 0.4+ | 2006 10 15 | 703 | 0.7+ | 0.8+ |
| 1998 10 20 | 699 | 1.0+ | 0.7+ | 2002 10 31 | 704 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.2− | 0.5− |
| 1998 10 20 | 699 | 1.4+ | 0.7+ | 2002 10 31 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 1998 10 20 | 699 | 0.8+ | 0.4+ | 2002 10 31 | 704 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 1998 10 28 | 704 | 1.4− | 0.7+ | 2002 11 04 | 608 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1998 10 28 | 704 | 0.9+ | 0.5+ | 2002 11 04 | 608 | 0.1− | 1.0− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1998 10 28 | 704 | 0.3− | 0.1+ | 2002 11 04 | 608 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 1998 10 28 | 704 | 1.8− | 0.2− | 2002 11 05 | 699 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1998 10 29 | 704 | 0.6− | 1.3+ | 2002 11 05 | 699 | 0.8+ | 0.8+ | 2006 10 21 | 703 | 0.4− | 0.8− |
| 1998 10 29 | 704 | 0.4− | 1.1+ | 2002 11 05 | 699 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.8− |
| 1998 10 29 | 704 | 0.5+ | 1.0+ | 2002 11 05 | 699 | 0.5+ | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.2− |
| 1998 10 29 | 704 | 0.1− | 0.8− | 2002 11 11 | 704 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.4− | 1.1− |
| 1998 10 29 | 704 | 0.8+ | 0.4− | 2002 11 11 | 704 | 0.5− | 0.3+ | 2006 10 22 | 704 | 0.1− | 0.3+ |
| 2000 04 10 | 695 | 0.1+ | 0.7− | 2002 11 11 | 704 | 0.0 | 0.1− | 2006 10 22 | 704 | 0.6− | 0.2− |
| 2000 04 10 | 695 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 10 22 | 704 | (1.6− | 1.8+) |
| 2001 05 25 | 691 | 0.0 | 0.3+ | 2004 02 23 | 704 | (0.4+ | 1.7+) | 2006 10 22 | 704 | (0.2− | 2.4+) |
| 2001 05 25 | 691 | 0.0 | 0.4+ | 2004 02 23 | 704 | 0.7+ | 0.8+ | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2001 05 25 | 691 | 0.1− | 0.4+ | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2001 06 11 | 691 | 0.1+ | 0.1+ | 2004 02 29 | 691 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.8− | 1.0− |
| 2001 06 11 | 691 | 0.3+ | 0.2+ | 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.5− |
| 2001 06 11 | 691 | 0.1+ | 0.4+ | 2005 05 14 | G96 | (2.1− | 1.7−) | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2002 10 01 | 704 | 0.5− | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 10 01 | 704 | 1.2− | 0.3− | 2005 05 14 | G96 | 1.0+ | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2002 10 01 | 704 | 0.2− | 0.3− | 2005 05 14 | G96 | 0.4− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2002 10 01 | 704 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 27 | 704 | 0.7+ | 0.0 |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 27 | 704 | 0.6+ | 0.7+ |
| 2002 10 02 | 704 | 0.9− | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.3− | 2006 10 27 | 704 | 0.1+ | 1.5+ |
| 2002 10 02 | 704 | 0.7− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.9+ | 2006 10 27 | 704 | 0.1+ | 0.6+ |
| 2002 10 02 | 704 | 0.6− | 0.8+ | 2006 09 26 | 704 | 0.4+ | 1.0+ | 2006 10 27 | 704 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.4+ | 0.4− | 2006 09 26 | 704 | 0.1− | 1.3+ | 2006 11 13 | 703 | 0.6+ | 0.7+ |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.7+ | 2006 11 13 | 703 | 1.4+ | 0.8+ |
| 2002 10 03 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.1− | | | | |
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.3− | | | | |

**(136999)∗ 1998 SG$_{76}$ = 2002 TX$_{128}$**

Discovered 1998 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37106)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.05914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25301650 | $\omega$ | 41.96531 | | +0.94665717 | +0.30844838 | |
| $a$ | 2.4757312 | $\Omega$ | 299.84354 | | −0.31679948 | +0.83785342 | |
| $e$ | 0.1729174 | $i$ | 6.17312 | | −0.05897709 | +0.45040120 | |
| $P$ | 3.90 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.1+ | 1.3+ | 2002 10 05 | 704 | 0.5+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1998 08 17 | 704 | 0.1+ | 1.8+ | 2002 10 05 | 704 | 0.6+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1998 08 17 | 704 | (2.3− | 0.7−) | 2002 10 07 | 699 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 1998 08 17 | 704 | (6.2− | 1.3+) | 2002 10 07 | 699 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.8+ | 0.4− |
| 1998 08 30 | 699 | 0.2+ | 0.1− | 2002 10 07 | 699 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.5+ | 0.2+ |
| 1998 08 30 | 699 | 0.3+ | 0.8+ | 2002 10 07 | 699 | 0.8− | 0.1+ | 2006 10 12 | 644 | 0.6+ | 0.1+ |
| 1998 08 30 | 699 | 1.3+ | 0.5+ | 2002 10 09 | 704 | 0.2+ | 0.5+ | 2006 10 17 | A50 | 0.1+ | 0.3+ |
| 1998 09 16 | 699 | 0.1+ | 0.4+ | 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 10 17 | A50 | 0.3+ | 0.6+ |
| 1998 09 16 | 699 | 0.0 | 0.3+ | 2002 10 09 | 704 | 0.1+ | 0.1+ | 2006 10 18 | A50 | 0.1− | 0.1− |
| 1998 09 16 | 699 | 0.3− | 0.1− | 2002 10 09 | 704 | 0.5− | 0.2+ | 2006 10 18 | A50 | 0.8− | 0.1− |
| 1998 09 19 | 704 | 0.0 | 0.0 | 2002 10 09 | 704 | 0.7− | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.3+ |
| 1998 09 19 | 704 | 0.5+ | 0.3− | 2002 10 12 | 704 | (1.9− | 0.2−) | 2006 10 19 | 703 | 0.0 | 0.2+ |
| 1998 09 19 | 704 | 0.7+ | 0.6− | 2002 10 12 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 1.3+ | 0.2+ |
| 1998 09 19 | 704 | 1.0− | 1.1− | 2002 10 12 | 704 | 0.5− | 0.2+ | 2006 10 21 | 704 | (0.2+ | 1.6+) |
| 1998 09 23 | 704 | 0.3− | 1.8− | 2004 01 24 | 704 | 0.1+ | 0.3− | 2006 10 21 | 704 | (1.9+ | 0.1+) |
| 1998 09 23 | 704 | (2.2− | 1.2−) | 2004 01 24 | 704 | 0.0 | 0.6+ | 2006 10 21 | 704 | (0.5− | 1.8+) |
| 1998 09 23 | 704 | 1.0+ | 0.5− | 2004 01 24 | 704 | 0.1− | 0.4+ | 2006 10 21 | 704 | 1.1− | 1.0+ |
| 1998 09 23 | 704 | 0.8− | 0.1− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2000 02 03 | 691 | 0.2− | 0.0 | 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.5+ | 0.0 |
| 2000 02 03 | 691 | 0.4+ | 0.3− | 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2000 02 03 | 691 | 0.0 | 0.0 | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.2− |
| 2002 09 07 | 704 | 0.3+ | 0.2− | 2004 02 11 | 691 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2002 09 07 | 704 | 0.6− | 0.4− | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 09 07 | 704 | 0.9− | 0.5− | 2005 05 16 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 1.0+ | 0.7+ |
| 2002 09 07 | 704 | (1.7− | 0.7−) | 2005 05 16 | 644 | 0.4+ | 1.0+ | 2006 10 27 | 703 | 0.2− | 0.8− |
| 2002 09 17 | 608 | 0.9− | 0.8− | 2005 05 16 | 644 | 0.4+ | 0.6+ | 2006 10 27 | 703 | 0.6− | 0.5− |
| 2002 09 17 | 608 | 0.7− | 0.5− | 2006 09 17 | 703 | 0.3− | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2002 09 17 | 608 | 0.9− | 1.1− | 2006 09 17 | 703 | 0.4− | 0.3+ | 2006 11 09 | 104 | 0.8− | 0.5− |
| 2002 10 04 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.5+ | 2006 11 09 | 104 | 0.1+ | 0.4− |
| 2002 10 04 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 11 09 | 104 | 0.8+ | 0.0 |
| 2002 10 04 | 644 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.6+ | 0.7− | 2006 11 14 | 703 | 0.4− | 0.2− |
| 2002 10 05 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.6− | 2006 11 14 | 703 | 0.3+ | 0.5+ |
| 2002 10 05 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.1− |

**(137000)∗ 1998 SH$_{78}$ = 4210 P-L**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33048)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.00954 | | (2000.0) | | | |
| $n$ | 0.25900400 | $\omega$ | 55.85442 | | +0.95419466 | +0.29318810 |
| $a$ | 2.4374276 | $\Omega$ | 287.03408 | | −0.29090955 | +0.86265560 |
| $e$ | 0.0957628 | $i$ | 3.57439 | | −0.06988692 | +0.41214811 |
| $P$ | 3.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.0 | 0.6− | 2002 10 09 | 704 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.2− | 0.2+ |
| 1960 09 25 | 675 | 0.7+ | 0.7+ | 2002 10 11 | 644 | 0.2− | 1.0+ | 2006 10 19 | 703 | (1.7− | 1.0−) |
| 1960 09 26 | 675 | 0.0 | 0.8− | 2002 10 11 | 644 | 0.4− | 0.8+ | 2006 10 27 | 703 | 0.5+ | 0.6− |
| 1960 09 28 | 675 | 0.7− | 0.3+ | 2002 10 11 | 644 | 0.3+ | 1.2+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 1998 09 16 | 699 | 0.7+ | 0.5+ | 2002 10 12 | 704 | 0.9− | 1.3+ | 2006 10 27 | 703 | 1.4+ | 0.1− |
| 1998 09 16 | 699 | 0.7+ | 0.4− | 2002 10 12 | 704 | 0.3− | 0.8+ | 2006 10 27 | 703 | (2.3− | 0.5−) |
| 1998 09 16 | 699 | 0.6+ | 1.3+ | 2002 10 12 | 704 | 0.5− | 1.1+ | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 1998 09 26 | 704 | 0.4+ | 1.5+ | 2002 10 12 | 704 | (1.6− | 1.0+) | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 1998 09 26 | 704 | 0.1− | 0.8− | 2002 10 30 | 608 | 0.2− | 0.9− | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 1998 09 26 | 704 | 0.1− | 0.4+ | 2002 10 30 | 608 | 0.7− | 0.8− | 2006 11 11 | 703 | (1.6− | 0.1+) |
| 1998 09 26 | 704 | 0.4− | 0.2− | 2002 10 30 | 608 | 0.4− | 0.5− | 2006 11 15 | 704 | 0.4− | 0.5− |
| 1998 09 27 | 704 | 1.7− | 0.8+ | 2002 11 04 | 608 | 0.2− | 0.6+ | 2006 11 15 | 704 | 0.1− | 1.1− |
| 1998 09 27 | 704 | 0.3− | 0.9− | 2002 11 04 | 608 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.5+ | 0.4+ |
| 1998 09 27 | 704 | 0.7− | 0.5− | 2002 11 04 | 608 | 0.6− | 0.9+ | 2006 11 15 | 704 | 0.6− | 0.6− |
| 1998 09 27 | 704 | 0.0 | 0.8+ | 2004 03 11 | 644 | 0.6+ | 0.8+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 1998 09 27 | 704 | 1.6− | 1.1+ | 2004 03 11 | 644 | 1.1+ | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 1998 10 14 | 699 | 0.1+ | 1.0+ | 2004 03 11 | 644 | 0.7+ | 0.5+ | 2006 11 21 | 691 | 0.3− | 0.1− |
| 1998 10 14 | 699 | 0.8+ | 0.2− | 2004 03 20 | 691 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.8+ | 0.2− |
| 1998 10 14 | 699 | 0.6+ | 0.4+ | 2004 03 20 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.2− | 2004 03 20 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.2+ | 2005 01 17 | 809 | 0.8− | 0.4+ | 2006 11 22 | 704 | 0.4+ | 0.1− |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2005 01 17 | 809 | 0.1+ | 0.9+ | 2006 11 22 | 704 | 0.3− | 0.7− |
| 2002 10 09 | 239 | 0.2+ | 0.6− | 2005 01 17 | 809 | 0.0 | 0.3+ | 2006 11 24 | 703 | 0.2− | 0.2+ |
| 2002 10 09 | 239 | 0.6+ | 0.6− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 24 | 703 | 0.1+ | 0.3+ |
| 2002 10 09 | 239 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.9− | 2006 11 24 | 703 | 0.5− | 0.3− |
| 2002 10 09 | 704 | (0.9+ | 1.6+) | 2006 10 19 | 703 | 0.2+ | 0.8− | 2006 11 24 | 703 | 0.6− | 0.5− |
| 2002 10 09 | 704 | 0.7+ | 0.4− | 2006 10 19 | 691 | 0.5+ | 0.0 | | | | |
| 2002 10 09 | 704 | 1.4+ | 0.8+ | 2006 10 19 | 703 | 0.2− | 1.1− | | | | |

**(137001)∗ 1998 $SA_{81}$ = 2002 $TP_{52}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37107)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.48148 | | (2000.0) | | | |
| $n$ | 0.26234611 | $\omega$ | 193.89485 | | +0.78148776 | −0.62358508 |
| $a$ | 2.4166827 | $\Omega$ | 204.71919 | | +0.57700763 | +0.73481268 |
| $e$ | 0.2134276 | $i$ | 2.80416 | | +0.23735855 | +0.26681824 |
| $P$ | 3.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 1.3+ | 0.6+ | 2002 10 11 | 704 | 0.1− | 0.5+ | 2002 11 16 | 644 | 0.1+ | 0.0 |
| 1998 09 25 | 699 | 1.5+ | 0.9+ | 2002 10 11 | 704 | 0.1− | 0.3+ | 2002 11 24 | 644 | 0.1+ | 0.2+ |
| 1998 09 25 | 699 | (0.2+ | 2.8+) | 2002 10 11 | 704 | 0.6− | 0.1+ | 2002 11 24 | 644 | 0.1+ | 0.3+ |
| 1998 09 26 | 704 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.1+ | 0.8− | 2002 11 24 | 644 | 0.1+ | 0.2+ |
| 1998 09 26 | 704 | 1.2− | 1.3+ | 2002 10 30 | 608 | 1.0+ | 0.9+ | 2002 12 01 | 704 | 0.1+ | 1.2− |
| 1998 09 26 | 704 | 0.9+ | 1.4− | 2002 10 30 | 608 | 0.7+ | 0.7+ | 2002 12 01 | 704 | 0.1+ | 0.1+ |
| 1998 09 26 | 704 | 1.8+ | 0.4+ | 2002 10 30 | 608 | 0.2+ | 0.4+ | 2002 12 01 | 704 | 0.8− | 0.1+ |
| 1998 09 26 | 704 | 0.2+ | 1.5− | 2002 10 31 | 699 | 0.5+ | 0.7− | 2002 12 01 | 704 | 1.1+ | 0.8+ |
| 1998 09 26 | 704 | (2.1+ | 0.4−) | 2002 10 31 | 699 | 0.3− | 0.0 | 2002 12 01 | 704 | 0.3+ | 0.3− |
| 1998 09 26 | 704 | 1.0− | 1.1+ | 2002 10 31 | 699 | 0.8+ | 0.2− | 2002 12 05 | 704 | 0.3+ | 0.5+ |
| 1998 09 26 | 704 | 0.9+ | 1.5− | 2002 10 31 | 699 | 0.8− | 0.6+ | 2002 12 05 | 704 | 0.1+ | 0.3+ |
| 1998 09 26 | 704 | 0.7− | 0.1+ | 2002 11 05 | 704 | 0.0 | 0.7+ | 2002 12 05 | 704 | 0.0 | 0.6− |
| 1998 09 27 | 704 | 0.2+ | 1.4− | 2002 11 05 | 704 | 0.2− | 0.6+ | 2002 12 05 | 704 | 0.0 | 0.3− |
| 1998 09 27 | 704 | 0.4+ | 0.1− | 2002 11 05 | 704 | 0.4+ | 1.1+ | 2002 12 05 | 704 | 0.6− | 0.5− |
| 1998 09 27 | 704 | 0.4+ | 1.0− | 2002 11 05 | 704 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.1− | 0.1+ |
| 1998 09 27 | 704 | 1.5+ | 0.5− | 2002 11 05 | 704 | 0.4− | 0.8+ | 2002 12 10 | 704 | 0.1+ | 0.5+ |
| 1998 09 27 | 704 | 1.3+ | 1.0− | 2002 11 06 | 704 | 0.0 | 0.2− | 2002 12 10 | 704 | 0.1− | 0.0 |
| 1998 10 14 | 699 | 0.9+ | 0.9+ | 2002 11 06 | 704 | 0.2+ | 1.0+ | 2002 12 10 | 644 | 0.1+ | 0.1− |
| 1998 10 14 | 699 | 0.7+ | 0.9+ | 2002 11 06 | 704 | 0.2+ | 0.6+ | 2002 12 10 | 704 | 0.1− | 0.1+ |
| 1998 10 14 | 699 | 0.4+ | 0.9+ | 2002 11 06 | 704 | 0.1− | 0.1+ | 2002 12 10 | 644 | 0.0 | 0.1− |
| 1998 10 14 | 327 | 0.4− | 0.4+ | 2002 11 06 | 704 | (0.2− | 1.6+) | 2002 12 10 | 704 | 0.0 | 0.1+ |
| 1998 10 14 | 327 | 0.4− | 0.2− | 2002 11 06 | 704 | 0.4+ | 0.4+ | 2002 12 10 | 644 | 0.2− | 0.2− |
| 1998 10 14 | 327 | 0.6− | 0.4+ | 2002 11 06 | 704 | 0.1+ | 0.0 | 2002 12 10 | 644 | 0.1− | 0.0 |
| 1998 11 19 | 691 | 1.1− | 0.1− | 2002 11 06 | 704 | 0.2− | 0.3+ | 2002 12 10 | 644 | 0.2− | 0.0 |
| 1998 11 19 | 691 | 1.1− | 0.2− | 2002 11 06 | 704 | 0.2− | 0.7+ | 2002 12 10 | 644 | 0.0 | 0.0 |
| 1998 11 19 | 691 | 1.3− | 0.3− | 2002 11 06 | 704 | 0.3− | 0.7+ | 2002 12 27 | 644 | 0.2+ | 0.1+ |
| 2000 03 15 | 691 | 0.3− | 0.6− | 2002 11 07 | 704 | 0.4+ | 0.1+ | 2002 12 27 | 644 | 0.0 | 0.3+ |
| 2000 03 15 | 691 | 0.0 | 0.5− | 2002 11 07 | 704 | 1.1− | 0.9− | 2002 12 27 | 644 | 0.1+ | 0.4+ |
| 2000 03 15 | 691 | 0.4− | 0.5− | 2002 11 07 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 291 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | 0.3+ | 1.0− | 2002 11 07 | 704 | 0.9+ | 1.1+ | 2004 03 27 | 291 | 0.2− | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 1.2− | 2002 11 07 | 704 | 0.8+ | 1.1+ | 2004 03 27 | 291 | 0.4− | 0.3+ |
| 2002 10 02 | 704 | 0.3− | 0.3− | 2002 11 13 | 644 | 0.0 | 0.0 | 2004 04 20 | 691 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 1.0− | 0.6− | 2002 11 13 | 644 | 0.1+ | 0.0 | 2004 04 20 | 691 | 0.6+ | 0.5+ |
| 2002 10 03 | 704 | 0.1− | 0.6− | 2002 11 13 | 644 | 0.2+ | 0.0 | 2004 04 20 | 691 | 0.6+ | 0.3+ |
| 2002 10 03 | 704 | 0.6− | 0.6− | 2002 11 14 | 704 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.4− | 0.3− |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2002 11 14 | 704 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.5− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2002 11 14 | 704 | 0.4+ | 0.2− | 2006 10 01 | 691 | 0.6− | 0.5− |
| 2002 10 07 | 704 | 0.5− | 0.0 | 2002 11 14 | 704 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2002 10 07 | 704 | 0.0 | 0.2− | 2002 11 14 | 704 | 1.0+ | 0.1− | 2006 11 01 | G96 | 0.6− | 0.6− |
| 2002 10 07 | 704 | 0.2+ | 0.5− | 2002 11 16 | 644 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3− | 0.7− |
| 2002 10 11 | 704 | 0.2− | 0.3− | 2002 11 16 | 644 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.7− |

**(137002)∗ 1998 $SN_{83}$ = 2002 $TK_{206}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37107)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.42684 | | (2000.0) | | | |
| $n$ | 0.25987648 | $\omega$ | 296.89801 | | +0.48488281 | +0.87457103 |
| $a$ | 2.4319691 | $\Omega$ | 2.11803 | | −0.76191474 | +0.42453001 |
| $e$ | 0.1042160 | $i$ | 5.84913 | | −0.42938863 | +0.23430704 |
| $P$ | 3.79 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 16 | 699 | 0.3+ | 0.1− | 2002 10 11 | 704 | 0.0 | 0.5− | 2006 11 15 | 691 | 0.3− | 0.3− |
| 1998 09 16 | 699 | 0.7+ | 0.4+ | 2002 10 11 | 704 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.4− | 0.4− |
| 1998 09 16 | 699 | 0.2+ | 0.9+ | 2002 10 11 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 704 | (1.5+ | 0.6+) |
| 1998 09 25 | 699 | 0.7+ | 0.3+ | 2002 10 11 | 704 | 0.6− | 1.1− | 2006 11 15 | 704 | 0.9+ | 0.8+ |
| 1998 09 25 | 699 | 0.8+ | 0.0 | 2002 10 12 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 704 | 0.3+ | 0.2+ |
| 1998 09 25 | 699 | 0.3+ | 0.1+ | 2002 10 12 | 704 | 0.2− | 0.3+ | 2006 11 16 | 704 | (0.5+ | 4.1+) |
| 1998 09 26 | 704 | 0.7− | 0.3+ | 2002 10 12 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 1998 09 26 | 704 | 0.8+ | 1.0+ | 2002 10 12 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.9+ |
| 1998 09 26 | 704 | 1.8− | 1.5− | 2002 10 12 | 704 | 0.6+ | 0.7+ | 2006 11 16 | 704 | 0.6− | 1.3+ |
| 1998 09 26 | 704 | 0.0 | 1.3+ | 2002 10 12 | 704 | 0.2− | 0.5− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1998 09 27 | 704 | 0.2+ | 0.6+ | 2002 10 12 | 704 | 0.6+ | 0.8+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1998 09 27 | 704 | (0.6+ | 2.0+) | 2002 10 12 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 1998 09 27 | 704 | 0.2− | 1.2+ | 2002 10 12 | 704 | 0.3+ | 0.8+ | 2006 11 19 | 691 | 0.4− | 0.1+ |
| 1998 09 27 | 704 | 0.5+ | 1.2+ | 2002 10 12 | 704 | 0.9+ | 1.2+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 1998 09 27 | 704 | 1.6+ | 1.2+ | 2002 10 30 | 608 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1998 10 13 | 691 | 0.2+ | 0.2− | 2002 10 30 | 608 | 0.5− | 0.2− | 2006 11 19 | 704 | 0.1+ | 1.0− |
| 1998 10 13 | 691 | 0.4+ | 0.5− | 2002 10 30 | 608 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 1998 10 13 | 691 | 0.3+ | 0.3− | 2002 10 31 | 608 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.6+ |
| 1998 10 13 | 691 | 0.4+ | 0.5− | 2002 10 31 | 608 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.3− |
| 1998 10 13 | 691 | 0.3+ | 0.8− | 2002 10 31 | 608 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 1998 10 13 | 691 | (2.1+ | 0.4−) | 2002 11 08 | 704 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.1− | 0.5− |
| 1998 10 16 | 691 | 0.1− | 0.0 | 2002 11 08 | 704 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 1998 10 16 | 691 | 0.1− | 0.0 | 2002 11 08 | 704 | 0.3− | 1.3+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 1998 10 16 | 691 | 0.1− | 0.4+ | 2002 11 08 | 704 | (2.1− | 0.8+) | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 1998 10 24 | 691 | 0.9− | 0.2+ | 2002 11 12 | 704 | 0.3− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 1998 10 24 | 691 | 0.9− | 0.2+ | 2002 11 12 | 704 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 1998 10 24 | 691 | 0.7− | 0.3+ | 2002 11 12 | 704 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.0 |
| 1998 10 29 | 691 | 0.2− | 0.1− | 2002 11 12 | 704 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 691 | 0.2− | 0.2− | 2002 11 12 | 704 | 0.4+ | 0.0 | 2006 11 21 | 704 | 1.0+ | 0.1+ |
| 1998 10 29 | 691 | 0.2− | 0.1− | 2004 01 28 | 703 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2001 04 21 | 704 | 0.3− | 0.6− | 2004 01 28 | 703 | 1.2+ | 1.3+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 04 21 | 704 | 1.0+ | 0.8− | 2004 01 28 | 703 | 1.2+ | 1.1+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 04 21 | 704 | 0.4− | 0.4− | 2004 01 28 | 703 | 0.8− | 0.5− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 04 21 | 704 | 1.0− | 0.3− | 2004 02 16 | 704 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2004 02 16 | 704 | 0.5+ | 0.8+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.0 | 0.8− | 2004 02 16 | 704 | 0.4− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | 0.9+ | 0.0 | 2004 02 16 | 704 | 0.4+ | 0.8+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2005 01 17 | 809 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2002 10 04 | 704 | 0.3+ | 0.5− | 2005 01 17 | 809 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2002 10 08 | 699 | 0.2+ | 0.1− | 2005 01 17 | 809 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2002 10 08 | 699 | 0.6+ | 1.0− | 2006 10 19 | 703 | 1.1+ | 0.9+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2002 10 08 | 699 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.5+ | 2006 11 22 | 704 | 1.0+ | 0.3+ |
| 2002 10 08 | 699 | 0.5− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.9− | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2002 10 09 | 704 | 0.5− | 0.4− | 2006 10 19 | 703 | (1.0− | 1.6+) | 2006 11 22 | 704 | 0.6+ | 0.6+ |
| 2002 10 09 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 1.4+ | 0.5− |
| 2002 10 09 | 704 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2002 10 10 | 704 | 0.0 | 0.8+ | 2006 11 11 | 691 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 691 | 0.3− | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | (1.2− | 2.0+) | 2006 11 11 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 2002 10 11 | 704 | 0.7+ | 1.0+ | 2006 11 15 | 691 | 0.3− | 0.3− | | | | |

**(137003)∗ 1998 SU$_{90}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.97241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25430354 | $\omega$ | 356.21100 | | +0.99841634 | −0.05566918 | |
| $a$ | 2.4673709 | $\Omega$ | 6.99573 | | +0.05320634 | +0.88760557 | |
| $e$ | 0.1118234 | $i$ | 3.81727 | | +0.01827269 | +0.45722784 | |
| $P$ | 3.88 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 25 | 691 | 0.5+ | 0.7− | 2002 10 02 | 704 | 0.2− | 0.4+ | 2006 10 13 | 691 | 0.4+ | 0.0 |
| 1996 01 25 | 691 | 1.0− | 0.8− | 2002 10 02 | 704 | (1.5− | 2.0+) | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1998 09 26 | 704 | 1.5− | 0.3+ | 2002 10 02 | 704 | 0.9− | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.2+ |
| 1998 09 26 | 704 | 0.4− | 0.3− | 2002 10 03 | 704 | 0.8+ | 0.4− | 2006 10 17 | 691 | 0.1− | 0.3− |
| 1998 09 26 | 704 | 1.9− | 0.9+ | 2002 10 03 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 1998 09 27 | 704 | 0.8− | 1.4− | 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 1998 09 27 | 704 | 1.1+ | 0.7− | 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 1998 09 27 | 704 | 1.1+ | 1.7+ | 2002 10 11 | 704 | 1.2+ | 1.0+ | 2006 10 27 | 703 | 0.2+ | 1.2+ |
| 1998 09 27 | 704 | 0.8+ | 0.4− | 2002 10 11 | 704 | (2.1+ | 0.9−) | 2006 10 27 | 703 | 0.9− | 0.5+ |
| 1998 09 27 | 704 | 1.8+ | 0.3+ | 2002 10 11 | 704 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 0.8+ | 1.2− |
| 1998 09 28 | 691 | 0.5+ | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.8+ | 2006 10 27 | 703 | 0.2+ | 0.7− |
| 1998 09 28 | 691 | 0.8+ | 0.0 | 2002 10 18 | 644 | 0.0 | 1.0+ | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 1998 09 28 | 691 | 0.6+ | 0.1+ | 2002 10 18 | 644 | 0.7+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 1998 10 16 | 691 | 0.3− | 0.7− | 2002 10 18 | 644 | 0.4+ | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1998 10 16 | 691 | 0.7− | 0.5− | 2002 10 30 | 644 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1998 10 16 | 691 | (6.7− | 1.7+) | 2002 10 30 | 644 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 1998 10 22 | 691 | 0.3+ | 0.5− | 2002 10 30 | 644 | 0.6+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 1998 10 22 | 691 | 0.1+ | 0.2− | 2004 02 14 | 691 | 0.6− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 1998 10 22 | 691 | 0.1+ | 0.1− | 2004 02 14 | 691 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2− |
| 1998 10 28 | 691 | 0.4− | 0.3− | 2004 02 14 | 691 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1998 10 28 | 691 | 0.0 | 0.4− | 2004 02 23 | 704 | 1.2+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1998 10 28 | 691 | 0.3− | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.6− | 0.5− |
| 1998 11 16 | 691 | 0.3− | 0.5− | 2004 02 23 | 704 | 1.2+ | 1.2+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 1998 11 16 | 691 | (5.6+ | 0.8−) | 2004 02 23 | 704 | (2.0− | 0.3+) | 2006 11 11 | 703 | 1.3− | 0.4− |
| 1998 11 16 | 691 | (2.0+ | 4.2−) | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2002 09 29 | 608 | 0.3− | 0.3+ | 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.4− | 0.3+ |
| 2002 09 29 | 608 | 0.3− | 0.7+ | 2004 03 17 | 691 | 0.1− | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2002 09 29 | 608 | 0.1+ | 0.8+ | 2006 07 22 | G96 | 0.2+ | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2002 10 01 | 699 | 0.9− | 1.3+ | 2006 07 22 | G96 | 0.9− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2002 10 01 | 699 | (0.3− | 2.1+) | 2006 07 22 | G96 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.7− | 0.8+ |
| 2002 10 01 | 699 | (0.4+ | 1.8+) | 2006 07 22 | G96 | 0.9− | 0.4+ | 2006 11 19 | 704 | 1.1− | 1.0+ |
| 2002 10 01 | 699 | 0.7− | 0.8− | 2006 10 13 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2002 10 02 | 704 | 0.3− | 0.9+ | 2006 10 13 | 691 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.8− |

**(137004)∗ 1998 SA$_{92}$ = 2002 TZ$_{182}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37109)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.70014 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24231929 | $\omega$ | 110.78888 | | +0.61795797 | +0.78322073 | |
| $a$ | 2.5480663 | $\Omega$ | 197.90681 | | −0.77841482 | +0.59726223 | |
| $e$ | 0.1946513 | $i$ | 12.87410 | | −0.11044600 | +0.17275160 | |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 699 | 0.4+ | 0.8+ | 2002 09 28 | 608 | (1.4− | 2.5−) | 2006 09 14 | 703 | 1.1− | 0.1− |
| 1998 09 15 | 699 | 1.4+ | 1.5+ | 2002 09 28 | 608 | (1.4− | 2.4−) | 2006 09 14 | 703 | 0.9− | 1.5+ |
| 1998 09 15 | 699 | 1.1+ | 1.6+ | 2002 09 28 | 608 | (1.3− | 2.5−) | 2006 09 14 | 703 | 0.4+ | 0.9− |
| 1998 09 26 | 704 | 0.8+ | 1.8− | 2002 10 04 | 704 | 0.6+ | 0.0 | 2006 09 15 | 704 | 0.5+ | 0.0 |
| 1998 09 26 | 704 | 0.2+ | 0.7− | 2002 10 04 | 704 | 0.3+ | 0.1+ | 2006 09 15 | 704 | 0.6+ | 0.3+ |
| 1998 09 26 | 704 | 1.1− | 1.0+ | 2002 10 04 | 704 | 0.5+ | 0.0 | 2006 09 15 | 704 | 0.8+ | 0.4+ |
| 1998 09 26 | 704 | 1.4− | 1.2− | 2002 10 04 | 704 | 0.8+ | 0.1+ | 2006 09 15 | 704 | 0.1− | 0.1− |
| 1998 09 27 | 704 | 0.3− | 0.1+ | 2002 10 04 | 704 | 0.3+ | 0.3+ | 2006 09 15 | 704 | 0.4+ | 0.2+ |
| 1998 09 27 | 704 | 0.1− | 0.1− | 2002 10 07 | 699 | 0.5+ | 0.6+ | 2006 09 16 | 644 | 0.6+ | 0.2− |
| 1998 09 27 | 704 | 1.2− | 0.8− | 2002 10 07 | 699 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.8+ | 0.2− |
| 1998 09 27 | 704 | 0.0 | 0.1− | 2002 10 07 | 699 | 0.6− | 0.6+ | 2006 09 16 | 644 | 0.7+ | 0.2+ |
| 1998 09 27 | 704 | 1.4− | 0.3+ | 2002 10 07 | 699 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.4+ | 0.1+ |
| 1998 10 14 | 699 | 1.4+ | 1.3+ | 2002 11 06 | 704 | 1.1− | 0.6− | 2006 09 18 | 703 | 0.8+ | 0.1+ |
| 1998 10 14 | 699 | 0.2+ | 1.0+ | 2002 11 06 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.9− |
| 1998 10 14 | 699 | 0.3− | 1.1+ | 2002 11 06 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.9+ | 0.1+ |
| 1998 10 20 | 046 | 0.1+ | 0.3− | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 09 20 | 699 | 0.7+ | 0.1+ |
| 1998 10 20 | 046 | 0.6+ | 0.4− | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 09 20 | 699 | 0.4+ | 0.3− |
| 1998 10 20 | 046 | 0.2− | 0.1− | 2005 03 03 | 691 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.4+ |
| 1998 10 20 | 046 | 0.4− | 0.0 | 2005 03 03 | 691 | 0.0 | 0.1− | 2006 09 30 | 699 | 0.0 | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2005 03 03 | 691 | 0.3+ | 0.3− | 2006 09 30 | 699 | 0.4+ | 0.5− |
| 2002 09 07 | 704 | 0.7− | 0.4− | 2005 04 12 | G96 | 0.7− | 0.5+ | 2006 09 30 | 699 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.5+ | 1.0+ | 2005 04 12 | G96 | 0.4− | 0.2+ | 2006 09 30 | 699 | 0.1− | 0.3− |
| 2002 09 07 | 704 | 0.7− | 0.3+ | 2005 04 12 | G96 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.0 |
| 2002 09 07 | 704 | 0.6+ | 0.6+ | 2005 04 12 | G96 | 0.6− | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.6− |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2006 08 31 | 704 | 1.0− | 0.7− | 2006 10 01 | 704 | (1.1− | 1.6+) |
| 2002 09 07 | 704 | 0.3+ | 0.2− | 2006 08 31 | 704 | 0.8− | 0.1− | 2006 10 01 | 704 | 0.2− | 0.5+ |
| 2002 09 13 | 644 | 0.2+ | 0.1− | 2006 08 31 | 704 | 1.3− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2002 09 13 | 644 | 0.3+ | 0.1− | 2006 08 31 | 704 | 1.4− | 0.9− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.3+ | 0.2− | 2006 09 14 | 703 | 1.4− | 0.8− | 2006 10 10 | 644 | 0.4+ | 0.2+ |

**(137005)∗ 1998 SN$_{93}$ = 1994 PX$_3$ = 1998 VL$_{47}$ = 2000 CU$_{118}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 6814)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.78430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25609753 | $\omega$ | 208.47431 | | +0.96218510 | −0.27235790 | |
| $a$ | 2.4558347 | $\Omega$ | 167.32780 | | +0.25371460 | +0.88994331 | |
| $e$ | 0.1965702 | $i$ | 1.19736 | | +0.09914003 | +0.36581699 | |
| $P$ | 3.85 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | 1.2− | 1.6+ | 2002 10 08 | 699 | 0.3− | 0.2− | 2002 12 10 | 644 | 1.0− | 0.6+ |
| 1994 08 10 | 809 | 1.7− | 1.6+ | 2002 10 08 | 699 | 0.2− | 0.8+ | 2002 12 10 | 644 | 1.0− | 0.8+ |
| 1994 08 10 | 809 | (1.3− | 3.3+) | 2002 10 08 | 699 | 0.7− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 1994 08 11 | 809 | (0.3+ | 2.1+) | 2002 10 08 | 699 | 0.9− | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 1994 08 11 | 809 | (0.2+ | 2.4+) | 2002 10 09 | 704 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 1994 08 11 | 809 | (0.7+ | 2.7+) | 2002 10 09 | 704 | 1.1− | 1.2+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 1994 09 08 | 691 | 0.1− | 0.7+ | 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 1994 09 08 | 691 | 0.4− | 0.7+ | 2002 10 11 | 704 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 08 | 691 | 0.3+ | 0.5+ | 2002 10 11 | 704 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1998 09 17 | 691 | 0.3− | 0.7− | 2002 10 11 | 704 | 0.9+ | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 1998 09 17 | 691 | 0.4− | 0.6− | 2002 10 11 | 704 | 0.3− | 0.8+ | 2006 11 15 | 703 | 0.4− | 0.5− |
| 1998 09 17 | 691 | 0.4− | 0.6− | 2002 10 11 | 704 | 0.4− | 0.6+ | 2006 11 15 | 703 | 0.4− | 0.6− |
| 1998 09 25 | 699 | 1.3+ | 0.4− | 2002 10 16 | 644 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.5− |
| 1998 09 25 | 699 | 0.4− | 0.1+ | 2002 10 16 | 644 | 0.1− | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 1998 09 25 | 699 | 0.5+ | 1.0+ | 2002 10 16 | 644 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 1998 09 26 | 704 | 0.3− | 0.6− | 2002 10 26 | 608 | 0.6− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1998 09 26 | 704 | 0.2+ | 0.6+ | 2002 10 26 | 608 | 1.0− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.6+ |
| 1998 09 26 | 704 | (1.8+ | 2.2−) | 2002 10 26 | 608 | 0.9− | 0.8− | 2006 11 18 | 704 | 0.6+ | 1.1+ |
| 1998 09 26 | 704 | 1.0+ | 0.9+ | 2002 10 31 | 644 | 0.5− | 0.1+ | 2006 11 18 | 704 | (1.6+ | 0.8+) |
| 1998 09 26 | 704 | 0.2− | 1.0− | 2002 10 31 | 644 | 0.6− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 1.0+ |
| 1998 09 27 | 704 | 0.5+ | 1.2− | 2002 10 31 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 1998 09 27 | 704 | 0.2+ | 0.8+ | 2002 11 06 | 704 | 0.9+ | 1.1+ | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 1998 09 27 | 704 | 0.2− | 1.7+ | 2002 11 06 | 704 | 1.2+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 1998 09 27 | 704 | 0.5− | 0.3+ | 2002 11 06 | 704 | 0.9+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 1998 10 16 | 691 | 0.1+ | 0.3− | 2002 11 06 | 704 | 0.6+ | 0.9+ | 2006 11 21 | 704 | (0.9− | 2.1+) |
| 1998 10 16 | 691 | 0.3+ | 0.0 | 2002 11 06 | 704 | 0.8+ | 0.3− | 2006 11 21 | 704 | 0.5− | 1.2+ |
| 1998 10 16 | 691 | 0.4+ | 0.0 | 2002 11 06 | 608 | 1.0+ | 0.4+ | 2006 11 21 | 704 | 1.0− | 1.2+ |
| 1998 10 28 | 691 | 0.8+ | 0.5− | 2002 11 06 | 608 | 0.7+ | 0.0 | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 1998 10 28 | 691 | 0.4+ | 0.5− | 2002 11 06 | 608 | 0.7+ | 0.5+ | 2006 11 21 | 704 | 0.3− | 1.1+ |
| 1998 10 28 | 691 | 0.3+ | 0.4− | 2002 11 07 | 699 | 0.3− | 1.0− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 1998 11 15 | 691 | 0.3− | 0.2− | 2002 11 07 | 699 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 1998 11 15 | 691 | 0.5− | 0.4− | 2002 11 07 | 699 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 1998 11 15 | 691 | 0.5− | 0.5− | 2002 11 07 | 699 | (1.7− | 1.1−) | 2006 11 24 | G96 | 0.5+ | 0.4+ |
| 1998 11 21 | 691 | 0.6+ | 0.0 | 2002 11 10 | 704 | 0.8− | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 1998 11 21 | 691 | 0.6+ | 0.2− | 2002 11 10 | 704 | 0.6− | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 1998 11 21 | 691 | 1.1+ | 0.2− | 2002 11 10 | 704 | (1.5− | 0.6−) | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2000 02 05 | 695 | 0.0 | 0.2+ | 2002 11 10 | 704 | 0.9− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2000 02 05 | 695 | 0.0 | 0.4+ | 2002 11 22 | 644 | 0.3+ | 1.4+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2000 02 14 | 691 | 0.2+ | 0.0 | 2002 11 22 | 644 | 0.0 | 1.4+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2000 02 14 | 691 | 0.0 | 0.5+ | 2002 11 22 | 644 | 0.2+ | 1.0+ | 2006 12 01 | 704 | 0.1− | 0.4− |
| 2000 02 14 | 691 | 0.0 | 0.2+ | 2002 11 30 | 608 | 0.7− | 0.4− | 2006 12 01 | 704 | 0.8− | 0.6− |
| 2002 10 02 | 704 | 0.2− | 0.8+ | 2002 11 30 | 608 | 0.4− | 0.9− | 2006 12 01 | 704 | 0.9− | 0.8− |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2002 11 30 | 608 | 0.4− | 0.7− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.5+ | 0.4− | 2002 12 01 | 704 | 0.4+ | 0.8+ | 2006 12 01 | 704 | 0.2+ | 0.3− |
| 2002 10 02 | 704 | 0.1− | 0.3+ | 2002 12 01 | 704 | 0.5− | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 1.4− | 0.5+ | 2002 12 01 | 704 | 0.7− | 0.8+ | 2006 12 01 | 704 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.5− | 1.3+ | 2002 12 01 | 704 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2002 12 10 | 644 | 0.9− | 0.5+ | | | | |

**(137006)∗ 1998 SX$_{94}$ = 2002 RY$_{10}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34735)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.52655 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23660137 | $\omega$ | 225.90267 | | +0.86992519 | −0.49026904 |
| $a$ | 2.5889553 | $\Omega$ | 163.22668 | | +0.48866028 | +0.84218312 |
| $e$ | 0.1376003 | $i$ | 10.69156 | | +0.06664298 | +0.22441893 |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.1+ | 0.6+ | 2002 08 18 | 608 | (1.1− | 2.2+) | 2002 09 30 | 608 | 0.4+ | 0.6− |
| 1996 03 26 | 691 | 0.2+ | 0.1− | 2002 08 18 | 608 | (1.3− | 1.9+) | 2002 09 30 | 608 | 0.1− | 0.9− |
| 1996 03 26 | 691 | 0.3+ | 0.1+ | 2002 09 01 | 608 | 0.2+ | 0.1− | 2002 10 03 | 704 | (1.6+ | 1.4+) |
| 1998 09 25 | 699 | 1.6+ | 1.1+ | 2002 09 01 | 608 | 1.3+ | 0.1− | 2002 10 03 | 704 | 0.1+ | 0.7+ |
| 1998 09 25 | 699 | 0.2− | 1.4+ | 2002 09 01 | 608 | 1.0+ | 0.3+ | 2002 10 03 | 704 | 0.4− | 0.0 |
| 1998 09 25 | 699 | 0.2+ | 1.7+ | 2002 09 04 | 644 | 0.5− | 0.3− | 2002 10 03 | 704 | 0.0 | 0.7+ |
| 1998 09 26 | 704 | 1.8− | 0.0 | 2002 09 04 | 644 | 0.6− | 0.4− | 2002 10 05 | 704 | 0.6− | 1.0+ |
| 1998 09 26 | 704 | 0.3+ | 1.4+ | 2002 09 04 | 644 | 0.5− | 0.2− | 2002 10 05 | 704 | 0.3− | 0.1− |
| 1998 09 26 | 704 | 1.2− | 1.4+ | 2002 09 05 | 704 | 0.2+ | 0.1+ | 2002 10 05 | 704 | 0.0 | 0.4− |
| 1998 09 27 | 704 | 1.2+ | 1.8− | 2002 09 05 | 704 | 0.7+ | 0.1+ | 2002 10 05 | 704 | 0.6− | 0.7+ |
| 1998 09 27 | 704 | 0.6− | 0.2+ | 2002 09 05 | 704 | 0.0 | 0.3+ | 2004 01 28 | 645 | 0.0 | 0.1+ |
| 1998 09 27 | 704 | (0.5− | 2.8−) | 2002 09 05 | 704 | 0.5+ | 0.7+ | 2004 01 28 | 645 | 0.0 | 0.0 |
| 1998 09 27 | 704 | 0.7+ | 1.2− | 2002 09 05 | 704 | 0.1+ | 0.7+ | 2004 02 09 | 644 | 0.1+ | 0.3+ |
| 1998 09 27 | 704 | 0.9− | 1.0− | 2002 09 14 | 644 | 0.4− | 0.3+ | 2004 02 09 | 644 | 0.1+ | 0.5+ |
| 2000 02 06 | 704 | 1.2+ | 0.4+ | 2002 09 14 | 644 | 0.1− | 0.2+ | 2004 02 09 | 644 | 0.3+ | 0.5+ |
| 2000 02 06 | 704 | 0.5+ | 0.7+ | 2002 09 14 | 644 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.7+ | 0.0 |
| 2000 02 06 | 704 | 0.7− | 0.1+ | 2002 09 15 | 608 | 1.2− | 0.6− | 2006 09 25 | G96 | 0.8+ | 0.0 |
| 2001 06 15 | 645 | 0.0 | 0.1+ | 2002 09 15 | 608 | 0.7− | 0.2− | 2006 09 25 | G96 | 0.5+ | 0.1+ |
| 2001 06 15 | 645 | 0.0 | 0.1+ | 2002 09 15 | 608 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.8+ | 0.1− |
| 2002 08 12 | 704 | 1.1+ | 1.1− | 2002 09 16 | 644 | 0.8− | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2002 08 12 | 704 | 0.6+ | 0.1+ | 2002 09 16 | 644 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2002 08 12 | 704 | 0.3+ | 0.3+ | 2002 09 16 | 644 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.8+ | 0.1− |
| 2002 08 18 | 608 | 1.1− | 1.5+ | 2002 09 30 | 608 | 0.5− | 0.0 | | | | |

**(137007)∗ 1998 SC$_{108}$ = 2002 XQ$_{78}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 39958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.65673 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27162684 | $\omega$ | 107.86784 | | +0.18474018 | −0.98216047 |
| $a$ | 2.3613169 | $\Omega$ | 331.41464 | | +0.87163994 | +0.18024022 |
| $e$ | 0.1784701 | $i$ | 4.20674 | | +0.45399878 | +0.05361232 |
| $P$ | 3.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.4+ | 0.0 | 2003 01 05 | 704 | 0.5− | 0.5− | 2005 09 07 | 699 | 0.3+ | 0.3+ |
| 1998 09 25 | 699 | 0.1+ | 0.1− | 2003 01 05 | 704 | 0.6− | 0.5− | 2005 09 07 | 699 | 0.2− | 0.1− |
| 1998 09 25 | 699 | 0.7− | 0.1+ | 2003 01 05 | 704 | 0.6− | 0.4− | 2005 09 08 | 704 | 0.2+ | 0.5− |
| 1998 09 26 | 704 | 0.5− | 0.2− | 2003 01 09 | 704 | 0.2− | 0.0 | 2005 09 08 | 704 | 0.4− | 0.0 |
| 1998 09 26 | 704 | (1.2− | 2.6−) | 2003 01 09 | 704 | 0.8− | 0.4− | 2005 09 08 | 704 | 0.1− | 0.0 |
| 1998 09 26 | 704 | 0.5+ | 0.4− | 2003 01 09 | 704 | 0.0 | 0.5+ | 2005 09 08 | 704 | 0.4+ | 0.3+ |
| 1998 09 26 | 704 | 1.4− | 1.7− | 2003 01 09 | 704 | 0.9+ | 1.1+ | 2005 09 22 | 644 | 0.2− | 0.0 |
| 1998 09 26 | 704 | 1.5+ | 0.3− | 2003 02 01 | 704 | 0.1− | 0.8+ | 2005 09 22 | 644 | 0.4− | 0.1− |
| 1998 09 27 | 704 | 0.2− | 0.6− | 2003 02 01 | 704 | 0.6− | 0.0 | 2005 09 22 | 644 | 0.3− | 0.1− |
| 1998 09 27 | 704 | 1.3+ | 0.8+ | 2003 02 01 | 704 | 0.4− | 0.4+ | 2005 09 22 | 644 | 0.2− | 0.1− |
| 1998 09 27 | 704 | 1.3− | 0.6− | 2003 02 01 | 704 | 0.8− | 0.8+ | 2005 09 22 | 644 | 0.2− | 0.0 |
| 1998 09 27 | 704 | 1.0+ | 0.2+ | 2003 02 04 | 704 | 0.3− | 0.0 | 2005 09 22 | 644 | 0.5− | 0.1− |
| 1998 09 27 | 704 | 0.4− | 0.8− | 2003 02 04 | 704 | 0.6− | 0.0 | 2005 09 23 | 691 | 0.0 | 0.0 |
| 1998 10 11 | 699 | 0.7+ | 1.3− | 2003 02 04 | 704 | 0.7− | 0.1+ | 2005 09 23 | 691 | 0.0 | 0.2+ |
| 1998 10 11 | 699 | 0.5+ | 0.2+ | 2003 02 04 | 704 | 0.8− | 0.8− | 2005 09 23 | 691 | 0.0 | 0.2+ |
| 1998 10 11 | 699 | 0.7+ | 0.3+ | 2003 02 26 | 704 | (0.0 | 3.2+) | 2005 10 05 | 691 | 0.4+ | 0.1+ |
| 2002 11 12 | 704 | 0.2− | 1.2+ | 2003 02 26 | 704 | (1.0+ | 2.9+) | 2005 10 05 | 691 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 0.3− | 0.8+ | 2003 02 26 | 704 | (0.5+ | 1.9+) | 2005 10 05 | 691 | 0.4+ | 0.1+ |
| 2002 11 12 | 704 | 0.4+ | 0.4+ | 2003 02 26 | 704 | (0.7+ | 2.2+) | 2005 10 25 | G96 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.8− | 0.2− | 2005 08 06 | 644 | 0.2− | 0.3+ | 2005 10 25 | G96 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2005 08 06 | 644 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2005 08 06 | 644 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.1+ | 0.5− |
| 2002 12 06 | 704 | 0.3+ | 0.6− | 2005 08 25 | 644 | 0.2− | 0.2+ | 2005 10 25 | G96 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2005 08 25 | 644 | 0.4− | 0.0 | 2005 10 25 | G96 | 0.2+ | 0.4− |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2005 08 25 | 644 | 0.5− | 0.0 | 2005 10 25 | G96 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2005 08 29 | 704 | 0.1− | 0.3+ | 2005 10 25 | G96 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.5+ | 0.3+ | 2005 08 29 | 704 | 0.1+ | 1.3+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2005 08 29 | 704 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.4− | 0.3− |
| 2002 12 11 | 704 | 0.5+ | 0.4+ | 2005 08 29 | 704 | 0.1+ | 1.1+ | 2006 11 01 | G96 | 0.4− | 0.3− |
| 2002 12 14 | 704 | 0.6+ | 0.1− | 2005 08 29 | 704 | 0.2− | 0.9+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.6+ | 0.0 | 2005 08 29 | 699 | 0.9− | 0.8+ | 2006 11 22 | 691 | 0.2+ | 0.6+ |
| 2002 12 14 | 704 | 0.5+ | 0.3− | 2005 08 29 | 699 | 0.5− | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.4+ |
| 2002 12 14 | 704 | 0.6+ | 0.2− | 2005 08 29 | 699 | 0.8− | 0.8+ | 2006 11 22 | 691 | 0.4+ | 0.2+ |
| 2002 12 14 | 704 | 0.6+ | 0.1+ | 2005 08 29 | 699 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 12 30 | 704 | 0.6+ | 0.3+ | 2005 09 05 | 703 | 0.3− | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2002 12 30 | 704 | 0.7+ | 0.2+ | 2005 09 05 | 703 | 1.1− | 0.2− | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 12 30 | 704 | 0.6+ | 0.0 | 2005 09 05 | 703 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2002 12 30 | 704 | 0.6+ | 0.0 | 2005 09 05 | 703 | 0.4− | 0.4+ | 2006 11 25 | 691 | 0.0 | 0.3+ |
| 2003 01 05 | 704 | 0.5− | 0.5− | 2005 09 07 | 699 | 0.8+ | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.6− | 0.5− | 2005 09 07 | 699 | 0.1+ | 0.6+ | 2006 11 25 | 691 | 0.1− | 0.2− |

**(137008)∗ 1998 $SL_{108}$ = 2002 $RK_{58}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34737)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 277.34993 | | (2000.0) | | | | |
| $n$ | 0.23784094 | $\omega$ | 208.51567 | | +0.07048670 | −0.99625258 | |
| $a$ | 2.5799521 | $\Omega$ | 237.48327 | | +0.92611768 | +0.08402739 | |
| $e$ | 0.1593102 | $i$ | 3.40783 | | +0.37059096 | −0.02049887 | |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.9+ | 0.1+ | 2002 09 30 | 704 | 0.3+ | 0.8− | 2004 02 19 | 704 | 0.5− | 0.0 | |
| 1998 09 26 | 704 | 1.3+ | 0.8− | 2002 09 30 | 704 | 0.2− | 0.1− | 2004 02 19 | 704 | 0.3− | 0.4− | |
| 1998 09 26 | 704 | 0.9− | 0.8+ | 2002 09 30 | 704 | 0.9− | 0.6− | 2004 02 23 | 704 | 0.2− | 0.3+ | |
| 1998 09 26 | 704 | 1.4+ | 0.0 | 2002 10 01 | 291 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.5− | 0.7+ | |
| 1998 09 26 | 704 | 0.9− | 0.7+ | 2002 10 01 | 291 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.0 | 0.2+ | |
| 1998 09 27 | 704 | 0.4− | 0.8− | 2002 10 01 | 291 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.0 | 0.6+ | |
| 1998 09 27 | 704 | 1.3− | 0.6+ | 2002 10 04 | 704 | 0.4− | 0.6+ | 2004 02 23 | 704 | 0.9− | 1.0+ | |
| 1998 09 27 | 704 | 0.3− | 0.7− | 2002 10 04 | 704 | (0.3− | 2.1+) | 2004 03 15 | 704 | 0.5+ | 0.4+ | |
| 1998 09 27 | 704 | 0.5+ | 0.8− | 2002 10 04 | 704 | 0.2+ | 0.8+ | 2004 03 15 | 704 | 0.3+ | 0.3− | |
| 1998 09 27 | 704 | 1.0− | 0.5− | 2002 10 04 | 704 | 0.2+ | 1.9+ | 2004 03 15 | 704 | 0.3+ | 0.1− | |
| 1998 10 15 | 327 | 0.9+ | 0.0 | 2002 10 04 | 704 | 0.1− | 1.7+ | 2004 03 15 | 704 | 0.2+ | 0.0 | |
| 1998 10 15 | 327 | 1.1+ | 0.1+ | 2002 10 07 | 699 | 0.8+ | 0.4+ | 2004 03 15 | 704 | 0.3+ | 0.1− | |
| 1998 10 15 | 327 | 0.6+ | 0.2+ | 2002 10 07 | 699 | 0.5− | 0.4− | 2004 03 19 | 704 | 0.1+ | 1.2+ | |
| 1998 10 17 | 327 | 0.9+ | 0.4+ | 2002 10 07 | 699 | 1.4− | 0.2+ | 2004 03 19 | 704 | 0.3− | 1.6+ | |
| 1998 10 17 | 327 | 0.2+ | 0.5+ | 2002 10 07 | 699 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.8+ | 0.9+ | |
| 1998 10 17 | 327 | 0.3+ | 0.4− | 2002 10 31 | 645 | 0.2− | 0.3− | 2004 03 19 | 704 | (0.1− | 2.1+) | |
| 2002 09 05 | 699 | 0.9+ | 0.5+ | 2002 10 31 | 645 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.7+ | 1.7+ | |
| 2002 09 05 | 699 | 0.6+ | 0.4− | 2004 01 29 | 704 | 1.1+ | 0.2+ | 2006 08 29 | 703 | 1.0+ | 0.3− | |
| 2002 09 05 | 699 | 0.1− | 1.0+ | 2004 01 29 | 704 | 0.7+ | 0.9+ | 2006 08 29 | 703 | 0.2+ | 0.4+ | |
| 2002 09 05 | 699 | 0.3+ | 0.3+ | 2004 01 29 | 704 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.6− | 0.2+ | |
| 2002 09 06 | 704 | 0.8− | 1.1+ | 2004 01 29 | 704 | 0.9+ | 0.1− | 2006 08 29 | 703 | 0.1− | 1.2+ | |
| 2002 09 06 | 704 | 0.5− | 1.0+ | 2004 01 29 | 699 | (2.6+ | 0.3+) | 2006 08 29 | 703 | 0.3− | 0.0 | |
| 2002 09 06 | 704 | 0.1+ | 1.4+ | 2004 01 29 | 699 | 0.6+ | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.4− | |
| 2002 09 06 | 704 | 1.1+ | 0.9+ | 2004 01 29 | 699 | 1.1− | 0.7+ | 2006 08 29 | 703 | 0.3+ | 0.0 | |
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2004 01 29 | 699 | (3.0− | 0.1−) | 2006 08 29 | 703 | 0.3− | 0.0 | |
| 2002 09 13 | 644 | 0.4− | 0.6+ | 2004 02 12 | 644 | 0.5+ | 0.1− | 2006 09 17 | 703 | 0.3− | 0.3+ | |
| 2002 09 13 | 644 | 0.7− | 0.4+ | 2004 02 12 | 644 | 0.7+ | 0.0 | 2006 09 17 | 703 | 1.0+ | 0.3+ | |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2004 02 12 | 644 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 0.7+ | 0.5+ | |
| 2002 09 14 | 644 | 0.0 | 1.0+ | 2004 02 17 | 608 | 0.2+ | 0.8− | 2006 09 17 | 703 | 0.6− | 0.1+ | |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2004 02 17 | 608 | 0.1+ | 1.1− | 2006 09 20 | 699 | 0.6− | 1.6+ | |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2004 02 17 | 608 | 0.1+ | 1.1− | 2006 09 20 | 699 | 2.0+ | 0.1− | |
| 2002 09 19 | 644 | 1.0− | 0.3+ | 2004 02 19 | 704 | 0.8− | 0.0 | 2006 09 20 | 699 | 0.5− | 0.2− | |
| 2002 09 19 | 644 | 0.1− | 0.3+ | 2004 02 19 | 704 | 0.5− | 0.3+ | 2006 09 20 | 699 | 0.9+ | 0.5− | |
| 2002 09 19 | 644 | 0.8− | 0.2+ | 2004 02 19 | 704 | 0.6− | 0.4+ | | | | | |

**(137009)∗ 1998 $SS_{120}$ = 1997 $KQ_2$ = 2006 $GN_{14}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 99894)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 273.94255 | | (2000.0) | | | | |
| $n$ | 0.20961692 | $\omega$ | 209.23530 | | +0.93947028 | +0.33893003 | |
| $a$ | 2.8066300 | $\Omega$ | 130.86427 | | −0.30004501 | +0.88458877 | |
| $e$ | 0.1606917 | $i$ | 3.80754 | | −0.16543452 | +0.32035782 | |
| $P$ | 4.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 29 | 691 | 0.4− | 0.8+ | 1998 09 27 | 704 | 0.6− | 1.4+ | 2005 02 04 | 691 | 0.2− | 0.1− | |
| 1997 05 29 | 691 | 0.5− | 0.5+ | 1998 09 27 | 704 | 0.1− | 0.1− | 2006 04 02 | 691 | 0.4+ | 0.5+ | |
| 1997 05 29 | 691 | 0.6− | 0.3+ | 2001 03 15 | 691 | 0.2+ | 0.1− | 2006 04 02 | 691 | 0.3+ | 0.0 | |
| 1997 06 05 | 691 | 0.2− | 0.0 | 2001 03 15 | 691 | 0.5+ | 0.0 | 2006 04 02 | 691 | 0.4+ | 0.1+ | |
| 1997 06 05 | 691 | 0.2− | 0.4− | 2001 03 15 | 691 | 0.1+ | 0.2+ | 2006 04 07 | 691 | 0.5+ | 0.8+ | |
| 1997 06 05 | 691 | 0.1− | 0.3+ | 2001 04 16 | 645 | 0.1+ | 0.2− | 2006 04 07 | 691 | 0.4+ | 0.4+ | |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2001 04 16 | 645 | 0.1+ | 0.1− | 2006 04 07 | 691 | 0.4+ | 0.3+ | |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2003 10 25 | 704 | 1.3− | 0.7+ | 2006 04 08 | G96 | 0.3− | 0.1+ | |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2003 10 25 | 704 | 0.3− | 0.2+ | 2006 04 08 | G96 | 0.8− | 0.2+ | |
| 1998 09 25 | 645 | 0.1+ | 0.1+ | 2003 10 25 | 704 | 1.6− | 1.2+ | 2006 04 08 | G96 | 0.1− | 0.5− | |
| 1998 09 26 | 704 | 0.6− | 0.2− | 2003 10 25 | 704 | 0.8− | 0.9+ | 2006 04 08 | G96 | 0.3− | 0.3− | |
| 1998 09 26 | 704 | 1.3− | 0.0 | 2003 11 21 | 691 | 0.2− | 0.1+ | 2006 05 30 | G96 | 0.1− | 0.0 | |
| 1998 09 26 | 704 | 0.5− | 1.1− | 2003 11 21 | 691 | 0.3− | 0.0 | 2006 05 30 | G96 | 0.7− | 0.3+ | |
| 1998 09 26 | 704 | 1.8+ | 0.5+ | 2003 11 21 | 691 | 0.3− | 0.0 | 2006 05 30 | G96 | 0.4− | 0.1+ | |
| 1998 09 27 | 704 | 1.7+ | 1.4+ | 2005 02 04 | 691 | 0.1− | 0.0 | 2006 05 30 | G96 | 0.1+ | 0.0 | |
| 1998 09 27 | 704 | 0.7+ | 0.7− | 2005 02 04 | 691 | 0.3− | 1.1+ | | | | | |

**(137010)∗ 1998 $ST_{121}$ = 2002 $RU_{56}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34739)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 345.84149 | | (2000.0) | | | | |
| $n$ | 0.24269936 | $\omega$ | 51.62520 | | +0.95484845 | −0.29567011 | |
| $a$ | 2.5454054 | $\Omega$ | 325.54475 | | +0.25405548 | +0.86329610 | |
| $e$ | 0.2726471 | $i$ | 2.94276 | | +0.15401380 | +0.40902204 | |
| $P$ | 4.06 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 699 | 0.2− | 0.7+ | 2002 10 04 | 704 | 1.1+ | 0.3+ | 2006 09 01 | 704 | 0.6+ | 0.3+ | |
| 1998 09 14 | 699 | 0.3− | 0.2+ | 2002 10 04 | 704 | 1.2− | 0.0 | 2006 09 01 | 704 | 0.1+ | 0.1− | |
| 1998 09 14 | 699 | 0.5+ | 0.7− | 2002 10 04 | 644 | 0.0 | 0.4+ | 2006 09 01 | 704 | 0.0 | 0.1− | |
| 1998 09 26 | 704 | 0.3+ | 1.1− | 2002 10 12 | 704 | 0.7− | 0.7+ | 2006 09 01 | 704 | 0.2+ | 0.2+ | |
| 1998 09 26 | 704 | 0.4− | 0.6− | 2002 10 12 | 704 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.6+ | 0.2+ | |
| 1998 09 26 | 704 | 0.2− | 1.1− | 2002 10 12 | 704 | 0.1− | 0.3− | 2006 09 16 | 644 | 0.0 | 0.1+ | |
| 1998 09 26 | 704 | 0.3+ | 0.7− | 2002 10 12 | 704 | 0.3− | 0.2− | 2006 09 16 | 644 | 0.0 | 0.1+ | |
| 1998 09 26 | 704 | 0.1+ | 1.2− | 2002 11 08 | 704 | (3.2− | 0.9+) | 2006 09 16 | 644 | 0.1− | 0.2+ | |
| 1998 09 27 | 704 | 0.1+ | 0.5− | 2002 11 08 | 704 | (3.5− | 2.8+) | 2006 09 17 | 703 | 0.2− | 0.3+ | |
| 1998 09 27 | 704 | 0.3− | 0.5− | 2002 11 08 | 704 | (1.2− | 3.1+) | 2006 09 17 | 703 | 0.1+ | 0.2+ | |
| 1998 09 27 | 704 | 0.4+ | 0.3− | 2002 11 12 | 704 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.0 | 0.3+ | |
| 1998 09 27 | 704 | 1.2− | 0.2− | 2002 11 12 | 704 | 0.8+ | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.2+ | |
| 1998 09 27 | 704 | (0.2+ | 2.3−) | 2002 11 12 | 704 | 0.5+ | 0.7+ | 2006 09 17 | 704 | 0.5− | 0.1+ | |
| 1998 10 12 | 699 | 0.0 | 0.7+ | 2002 11 12 | 704 | (2.2+ | 1.3−) | 2006 09 17 | 703 | 0.6− | 0.1+ | |
| 1998 10 12 | 699 | 1.6+ | 0.3+ | 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.3+ | |
| 1998 10 12 | 699 | 0.5− | 0.2− | 2002 12 06 | 704 | 0.3− | 0.8+ | 2006 09 17 | 704 | 0.1− | 0.2− | |
| 1998 10 24 | 888 | 0.3− | 0.8− | 2002 12 06 | 704 | 0.8− | 0.8+ | 2006 09 17 | 704 | 0.4− | 0.6+ | |
| 1998 10 24 | 888 | 0.3+ | 0.8− | 2004 02 16 | 691 | 0.2+ | 0.9+ | 2006 09 20 | 704 | 0.1− | 0.6+ | |
| 1998 10 24 | 888 | 0.7+ | 0.7− | 2004 02 16 | 691 | 0.1− | 0.8+ | 2006 09 20 | 704 | 0.3− | 0.5+ | |
| 1998 10 25 | 888 | 0.1− | 0.3− | 2004 02 16 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.3+ | 1.0+ | |
| 1998 10 25 | 888 | 0.4+ | 0.3− | 2004 03 14 | 691 | 0.7+ | 0.9+ | 2006 09 20 | 704 | 0.2+ | 1.3+ | |
| 1998 10 25 | 888 | 0.1+ | 0.1− | 2004 03 14 | 691 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.6− | 0.2+ | |
| 1998 10 28 | 704 | 1.0+ | 1.4− | 2004 03 14 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.6+ | 0.3+ | |
| 1998 10 28 | 704 | 0.6− | 0.9+ | 2006 07 18 | G96 | 0.1− | 0.6− | 2006 09 20 | 699 | 0.5− | 0.4+ | |
| 1998 10 28 | 704 | 0.6+ | 0.7+ | 2006 07 18 | G96 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.3− | 0.2+ | |
| 1998 10 28 | 704 | 1.9− | 0.1− | 2006 07 18 | G96 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.4− | 0.2+ | |
| 1998 10 28 | 704 | 0.1+ | 0.4+ | 2006 07 18 | G96 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.6+ | |
| 1998 10 29 | 704 | 1.1+ | 0.5− | 2006 08 15 | 644 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.5+ | 0.4+ | |
| 1998 10 29 | 704 | (3.4+ | 0.6−) | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.4+ | |
| 1998 10 29 | 704 | 0.7− | 0.9+ | 2006 08 15 | 644 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.9+ | |
| 1998 10 29 | 704 | 1.1+ | 0.6+ | 2006 08 18 | 704 | 0.0 | 0.8+ | 2006 09 27 | 704 | 0.3− | 0.9+ | |
| 1998 10 29 | 704 | 0.3− | 0.5+ | 2006 08 18 | 704 | 0.4+ | 0.7+ | 2006 09 28 | G96 | 0.3− | 0.1− | |
| 1998 11 10 | 704 | 1.2+ | 0.9− | 2006 08 18 | 704 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.3− | |
| 1998 11 10 | 704 | 0.2− | 1.0+ | 2006 08 19 | 644 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.1− | |
| 1998 11 10 | 704 | 1.4+ | 0.3− | 2006 08 19 | 644 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.2− | |
| 1998 11 10 | 704 | 1.5+ | 1.5− | 2006 08 19 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.8+ | |
| 2002 08 05 | 704 | 0.9+ | 0.1+ | 2006 08 21 | 704 | 0.6+ | 0.6+ | 2006 09 29 | 704 | 0.5− | 0.2+ | |
| 2002 08 05 | 704 | 0.5+ | 0.8+ | 2006 08 21 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.5− | 1.1+ | |
| 2002 08 05 | 704 | 0.3+ | 1.1+ | 2006 08 21 | 704 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.0 | |
| 2002 08 05 | 704 | 0.2+ | 0.9− | 2006 08 21 | 704 | 0.5+ | 0.7+ | 2006 09 29 | 704 | 0.7− | 0.7+ | |
| 2002 09 05 | 699 | 0.7+ | 0.4+ | 2006 08 21 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.7+ | 0.1− | |
| 2002 09 05 | 699 | 0.8+ | 0.0 | 2006 08 25 | 704 | 0.3+ | 0.9− | 2006 09 30 | 704 | 0.2+ | 0.1+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | (1.9+ | 0.6+) | 2006 08 25 | 704 | 0.6+ | 0.5− | 2006 09 30 | 699 | 0.4− | 0.9+ |
| 2002 09 05 | 699 | (2.3+ | 0.1+) | 2006 08 25 | 704 | 0.0 | 0.4− | 2006 09 30 | 704 | 0.5− | 0.2− |
| 2002 09 06 | 704 | 0.4− | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.2+ | 0.4− |
| 2002 09 06 | 704 | 0.3− | 0.1− | 2006 08 25 | 704 | 0.4− | 0.9− | 2006 09 30 | 704 | 0.8− | 0.3+ |
| 2002 09 06 | 704 | 1.0− | 0.4− | 2006 08 27 | 699 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.2+ | 0.8+ |
| 2002 09 06 | 704 | 0.3− | 0.4− | 2006 08 27 | 699 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.6− | 0.8+ |
| 2002 09 06 | 704 | 0.7− | 0.5− | 2006 08 27 | 699 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.4− | 0.3+ |
| 2002 09 14 | 644 | 0.1− | 0.7− | 2006 08 27 | 699 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.6− | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2002 09 14 | 644 | 0.3− | 0.6− | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 11 11 | 703 | (0.5+ | 2.0−) |
| 2002 09 17 | 608 | 1.2− | 0.2− | 2006 08 28 | 703 | 0.6− | 0.1− | 2006 11 11 | 703 | 0.3+ | 1.3+ |
| 2002 09 17 | 608 | 1.2− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 11 11 | 703 | 1.1− | 0.3+ |
| 2002 09 17 | 608 | 1.1− | 0.2− | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.0 |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2006 08 29 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.2+ | 1.0− |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 08 29 | 704 | 0.1+ | 0.8+ | 2006 11 19 | 704 | 0.3+ | 1.2− |
| 2002 10 04 | 704 | 0.4+ | 0.1+ | 2006 08 29 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.6− |

**(137011)∗ 1998 SF$_{122}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.58382 | | (2000.0) | | | |
| $n$ | 0.12485655 | $\omega$ | 1.43947 | | +0.99746682 | +0.07056196 |
| $a$ | 3.9645615 | $\Omega$ | 354.49000 | | −0.06616420 | +0.87388703 |
| $e$ | 0.3320542 | $i$ | 5.37699 | | −0.02611993 | +0.48098074 |
| $P$ | 7.89 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 25 | 691 | 0.2− | 0.1+ | 2006 08 24 | 704 | 0.0 | 1.2+ | 2006 10 21 | 644 | 0.4− | 0.1− |
| 1990 09 25 | 691 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.3+ | 1.2+ | 2006 10 29 | 704 | 0.2+ | 0.1− |
| 1990 09 25 | 691 | 0.1− | 0.1+ | 2006 08 24 | 704 | (0.6− | 2.1+) | 2006 10 29 | 704 | 0.1+ | 0.2+ |
| 1994 03 04 | 691 | 0.5− | 0.3− | 2006 08 25 | 704 | 0.8− | 0.1+ | 2006 10 29 | 704 | 0.3+ | 0.1− |
| 1994 03 04 | 691 | 0.3+ | 0.6− | 2006 08 25 | 704 | 0.5− | 0.1− | 2006 10 29 | 704 | 0.8+ | 0.2− |
| 1994 03 04 | 691 | 0.3− | 0.3− | 2006 08 25 | 704 | 0.5− | 0.3+ | 2006 10 29 | 704 | 0.5− | 0.1− |
| 1998 09 14 | 699 | 0.2+ | 0.0 | 2006 08 25 | 704 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 1998 09 14 | 699 | 0.5+ | 0.5+ | 2006 08 25 | 704 | 0.3− | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1998 09 14 | 699 | 0.1− | 0.7+ | 2006 08 30 | 699 | 0.5+ | 1.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1998 09 26 | 704 | 0.9− | 1.1+ | 2006 08 30 | 699 | 0.5+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 1998 09 26 | 704 | 0.7− | 0.1+ | 2006 08 30 | 699 | (1.7− | 1.2+) | 2006 11 09 | 644 | 0.2− | 0.2− |
| 1998 09 26 | 704 | 0.5− | 0.1+ | 2006 08 30 | 699 | 1.4− | 0.4+ | 2006 11 09 | 644 | 0.5− | 0.5− |
| 1998 09 26 | 704 | 0.4− | 1.2− | 2006 09 01 | 704 | 1.2− | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.3− |
| 1998 09 27 | 704 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.2− | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 1998 09 27 | 704 | 0.6+ | 0.1− | 2006 09 01 | 704 | (0.3+ | 1.6+) | 2006 11 10 | 644 | 0.2− | 0.0 |
| 1998 09 27 | 704 | 0.7+ | 0.1+ | 2006 09 04 | 204 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.1− |
| 1998 09 27 | 704 | 0.8− | 0.1− | 2006 09 04 | 204 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.7− |
| 1998 09 27 | 704 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 1998 10 11 | 699 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.1+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 1998 10 11 | 699 | 0.5+ | 0.5+ | 2006 09 20 | 699 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.3+ |
| 1998 10 11 | 699 | 0.5− | 0.3+ | 2006 09 20 | 699 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.2− |
| 1998 10 28 | 704 | 0.2− | 1.5− | 2006 09 25 | 704 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 1998 10 28 | 704 | 0.1− | 0.9+ | 2006 09 25 | 704 | 0.7− | 1.0− | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 1998 10 28 | 704 | 0.4+ | 1.1− | 2006 09 25 | 704 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.7− | 0.2+ |
| 1998 10 28 | 704 | 0.1− | 0.6− | 2006 09 25 | 704 | (0.6− | 1.5+) | 2006 11 17 | 704 | 0.5+ | 0.1+ |
| 1998 10 28 | 704 | 0.0 | 0.9− | 2006 09 29 | 704 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.5+ | 0.6− |
| 1998 10 29 | 704 | 0.2− | 0.9− | 2006 09 29 | 704 | 0.3− | 0.7+ | 2006 11 17 | 704 | 0.7+ | 0.1+ |
| 1998 10 29 | 704 | 0.8+ | 0.1− | 2006 09 29 | 704 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.7+ | 0.4− |
| 1998 10 29 | 704 | 0.6+ | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 1998 10 29 | 704 | 0.2+ | 0.8− | 2006 09 29 | 704 | 0.9− | 0.0 | 2006 11 19 | 704 | 1.3+ | 0.5+ |
| 1998 10 29 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 704 | 1.2+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 1998 11 10 | 704 | 0.0 | 0.6− | 2006 10 19 | 704 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 1998 11 10 | 704 | 1.0+ | 0.1− | 2006 10 19 | 704 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.8+ | 0.3+ |
| 1998 11 10 | 704 | 0.3− | 0.8+ | 2006 10 19 | 704 | 0.2− | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 1998 11 10 | 704 | 1.6+ | 1.3− | 2006 10 19 | 704 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2002 02 12 | 691 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.6+ |
| 2002 02 12 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2002 02 12 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 03 05 | 691 | 0.3− | 0.2+ | 2006 10 20 | A44 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.4+ |
| 2002 03 05 | 691 | 0.1+ | 0.5+ | 2006 10 20 | A44 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 1.1+ |
| 2002 03 05 | 691 | 0.2− | 0.5− | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.5+ |
| 2003 04 08 | 691 | 1.1+ | 1.3+ | 2006 10 21 | 691 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.6− | 0.8− |
| 2003 04 08 | 691 | 0.6+ | 1.0+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2003 04 08 | 691 | 0.3+ | 1.4+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.6− |
| 2006 08 24 | 704 | 0.7− | 1.1+ | 2006 10 21 | 644 | 0.3− | 0.1− | | | | |

**(137012)∗ 1998 SY$_{125}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.89894 | | (2000.0) | | | |
| $n$ | 0.24251392 | $\omega$ | 319.80646 | | +0.98646229 | −0.14851894 |
| $a$ | 2.5467028 | $\Omega$ | 48.87699 | | +0.16387390 | +0.87695285 |
| $e$ | 0.2636328 | $i$ | 5.29589 | | +0.00612329 | +0.45705122 |
| $P$ | 4.06 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1− | 2002 09 13 | 704 | (2.2+ | 12.1+) | 2006 08 15 | 644 | 0.1− | 0.5+ |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2002 09 13 | 704 | (2.2+ | 11.5+) | 2006 08 28 | E12 | 0.3− | 0.5− |
| 1998 09 25 | 699 | 0.4+ | 0.0 | 2002 09 16 | 644 | 0.1+ | 0.5+ | 2006 08 28 | E12 | 0.3− | 0.1+ |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2002 09 16 | 644 | 0.2− | 0.4+ | 2006 08 28 | E12 | 0.4+ | 0.2+ |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2002 09 16 | 644 | 0.0 | 0.3+ | 2006 08 28 | E12 | 0.4+ | 0.0 |
| 1998 09 25 | 699 | 0.2+ | 0.4− | 2002 09 19 | 644 | 0.6− | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.3+ |
| 1998 09 25 | 699 | 0.6+ | 0.4− | 2002 09 19 | 644 | 0.3− | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 1998 09 26 | 704 | 0.3− | 0.1+ | 2002 09 19 | 644 | 0.1− | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.0 |
| 1998 09 26 | 704 | 0.6+ | 1.5− | 2002 10 04 | 704 | 1.2− | 0.1− | 2006 09 17 | 699 | 0.6+ | 0.4+ |
| 1998 09 26 | 704 | 1.5+ | 0.1+ | 2002 10 04 | 704 | 0.8− | 0.4− | 2006 09 17 | 699 | 0.7− | 0.0 |
| 1998 09 26 | 704 | 0.2+ | 1.6+ | 2002 10 04 | 704 | 0.5− | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.0 |
| 1998 09 27 | 704 | 0.3− | 0.0 | 2002 10 04 | 704 | 0.1− | 0.2+ | 2006 09 17 | 699 | 1.5+ | 0.1− |
| 1998 09 27 | 704 | 0.3+ | 1.2+ | 2002 10 04 | 704 | 0.3− | 0.5+ | 2006 09 20 | 703 | 0.2− | 0.4− |
| 1998 09 27 | 704 | 0.7− | 0.8− | 2002 10 05 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 703 | 0.2+ | 0.7− |
| 1998 09 27 | 704 | (1.3+ | 2.2−) | 2002 10 05 | 704 | 0.0 | 0.6+ | 2006 09 20 | 703 | 0.5− | 1.2− |
| 1998 09 27 | 704 | 1.1− | 1.9− | 2002 10 05 | 704 | 0.0 | 0.7+ | 2006 09 20 | 703 | 0.1− | 0.2+ |
| 1998 10 17 | 699 | 0.1− | 1.9+ | 2002 10 11 | 608 | 0.9+ | 1.0+ | 2006 09 26 | 703 | 0.4+ | 0.1+ |
| 1998 10 17 | 699 | 0.1− | 0.4+ | 2002 10 11 | 608 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.1− |
| 1998 10 17 | 699 | 1.1+ | 1.1− | 2002 10 11 | 608 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.5− |
| 2002 08 31 | 699 | (0.6− | 1.5+) | 2002 10 29 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 703 | 0.5− | 0.6− |
| 2002 08 31 | 699 | 0.8− | 0.1+ | 2002 10 29 | 704 | 0.8− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2002 08 31 | 699 | 0.4− | 1.0+ | 2002 10 29 | 704 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 31 | 699 | 0.0 | 0.3− | 2002 10 29 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2002 09 03 | 599 | 0.1− | 0.3+ | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 2002 09 03 | 599 | 0.1− | 0.5+ | 2004 02 16 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.7+ |
| 2002 09 03 | 599 | 0.0 | 0.5+ | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.0 |
| 2002 09 03 | 599 | 0.1+ | 0.4+ | 2005 05 14 | G96 | 0.3− | 0.3− | 2006 10 21 | 703 | 0.2− | 0.3− |
| 2002 09 12 | 608 | 0.8− | 0.5+ | 2005 05 14 | G96 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.2− | 0.2+ |
| 2002 09 12 | 608 | 0.8− | 0.9+ | 2005 05 14 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2002 09 12 | 608 | 0.8− | 0.4+ | 2005 05 14 | G96 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.2− | 0.5− |
| 2002 09 13 | 704 | (2.7+ | 12.2+) | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2002 09 13 | 704 | (2.8+ | 12.3+) | 2006 08 15 | 644 | 0.3+ | 0.3+ | | | | |

**(137013)∗ 1998 SF$_{130}$ = 2000 FD$_{53}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 40013)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.37278 | | (2000.0) | | | |
| $n$ | 0.24523684 | $\omega$ | 51.68442 | | +0.40009497 | −0.91627476 |
| $a$ | 2.5278167 | $\Omega$ | 14.76659 | | +0.81573658 | +0.34654364 |
| $e$ | 0.2239155 | $i$ | 4.29626 | | +0.41772940 | +0.20086830 |
| $P$ | 4.02 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 16 | 691 | 0.7− | 0.7− | 2002 10 08 | 291 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.4− | 0.0 | |
| 1996 03 16 | 691 | 0.4− | 0.5+ | 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.5+ | |
| 1996 03 16 | 691 | 0.7− | 0.5+ | 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 09 17 | 704 | 1.1− | 0.6+ | |
| 1998 09 26 | 704 | 0.3+ | 1.5− | 2002 10 11 | 704 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.5+ | 0.8+ | |
| 1998 09 26 | 704 | 1.4+ | 0.5+ | 2002 10 11 | 704 | 0.5− | 0.2− | 2006 09 17 | 704 | 0.2− | 0.2− | |
| 1998 09 26 | 704 | 1.0+ | 0.2− | 2002 10 11 | 704 | 0.7− | 0.3+ | 2006 09 17 | 704 | 0.9− | 0.4+ | |
| 1998 09 27 | 704 | 0.4− | 0.7+ | 2002 10 30 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.2+ | |
| 1998 09 27 | 704 | 0.6+ | 1.5+ | 2002 10 30 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2+ | |
| 1998 09 27 | 704 | (1.5− | 2.3+) | 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.3+ | |
| 1998 09 27 | 704 | 0.4− | 1.1− | 2002 10 31 | 699 | 0.6+ | 0.6− | 2006 09 18 | 699 | 1.2+ | 0.5− | |
| 1998 09 27 | 704 | 0.9+ | 0.2− | 2002 10 31 | 699 | 0.3− | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.6+ | |
| 1998 10 11 | 699 | 0.9+ | 1.4+ | 2002 10 31 | 699 | 0.8− | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.1− | |
| 1998 10 11 | 699 | 0.7+ | 0.1+ | 2002 10 31 | 699 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | |
| 1998 10 11 | 699 | 0.1+ | 0.7+ | 2002 11 01 | 704 | 0.3− | 0.6− | 2006 09 20 | 704 | 0.9+ | 1.1+ | |
| 1998 10 17 | 699 | 0.6+ | 0.0 | 2002 11 01 | 704 | 0.0 | 0.9+ | 2006 09 20 | 704 | 0.2+ | 0.4+ | |
| 1998 10 17 | 699 | (2.3+ | 0.8+) | 2002 11 01 | 704 | 0.8− | 0.4+ | 2006 09 20 | 704 | (1.6− | 1.2+) | |
| 1998 10 17 | 699 | 0.2− | 0.3+ | 2002 11 01 | 704 | 0.7+ | 0.5− | 2006 09 20 | 704 | 0.1+ | 0.6+ | |
| 1998 10 28 | 704 | 0.5− | 1.0− | 2002 11 06 | 704 | 0.4− | 0.4− | 2006 09 20 | 644 | 0.4− | 0.0 | |
| 1998 10 28 | 704 | (0.4+ | 3.2−) | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.5− | 0.4+ | |
| 1998 10 28 | 704 | 0.2− | 1.1− | 2002 11 06 | 704 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.6− | 0.0 | |
| 1998 10 28 | 704 | 0.6− | 1.1+ | 2002 11 06 | 704 | 0.6+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1− | |
| 1998 10 28 | 704 | 1.4− | 0.6− | 2002 11 06 | 704 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | |
| 1998 10 29 | 704 | 0.4+ | 0.5+ | 2002 11 21 | 644 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1− | |
| 1998 10 29 | 704 | 0.2+ | 1.3− | 2002 11 21 | 644 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.7+ | 1.2+ | |
| 1998 10 29 | 704 | 1.6− | 1.3+ | 2002 11 21 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 704 | (0.7+ | 1.5+) | |
| 1998 10 29 | 704 | 0.2− | 0.6− | 2002 11 23 | 644 | 0.1− | 0.2− | 2006 09 27 | 704 | (1.7+ | 0.3−) | |
| 1998 10 29 | 704 | 1.3− | 1.9+ | 2002 11 23 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.8+ | |
| 2000 03 30 | 691 | 0.1+ | 0.0 | 2002 11 23 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.3+ | |
| 2000 03 30 | 691 | 0.3+ | 0.2− | 2002 12 01 | 704 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.1− | 0.9+ | |
| 2000 03 30 | 691 | 0.1+ | 0.2− | 2002 12 01 | 704 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.8+ | |
| 2000 04 05 | 704 | 0.4+ | 0.8+ | 2002 12 01 | 704 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.3− | 0.6+ | |
| 2000 04 05 | 704 | 0.6+ | 0.8+ | 2002 12 01 | 704 | 0.8− | 0.0 | 2006 10 01 | 704 | 0.1+ | 0.8+ | |
| 2000 04 05 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 10 01 | 704 | 0.1− | 1.2+ | |
| 2000 04 05 | 704 | 1.1+ | 1.0+ | 2004 03 18 | 704 | 0.2− | 0.5+ | 2006 10 01 | 704 | 0.4− | 0.7+ | |
| 2000 04 05 | 704 | 1.5+ | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.7+ | |
| 2000 04 06 | 691 | 0.1− | 0.5− | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.1+ | |
| 2000 04 06 | 691 | 0.5+ | 0.4− | 2004 03 27 | 704 | 1.0+ | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | |
| 2000 04 06 | 691 | 0.1+ | 0.6− | 2004 03 27 | 704 | 0.5+ | 1.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | |
| 2002 09 07 | 704 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.7− | 1.2+ | 2006 10 15 | 106 | 0.5+ | 0.7− | |
| 2002 09 07 | 704 | 0.7+ | 0.2+ | 2004 03 27 | 704 | 0.7+ | 1.5+ | 2006 10 15 | 106 | 0.4+ | 0.5− | |
| 2002 09 07 | 704 | 0.3− | 0.7+ | 2004 03 29 | 691 | 0.3+ | 0.3+ | 2006 10 15 | 106 | 0.4+ | 0.2− | |
| 2002 09 07 | 704 | 0.6− | 0.1− | 2004 03 29 | 691 | 0.4+ | 0.5+ | 2006 10 16 | 106 | 0.0 | 0.2+ | |
| 2002 10 01 | 699 | 0.3+ | 0.3+ | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.3− | |
| 2002 10 01 | 699 | 0.1− | 0.1− | 2004 03 30 | 291 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.1− | 0.4− | |
| 2002 10 01 | 699 | 1.4+ | 0.4− | 2004 03 30 | 291 | 0.1+ | 0.7+ | 2006 10 16 | G96 | 0.1− | 0.3− | |
| 2002 10 01 | 699 | 0.9+ | 0.6+ | 2004 03 30 | 291 | 0.2+ | 0.6+ | 2006 10 16 | G96 | 0.1− | 0.4− | |
| 2002 10 02 | 704 | 0.2− | 0.4+ | 2004 04 23 | 691 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.3+ | |
| 2002 10 02 | 704 | 0.7− | 1.1− | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.1− | |
| 2002 10 02 | 704 | 0.9− | 0.2− | 2004 04 23 | 691 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.3+ | |
| 2002 10 02 | 704 | 0.7− | 0.6− | 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.7+ | |
| 2002 10 02 | 608 | 0.1− | 1.0+ | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1+ | |
| 2002 10 02 | 608 | 0.6+ | 0.2− | 2006 08 18 | 644 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1− | |
| 2002 10 02 | 608 | 0.4+ | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.3− | |
| 2002 10 02 | 049 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2002 10 02 | 049 | 0.3+ | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2002 10 02 | 049 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2− | |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.5− | |
| 2002 10 03 | 704 | 0.8− | 0.1+ | 2006 09 14 | 703 | 0.0 | 1.1− | 2006 10 31 | G96 | 0.2+ | 0.5− | |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4− | |
| 2002 10 03 | 704 | 0.1+ | 0.5− | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.3− | |
| 2002 10 03 | 704 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.2− | |
| 2002 10 07 | 704 | 0.3+ | 0.3− | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.4− | |
| 2002 10 07 | 704 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3− | |
| 2002 10 07 | 704 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.1+ | 1.8+ | |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.9− | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.6− | |
| 2002 10 07 | 704 | 1.4+ | 1.2+ | 2006 09 14 | 703 | 0.8− | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.6− | |
| 2002 10 08 | 291 | 0.2− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.5− | |
| 2002 10 08 | 291 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.6− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.5− | |

## (137014)∗ 1998 $SM_{130}$ = 2004 $JF_{53}$

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64656)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.12707 | | (2000.0) | | | |
| $n$ | 0.12339016 | $\omega$ | 121.79599 | | +0.94607499 | +0.32342837 |
| $a$ | 3.9959099 | $\Omega$ | 219.34208 | | −0.30613775 | +0.87411925 |
| $e$ | 0.2832552 | $i$ | 1.65743 | | −0.10593299 | +0.36236671 |
| $P$ | 7.99 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.1− | 0.9− | 2006 09 24 | 691 | 0.7− | 1.2− | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 1998 09 26 | 704 | 0.9+ | 0.3− | 2006 09 24 | 691 | 1.3+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 1998 09 26 | 704 | (1.9+ | 3.0−) | 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 10 23 | 704 | 0.0 | 0.1+ | |
| 1998 09 26 | 704 | 1.2+ | 0.4+ | 2006 09 26 | 683 | 0.4+ | 0.0 | 2006 10 23 | 704 | 0.0 | 0.6+ | |
| 1998 09 26 | 704 | 0.3+ | 0.6− | 2006 09 26 | 683 | 0.4+ | 0.4− | 2006 10 23 | 704 | 0.2+ | 0.3+ | |
| 1998 09 27 | 704 | 0.4− | 0.3+ | 2006 09 26 | 683 | 0.8+ | 0.2+ | 2006 10 23 | 704 | 0.4− | 0.1+ | |
| 1998 09 27 | 704 | 0.5+ | 1.4+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.0 | 0.3+ | |
| 1998 09 27 | 704 | 1.4+ | 0.6+ | 2006 09 27 | 704 | 0.6− | 0.4+ | 2006 10 25 | 106 | 0.5− | 0.8+ | |
| 1998 09 27 | 704 | 1.0+ | 0.2− | 2006 09 27 | 704 | 0.1− | 0.4+ | 2006 10 25 | 106 | 0.1+ | 0.4+ | |
| 1998 09 27 | 704 | 0.2+ | 1.0− | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 10 25 | 106 | 0.7+ | 0.4− | |
| 1998 10 17 | 699 | 0.2+ | 1.3+ | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 25 | 106 | 0.0 | 0.2− | |
| 1998 10 17 | 699 | (0.5− | 2.9+) | 2006 09 28 | 691 | 0.5+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 | |
| 1998 10 17 | 699 | 0.3+ | 1.2+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1+ | |
| 1998 10 28 | 704 | 0.3+ | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.2+ | |
| 1998 10 28 | 704 | (2.3+ | 1.1−) | 2006 09 29 | 704 | 0.7+ | 0.4− | 2006 10 28 | 704 | 0.3+ | 0.9+ | |
| 1998 10 28 | 704 | 0.3+ | 1.4− | 2006 09 29 | 704 | 0.5− | 0.4+ | 2006 10 28 | 704 | 1.1− | 0.3+ | |
| 1998 10 28 | 704 | 0.4− | 1.9− | 2006 09 29 | 704 | 0.5+ | 0.9− | 2006 10 28 | 704 | 0.5− | 0.6+ | |
| 1998 10 29 | 704 | 0.5+ | 1.5+ | 2006 09 29 | 704 | 0.1− | 0.2+ | 2006 10 28 | 704 | 0.0 | 0.9+ | |
| 1998 10 29 | 704 | (2.4+ | 0.4−) | 2006 09 30 | 683 | 0.1− | 0.5− | 2006 10 28 | 704 | 0.7− | 0.9+ | |
| 1998 10 29 | 704 | 0.1− | 0.2+ | 2006 09 30 | 683 | 0.5− | 1.3+ | 2006 10 28 | G96 | 0.1− | 0.2− | |
| 1998 10 29 | 704 | 0.6+ | 1.3− | 2006 09 30 | 683 | 1.4− | 0.7− | 2006 10 28 | G96 | 0.0 | 0.2− | |
| 1998 10 29 | 704 | 0.6− | 0.6− | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | |
| 1999 01 15 | 691 | 0.4− | 0.6− | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1− | |
| 1999 01 15 | 691 | 0.6− | 0.7− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.1+ | |
| 1999 01 15 | 691 | 0.4− | 0.8− | 2006 10 03 | 704 | (1.2+ | 1.7+) | 2006 10 31 | 691 | 0.1+ | 0.3+ | |
| 2002 02 13 | 645 | 0.0 | 0.0 | 2006 10 03 | 683 | 0.8+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 | |
| 2002 02 13 | 645 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.4− | 0.0 | 2006 11 07 | 644 | 0.2− | 0.1+ | |
| 2003 04 07 | 691 | 0.3+ | 0.2+ | 2006 10 03 | 704 | (0.9+ | 2.0+) | 2006 11 07 | 644 | 0.2− | 0.3+ | |
| 2003 04 07 | 691 | 0.4+ | 0.1+ | 2006 10 03 | 704 | 1.1+ | 0.1− | 2006 11 07 | 644 | 0.4− | 0.0 | |
| 2003 04 07 | 691 | 0.0 | 0.7+ | 2006 10 03 | 683 | (0.4+ | 2.2+) | 2006 11 09 | 644 | 0.0 | 0.2+ | |
| 2004 05 09 | 691 | 0.0 | 0.4+ | 2006 10 04 | 683 | (3.3+ | 0.5−) | 2006 11 09 | 644 | 0.2+ | 0.3+ | |
| 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 10 04 | 683 | 1.3+ | 1.4+ | 2006 11 09 | 644 | 0.0 | 0.2+ | |
| 2004 05 09 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.9− | |
| 2004 05 19 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1− | 0.7+ | |
| 2004 05 19 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.2− | |
| 2004 05 19 | 691 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.2− | |
| 2006 07 22 | G96 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.3− | |
| 2006 07 22 | G96 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.2− | |
| 2006 07 22 | G96 | 0.4− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.4− | |
| 2006 07 22 | G96 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1− | 0.2− | |
| 2006 08 12 | 644 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.0 | 0.7− | |
| 2006 08 12 | 644 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.8− | 0.1− | |
| 2006 08 12 | 644 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5− | 0.4− | |
| 2006 09 18 | 699 | 0.3− | 0.0 | 2006 10 19 | 691 | (1.9− | 0.7+) | 2006 11 17 | 703 | 0.7− | 0.6+ | |
| 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.9− | 1.5+ | |
| 2006 09 18 | 699 | (1.5− | 0.3−) | 2006 10 20 | 703 | 0.5− | 0.2+ | 2006 11 18 | 704 | 0.7− | 1.0+ | |
| 2006 09 18 | 699 | (0.3− | 1.7+) | 2006 10 20 | 703 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.5− | |
| 2006 09 20 | 704 | 1.1+ | 0.4− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.7+ | |
| 2006 09 20 | 704 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.9+ | |
| 2006 09 20 | 704 | 0.1− | 1.2− | 2006 10 20 | 703 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.3− | 1.0+ | |
| 2006 09 21 | 224 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 21 | 224 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.6− | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2006 09 21 | 224 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 1.2+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2006 09 22 | 683 | (1.0− | 2.3−) | 2006 10 21 | 703 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2006 09 22 | 683 | (1.2− | 2.3−) | 2006 10 21 | 703 | 0.6− | 0.5+ | 2006 11 21 | 704 | 1.0− | 1.3+ |
| 2006 09 22 | 683 | 0.3− | 0.7− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.9+ |

**(137015)∗ 1998 SW$_{130}$ = 1990 TZ$_{11}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 16856)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.20741 | | (2000.0) | | +0.93389262 | +0.35438437 |
| $n$ | 0.12476391 | $\omega$ | 78.90592 | | −0.34397670 | +0.85420700 |
| $a$ | 3.9665237 | $\Omega$ | 260.32486 | | −0.09759405 | +0.38044990 |
| $e$ | 0.3324804 | $i$ | 2.76191 | | | |
| $P$ | 7.90 | $H$ | 14.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 11 | 033 | 1.6+ | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1990 10 12 | 033 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.2− | 1.4+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1990 10 12 | 033 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 1990 10 13 | 033 | (2.9+ | 0.7+) | 2006 09 25 | 704 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 1990 10 14 | 261 | 0.5− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 1990 10 14 | 261 | 0.7+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 1990 10 14 | 033 | 0.6+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 1998 09 14 | 699 | 1.9− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.2− | 0.0 |
| 1998 09 14 | 699 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.7− | 2006 11 11 | 703 | 0.4− | 0.7− |
| 1998 09 14 | 699 | 1.5− | 0.5− | 2006 09 29 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 1998 09 26 | 704 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.3− | 0.0 |
| 1998 09 26 | 704 | 0.9+ | 0.1− | 2006 09 29 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.4− | 0.6− |
| 1998 09 26 | 704 | 0.7+ | 1.1+ | 2006 09 29 | 704 | 1.2− | 0.7− | 2006 11 16 | 704 | 0.3− | 0.0 |
| 1998 09 26 | 704 | 0.5− | 0.2− | 2006 10 17 | 691 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.6+ |
| 1998 09 26 | 704 | 0.1− | 1.9+ | 2006 10 17 | 691 | 0.3− | 0.4+ | 2006 11 16 | 704 | 0.7+ | 0.1− |
| 1998 09 27 | 704 | 0.3+ | 0.5− | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.1− |
| 1998 09 27 | 704 | 1.1+ | 0.4− | 2006 10 19 | 704 | 0.2− | 0.2− | 2006 11 16 | 704 | (1.8+ | 0.1+) |
| 1998 09 27 | 704 | 0.0 | 0.2− | 2006 10 19 | 704 | 1.3− | 0.3+ | 2006 11 18 | 704 | (1.6+ | 0.3−) |
| 1998 09 27 | 704 | 0.0 | 1.5− | 2006 10 19 | 704 | 1.4− | 0.9+ | 2006 11 18 | 704 | 0.8− | 0.8+ |
| 1998 09 27 | 704 | 0.6− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | (1.7+ | 0.1−) |
| 1998 10 17 | 699 | 0.9+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 1998 10 17 | 699 | 1.3+ | 1.3+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.5+ |
| 1998 10 17 | 699 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 1998 10 23 | 691 | 0.4− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.7+ |
| 1998 10 23 | 691 | 0.6− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 1998 10 23 | 691 | 0.6− | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 1998 11 11 | 704 | 1.0+ | 0.7− | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 1998 11 11 | 704 | 0.3− | 0.5− | 2006 10 21 | 691 | (1.2+ | 1.8−) | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 1998 11 11 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 1998 11 11 | 704 | (3.6− | 0.8−) | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 1998 11 23 | 699 | (2.2+ | 0.9+) | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 1998 11 23 | 699 | 0.0 | 1.0+ | 2006 10 27 | 224 | 0.9− | 1.0− | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 1998 11 23 | 699 | 0.5− | 1.6+ | 2006 10 27 | 224 | (1.8− | 0.7−) | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 1999 01 14 | 691 | 0.2+ | 0.0 | 2006 10 27 | 224 | 0.9− | 0.8− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 1999 01 14 | 691 | 0.3+ | 0.6− | 2006 10 29 | 704 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.4+ | 0.0 |
| 1999 01 14 | 691 | 0.1+ | 0.9− | 2006 10 29 | 704 | 0.3+ | 0.4+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2003 04 07 | 691 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.7− | 1.2+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2003 04 07 | 691 | 0.5− | 0.3+ | 2006 10 29 | 704 | 0.2+ | 0.0 | 2006 11 28 | 704 | 1.4+ | 0.6+ |
| 2003 04 07 | 691 | 0.9+ | 0.1+ | 2006 10 29 | 704 | 1.0+ | 1.0− | 2006 11 28 | 704 | 0.2+ | 0.9+ |
| 2006 09 25 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 1.4− | 2006 11 28 | 704 | 0.1− | 0.5− |

**(137016)∗ 1998 SH$_{131}$ = 2002 RH$_{69}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34741)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.38102 | | (2000.0) | | +0.54435804 | −0.83876029 |
| $n$ | 0.23823989 | $\omega$ | 65.57057 | | +0.73620440 | +0.48481880 |
| $a$ | 2.5770711 | $\Omega$ | 351.41617 | | +0.40209129 | +0.24785460 |
| $e$ | 0.3213463 | $i$ | 4.79242 | | | |
| $P$ | 4.14 | $H$ | 15.9 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.7− | 0.5+ | 2002 09 12 | 644 | 0.4− | 0.5+ | 2004 04 12 | 691 | 0.5+ | 0.1− |
| 1998 09 26 | 704 | 0.1+ | 0.3− | 2002 09 15 | 644 | 0.3− | 0.1− | 2004 04 12 | 691 | 0.3+ | 0.0 |
| 1998 09 26 | 704 | 0.3− | 0.0 | 2002 09 15 | 644 | 0.6− | 0.0 | 2004 04 12 | 691 | 0.6+ | 0.1+ |
| 1998 09 26 | 704 | 0.4+ | 0.2+ | 2002 09 15 | 644 | 0.6− | 0.1− | 2004 04 22 | 691 | 0.1− | 0.1+ |
| 1998 09 27 | 704 | 0.4+ | 1.3+ | 2002 10 01 | 699 | 0.3− | 0.6+ | 2004 04 22 | 691 | 0.2+ | 0.3+ |
| 1998 09 27 | 704 | 0.9− | 0.1+ | 2002 10 01 | 699 | 0.2+ | 0.2+ | 2004 04 22 | 691 | 0.3− | 0.2+ |
| 1998 09 27 | 704 | 0.2− | 0.3+ | 2002 10 01 | 699 | 0.7+ | 0.5+ | 2006 08 15 | 644 | 0.1+ | 0.2− |
| 1998 09 27 | 704 | 0.7− | 0.9+ | 2002 10 01 | 699 | 0.1− | 0.7+ | 2006 08 15 | 644 | 0.1+ | 0.3− |
| 1998 09 27 | 704 | 1.4− | 0.9+ | 2002 10 01 | 608 | 1.1− | 0.7+ | 2006 08 15 | 644 | 0.0 | 0.2− |
| 1998 10 11 | 699 | 0.1− | 0.2− | 2002 10 01 | 608 | 1.0− | 1.2+ | 2006 08 16 | 644 | 0.0 | 0.3− |
| 1998 10 11 | 699 | 0.1− | 0.0 | 2002 10 01 | 608 | 0.5− | 1.0+ | 2006 08 16 | 644 | 0.0 | 0.3− |
| 1998 10 11 | 699 | 0.6+ | 0.1+ | 2002 10 03 | 704 | 0.5− | 0.2− | 2006 08 16 | 644 | 0.0 | 0.2− |
| 1998 10 28 | 704 | 0.4− | 0.1− | 2002 10 03 | 704 | 0.4− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1− |
| 1998 10 28 | 704 | 0.4+ | 0.3− | 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.1− |
| 1998 10 28 | 704 | 0.1+ | 0.6− | 2002 10 03 | 704 | 0.6− | 0.4− | 2006 08 18 | 644 | 0.2+ | 0.1− |
| 1998 10 28 | 704 | 0.1− | 0.4− | 2002 10 03 | 704 | 0.7− | 0.3− | 2006 08 19 | 699 | 0.3+ | 0.6− |
| 1998 10 28 | 704 | 1.4− | 0.1− | 2002 10 06 | 704 | 0.1+ | 0.0 | 2006 08 19 | 699 | 0.6+ | 0.4+ |
| 1998 10 29 | 704 | 1.2+ | 0.0 | 2002 10 06 | 704 | (0.3+ | 2.3+) | 2006 08 19 | 699 | 0.7+ | 0.6+ |
| 1998 10 29 | 704 | 0.3+ | 0.4+ | 2002 10 06 | 704 | 0.3+ | 0.2+ | 2006 08 19 | 699 | 0.3+ | 0.3+ |
| 1998 10 29 | 704 | 1.5+ | 0.7− | 2002 10 06 | 704 | 0.4− | 1.5+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| 1998 10 29 | 704 | 0.6+ | 0.6− | 2002 10 06 | 704 | 0.3+ | 0.3− | 2006 08 20 | 644 | 0.2− | 0.3− |
| 1998 11 10 | 704 | 0.2+ | 0.5− | 2002 10 06 | 704 | (0.1− | 2.0+) | 2006 08 20 | 644 | 0.0 | 0.2− |
| 1998 11 10 | 704 | 0.8+ | 0.7− | 2002 10 06 | 704 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.1+ | 0.4− |
| 1998 11 10 | 704 | 0.6− | 0.2+ | 2002 10 06 | 704 | 0.5+ | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.3− |
| 1998 11 10 | 704 | 0.1+ | 0.8− | 2002 10 06 | 704 | (0.6+ | 1.9+) | 2006 08 24 | 644 | 0.2− | 0.1− |
| 1998 11 11 | 704 | 0.8+ | 0.3− | 2002 10 07 | 704 | 0.8+ | 0.2− | 2006 08 28 | 704 | 0.4+ | 0.3− |
| 1998 11 11 | 704 | 1.6+ | 0.5− | 2002 10 07 | 704 | 0.7+ | 0.1− | 2006 08 28 | 704 | 0.5− | 0.4− |
| 1998 11 11 | 704 | 0.5− | 0.6− | 2002 10 07 | 704 | 0.1+ | 0.4− | 2006 08 28 | 704 | 0.7+ | 1.1+ |
| 1998 11 11 | 704 | 1.1+ | 0.5+ | 2002 10 07 | 704 | 0.6+ | 0.0 | 2006 08 28 | 699 | 0.6− | 0.4+ |
| 1998 11 11 | 704 | 1.0− | 0.9− | 2002 10 07 | 704 | 1.1+ | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.2− |
| 1998 11 17 | 699 | 0.5− | 0.0 | 2002 10 09 | 699 | 0.5− | 1.3+ | 2006 08 28 | 704 | 0.6+ | 0.1+ |
| 1998 11 17 | 699 | 0.1− | 0.4− | 2002 10 09 | 699 | 0.6+ | 1.1+ | 2006 08 28 | 699 | 0.4+ | 0.1+ |
| 1998 11 17 | 699 | 1.5− | 1.6+ | 2002 10 09 | 699 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.5+ | 0.9− |
| 2002 08 12 | 704 | 0.6− | 1.1+ | 2002 10 09 | 699 | 0.6+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.0 |
| 2002 08 12 | 704 | 0.5− | 0.6− | 2002 10 11 | 704 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.5− | 0.4+ |
| 2002 08 12 | 704 | 0.6− | 0.1− | 2002 10 11 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.0 | 0.1− |
| 2002 08 12 | 704 | 1.0− | 0.7− | 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.3− |
| 2002 08 21 | 644 | 0.6− | 0.5− | 2002 10 11 | 704 | 0.2+ | 0.2− | 2006 08 31 | 704 | 0.0 | 0.7− |
| 2002 08 21 | 644 | 0.5− | 0.7− | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 08 31 | 704 | (1.9+ | 1.8−) |
| 2002 08 21 | 644 | 0.4− | 0.9− | 2002 10 30 | 704 | 0.3+ | 0.2+ | 2006 08 31 | 704 | 1.0+ | 0.4+ |
| 2002 09 04 | 699 | 0.9+ | 0.1+ | 2002 10 30 | 704 | 0.3− | 0.8+ | 2006 08 31 | 704 | 1.3+ | 0.8− |
| 2002 09 04 | 699 | 0.3+ | 0.4+ | 2002 10 30 | 704 | 0.4+ | 0.3+ | 2006 09 13 | 644 | 0.4− | 0.3− |
| 2002 09 04 | 699 | 0.5+ | 0.2+ | 2002 11 06 | 704 | 0.7+ | 0.3− | 2006 09 13 | 644 | 0.0 | 0.4− |
| 2002 09 04 | 699 | 0.4+ | 0.6+ | 2002 11 06 | 704 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.2− |
| 2002 09 05 | 704 | (2.8− | 0.5−) | 2002 11 06 | 704 | 0.2− | 0.0 | 2006 09 24 | 699 | 0.6− | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2002 12 05 | 704 | (1.7− | 0.2−) | 2006 09 24 | 699 | 0.4− | 1.1− |
| 2002 09 05 | 704 | 0.4− | 1.2+ | 2002 12 05 | 704 | 1.2− | 0.6+ | 2006 09 24 | 699 | 0.4− | 0.2− |
| 2002 09 05 | 704 | 0.0 | 0.5+ | 2002 12 05 | 704 | 0.7− | 0.3+ | 2006 09 24 | 699 | 0.8− | 0.6− |
| 2002 09 05 | 704 | 0.6+ | 0.8+ | 2002 12 05 | 704 | (0.2− | 2.0+) | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2002 09 07 | 704 | 0.5+ | 0.3+ | 2004 03 26 | 691 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2002 09 07 | 704 | 0.2− | 0.8+ | 2004 03 26 | 691 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2002 09 07 | 704 | 0.3+ | 0.0 | 2004 03 26 | 691 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.4− | 0.4− |
| 2002 09 07 | 704 | 0.8− | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.7− | 2006 10 22 | G96 | 0.3− | 0.7− |
| 2002 09 07 | 704 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2002 09 12 | 644 | 0.3− | 0.3+ | 2004 03 27 | 704 | (0.6+ | 2.2+) | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2002 09 12 | 644 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.4− |

**(137017)∗ 1998 $SW_{139}$ = 1998 $UW_{36}$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. S. Nakano (d, MPC 33590)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.82880 | | (2000.0) | | | |
| $n$ | 0.24733654 | $\omega$ | 193.23989 | | +0.56774038 | −0.81195102 |
| $a$ | 2.5134902 | $\Omega$ | 222.38689 | | +0.77242790 | +0.58242197 |
| $e$ | 0.1128835 | $i$ | 11.61014 | | +0.28465068 | +0.03898957 |
| $P$ | 3.98 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.4+ | 0.8+ | 2002 11 12 | 644 | 0.2− | 0.1+ | 2006 10 19 | 704 | 0.3− | 0.4+ |
| 1998 09 26 | 704 | 0.4+ | 0.4+ | 2002 11 22 | 644 | 0.1+ | 0.0 | 2006 10 19 | 704 | 0.2− | 0.8+ |
| 1998 09 26 | 704 | 0.3+ | 1.4+ | 2002 11 22 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1998 09 26 | 704 | 1.9− | 0.8− | 2002 11 22 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.1− |
| 1998 09 27 | 704 | 0.5+ | 0.6− | 2002 12 01 | 704 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 1998 09 27 | 704 | 1.1− | 0.3+ | 2002 12 01 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.4− |
| 1998 09 27 | 704 | 1.6+ | 1.9− | 2002 12 01 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.3− |
| 1998 09 27 | 704 | 0.0 | 1.9− | 2002 12 01 | 704 | 0.9+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.3− |
| 1998 09 27 | 704 | (2.4− | 1.5−) | 2002 12 01 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1998 10 28 | 704 | 0.6− | 0.1+ | 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1998 10 28 | 704 | 0.5− | 0.6+ | 2002 12 05 | 704 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1998 10 28 | 704 | 1.1− | 0.3− | 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 10 29 | 704 | (1.6+ | 0.2−) |
| 1998 10 28 | 704 | 1.5− | 0.4+ | 2002 12 05 | 704 | 0.7+ | 0.1− | 2006 10 29 | 704 | 0.1− | 0.6+ |
| 1998 10 29 | 704 | 1.1− | 1.2− | 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.1+ | 0.6− |
| 1998 10 29 | 704 | 0.0 | 0.2− | 2002 12 10 | 704 | 1.0+ | 0.2+ | 2006 10 29 | 704 | 0.1+ | 0.5+ |
| 1998 10 29 | 704 | 0.1+ | 0.1+ | 2002 12 10 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.2− | 0.9− |
| 1998 10 29 | 704 | 1.0+ | 0.2− | 2002 12 10 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 1998 11 10 | 704 | 0.4− | 0.1+ | 2002 12 10 | 704 | 0.9+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3− |
| 1998 11 10 | 704 | 1.4+ | 0.9+ | 2003 01 04 | 704 | 0.1− | 0.9− | 2006 11 09 | 644 | 0.1− | 0.3− |
| 1998 11 10 | 704 | 0.2+ | 0.6− | 2003 01 04 | 704 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.1− |
| 1998 11 10 | 704 | 0.4+ | 1.1− | 2003 01 04 | 704 | 0.6− | 0.8− | 2006 11 10 | 644 | 0.0 | 0.3− |
| 1998 11 23 | 699 | 0.6− | 0.2+ | 2003 01 04 | 704 | 0.4− | 0.4− | 2006 11 10 | 644 | 0.2− | 0.1− |
| 1998 11 23 | 699 | 0.2− | 0.9+ | 2004 02 18 | 703 | 1.3− | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 1998 11 23 | 699 | 0.4− | 0.1− | 2004 02 18 | 703 | 0.3− | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2000 03 09 | 704 | 0.2− | 0.0 | 2004 02 18 | 703 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2000 03 09 | 704 | 0.3− | 0.2− | 2004 02 18 | 703 | 0.7− | 1.1− | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2000 03 09 | 704 | 0.4− | 0.5− | 2004 03 17 | 704 | 0.6− | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2000 03 09 | 704 | 0.1+ | 0.8− | 2004 03 17 | 704 | 0.9+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2002 09 17 | 699 | 0.3− | 0.1+ | 2004 03 17 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2002 09 17 | 699 | 0.4− | 0.2− | 2004 03 17 | 704 | 0.2− | 0.1+ | 2006 11 13 | 683 | 0.5+ | 0.6− |
| 2002 09 17 | 699 | 0.9− | 0.5− | 2004 03 17 | 704 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2002 09 17 | 699 | 0.6− | 0.5+ | 2004 03 31 | 704 | 0.6+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2002 10 04 | 704 | (1.9+ | 0.9+) | 2004 03 31 | 704 | 1.4+ | 0.8+ | 2006 11 13 | 683 | 1.0+ | 0.8− |
| 2002 10 04 | 704 | (2.1+ | 0.5+) | 2004 03 31 | 704 | 1.4+ | 0.7+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2002 10 04 | 704 | 0.9+ | 0.9+ | 2004 03 31 | 704 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2002 10 04 | 704 | (2.1+ | 0.8+) | 2006 08 24 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 683 | 1.4+ | 0.3− |
| 2002 10 09 | 704 | 0.4− | 0.7+ | 2006 08 24 | 704 | 0.3− | 0.7+ | 2006 11 14 | 683 | 0.3+ | 0.2− |
| 2002 10 09 | 704 | 0.0 | 0.4+ | 2006 08 24 | 704 | 0.7+ | 0.1− | 2006 11 14 | 683 | 0.5+ | 1.2− |
| 2002 10 09 | 704 | 0.2+ | 1.2+ | 2006 08 24 | 704 | 0.1− | 0.1− | 2006 11 14 | 683 | 0.2+ | 0.2+ |
| 2002 10 09 | 704 | 1.1− | 0.0 | 2006 08 24 | 704 | (1.8+ | 0.2+) | 2006 11 15 | 683 | 0.3+ | 0.6− |
| 2002 10 11 | 644 | 0.3− | 0.6− | 2006 08 30 | 704 | (0.4+ | 2.4+) | 2006 11 15 | 683 | 0.4+ | 0.3− |
| 2002 10 11 | 644 | 0.3− | 0.5− | 2006 08 30 | 704 | 1.0+ | 0.3+ | 2006 11 15 | 683 | 0.4+ | 1.0− |
| 2002 10 11 | 644 | 0.4− | 0.3− | 2006 08 30 | 704 | (0.5− | 1.6+) | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2002 10 11 | 176 | 0.7+ | 0.5+ | 2006 08 30 | 704 | 0.7+ | 1.2+ | 2006 11 18 | 704 | 0.6+ | 0.8+ |
| 2002 10 11 | 176 | 0.7+ | 0.5+ | 2006 08 30 | 704 | (0.7+ | 1.8+) | 2006 11 18 | 704 | 0.2+ | 0.3− |
| 2002 10 11 | 176 | 0.6+ | 0.5+ | 2006 09 20 | 699 | 1.1+ | 0.3− | 2006 11 18 | 704 | (1.6− | 0.7+) |
| 2002 10 11 | 176 | 0.6+ | 0.6+ | 2006 09 20 | 699 | 0.7+ | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.8− | 0.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2002 10 12 | 704 | 0.0 | 0.6+ | 2006 09 25 | 704 | 0.6− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2002 10 12 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.9− | 1.0− | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2002 10 12 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 704 | (1.0− | 1.6−) | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2002 10 12 | 176 | 0.8+ | 0.2+ | 2006 09 25 | 704 | 1.2− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2002 10 12 | 176 | 0.3+ | 0.4+ | 2006 09 25 | 704 | (1.0− | 1.5−) | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2002 10 12 | 176 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2002 10 12 | 176 | 0.9− | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.3− | 0.3− |
| 2002 10 31 | 699 | 0.3− | 0.5+ | 2006 09 28 | 703 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2002 10 31 | 699 | 0.6− | 1.2+ | 2006 09 28 | 703 | 0.8− | 0.7− | 2006 11 25 | 703 | 0.6+ | 0.7+ |
| 2002 10 31 | 699 | 1.1+ | 1.0− | 2006 09 29 | 704 | (1.7+ | 1.3+) | 2006 11 25 | 703 | 0.6+ | 1.8+ |
| 2002 10 31 | 699 | 0.1− | 0.7+ | 2006 09 29 | 704 | 0.9+ | 1.2+ | 2006 11 25 | 703 | 0.2− | 0.1− |
| 2002 11 03 | 704 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.1− | 0.2− |
| 2002 11 03 | 704 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.8+ | 2006 11 26 | 704 | 0.4− | 0.4− |
| 2002 11 03 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 704 | 0.8− | 0.0 | 2006 11 26 | 704 | 1.1− | 0.2+ |
| 2002 11 04 | 608 | 1.0− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 26 | 704 | 1.4− | 0.6+ |
| 2002 11 04 | 608 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 27 | 691 | 1.0− | 0.2+ |
| 2002 11 04 | 608 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.4− |
| 2002 11 09 | 695 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2002 11 09 | 695 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.9− | 0.6+ |
| 2002 11 10 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.5− | 1.1+ |
| 2002 11 10 | 704 | 0.6+ | 0.8+ | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.4− | 0.1+ |
| 2002 11 10 | 704 | 0.4+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2002 11 10 | 704 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.4− | 0.5− |
| 2002 11 12 | 644 | 0.1− | 0.2+ | 2006 10 19 | 704 | 0.8− | 0.5+ | | | | |
| 2002 11 12 | 644 | 0.1− | 0.1− | 2006 10 19 | 704 | 0.4+ | 1.0− | | | | |

**(137018)∗ 1998 $SL_{160}$ = 2002 $UG_5$**

Discovered 1998 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 39965)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.92402 | | (2000.0) | | | |
| $n$ | 0.24711415 | $\omega$ | 237.99248 | | +0.98404266 | +0.16266051 |
| $a$ | 2.5149980 | $\Omega$ | 112.55934 | | −0.12517843 | +0.92093182 |
| $e$ | 0.1407674 | $i$ | 4.47924 | | −0.12645314 | +0.35415554 |
| $P$ | 3.99 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.7− | 0.3− | 2002 10 10 | 645 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.3− | 0.3− |
| 1996 02 15 | 691 | 0.2− | 0.3− | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.1− |
| 1998 09 24 | 699 | (0.8+ | 2.2+) | 2002 10 15 | 644 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.9− | 0.2+ |
| 1998 09 24 | 699 | 0.2− | 1.9+ | 2002 10 15 | 644 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.3+ | 0.6+ |
| 1998 09 24 | 699 | (0.4− | 2.0+) | 2002 10 15 | 644 | 0.4− | 0.6− | 2006 09 30 | 703 | 1.2− | 0.5− |
| 1998 09 26 | 704 | 0.3− | 0.3− | 2002 10 28 | 644 | (0.6− | 1.6+) | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 1998 09 26 | 704 | 2.0+ | 0.6+ | 2002 10 28 | 644 | 0.5− | 1.4+ | 2006 10 01 | 704 | 0.6+ | 0.9− |
| 1998 09 26 | 704 | 0.3− | 1.4− | 2002 10 28 | 644 | 0.6− | 1.3+ | 2006 10 01 | 704 | 1.2+ | 0.8+ |
| 1998 09 26 | 704 | 0.3+ | 0.4+ | 2002 10 30 | 704 | 0.4− | 0.8+ | 2006 10 01 | 704 | 0.1− | 0.3− |
| 1998 09 26 | 704 | 0.2− | 0.9+ | 2002 10 30 | 704 | 0.0 | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 1998 09 27 | 704 | 0.7+ | 0.7+ | 2002 10 30 | 704 | (2.0+ | 0.5+) | 2006 10 02 | G96 | 0.3− | 0.2− |
| 1998 09 27 | 704 | 0.4+ | 1.8− | 2002 10 30 | 704 | 0.9− | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 1998 09 27 | 704 | 1.0− | 0.3+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 1998 09 27 | 704 | 1.9+ | 0.0 | 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 2001 04 18 | 691 | 0.0 | 0.3+ | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.4− |
| 2001 04 18 | 691 | 0.1− | 0.2+ | 2004 03 01 | 691 | 0.3+ | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.4− |
| 2001 04 18 | 691 | 0.2− | 0.6+ | 2004 03 01 | 691 | 0.8+ | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 1.2+ | 2004 03 01 | 691 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2002 09 06 | 704 | (1.1+ | 1.8+) | 2005 05 08 | 691 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 1.2+ | 2005 05 08 | 691 | 0.4+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2002 09 06 | 704 | 0.1− | 1.0+ | 2005 05 08 | 691 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2005 05 19 | G96 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 09 16 | 608 | 0.6− | 1.3− | 2005 05 19 | G96 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2002 09 16 | 608 | 0.2+ | 0.3− | 2005 05 19 | G96 | 0.7+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2002 09 16 | 608 | 0.1− | 1.1− | 2005 05 19 | G96 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2002 09 30 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 0.5− | 0.5+ | 2006 09 18 | 703 | 1.2− | 0.2+ | 2006 10 16 | 703 | 1.2+ | 0.4− |
| 2002 09 30 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2002 09 30 | 704 | 0.6− | 1.4+ | 2006 09 18 | 703 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 10 02 | 608 | 0.6− | 0.0 | 2006 09 22 | 704 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2002 10 02 | 608 | 0.3− | 0.1+ | 2006 09 22 | 704 | 1.0+ | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2002 10 02 | 608 | 0.3− | 0.2− | 2006 09 22 | 704 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | 1.0+ | 0.1+ | 2006 09 22 | 704 | 0.6− | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.0+ | 0.3− | 2006 09 22 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 1.0+ | 0.7+ |
| 2002 10 03 | 704 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.2− | 1.0+ | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2002 10 03 | 704 | 0.5+ | 0.6− | 2006 09 26 | 704 | 0.1+ | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.8+ |
| 2002 10 03 | 704 | 0.5+ | 0.5− | 2006 09 26 | 704 | 0.3+ | 0.7− | 2006 10 22 | 703 | 0.2+ | 1.1+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.5− | 1.2+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.9− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.3+ | 1.1− | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.3− | | | | |

**(137019)∗ 1998 SE$_{168}$ = 1990 SC$_9$**

Discovered 1998 Sept. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 29020)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.99106 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24311098 | $\omega$ | 247.01394 | | +0.43567600 | +0.89736385 | |
| $a$ | 2.5425314 | $\Omega$ | 49.00611 | | −0.78804007 | +0.41794645 | |
| $e$ | 0.2211747 | $i$ | 5.33474 | | −0.43494743 | +0.14162939 | |
| $P$ | 4.05 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 22 | 809 | 1.6+ | 0.3− | 2002 08 17 | 608 | 0.1+ | 0.0 | 2005 03 16 | 703 | 0.2− | 0.5− |
| 1990 09 22 | 809 | 1.4+ | 1.1− | 2002 08 17 | 608 | 0.4− | 0.0 | 2005 03 16 | 703 | 0.7+ | 0.1+ |
| 1990 09 22 | 809 | (2.4+ | 0.1−) | 2002 08 17 | 608 | 0.2− | 0.1+ | 2005 03 16 | 703 | 0.8− | 0.4− |
| 1990 09 25 | 809 | 0.8+ | 0.5− | 2002 08 19 | 644 | 0.4− | 0.1+ | 2005 04 09 | 703 | (1.6+ | 0.2−) |
| 1990 09 25 | 809 | 0.4+ | 0.9− | 2002 08 19 | 644 | 0.3− | 1.0+ | 2005 04 09 | 703 | 0.7+ | 0.9+ |
| 1990 09 25 | 809 | 0.6+ | 0.0 | 2002 08 19 | 644 | 0.4− | 0.0 | 2005 04 09 | 703 | 1.1− | 0.3− |
| 1998 08 28 | 699 | 0.5− | 0.0 | 2002 08 30 | 644 | 0.3− | 0.1− | 2005 04 09 | 703 | (0.8− | 1.6+) |
| 1998 08 28 | 699 | 1.2− | 0.2− | 2002 08 30 | 644 | 0.4− | 0.1− | 2006 05 25 | E12 | 0.8+ | 0.2− |
| 1998 08 28 | 699 | 0.2− | 0.3− | 2002 08 30 | 644 | 0.4− | 0.0 | 2006 05 25 | E12 | 0.6+ | 0.6− |
| 1998 09 16 | 699 | 0.2− | 0.1+ | 2002 09 11 | 608 | 0.8− | 0.9− | 2006 05 25 | E12 | 0.0 | 0.1− |
| 1998 09 16 | 699 | 0.6− | 0.9− | 2002 09 11 | 608 | 0.5− | 0.9− | 2006 05 25 | E12 | 0.2− | 0.4− |
| 1998 09 16 | 699 | 0.4− | 0.5+ | 2002 09 11 | 608 | 0.4− | 1.0− | 2006 06 18 | E12 | 1.4+ | 0.5− |
| 1998 09 22 | 699 | 0.1− | 1.2+ | 2002 09 16 | 644 | 0.6− | 0.2− | 2006 06 18 | E12 | 0.9+ | 0.3− |
| 1998 09 22 | 699 | 0.2− | 0.7+ | 2002 09 16 | 644 | 0.6− | 0.1− | 2006 06 18 | E12 | 0.3+ | 0.2− |
| 1998 09 22 | 699 | 0.3+ | 0.2− | 2002 09 16 | 644 | 0.3− | 0.2− | 2006 06 18 | E12 | 0.9+ | 0.7− |
| 2001 03 27 | 699 | 0.9− | 0.5+ | 2002 10 04 | 704 | 1.2+ | 0.8+ | 2006 08 28 | E12 | 0.0 | 0.1+ |
| 2001 03 27 | 699 | 1.1− | 0.5+ | 2002 10 04 | 704 | (0.6+ | 1.9+) | 2006 08 28 | E12 | 0.1+ | 0.3− |
| 2001 03 27 | 699 | 0.3− | 0.4+ | 2002 10 04 | 704 | 0.1− | 0.9+ | 2006 08 28 | E12 | 0.4+ | 0.1− |
| 2001 03 27 | 699 | 0.4− | 0.6+ | 2005 02 14 | 704 | 1.0+ | 0.3+ | 2006 08 28 | E12 | 0.0 | 0.1+ |
| 2002 06 09 | 608 | 0.5− | 0.7− | 2005 02 14 | 704 | 1.0+ | 0.3+ | 2006 09 15 | 644 | 0.0 | 0.4+ |
| 2002 06 09 | 608 | 0.2− | 0.0 | 2005 02 14 | 704 | (0.8+ | 1.7+) | 2006 09 15 | 644 | 0.4+ | 0.4+ |
| 2002 06 09 | 608 | 0.2+ | 0.1− | 2005 02 14 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 644 | 0.0 | 0.4+ |
| 2002 08 13 | 644 | 0.3+ | 0.8+ | 2005 03 02 | 703 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.4− | 0.0 |
| 2002 08 13 | 644 | 0.2+ | 0.8+ | 2005 03 02 | 703 | 1.2− | 0.9− | 2006 09 26 | 704 | 0.0 | 0.2− |
| 2002 08 13 | 644 | 0.2+ | 0.7+ | 2005 03 02 | 703 | (1.1− | 1.6−) | 2006 09 26 | 704 | 0.0 | 0.3− |
| 2002 08 14 | 704 | 0.3+ | 0.3− | 2005 03 02 | 703 | (0.5− | 1.8−) | 2006 09 26 | 704 | 0.2− | 0.4+ |
| 2002 08 14 | 704 | 0.2− | 0.1+ | 2005 03 04 | 704 | 0.2− | 0.6+ | 2006 10 11 | E12 | 0.0 | 0.4+ |
| 2002 08 14 | 704 | 0.6− | 1.1+ | 2005 03 04 | 704 | 1.1+ | 0.3+ | 2006 10 11 | E12 | 0.1+ | 0.6+ |
| 2002 08 14 | 704 | 0.1− | 1.1+ | 2005 03 04 | 704 | 0.8+ | 1.1− | 2006 10 11 | E12 | 0.2− | 0.1+ |
| 2002 08 14 | 704 | 0.2− | 0.2+ | 2005 03 16 | 703 | 1.2+ | 0.1+ | 2006 10 11 | E12 | 0.3+ | 0.6+ |

**(137020)∗ 1998 TL = 2002 RF$_{100}$**

Discovered 1998 Oct. 10 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPO* 34744)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.85099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24517779 | $\omega$ | 40.61930 | | +0.72643950 | −0.68720828 | |
| $a$ | 2.5282225 | $\Omega$ | 2.80888 | | +0.59777374 | +0.62789838 | |
| $e$ | 0.2386120 | $i$ | 6.46362 | | +0.33904602 | +0.36536064 | |
| $P$ | 4.02 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 10 | 411 | 0.0 | 0.3+ | 2002 11 03 | 704 | 0.4− | 0.9+ | 2006 09 16 | 683 | 0.4− | 0.7− |
| 1998 10 10 | 411 | 0.8− | 0.1+ | 2002 11 03 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 704 | 0.7+ | 1.1− |
| 1998 10 11 | 699 | 0.2+ | 0.2− | 2002 11 05 | 699 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.5+ | 0.1− |
| 1998 10 11 | 699 | 0.2+ | 0.6+ | 2002 11 05 | 699 | 0.4− | 1.1+ | 2006 09 17 | 704 | 1.1+ | 0.3+ |
| 1998 10 11 | 699 | 0.4+ | 0.6+ | 2002 11 05 | 699 | 0.0 | 0.6+ | 2006 09 17 | 704 | 0.3+ | 0.2+ |
| 1998 10 11 | 411 | 0.1+ | 0.2− | 2002 11 05 | 699 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.5+ |
| 1998 10 11 | 411 | 0.1− | 0.3+ | 2002 11 08 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 683 | 1.5+ | 0.9− |
| 1998 10 19 | 699 | 0.3− | 0.1− | 2002 11 08 | 704 | 0.3+ | 0.0 | 2006 09 18 | 683 | 1.0+ | 1.0− |
| 1998 10 19 | 699 | 0.3+ | 0.2+ | 2002 11 08 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 683 | 0.5+ | 0.4− |
| 1998 10 19 | 699 | (2.3− | 0.7−) | 2002 11 08 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.5+ |
| 1998 10 24 | 411 | 0.2− | 0.0 | 2002 11 08 | 704 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.0 | 0.2+ |
| 1998 10 24 | 411 | 1.3− | 0.4+ | 2002 11 12 | 704 | 0.7+ | 0.9− | 2006 09 18 | 699 | 0.2+ | 0.4+ |
| 1998 10 24 | 411 | 0.3+ | 0.0 | 2002 11 12 | 644 | 0.5− | 1.1+ | 2006 09 18 | 699 | 0.8+ | 0.2− |
| 1998 10 28 | 704 | 0.6+ | 0.7− | 2002 11 12 | 704 | 0.4+ | 1.0− | 2006 09 19 | 683 | 1.0+ | 0.6− |
| 1998 10 28 | 704 | 0.3+ | 1.7− | 2002 11 12 | 644 | 0.0 | 1.0+ | 2006 09 19 | 683 | 0.8+ | 1.2− |
| 1998 10 28 | 704 | (1.5+ | 2.0−) | 2002 11 12 | 704 | 0.1+ | 0.9− | 2006 09 19 | 691 | 0.0 | 0.0 |
| 1998 10 28 | 704 | 0.1− | 1.6− | 2002 11 12 | 644 | 0.1+ | 1.1+ | 2006 09 19 | 683 | 1.5+ | 0.1− |
| 1998 10 29 | 704 | 0.2+ | 0.5+ | 2002 11 12 | 704 | 0.5+ | 0.8− | 2006 09 19 | 691 | 0.2− | 0.0 |
| 1998 10 29 | 704 | 0.3− | 0.7− | 2002 11 12 | 704 | 0.6+ | 0.4− | 2006 09 19 | 691 | 0.1− | 0.0 |
| 1998 10 29 | 704 | 0.4+ | 1.4− | 2002 12 11 | 704 | 0.2− | 0.9+ | 2006 09 20 | 704 | 0.1− | 0.7+ |
| 1998 10 29 | 704 | 0.5− | 0.7− | 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.3− |
| 1998 10 29 | 704 | 1.2− | 1.7− | 2002 12 11 | 704 | (0.2− | 2.2−) | 2006 09 20 | 704 | 0.2− | 0.0 |
| 1998 11 07 | 411 | 0.1+ | 0.4− | 2002 12 11 | 704 | 0.1+ | 1.0− | 2006 09 25 | 704 | 0.0 | 0.3− |
| 1998 11 07 | 411 | 0.4+ | 0.6+ | 2003 01 05 | 704 | 0.1+ | 1.1+ | 2006 09 25 | 704 | 0.2− | 0.0 |
| 1998 11 10 | 704 | 0.1+ | 1.2− | 2003 01 05 | 704 | 0.4+ | 1.0− | 2006 09 25 | 704 | 0.2+ | 0.7+ |
| 1998 11 10 | 704 | 1.1+ | 1.2− | 2003 01 05 | 704 | 0.9+ | 0.5+ | 2006 09 25 | 704 | 0.3+ | 0.6+ |
| 1998 11 10 | 704 | (0.1+ | 3.4−) | 2003 01 05 | 704 | 0.7− | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.3+ |
| 1998 11 10 | 704 | (0.3− | 2.5−) | 2003 01 05 | 704 | 0.8− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 1998 11 11 | 704 | 0.3− | 0.5− | 2004 03 17 | 691 | 0.5+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 1998 11 11 | 704 | 0.5+ | 0.2− | 2004 03 17 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 1998 11 11 | 704 | 1.7+ | 1.6− | 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.4+ | 0.6+ |
| 1998 11 11 | 704 | 0.9+ | 0.4− | 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 1998 11 11 | 704 | 1.1+ | 1.0− | 2004 03 18 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.9+ |
| 2002 09 05 | 704 | 0.4+ | 0.5− | 2004 03 18 | 704 | (1.7+ | 1.2+) | 2006 09 29 | 704 | 0.5− | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | (1.6+ | 1.3+) | 2006 09 29 | 704 | 0.2+ | 0.2− |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 10 03 | 704 | 0.5− | 0.6+ |
| 2002 09 05 | 704 | 0.6+ | 0.1+ | 2004 03 26 | 699 | 1.3+ | 0.9+ | 2006 10 03 | 704 | 0.4+ | 0.7+ |
| 2002 09 05 | 704 | 0.4+ | 0.1− | 2004 03 26 | 699 | 0.3− | 0.6+ | 2006 10 03 | 704 | 0.5− | 0.2+ |
| 2002 09 07 | 704 | 0.7− | 0.3+ | 2004 03 26 | 699 | 1.3− | 0.3+ | 2006 10 03 | 704 | 0.7− | 0.6+ |
| 2002 09 07 | 704 | 0.9− | 0.6+ | 2004 03 26 | 699 | 0.2+ | 0.7− | 2006 10 03 | 704 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.9− | 0.4+ | 2004 03 29 | 691 | 0.4+ | 0.4+ | 2006 10 03 | H06 | 0.3+ | 0.2+ |
| 2002 09 07 | 704 | 0.7− | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.6+ | 2006 10 03 | H06 | 0.1− | 0.2− |
| 2002 09 07 | 704 | 0.8− | 0.7+ | 2004 03 29 | 691 | 0.0 | 0.6+ | 2006 10 03 | H06 | 0.4+ | 0.2− |
| 2002 09 17 | 608 | 0.7− | 0.4+ | 2006 08 19 | 699 | 0.9− | 1.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 2002 09 17 | 608 | 0.5− | 0.3+ | 2006 08 19 | 699 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2002 09 17 | 608 | 0.4− | 0.2+ | 2006 08 19 | 699 | 0.8+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 106 | 0.4+ | 0.0 | 2006 08 19 | 699 | 0.6− | 1.1+ | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 10 01 | 106 | 0.5+ | 0.2− | 2006 08 21 | 704 | 1.2− | 0.6− | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2002 10 01 | 106 | 0.3+ | 0.6+ | 2006 08 21 | 704 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2002 10 03 | 644 | 0.1− | 0.7+ | 2006 08 21 | 704 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2002 10 03 | 644 | 0.4− | 0.7+ | 2006 08 21 | 704 | 0.0 | 1.4+ | 2006 10 19 | 704 | 0.3− | 1.3− |
| 2002 10 03 | 644 | 0.3− | 0.8+ | 2006 08 25 | 704 | 0.6− | 0.5+ | 2006 10 19 | 704 | 0.3− | 0.4+ |
| 2002 10 04 | 704 | 0.2+ | 0.3+ | 2006 08 25 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 704 | 0.5− | 0.3+ |
| 2002 10 04 | 704 | 0.4+ | 0.6+ | 2006 08 25 | 704 | 1.4+ | 0.6+ | 2006 10 19 | 704 | 0.4− | 0.1+ |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 10 19 | 704 | 0.5− | 0.1− |
| 2002 10 04 | 704 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.3− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 703 | (1.0+ | 3.6+) | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 10 09 | 704 | 0.5− | 0.1+ | 2006 08 30 | 699 | 0.5− | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2002 10 09 | 704 | 0.1− | 1.0+ | 2006 08 30 | 699 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2006 08 30 | 699 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2002 10 09 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.0 | 0.0 | 2006 10 26 | 704 | 0.5− | 0.1− |
| 2002 10 12 | 704 | 0.4− | 0.1+ | 2006 08 31 | 704 | 0.5− | 0.1+ | 2006 10 26 | 704 | 0.3− | 0.4+ |
| 2002 10 12 | 704 | 0.5− | 0.4+ | 2006 08 31 | 704 | 1.0− | 0.1− | 2006 10 26 | 704 | 0.3− | 0.1− |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2006 08 31 | 704 | 0.8− | 0.4+ | 2006 10 29 | 704 | 0.4+ | 0.8+ |
| 2002 10 12 | 704 | 0.6− | 0.3+ | 2006 08 31 | 704 | 1.3− | 0.2+ | 2006 10 29 | 704 | 0.2+ | 0.4− |
| 2002 10 12 | 704 | 0.3− | 0.6+ | 2006 08 31 | 704 | 0.7− | 0.4− | 2006 10 29 | 704 | 0.1+ | 0.2+ |
| 2002 10 30 | 608 | (1.5− | 2.6+) | 2006 09 15 | 683 | 0.9− | 0.7− | 2006 10 29 | 704 | 0.0 | 0.1+ |
| 2002 10 30 | 608 | (1.4− | 2.6+) | 2006 09 15 | 683 | 0.2+ | 1.1− | 2006 10 29 | 704 | 0.7− | 0.5+ |
| 2002 10 30 | 608 | (1.1− | 2.4+) | 2006 09 15 | 683 | 0.3− | 0.2+ | 2006 11 16 | 704 | 1.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.5+ | 0.2− |
| 2002 10 31 | 644 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.0 | 0.5− |
| 2002 10 31 | 644 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2002 11 03 | 704 | 0.2− | 0.7+ | 2006 09 16 | 683 | 1.0− | 1.0− | 2006 11 16 | 704 | 0.8− | 0.3+ |
| 2002 11 03 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 683 | (1.6− | 2.1−) | | | | |

**(137021)∗ 1998 TV$_2$ = 2002 TJ$_{77}$**

Discovered 1998 Oct. 13 by the OCA-DLR Asteroid Survey at Caussols.
Id. G. V. Williams (*MPO* 37119)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.55848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24234376 | $\omega$ | 215.59509 | | +0.08902267 | −0.99364025 | |
| $a$ | 2.5478948 | $\Omega$ | 229.40255 | | +0.93357595 | +0.10736731 | |
| $e$ | 0.1405634 | $i$ | 5.21000 | | +0.34714682 | −0.03393099 | |
| $P$ | 4.07 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 22 | 691 | 0.0 | 0.0 | 2002 10 12 | 704 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.2+ |
| 1990 11 22 | 691 | 0.1− | 0.4+ | 2002 10 30 | 644 | 0.6− | 0.2− | 2006 09 18 | 699 | 0.1− | 0.1− |
| 1990 11 22 | 691 | 0.0 | 0.1+ | 2002 10 30 | 644 | 0.5− | 0.4− | 2006 09 21 | 683 | 0.7+ | 0.4+ |
| 1994 11 30 | 691 | 0.1− | 0.7− | 2002 10 30 | 644 | 0.6− | 0.0 | 2006 09 21 | 683 | (0.9+ | 1.6−) |
| 1994 11 30 | 691 | 0.2− | 0.0 | 2002 11 05 | 699 | 1.1− | 1.2+ | 2006 09 21 | 683 | (4.8+ | 1.9−) |
| 1994 11 30 | 691 | 0.1+ | 0.6− | 2002 11 05 | 699 | 0.6− | 0.5− | 2006 09 23 | 104 | 0.2+ | 0.5+ |
| 1998 10 13 | 910 | 1.1+ | 0.2− | 2002 11 05 | 699 | 0.5− | 1.5+ | 2006 09 23 | 104 | 0.6+ | 0.2+ |
| 1998 10 13 | 910 | 0.5+ | 0.2− | 2002 11 05 | 699 | 0.5− | 0.6+ | 2006 09 23 | 104 | 0.5+ | 0.3+ |
| 1998 10 13 | 910 | 0.5+ | 0.2− | 2002 11 06 | 704 | 1.1− | 0.3− | 2006 09 24 | 104 | 0.2+ | 0.6+ |
| 1998 10 15 | 910 | 1.2+ | 0.9− | 2002 11 06 | 704 | 0.5− | 1.3− | 2006 09 24 | 104 | 1.3+ | 0.0 |
| 1998 10 15 | 910 | 1.0+ | 0.9− | 2002 11 06 | 704 | 0.3− | 0.2+ | 2006 09 24 | 104 | 0.4+ | 0.5− |
| 1998 10 15 | 910 | 1.3+ | 1.1− | 2002 11 06 | 704 | 0.2− | 0.4+ | 2006 09 27 | 683 | 0.5− | 0.1− |
| 1998 10 15 | 691 | 0.5+ | 0.0 | 2002 11 06 | 704 | 1.3− | 0.8+ | 2006 09 27 | 683 | 0.2− | 0.8+ |
| 1998 10 15 | 691 | 0.4+ | 0.4− | 2002 11 08 | 704 | 0.7− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1998 10 15 | 691 | 0.3+ | 0.4− | 2002 11 08 | 704 | 0.4+ | 0.9+ | 2006 09 27 | 691 | 0.3+ | 0.0 |
| 1998 10 20 | 910 | 0.3+ | 0.8+ | 2002 11 08 | 704 | 0.6− | 1.4+ | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 1998 10 20 | 910 | 0.1+ | 0.9+ | 2002 11 22 | 644 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.7+ |
| 1998 10 20 | 910 | 0.4+ | 0.8+ | 2002 11 22 | 644 | 1.0− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.2+ |
| 1998 10 21 | 910 | 0.8− | 0.4+ | 2002 11 22 | 644 | 0.6− | 0.3+ | 2006 09 29 | 704 | 0.3+ | 0.3+ |
| 1998 10 21 | 910 | 0.9− | 0.4+ | 2004 02 16 | 703 | 0.7− | 0.2− | 2006 09 29 | 704 | 0.3− | 0.6+ |
| 1998 10 21 | 910 | 0.7− | 0.5+ | 2004 02 16 | 703 | 1.0+ | 0.9+ | 2006 09 30 | 703 | 0.8+ | 0.5− |
| 1998 11 11 | 704 | 0.0 | 0.2− | 2004 02 16 | 703 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.4+ |
| 1998 11 11 | 704 | 1.2+ | 1.9− | 2004 02 16 | 703 | 0.8− | 1.3+ | 2006 09 30 | 703 | 0.3+ | 0.6− |
| 1998 11 11 | 704 | 0.7+ | 0.5− | 2004 03 16 | 703 | 0.9+ | 0.5+ | 2006 09 30 | 703 | 0.1− | 1.3− |
| 1998 11 11 | 704 | (3.3− | 2.1−) | 2004 03 16 | 703 | 1.2− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2002 10 01 | 699 | 0.9− | 0.2− | 2004 03 16 | 703 | 0.9+ | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2002 10 01 | 699 | 0.0 | 0.3− | 2004 03 16 | 703 | (1.8+ | 0.2+) | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 10 01 | 699 | 0.0 | 1.0+ | 2004 03 16 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2002 10 01 | 699 | 0.9− | 0.3+ | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.3− | 0.4− | 2004 03 16 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.6− | 2004 03 19 | 704 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | 0.3+ | 0.4− | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2002 10 04 | 704 | 0.2− | 1.0− | 2004 03 19 | 704 | 1.2+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.0 | 2004 03 27 | 703 | (1.8+ | 0.2+) | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 0.6+ | 2004 03 27 | 703 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 0.1− | 0.2+ | 2004 03 27 | 703 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.1+ | 1.0+ | 2004 03 27 | 703 | (1.8− | 0.4−) | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | 0.3− | 0.5+ | 2004 03 28 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.8− |
| 2002 10 09 | 704 | 0.0 | 1.3+ | 2004 03 28 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.6− | 1.8+ |
| 2002 10 12 | 704 | 0.2+ | 0.2− | 2004 03 28 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 2002 10 12 | 704 | 0.7− | 0.3+ | 2006 09 18 | 699 | 0.7− | 0.0 | 2006 11 11 | 703 | 1.3− | 0.6− |
| 2002 10 12 | 704 | 0.4− | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.2− | | | | |

**(137022)∗ 1998 TF$_3$ = 2001 WE$_{23}$**

Discovered 1998 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. A. Doppler (*MPO* 29020)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.06625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37031329 | $\omega$ | 41.49616 | | +0.55780261 | −0.82401840 | |
| $a$ | 1.9205392 | $\Omega$ | 15.47135 | | +0.62906815 | +0.34174190 | |
| $e$ | 0.0295195 | $i$ | 21.84210 | | +0.54141436 | +0.45189174 | |
| $P$ | 2.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 704 | 0.3− | 0.1+ | 2005 03 14 | 703 | (0.8+ | 1.7+) | 2006 09 30 | 703 | 0.0 | 0.2− |
| 1998 10 14 | 704 | 0.1− | 0.8− | 2005 04 01 | 703 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 1998 10 14 | 704 | (2.2− | 1.7+) | 2005 04 01 | 703 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.0 |
| 1998 10 14 | 704 | 0.8+ | 1.2+ | 2005 04 01 | 703 | 1.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.0 |
| 1998 10 15 | 704 | 0.8− | 0.2+ | 2005 04 01 | 703 | 0.0 | 0.6+ | 2006 10 02 | 703 | 0.1+ | 0.5+ |
| 1998 10 15 | 704 | 0.4+ | 0.1− | 2005 04 13 | 704 | (0.4+ | 1.7+) | 2006 10 02 | 703 | 0.1− | 0.0 |
| 1998 10 15 | 704 | (1.3+ | 2.1−) | 2005 04 13 | 704 | (1.6+ | 1.7+) | 2006 10 02 | 703 | 0.5− | 0.1+ |
| 1998 10 17 | 699 | 0.1− | 0.6− | 2005 04 13 | 704 | (1.6+ | 1.4+) | 2006 10 16 | 703 | 0.8− | 0.0 |
| 1998 10 17 | 699 | 0.9+ | 0.3− | 2005 04 13 | 704 | 1.3+ | 1.5+ | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 1998 10 17 | 699 | 0.8+ | 1.0− | 2005 04 17 | 703 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2000 03 30 | 704 | 1.2+ | 0.0 | 2005 04 17 | 703 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2000 03 30 | 704 | 1.6+ | 1.8+ | 2005 04 17 | 703 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2000 03 30 | 704 | 1.0+ | 2.0+ | 2005 04 17 | 703 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2000 05 10 | 704 | (3.6+ | 1.5−) | 2005 05 02 | 703 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2000 05 10 | 704 | 1.0+ | 0.3+ | 2005 05 02 | 703 | 1.2− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2000 05 10 | 704 | 0.7− | 0.2− | 2005 05 02 | 703 | 1.1− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2000 05 10 | 704 | 0.5− | 0.1+ | 2005 05 02 | 703 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2001 09 28 | 704 | 0.5− | 0.5− | 2005 05 10 | 703 | 0.2+ | 0.8− | 2006 10 23 | 704 | 0.5+ | 1.1+ |
| 2001 09 28 | 704 | 0.6+ | 0.1− | 2005 05 10 | 703 | 0.4− | 1.2− | 2006 10 23 | 704 | 0.2− | 0.8+ |
| 2001 09 28 | 704 | 0.8+ | 0.5− | 2005 05 10 | 703 | (2.0− | 0.3−) | 2006 10 23 | 704 | (1.7− | 0.9−) |
| 2001 09 28 | 704 | 0.0 | 0.1+ | 2005 05 10 | 703 | 0.7− | 0.0 | 2006 10 23 | 704 | (2.3− | 0.3+) |
| 2001 11 27 | 704 | 0.4− | 0.5− | 2005 05 11 | 704 | 1.0+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 11 27 | 704 | 0.1− | 0.2− | 2005 05 11 | 704 | 0.8+ | 1.4+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2001 11 27 | 704 | 0.4− | 0.0 | 2005 05 11 | 704 | 0.5+ | 1.4+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 11 27 | 704 | 0.4− | 0.3− | 2005 05 11 | 704 | 1.2+ | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2001 12 03 | 704 | (2.1+ | 2.1−) | 2005 05 20 | 644 | 0.6+ | 0.1− | 2006 10 28 | 704 | 1.1+ | 0.1+ |
| 2001 12 03 | 704 | (2.1+ | 1.7−) | 2005 05 20 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 1.1+ | 0.6+ |
| 2001 12 03 | 704 | (2.2+ | 1.7−) | 2005 05 20 | 644 | 0.4+ | 0.1− | 2006 10 28 | 704 | 0.2+ | 0.5+ |
| 2001 12 04 | 704 | 0.2+ | 0.1− | 2006 08 05 | E12 | 0.3+ | 0.0 | 2006 10 28 | 704 | 0.1+ | 0.3+ |
| 2001 12 04 | 704 | 0.3+ | 0.4− | 2006 08 05 | E12 | 0.5− | 0.5− | 2006 10 28 | 704 | 0.4− | 0.4+ |
| 2001 12 04 | 704 | 0.1− | 0.1− | 2006 08 05 | E12 | 0.3− | 0.6− | 2006 11 11 | 703 | 0.7− | 0.8− |
| 2001 12 04 | 704 | 0.5− | 0.7+ | 2006 08 05 | E12 | 0.7− | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2001 12 04 | 704 | 0.4+ | 0.4− | 2006 09 12 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2004 12 10 | 704 | 0.4+ | 0.2+ | 2006 09 12 | 704 | 0.5+ | 0.0 | 2006 11 11 | 703 | 1.5− | 0.1− |
| 2004 12 10 | 704 | 0.9+ | 1.2+ | 2006 09 12 | 704 | (2.1− | 0.7+) | 2006 11 14 | 644 | 0.2− | 0.2+ |
| 2004 12 10 | 704 | (1.1+ | 2.2+) | 2006 09 12 | 704 | (0.7− | 2.1+) | 2006 11 14 | 644 | 0.2− | 0.2+ |
| 2005 01 16 | 699 | 0.6+ | 0.0 | 2006 09 12 | 704 | 0.5− | 1.4+ | 2006 11 14 | 644 | 0.1− | 0.2+ |
| 2005 01 16 | 699 | 0.8+ | 0.2− | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.4− | 0.5+ |
| 2005 01 16 | 699 | 0.3+ | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.2− | 2006 11 15 | 704 | (2.2+ | 1.6+) |
| 2005 01 16 | 699 | (1.8+ | 0.6+) | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.9+ | 1.3+ |
| 2005 02 28 | 703 | 0.4− | 0.1− | 2006 09 17 | 699 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.3− | 1.3+ |
| 2005 02 28 | 703 | 0.8− | 0.8− | 2006 09 17 | 699 | 0.3+ | 0.0 | 2006 11 15 | 704 | 0.7− | 1.1+ |
| 2005 02 28 | 703 | 0.7− | 0.4− | 2006 09 17 | 699 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.3− |
| 2005 02 28 | 703 | 1.1− | 0.5− | 2006 09 17 | 699 | 0.3+ | 0.0 | 2006 11 21 | 704 | 1.1− | 0.2+ |
| 2005 02 28 | 703 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 11 21 | 704 | 1.0− | 0.9+ |
| 2005 02 28 | 703 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.8− | 0.5+ |
| 2005 02 28 | 703 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2005 02 28 | 703 | 0.8− | 1.1− | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 11 22 | 704 | 1.1+ | 0.5+ |
| 2005 03 08 | 703 | 0.4+ | 0.3+ | 2006 09 24 | 608 | (0.4− | 1.9−) | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2005 03 08 | 703 | 0.4+ | 0.2+ | 2006 09 24 | 608 | (0.1+ | 1.8−) | 2006 11 22 | 704 | 0.8+ | 1.0+ |
| 2005 03 08 | 703 | 0.1+ | 0.0 | 2006 09 24 | 608 | (0.2+ | 1.7−) | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2005 03 08 | 703 | 0.9+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.3+ |
| 2005 03 14 | 703 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.3− | 2006 11 27 | 704 | 0.1− | 0.4+ |
| 2005 03 14 | 703 | 0.7+ | 0.1− | 2006 09 26 | 703 | 0.4− | 0.0 | 2006 11 27 | 704 | 0.1+ | 0.2− |
| 2005 03 14 | 703 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.7− | | | | |

**(137023)∗ 1998 TB$_{15}$ = 2002 TO$_{217}$**

Discovered 1998 Oct. 14 by Spacewatch at Kitt Peak.
Id. G. V. Williams (*MPO* 37120)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.98821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24067367 | $\omega$ | 295.82023 | | +0.83293865 | | +0.55209500 |
| $a$ | 2.5596681 | $\Omega$ | 30.71011 | | −0.47779844 | | +0.75170411 |
| $e$ | 0.1627587 | $i$ | 4.20808 | | −0.27914487 | | +0.36073819 |
| $P$ | 4.10 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.0 | 0.2+ | 2002 10 09 | 704 | (0.2+ | 2.0−) | 2005 04 17 | 691 | 0.4+ | 0.2+ |
| 1996 01 15 | 691 | 0.1− | 0.1+ | 2002 10 09 | 704 | 0.6+ | 0.5− | 2006 09 12 | 703 | 0.9− | 0.3+ |
| 1996 01 15 | 691 | 0.3+ | 0.3+ | 2002 10 09 | 704 | (0.8− | 2.3−) | 2006 09 12 | 703 | (1.9+ | 0.1−) |
| 1998 09 22 | 910 | 0.5− | 0.1− | 2002 10 09 | 704 | 0.2+ | 0.5− | 2006 09 12 | 703 | 0.7− | 0.4− |
| 1998 09 22 | 910 | 0.0 | 0.1+ | 2002 10 09 | 291 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.4+ | 0.2+ |
| 1998 09 22 | 910 | 0.4− | 0.5+ | 2002 10 09 | 291 | 0.3− | 0.1+ | 2006 09 18 | 699 | 1.3− | 0.8− |
| 1998 10 14 | 691 | 0.3− | 0.8+ | 2002 10 09 | 291 | 0.5− | 0.1+ | 2006 09 18 | 699 | 1.1+ | 1.0− |
| 1998 10 14 | 691 | 0.6− | 0.1− | 2002 10 10 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.2+ |
| 1998 10 14 | 691 | 1.2− | 0.2+ | 2002 10 10 | 644 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.1+ |
| 1998 10 18 | 691 | 1.1+ | 0.1+ | 2002 10 10 | 644 | 0.2− | 0.6+ | 2006 09 20 | 704 | 1.1− | 0.6+ |
| 1998 10 18 | 691 | 0.7+ | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.4+ |
| 1998 10 23 | 327 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 1.1− | 0.1− |
| 1998 10 23 | 327 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.4+ |
| 1998 10 23 | 327 | 0.3+ | 0.4− | 2002 10 11 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.0 | 0.4− |
| 1998 10 29 | 691 | 0.5− | 0.0 | 2002 10 11 | 704 | 0.8+ | 0.8− | 2006 10 01 | 704 | 0.1− | 0.8+ |
| 1998 10 29 | 691 | 0.4− | 0.2− | 2002 10 31 | 699 | 1.0+ | 0.9+ | 2006 10 01 | 704 | 1.3+ | 0.8+ |
| 1998 10 29 | 691 | (3.6+ | 4.8−) | 2002 10 31 | 699 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 1.2+ | 0.4+ |
| 2002 09 29 | 291 | 0.1− | 0.2+ | 2002 10 31 | 699 | 0.0 | 1.3+ | 2006 10 22 | G96 | 0.4− | 0.5− |
| 2002 09 29 | 291 | 0.2+ | 0.1+ | 2002 10 31 | 699 | 1.5+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 09 29 | 291 | 0.1− | 0.3+ | 2002 12 07 | 291 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2002 12 07 | 291 | 0.5+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2002 12 07 | 291 | 0.6+ | 0.1− | 2006 11 14 | G96 | 0.4− | 0.2− |
| 2002 10 03 | 704 | 0.6− | 0.9+ | 2005 04 12 | 691 | 0.1+ | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2005 04 12 | 691 | 0.1− | 0.6+ | 2006 11 14 | G96 | 0.4+ | 0.7− |
| 2002 10 07 | 704 | 0.4− | 0.9− | 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.5− | 0.7− |
| 2002 10 07 | 704 | 0.2− | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.3+ | | | | |
| 2002 10 07 | 704 | 0.2− | 0.4+ | 2005 04 17 | 691 | 0.3+ | 0.4+ | | | | |

**(137024)∗ 1998 TH$_{15}$ = 1992 EV$_{30}$**

Discovered 1998 Oct. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 33303)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.68983 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25626526 | $\omega$ | 261.81514 | | −0.47551621 | | −0.87968509 |
| $a$ | 2.4547629 | $\Omega$ | 216.57991 | | +0.81115800 | | −0.43572317 |
| $e$ | 0.1379664 | $i$ | 0.59636 | | +0.34045123 | | −0.19052418 |
| $P$ | 3.85 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.7− | 0.9+ | 1998 11 17 | 691 | 0.1+ | 0.2− | 2002 11 24 | 644 | 0.1− | 0.3+ |
| 1992 03 03 | 809 | 0.6− | 0.6+ | 1998 11 18 | 691 | 0.1− | 0.8− | 2002 12 05 | 704 | 1.1+ | 0.6+ |
| 1998 10 14 | 691 | 0.7− | 0.1+ | 1998 11 18 | 691 | 0.2− | 0.2− | 2002 12 05 | 704 | (1.1+ | 1.9−) |
| 1998 10 14 | 691 | 0.5− | 0.2+ | 1998 11 18 | 691 | 0.1− | 0.4− | 2002 12 05 | 704 | 0.3+ | 1.2+ |
| 1998 10 14 | 691 | 0.3− | 0.0 | 1998 11 21 | 691 | 0.5+ | 0.3− | 2002 12 05 | 704 | 0.3+ | 0.7+ |
| 1998 10 15 | 691 | 0.5− | 0.4+ | 1998 11 21 | 691 | 0.4+ | 0.1− | 2004 04 28 | 691 | 0.2− | 0.2− |
| 1998 10 15 | 691 | 0.5− | 0.5+ | 1998 11 21 | 691 | 0.5+ | 0.6− | 2004 04 28 | 691 | 0.3− | 0.2− |
| 1998 10 15 | 691 | 0.6− | 0.4+ | 1998 11 26 | 691 | (4.9+ | 6.0−) | 2004 04 28 | 691 | 0.8+ | 1.4+ |
| 1998 10 18 | 691 | 0.5+ | 0.2+ | 1998 11 26 | 691 | 0.6− | 0.3+ | 2004 05 28 | 691 | 0.5− | 0.2+ |
| 1998 10 18 | 691 | 0.6+ | 0.4+ | 1998 11 26 | 691 | 0.4− | 0.5− | 2004 05 28 | 691 | 0.1− | 0.1− |
| 1998 10 28 | 691 | 0.3+ | 0.7+ | 1998 12 13 | 691 | 0.1− | 0.0 | 2004 05 28 | 691 | 0.3− | 0.5+ |
| 1998 10 28 | 691 | 0.3+ | 0.3+ | 1998 12 13 | 691 | 0.3+ | 0.4− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1998 10 28 | 691 | 0.1+ | 0.1+ | 1998 12 13 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2− | 0.1− |
| 1998 11 17 | 950 | 0.4− | 0.4+ | 2000 04 07 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 1998 11 17 | 950 | 0.3+ | 0.5+ | 2000 04 07 | 691 | 0.7+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 1998 11 17 | 950 | 0.0 | 0.4+ | 2000 04 07 | 691 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 1998 11 17 | 691 | 0.2+ | 0.0 | 2002 11 24 | 644 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.3− | 0.1+ |
| 1998 11 17 | 691 | 0.4+ | 0.2− | 2002 11 24 | 644 | 0.3+ | 0.6+ | | | | |

**(137025)∗ 1998 TT$_{15}$ = 2002 TM$_{276}$**

Discovered 1998 Oct. 15 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPO* 37120)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.58731 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24271584 | $\omega$ | 224.71554 | | −0.37867908 | | −0.92379573 |
| $a$ | 2.5452902 | $\Omega$ | 247.61189 | | +0.86536760 | | −0.33171319 |
| $e$ | 0.0322349 | $i$ | 3.50953 | | +0.32823935 | | −0.19122714 |
| $P$ | 4.06 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 15 | 910 | 0.1+ | 0.1+ | 2003 12 19 | 291 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 1998 10 15 | 910 | 0.0 | 0.4+ | 2004 01 24 | 704 | 1.1− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 1998 10 15 | 910 | 0.1+ | 0.2− | 2004 01 24 | 704 | (1.7− | 0.6−) | 2006 09 17 | 691 | 0.1− | 0.3+ |
| 1998 10 20 | 910 | 0.3+ | 0.2+ | 2004 01 24 | 704 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.0 | 0.4+ |
| 1998 10 20 | 910 | 0.2+ | 0.1+ | 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.1+ |
| 1998 10 20 | 910 | 0.2+ | 0.3− | 2004 01 29 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.5− |
| 1998 10 21 | 910 | 0.8+ | 0.4− | 2004 01 29 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.5− |
| 1998 10 21 | 910 | 0.7+ | 0.4− | 2004 01 29 | 704 | 0.9− | 0.9+ | 2006 09 18 | 699 | 1.4− | 0.3+ |
| 1998 10 21 | 910 | 1.1+ | 0.2− | 2004 02 13 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.7+ | 0.2+ |
| 2002 10 04 | 704 | 0.4− | 0.4− | 2004 02 13 | 644 | 0.6+ | 0.9+ | 2006 09 18 | 699 | 0.8+ | 0.1+ |
| 2002 10 04 | 704 | (0.3− | 1.7+) | 2004 02 13 | 644 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.4− | 0.3− |
| 2002 10 04 | 704 | 0.3− | 1.4− | 2004 02 15 | 608 | 0.2+ | 0.9− | 2006 09 19 | 703 | 0.7− | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2004 02 15 | 608 | 0.5+ | 0.5− | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2004 02 15 | 608 | 0.5+ | 0.7− | 2006 09 19 | 703 | 0.7− | 0.2− |
| 2002 10 09 | 704 | 0.5− | 0.2+ | 2004 02 18 | 704 | 0.4− | 0.1− | 2006 09 19 | 703 | 1.1+ | 1.3− |
| 2002 10 09 | 704 | 0.5− | 0.6+ | 2004 02 18 | 704 | 0.7− | 0.4− | 2006 09 22 | 224 | 0.2− | 0.2+ |
| 2002 10 09 | 704 | 0.9− | 0.1+ | 2004 02 18 | 704 | 0.6+ | 1.5+ | 2006 09 22 | 224 | 0.9− | 0.8+ |
| 2002 10 09 | 704 | (1.6− | 0.2−) | 2004 02 18 | 704 | 0.6− | 0.4− | 2006 09 22 | 224 | 0.6+ | 0.6+ |
| 2002 10 12 | 704 | 0.2+ | 0.1− | 2004 03 01 | 703 | (0.1− | 1.6+) | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2004 03 01 | 703 | 0.2− | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2002 10 12 | 704 | 0.9− | 0.5+ | 2004 03 01 | 703 | 1.2− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2002 10 15 | 704 | 0.5− | 0.9− | 2004 03 01 | 703 | 0.7− | 0.4+ | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2002 10 15 | 704 | 0.6− | 0.4+ | 2004 03 15 | 704 | 0.9− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.4+ |
| 2002 10 15 | 704 | 0.1− | 0.2− | 2004 03 15 | 704 | 1.2+ | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 10 31 | 699 | 0.7+ | 0.8+ | 2004 03 15 | 704 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2002 10 31 | 644 | 0.4− | 0.1− | 2004 03 15 | 704 | 1.0+ | 1.2− | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2002 10 31 | 699 | 0.2− | 1.2− | 2004 03 18 | 704 | 0.1− | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2002 10 31 | 644 | 0.5− | 0.0 | 2004 03 18 | 704 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2002 10 31 | 699 | 0.8− | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 10 31 | 644 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2002 10 31 | 699 | 0.6+ | 0.6− | 2004 03 18 | 704 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 22 | 644 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 11 22 | 644 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 11 22 | 644 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 12 06 | 291 | 0.2+ | 0.6− | 2004 03 20 | 704 | 0.6+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 291 | 0.2− | 0.4− | 2004 03 20 | 704 | 0.6− | 0.6− | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2002 12 06 | 291 | 0.2+ | 0.4− | 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2003 12 19 | 291 | 0.5− | 0.0 | 2004 03 21 | 691 | 0.3+ | 0.2+ | | | | |
| 2003 12 19 | 291 | 0.1+ | 0.1− | 2004 03 21 | 691 | 0.2+ | 0.0 | | | | |

**(137026)∗ 1998 TX$_{16}$ = 2002 RA$_{112}$**

Discovered 1998 Oct. 14 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPO* 34745)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.03997 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24507878 | $\omega$ | 288.00980 | | +0.24667218 | | +0.96908446 |
| $a$ | 2.5289034 | $\Omega$ | 356.25873 | | −0.85553259 | | +0.21519002 |
| $e$ | 0.1599555 | $i$ | 4.66449 | | −0.45521076 | | +0.12070035 |
| $P$ | 4.02 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 691 | 0.3− | 0.3− | 2002 09 12 | 461 | 0.7− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 |
| 1998 09 21 | 691 | 0.1+ | 0.3+ | 2002 09 12 | 461 | 0.8+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1998 09 21 | 691 | 0.1+ | 0.0 | 2002 09 12 | 461 | 0.7+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 691 | 0.2− | 0.2− | 2004 01 17 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 1998 09 24 | 691 | 0.9− | 0.4− | 2004 01 17 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.3+ | | |
| 1998 09 24 | 691 | 0.6− | 0.8− | 2004 01 17 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ | | |
| 1998 09 30 | 691 | 0.5+ | 0.2− | 2005 04 14 | 703 | 1.0− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.4+ | | |
| 1998 09 30 | 691 | 0.6+ | 0.4− | 2005 04 14 | 703 | (2.1− | 0.2−) | 2006 10 11 | 691 | 0.0 | 0.3+ | | |
| 1998 09 30 | 691 | 0.2+ | 0.7− | 2005 04 14 | 703 | 0.3+ | 0.9− | 2006 10 11 | 691 | 0.3+ | 0.1+ | | |
| 1998 10 14 | 910 | 0.9+ | 0.2+ | 2005 04 14 | 703 | 0.7+ | 0.6+ | 2006 10 15 | 691 | 0.5+ | 0.0 | | |
| 1998 10 15 | 910 | 0.8+ | 0.6+ | 2005 05 01 | 644 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.4− | | |
| 1998 10 15 | 910 | 0.8+ | 0.3+ | 2005 05 01 | 644 | 0.3+ | 0.4+ | 2006 10 15 | 691 | 0.7− | 0.6− | | |
| 1998 10 21 | 910 | 1.1+ | 0.1+ | 2005 05 01 | 644 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.5− | | |
| 1998 10 21 | 910 | 1.1+ | 0.4+ | 2005 05 10 | 699 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.6− | | |
| 1998 10 22 | 910 | 1.0+ | 0.1− | 2005 05 10 | 699 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.6− | 0.6− | | |
| 2002 09 07 | 461 | 1.1− | 0.1+ | 2005 05 10 | 699 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.6+ | | |
| 2002 09 07 | 461 | 0.5− | 0.0 | 2005 05 10 | 699 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 07 | 461 | 0.7− | 0.1− | 2005 05 19 | 644 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2002 09 08 | 461 | 0.7+ | 0.7+ | 2005 05 19 | 644 | 0.1+ | 0.6+ | 2006 10 27 | 691 | 0.3+ | 0.2− | | |
| 2002 09 08 | 461 | 0.0 | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.6− | 0.2+ | | |
| 2002 09 08 | 461 | 0.2+ | 0.6+ | 2006 07 22 | G96 | 0.8− | 0.2− | 2006 10 31 | 691 | 0.2− | 0.8+ | | |
| 2002 09 09 | 461 | 0.5− | 0.3+ | 2006 07 22 | G96 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.3+ | | |
| 2002 09 09 | 461 | 0.0 | 0.9+ | 2006 07 22 | G96 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2002 09 09 | 461 | 0.1+ | 0.6+ | 2006 07 22 | G96 | 0.4− | 0.4+ | 2006 11 17 | G96 | 0.4+ | 0.1+ | | |
| 2002 09 10 | 461 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2002 09 10 | 461 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.2− | | |
| 2002 09 10 | 461 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | | | | | | |

**(137027)∗ 1998 TH$_{17}$**

Discovered 1998 Oct. 15 by the OCA-DLR Asteroid Survey at Caussols.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.55163 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25973732 | $\omega$ | 337.79632 | | +0.03213639 | +0.99925161 | |
| $a$ | 2.4328378 | $\Omega$ | 294.03978 | | −0.91342826 | +0.02061895 | |
| $e$ | 0.1591006 | $i$ | 1.35076 | | −0.40572905 | +0.03272727 | |
| $P$ | 3.79 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.5+ | 1.8+ | 2004 02 12 | 691 | 0.1+ | 0.5+ | 2005 09 30 | G96 | 0.3− | 0.1+ | | |
| 1993 03 24 | 809 | 0.4+ | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2005 09 30 | G96 | 0.1+ | 0.0 | | |
| 1994 09 27 | 691 | 0.5− | 0.3− | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.3+ | | |
| 1994 09 27 | 691 | 0.5− | 0.3− | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.6− | 0.1+ | | |
| 1994 09 27 | 691 | 0.7− | 0.2+ | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 1998 10 01 | 691 | 0.7+ | 0.0 | 2005 07 12 | G96 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.3+ | | |
| 1998 10 01 | 691 | 0.3+ | 0.1− | 2005 07 12 | G96 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.3− | 0.2− | | |
| 1998 10 01 | 691 | 0.2+ | 0.3− | 2005 07 12 | G96 | 0.4− | 0.2− | 2006 11 24 | 691 | 0.2− | 0.3− | | |
| 1998 10 15 | 910 | 1.3+ | 0.6+ | 2005 07 12 | G96 | 0.1+ | 0.1− | 2006 11 26 | H07 | 1.2+ | 0.1+ | | |
| 1998 10 15 | 910 | 1.3+ | 0.5+ | 2005 07 16 | 691 | 0.2− | 0.1− | 2006 11 26 | H07 | 0.6+ | 0.1+ | | |
| 1998 10 15 | 910 | 1.8+ | 0.4+ | 2005 07 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | H07 | 1.2− | 0.7+ | | |
| 1998 10 21 | 910 | 1.1+ | 0.3+ | 2005 07 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | H07 | 0.1+ | 0.4+ | | |
| 1998 10 21 | 910 | 0.7+ | 1.0+ | 2005 07 30 | E12 | 0.3+ | 0.6− | 2006 11 28 | H07 | 1.3+ | 0.9− | | |
| 1998 10 22 | 910 | 0.7+ | 0.3+ | 2005 07 30 | E12 | 0.0 | 0.2− | 2006 11 28 | H07 | 1.1− | 0.8+ | | |
| 2000 02 11 | 691 | 0.0 | 0.3− | 2005 07 30 | E12 | 1.3+ | 0.3+ | 2006 11 30 | 691 | 0.1− | 0.4+ | | |
| 2000 02 11 | 691 | 0.2− | 0.7− | 2005 07 30 | E12 | 0.3− | 0.2+ | 2006 11 30 | 691 | 0.7− | 0.2+ | | |
| 2000 02 11 | 691 | 0.1− | 0.7− | 2005 09 30 | G96 | 0.2− | 0.1+ | 2006 11 30 | 691 | 0.0 | 0.1+ | | |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2005 09 30 | G96 | 0.4− | 0.3+ | | | | | | |

**(137028)∗ 1998 TO$_{17}$ = 2002 TR$_{22}$**

Discovered 1998 Oct. 15 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPO* 37120)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.20423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23703676 | $\omega$ | 274.21539 | | +0.18507623 | +0.98270327 | |
| $a$ | 2.5857840 | $\Omega$ | 6.46081 | | −0.87752949 | +0.16819711 | |
| $e$ | 0.1674879 | $i$ | 3.26516 | | −0.44236725 | +0.07748560 | |
| $P$ | 4.16 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 15 | 910 | 1.5+ | 0.9+ | 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | | |
| 1998 10 15 | 910 | (2.1+ | 1.1+) | 2005 03 10 | G96 | 0.4− | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.1− | | |
| 1998 10 15 | 910 | 1.8+ | 0.9+ | 2005 03 10 | G96 | 0.4− | 0.1+ | 2006 09 17 | 704 | (0.8− | 1.6−) | | |
| 1998 10 20 | 691 | 0.1+ | 0.2+ | 2005 03 13 | 703 | 0.7− | 0.4+ | 2006 09 17 | 704 | 0.3+ | 0.6− | | |
| 1998 10 20 | 691 | 0.4+ | 0.2+ | 2005 03 13 | 703 | 0.8− | 0.3+ | 2006 09 17 | 704 | 0.8− | 0.4− | | |
| 1998 10 20 | 691 | 0.2− | 0.3+ | 2005 03 13 | 703 | 0.6− | 0.7+ | 2006 09 18 | 699 | (1.9+ | 0.4+) | | |
| 1998 10 21 | 910 | (2.6+ | 0.4+) | 2005 03 13 | 703 | 1.1− | 0.6+ | 2006 09 18 | 699 | 0.7− | 0.4− | | |
| 1998 10 21 | 910 | (2.8+ | 0.5+) | 2005 03 17 | 691 | 0.1− | 0.3+ | 2006 09 18 | 699 | (1.7+ | 0.1−) | | |
| 1998 10 21 | 910 | (2.5+ | 0.4+) | 2005 03 17 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 1.0+ | 0.9+ | | |
| 2002 10 01 | 699 | 0.1+ | 0.4− | 2005 03 17 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.1− | | |
| 2002 10 01 | 699 | 0.3+ | 0.7+ | 2005 04 02 | 691 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.1+ | 0.2− | | |
| 2002 10 01 | 699 | 0.4+ | 1.0+ | 2005 04 02 | 691 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.5+ | 1.2+ | | |
| 2002 10 01 | 699 | (1.8− | 2.7+) | 2005 04 02 | 691 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.0 | | |
| 2002 10 02 | 704 | 1.4− | 0.5− | 2005 04 04 | 704 | (1.6+ | 1.4+) | 2006 09 20 | 704 | 0.0 | 1.0+ | | |
| 2002 10 02 | 704 | 0.4− | 1.5− | 2005 04 04 | 704 | 0.3+ | 1.0+ | 2006 09 20 | 644 | 0.1− | 0.4+ | | |
| 2002 10 02 | 704 | 0.8− | 0.5− | 2005 04 04 | 704 | 0.2+ | 0.6− | 2006 09 20 | 644 | 0.2− | 0.1− | | |
| 2002 10 02 | 608 | 0.2+ | 0.4− | 2005 04 04 | 704 | 1.0+ | 1.2+ | 2006 09 27 | 704 | 1.0− | 0.1+ | | |
| 2002 10 02 | 608 | 1.0− | 0.1− | 2005 04 05 | 699 | 1.1− | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.2+ | | |
| 2002 10 02 | 608 | 0.8− | 0.3− | 2005 04 05 | 699 | 0.8− | 0.9+ | 2006 09 27 | 704 | 0.4+ | 0.5+ | | |
| 2002 10 02 | 599 | 0.9− | 0.6+ | 2005 04 05 | 699 | 0.6+ | 0.6+ | 2006 09 27 | 704 | 0.0 | 1.1+ | | |
| 2002 10 02 | 599 | 0.3− | 0.3+ | 2005 04 05 | 699 | (0.7+ | 2.0+) | 2006 09 27 | 704 | 0.3+ | 0.1− | | |
| 2002 10 02 | 599 | 0.7+ | 0.1+ | 2005 04 06 | 608 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.1− | 0.4− | | |
| 2002 10 03 | 704 | 0.8− | 0.2− | 2005 04 06 | 608 | 0.3+ | 0.1− | 2006 09 28 | 704 | 0.5+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.8− | 2005 04 06 | 608 | 0.4− | 0.5− | 2006 09 28 | 704 | 0.3+ | 0.5− | | |
| 2002 10 03 | 704 | 0.4− | 0.2− | 2005 04 07 | 704 | 1.2+ | 1.4+ | 2006 09 28 | 704 | 0.8+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.6− | 0.2− | 2005 04 07 | 704 | 0.4+ | 0.0 | 2006 09 28 | 704 | 0.5+ | 0.1+ | | |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2005 04 07 | 704 | (1.2+ | 1.6+) | 2006 09 28 | 704 | 0.2− | 0.8+ | | |
| 2002 10 04 | 644 | 0.0 | 0.7+ | 2005 04 07 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | | |
| 2002 10 04 | 644 | 0.4− | 0.5+ | 2005 04 07 | 704 | 1.0+ | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.4− | | |
| 2002 10 07 | 644 | 0.3− | 0.6+ | 2005 04 12 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.0 | 0.7+ | | |
| 2002 10 07 | 644 | 0.4− | 0.7+ | 2005 04 12 | 704 | 1.3+ | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.6+ | | |
| 2002 10 07 | 704 | 0.3− | 0.4+ | 2005 04 12 | 704 | 0.9+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.1− | | |
| 2002 10 07 | 644 | 0.3− | 0.5+ | 2005 04 12 | 704 | 0.9+ | 1.1+ | 2006 10 09 | 644 | 0.3− | 0.3+ | | |
| 2002 10 07 | 704 | (0.0 | 1.5+) | 2005 04 12 | 704 | 0.9+ | 0.3+ | 2006 10 09 | 644 | 0.5− | 0.0 | | |
| 2002 10 07 | 704 | 1.2− | 0.0 | 2005 05 03 | 691 | 0.7+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.3+ | | |
| 2002 10 11 | 704 | 0.7− | 0.7+ | 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.4− | 0.4+ | | |
| 2002 10 11 | 704 | 0.3+ | 1.5+ | 2005 05 03 | 691 | 0.4+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.6+ | | |
| 2002 10 11 | 704 | 0.4− | 0.1− | 2006 08 22 | 644 | 0.6+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1− | | |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.6− | 0.3+ | | |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 08 22 | 644 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.5+ | | |
| 2002 10 28 | 291 | 0.3− | 0.4+ | 2006 08 25 | 704 | 0.4+ | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2002 10 28 | 291 | 0.4− | 0.1+ | 2006 08 25 | 704 | 0.7+ | 0.6− | 2006 10 21 | 644 | 0.5− | 0.2+ | | |
| 2002 10 28 | 291 | 0.4− | 0.1+ | 2006 08 25 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2003 12 27 | 704 | 0.4+ | 1.4+ | 2006 08 25 | 704 | (0.8+ | 1.9+) | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2003 12 27 | 704 | (0.2+ | 2.7+) | 2006 08 25 | 704 | 0.2− | 0.7+ | 2006 10 27 | G96 | 0.3− | 0.1+ | | |
| 2003 12 27 | 704 | (0.2+ | 2.1+) | 2006 09 12 | 703 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2003 12 27 | 704 | (0.2+ | 2.3+) | 2006 09 12 | 703 | 0.8− | 0.6− | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2005 03 03 | 691 | 0.2+ | 0.2− | 2006 09 12 | 703 | 1.5− | 1.4+ | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2005 03 03 | 691 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 1.3− | 1.4+ | 2006 11 21 | G96 | 0.1− | 0.0 | | |
| 2005 03 03 | 691 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.2− | | |
| 2005 03 10 | G96 | 0.5− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.6− | 0.3− | | |

**(137029)∗ 1998 TB$_{19}$ = 1998 UY$_{39}$**

Discovered 1998 Oct. 14 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. S. Nakano (d, MPC 33590)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.60796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24541998 | $\omega$ | 349.66980 | | +0.99945094 | +0.03149214 | |
| $a$ | 2.5265589 | $\Omega$ | 8.54568 | | −0.02323646 | +0.88777080 | |
| $e$ | 0.2789987 | $i$ | 3.97394 | | −0.02361938 | +0.45920721 | |
| $P$ | 4.02 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.1− | 0.4+ | 2002 10 07 | 704 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.7− | 1.4+ |
| 1994 10 28 | 691 | 0.1− | 0.4− | 2002 10 07 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.1+ | 1.5+ |
| 1994 10 28 | 691 | 0.2− | 0.1+ | 2002 10 07 | 704 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.9+ | 0.4+ |
| 1994 11 10 | 691 | 0.1+ | 0.3+ | 2002 10 07 | 704 | 0.2− | 0.5+ | 2006 09 20 | 704 | 1.0+ | 0.4+ |
| 1994 11 10 | 691 | 0.7+ | 0.1+ | 2002 10 07 | 704 | 0.0 | 0.1+ | 2006 09 22 | 012 | 0.0 | 0.2+ |
| 1998 09 14 | 691 | 0.4− | 0.2− | 2002 10 09 | 704 | 0.7+ | 0.3+ | 2006 09 22 | 012 | 0.3+ | 0.0 |
| 1998 09 14 | 691 | 0.5− | 0.3− | 2002 10 09 | 704 | 1.4+ | 0.3+ | 2006 09 22 | 012 | 0.0 | 0.2− |
| 1998 09 14 | 691 | 0.5− | 0.1− | 2002 10 09 | 704 | 0.9+ | 0.8+ | 2006 09 22 | 012 | 0.6+ | 0.2− |
| 1998 09 27 | 691 | 0.1+ | 0.5− | 2002 10 09 | 704 | 0.9+ | 1.2+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1998 09 27 | 691 | 0.1− | 0.2− | 2002 10 09 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1998 09 27 | 691 | 0.0 | 0.3− | 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 1998 10 11 | 699 | 1.0+ | 0.4− | 2002 10 11 | 704 | 0.6+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 1998 10 11 | 699 | 1.0+ | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 1998 10 11 | 699 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 1998 10 14 | 327 | 0.1+ | 0.3− | 2002 10 11 | 704 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 1998 10 14 | 327 | 0.9+ | 0.3− | 2002 10 30 | 644 | 0.2− | 0.6− | 2006 09 27 | 704 | 0.0 | 0.5− |
| 1998 10 14 | 327 | 0.5+ | 0.5− | 2002 10 30 | 644 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.6− | 0.5+ |
| 1998 10 15 | 327 | 0.4+ | 0.5− | 2002 10 30 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.0 |
| 1998 10 15 | 327 | 0.1+ | 0.0 | 2002 10 31 | 699 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.6− | 0.6+ |
| 1998 10 15 | 327 | 0.8+ | 0.1+ | 2002 10 31 | 644 | 0.4− | 0.1+ | 2006 09 29 | 704 | (1.8− | 0.4+) |
| 1998 10 28 | 704 | 0.2− | 0.5+ | 2002 10 31 | 699 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.3− |
| 1998 10 28 | 704 | (0.6− | 2.1−) | 2002 10 31 | 644 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 1998 10 28 | 704 | 1.0− | 0.0 | 2002 10 31 | 699 | 0.6− | 0.4+ | 2006 09 29 | 704 | 0.5− | 0.1− |
| 1998 10 28 | 704 | 1.6− | 1.8+ | 2002 10 31 | 644 | 0.5− | 0.2+ | 2006 09 29 | 704 | 0.6− | 0.7+ |
| 1998 10 29 | 704 | 0.2− | 1.0+ | 2002 10 31 | 699 | 0.7− | 0.1− | 2006 09 29 | 691 | 0.0 | 0.0 |
| 1998 10 29 | 704 | (3.5− | 0.6+) | 2002 11 04 | 608 | 0.1+ | 0.2− | 2006 09 29 | 691 | 0.2− | 0.2− |
| 1998 10 29 | 704 | 1.3− | 0.1− | 2002 11 04 | 608 | 0.1+ | 0.2− | 2006 09 29 | 691 | 0.1− | 0.2− |
| 1998 11 10 | 704 | 0.0 | 0.6+ | 2002 11 04 | 608 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 1998 11 10 | 704 | (3.1+ | 0.2−) | 2002 11 05 | 699 | 0.6− | 0.0 | 2006 10 03 | 691 | 0.0 | 0.1+ |
| 1998 11 10 | 704 | 1.4+ | 0.5− | 2002 11 05 | 699 | (1.7− | 0.1+) | 2006 10 03 | 691 | 0.0 | 0.1+ |
| 1998 11 10 | 704 | 1.1− | 0.8− | 2002 11 05 | 699 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.9− |
| 1998 11 14 | 327 | 0.4+ | 0.3− | 2002 11 05 | 699 | 0.8− | 0.3− | 2006 10 17 | 703 | 0.6− | 0.4− |
| 1998 11 14 | 327 | 0.4+ | 0.1− | 2002 11 08 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2− | 0.8− |
| 1998 11 14 | 327 | 0.0 | 0.5− | 2002 11 08 | 704 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2002 09 05 | 704 | 0.3+ | 1.4+ | 2002 11 08 | 704 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2002 09 05 | 704 | 0.6+ | 1.4+ | 2002 11 22 | 644 | 0.9− | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2002 09 05 | 704 | 0.5− | 0.5+ | 2002 11 22 | 644 | 0.6− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2002 09 05 | 704 | (0.7+ | 1.6+) | 2002 11 22 | 644 | 0.7− | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 2002 09 06 | 049 | 1.0− | 0.0 | 2006 08 19 | 699 | (0.3− | 1.6+) | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 09 06 | 049 | 1.2− | 0.6− | 2006 08 19 | 699 | (0.9+ | 1.5+) | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 09 06 | 049 | 1.1− | 0.4− | 2006 08 19 | 699 | (2.3+ | 0.5+) | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 09 17 | 049 | 0.3− | 0.3− | 2006 08 19 | 699 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 17 | 049 | 0.5− | 0.2− | 2006 09 06 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 17 | 049 | 0.3− | 0.2− | 2006 09 06 | 644 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 09 29 | 608 | 1.0+ | 0.7+ | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2002 09 29 | 608 | 0.9+ | 0.8+ | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2002 09 29 | 608 | 1.0+ | 1.0+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.2− | 0.3− |
| 2002 10 02 | 704 | 0.1− | 0.6− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2002 10 02 | 704 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.2+ | 1.0− | 2006 11 06 | 644 | 0.1− | 0.4− |
| 2002 10 02 | 704 | 0.0 | 0.7− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 1.1+ | 0.0 | 2006 11 06 | 644 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.7+ | 2006 11 06 | 644 | 0.1+ | 0.3− |

**(137030)∗ 1998 TR$_{19}$**

Discovered 1998 Oct. 15 by BAO Schmidt CCD Asteroid Program at Xinglong.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.96752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36875832 | $\omega$ | 98.95610 | | −0.51959664 | −0.84218522 | |
| $a$ | 1.9259344 | $\Omega$ | 24.10384 | | +0.57721728 | −0.47028558 | |
| $e$ | 0.0818423 | $i$ | 20.65044 | | +0.62995202 | −0.26373381 | |
| $P$ | 2.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 809 | 1.0− | 0.8+ | 2005 03 23 | 608 | 0.7+ | 0.7− | 2006 09 20 | 699 | 0.5− | 0.1+ |
| 1998 09 21 | 809 | 1.3− | 0.4+ | 2005 03 23 | 608 | 1.0+ | 0.7− | 2006 09 20 | 699 | (2.1− | 0.1−) |
| 1998 09 21 | 809 | 1.0− | 0.2+ | 2005 03 23 | 608 | 0.7+ | 0.5− | 2006 09 22 | 704 | 0.3− | 0.6+ |
| 1998 10 11 | 699 | 0.2+ | 0.1+ | 2005 04 01 | 699 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.1− | 0.5+ |
| 1998 10 11 | 699 | 1.3− | 0.3− | 2005 04 01 | 699 | 0.4− | 0.4+ | 2006 09 22 | 704 | 0.5− | 0.6+ |
| 1998 10 11 | 699 | 0.1+ | 0.3− | 2005 04 01 | 699 | 0.3+ | 0.1− | 2006 09 22 | 704 | 0.6− | 0.0 |
| 1998 10 13 | 691 | 0.0 | 0.2− | 2005 04 01 | 699 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.3+ |
| 1998 10 13 | 691 | 0.3− | 0.5− | 2005 04 02 | 699 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 1998 10 13 | 691 | 0.0 | 0.4− | 2005 04 02 | 699 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 1.0+ |
| 1998 10 15 | 327 | 1.3+ | 0.3+ | 2005 04 02 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.8+ | 0.0 |
| 1998 10 15 | 327 | 0.5+ | 0.2+ | 2005 04 02 | 699 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.5+ |
| 1998 10 15 | 327 | 0.6+ | 0.2+ | 2005 04 02 | 644 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.3+ |
| 1998 10 17 | 327 | 0.1− | 0.3+ | 2005 04 02 | 644 | 0.5+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 1998 10 17 | 327 | 0.0 | 0.3+ | 2005 04 02 | 644 | 0.5+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 1998 10 17 | 327 | 0.5+ | 0.4+ | 2005 04 03 | H06 | 0.6+ | 0.7+ | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 1998 10 17 | 327 | 0.0 | 0.4+ | 2005 04 03 | H06 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 1.0+ | 1.1+ |
| 1998 10 17 | 327 | 0.0 | 0.4+ | 2005 04 03 | H06 | 0.6+ | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.3− |
| 1998 10 17 | 327 | 0.3− | 0.0 | 2005 04 07 | 704 | 0.6+ | 0.2+ | 2006 09 28 | 704 | 0.9+ | 0.0 |
| 1998 10 18 | 327 | 0.2− | 0.5+ | 2005 04 07 | 704 | 0.7+ | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.1− |
| 1998 10 18 | 327 | 0.1+ | 0.7+ | 2005 04 07 | 704 | 0.8+ | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.1− |
| 1998 10 18 | 327 | 0.2+ | 0.3+ | 2005 04 07 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 1998 10 20 | 327 | 0.4− | 0.4+ | 2005 04 07 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.4− | 0.3+ |
| 1998 10 20 | 327 | 0.5− | 0.0 | 2005 04 09 | 704 | (1.7+ | 0.6+) | 2006 10 11 | 691 | 0.3− | 0.2+ |
| 1998 10 20 | 327 | 0.4− | 0.4+ | 2005 04 09 | 704 | (1.7+ | 0.1+) | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 1998 10 28 | 704 | 0.0 | 0.4− | 2005 04 09 | 704 | 0.9+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 1998 10 28 | 704 | (0.4− | 2.1−) | 2005 04 09 | 704 | (1.6+ | 0.3+) | 2006 10 15 | 691 | 0.1− | 0.3+ |
| 1998 10 28 | 704 | 0.3+ | 0.9− | 2005 04 09 | 704 | 1.3+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.2+ |
| 1998 10 28 | 704 | 0.3+ | 0.9− | 2005 04 09 | 608 | 0.2+ | 0.9+ | 2006 10 16 | 683 | 0.6− | 0.4+ |
| 1998 10 29 | 704 | 1.6+ | 1.0− | 2005 04 09 | 608 | 0.1+ | 0.7+ | 2006 10 16 | 683 | 1.0− | 0.4+ |
| 1998 10 29 | 704 | 1.5+ | 0.1− | 2005 04 09 | 608 | 0.0 | 0.7+ | 2006 10 17 | 683 | 0.1+ | 0.2+ |
| 1998 10 29 | 704 | 1.5+ | 0.4− | 2005 04 11 | 699 | 0.1+ | 0.2− | 2006 10 17 | 683 | 0.1+ | 0.5+ |
| 1998 10 29 | 704 | (1.7+ | 2.4−) | 2005 04 11 | 699 | 0.0 | 0.2+ | 2006 10 17 | 683 | 0.2+ | 0.2− |
| 1998 10 29 | 704 | 1.5+ | 0.6− | 2005 04 11 | 699 | 0.0 | 0.8+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 1998 11 26 | 699 | 0.4+ | 1.1− | 2005 04 11 | 699 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 1998 11 26 | 699 | 0.2+ | 0.3+ | 2005 04 11 | 699 | 0.2+ | 0.7+ | 2006 10 17 | 703 | (1.8− | 1.3−) |
| 1998 11 26 | 699 | 0.7+ | 1.6− | 2005 04 11 | 699 | 0.3− | 0.4+ | 2006 10 17 | 703 | (1.4+ | 2.2−) |
| 2001 09 28 | 704 | 0.0 | 0.5+ | 2005 04 11 | 699 | 0.6+ | 0.2+ | 2006 10 18 | 704 | 1.3+ | 0.6+ |
| 2001 09 28 | 704 | 0.0 | 0.4− | 2005 04 12 | 704 | (0.4+ | 1.7+) | 2006 10 18 | 704 | 0.9+ | 0.4+ |
| 2001 09 28 | 704 | 0.2− | 0.4− | 2005 04 12 | 704 | (0.9+ | 2.3+) | 2006 10 18 | 704 | (1.6+ | 0.0 ) |
| 2001 10 19 | 699 | 0.6+ | 0.6+ | 2005 04 12 | 704 | (0.5+ | 1.7+) | 2006 10 19 | 683 | 0.3− | 0.6− |
| 2001 10 19 | 699 | 0.5+ | 0.7+ | 2005 04 12 | 704 | 0.2+ | 1.3+ | 2006 10 19 | 683 | 0.1+ | 0.7− |
| 2001 10 19 | 699 | 1.0+ | 0.5− | 2005 04 12 | 704 | (0.5+ | 1.5+) | 2006 10 19 | 683 | 1.4− | 0.5+ |
| 2001 10 19 | 699 | 0.3− | 0.5+ | 2005 04 15 | 699 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2002 01 13 | 699 | 0.3− | 0.1− | 2005 04 15 | 699 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 01 13 | 699 | 0.1+ | 0.1+ | 2005 04 15 | 699 | 0.6+ | 0.9+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 01 13 | 699 | 0.0 | 0.4− | 2005 04 18 | 703 | 0.1− | 0.3+ | 2006 10 20 | 683 | 0.2− | 0.3− |
| 2002 01 13 | 699 | 0.2+ | 0.1+ | 2005 04 18 | 703 | 0.3− | 0.3+ | 2006 10 20 | 683 | 0.5+ | 0.2− |
| 2002 01 26 | 704 | 0.1+ | 0.5− | 2005 04 18 | 703 | 0.2− | 0.3+ | 2006 10 20 | 683 | 0.7− | 0.3− |
| 2002 01 26 | 704 | 0.2− | 0.2− | 2005 04 18 | 704 | 1.0+ | 0.3− | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2002 01 26 | 704 | 0.6− | 0.4− | 2005 04 18 | 703 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 01 26 | 704 | 0.2− | 0.8− | 2005 04 18 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2002 02 01 | 704 | 0.4+ | 0.2− | 2005 04 18 | 704 | 1.4+ | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2002 02 01 | 704 | 0.2+ | 0.6+ | 2005 04 18 | 704 | 1.2+ | 0.8+ | 2006 10 20 | 644 | 0.6− | 0.1+ |
| 2002 02 01 | 704 | 0.4+ | 0.6+ | 2005 04 18 | 704 | 1.1+ | 0.6+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2002 02 01 | 704 | 0.7+ | 0.6+ | 2005 04 30 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2002 02 01 | 704 | 0.6+ | 0.3+ | 2005 04 30 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2002 02 06 | 704 | 0.2− | 0.0 | 2005 04 30 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2002 02 06 | 704 | 0.2− | 0.1− | 2005 05 06 | 703 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.4− |
| 2002 02 06 | 704 | 0.2− | 0.1− | 2005 05 06 | 703 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 704 | 0.1− | 0.4− | 2005 05 06 | 703 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 02 06 | 704 | 0.3− | 0.2− | 2005 05 06 | 703 | 0.8− | 0.7− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2002 02 09 | 699 | 0.4+ | 0.1− | 2005 05 14 | 703 | 0.2+ | 0.4+ | 2006 10 24 | 704 | 0.4− | 0.2+ |
| 2002 02 09 | 699 | 0.2+ | 0.0 | 2005 05 14 | 703 | 0.0 | 0.0 | 2006 10 24 | 704 | 0.1− | 0.6+ |
| 2002 02 09 | 699 | 0.0 | 0.2− | 2005 05 14 | 703 | 0.2− | 1.2+ | 2006 10 24 | 704 | 0.2− | 0.8+ |
| 2002 02 09 | 699 | 0.4− | 0.3+ | 2005 05 14 | 703 | 0.3− | 1.0+ | 2006 10 29 | 704 | 0.1− | 0.0 |
| 2002 02 22 | 704 | (1.8+ | 0.1−) | 2006 08 23 | 704 | 0.1+ | 1.0+ | 2006 10 29 | 704 | 0.1− | 0.5+ |
| 2002 02 22 | 704 | 0.5+ | 0.0 | 2006 08 23 | 704 | 0.6− | 0.4+ | 2006 10 29 | 704 | 0.2+ | 0.4− |
| 2002 02 22 | 704 | 1.0+ | 0.1+ | 2006 08 23 | 704 | (0.5− | 1.9+) | 2006 10 29 | 704 | 0.3+ | 0.8+ |
| 2002 02 22 | 704 | 0.1− | 0.1− | 2006 08 23 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.2+ | 0.8+ |
| 2002 03 03 | 704 | 1.1− | 0.1− | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 03 03 | 704 | 0.6− | 0.2− | 2006 09 06 | 644 | 0.5− | 0.6+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 03 03 | 704 | 0.6− | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2002 03 03 | 704 | 1.1− | 0.2− | 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.0 |
| 2002 04 02 | 704 | 0.1− | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 2002 04 02 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.3+ | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2002 04 02 | 704 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.5− | 0.8+ | 2006 11 14 | 703 | 0.0 | 0.5− |
| 2002 04 02 | 704 | 0.6+ | 0.5+ | 2006 09 16 | 704 | 0.1− | 1.1+ | 2006 11 18 | 704 | 0.7− | 1.3+ |
| 2002 04 02 | 704 | 0.6+ | 0.5+ | 2006 09 16 | 704 | 1.1+ | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.9− |
| 2005 01 09 | 703 | 0.4− | 0.5+ | 2006 09 16 | 704 | 0.9+ | 0.8+ | 2006 11 18 | 704 | 1.2− | 0.2− |
| 2005 01 09 | 703 | 1.1+ | 0.2− | 2006 09 16 | 699 | 0.1+ | 0.3− | 2006 11 18 | 704 | (1.8− | 1.2−) |
| 2005 01 09 | 703 | 0.1− | 0.3− | 2006 09 16 | 699 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2005 01 09 | 703 | (1.8− | 0.1+) | 2006 09 16 | 699 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 1.1− | 0.4+ |
| 2005 03 04 | 703 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.6− | 0.3+ | 2006 11 25 | 703 | 1.1− | 0.1+ |
| 2005 03 04 | 703 | 0.1+ | 0.1− | 2006 09 19 | 704 | 1.3+ | 0.6− | 2006 11 25 | 703 | 0.6− | 0.4− |
| 2005 03 04 | 703 | 0.6− | 0.3− | 2006 09 19 | 704 | 0.1+ | 0.7+ | 2006 11 25 | 703 | 0.5− | 0.5+ |
| 2005 03 04 | 703 | 1.0− | 0.3− | 2006 09 19 | 704 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2005 03 18 | 703 | 0.4− | 0.2+ | 2006 09 19 | 704 | 0.7− | 0.7+ | 2006 11 29 | 704 | 0.7+ | 0.7+ |
| 2005 03 18 | 703 | 0.3− | 0.1+ | 2006 09 19 | 704 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.3+ | 0.6+ |
| 2005 03 18 | 703 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.5− | 0.6+ | 2006 11 29 | 704 | 0.7− | 0.3− |
| 2005 03 18 | 703 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.2− | 1.1+ |

**(137031)∗ 1998 TJ$_{22}$ = 2000 DJ$_{114}$**

Discovered 1998 Oct. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 1979)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.79311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23232442 | $\omega$ | 41.47916 | | +0.36861485 | −0.92954741 | |
| $a$ | 2.6206326 | $\Omega$ | 26.89354 | | +0.84812146 | +0.33275771 | |
| $e$ | 0.0923296 | $i$ | 1.01891 | | +0.38054314 | +0.15878890 | |
| $P$ | 4.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.8+ | 0.3− | 2000 03 11 | 704 | 0.3+ | 1.1+ | 2004 01 24 | 704 | 0.6− | 0.8− |
| 1998 10 13 | 691 | 0.7+ | 0.1+ | 2000 03 11 | 704 | 0.2+ | 0.6+ | 2004 01 31 | 691 | 0.1− | 0.1+ |
| 1998 10 13 | 691 | 1.2+ | 0.1− | 2000 03 11 | 704 | 0.2+ | 0.9− | 2004 01 31 | 691 | 0.2− | 0.0 |
| 1998 10 19 | 691 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.1+ | 0.3+ | 2004 01 31 | 691 | 0.2+ | 0.2+ |
| 1998 10 19 | 691 | 0.1− | 0.1− | 2002 09 14 | 644 | 0.2− | 0.7+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 1998 10 19 | 691 | 0.9− | 0.8− | 2002 09 14 | 644 | 0.2− | 0.6+ | 2006 08 28 | 691 | 0.4− | 0.7+ |
| 1998 10 27 | 691 | 0.3− | 0.4− | 2002 10 04 | 644 | 0.6− | 0.3+ | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 1998 10 27 | 691 | 0.7− | 0.1− | 2002 10 04 | 644 | 0.6− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.4− |
| 1998 10 27 | 691 | 0.5− | 0.2+ | 2002 10 04 | 644 | 0.4− | 0.9+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2000 02 27 | 691 | 0.0 | 0.4+ | 2002 10 30 | 645 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2000 02 27 | 691 | 0.2− | 0.4+ | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2000 02 27 | 691 | 0.0 | 0.5+ | 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 1.0+ | 0.5+ |
| 2000 03 03 | 704 | 0.8+ | 0.3+ | 2004 01 18 | 644 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3+ |
| 2000 03 03 | 704 | 0.6+ | 0.3− | 2004 01 18 | 644 | 0.5+ | 0.4+ | 2006 10 28 | G96 | 1.6+ | 1.1− |
| 2000 03 03 | 704 | 1.2+ | 0.3− | 2004 01 24 | 704 | (1.7+ | 1.4+) | 2006 10 28 | G96 | 0.1+ | 1.2− |
| 2000 03 03 | 704 | 0.2− | 0.9− | 2004 01 24 | 704 | 0.8+ | 1.0+ | | | | |

**(137032)∗ 1998 UO$_1$**

Discovered 1998 Oct. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.21729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.48912432 | $\omega$ | 252.21980 | | −0.32422213 | +0.94593326 | |
| $a$ | 1.5953521 | $\Omega$ | 358.73747 | | −0.61855297 | −0.21958916 | |
| $e$ | 0.7632260 | $i$ | 25.54516 | | −0.71573195 | −0.23872760 | |
| $P$ | 2.02 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 20 | 675 | (10.5− | 4.2−) | 2004 09 13 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 379 | 0.1− | 0.2− |
| 1992 10 20 | 675 | (9.8− | 3.1−) | 2004 09 13 | 704 | 0.3+ | 0.4− | 2006 10 12 | 379 | 0.1+ | 0.1+ |
| 1998 10 19 | 704 | 0.7+ | 0.4− | 2004 09 17 | 355 | 0.0 | 0.3+ | 2006 10 12 | 379 | 0.1+ | 0.1− |
| 1998 10 19 | 704 | 0.0 | 0.5+ | 2004 09 17 | 355 | 0.0 | 0.3− | 2006 10 12 | 379 | 0.3+ | 0.0 |
| 1998 10 19 | 704 | 0.5+ | 0.1− | 2004 09 17 | 355 | 0.3− | 0.0 | 2006 10 12 | 379 | 0.0 | 0.1+ |
| 1998 10 19 | 704 | 0.3+ | 0.1− | 2004 09 17 | 355 | 0.2+ | 0.3− | 2006 10 12 | 151 | 0.3− | 0.3+ |
| 1998 10 20 | 557 | 0.1+ | 0.2− | 2004 09 19 | 113 | 0.2+ | 0.1− | 2006 10 12 | 151 | 0.3− | 0.2+ |
| 1998 10 20 | 557 | 0.1− | 0.2+ | 2004 09 19 | 113 | 1.0+ | 0.8− | 2006 10 12 | 151 | 0.3− | 0.3+ |
| 1998 10 20 | 557 | 0.2+ | 0.1− | 2004 09 19 | 113 | 0.2+ | 0.3− | 2006 10 12 | 151 | 0.4− | 0.3+ |
| 1998 10 20 | 046 | 0.6+ | 0.7− | 2004 09 19 | 113 | 0.3+ | 0.2− | 2006 10 12 | 151 | 0.2− | 0.2+ |
| 1998 10 20 | 046 | 0.1+ | 0.1+ | 2004 09 19 | 113 | 0.7+ | 0.7− | 2006 10 12 | 151 | 0.3− | 0.2+ |
| 1998 10 20 | 046 | 0.2+ | 0.6− | 2004 09 22 | 379 | 0.2+ | 0.6− | 2006 10 12 | 151 | 0.2− | 0.3+ |
| 1998 10 20 | 046 | 0.3+ | 0.2− | 2004 09 22 | 379 | 0.3+ | 0.1− | 2006 10 12 | J94 | 0.3+ | 0.1− |
| 1998 10 20 | 673 | 0.6− | 0.7+ | 2004 09 22 | 379 | 0.1− | 0.1+ | 2006 10 12 | J94 | 0.1+ | 0.0 |
| 1998 10 20 | 658 | 0.1− | 0.4− | 2004 09 22 | 379 | 0.1+ | 0.2+ | 2006 10 12 | J94 | 0.1− | 0.2− |
| 1998 10 20 | 658 | 0.2− | 0.2− | 2004 09 26 | 704 | 0.2− | 0.1− | 2006 10 13 | A67 | 0.1− | 0.2− |
| 1998 10 20 | 658 | 0.0 | 0.3− | 2004 09 26 | 704 | 0.5+ | 0.5− | 2006 10 13 | A67 | 0.2+ | 0.0 |
| 1998 10 20 | 673 | 0.1− | 1.7− | 2004 09 26 | 704 | 0.3− | 0.2+ | 2006 10 13 | A67 | 0.2+ | 0.0 |
| 1998 10 20 | 104 | 0.2− | 0.7+ | 2004 09 26 | 704 | 0.1+ | 0.4− | 2006 10 13 | A67 | 0.2− | 0.1+ |
| 1998 10 20 | 104 | 0.2− | 0.4+ | 2004 09 26 | 704 | 0.1− | 0.0 | 2006 10 13 | A67 | 0.0 | 0.0 |
| 1998 10 20 | 104 | 1.3− | 0.1− | 2004 09 29 | 750 | 0.1+ | 0.1+ | 2006 10 13 | A67 | 0.2+ | 0.3+ |
| 1998 10 20 | 104 | 0.5− | 0.2+ | 2004 09 29 | 750 | 0.5+ | 0.2− | 2006 10 13 | A67 | 0.0 | 0.1+ |
| 1998 10 20 | 106 | 0.2− | 0.5− | 2004 09 29 | 750 | 0.1+ | 0.3− | 2006 10 13 | A67 | 0.2+ | 0.2+ |
| 1998 10 20 | 106 | 0.8− | 0.4− | 2004 09 29 | 750 | 0.1− | 0.1− | 2006 10 13 | A67 | 0.1− | 0.1− |
| 1998 10 20 | 106 | 0.0 | 0.4− | 2004 09 29 | 750 | 0.3− | 0.0 | 2006 10 13 | A67 | 0.2+ | 0.1− |
| 1998 10 20 | 557 | 0.2+ | 0.5− | 2004 09 30 | 379 | 0.5− | 0.0 | 2006 10 13 | A67 | 0.1+ | 0.1+ |
| 1998 10 20 | 106 | 0.3− | 0.3− | 2004 09 30 | 379 | 0.2+ | 0.0 | 2006 10 13 | A67 | 0.3− | 0.3− |
| 1998 10 20 | 557 | 0.0 | 0.1− | 2004 09 30 | 379 | 0.0 | 0.7− | 2006 10 13 | A67 | 0.2− | 0.3+ |
| 1998 10 20 | 118 | 0.5+ | 0.1− | 2004 09 30 | 379 | 0.4− | 0.4+ | 2006 10 13 | A67 | 0.1+ | 0.0 |
| 1998 10 20 | 118 | 0.5+ | 0.3− | 2004 09 30 | A13 | 0.3− | 0.0 | 2006 10 13 | A67 | 0.0 | 0.1− |
| 1998 10 20 | 118 | 0.3+ | 0.1− | 2004 09 30 | A13 | 0.4− | 0.3− | 2006 10 13 | A67 | 0.3+ | 0.0 |
| 1998 10 20 | 046 | 0.3− | 0.4− | 2004 09 30 | A13 | 0.3+ | 1.0− | 2006 10 13 | A67 | 0.2+ | 0.1+ |
| 1998 10 20 | 046 | 0.3+ | 0.3− | 2004 10 02 | 928 | 0.2− | 0.3− | 2006 10 13 | A67 | 0.2− | 0.1− |
| 1998 10 20 | 046 | 0.2+ | 0.1− | 2004 10 02 | 928 | 0.5− | 0.2− | 2006 10 13 | A67 | 0.1− | 0.1− |
| 1998 10 20 | 046 | 0.2+ | 0.3− | 2004 10 02 | 928 | 0.5− | 0.3− | 2006 10 13 | A67 | 0.1+ | 0.1+ |
| 1998 10 21 | 673 | 0.2− | 0.0 | 2004 10 05 | 704 | 0.3+ | 0.2+ | 2006 10 13 | A67 | 0.0 | 0.2+ |
| 1998 10 21 | 681 | 1.5− | 0.1− | 2004 10 05 | 704 | 0.6+ | 0.5+ | 2006 10 13 | A67 | 0.0 | 0.0 |
| 1998 10 21 | 673 | 0.1− | 0.8− | 2004 10 05 | 704 | 0.1+ | 1.0− | 2006 10 13 | A67 | 0.3− | 0.2− |
| 1998 10 21 | 681 | 0.3+ | 0.7− | 2004 10 05 | 704 | 0.3+ | 0.4− | 2006 10 13 | J94 | 0.3+ | 0.2− |
| 1998 10 21 | 681 | 0.0 | 0.8− | 2004 10 05 | A35 | 0.2+ | 0.2+ | 2006 10 13 | A67 | 0.2− | 0.1− |
| 1998 10 21 | 681 | 0.9+ | 0.4+ | 2004 10 05 | A35 | 0.1+ | 0.2+ | 2006 10 13 | A67 | 0.2− | 0.2+ |
| 1998 10 21 | 557 | 0.1− | 0.3+ | 2004 10 05 | A35 | 0.1+ | 0.2+ | 2006 10 13 | A67 | 0.3− | 0.0 |
| 1998 10 21 | 557 | 0.3− | 0.4− | 2004 10 06 | H41 | 0.0 | 0.1+ | 2006 10 13 | A67 | 0.1+ | 0.4− |
| 1998 10 21 | 557 | 0.3+ | 0.4− | 2004 10 06 | H41 | 0.3+ | 0.2+ | 2006 10 13 | A67 | 0.2+ | 0.1+ |
| 1998 10 22 | 658 | 0.1− | 1.1− | 2004 10 06 | H41 | 0.4+ | 0.1+ | 2006 10 13 | J94 | 0.1+ | 0.1− |
| 1998 10 22 | 658 | 0.1− | 0.9− | 2004 10 06 | H41 | 0.5+ | 0.0 | 2006 10 13 | A67 | 0.0 | 0.0 |
| 1998 10 22 | 658 | 0.1+ | 0.7− | 2004 10 06 | H41 | 0.2+ | 0.1− | 2006 10 13 | A67 | 0.1− | 0.2− |
| 1998 10 22 | 587 | 0.1− | 0.3− | 2004 10 06 | H41 | 0.4+ | 0.1− | 2006 10 13 | A67 | 0.1− | 0.1− |
| 1998 10 22 | 587 | 0.3+ | 0.1− | 2004 10 06 | 379 | 0.4+ | 0.2− | 2006 10 13 | A67 | 0.4− | 0.0 |
| 1998 10 23 | 046 | 0.3− | 0.6− | 2004 10 06 | 379 | 0.0 | 1.1− | 2006 10 13 | A67 | 0.1− | 0.2− |
| 1998 10 23 | 046 | 0.8− | 0.0 | 2004 10 06 | 379 | 0.2+ | 0.3− | 2006 10 13 | A67 | 0.3− | 0.0 |
| 1998 10 23 | 046 | 0.5− | 0.0 | 2004 10 06 | 379 | 0.7+ | 0.1+ | 2006 10 13 | A67 | 0.1+ | 0.3− |
| 1998 10 23 | 118 | 0.3− | 0.1− | 2004 10 06 | 379 | 0.0 | 0.6− | 2006 10 13 | A67 | 0.4− | 0.0 |
| 1998 10 23 | 118 | 0.3− | 0.1− | 2004 10 06 | 379 | 0.0 | 0.1+ | 2006 10 13 | A67 | 0.3− | 0.3− |
| 1998 10 24 | 118 | 1.0− | 0.5− | 2004 10 06 | 379 | 0.1− | 0.1+ | 2006 10 13 | A67 | 0.0 | 0.0 |
| 1998 10 24 | 118 | 0.4− | 0.6− | 2004 10 07 | 379 | 0.4+ | 0.3− | 2006 10 13 | A67 | 0.3+ | 0.4− |
| 1998 10 25 | 402 | 0.6− | 0.8− | 2004 10 07 | 379 | 0.0 | 0.3+ | 2006 10 13 | J94 | 0.3+ | 0.3− |
| 1998 10 25 | 402 | 0.5− | 1.0− | 2004 10 07 | 379 | 0.1+ | 0.2− | 2006 10 13 | A67 | 0.1− | 0.3− |
| 1998 10 25 | 402 | 0.5− | 0.7− | 2004 10 07 | 379 | 0.3+ | 0.1+ | 2006 10 13 | A67 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 26 | 118 | 0.0 | 0.6− | 2004 10 07 | 379 | 0.4− | 0.1− | 2006 10 13 | A67 | 0.1+ | 0.1− | 2000 10 04 | 704 | 0.5− | 0.7+ | 2004 10 22 | 113 | 0.2+ | 0.4+ | 2006 10 16 | 379 | 0.0 | 0.1+ |
| 1998 10 26 | 118 | 0.2− | 0.6− | 2004 10 07 | 379 | 0.6+ | 0.2+ | 2006 10 13 | A67 | 0.1− | 0.1− | 2000 10 07 | 704 | 0.0 | 0.3+ | 2004 10 22 | 113 | 0.1− | 0.5+ | 2006 10 16 | 379 | 0.0 | 0.2+ |
| 1998 10 27 | 658 | 0.6− | 0.5− | 2004 10 11 | 750 | 0.3+ | 0.2+ | 2006 10 13 | A67 | 0.1− | 0.0 | 2000 10 07 | 704 | 0.1+ | 0.7− | 2004 10 22 | 113 | 0.1+ | 0.7+ | 2006 10 16 | 379 | 0.1+ | 0.1+ |
| 1998 10 27 | 658 | 0.4− | 0.5− | 2004 10 11 | 750 | 0.1+ | 0.1− | 2006 10 13 | A67 | 0.1− | 0.4− | 2000 10 07 | 704 | 0.2+ | 0.2− | 2004 10 23 | A16 | 0.8− | 0.4− | 2006 10 16 | 379 | 0.4+ | 0.0 |
| 1998 10 27 | 658 | 0.7− | 0.4− | 2004 10 11 | 750 | 0.0 | 0.0 | 2006 10 13 | A67 | 0.3− | 0.1− | 2000 10 07 | 704 | 1.0+ | 0.4− | 2004 10 23 | A16 | 0.8− | 0.4− | 2006 10 16 | 379 | 0.0 | 0.1+ |
| 1998 10 29 | 699 | 2.0+ | 1.1+ | 2004 10 11 | A70 | 0.0 | 0.8+ | 2006 10 13 | A67 | 0.0 | 0.2− | 2000 10 07 | 704 | 0.3+ | 0.2− | 2004 10 23 | A16 | 0.8− | 0.5− | 2006 10 16 | 379 | 0.0 | 0.5+ |
| 1998 10 29 | 699 | 0.1− | 0.1+ | 2004 10 11 | A70 | 0.4+ | 0.5− | 2006 10 13 | A67 | 0.3− | 0.2− | 2000 10 09 | 726 | 0.5+ | 0.8− | 2004 10 23 | A16 | 1.0− | 0.5− | 2006 10 16 | 379 | 0.1+ | 0.4+ |
| 1998 10 29 | 699 | (2.1+ | 0.4−) | 2004 10 11 | A70 | 0.3− | 0.3− | 2006 10 13 | A67 | 0.4− | 0.1− | 2000 10 09 | 726 | 1.1− | 0.6+ | 2004 10 23 | A16 | 0.7− | 0.6− | 2006 10 16 | 379 | 0.4+ | 0.3+ |
| 1998 10 29 | 360 | 0.5+ | 0.6− | 2004 10 12 | 704 | 0.2− | 0.0 | 2006 10 13 | A67 | 0.3− | 0.2− | 2000 10 09 | 726 | (3.1+ | 0.2−) | 2004 10 24 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 379 | 0.3+ | 0.5+ |
| 1998 10 29 | 360 | 0.6+ | 0.7− | 2004 10 12 | 704 | 0.2− | 0.3+ | 2006 10 13 | A67 | 0.1− | 0.1− | 2000 10 09 | 726 | 0.2+ | 0.0 | 2004 10 24 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 113 | 0.1+ | 0.1− |
| 1998 10 29 | 360 | 0.7+ | 0.6− | 2004 10 12 | 704 | 0.2− | 0.2+ | 2006 10 13 | A67 | 0.1− | 0.1+ | 2000 10 09 | 726 | 0.4− | 0.3− | 2004 10 24 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 113 | 0.2+ | 0.1− |
| 1998 10 30 | 658 | 0.4+ | 0.9− | 2004 10 12 | 704 | 0.2− | 0.7− | 2006 10 13 | A67 | 0.1+ | 0.1+ | 2000 10 16 | 113 | 0.1+ | 0.2+ | 2004 10 24 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 113 | 0.1+ | 0.1− |
| 1998 10 30 | 658 | 0.5+ | 1.0− | 2004 10 12 | 704 | 0.0 | 0.2+ | 2006 10 13 | A67 | 0.4− | 0.0 | 2000 10 16 | 113 | 0.2− | 0.7+ | 2004 10 24 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 113 | 0.1+ | 0.1− |
| 1998 10 30 | 658 | 0.2+ | 0.8− | 2004 10 12 | J81 | 0.1− | 0.1+ | 2006 10 13 | A67 | 0.1− | 0.2− | 2000 10 16 | 113 | 0.1− | 0.5− | 2004 10 24 | A16 | 1.3− | 0.3− | 2006 10 16 | 113 | 0.3+ | 0.2− |
| 1998 10 30 | 587 | 1.0+ | 1.1− | 2004 10 12 | J81 | 0.2− | 0.2− | 2006 10 13 | A67 | 0.0 | 0.3− | 2000 10 16 | 113 | 0.1+ | 0.1+ | 2004 10 24 | A16 | 1.1− | 0.8− | 2006 10 16 | 151 | 0.3− | 0.3+ |
| 1998 10 30 | 587 | 1.2+ | 0.4− | 2004 10 12 | J81 | 0.4+ | 0.1− | 2006 10 13 | A67 | 0.2− | 0.2− | 2000 10 16 | 113 | 0.1+ | 0.7+ | 2004 10 24 | A16 | 1.1− | 0.5− | 2006 10 16 | 151 | 0.3− | 0.2+ |
| 1998 11 07 | 046 | 0.5+ | 0.5− | 2004 10 12 | J81 | 0.3− | 1.0+ | 2006 10 13 | A67 | 0.1− | 0.3− | 2000 10 17 | 726 | 0.3− | 0.1− | 2004 10 24 | A16 | 0.9− | 0.5− | 2006 10 16 | 151 | 0.2− | 0.4+ |
| 1998 11 07 | 046 | 0.4+ | 0.1− | 2004 10 13 | 928 | (1.9+ | 1.0+) | 2006 10 13 | A67 | 0.2− | 0.2− | 2000 10 17 | 726 | 0.7+ | 1.4− | 2004 10 24 | A16 | 0.7− | 0.6+ | 2006 10 16 | 151 | 0.3− | 0.2+ |
| 1998 11 07 | 046 | 0.1+ | 0.5− | 2004 10 13 | 928 | 1.1+ | 0.9+ | 2006 10 13 | A67 | 0.1+ | 0.2− | 2000 10 17 | 726 | 1.5− | 1.1− | 2004 10 28 | 084 | 0.1+ | 0.1+ | 2006 10 16 | 151 | 0.1− | 0.1+ |
| 1998 11 07 | 046 | 0.1− | 0.7− | 2004 10 13 | 928 | (2.2+ | 1.1+) | 2006 10 13 | A67 | 0.2− | 0.3− | 2000 10 17 | 726 | 1.4+ | 0.8− | 2004 10 30 | 084 | 0.3+ | 0.5+ | 2006 10 16 | 151 | 0.2− | 0.2+ |
| 1998 11 07 | 046 | 0.1+ | 0.3+ | 2004 10 13 | 928 | 1.4+ | 0.4+ | 2006 10 13 | A67 | 0.1− | 0.3− | 2000 10 17 | 726 | 0.7− | 1.5− | 2004 11 02 | 084 | 0.4− | 0.3+ | 2006 10 16 | 151 | 0.2− | 0.2+ |
| 1998 11 07 | 118 | 0.3+ | 0.5− | 2004 10 13 | 928 | 1.1+ | 1.0+ | 2006 10 13 | A67 | 0.1− | 0.2− | 2000 10 18 | 726 | 0.2− | 0.5+ | 2004 11 04 | 644 | 0.4− | 0.4+ | 2006 10 16 | 127 | 0.1+ | 0.1− |
| 1998 11 07 | 118 | 0.3+ | 0.1+ | 2004 10 13 | 928 | 1.3+ | 1.0+ | 2006 10 13 | A67 | 0.3− | 0.1− | 2000 10 18 | 726 | 1.8− | 1.1− | 2004 11 04 | 644 | 0.3− | 0.4+ | 2006 10 16 | 127 | 0.2+ | 0.0 |
| 1998 11 08 | 658 | 0.3− | 0.1− | 2004 10 13 | 928 | 1.2+ | 1.1+ | 2006 10 13 | A67 | 0.4− | 0.3− | 2000 10 18 | 726 | 0.0 | 0.3− | 2004 11 04 | 644 | 0.2− | 0.3+ | 2006 10 16 | 127 | 0.3+ | 0.0 |
| 1998 11 08 | 658 | 0.4− | 0.1− | 2004 10 13 | 704 | 0.1+ | 0.3+ | 2006 10 13 | A67 | 0.0 | 0.2− | 2000 10 23 | 151 | 0.2+ | 0.2− | 2004 11 04 | 704 | 0.4− | 0.4+ | 2006 10 16 | 127 | 0.2+ | 0.0 |
| 1998 11 08 | 658 | 0.5− | 0.1− | 2004 10 13 | 704 | 0.0 | 0.2+ | 2006 10 13 | A67 | 0.1− | 0.2− | 2000 10 23 | 151 | 0.1− | 0.6− | 2004 11 04 | 704 | 0.2− | 0.4+ | 2006 10 16 | 198 | 0.0 | 0.3+ |
| 1998 11 08 | 360 | 0.5− | 0.0 | 2004 10 13 | 704 | 0.2+ | 0.3+ | 2006 10 13 | A67 | 0.2− | 0.2− | 2000 10 23 | 151 | 0.2− | 0.6− | 2004 11 04 | 704 | 0.4− | 0.5+ | 2006 10 16 | 639 | 0.3− | 0.3+ |
| 1998 11 08 | 360 | 0.3− | 0.3− | 2004 10 14 | 704 | 0.6+ | 0.5+ | 2006 10 13 | A67 | 0.2− | 0.2− | 2000 10 23 | 151 | 0.2+ | 0.1− | 2004 11 04 | 704 | (0.4− | 1.7−) | 2006 10 16 | 198 | 0.0 | 0.3+ |
| 1998 11 08 | 360 | 0.3− | 0.5− | 2004 10 14 | 704 | 0.3+ | 0.7+ | 2006 10 13 | A67 | 0.2− | 0.2− | 2000 10 28 | 151 | 0.1+ | 0.3+ | 2004 11 04 | 704 | 0.6− | 0.5+ | 2006 10 16 | 639 | 0.2+ | 0.3+ |
| 1998 11 11 | 046 | 0.1+ | 0.1+ | 2004 10 14 | 704 | 0.5+ | 0.3+ | 2006 10 13 | A67 | 0.1+ | 0.1− | 2000 10 28 | 151 | 0.1− | 0.0 | 2004 11 10 | 704 | 0.6+ | 0.0 | 2006 10 16 | 198 | 0.0 | 0.3+ |
| 1998 11 11 | 046 | 0.0 | 0.4− | 2004 10 14 | H41 | 0.3+ | 0.1+ | 2006 10 13 | A67 | 0.2− | 0.2− | 2000 10 28 | 151 | 0.2− | 0.3+ | 2004 11 10 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 639 | 0.3+ | 0.4+ |
| 1998 11 11 | 046 | 0.0 | 0.4− | 2004 10 14 | H41 | 0.3+ | 0.0 | 2006 10 13 | A67 | 0.2− | 0.4− | 2000 10 28 | 151 | 0.4− | 0.4− | 2004 11 10 | 704 | 0.1− | 0.3− | 2006 10 16 | 198 | 0.2− | 0.3+ |
| 1998 11 11 | 046 | 0.1+ | 0.3− | 2004 10 14 | H41 | 0.0 | 0.1+ | 2006 10 13 | A67 | 0.5− | 0.3− | 2002 09 08 | 848 | 0.3− | 0.4+ | 2004 11 10 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 639 | 0.4+ | 0.5+ |
| 1998 11 12 | 557 | 0.2+ | 0.5− | 2004 10 14 | H41 | 0.1+ | 0.1+ | 2006 10 13 | A67 | 0.1− | 0.2− | 2002 09 08 | 848 | 0.3− | 0.5− | 2004 11 10 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 198 | 0.1− | 0.3+ |
| 1998 11 12 | 557 | 0.4+ | 0.0 | 2004 10 14 | H41 | 0.0 | 0.1+ | 2006 10 13 | A67 | 0.2− | 0.2− | 2002 09 08 | 848 | (0.8+ | 1.7+) | 2004 11 15 | 198 | 0.2− | 0.4+ | 2006 10 16 | 145 | 0.0 | 0.1− |
| 1998 11 12 | 557 | 0.2+ | 0.1− | 2004 10 14 | 379 | 0.6+ | 0.3+ | 2006 10 13 | A67 | 0.3− | 0.3− | 2002 09 08 | 848 | (0.3− | 2.8+) | 2004 11 15 | 198 | 0.2− | 0.5+ | 2006 10 16 | 145 | 0.1− | 0.2− |
| 1998 11 14 | 402 | 0.1− | 0.1− | 2004 10 14 | 379 | 0.2+ | 0.1− | 2006 10 13 | A67 | 0.2− | 0.2− | 2002 09 08 | 848 | 0.9− | 1.1+ | 2004 11 15 | 198 | 0.2− | 0.4+ | 2006 10 16 | 145 | 0.1− | 0.1− |
| 1998 11 14 | 402 | 0.4− | 0.7− | 2004 10 14 | 379 | 0.3+ | 0.2− | 2006 10 13 | A67 | 0.3− | 0.5− | 2002 09 09 | 113 | 0.1+ | 0.1− | 2004 11 15 | 198 | 0.2− | 0.4+ | 2006 10 16 | 145 | 0.0 | 0.0 |
| 1998 11 14 | 402 | 0.1+ | 0.0 | 2004 10 14 | 379 | 0.4+ | 0.2+ | 2006 10 15 | H55 | 0.5− | 0.2− | 2002 09 09 | 113 | 0.3+ | 0.4− | 2004 11 15 | 198 | 0.1− | 0.4+ | 2006 10 16 | 145 | 0.0 | 0.1− |
| 1998 11 15 | 360 | 0.1+ | 0.3− | 2004 10 14 | 379 | 0.1+ | 0.0 | 2006 10 15 | H55 | 0.7− | 0.6− | 2002 09 09 | 113 | 0.2+ | 0.2− | 2004 12 10 | 246 | 0.4+ | 0.2+ | 2006 10 16 | 145 | 0.0 | 0.1− |
| 1998 11 15 | 360 | 0.1+ | 0.4− | 2004 10 16 | 379 | 0.4+ | 0.0 | 2006 10 15 | H55 | 0.1− | 0.1+ | 2002 09 09 | 113 | 0.4− | 0.4+ | 2004 12 10 | 246 | 0.3+ | 0.1− | 2006 10 17 | 704 | 0.4+ | 0.2− |
| 1998 11 15 | 360 | 0.2− | 0.2− | 2004 10 16 | 379 | 0.0 | 0.1+ | 2006 10 15 | H55 | 1.0+ | 0.7− | 2002 09 14 | 196 | 0.4− | 0.1− | 2004 12 10 | 246 | 0.0 | 0.7+ | 2006 10 17 | 704 | 0.1− | 0.9+ |
| 1998 11 15 | 587 | 0.0 | 0.3+ | 2004 10 16 | 379 | 0.0 | 0.4+ | 2006 10 15 | 379 | 0.3+ | 0.0 | 2002 09 14 | 196 | 0.4+ | 0.2− | 2004 12 10 | 246 | 0.1− | 0.4+ | 2006 10 17 | 704 | 0.6− | 0.4+ |
| 1998 11 15 | 587 | 0.0 | 0.4− | 2004 10 17 | 379 | 0.4+ | 0.6+ | 2006 10 15 | 379 | 0.1− | 0.4+ | 2002 09 14 | 170 | 0.5− | 0.5− | 2004 12 10 | 246 | 0.1− | 0.4+ | 2006 10 17 | 704 | 0.6− | 0.1+ |
| 1998 11 16 | 118 | 0.6+ | 0.2+ | 2004 10 17 | 379 | 0.2+ | 0.2+ | 2006 10 15 | 379 | 0.2+ | 0.3+ | 2002 09 14 | 170 | 1.3− | 0.3− | 2004 12 10 | 246 | 0.2+ | 0.6+ | 2006 10 17 | 704 | 0.1+ | 0.3+ |
| 1998 11 16 | 118 | 0.3+ | 0.3− | 2004 10 17 | 355 | 0.1− | 0.2+ | 2006 10 15 | 379 | 0.2+ | 0.1+ | 2002 09 14 | 151 | 0.7− | 0.4+ | 2006 09 22 | A32 | 0.1− | 0.4+ | 2006 10 17 | 379 | 0.3− | 0.0 |
| 1998 11 24 | 557 | 0.3− | 0.0 | 2004 10 17 | 355 | 0.2− | 0.1+ | 2006 10 15 | 379 | 0.0 | 0.2− | 2002 09 14 | 151 | 0.2+ | 0.0 | 2006 09 22 | A32 | 0.6+ | 0.0 | 2006 10 17 | 379 | 0.0 | 0.2− |
| 1998 11 24 | 557 | 0.5+ | 0.1+ | 2004 10 17 | 355 | 0.5+ | 0.5+ | 2006 10 15 | 379 | 0.2+ | 0.4+ | 2002 09 14 | 151 | 0.1− | 0.2+ | 2006 09 22 | A32 | 0.3− | 0.1− | 2006 10 17 | 379 | 0.1+ | 0.2+ |
| 1998 11 25 | 402 | 0.6+ | 1.4+ | 2004 10 17 | 355 | 0.7+ | 0.0 | 2006 10 15 | 379 | 0.3+ | 0.2+ | 2002 09 14 | 151 | 0.7− | 0.6+ | 2006 09 22 | A32 | 0.1− | 0.2+ | 2006 10 17 | 379 | 0.1+ | 0.1+ |
| 1998 11 25 | 402 | 0.1− | 0.4+ | 2004 10 17 | 130 | 0.1+ | 0.1− | 2006 10 15 | 379 | 0.1+ | 0.2+ | 2002 09 14 | 151 | 0.1+ | 0.7+ | 2006 09 22 | A32 | 0.3− | 0.1− | 2006 10 17 | 379 | 0.2+ | 0.3+ |
| 1998 11 25 | 402 | 1.2− | 0.9− | 2004 10 17 | 130 | 0.2− | 0.2− | 2006 10 15 | 113 | 0.4− | 0.2− | 2002 09 14 | 151 | 0.5− | 0.1+ | 2006 09 23 | 113 | 0.6+ | 0.2− | 2006 10 17 | 379 | 0.1− | 0.1+ |
| 1999 12 31 | 461 | 1.0+ | 0.1− | 2004 10 17 | 130 | 0.2− | 0.2− | 2006 10 15 | 113 | 0.1− | 0.2− | 2002 09 15 | 151 | 0.6− | 0.6+ | 2006 09 23 | 113 | 0.5+ | 0.2− | 2006 10 17 | 113 | 0.0 | 0.2− |
| 1999 12 31 | 461 | 0.0 | 0.2+ | 2004 10 17 | 130 | 0.1− | 0.2− | 2006 10 15 | 113 | 0.0 | 0.0 | 2002 09 15 | 151 | 0.4− | 0.2+ | 2006 09 23 | 113 | 0.6+ | 0.3− | 2006 10 17 | 113 | 0.0 | 0.2− |
| 1999 12 31 | 461 | 0.3+ | 0.1− | 2004 10 19 | H41 | 0.1− | 0.7+ | 2006 10 15 | 113 | 0.0 | 0.0 | 2002 09 15 | 151 | 0.1− | 0.2+ | 2006 09 23 | 113 | 0.3+ | 0.0 | 2006 10 17 | 113 | 0.0 | 0.2− |
| 2000 09 05 | 670 | 0.2+ | 0.5+ | 2004 10 19 | H41 | 0.5− | 0.1+ | 2006 10 15 | 113 | 0.1− | 0.1+ | 2002 09 15 | 151 | 0.7− | 0.0 | 2006 09 23 | 113 | 0.5+ | 0.0 | 2006 10 17 | 113 | 0.0 | 0.1− |
| 2000 09 05 | 670 | 0.1+ | 0.4− | 2004 10 19 | H41 | 0.3− | 0.6+ | 2006 10 15 | A48 | 0.3− | 0.2− | 2002 09 17 | 240 | 0.1+ | 0.1− | 2006 09 23 | 113 | 0.6+ | 0.1− | 2006 10 17 | 113 | 0.0 | 0.1− |
| 2000 09 24 | 557 | 0.3+ | 0.1− | 2004 10 19 | H41 | 0.3− | 0.1+ | 2006 10 15 | A48 | 0.2− | 0.3− | 2002 09 17 | 240 | 0.3− | 0.7+ | 2006 09 27 | 294 | (1.7− | 0.0 ) | 2006 10 17 | 151 | 0.0 | 0.1+ |
| 2000 09 24 | 557 | 0.0 | 0.1− | 2004 10 19 | H41 | 0.7+ | 0.5− | 2006 10 15 | A48 | 0.4− | 0.4− | 2002 09 17 | 240 | 0.4− | 0.6+ | 2006 09 29 | A41 | (2.3− | 0.9−) | 2006 10 17 | 151 | 0.1− | 0.1+ |
| 2000 09 25 | 557 | 0.0 | 0.0 | 2004 10 20 | H41 | 0.2+ | 0.2+ | 2006 10 15 | A48 | 0.3− | 0.3− | 2002 09 22 | 232 | 0.3− | 0.2+ | 2006 09 30 | A41 | 1.1− | 0.5− | 2006 10 17 | 151 | 0.1− | 0.2+ |
| 2000 09 25 | 557 | 0.4− | 0.1− | 2004 10 20 | H41 | 0.2+ | 0.1− | 2006 10 15 | 127 | 0.2+ | 0.2+ | 2002 09 22 | 232 | 0.4+ | 0.0 | 2006 09 30 | 294 | 0.3− | 0.8− | 2006 10 17 | 151 | 0.0 | 0.1+ |
| 2000 09 25 | 557 | 0.3− | 0.1− | 2004 10 20 | H41 | 0.0 | 0.0 | 2006 10 15 | 127 | 0.1+ | 0.0 | 2002 09 22 | 232 | 1.4− | 0.5− | 2006 09 30 | 294 | 0.6− | 0.1− | 2006 10 17 | 151 | 0.1− | 0.2+ |
| 2000 09 26 | 360 | 0.1− | 0.0 | 2004 10 22 | 113 | 0.1+ | 0.5+ | 2006 10 15 | 127 | 0.1+ | 0.1+ | 2002 09 22 | 232 | (2.9− | 0.7−) | 2006 09 30 | 294 | 0.4− | 0.2− | 2006 10 17 | 151 | 0.1− | 0.3+ |
| 2000 09 26 | 360 | 0.1− | 0.1+ | 2004 10 22 | 113 | 0.2+ | 0.5+ | 2006 10 15 | 127 | 0.3+ | 0.3+ | 2002 09 22 | 926 | 0.1− | 0.4+ | 2006 09 30 | 294 | 0.1− | 0.0 | 2006 10 17 | 151 | 0.1− | 0.2+ |
| 2000 09 26 | 360 | 0.1− | 0.2− | 2004 10 22 | 113 | 0.1+ | 0.6+ | 2006 10 16 | 379 | 0.1+ | 0.1+ | 2002 09 22 | 926 | 0.5+ | 0.7+ | 2006 10 05 | 204 | 0.1− | 0.2− | 2006 10 17 | 434 | 0.0 | 0.2+ |
| 2000 10 04 | 704 | 0.1+ | 0.2− | 2004 10 22 | 113 | 0.2+ | 0.5+ | 2006 10 16 | 379 | 0.2+ | 0.4+ | 2002 09 22 | 926 | 0.1− | 0.0 | 2006 10 05 | 204 | 0.0 | 0.1− | 2006 10 17 | 434 | 0.4− | 0.2+ |
| 2000 10 04 | 704 | 0.5− | 0.1+ | 2004 10 22 | 113 | 0.2+ | 0.4+ | 2006 10 16 | 379 | 0.3+ | 0.2+ | 2002 09 22 | 926 | 0.6+ | 0.1+ | 2006 10 05 | 204 | 0.1+ | 0.1− | 2006 10 17 | 434 | 0.7+ | 0.2− |
| 2000 10 04 | 704 | 0.4− | 0.1+ | 2004 10 22 | 113 | 0.3+ | 0.4+ | 2006 10 16 | 379 | 0.1+ | 0.1+ | 2002 09 28 | 151 | 0.5+ | 0.1− | 2006 10 05 | 204 | 0.0 | 0.2− | 2006 10 17 | 434 | 0.0 | 0.1+ |
| 2000 10 04 | 704 | 0.6− | 0.0 | 2004 10 22 | 113 | 0.0 | 0.6+ | 2006 10 16 | 379 | 0.1− | 0.1+ | 2002 09 28 | 151 | 0.3+ | 0.0 | 2006 10 05 | 204 | 0.1− | 0.0 | 2006 10 17 | 434 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 151 | 0.4− | 0.0 | 2006 10 08 | 379 | 0.4− | 0.0 | 2006 10 17 | 434 | 0.5+ | 0.0 |
| 2002 09 28 | 151 | 0.2− | 0.3− | 2006 10 08 | 379 | 0.1− | 0.1+ | 2006 10 18 | 379 | 0.3− | 0.1− |
| 2002 09 28 | 151 | 0.1+ | 0.0 | 2006 10 08 | 379 | 0.1+ | 0.1+ | 2006 10 18 | 379 | 0.3+ | 0.1+ |
| 2002 09 28 | 151 | 0.0 | 0.2− | 2006 10 08 | 379 | 0.3− | 0.2+ | 2006 10 18 | 379 | 0.0 | 0.3+ |
| 2002 09 28 | 151 | 0.1+ | 0.3− | 2006 10 08 | 379 | 0.1− | 0.0 | 2006 10 18 | 379 | 0.3+ | 0.1+ |
| 2002 09 28 | 151 | 0.0 | 0.2+ | 2006 10 08 | 379 | 0.1− | 0.3+ | 2006 10 18 | 379 | 0.1− | 0.1+ |
| 2002 09 28 | 151 | 0.2− | 0.1− | 2006 10 08 | 379 | 0.1+ | 0.1+ | 2006 10 18 | 379 | 0.2+ | 0.2+ |
| 2002 09 28 | 151 | 0.2− | 0.1+ | 2006 10 08 | 379 | 0.0 | 0.3+ | 2006 10 18 | 379 | 0.2+ | 0.1+ |
| 2002 09 30 | 704 | 0.1− | 0.3− | 2006 10 08 | 379 | 0.0 | 0.2+ | 2006 10 18 | 379 | 0.3− | 0.2+ |
| 2002 09 30 | 704 | 0.3− | 0.4− | 2006 10 08 | 113 | 0.1+ | 0.1− | 2006 10 18 | 379 | 0.1− | 0.3+ |
| 2002 09 30 | 704 | 0.1− | 0.5− | 2006 10 08 | 113 | 0.0 | 0.3− | 2006 10 18 | 379 | 0.0 | 0.2+ |
| 2002 09 30 | 704 | 0.2− | 0.8− | 2006 10 08 | 113 | 0.4+ | 0.1+ | 2006 10 18 | 379 | 0.1+ | 0.3+ |
| 2002 09 30 | A20 | (3.1− | 0.4+) | 2006 10 08 | 113 | 0.2+ | 0.2− | 2006 10 18 | 379 | 0.0 | 0.3+ |
| 2002 09 30 | A20 | 1.4− | 0.1+ | 2006 10 08 | 113 | 0.2+ | 0.1− | 2006 10 21 | H45 | 0.1− | 0.1− |
| 2002 09 30 | A20 | (3.9− | 0.2−) | 2006 10 08 | 240 | 0.0 | 0.1− | 2006 10 21 | H45 | 0.3− | 0.1− |
| 2002 10 03 | 379 | 0.2− | 0.8− | 2006 10 08 | 240 | 0.0 | 0.3− | 2006 10 21 | H45 | 0.1− | 0.2− |
| 2002 10 03 | 379 | 0.4− | 0.7+ | 2006 10 08 | 240 | 0.1+ | 0.2− | 2006 10 21 | H45 | 0.0 | 0.2− |
| 2002 10 03 | 379 | 1.3− | 0.1+ | 2006 10 08 | 240 | 0.0 | 0.0 | 2006 10 22 | 711 | 0.0 | 0.4+ |
| 2002 10 03 | 379 | (1.6− | 1.5−) | 2006 10 08 | 240 | 0.1+ | 0.0 | 2006 10 22 | 711 | 0.1+ | 0.4+ |
| 2002 10 03 | 355 | 0.7+ | 1.1− | 2006 10 08 | 240 | 0.0 | 0.1− | 2006 10 22 | 711 | 0.0 | 0.5+ |
| 2002 10 03 | 355 | 0.4+ | 1.0− | 2006 10 08 | 240 | 0.1+ | 0.1− | 2006 10 24 | H45 | 0.1− | 0.1− |
| 2002 10 03 | 355 | 0.4+ | 0.7− | 2006 10 08 | 240 | 0.0 | 0.1− | 2006 10 24 | H45 | 0.0 | 0.2− |
| 2002 10 07 | 557 | 0.3+ | 0.3− | 2006 10 08 | 240 | 0.1+ | 0.2− | 2006 10 24 | H45 | 0.1− | 0.0 |
| 2002 10 07 | 557 | 0.2− | 0.1− | 2006 10 08 | 240 | 0.0 | 0.1− | 2006 10 24 | H45 | 0.2− | 0.3− |
| 2002 10 07 | 557 | 0.1− | 0.1+ | 2006 10 08 | 240 | 0.2+ | 0.0 | 2006 10 24 | H45 | 0.0 | 0.1− |
| 2002 10 08 | 127 | 0.3− | 0.0 | 2006 10 08 | 639 | 0.1− | 0.0 | 2006 10 25 | 113 | 0.2+ | 0.1+ |
| 2002 10 08 | 127 | 0.2− | 0.2+ | 2006 10 08 | 639 | 0.2− | 0.2+ | 2006 10 25 | 113 | 0.0 | 0.1+ |
| 2002 10 08 | 127 | 0.3− | 0.1+ | 2006 10 08 | 639 | 0.1− | 0.2+ | 2006 10 25 | 113 | 0.1+ | 0.1+ |
| 2002 10 13 | 941 | 0.3− | 0.3+ | 2006 10 08 | 639 | 0.1− | 0.2+ | 2006 10 25 | 113 | 0.1− | 0.1+ |
| 2002 10 13 | 941 | 0.3− | 0.3+ | 2006 10 09 | 379 | 0.2− | 0.2+ | 2006 10 25 | 113 | 0.1+ | 0.0 |
| 2002 10 13 | 941 | 0.3− | 0.2+ | 2006 10 09 | 379 | 0.1− | 0.2+ | 2006 10 25 | 113 | 0.1+ | 0.0 |
| 2002 10 13 | 941 | 0.3+ | 0.3+ | 2006 10 09 | 379 | 0.2+ | 0.4+ | 2006 10 25 | 151 | 0.0 | 0.1+ |
| 2002 10 13 | 941 | 0.6+ | 0.5+ | 2006 10 09 | 379 | 0.2− | 0.0 | 2006 10 25 | 151 | 0.1+ | 0.1+ |
| 2002 10 13 | 644 | 1.0− | 0.3− | 2006 10 09 | 379 | 0.0 | 0.0 | 2006 10 25 | 151 | 0.0 | 0.2+ |
| 2002 10 13 | 644 | 0.7− | 0.3− | 2006 10 09 | 379 | 0.3+ | 0.4+ | 2006 10 25 | 151 | 0.2− | 0.3+ |
| 2002 10 13 | 644 | 0.9− | 0.3− | 2006 10 09 | 379 | 0.2+ | 0.2+ | 2006 10 25 | 639 | 0.0 | 0.2+ |
| 2002 10 15 | 704 | 0.6+ | 0.8+ | 2006 10 09 | 379 | 0.0 | 0.2+ | 2006 10 25 | B09 | 0.2+ | 0.5+ |
| 2002 10 15 | 704 | 0.9+ | 0.5+ | 2006 10 09 | 379 | 0.1+ | 0.1+ | 2006 10 25 | 639 | 0.0 | 0.1+ |
| 2002 10 15 | 704 | 0.7+ | 0.8+ | 2006 10 09 | 379 | 0.4+ | 0.1+ | 2006 10 25 | 639 | 0.1− | 0.2+ |
| 2002 10 15 | 704 | 0.3+ | 0.6+ | 2006 10 09 | B09 | 0.1− | 0.4− | 2006 10 25 | B09 | 0.4+ | 0.8+ |
| 2002 10 15 | 704 | 0.3+ | 0.5+ | 2006 10 09 | B09 | 0.4− | 0.0 | 2006 10 25 | B09 | 0.6+ | 0.4+ |
| 2002 10 17 | 704 | 0.1+ | 1.3− | 2006 10 10 | 379 | 0.4+ | 0.1+ | 2006 10 25 | B09 | 0.3+ | 1.3+ |
| 2002 10 17 | 704 | 0.2+ | 1.0− | 2006 10 10 | 379 | 0.5+ | 0.1− | 2006 10 25 | A41 | 0.1+ | 0.4+ |
| 2002 10 17 | 704 | 0.1− | 1.0− | 2006 10 10 | 379 | 0.1+ | 0.2− | 2006 10 26 | A41 | 0.1+ | 0.4+ |
| 2002 10 18 | 941 | 0.2− | 0.2+ | 2006 10 10 | 379 | 0.0 | 0.2+ | 2006 10 27 | 703 | 1.1− | 0.3+ |
| 2002 10 18 | 941 | 0.6+ | 0.3− | 2006 10 10 | 379 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.1+ |
| 2002 10 19 | 240 | 0.1+ | 0.5+ | 2006 10 10 | 151 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2002 10 19 | 240 | 0.3− | 0.5− | 2006 10 10 | 151 | 0.0 | 0.1+ | 2006 10 30 | 726 | (0.6− | 1.7+) |
| 2002 10 19 | 240 | 0.1− | 0.3− | 2006 10 10 | 151 | 0.0 | 0.2+ | 2006 10 30 | 726 | 0.5+ | 0.3− |
| 2002 10 21 | 170 | 0.8+ | 0.0 | 2006 10 10 | 151 | 0.1− | 0.1+ | 2006 10 30 | 726 | (1.5+ | 1.7+) |
| 2002 10 21 | 170 | 1.4+ | 0.8− | 2006 10 10 | 151 | 0.1− | 0.2+ | 2006 10 30 | 726 | (0.6− | 2.7+) |
| 2002 10 21 | 170 | 0.7+ | 0.1+ | 2006 10 10 | 151 | 0.1− | 0.1+ | 2006 10 30 | 726 | 0.2+ | 1.3+ |
| 2002 10 26 | 859 | 0.8− | 0.3+ | 2006 10 10 | 151 | 0.1− | 0.2+ | 2006 10 30 | 240 | 0.1+ | 0.1+ |
| 2002 10 26 | 859 | (3.1− | 1.1+) | 2006 10 10 | 151 | 0.1− | 0.0 | 2006 10 30 | 240 | 0.1+ | 0.1+ |
| 2002 10 26 | 151 | 0.2+ | 0.0 | 2006 10 10 | 151 | 0.2− | 0.1+ | 2006 10 30 | 240 | 0.0 | 0.1+ |
| 2002 10 26 | 151 | 0.2+ | 0.4+ | 2006 10 10 | 151 | 0.1− | 0.2+ | 2006 10 30 | 240 | 0.0 | 0.2+ |
| 2002 10 26 | 151 | 0.1− | 0.2+ | 2006 10 10 | 151 | 0.2− | 0.2+ | 2006 10 30 | 240 | 0.1+ | 0.2+ |
| 2002 10 26 | 151 | 0.1+ | 0.1+ | 2006 10 10 | 151 | 0.1− | 0.1+ | 2006 10 30 | 240 | 0.2+ | 0.3+ |
| 2002 10 26 | 170 | 0.1− | 0.1+ | 2006 10 10 | 151 | 0.1− | 0.1+ | 2006 10 30 | 240 | 0.2+ | 0.1+ |
| 2002 10 26 | 170 | 0.0 | 0.2+ | 2006 10 10 | 627 | 0.0 | 0.1+ | 2006 11 02 | 703 | 0.6− | 0.2− |
| 2002 10 26 | 170 | 0.5− | 0.0 | 2006 10 10 | 627 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.5− | 0.2+ |
| 2002 10 26 | 170 | 0.0 | 0.6− | 2006 10 10 | 627 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.7− | 0.2− |
| 2002 10 26 | 170 | 0.4+ | 0.5− | 2006 10 10 | B09 | 0.7− | 0.6− | 2006 11 08 | 113 | 0.3+ | 0.2+ |
| 2002 10 31 | 704 | (1.8+ | 0.2−) | 2006 10 10 | B09 | 0.3+ | 0.5+ | 2006 11 08 | 113 | 0.0 | 0.0 |
| 2002 10 31 | 704 | (2.1+ | 0.4−) | 2006 10 10 | B09 | 0.4+ | 0.8+ | 2006 11 08 | 113 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | (1.8+ | 0.7−) | 2006 10 10 | 627 | 0.3+ | 0.3+ | 2006 11 08 | 113 | 0.5+ | 0.2+ |
| 2002 10 31 | 704 | (1.8+ | 0.2−) | 2006 10 10 | B09 | 0.7− | 1.3+ | 2006 11 08 | 113 | 0.1− | 0.1− |
| 2002 10 31 | 704 | (1.8+ | 0.1−) | 2006 10 11 | 113 | 0.1+ | 0.2− | 2006 11 08 | 113 | 0.2+ | 0.1− |
| 2002 11 01 | J87 | 0.1+ | 0.1− | 2006 10 11 | 113 | 0.0 | 0.4− | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2002 11 01 | J87 | (2.8− | 0.4−) | 2006 10 11 | 113 | 0.1+ | 0.3− | 2006 11 15 | 703 | 0.2− | 0.3+ |
| 2002 11 07 | 938 | 0.7+ | 0.5+ | 2006 10 11 | 113 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2002 11 07 | 938 | 0.9− | 1.4+ | 2006 10 11 | 113 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2002 11 11 | 704 | 0.0 | 1.4+ | 2006 10 11 | 473 | 0.2− | 0.4+ | 2006 11 16 | 704 | 1.0− | 1.4+ |
| 2002 11 11 | 704 | 0.5− | 1.3+ | 2006 10 11 | 473 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.6− | 0.4+ |
| 2002 11 11 | 704 | 0.2+ | 1.4+ | 2006 10 11 | 473 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 2002 11 11 | 704 | 1.0− | 0.8+ | 2006 10 12 | 379 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.9− | 0.4+ |
| 2002 11 11 | 704 | 0.1+ | 1.3+ | 2006 10 12 | 379 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.2+ | 0.1+ |
| 2003 12 26 | 461 | (0.7+ | 1.6+) | 2006 10 12 | 379 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.3+ | 0.1− |
| 2003 12 26 | 461 | 1.2+ | 0.6+ | 2006 10 12 | 379 | 0.2+ | 0.0 | 2006 11 22 | 703 | 0.5− | 0.9− |
| 2004 09 13 | 704 | 0.2+ | 0.2− | 2006 10 12 | 379 | 0.2+ | 0.1− | 2006 11 22 | 703 | 0.0 | 0.4− |
| 2004 09 13 | 704 | 0.6+ | 0.3− | 2006 10 12 | 379 | 0.2+ | 0.1+ | | | | |
| 2004 09 13 | 704 | 0.4+ | 0.1− | 2006 10 12 | 379 | 0.1− | 0.2+ | | | | |

**(137033)∗ 1998 UM$_6$ = 2002 RU$_{110}$**

Discovered 1998 Oct. 21 at Kleť.

Id. G. V. Williams (*MPO* 34747)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.03405 | (2000.0) | | | | |
| $n$ | 0.23210799 | $\omega$ | 251.24425 | | +0.62345562 | +0.77813497 |
| $a$ | 2.6222615 | $\Omega$ | 57.56436 | | −0.67902441 | +0.58720169 |
| $e$ | 0.1669906 | $i$ | 5.18117 | | −0.38759378 | +0.22293529 |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 21 | 046 | 0.3+ | 0.3− | 1998 12 10 | 046 | 1.1+ | 0.1− | 2002 10 08 | 699 | 0.3− | 1.4+ |
| 1998 10 21 | 046 | 0.1− | 0.1+ | 1998 12 10 | 046 | 0.7+ | 0.5+ | 2002 10 08 | 699 | 0.7− | 0.5− |
| 1998 10 21 | 046 | 0.1+ | 0.2+ | 2002 09 06 | 704 | 0.4+ | 1.5− | 2002 10 11 | 704 | 2.0− | 0.1− |
| 1998 10 21 | 046 | 0.1− | 0.1− | 2002 09 06 | 704 | 0.8− | 0.4− | 2002 10 11 | 704 | 1.3− | 0.7− |
| 1998 10 23 | 046 | 0.3+ | 0.7+ | 2002 09 06 | 704 | 0.6− | 1.3− | 2002 10 11 | 704 | 1.9− | 0.3+ |
| 1998 10 23 | 046 | 0.3− | 0.2+ | 2002 09 06 | 704 | 1.3− | 1.2− | 2003 12 18 | 691 | 0.0 | 0.3+ |
| 1998 10 23 | 046 | 0.3− | 0.3− | 2002 09 06 | 704 | 0.1− | 1.2− | 2003 12 18 | 691 | 0.3+ | 0.1+ |
| 1998 10 23 | 046 | 0.2− | 0.3+ | 2002 09 07 | 704 | 0.4+ | 0.2− | 2003 12 18 | 691 | 0.1− | 0.4+ |
| 1998 10 23 | 046 | 0.1+ | 0.3+ | 2002 09 07 | 704 | 1.0− | 0.4+ | 2005 04 04 | 703 | 0.4− | 0.0 |
| 1998 10 25 | 046 | 0.4+ | 0.2− | 2002 09 07 | 704 | 0.0 | 0.5+ | 2005 04 04 | 703 | 1.3− | 1.7+ |
| 1998 10 25 | 046 | 0.1− | 0.7+ | 2002 09 07 | 704 | 0.0 | 0.1− | 2005 04 04 | 703 | 0.1− | 0.2− |
| 1998 10 25 | 046 | 1.0+ | 1.2− | 2002 09 07 | 704 | 0.1− | 0.3+ | 2005 04 04 | 703 | 0.4+ | 0.3− |
| 1998 10 25 | 046 | 0.3− | 0.0 | 2002 09 07 | 704 | 0.4− | 1.0+ | 2006 08 16 | E12 | 0.1− | 0.0 |
| 1998 10 25 | 046 | 0.8+ | 0.3− | 2002 09 07 | 704 | 0.2− | 0.3+ | 2006 08 16 | E12 | 0.5− | 0.5+ |
| 1998 11 07 | 046 | 0.3− | 1.0− | 2002 09 07 | 704 | 0.7− | 0.6+ | 2006 08 16 | E12 | 1.0+ | 0.2+ |
| 1998 11 07 | 046 | 1.0+ | 0.1− | 2002 09 07 | 704 | 0.6− | 0.2+ | 2006 08 16 | E12 | 0.1+ | 0.2+ |
| 1998 11 07 | 046 | 0.3+ | 0.4− | 2002 09 07 | 704 | 1.2− | 0.9− | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 1998 11 07 | 046 | 0.4+ | 0.4− | 2002 09 14 | 608 | 1.1− | 1.2− | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 1998 11 11 | 046 | 0.7− | 0.2+ | 2002 09 14 | 608 | 1.1− | 1.3− | 2006 08 20 | 644 | 0.5+ | 0.3+ |
| 1998 11 11 | 046 | 0.3− | 0.2− | 2002 09 14 | 608 | 1.1− | 1.0− | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 1998 11 11 | 046 | 0.2− | 0.2+ | 2002 09 30 | 608 | 0.5+ | 1.0− | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 1998 11 11 | 046 | 0.3+ | 0.1− | 2002 09 30 | 608 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.4+ | 0.4+ |
| 1998 11 24 | 046 | 0.4− | 0.4− | 2002 09 30 | 608 | 0.4+ | 0.1− | 2006 08 28 | E12 | 0.2− | 0.5+ |
| 1998 11 24 | 046 | 1.0+ | 0.8− | 2002 10 03 | 704 | 0.8+ | 1.2+ | 2006 08 28 | E12 | 1.0+ | 1.6− |
| 1998 11 24 | 046 | 0.3− | 0.6− | 2002 10 03 | 704 | 0.2+ | 1.6+ | 2006 08 28 | E12 | 0.2+ | 0.1− |
| 1998 11 24 | 046 | 0.9+ | 0.7− | 2002 10 03 | 704 | 1.2+ | 0.7+ | 2006 08 28 | E12 | 0.4+ | 0.4+ |
| 1998 12 09 | 046 | 1.4+ | 1.1+ | 2002 10 03 | 704 | 1.4+ | 1.5+ | 2006 09 15 | 644 | 0.8+ | 0.4+ |
| 1998 12 09 | 046 | 0.6+ | 0.5+ | 2002 10 08 | 699 | 0.6− | 0.1− | 2006 09 15 | 644 | 0.2+ | 0.3+ |
| 1998 12 09 | 046 | 1.6+ | 1.2+ | 2002 10 08 | 699 | 0.2+ | 0.5+ | 2006 09 15 | 644 | 0.2+ | 0.3+ |

**(137034)∗ 1998 UD$_{14}$ = 2004 BQ$_{56}$**

Discovered 1998 Oct. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.07035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25637925 | $\omega$ | 75.93092 | | −0.27579511 | +0.96121554 | |
| $a$ | 2.4540353 | $\Omega$ | 178.05819 | | −0.89622779 | −0.25665249 | |
| $e$ | 0.1412905 | $i$ | 2.22926 | | −0.34743749 | −0.10096622 | |
| $P$ | 3.84 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.5+ | 0.9− | 2004 02 17 | 704 | 0.3+ | 0.4− | 2005 07 12 | 703 | 0.6+ | 1.1− |
| 1994 10 08 | 691 | 0.2+ | 0.3− | 2004 02 26 | 704 | 0.6− | 0.3− | 2005 08 06 | 644 | 0.1− | 0.5+ |
| 1994 10 08 | 691 | 0.1− | 0.4− | 2004 02 26 | 704 | 0.7− | 1.0+ | 2005 08 06 | 644 | 0.1− | 0.5+ |
| 1998 10 17 | 691 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.4− | 0.0 | 2005 08 06 | 644 | 0.2− | 0.4+ |
| 1998 10 17 | 691 | 0.4− | 0.2− | 2004 02 26 | 704 | 0.5− | 0.6+ | 2005 08 06 | 644 | 0.0 | 0.5+ |
| 1998 10 17 | 691 | 0.1− | 0.3+ | 2004 02 26 | 704 | (1.7− | 0.6−) | 2005 08 06 | 644 | 0.1− | 0.5+ |
| 1998 10 23 | 691 | 0.2+ | 0.0 | 2004 02 29 | 691 | 0.0 | 0.1+ | 2005 08 06 | 644 | 0.3− | 0.5+ |
| 1998 10 23 | 691 | 0.2+ | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2005 08 25 | 644 | 0.3− | 0.5+ |
| 1998 10 23 | 691 | 0.1+ | 0.0 | 2004 02 29 | 691 | 0.0 | 0.1+ | 2005 08 25 | 644 | 0.2+ | 0.6+ |
| 1998 10 24 | 691 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.3+ | 0.5+ | 2005 08 25 | 644 | 0.0 | 0.6+ |
| 1998 10 24 | 691 | 0.2− | 0.0 | 2004 03 15 | 704 | 1.0− | 0.1− | 2005 11 25 | G96 | 0.0 | 0.0 |
| 1998 10 24 | 691 | 0.2− | 0.0 | 2004 03 15 | 704 | 0.6− | 0.3+ | 2005 11 25 | G96 | 0.2+ | 0.0 |
| 2000 02 02 | 704 | 1.4+ | 0.1− | 2004 03 15 | 704 | 1.0− | 0.1− | 2005 11 25 | G96 | 1.3+ | 1.0+ |
| 2000 02 02 | 704 | 0.4+ | 0.4− | 2004 03 18 | 704 | 1.0+ | 0.4+ | 2005 11 25 | G96 | 0.2− | 0.2− |
| 2000 02 02 | 704 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.3+ |
| 2000 02 02 | 704 | 0.6− | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.5− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2000 02 02 | 704 | 0.6+ | 1.0+ | 2004 03 18 | 704 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.6− | 0.3− |
| 2004 01 23 | 699 | 0.6− | 1.3+ | 2004 03 18 | 704 | 0.5+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2004 01 23 | 699 | 1.0+ | 0.3− | 2005 05 19 | G96 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2004 01 23 | 699 | 0.3− | 0.7+ | 2005 05 19 | G96 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.6+ | 0.0 |
| 2004 01 23 | 699 | (1.8− | 0.7−) | 2005 05 19 | G96 | 0.8− | 1.0+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2004 01 24 | 704 | 0.3+ | 0.5+ | 2005 05 19 | G96 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2004 01 24 | 704 | 0.4+ | 0.3+ | 2005 06 29 | 644 | 0.0 | 0.5+ | 2006 11 12 | G96 | 0.4+ | 0.1+ |
| 2004 01 24 | 704 | 0.7+ | 0.2+ | 2005 06 29 | 644 | 0.2+ | 0.7+ | 2006 11 12 | G96 | 0.2− | 0.4− |
| 2004 01 24 | 704 | 0.2+ | 0.3− | 2005 06 29 | 644 | 0.0 | 0.9+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2005 07 05 | 644 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.5− | 0.6− |
| 2004 02 11 | 644 | 0.4+ | 0.1− | 2005 07 05 | 644 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.3− | 0.4+ |
| 2004 02 11 | 644 | 0.4+ | 0.0 | 2005 07 05 | 644 | 0.2+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 02 12 | 691 | 0.2− | 0.3− | 2005 07 11 | 703 | 0.8− | 1.2− | 2006 11 16 | 691 | 0.1− | 0.9+ |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2005 07 11 | 703 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 02 12 | 691 | 0.1− | 0.3− | 2005 07 11 | 703 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2004 02 17 | 704 | 0.2− | 0.2− | 2005 07 11 | 703 | 0.4+ | 0.8− | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2004 02 17 | 704 | 0.2+ | 0.0 | 2005 07 12 | 703 | 0.7− | 0.3− | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2004 02 17 | 704 | 0.1− | 0.6− | 2005 07 12 | 703 | 0.3− | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2004 02 17 | 704 | 0.7− | 0.9+ | 2005 07 12 | 703 | 0.4− | 0.6− | 2006 11 24 | 691 | 0.0 | 0.1− |

**(137035)∗ 1998 UE$_{17}$ = 2002 XD$_{87}$**

Discovered 1998 Oct. 17 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPO* 39971)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.61210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27603861 | $\omega$ | 127.37525 | | +0.02332420 | −0.99712605 | |
| $a$ | 2.3360896 | $\Omega$ | 321.09921 | | +0.87712323 | +0.05500633 | |
| $e$ | 0.0639603 | $i$ | 6.59111 | | +0.47969868 | −0.05209554 | |
| $P$ | 3.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.4+ | 1.2+ | 2003 01 05 | 704 | 0.2+ | 0.3− | 2005 09 26 | 644 | 0.2− | 0.1+ |
| 1998 10 12 | 699 | 0.9+ | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.2+ | 2005 10 01 | 703 | 0.0 | 0.4− |
| 1998 10 12 | 699 | 0.1+ | 1.2+ | 2003 01 09 | 704 | 0.2− | 1.1+ | 2005 10 01 | 703 | 0.8+ | 0.2− |
| 1998 10 17 | 327 | 0.2− | 0.8− | 2003 01 09 | 704 | 0.1− | 0.2+ | 2005 10 01 | 703 | 0.4+ | 0.7− |
| 1998 10 17 | 327 | 0.4− | 0.1+ | 2003 01 09 | 704 | 0.1+ | 0.2− | 2005 10 01 | 703 | 0.6+ | 0.6− |
| 1998 10 17 | 327 | 0.1− | 0.5− | 2003 01 09 | 704 | 0.3+ | 0.4− | 2005 10 02 | 699 | 1.1− | 0.6+ |
| 1998 10 19 | 327 | 0.3− | 0.4− | 2003 01 09 | 704 | 0.4+ | 0.3+ | 2005 10 02 | 699 | 0.2− | 0.2+ |
| 1998 10 19 | 327 | 0.5− | 0.6+ | 2003 02 01 | 704 | 0.0 | 0.3+ | 2005 10 02 | 699 | 0.6+ | 1.0+ |
| 1998 10 19 | 327 | 0.6+ | 0.5− | 2003 02 01 | 704 | 0.4− | 0.1− | 2005 10 02 | 699 | 0.7+ | 0.5− |
| 2000 03 09 | 704 | 0.1+ | 0.1− | 2003 02 01 | 704 | 0.4− | 0.8− | 2005 10 21 | 644 | 0.1− | 0.0 |
| 2000 03 09 | 704 | 0.1− | 0.0 | 2005 08 29 | 644 | 0.3− | 0.1− | 2005 10 21 | 644 | 0.2+ | 0.2+ |
| 2000 03 09 | 704 | 0.2− | 0.5+ | 2005 08 29 | 644 | 0.2− | 0.1− | 2005 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 06 | 704 | 0.3+ | 0.4+ | 2005 08 29 | 644 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2005 08 30 | 704 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.3+ |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2005 08 30 | 704 | 0.1+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.6− | 0.1+ | 2005 08 30 | 704 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2005 09 01 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.6− | 0.5− |
| 2002 12 11 | 704 | 0.2+ | 0.5− | 2005 09 01 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2005 09 01 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.5− | 0.1+ | 2005 09 09 | A50 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.2+ |
| 2002 12 15 | 704 | 0.7− | 0.3+ | 2005 09 09 | A50 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.5+ | 0.4− |
| 2002 12 15 | 704 | 0.3− | 1.1+ | 2005 09 23 | 644 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 12 15 | 704 | 0.0 | 0.3+ | 2005 09 23 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 12 15 | 704 | 0.4− | 0.4− | 2005 09 23 | 644 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2003 01 05 | 704 | 0.4+ | 0.6− | 2005 09 26 | 644 | 0.0 | 0.0 | | | | |
| 2003 01 05 | 704 | 0.3+ | 0.2− | 2005 09 26 | 644 | 0.2− | 0.1+ | | | | |

**(137036)∗ 1998 UC$_{18}$ = 2002 VH$_{108}$**

Discovered 1998 Oct. 19 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPO* 37126)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.10826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25955558 | $\omega$ | 184.19074 | | +0.08010394 | −0.98831995 | |
| $a$ | 2.4339733 | $\Omega$ | 261.25059 | | +0.91830432 | +0.12375510 | |
| $e$ | 0.1961687 | $i$ | 7.53711 | | +0.38768614 | −0.08892896 | |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 327 | 0.1− | 0.6− | 2002 12 06 | 704 | 0.5+ | 0.4+ | 2003 01 27 | 291 | 0.7− | 0.3+ |
| 1998 10 19 | 327 | 0.8+ | 0.6− | 2002 12 06 | 704 | 0.5+ | 0.4+ | 2003 01 27 | 704 | (1.7+ | 0.3−) |
| 1998 10 19 | 327 | 0.2+ | 0.3+ | 2002 12 07 | 704 | 0.4+ | 0.4+ | 2003 01 27 | 704 | 0.3− | 0.2+ |
| 1998 10 20 | 327 | 0.5+ | 0.2− | 2002 12 07 | 704 | 0.2+ | 0.3+ | 2003 01 27 | 291 | 0.2+ | 0.3+ |
| 1998 10 20 | 327 | 0.7+ | 0.2− | 2002 12 07 | 704 | 0.4+ | 0.3+ | 2004 05 19 | 291 | 0.1− | 0.4+ |
| 1998 10 20 | 327 | 0.1+ | 0.6− | 2002 12 07 | 704 | 0.6+ | 0.3+ | 2004 05 19 | 291 | 0.1+ | 0.2+ |
| 1998 10 22 | 327 | 0.4+ | 0.5− | 2002 12 07 | 704 | 0.2+ | 0.2+ | 2004 05 19 | 291 | 0.5+ | 0.2+ |
| 1998 10 22 | 327 | 0.2+ | 0.3− | 2002 12 08 | 333 | 0.2− | 0.3− | 2005 07 04 | 691 | 0.3− | 0.1+ |
| 1998 10 22 | 327 | 0.5+ | 0.2− | 2002 12 08 | 333 | 0.2− | 0.4− | 2005 07 04 | 691 | 0.2− | 0.3+ |
| 2002 10 12 | 704 | 0.8+ | 0.3+ | 2002 12 08 | 333 | 0.4− | 0.6− | 2005 07 04 | 691 | 0.2− | 0.4+ |
| 2002 10 12 | 704 | 0.6+ | 1.4+ | 2002 12 11 | 704 | 0.5+ | 0.2− | 2005 07 29 | 644 | 0.3− | 0.2+ |
| 2002 10 12 | 704 | 0.5+ | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.2− | 2005 07 29 | 644 | 0.4− | 0.3+ |
| 2002 10 12 | 704 | 1.3+ | 0.9+ | 2002 12 11 | 704 | 0.2+ | 0.2+ | 2005 07 29 | 644 | 0.3− | 0.4+ |
| 2002 11 12 | 704 | 0.2− | 0.4+ | 2002 12 11 | 704 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.6+ | 0.1− |
| 2002 11 12 | 704 | 0.7− | 0.7+ | 2002 12 11 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 691 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | 0.9− | 0.0 | 2002 12 27 | 644 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.7+ | 0.1− |
| 2002 11 12 | 704 | 0.4− | 0.3+ | 2002 12 27 | 644 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.7− | 0.1− | 2002 12 27 | 644 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 1.2− | 0.0 | 2002 12 31 | 699 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2002 11 14 | 704 | 0.7− | 0.9+ | 2002 12 31 | 704 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2002 11 14 | 704 | 0.6− | 0.1+ | 2002 12 31 | 699 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.9− | 0.0 |
| 2002 11 14 | 704 | 0.3− | 0.2− | 2002 12 31 | 704 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.7− | 0.1+ | 2002 12 31 | 699 | 0.8− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 11 27 | 599 | 0.1+ | 0.2− | 2002 12 31 | 704 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.8− |
| 2002 11 27 | 599 | 0.1+ | 0.2− | 2002 12 31 | 704 | 0.5− | 0.5+ | 2006 11 17 | 703 | 0.5+ | 0.2− |
| 2002 11 27 | 599 | 0.1− | 0.2− | 2002 12 31 | 699 | (0.2+ | 4.0−) | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2002 11 28 | 599 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.4− | 1.5+ | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2002 11 28 | 599 | 0.1+ | 0.7− | 2003 01 08 | 704 | 0.8− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 11 28 | 599 | 0.3+ | 0.1− | 2003 01 08 | 704 | 0.3+ | 1.0− | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2002 11 28 | 599 | 0.2+ | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.2− | 1.2+ |
| 2002 11 28 | 599 | 0.0 | 0.1− | 2003 01 08 | 704 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.9− | 1.0+ |
| 2002 11 28 | 599 | 0.2− | 0.2− | 2003 01 08 | 704 | 0.4+ | 0.1− | 2006 11 24 | 644 | 0.3− | 0.0 |
| 2002 11 28 | 599 | 0.7− | 0.2− | 2003 01 19 | 644 | 0.1+ | 0.1+ | 2006 11 24 | 644 | 0.1+ | 0.1− |
| 2002 12 02 | 704 | 0.2+ | 0.1− | 2003 01 19 | 644 | 0.2− | 0.1+ | 2006 11 24 | 644 | 0.0 | 0.2− |
| 2002 12 02 | 704 | 0.1+ | 0.0 | 2003 01 19 | 644 | 0.2− | 0.2+ | 2006 11 27 | 703 | 1.2− | 0.5− |
| 2002 12 02 | 704 | 0.2− | 0.5+ | 2003 01 27 | 704 | 0.0 | 1.0+ | 2006 11 27 | 703 | 0.6− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2003 01 27 | 291 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.9− | | |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2003 01 27 | 704 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.6− | | |

**(137037)∗ 1998 UM$_{19}$ = 2002 AL$_4$**

Discovered 1998 Oct. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22054)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.85177 | | (2000.0) | | | |
| $n$ | 0.36196974 | $\omega$ | 22.95814 | | +0.55753111 | −0.80275569 |
| $a$ | 1.9499398 | $\Omega$ | 34.26007 | | +0.69139071 | +0.30797680 |
| $e$ | 0.1021918 | $i$ | 22.07017 | | +0.45949749 | +0.51062080 |
| $P$ | 2.72 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.1− | 2002 01 09 | 704 | 1.0− | 0.5+ | 2005 03 12 | 704 | 0.8+ | 0.9+ | | |
| 1998 09 25 | 645 | 0.0 | 0.1− | 2002 01 09 | 704 | 0.8− | 0.4− | 2005 03 12 | 704 | (0.1+ | 2.2−) | | |
| 1998 10 11 | 699 | 1.1+ | 0.5+ | 2002 01 09 | 704 | 0.5− | 0.3− | 2005 03 12 | 704 | 0.5− | 1.1+ | | |
| 1998 10 11 | 699 | 0.2+ | 0.4+ | 2002 01 09 | 704 | 0.4− | 1.1− | 2005 03 13 | 704 | 1.9− | 1.0+ | | |
| 1998 10 11 | 699 | 0.4− | 0.2+ | 2002 01 09 | 704 | 0.1+ | 0.7− | 2005 03 13 | 704 | (0.9+ | 2.2+) | | |
| 1998 10 15 | 704 | 0.7+ | 1.3+ | 2002 01 12 | 699 | 1.6+ | 0.2− | 2005 03 13 | 704 | 0.1− | 1.1+ | | |
| 1998 10 15 | 704 | (2.1− | 0.5−) | 2002 01 12 | 699 | 0.2− | 0.2+ | 2005 03 13 | 704 | 0.6+ | 1.4+ | | |
| 1998 10 15 | 704 | 0.8+ | 0.6+ | 2002 01 12 | 699 | 0.5+ | 0.7+ | 2005 03 14 | 704 | 1.4+ | 1.1− | | |
| 1998 10 15 | 704 | (4.4− | 0.5−) | 2002 01 12 | 699 | 0.3+ | 0.7+ | 2005 03 14 | 704 | 1.7+ | 0.3− | | |
| 1998 10 20 | 699 | 0.2− | 0.4+ | 2002 01 12 | 699 | 1.2+ | 0.7+ | 2005 03 14 | 704 | 0.7+ | 1.0− | | |
| 1998 10 20 | 699 | 1.5+ | 0.0 | 2002 01 12 | 699 | 0.4− | 0.4+ | 2005 03 14 | 704 | (2.4− | 2.6−) | | |
| 1998 10 20 | 699 | 0.0 | 0.7+ | 2002 01 12 | 699 | 1.3+ | 0.8+ | 2005 03 14 | 703 | 0.7− | 0.1+ | | |
| 1998 10 28 | 704 | 0.7+ | 1.4− | 2002 01 12 | 699 | 0.6− | 0.1+ | 2005 03 14 | 703 | 0.5− | 0.8− | | |
| 1998 10 28 | 704 | 0.1+ | 0.5− | 2002 02 01 | 704 | 0.1− | 0.4− | 2005 03 14 | 703 | 0.2− | 0.5− | | |
| 1998 10 28 | 704 | 0.6− | 0.4+ | 2002 02 01 | 704 | 0.4+ | 0.1+ | 2005 03 14 | 703 | 0.7− | 0.8− | | |
| 1998 10 28 | 704 | 0.2− | 1.1+ | 2002 02 01 | 704 | 1.6− | 0.4− | 2005 04 01 | 703 | 0.8− | 0.1+ | | |
| 1998 10 29 | 704 | 1.3− | 0.3− | 2002 02 01 | 704 | 1.7− | 0.8+ | 2005 04 01 | 703 | 0.3+ | 0.5+ | | |
| 1998 10 29 | 704 | 0.2+ | 0.7− | 2002 02 01 | 704 | 0.8− | 0.6− | 2005 04 01 | 703 | 1.3+ | 0.1+ | | |
| 1998 10 29 | 704 | 1.3− | 0.8− | 2002 02 06 | 704 | (1.7+ | 3.2−) | 2005 04 01 | 703 | 1.2− | 0.5+ | | |
| 1998 10 29 | 704 | 0.3+ | 0.2− | 2002 02 06 | 704 | (1.1+ | 2.6−) | 2006 08 14 | E12 | 0.1− | 0.4− | | |
| 1998 11 10 | 704 | (0.5+ | 2.5−) | 2002 02 06 | 704 | 1.1+ | 0.8− | 2006 08 14 | E12 | 0.4+ | 0.6+ | | |
| 1998 11 10 | 704 | 0.1+ | 0.8− | 2002 02 06 | 704 | (0.6+ | 2.2−) | 2006 08 14 | E12 | 0.1+ | 0.3− | | |
| 1998 11 10 | 704 | (2.1− | 0.6−) | 2002 02 08 | 704 | 0.4− | 0.1− | 2006 08 14 | E12 | 0.1− | 1.2+ | | |
| 1998 11 10 | 699 | (2.1+ | 0.5+) | 2002 02 08 | 704 | 0.4+ | 0.6+ | 2006 08 26 | E12 | 0.6− | 0.3+ | | |
| 1998 11 10 | 704 | 0.3− | 0.5− | 2002 02 08 | 704 | 1.2− | 0.2− | 2006 08 26 | E12 | 1.3− | 1.1+ | | |
| 1998 11 10 | 699 | 1.2+ | 0.1+ | 2002 02 08 | 704 | 0.1− | 0.2+ | 2006 08 26 | E12 | 0.6− | 0.6+ | | |
| 1998 11 10 | 699 | 0.3− | 0.5+ | 2005 03 08 | 703 | 0.5+ | 0.4− | 2006 08 26 | E12 | 0.4− | 0.3+ | | |
| 2002 01 08 | 704 | 0.9+ | 0.4+ | 2005 03 08 | 703 | 0.3− | 0.0 | 2006 09 25 | E12 | 1.1− | 0.3− | | |
| 2002 01 08 | 704 | 0.5+ | 0.1+ | 2005 03 08 | 703 | 0.5− | 1.1+ | 2006 09 25 | E12 | 0.3+ | 1.2+ | | |
| 2002 01 08 | 704 | 0.5+ | 0.2+ | 2005 03 08 | 703 | 0.3− | 0.1+ | 2006 09 25 | E12 | 0.0 | 0.1+ | | |
| 2002 01 08 | 704 | 1.2+ | 0.6+ | 2005 03 12 | 704 | 1.7+ | 1.6− | | | | | | |
| 2002 01 08 | 704 | 0.7+ | 1.0+ | 2005 03 12 | 704 | 1.8− | 0.1+ | | | | | | |

**(137038)∗ 1998 UA$_{26}$**

Discovered 1998 Oct. 18 by E. W. Elst at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.34797 | | (2000.0) | | | |
| $n$ | 0.23865464 | $\omega$ | 292.91399 | | +0.97755707 | −0.19236232 |
| $a$ | 2.5740845 | $\Omega$ | 78.26253 | | +0.21064578 | +0.88621359 |
| $e$ | 0.2213711 | $i$ | 5.03333 | | +0.00324591 | +0.42145250 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 699 | 0.5+ | 0.2− | 2002 10 04 | 704 | (2.1+ | 0.2+) | 2006 08 14 | 644 | 0.2+ | 0.0 | | |
| 1998 10 14 | 699 | 0.4− | 0.7− | 2002 10 04 | 704 | (2.1+ | 0.4+) | 2006 08 14 | 644 | 0.1− | 0.2+ | | |
| 1998 10 14 | 699 | 0.7+ | 1.1+ | 2002 10 08 | 608 | 0.3+ | 0.6− | 2006 08 14 | 644 | 0.0 | 0.0 | | |
| 1998 10 18 | 809 | 1.0− | 1.6+ | 2002 10 08 | 608 | 0.3− | 0.9− | 2006 08 21 | 644 | 0.5+ | 0.2− | | |
| 1998 10 18 | 809 | 0.3+ | 1.2+ | 2002 10 08 | 608 | 0.4− | 1.0− | 2006 08 21 | 644 | 0.3+ | 0.1+ | | |
| 1998 10 18 | 809 | 0.9− | 1.4+ | 2002 10 22 | 644 | 0.2− | 0.2+ | 2006 08 21 | 644 | 0.1+ | 0.1+ | | |
| 1998 10 19 | 809 | (1.2+ | 2.9+) | 2002 10 22 | 644 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.3− | 1.3− | | |
| 1998 10 19 | 809 | (1.6+ | 3.4+) | 2002 10 22 | 644 | 0.1− | 0.5+ | 2006 08 30 | 699 | (1.6+ | 0.1+) | | |
| 1998 10 19 | 809 | (0.8+ | 4.0+) | 2002 10 30 | 704 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.7+ | 1.1+ | | |
| 1998 10 20 | 699 | 0.4+ | 0.4+ | 2002 10 30 | 704 | 0.3− | 0.4+ | 2006 08 30 | 699 | 1.3+ | 0.7+ | | |
| 1998 10 20 | 699 | 1.2+ | 0.6+ | 2002 10 30 | 704 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.7− | | |
| 1998 10 20 | 699 | 0.5+ | 0.4+ | 2002 10 30 | 704 | 0.5− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.2+ | | |
| 1998 11 11 | 704 | 1.2− | 0.3− | 2002 10 30 | 704 | 0.4− | 0.5− | 2006 09 18 | 699 | 1.1+ | 0.1− | | |
| 1998 11 11 | 704 | 0.6− | 0.7− | 2002 11 02 | 608 | 0.2− | 0.3− | 2006 09 18 | 699 | 0.1− | 0.1+ | | |
| 1998 11 11 | 704 | 0.2+ | 0.2+ | 2002 11 02 | 608 | 0.0 | 0.2− | 2006 09 20 | 703 | 0.6− | 0.4+ | | |
| 1998 11 11 | 704 | 0.5+ | 0.6+ | 2002 11 02 | 608 | 0.9− | 0.4− | 2006 09 20 | 703 | 0.3− | 0.4+ | | |
| 1998 11 11 | 704 | 0.8+ | 1.3+ | 2002 11 06 | 644 | 0.1− | 0.8+ | 2006 09 20 | 703 | 0.2− | 0.9− | | |
| 2001 05 26 | 691 | 0.1− | 0.0 | 2002 11 06 | 644 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 0.3− | 0.1− | | |
| 2001 05 26 | 691 | 0.0 | 0.2+ | 2002 11 06 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.7− | | |
| 2001 05 26 | 691 | 0.1+ | 0.4+ | 2002 11 07 | 704 | 1.0− | 0.9+ | 2006 09 25 | 699 | 0.2+ | 0.4− | | |
| 2002 08 12 | 704 | 0.2− | 0.1+ | 2002 11 07 | 704 | 1.2− | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.3+ | | |
| 2002 08 12 | 704 | 0.0 | 0.1− | 2002 11 07 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.4− | 0.1+ | | |
| 2002 08 12 | 704 | (1.7+ | 0.2+) | 2002 11 07 | 704 | 0.1− | 0.3+ | 2006 09 26 | 703 | 1.0− | 0.4+ | | |
| 2002 09 10 | 608 | 0.9− | 0.3− | 2002 11 07 | 704 | (0.1− | 1.7+) | 2006 09 26 | 703 | 0.3+ | 1.3− | | |
| 2002 09 10 | 608 | 0.5− | 0.2− | 2005 04 15 | 691 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.6+ | 1.3+ | | |
| 2002 09 10 | 608 | 0.9− | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.8+ | 0.0 | | |
| 2002 09 28 | 608 | (2.5− | 0.1−) | 2005 04 15 | 691 | 0.8+ | 0.8+ | 2006 11 27 | G96 | 0.4+ | 0.3− | | |
| 2002 09 28 | 608 | (3.1− | 0.3+) | 2005 05 11 | 947 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.3− | | |
| 2002 09 28 | 608 | (2.6− | 0.1+) | 2005 05 11 | 947 | 0.6− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.4− | | |
| 2002 10 04 | 704 | (2.6+ | 0.7+) | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.1− | | |
| 2002 10 04 | 704 | (3.1+ | 0.3+) | 2006 08 14 | 644 | 0.0 | 0.2+ | | | | | | |
| 2002 10 04 | 704 | (2.5+ | 0.2+) | 2006 08 14 | 644 | 0.2+ | 0.2− | | | | | | |

**(137039)∗ 1998 UX$_{31}$ = 2002 UU$_{26}$**

Discovered 1998 Oct. 26 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. G. V. Williams (*MPO* 37127)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.41423 | | (2000.0) | | | |
| $n$ | 0.23449278 | $\omega$ | 338.03999 | | +0.76155767 | −0.60844710 |
| $a$ | 2.6044522 | $\Omega$ | 61.39500 | | +0.62600333 | +0.60143329 |
| $e$ | 0.1796138 | $i$ | 14.72860 | | +0.16777885 | +0.51775489 |
| $P$ | 4.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 26 | 327 | 0.2+ | 0.7− | 2002 11 11 | 704 | (2.4− | 0.2+) | 2004 02 16 | 704 | 0.1− | 1.4+ | | |
| 1998 10 26 | 327 | 0.1− | 1.1− | 2002 11 11 | 704 | 0.1+ | 0.2− | 2004 02 16 | 704 | 1.1+ | 1.1+ | | |
| 1998 10 26 | 327 | 0.6− | 0.4− | 2002 11 11 | 704 | 0.1− | 0.1+ | 2004 02 16 | 704 | 0.5+ | 0.9+ | | |
| 1998 10 29 | 327 | 0.2− | 1.1− | 2002 11 11 | 704 | 0.1+ | 0.2+ | 2004 02 16 | 704 | 0.1− | 0.2+ | | |
| 1998 10 29 | 327 | 0.1+ | 0.2− | 2002 11 21 | 644 | 0.0 | 0.2+ | 2004 03 14 | 704 | (1.7− | 1.3−) | | |
| 1998 10 29 | 327 | 0.9+ | 0.8− | 2002 11 21 | 644 | 0.1+ | 0.1+ | 2004 03 14 | 704 | 0.2− | 0.6− | | |
| 1998 10 30 | 327 | 0.2+ | 0.7− | 2002 11 21 | 644 | 0.1− | 0.2+ | 2004 03 14 | 704 | 0.5+ | 0.3− | | |
| 1998 10 30 | 327 | 0.1− | 0.5− | 2002 12 01 | 704 | 0.3+ | 0.1+ | 2004 03 14 | 704 | 0.6+ | 0.3− | | |
| 1998 10 30 | 327 | 0.1+ | 0.3− | 2002 12 01 | 704 | 0.3+ | 0.3+ | 2004 04 14 | 644 | 0.2+ | 0.2+ | | |
| 1998 11 09 | 327 | 0.5+ | 1.1− | 2002 12 01 | 704 | 0.1− | 0.5− | 2004 04 14 | 644 | 0.5+ | 0.4+ | | |
| 1998 11 09 | 327 | 0.1− | 0.9− | 2002 12 01 | 704 | 0.2+ | 0.1− | 2004 04 14 | 644 | 0.1+ | 0.4+ | | |
| 1998 11 09 | 327 | 0.3+ | 0.7− | 2002 12 01 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.2+ | | |
| 1998 12 17 | 704 | 0.3− | 0.0 | 2002 12 06 | 608 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.3+ | | |
| 1998 12 17 | 704 | (0.4+ | 2.3−) | 2002 12 06 | 608 | 0.2+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.2+ | | |
| 1998 12 17 | 704 | 1.1+ | 0.1+ | 2002 12 06 | 608 | 0.2+ | 0.5− | 2006 09 26 | 703 | 0.1− | 0.3− | | |
| 1998 12 17 | 704 | 0.2− | 0.8− | 2002 12 07 | 704 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.2− | | |
| 1998 12 17 | 704 | 0.4− | 0.2− | 2002 12 07 | 704 | 0.6− | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.1+ | | |
| 2002 09 30 | 704 | 0.6+ | 0.7− | 2002 12 07 | 704 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.2− | | |
| 2002 09 30 | 704 | 0.8+ | 1.4− | 2002 12 09 | 644 | 0.6− | 0.2+ | 2006 10 03 | E12 | 0.3− | 0.7+ | | |
| 2002 09 30 | 704 | 0.7+ | 0.5− | 2002 12 09 | 644 | 0.3− | 0.2− | 2006 10 03 | E12 | 0.5+ | 0.3+ | | |
| 2002 10 26 | 608 | 1.1− | 0.5− | 2002 12 09 | 644 | 0.2− | 0.4+ | 2006 10 03 | E12 | 0.2+ | 0.4+ | | |
| 2002 10 26 | 608 | 0.6− | 0.4− | 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 10 03 | E12 | 0.5− | 0.4+ | | |
| 2002 10 26 | 608 | 1.1− | 0.9− | 2002 12 11 | 704 | 0.0 | 0.4− | 2006 10 12 | E12 | 0.1+ | 0.5+ | | |
| 2002 10 29 | 683 | 1.2− | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 10 12 | E12 | 0.2− | 0.6+ | | |
| 2002 10 29 | 683 | 0.1+ | 0.0 | 2002 12 11 | 704 | 0.1− | 0.3+ | 2006 10 12 | E12 | 0.4+ | 0.5− | | |
| 2002 10 29 | 683 | 1.0− | 0.4+ | 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 10 12 | E12 | 0.2+ | 0.2+ | | |
| 2002 10 30 | 683 | 0.9+ | 0.3+ | 2003 01 04 | 704 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 683 | 0.1+ | 0.0 | 2003 01 04 | 704 | 0.3+ | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2002 10 30 | 683 | 0.5+ | 0.1− | 2003 01 04 | 704 | 1.0− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.4+ | 2003 01 04 | 704 | (1.6+ | 0.0 ) | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 683 | (2.3+ | 0.3−) | 2003 01 04 | 704 | 0.6+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2003 01 05 | 699 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2002 10 31 | 683 | 0.3− | 0.3− | 2003 01 05 | 699 | 0.8− | 0.6+ | 2006 11 13 | 644 | 0.6− | 0.0 |
| 2002 10 31 | 683 | (3.9+ | 0.5+) | 2003 01 05 | 699 | 1.2− | 0.3− | 2006 11 13 | 644 | 0.0 | 0.5+ |
| 2002 10 31 | 704 | 0.1+ | 0.4+ | 2003 01 05 | 699 | 0.1+ | 1.4+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2003 01 08 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 703 | 1.0− | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2003 01 08 | 704 | 1.0+ | 1.5− | 2006 11 19 | 703 | 0.0 | 0.3− |
| 2002 11 01 | 608 | 0.9+ | 0.9+ | 2003 01 08 | 704 | 0.1+ | 0.8− | 2006 11 19 | 703 | 0.2− | 0.5+ |
| 2002 11 01 | 608 | 0.3+ | 1.0+ | 2003 01 08 | 704 | 0.4− | 0.5− | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2002 11 01 | 608 | 0.4+ | 0.3+ | 2003 01 27 | 704 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.3− | 0.3− |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2003 01 27 | 704 | 1.0− | 0.7+ | 2006 11 27 | 703 | (0.7+ | 1.9−) |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2003 01 27 | 704 | 0.2− | 1.4+ | 2006 11 27 | 703 | 0.1− | 0.6− |
| 2002 11 07 | 704 | 0.4+ | 0.2+ | 2003 11 21 | 291 | 0.0 | 0.5+ | 2006 11 27 | 703 | 1.4− | 0.4− |
| 2002 11 07 | 704 | 0.5+ | 0.5+ | 2003 11 21 | 291 | 0.2− | 0.1+ | | | | |
| 2002 11 07 | 704 | 0.3+ | 0.8+ | 2003 11 21 | 291 | 0.3+ | 0.3+ | | | | |

**(137040)∗ 1998 UY$_{35}$**

Discovered 1998 Oct. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.43555 | | (2000.0) | | +0.72837383 | −0.68438494 |
| $n$ | 0.26375160 | $\omega$ | 5.27425 | | +0.62666353 | +0.64592195 |
| $a$ | 2.4080896 | $\Omega$ | 37.98232 | | +0.27706385 | +0.33823377 |
| $e$ | 0.2076999 | $i$ | 3.07353 | | | |
| $P$ | 3.74 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 10 | 699 | 0.4− | 0.6+ | 2000 05 05 | 645 | 0.1− | 0.1+ | 2002 12 30 | 704 | 0.3− | 0.1+ |
| 1998 10 10 | 699 | 0.0 | 0.2+ | 2000 05 05 | 645 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.1+ | 0.2+ |
| 1998 10 10 | 699 | 0.1+ | 0.5+ | 2002 11 14 | 704 | 0.0 | 0.6− | 2003 01 05 | 704 | 0.1− | 0.1+ |
| 1998 10 28 | 704 | 0.3+ | 0.8− | 2002 11 14 | 704 | 0.4− | 0.9+ | 2003 01 05 | 704 | 0.0 | 0.5+ |
| 1998 10 28 | 704 | 1.1− | 0.9+ | 2002 11 14 | 704 | (1.9+ | 0.4+) | 2003 01 05 | 704 | 0.0 | 0.3+ |
| 1998 10 28 | 704 | 0.2+ | 1.3− | 2002 11 14 | 704 | 0.8+ | 0.6+ | 2004 01 18 | 807 | 0.1+ | 0.7+ |
| 1998 10 28 | 704 | 0.4− | 0.5− | 2002 12 06 | 704 | 0.4− | 0.2+ | 2004 01 18 | 807 | 0.6+ | 0.5+ |
| 1998 10 29 | 704 | 1.6+ | 0.5− | 2002 12 06 | 704 | 0.2− | 0.4− | 2004 04 25 | 291 | 0.2+ | 0.6+ |
| 1998 10 29 | 704 | 1.2+ | 0.4+ | 2002 12 06 | 704 | 0.0 | 0.0 | 2004 04 25 | 291 | 0.1+ | 0.4+ |
| 1998 10 29 | 704 | 0.9+ | 0.9− | 2002 12 06 | 704 | 0.0 | 0.3+ | 2004 04 25 | 291 | 0.0 | 0.2+ |
| 1998 10 29 | 704 | 1.7− | 0.9+ | 2002 12 10 | 704 | 0.1− | 0.5− | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 1998 10 29 | 704 | 0.8+ | 0.4− | 2002 12 10 | 704 | 1.1+ | 0.4− | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 1998 11 23 | 699 | 0.5+ | 0.7− | 2002 12 10 | 704 | 0.4− | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 1998 11 23 | 699 | 0.0 | 0.4+ | 2002 12 10 | 704 | (0.4− | 1.6−) | 2006 10 23 | G96 | 0.0 | 0.2− |
| 1998 11 23 | 699 | 0.9− | 0.3− | 2002 12 11 | 704 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2002 12 11 | 704 | 1.3+ | 0.5− | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2002 12 11 | 704 | 1.2− | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2000 03 03 | 645 | 0.3+ | 0.2− | 2002 12 14 | 704 | 0.8− | 0.6+ | 2006 11 02 | G96 | 0.8+ | 0.6+ |
| 2000 03 03 | 691 | 0.6− | 0.5− | 2002 12 14 | 704 | 1.0+ | 0.4+ | 2006 11 02 | G96 | 0.2− | 0.0 |
| 2000 03 03 | 691 | 0.5− | 0.4− | 2002 12 14 | 704 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.8+ | 0.2+ |
| 2000 03 03 | 691 | 0.2− | 0.4− | 2002 12 14 | 704 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.6+ | 0.1+ |
| 2000 04 05 | 704 | 0.2+ | 0.9+ | 2002 12 14 | 704 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.5− | 0.2− |
| 2000 04 05 | 704 | 0.5+ | 1.2+ | 2002 12 30 | 704 | 0.6− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2000 04 05 | 704 | 1.5+ | 0.5+ | 2002 12 30 | 704 | 1.4− | 0.7− | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 0.6− | 0.7+ | 2002 12 30 | 704 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.1− |

**(137041)∗ 1998 UG$_{43}$ = 1986 VT$_2$ = 2000 EL$_{44}$**

Discovered 1998 Oct. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 26888), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.92791 | | (2000.0) | | +0.41416089 | −0.90982937 |
| $n$ | 0.24688723 | $\omega$ | 79.44463 | | +0.78721023 | +0.37244437 |
| $a$ | 2.5165388 | $\Omega$ | 346.00146 | | +0.45691445 | +0.18301834 |
| $e$ | 0.1418724 | $i$ | 6.19442 | | | |
| $P$ | 3.99 | $H$ | 14.9 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1986 11 04 | 010 | 1.0− | 0.3+ | 2002 11 07 | 704 | 0.1+ | 0.0 | 2004 04 15 | 699 | 1.4− | 0.3+ |
| 1986 11 04 | 010 | (3.0+ | 0.4−) | 2002 11 07 | 704 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.3− | 1.1+ |
| 1998 10 28 | 704 | 0.7+ | 0.8− | 2002 11 13 | 644 | 0.1− | 0.1+ | 2004 04 20 | 704 | 0.5+ | 0.1− |
| 1998 10 28 | 704 | 0.6+ | 0.1+ | 2002 11 13 | 644 | 0.0 | 0.2− | 2004 04 20 | 704 | 0.3+ | 0.3− |
| 1998 10 28 | 704 | 0.2− | 0.6− | 2002 11 13 | 644 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.5− | 0.8+ |
| 1998 10 28 | 704 | 1.2− | 0.6+ | 2002 11 14 | 704 | 0.2− | 0.1− | 2004 04 22 | 691 | 0.3− | 0.4+ |
| 1998 10 29 | 704 | 1.0− | 0.3+ | 2002 11 14 | 704 | 0.3+ | 0.1+ | 2004 04 22 | 691 | 0.3− | 0.3+ |
| 1998 10 29 | 704 | 0.7− | 0.4+ | 2002 11 14 | 704 | 0.1− | 0.1+ | 2004 04 22 | 691 | 0.3− | 0.3+ |
| 1998 10 29 | 704 | 0.3− | 2.0+ | 2002 11 14 | 704 | 0.0 | 0.1− | 2004 04 26 | 699 | 0.6− | 0.7+ |
| 1998 10 29 | 704 | 0.3+ | 0.6+ | 2002 12 05 | 704 | 0.7+ | 0.6+ | 2004 04 26 | 699 | 1.4+ | 1.1− |
| 1998 10 29 | 704 | 0.4− | 0.4+ | 2002 12 05 | 704 | 0.2+ | 0.2+ | 2004 04 26 | 699 | 0.8+ | 0.1− |
| 1998 11 14 | 704 | (2.2+ | 1.7−) | 2002 12 05 | 704 | 0.2+ | 0.1− | 2004 04 26 | 699 | 0.6− | 0.6− |
| 1998 11 14 | 704 | 0.3− | 1.3− | 2002 12 05 | 704 | (1.7+ | 0.4−) | 2006 08 30 | 704 | 0.4− | 0.5+ |
| 1998 11 14 | 704 | 0.1− | 1.9− | 2002 12 05 | 704 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.2− | 0.7+ |
| 1998 11 14 | 704 | (5.1− | 1.3−) | 2002 12 20 | 644 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.6− | 0.2− |
| 1998 11 16 | 704 | 0.7+ | 0.6+ | 2002 12 20 | 644 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.4+ | 1.3+ |
| 1998 11 16 | 704 | 1.5+ | 0.2+ | 2002 12 20 | 644 | 0.3+ | 0.4+ | 2006 08 30 | 699 | 0.2+ | 0.7+ |
| 1998 11 16 | 704 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.5+ | 0.5+ | 2006 08 30 | 699 | 0.5+ | 0.7+ |
| 1998 11 16 | 704 | 0.7− | 1.2− | 2002 12 31 | 704 | 0.2+ | 0.3− | 2006 08 30 | 699 | 0.2+ | 0.8+ |
| 2000 03 09 | 704 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.1− | 0.8+ | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2000 03 09 | 704 | 0.3− | 0.0 | 2002 12 31 | 704 | (0.2+ | 1.7+) | 2006 09 19 | 703 | 0.2+ | 0.1− |
| 2000 03 09 | 704 | 0.2+ | 0.6− | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.1− |
| 2000 03 09 | 704 | 0.4+ | 0.1− | 2003 01 05 | 704 | 0.1− | 0.7− | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2000 03 09 | 704 | 0.3+ | 0.4+ | 2003 01 05 | 704 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.6+ | 0.3− |
| 2000 03 10 | 704 | 0.2+ | 0.4+ | 2003 01 05 | 704 | 0.1+ | 0.6− | 2006 09 25 | 704 | 0.2+ | 0.0 |
| 2000 03 10 | 704 | 0.2+ | 0.1− | 2003 01 05 | 704 | 0.1+ | 0.6− | 2006 09 25 | 704 | 0.2− | 0.4+ |
| 2000 03 10 | 704 | 0.3− | 0.9+ | 2003 02 04 | 704 | 0.3+ | 0.2− | 2006 09 25 | 704 | 0.1− | 0.4+ |
| 2000 03 10 | 704 | 0.2+ | 0.2+ | 2003 02 04 | 704 | 0.7+ | 0.0 | 2006 09 25 | 704 | 0.3− | 0.2− |
| 2000 03 10 | 704 | 0.6− | 0.7+ | 2003 02 04 | 704 | 0.4+ | 0.3− | 2006 09 28 | 703 | 1.4− | 1.1− |
| 2000 03 11 | 704 | 0.5− | 0.4− | 2003 02 04 | 704 | 0.1− | 0.3− | 2006 09 28 | 703 | 1.1− | 1.0− |
| 2000 03 11 | 704 | 0.6− | 0.2− | 2004 02 19 | 704 | 0.6+ | 0.4+ | 2006 09 28 | 703 | 0.9− | 0.7− |
| 2000 03 11 | 704 | 0.3+ | 0.7+ | 2004 02 19 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 1.2− | 0.4− |
| 2000 03 11 | 704 | 0.4+ | 0.3+ | 2004 02 19 | 704 | 0.3− | 1.0− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 1.1+ | 1.2+ | 2004 02 19 | 704 | 0.4+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2000 04 07 | 704 | 1.4+ | 0.3+ | 2004 02 19 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2000 04 07 | 704 | 1.0+ | 0.2+ | 2004 02 25 | 704 | 0.2− | 1.3− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2000 04 07 | 704 | 0.2+ | 0.2+ | 2004 02 25 | 704 | 1.3+ | 1.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2000 05 02 | 699 | 0.1− | 0.3+ | 2004 02 25 | 704 | 1.1+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2000 05 02 | 699 | 0.2+ | 0.4+ | 2004 02 25 | 704 | 0.3+ | 0.9+ | 2006 10 13 | 691 | 0.1+ | 0.3+ |
| 2000 05 02 | 699 | 0.1− | 0.1+ | 2004 03 15 | 185 | 0.3− | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.2+ |
| 2000 05 02 | 699 | 0.6+ | 0.6− | 2004 03 15 | 185 | 0.8− | 0.0 | 2006 10 13 | 691 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 1.1− | 1.3+ | 2004 03 15 | 185 | 0.6− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.5− |
| 2002 09 06 | 704 | 1.1+ | 0.1+ | 2004 03 16 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.4+ | 0.8+ | 2004 03 16 | 703 | 0.7+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.1+ |
| 2002 09 17 | 699 | (0.1− | 2.0+) | 2004 03 16 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2002 09 17 | 699 | 1.3+ | 0.9+ | 2004 03 16 | 703 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 09 17 | 699 | 0.3− | 1.1+ | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 09 17 | 699 | 0.4+ | 0.9+ | 2004 03 16 | 703 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.8+ | 2004 03 16 | 704 | 1.4+ | 0.2− | 2006 10 21 | 704 | 0.1+ | 0.4− |
| 2002 10 04 | 704 | 0.7− | 0.9+ | 2004 03 16 | 703 | 0.3+ | 0.1+ | 2006 10 21 | 704 | 0.6+ | 0.1+ |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 704 | 0.7+ | 1.0− | 2006 10 21 | 704 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.5+ | 0.5+ | 2004 03 18 | 704 | 0.4− | 0.4− | 2006 10 21 | 704 | 0.7+ | 0.2− |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2004 03 18 | 704 | 0.5− | 0.1+ | 2006 10 21 | 704 | 0.1− | 0.4− |
| 2002 10 04 | 699 | 0.2− | 1.1+ | 2004 03 18 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 04 | 699 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.7− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 699 | 0.2+ | 0.9+ | 2004 03 18 | 704 | 0.9− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 04 | 699 | 0.3+ | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.9+ | 2006 10 27 | 703 | 0.6− | 0.3− |
| 2002 10 10 | 704 | 0.6− | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.5− |
| 2002 10 10 | 704 | 0.2− | 0.8+ | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.5− | 0.5+ | 2004 03 20 | 704 | 0.2− | 0.8+ | 2006 10 27 | 703 | 0.6− | 0.3− |
| 2002 10 10 | 704 | 0.5− | 0.9+ | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.8− |
| 2002 10 10 | 704 | 0.0 | 1.3+ | 2004 03 23 | 704 | 0.7+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 1.0− |
| 2002 10 12 | 704 | 0.5+ | 0.1− | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.8− |
| 2002 10 12 | 704 | 0.1− | 1.0− | 2004 03 23 | 704 | 0.7+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 0.4+ | 0.4− | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.2+ | 0.9− | 2004 03 23 | 704 | 0.7+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 10 12 | 704 | 0.5+ | 1.3− | 2004 03 24 | 699 | 0.7+ | 0.2− | 2006 11 14 | 703 | 0.8+ | 0.3+ |
| 2002 11 05 | 704 | 0.2− | 0.3+ | 2004 03 24 | 699 | 0.1+ | 0.7+ | 2006 11 14 | 703 | 0.8+ | 0.2− |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2004 03 24 | 699 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.7+ |
| 2002 11 05 | 704 | 1.4+ | 0.8− | 2004 03 24 | 699 | 0.7+ | 0.7− | 2006 11 14 | 703 | 0.1+ | 0.5+ |
| 2002 11 05 | 704 | 0.3− | 0.1+ | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.4+ |
| 2002 11 05 | 704 | 0.2− | 0.3+ | 2004 03 26 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.9+ | 0.3+ |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2004 03 26 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.4+ | 0.8+ |
| 2002 11 06 | 704 | 0.0 | 0.3− | 2004 03 27 | 704 | 0.2+ | 0.8− | 2006 11 14 | 703 | 0.4+ | 0.2− |
| 2002 11 06 | 704 | 0.4+ | 0.6− | 2004 03 27 | 704 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.2− | 1.1+ |
| 2002 11 06 | 704 | 1.1+ | 0.3− | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 704 | (1.5− | 0.8−) |
| 2002 11 06 | 704 | 0.5+ | 0.8− | 2004 03 27 | 704 | 0.3+ | 0.6− | 2006 11 17 | 704 | (1.5− | 0.8−) |
| 2002 11 06 | 704 | 0.5− | 0.4− | 2004 03 27 | 704 | 0.1− | 0.0 | 2006 11 17 | 704 | (1.8+ | 1.5−) |
| 2002 11 06 | 704 | 0.0 | 0.7− | 2004 04 12 | 699 | 0.4+ | 0.4− | 2006 11 17 | 704 | 1.4− | 0.6− |
| 2002 11 06 | 704 | 0.2− | 0.7− | 2004 04 12 | 699 | 0.4− | 0.8− | 2006 11 23 | 703 | 0.4+ | 0.2− |
| 2002 11 06 | 704 | 0.4− | 0.6− | 2004 04 12 | 699 | 0.9− | 0.5+ | 2006 11 23 | 703 | 0.1− | 0.4− |
| 2002 11 06 | 704 | 0.3− | 0.5− | 2004 04 12 | 699 | 0.8− | 0.1− | 2006 11 23 | 703 | 0.1− | 0.5− |
| 2002 11 06 | 926 | 0.5+ | 0.2+ | 2004 04 15 | 691 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.2− | 0.2− |
| 2002 11 06 | 926 | 0.2− | 0.5+ | 2004 04 15 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.1+ |
| 2002 11 06 | 926 | 0.2− | 0.1+ | 2004 04 15 | 699 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.3− | 0.2+ |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2004 04 15 | 691 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.1− | 0.7− |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2004 04 15 | 699 | 0.0 | 0.3+ | 2006 12 01 | 704 | 0.9− | 0.3− |
| 2002 11 07 | 704 | 0.1− | 0.7+ | 2004 04 15 | 699 | (0.5+ | 1.6+) | 2006 12 01 | 704 | 0.6− | 0.2− |

**(137042)∗ 1998 UT$_{46}$ = 2000 BR$_{35}$**

Discovered 1998 Oct. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 14769)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.68192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25619026 | $\omega$ | 179.17547 | | −0.97540538 | +0.22023119 | |
| $a$ | 2.4552420 | $\Omega$ | 13.55749 | | −0.20245129 | −0.87883274 | |
| $e$ | 0.1315462 | $i$ | 2.22136 | | −0.08716543 | −0.42326262 | |
| $P$ | 3.85 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 691 | 0.5− | 0.0 | 2004 01 22 | 704 | 0.1− | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.4− |
| 1998 09 25 | 691 | 0.2− | 0.3− | 2004 01 22 | 704 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.8− | 1.0− |
| 1998 09 25 | 691 | 0.1− | 0.5− | 2004 01 22 | 704 | 0.3− | 0.5+ | 2004 04 19 | 704 | 0.2− | 0.3− |
| 1998 09 30 | 691 | 0.6+ | 0.5+ | 2004 01 30 | 704 | 0.3+ | 0.4− | 2004 04 22 | 704 | 0.3− | 0.6− |
| 1998 09 30 | 691 | 0.2+ | 0.3+ | 2004 01 30 | 704 | 0.1− | 0.8− | 2004 04 22 | 704 | 0.1+ | 0.6+ |
| 1998 09 30 | 691 | 0.3− | 0.5+ | 2004 01 30 | 704 | 0.1+ | 0.5− | 2004 04 22 | 704 | 0.5+ | 0.7+ |
| 1998 10 24 | 691 | 0.6+ | 0.4+ | 2004 01 30 | 704 | 0.2+ | 0.2− | 2004 04 22 | 704 | 0.6− | 0.3− |
| 1998 10 24 | 691 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.0 |
| 1998 10 24 | 691 | 0.5+ | 0.4+ | 2004 02 10 | 644 | 0.2− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.2− |
| 1998 10 29 | 691 | 0.8− | 0.9+ | 2004 02 10 | 644 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.3+ |
| 1998 10 29 | 691 | 0.4− | 0.4+ | 2004 02 10 | 644 | 0.1− | 0.7+ | 2006 07 21 | G96 | 0.3+ | 0.2− |
| 1998 10 29 | 691 | 1.0− | 0.3+ | 2004 02 11 | 699 | 0.7− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.0 |
| 2000 01 04 | 704 | 0.4+ | 0.4− | 2004 02 11 | 699 | 0.9+ | 0.3− | 2006 10 12 | 691 | 0.0 | 0.2− |
| 2000 01 04 | 704 | 0.2+ | 0.8− | 2004 02 11 | 699 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.0 |
| 2000 01 04 | 704 | (1.7− | 2.3−) | 2004 02 11 | 699 | 0.4+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.4− |
| 2000 01 31 | 704 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.3− |
| 2000 01 31 | 704 | 0.6+ | 0.2− | 2004 02 16 | 704 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2− |
| 2000 01 31 | 704 | 0.3− | 0.7+ | 2004 02 16 | 704 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2000 02 11 | 704 | 0.3− | 0.7+ | 2004 02 16 | 704 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 1.0− |
| 2000 02 11 | 704 | 0.8+ | 0.4− | 2004 02 16 | 704 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2000 02 11 | 704 | 0.2− | 1.5+ | 2004 02 17 | 644 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 1.2− | 0.6+ | 2004 02 17 | 644 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.4− |
| 2004 01 05 | 703 | 0.9− | 0.6+ | 2004 02 17 | 644 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 01 05 | 703 | 0.5− | 0.2+ | 2004 02 18 | 608 | 0.1− | 0.5− | 2006 11 10 | 691 | 0.3− | 0.2− |
| 2004 01 05 | 703 | 0.2+ | 0.4+ | 2004 02 18 | 608 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2004 01 05 | 703 | 0.1− | 0.2− | 2004 02 18 | 608 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.9− | 1.4+ |
| 2004 01 16 | 644 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2004 01 16 | 644 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.3− |
| 2004 01 18 | 644 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 11 15 | 691 | 0.5+ | 0.5− |
| 2004 01 18 | 644 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2004 01 18 | 644 | 0.3+ | 0.1− | 2004 02 23 | 608 | 0.3+ | 0.8− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.6− | 1.1+ | 2004 02 23 | 608 | 0.5+ | 0.4− | 2006 11 17 | 691 | 0.7+ | 0.1+ |
| 2004 01 22 | 704 | 0.2− | 0.1− | 2004 02 23 | 608 | 0.4+ | 0.5− | 2006 11 17 | 691 | 0.2+ | 0.0 |

**(137043)∗ 1998 UL$_{49}$ = 2002 TX$_{89}$**

Discovered 1998 Oct. 23 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPO* 37130)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.07828 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23588147 | $\omega$ | 230.55494 | | +0.04311645 | −0.99812644 | |
| $a$ | 2.5942202 | $\Omega$ | 217.04326 | | +0.93734172 | +0.05545108 | |
| $e$ | 0.2665495 | $i$ | 4.13246 | | +0.34573324 | −0.02586081 | |
| $P$ | 4.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 23 | 910 | 1.5+ | 0.3+ | 2000 05 01 | 691 | 0.1+ | 0.3+ | 2004 04 14 | 291 | 0.1− | 0.4+ |
| 1998 10 23 | 910 | 1.2+ | 0.2+ | 2000 05 01 | 691 | 0.4+ | 0.3+ | 2004 04 14 | 291 | 0.1− | 0.3+ |
| 1998 10 23 | 910 | 1.1+ | 0.4+ | 2002 10 03 | 704 | 0.5+ | 0.6+ | 2006 08 29 | 703 | (0.8+ | 1.9+) |
| 1998 11 21 | 704 | 0.0 | 1.1− | 2002 10 03 | 704 | 1.0+ | 0.6+ | 2006 08 29 | 703 | (0.3− | 1.9−) |
| 1998 11 21 | 704 | 1.8− | 0.5− | 2002 10 03 | 704 | (1.1+ | 1.7+) | 2006 08 29 | 703 | (1.8− | 0.5−) |
| 1998 11 21 | 704 | 0.4+ | 0.2− | 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 08 29 | 703 | 0.7− | 0.2+ |
| 1998 11 21 | 704 | (2.2+ | 0.3+) | 2002 10 03 | 291 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.4+ | 0.5− |
| 1998 11 21 | 704 | 0.8− | 0.3+ | 2002 10 03 | 291 | 0.2− | 0.1+ | 2006 09 16 | 699 | 1.1+ | 0.7+ |
| 1998 11 23 | 699 | 0.0 | 0.6+ | 2002 10 03 | 291 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.7− | 0.3− |
| 1998 11 23 | 699 | 0.4− | 0.4+ | 2002 10 04 | 704 | 0.0 | 0.5+ | 2006 09 16 | 699 | 1.4+ | 1.1+ |
| 1998 11 23 | 699 | 0.9+ | 0.0 | 2002 10 04 | 704 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.7− | 0.7+ |
| 1998 11 24 | 704 | 0.3− | 0.3+ | 2002 10 04 | 704 | 0.1− | 0.6+ | 2006 09 19 | 703 | 0.3+ | 0.4+ |
| 1998 11 24 | 704 | 0.1+ | 0.1+ | 2002 10 04 | 704 | 0.3− | 0.7+ | 2006 09 19 | 699 | 0.4− | 0.8− |
| 1998 11 24 | 704 | 0.1+ | 0.8− | 2002 10 04 | 704 | 0.0 | 0.7+ | 2006 09 19 | 703 | (0.2− | 1.9+) |
| 1998 11 24 | 704 | (3.7− | 2.9+) | 2002 10 07 | 704 | (1.8+ | 0.4−) | 2006 09 19 | 703 | 0.1− | 0.1+ |
| 1998 12 08 | 699 | 0.5+ | 0.6+ | 2002 10 07 | 704 | 0.5+ | 0.0 | 2006 09 19 | 699 | 1.5+ | 0.3+ |
| 1998 12 08 | 699 | 0.3+ | 0.8+ | 2002 10 07 | 704 | 0.2− | 1.1+ | 2006 09 19 | 703 | 1.1− | 0.1− |
| 1998 12 08 | 699 | 1.0+ | 0.6+ | 2002 10 07 | 704 | (1.9+ | 0.2−) | 2006 09 19 | 699 | 1.1− | 0.2− |
| 1998 12 12 | 691 | 0.2− | 0.3− | 2002 10 09 | 704 | 0.7− | 0.3+ | 2006 09 20 | 691 | 0.6− | 0.3+ |
| 1998 12 12 | 691 | 0.1− | 0.3− | 2002 10 09 | 704 | (1.6− | 0.7+) | 2006 09 20 | 691 | 0.5− | 0.8− |
| 1998 12 12 | 691 | 0.2− | 0.4− | 2002 10 09 | 704 | 1.5− | 0.4+ | 2006 09 20 | 691 | 0.3− | 0.0 |
| 1998 12 22 | 691 | 0.4− | 0.1+ | 2002 10 09 | 704 | 0.9− | 0.6+ | 2006 10 03 | G96 | 0.4+ | 0.8− |
| 1998 12 22 | 691 | 0.2− | 0.0 | 2002 10 12 | 704 | 0.9+ | 0.0 | 2006 10 03 | G96 | 0.2− | 0.1− |
| 1998 12 22 | 691 | 0.4− | 0.0 | 2002 10 12 | 704 | 0.9+ | 0.3+ | 2006 10 03 | G96 | 0.9+ | 0.7+ |
| 1998 12 26 | 691 | 0.0 | 0.3+ | 2002 10 12 | 704 | 1.2+ | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.9− |
| 1998 12 26 | 691 | 0.2− | 0.3+ | 2002 10 12 | 704 | 1.5+ | 0.8+ | 2006 11 14 | G96 | 0.8− | 0.1− |
| 1998 12 26 | 691 | 0.1− | 0.2+ | 2002 10 31 | 699 | 0.5+ | 0.5− | 2006 11 14 | G96 | 0.1− | 0.7− |
| 2000 04 25 | 691 | 0.3− | 0.2+ | 2002 10 31 | 699 | 0.6+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2000 04 25 | 691 | 0.2− | 0.1+ | 2002 10 31 | 699 | 0.7+ | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2000 04 25 | 691 | 0.2− | 0.4+ | 2002 10 31 | 699 | 0.0 | 0.7+ | | | | |
| 2000 05 01 | 691 | 0.2+ | 0.4− | 2004 04 14 | 291 | 0.9+ | 0.4+ | | | | |

**(137044)∗ 1998 UC$_{50}$**

Discovered 1998 Oct. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.39353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28841037 | $\omega$ | 166.18827 | | −0.78202694 | −0.62242051 | |
| $a$ | 2.2687961 | $\Omega$ | 335.23134 | | +0.56430800 | −0.68531678 | |
| $e$ | 0.4295742 | $i$ | 4.38605 | | +0.26455689 | −0.37806563 | |
| $P$ | 3.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 704 | 1.1− | 0.9+ | 2006 02 27 | 151 | 0.4− | 0.1− | 2006 03 25 | 941 | 0.1− | 0.0 |
| 1998 10 29 | 704 | 1.3+ | 1.3+ | 2006 02 27 | 151 | 0.7− | 0.2− | 2006 03 25 | 941 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 704 | (0.9+ | 2.7+) | 2006 02 27 | 240 | 0.0 | 0.0 | 2006 03 26 | 704 | 0.6+ | 0.4− |
| 1998 10 29 | 704 | 0.4+ | 0.2+ | 2006 02 27 | 240 | 0.2+ | 0.2+ | 2006 03 26 | 704 | 0.1+ | 0.4− |
| 1998 11 11 | 704 | (2.2− | 1.4+) | 2006 02 27 | 240 | 0.1− | 0.0 | 2006 03 26 | 704 | (3.2+ | 0.0 ) |
| 1998 11 11 | 704 | 0.3+ | 0.4− | 2006 02 27 | 240 | 0.1− | 0.3− | 2006 03 26 | 704 | 0.2+ | 0.0 |
| 1998 11 11 | 704 | 0.1− | 1.9− | 2006 02 27 | 240 | 0.1+ | 0.2− | 2006 03 29 | H45 | 0.3− | 0.2+ |
| 1998 11 11 | 704 | 0.2+ | 0.6− | 2006 02 27 | 240 | 0.5− | 0.2− | 2006 03 29 | H45 | 0.3− | 0.2− |
| 2001 08 23 | 691 | 0.4− | 0.2+ | 2006 02 28 | 170 | 0.1− | 0.3− | 2006 03 29 | H45 | 0.1+ | 0.1− |
| 2001 08 23 | 691 | 0.2− | 0.0 | 2006 02 28 | 170 | 0.1− | 0.3− | 2006 03 29 | H45 | 0.4+ | 0.3+ |
| 2001 08 23 | 691 | 0.3− | 0.1− | 2006 02 28 | 170 | 0.1− | 0.1− | 2006 03 29 | H45 | 0.5− | 0.3− |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2006 03 01 | 565 | 0.0 | 0.7+ | 2006 03 29 | 151 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.6+ | 0.2− | 2006 03 01 | 565 | 0.3− | 0.3+ | 2006 03 29 | 151 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2006 03 01 | 565 | 0.6− | 0.5− | 2006 03 29 | 151 | 0.1− | 0.2+ |
| 2005 11 02 | 704 | 0.3+ | 1.1+ | 2006 03 01 | 565 | 0.1+ | 0.0 | 2006 03 29 | 151 | 0.0 | 0.0 |
| 2005 11 02 | 704 | 0.5+ | 0.8+ | 2006 03 03 | 379 | 0.2− | 0.0 | 2006 03 29 | 151 | 0.3− | 0.1+ |
| 2005 11 02 | 704 | 0.3+ | 0.3+ | 2006 03 03 | 379 | 0.1− | 0.2− | 2006 03 29 | 151 | 0.3− | 0.1+ |
| 2005 11 02 | 704 | 0.5− | 0.4+ | 2006 03 03 | 379 | 0.5− | 0.4− | 2006 03 30 | 434 | 0.7− | 0.3+ |
| 2005 11 02 | 704 | 0.0 | 0.6+ | 2006 03 03 | 379 | 0.6− | 0.1+ | 2006 03 30 | 434 | 0.4+ | 0.2+ |
| 2005 12 24 | 704 | 0.2+ | 0.1− | 2006 03 04 | 379 | 0.3+ | 0.2− | 2006 03 30 | 434 | 0.1+ | 0.9+ |
| 2005 12 24 | 704 | 0.2+ | 0.3− | 2006 03 04 | 379 | 0.3+ | 0.0 | 2006 03 30 | 434 | 0.2− | 0.5+ |
| 2005 12 24 | 704 | (0.5+ | 3.1−) | 2006 03 04 | 379 | 0.2+ | 0.2+ | 2006 04 02 | 703 | 0.5− | 0.2− |
| 2005 12 24 | 704 | (1.1− | 1.8−) | 2006 03 04 | 379 | 0.1+ | 0.1− | 2006 04 02 | 703 | 0.1+ | 0.1+ |
| 2005 12 24 | 704 | 0.2− | 0.3− | 2006 03 04 | 379 | 0.0 | 0.1− | 2006 04 02 | 703 | 0.4− | 0.3− |
| 2006 01 07 | 704 | 0.6+ | 0.7+ | 2006 03 04 | 379 | 0.4− | 0.1− | 2006 04 02 | 704 | 0.0 | 0.6+ |
| 2006 01 07 | 704 | 0.1+ | 0.8+ | 2006 03 04 | 379 | 0.5− | 0.1+ | 2006 04 02 | 704 | 0.2− | 0.2+ |
| 2006 01 07 | 704 | 0.5+ | 0.5+ | 2006 03 05 | 704 | 0.1− | 0.1+ | 2006 04 02 | 704 | 0.4+ | 0.2− |
| 2006 01 07 | 704 | 0.4+ | 0.6+ | 2006 03 05 | 704 | 0.1− | 0.4+ | 2006 04 02 | 704 | 0.0 | 0.1+ |
| 2006 01 26 | 704 | 0.2+ | 0.1+ | 2006 03 05 | 704 | 0.1− | 0.1+ | 2006 04 02 | 704 | 0.3+ | 0.1+ |
| 2006 01 26 | 704 | 0.7+ | 0.4− | 2006 03 05 | 704 | 0.1− | 0.0 | 2006 04 02 | A53 | 0.3+ | 0.3− |
| 2006 01 26 | 704 | 0.0 | 0.0 | 2006 03 05 | 704 | 0.7+ | 0.3+ | 2006 04 02 | A53 | 0.2+ | 0.1+ |
| 2006 01 26 | 704 | 0.2+ | 0.1− | 2006 03 05 | 379 | 0.3+ | 0.1− | 2006 04 02 | A53 | 0.0 | 0.4− |
| 2006 02 20 | 704 | 0.2− | 1.1+ | 2006 03 05 | 379 | 0.1− | 0.1− | 2006 04 03 | H45 | 0.5− | 0.5− |
| 2006 02 20 | 704 | 0.4− | 0.2+ | 2006 03 05 | 379 | 0.3+ | 0.5− | 2006 04 03 | H45 | 0.5− | 0.3+ |
| 2006 02 20 | 704 | 0.1− | 0.4+ | 2006 03 05 | 379 | 0.0 | 0.4− | 2006 04 03 | H45 | 0.7− | 0.2+ |
| 2006 02 20 | 704 | 0.4− | 0.8+ | 2006 03 05 | 379 | 0.2− | 0.1+ | 2006 04 03 | H45 | 0.2+ | 0.7− |
| 2006 02 20 | 704 | 0.4+ | 0.4+ | 2006 03 08 | H93 | (3.0+ | 0.9−) | 2006 04 03 | H45 | 0.4− | 0.1+ |
| 2006 02 22 | 704 | 0.2− | 0.2− | 2006 03 08 | H93 | (4.2+ | 2.8−) | 2006 04 11 | H55 | 0.8− | 0.3+ |
| 2006 02 22 | 704 | 0.6− | 0.1− | 2006 03 08 | H93 | (3.9+ | 1.6−) | 2006 04 11 | H55 | 0.2− | 0.3+ |
| 2006 02 22 | 704 | 0.9− | 0.3+ | 2006 03 13 | 198 | 0.0 | 0.3+ | 2006 04 11 | H55 | 0.3− | 0.0 |
| 2006 02 22 | 704 | 0.1+ | 0.3− | 2006 03 13 | 198 | 0.1− | 0.3+ | 2006 04 13 | 941 | 0.3− | 0.0 |
| 2006 02 22 | 704 | 0.2+ | 0.7− | 2006 03 13 | 198 | 0.1− | 0.3+ | 2006 04 13 | 941 | 0.2− | 0.0 |
| 2006 02 22 | 704 | 0.1+ | 0.2− | 2006 03 13 | 143 | 0.2− | 0.0 | 2006 04 13 | 941 | 0.4− | 0.0 |
| 2006 02 22 | 704 | 0.1− | 0.4− | 2006 03 13 | 198 | 0.2− | 0.3+ | 2006 04 13 | 941 | 0.2− | 0.1− |
| 2006 02 22 | 704 | (1.6+ | 1.9−) | 2006 03 13 | 198 | 0.1+ | 0.2+ | 2006 04 18 | 703 | 0.4− | 0.0 |
| 2006 02 22 | 704 | 0.1− | 0.2− | 2006 03 13 | 143 | 0.1+ | 0.1− | 2006 04 18 | 703 | 0.3+ | 0.5+ |
| 2006 02 22 | 704 | 0.7+ | 0.0 | 2006 03 13 | 143 | 0.0 | 0.1− | 2006 04 18 | 703 | 0.1− | 0.2+ |
| 2006 02 22 | 704 | 0.1+ | 0.5− | 2006 03 15 | H55 | 0.1+ | 0.4− | 2006 04 18 | 703 | 0.6+ | 0.3− |
| 2006 02 22 | 704 | 0.1− | 0.5− | 2006 03 15 | H55 | 0.6− | 0.2− | 2006 04 20 | 704 | 0.3+ | 0.3+ |
| 2006 02 22 | 704 | 0.1+ | 0.1− | 2006 03 15 | H55 | 0.4− | 0.1− | 2006 04 20 | 704 | 0.3+ | 0.3+ |
| 2006 02 22 | 704 | 0.6− | 0.5+ | 2006 03 17 | 379 | 0.4− | 0.5− | 2006 04 20 | 704 | 0.0 | 0.1+ |
| 2006 02 23 | 704 | 0.2+ | 0.3− | 2006 03 17 | 379 | 0.4+ | 1.1− | 2006 04 20 | 704 | 0.3− | 0.2+ |
| 2006 02 23 | 704 | 0.2+ | 0.3− | 2006 03 18 | 127 | 0.1+ | 0.5+ | 2006 04 20 | 704 | 0.0 | 0.2+ |
| 2006 02 23 | 704 | 0.3+ | 0.1− | 2006 03 18 | A89 | 0.3− | 0.1+ | 2006 04 21 | 704 | 0.1+ | 0.9+ |
| 2006 02 23 | 704 | 0.7+ | 0.2− | 2006 03 18 | 127 | 0.2+ | 0.3+ | 2006 04 21 | 704 | 0.3− | 0.2+ |
| 2006 02 23 | 704 | 0.2+ | 0.2+ | 2006 03 18 | 127 | 0.1+ | 0.5+ | 2006 04 21 | 704 | 0.3+ | 0.2− |
| 2006 02 23 | 704 | 0.1+ | 0.0 | 2006 03 18 | A89 | 1.4− | 0.3+ | 2006 04 21 | 704 | 0.6+ | 0.1+ |
| 2006 02 23 | 704 | 0.1+ | 0.1+ | 2006 03 18 | 127 | 0.1+ | 0.4+ | 2006 04 21 | 704 | 0.1+ | 0.0 |
| 2006 02 23 | 704 | 0.3+ | 0.6+ | 2006 03 19 | 113 | 0.1+ | 0.2− | 2006 04 21 | 704 | 0.7+ | 0.1+ |
| 2006 02 23 | 704 | 0.1+ | 0.2− | 2006 03 19 | 113 | 0.2+ | 0.1− | 2006 04 21 | 704 | 0.5+ | 0.2+ |
| 2006 02 23 | 704 | 0.4+ | 0.0 | 2006 03 19 | 113 | 0.4− | 0.0 | 2006 04 21 | 704 | 0.6− | 0.1+ |
| 2006 02 24 | 704 | 0.3+ | 0.4− | 2006 03 19 | 127 | 0.4− | 0.4+ | 2006 04 21 | 704 | 0.3+ | 0.2− |
| 2006 02 24 | 704 | 0.2+ | 0.4− | 2006 03 19 | 127 | 0.4− | 0.4+ | 2006 04 24 | 130 | 0.5+ | 0.1− |
| 2006 02 24 | 704 | 0.5+ | 0.2− | 2006 03 19 | 127 | 0.2− | 0.3+ | 2006 04 24 | 130 | 0.0 | 0.1− |
| 2006 02 24 | 704 | 0.4+ | 0.0 | 2006 03 22 | 704 | (1.6+ | 1.6+) | 2006 04 26 | 704 | 0.3+ | 0.3− |
| 2006 02 24 | 704 | 0.0 | 0.3− | 2006 03 22 | 704 | 0.1+ | 0.2− | 2006 04 26 | 704 | 0.4+ | 0.1− |
| 2006 02 24 | 704 | 1.0− | 0.1+ | 2006 03 22 | 704 | 0.0 | 0.1− | 2006 04 26 | 704 | 0.7+ | 0.4− |
| 2006 02 24 | 704 | 0.5+ | 0.7− | 2006 03 22 | 704 | 0.1− | 0.1+ | 2006 04 26 | 704 | 0.0 | 0.2+ |
| 2006 02 24 | 704 | 0.1+ | 0.1+ | 2006 03 22 | 704 | 0.5+ | 1.0− | 2006 04 26 | 704 | 0.9+ | 0.4+ |
| 2006 02 24 | 704 | 0.4+ | 0.1− | 2006 03 24 | 699 | 0.1− | 0.2+ | 2006 04 26 | 704 | 0.4+ | 0.7+ |
| 2006 02 24 | 704 | 0.1− | 0.1− | 2006 03 24 | 699 | 0.1− | 0.4+ | 2006 04 26 | 704 | 0.9+ | 0.3+ |
| 2006 02 26 | 704 | 0.1+ | 0.1− | 2006 03 24 | 699 | 0.5− | 0.3+ | 2006 04 26 | 704 | 0.8+ | 0.5− |
| 2006 02 26 | 704 | 0.1+ | 0.2+ | 2006 03 24 | H45 | 0.3+ | 0.5− | 2006 04 26 | 704 | 0.7+ | 0.6+ |
| 2006 02 26 | 704 | 0.4+ | 0.5+ | 2006 03 24 | H45 | 0.7− | 0.1+ | 2006 04 26 | 704 | 1.2+ | 0.1− |
| 2006 02 26 | 704 | 0.0 | 0.3+ | 2006 03 24 | H45 | 0.2− | 0.5− | 2006 04 29 | 204 | 0.5+ | 0.2+ |
| 2006 02 26 | 704 | 0.2+ | 0.4− | 2006 03 24 | H45 | 0.4− | 0.1− | 2006 04 29 | 204 | 0.3+ | 0.2− |
| 2006 02 27 | H89 | 0.1+ | 0.5+ | 2006 03 25 | H45 | 0.3+ | 0.5− | 2006 04 29 | 204 | 0.1+ | 0.4+ |
| 2006 02 27 | H89 | 0.0 | 0.1− | 2006 03 25 | H45 | 0.3+ | 0.3+ | 2006 05 13 | 644 | 0.1+ | 0.0 |
| 2006 02 27 | H89 | (2.4− | 1.1+) | 2006 03 25 | H45 | 0.8− | 0.1+ | 2006 05 13 | 644 | 0.0 | 0.0 |
| 2006 02 27 | 151 | 0.2− | 0.5− | 2006 03 25 | H45 | 0.1− | 0.3− | 2006 05 13 | 644 | 0.8+ | 0.2+ |
| 2006 02 27 | 151 | 0.3− | 0.4− | 2006 03 25 | H45 | 0.0 | 0.0 | 2006 05 13 | 644 | 0.2+ | 0.1+ |
| 2006 02 27 | 151 | 0.3− | 0.4− | 2006 03 25 | 941 | 0.0 | 0.1+ | 2006 05 13 | 644 | 0.1+ | 0.2+ |
| 2006 02 27 | 151 | 0.1− | 0.1+ | 2006 03 25 | 941 | 0.2− | 0.2+ | 2006 05 13 | 644 | 0.1+ | 0.0 |

**(137045)∗ 1998 VE = 1990 RP**

Discovered 1998 Nov. 7 by T. Kagawa at the Gekko Observatory.

Id. G. V. Williams (MPC 33316)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.00026 | | (2000.0) | | | |
| $n$ | 0.25504380 | $\omega$ | 100.18596 | | +0.98101832 | −0.19292603 |
| $a$ | 2.4625943 | $\Omega$ | 270.93961 | | +0.16937543 | +0.90161613 |
| $e$ | 0.2270366 | $i$ | 1.12093 | | +0.09441935 | +0.38712775 |
| $P$ | 3.86 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 13 | 675 | 0.8+ | 0.1+ | 1999 02 10 | 691 | 1.0− | 0.3− | 2002 12 10 | 704 | 0.0 | 0.3− |
| 1990 09 13 | 675 | 0.7− | 1.0− | 1999 02 10 | 691 | 1.1− | 0.0 | 2002 12 10 | 704 | 0.0 | 0.4− |
| 1990 09 15 | 675 | 1.4− | 0.8− | 1999 02 14 | 691 | 0.1+ | 0.4− | 2002 12 10 | 704 | 0.3− | 0.0 |
| 1990 09 15 | 675 | 0.3− | 0.3− | 1999 02 14 | 691 | 0.1− | 0.7− | 2002 12 10 | 704 | 0.2+ | 0.1+ |
| 1990 09 18 | 675 | 0.3+ | 1.3− | 1999 02 14 | 691 | 0.1+ | 0.5− | 2002 12 10 | 704 | (0.0 | 2.1−) |
| 1990 09 18 | 675 | 0.1+ | 1.1− | 2000 03 03 | 704 | 0.3+ | 0.8+ | 2002 12 10 | 704 | (0.0 | 2.5−) |
| 1990 09 20 | 675 | 0.6− | 0.5+ | 2000 03 03 | 704 | 0.6+ | 0.1+ | 2002 12 10 | 704 | 0.7− | 0.2− |
| 1990 09 20 | 675 | 1.1− | 1.5+ | 2000 03 03 | 704 | 0.7+ | 0.4+ | 2002 12 10 | 704 | 0.1− | 0.1− |
| 1998 10 19 | 699 | 0.1− | 1.1− | 2000 03 03 | 704 | 0.1− | 0.4+ | 2002 12 10 | 704 | (0.2− | 3.1−) |
| 1998 10 19 | 699 | 0.2− | 0.2− | 2000 03 11 | 699 | 0.6− | 0.3+ | 2002 12 16 | 608 | (0.4+ | 1.9+) |
| 1998 10 19 | 699 | 1.1− | 0.4− | 2000 03 11 | 704 | 0.0 | 0.3− | 2002 12 16 | 608 | (0.5+ | 1.8+) |
| 1998 11 07 | 888 | 0.2− | 0.1+ | 2000 03 11 | 704 | 0.9+ | 0.0 | 2002 12 16 | 608 | (0.6+ | 1.7+) |
| 1998 11 07 | 888 | 0.0 | 0.1+ | 2000 03 11 | 699 | 0.8+ | 0.8+ | 2002 12 31 | 704 | 0.1+ | 0.3+ |
| 1998 11 07 | 888 | 0.2− | 0.0 | 2000 03 11 | 704 | 0.5− | 0.6+ | 2002 12 31 | 704 | 0.1+ | 0.1+ |
| 1998 11 07 | 888 | 0.2− | 0.2− | 2000 03 11 | 699 | 1.9− | 0.4+ | 2002 12 31 | 704 | 0.1− | 0.2+ |
| 1998 11 08 | 886 | 1.4− | 1.2− | 2000 03 11 | 704 | 0.7+ | 0.8− | 2002 12 31 | 704 | 0.4− | 0.2+ |
| 1998 11 08 | 886 | 0.8+ | 0.7− | 2000 03 11 | 699 | 1.5+ | 0.0 | 2002 12 31 | 704 | 0.0 | 0.3+ |
| 1998 11 08 | 888 | 0.1− | 0.1− | 2000 04 05 | 704 | 0.6+ | 0.8− | 2003 01 01 | 291 | 0.9− | 0.2− |
| 1998 11 08 | 888 | 0.5− | 0.0 | 2000 04 05 | 704 | 0.6+ | 0.7+ | 2003 01 01 | 291 | 0.1+ | 0.3− |
| 1998 11 08 | 888 | 0.2− | 0.0 | 2000 04 05 | 704 | 0.5+ | 0.7+ | 2003 01 01 | 291 | 0.4+ | 0.3− |
| 1998 11 09 | 910 | 0.8+ | 0.8+ | 2000 04 05 | 704 | 0.9+ | 1.2+ | 2003 01 04 | 704 | 0.1+ | 0.3− |
| 1998 11 09 | 910 | 0.8+ | 0.8+ | 2002 10 03 | 704 | 0.3+ | 0.3+ | 2003 01 04 | 704 | 0.3− | 0.0 |
| 1998 11 10 | 910 | 0.6+ | 0.9+ | 2002 10 03 | 704 | 0.1+ | 0.4+ | 2003 01 04 | 704 | 0.6− | 0.2+ |
| 1998 11 10 | 699 | 0.3+ | 0.8+ | 2002 10 03 | 704 | 0.3− | 0.5+ | 2003 01 04 | 704 | 0.3− | 0.4+ |
| 1998 11 10 | 699 | 0.1+ | 0.1+ | 2002 10 07 | 704 | 1.2+ | 0.2+ | 2003 01 09 | 704 | 0.5− | 0.0 |
| 1998 11 10 | 699 | 0.6− | 1.1+ | 2002 10 07 | 704 | 0.2+ | 0.1− | 2003 01 09 | 704 | 0.0 | 0.1+ |
| 1998 11 10 | 888 | 0.5− | 0.4+ | 2002 10 07 | 704 | 0.2+ | 0.1− | 2003 01 09 | 704 | 0.1+ | 0.9− |
| 1998 11 10 | 888 | 0.6− | 0.5+ | 2002 10 10 | 704 | 0.2+ | 0.4+ | 2004 03 17 | 691 | 0.0 | 0.3− |
| 1998 11 10 | 888 | 0.2− | 0.5+ | 2002 10 10 | 704 | 0.1− | 1.0+ | 2004 03 17 | 691 | 0.0 | 0.0 |
| 1998 11 10 | 910 | 0.6+ | 0.9+ | 2002 10 10 | 704 | 1.0− | 0.1− | 2004 03 17 | 691 | 0.2− | 0.1+ |
| 1998 11 10 | 910 | 0.3+ | 0.4+ | 2002 10 10 | 704 | 0.2− | 0.7− | 2004 03 18 | 704 | 0.0 | 0.0 |
| 1998 11 10 | 910 | 0.3+ | 0.4+ | 2002 10 10 | 704 | 1.4+ | 0.8− | 2004 03 18 | 704 | 0.7+ | 0.0 |
| 1998 11 11 | 704 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.8+ | 1.2− |
| 1998 11 11 | 704 | 0.3+ | 0.8− | 2002 10 11 | 704 | 0.6− | 0.0 | 2004 03 18 | 704 | 0.4+ | 0.0 |
| 1998 11 11 | 704 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.2+ | 0.6+ | 2004 03 20 | 704 | 0.9− | 0.6− |
| 1998 11 11 | 704 | 0.3+ | 0.7+ | 2002 10 11 | 704 | 0.4+ | 1.0+ | 2004 03 20 | 704 | 0.7+ | 1.1+ |
| 1998 11 11 | 704 | 0.4+ | 0.4− | 2002 10 11 | 704 | 0.3− | 1.3+ | 2004 03 20 | 704 | 1.1− | 1.1− |
| 1998 11 13 | 910 | 0.9+ | 0.6+ | 2002 11 05 | 704 | 0.4− | 0.2− | 2004 03 20 | 704 | (2.3− | 0.1+) |
| 1998 11 13 | 910 | 1.0+ | 0.6+ | 2002 11 05 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | 1.3+ | 1.0− |
| 1998 11 13 | 910 | 1.0+ | 0.6+ | 2002 11 05 | 704 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.6+ | 0.4+ |
| 1998 11 13 | 888 | 0.2− | 0.4− | 2002 11 05 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.0 |
| 1998 11 13 | 888 | 0.2− | 0.1+ | 2002 11 05 | 704 | 0.6− | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 13 | 888 | 0.8− | 0.2− | 2002 11 06 | 704 | 0.4− | 0.4− | 2004 03 23 | 704 | 0.2+ | 0.6+ |
| 1998 11 20 | 699 | 0.9+ | 0.7+ | 2002 11 06 | 704 | 0.6− | 0.1− | 2004 03 23 | 691 | 0.4− | 0.0 |
| 1998 11 20 | 699 | 1.1+ | 0.7+ | 2002 11 06 | 704 | 0.7− | 0.2− | 2004 03 23 | 691 | 0.2− | 0.0 |
| 1998 11 20 | 699 | 0.7+ | 1.0+ | 2002 11 06 | 704 | 0.5− | 0.0 | 2004 03 23 | 691 | 0.2− | 0.0 |
| 1998 11 26 | 691 | 0.3+ | 0.0 | 2002 11 06 | 704 | 0.1− | 0.1+ | 2004 03 31 | 691 | 0.0 | 0.3− |
| 1998 11 26 | 691 | 1.1+ | 0.1+ | 2002 11 14 | 704 | 0.7− | 0.2− | 2004 03 31 | 691 | 0.5+ | 0.3+ |
| 1998 11 26 | 691 | 0.5+ | 0.0 | 2002 11 14 | 704 | 0.5− | 0.2+ | 2004 03 31 | 691 | 0.3− | 0.3+ |
| 1998 12 08 | 699 | 1.2+ | 1.1+ | 2002 11 14 | 704 | 0.4− | 0.1− | 2006 10 23 | 704 | 0.6− | 0.5+ |
| 1998 12 08 | 699 | 0.2+ | 1.2+ | 2002 11 14 | 704 | 0.4− | 0.2+ | 2006 10 23 | 704 | 0.2+ | 0.5− |
| 1998 12 08 | 699 | 0.4− | 0.9+ | 2002 11 14 | 704 | 0.8− | 0.0 | 2006 10 23 | 704 | 0.3− | 0.0 |
| 1999 02 09 | 691 | 0.8+ | 0.8− | 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.3+ | 0.1− |
| 1999 02 09 | 691 | 0.3+ | 0.6− | 2002 12 05 | 704 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.3− | 0.3− |
| 1999 02 09 | 691 | 0.7+ | 0.4− | 2002 12 05 | 704 | 0.4− | 0.8+ | 2006 12 01 | 704 | 0.1+ | 1.2+ |
| 1999 02 10 | 691 | 1.0− | 0.1+ | 2002 12 05 | 704 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.5+ |

**(137046)∗ 1998 VE$_6$**

Discovered 1998 Nov. 11 by Y. Shimizu and T. Urata at Nachi-Katsuura Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.70415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23939413 | $\omega$ | 35.76985 | | +0.45618368 | −0.88494604 | |
| $a$ | 2.5687808 | $\Omega$ | 27.45010 | | +0.76192738 | +0.33406120 | |
| $e$ | 0.2293776 | $i$ | 11.71929 | | +0.45974246 | +0.32445898 | |
| $P$ | 4.12 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 699 | 0.5+ | 0.7− | 2002 10 30 | 644 | 0.2− | 0.1− | 2006 08 29 | D35 | 0.1− | 0.1+ |
| 1998 10 19 | 699 | 0.1+ | 0.1+ | 2002 10 30 | 644 | 0.2− | 0.2+ | 2006 08 30 | D35 | 0.8+ | 0.2+ |
| 1998 10 19 | 699 | 0.7+ | 0.7− | 2002 10 31 | 699 | 0.6+ | 0.6+ | 2006 08 30 | D35 | 0.4+ | 0.2+ |
| 1998 11 10 | 704 | 0.6+ | 0.4+ | 2002 10 31 | 699 | 0.6+ | 1.1+ | 2006 08 30 | D35 | 0.2+ | 0.2+ |
| 1998 11 10 | 704 | 1.3+ | 0.3− | 2002 10 31 | 699 | 0.2+ | 1.1+ | 2006 09 17 | 699 | 0.1+ | 0.4+ |
| 1998 11 10 | 704 | 0.0 | 0.5+ | 2002 10 31 | 699 | 1.5+ | 0.4+ | 2006 09 17 | 699 | 0.3− | 0.1+ |
| 1998 11 10 | 704 | 1.1− | 0.6+ | 2002 11 01 | 704 | 0.5− | 0.0 | 2006 09 17 | 699 | 0.3+ | 0.0 |
| 1998 11 10 | 704 | (2.5+ | 0.7+) | 2002 11 01 | 704 | 0.2− | 0.0 | 2006 09 17 | 608 | (0.2+ | 2.4−) |
| 1998 11 11 | 704 | 0.8+ | 0.2− | 2002 11 01 | 704 | 0.0 | 0.2+ | 2006 09 17 | 608 | (0.1− | 2.6−) |
| 1998 11 11 | 704 | 0.7+ | 0.9− | 2002 11 01 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 608 | (0.6− | 2.5−) |
| 1998 11 11 | 704 | 0.3+ | 0.1+ | 2002 11 06 | 704 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 1998 11 11 | 704 | 0.2− | 0.4+ | 2002 11 06 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.1+ |
| 1998 11 11 | 704 | 0.2+ | 0.7− | 2002 11 06 | 704 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 1998 11 11 | 905 | 0.6− | 1.4− | 2002 11 06 | 704 | 0.1+ | 0.1− | 2006 09 22 | 608 | 1.4+ | 0.3− |
| 1998 11 11 | 905 | 0.5− | 0.3+ | 2002 11 06 | 704 | 1.1+ | 0.5− | 2006 09 22 | 608 | 1.5+ | 1.0− |
| 1998 11 12 | 905 | 0.3− | 0.2+ | 2002 11 10 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 608 | 1.1+ | 0.5− |
| 1998 11 12 | 905 | 0.5− | 0.5− | 2002 11 10 | 704 | 0.9+ | 0.3− | 2006 09 25 | 703 | 0.6+ | 0.3− |
| 1998 11 15 | 888 | 0.4− | 0.3+ | 2002 11 10 | 704 | 0.6+ | 0.6− | 2006 09 25 | 703 | 0.4− | 0.6+ |
| 1998 11 15 | 888 | 0.3− | 0.1+ | 2002 11 10 | 704 | 0.7− | 0.1− | 2006 09 25 | 703 | 0.3− | 0.6− |
| 1998 11 15 | 888 | 0.1− | 0.2+ | 2002 11 11 | 644 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.2− |
| 1998 11 16 | 704 | 0.2+ | 0.3− | 2002 11 11 | 644 | 0.5− | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.3− |
| 1998 11 16 | 704 | 0.5+ | 0.6− | 2002 11 11 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.3− | 0.1− |
| 1998 11 16 | 704 | (2.1− | 0.2−) | 2002 12 01 | 704 | 0.4− | 0.3+ | 2006 10 17 | 106 | 0.1+ | 0.3− |
| 1998 11 16 | 704 | 0.5+ | 1.5− | 2002 12 01 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 106 | 0.6− | 0.6− |
| 1998 11 16 | 566 | 0.2+ | 0.1+ | 2002 12 01 | 704 | 0.2− | 0.2+ | 2006 10 17 | 106 | 0.6+ | 0.1+ |
| 1998 11 16 | 566 | 0.0 | 0.0 | 2002 12 01 | 704 | 0.8+ | 0.0 | 2006 10 17 | 106 | 0.1− | 0.6− |
| 1998 11 16 | 566 | 0.1− | 0.0 | 2002 12 06 | 704 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.5− | 0.2− |
| 1998 11 18 | 905 | 0.5+ | 0.1− | 2002 12 06 | 704 | 0.2+ | 0.9− | 2006 10 19 | 703 | (0.9− | 1.6+) |
| 1998 11 18 | 905 | 0.1− | 0.7− | 2002 12 06 | 704 | 0.6− | 1.1− | 2006 10 19 | 644 | 0.3− | 0.2− |
| 1998 11 24 | 888 | 0.3+ | 0.0 | 2002 12 06 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.6− |
| 1998 11 24 | 888 | 0.5+ | 0.1+ | 2002 12 06 | 704 | 0.4− | 0.2− | 2006 10 19 | 703 | 1.0+ | 1.5+ |
| 1998 11 24 | 888 | 0.4+ | 0.3− | 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 1998 12 11 | 385 | 0.5+ | 0.0 | 2002 12 11 | 704 | 0.3+ | 1.4+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 1998 12 11 | 385 | 0.6− | 1.6− | 2002 12 11 | 704 | 0.2− | 1.1+ | 2006 10 19 | 703 | 0.0 | 0.8+ |
| 2002 08 25 | 644 | 0.3− | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.7− |
| 2002 08 25 | 644 | 0.3− | 0.0 | 2002 12 11 | 704 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2002 08 25 | 644 | 0.2− | 0.3+ | 2003 01 01 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.7− | 0.2+ | 2003 01 01 | 704 | 1.1− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 0.5− | 0.3+ | 2003 01 01 | 704 | 0.0 | 0.9+ | 2006 10 22 | 704 | (1.6− | 0.0 ) |
| 2002 09 05 | 704 | (1.5− | 0.2+) | 2003 01 01 | 704 | (1.8− | 0.3+) | 2006 10 22 | 704 | 0.3− | 0.0 |
| 2002 09 16 | 608 | (1.6− | 0.1−) | 2003 01 01 | 704 | 0.4+ | 1.2+ | 2006 10 22 | 704 | 0.4+ | 1.0+ |
| 2002 09 16 | 608 | 1.2− | 0.4− | 2003 01 05 | 704 | (2.3− | 1.5+) | 2006 10 22 | 644 | 0.2− | 0.4− |
| 2002 09 16 | 608 | (1.7− | 0.1−) | 2003 01 05 | 704 | (1.3− | 1.9+) | 2006 10 22 | 704 | 0.5+ | 0.1+ |
| 2002 09 21 | 608 | (1.5− | 0.6+) | 2003 01 05 | 704 | (2.6− | 1.9+) | 2006 10 22 | 644 | 0.2− | 0.4− |
| 2002 09 21 | 608 | (2.0− | 0.3+) | 2003 01 05 | 704 | (1.7− | 2.2+) | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 09 21 | 608 | 1.4− | 0.7+ | 2003 01 05 | 704 | (2.4− | 2.2+) | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2002 09 29 | 608 | 1.2− | 1.3+ | 2003 02 01 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.3− |
| 2002 09 29 | 608 | 1.3− | 1.3+ | 2003 02 01 | 704 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.3− |
| 2002 09 29 | 608 | 1.0− | 0.9+ | 2003 02 01 | 704 | 0.8− | 0.6− | 2006 10 24 | 644 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2004 02 25 | 704 | 1.2− | 1.0+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.1− | 0.2− | 2004 02 25 | 704 | 0.2+ | 1.0+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.2+ | 0.3− | 2004 02 25 | 704 | 0.8+ | 0.4− | 2006 11 14 | 704 | 0.4− | 0.5+ |
| 2002 10 02 | 704 | 0.6− | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.5+ |
| 2002 10 03 | 704 | 0.7− | 0.7+ | 2004 03 20 | 704 | (2.0+ | 0.9+) | 2006 11 14 | 704 | 0.4+ | 0.3+ |
| 2002 10 03 | 704 | 0.6− | 0.6+ | 2004 03 20 | 704 | 0.6+ | 0.3− | 2006 11 17 | 704 | 0.5− | 0.5− |
| 2002 10 03 | 704 | 0.4− | 0.9+ | 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.6− |
| 2002 10 03 | 704 | 1.3− | 0.6+ | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 1.0− | 0.3− |
| 2002 10 03 | 704 | 0.7− | 0.9+ | 2004 03 22 | 704 | 0.5+ | 0.8+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.7+ | 0.1− | 2004 03 22 | 704 | 0.9+ | 0.7+ | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2002 10 11 | 704 | (0.1− | 1.7+) | 2004 03 22 | 704 | 0.4+ | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.6+ | 0.1− | 2004 03 24 | 699 | 0.7− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.5− | 0.0 | 2004 03 24 | 699 | (1.2+ | 2.2+) | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.7+ | 0.1− | 2004 03 24 | 699 | 0.6− | 1.2+ | 2006 11 21 | 704 | 1.0− | 0.4+ |
| 2002 10 11 | 704 | 1.1− | 0.5− | 2004 03 24 | 699 | 0.3+ | 0.9+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.5+ | 0.3− | 2004 04 19 | 704 | 0.6+ | 0.9+ | 2006 11 21 | 704 | 0.7+ | 1.9+ |
| 2002 10 11 | 704 | 1.2− | 0.6− | 2004 04 19 | 704 | (1.3+ | 2.2+) | 2006 11 21 | 704 | 1.0− | 0.5− |
| 2002 10 11 | 704 | 0.5+ | 0.4− | 2004 04 19 | 704 | 1.4+ | 1.3+ | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2002 10 11 | 704 | 0.8− | 0.6− | 2006 08 29 | D35 | 0.1− | 0.3− | | | | |
| 2002 10 30 | 644 | 0.1− | 0.3+ | 2006 08 29 | D35 | 0.7− | 0.3+ | | | | |

**(137047)∗ 1998 VZ$_{10}$ = 2002 TX$_{197}$**

Discovered 1998 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37132)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.38393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24382274 | $\omega$ | 205.52444 | | +0.37941853 | −0.92426429 | |
| $a$ | 2.5375810 | $\Omega$ | 222.21321 | | +0.85926902 | +0.36889972 | |
| $e$ | 0.2512208 | $i$ | 3.59721 | | +0.34307190 | +0.09822690 | |
| $P$ | 4.04 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 10 | 699 | 0.4+ | 0.7+ | 2002 11 06 | 704 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.5+ |
| 1998 10 10 | 699 | 0.4+ | 0.7+ | 2002 11 06 | 704 | 0.2+ | 0.3− | 2006 09 25 | 704 | 0.6+ | 0.4+ |
| 1998 10 10 | 699 | 0.3− | 0.7+ | 2002 11 06 | 704 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.0 |
| 1998 10 15 | 691 | 0.5− | 0.0 | 2002 11 06 | 704 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.2+ | 0.5− |
| 1998 10 15 | 691 | 0.6− | 0.1− | 2002 11 06 | 704 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.8+ | 0.4+ |
| 1998 10 15 | 691 | 0.6− | 0.2+ | 2002 11 06 | 704 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1998 10 19 | 699 | 0.1+ | 0.3− | 2002 11 06 | 704 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1998 10 19 | 699 | 0.3+ | 0.2− | 2002 11 06 | 704 | 0.4− | 1.0+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1998 10 19 | 699 | 0.8+ | 0.3+ | 2002 11 06 | 704 | 0.8− | 1.2− | 2006 09 29 | 704 | 0.7− | 0.4+ |
| 1998 11 10 | 704 | 0.5+ | 0.6− | 2002 11 11 | 644 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.2− | 0.0 |
| 1998 11 10 | 704 | 1.1+ | 0.5− | 2002 11 11 | 644 | 0.5− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.5+ |
| 1998 11 10 | 704 | 0.8+ | 1.0+ | 2002 11 11 | 644 | 0.4− | 0.3− | 2006 09 29 | 704 | 0.0 | 0.4+ |
| 1998 11 10 | 704 | 1.2+ | 0.0 | 2002 11 22 | 644 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.8+ |
| 1998 11 10 | 704 | 0.9− | 0.0 | 2002 11 22 | 644 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1998 11 11 | 704 | 0.2+ | 0.5+ | 2002 11 22 | 644 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1998 11 11 | 704 | 0.4+ | 0.2+ | 2002 11 22 | 644 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 1998 11 11 | 704 | 0.2+ | 0.5+ | 2002 11 22 | 644 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 1998 11 11 | 704 | 0.3+ | 1.1− | 2002 11 22 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.0 |
| 1998 11 11 | 704 | 1.1+ | 0.6− | 2002 11 25 | 291 | (2.2+ | 0.7+) | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 1998 11 15 | 566 | 0.7− | 0.8− | 2002 11 25 | 291 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.3− |
| 1998 11 15 | 566 | 0.2− | 0.1− | 2002 11 25 | 291 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 1998 11 15 | 566 | 0.5− | 0.8− | 2002 12 04 | 333 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 0.5+ | 2002 12 04 | 333 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2002 12 04 | 333 | 0.6+ | 0.4− | 2006 10 17 | 703 | 1.3− | 0.7+ |
| 2002 10 04 | 704 | 0.9+ | 0.4− | 2002 12 05 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 704 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.6+ | 0.4− | 2002 12 05 | 704 | (0.1+ | 1.6+) | 2006 10 19 | 704 | (2.1+ | 0.7+) | | |
| 2002 10 04 | 704 | 0.1+ | 0.5− | 2002 12 05 | 704 | 0.0 | 1.1+ | 2006 10 19 | 704 | 1.5− | 0.8− | | |
| 2002 10 07 | 704 | (1.2+ | 1.7+) | 2002 12 05 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 704 | 0.0 | 0.5− | | |
| 2002 10 07 | 704 | 0.9+ | 0.8+ | 2002 12 10 | 704 | 0.2− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2002 10 07 | 704 | 1.1+ | 1.2+ | 2002 12 10 | 704 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2002 10 07 | 704 | 0.9+ | 1.1+ | 2002 12 10 | 704 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.3− | | |
| 2002 10 07 | 704 | 0.9+ | 1.0+ | 2002 12 10 | 704 | 0.5+ | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.3− | | |
| 2002 10 09 | 704 | 0.5+ | 0.2+ | 2003 01 04 | 704 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2002 10 09 | 704 | 0.7+ | 0.0 | 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2002 10 09 | 704 | 0.6+ | 0.0 | 2003 01 04 | 704 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2002 10 09 | 704 | 0.0 | 0.0 | 2003 01 04 | 704 | 0.6− | 0.0 | 2006 10 28 | 704 | 0.1+ | 0.1− | | |
| 2002 10 09 | 704 | 0.6+ | 0.1− | 2004 03 27 | 704 | 1.0− | 0.2− | 2006 10 28 | 704 | 0.2− | 0.4+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.5− | 2004 03 27 | 704 | 0.1+ | 0.2− | 2006 10 28 | 704 | 0.4− | 0.2+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 1.0+ | 0.4+ | 2006 10 28 | 704 | (2.1− | 1.0+) | | |
| 2002 10 11 | 704 | 0.1+ | 0.5− | 2004 03 27 | 704 | (0.4− | 1.9+) | 2006 10 28 | 704 | 0.4− | 0.5+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.3− | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− | | |
| 2002 10 30 | 644 | 0.1− | 0.4− | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.2− | | |
| 2002 10 30 | 644 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 11 15 | G96 | 0.2+ | 0.3− | | |
| 2002 10 30 | 644 | 0.1− | 0.6− | 2006 09 14 | 703 | 0.6+ | 0.1− | 2006 11 18 | A32 | 0.7− | 0.4+ | | |
| 2002 10 31 | 699 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 11 18 | A32 | 0.2− | 0.2+ | | |
| 2002 10 31 | 699 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.8− | 2006 11 18 | A32 | 0.2+ | 0.1+ | | |
| 2002 10 31 | 699 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.3− | 0.1− | 2006 11 23 | 291 | 0.2+ | 0.1+ | | |
| 2002 10 31 | 699 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 11 23 | 291 | 0.3+ | 0.0 | | |
| 2002 11 01 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.0 | 2006 11 23 | 291 | 0.2+ | 0.0 | | |
| 2002 11 01 | 704 | 0.3+ | 0.1− | 2006 09 18 | 704 | 0.3+ | 0.6− | 2006 11 25 | G92 | 0.4+ | 0.1+ | | |
| 2002 11 01 | 704 | 0.0 | 0.5+ | 2006 09 18 | 704 | 0.3− | 0.4− | 2006 11 25 | G92 | 0.8+ | 0.0 | | |
| 2002 11 01 | 704 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.0 | 2006 11 25 | G92 | 0.6+ | 0.1− | | |
| 2002 11 02 | 644 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.0 | 0.4− | 2006 11 27 | G96 | 0.3− | 0.5− | | |
| 2002 11 02 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.7− | 0.2− | 2006 11 27 | G96 | 0.4− | 0.5− | | |
| 2002 11 02 | 644 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.5− | 0.3− | | |
| 2002 11 05 | 699 | 0.5− | 0.7+ | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2002 11 05 | 699 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.4− | 2006 11 27 | G96 | 0.7− | 0.4− | | |
| 2002 11 05 | 699 | 0.4− | 0.6− | 2006 09 21 | 704 | 0.8+ | 0.3− | 2006 11 27 | G96 | 0.2− | 0.4− | | |
| 2002 11 05 | 699 | 0.3− | 0.4+ | 2006 09 21 | 704 | 0.9+ | 0.3− | 2006 11 27 | G96 | 0.2− | 0.3− | | |
| 2002 11 06 | 704 | 0.1− | 0.6− | 2006 09 21 | 704 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− | | |

**(137048)∗ 1998 VP$_{13}$ = 2002 RX$_{109}$**

Discovered 1998 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34750)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.05395 | | (2000.0) | | +0.94980535 | −0.30744526 |
| $n$ | 0.23812453 | $\omega$ | 130.25358 | | +0.26468769 | +0.88832749 |
| $a$ | 2.5779033 | $\Omega$ | 247.72221 | | +0.16676399 | +0.34110364 |
| $e$ | 0.2494585 | $i$ | 3.58458 | | | |
| $P$ | 4.14 | $H$ | 16.0 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 10 | 699 | 0.4+ | 1.0+ | 2002 09 07 | 704 | 0.7− | 0.6+ | 2006 08 21 | 644 | 0.2+ | 0.1− | | |
| 1998 10 10 | 699 | 0.1− | 0.7+ | 2002 09 16 | 608 | 1.0− | 0.1− | 2006 08 21 | 644 | 0.1+ | 0.0 | | |
| 1998 10 10 | 699 | 0.6− | 0.2− | 2002 09 16 | 608 | 0.6− | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.3+ | | |
| 1998 10 19 | 699 | 1.1+ | 0.3+ | 2002 09 16 | 608 | 0.9− | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.1− | | |
| 1998 10 19 | 699 | 0.7+ | 0.2+ | 2002 09 28 | 608 | 0.7− | 0.0 | 2006 08 28 | 699 | 0.6+ | 0.4+ | | |
| 1998 10 19 | 699 | 0.2+ | 0.4+ | 2002 09 28 | 608 | 1.0− | 0.5− | 2006 08 29 | 703 | 0.4− | 0.1− | | |
| 1998 11 10 | 704 | 0.6− | 0.4− | 2002 09 28 | 608 | 1.0− | 0.1− | 2006 08 29 | 703 | 0.4− | 0.1− | | |
| 1998 11 10 | 704 | 0.9− | 1.5− | 2002 09 30 | 143 | 0.3− | 0.5− | 2006 08 29 | 703 | 0.3− | 0.0 | | |
| 1998 11 10 | 704 | 0.8+ | 1.0− | 2002 09 30 | 143 | 0.6− | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.1− | | |
| 1998 11 10 | 704 | 1.5+ | 1.1− | 2002 09 30 | 143 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.9+ | 0.3− | | |
| 1998 11 10 | 704 | 1.3+ | 0.2+ | 2002 10 04 | 704 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.4+ | 0.5− | | |
| 1998 11 11 | 704 | 0.5+ | 0.2+ | 2002 10 04 | 704 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.1− | 0.3− | | |
| 1998 11 11 | 704 | 0.3− | 0.2+ | 2002 10 04 | 704 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.5− | | |
| 1998 11 11 | 704 | 0.7− | 0.0 | 2002 10 04 | 704 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.1− | 0.6− | | |
| 1998 11 11 | 704 | 0.4+ | 0.1− | 2002 10 04 | 704 | 1.1− | 0.0 | 2006 08 30 | 704 | 0.3− | 0.3− | | |
| 1998 11 11 | 704 | 0.2− | 0.1+ | 2002 10 08 | 704 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.0 | 1.0+ | | |
| 1998 11 16 | 566 | 1.7− | 0.1+ | 2002 10 08 | 704 | 0.7− | 0.1− | 2006 08 30 | 704 | 0.4− | 0.5− | | |
| 1998 11 16 | 566 | (2.1− | 0.4−) | 2002 10 08 | 704 | 0.3− | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.1− | | |
| 1998 11 16 | 566 | (2.1− | 0.4−) | 2002 10 12 | 704 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.4− | 0.4− | | |
| 1998 11 20 | 699 | 0.3− | 0.3− | 2002 10 12 | 704 | 0.0 | 0.1− | 2006 09 01 | 704 | 0.2− | 0.8− | | |
| 1998 11 20 | 699 | 0.3+ | 0.1+ | 2002 10 12 | 704 | 0.6− | 1.0− | 2006 09 01 | 704 | 0.5− | 0.6− | | |
| 1998 11 20 | 699 | 0.8− | 0.3+ | 2002 10 12 | 704 | 0.5− | 0.9− | 2006 09 01 | 704 | 0.3− | 1.1− | | |
| 1998 12 08 | 699 | 0.1− | 0.1− | 2002 10 31 | 704 | (1.7− | 1.3+) | 2006 09 12 | 699 | 0.5+ | 1.0+ | | |
| 1998 12 08 | 699 | 0.9+ | 0.5+ | 2002 10 31 | 704 | 0.4− | 1.0+ | 2006 09 12 | 699 | 0.3− | 0.7+ | | |
| 1998 12 08 | 699 | 0.2+ | 0.4− | 2002 10 31 | 704 | 0.1− | 0.2+ | 2006 09 12 | 699 | 1.0+ | 0.2− | | |
| 2002 08 11 | 704 | 0.4− | 0.8+ | 2002 10 31 | 704 | 0.5− | 0.4+ | 2006 09 12 | 699 | 0.4+ | 0.1+ | | |
| 2002 08 11 | 704 | 0.4+ | 0.0 | 2002 10 31 | 704 | 1.4− | 0.6− | 2006 09 14 | 703 | 0.7− | 1.1− | | |
| 2002 08 11 | 704 | 0.3− | 0.5+ | 2002 11 06 | 291 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.3− | | |
| 2002 08 11 | 704 | 0.2+ | 0.6+ | 2002 11 06 | 291 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.8− | 0.1− | | |
| 2002 08 11 | 704 | 0.1− | 1.1+ | 2002 11 06 | 291 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.5− | | |
| 2002 08 11 | 704 | 0.9+ | 0.5+ | 2002 11 08 | 704 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.1− | | |
| 2002 08 11 | 704 | 0.1− | 1.3+ | 2002 11 08 | 704 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 11 | 704 | (0.3+ | 1.6+) | 2002 11 08 | 704 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2002 11 08 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 691 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2002 12 31 | 291 | 0.3+ | 0.3+ | 2006 09 17 | 691 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.2+ | 0.2− | 2002 12 31 | 291 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.3+ | 0.0 | | |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2002 12 31 | 291 | 0.6+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.1+ | | |
| 2002 09 06 | 704 | 0.5+ | 0.0 | 2002 12 31 | 291 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.8− | 0.0 | | |
| 2002 09 07 | 704 | 0.4+ | 0.6+ | 2002 12 31 | 291 | 0.4− | 0.2− | 2006 09 18 | 699 | 0.3− | 0.4+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.0 | 2002 12 31 | 291 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.6+ | 0.5+ | | |
| 2002 09 07 | 704 | 0.1− | 0.3− | 2005 05 14 | G96 | 0.3− | 0.3− | 2006 09 18 | 704 | 0.6− | 1.1+ | | |
| 2002 09 07 | 704 | 0.1− | 0.5+ | 2005 05 14 | G96 | 0.4+ | 0.1+ | 2006 09 18 | 704 | 0.4+ | 0.3+ | | |
| 2002 09 07 | 704 | 0.3+ | 0.2+ | 2005 05 14 | G96 | 0.1+ | 0.6+ | 2006 09 18 | 704 | 1.0+ | 0.7− | | |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2005 05 14 | G96 | 0.6− | 0.5+ | 2006 09 24 | 699 | 0.0 | 0.2− | | |
| 2002 09 07 | 704 | 0.3+ | 0.8+ | 2006 08 18 | 704 | 0.2+ | 1.0− | 2006 09 24 | 699 | 0.4− | 0.1− | | |
| 2002 09 07 | 704 | 0.6− | 0.1+ | 2006 08 18 | 704 | 0.2+ | 0.4− | 2006 09 24 | 699 | 0.6− | 0.7+ | | |
| 2002 09 07 | 704 | 0.4− | 0.3+ | 2006 08 18 | 704 | 0.3+ | 0.1+ | 2006 09 24 | 699 | (0.6− | 1.5−) | | |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2006 08 19 | 699 | 0.6− | 0.1+ | 2006 11 18 | 703 | 0.3+ | 0.0 | | |
| 2002 09 07 | 704 | 0.4+ | 0.0 | 2006 08 19 | 699 | 0.2+ | 0.1+ | 2006 11 18 | 703 | 0.1+ | 0.9− | | |
| 2002 09 07 | 704 | 0.2+ | 0.5+ | 2006 08 19 | 699 | 0.7+ | 0.4− | 2006 11 18 | 703 | 0.6− | 0.6− | | |
| 2002 09 07 | 704 | 0.2− | 0.5− | 2006 08 19 | 699 | 0.4+ | 0.0 | 2006 11 18 | 703 | 0.2− | 0.7− | | |
| 2002 09 07 | 704 | 0.2+ | 1.3+ | 2006 08 21 | 644 | 0.1+ | 0.0 | | | | | | |

**(137049)∗ 1998 VB$_{14}$ = 2002 RA$_{93}$**

Discovered 1998 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34750)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.75887 | | (2000.0) | | +0.08756041 | −0.99608286 |
| $n$ | 0.23694869 | $\omega$ | 93.53099 | | +0.87801155 | +0.08301813 |
| $a$ | 2.5864247 | $\Omega$ | 351.41643 | | +0.47056231 | +0.03044558 |
| $e$ | 0.2099865 | $i$ | 4.74012 | | | |
| $P$ | 4.16 | $H$ | 15.6 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 10 | 704 | 0.1+ | 1.4− | 2002 11 12 | 704 | 0.2+ | 0.6− | 2006 08 25 | 704 | 0.1+ | 1.4+ | | |
| 1998 11 10 | 704 | 0.3− | 0.7+ | 2002 11 12 | 704 | 0.2− | 0.2− | 2006 08 25 | 704 | 0.2− | 0.8+ | | |
| 1998 11 10 | 704 | 0.1− | 1.0− | 2002 12 06 | 704 | (1.6− | 0.5+) | 2006 08 25 | 704 | 1.0− | 0.3+ | | |
| 1998 11 10 | 704 | 0.4− | 0.4− | 2002 12 06 | 704 | 0.5− | 0.0 | 2006 08 27 | 699 | 0.3− | 0.7+ | | |
| 1998 11 11 | 704 | 0.1+ | 0.4+ | 2002 12 06 | 704 | 0.9− | 0.3+ | 2006 08 27 | 699 | 0.6+ | 0.6+ | | |
| 1998 11 11 | 704 | 0.2+ | 0.6+ | 2002 12 06 | 704 | 0.3+ | 0.8+ | 2006 08 27 | 699 | 0.2− | 1.4+ | | |
| 1998 11 11 | 704 | (2.7− | 3.2−) | 2003 01 05 | 704 | 0.1− | 0.5− | 2006 08 27 | 699 | 0.4+ | 0.7+ | | |
| 1998 11 15 | 699 | 0.5− | 0.6+ | 2003 01 05 | 704 | 0.1− | 0.2− | 2006 08 28 | 703 | 1.0− | 0.5− | | |
| 1998 11 15 | 699 | 0.9+ | 0.3+ | 2003 01 05 | 704 | 0.7− | 0.4− | 2006 08 28 | 703 | 0.3− | 0.2− | | |
| 1998 11 15 | 699 | 0.8+ | 1.9+ | 2003 01 05 | 704 | (1.6− | 2.0−) | 2006 08 28 | 703 | 0.7− | 0.3+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.8− | 2004 02 26 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.1+ | 0.8+ | | |
| 2002 09 05 | 704 | 0.5− | 1.1− | 2004 02 26 | 704 | 0.3+ | 0.8+ | 2006 09 14 | 644 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.3− | 1.3+ | 2006 09 14 | 644 | 0.0 | 0.1− | | |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.2− | 0.8+ | 2006 09 14 | 644 | 0.1+ | 0.1− | | |
| 2002 09 07 | 704 | 0.7+ | 0.6+ | 2004 02 26 | 704 | 1.2− | 0.7− | 2006 09 16 | 699 | 0.0 | 0.0 | | |
| 2002 09 07 | 704 | 0.1− | 0.4+ | 2004 03 15 | 703 | 1.0+ | 1.5+ | 2006 09 16 | 699 | 0.4− | 0.1− | | |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2004 03 15 | 703 | 1.3+ | 0.1+ | 2006 09 16 | 699 | 0.6+ | 0.0 | | |
| 2002 09 07 | 704 | 0.4− | 1.2+ | 2004 03 15 | 703 | 0.5+ | 0.4+ | 2006 09 16 | 699 | 0.2− | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (2.3− | 0.2−) | 2004 03 15 | 703 | 0.1− | 0.9+ | 2006 09 17 | 704 | 0.3+ | 0.0 | | |
| 2002 09 28 | 608 | (2.4− | 0.4+) | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 09 17 | 704 | 1.1− | 0.6+ | | |
| 2002 09 28 | 608 | (2.5− | 0.0 ) | 2004 03 18 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 704 | 0.0 | 0.3− | | |
| 2002 10 02 | 704 | 0.5+ | 0.8+ | 2004 03 18 | 704 | 0.1− | 0.5+ | 2006 09 17 | 704 | 1.1− | 1.0+ | | |
| 2002 10 02 | 704 | 1.1+ | 0.6+ | 2004 03 18 | 704 | 0.8+ | 1.3+ | 2006 09 17 | 704 | 1.0− | 0.4+ | | |
| 2002 10 02 | 704 | 0.8+ | 0.2+ | 2004 03 18 | 704 | (0.8+ | 2.2+) | 2006 09 19 | 699 | 0.2− | 0.1+ | | |
| 2002 10 02 | 704 | 1.0+ | 1.2+ | 2004 03 26 | 691 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.5+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.6+ | 2004 03 26 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2004 03 26 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.9+ | 2004 03 27 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.1− | 0.4− | | |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2004 03 27 | 704 | 1.1+ | 0.7+ | 2006 09 19 | 699 | 0.6− | 0.2− | | |
| 2002 10 03 | 704 | 0.5+ | 0.8+ | 2004 03 27 | 704 | 1.0+ | 0.6+ | 2006 09 19 | 703 | 0.7+ | 0.5+ | | |
| 2002 10 06 | 644 | 0.6− | 0.4+ | 2004 03 27 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.3+ | 0.1+ | | |
| 2002 10 06 | 644 | 0.8− | 0.3+ | 2004 03 27 | 704 | 0.7+ | 1.3+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | | |
| 2002 10 06 | 644 | 0.9− | 0.5+ | 2004 04 11 | 644 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.8+ | | |
| 2002 10 07 | 699 | 0.0 | 0.6+ | 2004 04 11 | 644 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 07 | 699 | 0.9− | 0.4+ | 2004 04 11 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 07 | 699 | 0.1+ | 0.2+ | 2004 04 11 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.1− | | |
| 2002 10 07 | 699 | 0.3+ | 0.4+ | 2004 04 11 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.4− | 0.1+ | | |
| 2002 10 12 | 704 | 0.7− | 0.0 | 2004 04 11 | 644 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 0.3− | 0.5+ | | |
| 2002 10 12 | 704 | 0.3− | 0.3+ | 2004 04 12 | 699 | 0.1− | 0.9− | 2006 09 25 | G96 | 0.2− | 0.2− | | |
| 2002 10 12 | 704 | 0.3− | 0.5+ | 2004 04 12 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.2− | | |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2004 04 12 | 699 | 0.6+ | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.1− | | |
| 2002 10 12 | 704 | 0.1− | 0.1+ | 2004 04 12 | 699 | 0.0 | 1.1+ | 2006 09 25 | G96 | 0.6+ | 0.2− | | |
| 2002 10 15 | 704 | (2.0− | 0.4+) | 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.3− | | |
| 2002 10 15 | 704 | 0.3− | 0.9− | 2004 04 12 | 699 | 0.5+ | 0.9+ | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 2002 10 15 | 704 | 0.1+ | 1.1− | 2004 04 12 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2002 10 30 | 644 | 0.2− | 0.9+ | 2004 04 15 | 699 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2002 10 30 | 644 | 0.2− | 0.8+ | 2004 04 15 | 699 | 0.7+ | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.2+ | | |
| 2002 10 30 | 644 | 0.2− | 0.8+ | 2004 04 15 | 699 | 0.6+ | 0.4− | 2006 09 25 | 699 | 0.3− | 0.1+ | | |
| 2002 10 31 | 699 | 0.5− | 0.4− | 2004 04 15 | 699 | (0.4− | 3.2+) | 2006 09 30 | 704 | 1.2+ | 0.2+ | | |
| 2002 10 31 | 699 | 0.6− | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.9− | 2006 09 30 | 704 | 0.1− | 0.6+ | | |
| 2002 10 31 | 699 | 0.6− | 0.6+ | 2004 04 20 | 704 | 0.3− | 1.1− | 2006 09 30 | 704 | 0.7− | 0.6− | | |
| 2002 10 31 | 699 | 0.8− | 0.3+ | 2004 04 20 | 704 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2002 11 01 | 704 | (0.4− | 1.7+) | 2004 04 20 | 704 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2002 11 01 | 704 | 1.0− | 0.6+ | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.4+ | 0.1+ | | |
| 2002 11 01 | 704 | 1.3− | 0.1+ | 2004 04 22 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 1.0+ | | |
| 2002 11 02 | 608 | 0.8− | 0.4− | 2004 04 22 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.8+ | | |
| 2002 11 02 | 608 | 1.2− | 0.5− | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.4− | 0.4− | | |
| 2002 11 02 | 608 | 1.2− | 0.5− | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.5+ | | |
| 2002 11 08 | 704 | 0.7− | 0.3− | 2006 08 22 | 644 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.2− | | |
| 2002 11 08 | 704 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.4− | | |
| 2002 11 08 | 704 | 0.6− | 0.4+ | 2006 08 23 | 644 | 0.4− | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1− | | |
| 2002 11 12 | 704 | 0.3+ | 0.1+ | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.1− | | |

**(137050)∗ 1998 VL$_{15}$ = 2002 TT$_{128}$**

Discovered 1998 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37133)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.00220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23804203 | $\omega$ | 212.55165 | | +0.24815881 | −0.95834552 | |
| $a$ | 2.5784989 | $\Omega$ | 223.54597 | | +0.92691408 | +0.27732120 | |
| $e$ | 0.2639125 | $i$ | 11.84291 | | +0.28150931 | −0.06831407 | |
| $P$ | 4.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 10 | 704 | 0.3− | 0.8+ | 2002 11 08 | 704 | 0.2− | 0.1+ | 2006 08 29 | 699 | 0.0 | 0.3− | | |
| 1998 11 10 | 704 | 1.0+ | 1.0+ | 2002 11 08 | 704 | 0.8+ | 0.6− | 2006 08 29 | 683 | 0.5+ | 0.8+ | | |
| 1998 11 10 | 704 | 0.1+ | 1.6+ | 2002 11 08 | 704 | 0.2+ | 0.0 | 2006 08 29 | 683 | 0.8− | 1.1+ | | |
| 1998 11 10 | 704 | 0.3− | 2.0+ | 2002 11 12 | 704 | 0.9+ | 0.9− | 2006 08 29 | 699 | 0.4− | 0.5+ | | |
| 1998 11 11 | 704 | 0.7+ | 1.0+ | 2002 11 12 | 704 | 0.0 | 0.2+ | 2006 08 31 | 704 | (0.7− | 2.3−) | | |
| 1998 11 11 | 704 | 0.4+ | 0.1+ | 2002 11 12 | 704 | 0.2+ | 0.1+ | 2006 08 31 | 704 | (2.8+ | 1.0−) | | |
| 1998 11 11 | 704 | 0.1− | 1.2− | 2002 11 12 | 704 | 1.3− | 0.4+ | 2006 08 31 | 704 | (0.1+ | 1.9−) | | |
| 1998 11 11 | 704 | 0.4− | 1.5− | 2002 11 12 | 704 | 0.5− | 1.1− | 2006 08 31 | 704 | (2.8− | 0.4−) | | |
| 1998 11 11 | 704 | 0.2− | 1.1− | 2002 11 30 | 608 | 0.4− | 0.3− | 2006 09 11 | 703 | 0.7+ | 1.0+ | | |
| 1998 11 14 | 699 | 0.3− | 0.6+ | 2002 11 30 | 608 | 0.2− | 0.4− | 2006 09 11 | 703 | 0.2− | 0.6+ | | |
| 1998 11 14 | 699 | 0.2+ | 0.4+ | 2002 11 30 | 608 | (0.3− | 1.7−) | 2006 09 11 | 703 | 0.1− | 0.3− | | |
| 1998 11 14 | 699 | 0.2− | 0.4+ | 2002 12 06 | 704 | 0.3+ | 0.1− | 2006 09 11 | 703 | 0.0 | 0.4+ | | |
| 1998 12 23 | 699 | 0.0 | 1.7− | 2002 12 06 | 704 | 0.9+ | 0.0 | 2006 09 15 | 704 | 0.6+ | 1.1+ | | |
| 1998 12 23 | 699 | 0.3− | 1.0+ | 2002 12 06 | 704 | 0.2+ | 0.9+ | 2006 09 15 | 704 | 0.7+ | 0.4+ | | |
| 1998 12 23 | 699 | 1.5− | 1.6+ | 2002 12 06 | 704 | 0.6+ | 0.1+ | 2006 09 15 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 04 | 644 | 0.0 | 0.7+ | 2002 12 11 | 704 | 0.3+ | 0.8+ | 2006 09 15 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 04 | 644 | 0.0 | 0.7+ | 2002 12 11 | 704 | 0.2+ | 0.4+ | 2006 09 15 | 704 | 0.2+ | 0.3+ | | |
| 2002 10 04 | 644 | 0.1+ | 0.6+ | 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.3+ | | |
| 2002 10 05 | 704 | 0.1− | 0.2+ | 2002 12 11 | 704 | 0.7− | 1.4− | 2006 09 20 | 699 | 0.1+ | 0.5+ | | |
| 2002 10 05 | 704 | 0.4− | 0.3+ | 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.7− | 0.2+ | | |
| 2002 10 05 | 704 | 0.4− | 0.1+ | 2002 12 11 | 704 | 0.3− | 1.2− | 2006 09 20 | 699 | 1.0− | 1.0+ | | |
| 2002 10 05 | 704 | 0.3− | 0.1− | 2003 01 04 | 704 | 0.3+ | 0.6− | 2006 09 29 | 699 | 0.3+ | 0.8− | | |
| 2002 10 05 | 704 | 0.5− | 0.4− | 2003 01 04 | 704 | 1.2− | 0.5− | 2006 09 29 | 699 | 0.1+ | 0.6− | | |
| 2002 10 07 | 699 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 0.4+ | 1.3− | 2006 09 29 | 699 | 1.1+ | 0.4+ | | |
| 2002 10 07 | 699 | 0.3+ | 0.2− | 2003 01 04 | 704 | 0.5− | 0.7− | 2006 09 29 | 699 | 0.1+ | 0.1− | | |
| 2002 10 07 | 699 | 0.3+ | 0.4− | 2004 03 31 | 704 | 0.7− | 0.2+ | 2006 10 01 | 703 | 0.5− | 0.0 | | |
| 2002 10 07 | 699 | 0.0 | 0.6− | 2004 03 31 | 704 | 1.1+ | 0.2+ | 2006 10 01 | 703 | 1.1− | 0.2− | | |
| 2002 10 09 | 704 | 0.6+ | 0.2+ | 2004 03 31 | 704 | 0.6+ | 1.2+ | 2006 10 01 | 703 | 0.1+ | 0.2− | | |
| 2002 10 09 | 704 | 0.5+ | 0.2+ | 2004 04 16 | 644 | 0.1+ | 0.8+ | 2006 10 01 | 703 | 1.1− | 0.1− | | |
| 2002 10 09 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 644 | 0.2− | 1.0+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 2002 10 09 | 704 | 0.9+ | 0.0 | 2004 04 16 | 644 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 10 09 | 704 | 0.9+ | 0.3+ | 2006 08 27 | 683 | (1.7+ | 1.0−) | 2006 10 11 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.4− | 0.3− | 2006 08 27 | 683 | (1.9+ | 1.1−) | 2006 10 17 | 703 | 0.4− | 0.7− | | |
| 2002 10 12 | 704 | 0.2+ | 0.7− | 2006 08 27 | 683 | 1.0+ | 0.7− | 2006 10 17 | 703 | 0.1+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.2− | 0.4− | 2006 08 28 | 683 | 0.3+ | 0.8− | 2006 10 17 | 703 | 0.6− | 0.8+ | | |
| 2002 11 01 | 704 | 0.6− | 0.4+ | 2006 08 28 | 683 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.4+ | 0.4+ | | |
| 2002 11 01 | 704 | 0.8− | 0.5+ | 2006 08 28 | 683 | 0.2+ | 1.2+ | 2006 10 29 | 703 | 0.1+ | 0.1− | | |
| 2002 11 01 | 704 | 0.6− | 0.9+ | 2006 08 29 | 699 | 0.1+ | 0.2− | 2006 10 29 | 703 | 0.2+ | 1.9− | | |
| 2002 11 08 | 704 | 0.6+ | 0.7− | 2006 08 29 | 699 | 0.2− | 0.6− | 2006 10 29 | 703 | 1.5− | 1.4− | | |
| 2002 11 08 | 704 | 0.3+ | 0.1− | 2006 08 29 | 683 | 0.1− | 0.7− | 2006 10 29 | 703 | 1.2− | 1.3− | | |

**(137051)∗ 1998 VA$_{27}$ = 2002 XC$_1$**

Discovered 1998 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 39976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.63394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24114812 | $\omega$ | 140.59841 | | +0.93823272 | −0.28829942 | |
| $a$ | 2.5563096 | $\Omega$ | 237.18087 | | +0.23096152 | +0.93354763 | |
| $e$ | 0.1765002 | $i$ | 13.15909 | | +0.25763568 | +0.21300766 | |
| $P$ | 4.09 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 10 | 704 | (0.4− | 2.3−) | 2002 10 31 | 644 | 0.2+ | 0.9+ | 2006 09 16 | 703 | 0.5+ | 0.0 | | |
| 1998 11 10 | 704 | 0.8+ | 0.5− | 2002 12 01 | 704 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.4+ | 0.4+ | | |
| 1998 11 10 | 704 | (0.4− | 3.1−) | 2002 12 01 | 704 | 0.5− | 0.3+ | 2006 09 28 | 703 | 0.6+ | 0.5− | | |
| 1998 11 11 | 704 | 0.2− | 0.5− | 2002 12 01 | 704 | 0.9− | 0.4+ | 2006 09 28 | 703 | 0.3− | 0.6− | | |
| 1998 11 11 | 704 | 1.3− | 0.7− | 2002 12 01 | 704 | 0.1− | 0.7+ | 2006 09 28 | 703 | 0.6− | 0.7− | | |
| 1998 11 11 | 704 | 0.1− | 1.7− | 2002 12 01 | 704 | 0.2− | 0.7− | 2006 09 28 | 703 | 0.1+ | 0.4− | | |
| 1998 11 15 | 699 | 0.2+ | 0.6+ | 2002 12 02 | 608 | 0.7− | 0.2− | 2006 09 28 | 703 | 0.4+ | 0.2+ | | |
| 1998 11 15 | 699 | 0.2+ | 1.5+ | 2002 12 02 | 608 | 1.1− | 0.6− | 2006 09 28 | 703 | 0.4+ | 0.1− | | |
| 1998 11 15 | 699 | 0.3+ | 1.2+ | 2002 12 02 | 608 | 1.1− | 0.8− | 2006 09 28 | 703 | 0.1− | 0.4− | | |
| 2000 03 11 | 704 | 0.3+ | 0.2− | 2002 12 06 | 704 | 0.5− | 0.0 | 2006 09 28 | 703 | 0.0 | 0.1− | | |
| 2000 03 11 | 704 | 0.6+ | 1.0+ | 2002 12 06 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.1+ | | |
| 2000 03 11 | 704 | 0.3+ | 0.3+ | 2002 12 06 | 704 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.3− | 0.1+ | | |
| 2002 09 27 | 644 | 0.3+ | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.9+ | 2006 09 30 | 704 | 0.2− | 0.8+ | | |
| 2002 09 27 | 644 | 0.2+ | 0.4+ | 2005 04 10 | 695 | 0.1+ | 0.7+ | 2006 10 20 | 703 | 0.4+ | 0.7− | | |
| 2002 09 27 | 644 | 0.7+ | 0.1− | 2005 04 10 | 695 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.3− | 0.2− | | |
| 2002 09 27 | 644 | 0.2+ | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 20 | 703 | 0.6− | 0.1+ | | |
| 2002 09 27 | 644 | 0.4+ | 0.1− | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 10 20 | 703 | 0.3+ | 0.9− | | |
| 2002 09 27 | 644 | 0.2+ | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.9+ | 0.1+ | | |
| 2002 10 10 | 704 | 0.5− | 0.6− | 2005 05 10 | G96 | 0.3+ | 0.5+ | 2006 11 14 | 703 | (1.7− | 0.3+) | | |
| 2002 10 10 | 704 | 0.1+ | 0.6− | 2005 06 14 | G96 | 0.6− | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.1+ | | |
| 2002 10 10 | 704 | 0.2+ | 0.1− | 2005 06 14 | G96 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.7− | 0.5+ | | |
| 2002 10 10 | 704 | 0.6+ | 0.8− | 2005 06 14 | G96 | 0.0 | 0.9+ | 2006 11 25 | 703 | 0.2− | 0.8+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.5+ | 0.3+ | 2005 06 14 | G96 | 0.2− | 0.6+ | 2006 11 25 | 703 | 0.2− | 0.4+ | | |
| 2002 10 31 | 644 | 0.1+ | 1.0+ | 2006 09 16 | 703 | (0.5+ | 1.7+) | 2006 11 25 | 703 | 0.2+ | 0.4+ | | |
| 2002 10 31 | 644 | 0.1+ | 0.8+ | 2006 09 16 | 703 | 0.1− | 1.4+ | 2006 11 25 | 703 | 0.4− | 0.1+ | | |

**(137052)∗ 1998 VO$_{33}$**

Discovered 1998 Nov. 15 by C.-I. Lagerkvist at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.30855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.70703367 | $\omega$ | 209.77197 | | +0.05771084 | +0.97087094 | |
| $a$ | 1.2478891 | $\Omega$ | 64.40596 | | −0.85745950 | +0.16750462 | |
| $e$ | 0.8095110 | $i$ | 14.94252 | | −0.51130487 | −0.17132371 | |
| $P$ | 1.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 809 | (2.4− | 0.4+) | 2003 12 29 | 703 | 0.4− | 0.4− | 2005 11 20 | A70 | 0.1− | 0.1− | | |
| 1998 11 15 | 809 | 0.7− | 0.7− | 2004 01 04 | 084 | 0.6+ | 0.3+ | 2005 11 20 | A70 | 0.5− | 0.0 | | |
| 1998 11 16 | 809 | 0.3+ | 0.1− | 2004 01 11 | 670 | 1.5− | 0.6− | 2005 11 20 | A70 | 0.1+ | 0.2− | | |
| 1998 11 17 | 758 | 0.8− | 0.5+ | 2004 01 11 | 670 | 0.2− | 0.4− | 2005 11 21 | 703 | 0.0 | 0.4− | | |
| 1998 11 17 | 758 | 1.0− | 0.5+ | 2004 01 11 | 670 | 0.7− | 0.2− | 2005 11 21 | 703 | 0.4+ | 0.0 | | |
| 1998 11 17 | 758 | 0.7− | 0.5+ | 2004 01 17 | 830 | 0.2+ | 0.8− | 2005 11 21 | 703 | 0.1+ | 0.3− | | |
| 1998 11 17 | 713 | 1.6− | 0.6+ | 2004 01 17 | 830 | 0.0 | 0.6+ | 2005 11 21 | 703 | 0.2+ | 0.3− | | |
| 1998 11 17 | 713 | 0.9− | 0.5+ | 2004 01 17 | 830 | 0.0 | 0.5+ | 2005 11 21 | 379 | 0.0 | 0.4− | | |
| 1998 11 17 | 713 | 1.2− | 0.4+ | 2004 01 17 | 830 | 0.2− | 0.7+ | 2005 11 21 | 379 | 0.1+ | 0.2− | | |
| 1998 11 17 | 713 | 1.0− | 0.2+ | 2004 01 17 | 130 | 0.3− | 0.4+ | 2005 11 21 | 379 | 0.2+ | 0.1+ | | |
| 1998 11 17 | 711 | 0.4− | 0.3+ | 2004 01 17 | 130 | 0.1− | 0.7+ | 2005 11 21 | 379 | 0.1+ | 0.4− | | |
| 1998 11 17 | 711 | 0.5− | 0.3+ | 2004 01 17 | 130 | 0.0 | 0.3+ | 2005 11 21 | 379 | 0.5+ | 0.6− | | |
| 1998 11 17 | 711 | 0.5− | 0.3+ | 2004 01 17 | 130 | 0.4− | 0.6+ | 2005 11 22 | 691 | 0.1+ | 0.1+ | | |
| 1998 11 17 | 734 | 0.7− | 0.5+ | 2004 01 18 | 938 | 0.0 | 0.3+ | 2005 11 22 | 691 | 0.4+ | 0.2+ | | |
| 1998 11 17 | 734 | 0.5− | 0.5+ | 2004 01 20 | 830 | 0.3− | 0.4+ | 2005 11 22 | 691 | 0.1+ | 0.0 | | |
| 1998 11 17 | 734 | 0.4− | 0.5+ | 2004 01 20 | 830 | 0.0 | 0.4+ | 2005 11 22 | H45 | 0.1+ | 0.0 | | |
| 1998 11 17 | 426 | 0.7− | 0.4+ | 2004 01 20 | 830 | 0.2− | 0.1+ | 2005 11 22 | H45 | 0.8− | 0.6− | | |
| 1998 11 17 | 426 | 0.6− | 0.3+ | 2004 01 20 | 830 | 0.2+ | 0.5+ | 2005 11 22 | H45 | 1.5− | 1.5− | | |
| 1998 11 17 | 426 | 0.0 | 0.1+ | 2004 01 20 | 830 | (4.0− | 4.4+) | 2005 11 22 | H45 | 0.0 | 0.3+ | | |
| 1998 11 17 | 428 | 0.5+ | 0.2+ | 2004 01 20 | 830 | (3.2− | 3.2+) | 2005 11 22 | H45 | 0.0 | 0.5− | | |
| 1998 11 17 | 428 | 0.5+ | 0.3+ | 2004 01 20 | 830 | (3.5+ | 3.2−) | 2005 11 22 | H45 | 0.1+ | 0.1+ | | |
| 1998 11 17 | 428 | 0.2− | 0.3+ | 2004 01 20 | 830 | 0.1− | 0.1− | 2005 11 22 | 379 | 0.0 | 0.2+ | | |
| 1998 11 17 | 428 | 0.1− | 0.3+ | 2004 01 21 | 830 | 0.0 | 0.2+ | 2005 11 22 | 379 | 0.1− | 0.1+ | | |
| 1998 11 17 | 428 | 0.1− | 0.3+ | 2004 01 21 | 830 | 0.1+ | 0.2+ | 2005 11 22 | 379 | 0.0 | 0.2− | | |
| 1998 11 17 | 428 | 0.1− | 0.6+ | 2004 01 21 | 830 | 0.0 | 0.3+ | 2005 11 22 | 379 | 0.2+ | 0.1− | | |
| 1998 11 17 | 355 | 0.0 | 0.5+ | 2004 01 21 | 830 | 0.1+ | 0.1+ | 2005 11 22 | 379 | 0.3+ | 0.2− | | |
| 1998 11 17 | 355 | 0.0 | 0.3+ | 2004 01 23 | H41 | 0.7+ | 0.5− | 2005 11 22 | 379 | 0.7+ | 0.1+ | | |
| 1998 11 17 | 355 | 0.4− | 0.5+ | 2004 01 23 | H41 | 1.2+ | 0.1− | 2005 11 22 | 379 | 0.3+ | 0.2− | | |
| 1998 11 17 | 355 | 0.3− | 1.0+ | 2004 01 23 | H41 | 1.5+ | 0.9+ | 2005 11 22 | 084 | 0.1− | 0.2− | | |
| 1998 11 17 | 046 | 0.5− | 0.3+ | 2004 01 23 | H41 | 0.2− | 0.3+ | 2005 11 22 | 084 | 0.2+ | 0.0 | | |
| 1998 11 17 | 046 | 0.3− | 0.3+ | 2004 01 23 | H41 | 0.2+ | 0.6+ | 2005 11 23 | H45 | 0.1− | 0.0 | | |
| 1998 11 17 | 046 | 0.2− | 0.3+ | 2004 01 23 | H41 | 0.5− | 0.2− | 2005 11 23 | H45 | 0.3− | 0.5− | | |
| 1998 11 17 | 046 | 0.4− | 0.3+ | 2004 01 24 | 084 | 0.2− | 0.3− | 2005 11 23 | H45 | 0.2− | 0.5− | | |
| 1998 11 17 | 151 | 0.2− | 0.2+ | 2004 01 28 | H41 | 0.2− | 0.9+ | 2005 11 23 | H45 | 0.1− | 0.3+ | | |
| 1998 11 17 | 151 | 1.2− | 0.2+ | 2004 01 28 | H41 | 0.2− | 0.7− | 2005 11 23 | H45 | 0.2+ | 0.3− | | |
| 1998 11 17 | 596 | 0.3− | 0.4+ | 2004 01 28 | H41 | (5.9+ | 1.2+) | 2005 11 23 | 379 | 0.0 | 0.1+ | | |
| 1998 11 17 | 151 | 0.3− | 0.3+ | 2004 01 28 | H41 | 0.1+ | 0.3− | 2005 11 23 | 379 | 0.2+ | 0.1+ | | |
| 1998 11 17 | 596 | 0.2− | 0.0 | 2004 01 29 | H41 | 0.9− | 0.7+ | 2005 11 23 | 379 | 0.5+ | 0.1+ | | |
| 1998 11 17 | 106 | 1.2− | 0.4+ | 2004 01 29 | H41 | 0.2− | 0.2+ | 2005 11 23 | 379 | 0.5+ | 0.1− | | |
| 1998 11 17 | 596 | 0.0 | 0.2+ | 2004 01 29 | H41 | 0.2− | 0.6− | 2005 11 23 | 379 | 0.5+ | 0.1− | | |
| 1998 11 17 | 106 | 1.4− | 0.2+ | 2004 01 29 | H41 | 0.9+ | 1.0+ | 2005 11 24 | H45 | 0.1− | 0.8+ | | |
| 1998 11 17 | 106 | 1.3− | 0.3+ | 2004 01 31 | 703 | 0.8− | 0.2+ | 2005 11 24 | H45 | 0.1− | 0.3+ | | |
| 1998 11 17 | 106 | 1.2− | 0.3+ | 2004 01 31 | 703 | 0.5− | 0.4+ | 2005 11 24 | H45 | 0.1− | 0.4− | | |
| 1998 11 17 | 106 | 1.2− | 0.1+ | 2004 01 31 | 703 | 0.6− | 0.2+ | 2005 11 24 | H45 | 0.2+ | 0.1− | | |
| 1998 11 17 | 106 | 1.4− | 0.3+ | 2004 01 31 | 703 | 0.4− | 0.3+ | 2005 11 24 | H45 | 0.3+ | 0.2− | | |
| 1998 11 17 | 106 | 1.2− | 0.3+ | 2004 01 31 | H41 | 0.0 | 0.8− | 2005 11 24 | 379 | 0.6+ | 0.1− | | |
| 1998 11 17 | 106 | 1.2− | 0.2+ | 2004 01 31 | H41 | 0.6+ | 0.2− | 2005 11 24 | 379 | 0.3+ | 0.2+ | | |
| 1998 11 17 | 587 | 0.6− | 0.0 | 2004 01 31 | H41 | 0.5− | 1.0+ | 2005 11 24 | 379 | 0.3+ | 0.1− | | |
| 1998 11 17 | 587 | 0.6− | 0.4+ | 2004 01 31 | H41 | 0.2− | 0.2+ | 2005 11 24 | 379 | 0.3+ | 0.4− | | |
| 1998 11 17 | 106 | 1.4− | 0.5+ | 2004 02 02 | A16 | (4.2+ | 0.7−) | 2005 11 25 | G96 | 0.1+ | 0.3− | | |
| 1998 11 18 | 761 | 0.2− | 0.0 | 2004 02 02 | A16 | (6.5+ | 0.9−) | 2005 11 25 | G96 | 0.0 | 0.2− | | |
| 1998 11 18 | 761 | 0.1− | 0.0 | 2004 02 03 | A16 | (3.9− | 1.3+) | 2005 11 25 | G96 | 0.3+ | 0.2− | | |
| 1998 11 18 | 713 | 0.2+ | 0.5− | 2004 02 03 | A16 | (2.4− | 1.6−) | 2005 11 25 | 379 | 0.1− | 0.1− | | |
| 1998 11 18 | 713 | 0.3+ | 0.2− | 2004 02 09 | 704 | 1.4+ | 0.1− | 2005 11 25 | 379 | 0.1+ | 0.2− | | |
| 1998 11 18 | 711 | 0.1+ | 0.5− | 2004 02 09 | 704 | 1.1+ | 0.3− | 2005 11 25 | 379 | 0.6+ | 0.4− | | |
| 1998 11 18 | 711 | 0.1− | 0.5− | 2004 02 09 | 704 | 1.1+ | 0.1+ | 2005 11 25 | 379 | 0.3+ | 0.2− | | |
| 1998 11 18 | 711 | 0.1− | 0.6− | 2004 02 09 | 704 | 0.5+ | 0.6+ | 2005 11 25 | 379 | 0.0 | 0.3− | | |
| 1998 11 18 | 355 | 0.7+ | 0.3− | 2004 02 09 | 704 | 0.4+ | 0.2− | 2005 11 25 | 379 | 0.3+ | 0.2− | | |
| 1998 11 18 | 355 | 0.6+ | 0.0 | 2004 02 11 | A32 | 0.2− | 0.6− | 2005 11 25 | 379 | 0.2+ | 0.2− | | |
| 1998 11 18 | 355 | 0.5+ | 0.3− | 2004 02 11 | A32 | 0.6− | 0.3− | 2005 11 25 | 379 | 0.3+ | 0.2− | | |
| 1998 11 18 | 143 | 0.2+ | 0.4+ | 2004 02 11 | A32 | 0.2− | 0.2− | 2005 11 26 | 379 | 0.0 | 0.1− | | |
| 1998 11 18 | 143 | 0.4− | 0.4+ | 2004 02 11 | A32 | 0.2− | 0.1− | 2005 11 26 | 379 | 0.1+ | 0.1− | | |
| 1998 11 18 | 143 | 0.5− | 0.0 | 2004 02 14 | 830 | 0.3− | 0.2− | 2005 11 26 | 379 | 0.2+ | 0.2− | | |
| 1998 11 18 | 022 | (2.8+ | 0.5−) | 2004 02 14 | 830 | 0.1− | 0.4− | 2005 11 26 | 379 | 0.4+ | 0.4− | | |
| 1998 11 18 | 022 | (2.7+ | 0.4−) | 2004 02 14 | 830 | 0.3+ | 0.5− | 2005 11 26 | 379 | 0.2+ | 0.3− | | |
| 1998 11 18 | 022 | (2.8+ | 0.5−) | 2004 02 16 | H41 | 0.7+ | 0.3+ | 2005 11 26 | 379 | 0.2+ | 0.1− | | |
| 1998 11 19 | 897 | 0.2+ | 0.2+ | 2004 02 16 | H41 | 0.8+ | 0.1− | 2005 11 26 | 185 | 0.1+ | 0.0 | | |
| 1998 11 19 | 897 | 0.2− | 0.1+ | 2004 02 16 | H41 | 0.5+ | 0.3− | 2005 11 26 | 185 | 0.2+ | 0.0 | | |
| 1998 11 19 | 627 | 0.4− | 0.7+ | 2004 02 16 | H41 | 0.2− | 0.4− | 2005 11 26 | 185 | 0.5+ | 0.1+ | | |
| 1998 11 19 | 627 | 0.8− | 0.6+ | 2004 02 16 | H41 | 0.1− | 0.0 | 2005 11 26 | 185 | 0.2− | 0.1+ | | |
| 1998 11 19 | 627 | 0.4− | 0.7+ | 2004 02 17 | A32 | 0.3− | 0.5− | 2005 11 26 | 185 | 0.4+ | 0.4− | | |
| 1998 11 19 | 627 | 0.9− | 0.5+ | 2004 02 17 | A32 | 0.4+ | 0.1− | 2005 11 27 | 711 | 0.0 | 0.5+ | | |
| 1998 11 20 | 860 | 0.1− | 0.6+ | 2004 02 17 | A32 | 1.4+ | 0.1+ | 2005 11 27 | 711 | 0.1− | 0.5+ | | |
| 1998 11 20 | 860 | 0.3− | 0.3+ | 2004 02 17 | A32 | 0.2− | 0.2− | 2005 11 27 | 711 | 0.2− | 0.5+ | | |
| 1998 11 20 | 860 | 1.2− | 0.7+ | 2004 02 18 | H41 | 0.4− | 0.0 | 2005 11 27 | 379 | 0.1− | 0.2− | | |
| 1998 11 20 | 360 | 0.1− | 0.3+ | 2004 02 18 | H41 | 1.1− | 0.6+ | 2005 11 27 | 379 | 0.1− | 0.1+ | | |
| 1998 11 20 | 360 | 0.3− | 0.4+ | 2004 02 18 | H41 | 0.1− | 0.0 | 2005 11 27 | 379 | 0.5+ | 0.0 | | |
| 1998 11 20 | 360 | 0.2− | 0.4+ | 2004 02 18 | H41 | 0.2− | 0.2+ | 2005 11 27 | 379 | 0.2− | 0.5+ | | |
| 1998 11 21 | 557 | 0.2− | 0.2− | 2004 02 21 | A32 | 1.3+ | 0.4+ | 2005 11 27 | 379 | 0.3+ | 0.4+ | | |
| 1998 11 21 | 557 | 0.3− | 0.1− | 2004 02 21 | A32 | 1.4+ | 0.1+ | 2005 11 27 | 379 | 0.7+ | 0.4+ | | |
| 1998 11 21 | 557 | 0.1− | 0.0 | 2004 02 21 | A32 | 0.5+ | 0.2+ | 2005 11 28 | 703 | 0.3+ | 0.6− | | |
| 1998 11 21 | 557 | 0.5− | 0.1− | 2004 02 21 | A32 | 1.1+ | 0.2+ | 2005 11 28 | G96 | 0.1+ | 0.2− | | |
| 1998 11 21 | 557 | 0.2− | 0.1− | 2004 02 21 | 084 | 0.0 | 1.1+ | 2005 11 28 | 703 | 0.3+ | 0.2− | | |
| 1998 11 21 | 704 | (3.2+ | 1.2−) | 2004 02 26 | 198 | 1.0− | 0.3− | 2005 11 28 | G96 | 0.1− | 0.3− | | |
| 1998 11 21 | 704 | (3.1+ | 1.5−) | 2004 02 26 | 198 | 0.7− | 0.2− | 2005 11 28 | 703 | 0.3+ | 0.2− | | |
| 1998 11 21 | 704 | (3.0+ | 1.1−) | 2004 02 26 | 198 | 0.3− | 0.1− | 2005 11 28 | G96 | 0.1− | 0.3− | | |
| 1998 11 21 | 704 | (2.1+ | 0.0 ) | 2004 02 26 | 198 | 0.1+ | 0.4− | 2005 11 28 | 703 | 0.2− | 0.4− | | |
| 1998 11 21 | 704 | 1.9+ | 2.0− | 2004 02 26 | A32 | 0.1− | 0.0 | 2005 11 28 | G96 | 0.0 | 0.3− | | |
| 1998 11 22 | 151 | 0.2− | 0.2− | 2004 02 26 | A32 | 0.0 | 0.2+ | 2005 11 28 | 703 | 0.1− | 0.2− | | |
| 1998 11 22 | 151 | 0.4− | 0.7− | 2004 02 26 | A32 | 0.3− | 0.4+ | 2005 11 28 | 703 | 0.0 | 0.4− | | |
| 1998 11 22 | 151 | 0.0 | 0.6− | 2004 02 26 | A32 | 0.2− | 0.1+ | 2005 11 28 | 703 | 0.2− | 0.4− | | |
| 1998 11 23 | 699 | (2.4+ | 0.4−) | 2004 02 27 | A32 | 0.8− | 0.3+ | 2005 11 28 | 703 | 0.4− | 0.3− | | |
| 1998 11 23 | 699 | (2.7+ | 0.2−) | 2004 02 27 | A32 | 0.5− | 0.1+ | 2005 11 29 | 704 | 0.1− | 0.0 | | |
| 1998 11 23 | 699 | (2.5+ | 0.3−) | 2004 02 27 | A32 | 0.2− | 0.2− | 2005 11 29 | 704 | 0.0 | 0.1− | | |
| 1998 11 23 | 118 | 0.1+ | 0.1+ | 2004 02 27 | A32 | 0.4− | 0.0 | 2005 11 29 | 704 | 0.2− | 0.0 | | |
| 1998 11 23 | 118 | 0.1+ | 0.1+ | 2004 03 03 | 198 | 1.0− | 0.5− | 2005 11 29 | 704 | 0.1− | 0.0 | | |
| 1998 11 23 | 118 | 0.2+ | 0.0 | 2004 03 03 | 198 | 0.9− | 0.2− | 2005 11 29 | 704 | 0.1+ | 0.3+ | | |
| 1998 11 23 | 046 | 0.7+ | 0.3− | 2004 03 03 | 198 | (2.3− | 1.8+) | 2005 11 30 | 379 | 0.4+ | 0.4− | | |
| 1998 11 23 | 046 | 0.7+ | 0.1− | 2004 03 03 | A32 | 0.1+ | 0.7− | 2005 11 30 | 379 | 0.3− | 0.3+ | | |
| 1998 11 23 | 046 | 0.3+ | 0.3− | 2004 03 03 | A32 | 0.0 | 0.1− | 2005 11 30 | 379 | 0.3+ | 0.2+ | | |
| 1998 11 24 | 704 | 1.7+ | 0.1+ | 2004 03 03 | A32 | 0.1+ | 0.1− | 2005 12 01 | 704 | 0.8− | 0.5+ | | |
| 1998 11 24 | 704 | (2.5+ | 0.4−) | 2004 03 03 | A32 | 0.3− | 0.5− | 2005 12 01 | 704 | 0.1− | 0.2+ | | |
| 1998 11 24 | 704 | (2.0+ | 0.3+) | 2004 03 04 | 084 | 0.2− | 0.9+ | 2005 12 01 | 704 | 0.8− | 0.0 | | |
| 1998 11 24 | 750 | (5.5+ | 0.5−) | 2004 03 10 | 084 | 0.3+ | 0.2− | 2005 12 01 | 704 | 0.3− | 0.1− | | |
| 1998 11 24 | 750 | (2.1+ | 0.0 ) | 2004 03 11 | 084 | 0.6+ | 0.9+ | 2005 12 01 | 704 | 0.0 | 0.1− | | |
| 1998 11 24 | 704 | (3.5+ | 0.7+) | 2004 03 12 | 084 | 0.7+ | 0.2− | 2005 12 02 | H45 | 0.1− | 0.1+ | | |
| 1998 11 24 | 118 | 0.2− | 0.1− | 2004 03 13 | 084 | 0.2+ | 0.3+ | 2005 12 02 | H45 | 0.2− | 0.5− | | |
| 1998 11 24 | 118 | 0.2− | 0.2− | 2004 03 19 | 084 | 0.5− | 0.4+ | 2005 12 02 | H45 | 0.2+ | 0.4+ | | |
| 1998 11 24 | 118 | 0.2− | 0.2− | 2004 11 16 | 461 | 0.1+ | 0.0 | 2005 12 02 | H45 | 0.6+ | 0.8− | | |
| 1998 11 26 | 402 | 0.6+ | 0.3− | 2004 11 16 | 461 | 0.3− | 0.4+ | 2005 12 03 | 084 | 0.2+ | 0.5− | | |
| 1998 11 26 | 402 | 0.6+ | 0.1− | 2004 12 20 | 012 | 0.3− | 0.0 | 2005 12 03 | 084 | 0.5− | 0.6− | | |
| 1998 11 26 | 402 | 0.5+ | 0.2− | 2004 12 20 | 012 | (2.1− | 1.2−) | 2005 12 03 | 170 | 0.2+ | 0.5− | | |
| 1998 11 28 | 750 | 1.7+ | 0.7− | 2004 12 20 | 012 | 1.5− | 0.6+ | 2005 12 03 | 170 | 0.4+ | 0.4− | | |
| 1998 11 28 | 750 | (2.2+ | 3.4−) | 2004 12 21 | 012 | 1.0− | 0.0 | 2005 12 03 | 170 | 0.3+ | 0.1+ | | |
| 1998 11 28 | 118 | 1.3+ | 0.5− | 2005 01 07 | 151 | 0.4+ | 0.0 | 2005 12 03 | 170 | 0.3+ | 0.4− | | |
| 1998 11 28 | 118 | 1.2+ | 0.6− | 2005 01 07 | 151 | 1.1+ | 0.4− | 2005 12 04 | 704 | 0.1− | 0.1+ | | |
| 1998 11 28 | 120 | 1.0+ | 0.0 | 2005 10 28 | 084 | 1.4+ | 0.4− | 2005 12 04 | 704 | 0.3+ | 0.7+ | | |
| 1998 11 28 | 118 | 1.2+ | 0.3− | 2005 10 28 | 084 | 1.1+ | 0.4− | 2005 12 04 | 704 | 0.3+ | 0.9+ | | |
| 1998 11 28 | 120 | 1.1+ | 0.1− | 2005 11 01 | 084 | 0.7+ | 0.4− | 2005 12 04 | 704 | 0.1+ | 0.2+ | | |
| 1998 11 28 | 120 | 0.6+ | 0.3− | 2005 11 01 | 084 | 0.1− | 0.7− | 2005 12 04 | 704 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 28 | 587 | 0.9+ | 0.5− | 2005 11 01 | 379 | 0.8+ | 0.6− | 2005 12 05 | G96 | 0.1− | 0.3− | |
| 1998 11 28 | 587 | 0.9+ | 0.3− | 2005 11 01 | 379 | 0.3+ | 0.3− | 2005 12 05 | G96 | 0.1+ | 0.3− | |
| 1998 11 28 | 104 | (2.1+ | 0.7−) | 2005 11 01 | 379 | 0.5+ | 0.1− | 2005 12 05 | G96 | 0.0 | 0.0 | |
| 1998 11 28 | 104 | 2.0+ | 0.8− | 2005 11 01 | 379 | 0.6+ | 0.4+ | 2005 12 05 | G96 | 0.2+ | 0.1− | |
| 1998 11 28 | 104 | 0.8+ | 0.2− | 2005 11 01 | 379 | 0.5+ | 0.2+ | 2005 12 06 | 704 | 0.1+ | 0.5− | |
| 1998 11 28 | 104 | 0.4− | 0.4− | 2005 11 01 | 379 | 0.2− | 0.2+ | 2005 12 06 | 704 | 0.5− | 0.5+ | |
| 1998 11 29 | 402 | 0.2− | 1.2− | 2005 11 02 | 084 | 0.2− | 0.6− | 2005 12 06 | 704 | 0.4− | 0.1+ | |
| 1998 11 29 | 402 | 0.1− | 1.3− | 2005 11 02 | 084 | 0.6+ | 0.7− | 2005 12 06 | 704 | 0.2− | 0.4− | |
| 1998 11 29 | 402 | 0.1− | 1.2− | 2005 11 02 | 084 | 0.6− | 0.0 | 2005 12 06 | H45 | 0.4+ | 1.1+ | |
| 1998 12 07 | 046 | 0.9+ | 0.6+ | 2005 11 02 | 084 | 0.2+ | 0.2− | 2005 12 06 | H45 | 0.5+ | 0.4+ | |
| 1998 12 07 | 046 | 0.4+ | 0.1+ | 2005 11 03 | 379 | 0.1+ | 0.3− | 2005 12 06 | H45 | 0.8− | 0.6+ | |
| 1998 12 07 | 046 | 1.2+ | 0.4+ | 2005 11 03 | 379 | 0.2− | 0.4− | 2005 12 06 | H45 | 1.1− | 0.1+ | |
| 1998 12 08 | 151 | 1.0+ | 1.6+ | 2005 11 03 | 379 | 0.2+ | 0.0 | 2005 12 07 | H45 | 0.4− | 0.9− | |
| 1998 12 08 | 151 | 0.4− | 0.9+ | 2005 11 03 | 379 | 0.1+ | 0.2+ | 2005 12 07 | H45 | 0.7− | 0.3+ | |
| 1998 12 08 | 151 | (2.2+ | 2.1+) | 2005 11 03 | 379 | 0.2− | 0.1− | 2005 12 07 | H45 | 0.3− | 1.0− | |
| 1998 12 10 | 118 | 0.4+ | 0.3+ | 2005 11 03 | 379 | 0.4− | 0.0 | 2005 12 07 | H45 | 0.4+ | 0.2+ | |
| 1998 12 10 | 118 | 0.1+ | 0.2+ | 2005 11 04 | 379 | 0.0 | 0.5+ | 2005 12 09 | 704 | (0.7− | 1.8+) | |
| 1998 12 10 | 118 | 0.4+ | 0.2+ | 2005 11 04 | 379 | 0.4+ | 0.4− | 2005 12 09 | 704 | 1.0− | 0.9+ | |
| 1998 12 11 | 360 | 0.7+ | 0.5− | 2005 11 06 | 704 | 0.0 | 0.3+ | 2005 12 09 | 704 | 0.8+ | 0.6− | |
| 1998 12 11 | 360 | 0.3+ | 0.0 | 2005 11 06 | 704 | 0.4− | 0.4+ | 2005 12 09 | 704 | 0.5− | 0.7+ | |
| 1998 12 11 | 360 | 0.7+ | 0.0 | 2005 11 06 | 704 | 0.4− | 0.4+ | 2005 12 09 | 704 | 0.5+ | 0.4+ | |
| 1998 12 12 | 422 | 0.4+ | 0.3− | 2005 11 06 | 704 | 0.5− | 0.1− | 2005 12 10 | 691 | 0.1− | 0.2+ | |
| 1998 12 12 | 422 | 0.4+ | 0.3− | 2005 11 06 | 704 | 0.3− | 0.3+ | 2005 12 10 | 691 | 0.2+ | 0.2+ | |
| 1998 12 12 | 422 | 1.0+ | 0.0 | 2005 11 07 | 071 | (2.1− | 0.0 ) | 2005 12 10 | 691 | 0.0 | 0.2+ | |
| 1998 12 15 | 046 | 0.8+ | 0.4− | 2005 11 07 | 071 | (2.2− | 0.1+) | 2005 12 21 | 699 | 0.0 | 0.3+ | |
| 1998 12 15 | 046 | 0.4+ | 0.4− | 2005 11 07 | 704 | 0.0 | 0.0 | 2005 12 21 | 699 | 0.3+ | 0.1− | |
| 1998 12 15 | 046 | 0.9+ | 0.2− | 2005 11 07 | 704 | 0.0 | 0.0 | 2005 12 21 | 699 | 0.2− | 0.2+ | |
| 1998 12 17 | 402 | 0.9+ | 0.4− | 2005 11 07 | 704 | 0.0 | 0.7+ | 2005 12 21 | 699 | 0.2+ | 0.4+ | |
| 1998 12 17 | 402 | 0.9+ | 0.6− | 2005 11 07 | 147 | 0.1− | 0.2− | 2005 12 23 | 185 | 0.0 | 0.5− | |
| 1998 12 17 | 402 | 1.0+ | 0.5− | 2005 11 07 | 147 | 0.1+ | 0.3− | 2005 12 23 | 185 | 0.1+ | 0.4− | |
| 1999 01 02 | 658 | 0.3+ | 0.1+ | 2005 11 07 | 147 | 0.1+ | 0.3− | 2005 12 23 | 185 | 0.2+ | 0.8− | |
| 1999 01 02 | 658 | 0.2+ | 0.2− | 2005 11 08 | 379 | 1.0+ | 0.2− | 2005 12 24 | 703 | 0.5− | 0.5− | |
| 1999 01 02 | 658 | 0.3+ | 0.3+ | 2005 11 08 | 379 | 0.5+ | 0.3− | 2005 12 24 | 703 | 0.7+ | 0.7− | |
| 1999 01 21 | 561 | 0.2− | 0.0 | 2005 11 08 | 379 | 0.5+ | 0.7− | 2005 12 24 | 703 | 0.7− | 0.3− | |
| 1999 01 21 | 561 | 0.1− | 0.3− | 2005 11 08 | 379 | 0.5+ | 0.8− | 2005 12 24 | 703 | 0.0 | 0.2− | |
| 1999 01 21 | 561 | 0.0 | 0.3− | 2005 11 08 | 379 | 0.2+ | 0.9− | 2005 12 29 | 704 | 0.3− | 1.0+ | |
| 2000 01 01 | 104 | 0.8− | 0.7− | 2005 11 08 | 379 | 0.0 | 0.8− | 2005 12 29 | 704 | 0.6+ | 0.6+ | |
| 2000 01 02 | 104 | 1.8− | 1.6+ | 2005 11 12 | 379 | 0.5+ | 0.4− | 2005 12 29 | 703 | 0.3+ | 0.7− | |
| 2000 01 02 | 104 | 1.1− | 0.2+ | 2005 11 12 | 379 | 0.2+ | 0.1+ | 2005 12 29 | 704 | 0.8− | 0.5+ | |
| 2000 01 02 | 104 | (2.7− | 1.4+) | 2005 11 12 | 379 | 0.7+ | 0.5− | 2005 12 29 | 703 | 0.7− | 0.6− | |
| 2000 01 04 | 104 | 0.6− | 0.9− | 2005 11 15 | 379 | 0.0 | 0.1+ | 2005 12 29 | 704 | 0.1+ | 1.4+ | |
| 2001 12 22 | 704 | 0.1− | 0.2+ | 2005 11 15 | 379 | 1.1+ | 0.4− | 2005 12 29 | 703 | (2.1− | 0.5−) | |
| 2001 12 22 | 704 | 0.5+ | 0.1+ | 2005 11 18 | 379 | 1.2+ | 0.3+ | 2005 12 29 | 703 | 0.4− | 0.2+ | |
| 2001 12 22 | 704 | (0.7+ | 1.5−) | 2005 11 18 | 379 | 1.3+ | 0.3+ | 2005 12 29 | 704 | 0.2− | 1.1+ | |
| 2001 12 22 | 704 | 0.0 | 0.2+ | 2005 11 18 | 379 | 1.0+ | 0.2+ | 2005 12 30 | G96 | 0.3− | 0.4− | |
| 2001 12 23 | 704 | 0.4− | 1.1+ | 2005 11 19 | H45 | 0.4+ | 0.6− | 2005 12 30 | G96 | 0.0 | 0.2− | |
| 2001 12 23 | 704 | 0.0 | 0.5+ | 2005 11 19 | H45 | 0.1+ | 0.0 | 2005 12 30 | G96 | 0.1− | 0.3− | |
| 2001 12 23 | 704 | 0.6− | 0.4+ | 2005 11 19 | H45 | 0.3+ | 0.1− | 2005 12 30 | G96 | 0.2+ | 0.1− | |
| 2001 12 23 | 704 | 0.1− | 0.2+ | 2005 11 19 | H45 | 0.5+ | 0.1− | 2005 12 30 | 699 | 0.1+ | 0.6+ | |
| 2001 12 23 | 704 | 0.1− | 0.8+ | 2005 11 19 | H45 | 0.3+ | 0.8+ | 2005 12 30 | 699 | 0.4+ | 0.7+ | |
| 2002 12 29 | 413 | 0.8+ | 0.3+ | 2005 11 19 | 379 | 1.1+ | 0.1− | 2005 12 30 | 699 | 0.4− | 0.1− | |
| 2002 12 29 | 413 | 0.7+ | 0.1− | 2005 11 19 | 379 | 0.7+ | 0.0 | 2005 12 30 | 699 | 0.0 | 0.7− | |
| 2003 11 21 | 644 | 0.5− | 0.2+ | 2005 11 19 | 379 | 0.2+ | 0.1+ | 2006 01 02 | 049 | 0.7+ | 0.7− | |
| 2003 11 21 | 644 | 0.0 | 0.3+ | 2005 11 19 | A48 | 0.1− | 0.1+ | 2006 01 02 | 049 | 0.7+ | 0.2− | |
| 2003 11 21 | 644 | 0.1− | 0.4+ | 2005 11 19 | A48 | 0.1+ | 0.1+ | 2006 01 02 | 049 | 0.6+ | 0.2+ | |
| 2003 12 24 | 170 | 0.5+ | 0.8− | 2005 11 19 | A48 | 0.2+ | 0.0 | 2006 01 02 | 049 | 0.4+ | 0.1+ | |
| 2003 12 24 | 170 | 0.6+ | 1.0− | 2005 11 19 | A48 | 0.1+ | 0.1− | 2006 01 02 | 049 | 0.5+ | 0.4+ | |
| 2003 12 29 | 703 | 0.7− | 0.2+ | 2005 11 19 | A48 | 0.0 | 0.0 | 2006 01 02 | 049 | 0.6+ | 0.2− | |
| 2003 12 29 | 703 | 0.8− | 0.3+ | 2005 11 19 | 203 | 0.0 | 0.0 | 2006 01 02 | 049 | 0.2+ | 0.2− | |
| 2003 12 29 | 703 | 0.1+ | 0.2+ | 2005 11 20 | 203 | 0.0 | 0.3− | | | | | |

**(137053)∗ 1998 VQ$_{33}$ = 2002 BN$_{21}$**

Discovered 1998 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 24978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.41817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36833647 | $\omega$ | 4.50199 | | +0.44679830 | −0.82878799 | |
| $a$ | 1.9274046 | $\Omega$ | 59.30457 | | +0.80809441 | +0.21230694 | |
| $e$ | 0.0941784 | $i$ | 23.06397 | | +0.38386808 | +0.51772215 | |
| $P$ | 2.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 24 | 691 | 0.2− | 0.3− | 2002 03 05 | 704 | 1.1+ | 0.5+ | 2006 10 31 | 704 | 0.1− | 0.3− | |
| 1990 11 24 | 691 | 0.0 | 0.1− | 2005 03 10 | 703 | 0.1− | 1.0− | 2006 10 31 | 704 | (1.5− | 1.0+) | |
| 1990 11 24 | 691 | 0.0 | 0.4− | 2005 03 10 | 703 | 0.7− | 0.6− | 2006 10 31 | 704 | (2.0− | 0.6+) | |
| 1998 11 11 | 704 | 0.9+ | 0.6− | 2005 03 10 | 703 | 0.2− | 0.2− | 2006 10 31 | 704 | 0.1+ | 0.9+ | |
| 1998 11 11 | 704 | 1.5+ | 1.0− | 2005 03 10 | 703 | 0.7− | 0.0 | 2006 11 13 | 703 | 0.8− | 0.8+ | |
| 1998 11 11 | 704 | 1.4+ | 0.2− | 2005 04 02 | 703 | 0.5+ | 0.1− | 2006 11 13 | 703 | 0.2− | 0.2+ | |
| 1998 11 18 | 704 | 1.7+ | 0.2− | 2005 04 02 | 703 | 0.6− | 0.8+ | 2006 11 13 | 703 | 0.1− | 0.6+ | |
| 1998 11 18 | 704 | 0.4+ | 0.2− | 2005 04 02 | 703 | 0.2− | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.5+ | |
| 1998 11 18 | 704 | 0.6+ | 1.2− | 2005 04 02 | 703 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.6− | 0.0 | |
| 1998 11 18 | 704 | 0.6− | 1.9− | 2005 04 06 | 703 | 0.4+ | 0.9− | 2006 11 17 | 704 | 0.1− | 0.2+ | |
| 1998 11 24 | 699 | 1.9+ | 0.1− | 2005 04 06 | 703 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.8− | 0.1+ | |
| 1998 11 24 | 699 | 1.9+ | 1.4− | 2005 04 06 | 703 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.6− | 0.6+ | |
| 1998 11 24 | 699 | 1.9+ | 0.6− | 2005 04 06 | 703 | 0.5+ | 0.3− | 2006 11 17 | 704 | 0.5− | 0.1+ | |
| 2001 12 09 | 704 | 0.8+ | 1.4+ | 2005 04 16 | 703 | 0.4+ | 0.0 | 2006 11 19 | 703 | 0.4− | 0.0 | |
| 2001 12 09 | 704 | (2.2+ | 1.8+) | 2005 04 16 | 703 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.4− | |
| 2001 12 09 | 704 | (1.7+ | 0.6+) | 2005 04 16 | 703 | 0.6− | 0.3− | 2006 11 19 | 703 | 0.9− | 0.3− | |
| 2001 12 09 | 704 | 0.1− | 1.0+ | 2005 04 16 | 703 | 0.7− | 1.1+ | 2006 11 19 | 703 | 0.1+ | 0.1− | |
| 2002 01 13 | 645 | 0.1− | 0.1− | 2005 04 30 | 699 | 1.3+ | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.3+ | |
| 2002 01 13 | 645 | 0.0 | 0.1− | 2005 04 30 | 699 | 0.6+ | 0.6− | 2006 11 20 | 704 | 1.0− | 1.5+ | |
| 2002 01 25 | 704 | 0.9+ | 0.9+ | 2005 04 30 | 699 | 0.1+ | 1.3+ | 2006 11 20 | 704 | 0.4− | 0.5+ | |
| 2002 01 25 | 704 | 0.1− | 0.5− | 2005 04 30 | 699 | 1.0+ | 0.1− | 2006 11 20 | 704 | 0.9− | 0.8+ | |
| 2002 01 25 | 704 | 0.6+ | 0.0 | 2005 05 08 | 703 | 0.8− | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.2+ | |
| 2002 01 25 | 704 | 0.1+ | 0.3+ | 2005 05 08 | 703 | (0.5− | 1.7+) | 2006 11 20 | 704 | 0.9+ | 1.4+ | |
| 2002 01 26 | 704 | (1.0+ | 2.2+) | 2005 05 08 | 703 | 0.2− | 1.2− | 2006 11 20 | 704 | 0.4− | 0.7+ | |
| 2002 01 26 | 704 | 0.3+ | 0.3+ | 2005 05 08 | 703 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.3− | 0.5+ | |
| 2002 01 26 | 704 | (2.0+ | 0.8+) | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.1+ | |
| 2002 01 26 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.2− | 1.0+ | |
| 2002 01 26 | 704 | 1.0+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 | |
| 2002 02 13 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.3− | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.0 | |
| 2002 02 13 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.5− | 0.7+ | 2006 11 23 | G96 | 0.2− | 0.0 | |
| 2002 03 05 | 704 | 0.4− | 0.2− | 2006 10 17 | 703 | 1.4− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.0 | |
| 2002 03 05 | 704 | 0.9+ | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.4− | | | | | |

**(137054)∗ 1998 VB$_{34}$ = 2002 UU$_{41}$**

Discovered 1998 Nov. 11 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 39977)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.11003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24100059 | $\omega$ | 58.47905 | | −0.66718121 | −0.73425872 | |
| $a$ | 2.5573528 | $\Omega$ | 73.91227 | | +0.63149276 | −0.64684355 | |
| $e$ | 0.2215288 | $i$ | 7.50109 | | +0.39507736 | −0.20605231 | |
| $P$ | 4.09 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 910 | 0.1− | 0.2+ | 2002 12 01 | 704 | (1.0+ | 1.6+) | 2006 09 30 | 703 | 0.2− | 0.5− | |
| 1998 11 11 | 910 | 0.2+ | 0.3− | 2002 12 10 | 704 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.1− | 0.1− | |
| 1998 11 11 | 910 | 0.9+ | 0.3− | 2002 12 10 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | (1.6− | 0.6−) | |
| 1998 11 19 | 910 | 1.3+ | 1.3− | 2002 12 10 | 704 | 1.1− | 0.5+ | 2006 09 30 | 703 | 0.6+ | 0.7− | |
| 1998 11 19 | 910 | 0.9+ | 1.2− | 2002 12 10 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 1.3+ | 0.9− | |
| 1998 11 19 | 910 | 1.1+ | 1.3− | 2003 01 03 | 291 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1− | 1.1− | |
| 1998 11 25 | 699 | 0.4+ | 0.1+ | 2003 01 03 | 291 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.5− | |
| 1998 11 25 | 699 | 0.4− | 0.6+ | 2003 01 03 | 291 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.4− | |
| 1998 11 25 | 699 | 0.1+ | 0.4+ | 2003 01 04 | 704 | 0.7+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.1− | |
| 2002 10 31 | 644 | 0.4− | 0.2+ | 2003 01 04 | 704 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.1− | |
| 2002 10 31 | 644 | 0.5− | 0.4+ | 2003 01 04 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.2− | |
| 2002 10 31 | 644 | 0.1+ | 0.7+ | 2004 04 17 | 704 | 0.4− | 0.7+ | 2006 10 21 | G96 | 0.3+ | 0.2− | |
| 2002 11 03 | 608 | 0.9− | 1.5− | 2004 04 17 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.6+ | 0.2+ | |
| 2002 11 03 | 608 | 0.8− | 1.5− | 2004 04 17 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.6+ | 0.2− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | (1.0− | 1.8−) | 2004 04 17 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.4+ | 0.0 | | |
| 2002 11 07 | 704 | 1.1− | 0.0 | 2004 04 19 | 704 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.5− | 0.6+ | 2004 04 19 | 704 | 0.3+ | 0.8+ | 2006 11 13 | 703 | 0.2− | 0.4+ | | |
| 2002 11 07 | 704 | (0.7− | 1.7+) | 2004 04 19 | 704 | 1.1+ | 0.5+ | 2006 11 13 | 703 | 0.2− | 1.0+ | | |
| 2002 11 07 | 704 | 1.2− | 0.6+ | 2004 04 19 | 704 | 0.4+ | 0.6+ | 2006 11 13 | 703 | 0.5+ | 0.3+ | | |
| 2002 11 11 | 704 | 0.1− | 0.0 | 2004 05 15 | 599 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.9− | 0.3+ | | |
| 2002 11 11 | 704 | 0.6− | 0.2+ | 2004 05 15 | 599 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 1.0− | 0.6+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.3+ | 2004 05 15 | 599 | 0.1+ | 0.0 | 2006 11 17 | 704 | 1.2− | 0.6+ | | |
| 2002 11 11 | 704 | 0.6− | 0.6+ | 2004 05 17 | 704 | 0.5− | 0.9+ | 2006 11 17 | 704 | 1.0− | 1.0+ | | |
| 2002 11 11 | 704 | 0.3− | 0.0 | 2004 05 17 | 704 | 0.5− | 0.8+ | 2006 11 20 | 704 | 0.8+ | 2.3+ | | |
| 2002 11 11 | 704 | 0.4− | 1.0+ | 2004 05 17 | 704 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.6− | 0.6+ | | |
| 2002 11 11 | 704 | 0.0 | 0.0 | 2004 05 17 | 704 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.2− | 1.4+ | | |
| 2002 11 11 | 704 | 0.0 | 0.2+ | 2004 05 21 | 704 | 0.5+ | 0.4+ | 2006 11 20 | 704 | 0.1− | 1.5+ | | |
| 2002 11 11 | 704 | 0.6− | 0.2+ | 2004 05 21 | 704 | 0.1− | 0.1+ | 2006 11 20 | 704 | 1.2+ | 0.9+ | | |
| 2002 11 22 | 644 | 0.0 | 0.6+ | 2004 05 21 | 704 | 0.4+ | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2002 11 22 | 644 | 0.2− | 0.6+ | 2004 05 21 | 704 | 0.3+ | 0.7+ | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2002 11 22 | 644 | 0.1− | 0.8+ | 2004 05 21 | 704 | 0.7+ | 1.5+ | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2002 12 01 | 704 | 1.4− | 0.3+ | 2004 06 13 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.0 | | |
| 2002 12 01 | 704 | 0.1+ | 0.2+ | 2004 06 13 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2002 12 01 | 704 | 1.0− | 0.9+ | 2004 06 13 | 691 | 0.1+ | 0.4+ | | | | | | |

**(137055)∗ 1998 VN$_{36}$ = 2002 TN$_{285}$**

Discovered 1998 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37135)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.25859 | | (2000.0) | | | |
| $n$ | 0.24398785 | $\omega$ | 128.17351 | | +0.97371198 | −0.14215581 |
| $a$ | 2.5364360 | $\Omega$ | 240.65659 | | +0.08443612 | +0.95094967 |
| $e$ | 0.1895158 | $i$ | 11.78124 | | +0.21155502 | +0.27474797 |
| $P$ | 4.04 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 07 | 691 | 0.0 | 0.3+ | 2002 11 06 | 704 | 0.8+ | 0.5+ | 2005 01 19 | 809 | 0.2+ | 0.5+ | | |
| 1995 01 07 | 691 | 0.3− | 0.1+ | 2002 11 06 | 704 | 0.5+ | 0.8+ | 2005 01 19 | 809 | 0.6+ | 0.4+ | | |
| 1995 01 07 | 691 | 0.4− | 0.1− | 2002 11 06 | 699 | 0.4− | 0.5+ | 2005 01 19 | 809 | 0.7+ | 0.9+ | | |
| 1998 11 11 | 704 | 0.7+ | 0.4− | 2002 11 06 | 704 | 0.3+ | 0.0 | 2005 06 14 | 291 | 0.1+ | 0.4+ | | |
| 1998 11 11 | 704 | 1.4+ | 0.4+ | 2002 11 06 | 699 | 0.8− | 0.2+ | 2005 06 14 | 291 | 0.1− | 0.5+ | | |
| 1998 11 11 | 704 | 0.4− | 1.1+ | 2002 11 06 | 704 | 0.2− | 0.7+ | 2005 06 14 | 291 | 0.1− | 0.3+ | | |
| 1998 11 11 | 704 | (1.1+ | 2.6−) | 2002 11 06 | 699 | 0.3− | 0.1+ | 2006 09 23 | 113 | 0.0 | 0.2− | | |
| 1998 11 14 | 704 | 0.6− | 0.3− | 2002 11 06 | 699 | 0.0 | 0.2+ | 2006 09 23 | 113 | 0.0 | 0.5− | | |
| 1998 11 14 | 704 | 0.1− | 0.4− | 2002 11 08 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.3− | | |
| 1998 11 14 | 704 | 1.0+ | 0.6− | 2002 11 08 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.3− | | |
| 1998 11 14 | 704 | (2.1+ | 0.5−) | 2002 11 08 | 704 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.4− | | |
| 1998 11 14 | 704 | 0.3+ | 0.6− | 2002 11 08 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.0 | | |
| 1998 11 18 | 704 | 0.9+ | 0.8− | 2002 11 08 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.1− | | |
| 1998 11 18 | 704 | 1.5+ | 1.5− | 2002 11 08 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.1− | | |
| 1998 11 18 | 704 | (1.2+ | 3.8−) | 2002 11 08 | 704 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.5+ | 0.2− | | |
| 1998 11 18 | 704 | 0.7+ | 0.6− | 2002 11 08 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 704 | 0.7− | 0.3+ | | |
| 1998 11 18 | 704 | 0.1− | 1.3− | 2002 11 08 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 704 | 0.7− | 0.0 | | |
| 1998 11 25 | 691 | 0.2− | 0.6− | 2002 11 12 | 704 | 0.0 | 0.1+ | 2006 10 21 | 704 | 0.5− | 0.1− | | |
| 1998 11 25 | 691 | 0.5− | 0.4− | 2002 11 12 | 704 | 0.0 | 0.0 | 2006 10 21 | 704 | 0.2− | 0.2− | | |
| 1998 11 25 | 691 | 0.2− | 0.4− | 2002 11 12 | 704 | 0.0 | 0.0 | 2006 10 21 | 704 | 0.7− | 0.1+ | | |
| 1998 12 15 | 910 | 0.0 | 0.6+ | 2002 11 12 | 704 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.1− | 0.3− | | |
| 1998 12 15 | 910 | 0.1+ | 0.7+ | 2002 11 12 | 704 | 0.6+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 1998 12 15 | 910 | 0.2+ | 0.5+ | 2002 11 14 | 704 | 0.7− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2− | | |
| 1998 12 16 | 910 | 0.7+ | 0.5+ | 2002 11 14 | 704 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.6− | | |
| 1998 12 16 | 910 | 0.6− | 0.8+ | 2002 11 14 | 704 | 0.5− | 0.7− | 2006 10 27 | 703 | 0.1+ | 0.6− | | |
| 1998 12 16 | 910 | 0.6− | 0.9+ | 2002 11 14 | 704 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.0 | 0.6− | | |
| 1998 12 21 | 910 | 0.1− | 1.1+ | 2002 11 23 | 644 | 0.2− | 0.9+ | 2006 10 27 | 703 | 0.2+ | 0.6− | | |
| 1998 12 21 | 910 | 0.2+ | 1.7+ | 2002 11 23 | 644 | 0.3− | 0.9+ | 2006 11 01 | G96 | 0.0 | 0.5− | | |
| 1998 12 21 | 910 | 0.0 | 1.4+ | 2002 11 23 | 644 | 0.3+ | 1.0+ | 2006 11 01 | G96 | 0.1+ | 0.6− | | |
| 2002 09 07 | 704 | (0.6− | 1.6+) | 2002 11 30 | 608 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.5− | | |
| 2002 09 07 | 704 | 0.6− | 1.2+ | 2002 11 30 | 608 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.7− | 0.4− | | |
| 2002 09 07 | 704 | 0.0 | 1.4+ | 2002 11 30 | 608 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.3− | 0.6+ | | |
| 2002 10 04 | 704 | 0.7− | 0.5+ | 2002 12 02 | 704 | 0.8+ | 0.2− | 2006 11 14 | 703 | 0.2− | 0.6+ | | |
| 2002 10 04 | 704 | (2.1− | 0.7+) | 2002 12 02 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.6+ | | |
| 2002 10 04 | 704 | 0.6− | 0.1+ | 2002 12 02 | 704 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.3− | | |
| 2002 10 04 | 704 | (2.3− | 0.3+) | 2002 12 02 | 704 | 0.8+ | 0.6− | 2006 11 16 | 704 | 0.1− | 0.5+ | | |
| 2002 10 10 | 704 | 0.0 | 0.1− | 2002 12 02 | 704 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.2+ | | |
| 2002 10 10 | 704 | 0.1+ | 0.7− | 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.9+ | | |
| 2002 10 10 | 704 | 0.2+ | 0.2+ | 2002 12 05 | 704 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.3− | 0.7+ | | |
| 2002 10 10 | 704 | 0.5− | 0.6− | 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.7+ | 0.3− | | |
| 2002 10 10 | 704 | 0.1− | 0.2− | 2002 12 05 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 1.1− | 0.5− | | |
| 2002 10 12 | 704 | 0.3− | 0.0 | 2002 12 05 | 704 | 0.1− | 0.7+ | 2006 11 17 | 704 | 0.1− | 1.2+ | | |
| 2002 10 12 | 704 | 0.2− | 0.3+ | 2002 12 10 | 644 | 0.1− | 0.7− | 2006 11 17 | 704 | 0.0 | 0.3− | | |
| 2002 10 12 | 704 | 0.3+ | 0.6+ | 2002 12 10 | 644 | 0.2− | 0.7− | 2006 11 17 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.4− | 0.9+ | 2002 12 10 | 644 | 0.2− | 0.5− | 2006 11 18 | G96 | 0.1− | 0.6− | | |
| 2002 10 12 | 704 | 0.8− | 0.6− | 2002 12 10 | 704 | 0.3− | 0.8− | 2006 11 18 | G96 | 0.1+ | 0.4− | | |
| 2002 10 31 | 699 | 0.3− | 0.3− | 2002 12 10 | 704 | 0.6+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.4− | | |
| 2002 10 31 | 699 | 0.5+ | 0.0 | 2002 12 10 | 704 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.5+ | 0.5− | | |
| 2002 10 31 | 699 | 0.2− | 0.1+ | 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.5+ | | |
| 2002 10 31 | 699 | 0.8+ | 0.4+ | 2002 12 10 | 704 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.4− | | |
| 2002 11 01 | 644 | 0.5− | 0.7− | 2003 01 04 | 704 | 0.2− | 0.8+ | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2002 11 01 | 644 | 0.5− | 0.5− | 2003 01 04 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.1+ | | |
| 2002 11 01 | 644 | 0.4− | 0.5− | 2003 01 04 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.2− | | |
| 2002 11 03 | 704 | 0.2+ | 0.0 | 2003 01 04 | 704 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.3+ | | |
| 2002 11 03 | 704 | 0.7+ | 0.8+ | 2003 01 04 | 704 | 0.6+ | 0.4+ | 2006 11 22 | 704 | (1.5− | 0.3−) | | |
| 2002 11 03 | 704 | 0.0 | 0.6+ | 2003 01 08 | 704 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.3− | 0.5+ | | |
| 2002 11 03 | 704 | 1.1− | 0.3+ | 2003 01 08 | 704 | 0.0 | 0.8− | 2006 11 22 | 704 | 0.5− | 0.4+ | | |
| 2002 11 05 | 704 | 0.2+ | 0.2− | 2003 01 08 | 704 | 0.6− | 1.1− | 2006 11 22 | 704 | 0.0 | 0.5+ | | |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2003 01 27 | 704 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1− | 0.4+ | | |
| 2002 11 05 | 704 | 0.1− | 0.1− | 2003 01 27 | 704 | 0.5− | 0.0 | 2006 11 29 | 704 | 0.4− | 0.0 | | |
| 2002 11 05 | 704 | (1.9− | 0.1−) | 2003 01 27 | 704 | 0.2+ | 0.6− | 2006 11 29 | 704 | 0.1+ | 0.0 | | |
| 2002 11 05 | 704 | 0.2+ | 0.0 | 2003 01 27 | 704 | 0.3+ | 1.5+ | 2006 11 29 | 704 | 0.2− | 0.1+ | | |
| 2002 11 06 | 704 | 0.8+ | 0.7+ | 2003 01 27 | 704 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.6− | 0.3+ | | |

**(137056)∗ 1998 VW$_{43}$ = 1998 WJ$_{30}$**

Discovered 1998 Nov. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, MPC 34061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.28606 | | (2000.0) | | | |
| $n$ | 0.23350493 | $\omega$ | 316.06939 | | +0.52146758 | −0.83546731 |
| $a$ | 2.6117926 | $\Omega$ | 101.77596 | | +0.82358088 | +0.43968124 |
| $e$ | 0.1945426 | $i$ | 10.20224 | | +0.22312799 | +0.32965858 |
| $P$ | 4.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 12 | 691 | (2.4− | 3.3−) | 2002 11 07 | 704 | 0.8+ | 0.8+ | 2004 03 29 | 691 | 0.3+ | 0.6+ | | |
| 1996 05 12 | 691 | 0.2− | 0.3+ | 2002 11 07 | 704 | 0.0 | 1.0+ | 2006 09 29 | 699 | 0.6+ | 0.8+ | | |
| 1996 05 12 | 691 | 0.6− | 0.2+ | 2002 11 07 | 704 | 0.4− | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.6− | | |
| 1996 05 18 | 691 | 0.3+ | 0.1− | 2002 11 11 | 704 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.6− | 0.3− | | |
| 1996 05 18 | 691 | 0.3+ | 0.1− | 2002 11 11 | 704 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.2− | | |
| 1996 05 18 | 691 | 0.1+ | 0.2− | 2002 11 11 | 704 | (2.1+ | 1.2+) | 2006 09 30 | 704 | 1.1+ | 0.4+ | | |
| 1996 06 11 | 691 | 0.5− | 0.1− | 2002 12 01 | 704 | 1.1− | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.0 | | |
| 1996 06 11 | 691 | 0.0 | 0.3− | 2002 12 01 | 704 | 1.4− | 0.0 | 2006 09 30 | 704 | 0.0 | 0.3+ | | |
| 1996 06 11 | 691 | 0.0 | 0.5− | 2002 12 01 | 704 | 0.9− | 0.0 | 2006 09 30 | 704 | 0.9+ | 0.4+ | | |
| 1998 11 15 | 691 | 0.3− | 0.4− | 2002 12 01 | 704 | 1.0− | 0.0 | 2006 09 30 | 704 | 0.4− | 0.1− | | |
| 1998 11 15 | 691 | 0.4− | 0.3− | 2002 12 11 | 704 | 0.0 | 1.2+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 1998 11 15 | 691 | 0.7− | 0.3− | 2002 12 11 | 704 | 0.1− | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 1998 11 19 | 691 | 0.1− | 0.7− | 2002 12 11 | 704 | 0.2− | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 1998 11 19 | 691 | 0.0 | 0.3− | 2002 12 11 | 704 | 0.5− | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 1998 11 24 | 691 | 0.9+ | 0.2− | 2002 12 11 | 704 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.5+ | 0.1− | | |
| 1998 11 24 | 691 | 0.9+ | 0.4− | 2002 12 16 | 608 | (1.7+ | 0.4−) | 2006 10 17 | 703 | 0.3+ | 0.1− | | |
| 1998 11 24 | 691 | 0.9+ | 0.4− | 2002 12 16 | 608 | (1.5+ | 0.4−) | 2006 10 17 | 703 | (0.4− | 1.6−) | | |
| 1998 11 26 | 691 | 0.6− | 0.6− | 2002 12 16 | 608 | (1.6+ | 0.4−) | 2006 10 28 | 703 | 1.1+ | 1.2+ | | |
| 1998 11 26 | 691 | 0.5− | 0.5− | 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.5− | 0.6+ | | |
| 1998 11 26 | 691 | 0.6− | 0.3− | 2002 12 31 | 704 | 0.8− | 0.1− | 2006 10 28 | 703 | 0.7+ | 0.6+ | | |
| 1998 12 11 | 691 | 0.2+ | 0.6− | 2002 12 31 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.2+ | 0.3− | | |
| 1998 12 11 | 691 | 0.1+ | 0.5− | 2003 01 07 | 704 | 0.8− | 0.2+ | 2006 10 28 | 703 | 1.0+ | 1.0+ | | |
| 1998 12 11 | 691 | 0.1+ | 0.1− | 2003 01 07 | 704 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.5− | 0.3+ | | |
| 1998 12 16 | 699 | 0.4− | 1.0+ | 2003 01 07 | 704 | 0.5+ | 1.1− | 2006 10 28 | 703 | 0.6+ | 1.0+ | | |
| 1998 12 16 | 699 | 1.2+ | 0.8+ | 2003 01 07 | 704 | 0.5− | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.6+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 699 | 0.6+ | 1.1+ | 2003 01 07 | 704 | 0.3− | 0.6+ | 2006 11 10 | 704 | 0.5− | 0.5− | | |
| 1999 01 10 | 699 | 0.5− | 0.4− | 2003 01 31 | 704 | (0.1− | 1.6−) | 2006 11 10 | 704 | (1.9− | 0.5+) | | |
| 1999 01 10 | 699 | 0.2− | 0.5+ | 2003 01 31 | 704 | 0.0 | 0.4− | 2006 11 10 | 704 | 0.5− | 1.3− | | |
| 1999 01 10 | 699 | 0.8− | 0.5+ | 2003 01 31 | 704 | (0.3+ | 1.7−) | 2006 11 10 | 704 | 0.4− | 0.2− | | |
| 1999 02 12 | 699 | 0.8+ | 0.2+ | 2003 01 31 | 704 | 0.0 | 0.7+ | 2006 11 10 | 704 | 0.6− | 0.2− | | |
| 1999 02 12 | 699 | 0.2− | 0.6+ | 2003 02 08 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.2− | | |
| 1999 02 12 | 699 | 0.6+ | 0.8+ | 2003 02 08 | 704 | 0.6+ | 0.5+ | 2006 11 16 | 703 | 0.2− | 0.3− | | |
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2003 02 08 | 704 | (1.6+ | 0.3−) | 2006 11 16 | 703 | 0.1+ | 0.3− | | |
| 2002 10 04 | 704 | 0.3− | 0.3− | 2004 03 23 | 704 | 0.7− | 1.2+ | 2006 11 16 | 703 | 1.2− | 0.8+ | | |
| 2002 10 04 | 704 | 0.0 | 0.8+ | 2004 03 23 | 704 | 0.2+ | 0.4− | 2006 11 16 | 703 | (1.8− | 1.0+) | | |
| 2002 10 04 | 704 | 0.6− | 0.6+ | 2004 03 23 | 704 | 1.1− | 0.2+ | 2006 11 16 | 703 | (1.3− | 2.7−) | | |
| 2002 10 09 | 704 | 0.8+ | 0.2+ | 2004 03 23 | 704 | 0.6+ | 0.6+ | 2006 11 16 | 703 | (1.3− | 3.1−) | | |
| 2002 10 09 | 704 | 0.2− | 0.7+ | 2004 03 29 | 703 | (0.0 | 3.2+) | 2006 11 22 | 704 | 0.2+ | 0.6+ | | |
| 2002 10 09 | 704 | 0.6+ | 0.7− | 2004 03 29 | 703 | 0.2+ | 1.4+ | 2006 11 22 | 704 | 1.2− | 0.2+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.7+ | 2004 03 29 | 703 | 1.5+ | 1.5+ | 2006 11 22 | 704 | 0.7− | 0.4− | | |
| 2002 10 09 | 704 | 0.6+ | 0.2− | 2004 03 29 | 703 | 1.1+ | 0.9+ | 2006 11 22 | 704 | 0.6+ | 1.0+ | | |
| 2002 11 07 | 704 | 0.7+ | 0.6+ | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.1− | | |
| 2002 11 07 | 704 | 0.1+ | 0.7+ | 2004 03 29 | 691 | 0.2+ | 0.6+ | | | | | | |

**(137057)∗ 1998 VK$_{44}$ = 2002 BA$_{26}$**

Discovered 1998 Nov. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 26889)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.72099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36493377 | $\omega$ | 63.71521 | | −0.55733937 | −0.75082466 | |
| $a$ | 1.9393671 | $\Omega$ | 64.76170 | | +0.55045328 | −0.65373597 | |
| $e$ | 0.0777667 | $i$ | 23.07005 | | +0.62158990 | −0.09429535 | |
| $P$ | 2.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 13 | 704 | 1.1+ | 0.3− | 2002 03 03 | 704 | 0.7+ | 0.4− | 2005 05 08 | 703 | 1.3− | 0.3− | | |
| 1998 11 13 | 704 | 1.7− | 1.6+ | 2002 03 03 | 704 | 0.8+ | 0.0 | 2005 05 08 | 703 | 0.4− | 0.2− | | |
| 1998 11 13 | 704 | 0.3+ | 0.6− | 2002 03 03 | 704 | 0.4− | 0.2− | 2005 05 08 | 703 | 0.6− | 0.2− | | |
| 1998 11 13 | 704 | 0.2− | 0.2+ | 2002 03 03 | 704 | 0.5+ | 0.1+ | 2005 05 09 | 704 | 0.7+ | 0.4− | | |
| 1998 11 13 | 704 | (4.2− | 0.0 ) | 2002 03 05 | 704 | 0.4+ | 0.1− | 2005 05 09 | 704 | 0.1+ | 0.1+ | | |
| 1998 11 14 | 699 | 1.0− | 0.9+ | 2002 03 05 | 704 | 0.3+ | 1.0− | 2005 05 09 | 704 | 0.2+ | 0.3− | | |
| 1998 11 14 | 699 | 0.0 | 1.5+ | 2002 03 05 | 704 | 0.7+ | 0.9− | 2005 05 09 | 704 | 1.0+ | 0.3+ | | |
| 1998 11 14 | 699 | 0.2− | 0.3− | 2002 03 05 | 704 | 0.7+ | 1.0− | 2005 05 09 | 704 | (1.8+ | 0.4−) | | |
| 1998 11 23 | 699 | 1.0+ | 0.1+ | 2002 03 05 | 704 | 0.2+ | 0.5− | 2005 05 12 | 704 | 0.5+ | 0.5+ | | |
| 1998 11 23 | 699 | 0.8+ | 0.8− | 2002 03 05 | 704 | 0.4+ | 0.7− | 2005 05 12 | 704 | 0.1+ | 0.3+ | | |
| 1998 11 23 | 699 | 0.5+ | 0.5− | 2002 03 05 | 704 | 0.2− | 0.7− | 2005 05 12 | 704 | 1.0+ | 0.3+ | | |
| 1998 11 24 | 699 | 1.1+ | 1.4− | 2002 03 05 | 704 | 0.3− | 0.0 | 2005 05 12 | 704 | 0.3+ | 0.2+ | | |
| 1998 11 24 | 699 | 0.6+ | 1.0+ | 2002 03 05 | 704 | 0.6+ | 0.2− | 2005 05 12 | 704 | 0.7+ | 1.2+ | | |
| 1998 11 24 | 699 | 0.6+ | 1.3− | 2005 03 13 | 699 | 0.8− | 0.9− | 2005 05 30 | 703 | (1.6− | 0.7−) | | |
| 1998 12 08 | 910 | 0.0 | 1.8− | 2005 03 13 | 699 | 0.4+ | 0.2− | 2005 05 30 | 703 | 0.9− | 0.1+ | | |
| 1998 12 08 | 910 | 0.3+ | 1.7− | 2005 03 13 | 699 | 0.2+ | 0.8− | 2005 05 30 | 703 | (1.9− | 1.1−) | | |
| 1998 12 08 | 910 | 0.1+ | 1.8− | 2005 03 13 | 699 | (1.6+ | 0.2+) | 2005 05 30 | 703 | (0.7− | 2.6−) | | |
| 2001 12 08 | 704 | (2.1+ | 0.8−) | 2005 04 01 | 699 | 0.4− | 0.3+ | 2005 06 01 | 704 | 0.6+ | 0.7− | | |
| 2001 12 08 | 704 | (2.4+ | 0.1−) | 2005 04 01 | 699 | 0.2− | 0.4− | 2005 06 01 | 704 | 0.5+ | 1.1+ | | |
| 2001 12 08 | 704 | 0.1− | 0.6− | 2005 04 01 | 699 | 0.7− | 0.4− | 2005 06 01 | 704 | (2.3+ | 0.5+) | | |
| 2001 12 08 | 704 | (0.9− | 2.1−) | 2005 04 01 | 699 | 0.4+ | 0.3+ | 2005 06 01 | 704 | 0.8+ | 0.2+ | | |
| 2001 12 23 | 704 | 0.6+ | 0.7+ | 2005 04 01 | 699 | (1.8− | 0.3+) | 2005 06 03 | 699 | 0.4+ | 0.2+ | | |
| 2001 12 23 | 704 | 0.8+ | 0.5+ | 2005 04 01 | 699 | 0.2+ | 0.3− | 2005 06 03 | 699 | (0.7− | 2.5−) | | |
| 2001 12 23 | 704 | 0.8+ | 0.6+ | 2005 04 01 | 699 | 1.0− | 0.4− | 2005 06 03 | 699 | 0.3− | 0.0 | | |
| 2001 12 23 | 704 | 1.1+ | 0.2+ | 2005 04 01 | 699 | 0.9+ | 0.5− | 2005 06 03 | 699 | 1.2+ | 0.3− | | |
| 2001 12 23 | 704 | 0.7+ | 0.4− | 2005 04 12 | 699 | 0.3+ | 0.4+ | 2006 09 25 | 703 | 0.2+ | 0.3+ | | |
| 2002 01 09 | 645 | 0.1− | 0.1+ | 2005 04 12 | 699 | 1.0+ | 0.5+ | 2006 09 25 | 703 | 0.5− | 0.4+ | | |
| 2002 01 09 | 645 | 0.1− | 0.1+ | 2005 04 12 | 699 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.3+ | 0.2− | | |
| 2002 01 26 | 704 | 0.5− | 0.3+ | 2005 04 12 | 699 | 0.4+ | 0.0 | 2006 09 25 | 703 | 0.1+ | 0.7+ | | |
| 2002 01 26 | 704 | 0.2− | 0.6+ | 2005 04 12 | 704 | 0.7+ | 1.5+ | 2006 10 21 | 703 | 0.6+ | 0.3+ | | |
| 2002 01 26 | 704 | 0.0 | 0.4+ | 2005 04 12 | 704 | 0.3− | 0.2− | 2006 10 21 | 703 | 1.0− | 0.2− | | |
| 2002 01 26 | 704 | 0.6− | 0.4+ | 2005 04 12 | 704 | 0.1+ | 1.5+ | 2006 10 21 | 703 | 1.0− | 0.0 | | |
| 2002 02 01 | 704 | 0.5+ | 0.4+ | 2005 04 12 | 704 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.5− | 0.2+ | | |
| 2002 02 01 | 704 | 0.1− | 0.9+ | 2005 04 16 | 703 | 0.6− | 0.3− | 2006 10 31 | 703 | 0.3+ | 0.7+ | | |
| 2002 02 01 | 704 | 0.0 | 0.8+ | 2005 04 16 | 703 | (1.9+ | 4.6−) | 2006 10 31 | 703 | 0.2− | 0.0 | | |
| 2002 02 01 | 704 | 0.1+ | 0.8+ | 2005 04 16 | 703 | 0.7− | 0.6− | 2006 10 31 | 703 | 0.8− | 0.9+ | | |
| 2002 02 01 | 704 | (0.2+ | 1.6+) | 2005 04 16 | 703 | 0.9− | 0.7+ | 2006 10 31 | 703 | 0.1+ | 0.9+ | | |
| 2002 02 11 | 699 | 0.3− | 0.2− | 2005 05 03 | 703 | 0.3− | 0.5+ | 2006 11 17 | 644 | 0.3− | 0.5+ | | |
| 2002 02 11 | 699 | 1.0+ | 0.1+ | 2005 05 03 | 703 | 0.7− | 0.6− | 2006 11 17 | 644 | 0.4− | 0.5+ | | |
| 2002 02 11 | 699 | 0.2+ | 0.2− | 2005 05 03 | 703 | 1.1− | 0.2− | 2006 11 17 | 644 | 0.6− | 0.2+ | | |
| 2002 02 11 | 699 | 0.1+ | 0.5+ | 2005 05 03 | 703 | 0.6− | 0.5+ | | | | | | |
| 2002 03 03 | 704 | 0.1+ | 0.2− | 2005 05 08 | 703 | 0.1− | 0.8− | | | | | | |

**(137058)∗ 1998 VN$_{45}$ = 2002 TP$_{79}$**

Discovered 1998 Nov. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37137)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.13656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24402997 | $\omega$ | 346.85507 | | +0.78764264 | −0.60144288 | |
| $a$ | 2.5361441 | $\Omega$ | 50.93308 | | +0.57972857 | +0.64993134 | |
| $e$ | 0.2917500 | $i$ | 9.91867 | | +0.20864770 | +0.46460275 | |
| $P$ | 4.04 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 22 | 691 | 0.3+ | 0.2+ | 2002 11 22 | 644 | 0.1− | 0.9+ | 2006 10 03 | 704 | 0.3+ | 0.5+ | | |
| 1996 04 22 | 691 | 0.2+ | 0.1− | 2002 11 22 | 644 | 0.1− | 0.8+ | 2006 10 03 | 704 | 0.0 | 0.3+ | | |
| 1996 04 22 | 691 | 0.4+ | 0.1− | 2002 11 22 | 644 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.5+ | 0.3+ | | |
| 1998 10 18 | 699 | 0.5− | 0.4− | 2002 11 22 | 644 | 0.3− | 0.7+ | 2006 10 03 | 704 | 0.5+ | 0.5+ | | |
| 1998 10 18 | 699 | 0.4− | 0.2− | 2002 11 22 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.4− | | |
| 1998 10 18 | 699 | 0.7− | 0.9− | 2002 11 22 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.1− | | |
| 1998 11 10 | 704 | 0.8+ | 0.1− | 2002 12 01 | 704 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.8− | 0.3− | | |
| 1998 11 10 | 699 | 0.8+ | 0.5+ | 2002 12 01 | 704 | 0.8− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.0 | | |
| 1998 11 10 | 704 | 1.2+ | 1.3− | 2002 12 01 | 704 | 0.3− | 0.2+ | 2006 10 22 | 704 | 0.0 | 0.2− | | |
| 1998 11 10 | 704 | 0.5− | 0.2+ | 2002 12 01 | 704 | 0.0 | 0.3− | 2006 10 22 | 704 | 0.8− | 0.9+ | | |
| 1998 11 10 | 704 | 0.1− | 0.5− | 2002 12 01 | 704 | 0.6− | 0.4− | 2006 10 22 | 704 | 0.5− | 0.9+ | | |
| 1998 11 10 | 699 | 0.2− | 0.1+ | 2002 12 05 | 704 | 0.9+ | 1.2+ | 2006 10 22 | 704 | 0.3− | 0.7− | | |
| 1998 11 10 | 704 | (6.5− | 3.2−) | 2002 12 05 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 704 | 0.0 | 0.9+ | | |
| 1998 11 10 | 699 | 1.1+ | 0.5− | 2002 12 05 | 704 | 1.2+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.2− | | |
| 1998 11 10 | 910 | (2.1+ | 0.5−) | 2002 12 05 | 704 | 1.4+ | 0.8− | 2006 10 22 | 703 | 0.1+ | 0.1− | | |
| 1998 11 10 | 910 | (2.1+ | 0.6−) | 2002 12 05 | 704 | (1.9+ | 0.3−) | 2006 10 22 | 703 | 0.3+ | 0.2− | | |
| 1998 11 10 | 910 | (2.1+ | 0.4−) | 2002 12 10 | 704 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.5− | 0.6− | | |
| 1998 11 11 | 704 | 0.1− | 0.5− | 2002 12 10 | 704 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.2− | | |
| 1998 11 11 | 704 | (3.4− | 1.3−) | 2002 12 10 | 704 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.2− | 0.3− | | |
| 1998 11 11 | 704 | 0.3− | 1.1− | 2002 12 10 | 704 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.3− | | |
| 1998 11 11 | 704 | (2.5+ | 2.7−) | 2002 12 12 | 608 | 0.3− | 0.7− | 2006 10 27 | 704 | 0.8+ | 1.0+ | | |
| 1998 11 16 | 691 | 0.2+ | 0.8− | 2002 12 12 | 608 | 0.1− | 0.5− | 2006 10 27 | 704 | 0.3+ | 0.4+ | | |
| 1998 11 16 | 691 | 0.5+ | 0.8− | 2002 12 12 | 608 | 0.3+ | 0.5− | 2006 10 27 | 704 | 0.4+ | 0.3+ | | |
| 1998 11 16 | 691 | 0.4+ | 0.7− | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 10 27 | 704 | 0.6− | 0.3+ | | |
| 1998 11 18 | 704 | 0.5+ | 0.1− | 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.9+ | 0.4+ | | |
| 1998 11 18 | 704 | 0.1+ | 1.1− | 2002 12 31 | 704 | 0.5+ | 0.3+ | 2006 10 31 | 704 | 0.6+ | 1.3+ | | |
| 1998 11 18 | 704 | 0.5− | 0.9− | 2002 12 31 | 704 | 0.1− | 0.7+ | 2006 10 31 | 704 | (0.7+ | 2.9+) | | |
| 1998 11 18 | 704 | 0.7− | 0.4− | 2002 12 31 | 704 | 0.6+ | 0.6+ | 2006 10 31 | 704 | (0.3+ | 1.7+) | | |
| 1998 11 18 | 704 | 1.7− | 1.0− | 2003 01 05 | 699 | 1.2− | 0.0 | 2006 10 31 | 704 | 1.2− | 1.0+ | | |
| 1998 12 16 | 699 | 0.1− | 0.3+ | 2003 01 05 | 699 | 0.6+ | 0.0 | 2006 11 14 | 704 | 0.7− | 0.6+ | | |
| 1998 12 16 | 699 | 0.2− | 0.5+ | 2003 01 05 | 704 | 0.8+ | 0.2− | 2006 11 14 | 704 | 0.4− | 0.4+ | | |
| 1998 12 16 | 699 | 0.2+ | 0.2+ | 2003 01 05 | 699 | 0.6− | 0.3+ | 2006 11 14 | 704 | 0.7− | 0.8+ | | |
| 2002 10 01 | 704 | 0.5+ | 0.5+ | 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.3− | 0.1+ | | |
| 2002 10 01 | 704 | 0.5+ | 0.3− | 2003 01 05 | 699 | 0.3− | 1.0+ | 2006 11 14 | 704 | 1.1− | 0.6+ | | |
| 2002 10 01 | 704 | 0.5+ | 0.6+ | 2003 01 05 | 704 | 0.8+ | 1.0+ | 2006 11 17 | 704 | (0.8+ | 2.0+) | | |
| 2002 10 01 | 704 | 0.4− | 0.1+ | 2003 01 05 | 704 | 0.7+ | 0.4+ | 2006 11 17 | 704 | 0.5+ | 1.2+ | | |
| 2002 10 04 | 704 | 0.8+ | 0.1− | 2003 01 19 | 644 | 0.7− | 0.4+ | 2006 11 17 | 704 | 0.9+ | 0.9+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.7− | 2003 01 19 | 644 | 0.4− | 0.6+ | 2006 11 17 | 704 | 0.3− | 0.5+ | | |
| 2002 10 04 | 704 | 0.1+ | 0.1− | 2003 01 19 | 644 | 0.4− | 0.9+ | 2006 11 17 | 704 | (0.5+ | 1.7+) | | |
| 2002 10 11 | 704 | 0.1− | 0.5+ | 2003 02 01 | 704 | 0.9+ | 1.2+ | 2006 11 18 | 704 | 0.4− | 0.5+ | | |
| 2002 10 11 | 704 | 0.3− | 0.7+ | 2003 02 01 | 704 | 0.7+ | 1.3+ | 2006 11 18 | G96 | 0.2− | 0.6− | | |
| 2002 10 11 | 704 | 0.6− | 0.6+ | 2003 02 01 | 704 | 0.4+ | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.4− | | |
| 2002 10 11 | 704 | 0.1− | 0.5+ | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.7− | 0.2+ | | |
| 2002 10 11 | 704 | 0.3− | 0.9+ | 2004 04 21 | 691 | 0.2+ | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.4− | | |
| 2002 10 26 | 608 | 1.1+ | 0.6− | 2004 04 21 | 691 | 0.1− | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.4− | | |
| 2002 10 26 | 608 | 0.4+ | 1.1− | 2006 09 21 | 699 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 26 | 608 | 0.7+ | 1.2− | 2006 09 21 | 699 | 0.6+ | 0.6− | 2006 11 18 | 704 | 0.7− | 0.6+ | | |
| 2002 11 01 | 704 | 0.0 | 0.1− | 2006 09 21 | 699 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 2002 11 01 | 704 | 0.5− | 0.2− | 2006 09 21 | 699 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.1− | | |
| 2002 11 01 | 704 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.1+ | | |
| 2002 11 01 | 704 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.3+ | | |
| 2002 11 03 | 300 | 0.2− | 1.0+ | 2006 09 25 | 699 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.3+ | | |
| 2002 11 03 | 300 | 0.3− | 0.4− | 2006 09 25 | 699 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.8− | 0.4+ | | |
| 2002 11 03 | 300 | 0.7− | 0.0 | 2006 09 26 | 703 | 0.6+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2002 11 03 | 300 | 0.4− | 0.9+ | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.2− | 0.3− | | |
| 2002 11 04 | 699 | 0.5− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.1− | 0.2− | | |
| 2002 11 04 | 699 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.0 | | |
| 2002 11 04 | 699 | (1.6− | 0.3+) | 2006 09 29 | 699 | 1.1− | 1.1− | 2006 11 21 | 704 | 0.2− | 0.1− | | |
| 2002 11 04 | 699 | 0.1− | 0.2+ | 2006 09 29 | 699 | (0.7+ | 1.5−) | 2006 11 21 | 704 | 0.1+ | 0.0 | | |
| 2002 11 06 | 704 | 0.3+ | 0.2− | 2006 09 29 | 699 | 0.5+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.2− | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2002 11 06 | 704 | 0.1− | 0.4− | 2006 10 01 | 704 | 0.1− | 0.3+ | 2006 11 26 | 704 | 0.5− | 0.5+ | | |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.1+ | 2006 11 26 | 704 | 0.3+ | 0.5+ | | |
| 2002 11 06 | 704 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.1− | 0.1− | 2006 11 26 | 704 | 0.3− | 0.8+ | | |
| 2002 11 10 | 704 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.5+ | 2006 11 26 | 704 | 1.0− | 0.3+ | | |
| 2002 11 10 | 704 | 0.7+ | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.6+ | 2006 11 27 | 703 | 0.0 | 0.6− | | |
| 2002 11 10 | 704 | 0.2+ | 0.2− | 2006 10 03 | 704 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.3− | | |
| 2002 11 10 | 704 | 0.6+ | 0.3+ | 2006 10 03 | 704 | (1.6+ | 0.4−) | 2006 11 27 | 703 | 0.1− | 0.3− | | |
| 2002 11 12 | 644 | 0.1+ | 0.0 | 2006 10 03 | 704 | 1.0+ | 0.4+ | 2006 11 27 | 703 | 0.1+ | 0.6− | | |
| 2002 11 12 | 644 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.2+ | 0.7+ | | | | | | |
| 2002 11 12 | 644 | 0.1− | 0.0 | 2006 10 03 | 704 | 0.1− | 1.4+ | | | | | | |

**(137059)∗ 1998 VA$_{49}$ = 1992 EW$_{30}$ = 2003 AG$_{23}$**

Discovered 1998 Nov. 11 by BAO Schmidt CCD Asteroid Program at Xinglong.

Id. A. Doppler (*MPO* 68531)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.84887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25782785 | $\omega$ | 235.89447 | | +0.72839100 | −0.68431454 | |
| $a$ | 2.4448347 | $\Omega$ | 167.17157 | | +0.66825283 | +0.69856080 | |
| $e$ | 0.2661087 | $i$ | 8.82441 | | +0.15127696 | +0.20910862 | |
| $P$ | 3.82 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | (1.5− | 2.8+) | 2002 08 14 | 699 | (2.2− | 2.7+) | 2003 01 09 | G74 | 1.4+ | 0.4+ | | |
| 1992 03 03 | 809 | 0.1+ | 0.2+ | 2002 08 14 | 699 | (1.3− | 2.1+) | 2003 01 09 | G74 | 1.1− | 1.3− | | |
| 1998 08 31 | 704 | 1.6− | 1.3+ | 2002 08 14 | 699 | (1.6− | 1.2−) | 2003 01 09 | G74 | 0.6+ | 1.2− | | |
| 1998 08 31 | 704 | 0.3+ | 0.0 | 2002 08 14 | 699 | 0.3+ | 0.1− | 2004 03 16 | 691 | 0.4+ | 0.7+ | | |
| 1998 08 31 | 704 | 0.8− | 1.6+ | 2002 10 09 | 704 | 0.9− | 0.8− | 2004 03 16 | 691 | 0.1+ | 0.7+ | | |
| 1998 08 31 | 704 | (8.3− | 2.6+) | 2002 10 09 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 691 | 0.2+ | 0.3+ | | |
| 1998 11 11 | 327 | 0.2− | 0.6+ | 2002 10 09 | 704 | 0.1− | 0.2+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | | |
| 1998 11 11 | 327 | 0.4− | 0.1+ | 2002 10 09 | 704 | 0.3+ | 1.0+ | 2004 04 14 | 691 | 0.0 | 0.4+ | | |
| 1998 11 11 | 327 | 0.3− | 0.2+ | 2002 10 09 | 704 | 0.1− | 0.6+ | 2004 04 14 | 691 | 0.0 | 0.5+ | | |
| 1998 11 13 | 704 | 0.7− | 1.8+ | 2002 12 14 | 704 | 0.2+ | 0.8+ | 2006 10 31 | 703 | (1.6− | 0.3+) | | |
| 1998 11 13 | 704 | 0.2+ | 0.4+ | 2002 12 14 | 704 | 0.1+ | 0.5+ | 2006 10 31 | 703 | 0.1+ | 0.3+ | | |
| 1998 11 13 | 704 | 0.5− | 0.2− | 2002 12 14 | 704 | 0.4+ | 0.8+ | 2006 10 31 | 703 | 0.6− | 0.4− | | |
| 1998 11 13 | 704 | 0.2− | 0.1+ | 2002 12 14 | 704 | 0.9+ | 0.4+ | 2006 10 31 | 703 | (1.6− | 0.4−) | | |
| 1998 11 13 | 704 | 1.1− | 1.1+ | 2002 12 14 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 703 | 0.6− | 0.1− | | |
| 1998 11 19 | 699 | 1.4+ | 1.1+ | 2003 01 06 | G74 | 0.3− | 0.9− | 2006 11 16 | 703 | (2.3+ | 3.8−) | | |
| 1998 11 19 | 699 | 0.4+ | 0.3+ | 2003 01 06 | G74 | (0.3+ | 1.7−) | 2006 11 16 | 703 | (4.3− | 0.4−) | | |
| 1998 11 19 | 699 | 0.2+ | 0.4+ | 2003 01 06 | G74 | 0.4− | 0.1+ | 2006 11 16 | 703 | 0.2+ | 0.4+ | | |

**(137060)∗ 1998 VO$_{50}$ = 2002 RS$_{61}$**

Discovered 1998 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34752)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.15331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23746718 | $\omega$ | 282.25471 | | +0.61914013 | −0.78383066 | |
| $a$ | 2.5826585 | $\Omega$ | 129.38681 | | +0.74234175 | +0.56439579 | |
| $e$ | 0.1860078 | $i$ | 3.53815 | | +0.25611368 | +0.25897275 | |
| $P$ | 4.15 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 1.4+ | 0.1+ | 2002 11 08 | 645 | 0.2+ | 0.2− | 2006 08 23 | 644 | 0.1− | 0.2+ | | |
| 1998 11 11 | 704 | 1.0+ | 0.3− | 2002 11 11 | 704 | 0.4+ | 0.3− | 2006 08 24 | 644 | 0.1− | 0.2+ | | |
| 1998 11 11 | 704 | 0.4+ | 1.0− | 2002 11 11 | 704 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.2+ | | |
| 1998 11 14 | 699 | 1.7− | 0.9+ | 2002 11 11 | 704 | 0.9+ | 0.9− | 2006 08 24 | 644 | 0.2− | 0.4+ | | |
| 1998 11 14 | 699 | 0.4− | 0.1− | 2002 11 11 | 704 | (1.3+ | 1.7+) | 2006 08 27 | 699 | 0.1+ | 0.2+ | | |
| 1998 11 14 | 699 | 0.9− | 1.6+ | 2002 11 11 | 704 | (0.4+ | 1.9−) | 2006 08 27 | 699 | 0.1+ | 1.2+ | | |
| 1998 12 11 | 699 | 0.5− | 1.3+ | 2002 12 02 | 608 | 0.1− | 0.5− | 2006 08 27 | 699 | 0.4− | 0.8+ | | |
| 1998 12 11 | 699 | 0.1+ | 0.3+ | 2002 12 02 | 608 | 0.2+ | 0.1− | 2006 08 27 | 699 | 0.6− | 0.4+ | | |
| 1998 12 11 | 699 | 0.7− | 0.5+ | 2002 12 02 | 608 | 0.2+ | 0.1− | 2006 08 28 | 704 | 0.8− | 0.1+ | | |
| 2002 08 05 | 704 | 0.6− | 0.7+ | 2002 12 18 | 608 | 0.1+ | 0.4− | 2006 08 28 | 704 | 0.9− | 1.3+ | | |
| 2002 08 05 | 704 | 0.3− | 0.9− | 2002 12 18 | 608 | 0.5− | 0.2− | 2006 08 28 | 704 | 0.5− | 0.6+ | | |
| 2002 08 05 | 704 | 0.4− | 0.5− | 2002 12 18 | 608 | 0.3+ | 0.3+ | 2006 08 28 | 704 | 0.0 | 0.2+ | | |
| 2002 08 05 | 704 | 0.4− | 0.8+ | 2004 02 13 | 644 | 0.7+ | 0.5+ | 2006 08 28 | 703 | 0.6− | 0.2− | | |
| 2002 08 05 | 704 | 0.2+ | 0.1+ | 2004 02 13 | 644 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.3− | | |
| 2002 09 05 | 704 | (0.8− | 1.9+) | 2004 02 13 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.5− | | |
| 2002 09 05 | 704 | (0.3− | 2.3+) | 2004 02 13 | 644 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.4− | | |
| 2002 09 05 | 704 | 0.2− | 1.3+ | 2004 02 13 | 644 | 0.4− | 0.6+ | 2006 08 30 | 704 | 0.0 | 0.7+ | | |
| 2002 09 06 | 704 | 1.1+ | 0.6+ | 2004 02 13 | 644 | 0.3+ | 0.6+ | 2006 08 30 | 704 | 0.1+ | 0.0 | | |
| 2002 09 06 | 704 | 0.4+ | 0.8+ | 2004 02 18 | 704 | 0.2− | 0.6+ | 2006 08 30 | 704 | 0.7− | 0.6+ | | |
| 2002 09 06 | 704 | 0.7+ | 1.1+ | 2004 02 18 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.1+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.8+ | 0.2+ | 2004 02 18 | 704 | 0.0 | 0.2− | 2006 08 30 | 704 | 1.4+ | 0.5− | | |
| 2002 09 06 | 704 | 0.2+ | 0.6+ | 2004 02 18 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.4− | | |
| 2002 09 16 | 608 | 0.7− | 0.4− | 2004 02 18 | 704 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.2− | | |
| 2002 09 16 | 608 | 0.2− | 0.6− | 2004 02 23 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.5− | 0.1− | | |
| 2002 09 16 | 608 | 0.4− | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.3− | | |
| 2002 09 28 | 683 | (0.4+ | 2.2+) | 2004 02 23 | 704 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.3+ | 0.6+ | | |
| 2002 09 28 | 683 | (1.8+ | 2.4+) | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 704 | 0.1+ | 0.4+ | | |
| 2002 09 28 | 683 | 0.8+ | 0.9+ | 2004 02 23 | 704 | 0.1+ | 0.7− | 2006 09 16 | 704 | 0.3− | 0.5+ | | |
| 2002 09 29 | 683 | (1.7− | 2.1+) | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 09 16 | 704 | 0.1− | 0.7+ | | |
| 2002 09 29 | 683 | 0.1+ | 1.0+ | 2004 02 26 | 704 | 0.2− | 0.3+ | 2006 09 16 | 704 | 0.3+ | 0.2+ | | |
| 2002 09 29 | 683 | (2.6− | 0.3−) | 2004 02 26 | 704 | 0.5− | 0.5+ | 2006 09 19 | 704 | 0.3− | 0.1− | | |
| 2002 09 30 | 704 | 0.2− | 0.4+ | 2004 02 26 | 704 | 0.0 | 1.0+ | 2006 09 19 | 699 | 0.5+ | 0.3+ | | |
| 2002 09 30 | 704 | 0.2− | 0.7+ | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 704 | 0.3+ | 0.7+ | | |
| 2002 09 30 | 704 | 0.4− | 0.3+ | 2004 03 11 | 644 | 0.6+ | 0.6+ | 2006 09 19 | 704 | 1.4− | 0.2+ | | |
| 2002 09 30 | 704 | 0.4− | 0.8+ | 2004 03 11 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.0 | | |
| 2002 09 30 | 704 | 0.2+ | 0.6+ | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 704 | (0.2+ | 2.3−) | | |
| 2002 10 02 | 704 | (1.9− | 0.1−) | 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 704 | 1.0− | 0.6+ | | |
| 2002 10 02 | 704 | (1.7− | 0.2−) | 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.9+ | | |
| 2002 10 02 | 704 | (1.5− | 0.4+) | 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.6− | 0.4+ | | |
| 2002 10 02 | 704 | 1.3− | 0.0 | 2004 03 15 | 704 | (0.2− | 1.6−) | 2006 09 22 | 704 | 0.3− | 0.0 | | |
| 2002 10 02 | 608 | 0.5+ | 0.8+ | 2004 03 15 | 704 | 0.3− | 0.3− | 2006 09 22 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 02 | 608 | 0.5+ | 0.1+ | 2004 03 15 | 704 | 0.7− | 0.0 | 2006 09 22 | 704 | 0.6− | 0.1+ | | |
| 2002 10 02 | 608 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.5+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.5+ | 2004 03 19 | 704 | 1.0− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.0 | | |
| 2002 10 03 | 704 | 1.0+ | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.1− | 2004 03 19 | 704 | 0.3− | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.7− | 0.7+ | | |
| 2002 10 03 | 704 | 0.9+ | 0.4+ | 2004 03 19 | 704 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.4− | | |
| 2002 10 11 | 704 | 1.1− | 0.3+ | 2004 03 20 | 699 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.5+ | 0.0 | | |
| 2002 10 11 | 704 | 1.1− | 0.3+ | 2004 03 20 | 699 | 0.9− | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.1− | | |
| 2002 10 11 | 704 | 1.5− | 0.3+ | 2004 03 20 | 699 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.7+ | 0.2+ | | |
| 2002 10 11 | 704 | 1.3− | 0.5+ | 2004 03 20 | 699 | 0.0 | 0.6− | 2006 09 28 | 704 | (3.0+ | 3.1−) | | |
| 2002 10 11 | 704 | 1.0− | 0.1+ | 2004 03 21 | 691 | 0.1− | 0.4+ | 2006 09 28 | 704 | (1.4+ | 3.1−) | | |
| 2002 10 15 | 644 | 0.0 | 0.3− | 2004 03 21 | 691 | 0.1− | 0.5+ | 2006 09 28 | 704 | (2.2+ | 2.4−) | | |
| 2002 10 15 | 644 | 0.0 | 0.6+ | 2004 03 21 | 691 | 0.2− | 0.6+ | 2006 09 28 | 704 | (1.2+ | 1.5−) | | |
| 2002 10 15 | 644 | 0.1+ | 0.8+ | 2004 03 22 | 704 | 1.3+ | 0.6− | 2006 09 30 | 703 | 0.6+ | 0.5+ | | |
| 2002 10 30 | 645 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.8+ | 0.4+ | | |
| 2002 10 30 | 645 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.2− | | |
| 2002 10 31 | 704 | 0.7− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.6+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.8− | 0.2− | 2004 03 28 | 704 | (1.7+ | 1.3+) | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 10 31 | 704 | 0.2+ | 0.6− | 2004 03 28 | 704 | 0.8+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 10 31 | 704 | 0.5− | 0.2− | 2004 03 28 | 704 | 1.0+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2002 10 31 | 704 | 0.8− | 0.2− | 2004 03 28 | 704 | 1.3+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 03 | 608 | 0.5− | 0.3− | 2004 03 30 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.4+ | 0.1+ | | |
| 2002 11 03 | 608 | 0.5− | 0.1+ | 2004 03 30 | 691 | 0.5+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.3+ | | |
| 2002 11 03 | 608 | 0.1+ | 0.5+ | 2004 03 30 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 05 | 699 | 0.5− | 0.7+ | 2006 08 15 | 644 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.4+ | | |
| 2002 11 05 | 699 | 0.6− | 0.3+ | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.3+ | | |
| 2002 11 05 | 699 | 0.2− | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.7+ | 0.0 | | |
| 2002 11 05 | 699 | 0.7− | 0.1+ | 2006 08 23 | 704 | 0.5− | 0.5+ | 2006 11 20 | 704 | 0.3− | 1.3+ | | |
| 2002 11 07 | 704 | 0.0 | 0.5+ | 2006 08 23 | 704 | 0.7− | 0.4+ | 2006 11 20 | 704 | (0.7− | 1.9+) | | |
| 2002 11 07 | 704 | 1.2− | 0.2− | 2006 08 23 | 704 | 1.2− | 0.9+ | 2006 11 25 | G96 | 0.4+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.3− | 0.4+ | 2006 08 23 | 704 | 1.3− | 0.6+ | 2006 11 25 | G96 | 0.8+ | 0.1− | | |
| 2002 11 07 | 704 | 0.5− | 0.8+ | 2006 08 23 | 704 | 0.8− | 0.2− | 2006 11 25 | G96 | 0.6+ | 0.2− | | |
| 2002 11 07 | 704 | 0.2− | 0.7+ | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.2+ | | |
| 2002 11 08 | 645 | 0.1+ | 0.2− | 2006 08 23 | 644 | 0.1− | 0.1+ | | | | | | |

**(137061)∗ 1998 VR$_{50}$ = 1999 CV$_{147}$**

Discovered 1998 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 35668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.51341 | | (2000.0) | | | |
| $n$ | 0.25690589 | $\omega$ | 164.63215 | | +0.56655873 | −0.82379880 |
| $a$ | 2.4506804 | $\Omega$ | 250.85367 | | +0.75387176 | +0.52757038 |
| $e$ | 0.1937610 | $i$ | 1.16157 | | +0.33269893 | +0.20742475 |
| $P$ | 3.84 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.1+ | 0.7+ | 2002 12 05 | 704 | 0.2+ | 0.0 | 2005 07 07 | 568 | 0.2− | 0.6+ | | |
| 1998 11 10 | 699 | 0.8+ | 1.0+ | 2002 12 05 | 704 | 0.5+ | 0.0 | 2005 07 08 | 568 | 0.5− | 0.0 | | |
| 1998 11 10 | 699 | 0.0 | 1.0+ | 2002 12 05 | 704 | 0.4+ | 0.2+ | 2005 07 10 | 691 | 0.0 | 0.0 | | |
| 1998 11 10 | 699 | 1.0+ | 0.5− | 2002 12 05 | 704 | 0.3+ | 0.3+ | 2005 07 10 | 691 | 0.1− | 0.3− | | |
| 1998 11 11 | 704 | 0.2+ | 0.5+ | 2002 12 09 | 291 | 0.3− | 0.2+ | 2005 07 10 | 691 | 0.1− | 0.1+ | | |
| 1998 11 11 | 704 | 0.4+ | 0.1+ | 2002 12 09 | 291 | 0.3− | 0.6+ | 2005 07 15 | 691 | 0.0 | 0.2− | | |
| 1998 11 11 | 704 | 0.6+ | 1.0− | 2002 12 09 | 291 | 0.1− | 0.2+ | 2005 07 15 | 691 | 0.1− | 0.0 | | |
| 1998 11 13 | 910 | 0.6+ | 0.1+ | 2002 12 10 | 704 | 0.7+ | 1.3+ | 2005 07 15 | 691 | (0.5+ | 1.8+) | | |
| 1998 11 13 | 910 | 0.5+ | 0.1+ | 2002 12 10 | 704 | 0.7− | 1.0+ | 2005 07 15 | G96 | 0.0 | 0.2+ | | |
| 1998 11 13 | 910 | 0.6− | 0.6− | 2002 12 10 | 704 | 0.5+ | 0.2− | 2005 07 15 | G96 | 0.2+ | 0.4+ | | |
| 1998 11 18 | 691 | 0.1− | 0.1− | 2002 12 10 | 704 | 1.0+ | 0.1− | 2005 07 15 | G96 | 1.0− | 0.8+ | | |
| 1998 11 18 | 691 | 0.2− | 0.3+ | 2002 12 12 | 704 | 0.1− | 0.1− | 2005 07 15 | G96 | 0.2− | 0.5+ | | |
| 1998 11 18 | 691 | 0.1− | 0.2+ | 2002 12 12 | 704 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.0 | | |
| 1999 02 09 | 691 | 0.6+ | 1.1− | 2002 12 12 | 704 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 1999 02 09 | 691 | 0.3+ | 0.2+ | 2002 12 12 | 704 | 0.7− | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 1999 02 09 | 691 | (4.3+ | 2.2+) | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 1999 02 10 | 691 | 1.0− | 0.3− | 2002 12 31 | 704 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.4− | 0.3− | | |
| 1999 02 10 | 691 | 0.5− | 0.6− | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 1999 02 10 | 691 | 0.9− | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.3− | 0.7− | | |
| 1999 02 14 | 691 | 0.1− | 0.5− | 2002 12 31 | 704 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 1999 02 14 | 691 | 0.3− | 0.4− | 2005 07 03 | G96 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.2+ | | |
| 1999 02 14 | 691 | 0.3+ | 0.3− | 2005 07 03 | G96 | 0.2− | 0.6− | 2006 11 27 | 703 | 0.1− | 1.6+ | | |
| 1999 02 16 | 691 | 0.0 | 0.8− | 2005 07 03 | G96 | 1.2+ | 0.2− | 2006 11 27 | 703 | 0.1+ | 0.5− | | |
| 1999 02 16 | 691 | 0.7+ | 0.2− | 2005 07 03 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 1.0+ | 0.8− | | |
| 1999 02 16 | 691 | 0.6+ | 0.2+ | 2005 07 06 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2000 04 06 | 704 | 0.6+ | 0.1+ | 2005 07 06 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.3− | | |
| 2000 04 06 | 704 | 1.1− | 0.4+ | 2005 07 06 | 691 | 0.3+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2000 04 06 | 704 | 1.5+ | 0.4+ | 2005 07 07 | 568 | 0.2− | 0.5+ | 2006 11 27 | G96 | 0.6+ | 0.5− | | |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2005 07 07 | 568 | 0.3− | 0.6+ | | | | | | |

**(137062)∗ 1998 WM**

Discovered 1998 Nov. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 150.64087 | | (2000.0) | | | |
| $n$ | 0.72722667 | $\omega$ | 172.48473 | | −0.77895589 | +0.56402817 |
| $a$ | 1.2246806 | $\Omega$ | 45.69360 | | −0.59341843 | −0.52177127 |
| $e$ | 0.3153790 | $i$ | 22.51645 | | −0.20268767 | −0.64002107 |
| $P$ | 1.36 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 10 16 | 260 | 1.7− | 0.6− | 2002 10 11 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.2− | 0.8+ | | |
| 1987 10 16 | 260 | 1.2− | 1.2− | 2002 10 16 | 699 | 0.6+ | 0.8+ | 2006 09 22 | 693 | 0.0 | 0.1− | | |
| 1998 11 16 | 704 | 0.7− | 0.2+ | 2002 10 16 | 699 | 0.0 | 0.1+ | 2006 09 22 | 693 | 0.1− | 0.2− | | |
| 1998 11 16 | 704 | 0.8− | 0.8− | 2002 10 16 | 699 | 0.1− | 0.6+ | 2006 09 26 | 703 | 1.2− | 0.0 | | |
| 1998 11 16 | 704 | 0.2+ | 1.9− | 2002 10 16 | 699 | 0.2− | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.2+ | | |
| 1998 11 16 | 704 | (0.1+ | 2.8−) | 2002 10 28 | 240 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.9− | 0.1+ | | |
| 1998 11 16 | 704 | 1.1− | 1.6− | 2002 10 28 | 240 | 0.3− | 0.2− | 2006 09 26 | 703 | 0.5− | 0.6+ | | |
| 1998 11 17 | 734 | 0.5− | 0.1+ | 2002 10 28 | 240 | 0.1− | 0.1− | 2006 09 30 | 699 | 0.0 | 0.4+ | | |
| 1998 11 17 | 711 | 0.2− | 0.2− | 2002 10 30 | 608 | 0.2+ | 0.2− | 2006 09 30 | 699 | 0.1− | 0.3+ | | |
| 1998 11 17 | 734 | 0.2− | 0.1− | 2002 10 30 | 608 | 0.2+ | 0.0 | 2006 09 30 | 699 | 0.4− | 0.1+ | | |
| 1998 11 17 | 711 | 0.4− | 0.1+ | 2002 10 30 | 608 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.5− | | |
| 1998 11 17 | 711 | 0.9+ | 0.8− | 2002 11 01 | 170 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.7− | | |
| 1998 11 17 | 596 | 0.4− | 1.6− | 2002 11 01 | 170 | 1.1− | 1.4+ | 2006 09 30 | 703 | 0.5− | 1.1− | | |
| 1998 11 17 | 596 | 0.6− | 0.4− | 2002 11 01 | 170 | 0.9+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.7− | | |
| 1998 11 17 | 106 | 0.6− | 0.2− | 2002 11 01 | 170 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.5+ | 0.5+ | | |
| 1998 11 17 | 106 | 0.3− | 0.0 | 2002 11 01 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.6+ | | |
| 1998 11 17 | 106 | 0.5− | 0.3− | 2002 11 01 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.7+ | | |
| 1998 11 17 | 106 | 0.3− | 0.5− | 2002 11 01 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.1+ | | |
| 1998 11 17 | 587 | 0.2− | 0.4− | 2002 11 05 | 704 | 0.3− | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.4+ | | |
| 1998 11 17 | 587 | 1.7− | 0.8− | 2002 11 05 | 704 | 0.5− | 0.0 | 2006 10 07 | 198 | 0.3− | 1.3+ | | |
| 1998 11 18 | 046 | 0.2− | 0.3− | 2002 11 05 | 704 | 0.5− | 0.1+ | 2006 10 07 | 198 | 0.1+ | 1.0+ | | |
| 1998 11 18 | 046 | 0.0 | 0.1− | 2002 11 05 | 704 | 0.6− | 0.1− | 2006 10 07 | 198 | 1.0+ | 0.7+ | | |
| 1998 11 18 | 046 | 0.2− | 0.1− | 2002 11 05 | 704 | 0.4− | 0.3+ | 2006 10 11 | 204 | 0.1+ | 0.0 | | |
| 1998 11 18 | 046 | 0.4+ | 0.1− | 2002 11 05 | 170 | 0.1− | 0.1− | 2006 10 11 | 204 | 0.0 | 0.1− | | |
| 1998 11 18 | 711 | 0.1+ | 0.4− | 2002 11 05 | 170 | 0.3+ | 0.2+ | 2006 10 14 | H55 | 0.4− | 0.0 | | |
| 1998 11 18 | 711 | 0.1+ | 0.5− | 2002 11 05 | 170 | 1.0− | 0.1− | 2006 10 14 | H55 | 0.4− | 0.3+ | | |
| 1998 11 22 | 360 | 0.1− | 0.5+ | 2002 11 05 | 170 | 0.5+ | 0.1+ | 2006 10 14 | H55 | 0.4+ | 0.1+ | | |
| 1998 11 22 | 360 | 0.1− | 0.4+ | 2002 11 06 | 704 | 0.3− | 0.3+ | 2006 10 14 | H55 | 0.0 | 0.2− | | |
| 1998 11 22 | 360 | 0.1+ | 0.3+ | 2002 11 06 | 704 | 0.2− | 0.5+ | 2006 10 16 | 693 | 0.1+ | 0.2+ | | |
| 1998 11 23 | 118 | 0.4+ | 0.2+ | 2002 11 06 | 704 | 0.3− | 0.5+ | 2006 10 16 | 693 | 0.0 | 0.2+ | | |
| 1998 11 23 | 118 | 0.6+ | 0.0 | 2002 11 06 | 704 | 0.1− | 0.0 | 2006 10 16 | 693 | 0.0 | 0.2+ | | |
| 1998 11 23 | 118 | 0.4+ | 0.1− | 2002 11 06 | 704 | 0.1− | 0.3+ | 2006 10 16 | 693 | 0.0 | 0.2+ | | |
| 1998 11 23 | 557 | 0.3+ | 0.2+ | 2002 11 06 | 379 | 0.7− | 0.5− | 2006 10 16 | 703 | 0.1− | 0.4+ | | |
| 1998 11 23 | 557 | 0.4+ | 0.2+ | 2002 11 06 | 379 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3+ | | |
| 1998 11 23 | 557 | 0.3+ | 0.2+ | 2002 11 06 | 379 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.2+ | | |
| 1998 11 24 | 046 | 0.7+ | 0.1− | 2002 11 06 | 379 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.2+ | | |
| 1998 11 24 | 046 | 0.1+ | 0.1− | 2002 11 06 | 151 | 0.3− | 0.3− | 2006 10 17 | 130 | 0.4+ | 0.2− | | |
| 1998 11 24 | 046 | 0.1− | 0.2− | 2002 11 06 | 151 | 1.4− | 0.5− | 2006 10 17 | 130 | 0.3+ | 0.1+ | | |
| 1998 11 24 | 118 | 0.2+ | 0.3− | 2002 11 06 | 151 | 0.2+ | 0.1+ | 2006 10 17 | 130 | 0.1+ | 0.1+ | | |
| 1998 11 24 | 118 | 0.0 | 0.2− | 2002 11 06 | 151 | 0.3+ | 0.2− | 2006 10 17 | 130 | 0.0 | 0.4− | | |
| 1998 11 24 | 118 | 0.1+ | 0.2− | 2002 11 07 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.2+ | | |
| 1998 11 25 | 540 | 0.8− | 0.5+ | 2002 11 07 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | (1.0− | 1.7−) | | |
| 1998 11 25 | 540 | 0.1+ | 0.6+ | 2002 11 07 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.6− | | |
| 1998 11 25 | 540 | 0.3+ | 0.1− | 2002 11 07 | 704 | 0.3− | 0.4+ | 2006 10 23 | H45 | 0.0 | 0.3− | | |
| 1998 11 25 | 540 | 0.1− | 1.1+ | 2002 11 07 | 704 | 0.1+ | 0.5+ | 2006 10 23 | H45 | 0.2− | 0.2− | | |
| 1998 11 28 | 402 | 0.2+ | 0.9+ | 2002 11 08 | 704 | 0.9+ | 0.6− | 2006 10 23 | H45 | 0.2− | 0.4− | | |
| 1998 11 28 | 402 | 0.3+ | 0.9+ | 2002 11 08 | 704 | 0.8+ | 0.7− | 2006 10 23 | H45 | 0.1+ | 0.3− | | |
| 1998 11 28 | 402 | 0.2+ | 1.1+ | 2002 11 08 | 704 | 0.7+ | 0.7− | 2006 10 23 | H45 | 0.3− | 0.5− | | |
| 1998 11 28 | 118 | 0.2− | 0.5+ | 2002 11 08 | 704 | 0.5+ | 0.8− | 2006 10 27 | 704 | 0.3− | 0.1+ | | |
| 1998 11 28 | 118 | 0.1− | 0.5+ | 2002 11 11 | 151 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.5− | 0.0 | | |
| 1998 11 28 | 118 | 0.1− | 0.6+ | 2002 11 11 | 151 | 0.4− | 0.1− | 2006 10 27 | 704 | (3.3− | 0.8+) | | |
| 1998 12 07 | 104 | 0.7+ | 0.6− | 2002 11 11 | 151 | 0.3− | 0.1+ | 2006 10 27 | 704 | 0.3− | 0.1+ | | |
| 1998 12 07 | 104 | 0.2+ | 0.4− | 2002 11 11 | 151 | 0.6− | 0.2+ | 2006 10 27 | 704 | 0.0 | 0.1+ | | |
| 1998 12 07 | 104 | 0.7+ | 0.6− | 2002 11 12 | 704 | (0.5+ | 2.0−) | 2006 10 28 | H45 | 0.2− | 0.5− | | |
| 1998 12 07 | 104 | 0.4+ | 0.4− | 2002 11 12 | 704 | (0.3+ | 2.7−) | 2006 10 28 | H45 | 0.1+ | 0.4− | | |
| 1998 12 09 | 540 | 1.4+ | 0.1+ | 2002 11 12 | 704 | (0.6+ | 1.8−) | 2006 10 28 | H45 | 0.1+ | 0.3− | | |
| 1998 12 09 | 540 | 0.1+ | 0.3+ | 2002 11 12 | 704 | (0.6+ | 1.8−) | 2006 10 28 | H45 | 0.0 | 0.5− | | |
| 1998 12 09 | 540 | 0.2+ | 0.4+ | 2002 11 12 | 704 | (2.3+ | 1.4−) | 2006 10 28 | H45 | 0.2− | 0.4− | | |
| 1998 12 09 | 540 | 0.4− | 0.1+ | 2002 11 14 | 704 | 0.1− | 1.2+ | 2006 10 29 | H45 | 0.1+ | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 670 | 0.7+ | 0.1+ | 2002 11 14 | 704 | 0.1− | 1.4+ | 2006 10 29 | H45 | 0.3+ | 0.1− |
| 1998 12 11 | 670 | 1.2+ | 1.3+ | 2002 11 14 | 704 | 0.2− | 1.1+ | 2006 10 29 | H45 | 0.1+ | 0.1− |
| 1998 12 12 | 402 | 0.0 | 0.1+ | 2002 11 14 | 704 | (0.1− | 1.9+) | 2006 10 29 | H45 | 0.2+ | 0.2− |
| 1998 12 12 | 402 | 0.1+ | 0.0 | 2002 11 14 | 704 | 0.2− | 1.2+ | 2006 10 29 | H45 | 0.0 | 0.2− |
| 1998 12 12 | 402 | 0.1− | 0.1+ | 2002 11 16 | 941 | 0.8+ | 0.0 | 2006 10 29 | 379 | 0.4+ | 0.1− |
| 1998 12 20 | 360 | 0.2+ | 0.5− | 2002 11 16 | 941 | 0.1+ | 0.2− | 2006 10 29 | 379 | 0.6+ | 0.1− |
| 1998 12 20 | 360 | 0.0 | 0.7− | 2002 11 16 | 941 | 1.1+ | 0.4+ | 2006 10 29 | 379 | 0.0 | 0.4− |
| 1998 12 20 | 360 | 0.0 | 0.6− | 2002 11 17 | 240 | 0.0 | 0.3+ | 2006 10 30 | 203 | 0.3− | 0.5− |
| 1998 12 20 | 071 | 0.1+ | 0.1− | 2002 11 17 | 240 | 0.2+ | 0.2+ | 2006 10 30 | 203 | 0.1+ | 0.5− |
| 1998 12 20 | 071 | 0.4+ | 0.3− | 2002 11 17 | 240 | 0.0 | 0.1− | 2006 11 09 | H45 | 0.1− | 0.0 |
| 1998 12 20 | 071 | 0.0 | 0.2− | 2002 11 21 | 670 | 0.1− | 0.3+ | 2006 11 09 | H45 | 0.2− | 0.2− |
| 1998 12 24 | 402 | 0.5+ | 0.0 | 2002 11 21 | 670 | 0.9− | 1.0− | 2006 11 09 | H45 | 0.1− | 0.1− |
| 1998 12 24 | 402 | 0.3+ | 0.0 | 2002 11 22 | 941 | 0.9− | 0.8− | 2006 11 09 | H45 | 0.1− | 0.1− |
| 1998 12 24 | 402 | 0.4+ | 0.0 | 2002 11 22 | 941 | 0.6− | 0.5− | 2006 11 09 | H45 | 0.0 | 0.2− |
| 1998 12 25 | 046 | 0.2+ | 0.3+ | 2002 11 22 | 941 | 0.3− | 0.2− | 2006 11 09 | H45 | 0.1− | 0.1− |
| 1998 12 25 | 046 | 0.5+ | 0.8+ | 2002 11 22 | 941 | 0.5+ | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 1998 12 26 | 360 | 0.1+ | 0.0 | 2002 11 22 | 941 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.2− | 0.0 |
| 1998 12 26 | 360 | 0.5+ | 0.1− | 2002 11 22 | 941 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1− | 0.0 |
| 1998 12 26 | 360 | 0.2+ | 0.1− | 2002 11 25 | 644 | 0.5+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 1999 01 06 | 046 | 0.3+ | 0.2− | 2002 11 25 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.3− |
| 1999 01 06 | 046 | 0.1+ | 0.3− | 2002 11 25 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3− |
| 1999 01 06 | 046 | 0.3+ | 0.3− | 2002 11 26 | 170 | (0.4+ | 1.8−) | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 1999 01 06 | 540 | 0.0 | 0.1− | 2002 11 26 | 170 | 0.5+ | 0.7− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 1999 01 06 | 540 | 0.1− | 0.2− | 2002 11 26 | 170 | 0.0 | 1.2− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 1999 01 06 | 540 | 0.4− | 0.1+ | 2002 11 26 | 170 | 0.7+ | 0.8− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 1999 01 22 | 402 | 0.3+ | 0.3− | 2002 11 28 | 355 | 0.5+ | 0.1− | 2006 11 16 | 726 | 0.4− | 0.4− |
| 1999 01 22 | 402 | 0.5+ | 0.4− | 2002 11 28 | 355 | 0.5+ | 0.4− | 2006 11 16 | 726 | 1.5+ | 0.2− |
| 1999 01 22 | 402 | 0.7+ | 0.2− | 2002 11 28 | 355 | 0.0 | 0.5− | 2006 11 16 | 726 | 0.2− | 0.5− |
| 1999 01 25 | 711 | 0.2+ | 0.6+ | 2002 11 28 | 355 | 0.2+ | 0.8− | 2006 11 16 | 726 | 0.1− | 0.2+ |
| 1999 01 25 | 711 | 0.1− | 0.4+ | 2002 12 05 | 699 | 0.3− | 0.2+ | 2006 11 16 | 726 | 0.5+ | 0.0 |
| 1999 02 08 | 704 | 0.3− | 0.3− | 2002 12 05 | 699 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 1999 02 08 | 704 | 1.1− | 0.4− | 2002 12 05 | 699 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 1999 02 08 | 704 | (0.5− | 2.5+) | 2002 12 05 | 699 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 1999 02 08 | 704 | 0.1− | 0.9+ | 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.3− |
| 1999 02 25 | 587 | 0.8− | 1.9− | 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 1999 02 25 | 587 | 0.2+ | 0.9− | 2002 12 06 | 704 | 1.1− | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 1999 03 26 | 046 | 0.1− | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 1999 03 26 | 046 | 0.6− | 0.1− | 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 1999 03 26 | 046 | 0.1− | 0.6+ | 2002 12 07 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 1999 04 05 | 587 | 0.2− | 0.1− | 2002 12 07 | 704 | 0.1+ | 0.3+ | 2006 11 18 | H45 | 0.1+ | 0.1+ |
| 1999 04 05 | 587 | 1.1− | 1.5+ | 2002 12 07 | 704 | 0.1+ | 0.5+ | 2006 11 18 | H45 | 0.1+ | 0.1− |
| 1999 04 05 | 587 | 0.2+ | 1.2+ | 2002 12 08 | 699 | 1.4+ | 0.5+ | 2006 11 18 | H45 | 0.1+ | 0.1− |
| 1999 04 06 | 118 | 0.3+ | 0.3− | 2002 12 08 | 699 | 1.2+ | 1.1+ | 2006 11 18 | H45 | 0.0 | 0.0 |
| 1999 04 06 | 118 | 0.2− | 0.4+ | 2002 12 08 | 699 | 1.2+ | 0.5+ | 2006 11 18 | H45 | 0.0 | 0.1− |
| 1999 04 14 | 360 | 0.7− | 0.7+ | 2002 12 08 | 699 | 0.5+ | 0.5+ | 2006 11 19 | 726 | 0.2+ | 0.2+ |
| 1999 04 14 | 360 | 0.9− | 1.2+ | 2002 12 09 | 699 | 0.1− | 0.5+ | 2006 11 19 | 726 | 0.0 | 0.1+ |
| 1999 04 14 | 360 | 0.5− | 1.0+ | 2002 12 09 | 699 | 0.6+ | 0.5+ | 2006 11 19 | 726 | 0.3+ | 1.1− |
| 1999 05 07 | 360 | 0.7− | 0.6− | 2002 12 09 | 699 | 0.4+ | 0.2+ | 2006 11 19 | 726 | (1.6+ | 0.9−) |
| 1999 05 07 | 360 | 0.6− | 0.6− | 2002 12 09 | 699 | 0.5+ | 0.6+ | 2006 11 19 | 726 | 1.1+ | 1.2− |
| 1999 05 07 | 360 | 0.1+ | 0.5− | 2002 12 12 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.1− |
| 1999 05 09 | 046 | 0.2− | 0.1− | 2002 12 12 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 1999 05 09 | 046 | 0.3− | 1.3+ | 2002 12 12 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.2− |
| 1999 05 09 | 046 | 0.9+ | 0.9+ | 2002 12 14 | 704 | 0.6+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 1999 05 09 | 046 | 0.8+ | 1.1+ | 2002 12 14 | 704 | 0.8+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.2− |
| 1999 06 29 | 413 | 0.1+ | 0.1− | 2002 12 14 | 704 | 0.2− | 0.5+ | 2006 11 20 | 726 | 0.0 | 0.1− |
| 1999 06 29 | 413 | 0.1+ | 0.1− | 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 11 20 | 726 | 0.2+ | 0.5− |
| 1999 07 02 | 413 | 0.1− | 0.1+ | 2002 12 26 | H86 | 0.3+ | 0.5+ | 2006 11 20 | 726 | 0.3+ | 0.5− |
| 1999 07 02 | 413 | 0.1− | 0.2+ | 2002 12 26 | H86 | 0.3+ | 0.5+ | 2006 11 20 | 726 | 0.2− | 1.1+ |
| 1999 08 03 | 413 | 0.1+ | 0.2− | 2002 12 29 | 704 | 0.3+ | 0.1+ | 2006 11 20 | 726 | 1.1+ | 0.8+ |
| 1999 08 03 | 413 | 0.2+ | 0.2− | 2002 12 29 | 704 | 0.0 | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 1999 08 04 | 413 | 0.2− | 0.3− | 2002 12 29 | 704 | 0.7+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 1999 08 04 | 413 | 0.1− | 0.1− | 2002 12 29 | 704 | 0.8+ | 0.8+ | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 1999 08 08 | 844 | 0.7+ | 1.9+ | 2002 12 29 | 704 | 0.2− | 0.5+ | 2006 11 21 | 704 | (0.9+ | 2.1+) |
| 1999 08 08 | 844 | 0.6− | 0.4− | 2003 01 14 | 711 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.3− |
| 1999 08 08 | 844 | 0.6− | 0.4− | 2003 01 14 | 711 | 0.0 | 0.1+ | 2006 11 21 | 704 | (0.0 | 1.8−) |
| 1999 09 01 | 413 | 0.2+ | 0.1− | 2003 01 14 | 711 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.5− |
| 1999 09 01 | 413 | 0.0 | 0.0 | 2003 02 12 | 113 | (0.2+ | 1.5−) | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1999 09 20 | 413 | 0.3+ | 0.1+ | 2003 02 12 | 113 | (0.0 | 1.7−) | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1999 09 20 | 413 | 0.1+ | 0.2+ | 2003 02 12 | 113 | 0.2− | 1.4− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 1999 09 20 | 413 | 0.1− | 0.2+ | 2003 02 12 | 113 | 0.5− | 1.3− | 2006 11 25 | H98 | 1.0+ | 0.3− |
| 1999 09 28 | 413 | 0.1− | 0.1+ | 2003 02 12 | 113 | 0.0 | 0.5− | 2006 11 25 | H98 | 0.0 | 0.3− |
| 1999 09 28 | 413 | 0.1+ | 0.1+ | 2003 05 02 | 926 | 0.6+ | 0.5+ | 2006 11 25 | H98 | 0.1− | 0.7− |
| 1999 10 16 | 413 | 0.1+ | 0.1+ | 2003 05 02 | 926 | (0.8+ | 1.6+) | 2006 11 26 | 704 | 0.0 | 0.1+ |
| 1999 10 16 | 413 | 0.0 | 0.2+ | 2003 09 30 | E14 | 0.3− | 1.2+ | 2006 11 26 | 704 | 0.2− | 0.0 |
| 2002 09 20 | 711 | 0.1− | 0.1+ | 2003 09 30 | E14 | 0.9− | 0.3− | 2006 11 26 | 704 | 0.3− | 0.2+ |
| 2002 09 20 | 711 | 0.2− | 0.3+ | 2005 11 09 | 704 | 0.9+ | 0.2+ | 2006 11 26 | 113 | 0.4− | 0.0 |
| 2002 09 20 | 711 | 0.0 | 0.1+ | 2005 11 09 | 704 | 0.4+ | 1.5+ | 2006 11 26 | 113 | 0.6+ | 0.3− |
| 2002 09 25 | 608 | (0.1− | 2.4+) | 2005 11 09 | 704 | 0.2+ | 0.8+ | 2006 11 26 | 113 | 0.5− | 0.2− |
| 2002 09 25 | 608 | (0.2− | 2.3+) | 2005 11 09 | 704 | 0.0 | 0.8+ | 2006 11 26 | 113 | 0.2− | 0.2− |
| 2002 09 25 | 608 | (0.3+ | 2.6+) | 2005 11 28 | 704 | 0.2− | 0.0 | 2006 11 26 | 113 | 0.5− | 0.4− |
| 2002 10 02 | 704 | 0.1− | 1.0− | 2005 11 28 | 704 | 0.1+ | 1.4+ | 2006 11 26 | 113 | 0.2− | 0.4− |
| 2002 10 02 | 704 | 0.7+ | 0.7− | 2005 11 28 | 704 | 0.1+ | 0.3− | 2006 11 27 | 113 | 0.5+ | 0.0 |
| 2002 10 02 | 704 | 0.5− | 0.7− | 2005 12 10 | 704 | (0.2+ | 1.7+) | 2006 11 27 | 113 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.5+ | 1.0− | 2005 12 10 | 704 | (0.2+ | 1.5+) | 2006 11 27 | 113 | 0.4+ | 0.1− |
| 2002 10 09 | 704 | 0.1− | 0.5+ | 2005 12 10 | 704 | 0.4+ | 1.2+ | 2006 11 27 | 113 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.6− | 0.7+ | 2005 12 10 | 704 | 0.1+ | 0.7+ | 2006 11 27 | 113 | 0.0 | 0.8− |
| 2002 10 09 | 704 | 0.1+ | 0.0 | 2005 12 10 | 704 | 0.2+ | 1.4+ | 2006 11 28 | 683 | 0.8− | 0.5− |
| 2002 10 09 | 704 | 0.3+ | 0.6− | 2006 09 05 | 673 | 0.0 | 0.4+ | 2006 11 28 | 683 | 0.6− | 0.9+ |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2006 09 05 | 673 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.6+ |
| 2002 10 11 | 704 | 0.4− | 0.2− | 2006 09 05 | 673 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.4− |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.7+ | 2006 11 28 | 704 | 0.9− | 0.0 |
| 2002 10 11 | 704 | 0.7+ | 0.4+ | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2002 10 11 | 704 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.0 |

**(137063)∗ 1998 WK$_1$ = 1974 TU$_1$ = 2000 BO$_{27}$**

Discovered 1998 Nov. 16 by S. Donati at Monte Agliale.

Id. M. E. Sansaturio (MPC 38531), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.89209 | | (2000.0) | | | |
| $n$ | 0.24633069 | $\omega$ | 350.73276 | | +0.83969566 | +0.53270130 |
| $a$ | 2.5203278 | $\Omega$ | 336.13792 | | −0.48003822 | +0.63722130 |
| $e$ | 0.1424747 | $i$ | 15.12422 | | −0.25391831 | +0.55693657 |
| $P$ | 4.00 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1974 10 11 | 033 | (4.6− | 0.7−) | 2000 03 05 | 704 | 0.3− | 0.4+ | 2004 02 11 | 644 | 0.0 | 0.2− |
| 1974 10 11 | 033 | 0.3− | 1.3− | 2000 03 05 | 704 | 0.0 | 0.7+ | 2004 02 11 | 699 | 0.4+ | 0.0 |
| 1998 09 26 | 699 | 0.3+ | 0.6+ | 2000 03 05 | 704 | 1.1− | 1.3+ | 2004 02 11 | 333 | 0.8− | 0.4− |
| 1998 09 26 | 699 | 0.6+ | 0.5+ | 2002 08 10 | 704 | 0.0 | 0.0 | 2004 02 11 | 644 | 0.2− | 0.0 |
| 1998 09 26 | 699 | (2.5+ | 2.0+) | 2002 08 10 | 704 | 0.7+ | 1.2+ | 2004 02 11 | 333 | 1.0− | 0.2− |
| 1998 11 14 | 704 | 0.3− | 1.0+ | 2002 08 10 | 704 | 0.3+ | 1.0+ | 2004 02 11 | 333 | 0.9− | 0.1+ |
| 1998 11 14 | 704 | 0.6− | 0.3+ | 2002 08 10 | 704 | 0.1− | 0.8+ | 2004 02 16 | 691 | 0.2+ | 0.0 |
| 1998 11 14 | 704 | 0.5+ | 1.0+ | 2002 08 15 | 699 | 0.3+ | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.1− |
| 1998 11 14 | 704 | (1.0+ | 2.2+) | 2002 08 15 | 699 | 0.2+ | 0.9+ | 2004 02 16 | 691 | 0.1+ | 0.1− |
| 1998 11 14 | 704 | 0.8+ | 0.5+ | 2002 08 15 | 699 | 0.8− | 0.2+ | 2004 02 16 | 704 | 1.2+ | 0.0 |
| 1998 11 16 | 159 | 0.7+ | 0.2+ | 2002 08 15 | 699 | 0.9+ | 0.9+ | 2004 02 16 | 704 | 1.4+ | 0.2+ |
| 1998 11 16 | 159 | 0.9+ | 0.2+ | 2002 09 14 | 159 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.2+ | 0.0 |
| 1998 11 16 | 159 | 0.3+ | 0.9+ | 2002 09 14 | 159 | 0.4+ | 0.1− | 2004 02 16 | 704 | 1.2+ | 0.2− |
| 1998 11 18 | 159 | 1.3+ | 0.3− | 2002 09 14 | 159 | 0.3+ | 0.9+ | 2004 02 16 | 704 | 0.5+ | 0.2+ |
| 1998 11 18 | 159 | 1.8− | 0.9+ | 2002 09 14 | 159 | 0.3− | 0.6+ | 2004 02 19 | 608 | 1.1+ | 0.8+ |
| 1998 11 18 | 159 | 0.8+ | 0.2+ | 2002 09 14 | 159 | 0.7+ | 0.3+ | 2004 02 19 | 608 | (1.6+ | 0.5+) |
| 1998 11 18 | 159 | 0.4− | 0.2− | 2002 09 14 | 159 | 0.2− | 0.9− | 2004 02 19 | 608 | 1.2+ | 0.4+ |
| 1998 11 18 | 159 | 0.7− | 1.1+ | 2002 10 01 | 704 | 0.8− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.5+ |
| 1998 11 19 | 159 | 0.6+ | 0.6+ | 2002 10 01 | 704 | 1.0− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.9+ |
| 1998 11 19 | 159 | 1.2+ | 0.7− | 2002 10 01 | 704 | 1.2− | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.2+ |
| 1998 11 19 | 159 | 0.4+ | 0.8+ | 2002 10 01 | 704 | 1.1− | 0.2+ | 2004 02 26 | 704 | 0.2+ | 0.9+ |
| 1998 11 19 | 159 | 0.2− | 0.3− | 2002 10 03 | 159 | 0.3− | 0.0 | 2004 02 26 | 704 | 1.2− | 0.4+ |
| 1998 11 19 | 159 | 0.3+ | 0.1− | 2002 10 03 | 159 | 0.7− | 0.1+ | 2004 03 14 | 704 | 0.1+ | 0.2− |
| 1998 11 19 | 159 | 1.3+ | 0.3+ | 2002 10 03 | 159 | 0.9− | 0.3− | 2004 03 14 | 704 | 0.6+ | 0.9+ |
| 1998 11 19 | 159 | 1.7+ | 1.4− | 2002 10 03 | 159 | 0.3− | 0.7+ | 2004 03 14 | 704 | (1.6+ | 0.6−) |
| 1998 11 19 | 159 | 0.7+ | 0.2+ | 2002 10 03 | 159 | 0.9− | 0.1+ | 2004 03 14 | 704 | 0.7+ | 0.7+ |
| 1998 11 19 | 159 | 1.2+ | 0.5− | 2002 10 06 | 704 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.3− | 0.3− |
| 1998 11 23 | 159 | (4.6− | 1.0+) | 2002 10 06 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.8− | 0.0 |
| 1998 11 23 | 159 | (3.0− | 0.8+) | 2002 10 06 | 704 | 0.3− | 0.2− | 2004 03 19 | 704 | 0.0 | 1.4− |
| 1998 11 28 | 159 | 0.6+ | 0.3− | 2002 10 06 | 704 | 0.5− | 0.4− | 2004 03 19 | 704 | 0.4− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 28 | 159 | 0.3+ | 0.8− | 2002 10 06 | 704 | 0.6− | 0.0 | 2005 07 29 | E12 | (1.2+ | 1.6+) | | |
| 1998 11 28 | 159 | 1.0+ | 1.5− | 2002 10 15 | 704 | 0.1+ | 0.2+ | 2005 07 29 | E12 | 0.4+ | 1.3+ | | |
| 1998 11 28 | 159 | 0.6+ | 0.4− | 2002 10 15 | 704 | 0.2+ | 0.0 | 2005 07 29 | E12 | 0.1+ | 0.1− | | |
| 1998 11 28 | 159 | 0.0 | 0.1− | 2002 10 15 | 704 | 0.1− | 0.1− | 2005 07 29 | E12 | 0.1− | 0.6+ | | |
| 1998 11 28 | 159 | 0.2− | 0.2+ | 2002 10 15 | 704 | 0.2+ | 0.2+ | 2006 09 01 | 159 | 0.1+ | 0.3− | | |
| 1998 12 05 | 159 | 1.6− | 0.2+ | 2002 10 15 | 704 | 0.2+ | 0.3+ | 2006 09 01 | 159 | 0.7+ | 1.0− | | |
| 1998 12 05 | 159 | 0.2− | 0.3− | 2002 10 20 | 644 | 0.4− | 0.2+ | 2006 09 01 | 159 | 0.1− | 0.0 | | |
| 1998 12 05 | 159 | 0.4+ | 0.2− | 2002 10 20 | 644 | 0.4− | 0.0 | 2006 09 01 | 159 | 0.5− | 0.5− | | |
| 1998 12 05 | 159 | 0.1+ | 0.3− | 2002 10 20 | 644 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.3+ | | |
| 1998 12 05 | 159 | 0.3− | 0.5− | 2002 10 31 | 704 | 0.9− | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.3− | | |
| 1998 12 08 | 159 | 0.6− | 0.5− | 2002 10 31 | 704 | 1.1− | 0.4+ | 2006 09 19 | 704 | 0.2− | 0.4+ | | |
| 1998 12 08 | 159 | 0.1+ | 0.4− | 2002 10 31 | 704 | 0.9− | 0.9+ | 2006 09 19 | 703 | 0.2− | 0.6− | | |
| 1998 12 08 | 159 | 0.2+ | 0.6− | 2002 10 31 | 704 | 1.0− | 0.6+ | 2006 09 19 | 704 | 0.6− | 0.3+ | | |
| 1998 12 08 | 159 | 0.4− | 0.7+ | 2002 10 31 | 704 | 0.9− | 0.5+ | 2006 09 19 | 704 | (0.5+ | 1.8+) | | |
| 1998 12 08 | 159 | 0.4+ | 0.1+ | 2002 11 12 | 699 | 0.2− | 0.1− | 2006 09 25 | 703 | 0.6− | 0.2+ | | |
| 1998 12 08 | 159 | 0.2− | 0.4+ | 2002 11 12 | 699 | 0.4+ | 0.1− | 2006 09 25 | 703 | 0.5− | 0.5+ | | |
| 1998 12 17 | 159 | 0.1− | 1.0− | 2002 11 12 | 699 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.5− | 0.1+ | | |
| 1998 12 17 | 159 | 0.7− | 0.3− | 2002 11 12 | 699 | 0.2− | 0.0 | 2006 09 25 | 703 | 1.3− | 0.2+ | | |
| 1998 12 17 | 159 | 0.6+ | 1.5− | 2002 11 15 | 704 | 0.2+ | 0.6+ | 2006 10 02 | 704 | 0.6+ | 0.3+ | | |
| 1998 12 17 | 159 | 0.4− | 0.9+ | 2002 11 15 | 704 | 0.7+ | 1.0+ | 2006 10 02 | 704 | 1.1+ | 0.1+ | | |
| 1998 12 17 | 159 | 0.4+ | 0.3+ | 2002 11 15 | 704 | 0.8+ | 0.6+ | 2006 10 02 | 704 | 0.8+ | 0.2− | | |
| 1998 12 17 | 159 | (2.5− | 0.2−) | 2002 11 15 | 704 | (0.3+ | 1.6+) | 2006 10 02 | 704 | 1.3+ | 0.7+ | | |
| 1998 12 24 | 159 | 0.3− | 0.8− | 2002 11 15 | 704 | (0.1+ | 1.7+) | 2006 10 03 | 703 | 0.1− | 0.1+ | | |
| 1998 12 24 | 159 | (2.9+ | 1.8+) | 2002 12 08 | 233 | 0.3− | 0.5+ | 2006 10 03 | 703 | 0.0 | 0.2− | | |
| 1998 12 26 | 159 | 1.2− | 0.5− | 2002 12 08 | 233 | 0.3− | 0.8+ | 2006 10 03 | 703 | 0.3− | 0.1− | | |
| 1998 12 26 | 159 | (3.0− | 0.8−) | 2002 12 08 | 233 | 0.1+ | 0.2+ | 2006 10 03 | 703 | 0.3− | 0.4− | | |
| 1999 01 05 | 159 | 0.2− | 0.4− | 2002 12 10 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 704 | 0.6− | 0.2+ | | |
| 1999 01 05 | 159 | 1.6+ | 0.1− | 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 10 17 | 704 | 0.0 | 0.5− | | |
| 1999 01 15 | 159 | (3.3− | 0.3+) | 2002 12 10 | 704 | 0.9+ | 0.2+ | 2006 10 17 | 704 | 0.1− | 0.7− | | |
| 1999 01 15 | 159 | 0.1+ | 1.8− | 2002 12 10 | 704 | 0.5+ | 0.5+ | 2006 10 23 | 703 | 0.5− | 0.6− | | |
| 1999 01 15 | 159 | 0.4− | 1.6− | 2002 12 10 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 703 | 0.1+ | 0.3− | | |
| 1999 01 15 | 159 | 0.0 | 0.9− | 2002 12 11 | 699 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.2+ | 0.2− | | |
| 2000 01 08 | 704 | 0.5+ | 0.1− | 2002 12 11 | 699 | 0.1− | 0.4− | 2006 10 23 | 703 | 0.0 | 0.3− | | |
| 2000 01 08 | 704 | 0.4+ | 0.3+ | 2002 12 11 | 699 | 0.3− | 0.1− | 2006 10 30 | 106 | 0.1+ | 0.3+ | | |
| 2000 01 08 | 704 | 0.2− | 1.1− | 2002 12 11 | 699 | 0.5+ | 0.3− | 2006 10 30 | 106 | 0.2− | 0.3− | | |
| 2000 01 10 | 159 | (2.2− | 1.1−) | 2004 01 18 | 644 | 0.0 | 0.3+ | 2006 10 30 | 106 | 0.3+ | 0.1− | | |
| 2000 01 10 | 159 | 1.3− | 0.4− | 2004 01 18 | 644 | 0.0 | 0.3+ | 2006 10 30 | 106 | 0.3− | 0.0 | | |
| 2000 01 10 | 159 | 0.2− | 0.4+ | 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 0.2+ | 0.5− | | |
| 2000 01 10 | 159 | 1.5− | 0.7− | 2004 01 21 | 159 | (1.4− | 3.0−) | 2006 10 31 | 703 | 0.4− | 0.5− | | |
| 2000 01 10 | 159 | (2.1− | 0.7−) | 2004 01 21 | 159 | (1.9− | 0.6−) | 2006 10 31 | 703 | 0.8− | 0.0 | | |
| 2000 01 11 | 159 | 0.6− | 0.5− | 2004 01 21 | 159 | 1.2− | 0.8− | 2006 10 31 | 703 | 0.9− | 0.2+ | | |
| 2000 01 30 | 704 | 0.4− | 0.8+ | 2004 01 21 | 159 | 0.7− | 0.9− | 2006 11 14 | 704 | 0.4+ | 0.1+ | | |
| 2000 01 30 | 704 | 0.9+ | 0.5+ | 2004 01 30 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.7+ | 0.2+ | | |
| 2000 01 30 | 704 | 0.6+ | 1.3+ | 2004 01 30 | 704 | 0.6+ | 0.2− | 2006 11 14 | 704 | 0.9+ | 0.1+ | | |
| 2000 02 03 | 704 | 0.1+ | 0.5+ | 2004 01 30 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 0.6+ | 0.1+ | | |
| 2000 02 03 | 704 | 0.3− | 0.4− | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 1.4+ | 0.8+ | | |
| 2000 02 03 | 704 | 0.1− | 0.7+ | 2004 01 30 | 704 | 0.8+ | 0.2− | 2006 11 16 | 703 | 0.1− | 0.5− | | |
| 2000 02 03 | 704 | 0.3− | 0.0 | 2004 02 10 | 644 | 0.2+ | 0.5− | 2006 11 16 | 703 | 0.1− | 0.3− | | |
| 2000 02 03 | 704 | 0.6− | 0.9− | 2004 02 10 | 644 | 0.3− | 0.2− | 2006 11 16 | 703 | 0.6− | 0.4− | | |
| 2000 02 28 | 704 | 0.0 | 0.5+ | 2004 02 10 | 644 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.5− | 0.2− | | |
| 2000 02 28 | 704 | 0.4− | 0.4− | 2004 02 11 | 644 | 0.0 | 0.3− | 2006 11 22 | 703 | 0.3+ | 0.1− | | |
| 2000 02 28 | 704 | 1.4+ | 0.3+ | 2004 02 11 | 699 | 1.1+ | 0.3+ | 2006 11 22 | 703 | 0.4+ | 0.5− | | |
| 2000 02 28 | 704 | 0.2− | 0.9− | 2004 02 11 | 699 | 1.2− | 1.2+ | 2006 11 22 | 703 | 0.0 | 0.8− | | |
| 2000 02 28 | 704 | 0.5+ | 0.3− | 2004 02 11 | 699 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.1− | | |

**(137064)∗ 1998 WP$_5$**

Discovered 1998 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.58416 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.61187582 | $\omega$ | 97.49331 | | −0.65715206 | −0.72751330 |
| $a$ | 1.3741280 | $\Omega$ | 36.19616 | | +0.48963018 | −0.61089032 |
| $e$ | 0.1951266 | $i$ | 19.50398 | | +0.57307369 | −0.31230980 |
| $P$ | 1.61 | $H$ | 18.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 704 | 1.1− | 1.5− | 1998 12 24 | 402 | 0.6+ | 0.8− | 2006 10 25 | 113 | 0.3+ | 0.1− |
| 1998 11 19 | 704 | 0.3+ | 0.4+ | 1999 01 05 | 402 | 0.1− | 0.3− | 2006 10 26 | A41 | 0.5− | 0.2− |
| 1998 11 19 | 704 | (0.9+ | 2.5−) | 1999 01 05 | 402 | 0.1+ | 0.2+ | 2006 10 27 | A41 | 0.0 | 0.3+ |
| 1998 11 19 | 704 | 1.2− | 1.7− | 1999 01 05 | 402 | 0.2− | 0.5+ | 2006 10 27 | A41 | 0.0 | 0.3+ |
| 1998 11 19 | 704 | 0.7− | 0.0 | 1999 04 14 | 360 | 0.6+ | 0.5+ | 2006 10 27 | 704 | 1.5− | 0.5+ |
| 1998 11 20 | 557 | 0.1− | 0.1+ | 1999 04 14 | 360 | 0.7+ | 0.3+ | 2006 10 27 | 704 | 0.0 | 0.5+ |
| 1998 11 20 | 557 | 0.3+ | 0.1+ | 1999 04 14 | 360 | 0.8+ | 0.7+ | 2006 10 27 | 704 | 0.2− | 1.0+ |
| 1998 11 20 | 557 | 0.0 | 0.4+ | 1999 04 29 | 658 | 0.6+ | 0.5− | 2006 10 27 | 704 | 0.0 | 0.5+ |
| 1998 11 20 | 557 | 0.4+ | 0.4+ | 1999 04 29 | 658 | 0.3+ | 0.4+ | 2006 10 27 | 704 | 0.6− | 0.3+ |
| 1998 11 21 | 611 | 0.4+ | 0.2+ | 1999 04 29 | 658 | 0.3+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.1− |
| 1998 11 21 | 611 | 0.9− | 0.4+ | 2001 07 23 | 474 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 1998 11 21 | 611 | 0.1− | 1.4− | 2001 07 23 | 474 | 1.3+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2− |
| 1998 11 21 | 587 | 0.4− | 0.7+ | 2001 07 23 | 474 | 0.6+ | 0.7− | 2006 10 28 | 704 | 0.3− | 0.2+ |
| 1998 11 21 | 587 | 0.5+ | 0.2− | 2001 07 24 | 474 | 0.2+ | 0.5− | 2006 10 28 | 704 | 0.7+ | 0.8+ |
| 1998 11 22 | 360 | 0.1+ | 0.3+ | 2001 07 24 | 474 | 0.0 | 0.6− | 2006 10 28 | 704 | 0.2− | 0.5+ |
| 1998 11 22 | 360 | 0.3+ | 0.2+ | 2001 07 24 | 474 | 0.1− | 0.5− | 2006 10 28 | 704 | 0.1− | 0.4+ |
| 1998 11 22 | 360 | 0.4+ | 0.0 | 2001 07 24 | 474 | 0.3+ | 0.5− | 2006 10 28 | 704 | 0.1+ | 0.5+ |
| 1998 11 23 | 704 | 1.2− | 0.3− | 2004 04 25 | 474 | 0.3− | 0.0 | 2006 11 03 | 130 | 0.4− | 0.3− |
| 1998 11 23 | 704 | 0.5+ | 1.7− | 2004 04 25 | 474 | 0.1− | 0.6+ | 2006 11 03 | 130 | 0.3+ | 0.2+ |
| 1998 11 23 | 704 | 0.8+ | 0.1− | 2004 04 25 | 474 | 0.7+ | 0.2− | 2006 11 03 | 130 | 0.2− | 0.5− |
| 1998 11 23 | 704 | 1.3− | 0.7+ | 2004 04 25 | 474 | 1.2− | 1.1+ | 2006 11 03 | 130 | 0.8+ | 0.2− |
| 1998 11 23 | 704 | 0.9− | 0.6− | 2004 06 12 | 474 | 0.0 | 0.2+ | 2006 11 08 | 113 | 0.3− | 0.3− |
| 1998 11 23 | 704 | 0.4− | 0.5+ | 2004 06 12 | 474 | 0.0 | 0.0 | 2006 11 08 | 113 | 0.2+ | 0.1+ |
| 1998 11 23 | 704 | 0.6+ | 0.0 | 2004 06 12 | 474 | 0.1+ | 0.2− | 2006 11 08 | 113 | 0.1+ | 0.1− |
| 1998 11 23 | 704 | (2.9− | 2.3+) | 2004 06 12 | 474 | 0.1− | 0.1− | 2006 11 08 | 113 | 0.4+ | 0.2− |
| 1998 11 23 | 704 | 0.8− | 0.1− | 2006 09 16 | 448 | 0.3− | 0.1− | 2006 11 08 | 113 | 0.4+ | 0.3− |
| 1998 11 23 | 704 | 0.2− | 0.7+ | 2006 09 16 | 448 | 0.4+ | 0.8− | 2006 11 09 | H45 | 0.2+ | 0.2− |
| 1998 11 23 | 704 | 0.8− | 0.2+ | 2006 09 16 | 448 | 1.0+ | 0.6− | 2006 11 09 | H45 | 0.1− | 0.1+ |
| 1998 11 23 | 704 | 0.7− | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.8+ | 2006 11 09 | H45 | 0.1− | 0.6+ |
| 1998 11 23 | 704 | 0.4− | 1.5− | 2006 09 26 | 703 | 0.2+ | 0.0 | 2006 11 09 | H45 | 0.1+ | 0.0 |
| 1998 11 23 | 704 | 1.2+ | 0.8+ | 2006 09 26 | 703 | 0.8+ | 0.4− | 2006 11 09 | H45 | 0.1− | 0.3− |
| 1998 11 23 | 704 | 0.8− | 0.4− | 2006 09 26 | 703 | 0.6+ | 0.7+ | 2006 11 14 | 703 | 0.1− | 0.6+ |
| 1998 11 23 | 704 | 1.1− | 1.6− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.2+ |
| 1998 11 23 | 704 | 0.5− | 1.1+ | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 1998 11 23 | 557 | 0.6+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.7− |
| 1998 11 23 | 557 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 15 | 113 | 0.4− | 0.5+ |
| 1998 11 23 | 557 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.9+ | 2006 11 15 | 113 | 0.1− | 0.0 |
| 1998 11 23 | 118 | 1.0+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.8− | 0.3− |
| 1998 11 23 | 118 | 1.8+ | 0.6− | 2006 10 16 | 703 | 0.8− | 0.1− | 2006 11 17 | 704 | 0.4− | 0.6− |
| 1998 11 23 | 118 | 0.8+ | 0.5− | 2006 10 21 | H45 | 0.1+ | 0.1− | 2006 11 17 | 704 | (0.3+ | 3.6+) |
| 1998 11 24 | 046 | 1.0+ | 0.1+ | 2006 10 21 | H45 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.9+ | 1.0+ |
| 1998 11 24 | 046 | 1.3+ | 0.0 | 2006 10 21 | H45 | 0.0 | 0.1+ | 2006 11 17 | 170 | 0.4+ | 0.3− |
| 1998 11 24 | 046 | 1.1+ | 0.1+ | 2006 10 21 | H45 | 0.2+ | 0.2− | 2006 11 17 | 170 | 0.3+ | 0.4− |
| 1998 11 24 | 046 | 1.0+ | 0.0 | 2006 10 21 | H45 | 0.3+ | 0.2− | 2006 11 17 | 170 | 0.7+ | 0.3− |
| 1998 11 29 | 402 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 18 | 113 | 0.1+ | 0.3− |
| 1998 11 29 | 402 | 0.4− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 18 | 113 | 0.0 | 0.1− |
| 1998 11 29 | 402 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1− | 2006 11 18 | 113 | 0.0 | 0.1+ |
| 1998 12 12 | 402 | 1.2+ | 0.8− | 2006 10 22 | 704 | 0.9+ | 0.0 | 2006 11 18 | 113 | 0.2− | 0.2+ |
| 1998 12 12 | 402 | 1.3+ | 0.4− | 2006 10 22 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 113 | 0.4− | 0.2+ |
| 1998 12 12 | 402 | 1.2+ | 0.7− | 2006 10 22 | 704 | 0.1− | 0.5+ | 2006 11 22 | 703 | 0.7− | 0.3− |
| 1998 12 14 | 658 | 0.3− | 0.1+ | 2006 10 22 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.4− |
| 1998 12 14 | 658 | 0.4− | 0.2+ | 2006 10 22 | 704 | 0.5− | 0.0 | 2006 11 22 | 703 | 0.6− | 0.5− |
| 1998 12 14 | 658 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.1− | 2006 11 22 | 703 | 0.2− | 0.4− |
| 1998 12 23 | 118 | 0.0 | 0.6− | 2006 10 22 | 703 | 0.1− | 0.0 | 2006 11 24 | H68 | 0.1+ | 0.2− |
| 1998 12 23 | 118 | 0.2− | 0.5− | 2006 10 22 | 703 | 0.2− | 0.1− | 2006 11 24 | H68 | 0.2− | 0.8+ |
| 1998 12 23 | 118 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.0 | 2006 11 24 | H68 | 0.1− | 0.5+ |
| 1998 12 24 | 402 | 0.4+ | 0.6+ | 2006 10 25 | 113 | 0.2+ | 0.3+ | 2006 11 24 | H68 | 0.0 | 0.8+ |
| 1998 12 24 | 402 | 0.2− | 0.6− | 2006 10 25 | 113 | 0.2− | 0.1+ | 2006 11 24 | H68 | 0.3+ | 1.0+ |

**(137065)∗ 1998 WH$_6$ = 1978 VQ$_{11}$**

Discovered 1998 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 236)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.31905 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24555037 | $\omega$ | 131.44211 | | +0.96180546 | −0.19112536 | |
| $a$ | 2.5256644 | $\Omega$ | 240.44155 | | +0.13047892 | +0.94942867 | |
| $e$ | 0.1876125 | $i$ | 13.01949 | | +0.24063565 | +0.24911101 | |
| $P$ | 4.01 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 06 | 675 | (2.6− | 1.3−) | 2002 12 02 | 704 | (3.4+ | 1.1+) | 2006 10 22 | 644 | 0.4− | 0.2+ | | | | | |
| 1978 11 07 | 675 | 1.6+ | 1.5+ | 2002 12 02 | 704 | (4.0+ | 0.0 ) | 2006 10 22 | 644 | 0.7− | 1.0+ | | | | | |
| 1978 11 08 | 675 | (5.4− | 3.0−) | 2002 12 02 | 704 | (3.2+ | 0.2+) | 2006 10 23 | 691 | 0.1− | 0.4− | | | | | |
| 1998 11 20 | 699 | 0.9+ | 0.9+ | 2002 12 02 | 704 | (3.0+ | 0.4+) | 2006 10 23 | 691 | 0.2− | 0.4− | | | | | |
| 1998 11 20 | 699 | 1.1+ | 0.6− | 2002 12 02 | 608 | 0.8− | 1.3− | 2006 10 23 | 691 | 0.2− | 0.5− | | | | | |
| 1998 11 20 | 699 | 0.8+ | 0.9+ | 2002 12 02 | 608 | 0.5− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1− | | | | | |
| 1998 11 21 | 704 | 0.4+ | 0.2+ | 2002 12 02 | 608 | 0.9− | 0.9− | 2006 10 27 | 691 | 0.0 | 0.1− | | | | | |
| 1998 11 21 | 704 | 1.0+ | 1.3− | 2002 12 05 | 704 | (0.5− | 1.7+) | 2006 10 27 | 691 | 0.2− | 0.2− | | | | | |
| 1998 11 21 | 704 | 1.7+ | 1.3+ | 2002 12 05 | 704 | 0.4− | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.1+ | | | | | |
| 1998 11 21 | 704 | 1.6+ | 0.6− | 2002 12 05 | 704 | 0.0 | 0.9+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | | | | | |
| 1998 11 24 | 704 | 0.4+ | 0.6− | 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 11 09 | 691 | 0.2+ | 0.0 | | | | | |
| 1998 11 24 | 704 | 0.4+ | 0.1+ | 2002 12 05 | 704 | 0.6+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1− | | | | | |
| 1998 11 24 | 704 | 0.8− | 0.1− | 2002 12 10 | 704 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.0 | | | | | |
| 1998 11 24 | 704 | 0.1− | 1.3− | 2002 12 10 | 704 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | | | | |
| 1998 11 25 | 699 | 0.4+ | 0.4− | 2002 12 10 | 704 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2− | | | | | |
| 1998 11 25 | 699 | 0.0 | 1.1+ | 2002 12 10 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | | | | | |
| 1998 11 25 | 699 | 0.1− | 1.5+ | 2002 12 10 | 704 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.0 | | | | | |
| 1998 12 08 | 699 | 1.1− | 0.8− | 2002 12 10 | 704 | 0.1− | 0.6+ | 2006 11 10 | 644 | 0.4+ | 0.1− | | | | | |
| 1998 12 08 | 699 | 0.4+ | 0.4− | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.1− | | | | | |
| 1998 12 08 | 699 | 0.9− | 0.9− | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.1− | | | | | |
| 1998 12 10 | 691 | 0.3− | 0.1− | 2002 12 27 | 644 | 0.1+ | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.1− | | | | | |
| 1998 12 10 | 691 | 0.2− | 0.1− | 2002 12 27 | 644 | 0.0 | 0.6+ | 2006 11 13 | 691 | 0.4+ | 0.3− | | | | | |
| 1998 12 10 | 691 | 0.1+ | 0.0 | 2002 12 27 | 644 | 0.0 | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | | | | | |
| 1998 12 25 | 691 | 0.6− | 0.7− | 2002 12 31 | 704 | 0.2− | 0.5+ | 2006 11 17 | 704 | 1.4+ | 0.2− | | | | | |
| 1998 12 25 | 691 | 0.6− | 0.8− | 2002 12 31 | 704 | 0.1+ | 0.9+ | 2006 11 17 | 704 | 0.0 | 0.2+ | | | | | |
| 1998 12 25 | 691 | 0.9− | 1.0− | 2002 12 31 | 704 | 0.9+ | 1.2+ | 2006 11 17 | 704 | 0.3+ | 0.3− | | | | | |
| 2001 07 14 | 644 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.6+ | 0.7+ | 2006 11 17 | 704 | 0.7− | 0.3+ | | | | | |
| 2001 07 14 | 644 | 0.0 | 0.3− | 2002 12 31 | 704 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.0 | | | | | |
| 2001 07 14 | 644 | 0.4− | 0.3− | 2003 01 18 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1+ | | | | | |
| 2002 10 04 | 704 | 0.0 | 0.6− | 2003 01 18 | 644 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.2+ | | | | | |
| 2002 10 04 | 704 | 0.4− | 1.1+ | 2003 01 18 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.4+ | | | | | |
| 2002 10 04 | 704 | 0.4− | 0.2− | 2003 01 27 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.1− | | | | | |
| 2002 10 04 | 704 | 0.6− | 0.5− | 2003 01 27 | 644 | 0.8− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.1− | | | | | |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2003 01 27 | 644 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.3− | | | | | |
| 2002 11 01 | 644 | 0.7+ | 1.4+ | 2005 01 17 | 809 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.2+ | | | | | |
| 2002 11 01 | 644 | 0.4+ | 1.1+ | 2005 01 17 | 809 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.5− | | | | | |
| 2002 11 01 | 644 | 0.3+ | 1.2+ | 2005 01 17 | 809 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.3− | | | | | |
| 2002 11 05 | 704 | 0.0 | 0.5+ | 2005 06 16 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3− | 0.4− | | | | | |
| 2002 11 05 | 704 | 0.8− | 1.1+ | 2005 06 16 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.4− | | | | | |
| 2002 11 05 | 704 | 0.0 | 0.2− | 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4− | | | | | |
| 2002 11 05 | 704 | 0.5+ | 0.3+ | 2005 07 05 | 644 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.1− | | | | | |
| 2002 11 05 | 704 | 0.4− | 0.1+ | 2005 07 05 | 644 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.4+ | 0.2− | | | | | |
| 2002 11 13 | 644 | 0.1− | 1.1+ | 2005 07 05 | 644 | 0.5− | 0.5− | 2006 11 24 | G96 | 0.5+ | 0.2− | | | | | |
| 2002 11 13 | 644 | 0.0 | 1.1+ | 2006 09 25 | 704 | 0.3− | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | | | | |
| 2002 11 13 | 644 | 0.3− | 1.0+ | 2006 09 25 | 704 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.6+ | 0.1− | | | | | |
| 2002 11 23 | 644 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.5+ | 2006 11 27 | G96 | 0.4+ | 0.3− | | | | | |
| 2002 11 23 | 644 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.7+ | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.3− | | | | | |
| 2002 11 23 | 644 | 0.1− | 1.4− | 2006 10 19 | 691 | 0.4+ | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.1− | | | | | |
| 2002 11 27 | 699 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.3− | | | | | |
| 2002 11 27 | 699 | 0.4− | 0.5+ | 2006 10 19 | 703 | 0.8− | 0.3− | 2006 11 27 | 703 | 0.1− | 0.1− | | | | | |
| 2002 11 27 | 699 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.3− | 2006 11 27 | 703 | 0.8− | 0.4− | | | | | |
| 2002 11 27 | 699 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.4+ | | | | | |
| 2002 11 28 | 699 | 0.8− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.9− | 2006 11 29 | 704 | 0.1− | 0.1+ | | | | | |
| 2002 11 28 | 699 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2− | 0.2− | | | | | |
| 2002 11 28 | 699 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.6+ | | | | | |
| 2002 11 28 | 699 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 1.3+ | 0.3− | | | | | |
| 2002 12 02 | 704 | (3.8+ | 0.1−) | 2006 10 22 | 644 | 0.1− | 0.2− | | | | | | | | | |

**(137066)∗ 1998 WR$_8$**

Discovered 1998 Nov. 23 by K. Sárneczky and L. Kiss at Piszkéstető Stn. (Konkoly).

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.13454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36394447 | $\omega$ | 29.17928 | | +0.51837932 | −0.83596358 | |
| $a$ | 1.9428799 | $\Omega$ | 30.66487 | | +0.70001897 | +0.29383059 | |
| $e$ | 0.0888813 | $i$ | 20.68259 | | +0.49117850 | +0.46349594 | |
| $P$ | 2.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 561 | (0.9+ | 2.3−) | 2005 05 12 | 691 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.2+ | | | | | |
| 1998 11 23 | 561 | (1.0− | 2.5−) | 2005 05 12 | 691 | 0.6+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.3− | | | | | |
| 1998 11 23 | 561 | 0.7+ | 0.2− | 2005 05 15 | 644 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | | | | |
| 1998 11 24 | 561 | 0.2− | 0.3− | 2005 05 15 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.4+ | | | | | |
| 1998 11 24 | 561 | 0.4+ | 0.5− | 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.3+ | | | | | |
| 1998 11 24 | 561 | 0.1− | 0.5− | 2006 09 16 | 699 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.3+ | | | | | |
| 1998 11 24 | 561 | 0.2+ | 0.2− | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 10 23 | 691 | 0.7− | 0.7+ | | | | | |
| 1998 12 11 | 561 | 0.3+ | 0.4− | 2006 09 16 | 699 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.6+ | | | | | |
| 1998 12 11 | 561 | 0.1+ | 0.3− | 2006 09 16 | 699 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.5+ | | | | | |
| 1998 12 11 | 561 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.7− | 2006 10 23 | 704 | (1.8+ | 0.7−) | | | | | |
| 1999 01 21 | 561 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 10 23 | 704 | 0.4+ | 0.4+ | | | | | |
| 1999 01 21 | 561 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 23 | 704 | 1.1+ | 0.6− | | | | | |
| 1999 01 21 | 561 | 0.1+ | 0.4− | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 10 23 | 704 | 1.1+ | 0.5− | | | | | |
| 2001 12 23 | 704 | 1.1− | 1.3+ | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− | | | | | |
| 2001 12 23 | 704 | 0.8− | 0.2− | 2006 09 26 | 704 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.2− | | | | | |
| 2001 12 23 | 704 | 0.5− | 0.6− | 2006 09 26 | 704 | 1.0− | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.3− | | | | | |
| 2001 12 23 | 704 | 0.5− | 1.2− | 2006 09 28 | A13 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4− | | | | | |
| 2001 12 23 | 704 | 0.0 | 0.4− | 2006 09 28 | A13 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.5− | 0.1+ | | | | | |
| 2002 01 11 | 461 | 0.2+ | 0.6+ | 2006 09 29 | 461 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.5− | 0.5+ | | | | | |
| 2002 01 11 | 461 | 0.7+ | 0.2+ | 2006 09 29 | 461 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.0 | | | | | |
| 2002 01 25 | 704 | 1.2+ | 0.3− | 2006 09 29 | 461 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.0 | | | | | |
| 2002 01 25 | 704 | 0.3− | 0.6+ | 2006 09 29 | 461 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.1− | | | | | |
| 2002 01 25 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 703 | 0.7− | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.0 | | | | | |
| 2005 03 10 | 703 | 0.1+ | 0.8− | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 11 13 | 683 | (0.6− | 1.7−) | | | | | |
| 2005 03 10 | 703 | 0.8+ | 0.0 | 2006 09 30 | 703 | (2.6+ | 2.3+) | 2006 11 13 | 683 | 0.4+ | 0.2− | | | | | |
| 2005 03 10 | 703 | 0.5− | 0.7+ | 2006 09 30 | 703 | 1.0− | 0.1+ | 2006 11 13 | 683 | 1.1− | 0.8− | | | | | |
| 2005 03 10 | 703 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.5+ | 1.2+ | 2006 11 14 | 703 | 0.7− | 0.3+ | | | | | |
| 2005 03 12 | 704 | 0.6− | 0.8− | 2006 10 01 | 704 | (0.6− | 1.6+) | 2006 11 14 | 703 | 0.9+ | 0.3+ | | | | | |
| 2005 03 12 | 704 | 1.0+ | 0.6− | 2006 10 01 | 704 | 0.3+ | 1.4+ | 2006 11 14 | 703 | 0.4− | 0.2− | | | | | |
| 2005 03 12 | 704 | 0.7+ | 0.6− | 2006 10 01 | 704 | 0.1+ | 1.5+ | 2006 11 14 | 703 | 0.8− | 0.6+ | | | | | |
| 2005 03 12 | 704 | 1.1+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 14 | 703 | 1.1− | 0.2+ | | | | | |
| 2005 04 01 | 461 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.1+ | 0.7− | | | | | |
| 2005 04 01 | 461 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 1.4+ | 0.3+ | | | | | |
| 2005 04 01 | 461 | 0.1+ | 0.3+ | 2006 10 12 | 461 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.7− | | | | | |
| 2005 04 01 | 461 | 0.1− | 0.4+ | 2006 10 12 | 461 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.1+ | | | | | |
| 2005 04 02 | 461 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.5+ | | | | | |
| 2005 04 02 | 461 | 0.5+ | 0.7+ | 2006 10 15 | 703 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3+ | 1.0+ | | | | | |
| 2005 04 02 | 461 | 1.1− | 0.2+ | 2006 10 15 | 703 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.6+ | | | | | |
| 2005 04 02 | 461 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.4+ | | | | | |
| 2005 04 02 | 461 | 0.2+ | 0.0 | 2006 10 19 | A79 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.4+ | 1.1+ | | | | | |
| 2005 04 02 | 461 | 0.2+ | 0.1+ | 2006 10 19 | A79 | (1.3+ | 1.7−) | 2006 11 22 | 704 | (2.0− | 0.7+) | | | | | |
| 2005 04 02 | 461 | 0.3− | 0.2+ | 2006 10 19 | A79 | 0.3+ | 0.4+ | 2006 11 22 | 704 | (1.7+ | 1.2+) | | | | | |
| 2005 04 02 | 461 | 0.8− | 0.1+ | 2006 10 19 | A79 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.9+ | 1.0+ | | | | | |
| 2005 04 02 | 461 | 0.3+ | 0.6+ | 2006 10 19 | A79 | 0.2+ | 0.7− | 2006 11 22 | 704 | 0.2+ | 1.0+ | | | | | |
| 2005 04 02 | 461 | 0.1− | 0.2+ | 2006 10 19 | A79 | 0.5− | 0.0 | 2006 11 25 | 703 | 0.3− | 1.1− | | | | | |
| 2005 04 02 | 461 | 0.0 | 0.5+ | 2006 10 19 | A79 | 0.3+ | 0.1+ | 2006 11 25 | 703 | 1.1− | 0.1+ | | | | | |
| 2005 04 02 | 461 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 25 | 703 | 0.0 | 0.2+ | | | | | |
| 2005 05 03 | 691 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 25 | 703 | 0.1+ | 0.5− | | | | | |
| 2005 05 03 | 691 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.0 | 0.8+ | | | | | |
| 2005 05 03 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.4+ | 2006 11 29 | 704 | 1.3− | 0.2− | | | | | |
| 2005 05 04 | 644 | 0.6+ | 0.6+ | 2006 10 21 | 703 | 1.2− | 0.5− | 2006 11 29 | 704 | 0.3+ | 0.2− | | | | | |
| 2005 05 04 | 644 | 0.6+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.4− | 2006 11 29 | 704 | 0.6+ | 0.8+ | | | | | |
| 2005 05 04 | 644 | 0.5+ | 0.5+ | 2006 10 21 | G96 | 0.4+ | 0.3− | | | | | | | | | |
| 2005 05 12 | 691 | 0.6+ | 0.7+ | 2006 10 21 | G96 | 0.5+ | 0.3− | | | | | | | | | |

**(137067)∗ 1998 WQ$_9$**

Discovered 1998 Nov. 28 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.71895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24087342 | $\omega$ | 189.89583 | | +0.71760458 | −0.69445529 | |
| $a$ | 2.5582528 | $\Omega$ | 214.28200 | | +0.64520478 | +0.69137738 | |
| $e$ | 0.2402043 | $i$ | 5.36681 | | +0.26221071 | +0.19932176 | |
| $P$ | 4.09 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 699 | 0.5+ | 1.0− | 2002 10 26 | 608 | 0.3+ | 0.5− | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 1998 10 18 | 699 | 0.2+ | 0.7− | 2002 10 26 | 608 | 0.0 | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 1998 10 18 | 699 | 0.1+ | 0.3− | 2002 10 30 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.1− | 0.5− |
| 1998 10 20 | 699 | 0.5+ | 0.1− | 2002 10 30 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 0.3− | 0.4− |
| 1998 10 20 | 699 | 0.8+ | 0.1− | 2002 10 30 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 704 | 0.6− | 0.3− |
| 1998 10 20 | 699 | 0.4+ | 0.1+ | 2002 10 31 | 699 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.8− | 0.3+ |
| 1998 11 11 | 699 | 0.3+ | 0.9+ | 2002 10 31 | 699 | 0.1+ | 0.4+ | 2006 09 21 | 704 | 0.2+ | 0.1− |
| 1998 11 11 | 704 | 0.0 | 0.4− | 2002 10 31 | 699 | 0.0 | 0.5+ | 2006 09 21 | 704 | 0.7− | 0.6+ |
| 1998 11 11 | 699 | 0.6+ | 0.4+ | 2002 10 31 | 699 | 0.1− | 0.6+ | 2006 09 21 | 704 | 0.2− | 0.1+ |
| 1998 11 11 | 704 | (2.6+ | 0.3+) | 2002 11 01 | 704 | 0.9− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.3+ |
| 1998 11 11 | 699 | 0.5+ | 0.2+ | 2002 11 01 | 704 | 0.9− | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.1+ |
| 1998 11 11 | 704 | 1.0+ | 1.3+ | 2002 11 01 | 704 | 1.1− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.3+ |
| 1998 11 11 | 704 | 0.4− | 0.6+ | 2002 11 01 | 704 | 0.9− | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.6+ |
| 1998 11 18 | 704 | 0.1+ | 1.4− | 2002 11 01 | 704 | 0.8− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.6+ |
| 1998 11 18 | 704 | 0.5+ | 1.6− | 2002 11 06 | 704 | 1.4+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 1998 11 18 | 704 | (0.1− | 2.0−) | 2002 11 06 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 1998 11 18 | 704 | (0.5− | 3.1−) | 2002 11 06 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 1998 11 18 | 704 | 0.7− | 1.9− | 2002 11 06 | 704 | 0.9+ | 0.0 | 2006 09 27 | 699 | 0.2+ | 0.1+ |
| 1998 11 21 | 704 | 0.3− | 1.1+ | 2002 11 06 | 704 | 0.8+ | 0.0 | 2006 09 27 | 699 | 0.2− | 0.3+ |
| 1998 11 21 | 704 | 0.2− | 0.2+ | 2002 11 10 | 704 | 0.6+ | 0.0 | 2006 09 27 | 699 | 0.0 | 0.2+ |
| 1998 11 21 | 704 | 0.3− | 0.4+ | 2002 11 10 | 704 | 0.1− | 0.6+ | 2006 09 27 | 699 | 0.1+ | 0.2− |
| 1998 11 21 | 704 | (0.4− | 2.5+) | 2002 11 10 | 704 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.9+ |
| 1998 11 28 | 120 | 0.8+ | 0.3− | 2002 11 10 | 704 | 0.5− | 0.7− | 2006 09 29 | 704 | 0.5+ | 0.3− |
| 1998 11 28 | 120 | 0.7− | 0.9− | 2002 11 22 | 644 | 0.3− | 0.2+ | 2006 09 29 | 704 | (0.0 | 1.6+) |
| 1998 11 29 | 120 | 1.1+ | 0.3+ | 2002 11 22 | 644 | 0.2− | 0.2+ | 2006 09 29 | 704 | 1.0+ | 0.4+ |
| 1998 11 29 | 120 | 1.4+ | 0.3− | 2002 11 22 | 644 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.9+ | 1.3+ |
| 1998 11 29 | 120 | 0.8− | 0.8+ | 2002 12 10 | 704 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1998 12 11 | 699 | 0.2− | 0.4+ | 2002 12 10 | 704 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1998 12 11 | 699 | 0.1− | 0.3− | 2002 12 10 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1998 12 11 | 699 | 0.7+ | 0.6+ | 2002 12 10 | 704 | 0.7+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 1998 12 17 | 120 | 0.6− | 1.2+ | 2003 01 04 | 704 | 0.6+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.3− |
| 1998 12 17 | 120 | 0.6+ | 0.4− | 2003 01 04 | 704 | 0.4− | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 1999 01 10 | 699 | 0.6− | 0.2− | 2003 01 04 | 704 | 0.7− | 1.3+ | 2006 10 17 | 703 | 0.6− | 1.5+ |
| 1999 01 10 | 699 | 1.0− | 1.2− | 2003 01 04 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.0 |
| 1999 01 10 | 699 | 0.3− | 0.5+ | 2003 01 04 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 1999 01 15 | 699 | 0.3− | 0.6+ | 2003 01 05 | 699 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.4− | 0.3− |
| 1999 01 15 | 699 | 0.8− | 1.2+ | 2003 01 05 | 699 | 0.3− | 0.5− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1999 01 15 | 699 | 0.4− | 0.6+ | 2003 01 05 | 699 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2002 09 30 | 239 | 0.4− | 0.1+ | 2003 01 05 | 699 | 0.2− | 0.2+ | 2006 10 19 | 704 | 0.2+ | 0.4+ |
| 2002 09 30 | 239 | 0.4− | 0.2+ | 2003 02 02 | 704 | 0.0 | 0.2− | 2006 10 19 | 704 | 0.1+ | 0.1+ |
| 2002 09 30 | 239 | 0.2− | 0.0 | 2003 02 02 | 704 | 1.3− | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.1+ | 0.1− | 2003 02 02 | 704 | 1.0− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 704 | 0.1+ | 0.3− |
| 2002 10 02 | 704 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 704 | 0.5− | 0.7− |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2004 03 27 | 704 | (1.6+ | 1.6+) | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2004 03 27 | 704 | 0.6+ | 1.5+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.7+ | 1.4+ | 2006 10 19 | 704 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2004 04 11 | 644 | 0.4+ | 1.3+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2004 04 11 | 644 | 0.6+ | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2004 04 11 | 644 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 0.0 | 2004 04 25 | 691 | 0.1− | 0.6+ | 2006 10 29 | 704 | 0.8− | 0.3+ |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2004 04 25 | 691 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 0.5+ | 1.2− |
| 2002 10 04 | 704 | 1.3− | 0.4+ | 2004 04 25 | 691 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 1.3− | 0.8+ |
| 2002 10 04 | 704 | 0.2+ | 0.2− | 2005 07 01 | 691 | 0.1+ | 0.7+ | 2006 10 29 | 704 | 1.1+ | 0.3− |
| 2002 10 04 | 704 | 0.4− | 0.6− | 2005 07 01 | 691 | 0.2+ | 0.5+ | 2006 10 29 | 704 | 0.0 | 0.1+ |
| 2002 10 05 | 049 | 0.6− | 0.0 | 2005 07 01 | 691 | 0.0 | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2002 10 05 | 049 | 0.8− | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2002 10 06 | 049 | 0.6− | 0.3− | 2005 07 12 | G96 | 0.6− | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 10 09 | 704 | 0.4− | 0.1− | 2005 07 12 | G96 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 10 09 | 704 | 0.2− | 0.2− | 2005 07 12 | G96 | 0.1− | 0.6+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2002 10 09 | 704 | 0.1− | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 10 09 | 704 | 0.2+ | 0.1− | 2006 09 15 | 704 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.1+ | 0.7− | 2006 09 15 | 704 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 10 11 | 644 | 0.4− | 0.0 | 2006 09 15 | 704 | 0.4− | 0.0 | 2006 11 18 | 704 | 1.4− | 0.4+ |
| 2002 10 11 | 704 | 1.2− | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1− | 1.2+ |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2002 10 11 | 644 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.5− | 0.9+ |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2002 10 11 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.6− | 1.2+ |
| 2002 10 11 | 644 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.7+ |
| 2002 10 26 | 608 | 0.3+ | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.2+ |

**(137068)∗ 1998 WD$_{13}$ = 1990 TL$_{12}$**

Discovered 1998 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31249)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.04629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24615769 | $\omega$ | 104.80462 | | +0.97869018 | −0.19690535 | |
| $a$ | 2.5215086 | $\Omega$ | 266.57683 | | +0.15870243 | +0.90534786 | |
| $e$ | 0.2125208 | $i$ | 3.34572 | | +0.13030376 | +0.37626259 | |
| $P$ | 4.00 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 14 | 033 | (2.7− | 0.2−) | 2002 11 28 | 699 | 0.3+ | 0.2+ | 2006 10 21 | 704 | 0.5− | 0.7+ |
| 1990 10 15 | 033 | 1.8− | 0.9+ | 2002 12 02 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 704 | 0.7− | 0.2+ |
| 1990 10 15 | 033 | 0.9− | 0.2+ | 2002 12 02 | 704 | 0.7+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 1990 10 18 | 033 | 0.2+ | 0.8+ | 2002 12 02 | 704 | 0.7+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 1990 10 18 | 033 | 1.3− | 0.1− | 2002 12 02 | 704 | 0.7+ | 0.1− | 2006 10 23 | 691 | 0.6+ | 0.2− |
| 1998 11 18 | 704 | 0.1− | 0.4+ | 2002 12 02 | 704 | 0.6+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 1998 11 18 | 704 | 0.4+ | 0.6− | 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1998 11 18 | 704 | 0.8− | 1.7− | 2002 12 06 | 704 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 1998 11 18 | 704 | 0.7+ | 0.2− | 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.9+ | 0.7+ |
| 1998 11 18 | 704 | 1.3+ | 0.8− | 2002 12 06 | 704 | 0.3− | 0.2− | 2006 10 29 | 704 | 0.8+ | 0.4+ |
| 1998 11 21 | 704 | 0.6− | 0.9− | 2002 12 06 | 704 | 0.6+ | 0.3+ | 2006 10 29 | 704 | 0.0 | 0.1+ |
| 1998 11 21 | 704 | 0.3− | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 1998 11 21 | 704 | 0.4− | 0.3− | 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 1998 11 21 | 704 | 0.5− | 1.1+ | 2002 12 06 | 704 | 0.3− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 1998 11 21 | 704 | 1.3+ | 0.5− | 2002 12 06 | 704 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.0 |
| 1998 11 24 | 704 | 0.3− | 0.7− | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 1998 11 24 | 704 | 0.3− | 1.4− | 2002 12 11 | 644 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 1998 11 24 | 704 | 0.3+ | 1.4− | 2002 12 11 | 644 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.8− |
| 1998 11 24 | 704 | 0.5+ | 0.9− | 2002 12 11 | 644 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 1998 11 25 | 699 | 0.1+ | 0.6+ | 2002 12 27 | 644 | 0.3− | 0.4+ | 2006 11 14 | 703 | 0.2+ | 0.3− |
| 1998 11 25 | 699 | 0.2+ | 0.1+ | 2002 12 27 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.6− |
| 1998 11 25 | 699 | 0.1+ | 0.4+ | 2002 12 27 | 644 | 0.3− | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.7− |
| 1998 12 11 | 699 | 0.4+ | 0.6+ | 2003 01 28 | 608 | 0.1− | 0.4− | 2006 11 15 | 704 | 0.7− | 0.5− |
| 1998 12 11 | 699 | 0.0 | 1.4+ | 2003 01 28 | 608 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.1− | 0.0 |
| 1998 12 11 | 699 | 0.1− | 0.6+ | 2003 01 28 | 608 | 0.5+ | 0.8− | 2006 11 16 | 704 | 0.1− | 0.1− |
| 1999 01 10 | 691 | 1.0+ | 0.7− | 2003 01 31 | 704 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.1− |
| 1999 01 10 | 691 | 1.1+ | 0.6− | 2003 01 31 | 704 | 1.0− | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.2− |
| 1999 01 10 | 691 | 1.1+ | 0.4− | 2003 01 31 | 704 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.3− |
| 2002 09 06 | 704 | 0.6− | 0.2+ | 2003 01 31 | 704 | 0.7− | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2002 09 06 | 704 | 0.2− | 0.0 | 2004 03 13 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.5− | 0.1− |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2004 03 13 | 644 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.2− | 0.6+ | 2004 03 13 | 644 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.4− |
| 2002 10 31 | 699 | 0.3− | 0.3+ | 2004 03 18 | 704 | 1.4+ | 0.7+ | 2006 11 17 | 704 | 0.7− | 0.3− |
| 2002 10 31 | 699 | 0.4+ | 0.4+ | 2004 03 18 | 704 | 0.9− | 0.1− | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2002 10 31 | 699 | 0.2+ | 0.6+ | 2004 03 18 | 704 | 0.6− | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 10 31 | 699 | 0.2− | 0.3+ | 2004 03 18 | 704 | 1.1+ | 1.1+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 1.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.8− | 0.0 | 2006 11 19 | 704 | (2.2− | 0.0 | ) | |
| 2002 11 05 | 704 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.6− | 1.0+ | 2006 11 19 | 704 | 0.3− | 0.2− | | |
| 2002 11 05 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.8− | 0.8− | 2006 11 19 | 704 | 0.2+ | 0.2− | | |
| 2002 11 08 | 704 | 0.2− | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.1− | | |
| 2002 11 08 | 704 | 0.6− | 0.0 | 2004 03 27 | 704 | 0.2+ | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.2+ | | |
| 2002 11 08 | 704 | 0.7− | 0.1− | 2004 03 27 | 704 | 0.7+ | 0.8+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2002 11 08 | 704 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 12 | 704 | 0.1+ | 0.9− | 2005 05 11 | 644 | 0.5+ | 0.7+ | 2006 11 22 | 704 | 0.1− | 0.8+ | | |
| 2002 11 12 | 704 | 0.2− | 0.2− | 2005 05 11 | 644 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.7+ | 1.2+ | | |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2005 05 11 | 644 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.7+ | | |
| 2002 11 12 | 704 | 0.7− | 0.1− | 2006 08 29 | 703 | 1.0− | 0.5− | 2006 11 22 | 704 | 0.2− | 0.4+ | | |
| 2002 11 12 | 704 | 0.7− | 0.1+ | 2006 08 29 | 703 | 0.7− | 1.1+ | 2006 11 22 | 704 | (3.4+ | 0.7− | ) | |
| 2002 11 13 | 644 | 0.4− | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.6− | 2006 11 27 | 704 | 0.3− | 0.4+ | | |
| 2002 11 13 | 644 | 0.5− | 0.1+ | 2006 08 29 | 703 | 1.2− | 0.4− | 2006 11 27 | 704 | 0.2− | 0.8+ | | |
| 2002 11 13 | 644 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 1.2− | 0.1+ | | |
| 2002 11 14 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.3− | 0.0 | | |
| 2002 11 14 | 704 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.5− | | |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.7+ | 2006 12 01 | G96 | 0.0 | 0.4− | | |
| 2002 11 14 | 704 | 0.6− | 0.9+ | 2006 09 25 | 704 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.3+ | 0.5− | | |
| 2002 11 14 | 704 | 0.4− | 0.5+ | 2006 09 25 | 704 | 0.5+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2002 11 24 | 644 | 0.4− | 0.1− | 2006 09 25 | 704 | 0.7+ | 0.3− | 2006 12 01 | 704 | 0.6− | 0.2− | | |
| 2002 11 24 | 644 | 0.4− | 0.1+ | 2006 09 25 | 704 | 1.2+ | 0.4− | 2006 12 01 | 704 | 0.4+ | 0.4+ | | |
| 2002 11 24 | 644 | 0.6− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.1− | | |
| 2002 11 28 | 699 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.8− | 1.0+ | | |
| 2002 11 28 | 699 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.3+ | | |
| 2002 11 28 | 699 | 0.2+ | 0.6+ | 2006 10 21 | 704 | 1.0+ | 0.7− | | | | | | |

**(137069)∗ 1998 WQ$_{15}$**

Discovered 1998 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.13835 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24427489 | $\omega$ | 331.42781 | | +0.64784196 | −0.74446113 |
| $a$ | 2.5344487 | $\Omega$ | 77.70797 | | +0.72658458 | +0.54018374 |
| $e$ | 0.3559687 | $i$ | 9.51333 | | +0.22885724 | +0.39240178 |
| $P$ | 4.03 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 566 | 0.0 | 0.2− | 2002 11 05 | 704 | 0.1+ | 1.2+ | 2003 01 08 | 704 | 0.6− | 0.0 | | |
| 1998 11 16 | 566 | 0.4− | 0.2− | 2002 11 05 | 704 | 0.1+ | 0.8+ | 2003 01 08 | 704 | 0.1− | 0.4+ | | |
| 1998 11 16 | 566 | 0.2− | 0.3− | 2002 11 05 | 704 | 0.4+ | 1.1+ | 2003 01 08 | 704 | 0.3− | 1.2− | | |
| 1998 11 21 | 704 | 0.7+ | 0.4− | 2002 11 05 | 704 | 0.3+ | 1.4+ | 2003 01 19 | 644 | 0.1− | 0.4+ | | |
| 1998 11 21 | 704 | 1.0+ | 0.6− | 2002 11 06 | 699 | 0.0 | 0.1+ | 2003 01 19 | 644 | 0.1+ | 0.4+ | | |
| 1998 11 21 | 704 | 0.5+ | 0.1+ | 2002 11 06 | 699 | 0.3− | 0.0 | 2003 01 19 | 644 | 0.1+ | 0.3+ | | |
| 1998 11 21 | 704 | 0.3+ | 1.3+ | 2002 11 06 | 699 | 0.1− | 0.3+ | 2003 01 25 | 699 | 0.1− | 0.3+ | | |
| 1998 11 21 | 704 | 0.5+ | 1.7+ | 2002 11 06 | 699 | 0.2− | 0.2+ | 2003 01 25 | 699 | 0.4− | 0.7+ | | |
| 1998 11 23 | 699 | 0.1− | 0.1− | 2002 11 07 | 645 | 0.1+ | 0.2− | 2003 01 25 | 699 | 0.8− | 0.5− | | |
| 1998 11 23 | 699 | 0.3+ | 0.6− | 2002 11 07 | 645 | 0.1+ | 0.2− | 2003 01 25 | 699 | 0.6+ | 0.2− | | |
| 1998 11 23 | 699 | 0.3+ | 0.0 | 2002 11 12 | 704 | 0.7− | 0.2− | 2003 01 31 | 704 | 0.6− | 0.2+ | | |
| 1998 11 24 | 704 | 0.1+ | 0.3− | 2002 11 12 | 704 | 0.7− | 0.4− | 2003 01 31 | 704 | 0.6− | 0.8+ | | |
| 1998 11 24 | 704 | (2.2+ | 2.5−) | 2002 11 12 | 704 | 0.6− | 0.3− | 2003 01 31 | 704 | 0.7− | 0.7+ | | |
| 1998 11 24 | 704 | 1.2+ | 0.8− | 2002 11 12 | 704 | 0.5− | 0.3− | 2003 01 31 | 704 | 0.5+ | 0.1− | | |
| 1998 11 24 | 704 | 0.5− | 1.6− | 2002 11 12 | 704 | 0.6− | 0.4− | 2006 09 24 | 699 | 0.4− | 0.0 | | |
| 1998 11 24 | 704 | 0.2+ | 1.9− | 2002 11 13 | 704 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.1− | 0.2+ | | |
| 1998 12 08 | 699 | 0.9− | 0.5− | 2002 11 13 | 704 | 0.1+ | 0.2+ | 2006 09 24 | 699 | 0.2− | 0.4+ | | |
| 1998 12 08 | 699 | 1.7− | 0.8+ | 2002 11 13 | 704 | 0.1− | 0.0 | 2006 09 24 | 699 | 0.1+ | 0.4+ | | |
| 1998 12 08 | 699 | 0.6+ | 0.6− | 2002 11 13 | 704 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.2+ | 0.1− | | |
| 1998 12 12 | 691 | 0.3+ | 0.3+ | 2002 11 13 | 704 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.0 | | |
| 1998 12 12 | 691 | 0.3+ | 0.1+ | 2002 11 13 | 704 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.1+ | | |
| 1998 12 12 | 691 | 0.4− | 0.1− | 2002 11 13 | 704 | 0.3− | 0.2− | 2006 10 02 | 703 | 0.0 | 0.0 | | |
| 1998 12 15 | 910 | 0.2+ | 1.1− | 2002 11 13 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 1998 12 15 | 910 | 0.2+ | 1.0− | 2002 11 13 | 704 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 1998 12 15 | 910 | 0.1+ | 1.1− | 2002 11 13 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 1998 12 23 | 691 | 0.4+ | 0.2− | 2002 11 30 | 704 | 0.5− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 1998 12 23 | 691 | 0.6+ | 0.4− | 2002 11 30 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 1998 12 23 | 691 | 0.8− | 0.7+ | 2002 11 30 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 1999 01 06 | 699 | 0.7− | 0.3− | 2002 11 30 | 704 | 0.2− | 0.8− | 2006 10 17 | 703 | 0.0 | 0.3− | | |
| 1999 01 06 | 699 | 0.2− | 0.6+ | 2002 11 30 | 704 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.4− | | |
| 1999 01 06 | 699 | 1.3− | 0.6− | 2002 11 30 | 608 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.3− | | |
| 1999 01 08 | 684 | (2.4− | 0.5−) | 2002 11 30 | 608 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.1− | | |
| 1999 01 08 | 684 | 1.2+ | 1.2+ | 2002 11 30 | 608 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.0 | | |
| 1999 01 09 | 684 | 0.1+ | 0.3− | 2002 12 07 | 704 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.0 | | |
| 1999 01 09 | 684 | 0.2+ | 0.6− | 2002 12 07 | 704 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.1− | | |
| 2000 05 05 | 645 | 0.1+ | 0.1+ | 2002 12 07 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.0 | | |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2002 12 07 | 704 | 0.4− | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 12 | 704 | 0.1+ | 0.2+ | 2002 12 09 | 644 | 0.1− | 0.5+ | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 12 | 704 | 0.5− | 0.5+ | 2002 12 09 | 644 | 0.0 | 0.5+ | 2006 11 07 | 644 | 0.3− | 0.0 | | |
| 2002 08 12 | 704 | 1.3− | 0.1− | 2002 12 09 | 644 | 0.3+ | 0.5+ | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 12 | 704 | 0.8− | 0.1+ | 2002 12 11 | 704 | 1.1+ | 0.4+ | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 12 | 704 | 0.3+ | 0.5− | 2002 12 11 | 704 | 1.0+ | 0.9+ | 2006 11 07 | 644 | 0.3+ | 0.1+ | | |
| 2002 09 15 | 699 | 0.1− | 0.1− | 2002 12 11 | 704 | 1.0+ | 0.9+ | 2006 11 10 | 704 | 0.0 | 0.8+ | | |
| 2002 09 15 | 699 | 0.5− | 0.0 | 2002 12 11 | 704 | 1.2+ | 1.1+ | 2006 11 10 | 704 | 0.1+ | 0.9+ | | |
| 2002 09 15 | 699 | 0.3− | 0.1+ | 2002 12 11 | 704 | 1.2+ | 0.7+ | 2006 11 10 | 704 | 0.1+ | 0.9+ | | |
| 2002 09 15 | 699 | 0.2− | 0.3+ | 2003 01 01 | 704 | 1.4− | 1.2+ | 2006 11 10 | 704 | 0.6− | 0.8+ | | |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2003 01 01 | 704 | 0.5− | 1.0− | 2006 11 10 | 704 | 0.5+ | 1.0+ | | |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2003 01 01 | 704 | 1.2− | 0.1+ | 2006 11 16 | 703 | 0.2+ | 0.1− | | |
| 2002 10 20 | 608 | 0.7− | 1.2+ | 2003 01 01 | 704 | 0.4− | 0.7− | 2006 11 16 | 703 | 0.2− | 0.4+ | | |
| 2002 10 20 | 608 | 0.7− | 1.0+ | 2003 01 01 | 704 | 1.0− | 0.7− | 2006 11 16 | 703 | (1.0+ | 1.7+ | ) | |
| 2002 10 20 | 608 | 0.6− | 0.8+ | 2003 01 01 | 704 | 0.1+ | 0.6− | 2006 11 16 | 703 | (2.2+ | 1.3− | ) | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2003 01 01 | 704 | 1.0− | 0.9+ | 2006 11 16 | 703 | 0.0 | 0.2− | | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2003 01 01 | 704 | 0.4+ | 1.0− | 2006 11 16 | 703 | 0.1+ | 0.1− | | |
| 2002 10 31 | 704 | 0.5− | 0.4+ | 2003 01 01 | 704 | (1.6− | 0.8+) | 2006 11 16 | 703 | 0.3− | 0.3− | | |
| 2002 10 31 | 704 | 0.2− | 0.7+ | 2003 01 01 | 704 | 0.3− | 1.0− | 2006 11 16 | 703 | 0.1+ | 0.0 | | |
| 2002 10 31 | 704 | 0.5− | 1.5+ | 2003 01 04 | 704 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3− | 0.2+ | | |
| 2002 10 31 | 704 | 0.3− | 1.1+ | 2003 01 04 | 704 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.7+ | | |
| 2002 10 31 | 704 | 0.2− | 1.1+ | 2003 01 04 | 704 | 0.6+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.4+ | | |
| 2002 11 01 | 608 | 0.5+ | 1.3+ | 2003 01 04 | 704 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.1− | 0.3+ | | |
| 2002 11 01 | 608 | 0.7+ | 1.4+ | 2003 01 04 | 704 | 0.4+ | 0.2− | 2006 11 22 | 704 | 1.0− | 0.0 | | |
| 2002 11 01 | 608 | 0.6+ | 1.5+ | 2003 01 08 | 704 | 0.3+ | 0.1− | | | | | | |
| 2002 11 05 | 704 | 0.1+ | 1.0+ | 2003 01 08 | 704 | 0.2− | 0.2+ | | | | | | |

**(137070)∗ 1998 WE$_{21}$ = 2002 RA$_{51}$**

Discovered 1998 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34754)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.54533 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23276030 | $\omega$ | 26.91689 | | +0.44067910 | −0.89479840 |
| $a$ | 2.6173599 | $\Omega$ | 37.05944 | | +0.80069056 | +0.35571822 |
| $e$ | 0.2543854 | $i$ | 6.83091 | | +0.40582823 | +0.26981546 |
| $P$ | 4.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 10 | 699 | 0.6− | 0.8− | 2002 10 01 | 699 | 0.2+ | 0.4+ | 2004 02 25 | 704 | 0.5− | 0.6+ | | |
| 1998 11 10 | 699 | 0.5+ | 0.5+ | 2002 10 02 | 704 | 0.2− | 0.4+ | 2004 02 25 | 704 | 0.4+ | 0.4− | | |
| 1998 11 10 | 699 | 0.5+ | 0.1− | 2002 10 02 | 704 | 1.1+ | 0.3− | 2004 02 25 | 704 | 0.8+ | 1.0+ | | |
| 1998 11 11 | 704 | 0.5+ | 0.7− | 2002 10 02 | 704 | 0.1+ | 0.3+ | 2004 02 25 | 704 | 0.7+ | 1.6+ | | |
| 1998 11 11 | 704 | 0.2− | 0.6− | 2002 10 02 | 704 | 0.6+ | 0.8+ | 2004 02 26 | 704 | 1.2− | 0.3+ | | |
| 1998 11 11 | 704 | 0.4+ | 0.5+ | 2002 10 02 | 704 | 0.2− | 1.3+ | 2004 02 26 | 704 | 2.0+ | 0.4+ | | |
| 1998 11 16 | 566 | 0.2+ | 0.2− | 2002 10 03 | 704 | 0.0 | 0.9+ | 2004 02 26 | 704 | 1.1− | 1.2− | | |
| 1998 11 16 | 566 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.5− | 0.3+ | 2004 02 26 | 704 | 0.5+ | 0.7+ | | |
| 1998 11 16 | 566 | 0.2− | 0.3− | 2002 10 03 | 704 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.6− | 0.2− | | |
| 1998 11 18 | 704 | 0.4+ | 0.6+ | 2002 10 03 | 704 | 0.5− | 0.6+ | 2004 03 15 | 704 | 1.2+ | 1.3+ | | |
| 1998 11 18 | 704 | 0.4+ | 0.1+ | 2002 10 03 | 704 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.3+ | | |
| 1998 11 18 | 704 | 0.3− | 0.3+ | 2002 10 06 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 704 | 0.9+ | 0.9+ | | |
| 1998 11 18 | 704 | 0.0 | 0.9− | 2002 10 06 | 704 | 0.4+ | 0.6+ | 2004 03 15 | 704 | 0.3+ | 1.1+ | | |
| 1998 11 18 | 704 | 1.2+ | 0.3+ | 2002 10 06 | 704 | 0.1+ | 0.8+ | 2004 03 15 | 704 | 0.5+ | 0.8+ | | |
| 1998 11 21 | 704 | 0.6− | 0.0 | 2002 10 06 | 704 | 0.3− | 0.2+ | 2004 03 20 | 691 | 0.3+ | 0.2+ | | |
| 1998 11 21 | 704 | 0.5− | 0.1− | 2002 10 06 | 704 | 0.2+ | 0.3+ | 2004 03 20 | 691 | 0.1+ | 0.0 | | |
| 1998 11 21 | 704 | 0.6+ | 0.8− | 2002 10 06 | 608 | 0.6+ | 1.0− | 2004 03 20 | 691 | 0.1− | 0.1+ | | |
| 1998 11 21 | 704 | 0.9+ | 1.1− | 2002 10 06 | 608 | 0.7+ | 1.2− | 2004 03 20 | 704 | 0.4+ | 0.3+ | | |
| 1998 12 14 | 704 | 0.4− | 0.1+ | 2002 10 06 | 608 | 0.9+ | 1.1− | 2004 03 20 | 704 | 0.4+ | 0.0 | | |
| 1998 12 14 | 704 | 1.4− | 0.7+ | 2002 10 08 | 699 | 0.2+ | 0.9+ | 2004 03 20 | 704 | 0.6+ | 0.5+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 1.1− | 0.8− | 2002 10 08 | 699 | 0.1− | 0.8+ | 2004 03 20 | 704 | 1.4+ | 0.7− |
| 1998 12 14 | 704 | 0.8− | 0.5+ | 2002 10 08 | 699 | 0.3+ | 1.1+ | 2004 03 20 | 704 | 0.3+ | 0.1+ |
| 2002 09 05 | 704 | 1.6− | 0.1+ | 2002 10 08 | 699 | 0.1+ | 1.3+ | 2004 03 22 | 704 | 1.1+ | 0.7+ |
| 2002 09 05 | 704 | (2.1− | 0.0 ) | 2002 10 11 | 704 | 0.6− | 1.6− | 2004 03 22 | 704 | 0.5+ | 0.6+ |
| 2002 09 05 | 704 | 1.0− | 0.5− | 2002 10 11 | 704 | 0.2+ | 1.7− | 2004 03 22 | 704 | 0.6+ | 1.1− |
| 2002 09 05 | 704 | 0.9− | 0.6− | 2002 10 11 | 704 | 0.2+ | 1.6− | 2004 03 22 | 704 | 0.8+ | 0.8+ |
| 2002 09 05 | 704 | 1.1− | 0.0 | 2002 10 11 | 704 | 0.2− | 1.1− | 2004 03 30 | 691 | 0.0 | 0.6+ |
| 2002 09 06 | 704 | 1.1− | 0.4− | 2002 10 11 | 704 | (0.3+ | 2.2−) | 2004 03 30 | 691 | 0.0 | 0.5+ |
| 2002 09 06 | 704 | 0.4+ | 0.5+ | 2002 10 30 | 704 | 0.4− | 0.6+ | 2004 03 30 | 691 | 0.4− | 0.3+ |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2002 10 30 | 704 | 0.2+ | 0.2+ | 2006 08 16 | E12 | 0.4+ | 0.0 |
| 2002 09 06 | 704 | 0.8− | 0.4− | 2002 10 30 | 704 | 0.2+ | 0.6+ | 2006 08 16 | E12 | 0.3+ | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.4− | 2002 10 30 | 704 | 0.4− | 0.5+ | 2006 08 16 | E12 | 0.3+ | 0.6+ |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2002 11 01 | 608 | 0.0 | 0.3+ | 2006 08 16 | E12 | 1.2+ | 0.4+ |
| 2002 09 07 | 704 | 0.3+ | 0.0 | 2002 11 01 | 608 | 0.5+ | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.3− | 0.9+ | 2002 11 01 | 608 | 0.1+ | 0.5+ | 2006 08 17 | 644 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.3+ | 0.2+ | 2002 11 06 | 608 | 0.5+ | 1.6+ | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2002 11 06 | 608 | 0.0 | 1.4+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2002 09 17 | 608 | (2.3− | 0.9−) | 2002 11 06 | 608 | 0.3+ | 1.4+ | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 2002 09 17 | 608 | 0.9− | 0.1− | 2002 11 07 | 704 | 1.2+ | 0.9+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2002 09 17 | 608 | 1.0− | 0.6− | 2002 11 07 | 704 | 0.3+ | 1.0+ | 2006 08 24 | 644 | 0.1− | 0.1− |
| 2002 09 27 | 699 | 0.0 | 0.2− | 2002 11 07 | 704 | 0.1+ | 1.9+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 09 27 | 699 | 0.2+ | 0.0 | 2002 11 11 | 704 | 0.8+ | 0.1− | 2006 08 24 | 644 | 0.2− | 0.1− |
| 2002 09 27 | 699 | 0.3− | 0.1− | 2002 11 11 | 704 | 1.5+ | 0.9+ | 2006 09 17 | 699 | 1.1+ | 0.9− |
| 2002 09 27 | 699 | 0.1+ | 0.7+ | 2002 11 11 | 704 | 0.5+ | 0.8+ | 2006 09 17 | 699 | 1.6− | 1.4+ |
| 2002 09 30 | 608 | 1.1− | 0.1+ | 2002 11 19 | 644 | 0.1− | 0.3+ | 2006 09 17 | 699 | 0.7− | 0.2+ |
| 2002 09 30 | 608 | 0.5− | 0.3+ | 2002 11 19 | 644 | 1.2− | 0.6+ | 2006 09 17 | 699 | 1.3− | 0.9− |
| 2002 09 30 | 608 | 0.8− | 0.5+ | 2002 11 19 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.9− | 1.4+ |
| 2002 10 01 | 699 | 0.3− | 0.5+ | 2002 11 30 | 608 | 0.4− | 0.5− | 2006 09 30 | 703 | 1.3− | 1.3− |
| 2002 10 01 | 699 | 0.2− | 0.1+ | 2002 11 30 | 608 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2002 10 01 | 699 | 1.0− | 0.5+ | 2002 11 30 | 608 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.6− | 1.2− |

**(137071)∗ 1998 WD$_{29}$ = 1992 EZ$_{31}$ = 2000 EB$_{116}$**

Discovered 1998 Nov. 23 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 1991), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.44479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24707034 | $\omega$ | 204.98844 | | −0.56041278 | | −0.82819324 |
| $a$ | 2.5152953 | $\Omega$ | 279.09641 | | +0.76085204 | | −0.51206071 |
| $e$ | 0.0296476 | $i$ | 0.33568 | | +0.32717226 | | −0.22779329 |
| $P$ | 3.99 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | (2.6− | 1.5+) | 2002 11 02 | 608 | 0.1− | 0.6+ | 2004 03 20 | 699 | 0.0 | 1.5− |
| 1992 03 03 | 809 | (1.5+ | 2.3−) | 2002 11 02 | 608 | 0.8+ | 0.9+ | 2004 03 20 | 699 | 1.3− | 0.5+ |
| 1994 11 29 | 691 | 0.7− | 0.6− | 2002 11 02 | 608 | 0.1+ | 0.6+ | 2004 03 20 | 699 | 0.3− | 1.3+ |
| 1994 11 29 | 691 | 0.0 | 0.4− | 2002 11 06 | 704 | 0.5− | 0.0 | 2004 03 20 | 699 | 0.0 | 0.3+ |
| 1994 11 29 | 691 | 0.2+ | 1.2− | 2002 11 06 | 704 | 0.5− | 0.0 | 2004 03 27 | 704 | 0.2+ | 1.2− |
| 1996 03 11 | 691 | 0.0 | 0.5− | 2002 11 06 | 704 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.1− | 0.5+ |
| 1996 03 11 | 691 | 0.2− | 0.3− | 2002 11 06 | 704 | 0.2− | 0.9+ | 2004 03 27 | 704 | 0.1− | 0.0 |
| 1996 03 11 | 691 | 0.1+ | 0.4− | 2002 11 06 | 704 | 0.4− | 1.2− | 2005 06 03 | 691 | 0.2− | 0.1+ |
| 1998 10 14 | 691 | 0.0 | 0.3+ | 2002 11 06 | 608 | 0.1− | 0.6− | 2005 06 03 | 691 | 0.1+ | 0.1+ |
| 1998 10 14 | 691 | 0.7− | 0.0 | 2002 11 06 | 608 | 0.1− | 0.8− | 2005 06 03 | 691 | 0.1+ | 0.2− |
| 1998 10 14 | 691 | 0.1+ | 0.1+ | 2002 11 06 | 608 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.1− | 0.0 |
| 1998 10 19 | 691 | 0.7− | 0.3+ | 2002 11 07 | 704 | 0.9− | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.0 |
| 1998 10 19 | 691 | 1.0− | 0.0 | 2002 11 07 | 704 | 0.3− | 0.5− | 2006 09 27 | G96 | 0.0 | 0.5− |
| 1998 10 19 | 691 | 0.7− | 0.0 | 2002 11 07 | 704 | 0.3− | 1.5+ | 2006 09 27 | G96 | 0.3− | 0.0 |
| 1998 10 29 | 691 | 0.1− | 0.4+ | 2002 11 07 | 704 | 0.8− | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.6+ |
| 1998 10 29 | 691 | 0.3+ | 0.1+ | 2002 11 07 | 704 | (0.6− | 1.5+) | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 1998 10 29 | 691 | 0.2+ | 0.1+ | 2002 11 07 | 704 | 1.1− | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.3+ |
| 1998 11 17 | 691 | 1.0+ | 0.1+ | 2002 11 07 | 704 | 1.0− | 0.7+ | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 1998 11 17 | 691 | 0.8+ | 0.1+ | 2002 11 07 | 704 | 0.6+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 1998 11 17 | 691 | 1.2+ | 0.1− | 2002 11 13 | 291 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 1998 11 18 | 691 | 0.5+ | 0.1− | 2002 11 13 | 291 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 1998 11 18 | 691 | 0.6+ | 0.3− | 2002 11 13 | 291 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 1.0+ |
| 1998 11 18 | 691 | 0.7+ | 0.4− | 2004 02 13 | 291 | 0.6− | 0.1+ | 2006 11 11 | 703 | (3.0− | 0.4−) |
| 1998 11 23 | 691 | 0.4− | 0.0 | 2004 02 13 | 291 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.1+ |
| 1998 11 23 | 691 | 0.7− | 0.4− | 2004 02 13 | 291 | 0.3− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 1998 11 23 | 691 | 0.3− | 0.3− | 2004 02 26 | 704 | 0.5− | 1.2+ | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 1998 11 26 | 691 | 0.3+ | 0.5− | 2004 02 26 | 704 | 0.4+ | 1.2+ | 2006 11 12 | G96 | 0.0 | 0.1+ |
| 1998 11 26 | 691 | 0.3+ | 0.2− | 2004 02 26 | 704 | 0.4+ | 1.2− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 1998 11 26 | 691 | 0.1+ | 0.3− | 2004 02 26 | 704 | 0.8+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.4+ | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.7− |
| 2000 03 03 | 704 | 0.6+ | 0.9+ | 2004 03 11 | 644 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2000 03 03 | 704 | 0.4+ | 1.2+ | 2004 03 11 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2000 03 03 | 704 | 0.5+ | 0.8+ | 2004 03 11 | 644 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.3+ |
| 2000 03 10 | 691 | 0.2− | 0.3− | 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.9− | 0.4+ |
| 2000 03 10 | 691 | 0.2− | 0.3− | 2004 03 14 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2000 03 10 | 691 | 0.0 | 0.2− | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.2+ |
| 2000 03 11 | 704 | 0.5− | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 1.0+ |
| 2000 03 11 | 704 | 0.0 | 0.2− | 2004 03 15 | 704 | 1.3+ | 0.8+ | 2006 11 21 | 704 | 0.6− | 0.9+ |
| 2000 03 11 | 704 | 0.1− | 0.1− | 2004 03 15 | 704 | 1.3+ | 0.8+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2000 03 11 | 704 | 0.4− | 0.1+ | 2004 03 15 | 704 | (1.7+ | 0.0 ) | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2000 03 11 | 704 | 0.3+ | 0.4− | 2004 03 17 | 291 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2004 03 17 | 291 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2002 10 02 | 704 | 0.4− | 0.8+ | 2004 03 17 | 291 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | (0.7+ | 1.6+) | 2004 03 18 | 704 | (2.5+ | 1.0−) | 2006 11 27 | 703 | 0.5+ | 0.6− |
| 2002 10 18 | 644 | 0.2− | 0.3+ | 2004 03 18 | 704 | 1.3+ | 0.3− | 2006 11 27 | 703 | 0.4+ | 0.3− |
| 2002 10 18 | 644 | 0.4− | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 11 27 | 703 | 0.8+ | 0.0 |
| 2002 10 18 | 644 | 0.1+ | 0.4+ | 2004 03 18 | 704 | (1.8+ | 0.0 ) | 2006 11 27 | 703 | 0.1+ | 0.3+ |

**(137072)∗ 1998 WM$_{30}$ = 2004 CS$_{17}$**

Discovered 1998 Nov. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60519)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.32140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23327064 | $\omega$ | 195.17275 | | −0.30345267 | | +0.95167914 |
| $a$ | 2.6135411 | $\Omega$ | 57.18298 | | −0.86827455 | | −0.25579886 |
| $e$ | 0.0410269 | $i$ | 3.21632 | | −0.39244845 | | −0.16992281 |
| $P$ | 4.23 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 691 | 0.1− | 0.3− | 2004 02 10 | 703 | 0.6− | 0.3− | 2005 05 28 | 599 | 0.3+ | 0.1+ |
| 1998 11 18 | 691 | 0.0 | 0.1− | 2004 02 10 | 703 | (2.5+ | 0.4+) | 2005 05 28 | 599 | 0.3+ | 0.5+ |
| 1998 11 18 | 691 | 0.6+ | 0.0 | 2004 02 10 | 703 | 0.7− | 1.3− | 2005 06 14 | G96 | 0.4− | 0.1− |
| 1998 11 26 | 691 | 0.7− | 0.2+ | 2004 02 13 | 691 | 0.2+ | 0.3+ | 2005 06 14 | G96 | 0.4− | 0.1− |
| 1998 11 26 | 691 | 0.4− | 0.2− | 2004 02 13 | 691 | 0.3− | 0.2+ | 2005 06 14 | G96 | 0.0 | 0.2− |
| 1998 11 26 | 691 | 0.7− | 0.1+ | 2004 02 13 | 691 | 0.3− | 0.1+ | 2005 06 14 | G96 | 0.2− | 0.1+ |
| 1998 11 27 | 691 | 0.5+ | 0.4− | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.5+ |
| 1998 11 27 | 691 | 0.7+ | 0.0 | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 1.1+ | 1.1+ |
| 1998 11 27 | 691 | 0.5+ | 0.1− | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.0 | 1.1+ |
| 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.8+ | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.4+ |
| 2004 01 17 | 644 | 0.7+ | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.2+ | 2006 09 28 | 691 | (0.2− | 1.8+) |
| 2004 01 17 | 644 | 0.5+ | 0.6+ | 2004 02 23 | 704 | 0.9+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2004 01 30 | 704 | 0.4+ | 0.4+ | 2005 05 27 | 599 | 0.9− | 0.3+ | 2006 09 28 | 691 | 0.4− | 0.4+ |
| 2004 01 30 | 704 | (1.5+ | 1.6−) | 2005 05 27 | 599 | 0.5+ | 0.3+ | 2006 10 12 | 104 | 0.3+ | 0.5− |
| 2004 01 30 | 704 | 0.6+ | 0.7+ | 2005 05 27 | 599 | 0.4+ | 0.2+ | 2006 10 12 | 104 | 0.5+ | 0.1− |
| 2004 01 30 | 704 | 0.4+ | 0.4+ | 2005 05 28 | 599 | 0.3+ | 0.2+ | 2006 10 12 | 104 | 1.4− | 0.2− |
| 2004 02 10 | 703 | 0.3− | 1.6− | 2005 05 28 | 599 | 0.1+ | 0.1+ | | | | |

**(137073)∗ 1998 WG$_{33}$ = 2002 YW$_{19}$**

Discovered 1998 Nov. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 39982)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.40145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25840105 | $\omega$ | 261.72835 | | +0.99284554 | | +0.10364415 |
| $a$ | 2.4412178 | $\Omega$ | 92.30800 | | −0.07202959 | | +0.91590319 |
| $e$ | 0.2047683 | $i$ | 3.40198 | | −0.09523381 | | +0.38778763 |
| $P$ | 3.81 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 04 | 809 | (0.4− | 2.4−) | 2002 12 31 | 704 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.5+ | 0.8− |
| 1997 05 04 | 809 | 0.7+ | 1.6− | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2004 03 19 | 704 | 0.7+ | 1.0+ |
| 1997 05 04 | 809 | (2.0− | 2.1−) | 2002 12 31 | 704 | 0.6− | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.6− |
| 1998 11 20 | 699 | 0.3+ | 0.4+ | 2003 01 01 | 097 | 0.2+ | 0.1+ | 2004 03 22 | 704 | 0.0 | 0.3+ |
| 1998 11 20 | 699 | 0.1− | 1.4− | 2003 01 01 | 097 | 0.8+ | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.3− |
| 1998 11 20 | 699 | 0.7+ | 0.4− | 2003 01 01 | 097 | 1.0+ | 0.5− | 2004 03 22 | 704 | 0.5+ | 0.2− |
| 1998 11 24 | 704 | 0.3− | 0.7− | 2003 01 01 | 097 | 0.7+ | 0.2− | 2004 03 22 | 704 | 0.9− | 0.1+ |
| 1998 11 24 | 704 | 0.4− | 1.2+ | 2003 01 01 | 097 | 0.7+ | 0.0 | 2004 03 30 | 691 | 0.5− | 0.1+ |
| 1998 11 24 | 704 | 0.2− | 0.7+ | 2003 01 01 | 097 | 0.1+ | 0.4+ | 2004 03 30 | 691 | 0.5− | 0.3+ |
| 1998 11 24 | 704 | 0.0 | 1.0+ | 2003 01 01 | 097 | 0.2+ | 0.6− | 2004 03 30 | 691 | 0.4− | 0.1− |
| 1998 11 25 | 699 | 0.6+ | 0.3− | 2003 01 01 | 097 | 0.2− | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.1+ |
| 1998 11 25 | 699 | (2.5+ | 1.6+) | 2003 01 01 | 097 | 0.5− | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.1+ |
| 1998 11 25 | 699 | 1.4− | 1.5+ | 2003 01 01 | 097 | 0.4+ | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.2+ |
| 1998 12 23 | 691 | 0.9− | 0.0 | 2003 01 01 | 097 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 1998 12 23 | 691 | 0.6− | 0.0 | 2003 01 01 | 097 | 0.9+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.3− |
| 1998 12 23 | 691 | 0.4− | 0.3− | 2003 01 04 | 704 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.5− |
| 1999 01 10 | 327 | 0.1− | 0.2+ | 2003 01 04 | 704 | 0.0 | 0.4− | 2006 10 17 | G96 | 0.0 | 0.0 |
| 1999 01 10 | 327 | 1.6+ | 0.3+ | 2003 01 04 | 704 | 0.7+ | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 1999 01 10 | 327 | 1.2+ | 0.5+ | 2003 01 04 | 704 | 0.4+ | 0.5− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 1999 01 17 | 691 | 0.4+ | 0.4+ | 2003 01 04 | 704 | 1.1− | 0.9− | 2006 10 22 | G96 | 0.2+ | 0.6− |
| 1999 01 17 | 691 | 0.7+ | 0.3− | 2004 03 11 | 644 | 0.4− | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 1999 01 17 | 691 | 0.4+ | 0.3− | 2004 03 11 | 644 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.6− | 0.0 | 2004 03 11 | 644 | 0.8+ | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 03 15 | 704 | 1.1+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.4+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | 1.0+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 12 31 | 704 | 0.2− | 0.2+ | 2004 03 19 | 704 | 1.1+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2004 03 19 | 704 | (2.0+ | 0.0 ) | 2006 11 15 | G96 | 0.0 | 0.5− |

**(137074)∗ 1998 WJ$_{34}$ = 1994 SN$_{13}$ = 2002 YB$_9$**

Discovered 1998 Nov. 16 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 42902), A. Doppler (*MPO* 88678)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.25451 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26227045 | $\omega$ | 2.77798 | | +0.45774518 | | −0.88874360 |
| $a$ | 2.4171474 | $\Omega$ | 59.98141 | | +0.81516985 | | +0.40849404 |
| $e$ | 0.1403358 | $i$ | 1.62671 | | +0.35491896 | | +0.20800826 |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.3− | 0.3+ | 2002 12 31 | 704 | 0.6+ | 0.4+ | 2005 08 04 | 644 | 0.0 | 0.2+ |
| 1994 09 29 | 691 | 0.3− | 0.5+ | 2003 01 01 | 704 | 0.6+ | 0.6+ | 2005 08 04 | 644 | 0.1+ | 0.2+ |
| 1994 09 29 | 691 | 0.2− | 0.4+ | 2003 01 01 | 704 | 0.7− | 0.6+ | 2005 08 04 | 644 | 0.1+ | 0.2+ |
| 1996 03 26 | 691 | 0.4+ | 0.2− | 2003 01 01 | 704 | 0.8− | 1.1+ | 2005 08 05 | 644 | 0.0 | 0.1+ |
| 1996 03 26 | 691 | 0.1− | 0.3− | 2003 01 01 | 704 | 0.5− | 0.1+ | 2005 08 05 | 644 | 0.0 | 0.2+ |
| 1996 03 26 | 691 | 0.4+ | 0.2− | 2003 01 01 | 704 | 0.1+ | 0.6+ | 2005 08 05 | 644 | 0.0 | 0.1− |
| 1998 11 16 | 691 | 0.4− | 0.5− | 2003 01 01 | 704 | 0.5+ | 0.3+ | 2005 08 30 | 644 | 0.3− | 0.1+ |
| 1998 11 16 | 691 | 0.1− | 0.4− | 2003 01 01 | 704 | 1.3− | 0.8− | 2005 08 30 | 644 | 0.1+ | 0.0 |
| 1998 11 16 | 691 | 0.1− | 0.3− | 2003 01 01 | 704 | 0.8− | 0.3+ | 2005 08 30 | 644 | 0.3− | 0.1− |
| 1998 11 17 | 910 | 0.0 | 0.4+ | 2003 01 01 | 704 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.1− |
| 1998 11 17 | 910 | 1.1+ | 0.0 | 2003 01 01 | 704 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.5+ | 0.1+ |
| 1998 11 18 | 910 | 0.4+ | 0.4+ | 2003 01 08 | 704 | 0.7+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 1998 11 19 | 691 | 0.1− | 0.4+ | 2003 01 08 | 704 | (2.2+ | 0.1+) | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 1998 11 19 | 691 | 0.0 | 0.5+ | 2003 01 08 | 704 | 1.4+ | 0.3+ | 2006 10 27 | G96 | 0.6− | 0.5− |
| 1998 11 19 | 691 | 0.3− | 0.4+ | 2003 01 08 | 704 | (1.7+ | 1.6+) | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 1998 11 26 | 691 | 0.0 | 0.0 | 2003 01 08 | 704 | 1.2+ | 0.9+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 1998 11 26 | 691 | 0.2+ | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 1998 11 26 | 691 | 0.3+ | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2000 04 13 | 691 | 0.3− | 0.5+ | 2004 04 25 | 691 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2000 04 13 | 691 | 0.8− | 0.4+ | 2004 04 28 | 291 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2000 04 13 | 691 | 0.7− | 0.1+ | 2004 04 28 | 291 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.5+ |
| 2002 12 31 | 704 | 0.6− | 0.2− | 2004 04 28 | 291 | 0.1+ | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 12 31 | 704 | 0.2+ | 0.4+ | 2004 05 09 | 691 | 0.5+ | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2002 12 31 | 704 | 0.0 | 0.4+ | 2004 05 09 | 691 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2004 05 09 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.4+ |

**(137075)∗ 1998 WK$_{38}$ = 2002 TS$_{210}$**

Discovered 1998 Nov. 21 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37145)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.46481 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24100539 | $\omega$ | 336.82191 | | +0.64028879 | | −0.76779995 |
| $a$ | 2.5573189 | $\Omega$ | 73.35686 | | +0.70840055 | | +0.57883407 |
| $e$ | 0.1998717 | $i$ | 1.35525 | | +0.29698303 | | +0.27465316 |
| $P$ | 4.09 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 699 | 1.2+ | 0.6+ | 2002 10 08 | 699 | 0.1+ | 0.2− | 2006 09 12 | 703 | (0.7+ | 2.0+) |
| 1998 11 11 | 699 | 1.0+ | 0.3− | 2002 10 11 | 704 | 0.7+ | 0.2+ | 2006 09 12 | 703 | 0.9+ | 0.2+ |
| 1998 11 11 | 699 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 09 12 | 703 | 0.5+ | 0.5+ |
| 1998 11 15 | 691 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 1998 11 15 | 691 | 0.1− | 0.2− | 2002 10 11 | 704 | 0.0 | 0.3− | 2006 09 14 | 691 | 1.3− | 0.5+ |
| 1998 11 15 | 691 | 0.1− | 0.2− | 2002 10 31 | 699 | 0.0 | 1.0+ | 2006 09 14 | 691 | 0.1+ | 0.2+ |
| 1998 11 18 | 704 | 0.3+ | 1.0− | 2002 10 31 | 699 | 0.4+ | 1.4+ | 2006 09 18 | 691 | 0.3− | 0.4+ |
| 1998 11 18 | 704 | 1.2+ | 0.7− | 2002 10 31 | 699 | 1.4+ | 1.3+ | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 1998 11 18 | 704 | 1.0+ | 0.2+ | 2002 10 31 | 699 | 0.4+ | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.3− |
| 1998 11 18 | 704 | (3.0− | 0.6−) | 2002 10 31 | 608 | 0.3− | 1.3+ | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 1998 11 21 | 691 | 0.6− | 0.1+ | 2002 10 31 | 608 | 0.5− | 1.0+ | 2006 09 20 | 644 | 0.4− | 0.4+ |
| 1998 11 21 | 691 | 0.8− | 0.0 | 2002 10 31 | 608 | 0.7− | 1.2+ | 2006 09 20 | 644 | 0.3+ | 0.3+ |
| 1998 11 21 | 691 | 0.4− | 0.0 | 2002 11 05 | 699 | 0.0 | 0.5− | 2006 09 25 | 691 | 0.1− | 0.7− |
| 1998 11 27 | 691 | 0.3+ | 0.1− | 2002 11 05 | 699 | (0.2+ | 1.6+) | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 1998 11 27 | 691 | 0.1+ | 0.2− | 2002 11 05 | 699 | 0.1− | 0.8− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 1998 11 27 | 691 | 0.3+ | 0.2− | 2002 11 05 | 699 | 0.3+ | 0.6+ | 2006 10 01 | 704 | 0.7− | 0.3+ |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2002 11 06 | 704 | 0.3+ | 0.6− | 2006 10 01 | 704 | 0.4+ | 0.4+ |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2002 11 06 | 704 | 0.1− | 0.7− | 2006 10 01 | 704 | 0.6+ | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2002 11 06 | 704 | 0.2− | 1.2− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | (0.8− | 1.6+) | 2002 11 22 | 644 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2002 11 22 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 10 07 | 704 | 0.3− | 0.4+ | 2002 11 22 | 644 | (1.7+ | 1.7+) | 2006 10 19 | 644 | 1.2+ | 0.5+ |
| 2002 10 07 | 704 | 1.2− | 0.3+ | 2004 02 17 | 291 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 10 07 | 704 | 0.2− | 0.0 | 2004 02 17 | 291 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 10 07 | 704 | (0.3− | 1.7+) | 2004 02 17 | 291 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 10 08 | 699 | 0.0 | 1.3+ | 2004 02 26 | 695 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 10 08 | 699 | 0.2+ | 0.9− | 2004 02 26 | 695 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 10 08 | 699 | 0.2− | 0.1+ | 2006 09 12 | 703 | 0.5+ | 1.0+ | 2006 10 22 | G96 | 0.3+ | 0.3− |

**(137076)∗ 1998 XK$_3$**

Discovered 1998 Dec. 10 by L. Šarounová at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.29933 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23348035 | $\omega$ | 134.35106 | | +0.65606116 | | −0.68677846 |
| $a$ | 2.6119758 | $\Omega$ | 271.86091 | | +0.57221009 | | +0.72299647 |
| $e$ | 0.2512354 | $i$ | 18.24527 | | +0.49209691 | | +0.07490962 |
| $P$ | 4.22 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 704 | 0.5− | 0.2− | 2002 11 08 | 704 | 0.7+ | 0.7− | 2003 01 08 | 704 | 0.4+ | 0.4+ |
| 1998 11 23 | 704 | 1.6+ | 0.7− | 2002 11 08 | 704 | 0.1+ | 0.4− | 2003 01 27 | 704 | 0.8+ | 0.3+ |
| 1998 11 23 | 704 | 0.7+ | 1.3+ | 2002 11 08 | 704 | 0.3+ | 0.7− | 2003 01 27 | 704 | 0.3+ | 0.5+ |
| 1998 11 25 | 704 | 1.2− | 1.8− | 2002 11 10 | 636 | 0.1+ | 0.1+ | 2003 01 27 | 704 | 0.3+ | 0.3+ |
| 1998 11 25 | 704 | 0.1+ | 1.2+ | 2002 11 10 | 636 | 0.3+ | 0.1− | 2003 01 27 | 704 | 0.3+ | 0.2+ |
| 1998 11 25 | 704 | 0.9+ | 0.2− | 2002 11 10 | 636 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.3+ | 0.1+ |
| 1998 11 25 | 704 | 0.5− | 0.5+ | 2002 11 12 | 704 | 0.9− | 0.3+ | 2003 02 02 | 704 | 0.5+ | 0.4− |
| 1998 12 10 | 557 | 0.6− | 0.1− | 2002 11 12 | 704 | 0.3− | 0.4+ | 2003 02 02 | 704 | 0.1+ | 0.6− |
| 1998 12 10 | 557 | 0.5− | 0.3+ | 2002 11 12 | 704 | 0.4− | 1.0+ | 2003 02 02 | 704 | 0.0 | 0.4− |
| 1998 12 11 | 557 | 0.9− | 0.1− | 2002 11 12 | 704 | 0.6− | 0.7+ | 2003 02 02 | 704 | 0.5− | 0.3− |
| 1998 12 11 | 557 | 0.3− | 0.3− | 2002 11 12 | 704 | 0.5− | 0.7+ | 2003 02 02 | 704 | 0.7− | 0.5− |
| 1998 12 16 | 557 | 0.0 | 0.0 | 2002 11 15 | 704 | 0.5+ | 0.0 | 2003 02 28 | 704 | 0.2− | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 557 | 0.1− | 0.2− | 2002 11 15 | 704 | 0.9− | 1.0+ | 2003 02 28 | 704 | 0.2− | 0.3+ | | |
| 1998 12 18 | 557 | 0.2− | 0.2− | 2002 11 15 | 704 | 0.4+ | 0.4+ | 2003 02 28 | 704 | 0.5+ | 0.0 | | |
| 1998 12 18 | 557 | 0.2+ | 0.4− | 2002 11 15 | 704 | 0.1− | 1.1+ | 2003 02 28 | 704 | 0.1− | 0.3− | | |
| 1998 12 18 | 699 | 0.0 | 1.2+ | 2002 11 15 | 704 | (3.3+ | 0.4−) | 2003 02 28 | 704 | 0.1+ | 0.5+ | | |
| 1998 12 18 | 699 | 1.2+ | 1.4+ | 2002 12 06 | 704 | 0.2− | 0.4+ | 2003 03 07 | 704 | 1.2+ | 0.6+ | | |
| 1998 12 18 | 699 | 0.1− | 1.1+ | 2002 12 06 | 704 | 0.1− | 0.1− | 2003 03 07 | 704 | 0.5+ | 0.5+ | | |
| 1998 12 23 | 704 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.0 | 0.1+ | 2003 03 07 | 704 | 0.1+ | 0.6+ | | |
| 1998 12 23 | 704 | 1.6+ | 1.5− | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2003 03 07 | 704 | 0.4+ | 0.4+ | | |
| 1998 12 23 | 704 | 1.1− | 1.1− | 2002 12 06 | 704 | 0.2− | 0.0 | 2004 04 24 | E12 | 0.3− | 0.6+ | | |
| 1998 12 23 | 704 | 0.5+ | 0.7− | 2002 12 10 | 557 | 0.2+ | 0.3+ | 2004 04 24 | E12 | 0.5+ | 0.1− | | |
| 1998 12 29 | 557 | 0.0 | 0.2− | 2002 12 10 | 557 | 0.0 | 0.3+ | 2004 04 24 | E12 | 0.1+ | 0.6+ | | |
| 1998 12 29 | 557 | 0.2+ | 0.2− | 2002 12 11 | 704 | 0.2− | 0.2+ | 2004 04 24 | E12 | 0.4− | 0.9+ | | |
| 1999 01 07 | 557 | 0.3− | 0.2− | 2002 12 11 | 704 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.5− | 0.4+ | | |
| 1999 01 07 | 557 | 0.3− | 0.6+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2006 09 17 | 704 | 0.2− | 0.1+ | | |
| 1999 01 07 | 557 | 0.1− | 0.2− | 2002 12 11 | 704 | 0.4− | 0.7+ | 2006 09 17 | 704 | 0.4− | 0.2− | | |
| 1999 02 09 | 557 | 1.0− | 0.5− | 2002 12 11 | 704 | 0.3− | 0.8+ | 2006 09 17 | 704 | 0.4− | 0.2+ | | |
| 1999 02 09 | 557 | 0.4− | 0.7− | 2002 12 14 | 704 | (0.7+ | 1.7−) | 2006 09 17 | 704 | 0.2− | 0.1− | | |
| 2001 06 21 | 557 | 0.2+ | 0.2− | 2002 12 14 | 704 | 0.2+ | 0.8− | 2006 10 04 | 704 | 1.0+ | 0.2− | | |
| 2001 06 21 | 557 | 0.2+ | 0.0 | 2002 12 14 | 704 | 0.4+ | 0.8− | 2006 10 04 | 704 | 0.0 | 0.0 | | |
| 2001 07 28 | 557 | 0.8− | 0.7+ | 2002 12 14 | 704 | 0.4+ | 0.7− | 2006 10 04 | 704 | 0.1+ | 0.5− | | |
| 2001 07 28 | 557 | 0.3+ | 1.4+ | 2002 12 14 | 704 | 0.8− | 0.1− | 2006 10 04 | 704 | 0.5+ | 0.3− | | |
| 2002 09 07 | 704 | (1.3− | 1.9+) | 2002 12 15 | 704 | 0.1− | 0.7− | 2006 10 04 | 704 | 0.4− | 0.2− | | |
| 2002 09 07 | 704 | (0.2− | 3.4+) | 2002 12 15 | 704 | 0.7+ | 0.8− | 2006 10 14 | 704 | 0.6+ | 0.4+ | | |
| 2002 09 07 | 704 | (0.2+ | 3.0+) | 2002 12 15 | 704 | 0.5+ | 0.8− | 2006 10 14 | 704 | 0.4+ | 0.1+ | | |
| 2002 09 07 | 704 | (0.0 | 3.1+) | 2002 12 15 | 704 | 0.7+ | 0.9− | 2006 10 14 | 704 | 0.0 | 0.1− | | |
| 2002 10 05 | 704 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.5− | 0.6+ | 2006 10 14 | 704 | 0.1+ | 0.4− | | |
| 2002 10 05 | 704 | (2.5+ | 0.4+) | 2002 12 31 | 704 | 0.4− | 0.3+ | 2006 10 14 | 704 | (0.6+ | 1.7+) | | |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2002 12 31 | 704 | 0.2− | 0.0 | 2006 11 13 | 704 | (2.9− | 0.4−) | | |
| 2002 10 05 | 704 | 0.1+ | 0.2− | 2002 12 31 | 704 | 0.1− | 0.4+ | 2006 11 13 | 704 | 0.5− | 0.5− | | |
| 2002 10 12 | 704 | 0.3+ | 0.1+ | 2002 12 31 | 704 | 0.3− | 0.2− | 2006 11 13 | 704 | 0.3− | 0.0 | | |
| 2002 10 12 | 704 | 0.1+ | 0.4− | 2003 01 04 | 704 | 1.2− | 0.2+ | 2006 11 13 | 704 | 0.4− | 0.3− | | |
| 2002 10 12 | 704 | 0.7+ | 0.1+ | 2003 01 04 | 704 | 0.4− | 0.7− | 2006 11 13 | 704 | 0.1− | 0.1− | | |
| 2002 10 31 | 704 | 0.4+ | 0.4+ | 2003 01 04 | 704 | 0.4− | 0.5− | 2006 11 16 | 951 | 0.3+ | 0.1− | | |
| 2002 10 31 | 704 | 0.3+ | 0.6+ | 2003 01 04 | 704 | 0.2− | 0.6− | 2006 11 16 | 951 | 0.2+ | 0.0 | | |
| 2002 10 31 | 704 | 0.4+ | 0.4+ | 2003 01 08 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 951 | 0.4+ | 0.2− | | |
| 2002 10 31 | 704 | 0.4+ | 0.7+ | 2003 01 08 | 704 | 0.4+ | 0.2+ | 2006 12 01 | 704 | 0.5− | 0.2+ | | |
| 2002 10 31 | 704 | 0.1− | 1.0+ | 2003 01 08 | 704 | 0.4+ | 0.2+ | 2006 12 01 | 704 | 0.3+ | 0.1+ | | |
| 2002 11 08 | 704 | 0.8+ | 0.6− | 2003 01 08 | 704 | 0.4+ | 0.3+ | 2006 12 01 | 704 | 0.2+ | 0.0 | | |

**(137077)∗ 1998 XE$_4$ = 2002 XM$_{10}$**

Discovered 1998 Dec. 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 39984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.84656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25841031 | $\omega$ | 14.92036 | | −0.43053860 | −0.90083857 | |
| $a$ | 2.4411595 | $\Omega$ | 100.60741 | | +0.82215855 | −0.41698829 | |
| $e$ | 0.1729472 | $i$ | 3.26110 | | +0.37241353 | −0.12087446 | |
| $P$ | 3.81 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 21 | 691 | 0.7+ | 0.3− | 2002 12 05 | 704 | 0.3+ | 0.2+ | 2005 08 10 | 807 | 0.2+ | 0.5+ | | |
| 1996 03 21 | 691 | 1.0+ | 0.3+ | 2002 12 05 | 704 | 0.7+ | 0.4+ | 2005 08 10 | 807 | 0.0 | 0.6+ | | |
| 1996 03 21 | 691 | 0.5+ | 0.1− | 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.7− | 0.2+ | | |
| 1996 04 09 | 691 | 0.8− | 0.0 | 2002 12 10 | 704 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.4+ | | |
| 1996 04 09 | 691 | 0.7− | 0.1+ | 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.3− | | |
| 1996 04 09 | 691 | 0.6− | 0.1+ | 2002 12 10 | 704 | 0.2− | 1.0+ | 2006 10 17 | G96 | 0.4− | 0.2+ | | |
| 1998 11 23 | 699 | 0.5+ | 1.1+ | 2002 12 10 | 704 | (5.8− | 2.6+) | 2006 10 23 | G96 | 0.0 | 1.3+ | | |
| 1998 11 23 | 699 | 0.0 | 2.0+ | 2002 12 31 | 704 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.0 | | |
| 1998 11 23 | 699 | 0.3+ | 0.5+ | 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.8− | 0.5− | | |
| 1998 12 08 | 691 | 0.4− | 0.4+ | 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.4− | 0.2− | | |
| 1998 12 08 | 691 | 0.1− | 0.4− | 2002 12 31 | 704 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.5− | 0.3− | | |
| 1998 12 08 | 691 | 0.0 | 0.1− | 2003 01 04 | 704 | (0.9+ | 1.6+) | 2006 11 01 | G96 | 0.0 | 0.3− | | |
| 1998 12 12 | 691 | 0.6+ | 0.0 | 2003 01 04 | 704 | 0.0 | 0.9+ | 2006 11 01 | G96 | 0.1− | 0.4− | | |
| 1998 12 12 | 691 | 0.9+ | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.9+ | 2006 11 01 | G96 | 0.1+ | 0.5− | | |
| 1998 12 12 | 691 | 0.2− | 1.5− | 2003 01 04 | 704 | 1.1+ | 1.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 1998 12 20 | 691 | 0.8− | 0.1+ | 2003 01 04 | 704 | (0.1+ | 2.2+) | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 1998 12 20 | 691 | 0.7− | 0.2− | 2003 01 08 | 704 | 0.6+ | 0.6− | 2006 11 16 | G96 | 0.6− | 0.5− | | |
| 1998 12 20 | 691 | 0.3− | 0.0 | 2003 01 08 | 704 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2− | 0.4− | | |
| 2002 12 03 | 012 | 0.4− | 0.9− | 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.4− | 0.1+ | | |
| 2002 12 03 | 012 | (1.7+ | 0.6−) | 2003 01 08 | 704 | 0.1+ | 0.8− | 2006 11 27 | G96 | 0.6− | 0.2+ | | |
| 2002 12 03 | 012 | 0.0 | 0.4− | 2003 01 31 | 704 | 0.9+ | 1.3+ | 2006 11 27 | G96 | 0.1− | 0.1− | | |
| 2002 12 03 | 012 | 0.5− | 1.3+ | 2003 01 31 | 704 | 0.1− | 0.5− | 2006 11 27 | G96 | 0.8− | 0.1+ | | |
| 2002 12 03 | 012 | 0.7+ | 1.1− | 2003 01 31 | 704 | 0.0 | 0.3+ | | | | | | |
| 2002 12 05 | 704 | 0.6+ | 0.4+ | 2005 08 09 | 807 | 0.0 | 0.5+ | | | | | | |

**(137078)∗ 1998 XZ$_4$**

Discovered 1998 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.96355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36494103 | $\omega$ | 9.45006 | | +0.89103962 | +0.39221567 | |
| $a$ | 1.9393413 | $\Omega$ | 324.54293 | | −0.43794610 | +0.61041068 | |
| $e$ | 0.6388187 | $i$ | 23.19825 | | −0.11938008 | +0.68816108 | |
| $P$ | 2.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 704 | 0.1+ | 0.9+ | 1998 12 27 | 402 | 0.4− | 0.0 | 2006 03 27 | E12 | 0.6+ | 0.2− | | |
| 1998 12 11 | 704 | 1.3+ | 1.1− | 1998 12 27 | 402 | 0.2− | 0.3+ | 2006 03 27 | E12 | 0.0 | 0.0 | | |
| 1998 12 11 | 704 | 1.0+ | 0.8− | 1999 01 05 | 557 | 0.1− | 0.2− | 2006 03 27 | E12 | 0.1+ | 0.1+ | | |
| 1998 12 11 | 704 | (2.4+ | 0.2−) | 1999 01 05 | 557 | 0.0 | 0.1− | 2006 03 27 | E12 | 0.3+ | 0.2+ | | |
| 1998 12 11 | 704 | 1.0+ | 0.3+ | 1999 01 18 | 402 | 0.3+ | 0.6+ | 2006 05 03 | E12 | 0.0 | 0.5+ | | |
| 1998 12 13 | 327 | 0.1− | 0.1− | 1999 01 18 | 402 | 0.2+ | 0.6+ | 2006 05 03 | E12 | 0.4+ | 1.3− | | |
| 1998 12 13 | 327 | 0.1− | 0.0 | 1999 01 18 | 402 | 0.2+ | 0.3+ | 2006 05 03 | E12 | 0.7− | 0.3+ | | |
| 1998 12 13 | 327 | 0.3− | 0.0 | 1999 01 22 | 360 | 1.0+ | 0.7+ | 2006 05 03 | E12 | 0.6− | 0.1− | | |
| 1998 12 13 | 327 | 0.0 | 0.0 | 1999 01 22 | 360 | 1.3+ | 0.6+ | 2006 05 30 | E12 | 0.2− | 0.1− | | |
| 1998 12 13 | 046 | 0.3− | 0.3+ | 1999 01 22 | 360 | 1.3+ | 0.4+ | 2006 05 30 | E12 | 0.3− | 0.1− | | |
| 1998 12 13 | 046 | 0.2− | 0.3+ | 2000 02 10 | 413 | 0.3− | 0.4− | 2006 05 30 | E12 | (1.7+ | 0.1+) | | |
| 1998 12 13 | 046 | 0.2− | 0.0 | 2000 02 10 | 413 | 0.4− | 0.4− | 2006 05 30 | E12 | 0.4− | 0.0 | | |
| 1998 12 13 | 046 | 0.2+ | 0.1− | 2000 02 10 | 413 | 0.1− | 0.2− | 2006 07 22 | E12 | 0.0 | 0.0 | | |
| 1998 12 13 | 046 | 0.1+ | 0.1+ | 2000 02 26 | 413 | 0.1+ | 0.0 | 2006 07 22 | E12 | (2.1− | 1.1+) | | |
| 1998 12 13 | 046 | 0.0 | 0.0 | 2000 02 26 | 413 | 0.1− | 0.0 | 2006 07 22 | E12 | 0.3− | 0.4− | | |
| 1998 12 14 | 711 | (2.7− | 0.3−) | 2000 02 26 | 413 | 0.0 | 0.3− | 2006 07 22 | E12 | 0.1+ | 0.9− | | |
| 1998 12 14 | 711 | 0.3− | 0.0 | 2000 02 27 | 693 | 1.9− | 0.8+ | 2006 11 02 | F84 | 1.2− | 0.0 | | |
| 1998 12 14 | 711 | 0.2− | 0.0 | 2000 02 27 | 693 | 1.2+ | 0.3− | 2006 11 02 | F84 | 0.6− | 0.4+ | | |
| 1998 12 14 | 704 | 0.2+ | 0.3+ | 2001 11 18 | 696 | 0.6+ | 0.5+ | 2006 11 13 | 130 | 0.3− | 0.3− | | |
| 1998 12 14 | 658 | (2.2− | 1.9−) | 2001 11 18 | 696 | 0.0 | 0.4+ | 2006 11 13 | 130 | 0.4− | 0.4− | | |
| 1998 12 14 | 658 | 1.8− | 1.5− | 2002 01 13 | 711 | 1.0+ | 0.2+ | 2006 11 13 | 130 | 0.0 | 0.6− | | |
| 1998 12 14 | 658 | (2.1− | 1.3−) | 2002 01 13 | 711 | 1.1− | 0.5+ | 2006 11 13 | 130 | 0.2− | 0.3− | | |
| 1998 12 14 | 658 | 1.8− | 1.6− | 2002 01 13 | 711 | 0.5− | 0.0 | 2006 11 15 | 113 | 0.0 | 0.2+ | | |
| 1998 12 14 | 658 | 1.4− | 1.5− | 2002 02 03 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 113 | 0.1− | 0.0 | | |
| 1998 12 14 | 704 | 0.3+ | 0.2+ | 2002 02 03 | 644 | 0.1− | 0.2+ | 2006 11 15 | 113 | 0.2+ | 0.3+ | | |
| 1998 12 14 | 704 | 0.5− | 0.3− | 2002 02 03 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 113 | 0.0 | 0.2− | | |
| 1998 12 14 | 704 | 0.3− | 0.7+ | 2003 03 06 | 711 | (1.8+ | 0.8−) | 2006 11 15 | 113 | 0.1− | 0.1+ | | |
| 1998 12 14 | 704 | 0.9− | 1.0+ | 2003 03 06 | 711 | 1.1+ | 0.2− | 2006 11 18 | 113 | 0.0 | 0.1+ | | |
| 1998 12 14 | 587 | (0.9+ | 2.2−) | 2003 03 06 | 711 | 0.9+ | 0.1− | 2006 11 18 | 113 | 0.1− | 0.1− | | |
| 1998 12 16 | 360 | 0.3− | 0.1− | 2005 02 09 | 711 | 0.3+ | 1.0+ | 2006 11 18 | 113 | 0.1+ | 0.1+ | | |
| 1998 12 16 | 360 | 0.3− | 0.2− | 2005 02 09 | 711 | 1.1+ | 0.2+ | 2006 11 18 | 113 | 0.1− | 0.1− | | |
| 1998 12 16 | 360 | 0.2− | 0.2− | 2005 02 09 | 711 | (2.5− | 0.3+) | 2006 11 18 | 113 | 0.1+ | 0.0 | | |
| 1998 12 17 | 540 | 0.5+ | 0.6+ | 2005 03 04 | G96 | (0.4+ | 7.6+) | 2006 11 18 | 113 | 0.2− | 0.1+ | | |
| 1998 12 17 | 540 | 0.5− | 1.7+ | 2005 03 04 | G96 | (0.6+ | 8.7+) | 2006 11 27 | 113 | 0.8− | 0.5+ | | |
| 1998 12 17 | 540 | 0.3+ | 0.3+ | 2005 03 04 | G96 | (0.2− | 7.3+) | 2006 11 27 | 113 | 0.2− | 0.2− | | |
| 1998 12 23 | 402 | 0.9− | 0.6− | 2005 03 04 | G96 | (0.0 | 7.6+) | 2006 11 27 | 113 | 0.0 | 0.3+ | | |
| 1998 12 23 | 402 | 0.7− | 0.6− | 2005 04 07 | 568 | 0.3− | 0.1− | 2006 11 27 | 113 | 0.1+ | 0.2+ | | |
| 1998 12 23 | 402 | 0.7− | 0.6− | 2005 04 07 | 568 | 0.2− | 0.0 | 2006 11 27 | 113 | 0.1− | 0.3− | | |
| 1998 12 27 | 402 | 0.3+ | 0.2− | 2005 04 07 | 568 | 0.2− | 0.1− | 2006 11 27 | 113 | 0.1− | 0.2− | | |

**(137079)∗ 1998 XC$_5$ = 2002 TC$_{64}$**

Discovered 1998 Dec. 9 at Farra d'Isonzo.

Id. A. Doppler (*MPO* 37148)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.90481 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22674894 | $\omega$ | 114.33678 | | −0.31549205 | −0.94887552 | |
| $a$ | 2.6634172 | $\Omega$ | 354.02724 | | +0.83207848 | −0.27156110 | |
| $e$ | 0.1706300 | $i$ | 5.51493 | | +0.45619094 | −0.16090309 | |
| $P$ | 4.35 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 09 | 595 | 1.1− | 0.2− | 2004 02 19 | 704 | 0.0 | 0.4+ | 2004 03 27 | 704 | 0.4+ | 0.0 |
| 1998 12 09 | 595 | 0.4+ | 0.3− | 2004 02 19 | 704 | 0.2− | 1.3+ | 2004 03 27 | 704 | 0.2+ | 0.4+ |
| 1998 12 12 | 595 | 0.1+ | 0.5+ | 2004 02 19 | 704 | 0.8+ | 0.4+ | 2004 03 27 | 704 | 0.4+ | 0.3− |
| 1998 12 12 | 595 | 0.4− | 0.1+ | 2004 02 19 | 704 | 0.6+ | 1.0+ | 2004 03 27 | 704 | 0.8+ | 0.5− |
| 1998 12 13 | 595 | 0.6− | 0.1− | 2004 02 25 | 683 | 0.2+ | 0.9− | 2004 03 30 | 691 | 0.1+ | 0.6+ |
| 1998 12 13 | 595 | (0.3− | 2.1−) | 2004 02 25 | 683 | (2.2− | 0.7−) | 2004 03 30 | 691 | 0.4+ | 0.4− |
| 1998 12 17 | 704 | 1.7+ | 0.4− | 2004 02 25 | 683 | 1.2− | 0.3+ | 2004 03 30 | 691 | 0.1+ | 0.1+ |
| 1998 12 17 | 704 | 0.8− | 0.0 | 2004 02 26 | 683 | (1.6+ | 0.0 ) | 2004 03 31 | 691 | 0.1− | 0.0 |
| 1998 12 17 | 704 | 0.8+ | 0.2+ | 2004 02 26 | 704 | 1.1+ | 1.2+ | 2004 03 31 | 691 | 0.1+ | 0.2+ |
| 1998 12 17 | 704 | 0.7+ | 0.7+ | 2004 02 26 | 683 | 0.7+ | 0.7+ | 2004 03 31 | 691 | 0.1+ | 0.2+ |
| 1998 12 21 | 595 | 0.2− | 0.3− | 2004 02 26 | 704 | 1.4+ | 1.2+ | 2004 04 24 | 691 | 0.2− | 0.5+ |
| 1998 12 21 | 595 | 0.4− | 0.6+ | 2004 02 26 | 683 | (0.9− | 2.6+) | 2004 04 24 | 691 | 0.3− | 0.4+ |
| 1998 12 21 | 595 | 0.9− | 0.9+ | 2004 02 26 | 704 | 0.9+ | 1.0+ | 2004 04 24 | 691 | 0.2− | 0.4+ |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2004 02 26 | 704 | (1.8+ | 0.2+) | 2006 08 21 | 691 | 0.2− | 0.5+ |
| 2002 10 04 | 704 | 0.2− | 0.4− | 2004 02 26 | 704 | 0.7+ | 0.7+ | 2006 08 21 | 691 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 08 21 | 691 | 0.3− | 0.6+ |
| 2002 10 04 | 704 | 0.3− | 0.8+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.3− | 0.5+ |
| 2002 10 04 | 704 | 0.9+ | 1.1+ | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.5− | 0.8+ |
| 2002 10 04 | 644 | 0.3+ | 0.1+ | 2004 03 16 | 291 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.4− | 0.6+ |
| 2002 10 04 | 644 | 0.2+ | 0.3+ | 2004 03 16 | 291 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.5+ |
| 2002 10 04 | 644 | 0.9− | 0.2+ | 2004 03 16 | 704 | 0.3− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.8+ |
| 2002 10 04 | 644 | 0.1+ | 0.4+ | 2004 03 16 | 704 | 0.5− | 0.2+ | 2006 08 28 | 691 | 0.5− | 0.2+ |
| 2002 10 04 | 644 | 0.8− | 0.9+ | 2004 03 16 | 291 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.5+ |
| 2002 10 04 | 644 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.7− | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2002 10 05 | 599 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 10 05 | 599 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2002 10 05 | 599 | 0.5− | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.9− |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.7+ | 0.6− | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2002 10 09 | 704 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.7+ | 0.5− | 2006 11 11 | G96 | 0.5+ | 0.8− |
| 2002 10 09 | 704 | 0.7− | 1.1− | 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.8− | 0.6− |
| 2002 10 26 | 049 | 0.2+ | 0.0 | 2004 03 20 | 704 | 1.0+ | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2002 10 26 | 049 | 0.5+ | 0.4+ | 2004 03 20 | 704 | 1.1+ | 1.2+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2002 10 26 | 049 | 0.2− | 0.2+ | 2004 03 20 | 704 | (1.5+ | 0.5+) | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2004 02 19 | 704 | 0.4− | 0.6+ | 2004 03 27 | 704 | (1.8+ | 0.1+) | 2006 11 21 | G96 | 0.2− | 0.3+ |

**(137080)∗ 1998 XD$_7$**

Discovered 1998 Dec. 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.57005 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26234491 | $\omega$ | 144.88666 | | +0.95975729 | −0.27034783 | |
| $a$ | 2.4166901 | $\Omega$ | 230.97985 | | +0.23004544 | +0.91209564 | |
| $e$ | 0.1538097 | $i$ | 5.61471 | | +0.16107462 | +0.30821029 | |
| $P$ | 3.76 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 13 | 691 | 0.1− | 0.6− | 2004 03 27 | 704 | 0.1− | 0.3+ | 2005 06 21 | 644 | 0.2− | 0.1+ |
| 1996 03 13 | 691 | 0.1− | 0.6− | 2004 03 27 | 704 | 0.3− | 0.9+ | 2005 06 29 | 644 | 0.1− | 0.1+ |
| 1996 03 13 | 691 | 0.6− | 0.9− | 2004 03 27 | 704 | 1.0+ | 1.0+ | 2005 06 29 | 644 | 0.4− | 0.1+ |
| 1998 11 18 | 704 | 0.5− | 0.4− | 2004 03 31 | 704 | 0.7+ | 0.5+ | 2005 06 29 | 644 | 0.1− | 0.1+ |
| 1998 11 18 | 704 | 0.5+ | 0.0 | 2004 03 31 | 704 | 0.2− | 0.1− | 2005 06 29 | 644 | 0.2− | 0.4+ |
| 1998 11 18 | 704 | 0.8− | 0.1+ | 2004 03 31 | 704 | 0.7− | 0.2+ | 2005 06 29 | 644 | 0.1− | 0.2+ |
| 1998 11 18 | 704 | 0.5− | 0.5− | 2004 03 31 | 704 | 0.5+ | 0.1+ | 2005 06 29 | 644 | 0.2− | 0.1+ |
| 1998 11 18 | 704 | (2.8− | 1.5−) | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2005 08 24 | 644 | 0.3− | 0.1− |
| 1998 11 20 | 699 | 0.7− | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2005 08 24 | 644 | 0.1− | 0.1− |
| 1998 11 20 | 699 | 0.2− | 1.0− | 2004 04 13 | 691 | 0.0 | 0.5+ | 2005 08 24 | 644 | 0.2− | 0.1− |
| 1998 11 20 | 699 | 0.1+ | 0.1+ | 2004 04 17 | 704 | 0.6+ | 0.1+ | 2005 08 31 | 704 | 0.3+ | 0.7+ |
| 1998 11 21 | 704 | 0.1+ | 1.3− | 2004 04 17 | 704 | 1.3+ | 0.6− | 2005 08 31 | 704 | 0.6+ | 0.5+ |
| 1998 11 21 | 704 | 0.5+ | 1.3+ | 2004 04 17 | 704 | 0.6+ | 1.1+ | 2005 08 31 | 704 | 0.4− | 0.4− |
| 1998 11 21 | 704 | (1.1− | 3.6+) | 2004 04 17 | 704 | 0.5+ | 1.1+ | 2005 08 31 | 704 | 0.5+ | 1.1− |
| 1998 11 21 | 704 | (5.7− | 3.7+) | 2004 04 19 | 704 | 0.6+ | 0.6+ | 2005 08 31 | 704 | 0.9+ | 1.5− |
| 1998 12 08 | 691 | 0.3− | 0.1+ | 2004 04 19 | 704 | 0.5+ | 0.5+ | 2005 09 03 | 644 | 0.1− | 0.1+ |
| 1998 12 08 | 691 | 0.2− | 0.1+ | 2004 04 19 | 704 | 0.9− | 1.3+ | 2005 09 03 | 644 | 0.2− | 0.0 |
| 1998 12 08 | 691 | 0.3− | 0.2+ | 2004 04 19 | 704 | 1.0+ | 0.1− | 2005 09 03 | 644 | 0.1− | 0.0 |
| 1998 12 08 | 699 | 0.2+ | 1.4+ | 2004 04 19 | 704 | 0.1+ | 0.3+ | 2005 09 27 | 644 | 0.1− | 0.0 |
| 1998 12 08 | 699 | 0.3+ | 0.1− | 2004 04 20 | 704 | 0.0 | 0.0 | 2005 09 27 | 644 | 0.1− | 0.0 |
| 1998 12 08 | 699 | 1.6+ | 1.6+ | 2004 04 20 | 704 | 0.6+ | 1.0− | 2005 09 27 | 644 | 0.1− | 0.1− |
| 1998 12 13 | 691 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.1+ | 1.9+ | 2005 10 08 | 704 | 0.8+ | 0.1− |
| 1998 12 13 | 691 | 0.2− | 0.0 | 2004 04 20 | 704 | 0.4− | 0.1+ | 2005 10 08 | 704 | 0.0 | 1.0+ |
| 1998 12 13 | 691 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.4− | 0.4+ | 2005 10 08 | 704 | 0.0 | 0.6+ |
| 1998 12 15 | 910 | 0.4− | 1.2+ | 2004 04 22 | 704 | 1.4− | 0.2+ | 2005 10 22 | 703 | 0.2+ | 0.6− |
| 1998 12 15 | 910 | 0.3− | 0.9+ | 2004 04 22 | 704 | 0.7− | 0.0 | 2005 10 22 | 703 | 0.1+ | 0.2− |
| 1998 12 15 | 910 | 0.4− | 1.2+ | 2004 04 22 | 704 | 0.8+ | 0.7+ | 2005 10 22 | 703 | 0.2− | 1.8+ |
| 1998 12 21 | 910 | 1.1+ | 0.9+ | 2004 04 22 | 704 | 1.0− | 0.1− | 2005 10 22 | 703 | (2.6− | 0.2−) |
| 1998 12 21 | 910 | 1.4+ | 0.8+ | 2005 06 21 | 644 | 0.2− | 0.2+ | | | | |
| 1998 12 21 | 910 | 1.1+ | 0.6+ | 2005 06 21 | 644 | 0.4− | 0.3+ | | | | |

**(137081)∗ 1998 XO$_7$ = 2002 TC$_{89}$**

Discovered 1998 Dec. 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37149)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.93765 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22191246 | $\omega$ | 26.15373 | | −0.22874181 | +0.96508393 | |
| $a$ | 2.7019767 | $\Omega$ | 230.89727 | | −0.91951419 | −0.25724396 | |
| $e$ | 0.1258438 | $i$ | 9.46657 | | −0.31964172 | +0.04938164 | |
| $P$ | 4.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 08 | 691 | 0.1+ | 0.2+ | 2005 04 06 | 699 | 0.2+ | 0.7− | 2005 05 09 | 699 | 1.0− | 0.0 |
| 1998 12 08 | 691 | 0.1+ | 0.1− | 2005 04 06 | 699 | 0.1+ | 0.5− | 2005 05 14 | 644 | 0.2+ | 0.4+ |
| 1998 12 08 | 691 | 0.0 | 0.6− | 2005 04 06 | 699 | 0.2− | 0.4+ | 2005 05 14 | 644 | 0.2+ | 0.2+ |
| 1998 12 13 | 691 | 0.5+ | 0.0 | 2005 04 06 | 699 | 0.3+ | 0.8+ | 2005 05 14 | 644 | 0.0 | 0.2+ |
| 1998 12 13 | 691 | 0.7+ | 0.0 | 2005 04 06 | 704 | 0.8+ | 0.0 | 2005 07 04 | E12 | 1.1+ | 0.4+ |
| 1998 12 13 | 691 | 0.5+ | 0.2+ | 2005 04 06 | 704 | 0.3+ | 0.9+ | 2005 07 04 | E12 | 0.1+ | 0.1− |
| 1998 12 25 | 691 | 0.4− | 0.0 | 2005 04 06 | 704 | 0.6+ | 0.3− | 2005 07 04 | E12 | 0.4− | 0.7− |
| 1998 12 25 | 691 | 0.5− | 0.4+ | 2005 04 18 | 703 | (1.6− | 1.1+) | 2005 07 04 | E12 | 1.1+ | 0.1− |
| 1998 12 25 | 691 | 0.7− | 0.4+ | 2005 04 18 | 703 | (1.3− | 1.6+) | 2006 08 18 | 644 | 0.2+ | 0.1+ |
| 2002 09 21 | 644 | 0.6− | 0.1+ | 2005 04 18 | 703 | 0.6− | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 2002 09 21 | 644 | 0.7− | 0.4+ | 2005 04 18 | 703 | 0.2− | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 2002 09 21 | 644 | 0.5− | 0.8+ | 2005 04 19 | 699 | 0.6+ | 0.9+ | 2006 08 19 | 644 | 0.1+ | 0.1+ |
| 2002 10 03 | 644 | 0.3− | 0.4+ | 2005 04 19 | 699 | 1.0+ | 0.5+ | 2006 08 19 | 644 | 0.0 | 0.0 |
| 2002 10 03 | 644 | 0.4− | 0.2+ | 2005 04 19 | 699 | (1.6+ | 0.8−) | 2006 08 19 | 644 | 0.0 | 0.1− |
| 2002 10 03 | 644 | 0.2− | 0.3+ | 2005 04 19 | 699 | 0.5+ | 0.7+ | 2006 08 28 | 704 | 0.7+ | 0.1− |
| 2002 10 04 | 704 | 0.5+ | 0.0 | 2005 05 01 | 644 | 0.3− | 0.3+ | 2006 08 28 | 704 | 0.4+ | 0.6+ |
| 2002 10 04 | 704 | 0.7− | 0.9+ | 2005 05 01 | 644 | 0.4− | 0.3+ | 2006 08 28 | 704 | 0.8+ | 0.6− |
| 2002 10 04 | 704 | 0.3+ | 0.7+ | 2005 05 01 | 644 | 0.2− | 0.4+ | 2006 08 30 | 699 | (0.4+ | 2.4−) |
| 2002 10 12 | 704 | 0.2− | 1.1+ | 2005 05 04 | E12 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.5− | 0.5+ |
| 2002 10 12 | 704 | 0.3− | 0.8+ | 2005 05 04 | E12 | 0.2+ | 0.6+ | 2006 08 30 | 699 | 0.3− | 0.3− |
| 2002 10 12 | 704 | 0.2+ | 0.6+ | 2005 05 04 | E12 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.5+ | 0.4+ | 2005 05 04 | E12 | 0.8− | 0.9+ | 2006 09 11 | 703 | 0.3− | 0.5+ |
| 2002 10 31 | 699 | 0.4− | 0.2− | 2005 05 09 | 699 | 0.0 | 0.7+ | 2006 09 11 | 703 | 0.8− | 0.6+ |
| 2002 10 31 | 644 | 0.4− | 0.4+ | 2005 05 09 | 703 | 0.4− | 0.1+ | 2006 09 11 | 703 | 1.0+ | 0.3+ |
| 2002 10 31 | 699 | 0.8− | 0.5− | 2005 05 09 | 703 | (1.7− | 0.4+) | 2006 09 11 | 703 | 0.5− | 0.1+ |
| 2002 10 31 | 644 | 0.2+ | 0.4+ | 2005 05 09 | 703 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.5− | 0.1− |
| 2002 10 31 | 699 | 0.6− | 0.4+ | 2005 05 09 | 699 | 0.1+ | 1.0+ | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2002 10 31 | 644 | 0.4+ | 0.7+ | 2005 05 09 | 703 | 0.9+ | 1.3+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 699 | 0.0 | 0.4− | 2005 05 09 | 699 | 0.6− | 0.3+ | | | | |

**(137082)∗ 1998 XE$_9$ = 2002 XE$_{19}$**

Discovered 1998 Dec. 12 by L. Tesi and G. Forti at San Marcello Pistoiese.

Id. A. Doppler (*MPO* 39985)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.21465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23335101 | $\omega$ | 219.75594 | | −0.41907134 | −0.87739310 | |
| $a$ | 2.6129409 | $\Omega$ | 256.17616 | | +0.88217930 | −0.33260837 | |
| $e$ | 0.1123424 | $i$ | 13.91898 | | +0.21479966 | −0.34576440 | |
| $P$ | 4.22 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 104 | 0.8+ | 0.4+ | 2002 12 06 | 704 | 0.2− | 0.8+ | 2006 10 15 | 104 | 0.8+ | 1.2− |
| 1998 12 12 | 104 | 0.6− | 0.8− | 2002 12 11 | 644 | 0.1− | 0.2+ | 2006 10 15 | 104 | 0.2+ | 0.3+ |
| 1998 12 12 | 104 | 0.1+ | 0.9− | 2002 12 11 | 644 | 0.3− | 0.0 | 2006 10 15 | 104 | 0.6+ | 0.8+ |
| 1998 12 12 | 104 | 0.3+ | 0.3− | 2002 12 11 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.2+ |
| 1998 12 14 | 104 | 0.3− | 0.3+ | 2002 12 11 | 704 | 0.5− | 0.7+ | 2006 10 19 | 703 | 0.1+ | 1.1− |
| 1998 12 14 | 104 | 0.3− | 0.1− | 2002 12 11 | 704 | 0.6− | 0.6+ | 2006 10 19 | 703 | 0.5− | 0.4− |
| 1998 12 14 | 104 | 0.2− | 0.4− | 2002 12 11 | 704 | 0.8+ | 1.1+ | 2006 10 19 | 703 | 0.0 | 0.2+ |
| 1998 12 15 | 104 | 0.2− | 0.4+ | 2004 03 15 | 644 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 1998 12 15 | 104 | 0.3− | 0.2+ | 2004 03 15 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 1998 12 15 | 104 | 0.7− | 0.4+ | 2004 03 15 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 1998 12 23 | 104 | 0.1− | 0.8− | 2004 03 26 | 704 | 0.6− | 0.4+ | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 1998 12 23 | 104 | 0.4+ | 0.4− | 2004 03 26 | 704 | 1.1+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 1998 12 23 | 104 | 1.3+ | 0.8− | 2004 03 26 | 704 | 0.9− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 05 | 704 | (0.5− | 1.7−) | 2004 03 26 | 704 | 0.1+ | 0.5− | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2002 10 05 | 704 | 0.1− | 0.3+ | 2004 04 17 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.6+ |
| 2002 10 05 | 704 | 0.1+ | 0.1+ | 2004 04 17 | 704 | 0.9+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 12 02 | 704 | 0.0 | 0.2− | 2004 04 17 | 704 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 12 02 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2002 12 02 | 704 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.0 |
| 2002 12 02 | 704 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.7+ | 0.2+ |
| 2002 12 02 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.5+ | 0.5+ |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 1.0− | 0.3+ | 2006 10 27 | 703 | 1.6− | 0.4− |
| 2002 12 06 | 704 | 0.4− | 0.8+ | 2006 09 28 | 703 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.9− |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.5− | 0.5− | | | | |
| 2002 12 06 | 704 | 0.4− | 1.2− | 2006 09 28 | 703 | 0.1+ | 0.4− | | | | |

**(137083)∗ 1998 XZ$_{13}$ = 2002 UD$_{23}$**

Discovered 1998 Dec. 15 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 37150)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.89161 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24581848 | $\omega$ | 272.48269 | | +0.89928376 | −0.43425939 | |
| $a$ | 2.5238277 | $\Omega$ | 113.25955 | | +0.42041043 | +0.82547775 | |
| $e$ | 0.2187132 | $i$ | 3.24678 | | +0.12059760 | +0.36056243 | |
| $P$ | 4.01 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 22 | 691 | 0.7− | 0.9+ | 2002 12 01 | 704 | 0.3+ | 0.5+ | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 1990 11 22 | 691 | 0.4− | 0.5+ | 2002 12 01 | 704 | 0.7+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.3− |
| 1990 11 22 | 691 | 0.8− | 0.5− | 2002 12 01 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 1996 02 15 | 691 | 0.2+ | 0.4− | 2002 12 02 | 704 | 0.3+ | 0.7+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 1996 02 15 | 691 | 0.1+ | 0.1− | 2002 12 02 | 704 | 0.3− | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 1996 02 15 | 691 | 0.1+ | 0.4− | 2002 12 02 | 704 | 0.1+ | 1.3+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 1998 11 24 | 704 | 0.9+ | 1.3− | 2002 12 02 | 704 | 0.8− | 1.2+ | 2006 10 27 | 704 | 0.0 | 0.6+ |
| 1998 11 24 | 704 | 1.2+ | 0.8− | 2002 12 02 | 704 | 0.1− | 0.7+ | 2006 10 27 | 704 | 0.7+ | 0.7− |
| 1998 11 24 | 704 | 1.8+ | 0.2− | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 0.4− | 0.3+ |
| 1998 11 24 | 704 | 0.7+ | 0.0 | 2002 12 05 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 704 | 0.6− | 0.5+ |
| 1998 12 08 | 699 | 0.6+ | 0.7+ | 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 11 02 | 703 | (0.1+ | 2.1+) |
| 1998 12 08 | 699 | 0.3+ | 0.1+ | 2002 12 05 | 704 | 0.2− | 0.5+ | 2006 11 02 | 703 | (1.4+ | 1.7+) |
| 1998 12 08 | 699 | 0.0 | 0.5+ | 2002 12 05 | 704 | 0.1− | 0.6+ | 2006 11 02 | 703 | 0.2+ | 0.1− |
| 1998 12 15 | 910 | 0.4+ | 0.9− | 2002 12 06 | 704 | 0.1− | 0.2− | 2006 11 02 | 703 | 0.5+ | 0.4− |
| 1998 12 15 | 910 | 0.5+ | 1.0− | 2002 12 06 | 704 | 0.6− | 0.1+ | 2006 11 05 | 644 | 0.2− | 0.1− |
| 1998 12 16 | 910 | 1.5+ | 0.6− | 2002 12 06 | 704 | 0.4− | 0.1− | 2006 11 05 | 644 | 0.2− | 0.0 |
| 1998 12 16 | 910 | 1.1+ | 0.1− | 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 11 05 | 644 | 0.3− | 0.1− |
| 1998 12 16 | 910 | 1.2+ | 0.3− | 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.3− |
| 1998 12 16 | 910 | 1.2+ | 0.1− | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.4− | 0.0 |
| 1998 12 22 | 910 | 0.2+ | 0.8− | 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 1998 12 22 | 910 | 0.1+ | 0.6− | 2002 12 10 | 644 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 1998 12 22 | 910 | 0.2+ | 0.4− | 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2002 09 08 | 599 | 0.6− | 0.2+ | 2002 12 11 | 704 | 0.6+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2002 09 08 | 599 | 0.3+ | 0.1+ | 2002 12 11 | 704 | 0.2+ | 0.7− | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2002 09 08 | 599 | 0.3+ | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.5− | 2006 11 14 | 704 | 0.8+ | 0.6+ |
| 2002 10 03 | 704 | (1.5− | 1.3+) | 2002 12 11 | 704 | 0.3+ | 0.5− | 2006 11 14 | 704 | 0.8− | 0.3+ |
| 2002 10 03 | 704 | 0.7− | 1.3+ | 2002 12 27 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 1.0+ | 2002 12 27 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.1− | 1.1+ |
| 2002 10 03 | 704 | (0.3− | 1.6+) | 2002 12 27 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.6+ |
| 2002 10 03 | 704 | (0.1− | 3.6+) | 2004 03 22 | 704 | 0.9− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 1.0+ | 2004 03 22 | 704 | 1.1− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.1+ | 0.7+ | 2004 03 22 | 704 | 0.9+ | 0.7+ | 2006 11 16 | 691 | 0.2− | 0.4− |
| 2002 10 09 | 704 | 0.5+ | 0.0 | 2004 03 22 | 704 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2002 10 30 | 608 | 0.4− | 0.9− | 2004 03 22 | 704 | 1.2+ | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2002 10 30 | 608 | 0.1− | 0.9− | 2004 03 30 | 691 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.1+ |
| 2002 10 30 | 608 | 0.1− | 0.4− | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.6+ |
| 2002 10 31 | 699 | 0.1+ | 1.2− | 2004 03 30 | 691 | 0.3− | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.1− |
| 2002 10 31 | 699 | 0.0 | 0.2+ | 2005 06 17 | G96 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2002 10 31 | 699 | 0.2+ | 0.3− | 2005 06 17 | G96 | 0.6+ | 0.5+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2002 10 31 | 699 | 0.3+ | 0.1− | 2005 06 17 | G96 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 11 05 | 699 | 0.3− | 0.3− | 2006 08 29 | 703 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2002 11 05 | 699 | 0.8+ | 0.2− | 2006 08 29 | 703 | 1.1+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2002 11 05 | 699 | 0.2− | 0.3− | 2006 08 29 | 703 | 0.5− | 1.1− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 11 05 | 699 | 0.7+ | 0.7− | 2006 08 29 | 703 | 1.0− | 0.1− | 2006 11 20 | 691 | 0.6− | 0.6+ |
| 2002 11 07 | 704 | 0.0 | 0.3− | 2006 09 16 | 703 | 0.7− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.7− |
| 2002 11 07 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | 1.2− | 0.3+ | 2006 11 20 | 704 | 0.9+ | 0.0 |
| 2002 11 07 | 704 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.5+ | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.5− |
| 2002 11 07 | 704 | 0.1+ | 0.8− | 2006 09 16 | 703 | 0.4− | 0.5+ | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.6+ |
| 2002 11 11 | 704 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.8− | 1.1+ | 2006 11 20 | 704 | 0.8+ | 0.2− |
| 2002 11 11 | 704 | 0.2+ | 0.6− | 2006 09 19 | 699 | 1.1− | 0.4+ | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.6− | 0.2− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2002 11 11 | 704 | 0.7+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2002 11 24 | 644 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 11 29 | 704 | 0.5+ | 0.3− |
| 2002 11 24 | 644 | 0.7+ | 0.5− | 2006 09 30 | 703 | 1.0− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2002 11 24 | 644 | 0.6+ | 0.6− | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2002 12 01 | 704 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.1− | 0.6+ |

**(137084)∗ 1998 XS$_{16}$**

Discovered 1998 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.04554 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.73839188 | $\omega$ | 358.22164 | | +0.02528536 | +0.89447237 | |
| $a$ | 1.2123037 | $\Omega$ | 273.03991 | | −0.91158205 | −0.16266558 | |
| $e$ | 0.4966018 | $i$ | 26.55372 | | −0.41033989 | +0.41648420 | |
| $P$ | 1.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 03 | 691 | 1.0− | 0.8+ | 1999 10 15 | 557 | 0.3+ | 0.2+ | 2003 02 23 | 246 | 0.5− | 0.3− |
| 1994 12 03 | 691 | 0.8− | 0.3+ | 1999 10 15 | 557 | 0.6+ | 0.2− | 2003 02 23 | 246 | 0.6+ | 0.3− |
| 1994 12 03 | 691 | 0.7− | 0.7+ | 1999 10 15 | 557 | 0.3+ | 0.1− | 2003 02 23 | 246 | 0.9− | 0.3+ |
| 1998 12 15 | 704 | 0.2+ | 0.1− | 1999 10 16 | 557 | 0.4+ | 0.3+ | 2003 03 09 | 704 | 0.6− | 0.5− |
| 1998 12 15 | 704 | 0.1− | 0.2− | 1999 10 21 | 402 | 0.7+ | 0.5+ | 2003 03 09 | 704 | 0.1+ | 0.6+ |
| 1998 12 15 | 704 | (3.5− | 2.2−) | 1999 10 21 | 402 | 0.2+ | 0.2+ | 2003 03 09 | 704 | 0.5+ | 0.6− |
| 1998 12 15 | 704 | 1.5+ | 0.4+ | 1999 10 21 | 402 | 0.1+ | 0.2− | 2003 03 09 | 704 | 0.0 | 0.1+ |
| 1998 12 15 | 704 | 1.7− | 1.5− | 1999 10 29 | 704 | 0.1− | 0.2− | 2003 09 08 | 084 | 0.5+ | 0.1+ |
| 1998 12 17 | 046 | 0.2− | 0.6− | 1999 10 29 | 704 | 0.6− | 0.8− | 2003 09 17 | 084 | 0.2− | 0.7− |
| 1998 12 17 | 046 | 0.0 | 0.8− | 1999 10 29 | 704 | 1.2− | 1.0− | 2003 09 19 | 118 | 0.1+ | 0.3− |
| 1998 12 17 | 046 | 0.1+ | 1.0− | 1999 10 29 | 704 | 1.5− | 1.4− | 2003 09 19 | 118 | 0.0 | 0.1− |
| 1998 12 17 | 046 | 0.5+ | 0.5− | 1999 10 29 | 360 | 0.2− | 0.1+ | 2003 09 19 | 118 | 0.3+ | 0.4− |
| 1998 12 17 | 046 | 0.0 | 0.5− | 1999 10 29 | 360 | 0.0 | 0.3− | 2003 09 20 | 084 | 0.7− | 0.9− |
| 1998 12 17 | 704 | 0.0 | 1.7− | 1999 10 29 | 360 | 0.0 | 0.1− | 2003 09 24 | 084 | 0.6− | 0.3+ |
| 1998 12 17 | 704 | 1.6+ | 0.3− | 1999 10 30 | 704 | 0.3+ | 0.4− | 2003 09 29 | 084 | 0.7− | 1.0− |
| 1998 12 17 | 704 | 0.8+ | 0.3− | 1999 10 30 | 704 | 0.6+ | 0.0 | 2003 10 08 | 084 | 0.0 | 0.2+ |
| 1998 12 17 | 704 | 1.4+ | 0.3− | 1999 10 30 | 704 | 0.5+ | 0.0 | 2003 10 13 | 704 | 0.6+ | 0.1− |
| 1998 12 17 | 704 | 0.4+ | 0.3− | 1999 10 30 | 704 | 0.8+ | 0.4+ | 2003 10 13 | 704 | 0.5+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.4+ | 0.9− | 1999 10 30 | 704 | 0.5+ | 0.5− | 2003 10 13 | 704 | 0.9+ | 0.3− | 1999 01 22 | 360 | 0.2+ | 0.4− |
| 1998 12 17 | 704 | 0.8+ | 1.5− | 1999 11 15 | 118 | 0.1+ | 0.0 | 2003 10 13 | 704 | 0.5+ | 0.1+ | 1999 01 22 | 360 | 0.0 | 0.3− |
| 1998 12 17 | 704 | 0.4+ | 1.0− | 1999 11 15 | 118 | 0.1+ | 0.0 | 2003 10 13 | 704 | 0.0 | 0.9+ | 1999 01 25 | 711 | 0.7− | 0.1− |
| 1998 12 17 | 704 | 0.2− | 0.9− | 1999 11 16 | 670 | 0.1+ | 0.7+ | 2003 10 16 | 084 | 0.3+ | 0.3+ | 1999 01 25 | 711 | 0.6− | 0.1− |
| 1998 12 17 | 402 | 0.0 | 0.5− | 1999 11 16 | 670 | 0.9+ | 0.4+ | 2003 10 18 | 084 | 0.7+ | 0.1+ | 1999 02 10 | 426 | 1.0− | 0.4+ |
| 1998 12 17 | 402 | 0.4+ | 0.7− | 1999 11 16 | 670 | 0.3− | 0.6+ | 2003 10 19 | 084 | 0.3− | 0.1− | 1999 02 10 | 426 | 0.2+ | 0.0 |
| 1998 12 17 | 402 | 0.4+ | 0.5− | 1999 11 16 | 670 | 0.0 | 1.6+ | 2003 10 22 | 084 | 0.0 | 0.7− | 1999 02 10 | 426 | 0.1+ | 0.1+ |
| 1998 12 17 | 402 | 0.3+ | 0.7− | 1999 11 18 | 360 | 0.4+ | 0.0 | 2003 10 24 | 084 | 0.2− | 0.3+ | 1999 02 17 | 360 | 0.3+ | 0.6− |
| 1998 12 17 | 540 | 1.8+ | 0.8+ | 1999 11 18 | 360 | 0.2+ | 0.1− | 2003 10 27 | 084 | 0.3+ | 0.2− | 1999 02 17 | 360 | 0.0 | 0.7− |
| 1998 12 17 | 540 | (2.8+ | 0.2−) | 1999 11 18 | 360 | 0.1+ | 0.0 | 2003 10 29 | 084 | 1.0− | 0.3− | 1999 02 17 | 360 | 0.1− | 0.4− |
| 1998 12 17 | 540 | (2.8+ | 1.3−) | 1999 12 11 | 118 | 0.3− | 0.3− | 2003 10 30 | 084 | 0.8− | 0.0 | 1999 02 19 | 711 | 0.1+ | 0.3− |
| 1998 12 17 | 557 | 0.1+ | 0.9− | 1999 12 11 | 118 | 0.1+ | 0.1+ | 2003 11 01 | 084 | 0.5+ | 0.0 | 1999 02 19 | 711 | 0.3− | 0.3− |
| 1998 12 17 | 046 | 0.4+ | 0.5− | 1999 12 12 | 360 | 0.4+ | 0.6+ | 2003 11 04 | 461 | 0.4+ | 0.5+ | 1999 02 20 | 711 | 0.3− | 0.5− |
| 1998 12 17 | 046 | 0.5+ | 0.0 | 1999 12 12 | 360 | 0.1− | 0.1+ | 2003 11 04 | 461 | 0.1+ | 0.4+ | 1999 02 20 | 711 | 0.6− | 0.8− |
| 1998 12 17 | 046 | 0.5+ | 0.8− | 1999 12 12 | 360 | 0.1+ | 0.4+ | 2003 11 04 | 461 | 0.5+ | 0.0 | 1999 05 01 | 426 | 0.2− | 0.3− |
| 1998 12 18 | 118 | 0.5+ | 0.3+ | 1999 12 13 | 704 | 0.4+ | 0.4− | 2003 11 04 | 461 | 0.1+ | 0.4+ | 1999 05 01 | 426 | 0.5− | 0.1+ |
| 1998 12 18 | 118 | 1.0+ | 1.0− | 1999 12 13 | 704 | 0.7+ | 0.4− | 2003 11 04 | 461 | 0.2+ | 0.2+ | 1999 05 03 | 426 | 0.4+ | 0.3+ |
| 1998 12 18 | 118 | 0.6+ | 0.3− | 1999 12 13 | 704 | 0.7+ | 0.2− | 2003 11 06 | 704 | (1.8− | 0.4+) | 1999 05 03 | 426 | 0.5+ | 0.5+ |
| 1998 12 18 | 734 | 1.6+ | 0.8− | 1999 12 13 | 704 | 0.5+ | 0.0 | 2003 11 06 | 704 | 0.4− | 0.4+ | 1999 05 03 | 426 | 0.2− | 0.0 |
| 1998 12 18 | 734 | 0.9+ | 0.4− | 1999 12 16 | 402 | 1.0+ | 0.5− | 2003 11 06 | 704 | 0.3− | 0.1− | 1999 05 03 | 426 | 0.2− | 0.1+ |
| 1998 12 18 | 734 | 0.9+ | 1.4− | 1999 12 16 | 402 | 0.6+ | 0.4− | 2003 11 06 | 704 | 0.6− | 0.3+ | 1999 08 04 | 413 | 1.2+ | 0.1+ |
| 1998 12 18 | 402 | 0.0 | 0.1− | 1999 12 16 | 402 | 0.1− | 0.2− | 2003 11 06 | 704 | 0.4− | 0.7+ | 1999 08 04 | 413 | 0.1− | 1.1+ |
| 1998 12 18 | 402 | 0.4− | 0.1− | 2000 01 02 | 704 | 0.5− | 0.5+ | 2003 11 07 | 084 | 0.3+ | 0.0 | 1999 08 04 | 413 | 1.0+ | 0.2+ |
| 1998 12 18 | 402 | 0.0 | 0.0 | 2000 01 02 | 704 | 0.0 | 1.7+ | 2003 11 13 | 104 | 0.3+ | 0.1− | 1999 09 08 | 557 | 0.8+ | 0.1− |
| 1998 12 21 | 422 | 0.3− | 0.3− | 2000 01 02 | 704 | 0.8− | 0.6+ | 2003 11 13 | 104 | 0.4+ | 0.0 | 1999 09 08 | 557 | 1.2+ | 0.3− |
| 1998 12 21 | 422 | 0.3− | 0.4− | 2002 01 13 | 413 | 0.0 | 0.0 | 2003 11 13 | 104 | 0.2+ | 0.0 | 1999 09 08 | 557 | 0.8+ | 0.3− |
| 1998 12 21 | 422 | 0.1+ | 0.3− | 2002 01 13 | 413 | 0.0 | 0.0 | 2003 11 29 | 130 | 0.3+ | 0.2+ | 1999 09 12 | 046 | 0.7+ | 0.4+ |
| 1998 12 21 | 360 | 0.4− | 0.2− | 2002 01 13 | 413 | 0.1+ | 0.1− | 2003 11 29 | 130 | 0.0 | 0.4+ | 1999 09 12 | 046 | 0.6+ | 0.0 |
| 1998 12 21 | 426 | 0.6− | 0.5− | 2002 11 12 | 704 | 0.9− | 0.5− | 2003 11 29 | 130 | 0.0 | 0.1+ | 1999 09 12 | 046 | 0.8+ | 0.3+ |
| 1998 12 21 | 360 | 0.4− | 0.4− | 2002 11 12 | 704 | 0.1− | 0.0 | 2003 11 29 | 130 | 0.3+ | 0.2+ | 1999 09 12 | 046 | 0.6+ | 0.5+ |
| 1998 12 21 | 426 | 0.9− | 0.3− | 2002 11 12 | 704 | 0.1+ | 0.3+ | 2003 12 04 | 704 | 0.5+ | 0.0 | 1999 09 15 | 118 | 0.1+ | 0.4+ |
| 1998 12 21 | 360 | 0.5− | 0.2− | 2002 12 05 | 704 | 1.0+ | 0.3+ | 2003 12 04 | 704 | 0.7− | 0.1+ | 1999 09 15 | 118 | 0.3+ | 0.3− |
| 1998 12 21 | 426 | 0.2− | 0.6− | 2002 12 05 | 704 | 0.6+ | 0.0 | 2003 12 04 | 704 | 0.4+ | 0.1− | 1999 09 15 | 118 | 0.7+ | 0.1− |
| 1998 12 22 | 704 | 0.4+ | 1.4− | 2002 12 05 | 704 | 1.1+ | 0.8− | 2003 12 04 | 704 | 0.3+ | 0.4+ | 1999 09 28 | 587 | 0.1+ | 0.2− |
| 1998 12 22 | 704 | 0.2− | 0.5− | 2002 12 05 | 704 | 0.6+ | 0.1+ | 2003 12 05 | 704 | 0.2+ | 0.0 | 1999 09 28 | 587 | 0.3+ | 0.1− |
| 1998 12 22 | 704 | (2.3− | 0.7−) | 2002 12 10 | 704 | 0.1+ | 0.3+ | 2003 12 05 | 704 | 0.2+ | 0.9+ | 1999 10 08 | 360 | 0.1+ | 0.3+ |
| 1998 12 22 | 704 | 1.2+ | 0.2− | 2002 12 10 | 704 | 0.8+ | 0.0 | 2003 12 05 | 704 | 0.2+ | 0.3+ | 1999 10 08 | 360 | 0.5+ | 0.2+ |
| 1998 12 22 | 704 | (4.3− | 1.0−) | 2002 12 10 | 704 | 0.1+ | 0.1+ | 2003 12 05 | 704 | 0.2+ | 0.2+ | 1999 10 08 | 360 | 0.7+ | 1.0+ |
| 1998 12 27 | 402 | 0.4− | 0.2− | 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 12 08 | 113 | 0.1+ | 0.4− | 1999 10 15 | 557 | 0.3+ | 0.3− |
| 1998 12 27 | 402 | 0.3− | 0.4− | 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 12 08 | 113 | 0.3+ | 0.4− | 1999 10 15 | 557 | 0.0 | 0.1+ |
| 1998 12 27 | 402 | 0.6− | 0.3− | 2002 12 11 | 704 | 0.2− | 0.2+ | 2003 12 08 | 113 | 0.0 | 0.0 | | | | |
| 1998 12 28 | 360 | 0.3+ | 0.2+ | 2002 12 11 | 704 | 0.2− | 0.4+ | 2003 12 08 | 113 | 0.1− | 0.3+ | | | | |
| 1998 12 28 | 360 | 0.2+ | 0.2+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2003 12 10 | 151 | 0.4+ | 0.6− | | | | |
| 1998 12 28 | 360 | 0.2+ | 0.2+ | 2002 12 12 | 704 | 0.2+ | 0.2+ | 2003 12 10 | 151 | 0.2+ | 0.4− | | | | |
| 1998 12 30 | 046 | 0.2− | 0.5− | 2002 12 12 | 704 | 1.1+ | 0.2+ | 2003 12 10 | 151 | 0.3+ | 0.3− | | | | |
| 1998 12 30 | 046 | 0.2+ | 0.0 | 2002 12 12 | 704 | 0.3+ | 0.1+ | 2003 12 10 | 151 | 0.2+ | 0.2− | | | | |
| 1998 12 30 | 046 | 0.4− | 0.2− | 2002 12 15 | 170 | 0.8+ | 1.2− | 2003 12 15 | 434 | 0.4+ | 1.0+ | | | | |
| 1999 01 04 | 422 | 1.0+ | 1.2+ | 2002 12 15 | 170 | 0.9− | 0.6− | 2003 12 15 | 434 | 0.2+ | 0.2− | | | | |
| 1999 01 04 | 422 | 1.5+ | 1.9+ | 2002 12 15 | 170 | (1.7− | 1.0+) | 2003 12 15 | 434 | 0.1− | 0.7+ | | | | |
| 1999 01 04 | 422 | 0.8+ | 0.2+ | 2002 12 15 | 170 | 0.0 | 0.1− | 2003 12 17 | 704 | 0.1− | 0.1+ | | | | |
| 1999 01 05 | 422 | 1.7− | 0.4+ | 2002 12 15 | 170 | (2.0+ | 0.1+) | 2003 12 17 | 704 | 0.1+ | 0.7+ | | | | |
| 1999 01 05 | 422 | 1.2− | 0.9+ | 2002 12 26 | 151 | 0.3+ | 0.1+ | 2003 12 17 | 704 | 0.0 | 0.1− | | | | |
| 1999 01 05 | 402 | 0.1+ | 0.4+ | 2002 12 26 | 151 | 0.3+ | 0.1− | 2003 12 17 | 704 | 0.2+ | 0.2+ | | | | |
| 1999 01 05 | 402 | 0.0 | 0.6+ | 2002 12 26 | 151 | 0.1− | 0.1− | 2003 12 17 | 704 | 0.2− | 0.1+ | | | | |
| 1999 01 05 | 402 | 0.5− | 0.6+ | 2002 12 26 | 151 | 0.2+ | 0.1+ | 2003 12 23 | 084 | 0.4+ | 0.3− | | | | |
| 1999 01 05 | 557 | 1.2− | 0.5+ | 2002 12 29 | 170 | 0.4+ | 0.7+ | 2003 12 23 | 113 | 0.3+ | 0.3− | | | | |
| 1999 01 05 | 557 | 0.5− | 0.6+ | 2002 12 29 | 170 | 0.6− | 0.2+ | 2003 12 23 | 113 | 0.6+ | 0.5− | | | | |
| 1999 01 05 | 557 | 0.1− | 0.5+ | 2002 12 29 | 170 | 0.5− | 0.5+ | 2003 12 23 | 113 | 0.6+ | 0.4+ | | | | |
| 1999 01 10 | 422 | 0.1− | 0.2− | 2002 12 29 | 170 | 0.5+ | 0.2+ | 2003 12 23 | 113 | 0.4+ | 0.8+ | | | | |
| 1999 01 10 | 422 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.3− | 0.4− | 2003 12 23 | 113 | 0.3+ | 0.5− | | | | |
| 1999 01 15 | 422 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.8− | 0.8− | 2004 01 20 | 704 | 0.6+ | 0.9+ | | | | |
| 1999 01 15 | 422 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.2− | 0.6− | 2004 01 20 | 704 | 0.9+ | 0.6− | | | | |
| 1999 01 17 | 118 | 0.0 | 0.2− | 2003 01 04 | 170 | 0.9+ | 0.3− | 2004 01 20 | 704 | 0.5− | 0.1− | | | | |
| 1999 01 17 | 118 | 0.6− | 0.6− | 2003 01 04 | 170 | 0.6− | 0.0 | 2004 01 30 | 704 | 1.2+ | 1.1+ | | | | |
| 1999 01 21 | 046 | 0.4− | 0.0 | 2003 01 07 | 704 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.2+ | 0.5+ | | | | |
| 1999 01 21 | 046 | 0.5− | 0.2+ | 2003 01 07 | 704 | 0.2+ | 0.5+ | 2004 01 30 | 704 | (2.4+ | 1.0+) | | | | |
| 1999 01 21 | 046 | 0.2− | 0.3+ | 2003 01 07 | 704 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.3− | 0.4+ | | | | |
| 1999 01 22 | 360 | 0.1+ | 0.2− | 2003 01 07 | 704 | 0.2+ | 0.1+ | 2005 12 19 | E12 | 0.1+ | 0.1− | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 22 | 360 | 0.2+ | 0.4− | 2003 01 07 | 704 | 0.1+ | 0.0 | 2005 12 19 | E12 | 0.3− | 0.4− | | |
| 1999 01 22 | 360 | 0.0 | 0.3− | 2003 01 08 | 704 | 0.1− | 0.1+ | 2005 12 19 | E12 | 0.4− | 0.1− | | |
| 1999 01 25 | 711 | 0.7− | 0.1− | 2003 01 08 | 704 | 0.3+ | 1.2+ | 2005 12 19 | E12 | 0.1+ | 0.4− | | |
| 1999 01 25 | 711 | 0.6− | 0.1− | 2003 01 08 | 704 | 0.2− | 0.0 | 2005 12 20 | E12 | 0.4+ | 0.1− | | |
| 1999 02 10 | 426 | 1.0− | 0.4+ | 2003 01 08 | 704 | 0.0 | 0.3+ | 2005 12 20 | E12 | 0.1+ | 0.4+ | | |
| 1999 02 10 | 426 | 0.2+ | 0.0 | 2003 01 08 | 704 | 0.0 | 0.4+ | 2005 12 20 | E12 | 0.2+ | 0.6+ | | |
| 1999 02 10 | 426 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.0 | 0.3+ | 2005 12 20 | E12 | 0.1+ | 0.0 | | |
| 1999 02 17 | 360 | 0.3+ | 0.6− | 2003 01 08 | 704 | 0.2− | 0.2− | 2005 12 26 | E17 | 0.4+ | 0.3+ | | |
| 1999 02 17 | 360 | 0.0 | 0.7− | 2003 01 08 | 704 | 0.2+ | 0.5+ | 2005 12 26 | E17 | 0.7− | 0.1+ | | |
| 1999 02 17 | 360 | 0.1− | 0.4− | 2003 01 08 | 704 | 0.2− | 0.1− | 2005 12 26 | E17 | 0.6− | 1.5+ | | |
| 1999 02 19 | 711 | 0.1+ | 0.3− | 2003 01 08 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 1.1+ | 0.3+ | | |
| 1999 02 19 | 711 | 0.3− | 0.3− | 2003 01 27 | 704 | (1.8− | 0.7−) | 2006 10 19 | 703 | 0.5+ | 0.7+ | | |
| 1999 02 20 | 711 | 0.3− | 0.5− | 2003 01 27 | 704 | 0.8− | 0.4− | 2006 10 19 | 703 | 0.6− | 0.2− | | |
| 1999 02 20 | 711 | 0.6− | 0.8− | 2003 01 27 | 704 | 1.2− | 0.5− | 2006 10 19 | 703 | 0.3− | 0.4− | | |
| 1999 05 01 | 426 | 0.2− | 0.3− | 2003 01 27 | 704 | (1.6− | 0.5−) | 2006 11 15 | 704 | 0.1− | 0.5+ | | |
| 1999 05 01 | 426 | 0.5− | 0.1+ | 2003 01 27 | 704 | 0.3− | 0.4− | 2006 11 15 | 704 | 0.8− | 0.2+ | | |
| 1999 05 03 | 426 | 0.4+ | 0.3+ | 2003 01 28 | 704 | 0.5+ | 1.1+ | 2006 11 15 | 704 | 0.0 | 0.4+ | | |
| 1999 05 03 | 426 | 0.5+ | 0.5+ | 2003 01 28 | 704 | 0.4+ | 0.9+ | 2006 11 15 | 704 | 0.7− | 0.6+ | | |
| 1999 05 03 | 426 | 0.2− | 0.0 | 2003 01 28 | 704 | 0.1+ | 0.8+ | 2006 11 17 | 644 | 0.0 | 0.1− | | |
| 1999 05 03 | 426 | 0.2− | 0.1+ | 2003 01 28 | 704 | 0.2+ | 1.0+ | 2006 11 17 | 644 | 0.2+ | 0.1− | | |
| 1999 08 04 | 413 | 1.2+ | 0.1+ | 2003 02 01 | 704 | 0.5− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.2− | | |
| 1999 08 04 | 413 | 0.1− | 1.1+ | 2003 02 01 | 704 | 1.1− | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.4− | | |
| 1999 08 04 | 413 | 1.0+ | 0.2+ | 2003 02 01 | 704 | 0.6− | 0.9+ | 2006 11 22 | G96 | 0.3+ | 0.3− | | |
| 1999 09 08 | 557 | 0.8+ | 0.1− | 2003 02 01 | 704 | 1.4− | 0.7+ | 2006 11 22 | 704 | 0.4− | 0.1+ | | |
| 1999 09 08 | 557 | 1.2+ | 0.3− | 2003 02 01 | 113 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.4− | | |
| 1999 09 08 | 557 | 0.8+ | 0.3− | 2003 02 01 | 113 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.9+ | | |
| 1999 09 12 | 046 | 0.7+ | 0.4+ | 2003 02 01 | 113 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.3− | | |
| 1999 09 12 | 046 | 0.6+ | 0.0 | 2003 02 01 | 113 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.6+ | | |
| 1999 09 12 | 046 | 0.8+ | 0.3+ | 2003 02 01 | 113 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.4+ | 0.2+ | | |
| 1999 09 12 | 046 | 0.6+ | 0.5+ | 2003 02 08 | 608 | 0.3+ | 0.5+ | 2006 11 22 | 704 | 0.0 | 0.1+ | | |
| 1999 09 15 | 118 | 0.1+ | 0.4+ | 2003 02 08 | 608 | 0.3+ | 0.9+ | 2006 11 28 | 704 | 0.1+ | 0.4+ | | |
| 1999 09 15 | 118 | 0.3+ | 0.3− | 2003 02 08 | 608 | 0.5+ | 0.6+ | 2006 11 28 | 704 | 0.6− | 0.3− | | |
| 1999 09 15 | 118 | 0.7+ | 0.1− | 2003 02 15 | 711 | 0.8− | 1.2− | 2006 11 28 | 704 | 0.3− | 0.2− | | |
| 1999 09 28 | 587 | 0.1+ | 0.2− | 2003 02 15 | 711 | (1.7+ | 1.0−) | 2006 12 01 | 704 | 0.7− | 0.9+ | | |
| 1999 09 28 | 587 | 0.3+ | 0.1− | 2003 02 15 | 711 | (1.5− | 3.2−) | 2006 12 01 | 704 | 0.5− | 0.9+ | | |
| 1999 10 08 | 360 | 0.1+ | 0.3+ | 2003 02 20 | 113 | 0.5+ | 0.0 | 2006 12 01 | 704 | 0.5− | 0.9+ | | |
| 1999 10 08 | 360 | 0.5+ | 0.2+ | 2003 02 20 | 113 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.6− | 0.9+ | | |
| 1999 10 08 | 360 | 0.7+ | 1.0+ | 2003 02 20 | 113 | 0.7+ | 0.3+ | 2006 12 01 | 704 | 0.5− | 1.1+ | | |
| 1999 10 15 | 557 | 0.3+ | 0.3− | 2003 02 23 | 246 | 0.8+ | 0.8+ | | | | | | |
| 1999 10 15 | 557 | 0.0 | 0.1+ | 2003 02 23 | 246 | 0.4+ | 0.3+ | | | | | | |

**(137085)∗ 1998 XD$_{18}$**

Discovered 1998 Dec. 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.89224 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23935970 | $\omega$ | 331.79516 | −0.82543633 | | +0.52846611 | |
| $a$ | 2.5690271 | $\Omega$ | 241.46728 | −0.46610450 | | −0.83636654 | |
| $e$ | 0.0493798 | $i$ | 13.05426 | −0.31843597 | | −0.14565225 | |
| $P$ | 4.12 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 704 | 1.9+ | 0.8− | 2002 11 12 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.3− | | |
| 1998 11 24 | 704 | (2.9+ | 0.5−) | 2002 11 12 | 704 | 0.8+ | 0.2+ | 2006 10 19 | A50 | 0.0 | 0.1− | | |
| 1998 11 24 | 704 | 0.6+ | 1.3− | 2002 11 14 | 704 | 0.3+ | 0.1+ | 2006 10 19 | A50 | 0.0 | 0.7− | | |
| 1998 11 24 | 704 | (1.0− | 2.2−) | 2002 11 14 | 704 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 1998 12 08 | 691 | 0.3− | 0.5− | 2002 11 14 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 1998 12 08 | 691 | 0.5− | 0.2− | 2002 11 14 | 704 | 0.8− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 1998 12 08 | 691 | 0.2− | 0.0 | 2002 11 14 | 704 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 1998 12 15 | 691 | 0.3+ | 0.4− | 2002 11 30 | 608 | (0.1− | 1.9−) | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 1998 12 15 | 691 | 0.0 | 0.3− | 2002 11 30 | 608 | 0.5+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 1998 12 15 | 691 | 0.4+ | 0.5− | 2002 11 30 | 608 | (0.2+ | 1.9−) | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2000 04 07 | 704 | 0.1+ | 0.2− | 2002 12 10 | 644 | 0.5− | 0.7− | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2000 04 07 | 704 | 0.5+ | 0.3− | 2002 12 10 | 644 | 0.1+ | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2000 04 07 | 704 | 0.5+ | 1.0+ | 2002 12 10 | 644 | 0.4− | 0.6− | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2000 04 07 | 704 | 1.1+ | 0.4+ | 2002 12 10 | 644 | 0.3+ | 0.9+ | 2006 10 23 | 644 | 0.2− | 0.4+ | | |
| 2000 05 02 | 699 | 0.4− | 0.0 | 2002 12 10 | 644 | 0.2− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2000 05 02 | 699 | (1.1+ | 2.2+) | 2002 12 10 | 644 | 0.1+ | 0.8+ | 2006 10 27 | 703 | 0.4− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 699 | 0.4+ | 1.0− | 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.9+ | | |
| 2000 05 02 | 699 | 0.8− | 0.7+ | 2002 12 11 | 704 | 1.2− | 0.4− | 2006 10 27 | 703 | 0.2+ | 1.3+ | | |
| 2002 10 10 | 704 | 0.2− | 0.1+ | 2002 12 11 | 704 | 0.8− | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.4− | | |
| 2002 10 10 | 704 | 0.5+ | 0.0 | 2004 01 28 | 704 | 1.1+ | 0.3− | 2006 11 14 | 703 | 0.6− | 0.6+ | | |
| 2002 10 10 | 704 | 0.3+ | 1.4− | 2004 01 28 | 704 | 1.0+ | 0.2− | 2006 11 14 | 703 | 0.2− | 0.1+ | | |
| 2002 10 12 | 704 | 0.2− | 0.9+ | 2004 01 28 | 704 | 0.8+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.4+ | | |
| 2002 10 12 | 704 | (1.1+ | 1.7+) | 2004 01 28 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.4+ | | |
| 2002 10 12 | 704 | 0.9+ | 1.1− | 2004 03 10 | 608 | 0.6− | 0.2− | 2006 11 16 | 704 | 1.0+ | 1.4+ | | |
| 2002 10 12 | 704 | 0.2+ | 0.2+ | 2004 03 10 | 608 | 0.6− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.3+ | | |
| 2002 11 05 | 704 | 0.8− | 0.7− | 2004 03 10 | 608 | 0.5− | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.4− | | |
| 2002 11 05 | 704 | 0.5− | 0.1− | 2004 03 14 | 644 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.6+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.5− | 0.1+ | 2004 03 14 | 644 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.2− | | |
| 2002 11 05 | 704 | 0.3+ | 0.4+ | 2004 03 14 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.1+ | | |
| 2002 11 06 | 704 | 0.5− | 0.2+ | 2004 03 26 | 699 | (1.7+ | 0.3+) | 2006 11 19 | 704 | 0.4+ | 0.7+ | | |
| 2002 11 06 | 704 | 0.1+ | 0.5+ | 2004 03 26 | 699 | 0.0 | 0.9+ | 2006 11 19 | 704 | 0.6+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2004 03 26 | 699 | 0.9− | 0.9+ | 2006 11 22 | 704 | 1.2+ | 0.1− | | |
| 2002 11 06 | 699 | 0.1− | 0.5+ | 2004 03 26 | 699 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.4+ | 0.4+ | | |
| 2002 11 06 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 703 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.3+ | | |
| 2002 11 06 | 699 | 0.7− | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.9− | 2006 11 22 | 704 | 0.9+ | 0.3− | | |
| 2002 11 06 | 704 | 0.3− | 0.3+ | 2006 09 17 | 703 | 1.2− | 0.2+ | 2006 11 22 | 704 | 0.2+ | 1.0+ | | |
| 2002 11 06 | 699 | 1.0− | 0.5+ | 2006 09 17 | 703 | 0.2− | 0.4− | 2006 11 23 | 703 | 1.0+ | 0.7+ | | |
| 2002 11 06 | 699 | 0.1+ | 0.5+ | 2006 09 28 | 703 | 0.1+ | 1.0+ | 2006 11 23 | 703 | 1.3− | 0.8− | | |
| 2002 11 08 | 704 | 0.1− | 0.5+ | 2006 09 28 | 703 | 0.3− | 0.3+ | 2006 11 23 | 703 | 1.5− | 0.9+ | | |
| 2002 11 08 | 704 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.3− | 1.0+ | 2006 11 23 | 703 | 0.1− | 0.0 | | |
| 2002 11 08 | 704 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 0.3− | 1.3+ | 2006 11 25 | G96 | 0.3+ | 0.2− | | |
| 2002 11 12 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.3+ | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.3− | | |
| 2002 11 12 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.5+ | 1.0− | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2002 11 12 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 25 | G96 | 0.3+ | 0.2− | | |

**(137086)∗ 1998 $XX_{18}$ = 2002 $TJ_5$**

Discovered 1998 Dec. 10 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37151)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.54226 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23525958 | $\omega$ | 298.07917 | | +0.98573629 | −0.14669815 | |
| $a$ | 2.5987899 | $\Omega$ | 70.45507 | | +0.16791262 | +0.89038084 | |
| $e$ | 0.1133092 | $i$ | 5.02138 | | −0.01137186 | +0.43093110 | |
| $P$ | 4.19 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.6− | 0.1+ | 2002 10 31 | 699 | 1.0− | 0.7+ | 2006 09 19 | 704 | 0.7− | 0.8− | | |
| 1998 11 16 | 691 | 0.6− | 0.1+ | 2002 10 31 | 704 | 0.3+ | 0.0 | 2006 09 19 | 704 | 0.7+ | 0.2+ | | |
| 1998 11 16 | 691 | 0.7− | 0.1− | 2002 10 31 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 0.0 | 0.2− | | |
| 1998 11 23 | 691 | 0.5+ | 0.1− | 2002 10 31 | 699 | 1.2+ | 0.6+ | 2006 09 26 | 704 | 0.2+ | 0.2+ | | |
| 1998 11 23 | 691 | 0.8+ | 0.0 | 2002 10 31 | 704 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.3+ | | |
| 1998 11 23 | 691 | 0.8+ | 0.2− | 2002 10 31 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.2− | 0.3+ | | |
| 1998 12 10 | 691 | 0.0 | 0.7− | 2002 10 31 | 608 | 0.3− | 0.1+ | 2006 09 26 | 704 | 1.3+ | 0.2− | | |
| 1998 12 10 | 691 | 0.3+ | 0.0 | 2002 10 31 | 608 | 0.1− | 0.6+ | 2006 10 02 | 703 | 0.6− | 0.8+ | | |
| 1998 12 10 | 691 | 0.5+ | 0.6− | 2002 10 31 | 608 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.5+ | | |
| 1998 12 15 | 691 | 0.2− | 0.1− | 2002 11 07 | 704 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.5+ | 1.4+ | | |
| 1998 12 15 | 691 | 0.2− | 0.1+ | 2002 11 07 | 704 | 0.3− | 0.3− | 2006 10 02 | 703 | 0.5− | 0.5+ | | |
| 1998 12 15 | 691 | 0.3− | 0.3− | 2002 11 07 | 704 | 0.8+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.3− | | |
| 1999 01 23 | 691 | 0.3− | 0.6− | 2002 11 07 | 704 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.4− | | |
| 1999 01 23 | 691 | (3.0+ | 6.3−) | 2004 02 16 | 691 | 0.3+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.3− | | |
| 1999 01 23 | 691 | 0.0 | 0.1− | 2004 02 16 | 691 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.9− | 1.1− | | |
| 2002 10 01 | 704 | 0.0 | 0.4− | 2004 02 16 | 691 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.3− | | |
| 2002 10 01 | 704 | 0.6− | 0.0 | 2005 05 08 | G96 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2002 10 01 | 704 | 0.3+ | 0.8+ | 2005 05 08 | G96 | 0.2− | 0.5− | 2006 10 19 | 703 | 0.8− | 0.6+ | | |
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.8+ | 0.9+ | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 10 19 | 703 | 1.1− | 1.1+ | | |
| 2002 10 02 | 704 | 0.4− | 0.5+ | 2006 08 28 | 699 | 1.5− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.7− | | |
| 2002 10 11 | 704 | 0.5+ | 0.8+ | 2006 08 28 | 699 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4− | | |
| 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.5− | | |
| 2002 10 11 | 704 | 0.2+ | 1.0+ | 2006 08 28 | 699 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 10 11 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.4− | 0.1− | | |
| 2002 10 15 | 704 | 0.7+ | 1.2− | 2006 09 14 | 703 | 0.8− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.5− | | |
| 2002 10 15 | 704 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2002 10 15 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.4− | 2006 10 23 | 644 | 0.1− | 0.2− | | |
| 2002 10 15 | 704 | 0.2+ | 0.1− | 2006 09 17 | 699 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.2− | | |
| 2002 10 31 | 699 | (1.7− | 1.0+) | 2006 09 17 | 699 | 0.7− | 1.0+ | 2006 10 23 | 644 | 0.0 | 0.4− | | |
| 2002 10 31 | 699 | 0.0 | 1.2+ | 2006 09 17 | 699 | 0.4+ | 0.5+ | | | | | | |
| 2002 10 31 | 704 | 0.8− | 0.2+ | 2006 09 19 | 704 | 0.4− | 0.7− | | | | | | |

**(137087)∗ 1998 $XC_{19}$ = 2004 $BK_{28}$ = 2004 $DP_{77}$**

Discovered 1998 Dec. 10 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 71976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.02655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23504044 | $\omega$ | 251.82925 | | +0.80241064 | +0.59499228 | |
| $a$ | 2.6004050 | $\Omega$ | 71.63380 | | −0.52754951 | +0.74329843 | |
| $e$ | 0.0859292 | $i$ | 2.78167 | | −0.27897792 | +0.30576401 | |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 23 | 910 | 0.6+ | 0.4− | 2004 01 31 | 691 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1+ | | |
| 1998 10 23 | 910 | 0.4+ | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 1998 10 23 | 910 | 0.2+ | 0.1− | 2004 02 11 | 691 | 0.3+ | 0.1− | 2006 09 28 | 704 | 1.1− | 0.2+ | | |
| 1998 11 27 | 691 | 0.4+ | 0.4− | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.4− | 0.8+ | | |
| 1998 11 27 | 691 | 0.3+ | 0.4− | 2004 02 12 | 291 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.2+ | | |
| 1998 11 27 | 691 | 0.3+ | 0.4− | 2004 02 12 | 291 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.3+ | | |
| 1998 12 10 | 691 | 0.1+ | 0.4− | 2004 02 12 | 291 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 1998 12 10 | 691 | 0.0 | 0.0 | 2004 02 26 | 695 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 1998 12 10 | 691 | 0.3− | 0.1− | 2004 02 26 | 695 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 1998 12 15 | 691 | 0.4− | 0.2− | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.8+ | | |
| 1998 12 15 | 691 | 0.3− | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.9+ | | |
| 1998 12 15 | 691 | 0.4+ | 0.6− | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.8+ | | |
| 2002 10 09 | 704 | 1.3− | 0.5− | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.5+ | | |
| 2002 10 09 | 704 | 1.2+ | 0.8+ | 2005 05 19 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.6− | 0.2+ | | |
| 2002 10 09 | 704 | 0.4+ | 0.1− | 2005 05 19 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.2+ | | |
| 2002 10 09 | 704 | 0.2+ | 1.4+ | 2005 05 19 | 644 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 10 09 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 703 | 0.5− | 1.0− | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2002 10 15 | 644 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 10 15 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 10 21 | 703 | 1.3− | 1.3+ | | |
| 2002 10 15 | 644 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.5+ | 2006 10 21 | 703 | (1.4− | 4.1+) | | |
| 2002 10 31 | 608 | 1.0− | 1.2− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2002 10 31 | 608 | 1.1− | 0.4− | 2006 09 18 | 703 | 1.1− | 0.2+ | 2006 10 21 | 703 | (0.6+ | 2.8+) | | |
| 2002 10 31 | 608 | (1.8− | 0.8−) | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | (0.7− | 2.0+) | | |
| 2004 01 18 | 644 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.6+ | 2006 11 16 | G96 | 0.6+ | 0.2− | | |
| 2004 01 18 | 644 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 1.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.3+ | | |
| 2004 01 18 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2004 01 31 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.8+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1+ | | |
| 2004 01 31 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | | | | | | |

**(137088)∗ 1998 $XT_{23}$ = 2002 $YA_{36}$**

Discovered 1998 Dec. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 46349)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.02534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26674348 | $\omega$ | 0.92405 | | −0.90536376 | −0.42402740 | |
| $a$ | 2.3900492 | $\Omega$ | 153.94956 | | +0.38926374 | −0.85015466 | |
| $e$ | 0.1512643 | $i$ | 2.96848 | | +0.16967676 | −0.31215032 | |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.2+ | 0.1+ | 2003 01 07 | 704 | 0.1+ | 0.8+ | 2005 10 12 | 691 | 0.1− | 0.0 | | |
| 1994 10 09 | 691 | 0.1+ | 0.0 | 2003 01 07 | 704 | 0.0 | 0.7+ | 2005 10 12 | 691 | 0.1+ | 0.1− | | |
| 1994 10 09 | 691 | 0.5+ | 0.2− | 2003 01 13 | 644 | 0.0 | 0.4− | 2005 10 30 | G96 | 0.1+ | 0.1− | | |
| 1998 12 11 | 691 | 0.5+ | 0.2+ | 2003 01 13 | 644 | 0.2+ | 0.1− | 2005 10 30 | G96 | 0.3− | 0.4− | | |
| 1998 12 11 | 691 | 0.7+ | 0.2− | 2003 01 13 | 644 | 0.0 | 0.2− | 2005 10 30 | G96 | 0.5+ | 0.2− | | |
| 1998 12 11 | 691 | 0.4+ | 0.1− | 2003 02 01 | 704 | 0.7− | 0.5+ | 2005 10 30 | G96 | 0.1+ | 0.2− | | |
| 1998 12 19 | 691 | 0.2− | 0.3− | 2003 02 01 | 704 | 1.0− | 0.2+ | 2005 11 01 | G96 | 0.0 | 0.0 | | |
| 1998 12 19 | 691 | 0.4− | 0.2− | 2003 02 01 | 704 | 0.6+ | 0.5− | 2005 11 01 | G96 | 0.1+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 19 | 691 | 0.1− | 0.2− | 2003 02 01 | 704 | 0.8+ | 0.7− | 2005 11 01 | G96 | 0.1+ | 0.1+ |
| 1998 12 22 | 691 | 0.3− | 0.1− | 2005 09 24 | 691 | 0.1+ | 0.0 | 2005 11 01 | G96 | 0.2+ | 0.1− |
| 1998 12 22 | 691 | 0.6− | 0.2− | 2005 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.7− | 0.2− |
| 1998 12 22 | 691 | 0.1− | 0.4+ | 2005 09 24 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2000 05 27 | 704 | 0.5+ | 0.9− | 2005 09 30 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2000 05 27 | 704 | 0.1− | 0.9− | 2005 09 30 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2000 05 27 | 704 | 0.3− | 0.6+ | 2005 09 30 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2000 05 27 | 704 | 0.9− | 1.8+ | 2005 10 05 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.8− | 0.6+ | 2005 10 05 | 691 | 1.1− | 0.5− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 12 31 | 704 | 0.7− | 1.0+ | 2005 10 05 | 691 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.8+ | 2005 10 10 | 691 | 0.1+ | 0.2− | 2006 11 21 | 691 | 0.8+ | 0.2− |
| 2003 01 07 | 704 | 0.2− | 0.1− | 2005 10 10 | 691 | 0.3+ | 0.2+ | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2003 01 07 | 704 | 0.1− | 0.4+ | 2005 10 10 | 691 | 0.3− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2003 01 07 | 704 | 0.1− | 0.6+ | 2005 10 12 | 691 | 0.3+ | 0.4+ | | | | |

**(137089)∗ 1998 XT$_{43}$ = 2002 VP$_{93}$**

Discovered 1998 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 39986)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.38029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23275265 | $\omega$ | 320.50436 | | +0.69509380 | −0.68231411 | |
| $a$ | 2.6174172 | $\Omega$ | 84.12146 | | +0.70367710 | +0.58119074 | |
| $e$ | 0.1571469 | $i$ | 13.16022 | | +0.14725199 | +0.44346903 | |
| $P$ | 4.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.2+ | 0.0 | 2003 01 07 | 704 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.5− | 0.2+ |
| 1998 12 14 | 704 | 0.1− | 1.1− | 2003 01 07 | 704 | 1.1− | 0.9+ | 2006 09 17 | 699 | 0.2− | 0.6+ |
| 1998 12 14 | 704 | 0.1− | 1.6+ | 2003 01 07 | 704 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.0 | 0.4+ |
| 1998 12 14 | 704 | 0.7+ | 1.5+ | 2003 01 07 | 704 | 0.3− | 0.3+ | 2006 09 17 | 699 | 0.0 | 0.5+ |
| 1998 12 16 | 704 | 0.2+ | 0.9− | 2003 01 26 | 699 | 0.3− | 0.2+ | 2006 09 22 | 703 | 0.4− | 0.6+ |
| 1998 12 16 | 704 | 1.2+ | 0.7− | 2003 01 26 | 699 | 1.4− | 0.6+ | 2006 09 22 | 703 | 0.1+ | 0.1+ |
| 1998 12 16 | 704 | 0.7− | 1.1− | 2003 01 26 | 699 | (0.2+ | 1.8+) | 2006 09 22 | 703 | 0.3+ | 0.4+ |
| 1998 12 16 | 704 | 0.2− | 1.4− | 2003 01 26 | 699 | 0.9− | 0.3− | 2006 09 22 | 703 | 0.2− | 0.1− |
| 1998 12 16 | 704 | 0.7− | 1.5− | 2003 01 31 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 703 | 0.1+ | 0.3+ |
| 1998 12 17 | 704 | 0.8+ | 0.7− | 2003 01 31 | 704 | 0.6− | 0.7− | 2006 09 27 | 703 | 0.5− | 0.0 |
| 1998 12 17 | 704 | 0.5− | 1.2− | 2003 01 31 | 704 | (0.2− | 1.6+) | 2006 09 27 | 703 | 0.1− | 0.6− |
| 1998 12 17 | 704 | 0.2− | 0.9− | 2003 01 31 | 704 | 0.5− | 0.7+ | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 1998 12 17 | 704 | 0.3− | 0.9− | 2003 02 02 | 644 | 0.1+ | 0.8+ | 2006 09 27 | 703 | 0.2+ | 0.2− |
| 1998 12 17 | 704 | 0.8− | 0.5− | 2003 02 02 | 644 | 0.2− | 0.8+ | 2006 09 27 | 703 | 0.8− | 0.0 |
| 2002 09 15 | 699 | 0.0 | 0.8+ | 2003 02 02 | 644 | 0.1− | 0.9+ | 2006 09 27 | 703 | 0.3− | 0.0 |
| 2002 09 15 | 699 | 0.2+ | 0.4+ | 2004 01 28 | 645 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.1+ | 0.2− |
| 2002 09 15 | 699 | 0.7+ | 0.6+ | 2004 01 28 | 645 | 0.0 | 0.1+ | 2006 09 27 | 703 | 1.0− | 0.1+ |
| 2002 09 15 | 683 | (0.2− | 2.0+) | 2004 02 16 | 704 | 0.9+ | 1.0+ | 2006 09 27 | 703 | 1.3+ | 1.1+ |
| 2002 09 15 | 699 | 1.4+ | 0.0 | 2004 02 16 | 704 | 1.2+ | 0.2− | 2006 09 27 | 703 | 0.0 | 0.4− |
| 2002 09 15 | 683 | 0.3+ | 1.0− | 2004 02 16 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.2+ |
| 2002 09 15 | 683 | 0.6+ | 0.5− | 2004 02 16 | 704 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.0 | 0.9+ | 2004 02 16 | 704 | (1.5+ | 0.4+) | 2006 09 27 | 703 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.0 | 0.4+ | 2004 03 18 | 703 | (1.0− | 1.5+) | 2006 09 27 | 703 | 0.5− | 0.3+ |
| 2002 10 31 | 704 | 0.1+ | 0.9+ | 2004 03 18 | 703 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.2− | 0.5+ |
| 2002 10 31 | 704 | 0.1+ | 1.0+ | 2004 03 18 | 703 | 0.7+ | 0.4+ | 2006 09 28 | 703 | 0.8− | 0.5+ |
| 2002 11 12 | 704 | 0.3+ | 0.5+ | 2004 03 18 | 703 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.2+ | 0.8+ |
| 2002 11 12 | 704 | 0.2+ | 1.1+ | 2004 03 19 | 644 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.5− | 0.5+ |
| 2002 11 12 | 704 | 0.0 | 0.6+ | 2004 03 19 | 644 | 0.4+ | 0.3+ | 2006 10 31 | 703 | (1.6− | 0.4−) |
| 2002 11 12 | 704 | (0.3+ | 1.6+) | 2004 03 19 | 644 | 0.4+ | 0.2+ | 2006 10 31 | 703 | 0.5− | 0.1− |
| 2002 11 13 | 704 | 0.4+ | 0.2+ | 2004 04 14 | 644 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 0.8− | 1.5− |
| 2002 11 13 | 704 | 0.5− | 0.0 | 2004 04 14 | 644 | 0.3+ | 0.5+ | 2006 10 31 | 703 | 0.6− | 1.4− |
| 2002 11 13 | 704 | 0.0 | 0.2+ | 2004 04 14 | 644 | 0.2+ | 0.2+ | 2006 11 09 | E12 | 0.5+ | 0.1+ |
| 2002 11 13 | 704 | 1.0− | 1.0− | 2004 04 14 | 644 | 0.7+ | 0.5+ | 2006 11 09 | E12 | 0.3+ | 0.1− |
| 2002 11 13 | 704 | 0.2− | 0.0 | 2004 04 14 | 644 | 0.1+ | 0.2+ | 2006 11 09 | E12 | 0.7+ | 0.5+ |
| 2002 11 30 | 704 | 0.6+ | 0.3+ | 2004 04 14 | 644 | 0.5+ | 0.5+ | 2006 11 09 | E12 | 0.4+ | 0.1− |
| 2002 11 30 | 704 | 0.5+ | 0.4+ | 2004 04 14 | 703 | (1.7− | 0.5+) | 2006 11 19 | 703 | 0.3+ | 0.2+ |
| 2002 11 30 | 704 | 0.8+ | 0.3+ | 2004 04 14 | 703 | (1.7+ | 0.6+) | 2006 11 19 | 703 | 0.4+ | 0.2+ |
| 2002 11 30 | 704 | 0.5+ | 1.0− | 2004 04 14 | 703 | 1.1+ | 1.1+ | 2006 11 19 | 703 | 0.0 | 0.5+ |
| 2002 11 30 | 704 | 0.4+ | 0.8− | 2004 04 14 | 703 | 0.0 | 1.1+ | 2006 11 19 | 703 | 0.8− | 0.7− |
| 2002 12 08 | 644 | 0.2+ | 0.4+ | 2005 06 17 | G96 | 0.1− | 0.8+ | 2006 11 27 | 703 | 0.1+ | 0.9+ |
| 2002 12 08 | 644 | 0.1− | 0.4+ | 2005 06 17 | G96 | 0.2+ | 0.6+ | 2006 11 27 | 703 | 0.7− | 0.6+ |
| 2002 12 08 | 644 | 0.3− | 0.2+ | 2005 06 17 | G96 | 0.1− | 0.5+ | 2006 11 27 | 703 | 0.5+ | 1.7+ |
| 2003 01 07 | 704 | 0.3− | 0.5− | 2005 06 17 | G96 | 0.4− | 0.4+ | 2006 11 27 | 703 | 1.0− | 0.5+ |

**(137090)∗ 1998 XZ$_{57}$ = 2002 VL$_{84}$**

Discovered 1998 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 39987)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.63948 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25404896 | $\omega$ | 334.14898 | | +0.23255370 | −0.95865594 | |
| $a$ | 2.4690190 | $\Omega$ | 102.04753 | | +0.91888869 | +0.16131372 | |
| $e$ | 0.1934024 | $i$ | 9.65402 | | +0.31868849 | +0.23442841 | |
| $P$ | 3.88 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.3− | 0.3− | 2003 01 04 | 704 | 0.1− | 0.2+ | 2004 06 16 | 691 | 0.1+ | 0.4+ |
| 1998 12 15 | 704 | 0.5+ | 1.3− | 2003 01 04 | 704 | 1.2+ | 0.7+ | 2005 07 26 | 644 | 0.2− | 0.7+ |
| 1998 12 15 | 704 | 1.4− | 1.2+ | 2003 01 04 | 704 | 0.0 | 0.8+ | 2005 07 26 | 644 | 0.3− | 0.7+ |
| 1998 12 15 | 704 | 0.6+ | 1.0+ | 2003 01 04 | 704 | 0.6+ | 1.4+ | 2005 07 26 | 644 | 0.2− | 0.5+ |
| 1998 12 16 | 704 | 0.3− | 0.3− | 2003 01 04 | 704 | 0.6− | 0.4+ | 2005 08 04 | 644 | 0.0 | 0.7+ |
| 1998 12 16 | 704 | 0.6− | 0.1+ | 2003 01 08 | 704 | 0.4− | 0.2+ | 2005 08 04 | 644 | 0.2+ | 0.7+ |
| 1998 12 16 | 704 | 0.5− | 1.0+ | 2003 01 08 | 704 | 0.3− | 0.0 | 2005 08 04 | 644 | 0.1+ | 0.8+ |
| 1998 12 16 | 704 | (2.1− | 2.6+) | 2003 01 08 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.9+ | 0.1− |
| 1998 12 22 | 704 | 1.4− | 0.7− | 2003 01 08 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2− | 1.2− |
| 1998 12 22 | 704 | 0.2− | 0.5− | 2003 01 08 | 704 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.8+ | 0.8− |
| 1998 12 22 | 704 | 0.1+ | 0.2+ | 2003 01 09 | 608 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.9− |
| 1998 12 22 | 704 | 0.1+ | 0.0 | 2003 01 09 | 608 | 0.1+ | 1.1+ | 2006 10 20 | 703 | 0.9− | 0.4− |
| 2002 11 07 | 704 | 0.3+ | 0.6− | 2003 01 09 | 608 | 0.0 | 0.9+ | 2006 10 20 | 703 | 0.6− | 1.3− |
| 2002 11 07 | 704 | 0.1+ | 0.6− | 2003 02 01 | 704 | 1.0+ | 0.1− | 2006 10 20 | 703 | 0.3− | 0.8− |
| 2002 11 07 | 704 | 0.1− | 0.6− | 2003 02 01 | 704 | 0.5+ | 0.6− | 2006 10 20 | 703 | 0.9− | 0.3− |
| 2002 11 07 | 704 | 0.1− | 0.2− | 2003 02 01 | 704 | 0.8+ | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2002 11 11 | 704 | 1.3+ | 0.2+ | 2003 02 01 | 704 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2003 02 01 | 704 | 1.0+ | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2002 11 11 | 704 | 0.1+ | 1.5+ | 2003 02 04 | 704 | (2.0− | 0.6−) | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2002 11 11 | 704 | 0.1+ | 0.8+ | 2003 02 04 | 704 | 0.7− | 0.8− | 2006 11 01 | G96 | 0.4− | 0.1− |
| 2002 11 14 | 704 | 0.0 | 0.4+ | 2003 02 04 | 704 | 0.8− | 0.4− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.5+ | 0.7− | 2003 02 04 | 704 | 0.9− | 0.8− | 2006 11 01 | G96 | 0.5− | 0.4− |
| 2002 11 14 | 704 | 0.4+ | 0.2+ | 2003 03 06 | 704 | 0.9− | 0.5+ | 2006 11 15 | 703 | (0.0 | 2.8+) |
| 2002 11 14 | 704 | 0.6+ | 0.2+ | 2003 03 06 | 704 | 0.3+ | 0.9− | 2006 11 15 | 703 | (3.6− | 2.8+) |
| 2002 11 27 | 699 | 0.6+ | 0.2− | 2003 03 06 | 704 | 0.5+ | 0.2+ | 2006 11 15 | 703 | 1.4− | 0.4+ |
| 2002 11 27 | 699 | 0.3+ | 0.4+ | 2003 03 06 | 704 | 0.5+ | 0.0 | 2006 11 15 | 703 | 0.2− | 0.9− |
| 2002 11 27 | 699 | 0.0 | 0.1− | 2003 03 06 | 704 | 0.1− | 0.7− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 11 27 | 699 | 0.8+ | 1.2+ | 2003 04 02 | 704 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2002 12 08 | 608 | 0.1− | 1.4+ | 2003 04 02 | 704 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2002 12 08 | 608 | 0.0 | 1.5+ | 2003 04 02 | 704 | 0.7+ | 0.0 | 2006 11 16 | G96 | 0.8− | 0.3+ |
| 2002 12 08 | 608 | 0.1+ | 1.3+ | 2004 05 12 | 699 | (0.5− | 1.9+) | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 2002 12 10 | 704 | 1.0+ | 0.3− | 2004 05 12 | 699 | (0.8+ | 1.7−) | 2006 11 21 | 704 | 0.5− | 0.4− |
| 2002 12 10 | 704 | 0.2+ | 0.2+ | 2004 05 12 | 699 | 1.2+ | 0.6− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2002 12 10 | 704 | 0.2+ | 0.7+ | 2004 05 12 | 699 | 0.1− | 0.7− | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2004 05 23 | 704 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.1− |
| 2002 12 31 | 704 | 0.2− | 0.1+ | 2004 05 23 | 704 | 0.6+ | 0.2+ | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2004 05 23 | 704 | 0.8+ | 1.4+ | 2006 11 22 | G96 | 0.4− | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 0.5+ | 2004 05 23 | 704 | (0.7+ | 2.2+) | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2004 06 16 | 691 | 0.1− | 0.4+ | | | | |
| 2002 12 31 | 704 | 0.0 | 0.3− | 2004 06 16 | 691 | 0.1− | 0.4+ | | | | |

**(137091)∗ 1998 XU$_{63}$ = 2002 PL$_{41}$**

Discovered 1998 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33063)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.95863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22973229 | $\omega$ | 113.39130 | | +0.49020925 | −0.86077022 | |
| $a$ | 2.6403086 | $\Omega$ | 306.54190 | | +0.72442846 | +0.48977268 | |
| $e$ | 0.1692888 | $i$ | 9.81823 | | +0.48466307 | +0.13855452 | |
| $P$ | 4.29 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 0.5− | 0.7+ | 2002 11 12 | 644 | 0.0 | 0.1− | 2004 03 16 | 704 | 1.3+ | 1.0+ |
| 1998 11 16 | 704 | 1.8+ | 0.2+ | 2002 11 12 | 644 | 0.3+ | 0.6− | 2004 03 16 | 704 | 0.9+ | 0.6+ |
| 1998 11 16 | 704 | 0.5− | 0.9− | 2002 11 14 | 704 | 0.6+ | 0.3+ | 2006 08 18 | 704 | 0.3− | 0.3+ |
| 1998 11 16 | 704 | 1.0+ | 0.3+ | 2002 11 14 | 704 | 0.4+ | 0.1− | 2006 08 18 | 699 | 1.1+ | 0.0 |
| 1998 11 16 | 704 | 0.7+ | 0.7+ | 2002 11 14 | 704 | 0.1− | 0.3− | 2006 08 18 | 699 | 0.7+ | 0.3+ |
| 1998 12 14 | 704 | 0.7+ | 0.7− | 2002 11 14 | 704 | 0.1+ | 0.2− | 2006 08 18 | 704 | 1.2− | 0.6+ |
| 1998 12 14 | 704 | 1.0+ | 0.9− | 2002 12 01 | 704 | 1.5+ | 1.0− | 2006 08 18 | 699 | 0.1+ | 0.5+ |
| 1998 12 14 | 704 | 0.1− | 0.7− | 2002 12 01 | 704 | 1.5+ | 1.3− | 2006 08 18 | 704 | 0.0 | 0.4− |
| 1998 12 14 | 704 | 0.6− | 0.0 | 2002 12 01 | 704 | 1.2+ | 1.3− | 2006 08 18 | 704 | (1.8− | 1.6+) |
| 1998 12 14 | 704 | 0.1− | 1.2+ | 2002 12 01 | 704 | (1.9+ | 1.2−) | 2006 08 18 | 699 | 0.0 | 0.2+ |
| 1998 12 17 | 704 | (2.2+ | 0.6+) | 2002 12 01 | 704 | (2.2+ | 1.6−) | 2006 08 24 | 704 | 0.4+ | 0.2+ |
| 1998 12 17 | 704 | 0.2+ | 1.4− | 2002 12 06 | 704 | 0.5− | 1.3+ | 2006 08 24 | 704 | 0.8− | 0.1− |
| 1998 12 17 | 704 | 0.7− | 1.0− | 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 08 24 | 704 | 0.2+ | 0.2− |
| 1998 12 17 | 704 | 0.0 | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.9+ | 2006 08 24 | 704 | 0.1− | 0.4+ |
| 1998 12 17 | 704 | 1.1− | 0.3− | 2002 12 06 | 704 | 0.1+ | 0.9+ | 2006 08 24 | 704 | 0.1+ | 0.1+ |
| 2002 08 04 | 704 | (1.7− | 1.5+) | 2002 12 06 | 704 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.4− |
| 2002 08 04 | 704 | (0.3+ | 1.5−) | 2002 12 19 | 644 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.3+ | 0.5− |
| 2002 08 04 | 704 | (0.1− | 2.0−) | 2002 12 19 | 644 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.2+ | 0.5− |
| 2002 08 04 | 704 | 1.0− | 0.7+ | 2002 12 19 | 644 | 0.2+ | 0.3− | 2006 08 29 | 703 | 0.4+ | 0.2+ |
| 2002 08 10 | 704 | 0.2+ | 0.3+ | 2002 12 31 | 704 | 0.7− | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.4− |
| 2002 08 10 | 704 | 0.2+ | 0.1− | 2002 12 31 | 704 | (0.8− | 2.1+) | 2006 08 29 | 703 | 0.5− | 0.2− |
| 2002 08 10 | 704 | 0.7− | 0.1+ | 2002 12 31 | 704 | (1.4− | 1.5+) | 2006 08 29 | 703 | 0.0 | 0.5− |
| 2002 08 10 | 704 | 0.6+ | 0.0 | 2002 12 31 | 704 | (1.2− | 2.6+) | 2006 08 29 | 703 | 0.1− | 0.3− |
| 2002 08 10 | 704 | 0.1− | 0.3+ | 2002 12 31 | 704 | (0.7− | 2.0+) | 2006 08 30 | 704 | 0.2+ | 0.4+ |
| 2002 08 30 | 704 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.4− | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.3+ |
| 2002 08 30 | 704 | 0.4− | 0.7+ | 2003 01 27 | 704 | 0.9− | 0.0 | 2006 08 30 | 704 | 0.5− | 0.7+ |
| 2002 08 30 | 704 | 0.2+ | 0.6+ | 2003 01 27 | 704 | 0.6− | 0.2− | 2006 08 30 | 704 | 0.2− | 0.6+ |
| 2002 08 30 | 704 | 0.5− | 0.7+ | 2003 01 27 | 704 | (2.0− | 0.8−) | 2006 08 30 | 704 | 0.4+ | 0.2+ |
| 2002 08 30 | 704 | 0.1− | 0.9+ | 2004 01 23 | 699 | 0.5− | 0.3+ | 2006 09 01 | 704 | 0.0 | 0.9− |
| 2002 09 30 | 151 | 0.0 | 0.1+ | 2004 01 23 | 699 | 0.1− | 1.1+ | 2006 09 01 | 704 | 0.1+ | 0.2+ |
| 2002 09 30 | 151 | 0.3− | 0.1+ | 2004 01 23 | 704 | 0.4+ | 0.7− | 2006 09 01 | 704 | (0.4− | 1.6+) |
| 2002 09 30 | 151 | 0.5+ | 0.6+ | 2004 01 23 | 699 | 0.0 | 1.0+ | 2006 09 11 | 703 | 0.5− | 0.2+ |
| 2002 09 30 | 151 | 0.6− | 0.0 | 2004 01 23 | 699 | 0.2+ | 0.8− | 2006 09 11 | 703 | 0.1− | 0.3+ |
| 2002 09 30 | 151 | 0.0 | 0.4− | 2004 01 23 | 704 | 0.5− | 0.1− | 2006 09 11 | 703 | 0.1+ | 0.7+ |
| 2002 10 06 | 704 | 1.0− | 0.5− | 2004 01 23 | 704 | 0.0 | 1.0+ | 2006 09 11 | 703 | 0.1− | 0.4+ |
| 2002 10 06 | 704 | 1.0− | 0.3− | 2004 01 23 | 704 | 0.2− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.8− | 0.2− | 2004 01 28 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 10 06 | 704 | 0.8− | 0.1− | 2004 01 28 | 704 | 0.6+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2002 10 06 | 704 | 1.3− | 0.3− | 2004 01 28 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.2− |
| 2002 10 10 | 704 | 0.2− | 0.6+ | 2004 01 28 | 704 | 0.4+ | 0.5− | 2006 09 19 | 699 | 0.4− | 0.3− |
| 2002 10 10 | 704 | 0.1− | 0.2+ | 2004 01 28 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2002 10 10 | 704 | 0.4− | 0.4+ | 2004 01 29 | 699 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.5− |
| 2002 10 10 | 704 | 0.1+ | 0.2+ | 2004 01 29 | 699 | 0.5+ | 0.8− | 2006 09 19 | 691 | 0.3+ | 0.2+ |
| 2002 10 10 | 704 | 0.2− | 0.2+ | 2004 01 29 | 699 | 0.5+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.3− |
| 2002 10 15 | 704 | 0.3− | 0.1− | 2004 01 29 | 699 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.6+ | 1.0− |
| 2002 10 15 | 704 | 0.2+ | 0.2− | 2004 02 14 | 699 | 0.1− | 1.4+ | 2006 09 26 | 704 | 0.3+ | 1.1− |
| 2002 10 15 | 704 | 0.3+ | 0.2+ | 2004 02 14 | 699 | 0.0 | 1.0+ | 2006 09 26 | 704 | 1.0− | 0.9+ |
| 2002 10 15 | 704 | 0.9− | 0.4− | 2004 02 14 | 699 | 0.6− | 0.3+ | 2006 09 26 | 704 | 1.0− | 0.4− |
| 2002 10 15 | 704 | 0.0 | 0.0 | 2004 02 14 | 699 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.4− | 0.3+ |
| 2002 10 24 | 608 | 0.3− | 0.3+ | 2004 02 17 | 703 | 0.9+ | 0.2− | 2006 11 10 | 704 | 0.4− | 0.1+ |
| 2002 10 24 | 608 | 0.6− | 0.0 | 2004 02 17 | 703 | 0.4− | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.7+ |
| 2002 10 24 | 608 | 0.4− | 0.4− | 2004 02 17 | 703 | 0.2− | 0.2+ | 2006 11 10 | 704 | 0.5+ | 1.3+ |
| 2002 11 01 | 644 | 0.1+ | 0.1− | 2004 02 17 | 703 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2002 11 01 | 644 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.3+ | 1.9+ |
| 2002 11 01 | 644 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.8− | 0.6+ |
| 2002 11 07 | 704 | 0.5+ | 0.2+ | 2004 02 19 | 704 | 0.8− | 0.7+ | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2002 11 07 | 704 | 0.5+ | 0.3+ | 2004 02 19 | 704 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 1.0− | 0.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2004 02 19 | 704 | 0.9− | 0.5+ | 2006 11 22 | 704 | 0.4− | 1.2− |
| 2002 11 07 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 704 | 1.1+ | 0.5+ | 2006 11 22 | 704 | 0.9− | 1.1+ |
| 2002 11 07 | 704 | 0.5+ | 0.2+ | 2004 03 16 | 704 | 1.0+ | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.2+ |
| 2002 11 12 | 644 | 0.1− | 0.1− | 2004 03 16 | 704 | 0.8+ | 0.8+ | 2006 11 22 | 704 | 0.8− | 0.9+ |

**(137092)∗ 1998 XX$_{68}$**

Discovered 1998 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.67906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24274163 | $\omega$ | 79.55669 | | +0.97571593 | −0.14542859 | |
| $a$ | 2.5451099 | $\Omega$ | 288.65569 | | +0.05908177 | +0.89480772 | |
| $e$ | 0.3052864 | $i$ | 9.95525 | | +0.21092126 | +0.42210148 | |
| $P$ | 4.06 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 0.7+ | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.5− | 2003 02 04 | 704 | 1.2+ | 0.4− |
| 1998 11 16 | 704 | 1.9+ | 0.3+ | 2002 12 05 | 704 | 0.2− | 0.3− | 2004 03 16 | 691 | 0.0 | 0.1+ |
| 1998 11 16 | 704 | 0.8− | 0.2− | 2002 12 05 | 704 | 0.4− | 0.2− | 2004 03 16 | 691 | 0.1+ | 0.1+ |
| 1998 11 16 | 704 | 0.0 | 1.1− | 2002 12 05 | 704 | 0.6− | 0.3− | 2004 03 16 | 691 | 0.0 | 0.1+ |
| 1998 11 16 | 704 | 0.6+ | 0.8− | 2002 12 06 | 704 | 0.1− | 0.5+ | 2006 08 23 | 704 | 0.1+ | 0.1+ |
| 1998 12 14 | 704 | (0.6− | 2.7−) | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 08 23 | 704 | 0.3− | 1.1+ |
| 1998 12 14 | 704 | 0.8+ | 0.3− | 2002 12 06 | 704 | 0.1− | 0.4+ | 2006 08 23 | 704 | 0.2− | 0.8+ |
| 1998 12 14 | 704 | (2.3+ | 1.5−) | 2002 12 06 | 704 | 0.4− | 0.6+ | 2006 08 23 | 704 | 0.2− | 0.4+ |
| 1998 12 14 | 704 | 0.9− | 0.5+ | 2002 12 06 | 704 | 0.3− | 0.7+ | 2006 09 19 | 704 | 0.8+ | 0.1− |
| 1998 12 14 | 704 | 0.3+ | 1.3− | 2002 12 12 | 644 | 0.1+ | 0.1− | 2006 09 19 | 704 | 1.2− | 1.0− |
| 1998 12 17 | 704 | 0.7+ | 0.5− | 2002 12 12 | 644 | 0.0 | 0.1− | 2006 09 19 | 704 | 1.0− | 1.2− |
| 1998 12 17 | 704 | (1.9+ | 3.6−) | 2002 12 12 | 644 | 0.2+ | 0.1− | 2006 10 15 | 628 | 0.2− | 0.2+ |
| 1998 12 17 | 704 | (2.3+ | 3.8−) | 2002 12 15 | 704 | 0.1+ | 0.1+ | 2006 10 15 | 628 | 0.0 | 0.1− |
| 1998 12 17 | 704 | (0.0 | 3.2−) | 2002 12 15 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 703 | 1.1− | 0.1+ |
| 1999 01 23 | 046 | 0.5− | 0.2+ | 2002 12 15 | 704 | 0.3+ | 0.5+ | 2006 10 23 | 703 | 0.1− | 0.1+ |
| 1999 01 23 | 046 | 0.3− | 0.3− | 2002 12 15 | 704 | 0.3+ | 0.5+ | 2006 10 23 | 703 | 0.5+ | 0.7+ |
| 1999 01 23 | 046 | 0.8− | 0.5− | 2002 12 28 | 699 | 0.6− | 0.0 | 2006 10 23 | 703 | 0.9+ | 0.9+ |
| 1999 01 23 | 046 | 0.6− | 0.5− | 2002 12 28 | 699 | 1.1− | 0.2− | 2006 10 29 | 703 | 0.0 | 0.2− |
| 2002 09 07 | 704 | 0.5+ | 0.3+ | 2002 12 28 | 699 | 0.2− | 0.3+ | 2006 10 29 | 703 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.1− | 0.3− | 2002 12 28 | 699 | 1.5− | 0.0 | 2006 10 29 | 703 | 0.2− | 0.0 |
| 2002 09 07 | 704 | 0.2− | 0.2+ | 2003 01 05 | 704 | 0.1+ | 0.2− | 2006 10 29 | 703 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.3+ | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.2− | 0.2+ |
| 2002 10 05 | 704 | 0.1+ | 0.6− | 2003 01 05 | 704 | 0.6− | 0.1− | 2006 11 14 | 704 | 0.5+ | 0.2+ |
| 2002 10 05 | 704 | 0.0 | 0.6+ | 2003 01 05 | 704 | 0.5− | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.5− |
| 2002 10 05 | 704 | 0.1+ | 0.4+ | 2003 01 05 | 704 | 0.8− | 0.6+ | 2006 11 14 | 704 | 0.5+ | 0.7− |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2003 01 20 | 644 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.6− | 0.0 | 2003 01 20 | 644 | 0.4− | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.4− |
| 2002 10 31 | 704 | 0.4− | 0.0 | 2003 01 20 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 2002 10 31 | 704 | 0.5− | 0.3− | 2003 01 25 | 699 | 0.8+ | 0.9− | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2002 10 31 | 704 | 0.3− | 0.0 | 2003 01 25 | 699 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.3+ |
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2003 01 25 | 699 | 0.5− | 0.0 | 2006 11 21 | 703 | 0.3+ | 0.3− |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2003 01 25 | 699 | 0.4− | 0.5− | 2006 11 21 | 703 | 0.4+ | 0.6− |
| 2002 11 07 | 704 | 0.5+ | 0.2+ | 2003 02 01 | 644 | 0.1− | 0.1− | 2006 11 21 | 703 | 0.1− | 0.4− |
| 2002 11 07 | 704 | (1.2+ | 2.0+) | 2003 02 01 | 644 | 0.1− | 0.1− | 2006 11 21 | 703 | 0.0 | 0.4− |
| 2002 11 07 | 704 | 0.1− | 0.4− | 2003 02 01 | 644 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 0.7+ | 0.5− |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2003 02 01 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.5+ |
| 2002 11 15 | 704 | (0.1+ | 1.6+) | 2003 02 01 | 644 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 1.0+ | 0.4− |
| 2002 11 15 | 704 | 0.2+ | 0.6+ | 2003 02 01 | 644 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2002 11 15 | 704 | 0.8+ | 0.6+ | 2003 02 04 | 704 | 0.7− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2002 11 15 | 704 | 0.3+ | 0.9+ | 2003 02 04 | 704 | 0.3+ | 0.4+ | | | | |
| 2002 11 15 | 704 | 0.2+ | 0.1+ | 2003 02 04 | 704 | 0.1− | 0.8+ | | | | |

**(137093)∗ 1998 XW$_{70}$ = 2002 TS$_{53}$**

Discovered 1998 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37155)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.79298 | | (2000.0) | | | |
| $n$ | 0.24112949 | $\omega$ | 10.43997 | | +0.17461756 | −0.98034318 |
| $a$ | 2.5564413 | $\Omega$ | 69.55120 | | +0.89617363 | +0.11959368 |
| $e$ | 0.1829744 | $i$ | 5.62542 | | +0.40789893 | +0.15692228 |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.3− | 0.3+ | 2002 11 27 | 699 | 0.4+ | 0.2+ | 2006 10 22 | 704 | 0.1− | 1.0+ |
| 1996 04 18 | 691 | 0.2+ | 0.5+ | 2002 11 27 | 699 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.8+ |
| 1996 04 18 | 691 | 0.1− | 0.3+ | 2002 11 27 | 699 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1998 11 25 | 046 | 0.5+ | 0.4− | 2002 11 28 | 608 | (1.7− | 1.3+) | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 1998 11 25 | 046 | 0.7+ | 0.4− | 2002 11 28 | 608 | (1.8− | 1.3+) | 2006 10 27 | 704 | 0.1− | 0.8+ |
| 1998 11 25 | 046 | 0.1+ | 0.5− | 2002 11 28 | 608 | 1.4− | 1.3+ | 2006 10 27 | 704 | (0.6+ | 1.6+) |
| 1998 11 25 | 046 | 0.5+ | 0.7− | 2002 12 02 | 704 | 0.1+ | 0.1− | 2006 10 27 | 704 | 0.4+ | 0.4+ |
| 1998 12 14 | 704 | 0.9+ | 0.5+ | 2002 12 02 | 704 | 0.1+ | 0.0 | 2006 10 27 | 704 | 0.2− | 0.9+ |
| 1998 12 14 | 704 | 1.3− | 1.3− | 2002 12 02 | 704 | 0.1+ | 0.5− | 2006 10 27 | 704 | (1.8− | 0.2+) |
| 1998 12 14 | 704 | 0.7+ | 0.4− | 2002 12 02 | 704 | 0.2+ | 0.0 | 2006 11 02 | 703 | 0.6− | 0.5+ |
| 1998 12 14 | 704 | 0.0 | 1.3+ | 2002 12 02 | 704 | 0.3+ | 0.6− | 2006 11 02 | 703 | 0.1− | 0.1+ |
| 1998 12 16 | 704 | 1.1− | 0.6− | 2002 12 03 | 608 | 0.4− | 0.5− | 2006 11 02 | 703 | 0.5+ | 0.1+ |
| 1998 12 16 | 704 | 1.3− | 0.1+ | 2002 12 03 | 608 | 0.6− | 0.8− | 2006 11 02 | 703 | 0.1− | 1.0+ |
| 1998 12 16 | 704 | 0.5− | 1.2+ | 2002 12 03 | 608 | 0.5− | 0.9− | 2006 11 10 | 644 | 0.3− | 0.1− |
| 1998 12 16 | 704 | 0.9− | 0.6− | 2002 12 04 | 333 | 0.3+ | 0.0 | 2006 11 10 | 644 | 0.3− | 0.2− |
| 2002 09 04 | 599 | 0.2+ | 0.5+ | 2002 12 04 | 333 | 0.8+ | 0.7− | 2006 11 10 | 644 | 0.3− | 0.3− |
| 2002 09 04 | 599 | 0.6+ | 0.3+ | 2002 12 04 | 333 | 0.9− | 0.4− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2002 09 04 | 599 | 0.0 | 0.5+ | 2002 12 05 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2002 09 04 | 599 | 0.3+ | 0.1− | 2002 12 05 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.1+ | 0.0 | 2002 12 05 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.3+ | 0.3+ |
| 2002 10 02 | 704 | 0.3+ | 0.3+ | 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 11 14 | 704 | 0.5− | 0.5+ |
| 2002 10 02 | 704 | 0.1− | 0.4+ | 2002 12 10 | 704 | 0.6+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.5+ | 1.0+ | 2002 12 10 | 704 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2002 12 10 | 704 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.9− | 1.1+ | 2002 12 10 | 704 | 0.4+ | 0.6− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.5+ | 0.3− | 2002 12 10 | 704 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.7+ | 0.3+ | 2002 12 31 | 699 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 10 30 | 608 | 0.6− | 0.4− | 2002 12 31 | 704 | 0.3− | 1.2− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 10 30 | 608 | 0.1+ | 0.1+ | 2002 12 31 | 699 | 0.6− | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.6+ |
| 2002 10 30 | 608 | 0.3− | 0.1− | 2002 12 31 | 704 | 0.8− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.7+ | 0.1+ | 2002 12 31 | 699 | 0.7+ | 0.4+ | 2006 11 17 | 704 | 0.0 | 0.2− |
| 2002 11 05 | 704 | 0.2+ | 0.6− | 2002 12 31 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.5+ | 0.1+ | 2002 12 31 | 704 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.7− | 0.0 |
| 2002 11 05 | 704 | 0.2+ | 0.5− | 2002 12 31 | 699 | 0.8+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2002 11 05 | 704 | 1.2+ | 0.5− | 2002 12 31 | 704 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2002 11 06 | 704 | 0.2+ | 0.2− | 2003 02 01 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.2+ | 0.1+ | 2003 02 01 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | (0.4− | 1.5+) |
| 2002 11 06 | 704 | 0.2+ | 0.3+ | 2003 02 01 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.6− |
| 2002 11 06 | 704 | 0.2+ | 0.3− | 2004 03 31 | 691 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.4− | 2004 03 31 | 691 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 11 13 | 644 | 0.2− | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.7+ | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2004 05 23 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.4− | 1.2+ |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2004 05 23 | 691 | 0.6+ | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2002 11 14 | 704 | 0.5+ | 0.6+ | 2004 05 23 | 691 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.7− | 0.4+ |
| 2002 11 14 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.9+ |
| 2002 11 14 | 704 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 0.7− | 0.8+ |
| 2002 11 14 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 28 | 704 | 0.6+ | 0.4+ |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.7+ | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.7− | 2006 10 22 | 704 | 1.0− | 0.2− | 2006 11 28 | 704 | 0.0 | 0.5+ |
| 2002 11 24 | 644 | 0.3+ | 0.7− | 2006 10 22 | 704 | 0.2− | 0.6− | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2002 11 27 | 699 | 0.2− | 0.2+ | 2006 10 22 | 704 | 0.5− | 0.6+ | 2006 11 28 | 704 | 0.9+ | 0.1− |

**(137094)∗ 1998 XD$_{84}$ = 2002 TS$_{288}$**

Discovered 1998 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37155)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.62249 | | (2000.0) | | | |
| $n$ | 0.23449716 | $\omega$ | 196.42847 | | +0.12996177 | −0.96520679 |
| $a$ | 2.6044198 | $\Omega$ | 246.56966 | | +0.93525535 | +0.19532652 |
| $e$ | 0.1254566 | $i$ | 14.31755 | | +0.32925273 | −0.17384882 |
| $P$ | 4.20 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.1+ | 0.2− | 2002 12 02 | 704 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.6+ |
| 1998 12 15 | 704 | 1.2− | 1.5− | 2002 12 02 | 704 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.3− |
| 1998 12 15 | 704 | (1.2− | 2.8−) | 2002 12 02 | 704 | 0.5− | 0.1− | 2004 03 27 | 704 | 0.7+ | 0.1+ |
| 1998 12 15 | 704 | 0.3+ | 0.2+ | 2002 12 02 | 704 | 0.4− | 0.1+ | 2004 03 27 | 704 | 0.2− | 0.3− |
| 1998 12 15 | 704 | 1.6− | 1.2− | 2002 12 02 | 704 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.1+ |
| 1998 12 16 | 704 | 0.3+ | 1.0− | 2002 12 06 | 704 | 0.5− | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.2− |
| 1998 12 16 | 704 | 0.0 | 1.1− | 2002 12 06 | 704 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.3− | 0.4− |
| 1998 12 16 | 704 | 0.9+ | 0.7+ | 2002 12 06 | 704 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.4− |
| 1998 12 16 | 704 | 1.5− | 0.7− | 2002 12 06 | 704 | 0.2− | 0.3− | 2004 04 16 | 699 | (0.1− | 1.8+) |
| 1998 12 22 | 704 | 0.2+ | 1.1+ | 2002 12 11 | 644 | 0.1− | 0.0 | 2004 04 16 | 699 | 0.2− | 0.3− |
| 1998 12 22 | 704 | 0.5+ | 1.8− | 2002 12 11 | 644 | 0.1− | 0.2− | 2004 04 16 | 699 | 0.1+ | 0.2− |
| 1998 12 22 | 704 | 0.3− | 0.2− | 2002 12 11 | 704 | 0.2+ | 0.4− | 2004 04 16 | 699 | 0.2+ | 1.3+ |
| 1998 12 22 | 704 | 1.1+ | 0.6− | 2002 12 11 | 704 | 0.5− | 0.1+ | 2004 05 12 | E12 | 0.5+ | 0.1− |
| 1998 12 22 | 704 | 0.9− | 1.5− | 2002 12 11 | 644 | 0.3− | 0.1+ | 2004 05 12 | E12 | 0.6+ | 0.7− |
| 2002 10 05 | 704 | 0.3+ | 1.1+ | 2002 12 11 | 704 | 0.2− | 0.3+ | 2004 05 12 | E12 | (1.7+ | 0.3+) |
| 2002 10 05 | 704 | 0.6+ | 0.0 | 2002 12 11 | 704 | 0.7− | 0.2+ | 2004 05 12 | E12 | 0.7+ | 0.3+ |
| 2002 10 05 | 704 | 0.2+ | 0.2− | 2002 12 11 | 704 | 0.8− | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.5− |
| 2002 10 05 | 704 | 0.0 | 0.4− | 2002 12 31 | 704 | 0.8− | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.2− |
| 2002 10 10 | 704 | 0.4+ | 0.8+ | 2002 12 31 | 704 | 0.2− | 0.3+ | 2006 09 17 | 703 | 1.1+ | 0.3+ |
| 2002 10 10 | 704 | 0.8+ | 0.9+ | 2002 12 31 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.1− |
| 2002 10 10 | 704 | (1.6+ | 0.3−) | 2002 12 31 | 704 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2002 10 10 | 704 | (1.5+ | 0.1+) | 2003 01 04 | 704 | 0.4+ | 0.7+ | 2006 09 28 | 703 | 0.3− | 0.1+ |
| 2002 10 10 | 704 | 0.9+ | 0.3− | 2003 01 04 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.4+ |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2003 01 04 | 704 | 0.5− | 0.7+ | 2006 09 28 | 703 | 0.5+ | 0.0 |
| 2002 10 12 | 704 | 0.4− | 0.4+ | 2003 01 04 | 704 | 0.6− | 0.6− | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 2002 10 12 | 704 | 0.4+ | 0.1+ | 2003 01 18 | 644 | 0.3+ | 1.4+ | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2002 10 12 | 704 | 0.3+ | 0.6+ | 2003 01 18 | 644 | 0.6+ | 1.3+ | 2006 10 19 | 703 | 0.2+ | 1.0− |
| 2002 11 05 | 644 | 0.2− | 0.0 | 2003 01 18 | 644 | 0.4+ | 1.1+ | 2006 10 19 | 703 | 0.1+ | 0.5− |
| 2002 11 05 | 644 | 0.0 | 0.1+ | 2003 01 19 | 644 | 0.1− | 0.5+ | 2006 10 21 | 704 | (0.2− | 3.0+) |
| 2002 11 05 | 644 | 0.3+ | 0.1− | 2003 01 19 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 704 | (0.2− | 1.8+) |
| 2002 11 08 | 704 | 0.5+ | 0.3+ | 2003 01 19 | 644 | 0.1− | 0.4+ | 2006 10 21 | 704 | (1.9+ | 0.5+) |
| 2002 11 08 | 704 | 0.4+ | 0.0 | 2003 01 27 | 704 | 0.1− | 0.1+ | 2006 10 21 | 704 | (1.3− | 1.9−) |
| 2002 11 08 | 704 | 0.2− | 0.3− | 2003 01 27 | 644 | 0.0 | 0.4+ | 2006 10 21 | 704 | (0.3− | 2.1+) |
| 2002 11 08 | 704 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.2− | 0.2− | 2003 01 27 | 704 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 11 12 | 704 | 0.1+ | 0.2− | 2003 01 27 | 644 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.1− | 0.2+ | 2003 01 27 | 644 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.2+ | 0.1+ | 2003 02 02 | 644 | 0.1+ | 0.6− | 2006 10 24 | 644 | 0.0 | 0.4− |
| 2002 11 12 | 704 | 0.1+ | 0.1+ | 2003 02 02 | 644 | 0.2− | 0.5− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.1+ | 0.6+ | 2003 02 02 | 644 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 0.8+ | 2004 03 16 | E12 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.5− |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2004 03 16 | E12 | 0.7− | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.6− |
| 2002 11 14 | 704 | 0.2+ | 0.6+ | 2004 03 16 | E12 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.6− |
| 2002 11 14 | 704 | 0.3− | 0.7+ | 2004 03 16 | E12 | 0.4− | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.6+ |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2004 03 26 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 1.0+ | 0.2+ |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2004 03 26 | 704 | 0.3− | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.4+ | 0.1− | 2004 03 26 | 704 | 0.9− | 0.8+ | 2006 11 14 | 703 | 0.1+ | 0.4+ |
| 2002 11 28 | 699 | 0.8+ | 0.5− | 2004 03 26 | 704 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.6− | 0.0 |
| 2002 11 28 | 699 | 0.3+ | 0.2− | 2004 03 26 | 704 | 0.4− | 0.3+ | 2006 11 23 | 703 | 0.4− | 0.8− |
| 2002 11 28 | 699 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.0 | 2006 11 23 | 703 | 0.8− | 0.1− |
| 2002 11 28 | 699 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.2− | 0.7− | | | | |

**(137095)∗ 1998 XX$_{86}$ = 2002 RG$_{62}$**

Discovered 1998 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34758)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.84729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23373520 | $\omega$ | 288.96514 | | +0.32831333 | −0.94262169 | |
| $a$ | 2.6100769 | $\Omega$ | 141.69788 | | +0.89925215 | +0.29227823 | |
| $e$ | 0.2714668 | $i$ | 5.61269 | | +0.28906041 | +0.16136226 | |
| $P$ | 4.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 704 | 1.7+ | 0.8+ | 2002 12 07 | 704 | 0.4− | 0.4+ | 2006 08 30 | 704 | 0.3− | 0.0 | |
| 1998 11 23 | 704 | 0.8+ | 1.0− | 2002 12 07 | 704 | 1.0− | 1.2+ | 2006 08 31 | 958 | 0.7− | 0.1+ | |
| 1998 11 23 | 704 | (0.4+ | 2.7−) | 2003 01 07 | 704 | 0.0 | 0.2− | 2006 08 31 | 958 | 0.7− | 0.1+ | |
| 1998 11 23 | 704 | 0.5− | 1.0− | 2003 01 07 | 704 | 0.2− | 0.4+ | 2006 09 01 | 958 | 0.2− | 0.3− | |
| 1998 11 23 | 704 | 1.1− | 0.4− | 2003 01 07 | 704 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.3− | 0.4+ | |
| 1998 12 15 | 704 | 0.1− | 0.2− | 2003 01 07 | 704 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.0 | 0.2+ | |
| 1998 12 15 | 704 | 0.2− | 0.5− | 2003 01 07 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.0 | |
| 1998 12 15 | 704 | 0.8− | 0.5+ | 2003 01 28 | 704 | (0.5− | 2.4+) | 2006 09 14 | 703 | 0.2− | 0.2− | |
| 1998 12 15 | 704 | 0.6− | 0.5+ | 2003 01 28 | 704 | (0.7− | 2.0+) | 2006 09 16 | 704 | 0.2+ | 0.3− | |
| 1998 12 15 | 704 | 0.3+ | 0.1+ | 2003 01 28 | 704 | (0.4− | 1.7+) | 2006 09 16 | 704 | 0.2+ | 1.1− | |
| 1998 12 22 | 704 | 0.6− | 0.4− | 2003 01 28 | 704 | (0.6− | 1.8+) | 2006 09 16 | 704 | 0.5− | 0.4− | |
| 1998 12 22 | 704 | 0.0 | 1.1− | 2003 02 02 | 704 | 1.4− | 1.3+ | 2006 09 16 | 704 | 0.5− | 0.3− | |
| 1998 12 22 | 704 | 1.0+ | 0.0 | 2003 02 02 | 704 | 0.5− | 0.7+ | 2006 09 16 | 704 | 0.3− | 0.4− | |
| 1998 12 22 | 704 | 0.6+ | 1.1+ | 2003 02 02 | 704 | 1.2− | 0.7+ | 2006 09 19 | 704 | 0.3− | 0.7+ | |
| 1998 12 22 | 704 | 0.5− | 0.6+ | 2003 02 02 | 704 | 1.1− | 0.8+ | 2006 09 19 | 704 | 0.2− | 0.4+ | |
| 2002 08 11 | 704 | (0.1+ | 2.1−) | 2003 02 28 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 0.2− | 0.1+ | |
| 2002 08 11 | 704 | 0.3− | 0.2+ | 2003 02 28 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 704 | 0.5− | 0.6+ | |
| 2002 08 11 | 704 | 0.1+ | 0.2+ | 2003 02 28 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.5+ | 0.2+ | |
| 2002 08 11 | 704 | 0.8− | 0.2+ | 2003 02 28 | 704 | 1.4+ | 1.1+ | 2006 09 19 | 704 | 0.7− | 0.0 | |
| 2002 08 25 | 644 | 0.0 | 0.2+ | 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.1− | |
| 2002 08 25 | 644 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 0.5− | 0.5+ | |
| 2002 08 25 | 644 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.9+ | 1.4+ | 2006 09 19 | 699 | 0.3− | 0.0 | |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2004 03 20 | 699 | 0.0 | 1.5+ | 2006 09 20 | 644 | 0.1− | 0.2+ | |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.1+ | |
| 2002 09 05 | 704 | 0.4+ | 0.8+ | 2004 03 20 | 704 | 0.8+ | 0.8+ | 2006 09 20 | 644 | 0.1+ | 0.1− | |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2004 03 20 | 699 | 1.2− | 0.0 | 2006 09 22 | 704 | 0.3− | 0.2− | |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2004 03 20 | 699 | 0.7− | 0.0 | 2006 09 22 | 704 | 0.4+ | 0.7+ | |
| 2002 09 06 | 599 | 0.1+ | 0.0 | 2004 03 20 | 699 | 0.1+ | 0.9+ | 2006 09 22 | 704 | 0.3− | 0.2− | |
| 2002 09 06 | 599 | 0.0 | 0.0 | 2004 03 22 | 704 | (1.8+ | 2.2+) | 2006 09 22 | 704 | 0.5− | 0.1+ | |
| 2002 09 06 | 599 | 0.5+ | 0.9+ | 2004 03 22 | 704 | (0.3+ | 1.7+) | 2006 09 22 | 704 | 0.1+ | 0.3+ | |
| 2002 09 06 | 599 | 0.0 | 0.0 | 2004 03 22 | 704 | 1.4+ | 1.0+ | 2006 09 25 | 699 | 0.2+ | 0.0 | |
| 2002 09 06 | 704 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.2− | 1.0+ | 2006 09 25 | 699 | 0.5− | 0.5− | |
| 2002 09 06 | 704 | 0.2− | 0.6+ | 2004 03 24 | 699 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 1.0− | |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2004 03 24 | 699 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.3+ | |
| 2002 09 06 | 704 | 0.5+ | 0.4− | 2004 03 24 | 699 | 0.5− | 0.9+ | 2006 09 26 | 704 | 0.1− | 0.3+ | |
| 2002 09 18 | 699 | 0.5+ | 0.7− | 2004 03 24 | 699 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.2+ | |
| 2002 09 18 | 699 | (1.7− | 0.8+) | 2004 04 09 | E12 | 0.9− | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.1− | |
| 2002 09 18 | 699 | 0.1− | 0.3− | 2004 04 09 | E12 | 0.5− | 0.5+ | 2006 09 26 | 704 | 0.2+ | 0.1+ | |
| 2002 09 18 | 699 | 0.3− | 1.3− | 2004 04 09 | E12 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.4− | |
| 2002 10 01 | 704 | 0.1+ | 0.1+ | 2004 04 09 | E12 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.9+ | 0.3+ | |
| 2002 10 01 | 704 | 0.3+ | 0.3+ | 2004 04 17 | 699 | 0.3− | 0.1− | 2006 09 28 | 704 | 0.6− | 0.3− | |
| 2002 10 01 | 704 | 0.2+ | 0.2+ | 2004 04 17 | 699 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.5− | 1.4+ | |
| 2002 10 01 | 704 | 0.0 | 0.6+ | 2004 04 17 | 699 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.4− | |
| 2002 10 01 | 704 | 0.3+ | 0.3+ | 2004 04 17 | 699 | 0.6− | 0.4− | 2006 09 28 | 704 | 0.7+ | 0.1+ | |
| 2002 10 04 | 704 | 0.7− | 0.4+ | 2004 04 17 | 699 | (1.6− | 0.6+) | 2006 09 30 | 703 | 0.4− | 0.6− | |
| 2002 10 04 | 704 | 0.6− | 0.6+ | 2004 04 17 | 699 | (1.8− | 1.9+) | 2006 09 30 | 703 | 0.0 | 0.5− | |
| 2002 10 04 | 704 | 1.0− | 0.5+ | 2004 04 17 | 699 | (0.5− | 3.2+) | 2006 09 30 | 703 | 0.8− | 0.3− | |
| 2002 10 04 | 704 | 1.0− | 1.0+ | 2004 04 17 | 699 | 0.6+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.5− | |
| 2002 10 04 | 704 | 1.4− | 1.3+ | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.0 | |
| 2002 10 08 | 608 | 0.9− | 1.0− | 2004 04 20 | 704 | (0.6+ | 1.5+) | 2006 10 09 | 644 | 0.1+ | 0.1+ | |
| 2002 10 08 | 608 | 1.0− | 0.6− | 2004 04 20 | 704 | 0.6+ | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.2+ | |
| 2002 10 08 | 608 | 1.1− | 0.5− | 2004 04 20 | 704 | 0.6+ | 0.1+ | 2006 11 05 | 644 | 0.2− | 0.0 | |
| 2002 10 26 | 608 | 1.2+ | 1.1+ | 2004 04 20 | 704 | 0.6+ | 0.5+ | 2006 11 05 | 644 | 0.1− | 0.1+ | |
| 2002 10 26 | 608 | 1.4+ | 0.4+ | 2004 04 20 | E12 | 1.1+ | 0.5+ | 2006 11 05 | 644 | 0.3+ | 0.5+ | |
| 2002 10 26 | 608 | 0.4+ | 0.7+ | 2004 04 20 | E12 | 0.4+ | 0.6− | 2006 11 11 | 644 | 0.1+ | 0.2+ | |
| 2002 10 31 | 704 | 0.3− | 0.2− | 2004 04 20 | E12 | 0.4+ | 0.3− | 2006 11 11 | 644 | 0.1+ | 0.3+ | |
| 2002 10 31 | 704 | 0.1− | 0.1− | 2004 04 20 | E12 | 0.1+ | 0.0 | 2006 11 11 | 644 | 0.3+ | 0.4+ | |
| 2002 10 31 | 704 | 0.6− | 0.1− | 2006 08 23 | 704 | (1.8+ | 1.4+) | 2006 11 14 | 704 | 0.0 | 0.3+ | |
| 2002 10 31 | 704 | 0.1− | 0.3− | 2006 08 23 | 704 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.9+ | |
| 2002 10 31 | 704 | 0.0 | 0.4− | 2006 08 23 | 704 | 0.6+ | 0.0 | 2006 11 14 | 704 | (0.3− | 1.8−) | |
| 2002 10 31 | 608 | 0.6− | 1.4+ | 2006 08 23 | 704 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.4− | 0.5− | |
| 2002 10 31 | 608 | 0.5− | 1.4+ | 2006 08 23 | 704 | 1.0+ | 0.3− | 2006 11 17 | 704 | 0.8+ | 0.6− | |
| 2002 10 31 | 608 | 0.7− | 1.4+ | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.7+ | 0.3+ | |
| 2002 11 01 | 704 | 0.4+ | 0.2+ | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.7+ | |
| 2002 11 01 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.1− | 0.5+ | |
| 2002 11 01 | 704 | 0.8+ | 0.1− | 2006 08 27 | 699 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.9+ | 0.8+ | |
| 2002 11 01 | 704 | 0.5+ | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.1+ | 0.1− | |
| 2002 11 01 | 704 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 11 20 | 704 | 1.0+ | 0.0 | |
| 2002 11 07 | 645 | 0.1+ | 0.2− | 2006 08 28 | 704 | 1.1+ | 0.6+ | 2006 11 20 | 704 | 0.9+ | 0.1+ | |
| 2002 11 07 | 645 | 0.1+ | 0.2− | 2006 08 28 | 704 | (1.5+ | 0.0 ) | 2006 11 20 | 704 | 0.1− | 0.6+ | |
| 2002 11 12 | 704 | 0.5− | 0.3+ | 2006 08 28 | 704 | (2.2+ | 0.3+) | 2006 11 27 | 703 | 0.7− | 0.7− | |
| 2002 11 12 | 704 | 0.7− | 0.4+ | 2006 08 28 | 704 | (1.6+ | 0.8+) | 2006 11 27 | 703 | 0.9− | 0.1+ | |
| 2002 11 12 | 704 | 1.0+ | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.3+ | |
| 2002 11 12 | 704 | 0.7− | 0.0 | 2006 08 30 | 704 | (1.7− | 0.6+) | 2006 11 27 | 703 | 0.2− | 0.1+ | |
| 2002 12 07 | 704 | 0.2− | 0.3+ | 2006 08 30 | 704 | (1.1− | 1.8+) | | | | | |

**(137096)∗ 1998 XG$_{97}$ = 2002 VY$_{105}$**

Discovered 1998 Dec. 11 by O. A. Naranjo at Mérida.

Id. G. V. Williams (*MPO* 37155)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.79223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21985743 | $\omega$ | 128.93110 | | +0.17224088 | −0.98361025 | |
| $a$ | 2.7187877 | $\Omega$ | 311.06531 | | +0.88047261 | +0.17800412 | |
| $e$ | 0.0925455 | $i$ | 4.05600 | | +0.44170245 | +0.02873008 | |
| $P$ | 4.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 303 | 0.6− | 1.0+ | 2002 12 11 | 704 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.4+ | 0.1− | |
| 1998 12 12 | 303 | (0.9− | 2.1+) | 2002 12 11 | 704 | 0.1− | 0.7− | 2006 09 25 | 691 | 0.4− | 0.4+ | |
| 1998 12 12 | 303 | 0.7− | 1.9+ | 2002 12 11 | 704 | 0.6− | 0.0 | 2006 09 25 | 691 | 0.5− | 0.5+ | |
| 1998 12 13 | 303 | 0.1+ | 1.3+ | 2002 12 27 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.4+ | 0.1− | |
| 1998 12 13 | 303 | 0.1+ | 1.1+ | 2002 12 27 | 644 | 1.1+ | 0.0 | 2006 09 25 | 704 | 0.7+ | 0.2+ | |
| 1998 12 14 | 303 | 0.3− | 0.1+ | 2002 12 27 | 644 | 0.6+ | 0.0 | 2006 09 25 | 704 | 0.1− | 0.3+ | |
| 1998 12 14 | 303 | 0.1+ | 1.5+ | 2002 12 31 | 704 | 0.3− | 0.4− | 2006 09 25 | 704 | 0.9+ | 0.5+ | |
| 1999 02 12 | 691 | 0.3+ | 0.3− | 2002 12 31 | 704 | 0.4− | 0.1− | 2006 09 25 | 704 | 0.4− | 1.1+ | |
| 1999 02 12 | 691 | 0.5+ | 0.4− | 2002 12 31 | 704 | 0.7− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ | |
| 1999 02 12 | 691 | 0.3+ | 0.5− | 2002 12 31 | 704 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ | |
| 1999 03 21 | 691 | 0.4− | 0.7− | 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ | |
| 1999 03 21 | 691 | 0.3− | 0.9− | 2004 03 19 | 704 | 0.5+ | 1.2+ | 2006 09 29 | 704 | 0.3− | 0.7− | |
| 1999 03 21 | 691 | 0.5− | 0.4− | 2004 03 19 | 704 | 0.1+ | 1.1+ | 2006 09 29 | 704 | 0.3− | 0.4+ | |
| 2002 11 12 | 704 | 0.9− | 1.5− | 2004 03 19 | 704 | (0.1− | 1.8+) | 2006 09 29 | 704 | 0.1− | 0.3− | |
| 2002 11 12 | 704 | 0.2− | 0.3− | 2004 03 19 | 704 | 0.3+ | 0.8+ | 2006 09 29 | 704 | 0.9− | 0.3+ | |
| 2002 11 12 | 704 | 0.1− | 0.1− | 2004 03 26 | 704 | 1.1+ | 0.8+ | 2006 09 29 | 704 | 0.2+ | 0.6− | |
| 2002 11 12 | 704 | 1.0− | 1.4+ | 2004 03 26 | 704 | (1.0+ | 2.0+) | 2006 10 01 | 691 | 0.2+ | 0.1+ | |
| 2002 11 12 | 704 | 0.2+ | 0.6+ | 2004 03 26 | 704 | 0.6+ | 1.1+ | 2006 10 01 | 691 | 0.2+ | 0.0 | |
| 2002 11 14 | 704 | 0.3− | 1.1+ | 2004 03 27 | 704 | (0.1+ | 1.7+) | 2006 10 01 | 691 | 0.0 | 0.3− | |
| 2002 11 14 | 704 | 0.9+ | 0.4+ | 2004 03 27 | 703 | (0.6− | 1.8+) | 2006 10 11 | 644 | 0.0 | 0.1+ | |
| 2002 11 14 | 704 | 0.8+ | 0.8+ | 2004 03 27 | 704 | 0.5+ | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.1− | |
| 2002 11 24 | 644 | 1.0+ | 1.0+ | 2004 03 27 | 703 | 0.2− | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.2− | |
| 2002 11 24 | 644 | 0.1+ | 0.8+ | 2004 03 27 | 704 | (0.5− | 1.7+) | 2006 10 21 | 644 | 0.7+ | 1.2− | |
| 2002 11 24 | 644 | 0.4+ | 0.5+ | 2004 03 27 | 703 | (0.1− | 1.6+) | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2002 12 06 | 704 | 0.1+ | 0.5− | 2004 03 27 | 704 | (0.3+ | 1.5+) | 2006 10 23 | G96 | 0.0 | 0.5− | |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2004 03 27 | 703 | 0.7+ | 1.1+ | 2006 10 23 | G96 | 0.1+ | 0.4− | |
| 2002 12 06 | 704 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.3− | |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.5− | 2006 10 23 | G96 | 0.0 | 0.5− | |
| 2002 12 11 | 704 | 0.7− | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.1+ | | | | | |

**(137097)∗ 1998 XP$_{97}$ = 2002 TT$_{90}$**

Discovered 1998 Dec. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37156)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.32296 | | (2000.0) | | +0.39267309 | −0.91322588 |
| $n$ | 0.23588284 | $\omega$ | 184.42558 | | +0.84750716 | +0.40523691 |
| $a$ | 2.5942101 | $\Omega$ | 242.48566 | | +0.35712667 | +0.04244445 |
| $e$ | 0.1690295 | $i$ | 7.04319 | | +0.04244445 | |
| $P$ | 4.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 704 | 0.7− | 0.0 | 2002 11 12 | 704 | 0.2− | 0.6− | 2006 09 06 | 644 | 0.2+ | 0.0 |
| 1998 11 18 | 704 | (0.9− | 3.2−) | 2002 11 12 | 704 | 0.7− | 0.4− | 2006 09 06 | 644 | 0.2+ | 0.2+ |
| 1998 11 18 | 704 | (2.2+ | 1.9−) | 2002 11 12 | 704 | 0.7+ | 1.4− | 2006 09 06 | 644 | 0.2+ | 0.0 |
| 1998 11 18 | 704 | (2.2+ | 3.2−) | 2002 11 12 | 704 | 0.5− | 0.7− | 2006 09 17 | 703 | 0.0 | 0.1+ |
| 1998 11 20 | 699 | 1.2+ | 0.4+ | 2002 11 12 | 644 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.5+ |
| 1998 11 20 | 699 | 0.1− | 0.8− | 2002 11 12 | 704 | (0.3− | 1.7−) | 2006 09 17 | 703 | 0.3− | 0.0 |
| 1998 11 20 | 699 | 0.6+ | 0.3− | 2002 11 12 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.7− | 0.3+ |
| 1998 11 24 | 704 | 1.4+ | 0.5− | 2002 11 12 | 644 | 0.1+ | 0.2− | 2006 09 19 | 699 | (2.0+ | 1.6+) |
| 1998 11 24 | 704 | (0.1− | 2.2−) | 2002 11 22 | 644 | (1.4+ | 1.7−) | 2006 09 19 | 699 | 0.1+ | 0.5+ |
| 1998 11 24 | 704 | (0.2+ | 2.9−) | 2002 11 22 | 644 | 0.1− | 0.5− | 2006 09 19 | 699 | 0.3+ | 0.3+ |
| 1998 11 24 | 704 | (2.3+ | 2.2−) | 2002 11 22 | 644 | 0.1+ | 0.5− | 2006 09 19 | 699 | 0.9+ | 0.8+ |
| 1998 12 08 | 699 | 0.6+ | 0.6+ | 2002 12 01 | 704 | 1.2− | 0.5+ | 2006 09 27 | 703 | 0.4+ | 0.1− |
| 1998 12 08 | 699 | 0.7+ | 0.4− | 2002 12 01 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.9− |
| 1998 12 08 | 699 | 0.6+ | 0.2− | 2002 12 01 | 704 | 1.4− | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 1998 12 14 | 691 | 0.1− | 0.4− | 2002 12 01 | 704 | 0.1+ | 0.2− | 2006 09 29 | 699 | 0.1− | 0.2+ |
| 1998 12 14 | 691 | 0.3− | 0.4− | 2002 12 06 | 704 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.3− |
| 1998 12 14 | 691 | 0.0 | 0.4− | 2002 12 06 | 704 | 0.2+ | 0.1− | 2006 09 29 | 699 | 1.1+ | 0.0 |
| 2002 09 21 | 644 | 0.2− | 0.3+ | 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.4− |
| 2002 09 21 | 644 | 0.3− | 0.1+ | 2002 12 06 | 704 | 0.1+ | 0.3− | 2006 10 03 | 703 | 0.1+ | 0.4+ |
| 2002 09 21 | 644 | 0.1+ | 0.1+ | 2002 12 11 | 704 | (1.0− | 1.6+) | 2006 10 03 | 703 | 0.1+ | 0.6− |
| 2002 10 03 | 644 | 0.2+ | 0.1− | 2002 12 11 | 704 | (2.5− | 0.5+) | 2006 10 03 | 703 | 0.9− | 0.1+ |
| 2002 10 03 | 644 | 0.2+ | 0.0 | 2002 12 11 | 704 | 1.4− | 1.0+ | 2006 10 03 | 703 | 0.4− | 0.6− |
| 2002 10 03 | 644 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.5− | 0.5− | 2003 01 04 | 704 | 0.6− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.5+ | 0.5− | 2003 01 04 | 704 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.3− | 2003 01 04 | 704 | 0.9− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 2002 10 04 | 704 | 0.6− | 0.6− | 2004 03 16 | 703 | 0.6+ | 1.1+ | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 10 09 | 239 | 0.0 | 0.2+ | 2004 03 16 | 703 | 1.2+ | 0.7+ | 2006 10 17 | 703 | 0.7− | 0.1+ |
| 2002 10 09 | 239 | 0.1− | 0.6+ | 2004 03 16 | 703 | 0.4+ | 1.0+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2002 10 09 | 239 | 0.9− | 0.1+ | 2004 03 16 | 703 | 0.4− | 0.7− | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.1− | 0.2− | 2004 03 17 | 704 | 0.3+ | 1.2+ | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 1.2+ | 0.8+ | 2004 03 17 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.5− | 0.2+ | 2004 03 17 | 704 | 0.8− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 1.0+ | 0.5+ | 2004 03 17 | 704 | 1.0+ | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.0 | 0.1+ | 2004 03 17 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 10 12 | 704 | 0.7− | 0.6+ | 2004 03 27 | 703 | 0.2− | 0.7− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 0.4− | 0.8+ | 2004 03 27 | 703 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 10 12 | 704 | 0.7− | 0.9+ | 2004 03 27 | 703 | 0.8+ | 0.6+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.1− | 1.2+ | 2004 03 27 | 703 | 0.4− | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.3− | 1.2+ | 2004 04 15 | 703 | 0.5− | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 10 18 | 644 | 0.0 | 0.5+ | 2004 04 15 | 703 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2002 10 18 | 644 | 0.1+ | 0.3+ | 2004 04 15 | 703 | 1.0− | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2002 10 18 | 644 | 0.0 | 0.0 | 2004 04 15 | 703 | 0.9+ | 1.3+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2002 10 30 | 608 | 0.2+ | 0.3+ | 2006 08 27 | 683 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2002 10 30 | 608 | 0.3+ | 0.5+ | 2006 08 27 | 683 | 0.8+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2002 10 30 | 608 | 0.1+ | 0.4+ | 2006 08 27 | 683 | 0.6+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 08 28 | 683 | 0.2− | 0.2− | 2006 10 29 | 704 | 0.6− | 1.0+ |
| 2002 10 31 | 644 | 0.3+ | 0.5+ | 2006 08 28 | 683 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.1− | 0.4+ |
| 2002 10 31 | 644 | 0.3+ | 0.5+ | 2006 08 28 | 683 | 0.9− | 0.2+ | 2006 10 29 | 704 | 0.6− | 0.6+ |
| 2002 11 03 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 683 | 0.9− | 1.3− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 11 03 | 704 | 0.3− | 0.1+ | 2006 08 29 | 683 | 0.2+ | 1.1− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2002 11 03 | 704 | 0.2− | 0.1+ | 2006 08 29 | 683 | 0.4− | 1.2− | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2002 11 03 | 704 | 0.1− | 0.3+ | 2006 08 31 | 704 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.8+ |
| 2002 11 08 | 704 | 0.3− | 0.4+ | 2006 08 31 | 704 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.0 |
| 2002 11 08 | 704 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.2− | 0.1+ | 2006 11 15 | 704 | (2.9+ | 0.7+) |
| 2002 11 08 | 704 | (0.6− | 3.1+) | 2006 08 31 | 704 | 0.1+ | 0.1+ | 2006 11 15 | 704 | (0.5+ | 1.6+) |
| 2002 11 08 | 704 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.2− | 0.3− | | | | |

**(137098)∗ 1998 YP$_2$**

Discovered 1998 Dec. 17 by the OCA-DLR Asteroid Survey at Caussols.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.69226 | | (2000.0) | | −0.39562795 | −0.91078572 |
| $n$ | 0.22064839 | $\omega$ | 163.67361 | | +0.82459347 | −0.29564442 |
| $a$ | 2.7122863 | $\Omega$ | 309.47226 | | +0.40438119 | −0.28820783 |
| $e$ | 0.2031608 | $i$ | 8.80049 | | | |
| $P$ | 4.47 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 910 | 1.2− | 0.3+ | 1999 02 16 | 704 | 1.3+ | 1.2+ | 2002 12 12 | 644 | 0.0 | 0.4+ |
| 1998 12 17 | 910 | 1.6− | 0.5+ | 1999 02 16 | 704 | 1.2+ | 1.1− | 2002 12 12 | 644 | 0.1+ | 0.0 |
| 1998 12 17 | 910 | 1.4− | 0.3+ | 2002 10 13 | 644 | 0.3− | 0.0 | 2002 12 12 | 644 | 0.1+ | 0.6+ |
| 1998 12 17 | 910 | 1.8− | 0.4+ | 2002 10 13 | 644 | 0.4− | 0.0 | 2003 01 28 | 644 | 0.3− | 1.0+ |
| 1998 12 18 | 910 | 1.6− | 0.4+ | 2002 10 13 | 644 | 0.2− | 0.0 | 2003 01 28 | 644 | 0.2+ | 1.0+ |
| 1998 12 18 | 910 | 1.8− | 0.5+ | 2002 11 08 | 704 | 0.8+ | 0.5+ | 2003 01 28 | 644 | 0.2+ | 1.2+ |
| 1999 01 19 | 704 | 0.5− | 1.9− | 2002 11 08 | 704 | 0.5+ | 0.2− | 2004 04 22 | E12 | 1.2− | 0.2+ |
| 1999 01 19 | 704 | 0.1+ | 0.7+ | 2002 11 08 | 704 | 0.3+ | 0.6+ | 2004 04 22 | E12 | 0.8+ | 0.9− |
| 1999 01 19 | 704 | 1.8− | 1.1− | 2002 11 08 | 704 | 0.1+ | 0.9+ | 2004 04 22 | E12 | 0.9+ | 0.7+ |
| 1999 01 19 | 704 | 0.0 | 1.5− | 2002 11 08 | 704 | 0.7− | 1.1+ | 2004 04 22 | E12 | 0.6− | 0.2+ |
| 1999 01 22 | 120 | 1.3− | 1.4− | 2002 11 13 | 644 | 0.2− | 0.7+ | 2006 09 17 | 703 | 0.4− | 1.4+ |
| 1999 01 22 | 120 | 1.0+ | 1.1− | 2002 11 13 | 644 | 0.1− | 0.8+ | 2006 09 17 | 703 | 0.1− | 0.3− |
| 1999 01 23 | 120 | 0.4− | 0.0 | 2002 11 13 | 644 | 0.4− | 0.8+ | 2006 09 17 | 703 | 0.2− | 1.4+ |
| 1999 01 24 | 120 | 0.5+ | 0.2− | 2002 11 15 | 704 | 0.3− | 1.4− | 2006 09 17 | 703 | (0.7+ | 1.8+) |
| 1999 01 24 | 120 | 0.4− | 0.3+ | 2002 11 15 | 704 | (1.7+ | 0.8−) | 2006 09 19 | 699 | 1.2+ | 0.2− |
| 1999 02 06 | 120 | 0.3− | 0.5+ | 2002 11 15 | 704 | 0.7+ | 0.6− | 2006 09 19 | 699 | 0.8+ | 1.0+ |
| 1999 02 06 | 120 | 0.4+ | 0.7+ | 2002 11 15 | 704 | 0.3+ | 0.9− | 2006 09 19 | 699 | 1.1− | 0.7− |
| 1999 02 12 | 699 | 1.1+ | 0.2+ | 2002 11 25 | 644 | 0.0 | 0.8− | 2006 09 19 | 699 | 0.5+ | 0.5− |
| 1999 02 12 | 699 | 1.1+ | 1.0+ | 2002 11 25 | 644 | 0.2− | 0.8− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 1999 02 12 | 699 | 0.1− | 1.7+ | 2002 11 25 | 644 | 0.1− | 0.8− | 2006 10 19 | 691 | 0.5+ | 0.1− |
| 1999 02 12 | 704 | 0.0 | 1.1+ | 2002 12 06 | 704 | 0.3+ | 0.5− | 2006 10 19 | 691 | 0.3+ | 0.1+ |
| 1999 02 12 | 704 | 1.0+ | 0.8− | 2002 12 06 | 704 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− |
| 1999 02 12 | 704 | 0.9+ | 0.5− | 2002 12 06 | 704 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 1999 02 12 | 704 | 0.5+ | 0.7+ | 2002 12 06 | 704 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.0 | 0.3− |
| 1999 02 12 | 704 | 0.3− | 0.8+ | 2002 12 09 | 699 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 1999 02 16 | 704 | 0.9+ | 1.4− | 2002 12 09 | 699 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 1999 02 16 | 704 | 1.1+ | 0.5+ | 2002 12 09 | 699 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 1999 02 16 | 704 | 0.5+ | 0.2− | 2002 12 09 | 699 | 0.4− | 0.3− | | | | |

**(137099)∗ 1998 YW$_3$**

Discovered 1998 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.16346 | | (2000.0) | | +0.29576463 | +0.82572265 |
| $n$ | 0.85425260 | $\omega$ | 194.78316 | | −0.82026023 | +0.47722786 |
| $a$ | 1.1000485 | $\Omega$ | 94.31741 | | −0.48958802 | −0.30072526 |
| $e$ | 0.4626187 | $i$ | 28.79550 | | | |
| $P$ | 1.15 | $H$ | 18.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.5− | 1.1− | 1998 12 30 | 046 | 0.5− | 0.9− | 1999 12 07 | 360 | 0.2+ | 0.4+ |
| 1998 12 17 | 704 | 1.8+ | 1.2− | 1999 01 08 | 658 | 0.3− | 0.2+ | 2004 01 12 | 673 | 0.4− | 0.2− |
| 1998 12 17 | 704 | 0.6− | 1.1− | 1999 01 08 | 658 | 0.1− | 0.3+ | 2004 01 12 | 673 | 0.1− | 0.4− |
| 1998 12 17 | 704 | 1.5+ | 1.1− | 1999 01 08 | 658 | 0.3− | 0.2− | 2004 01 12 | 673 | 0.0 | 0.3− |
| 1998 12 17 | 704 | 0.8− | 1.8− | 1999 01 08 | 557 | 0.4− | 0.1+ | 2004 01 12 | 673 | 0.4− | 0.0 |
| 1998 12 18 | 402 | 0.2− | 0.6+ | 1999 01 08 | 557 | 0.1− | 0.3+ | 2004 01 13 | 673 | 0.2+ | 0.6− |
| 1998 12 18 | 402 | 0.8+ | 0.2− | 1999 01 08 | 557 | 0.2− | 0.0 | 2004 01 13 | 673 | 1.1− | 0.6− |
| 1998 12 18 | 402 | 1.0− | 0.1− | 1999 01 22 | 360 | 0.3− | 0.1+ | 2004 01 13 | 673 | 0.9+ | 0.8+ |
| 1998 12 18 | 587 | 0.5+ | 1.0− | 1999 01 22 | 360 | 0.2− | 0.2− | 2004 01 13 | 673 | 1.0− | 0.3+ |
| 1998 12 18 | 587 | 0.4− | 1.0+ | 1999 01 22 | 360 | 0.5− | 0.1+ | 2005 02 18 | H36 | (1.9− | 1.8+) |
| 1998 12 18 | 046 | 0.7− | 0.2+ | 1999 01 24 | 711 | 0.2− | 0.2+ | 2005 02 18 | H36 | 0.6− | 0.6+ |
| 1998 12 18 | 046 | 0.7− | 0.1+ | 1999 01 24 | 711 | 0.5− | 1.3+ | 2005 02 18 | H36 | 0.0 | 0.5+ |
| 1998 12 18 | 046 | 0.7+ | 0.1− | 1999 02 20 | 711 | 0.2− | 0.3+ | 2006 01 11 | 461 | 0.2+ | 0.4+ |
| 1998 12 18 | 587 | 0.4+ | 0.4− | 1999 02 20 | 711 | 0.4− | 0.2+ | 2006 01 11 | 461 | 0.1+ | 0.3+ |
| 1998 12 18 | 046 | 0.8+ | 1.0+ | 1999 03 13 | 711 | 0.3+ | 0.6− | 2006 01 11 | 461 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 18 | 557 | 0.2− | 0.7+ | 1999 03 14 | 711 | 0.3− | 0.1− | 2006 01 11 | 461 | 0.1+ | 0.4+ |
| 1998 12 18 | 557 | 0.3+ | 0.9+ | 1999 05 24 | 693 | 1.0+ | 1.1+ | 2006 01 11 | 461 | 0.1+ | 0.1+ |
| 1998 12 18 | 557 | 1.1− | 0.2+ | 1999 05 24 | 693 | 0.5+ | 0.6+ | 2006 01 11 | 461 | 0.1+ | 0.3+ |
| 1998 12 20 | 557 | 0.7+ | 0.4+ | 1999 10 05 | 413 | 1.5− | 0.1− | 2006 01 11 | 461 | 0.2+ | 0.5+ |
| 1998 12 20 | 557 | 0.2− | 0.3+ | 1999 10 05 | 413 | 0.1+ | 0.5− | 2006 01 11 | 461 | 0.7+ | 0.4− |
| 1998 12 20 | 557 | 0.3+ | 0.4+ | 1999 10 05 | 413 | 0.7+ | 0.0 | 2006 01 28 | A74 | 0.0 | 0.1+ |
| 1998 12 24 | 360 | 0.5− | 0.2− | 1999 10 06 | 413 | 0.4− | 0.2+ | 2006 01 28 | A74 | 0.4+ | 0.4− |
| 1998 12 24 | 360 | 0.2− | 0.5− | 1999 10 06 | 413 | 0.7+ | 0.4− | 2006 01 28 | A74 | 0.5+ | 0.2− |
| 1998 12 24 | 360 | 0.3− | 0.3− | 1999 10 07 | 413 | 0.5− | 0.1− | 2006 01 30 | 240 | 1.2+ | 0.4+ |
| 1998 12 27 | 402 | 1.0+ | 0.3+ | 1999 10 07 | 413 | 0.5− | 0.1+ | 2006 01 30 | 240 | 0.1+ | 0.0 |
| 1998 12 27 | 402 | 0.0 | 0.3+ | 1999 11 30 | 704 | 1.4+ | 0.1− | 2006 01 30 | 240 | 0.1+ | 0.3+ |
| 1998 12 27 | 402 | 0.1− | 0.4+ | 1999 11 30 | 704 | 1.1− | 0.1− | 2006 01 30 | 240 | 0.1+ | 0.5+ |
| 1998 12 30 | 046 | 0.2+ | 0.5+ | 1999 11 30 | 704 | 0.2+ | 0.6− | 2006 02 02 | 240 | 1.3− | 1.3− |
| 1998 12 30 | 046 | 0.5− | 0.2+ | 1999 11 30 | 704 | 0.6− | 0.3− | 2006 02 02 | 240 | 0.2− | 0.5− |
| 1998 12 30 | 046 | 0.5+ | 0.7− | 1999 12 07 | 360 | 0.2− | 0.3+ | 2006 02 02 | 240 | 0.1+ | 0.2+ |
| 1998 12 30 | 046 | 0.0 | 0.2− | 1999 12 07 | 360 | 0.1− | 0.9+ | | | | |

**(137100)∗ 1998 YM$_7$ = 2000 CM$_{63}$**

Discovered 1998 Dec. 23 by J. Wentworth at Brainerd.

Id. T. B. Spahr (MPC 38539)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.48358 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24455846 | $\omega$ | 27.97536 | | +0.99335821 | | +0.00239007 |
| $a$ | 2.5324892 | $\Omega$ | 331.18286 | | −0.06890814 | | +0.81302769 |
| $e$ | 0.2231745 | $i$ | 13.80748 | | +0.09214732 | | +0.58222012 |
| $P$ | 4.03 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 04 | G91 | 0.1+ | 0.4− | 2002 10 29 | 704 | 0.5+ | 0.4+ | 2004 01 30 | 608 | 0.4− | 0.8− |
| 1998 11 16 | 704 | 0.8+ | 1.4+ | 2002 10 29 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 608 | 0.0 | 0.5− |
| 1998 11 16 | 704 | 0.7− | 1.3+ | 2002 10 29 | 704 | 0.9+ | 0.9+ | 2004 01 30 | 608 | 0.5− | 0.6− |
| 1998 11 16 | 704 | 0.8+ | 0.9+ | 2002 11 08 | 704 | 0.6+ | 0.9+ | 2004 02 04 | 608 | 0.4+ | 0.8− |
| 1998 11 16 | 704 | 1.5− | 1.0+ | 2002 11 08 | 704 | 0.7+ | 0.5+ | 2004 02 04 | 608 | 0.6+ | 0.4− |
| 1998 11 16 | 704 | 0.5+ | 0.9+ | 2002 11 08 | 704 | 0.0 | 0.7+ | 2004 02 04 | 608 | 0.9+ | 0.5− |
| 1998 12 12 | 704 | 1.1+ | 0.5+ | 2002 11 08 | 704 | 0.3+ | 0.0 | 2004 02 13 | 644 | 0.2+ | 0.8+ |
| 1998 12 12 | 704 | (2.3+ | 0.9−) | 2002 11 08 | 704 | 0.4− | 0.4− | 2004 02 13 | 644 | 0.2+ | 0.4+ |
| 1998 12 12 | 704 | 0.6+ | 0.0 | 2002 11 25 | 704 | 0.3− | 0.1+ | 2004 02 13 | 644 | 0.3+ | 0.2+ |
| 1998 12 12 | 704 | 0.0 | 0.6+ | 2002 11 25 | 704 | 0.6− | 0.7− | 2004 02 16 | 333 | 0.2− | 0.3− |
| 1998 12 12 | 704 | 0.4− | 0.5+ | 2002 11 25 | 704 | 1.1− | 0.5+ | 2004 02 16 | 333 | 0.2− | 0.2− |
| 1998 12 23 | 726 | 0.2+ | 0.5− | 2002 11 25 | 704 | 0.9− | 0.4+ | 2004 02 17 | 703 | 0.4+ | 0.0 |
| 1998 12 23 | 726 | (0.1+ | 3.1−) | 2002 11 25 | 704 | 0.7− | 0.1− | 2004 02 17 | 703 | 0.1− | 0.6+ |
| 1998 12 23 | 726 | 0.2+ | 0.9− | 2002 12 03 | 726 | 0.3− | 0.2+ | 2004 02 17 | 703 | 0.1− | 0.2+ |
| 1998 12 24 | 726 | 1.1− | 1.0− | 2002 12 03 | 726 | 0.3+ | 0.5− | 2004 02 17 | 703 | 0.5+ | 0.1− |
| 1998 12 24 | 726 | 1.2− | 0.7− | 2002 12 03 | 726 | 0.1− | 0.4− | 2004 02 17 | 333 | 0.0 | 0.1+ |
| 1998 12 24 | 726 | 1.2− | 0.9− | 2002 12 03 | 726 | 0.1+ | 0.4− | 2004 02 17 | 333 | 0.1+ | 0.3− |
| 1998 12 24 | 726 | 0.7− | 1.2− | 2002 12 03 | 726 | 0.8+ | 0.1− | 2004 02 19 | 704 | 0.0 | 0.2+ |
| 1998 12 26 | 726 | 0.7− | 0.1− | 2002 12 03 | 726 | 0.2+ | 1.0− | 2004 02 19 | 704 | 0.6+ | 0.3+ |
| 1998 12 26 | 726 | 0.5− | 0.2− | 2002 12 05 | 726 | (0.9− | 1.7−) | 2004 02 19 | 704 | 0.2+ | 0.7+ |
| 1998 12 30 | 726 | 1.1− | 0.7− | 2002 12 05 | 726 | 0.3+ | 0.3− | 2004 02 19 | 704 | 0.2− | 0.1+ |
| 1998 12 30 | 726 | 1.4− | 1.7− | 2002 12 05 | 726 | 0.1− | 0.3+ | 2004 02 19 | 704 | 0.3− | 0.4+ |
| 1999 01 09 | 726 | 0.8− | 0.8− | 2002 12 05 | 726 | 1.5+ | 1.0− | 2004 02 20 | 608 | 0.1+ | 0.4+ |
| 1999 01 09 | 726 | 0.5− | 1.2− | 2002 12 05 | 726 | 0.5+ | 1.2− | 2004 02 20 | 608 | 0.1− | 0.4+ |
| 1999 01 12 | 726 | 0.3− | 0.9− | 2002 12 06 | 726 | 0.6− | 0.6+ | 2004 02 20 | 608 | 0.0 | 0.4+ |
| 1999 01 12 | 726 | 1.7− | 1.9+ | 2002 12 06 | 726 | 1.4+ | 1.4+ | 2004 02 25 | 704 | 0.5− | 0.4+ |
| 1999 01 26 | 726 | 0.6+ | 0.6− | 2002 12 06 | 726 | 0.2− | 0.9− | 2004 02 25 | 704 | 0.5− | 0.2− |
| 1999 01 26 | 726 | 1.0+ | 0.2+ | 2002 12 07 | 704 | 0.2+ | 0.3− | 2004 02 25 | 704 | 0.7− | 0.6+ |
| 2000 02 02 | 704 | 1.3+ | 0.2− | 2002 12 07 | 704 | 0.8+ | 0.1+ | 2004 02 25 | 704 | 0.3− | 0.4+ |
| 2000 02 02 | 704 | 1.0+ | 0.6− | 2002 12 07 | 704 | 0.3+ | 0.1+ | 2004 02 25 | 704 | 0.1− | 0.4+ |
| 2000 02 02 | 704 | 0.6− | 0.6− | 2002 12 07 | 704 | 0.5+ | 0.3− | 2004 03 14 | 703 | 1.5− | 0.7+ |
| 2000 02 08 | 704 | 0.8+ | 0.4− | 2002 12 09 | 726 | 0.1+ | 0.3+ | 2004 03 14 | 703 | 1.4− | 0.0 |
| 2000 02 08 | 704 | 1.0+ | 0.3− | 2002 12 09 | 726 | (2.7− | 0.1+) | 2004 03 14 | 703 | (2.1− | 1.5+) |
| 2000 02 08 | 704 | 0.1+ | 0.1− | 2002 12 09 | 726 | 0.4+ | 0.5− | 2004 03 14 | 703 | 1.5− | 0.7+ |
| 2000 02 08 | 704 | 0.6+ | 0.4− | 2002 12 09 | 726 | 0.2+ | 0.3+ | 2004 03 16 | 704 | 0.2+ | 0.6+ |
| 2000 03 01 | 703 | 0.1+ | 0.5+ | 2002 12 26 | 726 | 0.3+ | 0.4− | 2004 03 16 | 704 | 0.0 | 0.2+ |
| 2000 03 01 | 703 | 0.2− | 0.4+ | 2002 12 26 | 726 | 0.4+ | 0.1− | 2004 03 16 | 704 | 0.0 | 0.3+ |
| 2000 03 01 | 703 | 0.9+ | 0.5+ | 2002 12 26 | 726 | 0.7+ | 0.1− | 2004 03 16 | 704 | 0.2+ | 0.6+ |
| 2000 03 01 | 703 | 0.7− | 0.2+ | 2002 12 26 | 726 | 0.5− | 0.0 | 2004 03 16 | 704 | 0.0 | 0.4+ |
| 2000 03 03 | 645 | 0.0 | 0.2− | 2002 12 28 | 704 | 0.6+ | 0.1− | 2004 03 19 | 704 | 0.1− | 0.0 |
| 2000 03 03 | 645 | 0.1+ | 0.2− | 2002 12 28 | 704 | 0.6+ | 0.3+ | 2004 03 19 | 704 | 0.7− | 0.1+ |
| 2000 03 08 | 704 | 0.2+ | 0.2− | 2002 12 28 | 704 | 0.9+ | 0.6+ | 2004 03 19 | 704 | 0.1− | 0.4− |
| 2000 03 08 | 704 | 0.7+ | 0.1− | 2002 12 28 | 704 | 1.0+ | 0.7+ | 2004 03 19 | 704 | 0.3− | 0.3+ |
| 2000 03 08 | 704 | 0.2− | 0.9+ | 2002 12 28 | 704 | 1.1+ | 0.9+ | 2004 03 19 | 704 | 0.6− | 0.4+ |
| 2000 03 08 | 704 | 0.1+ | 1.6− | 2002 12 29 | 726 | 0.3− | 1.3− | 2004 03 21 | 704 | 0.8+ | 0.5+ |
| 2000 03 08 | 704 | 0.7+ | 1.6− | 2002 12 29 | 726 | 0.0 | 0.8− | 2004 03 21 | 704 | 0.2+ | 0.9+ |
| 2000 03 30 | 703 | 1.2+ | 0.0 | 2002 12 29 | 726 | 0.7+ | 0.0 | 2004 03 21 | 704 | 0.2+ | 1.2+ |
| 2000 03 30 | 703 | 0.8+ | 0.8+ | 2002 12 29 | 726 | 0.1− | 0.6+ | 2004 03 21 | 704 | 1.2− | 0.6− |
| 2000 03 30 | 703 | 0.4+ | 0.0 | 2003 01 10 | 704 | 0.1+ | 0.9− | 2004 03 29 | 703 | 0.0 | 0.4+ |
| 2000 03 30 | 703 | 0.0 | 0.1− | 2003 01 10 | 704 | 0.2− | 0.5− | 2004 03 29 | 703 | 0.2− | 0.9+ |
| 2000 04 02 | 699 | 0.3+ | 0.0 | 2003 01 10 | 704 | 0.1+ | 0.7− | 2004 03 29 | 703 | 1.3− | 0.1− |
| 2000 04 02 | 699 | 0.1+ | 0.0 | 2003 01 10 | 704 | 0.3+ | 0.5− | 2004 03 29 | 703 | 0.8− | 0.3+ |
| 2000 04 02 | 699 | 0.2− | 0.1− | 2003 01 13 | 704 | 0.1+ | 0.1− | 2004 04 09 | 703 | 0.0 | 0.6− |
| 2000 04 02 | 699 | 0.0 | 0.0 | 2003 01 13 | 704 | 0.1− | 0.1+ | 2004 04 09 | 703 | 0.0 | 0.2+ |
| 2000 04 04 | 704 | 1.0− | 0.1− | 2003 01 13 | 704 | 0.4− | 0.4− | 2004 04 09 | 703 | 0.8+ | 0.5− |
| 2000 04 04 | 704 | 0.4+ | 0.3− | 2003 01 13 | 704 | 0.2+ | 0.3+ | 2004 04 09 | 703 | 0.1+ | 0.8+ |
| 2000 04 04 | 704 | 0.5+ | 0.2+ | 2003 01 13 | 704 | 0.3+ | 0.4+ | 2004 04 12 | 703 | 0.5+ | 0.1− |
| 2000 04 04 | 704 | 0.8+ | 0.6− | 2003 02 02 | 704 | 0.3− | 0.3− | 2004 04 12 | 703 | 0.1+ | 1.4+ |
| 2000 04 04 | 704 | 0.1− | 0.8+ | 2003 02 02 | 704 | 0.1+ | 0.5− | 2004 04 12 | 703 | (1.7+ | 1.5+) |
| 2000 04 26 | 699 | 0.2− | 0.2− | 2003 02 02 | 704 | 0.2− | 0.5− | 2004 04 12 | 703 | 0.8− | 0.6+ |
| 2000 04 26 | 699 | 0.1+ | 0.1− | 2003 02 02 | 704 | 0.1− | 0.5− | 2004 04 14 | 699 | 0.1+ | 0.3+ |
| 2000 04 26 | 699 | 0.3− | 0.3− | 2003 02 02 | 704 | 0.1+ | 0.4− | 2004 04 14 | 699 | 0.4− | 0.4− |
| 2000 04 26 | 699 | 0.7+ | 0.3− | 2003 03 05 | 704 | 0.1− | 0.3+ | 2004 04 14 | 699 | 0.6+ | 0.1+ |
| 2002 08 10 | 704 | 1.1− | 0.7+ | 2003 03 05 | 704 | 0.1+ | 0.2− | 2004 04 14 | 699 | 0.2− | 0.0 |
| 2002 08 10 | 704 | 1.1− | 0.5+ | 2003 03 05 | 704 | 0.2− | 0.1− | 2004 04 16 | 704 | 0.1− | 0.3+ |
| 2002 08 10 | 704 | 1.2− | 0.1+ | 2003 03 05 | 704 | 0.6+ | 1.4+ | 2004 04 16 | 704 | (0.5+ | 3.1+) |
| 2002 08 10 | 704 | 1.3− | 0.2+ | 2003 03 05 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 704 | 0.9− | 0.9+ |
| 2002 08 10 | 848 | 0.7+ | 0.1+ | 2003 03 05 | 704 | 0.1+ | 0.1+ | 2004 04 16 | 704 | (0.2− | 2.8+) |
| 2002 08 10 | 848 | 0.7+ | 0.2− | 2003 03 05 | 704 | 0.1− | 0.3− | 2004 04 16 | 704 | (1.1− | 1.7+) |
| 2002 08 10 | 848 | 0.3+ | 0.5+ | 2003 04 02 | 704 | 0.4− | 1.2+ | 2004 04 19 | 704 | 0.9− | 0.9+ |
| 2002 10 06 | 704 | 0.3− | 0.4+ | 2003 04 02 | 704 | 0.8+ | 1.0+ | 2004 04 19 | 704 | (0.5+ | 2.6+) |
| 2002 10 06 | 704 | 0.4− | 0.2+ | 2003 04 02 | 704 | 0.7+ | 1.1+ | 2004 04 19 | 704 | 1.1− | 1.1+ |
| 2002 10 06 | 704 | 0.5− | 0.7+ | 2003 04 02 | 704 | (1.5+ | 1.1+) | 2004 04 19 | 704 | (1.1− | 1.9+) |
| 2002 10 06 | 704 | 0.4− | 1.0+ | 2003 12 21 | 704 | (0.3− | 3.4−) | 2006 09 18 | 704 | 1.0+ | 0.1+ |
| 2002 10 14 | 704 | 0.2− | 0.3− | 2003 12 21 | 704 | (1.7− | 3.1−) | 2006 09 18 | 704 | 0.4+ | 0.5+ |
| 2002 10 14 | 704 | 0.2− | 0.1− | 2003 12 21 | 704 | (2.5− | 0.6−) | 2006 09 18 | 704 | 0.4+ | 1.0+ |
| 2002 10 14 | 704 | 0.2+ | 0.6− | 2004 01 28 | 704 | 0.8+ | 0.9+ | 2006 09 18 | 704 | 0.8− | 0.1+ |
| 2002 10 14 | 704 | 0.7+ | 0.2− | 2004 01 28 | 704 | 0.1− | 0.6+ | 2006 10 16 | 704 | 0.6− | 0.5+ |
| 2002 10 14 | 704 | 0.6+ | 0.1− | 2004 01 28 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 704 | 0.1− | 0.1− |
| 2002 10 29 | 704 | 0.0 | 0.5+ | 2004 01 28 | 704 | 0.3+ | 0.1− | 2006 10 16 | 704 | 0.4− | 0.2+ |
| 2002 10 29 | 704 | 0.3+ | 0.6+ | 2004 01 28 | 704 | 0.5− | 0.0 | 2006 10 16 | 704 | 0.2− | 0.1+ |

**(137101)∗ 1998 YN$_{17}$**

Discovered 1998 Dec. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.78203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23075043 | $\omega$ | 15.95450 | | −0.72852008 | | −0.68467327 |
| $a$ | 2.6325363 | $\Omega$ | 120.81441 | | +0.62567250 | | −0.67809399 |
| $e$ | 0.0913864 | $i$ | 1.46330 | | +0.27891291 | | −0.26722845 |
| $P$ | 4.27 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 691 | 0.6− | 0.1− | 2001 09 19 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1− | 0.6+ |
| 1998 12 22 | 691 | 0.0 | 1.3+ | 2004 04 22 | 691 | 0.1− | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1998 12 22 | 691 | 0.5− | 0.1− | 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.8+ | 0.1+ |
| 1998 12 28 | 691 | 0.4+ | 0.4+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 691 | 0.4− | 0.5+ |
| 1998 12 28 | 691 | 0.4+ | 0.4− | 2004 05 09 | 691 | 0.3− | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 1998 12 28 | 691 | 0.3+ | 0.2+ | 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 1.2− | 2.6− |
| 1999 02 10 | 691 | 0.0 | 0.2− | 2004 05 09 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 1999 02 10 | 691 | 0.9− | 0.2− | 2004 05 18 | 599 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.0 |
| 1999 02 10 | 691 | 0.1− | 0.2− | 2004 05 18 | 599 | 0.6+ | 0.6+ | 2006 11 17 | 703 | (5.2− | 0.8−) |
| 1999 02 13 | 691 | 0.3+ | 0.6− | 2004 05 18 | 599 | 0.6+ | 0.6+ | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 1999 02 13 | 691 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.3+ |
| 1999 02 13 | 691 | 0.4+ | 0.6− | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2001 08 19 | 807 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.7+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.0 | | |

**(137102)∗ 1998 YL$_{19}$**

Discovered 1998 Dec. 25 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.80052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25343143 | $\omega$ | 281.58264 | | −0.76937113 | +0.63122214 | |
| $a$ | 2.4730282 | $\Omega$ | 297.63859 | | −0.53441576 | −0.72015393 | |
| $e$ | 0.0986155 | $i$ | 6.35876 | | −0.34995408 | −0.28798771 | |
| $P$ | 3.89 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 03 | 691 | 0.1− | 0.4− | 2003 01 27 | 699 | (1.3+ | 1.6−) | 2005 10 26 | 699 | 0.3+ | 0.2− | |
| 1997 11 03 | 691 | 0.4+ | 0.1− | 2003 01 28 | 704 | 0.2− | 0.1+ | 2005 10 26 | 699 | 0.5+ | 0.7+ | |
| 1997 11 03 | 691 | 0.1+ | 0.2− | 2003 01 28 | 704 | 0.1− | 0.1+ | 2005 10 29 | 703 | 0.3+ | 0.2+ | |
| 1998 12 25 | 691 | 0.0 | 0.7− | 2003 01 28 | 704 | 0.0 | 0.2+ | 2005 10 29 | 703 | (1.6− | 1.5−) | |
| 1998 12 25 | 691 | 0.4− | 0.3− | 2003 01 28 | 704 | 0.0 | 0.1+ | 2005 10 29 | 703 | 0.9− | 0.1− | |
| 1998 12 25 | 691 | 0.2− | 0.4− | 2003 01 28 | 704 | 0.7+ | 0.5+ | 2005 10 29 | 703 | 0.9− | 0.1+ | |
| 1998 12 28 | 691 | 0.1− | 0.8− | 2003 01 30 | 644 | 0.2+ | 0.3+ | 2005 10 30 | 704 | 0.3+ | 0.2+ | |
| 1998 12 28 | 691 | 0.1+ | 0.5− | 2003 01 30 | 644 | 0.4+ | 0.5+ | 2005 10 30 | 704 | 0.3− | 0.5+ | |
| 1998 12 28 | 691 | 0.5− | 0.2− | 2003 01 30 | 644 | 0.4+ | 0.4+ | 2005 10 30 | 704 | 0.1− | 0.0 | |
| 2001 10 12 | 608 | 0.2− | 0.8+ | 2003 01 31 | 704 | (1.0− | 1.6+) | 2005 10 30 | 704 | 0.5− | 0.2+ | |
| 2001 10 12 | 608 | 0.1− | 0.3+ | 2003 01 31 | 704 | 0.0 | 0.1+ | 2005 11 02 | 704 | 0.9+ | 0.3− | |
| 2001 10 12 | 608 | 0.2+ | 0.2+ | 2003 01 31 | 704 | 0.8− | 1.2+ | 2005 11 02 | 704 | (1.5+ | 0.7−) | |
| 2001 10 14 | 704 | 0.4− | 0.0 | 2003 01 31 | 704 | 0.4− | 1.2+ | 2005 11 02 | 704 | 0.2+ | 1.0+ | |
| 2001 10 14 | 704 | 0.6− | 0.1− | 2003 03 07 | 926 | 0.2+ | 0.1+ | 2005 11 02 | 704 | 0.1− | 0.8+ | |
| 2001 10 14 | 704 | 0.1+ | 0.1− | 2003 03 07 | 926 | 0.4+ | 0.1+ | 2005 11 02 | 704 | 0.6− | 0.9+ | |
| 2001 10 14 | 704 | 0.8− | 0.7+ | 2003 03 07 | 926 | 0.0 | 0.1− | 2005 11 07 | 704 | 1.3+ | 0.0 | |
| 2001 10 14 | 704 | 0.8− | 0.1+ | 2005 09 30 | 703 | 0.7+ | 1.3+ | 2005 11 07 | 704 | 1.3+ | 0.2− | |
| 2001 10 25 | 704 | 0.2− | 0.5+ | 2005 09 30 | 703 | (1.0+ | 3.1−) | 2005 11 07 | 704 | 0.1+ | 0.6+ | |
| 2001 10 25 | 704 | 0.2+ | 1.0+ | 2005 09 30 | 703 | 0.7− | 1.1− | 2005 11 07 | 704 | 0.1+ | 0.6+ | |
| 2001 10 25 | 704 | 1.3+ | 0.1+ | 2005 09 30 | 703 | (0.1+ | 1.7−) | 2005 11 25 | 703 | (2.7− | 0.8−) | |
| 2001 10 25 | 704 | 0.3+ | 0.5+ | 2005 10 23 | 703 | 0.0 | 0.6− | 2005 11 25 | 703 | (1.7− | 1.2−) | |
| 2003 01 08 | 704 | 1.2+ | 0.6− | 2005 10 23 | 703 | (1.6− | 0.2+) | 2005 11 25 | 703 | 0.8− | 0.5− | |
| 2003 01 08 | 704 | 0.9+ | 1.3+ | 2005 10 23 | 703 | (0.3− | 1.9−) | 2005 11 25 | 703 | 1.4− | 1.4− | |
| 2003 01 08 | 704 | 0.1− | 0.7+ | 2005 10 23 | 703 | 0.8− | 1.2− | 2006 10 19 | 695 | 0.3+ | 0.1+ | |
| 2003 01 13 | 291 | 0.2+ | 0.2+ | 2005 10 24 | 699 | 0.5− | 1.4+ | 2006 10 19 | 695 | 0.6− | 0.1+ | |
| 2003 01 13 | 291 | 0.4+ | 0.2+ | 2005 10 24 | 699 | 0.3− | 0.8+ | 2006 11 16 | G96 | 0.4+ | 0.2+ | |
| 2003 01 13 | 291 | 0.5+ | 0.1+ | 2005 10 24 | 699 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.5− | 0.3+ | |
| 2003 01 27 | 699 | 0.3− | 1.1+ | 2005 10 24 | 699 | 0.1− | 1.1− | 2006 11 16 | G96 | 0.2− | 0.5− | |
| 2003 01 27 | 699 | 1.2− | 0.1− | 2005 10 26 | 699 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4− | |
| 2003 01 27 | 699 | 0.4− | 1.0+ | 2005 10 26 | 699 | 0.8+ | 0.6− | | | | | |

**(137103)∗ 1998 YP$_{27}$ = 2002 RH$_{64}$**

Discovered 1998 Dec. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 34759)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.59528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23007625 | $\omega$ | 13.35301 | | +0.68755464 | −0.71365937 | |
| $a$ | 2.6376765 | $\Omega$ | 33.51029 | | +0.64192602 | +0.51111598 | |
| $e$ | 0.2511797 | $i$ | 14.04803 | | +0.33941067 | +0.47901019 | |
| $P$ | 4.28 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 0.4− | 0.3− | 2002 10 31 | 699 | 0.5+ | 0.1+ | 2004 03 21 | 699 | 0.7+ | 0.5+ | |
| 1998 12 12 | 704 | 0.9− | 2.0− | 2002 10 31 | 699 | 0.6+ | 0.0 | 2004 03 21 | 699 | 0.3− | 1.0+ | |
| 1998 12 12 | 704 | 1.2+ | 1.6− | 2002 10 31 | 644 | 0.8− | 0.3− | 2004 03 21 | 699 | 0.6− | 1.5+ | |
| 1998 12 12 | 704 | 0.6+ | 0.6− | 2002 10 31 | 699 | 0.3+ | 0.1− | 2004 03 23 | 704 | 1.2+ | 0.0 | |
| 1998 12 12 | 704 | 0.9− | 1.2− | 2002 10 31 | 644 | 0.6− | 0.4− | 2004 03 23 | 704 | 0.5+ | 0.0 | |
| 1998 12 27 | 699 | 0.1− | 0.6+ | 2002 10 31 | 644 | 0.5− | 0.4− | 2004 03 23 | 704 | 0.7+ | 0.3− | |
| 1998 12 27 | 699 | 0.0 | 0.0 | 2002 11 04 | 699 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.8+ | 0.6− | |
| 1998 12 27 | 699 | 0.0 | 0.2− | 2002 11 04 | 699 | 0.5− | 0.2− | 2004 03 26 | 704 | 0.8+ | 0.6+ | |
| 1999 01 08 | 699 | 0.2− | 0.1+ | 2002 11 04 | 699 | 0.3− | 0.2− | 2004 03 26 | 704 | 0.1+ | 1.1+ | |
| 1999 01 08 | 699 | 0.1− | 0.9+ | 2002 11 04 | 699 | 0.4− | 0.0 | 2004 03 26 | 704 | 0.7+ | 0.3+ | |
| 1999 01 08 | 699 | 0.1− | 0.3− | 2002 11 05 | 704 | 0.2− | 0.3+ | 2004 03 26 | 704 | 0.3+ | 0.3+ | |
| 1999 01 14 | 704 | 1.1− | 0.4+ | 2002 11 05 | 704 | 0.2− | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.9+ | |
| 1999 01 14 | 704 | 0.9− | 0.0 | 2002 11 05 | 704 | 0.3− | 0.2+ | 2004 03 28 | 704 | 0.5− | 0.5+ | |
| 1999 01 14 | 704 | 0.3− | 1.3+ | 2002 11 05 | 704 | 0.4− | 0.3+ | 2004 03 28 | 704 | 0.0 | 0.7+ | |
| 1999 01 14 | 704 | 1.1− | 0.6+ | 2002 11 05 | 704 | 0.7− | 0.2+ | 2004 03 28 | 704 | 0.3− | 0.4+ | |
| 1999 01 14 | 704 | 1.5− | 0.1− | 2002 11 06 | 608 | 0.4− | 0.2− | 2004 03 28 | 704 | 0.7− | 0.3− | |
| 2002 08 11 | 704 | 0.5+ | 0.7+ | 2002 11 06 | 608 | 0.4− | 0.1− | 2004 04 16 | 691 | 0.5+ | 0.2+ | |
| 2002 08 11 | 704 | 0.8+ | 0.5− | 2002 11 06 | 608 | 0.4− | 0.1− | 2004 04 16 | 691 | 0.5+ | 0.1+ | |
| 2002 08 11 | 704 | (1.6+ | 0.3+) | 2002 11 08 | 704 | 0.1− | 0.1− | 2004 04 16 | 691 | 0.4+ | 0.2+ | |
| 2002 08 11 | 704 | 1.4+ | 1.1− | 2002 11 08 | 704 | 0.2− | 0.1− | 2004 04 21 | 703 | 0.5+ | 0.2− | |
| 2002 08 16 | 608 | (1.8− | 2.5+) | 2002 11 08 | 704 | 0.1− | 0.1+ | 2004 04 21 | 703 | 0.1− | 0.7+ | |
| 2002 08 16 | 608 | (2.2− | 2.5+) | 2002 11 08 | 704 | 0.2− | 0.5+ | 2004 04 21 | 703 | 0.4− | 0.5+ | |
| 2002 08 16 | 608 | (1.6− | 2.1+) | 2002 11 08 | 704 | 0.2− | 0.0 | 2004 04 21 | 703 | 0.8− | 1.2− | |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2002 11 12 | 704 | 0.3− | 0.1− | 2006 05 29 | E12 | 0.1− | 0.7+ | |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2002 11 12 | 704 | 0.0 | 0.2− | 2006 05 29 | E12 | 0.2− | 0.4+ | |
| 2002 09 05 | 704 | 0.2− | 1.1+ | 2002 11 12 | 704 | 0.1+ | 0.2− | 2006 05 29 | E12 | 0.3− | 0.1+ | |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2002 11 12 | 704 | 0.3− | 0.3− | 2006 05 29 | E12 | 0.1+ | 0.4+ | |
| 2002 09 06 | 704 | 0.6− | 0.9− | 2002 11 12 | 704 | 0.0 | 0.1− | 2006 07 30 | E12 | 0.0 | 0.3+ | |
| 2002 09 06 | 704 | 0.9− | 0.1+ | 2002 11 13 | 644 | 0.1− | 0.0 | 2006 07 30 | E12 | 0.5+ | 0.0 | |
| 2002 09 06 | 704 | (1.6− | 0.5−) | 2002 11 13 | 644 | 0.6− | 0.7− | 2006 07 30 | E12 | 0.6+ | 0.6+ | |
| 2002 09 06 | 704 | 0.9− | 0.0 | 2002 11 13 | 644 | 0.3− | 0.0 | 2006 07 30 | E12 | 0.1+ | 0.2+ | |
| 2002 10 02 | 704 | 0.3− | 1.0+ | 2002 11 14 | 704 | 0.1+ | 0.2− | 2006 08 14 | 644 | 0.1− | 0.2+ | |
| 2002 10 02 | 704 | 0.5− | 0.7+ | 2002 11 14 | 704 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.3− | 0.1+ | |
| 2002 10 02 | 704 | 0.1− | 0.8+ | 2002 11 14 | 704 | 0.4+ | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.1+ | |
| 2002 10 02 | 704 | 0.3+ | 0.5+ | 2002 11 14 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.4+ | 0.0 | |
| 2002 10 02 | 704 | 0.1+ | 0.6+ | 2002 11 14 | 704 | 0.9+ | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.1− | |
| 2002 10 03 | 704 | 0.0 | 1.0+ | 2002 12 02 | 704 | 0.7+ | 0.3− | 2006 09 26 | 703 | 0.1− | 0.1− | |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2002 12 02 | 704 | 0.7+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.1− | |
| 2002 10 03 | 704 | 0.0 | 1.0+ | 2002 12 02 | 704 | 0.6+ | 0.5− | 2006 09 26 | 703 | 0.8− | 0.1− | |
| 2002 10 03 | 704 | 1.3+ | 0.3+ | 2002 12 02 | 704 | 1.0+ | 0.6− | 2006 09 26 | 703 | 0.6− | 0.2− | |
| 2002 10 03 | 704 | 0.1− | 1.4+ | 2002 12 02 | 704 | 0.9+ | 0.2− | 2006 09 26 | 703 | 0.8− | 0.1− | |
| 2002 10 07 | 704 | 0.1− | 0.3+ | 2002 12 05 | 704 | 1.4+ | 1.4− | 2006 09 26 | 703 | 0.4− | 0.3− | |
| 2002 10 07 | 704 | 0.2− | 0.4+ | 2002 12 05 | 704 | (1.7+ | 1.1−) | 2006 09 27 | E12 | 0.2+ | 0.2− | |
| 2002 10 07 | 704 | 0.1− | 0.5+ | 2002 12 05 | 704 | 1.5+ | 1.2− | 2006 09 27 | E12 | 0.4− | 0.1− | |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2002 12 05 | 704 | (2.0+ | 1.3−) | 2006 09 27 | E12 | 0.5− | 0.2+ | |
| 2002 10 07 | 704 | 0.6− | 0.5+ | 2002 12 05 | 704 | 1.3+ | 0.8− | 2006 09 27 | E12 | 0.2− | 0.2− | |
| 2002 10 09 | 704 | 0.1− | 0.0 | 2002 12 20 | 644 | 0.1− | 0.2+ | 2006 10 11 | E12 | 0.1+ | 0.3− | |
| 2002 10 09 | 704 | 0.2− | 0.0 | 2002 12 20 | 644 | 0.1− | 0.2+ | 2006 10 11 | E12 | 0.3− | 0.1− | |
| 2002 10 09 | 704 | 0.2− | 0.4+ | 2002 12 20 | 644 | 0.3+ | 0.4+ | 2006 10 11 | E12 | 0.3− | 0.1+ | |
| 2002 10 09 | 704 | 0.1+ | 0.3+ | 2002 12 31 | 704 | 0.4− | 0.1+ | 2006 10 11 | E12 | 0.2− | 0.2− | |
| 2002 10 09 | 704 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.3+ | |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ | |
| 2002 10 11 | 704 | 0.7+ | 0.0 | 2002 12 31 | 704 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2002 10 11 | 704 | 0.6+ | 0.0 | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.4+ | |
| 2002 10 11 | 704 | 0.8+ | 0.6+ | 2003 01 31 | 699 | 0.6− | 0.1+ | 2006 11 20 | 704 | 1.1− | 1.2+ | |
| 2002 10 11 | 704 | 0.6+ | 0.1− | 2003 01 31 | 699 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.3− | |
| 2002 10 15 | 644 | 0.2− | 0.9+ | 2003 01 31 | 699 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.5− | 1.2+ | |
| 2002 10 15 | 644 | 0.0 | 1.0+ | 2003 01 31 | 699 | 0.5− | 1.0+ | 2006 11 20 | 704 | 0.6− | 1.4+ | |
| 2002 10 15 | 644 | 0.1+ | 0.9+ | 2004 03 15 | 704 | 1.0+ | 1.1+ | 2006 11 27 | 703 | 0.1− | 0.6− | |
| 2002 10 16 | 699 | 0.8− | 0.9+ | 2004 03 15 | 704 | 1.0+ | 0.3+ | 2006 11 27 | 703 | 1.1− | 1.0− | |
| 2002 10 16 | 699 | 0.4− | 0.1+ | 2004 03 15 | 704 | 1.2+ | 1.0+ | 2006 11 27 | 703 | 1.4− | 0.7− | |
| 2002 10 16 | 699 | 0.4− | 0.2− | 2004 03 15 | 704 | 0.6+ | 0.4+ | 2006 11 27 | 703 | 0.3− | 0.5− | |
| 2002 10 16 | 699 | 0.3− | 0.5+ | 2004 03 15 | 704 | 0.8+ | 0.9+ | | | | | |
| 2002 10 31 | 699 | 0.4+ | 0.3+ | 2004 03 21 | 699 | (0.5+ | 2.3+) | | | | | |

**(137104)∗ 1998 YU$_{30}$ = 2000 HV$_{38}$**

Discovered 1998 Dec. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 16901)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.56862 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23691475 | $\omega$ | 346.27569 | | +0.03821504 | −0.99275538 | |
| $a$ | 2.5866717 | $\Omega$ | 101.44385 | | +0.92743118 | −0.00720557 | |
| $e$ | 0.2217511 | $i$ | 6.67426 | | +0.37203632 | +0.11993681 | |
| $P$ | 4.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 699 | 0.4− | 1.2− | 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.6+ | 0.4− |
| 1998 12 16 | 699 | 0.7− | 0.6− | 2002 12 11 | 704 | 0.6− | 0.7+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 1998 12 16 | 699 | 0.8− | 0.3− | 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.1− |
| 1998 12 17 | 704 | 0.0 | 0.9+ | 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 1998 12 17 | 704 | 0.2+ | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 1998 12 17 | 704 | 0.1+ | 0.4− | 2002 12 11 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 704 | 0.3+ | 0.9+ |
| 1998 12 17 | 704 | 0.1+ | 0.5− | 2002 12 11 | 644 | 0.0 | 0.3+ | 2006 10 31 | 704 | 0.4+ | 0.6+ |
| 1999 01 16 | 704 | 0.2− | 0.9− | 2002 12 11 | 644 | 0.1− | 0.3+ | 2006 10 31 | 704 | (2.0− | 1.0+) |
| 1999 01 16 | 704 | 0.1+ | 1.3− | 2002 12 16 | 608 | 0.3+ | 1.0− | 2006 10 31 | 704 | (1.0− | 1.9+) |
| 1999 01 16 | 704 | 0.4+ | 1.4− | 2002 12 16 | 608 | 0.2+ | 0.7− | 2006 10 31 | 704 | 0.2+ | 0.1+ |
| 1999 01 16 | 704 | 0.9+ | 0.5− | 2002 12 16 | 608 | 0.1− | 0.5− | 2006 11 01 | 703 | 0.5− | 0.1+ |
| 2000 04 28 | 691 | 0.3+ | 0.2+ | 2002 12 31 | 704 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.8− | 0.3− |
| 2000 04 28 | 691 | 0.1+ | 0.5+ | 2002 12 31 | 704 | 0.6− | 0.0 | 2006 11 01 | 703 | 0.6− | 0.6− |
| 2000 04 28 | 691 | 0.2+ | 0.3+ | 2002 12 31 | 704 | 0.0 | 0.5+ | 2006 11 01 | 703 | 0.2+ | 0.3− |
| 2000 05 04 | 691 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2000 05 04 | 691 | 0.2− | 0.3+ | 2002 12 31 | 704 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.3− | 0.1− |
| 2000 05 04 | 691 | 0.1− | 0.5+ | 2003 01 04 | 704 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 2002 10 09 | 704 | 0.3− | 0.4+ | 2003 01 04 | 704 | 0.5− | 0.2− | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2002 10 09 | 704 | 0.5− | 0.4− | 2003 01 04 | 704 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2002 10 09 | 704 | 0.7− | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 10 11 | 704 | 1.1+ | 0.8+ | 2003 01 04 | 704 | (2.6− | 2.3+) | 2006 11 13 | 703 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 1.0+ | 0.3+ | 2003 01 08 | 704 | 1.3+ | 0.7+ | 2006 11 13 | 703 | 0.1− | 0.7+ |
| 2002 10 11 | 704 | 1.5+ | 0.8+ | 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 11 13 | 703 | 0.7+ | 0.1+ |
| 2002 11 07 | 704 | 0.2+ | 0.2− | 2003 01 08 | 704 | 0.3− | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.2+ | 0.0 | 2003 01 08 | 704 | 0.3− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.1− | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 0.4+ | 0.3− | 2003 01 31 | 704 | 0.6+ | 0.6+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.4− | 2003 01 31 | 704 | 0.9+ | 0.2+ | 2006 11 14 | 644 | 0.3+ | 0.1− |
| 2002 11 11 | 704 | 0.0 | 1.0− | 2003 01 31 | 704 | 0.6+ | 0.0 | 2006 11 14 | 644 | 0.2+ | 0.2+ |
| 2002 11 11 | 704 | 0.4+ | 1.1− | 2003 01 31 | 704 | 0.2+ | 0.6+ | 2006 11 14 | 644 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 0.0 | 1.2− | 2003 01 31 | 704 | 0.8+ | 1.0+ | 2006 11 19 | 703 | 0.8− | 0.5+ |
| 2002 11 11 | 704 | 0.0 | 0.9− | 2004 04 20 | 704 | 1.4+ | 1.0− | 2006 11 19 | 703 | 0.5− | 0.2+ |
| 2002 11 11 | 704 | 0.5− | 1.2− | 2004 04 20 | 704 | 0.9+ | 0.2+ | 2006 11 19 | 703 | 0.4− | 0.3+ |
| 2002 11 28 | 608 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 703 | 0.2+ | 0.4+ |
| 2002 11 28 | 608 | 0.2− | 0.0 | 2004 04 26 | 691 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.5− | 0.1− |
| 2002 11 28 | 608 | 0.1− | 0.0 | 2004 04 26 | 691 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.5− | 0.3+ |
| 2002 12 01 | 704 | 1.0− | 0.4+ | 2004 04 26 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2002 12 01 | 704 | 1.1− | 0.3+ | 2005 06 08 | 691 | 0.2+ | 0.6− | 2006 11 19 | 703 | 0.7+ | 0.1− |
| 2002 12 01 | 704 | 0.6− | 0.7+ | 2005 06 08 | 691 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2002 12 01 | 704 | 0.5− | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2002 12 05 | 644 | 0.0 | 0.5− | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.8+ | 0.5+ |
| 2002 12 05 | 644 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.0 | 0.6+ | 2006 11 20 | 704 | (1.6+ | 1.2+) |
| 2002 12 05 | 644 | 0.1− | 0.5− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.1+ |
| 2002 12 05 | 608 | 0.4+ | 1.5+ | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.6− | 0.1− |
| 2002 12 05 | 608 | 0.1+ | 1.3+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.4− | 0.1+ |
| 2002 12 05 | 608 | 0.0 | 1.4+ | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.2+ |

**(137105)∗ 1998 YK$_{31}$ = 2002 RN$_{64}$**

Discovered 1998 Dec. 22 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 34759)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.30918 | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24321648 | $\omega$ | 313.49873 | +0.72558244 | | −0.68195930 | |
| $a$ | 2.5417962 | $\Omega$ | 89.72726 | +0.65491908 | | +0.64333102 | |
| $e$ | 0.2239801 | $i$ | 5.27800 | +0.21121346 | | +0.34793204 | |
| $P$ | 4.05 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 699 | 0.2+ | 0.2− | 2002 11 22 | 644 | 0.5− | 0.2+ | 2006 08 28 | 704 | 0.5+ | 0.0 |
| 1998 11 11 | 699 | 0.2+ | 0.9− | 2002 11 22 | 644 | 0.3− | 0.3+ | 2006 08 28 | 704 | (2.0+ | 1.5+) |
| 1998 11 11 | 699 | 0.3+ | 0.4− | 2002 11 22 | 644 | 0.4− | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.0 |
| 1998 11 24 | 704 | 0.1+ | 0.6− | 2002 12 01 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.3− |
| 1998 11 24 | 704 | 0.1+ | 0.4− | 2002 12 01 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 1998 11 24 | 704 | 1.3+ | 0.7− | 2002 12 01 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.4− |
| 1998 11 24 | 704 | 0.4+ | 1.7− | 2002 12 01 | 704 | 0.6− | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.3− |
| 1998 11 24 | 704 | 0.6+ | 0.6− | 2002 12 01 | 704 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 1998 12 08 | 699 | 0.3+ | 0.1+ | 2002 12 01 | 608 | 0.8+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1998 12 08 | 699 | 0.5+ | 0.2+ | 2002 12 01 | 608 | 0.8+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1998 12 08 | 699 | 0.1+ | 0.1+ | 2002 12 01 | 608 | 0.8+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.4− |
| 1998 12 22 | 691 | 0.1+ | 0.1− | 2002 12 07 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.2− |
| 1998 12 22 | 691 | 0.2− | 0.7− | 2002 12 07 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 1998 12 22 | 691 | 0.2− | 0.8− | 2002 12 07 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.4− |
| 1998 12 22 | 910 | 0.0 | 1.1− | 2002 12 07 | 704 | 0.1+ | 0.2− | 2006 10 22 | 704 | 0.2− | 0.5+ |
| 1998 12 22 | 910 | 0.1− | 1.2− | 2002 12 07 | 704 | 0.1+ | 0.0 | 2006 10 22 | 704 | 0.2+ | 0.9− |
| 1998 12 22 | 910 | 0.0 | 1.0− | 2002 12 09 | 644 | 0.2− | 0.4+ | 2006 10 22 | 704 | 0.0 | 0.3− |
| 1999 01 05 | 699 | 0.1− | 1.1− | 2002 12 09 | 644 | 0.1− | 0.3+ | 2006 10 22 | 704 | 0.3+ | 0.6− |
| 1999 01 05 | 699 | 0.2+ | 1.1− | 2002 12 09 | 644 | 0.3− | 0.5+ | 2006 10 22 | 704 | 0.1+ | 0.3+ |
| 1999 01 05 | 699 | 0.2− | 0.8− | 2002 12 11 | 704 | 0.1− | 1.0+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2002 08 10 | 704 | 0.4+ | 1.0+ | 2002 12 11 | 704 | 0.1− | 1.1+ | 2006 10 22 | 703 | 0.2+ | 0.7− |
| 2002 08 10 | 704 | 0.1− | 0.2+ | 2002 12 11 | 704 | 0.1− | 1.4+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 2002 08 10 | 704 | 0.3− | 1.1+ | 2002 12 11 | 704 | 0.4− | 1.3+ | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2002 08 10 | 704 | 0.1− | 0.6+ | 2002 12 11 | 704 | 0.4− | 1.1+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 08 10 | 704 | 0.4+ | 1.2+ | 2002 12 30 | 608 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.7− | 0.4− | 2002 12 30 | 608 | 0.8− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 09 05 | 704 | (1.6− | 1.0+) | 2002 12 30 | 608 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.9− | 0.0 | 2003 01 01 | 704 | 0.8+ | 0.7+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 1.1− | 0.6+ | 2003 01 01 | 704 | (0.2+ | 1.8+) | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2002 09 06 | 704 | 0.4− | 0.7+ | 2003 01 01 | 704 | (1.5+ | 1.7−) | 2006 10 27 | 704 | 1.0− | 0.3+ |
| 2002 09 06 | 704 | 0.8− | 0.1+ | 2003 01 01 | 704 | (1.6+ | 0.6+) | 2006 10 27 | 704 | 0.5− | 0.7+ |
| 2002 09 06 | 704 | 0.7− | 0.4+ | 2003 01 04 | 704 | 0.6− | 0.5+ | 2006 10 27 | 704 | 0.6− | 0.0 |
| 2002 09 06 | 704 | 1.2− | 1.1+ | 2003 01 04 | 704 | 0.3− | 0.5+ | 2006 10 27 | 704 | 0.6− | 0.4+ |
| 2002 09 16 | 608 | 0.5+ | 0.4− | 2003 01 04 | 704 | 0.4− | 0.9+ | 2006 10 27 | 704 | 1.0− | 0.2− |
| 2002 09 16 | 608 | 0.4+ | 0.7− | 2003 01 04 | 704 | 0.6− | 0.8+ | 2006 10 31 | 704 | 0.3− | 0.2+ |
| 2002 09 16 | 608 | 0.4+ | 0.5− | 2003 01 04 | 704 | 0.6− | 0.4+ | 2006 10 31 | 704 | 0.7− | 0.7+ |
| 2002 09 21 | 608 | 0.4+ | 0.3− | 2003 01 08 | 704 | 0.6− | 0.3+ | 2006 10 31 | 704 | 0.2− | 0.8+ |
| 2002 09 21 | 608 | 0.3+ | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.2+ | 2006 10 31 | 704 | 0.3− | 0.6+ |
| 2002 09 21 | 608 | 0.5+ | 0.2− | 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 10 31 | 704 | 0.4− | 0.2+ |
| 2002 10 09 | 704 | 0.8+ | 0.9+ | 2003 01 08 | 704 | 0.7+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | (0.9− | 1.8+) | 2003 01 08 | 704 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.4+ | 0.2+ |
| 2002 10 09 | 704 | (0.2− | 2.0+) | 2003 01 18 | 644 | 0.7+ | 0.4− | 2006 11 13 | 703 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | (1.3− | 1.5−) | 2003 01 18 | 644 | 0.1− | 0.8− | 2006 11 13 | 703 | 0.3+ | 0.3+ |
| 2002 10 11 | 704 | (1.5+ | 0.7+) | 2003 01 18 | 644 | 0.2+ | 0.7− | 2006 11 14 | 704 | 0.1− | 0.4+ |
| 2002 10 11 | 704 | 0.7− | 0.5+ | 2003 01 19 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.9− | 1.4+ | 2003 01 19 | 644 | 0.5+ | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.6+ |
| 2002 10 11 | 704 | 0.5+ | 0.6− | 2003 01 19 | 644 | 0.2− | 0.2+ | 2006 11 14 | 644 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2003 01 27 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.4+ |
| 2002 10 30 | 644 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 644 | 0.3+ | 0.1− |
| 2002 10 30 | 644 | 0.2+ | 0.1+ | 2003 01 27 | 704 | 1.0− | 0.4+ | 2006 11 14 | 704 | 0.8− | 0.4+ |
| 2002 10 30 | 644 | 0.1+ | 0.1+ | 2003 01 27 | 704 | (0.0 | 1.6−) | 2006 11 14 | 644 | 0.2− | 0.2+ |
| 2002 11 01 | 704 | 0.1+ | 0.2+ | 2003 02 22 | 699 | 0.3+ | 0.9+ | 2006 11 17 | 704 | 0.4+ | 0.4+ |
| 2002 11 01 | 704 | 0.2+ | 0.5+ | 2003 02 22 | 699 | 0.6+ | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.1+ |
| 2002 11 01 | 704 | 0.3+ | 0.1− | 2003 02 22 | 699 | 1.4+ | 1.1− | 2006 11 17 | 704 | 0.3+ | 0.3+ |
| 2002 11 01 | 704 | 0.3− | 0.9+ | 2003 02 22 | 699 | 0.7− | 1.4+ | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2002 11 03 | 608 | 0.2+ | 0.2− | 2004 03 15 | 704 | 1.2+ | 0.1− | 2006 11 19 | 703 | 0.0 | 0.3+ |
| 2002 11 03 | 608 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2002 11 03 | 608 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.5− | 0.7+ | 2006 11 19 | 703 | 0.0 | 0.1+ |
| 2002 11 05 | 644 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.2− | 0.2+ |
| 2002 11 05 | 644 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.5+ | 1.1+ | 2006 11 20 | 704 | 0.9+ | 0.3+ |
| 2002 11 05 | 699 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.8+ | 2006 11 20 | 704 | 0.6+ | 0.2+ |
| 2002 11 05 | 699 | 0.1− | 0.5− | 2004 03 20 | 704 | (1.2+ | 1.6+) | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2002 11 05 | 644 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2002 11 05 | 699 | 0.4− | 0.4− | 2004 03 20 | 704 | 0.7+ | 1.4+ | 2006 11 20 | 704 | 0.4+ | 0.4+ |
| 2002 11 05 | 699 | 0.3+ | 0.9+ | 2004 03 20 | 704 | 1.2+ | 0.6+ | 2006 11 20 | 704 | 0.2− | 1.5+ |
| 2002 11 07 | 704 | 0.0 | 0.2− | 2004 04 21 | 691 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2004 04 21 | 691 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.7+ | 0.5+ |
| 2002 11 07 | 704 | 0.1− | 0.2− | 2004 04 21 | 691 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.8+ |
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 1.1− | 0.5+ | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.2− | 2006 08 23 | 704 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2006 08 23 | 704 | 0.0 | 0.5− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 11 11 | 704 | 0.1+ | 0.2− | 2006 08 23 | 704 | 0.7+ | 0.3− | 2006 11 22 | G96 | 0.2− | 0.4− |
| 2002 11 11 | 704 | 0.4+ | 0.3− | 2006 08 23 | 704 | 0.3− | 0.4− | 2006 11 22 | G96 | 0.1− | 1.4− |
| 2002 11 11 | 704 | 0.2+ | 0.2− | 2006 08 28 | 704 | 0.2− | 0.9+ | | | | |
| 2002 11 11 | 704 | 0.6+ | 0.5− | 2006 08 28 | 704 | 0.2− | 0.2+ | | | | |

**(137106)∗ 1999 AQ$_5$ = 2001 SF$_{263}$**

Discovered 1999 Jan. 12 by T. Kobayashi at Oizumi.

Id. T. B. Spahr (*MPO* 16902)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.28980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24171326 | $\omega$ | 76.57707 | | −0.86452147 | −0.49082927 | |
| $a$ | 2.5523236 | $\Omega$ | 73.93464 | | +0.40652681 | −0.80939142 | |
| $e$ | 0.1227220 | $i$ | 6.46007 | | +0.29553102 | −0.32244715 | |
| $P$ | 4.08 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 12 | 411 | 0.4− | 0.1− | 2001 10 24 | 644 | 1.0− | 0.4+ | 2003 01 31 | 699 | 0.5− | 1.1+ |
| 1999 01 12 | 411 | 0.4+ | 0.6− | 2001 10 24 | 644 | 0.6− | 0.4+ | 2003 01 31 | 699 | 1.0− | 0.5+ |
| 1999 01 13 | 411 | 0.8+ | 0.4− | 2001 10 24 | 644 | 0.4− | 0.6+ | 2003 02 01 | 645 | 0.1+ | 0.1− |
| 1999 01 13 | 411 | 0.3+ | 0.3+ | 2002 12 11 | 644 | 0.2− | 1.2+ | 2003 02 01 | 645 | 0.1+ | 0.1− |
| 1999 01 20 | 411 | 1.6+ | 0.4+ | 2002 12 11 | 644 | 0.1− | 1.0+ | 2003 02 26 | 704 | 0.6− | 1.0+ |
| 1999 01 20 | 411 | 0.2+ | 1.0+ | 2002 12 11 | 644 | 0.1+ | 1.3+ | 2003 02 26 | 704 | 0.4− | 0.6+ |
| 1999 01 28 | 411 | 0.2− | 0.4+ | 2002 12 31 | 704 | 0.3+ | 0.5− | 2003 02 26 | 704 | 0.2− | 0.4+ |
| 1999 01 28 | 411 | 1.7− | 0.0 | 2002 12 31 | 704 | 0.3− | 0.4− | 2003 02 26 | 704 | 0.0 | 0.7+ |
| 1999 02 07 | 411 | 0.3+ | 0.1− | 2002 12 31 | 704 | 0.3+ | 0.7− | 2003 02 26 | 704 | 0.6− | 0.8+ |
| 1999 02 07 | 411 | 0.3+ | 0.5− | 2002 12 31 | 704 | 0.0 | 0.4+ | 2003 03 25 | 699 | 0.5+ | 0.6− |
| 1999 02 20 | 699 | 0.4+ | 0.9+ | 2003 01 05 | 704 | 0.3+ | 0.6+ | 2003 03 25 | 699 | 0.4− | 1.1+ |
| 1999 02 20 | 699 | 0.4+ | 0.7+ | 2003 01 05 | 704 | 0.1+ | 0.9− | 2003 03 25 | 699 | 0.2+ | 0.2− |
| 1999 02 20 | 699 | 0.3− | 0.9+ | 2003 01 05 | 704 | 0.3− | 0.2− | 2003 03 25 | 699 | 0.1− | 0.9+ |
| 2001 09 12 | 704 | 0.5+ | 0.0 | 2003 01 07 | 704 | 0.4− | 0.1− | 2005 08 26 | 644 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.6− | 0.3+ | 2003 01 07 | 704 | 0.1+ | 0.1+ | 2005 08 26 | 644 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.5+ | 0.4+ | 2003 01 07 | 704 | 0.2− | 0.2+ | 2005 08 26 | 644 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 1.2+ | 0.6+ | 2003 01 07 | 704 | 0.3− | 0.2− | 2005 09 23 | 703 | 0.3+ | 0.1− |
| 2001 09 25 | 734 | (1.5+ | 1.9+) | 2003 01 07 | 704 | 0.0 | 0.7− | 2005 09 23 | 703 | 0.9− | 0.7+ |
| 2001 09 25 | 734 | 0.0 | 0.6− | 2003 01 09 | 704 | 0.0 | 0.3− | 2005 09 23 | 703 | 0.4− | 0.6− |
| 2001 09 25 | 734 | 0.0 | 0.0 | 2003 01 09 | 704 | 0.2+ | 0.1− | 2005 09 23 | 703 | 0.6+ | 0.5+ |
| 2001 09 26 | 734 | (2.7+ | 3.8+) | 2003 01 09 | 704 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2001 09 26 | 734 | 0.4+ | 0.8− | 2003 01 09 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2001 09 26 | 734 | 0.3+ | 0.2− | 2003 01 09 | 704 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.5− | 0.2+ |
| 2001 09 26 | 734 | 0.2− | 0.1+ | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1− | 0.4− |
| 2001 09 28 | 734 | 0.6− | 1.0+ | 2003 01 29 | 645 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.6+ | 0.1− |
| 2001 09 28 | 734 | (2.4− | 3.1+) | 2003 01 31 | 704 | 0.1− | 1.0+ | 2006 09 28 | 691 | 0.4+ | 0.6− |
| 2001 10 08 | 644 | 0.1− | 0.5+ | 2003 01 31 | 704 | (0.2+ | 1.5+) | 2006 10 23 | G96 | 0.2− | 0.7− |
| 2001 10 08 | 644 | 0.0 | 0.4+ | 2003 01 31 | 704 | 0.5− | 1.0+ | 2006 10 23 | G96 | 0.2+ | 0.7− |
| 2001 10 08 | 644 | 0.3+ | 0.6+ | 2003 01 31 | 699 | 0.4− | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2001 10 16 | 644 | 0.6− | 0.2+ | 2003 01 31 | 704 | (0.3− | 1.7+) | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2001 10 16 | 644 | 0.2− | 0.1+ | 2003 01 31 | 704 | 0.3− | 1.5+ | | | | |
| 2001 10 16 | 644 | 0.6− | 0.4− | 2003 01 31 | 699 | 0.4+ | 0.2+ | | | | |

**(137107)∗ 1999 AT$_6$**

Discovered 1999 Jan. 9 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.71113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22525372 | $\omega$ | 313.34839 | | +0.11934288 | −0.99186011 | |
| $a$ | 2.6751906 | $\Omega$ | 129.74361 | | +0.92681074 | +0.09525782 | |
| $e$ | 0.1968808 | $i$ | 3.30985 | | +0.35606058 | +0.08449537 | |
| $P$ | 4.38 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 0.6− | 0.1+ | 2002 12 01 | 704 | 0.2− | 0.6− | 2006 09 14 | 644 | 0.1− | 0.2− |
| 1998 10 20 | 691 | 1.3− | 0.6− | 2002 12 01 | 704 | 0.7+ | 1.3+ | 2006 09 14 | 644 | 0.1− | 0.2− |
| 1998 10 20 | 691 | 0.9− | 0.2− | 2002 12 01 | 704 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.1− |
| 1998 12 28 | 691 | 1.3− | 0.1+ | 2002 12 01 | 704 | 0.4− | 0.1− | 2006 09 16 | 704 | 1.3− | 1.4+ |
| 1998 12 28 | 691 | 1.4− | 0.1+ | 2002 12 01 | 704 | 1.1+ | 0.7+ | 2006 09 16 | 704 | 0.7− | 1.4+ |
| 1998 12 28 | 691 | 1.7− | 0.1+ | 2002 12 07 | 704 | 0.1− | 0.7+ | 2006 09 16 | 704 | 1.2− | 1.0+ |
| 1999 01 08 | 691 | 0.2− | 0.2− | 2002 12 07 | 704 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 1999 01 08 | 691 | 0.3− | 0.2− | 2002 12 07 | 704 | 0.6− | 0.0 | 2006 09 18 | 703 | 0.3− | 1.2− |
| 1999 01 08 | 691 | 0.1+ | 0.2− | 2002 12 07 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.1+ |
| 1999 01 09 | 120 | 0.5+ | 0.4− | 2002 12 07 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 1.2− | 0.1− |
| 1999 01 09 | 120 | 0.5− | 0.1− | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 09 18 | 703 | (3.9+ | 2.5−) |
| 1999 01 09 | 120 | 1.2+ | 1.0+ | 2002 12 10 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.0 |
| 1999 01 11 | 120 | 1.2+ | 0.1+ | 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.2− |
| 1999 01 13 | 120 | 0.9+ | 0.0 | 2002 12 10 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.3− |
| 1999 01 13 | 120 | 0.6− | 0.5+ | 2002 12 10 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.4+ |
| 1999 01 13 | 120 | 0.2− | 0.9+ | 2002 12 10 | 644 | 0.0 | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.5− |
| 1999 01 13 | 120 | 0.0 | 0.8+ | 2002 12 11 | 704 | 0.9− | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.5+ |
| 1999 01 21 | 120 | 0.0 | 0.4− | 2002 12 11 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.3− | 0.5+ |
| 1999 01 21 | 120 | 0.8+ | 0.3+ | 2002 12 11 | 704 | 0.5− | 0.7+ | 2006 09 22 | 704 | 0.3− | 0.5+ |
| 1999 01 22 | 691 | 1.2+ | 0.2+ | 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.4+ |
| 1999 01 22 | 691 | 1.0+ | 0.1+ | 2002 12 11 | 704 | 0.5− | 0.4+ | 2006 09 22 | 704 | 0.6− | 0.6+ |
| 1999 01 22 | 691 | 1.2+ | 0.1+ | 2002 12 27 | 644 | 0.2− | 0.6+ | 2006 09 22 | 704 | 0.3+ | 0.1+ |
| 1999 02 10 | 691 | 0.7+ | 0.6− | 2002 12 27 | 644 | 0.2+ | 1.0+ | 2006 09 22 | 704 | 1.0− | 0.4+ |
| 1999 02 10 | 691 | 0.5+ | 0.3− | 2002 12 27 | 644 | 0.0 | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.1− |
| 1999 02 10 | 691 | 0.5+ | 0.2− | 2003 01 27 | 644 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.5+ | 0.6+ |
| 1999 02 11 | 699 | 0.6+ | 0.9− | 2003 01 27 | 644 | 0.3+ | 0.6− | 2006 09 22 | 704 | 0.1+ | 1.0+ |
| 1999 02 11 | 699 | 0.3− | 0.1+ | 2003 01 27 | 644 | 0.4+ | 0.6− | 2006 09 25 | 699 | 0.7+ | 0.2+ |
| 1999 02 11 | 699 | (0.4+ | 2.1+) | 2004 03 19 | 704 | 1.0+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.5+ |
| 2002 10 30 | 608 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.2− | 0.1− | 2006 09 25 | 699 | 1.2+ | 1.2+ |
| 2002 10 30 | 608 | 0.2− | 0.4− | 2004 03 19 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 699 | 0.2+ | 1.1+ |
| 2002 10 30 | 608 | 0.2− | 0.3− | 2004 03 19 | 704 | 1.0+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.3− |
| 2002 11 04 | 608 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.2− | 2006 09 26 | 704 | 0.9+ | 0.5− |
| 2002 11 04 | 608 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.7+ | 1.2+ | 2006 09 26 | 704 | 0.1+ | 0.4+ |
| 2002 11 04 | 608 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 09 28 | 704 | 1.1+ | 0.2− |
| 2002 11 05 | 699 | 0.6+ | 0.9+ | 2004 03 22 | 704 | 0.2− | 1.2+ | 2006 09 28 | 704 | 0.2− | 0.3− |
| 2002 11 05 | 699 | 0.4− | 0.5+ | 2004 03 22 | 704 | 1.0+ | 0.1+ | 2006 09 28 | 704 | 0.3+ | 0.6− |
| 2002 11 05 | 699 | 0.5− | 0.5+ | 2004 03 23 | 691 | 0.0 | 0.8+ | 2006 09 28 | 704 | 0.5+ | 0.8− |
| 2002 11 05 | 699 | 0.3− | 0.0 | 2004 03 23 | 691 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2002 11 07 | 704 | 0.0 | 0.3+ | 2004 03 23 | 691 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.8− |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 0.5− | 0.3− | 2006 09 30 | 704 | 0.9+ | 0.3− |
| 2002 11 07 | 704 | 0.6− | 0.2+ | 2004 03 28 | 704 | 1.1+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.2− |
| 2002 11 07 | 704 | 0.4+ | 0.1+ | 2004 03 28 | 704 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.9− | 0.2− |
| 2002 11 07 | 704 | 0.5− | 0.5− | 2004 03 28 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.5+ | 0.9− |
| 2002 11 11 | 704 | 0.4+ | 0.3+ | 2004 04 11 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.4− | 0.4+ |
| 2002 11 11 | 704 | 0.9+ | 0.3− | 2004 04 11 | 644 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 11 11 | 704 | 0.1− | 0.2− | 2004 04 11 | 644 | 0.2+ | 0.5+ | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2002 11 11 | 704 | 0.8+ | 0.1− | 2004 04 22 | 704 | 0.8− | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 11 11 | 704 | 0.0 | 0.5− | 2004 04 22 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2002 11 13 | 704 | 0.6− | 0.3+ | 2004 04 22 | 704 | 0.8+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2002 11 13 | 704 | 0.4− | 0.1+ | 2006 08 18 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2002 11 13 | 704 | 0.6− | 0.0 | 2006 08 18 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2002 11 13 | 704 | 0.7− | 0.3+ | 2006 08 18 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2002 11 13 | 704 | 0.6− | 0.4+ | 2006 08 19 | 291 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.2− |
| 2002 11 15 | 644 | 0.3− | 0.4− | 2006 08 19 | 291 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.5+ | 0.3+ |
| 2002 11 15 | 644 | 0.6+ | 0.3− | 2006 08 19 | 291 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 11 15 | 644 | 0.1+ | 0.2− | 2006 09 12 | 703 | 0.8+ | 0.8− | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 11 23 | 644 | 0.7+ | 0.6+ | 2006 09 12 | 703 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 11 23 | 644 | 0.4+ | 0.6+ | 2006 09 12 | 703 | 0.1+ | 0.7+ | | | | |
| 2002 11 23 | 644 | 0.5+ | 0.6+ | 2006 09 12 | 703 | 0.2− | 0.8+ | | | | |

**(137108)∗ 1999 AN$_{10}$**

Discovered 1999 Jan. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.60831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.55942941 | $\omega$ | 268.28881 | | −0.56775729 | +0.68404753 | |
| $a$ | 1.4587220 | $\Omega$ | 314.48291 | | −0.21797209 | −0.66139014 | |
| $e$ | 0.5622016 | $i$ | 39.93301 | | −0.79381347 | −0.30763950 | |
| $P$ | 1.76 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1955 01 26 | 675 | 0.3+ | 0.3− | 1999 01 24 | 658 | 0.2+ | 0.5− | 1999 05 15 | 426 | 0.5− | 0.1− |
| 1955 01 26 | 675 | (9.9+ | 1.4+) | 1999 01 25 | 026 | 0.1− | 0.2− | 1999 05 16 | 426 | 0.8− | 0.5− |
| 1955 01 26 | 675 | 0.0 | 1.1+ | 1999 01 25 | 026 | 0.0 | 0.0 | 1999 05 16 | 426 | 1.3− | 0.5− |
| 1955 01 26 | 675 | (4.7+ | 1.1+) | 1999 01 25 | 026 | 0.0 | 0.2− | 1999 05 16 | 426 | 0.9− | 0.3+ |
| 1999 01 13 | 704 | 1.1+ | 0.9+ | 1999 01 25 | 026 | 0.1+ | 0.1− | 1999 05 23 | 426 | 1.8− | 0.6− |
| 1999 01 13 | 704 | (0.0 | 2.4−) | 1999 01 25 | 026 | 0.2+ | 0.0 | 1999 05 23 | 426 | 1.6− | 0.0 |
| 1999 01 13 | 704 | 0.7− | 0.4− | 1999 01 26 | 071 | 0.3+ | 0.5+ | 1999 05 26 | 950 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 704 | 0.2+ | 0.5+ | 1999 01 26 | 071 | (0.3− | 2.9+) | 1999 05 26 | 950 | 0.5+ | 0.3− |
| 1999 01 13 | 704 | (2.1− | 0.0 ) | 1999 01 26 | 402 | 0.4+ | 0.8+ | 1999 05 26 | 950 | 0.8− | 0.7− |
| 1999 01 14 | 557 | 0.3− | 0.3− | 1999 01 26 | 402 | 0.3− | 0.3+ | 1999 05 27 | 950 | 0.3+ | 0.8+ |
| 1999 01 14 | 557 | 0.1− | 0.1+ | 1999 01 26 | 402 | 0.4+ | 0.7+ | 1999 05 27 | 950 | 0.0 | 0.7+ |
| 1999 01 15 | 046 | 0.1− | 0.1+ | 1999 01 26 | 360 | 0.3+ | 0.3+ | 1999 06 09 | 675 | 0.2+ | 0.0 |
| 1999 01 15 | 046 | 0.1− | 0.3+ | 1999 01 26 | 360 | 0.2− | 0.6+ | 1999 06 09 | 675 | 0.1+ | 0.1+ |
| 1999 01 15 | 046 | 0.4− | 0.4− | 1999 01 26 | 360 | 0.3+ | 0.4+ | 1999 06 09 | 675 | 0.1+ | 0.2+ |
| 1999 01 15 | 046 | 0.2− | 0.1− | 1999 01 27 | 587 | 0.5− | 0.1+ | 1999 06 09 | 675 | 0.1+ | 0.1+ |
| 1999 01 15 | 046 | 0.4− | 0.2+ | 1999 01 27 | 587 | 0.3− | 0.3− | 1999 06 09 | 675 | 0.0 | 0.1+ |
| 1999 01 15 | 587 | 0.7+ | 0.8+ | 1999 01 30 | 402 | 0.7+ | 0.6+ | 1999 06 09 | 675 | 0.0 | 0.1+ |
| 1999 01 15 | 587 | 0.2− | 1.1+ | 1999 01 30 | 402 | 0.0 | 0.2− | 1999 06 20 | 046 | (1.0− | 2.4−) |
| 1999 01 16 | 704 | 0.5+ | 0.3− | 1999 01 30 | 402 | 0.1+ | 0.3− | 1999 07 02 | 413 | 0.3+ | 0.5+ |
| 1999 01 16 | 704 | 0.1+ | 0.1+ | 1999 02 04 | 402 | 0.2+ | 0.0 | 1999 07 08 | 587 | (0.4− | 2.0−) |
| 1999 01 16 | 704 | 0.8− | 0.4+ | 1999 02 04 | 402 | 0.0 | 0.0 | 1999 07 08 | 658 | 0.1− | 1.5− |
| 1999 01 16 | 704 | 0.2+ | 0.7+ | 1999 02 07 | 587 | 0.4+ | 0.0 | 1999 07 08 | 658 | 0.2+ | 0.7− |
| 1999 01 17 | 046 | 0.1− | 0.1+ | 1999 02 07 | 587 | 0.7+ | 0.4+ | 1999 07 08 | 658 | 0.6+ | 0.4− |
| 1999 01 17 | 046 | 0.1+ | 0.2− | 1999 02 07 | 587 | 0.5+ | 0.4− | 1999 07 08 | 568 | 0.1− | 0.1+ |
| 1999 01 17 | 046 | 0.1− | 0.2+ | 1999 02 08 | 704 | (0.8+ | 2.9+) | 1999 07 08 | 568 | 0.1+ | 0.2+ |
| 1999 01 17 | 046 | 0.0 | 0.1+ | 1999 02 08 | 704 | 0.4+ | 0.4+ | 1999 07 09 | 658 | 0.2− | 0.2− |
| 1999 01 17 | 402 | 0.5− | 0.2+ | 1999 02 08 | 704 | 0.5− | 0.9+ | 1999 07 09 | 658 | 0.8− | 0.1+ |
| 1999 01 17 | 402 | 0.2− | 0.0 | 1999 02 08 | 704 | 0.3− | 0.1+ | 1999 07 09 | 658 | 0.5+ | 0.2− |
| 1999 01 17 | 402 | 0.5− | 0.2+ | 1999 02 08 | 704 | 0.7− | 0.8+ | 1999 07 10 | 568 | 0.0 | 0.2+ |
| 1999 01 17 | 540 | 0.7− | 0.4+ | 1999 02 08 | 900 | 0.3− | 0.1+ | 1999 07 10 | 568 | 0.1+ | 0.2+ |
| 1999 01 17 | 540 | 0.6− | 0.2+ | 1999 02 08 | 900 | 0.3+ | 0.3− | 1999 07 20 | 658 | 0.3+ | 0.0 |
| 1999 01 17 | 540 | (2.1− | 0.2+) | 1999 02 08 | 402 | 0.1− | 0.3− | 1999 07 20 | 658 | 0.0 | 0.1− |
| 1999 01 19 | 151 | 0.9− | 0.2− | 1999 02 08 | 402 | 0.0 | 0.7− | 1999 07 20 | 658 | 0.5+ | 0.2− |
| 1999 01 19 | 151 | 0.5+ | 0.2+ | 1999 02 08 | 402 | 0.3+ | 0.7− | 1999 08 10 | 658 | 1.3+ | 0.3+ |
| 1999 01 19 | 151 | (3.5− | 1.5+) | 1999 02 09 | 360 | 0.4+ | 0.1+ | 1999 08 10 | 658 | 0.5+ | 0.2− |
| 1999 01 19 | 587 | 0.0 | 0.0 | 1999 02 09 | 360 | 0.5+ | 0.4+ | 1999 08 10 | 658 | 0.8+ | 0.1+ |
| 1999 01 19 | 587 | 0.3− | 0.2+ | 1999 02 09 | 360 | 0.3+ | 0.3+ | 2004 08 29 | 474 | 0.2− | 0.6− |
| 1999 01 20 | 026 | 0.4+ | 0.4− | 1999 02 12 | 587 | 0.2− | 0.9+ | 2004 08 29 | 474 | 0.2− | 0.5− |
| 1999 01 20 | 026 | 0.3+ | 0.1− | 1999 02 12 | 587 | 0.0 | 0.7− | 2004 08 29 | 474 | 0.2− | 0.0 |
| 1999 01 21 | 046 | 0.2− | 0.2− | 1999 02 12 | 587 | 0.1− | 0.1− | 2005 12 10 | A74 | 0.5− | 0.0 |
| 1999 01 21 | 046 | 0.4+ | 0.1− | 1999 02 14 | 587 | 0.5− | 0.1+ | 2005 12 10 | A74 | 0.3+ | 0.6− |
| 1999 01 21 | 046 | 0.0 | 0.0 | 1999 02 14 | 587 | 1.1− | 0.2− | 2005 12 10 | A74 | 0.1+ | 0.1+ |
| 1999 01 21 | 026 | 0.1− | 0.1− | 1999 02 14 | 587 | 0.2+ | 0.2+ | 2005 12 28 | 696 | 0.0 | 0.4+ |
| 1999 01 21 | 587 | 0.3− | 0.4− | 1999 02 15 | 046 | 0.6− | 0.3− | 2005 12 28 | 696 | 0.2− | 0.2− |
| 1999 01 21 | 587 | 0.3− | 0.2− | 1999 02 15 | 046 | 0.2+ | 0.6+ | 2006 01 18 | 704 | 0.1+ | 0.2− |
| 1999 01 23 | 071 | 0.1− | 0.2+ | 1999 02 15 | 046 | 0.0 | 0.6+ | 2006 01 18 | 704 | 0.2− | 0.1− |
| 1999 01 23 | 071 | 0.0 | 0.1+ | 1999 02 15 | 046 | 0.1+ | 0.5+ | 2006 01 18 | 704 | 0.5− | 0.1− |
| 1999 01 23 | 026 | 0.1− | 0.3− | 1999 02 18 | 104 | 0.1− | 1.1− | 2006 01 18 | 704 | 0.2− | 0.3− |
| 1999 01 23 | 026 | 0.1− | 0.4− | 1999 02 18 | 587 | 0.1− | 1.0+ | 2006 07 19 | 151 | 0.2− | 0.6+ |
| 1999 01 23 | 026 | 0.1− | 0.2− | 1999 02 18 | 587 | 0.9− | 0.3− | 2006 07 20 | 151 | 0.2− | 0.2+ |
| 1999 01 24 | 046 | 0.3+ | 0.0 | 1999 02 18 | 587 | 0.4+ | 0.7+ | 2006 07 20 | 151 | 0.5− | 0.2+ |
| 1999 01 24 | 046 | 0.3+ | 0.0 | 1999 02 18 | 587 | 0.8+ | 0.8− | 2006 08 04 | A99 | 0.0 | 0.1− |
| 1999 01 24 | 046 | 0.1− | 0.2− | 1999 02 20 | 428 | 0.6+ | 0.8− | 2006 08 04 | A99 | 0.0 | 0.4− |
| 1999 01 24 | 046 | 0.7+ | 0.2− | 1999 02 20 | 428 | 0.8+ | 1.5− | 2006 08 04 | A99 | 0.0 | 0.7− |
| 1999 01 24 | 658 | 0.1+ | 0.5− | 1999 05 15 | 426 | 0.7− | 0.2− | | | | |
| 1999 01 24 | 658 | 0.2− | 0.3− | 1999 05 15 | 426 | 0.2− | 0.8− | | | | |

**(137109)∗ 1999 AL$_{11}$ = 2001 SP$_{117}$**

Discovered 1999 Jan. 7 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 19363)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.48964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24688707 | $\omega$ | 157.80900 | | +0.02500439 | −0.99435488 | |
| $a$ | 2.5165399 | $\Omega$ | 290.63485 | | +0.89984589 | +0.06732174 | |
| $e$ | 0.0389217 | $i$ | 6.32604 | | +0.43549071 | −0.08201310 | |
| $P$ | 3.99 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 20 | 691 | 0.1+ | 0.0 | 2001 09 18 | 699 | (1.4− | 1.6+) | 2003 01 31 | 704 | 0.9+ | 0.1− |
| 1993 09 20 | 691 | 0.2+ | 0.8− | 2001 09 18 | 699 | 0.3− | 0.7− | 2003 01 31 | 704 | (3.6+ | 0.7+) |
| 1993 09 20 | 691 | 0.2+ | 0.6− | 2001 09 18 | 699 | 0.6− | 0.1− | 2003 01 31 | 704 | (2.5+ | 0.0 ) |
| 1999 01 07 | 691 | 0.0 | 0.2− | 2001 09 20 | 704 | (1.6− | 0.2−) | 2005 09 09 | 704 | 1.0+ | 0.8− |
| 1999 01 07 | 691 | 0.2− | 0.4− | 2001 09 20 | 704 | 0.3+ | 0.1− | 2005 09 09 | 704 | 1.0− | 0.1− |
| 1999 01 07 | 691 | 0.2− | 0.3− | 2001 09 20 | 704 | 0.0 | 1.0+ | 2005 09 09 | 704 | (0.8− | 2.8+) |
| 1999 01 14 | 691 | 0.2− | 0.4− | 2001 09 20 | 704 | 0.8− | 0.2− | 2005 09 24 | 703 | 1.4− | 0.2+ |
| 1999 01 14 | 691 | 0.1+ | 0.2− | 2001 09 20 | 704 | 0.7− | 0.3− | 2005 09 24 | 703 | 0.7− | 0.4+ |
| 1999 01 14 | 691 | 0.0 | 0.3− | 2001 10 14 | 704 | 0.5+ | 0.4+ | 2005 09 24 | 703 | 0.0 | 0.2+ |
| 1999 01 22 | 691 | 0.1− | 0.5− | 2001 10 14 | 704 | 0.2+ | 0.9+ | 2005 09 24 | 703 | 0.9− | 0.4+ |
| 1999 01 22 | 691 | 0.1− | 0.5− | 2001 10 14 | 704 | 0.1− | 0.3+ | 2005 10 01 | 703 | 0.4+ | 0.9+ |
| 1999 01 22 | 691 | 0.1+ | 0.2+ | 2001 10 14 | 704 | 0.9+ | 1.4+ | 2005 10 01 | 703 | 0.4+ | 0.0 |
| 2001 07 21 | 691 | 0.3+ | 0.1− | 2001 10 14 | 704 | (0.7+ | 1.6+) | 2005 10 01 | 703 | 0.0 | 0.9− |
| 2001 07 21 | 691 | 0.4+ | 0.9− | 2002 12 13 | 291 | 0.1− | 0.5+ | 2005 10 01 | 703 | 0.2+ | 0.4− |
| 2001 07 21 | 691 | 0.4− | 0.2+ | 2002 12 13 | 291 | 0.1− | 0.6+ | 2005 12 21 | 291 | 0.2− | 0.0 |
| 2001 08 12 | 644 | 0.2− | 0.6− | 2002 12 13 | 291 | 0.0 | 0.6+ | 2005 12 21 | 291 | 0.0 | 0.3+ |
| 2001 08 12 | 644 | 0.9− | 0.0 | 2002 12 13 | 291 | (1.7+ | 1.6+) | 2005 12 21 | 291 | 0.1− | 0.2+ |
| 2001 08 12 | 644 | 0.5− | 0.3− | 2002 12 13 | 291 | 0.0 | 0.4+ | 2006 10 23 | G96 | (1.1− | 1.7−) |
| 2001 09 08 | 704 | 1.0− | 0.3+ | 2002 12 13 | 291 | 0.4− | 0.5+ | 2006 10 23 | G96 | 0.6− | 0.6− |
| 2001 09 08 | 704 | 0.8− | 0.5+ | 2003 01 27 | 704 | 0.3− | 1.0+ | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2001 09 08 | 704 | 0.5+ | 0.4+ | 2003 01 27 | 704 | 0.5− | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2001 09 16 | 704 | 0.6+ | 0.7+ | 2003 01 27 | 704 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.9− |
| 2001 09 16 | 704 | 0.7+ | 0.8+ | 2003 01 27 | 704 | 0.1− | 1.0+ | 2006 11 27 | G96 | 0.1+ | 0.8− |
| 2001 09 16 | 704 | 0.6+ | 0.7+ | 2003 01 29 | 644 | (1.6+ | 0.4+) | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2001 09 16 | 704 | 0.7+ | 0.4+ | 2003 01 29 | 644 | 1.2+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.9− |
| 2001 09 16 | 704 | 0.8+ | 0.6+ | 2003 01 29 | 644 | 1.3+ | 0.3+ | | | | |
| 2001 09 18 | 699 | 0.1− | 0.9+ | 2003 01 31 | 704 | 1.1+ | 0.3− | | | | |

**(137110)∗ 1999 AN$_{12}$ = 2003 AK$_{10}$**

Discovered 1999 Jan. 7 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 39992)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.82081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23131428 | $\omega$ | 270.19739 | | +0.85135387 | −0.47350537 | |
| $a$ | 2.6282565 | $\Omega$ | 118.07128 | | +0.52194435 | +0.80775878 | |
| $e$ | 0.2073334 | $i$ | 14.82768 | | −0.05263732 | +0.35116722 | |
| $P$ | 4.26 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 699 | 1.1+ | 0.2+ | 2003 01 09 | 608 | 0.1+ | 1.0− | 2005 07 04 | 703 | 0.3+ | 0.9+ |
| 1998 12 16 | 699 | 0.4+ | 0.4+ | 2003 01 11 | 644 | (0.0 | 1.5+) | 2005 07 04 | 703 | 0.3− | 0.1+ |
| 1998 12 16 | 699 | 0.4+ | 0.4+ | 2003 01 11 | 644 | 0.1+ | 1.1+ | 2005 07 04 | 703 | 0.6+ | 0.1− |
| 1999 01 06 | 699 | 0.0 | 0.6− | 2003 01 11 | 644 | 0.2+ | 1.0+ | 2005 07 04 | 703 | 0.5− | 0.8+ |
| 1999 01 06 | 699 | 0.8+ | 0.9− | 2003 01 27 | 704 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.3− |
| 1999 01 06 | 699 | 1.0+ | 1.2+ | 2003 01 27 | 704 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 1999 01 07 | 691 | 0.5+ | 0.4− | 2003 01 27 | 704 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.0 |
| 1999 01 07 | 691 | 0.4+ | 0.4− | 2003 01 27 | 704 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.0 |
| 1999 01 07 | 691 | 0.3+ | 0.2− | 2003 01 27 | 704 | 0.5+ | 0.1− | 2006 10 04 | 703 | 0.6− | 0.2+ |
| 1999 01 15 | 691 | 0.7− | 0.6− | 2003 02 02 | 704 | 0.9− | 1.2+ | 2006 10 04 | 703 | 0.1− | 0.2+ |
| 1999 01 15 | 691 | 0.6− | 0.4− | 2003 02 02 | 704 | 0.2− | 1.2+ | 2006 10 04 | 703 | 0.1+ | 0.1+ |
| 1999 01 15 | 691 | 0.6− | 0.5− | 2003 02 02 | 704 | 0.2+ | 0.2+ | 2006 10 04 | 703 | 0.1+ | 0.0 |
| 1999 01 23 | 691 | 0.2− | 0.1− | 2003 02 02 | 704 | 0.7+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 1999 01 23 | 691 | 0.0 | 0.1− | 2003 02 02 | 704 | 0.3− | 1.4+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 1999 01 23 | 691 | 0.1+ | 0.1− | 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 0.3+ | 0.2+ | 2004 02 29 | 691 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2002 12 14 | 704 | 0.4− | 0.6+ | 2004 02 29 | 691 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 2002 12 14 | 704 | 0.1− | 0.3+ | 2004 03 15 | 704 | 1.1+ | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 2002 12 14 | 704 | 0.1− | 1.1+ | 2004 03 15 | 704 | 1.0+ | 0.8− | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2002 12 14 | 704 | 0.0 | 1.4+ | 2004 03 15 | 704 | 0.6+ | 1.0+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2003 01 01 | 704 | 0.3− | 0.6− | 2004 03 15 | 704 | 1.1+ | 0.7+ | 2006 11 06 | 644 | 0.3− | 0.1− |
| 2003 01 01 | 704 | 0.1+ | 0.4− | 2004 03 24 | 703 | 0.0 | 1.3+ | 2006 11 06 | 644 | 0.4− | 0.3+ |
| 2003 01 01 | 704 | 0.2− | 0.1+ | 2004 03 24 | 703 | (0.7+ | 2.1+) | 2006 11 18 | 703 | 0.6− | 0.4+ |
| 2003 01 01 | 704 | 0.4+ | 0.4− | 2004 03 24 | 703 | 0.3− | 0.8+ | 2006 11 18 | 703 | 0.9− | 0.1− |
| 2003 01 01 | 704 | 0.1− | 0.3+ | 2004 03 24 | 703 | 0.7+ | 0.0 | 2006 11 18 | 703 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.3− | 1.1+ | 2004 04 24 | 703 | 0.7− | 1.4− | 2006 11 18 | 703 | 0.4− | 0.1− |
| 2003 01 05 | 704 | 0.5− | 0.8+ | 2004 04 24 | 703 | 0.8− | 0.3+ | 2006 11 24 | 703 | 0.6+ | 0.4+ |
| 2003 01 05 | 704 | 0.1− | 0.6+ | 2004 04 24 | 703 | 1.3+ | 0.2− | 2006 11 24 | 703 | 0.6+ | 0.3+ |
| 2003 01 05 | 704 | 0.3− | 0.5+ | 2004 04 24 | 703 | (1.6+ | 1.4+) | 2006 11 24 | 703 | 0.7+ | 0.6+ |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2005 05 11 | A44 | 0.2+ | 1.0+ | 2006 11 24 | 703 | 0.0 | 1.1+ |
| 2003 01 09 | 608 | 0.1− | 0.2− | 2005 05 12 | A44 | 0.9+ | 0.8+ | | | | |
| 2003 01 09 | 608 | 0.2+ | 0.8− | 2005 05 12 | A44 | 0.8− | 0.7+ | | | | |

**(137111)∗ 1999 AX$_{18}$ = 2004 DT$_5$**

Discovered 1999 Jan. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60522)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 166.73672 | | (2000.0) | | | |
| $n$ | 0.21335534 | $\omega$ | 62.39423 | | −0.97073369 | +0.23127158 |
| $a$ | 2.7737482 | $\Omega$ | 130.90195 | | −0.23923775 | −0.90765047 |
| $e$ | 0.0100848 | $i$ | 4.91263 | | −0.02100954 | −0.35026287 |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.1− | 0.6− | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2004 03 22 | 704 | (0.5+ | 1.7+) |
| 1995 03 26 | 691 | 0.0 | 0.1− | 2004 02 16 | 691 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 1.1+ | 1.1+ |
| 1995 03 26 | 691 | 0.1− | 0.4− | 2004 02 17 | 704 | 0.1+ | 1.0+ | 2006 08 18 | 691 | 0.2− | 0.1+ |
| 1998 12 22 | 691 | 0.7− | 0.7− | 2004 02 17 | 704 | 0.5− | 1.3+ | 2006 08 18 | 691 | 0.0 | 0.6− |
| 1998 12 22 | 691 | 1.4− | 0.6− | 2004 02 17 | 704 | 1.1+ | 0.9+ | 2006 08 18 | 691 | 0.3− | 0.2− |
| 1998 12 22 | 691 | (2.4− | 0.1+) | 2004 02 17 | 704 | 1.3+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 1999 01 13 | 691 | 0.9+ | 0.2− | 2004 02 17 | 704 | 0.5+ | 0.8+ | 2006 08 27 | 691 | 0.2− | 0.7+ |
| 1999 01 13 | 691 | 0.4+ | 0.3− | 2004 02 18 | 608 | 0.1− | 0.3− | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 1999 01 13 | 691 | 0.6+ | 0.1− | 2004 02 18 | 608 | 0.1+ | 0.4+ | 2006 09 12 | 703 | (0.7+ | 2.1+) |
| 1999 01 14 | 691 | 0.1− | 0.2+ | 2004 02 18 | 608 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.5− | 0.2+ |
| 1999 01 14 | 691 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.9− | 0.7− | 2006 09 18 | 703 | 0.6− | 0.0 |
| 1999 01 14 | 691 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.3+ | 0.0 |
| 1999 01 22 | 691 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.2+ | 1.3+ | 2006 09 18 | 703 | 0.0 | 0.5− |
| 1999 01 22 | 691 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.5− |
| 1999 01 22 | 691 | 0.3− | 0.5− | 2004 02 23 | 704 | (1.8− | 0.4−) | 2006 09 26 | 704 | 1.1+ | 1.4+ |
| 2001 08 27 | 691 | 0.1− | 0.5+ | 2004 03 10 | 644 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 1.0+ |
| 2001 08 27 | 691 | 0.0 | 0.2− | 2004 03 10 | 644 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.9− |
| 2001 08 27 | 691 | 0.2− | 0.4+ | 2004 03 10 | 644 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.7+ | 0.3+ |
| 2002 11 23 | 644 | 0.1+ | 1.1+ | 2004 03 14 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.8+ |
| 2002 11 23 | 644 | 0.4+ | 1.3+ | 2004 03 14 | 691 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2002 11 23 | 644 | 0.0 | 1.2+ | 2004 03 14 | 691 | 0.0 | 0.6+ | 2006 09 30 | 703 | (0.2+ | 1.5+) |
| 2002 12 10 | 644 | 0.1+ | 0.9+ | 2004 03 19 | 704 | (1.9+ | 1.1+) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 12 10 | 644 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 1.1+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 12 10 | 644 | 0.3+ | 0.4+ | 2004 03 19 | 704 | (2.0+ | 0.9+) | 2006 10 21 | 644 | 0.1+ | 0.6− |
| 2004 02 16 | 691 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.2+ | 1.1+ | | | | |

**(137112)∗ 1999 AF$_{20}$**

Discovered 1999 Jan. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.56286 | | (2000.0) | | | |
| $n$ | 0.23057391 | $\omega$ | 73.31029 | | +0.79339235 | −0.60680530 |
| $a$ | 2.6338798 | $\Omega$ | 324.00772 | | +0.52262371 | +0.71958713 |
| $e$ | 0.2304868 | $i$ | 4.69712 | | +0.31207858 | +0.33761173 |
| $P$ | 4.27 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.5− | 0.1+ | 2002 12 14 | 704 | 1.1+ | 0.9− | 2006 11 13 | 644 | 0.2+ | 0.2− |
| 1999 01 13 | 691 | 0.1− | 0.3− | 2002 12 27 | 699 | 0.1+ | 1.4− | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 1999 01 15 | 691 | 0.1+ | 0.3− | 2002 12 27 | 699 | 0.2− | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.3− |
| 1999 01 15 | 691 | 0.2+ | 0.2+ | 2002 12 27 | 699 | 0.7+ | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 1999 01 15 | 691 | 0.2− | 0.1− | 2002 12 27 | 699 | (1.6− | 0.7+) | 2006 11 15 | 703 | 0.2+ | 0.6− |
| 1999 02 10 | 704 | 1.8− | 0.3− | 2003 01 05 | 704 | 0.2+ | 0.8+ | 2006 11 15 | 703 | 0.2+ | 0.8− |
| 1999 02 10 | 704 | 0.6− | 0.3+ | 2003 01 05 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.8− |
| 1999 02 10 | 704 | 0.5+ | 0.8+ | 2003 01 05 | 704 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.9− | 1.1+ |
| 1999 02 10 | 704 | (1.9− | 2.9+) | 2003 01 05 | 704 | 0.4− | 1.2+ | 2006 11 15 | 704 | 0.6+ | 0.6+ |
| 1999 02 13 | 704 | 0.6+ | 0.0 | 2003 01 09 | 704 | (1.4− | 2.2−) | 2006 11 15 | 704 | 0.1− | 1.0+ |
| 1999 02 13 | 704 | 1.2+ | 1.2+ | 2003 01 09 | 704 | 0.8− | 0.5+ | 2006 11 15 | 704 | 0.5− | 1.1+ |
| 1999 02 13 | 704 | 0.7− | 0.1+ | 2003 01 09 | 704 | 0.6− | 1.3+ | 2006 11 15 | 704 | 0.8− | 0.0 |
| 1999 02 13 | 704 | (3.7− | 1.4+) | 2003 01 09 | 704 | 0.7+ | 0.9− | 2006 11 20 | G96 | 0.3+ | 0.5− |
| 2001 06 30 | 644 | 0.3+ | 0.3+ | 2003 02 01 | 704 | (2.4− | 0.4+) | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2001 06 30 | 644 | 0.6+ | 0.1− | 2003 02 01 | 704 | 0.8+ | 0.6− | 2006 11 20 | G96 | 0.0 | 0.7− |
| 2001 06 30 | 644 | 0.3+ | 0.1+ | 2003 02 01 | 704 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.7+ | 0.5− |
| 2001 07 18 | 644 | 0.1+ | 0.0 | 2003 02 01 | 704 | (1.5+ | 0.4+) | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2001 07 18 | 644 | 0.4− | 0.0 | 2006 08 29 | 703 | 1.3− | 0.9− | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2001 07 18 | 644 | 0.2− | 0.1+ | 2006 08 29 | 703 | 1.5− | 1.2+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2002 12 11 | 704 | 0.3− | 0.9+ | 2006 08 29 | 703 | 0.3+ | 0.6+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2002 12 11 | 704 | 0.7+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.8− | 2006 11 29 | 704 | 0.4+ | 0.0 |
| 2002 12 11 | 704 | 0.6+ | 0.5− | 2006 09 18 | 703 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.4− | 0.8+ |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.7− | 0.3− | 2006 11 29 | 704 | 0.0 | 1.1+ |
| 2002 12 14 | 704 | 0.5− | 1.4− | 2006 09 18 | 703 | 0.7− | 0.1− | 2006 11 29 | 704 | 0.8+ | 1.3+ |
| 2002 12 14 | 704 | 1.1+ | 0.7− | 2006 09 18 | 703 | 1.3+ | 0.3+ | | | | |

**(137113)∗ 1999 AG$_{20}$ = 2001 SP$_{84}$**

Discovered 1999 Jan. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 16906)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.37712 | | (2000.0) | | | |
| $n$ | 0.21045444 | $\omega$ | 252.60269 | | −0.79794777 | +0.59846166 |
| $a$ | 2.7991789 | $\Omega$ | 324.06349 | | −0.49629213 | −0.71977553 |
| $e$ | 0.0242750 | $i$ | 7.00505 | | −0.34201385 | −0.35180511 |
| $P$ | 4.68 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.9+ | 0.1− | 2001 10 19 | 644 | 0.4− | 0.1+ | 2004 04 16 | 704 | (1.7+ | 0.4+) |
| 1999 01 13 | 691 | 1.0+ | 0.0 | 2001 10 19 | 644 | 0.3− | 0.3+ | 2004 04 16 | 704 | 1.2+ | 0.0 |
| 1999 01 15 | 691 | 1.1+ | 0.0 | 2001 10 19 | 644 | 0.3− | 0.4+ | 2004 04 16 | 704 | 0.2− | 0.3+ |
| 1999 01 15 | 691 | 1.0+ | 0.2+ | 2004 03 20 | 699 | 0.5− | 0.3+ | 2004 04 16 | 704 | 0.0 | 0.7+ |
| 1999 01 15 | 691 | 1.0+ | 0.2− | 2004 03 20 | 699 | 0.7+ | 0.9+ | 2006 09 27 | 703 | 0.4+ | 1.2+ |
| 1999 01 18 | 691 | 0.8− | 0.4− | 2004 03 20 | 704 | (0.1+ | 1.7+) | 2006 09 27 | 703 | 0.3− | 0.0 |
| 1999 01 18 | 691 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.0 | 0.4− | 2006 09 27 | 703 | 0.1+ | 0.8− |
| 1999 01 18 | 691 | 0.4− | 0.1− | 2004 03 20 | 704 | (0.6+ | 1.6+) | 2006 09 27 | 703 | 0.5+ | 0.3− |
| 1999 01 23 | 691 | 0.6− | 0.4+ | 2004 03 20 | 699 | 0.2− | 0.8+ | 2006 10 10 | 644 | 0.4− | 0.0 |
| 1999 01 23 | 691 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.4− | 2006 10 10 | 644 | 0.3+ | 0.4+ |
| 1999 02 07 | 691 | 1.0− | 0.0 | 2004 03 20 | 704 | (0.1− | 2.1+) | 2006 10 10 | 644 | 0.1− | 0.0 |
| 1999 02 07 | 691 | 0.9− | 0.2− | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.9− |
| 1999 02 07 | 691 | 0.6− | 0.3+ | 2004 03 20 | 704 | 1.1+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2004 03 20 | 699 | (0.2+ | 1.7+) | 2006 10 17 | 703 | (0.8− | 2.0−) |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2004 03 20 | 704 | 1.4− | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2001 09 20 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2001 09 22 | 704 | 0.5− | 1.2+ | 2004 03 20 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2001 09 22 | 704 | 0.6− | 1.2+ | 2004 03 26 | 699 | 0.2+ | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2001 09 22 | 704 | 1.2− | 1.5+ | 2004 03 26 | 699 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 09 22 | 704 | (1.2− | 1.6+) | 2004 03 26 | 699 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2001 09 22 | 704 | (2.5− | 2.2+) | 2004 03 26 | 699 | 0.4+ | 1.2− | 2006 10 22 | 644 | 0.0 | 0.4+ |

**(137114)∗ 1999 AT$_{24}$ = 2001 TS$_{99}$**

Discovered 1999 Jan. 15 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 19366)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.80813 | | (2000.0) | | | |
| $n$ | 0.24333218 | $\omega$ | 224.97742 | | −0.99646332 | −0.06713745 |
| $a$ | 2.5409904 | $\Omega$ | 311.10409 | | +0.08251283 | −0.89550707 |
| $e$ | 0.1196524 | $i$ | 3.84518 | | −0.01588989 | −0.43995415 |
| $P$ | 4.05 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.1− | 0.1− | 2003 01 17 | 644 | 0.1− | 0.2+ | 2003 03 12 | 644 | 0.3− | 0.1+ |
| 1993 10 12 | 691 | 0.2− | 0.2+ | 2003 01 17 | 644 | 0.4− | 0.6− | 2005 10 01 | 703 | 0.2+ | 1.1− |
| 1993 10 12 | 691 | 0.5− | 0.3+ | 2003 01 17 | 644 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.6− | 0.8− |
| 1997 12 06 | 691 | 0.7+ | 0.6− | 2003 01 27 | 704 | 0.4− | 0.1+ | 2005 10 01 | 703 | (2.0− | 1.1−) |
| 1997 12 06 | 691 | 0.8+ | 0.7− | 2003 01 27 | 704 | 0.1− | 0.7+ | 2005 10 01 | 703 | 0.6− | 0.8− |
| 1997 12 06 | 691 | 0.7+ | 0.4− | 2003 01 27 | 704 | 0.1− | 0.1+ | 2005 10 06 | 699 | 0.6+ | 0.0 |
| 1999 01 15 | 910 | 0.0 | 0.2+ | 2003 01 27 | 644 | 0.4− | 0.3+ | 2005 10 06 | 691 | 0.1+ | 0.3+ |
| 1999 01 15 | 910 | 0.3+ | 0.2− | 2003 01 27 | 644 | 0.3− | 0.2+ | 2005 10 06 | 699 | 0.2− | 0.4+ |
| 1999 01 15 | 910 | 0.1+ | 0.4− | 2003 01 27 | 644 | 0.2− | 0.2+ | 2005 10 06 | 691 | 0.2+ | 0.3+ |
| 1999 01 19 | 910 | 0.1− | 0.1− | 2003 01 30 | 699 | 0.0 | 0.0 | 2005 10 06 | 691 | 0.1+ | 0.3+ |
| 1999 01 19 | 910 | 0.1− | 0.2− | 2003 01 30 | 699 | 0.6− | 1.1+ | 2005 10 06 | 699 | 1.2− | 0.6− |
| 1999 01 19 | 910 | 0.1+ | 0.0 | 2003 01 30 | 699 | 0.2+ | 1.4+ | 2005 10 06 | 699 | (0.4+ | 1.5+) |
| 1999 02 12 | 699 | 0.9− | 1.1+ | 2003 01 30 | 699 | 0.4− | 0.7+ | 2005 10 08 | 704 | (0.2+ | 2.0+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 699 | 0.4+ | 0.8− | 2003 01 31 | 291 | 0.3− | 0.0 | 2005 10 08 | 704 | (0.1− | 1.6+) |
| 1999 02 12 | 704 | 0.0 | 1.8− | 2003 01 31 | 291 | 0.3− | 0.0 | 2005 10 08 | 704 | 1.1− | 1.0+ |
| 1999 02 12 | 704 | 0.1+ | 0.3− | 2003 01 31 | 291 | 0.3− | 0.0 | 2005 10 08 | 704 | (0.3− | 1.7+) |
| 1999 02 12 | 699 | 0.6− | 0.4− | 2003 01 31 | 704 | 0.2+ | 0.3+ | 2005 10 08 | 704 | 0.4− | 0.3+ |
| 1999 02 12 | 704 | 1.6+ | 1.5− | 2003 01 31 | 704 | 0.5+ | 0.1+ | 2005 10 10 | 691 | 0.1− | 0.4+ |
| 1999 02 12 | 704 | 0.1− | 0.9− | 2003 01 31 | 704 | 0.4+ | 0.5+ | 2005 10 10 | 691 | 0.3− | 0.5+ |
| 1999 02 16 | 704 | 1.3− | 0.5+ | 2003 01 31 | 704 | 0.5+ | 0.2+ | 2005 10 10 | 691 | 0.2− | 0.4+ |
| 1999 02 16 | 704 | 0.2− | 0.5+ | 2003 01 31 | 704 | 0.6+ | 0.3+ | 2005 10 22 | 644 | 0.2+ | 0.3+ |
| 1999 02 16 | 704 | 0.7− | 0.8+ | 2003 02 03 | 704 | 0.2+ | 0.7+ | 2005 10 22 | 644 | 0.0 | 0.2+ |
| 1999 02 16 | 704 | 0.1− | 0.5− | 2003 02 03 | 704 | 0.2+ | 0.3− | 2005 10 22 | 644 | 0.1− | 0.3+ |
| 1999 02 16 | 704 | 0.6− | 0.8− | 2003 02 03 | 704 | 0.9− | 0.5+ | 2005 10 25 | 683 | 0.1− | 0.5+ |
| 1999 03 22 | 699 | 0.4+ | 0.9+ | 2003 02 03 | 704 | 0.6− | 0.6− | 2005 10 25 | 683 | 0.7+ | 0.2− |
| 1999 03 22 | 699 | 0.4+ | 1.4+ | 2003 02 03 | 704 | 1.0− | 0.6+ | 2005 10 25 | 683 | (0.3+ | 3.0+) |
| 1999 03 22 | 699 | 0.3+ | 0.4− | 2003 02 08 | 704 | 0.9+ | 0.2+ | 2005 10 26 | 683 | 0.2− | 0.2− |
| 2001 10 14 | 704 | (1.6+ | 0.7−) | 2003 02 08 | 704 | 0.3+ | 0.8+ | 2005 10 26 | 683 | (3.3+ | 3.3+) |
| 2001 10 14 | 704 | 0.5+ | 0.1− | 2003 02 08 | 704 | 0.4+ | 0.7+ | 2005 10 28 | 703 | 0.9+ | 0.1− |
| 2001 10 14 | 704 | 0.6+ | 0.3+ | 2003 02 08 | 704 | 0.8+ | 0.9+ | 2005 10 28 | 703 | 0.1+ | 1.1+ |
| 2001 10 14 | 704 | 0.8+ | 0.9+ | 2003 02 11 | 608 | 0.5+ | 0.4− | 2005 10 28 | 703 | 0.6− | 1.2+ |
| 2001 10 17 | 704 | 0.4− | 0.4+ | 2003 02 11 | 608 | 0.5+ | 0.1+ | 2005 10 28 | 703 | 0.2− | 1.0− |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2003 02 11 | 608 | 0.6+ | 0.2− | 2006 02 24 | G96 | 0.5− | 0.4+ |
| 2001 10 17 | 704 | 0.2− | 1.1− | 2003 02 21 | 644 | 0.3+ | 0.2+ | 2006 02 24 | G96 | 0.7− | 0.6+ |
| 2001 10 17 | 704 | 0.5− | 0.2− | 2003 02 21 | 644 | 0.3+ | 0.4− | 2006 02 24 | G96 | (2.2− | 0.0 ) |
| 2001 10 17 | 704 | 0.3− | 0.1− | 2003 02 21 | 644 | 0.4+ | 0.2+ | 2006 02 24 | G96 | 1.4− | 0.0 |
| 2001 10 17 | 704 | 1.0− | 0.2+ | 2003 02 22 | 699 | 0.2+ | 0.4− | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2001 10 17 | 704 | 0.6− | 0.1+ | 2003 02 22 | 699 | 0.7+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2001 10 20 | 704 | (0.3− | 2.1−) | 2003 02 22 | 699 | 0.9+ | 0.1− | 2006 10 23 | G96 | 0.5− | 0.7− |
| 2001 10 20 | 704 | (0.6+ | 2.1−) | 2003 02 22 | 699 | 0.3+ | 0.2− | 2006 10 23 | G96 | 0.6− | 0.7− |
| 2001 10 20 | 704 | (0.1+ | 2.0−) | 2003 02 28 | 704 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2001 10 21 | 704 | 0.4+ | 0.1− | 2003 02 28 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2001 10 21 | 704 | (0.7− | 2.0−) | 2003 02 28 | 704 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2001 10 21 | 704 | 1.2− | 1.4− | 2003 02 28 | 704 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | (1.9+ | 1.0−) | 2003 03 01 | 608 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.5− |
| 2001 10 21 | 704 | 0.4+ | 0.7− | 2003 03 01 | 608 | 0.6+ | 0.5+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2001 10 25 | 704 | 0.2− | 0.1+ | 2003 03 01 | 608 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2001 10 25 | 704 | 0.6+ | 0.2− | 2003 03 05 | 704 | 0.3+ | 0.8− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2001 10 25 | 704 | 0.2+ | 0.1+ | 2003 03 05 | 704 | 0.4+ | 0.2− | 2006 11 27 | G96 | 0.2− | 0.5− |
| 2003 01 08 | 704 | 0.1+ | 0.3+ | 2003 03 05 | 704 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2003 01 08 | 704 | 0.7+ | 0.2+ | 2003 03 05 | 704 | 0.5+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2003 01 08 | 704 | 0.0 | 0.1+ | 2003 03 05 | 704 | 0.5+ | 0.3− | 2006 11 27 | G96 | 0.2− | 0.6− |
| 2003 01 08 | 704 | 0.4− | 0.6+ | 2003 03 12 | 644 | 0.2+ | 0.2+ | | | | |
| 2003 01 08 | 704 | 0.1− | 1.1+ | 2003 03 12 | 644 | 0.3+ | 0.6+ | | | | |

**(137115)∗ 1999 AZ$_{30}$ = 2002 VS$_{58}$**

Discovered 1999 Jan. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37160)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.36504 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22909880 | $\omega$ | 319.07692 | | +0.01478677 | −0.99799537 |
| $a$ | 2.6451735 | $\Omega$ | 129.98293 | | +0.93703659 | −0.00764448 |
| $e$ | 0.1962241 | $i$ | 4.60630 | | +0.34891801 | +0.06282359 |
| $P$ | 4.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 691 | 0.3+ | 0.4+ | 2002 11 18 | 644 | 0.2− | 0.2+ | 2004 04 20 | 704 | (0.0 | 1.6+) |
| 1999 01 14 | 691 | 0.3+ | 0.3+ | 2002 11 24 | 644 | 0.4− | 0.3+ | 2004 04 20 | 691 | 0.4+ | 0.5+ |
| 1999 01 14 | 691 | 0.4+ | 0.1+ | 2002 11 24 | 644 | 0.5− | 0.2+ | 2004 04 20 | 704 | 0.9+ | 0.5+ |
| 1999 01 17 | 691 | 0.7− | 0.1− | 2002 11 24 | 644 | 0.4− | 0.3+ | 2004 04 20 | 691 | 0.3+ | 0.4+ |
| 1999 01 17 | 691 | 0.6− | 0.2− | 2002 12 01 | 704 | 0.2+ | 0.5+ | 2006 09 21 | 699 | 0.8− | 0.1− |
| 1999 02 09 | 691 | 0.0 | 0.1− | 2002 12 01 | 704 | 0.0 | 0.7+ | 2006 09 21 | 699 | (1.7+ | 0.6+) |
| 1999 02 09 | 691 | 0.3− | 0.1− | 2002 12 01 | 704 | 0.3+ | 0.6+ | 2006 09 21 | 699 | 1.0− | 0.2− |
| 1999 02 09 | 691 | 0.3− | 0.1+ | 2002 12 01 | 704 | 0.1+ | 0.7+ | 2006 09 21 | 699 | 0.4+ | 0.2− |
| 1999 02 11 | 699 | 0.5+ | 0.4+ | 2002 12 03 | 644 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.5− | 1.1+ |
| 1999 02 11 | 699 | 0.4− | 1.4+ | 2002 12 03 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 1.0+ | 0.4+ |
| 1999 02 11 | 699 | 0.3+ | 0.8+ | 2002 12 03 | 644 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 1999 02 12 | 691 | 0.2+ | 0.3− | 2002 12 05 | 608 | 1.3+ | 1.2+ | 2006 09 25 | 699 | 0.1− | 0.1− |
| 1999 02 12 | 691 | 0.2+ | 0.5− | 2002 12 05 | 608 | 0.7+ | 0.9+ | 2006 09 29 | 699 | 0.8+ | 1.1+ |
| 1999 02 12 | 691 | 0.1+ | 0.6− | 2002 12 05 | 608 | 0.9+ | 0.9+ | 2006 09 29 | 699 | 0.4− | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 07 | 691 | 0.1+ | 0.4− | 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.6+ |
| 2000 06 07 | 691 | 0.2− | 0.0 | 2002 12 10 | 644 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.4+ | 0.5+ |
| 2000 06 07 | 691 | 0.2− | 0.1+ | 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | (0.1− | 1.6+) |
| 2002 11 06 | 608 | (1.3+ | 2.0+) | 2002 12 11 | 704 | 0.5− | 0.5+ | 2006 09 30 | 703 | 1.0+ | 0.8+ |
| 2002 11 06 | 608 | (0.9+ | 1.7+) | 2002 12 11 | 704 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.7+ | 1.1+ |
| 2002 11 06 | 608 | (1.0+ | 1.6+) | 2002 12 11 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.4+ |
| 2002 11 07 | 704 | 0.2+ | 0.6− | 2002 12 11 | 704 | 0.4− | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.5+ |
| 2002 11 07 | 704 | 0.1+ | 0.5− | 2002 12 11 | 704 | 0.6− | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.2− |
| 2002 11 07 | 704 | 0.1− | 0.4− | 2002 12 28 | 699 | 0.4+ | 0.8− | 2006 10 01 | 704 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.7+ | 0.2− | 2002 12 28 | 699 | 0.4− | 0.4+ | 2006 10 01 | 704 | (1.6+ | 0.2−) |
| 2002 11 07 | 704 | 0.9+ | 0.8− | 2002 12 28 | 699 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2002 11 11 | 704 | 0.0 | 0.1+ | 2002 12 28 | 699 | (1.8− | 0.4−) | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2002 11 11 | 704 | 0.2− | 0.5+ | 2002 12 31 | 699 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.6− | 0.6− |
| 2002 11 11 | 704 | 0.5+ | 0.8− | 2002 12 31 | 699 | 0.7− | 0.5− | 2006 10 04 | G96 | 0.4+ | 0.1− |
| 2002 11 11 | 704 | 0.2+ | 0.5− | 2002 12 31 | 699 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 11 | 704 | 0.4− | 0.0 | 2002 12 31 | 699 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.7− | 0.5− | 2002 12 31 | 704 | 1.0+ | 1.2− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | (1.7− | 0.6+) | 2002 12 31 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.0 | 0.7− | 2002 12 31 | 704 | 0.9+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2002 11 12 | 704 | 0.1+ | 0.2+ | 2003 01 01 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.9− | 2003 01 01 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.1+ |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2003 01 01 | 704 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.9− | 2003 01 01 | 704 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 11 12 | 704 | 0.6+ | 0.5+ | 2003 01 01 | 704 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | 0.2+ | 1.4− | 2003 01 07 | 704 | 1.0− | 1.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 12 | 704 | 1.2+ | 0.0 | 2003 01 07 | 704 | 0.5− | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 11 12 | 704 | 0.4− | 0.7− | 2003 01 07 | 704 | (0.4− | 1.8+) | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.4+ | 0.4− | 2003 01 07 | 704 | (0.1+ | 1.8+) | 2006 10 22 | 704 | (0.1+ | 1.8+) |
| 2002 11 12 | 704 | 0.5+ | 0.8− | 2003 01 07 | 704 | (0.1+ | 1.7+) | 2006 10 22 | 704 | (0.2− | 1.8+) |
| 2002 11 12 | 704 | 0.5+ | 0.3− | 2003 01 19 | 644 | 1.1− | 0.5+ | 2006 10 22 | 704 | 0.7− | 1.4+ |
| 2002 11 12 | 704 | 0.4+ | 0.3− | 2003 01 19 | 644 | 0.2− | 0.7+ | 2006 10 22 | 704 | 0.6+ | 0.2− |
| 2002 11 12 | 704 | 0.1+ | 0.5+ | 2003 01 19 | 644 | 0.2− | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 0.7+ | 0.8− | 2003 01 25 | 699 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.7− | 0.7− |
| 2002 11 12 | 704 | 0.5+ | 0.1+ | 2003 01 25 | 699 | 0.6− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.8− |
| 2002 11 12 | 704 | 0.0 | 0.1+ | 2003 01 25 | 699 | (0.7+ | 1.5+) | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2002 11 12 | 704 | 0.3+ | 0.1− | 2003 01 25 | 699 | 0.3− | 0.5− | 2006 11 10 | 704 | 0.7− | 1.3+ |
| 2002 11 18 | 644 | 0.5− | 0.1− | 2004 04 13 | 691 | 0.7− | 0.6+ | 2006 11 10 | 704 | 0.4− | 0.3+ |
| 2002 11 18 | 644 | 0.4− | 0.2+ | 2004 04 13 | 691 | 0.4+ | 0.8+ | 2006 11 10 | 704 | 0.3− | 0.6+ |
| 2002 11 18 | 644 | 0.5− | 0.0 | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 704 | 1.3− | 1.2+ |
| 2002 11 18 | 644 | 0.0 | 0.2+ | 2004 04 20 | 691 | 0.5+ | 0.4+ | | | | |
| 2002 11 18 | 644 | 0.4− | 0.2+ | 2004 04 20 | 704 | (0.0 | 2.4+) | | | | |

**(137116)∗ 1999 BL$_2$ = 2001 QA$_{40}$**

Discovered 1999 Jan. 19 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPO* 19367)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.83022 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22786516 | $\omega$ | 86.49976 | | +0.69298231 | −0.71917801 |
| $a$ | 2.6547121 | $\Omega$ | 319.47697 | | +0.62670177 | +0.63558480 |
| $e$ | 0.1969557 | $i$ | 4.46485 | | +0.35639923 | +0.28074000 |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 910 | 0.7+ | 0.3− | 2003 01 09 | 704 | 0.6+ | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 1999 01 19 | 910 | 1.0+ | 0.2− | 2003 01 09 | 704 | 0.0 | 1.1+ | 2006 11 15 | 691 | 0.3+ | 0.5+ |
| 1999 01 19 | 910 | 1.0+ | 0.1− | 2003 01 09 | 704 | 0.9− | 1.2+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 1999 01 19 | 910 | 0.4+ | 0.2+ | 2003 01 09 | 704 | 0.7+ | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.2+ |
| 1999 01 20 | 910 | 0.2+ | 0.5− | 2003 01 31 | 704 | 1.0− | 0.2+ | 2006 11 15 | 704 | 0.4− | 0.1− |
| 1999 01 20 | 910 | 0.6+ | 0.6− | 2003 01 31 | 704 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.2+ |
| 1999 01 21 | 910 | 0.6+ | 0.2+ | 2003 01 31 | 704 | 0.1+ | 0.7+ | 2006 11 15 | 704 | 0.1+ | 0.0 |
| 1999 01 21 | 910 | 0.5+ | 0.2+ | 2003 01 31 | 704 | 1.5+ | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 1999 01 21 | 910 | 0.8+ | 0.5− | 2003 02 03 | 704 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 1999 01 23 | 910 | 1.2+ | 0.3− | 2003 02 03 | 704 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.8+ |
| 1999 01 23 | 910 | 0.4+ | 0.2− | 2003 02 03 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 704 | 0.7− | 0.1− |
| 1999 01 23 | 910 | 1.1+ | 0.1− | 2003 02 04 | 704 | 1.5− | 0.5− | 2006 11 16 | 704 | 0.4− | 0.3+ |
| 2001 07 27 | 699 | 0.7+ | 0.9+ | 2003 02 04 | 704 | 1.4− | 1.3− | 2006 11 16 | 704 | 0.1− | 0.3+ |
| 2001 07 27 | 699 | 0.7− | 0.7+ | 2003 02 04 | 704 | 1.2− | 1.3− | 2006 11 16 | 704 | 0.6− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | (0.7+ | 1.9+) | 2003 02 04 | 704 | 0.8− | 0.4− | 2006 11 16 | 704 | 0.5− | 0.6+ |
| 2001 07 27 | 699 | 0.2− | 0.4+ | 2003 02 08 | 704 | (1.6− | 0.5−) | 2006 11 16 | 704 | 0.4− | 0.3+ |
| 2001 08 16 | 704 | 1.3− | 1.0− | 2003 02 08 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.6− | 0.2+ |
| 2001 08 16 | 704 | 1.2+ | 1.1− | 2003 02 08 | 704 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.2− | 0.5+ | 2003 02 08 | 704 | 0.6+ | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | 0.4− | 0.7− | 2004 04 13 | 644 | 0.1− | 0.9+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2001 08 19 | 704 | 0.1− | 0.2− | 2004 04 13 | 644 | 0.0 | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 08 19 | 704 | 0.7− | 0.0 | 2004 04 13 | 644 | 0.1− | 0.8+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 08 19 | 704 | 0.8+ | 0.1− | 2006 08 29 | 703 | (1.9− | 0.7−) | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 08 19 | 704 | 0.7− | 1.0+ | 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.4− | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2002 12 06 | 645 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2002 12 06 | 645 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.4− | 0.7− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2002 12 13 | 645 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.2− |
| 2002 12 13 | 645 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.1− | 0.8+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 12 27 | 699 | 0.2− | 0.3− | 2006 09 25 | 704 | 1.0+ | 0.8− | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2002 12 27 | 699 | 0.2− | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.8− | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2002 12 27 | 699 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2002 12 27 | 699 | 0.5− | 0.3+ | 2006 10 27 | 703 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2002 12 28 | 699 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.7− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2002 12 28 | 699 | 0.0 | 1.4+ | 2006 10 28 | D35 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2002 12 28 | 699 | 0.2+ | 0.1+ | 2006 10 28 | D35 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2002 12 28 | 699 | 0.3− | 0.2+ | 2006 10 28 | D35 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2002 12 31 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.0 | 0.4+ | 2006 11 11 | 644 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.1+ |
| 2003 01 05 | 704 | 0.7− | 0.9+ | 2006 11 11 | 644 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 0.5− | 1.0+ | 2006 11 11 | 644 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.8− | 1.2− |
| 2003 01 05 | 704 | 0.6− | 1.0+ | 2006 11 14 | 703 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.5+ | 1.6− |
| 2003 01 05 | 704 | 1.0− | 1.3+ | 2006 11 14 | 703 | 0.6− | 1.0+ | 2006 11 28 | 704 | 0.5+ | 0.9− |
| 2003 01 05 | 704 | 0.6− | 1.4+ | 2006 11 14 | 703 | 0.5− | 0.2+ | 2006 11 28 | 704 | 0.8− | 1.3− |
| 2003 01 09 | 704 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.1+ | 2006 11 28 | 704 | 0.7+ | 1.4− |

**(137117)∗ 1999 BK$_4$ = 2002 XY$_2$**

Discovered 1999 Jan. 19 by A. Boattini and L. Tesi at San Marcello Pistoiese.

Id. G. V. Williams (*MPO* 39994)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.92873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22546456 | $\omega$ | 30.21992 | | −0.74332947 | −0.63952388 | |
| $a$ | 2.6735226 | $\Omega$ | 108.68866 | | +0.56477849 | −0.75713528 | |
| $e$ | 0.1874721 | $i$ | 11.94990 | | +0.35845021 | −0.13324927 | |
| $P$ | 4.37 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 104 | 0.1− | 0.3+ | 2002 12 01 | 704 | 0.8+ | 0.4+ | 2004 05 24 | 704 | 0.0 | 0.1+ |
| 1999 01 19 | 104 | 0.5− | 0.3− | 2002 12 01 | 704 | 1.0+ | 0.7+ | 2004 05 24 | 704 | 0.2+ | 0.5− |
| 1999 01 19 | 104 | 0.6− | 0.1+ | 2002 12 03 | 608 | 0.5− | 1.1− | 2004 05 24 | 704 | 0.5+ | 0.4− |
| 1999 01 20 | 104 | 0.8+ | 0.0 | 2002 12 03 | 608 | 1.1− | 0.8− | 2006 09 23 | 104 | 0.1− | 1.1+ |
| 1999 01 20 | 104 | 0.1+ | 0.3− | 2002 12 03 | 608 | 0.1− | 1.0− | 2006 09 23 | 104 | 0.0 | 0.0 |
| 1999 01 20 | 104 | 0.2+ | 0.8+ | 2004 04 24 | 704 | 0.5+ | 0.8− | 2006 09 23 | 104 | 0.1− | 1.2+ |
| 1999 01 20 | 104 | 0.3− | 0.0 | 2004 04 24 | 704 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 1999 01 20 | 104 | 0.9− | 0.7− | 2004 04 24 | 704 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 1999 01 25 | 120 | 0.2+ | 0.1− | 2004 04 24 | 704 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1999 01 25 | 120 | 0.1+ | 0.0 | 2004 04 24 | 704 | 0.4+ | 1.0+ | 2006 10 12 | 644 | 0.4+ | 0.2+ |
| 1999 02 06 | 104 | 1.3+ | 1.0+ | 2004 04 24 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1999 02 06 | 104 | 0.0 | 0.6+ | 2004 04 24 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.8+ |
| 1999 02 06 | 104 | 0.1− | 0.3+ | 2004 04 24 | 704 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 1.1− |
| 1999 02 15 | 104 | (0.0 | 4.9−) | 2004 05 12 | 703 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 1999 02 15 | 104 | (0.3+ | 4.8−) | 2004 05 12 | 703 | 1.3− | 0.6− | 2006 11 17 | 703 | 0.8− | 1.1− |
| 1999 02 15 | 104 | (0.9+ | 4.8−) | 2004 05 12 | 703 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.7− | 0.3+ |
| 2002 12 01 | 704 | 1.0+ | 0.2− | 2004 05 12 | 703 | 1.2− | 0.2+ | | | | |

**(137118)∗ 1999 BV$_4$ = 2001 SQ$_{179}$**

Discovered 1999 Jan. 19 by the OCA-DLR Asteroid Survey at Caussols.

Id. T. B. Spahr (*MPO* 19368)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.53448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22211222 | $\omega$ | 91.42908 | | +0.46708261 | −0.87843295 | |
| $a$ | 2.7003563 | $\Omega$ | 330.05568 | | +0.70934626 | +0.44041486 | |
| $e$ | 0.1717955 | $i$ | 11.66713 | | +0.52788419 | +0.18544621 | |
| $P$ | 4.44 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 910 | 0.5+ | 0.7+ | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 08 12 | 644 | 0.3− | 0.4+ |
| 1999 01 20 | 910 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 1999 01 20 | 910 | 0.0 | 0.3+ | 2002 12 12 | 644 | 0.3− | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 1999 01 21 | 910 | 0.0 | 0.3+ | 2002 12 12 | 644 | 0.4− | 0.3+ | 2006 08 20 | 644 | 0.3− | 0.1− |
| 1999 01 21 | 910 | 0.0 | 0.6+ | 2002 12 12 | 644 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.7− |
| 1999 01 21 | 910 | 0.1+ | 0.4+ | 2002 12 15 | 704 | 0.5− | 0.3+ | 2006 09 17 | 703 | 0.3+ | 1.2− |
| 1999 01 23 | 910 | 0.4+ | 0.4+ | 2002 12 15 | 704 | 0.4− | 0.4+ | 2006 09 17 | 703 | 0.2+ | 0.1− |
| 1999 01 23 | 910 | 0.6+ | 0.5+ | 2002 12 15 | 704 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.6− |
| 1999 01 23 | 910 | 0.6+ | 0.3+ | 2002 12 15 | 704 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.0 |
| 2001 08 13 | 608 | 0.4+ | 0.3− | 2002 12 15 | 704 | 0.3− | 0.4− | 2006 09 28 | 703 | 0.0 | 0.1+ |
| 2001 08 13 | 608 | 0.4− | 0.2− | 2003 01 07 | 704 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.3− |
| 2001 08 13 | 608 | 0.3+ | 1.1− | 2003 01 07 | 704 | 0.6− | 0.4− | 2006 09 28 | 703 | 0.1− | 0.0 |
| 2001 08 23 | 699 | 0.2− | 0.1− | 2003 01 07 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.5− | 0.4+ |
| 2001 08 23 | 699 | 0.4+ | 0.0 | 2003 01 07 | 704 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.2+ | 0.2− |
| 2001 08 23 | 699 | 0.3+ | 0.1− | 2003 01 10 | 704 | 0.5− | 0.1− | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2001 08 23 | 699 | 0.6+ | 0.4+ | 2003 01 10 | 704 | 0.7+ | 1.2− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | (1.6− | 1.5+) | 2003 01 10 | 704 | 0.0 | 1.3− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 1.3− | 0.2+ | 2003 01 10 | 704 | 0.1+ | 1.2− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 0.4+ | 2003 01 13 | 704 | 0.2+ | 0.6− | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | (1.7− | 0.0 ) | 2003 01 13 | 704 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.8+ | 0.0 | 2003 01 13 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.4+ | 2003 01 13 | 704 | 1.2+ | 0.8− | 2006 10 19 | 703 | 0.9+ | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2003 01 13 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.2− | 0.9− | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2002 11 15 | 644 | 0.3+ | 0.1− | 2003 01 31 | 704 | 0.1+ | 0.7− | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2002 11 15 | 644 | 0.2+ | 0.6+ | 2003 01 31 | 704 | 0.5+ | 0.6− | 2006 10 21 | 704 | 0.1− | 0.9+ |
| 2002 11 15 | 644 | 0.7+ | 0.4+ | 2003 01 31 | 704 | 0.5+ | 0.4− | 2006 10 21 | 704 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 0.3− | 0.1+ | 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 10 21 | 704 | 0.6− | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.6+ | 2006 08 12 | 644 | 0.3− | 0.5+ | 2006 10 21 | 704 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 08 12 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 704 | 0.2− | 0.3+ |

**(137119)∗ 1999 BU$_6$ = 2001 SN$_{272}$**

Discovered 1999 Jan. 21 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 16911)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.26563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22685986 | $\omega$ | 134.60384 | | −0.81529303 | −0.57677345 | |
| $a$ | 2.6625490 | $\Omega$ | 10.53294 | | +0.41921563 | −0.64902199 | |
| $e$ | 0.2798021 | $i$ | 16.29158 | | +0.39944403 | −0.49608755 | |
| $P$ | 4.34 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 21 | 910 | 0.1− | 0.7+ | 2001 10 20 | 704 | 0.1− | 1.0+ | 2003 02 25 | 704 | (0.1+ | 1.6−) |
| 1999 01 21 | 910 | 0.4− | 0.5+ | 2001 10 20 | 704 | 0.6− | 0.8+ | 2003 02 25 | 704 | 1.1+ | 0.0 |
| 1999 01 21 | 910 | 0.3− | 0.6+ | 2001 10 20 | 704 | 0.5− | 0.6+ | 2003 02 25 | 704 | (0.1− | 1.8−) |
| 1999 01 22 | 910 | 0.3− | 0.5+ | 2002 10 30 | 704 | 0.7+ | 0.7+ | 2003 02 25 | 704 | 1.1+ | 0.1+ |
| 1999 01 22 | 910 | 0.4− | 0.6+ | 2002 10 30 | 704 | 0.2+ | 0.1+ | 2003 03 07 | 447 | 0.4− | 0.0 |
| 1999 01 22 | 910 | 0.3− | 0.4+ | 2002 10 30 | 704 | 0.9+ | 0.5+ | 2003 03 07 | 447 | 0.5+ | 0.2− |
| 1999 03 25 | 704 | 0.3+ | 0.5− | 2002 10 30 | 704 | 0.0 | 0.1− | 2003 03 24 | 704 | 0.1+ | 0.1− |
| 1999 03 25 | 704 | (2.4+ | 0.0 ) | 2002 11 15 | 704 | 0.2− | 0.2− | 2003 03 24 | 704 | 0.5− | 0.1+ |
| 1999 03 25 | 704 | (3.0+ | 0.3+) | 2002 11 15 | 704 | 0.0 | 0.2+ | 2003 03 24 | 704 | 0.0 | 0.1+ |
| 1999 03 25 | 704 | 1.3+ | 1.7+ | 2002 11 15 | 704 | 0.7+ | 1.0+ | 2003 03 24 | 704 | 0.9− | 0.1− |
| 1999 03 25 | 704 | 0.1− | 0.4+ | 2002 12 09 | 636 | 0.2+ | 0.2− | 2003 03 24 | 704 | 0.1+ | 0.2− |
| 1999 04 07 | 704 | 0.3− | 1.2− | 2002 12 09 | 636 | 0.4+ | 0.1+ | 2003 03 24 | 704 | 0.7+ | 0.2− |
| 1999 04 07 | 704 | 1.9− | 0.7+ | 2002 12 09 | 636 | 0.4+ | 0.9− | 2003 03 24 | 704 | 0.7− | 0.1− |
| 1999 04 07 | 704 | 0.9− | 0.3− | 2002 12 09 | 699 | 0.6− | 0.4− | 2003 03 24 | 704 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 07 | 704 | 1.3− | 0.4− | 2002 12 09 | 699 | 0.4− | 0.4+ | 2003 03 24 | 704 | 1.3− | 0.9− | | |
| 1999 04 07 | 704 | 1.4− | 0.2− | 2002 12 09 | 699 | 0.6− | 0.3+ | 2003 04 04 | 704 | 0.2+ | 0.1+ | | |
| 1999 04 14 | 704 | 0.1− | 0.2+ | 2002 12 09 | 699 | 0.5+ | 0.3+ | 2003 04 04 | 704 | 0.4+ | 0.4+ | | |
| 1999 04 14 | 704 | 0.3+ | 0.3+ | 2002 12 10 | 704 | 0.0 | 0.1+ | 2003 04 04 | 704 | 0.2+ | 0.2− | | |
| 1999 04 14 | 704 | (2.1+ | 0.7+) | 2002 12 10 | 704 | 0.1− | 0.1+ | 2003 04 04 | 704 | 0.2+ | 0.2− | | |
| 1999 04 14 | 704 | (1.5+ | 2.4+) | 2002 12 10 | 704 | 0.2− | 0.5− | 2003 04 04 | 704 | 0.4+ | 0.1− | | |
| 1999 04 15 | 704 | 0.1+ | 0.2+ | 2002 12 10 | 704 | 0.4− | 0.7− | 2003 04 04 | 704 | 0.8+ | 0.3+ | | |
| 1999 04 15 | 704 | 0.2+ | 0.6+ | 2002 12 12 | 704 | 0.3− | 0.4+ | 2003 04 04 | 704 | 0.1− | 0.1+ | | |
| 1999 04 15 | 704 | 0.5+ | 0.8+ | 2002 12 12 | 704 | 0.2− | 0.5+ | 2003 04 04 | 704 | 0.4+ | 0.2+ | | |
| 1999 04 15 | 704 | 0.7+ | 0.6+ | 2002 12 12 | 704 | 0.2− | 0.7+ | 2003 04 04 | 704 | 0.2+ | 0.3+ | | |
| 1999 04 15 | 704 | 0.3− | 1.0+ | 2002 12 12 | 704 | 0.1− | 0.5+ | 2003 04 04 | 704 | 0.2+ | 0.3+ | | |
| 1999 04 17 | 704 | 1.2+ | 0.4− | 2002 12 28 | 704 | 0.2− | 0.5+ | 2003 04 23 | 704 | 0.4+ | 1.2+ | | |
| 1999 04 17 | 704 | (3.1+ | 0.2−) | 2002 12 28 | 704 | 0.3+ | 0.8+ | 2003 04 23 | 704 | 0.6+ | 1.2+ | | |
| 1999 04 17 | 704 | 0.6− | 0.1− | 2002 12 28 | 704 | 0.1− | 1.0+ | 2003 04 23 | 704 | (0.8− | 2.1+) | | |
| 1999 04 17 | 704 | 0.9+ | 0.2− | 2002 12 28 | 704 | 0.2− | 0.9+ | 2003 04 23 | 704 | 1.1+ | 0.6+ | | |
| 1999 04 17 | 704 | 0.6+ | 0.2− | 2002 12 28 | 704 | (0.1− | 1.7+) | 2003 04 23 | 704 | 1.4+ | 0.4+ | | |
| 1999 04 19 | I02 | 0.3+ | 0.1+ | 2003 01 11 | 704 | 0.1− | 0.2+ | 2003 05 05 | 704 | (1.2+ | 2.3+) | | |
| 1999 05 16 | 699 | 1.1+ | 0.0 | 2003 01 11 | 704 | 0.2− | 0.2− | 2003 05 05 | 704 | (0.0 | 2.1+) | | |
| 1999 05 16 | 699 | 1.1+ | 0.4+ | 2003 01 11 | 704 | 0.0 | 0.1− | 2003 05 05 | 704 | (0.3− | 2.3+) | | |
| 1999 05 16 | 699 | 1.8+ | 0.6− | 2003 01 11 | 704 | 0.0 | 0.1− | 2003 05 05 | 704 | 0.3+ | 1.4+ | | |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2003 01 11 | 704 | 0.3− | 0.3− | 2003 05 05 | 704 | 0.6− | 1.1+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2003 01 12 | 699 | 0.0 | 0.2+ | 2005 08 31 | 644 | 0.3+ | 0.8+ | | |
| 2001 09 12 | 704 | 0.5− | 0.9+ | 2003 01 12 | 699 | 0.7+ | 0.7+ | 2005 08 31 | 644 | 0.4+ | 0.6+ | | |
| 2001 09 18 | 699 | 0.4− | 0.0 | 2003 01 12 | 699 | 0.2+ | 0.5+ | 2005 08 31 | 644 | 0.3+ | 0.3+ | | |
| 2001 09 18 | 699 | 0.9− | 0.0 | 2003 01 12 | 699 | 0.2+ | 0.2+ | 2006 10 02 | 704 | 0.1− | 0.6+ | | |
| 2001 09 18 | 699 | (1.3− | 1.5−) | 2003 01 14 | 704 | 0.2+ | 0.3− | 2006 10 02 | 704 | 1.0− | 0.4− | | |
| 2001 09 18 | 699 | 0.5− | 0.9+ | 2003 01 14 | 704 | 0.3+ | 0.3+ | 2006 10 02 | 704 | 0.8+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.6− | 0.5+ | 2003 01 14 | 704 | 0.2+ | 0.5− | 2006 10 02 | 704 | 0.6− | 1.0+ | | |
| 2001 09 21 | 704 | 1.2− | 0.6+ | 2003 01 14 | 704 | 0.1− | 0.1− | 2006 10 02 | 703 | 0.7− | 0.4− | | |
| 2001 09 21 | 704 | 0.5− | 0.1+ | 2003 01 14 | 704 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.6− | 0.9− | | |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2003 01 21 | 704 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.8− | 0.1+ | 2003 01 21 | 704 | 0.3− | 0.1+ | 2006 10 23 | 703 | 0.2− | 1.4− | | |
| 2001 09 27 | 704 | (1.9+ | 0.1+) | 2003 01 21 | 704 | 0.7− | 0.3+ | 2006 10 23 | 703 | 0.2+ | 0.9− | | |
| 2001 09 27 | 704 | 0.7+ | 1.3+ | 2003 01 21 | 704 | 0.1− | 0.3− | 2006 10 23 | 703 | 0.5+ | 0.5− | | |
| 2001 09 27 | 704 | 0.8+ | 0.3+ | 2003 02 10 | 704 | 0.1− | 0.8− | 2006 10 23 | 703 | 0.4+ | 0.2− | | |
| 2001 09 27 | 704 | 0.9+ | 0.7+ | 2003 02 10 | 704 | 0.2+ | 0.1− | 2006 11 20 | 703 | 0.4− | 0.4− | | |
| 2001 10 17 | 644 | 1.1− | 0.5+ | 2003 02 10 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 703 | 0.4− | 0.6− | | |
| 2001 10 17 | 644 | 0.8− | 0.5+ | 2003 02 10 | 704 | 1.2+ | 1.2− | 2006 11 20 | 703 | 0.2− | 0.8− | | |
| 2001 10 17 | 644 | 0.9− | 0.4+ | 2003 02 25 | 704 | 0.1− | 0.8− | 2006 11 20 | 703 | 0.0 | 0.0 | | |
| 2001 10 20 | 704 | 0.7− | 0.2+ | 2003 02 25 | 704 | (0.2− | 2.5−) | | | | | | |
| 2001 10 20 | 704 | 0.4+ | 0.1+ | 2003 02 25 | 704 | 0.2− | 1.3− | | | | | | |

**(137120)∗ 1999 BJ$_8$**

Discovered 1999 Jan. 20 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.62386 | | (2000.0) | | −0.92870776 | +0.36685667 |
| $n$ | 0.37634443 | $\omega$ | 221.48696 | | −0.28530672 | −0.79998658 |
| $a$ | 1.8999655 | $\Omega$ | 339.83854 | | −0.23685855 | −0.47480276 |
| $e$ | 0.5488409 | $i$ | 9.01708 | | | |
| $P$ | 2.62 | $H$ | 18.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 704 | 0.4− | 0.7− | 1999 02 14 | 744 | 0.4− | 0.0 | 1999 02 18 | 595 | 0.4+ | 0.8+ | | |
| 1999 01 14 | 704 | 0.6− | 0.3+ | 1999 02 14 | 732 | 0.9− | 0.3− | 1999 02 18 | 595 | 0.4+ | 0.8+ | | |
| 1999 01 14 | 704 | 1.3+ | 0.6+ | 1999 02 14 | 732 | 0.9− | 0.1− | 1999 02 18 | 595 | 0.4+ | 0.6+ | | |
| 1999 01 14 | 704 | 0.3− | 0.2+ | 1999 02 14 | 732 | 0.9− | 0.1− | 1999 02 18 | 046 | 0.0 | 0.1− | | |
| 1999 01 14 | 704 | 0.2− | 0.4+ | 1999 02 14 | 732 | 0.8− | 0.2− | 1999 02 18 | 046 | 0.4+ | 0.0 | | |
| 1999 01 20 | 703 | 0.1+ | 0.2+ | 1999 02 14 | 732 | 1.1− | 0.2− | 1999 02 18 | 046 | 0.1− | 0.2− | | |
| 1999 01 20 | 703 | 0.2+ | 0.1+ | 1999 02 14 | 732 | 1.2− | 0.2− | 1999 02 18 | 046 | 0.5+ | 0.0 | | |
| 1999 01 20 | 703 | 0.0 | 0.0 | 1999 02 14 | 758 | 0.3+ | 0.1− | 1999 02 19 | 104 | 0.0 | 0.2+ | | |
| 1999 01 23 | 703 | 0.3− | 0.2− | 1999 02 14 | 758 | 0.3+ | 0.3− | 1999 02 19 | 104 | 0.1+ | 0.2+ | | |
| 1999 01 23 | 703 | 0.1+ | 0.1− | 1999 02 14 | 758 | 0.3+ | 0.2− | 1999 02 19 | 104 | 0.5+ | 0.4+ | | |
| 1999 02 11 | 704 | 0.6+ | 0.5− | 1999 02 14 | 684 | 0.4− | 0.1+ | 1999 02 19 | 104 | 1.3+ | 0.2− | | |
| 1999 02 11 | 704 | 0.7+ | 0.3− | 1999 02 14 | 684 | 0.5− | 0.2+ | 1999 02 19 | 104 | 0.7+ | 0.1+ | | |
| 1999 02 11 | 704 | 0.7+ | 0.6+ | 1999 02 14 | 684 | 0.3− | 0.1+ | 1999 02 19 | 104 | 0.2− | 0.8+ | | |
| 1999 02 11 | 704 | 0.0 | 0.7+ | 1999 02 14 | 684 | 0.4− | 0.1+ | 1999 02 19 | 104 | 0.1− | 0.2+ | | |
| 1999 02 11 | 704 | 0.3+ | 1.3+ | 1999 02 14 | 658 | 0.2− | 0.7+ | 1999 02 19 | 104 | 0.9+ | 0.2− | | |
| 1999 02 11 | 557 | 0.2− | 0.1− | 1999 02 14 | 658 | 0.2− | 0.4+ | 1999 02 19 | 104 | 0.4+ | 0.1+ | | |
| 1999 02 11 | 557 | 0.2− | 0.2− | 1999 02 14 | 360 | 0.0 | 0.2+ | 1999 02 19 | 402 | 0.1− | 0.1+ | | |
| 1999 02 11 | 557 | 0.3− | 0.2− | 1999 02 14 | 360 | 0.0 | 0.2+ | 1999 02 19 | 402 | 0.2− | 0.1+ | | |
| 1999 02 11 | 557 | 0.4− | 0.1− | 1999 02 14 | 360 | 0.0 | 0.2+ | 1999 02 19 | 402 | 0.1− | 0.1+ | | |
| 1999 02 12 | 758 | 0.1+ | 0.0 | 1999 02 14 | 587 | 0.3+ | 0.1− | 1999 02 19 | 104 | 0.1+ | 0.1− | | |
| 1999 02 12 | 758 | 0.0 | 0.0 | 1999 02 14 | 587 | 0.1+ | 0.3+ | 1999 02 19 | 104 | 0.3+ | 0.1+ | | |
| 1999 02 12 | 758 | 0.0 | 0.0 | 1999 02 14 | 587 | 0.2+ | 0.1+ | 1999 02 19 | 104 | 0.5+ | 0.3+ | | |
| 1999 02 12 | 758 | 0.3+ | 0.0 | 1999 02 14 | 758 | 0.2+ | 0.3− | 1999 02 19 | 104 | 0.3+ | 0.3+ | | |
| 1999 02 12 | 758 | 0.1+ | 0.0 | 1999 02 14 | 758 | 0.1+ | 0.2− | 1999 02 19 | 104 | 0.2+ | 0.3+ | | |
| 1999 02 12 | 758 | 0.1+ | 0.0 | 1999 02 15 | 611 | 0.3− | 1.2− | 1999 02 19 | 104 | 0.7− | 0.8+ | | |
| 1999 02 12 | 758 | 0.3+ | 0.1− | 1999 02 15 | 758 | 0.3+ | 0.3− | 1999 02 19 | 104 | 0.2+ | 0.4− | | |
| 1999 02 12 | 758 | 0.3+ | 0.0 | 1999 02 15 | 611 | 0.0 | 0.5+ | 1999 02 19 | 620 | 0.4− | 0.1− | | |
| 1999 02 12 | 758 | 0.2+ | 0.0 | 1999 02 15 | 758 | 0.3+ | 0.3− | 1999 02 19 | 620 | 0.5− | 0.1+ | | |
| 1999 02 12 | 758 | 0.3+ | 0.4− | 1999 02 15 | 611 | 0.2− | 0.1− | 1999 02 19 | 620 | 0.5+ | 0.4+ | | |
| 1999 02 12 | 713 | 0.3+ | 0.3+ | 1999 02 15 | 758 | 0.3+ | 0.3− | 1999 02 19 | 620 | 0.4− | 0.1+ | | |
| 1999 02 12 | 713 | 0.5+ | 0.1+ | 1999 02 15 | 758 | 0.2+ | 0.3− | 1999 02 19 | 620 | 0.2− | 0.3+ | | |
| 1999 02 12 | 713 | 0.1+ | 0.4+ | 1999 02 15 | 611 | 0.4− | 0.1+ | 1999 02 19 | 620 | 0.5− | 0.3+ | | |
| 1999 02 12 | 758 | 0.6+ | 0.7+ | 1999 02 15 | 611 | 0.1+ | 0.6− | 1999 02 19 | 620 | 0.3− | 0.6+ | | |
| 1999 02 12 | 758 | 0.7+ | 0.8+ | 1999 02 15 | 611 | 0.2− | 0.2− | 1999 02 19 | 620 | 0.5− | 0.7+ | | |
| 1999 02 12 | 758 | 0.6+ | 0.9+ | 1999 02 15 | 750 | 0.3− | 0.3− | 1999 02 20 | 133 | 0.0 | 0.3− | | |
| 1999 02 12 | 713 | 0.3+ | 0.2+ | 1999 02 15 | 684 | 0.2+ | 0.5− | 1999 02 20 | 133 | 0.1− | 0.1− | | |
| 1999 02 12 | 758 | 0.9+ | 0.8+ | 1999 02 15 | 750 | 0.2− | 0.4− | 1999 02 20 | 133 | 0.1+ | 0.0 | | |
| 1999 02 12 | 704 | 1.8+ | 0.7− | 1999 02 15 | 684 | 0.2+ | 0.7− | 1999 02 20 | 133 | 0.2+ | 0.2+ | | |
| 1999 02 12 | 713 | 0.0 | 0.5+ | 1999 02 15 | 732 | 0.1− | 0.6− | 1999 02 20 | 133 | 0.0 | 0.1− | | |
| 1999 02 12 | 704 | 0.8− | 0.6− | 1999 02 15 | 750 | 0.3+ | 1.1+ | 1999 02 20 | 133 | 0.6− | 0.1+ | | |
| 1999 02 12 | 713 | 0.1+ | 0.5+ | 1999 02 15 | 732 | 0.9− | 0.6− | 1999 02 20 | 133 | 0.3− | 0.5+ | | |
| 1999 02 12 | 704 | 0.2+ | 0.9− | 1999 02 15 | 684 | 0.4+ | 0.6− | 1999 02 20 | 619 | 0.4− | 0.4− | | |
| 1999 02 12 | 704 | 0.0 | 0.8− | 1999 02 15 | 732 | 0.5+ | 0.8− | 1999 02 20 | 619 | 0.7− | 0.5− | | |
| 1999 02 12 | 704 | 0.2+ | 0.6− | 1999 02 15 | 750 | 0.6− | 0.7+ | 1999 02 20 | 619 | 0.4+ | 0.4+ | | |
| 1999 02 12 | 734 | 0.3− | 0.1+ | 1999 02 15 | 684 | 0.3+ | 0.6− | 1999 02 20 | 133 | 0.2− | 0.3− | | |
| 1999 02 12 | 734 | 0.4− | 0.1+ | 1999 02 15 | 684 | 0.2+ | 0.5− | 1999 02 20 | 133 | 0.0 | 0.0 | | |
| 1999 02 12 | 734 | 0.1− | 0.2+ | 1999 02 15 | 732 | 0.1− | 0.6− | 1999 02 20 | 133 | 0.1− | 0.2+ | | |
| 1999 02 12 | 355 | 0.3− | 0.1− | 1999 02 15 | 750 | 1.4− | 0.7+ | 1999 02 20 | 133 | 0.4+ | 0.3+ | | |
| 1999 02 12 | 355 | 0.3− | 0.1− | 1999 02 15 | 732 | 0.6− | 0.6− | 1999 02 20 | 133 | 0.3− | 0.6− | | |
| 1999 02 12 | 355 | 0.1+ | 0.0 | 1999 02 15 | 540 | 0.3+ | 0.3+ | 1999 02 20 | 133 | 0.3+ | 0.4+ | | |
| 1999 02 12 | 635 | 0.9+ | 0.7+ | 1999 02 15 | 540 | 0.4+ | 0.3+ | 1999 02 20 | 133 | 0.4+ | 0.3+ | | |
| 1999 02 12 | 151 | 0.2− | 0.4+ | 1999 02 15 | 540 | 0.3+ | 0.3+ | 1999 02 20 | 133 | 0.1− | 0.1− | | |
| 1999 02 12 | 151 | 0.3− | 0.2− | 1999 02 15 | 540 | 0.3+ | 0.3+ | 1999 02 20 | 133 | 0.3− | 0.5− | | |
| 1999 02 12 | 151 | 0.4− | 0.0 | 1999 02 15 | 046 | 0.2+ | 0.3− | 1999 02 21 | 726 | 0.9− | 0.9− | | |
| 1999 02 12 | 635 | 0.2+ | 0.2+ | 1999 02 15 | 046 | 0.1+ | 0.4− | 1999 02 21 | 726 | 0.4− | 0.9− | | |
| 1999 02 12 | 151 | 0.1− | 0.1− | 1999 02 15 | 046 | 0.0 | 0.3− | 1999 02 21 | 726 | 0.4− | 0.7− | | |
| 1999 02 12 | 635 | 0.9+ | 0.1− | 1999 02 16 | 732 | 0.3− | 0.4− | 1999 02 21 | 619 | 0.3− | 1.3+ | | |
| 1999 02 12 | 635 | 0.2+ | 0.5+ | 1999 02 16 | 732 | 0.5− | 0.3− | 1999 02 21 | 619 | 0.4− | 0.4+ | | |
| 1999 02 12 | 631 | 0.1+ | 0.1+ | 1999 02 16 | 732 | 0.0 | 0.3− | 1999 02 21 | 619 | 0.5+ | 0.3+ | | |
| 1999 02 12 | 631 | 0.1− | 0.3+ | 1999 02 16 | 732 | 0.4− | 0.4− | 1999 02 21 | 619 | 0.2+ | 0.9− | | |
| 1999 02 12 | 631 | 0.7+ | 0.5− | 1999 02 16 | 732 | 0.4− | 0.1− | 1999 05 15 | 426 | 0.2− | 0.0 | | |
| 1999 02 12 | 631 | 0.3− | 0.3+ | 1999 02 16 | 732 | 0.2− | 0.3− | 1999 05 15 | 426 | 0.3− | 0.3− | | |
| 1999 02 13 | 611 | 0.4+ | 0.3+ | 1999 02 16 | 732 | 0.1− | 0.0 | 1999 05 15 | 426 | 0.7− | 0.1− | | |
| 1999 02 13 | 611 | 0.4+ | 0.3+ | 1999 02 16 | 719 | 0.0 | 0.1− | 1999 06 23 | 426 | 0.7− | 0.4− | | |
| 1999 02 13 | 611 | 0.6+ | 0.4+ | 1999 02 16 | 719 | 0.6− | 0.2+ | 1999 06 23 | 426 | 0.7− | 0.3− | | |
| 1999 02 13 | 750 | 0.1− | 0.3+ | 1999 02 16 | 402 | 0.6+ | 0.2+ | 1999 06 23 | 426 | 0.5− | 0.4− | | |
| 1999 02 13 | 750 | 0.5+ | 0.0 | 1999 02 16 | 402 | 0.9+ | 0.2+ | 1999 07 02 | 413 | 0.5− | 0.4− | | |
| 1999 02 13 | 750 | 0.6+ | 0.0 | 1999 02 16 | 402 | 0.8+ | 0.4+ | 1999 07 02 | 413 | 0.7− | 0.3− | | |
| 1999 02 13 | 750 | 0.2− | 0.1+ | 1999 02 16 | 046 | 0.0 | 0.0 | 1999 07 19 | 422 | 0.4− | 0.2+ | | |
| 1999 02 13 | 750 | 0.3+ | 0.2− | 1999 02 16 | 046 | 0.2− | 0.1+ | 1999 08 01 | 413 | 0.0 | 0.0 | | |
| 1999 02 13 | 750 | 0.4+ | 0.1+ | 1999 02 16 | 046 | 0.1+ | 0.0 | 1999 08 01 | 413 | 0.0 | 0.1− | | |
| 1999 02 13 | 670 | 0.3− | 0.1+ | 1999 02 16 | 046 | 0.0 | 0.1+ | 1999 08 02 | 413 | 0.5− | 0.0 | | |
| 1999 02 13 | 670 | 0.6− | 0.3+ | 1999 02 17 | 726 | 0.1− | 0.1− | 1999 08 02 | 413 | 0.5− | 0.2+ | | |
| 1999 02 13 | 670 | 0.3− | 0.1+ | 1999 02 17 | 726 | 0.3− | 0.0 | 1999 08 03 | 413 | 0.5− | 0.2+ | | |
| 1999 02 13 | 670 | 0.3− | 0.0 | 1999 02 17 | 726 | 0.3− | 0.1+ | 1999 08 03 | 413 | 0.5− | 0.0 | | |
| 1999 02 13 | 355 | 0.4− | 0.1− | 1999 02 17 | 726 | 1.6− | 0.3− | 1999 08 04 | 711 | 0.1− | 0.2− | | |
| 1999 02 13 | 355 | 0.2− | 0.2− | 1999 02 17 | 726 | 0.1− | 0.3+ | 1999 08 04 | 711 | (3.4+ | 0.9−) | | |
| 1999 02 13 | 355 | 0.1− | 0.2− | 1999 02 17 | 726 | 0.2− | 0.1+ | 1999 08 06 | 711 | 1.8+ | 0.4− | | |
| 1999 02 13 | 871 | 0.2− | 0.5− | 1999 02 17 | 726 | 0.1− | 0.0 | 1999 08 06 | 711 | (2.1+ | 1.2+) | | |
| 1999 02 13 | 871 | 1.3+ | 0.3+ | 1999 02 17 | 360 | 0.3+ | 0.0 | 1999 08 20 | 413 | 0.4− | 0.2+ | | |
| 1999 02 13 | 151 | 0.8− | 0.4− | 1999 02 17 | 360 | 0.4+ | 0.0 | 1999 08 20 | 413 | 0.4− | 0.1+ | | |
| 1999 02 13 | 151 | 0.8− | 0.3− | 1999 02 17 | 360 | 0.3+ | 0.0 | 1999 08 20 | 413 | 0.5− | 0.1− | | |
| 1999 02 13 | 151 | 0.8− | 0.4− | 1999 02 17 | 046 | 0.0 | 0.2− | 2002 09 30 | 696 | (1.6+ | 1.2+) | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 151 | 0.6− | 0.3− | 1999 02 17 | 046 | 0.2+ | 0.3− | 2002 09 30 | 696 | 1.1+ | 0.9+ |
| 1999 02 13 | 151 | 0.9− | 0.3− | 1999 02 17 | 046 | 0.4− | 0.2− | 2005 09 25 | 291 | 1.0+ | 0.4+ |
| 1999 02 14 | 758 | 0.3+ | 0.2+ | 1999 02 17 | 046 | 0.0 | 0.1− | 2005 09 25 | 291 | 0.8+ | 0.7+ |
| 1999 02 14 | 739 | 0.7− | 0.8− | 1999 02 18 | 726 | 0.4− | 0.3+ | 2006 09 27 | 291 | 0.4− | 0.2+ |
| 1999 02 14 | 758 | 0.5+ | 0.0 | 1999 02 18 | 726 | 0.0 | 0.1− | 2006 09 27 | 291 | 0.1+ | 0.2− |
| 1999 02 14 | 739 | 0.8− | 0.4− | 1999 02 18 | 595 | 0.2+ | 0.2− | 2006 11 10 | 291 | 0.1− | 0.0 |
| 1999 02 14 | 739 | 0.0 | 0.4− | 1999 02 18 | 595 | 0.4+ | 0.1− | 2006 11 10 | 291 | 1.1− | 1.3+ |
| 1999 02 14 | 758 | 0.2+ | 0.1+ | 1999 02 18 | 595 | 0.0 | 0.1− | 2006 11 10 | 291 | 1.2+ | 0.2− |
| 1999 02 14 | 739 | 0.2− | 0.1− | 1999 02 18 | 595 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.1− | 1.0+ |
| 1999 02 14 | 739 | 0.2− | 0.6− | 1999 02 18 | 046 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.6+ | 0.2− |
| 1999 02 14 | 739 | 1.5− | 0.5− | 1999 02 18 | 046 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.5+ | 0.1+ |
| 1999 02 14 | 744 | 0.4− | 0.1− | 1999 02 18 | 046 | 0.1+ | 0.1− | | | | |
| 1999 02 14 | 744 | 0.4− | 0.4− | 1999 02 18 | 046 | 0.1− | 0.1− | | | | |

**(137121)∗ 1999 BJ$_{11}$ = 2004 FS$_{65}$**

Discovered 1999 Jan. 20 by the OCA-DLR Asteroid Survey at Caussols.

Id. G. V. Williams (*MPO* 60523)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 224.06530 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21320471 | $\omega$ | 32.40990 | | | −0.95253081 | | −0.30103195 | |
| $a$ | 2.7750545 | $\Omega$ | 130.00207 | | | +0.26514606 | | −0.89363711 | |
| $e$ | 0.1264400 | $i$ | 3.40077 | | | +0.14960822 | | −0.33285504 | |
| $P$ | 4.62 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 26 | 691 | 0.4− | 0.6− | 2004 04 16 | 704 | 0.4+ | 0.0 | 2005 07 05 | 691 | 1.0+ | 0.6+ |
| 1995 06 26 | 691 | 0.6− | 0.5− | 2004 04 16 | 704 | 0.5− | 0.7+ | 2005 07 05 | 691 | 0.2+ | 0.2+ |
| 1995 06 26 | 691 | 0.5− | 0.2− | 2004 04 16 | 704 | 1.0+ | 0.6+ | 2005 07 09 | 691 | 0.2+ | 0.2− |
| 1999 01 20 | 910 | 0.4+ | 0.1− | 2004 04 16 | 704 | (1.7+ | 0.0 ) | 2005 07 09 | 691 | 0.0 | 0.1+ |
| 1999 01 20 | 910 | 0.5+ | 0.4− | 2004 04 19 | 704 | 0.2+ | 0.5+ | 2005 07 09 | 691 | 0.1+ | 0.1− |
| 1999 01 20 | 910 | 0.3+ | 0.2+ | 2004 04 19 | 704 | (1.5− | 2.1+) | 2005 07 30 | E12 | 0.0 | 0.4+ |
| 1999 01 23 | 910 | 0.0 | 0.3− | 2004 04 19 | 704 | 0.2+ | 0.2− | 2005 07 30 | E12 | 0.6− | 0.6+ |
| 1999 01 23 | 910 | 0.2+ | 0.2− | 2004 04 19 | 704 | 0.4+ | 0.9+ | 2005 07 30 | E12 | 0.1+ | 0.6+ |
| 1999 01 23 | 910 | 0.3+ | 0.2− | 2004 04 19 | 704 | 0.7+ | 0.2+ | 2005 07 30 | E12 | 0.7− | 0.4− |
| 1999 01 26 | 910 | 1.0+ | 0.2− | 2004 04 22 | 704 | 0.4− | 0.7− | 2006 09 17 | 691 | 0.2− | 0.0 |
| 1999 01 26 | 910 | 0.7+ | 0.1− | 2004 04 22 | 704 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 1999 01 26 | 910 | 0.7+ | 0.1+ | 2004 04 22 | 704 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.9+ | 0.4+ | 2004 04 22 | 704 | 1.0− | 0.8+ | 2006 10 01 | 691 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 1.0+ | 2004 04 22 | 704 | 0.6− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.8+ | 0.6+ | 2005 06 15 | G96 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.4− | 0.1+ |
| 2004 03 19 | 704 | (0.1+ | 2.6+) | 2005 06 15 | G96 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2004 03 19 | 704 | 0.3+ | 0.8+ | 2005 06 15 | G96 | 0.2+ | 0.4− | 2006 10 22 | G96 | 0.4+ | 0.1+ |
| 2004 03 19 | 704 | 0.1− | 1.3+ | 2005 06 15 | G96 | 0.1− | 0.5− | 2006 10 22 | G96 | 0.5− | 0.2+ |
| 2004 03 19 | 704 | 0.0 | 1.1+ | 2005 07 03 | G96 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2004 03 22 | 704 | 0.1− | 0.4+ | 2005 07 03 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.6− |
| 2004 03 22 | 704 | 0.9+ | 0.5+ | 2005 07 03 | G96 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2004 03 22 | 704 | 0.1− | 1.1+ | 2005 07 03 | G96 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.5− | 0.0 |
| 2004 04 16 | 704 | 0.2+ | 0.5+ | 2005 07 05 | 691 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.2− |

**(137122)∗ 1999 BX$_{12}$**

Discovered 1999 Jan. 24 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 1.01084 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24426469 | $\omega$ | 131.69281 | | | +0.38448567 | | −0.91782995 | |
| $a$ | 2.5345192 | $\Omega$ | 295.44395 | | | +0.81113889 | | +0.38698969 | |
| $e$ | 0.2633660 | $i$ | 6.28064 | | | +0.44070906 | | +0.08847125 | |
| $P$ | 4.03 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 26 | 691 | 0.4− | 0.6− | 2003 01 25 | 699 | 0.3+ | 0.3+ | 2003 02 08 | 704 | 0.0 | 0.4+ |
| 1998 11 26 | 691 | 0.6− | 0.7− | 2003 01 25 | 699 | 0.3− | 0.4+ | 2003 02 17 | 608 | (0.1− | 1.8+) |
| 1998 11 26 | 691 | 0.5− | 0.7− | 2003 01 26 | 608 | (1.0− | 1.9+) | 2003 02 17 | 608 | (0.5+ | 2.5+) |
| 1999 01 14 | 699 | 0.1+ | 0.1− | 2003 01 26 | 608 | (0.9− | 1.9+) | 2003 02 17 | 608 | (0.2− | 2.2+) |
| 1999 01 14 | 699 | 0.2− | 1.1− | 2003 01 26 | 608 | (0.9− | 1.7+) | 2005 06 17 | G96 | 0.2− | 0.7+ |
| 1999 01 14 | 699 | 0.1− | 0.2+ | 2003 01 27 | 699 | 0.0 | 0.4− | 2005 06 17 | G96 | 0.3− | 0.5+ |
| 1999 01 24 | 120 | 0.5− | 0.1+ | 2003 01 27 | 699 | 0.2− | 0.0 | 2005 06 17 | G96 | 0.3− | 0.6+ |
| 1999 01 24 | 120 | (2.9− | 0.3−) | 2003 01 27 | 704 | 0.2− | 0.5− | 2005 06 17 | G96 | 0.4− | 0.9+ |
| 1999 01 24 | 120 | 0.2+ | 0.6+ | 2003 01 27 | 704 | 0.2− | 0.2− | 2005 07 15 | G96 | 0.2− | 0.5+ |
| 1999 01 25 | 120 | 0.6+ | 1.0− | 2003 01 27 | 704 | 0.8− | 0.2− | 2005 07 15 | G96 | 0.0 | 0.3+ |
| 1999 01 27 | 120 | 1.0− | 1.1− | 2003 01 27 | 704 | 0.4− | 1.1− | 2005 07 15 | G96 | 0.1− | 0.2+ |
| 1999 01 27 | 120 | 0.2+ | 0.4+ | 2003 01 27 | 699 | 0.1− | 0.1+ | 2005 07 15 | G96 | 0.2− | 0.3+ |
| 1999 02 18 | 120 | 0.3+ | 0.5− | 2003 01 27 | 704 | 0.4− | 1.0− | 2006 10 20 | 703 | 0.5− | 1.4− |
| 1999 02 18 | 120 | 0.9+ | 0.1− | 2003 01 27 | 699 | 0.1− | 0.1− | 2006 10 20 | 703 | 0.7− | 0.6+ |
| 2001 07 14 | 644 | 0.4+ | 0.2− | 2003 01 31 | 704 | 0.2− | 0.4+ | 2006 10 20 | 703 | 0.5+ | 0.4− |
| 2001 07 14 | 644 | 0.1− | 0.5+ | 2003 01 31 | 704 | 0.6− | 0.1+ | 2006 10 20 | 703 | (3.6− | 0.4+) |
| 2001 07 14 | 644 | 0.0 | 0.1+ | 2003 01 31 | 704 | 0.1+ | 0.1− | 2006 11 02 | G96 | 0.2− | 0.8− |
| 2002 12 05 | 704 | 0.7+ | 0.3+ | 2003 01 31 | 704 | 0.1+ | 0.4+ | 2006 11 02 | G96 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2003 01 31 | 704 | 1.1− | 0.5+ | 2006 11 02 | G96 | 0.6− | 0.5− |
| 2002 12 05 | 704 | 0.7+ | 0.9+ | 2003 01 31 | 704 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.4− | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2003 01 31 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | (0.6+ | 1.9+) |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2003 01 31 | 704 | 0.4− | 0.3+ | 2006 11 16 | 704 | 0.5− | 0.3+ |
| 2002 12 19 | 644 | 0.1− | 1.0+ | 2003 01 31 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.7+ |
| 2002 12 19 | 644 | 0.1− | 0.7+ | 2003 01 31 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.8+ |
| 2002 12 19 | 644 | 0.2+ | 0.2+ | 2003 01 31 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.5+ | 0.5+ |
| 2002 12 28 | 699 | 0.2− | 0.2+ | 2003 01 31 | 704 | 0.2− | 0.8+ | 2006 11 19 | 704 | 1.1+ | 0.6+ |
| 2002 12 28 | 699 | 0.3− | 0.5− | 2003 01 31 | 704 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1− | 1.2+ |
| 2002 12 28 | 699 | 1.4+ | 0.6+ | 2003 01 31 | 704 | 0.0 | 0.8+ | 2006 11 19 | 704 | 1.6+ | 0.7+ |
| 2002 12 28 | 699 | 0.9− | 0.3+ | 2003 01 31 | 704 | 0.6− | 0.6+ | 2006 11 19 | 704 | 1.4+ | 1.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.4+ | 2003 02 03 | 704 | 1.0+ | 0.7+ | 2006 11 19 | 704 | 0.9+ | 0.7+ |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2003 02 03 | 704 | 0.8+ | 0.5+ | 2006 11 22 | 704 | 0.3+ | 0.6− |
| 2002 12 31 | 704 | 0.2− | 0.8+ | 2003 02 03 | 704 | 0.0 | 0.7+ | 2006 11 22 | 704 | 1.6+ | 0.1+ |
| 2003 01 04 | 704 | 0.3+ | 0.6− | 2003 02 03 | 704 | 1.1+ | 0.8+ | 2006 11 22 | 704 | 1.1+ | 1.0+ |
| 2003 01 04 | 704 | 0.3+ | 0.8− | 2003 02 03 | 704 | 0.4+ | 0.1+ | 2006 11 22 | 704 | 1.2+ | 0.6+ |
| 2003 01 04 | 704 | 0.4+ | 0.1− | 2003 02 04 | 644 | 0.5+ | 0.2+ | 2006 11 24 | 644 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.2+ | 0.2− | 2003 02 04 | 644 | 0.0 | 0.4+ | 2006 11 24 | 644 | 0.2− | 0.0 |
| 2003 01 04 | 704 | 0.1+ | 0.3− | 2003 02 04 | 644 | 0.5+ | 0.0 | 2006 11 24 | 644 | 0.2− | 0.2+ |
| 2003 01 08 | 704 | 1.0− | 0.6+ | 2003 02 06 | 608 | 0.4− | 0.9− | 2006 11 27 | 703 | 1.5− | 0.7− |
| 2003 01 08 | 704 | 1.1+ | 0.2+ | 2003 02 06 | 608 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2003 01 08 | 704 | 0.6− | 0.1− | 2003 02 06 | 608 | 0.5+ | 0.3+ | 2006 11 27 | 703 | 0.7− | 1.0+ |
| 2003 01 08 | 704 | 1.0− | 0.6− | 2003 02 08 | 704 | 0.6+ | 0.1+ | 2006 11 27 | 703 | 2.3− | 0.8− |
| 2003 01 25 | 699 | 0.2+ | 0.1− | 2003 02 08 | 704 | 0.2+ | 0.1+ | | | | |
| 2003 01 25 | 699 | 0.4+ | 0.0 | 2003 02 08 | 704 | 0.0 | 0.0 | | | | |

**(137123)∗ 1999 BX$_{21}$ = 2003 AB$_{10}$**

Discovered 1999 Jan. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 39996)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 340.32258 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23865933 | $\omega$ | 305.04272 | | | +0.51705584 | | −0.83020415 | |
| $a$ | 2.5740507 | $\Omega$ | 112.50855 | | | +0.84028022 | | +0.44595292 | |
| $e$ | 0.2144342 | $i$ | 13.03477 | | | +0.16304114 | | +0.33449524 | |
| $P$ | 4.13 | $H$ | 14.6 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.2− | 0.0 | 2002 12 21 | 608 | 0.4− | 0.6+ | 2004 04 23 | 703 | 0.6− | 1.1+ |
| 1994 12 01 | 691 | 0.0 | 0.1+ | 2002 12 21 | 608 | 0.2− | 0.5+ | 2004 04 23 | 703 | 0.1− | 1.0+ |
| 1994 12 01 | 691 | 0.5− | 0.0 | 2003 01 01 | 704 | 0.1+ | 0.6+ | 2004 04 23 | 703 | 0.6− | 0.8+ |
| 1998 12 15 | 704 | 0.5+ | 1.4− | 2003 01 01 | 704 | 0.1+ | 0.7− | 2004 04 23 | 703 | 1.0+ | 0.4+ |
| 1998 12 15 | 704 | 0.3+ | 0.1− | 2003 01 01 | 704 | 0.0 | 1.2+ | 2004 04 24 | 704 | 0.1− | 0.1+ |
| 1998 12 15 | 704 | 0.2− | 1.0− | 2003 01 01 | 704 | 0.4− | 0.3− | 2004 04 24 | 704 | 0.8+ | 0.2− |
| 1998 12 15 | 704 | 0.2− | 0.1+ | 2003 01 01 | 704 | 0.6− | 0.6− | 2004 04 24 | 704 | 0.4− | 1.2+ |
| 1998 12 15 | 704 | (3.0+ | 2.2−) | 2003 01 05 | 704 | 0.3+ | 0.0 | 2004 04 24 | 704 | 0.1− | 0.7+ |
| 1998 12 22 | 704 | 1.3+ | 0.1− | 2003 01 05 | 704 | 0.0 | 0.2− | 2004 04 25 | 699 | 0.9+ | 1.0− |
| 1998 12 22 | 704 | 1.1+ | 0.2− | 2003 01 05 | 704 | 0.2− | 0.2− | 2004 04 25 | 699 | 0.2− | 0.2− |
| 1998 12 22 | 704 | 1.3+ | 0.6− | 2003 01 05 | 704 | 0.1+ | 0.1− | 2004 04 25 | 699 | 0.1− | 0.4− |
| 1998 12 22 | 704 | 1.9+ | 0.2+ | 2003 01 05 | 704 | 0.2+ | 0.1− | 2004 04 25 | 699 | 0.6− | 0.9+ |
| 1999 01 18 | 704 | (1.5+ | 2.2−) | 2003 01 08 | 699 | 0.1− | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.2− |
| 1999 01 18 | 704 | 0.5− | 0.9− | 2003 01 08 | 699 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.2− |
| 1999 01 18 | 704 | 1.0+ | 0.0 | 2003 01 08 | 699 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.0 | 0.2− |
| 1999 01 18 | 704 | 0.5− | 0.6− | 2003 01 08 | 699 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 704 | 0.4− | 1.3− | 2003 01 18 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.4− | 0.1+ |
| 1999 01 20 | 704 | 0.2+ | 1.5− | 2003 01 18 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.2− | 0.0 |
| 1999 01 20 | 704 | 0.0 | 1.5− | 2003 01 18 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.7− | 0.1+ |
| 1999 01 20 | 704 | 0.9− | 1.9− | 2003 01 25 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.3− | 0.6+ |
| 2002 10 31 | 704 | (1.7+ | 1.1+) | 2003 01 25 | 699 | 0.5+ | 0.2+ | 2006 09 30 | 704 | 0.4− | 0.4− |
| 2002 10 31 | 704 | 0.9+ | 0.8+ | 2003 01 25 | 699 | (2.8+ | 1.3+) | 2006 10 17 | 703 | 0.4+ | 0.6− |
| 2002 10 31 | 704 | 0.5+ | 0.1+ | 2003 01 25 | 699 | 1.1+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2002 10 31 | 704 | 0.8+ | 0.2+ | 2003 01 27 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.9− | 0.4− | 2003 01 27 | 704 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2002 11 30 | 704 | 0.5− | 0.2− | 2003 01 27 | 704 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.7+ |
| 2002 11 30 | 704 | 0.5− | 0.0 | 2003 01 27 | 704 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2002 11 30 | 704 | 0.5− | 0.3− | 2003 01 27 | 704 | 0.2− | 0.2− | 2006 10 28 | 703 | 0.5+ | 0.5+ |
| 2002 11 30 | 704 | 0.2− | 0.5− | 2003 01 27 | 644 | 0.1+ | 1.5+ | 2006 10 28 | 703 | 0.1− | 0.6+ |
| 2002 11 30 | 704 | 0.3− | 0.4− | 2003 01 27 | 644 | 0.1− | 1.4+ | 2006 11 10 | 704 | 0.2+ | 0.5+ |
| 2002 12 14 | 704 | 0.5− | 0.4+ | 2003 01 27 | 644 | 0.1− | 1.4+ | 2006 11 10 | 704 | 0.5− | 0.1− |
| 2002 12 14 | 704 | 0.4− | 0.6+ | 2004 03 15 | 704 | (1.6+ | 0.8+) | 2006 11 10 | 704 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 0.4− | 0.5+ | 2004 03 15 | 704 | 1.1+ | 0.2− | 2006 11 10 | 704 | 0.3+ | 1.1− |
| 2002 12 14 | 704 | 0.3− | 1.1+ | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2006 11 10 | 704 | 0.6+ | 0.7− |
| 2002 12 14 | 704 | 0.4− | 0.8+ | 2004 03 15 | 704 | 0.3− | 0.5− | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2002 12 14 | 608 | 0.2− | 0.0 | 2004 03 15 | 704 | 1.2+ | 1.2+ | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 2002 12 14 | 608 | 0.2− | 0.0 | 2004 04 12 | 703 | 0.4+ | 1.4+ | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2002 12 14 | 608 | 0.4− | 0.1+ | 2004 04 12 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 1.6+ |
| 2002 12 16 | 608 | 0.0 | 0.6− | 2004 04 12 | 703 | 0.1+ | 0.7+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 12 16 | 608 | 0.1+ | 0.5− | 2004 04 12 | 703 | 0.2+ | 1.0+ | 2006 11 22 | 704 | 0.2− | 1.1+ |
| 2002 12 16 | 608 | 0.0 | 0.6− | 2004 04 15 | 704 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.8+ |
| 2002 12 16 | 608 | 0.0 | 0.6− | 2004 04 15 | 704 | 0.3+ | 0.5+ | 2006 11 22 | 704 | 0.5− | 0.7+ |
| 2002 12 16 | 608 | 0.2+ | 0.6− | 2004 04 15 | 704 | 0.4− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 12 16 | 608 | (0.0 | 2.1+) | 2004 04 15 | 704 | 0.1+ | 0.1+ | | | | |
| 2002 12 21 | 608 | 0.5− | 0.6+ | 2004 04 15 | 704 | 0.4− | 1.2− | | | | |

**(137124)∗ 1999 BH$_{30}$ = 2002 XR$_{110}$**

Discovered 1999 Jan. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 42904)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.76474 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21995804 | $\omega$ | 104.20923 | | +0.20580343 | | −0.97847995 |
| $a$ | 2.7179585 | $\Omega$ | 333.89992 | | +0.88427913 | | +0.19246762 |
| $e$ | 0.0133964 | $i$ | 1.94052 | | +0.41916031 | | +0.07438547 |
| $P$ | 4.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 691 | 0.5− | 0.1+ | 2004 03 18 | 704 | 1.1+ | 0.3+ | 2006 09 18 | 699 | 0.8− | 1.2+ |
| 1999 01 10 | 691 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.5− | 1.1+ |
| 1999 01 10 | 691 | 0.3− | 0.3− | 2004 03 18 | 704 | 0.9+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 1999 01 19 | 691 | 0.4+ | 0.3− | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.2+ |
| 1999 01 19 | 691 | 0.7+ | 0.4− | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 1999 01 19 | 691 | 0.6+ | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 1999 01 22 | 691 | 0.3+ | 0.9− | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 1999 01 22 | 691 | 0.0 | 0.3− | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 1999 01 22 | 691 | 0.0 | 0.3− | 2004 03 27 | 704 | 0.4+ | 1.4+ | 2006 09 27 | 704 | 0.1+ | 1.0+ |
| 1999 01 23 | 691 | 0.7− | 0.4− | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 09 27 | 704 | 0.1− | 0.3+ |
| 1999 01 23 | 691 | 0.4− | 0.3− | 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 09 27 | 704 | 0.1+ | 0.3+ |
| 1999 01 23 | 691 | 0.7− | 0.3− | 2004 03 27 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.9− | 0.6+ |
| 2002 11 24 | 644 | 0.4− | 0.7+ | 2004 03 31 | 291 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.3+ | 0.0 |
| 2002 11 24 | 644 | 0.5− | 0.4+ | 2004 03 31 | 291 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.7+ | 0.7+ |
| 2002 11 24 | 644 | 0.3− | 0.8+ | 2004 03 31 | 291 | 0.4− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.8+ | 1.1+ | 2004 04 12 | 699 | 0.9− | 0.6+ | 2006 09 30 | 691 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.8− | 0.2+ | 2004 04 12 | 699 | 0.8− | 1.1+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2002 12 06 | 704 | 0.3+ | 0.1+ | 2004 04 12 | 699 | 0.8− | 1.0+ | 2006 10 17 | 703 | 0.2+ | 0.7− |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2004 04 12 | 699 | 1.0+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2002 12 11 | 704 | 0.0 | 1.4+ | 2004 04 13 | 691 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2002 12 11 | 704 | 0.4− | 0.7+ | 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.8+ | 0.5− |
| 2002 12 11 | 704 | 0.9− | 0.5+ | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.4+ | 2004 04 17 | 691 | 0.9+ | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.7+ | 2004 04 17 | 691 | 0.7+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2004 02 26 | 704 | 0.3+ | 0.3+ | 2004 04 17 | 691 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 1.2+ | 0.6+ | 2004 04 24 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.6+ |
| 2004 02 26 | 704 | 0.4+ | 0.9+ | 2004 04 24 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.8+ |
| 2004 02 26 | 704 | 0.2+ | 0.7+ | 2004 04 24 | 691 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 2004 02 26 | 704 | 0.9+ | 0.4+ | 2006 07 22 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 07 22 | G96 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 07 22 | G96 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.5+ | 0.4+ |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 07 22 | G96 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 703 | 0.8− | 0.3+ | 2006 09 14 | 691 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 703 | 0.8− | 1.4+ | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 703 | 0.9− | 0.4+ | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2004 03 15 | 703 | 0.9− | 0.9+ | 2006 09 18 | 699 | 0.1+ | 1.4+ | | | | |
| 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 1.4− | 0.6+ | | | | |

**(137125)∗ 1999 CT$_3$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.85231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.57832057 | $\omega$ | 268.20985 | | −0.53363012 | | +0.77145187 |
| $a$ | 1.4267798 | $\Omega$ | 321.97531 | | −0.35589420 | | −0.57656898 |
| $e$ | 0.1318441 | $i$ | 34.23508 | | −0.76718851 | | −0.26912864 |
| $P$ | 1.70 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.8− | 0.9− | 1999 02 16 | 402 | 0.6+ | 1.8− | 2001 07 30 | 046 | 0.1+ | 0.4+ |
| 1999 02 10 | 704 | 1.0+ | 0.2− | 1999 02 19 | 402 | 0.5+ | 0.2+ | 2001 07 30 | 046 | 0.9− | 0.6+ |
| 1999 02 10 | 704 | 1.1+ | 0.6− | 1999 02 19 | 402 | 0.1− | 0.4− | 2001 08 18 | 699 | 0.7+ | 0.6+ |
| 1999 02 10 | 704 | 0.3+ | 1.7− | 1999 02 19 | 402 | 0.0 | 0.9− | 2001 08 18 | 699 | 0.1+ | 0.1− |
| 1999 02 10 | 704 | 0.7+ | 0.6− | 1999 02 25 | 658 | 0.7+ | 0.7− | 2001 08 18 | 699 | 0.1+ | 0.4+ |
| 1999 02 11 | 557 | 0.4− | 0.2+ | 1999 02 25 | 658 | 0.3+ | 0.7− | 2001 08 18 | 699 | 0.3+ | 0.4+ |
| 1999 02 11 | 557 | 0.5− | 0.6+ | 1999 02 25 | 658 | 1.3+ | 0.1− | 2001 08 25 | 704 | 0.2− | 0.2+ |
| 1999 02 11 | 557 | 0.7− | 0.6+ | 1999 03 06 | 658 | 0.3+ | 0.4+ | 2001 08 25 | 704 | 0.2− | 0.0 |
| 1999 02 11 | 704 | 1.4− | 0.3+ | 1999 03 06 | 658 | 0.2+ | 0.3+ | 2001 08 25 | 704 | 0.5− | 0.7− |
| 1999 02 11 | 704 | (0.2+ | 2.3−) | 1999 03 06 | 658 | 0.8+ | 0.5+ | 2001 08 25 | 704 | 0.4− | 0.3− |
| 1999 02 11 | 704 | 1.5− | 1.3+ | 1999 03 20 | 658 | 0.1− | 0.4+ | 2001 08 25 | 704 | 0.3− | 0.2+ |
| 1999 02 11 | 704 | 1.2+ | 0.9+ | 1999 03 20 | 658 | 0.1− | 0.1+ | 2001 08 27 | 704 | 0.4− | 0.5+ |
| 1999 02 11 | 704 | (2.1+ | 1.0+) | 1999 03 20 | 658 | 0.6+ | 0.7+ | 2001 08 27 | 704 | 0.1− | 0.2+ |
| 1999 02 11 | 704 | 0.1+ | 0.7+ | 2001 07 26 | 620 | 1.2− | 0.3− | 2001 08 27 | 704 | 0.4− | 0.5+ |
| 1999 02 11 | 704 | 0.3+ | 0.8+ | 2001 07 26 | 620 | 0.0 | 0.6− | 2001 08 27 | 704 | 0.3− | 1.0+ |
| 1999 02 11 | 704 | 0.5− | 1.8+ | 2001 07 26 | 620 | (0.4+ | 1.6−) | 2001 08 27 | 704 | 0.3− | 0.7+ |
| 1999 02 11 | 704 | 0.3− | 1.8+ | 2001 07 27 | 620 | (0.7− | 2.6−) | 2001 09 09 | 704 | 0.7+ | 0.7− |
| 1999 02 11 | 704 | 1.3− | 0.5+ | 2001 07 27 | 620 | 0.7+ | 1.0− | 2001 09 09 | 704 | 0.0 | 0.3− |
| 1999 02 11 | 704 | (0.6+ | 3.5+) | 2001 07 29 | 540 | 0.7− | 0.2+ | 2001 09 09 | 704 | 0.0 | 0.0 |
| 1999 02 11 | 557 | 0.3+ | 0.8+ | 2001 07 29 | 540 | 0.5+ | 0.3− | 2001 09 09 | 704 | 0.4− | 0.1− |
| 1999 02 11 | 557 | 0.2+ | 0.7+ | 2001 07 29 | 046 | 0.0 | 0.1− | 2001 09 09 | 704 | 0.4+ | 0.3− |
| 1999 02 11 | 557 | 0.0 | 0.2− | 2001 07 29 | 046 | 0.6− | 0.2+ | 2001 09 09 | 608 | 0.0 | 0.6− |
| 1999 02 11 | 557 | 0.0 | 0.2− | 2001 07 29 | 540 | 0.6− | 0.2+ | 2001 09 09 | 608 | 0.4+ | 0.6− |
| 1999 02 14 | 360 | 0.7+ | 0.2− | 2001 07 29 | 046 | 0.8+ | 0.3− | 2001 09 09 | 608 | 0.3+ | 0.1− |
| 1999 02 14 | 360 | 0.5+ | 0.4− | 2001 07 29 | 046 | 0.2+ | 0.2− | 2003 12 01 | 696 | 0.3− | 0.3− |
| 1999 02 14 | 360 | 0.3+ | 0.2− | 2001 07 29 | 540 | 0.9+ | 0.1+ | 2003 12 01 | 696 | 0.4− | 0.1+ |
| 1999 02 15 | 046 | 0.2+ | 0.5+ | 2001 07 29 | 046 | 0.0 | 0.4+ | 2006 01 10 | 448 | (1.1− | 1.8+) |
| 1999 02 15 | 046 | 0.2+ | 0.4+ | 2001 07 29 | 046 | 0.1+ | 0.0 | 2006 01 10 | 448 | (0.5− | 2.4+) |
| 1999 02 15 | 046 | 0.2+ | 0.2− | 2001 07 29 | 540 | 0.4− | 0.2+ | 2006 08 01 | E12 | 0.1− | 0.2− |
| 1999 02 15 | 118 | 0.3+ | 0.3+ | 2001 07 30 | 046 | 0.4− | 1.5+ | 2006 08 01 | E12 | 0.2+ | 0.0 |
| 1999 02 15 | 118 | 0.3− | 0.3+ | 2001 07 30 | 046 | 0.3− | 0.1+ | 2006 08 01 | E12 | 0.3− | 0.6+ |
| 1999 02 16 | 402 | 0.1+ | 0.1− | 2001 07 30 | 046 | 0.1+ | 0.4+ | | | | |
| 1999 02 16 | 402 | 0.5− | 1.3− | 2001 07 30 | 046 | 1.1− | 0.4− | | | | |

**(137126)∗ 1999 CF$_9$**

Discovered 1999 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.39025 | | (2000.0) | | −0.38529530 | +0.92204469 |
| $n$ | 0.41768642 | $\omega$ | 89.84284 | | −0.88043108 | −0.35524746 |
| $a$ | 1.7724302 | $\Omega$ | 157.38328 | | −0.27638495 | −0.15372972 |
| $e$ | 0.5995688 | $i$ | 5.54558 | | | |
| $P$ | 2.36 | $H$ | 17.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 15 | 699 | 1.1+ | 0.3− | 1999 03 02 | 658 | 0.3+ | 0.3− | 2002 11 11 | 291 | 0.5− | 0.8+ | |
| 1999 01 15 | 699 | 0.1+ | 0.4+ | 1999 03 02 | 658 | 0.1− | 0.3+ | 2002 11 11 | 291 | 0.2− | 0.2+ | |
| 1999 01 15 | 699 | 0.1+ | 0.9+ | 1999 03 02 | 658 | 1.1+ | 0.5+ | 2002 11 11 | 291 | 0.9+ | 1.0+ | |
| 1999 02 12 | 704 | 0.4− | 0.8− | 1999 03 03 | 402 | 0.2+ | 0.3+ | 2004 11 10 | 696 | 1.0− | 0.6− | |
| 1999 02 12 | 704 | 0.3+ | 0.9− | 1999 03 03 | 402 | 0.2+ | 0.3− | 2004 11 10 | 696 | 1.1+ | 0.4− | |
| 1999 02 12 | 704 | 0.2− | 0.7− | 1999 03 03 | 402 | 0.2+ | 0.1− | 2005 11 06 | 291 | 0.5− | 0.3− | |
| 1999 02 12 | 704 | (3.7− | 0.6−) | 1999 03 03 | 118 | 0.3+ | 0.1− | 2005 11 06 | 291 | 0.1− | 0.7+ | |
| 1999 02 12 | 704 | 0.4+ | 0.2− | 1999 03 03 | 118 | 0.1+ | 0.1− | 2005 11 06 | 291 | 0.4− | 0.3+ | |
| 1999 02 13 | 704 | 0.1+ | 0.3− | 1999 03 03 | 118 | 0.5+ | 0.3− | 2005 12 30 | 711 | 1.1+ | 0.5− | |
| 1999 02 13 | 704 | 0.6− | 0.5− | 1999 03 03 | 046 | 0.0 | 0.2+ | 2005 12 30 | 711 | 1.1+ | 0.1− | |
| 1999 02 13 | 704 | 0.5+ | 0.0 | 1999 03 03 | 046 | 0.1+ | 0.2+ | 2005 12 30 | 696 | 0.8+ | 0.2− | |
| 1999 02 13 | 704 | 0.1+ | 0.8− | 1999 03 03 | 046 | 0.3− | 0.4+ | 2005 12 30 | 711 | 0.4+ | 0.1+ | |
| 1999 02 13 | 704 | 0.1− | 0.9− | 1999 03 03 | 046 | 0.3− | 0.1+ | 2005 12 30 | 696 | 0.1− | 0.5− | |
| 1999 02 13 | 422 | 0.4− | 0.1− | 1999 03 05 | 151 | 0.7− | 0.6− | 2006 01 05 | 699 | (0.1+ | 1.5+) | |
| 1999 02 13 | 422 | 0.4− | 0.1− | 1999 03 05 | 151 | 0.4− | 0.4− | 2006 01 05 | 699 | 0.9+ | 0.3− | |
| 1999 02 13 | 422 | 0.3− | 0.0 | 1999 03 05 | 151 | 0.2− | 0.9− | 2006 01 05 | 699 | 0.6− | 0.2+ | |
| 1999 02 13 | 422 | 0.3− | 0.2− | 1999 03 05 | 151 | 0.4− | 0.8− | 2006 01 05 | 699 | 1.0− | 0.2− | |
| 1999 02 14 | 758 | 0.6− | 0.5+ | 1999 03 06 | 719 | 0.4− | 0.6+ | 2006 01 18 | 703 | 0.7+ | 0.5− | |
| 1999 02 14 | 758 | 0.6− | 0.7+ | 1999 03 06 | 719 | 0.5− | 0.3+ | 2006 01 18 | 703 | (1.0− | 1.6+) | |
| 1999 02 14 | 758 | 0.6− | 0.6+ | 1999 03 06 | 046 | 0.1+ | 0.6+ | 2006 01 18 | 703 | 1.3− | 0.2− | |
| 1999 02 14 | 758 | 0.4− | 0.4+ | 1999 03 06 | 046 | 0.3+ | 0.4+ | 2006 01 18 | 703 | 0.1− | 0.4+ | |
| 1999 02 14 | 758 | 0.7− | 0.5+ | 1999 03 06 | 046 | 0.4+ | 0.3+ | 2006 01 23 | 704 | 0.2+ | 1.2+ | |
| 1999 02 14 | 761 | 1.7− | 0.5+ | 1999 03 06 | 046 | 0.3+ | 0.3+ | 2006 01 23 | 704 | 1.0− | 1.1+ | |
| 1999 02 14 | 761 | 1.0− | 0.3− | 1999 03 08 | 118 | 0.2− | 0.1+ | 2006 01 23 | 704 | 0.3− | 0.7+ | |
| 1999 02 14 | 761 | 1.6+ | 0.2+ | 1999 03 08 | 118 | 0.1+ | 0.1− | 2006 01 23 | 704 | 0.2− | 1.3+ | |
| 1999 02 14 | 844 | 1.3+ | 0.5− | 1999 03 08 | 118 | 0.0 | 0.1+ | 2006 01 28 | 246 | 0.5+ | 0.1− | |
| 1999 02 14 | 844 | 0.3− | 0.1+ | 1999 03 09 | 719 | 0.3− | 0.4+ | 2006 01 28 | 246 | 0.2+ | 0.0 | |
| 1999 02 14 | 844 | 0.4+ | 0.1− | 1999 03 09 | 719 | 0.1− | 0.1+ | 2006 01 28 | 246 | 0.2+ | 0.3+ | |
| 1999 02 14 | 844 | 0.0 | 0.3− | 1999 03 09 | 151 | 0.0 | 1.2+ | 2006 01 28 | 246 | 0.6+ | 0.1− | |
| 1999 02 14 | 844 | 0.1+ | 0.3− | 1999 03 09 | 151 | 0.5− | 1.0+ | 2006 01 28 | 246 | 0.1+ | 0.1− | |
| 1999 02 14 | 658 | 0.3− | 0.2− | 1999 03 09 | 151 | 0.8− | 0.2+ | 2006 01 28 | 246 | 0.1+ | 0.5+ | |
| 1999 02 14 | 658 | 0.3− | 0.0 | 1999 03 09 | 620 | 0.1+ | 0.2+ | 2006 02 02 | G96 | 0.2+ | 0.5− | |
| 1999 02 14 | 658 | 0.2− | 0.1− | 1999 03 09 | 620 | 0.3− | 0.1+ | 2006 02 02 | G96 | 0.2+ | 0.8− | |
| 1999 02 14 | 734 | 0.3− | 0.7+ | 1999 03 09 | 620 | 0.0 | 0.1+ | 2006 02 02 | G96 | 0.0 | 0.5− | |
| 1999 02 14 | 734 | 0.2− | 0.4+ | 1999 03 09 | 620 | 0.6− | 0.4+ | 2006 02 02 | G96 | 0.1− | 0.4− | |
| 1999 02 14 | 422 | 0.2− | 0.3− | 1999 03 09 | 620 | 0.1− | 0.3+ | 2006 02 03 | 704 | 0.1− | 0.1− | |
| 1999 02 14 | 422 | 0.1− | 0.2− | 1999 03 10 | 118 | 0.2+ | 0.5− | 2006 02 03 | 704 | 0.1+ | 0.4+ | |
| 1999 02 14 | 422 | 0.1+ | 0.2− | 1999 03 10 | 118 | 0.7+ | 0.1− | 2006 02 03 | 704 | 0.4+ | 0.3+ | |
| 1999 02 14 | 900 | 0.3− | 0.1+ | 1999 03 11 | 719 | 1.5− | 1.5− | 2006 02 03 | 704 | 0.1+ | 0.2+ | |
| 1999 02 14 | 900 | 0.1+ | 0.1− | 1999 03 11 | 719 | 0.2− | 0.8+ | 2006 03 01 | 198 | 0.0 | 0.1+ | |
| 1999 02 15 | 744 | 1.3− | 0.6+ | 1999 03 11 | 046 | 0.2− | 0.5+ | 2006 03 01 | 198 | 0.1+ | 0.1+ | |
| 1999 02 15 | 744 | (2.0+ | 3.8−) | 1999 03 11 | 151 | 0.2− | 0.1+ | 2006 03 01 | 198 | 0.1+ | 0.1+ | |
| 1999 02 15 | 744 | 0.7− | 1.6− | 1999 03 11 | 046 | 0.1− | 0.4+ | 2006 03 01 | 198 | 0.2+ | 0.1+ | |
| 1999 02 15 | 732 | 0.3+ | 0.0 | 1999 03 11 | 046 | 0.2+ | 0.4+ | 2006 03 01 | 198 | 0.2+ | 0.1+ | |
| 1999 02 15 | 732 | 0.4− | 0.0 | 1999 03 11 | 046 | 0.1+ | 0.3+ | 2006 03 15 | H55 | 0.4− | 0.3− | |
| 1999 02 15 | 732 | 0.2+ | 0.2+ | 1999 03 11 | 151 | 0.5+ | 0.1+ | 2006 03 15 | H55 | 0.0 | 0.6− | |
| 1999 02 15 | 670 | 0.3− | 0.5+ | 1999 03 11 | 151 | 0.4+ | 0.6− | 2006 03 15 | H55 | 0.5+ | 0.1− | |
| 1999 02 15 | 658 | 0.5− | 0.2− | 1999 03 11 | 151 | 0.8− | 0.7+ | 2006 08 21 | 704 | 0.3− | 0.7+ | |
| 1999 02 15 | 670 | 0.2+ | 0.1+ | 1999 03 11 | 151 | 0.6+ | 0.5+ | 2006 08 21 | 704 | 1.3− | 0.6+ | |
| 1999 02 15 | 658 | 0.6− | 0.1− | 1999 03 11 | 118 | 0.1− | 0.3+ | 2006 08 21 | 704 | 0.3+ | 0.4− | |
| 1999 02 15 | 658 | 0.8− | 0.2+ | 1999 03 11 | 118 | 0.0 | 0.2+ | 2006 08 21 | 704 | 0.8− | 0.9+ | |
| 1999 02 15 | 428 | 1.2+ | 0.1− | 1999 03 12 | 151 | 0.4− | 0.3+ | 2006 08 21 | 704 | 0.4+ | 0.1+ | |
| 1999 02 15 | 428 | 0.5+ | 0.4+ | 1999 03 12 | 151 | 0.7+ | 0.2+ | 2006 08 25 | 704 | 0.2+ | 0.7+ | |
| 1999 02 15 | 422 | 0.4+ | 0.2+ | 1999 03 12 | 151 | 0.0 | 0.2− | 2006 08 25 | 704 | 0.1− | 0.8+ | |
| 1999 02 15 | 422 | 0.6+ | 0.4+ | 1999 03 12 | 151 | 0.5− | 0.4+ | 2006 08 25 | 704 | 0.4+ | 0.3+ | |
| 1999 02 15 | 422 | 0.4+ | 0.3+ | 1999 03 12 | 151 | 0.3− | 0.2+ | 2006 08 25 | 704 | 0.3+ | 0.8+ | |
| 1999 02 15 | 428 | 0.1− | 0.2− | 1999 03 13 | 046 | 0.2+ | 0.3+ | 2006 08 25 | 704 | 0.4− | 0.5+ | |
| 1999 02 15 | 428 | 0.7+ | 0.1− | 1999 03 13 | 046 | 0.1− | 0.4+ | 2006 08 28 | 704 | (0.1− | 1.6+) | |
| 1999 02 15 | 151 | 0.9− | 0.4+ | 1999 03 13 | 046 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 0.4+ | 1.4+ | |
| 1999 02 15 | 151 | 0.3− | 0.6− | 1999 03 13 | 046 | 0.1− | 0.4+ | 2006 08 28 | 704 | (0.7− | 1.8+) | |
| 1999 02 15 | 151 | 0.7− | 0.4− | 1999 03 13 | 151 | 0.8+ | 0.3+ | 2006 08 28 | 704 | (0.4− | 1.6+) | |
| 1999 02 15 | 151 | 0.5− | 0.1+ | 1999 03 13 | 151 | 1.1− | 0.6− | 2006 09 06 | 644 | 0.0 | 0.2+ | |
| 1999 02 15 | 557 | 0.2− | 0.0 | 1999 03 13 | 104 | 0.1+ | 0.3− | 2006 09 06 | 644 | 0.5− | 0.0 | |
| 1999 02 15 | 557 | 0.3− | 0.1+ | 1999 03 13 | 104 | 0.6+ | 0.9− | 2006 09 06 | 644 | 0.1+ | 0.1− | |
| 1999 02 15 | 557 | 0.1− | 0.1− | 1999 03 13 | 104 | 0.6+ | 0.7− | 2006 09 12 | 703 | 0.5+ | 0.0 | |
| 1999 02 15 | 046 | 0.1+ | 0.2+ | 1999 03 13 | 104 | 0.8+ | 0.4− | 2006 09 12 | 703 | 0.2+ | 0.5+ | |
| 1999 02 15 | 046 | 0.2+ | 0.1+ | 1999 03 15 | 726 | 0.3− | 0.4− | 2006 09 12 | 703 | 0.9+ | 0.2+ | |
| 1999 02 15 | 046 | 0.0 | 0.4+ | 1999 03 15 | 726 | (0.9− | 2.1−) | 2006 09 12 | 703 | 0.5+ | 1.4+ | |
| 1999 02 15 | 046 | 0.3+ | 0.2+ | 1999 03 15 | 726 | 0.4+ | 1.2− | 2006 09 16 | 704 | 0.4− | 0.7+ | |
| 1999 02 16 | 704 | (2.9+ | 0.2+) | 1999 03 15 | 726 | 0.4− | 0.2− | 2006 09 16 | 704 | 0.3− | 0.3+ | |
| 1999 02 16 | 704 | 0.3− | 0.5− | 1999 03 15 | 726 | 0.3+ | 0.7− | 2006 09 16 | 704 | 0.6− | 0.3− | |
| 1999 02 16 | 704 | 0.1+ | 0.2− | 1999 03 15 | 726 | (1.0− | 2.3−) | 2006 09 16 | 704 | 0.7− | 0.4+ | |
| 1999 02 16 | 704 | 0.2+ | 1.1− | 1999 03 15 | 118 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.8− | 0.1+ | |
| 1999 02 16 | 704 | 0.1+ | 1.0− | 1999 03 15 | 118 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.4− | |
| 1999 02 16 | 696 | 0.0 | 0.4+ | 1999 03 15 | 118 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.0 | |
| 1999 02 16 | 719 | 0.6− | 0.3+ | 1999 03 16 | 402 | 0.6+ | 0.2− | 2006 09 18 | 703 | 0.2− | 0.0 | |
| 1999 02 16 | 719 | 0.2− | 0.1+ | 1999 03 16 | 402 | 0.8− | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.4− | |
| 1999 02 16 | 696 | 0.7+ | 0.0 | 1999 03 16 | 402 | 0.2− | 0.2+ | 2006 09 19 | 704 | 0.0 | 0.2− | |
| 1999 02 16 | 426 | 0.1− | 0.2− | 1999 03 16 | 360 | 0.4− | 0.6+ | 2006 09 19 | 704 | 0.4+ | 0.6+ | |
| 1999 02 16 | 426 | 0.1− | 0.2− | 1999 03 16 | 360 | 0.3− | 0.5+ | 2006 09 19 | 704 | 0.7+ | 0.1+ | |
| 1999 02 16 | 426 | 0.0 | 0.3− | 1999 03 16 | 360 | 0.2− | 0.4+ | 2006 09 19 | 704 | 0.8+ | 0.5+ | |
| 1999 02 16 | 402 | 0.3+ | 0.3+ | 1999 03 17 | 118 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.1+ | 0.1− | |
| 1999 02 16 | 402 | 0.3+ | 0.5+ | 1999 03 17 | 118 | 0.2+ | 0.1− | 2006 09 22 | 151 | 0.3− | 0.1+ | |
| 1999 02 16 | 402 | 0.2+ | 0.4+ | 1999 03 17 | 118 | 0.7+ | 0.7+ | 2006 09 22 | 151 | 0.1− | 0.2− | |
| 1999 02 18 | 587 | 0.2+ | 0.6− | 1999 03 17 | 860 | (2.7− | 0.4+) | 2006 09 22 | 151 | 0.1+ | 0.5− | |
| 1999 02 18 | 587 | 0.6+ | 0.3− | 1999 03 17 | 860 | (2.7− | 1.0+) | 2006 09 22 | 151 | 0.4− | 0.3− | |
| 1999 02 19 | 104 | 0.7+ | 1.1− | 1999 03 17 | 860 | 1.4− | 1.2+ | 2006 09 22 | 151 | 0.1− | 0.3− | |
| 1999 02 19 | 104 | 0.3− | 0.6− | 1999 03 18 | 587 | 0.5+ | 0.7+ | 2006 09 22 | 151 | 0.1+ | 0.2− | |
| 1999 02 19 | 104 | 0.7+ | 0.7− | 1999 03 18 | 587 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.2+ | |
| 1999 02 19 | 719 | 0.7+ | 1.0− | 1999 03 18 | 540 | 0.6+ | 0.4+ | 2006 09 22 | 704 | 0.1− | 0.1+ | |
| 1999 02 19 | 719 | 0.5+ | 1.1− | 1999 03 18 | 540 | 0.2− | 0.6+ | 2006 09 22 | 704 | 0.3− | 0.1− | |
| 1999 02 19 | 402 | 0.4+ | 1.0− | 1999 03 18 | 540 | 0.0 | 0.5+ | 2006 09 22 | 704 | 0.2− | 0.1− | |
| 1999 02 19 | 402 | 0.2+ | 0.9− | 1999 03 19 | 046 | 0.0 | 0.9+ | 2006 09 22 | 704 | 0.2+ | 0.4+ | |
| 1999 02 19 | 402 | 0.3+ | 1.0− | 1999 03 19 | 046 | 0.1+ | 1.3+ | 2006 09 26 | 704 | 0.6+ | 0.3− | |
| 1999 02 21 | 726 | 0.6− | 0.4− | 1999 03 19 | 046 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.1− | |
| 1999 02 21 | 726 | 0.1− | 0.4+ | 1999 03 19 | 046 | 0.3− | 0.9+ | 2006 09 26 | 704 | 0.1− | 0.9+ | |
| 1999 02 21 | 726 | 0.2+ | 0.7− | 1999 03 22 | 118 | 1.3+ | 1.5− | 2006 09 26 | 704 | 0.3+ | 1.3+ | |
| 1999 02 22 | 726 | 0.4+ | 0.6− | 1999 03 22 | 118 | 0.6+ | 1.4− | 2006 09 26 | 704 | 0.6+ | 0.1+ | |
| 1999 02 22 | 726 | 0.5+ | 0.4− | 1999 03 26 | 046 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.3− | |
| 1999 02 22 | 726 | 1.2+ | 0.0 | 1999 03 26 | 046 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2− | |
| 1999 02 22 | 726 | 0.2+ | 0.7+ | 1999 03 26 | 046 | 0.6− | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.1− | |
| 1999 02 22 | 711 | 0.4+ | 0.2− | 1999 03 26 | 046 | 0.2− | 0.7+ | 2006 09 29 | 808 | (1.8− | 0.7−) | |
| 1999 02 22 | 711 | 0.5+ | 0.2− | 1999 03 26 | 046 | 0.2− | 0.8+ | 2006 09 29 | 808 | 1.4− | 0.7− | |
| 1999 02 23 | 108 | 1.0− | 0.1+ | 1999 07 16 | 568 | 0.2− | 0.6+ | 2006 09 29 | 808 | (1.6+ | 0.0 ) | |
| 1999 02 23 | 108 | 0.0 | 0.4+ | 1999 07 16 | 568 | 0.2− | 0.6+ | 2006 09 30 | 704 | 0.4+ | 0.2+ | |
| 1999 02 23 | 108 | 0.6− | 0.5− | 1999 08 10 | 658 | 0.6+ | 0.6+ | 2006 09 30 | 704 | 0.3+ | 0.1+ | |
| 1999 02 24 | 046 | 0.4− | 0.1− | 1999 08 10 | 658 | 0.3− | 0.4+ | 2006 09 30 | 704 | 0.4+ | 0.7+ | |
| 1999 02 24 | 046 | 0.4− | 0.3+ | 1999 09 13 | 848 | 0.1− | 1.2+ | 2006 09 30 | 704 | 0.0 | 0.6− | |
| 1999 02 24 | 046 | 0.3+ | 0.1− | 1999 09 13 | 848 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 1.1− | |
| 1999 02 24 | 046 | 0.3− | 0.2+ | 1999 09 13 | 848 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.9− | 0.7− | |
| 1999 02 24 | 587 | 0.4− | 0.3+ | 1999 09 14 | 413 | 0.4− | 0.1− | 2006 10 16 | 703 | (0.6+ | 1.5−) | |
| 1999 02 24 | 587 | 0.1+ | 0.2+ | 1999 09 14 | 413 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.0 | |
| 1999 02 25 | 402 | 0.3− | 0.5+ | 1999 09 14 | 413 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.7− | 0.2+ | |
| 1999 02 25 | 402 | 0.2+ | 0.2+ | 1999 10 15 | 711 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 1999 02 25 | 402 | 0.0 | 0.3+ | 1999 10 16 | 711 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | |
| 1999 02 25 | 900 | 0.5− | 0.8+ | 1999 10 16 | 658 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 1999 02 25 | 900 | 0.5− | 0.5+ | 1999 10 16 | 658 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 1999 02 26 | 046 | 0.1− | 0.5+ | 1999 10 16 | 658 | 0.5+ | 1.1− | 2006 10 21 | 644 | 0.2+ | 0.0 | |
| 1999 02 26 | 046 | 0.4− | 0.0 | 1999 10 18 | 658 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.2+ | |
| 1999 02 26 | 046 | 0.1+ | 0.6+ | 1999 10 18 | 658 | 0.5− | 0.7− | 2006 10 22 | 703 | 0.8− | 0.9+ | |
| 1999 02 26 | 046 | 0.3− | 0.5+ | 1999 10 18 | 658 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.7− | 0.2− | |
| 1999 02 26 | 046 | 0.0 | 0.3− | 2000 12 05 | 693 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.1− | 0.6− | |
| 1999 03 01 | 739 | 0.3− | 0.7− | 2000 12 05 | 693 | 0.2+ | 0.2− | | | | | |
| 1999 03 01 | 739 | (0.4− | 2.5−) | 2000 12 05 | 693 | 0.3+ | 0.3− | | | | | |

**(137127)∗ 1999 $CV_{22}$ = 2001 $QC_{53}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33066)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.71687 | | (2000.0) | | | |
| $n$ | 0.23274552 | $\omega$ | 121.49298 | | −0.00465256 | −0.99412286 |
| $a$ | 2.6174707 | $\Omega$ | 328.22507 | | +0.83362360 | +0.05588246 |
| $e$ | 0.1569857 | $i$ | 11.85262 | | +0.55231336 | −0.09271938 |
| $P$ | 4.23 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 704 | 1.8− | 0.5+ | 2002 11 15 | 644 | 0.7− | 0.1− | 2003 01 31 | 704 | 0.1− | 0.5+ |
| 1999 01 19 | 704 | 0.6+ | 1.4− | 2002 11 15 | 704 | 1.0+ | 0.3+ | 2003 03 06 | 704 | 0.2− | 0.1+ |
| 1999 01 19 | 704 | 1.6+ | 0.0 | 2002 11 15 | 644 | 0.0 | 0.3+ | 2003 03 06 | 704 | 0.4− | 0.0 |
| 1999 01 19 | 704 | 0.5− | 1.4+ | 2002 11 15 | 704 | 0.5+ | 1.1− | 2003 03 06 | 704 | 0.2+ | 0.0 |
| 1999 01 22 | 699 | 0.9+ | 0.0 | 2002 11 15 | 644 | 0.3+ | 0.4+ | 2003 03 06 | 704 | 0.4+ | 0.2− |
| 1999 01 22 | 699 | 0.6+ | 0.1− | 2002 12 06 | 704 | 0.3− | 0.0 | 2004 04 21 | E12 | 0.3+ | 0.2+ |
| 1999 01 22 | 699 | 0.3+ | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.5− | 2004 04 21 | E12 | 0.4+ | 0.3− |
| 1999 02 10 | 704 | 1.3− | 0.1+ | 2002 12 06 | 704 | 0.1+ | 0.0 | 2004 04 21 | E12 | 0.1− | 1.2+ |
| 1999 02 10 | 704 | 0.6+ | 1.1+ | 2002 12 06 | 704 | 0.4− | 0.0 | 2004 04 21 | E12 | 0.4+ | 0.3+ |
| 1999 02 10 | 704 | 1.0− | 0.8+ | 2002 12 15 | 704 | 0.0 | 0.3− | 2006 10 02 | 703 | (1.2− | 2.5−) |
| 1999 02 10 | 704 | 0.3− | 1.0+ | 2002 12 15 | 704 | 0.4− | 0.3− | 2006 10 02 | 703 | 0.4+ | 0.5+ |
| 1999 02 12 | 699 | 0.7+ | 0.3+ | 2002 12 15 | 704 | 0.2+ | 0.1− | 2006 10 02 | 703 | 0.0 | 0.6+ |
| 1999 02 12 | 699 | 1.0+ | 1.0+ | 2002 12 15 | 704 | 0.7+ | 0.1− | 2006 10 16 | 704 | 0.1− | 0.6+ |
| 1999 02 12 | 699 | 0.7+ | 0.3− | 2002 12 15 | 704 | 0.2+ | 0.1− | 2006 10 16 | 704 | 0.1− | 0.4+ |
| 1999 02 13 | 704 | 0.3− | 0.7− | 2003 01 03 | 704 | 0.1− | 0.9+ | 2006 10 16 | 704 | 0.6+ | 0.7+ |
| 1999 02 13 | 704 | 1.1− | 0.2− | 2003 01 03 | 704 | 0.3− | 0.6+ | 2006 10 16 | 704 | 0.4+ | 0.9+ |
| 1999 02 13 | 704 | 2.0− | 0.9+ | 2003 01 03 | 704 | (0.5− | 1.7+) | 2006 10 16 | 704 | 0.2+ | 0.1+ |
| 1999 02 13 | 704 | 0.2+ | 0.5+ | 2003 01 03 | 704 | 0.4− | 1.1+ | 2006 10 23 | 703 | 0.6− | 0.3− |
| 1999 02 24 | 699 | 0.7+ | 0.1− | 2003 01 07 | 704 | 0.1− | 0.5− | 2006 10 23 | 703 | 0.5− | 0.3− |
| 1999 02 24 | 699 | 0.5+ | 0.1+ | 2003 01 07 | 704 | 0.1+ | 0.4− | 2006 10 23 | 703 | 0.3− | 0.1+ |
| 1999 02 24 | 699 | 0.9+ | 0.2+ | 2003 01 07 | 704 | 0.6− | 0.2+ | 2006 10 23 | 703 | 1.1− | 0.5+ |
| 2001 08 16 | 704 | 0.9− | 0.4+ | 2003 01 07 | 704 | 0.3+ | 1.1− | 2006 11 13 | 704 | 0.4− | 0.3+ |
| 2001 08 16 | 704 | 0.4+ | 0.9+ | 2003 01 07 | 704 | 0.3− | 0.8− | 2006 11 13 | 704 | 0.0 | 0.2− |
| 2001 08 16 | 704 | (0.1+ | 2.4+) | 2003 01 13 | 704 | 0.0 | 0.6− | 2006 11 13 | 704 | 0.6− | 0.4− |
| 2001 08 19 | 704 | 0.9− | 0.7+ | 2003 01 13 | 704 | 0.5+ | 0.6− | 2006 11 20 | 703 | 0.7+ | 0.5− |
| 2001 08 19 | 704 | 0.1− | 0.8+ | 2003 01 13 | 704 | 0.5+ | 0.0 | 2006 11 20 | 703 | 0.6− | 0.0 |
| 2001 08 19 | 704 | 0.0 | 0.2+ | 2003 01 31 | 704 | 0.4+ | 0.4− | 2006 11 20 | 703 | 0.2− | 0.2− |
| 2002 11 15 | 704 | 0.8+ | 0.2+ | 2003 01 31 | 704 | 0.1− | 0.0 | 2006 11 20 | 703 | 0.0 | 0.2− |
| 2002 11 15 | 704 | 0.5+ | 0.6− | 2003 01 31 | 704 | 0.3+ | 0.0 | | | | |

**(137128)∗ 1999 $CQ_{31}$ = 2002 $XE_{18}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40000)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 203.97101 | | (2000.0) | | | |
| $n$ | 0.21586751 | $\omega$ | 103.81295 | | −0.99323991 | +0.05355985 |
| $a$ | 2.7521865 | $\Omega$ | 79.33141 | | −0.09171365 | −0.90592498 |
| $e$ | 0.0979567 | $i$ | 6.01542 | | +0.07115537 | −0.42003722 |
| $P$ | 4.57 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 1.0+ | 0.5− | 2002 12 31 | 704 | 0.3− | 0.2+ | 2004 03 27 | 683 | 0.5− | 1.3+ |
| 1999 02 10 | 704 | (1.3+ | 2.5−) | 2002 12 31 | 704 | 0.2+ | 0.8+ | 2004 03 27 | 683 | 0.3− | 1.1+ |
| 1999 02 10 | 704 | 0.4− | 0.6− | 2003 01 04 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 683 | 0.3+ | 1.2− |
| 1999 02 10 | 704 | 0.3− | 0.3+ | 2003 01 04 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 683 | 0.6− | 0.5+ |
| 1999 02 11 | 704 | 0.0 | 0.2− | 2003 01 04 | 704 | 0.8+ | 0.7+ | 2004 03 28 | 683 | 0.7− | 1.0+ |
| 1999 02 11 | 704 | 0.6+ | 0.9− | 2003 01 04 | 704 | 0.5+ | 0.1− | 2004 03 29 | 683 | (0.2+ | 1.9−) |
| 1999 02 11 | 704 | (0.3− | 2.4−) | 2003 01 04 | 704 | 1.1+ | 0.7+ | 2004 03 29 | 683 | 1.4− | 0.8− |
| 1999 02 11 | 704 | 0.6− | 1.3− | 2003 01 05 | 291 | 0.3− | 0.4− | 2004 03 29 | 683 | 0.9− | 0.1+ |
| 1999 02 13 | 704 | 1.5− | 0.4+ | 2003 01 05 | 291 | 0.0 | 0.3− | 2004 03 30 | 683 | 0.5+ | 0.2− |
| 1999 02 13 | 704 | 0.5+ | 0.2+ | 2003 01 05 | 291 | 0.1− | 0.6− | 2004 03 30 | 683 | 0.4+ | 0.0 |
| 1999 02 13 | 704 | (3.1− | 0.1+) | 2003 01 08 | 704 | 0.8− | 0.3− | 2004 03 30 | 703 | 0.2+ | 0.7+ |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2003 01 08 | 704 | 0.1+ | 0.4+ | 2004 03 30 | 683 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2003 01 08 | 704 | 0.4+ | 0.0 | 2004 03 30 | 703 | 0.6− | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2004 01 23 | 704 | 1.4+ | 0.3+ | 2004 03 30 | 703 | 0.3+ | 0.9+ |
| 2002 12 06 | 704 | 0.1+ | 0.5− | 2004 01 23 | 704 | 0.5+ | 0.4− | 2004 03 30 | 703 | 0.9− | 0.4+ |
| 2002 12 06 | 704 | 0.8− | 0.8+ | 2004 01 23 | 704 | 0.8+ | 0.0 | 2004 04 12 | 703 | 1.4+ | 0.8+ |
| 2002 12 06 | 704 | 0.4− | 0.2− | 2004 01 23 | 704 | 0.4+ | 0.5+ | 2004 04 12 | 703 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 0.0 | 0.2+ | 2004 03 16 | 704 | 0.4+ | 0.1− | 2004 04 12 | 703 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 0.6− | 0.2− | 2004 03 16 | 704 | 0.3+ | 0.1− | 2004 04 12 | 703 | 0.5+ | 0.9+ |
| 2002 12 06 | 704 | 0.4− | 0.1− | 2004 03 16 | 704 | 1.0+ | 0.1− | 2004 04 22 | 704 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.8+ | 1.0+ | 2004 03 16 | 704 | 0.3+ | 0.2+ | 2004 04 22 | 704 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.6− | 0.4− | 2004 03 16 | 704 | 0.6− | 0.8+ | 2004 04 22 | 704 | 0.2− | 0.7− |
| 2002 12 06 | 704 | 0.5+ | 1.0+ | 2004 03 18 | 691 | 0.1+ | 0.0 | 2004 04 22 | 704 | 0.7− | 0.2+ |
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.2+ |
| 2002 12 10 | 704 | 0.4+ | 0.4+ | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.5+ | 0.2− | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.1+ |
| 2002 12 10 | 704 | 0.2+ | 0.5+ | 2004 03 20 | 704 | 0.8+ | 0.2− | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.5+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 12 10 | 704 | 0.0 | 0.4− | 2004 03 20 | 704 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2002 12 10 | 704 | 0.3+ | 0.5− | 2004 03 22 | 699 | 0.6− | 0.8− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 12 10 | 704 | 0.5+ | 1.2+ | 2004 03 22 | 699 | 0.6− | 0.7− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 12 11 | 704 | 0.1− | 0.0 | 2004 03 22 | 699 | 0.4− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 12 11 | 704 | 0.4− | 0.5− | 2004 03 22 | 699 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 12 11 | 704 | 0.8− | 0.1− | 2004 03 23 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.7− | 0.4+ |
| 2002 12 11 | 704 | 1.0− | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.2− | 0.5+ | 2004 03 23 | 704 | 0.1− | 0.0 | 2006 11 13 | 703 | 1.1− | 0.1+ |
| 2002 12 31 | 704 | 0.4+ | 1.3+ | 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.3+ | 1.5+ |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.4+ | 0.9+ |
| 2002 12 31 | 704 | 0.6+ | 0.4+ | 2004 03 27 | 683 | 0.8+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.9− |

**(137129)∗ 1999 $CE_{34}$ = 2002 $YS_{35}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 309.87930 | | (2000.0) | | | |
| $n$ | 0.22914418 | $\omega$ | 328.70857 | | −0.16775363 | −0.98497141 |
| $a$ | 2.6448243 | $\Omega$ | 130.91489 | | +0.91534822 | −0.17110914 |
| $e$ | 0.1650338 | $i$ | 3.11851 | | +0.36605512 | −0.02351581 |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 691 | 0.7− | 0.1+ | 2003 01 31 | 704 | 0.5+ | 1.3− | 2006 10 31 | 683 | 1.0+ | 1.5+ |
| 1999 01 10 | 691 | 0.5− | 0.2+ | 2003 01 31 | 704 | 1.0+ | 0.8− | 2006 10 31 | 683 | 1.3− | 0.5+ |
| 1999 01 10 | 691 | 0.9− | 0.4+ | 2005 06 13 | G96 | 0.3+ | 0.0 | 2006 11 02 | 703 | 0.4− | 0.9− |
| 1999 02 07 | 691 | 0.1− | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.2− | 2006 11 02 | 703 | 0.2− | 1.4− |
| 1999 02 07 | 691 | 0.3+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.5+ | 0.4− |
| 1999 02 07 | 691 | 0.2+ | 0.0 | 2005 06 13 | G96 | 0.3+ | 0.0 | 2006 11 02 | 703 | 1.0− | 0.3− |
| 1999 02 10 | 704 | 1.1+ | 0.4+ | 2005 06 30 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 1999 02 10 | 704 | 1.2+ | 0.0 | 2005 06 30 | 691 | 0.0 | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 1999 02 10 | 704 | 1.3+ | 0.6+ | 2005 06 30 | 691 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1999 02 10 | 704 | 0.0 | 0.5+ | 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 1999 02 12 | 699 | 1.6+ | 1.5+ | 2005 07 05 | 691 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.4− | 0.0 |
| 1999 02 12 | 699 | 1.6+ | 1.4+ | 2005 07 05 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1999 02 12 | 699 | 0.8+ | 0.1+ | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.6− |
| 1999 02 13 | 704 | 0.1− | 0.3+ | 2005 07 09 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (1.7− | 0.3−) |
| 1999 02 13 | 704 | 1.1− | 0.1+ | 2005 07 09 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7− | 1.1+ |
| 1999 02 13 | 704 | 0.8+ | 0.6− | 2005 07 12 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 1999 02 13 | 704 | 1.0− | 1.2− | 2005 07 12 | G96 | 0.7− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 08 24 | 644 | 0.0 | 0.1− | 2005 07 12 | G96 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2001 08 24 | 644 | 0.2+ | 0.3− | 2005 07 12 | G96 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2001 08 24 | 644 | 0.1− | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 2002 12 10 | 704 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2002 12 10 | 704 | 0.0 | 0.7+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.5− |
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.8− | 0.6− | 2006 11 19 | 704 | 0.8+ | 0.7− |
| 2002 12 31 | 704 | 0.7+ | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.9+ | 1.5+ |
| 2002 12 31 | 704 | 0.9+ | 1.5+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2003 01 07 | 704 | 0.4+ | 1.4+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 1.4− | 0.4+ |
| 2003 01 07 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 691 | (2.0− | 0.8−) | 2006 11 20 | 704 | 0.6+ | 1.1+ |
| 2003 01 07 | 704 | 0.9− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | (0.8+ | 2.0+) |
| 2003 01 07 | 704 | 0.4− | 0.2− | 2006 10 28 | 683 | (1.5− | 0.5−) | 2006 11 20 | 704 | (0.6+ | 1.6+) |
| 2003 01 31 | 704 | 0.3+ | 1.0− | 2006 10 28 | 683 | (1.2+ | 1.5+) | 2006 11 20 | 704 | 0.0 | 1.4+ |
| 2003 01 31 | 704 | 0.1+ | 1.0− | 2006 10 28 | 683 | (1.6+ | 1.1+) | 2006 11 20 | 704 | 0.5+ | 0.9+ |
| 2003 01 31 | 704 | 0.0 | 1.1− | 2006 10 31 | 683 | 0.7− | 0.1− | | | | |

**(137130)∗ 1999 CM$_{38}$ = 2004 FX$_{35}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60524)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 192.68880 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21042849 | $\omega$ | 50.87872 | | −0.98440382 | +0.16681546 | |
| *a* | 2.7994091 | $\Omega$ | 138.63725 | | −0.17585947 | −0.92452183 | |
| *e* | 0.1354074 | *i* | 4.85012 | | −0.00475032 | −0.34268350 | |
| *P* | 4.68 | *H* | 15.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 1.4− | 0.1+ | 2004 03 30 | 703 | 0.7+ | 0.3− | 2004 04 22 | 704 | 0.3− | 0.1− |
| 1999 02 10 | 704 | 0.3+ | 0.6+ | 2004 03 30 | 703 | 1.0− | 1.1− | 2004 05 07 | 703 | 0.4+ | 0.3+ |
| 1999 02 10 | 704 | (2.2− | 1.2+) | 2004 03 30 | 703 | 0.5+ | 0.2− | 2004 05 07 | 703 | 1.1+ | 1.1+ |
| 1999 02 10 | 704 | 1.1− | 0.2+ | 2004 03 30 | 703 | 0.1− | 0.2+ | 2004 05 07 | 703 | 0.2+ | 0.7+ |
| 1999 02 10 | 704 | 0.6− | 1.8− | 2004 04 12 | 683 | (2.2+ | 1.6+) | 2004 05 07 | 703 | (0.0 | 2.5−) |
| 1999 02 11 | 691 | 0.3+ | 0.5− | 2004 04 12 | 683 | 0.3− | 1.1+ | 2005 05 19 | G96 | 0.2− | 0.2− |
| 1999 02 11 | 691 | 0.0 | 0.0 | 2004 04 12 | 683 | 0.6+ | 1.0+ | 2005 05 19 | G96 | 0.2+ | 0.1− |
| 1999 02 11 | 691 | 0.2+ | 0.4− | 2004 04 13 | 683 | 0.3− | 0.5+ | 2005 05 19 | G96 | 0.0 | 0.0 |
| 1999 02 12 | 699 | 1.2+ | 0.6+ | 2004 04 13 | 683 | 0.1− | 0.4+ | 2005 05 19 | G96 | 0.0 | 0.0 |
| 1999 02 12 | 699 | 0.3− | 0.1+ | 2004 04 13 | 683 | 1.4− | 0.8+ | 2005 07 04 | G96 | 0.2− | 0.1+ |
| 1999 02 12 | 699 | 0.4+ | 1.0+ | 2004 04 14 | 683 | 1.0− | 0.8− | 2005 07 04 | G96 | 0.2+ | 0.6+ |
| 1999 02 13 | 704 | 0.5− | 0.4− | 2004 04 14 | 683 | 0.0 | 0.2− | 2005 07 04 | G96 | 0.0 | 0.2+ |
| 1999 02 13 | 704 | 1.4− | 0.2− | 2004 04 14 | 683 | 1.0− | 0.4+ | 2005 07 04 | G96 | 0.1− | 0.2− |
| 1999 02 13 | 704 | 1.0+ | 0.2− | 2004 04 15 | 683 | 0.9− | 0.5− | 2005 07 07 | 691 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.4+ | 2004 04 15 | 683 | (0.0 | 1.5−) | 2005 07 07 | 691 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.9− | 0.3+ | 2004 04 15 | 683 | (0.5− | 2.0+) | 2005 07 07 | 691 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2004 04 15 | 049 | 0.1− | 0.2− | 2005 09 11 | 691 | 0.0 | 0.5− |
| 2001 09 12 | 704 | (0.5− | 2.0+) | 2004 04 15 | 049 | 0.5− | 0.0 | 2005 09 11 | 691 | 0.1− | 0.2− |
| 2004 03 16 | 704 | 0.2− | 0.3+ | 2004 04 15 | 049 | 0.0 | 0.3+ | 2005 09 11 | 691 | 0.2− | 0.1− |
| 2004 03 16 | 704 | 0.0 | 0.0 | 2004 04 16 | 683 | 0.0 | 0.6− | 2006 10 02 | G96 | 0.1− | 0.5+ |
| 2004 03 16 | 704 | 0.4− | 0.2+ | 2004 04 16 | 683 | 0.3− | 1.4− | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2004 03 16 | 704 | (1.6+ | 0.5+) | 2004 04 16 | 683 | 0.4− | 0.9− | 2006 10 02 | G96 | 0.1− | 0.5+ |
| 2004 03 16 | 704 | 0.7+ | 0.2− | 2004 04 20 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2− | 0.6+ |
| 2004 03 19 | 704 | 0.4+ | 0.4+ | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 10 03 | G96 | 0.3− | 0.2+ |
| 2004 03 19 | 704 | 0.4− | 0.2− | 2004 04 20 | 704 | 0.5+ | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2004 03 19 | 704 | 0.2− | 0.1+ | 2004 04 20 | 704 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.2+ |
| 2004 03 19 | 704 | 0.2+ | 0.7+ | 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 0.2− | 0.5+ | 2004 04 20 | E12 | 0.9− | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2004 03 21 | 691 | 0.1− | 0.1+ | 2004 04 20 | E12 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2004 03 21 | 691 | 0.0 | 0.1+ | 2004 04 20 | E12 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.8+ |
| 2004 03 21 | 691 | 0.1− | 0.0 | 2004 04 20 | E12 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2004 03 22 | 704 | 0.4+ | 0.4+ | 2004 04 21 | 703 | 0.1− | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.4+ |
| 2004 03 22 | 704 | 0.5+ | 0.4+ | 2004 04 21 | 703 | 0.9+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.3+ |
| 2004 03 22 | 704 | 0.9+ | 0.1− | 2004 04 21 | 703 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2004 03 22 | 704 | 1.2+ | 0.5+ | 2004 04 21 | 703 | 0.1− | 1.0+ | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2004 03 22 | 704 | 0.5+ | 0.4+ | 2004 04 22 | 704 | 0.6+ | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.3+ |
| 2004 03 28 | 691 | 0.3+ | 0.2+ | 2004 04 22 | 704 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.0 | 0.4+ |
| 2004 03 28 | 691 | 0.2+ | 0.1+ | 2004 04 22 | 704 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.5− | 0.1− |
| 2004 03 28 | 691 | 0.4+ | 0.1+ | 2004 04 22 | 704 | 0.0 | 0.8− | | | | |

**(137131)∗ 1999 CN$_{39}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 276.79869 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24395055 | $\omega$ | 75.75339 | | −0.97853640 | +0.17430034 | |
| *a* | 2.5366946 | $\Omega$ | 114.18936 | | −0.20222520 | −0.91482549 | |
| *e* | 0.0358757 | *i* | 6.92199 | | +0.03964201 | −0.36429893 | |
| *P* | 4.04 | *H* | 15.9 | *G* | 0.15 | *U* | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.2+ | 0.6+ | 2003 01 27 | 704 | 0.5− | 0.6+ | 2005 10 01 | 699 | 0.4− | 0.0 |
| 1999 02 10 | 704 | 1.2− | 0.5− | 2003 01 27 | 704 | 0.8− | 0.8+ | 2005 10 01 | 699 | 0.6+ | 0.2− |
| 1999 02 10 | 704 | 0.8+ | 1.2− | 2003 01 27 | 704 | 0.4− | 0.2+ | 2005 10 05 | 703 | 0.8− | 0.5+ |
| 1999 02 10 | 704 | 0.1+ | 1.5+ | 2003 01 27 | 704 | 0.2+ | 0.8+ | 2005 10 05 | 703 | 0.3− | 0.2+ |
| 1999 02 13 | 704 | (0.1+ | 2.2−) | 2003 02 01 | 704 | 0.3− | 0.2+ | 2005 10 05 | 703 | 0.2+ | 0.8+ |
| 1999 02 13 | 704 | (2.2− | 0.0 ) | 2003 02 01 | 704 | 0.2+ | 0.2− | 2005 10 05 | 703 | 1.0− | 0.6+ |
| 1999 02 13 | 704 | 0.1− | 0.7+ | 2003 02 01 | 704 | 0.4− | 0.7+ | 2005 10 27 | 704 | (2.0− | 0.9+) |
| 1999 02 13 | 704 | (3.4− | 1.1−) | 2003 02 01 | 704 | 0.7+ | 0.6+ | 2005 10 27 | 704 | (2.5− | 0.4−) |
| 2001 09 16 | 704 | 0.3− | 0.2− | 2003 02 01 | 704 | 0.6+ | 0.4+ | 2005 10 27 | 704 | 1.2− | 0.1+ |
| 2001 09 16 | 704 | 0.3+ | 0.4+ | 2003 02 04 | 699 | 0.2+ | 0.3+ | 2005 10 27 | 704 | (0.5− | 1.6+) |
| 2001 09 16 | 704 | 0.7− | 0.6+ | 2003 02 04 | 699 | 0.5− | 0.1+ | 2005 10 31 | 699 | 0.3+ | 1.1+ |
| 2001 10 10 | 644 | 0.4+ | 0.2+ | 2003 02 04 | 699 | 0.8− | 1.0+ | 2005 10 31 | 699 | 0.3− | 1.2+ |
| 2001 10 10 | 644 | 0.1+ | 0.1+ | 2003 02 04 | 704 | 0.5+ | 0.0 | 2005 10 31 | 699 | 0.4+ | 0.3+ |
| 2001 10 10 | 644 | 0.4− | 0.0 | 2003 02 04 | 699 | 0.9+ | 0.8+ | 2005 10 31 | 699 | 0.6− | 0.4+ |
| 2001 10 14 | 699 | 1.2+ | 0.9+ | 2003 02 04 | 704 | 0.2+ | 0.0 | 2005 11 01 | 703 | 0.1− | 0.8− |
| 2001 10 14 | 699 | 1.0− | 0.4+ | 2003 02 04 | 704 | 0.3+ | 0.7+ | 2005 11 01 | 703 | 0.5− | 0.4+ |
| 2001 10 14 | 699 | 0.7+ | 1.0+ | 2003 02 04 | 704 | 0.2+ | 0.1− | 2005 11 01 | 703 | 0.1− | 0.3− |
| 2001 10 14 | 699 | 0.9+ | 0.1+ | 2003 02 04 | 704 | 0.1− | 0.1− | 2005 11 01 | 703 | 0.5+ | 0.5− |
| 2001 10 24 | 644 | 0.5− | 0.2+ | 2003 02 19 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.4− | 0.5− |
| 2001 10 24 | 644 | 0.0 | 0.3+ | 2003 02 19 | 644 | 0.5+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.7− |
| 2001 10 24 | 644 | 0.5+ | 0.1+ | 2003 02 19 | 644 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2001 11 12 | 645 | 0.0 | 0.2− | 2003 02 24 | 608 | 0.9+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.5− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 02 24 | 608 | 0.0 | 0.6− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2003 01 14 | 599 | 0.4+ | 1.3− | 2003 02 24 | 608 | 0.2+ | 0.9− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2003 01 14 | 599 | 0.3− | 0.1+ | 2003 03 06 | 704 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2003 01 14 | 599 | (2.7+ | 0.5+) | 2003 03 06 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2003 01 26 | 699 | 0.7− | 0.1+ | 2003 03 06 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 691 | 0.4+ | 0.2− |
| 2003 01 26 | 699 | (0.6− | 1.6+) | 2003 03 06 | 704 | 0.7+ | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.3− |
| 2003 01 26 | 699 | 0.4− | 0.5− | 2003 03 06 | 704 | 0.3+ | 0.9+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2003 01 26 | 699 | 0.6− | 0.7+ | 2003 03 13 | 608 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.6− |
| 2003 01 26 | 608 | 0.9− | 0.4− | 2003 03 13 | 608 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.6− | 0.5− |
| 2003 01 26 | 608 | 0.1− | 0.2− | 2003 03 13 | 608 | 0.9+ | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.6− |
| 2003 01 26 | 608 | 0.9− | 0.3− | 2005 10 01 | 699 | 0.4− | 0.6+ | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2003 01 27 | 704 | 0.4− | 0.2− | 2005 10 01 | 699 | 0.3+ | 0.6+ | | | | |

**(137132)∗ 1999 CL$_{43}$ = 2003 AQ$_{12}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 42904)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 307.47914 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.22835012 | $\omega$ | 330.14402 | | −0.28692817 | −0.94209211 | |
| *a* | 2.6509521 | $\Omega$ | 135.87649 | | +0.92086938 | −0.32118599 | |
| *e* | 0.1469014 | *i* | 14.43855 | | +0.26395417 | +0.09644695 | |
| *P* | 4.32 | *H* | 15.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 1.4− | 1.0− | 2003 01 05 | 704 | 0.1− | 0.1− | 2005 07 18 | 644 | 0.0 | 0.5+ |
| 1999 02 10 | 704 | 0.5− | 1.3+ | 2003 01 05 | 704 | 0.1+ | 0.1− | 2005 07 18 | 644 | 0.1− | 0.0 |
| 1999 02 10 | 704 | 0.1+ | 0.7− | 2003 01 05 | 704 | 0.5− | 0.0 | 2005 07 27 | 644 | 0.1+ | 0.5+ |
| 1999 02 12 | 699 | 0.3+ | 0.7− | 2003 01 05 | 704 | 0.4− | 0.2+ | 2005 07 27 | 644 | 0.2− | 0.2+ |
| 1999 02 12 | 699 | 0.4+ | 0.7− | 2003 01 05 | 704 | 0.2− | 0.7− | 2005 07 27 | 644 | 0.4− | 0.2+ |
| 1999 02 12 | 699 | 0.1− | 0.8+ | 2003 02 02 | 704 | 0.0 | 0.5− | 2005 09 11 | 691 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 704 | 0.9− | 0.1+ | 2003 02 02 | 704 | 1.1− | 0.1− | 2005 09 11 | 691 | 0.2− | 0.1− | | |
| 1999 02 13 | 704 | 0.1− | 1.0+ | 2003 02 02 | 704 | 0.1+ | 0.7+ | 2005 09 11 | 691 | 0.2− | 0.1− | | |
| 1999 02 13 | 704 | 0.7+ | 1.7+ | 2003 02 02 | 704 | 0.4− | 0.9+ | 2006 10 20 | 703 | 0.4+ | 0.1+ | | |
| 1999 02 13 | 704 | 1.2+ | 0.5+ | 2003 02 02 | 704 | 0.0 | 0.3− | 2006 10 20 | 703 | 0.1+ | 0.3− | | |
| 1999 02 13 | 704 | 1.7+ | 0.9− | 2004 05 13 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 703 | 0.4− | 0.6− | | |
| 2002 12 14 | 704 | 0.4− | 0.1+ | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 703 | 1.2− | 1.3− | | |
| 2002 12 14 | 704 | 0.3+ | 0.5+ | 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.2+ | 1.0+ | | |
| 2002 12 14 | 704 | 0.1− | 0.9+ | 2005 07 10 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 0.1+ | 1.3+ | | |
| 2002 12 14 | 704 | (0.2− | 1.8+) | 2005 07 10 | 691 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.4+ | 1.3+ | | |
| 2002 12 14 | 704 | 0.4− | 0.5+ | 2005 07 10 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 1.4+ | 0.1+ | | |
| 2003 01 01 | 704 | 0.1− | 0.1− | 2005 07 11 | G96 | 0.7− | 0.4− | 2006 11 16 | 703 | 0.1+ | 0.1+ | | |
| 2003 01 01 | 704 | 0.2+ | 0.7+ | 2005 07 11 | G96 | 1.0− | 0.1− | 2006 11 16 | 703 | 0.1− | 0.4+ | | |
| 2003 01 01 | 704 | 0.2+ | 0.9+ | 2005 07 11 | G96 | 0.9− | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.5+ | | |
| 2003 01 01 | 704 | 0.5− | 0.7+ | 2005 07 11 | G96 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.1+ | | |
| 2003 01 01 | 704 | 0.2+ | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.2+ | | | | | | |

**(137133)∗ 1999 CE$_{54}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 231.33785 | | (2000.0) | | | |
| $n$ | 0.21483008 | $\omega$ | 184.74628 | | −0.95547160 | −0.28145474 |
| $a$ | 2.7610397 | $\Omega$ | 338.26501 | | +0.27800132 | −0.75786599 |
| $e$ | 0.1447019 | $i$ | 13.84921 | | +0.09894086 | −0.58857656 |
| $P$ | 4.59 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.4+ | 0.6− | 2001 09 23 | 704 | 0.3+ | 0.9− | 2006 09 17 | 703 | 0.0 | 0.8+ | | |
| 1999 02 10 | 704 | 1.8+ | 0.1+ | 2001 09 28 | 644 | 0.4− | 0.6− | 2006 09 17 | 703 | (1.9− | 1.3+) | | |
| 1999 02 10 | 704 | 0.6− | 0.4+ | 2001 09 28 | 644 | 0.6− | 0.0 | 2006 09 17 | 703 | 0.4− | 1.2+ | | |
| 1999 02 10 | 704 | 0.0 | 0.4− | 2001 09 28 | 644 | 0.2− | 0.4− | 2006 09 17 | 703 | 0.3+ | 0.4− | | |
| 1999 02 13 | 704 | 0.5+ | 0.5− | 2004 03 25 | E12 | (2.9+ | 1.8+) | 2006 09 28 | 703 | (1.9+ | 1.1+) | | |
| 1999 02 13 | 704 | 0.9+ | 1.0+ | 2004 03 25 | E12 | 0.6+ | 0.1+ | 2006 09 28 | 703 | 0.4+ | 0.6+ | | |
| 1999 02 13 | 704 | 0.5− | 1.3+ | 2004 03 25 | E12 | (3.1+ | 1.3+) | 2006 09 28 | 703 | 1.2+ | 1.0+ | | |
| 1999 02 13 | 704 | 0.9− | 0.2− | 2004 03 25 | E12 | 0.6+ | 0.8+ | 2006 09 28 | 703 | (1.6+ | 1.9+) | | |
| 1999 02 13 | 704 | 0.5− | 0.4− | 2004 04 24 | 699 | 0.7+ | 0.5+ | 2006 10 17 | A50 | 0.3+ | 0.2+ | | |
| 1999 02 18 | 566 | 0.1+ | 0.3+ | 2004 04 24 | 699 | (2.7+ | 2.5+) | 2006 10 17 | A50 | 1.3+ | 0.3+ | | |
| 1999 02 18 | 566 | 0.3− | 0.6+ | 2004 04 24 | 699 | 0.8+ | 0.8− | 2006 10 18 | A50 | 0.4+ | 0.2+ | | |
| 1999 02 18 | 566 | 0.9− | 0.5+ | 2004 04 24 | 699 | 0.9+ | 0.5+ | 2006 10 18 | A50 | 0.6+ | 0.6+ | | |
| 1999 03 19 | 704 | 0.7− | 0.6+ | 2004 04 30 | E12 | 0.4− | 1.3+ | 2006 10 19 | 703 | 0.4+ | 0.5+ | | |
| 1999 03 19 | 704 | 0.4+ | 0.2+ | 2004 04 30 | E12 | (0.7− | 2.2+) | 2006 10 19 | 703 | 0.3− | 1.2+ | | |
| 1999 03 19 | 704 | 0.7+ | 0.5+ | 2004 04 30 | E12 | (0.7− | 2.3+) | 2006 10 19 | 703 | 0.5− | 0.1− | | |
| 1999 03 19 | 704 | 0.8− | 0.1+ | 2004 04 30 | E12 | 0.1− | 1.2+ | 2006 10 19 | 703 | 0.7− | 0.6+ | | |
| 1999 03 20 | 704 | 0.7− | 0.9− | 2004 05 12 | E12 | 1.0− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 1999 03 20 | 704 | 0.1− | 0.3+ | 2004 05 12 | E12 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 1999 03 20 | 704 | 1.1+ | 0.9− | 2004 05 12 | E12 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 1999 03 20 | 704 | 0.6+ | 0.6+ | 2004 05 12 | E12 | 0.7− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 1999 03 20 | 704 | 1.1+ | 0.8− | 2004 06 12 | 644 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.1− | | |
| 2001 08 24 | 699 | 0.9+ | 1.4+ | 2004 06 12 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.6− | 0.1+ | | |
| 2001 08 24 | 699 | 1.1+ | 0.1+ | 2004 06 12 | 644 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.7− | 1.3− | | |
| 2001 08 24 | 699 | 0.1+ | 0.2+ | 2005 07 10 | E12 | 0.1− | 0.9− | 2006 10 27 | 703 | 1.0− | 0.5− | | |
| 2001 08 24 | 699 | 0.1+ | 0.0 | 2005 07 10 | E12 | 0.8− | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.0 | | |
| 2001 09 16 | 704 | 0.2− | 0.7+ | 2005 07 10 | E12 | 1.1+ | 0.3− | 2006 10 27 | 703 | (2.5− | 0.2−) | | |
| 2001 09 16 | 704 | 0.9− | 0.4− | 2005 07 10 | E12 | 0.5+ | 0.7− | 2006 11 15 | 703 | 0.8+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.1− | 0.0 | 2005 07 26 | 644 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.6− | | |
| 2001 09 16 | 704 | 0.0 | 0.4+ | 2005 07 26 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.3− | | |
| 2001 09 16 | 704 | 0.7− | 0.5+ | 2005 07 26 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | 1.5− | 0.8− | | |
| 2001 09 18 | 699 | 0.1− | 0.8+ | 2005 07 26 | 644 | 0.4+ | 0.0 | 2006 11 22 | 703 | 0.1− | 0.1− | | |
| 2001 09 18 | 699 | (1.7− | 0.4+) | 2005 07 26 | 644 | 0.4+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 1.0− | | |
| 2001 09 18 | 699 | 1.2− | 1.3+ | 2005 07 26 | 644 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 1.4− | 0.4+ | | |
| 2001 09 18 | 699 | 0.9− | 0.7+ | 2005 08 04 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 1.2− | 0.2+ | | |
| 2001 09 23 | 704 | 0.1− | 0.4+ | 2005 08 04 | 644 | 0.3+ | 0.0 | | | | | | |
| 2001 09 23 | 704 | 0.7− | 1.1− | 2005 08 04 | 644 | 0.2+ | 0.2+ | | | | | | |

**(137134)∗ 1999 CJ$_{60}$**

Discovered 1999 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.24020 | | (2000.0) | | | |
| $n$ | 0.22939993 | $\omega$ | 284.22992 | | +0.07470410 | −0.99714920 |
| $a$ | 2.6428582 | $\Omega$ | 161.47597 | | +0.92732315 | +0.06554876 |
| $e$ | 0.1864213 | $i$ | 1.91548 | | +0.36673025 | +0.03737419 |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.4+ | 0.1+ | 2002 12 31 | 704 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.3+ | 0.4− | | |
| 1997 09 27 | 691 | 0.4+ | 0.1+ | 2002 12 31 | 704 | 0.0 | 1.5+ | 2006 11 02 | 703 | 0.1+ | 0.2− | | |
| 1997 09 27 | 691 | 0.2+ | 0.1− | 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 11 02 | 703 | 0.2− | 0.4+ | | |
| 1997 09 30 | 691 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.4− | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.2− | | |
| 1997 09 30 | 691 | 0.4− | 0.7+ | 2003 01 01 | 704 | 0.5− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 1997 09 30 | 691 | 0.5− | 0.2− | 2003 01 01 | 704 | 0.7+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 1999 01 19 | 910 | 0.8+ | 0.1+ | 2003 01 01 | 704 | 0.7− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.1− | | |
| 1999 01 19 | 910 | 0.5+ | 0.3− | 2003 01 01 | 704 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2− | | |
| 1999 01 19 | 910 | 0.4+ | 0.5+ | 2003 01 01 | 704 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.5− | | |
| 1999 02 12 | 704 | 0.7− | 0.1− | 2003 01 02 | 704 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2− | | |
| 1999 02 12 | 704 | 0.1+ | 1.5− | 2003 01 02 | 704 | 0.1+ | 0.8− | 2006 11 09 | 644 | 0.2+ | 0.4− | | |
| 1999 02 12 | 704 | 0.8+ | 1.7− | 2003 01 02 | 704 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.3− | | |
| 1999 02 12 | 704 | 1.8+ | 0.2− | 2003 01 02 | 704 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.2− | | |
| 1999 02 12 | 704 | (2.2− | 1.7−) | 2003 01 02 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.4− | | |
| 1999 02 14 | 691 | 0.3+ | 0.2+ | 2003 01 04 | 704 | 0.2+ | 0.5− | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 1999 02 14 | 691 | 0.3+ | 0.1+ | 2003 01 04 | 704 | 0.1− | 1.3− | 2006 11 11 | 703 | 0.5+ | 0.5+ | | |
| 1999 02 14 | 691 | 0.3+ | 0.1+ | 2003 01 04 | 704 | 0.4+ | 0.7− | 2006 11 11 | 703 | 0.3+ | 0.1− | | |
| 1999 02 16 | 704 | 0.2− | 1.5+ | 2003 01 04 | 704 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.7+ | 0.3− | | |
| 1999 02 16 | 704 | 0.1− | 1.3− | 2003 01 08 | 704 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.7+ | | |
| 1999 02 16 | 704 | 1.3− | 1.2+ | 2003 01 08 | 704 | 0.1− | 0.5+ | 2006 11 11 | 644 | 0.2+ | 0.0 | | |
| 1999 02 16 | 704 | (2.1− | 0.2−) | 2003 01 08 | 704 | 0.3− | 0.1− | 2006 11 11 | 644 | 0.1+ | 0.2− | | |
| 1999 02 23 | 691 | 0.3− | 0.0 | 2003 01 08 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 644 | 0.0 | 0.1+ | | |
| 1999 02 23 | 691 | 0.0 | 0.1+ | 2005 07 10 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 1999 02 23 | 691 | 0.4− | 0.3+ | 2005 07 10 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 1999 02 23 | 699 | 1.1+ | 0.2− | 2005 07 10 | 691 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.2− | 0.6− | | |
| 1999 02 23 | 699 | 1.0+ | 1.8+ | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 1999 02 23 | 699 | 0.0 | 1.2+ | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.8− | 0.1+ | | |
| 1999 03 12 | 691 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 1.0− | 0.0 | | |
| 1999 03 12 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.5− | | |
| 1999 03 12 | 691 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.8− | 2006 11 17 | 703 | 0.1− | 0.1+ | | |
| 1999 03 20 | 691 | 0.5− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.7− | 2006 11 19 | 704 | (0.4+ | 1.6+) | | |
| 1999 03 20 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.2− | 0.5+ | | |
| 1999 03 20 | 691 | 0.2− | 0.5− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.9− | 0.1− | | |
| 1999 04 17 | 691 | 0.8− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 1.2− | 0.6+ | | |
| 1999 04 17 | 691 | 0.9− | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.1− | 0.4− | | |
| 1999 04 17 | 691 | 0.7− | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.9+ | | |
| 1999 04 20 | 691 | 1.3+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.7− | | |
| 1999 04 20 | 691 | 0.7+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.5− | 0.0 | | |
| 1999 04 20 | 691 | 0.5+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.5− | 0.3− | | |
| 2002 12 31 | 704 | 0.9+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.5− | | | | | | |

**(137135)∗ 1999 CK$_{63}$**

Discovered 1999 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.00399 | | (2000.0) | | | |
| $n$ | 0.22253562 | $\omega$ | 185.00715 | | +0.00383703 | −0.97632536 |
| $a$ | 2.6969301 | $\Omega$ | 264.89185 | | +0.92484904 | +0.08571784 |
| $e$ | 0.0955737 | $i$ | 12.54084 | | +0.38031505 | −0.19859819 |
| $P$ | 4.43 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 699 | 0.5− | 0.8+ | 2001 09 09 | 699 | 1.0+ | 0.2+ | 2003 02 02 | 704 | (2.9+ | 0.8−) | | |
| 1998 12 26 | 699 | 0.4+ | 0.8+ | 2001 09 14 | 644 | 0.0 | 0.4+ | 2003 03 06 | 704 | 0.4− | 1.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 699 | 0.7+ | 0.6+ | 2001 09 14 | 644 | 0.2− | 0.6+ | 2003 03 06 | 704 | (0.7− | 1.7−) | | |
| 1999 01 17 | 699 | 0.1− | 0.7+ | 2001 09 14 | 644 | 0.0 | 0.4+ | 2003 03 06 | 704 | 0.5+ | 1.1− | | |
| 1999 01 17 | 699 | 0.2− | 0.8− | 2001 09 25 | 704 | 0.6+ | 0.1+ | 2003 03 06 | 704 | 0.3− | 0.9+ | | |
| 1999 01 17 | 699 | 0.2+ | 0.1+ | 2001 09 25 | 704 | 0.0 | 0.1− | 2003 03 06 | 704 | 0.4− | 0.2− | | |
| 1999 02 12 | 704 | 1.1− | 0.1− | 2001 09 25 | 704 | 0.6+ | 1.1+ | 2003 03 06 | 704 | 0.2+ | 0.5− | | |
| 1999 02 12 | 704 | 0.1− | 0.3+ | 2001 10 15 | 645 | 0.1− | 0.1− | 2003 03 06 | 704 | 0.6+ | 0.7− | | |
| 1999 02 12 | 704 | (2.1− | 1.4+) | 2001 10 15 | 645 | 0.1− | 0.0 | 2003 03 06 | 704 | 0.2− | 0.0 | | |
| 1999 02 12 | 704 | 1.1− | 0.3+ | 2001 10 19 | 704 | 0.2− | 1.2+ | 2003 03 07 | 704 | 0.2+ | 0.9+ | | |
| 1999 02 12 | 704 | 0.5− | 0.5− | 2001 10 19 | 704 | 0.1− | 0.1− | 2003 03 07 | 704 | 0.2+ | 0.6+ | | |
| 1999 02 16 | 704 | 0.1− | 0.3− | 2001 10 19 | 704 | 0.3+ | 0.1− | 2003 03 07 | 704 | 0.3− | 0.7+ | | |
| 1999 02 16 | 704 | 0.4− | 0.2+ | 2002 11 12 | 704 | 0.4− | 0.8+ | 2003 03 07 | 704 | 0.2− | 1.3+ | | |
| 1999 02 16 | 704 | 0.6− | 0.2− | 2002 11 12 | 704 | 0.6+ | 0.3+ | 2004 03 24 | E12 | 0.1+ | 0.7+ | | |
| 1999 02 16 | 704 | 0.4− | 0.2− | 2002 11 12 | 704 | 0.1+ | 0.1+ | 2004 03 24 | E12 | 0.6+ | 0.5+ | | |
| 1999 02 16 | 704 | 0.4− | 0.3− | 2002 11 12 | 704 | 0.1− | 0.3+ | 2004 03 24 | E12 | 0.0 | 1.0+ | | |
| 1999 02 21 | 699 | 1.2+ | 0.3+ | 2002 11 12 | 704 | 0.3+ | 0.2+ | 2004 03 24 | E12 | 0.5− | 0.4+ | | |
| 1999 02 21 | 699 | 0.9+ | 0.1− | 2002 12 05 | 704 | 0.2− | 0.1+ | 2004 03 26 | 704 | 1.4+ | 0.1+ | | |
| 1999 02 21 | 699 | 1.5+ | 1.2+ | 2002 12 05 | 704 | 0.1− | 0.1− | 2004 03 26 | 704 | (1.8+ | 0.5+) | | |
| 2001 06 29 | 699 | (2.0− | 2.1+) | 2002 12 05 | 704 | 0.6− | 0.1− | 2004 03 26 | 704 | (0.5+ | 1.9−) | | |
| 2001 06 29 | 699 | (2.0− | 0.9+) | 2002 12 05 | 704 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.6+ | 0.9+ | | |
| 2001 06 29 | 699 | 1.1− | 0.4− | 2002 12 10 | 636 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.3− | 0.2+ | | |
| 2001 06 29 | 699 | 0.4+ | 1.4− | 2002 12 10 | 636 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.2− | 0.6− | | |
| 2001 06 30 | 699 | 0.3− | 0.8+ | 2002 12 10 | 636 | 0.6+ | 0.5− | 2006 09 17 | 703 | 0.3+ | 0.2− | | |
| 2001 06 30 | 699 | 0.5− | 0.7+ | 2002 12 10 | 704 | 1.1+ | 0.4− | 2006 09 28 | 703 | 0.4+ | 0.1+ | | |
| 2001 06 30 | 699 | 1.0− | 0.3+ | 2002 12 10 | 704 | 0.2− | 0.7− | 2006 09 28 | 703 | 0.1+ | 0.4− | | |
| 2001 06 30 | 699 | 0.2− | 0.1+ | 2002 12 10 | 704 | 0.4+ | 0.4− | 2006 09 28 | 703 | 0.0 | 0.0 | | |
| 2001 08 21 | 704 | 0.1+ | 1.2− | 2002 12 10 | 704 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.3− | | |
| 2001 08 21 | 704 | 0.2+ | 1.3− | 2002 12 10 | 704 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.7+ | | |
| 2001 08 21 | 704 | 0.1− | 0.2− | 2002 12 31 | 704 | 1.3− | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.1+ | | |
| 2001 08 21 | 704 | 0.2− | 1.2− | 2002 12 31 | 704 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.4+ | | |
| 2001 08 23 | 699 | (1.5− | 1.6+) | 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.4+ | | |
| 2001 08 23 | 699 | 0.2− | 1.0+ | 2003 01 04 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 704 | 0.3− | 0.6− | | |
| 2001 08 23 | 699 | 0.1+ | 0.7+ | 2003 01 04 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 704 | 0.5− | 0.3− | | |
| 2001 08 23 | 699 | 0.1+ | 0.7+ | 2003 01 04 | 704 | 0.1− | 0.2− | 2006 10 20 | 704 | 0.9+ | 0.1+ | | |
| 2001 08 27 | 561 | 0.0 | 0.3+ | 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 10 20 | 704 | 1.1− | 0.3+ | | |
| 2001 08 27 | 561 | 0.0 | 0.4+ | 2003 01 04 | 704 | 0.1− | 0.6− | 2006 10 24 | A24 | 0.3+ | 0.0 | | |
| 2001 08 27 | 561 | 0.2+ | 0.3+ | 2003 01 05 | 704 | 0.4+ | 0.4+ | 2006 10 24 | A24 | 0.3− | 0.1− | | |
| 2001 08 28 | 561 | 0.3− | 0.2+ | 2003 01 05 | 704 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.7− | | |
| 2001 08 28 | 561 | 0.4− | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.6+ | | |
| 2001 08 28 | 561 | 0.4+ | 0.5+ | 2003 01 05 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.2− | | |
| 2001 08 29 | 644 | 0.1+ | 0.1+ | 2003 01 05 | 704 | 0.5+ | 0.9+ | 2006 10 27 | 703 | 0.9− | 0.4+ | | |
| 2001 08 29 | 644 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.8− | | |
| 2001 08 29 | 644 | 0.0 | 0.1+ | 2003 01 08 | 704 | 0.3+ | 0.1− | 2006 11 15 | 703 | 0.1− | 0.1− | | |
| 2001 08 29 | 561 | 0.1− | 0.6+ | 2003 01 08 | 704 | 0.5+ | 0.0 | 2006 11 15 | 703 | 0.4− | 0.5− | | |
| 2001 08 29 | 561 | 0.0 | 1.0+ | 2003 01 08 | 704 | 0.2+ | 0.0 | 2006 11 15 | 703 | (2.8− | 1.2−) | | |
| 2001 09 09 | 699 | 1.1+ | 0.0 | 2003 01 08 | 704 | 0.5+ | 0.2+ | 2006 11 22 | G92 | 0.3− | 0.3− | | |
| 2001 09 09 | 699 | 0.0 | 1.1+ | 2003 02 02 | 704 | (1.2+ | 1.9+) | 2006 11 22 | G92 | 0.3+ | 0.1− | | |
| 2001 09 09 | 699 | (0.4+ | 2.9−) | 2003 02 02 | 704 | (1.8+ | 0.6−) | 2006 11 22 | G92 | 0.3+ | 0.0 | | |

**(137136)∗ 1999 $CL_{88}$ = 2001 $OQ_{112}$ = 2002 $XW_{73}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40004, *MPO* 74599)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.89327 | | (2000.0) | | | |
| $n$ | 0.22771553 | $\omega$ | 11.49254 | | +0.25642692 | −0.95244874 |
| $a$ | 2.6558749 | $\Omega$ | 63.82898 | | +0.87163753 | +0.15427857 |
| $e$ | 0.1422405 | $i$ | 10.56670 | | +0.41772390 | +0.26275372 |
| $P$ | 4.33 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 21 | 704 | (0.8− | 3.6−) | 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 1.2− | 0.0 | | |
| 1998 12 21 | 704 | (2.2− | 0.5+) | 2002 12 14 | 704 | 0.3+ | 0.6− | 2006 10 01 | 704 | (1.6+ | 1.2+) | | |
| 1998 12 21 | 704 | 1.6+ | 0.6− | 2002 12 14 | 704 | 0.2+ | 0.5− | 2006 10 01 | 704 | (2.1+ | 1.0+) | | |
| 1998 12 21 | 704 | 1.5− | 0.9− | 2002 12 14 | 704 | 0.7+ | 0.2− | 2006 10 01 | 704 | 1.3+ | 0.0 | | |
| 1999 02 10 | 704 | 0.3+ | 1.7− | 2002 12 14 | 704 | 0.3+ | 0.4− | 2006 10 01 | 704 | (0.5+ | 1.8+) | | |
| 1999 02 10 | 704 | 0.2− | 0.7− | 2002 12 14 | 704 | 0.6+ | 0.1− | 2006 10 01 | 704 | (1.9+ | 0.6−) | | |
| 1999 02 10 | 704 | 1.3− | 0.2− | 2002 12 30 | 704 | 0.1+ | 0.2− | 2006 10 03 | 704 | 0.9+ | 1.0− | | |
| 1999 02 10 | 704 | 0.1− | 1.0+ | 2002 12 30 | 704 | 0.1− | 0.5+ | 2006 10 03 | 704 | 0.3− | 1.2+ | | |
| 1999 02 10 | 704 | 1.0− | 0.1+ | 2002 12 30 | 704 | 0.1− | 0.3− | 2006 10 03 | 704 | 0.5− | 0.5+ | | |
| 1999 02 13 | 704 | (1.3− | 2.4−) | 2002 12 30 | 704 | 0.5− | 0.5+ | 2006 10 03 | 704 | 0.1+ | 0.5+ | | |
| 1999 02 13 | 704 | 0.2− | 0.5+ | 2003 01 05 | 704 | (1.0− | 2.3+) | 2006 10 16 | 703 | 0.6− | 0.2+ | | |
| 1999 02 13 | 704 | 0.6− | 0.8− | 2003 01 05 | 704 | 0.5− | 0.8+ | 2006 10 16 | 703 | 1.3− | 0.5− | | |
| 1999 02 13 | 704 | 0.3+ | 0.3− | 2003 01 05 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.1− | | |
| 1999 02 13 | 704 | 0.3− | 1.2+ | 2003 01 05 | 704 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.6− | | |
| 1999 02 18 | 699 | 0.3+ | 0.0 | 2003 01 05 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.3− | | |
| 1999 02 18 | 699 | 0.7− | 0.1+ | 2004 03 16 | 704 | 0.1− | 0.8− | 2006 10 22 | 703 | 0.8− | 0.4− | | |
| 1999 02 18 | 699 | 0.4+ | 0.6+ | 2004 03 16 | 704 | (1.7− | 0.6−) | 2006 10 22 | 703 | 0.2− | 0.4− | | |
| 2001 07 30 | 644 | 0.2+ | 0.7− | 2004 03 16 | 704 | 0.7+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.2− | | |
| 2001 07 30 | 644 | 0.4+ | 0.2− | 2004 03 16 | 704 | (1.7+ | 1.3−) | 2006 10 22 | 644 | 0.2+ | 0.4+ | | |
| 2001 07 30 | 644 | 0.1+ | 0.5− | 2004 03 22 | 699 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 03 22 | 699 | 0.6− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.3− | 2004 03 22 | 699 | 1.1− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2002 10 03 | 704 | 0.9+ | 0.3− | 2004 03 22 | 699 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 10 11 | 704 | 0.4− | 0.1− | 2004 03 23 | 704 | 1.0+ | 0.0 | 2006 10 28 | 703 | 0.7− | 0.3− | | |
| 2002 10 11 | 704 | 0.3+ | 0.4− | 2004 03 23 | 704 | 0.5− | 0.4+ | 2006 10 28 | 703 | 0.1− | 0.4+ | | |
| 2002 10 11 | 704 | (1.4+ | 1.7+) | 2004 04 17 | 704 | 0.4+ | 0.4− | 2006 10 28 | 703 | 0.5+ | 0.1− | | |
| 2002 11 06 | 704 | 0.7+ | 0.1+ | 2004 04 17 | 704 | 0.5+ | 0.4+ | 2006 10 28 | 703 | 1.1− | 0.2− | | |
| 2002 11 06 | 704 | 0.6+ | 0.6+ | 2004 04 17 | 704 | 0.5+ | 0.1− | 2006 11 13 | 703 | 0.4+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.9+ | 0.3+ | 2004 04 17 | 704 | 1.2+ | 0.5+ | 2006 11 13 | 703 | 0.5+ | 0.5− | | |
| 2002 11 06 | 704 | 0.3+ | 0.3− | 2004 04 21 | 703 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.8+ | 0.1− | | |
| 2002 11 06 | 704 | 0.6+ | 0.5+ | 2004 04 21 | 703 | 0.4+ | 0.5+ | 2006 11 13 | 703 | 0.4+ | 0.4− | | |
| 2002 11 14 | 704 | 1.4− | 0.3+ | 2004 04 21 | 703 | (1.7− | 1.6−) | 2006 11 14 | 704 | (1.0+ | 1.6+) | | |
| 2002 11 14 | 704 | 1.0− | 0.2+ | 2004 04 21 | 703 | 0.4− | 0.8− | 2006 11 14 | 704 | (0.9+ | 2.2+) | | |
| 2002 11 14 | 704 | 0.1− | 0.5− | 2004 04 23 | 704 | 0.8+ | 0.5+ | 2006 11 14 | 704 | (0.6+ | 1.6+) | | |
| 2002 11 14 | 704 | 0.5− | 0.1− | 2004 04 23 | 704 | 0.3− | 1.4+ | 2006 11 14 | 704 | (0.5− | 2.5+) | | |
| 2002 11 14 | 704 | 0.0 | 0.2− | 2004 04 23 | 704 | 0.0 | 1.3+ | 2006 11 20 | 704 | 0.9+ | 0.0 | | |
| 2002 12 06 | 704 | (2.5+ | 0.1+) | 2004 04 23 | 704 | (0.2+ | 1.6+) | 2006 11 20 | 704 | 0.2+ | 0.2− | | |
| 2002 12 06 | 704 | 0.2+ | 0.2+ | 2004 04 23 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.4+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.7− | 0.3− | 2006 11 20 | 704 | 0.4− | 0.4+ | | |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.2− | 0.6+ | | |
| 2002 12 06 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.2− | | |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.0 | | |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.4+ | 1.5+ | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.5− | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.8− | 0.7+ | | | | | | |

**(137137)∗ 1999 $CU_{95}$ = 2001 $RU_{99}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 16942)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.38439 | | (2000.0) | | | |
| $n$ | 0.22738891 | $\omega$ | 130.40669 | | −0.37785798 | −0.92358279 |
| $a$ | 2.6584176 | $\Omega$ | 341.47852 | | +0.77543964 | −0.27736011 |
| $e$ | 0.1367663 | $i$ | 11.79766 | | +0.50588211 | −0.26470021 |
| $P$ | 4.33 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.5− | 0.0 | 2001 09 19 | 704 | 0.3− | 0.2− | 2003 01 13 | 704 | 0.4− | 0.0 | | |
| 1999 02 10 | 704 | 0.3+ | 0.1+ | 2001 09 19 | 645 | 0.0 | 0.1+ | 2003 01 13 | 704 | 0.0 | 0.6− | | |
| 1999 02 10 | 704 | 1.0+ | 1.7+ | 2001 09 19 | 645 | 0.0 | 0.1+ | 2003 01 13 | 704 | 0.2− | 0.2− | | |
| 1999 02 10 | 704 | 0.6− | 1.0+ | 2001 09 21 | 704 | 0.1− | 0.4− | 2003 01 13 | 704 | 0.2− | 0.3− | | |
| 1999 02 10 | 704 | 0.3+ | 0.6− | 2001 09 21 | 704 | 0.2− | 0.7− | 2003 01 13 | 704 | 0.3− | 0.1+ | | |
| 1999 02 12 | 699 | 0.3+ | 0.4+ | 2001 09 21 | 704 | 0.2+ | 0.2− | 2005 07 17 | 644 | 0.4− | 0.4+ | | |
| 1999 02 12 | 699 | 0.1− | 0.9+ | 2001 09 21 | 704 | 0.2− | 0.9+ | 2005 07 17 | 644 | 0.4− | 0.6+ | | |
| 1999 02 12 | 699 | 0.1+ | 1.4+ | 2001 09 21 | 704 | 0.5+ | 0.2+ | 2005 07 17 | 644 | 0.3+ | 0.4− | | |
| 1999 02 13 | 704 | 0.3− | 0.2+ | 2001 10 11 | 644 | 0.4+ | 0.8+ | 2005 07 19 | 644 | 0.4− | 0.8+ | | |
| 1999 02 13 | 704 | 0.1− | 0.9+ | 2001 10 11 | 644 | 0.1− | 0.8+ | 2005 07 19 | 644 | 0.6− | 0.5+ | | |
| 1999 02 13 | 704 | 0.1− | 1.3+ | 2001 10 11 | 644 | 0.2+ | 0.5+ | 2005 07 19 | 644 | 0.2− | 0.4+ | | |
| 1999 02 13 | 704 | 0.0 | 1.0− | 2002 10 12 | 704 | 0.3− | 0.0 | 2006 10 02 | 703 | (1.1− | 2.7−) | | |
| 1999 02 13 | 704 | 0.1− | 1.3+ | 2002 10 12 | 704 | 0.4+ | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.7− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 0.6+ | 0.4− | 2002 10 12 | 704 | 1.3+ | 0.6− | 2006 10 02 | 703 | 0.4− | 0.3− |
| 1999 02 23 | 699 | 0.1− | 0.4+ | 2002 11 07 | 704 | 0.5+ | 0.6− | 2006 10 02 | 703 | 0.2− | 0.0 |
| 1999 02 23 | 699 | 0.8+ | 0.6+ | 2002 11 07 | 704 | 0.7+ | 0.5− | 2006 10 23 | 703 | 0.6− | 0.3− |
| 1999 03 24 | 691 | 0.0 | 0.2+ | 2002 11 07 | 704 | 0.0 | 0.7+ | 2006 10 23 | 703 | 0.3+ | 0.1− |
| 1999 03 24 | 691 | 1.0+ | 0.6+ | 2002 11 15 | 644 | 0.3+ | 0.9+ | 2006 10 23 | 703 | 0.6+ | 0.2+ |
| 1999 03 24 | 691 | 0.9+ | 0.2− | 2002 11 15 | 644 | 0.2+ | 1.2+ | 2006 10 23 | 703 | 0.5+ | 0.3− |
| 1999 04 12 | 691 | 0.0 | 0.1− | 2002 11 15 | 644 | 0.9+ | 1.2+ | 2006 10 29 | 703 | 0.5+ | 0.1+ |
| 1999 04 12 | 691 | 0.0 | 0.1− | 2002 11 16 | 699 | (1.9− | 0.3−) | 2006 10 29 | 703 | 0.0 | 0.6− |
| 1999 04 12 | 691 | 0.0 | 0.3− | 2002 11 16 | 699 | 1.3+ | 0.4− | 2006 10 29 | 703 | 0.0 | 0.0 |
| 1999 04 16 | 691 | 0.0 | 0.2− | 2002 11 16 | 699 | 0.4− | 0.3− | 2006 10 29 | 703 | 0.5+ | 0.1− |
| 1999 04 16 | 691 | 0.3+ | 0.1+ | 2002 11 16 | 699 | 0.2+ | 0.2− | 2006 11 14 | 644 | 0.0 | 0.1− |
| 1999 04 16 | 691 | 0.6+ | 0.1− | 2002 12 06 | 704 | 0.4− | 0.2− | 2006 11 14 | 644 | 0.1+ | 0.0 |
| 1999 04 20 | 691 | 1.0− | 0.1+ | 2002 12 06 | 704 | 0.6+ | 0.5− | 2006 11 14 | 704 | 0.8+ | 0.4− |
| 1999 04 20 | 691 | 0.7− | 0.5− | 2002 12 06 | 704 | 0.6+ | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.9− |
| 1999 04 20 | 691 | 0.7− | 0.2− | 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 11 14 | 644 | 0.0 | 0.1− |
| 2001 08 23 | 699 | 0.6− | 1.2+ | 2002 12 12 | 644 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.4+ | 1.4− |
| 2001 08 23 | 699 | 0.3− | 0.5+ | 2002 12 12 | 644 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.6+ | 0.9− |
| 2001 08 23 | 699 | 0.2− | 0.5− | 2002 12 12 | 644 | 0.0 | 0.4+ | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2001 08 23 | 699 | 0.5− | 0.7+ | 2002 12 28 | 704 | 0.6− | 0.2− | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2002 12 28 | 704 | 0.4− | 0.4+ | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.9− | 0.7+ | 2002 12 28 | 704 | 0.8− | 0.2− | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 1.4− | 1.0+ | 2002 12 28 | 704 | 0.3− | 0.1− | 2006 11 17 | 644 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 1.3− | 0.3+ | 2002 12 28 | 704 | 1.0− | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 1.4− | 0.9+ | 2003 01 07 | 704 | 0.0 | 1.3+ | 2006 11 21 | 703 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2003 01 07 | 704 | (0.5− | 2.0+) | 2006 11 21 | 703 | 0.5+ | 0.8− |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2003 01 07 | 704 | 0.3+ | 1.1+ | 2006 11 21 | 703 | 0.3− | 0.7− |
| 2001 09 19 | 704 | 1.0− | 0.3+ | 2003 01 07 | 704 | 0.2+ | 1.4+ | 2006 11 21 | 703 | 0.2+ | 0.2− |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2003 01 07 | 704 | 0.4+ | 1.5+ | | | | |

**(137138)∗ 1999 CC$_{98}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.60762 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22082957 | $\omega$ | 127.81408 | | −0.63151855 | −0.77536033 | |
| $a$ | 2.7108026 | $\Omega$ | 1.34902 | | +0.69988171 | −0.57050094 | |
| $e$ | 0.2367453 | $i$ | 2.01365 | | +0.33369135 | −0.27082290 | |
| $P$ | 4.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 1.5+ | 1.7+ | 1999 04 15 | 691 | 0.4+ | 0.6− | 2004 05 21 | 691 | 0.0 | 0.2+ |
| 1999 02 10 | 704 | 0.0 | 1.9+ | 1999 04 15 | 691 | 0.7+ | 0.3− | 2004 05 21 | 691 | 0.2+ | 0.0 |
| 1999 02 10 | 704 | 1.3+ | 0.9+ | 1999 04 19 | 691 | 0.1− | 0.0 | 2004 05 21 | 691 | 0.2− | 0.1+ |
| 1999 02 10 | 704 | (1.8+ | 2.0+) | 1999 04 19 | 691 | 0.1+ | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.2+ |
| 1999 02 12 | 699 | (2.3+ | 0.8−) | 1999 04 19 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.4− | 0.1− |
| 1999 02 12 | 699 | 0.3+ | 0.5+ | 2002 11 05 | 704 | 0.5+ | 0.9− | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 1999 02 12 | 699 | 1.6+ | 0.0 | 2002 11 05 | 704 | 0.4+ | 1.2− | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1999 02 13 | 704 | 0.8− | 0.7+ | 2002 11 05 | 704 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 1999 02 13 | 704 | 1.2+ | 1.5+ | 2002 11 05 | 704 | (0.5+ | 1.7−) | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 1999 02 13 | 704 | 1.3− | 0.9− | 2002 11 05 | 704 | (1.7− | 0.6−) | 2006 09 24 | 691 | 1.3− | 0.3+ |
| 1999 02 13 | 704 | 0.7+ | 0.5+ | 2002 11 14 | 704 | 1.5+ | 0.2− | 2006 09 24 | 691 | 0.4+ | 0.0 |
| 1999 02 13 | 704 | (2.2+ | 2.0+) | 2002 11 14 | 704 | (1.8+ | 0.8−) | 2006 09 24 | 691 | 0.1− | 0.0 |
| 1999 02 23 | 699 | 2.0+ | 0.3+ | 2002 11 14 | 704 | (2.6+ | 0.7−) | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 1999 02 23 | 699 | 0.4+ | 0.8+ | 2002 11 14 | 704 | (2.6+ | 0.2−) | 2006 09 28 | 691 | 0.0 | 0.0 |
| 1999 02 23 | 699 | (2.1+ | 0.5+) | 2002 12 06 | 704 | 0.5− | 0.0 | 2006 09 28 | 691 | 0.3+ | 0.2+ |
| 1999 03 14 | 691 | 0.2+ | 0.4− | 2002 12 06 | 704 | 0.6− | 0.5+ | 2006 10 16 | G96 | 0.1− | 0.0 |
| 1999 03 14 | 691 | 0.6+ | 0.0 | 2002 12 06 | 704 | 0.6+ | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 1999 03 14 | 691 | 1.0+ | 0.1+ | 2002 12 11 | 704 | 0.1+ | 0.9+ | 2006 10 16 | G96 | 0.3+ | 0.6− |
| 1999 03 16 | 691 | 0.5− | 0.3− | 2002 12 11 | 704 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.6− |
| 1999 03 16 | 691 | 1.0− | 0.3+ | 2002 12 11 | 704 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.0 |
| 1999 03 16 | 691 | 0.4− | 0.2− | 2002 12 11 | 704 | 0.5− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 1999 03 20 | 691 | 0.8− | 0.1− | 2002 12 31 | 704 | 0.1− | 0.5− | 2006 10 28 | G96 | 0.5+ | 0.3+ |
| 1999 03 20 | 691 | 0.7− | 0.0 | 2002 12 31 | 704 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 1999 03 20 | 691 | 0.7− | 0.0 | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.0 |
| 1999 04 11 | 691 | 0.3− | 0.3+ | 2002 12 31 | 704 | 0.4− | 0.7+ | 2006 11 13 | G96 | 0.8+ | 0.3− |
| 1999 04 11 | 691 | 0.3− | 0.3− | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 1999 04 11 | 691 | 0.3− | 0.2− | 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 1999 04 15 | 691 | 0.5+ | 0.3− | 2004 05 13 | 691 | 0.1− | 0.2+ | | | | |

**(137139)∗ 1999 CM$_{98}$**

Discovered 1999 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.89310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24296172 | $\omega$ | 120.70703 | | +0.10550187 | −0.99348559 | |
| $a$ | 2.5435726 | $\Omega$ | 323.16012 | | +0.88602751 | +0.11358136 | |
| $e$ | 0.2849435 | $i$ | 4.12010 | | +0.45146938 | +0.00925507 | |
| $P$ | 4.06 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 20 | 910 | 1.2− | 0.2− | 2003 01 30 | 699 | 0.3+ | 0.1+ | 2003 03 06 | 704 | (1.7− | 1.5+) |
| 1998 11 20 | 910 | 0.6− | 0.0 | 2003 01 30 | 699 | 1.1+ | 0.2+ | 2003 03 06 | 644 | 0.3+ | 0.5+ |
| 1998 11 20 | 910 | 1.6− | 0.2+ | 2003 01 31 | 704 | 0.0 | 0.7+ | 2003 03 06 | 644 | 0.0 | 0.3+ |
| 1999 01 15 | 699 | 0.8+ | 0.0 | 2003 01 31 | 704 | 0.0 | 0.4+ | 2003 03 12 | 644 | 0.1− | 0.4+ |
| 1999 01 15 | 699 | 0.3+ | 0.4+ | 2003 01 31 | 704 | 0.1− | 0.1+ | 2003 03 12 | 644 | 0.2− | 0.2+ |
| 1999 01 15 | 699 | (1.2+ | 2.7+) | 2003 01 31 | 704 | 0.2− | 0.3+ | 2003 03 12 | 644 | 0.0 | 0.3+ |
| 1999 02 10 | 704 | 1.3− | 0.6− | 2003 01 31 | 704 | 0.1+ | 0.2+ | 2005 07 16 | 291 | 0.3− | 0.2+ |
| 1999 02 10 | 704 | (1.7− | 2.9−) | 2003 02 03 | 704 | 0.7− | 0.8− | 2005 07 16 | 291 | 0.4− | 0.4+ |
| 1999 02 10 | 704 | 0.1+ | 1.2− | 2003 02 03 | 704 | 0.5− | 0.9− | 2005 07 16 | 291 | 0.3− | 0.3+ |
| 1999 02 10 | 704 | 0.8− | 0.9− | 2003 02 03 | 704 | 0.6− | 0.3− | 2005 07 18 | 644 | 0.0 | 0.5+ |
| 1999 02 12 | 699 | 0.6− | 0.5+ | 2003 02 03 | 704 | 0.1− | 0.2− | 2005 07 18 | 644 | 0.1+ | 0.8+ |
| 1999 02 12 | 699 | 0.9+ | 0.4+ | 2003 02 03 | 644 | 0.3+ | 0.0 | 2005 07 18 | 644 | 0.5+ | 0.6+ |
| 1999 02 12 | 699 | 2.0+ | 0.5− | 2003 02 03 | 644 | 0.1+ | 0.2+ | 2005 07 27 | 644 | 0.3+ | 0.2+ |
| 1999 02 16 | 704 | 0.2− | 0.4− | 2003 02 03 | 644 | 0.3+ | 0.1+ | 2005 07 27 | 644 | 0.1+ | 0.3+ |
| 1999 02 16 | 704 | 0.3+ | 0.3− | 2003 02 08 | 704 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.5+ | 0.5+ |
| 1999 02 16 | 704 | 0.3+ | 0.7+ | 2003 02 08 | 704 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.7+ | 0.3− |
| 1999 02 16 | 704 | 0.3+ | 0.4− | 2003 02 08 | 704 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 1999 02 16 | 704 | 0.2+ | 0.5+ | 2003 02 08 | 704 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.6+ | 0.3− |
| 1999 02 17 | 704 | 1.1− | 0.2+ | 2003 02 11 | 608 | 0.2− | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1999 02 17 | 704 | 1.0+ | 0.4+ | 2003 02 11 | 608 | 0.1− | 1.0− | 2006 11 15 | 703 | 0.9− | 0.4+ |
| 1999 02 17 | 704 | 0.6+ | 1.3− | 2003 02 11 | 608 | 0.2− | 0.8− | 2006 11 15 | 703 | 0.7− | 0.1+ |
| 1999 02 17 | 704 | 0.3+ | 0.2+ | 2003 02 21 | 644 | 0.0 | 0.4+ | 2006 11 15 | 703 | (2.0+ | 0.5+) |
| 1999 02 17 | 704 | 0.1+ | 0.3− | 2003 02 21 | 644 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.3+ |
| 1999 02 17 | 704 | 0.1− | 0.7− | 2003 02 21 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 1.0− | 0.5+ |
| 1999 02 17 | 704 | 0.0 | 0.7+ | 2003 02 22 | 699 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.9+ |
| 1999 02 17 | 704 | (0.6− | 2.3+) | 2003 02 22 | 699 | 0.2+ | 0.1− | 2006 11 16 | 704 | (1.6− | 0.9+) |
| 1999 02 17 | 704 | 0.1− | 0.9+ | 2003 02 22 | 699 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 1.0− | 1.0+ |
| 2002 12 08 | 608 | 0.7+ | 0.6− | 2003 02 22 | 699 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.0+ | 0.9+ |
| 2002 12 08 | 608 | 0.8+ | 0.4− | 2003 02 23 | 291 | 0.0 | 0.1− | 2006 11 19 | 704 | (1.0+ | 1.5+) |
| 2002 12 08 | 608 | 0.7+ | 0.4− | 2003 02 23 | 291 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2003 01 08 | 704 | 0.7+ | 0.6+ | 2003 02 23 | 291 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.5+ | 1.3+ |
| 2003 01 08 | 704 | 0.6+ | 1.2+ | 2003 02 24 | 608 | 1.0+ | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.8− |
| 2003 01 08 | 704 | 0.2+ | 0.3+ | 2003 02 24 | 608 | 1.0+ | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.7− |
| 2003 01 08 | 704 | 0.6+ | 0.9+ | 2003 02 24 | 608 | 1.0+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.8− |
| 2003 01 17 | 644 | 0.1+ | 0.3+ | 2003 02 28 | 704 | 0.0 | 1.1+ | 2006 11 22 | 704 | 0.6+ | 0.5+ |
| 2003 01 17 | 644 | 0.2+ | 0.3+ | 2003 02 28 | 704 | 0.3− | 0.8− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2003 01 17 | 644 | 0.5+ | 0.4+ | 2003 02 28 | 704 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.7+ | 0.6− |
| 2003 01 27 | 704 | 0.1+ | 0.3+ | 2003 03 05 | 704 | 0.6+ | 0.3− | 2006 11 24 | G96 | 0.4− | 0.4− |
| 2003 01 27 | 704 | 0.4+ | 0.5+ | 2003 03 05 | 704 | 0.5+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2003 01 27 | 704 | 0.2+ | 0.4+ | 2003 03 05 | 704 | 0.5+ | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2003 01 27 | 644 | 0.3− | 0.3+ | 2003 03 05 | 704 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2003 01 27 | 644 | 0.4− | 0.2+ | 2003 03 05 | 704 | 0.3− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2003 01 27 | 644 | 0.1− | 0.5+ | 2003 03 06 | 704 | 0.1− | 1.5+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2003 01 28 | 645 | 0.3− | 0.2− | 2003 03 06 | 704 | 0.4− | 1.1+ | 2006 12 01 | 704 | 1.9+ | 0.7+ |
| 2003 01 28 | 645 | 0.2− | 0.2− | 2003 03 06 | 704 | 0.4− | 1.4+ | 2006 12 01 | 704 | 0.9+ | 1.6+ |
| 2003 01 30 | 699 | 0.9+ | 0.2− | 2003 03 06 | 704 | 1.0− | 0.7+ | 2006 12 01 | 704 | 0.0 | 0.6+ |
| 2003 01 30 | 699 | 0.4+ | 0.1+ | 2003 03 06 | 644 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.2− | 1.1+ |

**(137140)∗ 1999 CH$_{105}$ = 2002 XX$_{61}$**

Discovered 1999 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.57789 | | (2000.0) | | | |
| $n$ | 0.22481741 | $\omega$ | 239.65793 | | −0.70291480 | −0.67794352 |
| $a$ | 2.6786507 | $\Omega$ | 256.70312 | | +0.70456266 | −0.62219271 |
| $e$ | 0.1404990 | $i$ | 12.77423 | | +0.09747946 | −0.39149562 |
| $P$ | 4.38 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 699 | 0.7+ | 1.0+ | 2002 12 13 | 704 | 0.5+ | 0.3− | 2004 07 05 | E12 | (1.0+ | 1.6−) |
| 1999 01 17 | 699 | 0.4+ | 0.9+ | 2002 12 13 | 704 | 0.1+ | 0.1+ | 2005 06 27 | 691 | 0.0 | 0.1− |
| 1999 01 17 | 699 | 1.1+ | 1.1+ | 2002 12 13 | 704 | 0.0 | 0.4+ | 2005 06 27 | 691 | 0.1+ | 0.1+ |
| 1999 02 12 | 704 | 1.0− | 0.7− | 2002 12 13 | 704 | 0.2+ | 0.4+ | 2005 06 27 | 691 | 0.0 | 0.0 |
| 1999 02 12 | 704 | 1.1− | 0.7− | 2002 12 14 | 704 | 0.4+ | 0.7+ | 2005 09 02 | 644 | 0.1− | 0.0 |
| 1999 02 12 | 704 | (2.7− | 1.5+) | 2002 12 14 | 704 | 0.0 | 0.1+ | 2005 09 02 | 644 | 0.2+ | 0.0 |
| 1999 02 12 | 704 | 0.3− | 0.0 | 2002 12 14 | 704 | 0.5− | 0.7+ | 2005 09 02 | 644 | 0.4+ | 0.1+ |
| 1999 02 12 | 704 | 1.3− | 1.3+ | 2002 12 14 | 704 | 0.1+ | 1.2+ | 2006 10 19 | 703 | 0.5+ | 0.3+ |
| 1999 02 16 | 704 | 0.4− | 0.8− | 2002 12 31 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.7+ |
| 1999 02 16 | 704 | 0.2+ | 0.6+ | 2002 12 31 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.2+ |
| 1999 02 16 | 704 | 0.3+ | 1.1− | 2002 12 31 | 704 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.7− | 0.4+ |
| 1999 02 16 | 704 | 0.4− | 0.6− | 2002 12 31 | 704 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 1999 02 16 | 704 | 1.5− | 0.2+ | 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 1999 02 21 | 699 | 1.3+ | 0.7+ | 2003 01 07 | 704 | 0.2+ | 0.8− | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 1999 02 21 | 699 | 0.0 | 0.5− | 2003 01 07 | 704 | 1.3+ | 0.2− | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 1999 02 21 | 699 | 1.3+ | 1.7− | 2003 01 07 | 704 | 0.2+ | 0.7− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.5+ | 0.1− | 2003 01 27 | 704 | 1.1− | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2002 10 12 | 704 | 0.3+ | 0.4+ | 2003 01 27 | 704 | 0.9− | 0.2− | 2006 10 27 | 703 | 0.6− | 0.3− |
| 2002 10 12 | 704 | 0.0 | 0.9+ | 2003 01 27 | 704 | 1.4− | 1.5− | 2006 10 27 | 703 | 0.2− | 0.5− |
| 2002 11 14 | 291 | 0.2− | 0.1+ | 2003 01 27 | 704 | (1.7− | 1.3−) | 2006 10 27 | 703 | 0.3− | 0.3− |
| 2002 11 14 | 704 | (2.0− | 0.3−) | 2004 04 19 | E12 | 0.9− | 1.4+ | 2006 10 27 | 703 | (1.1+ | 1.6−) |
| 2002 11 14 | 291 | 0.2− | 0.0 | 2004 04 19 | E12 | 0.5− | 0.9+ | 2006 11 15 | 703 | 0.4− | 0.6+ |
| 2002 11 14 | 704 | (1.6− | 0.1−) | 2004 04 19 | E12 | 1.1− | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | 1.5− | 0.8− | 2004 04 19 | E12 | 0.8− | 0.8+ | 2006 11 15 | 703 | (1.6− | 0.5−) |
| 2002 11 14 | 291 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.6+ | 0.7+ | 2006 11 15 | 703 | 1.1− | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2004 04 25 | 704 | 0.3+ | 1.0− | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2004 04 25 | 704 | 1.0+ | 1.4+ | 2006 11 15 | 703 | 0.1+ | 0.6− |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2004 04 25 | 704 | 1.5+ | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.6+ | 0.9− | 2004 04 25 | 704 | 0.8+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2004 05 13 | 644 | 0.2− | 0.2+ | 2006 11 23 | 703 | 0.3− | 0.2+ |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2004 05 13 | 644 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2004 05 13 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.5− | 1.2+ |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2004 07 05 | E12 | (0.1+ | 1.5−) | 2006 11 23 | 703 | 0.9+ | 0.7+ |
| 2002 12 11 | 704 | (1.5+ | 0.8−) | 2004 07 05 | E12 | (1.0+ | 1.8−) | | | | |
| 2002 12 11 | 704 | 0.8+ | 0.3− | 2004 07 05 | E12 | (0.9− | 1.6−) | | | | |

**(137141)∗ 1999 $CL_{112}$ = 2003 $BX_{25}$**

Discovered 1999 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40009)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.33681 | | (2000.0) | | | |
| $n$ | 0.22328398 | $\omega$ | 275.67681 | | −0.44705309 | −0.89134668 |
| $a$ | 2.6909007 | $\Omega$ | 201.37791 | | +0.88041397 | −0.42360401 |
| $e$ | 0.1653621 | $i$ | 11.89448 | | +0.15816059 | −0.16143336 |
| $P$ | 4.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.5− | 1.1+ | 2003 01 28 | 704 | 0.1− | 0.9+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 1999 02 12 | 704 | 0.1+ | 0.7− | 2003 01 28 | 704 | 0.7− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.3− |
| 1999 02 12 | 704 | 1.6− | 0.2+ | 2004 04 22 | 704 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.5− |
| 1999 02 12 | 704 | 0.3+ | 0.7− | 2004 04 22 | 704 | (0.9+ | 2.0−) | 2006 10 19 | 644 | 0.0 | 0.1− |
| 1999 02 12 | 704 | (2.3− | 0.7−) | 2004 04 22 | 704 | 0.5+ | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1999 02 16 | 704 | 0.4+ | 0.0 | 2004 04 22 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1999 02 16 | 704 | 0.3+ | 1.2− | 2004 05 13 | 699 | 0.5+ | 0.7+ | 2006 10 22 | 691 | 0.0 | 0.3− |
| 1999 02 16 | 704 | 0.6+ | 0.4+ | 2004 05 13 | 699 | 0.4+ | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 1999 02 16 | 704 | 0.4+ | 0.2+ | 2004 05 13 | 699 | 0.4+ | 0.9− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 1999 02 16 | 704 | 0.2+ | 0.6+ | 2004 05 13 | 699 | 0.3− | 0.1− | 2006 10 23 | 704 | 0.7+ | 0.9+ |
| 1999 02 23 | 699 | 0.6+ | 0.7+ | 2004 05 14 | 704 | 0.8− | 1.1− | 2006 10 23 | 704 | 1.4+ | 0.6+ |
| 1999 02 23 | 699 | 0.9+ | 0.4− | 2004 05 14 | 704 | 0.0 | 0.5− | 2006 10 23 | 704 | 0.8+ | 0.0 |
| 1999 02 23 | 699 | 0.7+ | 0.9+ | 2004 05 14 | 704 | 0.4− | 0.5− | 2006 10 28 | 704 | 0.1+ | 1.1− |
| 2001 08 25 | 704 | 0.8− | 0.4+ | 2004 05 18 | 704 | (0.1+ | 1.9+) | 2006 10 28 | 704 | 0.7− | 1.3− |
| 2001 08 25 | 704 | 0.7− | 0.4+ | 2004 05 18 | 704 | 0.1− | 0.7+ | 2006 10 28 | 704 | (0.2− | 1.9−) |
| 2001 08 25 | 704 | 0.9− | 0.3+ | 2004 05 18 | 704 | 0.2− | 0.4+ | 2006 10 28 | 704 | 0.0 | 1.1− |
| 2001 08 25 | 704 | 0.6+ | 1.3+ | 2004 05 18 | 704 | 0.1+ | 1.1+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 10 09 | 704 | 0.1− | 1.2− | 2004 05 22 | 704 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2004 05 22 | 704 | 0.2+ | 0.6− | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2002 10 09 | 704 | 0.1− | 0.1+ | 2004 05 22 | 704 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 12 01 | 704 | 0.7+ | 0.1− | 2004 05 22 | 704 | 0.7− | 0.9+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2002 12 01 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 07 | 644 | 0.2+ | 0.0 |
| 2002 12 01 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2002 12 14 | 704 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.1− | 1.4+ |
| 2002 12 14 | 704 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 11 13 | 703 | (2.7− | 0.1−) |
| 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2002 12 14 | 704 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.2+ | 1.2+ |
| 2002 12 14 | 704 | 0.5+ | 0.5− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2003 01 01 | 704 | 0.3− | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2003 01 01 | 704 | 0.8− | 0.5− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2003 01 01 | 704 | 0.8− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2003 01 26 | 644 | 0.4− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.4− | 0.3+ |
| 2003 01 26 | 644 | 0.6− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.4− | 0.4+ |
| 2003 01 26 | 644 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.2− | 0.4+ |
| 2003 01 28 | 704 | 0.2− | 1.1+ | 2006 10 17 | G96 | 0.9+ | 0.7− | | | | |

**(137142)∗ 1999 $CZ_{113}$ = 2001 $OC_{25}$**

Discovered 1999 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14782)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.85158 | | (2000.0) | | | |
| $n$ | 0.22292817 | $\omega$ | 127.37868 | | +0.33903835 | −0.92381811 |
| $a$ | 2.6937632 | $\Omega$ | 301.88931 | | +0.78334122 | +0.38187808 |
| $e$ | 0.1324780 | $i$ | 12.08757 | | +0.52098899 | +0.02700425 |
| $P$ | 4.42 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 1.0− | 0.6− | 2002 12 15 | 704 | 0.3+ | 1.3+ | 2006 09 25 | 703 | 0.0 | 0.1+ |
| 1999 02 12 | 704 | 1.3+ | 0.8− | 2002 12 15 | 704 | 0.8− | 0.6+ | 2006 09 25 | 703 | 0.9− | 0.8+ |
| 1999 02 12 | 704 | 0.6− | 1.0− | 2002 12 15 | 704 | 0.1+ | 0.5+ | 2006 10 02 | 704 | 0.4+ | 0.2− |
| 1999 02 12 | 704 | (1.0− | 2.1−) | 2002 12 15 | 704 | 0.3+ | 1.2+ | 2006 10 02 | 704 | 0.5− | 0.1+ |
| 1999 02 12 | 704 | 0.8− | 1.3− | 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 10 02 | 704 | 0.2+ | 0.0 |
| 1999 02 16 | 704 | 1.4− | 1.9− | 2003 01 05 | 704 | 0.5+ | 0.5+ | 2006 10 02 | 704 | 0.8+ | 0.4− |
| 1999 02 16 | 704 | 0.7− | 0.4− | 2003 01 05 | 704 | 0.7+ | 0.8− | 2006 10 02 | 703 | 0.5− | 0.1+ |
| 1999 02 16 | 704 | 0.7+ | 1.5+ | 2003 01 05 | 704 | 0.2+ | 1.0− | 2006 10 02 | 703 | 0.5− | 0.5+ |
| 1999 02 16 | 704 | 1.1− | 1.2+ | 2003 01 07 | 704 | 0.1− | 0.5+ | 2006 10 02 | 703 | 0.3+ | 0.3+ |
| 1999 02 16 | 704 | 0.9− | 0.9+ | 2003 01 07 | 704 | 0.2+ | 0.7+ | 2006 10 02 | 703 | 0.8+ | 0.3+ |
| 1999 02 21 | 699 | 0.7+ | 1.0+ | 2003 01 07 | 704 | 0.5− | 1.0+ | 2006 10 23 | 703 | 0.4− | 0.5− |
| 1999 02 21 | 699 | 0.9+ | 0.1+ | 2003 01 07 | 704 | (1.4+ | 1.6+) | 2006 10 23 | 703 | 0.1− | 0.4+ |
| 1999 02 21 | 699 | 0.7+ | 0.1+ | 2003 01 09 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 703 | 0.1+ | 0.3− |
| 2001 07 16 | 608 | 0.2+ | 1.0+ | 2003 01 09 | 704 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.1+ | 0.6− |
| 2001 07 16 | 608 | 0.3+ | 0.8+ | 2003 01 09 | 704 | 0.0 | 0.1+ | 2006 10 30 | 106 | 0.1− | 0.3− |
| 2001 07 16 | 608 | 0.8+ | 0.3+ | 2003 01 09 | 704 | 0.4− | 0.1+ | 2006 10 30 | 106 | 0.0 | 0.6− |
| 2001 07 18 | 691 | 0.3− | 0.5+ | 2003 01 09 | 704 | 0.1− | 0.5+ | 2006 10 30 | 106 | 0.7+ | 0.0 |
| 2001 07 18 | 691 | 0.2− | 0.2+ | 2004 04 12 | E12 | 0.3+ | 1.2+ | 2006 10 30 | 106 | 0.1+ | 0.2− |
| 2001 07 18 | 691 | 0.3− | 0.4+ | 2004 04 12 | E12 | 0.1+ | 0.7+ | 2006 10 31 | 703 | 0.1+ | 0.2− |
| 2001 08 14 | 608 | 0.2− | 0.6− | 2004 04 12 | E12 | (1.8+ | 1.0+) | 2006 10 31 | 703 | 1.2− | 0.1+ |
| 2001 08 14 | 608 | 0.2+ | 0.6− | 2004 04 12 | E12 | 1.0+ | 0.9+ | 2006 10 31 | 703 | 0.5− | 0.1− |
| 2001 08 14 | 608 | 0.1− | 0.5− | 2006 09 19 | 703 | 0.0 | 0.5− | 2006 11 16 | 703 | 0.1− | 0.0 |
| 2001 09 08 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.5− | 2006 11 16 | 703 | 0.3+ | 0.1+ |
| 2001 09 08 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.4+ |
| 2001 09 08 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 11 16 | 703 | 0.2+ | 0.6+ |
| 2001 09 08 | 704 | 0.1− | 0.0 | 2006 09 25 | 703 | 1.2+ | 0.7− | 2006 11 22 | 703 | 0.2− | 0.5− |
| 2001 09 08 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 0.3− | 0.3− | 2006 11 22 | 703 | 0.3− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 703 | 0.3+ | 0.4− | 2006 11 22 | 703 | 0.3+ | 0.2− |
| 2002 12 05 | 704 | 0.5+ | 0.4− | 2006 09 25 | 703 | 0.3+ | 0.1− | 2006 11 22 | 703 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.9+ | 2006 09 25 | 703 | 0.9+ | 0.2+ | | | | |
| 2002 12 15 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.2− | | | | |

**(137143)∗ 1999 $CT_{115}$ = 2001 $SU_{99}$**

Discovered 1999 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 16945)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.36948 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21290920 | $\omega$ | 345.47225 | | −0.99930943 | −0.01919879 | |
| $a$ | 2.7776217 | $\Omega$ | 193.54806 | | +0.02716489 | −0.96164072 | |
| $e$ | 0.1509440 | $i$ | 7.80497 | | −0.02535209 | −0.27363941 | |
| $P$ | 4.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 11 | 691 | 0.3− | 0.1− | 2004 03 24 | 699 | 1.4+ | 0.3+ | 2004 04 19 | 704 | 0.5+ | 0.6+ |
| 1999 02 11 | 691 | 0.1− | 0.2− | 2004 03 25 | 699 | (0.4− | 1.8−) | 2004 04 22 | 704 | 0.7+ | 0.5+ |
| 1999 02 11 | 691 | 0.0 | 0.0 | 2004 03 25 | 699 | 1.0+ | 0.0 | 2004 04 22 | 704 | 0.3+ | 0.5+ |
| 1999 02 12 | 704 | 0.3− | 0.1+ | 2004 03 25 | 699 | (0.5− | 1.7−) | 2004 04 22 | 704 | 0.0 | 0.6+ |
| 1999 02 12 | 704 | 0.0 | 0.1− | 2004 03 25 | 699 | 0.5+ | 0.1− | 2004 04 22 | 704 | 0.9+ | 0.8+ |
| 1999 02 12 | 704 | 1.1− | 1.1+ | 2004 03 28 | 704 | 0.7− | 0.7+ | 2004 05 23 | 691 | 0.1− | 0.0 |
| 1999 02 12 | 704 | (2.3− | 0.2−) | 2004 03 28 | 704 | 0.1− | 0.2− | 2004 05 23 | 691 | 0.0 | 0.0 |
| 1999 02 16 | 704 | 0.7− | 1.9− | 2004 03 28 | 704 | 0.1− | 0.8+ | 2004 05 23 | 691 | 0.1− | 0.1− |
| 1999 02 16 | 704 | 0.1− | 0.8− | 2004 03 28 | 704 | 0.0 | 0.5+ | 2005 07 10 | 691 | 0.1− | 0.3− |
| 1999 02 16 | 704 | 1.4− | 0.7− | 2004 03 28 | 704 | 0.1+ | 0.6+ | 2005 07 10 | 691 | 0.1− | 0.1− |
| 1999 02 16 | 704 | 0.9− | 0.2+ | 2004 03 31 | 704 | 0.7+ | 0.9+ | 2005 07 10 | 691 | 0.0 | 0.4− |
| 1999 02 16 | 704 | 0.5+ | 0.9+ | 2004 03 31 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 1999 02 21 | 699 | 0.9+ | 0.8− | 2004 03 31 | 704 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 1999 02 21 | 699 | 0.7+ | 0.6+ | 2004 03 31 | 704 | 0.7+ | 1.3+ | 2006 09 19 | 691 | 0.3+ | 0.3+ |
| 1999 02 21 | 699 | 0.5+ | 1.1+ | 2004 04 11 | 703 | 1.1− | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1999 03 22 | 699 | 1.3+ | 0.4+ | 2004 04 11 | 703 | 1.0+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.6+ |
| 1999 03 22 | 699 | 0.8+ | 0.4+ | 2004 04 11 | 703 | 0.6− | 0.1− | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 1999 03 22 | 699 | 0.9+ | 0.5+ | 2004 04 11 | 703 | 0.6− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 1.1+ | 2004 04 12 | 644 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2004 04 12 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 0.2+ | 2004 04 12 | 644 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 1.0+ | 2004 04 16 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.8+ |
| 2001 09 22 | 704 | 0.3− | 0.2+ | 2004 04 16 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2001 09 22 | 704 | (0.0 | 1.6+) | 2004 04 16 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2001 09 22 | 704 | (0.5− | 1.9+) | 2004 04 16 | 704 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.6− | 0.2+ |
| 2001 09 22 | 704 | 0.6+ | 0.9+ | 2004 04 16 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2001 09 23 | 704 | (0.0 | 1.8+) | 2004 04 16 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2001 09 23 | 704 | 0.6− | 0.9+ | 2004 04 16 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2001 09 23 | 704 | (1.1− | 1.6+) | 2004 04 16 | 704 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2004 03 16 | 703 | 1.0+ | 1.2+ | 2004 04 16 | 704 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.3+ |
| 2004 03 16 | 703 | 1.3+ | 0.2+ | 2004 04 16 | 644 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2004 03 16 | 703 | 0.6+ | 1.0+ | 2004 04 16 | 644 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.2+ |
| 2004 03 16 | 703 | (0.8− | 2.3+) | 2004 04 19 | 704 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2004 03 24 | 699 | 0.5+ | 0.3− | 2004 04 19 | 704 | 0.5− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2004 03 24 | 699 | 0.0 | 0.3− | 2004 04 19 | 704 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2004 03 24 | 699 | 0.2+ | 1.3− | 2004 04 19 | 704 | 0.3− | 0.0 | | | | |

**(137144)∗ 1999 $CL_{117}$ = 2003 $AH_{23}$**

Discovered 1999 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 40010)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.24143 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22357609 | $\omega$ | 307.72596 | | −0.91238668 | +0.36600545 | |
| $a$ | 2.6885564 | $\Omega$ | 254.40799 | | −0.28938047 | −0.89342477 | |
| $e$ | 0.2221903 | $i$ | 10.96910 | | −0.28949870 | −0.26044615 | |
| $P$ | 4.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.3+ | 0.2− | 2003 01 01 | 704 | 0.3+ | 1.0+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 1999 02 12 | 704 | 0.5+ | 0.2+ | 2003 01 01 | 704 | (3.3− | 1.6+) | 2006 11 20 | 691 | 0.4+ | 0.3− |
| 1999 02 12 | 704 | 0.4− | 0.2+ | 2003 01 01 | 704 | 0.6+ | 0.5− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 1999 02 12 | 704 | (1.3− | 2.1−) | 2003 01 07 | 704 | 0.7+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 1999 02 16 | 704 | 0.3+ | 0.0 | 2003 01 07 | 704 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 0.9+ | 0.8− |
| 1999 02 16 | 704 | 0.4+ | 0.4+ | 2003 01 07 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 1999 02 16 | 704 | 0.6+ | 0.5+ | 2003 01 07 | 704 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.0 |
| 1999 02 16 | 704 | 0.8+ | 1.2+ | 2003 01 07 | 704 | 0.8+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 1999 02 16 | 704 | 1.6+ | 1.4+ | 2003 01 08 | 012 | 0.9+ | 0.2− | 2006 11 22 | 704 | 1.0− | 1.2+ |
| 1999 02 19 | 704 | 0.1+ | 0.3− | 2003 01 08 | 012 | 1.0+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 1999 02 19 | 704 | 0.4− | 0.1+ | 2003 01 08 | 012 | 0.5− | 0.1+ | 2006 11 22 | 704 | (2.4+ | 0.2−) |
| 1999 02 19 | 704 | 0.6− | 0.5− | 2003 01 08 | 012 | 0.2− | 0.5− | 2006 11 24 | 691 | 0.1− | 0.2− |
| 1999 02 19 | 704 | 0.8− | 1.0− | 2003 01 08 | 012 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 1999 02 19 | 704 | 0.6− | 0.2− | 2003 01 09 | 704 | 0.5− | 0.6+ | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 1999 04 16 | 699 | 1.2− | 0.8− | 2003 01 09 | 704 | 0.4− | 0.2+ | 2006 11 28 | H07 | 0.3− | 0.7− |
| 1999 04 16 | 699 | 0.2− | 1.7+ | 2003 01 09 | 704 | 0.5− | 0.5+ | 2006 11 28 | H07 | 0.4+ | 0.1+ |
| 1999 04 16 | 699 | 0.4− | 0.5+ | 2005 09 01 | 644 | 0.1− | 0.1+ | 2006 11 28 | H07 | 0.6− | 0.5− |
| 2000 08 31 | 704 | 0.7+ | 1.2+ | 2005 09 01 | 644 | 0.2− | 0.2+ | 2006 11 28 | H07 | 0.2− | 0.3+ |
| 2000 08 31 | 704 | 0.0 | 1.2+ | 2005 09 01 | 644 | 0.1− | 0.0 | 2006 11 30 | 691 | 0.4− | 0.4− |
| 2000 08 31 | 704 | 0.1− | 1.4+ | 2005 10 01 | 703 | 0.7− | 1.2+ | 2006 11 30 | 691 | 0.1− | 0.3− |
| 2000 08 31 | 704 | 0.3+ | 1.4+ | 2005 10 01 | 703 | 0.9− | 0.5− | 2006 11 30 | 691 | 0.0 | 0.4− |
| 2001 09 25 | 704 | 0.5− | 0.3− | 2005 10 01 | 703 | 0.1− | 0.4− | 2006 12 01 | H07 | 0.3+ | 0.8− |
| 2001 09 25 | 704 | (0.2− | 1.7−) | 2005 10 01 | 703 | 0.7− | 0.6− | 2006 12 01 | H07 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.9− | 0.3− | 2006 11 15 | 703 | 0.4− | 0.3− | 2006 12 01 | H07 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2006 11 15 | 703 | 1.2− | 0.4+ | 2006 12 01 | H07 | 0.0 | 0.0 |
| 2001 10 20 | 644 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.9− | 1.2+ | 2006 12 01 | H07 | 0.1− | 0.1− |
| 2001 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 703 | (0.0 | 2.1+) | 2006 12 01 | H07 | 0.2− | 0.3− |
| 2001 10 20 | 644 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.4+ | 1.0+ | 2006 12 01 | H07 | 0.2− | 0.1− |
| 2003 01 01 | 704 | 0.3− | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.0 | 2006 12 01 | H07 | 0.0 | 0.0 |

**(137145)∗ 1999 $CA_{135}$ = 2002 $XV_{111}$**

Discovered 1999 Feb. 7 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 46353)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.12025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21211518 | $\omega$ | 127.74420 | | −0.35477916 | −0.93484999 | |
| $a$ | 2.7845491 | $\Omega$ | 343.02017 | | +0.84238780 | −0.31327159 | |
| $e$ | 0.0391176 | $i$ | 2.68565 | | +0.40560392 | −0.16708204 | |
| $P$ | 4.65 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 910 | 0.6+ | 0.2+ | 2004 03 13 | 644 | 0.6+ | 0.1+ | 2006 09 15 | 691 | 0.4− | 0.3+ |
| 1997 10 05 | 910 | 1.0+ | 0.2− | 2004 03 13 | 644 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.5− | 0.2+ |
| 1997 10 05 | 910 | 0.6+ | 0.2+ | 2004 03 13 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.5+ |
| 1999 02 07 | 691 | 0.5− | 0.4− | 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.5+ |
| 1999 02 07 | 691 | 0.5+ | 0.6+ | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.4+ |
| 1999 02 07 | 691 | 0.3− | 0.5− | 2004 03 17 | 691 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 1.0− | 0.9− |
| 1999 02 12 | 691 | 0.3+ | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.6+ | 2006 09 19 | 699 | 0.3− | 0.1− |
| 1999 02 12 | 691 | 0.7+ | 0.0 | 2004 03 18 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 699 | (1.8− | 1.6+) |
| 1999 02 12 | 691 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 09 19 | 699 | 0.6− | 0.3− |
| 1999 02 13 | 691 | 1.2− | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.3+ |
| 1999 02 13 | 691 | 0.8− | 0.4− | 2004 03 24 | 699 | (2.9+ | 1.1−) | 2006 09 24 | 691 | 0.3− | 0.2+ |
| 1999 02 13 | 691 | 1.0− | 0.4− | 2004 03 24 | 699 | 0.7− | 0.0 | 2006 09 24 | 691 | 0.4− | 0.4+ |
| 2001 08 28 | 644 | 0.3+ | 1.0+ | 2004 03 24 | 699 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.5+ | 0.1− |
| 2001 08 28 | 644 | 0.1− | 0.9+ | 2004 03 24 | 699 | 0.2− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2001 08 28 | 644 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.1+ | 1.4+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2004 03 27 | 704 | 0.4+ | 1.3+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.4+ |
| 2001 09 19 | 704 | 0.7− | 0.9+ | 2004 03 27 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.6+ |
| 2001 09 19 | 704 | 0.4− | 0.6+ | 2004 03 27 | 704 | 0.6− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2004 03 29 | 691 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.2+ |
| 2002 12 06 | 704 | 0.3− | 0.8+ | 2004 03 29 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.4+ | 0.1+ | 2004 03 29 | 691 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 0.7+ | 2004 04 15 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2004 04 15 | 691 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.0 | 0.6− | 2004 04 15 | 691 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.6+ | 0.1+ |
| 2002 12 11 | 704 | 0.5− | 0.6+ | 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 1.3+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 0.5+ | 0.3+ | 2004 04 22 | 691 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.1+ | 1.0+ | 2006 07 22 | G96 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2003 01 05 | 704 | 0.6+ | 1.4+ | 2006 07 22 | G96 | 0.7− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.2+ |
| 2003 01 05 | 704 | (0.1+ | 1.6+) | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4+ |
| 2003 01 05 | 704 | (0.3+ | 1.9+) | 2006 07 22 | G96 | 0.1− | 0.2+ | | | | |
| 2003 01 05 | 704 | 0.3− | 1.1+ | 2006 09 15 | 691 | 0.3− | 0.3+ | | | | |

**(137146)∗ 1999 CS$_{145}$**

Discovered 1999 Feb. 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.38067 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18321417 | $\omega$ | 310.69381 | | +0.46288431 | | +0.88610029 |
| $a$ | 3.0701765 | $\Omega$ | 346.81877 | | −0.77861630 | | +0.39363449 |
| $e$ | 0.1664475 | $i$ | 5.98011 | | −0.42366824 | | +0.24470016 |
| $P$ | 5.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 1.1+ | 0.2+ | 2001 10 17 | 704 | 0.1− | 0.9+ | 2006 08 25 | 704 | 0.1+ | 0.1− |
| 1999 02 08 | 691 | 0.5+ | 0.3− | 2001 10 17 | 704 | 0.8− | 1.0+ | 2006 08 25 | 704 | 0.3+ | 0.2+ |
| 1999 02 08 | 691 | 0.5+ | 0.1− | 2001 10 17 | 704 | 0.1− | 0.2+ | 2006 08 25 | 704 | 0.4− | 0.4+ |
| 1999 02 14 | 691 | 0.2− | 0.2+ | 2001 10 17 | 704 | (0.9+ | 2.2+) | 2006 08 25 | 704 | 0.0 | 0.0 |
| 1999 02 14 | 691 | 0.2− | 0.0 | 2001 10 18 | 644 | 0.1+ | 0.5− | 2006 08 27 | A79 | 0.7+ | 0.5+ |
| 1999 02 23 | 691 | 0.9− | 0.4+ | 2001 10 18 | 644 | 0.2+ | 0.6− | 2006 08 27 | A79 | 0.2− | 0.6+ |
| 1999 02 23 | 691 | 0.3+ | 0.1− | 2001 10 18 | 644 | 0.3− | 0.3− | 2006 08 27 | A79 | 0.0 | 0.3− |
| 1999 02 23 | 691 | 1.1− | 0.2+ | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2006 08 27 | A79 | 0.0 | 0.4+ |
| 1999 03 16 | 691 | 0.3− | 1.1+ | 2001 10 21 | 704 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.2+ |
| 1999 03 16 | 691 | 0.7+ | 0.7+ | 2001 10 21 | 704 | 0.5+ | 0.0 | 2006 08 28 | 691 | 0.3− | 0.0 |
| 1999 03 16 | 691 | 0.4+ | 0.1+ | 2001 10 21 | 704 | 0.7+ | 0.1− | 2006 08 28 | 691 | 0.2+ | 0.3+ |
| 1999 03 18 | 691 | 0.8+ | 0.2− | 2001 10 21 | 704 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.2+ |
| 1999 03 18 | 691 | 0.2+ | 0.0 | 2001 10 23 | 691 | 0.1+ | 0.5− | 2006 08 28 | 703 | 0.1+ | 0.7− |
| 1999 03 18 | 691 | 0.8+ | 0.3− | 2001 10 23 | 691 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.3− | 0.4− |
| 1999 03 22 | 691 | 0.1− | 0.4+ | 2001 10 23 | 691 | 0.1+ | 0.3− | 2006 08 28 | 699 | 0.9+ | 0.1− |
| 1999 03 22 | 691 | 0.2− | 0.0 | 2001 10 25 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.4− |
| 1999 03 22 | 691 | 0.3− | 0.1+ | 2001 10 25 | 644 | 0.2− | 0.4+ | 2006 08 28 | 699 | (0.2+ | 1.6+) |
| 2001 09 23 | 704 | 0.7− | 0.1+ | 2001 10 25 | 644 | 0.2+ | 0.8+ | 2006 08 28 | 699 | 0.2− | 1.5+ |
| 2001 09 23 | 704 | 0.4− | 0.6+ | 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 699 | 0.4+ | 1.1+ |
| 2001 09 23 | 704 | 0.6− | 0.8+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.3+ | 0.9+ |
| 2001 09 23 | 704 | 0.9− | 0.4+ | 2004 02 12 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 704 | 0.6+ | 0.9+ |
| 2001 09 23 | 704 | 1.1− | 1.2+ | 2005 04 14 | 703 | 0.3− | 0.2− | 2006 08 29 | 704 | 0.1− | 1.1+ |
| 2001 09 27 | 704 | 0.5− | 0.3+ | 2005 04 14 | 703 | 0.3− | 0.7− | 2006 08 31 | 704 | 0.2+ | 0.0 |
| 2001 09 27 | 704 | (0.9− | 1.8−) | 2005 04 14 | 703 | 0.3− | 0.6− | 2006 08 31 | 704 | 0.5+ | 0.1+ |
| 2001 09 27 | 704 | 0.1+ | 0.2− | 2005 04 14 | 703 | 1.2− | 0.8+ | 2006 08 31 | 704 | 0.8− | 0.8+ |
| 2001 09 27 | 704 | 0.7+ | 1.3− | 2006 08 14 | A13 | 0.3+ | 0.3− | 2006 08 31 | 704 | 0.5+ | 0.9+ |
| 2001 09 27 | 704 | (2.0+ | 1.4−) | 2006 08 14 | A13 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.4− | 0.0 |
| 2001 09 27 | 704 | 0.0 | 0.7+ | 2006 08 14 | A13 | 1.3− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.1+ |
| 2001 09 27 | 704 | 0.7− | 1.0− | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.5+ | 0.2+ |
| 2001 09 27 | 704 | 0.1− | 1.1− | 2006 08 16 | 644 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.6− | 0.8+ |
| 2001 09 27 | 704 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.0 | 1.4− |
| 2001 09 27 | 704 | (1.0+ | 2.0−) | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 2001 09 27 | 704 | 0.8+ | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 25 | 699 | (0.2− | 1.7+) |
| 2001 09 27 | 704 | 0.4+ | 0.7− | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.8+ |
| 2001 09 28 | 644 | 0.1− | 0.0 | 2006 08 21 | 704 | 0.6− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.5− |
| 2001 09 28 | 644 | 0.2+ | 0.3+ | 2006 08 21 | 704 | 0.6− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2001 09 28 | 644 | 0.3+ | 0.5+ | 2006 08 21 | 704 | 0.3− | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2001 10 13 | 699 | 0.6− | 0.2− | 2006 08 21 | 704 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2001 10 13 | 699 | 0.6+ | 0.0 | 2006 08 21 | 704 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 10 13 | 699 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.8− | 0.4− |
| 2001 10 13 | 699 | 0.2− | 0.6+ | 2006 08 21 | 644 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 1.5− | 1.0− | 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.6− | 1.2+ | 2006 08 25 | 704 | 0.1− | 0.2+ | | | | |

**(137147)∗ 1999 CW$_{145}$ = 2001 SP$_{95}$**

Discovered 1999 Feb. 8 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 19399)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.84389 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20645360 | $\omega$ | 59.82976 | | +0.99874746 | | +0.04729039 |
| $a$ | 2.8352264 | $\Omega$ | 297.45535 | | −0.04985359 | | +0.91273411 |
| $e$ | 0.0090300 | $i$ | 1.05537 | | −0.00425838 | | +0.40580792 |
| $P$ | 4.77 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.7− | 0.2+ | 2001 10 19 | 644 | 0.2− | 0.8+ | 2004 04 15 | 699 | 0.9+ | 0.4+ |
| 1999 02 08 | 691 | 0.7− | 0.1− | 2001 10 19 | 644 | 0.1− | 0.8+ | 2004 04 15 | 699 | 0.9− | 0.4− |
| 1999 02 08 | 691 | 0.6− | 0.1+ | 2001 10 21 | 704 | 0.5− | 0.1− | 2004 04 15 | 699 | 0.5+ | 0.1+ |
| 1999 02 09 | 691 | 0.8− | 0.3− | 2001 10 21 | 704 | 0.4− | 0.4− | 2004 04 19 | 691 | 0.0 | 0.1+ |
| 1999 02 09 | 691 | 0.3− | 0.0 | 2001 10 21 | 704 | 0.8− | 0.3− | 2004 04 19 | 691 | 0.1+ | 0.0 |
| 1999 02 09 | 691 | 0.4− | 0.2− | 2001 10 21 | 704 | 0.4− | 0.1− | 2004 04 19 | 691 | 0.0 | 0.1+ |
| 1999 02 14 | 691 | 0.6+ | 0.1+ | 2001 10 21 | 695 | 0.0 | 0.3− | 2004 04 21 | 704 | 0.4+ | 1.1+ |
| 1999 02 14 | 691 | 0.7+ | 0.1− | 2001 10 21 | 704 | 0.2− | 0.6− | 2004 04 21 | 704 | 1.3+ | 0.1− |
| 1999 03 12 | 691 | 0.4+ | 0.2− | 2001 10 21 | 695 | 0.3− | 0.1+ | 2004 04 21 | 704 | 0.0 | 0.0 |
| 1999 03 12 | 691 | 0.2+ | 0.2− | 2002 12 31 | 704 | 0.9+ | 1.1+ | 2006 09 14 | 703 | 0.5+ | 0.1+ |
| 1999 03 12 | 691 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.6+ | 1.1+ | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2001 08 16 | 704 | (0.4+ | 1.9+) | 2002 12 31 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.5− |
| 2001 08 16 | 704 | 0.3− | 0.8+ | 2002 12 31 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.5− |
| 2001 08 16 | 704 | 0.9− | 0.2+ | 2003 01 08 | 704 | 0.2+ | 0.2− | 2006 09 14 | 691 | 0.2− | 0.2+ |
| 2001 08 24 | 704 | 0.4+ | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 691 | 0.2− | 0.3+ |
| 2001 08 24 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.5+ | 0.0 | 2006 09 14 | 691 | 0.3− | 0.3+ |
| 2001 08 24 | 704 | 0.0 | 0.5− | 2003 01 08 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2001 08 24 | 704 | (0.7− | 1.6−) | 2003 01 08 | 704 | 0.5− | 1.0− | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2001 09 18 | 699 | 0.4+ | 1.1+ | 2004 03 13 | 644 | 0.3+ | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2001 09 18 | 699 | 1.0+ | 0.2− | 2004 03 13 | 644 | 0.2+ | 0.9+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | 0.2− | 0.7− | 2004 03 13 | 644 | 0.4+ | 1.1+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2001 09 18 | 699 | 0.6− | 0.6+ | 2004 03 15 | 703 | 0.2− | 0.7− | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 644 | 0.4+ | 1.4+ | 2004 03 15 | 703 | 0.6− | 1.1+ | 2006 09 27 | 704 | (1.8+ | 1.2−) |
| 2001 09 19 | 644 | 0.2+ | 1.3+ | 2004 03 15 | 703 | 1.0+ | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.1− |
| 2001 09 19 | 644 | 0.4+ | 1.3+ | 2004 03 15 | 703 | (1.4+ | 1.6+) | 2006 09 27 | 704 | 0.3+ | 0.3− |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.9+ | 2006 09 27 | 704 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.2− | 2004 03 18 | 704 | 0.7+ | 1.2+ | 2006 09 29 | 691 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 1.4+ | 0.3− | 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 09 29 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2004 03 18 | 704 | 1.2+ | 0.5+ | 2006 09 29 | 691 | 0.0 | 0.4− |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2004 03 18 | 704 | 0.8+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 644 | 0.9− | 0.4+ | 2004 03 26 | 691 | 0.1+ | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.3+ |
| 2001 09 21 | 644 | 1.0− | 0.8+ | 2004 03 26 | 691 | 0.1+ | 0.6+ | 2006 10 03 | 691 | 0.2− | 0.4+ |
| 2001 09 21 | 644 | 0.7− | 0.6+ | 2004 03 26 | 691 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.5+ | 0.7+ | 2004 03 27 | 704 | 0.5+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 2001 09 22 | 704 | 0.1+ | 0.8+ | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.2+ |
| 2001 09 22 | 704 | 0.2− | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.2+ |
| 2001 09 22 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.5+ |
| 2001 09 23 | 704 | 0.5+ | 0.5+ | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2001 09 23 | 704 | 0.6+ | 0.2− | 2004 04 12 | 699 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 09 23 | 704 | 0.2+ | 0.4+ | 2004 04 12 | 699 | 1.2− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 13 | 704 | (0.4+ | 2.3+) | 2004 04 12 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.7+ |
| 2001 10 13 | 704 | 0.3− | 0.6+ | 2004 04 12 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.8− |
| 2001 10 13 | 704 | 0.9− | 0.9+ | 2004 04 12 | 699 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2001 10 13 | 704 | 0.9− | 1.3+ | 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.0 |
| 2001 10 19 | 644 | 0.1− | 1.0+ | 2004 04 15 | 699 | 0.8+ | 1.1+ | 2006 11 11 | 703 | 0.7− | 0.7− |

**(137148)∗ 1999 CA$_{151}$ = 2001 SY$_{77}$**

Discovered 1999 Feb. 9 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 16953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.90917 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19948971 | $\omega$ | 44.44856 | | −0.89663387 | | +0.44254903 |
| $a$ | 2.9008307 | $\Omega$ | 161.80360 | | −0.41775620 | | −0.83501449 |
| $e$ | 0.0409463 | $i$ | 2.58300 | | −0.14672238 | | −0.32695743 |
| $P$ | 4.94 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.3− | 0.5− | 2004 02 13 | 291 | 0.7− | 0.1+ | 2004 03 27 | 704 | 1.1+ | 0.4+ |
| 1999 02 08 | 691 | 0.2+ | 0.0 | 2004 02 13 | 291 | 0.4− | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.3+ |
| 1999 02 08 | 691 | 0.5− | 0.2− | 2004 02 19 | 704 | 1.2− | 0.1− | 2004 03 30 | 291 | 0.0 | 0.3+ |
| 1999 02 09 | 691 | 0.0 | 0.4− | 2004 02 19 | 704 | 1.3+ | 0.7− | 2004 03 30 | 291 | 0.2+ | 0.4+ |
| 1999 02 09 | 691 | 0.2− | 0.1− | 2004 02 19 | 704 | 1.2− | 1.2+ | 2004 03 30 | 291 | 0.2+ | 0.3+ |
| 1999 02 09 | 691 | 0.2+ | 0.4− | 2004 02 19 | 704 | 0.1− | 0.5− | 2004 03 31 | 691 | 0.0 | 0.4+ |
| 1999 02 16 | 691 | 0.3+ | 0.2− | 2004 02 26 | 704 | 1.0+ | 0.7+ | 2004 03 31 | 691 | 0.3+ | 0.5+ |
| 1999 02 16 | 691 | 0.1+ | 0.2− | 2004 02 26 | 704 | 0.5+ | 0.7+ | 2004 03 31 | 691 | 0.0 | 0.5+ |
| 2001 09 11 | 699 | 1.2− | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2004 04 12 | 691 | 0.3+ | 0.4+ |
| 2001 09 11 | 699 | (2.3− | 1.3+) | 2004 02 26 | 704 | 0.5+ | 0.1+ | 2004 04 12 | 691 | 0.2− | 0.5+ |
| 2001 09 11 | 699 | 0.4+ | 0.2+ | 2004 02 26 | 704 | 0.9+ | 0.5+ | 2004 04 12 | 691 | 0.1+ | 0.1+ |
| 2001 09 11 | 699 | (2.1− | 1.8+) | 2004 03 11 | 644 | 0.0 | 0.4+ | 2004 04 12 | 699 | (1.8+ | 0.3−) |
| 2001 09 19 | 704 | 0.6− | 1.0+ | 2004 03 11 | 644 | 0.2+ | 0.2+ | 2004 04 12 | 699 | 0.5− | 1.3− |
| 2001 09 19 | 704 | 0.9− | 0.9+ | 2004 03 11 | 644 | 0.2+ | 0.2+ | 2004 04 12 | 699 | 0.7+ | 0.0 |
| 2001 09 19 | 704 | 0.6− | 0.9+ | 2004 03 15 | 691 | 0.3− | 0.2+ | 2004 04 12 | 699 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 1.3− | 0.1+ | 2004 03 15 | 691 | 0.3− | 0.2+ | 2004 04 24 | 691 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.9− | 0.8+ | 2004 03 15 | 691 | 0.2− | 0.1+ | 2004 04 24 | 691 | 0.3+ | 0.2+ |
| 2001 09 19 | 644 | 1.0− | 1.2+ | 2004 03 15 | 704 | 0.1+ | 0.5− | 2004 04 24 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 644 | 1.2− | 1.0+ | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.5+ |
| 2001 09 19 | 644 | 1.1− | 1.0+ | 2004 03 15 | 704 | 0.7+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2004 03 15 | 704 | 0.9+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.5+ |
| 2001 09 21 | 704 | 0.4− | 1.4+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 699 | (0.2− | 1.8+) |
| 2001 09 21 | 704 | (1.6− | 1.5+) | 2004 03 17 | 291 | 0.0 | 0.1+ | 2006 09 18 | 699 | 1.4− | 1.3− |
| 2001 09 21 | 704 | 0.7− | 1.2+ | 2004 03 17 | 291 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | (0.6− | 1.9+) | 2004 03 17 | 291 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.9+ |
| 2001 09 22 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 09 20 | 644 | 0.5− | 0.4+ |
| 2001 09 22 | 704 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.5− | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2001 09 22 | 704 | (2.0− | 0.8+) | 2004 03 18 | 704 | 0.5− | 0.8+ | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2001 09 23 | 704 | (0.1− | 1.7+) | 2004 03 18 | 704 | 0.0 | 0.8+ | 2006 09 26 | G96 | 0.4− | 0.2+ |
| 2001 09 23 | 704 | (0.1+ | 1.6+) | 2004 03 18 | 704 | (0.0 | 1.6+) | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2001 09 23 | 704 | (0.3− | 1.7+) | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2001 09 23 | 704 | (0.8− | 1.5+) | 2004 03 19 | 704 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 2001 09 24 | 704 | (1.6− | 0.7+) | 2004 03 19 | 704 | 0.3− | 0.5+ | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 2001 09 24 | 704 | 0.5− | 1.4+ | 2004 03 20 | 699 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2001 09 24 | 704 | 0.0 | 1.3+ | 2004 03 20 | 699 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.8− |
| 2001 09 24 | 704 | 0.1− | 0.6+ | 2004 03 20 | 699 | 0.6+ | 0.3− | 2006 10 17 | 703 | 1.2− | 0.1+ |
| 2001 09 24 | 704 | 0.2+ | 1.4+ | 2004 03 20 | 699 | 1.0+ | 0.6− | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2001 09 24 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.6+ | 1.4+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2001 09 24 | 704 | (0.1− | 1.8+) | 2004 03 22 | 704 | (0.0 | 1.9+) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2004 01 22 | 568 | 0.3− | 0.2+ | 2004 03 22 | 704 | (0.4+ | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2004 01 22 | 568 | 0.3− | 0.3+ | 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.8+ |
| 2004 01 22 | 568 | 0.2− | 0.3+ | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2004 01 30 | 568 | 0.5− | 0.4+ | 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2004 01 30 | 568 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.8+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2004 01 30 | 568 | 0.4− | 0.4+ | 2004 03 27 | 704 | 1.1+ | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2004 02 13 | 291 | 0.4− | 0.0 | 2004 03 27 | 704 | 0.9+ | 0.3+ | | | | |

**(137149)∗ 1999 CB$_{151}$ = 2001 SM$_{174}$**

Discovered 1999 Feb. 9 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 19400)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.64127 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20885028 | $\omega$ | 188.66187 | | +0.96182488 | +0.27063062 | |
| $a$ | 2.8134941 | $\Omega$ | 155.51874 | | −0.24484164 | +0.91732246 | |
| $e$ | 0.0465831 | $i$ | 5.62867 | | −0.12225165 | +0.29202496 | |
| $P$ | 4.72 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.2− | 0.2− | 2003 01 07 | 704 | 0.6− | 0.2+ | 2006 09 29 | 699 | (2.4+ | 1.6−) |
| 1999 02 08 | 691 | 0.0 | 0.0 | 2004 03 19 | 704 | 1.0+ | 0.9+ | 2006 09 29 | 699 | 1.2+ | 0.8− |
| 1999 02 08 | 691 | 0.3− | 0.3− | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.2− | 1.0+ |
| 1999 02 09 | 691 | 0.2+ | 0.2− | 2004 03 19 | 704 | 1.3+ | 0.6+ | 2006 09 29 | 699 | 0.3− | 0.1+ |
| 1999 02 09 | 691 | 0.2− | 0.2− | 2004 03 19 | 704 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.5+ | 0.1− |
| 1999 02 09 | 691 | 0.1− | 0.1− | 2004 03 19 | 704 | 0.8+ | 1.4+ | 2006 09 30 | 703 | 1.0+ | 0.7− |
| 1999 02 16 | 691 | 0.1+ | 0.1+ | 2004 03 20 | 699 | 0.5− | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.0 |
| 1999 02 16 | 691 | 0.8+ | 0.4+ | 2004 03 20 | 699 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.4− |
| 2001 08 27 | 699 | 0.1+ | 0.5+ | 2004 03 20 | 699 | 0.0 | 1.4+ | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2001 08 27 | 699 | 0.0 | 0.6+ | 2004 03 20 | 699 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2001 08 27 | 699 | 0.6− | 0.3+ | 2004 03 21 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.0 |
| 2001 08 27 | 699 | 0.2+ | 0.4+ | 2004 03 21 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2001 09 11 | 699 | 0.4− | 0.6+ | 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 09 11 | 699 | 0.1+ | 0.6+ | 2004 03 22 | 704 | 0.8− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2001 09 11 | 699 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.5− | 0.9+ | 2006 10 19 | 644 | 0.3− | 0.9+ |
| 2001 09 11 | 699 | (0.3+ | 2.0+) | 2004 03 22 | 704 | 0.0 | 1.3+ | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.3+ | 0.2+ | 2004 03 22 | 704 | 0.7− | 0.3− | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2001 09 16 | 704 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2001 09 16 | 704 | 0.8− | 0.5+ | 2004 03 24 | 699 | (0.1+ | 1.8+) | 2006 10 22 | 703 | 0.9− | 0.3− |
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2004 03 24 | 699 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.3+ | 0.7+ | 2004 03 24 | 699 | 0.5− | 0.5+ | 2006 11 13 | 703 | 0.4− | 0.5+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2004 03 24 | 699 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.8+ |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 03 28 | 704 | 0.2− | 0.8+ | 2006 11 13 | 703 | 0.4− | 0.1− |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2004 03 28 | 704 | 0.3+ | 1.3+ | 2006 11 14 | 704 | (0.7− | 3.1+) |
| 2001 09 19 | 704 | 0.1+ | 0.9+ | 2004 03 28 | 704 | 0.6+ | 1.1+ | 2006 11 14 | 704 | 1.1+ | 1.0+ |
| 2001 09 19 | 704 | 1.1+ | 0.7+ | 2004 03 28 | 704 | 0.2+ | 0.8+ | 2006 11 14 | 704 | 0.1− | 1.5+ |
| 2001 09 21 | 704 | (1.9+ | 1.1+) | 2004 03 28 | 704 | 0.2− | 0.3+ | 2006 11 14 | 644 | 0.5− | 0.2+ |
| 2001 09 21 | 704 | (1.5+ | 1.6+) | 2004 04 12 | 699 | 0.7+ | 0.6+ | 2006 11 14 | 704 | (1.8+ | 1.5+) |
| 2001 09 21 | 704 | (2.1+ | 1.1+) | 2004 04 12 | 699 | 0.3+ | 0.6+ | 2006 11 14 | 644 | 0.0 | 0.4− |
| 2001 09 21 | 704 | (2.3+ | 0.4+) | 2004 04 12 | 699 | 0.8+ | 0.6+ | 2006 11 14 | 644 | 0.2+ | 0.0 |
| 2001 10 13 | 704 | 1.0+ | 0.3− | 2004 04 12 | 699 | 0.6+ | 0.7+ | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2001 10 13 | 704 | 0.2+ | 0.3− | 2004 04 19 | 704 | 0.4+ | 0.4+ | 2006 11 17 | 704 | (1.7− | 1.9+) |
| 2001 10 13 | 704 | 0.3− | 0.4+ | 2004 04 19 | 704 | 0.6+ | 0.6+ | 2006 11 17 | 704 | 0.8+ | 1.4+ |
| 2001 10 13 | 704 | 0.5+ | 0.1+ | 2004 04 19 | 704 | 0.2+ | 0.3− | 2006 11 17 | 644 | 0.3− | 0.2− |
| 2001 10 17 | 644 | 0.3− | 1.0+ | 2004 04 19 | 704 | 0.5+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2001 10 17 | 644 | 0.3− | 0.8+ | 2004 04 19 | 704 | 0.6+ | 0.7+ | 2006 11 17 | 704 | 1.1− | 0.3− |
| 2001 10 17 | 644 | 0.5− | 0.7+ | 2004 04 22 | 704 | 0.2+ | 0.8+ | 2006 11 17 | 644 | 0.2− | 0.1− |
| 2001 10 19 | 699 | 0.3− | 0.9+ | 2004 04 22 | 704 | 0.8+ | 0.9+ | 2006 11 19 | 703 | 0.3− | 0.8+ |
| 2001 10 19 | 699 | 0.1+ | 0.9+ | 2004 04 22 | 704 | 0.1+ | 0.3− | 2006 11 19 | 703 | 0.1+ | 0.9+ |
| 2001 10 19 | 699 | 0.2− | 0.9+ | 2004 04 22 | 704 | 0.4+ | 1.4+ | 2006 11 19 | 703 | 0.6− | 0.6+ |
| 2001 10 19 | 699 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.6+ |
| 2001 10 24 | 704 | 0.2− | 0.7+ | 2006 09 20 | 644 | 0.5− | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.4+ |
| 2001 10 24 | 704 | 0.9− | 0.5− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.4− |
| 2001 10 24 | 704 | 0.6− | 0.5− | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 1.3− | 0.3− | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2001 10 24 | 704 | 1.3− | 0.6+ | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.4− | 0.7+ |
| 2003 01 07 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 704 | (1.6+ | 0.1+) | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2003 01 07 | 704 | 0.3− | 0.6− | 2006 09 26 | 704 | 0.4+ | 1.2+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2003 01 07 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.7− | 1.0+ | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2003 01 07 | 704 | 0.3+ | 0.7− | 2006 09 26 | 704 | 0.8+ | 0.6− | 2006 11 23 | G96 | 0.1− | 0.4− |

**(137150)∗ 1999 CX$_{155}$ = 2004 BU$_{83}$**

Discovered 1999 Feb. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 55862)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.84992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21655883 | $\omega$ | 343.31167 | | −0.76368742 | −0.63595356 | |
| $a$ | 2.7463262 | $\Omega$ | 156.08467 | | +0.61920260 | −0.77024561 | |
| $e$ | 0.2275201 | $i$ | 15.90690 | | +0.18267364 | −0.04779916 | |
| $P$ | 4.55 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 06 | 120 | 0.6− | 0.1− | 2004 01 28 | 704 | 0.7+ | 0.5+ | 2004 04 26 | 704 | 0.3+ | 0.1− |
| 1999 02 06 | 120 | 0.7+ | 1.8+ | 2004 02 19 | 704 | 0.8+ | 0.0 | 2004 05 08 | 703 | (2.4+ | 1.2+) |
| 1999 02 07 | 120 | 0.4+ | 0.6+ | 2004 02 19 | 704 | 0.2+ | 0.3+ | 2004 05 08 | 703 | 0.3− | 0.0 |
| 1999 02 12 | 699 | 0.2+ | 0.2− | 2004 02 19 | 704 | (0.9+ | 1.6+) | 2004 05 08 | 703 | 0.1+ | 0.7− |
| 1999 02 12 | 699 | 0.6+ | 0.2− | 2004 02 19 | 704 | (0.4+ | 2.3−) | 2004 05 08 | 703 | 0.4− | 1.3+ |
| 1999 02 12 | 699 | 0.2+ | 0.2+ | 2004 03 16 | 704 | 0.7− | 0.4− | 2004 05 13 | 704 | 0.3+ | 0.2− |
| 1999 02 16 | 704 | 0.2− | 0.8− | 2004 03 16 | 704 | 0.3− | 0.1− | 2004 05 13 | 704 | 0.2+ | 0.7+ |
| 1999 02 16 | 704 | 0.6− | 0.8− | 2004 03 16 | 704 | 0.1− | 0.2+ | 2004 05 13 | 704 | 0.0 | 0.0 |
| 1999 02 16 | 704 | 0.9− | 0.3+ | 2004 03 30 | 683 | (1.6+ | 1.3−) | 2004 05 13 | 704 | 0.5+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 16 | 704 | 0.3− | 0.1− | 2004 03 30 | 683 | (1.6− | 0.2−) | 2004 05 13 | 704 | 0.1+ | 0.6+ | | |
| 1999 02 16 | 704 | 1.2− | 0.4− | 2004 03 30 | 683 | (0.8+ | 1.7−) | 2004 05 22 | 703 | 0.6+ | 0.4+ | | |
| 1999 03 21 | 699 | 0.7+ | 0.2− | 2004 04 10 | 644 | 0.2− | 0.3− | 2004 05 22 | 703 | (1.8+ | 0.2−) | | |
| 1999 03 21 | 699 | 0.4+ | 0.1+ | 2004 04 10 | 644 | 0.2+ | 0.1+ | 2004 05 22 | 703 | 0.0 | 0.2+ | | |
| 1999 03 21 | 699 | 0.6+ | 0.4− | 2004 04 10 | 644 | 0.2+ | 0.1− | 2004 05 22 | 703 | 0.4+ | 1.2− | | |
| 2001 09 11 | 704 | 0.8+ | 1.3+ | 2004 04 12 | 703 | 0.6+ | 0.2− | 2005 07 05 | 644 | 0.2− | 0.2− | | |
| 2001 09 11 | 704 | 0.1+ | 0.4+ | 2004 04 12 | 703 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.1+ | 0.3− | | |
| 2001 09 11 | 704 | 1.0− | 0.6+ | 2004 04 12 | 703 | 0.1− | 0.4+ | 2005 07 05 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 16 | 644 | 0.3− | 1.0+ | 2004 04 12 | 703 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.2+ | | |
| 2002 11 16 | 644 | 0.0 | 0.7+ | 2004 04 15 | 704 | (1.6+ | 1.1+) | 2006 09 19 | 703 | 0.5− | 0.7+ | | |
| 2002 11 16 | 644 | 0.0 | 0.9+ | 2004 04 15 | 704 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.1+ | | |
| 2003 01 28 | 704 | 0.3− | 1.5+ | 2004 04 15 | 704 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.9+ | | |
| 2003 01 28 | 704 | 0.1− | 0.0 | 2004 04 15 | 704 | 0.4+ | 0.9+ | 2006 09 26 | 703 | 0.7− | 0.7− | | |
| 2003 01 28 | 704 | 0.6+ | 0.6+ | 2004 04 15 | 704 | 1.0− | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | | |
| 2004 01 23 | 704 | 0.4+ | 1.1+ | 2004 04 16 | 699 | 0.4+ | 0.8− | 2006 09 26 | 703 | 1.1+ | 1.0− | | |
| 2004 01 23 | 704 | 0.4− | 0.3− | 2004 04 16 | 699 | 1.4− | 0.1+ | 2006 09 26 | 703 | (0.4+ | 1.8−) | | |
| 2004 01 23 | 704 | 1.4+ | 0.4− | 2004 04 16 | 699 | 0.8− | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.5+ | | |
| 2004 01 23 | 704 | 1.1+ | 0.5+ | 2004 04 16 | 699 | 0.8+ | 0.6+ | 2006 10 21 | 703 | 0.1− | 1.0+ | | |
| 2004 01 28 | 704 | 0.2+ | 0.5+ | 2004 04 26 | 704 | 0.1− | 0.1+ | 2006 10 21 | 703 | 1.2+ | 1.2− | | |
| 2004 01 28 | 704 | 0.4− | 0.8+ | 2004 04 26 | 704 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.7+ | 0.1+ | | |
| 2004 01 28 | 704 | (0.2− | 1.5+) | 2004 04 26 | 704 | 0.2+ | 0.5− | | | | | | |

**(137151)∗ 1999 DO = 1995 GP$_9$**

Discovered 1999 Feb. 16 by the OCA-DLR Asteroid Survey at Caussols.

Id. A. Doppler (*MPO* 74602)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.43386 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22017223 | $\omega$ | 287.55676 | | −0.06491598 | | −0.99703944 |
| $a$ | 2.7161954 | $\Omega$ | 165.97211 | | +0.96786451 | | −0.07296327 |
| $e$ | 0.1458810 | $i$ | 9.78855 | | +0.24294898 | | +0.02426340 |
| $P$ | 4.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 07 | 691 | 0.2− | 0.1+ | 2003 01 11 | 644 | 0.6− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 1995 04 07 | 691 | 0.5− | 0.1− | 2003 02 08 | 608 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.1− | | |
| 1995 04 07 | 691 | 0.2− | 0.3+ | 2003 02 08 | 608 | 0.3− | 0.5− | 2006 10 04 | G96 | 0.5+ | 0.4− | | |
| 1999 02 12 | 699 | 0.8+ | 1.1+ | 2003 02 08 | 608 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.1− | | |
| 1999 02 12 | 704 | 0.9− | 0.1+ | 2004 04 17 | 699 | 0.0 | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.4− | | |
| 1999 02 12 | 699 | 0.2− | 1.4+ | 2004 04 17 | 699 | (0.0 | 1.6+) | 2006 10 04 | G96 | 0.4+ | 0.2− | | |
| 1999 02 12 | 704 | 1.4− | 0.2+ | 2004 04 17 | 699 | 0.2− | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 1999 02 12 | 699 | 0.7+ | 0.5+ | 2004 04 17 | 699 | 1.0+ | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 1999 02 12 | 704 | 1.1− | 0.3− | 2004 04 21 | 703 | 0.0 | 1.3+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | | |
| 1999 02 12 | 704 | 1.6− | 0.8+ | 2004 04 21 | 703 | 0.5− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 1999 02 12 | 704 | (4.4− | 1.7+) | 2004 04 21 | 703 | 0.5− | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.2− | | |
| 1999 02 16 | 910 | 0.8+ | 0.3− | 2004 04 21 | 703 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 1999 02 16 | 910 | 0.8+ | 0.5− | 2004 04 23 | 704 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.4− | | |
| 1999 02 16 | 910 | 1.0+ | 0.5− | 2004 04 23 | 704 | (0.8+ | 1.9+) | 2006 10 16 | 703 | 0.6+ | 0.9+ | | |
| 1999 02 16 | 704 | 1.0+ | 0.0 | 2004 04 23 | 704 | (0.7+ | 2.0+) | 2006 10 16 | 703 | 0.5+ | 0.0 | | |
| 1999 02 16 | 704 | 0.5− | 0.6+ | 2006 09 18 | 703 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.3+ | | |
| 1999 02 16 | 704 | 0.7+ | 1.3− | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 1999 02 16 | 704 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.6− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 1999 02 16 | 704 | 0.4− | 0.6− | 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.4− | | |
| 1999 02 17 | 910 | 1.0+ | 0.5− | 2006 09 26 | 704 | 1.2+ | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.1− | | |
| 1999 02 17 | 910 | 0.7+ | 0.6− | 2006 09 26 | 704 | 0.8− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 1999 02 17 | 910 | 0.4+ | 0.7− | 2006 09 26 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 1999 02 17 | 910 | 1.0+ | 1.1− | 2006 09 26 | 704 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 1.4− | | |
| 1999 02 17 | 910 | 0.9+ | 0.9− | 2006 09 26 | 704 | 0.6+ | 0.4− | 2006 10 22 | 703 | 0.3− | 0.4− | | |
| 1999 02 17 | 910 | 1.4+ | 1.1− | 2006 09 26 | 704 | 0.7− | 1.1+ | 2006 10 22 | 703 | 0.4+ | 0.4+ | | |
| 1999 03 19 | 699 | 1.1+ | 0.8− | 2006 09 26 | 704 | 0.4− | 1.3+ | 2006 10 22 | 703 | 0.4− | 0.0 | | |
| 1999 03 19 | 699 | 0.7+ | 0.4− | 2006 09 26 | 704 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.0 | | |
| 1999 03 19 | 699 | 0.3+ | 0.8− | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.7− | | |
| 2001 09 20 | 704 | 0.4+ | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.7− | 0.5− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.3− | | |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2006 09 29 | 699 | 0.9+ | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.8− | 0.0 | 2006 09 29 | 699 | 0.9+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2002 12 14 | 704 | 0.8− | 0.3+ | 2006 09 29 | 699 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 2002 12 14 | 704 | 1.0− | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 0.0 | 0.1+ | | |
| 2002 12 14 | 704 | 0.5− | 0.6+ | 2006 10 01 | 704 | 0.6+ | 0.0 | 2006 10 28 | 703 | 0.5− | 0.8− | | |
| 2002 12 14 | 704 | 0.6− | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.8+ | 2006 10 28 | 703 | (1.7− | 0.3+) | | |
| 2003 01 05 | 704 | 0.4− | 0.4+ | 2006 10 01 | 704 | 0.6− | 1.5− | 2006 10 28 | 703 | 0.2− | 0.0 | | |
| 2003 01 05 | 704 | 0.7− | 0.1+ | 2006 10 01 | 704 | 1.1− | 1.0+ | 2006 11 16 | 703 | 0.6− | 0.2− | | |
| 2003 01 05 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.6− | 0.4− | | |
| 2003 01 05 | 704 | 0.7− | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 16 | 703 | 0.0 | 1.2+ | | |
| 2003 01 05 | 704 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.7− | 0.2− | | |
| 2003 01 11 | 644 | 0.6− | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.2− | | | | | | |
| 2003 01 11 | 644 | 0.4− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.0 | | | | | | |

**(137152)∗ 1999 DY$_4$**

Discovered 1999 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.91327 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22953382 | $\omega$ | 287.18003 | | −0.78212849 | | −0.60940575 |
| $a$ | 2.6418304 | $\Omega$ | 215.58667 | | +0.62201429 | | −0.75115693 |
| $e$ | 0.0574954 | $i$ | 12.90827 | | +0.03705751 | | −0.25374769 |
| $P$ | 4.29 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 17 | 704 | (2.2− | 1.1−) | 2001 09 25 | 704 | 0.7− | 1.3+ | 2004 05 10 | 703 | 0.6+ | 0.2+ | | |
| 1999 02 17 | 704 | 0.5− | 1.0+ | 2001 09 25 | 704 | 0.3− | 1.1+ | 2004 05 10 | 703 | 0.2− | 0.3+ | | |
| 1999 02 17 | 704 | 0.5− | 1.0− | 2001 09 25 | 704 | 0.9− | 0.9+ | 2004 05 10 | 703 | 0.6+ | 0.0 | | |
| 1999 02 17 | 704 | (4.0− | 3.4+) | 2001 09 26 | 704 | 1.3+ | 0.5− | 2004 05 10 | 703 | 0.1− | 0.5+ | | |
| 1999 02 19 | 704 | 0.1+ | 1.0− | 2001 09 26 | 704 | 0.4+ | 0.3− | 2004 05 15 | 704 | 0.1+ | 0.7+ | | |
| 1999 02 19 | 704 | 1.1+ | 0.5− | 2001 09 26 | 704 | 0.0 | 1.0− | 2004 05 15 | 704 | 0.1+ | 0.8+ | | |
| 1999 02 19 | 704 | 0.6+ | 0.6− | 2002 12 14 | 704 | 0.1− | 1.0+ | 2004 05 15 | 704 | 0.8− | 0.6+ | | |
| 1999 02 19 | 704 | 1.5− | 0.4− | 2002 12 14 | 704 | 1.4+ | 0.8+ | 2004 05 15 | 704 | 0.7+ | 1.1+ | | |
| 1999 02 23 | 699 | 0.1+ | 0.6+ | 2002 12 14 | 704 | 0.2− | 0.7+ | 2004 05 15 | 704 | 0.1− | 0.7+ | | |
| 1999 02 23 | 699 | 0.3− | 0.2− | 2002 12 14 | 704 | 0.1+ | 1.2+ | 2004 05 17 | 704 | 0.1+ | 0.9+ | | |
| 1999 02 23 | 699 | 1.0+ | 0.1− | 2004 04 12 | 691 | 0.5− | 0.0 | 2004 05 17 | 704 | 0.3+ | 0.9+ | | |
| 2001 08 26 | 699 | (0.7− | 1.5+) | 2004 04 12 | 691 | 0.4− | 0.0 | 2004 05 17 | 704 | 0.1+ | 0.6+ | | |
| 2001 08 26 | 704 | 0.9+ | 1.0− | 2004 04 12 | 691 | 0.2− | 0.1− | 2004 05 17 | 704 | 1.0− | 0.8+ | | |
| 2001 08 26 | 704 | 0.9− | 0.5+ | 2004 04 17 | 704 | 0.1− | 0.2+ | 2004 05 21 | 704 | 0.3+ | 0.3− | | |
| 2001 08 26 | 699 | 0.1+ | 0.4− | 2004 04 17 | 704 | 0.7+ | 1.0+ | 2004 05 21 | 704 | (0.0 | 1.7+) | | |
| 2001 08 26 | 704 | 0.9− | 0.3− | 2004 04 17 | 704 | 0.1+ | 0.4+ | 2004 05 21 | 704 | 0.7+ | 0.4+ | | |
| 2001 08 26 | 699 | 0.1− | 0.6+ | 2004 04 17 | 704 | 0.1− | 0.8+ | 2004 05 21 | 704 | 1.3+ | 1.1− | | |
| 2001 08 26 | 699 | 0.3− | 0.5+ | 2004 04 17 | 704 | 1.2− | 1.1+ | 2004 05 21 | 704 | 0.9+ | 0.1− | | |
| 2001 09 10 | 704 | 0.0 | 1.1+ | 2004 04 19 | 704 | (0.1+ | 1.6+) | 2005 09 09 | 704 | 0.9+ | 0.9− | | |
| 2001 09 10 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 0.6+ | 1.5+ | 2005 09 09 | 704 | 0.3+ | 0.8− | | |
| 2001 09 10 | 704 | 1.0− | 0.0 | 2004 04 19 | 704 | (0.3+ | 2.7+) | 2005 09 09 | 704 | 0.6+ | 0.0 | | |
| 2001 09 10 | 699 | (1.9+ | 1.2+) | 2004 04 19 | 704 | (0.1− | 2.0+) | 2005 09 09 | 704 | 0.8+ | 0.3− | | |
| 2001 09 10 | 704 | 0.5− | 0.2− | 2004 04 19 | 704 | (0.2− | 1.9+) | 2006 11 05 | 644 | 0.1− | 0.5+ | | |
| 2001 09 10 | 704 | 0.1+ | 0.5+ | 2004 04 22 | 704 | 0.4− | 0.7− | 2006 11 05 | 644 | 0.1− | 0.4+ | | |
| 2001 09 10 | 699 | (1.8+ | 0.5+) | 2004 04 22 | 704 | 0.3− | 0.5− | 2006 11 05 | 644 | 0.1+ | 0.8+ | | |
| 2001 09 10 | 699 | 0.4+ | 0.7+ | 2004 04 22 | 704 | 1.4+ | 0.6+ | 2006 11 25 | G96 | 0.4− | 0.0 | | |
| 2001 09 10 | 699 | 0.2+ | 0.1+ | 2004 04 22 | 704 | 0.5− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.0 | | |
| 2001 09 21 | 644 | 0.1+ | 0.5+ | 2004 04 28 | 608 | 0.0 | 0.7− | 2006 11 25 | G96 | 0.3− | 0.1− | | |
| 2001 09 21 | 644 | 0.2+ | 0.5+ | 2004 04 28 | 608 | 0.0 | 0.8− | 2006 11 25 | G96 | 0.1+ | 0.3+ | | |
| 2001 09 21 | 644 | 0.0 | 0.5+ | 2004 04 28 | 608 | 0.4− | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.7+ | | |
| 2001 09 23 | 608 | 0.1+ | 0.0 | 2004 04 29 | 704 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.5+ | | |
| 2001 09 23 | 608 | 0.1− | 0.7− | 2004 04 29 | 704 | 0.5− | 1.1− | 2006 11 28 | 704 | 0.7− | 0.3+ | | |
| 2001 09 23 | 608 | 0.4− | 0.6− | 2004 04 29 | 704 | 0.0 | 0.9+ | 2006 11 28 | 704 | 0.2+ | 0.8+ | | |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2004 04 29 | 704 | 0.3+ | 0.3+ | | | | | | |
| 2001 09 25 | 704 | 0.6− | 0.7+ | 2004 04 29 | 704 | 0.1+ | 0.3+ | | | | | | |

**(137153)∗ 1999 EC = 2001 SZ$_{137}$**

Discovered 1999 Mar. 6 by P. G. Comba at Prescott.

Id. M. E. Sansaturio (*MPO* 19403)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.30598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21415689 | $\omega$ | 218.70832 | | −0.72574608 | +0.68791831 | |
| $a$ | 2.7668228 | $\Omega$ | 4.77984 | | −0.60557788 | −0.63340752 | |
| $e$ | 0.0199209 | $i$ | 5.37917 | | −0.32644764 | −0.35434913 | |
| $P$ | 4.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 06 | 684 | 0.4− | 0.1− | 2004 03 16 | 703 | 0.0 | 0.3− | 2004 05 16 | 704 | 0.2− | 0.4+ | |
| 1999 03 06 | 684 | 0.4− | 0.2+ | 2004 03 16 | 703 | (2.2+ | 1.9+) | 2004 05 16 | 704 | 0.2− | 0.1− | |
| 1999 03 07 | 684 | 0.2− | 0.6+ | 2004 03 16 | 703 | (1.7+ | 0.2+) | 2004 05 16 | 704 | 0.0 | 0.8+ | |
| 1999 03 07 | 684 | 0.6− | 0.3+ | 2004 03 16 | 703 | (2.1+ | 0.3−) | 2004 05 24 | 691 | 0.1+ | 0.2+ | |
| 1999 03 10 | 684 | 0.1− | 0.3− | 2004 03 20 | 699 | 0.1− | 0.3− | 2004 05 24 | 691 | 0.0 | 0.1− | |
| 1999 03 10 | 684 | 0.4+ | 0.5− | 2004 03 20 | 699 | 1.2− | 0.8− | 2004 05 24 | 691 | 0.2− | 0.1+ | |
| 1999 03 10 | 684 | 0.3+ | 0.4− | 2004 03 20 | 699 | 0.4− | 1.1+ | 2006 10 04 | G96 | 0.1+ | 0.3+ | |
| 1999 03 12 | 684 | 0.0 | 1.0− | 2004 03 20 | 704 | 0.6− | 1.0+ | 2006 10 04 | G96 | 0.1− | 0.2+ | |
| 1999 03 12 | 684 | 0.0 | 1.2− | 2004 03 20 | 704 | 0.2− | 1.3+ | 2006 10 04 | G96 | 0.1+ | 0.3+ | |
| 2001 08 23 | 333 | 0.5+ | 0.9+ | 2004 03 20 | 699 | 0.8− | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.2+ | |
| 2001 08 23 | 333 | 0.9− | 0.3+ | 2004 03 20 | 704 | 0.9+ | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | |
| 2001 08 23 | 333 | (0.2− | 1.8+) | 2004 03 20 | 704 | 0.2− | 0.3+ | 2006 10 13 | 691 | 0.3+ | 0.3+ | |
| 2001 09 16 | 704 | 0.8− | 0.4− | 2004 03 24 | 699 | 1.2+ | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.3+ | |
| 2001 09 16 | 704 | 1.4− | 0.8− | 2004 03 24 | 699 | 0.9+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1+ | |
| 2001 09 16 | 704 | 1.0− | 0.7− | 2004 03 24 | 699 | 0.9− | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.4+ | |
| 2001 09 16 | 704 | 1.3− | 0.9− | 2004 03 24 | 699 | 0.0 | 1.1+ | 2006 10 17 | 691 | 0.1− | 0.4+ | |
| 2001 09 18 | 699 | 0.6+ | 0.6+ | 2004 03 25 | 699 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.0 | |
| 2001 09 18 | 699 | 0.1+ | 1.3+ | 2004 03 25 | 699 | 0.8− | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.5− | |
| 2001 09 18 | 699 | 0.9+ | 0.9+ | 2004 03 25 | 699 | 0.8− | 1.1− | 2006 10 19 | G96 | 0.0 | 0.1+ | |
| 2001 09 18 | 699 | 0.3− | 0.4+ | 2004 03 25 | 699 | 0.4− | 0.8+ | 2006 10 19 | 703 | 0.9− | 0.3− | |
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2004 03 27 | 704 | 0.8+ | 1.5+ | 2006 10 19 | G96 | 0.1+ | 0.1+ | |
| 2001 09 20 | 704 | 0.4− | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.0 | |
| 2001 09 20 | 704 | 1.0− | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.4+ | 0.5− | |
| 2001 09 20 | 704 | 0.9− | 0.1− | 2004 03 27 | 704 | 1.0+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.5+ | |
| 2001 09 20 | 704 | 0.7− | 0.9− | 2004 03 27 | 704 | 1.1+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.1+ | |
| 2001 09 23 | 704 | 0.2+ | 0.5+ | 2004 03 31 | 704 | 0.9+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.1+ | |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2004 03 31 | 704 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ | |
| 2001 09 23 | 704 | 0.4− | 0.8+ | 2004 03 31 | 704 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3+ | |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2004 03 31 | 704 | 1.0+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | |
| 2001 09 25 | 699 | 1.4− | 0.7+ | 2004 03 31 | 704 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.5− | |
| 2001 09 25 | 699 | (1.7− | 1.2+) | 2004 04 12 | 644 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 2001 09 25 | 699 | 1.2− | 0.0 | 2004 04 12 | 644 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.5+ | |
| 2001 09 25 | 699 | 0.2+ | 1.0+ | 2004 04 12 | 644 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.4+ | |
| 2001 09 26 | 704 | (1.9− | 0.1−) | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.4+ | |
| 2001 09 26 | 704 | 1.0− | 0.3− | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.7+ | |
| 2001 09 26 | 704 | 1.3− | 0.5+ | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.6+ | |
| 2001 09 26 | 704 | 0.8− | 0.4+ | 2004 04 13 | 644 | 0.4+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.3+ | |
| 2001 09 26 | 704 | 0.9− | 0.4+ | 2004 04 13 | 644 | 0.4+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.0 | |
| 2001 10 06 | 644 | 0.1+ | 0.0 | 2004 04 13 | 644 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.5+ | |
| 2001 10 06 | 644 | 0.5− | 0.2+ | 2004 04 15 | 699 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.9− | |
| 2001 10 06 | 644 | 0.7− | 0.1+ | 2004 04 15 | 699 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.2− | 0.4+ | |
| 2001 10 11 | 644 | 0.5+ | 0.2+ | 2004 04 15 | 699 | 0.5+ | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.1− | |
| 2001 10 11 | 644 | 0.4+ | 0.1+ | 2004 04 15 | 699 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 1.1+ | 0.3− | |
| 2001 10 11 | 644 | 0.4+ | 0.0 | 2004 04 15 | 333 | 0.6− | 0.4− | 2006 11 14 | G96 | 0.3− | 0.0 | |
| 2001 10 13 | 704 | 0.9+ | 0.2− | 2004 04 15 | 333 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.1− | |
| 2001 10 13 | 704 | (1.9+ | 0.6−) | 2004 04 15 | 333 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.0 | |
| 2001 10 13 | 699 | 0.2+ | 0.5+ | 2004 04 16 | 644 | 0.4+ | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.0 | |
| 2001 10 13 | 699 | 0.3− | 1.2+ | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 11 16 | 704 | (1.5− | 0.2+) | |
| 2001 10 13 | 704 | 1.4+ | 0.8− | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.6+ | 1.0+ | |
| 2001 10 13 | 699 | 0.3− | 1.0+ | 2004 04 17 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 1.0− | |
| 2001 10 13 | 699 | (0.7+ | 1.6+) | 2004 04 17 | 704 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.4+ | 1.0− | |
| 2001 10 14 | 691 | 0.3+ | 0.1− | 2004 04 17 | 704 | 0.2+ | 0.3− | 2006 11 16 | 704 | 1.0− | 0.0 | |
| 2001 10 14 | 691 | 0.2+ | 0.0 | 2004 04 17 | 704 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.3+ | 1.3+ | |
| 2001 10 14 | 691 | 0.2+ | 0.2+ | 2004 04 20 | 703 | 0.7+ | 0.3+ | 2006 11 16 | 704 | (2.1− | 0.6−) | |
| 2001 10 16 | 704 | (0.6− | 1.7+) | 2004 04 20 | 703 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.8− | |
| 2001 10 16 | 704 | 0.0 | 0.8+ | 2004 04 20 | 703 | 0.6+ | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.1− | |
| 2001 10 16 | 704 | 0.8− | 0.6− | 2004 04 20 | 703 | 1.4− | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.4− | |
| 2001 10 16 | 704 | 1.3+ | 0.4+ | 2004 04 20 | 704 | 0.8+ | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.0 | |
| 2001 10 21 | 704 | 1.2+ | 1.0+ | 2004 04 20 | 704 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2001 10 21 | 704 | 0.4− | 0.7+ | 2004 04 20 | 704 | 0.5+ | 1.0+ | 2006 11 19 | 704 | 0.0 | 0.2− | |
| 2001 10 21 | 704 | 0.7+ | 0.7+ | 2004 04 20 | 704 | 0.9+ | 0.4− | 2006 11 19 | 704 | 0.0 | 0.7+ | |
| 2001 10 21 | 704 | 0.8+ | 0.9− | 2004 04 20 | 704 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.1− | 1.0+ | |
| 2001 10 21 | 704 | 1.2+ | 0.8− | 2004 05 10 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.4− | |
| 2003 01 05 | 704 | 0.1− | 0.1+ | 2004 05 10 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.1+ | |
| 2003 01 05 | 704 | 0.1+ | 0.7+ | 2004 05 10 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.7+ | |
| 2003 01 05 | 704 | 0.4− | 1.2+ | 2004 05 12 | 699 | (1.6− | 1.6+) | 2006 11 22 | 704 | 0.3+ | 0.8− | |
| 2004 03 14 | 644 | 0.3− | 0.4+ | 2004 05 12 | 699 | 0.0 | 0.9+ | 2006 11 22 | 704 | 0.0 | 0.0 | |
| 2004 03 14 | 644 | 0.1− | 0.4+ | 2004 05 12 | 699 | 0.2− | 0.8− | | | | | |
| 2004 03 14 | 644 | 0.0 | 0.6+ | 2004 05 12 | 699 | 0.1− | 0.8− | | | | | |

**(137154)∗ 1999 EN**

Discovered 1999 Mar. 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.38727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25155955 | $\omega$ | 146.03264 | | −0.49536537 | −0.86864527 | |
| $a$ | 2.4852811 | $\Omega$ | 333.65836 | | +0.79279833 | −0.44817488 | |
| $e$ | 0.1282845 | $i$ | 1.06915 | | +0.35508304 | −0.21117451 | |
| $P$ | 3.92 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 691 | 0.1+ | 0.4+ | 1999 04 11 | 691 | 1.3+ | 1.3− | 2003 03 06 | 644 | 0.2+ | 0.6+ | |
| 1999 02 12 | 691 | 0.1+ | 0.2+ | 1999 04 11 | 691 | 0.7+ | 0.1+ | 2003 03 06 | 644 | 0.1+ | 0.8+ | |
| 1999 02 12 | 691 | 0.1+ | 0.2+ | 1999 04 11 | 691 | 1.1+ | 0.0 | 2003 03 06 | 644 | 0.4+ | 1.0+ | |
| 1999 02 16 | 691 | 0.2− | 0.2+ | 1999 04 16 | 691 | 0.3− | 0.4− | 2005 10 01 | 291 | 0.2− | 0.0 | |
| 1999 02 16 | 691 | 0.7− | 0.0 | 1999 04 16 | 691 | 0.7− | 0.9− | 2005 10 01 | 291 | 0.0 | 0.0 | |
| 1999 02 16 | 691 | 0.6− | 0.1+ | 1999 04 16 | 691 | 0.5− | 0.5− | 2005 10 01 | 291 | 0.0 | 0.0 | |
| 1999 03 06 | 691 | 0.3− | 0.1+ | 1999 04 20 | 691 | 0.7− | 0.2+ | 2005 10 07 | 691 | 0.5+ | 0.2− | |
| 1999 03 06 | 691 | 0.5+ | 0.4+ | 1999 04 20 | 691 | (2.4− | 0.7−) | 2005 10 07 | 691 | 0.3+ | 0.3− | |
| 1999 03 06 | 691 | 0.5+ | 0.0 | 1999 04 20 | 691 | 1.5− | 0.3− | 2005 10 07 | 691 | 0.6+ | 0.2− | |
| 1999 03 09 | 691 | 0.9− | 0.1− | 2001 09 20 | 704 | 0.1− | 0.1+ | 2005 10 25 | G96 | 0.4+ | 0.4− | |
| 1999 03 09 | 691 | 0.4− | 0.2− | 2001 09 20 | 704 | 0.1− | 0.0 | 2005 10 25 | G96 | 0.2+ | 0.3− | |
| 1999 03 09 | 691 | 0.6− | 0.1+ | 2001 09 20 | 704 | 0.0 | 0.3+ | 2005 10 25 | G96 | 0.4− | 1.0− | |
| 1999 03 14 | 691 | 0.2+ | 0.1− | 2001 09 23 | 691 | 0.1− | 0.0 | 2005 10 25 | G96 | 0.1− | 0.1+ | |
| 1999 03 14 | 691 | 0.1− | 0.0 | 2001 09 23 | 691 | 0.2− | 0.1+ | 2005 11 04 | 691 | 0.4− | 0.2− | |
| 1999 03 14 | 691 | 0.5+ | 0.1− | 2001 09 23 | 691 | 0.2− | 0.5+ | 2005 11 04 | 691 | 0.3− | 0.1− | |
| 1999 03 20 | 691 | 0.7+ | 0.3+ | 2001 10 14 | 691 | 0.1+ | 0.0 | 2005 11 04 | 691 | 0.0 | 0.2+ | |
| 1999 03 20 | 691 | 0.6+ | 0.1− | 2001 10 14 | 691 | 0.1− | 0.1+ | | | | | |
| 1999 03 20 | 691 | 0.9+ | 0.0 | 2001 10 14 | 691 | 0.1+ | 0.1+ | | | | | |

**(137155)∗ 1999 EA$_4$ = 2006 DJ$_{82}$**

Discovered 1999 Mar. 12 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 99901)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.44765 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28666455 | $\omega$ | 100.85312 | | +0.00450167 | −0.99995944 | |
| $a$ | 2.2779983 | $\Omega$ | 348.88008 | | +0.90094635 | +0.00744077 | |
| $e$ | 0.1166591 | $i$ | 2.31823 | | +0.43390713 | −0.00507538 | |
| $P$ | 3.44 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 12 | 691 | 0.0 | 0.9− | 2004 09 11 | 691 | 0.1+ | 0.6+ | 2006 02 24 | 691 | 0.4+ | 0.2− | |
| 1999 03 12 | 691 | 0.6+ | 0.2− | 2004 10 15 | G96 | 0.0 | 0.3− | 2006 03 02 | 691 | 0.6+ | 0.7+ | |
| 1999 03 12 | 691 | 0.6+ | 0.3− | 2004 10 15 | G96 | 0.1− | 0.3− | 2006 03 02 | 691 | 0.3+ | 0.6+ | |
| 1999 03 14 | 691 | 0.8− | 0.4− | 2004 10 15 | G96 | 0.1+ | 0.3− | 2006 03 02 | 691 | 0.6+ | 0.6+ | |
| 1999 03 14 | 691 | 1.0− | 0.4− | 2004 10 15 | G96 | 0.3− | 0.9− | 2006 03 02 | 691 | 0.1+ | 0.5+ | |
| 1999 03 14 | 691 | 1.0− | 0.6− | 2006 02 07 | G96 | 0.6− | 0.1+ | 2006 03 02 | 691 | 0.3+ | 0.4+ | |
| 1999 03 20 | 691 | 0.2− | 0.2− | 2006 02 07 | G96 | 0.1+ | 0.7+ | 2006 03 02 | 691 | 0.4+ | 0.5+ | |
| 1999 03 20 | 691 | 0.0 | 0.6− | 2006 02 07 | G96 | 0.3− | 0.0 | 2006 03 06 | 691 | 0.2+ | 0.4+ | |
| 1999 03 20 | 691 | 0.0 | 0.6− | 2006 02 07 | G96 | 0.0 | 0.2− | 2006 03 06 | 691 | 0.1+ | 0.2+ | |
| 2001 11 24 | 704 | 0.4+ | 0.8+ | 2006 02 20 | G96 | 0.2− | 0.2+ | 2006 03 06 | 691 | 0.3+ | 0.3+ | |
| 2001 11 24 | 704 | 0.8+ | 0.9+ | 2006 02 20 | G96 | 0.3− | 0.0 | 2006 03 21 | G96 | 0.3+ | 0.3− | |
| 2001 11 24 | 704 | 0.3+ | 1.0+ | 2006 02 20 | G96 | 0.1+ | 0.2+ | 2006 03 21 | G96 | 0.2− | 0.1+ | |
| 2001 12 18 | 704 | 0.9− | 0.4− | 2006 02 20 | G96 | 0.2− | 0.1− | 2006 03 21 | G96 | 0.4+ | 0.2+ | |
| 2001 12 18 | 704 | 0.2− | 0.8+ | 2006 02 24 | 691 | 0.3− | 0.3+ | 2006 03 21 | G96 | 0.0 | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5− | 0.1+ | 2006 02 24 | 691 | 0.1+ | 0.1+ | 2006 04 21 | G96 | 0.4− | 0.1+ |
| 2001 12 18 | 704 | 0.4− | 0.1− | 2006 02 24 | 691 | 1.0− | 0.0 | 2006 04 21 | G96 | 0.5− | 0.2+ |
| 2004 09 11 | 691 | 0.4− | 0.3+ | 2006 02 24 | 691 | 0.6+ | 0.1+ | 2006 04 21 | G96 | 0.6− | 0.3+ |
| 2004 09 11 | 691 | 0.0 | 0.3+ | 2006 02 24 | 691 | 0.2+ | 0.4+ | 2006 04 21 | G96 | 0.6− | 1.1− |

**(137156)∗ 1999 EF$_4$ = 2003 AB$_{52}$**

Discovered 1999 Mar. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 40011)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.66232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22897519 | $\omega$ | 94.00300 | | +0.19242602 | −0.98125962 | |
| $a$ | 2.6461255 | $\Omega$ | 344.89123 | | +0.88427963 | +0.17784733 | |
| $e$ | 0.2489159 | $i$ | 2.21825 | | +0.42546652 | +0.07416122 | |
| $P$ | 4.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.6+ | 0.3− | 2006 11 14 | G96 | (1.3− | 1.5+) |
| 1997 08 11 | 691 | 0.2− | 0.0 | 2003 01 09 | 704 | 0.8− | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 1997 08 11 | 691 | 0.8− | 0.4− | 2003 01 09 | 704 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 1997 09 23 | 691 | 0.4+ | 0.1+ | 2003 01 09 | 704 | 0.4− | 1.1+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 1997 09 23 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.6− | 2006 11 16 | 704 | 0.4+ | 0.2− |
| 1997 09 23 | 691 | 0.6+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.7+ | 0.1− |
| 1999 02 08 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 11 16 | 704 | (0.8+ | 2.0+) |
| 1999 02 08 | 691 | 0.4+ | 0.7− | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 1999 02 08 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 1.0+ | 0.1+ |
| 1999 02 09 | 691 | 0.5+ | 0.6− | 2006 10 17 | 691 | 0.4− | 0.1− | 2006 11 16 | 704 | 1.0− | 0.8+ |
| 1999 02 09 | 691 | 0.2+ | 0.3− | 2006 10 17 | 691 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 1999 02 09 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.6+ | 0.3+ |
| 1999 02 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 1999 02 18 | 691 | 0.5− | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 1999 02 18 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.7− | 2006 11 19 | 704 | 1.0− | 0.4+ |
| 1999 03 12 | 691 | 0.5+ | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.6− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 1999 03 12 | 691 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.7− | 2006 11 19 | 704 | 0.4− | 1.1+ |
| 1999 03 12 | 691 | 0.5+ | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.2− |
| 1999 03 13 | 691 | 0.8− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.9+ |
| 1999 03 13 | 691 | 0.9− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.1− |
| 1999 03 13 | 691 | 0.6− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2002 12 31 | 704 | 1.0− | 0.3− | 2006 11 10 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2002 12 31 | 704 | 0.4− | 0.6− | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 1.0+ | 0.3+ |
| 2002 12 31 | 704 | (1.7− | 0.2−) | 2006 11 10 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2003 01 05 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.1− | 1.3+ |
| 2003 01 05 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.7+ | 0.2+ |
| 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2003 01 05 | 704 | (1.6+ | 0.1−) | 2006 11 11 | 703 | 0.2− | 0.2− | | | | |

**(137157)∗ 1999 EW$_{10}$ = 2001 SU$_{293}$**

Discovered 1999 Mar. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 22078)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.26701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21586558 | $\omega$ | 255.18148 | | +0.27848932 | −0.96043751 | |
| $a$ | 2.7522029 | $\Omega$ | 178.64419 | | +0.90878233 | +0.26288047 | |
| $e$ | 0.0402462 | $i$ | 4.53248 | | +0.31073842 | +0.09194376 | |
| $P$ | 4.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 691 | 0.4− | 1.2− | 2001 09 21 | 691 | 0.1+ | 0.0 | 2005 07 27 | 644 | 0.3+ | 0.1− |
| 1999 02 10 | 691 | (0.2− | 3.2−) | 2001 09 21 | 691 | 0.0 | 0.4− | 2005 12 01 | 695 | 0.2+ | 0.3+ |
| 1999 02 10 | 691 | 0.4− | 0.9− | 2001 09 23 | 704 | 0.3+ | 0.3+ | 2005 12 01 | 695 | 0.4− | 0.0 |
| 1999 03 14 | 691 | 0.1− | 0.0 | 2001 09 23 | 704 | 0.3+ | 0.8+ | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 1999 03 14 | 691 | 0.2+ | 0.2+ | 2001 09 23 | 704 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 1999 03 14 | 691 | 0.5+ | 0.2− | 2001 09 23 | 704 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.8+ |
| 1999 03 18 | 691 | 0.2− | 0.1− | 2001 09 23 | 704 | 0.0 | 1.0+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 1999 03 18 | 691 | 0.5− | 0.2− | 2001 10 14 | 645 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 1999 03 18 | 691 | 0.0 | 0.4− | 2001 10 14 | 645 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.4+ | 0.9+ |
| 1999 03 23 | 691 | 0.5+ | 0.4+ | 2001 10 15 | 645 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 1999 03 23 | 691 | 0.3− | 0.3− | 2001 10 15 | 645 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 1999 03 23 | 691 | 0.3− | 0.1− | 2001 10 20 | 704 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 1.3− | 0.3+ | 2001 10 20 | 704 | 0.8+ | 0.8+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2001 09 19 | 704 | 1.0− | 0.7+ | 2001 10 20 | 704 | 0.2+ | 1.2− | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.7− | 1.0+ | 2001 10 20 | 704 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.8+ | 0.2+ |
| 2001 09 19 | 704 | (1.7− | 0.5+) | 2005 07 27 | 644 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.7− | 0.4+ |
| 2001 09 21 | 691 | 0.1+ | 0.2− | 2005 07 27 | 644 | 0.4− | 0.2+ | | | | |

**(137158)∗ 1999 FB**

Discovered 1999 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.49995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.76893579 | $\omega$ | 2.96208 | | +0.76538823 | −0.62927032 | |
| $a$ | 1.1799837 | $\Omega$ | 37.16651 | | +0.58577787 | +0.59436219 | |
| $e$ | 0.6070557 | $i$ | 12.90326 | | +0.26654295 | +0.50075189 | |
| $P$ | 1.28 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 691 | 0.2− | 0.1+ | 1999 03 18 | 696 | 0.6− | 0.1− | 1999 04 05 | 587 | 1.0+ | 0.8+ |
| 1998 05 24 | 691 | 0.3− | 0.4+ | 1999 03 18 | 713 | 1.0− | 0.4+ | 1999 04 05 | 587 | 0.1+ | 0.6+ |
| 1998 05 24 | 691 | 0.1+ | 0.2+ | 1999 03 18 | 046 | 0.4− | 0.5+ | 1999 04 05 | 587 | 0.7+ | 0.5− |
| 1999 03 16 | 704 | 0.0 | 1.0− | 1999 03 18 | 046 | 0.7− | 0.2+ | 1999 04 15 | 422 | 0.2− | 0.0 |
| 1999 03 16 | 704 | 1.5+ | 0.3− | 1999 03 18 | 046 | 0.5− | 0.0 | 1999 04 15 | 422 | 0.2− | 0.0 |
| 1999 03 16 | 704 | 1.0+ | 0.6− | 1999 03 18 | 046 | 0.6− | 0.0 | 1999 04 15 | 422 | 0.4− | 0.3− |
| 1999 03 16 | 704 | 0.2− | 1.3− | 1999 03 19 | 620 | 0.5− | 0.2+ | 1999 05 14 | 693 | 0.2− | 0.7− |
| 1999 03 16 | 704 | 0.4+ | 0.9− | 1999 03 19 | 620 | 0.6− | 0.6+ | 1999 05 14 | 693 | 0.2− | 0.6− |
| 1999 03 16 | 620 | 1.9− | 0.5− | 1999 03 19 | 620 | 0.6− | 0.8+ | 1999 05 14 | 693 | 0.1− | 0.6− |
| 1999 03 16 | 620 | 0.1− | 0.2+ | 1999 03 19 | 620 | 0.6− | 1.0+ | 2001 04 05 | 413 | 0.5− | 0.0 |
| 1999 03 16 | 620 | 1.8+ | 1.0+ | 1999 03 20 | 587 | 0.8− | 0.4− | 2001 04 05 | 413 | 0.3− | 0.6− |
| 1999 03 16 | 620 | (3.3+ | 1.7+) | 1999 03 20 | 587 | 1.4− | 0.2− | 2001 06 02 | 413 | 0.5− | 0.0 |
| 1999 03 17 | 758 | 0.7− | 0.3+ | 1999 03 21 | 104 | 0.6+ | 0.2+ | 2001 06 02 | 413 | 0.3− | 0.1− |
| 1999 03 17 | 758 | 0.0 | 0.9+ | 1999 03 21 | 104 | 1.6+ | 0.0 | 2001 06 02 | 413 | 0.4− | 0.3+ |
| 1999 03 17 | 758 | 0.4+ | 1.0− | 1999 03 21 | 860 | 0.4+ | 0.1− | 2002 05 02 | 413 | 0.2+ | 1.0− |
| 1999 03 17 | 761 | 0.7− | 0.6+ | 1999 03 21 | 860 | 0.4− | 1.1− | 2002 05 02 | 413 | 0.1− | 0.1− |
| 1999 03 17 | 761 | (2.3+ | 1.8+) | 1999 03 21 | 860 | (2.4− | 0.7−) | 2002 06 03 | 474 | 0.1+ | 0.6− |
| 1999 03 17 | 422 | 0.4− | 0.4− | 1999 03 22 | 360 | 0.5− | 0.6+ | 2002 06 03 | 474 | 0.4+ | 0.5− |
| 1999 03 17 | 422 | 0.4− | 0.7− | 1999 03 22 | 360 | 0.6− | 0.6+ | 2002 06 03 | 474 | 0.2− | 1.0− |
| 1999 03 17 | 422 | 0.3+ | 0.6− | 1999 03 22 | 360 | 0.6− | 0.5+ | 2003 03 06 | 711 | 0.9+ | 0.2+ |
| 1999 03 17 | 422 | 0.0 | 0.0 | 1999 03 24 | 118 | 0.1− | 0.1− | 2003 03 06 | 711 | 1.4+ | 0.5+ |
| 1999 03 17 | 402 | 0.4− | 0.3− | 1999 03 24 | 118 | 0.0 | 0.1+ | 2003 03 06 | 711 | 0.6+ | 0.1+ |
| 1999 03 17 | 402 | 0.1+ | 0.3− | 1999 03 24 | 118 | 0.1− | 0.1− | 2003 03 13 | 608 | 0.9+ | 0.8− |
| 1999 03 17 | 402 | 0.1− | 0.6− | 1999 03 25 | 046 | 0.2− | 0.5+ | 2003 03 13 | 608 | 0.7+ | 0.5− |
| 1999 03 17 | 402 | 0.2− | 0.5− | 1999 03 25 | 046 | 0.6+ | 0.2+ | 2003 03 13 | 608 | 1.0+ | 1.3− |
| 1999 03 17 | 900 | 0.2− | 0.3− | 1999 03 25 | 046 | 0.1+ | 0.1+ | 2003 03 30 | 704 | 0.9+ | 0.7+ |
| 1999 03 17 | 900 | 0.5− | 0.3− | 1999 03 25 | 046 | 0.3+ | 0.0 | 2003 03 30 | 734 | 1.1− | 0.2+ |
| 1999 03 17 | 557 | 0.2− | 0.2− | 1999 03 26 | 620 | 0.2− | 1.0− | 2003 03 30 | 734 | 0.2− | 0.3+ |
| 1999 03 17 | 557 | 0.2− | 0.1− | 1999 03 26 | 620 | 1.0+ | 0.0 | 2003 03 30 | 704 | 1.4+ | 0.9+ |
| 1999 03 17 | 557 | 0.0 | 0.2− | 1999 03 26 | 620 | 1.4+ | 0.5− | 2003 03 30 | 734 | 0.2− | 0.0 |
| 1999 03 17 | 611 | 0.8+ | 0.9+ | 1999 03 26 | 118 | 1.1+ | 0.2+ | 2003 03 30 | 704 | 0.5+ | 1.0+ |
| 1999 03 17 | 611 | 0.5+ | 0.7+ | 1999 03 26 | 118 | 0.3+ | 0.2+ | 2003 03 30 | 704 | 1.0+ | 0.3− |
| 1999 03 17 | 611 | 0.4− | 0.2+ | 1999 03 26 | 118 | 1.8+ | 0.2+ | 2003 04 27 | 734 | 1.4− | 1.1− |
| 1999 03 18 | 046 | 0.0 | 0.0 | 1999 03 27 | 402 | 0.3+ | 0.9− | 2003 04 27 | 734 | 1.2− | 0.3+ |
| 1999 03 18 | 046 | 0.1+ | 0.2+ | 1999 03 27 | 402 | 0.4+ | 0.1− | 2003 05 05 | 704 | (1.7+ | 0.4−) |
| 1999 03 18 | 046 | 0.6+ | 0.0 | 1999 04 04 | 402 | 1.0+ | 0.2− | 2003 05 05 | 704 | 0.7+ | 0.3+ |
| 1999 03 18 | 046 | 0.1+ | 0.5+ | 1999 04 04 | 402 | 0.2+ | 0.8+ | 2003 05 05 | 704 | 0.7+ | 1.1+ |
| 1999 03 18 | 734 | 0.5− | 0.3− | 1999 04 04 | 402 | 0.9+ | 0.0 | 2003 05 05 | 704 | 0.6− | 1.2+ |
| 1999 03 18 | 734 | 0.8− | 0.1− | 1999 04 05 | 360 | 0.2+ | 0.1− | 2004 04 09 | 938 | 0.6− | 0.1+ |
| 1999 03 18 | 734 | 0.6− | 0.5− | 1999 04 05 | 360 | 0.2+ | 0.3+ | 2006 05 24 | E12 | 0.2− | 0.2− |
| 1999 03 18 | 713 | 0.3− | 0.9+ | 1999 04 05 | 360 | 0.2+ | 0.4+ | 2006 05 24 | E12 | 0.2− | 0.3− |
| 1999 03 18 | 696 | 0.6− | 0.0 | 1999 04 05 | 046 | 0.3+ | 0.1+ | 2006 06 06 | E12 | 0.0 | 0.4+ |
| 1999 03 18 | 696 | 0.5− | 0.1− | 1999 04 05 | 046 | 0.2− | 0.3+ | 2006 06 06 | E12 | 0.1+ | 0.4− |
| 1999 03 18 | 696 | 0.4− | 0.1− | 1999 04 05 | 046 | 0.6+ | 0.5+ | 2006 06 06 | E12 | 0.1+ | 0.1+ |
| 1999 03 18 | 696 | 0.6− | 0.2− | 1999 04 05 | 046 | 0.0 | 0.1+ | 2006 06 06 | E12 | 0.0 | 0.5− |

**(137159)∗ 1999 FO$_1$ = 2001 QZ$_{213}$**

Discovered 1999 Mar. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 16959)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 262.40620 | | (2000.0) | | | |
| $n$ | 0.20312972 | $\omega$ | 155.88921 | | −0.19091255 | −0.98147923 |
| $a$ | 2.8660718 | $\Omega$ | 305.11318 | | +0.89743099 | −0.16798022 |
| $e$ | 0.0310981 | $i$ | 1.10958 | | +0.39770594 | −0.09209329 |
| $P$ | 4.85 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 691 | 0.4− | 0.2− | 2001 09 21 | 704 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 1.4− |
| 1999 02 12 | 691 | 0.2− | 0.1− | 2004 02 26 | 704 | 0.6+ | 0.0 | 2006 08 28 | 691 | 0.5− | 0.1+ |
| 1999 02 12 | 691 | 0.5− | 0.2− | 2004 02 26 | 704 | 1.1+ | 0.6+ | 2006 08 28 | 691 | 0.5− | 0.1+ |
| 1999 02 21 | 691 | 0.4− | 0.0 | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.3− | 0.0 |
| 1999 02 21 | 691 | 0.5− | 0.1+ | 2004 02 26 | 704 | 0.9− | 1.1− | 2006 09 16 | 691 | 0.1+ | 0.3+ |
| 1999 02 21 | 691 | 0.4− | 0.3− | 2004 03 13 | 644 | 0.4+ | 0.4+ | 2006 09 16 | 691 | 0.0 | 0.3+ |
| 1999 03 06 | 691 | 0.4− | 0.4+ | 2004 03 13 | 644 | 0.3+ | 0.6+ | 2006 09 16 | 691 | 0.0 | 0.3+ |
| 1999 03 06 | 691 | 0.1− | 0.3+ | 2004 03 13 | 644 | 0.3+ | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.6+ |
| 1999 03 06 | 691 | 0.0 | 0.1+ | 2004 03 15 | 703 | 1.2+ | 1.3+ | 2006 09 18 | 699 | (1.6+ | 0.1−) |
| 1999 03 16 | 691 | 0.8+ | 0.4− | 2004 03 15 | 703 | 0.6+ | 1.3+ | 2006 09 18 | 699 | (1.3− | 2.2+) |
| 1999 03 16 | 691 | 0.8+ | 0.7− | 2004 03 15 | 703 | 0.2+ | 1.4+ | 2006 09 18 | 699 | (1.9− | 0.1+) |
| 1999 03 16 | 691 | 1.1+ | 0.4− | 2004 03 15 | 703 | 0.9− | 0.6+ | 2006 09 25 | 699 | 0.7+ | 1.4+ |
| 1999 03 18 | 691 | 0.1+ | 0.1+ | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | (1.5+ | 1.8+) |
| 1999 03 18 | 691 | 0.9+ | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.8− | 0.9+ |
| 1999 03 18 | 691 | 0.5+ | 0.1+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | (2.1+ | 3.1+) |
| 1999 03 19 | 691 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.2+ |
| 1999 03 19 | 691 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.5− | 0.0 | 2006 09 27 | 704 | 1.1− | 0.5+ |
| 1999 03 19 | 691 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 1.0+ |
| 1999 03 22 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 1999 03 22 | 691 | 0.7− | 0.3− | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 1999 03 22 | 691 | 0.4− | 0.3− | 2004 03 20 | 699 | 1.2+ | 0.8+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2001 08 23 | 699 | 0.9− | 0.7+ | 2004 03 20 | 699 | 0.1− | 0.9+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2001 08 23 | 699 | 0.8+ | 0.7+ | 2004 03 20 | 699 | 0.4+ | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2001 08 23 | 699 | 0.7− | 0.1+ | 2004 03 20 | 699 | 0.9− | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2001 08 23 | 699 | 1.2+ | 0.5+ | 2004 03 21 | 291 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.7− | 1.1+ |
| 2001 08 27 | 691 | 0.2− | 0.2− | 2004 03 21 | 291 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 1.2− | 0.9+ |
| 2001 08 27 | 691 | 0.3− | 0.3− | 2004 03 21 | 291 | (1.3− | 2.1−) | 2006 09 29 | 704 | 0.1+ | 1.0+ |
| 2001 08 27 | 691 | 0.3− | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.5+ | 2006 09 29 | 704 | 1.1− | 0.4+ |
| 2001 09 11 | 699 | 0.8+ | 0.9− | 2004 03 27 | 704 | 0.2+ | 0.9+ | 2006 09 29 | 704 | (0.9− | 1.8+) |
| 2001 09 11 | 699 | (2.0+ | 0.3+) | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.1− |
| 2001 09 11 | 699 | 0.5+ | 1.3− | 2004 03 27 | 704 | 0.8+ | 0.6+ | 2006 10 11 | 644 | 0.4− | 0.3+ |
| 2001 09 11 | 699 | 0.7− | 0.5+ | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2004 04 15 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.7− | 0.1− | 2004 04 15 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.9+ | 2.8+ |
| 2001 09 12 | 704 | 0.6+ | 0.0 | 2004 04 15 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.4+ |
| 2001 09 12 | 704 | 0.5+ | 0.1+ | 2006 08 19 | 691 | 0.8+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2001 09 21 | 691 | 0.8+ | 0.3− | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.9+ |
| 2001 09 21 | 691 | 0.4+ | 0.4− | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.9+ | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.8− | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 2001 09 21 | 691 | 0.1− | 0.6− | 2006 08 28 | 703 | 0.2− | 1.4− | 2006 10 20 | G96 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2006 08 28 | 703 | 1.1− | 0.6+ | 2006 10 20 | G96 | 0.5− | 0.4+ |

**(137160)∗ 1999 FF$_{32}$ = 4373 T-1**

Discovered 1999 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74602)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 247.82119 | | (2000.0) | | | |
| $n$ | 0.21156775 | $\omega$ | 132.32208 | | −0.84925542 | −0.52409305 |
| $a$ | 2.7893504 | $\Omega$ | 16.40261 | | +0.39277454 | −0.70808427 |
| $e$ | 0.2339502 | $i$ | 13.09241 | | +0.35283622 | −0.47322632 |
| $P$ | 4.66 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 24 | 675 | (2.9+ | 3.2−) | 1999 04 14 | 704 | (2.6+ | 0.8+) | 2006 09 19 | 691 | 0.4+ | 0.1+ |
| 1971 03 26 | 675 | 2.2− | 1.3− | 1999 04 14 | 704 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1971 03 26 | 675 | 0.8− | 1.6− | 1999 04 14 | 704 | 0.5− | 1.3+ | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 1971 03 27 | 675 | (3.0+ | 3.6−) | 1999 04 15 | 704 | 0.5+ | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 1971 04 02 | 675 | 0.2− | 0.0 | 1999 04 15 | 704 | 1.1+ | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.5− |
| 1971 04 16 | 675 | 1.2− | 1.0− | 1999 04 15 | 704 | 1.2+ | 1.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 1971 04 16 | 675 | 0.5+ | 1.0− | 1999 04 15 | 704 | 0.4− | 1.3+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 1971 04 16 | 675 | 0.3− | 1.4− | 1999 04 15 | 704 | 1.0− | 0.9+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1971 04 16 | 675 | 0.2+ | 1.6+ | 1999 05 17 | 699 | 0.7− | 1.8+ | 2006 09 30 | 691 | 0.2+ | 0.6+ |
| 1971 05 14 | 675 | (68.0+ | 28.1−) | 1999 05 17 | 699 | (0.4+ | 2.0+) | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1992 10 03 | 691 | 0.1− | 0.8+ | 1999 05 17 | 699 | 1.0+ | 1.1+ | 2006 10 15 | 703 | 0.9− | 0.4+ |
| 1992 10 03 | 691 | 0.5− | 0.9+ | 2002 11 07 | 704 | (1.7− | 0.5−) | 2006 10 15 | 703 | 0.4− | 1.2− |
| 1992 10 03 | 691 | 0.7− | 0.8+ | 2002 11 07 | 704 | 1.4− | 1.4+ | 2006 10 15 | 703 | 0.3− | 1.1− |
| 1999 03 19 | 704 | (0.4− | 2.3+) | 2002 11 07 | 704 | 0.8− | 0.8+ | 2006 10 15 | 703 | 0.4+ | 0.9− |
| 1999 03 19 | 704 | 0.6+ | 0.3− | 2002 12 07 | 704 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 1999 03 19 | 704 | 1.2− | 1.5+ | 2002 12 07 | 704 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.1− | 0.5− |
| 1999 03 19 | 704 | 0.7+ | 0.9+ | 2002 12 07 | 704 | 0.5− | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.7− |
| 1999 03 20 | 704 | 0.4+ | 1.0+ | 2002 12 07 | 704 | 0.6− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 1999 03 20 | 704 | (2.0+ | 1.7+) | 2002 12 28 | 704 | 0.4− | 1.1+ | 2006 10 17 | 703 | 0.3+ | 0.8− |
| 1999 03 20 | 704 | 0.5− | 0.8+ | 2002 12 28 | 704 | 0.8+ | 0.8+ | 2006 10 17 | 703 | 1.0− | 1.4− |
| 1999 03 20 | 704 | 0.1− | 0.6− | 2002 12 28 | 704 | 0.9+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.8− |
| 1999 04 07 | 704 | 0.2− | 0.2+ | 2005 09 01 | E12 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.6− | 1.1− |
| 1999 04 07 | 704 | 0.5+ | 0.0 | 2005 09 01 | E12 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1999 04 07 | 704 | 0.2+ | 0.4+ | 2005 09 01 | E12 | 0.9− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 1999 04 07 | 704 | 0.6− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 04 07 | 699 | 1.7+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.5− |
| 1999 04 07 | 699 | 1.8+ | 0.6− | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 1999 04 07 | 699 | 1.4+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 1999 04 14 | 704 | 1.8+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1+ | | | | |

**(137161)∗ 1999 FK$_{34}$ = 2001 WT$_{41}$**

Discovered 1999 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22083)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.07476 | | (2000.0) | | | |
| $n$ | 0.18518081 | $\omega$ | 195.21823 | | −0.71100147 | +0.68940728 |
| $a$ | 3.0484007 | $\Omega$ | 29.88404 | | −0.61264565 | −0.51059812 |
| $e$ | 0.0908759 | $i$ | 16.14468 | | −0.34516984 | −0.51381628 |
| $P$ | 5.32 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 704 | (1.7− | 2.2−) | 2001 11 18 | 704 | 0.2+ | 1.2− | 2004 03 25 | 704 | 0.1− | 0.1− |
| 1999 03 19 | 704 | 0.9+ | 0.8+ | 2001 11 18 | 704 | 0.7− | 0.2− | 2004 03 25 | 704 | 0.2− | 0.0 |
| 1999 03 19 | 704 | 0.0 | 0.8+ | 2001 11 18 | 704 | 0.4+ | 0.4+ | 2004 03 25 | 704 | (2.3− | 0.2−) |
| 1999 03 20 | 704 | 0.1− | 1.9− | 2001 11 18 | 704 | 0.2+ | 0.4+ | 2004 03 25 | 704 | (1.9− | 0.1+) |
| 1999 03 20 | 704 | (1.2− | 2.2−) | 2001 11 20 | 704 | 0.2− | 0.2+ | 2004 03 25 | 704 | 0.2− | 0.9+ |
| 1999 03 20 | 704 | (1.7− | 2.6−) | 2001 11 20 | 704 | 0.1− | 0.3+ | 2004 03 25 | 704 | (3.2− | 0.6+) |
| 1999 03 20 | 704 | (2.4− | 2.6−) | 2001 11 20 | 704 | 0.4− | 0.1− | 2004 03 30 | 703 | 0.1− | 0.5+ |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.1− | 2004 03 30 | 703 | 0.4+ | 0.5+ |
| 1999 03 21 | 645 | 0.1− | 0.1+ | 2001 11 20 | 704 | 0.5− | 0.5+ | 2004 03 30 | 703 | 0.6+ | 0.0 |
| 1999 03 23 | 703 | 0.8− | 0.3− | 2001 11 21 | 704 | 0.5+ | 0.1+ | 2004 03 30 | 703 | 0.4+ | 0.8− |
| 1999 03 23 | 703 | (0.8− | 2.5−) | 2001 11 21 | 704 | 0.4+ | 0.3+ | 2004 04 13 | 703 | 0.0 | 0.2+ |
| 1999 03 23 | 703 | (1.1+ | 2.3−) | 2001 11 21 | 704 | 0.2− | 0.3+ | 2004 04 13 | 703 | 0.0 | 1.1+ |
| 1999 03 23 | 703 | (0.4+ | 3.7−) | 2001 11 21 | 704 | 0.0 | 0.1+ | 2004 04 13 | 703 | 0.4+ | 0.3+ |
| 1999 04 07 | 704 | (2.9− | 0.2+) | 2001 11 21 | 704 | 0.7− | 0.7+ | 2004 04 13 | 703 | 1.0+ | 0.3− |
| 1999 04 07 | 704 | (2.5− | 1.1+) | 2003 12 30 | 704 | 0.2+ | 1.3− | 2004 05 21 | 703 | 0.8− | 1.1+ |
| 1999 04 07 | 704 | (2.2− | 0.7−) | 2003 12 30 | 704 | 0.5− | 0.1− | 2004 05 21 | 703 | 0.8+ | 0.5+ |
| 1999 04 07 | 704 | (0.7+ | 2.6+) | 2003 12 30 | 704 | 0.3− | 0.0 | 2004 05 21 | 703 | 0.4+ | 0.8+ |
| 1999 04 07 | 704 | (2.2− | 0.9−) | 2003 12 30 | 704 | 0.4− | 1.0− | 2004 05 21 | 703 | 0.7+ | 0.6+ |
| 1999 04 10 | 699 | 0.2− | 1.2+ | 2004 01 29 | 097 | 0.3− | 0.1− | 2004 05 23 | 704 | 0.4+ | 0.8+ |
| 1999 04 10 | 699 | 0.9+ | 1.5+ | 2004 01 29 | 097 | 0.4− | 0.5− | 2004 05 23 | 704 | 1.1+ | 0.2+ |
| 1999 04 10 | 699 | 1.4+ | 0.5+ | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2004 05 23 | 704 | 1.0+ | 0.5+ |
| 1999 04 12 | 704 | 0.6+ | 0.2+ | 2004 01 30 | 704 | 0.5+ | 0.4+ | 2004 05 23 | 704 | 0.5+ | 0.1− |
| 1999 04 12 | 704 | 0.1− | 1.0− | 2004 01 30 | 704 | 0.0 | 0.5− | 2004 05 23 | 704 | 0.3+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 704 | 0.3− | 1.0− | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 703 | 0.4− | 0.2+ | | |
| 1999 04 12 | 704 | 0.6− | 1.6− | 2004 01 30 | 704 | 0.2− | 0.1− | 2006 09 20 | 703 | 1.2− | 0.2− | | |
| 1999 04 12 | 704 | 0.0 | 1.8− | 2004 02 16 | 704 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.1− | 0.8+ | | |
| 1999 05 10 | 699 | 0.8+ | 1.0− | 2004 02 16 | 704 | 0.4− | 0.0 | 2006 09 20 | 703 | 0.8− | 0.4− | | |
| 1999 05 10 | 699 | 1.1+ | 1.7+ | 2004 02 16 | 704 | 0.0 | 0.4+ | 2006 09 21 | 699 | 0.9+ | 0.2+ | | |
| 1999 05 10 | 699 | 0.6+ | 1.1+ | 2004 02 16 | 704 | 0.2− | 0.2− | 2006 09 21 | 699 | 0.3− | 0.6− | | |
| 1999 06 06 | 691 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.9+ | 1.3+ | | |
| 1999 06 06 | 691 | 0.1+ | 0.1− | 2004 03 10 | 644 | 0.0 | 0.1− | 2006 09 21 | 699 | 0.2+ | 1.1+ | | |
| 1999 06 06 | 691 | 0.1+ | 0.0 | 2004 03 10 | 703 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.7− | | |
| 2001 09 11 | 699 | 0.1− | 0.9+ | 2004 03 10 | 703 | 0.3− | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.2+ | | |
| 2001 09 11 | 699 | 0.2+ | 0.5+ | 2004 03 10 | 703 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 1.0+ | | |
| 2001 09 11 | 699 | 1.1− | 0.8+ | 2004 03 10 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | (0.5− | 6.8+) | | |
| 2001 09 11 | 699 | 1.2− | 0.8+ | 2004 03 10 | 703 | 0.5− | 0.1+ | 2006 10 02 | 703 | (1.8− | 0.5+) | | |
| 2001 09 21 | 704 | 1.1− | 0.6+ | 2004 03 10 | 644 | 0.1− | 0.2− | 2006 10 02 | 703 | 0.7− | 0.3− | | |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2004 03 14 | 704 | 0.5+ | 0.5+ | 2006 10 02 | 703 | 0.5− | 0.3+ | | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 03 14 | 704 | 0.5+ | 0.2− | 2006 10 02 | 703 | 0.7+ | 0.2+ | | |
| 2001 10 13 | 704 | (1.8− | 1.5+) | 2004 03 14 | 704 | 0.5+ | 0.2− | 2006 10 10 | 644 | 0.6− | 0.4+ | | |
| 2001 10 13 | 704 | 0.2+ | 1.0+ | 2004 03 14 | 704 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.4− | 0.4+ | | |
| 2001 10 13 | 704 | (2.1− | 1.4+) | 2004 03 14 | 704 | 0.5+ | 0.2+ | 2006 10 10 | 644 | 0.5− | 0.4+ | | |
| 2001 10 13 | 704 | (2.7− | 0.7+) | 2004 03 18 | 703 | 0.1− | 1.2+ | 2006 10 11 | 644 | 0.6− | 0.7+ | | |
| 2001 10 17 | 644 | 0.0 | 0.2+ | 2004 03 18 | 703 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.4− | 0.4+ | | |
| 2001 10 17 | 644 | 0.1+ | 0.1+ | 2004 03 18 | 703 | 0.5− | 1.2+ | 2006 10 11 | 644 | 0.5− | 0.6+ | | |
| 2001 10 17 | 644 | 0.0 | 0.2+ | 2004 03 18 | 703 | 0.5+ | 1.3+ | 2006 10 23 | 644 | 0.2− | 0.7+ | | |
| 2001 10 25 | 645 | 0.1+ | 0.1− | 2004 03 25 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.6+ | | |
| 2001 10 25 | 645 | 0.1+ | 0.1− | 2004 03 25 | 704 | 0.3+ | 0.5− | 2006 10 23 | 644 | 0.3− | 0.5+ | | |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2004 03 25 | 704 | 0.2+ | 0.3− | | | | | | |

**(137162)∗ 1999 FW$_{35}$ = 2002 VQ$_{33}$**

Discovered 1999 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40013)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 254.55148 | | (2000.0) | | | |
| $n$ | 0.21660238 | $\omega$ | 63.70100 | | −0.71248928 | −0.70023441 |
| $a$ | 2.7459581 | $\Omega$ | 71.81514 | | +0.62568327 | −0.66307806 |
| $e$ | 0.1759247 | $i$ | 2.71876 | | +0.31761530 | −0.26457372 |
| $P$ | 4.55 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 699 | 0.8+ | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.2+ | 2004 05 11 | 699 | 0.2+ | 0.1− | | |
| 1999 02 18 | 699 | 0.8+ | 0.0 | 2002 12 31 | 704 | 0.3+ | 0.3+ | 2004 05 15 | 704 | 0.4− | 0.5+ | | |
| 1999 02 18 | 699 | 0.7+ | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.7+ | 2004 05 15 | 704 | 0.2+ | 0.9+ | | |
| 1999 03 20 | 704 | 1.2− | 1.5+ | 2002 12 31 | 704 | 0.5+ | 0.7+ | 2004 05 15 | 704 | 0.1− | 0.9+ | | |
| 1999 03 20 | 704 | 0.1− | 0.9− | 2002 12 31 | 704 | 0.3+ | 0.2+ | 2004 05 15 | 704 | 1.0+ | 0.8+ | | |
| 1999 03 20 | 704 | 0.4+ | 1.1+ | 2003 01 04 | 704 | 0.4+ | 0.3+ | 2004 05 15 | 704 | 0.5+ | 0.6+ | | |
| 1999 03 20 | 704 | (2.2+ | 1.3−) | 2003 01 04 | 704 | 0.2− | 0.1+ | 2004 05 16 | 704 | 0.2+ | 0.3+ | | |
| 1999 03 20 | 704 | 0.5− | 0.9+ | 2003 01 04 | 704 | 0.5+ | 0.5+ | 2004 05 16 | 704 | 0.7+ | 0.5+ | | |
| 1999 03 23 | 704 | 1.1− | 1.2− | 2003 01 04 | 704 | 0.2+ | 0.2− | 2004 05 16 | 704 | 0.7+ | 0.8+ | | |
| 1999 03 23 | 704 | 1.0+ | 1.2+ | 2003 01 04 | 704 | 0.1− | 0.3+ | 2004 05 16 | 704 | 0.6+ | 1.3+ | | |
| 1999 03 23 | 704 | 0.0 | 0.5+ | 2003 01 08 | 704 | 0.4− | 0.5− | 2004 05 23 | 691 | 0.2+ | 0.6+ | | |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2003 01 08 | 704 | 0.1+ | 0.5+ | 2004 05 23 | 691 | 0.0 | 0.5+ | | |
| 2002 11 05 | 704 | 0.5+ | 0.2+ | 2003 01 08 | 704 | 1.1− | 0.6+ | 2004 05 23 | 691 | 0.2+ | 0.5+ | | |
| 2002 11 05 | 704 | 0.1− | 0.3+ | 2003 01 08 | 704 | (1.1− | 1.6+) | 2006 09 14 | 691 | 0.3− | 0.4+ | | |
| 2002 11 05 | 704 | 0.4− | 0.9+ | 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.3+ | | |
| 2002 11 06 | 704 | 0.4+ | 0.4+ | 2003 01 31 | 704 | 0.8− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.3+ | | |
| 2002 11 06 | 704 | 0.9+ | 0.4− | 2003 01 31 | 704 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.2+ | | |
| 2002 11 06 | 704 | 1.2+ | 0.9− | 2004 03 31 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.3+ | | |
| 2002 11 06 | 704 | 0.1+ | 0.2+ | 2004 03 31 | 704 | 0.8+ | 1.1+ | 2006 09 18 | 691 | 0.0 | 0.1+ | | |
| 2002 11 06 | 704 | 0.7+ | 0.1− | 2004 03 31 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 691 | 0.2− | 0.5+ | | |
| 2002 11 14 | 704 | 0.8− | 0.2+ | 2004 03 31 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.6+ | | |
| 2002 11 14 | 704 | 0.7+ | 0.7− | 2004 03 31 | 704 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.6+ | | |
| 2002 11 14 | 704 | 0.4− | 0.6− | 2004 04 12 | 699 | 0.5− | 0.5− | 2006 09 28 | 691 | 0.0 | 0.5+ | | |
| 2002 11 14 | 704 | 0.6− | 0.0 | 2004 04 12 | 699 | 0.8− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.3+ | | |
| 2002 11 28 | 608 | 0.7− | 0.6− | 2004 04 12 | 699 | 0.1+ | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.3+ | | |
| 2002 11 28 | 608 | 0.4− | 0.7− | 2004 04 12 | 699 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.0 | | |
| 2002 11 28 | 608 | 0.8− | 0.0 | 2004 04 15 | 699 | 0.4− | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.1+ | | |
| 2002 12 05 | 695 | 0.1− | 0.2+ | 2004 04 15 | 699 | 0.1− | 0.7+ | 2006 10 02 | 691 | 0.7− | 0.2− | | |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2004 04 15 | 699 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.9+ | | |
| 2002 12 05 | 695 | 0.2− | 0.1+ | 2004 04 15 | 699 | (1.7− | 0.0 ) | 2006 10 16 | 703 | 0.5− | 0.3− | | |
| 2002 12 05 | 704 | 0.8+ | 0.3+ | 2004 04 19 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.9− | | |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2004 04 19 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.6+ | 1.4+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.5+ | 2004 04 19 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 1.3+ | 1.2+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.9+ | 2004 04 22 | 704 | 0.6+ | 0.7− | 2006 10 22 | 703 | (1.7+ | 0.9+) | | |
| 2002 12 05 | 608 | 0.3+ | 1.2+ | 2004 04 22 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 1.0− | 0.1− | | |
| 2002 12 05 | 608 | 0.1+ | 0.8+ | 2004 04 22 | 704 | 0.9+ | 0.4− | 2006 10 22 | 703 | 0.6− | 1.0− | | |
| 2002 12 05 | 608 | 0.3+ | 0.5+ | 2004 04 22 | 704 | 0.6− | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.2− | | |
| 2002 12 10 | 704 | 0.8− | 0.2− | 2004 04 26 | 699 | 0.5− | 1.0+ | 2006 10 22 | G96 | 0.4− | 0.0 | | |
| 2002 12 10 | 704 | 0.5− | 0.2+ | 2004 04 26 | 699 | 1.0+ | 1.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− | | |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2004 04 26 | 699 | 0.6+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2002 12 10 | 704 | 1.0− | 0.5+ | 2004 04 26 | 699 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.1+ | | |
| 2002 12 21 | 608 | 0.6− | 0.7+ | 2004 05 11 | 699 | 0.9− | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.1+ | | |
| 2002 12 21 | 608 | 0.4− | 0.6+ | 2004 05 11 | 699 | 0.7− | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2002 12 21 | 608 | 0.2− | 0.7+ | 2004 05 11 | 699 | 0.1+ | 0.9+ | 2006 11 16 | G96 | 0.2− | 0.1− | | |

**(137163)∗ 1999 FE$_{40}$**

Discovered 1999 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.49556 | | (2000.0) | | | |
| $n$ | 0.22740004 | $\omega$ | 224.79615 | | −0.97748812 | −0.19014737 |
| $a$ | 2.6583308 | $\Omega$ | 304.03283 | | +0.21088420 | −0.86672916 |
| $e$ | 0.2053109 | $i$ | 6.33475 | | +0.00669536 | −0.46111229 |
| $P$ | 4.33 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 14 | 699 | 1.3+ | 1.1+ | 2002 12 31 | 704 | 0.9− | 0.9− | 2006 11 17 | 644 | 0.2+ | 0.2− | | |
| 1999 02 14 | 699 | 0.6+ | 0.6+ | 2002 12 31 | 704 | 0.6+ | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.1− | | |
| 1999 02 14 | 699 | 0.1− | 1.0+ | 2002 12 31 | 704 | 0.9+ | 0.0 | 2006 11 17 | 644 | 0.2+ | 0.0 | | |
| 1999 03 20 | 704 | 0.4− | 0.1+ | 2002 12 31 | 704 | 0.7+ | 0.1− | 2006 11 17 | 644 | 0.3+ | 0.3− | | |
| 1999 03 20 | 704 | 1.0− | 1.5− | 2003 01 04 | 704 | 0.7− | 0.3+ | 2006 11 17 | 644 | 0.2+ | 0.0 | | |
| 1999 03 20 | 704 | 0.8− | 0.1− | 2003 01 04 | 704 | 0.8− | 1.0+ | 2006 11 17 | 644 | 0.0 | 0.2− | | |
| 1999 03 20 | 704 | 1.1− | 1.4+ | 2003 01 04 | 704 | 0.6− | 0.5+ | 2006 11 19 | 704 | 0.5− | 0.1− | | |
| 1999 03 20 | 704 | 0.9− | 1.2− | 2003 01 04 | 704 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.8− | | |
| 1999 03 23 | 704 | 0.4+ | 0.2− | 2003 01 04 | 704 | 0.4+ | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.9− | | |
| 1999 03 23 | 704 | 0.0 | 0.4− | 2003 01 08 | 704 | 0.6+ | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.3− | | |
| 1999 03 23 | 704 | 0.2− | 0.3+ | 2003 01 08 | 704 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.2− | | |
| 1999 03 23 | 704 | 1.1+ | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.0 | | |
| 2001 09 17 | 704 | (0.7− | 2.2+) | 2003 01 08 | 704 | 0.4+ | 0.7− | 2006 11 22 | 704 | 0.7− | 0.8− | | |
| 2001 09 17 | 704 | (2.7− | 0.5+) | 2003 01 08 | 704 | 0.5+ | 0.4− | 2006 11 22 | 704 | 0.2− | 0.2− | | |
| 2001 09 17 | 704 | (2.3− | 0.3−) | 2003 01 31 | 704 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.1− | 0.6− | | |
| 2001 09 28 | 644 | 0.3− | 0.7+ | 2003 01 31 | 704 | 0.2− | 0.4− | 2006 11 24 | 703 | 0.4− | 0.4− | | |
| 2001 09 28 | 644 | 0.9− | 0.6+ | 2003 01 31 | 704 | 0.0 | 0.2− | 2006 11 24 | 703 | 0.5− | 0.6− | | |
| 2001 09 28 | 644 | 0.8− | 0.5+ | 2003 01 31 | 704 | 0.5− | 0.6+ | 2006 11 24 | 703 | 1.5− | 0.3+ | | |
| 2001 10 17 | 704 | 0.4− | 0.2+ | 2003 01 31 | 704 | 0.1+ | 0.5+ | 2006 11 24 | 703 | 0.6+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.9− | 0.3− | 2003 02 03 | 704 | 0.1+ | 1.0+ | 2006 11 27 | 704 | 0.1− | 0.3− | | |
| 2001 10 17 | 704 | 0.6+ | 0.8+ | 2003 02 03 | 704 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.0 | 0.1+ | | |
| 2001 10 17 | 704 | 0.2− | 1.0+ | 2003 02 03 | 704 | 0.5+ | 0.6+ | 2006 11 27 | 704 | 0.5+ | 0.6− | | |
| 2002 12 11 | 704 | 0.5+ | 0.2+ | 2003 02 03 | 704 | 1.1− | 0.2+ | 2006 11 27 | 704 | 0.1− | 0.4− | | |
| 2002 12 11 | 704 | 0.5+ | 0.3+ | 2003 02 03 | 704 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.7− | 0.2− | | |
| 2002 12 11 | 704 | 0.5+ | 0.4+ | 2003 02 08 | 704 | 1.1+ | 1.0+ | 2006 11 28 | 704 | 0.5+ | 1.0− | | |
| 2002 12 11 | 704 | 0.1+ | 1.0+ | 2003 02 08 | 704 | (2.2+ | 0.5+) | 2006 11 28 | 704 | 0.1+ | 1.1− | | |
| 2002 12 11 | 704 | 0.1+ | 0.8+ | 2003 02 08 | 704 | (3.4+ | 0.7+) | 2006 11 28 | 704 | 0.0 | 0.5− | | |
| 2002 12 14 | 704 | 1.2+ | 0.1+ | 2005 09 12 | 691 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.3− | 0.5− | | |
| 2002 12 14 | 704 | 0.7+ | 0.2+ | 2005 09 12 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.2− | | |
| 2002 12 14 | 704 | 0.4+ | 0.7+ | 2005 09 12 | 691 | 0.1− | 0.8+ | 2006 11 29 | 704 | 0.3− | 0.0 | | |
| 2002 12 14 | 704 | 0.1− | 0.6+ | 2005 09 29 | 691 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.7− | | |
| 2002 12 14 | 704 | 1.0+ | 0.1+ | 2005 09 29 | 691 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.5− | | |
| 2002 12 31 | 704 | 0.9+ | 0.4− | 2005 09 29 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.7− | | |

**(137164)∗ 1999 FO$_{51}$ = 1999 GZ$_{9}$ = 2005 GY$_{141}$**

Discovered 1999 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, MPC 35126), G. V. Williams (*MPO* 74603)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.82815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18027775 | $\omega$ | 49.78786 | | −0.66281246 | | +0.74875426 |
| $a$ | 3.1034253 | $\Omega$ | 178.63871 | | −0.74414890 | | −0.65766677 |
| $e$ | 0.2017060 | $i$ | 16.71774 | | −0.08319890 | | −0.08271320 |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 704 | 0.6− | 0.9− | 2005 04 09 | 704 | 0.0 | 0.1− | 2005 06 27 | 699 | 0.4− | 0.8− |
| 1999 03 20 | 704 | 1.2− | 0.7+ | 2005 04 09 | 704 | 1.4+ | 0.1− | 2005 07 01 | 644 | 0.1− | 0.1+ |
| 1999 03 20 | 704 | 0.1+ | 0.6− | 2005 04 15 | 703 | 0.1− | 0.3+ | 2005 07 01 | 644 | 0.1− | 0.1+ |
| 1999 03 20 | 704 | 1.2+ | 1.0− | 2005 04 15 | 703 | 0.4− | 0.3+ | 2005 07 01 | 644 | 0.1+ | 0.0 |
| 1999 03 20 | 704 | 0.6− | 0.5+ | 2005 04 15 | 703 | 0.2− | 0.0 | 2005 07 09 | 703 | 0.1+ | 0.5+ |
| 1999 03 23 | 704 | 0.7+ | 0.6− | 2005 04 15 | 703 | 0.3− | 0.2− | 2005 07 09 | 703 | 0.1+ | 0.7+ |
| 1999 03 23 | 704 | 0.5+ | 1.3− | 2005 05 04 | 703 | 0.4− | 0.1− | 2005 07 09 | 703 | 0.1+ | 0.1+ |
| 1999 03 23 | 704 | 0.3+ | 1.9− | 2005 05 04 | 703 | 0.0 | 0.3− | 2005 07 09 | 703 | 0.1+ | 0.6− |
| 1999 03 23 | 704 | 0.1− | 1.8− | 2005 05 04 | 703 | 0.0 | 0.1− | 2005 07 10 | 699 | 0.0 | 0.1− |
| 1999 04 09 | 696 | 0.0 | 1.3+ | 2005 05 04 | 703 | 0.7− | 0.0 | 2005 07 10 | 699 | 0.1+ | 0.4+ |
| 1999 04 09 | 696 | 1.3− | 0.8+ | 2005 05 08 | 699 | 0.2+ | 0.5− | 2005 07 10 | 699 | 0.5+ | 0.8+ |
| 1999 04 10 | 696 | 0.1+ | 0.2+ | 2005 05 08 | 699 | 1.5+ | 0.6+ | 2005 07 10 | 699 | 0.3+ | 1.1+ |
| 1999 04 10 | 696 | 0.2+ | 0.3+ | 2005 05 08 | 699 | 0.1− | 0.8+ | 2006 08 29 | 703 | 1.2− | 0.3− |
| 2004 01 23 | 699 | 0.1− | 0.2+ | 2005 05 09 | 683 | (0.1+ | 2.5+) | 2006 08 29 | 703 | 0.6+ | 0.2− |
| 2004 01 23 | 699 | (0.4− | 2.3+) | 2005 05 09 | 683 | 1.3+ | 0.8− | 2006 08 29 | 703 | 0.2− | 0.5+ |
| 2004 01 23 | 699 | 0.6+ | 1.8+ | 2005 05 19 | 703 | 0.3− | 0.0 | 2006 08 29 | 703 | 1.1− | 0.4+ |
| 2004 01 23 | 699 | 0.8− | 0.2+ | 2005 05 19 | 703 | 0.5+ | 0.1+ | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 2004 02 12 | 644 | 0.2+ | 0.3+ | 2005 05 19 | 703 | 0.5− | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.2− |
| 2004 02 12 | 644 | 0.0 | 0.0 | 2005 05 19 | 703 | 0.3− | 0.5− | 2006 09 13 | 644 | 0.4+ | 0.1− |
| 2004 02 12 | 644 | 0.0 | 1.0+ | 2005 05 21 | 644 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 2004 03 12 | 644 | 0.3+ | 0.3+ | 2005 05 21 | 644 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 2004 03 12 | 644 | 0.0 | 0.5+ | 2005 05 21 | 644 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2004 03 12 | 644 | 0.4+ | 0.8+ | 2005 06 27 | 699 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.5+ | 0.3− |
| 2005 04 09 | 704 | 0.4− | 0.1+ | 2005 06 27 | 699 | 0.5− | 0.7+ | | | | |
| 2005 04 09 | 704 | 0.0 | 0.5− | 2005 06 27 | 699 | 1.0− | 0.5+ | | | | |

**(137165)∗ 1999 $FP_{68}$ = 2005 $GM_{38}$**

Discovered 1999 Mar. 20 by the Sloan Digital Sky Survey at Apache Point.
Id. A. Doppler (*MPO* 74603)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.51358 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17301068 | $\omega$ | 270.61149 | | −0.16629066 | | +0.98562414 |
| $a$ | 3.1897314 | $\Omega$ | 349.67064 | | −0.82543154 | | −0.15570991 |
| $e$ | 0.2132323 | $i$ | 9.59082 | | −0.53945361 | | −0.06557046 |
| $P$ | 5.70 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.9+ | 1.0− | 2005 04 06 | 699 | 0.8+ | 0.8− | 2006 08 16 | 644 | 0.4− | 0.0 |
| 1995 10 18 | 691 | 0.7+ | 0.9− | 2005 04 06 | 699 | 0.2+ | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.1− |
| 1995 10 18 | 691 | 1.1+ | 1.0− | 2005 04 06 | 699 | 0.5+ | 0.5− | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 1999 02 10 | 691 | 0.3+ | 1.0+ | 2005 04 18 | 703 | 0.8− | 0.5− | 2006 08 24 | 644 | 0.2− | 0.2− |
| 1999 02 10 | 691 | 0.2+ | 0.8+ | 2005 04 18 | 703 | 0.3+ | 0.5− | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 1999 02 10 | 691 | 0.3+ | 1.1+ | 2005 04 18 | 703 | 0.1− | 0.2− | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 1999 03 10 | 691 | 0.4− | 0.6− | 2005 04 18 | 703 | 0.6− | 0.2− | 2006 08 24 | 644 | 0.3− | 0.0 |
| 1999 03 10 | 691 | 0.1− | 0.8− | 2005 05 01 | 644 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.2− | 0.3+ |
| 1999 03 10 | 691 | 0.2− | 0.7− | 2005 05 01 | 644 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 1999 03 20 | 645 | 0.2− | 0.1− | 2005 05 01 | 644 | 0.3− | 0.2− | 2006 08 24 | 644 | 0.4− | 0.2+ |
| 1999 03 20 | 645 | 0.2− | 0.1− | 2005 05 01 | E12 | 0.0 | 0.2− | 2006 08 24 | 644 | 0.5− | 0.2+ |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2005 05 01 | E12 | 0.7− | 0.1− | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2005 05 01 | E12 | 0.4+ | 0.5− | 2006 09 25 | 699 | 0.8− | 0.4− |
| 2001 10 20 | 644 | 0.7− | 0.1− | 2005 05 01 | E12 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.5+ | 0.5− |
| 2001 10 20 | 644 | 0.5− | 0.2+ | 2005 05 09 | 703 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2001 10 20 | 644 | 0.2− | 0.3+ | 2005 05 09 | 703 | 1.2+ | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.3+ |
| 2004 02 17 | 645 | 0.1+ | 0.0 | 2005 05 09 | 703 | 0.2− | 0.6− | 2006 10 28 | G96 | 0.0 | 0.3+ |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2005 05 09 | 703 | 0.0 | 0.6− | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2005 04 03 | E12 | 0.8− | 0.4− | 2005 05 09 | E12 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2+ |
| 2005 04 03 | E12 | 0.1− | 0.1− | 2005 05 09 | E12 | (1.2− | 2.2−) | 2006 11 16 | G96 | 0.5− | 0.6− |
| 2005 04 03 | E12 | 0.9+ | 0.3− | 2005 05 09 | E12 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2005 04 03 | E12 | 0.0 | 0.2− | 2005 05 09 | E12 | 0.4− | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2005 04 06 | 699 | 1.5+ | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.2+ |

**(137166)∗ 1999 $FS_{81}$ = 2004 EA**

Discovered 1999 Mar. 20 by the Sloan Digital Sky Survey at Apache Point.
Id. A. Doppler (*MPO* 71977)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.63670 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18094863 | $\omega$ | 94.67416 | | −0.27548287 | | +0.95882720 |
| $a$ | 3.0957498 | $\Omega$ | 158.93760 | | −0.94044158 | | −0.25393778 |
| $e$ | 0.0813069 | $i$ | 11.06756 | | −0.19919544 | | −0.12714559 |
| $P$ | 5.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.3+ | 2004 03 15 | 704 | 0.3+ | 1.0+ | 2006 08 28 | 703 | 0.7− | 0.8+ |
| 1995 09 19 | 691 | 0.0 | 0.2− | 2004 03 15 | 704 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.7+ |
| 1995 09 19 | 691 | 0.1+ | 0.2− | 2004 03 24 | 673 | 1.1+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.5+ |
| 1998 03 04 | 691 | 0.4− | 0.3− | 2004 03 24 | 673 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.6− |
| 1998 03 04 | 691 | 0.1+ | 0.1+ | 2004 03 24 | 673 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.3+ | 0.9− |
| 1998 03 04 | 691 | 0.2− | 0.1− | 2005 06 02 | 703 | 0.7+ | 2.0+ | 2006 09 14 | 703 | 0.5− | 0.7+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2005 06 02 | 703 | 0.1+ | 1.1+ | 2006 09 19 | 699 | 0.6+ | 1.0+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2005 06 02 | 703 | (2.1− | 1.3+) | 2006 09 19 | 699 | 0.2+ | 0.4+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2005 06 02 | 703 | (0.0 | 3.2+) | 2006 09 19 | 699 | 0.2− | 0.6− |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2005 06 09 | 703 | 0.5− | 0.3− | 2006 09 19 | 699 | 0.8− | 1.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 06 09 | 703 | 1.0− | 0.5− | 2006 09 25 | 699 | 0.1− | 1.3+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2005 06 09 | 703 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.1− |
| 2001 09 21 | 645 | 0.1+ | 0.1+ | 2005 06 09 | 703 | 0.4− | 1.4− | 2006 09 25 | 699 | 1.2+ | 0.8+ |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2005 07 11 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | (4.1+ | 0.1+) |
| 2004 03 09 | 673 | 1.4+ | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.2− | 0.1+ |
| 2004 03 09 | 673 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.2+ | 0.1+ |
| 2004 03 09 | 673 | 0.2− | 0.1+ | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.9+ | 1.0+ |
| 2004 03 10 | 673 | 0.1+ | 0.7+ | 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2004 03 10 | 673 | 0.0 | 0.6+ | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2004 03 10 | 673 | 0.1− | 0.7+ | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2004 03 12 | 673 | 0.4− | 0.6+ | 2006 08 27 | 691 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2004 03 12 | 673 | 0.2− | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.1+ |
| 2004 03 12 | 673 | 0.1− | 0.7+ | 2006 08 28 | 703 | 1.0+ | 0.9+ | | | | |
| 2004 03 15 | 704 | 0.7+ | 1.1+ | 2006 08 28 | 703 | 0.5− | 0.4− | | | | |

**(137167)∗ 1999 $GC_3$ = 2005 $JG_{19}$ = 2005 $LH_{15}$**

Discovered 1999 Apr. 7 by Spacewatch at Kitt Peak.
Id. A. Doppler (*MPO* 84492)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.54960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17774871 | $\omega$ | 59.59071 | | +0.17240383 | | +0.98501425 |
| $a$ | 3.1327933 | $\Omega$ | 220.33782 | | −0.90631228 | | +0.15668315 |
| $e$ | 0.2006144 | $i$ | 0.43224 | | −0.38584319 | | +0.07209243 |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 07 | 691 | 0.2+ | 0.0 | 2005 05 04 | G96 | 0.3+ | 0.9+ | 2006 09 12 | 703 | 0.2− | 1.1− |
| 1999 04 07 | 691 | 0.5− | 0.4− | 2005 05 04 | G96 | 0.5+ | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.3+ |
| 1999 04 07 | 691 | 0.3+ | 0.2+ | 2005 05 07 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 1999 04 09 | 691 | 0.8− | 0.9− | 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.3+ |
| 1999 04 09 | 691 | 0.7− | 0.7− | 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.2− |
| 1999 04 09 | 691 | 0.3− | 0.6− | 2005 05 08 | 699 | 0.2+ | 1.0+ | 2006 09 19 | 699 | 0.8+ | 0.2+ |
| 1999 04 14 | 691 | 0.5+ | 0.8− | 2005 05 08 | 699 | 0.9+ | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.5+ |
| 1999 04 14 | 691 | 0.4+ | 0.1− | 2005 05 08 | 699 | 1.2+ | 1.0− | 2006 09 19 | 699 | 0.4− | 0.3+ |
| 1999 04 14 | 691 | 0.3+ | 0.5− | 2005 05 08 | 699 | (1.9+ | 0.1+) | 2006 09 23 | 691 | 0.2+ | 1.4− |
| 2000 08 04 | 608 | 1.0− | 1.2− | 2005 06 08 | 701 | 0.1+ | 0.4+ | 2006 09 23 | 691 | 0.5− | 0.1+ |
| 2000 08 04 | 608 | 0.7− | 1.1− | 2005 06 08 | 701 | 0.6− | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.0 |
| 2000 08 04 | 608 | 0.5− | 0.9− | 2005 06 08 | 701 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.2− |
| 2001 10 21 | 704 | 0.9+ | 1.1+ | 2005 06 10 | 701 | 0.6+ | 1.1+ | 2006 09 25 | 699 | (1.7+ | 0.5−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2005 06 10 | 701 | 1.4+ | 0.5+ | 2006 09 25 | 699 | (0.3− | 1.6+) |
| 2001 10 21 | 704 | 0.8+ | 1.1− | 2005 06 10 | 701 | 0.6+ | 0.3− | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2001 11 19 | 704 | 0.4+ | 0.4+ | 2005 06 14 | G96 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2001 11 19 | 704 | 1.4− | 0.3+ | 2005 06 14 | G96 | 0.3+ | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.4− |
| 2001 11 19 | 704 | 0.7+ | 0.4+ | 2005 06 14 | G96 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2001 11 19 | 704 | (0.0 | 1.7+) | 2005 06 14 | G96 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2004 02 12 | 691 | 0.3− | 0.4+ | 2006 08 17 | 644 | 0.4− | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2004 02 12 | 691 | 0.3− | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2004 02 12 | 691 | 0.2− | 0.5+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2005 03 11 | G96 | 0.4− | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2005 03 11 | G96 | 0.5− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 04 17 | 691 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2005 04 17 | 691 | 0.5− | 0.3+ | 2006 08 24 | 644 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.6− |
| 2005 04 17 | 691 | 0.2− | 0.1+ | 2006 09 12 | 703 | 0.0 | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2005 05 04 | G96 | 0.0 | 0.2− | 2006 09 12 | 703 | (1.8− | 0.6−) | 2006 11 21 | G96 | 0.1− | 0.6− |
| 2005 05 04 | G96 | 0.4− | 0.2− | 2006 09 12 | 703 | 1.0− | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.1− |

**(137168)∗ 1999 GK$_3$ = 2001 UP$_{186}$**

Discovered 1999 Apr. 7 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 33072)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.48476 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18630901 | $\omega$ | 253.50316 | | −0.02934353 | | +0.99928794 |
| $a$ | 3.0360818 | $\Omega$ | 14.87569 | | −0.87824039 | | −0.01444341 |
| $e$ | 0.1097234 | $i$ | 5.30113 | | −0.47731831 | | −0.03485694 |
| $P$ | 5.29 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2001 10 17 | 291 | 0.1+ | 0.1+ | 2006 08 18 | 691 | 0.1− | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2001 10 17 | 291 | 0.7+ | 0.2+ | 2006 08 18 | 691 | 0.3− | 0.1+ |
| 1999 04 07 | 691 | 0.7+ | 0.3+ | 2001 10 17 | 291 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.6+ | 0.8+ |
| 1999 04 07 | 691 | 0.4+ | 0.3+ | 2001 10 21 | 704 | (0.2− | 1.8−) | 2006 09 15 | 691 | 0.4− | 0.2+ |
| 1999 04 07 | 691 | 0.2+ | 0.2+ | 2001 10 21 | 704 | 0.3− | 1.3− | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 1999 04 09 | 691 | 0.9− | 0.2− | 2001 10 21 | 704 | 0.6+ | 1.5− | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 1999 04 09 | 691 | 1.1− | 0.2− | 2001 10 21 | 704 | 0.5+ | 1.2− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1999 04 09 | 691 | 0.9− | 0.3− | 2001 10 21 | 704 | 0.3+ | 0.7− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 1999 04 13 | 422 | (2.4+ | 3.2−) | 2001 11 21 | 704 | 0.8− | 1.0− | 2006 09 30 | G96 | 0.6− | 0.3− |
| 1999 04 13 | 422 | 1.4+ | 1.0− | 2001 11 21 | 704 | 0.1− | 1.0− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 1999 04 13 | 422 | 0.1+ | 1.3− | 2001 11 21 | 704 | 0.8− | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 1999 04 13 | 422 | 0.5+ | 1.1− | 2004 02 23 | 704 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 1999 04 13 | 422 | 0.3+ | 0.9− | 2004 02 23 | 704 | 0.4+ | 0.6+ | 2006 10 20 | G96 | 0.4+ | 0.5− |
| 1999 04 13 | 422 | 1.1− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.6− |
| 1999 04 14 | 691 | 0.2− | 0.4− | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 10 20 | G96 | 0.5− | 0.3− |
| 1999 04 14 | 691 | 0.2− | 0.1− | 2004 02 23 | 704 | (1.8+ | 1.3+) | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 1999 04 14 | 691 | 0.2− | 0.3− | 2004 03 29 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 1999 04 20 | 691 | 0.4+ | 0.4− | 2004 03 29 | 691 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 1999 04 20 | 691 | 0.7+ | 0.4− | 2004 03 29 | 691 | 0.5+ | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.3− |
| 1999 04 20 | 691 | 0.6+ | 0.4− | 2006 08 18 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.5− |

**(137169)∗ 1999 GY$_9$**

Discovered 1999 Apr. 9 by O. A. Naranjo at Mt. Hopkins.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.93650 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21487328 | $\omega$ | 11.54190 | | +0.99441306 | | +0.10432246 |
| $a$ | 2.7606696 | $\Omega$ | 342.44566 | | −0.10060145 | | +0.89039703 |
| $e$ | 0.1014570 | $i$ | 3.06151 | | −0.03196883 | | +0.44306880 |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 696 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 1.0− | 0.8− |
| 1999 04 09 | 696 | 0.1− | 0.1+ | 2004 03 18 | 704 | (0.1+ | 1.6+) | 2006 10 17 | 703 | 0.5+ | 0.4+ |
| 1999 04 10 | 696 | 0.3− | 0.1+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.3− | 0.1+ |
| 1999 04 10 | 696 | 0.4+ | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | (0.6− | 1.7+) | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 19 | 683 | (1.5+ | 1.9−) |
| 2001 08 16 | 704 | 0.5− | 0.6+ | 2004 03 23 | 704 | 1.2+ | 0.4+ | 2006 10 19 | 683 | 1.1− | 0.6+ |
| 2001 08 16 | 704 | 0.7− | 0.3+ | 2004 03 23 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.5− |
| 2001 08 23 | 699 | 0.0 | 0.6+ | 2004 03 23 | 704 | 1.4+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2001 08 23 | 699 | 0.3− | 1.1+ | 2004 03 23 | 704 | 0.9+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 08 23 | 699 | 0.0 | 0.8+ | 2004 03 31 | 291 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 08 23 | 699 | 0.3− | 0.8+ | 2004 03 31 | 291 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 06 | 644 | 0.7− | 1.4+ | 2004 03 31 | 291 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 09 06 | 644 | 1.1− | 1.0+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 09 06 | 644 | 0.8− | 0.9+ | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 09 07 | 704 | (0.3− | 2.6+) | 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 07 | 704 | 1.0+ | 0.1− | 2004 04 17 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2001 09 07 | 704 | 1.0+ | 0.1− | 2004 04 17 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.4− | 0.2+ |
| 2001 09 07 | 704 | 0.1+ | 0.4+ | 2004 04 17 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 11 11 | 703 | 1.4+ | 1.1+ |
| 2001 09 21 | 704 | 0.7− | 0.5− | 2006 07 22 | G96 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.9+ | 0.2+ |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 07 22 | G96 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2004 03 15 | 703 | 0.7− | 1.2+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 703 | 0.4− | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2004 03 15 | 703 | 0.3− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.6− |
| 2004 03 15 | 703 | (4.4− | 5.5−) | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2004 03 18 | 704 | 0.2+ | 0.9+ | 2006 10 17 | 683 | 0.5− | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2004 03 18 | 704 | 1.4+ | 0.1− | 2006 10 17 | 683 | 0.0 | 1.2+ | | | | |
| 2004 03 18 | 704 | 0.1− | 0.2− | 2006 10 17 | 683 | (2.8+ | 2.0+) | | | | |

**(137170)∗ 1999 HF$_1$**

Discovered 1999 Apr. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.23083 | | (2000.0) | | **P** | | **Q** |
| $n$ | 1.32972054 | $\omega$ | 253.33976 | | +0.61392431 | | −0.76936410 |
| $a$ | 0.8190224 | $\Omega$ | 155.93410 | | +0.78117106 | | +0.62430311 |
| $e$ | 0.4625282 | $i$ | 25.65731 | | −0.11344036 | | +0.13536806 |
| $P$ | 0.74 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 20 | 704 | 0.1− | 0.5− | 1999 08 09 | 846 | 1.0− | 0.0 | 2002 08 11 | 642 | 1.5+ | 1.5+ |
| 1999 04 20 | 699 | 1.2− | 0.4+ | 1999 08 09 | 846 | 1.0− | 0.6− | 2003 03 07 | 474 | 0.4− | 0.2− |
| 1999 04 20 | 704 | 0.3− | 0.3− | 1999 08 09 | 846 | 0.3− | 0.7− | 2003 03 07 | 474 | 0.5− | 0.1− |
| 1999 04 20 | 699 | 1.0− | 0.7+ | 1999 08 13 | 151 | (2.5− | 0.1−) | 2003 03 07 | 474 | 0.2− | 0.1− |
| 1999 04 20 | 704 | 0.4− | 0.2− | 1999 08 13 | 151 | 0.1− | 0.2+ | 2003 03 07 | 474 | 0.5− | 0.2− |
| 1999 04 20 | 699 | 1.3− | 0.9+ | 1999 08 13 | 151 | 0.1+ | 0.1+ | 2003 03 09 | 941 | 0.3− | 0.6+ |
| 1999 04 20 | 704 | 0.8− | 0.5− | 1999 08 13 | 151 | 0.3− | 0.3− | 2003 03 09 | 941 | 0.4− | 0.2+ |
| 1999 04 20 | 704 | 0.4− | 0.2− | 1999 08 13 | 151 | 0.4− | 0.2− | 2003 03 09 | 941 | 0.0 | 1.1+ |
| 1999 04 20 | 046 | 0.3+ | 0.1− | 1999 08 20 | 151 | (2.5+ | 0.9+) | 2003 03 09 | 941 | 0.7+ | 1.1+ |
| 1999 04 20 | 046 | 0.2+ | 0.0 | 1999 08 20 | 151 | (2.7− | 3.3+) | 2003 04 21 | 170 | 0.0 | 0.3+ |
| 1999 04 20 | 046 | 0.3+ | 0.1− | 1999 08 20 | 151 | 0.1− | 1.7− | 2003 04 21 | 170 | 0.0 | 0.4+ |
| 1999 04 20 | 046 | 0.3+ | 0.0 | 1999 08 20 | 151 | 1.5+ | 1.0+ | 2003 04 21 | 170 | 0.4+ | 0.4+ |
| 1999 04 21 | 758 | 0.3+ | 0.1− | 1999 08 20 | 151 | 1.5+ | 0.5+ | 2003 04 27 | 300 | 1.2− | 0.1+ |
| 1999 04 21 | 758 | 0.4+ | 0.1− | 1999 08 21 | 118 | 0.0 | 1.3+ | 2003 04 27 | 300 | (2.2+ | 0.1−) |
| 1999 04 21 | 758 | 0.5+ | 0.1− | 1999 08 21 | 118 | 0.2+ | 0.5+ | 2003 04 27 | 300 | (1.1+ | 1.6−) |
| 1999 04 21 | 758 | 0.3+ | 0.0 | 1999 08 25 | 118 | 0.5+ | 0.5− | 2004 06 05 | J87 | 0.2+ | 0.2− |
| 1999 04 21 | 557 | 0.2+ | 0.4− | 1999 08 25 | 118 | 0.1+ | 0.2− | 2004 06 05 | J87 | 0.1− | 0.3+ |
| 1999 04 21 | 557 | 0.2+ | 0.4− | 1999 08 29 | 151 | 0.9− | 1.2+ | 2004 06 05 | J87 | 0.6+ | 0.3+ |
| 1999 04 21 | 557 | 0.2+ | 0.3− | 1999 08 29 | 151 | 1.8+ | 1.0+ | 2004 06 14 | 703 | 0.1+ | 0.5+ |
| 1999 04 21 | 557 | 0.3+ | 0.4− | 1999 08 29 | 151 | (2.1− | 0.5+) | 2004 06 14 | 703 | 0.2− | 0.4+ |
| 1999 04 21 | 758 | 0.5+ | 0.2− | 1999 09 02 | 151 | 1.1+ | 0.6− | 2004 06 14 | 703 | 0.4− | 0.5+ |
| 1999 04 21 | 758 | 0.6+ | 0.0 | 1999 09 02 | 151 | 1.1+ | 0.8− | 2004 06 14 | 703 | 0.2− | 0.5+ |
| 1999 04 21 | 711 | 0.2− | 0.6− | 1999 09 02 | 151 | 0.5+ | 1.1− | 2004 06 18 | 434 | 0.6+ | 0.6+ |
| 1999 04 21 | 711 | 0.2− | 0.6− | 1999 09 02 | 151 | 0.4+ | 0.3− | 2004 06 18 | 434 | (2.1− | 1.9+) |
| 1999 04 21 | 711 | 0.3− | 0.5− | 1999 09 02 | 151 | 1.5+ | 0.3− | 2004 06 18 | 434 | 0.9+ | 0.5+ |
| 1999 04 21 | 658 | 0.6+ | 0.2− | 1999 09 02 | 151 | 1.1+ | 0.9− | 2005 02 23 | 084 | 0.5− | 0.3+ |
| 1999 04 21 | 658 | 0.6+ | 0.3+ | 1999 09 02 | 151 | 0.4− | 0.6− | 2005 03 03 | F65 | 0.0 | 0.2+ |
| 1999 04 21 | 658 | 0.4+ | 0.3+ | 1999 12 30 | 413 | 0.4+ | 0.3+ | 2005 03 03 | F65 | 0.3+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 21 | 151 | 0.0 | 0.7− | 1999 12 30 | 413 | 0.4− | 0.8− | 2005 03 03 | F65 | 0.1+ | 0.3+ |
| 1999 04 21 | 151 | 0.4+ | 0.8− | 2000 01 03 | 104 | 0.8+ | 0.1+ | 2005 03 13 | 379 | 0.3+ | 0.0 |
| 1999 04 21 | 151 | 0.2+ | 0.5− | 2000 01 03 | 104 | 0.4+ | 0.3+ | 2005 03 13 | 379 | 0.0 | 0.3+ |
| 1999 04 21 | 151 | 0.1+ | 0.6− | 2000 01 04 | 104 | 0.4+ | 0.4+ | 2005 03 13 | 379 | 0.3+ | 0.3− |
| 1999 04 21 | 151 | 0.0 | 0.6− | 2000 01 04 | 104 | 0.1− | 0.3+ | 2005 03 13 | 379 | 0.3+ | 0.3− |
| 1999 04 21 | 151 | 0.2+ | 0.9− | 2000 01 04 | 104 | 0.4+ | 0.3+ | 2005 03 13 | 379 | 0.0 | 0.2− |
| 1999 04 21 | 611 | 0.5+ | 0.1− | 2000 01 04 | 104 | 0.5+ | 0.4+ | 2005 03 13 | 379 | 0.3+ | 0.3− |
| 1999 04 21 | 611 | 0.5+ | 0.1− | 2000 01 04 | 104 | 0.7+ | 0.1+ | 2005 03 17 | 084 | 0.1+ | 0.2− |
| 1999 04 21 | 611 | 0.5+ | 0.6− | 2000 04 03 | 611 | 0.3− | 0.6+ | 2005 03 17 | 084 | 0.2+ | 0.2+ |
| 1999 04 22 | 658 | 0.2− | 0.1+ | 2000 04 03 | 611 | 0.2+ | 0.5+ | 2005 03 21 | 704 | 0.3− | 0.4− |
| 1999 04 22 | 658 | 1.1+ | 0.5− | 2000 04 03 | 611 | 0.1− | 0.4+ | 2005 03 21 | 704 | 0.2+ | 0.3− |
| 1999 04 22 | 658 | 1.5+ | 0.8− | 2000 04 03 | 611 | 0.9− | 0.2− | 2005 03 21 | 704 | 0.6− | 0.3− |
| 1999 04 22 | 151 | 0.3+ | 0.4− | 2000 04 03 | 670 | 1.7− | 0.2− | 2005 03 21 | 704 | 0.1− | 0.1+ |
| 1999 04 22 | 151 | 0.5+ | 0.4− | 2000 04 03 | 670 | 0.3+ | 0.2+ | 2005 03 21 | 704 | 0.2− | 0.3− |
| 1999 04 22 | 151 | 0.4+ | 0.4− | 2000 04 03 | 670 | 0.6+ | 0.3− | 2005 03 22 | 084 | 0.1− | 0.1+ |
| 1999 04 22 | 151 | 0.2+ | 0.3− | 2000 04 08 | 739 | 0.3− | 0.7− | 2005 03 22 | 084 | 0.1− | 0.2+ |
| 1999 04 22 | 151 | 0.3+ | 0.3− | 2000 04 08 | 739 | 0.2+ | 0.4− | 2005 03 26 | 084 | 0.4− | 0.0 |
| 1999 04 22 | 151 | 0.5+ | 0.4− | 2000 04 08 | 739 | 0.1+ | 0.6− | 2005 03 29 | 084 | 0.0 | 0.1+ |
| 1999 04 22 | 557 | 0.2+ | 0.1− | 2000 04 28 | 860 | 0.1+ | 0.0 | 2005 03 29 | 084 | 0.0 | 0.3+ |
| 1999 04 22 | 557 | 0.2+ | 0.1− | 2000 04 28 | 860 | 0.7− | 0.5+ | 2005 03 29 | 379 | 0.1+ | 0.1− |
| 1999 04 22 | 557 | 0.1+ | 0.1− | 2000 04 28 | 860 | 0.8− | 0.0 | 2005 03 29 | 379 | 0.4+ | 0.4− |
| 1999 04 23 | 557 | 0.3+ | 0.2− | 2000 04 28 | 349 | 0.8− | 0.4+ | 2005 03 29 | 379 | 0.1− | 0.1− |
| 1999 04 23 | 557 | 0.3+ | 0.3− | 2000 04 28 | 349 | 0.5+ | 0.1− | 2005 03 29 | 379 | 0.1+ | 0.2− |
| 1999 04 23 | 557 | 0.3+ | 0.3− | 2000 04 28 | 349 | 1.0+ | 0.0 | 2005 03 29 | 379 | 0.2+ | 0.5− |
| 1999 04 23 | 658 | 0.4− | 0.1+ | 2000 05 14 | 118 | 0.3+ | 0.2+ | 2005 03 29 | 379 | 0.3+ | 0.6− |
| 1999 04 23 | 658 | 0.2+ | 0.3− | 2000 05 14 | 118 | 0.4+ | 0.2+ | 2005 03 30 | 084 | 0.1− | 0.4+ |
| 1999 04 23 | 658 | 0.5+ | 0.2− | 2000 05 28 | 151 | 0.1− | 0.5+ | 2005 03 30 | 084 | 0.2− | 0.3+ |
| 1999 04 24 | 557 | 0.2+ | 0.1− | 2000 05 28 | 151 | (1.0− | 2.9+) | 2005 03 30 | 355 | 0.1+ | 0.0 |
| 1999 04 24 | 557 | 0.2+ | 0.0 | 2000 05 28 | 151 | (2.3− | 2.5+) | 2005 03 30 | 355 | 0.2+ | 0.4+ |
| 1999 04 24 | 557 | 0.3+ | 0.1− | 2000 06 01 | 151 | 0.8− | 0.8+ | 2005 03 30 | 355 | 0.1+ | 0.4+ |
| 1999 04 24 | 557 | 0.2+ | 0.1− | 2000 06 01 | 151 | 0.3+ | 0.4+ | 2005 03 30 | 355 | 0.1+ | 0.1− |
| 1999 04 24 | 130 | 0.4+ | 0.0 | 2000 06 01 | 151 | 1.3+ | 0.8+ | 2005 03 30 | 355 | 0.2+ | 0.2+ |
| 1999 04 24 | 130 | 0.8+ | 0.2+ | 2000 06 01 | 151 | 0.1+ | 0.8+ | 2005 03 30 | 557 | 0.3+ | 0.5+ |
| 1999 04 24 | 130 | 0.1+ | 0.1+ | 2000 06 03 | 151 | 0.4+ | 0.2− | 2005 03 30 | 557 | 0.2+ | 0.6+ |
| 1999 04 24 | 130 | 0.6+ | 0.4− | 2000 06 03 | 151 | 1.2− | 1.4+ | 2005 03 30 | 557 | 0.2+ | 0.5+ |
| 1999 04 25 | 835 | 0.3+ | 0.6− | 2000 06 03 | 151 | 0.4+ | 0.4+ | 2005 03 31 | 557 | 0.3+ | 0.4+ |
| 1999 04 25 | 835 | 0.7+ | 0.4− | 2000 06 03 | 151 | 0.2− | 0.5+ | 2005 03 31 | 557 | 0.2+ | 0.4+ |
| 1999 04 25 | 835 | 0.4+ | 0.6− | 2001 05 29 | 587 | 1.1− | 0.3+ | 2005 03 31 | 557 | 0.2+ | 0.5+ |
| 1999 04 25 | 104 | 0.5+ | 0.2+ | 2001 05 29 | 587 | 0.7+ | 1.0+ | 2005 03 31 | 557 | 0.2+ | 0.4+ |
| 1999 04 25 | 104 | 0.4+ | 0.3− | 2001 05 29 | 587 | 0.3+ | 0.5− | 2005 03 31 | 557 | 0.3+ | 0.4+ |
| 1999 04 25 | 104 | 0.4+ | 0.3− | 2001 05 29 | 587 | 0.9+ | 0.2− | 2005 03 31 | 557 | 0.2+ | 0.4+ |
| 1999 04 25 | 104 | 0.2+ | 0.6− | 2001 05 29 | 587 | 0.6+ | 0.1+ | 2005 04 01 | 084 | 0.4− | 0.2+ |
| 1999 04 25 | 151 | 0.4+ | 0.4− | 2001 08 20 | 587 | 0.3+ | 0.5− | 2005 04 01 | 084 | 0.3− | 0.2+ |
| 1999 04 25 | 151 | 0.2+ | 0.4− | 2001 08 20 | 587 | 1.2− | 0.0 | 2005 04 01 | 750 | (0.4− | 2.2+) |
| 1999 04 25 | 151 | 0.1+ | 0.3− | 2001 09 12 | 104 | 0.4+ | 0.1− | 2005 04 01 | 750 | (0.2− | 2.0+) |
| 1999 04 25 | 151 | 0.3+ | 0.3− | 2001 09 12 | 104 | 0.1+ | 0.1+ | 2005 04 01 | 750 | (0.3− | 2.1+) |
| 1999 04 25 | 151 | 0.2+ | 0.2− | 2001 09 12 | 104 | 0.8+ | 0.6+ | 2005 04 01 | 750 | (0.6− | 2.3+) |
| 1999 04 25 | 151 | 0.2+ | 0.4− | 2001 09 12 | 104 | 0.0 | 0.4+ | 2005 04 01 | 557 | 0.7+ | 0.6+ |
| 1999 04 26 | 726 | 0.1− | 0.4− | 2001 09 12 | 104 | 1.1+ | 0.3+ | 2005 04 01 | 557 | 0.4+ | 0.5+ |
| 1999 04 26 | 726 | 0.2+ | 0.1− | 2001 09 12 | 104 | 0.5+ | 0.5+ | 2005 04 01 | 557 | 0.6+ | 0.4+ |
| 1999 04 26 | 726 | 0.2+ | 0.5− | 2001 09 12 | 104 | 0.3+ | 0.9+ | 2005 04 01 | 557 | 0.4+ | 0.8+ |
| 1999 04 26 | 726 | 0.0 | 0.2− | 2001 09 12 | 104 | 0.4− | 0.3+ | 2005 04 02 | 557 | 0.7+ | 0.7+ |
| 1999 04 26 | 726 | 0.2+ | 0.2− | 2001 09 12 | 104 | 0.2+ | 1.5+ | 2005 04 02 | 557 | 0.5+ | 0.5+ |
| 1999 04 26 | 726 | 0.3+ | 0.4− | 2002 03 11 | 926 | 0.5− | 1.3+ | 2005 04 02 | 557 | 0.4+ | 0.4+ |
| 1999 04 26 | 726 | 0.2+ | 0.6− | 2002 03 11 | 926 | 0.3− | 1.1+ | 2005 04 02 | 557 | 0.4+ | 0.5+ |
| 1999 04 26 | 726 | 0.0 | 0.5− | 2002 03 11 | 926 | 0.7+ | 0.2− | 2005 04 02 | 557 | 0.5+ | 0.2+ |
| 1999 04 26 | 726 | 0.1− | 0.1− | 2002 03 11 | 926 | 0.7+ | 0.3+ | 2005 04 02 | 557 | 0.5+ | 0.3+ |
| 1999 04 26 | 726 | 0.3+ | 1.2− | 2002 03 15 | 084 | 0.2− | 0.4− | 2005 04 02 | 557 | 0.4+ | 0.6+ |
| 1999 04 26 | 557 | 0.2− | 0.4− | 2002 03 16 | 084 | 0.1− | 0.3+ | 2005 04 02 | 750 | 0.2− | 0.6+ |
| 1999 04 26 | 557 | 0.0 | 0.3− | 2002 03 17 | 084 | 0.1− | 0.5+ | 2005 04 02 | 750 | 0.1− | 0.3+ |
| 1999 04 26 | 557 | 0.1− | 0.4− | 2002 03 20 | 587 | 0.0 | 0.8+ | 2005 04 02 | 750 | 0.0 | 0.3+ |
| 1999 04 26 | 557 | 0.2− | 0.1− | 2002 03 20 | 587 | 0.0 | 1.4+ | 2005 04 02 | 750 | 0.1+ | 0.3+ |
| 1999 04 27 | 900 | 0.1+ | 0.1− | 2002 03 20 | 587 | 0.1− | 0.8+ | 2005 04 02 | 557 | 0.0 | 0.1+ |
| 1999 04 27 | 900 | 0.3+ | 0.3− | 2002 03 20 | 587 | 0.3− | 1.1+ | 2005 04 02 | 557 | 0.1+ | 0.1+ |
| 1999 04 28 | 151 | 0.4− | 0.4− | 2002 03 20 | 587 | 0.3− | 0.5+ | 2005 04 02 | 557 | 0.0 | 0.1+ |
| 1999 04 28 | 151 | 0.7− | 0.3− | 2002 03 25 | 084 | 0.3− | 0.5+ | 2005 04 03 | 557 | 0.1+ | 0.2+ |
| 1999 04 28 | 151 | 0.6− | 0.3− | 2002 03 26 | 198 | 0.1− | 0.5+ | 2005 04 03 | 557 | 0.1+ | 0.1+ |
| 1999 04 28 | 151 | 0.2− | 0.6− | 2002 03 26 | 198 | 0.3− | 0.5+ | 2005 04 03 | 557 | 0.3+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 28 | 151 | 0.8− | 0.4− | 2002 03 26 | 198 | 0.1− | 0.3+ | 2005 04 03 | 557 | 0.2+ | 0.0 |
| 1999 04 28 | 151 | 0.6− | 0.1− | 2002 03 26 | 198 | 0.2− | 0.4+ | 2005 04 03 | 557 | 0.2+ | 0.2+ |
| 1999 04 28 | 046 | 0.1+ | 0.4− | 2002 03 26 | 198 | 0.1− | 0.2+ | 2005 04 04 | 557 | 0.3+ | 0.1+ |
| 1999 04 28 | 046 | 0.0 | 0.3− | 2002 03 27 | 926 | 1.4− | 1.0+ | 2005 04 04 | 557 | 0.2+ | 0.0 |
| 1999 04 28 | 046 | 0.1+ | 0.2− | 2002 03 27 | 926 | (0.2+ | 1.7+) | 2005 04 04 | 557 | 0.4+ | 0.1− |
| 1999 04 28 | 118 | 0.7− | 0.2− | 2002 03 27 | 926 | 1.0− | 0.4+ | 2005 04 04 | 557 | 0.5+ | 0.2− |
| 1999 04 28 | 118 | 0.6− | 0.1− | 2002 03 27 | 945 | 1.0− | 1.2+ | 2005 04 04 | 750 | 0.5+ | 0.4+ |
| 1999 04 28 | 118 | 0.5− | 0.1− | 2002 03 27 | 945 | 0.6− | 1.0+ | 2005 04 04 | 750 | 0.1+ | 0.1+ |
| 1999 04 28 | 636 | 0.4− | 0.8− | 2002 03 27 | 945 | 1.1− | 1.0+ | 2005 04 04 | 750 | 0.1− | 0.2+ |
| 1999 04 28 | 636 | 0.1− | 1.0− | 2002 03 28 | 198 | 0.1+ | 0.4+ | 2005 04 04 | 379 | 0.2+ | 0.0 |
| 1999 04 28 | 636 | 0.0 | 0.7− | 2002 03 28 | 198 | 0.0 | 0.3+ | 2005 04 04 | 379 | 0.0 | 0.2+ |
| 1999 04 29 | 699 | 1.0− | 0.8+ | 2002 03 28 | 198 | 0.1+ | 0.2+ | 2005 04 04 | 379 | 0.1+ | 0.3+ |
| 1999 04 29 | 699 | 1.1− | 0.8+ | 2002 03 29 | 195 | 0.5+ | 0.1+ | 2005 04 04 | 379 | 0.1− | 0.1+ |
| 1999 04 29 | 699 | 0.8− | 0.6+ | 2002 03 29 | 195 | 0.4+ | 0.1+ | 2005 04 04 | 379 | 0.1+ | 0.2− |
| 1999 04 29 | 658 | 0.2− | 0.5− | 2002 03 29 | 195 | 0.5+ | 0.1+ | 2005 04 04 | 379 | 0.3+ | 0.0 |
| 1999 04 29 | 658 | 0.7+ | 0.4− | 2002 03 29 | 628 | 1.1+ | 0.4− | 2005 04 04 | 379 | 0.1+ | 0.2+ |
| 1999 04 29 | 658 | 0.3+ | 0.5− | 2002 03 29 | 628 | 1.0+ | 1.2− | 2005 04 04 | 379 | 0.3+ | 0.2+ |
| 1999 04 29 | 046 | 0.5− | 0.1+ | 2002 03 29 | 628 | 1.1+ | 1.2− | 2005 04 04 | 557 | 0.2+ | 0.1− |
| 1999 04 29 | 046 | 0.5− | 0.1+ | 2002 03 29 | 628 | 0.6+ | 0.0 | 2005 04 04 | 557 | 0.2+ | 0.1− |
| 1999 04 29 | 046 | 0.6− | 0.1+ | 2002 03 30 | 084 | 0.2− | 0.3+ | 2005 04 04 | 557 | 0.2+ | 0.1+ |
| 1999 04 29 | 046 | 0.6− | 0.0 | 2002 03 30 | 195 | 0.4− | 0.0 | 2005 04 05 | 557 | 0.2+ | 0.0 |
| 1999 04 29 | 118 | 0.2− | 0.0 | 2002 03 30 | 195 | 0.0 | 0.1− | 2005 04 05 | 557 | 0.1+ | 0.1+ |
| 1999 04 29 | 118 | 0.3− | 0.0 | 2002 03 30 | 195 | 0.1− | 0.1− | 2005 04 05 | 084 | 0.1+ | 0.0 |
| 1999 04 29 | 118 | 0.2− | 0.1− | 2002 03 31 | 084 | 0.4− | 0.1+ | 2005 04 05 | 084 | 0.0 | 0.1+ |
| 1999 04 29 | 636 | 0.0 | 0.2− | 2002 04 01 | 704 | 0.1+ | 0.8+ | 2005 04 05 | 557 | 0.3+ | 0.2− |
| 1999 04 29 | 636 | 0.2+ | 0.2+ | 2002 04 01 | 704 | 0.0 | 0.5+ | 2005 04 05 | 557 | 0.3+ | 0.1− |
| 1999 04 30 | 636 | 0.0 | 0.3− | 2002 04 01 | 704 | 0.2+ | 0.2+ | 2005 04 05 | 379 | 0.2+ | 0.1− |
| 1999 04 30 | 636 | 0.2+ | 0.3− | 2002 04 01 | 704 | 0.7− | 0.3− | 2005 04 05 | 379 | 0.2+ | 0.2+ |
| 1999 04 30 | 726 | 0.4+ | 0.0 | 2002 04 01 | 704 | 0.3+ | 0.5− | 2005 04 05 | 379 | 0.4+ | 0.1+ |
| 1999 04 30 | 726 | 0.3+ | 0.1+ | 2002 04 01 | 355 | 0.0 | 0.1− | 2005 04 05 | 379 | 0.5+ | 0.1− |
| 1999 04 30 | 726 | 0.4+ | 0.2+ | 2002 04 01 | 355 | 0.1− | 0.1− | 2005 04 05 | 379 | 0.0 | 0.5+ |
| 1999 04 30 | 726 | 0.3+ | 0.4+ | 2002 04 01 | 355 | 0.1− | 0.0 | 2005 04 05 | 379 | 0.1− | 0.5+ |
| 1999 04 30 | 726 | 0.3+ | 0.1− | 2002 04 01 | 355 | 0.0 | 0.1− | 2005 04 07 | 084 | 0.7+ | 0.3− |
| 1999 04 30 | 402 | 0.0 | 0.3− | 2002 04 01 | 557 | 0.1− | 0.1+ | 2005 04 07 | 084 | 0.7+ | 0.2+ |
| 1999 04 30 | 402 | 0.0 | 0.2− | 2002 04 01 | 557 | 0.1− | 0.1+ | 2005 04 07 | 379 | 0.1+ | 0.2+ |
| 1999 04 30 | 402 | 0.0 | 0.1− | 2002 04 01 | 557 | 0.1− | 0.1+ | 2005 04 07 | 379 | 0.1+ | 0.3+ |
| 1999 04 30 | 151 | 0.3− | 0.1+ | 2002 04 01 | 557 | 0.2− | 0.0 | 2005 04 07 | 379 | 0.0 | 0.1+ |
| 1999 04 30 | 151 | 0.5− | 0.1+ | 2002 04 01 | 557 | 0.1− | 0.1+ | 2005 04 07 | 379 | 0.4+ | 0.1+ |
| 1999 04 30 | 151 | 0.2− | 0.3− | 2002 04 02 | 557 | 0.1− | 0.2+ | 2005 04 07 | 379 | 0.3+ | 0.4+ |
| 1999 04 30 | 151 | 0.2− | 0.2− | 2002 04 02 | 557 | 0.2− | 0.2+ | 2005 04 07 | 379 | 0.1− | 0.1− |
| 1999 04 30 | 151 | 0.3− | 0.2− | 2002 04 02 | 557 | 0.1− | 0.2+ | 2005 04 08 | 750 | 0.1+ | 0.0 |
| 1999 04 30 | 151 | 0.1+ | 0.0 | 2002 04 02 | 557 | 0.1− | 0.2+ | 2005 04 08 | 750 | 0.4+ | 0.1− |
| 1999 04 30 | 636 | 0.6− | 0.8+ | 2002 04 02 | 557 | 0.1− | 0.3+ | 2005 04 08 | 750 | 0.3+ | 0.1− |
| 1999 04 30 | 636 | 0.5− | 0.7+ | 2002 04 02 | 557 | 0.0 | 0.2+ | 2005 04 09 | 379 | 0.2− | 0.5+ |
| 1999 04 30 | 636 | 0.5− | 0.7+ | 2002 04 02 | 557 | 0.0 | 0.2+ | 2005 04 09 | 379 | 0.1+ | 0.2+ |
| 1999 04 30 | 636 | 0.4− | 0.6+ | 2002 04 02 | 557 | 0.2− | 0.2+ | 2005 04 09 | 379 | 0.5+ | 0.0 |
| 1999 05 01 | 726 | 0.4− | 0.2− | 2002 04 02 | 557 | 0.2− | 0.2+ | 2005 04 09 | 379 | 0.1− | 0.2+ |
| 1999 05 01 | 726 | 0.3− | 0.9− | 2002 04 02 | 557 | 0.2− | 0.2+ | 2005 04 09 | 379 | 0.3− | 0.1+ |
| 1999 05 01 | 726 | 0.4− | 0.1+ | 2002 04 02 | 557 | 0.2− | 0.2+ | 2005 04 13 | H45 | 0.5+ | 0.3+ |
| 1999 05 01 | 726 | 0.5− | 0.8− | 2002 04 02 | 557 | 0.1− | 0.1+ | 2005 04 13 | H45 | 0.1+ | 0.0 |
| 1999 05 01 | 726 | 0.5− | 0.9− | 2002 04 02 | 557 | 0.2− | 0.1+ | 2005 04 13 | H45 | 0.3+ | 0.1+ |
| 1999 05 01 | 726 | 0.3− | 0.4− | 2002 04 02 | 557 | 0.1− | 0.0 | 2005 04 13 | H45 | 0.3+ | 0.1+ |
| 1999 05 01 | 900 | 0.4+ | 0.1+ | 2002 04 03 | 557 | 0.1− | 0.1+ | 2005 04 13 | H45 | 0.3+ | 0.2− |
| 1999 05 01 | 900 | 0.4+ | 0.3+ | 2002 04 03 | 557 | 0.0 | 0.1+ | 2005 04 13 | 379 | 0.1+ | 0.0 |
| 1999 05 01 | 151 | 0.2+ | 0.0 | 2002 04 03 | 557 | 0.1− | 0.0 | 2005 04 13 | 379 | 0.0 | 0.2+ |
| 1999 05 01 | 151 | 0.5+ | 0.3− | 2002 04 03 | 198 | 0.1− | 0.0 | 2005 04 13 | 379 | 0.1+ | 0.1− |
| 1999 05 01 | 151 | 0.1+ | 0.6− | 2002 04 03 | 198 | 0.0 | 0.1+ | 2005 04 13 | 379 | 0.2+ | 0.2− |
| 1999 05 01 | 151 | 0.1+ | 0.2− | 2002 04 03 | 198 | 0.1+ | 0.2+ | 2005 04 13 | 379 | 0.2+ | 0.2− |
| 1999 05 01 | 151 | 0.2+ | 0.3− | 2002 04 03 | 198 | 0.1− | 0.2+ | 2005 04 13 | 379 | 0.2+ | 0.2+ |
| 1999 05 01 | 151 | 0.2− | 0.4− | 2002 04 03 | 557 | 0.1− | 0.1+ | 2005 04 13 | 379 | 0.3+ | 0.3+ |
| 1999 05 02 | 726 | 0.2− | 0.5− | 2002 04 03 | 084 | 0.1− | 1.0+ | 2005 04 13 | 379 | 0.1+ | 0.0 |
| 1999 05 02 | 726 | 0.3+ | 0.6− | 2002 04 03 | 557 | 0.0 | 0.1+ | 2005 04 14 | 750 | 0.2+ | 0.1+ |
| 1999 05 02 | 726 | 0.8− | 0.5+ | 2002 04 03 | 557 | 0.1+ | 0.1− | 2005 04 14 | 750 | 0.2+ | 0.1+ |
| 1999 05 02 | 726 | 0.1− | 0.2− | 2002 04 03 | 557 | 0.2+ | 0.1− | 2005 04 14 | 750 | 0.2+ | 0.2+ |
| 1999 05 02 | 726 | 0.1− | 0.2− | 2002 04 03 | 557 | 0.0 | 0.1− | 2005 04 14 | 379 | 0.4+ | 0.4+ |
| 1999 05 02 | 726 | 0.0 | 1.6− | 2002 04 03 | 557 | 0.1+ | 0.2− | 2005 04 14 | 379 | 0.1− | 0.1− |
| 1999 05 02 | 108 | 0.5+ | 1.0− | 2002 04 03 | 557 | 0.0 | 0.1− | 2005 04 14 | 379 | 0.0 | 0.2+ |
| 1999 05 02 | 108 | (0.7+ | 2.0−) | 2002 04 03 | 557 | 0.1− | 0.1− | 2005 04 14 | 379 | 0.1+ | 0.2+ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 02 | 108 | 1.0− | 1.6− | 2002 04 03 | 557 | 0.2− | 0.0 | 2005 04 14 | 379 | 0.3+ | 0.1+ | 1999 05 09 | 118 | 0.2+ | 0.1− | 2002 04 18 | 084 | 0.9− | 0.8− | 2005 04 21 | 084 | 0.4+ | 0.1− |
| 1999 05 02 | 108 | 1.9+ | 1.4− | 2002 04 03 | 198 | 0.1− | 0.3+ | 2005 04 14 | 379 | 0.3+ | 0.2+ | 1999 05 09 | 151 | 0.1+ | 0.7− | 2002 04 19 | 198 | 0.3+ | 0.1− | 2005 04 21 | 198 | 0.2+ | 0.1+ |
| 1999 05 02 | 151 | 0.1+ | 0.8+ | 2002 04 03 | 198 | 0.1+ | 0.2+ | 2005 04 14 | 379 | 0.0 | 0.2+ | 1999 05 09 | 151 | 0.2+ | 0.6− | 2002 04 19 | 198 | 0.3+ | 0.1− | 2005 04 21 | 198 | 0.1+ | 0.1+ |
| 1999 05 02 | 151 | 0.1+ | 0.3− | 2002 04 03 | 557 | 0.1− | 0.3− | 2005 04 15 | 084 | 0.2+ | 0.0 | 1999 05 09 | 610 | 0.4+ | 0.4− | 2002 04 19 | 198 | 0.2+ | 0.2− | 2005 04 21 | 198 | 0.1+ | 0.1+ |
| 1999 05 02 | 151 | 0.0 | 0.4− | 2002 04 03 | 198 | 0.1+ | 0.4+ | 2005 04 15 | 084 | 0.3− | 0.4+ | 1999 05 09 | 151 | 0.5+ | 0.7− | 2002 04 19 | 198 | 0.3+ | 0.3− | 2005 04 21 | 198 | 0.1+ | 0.0 |
| 1999 05 02 | 151 | 0.0 | 0.1− | 2002 04 03 | 198 | 0.4− | 0.6+ | 2005 04 15 | 084 | 0.0 | 0.4+ | 1999 05 09 | 610 | 0.4+ | 0.3− | 2002 04 19 | 198 | 0.3+ | 0.2− | 2005 04 21 | 198 | 0.1+ | 0.0 |
| 1999 05 02 | 151 | 0.1+ | 0.4− | 2002 04 03 | 198 | 0.1− | 0.5+ | 2005 04 15 | 084 | 0.0 | 0.3+ | 1999 05 09 | 557 | 0.4+ | 0.2− | 2002 04 20 | 699 | 0.0 | 0.0 | 2005 04 21 | A32 | 0.1− | 0.3+ |
| 1999 05 02 | 151 | 0.2+ | 0.3− | 2002 04 04 | 557 | 0.1− | 0.4− | 2005 04 15 | 750 | 0.2+ | 0.0 | 1999 05 09 | 610 | 0.3+ | 0.3− | 2002 04 20 | 699 | 0.0 | 0.1− | 2005 04 21 | A32 | 0.1− | 0.2+ |
| 1999 05 02 | 636 | 0.9+ | 0.3− | 2002 04 04 | 557 | 0.2− | 0.3− | 2005 04 15 | 750 | 0.3+ | 0.1− | 1999 05 09 | 151 | 0.0 | 0.2− | 2002 04 20 | 699 | 0.1+ | 0.1− | 2005 04 21 | A32 | 0.1− | 0.1− |
| 1999 05 02 | 636 | 1.0+ | 0.5− | 2002 04 04 | 379 | 0.4− | 0.1− | 2005 04 15 | 750 | 0.1+ | 0.0 | 1999 05 09 | 610 | 0.1+ | 0.3− | 2002 04 20 | 699 | 0.1+ | 0.1− | 2005 04 21 | A32 | 0.0 | 0.2− |
| 1999 05 02 | 636 | 1.1+ | 0.4− | 2002 04 04 | 379 | 0.6− | 0.4− | 2005 04 15 | 118 | 0.1+ | 0.2+ | 1999 05 09 | 610 | 0.1+ | 0.2− | 2002 04 20 | 699 | 0.0 | 0.1− | 2005 04 22 | 699 | 0.1+ | 0.1− |
| 1999 05 02 | 636 | 1.1+ | 0.4− | 2002 04 05 | 198 | 0.3− | 0.0 | 2005 04 15 | 118 | 0.0 | 0.0 | 1999 05 09 | 151 | 0.4+ | 0.4− | 2002 04 20 | 699 | 0.0 | 0.0 | 2005 04 22 | 699 | 0.1+ | 0.0 |
| 1999 05 03 | 557 | 0.2+ | 0.2− | 2002 04 05 | 198 | 0.0 | 0.0 | 2005 04 15 | 118 | 0.1+ | 0.0 | 1999 05 09 | 557 | 0.4+ | 0.2− | 2002 04 20 | 699 | 0.0 | 0.1+ | 2005 04 22 | 699 | 0.0 | 0.0 |
| 1999 05 03 | 636 | 0.2+ | 0.3− | 2002 04 05 | 198 | 0.1+ | 0.1− | 2005 04 15 | 118 | 0.2+ | 0.2+ | 1999 05 09 | 127 | 0.2+ | 0.2+ | 2002 04 20 | 699 | 0.0 | 0.0 | 2005 04 22 | 699 | 0.1+ | 0.2+ |
| 1999 05 03 | 557 | 0.1+ | 0.1− | 2002 04 05 | 198 | 0.0 | 0.0 | 2005 04 15 | 118 | 0.1+ | 0.1+ | 1999 05 09 | 127 | 0.1+ | 0.0 | 2002 04 20 | 084 | 1.3+ | 0.4+ | 2005 04 22 | 151 | 0.0 | 0.0 |
| 1999 05 03 | 636 | 0.1+ | 0.3− | 2002 04 05 | 198 | 0.2+ | 0.0 | 2005 04 16 | 704 | 0.7+ | 0.2− | 1999 05 09 | 127 | 0.5+ | 0.1+ | 2002 04 21 | 642 | 0.1+ | 0.1− | 2005 04 22 | 151 | 0.0 | 0.0 |
| 1999 05 03 | 636 | 0.2+ | 0.1− | 2002 04 05 | 198 | 0.1+ | 0.0 | 2005 04 16 | 704 | 0.5+ | 0.1− | 1999 05 09 | 557 | 0.4+ | 0.2− | 2002 04 21 | 642 | 0.1− | 0.0 | 2005 04 22 | 151 | 0.0 | 0.1+ |
| 1999 05 03 | 636 | 0.1+ | 0.1− | 2002 04 06 | 127 | 0.1+ | 0.1− | 2005 04 16 | 704 | 0.4+ | 0.3− | 1999 05 10 | 557 | 0.4+ | 0.4− | 2002 04 21 | 642 | 0.1+ | 0.0 | 2005 04 22 | 151 | 0.0 | 0.0 |
| 1999 05 03 | 557 | 0.1+ | 0.2− | 2002 04 06 | 127 | 0.0 | 0.1− | 2005 04 16 | 704 | 0.3+ | 0.4− | 1999 05 10 | 557 | 0.3+ | 0.3− | 2002 04 21 | 642 | 0.1+ | 0.2− | 2005 04 22 | 084 | 0.3+ | 0.0 |
| 1999 05 04 | 557 | 0.2+ | 0.2− | 2002 04 06 | 127 | 0.0 | 0.2− | 2005 04 16 | 704 | 0.3+ | 0.5− | 1999 05 10 | 739 | 1.0+ | 0.1− | 2002 04 21 | 611 | 0.1− | 0.5− | 2005 04 22 | 084 | 0.1+ | 0.0 |
| 1999 05 04 | 151 | 0.5+ | 0.4− | 2002 04 07 | 198 | 0.0 | 0.7− | 2005 04 16 | 379 | 0.2+ | 0.2+ | 1999 05 10 | 739 | 0.6+ | 0.6− | 2002 04 21 | 611 | 0.3− | 0.0 | 2005 04 23 | H45 | 0.3+ | 0.5− |
| 1999 05 04 | 151 | 0.2+ | 0.2− | 2002 04 07 | 198 | 0.1+ | 0.5− | 2005 04 16 | 379 | 0.1+ | 0.2+ | 1999 05 11 | 360 | 0.5+ | 0.0 | 2002 04 21 | 084 | 0.1− | 0.3− | 2005 04 23 | H45 | 0.4+ | 0.2− |
| 1999 05 04 | 151 | 0.4+ | 0.1+ | 2002 04 07 | 198 | 0.1+ | 0.3− | 2005 04 16 | 379 | 0.0 | 0.1+ | 1999 05 11 | 360 | 0.2+ | 0.1+ | 2002 04 22 | 198 | 0.3+ | 0.5+ | 2005 04 23 | H45 | 0.0 | 0.4− |
| 1999 05 04 | 151 | 0.1+ | 0.2− | 2002 04 07 | 084 | 0.1− | 0.5− | 2005 04 16 | 379 | 0.4+ | 0.1+ | 1999 05 11 | 360 | 0.0 | 0.1+ | 2002 04 22 | 198 | 0.2+ | 0.3+ | 2005 04 23 | H45 | 0.1+ | 0.5− |
| 1999 05 04 | 151 | 0.3− | 0.2− | 2002 04 07 | 127 | 0.1+ | 0.1+ | 2005 04 16 | 379 | 0.1− | 0.2− | 1999 05 11 | 900 | 0.4+ | 0.1− | 2002 04 22 | 198 | 0.2+ | 0.3+ | 2005 04 23 | H45 | 0.0 | 0.6− |
| 1999 05 04 | 151 | 0.3+ | 0.1− | 2002 04 07 | 127 | 0.0 | 0.1+ | 2005 04 16 | 379 | 0.1+ | 0.2+ | 1999 05 11 | 900 | 0.4+ | 0.1+ | 2002 04 22 | 198 | 0.1+ | 0.3+ | 2005 04 25 | 084 | 0.1+ | 0.0 |
| 1999 05 05 | 557 | 0.3+ | 0.0 | 2002 04 07 | 127 | 0.1− | 0.2+ | 2005 04 16 | 379 | 0.1+ | 0.1+ | 1999 05 13 | 121 | 0.4+ | 0.3− | 2002 04 22 | 198 | 0.0 | 0.2+ | 2005 04 25 | 084 | 0.2+ | 0.2− |
| 1999 05 05 | 557 | 0.3+ | 0.3− | 2002 04 08 | 084 | 0.5+ | 0.1− | 2005 04 16 | 379 | 0.1+ | 0.1+ | 1999 05 13 | 121 | 0.2− | 0.7− | 2002 04 22 | 084 | 0.0 | 0.3− | 2005 04 27 | 084 | 0.1− | 0.2− |
| 1999 05 05 | 557 | 0.3+ | 0.1− | 2002 04 09 | 084 | 0.2− | 0.1− | 2005 04 16 | 379 | 0.0 | 0.1+ | 1999 05 13 | 121 | 0.7+ | 0.0 | 2002 04 23 | 544 | 0.1− | 0.2+ | 2005 04 27 | 084 | 0.1− | 0.0 |
| 1999 05 05 | 557 | 0.4+ | 0.5− | 2002 04 09 | 379 | 0.6+ | 0.3+ | 2005 04 16 | 118 | 0.5− | 1.0+ | 1999 05 13 | 121 | 0.5+ | 0.6− | 2002 04 23 | 544 | 0.2+ | 0.0 | 2005 04 27 | 379 | 0.4+ | 0.0 |
| 1999 05 06 | 557 | 0.3+ | 0.1− | 2002 04 09 | 379 | 0.2+ | 0.5+ | 2005 04 16 | 118 | 0.3− | 0.9+ | 1999 05 13 | 121 | 0.4+ | 0.0 | 2002 04 24 | 084 | 0.1+ | 0.1− | 2005 04 27 | 379 | 0.5+ | 0.0 |
| 1999 05 06 | 151 | 0.4+ | 0.0 | 2002 04 09 | 198 | 0.1+ | 0.1+ | 2005 04 16 | 118 | 0.4− | 0.9+ | 1999 05 14 | 557 | 0.1+ | 0.4− | 2002 04 25 | 198 | 0.1− | 0.1+ | 2005 04 27 | 379 | 0.4− | 0.1− |
| 1999 05 06 | 151 | 0.2+ | 0.4+ | 2002 04 09 | 198 | 0.1− | 0.2+ | 2005 04 16 | 118 | 0.6− | 1.0+ | 1999 05 14 | 557 | 0.0 | 0.2− | 2002 04 25 | 198 | 0.0 | 0.1+ | 2005 04 27 | 379 | 0.3+ | 0.2+ |
| 1999 05 06 | 151 | 0.7+ | 0.3+ | 2002 04 09 | 198 | 0.1− | 0.2+ | 2005 04 16 | 118 | 0.3− | 0.9+ | 1999 05 14 | 557 | 0.0 | 0.3− | 2002 04 25 | 198 | 0.1− | 0.1+ | 2005 04 27 | 379 | 0.3+ | 0.1+ |
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| 1999 05 06 | 151 | 0.8+ | 0.8− | 2002 04 10 | 198 | 0.5+ | 0.3+ | 2005 04 16 | 084 | 0.1+ | 0.1− | 1999 05 15 | 121 | 0.5+ | 1.0− | 2002 04 25 | 198 | 0.2+ | 0.1+ | 2005 04 28 | 704 | 0.1+ | 0.7+ |
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| 1999 05 07 | 704 | 0.2+ | 0.3+ | 2002 04 10 | 198 | 0.2− | 0.0 | 2005 04 17 | 379 | 0.1− | 0.3+ | 1999 05 15 | 127 | 0.0 | 0.1− | 2002 04 25 | 198 | 0.1+ | 0.3− | 2005 04 28 | 704 | 0.1+ | 0.7+ |
| 1999 05 07 | 704 | 0.8+ | 0.7− | 2002 04 11 | 084 | 0.1− | 0.2+ | 2005 04 17 | 379 | 0.1− | 0.3+ | 1999 05 15 | 127 | 0.1+ | 0.3− | 2002 04 25 | 084 | 0.2+ | 0.3− | 2005 04 28 | 704 | 0.5− | 0.5+ |
| 1999 05 07 | 704 | 0.9+ | 0.2+ | 2002 04 12 | 367 | 0.5− | 0.1+ | 2005 04 17 | 379 | 0.2− | 0.4+ | 1999 05 15 | 127 | 0.1+ | 0.3− | 2002 04 27 | 084 | 0.2+ | 0.6− | 2005 04 28 | 704 | 0.2− | 0.6+ |
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| 1999 05 07 | 704 | 0.9+ | 0.1− | 2002 04 12 | 367 | 0.5− | 0.2− | 2005 04 17 | 379 | 0.1+ | 0.4+ | 1999 05 16 | 118 | 0.3+ | 0.6− | 2002 04 27 | 355 | 0.7+ | 0.1− | 2005 04 28 | 379 | 0.1+ | 0.1+ |
| 1999 05 07 | 360 | 1.0+ | 0.2− | 2002 04 12 | 367 | 0.6− | 0.2− | 2005 04 17 | 379 | 0.2− | 0.3+ | 1999 05 16 | 118 | 0.2+ | 0.8− | 2002 04 27 | 355 | 0.4+ | 0.0 | 2005 04 28 | 379 | 0.1+ | 0.2+ |
| 1999 05 07 | 360 | 0.9+ | 0.0 | 2002 04 12 | 367 | 0.4− | 0.0 | 2005 04 17 | 084 | 0.2− | 0.2+ | 1999 05 16 | 118 | 0.0 | 0.5− | 2002 04 27 | 355 | 0.5+ | 0.4− | 2005 04 28 | 379 | 0.1+ | 0.3+ |
| 1999 05 07 | 360 | 1.1+ | 0.0 | 2002 04 12 | 379 | 0.7+ | 0.3+ | 2005 04 17 | 084 | 0.2− | 0.2+ | 1999 05 16 | 557 | 0.3+ | 0.3− | 2002 04 29 | 557 | 0.3− | 1.0+ | 2005 04 28 | 379 | 0.2− | 0.0 |
| 1999 05 07 | 557 | 0.2+ | 0.1− | 2002 04 12 | 379 | 0.1− | 0.2− | 2005 04 18 | H45 | 0.3− | 0.6+ | 1999 05 16 | 557 | 0.3+ | 0.2− | 2002 04 29 | 557 | 0.0 | 0.7+ | 2005 04 28 | 379 | 0.2+ | 0.2+ |
| 1999 05 07 | 557 | 0.3+ | 0.2− | 2002 04 12 | 379 | 0.6+ | 0.3+ | 2005 04 18 | H45 | 0.5− | 0.5+ | 1999 05 16 | 557 | 0.5+ | 0.2− | 2002 04 29 | 557 | 0.2− | 0.9+ | 2005 04 28 | 379 | 0.2− | 0.0 |
| 1999 05 07 | 557 | 0.3+ | 0.1− | 2002 04 12 | 379 | 0.1+ | 0.1− | 2005 04 18 | H45 | 0.0 | 0.5+ | 1999 05 17 | 151 | 0.7+ | 1.5+ | 2002 04 30 | 084 | 0.6+ | 0.9− | 2005 04 28 | 118 | 0.1+ | 0.3+ |
| 1999 05 08 | 557 | 0.4+ | 0.1− | 2002 04 12 | 379 | 0.8+ | 0.1− | 2005 04 18 | H45 | 0.0 | 0.4+ | 1999 05 17 | 151 | 1.0+ | 0.0 | 2002 04 30 | 157 | 0.4+ | 0.1− | 2005 04 28 | 118 | 0.2+ | 0.2+ |
| 1999 05 08 | 704 | 0.9+ | 0.2+ | 2002 04 12 | 379 | 0.1− | 0.1+ | 2005 04 18 | H45 | 0.2− | 0.3+ | 1999 05 17 | 151 | 0.6+ | 0.4+ | 2002 04 30 | 157 | 0.2+ | 0.1− | 2005 04 28 | 118 | 0.3+ | 0.2+ |
| 1999 05 08 | 704 | 0.6+ | 0.1+ | 2002 04 12 | 379 | 0.4+ | 0.1+ | 2005 04 19 | 084 | 0.4− | 0.1+ | 1999 05 17 | 151 | 0.5− | 0.8+ | 2002 04 30 | 157 | 0.3+ | 0.1− | 2005 04 28 | 118 | 0.1+ | 0.3+ |
| 1999 05 08 | 704 | 0.5+ | 0.6− | 2002 04 12 | 379 | 0.2+ | 0.0 | 2005 04 19 | 084 | 0.2− | 0.1+ | 1999 05 17 | 151 | 0.5+ | 0.2− | 2002 05 01 | 557 | 0.7− | 0.1− | 2005 04 28 | 118 | 0.7+ | 0.1+ |
| 1999 05 08 | 704 | 0.2+ | 0.0 | 2002 04 12 | 379 | 0.5− | 0.4− | 2005 04 19 | 084 | 0.1− | 0.0 | 1999 05 17 | 151 | 0.1− | 0.3− | 2002 05 01 | 557 | 0.7− | 0.0 | 2005 04 30 | 118 | 0.3+ | 0.0 |
| 1999 05 08 | 704 | 0.6+ | 0.3+ | 2002 04 12 | 084 | 0.1− | 0.1− | 2005 04 20 | 127 | 0.3+ | 0.0 | 1999 05 17 | 628 | 0.6− | 0.3− | 2002 05 01 | 704 | 0.4− | 0.2+ | 2005 04 30 | 118 | 0.2+ | 0.1− |
| 1999 05 08 | 355 | 0.7+ | 0.1+ | 2002 04 14 | 198 | 0.0 | 0.0 | 2005 04 20 | 127 | 0.3+ | 0.2− | 1999 05 17 | 628 | 0.4− | 0.4+ | 2002 05 01 | 704 | 0.3− | 0.2+ | 2005 04 30 | 118 | 0.1+ | 0.1+ |
| 1999 05 08 | 355 | 1.0+ | 0.3+ | 2002 04 14 | 198 | 0.0 | 0.1− | 2005 04 20 | 127 | 0.5+ | 0.0 | 1999 05 17 | 628 | 0.2− | 0.2− | 2002 05 01 | 704 | 0.3− | 0.3+ | 2005 04 30 | 118 | 0.1+ | 0.1+ |
| 1999 05 08 | 355 | 0.8+ | 0.1− | 2002 04 14 | 198 | 0.1− | 0.1− | 2005 04 20 | 127 | 0.3+ | 0.2− | 1999 05 18 | 636 | 0.3− | 0.4+ | 2002 05 01 | 704 | 0.6− | 0.6+ | 2005 04 30 | 118 | 0.5+ | 0.0 |
| 1999 05 09 | 726 | 0.2+ | 0.2− | 2002 04 14 | 198 | 0.0 | 0.2− | 2005 04 20 | 127 | 0.3+ | 0.1− | 1999 05 18 | 636 | 0.2− | 0.3+ | 2002 05 01 | 704 | 0.5− | 0.4+ | 2005 05 02 | 084 | 0.1− | 0.3+ |
| 1999 05 09 | 726 | 0.5+ | 0.2− | 2002 04 14 | 198 | 0.1− | 0.2− | 2005 04 21 | 379 | 0.1+ | 0.2+ | 1999 05 18 | 636 | 0.0 | 0.4+ | 2002 05 01 | 557 | 0.2− | 0.2+ | 2005 05 02 | 084 | 0.2− | 0.1+ |
| 1999 05 09 | 726 | 0.3+ | 0.1− | 2002 04 15 | 198 | 0.2− | 0.2+ | 2005 04 21 | 379 | 0.3+ | 0.3+ | 1999 05 18 | 151 | 0.3+ | 0.6+ | 2002 05 02 | 557 | 0.3− | 0.2+ | 2005 05 03 | 379 | 0.0 | 0.1+ |
| 1999 05 09 | 726 | 0.5+ | 0.1− | 2002 04 15 | 198 | 0.1− | 0.2+ | 2005 04 21 | 379 | 0.2+ | 0.3+ | 1999 05 18 | 151 | 0.1+ | 0.1+ | 2002 05 02 | 557 | 0.2− | 0.2+ | 2005 05 03 | 379 | 0.2+ | 0.1+ |
| 1999 05 09 | 726 | 0.6+ | 0.4− | 2002 04 15 | 198 | 0.1− | 0.2+ | 2005 04 21 | 379 | 0.3+ | 0.1− | 1999 05 18 | 151 | 0.0 | 0.2+ | 2002 05 02 | 379 | 0.3+ | 0.2− | 2005 05 03 | 379 | 0.1+ | 0.0 |
| 1999 05 09 | 726 | 0.8+ | 0.3− | 2002 04 15 | 198 | 0.3− | 0.1+ | 2005 04 21 | 127 | 0.1+ | 0.1+ | 1999 05 18 | 151 | 0.2+ | 0.1− | 2002 05 02 | 379 | 0.7+ | 0.1− | 2005 05 03 | 379 | 0.2− | 0.1+ |
| 1999 05 09 | 726 | 0.6+ | 0.4− | 2002 04 17 | 198 | 0.2− | 0.2+ | 2005 04 21 | 127 | 0.2+ | 0.1+ | 1999 05 18 | 151 | 0.1+ | 0.2− | 2002 05 02 | 379 | 0.1− | 0.2− | 2005 05 03 | 379 | 0.2+ | 0.2+ |
| 1999 05 09 | 726 | 0.5+ | 0.4− | 2002 04 17 | 198 | 0.1− | 0.1+ | 2005 04 21 | 127 | 0.0 | 0.1− | 1999 05 18 | 557 | 0.2+ | 0.0 | 2002 05 02 | 557 | 0.2− | 0.0 | 2005 05 03 | 379 | 0.1− | 0.2+ |
| 1999 05 09 | 118 | 0.2+ | 0.3− | 2002 04 17 | 198 | 0.3− | 0.1− | 2005 04 21 | 127 | 0.0 | 0.0 | 1999 05 18 | 151 | 0.5+ | 0.0 | 2002 05 02 | 557 | 0.2− | 0.0 | 2005 05 04 | 750 | 0.0 | 0.1− |
| 1999 05 09 | 118 | 0.1+ | 0.1− | 2002 04 17 | 198 | 0.2− | 0.1− | 2005 04 21 | 127 | 0.2+ | 0.0 | 1999 05 18 | 557 | 0.2+ | 0.0 | 2002 05 02 | 557 | 0.2− | 0.0 | 2005 05 04 | 750 | 0.1+ | 0.0 |
| 1999 05 09 | 151 | 0.7+ | 0.8− | 2002 04 17 | 198 | 0.4− | 0.2− | 2005 04 21 | 084 | 0.2− | 0.0 | 1999 05 18 | 557 | 0.2+ | 0.1− | 2002 05 03 | 557 | 0.1− | 0.1− | 2005 05 07 | H45 | 0.2+ | 0.0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 19 | 151 | 0.5+ | 0.5− | 2002 05 03 | 557 | 0.4− | 0.1+ | 2005 05 07 | H45 | 0.3+ | 0.4− | 1999 05 27 | 151 | 0.3+ | 0.1+ | 2002 05 14 | 557 | 0.0 | 0.0 | 2005 05 20 | 379 | 0.4+ | 0.3− |
| 1999 05 19 | 151 | 0.1+ | 0.3− | 2002 05 03 | 557 | 0.2− | 0.0 | 2005 05 07 | H45 | 0.0 | 0.3− | 1999 05 28 | 151 | 1.7− | 1.1− | 2002 05 14 | 557 | 0.1+ | 0.0 | 2005 05 20 | 379 | 0.3+ | 0.1+ |
| 1999 05 19 | 151 | 0.4+ | 0.1− | 2002 05 03 | 557 | 0.3− | 0.0 | 2005 05 07 | H45 | 0.4+ | 0.1− | 1999 05 28 | 151 | 0.4+ | 1.4− | 2002 05 14 | 557 | 0.0 | 0.1− | 2005 05 20 | 379 | 0.6+ | 0.1+ |
| 1999 05 19 | 151 | 0.2− | 0.1+ | 2002 05 04 | 557 | 0.3− | 0.0 | 2005 05 07 | H45 | 0.6+ | 0.2− | 1999 05 28 | 151 | 0.3− | 0.3− | 2002 05 14 | 151 | 0.1+ | 0.2− | 2005 05 20 | 565 | 0.6+ | 0.3+ |
| 1999 05 19 | 151 | 0.2− | 0.1− | 2002 05 04 | 557 | 0.3− | 0.1− | 2005 05 07 | 379 | 0.2+ | 0.0 | 1999 05 28 | 151 | 0.3− | 0.5+ | 2002 05 14 | 557 | 0.1+ | 0.1+ | 2005 05 20 | 565 | 0.9+ | 0.3− |
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| 1999 05 20 | 704 | 0.7+ | 0.3+ | 2002 05 04 | 704 | 0.5− | 0.3+ | 2005 05 07 | 379 | 0.1+ | 0.1− | 1999 05 28 | 046 | 0.1+ | 0.8+ | 2002 05 14 | 151 | 0.3+ | 0.1+ | 2005 05 20 | 565 | 0.3+ | 0.2− |
| 1999 05 20 | 704 | 0.2+ | 0.3− | 2002 05 04 | 704 | 0.8+ | 0.2− | 2005 05 07 | 379 | 0.1+ | 0.0 | 1999 05 28 | 046 | 0.2− | 0.5+ | 2002 05 14 | 557 | 0.1+ | 0.2+ | 2005 05 20 | 084 | 0.3+ | 0.1− |
| 1999 05 20 | 704 | 0.1+ | 0.3− | 2002 05 04 | 704 | 0.5− | 0.0 | 2005 05 09 | 084 | 0.2− | 0.1+ | 1999 05 28 | 046 | 0.0 | 0.6+ | 2002 05 14 | 557 | 0.1+ | 0.0 | 2005 05 20 | 084 | 0.2+ | 0.1− |
| 1999 05 20 | 704 | 0.1− | 0.1− | 2002 05 04 | 704 | 0.9+ | 0.1− | 2005 05 09 | 084 | 0.2− | 0.2+ | 1999 05 28 | 046 | 0.1+ | 0.5+ | 2002 05 14 | 557 | 0.1+ | 0.0 | 2005 05 21 | A76 | 0.5+ | 0.0 |
| 1999 05 20 | 628 | 0.1+ | 0.2− | 2002 05 04 | 704 | 0.5− | 0.3+ | 2005 05 10 | H45 | 0.3+ | 0.0 | 1999 05 29 | 726 | 0.2+ | 0.2+ | 2002 05 15 | 557 | 0.1− | 0.1+ | 2005 05 21 | A76 | 0.3+ | 0.0 |
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| 1999 05 20 | 636 | 0.8+ | 0.2− | 2002 05 04 | 704 | 0.9+ | 0.0 | 2005 05 10 | H45 | 0.2+ | 0.1+ | 1999 05 29 | 726 | 0.3+ | 0.4+ | 2002 05 15 | 215 | 0.3+ | 0.0 | 2005 05 21 | 157 | 0.6+ | 0.4− |
| 1999 05 20 | 636 | 1.0+ | 0.3− | 2002 05 04 | 084 | 0.3+ | 0.4− | 2005 05 10 | H45 | 0.4+ | 0.1− | 1999 05 29 | 900 | 0.4+ | 0.3+ | 2002 05 15 | 215 | 0.3+ | 0.3+ | 2005 05 21 | 157 | 0.2− | 0.0 |
| 1999 05 20 | 628 | 0.7+ | 0.2− | 2002 05 05 | 704 | 0.2+ | 0.0 | 2005 05 10 | 379 | 0.2+ | 0.0 | 1999 05 29 | 900 | 0.7− | 0.2+ | 2002 05 15 | 215 | 0.2+ | 0.4+ | 2005 05 21 | A76 | 0.5+ | 0.1+ |
| 1999 05 20 | 636 | 1.2+ | 0.4− | 2002 05 05 | 704 | 0.2+ | 0.1− | 2005 05 10 | 379 | 0.4+ | 0.1+ | 1999 05 30 | 726 | 0.3− | 1.0+ | 2002 05 15 | 557 | 0.1+ | 0.2+ | 2005 05 21 | 084 | 0.2+ | 0.0 |
| 1999 05 20 | 628 | 0.1+ | 0.1+ | 2002 05 05 | 704 | 0.1+ | 0.0 | 2005 05 10 | 379 | 0.0 | 0.0 | 1999 05 30 | 726 | 0.2+ | 0.6+ | 2002 05 15 | 557 | 0.1+ | 0.1+ | 2005 05 21 | 084 | 0.2+ | 0.1− |
| 1999 05 22 | 628 | 0.5+ | 0.1+ | 2002 05 05 | 704 | 0.2+ | 0.1− | 2005 05 10 | 379 | 0.1+ | 0.3+ | 1999 05 30 | 726 | 0.1− | 0.3+ | 2002 05 15 | 557 | 0.1+ | 0.1+ | 2005 05 22 | 084 | 0.2+ | 0.2− |
| 1999 05 22 | 628 | 0.4+ | 0.4− | 2002 05 05 | 704 | 0.1+ | 0.3− | 2005 05 10 | 379 | 0.1+ | 0.2+ | 1999 05 30 | 726 | 0.6− | 0.8− | 2002 05 16 | 198 | 0.3+ | 0.5+ | 2005 05 22 | 084 | 0.1+ | 0.2+ |
| 1999 05 22 | 628 | 0.0 | 0.1+ | 2002 05 06 | 084 | 0.2+ | 0.2+ | 2005 05 10 | 379 | 0.1+ | 0.3+ | 1999 05 30 | 121 | 0.6+ | 0.2− | 2002 05 16 | 198 | 0.2+ | 0.3+ | 2005 05 23 | 699 | 0.5+ | 0.4− |
| 1999 05 23 | 726 | 0.5+ | 0.2− | 2002 05 07 | 557 | 0.0 | 0.1+ | 2005 05 12 | 084 | 0.1− | 0.7− | 1999 05 30 | 151 | 1.0+ | 0.9− | 2002 05 16 | 198 | 0.2+ | 0.2+ | 2005 05 23 | 699 | 0.3+ | 0.4− |
| 1999 05 23 | 726 | 0.2+ | 0.7− | 2002 05 07 | 557 | 0.1− | 0.1− | 2005 05 12 | 084 | 0.6− | 0.6+ | 1999 05 30 | 151 | 0.5− | 0.5− | 2002 05 16 | 557 | 0.0 | 0.2− | 2005 05 23 | 699 | 0.2+ | 0.4− |
| 1999 05 23 | 726 | 0.0 | 0.8− | 2002 05 07 | 557 | 0.1− | 0.0 | 2005 05 12 | J71 | 0.1− | 0.0 | 1999 05 30 | 151 | 0.1+ | 0.6+ | 2002 05 16 | 557 | 0.0 | 0.1− | 2005 05 23 | 699 | 0.3+ | 0.3− |
| 1999 05 23 | 610 | 0.9− | 0.0 | 2002 05 08 | 557 | 0.1− | 0.0 | 2005 05 12 | J71 | 0.2− | 0.2− | 1999 05 30 | 151 | 0.1− | 0.1+ | 2002 05 17 | 557 | 0.0 | 0.1− | 2005 05 24 | 699 | 0.2− | 0.1− |
| 1999 05 23 | 610 | 0.7− | 0.1− | 2002 05 08 | 557 | 0.2− | 0.0 | 2005 05 12 | J71 | 0.3− | 0.3+ | 1999 05 30 | 151 | 0.7+ | 0.0 | 2002 05 17 | 198 | 0.3+ | 0.1+ | 2005 05 24 | 699 | 0.3+ | 0.1− |
| 1999 05 23 | 610 | 0.7− | 0.0 | 2002 05 08 | 557 | 0.2− | 0.0 | 2005 05 14 | 084 | 0.1− | 0.2− | 1999 05 30 | 121 | 0.7+ | 0.1− | 2002 05 17 | 198 | 0.2+ | 0.0 | 2005 05 24 | 699 | 0.6− | 0.1− |
| 1999 05 23 | 610 | 0.6− | 0.1− | 2002 05 08 | 379 | 0.0 | 0.2− | 2005 05 14 | 084 | 0.1− | 0.1+ | 1999 05 30 | 121 | 0.3+ | 0.2− | 2002 05 17 | 198 | 0.2+ | 0.4+ | 2005 05 24 | 699 | 0.0 | 0.0 |
| 1999 05 23 | 610 | 0.4− | 0.1− | 2002 05 08 | 379 | 0.3+ | 0.0 | 2005 05 14 | 084 | 0.1− | 0.1+ | 1999 05 30 | 121 | 0.7+ | 0.0 | 2002 05 17 | 198 | 0.1+ | 0.3+ | 2005 05 25 | 379 | 0.1− | 0.4− |
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| 1999 05 23 | 046 | 0.2+ | 0.4− | 2002 05 08 | 379 | 0.0 | 0.1+ | 2005 05 14 | 084 | 0.1− | 0.0 | 1999 06 02 | 118 | 0.2+ | 0.1− | 2002 05 17 | 198 | 0.3+ | 0.1− | 2005 05 25 | 379 | 0.5+ | 0.1− |
| 1999 05 23 | 046 | 0.0 | 0.0 | 2002 05 08 | 557 | 0.3+ | 0.0 | 2005 05 14 | 084 | 0.2− | 0.0 | 1999 06 02 | 118 | 0.2+ | 0.0 | 2002 05 17 | 198 | 0.2+ | 0.2+ | 2005 05 25 | 379 | 0.4+ | 0.2+ |
| 1999 05 24 | 151 | 0.3+ | 0.8− | 2002 05 08 | 198 | 0.2+ | 0.9+ | 2005 05 14 | 084 | 0.4+ | 0.1+ | 1999 06 04 | 704 | 0.3− | 0.3− | 2002 05 17 | 198 | 0.3+ | 0.1+ | 2005 05 25 | 084 | 0.1+ | 0.2+ |
| 1999 05 24 | 151 | 0.1+ | 0.7− | 2002 05 08 | 198 | 0.1− | 0.0 | 2005 05 14 | 084 | 0.1− | 0.1− | 1999 06 04 | 704 | 0.2+ | 0.4− | 2002 05 17 | 198 | 0.2+ | 0.0 | 2005 05 25 | 084 | 0.1− | 0.1− |
| 1999 05 24 | 151 | 0.1+ | 1.2− | 2002 05 08 | 198 | 0.3− | 0.7− | 2005 05 14 | 084 | 0.1+ | 0.2− | 1999 06 04 | 704 | 0.3+ | 0.0 | 2002 05 17 | 198 | 0.3+ | 0.2+ | 2005 05 26 | H45 | 0.3+ | 0.1− |
| 1999 05 24 | 151 | 0.3+ | 1.3− | 2002 05 08 | 557 | 0.2+ | 0.1− | 2005 05 14 | 084 | 0.0 | 0.2− | 1999 06 04 | 704 | 0.4− | 0.1− | 2002 05 17 | 198 | 0.1+ | 0.3+ | 2005 05 26 | H45 | 0.3− | 0.2+ |
| 1999 05 24 | 151 | 0.1+ | 1.1− | 2002 05 08 | 557 | 0.1− | 0.0 | 2005 05 14 | 084 | 0.0 | 0.2− | 1999 06 04 | 704 | 0.0 | 0.6− | 2002 05 19 | 939 | 1.4+ | 0.5− | 2005 05 26 | H45 | 0.0 | 0.2+ |
| 1999 05 24 | 151 | 0.1+ | 0.8− | 2002 05 08 | 557 | 0.1− | 0.1+ | 2005 05 14 | 084 | 0.2+ | 0.0 | 1999 06 04 | 360 | 0.0 | 0.2− | 2002 05 19 | 939 | 0.9+ | 0.4− | 2005 05 26 | H45 | 0.1+ | 0.2+ |
| 1999 05 24 | 118 | 0.6− | 0.8− | 2002 05 09 | 557 | 0.3− | 0.0 | 2005 05 14 | 084 | 0.2+ | 0.2− | 1999 06 04 | 360 | 0.0 | 0.3− | 2002 05 19 | 939 | 0.7+ | 0.2− | 2005 05 26 | H45 | 0.0 | 0.4− |
| 1999 05 24 | 118 | 0.5− | 0.8− | 2002 05 09 | 557 | 0.1− | 0.0 | 2005 05 14 | 084 | 0.0 | 0.0 | 1999 06 04 | 360 | 0.2− | 0.1+ | 2002 05 19 | 379 | 0.5− | 0.0 | 2005 05 26 | 379 | 0.1+ | 0.3+ |
| 1999 05 24 | 118 | 0.3− | 0.8− | 2002 05 09 | 557 | 0.1− | 0.1− | 2005 05 14 | 084 | 0.2− | 0.1+ | 1999 06 04 | 151 | 0.2+ | 0.1+ | 2002 05 19 | 379 | 0.6− | 0.2− | 2005 05 26 | 379 | 0.4+ | 0.3+ |
| 1999 05 26 | 726 | 0.1− | 0.3− | 2002 05 09 | 557 | 0.2+ | 0.1− | 2005 05 14 | 084 | 0.3+ | 0.2− | 1999 06 04 | 151 | 1.1− | 0.8− | 2002 05 20 | 379 | 0.5− | 0.0 | 2005 05 26 | 379 | 0.4+ | 0.1− |
| 1999 05 26 | 726 | 0.1− | 0.9− | 2002 05 09 | 557 | 0.1+ | 0.1+ | 2005 05 14 | 084 | 0.2+ | 0.1+ | 1999 06 04 | 151 | 0.3− | 0.4+ | 2002 05 20 | 379 | 0.2− | 0.1− | 2005 05 26 | 379 | 0.5+ | 0.2+ |
| 1999 05 26 | 726 | 0.3− | 0.4− | 2002 05 09 | 557 | 0.1+ | 0.0 | 2005 05 14 | 084 | 0.0 | 0.2− | 1999 06 04 | 151 | 1.0− | 0.2− | 2002 05 20 | 379 | 0.2− | 0.3− | 2005 05 26 | 379 | 0.5+ | 0.1+ |
| 1999 05 26 | 726 | 0.2− | 0.1+ | 2002 05 09 | 557 | 0.1+ | 0.0 | 2005 05 14 | 084 | 0.3− | 0.1− | 1999 06 04 | 151 | 0.0 | 0.3+ | 2002 05 20 | 151 | 0.2+ | 0.2− | 2005 05 27 | A30 | 1.3+ | 0.5− |
| 1999 05 26 | 151 | 0.1+ | 0.3+ | 2002 05 09 | 084 | 0.7+ | 0.5+ | 2005 05 14 | 084 | 0.1− | 0.1− | 1999 06 04 | 151 | 0.2+ | 0.1− | 2002 05 20 | 151 | 0.2+ | 0.2− | 2005 05 27 | A30 | 0.7+ | 0.3− |
| 1999 05 26 | 151 | 0.1− | 0.0 | 2002 05 10 | 557 | 0.0 | 0.1+ | 2005 05 14 | A32 | 0.0 | 0.0 | 1999 06 05 | 739 | 0.4+ | 0.3+ | 2002 05 20 | 151 | 0.3+ | 0.1− | 2005 05 27 | A30 | 0.7+ | 0.4− |
| 1999 05 26 | 151 | 0.5+ | 0.2+ | 2002 05 10 | 557 | 0.1− | 0.0 | 2005 05 14 | A32 | 0.1+ | 0.2+ | 1999 06 05 | 739 | 0.2+ | 0.4− | 2002 05 20 | 151 | 0.2+ | 0.2− | 2005 05 27 | A30 | 0.5+ | 0.5+ |
| 1999 05 26 | 151 | 0.3+ | 0.3+ | 2002 05 10 | 557 | 0.0 | 0.0 | 2005 05 14 | A32 | 0.0 | 0.1+ | 1999 06 05 | 739 | 0.9− | 1.0− | 2002 05 20 | 544 | 0.2− | 0.2+ | 2005 05 27 | A30 | 0.6+ | 0.0 |
| 1999 05 26 | 151 | 0.1− | 0.8− | 2002 05 10 | 084 | 1.2+ | 0.3− | 2005 05 14 | A32 | 0.1+ | 0.2− | 1999 06 07 | 704 | 0.2− | 0.0 | 2002 05 20 | 544 | 0.2− | 0.1− | 2005 05 27 | 048 | 0.2+ | 0.3− |
| 1999 05 26 | 151 | 0.4+ | 0.3+ | 2002 05 11 | 084 | 1.2+ | 0.3− | 2005 05 14 | A32 | 0.0 | 0.1+ | 1999 06 07 | 704 | 0.6− | 0.2+ | 2002 05 20 | 544 | 0.2− | 0.0 | 2005 05 27 | 048 | 0.1+ | 0.4− |
| 1999 05 26 | 628 | 0.1− | 0.4+ | 2002 05 12 | 212 | 0.3+ | 0.4− | 2005 05 15 | 084 | 0.0 | 0.6− | 1999 06 07 | 704 | 0.2− | 0.1+ | 2002 05 20 | 544 | 0.1+ | 0.2− | 2005 05 27 | 048 | 0.0 | 0.3− |
| 1999 05 26 | 628 | 0.1+ | 0.3+ | 2002 05 12 | 212 | 0.4+ | 0.3− | 2005 05 17 | 379 | 0.3+ | 0.3+ | 1999 06 07 | 704 | 0.0 | 0.1+ | 2002 05 20 | 544 | 0.3− | 0.2+ | 2005 05 27 | 048 | 0.3+ | 0.3− |
| 1999 05 26 | 628 | 0.0 | 0.2+ | 2002 05 12 | 557 | 0.0 | 0.1− | 2005 05 17 | 379 | 0.3+ | 0.3− | 1999 06 07 | 704 | 0.2− | 0.1− | 2002 05 20 | 544 | 0.1− | 0.0 | 2005 05 27 | 048 | 0.4+ | 0.4− |
| 1999 05 26 | 628 | 0.0 | 0.1− | 2002 05 12 | 557 | 0.0 | 0.2− | 2005 05 17 | 379 | 0.6+ | 0.1− | 1999 06 08 | 704 | 0.3− | 0.1− | 2002 05 20 | 544 | 0.2− | 0.1− | 2005 05 27 | A32 | 0.3+ | 0.4− |
| 1999 05 26 | 636 | 0.2− | 0.3+ | 2002 05 12 | 557 | 0.1+ | 0.0 | 2005 05 17 | 379 | 0.0 | 0.2+ | 1999 06 08 | 704 | 0.6− | 0.4− | 2002 05 21 | 557 | 0.3− | 0.1− | 2005 05 27 | A32 | 0.2+ | 0.5− |
| 1999 05 26 | 636 | 0.2+ | 0.3+ | 2002 05 12 | 212 | 0.1+ | 0.3− | 2005 05 18 | 127 | 0.1+ | 0.7− | 1999 06 08 | 704 | 0.5− | 0.2− | 2002 05 21 | 557 | 0.3− | 0.1− | 2005 05 27 | A32 | 0.4− | 0.2− |
| 1999 05 26 | 636 | 0.1+ | 0.5+ | 2002 05 12 | 212 | 0.1+ | 0.2− | 2005 05 18 | 127 | 0.1+ | 0.6− | 1999 06 08 | 704 | 0.5− | 0.2− | 2002 05 21 | 557 | 0.4− | 0.2− | 2005 05 27 | A32 | 0.1+ | 0.1− |
| 1999 05 27 | 726 | 0.3+ | 0.1− | 2002 05 12 | 557 | 0.1+ | 0.1− | 2005 05 18 | 127 | 0.1+ | 0.7− | 1999 06 08 | 704 | 0.5− | 0.3− | 2002 05 21 | 544 | 0.1− | 0.6− | 2005 05 27 | A32 | 0.1− | 0.1+ |
| 1999 05 27 | 726 | 0.2+ | 0.6− | 2002 05 13 | 557 | 0.1+ | 0.2− | 2005 05 18 | 127 | 0.0 | 0.5− | 1999 06 09 | 587 | 0.0 | 0.8− | 2002 05 21 | 544 | 0.2− | 0.6− | 2005 05 28 | 151 | 0.3+ | 0.0 |
| 1999 05 27 | 726 | 0.4+ | 0.1− | 2002 05 13 | 557 | 0.0 | 0.1− | 2005 05 18 | 127 | 0.2+ | 0.5− | 1999 06 09 | 587 | 0.0 | 0.9− | 2002 05 21 | 544 | 0.0 | 0.7− | 2005 05 28 | 151 | 0.2+ | 0.1+ |
| 1999 05 27 | 726 | 0.2+ | 0.1+ | 2002 05 13 | 198 | 0.5+ | 0.9+ | 2005 05 19 | 084 | 0.3+ | 0.0 | 1999 06 11 | 071 | 0.0 | 0.1− | 2002 05 21 | 544 | 0.0 | 0.8− | 2005 05 28 | 151 | 0.1+ | 0.1+ |
| 1999 05 27 | 151 | (1.5+ | 2.1−) | 2002 05 13 | 557 | 0.1+ | 0.0 | 2005 05 19 | 084 | 0.2+ | 0.3− | 1999 06 11 | 071 | 0.3+ | 0.3− | 2002 05 21 | 544 | 0.0 | 0.8− | 2005 05 28 | 151 | 0.4+ | 0.2+ |
| 1999 05 27 | 151 | (1.8+ | 3.2−) | 2002 05 13 | 198 | 0.7+ | 0.6+ | 2005 05 20 | I06 | 0.9+ | 1.4− | 1999 06 11 | 071 | 0.2+ | 0.2+ | 2002 05 21 | 557 | 0.4− | 0.1− | 2005 05 28 | 442 | 0.4− | 0.7+ |
| 1999 05 27 | 151 | 0.1− | 0.6+ | 2002 05 13 | 198 | 0.5+ | 0.6+ | 2005 05 20 | I06 | 0.5+ | 0.8− | 1999 06 11 | 071 | 1.7− | 1.8− | 2002 05 22 | 557 | 0.4− | 0.0 | 2005 05 28 | 442 | 0.2− | 0.6+ |
| 1999 05 27 | 151 | 0.0 | 0.2− | 2002 05 13 | 557 | 0.0 | 0.0 | 2005 05 20 | I06 | 0.7+ | 0.8− | 1999 06 11 | 071 | 0.6+ | 0.2− | 2002 05 22 | 557 | 0.4− | 0.1− | 2005 05 28 | 442 | (2.3+ | 0.6+) |
| 1999 05 27 | 151 | 0.5+ | 0.0 | 2002 05 13 | 557 | 0.0 | 0.1+ | 2005 05 20 | 379 | 0.6+ | 0.1− | 1999 06 19 | 151 | 0.5+ | 0.7+ | 2002 05 22 | 084 | 0.4+ | 0.2+ | 2005 05 30 | 084 | 0.1− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 19 | 151 | 0.6− | 0.9− | 2002 05 24 | 084 | 0.5+ | 0.0 | 2005 05 30 | 084 | 0.1+ | 0.2+ |
| 1999 06 19 | 151 | 0.6+ | 0.1− | 2002 05 24 | 232 | 0.7− | 0.2+ | 2005 05 30 | 084 | 0.1+ | 0.2+ |
| 1999 06 19 | 151 | 0.1+ | 0.5+ | 2002 05 24 | 939 | 0.2+ | 0.0 | 2005 05 30 | 084 | 0.1+ | 0.0 |
| 1999 06 19 | 151 | 0.0 | 1.0− | 2002 05 24 | 939 | 0.2+ | 0.2− | 2005 06 02 | A74 | 0.2− | 0.1+ |
| 1999 06 20 | 900 | 0.2− | 0.0 | 2002 05 24 | 232 | 0.4− | 0.1+ | 2005 06 02 | A74 | 0.3− | 0.0 |
| 1999 06 20 | 900 | 0.2+ | 0.1− | 2002 05 24 | 939 | 0.2+ | 0.3− | 2005 06 02 | A74 | 0.3− | 0.1+ |
| 1999 06 22 | 151 | 0.3− | 0.2+ | 2002 05 24 | 232 | 0.3+ | 0.3− | 2005 06 03 | 560 | 0.4+ | 0.1+ |
| 1999 06 22 | 151 | 0.4− | 0.1+ | 2002 05 25 | 232 | 0.6− | 0.1+ | 2005 06 03 | 560 | 0.5+ | 0.0 |
| 1999 06 22 | 151 | 0.6− | 0.3+ | 2002 05 25 | 939 | 0.1− | 1.2+ | 2005 06 03 | 560 | 0.6+ | 0.1+ |
| 1999 06 22 | 151 | 0.2− | 0.2− | 2002 05 25 | 939 | 0.1− | 1.1+ | 2005 06 03 | A76 | 0.2− | 0.2+ |
| 1999 06 22 | 151 | 0.4− | 0.4− | 2002 05 25 | 939 | 0.2− | 1.0+ | 2005 06 03 | A76 | 0.6+ | 0.5− |
| 1999 06 25 | 046 | 0.2+ | 0.1− | 2002 05 26 | 084 | 0.8+ | 0.8+ | 2005 06 03 | A76 | 0.0 | 0.1− |
| 1999 06 25 | 046 | 0.4+ | 0.1+ | 2002 05 28 | 379 | 0.0 | 0.1− | 2005 06 06 | I06 | 0.5+ | 0.0 |
| 1999 06 25 | 046 | 0.3+ | 0.0 | 2002 05 28 | 379 | 0.1+ | 0.0 | 2005 06 06 | I06 | 0.5+ | 0.0 |
| 1999 06 25 | 046 | 0.6+ | 0.2+ | 2002 05 28 | 379 | 0.1− | 0.1− | 2005 06 06 | I06 | 0.6+ | 0.3− |
| 1999 06 28 | 151 | 0.5− | 1.1+ | 2002 05 28 | 379 | 0.3+ | 0.1− | 2005 06 06 | A53 | 0.5+ | 0.9+ |
| 1999 06 28 | 151 | 0.8− | 0.8− | 2002 05 28 | 379 | 0.3+ | 0.0 | 2005 06 06 | A53 | 0.5+ | 0.4+ |
| 1999 06 28 | 151 | 0.3− | 0.6− | 2002 05 30 | 704 | 0.5− | 0.3+ | 2005 06 06 | A53 | 0.8+ | 0.5+ |
| 1999 06 28 | 151 | 0.1+ | 0.1− | 2002 05 30 | 704 | 0.6− | 0.4+ | 2005 06 06 | A53 | 1.1+ | 0.3+ |
| 1999 06 28 | 151 | 1.0− | 0.8− | 2002 05 30 | 704 | 0.5− | 0.3+ | 2005 06 08 | 233 | 1.4− | 0.6+ |
| 1999 06 29 | 118 | 0.8+ | 0.3+ | 2002 05 30 | 704 | 0.6− | 0.2+ | 2005 06 08 | 233 | (2.3− | 0.1+) |
| 1999 06 29 | 118 | 0.6+ | 0.4+ | 2002 05 30 | 704 | 0.4− | 0.2+ | 2005 06 08 | 233 | (1.9− | 0.6+) |
| 1999 07 01 | 151 | 0.6+ | 0.4− | 2002 05 30 | 084 | 0.1+ | 0.2− | 2005 06 08 | A74 | 0.2− | 0.1+ |
| 1999 07 01 | 151 | 0.8+ | 0.7+ | 2002 06 01 | 939 | 0.2− | 0.2+ | 2005 06 08 | A74 | 0.3− | 0.1− |
| 1999 07 01 | 151 | 0.3+ | 0.1− | 2002 06 01 | 939 | 0.1− | 0.2+ | 2005 06 09 | A74 | 0.2− | 0.2+ |
| 1999 07 01 | 151 | 0.0 | 0.3+ | 2002 06 01 | 939 | 0.1+ | 0.1+ | 2005 06 09 | H45 | 0.1− | 0.0 |
| 1999 07 01 | 151 | 0.5+ | 0.2− | 2002 06 03 | 379 | 0.3+ | 0.5+ | 2005 06 09 | H45 | 0.1+ | 0.4+ |
| 1999 07 01 | 151 | 0.1− | 0.3− | 2002 06 03 | 379 | 0.5− | 0.1− | 2005 06 09 | H45 | 0.1− | 0.1+ |
| 1999 07 02 | 151 | 1.1− | 1.5− | 2002 06 03 | 379 | 0.1+ | 0.0 | 2005 06 09 | H45 | 0.1+ | 0.0 |
| 1999 07 02 | 151 | 2.0− | 0.3− | 2002 06 03 | 379 | 0.3+ | 0.1+ | 2005 06 09 | H45 | 0.0 | 0.2− |
| 1999 07 02 | 151 | 0.9− | 0.7− | 2002 06 20 | 704 | 0.2+ | 0.1+ | 2005 06 11 | A50 | 0.4+ | 0.1− |
| 1999 07 02 | 151 | 0.7− | 1.2− | 2002 06 20 | 704 | 0.2+ | 0.1− | 2005 06 11 | A50 | 0.4+ | 0.1− |
| 1999 07 02 | 151 | (2.1− | 0.7+) | 2002 06 20 | 704 | 0.1+ | 0.5+ | 2005 06 11 | A50 | 0.2+ | 0.2− |
| 1999 07 11 | 846 | 0.5+ | 0.1+ | 2002 06 20 | 704 | 0.3+ | 0.3+ | 2005 06 11 | A50 | 0.5+ | 0.1+ |
| 1999 07 11 | 846 | 1.1+ | 0.3+ | 2002 06 20 | 704 | 0.7+ | 0.6+ | 2005 06 11 | A50 | (0.7+ | 2.4+) |
| 1999 07 12 | 846 | 0.1+ | 0.6+ | 2002 06 21 | 939 | 1.0+ | 0.3− | 2005 06 14 | 704 | 0.1+ | 0.4+ |
| 1999 07 12 | 846 | 0.2+ | 0.7+ | 2002 06 21 | 939 | 0.4+ | 0.1− | 2005 06 14 | 704 | (0.1+ | 1.6+) |
| 1999 07 12 | 846 | 0.4+ | 1.2+ | 2002 06 21 | 939 | 0.0 | 0.1+ | 2005 06 14 | 704 | 0.1+ | 1.1+ |
| 1999 07 14 | 587 | 0.3+ | 0.2− | 2002 06 22 | 198 | 0.2+ | 0.9− | 2005 06 14 | 704 | 0.1+ | 1.1+ |
| 1999 07 14 | 587 | 0.5+ | 0.0 | 2002 06 22 | 198 | 0.0 | 0.7− | 2005 06 14 | 704 | 0.1− | 1.0+ |
| 1999 07 16 | 151 | 0.7+ | 0.7− | 2002 06 22 | 198 | 0.0 | 0.7− | 2005 06 17 | 750 | 0.4+ | 0.1− |
| 1999 07 16 | 151 | 0.5+ | 0.6− | 2002 06 22 | 939 | 0.0 | 0.2− | 2005 06 17 | 750 | 0.2+ | 0.6+ |
| 1999 07 16 | 151 | 0.2− | 0.9− | 2002 06 22 | 941 | 0.2− | 0.5− | 2005 06 17 | 750 | 0.3+ | 0.7+ |
| 1999 07 16 | 151 | 0.2− | 0.9− | 2002 06 22 | 939 | 0.1+ | 0.3+ | 2005 06 17 | 157 | 0.1+ | 0.3− |
| 1999 07 16 | 151 | 0.3− | 0.5− | 2002 06 22 | 941 | 0.2− | 0.2+ | 2005 06 17 | 157 | 0.4+ | 0.4− |
| 1999 07 18 | 595 | 0.5+ | 1.0− | 2002 06 22 | 941 | 0.1+ | 0.1+ | 2005 06 17 | 157 | 0.2+ | 0.4− |
| 1999 07 18 | 595 | 0.2+ | 0.9− | 2002 06 22 | 941 | 0.3+ | 0.5− | 2005 06 17 | 157 | 0.2+ | 0.4− |
| 1999 07 18 | 595 | 0.3+ | 0.7− | 2002 06 22 | 939 | 0.5+ | 0.7+ | 2005 06 18 | 750 | 0.5+ | 0.4+ |
| 1999 07 24 | 151 | 1.1− | 0.3+ | 2002 06 22 | 941 | 0.7+ | 0.4− | 2005 06 18 | 750 | 0.4+ | 0.3+ |
| 1999 07 24 | 151 | 0.5− | 0.6− | 2002 06 22 | 941 | 0.3+ | 0.0 | 2005 06 20 | 448 | 0.2+ | 0.0 |
| 1999 07 24 | 151 | 0.3− | 0.0 | 2002 06 22 | 232 | (4.3− | 5.0+) | 2005 06 20 | 448 | 0.2+ | 0.1+ |
| 1999 07 24 | 151 | 0.9− | 0.8− | 2002 06 22 | 232 | (4.0− | 5.2+) | 2005 06 20 | 448 | 0.1+ | 0.0 |
| 1999 07 24 | 151 | 1.3− | 1.2− | 2002 06 22 | 232 | (3.0− | 5.6+) | 2005 06 20 | 448 | 0.0 | 0.2+ |
| 1999 07 25 | 859 | 0.5+ | 0.7− | 2002 06 22 | 232 | (3.0− | 5.1+) | 2005 06 20 | 448 | 0.0 | 0.2+ |
| 1999 07 25 | 859 | 0.2+ | 0.2+ | 2002 06 30 | 704 | 0.4+ | 0.3+ | 2005 06 23 | A32 | 0.5+ | 0.4+ |
| 1999 07 25 | 859 | 1.0+ | 0.2− | 2002 06 30 | 704 | 0.2+ | 0.1+ | 2005 06 23 | A32 | 0.1− | 0.5+ |
| 1999 07 25 | 118 | 0.5+ | 0.7+ | 2002 06 30 | 704 | 0.4+ | 0.4+ | 2005 06 23 | A32 | 0.1+ | 0.3− |
| 1999 07 25 | 118 | 0.1+ | 0.8+ | 2002 06 30 | 704 | 0.2+ | 0.3+ | 2005 06 23 | A32 | 0.2− | 0.3− |
| 1999 07 25 | 118 | 0.6+ | 0.7+ | 2002 06 30 | 704 | 0.7+ | 0.2+ | 2005 06 23 | A32 | 0.5+ | 0.2− |
| 1999 07 25 | 151 | 0.9+ | 1.1+ | 2002 07 01 | 704 | 0.1+ | 0.1+ | 2005 07 02 | 750 | 0.1+ | 0.4− |
| 1999 07 25 | 151 | 0.1+ | 1.6+ | 2002 07 01 | 704 | 0.0 | 0.0 | 2005 07 02 | 750 | 0.0 | 0.3− |
| 1999 07 25 | 151 | 0.4− | 0.9+ | 2002 07 01 | 704 | 0.0 | 0.1+ | 2005 07 02 | 750 | 0.1+ | 0.1− |
| 1999 07 25 | 151 | 0.5− | 0.4+ | 2002 07 01 | 704 | 0.1+ | 0.2+ | 2005 07 08 | 750 | 0.1+ | 0.1− |
| 1999 07 26 | 151 | 0.5− | 0.4+ | 2002 07 01 | 704 | 0.3+ | 0.1+ | 2005 07 08 | 750 | 0.0 | 0.2− |
| 1999 07 26 | 151 | 1.1+ | 1.4+ | 2002 07 02 | 704 | 0.4+ | 0.0 | 2005 07 08 | 750 | 0.1+ | 0.0 |
| 1999 07 26 | 151 | 0.2− | 0.4− | 2002 07 02 | 704 | 0.4+ | 0.1− | 2005 07 08 | A35 | 0.1+ | 0.2− |
| 1999 07 26 | 151 | 0.3+ | 0.9+ | 2002 07 02 | 704 | 0.4+ | 0.1+ | 2005 07 08 | A35 | 0.1+ | 0.2− |
| 1999 07 26 | 595 | 0.0 | 0.9+ | 2002 07 02 | 704 | 0.3+ | 0.0 | 2005 07 08 | A35 | 0.1+ | 0.1− |
| 1999 07 26 | 595 | 0.4+ | 0.8+ | 2002 07 02 | 704 | 0.5+ | 0.0 | 2005 07 12 | J93 | 0.7+ | 0.6− |
| 1999 07 26 | 595 | 0.4+ | 0.4+ | 2002 07 03 | 939 | 0.0 | 0.4+ | 2005 07 12 | J93 | 0.8+ | 0.2+ |
| 1999 07 29 | 151 | 0.9− | 1.6− | 2002 07 03 | 939 | 0.1− | 0.2+ | 2005 07 12 | J93 | 0.5+ | 0.0 |
| 1999 07 29 | 151 | 0.9+ | 0.2− | 2002 07 03 | 939 | 0.2− | 0.5+ | 2005 07 15 | 704 | (2.2+ | 0.1−) |
| 1999 07 29 | 151 | 1.5+ | 1.2− | 2002 07 07 | 939 | 0.3− | 0.6+ | 2005 07 15 | 704 | (1.8+ | 0.2−) |
| 1999 07 29 | 151 | 1.3− | 0.1− | 2002 07 07 | 939 | 0.2− | 0.5+ | 2005 07 15 | 704 | (1.8+ | 0.4−) |
| 1999 07 31 | 540 | 0.0 | 1.2+ | 2002 07 07 | 939 | 0.1− | 0.0 | 2005 07 15 | 704 | (1.7+ | 0.1−) |
| 1999 07 31 | 540 | 0.4+ | 0.4+ | 2002 07 10 | 198 | 0.7+ | 0.3− | 2005 07 15 | 704 | 1.1+ | 0.2− |
| 1999 07 31 | 540 | 0.3− | 0.3+ | 2002 07 10 | 198 | 0.4+ | 0.0 | 2005 07 20 | 750 | 0.2+ | 0.3− |
| 1999 07 31 | 540 | 1.5+ | 0.8+ | 2002 07 10 | 198 | 0.0 | 0.1− | 2005 07 20 | 750 | 0.1+ | 0.3− |
| 1999 08 02 | 151 | (3.1+ | 0.2−) | 2002 07 10 | 198 | 0.2− | 0.0 | 2005 07 30 | 160 | 0.1+ | 0.1− |
| 1999 08 02 | 151 | 0.7+ | 0.1+ | 2002 07 20 | 468 | (1.7+ | 0.9−) | 2005 07 30 | 160 | 0.3+ | 0.0 |
| 1999 08 02 | 151 | 0.6+ | 0.4− | 2002 07 20 | 468 | 1.2+ | 0.3+ | 2005 07 30 | 160 | 0.4+ | 0.1− |
| 1999 08 02 | 151 | 0.1+ | 0.2− | 2002 07 20 | 468 | (2.3+ | 1.6−) | 2005 07 30 | 160 | 0.1+ | 0.1− |
| 1999 08 02 | 151 | 1.5− | 0.4+ | 2002 07 22 | 939 | 0.5+ | 0.1− | 2005 08 01 | A30 | 0.0 | 0.3− |
| 1999 08 02 | 151 | 0.6+ | 1.2− | 2002 07 22 | 939 | 0.8+ | 0.1+ | 2005 08 01 | A30 | 0.0 | 0.2− |
| 1999 08 03 | 151 | 1.2+ | 0.1− | 2002 07 22 | 939 | 1.0+ | 0.3− | 2005 08 01 | A30 | 0.0 | 0.3− |
| 1999 08 03 | 151 | 0.2+ | 1.0+ | 2002 07 24 | 939 | 1.3+ | 0.8− | 2005 08 01 | A30 | 0.0 | 0.2− |
| 1999 08 03 | 151 | 0.7+ | 0.3+ | 2002 07 24 | 939 | 0.3+ | 0.2− | 2005 08 01 | A30 | 0.0 | 0.2− |
| 1999 08 04 | 046 | 0.2− | 0.6+ | 2002 07 24 | 939 | 0.8− | 0.0 | 2005 08 01 | A30 | 0.0 | 0.1− |
| 1999 08 04 | 046 | 0.1− | 0.6+ | 2002 07 25 | 939 | (2.0+ | 0.8+) | 2005 08 01 | 084 | 0.2− | 0.0 |
| 1999 08 04 | 046 | 0.2− | 0.4+ | 2002 07 25 | 939 | 1.0+ | 0.8+ | 2005 08 01 | 084 | 0.5+ | 0.2− |
| 1999 08 04 | 046 | 0.0 | 0.5+ | 2002 07 25 | 939 | 0.0 | 0.7+ | 2005 08 08 | 084 | 0.1+ | 0.0 |
| 1999 08 06 | 046 | 0.3+ | 0.2+ | 2002 07 26 | 939 | 0.8− | 0.2− | 2005 08 08 | 084 | 0.2+ | 0.2+ |
| 1999 08 06 | 046 | 0.2+ | 0.3+ | 2002 07 26 | 939 | 0.5+ | 0.5+ | 2005 08 17 | 113 | 1.1+ | 0.1+ |
| 1999 08 06 | 046 | 0.2+ | 0.2+ | 2002 07 26 | 939 | 0.3+ | 0.9+ | 2005 08 17 | 113 | 0.5+ | 0.2+ |
| 1999 08 06 | 046 | 0.1− | 0.6+ | 2002 08 09 | 642 | 1.0− | 0.7+ | 2005 08 17 | 113 | 0.9+ | 0.6+ |
| 1999 08 07 | 151 | 0.0 | 0.3+ | 2002 08 09 | 642 | 0.4− | 1.0− | 2006 04 09 | 703 | 0.2− | 0.1+ |
| 1999 08 07 | 151 | 0.9− | 0.1+ | 2002 08 09 | 642 | (0.5− | 1.8+) | 2006 04 09 | 703 | 0.4− | 0.2− |
| 1999 08 07 | 151 | 0.3+ | 0.3+ | 2002 08 11 | 642 | 1.0− | 0.0 | 2006 04 09 | 703 | 0.4− | 0.2− |
| 1999 08 09 | 846 | 1.5− | 2.0− | 2002 08 11 | 642 | 0.5+ | 1.1− | 2006 04 09 | 703 | 0.8+ | 0.2+ |

**(137171)∗ 1999 HM$_7$**

Discovered 1999 Apr. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.61162 | | (2000.0) | | | |
| $n$ | 0.18396601 | $\omega$ | 252.11311 | | +0.28693973 | +0.94311879 |
| $a$ | 3.0618059 | $\Omega$ | 35.96241 | | −0.73446613 | +0.32912028 |
| $e$ | 0.0751651 | $i$ | 16.61371 | | −0.61500007 | +0.04697650 |
| $P$ | 5.36 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 691 | 0.4− | 0.1− | 2004 03 23 | 704 | 1.0− | 0.7− | 2006 09 20 | 644 | 0.3− | 0.4+ |
| 1999 04 11 | 691 | 0.5− | 0.5+ | 2004 03 23 | 704 | 1.0− | 0.8− | 2006 09 20 | 644 | 0.1− | 0.4+ |
| 1999 04 11 | 691 | (2.6− | 3.0+) | 2004 03 23 | 704 | 0.0 | 0.7− | 2006 09 21 | 699 | 0.4+ | 0.4+ |
| 1999 04 19 | 691 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 0.7+ | 0.2+ | 2006 09 21 | 699 | 0.8− | 1.1+ |
| 1999 04 19 | 691 | 0.0 | 0.1+ | 2004 03 25 | 704 | 0.7+ | 0.8+ | 2006 09 21 | 699 | 1.1− | 1.2+ |
| 1999 04 19 | 691 | 0.0 | 0.1+ | 2004 03 25 | 704 | (1.7+ | 0.5+) | 2006 09 21 | 699 | 0.7− | 0.8+ |
| 1999 04 21 | 691 | 0.5+ | 0.4− | 2004 03 25 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 699 | 0.5− | 0.7+ |
| 1999 04 21 | 691 | 0.2+ | 0.2+ | 2004 03 26 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.8+ | 0.7+ |
| 1999 04 21 | 691 | 0.5+ | 0.1+ | 2004 03 26 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.8+ |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2004 03 26 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 0.8+ | 1.0+ |
| 2001 09 20 | 704 | 0.1− | 0.4− | 2004 03 26 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.9− | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.7+ | 0.9+ | 2006 09 26 | 704 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2004 03 28 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 704 | (2.2− | 0.2+) |
| 2001 10 19 | 644 | 0.2− | 0.5+ | 2004 03 28 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 704 | 0.2+ | 0.6− |
| 2001 10 19 | 644 | 0.3− | 0.3+ | 2004 03 28 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.2+ | 0.5+ |
| 2001 10 19 | 644 | 0.2− | 0.4+ | 2004 03 28 | 704 | 0.1− | 0.6+ | 2006 09 26 | 703 | 1.1− | 0.8− |
| 2001 10 21 | 704 | 0.3− | 0.2− | 2004 03 28 | 703 | (1.7+ | 0.4+) | 2006 09 26 | 703 | 0.8− | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.2− | 2004 03 28 | 703 | 0.9+ | 0.3+ | 2006 09 26 | 703 | 1.0− | 0.3− |
| 2001 10 21 | 704 | 0.6− | 0.4− | 2004 03 28 | 703 | 1.1− | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | 1.2− | 0.7− | 2004 03 28 | 703 | 0.2+ | 1.1+ | 2006 09 29 | 699 | 0.4− | 0.7+ |
| 2001 10 21 | 704 | 0.6− | 0.4+ | 2004 03 29 | 704 | 0.5+ | 1.0+ | 2006 09 29 | 699 | 0.4+ | 0.0 |
| 2001 10 26 | 644 | 0.2+ | 0.5+ | 2004 03 29 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.7+ |
| 2001 10 26 | 644 | 0.1+ | 0.6+ | 2004 03 29 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.3+ |
| 2001 10 26 | 644 | 0.2+ | 0.7+ | 2004 03 29 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2001 11 10 | 704 | 0.0 | 0.3+ | 2004 03 29 | 704 | 0.7+ | 1.1+ | 2006 09 30 | 703 | 0.3+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.3+ | 0.6+ | 2004 03 30 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2001 11 10 | 704 | 0.1− | 0.3+ | 2004 03 30 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.8− |
| 2001 11 10 | 704 | 0.9− | 0.3+ | 2004 03 30 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2001 11 10 | 704 | 0.5− | 0.5+ | 2004 04 15 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 2001 11 19 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 704 | 1.5+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2001 11 19 | 704 | 0.3− | 0.7+ | 2004 04 15 | 704 | 1.1+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2001 11 19 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 704 | (1.5− | 0.8+) | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2001 11 19 | 704 | 0.8+ | 1.0+ | 2004 04 23 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2001 11 19 | 704 | 0.2− | 0.2+ | 2004 04 23 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2001 11 24 | 704 | 0.1+ | 1.2− | 2004 04 23 | 704 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 11 24 | 704 | (1.1+ | 2.3−) | 2005 06 01 | E12 | 1.1− | 1.4+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2001 11 24 | 704 | (0.4+ | 1.9−) | 2005 06 01 | E12 | 0.8− | 0.7+ | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2001 11 24 | 704 | 0.8− | 1.1− | 2005 06 01 | E12 | (0.9− | 1.5−) | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2001 12 20 | 644 | 0.3+ | 0.6+ | 2005 06 01 | E12 | (0.2− | 1.6+) | 2006 10 22 | 703 | 1.0+ | 0.1− |
| 2001 12 20 | 644 | 0.1+ | 0.8+ | 2005 06 01 | E12 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 1.3− |
| 2001 12 20 | 644 | 0.1+ | 0.5+ | 2005 06 01 | E12 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.4+ |
| 2004 03 15 | 704 | 0.4+ | 0.3+ | 2005 06 01 | E12 | 1.0+ | 0.8+ | 2006 11 23 | G96 | 0.3− | 0.3+ |
| 2004 03 15 | 704 | 0.7− | 1.3+ | 2005 06 01 | E12 | 0.5+ | 1.2+ | 2006 11 23 | G96 | 0.0 | 0.4+ |
| 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 11 23 | G96 | 0.5− | 0.3+ |
| 2004 03 15 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 11 23 | G96 | 0.5+ | 0.5+ |
| 2004 03 15 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.5− | 0.3+ |
| 2004 03 23 | 704 | 0.1− | 1.1− | 2006 09 18 | 703 | 0.3+ | 1.1− | 2006 11 23 | G96 | 0.3+ | 0.5+ |
| 2004 03 23 | 704 | 0.2− | 0.5− | 2006 09 20 | 644 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.4+ |

**(137172)∗ 1999 HJ$_9$**

Discovered 1999 Apr. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 141.83105 | | (2000.0) | | | |
| $n$ | 0.19277044 | $\omega$ | 214.99479 | | −0.55992152 | +0.82797151 |
| $a$ | 2.9678533 | $\Omega$ | 21.00753 | | −0.73920221 | −0.48238518 |
| $e$ | 0.1572291 | $i$ | 4.93501 | | −0.37425658 | −0.28595054 |
| $P$ | 5.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 910 | 1.6+ | 0.5− | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2004 04 24 | E12 | 0.1+ | 0.7+ |
| 1999 03 21 | 910 | 1.7+ | 0.3− | 2004 03 27 | 704 | 0.1− | 0.9+ | 2004 04 24 | E12 | 0.1− | 0.8+ |
| 1999 03 21 | 910 | 1.3+ | 0.4− | 2004 03 29 | 691 | 0.0 | 0.0 | 2004 04 24 | E12 | 0.5− | 0.0 |
| 1999 04 11 | 691 | 0.0 | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.0 | 2005 09 01 | 644 | 0.7− | 1.3+ |
| 1999 04 11 | 691 | 0.1+ | 0.3+ | 2004 03 29 | 691 | 0.1− | 0.0 | 2005 09 01 | 644 | 0.5− | 1.1+ |
| 1999 04 11 | 691 | 0.3− | 0.5+ | 2004 03 31 | 291 | 0.1+ | 0.1+ | 2005 09 01 | 644 | 0.0 | 1.2+ |
| 1999 04 15 | 704 | 0.2− | 1.1+ | 2004 03 31 | 291 | 0.2+ | 0.1+ | 2006 07 21 | G96 | 0.7− | 0.1− |
| 1999 04 15 | 704 | 0.0 | 1.4− | 2004 03 31 | 291 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 1.1− | 0.6+ |
| 1999 04 15 | 704 | 1.1+ | 0.9− | 2004 04 11 | 703 | 0.4− | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.0 |
| 1999 04 15 | 704 | (4.2− | 0.3+) | 2004 04 11 | 703 | 0.5+ | 1.4+ | 2006 07 21 | G96 | 0.4+ | 0.5+ |
| 1999 04 17 | 704 | 1.8− | 0.2+ | 2004 04 11 | 703 | 0.7− | 1.4+ | 2006 10 16 | 691 | 0.3− | 0.2+ |
| 1999 04 17 | 704 | 0.3− | 0.2− | 2004 04 11 | 703 | 0.6− | 1.0+ | 2006 10 16 | 691 | 0.2− | 0.0 |
| 1999 04 17 | 704 | 1.8− | 0.1− | 2004 04 12 | 699 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 1999 04 17 | 704 | 0.5− | 0.8− | 2004 04 12 | 699 | 1.0+ | 0.8− | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 1999 04 18 | 704 | 0.7+ | 1.0+ | 2004 04 12 | 699 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 1999 04 18 | 704 | 0.9+ | 1.4− | 2004 04 12 | 699 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 1999 04 18 | 704 | 1.6+ | 0.6− | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 1999 04 22 | 691 | 0.3− | 0.6+ | 2004 04 20 | 691 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.4+ |
| 1999 04 22 | 691 | (3.3+ | 1.8+) | 2004 04 20 | 691 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 1999 04 22 | 691 | 0.2− | 0.0 | 2004 04 21 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.9+ | 0.9− | 2004 04 21 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 2004 03 18 | 704 | 0.6− | 0.9− | 2004 04 21 | 704 | 0.1+ | 0.7+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2004 03 18 | 704 | (0.3+ | 1.6−) | 2004 04 21 | 704 | 0.8+ | 0.5+ | 2006 11 21 | 691 | 0.4− | 0.0 |
| 2004 03 18 | 704 | 0.3+ | 0.4+ | 2004 04 21 | 704 | 0.5+ | 0.6− | 2006 11 21 | 691 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | 0.4− | 0.8+ | 2004 04 23 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.4+ |
| 2004 03 27 | 704 | 0.2+ | 0.7+ | 2004 04 23 | 691 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.2− | 0.6+ |
| 2004 03 27 | 704 | 0.4+ | 0.5+ | 2004 04 23 | 691 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2004 03 27 | 704 | 0.0 | 0.3+ | 2004 04 24 | E12 | (1.6− | 0.5+) | 2006 11 21 | 691 | 0.1+ | 0.5− |

**(137173)∗ 1999 JY$_4$ = 2002 FZ$_6$**

Discovered 1999 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 29030)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.32484 | | (2000.0) | | | |
| $n$ | 0.30198832 | $\omega$ | 248.39338 | | +0.13749521 | +0.98748456 |
| $a$ | 2.2002699 | $\Omega$ | 29.83430 | | −0.84162616 | +0.15760162 |
| $e$ | 0.2456072 | $i$ | 8.93427 | | −0.52226475 | +0.00599840 |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 1.4+ | 0.1− | 2002 03 31 | 557 | 0.4− | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.3+ |
| 1999 05 10 | 704 | 0.4+ | 0.1− | 2002 04 01 | 649 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.3− | 0.7+ |
| 1999 05 10 | 704 | 0.5− | 0.2− | 2002 04 01 | 649 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 1.2+ | 0.8+ |
| 1999 05 10 | 704 | (3.0+ | 0.2−) | 2002 04 01 | 649 | 0.6− | 0.1+ | 2006 09 26 | 704 | (2.1+ | 1.6+) |
| 1999 05 10 | 704 | 1.4+ | 0.4− | 2002 04 01 | 644 | 0.5+ | 0.5+ | 2006 09 26 | 704 | (1.7+ | 0.9+) |
| 1999 05 13 | 704 | 0.1+ | 0.8+ | 2002 04 01 | 644 | 0.8+ | 0.3+ | 2006 09 26 | 704 | (2.2+ | 1.3+) |
| 1999 05 13 | 704 | 0.7+ | 1.7+ | 2002 04 01 | 644 | 0.6+ | 0.5+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 1999 05 13 | 704 | 0.1− | 1.6+ | 2002 04 02 | 644 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 1999 05 13 | 704 | (2.4+ | 1.4−) | 2002 04 02 | 644 | 0.2+ | 0.7+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 1999 05 13 | 704 | 0.2+ | 1.0+ | 2002 04 02 | 644 | 0.6+ | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 1999 05 18 | 704 | 0.2+ | 0.7+ | 2002 04 03 | 644 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 0.4− | 0.2+ |
| 1999 05 18 | 704 | 1.5+ | 0.5+ | 2002 04 03 | 644 | 0.6+ | 0.4+ | 2006 10 01 | 704 | 0.3− | 0.0 |
| 1999 05 18 | 704 | 1.5− | 0.3+ | 2002 04 03 | 644 | 0.7+ | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 1999 05 18 | 704 | 0.4− | 0.1− | 2002 04 16 | 704 | (2.0+ | 0.9−) | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 1999 05 18 | 704 | 0.4− | 1.4+ | 2002 04 16 | 704 | (3.1+ | 0.7−) | 2006 10 02 | 691 | 0.2− | 0.7+ |
| 2002 03 12 | 645 | 0.0 | 0.1− | 2002 04 16 | 704 | (2.6+ | 1.7−) | 2006 10 02 | 691 | 0.4− | 0.5+ |
| 2002 03 12 | 645 | 0.0 | 0.1− | 2003 10 23 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.3− | 0.4+ |
| 2002 03 20 | 699 | 0.6+ | 0.2+ | 2003 10 23 | 691 | 0.9− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 03 20 | 699 | 1.2+ | 1.0+ | 2003 10 23 | 691 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 03 20 | 699 | 0.5− | 0.1− | 2003 10 25 | 704 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 03 20 | 699 | 0.3+ | 0.2+ | 2003 10 25 | 704 | 1.5+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2002 03 22 | 644 | 0.6+ | 0.4+ | 2003 10 25 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2002 03 22 | 644 | 0.6+ | 0.5+ | 2003 11 19 | 691 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2002 03 22 | 644 | 0.8+ | 0.2+ | 2003 11 19 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2002 03 30 | 644 | 0.1+ | 1.0+ | 2003 11 19 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.2− |
| 2002 03 30 | 644 | 0.1+ | 1.2+ | 2003 12 01 | 691 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.8− | 0.6+ |
| 2002 03 30 | 644 | 0.2+ | 1.0+ | 2003 12 01 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | (2.2− | 0.6−) |
| 2002 03 31 | 345 | 0.1− | 0.9+ | 2003 12 01 | 691 | 0.1+ | 0.4− | 2006 10 22 | 703 | (1.5− | 0.2−) |
| 2002 03 31 | 345 | 0.1+ | 0.1+ | 2005 03 09 | 703 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2002 03 31 | 345 | 0.3+ | 0.2+ | 2005 03 09 | 703 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2002 03 31 | 345 | 0.2+ | 0.1+ | 2005 03 09 | 703 | 1.1− | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 03 31 | 557 | 0.1+ | 0.4+ | 2005 03 09 | 703 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 03 31 | 246 | 0.4− | 1.2+ | 2006 09 18 | 703 | 1.2+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2002 03 31 | 246 | 0.2− | 1.1+ | 2006 09 18 | 703 | 1.5− | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 03 31 | 246 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.8+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 03 31 | 246 | 0.7− | 0.7+ | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2002 03 31 | 557 | 0.3+ | 0.5+ | 2006 09 21 | 699 | 0.1− | 0.6+ | | | | |
| 2002 03 31 | 557 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.9+ | | | | |

**(137174)∗ 1999 JH$_5$ = 2003 AP$_{82}$**

Discovered 1999 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46359)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.86177 | | (2000.0) | | | |
| $n$ | 0.23300768 | $\omega$ | 115.04182 | | −0.87222911 | −0.27073456 |
| $a$ | 2.6155070 | $\Omega$ | 52.08570 | | −0.05501871 | −0.77322542 |
| $e$ | 0.2816433 | $i$ | 31.08497 | | +0.48599314 | −0.57343286 |
| $P$ | 4.23 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 0.6− | 0.7− | 2003 01 13 | 704 | 0.2+ | 0.4+ | 2003 04 23 | 704 | 0.2+ | 0.6− |
| 1999 05 10 | 704 | 0.6− | 0.7+ | 2003 01 13 | 704 | 0.1+ | 0.0 | 2003 04 23 | 704 | 0.0 | 0.5+ |
| 1999 05 10 | 704 | 1.0− | 0.6− | 2003 01 13 | 704 | 0.1+ | 0.9− | 2003 04 23 | 704 | 0.4− | 0.0 |
| 1999 05 10 | 704 | 0.1− | 0.6− | 2003 01 14 | 704 | 0.3+ | 0.3+ | 2003 04 23 | 704 | 0.7− | 0.3+ |
| 1999 05 10 | 704 | 1.0− | 0.1− | 2003 01 14 | 704 | 0.5+ | 0.4+ | 2003 05 17 | 699 | 1.0+ | 0.8+ |
| 1999 05 13 | 704 | 0.9− | 0.3− | 2003 01 14 | 704 | 0.2− | 0.1+ | 2003 05 17 | 699 | 0.0 | 1.0+ |
| 1999 05 13 | 704 | 0.7+ | 0.4+ | 2003 01 14 | 704 | 0.3− | 0.4+ | 2003 05 17 | 699 | 0.2+ | 0.3+ |
| 1999 05 13 | 704 | 0.2+ | 0.3+ | 2003 01 14 | 704 | 0.3+ | 0.1− | 2003 05 17 | 699 | 0.4+ | 0.3+ |
| 1999 05 13 | 704 | 0.7+ | 0.0 | 2003 02 06 | 699 | 0.2− | 0.2− | 2003 05 30 | 645 | 0.1− | 0.2− |
| 1999 05 17 | 703 | 0.5+ | 0.3− | 2003 02 06 | 699 | 0.0 | 0.1+ | 2003 05 30 | 645 | 0.1− | 0.1− |
| 1999 05 17 | 703 | 0.0 | 0.1+ | 2003 02 06 | 699 | 0.5+ | 0.1− | 2003 06 02 | 704 | 0.3− | 0.3+ |
| 1999 05 17 | 703 | 0.3− | 0.7+ | 2003 02 06 | 699 | 0.2+ | 0.1− | 2003 06 02 | 704 | 0.2+ | 0.1− |
| 1999 05 18 | 704 | (1.2+ | 2.6−) | 2003 03 26 | 704 | 0.1+ | 0.1+ | 2003 06 02 | 704 | 0.0 | 0.0 |
| 1999 05 18 | 704 | 0.3+ | 0.3− | 2003 03 26 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.8+ | 0.3− |
| 1999 05 18 | 704 | 0.6+ | 0.7− | 2003 03 26 | 704 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.3− | 1.0− |
| 1999 05 18 | 704 | 0.2− | 0.6− | 2003 03 26 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 1.2− | 0.5− |
| 1999 05 18 | 704 | 0.5− | 0.7+ | 2003 03 26 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.4− |
| 1999 05 18 | 699 | 0.7+ | 0.0 | 2003 03 27 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 1999 05 18 | 699 | 1.3+ | 0.8+ | 2003 03 27 | 704 | 0.2− | 0.4− | 2006 11 19 | 703 | 0.5− | 0.1− |
| 1999 05 18 | 699 | 1.4+ | 0.9+ | 2003 03 27 | 704 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.1− | 0.3+ |
| 1999 06 06 | 699 | 1.0+ | 0.9+ | 2003 03 27 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.3+ |
| 1999 06 06 | 699 | 0.7+ | 1.5+ | 2003 03 27 | 704 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.6+ | 0.1+ |
| 1999 06 06 | 699 | 0.2+ | 0.5+ | 2003 04 23 | 704 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.4+ |
| 2001 12 18 | 645 | 0.1− | 0.1+ | 2003 04 23 | 704 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.8+ | 0.9+ |
| 2001 12 18 | 645 | 0.0 | 0.1+ | 2003 04 23 | 704 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.6+ |
| 2003 01 13 | 704 | 0.8+ | 0.0 | 2003 04 23 | 704 | 0.1− | 0.4+ | | | | |
| 2003 01 13 | 704 | 0.3+ | 0.1+ | 2003 04 23 | 704 | 0.3− | 0.2− | | | | |

**(137175)∗ 1999 JA$_{11}$**

Discovered 1999 May 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.48086 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.69569646 | $\omega$ | 328.23117 | | +0.07587683 | −0.96434258 |
| $a$ | 1.2614098 | $\Omega$ | 116.30894 | | +0.96381253 | +0.00576147 |
| $e$ | 0.3413046 | $i$ | 16.43007 | | +0.25555451 | +0.26459438 |
| $P$ | 1.42 | $H$ | 18.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 14 | 704 | 0.1+ | 0.6− | 2002 06 08 | 649 | 0.8+ | 0.6− | 2006 02 27 | A74 | 0.0 | 0.1− |
| 1999 05 14 | 704 | 0.3− | 0.5+ | 2002 07 16 | 644 | 0.0 | 0.4+ | 2006 02 27 | A74 | 0.0 | 0.2+ |
| 1999 05 14 | 704 | 1.2+ | 0.8− | 2002 07 16 | 644 | 0.1+ | 0.2+ | 2006 02 27 | A74 | 0.0 | 0.0 |
| 1999 05 14 | 704 | (2.6− | 0.8+) | 2002 07 16 | 644 | 0.1+ | 0.8+ | 2006 02 27 | A74 | 0.1− | 0.1− |
| 1999 05 15 | 693 | 0.7− | 0.4+ | 2003 04 26 | 696 | 0.3+ | 0.2+ | 2006 02 27 | A74 | 0.0 | 0.0 |
| 1999 05 15 | 693 | 0.7− | 0.3+ | 2003 04 26 | 696 | 0.5+ | 0.0 | 2006 03 12 | A74 | 0.1− | 0.1− |
| 1999 05 15 | 693 | 0.8− | 0.3+ | 2005 05 15 | 291 | 0.1− | 0.3+ | 2006 03 12 | A74 | 0.0 | 0.0 |
| 1999 05 15 | 684 | 0.3− | 0.2+ | 2005 05 15 | 291 | 0.2+ | 1.4+ | 2006 03 12 | A74 | 0.2− | 0.2+ |
| 1999 05 15 | 684 | 0.1+ | 0.0 | 2005 07 02 | 691 | 0.0 | 0.2− | 2006 03 12 | A74 | 0.5− | 0.2+ |
| 1999 05 15 | 684 | 0.7− | 0.2+ | 2005 07 02 | 691 | 0.1+ | 0.3+ | 2006 03 12 | A74 | 0.0 | 0.1+ |
| 1999 05 15 | 704 | 0.9+ | 0.1+ | 2005 07 02 | 691 | 0.1+ | 0.4+ | 2006 03 12 | A74 | 0.0 | 0.2+ |
| 1999 05 15 | 704 | 0.0 | 0.2− | 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 03 12 | A74 | 0.3− | 0.1+ |
| 1999 05 15 | 704 | 1.1− | 0.8− | 2005 07 09 | 691 | 0.2− | 0.0 | 2006 03 12 | A74 | 0.1− | 0.1+ |
| 1999 05 15 | 704 | 0.7− | 0.1+ | 2005 07 09 | 691 | 0.3− | 0.0 | 2006 03 12 | A74 | 0.1+ | 0.2+ |
| 1999 05 15 | 426 | 0.6+ | 0.2+ | 2005 07 12 | G96 | 0.3+ | 0.4− | 2006 03 13 | 198 | 0.1− | 0.1+ |
| 1999 05 15 | 426 | 0.5+ | 0.4− | 2005 07 12 | G96 | 0.6+ | 0.5− | 2006 03 13 | 198 | 0.1− | 0.1+ |
| 1999 05 15 | 426 | 0.9− | 0.1+ | 2005 07 12 | G96 | 0.4+ | 0.5− | 2006 03 13 | 198 | 0.0 | 0.2+ |
| 1999 05 16 | 684 | 0.3+ | 0.2+ | 2005 07 12 | G96 | 0.3+ | 0.5− | 2006 03 13 | 198 | 0.1+ | 0.4+ |
| 1999 05 16 | 684 | 1.1− | 0.4− | 2005 07 16 | 691 | 0.0 | 0.0 | 2006 03 23 | 084 | 0.1+ | 0.1+ |
| 1999 05 16 | 426 | 0.1+ | 1.0− | 2005 07 16 | 691 | 0.1+ | 0.1− | 2006 03 29 | 703 | 0.4+ | 0.8− |
| 1999 05 16 | 426 | 0.1+ | 1.8− | 2005 07 16 | 691 | 0.4− | 0.1− | 2006 03 29 | 703 | 0.6+ | 0.0 |
| 1999 05 16 | 046 | 0.8+ | 0.1+ | 2005 07 18 | E17 | 0.7+ | 0.2− | 2006 03 29 | 703 | 0.4+ | 0.0 |
| 1999 05 16 | 046 | 0.2− | 0.1+ | 2005 07 18 | E17 | 0.0 | 0.0 | 2006 03 29 | 703 | 0.4+ | 0.1+ |
| 1999 05 16 | 046 | 0.2− | 0.5+ | 2005 07 18 | E17 | 0.1− | 0.4− | 2006 04 08 | H45 | 1.3+ | 0.4− |
| 1999 05 16 | 046 | 0.3− | 0.2− | 2005 07 29 | E12 | 0.4− | 0.4− | 2006 04 08 | H45 | 0.2− | 0.3+ |
| 1999 05 17 | 704 | 1.5+ | 0.0 | 2005 07 29 | E12 | 0.3+ | 0.1− | 2006 04 08 | H45 | 0.3− | 0.2− |
| 1999 05 17 | 704 | 0.5− | 0.8− | 2005 07 29 | E12 | 0.1− | 0.1− | 2006 04 21 | 151 | 0.3+ | 0.6− |
| 1999 05 17 | 704 | (2.2− | 1.4+) | 2005 07 29 | E12 | 0.0 | 0.1+ | 2006 04 21 | 151 | 0.6+ | 0.0 |
| 1999 05 17 | 426 | 0.1+ | 0.0 | 2006 02 27 | A74 | 0.1− | 0.1+ | 2006 04 21 | 151 | 1.1+ | 0.4+ |
| 1999 05 17 | 426 | 0.3− | 0.1− | 2006 02 27 | A74 | 0.1− | 0.1− | 2006 04 21 | 151 | 0.3+ | 0.4+ |
| 1999 05 17 | 426 | 0.1− | 0.4+ | 2006 02 27 | A74 | 0.1+ | 0.1− | 2006 04 21 | 151 | 0.1− | 0.8+ |
| 1999 05 23 | 658 | 0.4− | 0.9− | 2006 02 27 | A74 | 0.1− | 0.2+ | 2006 04 21 | 151 | 0.1+ | 1.0+ |
| 1999 05 23 | 658 | 0.4− | 0.8− | 2006 02 27 | A74 | 0.1− | 0.0 | 2006 04 29 | 703 | 1.0− | 0.6+ |
| 1999 05 24 | 658 | 0.4+ | 0.2− | 2006 02 27 | A74 | 0.0 | 0.1− | 2006 04 29 | 703 | 0.2− | 0.2− |
| 1999 05 24 | 658 | 0.5− | 0.0 | 2006 02 27 | A74 | 0.1− | 0.1+ | 2006 04 29 | 703 | (0.3− | 2.2+) |
| 1999 05 24 | 658 | 0.1− | 0.2− | 2006 02 27 | A74 | 0.0 | 0.0 | 2006 04 29 | 703 | 0.4+ | 0.2+ |
| 2002 06 07 | 649 | 0.1− | 0.5− | 2006 02 27 | A74 | 0.1− | 0.1− | 2006 05 24 | 703 | 1.2− | 0.3+ |
| 2002 06 07 | 649 | 0.5+ | 0.1+ | 2006 02 27 | A74 | 0.0 | 0.0 | 2006 05 24 | 703 | 0.3− | 0.1− |
| 2002 06 07 | 649 | 0.7+ | 0.6+ | 2006 02 27 | A74 | 0.1− | 0.0 | 2006 05 24 | 703 | 0.0 | 0.3+ |
| 2002 06 08 | 649 | 1.5+ | 0.1+ | 2006 02 27 | A74 | 0.1+ | 0.1+ | 2006 05 24 | 703 | 0.5− | 0.8+ |
| 2002 06 08 | 649 | 0.7− | 1.4− | 2006 02 27 | A74 | 0.0 | 0.1− | | | | |

**(137176)∗ 1999 JZ$_{11}$ = 2002 GS$_{114}$**

Discovered 1999 May 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33075)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.73378 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.30553219 | $\omega$ | 204.62104 | | +0.85598422 | +0.51313966 |
| $a$ | 2.1832228 | $\Omega$ | 124.35920 | | −0.46077750 | +0.81252698 |
| $e$ | 0.2625330 | $i$ | 4.38219 | | −0.23446771 | +0.27656391 |
| $P$ | 3.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 699 | 0.9+ | 0.7− | 2006 07 21 | 704 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.1− |
| 1999 05 10 | 699 | 0.1− | 0.4+ | 2006 07 21 | 704 | 0.8+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 1999 05 10 | 699 | 0.4− | 0.2+ | 2006 07 21 | 704 | 0.3+ | 1.0− | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 1999 05 13 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 704 | 1.2+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 1999 05 13 | 704 | 0.1− | 0.5+ | 2006 08 28 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1− |
| 1999 05 13 | 704 | 0.2+ | 1.5+ | 2006 08 28 | 704 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 1999 05 17 | 704 | 0.4− | 0.6+ | 2006 08 28 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 1999 05 17 | 704 | 1.3+ | 0.4− | 2006 08 28 | 704 | 0.6+ | 1.5+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 1999 05 17 | 704 | 0.8− | 1.4+ | 2006 08 28 | 704 | (1.8− | 1.2+) | 2006 10 22 | 704 | 0.9+ | 0.1− |
| 1999 05 18 | 704 | 0.2− | 1.2+ | 2006 08 28 | 704 | 0.3− | 1.1+ | 2006 10 22 | 704 | 0.1− | 0.1+ |
| 1999 05 18 | 704 | 1.4+ | 1.4+ | 2006 08 28 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 704 | 0.0 | 0.9+ |
| 1999 05 18 | 704 | 0.2− | 0.3− | 2006 08 28 | 704 | 0.1− | 0.7+ | 2006 10 22 | 704 | 0.4− | 1.1+ |
| 1999 05 18 | 704 | 1.4+ | 1.4− | 2006 08 31 | 704 | 0.5− | 1.4− | 2006 10 22 | 704 | 1.0+ | 0.8+ |
| 1999 05 18 | 704 | 0.1+ | 1.2+ | 2006 08 31 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 1999 05 18 | 704 | 0.6+ | 0.0 | 2006 08 31 | 704 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.1− | 0.7− |
| 1999 05 18 | 704 | 0.1+ | 0.5+ | 2006 08 31 | 704 | 0.4− | 1.1+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 1999 05 18 | 704 | 1.7+ | 1.6+ | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.2− |
| 1999 05 18 | 327 | 0.2− | 1.1+ | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 1999 05 18 | 327 | 0.7+ | 0.7+ | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 1999 05 18 | 327 | 0.9− | 1.1+ | 2006 09 15 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 1999 05 18 | 557 | 0.3+ | 0.4+ | 2006 09 15 | 644 | 0.0 | 0.3+ | 2006 10 31 | 704 | 0.9− | 0.3+ |
| 1999 05 18 | 557 | 0.5− | 0.2+ | 2006 09 15 | 644 | 0.0 | 0.2+ | 2006 10 31 | 704 | 0.0 | 0.6− |
| 1999 05 19 | 704 | 1.7− | 0.4− | 2006 09 22 | 704 | 0.2− | 0.4+ | 2006 10 31 | 704 | 0.6− | 0.1+ |
| 1999 05 19 | 704 | 1.7− | 1.3+ | 2006 09 22 | 704 | 0.7− | 0.8+ | 2006 10 31 | 704 | 0.5− | 0.1− |
| 1999 05 19 | 704 | 0.3+ | 1.4− | 2006 09 22 | 704 | 0.8+ | 0.7− | 2006 10 31 | 704 | 0.4− | 0.6+ |
| 1999 05 19 | 704 | (3.6− | 4.3+) | 2006 09 22 | 704 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.2+ | 1.0+ |
| 2002 04 11 | 704 | (0.1+ | 2.0+) | 2006 09 22 | 704 | 0.4− | 0.5− | 2006 11 13 | 703 | 0.1+ | 0.8+ |
| 2002 04 11 | 704 | 1.4+ | 0.3+ | 2006 09 25 | 704 | 0.8− | 0.8− | 2006 11 13 | 703 | 0.6− | 0.3− |
| 2002 04 11 | 704 | 0.1− | 1.2+ | 2006 09 25 | 704 | 0.6− | 0.3+ | 2006 11 13 | 703 | 0.7− | 1.1+ |
| 2002 04 11 | 704 | 0.6+ | 0.8+ | 2006 09 25 | 704 | 1.1− | 0.1− | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 2002 04 13 | 644 | 0.6+ | 0.8+ | 2006 09 25 | 704 | 0.2− | 0.6+ | 2006 11 14 | 704 | 0.2− | 0.1− |
| 2002 04 13 | 644 | 0.5+ | 0.6+ | 2006 09 25 | 704 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 2002 04 13 | 644 | 0.2+ | 0.7+ | 2006 09 26 | 704 | 0.4− | 1.1+ | 2006 11 14 | 704 | 0.8− | 0.1+ |
| 2002 04 16 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.4− | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.6− |
| 2002 04 16 | 704 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.5+ | 0.4− | 2006 11 17 | 704 | 0.2+ | 0.0 |
| 2002 04 16 | 704 | 0.5+ | 1.0+ | 2006 09 26 | 704 | 0.9− | 0.5+ | 2006 11 17 | 704 | 0.2+ | 0.8− |
| 2003 12 19 | 704 | 0.8− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.4− |
| 2003 12 19 | 704 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.7− | 0.5+ | 2006 09 29 | 699 | 0.5+ | 0.5+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2003 12 19 | 704 | 0.6− | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2003 12 19 | 704 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.1+ | 0.7− | 2006 11 20 | 704 | 1.0+ | 1.0+ |
| 2003 12 23 | 704 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.1− | 1.4+ |
| 2003 12 23 | 704 | 0.9+ | 0.6− | 2006 09 30 | 703 | 0.7− | 0.3− | 2006 11 21 | 704 | 1.9+ | 0.5+ |
| 2003 12 23 | 704 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.6− | 2006 11 21 | 704 | 2.2+ | 0.4+ |
| 2003 12 23 | 704 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2003 12 23 | 704 | 0.5+ | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.3− | 2006 11 21 | 704 | 1.9− | 1.0+ |
| 2004 01 12 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 01 12 | 644 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.1+ |
| 2004 01 12 | 644 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.6− | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2006 07 21 | 704 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.3+ | 0.1− |

**(137177)∗ 1999 JK$_{12}$**

Discovered 1999 May 8 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.48397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21586910 | $\omega$ | 112.70177 | | −0.92816075 | | +0.34650352 |
| $a$ | 2.7521730 | $\Omega$ | 87.79066 | | −0.37138382 | | −0.83842630 |
| $e$ | 0.2491745 | $i$ | 7.81313 | | −0.02432456 | | −0.42068592 |
| $P$ | 4.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 691 | 0.4+ | 0.3+ | 1999 05 17 | 704 | 0.5− | 0.9− | 2003 01 10 | 704 | 0.0 | 0.4− |
| 1999 03 13 | 691 | 0.2+ | 0.2+ | 1999 05 17 | 704 | 0.9− | 0.9− | 2003 01 26 | 644 | 0.2+ | 0.1+ |
| 1999 03 13 | 691 | 0.3+ | 0.3+ | 1999 05 17 | 704 | 1.0+ | 0.3− | 2003 01 26 | 644 | 0.1+ | 0.4+ |
| 1999 03 20 | 691 | 1.1− | 0.2− | 1999 05 17 | 704 | 1.5− | 0.6+ | 2003 01 26 | 644 | 0.2+ | 0.1− |
| 1999 03 20 | 691 | 1.2− | 0.1− | 1999 05 17 | 704 | 0.5+ | 0.0 | 2003 02 01 | 704 | 0.5+ | 0.6+ |
| 1999 03 20 | 691 | 1.0− | 0.1− | 1999 05 18 | 704 | 0.1− | 1.2− | 2003 02 01 | 704 | 0.4− | 0.4− |
| 1999 04 12 | 704 | 1.1− | 1.4− | 1999 05 18 | 703 | 0.0 | 0.8+ | 2003 02 01 | 704 | 0.9− | 1.1− |
| 1999 04 12 | 704 | 0.8− | 1.3+ | 1999 05 18 | 703 | 0.9+ | 1.0− | 2003 02 01 | 704 | 0.2− | 0.2− |
| 1999 04 12 | 704 | 0.6− | 0.3− | 1999 05 18 | 704 | 0.5+ | 1.2+ | 2003 02 04 | 644 | 0.3− | 0.1+ |
| 1999 04 12 | 704 | (0.6− | 2.0−) | 1999 05 18 | 703 | 1.1+ | 0.5− | 2003 02 04 | 644 | 0.1+ | 0.0 |
| 1999 04 12 | 704 | 0.3− | 0.8+ | 1999 05 18 | 704 | 1.2+ | 0.4− | 2003 02 04 | 644 | 0.0 | 0.1+ |
| 1999 05 08 | 703 | 1.4+ | 1.1− | 1999 05 18 | 703 | 0.4+ | 0.1+ | 2004 06 24 | 428 | 0.0 | 0.9+ |
| 1999 05 08 | 703 | 0.6+ | 0.3+ | 1999 05 18 | 704 | 0.1+ | 1.5+ | 2006 10 23 | G96 | 0.6− | 0.0 |
| 1999 05 08 | 703 | 1.4+ | 0.4− | 1999 05 18 | 704 | (2.5+ | 0.6−) | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 1999 05 08 | 703 | 0.3+ | 0.1− | 1999 06 07 | 703 | 0.7+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 1999 05 10 | 699 | 1.2+ | 0.1+ | 1999 06 07 | 703 | 0.7− | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 1999 05 10 | 699 | 1.5+ | 1.5− | 1999 06 07 | 703 | 1.9+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |
| 1999 05 10 | 699 | 0.6+ | 0.2+ | 1999 06 07 | 703 | 0.6+ | 1.3+ | 2006 11 16 | G96 | 0.8− | 0.3− |
| 1999 05 12 | 704 | (0.0 | 2.4−) | 2003 01 05 | 704 | 0.0 | 1.0+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 1999 05 12 | 704 | 0.9+ | 0.9− | 2003 01 05 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 1999 05 12 | 704 | 1.7− | 0.4+ | 2003 01 05 | 704 | 0.4+ | 0.4+ | 2006 11 20 | H07 | 0.2+ | 1.1+ |
| 1999 05 12 | 704 | 1.3− | 0.2− | 2003 01 05 | 704 | 1.0+ | 0.5+ | 2006 11 20 | H07 | 0.5+ | 0.6+ |
| 1999 05 12 | 704 | 0.3− | 0.2+ | 2003 01 09 | 704 | 0.8+ | 0.3− | 2006 11 20 | H07 | 0.5− | 0.6+ |
| 1999 05 13 | 704 | 0.5+ | 1.0+ | 2003 01 09 | 704 | 0.6+ | 0.1+ | 2006 11 20 | H07 | 0.3− | 0.7+ |
| 1999 05 13 | 704 | 1.3+ | 1.1− | 2003 01 09 | 704 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.6+ | 0.5− |
| 1999 05 13 | 704 | 0.6− | 0.9+ | 2003 01 09 | 704 | 0.4− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 1999 05 13 | 704 | 0.3− | 0.1+ | 2003 01 10 | 704 | 0.5− | 0.7+ | 2006 12 01 | G96 | 0.4− | 0.7− |
| 1999 05 13 | 704 | 0.1+ | 0.1+ | 2003 01 10 | 704 | 0.4− | 0.6+ | 2006 12 01 | G96 | 0.5+ | 0.6− |

**(137178)∗ 1999 JT$_{15}$ = 2002 FV$_{36}$**

Discovered 1999 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29031)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.93553 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31140129 | $\omega$ | 137.23725 | | +0.20125698 | | +0.97943036 |
| $a$ | 2.1557039 | $\Omega$ | 144.36600 | | −0.90532061 | | +0.19166049 |
| $e$ | 0.1452671 | $i$ | 1.43136 | | −0.37401902 | | +0.06310641 |
| $P$ | 3.17 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 08 | 699 | 1.0+ | 1.7+ | 2002 04 20 | 644 | 0.3+ | 0.2+ | 2005 04 11 | 691 | 0.1+ | 0.2+ |
| 1999 05 08 | 699 | 1.0+ | 0.6+ | 2002 04 20 | 644 | 0.3+ | 0.0 | 2005 04 11 | 691 | 0.1− | 0.1+ |
| 1999 05 08 | 699 | 0.4+ | 0.0 | 2002 04 20 | 644 | 0.8+ | 0.2+ | 2005 04 11 | G96 | 0.2− | 0.3− |
| 1999 05 10 | 704 | 0.2− | 0.1− | 2002 05 08 | 704 | 0.5+ | 0.3− | 2005 04 11 | G96 | 0.1− | 0.3− |
| 1999 05 10 | 704 | 0.5+ | 1.5+ | 2002 05 08 | 704 | 0.9+ | 0.5+ | 2005 04 11 | G96 | 0.4− | 0.1− |
| 1999 05 10 | 704 | 0.3− | 0.3− | 2002 05 08 | 704 | 0.6+ | 0.8+ | 2005 04 11 | G96 | 0.1− | 0.4− |
| 1999 05 10 | 704 | 0.8− | 0.2+ | 2002 05 08 | 704 | 0.4+ | 0.8+ | 2005 05 10 | G96 | 0.0 | 0.1− |
| 1999 05 10 | 704 | 0.6− | 0.2− | 2002 05 08 | 704 | 0.5+ | 0.9− | 2005 05 10 | G96 | 0.4− | 0.5− |
| 1999 05 13 | 704 | 0.1+ | 0.9− | 2003 10 20 | 691 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.2− |
| 1999 05 13 | 704 | 0.9+ | 0.1+ | 2003 10 20 | 691 | 0.1− | 0.2+ | 2005 05 10 | G96 | 0.2− | 0.3− |
| 1999 05 13 | 704 | 0.9− | 0.7− | 2003 10 20 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.2+ | 1.3+ |
| 1999 05 13 | 704 | 0.4− | 0.2+ | 2003 10 23 | 691 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.6+ |
| 1999 05 17 | 699 | 1.2+ | 0.5+ | 2003 10 23 | 691 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.9+ |
| 1999 05 17 | 699 | 1.2+ | 0.8+ | 2003 10 23 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.3− |
| 1999 05 17 | 703 | 0.6+ | 0.2+ | 2003 10 24 | 704 | 0.2+ | 1.1+ | 2006 09 27 | 691 | 0.2− | 0.6+ |
| 1999 05 17 | 703 | 0.5+ | 0.1− | 2003 10 24 | 704 | 0.6− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 1999 05 17 | 699 | 1.6+ | 0.8+ | 2003 10 24 | 704 | 0.7+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.5+ |
| 1999 05 17 | 703 | 0.2− | 0.1− | 2003 10 24 | 704 | 0.2+ | 1.4+ | 2006 10 01 | 691 | 0.8− | 0.3+ |
| 1999 05 17 | 703 | 0.9+ | 0.2− | 2003 11 21 | 704 | 0.3− | 0.9+ | 2006 10 01 | 691 | 0.2− | 0.6+ |
| 1999 05 18 | 704 | 0.7− | 0.2+ | 2003 11 21 | 704 | 1.0− | 0.7+ | 2006 10 01 | 691 | 0.4− | 0.4+ |
| 1999 05 18 | 704 | 0.7− | 1.3+ | 2003 11 21 | 704 | 0.3+ | 0.7+ | 2006 10 15 | 703 | (0.8+ | 1.8+) |
| 1999 05 18 | 704 | (0.2− | 2.5+) | 2003 11 21 | 704 | 0.2− | 1.2+ | 2006 10 15 | 703 | 0.3− | 0.0 |
| 1999 05 18 | 704 | (2.2− | 1.4+) | 2003 11 24 | 699 | 0.4+ | 1.2− | 2006 10 15 | 703 | 1.0− | 0.2+ |
| 1999 05 19 | 704 | 1.7+ | 0.8+ | 2003 11 24 | 699 | 1.0− | 0.4+ | 2006 10 15 | 703 | 0.9− | 0.4− |
| 1999 05 19 | 704 | 1.4+ | 0.2+ | 2003 11 24 | 699 | 0.2− | 0.5− | 2006 10 15 | 703 | 0.5+ | 1.1+ |
| 1999 05 19 | 704 | 0.6+ | 1.3− | 2003 11 24 | 699 | 0.5+ | 0.5− | 2006 10 15 | 703 | 1.2− | 0.5+ |
| 1999 05 23 | 691 | 0.4− | 0.3+ | 2003 11 30 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 703 | (0.3+ | 3.4+) |
| 1999 05 23 | 691 | 0.5− | 0.3+ | 2003 11 30 | 691 | 0.0 | 0.3+ | 2006 10 15 | 703 | (0.8+ | 2.4+) |
| 1999 05 23 | 691 | 0.4− | 0.3+ | 2003 11 30 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.7+ |
| 1999 06 04 | 703 | 0.2+ | 0.2+ | 2005 03 04 | 691 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.6+ |
| 1999 06 04 | 703 | 1.0+ | 0.6+ | 2005 03 04 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1999 06 04 | 703 | 0.4+ | 0.1+ | 2005 03 04 | 691 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 1999 06 04 | 703 | 0.1− | 0.8+ | 2005 03 04 | G96 | 0.6− | 0.6− | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2002 03 16 | 704 | 0.2+ | 0.1− | 2005 03 04 | G96 | 0.3− | 0.6− | 2006 10 20 | 644 | 0.4+ | 0.5+ |
| 2002 03 16 | 704 | 0.7+ | 0.1− | 2005 03 04 | G96 | 0.3− | 0.8− | 2006 10 21 | 703 | 0.1− | 0.5+ |
| 2002 03 16 | 704 | 1.4+ | 1.3+ | 2005 03 04 | G96 | 0.3− | 0.6− | 2006 10 21 | 703 | 0.9− | 0.1+ |
| 2002 03 16 | 704 | 0.1+ | 0.4+ | 2005 03 08 | 699 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.6− | 1.2+ |
| 2002 03 23 | 608 | (1.1+ | 1.5+) | 2005 03 08 | 699 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.4− |
| 2002 03 23 | 608 | 0.6+ | 0.5+ | 2005 03 08 | 699 | (2.5+ | 0.7−) | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2002 03 23 | 608 | (0.0 | 1.9+) | 2005 03 08 | 699 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 03 24 | 691 | 0.3− | 0.9+ | 2005 03 08 | 704 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 03 24 | 691 | 0.2− | 1.1+ | 2005 03 08 | 704 | 1.3+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2002 03 24 | 691 | 0.3− | 1.0+ | 2005 03 08 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.7+ |
| 2002 04 10 | 704 | (0.6+ | 1.6+) | 2005 03 08 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2002 04 10 | 704 | 0.5+ | 1.2+ | 2005 03 09 | 699 | 0.7+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 04 10 | 704 | 0.7+ | 1.3+ | 2005 03 09 | 699 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2002 04 10 | 704 | 0.1+ | 1.5+ | 2005 03 09 | 699 | 0.5+ | 0.9− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2002 04 10 | 704 | 0.3− | 1.0+ | 2005 03 09 | 699 | 1.0+ | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2002 04 17 | 704 | 0.2− | 0.7+ | 2005 03 17 | 704 | 0.5+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2002 04 17 | 704 | 0.4+ | 0.0 | 2005 03 17 | 704 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 04 17 | 704 | 0.6+ | 0.1− | 2005 03 17 | 704 | 0.6+ | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2002 04 17 | 704 | 0.2− | 0.5+ | 2005 03 30 | 703 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.2+ |
| 2002 04 17 | 704 | 0.3− | 0.6+ | 2005 03 30 | 703 | (0.3+ | 1.7−) | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2002 04 19 | 691 | 0.2− | 0.9+ | 2005 03 30 | 703 | 0.8− | 0.7− | 2006 11 20 | G96 | 0.2+ | 0.1+ |
| 2002 04 19 | 691 | 0.0 | 0.7+ | 2005 03 30 | 703 | 1.0− | 0.6+ | | | | |
| 2002 04 19 | 691 | 0.2+ | 0.8+ | 2005 04 11 | 691 | 0.1+ | 0.3+ | | | | |

**(137179)∗ 1999 JQ$_{16}$ = 2001 VY$_{9}$**

Discovered 1999 May 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 19428)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.86850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18127877 | $\omega$ | 334.49253 | | +0.82280264 | −0.54045481 | |
| $a$ | 3.0919900 | $\Omega$ | 59.34497 | | +0.55014595 | +0.67980512 | |
| $e$ | 0.0489755 | $i$ | 11.79172 | | +0.14260174 | +0.49575559 | |
| $P$ | 5.44 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 11 | 691 | 0.1+ | 0.0 | 2001 11 10 | 704 | 1.2− | 0.1− | 2001 12 10 | 691 | 0.5+ | 0.7− |
| 1990 11 11 | 691 | 0.0 | 0.2+ | 2001 11 10 | 704 | 0.0 | 1.0− | 2001 12 17 | 704 | 0.6+ | 1.4+ |
| 1990 11 11 | 691 | 0.1− | 0.2+ | 2001 11 10 | 704 | (1.5− | 1.5+) | 2001 12 17 | 704 | 0.3+ | 0.1− |
| 1999 05 15 | 691 | 0.3− | 1.1+ | 2001 11 10 | 704 | 0.8− | 0.8+ | 2001 12 17 | 704 | (0.6− | 1.7+) |
| 1999 05 15 | 691 | 0.7− | 1.4+ | 2001 11 11 | 704 | 1.1− | 0.5+ | 2003 01 10 | 644 | 0.3+ | 0.3+ |
| 1999 05 19 | 691 | 0.1+ | 0.4+ | 2001 11 11 | 704 | 0.5+ | 1.1− | 2003 01 10 | 644 | 0.2− | 1.0+ |
| 1999 05 19 | 691 | 0.3+ | 0.2+ | 2001 11 11 | 704 | 0.1− | 0.5− | 2003 01 10 | 644 | 0.2− | 0.5+ |
| 1999 05 19 | 691 | 0.3− | 0.4+ | 2001 11 11 | 704 | (0.9− | 1.6+) | 2004 03 15 | 691 | 0.7+ | 0.3+ |
| 1999 06 05 | 691 | 0.0 | 0.3+ | 2001 11 11 | 704 | 0.3+ | 0.6+ | 2004 03 15 | 691 | 0.1+ | 0.3+ |
| 1999 06 05 | 691 | 0.5+ | 0.1+ | 2001 11 17 | 704 | 0.0 | 0.1+ | 2004 03 15 | 691 | 0.4+ | 0.1+ |
| 1999 06 05 | 691 | 0.5+ | 0.0 | 2001 11 17 | 704 | 0.7− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.3− |
| 1999 06 10 | 691 | 0.1+ | 1.2− | 2001 11 17 | 704 | 0.7− | 1.1− | 2006 09 19 | 703 | 1.1+ | 0.1+ |
| 1999 06 10 | 691 | 0.1− | 0.6− | 2001 11 17 | 704 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.2− |
| 1999 06 10 | 691 | 0.1+ | 0.2− | 2001 11 18 | 608 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.2+ | 0.2− |
| 2001 10 18 | 644 | 0.2− | 0.8+ | 2001 11 18 | 608 | 0.0 | 0.1+ | 2006 09 25 | 703 | (0.4− | 2.7+) |
| 2001 10 18 | 644 | 0.6− | 0.8+ | 2001 11 18 | 608 | 0.1− | 0.3− | 2006 09 25 | 703 | (1.8+ | 1.9+) |
| 2001 10 18 | 644 | 0.1− | 0.9+ | 2001 11 21 | 704 | 0.0 | 0.9+ | 2006 09 25 | 703 | (2.4+ | 1.2+) |
| 2001 10 24 | 704 | 0.0 | 0.8+ | 2001 11 21 | 704 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.3− | 1.1+ |
| 2001 10 24 | 704 | 0.7− | 1.0+ | 2001 11 21 | 704 | 0.2− | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2001 11 21 | 704 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.5+ |
| 2001 10 24 | 704 | 0.7− | 0.4+ | 2001 11 21 | 704 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 2001 10 24 | 704 | 0.6− | 0.5+ | 2001 11 22 | 644 | 0.1+ | 0.7+ | 2006 10 28 | 703 | 0.6− | 0.6+ |
| 2001 11 10 | 704 | 0.3− | 0.3+ | 2001 11 22 | 644 | 0.4+ | 0.8+ | 2006 10 28 | 703 | 0.4+ | 0.4+ |
| 2001 11 10 | 704 | 0.6− | 0.2+ | 2001 11 22 | 644 | (3.2+ | 0.7+) | 2006 10 28 | 703 | 0.7− | 0.4+ |
| 2001 11 10 | 704 | (2.4− | 0.0 ) | 2001 12 10 | 691 | 0.5+ | 0.2− | 2006 10 28 | 703 | 0.7− | 1.1− |
| 2001 11 10 | 704 | 0.8− | 0.5+ | 2001 12 10 | 691 | 0.1+ | 0.1+ | | | | |

**(137180)∗ 1999 JF$_{20}$ = 2004 GO$_{36}$**

Discovered 1999 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60531)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.99606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19856614 | $\omega$ | 230.95676 | | −0.25073936 | +0.96615506 | |
| $a$ | 2.9098187 | $\Omega$ | 24.72485 | | −0.83737657 | −0.18504885 | |
| $e$ | 0.2017543 | $i$ | 8.33272 | | −0.48572653 | −0.17972567 | |
| $P$ | 4.96 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 1.1− | 1.3+ | 2004 04 17 | 704 | 0.8− | 0.6+ | 2005 08 30 | 691 | 0.0 | 0.0 |
| 1999 05 10 | 704 | 0.8− | 1.1+ | 2004 04 17 | 704 | (0.8− | 1.7+) | 2005 08 30 | 691 | 0.0 | 0.1+ |
| 1999 05 10 | 704 | 0.7− | 0.4+ | 2004 04 17 | 704 | 0.6+ | 0.5+ | 2005 09 13 | 703 | 0.3+ | 0.3+ |
| 1999 05 12 | 699 | (2.3+ | 0.3+) | 2004 04 17 | 704 | 0.7+ | 0.2+ | 2005 09 13 | 703 | 1.1− | 1.1+ |
| 1999 05 12 | 699 | 1.2+ | 0.3+ | 2004 04 20 | 704 | (0.0 | 1.5−) | 2005 09 13 | 703 | 0.2− | 0.7− |
| 1999 05 12 | 699 | 2.1+ | 0.2− | 2004 04 20 | 704 | (0.3− | 2.4−) | 2005 09 13 | 703 | 0.5− | 0.6+ |
| 1999 05 13 | 704 | 0.7− | 1.1+ | 2004 04 20 | 704 | 0.1− | 0.9− | 2005 09 13 | 691 | 0.3+ | 0.0 |
| 1999 05 13 | 704 | (2.4+ | 0.7+) | 2004 04 20 | 704 | 0.5− | 0.5− | 2005 09 13 | 691 | 0.2+ | 0.2− |
| 1999 05 13 | 704 | 0.1− | 0.8+ | 2004 04 25 | 704 | 0.2− | 0.4+ | 2005 09 13 | 691 | 0.1+ | 0.0 |
| 1999 05 13 | 704 | 1.0− | 0.5+ | 2004 04 25 | 704 | 0.4+ | 0.7+ | 2005 09 23 | 703 | 0.3+ | 1.4+ |
| 1999 05 18 | 704 | 0.7+ | 0.4+ | 2004 04 25 | 704 | 0.5− | 0.8+ | 2005 09 23 | 703 | 0.2+ | 1.1− |
| 1999 05 18 | 704 | 0.4+ | 1.6+ | 2004 04 25 | 704 | 0.4+ | 1.1+ | 2005 09 23 | 703 | 0.5− | 0.9− |
| 1999 05 18 | 704 | 0.2− | 0.4+ | 2004 04 25 | 704 | 0.2+ | 0.4− | 2005 09 23 | 703 | 0.0 | 0.2− |
| 1999 05 18 | 704 | 0.5− | 0.5+ | 2004 04 30 | 608 | 0.7− | 0.7− | 2005 10 01 | 703 | 0.0 | 0.4+ |
| 1999 05 19 | 704 | (2.6+ | 0.4−) | 2004 04 30 | 608 | 0.5− | 0.9− | 2005 10 01 | 703 | (0.1+ | 1.6−) |
| 1999 05 19 | 704 | 1.9+ | 0.4− | 2004 04 30 | 608 | 0.6− | 0.7− | 2005 10 01 | 703 | 0.9− | 1.0+ |
| 1999 05 19 | 704 | 1.4+ | 0.4− | 2004 05 13 | 699 | 0.2+ | 0.2− | 2005 10 01 | 703 | 0.2− | 0.7− |
| 1999 05 19 | 704 | 0.7+ | 0.5− | 2004 05 13 | 699 | 0.3+ | 0.2− | 2005 10 01 | 703 | 0.1− | 0.9+ |
| 1999 05 19 | 704 | 0.1− | 0.4− | 2004 05 13 | 699 | 0.4+ | 0.1− | 2005 10 01 | 703 | 1.0+ | 0.1+ |
| 1999 05 19 | 699 | 0.7− | 0.1+ | 2004 05 13 | 699 | 0.1− | 0.7+ | 2005 10 01 | 703 | 1.2− | 0.6+ |
| 1999 05 19 | 699 | (2.2+ | 0.6−) | 2004 05 15 | 704 | 0.2+ | 0.2+ | 2005 10 01 | 703 | 0.8− | 1.1+ |
| 1999 05 19 | 699 | 1.8+ | 1.0− | 2004 05 15 | 704 | 0.1− | 0.1− | 2005 10 05 | 704 | 0.1− | 0.2− |
| 2000 09 24 | 704 | 0.5− | 1.0− | 2004 05 15 | 704 | 0.3+ | 0.2− | 2005 10 05 | 704 | 0.7+ | 0.7+ |
| 2000 09 24 | 704 | 0.2− | 0.3+ | 2004 05 15 | 704 | 0.3+ | 0.6− | 2005 10 05 | 704 | 0.5+ | 0.4− |
| 2000 09 24 | 704 | 0.4− | 0.7+ | 2004 05 15 | 704 | 0.2− | 0.1+ | 2005 10 13 | 691 | 0.3− | 0.3− |
| 2000 09 24 | 704 | 1.2− | 0.0 | 2004 05 19 | 704 | 0.2− | 0.4+ | 2005 10 13 | 691 | 0.5+ | 0.4− |
| 2000 10 02 | 699 | (1.0+ | 2.5+) | 2004 05 19 | 704 | 0.1+ | 0.3+ | 2005 10 13 | 691 | 0.2+ | 0.0 |
| 2000 10 02 | 699 | 0.6− | 0.5+ | 2004 05 19 | 704 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2000 10 02 | 699 | 0.2− | 2.0+ | 2004 05 19 | 704 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.5− | 0.0 |
| 2000 10 02 | 699 | 0.3− | 0.5+ | 2004 05 19 | 704 | 0.6− | 1.0− | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2004 04 13 | 644 | 0.2− | 0.3+ | 2005 08 26 | 644 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.2− | 0.5+ |
| 2004 04 13 | 644 | 0.1− | 0.0 | 2005 08 26 | 644 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.3+ |
| 2004 04 13 | 644 | 0.2+ | 0.5+ | 2005 08 26 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.3− | 0.6+ |
| 2004 04 17 | 704 | 0.5+ | 0.2+ | 2005 08 30 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.3+ |

**(137181)∗ 1999 JA$_{30}$ = 2005 LP$_{6}$**

Discovered 1999 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84493)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.13908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18030949 | $\omega$ | 56.24819 | | +0.09996830 | +0.94848829 | |
| $a$ | 3.1030611 | $\Omega$ | 222.85473 | | −0.99451945 | +0.08595378 | |
| $e$ | 0.1609563 | $i$ | 26.23192 | | −0.03061711 | +0.30492936 | |
| $P$ | 5.47 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 07 | 699 | 0.7+ | 0.0 | 2001 12 11 | 704 | 0.1+ | 0.5+ | 2005 06 20 | A13 | 0.1− | 0.1− |
| 1999 05 07 | 699 | 0.2+ | 0.6+ | 2001 12 18 | 704 | 0.6+ | 0.9+ | 2006 09 17 | 703 | 0.0 | 1.2− |
| 1999 05 07 | 699 | (2.5+ | 0.0 ) | 2001 12 18 | 704 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.2+ | 0.7+ |
| 1999 05 10 | 704 | 1.2+ | 1.4+ | 2001 12 18 | 704 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.6− | 1.3− |
| 1999 05 10 | 704 | 0.2+ | 0.6+ | 2001 12 18 | 704 | 0.4− | 0.4+ | 2006 09 17 | 703 | 0.8− | 0.1+ |
| 1999 05 10 | 704 | 0.8− | 0.1+ | 2001 12 18 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 703 | 0.4+ | 0.7+ |
| 1999 05 13 | 704 | 0.6− | 0.0 | 2004 03 19 | E12 | 0.4− | 1.3+ | 2006 09 28 | 703 | 0.0 | 0.1+ |
| 1999 05 13 | 704 | 0.1+ | 0.2− | 2004 03 19 | E12 | (0.7− | 1.7+) | 2006 09 28 | 703 | 0.3+ | 0.8− |
| 1999 05 13 | 704 | 0.9+ | 1.2− | 2004 03 19 | E12 | 0.2− | 1.5+ | 2006 09 28 | 703 | 0.3+ | 0.6− |
| 1999 05 13 | 704 | 1.0+ | 0.9− | 2004 03 19 | E12 | 0.1+ | 0.6+ | 2006 10 17 | A50 | 0.4+ | 0.3− |
| 1999 05 13 | 704 | 0.9− | 0.8− | 2004 04 13 | 644 | 0.4+ | 0.2− | 2006 10 17 | A50 | 0.2+ | 0.3− |
| 1999 05 18 | 704 | 0.3+ | 0.9+ | 2004 04 13 | 644 | 0.2+ | 0.1+ | 2006 10 18 | A50 | 0.3+ | 0.1+ |
| 1999 05 18 | 704 | (2.6− | 1.6−) | 2004 04 13 | 644 | 0.3+ | 0.1+ | 2006 10 18 | A50 | 0.2+ | 0.0 |
| 1999 05 18 | 704 | 1.2− | 0.9− | 2005 06 01 | 704 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.5+ | 0.1− |
| 1999 05 19 | 704 | 1.5+ | 0.1− | 2005 06 01 | 704 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.1+ | 0.3+ |
| 1999 05 19 | 704 | 0.2− | 0.6− | 2005 06 01 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.4− |
| 1999 05 19 | 704 | 0.4− | 0.3− | 2005 06 01 | 704 | 0.0 | 1.0+ | 2006 10 19 | 703 | 0.6+ | 0.5+ |
| 1999 05 19 | 704 | 1.4− | 0.1+ | 2005 06 01 | 704 | 0.9− | 0.5+ | 2006 10 31 | 703 | 0.9− | 0.2− |
| 2000 09 29 | 699 | 0.3− | 0.6+ | 2005 06 04 | 704 | 0.1+ | 0.4+ | 2006 10 31 | 703 | 0.6− | 0.5+ |
| 2000 09 29 | 699 | 0.1− | 0.4− | 2005 06 04 | 704 | 0.2− | 0.3+ | 2006 10 31 | 703 | 0.3+ | 0.2− |
| 2000 09 29 | 699 | 0.7+ | 0.2− | 2005 06 04 | 704 | 0.0 | 0.4+ | 2006 10 31 | 703 | 1.0− | 0.0 |
| 2000 09 29 | 699 | 0.7− | 0.1+ | 2005 06 04 | 704 | 0.7+ | 0.6+ | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 2001 11 19 | 699 | 0.1− | 0.1+ | 2005 06 04 | 704 | 1.0+ | 0.1+ | 2006 11 19 | 704 | (1.8+ | 0.4+) |
| 2001 11 19 | 699 | 0.6+ | 0.3+ | 2005 06 06 | 704 | 0.6+ | 0.8+ | 2006 11 19 | 704 | 0.3+ | 1.4+ |
| 2001 11 19 | 699 | 0.5+ | 0.8+ | 2005 06 06 | 704 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.7− |
| 2001 11 19 | 699 | 1.0− | 0.1− | 2005 06 06 | 704 | 1.2− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2001 12 11 | 704 | 0.4− | 0.2+ | 2005 06 06 | 704 | 0.4− | 0.2− | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2005 06 06 | 704 | 0.0 | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2001 12 11 | 704 | 0.6+ | 1.0+ | 2005 06 20 | A13 | (2.9− | 0.8−) | 2006 11 25 | G96 | 0.5+ | 0.1+ |
| 2001 12 11 | 704 | 0.3+ | 0.9+ | 2005 06 20 | A13 | 0.1− | 0.1− | | | | |

**(137182)∗ 1999 JG$_{40}$ = 2004 CQ$_{98}$**

Discovered 1999 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60531)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.55529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18251504 | $\omega$ | 60.84652 | | −0.84687235 | +0.53160107 | |
| $a$ | 3.0780118 | $\Omega$ | 151.26006 | | −0.49773033 | −0.78279282 | |
| $e$ | 0.2196551 | $i$ | 1.71685 | | −0.18727452 | −0.32347443 | |
| $P$ | 5.40 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 0.6− | 0.1− | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2004 05 21 | 704 | 0.2+ | 0.8+ | |
| 1999 04 17 | 691 | 0.7− | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2004 05 21 | 704 | 0.3+ | 0.7+ | |
| 1999 04 17 | 691 | 0.7− | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.0 | 2005 06 15 | G96 | 0.3+ | 0.3+ | |
| 1999 05 08 | 699 | 1.4+ | 1.2+ | 2004 03 11 | 644 | 0.3+ | 0.2+ | 2005 06 15 | G96 | 0.1+ | 0.3+ | |
| 1999 05 08 | 699 | 1.5+ | 0.5− | 2004 03 11 | 644 | 0.2+ | 0.2+ | 2005 06 15 | G96 | 0.2+ | 0.5+ | |
| 1999 05 08 | 699 | 0.4+ | 1.2+ | 2004 03 11 | 644 | 0.2+ | 0.1+ | 2005 06 15 | G96 | 0.3+ | 0.4+ | |
| 1999 05 10 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.5− | 0.7+ | 2005 07 04 | 691 | 0.2− | 0.3+ | |
| 1999 05 10 | 704 | 0.0 | 0.9− | 2004 03 15 | 704 | 0.3− | 0.5+ | 2005 07 04 | 691 | 0.0 | 0.3+ | |
| 1999 05 10 | 704 | 1.3+ | 1.2− | 2004 03 15 | 704 | 0.4− | 0.8+ | 2005 07 04 | 691 | 0.2− | 0.3+ | |
| 1999 05 10 | 704 | 0.3+ | 0.6− | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2005 07 09 | 691 | 0.3− | 0.1+ | |
| 1999 05 10 | 704 | 0.6+ | 0.8− | 2004 03 15 | 704 | 0.2− | 0.8+ | 2005 07 09 | 691 | 0.0 | 0.1+ | |
| 1999 05 13 | 704 | 0.3+ | 0.0 | 2004 03 18 | 704 | 1.2+ | 0.2− | 2005 07 09 | 691 | 0.1− | 0.2+ | |
| 1999 05 13 | 704 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.9+ | 0.4− | 2005 07 12 | 703 | 0.2+ | 0.5+ | |
| 1999 05 13 | 704 | 0.6− | 0.7+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2005 07 12 | 703 | 0.4− | 0.5− | |
| 1999 05 13 | 704 | 1.6− | 1.3+ | 2004 03 18 | 704 | 1.0+ | 0.6− | 2005 07 12 | 703 | 0.2+ | 1.3+ | |
| 1999 05 13 | 704 | 0.1+ | 0.5− | 2004 03 18 | 704 | 0.7+ | 0.5− | 2005 07 12 | 703 | (1.9− | 0.7+) | |
| 1999 05 17 | 699 | 0.5+ | 0.1− | 2004 03 20 | 699 | 0.9− | 0.2+ | 2005 07 15 | G96 | 0.0 | 0.4+ | |
| 1999 05 17 | 699 | 0.8− | 0.5+ | 2004 03 20 | 699 | 0.4− | 0.1+ | 2005 07 15 | G96 | 0.1− | 0.4+ | |
| 1999 05 18 | 704 | 0.3+ | 1.6− | 2004 03 20 | 699 | 0.3− | 0.1+ | 2005 07 15 | G96 | 0.0 | 0.2+ | |
| 1999 05 18 | 704 | 0.5− | 0.5+ | 2004 03 20 | 699 | 0.9− | 0.4+ | 2005 08 06 | 704 | 0.4+ | 0.5+ | |
| 1999 05 18 | 704 | 0.2− | 2.0− | 2004 03 22 | 704 | 1.3+ | 0.6+ | 2005 08 06 | 704 | 0.2− | 0.2+ | |
| 1999 05 18 | 704 | 1.3− | 0.2+ | 2004 03 22 | 704 | 0.5+ | 0.1+ | 2005 08 06 | 704 | 0.5+ | 0.7− | |
| 1999 05 18 | 704 | (1.0− | 2.1+) | 2004 03 22 | 704 | 0.7+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.1+ | |
| 1999 05 23 | 691 | 0.3− | 0.2− | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.1− | |
| 1999 05 23 | 691 | 0.1− | 0.0 | 2004 03 22 | 704 | 0.5+ | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | |
| 1999 05 23 | 691 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.6+ | |
| 1999 06 04 | 703 | 0.9+ | 0.5− | 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.6+ | |
| 1999 06 04 | 703 | 1.2+ | 0.3− | 2004 03 23 | 704 | 0.6+ | 0.9+ | 2006 09 19 | 691 | 0.2− | 0.3+ | |
| 1999 06 04 | 703 | 0.9+ | 0.4+ | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.3+ | |
| 1999 06 04 | 703 | 1.2+ | 1.1+ | 2004 03 23 | 704 | (3.3+ | 0.7+) | 2006 09 19 | 703 | 0.0 | 0.8+ | |
| 1999 06 04 | 699 | (2.4+ | 0.8+) | 2004 03 27 | 704 | 0.7+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.4+ | |
| 1999 06 04 | 699 | 1.3+ | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.1− | |
| 1999 06 04 | 699 | 0.4+ | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 1.1+ | 0.4+ | |
| 1999 06 14 | 699 | 0.8+ | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 1.3− | 0.4+ | |
| 1999 06 14 | 699 | 1.5+ | 0.4+ | 2004 03 27 | 704 | 0.5− | 0.6+ | 2006 09 19 | 703 | (2.0− | 0.4−) | |
| 1999 06 14 | 699 | 0.8+ | 1.3+ | 2004 03 30 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.4+ | |
| 2004 02 13 | 683 | 0.3− | 1.1+ | 2004 03 30 | 691 | 0.2− | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.8+ | |
| 2004 02 13 | 683 | 0.5− | 1.4+ | 2004 03 30 | 691 | 0.2− | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.5+ | |
| 2004 02 13 | 683 | (2.3− | 0.3−) | 2004 03 31 | 691 | 0.2− | 0.3+ | 2006 09 23 | 691 | 0.4− | 0.6+ | |
| 2004 02 13 | 644 | 0.3− | 0.3+ | 2004 03 31 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.3+ | |
| 2004 02 13 | 644 | 0.0 | 0.6+ | 2004 03 31 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.0 | |
| 2004 02 13 | 644 | 0.1+ | 0.5+ | 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2+ | |
| 2004 02 14 | 703 | 0.3+ | 0.8+ | 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2+ | |
| 2004 02 14 | 703 | 1.0+ | 0.4+ | 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.4− | 1.0+ | |
| 2004 02 14 | 703 | 1.2+ | 0.7+ | 2004 04 12 | 699 | 0.5− | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.7+ | |
| 2004 02 14 | 703 | 0.5+ | 0.5+ | 2004 04 12 | 699 | 0.7− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.0 | |
| 2004 02 16 | 333 | 0.2− | 1.1+ | 2004 04 12 | 699 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.1− | 1.3+ | |
| 2004 02 16 | 333 | 0.3− | 0.4+ | 2004 04 12 | 699 | 0.3− | 0.2− | 2006 10 16 | 703 | (1.9− | 0.3+) | |
| 2004 02 16 | 333 | 0.4− | 0.4+ | 2004 04 15 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.0 | |
| 2004 02 18 | 683 | 0.3+ | 1.4− | 2004 04 15 | 704 | 0.7+ | 1.1+ | 2006 10 16 | 703 | 0.4+ | 0.4− | |
| 2004 02 18 | 683 | 0.1+ | 0.9− | 2004 04 15 | 699 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2− | 0.0 | |
| 2004 02 18 | 683 | (2.1− | 0.9−) | 2004 04 15 | 704 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.2+ | |
| 2004 02 19 | 704 | 0.5+ | 0.0 | 2004 04 15 | 704 | 0.0 | 0.6− | 2006 10 21 | G96 | 0.0 | 0.2+ | |
| 2004 02 19 | 704 | 0.8+ | 0.1+ | 2004 04 15 | 699 | 0.7+ | 0.9− | 2006 10 21 | G96 | 0.0 | 0.1+ | |
| 2004 02 19 | 704 | 0.5+ | 0.6+ | 2004 04 15 | 704 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.0 | |
| 2004 02 19 | 704 | 0.5+ | 0.0 | 2004 04 15 | 699 | 0.2− | 1.5− | 2006 11 14 | G96 | 0.2− | 0.2− | |
| 2004 02 19 | 704 | 0.9+ | 0.0 | 2004 04 15 | 699 | 0.6− | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.2− | |
| 2004 02 26 | 704 | 0.6+ | 0.1− | 2004 05 21 | 704 | 0.3− | 0.8− | 2006 11 14 | G96 | 0.4− | 0.2+ | |
| 2004 02 26 | 704 | 0.1− | 0.0 | 2004 05 21 | 704 | 0.2+ | 0.5+ | | | | | |

**(137183)∗ 1999 JX$_{49}$**

Discovered 1999 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.36638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16985284 | $\omega$ | 235.84186 | | +0.52757914 | +0.81782886 | |
| $a$ | 3.2291447 | $\Omega$ | 67.63402 | | −0.67442566 | +0.56772339 | |
| $e$ | 0.1614838 | $i$ | 14.38953 | | −0.51653681 | +0.09405376 | |
| $P$ | 5.80 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 0.1+ | 1.3+ | 2001 11 20 | 704 | 0.4− | 0.4+ | 2005 07 03 | E12 | 0.1+ | 0.2+ | |
| 1999 05 10 | 704 | 0.8+ | 1.7− | 2001 11 20 | 704 | 0.2+ | 0.2+ | 2005 07 03 | E12 | 1.0− | 0.5+ | |
| 1999 05 10 | 704 | 1.4+ | 0.8− | 2001 11 20 | 704 | 0.6− | 0.5+ | 2005 07 03 | E12 | 0.4+ | 0.8+ | |
| 1999 05 10 | 704 | (2.3− | 0.2+) | 2001 12 07 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 699 | 0.5− | 0.4− | |
| 1999 05 13 | 704 | 0.2− | 1.0− | 2001 12 07 | 644 | 0.1+ | 0.5+ | 2006 09 17 | 699 | 1.0+ | 1.4+ | |
| 1999 05 13 | 704 | 0.0 | 0.2− | 2001 12 07 | 644 | 0.3+ | 0.3+ | 2006 09 17 | 699 | 1.1+ | 0.8+ | |
| 1999 05 13 | 704 | 0.8+ | 0.9+ | 2001 12 14 | 704 | 0.3− | 0.1− | 2006 09 17 | 699 | 1.2− | 0.6+ | |
| 1999 05 13 | 704 | (0.3− | 2.1+) | 2001 12 14 | 704 | 0.2− | 0.3+ | 2006 09 20 | 703 | 0.1+ | 0.0 | |
| 1999 05 18 | 704 | 1.5+ | 0.5− | 2001 12 14 | 704 | 0.5− | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.4+ | |
| 1999 05 18 | 704 | 0.6− | 0.7+ | 2001 12 14 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.9− | 0.4+ | |
| 1999 05 18 | 704 | 0.0 | 1.7+ | 2001 12 17 | 704 | 0.4− | 0.3+ | 2006 09 20 | 703 | 0.7− | 0.0 | |
| 1999 05 18 | 704 | 0.1− | 0.6− | 2001 12 17 | 704 | 0.8− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.3− | |
| 1999 05 18 | 704 | 0.5− | 0.1+ | 2001 12 17 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.7+ | 0.2+ | |
| 1999 06 06 | 691 | 0.0 | 0.1+ | 2001 12 17 | 704 | 0.2− | 0.6+ | 2006 09 27 | 703 | 0.2− | 0.0 | |
| 1999 06 06 | 691 | 0.0 | 0.4+ | 2001 12 17 | 704 | 0.0 | 0.9+ | 2006 09 27 | 703 | 0.2− | 0.3+ | |
| 1999 06 06 | 691 | 0.3+ | 0.0 | 2001 12 19 | 704 | (1.5+ | 1.6−) | 2006 09 27 | 703 | 0.1+ | 0.3+ | |
| 1999 06 18 | 691 | 0.1+ | 0.2− | 2001 12 19 | 704 | (3.2+ | 1.4−) | 2006 09 27 | 703 | 0.3+ | 0.4− | |
| 1999 06 18 | 691 | 0.0 | 0.0 | 2001 12 19 | 704 | (2.6+ | 0.7−) | 2006 09 27 | 703 | 0.5− | 0.1+ | |
| 1999 06 18 | 691 | 0.1− | 0.3+ | 2002 01 08 | 691 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.1+ | |
| 2000 09 28 | 699 | 0.2+ | 0.2− | 2002 01 08 | 691 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ | |
| 2000 09 28 | 699 | 0.3− | 0.2− | 2002 01 08 | 691 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.2+ | |
| 2000 09 28 | 699 | 0.1+ | 1.0− | 2004 03 25 | 704 | (0.8+ | 1.8+) | 2006 10 09 | 644 | 0.3+ | 0.2+ | |
| 2000 09 28 | 699 | 1.1− | 0.7+ | 2004 03 25 | 704 | 0.6+ | 1.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | |
| 2001 10 18 | 333 | 0.8+ | 0.1− | 2004 03 25 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | |
| 2001 10 18 | 333 | 0.2+ | 0.3− | 2004 03 25 | 704 | 0.7+ | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.2− | |
| 2001 10 18 | 333 | 0.7− | 0.0 | 2005 06 05 | 428 | 0.0 | 0.6+ | 2006 10 28 | 703 | 0.7+ | 0.5+ | |
| 2001 10 24 | 704 | 0.6+ | 0.6+ | 2005 06 05 | 428 | 0.4− | 0.0 | 2006 10 28 | 703 | 0.5+ | 0.4− | |
| 2001 10 24 | 704 | 0.5+ | 0.3− | 2005 07 03 | 644 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.3− | 0.1+ | |
| 2001 10 24 | 704 | 0.1− | 0.4− | 2005 07 03 | 644 | 0.1+ | 0.7+ | 2006 10 28 | 703 | 0.5+ | 0.2− | |
| 2001 10 24 | 704 | 0.4− | 0.6− | 2005 07 03 | 644 | 0.2+ | 0.9+ | | | | | |
| 2001 10 24 | 704 | 1.0− | 0.0 | 2005 07 03 | E12 | 0.3− | 0.1+ | | | | | |

**(137184)∗ 1999 JG$_{63}$**

Discovered 1999 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.09908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19323493 | $\omega$ | 248.16050 | | +0.47003702 | +0.87609412 | |
| $a$ | 2.9630953 | $\Omega$ | 50.33043 | | −0.74956084 | +0.46042380 | |
| $e$ | 0.5566075 | $i$ | 8.01686 | | −0.46607268 | +0.14307000 | |
| $P$ | 5.10 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 704 | 1.0− | 0.8− | 2004 04 09 | E12 | 0.6− | 0.3+ | 2004 05 20 | H41 | 0.2− | 0.1− | |
| 1999 02 23 | 704 | (2.5− | 1.8−) | 2004 04 11 | 644 | 0.1+ | 0.1+ | 2004 05 20 | H41 | 0.1+ | 0.0 | |
| 1999 02 23 | 704 | (2.6− | 1.8+) | 2004 04 11 | 644 | 0.0 | 0.2+ | 2004 05 20 | H41 | 0.2− | 0.1− | |
| 1999 02 23 | 704 | (6.0− | 1.9−) | 2004 04 11 | 644 | 0.0 | 0.2+ | 2004 05 20 | H41 | 1.0− | 0.1+ | |
| 1999 03 29 | 699 | 0.7− | 0.4+ | 2004 04 12 | 939 | 0.6− | 0.3− | 2004 05 20 | H41 | 0.5− | 0.2− | |
| 1999 03 29 | 699 | 0.4− | 0.4+ | 2004 04 12 | 939 | 0.8− | 0.2− | 2004 05 20 | 084 | 0.6+ | 0.3+ | |
| 1999 03 29 | 699 | 1.8− | 0.6+ | 2004 04 12 | 939 | 0.9− | 0.1− | 2004 05 21 | H41 | 0.5+ | 1.0− | |
| 1999 05 10 | 704 | 0.6+ | 0.6+ | 2004 04 12 | 084 | 0.2+ | 0.0 | 2004 05 21 | H41 | 0.0 | 0.1− | |
| 1999 05 10 | 704 | 0.2− | 0.8+ | 2004 04 13 | 084 | 0.3− | 0.5− | 2004 05 21 | H41 | 0.8− | 0.5+ | |
| 1999 05 10 | 704 | 1.6− | 0.0 | 2004 04 15 | 644 | 0.1+ | 0.1+ | 2004 05 21 | H41 | 0.6− | 0.1+ | |
| 1999 05 10 | 704 | 0.1− | 0.5+ | 2004 04 15 | 644 | 0.0 | 0.2+ | 2004 05 21 | 704 | 1.1+ | 0.8+ | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 1.9+ | 1.8+ | 2004 04 15 | H41 | 0.2− | 0.1− | 2004 05 21 | 704 | 0.3+ | 0.4− | 2004 03 16 | 704 | 0.1− | 0.1− | 2004 05 05 | H41 | 0.1− | 0.4− | 2005 11 30 | 704 | 0.5− | 0.3− |
| 1999 05 13 | 704 | 0.3− | 0.1+ | 2004 04 15 | H41 | 0.3− | 0.0 | 2004 05 21 | 704 | 0.1+ | 0.2+ | 2004 03 19 | J87 | 0.4+ | 0.7− | 2004 05 06 | H41 | 0.9− | 0.3− | 2005 11 30 | 704 | 1.3− | 0.0 |
| 1999 05 13 | 704 | 0.3+ | 0.3+ | 2004 04 15 | H41 | 0.1+ | 0.1− | 2004 05 21 | 704 | 1.0+ | 0.1+ | 2004 03 19 | J87 | 0.6+ | 0.7− | 2004 05 06 | H41 | 1.0− | 1.1− | 2005 11 30 | 704 | 0.5− | 0.3− |
| 1999 05 13 | 704 | 0.1− | 1.0− | 2004 04 15 | H41 | 0.3− | 0.2− | 2004 05 21 | 704 | 0.6− | 0.1+ | 2004 03 19 | J87 | 0.4+ | 0.9− | 2004 05 06 | H41 | 0.4+ | 0.9− | 2005 11 30 | 704 | 0.5− | 0.1+ |
| 1999 05 13 | 704 | 0.8+ | 1.0+ | 2004 04 15 | 644 | 0.1+ | 0.1+ | 2004 05 23 | H41 | 0.8− | 0.4− | 2004 03 20 | 704 | 1.0+ | 0.5− | 2004 05 06 | H41 | 0.4− | 0.1− | 2005 11 30 | 704 | 0.5− | 0.7+ |
| 1999 05 13 | 704 | 0.4− | 0.5− | 2004 04 15 | 084 | 0.6− | 0.7− | 2004 05 23 | H41 | 0.4− | 0.0 | 2004 03 20 | 704 | 0.8+ | 0.3− | 2004 05 07 | 084 | 1.0− | 0.2+ | 2005 12 01 | 704 | 0.3+ | 0.1− |
| 1999 05 13 | 704 | 0.6+ | 0.4+ | 2004 04 16 | H72 | 0.6− | 0.2− | 2004 05 23 | H41 | 0.1− | 0.3− | 2004 03 20 | 704 | 1.1+ | 0.0 | 2004 05 08 | 084 | 0.6− | 0.8+ | 2005 12 01 | 704 | 0.5+ | 0.2+ |
| 1999 05 13 | 704 | 0.0 | 1.4− | 2004 04 16 | H72 | 0.7− | 0.2+ | 2004 05 23 | H41 | 0.2+ | 0.3− | 2004 03 20 | 699 | 0.3− | 0.0 | 2004 05 09 | 608 | 0.1+ | 0.9+ | 2005 12 01 | 704 | 0.0 | 0.2+ |
| 1999 05 13 | 704 | 0.6− | 0.8+ | 2004 04 16 | H72 | 0.5− | 0.1+ | 2004 05 23 | H41 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.4+ | 0.0 | 2004 05 09 | 608 | 0.3+ | 0.6+ | 2005 12 01 | 704 | 0.5+ | 0.1+ |
| 1999 05 13 | 704 | 0.8+ | 0.0 | 2004 04 16 | H72 | 0.4− | 0.1+ | 2004 05 23 | 699 | 0.6− | 0.4− | 2004 03 20 | 704 | 0.4+ | 0.0 | 2004 05 09 | 608 | 0.2+ | 0.7+ | 2005 12 02 | 691 | 0.1+ | 0.3+ |
| 1999 05 13 | 704 | 0.2− | 0.6− | 2004 04 16 | H41 | 1.2+ | 1.3− | 2004 05 23 | 699 | 1.1+ | 0.2− | 2004 03 20 | 699 | 0.2− | 0.0 | 2004 05 09 | 084 | 0.8− | 0.2+ | 2005 12 02 | 691 | 0.3+ | 0.6− |
| 1999 05 18 | 704 | (2.7+ | 2.6+) | 2004 04 16 | H41 | 0.3− | 0.0 | 2004 05 23 | 699 | 0.4+ | 0.0 | 2004 03 20 | 699 | 0.0 | 0.3− | 2004 05 10 | 703 | 0.0 | 0.2− | 2005 12 02 | 691 | 0.1+ | 0.2+ |
| 1999 05 18 | 704 | (0.7+ | 5.7−) | 2004 04 16 | H41 | 0.6− | 0.6− | 2004 05 23 | 699 | 0.3− | 0.7+ | 2004 03 20 | 699 | 0.1− | 0.2+ | 2004 05 10 | 703 | 0.1+ | 0.5+ | 2005 12 02 | 704 | 0.8+ | 0.9+ |
| 1999 05 18 | 704 | 1.5+ | 1.0− | 2004 04 16 | H41 | 0.7− | 0.2− | 2004 05 23 | 084 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2004 05 10 | 703 | 0.4+ | 0.2+ | 2005 12 02 | 704 | 1.1+ | 0.2+ |
| 1999 05 18 | 704 | 0.9− | 1.0− | 2004 04 16 | H41 | 0.5− | 0.5− | 2004 05 24 | 084 | 0.5+ | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.1− | 2004 05 10 | 703 | 0.1+ | 0.3+ | 2005 12 02 | 704 | 0.7− | 1.1+ |
| 1999 05 18 | 704 | 1.6− | 1.3− | 2004 04 16 | 084 | 0.1− | 0.3− | 2004 06 01 | 703 | 1.0+ | 0.9+ | 2004 03 22 | 704 | 0.6+ | 0.2+ | 2004 05 11 | H41 | 0.1− | 0.6− | 2005 12 02 | 704 | 0.0 | 0.1+ |
| 1999 05 19 | 704 | 1.5− | 0.9− | 2004 04 17 | J78 | 0.2− | 0.1− | 2004 06 01 | 703 | 1.4+ | 0.4+ | 2004 03 22 | 704 | 0.8+ | 0.1− | 2004 05 11 | H41 | 0.0 | 0.2− | 2005 12 02 | 704 | 0.3− | 0.3+ |
| 1999 05 19 | 704 | (3.9+ | 2.2−) | 2004 04 17 | J78 | 0.5+ | 0.3+ | 2004 06 01 | 703 | 1.2+ | 0.4+ | 2004 03 22 | 704 | 0.1− | 0.0 | 2004 05 11 | H41 | 0.1− | 0.3− | 2005 12 02 | 704 | 0.2− | 0.4+ |
| 1999 05 19 | 704 | 1.8+ | 1.9− | 2004 04 17 | 084 | 0.2− | 0.1+ | 2004 06 01 | 703 | (1.5+ | 0.6+) | 2004 03 24 | D85 | 1.3+ | 0.8− | 2004 05 11 | H41 | 0.4− | 0.5+ | 2005 12 06 | 691 | 0.0 | 0.3+ |
| 1999 05 19 | 704 | (3.3+ | 3.2−) | 2004 04 18 | H72 | 0.3+ | 0.3+ | 2004 06 04 | J87 | 0.2− | 0.1+ | 2004 03 24 | D85 | 0.4− | 0.8− | 2004 05 12 | 084 | 0.3+ | 0.1+ | 2005 12 06 | 691 | 0.2+ | 0.3+ |
| 1999 05 19 | 704 | (1.4+ | 2.7−) | 2004 04 18 | H72 | (2.2− | 0.2−) | 2004 06 04 | J87 | 0.2− | 0.2− | 2004 03 24 | D85 | 0.1− | 0.0 | 2004 05 13 | 084 | 0.5− | 0.1+ | 2005 12 06 | 691 | (0.0 | 2.7+) |
| 2001 12 19 | 644 | 0.9− | 0.0 | 2004 04 18 | J78 | 0.5− | 0.7− | 2004 06 04 | J87 | 0.4− | 0.2− | 2004 03 28 | 469 | 0.1+ | 0.0 | 2004 05 14 | 704 | 0.6+ | 0.1+ | 2005 12 21 | 703 | 1.0− | 1.1+ |
| 2001 12 19 | 644 | 0.2− | 0.0 | 2004 04 18 | J78 | 0.2− | 0.4+ | 2004 06 07 | H41 | 0.5+ | 1.1+ | 2004 03 28 | 469 | 0.1− | 0.1+ | 2004 05 14 | 704 | 0.0 | 0.2− | 2005 12 21 | 703 | (0.1+ | 2.2+) |
| 2001 12 19 | 644 | 0.1+ | 0.4− | 2004 04 18 | 084 | 0.4− | 0.0 | 2004 06 07 | H41 | 0.6− | 0.0 | 2004 03 28 | 469 | 0.3− | 0.0 | 2004 05 14 | 704 | 0.3+ | 0.2− | 2005 12 21 | 703 | 0.0 | 0.5+ |
| 2001 12 19 | 644 | 0.4− | 0.1+ | 2004 04 20 | 704 | 0.2+ | 0.1− | 2004 06 07 | H41 | 0.8− | 0.1− | 2004 03 28 | 469 | 0.1− | 0.1+ | 2004 05 14 | 704 | 0.3+ | 0.4+ | 2005 12 21 | 703 | (0.5+ | 1.6+) |
| 2001 12 19 | 644 | 0.2− | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.1− | 2004 06 07 | H41 | 0.1+ | 0.4− | 2004 03 28 | 469 | 0.1− | 0.0 | 2004 05 14 | 704 | 0.3− | 0.4+ | 2005 12 21 | 703 | 0.0 | 0.2− |
| 2001 12 19 | 644 | 0.4+ | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.1− | 2004 06 07 | H41 | 0.1+ | 0.0 | 2004 03 29 | 084 | 0.3+ | 0.3+ | 2004 05 14 | 084 | 0.7+ | 0.0 | 2005 12 21 | 703 | 0.2− | 0.2+ |
| 2001 12 19 | 644 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.1− | 2004 06 11 | H41 | 0.2− | 0.2+ | 2004 03 30 | 084 | 0.0 | 0.3+ | 2004 05 16 | H41 | 0.7+ | 0.3− | 2005 12 21 | 703 | 0.0 | 0.1+ |
| 2001 12 19 | 644 | 0.4− | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.1− | 2004 06 11 | H41 | 0.5+ | 0.4+ | 2004 03 31 | 084 | 0.2+ | 0.1+ | 2004 05 16 | H41 | 0.1− | 0.3− | 2005 12 21 | 703 | 1.1− | 0.8− |
| 2001 12 19 | 644 | 0.5− | 0.0 | 2004 04 20 | 203 | 0.6− | 0.2+ | 2004 06 11 | H41 | 0.2− | 0.1− | 2004 04 01 | 084 | 0.1+ | 0.8+ | 2004 05 16 | H41 | 0.1+ | 0.1− | 2005 12 28 | 691 | 0.1− | 0.1+ |
| 2001 12 20 | 645 | 0.1− | 0.2− | 2004 04 20 | J78 | 0.3− | 0.8+ | 2004 06 11 | H41 | 0.7− | 0.0 | 2004 04 03 | 084 | 0.1− | 0.2− | 2004 05 16 | H41 | 0.1− | 0.2− | 2005 12 28 | 691 | 0.1+ | 0.0 |
| 2001 12 20 | 645 | 0.1− | 0.3− | 2004 04 20 | 203 | 0.2− | 0.1− | 2004 06 11 | H41 | 0.0 | 0.0 | 2004 04 04 | 084 | 0.4+ | 0.0 | 2004 05 16 | 560 | 0.8+ | 0.9− | 2005 12 28 | 691 | 0.1+ | 0.2+ |
| 2002 02 03 | 644 | 0.4+ | 0.3+ | 2004 04 21 | 203 | 0.2− | 0.4− | 2004 06 12 | 703 | 0.2− | 0.3− | 2004 04 06 | 084 | 0.4− | 0.1+ | 2004 05 16 | 560 | 1.3+ | 0.0 | 2005 12 28 | 703 | 0.1− | 0.1− |
| 2002 02 03 | 644 | 0.0 | 0.2+ | 2004 04 21 | 203 | 0.5− | 0.2− | 2004 06 12 | 703 | 0.0 | 0.1− | 2004 04 07 | 084 | 0.7− | 0.4− | 2004 05 16 | 560 | 1.3+ | 0.7− | 2005 12 28 | 703 | (1.8− | 1.9+) |
| 2002 02 03 | 644 | 0.8+ | 0.5+ | 2004 04 22 | 704 | 0.0 | 0.0 | 2004 06 12 | 703 | (2.1+ | 0.4−) | 2004 04 08 | H41 | 1.0− | 0.6− | 2004 05 16 | 560 | 0.7+ | 0.4− | 2005 12 28 | 703 | (0.4− | 3.1+) |
| 2003 03 07 | 644 | 0.1+ | 0.9+ | 2004 04 22 | 704 | 0.2+ | 0.0 | 2004 06 12 | 703 | 0.5− | 0.1− | 2004 04 08 | H41 | 0.5− | 0.3− | 2004 05 17 | H41 | 0.1+ | 0.4+ | 2005 12 28 | 703 | 0.9− | 0.1+ |
| 2003 03 07 | 644 | 0.6+ | 1.3+ | 2004 04 22 | 704 | 0.2− | 0.0 | 2004 06 13 | 704 | 0.3+ | 0.1+ | 2004 04 08 | H41 | 0.6− | 0.1− | 2004 05 17 | H41 | 0.3+ | 1.0− | 2005 12 29 | 704 | 0.3− | 0.8− |
| 2003 03 07 | 644 | 0.3+ | 0.9+ | 2004 04 22 | 704 | 0.0 | 0.3− | 2004 06 13 | 704 | 0.6+ | 0.3+ | 2004 04 08 | H41 | 0.2+ | 0.8+ | 2004 05 17 | H41 | 0.3+ | 0.0 | 2005 12 29 | 704 | 0.2− | 0.0 |
| 2003 12 27 | 704 | 1.3+ | 0.7− | 2004 04 22 | 704 | 0.2− | 0.2+ | 2004 06 13 | 704 | 0.8+ | 0.6+ | 2004 04 08 | E12 | 1.4− | 1.2+ | 2004 05 17 | H41 | 0.5− | 0.7− | 2005 12 29 | 704 | 0.2− | 0.3− |
| 2003 12 27 | 704 | 0.4+ | 0.5+ | 2004 04 22 | 084 | 0.3+ | 0.4+ | 2004 06 13 | 704 | 0.8+ | 0.3+ | 2004 04 08 | E12 | (1.6− | 0.8+) | 2004 05 17 | 704 | 1.0+ | 0.3+ | 2005 12 29 | 704 | 0.1+ | 0.1+ |
| 2003 12 27 | 704 | 0.7+ | 0.1− | 2004 04 23 | 084 | 0.4− | 0.4− | 2004 06 13 | 704 | 1.0+ | 0.3+ | 2004 04 08 | E12 | 0.6− | 0.1− | 2004 05 17 | 704 | 0.3+ | 0.0 | 2005 12 29 | 704 | (1.5+ | 0.3+) |
| 2003 12 27 | 704 | 1.4+ | 0.0 | 2004 04 23 | J87 | 0.7− | 0.4− | 2004 06 14 | 704 | 0.4+ | 0.2+ | 2004 04 08 | E12 | (1.6− | 0.8+) | 2004 05 17 | 704 | 0.3+ | 0.1− | 2005 12 30 | G96 | 0.2+ | 0.2− |
| 2004 01 23 | 704 | 0.4+ | 0.3+ | 2004 04 23 | J87 | 0.2− | 0.2− | 2004 06 14 | 704 | 0.2+ | 0.4+ | 2004 04 09 | 703 | (1.1− | 2.1+) | 2004 05 17 | 704 | 0.3+ | 0.3− | 2005 12 30 | G96 | 0.0 | 0.2− |
| 2004 01 23 | 704 | 0.4+ | 0.3+ | 2004 04 23 | J87 | 0.3− | 0.2− | 2004 06 14 | 704 | 0.3+ | 0.6+ | 2004 04 09 | 703 | (1.2− | 2.6+) | 2004 05 17 | 704 | 0.7− | 0.3− | 2005 12 30 | G96 | 0.2+ | 0.2− |
| 2004 01 23 | 704 | 0.1− | 0.2− | 2004 04 24 | 084 | 0.1+ | 0.2+ | 2004 06 14 | 704 | 0.4+ | 0.5+ | 2004 04 09 | 703 | (0.9− | 3.0+) | 2004 05 17 | 084 | 0.5− | 0.1− | 2005 12 30 | G96 | 0.4+ | 0.1− |
| 2004 01 23 | 704 | 0.2− | 0.2− | 2004 04 24 | 939 | 0.3− | 0.5+ | 2004 06 14 | 704 | 0.7+ | 0.1− | 2004 04 09 | 703 | (0.5+ | 2.3+) | 2004 05 19 | H41 | 0.1+ | 0.3+ | 2006 01 06 | 704 | 0.1+ | 0.1+ |
| 2004 02 01 | 599 | 0.2− | 1.0+ | 2004 04 24 | 939 | 0.2+ | 0.3+ | 2004 07 01 | 703 | 0.5− | 0.1+ | 2004 04 09 | E12 | 0.9− | 0.7+ | 2004 05 19 | H41 | 0.0 | 0.2+ | 2006 01 06 | 704 | 0.2− | 0.5− |
| 2004 02 01 | 599 | 0.1− | 0.0 | 2004 04 24 | 939 | 0.1+ | 0.2+ | 2004 07 01 | 703 | 0.7+ | 0.1+ | 2004 04 09 | E12 | 0.8− | 0.8+ | 2004 05 19 | H41 | 0.7+ | 0.4+ | 2006 01 06 | 704 | 0.1− | 0.1− |
| 2004 02 01 | 599 | 0.2+ | 0.0 | 2004 04 24 | J78 | (2.0+ | 0.5−) | 2004 07 01 | 703 | 0.1− | 1.0+ | 2004 04 09 | E12 | 0.4− | 0.0 | 2004 05 19 | H41 | 0.2+ | 0.4− | 2006 01 06 | 704 | 0.2+ | 0.4− |
| 2004 03 08 | H41 | 0.5+ | 0.5+ | 2004 04 25 | 355 | 0.2− | 0.5+ | 2004 07 01 | 703 | 0.2− | 0.2+ | | | | | | | | | | | | |
| 2004 03 08 | H41 | 0.9+ | 0.6− | 2004 04 25 | 355 | 0.3− | 0.3+ | 2004 07 20 | E12 | 0.1− | 0.1+ | | | | | | | | | | | | |
| 2004 03 08 | H41 | 1.3+ | 0.8− | 2004 04 25 | 355 | 0.8− | 0.5− | 2004 07 20 | E12 | 0.3− | 0.3+ | | | | | | | | | | | | |
| 2004 03 10 | 084 | 0.3+ | 0.0 | 2004 04 25 | 084 | 0.1+ | 0.3+ | 2004 07 20 | E12 | 0.5− | 0.3+ | | | | | | | | | | | | |
| 2004 03 12 | 084 | 0.4+ | 0.3+ | 2004 04 26 | 691 | 0.1− | 0.1+ | 2004 07 20 | E12 | 0.1− | 0.1+ | | | | | | | | | | | | |
| 2004 03 13 | 644 | 0.2− | 0.0 | 2004 04 26 | 691 | 0.0 | 0.3+ | 2004 08 23 | E12 | 0.1− | 0.4+ | | | | | | | | | | | | |
| 2004 03 13 | 644 | 0.0 | 0.0 | 2004 04 26 | 691 | 0.1− | 0.1+ | 2004 08 23 | E12 | 0.3− | 0.6+ | | | | | | | | | | | | |
| 2004 03 13 | 644 | 0.2− | 0.1+ | 2004 04 26 | 084 | 0.1− | 0.4+ | 2004 08 23 | E12 | 0.0 | 0.4+ | | | | | | | | | | | | |
| 2004 03 13 | 644 | 0.1+ | 0.1+ | 2004 04 27 | 560 | 0.4+ | 0.1− | 2004 08 23 | E12 | 0.0 | 0.2− | | | | | | | | | | | | |
| 2004 03 13 | 644 | 0.1− | 0.2+ | 2004 04 27 | 560 | 0.6+ | 0.1+ | 2005 10 30 | 448 | 0.1− | 0.2+ | | | | | | | | | | | | |
| 2004 03 13 | 644 | 0.2+ | 0.2+ | 2004 04 27 | 560 | 0.5+ | 0.6+ | 2005 10 30 | 448 | 0.1+ | 0.0 | | | | | | | | | | | | |
| 2004 03 15 | H41 | 0.3− | 0.2− | 2004 04 27 | 560 | 0.4+ | 0.5+ | 2005 10 30 | 448 | 0.8+ | 0.1+ | | | | | | | | | | | | |
| 2004 03 15 | H41 | 1.0+ | 0.1+ | 2004 04 27 | 560 | 1.0+ | 0.3+ | 2005 11 02 | 448 | 0.3+ | 0.4− | | | | | | | | | | | | |
| 2004 03 15 | H41 | (1.6+ | 0.2−) | 2004 04 30 | 608 | 0.2− | 1.4+ | 2005 11 02 | 448 | 0.2− | 0.3− | | | | | | | | | | | | |
| 2004 03 15 | H41 | 1.1+ | 0.2− | 2004 04 30 | 608 | (0.5− | 1.6+) | 2005 11 02 | 448 | 0.3+ | 0.0 | | | | | | | | | | | | |
| 2004 03 16 | 704 | 0.1+ | 0.3− | 2004 04 30 | 608 | (0.2− | 1.6+) | 2005 11 28 | 704 | 0.2+ | 0.6− | | | | | | | | | | | | |
| 2004 03 16 | 704 | 0.0 | 0.1+ | 2004 05 05 | H41 | 0.6− | 0.8− | 2005 11 28 | 704 | 0.4+ | 0.1+ | | | | | | | | | | | | |
| 2004 03 16 | 704 | 0.1− | 0.2− | 2004 05 05 | H41 | 0.3+ | 0.6− | 2005 11 28 | 704 | 0.6+ | 0.7+ | | | | | | | | | | | | |
| 2004 03 16 | 704 | 0.0 | 0.1+ | 2004 05 05 | H41 | 0.1− | 0.6− | 2005 11 28 | 704 | 0.7− | 0.7+ | | | | | | | | | | | | |

**(137185)∗ 1999 JT$_{70}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.13719 | | (2000.0) | | | |
| $n$ | 0.22617961 | $\omega$ | 111.71336 | | −0.97166797 | −0.11915625 |
| $a$ | 2.6678849 | $\Omega$ | 61.95380 | | +0.00486797 | −0.87352158 |
| $e$ | 0.2164387 | $i$ | 13.37211 | | +0.23629995 | −0.47197652 |
| $P$ | 4.36 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 704 | 0.2+ | 1.3− | 2002 12 14 | 704 | 0.6+ | 0.6− | 2003 03 13 | 704 | 0.4− | 0.6− | | | | | | | | |
| 1999 04 12 | 704 | 0.8− | 0.4+ | 2003 01 11 | 704 | 0.4+ | 0.2− | 2003 03 13 | 704 | 0.5− | 0.3− | | | | | | | | |
| 1999 04 12 | 704 | 0.7+ | 0.7+ | 2003 01 11 | 704 | 0.5+ | 0.0 | 2003 03 21 | 644 | 0.1+ | 0.4− | | | | | | | | |
| 1999 04 12 | 704 | 0.4− | 0.4− | 2003 01 11 | 704 | 0.8+ | 0.3− | 2003 03 21 | 644 | 0.3+ | 0.4− | | | | | | | | |
| 1999 04 12 | 704 | 0.1− | 0.4+ | 2003 01 19 | 644 | 0.5+ | 0.2+ | 2003 03 21 | 644 | 0.1+ | 0.2− | | | | | | | | |
| 1999 05 12 | 704 | 0.4− | 0.2+ | 2003 01 19 | 644 | 0.3+ | 0.3+ | 2003 03 25 | 704 | 0.0 | 0.4+ | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 0.4− | 0.3+ | 2003 01 19 | 644 | 0.5+ | 0.1+ | 2003 03 25 | 704 | 0.4+ | 0.1+ |
| 1999 05 12 | 704 | 1.0− | 0.6− | 2003 01 25 | 704 | 1.4+ | 1.5+ | 2003 03 25 | 704 | 0.2+ | 0.6− |
| 1999 05 12 | 704 | 1.3− | 1.6− | 2003 01 25 | 704 | 0.8+ | 1.2+ | 2003 03 25 | 704 | 1.1+ | 0.4− |
| 1999 05 12 | 704 | 0.1− | 0.8− | 2003 01 25 | 704 | 1.3+ | 1.2+ | 2003 04 01 | 644 | 0.0 | 0.1− |
| 1999 05 12 | 699 | 1.3+ | 1.0+ | 2003 01 26 | 699 | 0.5+ | 0.3+ | 2003 04 01 | 644 | 0.0 | 0.0 |
| 1999 05 12 | 699 | 0.0 | 1.1+ | 2003 01 26 | 699 | 0.6+ | 0.2− | 2003 04 01 | 644 | 0.1+ | 0.0 |
| 1999 05 13 | 704 | 0.5− | 0.2− | 2003 01 26 | 699 | 0.8+ | 0.1− | 2003 04 23 | 704 | 0.3+ | 0.2− |
| 1999 05 13 | 704 | 0.1− | 0.4− | 2003 01 26 | 699 | 0.8+ | 0.3− | 2003 04 23 | 704 | 0.5+ | 0.3− |
| 1999 05 13 | 704 | 0.2+ | 0.9+ | 2003 02 01 | 644 | 0.1+ | 1.1+ | 2003 04 23 | 704 | 0.6+ | 0.2− |
| 1999 05 13 | 704 | (2.4− | 0.5−) | 2003 02 01 | 644 | 0.2− | 0.8+ | 2003 04 23 | 704 | 0.3+ | 0.1+ |
| 1999 05 14 | 703 | 0.4+ | 0.1− | 2003 02 01 | 644 | 0.2+ | 1.0+ | 2003 04 23 | 704 | 0.2+ | 0.2− |
| 1999 05 14 | 703 | 1.1+ | 0.3+ | 2003 02 11 | 704 | 1.2− | 0.5+ | 2004 07 15 | E12 | 0.3− | 0.9+ |
| 1999 05 14 | 703 | 0.5+ | 0.7+ | 2003 02 11 | 704 | 1.1− | 0.7+ | 2004 07 15 | E12 | 0.3− | 0.3+ |
| 1999 05 14 | 703 | 0.5− | 0.7+ | 2003 02 11 | 704 | 1.0− | 0.9+ | 2004 07 15 | E12 | 0.1− | 0.8+ |
| 1999 05 17 | 704 | 0.3+ | 0.8− | 2003 02 11 | 704 | 0.8− | 1.0+ | 2004 07 15 | E12 | 0.2+ | 0.7+ |
| 1999 05 17 | 704 | (1.1− | 2.2+) | 2003 02 19 | 644 | 0.3+ | 0.1+ | 2004 08 20 | E12 | 0.3− | 1.3+ |
| 1999 05 17 | 704 | 0.2− | 0.6− | 2003 02 19 | 644 | 0.3+ | 0.2+ | 2004 08 20 | E12 | 0.3− | 0.7+ |
| 1999 05 17 | 704 | 1.0+ | 0.5+ | 2003 02 19 | 644 | 0.4+ | 0.2+ | 2004 08 20 | E12 | 0.8+ | 0.1+ |
| 1999 05 17 | 704 | (2.5− | 0.3−) | 2003 02 26 | 704 | 0.6− | 0.1+ | 2004 08 20 | E12 | 0.2− | 1.0+ |
| 1999 05 18 | 704 | 0.2+ | 0.2− | 2003 02 26 | 704 | 1.1− | 0.7+ | 2005 09 25 | 703 | (1.3− | 1.8+) |
| 1999 05 18 | 704 | 1.3− | 0.0 | 2003 02 26 | 704 | 0.5− | 0.3− | 2005 09 25 | 703 | 1.5− | 0.5+ |
| 1999 05 18 | 704 | 1.1+ | 0.5− | 2003 02 26 | 704 | 1.2− | 0.2+ | 2005 09 25 | 703 | 0.8− | 0.8+ |
| 1999 05 18 | 704 | 0.5− | 0.6− | 2003 02 26 | 704 | 0.9− | 0.2+ | 2005 09 25 | 703 | 1.0− | 0.3+ |
| 1999 05 18 | 704 | 0.2− | 0.2− | 2003 02 26 | 704 | 0.8− | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 1999 05 19 | 704 | 0.7+ | 0.4+ | 2003 02 26 | 704 | 1.1− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 1999 05 19 | 704 | 0.3− | 0.3+ | 2003 02 26 | 704 | 1.1− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 1999 05 19 | 704 | 0.1− | 0.2+ | 2003 03 08 | 699 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.4− |
| 1999 05 19 | 704 | 0.8− | 0.1+ | 2003 03 08 | 699 | 0.1− | 0.3− | 2006 11 22 | 704 | 1.2+ | 0.1− |
| 1999 05 20 | 699 | 1.3+ | 0.4+ | 2003 03 08 | 699 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.6− |
| 1999 05 20 | 699 | 0.3+ | 0.7− | 2003 03 08 | 699 | 0.1− | 0.7+ | 2006 11 22 | 704 | 0.2− | 1.1+ |
| 1999 05 20 | 699 | 1.6+ | 0.7+ | 2003 03 09 | 644 | 0.4+ | 0.3− | 2006 11 22 | 704 | (3.0+ | 0.0 ) |
| 2001 10 24 | 644 | 0.0 | 0.6+ | 2003 03 09 | 644 | 0.4+ | 0.0 | 2006 11 27 | 704 | 0.2+ | 0.0 |
| 2001 10 24 | 644 | 0.2− | 0.8+ | 2003 03 09 | 644 | 0.3+ | 0.3− | 2006 11 27 | 704 | 0.0 | 0.1+ |
| 2001 10 24 | 644 | 0.4+ | 1.0+ | 2003 03 13 | 704 | 0.1− | 0.4− | 2006 11 27 | 704 | 0.6+ | 0.5+ |
| 2002 12 14 | 704 | 0.1− | 0.7− | 2003 03 13 | 704 | 0.1− | 0.5− | 2006 11 27 | 704 | 0.3+ | 0.4− |
| 2002 12 14 | 704 | 0.4+ | 0.5− | 2003 03 13 | 704 | 0.1+ | 0.2− | | | | |

**(137186)∗ 1999 JT$_{72}$ = 2003 FH$_{73}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46364)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.69565 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23679771 | $\omega$ | 68.81170 | | −0.80733341 | +0.58906941 |
| $a$ | 2.5875240 | $\Omega$ | 147.25061 | | −0.56244902 | −0.75033911 |
| $e$ | 0.1462284 | $i$ | 3.68675 | | −0.17850453 | −0.29998075 |
| $P$ | 4.16 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 0.3+ | 1.3− | 2003 03 30 | 704 | 0.1− | 0.2+ | 2003 04 27 | 704 | 0.7+ | 0.0 |
| 1999 05 12 | 704 | 0.4− | 1.8− | 2003 04 02 | 704 | 0.0 | 0.2− | 2003 05 02 | 691 | 0.3− | 0.1+ |
| 1999 05 12 | 704 | 1.1− | 1.8− | 2003 04 02 | 704 | 0.5+ | 0.0 | 2003 05 02 | 691 | 0.1− | 0.1+ |
| 1999 05 12 | 699 | 0.1+ | 0.6+ | 2003 04 02 | 704 | 0.4+ | 0.1− | 2003 05 02 | 691 | 0.1− | 0.0 |
| 1999 05 12 | 699 | 0.3+ | 1.2+ | 2003 04 02 | 704 | 0.2+ | 0.0 | 2004 09 12 | 704 | 0.5− | 0.7+ |
| 1999 05 12 | 699 | 0.6+ | 0.1+ | 2003 04 03 | 699 | 0.7− | 0.2− | 2004 09 12 | 704 | (0.1+ | 1.7+) |
| 1999 05 13 | 704 | 0.0 | 0.7+ | 2003 04 03 | 699 | (1.8− | 0.1−) | 2004 09 12 | 704 | 0.4+ | 0.4− |
| 1999 05 13 | 704 | 1.6− | 0.0 | 2003 04 03 | 699 | 0.1− | 0.2+ | 2004 09 12 | 704 | 0.0 | 0.9+ |
| 1999 05 13 | 704 | 1.1+ | 0.4− | 2003 04 03 | 699 | 0.5− | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.1− |
| 1999 05 14 | 703 | 0.6+ | 1.3+ | 2003 04 05 | 608 | 1.2+ | 1.3− | 2005 11 03 | G96 | 0.0 | 0.1+ |
| 1999 05 14 | 703 | 0.4+ | 0.7+ | 2003 04 05 | 608 | 1.4+ | 0.2− | 2005 11 03 | G96 | 0.6− | 1.1+ |
| 1999 05 14 | 703 | 0.3+ | 0.8+ | 2003 04 05 | 608 | (1.8+ | 0.7−) | 2005 11 03 | G96 | (2.2+ | 1.6+) |
| 1999 05 14 | 703 | 1.1+ | 0.7+ | 2003 04 08 | 704 | 0.1− | 1.3+ | 2005 11 05 | G96 | 0.1+ | 0.0 |
| 1999 05 18 | 704 | 0.3− | 0.2− | 2003 04 08 | 704 | 0.3− | 1.1+ | 2005 11 05 | G96 | 0.1− | 0.1− |
| 1999 05 18 | 704 | 0.9+ | 0.3+ | 2003 04 08 | 704 | 0.4− | 0.8+ | 2005 11 05 | G96 | 0.1+ | 0.0 |
| 1999 05 18 | 704 | (2.0+ | 2.4+) | 2003 04 08 | 704 | 0.6− | 1.2+ | 2005 11 05 | G96 | 0.1− | 0.1+ |
| 1999 05 18 | 704 | 1.6− | 0.1+ | 2003 04 09 | 691 | 0.6− | 0.0 | 2005 11 30 | 704 | 0.4+ | 0.2− |
| 1999 05 18 | 704 | (0.7− | 2.1+) | 2003 04 09 | 691 | 0.7− | 0.0 | 2005 11 30 | 704 | 1.2− | 0.8+ |
| 2001 12 14 | 704 | 0.4+ | 1.3+ | 2003 04 09 | 691 | 0.4− | 0.0 | 2005 11 30 | 704 | (2.0− | 1.1+) |
| 2001 12 14 | 704 | 0.2− | 0.3+ | 2003 04 20 | 608 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.8− | 0.1− |
| 2001 12 14 | 704 | 0.2+ | 0.8+ | 2003 04 20 | 608 | 0.4+ | 0.5− | 2006 10 22 | G96 | 0.5− | 0.4− |
| 2003 03 22 | 644 | 0.5+ | 0.5+ | 2003 04 20 | 608 | 0.5+ | 0.1− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2003 03 22 | 644 | 0.7+ | 0.5+ | 2003 04 22 | 703 | 0.5− | 0.6− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2003 03 22 | 644 | 0.7+ | 0.3+ | 2003 04 22 | 703 | 0.4− | 0.8− | 2006 11 20 | G96 | 0.5− | 0.1− |
| 2003 03 26 | 608 | 1.0+ | 0.6− | 2003 04 22 | 703 | 0.5− | 0.8− | 2006 11 20 | G96 | 0.2+ | 0.7− |
| 2003 03 26 | 608 | 0.7+ | 0.5− | 2003 04 22 | 703 | 0.4+ | 0.6− | 2006 11 20 | G96 | 0.2− | 0.5− |
| 2003 03 26 | 608 | 0.6+ | 0.3− | 2003 04 27 | 699 | 0.8− | 1.1− | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2003 03 27 | 644 | 0.1+ | 0.0 | 2003 04 27 | 699 | 0.4− | 0.9+ | 2006 11 21 | 691 | 0.1− | 0.3+ |
| 2003 03 27 | 644 | 0.0 | 0.1+ | 2003 04 27 | 699 | 0.2− | 0.9+ | 2006 11 21 | 691 | 0.9+ | 0.1+ |
| 2003 03 27 | 644 | 0.2− | 0.1− | 2003 04 27 | 704 | 0.9+ | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.3− |
| 2003 03 30 | 704 | 0.4+ | 0.3+ | 2003 04 27 | 699 | 0.5− | 0.3+ | 2006 12 01 | G96 | 0.5− | 0.6− |
| 2003 03 30 | 704 | 0.3+ | 0.2− | 2003 04 27 | 704 | 0.5+ | 0.0 | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2003 03 30 | 704 | 0.6+ | 0.4+ | 2003 04 27 | 704 | 0.6+ | 0.5+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2003 03 30 | 704 | 0.8+ | 0.2+ | 2003 04 27 | 704 | 0.6+ | 0.6+ | 2006 12 01 | G96 | 0.3− | 0.5− |

**(137187)∗ 1999 JC$_{74}$ = 2000 QQ$_{165}$ = 2000 TK$_{70}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 4484), A. Doppler (*MPO* 10347)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.78417 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17602319 | $\omega$ | 71.65149 | | −0.19668906 | +0.98024982 |
| $a$ | 3.1532335 | $\Omega$ | 187.10081 | | −0.95066448 | −0.19580542 |
| $e$ | 0.1897744 | $i$ | 9.58540 | | −0.23989679 | −0.02775844 |
| $P$ | 5.60 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 704 | 0.8− | 0.0 | 2000 09 23 | 704 | 0.9+ | 0.7+ | 2004 03 17 | 683 | (1.0− | 1.9−) |
| 1999 04 12 | 704 | 0.2− | 0.5− | 2000 09 23 | 704 | 0.3− | 0.2− | 2004 03 18 | 704 | 0.6+ | 1.0+ |
| 1999 04 12 | 704 | 0.5+ | 1.2+ | 2000 10 02 | 704 | 0.5− | 0.7+ | 2004 03 18 | 704 | 0.3+ | 1.1+ |
| 1999 04 12 | 704 | (3.4− | 0.2+) | 2000 10 02 | 704 | 0.4− | 0.1− | 2004 03 18 | 704 | 0.6+ | 1.0+ |
| 1999 05 08 | 703 | 0.1+ | 0.0 | 2000 10 02 | 704 | 0.6+ | 0.7+ | 2004 03 18 | 704 | 0.8+ | 0.3+ |
| 1999 05 08 | 703 | 0.4− | 0.3+ | 2000 10 02 | 704 | 0.4− | 1.1+ | 2004 03 18 | 704 | 0.9+ | 0.7+ |
| 1999 05 08 | 703 | 0.5− | 0.7+ | 2000 10 02 | 704 | 0.7+ | 1.0+ | 2004 03 20 | 704 | 0.3+ | 1.4+ |
| 1999 05 08 | 703 | 0.5+ | 0.3+ | 2004 02 19 | 704 | (1.7+ | 0.2−) | 2004 03 20 | 704 | 0.3− | 0.0 |
| 1999 05 10 | 699 | 0.2− | 0.9+ | 2004 02 19 | 704 | 1.1+ | 0.2+ | 2004 03 20 | 704 | 0.6+ | 1.0+ |
| 1999 05 10 | 699 | 0.7+ | 1.3+ | 2004 02 19 | 704 | 1.4+ | 0.3+ | 2004 03 20 | 704 | 0.7+ | 0.5+ |
| 1999 05 10 | 699 | 1.2+ | 0.0 | 2004 02 19 | 704 | 1.4+ | 0.5+ | 2004 03 20 | 704 | 0.1+ | 0.5+ |
| 1999 05 12 | 704 | 1.0+ | 0.6− | 2004 02 19 | 704 | 0.6+ | 0.2− | 2004 03 27 | 704 | 0.0 | 0.2+ |
| 1999 05 12 | 704 | 0.0 | 0.5+ | 2004 02 23 | 704 | (1.6− | 0.4−) | 2004 03 27 | 704 | 0.2+ | 0.3+ |
| 1999 05 12 | 699 | 1.2+ | 0.1+ | 2004 02 23 | 704 | 0.9− | 0.4+ | 2004 03 27 | 704 | 0.3+ | 0.5+ |
| 1999 05 12 | 704 | 0.6− | 0.4+ | 2004 02 23 | 704 | 1.2− | 0.8+ | 2004 03 27 | 704 | 0.3+ | 0.8+ |
| 1999 05 12 | 704 | 0.5− | 0.5− | 2004 02 23 | 704 | 0.6− | 0.0 | 2004 03 27 | 704 | 0.8+ | 0.6+ |
| 1999 05 12 | 699 | 0.9+ | 1.1+ | 2004 02 23 | 704 | 0.7− | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 1999 05 12 | 699 | 1.1+ | 0.6+ | 2004 02 24 | 608 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.4− | 0.3+ |
| 1999 05 13 | 704 | 0.1+ | 0.9− | 2004 02 24 | 608 | 0.0 | 0.4− | 2006 09 14 | 691 | 0.1+ | 0.3+ |
| 1999 05 13 | 704 | 0.3− | 0.3− | 2004 02 24 | 608 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.2− | 0.3+ |
| 1999 05 13 | 704 | 0.7− | 1.9+ | 2004 02 25 | 704 | 0.9+ | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.4+ |
| 1999 05 13 | 704 | 0.1− | 0.9+ | 2004 02 25 | 704 | 0.0 | 0.7− | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 1999 05 13 | 704 | 1.6− | 0.1+ | 2004 02 25 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.4+ | 1.1+ |
| 1999 05 17 | 704 | 0.1− | 0.3− | 2004 02 25 | 704 | (1.2− | 2.3+) | 2006 09 18 | 699 | 1.1+ | 0.7+ |
| 1999 05 17 | 704 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 0.7+ | 0.6+ | 2006 09 18 | 699 | (0.0 | 1.6+) |
| 1999 05 17 | 704 | 0.5− | 1.0+ | 2004 02 26 | 704 | 0.0 | 1.5+ | 2006 09 18 | 699 | 1.2− | 1.4+ |
| 1999 05 17 | 704 | 0.4+ | 1.6+ | 2004 02 26 | 704 | 1.1− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.6+ |
| 2000 08 26 | 691 | 0.0 | 0.3− | 2004 02 26 | 704 | (0.3+ | 2.0+) | 2006 09 25 | 691 | 0.3− | 0.4+ |
| 2000 08 26 | 691 | 0.1− | 0.2− | 2004 02 26 | 704 | 1.0+ | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2000 08 26 | 691 | 0.1− | 0.2− | 2004 03 13 | 644 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2000 08 31 | 704 | 0.6+ | 1.7− | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2000 08 31 | 704 | 0.6+ | 0.3+ | 2004 03 13 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.8+ | 1.2− | 2004 03 15 | 683 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.3+ | 0.2+ |
| 2000 08 31 | 704 | 0.3+ | 1.2+ | 2004 03 15 | 683 | (3.7− | 0.6−) | 2006 10 17 | 703 | 0.5− | 0.5+ |
| 2000 09 03 | 704 | 1.3+ | 0.7+ | 2004 03 15 | 683 | (1.6− | 2.2−) | 2006 10 17 | 703 | (0.5+ | 1.8−) |
| 2000 09 03 | 704 | 1.3+ | 0.2+ | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | (4.0− | 0.7−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.3− | 0.1− | 2004 03 16 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.8− | 1.4+ |
| 2000 09 03 | 704 | 0.6− | 0.7+ | 2004 03 16 | 704 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.7+ |
| 2000 09 22 | 699 | 0.4− | 1.1+ | 2004 03 16 | 683 | 0.2− | 1.3− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2000 09 22 | 699 | 0.4− | 0.0 | 2004 03 16 | 704 | 1.2− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2000 09 22 | 699 | 0.2− | 0.4+ | 2004 03 16 | 683 | 1.4− | 0.6− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2000 09 22 | 699 | 0.3+ | 0.2+ | 2004 03 16 | 704 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2000 09 23 | 699 | 0.7− | 0.4+ | 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2000 09 23 | 699 | 1.1− | 0.1− | 2004 03 16 | 683 | 1.1− | 1.5+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2000 09 23 | 699 | 0.7− | 0.3− | 2004 03 16 | 704 | 0.8+ | 0.9− | 2006 11 16 | G96 | 0.0 | 0.4+ |
| 2000 09 23 | 704 | 0.0 | 0.4+ | 2004 03 16 | 704 | 0.7− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.3+ |
| 2000 09 23 | 699 | 0.6− | 0.6+ | 2004 03 17 | 683 | (1.4− | 1.6−) | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2000 09 23 | 704 | 0.7− | 0.4+ | 2004 03 17 | 683 | 0.3+ | 1.3− | 2006 11 16 | G96 | 0.4− | 0.1+ |

**(137188)∗ 1999 JE$_{85}$ = 2003 AW$_{46}$**

Discovered 1999 May 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 42910)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 245.13108 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.21009685 | ω | 59.69888 | | −0.88337888 | | −0.35778554 |
| *a* | 2.8023542 | Ω | 97.86255 | | +0.25043291 | | −0.90631842 |
| *e* | 0.1444327 | *i* | 17.79302 | | +0.39613774 | | −0.22489204 |
| *P* | 4.69 | *H* | 14.9 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 10 | 704 | 0.6+ | 0.4− | 2003 01 12 | 644 | 0.1+ | 0.7+ | 2004 06 12 | 703 | 0.5+ | 1.3− |
| 1999 04 10 | 704 | 1.6+ | 0.1+ | 2003 01 12 | 644 | 0.8+ | 0.6+ | 2004 06 12 | 703 | 0.6+ | 0.7+ |
| 1999 04 10 | 704 | 1.9− | 0.8+ | 2003 02 01 | 704 | 0.4+ | 0.7− | 2006 10 02 | 703 | (0.2− | 2.5+) |
| 1999 04 10 | 704 | 0.5+ | 1.4+ | 2003 02 01 | 704 | 0.3− | 0.5+ | 2006 10 02 | 703 | 0.9+ | 1.0+ |
| 1999 04 10 | 704 | 0.7− | 1.6− | 2003 02 01 | 704 | 0.4− | 0.5+ | 2006 10 02 | 703 | 0.2+ | 0.6+ |
| 1999 05 14 | 704 | 0.6− | 1.3− | 2003 02 01 | 704 | 0.1− | 0.1− | 2006 10 02 | 703 | 1.0− | 0.0 |
| 1999 05 14 | 704 | 1.6− | 0.1− | 2003 02 01 | 704 | 0.4− | 0.1+ | 2006 10 20 | 703 | 0.1− | 0.3+ |
| 1999 05 14 | 704 | 0.3− | 0.1+ | 2003 02 04 | 704 | 0.1− | 0.4− | 2006 10 20 | 703 | 0.8− | 1.0+ |
| 1999 05 14 | 704 | 1.0− | 1.0− | 2003 02 04 | 704 | (2.4+ | 1.1+) | 2006 10 20 | 703 | (2.0− | 0.9+) |
| 1999 05 15 | 704 | 1.2− | 0.3− | 2003 02 04 | 704 | 0.6+ | 1.1+ | 2006 10 20 | 703 | 0.0 | 0.6+ |
| 1999 05 15 | 704 | 0.1− | 1.2+ | 2003 02 04 | 704 | 1.4+ | 0.3− | 2006 10 21 | 703 | 1.0− | 0.5+ |
| 1999 05 15 | 704 | (0.6+ | 2.5+) | 2004 04 24 | 704 | 0.6− | 0.7+ | 2006 10 21 | 703 | 0.5+ | 1.1+ |
| 1999 05 15 | 704 | 1.4+ | 0.4− | 2004 04 24 | 704 | 0.6+ | 1.0+ | 2006 10 21 | 703 | (2.2− | 2.2+) |
| 1999 05 17 | 704 | 0.2+ | 0.7− | 2004 04 24 | 704 | 0.5+ | 0.3− | 2006 10 21 | 703 | (3.1+ | 3.6+) |
| 1999 05 17 | 704 | 1.4+ | 0.1− | 2004 04 24 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 1.5+ | 1.3+ |
| 1999 05 17 | 704 | (2.6+ | 0.8+) | 2004 04 30 | 608 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 04 30 | 608 | 0.9+ | 0.2− | 2006 10 28 | 703 | 0.9+ | 0.6− |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2004 04 30 | 608 | 0.6+ | 0.3+ | 2006 10 28 | 703 | (1.9− | 1.2+) |
| 2002 12 05 | 704 | 0.0 | 1.0+ | 2004 05 14 | 704 | 0.2+ | 1.4+ | 2006 11 17 | 703 | 0.4+ | 0.7+ |
| 2003 01 05 | 704 | 0.4− | 0.6+ | 2004 05 14 | 704 | 0.6− | 0.8+ | 2006 11 17 | 703 | 1.0− | 0.1+ |
| 2003 01 05 | 704 | 0.0 | 0.3− | 2004 05 14 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.3+ | 0.6+ |
| 2003 01 05 | 704 | 0.2+ | 0.5+ | 2004 05 14 | 704 | 0.2− | 0.5+ | 2006 11 17 | 703 | 1.2− | 0.1− |
| 2003 01 05 | 704 | 0.8− | 0.5+ | 2004 05 19 | 291 | 0.3+ | 0.0 | 2006 11 19 | 703 | 1.1− | 0.5+ |
| 2003 01 05 | 704 | 0.3+ | 1.0+ | 2004 05 19 | 291 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.2− | 0.6− |
| 2003 01 09 | 704 | 0.1− | 0.1− | 2004 05 19 | 291 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.6+ | 1.4− |
| 2003 01 09 | 704 | 0.9− | 0.2− | 2004 05 24 | 704 | 0.0 | 1.4+ | 2006 11 19 | 703 | 0.4+ | 0.8+ |
| 2003 01 09 | 704 | 0.1− | 1.0+ | 2004 05 24 | 704 | 0.2− | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.3− |
| 2003 01 09 | 704 | 0.4− | 1.3− | 2004 05 24 | 704 | 0.2− | 0.9+ | 2006 11 23 | 703 | 0.9+ | 0.0 |
| 2003 01 10 | 704 | 0.1− | 0.3− | 2004 05 24 | 704 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.4− | 0.3− |
| 2003 01 10 | 704 | 0.5+ | 0.2+ | 2004 05 24 | 704 | 0.1− | 1.3+ | 2006 11 23 | 703 | 2.4− | 0.9− |
| 2003 01 10 | 704 | 0.1+ | 0.5+ | 2004 06 12 | 703 | 0.4+ | 0.1+ | | | | |
| 2003 01 12 | 644 | 0.2+ | 0.6− | 2004 06 12 | 703 | 0.2+ | 0.7+ | | | | |

**(137189)∗ 1999 JU$_{87}$ = 2002 VT$_{110}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40018)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 299.71405 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.22850100 | ω | 47.22711 | | −0.83604087 | | −0.50319070 |
| *a* | 2.6497850 | Ω | 101.44239 | | +0.41527919 | | −0.84085838 |
| *e* | 0.2260756 | *i* | 12.89393 | | +0.35857894 | | −0.19938985 |
| *P* | 4.31 | *H* | 14.5 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 02 27 | 675 | 0.6+ | 1.0− | 2003 01 26 | 699 | 0.1+ | 0.1+ | 2003 03 24 | 333 | 0.1+ | 0.5− |
| 1990 02 27 | 675 | 0.5− | 0.5− | 2003 01 26 | 699 | 0.0 | 0.0 | 2003 03 24 | 333 | 0.0 | 0.8− |
| 1999 04 10 | 704 | 0.2+ | 0.1+ | 2003 01 26 | 699 | 0.1+ | 0.0 | 2003 03 24 | 333 | 0.8− | 0.4− |
| 1999 04 10 | 704 | 1.5+ | 0.6+ | 2003 01 28 | 644 | 0.2+ | 0.0 | 2003 03 24 | 333 | 0.5− | 0.4− |
| 1999 04 10 | 704 | 0.1− | 0.6+ | 2003 01 28 | 644 | 0.3+ | 0.1+ | 2003 04 05 | 704 | 0.3− | 0.4+ |
| 1999 04 10 | 704 | 0.3− | 1.5− | 2003 01 28 | 644 | 0.2+ | 0.1+ | 2003 04 05 | 704 | 0.2+ | 0.3+ |
| 1999 05 12 | 704 | 0.9+ | 1.5+ | 2003 02 02 | 704 | 1.1− | 0.2− | 2003 04 05 | 704 | 0.5− | 0.2− |
| 1999 05 12 | 704 | 0.8+ | 0.5+ | 2003 02 02 | 704 | 0.8− | 0.1+ | 2003 04 05 | 704 | 0.2+ | 0.0 |
| 1999 05 12 | 704 | 1.0+ | 0.2− | 2003 02 02 | 704 | 0.8− | 0.2− | 2003 04 05 | 704 | 0.1− | 0.3− |
| 1999 05 17 | 704 | 0.8− | 1.4+ | 2003 02 02 | 704 | 0.8− | 0.2+ | 2003 04 23 | 704 | 0.2− | 0.2− |
| 1999 05 17 | 704 | 0.6− | 0.3+ | 2003 02 02 | 704 | 0.8− | 0.0 | 2003 04 23 | 704 | 0.7− | 0.2− |
| 1999 05 17 | 704 | 1.7− | 1.4+ | 2003 02 03 | 644 | 0.1− | 0.5− | 2003 04 23 | 704 | 0.4− | 0.3+ |
| 1999 05 17 | 704 | 0.4− | 0.4+ | 2003 02 03 | 644 | 0.1− | 0.6− | 2003 04 23 | 704 | 0.5− | 0.1+ |
| 2002 11 12 | 704 | 0.9− | 0.9+ | 2003 02 03 | 644 | 0.2− | 0.6− | 2003 04 23 | 704 | 0.5− | 0.3− |
| 2002 11 12 | 704 | 0.4+ | 0.6+ | 2003 02 04 | 699 | 0.2− | 0.3− | 2003 06 04 | 703 | 1.0+ | 0.2− |
| 2002 11 12 | 704 | 0.0 | 0.4+ | 2003 02 04 | 699 | 0.7− | 0.1− | 2003 06 04 | 703 | 0.6+ | 0.4+ |
| 2002 11 12 | 704 | 1.0+ | 0.5+ | 2003 02 04 | 699 | 0.3− | 0.0 | 2003 06 04 | 703 | 0.3+ | 0.9− |
| 2002 11 14 | 704 | (1.7+ | 0.7−) | 2003 02 04 | 699 | 0.2− | 0.0 | 2003 06 04 | 703 | 1.5+ | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 0.2− | 2003 02 06 | 704 | 0.2+ | 1.1+ | 2004 06 14 | 704 | 0.5+ | 0.6− |
| 2002 11 14 | 704 | 0.9+ | 0.3+ | 2003 02 06 | 704 | 0.3+ | 0.8+ | 2004 06 14 | 704 | 1.3+ | 0.1− |
| 2002 11 14 | 704 | 0.7+ | 0.0 | 2003 02 06 | 704 | 0.1+ | 0.9+ | 2004 06 14 | 704 | 1.1+ | 0.4− |
| 2002 11 14 | 704 | 0.1+ | 0.1+ | 2003 02 06 | 704 | 0.1+ | 1.0+ | 2004 06 14 | 704 | 0.2+ | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2003 02 06 | 704 | 0.3+ | 0.9+ | 2005 09 26 | 704 | (1.0− | 1.6−) |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2003 02 20 | 127 | 0.1− | 0.0 | 2005 09 26 | 704 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.4+ | 0.7+ | 2003 02 20 | 127 | 0.1+ | 0.1− | 2005 09 26 | 704 | 0.7− | 0.4+ |
| 2002 12 06 | 704 | 0.5+ | 0.6+ | 2003 02 20 | 127 | 0.0 | 0.3− | 2005 09 26 | 704 | (2.0− | 0.7−) |
| 2002 12 11 | 704 | (1.9+ | 0.0 ) | 2003 02 20 | 127 | 0.1+ | 0.2− | 2005 09 26 | 704 | 0.5− | 0.4+ |
| 2002 12 11 | 704 | 1.1+ | 0.7+ | 2003 02 21 | 644 | 0.2− | 0.9− | 2005 10 02 | E12 | 1.4− | 0.3+ |
| 2002 12 11 | 704 | 1.3+ | 0.2+ | 2003 02 21 | 644 | 0.3+ | 0.0 | 2005 10 02 | E12 | 0.8− | 0.1+ |
| 2002 12 11 | 704 | 1.1+ | 0.3− | 2003 02 21 | 644 | 0.2− | 1.0− | 2005 10 02 | E12 | 0.3+ | 0.1+ |
| 2002 12 11 | 704 | 0.9+ | 0.1− | 2003 02 21 | 644 | 0.4+ | 0.2+ | 2005 10 02 | E12 | 0.5+ | 1.0− |
| 2002 12 31 | 704 | 0.1− | 0.7+ | 2003 02 21 | 644 | 0.0 | 1.1− | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2002 12 31 | 704 | 0.0 | 0.8+ | 2003 02 21 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.2− |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2003 02 23 | 127 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2002 12 31 | 704 | 0.0 | 0.7+ | 2003 02 23 | 127 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.3− |
| 2002 12 31 | 704 | 0.1− | 1.0+ | 2003 02 23 | 127 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.1− |
| 2003 01 04 | 704 | 0.1− | 0.1− | 2003 02 26 | 704 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 2003 01 04 | 704 | 0.1+ | 0.1− | 2003 02 26 | 704 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2003 01 04 | 704 | 0.3+ | 0.3− | 2003 02 26 | 704 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.6− | 0.4− |
| 2003 01 04 | 704 | 0.7+ | 0.3− | 2003 02 26 | 704 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2003 01 04 | 704 | 0.5+ | 0.1− | 2003 03 03 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.4− | 0.5+ | 2003 03 03 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.5− | 0.1− |
| 2003 01 10 | 704 | 0.1+ | 0.3+ | 2003 03 03 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1− | 0.3− |
| 2003 01 10 | 704 | 0.3− | 0.0 | 2003 03 08 | 699 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2003 01 10 | 704 | 0.4− | 0.2− | 2003 03 08 | 699 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2003 01 10 | 704 | 0.3− | 0.1+ | 2003 03 08 | 699 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2003 01 26 | 699 | 0.1+ | 0.2+ | 2003 03 08 | 699 | 0.0 | 0.4− | 2006 11 29 | 704 | 1.2+ | 0.3− |

**(137190)∗ 1999 JC$_{88}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 244.19070 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.21598836 | ω | 77.62003 | | −0.96597080 | | +0.13358482 |
| *a* | 2.7511598 | Ω | 109.72931 | | −0.20028896 | | −0.92814667 |
| *e* | 0.1336764 | *i* | 13.60914 | | +0.16366048 | | −0.34741741 |
| *P* | 4.56 | *H* | 14.9 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 25 | 699 | 0.7+ | 0.5+ | 2002 12 11 | 704 | 0.1+ | 0.5+ | 2003 02 26 | 704 | 0.8− | 0.5− |
| 1999 03 25 | 699 | 0.2+ | 0.1− | 2002 12 11 | 704 | 1.1+ | 0.7+ | 2003 02 26 | 704 | 1.4− | 0.4− |
| 1999 03 25 | 699 | 0.1− | 0.1− | 2002 12 31 | 704 | 0.5+ | 0.1− | 2003 03 03 | 644 | 0.2+ | 0.2− |
| 1999 04 10 | 704 | 0.7− | 2.0− | 2002 12 31 | 704 | 0.8+ | 0.2+ | 2003 03 03 | 644 | 0.2+ | 0.1− |
| 1999 04 10 | 704 | 1.0− | 1.2+ | 2002 12 31 | 704 | 0.7+ | 0.1− | 2003 03 03 | 644 | 0.0 | 0.2− |
| 1999 04 10 | 704 | 1.5− | 0.3− | 2002 12 31 | 704 | (1.8+ | 2.9−) | 2003 03 05 | 704 | 0.1+ | 0.3− |
| 1999 04 10 | 704 | 0.4− | 1.7− | 2003 01 05 | 699 | 1.5+ | 0.3+ | 2003 03 05 | 704 | 0.0 | 0.5− |
| 1999 04 10 | 704 | (2.0− | 3.1−) | 2003 01 05 | 699 | 1.1+ | 0.6+ | 2003 03 05 | 704 | (1.0+ | 1.7+) |
| 1999 05 12 | 704 | 0.7+ | 1.6+ | 2003 01 05 | 699 | 0.0 | 0.4+ | 2003 03 05 | 704 | 0.1− | 0.2− |
| 1999 05 12 | 704 | 0.3− | 0.3+ | 2003 01 05 | 699 | 0.5+ | 0.1+ | 2003 03 05 | 704 | 0.1+ | 0.4+ |
| 1999 05 12 | 704 | 0.5+ | 0.3− | 2003 01 05 | 704 | 0.5− | 0.1+ | 2003 03 05 | 704 | 0.1+ | 0.7− |
| 1999 05 12 | 704 | 1.1− | 0.6− | 2003 01 05 | 704 | 0.2− | 0.2− | 2003 03 05 | 704 | 0.8+ | 1.1+ |
| 1999 05 12 | 704 | 1.0− | 0.2+ | 2003 01 05 | 704 | 0.6− | 0.6+ | 2003 03 05 | 704 | 0.1+ | 0.2+ |
| 1999 05 17 | 704 | 0.2− | 0.2− | 2003 01 05 | 704 | 0.2− | 1.2+ | 2003 03 07 | 644 | 0.1+ | 0.0 |
| 1999 05 17 | 704 | (2.3− | 2.3+) | 2003 01 05 | 704 | 0.1− | 1.0+ | 2003 03 07 | 644 | 0.0 | 0.1+ |
| 1999 05 17 | 704 | 0.6+ | 0.5+ | 2003 01 09 | 704 | 0.7+ | 0.0 | 2003 03 07 | 644 | 0.0 | 0.0 |
| 1999 05 17 | 704 | 0.5− | 0.9+ | 2003 01 09 | 704 | 0.4+ | 0.4+ | 2003 03 10 | 699 | 0.1+ | 0.1+ |
| 1999 05 17 | 704 | (2.8− | 1.2+) | 2003 01 09 | 704 | 0.5+ | 0.2− | 2003 03 10 | 699 | 0.4+ | 0.2− |
| 1999 06 08 | 704 | 0.3+ | 1.1+ | 2003 01 09 | 704 | 1.1+ | 0.4− | 2003 03 10 | 699 | 0.7− | 0.1+ |
| 1999 06 08 | 704 | 0.1+ | 0.5+ | 2003 01 09 | 704 | (2.7+ | 0.7−) | 2003 03 10 | 699 | 0.1− | 0.5− |
| 1999 06 08 | 704 | 0.7+ | 0.3− | 2003 01 17 | 644 | 0.3− | 0.0 | 2004 05 15 | 704 | (3.3+ | 1.4−) |
| 1999 06 08 | 704 | 0.0 | 0.5+ | 2003 01 17 | 644 | 0.2− | 0.1− | 2004 05 15 | 704 | (2.1+ | 1.7−) |
| 1999 06 08 | 704 | 1.3+ | 1.7− | 2003 01 17 | 644 | 0.1− | 0.0 | 2004 05 15 | 704 | 1.6+ | 0.7− |
| 1999 06 10 | 699 | 1.3+ | 0.3+ | 2003 01 31 | 644 | 0.0 | 0.4+ | 2004 05 15 | 704 | (2.0+ | 0.0 ) |
| 1999 06 10 | 699 | 0.6− | 0.9+ | 2003 01 31 | 644 | 0.3+ | 0.5+ | 2004 05 15 | 704 | (2.6+ | 1.2−) |
| 1999 06 10 | 699 | 0.4+ | 0.6− | 2003 01 31 | 644 | 0.1+ | 0.5+ | 2004 06 11 | 704 | (1.6+ | 1.7+) |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.3+ | 1.1+ | 2004 06 11 | 704 | 0.0 | 1.2+ |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2003 02 01 | 704 | 0.6− | 1.3+ | 2004 06 11 | 704 | 0.0 | 0.2+ |
| 2001 09 21 | 645 | 0.0 | 0.1+ | 2003 02 01 | 704 | 0.4+ | 1.2+ | 2004 06 11 | 704 | 0.5− | 0.5+ |
| 2001 09 21 | 645 | 0.1+ | 0.1+ | 2003 02 01 | 704 | 0.4+ | 1.3+ | 2005 09 26 | 704 | 0.1− | 0.4− |
| 2001 10 20 | 608 | 1.3− | 0.8− | 2003 02 01 | 704 | (0.5+ | 1.6+) | 2005 09 26 | 704 | 0.1− | 0.4+ |
| 2001 10 20 | 608 | 1.0− | 0.6− | 2003 02 02 | 644 | 0.1− | 0.9− | 2005 09 26 | 704 | 0.6+ | 0.1+ |
| 2001 10 20 | 608 | 0.7− | 0.4− | 2003 02 02 | 644 | 0.1− | 0.7− | 2006 11 15 | 703 | 0.0 | 1.0− |
| 2001 10 28 | 644 | 0.4− | 0.5+ | 2003 02 02 | 644 | 0.2− | 0.8− | 2006 11 15 | 703 | 0.3+ | 0.6− |
| 2001 10 28 | 644 | 0.3− | 0.3+ | 2003 02 04 | 699 | 0.3+ | 0.5− | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2001 10 28 | 644 | 0.5− | 0.5+ | 2003 02 04 | 699 | 0.4+ | 0.7− | 2006 11 15 | 703 | 0.3− | 0.5+ |
| 2002 01 08 | 645 | 0.1+ | 0.1− | 2003 02 04 | 699 | 0.3+ | 0.2− | 2006 11 25 | 703 | 0.4+ | 0.3− |
| 2002 01 08 | 645 | 0.0 | 0.1− | 2003 02 04 | 699 | 0.5+ | 0.2− | 2006 11 25 | 703 | 0.3− | 0.4+ |
| 2002 01 12 | 704 | 0.7+ | 0.5+ | 2003 02 07 | 704 | 0.2− | 0.1− | 2006 11 25 | 703 | 0.0 | 0.8− |
| 2002 01 12 | 704 | 0.4+ | 0.1− | 2003 02 07 | 704 | 0.5− | 0.2− | 2006 11 25 | 703 | 0.2− | 0.2− |
| 2002 01 12 | 704 | 0.3− | 0.2+ | 2003 02 07 | 704 | 1.1− | 0.3+ | 2006 11 28 | 704 | 0.6− | 0.7+ |
| 2002 12 06 | 608 | 0.3+ | 0.1− | 2003 02 07 | 704 | 0.6− | 0.4− | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2002 12 06 | 608 | 0.2+ | 0.3− | 2003 02 26 | 704 | 0.2+ | 0.2− | 2006 11 28 | 704 | 1.0− | 0.8− |
| 2002 12 06 | 608 | 0.3− | 0.1+ | 2003 02 26 | 704 | 1.1− | 0.3− | 2006 11 28 | 704 | 0.1− | 1.0− |
| 2002 12 11 | 704 | 0.5− | 0.6+ | 2003 02 26 | 704 | 0.9− | 0.5− | 2006 11 28 | 704 | 0.3+ | 0.4− |

**(137191)∗ 1999 JG$_{88}$ = 2003 AK$_{20}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 42911)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.35867 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19182317 | $\omega$ | 27.88749 | | −0.82981341 | −0.53087913 |
| $a$ | 2.9776159 | $\Omega$ | 119.02123 | | +0.46839578 | −0.83013156 |
| $e$ | 0.0680569 | $i$ | 11.34254 | | +0.30333990 | −0.17043753 |
| $P$ | 5.14 | $H$ | 14.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 21 | 691 | 0.1+ | 0.4− | 2003 01 07 | 704 | 0.6+ | 0.7+ | 2004 04 23 | 703 | 0.5− | 0.3− |
| 1993 01 21 | 691 | 0.2+ | 0.4− | 2003 01 07 | 704 | 0.4+ | 0.3+ | 2004 04 23 | 703 | 0.2+ | 0.1+ |
| 1993 01 21 | 691 | 0.1+ | 0.4− | 2003 01 07 | 704 | 0.6+ | 0.5+ | 2004 04 24 | 704 | 0.5+ | 1.1+ |
| 1998 01 22 | 691 | 0.7− | 0.7− | 2003 01 08 | 704 | 0.8+ | 0.3+ | 2004 04 24 | 704 | 1.4− | 0.0 |
| 1998 01 22 | 691 | 0.4− | 0.1+ | 2003 01 08 | 704 | 0.4+ | 0.1+ | 2004 04 24 | 704 | 1.0− | 0.5+ |
| 1998 01 22 | 691 | 0.0 | 0.5+ | 2003 01 08 | 704 | 0.2− | 0.5+ | 2004 04 24 | 704 | 0.2+ | 0.1+ |
| 1999 05 12 | 704 | 0.8+ | 0.8+ | 2003 01 08 | 704 | 0.1+ | 0.6+ | 2004 04 24 | 704 | (2.3− | 1.2+) |
| 1999 05 12 | 704 | 0.6+ | 0.1+ | 2003 01 08 | 704 | 0.6− | 0.5+ | 2004 04 25 | 699 | 0.7− | 0.4+ |
| 1999 05 12 | 704 | 0.3+ | 0.5− | 2003 01 08 | 704 | 0.3− | 0.5+ | 2004 04 25 | 699 | 0.1+ | 0.3− |
| 1999 05 12 | 704 | (2.4− | 1.7−) | 2003 01 08 | 704 | 0.8− | 0.1+ | 2004 04 25 | 699 | 0.5+ | 0.6+ |
| 1999 05 17 | 704 | 1.2+ | 1.9+ | 2003 01 08 | 704 | 0.5− | 0.3+ | 2004 04 25 | 699 | 0.5+ | 1.1+ |
| 1999 05 17 | 704 | 0.8− | 1.4+ | 2003 01 11 | 704 | 0.5− | 1.4+ | 2004 05 11 | 703 | 1.2+ | 0.4+ |
| 1999 05 17 | 704 | 1.7− | 1.0+ | 2003 01 11 | 704 | 0.1+ | 0.0 | 2004 05 11 | 703 | 0.8− | 1.5− |
| 1999 05 18 | 703 | 0.4+ | 0.0 | 2003 01 11 | 704 | 0.5+ | 0.1+ | 2004 05 11 | 703 | 0.6− | 0.3− |
| 1999 05 18 | 703 | 0.0 | 0.0 | 2003 01 11 | 704 | 0.8+ | 0.2+ | 2004 05 11 | 703 | 0.1− | 0.0 |
| 1999 05 18 | 703 | 0.1+ | 0.3+ | 2004 03 13 | 644 | 0.3+ | 0.4+ | 2004 06 14 | 703 | 0.3+ | 0.1− |
| 1999 05 18 | 703 | (2.2+ | 2.2+) | 2004 03 13 | 644 | 0.5+ | 0.4+ | 2004 06 14 | 703 | 0.2+ | 1.2− |
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2004 03 13 | 644 | 0.5+ | 0.4+ | 2004 06 14 | 703 | 0.2+ | 0.6− |
| 2001 09 16 | 704 | 0.1− | 1.2+ | 2004 03 15 | 704 | 0.2+ | 0.3− | 2004 06 14 | 703 | (2.6+ | 0.8−) |
| 2001 09 16 | 704 | 0.5− | 0.6+ | 2004 03 15 | 704 | 0.4− | 0.3− | 2005 06 26 | 644 | 0.4− | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 1.1+ | 2004 03 15 | 704 | 0.2− | 0.8+ | 2005 06 26 | 644 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.2− | 0.8+ | 2004 03 15 | 704 | 0.4− | 1.0+ | 2005 06 26 | 644 | 0.0 | 0.1+ |
| 2001 10 15 | 644 | 0.2+ | 0.8+ | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.3+ |
| 2001 10 15 | 644 | 0.3+ | 0.9+ | 2004 03 27 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 2001 10 15 | 644 | 0.0 | 0.8+ | 2004 03 27 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.1− |
| 2001 10 23 | 644 | 0.4− | 0.7+ | 2004 03 27 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 1.0− | 1.4+ |
| 2001 10 23 | 644 | 0.5− | 0.5+ | 2004 04 12 | 703 | 0.6+ | 0.8+ | 2006 09 25 | 703 | 0.5+ | 1.0− |
| 2001 10 23 | 644 | 0.4− | 0.5+ | 2004 04 12 | 703 | 0.4+ | 0.9+ | 2006 09 25 | 703 | 0.5− | 0.6+ |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2004 04 12 | 703 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 1.4− | 0.0 | 2004 04 12 | 703 | 0.7+ | 0.8+ | 2006 09 25 | 703 | 0.9− | 0.1− |
| 2002 12 11 | 704 | 0.0 | 0.4+ | 2004 04 15 | 704 | 1.0+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 2002 12 11 | 704 | 0.5+ | 1.1+ | 2004 04 15 | 704 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2003 01 05 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 704 | 1.0+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2003 01 05 | 704 | 0.4+ | 0.3+ | 2004 04 15 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2003 01 05 | 704 | 0.8+ | 0.3+ | 2004 04 15 | 704 | 0.8+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 01 07 | 704 | 0.3+ | 0.1− | 2004 04 23 | 703 | 0.3− | 1.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2003 01 07 | 704 | 0.1− | 0.4+ | 2004 04 23 | 703 | (2.0+ | 0.8−) | | | | |

**(137192)∗ 1999 JL$_{89}$ = 2001 WD$_{12}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19436)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.67976 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21995154 | $\omega$ | 123.85018 | | −0.80788599 | +0.56750517 |
| $a$ | 2.7180121 | $\Omega$ | 91.22050 | | −0.57948061 | −0.71582416 |
| $e$ | 0.1046799 | $i$ | 9.14677 | | −0.10734266 | −0.40685828 |
| $P$ | 4.48 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 704 | 0.0 | 0.7+ | 2001 12 17 | 704 | 0.6+ | 1.1+ | 2003 03 26 | 704 | 0.6+ | 1.1+ |
| 1999 04 12 | 704 | 1.3+ | 1.5+ | 2001 12 17 | 704 | 0.7− | 0.2+ | 2004 06 14 | 704 | 0.3+ | 0.2+ |
| 1999 04 12 | 704 | 1.8− | 0.6− | 2001 12 17 | 704 | 0.6− | 1.1+ | 2004 06 14 | 704 | 0.1− | 0.3− |
| 1999 04 12 | 704 | 1.5− | 0.9− | 2001 12 17 | 704 | 0.7− | 1.4+ | 2004 06 14 | 704 | 0.7+ | 0.6− |
| 1999 04 12 | 704 | (6.0− | 2.0−) | 2003 01 27 | 704 | 1.1+ | 1.2− | 2004 06 14 | 704 | 1.0− | 0.1+ |
| 1999 05 12 | 704 | (2.3+ | 0.4+) | 2003 01 27 | 704 | 1.0+ | 0.0 | 2004 06 14 | 704 | 0.2+ | 0.7+ |
| 1999 05 12 | 704 | 0.3− | 1.5− | 2003 01 27 | 704 | (2.9+ | 0.1−) | 2004 07 15 | E12 | 0.1+ | 1.0+ |
| 1999 05 12 | 704 | 1.2+ | 1.3− | 2003 01 28 | 608 | 0.2+ | 0.5− | 2004 07 15 | E12 | 0.2− | 0.8+ |
| 1999 05 17 | 704 | 0.7+ | 0.3− | 2003 01 28 | 608 | 0.1+ | 0.9− | 2004 07 15 | E12 | (0.2+ | 1.5+) |
| 1999 05 17 | 704 | 1.0+ | 0.5+ | 2003 01 28 | 608 | 0.2+ | 0.7− | 2004 07 15 | E12 | 0.3+ | 0.7+ |
| 1999 05 17 | 704 | 0.9+ | 1.1+ | 2003 01 31 | 704 | 0.6− | 1.2+ | 2005 11 01 | 703 | 0.6− | 1.2− |
| 1999 05 17 | 704 | 0.7− | 1.8+ | 2003 01 31 | 704 | 0.4+ | 0.8+ | 2005 11 01 | 703 | 1.3− | 1.2+ |
| 1999 05 17 | 704 | (2.9− | 2.5+) | 2003 01 31 | 704 | 1.4+ | 0.2+ | 2005 11 01 | 703 | 0.2+ | 0.9+ |
| 1999 05 18 | 703 | 0.6− | 1.0+ | 2003 02 08 | 699 | 0.0 | 0.1+ | 2005 11 01 | 703 | 1.0− | 0.1− |
| 1999 05 18 | 703 | 1.2+ | 0.9+ | 2003 02 08 | 699 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.8− |
| 1999 05 18 | 703 | 0.8+ | 0.1+ | 2003 02 08 | 699 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.6+ | 0.8− |
| 1999 05 18 | 703 | 0.4+ | 1.1+ | 2003 02 08 | 699 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 11 17 | 704 | 0.4+ | 0.0 | 2003 02 28 | 608 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2001 11 17 | 704 | 0.2− | 1.2+ | 2003 02 28 | 608 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.7− |
| 2001 11 17 | 704 | 0.1− | 1.0+ | 2003 02 28 | 608 | 0.1+ | 0.5− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 11 18 | 704 | 0.4− | 0.4+ | 2003 03 08 | 704 | 0.7− | 0.6+ | 2006 10 28 | G96 | 0.1− | 0.7− |
| 2001 11 18 | 704 | 0.2− | 0.5+ | 2003 03 08 | 704 | 0.7− | 0.6− | 2006 10 28 | G96 | 0.5+ | 0.5− |
| 2001 11 18 | 704 | 0.1− | 0.3+ | 2003 03 08 | 704 | 0.9− | 0.9+ | 2006 11 14 | G96 | 0.4+ | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | (0.5− | 2.0+) | 2003 03 08 | 704 | 1.0− | 1.0+ | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2001 12 11 | 704 | 0.2+ | 0.7+ | 2003 03 08 | 704 | 1.4− | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2001 12 11 | 704 | 0.7− | 1.3+ | 2003 03 08 | 704 | 0.5− | 1.5+ | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2001 12 11 | 704 | 0.4− | 0.5+ | 2003 03 08 | 704 | 0.2− | 1.1− | 2006 11 27 | G96 | 0.1− | 0.7− |
| 2001 12 11 | 704 | 0.3+ | 0.3+ | 2003 03 08 | 704 | 0.5− | 1.3+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 0.0 | 0.3+ | 2003 03 23 | 644 | 0.1+ | 0.6+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2001 12 14 | 704 | 0.5+ | 0.1− | 2003 03 23 | 644 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2001 12 14 | 704 | 0.2− | 0.9+ | 2003 03 23 | 644 | 0.4+ | 0.4+ | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2001 12 14 | 704 | 0.6− | 0.6+ | 2003 03 26 | 704 | (0.3+ | 2.3−) | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.3− | 0.7+ | 2003 03 26 | 704 | 1.1+ | 0.8+ | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2001 12 17 | 704 | 0.5− | 0.5+ | 2003 03 26 | 704 | (0.3+ | 1.8+) | | | | |

**(137193)∗ 1999 JB$_{96}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.13935 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17384782 | $\omega$ | 139.13359 | | −0.04901464 | +0.97575570 | |
| $a$ | 3.1794833 | $\Omega$ | 126.96793 | | −0.97173958 | +0.00278603 | |
| $e$ | 0.2478281 | $i$ | 15.48418 | | −0.23091072 | −0.21884482 | |
| $P$ | 5.67 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 0.8− | 0.1+ | 2000 08 28 | 704 | 0.7− | 1.3+ | 2005 07 05 | 704 | 0.2− | 0.5+ |
| 1999 05 12 | 704 | 0.7− | 0.7+ | 2000 10 02 | 699 | 0.5− | 1.0+ | 2005 07 05 | 704 | 0.5− | 0.6+ |
| 1999 05 12 | 704 | 0.5− | 0.7− | 2000 10 02 | 699 | 0.4− | 0.0 | 2005 07 05 | 704 | 0.1− | 0.5+ |
| 1999 05 12 | 704 | 0.4− | 1.4+ | 2000 10 02 | 699 | 0.2− | 0.0 | 2006 08 23 | 568 | 0.2− | 0.7+ |
| 1999 05 12 | 704 | 0.8− | 0.9+ | 2000 10 02 | 699 | 0.0 | 1.1+ | 2006 08 23 | 568 | 0.2− | 0.8+ |
| 1999 05 17 | 704 | 0.1+ | 0.4− | 2004 01 28 | 645 | 0.3− | 0.0 | 2006 08 23 | 568 | 0.2− | 0.7+ |
| 1999 05 17 | 704 | 0.6+ | 1.6− | 2004 01 28 | 645 | 0.3− | 0.0 | 2006 08 28 | 568 | 0.2− | 0.9+ |
| 1999 05 17 | 704 | 0.3+ | 1.9− | 2004 02 16 | 704 | 1.3+ | 1.4+ | 2006 08 28 | 568 | 0.2− | 0.9+ |
| 1999 05 17 | 704 | 0.2+ | 0.2− | 2004 02 16 | 704 | 0.8+ | 0.8+ | 2006 08 28 | 568 | 0.2− | 1.0+ |
| 1999 05 17 | 704 | 0.1+ | 1.1+ | 2004 02 16 | 704 | 1.4+ | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.4+ |
| 1999 06 08 | 704 | 0.2+ | 0.5+ | 2004 02 16 | 704 | 1.1+ | 0.2+ | 2006 09 19 | 703 | 0.4+ | 0.2− |
| 1999 06 08 | 704 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.9+ | 0.1− | 2006 09 19 | 703 | 1.0− | 0.6− |
| 1999 06 08 | 704 | 0.4− | 0.6+ | 2004 03 18 | 703 | 0.7+ | 0.6+ | 2006 09 19 | 703 | 0.4+ | 0.1+ |
| 1999 06 08 | 704 | 0.5− | 1.1− | 2004 03 18 | 703 | 0.6+ | 0.8+ | 2006 09 26 | 703 | 1.2− | 0.7+ |
| 1999 06 08 | 704 | 0.5− | 0.7+ | 2004 03 18 | 703 | 0.5+ | 1.1+ | 2006 09 26 | 703 | 0.3+ | 0.8+ |
| 1999 06 10 | 699 | 0.9+ | 0.1− | 2004 03 18 | 703 | 0.6+ | 1.3+ | 2006 09 26 | 703 | 0.8+ | 0.1+ |
| 1999 06 10 | 699 | 0.5+ | 0.8+ | 2004 03 23 | 704 | 0.1− | 0.8+ | 2006 09 26 | 703 | 1.2+ | 0.2+ |
| 1999 06 10 | 699 | 0.8+ | 0.1− | 2004 03 23 | 704 | 0.9+ | 1.0+ | 2006 10 21 | 703 | (1.6− | 0.2+) |
| 1999 06 12 | 704 | 0.4+ | 0.6+ | 2004 03 23 | 704 | 0.7+ | 1.0+ | 2006 10 21 | 703 | 0.9+ | 1.3− |
| 1999 06 12 | 704 | 1.2+ | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 703 | 0.6+ | 0.6− |
| 1999 06 12 | 704 | 0.2+ | 0.8+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.5+ |
| 1999 06 12 | 704 | 0.0 | 1.0− | 2004 03 25 | 704 | 0.3+ | 0.8+ | 2006 11 17 | 703 | 1.1+ | 0.1− |
| 1999 06 12 | 704 | 0.5+ | 0.3− | 2004 03 25 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 1.2+ | 0.7− |
| 2000 08 28 | 704 | 0.5− | 1.6+ | 2004 03 25 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.0 |
| 2000 08 28 | 704 | 0.8− | 0.9+ | 2004 03 25 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 1.0− | 0.0 |

**(137194)∗ 1999 JJ$_{103}$ = 2002 GD$_{155}$**

Discovered 1999 May 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31253)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.69001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30639457 | $\omega$ | 181.20592 | | +0.56158290 | +0.82429595 | |
| $a$ | 2.1791243 | $\Omega$ | 122.96391 | | −0.75842485 | +0.54752022 | |
| $e$ | 0.1934985 | $i$ | 4.91186 | | −0.33078149 | +0.14407566 | |
| $P$ | 3.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 08 | 703 | 0.3− | 0.4− | 2003 11 19 | 699 | 0.6− | 0.2− | 2006 09 22 | 704 | 0.1− | 0.0 |
| 1999 05 08 | 703 | 0.3− | 0.8+ | 2003 11 21 | 691 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.6− | 0.2+ |
| 1999 05 08 | 703 | 0.2+ | 1.1+ | 2003 11 21 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.1+ | 0.1− |
| 1999 05 08 | 703 | 0.2+ | 0.0 | 2003 11 21 | 691 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.1+ | 0.2− |
| 1999 05 10 | 699 | 1.3+ | 0.7+ | 2003 11 30 | 704 | 0.7− | 0.5− | 2006 09 25 | 699 | 0.4− | 0.3+ |
| 1999 05 10 | 699 | 1.1+ | 1.4+ | 2003 11 30 | 704 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 1999 05 10 | 699 | 0.9− | 0.3− | 2003 11 30 | 704 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.6+ | 0.6+ |
| 1999 05 13 | 704 | 0.2+ | 0.3− | 2005 03 12 | 704 | 0.7+ | 0.5+ | 2006 09 26 | 704 | 0.3− | 1.4+ |
| 1999 05 13 | 704 | 0.6− | 0.4+ | 2005 03 12 | 704 | 0.7+ | 0.8+ | 2006 09 26 | 704 | 0.3− | 0.2+ |
| 1999 05 13 | 704 | (2.9− | 1.8+) | 2005 03 12 | 704 | 0.1− | 0.8+ | 2006 09 26 | 704 | (1.6− | 1.0+) |
| 1999 05 17 | 704 | (0.3− | 2.4+) | 2005 03 16 | 703 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.9− | 0.4− |
| 1999 05 17 | 704 | (2.1− | 0.4+) | 2005 03 16 | 703 | 0.4− | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.4+ |
| 1999 05 17 | 704 | 0.5− | 1.0+ | 2005 03 16 | 703 | 0.9− | 1.0+ | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 1999 05 17 | 704 | 0.6− | 0.6− | 2005 03 16 | 703 | 0.8− | 1.0− | 2006 09 26 | 703 | 0.5− | 1.0+ |
| 2002 04 13 | 644 | 0.1+ | 1.0+ | 2006 08 19 | 699 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 2002 04 13 | 644 | 0.1+ | 1.2+ | 2006 08 19 | 699 | 0.1+ | 0.8+ | 2006 09 30 | 704 | 0.1− | 0.6+ |
| 2002 04 13 | 644 | 0.2+ | 0.9+ | 2006 08 19 | 699 | 0.4− | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.0 |
| 2002 04 16 | 704 | 1.4+ | 1.1+ | 2006 08 19 | 699 | 1.3+ | 0.3+ | 2006 09 30 | 704 | 0.4+ | 0.1+ |
| 2002 04 16 | 704 | 1.3+ | 1.1+ | 2006 09 18 | 703 | 0.9+ | 0.3− | 2006 09 30 | 704 | 0.2+ | 0.6+ |
| 2002 04 16 | 704 | 0.8+ | 0.9+ | 2006 09 18 | 703 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2002 04 16 | 704 | 1.4+ | 0.1− | 2006 09 18 | 703 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.4− | 0.9+ |
| 2002 04 16 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.1− |
| 2003 10 29 | 699 | (1.6− | 1.2+) | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2003 10 29 | 699 | 0.9+ | 0.3− | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2003 10 29 | 699 | 0.3+ | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.8− | 0.5− |
| 2003 10 29 | 699 | 0.8− | 0.2− | 2006 09 21 | 699 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.5+ |
| 2003 11 18 | 691 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 1.2+ | 1.1+ | 2006 10 22 | 703 | 0.1+ | 0.9+ |
| 2003 11 18 | 691 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.0 | 0.5− |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.5− |
| 2003 11 19 | 699 | 0.8+ | 0.7+ | 2006 09 22 | 704 | 1.1− | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.0 |
| 2003 11 19 | 699 | 0.5+ | 0.1− | 2006 09 22 | 704 | 1.0− | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.1− |
| 2003 11 19 | 699 | 0.3+ | 0.2+ | 2006 09 22 | 704 | 0.4− | 0.1− | | | | |

**(137195)∗ 1999 JJ$_{114}$ = 2003 FS$_{80}$**

Discovered 1999 May 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46367)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.74525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22782814 | $\omega$ | 166.36356 | | −0.72363442 | +0.67506890 | |
| $a$ | 2.6549997 | $\Omega$ | 57.03807 | | −0.64820307 | −0.59325531 | |
| $e$ | 0.0906803 | $i$ | 9.85810 | | −0.23703588 | −0.43855458 | |
| $P$ | 4.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 09 | 691 | 0.3− | 0.6+ | 2003 03 31 | 699 | 0.3− | 0.2− | 2005 10 28 | G96 | 0.1+ | 0.1− |
| 1996 10 09 | 691 | 0.4− | 0.5+ | 2003 03 31 | 704 | 0.1− | 0.2+ | 2005 10 28 | G96 | 0.2+ | 0.0 |
| 1996 10 09 | 691 | 0.5− | 0.7+ | 2003 03 31 | 704 | 0.5+ | 0.1+ | 2005 10 28 | G96 | 0.0 | 0.3− |
| 1999 05 13 | 704 | 1.1+ | 0.3+ | 2003 03 31 | 704 | 0.5+ | 1.0+ | 2005 10 31 | 704 | 0.8− | 1.6− |
| 1999 05 13 | 704 | 1.6+ | 1.2+ | 2003 03 31 | 704 | 0.1+ | 0.1+ | 2005 10 31 | 704 | 1.4− | 0.6− |
| 1999 05 13 | 704 | 0.3+ | 1.1− | 2003 04 01 | 645 | 0.2− | 0.1− | 2005 10 31 | 691 | 0.2− | 0.2+ |
| 1999 05 13 | 704 | 1.3+ | 0.3+ | 2003 04 01 | 645 | 0.2− | 0.1− | 2005 10 31 | 704 | 0.4− | 0.5+ |
| 1999 05 15 | 691 | 0.1− | 0.4+ | 2003 04 03 | 704 | 0.1+ | 0.6+ | 2005 10 31 | 691 | 0.4+ | 0.1+ |
| 1999 05 15 | 691 | 0.2+ | 0.9+ | 2003 04 03 | 704 | 0.9+ | 0.6+ | 2005 10 31 | 691 | 0.1− | 0.2+ |
| 1999 05 15 | 691 | 0.4+ | 0.2+ | 2003 04 03 | 704 | 1.9+ | 1.2− | 2005 11 06 | 691 | 0.1+ | 0.3+ |
| 1999 05 18 | 704 | 0.0 | 0.6− | 2003 04 03 | 704 | 0.4+ | 1.2+ | 2005 11 06 | 691 | 0.1− | 0.2+ |
| 1999 05 18 | 704 | 0.0 | 0.4+ | 2003 04 09 | 704 | 0.4− | 0.3− | 2005 11 06 | 691 | 0.1+ | 0.1+ |
| 1999 05 18 | 704 | 1.7− | 1.8+ | 2003 04 09 | 704 | 1.1− | 0.1+ | 2005 11 06 | 704 | 0.2+ | 0.6+ |
| 1999 05 18 | 704 | 0.4+ | 0.1+ | 2003 04 09 | 704 | 0.9− | 0.7+ | 2005 11 06 | 704 | 0.9− | 0.1− |
| 1999 05 18 | 704 | 0.8+ | 0.0 | 2003 04 09 | 704 | 0.9− | 0.4+ | 2005 11 06 | 704 | 0.7− | 0.4+ |
| 1999 06 15 | 704 | 0.0 | 1.3− | 2003 04 09 | 704 | 0.0 | 0.8+ | 2005 11 06 | 704 | 0.2− | 0.1+ |
| 1999 06 15 | 704 | 0.2− | 0.3+ | 2003 04 26 | 704 | 0.8+ | 0.7+ | 2005 11 06 | 704 | 0.3− | 0.2− |
| 1999 06 15 | 704 | 0.8− | 0.5− | 2003 04 26 | 704 | 0.3+ | 0.2+ | 2005 11 25 | 691 | 0.1− | 0.1+ |
| 1999 06 15 | 704 | 0.6− | 0.2− | 2003 04 26 | 704 | 0.6+ | 0.6− | 2005 11 25 | 691 | 0.1− | 0.1− |
| 1999 06 15 | 704 | 1.2− | 0.2+ | 2003 04 26 | 704 | 0.5+ | 1.6+ | 2005 11 25 | 691 | 0.1− | 0.1+ |
| 2001 12 22 | 704 | 0.3+ | 0.0 | 2003 04 26 | 608 | 0.1+ | 0.3+ | 2005 11 29 | 699 | 0.0 | 0.5+ |
| 2001 12 22 | 704 | 0.0 | 0.3− | 2003 04 26 | 608 | 0.5+ | 0.1− | 2005 11 29 | 699 | 0.8+ | 1.0+ |
| 2001 12 22 | 704 | 0.6+ | 0.9+ | 2003 04 26 | 608 | 0.3+ | 0.4− | 2005 11 29 | 699 | 1.6+ | 0.2− |
| 2003 03 09 | 704 | 1.3+ | 0.3+ | 2004 08 09 | 644 | 0.3− | 0.4+ | 2005 11 29 | 699 | 0.9+ | 0.8− |
| 2003 03 09 | 704 | 1.6+ | 1.6+ | 2004 08 09 | 644 | 0.2− | 0.5+ | 2005 12 01 | 695 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 704 | 1.1+ | 0.6+ | 2004 08 09 | 644 | 0.3− | 0.3+ | 2005 12 01 | 695 | 0.0 | 0.1+ | | |
| 2003 03 09 | 704 | 1.6+ | 0.6+ | 2005 10 22 | 691 | 0.0 | 0.1+ | 2005 12 01 | 695 | 0.1− | 0.2+ | | |
| 2003 03 09 | 704 | 1.7+ | 0.5+ | 2005 10 22 | 691 | 0.3− | 0.2+ | 2005 12 02 | G96 | 0.2+ | 0.1− | | |
| 2003 03 27 | 704 | 0.4+ | 0.4+ | 2005 10 22 | 691 | 0.1− | 0.1+ | 2005 12 02 | G96 | 0.7+ | 0.1− | | |
| 2003 03 27 | 704 | 0.5+ | 0.1+ | 2005 10 25 | 703 | 0.8− | 0.9+ | 2005 12 02 | G96 | 0.1− | 0.1− | | |
| 2003 03 27 | 704 | 0.4+ | 0.4+ | 2005 10 25 | 703 | 0.4+ | 1.0+ | 2005 12 02 | G96 | 0.1+ | 0.1− | | |
| 2003 03 27 | 704 | 0.4+ | 0.9+ | 2005 10 25 | 703 | 0.2+ | 0.1− | 2005 12 10 | 701 | 0.3− | 0.0 | | |
| 2003 03 27 | 704 | 0.2+ | 0.3− | 2005 10 25 | 703 | 0.0 | 0.9+ | 2005 12 10 | 701 | 0.7− | 0.0 | | |
| 2003 03 31 | 699 | 0.7− | 0.8− | 2005 10 25 | 291 | 0.0 | 0.1+ | 2005 12 10 | 701 | 0.1− | 0.1− | | |
| 2003 03 31 | 699 | 0.4− | 0.9+ | 2005 10 25 | 291 | 0.1+ | 0.4− | | | | | | |
| 2003 03 31 | 699 | 0.2+ | 0.8+ | 2005 10 25 | 291 | 0.0 | 0.1− | | | | | | |

**(137196)∗ 1999 JS$_{129}$ = 2003 AH$_{59}$**

Discovered 1999 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40019)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 267.73909 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21290543 | $\omega$ | 53.69769 | | −0.94219730 | −0.28983521 | |
| *a* | 2.7776545 | $\Omega$ | 108.91980 | | +0.22094551 | −0.91462926 | |
| *e* | 0.2069059 | *i* | 10.23625 | | +0.25188755 | −0.28186676 | |
| *P* | 4.63 | *H* | 15.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 699 | 1.6+ | 0.6+ | 2003 01 05 | 704 | 0.4+ | 0.5+ | 2003 02 19 | 644 | 0.1− | 0.2− | | |
| 1999 05 10 | 699 | 0.6+ | 0.1− | 2003 01 05 | 704 | 0.4+ | 1.0− | 2003 02 19 | 644 | 0.1+ | 0.4+ | | |
| 1999 05 10 | 699 | 1.8+ | 1.9+ | 2003 01 05 | 704 | 0.6+ | 0.0 | 2003 02 19 | 644 | 0.1− | 0.3− | | |
| 1999 05 12 | 704 | 1.5− | 0.9− | 2003 01 05 | 704 | 0.6+ | 0.1+ | 2003 02 19 | 644 | 0.0 | 0.4+ | | |
| 1999 05 12 | 704 | (2.0− | 2.7+) | 2003 01 09 | 704 | 0.2+ | 0.0 | 2003 02 19 | 644 | 0.0 | 0.4− | | |
| 1999 05 12 | 704 | (2.6− | 2.4+) | 2003 01 09 | 704 | 0.3+ | 0.4+ | 2003 02 19 | 644 | 0.1− | 0.5+ | | |
| 1999 05 17 | 704 | (0.7+ | 2.1−) | 2003 01 09 | 704 | 0.2− | 0.2− | 2003 02 23 | 699 | 0.1− | 0.1− | | |
| 1999 05 17 | 704 | (1.0+ | 2.6−) | 2003 01 09 | 704 | 0.2+ | 0.5+ | 2003 02 23 | 699 | 0.1− | 0.1+ | | |
| 1999 05 17 | 704 | 0.5− | 0.0 | 2003 01 09 | 704 | 0.1+ | 0.9+ | 2003 02 23 | 699 | 0.2− | 0.1+ | | |
| 1999 06 08 | 704 | 1.0+ | 0.2− | 2003 01 18 | 644 | 0.3− | 0.1+ | 2003 02 23 | 699 | 0.1− | 0.1− | | |
| 1999 06 08 | 704 | 0.5− | 0.6+ | 2003 01 18 | 644 | 0.1− | 0.2+ | 2003 02 26 | 704 | 0.2+ | 0.2+ | | |
| 1999 06 08 | 704 | 0.8− | 0.8− | 2003 01 18 | 644 | 0.3+ | 0.2+ | 2003 02 26 | 704 | 0.1− | 0.4+ | | |
| 1999 06 08 | 704 | 0.3+ | 0.8− | 2003 01 27 | 699 | (1.7+ | 0.5+) | 2003 02 26 | 704 | 0.2− | 0.4+ | | |
| 1999 06 11 | 691 | 0.5− | 0.2+ | 2003 01 27 | 699 | 1.2+ | 0.5+ | 2003 02 26 | 704 | 0.5− | 0.2+ | | |
| 1999 06 11 | 691 | 0.5− | 0.3+ | 2003 01 27 | 699 | 0.5+ | 0.5+ | 2003 02 26 | 704 | 0.9− | 0.3+ | | |
| 1999 06 11 | 691 | 0.5− | 0.2+ | 2003 01 27 | 699 | 0.7+ | 0.0 | 2003 03 03 | 704 | 0.1− | 0.4− | | |
| 1999 06 14 | 704 | 0.2+ | 0.4− | 2003 01 28 | 644 | 0.0 | 0.1+ | 2003 03 03 | 704 | 0.3+ | 0.2+ | | |
| 1999 06 14 | 691 | (0.6+ | 2.5+) | 2003 01 28 | 644 | 0.0 | 0.0 | 2003 03 03 | 704 | 0.0 | 0.2+ | | |
| 1999 06 14 | 704 | 0.7+ | 0.9− | 2003 01 28 | 644 | 0.0 | 0.1+ | 2003 04 23 | 704 | 0.7+ | 1.0+ | | |
| 1999 06 14 | 704 | 1.1+ | 0.5+ | 2003 01 30 | 608 | 0.2+ | 0.9− | 2003 04 23 | 704 | 1.1− | 0.5+ | | |
| 1999 06 14 | 691 | 0.1− | 0.6+ | 2003 01 30 | 608 | 0.2+ | 0.8− | 2003 04 23 | 704 | 0.4− | 0.7+ | | |
| 1999 06 14 | 704 | 1.2− | 0.9+ | 2003 01 30 | 608 | 0.3+ | 1.0− | 2005 08 27 | 644 | 0.3− | 0.4+ | | |
| 1999 06 14 | 691 | 0.4− | 0.3+ | 2003 01 31 | 704 | 1.3− | 0.6+ | 2005 08 27 | 644 | 0.0 | 0.6+ | | |
| 1999 06 19 | 691 | 0.3+ | 0.5− | 2003 01 31 | 704 | (1.6− | 0.7+) | 2005 08 27 | 644 | 0.1+ | 0.6+ | | |
| 1999 06 19 | 691 | 0.6+ | 0.3− | 2003 01 31 | 704 | (1.7− | 0.7+) | 2006 10 30 | 703 | 0.3− | 0.7− | | |
| 1999 06 19 | 691 | 0.4+ | 0.3− | 2003 01 31 | 704 | 1.5− | 0.6+ | 2006 10 30 | 703 | 0.3− | 0.9− | | |
| 2001 09 21 | 645 | 0.0 | 0.2+ | 2003 01 31 | 704 | (1.8− | 1.1+) | 2006 10 30 | 703 | (1.9− | 0.3−) | | |
| 2001 09 21 | 645 | 0.1− | 0.2+ | 2003 02 02 | 644 | 0.2+ | 0.1+ | 2006 10 30 | 703 | 0.6− | 0.9− | | |
| 2002 01 08 | 645 | 0.0 | 0.0 | 2003 02 02 | 644 | 0.1+ | 0.0 | 2006 11 05 | 644 | 0.3+ | 0.4+ | | |
| 2002 01 08 | 645 | 0.0 | 0.1− | 2003 02 02 | 644 | 0.1− | 0.1− | 2006 11 05 | 644 | 0.4+ | 0.0 | | |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 0.1+ | 0.1− | 2006 11 05 | 644 | 0.1− | 0.2+ | | |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.3− | 0.0 | | |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.2+ | | |
| 2002 01 14 | 645 | 0.1+ | 0.0 | 2003 02 04 | 699 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.3+ | 0.6+ | | |
| 2002 12 31 | 704 | 0.3+ | 0.0 | 2003 02 04 | 608 | 1.0+ | 0.5− | 2006 11 19 | 703 | 0.4− | 0.1− | | |
| 2002 12 31 | 704 | 0.1− | 0.1+ | 2003 02 04 | 608 | 0.9+ | 0.7− | 2006 12 01 | G96 | 0.1+ | 0.3− | | |
| 2002 12 31 | 704 | 0.6− | 0.1+ | 2003 02 04 | 608 | (0.3+ | 2.0−) | 2006 12 01 | G96 | 0.3+ | 0.2− | | |
| 2002 12 31 | 704 | 0.2− | 0.2+ | 2003 02 07 | 704 | 0.7− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.2− | | |
| 2002 12 31 | 704 | 0.0 | 0.4+ | 2003 02 07 | 704 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.4− | | |
| 2003 01 05 | 704 | 0.2+ | 0.2− | 2003 02 07 | 704 | 0.2− | 0.4+ | | | | | | |

**(137197)∗ 1999 KA$_1$ = 2002 GG$_{17}$**

Discovered 1999 May 17 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 29040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 124.72658 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.32123845 | $\omega$ | 97.46000 | | −0.23006955 | +0.97305526 | |
| *a* | 2.1114673 | $\Omega$ | 159.21978 | | −0.90893062 | −0.20926935 | |
| *e* | 0.1579060 | *i* | 2.45775 | | −0.34772566 | −0.09679776 | |
| *P* | 3.07 | *H* | 17.1 | *G* | 0.15 | *U* | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | (2.1− | 1.0−) | 2002 04 14 | 644 | 0.1+ | 0.1+ | 2005 04 04 | 703 | 0.1+ | 0.3+ | | |
| 1999 05 10 | 704 | 0.3− | 0.3− | 2002 04 14 | 644 | 0.3+ | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.1− | | |
| 1999 05 10 | 704 | 1.5+ | 0.8+ | 2002 04 14 | 644 | 0.3+ | 0.1+ | 2005 04 04 | 703 | 0.3− | 0.2− | | |
| 1999 05 10 | 704 | 1.0− | 0.6+ | 2002 04 15 | 704 | (0.2− | 2.3+) | 2005 04 09 | 704 | 0.2+ | 0.0 | | |
| 1999 05 13 | 704 | (1.7− | 2.3−) | 2002 04 15 | 704 | 0.0 | 1.4+ | 2005 04 09 | 704 | 0.2− | 0.2+ | | |
| 1999 05 13 | 704 | 0.2− | 1.1− | 2002 04 15 | 704 | (0.2+ | 1.8+) | 2005 04 09 | 704 | 0.2+ | 1.1− | | |
| 1999 05 13 | 704 | 0.7− | 1.6− | 2002 04 17 | 704 | 0.2− | 0.5+ | 2005 04 09 | 704 | 0.1+ | 0.8+ | | |
| 1999 05 13 | 704 | 0.1− | 1.2− | 2002 04 17 | 704 | 0.3− | 0.0 | 2005 04 09 | 704 | 0.8+ | 1.0+ | | |
| 1999 05 13 | 704 | (2.6− | 0.8−) | 2002 04 17 | 704 | 1.4− | 0.4+ | 2005 04 12 | 704 | 0.3+ | 0.8− | | |
| 1999 05 17 | 699 | 0.0 | 0.7+ | 2002 04 17 | 704 | 0.3− | 0.2+ | 2005 04 12 | 704 | 0.3− | 0.2− | | |
| 1999 05 17 | 699 | 1.3+ | 1.9+ | 2002 04 17 | 704 | 0.7− | 0.8+ | 2005 04 12 | 704 | 0.1+ | 0.0 | | |
| 1999 05 17 | 703 | 0.6− | 0.5+ | 2002 05 08 | 704 | 0.0 | 0.6− | 2005 04 12 | 704 | 0.4+ | 0.1+ | | |
| 1999 05 17 | 699 | 0.5+ | 1.3+ | 2002 05 08 | 704 | 0.3− | 0.4+ | 2005 04 12 | 704 | 0.7+ | 0.6+ | | |
| 1999 05 17 | 703 | 0.2+ | 0.1+ | 2002 05 08 | 704 | 0.8+ | 0.4+ | 2005 05 03 | 691 | 0.1+ | 0.2+ | | |
| 1999 05 17 | 703 | 0.9+ | 1.9+ | 2002 05 08 | 704 | 0.7− | 0.4+ | 2005 05 03 | 691 | 0.3+ | 0.1+ | | |
| 1999 05 17 | 703 | 0.3+ | 0.8+ | 2002 05 08 | 704 | 0.5+ | 0.0 | 2005 05 03 | 691 | 0.3+ | 0.1+ | | |
| 1999 05 18 | 704 | 0.9− | 1.1− | 2002 05 08 | 644 | 0.1+ | 0.3+ | 2005 05 04 | 644 | 0.1− | 0.2+ | | |
| 1999 05 18 | 704 | 0.2− | 1.1− | 2002 05 08 | 644 | 0.3+ | 0.3+ | 2005 05 04 | 644 | 0.1+ | 0.3+ | | |
| 1999 05 18 | 704 | 0.2− | 0.1+ | 2002 05 08 | 644 | 0.8+ | 0.1+ | 2005 05 04 | 644 | 0.0 | 0.3+ | | |
| 1999 05 18 | 704 | 0.0 | 1.2+ | 2002 05 10 | 704 | 0.8+ | 0.1+ | 2005 05 11 | G96 | 0.4− | 0.4− | | |
| 1999 05 18 | 704 | (2.6− | 2.4+) | 2002 05 10 | 704 | 0.7+ | 0.1+ | 2005 05 11 | G96 | 0.5− | 0.4− | | |
| 1999 05 19 | 703 | 0.7− | 0.5+ | 2002 05 10 | 704 | 0.8+ | 0.4− | 2005 05 11 | G96 | 0.6− | 0.3− | | |
| 1999 05 19 | 703 | 0.1− | 0.7+ | 2002 05 19 | 644 | 0.5+ | 0.4+ | 2005 05 11 | G96 | 0.7− | 0.3− | | |
| 1999 05 19 | 703 | 0.5+ | 0.7− | 2002 05 19 | 644 | 0.8− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.0 | | |
| 1999 05 19 | 703 | 0.4− | 0.2+ | 2002 05 19 | 644 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.4+ | | |
| 2002 04 05 | 699 | 0.3− | 0.3+ | 2003 11 18 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.3+ | | |
| 2002 04 05 | 699 | 0.2+ | 0.0 | 2003 11 18 | 691 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.0 | 0.1+ | | |
| 2002 04 05 | 699 | 0.4+ | 0.5− | 2003 11 18 | 691 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.1− | 0.7+ | | |
| 2002 04 05 | 699 | 0.7+ | 0.3+ | 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.6+ | | |
| 2002 04 08 | 644 | 0.1+ | 0.1+ | 2005 03 08 | G96 | 0.6− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.6+ | | |
| 2002 04 08 | 644 | 0.0 | 0.1+ | 2005 03 08 | G96 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.1+ | 1.3+ | | |
| 2002 04 08 | 644 | 0.2+ | 0.1+ | 2005 03 08 | G96 | 0.4− | 0.2− | 2006 11 11 | 703 | 2.3− | 1.5+ | | |
| 2002 04 09 | 644 | 0.4+ | 0.1− | 2005 03 12 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.6+ | 1.9+ | | |
| 2002 04 09 | 704 | 1.0+ | 0.2+ | 2005 03 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 2.4− | 2.8+ | | |
| 2002 04 09 | 704 | 0.0 | 0.8+ | 2005 03 12 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.4− | 0.0 | | |
| 2002 04 09 | 704 | 0.3+ | 0.3+ | 2005 03 18 | 703 | (0.1+ | 1.9−) | 2006 11 15 | G96 | 0.1− | 0.2+ | | |
| 2002 04 09 | 644 | 0.0 | 0.1− | 2005 03 18 | 703 | 1.0− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1+ | | |
| 2002 04 09 | 704 | 0.2+ | 0.1− | 2005 03 18 | 703 | 0.7− | 0.8− | 2006 11 15 | G96 | 0.5− | 0.2+ | | |
| 2002 04 09 | 704 | 0.9− | 0.2− | 2005 03 18 | 703 | 0.8− | 0.1− | | | | | | |
| 2002 04 09 | 644 | 0.3+ | 0.1+ | 2005 04 04 | 703 | 0.2− | 0.1− | | | | | | |

**(137198)∗ 1999 KR$_2$ = 2006 DU$_{122}$ = 2006 EN$_{26}$**

Discovered 1999 May 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 99906)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 342.92837 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26663579 | $\omega$ | 82.68112 | | −0.31257089 | +0.94987930 | |
| *a* | 2.3906927 | $\Omega$ | 169.10010 | | −0.88231637 | −0.28823810 | |
| *e* | 0.1581474 | *i* | 1.62488 | | −0.35187678 | −0.12102935 | |
| *P* | 3.70 | *H* | 16.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 22 | 691 | 0.2− | 0.2+ | 2000 10 01 | 704 | 0.7− | 0.2+ | 2006 01 26 | 691 | 0.3− | 0.0 | | |
| 1996 09 22 | 691 | 0.3− | 0.2+ | 2000 10 01 | 704 | 0.0 | 1.0+ | 2006 02 07 | 691 | 0.3+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 22 | 691 | 0.1− | 0.6+ | 2000 10 01 | 704 | 0.7+ | 1.6− | 2006 02 07 | 691 | 0.2+ | 0.2− |
| 1999 05 10 | 704 | 0.6− | 1.0− | 2002 01 13 | 704 | 1.4+ | 0.7− | 2006 02 07 | 691 | 0.1+ | 0.0 |
| 1999 05 10 | 704 | 0.7− | 1.2− | 2002 01 13 | 704 | 0.6+ | 0.4+ | 2006 02 24 | 704 | (2.8+ | 0.1+) |
| 1999 05 10 | 704 | 0.3− | 0.3+ | 2002 01 13 | 704 | 0.5+ | 0.8+ | 2006 02 24 | 704 | 0.6+ | 0.6+ |
| 1999 05 10 | 704 | (2.0− | 2.4−) | 2002 01 13 | 704 | 0.3− | 0.0 | 2006 02 24 | 704 | 0.3+ | 0.2+ |
| 1999 05 13 | 704 | 1.5+ | 0.5+ | 2002 01 22 | 704 | 0.7+ | 0.8− | 2006 02 24 | 704 | 0.1− | 0.8+ |
| 1999 05 13 | 704 | 0.6+ | 1.0− | 2002 01 22 | 704 | 0.8+ | 0.6+ | 2006 02 27 | 704 | (2.3+ | 0.3+) |
| 1999 05 13 | 704 | 0.2− | 1.9− | 2002 01 22 | 704 | 0.7+ | 0.9+ | 2006 02 27 | 704 | (2.3+ | 0.3+) |
| 1999 05 13 | 704 | 0.8+ | 0.9− | 2002 02 13 | 691 | 0.1− | 0.2+ | 2006 02 27 | 704 | 0.2− | 0.4− |
| 1999 05 16 | 691 | 0.1− | 0.2+ | 2002 02 13 | 691 | 0.0 | 0.1+ | 2006 03 02 | 695 | 0.4− | 0.1+ |
| 1999 05 16 | 691 | 0.2− | 0.1− | 2002 02 13 | 691 | 0.0 | 0.1+ | 2006 03 02 | 695 | 0.2− | 0.0 |
| 1999 05 16 | 691 | 0.3− | 0.2− | 2003 07 02 | 704 | 0.2− | 0.1− | 2006 03 02 | 695 | 0.5− | 0.1+ |
| 1999 05 17 | 699 | 1.2+ | 0.6+ | 2003 07 02 | 704 | 0.5+ | 1.1+ | 2006 03 03 | 691 | 0.1+ | 0.4+ |
| 1999 05 17 | 699 | 0.8+ | 0.9+ | 2003 07 02 | 704 | 0.3− | 0.4+ | 2006 03 03 | 691 | 0.2+ | 0.3+ |
| 1999 05 17 | 703 | 1.1+ | 0.6− | 2003 07 02 | 704 | 0.5− | 0.2+ | 2006 03 03 | 691 | 0.3+ | 0.2+ |
| 1999 05 17 | 703 | 0.1+ | 0.1+ | 2003 07 21 | 599 | 0.1+ | 0.0 | 2006 03 05 | 704 | 1.7+ | 0.0 |
| 1999 05 17 | 699 | 1.4+ | 1.1+ | 2003 07 21 | 599 | 1.5+ | 0.4+ | 2006 03 05 | 704 | 1.1+ | 1.2+ |
| 1999 05 17 | 703 | 1.0+ | 1.0+ | 2003 07 21 | 599 | 0.1− | 0.8+ | 2006 03 05 | 704 | 1.0+ | 0.4− |
| 1999 05 17 | 703 | 1.0+ | 0.3+ | 2004 10 15 | G96 | 0.6− | 0.6− | 2006 03 05 | 704 | 0.1− | 0.2− |
| 1999 05 18 | 704 | 0.3+ | 0.7− | 2004 10 15 | G96 | 0.0 | 0.8− | 2006 03 23 | 703 | 0.6− | 0.4+ |
| 1999 05 18 | 704 | 1.4− | 0.7+ | 2004 10 15 | G96 | 0.0 | 0.8− | 2006 03 23 | 703 | 1.9− | 1.1− |
| 1999 05 18 | 704 | 1.2− | 0.2− | 2004 10 15 | G96 | 0.1− | 0.4− | 2006 03 23 | 703 | 0.7− | 0.7− |
| 1999 05 18 | 704 | 0.9− | 1.2− | 2004 11 19 | 703 | 0.6− | 0.4+ | 2006 03 23 | 703 | 0.3− | 0.4− |
| 1999 05 18 | 704 | 1.0− | 0.3+ | 2004 11 19 | 703 | 0.4− | 1.1− | 2006 03 24 | G96 | 0.5− | 0.0 |
| 1999 05 20 | 691 | 0.6− | 0.7+ | 2004 11 19 | 703 | 0.2− | 0.7− | 2006 03 24 | G96 | 0.7− | 0.2− |
| 1999 05 20 | 691 | 0.0 | 0.2+ | 2004 11 19 | 703 | 0.4− | 0.1+ | 2006 03 24 | G96 | 0.4− | 0.2− |
| 1999 05 20 | 691 | 0.1+ | 0.1− | 2006 01 26 | 691 | 0.4− | 0.1− | 2006 03 24 | G96 | 0.1− | 0.2− |
| 2000 10 01 | 704 | 0.8+ | 1.1+ | 2006 01 26 | 691 | 0.2− | 0.1+ | | | | |

## (137199)∗ 1999 KX$_4$

Discovered 1999 May 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.17726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.56024309 | $\omega$ | 76.29327 | | −0.96076089 | +0.03232669 | |
| $a$ | 1.4573092 | $\Omega$ | 105.01432 | | −0.12156967 | −0.94178731 | |
| $e$ | 0.2926702 | $i$ | 16.57230 | | +0.24931772 | −0.33465154 | |
| $P$ | 1.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 08 10 | 260 | 0.4+ | 0.5− | 2003 12 18 | 113 | 0.3+ | 0.3+ | 2006 05 19 | H45 | 0.1+ | 0.1− |
| 1978 08 10 | 260 | 1.7+ | 1.1− | 2003 12 18 | 113 | 0.1− | 0.7+ | 2006 05 19 | H45 | 0.1+ | 0.3− |
| 1999 05 20 | 704 | 0.3+ | 0.4+ | 2003 12 18 | 113 | 0.2+ | 0.2+ | 2006 05 19 | H45 | 0.0 | 0.1+ |
| 1999 05 20 | 704 | 0.6− | 1.0− | 2003 12 18 | 113 | 0.1+ | 0.5+ | 2006 05 20 | H45 | 0.1− | 0.3− |
| 1999 05 20 | 704 | 1.1+ | 1.0+ | 2004 02 17 | 704 | 0.9+ | 0.8+ | 2006 05 20 | H45 | 0.1+ | 0.3− |
| 1999 05 20 | 699 | (2.1− | 1.7+) | 2004 02 17 | 704 | 0.6+ | 1.3+ | 2006 05 20 | H45 | 0.1+ | 0.0 |
| 1999 05 20 | 699 | 0.8− | 1.0+ | 2004 02 17 | 704 | 0.6+ | 1.0+ | 2006 05 20 | H45 | 0.1+ | 0.2− |
| 1999 05 20 | 699 | 0.3− | 0.8+ | 2004 02 17 | 704 | 0.9− | 0.9+ | 2006 05 20 | H45 | 0.0 | 0.1− |
| 1999 05 21 | 704 | 1.0+ | 1.2+ | 2004 02 18 | 704 | 0.0 | 0.1+ | 2006 05 20 | D44 | 0.0 | 0.1− |
| 1999 05 21 | 704 | 0.7− | 0.2− | 2004 02 18 | 704 | 0.0 | 0.3+ | 2006 05 20 | D44 | 0.1+ | 0.0 |
| 1999 05 21 | 704 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.6+ | 0.4+ | 2006 05 20 | D44 | 0.1+ | 0.1− |
| 1999 05 21 | 704 | 0.9− | 1.1− | 2004 02 18 | 704 | 0.0 | 0.2+ | 2006 05 20 | D44 | 0.2+ | 0.1− |
| 1999 05 21 | 704 | 0.1− | 0.9− | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 05 21 | H45 | 0.3− | 0.0 |
| 1999 05 21 | 704 | (2.4− | 2.2−) | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 05 21 | H45 | 0.3− | 0.0 |
| 1999 05 21 | 704 | (3.2− | 0.2−) | 2004 03 19 | 704 | 0.3− | 0.0 | 2006 05 21 | H45 | 0.2+ | 0.2+ |
| 1999 05 21 | 704 | (3.4− | 0.8−) | 2004 03 19 | 704 | 0.4− | 0.1+ | 2006 05 21 | H45 | 0.0 | 0.2+ |
| 1999 05 21 | 327 | 0.4+ | 0.3+ | 2004 03 22 | 704 | 0.4+ | 0.7+ | 2006 05 21 | H45 | 0.1+ | 0.3+ |
| 1999 05 21 | 327 | 0.4+ | 0.4− | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 05 22 | 157 | 0.2− | 0.2+ |
| 1999 05 21 | 327 | 0.2+ | 0.3+ | 2004 03 22 | 704 | 0.3− | 0.4− | 2006 05 22 | 157 | 0.2− | 0.0 |
| 1999 05 22 | 557 | 0.4+ | 0.6+ | 2004 03 22 | 704 | 0.6− | 1.0+ | 2006 05 22 | 157 | 0.1+ | 0.2− |
| 1999 05 22 | 557 | 0.3+ | 0.3+ | 2004 09 19 | 474 | 0.3− | 1.4+ | 2006 05 22 | 157 | 0.1+ | 0.0 |
| 1999 05 22 | 046 | 0.1+ | 0.5+ | 2004 09 19 | 474 | 0.6+ | 0.8+ | 2006 05 22 | 157 | 0.2− | 0.2+ |
| 1999 05 22 | 046 | 0.0 | 0.5− | 2005 10 30 | 644 | 0.2+ | 0.0 | 2006 05 22 | 157 | 0.0 | 0.1+ |
| 1999 05 22 | 046 | 1.2− | 1.1− | 2005 10 30 | 644 | 0.1− | 0.0 | 2006 05 23 | H45 | 0.0 | 0.0 |
| 1999 05 22 | 693 | 1.0+ | 0.6− | 2005 10 30 | 644 | 0.3+ | 0.2+ | 2006 05 23 | H45 | 0.2+ | 0.1+ |
| 1999 05 22 | 693 | 1.0+ | 0.6− | 2005 10 30 | 644 | 0.2+ | 0.2+ | 2006 05 23 | H45 | 0.3+ | 0.0 |
| 1999 05 22 | 693 | 1.1+ | 0.5− | 2005 10 30 | 644 | 0.4− | 0.1− | 2006 05 23 | H45 | 0.2+ | 0.2+ |
| 1999 05 24 | 422 | 0.2+ | 0.4− | 2005 10 30 | 644 | 0.3+ | 0.2+ | 2006 05 23 | H45 | 0.1+ | 0.1+ |
| 1999 05 24 | 422 | 0.4− | 0.1+ | 2005 11 05 | 704 | 1.2+ | 0.4− | 2006 05 25 | H45 | 0.2+ | 0.1+ |
| 1999 05 24 | 422 | 0.1− | 0.0 | 2005 11 05 | 704 | 0.1− | 0.1+ | 2006 05 25 | H45 | 0.2+ | 0.2+ |
| 1999 05 28 | 046 | 1.0+ | 0.0 | 2005 11 05 | 704 | 0.7+ | 0.0 | 2006 05 25 | H45 | 0.2+ | 0.0 |
| 1999 05 28 | 046 | 0.2− | 0.4− | 2005 11 05 | 704 | 0.0 | 0.3+ | 2006 05 25 | H45 | 0.2+ | 0.2+ |
| 1999 05 28 | 046 | 0.2+ | 0.1− | 2005 11 29 | 703 | 0.2+ | 0.0 | 2006 05 25 | H45 | 0.1+ | 0.0 |
| 1999 05 31 | 402 | 0.5− | 0.4− | 2005 11 29 | 703 | 0.6+ | 0.6− | 2006 05 27 | 170 | 0.0 | 0.1+ |
| 1999 05 31 | 402 | 0.2+ | 0.9− | 2005 11 29 | 703 | 0.0 | 0.6− | 2006 05 27 | 170 | 0.1− | 0.1− |
| 1999 05 31 | 402 | 0.0 | 1.3− | 2005 11 29 | 703 | 0.1− | 0.6− | 2006 05 29 | 704 | 0.5+ | 0.4+ |
| 1999 06 10 | 118 | 0.3+ | 0.1+ | 2005 11 30 | 703 | 0.6− | 0.4+ | 2006 05 29 | 704 | 0.4+ | 0.3+ |
| 1999 06 10 | 118 | 0.5+ | 0.2− | 2005 11 30 | 703 | 0.7− | 0.0 | 2006 05 29 | 704 | 0.4+ | 0.2+ |
| 1999 06 10 | 118 | 0.3− | 0.0 | 2005 11 30 | 703 | 0.0 | 0.2− | 2006 05 30 | 379 | 0.1+ | 0.2+ |
| 1999 06 13 | 699 | 0.5+ | 0.9+ | 2005 11 30 | 703 | 0.3− | 0.3+ | 2006 05 30 | 379 | 0.5+ | 0.1− |
| 1999 06 13 | 699 | 1.4− | 1.6+ | 2005 11 30 | 704 | 0.1− | 0.8+ | 2006 05 30 | 379 | 0.5+ | 0.3− |
| 1999 06 13 | 699 | (0.7+ | 2.7+) | 2005 11 30 | 704 | 0.3+ | 0.4+ | 2006 05 30 | 379 | 0.3+ | 0.3+ |
| 1999 06 17 | 422 | 0.4− | 0.2− | 2005 11 30 | 704 | 0.6+ | 1.4+ | 2006 06 03 | H45 | 0.1+ | 0.1− |
| 1999 06 17 | 422 | 0.6− | 0.5− | 2005 11 30 | 704 | 0.5+ | 0.2+ | 2006 06 03 | H45 | 0.3+ | 0.1− |
| 1999 06 17 | 422 | 0.1− | 0.1− | 2005 11 30 | 704 | 0.6+ | 0.5+ | 2006 06 03 | H45 | 0.2+ | 0.1− |
| 1999 06 21 | 691 | 0.2− | 0.1+ | 2005 12 01 | 704 | 0.5+ | 0.1+ | 2006 06 03 | H45 | 0.2+ | 0.2− |
| 1999 06 21 | 691 | 0.2− | 0.1+ | 2005 12 01 | 704 | 0.8+ | 0.3+ | 2006 06 03 | H45 | 0.2+ | 0.2− |
| 1999 06 21 | 691 | 0.2− | 0.1+ | 2005 12 01 | 704 | 0.6+ | 0.1+ | 2006 06 04 | 704 | 0.1+ | 0.1+ |
| 1999 06 24 | 118 | 1.1+ | 0.1+ | 2005 12 01 | 704 | 0.7+ | 0.1+ | 2006 06 04 | 704 | (1.8+ | 0.2−) |
| 1999 06 24 | 118 | 1.0+ | 0.7− | 2005 12 01 | 704 | 0.4+ | 1.1+ | 2006 06 04 | 704 | 1.2− | 0.5+ |
| 1999 06 24 | 118 | 0.7+ | 0.7− | 2005 12 04 | 704 | 0.2+ | 0.3+ | 2006 06 06 | 379 | 0.5− | 0.2− |
| 1999 06 25 | 046 | 0.0 | 0.3+ | 2005 12 04 | 704 | 0.5+ | 0.0 | 2006 06 06 | 379 | 0.3+ | 0.2− |
| 1999 06 25 | 046 | 0.2+ | 0.1+ | 2005 12 04 | 704 | 0.0 | 0.8+ | 2006 06 06 | 379 | 0.2+ | 0.3− |
| 1999 06 26 | 046 | 0.4− | 0.0 | 2005 12 04 | 704 | 0.0 | 0.1+ | 2006 06 06 | 379 | 0.1+ | 0.0 |
| 1999 07 08 | 360 | 0.0 | 0.0 | 2005 12 04 | 704 | 0.4+ | 0.3+ | 2006 06 06 | 379 | 0.3+ | 0.7+ |
| 1999 07 08 | 360 | 0.1− | 0.0 | 2005 12 05 | 071 | 0.9+ | 0.4+ | 2006 06 09 | H45 | 0.3+ | 0.2− |
| 1999 07 08 | 360 | 0.1+ | 0.2+ | 2005 12 05 | 071 | 0.8+ | 0.1− | 2006 06 09 | H45 | 0.1+ | 0.1− |
| 1999 07 14 | 704 | 0.2+ | 0.0 | 2005 12 05 | 071 | 1.0− | 0.3− | 2006 06 09 | H45 | 0.1+ | 0.0 |
| 1999 07 14 | 704 | 0.6− | 0.2+ | 2005 12 24 | 703 | 0.3+ | 0.5+ | 2006 06 09 | H45 | 0.1+ | 0.1− |
| 1999 07 14 | 704 | 0.1− | 0.1+ | 2005 12 24 | 703 | 0.6+ | 1.1+ | 2006 06 09 | H45 | 0.1+ | 0.2− |
| 1999 07 19 | 422 | 0.0 | 0.3+ | 2005 12 24 | 703 | 0.4− | 0.8− | 2006 06 12 | 844 | 0.3− | 0.7− |
| 1999 07 19 | 422 | 0.0 | 0.3+ | 2005 12 24 | 703 | 0.0 | 0.1− | 2006 06 12 | 844 | 0.1− | 0.7− |
| 1999 07 19 | 422 | 0.3− | 0.1+ | 2005 12 27 | 703 | 0.0 | 0.1− | 2006 06 12 | 844 | 0.0 | 1.1− |
| 1999 08 01 | 428 | 0.3− | 0.6+ | 2005 12 27 | 703 | 0.0 | 0.6+ | 2006 06 12 | 844 | 0.2− | 0.9− |
| 1999 08 01 | 428 | 0.5− | 0.4+ | 2005 12 27 | 703 | 0.3+ | 0.0 | 2006 06 12 | 844 | 0.4− | 0.9− |
| 1999 08 01 | 428 | 0.3− | 0.5+ | 2005 12 27 | 703 | 0.4+ | 0.4− | 2006 06 14 | H45 | 0.1− | 0.0 |
| 1999 09 28 | 413 | 0.3+ | 0.3+ | 2005 12 29 | H45 | 0.2+ | 0.2− | 2006 06 14 | H45 | 0.0 | 0.1+ |
| 1999 09 28 | 413 | 0.5− | 0.0 | 2005 12 29 | H45 | 0.3+ | 0.6− | 2006 06 14 | H45 | 0.1− | 0.1− |
| 1999 09 28 | 413 | 0.1− | 0.0 | 2005 12 29 | H45 | 0.2+ | 0.3− | 2006 06 14 | H45 | 0.1+ | 0.0 |
| 1999 10 01 | 426 | 0.6− | 0.3+ | 2005 12 29 | H45 | 0.1+ | 0.1− | 2006 06 14 | H45 | 0.1− | 0.2− |
| 1999 10 01 | 426 | 0.1− | 0.2+ | 2005 12 29 | H45 | 0.5− | 0.0 | 2006 06 14 | A89 | 0.6+ | 0.3+ |
| 1999 10 06 | 413 | 0.2+ | 0.1+ | 2005 12 30 | 683 | 0.7+ | 0.3+ | 2006 06 14 | A89 | 0.9− | 0.6− |
| 1999 10 06 | 413 | 0.2+ | 0.1+ | 2005 12 30 | 683 | 0.2− | 0.2+ | 2006 06 14 | A89 | 0.3− | 0.4− |
| 1999 11 04 | 413 | 0.7− | 0.4+ | 2005 12 30 | 683 | 0.7− | 0.4+ | 2006 06 15 | H45 | 0.1− | 0.3− |
| 1999 11 04 | 413 | 0.1− | 0.1+ | 2006 01 02 | H45 | 0.1+ | 0.7− | 2006 06 15 | H45 | 0.1+ | 0.2+ |
| 2001 08 09 | 413 | 0.1− | 0.3+ | 2006 01 02 | H45 | 0.5+ | 0.3− | 2006 06 15 | H45 | 0.3− | 0.0 |
| 2001 08 09 | 413 | 0.0 | 0.5+ | 2006 01 02 | H45 | 0.8+ | 0.6+ | 2006 06 15 | H45 | 0.0 | 0.3− |
| 2001 08 09 | 413 | 0.1− | 0.5+ | 2006 01 03 | H45 | 0.2− | 0.2− | 2006 06 15 | H45 | 0.1+ | 0.1− |
| 2001 08 15 | 474 | 0.6− | 1.1− | 2006 01 03 | H45 | 0.3− | 0.4+ | 2006 06 18 | 644 | 0.1+ | 0.0 |
| 2001 08 15 | 474 | 0.0 | 0.7− | 2006 01 03 | H45 | 0.1+ | 0.8+ | 2006 06 18 | 644 | 0.1+ | 0.1− |
| 2001 08 15 | 474 | 0.5− | 0.5− | 2006 01 03 | H45 | 0.1− | 0.1− | 2006 06 18 | 644 | 0.2+ | 0.0 |
| 2001 08 15 | 474 | 0.4− | 0.7− | 2006 01 04 | 703 | 0.1− | 0.2+ | 2006 06 20 | 808 | 0.4− | 0.2− |
| 2001 08 15 | 474 | 0.3− | 0.6− | 2006 01 04 | 703 | 0.0 | 0.1+ | 2006 06 20 | 808 | 1.2+ | 0.9+ |
| 2001 08 17 | 644 | (0.2− | 2.0−) | 2006 01 04 | 703 | 0.0 | 0.4+ | 2006 06 20 | 808 | 0.4− | 0.1− |
| 2001 08 17 | 644 | (0.3− | 1.7−) | 2006 01 04 | 703 | 0.1+ | 0.4+ | 2006 06 20 | H45 | 0.0 | 0.2− |
| 2001 08 17 | 644 | (0.0 | 1.8−) | 2006 01 06 | H45 | 0.2− | 0.0 | 2006 06 20 | H45 | 0.0 | 0.2− |
| 2001 08 19 | 704 | 0.8− | 0.4+ | 2006 01 06 | H45 | 0.2− | 0.2− | 2006 06 20 | H45 | 0.0 | 0.3− |
| 2001 08 19 | 704 | 0.3+ | 0.3+ | 2006 01 06 | H45 | 0.1+ | 0.1− | 2006 06 20 | H45 | 0.2+ | 0.1− |
| 2001 08 19 | 704 | (0.2+ | 1.6+) | 2006 01 06 | H45 | 0.7− | 0.2− | 2006 06 20 | H45 | 0.2+ | 0.3− |
| 2001 08 19 | 704 | 0.7+ | 0.7+ | 2006 01 06 | H45 | 0.5− | 0.8− | 2006 06 20 | 379 | 0.3− | 0.4+ |
| 2001 08 23 | 608 | 1.3− | 0.7− | 2006 01 09 | H45 | 0.4+ | 0.2+ | 2006 06 20 | 379 | 0.3− | 0.4+ |
| 2001 08 23 | 608 | 0.9− | 1.1− | 2006 01 09 | H45 | 0.2− | 0.1− | 2006 06 20 | 379 | 0.4+ | 1.2+ |
| 2001 08 23 | 608 | 0.6− | 1.3− | 2006 01 09 | H45 | (1.5− | 0.0 ) | 2006 06 21 | 644 | 0.1− | 0.2+ |
| 2001 08 24 | 608 | 0.9− | 0.5+ | 2006 01 09 | H45 | 0.0 | 0.3+ | 2006 06 21 | 644 | 0.2− | 0.1+ |
| 2001 08 24 | 608 | 0.5− | 0.5− | 2006 01 09 | H45 | 0.5− | 0.0 | 2006 06 21 | 704 | 0.2+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 608 | 0.2− | 0.8− | 2006 01 13 | 084 | 0.1− | 0.2− | 2006 06 21 | 644 | 0.1− | 0.1+ | | |
| 2001 09 11 | 704 | 0.4− | 0.3− | 2006 01 13 | 084 | 0.2− | 0.3− | 2006 06 21 | 704 | (1.9− | 0.4+) | | |
| 2001 09 11 | 704 | 0.3− | 0.4− | 2006 01 14 | H45 | 1.2− | 0.2− | 2006 06 21 | 704 | 0.3− | 0.0 | | |
| 2001 09 11 | 704 | 0.4− | 0.9− | 2006 01 14 | H45 | 0.1+ | 0.4+ | 2006 06 21 | 704 | 0.4− | 0.2+ | | |
| 2001 09 11 | 704 | 0.8+ | 1.2− | 2006 01 14 | H45 | 0.2− | 0.2− | 2006 06 23 | 704 | 0.8− | 0.3+ | | |
| 2003 09 27 | 711 | 0.1+ | 0.4+ | 2006 01 22 | 670 | 0.6− | 1.4+ | 2006 06 23 | 704 | 0.2− | 0.3+ | | |
| 2003 09 27 | 711 | 0.0 | 0.4+ | 2006 01 22 | 670 | 0.1− | 0.0 | 2006 06 23 | 704 | 0.1− | 0.4+ | | |
| 2003 09 27 | 711 | 0.1+ | 0.4+ | 2006 01 24 | H45 | 0.2− | 0.1+ | 2006 06 23 | 704 | 0.3− | 0.6+ | | |
| 2003 09 28 | 699 | 0.3+ | 0.2+ | 2006 01 24 | H45 | 0.2+ | 0.0 | 2006 06 23 | 704 | 0.0 | 0.2+ | | |
| 2003 09 28 | 699 | 0.1− | 0.2− | 2006 01 24 | H45 | 0.0 | 0.1− | 2006 06 24 | 704 | 0.1+ | 0.3− | | |
| 2003 09 28 | 699 | 0.3+ | 0.4− | 2006 01 24 | H45 | 1.1− | 0.7− | 2006 06 24 | 704 | 0.4− | 1.0+ | | |
| 2003 09 28 | 699 | 0.8− | 0.2− | 2006 01 31 | 198 | 0.1− | 0.1+ | 2006 06 24 | 704 | 0.1+ | 0.1− | | |
| 2003 10 18 | 704 | 0.1− | 1.2− | 2006 01 31 | 198 | 0.1− | 0.1− | 2006 06 24 | 704 | 0.7− | 0.5+ | | |
| 2003 10 18 | 704 | 1.0− | 0.3+ | 2006 02 04 | 704 | 0.8+ | 1.2+ | 2006 06 25 | 130 | 0.3− | 0.3+ | | |
| 2003 10 18 | 704 | 0.4− | 0.5+ | 2006 02 04 | 704 | 1.1+ | 1.3+ | 2006 06 26 | 130 | 0.3+ | 0.3− | | |
| 2003 10 18 | 704 | 0.6− | 0.9+ | 2006 02 04 | 704 | 0.7+ | 1.0+ | 2006 06 26 | 704 | 0.6+ | 0.6+ | | |
| 2003 10 18 | 704 | 1.4− | 0.5+ | 2006 02 07 | H45 | 1.2− | 0.1+ | 2006 06 26 | 704 | 0.8+ | 0.5+ | | |
| 2003 10 24 | 699 | 0.2− | 0.8+ | 2006 02 07 | H45 | 0.4+ | 0.5+ | 2006 06 26 | 704 | 0.9+ | 0.6+ | | |
| 2003 10 24 | 699 | 0.1+ | 0.0 | 2006 02 07 | H45 | 0.5− | 0.3+ | 2006 06 26 | 704 | 1.1+ | 0.0 | | |
| 2003 10 24 | 699 | 0.2+ | 0.4− | 2006 02 07 | H45 | 0.2− | 0.4+ | 2006 06 26 | 704 | 0.9+ | 0.8+ | | |
| 2003 10 24 | 699 | 0.0 | 0.3+ | 2006 02 22 | 704 | 0.0 | 0.0 | 2006 06 29 | 379 | 0.3+ | 0.6+ | | |
| 2003 11 25 | 446 | 0.1+ | 0.0 | 2006 02 22 | 704 | 0.1+ | 0.6+ | 2006 06 29 | 379 | 0.2+ | 0.5+ | | |
| 2003 11 25 | 446 | 0.1− | 0.0 | 2006 02 22 | 704 | 1.4+ | 0.4+ | 2006 06 29 | 379 | 0.3+ | 0.7+ | | |
| 2003 11 25 | 446 | 0.2+ | 0.0 | 2006 02 22 | 704 | (1.8+ | 0.0 ) | 2006 06 29 | 379 | 0.3− | 0.0 | | |
| 2003 11 26 | 704 | 0.0 | 0.1+ | 2006 04 26 | 113 | 0.1+ | 0.3+ | 2006 06 29 | 379 | 0.2− | 0.0 | | |
| 2003 11 26 | 704 | 0.2+ | 0.2+ | 2006 04 26 | 113 | 0.4+ | 0.6+ | 2006 06 29 | 379 | 0.1− | 0.1+ | | |
| 2003 11 26 | 704 | 0.3− | 0.7+ | 2006 04 26 | 113 | 0.3+ | 0.3+ | 2006 06 29 | 379 | 0.2+ | 0.2+ | | |
| 2003 11 26 | 704 | 0.3+ | 0.1+ | 2006 05 17 | H45 | 0.2− | 0.1− | 2006 07 03 | 379 | 0.1+ | 0.1− | | |
| 2003 11 26 | 704 | 0.2− | 0.4+ | 2006 05 17 | H45 | 0.2− | 0.4+ | 2006 07 03 | 379 | 0.0 | 0.5+ | | |
| 2003 12 12 | 104 | 0.1+ | 0.2+ | 2006 05 17 | H45 | 0.0 | 0.0 | 2006 07 03 | 379 | 0.0 | 0.7+ | | |
| 2003 12 12 | 104 | 0.1− | 0.8+ | 2006 05 17 | H45 | 0.0 | 0.1+ | 2006 07 03 | 379 | 0.4− | 0.9+ | | |
| 2003 12 12 | 104 | 0.8+ | 0.4− | 2006 05 17 | H45 | 0.0 | 0.0 | 2006 07 03 | 379 | 0.1+ | 1.0+ | | |
| 2003 12 13 | 704 | 1.2− | 0.5+ | 2006 05 17 | H45 | 0.1− | 0.0 | 2006 07 03 | 379 | 0.0 | 0.1+ | | |
| 2003 12 13 | 704 | 0.2− | 0.5+ | 2006 05 18 | H45 | 0.1− | 0.1− | 2006 07 18 | 808 | 0.6+ | 1.3+ | | |
| 2003 12 13 | 704 | 0.7− | 0.4− | 2006 05 18 | H45 | 0.2+ | 0.0 | 2006 07 18 | 808 | 0.1− | 0.0 | | |
| 2003 12 13 | 704 | 0.1+ | 0.7+ | 2006 05 18 | H45 | 0.2− | 0.4− | 2006 07 18 | 808 | 1.1+ | 1.0+ | | |
| 2003 12 14 | 644 | 0.0 | 0.3+ | 2006 05 18 | H45 | 0.5− | 0.5− | 2006 07 30 | 423 | 0.8+ | 0.3− | | |
| 2003 12 14 | 644 | 0.1− | 0.4+ | 2006 05 19 | H45 | 0.3− | 0.1+ | 2006 07 30 | 423 | 0.5− | 0.4+ | | |
| 2003 12 14 | 644 | 0.1− | 0.3+ | 2006 05 19 | H45 | 0.1+ | 0.3+ | | | | | | |
| 2003 12 18 | 113 | 0.1− | 0.5+ | 2006 05 19 | H45 | 0.1+ | 0.2+ | | | | | | |

**(137200)∗ 1999 KX$_{12}$**

Discovered 1999 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.03332 | | (2000.0) | | | |
| $n$ | 0.23327625 | $\omega$ | 110.05349 | | −0.44054617 | +0.89646192 |
| $a$ | 2.6134991 | $\Omega$ | 133.71328 | | −0.84634305 | −0.39702415 |
| $e$ | 0.1623652 | $i$ | 3.78369 | | −0.29937019 | −0.19679393 |
| $P$ | 4.23 | $H$ | 15.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.2− | 0.7− | 2003 03 24 | 608 | 0.2− | 0.3− | 2003 04 27 | 704 | (2.0+ | 0.3−) | | |
| 1992 11 18 | 691 | 0.1− | 0.3+ | 2003 03 24 | 608 | 0.8− | 0.8− | 2003 04 27 | 704 | 0.2− | 1.0+ | | |
| 1992 11 18 | 691 | 0.3+ | 0.3+ | 2003 03 26 | 699 | 0.5+ | 0.1+ | 2003 05 08 | 704 | 0.8+ | 0.2− | | |
| 1999 05 18 | 704 | 0.6− | 0.1+ | 2003 03 26 | 699 | 0.3− | 0.1− | 2003 05 08 | 704 | 0.5− | 1.3+ | | |
| 1999 05 18 | 704 | 0.4+ | 0.9− | 2003 03 26 | 699 | 0.2+ | 0.3− | 2003 05 08 | 704 | 1.0+ | 0.5+ | | |
| 1999 05 18 | 704 | 1.8+ | 0.4− | 2003 03 26 | 699 | 0.3− | 0.3− | 2003 05 08 | 704 | 0.1+ | 0.1+ | | |
| 1999 05 18 | 704 | 0.3+ | 0.5+ | 2003 03 27 | 644 | 0.4− | 0.5+ | 2004 09 09 | 704 | (0.6− | 1.6+) | | |
| 1999 05 18 | 704 | 0.1− | 0.9− | 2003 03 27 | 644 | 0.5+ | 0.2+ | 2004 09 09 | 704 | 0.2− | 1.1+ | | |
| 1999 05 19 | 704 | 1.4+ | 0.7+ | 2003 03 27 | 644 | 0.4+ | 0.5+ | 2004 09 09 | 704 | 0.1+ | 0.9+ | | |
| 1999 05 19 | 704 | 1.7− | 1.3+ | 2003 04 02 | 704 | 0.6+ | 0.7+ | 2004 09 09 | 704 | 0.2− | 0.7+ | | |
| 1999 05 19 | 704 | (2.5− | 0.1−) | 2003 04 02 | 704 | (1.8+ | 0.7+) | 2004 09 17 | 704 | 0.8− | 1.0+ | | |
| 1999 05 19 | 704 | 1.0− | 0.0 | 2003 04 02 | 704 | 0.5+ | 1.2+ | 2004 09 17 | 704 | 0.9− | 0.5+ | | |
| 1999 05 19 | 704 | 0.2− | 0.0 | 2003 04 02 | 704 | 0.1+ | 1.1+ | 2004 09 17 | 704 | 0.1− | 0.2− | | |
| 1999 05 20 | 699 | 0.0 | 0.3− | 2003 04 02 | 704 | (2.3+ | 2.0+) | 2004 09 17 | 704 | 0.4− | 0.1+ | | |
| 1999 05 20 | 699 | 0.6+ | 0.5+ | 2003 04 02 | 608 | 0.0 | 0.8− | 2005 12 01 | 691 | 0.1− | 0.4+ | | |
| 1999 05 20 | 699 | 0.4+ | 0.6+ | 2003 04 02 | 608 | 0.3+ | 0.6− | 2005 12 01 | 691 | 0.2+ | 0.6+ | | |
| 1999 06 06 | 699 | 1.3+ | 0.8+ | 2003 04 02 | 608 | 0.0 | 1.0− | 2005 12 01 | 691 | 0.2− | 0.5+ | | |
| 1999 06 06 | 699 | 1.7+ | 1.1+ | 2003 04 04 | 699 | 0.7+ | 0.0 | 2006 10 30 | G96 | 0.6− | 0.4+ | | |
| 1999 06 06 | 699 | 1.0+ | 0.9+ | 2003 04 04 | 699 | 0.7− | 0.7− | 2006 10 30 | G96 | 0.3+ | 0.1+ | | |
| 1999 06 09 | 704 | 0.7− | 0.3+ | 2003 04 04 | 691 | 0.7+ | 0.5+ | 2006 10 30 | G96 | 0.8+ | 0.1+ | | |
| 1999 06 09 | 704 | 0.1+ | 0.1− | 2003 04 04 | 699 | 0.0 | 0.0 | 2006 10 30 | G96 | 0.7+ | 0.8− | | |
| 1999 06 09 | 704 | 1.3− | 0.0 | 2003 04 04 | 699 | 0.5− | 0.5− | 2006 11 16 | 691 | 0.3+ | 0.3+ | | |
| 1999 06 09 | 704 | 0.3+ | 0.3− | 2003 04 04 | 691 | 0.4+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.7+ | | |
| 1999 06 14 | 703 | 0.4− | 0.5− | 2003 04 04 | 691 | 0.6+ | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.4+ | | |
| 1999 06 14 | 703 | 1.5+ | 0.6+ | 2003 04 08 | 704 | 0.6+ | 0.4− | 2006 11 20 | G96 | 0.8− | 0.1− | | |
| 1999 06 14 | 703 | 0.2+ | 0.6− | 2003 04 08 | 704 | 1.3+ | 1.0− | 2006 11 20 | G96 | 0.0 | 0.1− | | |
| 1999 06 14 | 703 | 0.0 | 0.8− | 2003 04 08 | 704 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.7− | 0.3− | | |
| 1999 06 15 | 704 | 1.0− | 0.1− | 2003 04 08 | 704 | 0.6+ | 0.8+ | 2006 11 20 | G96 | 0.3− | 0.1− | | |
| 1999 06 15 | 704 | 0.6− | 0.3+ | 2003 04 10 | 691 | 0.6− | 0.1− | 2006 11 21 | 691 | 0.3+ | 0.1− | | |
| 1999 06 15 | 704 | 1.0− | 0.6+ | 2003 04 10 | 691 | 0.8− | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.0 | | |
| 1999 06 15 | 704 | 0.5− | 0.8+ | 2003 04 10 | 691 | 0.7− | 0.2− | 2006 11 21 | 691 | 0.5− | 0.4+ | | |
| 1999 06 15 | 704 | 1.8− | 0.9+ | 2003 04 11 | 644 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.5− | 0.4− | | |
| 2000 10 27 | 691 | 0.1+ | 0.2+ | 2003 04 11 | 644 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.6− | 0.2− | | |
| 2000 10 27 | 691 | 0.1+ | 0.3+ | 2003 04 11 | 644 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.1− | | |
| 2000 10 27 | 691 | 0.2− | 0.5+ | 2003 04 27 | 704 | 0.2+ | 1.3+ | 2006 11 24 | G96 | 0.4+ | 0.1− | | |
| 2003 03 24 | 608 | 0.4− | 1.4− | 2003 04 27 | 704 | 1.5+ | 0.5− | | | | | | |

**(137201)∗ 1999 KF$_{13}$**

Discovered 1999 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.41792 | | (2000.0) | | | |
| $n$ | 0.30566061 | $\omega$ | 148.74694 | | +0.19504639 | +0.97959994 |
| $a$ | 2.1826113 | $\Omega$ | 132.45237 | | −0.91285206 | +0.19935466 |
| $e$ | 0.2626744 | $i$ | 3.75977 | | −0.35868932 | +0.02533144 |
| $P$ | 3.22 | $H$ | 17.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 17 | 566 | 0.1− | 0.3− | 1999 06 14 | 704 | 0.6− | 0.5+ | 2006 10 03 | G96 | 0.4− | 0.1+ | | |
| 1996 08 17 | 566 | 0.2+ | 0.1− | 1999 06 14 | 704 | 0.5− | 0.2− | 2006 10 03 | G96 | 0.3− | 0.4+ | | |
| 1996 08 17 | 566 | 0.4+ | 0.5− | 1999 06 14 | 704 | 0.9− | 0.7− | 2006 10 16 | 703 | (2.4+ | 4.7−) | | |
| 1999 05 13 | 704 | 0.1− | 0.3+ | 1999 06 14 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | (0.2+ | 1.7+) | | |
| 1999 05 13 | 704 | (1.8− | 2.4+) | 1999 06 14 | 704 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.7+ | | |
| 1999 05 13 | 704 | 0.8+ | 0.2+ | 2002 03 19 | 699 | 0.3+ | 0.5+ | 2006 10 16 | 703 | (0.5+ | 1.6+) | | |
| 1999 05 13 | 704 | (1.1− | 2.5+) | 2002 03 19 | 699 | 0.1− | 0.7− | 2006 10 22 | 691 | 0.1− | 0.2+ | | |
| 1999 05 13 | 704 | (2.8− | 0.2+) | 2002 03 19 | 699 | 1.3− | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 1999 05 18 | 704 | 0.8− | 0.4− | 2002 03 19 | 699 | 1.2+ | 1.0− | 2006 10 22 | 691 | 0.3− | 0.4+ | | |
| 1999 05 18 | 704 | 1.1− | 0.7+ | 2002 04 11 | 704 | 0.0 | 1.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 1999 05 18 | 704 | 1.6− | 0.6+ | 2002 04 11 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 691 | 0.5+ | 0.4− | | |
| 1999 05 18 | 704 | (2.2− | 0.9−) | 2002 04 11 | 704 | 0.1− | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 1999 05 19 | 704 | 0.5+ | 0.6+ | 2002 04 16 | 704 | 1.1+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.2+ | | |
| 1999 05 19 | 704 | 1.6+ | 1.0− | 2002 04 16 | 704 | 0.3+ | 0.4− | 2006 11 23 | G96 | 0.4− | 0.1+ | | |
| 1999 05 19 | 704 | 1.7+ | 1.8+ | 2002 04 16 | 704 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.3+ | | |
| 1999 05 19 | 704 | 1.5+ | 0.2+ | 2002 04 16 | 704 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.3+ | | |
| 1999 05 19 | 704 | 0.5+ | 0.8+ | 2005 02 09 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.3+ | | |
| 1999 05 22 | 699 | 0.7+ | 0.4− | 2005 02 09 | 691 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.3+ | | |
| 1999 05 22 | 699 | 1.0− | 0.7− | 2005 02 09 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.5+ | | |
| 1999 05 22 | 699 | 1.8+ | 0.1+ | 2005 03 16 | G96 | 0.7− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.5+ | | |
| 1999 06 09 | 704 | 0.6− | 1.4+ | 2005 03 16 | G96 | 0.4− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2+ | | |
| 1999 06 09 | 704 | 1.2− | 0.2+ | 2005 03 16 | G96 | 0.2− | 0.5− | 2006 11 23 | G96 | 0.1+ | 0.2+ | | |
| 1999 06 09 | 704 | 0.1+ | 0.5− | 2005 03 16 | G96 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2+ | | |
| 1999 06 09 | 704 | (0.0 | 2.3+) | 2006 10 03 | G96 | 0.2− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3+ | | |
| 1999 06 09 | 704 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.1− | 0.0 | | | | | | |

**(137202)∗ 1999 KJ$_{13}$ = 2000 SV$_{313}$**

Discovered 1999 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 5578)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.75933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17265459 | $\omega$ | 91.44637 | | +0.82148431 | +0.49273013 | |
| $a$ | 3.1941157 | $\Omega$ | 239.11554 | | −0.55680729 | +0.80169691 | |
| $e$ | 0.2672550 | $i$ | 19.53865 | | +0.12300070 | +0.33837713 | |
| $P$ | 5.71 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 704 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 1999 05 18 | 704 | 1.8− | 0.4− | 2006 10 19 | 691 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 1999 05 18 | 704 | (2.1− | 0.9−) | 2006 10 19 | 691 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.2− | 0.3− |
| 1999 05 18 | 704 | 1.0− | 0.4− | 2006 10 19 | 691 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 1999 05 19 | 704 | 1.6+ | 1.6− | 2006 10 21 | 704 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 1999 05 19 | 704 | (2.3+ | 0.6+) | 2006 10 21 | 704 | 0.1+ | 0.6− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 1999 05 19 | 704 | 1.3− | 1.2+ | 2006 10 21 | 704 | 0.4− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 1999 05 19 | 704 | 0.6− | 0.4+ | 2006 10 21 | 704 | 0.0 | 0.0 | 2006 11 20 | 703 | 0.0 | 0.6− |
| 1999 05 19 | 704 | 0.5− | 1.6− | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 20 | 703 | 0.1− | 0.5+ |
| 1999 06 06 | 699 | 1.5+ | 0.7+ | 2006 10 23 | 691 | 0.0 | 0.3− | 2006 11 20 | 703 | 0.2+ | 0.2− |
| 1999 06 06 | 699 | 0.6+ | 1.5+ | 2006 10 23 | 691 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.2− | 0.3− |
| 1999 06 06 | 699 | 0.9+ | 0.4+ | 2006 10 27 | 691 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 1999 06 15 | 704 | 0.9+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 1999 06 15 | 704 | 1.1− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.4− | 0.6− |
| 1999 06 15 | 704 | 1.2+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 20 | 704 | (2.7− | 0.4+) |
| 1999 06 15 | 704 | 0.4+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.9− | 0.3− |
| 1999 06 15 | 704 | 0.5− | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2000 09 22 | 699 | 0.5− | 0.8+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.3− |
| 2000 09 22 | 699 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.3− | 2006 11 20 | 704 | (1.6− | 0.9+) |
| 2000 09 22 | 699 | 0.4− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.6− | 0.6− |
| 2000 09 22 | 699 | 1.0− | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2000 09 27 | 704 | 0.5− | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.7− | 0.1+ |
| 2000 09 27 | 704 | 0.1+ | 0.6− | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 1.3− | 0.0 |
| 2000 09 27 | 704 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.7− |
| 2000 09 27 | 704 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2000 09 27 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.6− |
| 2000 10 04 | 704 | 0.0 | 0.0 | 2006 11 09 | D35 | 0.2− | 0.5+ | 2006 11 20 | 704 | 1.2− | 0.5− |
| 2000 10 04 | 704 | 0.2+ | 0.5+ | 2006 11 09 | D35 | 0.0 | 0.6+ | 2006 11 20 | 704 | 1.0− | 0.7− |
| 2000 10 04 | 704 | 0.1− | 0.4+ | 2006 11 09 | D35 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2000 10 04 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.5− | 0.3+ | 2006 11 20 | 704 | 0.8− | 0.5+ |
| 2000 10 25 | 704 | 0.4− | 0.2− | 2006 11 11 | 703 | (2.0− | 0.3−) | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2000 10 25 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2000 10 25 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 703 | (1.7+ | 0.8+) | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2000 10 25 | 704 | 0.8+ | 0.3− | 2006 11 13 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.4+ |
| 2000 10 25 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | (0.6− | 2.6−) |
| 2000 11 19 | 704 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.6− |
| 2000 11 19 | 704 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2000 11 19 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2000 11 19 | 704 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2000 11 19 | 704 | 0.5− | 0.4+ | 2006 11 17 | 704 | 1.1− | 1.5+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2000 12 17 | 699 | 0.6+ | 1.8+ | 2006 11 17 | 704 | (1.5+ | 0.4−) | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2000 12 17 | 699 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2000 12 17 | 699 | 0.2+ | 1.1+ | 2006 11 17 | 704 | 0.8− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2000 12 17 | 699 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.6− | 0.1− | 2006 11 27 | 703 | 0.1− | 0.5− |
| 2000 12 20 | 704 | 0.5+ | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2000 12 20 | 704 | 0.4+ | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.8+ | 0.1+ |
| 2000 12 20 | 704 | 1.1+ | 1.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.6− | 0.5+ |
| 2005 06 09 | 704 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.8+ | 0.2+ | 2006 11 27 | 703 | 0.0 | 0.3+ |
| 2005 06 09 | 704 | 0.9− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.1+ | 2006 11 27 | 704 | 0.6− | 1.0+ |
| 2005 06 09 | 704 | 0.5+ | 1.1− | 2006 11 18 | 704 | 0.4+ | 0.2− | 2006 11 27 | 704 | 0.8− | 0.0 |
| 2005 07 28 | 704 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.6+ | 2006 11 27 | 704 | 0.2− | 0.5− |
| 2005 07 28 | 704 | 1.3+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.2+ | 2006 11 27 | 704 | 0.1− | 0.2+ |
| 2005 07 28 | 704 | 0.8− | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2005 07 28 | 704 | (2.0+ | 1.1+) | 2006 11 19 | 704 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.4+ |
| 2006 10 16 | 703 | 0.6− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.6+ |
| 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 19 | 704 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.1+ |
| 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.5+ | 2006 11 29 | 704 | 0.4+ | 0.3+ |

## (137203)∗ 1999 LX

Discovered 1999 June 7 by P. G. Comba at Prescott.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.37615 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30990729 | $\omega$ | 226.95455 | | +0.99545067 | +0.07768733 | |
| $a$ | 2.1626265 | $\Omega$ | 128.51344 | | −0.05304149 | +0.93278377 | |
| $e$ | 0.1651454 | $i$ | 4.04246 | | −0.07914901 | +0.35196466 | |
| $P$ | 3.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 07 | 684 | 0.1− | 0.5+ | 2005 04 01 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 703 | 0.5− | 0.1− |
| 1999 06 07 | 684 | 0.4− | 0.1+ | 2005 04 01 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 0.2− | 0.0 |
| 1999 06 08 | 684 | 0.2+ | 0.3− | 2005 04 01 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1999 06 08 | 684 | 0.3− | 0.0 | 2005 05 03 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1999 06 11 | 684 | 0.3+ | 0.5+ | 2005 05 03 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 1999 06 11 | 684 | 0.4− | 0.3+ | 2005 05 03 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1999 06 11 | 684 | 0.5− | 0.5+ | 2005 05 15 | 644 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 06 12 | 684 | 0.4+ | 0.6+ | 2005 05 15 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 1999 06 12 | 684 | 0.0 | 0.2+ | 2005 05 15 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 1999 07 02 | 684 | 1.0+ | 0.8+ | 2005 05 15 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 1999 07 02 | 684 | 0.1+ | 0.4+ | 2005 05 15 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.9− |
| 1999 07 03 | 684 | (1.2− | 3.0+) | 2005 05 15 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.9− |
| 1999 07 03 | 684 | (1.3− | 2.4+) | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.4+ |
| 1999 07 03 | 684 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.4+ | 0.8+ | 2006 11 11 | 644 | 0.0 | 0.2− |
| 1999 07 31 | 684 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.6+ | 0.4+ | 2006 11 11 | 644 | 0.1+ | 0.1+ |
| 1999 07 31 | 684 | 0.5+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 1.0+ | 2006 11 14 | 704 | 1.0+ | 0.3+ |
| 1999 08 01 | 684 | 0.8− | 0.5+ | 2006 09 19 | 683 | 0.1− | 1.1− | 2006 11 14 | 704 | 1.0+ | 0.0 |
| 1999 08 01 | 684 | 0.4− | 0.4+ | 2006 09 19 | 683 | 0.8− | 1.2− | 2006 11 14 | 704 | 0.1+ | 0.3− |
| 2002 05 08 | 704 | 0.5+ | 0.1− | 2006 09 19 | 683 | 1.1− | 0.3+ | 2006 11 14 | 704 | 1.1+ | 0.3+ |
| 2002 05 08 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.9+ | 0.6+ |
| 2002 05 08 | 704 | 0.4+ | 1.0− | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2002 05 08 | 704 | 0.7+ | 1.5+ | 2006 10 16 | 703 | 1.0+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2003 12 03 | 704 | 1.1+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2003 12 03 | 704 | 0.1− | 0.4− | 2006 10 22 | 704 | 0.6+ | 1.2− | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2003 12 03 | 704 | 0.1− | 0.1− | 2006 10 22 | 704 | 0.9+ | 0.3− | 2006 11 17 | 704 | 0.5− | 0.6+ |
| 2003 12 03 | 704 | 0.9+ | 0.2+ | 2006 10 22 | 704 | (1.6+ | 0.2−) | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2003 12 19 | 704 | 0.2− | 0.3− | 2006 10 22 | 704 | 0.5− | 0.8+ | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 2003 12 19 | 704 | 0.2− | 0.9+ | 2006 10 22 | 703 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2003 12 19 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2003 12 19 | 704 | 1.3− | 0.0 | 2006 10 22 | 703 | 0.3− | 0.7+ | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2003 12 22 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.7+ | 2006 10 26 | 106 | 0.2− | 1.1+ | 2006 11 19 | 704 | 0.9− | 0.0 |
| 2003 12 22 | 704 | 0.7+ | 1.0+ | 2006 10 26 | 106 | 0.8− | 1.2+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2003 12 22 | 704 | 0.2+ | 0.8+ | 2006 10 26 | 106 | 0.3+ | 0.1− | 2006 11 19 | 704 | 1.1− | 0.3+ |
| 2003 12 22 | 704 | 0.0 | 0.3+ | 2006 10 26 | 106 | 0.3− | 0.9+ | 2006 11 20 | 704 | 0.6− | 0.2− |
| 2003 12 23 | 704 | 0.0 | 0.3− | 2006 10 31 | A50 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2003 12 23 | 704 | 0.2− | 0.3− | 2006 10 31 | A50 | 0.4+ | 0.5+ | 2006 11 20 | 704 | 1.1− | 0.1+ |
| 2003 12 23 | 704 | 0.6− | 0.2− | 2006 11 01 | 703 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.8− | 0.3− |
| 2003 12 23 | 704 | 0.5− | 0.8− | 2006 11 01 | 703 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.2− | 0.1− |

## (137204)∗ 1999 $LX_2$

Discovered 1999 June 5 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.55821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17473353 | $\omega$ | 245.19519 | | +0.98802116 | +0.03452015 | |
| $a$ | 3.1687299 | $\Omega$ | 112.53002 | | +0.01812055 | +0.94196442 | |
| $e$ | 0.0566300 | $i$ | 9.37153 | | −0.15325085 | +0.33393322 | |
| $P$ | 5.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 23 | 691 | 0.1− | 0.2− | 2001 11 19 | 699 | 1.1− | 1.0+ | 2006 09 21 | 699 | (0.9+ | 2.2+) |
| 1992 02 23 | 691 | 0.6+ | 0.7− | 2001 11 20 | 699 | 0.2+ | 0.7+ | 2006 09 21 | 699 | 0.2+ | 0.0 |
| 1992 02 23 | 691 | 0.1− | 0.9+ | 2001 11 20 | 699 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 1999 05 20 | 691 | 0.6− | 0.7+ | 2001 11 20 | 699 | 0.6+ | 1.2+ | 2006 09 26 | 703 | (0.6− | 2.1+) |
| 1999 05 20 | 691 | 0.2− | 0.0 | 2001 11 20 | 699 | 0.4− | 0.6+ | 2006 09 26 | 703 | 0.5− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 20 | 691 | 0.2− | 0.1+ | 2001 11 20 | 608 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.0 | 0.7+ | | |
| 1999 06 05 | 691 | 0.1− | 0.2+ | 2001 11 20 | 608 | 0.3− | 0.4− | 2006 09 26 | 703 | 0.4+ | 0.3+ | | |
| 1999 06 05 | 691 | 0.1− | 0.4− | 2001 11 20 | 608 | 0.3+ | 0.7− | 2006 09 26 | 703 | 0.8+ | 0.5− | | |
| 1999 06 05 | 691 | 1.2+ | 0.0 | 2003 01 27 | 699 | (3.0− | 1.6+) | 2006 09 26 | 703 | 0.4− | 0.4+ | | |
| 1999 06 10 | 691 | 0.4+ | 0.2+ | 2003 01 27 | 699 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.1+ | | |
| 1999 06 10 | 691 | 0.3+ | 0.1+ | 2003 01 27 | 699 | 0.8− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.4+ | | |
| 1999 06 10 | 691 | 0.1− | 0.3− | 2003 01 27 | 699 | 0.4+ | 1.1+ | 2006 10 10 | 644 | 0.2+ | 0.4+ | | |
| 1999 06 15 | 691 | 0.0 | 0.4+ | 2004 03 15 | 704 | (1.8− | 0.0 ) | 2006 10 10 | 644 | 0.3+ | 0.4+ | | |
| 1999 06 15 | 691 | 0.1− | 0.3− | 2004 03 15 | 704 | 1.2+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2− | | |
| 1999 06 15 | 691 | 0.0 | 0.4+ | 2004 03 15 | 704 | 0.8+ | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2000 08 26 | 704 | 0.6+ | 1.1+ | 2004 03 23 | 704 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 2000 08 26 | 704 | 0.6− | 0.0 | 2004 03 23 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2000 08 26 | 704 | 0.6− | 0.6− | 2004 03 23 | 704 | 0.7− | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2000 08 26 | 704 | 0.6− | 1.3− | 2004 03 23 | 704 | 0.1+ | 1.0+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2001 10 11 | 691 | 0.1− | 0.1+ | 2004 03 23 | 704 | 1.1− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.4+ | | |
| 2001 10 11 | 691 | 0.4− | 0.3− | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.2+ | | |
| 2001 10 11 | 691 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.6− | 0.3+ | | |
| 2001 10 17 | 704 | 1.1+ | 0.5+ | 2006 09 14 | 644 | 0.3− | 0.5+ | 2006 10 23 | 644 | 0.3+ | 0.1− | | |
| 2001 10 17 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.4− | | |
| 2001 10 17 | 704 | 0.9+ | 0.6− | 2006 09 18 | 703 | (0.0 | 2.5−) | 2006 10 23 | 644 | 0.3− | 0.4+ | | |
| 2001 10 17 | 704 | 0.6+ | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 10 24 | 644 | 0.2+ | 0.1+ | | |
| 2001 11 19 | 699 | 1.0− | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.3+ | | |
| 2001 11 19 | 699 | 1.2− | 0.3+ | 2006 09 21 | 699 | 1.4+ | 0.4− | 2006 10 24 | 644 | 0.3− | 0.0 | | |
| 2001 11 19 | 699 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 0.1+ | 0.6− | | | | | | |

**(137205)∗ 1999 LN$_{11}$**

Discovered 1999 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.14147 | | (2000.0) | | | |
| $n$ | 0.17358272 | $\omega$ | 91.80747 | | +0.01741030 | +0.99984173 |
| $a$ | 3.1827197 | $\Omega$ | 179.16342 | | −0.98773274 | +0.01776728 |
| $e$ | 0.2220835 | $i$ | 14.51581 | | −0.15518024 | −0.00091365 |
| $P$ | 5.68 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 704 | 0.0 | 0.9+ | 2000 10 02 | 645 | 0.1− | 0.1+ | 2004 04 12 | 703 | (0.1+ | 1.6−) | | |
| 1999 05 17 | 704 | 2.0− | 0.4+ | 2000 10 02 | 645 | 0.0 | 0.0 | 2004 04 12 | 703 | 1.4− | 0.5− | | |
| 1999 05 17 | 704 | 0.6+ | 0.1− | 2004 03 12 | 644 | 0.4+ | 0.2+ | 2004 04 12 | 703 | 0.1+ | 0.5− | | |
| 1999 05 17 | 704 | (3.2− | 0.3+) | 2004 03 12 | 644 | 0.0 | 0.3+ | 2004 04 12 | 703 | 0.4+ | 0.5− | | |
| 1999 06 06 | 703 | 1.1+ | 1.0+ | 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | | |
| 1999 06 06 | 703 | 0.3− | 0.2+ | 2004 03 12 | 644 | 0.2− | 0.4+ | 2004 04 13 | 691 | 0.1− | 0.3+ | | |
| 1999 06 06 | 703 | 0.9+ | 1.8+ | 2004 03 12 | 644 | 0.2− | 0.4+ | 2004 04 13 | 691 | 0.3+ | 0.1+ | | |
| 1999 06 06 | 703 | 0.0 | 0.4− | 2004 03 12 | 644 | 0.1− | 0.3+ | 2004 04 21 | 691 | 0.1+ | 0.0 | | |
| 1999 06 08 | 704 | 0.5+ | 0.7+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2004 04 21 | 691 | 0.1− | 0.2+ | | |
| 1999 06 08 | 704 | 0.8− | 0.5− | 2004 03 18 | 704 | 0.3+ | 0.0 | 2004 04 21 | 691 | 0.1+ | 0.2+ | | |
| 1999 06 08 | 704 | 0.1+ | 1.1+ | 2004 03 18 | 704 | 1.0+ | 0.6+ | 2006 09 29 | 461 | 0.1− | 0.3+ | | |
| 1999 06 08 | 704 | 1.0− | 0.8− | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 09 29 | 461 | 0.1− | 0.0 | | |
| 1999 06 14 | 704 | 0.1+ | 0.7+ | 2004 03 18 | 704 | 0.5+ | 0.3− | 2006 09 29 | 461 | 0.3− | 0.1+ | | |
| 1999 06 14 | 704 | 0.1− | 0.1+ | 2004 03 20 | 704 | (0.2− | 1.7+) | 2006 09 30 | 703 | 0.4+ | 0.3+ | | |
| 1999 06 14 | 704 | 0.5+ | 0.1+ | 2004 03 20 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.7− | 1.3+ | | |
| 1999 06 14 | 704 | 0.1+ | 1.8− | 2004 03 20 | 704 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.7− | 0.8+ | | |
| 2000 10 01 | 691 | 0.0 | 0.2+ | 2004 03 27 | 704 | (0.4− | 1.7+) | 2006 09 30 | 703 | 1.2− | 1.1+ | | |
| 2000 10 01 | 691 | 0.0 | 0.4+ | 2004 03 27 | 704 | 0.5+ | 0.0 | 2006 10 02 | 461 | 0.1− | 0.4+ | | |
| 2000 10 01 | 699 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.0 | 0.2− | 2006 10 02 | 461 | 0.4− | 0.7+ | | |
| 2000 10 01 | 691 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.6− | 0.3+ | 2006 10 02 | 461 | 0.2− | 0.1+ | | |
| 2000 10 01 | 699 | 0.6− | 1.2+ | 2004 03 28 | 683 | 1.4+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 1.6+ | | |
| 2000 10 01 | 699 | 1.6+ | 0.4− | 2004 03 28 | 683 | 0.8− | 0.7+ | 2006 10 16 | 703 | 0.8+ | 1.9− | | |
| 2000 10 01 | 699 | 1.6− | 1.4+ | 2004 03 28 | 683 | (1.2+ | 1.9−) | 2006 10 16 | 703 | 1.5+ | 1.1+ | | |
| 2000 10 02 | 704 | (0.5− | 2.2+) | 2004 03 31 | 291 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.4− | 1.8− | | |
| 2000 10 02 | 704 | 1.2+ | 1.1+ | 2004 03 31 | 291 | 0.4− | 0.4+ | | | | | | |
| 2000 10 02 | 704 | 1.1+ | 0.7− | 2004 03 31 | 291 | 0.2− | 0.4+ | | | | | | |

**(137206)∗ 1999 LJ$_{25}$ = 2000 WO$_{11}$**

Discovered 1999 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 6857)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.35067 | | (2000.0) | | | |
| $n$ | 0.29880008 | $\omega$ | 201.05990 | | +0.54656343 | +0.82877143 |
| $a$ | 2.2158936 | $\Omega$ | 102.25378 | | −0.74969145 | +0.54811912 |
| $e$ | 0.2808461 | $i$ | 7.05515 | | −0.37313691 | +0.11270913 |
| $P$ | 3.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 09 | 704 | 0.5+ | 0.5− | 2000 11 26 | 691 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.5− | 1.3+ | | |
| 1999 06 09 | 704 | 0.3+ | 0.8− | 2000 11 26 | 691 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.5− | 0.0 | | |
| 1999 06 09 | 704 | 0.5+ | 0.1+ | 2000 11 26 | 691 | 0.3− | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.1+ | | |
| 1999 06 09 | 704 | 0.5+ | 1.1+ | 2000 11 27 | 691 | 1.1+ | 0.1+ | 2006 10 01 | 704 | 0.9+ | 0.4− | | |
| 1999 06 09 | 704 | 0.2− | 0.5+ | 2000 11 27 | 691 | 1.0+ | 0.3− | 2006 10 01 | 704 | 1.0+ | 0.2− | | |
| 1999 06 15 | 704 | 0.4+ | 0.1+ | 2000 11 30 | 691 | 0.3− | 0.6− | 2006 10 12 | 644 | 0.3− | 0.3+ | | |
| 1999 06 15 | 704 | 0.5− | 0.4− | 2000 11 30 | 691 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.4− | 0.5+ | | |
| 1999 06 15 | 704 | 0.2+ | 0.0 | 2000 11 30 | 691 | 0.3− | 0.8− | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 1999 06 15 | 704 | 0.2+ | 0.3+ | 2000 12 04 | 691 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.1− | | |
| 1999 06 15 | 704 | 0.4− | 0.3− | 2000 12 04 | 691 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.1− | | |
| 1999 07 14 | 704 | 1.5− | 0.2− | 2000 12 04 | 691 | (2.0− | 0.6+) | 2006 10 16 | 703 | 0.4− | 0.4− | | |
| 1999 07 14 | 704 | 0.2− | 1.2− | 2002 04 11 | 704 | (0.3+ | 1.7+) | 2006 10 16 | 703 | 0.0 | 0.2+ | | |
| 1999 07 14 | 704 | 0.2− | 0.4− | 2002 04 11 | 704 | 0.8− | 0.5+ | 2006 10 22 | 703 | 0.2+ | 0.5− | | |
| 1999 07 14 | 704 | 0.2− | 0.2+ | 2002 04 11 | 704 | 0.4+ | 0.8− | 2006 10 22 | 703 | 0.6+ | 0.0 | | |
| 1999 07 14 | 704 | 0.7− | 0.0 | 2002 04 11 | 704 | 1.2+ | 0.3+ | 2006 10 22 | 703 | 1.3− | 0.7+ | | |
| 1999 07 16 | 704 | 0.8− | 0.7− | 2002 04 11 | 704 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.1− | | |
| 1999 07 16 | 704 | 0.2+ | 1.0− | 2002 04 12 | 644 | 0.3− | 0.8+ | 2006 11 13 | 703 | 0.7+ | 0.6+ | | |
| 1999 07 16 | 704 | 0.2+ | 0.2− | 2002 04 12 | 644 | 0.3− | 0.3+ | 2006 11 13 | 703 | 1.1+ | 0.3+ | | |
| 1999 07 16 | 704 | 0.4− | 1.2− | 2002 04 12 | 644 | 0.5− | 0.7+ | 2006 11 13 | 703 | 0.5− | 0.2+ | | |
| 1999 07 16 | 704 | 0.7+ | 0.6− | 2002 04 16 | 704 | 0.6− | 0.0 | 2006 11 13 | 703 | 0.7+ | 0.5+ | | |
| 2000 11 22 | 691 | 0.0 | 0.0 | 2002 04 16 | 704 | 1.0+ | 1.0+ | 2006 11 24 | G96 | 0.0 | 0.2+ | | |
| 2000 11 22 | 691 | 0.2+ | 0.3− | 2002 04 16 | 704 | 0.7− | 0.6− | 2006 11 24 | G96 | 0.3− | 0.0 | | |
| 2000 11 22 | 691 | 0.3+ | 0.2+ | 2002 04 16 | 704 | 0.9+ | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2000 11 25 | 691 | 0.0 | 1.1− | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.1+ | | |
| 2000 11 25 | 691 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.5− | 0.2+ | | | | | | |
| 2000 11 25 | 691 | 0.1− | 0.3− | 2006 09 30 | 703 | (0.9+ | 1.5+) | | | | | | |

**(137207)∗ 1999 LW$_{31}$ = 1999 LA$_{29}$ = 2001 UR$_{29}$**

Discovered 1999 June 14 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (d, *MPO* 13878), G. V. Williams (*MPO* 19443)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.52753 | | (2000.0) | | | |
| $n$ | 0.18198153 | $\omega$ | 359.47746 | | +0.45985116 | −0.86732125 |
| $a$ | 3.0840247 | $\Omega$ | 63.13293 | | +0.81549316 | +0.32757000 |
| $e$ | 0.1105626 | $i$ | 12.33064 | | +0.35143679 | +0.37476892 |
| $P$ | 5.42 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.2− | 0.4+ | 2001 10 20 | 704 | 0.1− | 0.9+ | 2001 12 19 | 704 | 0.1− | 1.0+ | | |
| 1999 05 18 | 691 | 0.2+ | 0.2+ | 2001 10 21 | 683 | 1.0+ | 0.9+ | 2001 12 19 | 699 | 1.1− | 0.9− | | |
| 1999 05 18 | 691 | 0.0 | 0.5+ | 2001 10 21 | 683 | 0.5+ | 0.2− | 2001 12 19 | 704 | 0.8− | 0.1+ | | |
| 1999 06 08 | 691 | 0.1+ | 0.0 | 2001 10 21 | 683 | 1.2+ | 1.0− | 2001 12 19 | 704 | 0.8− | 0.5+ | | |
| 1999 06 08 | 691 | 0.1− | 0.2+ | 2001 10 24 | 704 | 0.2− | 0.1+ | 2001 12 19 | 699 | 0.2− | 0.7+ | | |
| 1999 06 08 | 691 | 0.0 | 0.3+ | 2001 10 24 | 704 | 1.5− | 0.3+ | 2001 12 19 | 704 | 0.3+ | 0.3− | | |
| 1999 06 10 | 644 | 1.0+ | 0.0 | 2001 10 24 | 704 | 0.1− | 0.4− | 2001 12 19 | 699 | 0.8− | 0.3− | | |
| 1999 06 10 | 644 | 1.0+ | 0.1+ | 2001 10 24 | 704 | 1.2− | 0.8+ | 2001 12 19 | 699 | 0.0 | 0.4+ | | |
| 1999 06 10 | 644 | 1.0+ | 0.0 | 2001 10 24 | 644 | 0.1+ | 0.0 | 2002 01 02 | 644 | 0.1− | 1.6+ | | |
| 1999 06 11 | 691 | 0.5+ | 0.1− | 2001 10 24 | 644 | 0.0 | 0.1+ | 2002 01 02 | 644 | 0.7+ | 1.2+ | | |
| 1999 06 11 | 691 | 0.3+ | 0.1+ | 2001 10 24 | 644 | 0.1− | 0.1+ | 2002 01 02 | 644 | 0.3+ | 1.1+ | | |
| 1999 06 11 | 691 | 0.1+ | 0.1− | 2001 11 08 | 683 | 0.5+ | 0.3+ | 2003 01 24 | 644 | 0.0 | 0.3+ | | |
| 1999 06 14 | 691 | 0.4− | 0.1+ | 2001 11 08 | 683 | 1.7+ | 1.0− | 2003 01 24 | 644 | 0.1+ | 0.7+ | | |
| 1999 06 14 | 691 | 0.4− | 0.3+ | 2001 11 11 | 683 | 0.4− | 0.2+ | 2003 01 24 | 644 | 0.2+ | 0.7+ | | |
| 1999 06 15 | 691 | 0.1+ | 0.1− | 2001 11 11 | 683 | 1.2− | 0.8+ | 2003 01 29 | 644 | 0.5+ | 1.2+ | | |
| 1999 06 15 | 691 | 0.0 | 0.3− | 2001 11 14 | 683 | (3.4− | 1.8+) | 2003 01 29 | 644 | 0.3+ | 1.2+ | | |
| 1999 06 15 | 691 | 0.8− | 0.6− | 2001 11 14 | 683 | (3.3− | 2.0−) | 2003 01 29 | 644 | 0.3− | 0.8+ | | |
| 1999 06 22 | 691 | 0.2+ | 0.4− | 2001 11 14 | 683 | 0.7− | 0.1+ | 2003 02 01 | 645 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 22 | 691 | 0.5+ | 0.0 | 2001 11 15 | 683 | (2.5− | 0.3+) | 2003 02 01 | 645 | 0.1− | 0.1− |
| 1999 06 22 | 691 | 0.6− | 1.2+ | 2001 11 15 | 683 | 0.6− | 0.4− | 2003 02 01 | 644 | 0.2− | 0.3+ |
| 2001 09 17 | 699 | 0.7− | 1.7− | 2001 11 15 | 683 | (3.0− | 3.2−) | 2003 02 01 | 644 | 0.4+ | 0.1+ |
| 2001 09 17 | 699 | 0.3− | 0.6+ | 2001 11 15 | 644 | 0.6− | 0.4+ | 2003 02 01 | 644 | 0.1− | 0.0 |
| 2001 09 17 | 699 | 0.3− | 1.0+ | 2001 11 15 | 644 | 0.6− | 0.1+ | 2003 02 01 | 645 | 0.0 | 0.1− |
| 2001 09 17 | 699 | 0.0 | 0.9+ | 2001 11 15 | 644 | 0.1− | 0.1− | 2003 02 01 | 645 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.4+ | 2001 11 18 | 704 | 0.0 | 0.5− | 2003 02 08 | 699 | 0.6− | 0.2− |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2001 11 18 | 704 | 0.3− | 1.0− | 2003 02 08 | 699 | 0.8+ | 0.2+ |
| 2001 09 25 | 704 | 0.6− | 0.6+ | 2001 11 18 | 704 | 0.1+ | 1.0− | 2003 02 08 | 699 | 1.3+ | 0.2− |
| 2001 09 25 | 704 | 0.9− | 0.2− | 2001 11 18 | 704 | 0.4− | 0.1− | 2003 02 08 | 699 | 0.6− | 1.4+ |
| 2001 10 11 | 683 | (2.1− | 0.2+) | 2001 11 18 | 704 | 0.0 | 0.7− | 2003 03 08 | 644 | 0.2+ | 0.3+ |
| 2001 10 11 | 683 | 0.6+ | 0.6− | 2001 11 20 | 704 | 0.1− | 0.0 | 2003 03 08 | 644 | 0.5+ | 0.3+ |
| 2001 10 11 | 683 | (1.9− | 2.2−) | 2001 11 20 | 704 | 0.1− | 0.3− | 2003 03 08 | 644 | 0.4+ | 0.4+ |
| 2001 10 13 | 683 | 0.0 | 0.6− | 2001 11 20 | 699 | 0.5− | 0.0 | 2003 03 08 | 644 | 0.1+ | 0.2+ |
| 2001 10 13 | 683 | 0.0 | 0.3+ | 2001 11 20 | 704 | 0.9+ | 1.1− | 2003 03 08 | 644 | 0.2+ | 0.7+ |
| 2001 10 13 | 683 | 1.5+ | 1.7+ | 2001 11 20 | 699 | 0.7− | 0.4+ | 2003 03 08 | 644 | 0.3+ | 0.4+ |
| 2001 10 14 | 699 | 0.7+ | 1.2− | 2001 11 20 | 704 | 0.2− | 0.8− | 2004 04 13 | 691 | 0.5+ | 0.2+ |
| 2001 10 14 | 699 | 0.6+ | 0.1+ | 2001 11 20 | 699 | 0.1+ | 1.4+ | 2004 04 13 | 691 | 0.5+ | 0.2+ |
| 2001 10 14 | 699 | 1.1+ | 0.1− | 2001 11 20 | 704 | 0.3− | 0.6− | 2004 04 13 | 691 | 0.4+ | 0.5+ |
| 2001 10 14 | 683 | 1.2+ | 0.6+ | 2001 11 20 | 699 | 0.7− | 0.6+ | 2004 04 16 | 704 | 1.3+ | 0.8+ |
| 2001 10 14 | 683 | 0.3+ | 0.7− | 2001 12 07 | 704 | 1.1− | 0.5+ | 2004 04 16 | 704 | 0.5+ | 1.1+ |
| 2001 10 14 | 699 | 0.3+ | 0.3+ | 2001 12 07 | 704 | 0.8+ | 1.1+ | 2004 04 16 | 704 | 0.3+ | 1.1+ |
| 2001 10 14 | 683 | (1.0− | 2.2−) | 2001 12 07 | 704 | 0.2+ | 0.2− | 2004 04 16 | 704 | 0.7− | 1.2+ |
| 2001 10 16 | 704 | 0.4+ | 0.2+ | 2001 12 07 | 704 | 0.9+ | 0.8+ | 2006 08 19 | 644 | 0.2− | 0.2+ |
| 2001 10 16 | 704 | 0.0 | 0.1+ | 2001 12 07 | 704 | 1.5− | 1.2+ | 2006 08 19 | 644 | 0.1− | 0.2+ |
| 2001 10 16 | 704 | 0.4+ | 0.3− | 2001 12 14 | 704 | 0.1+ | 0.8+ | 2006 08 19 | 644 | 0.6− | 0.1+ |
| 2001 10 16 | 683 | 0.2+ | 1.7+ | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 703 | 0.6− | 0.9+ |
| 2001 10 16 | 704 | 0.1+ | 0.0 | 2001 12 14 | 704 | 0.2− | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.6+ |
| 2001 10 16 | 683 | 0.1− | 1.3− | 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.3− | 0.7− |
| 2001 10 16 | 704 | 0.3+ | 0.1− | 2001 12 14 | 704 | 0.1− | 0.7+ | 2006 09 20 | 703 | 0.9− | 0.4+ |
| 2001 10 16 | 683 | (2.5+ | 1.0+) | 2001 12 17 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.5+ | 1.0+ |
| 2001 10 20 | 704 | 0.5− | 0.6+ | 2001 12 17 | 704 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 1.0+ |
| 2001 10 20 | 704 | 0.4− | 0.5+ | 2001 12 17 | 704 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.6− | 0.1− |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2001 12 17 | 704 | 0.6− | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.7+ |
| 2001 10 20 | 704 | 0.3− | 0.2+ | 2001 12 17 | 704 | 0.2− | 0.7+ | | | | |

**(137208)∗ 1999 MC$_2$**

Discovered 1999 June 20 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.12353 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28984354 | $\omega$ | 199.58647 | | +0.72172200 | | +0.68157047 |
| $a$ | 2.2613110 | $\Omega$ | 116.83858 | | −0.61565577 | | +0.71181430 |
| $e$ | 0.2861736 | $i$ | 7.77713 | | −0.31636264 | | +0.16965283 |
| $P$ | 3.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 20 | 703 | (2.5− | 0.2+) | 2002 04 16 | 704 | 0.4+ | 0.7+ | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 1999 06 20 | 703 | 1.0− | 0.1+ | 2002 05 06 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.5+ | 0.4+ |
| 1999 06 20 | 703 | 0.1+ | 1.5+ | 2002 05 06 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.8+ | 0.4− |
| 1999 06 20 | 703 | 1.8− | 0.2+ | 2002 05 06 | 644 | 0.2+ | 0.1+ | 2006 10 03 | E14 | 0.8− | 0.1− |
| 1999 06 23 | 703 | 1.6− | 0.4− | 2002 05 07 | 704 | 1.2− | 0.1− | 2006 10 03 | E14 | (1.7+ | 0.7−) |
| 1999 06 23 | 703 | 0.4− | 1.3− | 2002 05 07 | 704 | 0.2− | 1.0− | 2006 10 03 | E14 | 0.2− | 0.0 |
| 1999 06 23 | 703 | 0.7− | 0.4+ | 2002 05 07 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 1999 06 23 | 703 | 0.3+ | 0.6+ | 2002 05 07 | 704 | 0.9− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.6+ |
| 1999 07 16 | 704 | 0.1− | 0.0 | 2002 05 07 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.7+ |
| 1999 07 16 | 704 | 0.7− | 0.2− | 2002 05 08 | 644 | 0.1+ | 0.9+ | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 1999 07 16 | 704 | (3.6− | 0.3−) | 2002 05 08 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.4− |
| 1999 09 09 | 699 | 0.5+ | 0.6+ | 2002 05 08 | 644 | 0.5+ | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 1999 09 09 | 699 | 0.2− | 0.4+ | 2002 05 27 | 644 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 1999 09 09 | 699 | 0.6+ | 0.5+ | 2002 05 27 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 1999 09 11 | 704 | 1.2+ | 0.3+ | 2002 05 27 | 644 | 0.6+ | 0.3− | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 1999 09 11 | 704 | 0.7+ | 0.5− | 2002 06 06 | 699 | (1.7+ | 0.5+) | 2006 10 22 | 703 | 0.1+ | 0.6− |
| 1999 09 11 | 704 | 0.4+ | 0.2− | 2002 06 06 | 699 | 0.2+ | 0.7− | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 1999 09 11 | 704 | 0.5+ | 0.4− | 2002 06 06 | 699 | 0.3+ | 0.8+ | 2006 10 31 | 704 | 0.3− | 0.7+ |
| 1999 09 11 | 704 | 0.2+ | 1.4− | 2002 06 06 | 699 | 1.2+ | 0.4+ | 2006 10 31 | 704 | 0.5− | 0.8+ |
| 2002 04 10 | 704 | 0.1+ | 0.6+ | 2002 06 07 | 608 | 0.0 | 0.6+ | 2006 10 31 | 704 | (1.2− | 1.8+) |
| 2002 04 10 | 704 | 0.6+ | 1.3+ | 2002 06 07 | 608 | 0.3− | 0.9+ | 2006 10 31 | 704 | 0.8− | 0.2+ |
| 2002 04 10 | 704 | 0.1− | 1.0+ | 2002 06 07 | 608 | 0.6+ | 1.2+ | 2006 10 31 | 704 | 0.8− | 0.2− |
| 2002 04 10 | 704 | (0.2+ | 1.9+) | 2002 06 10 | 704 | 0.4− | 0.3+ | 2006 11 10 | 704 | 0.8− | 0.2+ |
| 2002 04 10 | 704 | (1.4+ | 1.9+) | 2002 06 10 | 704 | 0.9+ | 0.3+ | 2006 11 10 | 704 | (1.8+ | 0.3+) |
| 2002 04 11 | 699 | 1.4+ | 1.0+ | 2002 06 10 | 704 | 0.4− | 0.9− | 2006 11 10 | 704 | 0.4− | 0.6+ |
| 2002 04 11 | 699 | 0.7− | 0.6+ | 2005 03 13 | 152 | 0.8+ | 0.8+ | 2006 11 16 | 703 | 0.5− | 0.8+ |
| 2002 04 11 | 699 | 0.4+ | 0.3+ | 2005 03 13 | 152 | 0.5− | 0.6− | 2006 11 16 | 703 | 0.2− | 0.9+ |
| 2002 04 11 | 699 | 0.3+ | 0.6+ | 2005 03 13 | 152 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.4+ |
| 2002 04 12 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 699 | 0.6+ | 0.3+ | 2006 11 16 | 703 | 0.8− | 0.8+ |
| 2002 04 12 | 644 | 0.3− | 0.1+ | 2006 09 30 | 699 | 0.2+ | 0.5+ | 2006 11 17 | 644 | 0.3− | 0.8+ |
| 2002 04 12 | 644 | 0.3+ | 0.2− | 2006 09 30 | 699 | 0.3− | 0.2+ | 2006 11 17 | 644 | 0.3− | 0.8+ |
| 2002 04 16 | 704 | 0.1− | 0.3+ | 2006 09 30 | 699 | 0.7+ | 0.7+ | 2006 11 17 | 644 | 0.1− | 0.8+ |
| 2002 04 16 | 704 | 0.1− | 0.1− | 2006 10 01 | 704 | 1.1+ | 0.2+ | | | | |
| 2002 04 16 | 704 | 1.1+ | 0.0 | 2006 10 01 | 704 | 0.3− | 0.5+ | | | | |

**(137209)∗ 1999 NU$_1$**

Discovered 1999 July 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.08824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28522289 | $\omega$ | 20.48033 | | +0.57117130 | | +0.74862527 |
| $a$ | 2.2856679 | $\Omega$ | 285.85093 | | −0.79337586 | | +0.39832103 |
| $e$ | 0.1483830 | $i$ | 20.48377 | | −0.21051860 | | +0.53000053 |
| $P$ | 3.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 12 | 704 | 0.6− | 0.6+ | 2000 12 26 | 691 | 0.1+ | 0.3+ | 2006 06 21 | 703 | 0.5− | 0.1+ |
| 1999 07 12 | 704 | 0.4− | 0.6− | 2000 12 26 | 691 | 0.1+ | 0.1+ | 2006 06 21 | 703 | 0.9− | 0.1+ |
| 1999 07 12 | 704 | 0.5− | 0.7+ | 2003 11 21 | 704 | 0.4− | 1.1+ | 2006 06 21 | 703 | 0.4+ | 0.3− |
| 1999 07 12 | 704 | 0.3− | 0.1+ | 2003 11 21 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.4− | 0.9+ |
| 1999 07 12 | 704 | 0.2− | 1.1+ | 2003 11 21 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.1− |
| 1999 07 13 | 704 | 0.1− | 0.3+ | 2003 12 04 | 704 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.1+ |
| 1999 07 13 | 704 | 0.1− | 0.3+ | 2003 12 04 | 704 | 1.1+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 1.1+ |
| 1999 07 13 | 704 | 0.2− | 0.6+ | 2003 12 04 | 704 | 0.3+ | 0.9+ | 2006 09 29 | 703 | 0.4+ | 0.8+ |
| 1999 07 13 | 704 | 0.1− | 0.3+ | 2003 12 17 | 704 | 0.1− | 0.0 | 2006 09 29 | 703 | 0.2+ | 0.4+ |
| 1999 07 13 | 704 | 0.2− | 0.3+ | 2003 12 17 | 704 | 0.2− | 0.4+ | 2006 09 29 | 703 | 0.0 | 1.3+ |
| 1999 07 22 | 704 | 0.8+ | 0.0 | 2003 12 17 | 704 | 0.3+ | 0.0 | 2006 09 29 | 703 | 0.7− | 0.9+ |
| 1999 07 22 | 704 | 0.9+ | 0.2+ | 2003 12 17 | 704 | 0.2+ | 0.4− | 2006 10 17 | 106 | 0.5− | 0.6− |
| 1999 07 22 | 704 | 0.2− | 0.3+ | 2003 12 29 | 704 | 0.2− | 0.2+ | 2006 10 17 | 106 | 0.3+ | 0.1− |
| 1999 07 22 | 704 | 0.8− | 0.0 | 2003 12 29 | 704 | 0.5+ | 0.9− | 2006 10 17 | 106 | 0.4− | 0.2− |
| 1999 08 11 | 704 | 0.6− | 0.2− | 2003 12 29 | 704 | 0.4+ | 0.3− | 2006 10 17 | 106 | (1.7+ | 0.2+) |
| 1999 08 11 | 704 | 0.2− | 0.0 | 2003 12 29 | 704 | 0.2− | 0.7− | 2006 10 27 | 703 | 0.3− | 0.6− |
| 1999 08 11 | 704 | 0.4− | 0.1− | 2003 12 29 | 704 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 1999 08 11 | 704 | 1.2+ | 1.5− | 2003 12 30 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.5− |
| 1999 10 10 | 704 | 0.1− | 0.8− | 2003 12 30 | 704 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.7+ |
| 1999 10 10 | 704 | 0.5+ | 0.8− | 2003 12 30 | 704 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.5+ | 1.3− |
| 1999 10 10 | 704 | 0.7+ | 0.4− | 2003 12 30 | 704 | 0.5− | 0.5− | 2006 11 23 | 703 | 0.3− | 0.9− |
| 1999 10 10 | 704 | 1.1+ | 0.1+ | 2003 12 30 | 704 | 0.1− | 0.2− | 2006 11 23 | 703 | 1.2+ | 1.2− |
| 2000 12 26 | 691 | 0.1+ | 0.4+ | 2006 06 21 | 703 | 0.1− | 0.4+ | 2006 11 23 | 703 | 0.1− | 1.3− |

**(137210)∗ 1999 NO$_2$**

Discovered 1999 July 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.58787 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29231511 | $\omega$ | 40.09194 | | +0.72199485 | | +0.68111030 |
| $a$ | 2.2485465 | $\Omega$ | 276.52800 | | −0.66204566 | | +0.62896046 |
| $e$ | 0.1819763 | $i$ | 7.03638 | | −0.20104472 | | +0.37482997 |
| $P$ | 3.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 12 | 704 | 0.2+ | 0.4+ | 1999 09 30 | 703 | 0.3− | 1.2+ | 2002 07 01 | 433 | 0.5+ | 0.5− |
| 1999 07 12 | 704 | 0.2− | 0.3− | 1999 10 04 | 704 | 0.4− | 0.7− | 2005 04 06 | 699 | 0.8+ | 0.6+ |
| 1999 07 12 | 704 | 0.6+ | 0.3+ | 1999 10 04 | 704 | 1.0− | 0.3− | 2005 04 06 | 699 | 1.2+ | 1.2+ |
| 1999 07 12 | 704 | 0.7− | 0.4+ | 1999 10 04 | 704 | 0.6+ | 1.1− | 2005 04 06 | 699 | (1.1+ | 2.7+) |
| 1999 07 12 | 704 | 0.7− | 0.2− | 1999 10 04 | 704 | 1.1+ | 1.4− | 2005 04 06 | 699 | 1.3− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.6− | 0.3+ | 1999 10 07 | 703 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 1999 07 13 | 704 | 0.9− | 0.4− | 1999 10 07 | 703 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.3+ |
| 1999 07 13 | 704 | 0.1+ | 0.5+ | 1999 10 07 | 703 | 0.8+ | 0.3− | 2006 10 12 | 644 | 0.4+ | 0.4+ |
| 1999 07 13 | 704 | 0.1− | 0.1+ | 1999 10 07 | 703 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1999 07 13 | 704 | 0.2− | 0.2+ | 1999 10 09 | 704 | 1.9+ | 1.4+ | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 1999 09 04 | 703 | 1.0− | 0.3+ | 1999 10 09 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 1999 09 04 | 703 | 0.3− | 0.1+ | 1999 10 09 | 704 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.0 | 0.2− |
| 1999 09 04 | 703 | 0.2− | 0.1− | 1999 10 09 | 704 | 1.4− | 0.1+ | 2006 10 27 | 703 | 0.1+ | 1.2− |
| 1999 09 04 | 703 | 0.3+ | 0.6− | 1999 11 06 | 704 | 0.2+ | 0.6− | 2006 10 27 | 703 | 0.3− | 0.1+ |
| 1999 09 09 | 704 | 0.5+ | 0.0 | 1999 11 06 | 704 | 1.3+ | 0.6− | 2006 10 27 | 703 | 0.7+ | 0.3+ |
| 1999 09 09 | 704 | 0.2+ | 1.0+ | 1999 11 06 | 704 | 0.7+ | 0.3− | 2006 11 15 | 703 | 0.7+ | 0.1− |
| 1999 09 09 | 704 | 0.6+ | 0.4+ | 2002 06 17 | 644 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.5− | 0.6+ |
| 1999 09 09 | 704 | 0.9+ | 0.3+ | 2002 06 17 | 644 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.5− |
| 1999 09 09 | 704 | 1.1+ | 0.1− | 2002 06 17 | 644 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 1999 09 16 | 704 | 0.0 | 0.0 | 2002 06 26 | 644 | 0.6+ | 0.4+ | 2006 11 23 | 703 | (0.9− | 1.8+) |
| 1999 09 16 | 704 | 1.1− | 0.3− | 2002 06 26 | 644 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.4− | 0.1+ |
| 1999 09 16 | 704 | 0.9− | 0.6− | 2002 06 26 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 1.5− | 0.6+ |
| 1999 09 16 | 704 | 0.8− | 0.2− | 2002 06 30 | 433 | 0.3+ | 0.2− | 2006 11 23 | 703 | 0.6− | 0.4− |
| 1999 09 16 | 704 | 0.8− | 0.4− | 2002 06 30 | 433 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.4− | 0.6− |
| 1999 09 30 | 703 | 0.2− | 0.5+ | 2002 06 30 | 433 | 0.8− | 0.2− | 2006 12 01 | 704 | 0.3− | 1.9+ |
| 1999 09 30 | 703 | 0.5− | 0.5+ | 2002 07 01 | 433 | 0.2− | 0.3+ | 2006 12 01 | 704 | 0.1− | 1.2+ |
| 1999 09 30 | 703 | 0.9+ | 0.5+ | 2002 07 01 | 433 | 0.5− | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.9+ |

**(137211)∗ 1999 NM$_4$ = 2002 JU$_{71}$**

Discovered 1999 July 13 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 29048)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 40.82026 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.29402520 | $\omega$ | 208.92455 | | +0.69398739 | | +0.70590973 |
| *a* | 2.2398195 | $\Omega$ | 105.42633 | | −0.62907181 | | +0.69021672 |
| *e* | 0.1673824 | *i* | 8.45161 | | −0.35021445 | | +0.15903562 |
| *P* | 3.35 | *H* | 16.3 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 428 | 0.6− | 0.2+ | 2002 05 18 | 704 | 0.2− | 0.5− | 2005 05 22 | 644 | 0.0 | 0.4+ |
| 1999 07 13 | 428 | 1.5− | 0.2+ | 2002 05 18 | 704 | 0.1+ | 0.1− | 2005 05 22 | 644 | 0.2− | 0.1+ |
| 1999 07 13 | 428 | 0.9− | 0.6− | 2002 05 18 | 704 | 0.5− | 0.2+ | 2005 05 22 | 644 | 0.1+ | 0.6+ |
| 1999 07 14 | 704 | 0.3− | 0.4+ | 2002 05 28 | 644 | 0.5+ | 0.1− | 2006 08 28 | 699 | 0.3+ | 0.2− |
| 1999 07 14 | 704 | 0.8+ | 0.4+ | 2002 05 28 | 644 | 0.6+ | 0.4+ | 2006 08 28 | 699 | 0.6− | 0.3+ |
| 1999 07 14 | 704 | 1.6+ | 1.4+ | 2002 05 28 | 644 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.0 | 0.3− |
| 1999 07 14 | 704 | 0.5+ | 0.7+ | 2002 06 06 | 699 | 0.0 | 0.7+ | 2006 08 28 | 699 | 0.4+ | 0.3+ |
| 1999 07 14 | 704 | 1.0+ | 0.7+ | 2002 06 06 | 699 | 0.3− | 0.6+ | 2006 09 21 | 699 | 0.9− | 0.2+ |
| 1999 07 14 | 428 | 0.3− | 0.6+ | 2002 06 06 | 699 | 0.4− | 0.0 | 2006 09 21 | 699 | 0.1+ | 0.1+ |
| 1999 07 14 | 428 | 1.3− | 0.1+ | 2002 06 06 | 699 | 1.0− | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.4− |
| 1999 07 15 | 428 | 0.5− | 0.9+ | 2002 06 09 | 704 | 0.7+ | 0.1− | 2006 09 21 | 699 | 0.2− | 0.4+ |
| 1999 07 15 | 428 | 0.6− | 0.4+ | 2002 06 09 | 704 | 0.3− | 0.2− | 2006 09 24 | 699 | 0.4+ | 0.6+ |
| 1999 07 20 | 428 | 0.1+ | 0.7− | 2002 06 09 | 704 | (1.8− | 1.0+) | 2006 09 24 | 699 | 0.3− | 0.0 |
| 1999 07 20 | 428 | 0.1+ | 0.4+ | 2002 06 09 | 704 | 0.4− | 1.3− | 2006 09 24 | 699 | 0.5+ | 0.8+ |
| 1999 08 02 | 428 | 1.0− | 0.2− | 2003 12 01 | 704 | (1.6− | 1.4+) | 2006 09 24 | 699 | 0.9+ | 0.8+ |
| 1999 08 02 | 428 | 0.1− | 0.0 | 2003 12 01 | 704 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.2− |
| 1999 08 12 | 428 | 0.2− | 0.3− | 2003 12 01 | 704 | 0.5− | 0.8+ | 2006 09 26 | 703 | 0.6− | 0.1+ |
| 1999 08 12 | 428 | 0.3+ | 0.6− | 2003 12 14 | 644 | 0.8+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.2+ |
| 1999 09 04 | 428 | 1.3+ | 0.1− | 2003 12 14 | 644 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 1999 09 04 | 428 | 0.9+ | 0.5+ | 2003 12 14 | 644 | 0.2+ | 0.9+ | 2006 10 02 | 703 | 0.1− | 0.1− |
| 2002 04 10 | 704 | 0.3+ | 0.5+ | 2004 01 12 | 644 | 0.4− | 1.4+ | 2006 10 02 | 703 | 0.6− | 0.1− |
| 2002 04 10 | 704 | 0.6− | 0.0 | 2004 01 12 | 644 | 0.3− | 1.2+ | 2006 10 02 | 703 | 0.9− | 0.1− |
| 2002 04 10 | 704 | 0.0 | 0.3+ | 2004 01 12 | 644 | 0.2− | 1.1+ | 2006 10 02 | 703 | 0.7− | 0.7− |
| 2002 04 10 | 704 | 0.2+ | 1.3+ | 2005 03 09 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 04 16 | 704 | 0.2+ | 0.1+ | 2005 03 09 | 704 | 0.2− | 1.1+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 04 16 | 704 | 0.2− | 0.2+ | 2005 03 09 | 704 | 0.7− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2002 04 16 | 704 | 0.4− | 0.1+ | 2005 03 09 | 704 | (2.1+ | 0.6+) | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 04 16 | 704 | 1.2− | 0.2+ | 2005 03 10 | 699 | 0.4+ | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2002 05 07 | 699 | 0.8+ | 0.9+ | 2005 03 10 | 699 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 05 07 | 699 | 0.6+ | 0.1− | 2005 03 10 | 699 | 1.0+ | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 05 07 | 699 | 0.2+ | 0.4+ | 2005 03 10 | 699 | (1.9+ | 1.0+) | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 05 07 | 699 | 0.3− | 0.5+ | 2005 03 16 | 704 | (0.6+ | 1.7+) | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 05 08 | 704 | 0.6− | 0.2+ | 2005 03 16 | 704 | 0.7+ | 1.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 05 08 | 704 | 0.4+ | 0.6− | 2005 03 16 | 704 | 0.7+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 05 08 | 704 | 0.3− | 0.2+ | 2005 04 02 | 703 | (2.2− | 0.4−) | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2002 05 08 | 704 | 0.3+ | 0.3+ | 2005 04 02 | 703 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.6− | 0.5+ |
| 2002 05 13 | 704 | 1.0+ | 1.4+ | 2005 04 02 | 703 | 1.0− | 1.1+ | 2006 10 21 | 703 | 0.2− | 0.4+ |
| 2002 05 13 | 704 | 0.3+ | 0.1+ | 2005 04 02 | 703 | 1.1− | 1.3− | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2002 05 13 | 704 | 0.4− | 0.3+ | 2005 04 06 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.5+ |
| 2002 05 13 | 704 | (1.1+ | 1.9+) | 2005 04 06 | 644 | 0.7+ | 0.7+ | 2006 10 28 | 703 | 0.4+ | 0.5+ |
| 2002 05 16 | 608 | 0.9+ | 1.2− | 2005 04 06 | 644 | 0.4+ | 0.8+ | 2006 10 28 | 703 | 0.7− | 0.0 |
| 2002 05 16 | 608 | 1.1+ | 0.9− | 2005 04 11 | 699 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.6− | 0.7+ |
| 2002 05 16 | 608 | 1.0+ | 1.0− | 2005 04 11 | 699 | 0.6+ | 1.0+ | 2006 10 28 | 703 | 0.1− | 0.1+ |
| 2002 05 18 | 704 | 0.8+ | 0.2+ | 2005 04 11 | 699 | 0.7+ | 1.5+ | | | | |
| 2002 05 18 | 704 | 0.6− | 0.1+ | 2005 04 11 | 699 | (0.0 | 1.6+) | | | | |

**(137212)∗ 1999 NB$_6$ = 2002 JB$_{123}$**

Discovered 1999 July 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31255)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 47.80150 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.29286665 | $\omega$ | 170.54883 | | +0.52709589 | | +0.84411338 |
| *a* | 2.2457225 | $\Omega$ | 131.18941 | | −0.78795685 | | +0.52873605 |
| *e* | 0.2106557 | *i* | 7.49774 | | −0.31826707 | | +0.08894261 |
| *P* | 3.37 | *H* | 16.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.5+ | 0.7− | 2003 11 24 | 691 | 0.1− | 0.0 | 2006 09 21 | 699 | (2.2+ | 0.6−) |
| 1999 07 13 | 704 | 0.1+ | 0.6− | 2003 11 24 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.4+ |
| 1999 07 13 | 704 | 0.0 | 0.1+ | 2003 11 24 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 1999 07 13 | 704 | 0.0 | 0.4− | 2003 12 16 | 691 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 1999 07 13 | 704 | 0.1− | 0.4− | 2003 12 16 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.8− | 0.3+ |
| 1999 07 16 | 704 | 0.5+ | 0.6− | 2003 12 16 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.3+ |
| 1999 07 16 | 704 | 0.5+ | 0.4− | 2005 03 12 | 704 | (1.4+ | 2.5+) | 2006 09 29 | 699 | 0.0 | 0.1+ |
| 1999 07 16 | 704 | 0.1+ | 0.5− | 2005 03 12 | 704 | (0.6+ | 1.6+) | 2006 09 29 | 699 | 0.6− | 0.1+ |
| 1999 07 16 | 704 | 0.3+ | 0.3− | 2005 03 12 | 704 | 0.3− | 0.6+ | 2006 09 30 | 704 | 1.1− | 0.6+ |
| 1999 07 16 | 704 | 0.0 | 0.2− | 2005 03 12 | 704 | 0.9+ | 1.4+ | 2006 09 30 | 704 | 0.5+ | 0.4+ |
| 1999 08 03 | 691 | 0.1− | 0.6+ | 2005 03 16 | 703 | 0.7+ | 1.0+ | 2006 09 30 | 704 | 0.4+ | 0.7+ |
| 1999 08 03 | 691 | 0.4− | 0.4+ | 2005 03 16 | 703 | 1.1− | 0.3+ | 2006 09 30 | 704 | 0.5− | 0.2+ |
| 1999 08 03 | 691 | 0.2− | 0.5+ | 2005 03 16 | 703 | (1.6− | 0.1−) | 2006 09 30 | 704 | 0.0 | 0.7+ |
| 1999 09 03 | 699 | 1.2− | 0.5+ | 2005 03 16 | 703 | 0.4− | 0.9+ | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 1999 09 03 | 699 | 1.1+ | 0.9+ | 2006 08 19 | 699 | 0.5− | 0.5+ | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 1999 09 03 | 699 | 0.3+ | 1.2− | 2006 08 19 | 699 | (1.9+ | 0.3+) | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 2002 04 10 | 704 | 0.4+ | 0.4+ | 2006 08 19 | 699 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2002 04 10 | 704 | 0.8+ | 0.6+ | 2006 08 19 | 699 | 0.5− | 0.6− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 04 10 | 704 | 0.1− | 0.8+ | 2006 09 18 | 703 | 0.8− | 1.0− | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 04 10 | 704 | (0.6+ | 1.6+) | 2006 09 18 | 703 | 0.4− | 0.4− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 05 06 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 1.1− | 0.5− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 05 06 | 644 | 0.4+ | 0.7+ | 2006 09 18 | 703 | (2.4− | 1.0−) | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 05 06 | 644 | 0.2+ | 0.7+ | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 05 07 | 704 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.5+ | 1.0+ |
| 2002 05 07 | 704 | 0.6+ | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.2− | 1.0+ |
| 2002 05 07 | 704 | 0.2− | 0.5+ | 2006 09 21 | 699 | (2.2+ | 2.5−) | 2006 10 28 | 703 | 1.1+ | 0.1+ |
| 2002 05 07 | 704 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.9− |
| 2002 05 07 | 704 | 0.7+ | 0.9+ | 2006 09 21 | 699 | 1.2+ | 0.3− | | | | |

**(137213)∗ 1999 NX$_{10}$**

Discovered 1999 July 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 45.10471 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.30449831 | $\omega$ | 66.04257 | | +0.99406448 | | +0.04492740 |
| *a* | 2.1881619 | $\Omega$ | 291.25940 | | −0.08355824 | | +0.89852693 |
| *e* | 0.1443190 | *i* | 6.10308 | | +0.06966946 | | +0.43661297 |
| *P* | 3.24 | *H* | 16.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 12 | 691 | 0.1+ | 0.1+ | 2001 02 17 | 608 | (1.6+ | 1.1+) | 2004 01 24 | 704 | 0.3+ | 0.4− |
| 1991 01 12 | 691 | 0.4− | 0.1− | 2003 12 18 | 644 | 0.5+ | 0.7+ | 2004 01 24 | 704 | 0.6+ | 0.8− |
| 1991 01 12 | 691 | 0.4− | 0.1− | 2003 12 18 | 644 | 0.1− | 0.4+ | 2004 01 24 | 704 | 0.3+ | 0.7− |
| 1996 11 14 | 691 | 0.1+ | 0.2+ | 2003 12 18 | 644 | 0.4− | 0.8+ | 2004 01 24 | 704 | 0.7+ | 0.2− |
| 1996 11 14 | 691 | 0.5+ | 0.1+ | 2003 12 19 | 704 | 0.1− | 0.3+ | 2005 05 13 | E12 | 0.3− | 1.0+ |
| 1996 11 14 | 691 | 0.1+ | 0.1+ | 2003 12 19 | 704 | 0.7− | 0.9− | 2005 05 13 | E12 | 0.3+ | 0.7+ |
| 1999 07 13 | 704 | 0.2− | 0.6− | 2003 12 19 | 704 | 0.0 | 0.5+ | 2005 05 13 | E12 | 0.4− | 0.5+ |
| 1999 07 13 | 704 | 1.8− | 0.2+ | 2003 12 19 | 704 | 0.2− | 0.9+ | 2005 06 26 | 644 | 0.3+ | 0.3+ |
| 1999 07 13 | 704 | 1.1− | 0.2+ | 2003 12 22 | 691 | 0.1+ | 0.1− | 2005 06 26 | 644 | 0.6+ | 0.6+ |
| 1999 07 13 | 704 | 0.3− | 1.3+ | 2003 12 22 | 691 | 0.1+ | 0.1− | 2005 06 26 | 644 | 0.9+ | 0.5+ |
| 1999 07 13 | 704 | 0.0 | 1.2+ | 2003 12 22 | 691 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.4+ | 0.1+ |
| 1999 07 16 | 704 | 0.6− | 0.2− | 2003 12 29 | 699 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.3− | 0.1− |
| 1999 07 16 | 704 | 0.2− | 0.0 | 2003 12 29 | 699 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.7− |
| 1999 07 16 | 704 | 0.7− | 1.4+ | 2003 12 29 | 699 | 0.4+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1999 09 09 | 704 | 0.6− | 0.1+ | 2003 12 29 | 699 | 0.6+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.4+ |
| 1999 09 09 | 704 | 0.6+ | 0.3− | 2004 01 19 | 699 | 0.7− | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 1999 09 09 | 704 | 0.1− | 0.6− | 2004 01 19 | 699 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.7− |
| 1999 09 09 | 704 | 0.3+ | 1.1− | 2004 01 19 | 699 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 1999 09 14 | 704 | 0.2+ | 0.1− | 2004 01 19 | 699 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.8+ |
| 1999 09 14 | 704 | 0.1− | 0.2− | 2004 01 21 | 704 | 0.3+ | 0.1− | 2006 11 22 | 704 | 1.4− | 0.2+ |
| 1999 09 14 | 704 | 0.8+ | 0.1− | 2004 01 21 | 704 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 1999 09 14 | 704 | 0.6+ | 0.6+ | 2004 01 21 | 704 | 0.1− | 1.1+ | 2006 11 22 | 704 | 0.2− | 1.1+ |
| 2001 02 17 | 608 | (1.5+ | 1.6+) | 2004 01 21 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.9+ |
| 2001 02 17 | 608 | 1.4+ | 1.4+ | 2004 01 21 | 704 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.6− | 1.6+ |

**(137214)∗ 1999 NF$_{33}$**

Discovered 1999 July 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.60293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29627253 | $\omega$ | 201.53924 | | +0.70434981 | +0.69360736 | |
| $a$ | 2.2284786 | $\Omega$ | 113.61023 | | −0.62484151 | +0.70674780 | |
| $e$ | 0.2367589 | $i$ | 9.48514 | | −0.33684480 | +0.13934265 | |
| $P$ | 3.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 09 | 703 | 0.7+ | 0.7− | 2002 05 06 | 644 | (0.5+ | 1.8+) | 2005 04 16 | 703 | 0.1− | 0.2+ |
| 1999 06 09 | 703 | 1.0+ | 2.0+ | 2002 05 06 | 644 | 0.2+ | 1.1+ | 2005 04 16 | 703 | 1.0− | 0.2− |
| 1999 06 09 | 703 | 0.5− | 1.3+ | 2002 05 07 | 704 | 0.2+ | 1.2− | 2006 09 30 | 699 | 0.0 | 0.5+ |
| 1999 06 09 | 703 | 1.1− | 0.7+ | 2002 05 07 | 704 | 0.6+ | 0.7− | 2006 09 30 | 699 | 0.7+ | 0.7− |
| 1999 06 09 | 703 | 0.7+ | 0.3− | 2002 05 07 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 1999 06 09 | 703 | 0.9− | 0.6− | 2002 05 07 | 704 | (0.2− | 1.5−) | 2006 09 30 | 699 | 0.5+ | 1.4+ |
| 1999 06 09 | 703 | 0.4− | 0.2− | 2002 05 07 | 704 | 0.3+ | 1.0− | 2006 09 30 | 703 | 0.7− | 0.4− |
| 1999 06 09 | 703 | 0.0 | 0.2+ | 2002 05 27 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 1999 07 14 | 704 | 0.4+ | 0.3+ | 2002 05 27 | 644 | 0.6+ | 0.2+ | 2006 09 30 | 699 | 0.5+ | 0.3+ |
| 1999 07 14 | 704 | 0.3+ | 0.5+ | 2002 05 27 | 644 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.1− |
| 1999 07 14 | 704 | 0.4− | 0.7+ | 2002 06 06 | 699 | 0.9− | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 1999 07 14 | 704 | 0.6+ | 0.1+ | 2002 06 06 | 699 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 1999 07 16 | 704 | 0.2− | 0.5− | 2002 06 06 | 699 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 1999 07 16 | 704 | 0.7− | 0.0 | 2002 06 06 | 699 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 1999 07 16 | 704 | 0.1+ | 0.3+ | 2002 06 09 | 644 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.5+ |
| 1999 08 12 | 699 | 0.1+ | 0.2+ | 2002 06 09 | 644 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 1999 08 12 | 699 | 1.1− | 1.1+ | 2002 06 09 | 644 | 0.2+ | 0.8+ | 2006 10 22 | 703 | 0.5− | 1.2+ |
| 1999 08 12 | 699 | 0.9+ | 0.6− | 2002 06 10 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.4+ | 0.1+ |
| 1999 09 11 | 704 | 0.6− | 0.0 | 2002 06 10 | 704 | 0.2− | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.6+ |
| 1999 09 11 | 704 | 0.0 | 0.0 | 2002 06 10 | 704 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.3− |
| 1999 09 11 | 704 | 0.6+ | 0.8− | 2002 06 10 | 704 | 0.3− | 0.6+ | 2006 11 13 | 703 | 0.6− | 0.1− |
| 1999 09 11 | 704 | 0.6− | 0.5− | 2003 11 21 | 291 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 0.3+ | 0.3+ |
| 1999 09 11 | 704 | 0.2− | 0.3− | 2003 11 21 | 291 | 0.0 | 0.6+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2002 04 10 | 704 | 0.3+ | 1.2+ | 2003 11 21 | 291 | 0.1− | 0.7+ | 2006 11 13 | 703 | 0.1− | 0.4+ |
| 2002 04 10 | 704 | 0.1+ | 0.8+ | 2005 04 02 | 703 | (1.6− | 0.1−) | 2006 11 13 | 703 | (1.7− | 0.4−) |
| 2002 04 10 | 704 | 0.1+ | 0.3+ | 2005 04 02 | 703 | (1.7− | 0.3+) | 2006 11 19 | 703 | 0.7− | 0.9− |
| 2002 04 12 | 644 | 0.1+ | 0.1− | 2005 04 02 | 703 | 0.4+ | 0.2− | 2006 11 19 | 703 | 0.8− | 0.3+ |
| 2002 04 12 | 644 | 0.2+ | 0.1+ | 2005 04 02 | 703 | 1.1− | 0.9+ | 2006 11 19 | 703 | 0.1− | 0.7− |
| 2002 04 12 | 644 | 0.0 | 0.0 | 2005 04 16 | 703 | (0.9− | 2.1−) | 2006 11 19 | 703 | 0.2− | 0.4+ |
| 2002 05 06 | 644 | 0.5+ | 1.3+ | 2005 04 16 | 703 | (1.7− | 0.3+) | | | | |

**(137215)∗ 1999 NU$_{36}$ = 2002 LT$_{16}$**

Discovered 1999 July 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46370)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.18164 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30278066 | $\omega$ | 287.01693 | | +0.95482726 | +0.29151536 | |
| $a$ | 2.1964296 | $\Omega$ | 56.06952 | | −0.23930919 | +0.86934529 | |
| $e$ | 0.1650791 | $i$ | 3.98433 | | −0.17617044 | +0.39907088 | |
| $P$ | 3.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.2− | 0.3+ | 2004 01 17 | 644 | 0.3− | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.7− |
| 1999 07 14 | 704 | 0.1− | 0.6+ | 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.6+ | 0.4+ |
| 1999 07 14 | 704 | 0.0 | 0.8+ | 2004 01 22 | 704 | 1.0− | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.5− |
| 1999 07 14 | 704 | 0.3+ | 0.7+ | 2004 01 22 | 704 | 0.7− | 1.1+ | 2006 11 15 | 703 | 0.8− | 0.0 |
| 1999 07 14 | 704 | 0.2+ | 1.0+ | 2004 01 22 | 704 | (1.7− | 1.5+) | 2006 11 15 | 703 | (0.7+ | 1.6+) |
| 1999 07 16 | 704 | 0.2+ | 0.8+ | 2004 01 22 | 704 | (1.3− | 1.6+) | 2006 11 15 | 703 | 0.9− | 1.1− |
| 1999 07 16 | 704 | 0.1− | 0.3+ | 2005 04 06 | G96 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.3− | 1.0− |
| 1999 07 16 | 704 | 0.7− | 0.9+ | 2005 04 06 | G96 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 06 06 | 704 | 0.4− | 0.6+ | 2005 04 06 | G96 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2002 06 06 | 704 | 0.5− | 0.3− | 2005 04 06 | G96 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 06 06 | 704 | 0.8− | 0.7− | 2005 05 01 | 644 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.7− |
| 2002 06 06 | 704 | 0.8− | 0.3− | 2005 05 01 | 644 | 0.4+ | 0.0 | 2006 11 18 | 704 | (0.6− | 2.2+) |
| 2002 06 06 | 704 | 0.8− | 0.9− | 2005 05 01 | 644 | 0.7+ | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.4− |
| 2002 06 08 | 704 | 0.3+ | 0.4+ | 2005 05 13 | 704 | 0.7+ | 0.1− | 2006 11 18 | 704 | 0.6− | 1.4+ |
| 2002 06 08 | 704 | 0.2− | 0.7+ | 2005 05 13 | 704 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.8+ | 0.1− |
| 2002 06 08 | 704 | 0.2+ | 0.3+ | 2005 05 13 | 704 | 0.7+ | 0.5+ | 2006 11 18 | 704 | 0.6− | 1.1+ |
| 2002 06 08 | 704 | (0.6+ | 2.0+) | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.1− |
| 2003 12 18 | 691 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 11 18 | 704 | (0.4− | 1.7+) |
| 2003 12 18 | 691 | 0.2+ | 0.1− | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.2+ |
| 2003 12 18 | 691 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 11 18 | 704 | (0.4− | 1.7+) |
| 2003 12 22 | 704 | 0.1− | 0.4+ | 2005 06 14 | G96 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2003 12 22 | 704 | 0.5+ | 0.6− | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 0.0 | 0.4+ | 2005 06 14 | G96 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 1.4+ | 0.1+ | 2005 06 14 | G96 | 0.2− | 0.1+ | 2006 11 21 | 704 | (2.2+ | 2.3−) |
| 2003 12 22 | 704 | 0.4− | 0.6− | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.5− |
| 2003 12 27 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.4− | 1.3+ |
| 2003 12 27 | 704 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2003 12 27 | 691 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.9− | 0.7+ |
| 2003 12 27 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2003 12 27 | 704 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 24 | H07 | 0.5+ | 0.4+ |
| 2003 12 27 | 704 | 1.2+ | 0.6− | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 24 | H07 | 0.2+ | 0.3+ |
| 2003 12 27 | 704 | 0.5+ | 1.1+ | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 24 | H07 | 0.2+ | 0.4+ |
| 2003 12 27 | 704 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.9+ | 0.2+ |
| 2003 12 27 | 704 | (1.5+ | 0.9+) | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 12 01 | 704 | 1.0+ | 0.2+ |
| 2003 12 27 | 704 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 12 01 | 704 | 0.1+ | 0.2− |
| 2003 12 27 | 704 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2004 01 17 | 644 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.0 | | | | |

**(137216)∗ 1999 NV$_{62}$ = 2002 JN$_{47}$**

Discovered 1999 July 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31256)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.06058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29565996 | $\omega$ | 86.55069 | | +0.82127762 | +0.55875680 | |
| $a$ | 2.2315556 | $\Omega$ | 239.44721 | | −0.56204697 | +0.75765667 | |
| $e$ | 0.2180141 | $i$ | 7.69433 | | −0.09801163 | +0.33726430 | |
| $P$ | 3.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 12 | 703 | 0.6+ | 0.3+ | 2002 06 08 | 704 | 0.9− | 0.9+ | 2006 10 29 | 704 | 1.0− | 0.8+ |
| 1999 06 12 | 703 | 0.8− | 0.6+ | 2002 06 08 | 704 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.7+ | 0.3− |
| 1999 06 12 | 703 | 0.2+ | 0.7+ | 2002 06 08 | 704 | 0.9− | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 1999 06 12 | 703 | 0.7− | 1.8+ | 2002 06 09 | 704 | 1.0+ | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 1999 07 13 | 704 | 0.7− | 0.4− | 2002 06 09 | 704 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1999 07 13 | 704 | 1.4+ | 0.8− | 2002 06 09 | 704 | 0.7+ | 1.2+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 1999 07 13 | 704 | 0.7− | 0.4− | 2002 06 09 | 704 | 0.7+ | 1.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 1999 07 13 | 704 | 0.3+ | 1.4− | 2002 06 09 | 704 | 0.5− | 1.0+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 1999 07 22 | 704 | 0.3+ | 0.5− | 2002 06 09 | 608 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 1999 07 22 | 704 | 0.6+ | 0.0 | 2002 06 09 | 608 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 1999 07 22 | 704 | 0.1+ | 0.7+ | 2002 06 09 | 608 | 0.3+ | 0.1− | 2006 11 14 | 703 | 0.3− | 0.5− |
| 1999 07 22 | 704 | 0.1+ | 0.8− | 2002 06 17 | 735 | 0.3− | 1.0+ | 2006 11 14 | 703 | 0.1− | 0.5+ |
| 1999 10 08 | 704 | 0.8− | 0.0 | 2002 06 17 | 735 | 0.3+ | 0.7+ | 2006 11 14 | 703 | 1.1+ | 0.1+ |
| 1999 10 08 | 704 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.1+ |
| 1999 10 08 | 704 | 0.5+ | 1.3− | 2006 10 12 | 644 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.7+ |
| 2001 01 20 | 608 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.5+ |
| 2001 01 20 | 608 | 0.5+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.6+ |
| 2001 01 20 | 608 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2002 05 09 | 704 | (3.4+ | 2.0+) | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2002 05 09 | 704 | (3.4+ | 1.5+) | 2006 10 21 | 704 | 0.8+ | 1.4+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2002 05 09 | 704 | (2.7+ | 1.1+) | 2006 10 21 | 704 | 0.7+ | 0.1− | 2006 11 18 | 704 | 0.5− | 1.3+ |
| 2002 05 09 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2002 05 09 | 644 | 0.1+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | (1.6− | 0.3+) |
| 2002 05 09 | 644 | 0.2+ | 0.8+ | 2006 10 21 | 704 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2002 05 11 | 704 | 0.0 | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2002 05 11 | 704 | 0.1− | 0.1+ | 2006 10 21 | 704 | 0.3− | 0.6+ | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 2002 05 11 | 704 | 0.5− | 0.3− | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2002 05 11 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.2+ |
| 2002 05 13 | 704 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2002 05 13 | 704 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2002 05 13 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2002 05 13 | 704 | (1.7− | 0.5−) | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 05 18 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.7+ |
| 2002 05 18 | 644 | 0.2+ | 0.8+ | 2006 10 27 | 703 | 0.1− | 0.4− | 2006 11 22 | 104 | 0.3+ | 0.7+ |
| 2002 05 18 | 644 | (0.3+ | 2.7+) | 2006 10 27 | 703 | 0.1+ | 0.6− | 2006 11 22 | 104 | 0.6− | 0.5+ |
| 2002 05 30 | 699 | (0.2− | 1.6+) | 2006 10 27 | 703 | 0.3+ | 0.1+ | 2006 11 22 | 104 | 0.4+ | 0.1+ |
| 2002 05 30 | 699 | 0.6− | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2002 05 30 | 699 | 0.8+ | 0.5+ | 2006 10 29 | 704 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 2.4− | 1.8+ |
| 2002 05 30 | 699 | 0.4+ | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.5+ | 2006 11 29 | 704 | 1.9+ | 2.0− |
| 2002 06 08 | 704 | 0.4− | 0.5+ | 2006 10 29 | 704 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.9− | 0.8− |
| 2002 06 08 | 704 | 1.3− | 0.8+ | 2006 10 29 | 704 | 0.3− | 0.4+ | | | | |

**(137217)∗ 1999 NH$_{64}$**

Discovered 1999 July 8 at Wise Observatory, Mitzpeh Ramon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.47139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28550031 | $\omega$ | 159.86113 | | +0.97975608 | −0.19192678 | |
| $a$ | 2.2841870 | $\Omega$ | 211.37535 | | +0.16541934 | +0.93632676 | |
| $e$ | 0.1264808 | $i$ | 6.27868 | | +0.11275844 | +0.29403454 | |
| $P$ | 3.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 08 | 097 | 0.2+ | 0.1+ | 1999 10 09 | 704 | 1.2− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.5− |
| 1999 07 08 | 097 | 0.5+ | 0.3+ | 1999 10 09 | 704 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.3+ |
| 1999 07 09 | 097 | 0.1+ | 0.2+ | 1999 10 13 | 645 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 1999 07 11 | 097 | 0.2− | 0.1− | 1999 10 13 | 645 | 0.1− | 0.3− | 2006 09 21 | 704 | 0.6+ | 0.1+ |
| 1999 07 11 | 097 | 0.2− | 0.1− | 1999 10 15 | 704 | 0.3+ | 0.4− | 2006 09 21 | 704 | 0.4− | 1.3+ |
| 1999 07 11 | 097 | 0.3− | 0.0 | 1999 10 15 | 704 | 0.4+ | 0.3− | 2006 09 21 | 704 | 0.3− | 0.1− |
| 1999 07 12 | 097 | 0.2− | 0.0 | 1999 10 15 | 704 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.3− | 0.6+ |
| 1999 08 11 | 097 | 0.0 | 0.5− | 1999 10 15 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.6+ |
| 1999 08 11 | 097 | 0.1− | 0.4− | 1999 10 15 | 704 | 0.1+ | 0.3− | 2006 09 25 | 704 | 0.1− | 0.8+ |
| 1999 09 04 | 703 | 0.1+ | 1.6+ | 2001 02 20 | 608 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.6− | 0.5+ |
| 1999 09 04 | 703 | 1.0− | 0.0 | 2001 02 20 | 608 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.3− | 0.7+ |
| 1999 09 04 | 703 | 0.6− | 0.4+ | 2001 02 20 | 608 | 0.3− | 0.0 | 2006 09 27 | 699 | 0.3+ | 0.3+ |
| 1999 09 04 | 703 | (2.7− | 0.4−) | 2003 12 01 | 704 | 0.3− | 0.8− | 2006 09 27 | 699 | 0.0 | 0.3+ |
| 1999 09 08 | 704 | 0.1− | 0.1− | 2003 12 01 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 699 | 0.5− | 0.1+ |
| 1999 09 08 | 704 | 0.6+ | 1.4+ | 2003 12 01 | 704 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 1999 09 08 | 704 | 0.1− | 0.7− | 2003 12 01 | 704 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.8− | 0.6+ |
| 1999 09 08 | 704 | 0.1+ | 0.6+ | 2005 03 15 | G96 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.2+ |
| 1999 09 08 | 704 | 0.3− | 0.2+ | 2005 03 15 | G96 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.5+ |
| 1999 09 09 | 704 | 0.7+ | 0.8− | 2005 03 15 | G96 | 0.8+ | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 1999 09 09 | 704 | 0.5+ | 0.9− | 2005 03 15 | G96 | 0.5− | 0.3− | 2006 10 17 | 703 | 1.3− | 0.8− |
| 1999 09 09 | 704 | 0.9+ | 0.2− | 2005 05 01 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.9− | 0.4− |
| 1999 09 09 | 704 | 0.3− | 0.1− | 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.1+ | 0.4+ |
| 1999 09 09 | 704 | 0.3− | 0.6+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 09 10 | 704 | 0.4+ | 0.3− | 2005 05 01 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 09 10 | 704 | 0.5+ | 0.7+ | 2005 05 01 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1999 09 10 | 704 | 0.1+ | 0.0 | 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 09 11 | 704 | 0.1− | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 09 11 | 704 | 0.1− | 0.0 | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 1999 09 11 | 704 | 0.3+ | 0.7− | 2005 05 14 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 1999 09 11 | 704 | 0.1+ | 1.2+ | 2005 05 14 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 1999 09 11 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 1999 10 01 | 703 | 0.4− | 0.4− | 2006 09 16 | 683 | (3.2+ | 0.4−) | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1999 10 01 | 703 | 0.1− | 0.5− | 2006 09 16 | 703 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.6+ |
| 1999 10 01 | 703 | 0.6+ | 0.3+ | 2006 09 16 | 703 | 0.6− | 0.7− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 1999 10 01 | 703 | 1.1+ | 0.1+ | 2006 09 16 | 683 | 1.1+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 1999 10 07 | 704 | 0.0 | 0.3− | 2006 09 16 | 683 | (1.5+ | 1.7−) | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 1999 10 07 | 704 | 0.9− | 1.0+ | 2006 09 18 | 704 | 0.9+ | 0.5+ | 2006 11 13 | G96 | 0.3− | 0.0 |
| 1999 10 07 | 704 | 0.1− | 0.6+ | 2006 09 18 | 704 | (0.1− | 2.7+) | 2006 11 13 | G96 | 0.3− | 0.3− |
| 1999 10 07 | 704 | 0.9+ | 0.7+ | 2006 09 18 | 704 | 1.0− | 0.9+ | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 1999 10 07 | 704 | 1.2+ | 0.1+ | 2006 09 18 | 699 | 0.7+ | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 1999 10 09 | 704 | 1.2+ | 0.5− | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.8+ | 0.1− | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 1999 10 09 | 704 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.6+ | | | | |

**(137218)∗ 1999 OQ$_5$**

Discovered 1999 July 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.40348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29236901 | $\omega$ | 187.13681 | | +0.85640119 | +0.50278222 | |
| $a$ | 2.2482702 | $\Omega$ | 141.93399 | | −0.46379707 | +0.84906707 | |
| $e$ | 0.1766552 | $i$ | 10.97835 | | −0.22686841 | +0.16215780 | |
| $P$ | 3.37 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.4+ | 0.2+ | 2002 05 18 | 704 | 0.7− | 0.5+ | 2006 09 30 | 704 | 0.6+ | 0.1+ |
| 1999 07 13 | 704 | 0.7− | 0.3− | 2002 05 30 | 644 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.7+ | 0.2+ |
| 1999 07 13 | 704 | 0.6− | 0.5+ | 2002 05 30 | 644 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.2+ |
| 1999 07 13 | 704 | 0.2− | 0.3+ | 2002 05 30 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 1999 07 13 | 704 | 1.0− | 0.4− | 2005 04 12 | 699 | 0.7+ | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.5+ |
| 1999 07 21 | 699 | 0.8+ | 0.2− | 2005 04 12 | 699 | 0.4− | 0.9+ | 2006 10 02 | 703 | 0.1− | 0.3+ |
| 1999 07 21 | 699 | 0.1− | 0.3+ | 2005 04 12 | 699 | 1.4+ | 0.9+ | 2006 10 02 | 703 | 0.1− | 0.2+ |
| 1999 07 21 | 699 | 0.2+ | 0.3+ | 2005 04 12 | 699 | 1.2+ | 1.4+ | 2006 10 02 | 703 | 1.1− | 0.3+ |
| 1999 07 23 | 704 | 0.7+ | 0.8− | 2006 07 21 | 704 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2− |
| 1999 07 23 | 704 | 0.3− | 1.3− | 2006 07 21 | 704 | 0.9− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 1999 07 23 | 704 | 0.6− | 0.9− | 2006 07 21 | 704 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 1999 08 07 | 699 | 0.2− | 0.3− | 2006 08 29 | D35 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 1999 08 07 | 699 | 0.5− | 0.3− | 2006 08 29 | D35 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 1999 08 07 | 699 | 0.3− | 0.4− | 2006 08 29 | D35 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 1999 09 11 | 704 | 0.1+ | 1.7+ | 2006 09 21 | 699 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 1999 09 11 | 704 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 1999 09 11 | 704 | 1.6+ | 0.3+ | 2006 09 21 | 699 | 0.6− | 0.1− | 2006 10 21 | 703 | 0.7− | 0.6+ |
| 1999 09 11 | 704 | 0.8+ | 0.3+ | 2006 09 21 | 699 | 0.2− | 0.8+ | 2006 10 21 | 703 | 0.9− | 0.3+ |
| 2002 05 07 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 1.4+ | 1.5− | 2006 10 31 | 703 | 0.0 | 0.2− |
| 2002 05 07 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | (2.4+ | 0.8+) | 2006 10 31 | 703 | 0.6+ | 0.2− |
| 2002 05 07 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.9− | 0.2+ | 2006 10 31 | 703 | 0.4− | 0.9+ |
| 2002 05 07 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.2+ | 2006 10 31 | 703 | 0.2− | 0.1+ |
| 2002 05 18 | 704 | 0.4+ | 0.1− | 2006 09 29 | 699 | 0.4− | 0.3+ | 2006 11 06 | 644 | 0.0 | 0.3+ |
| 2002 05 18 | 704 | 0.3− | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.5+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2002 05 18 | 704 | 0.6− | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.4+ | 2006 11 06 | 644 | 0.2+ | 0.7+ |
| 2002 05 18 | 704 | 0.5− | 1.0+ | 2006 09 30 | 704 | 0.2+ | 0.3+ | | | | |

**(137219)∗ 1999 PX$_2$ = 2004 BS$_{73}$**

Discovered 1999 Aug. 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55867)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.22978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31304613 | $\omega$ | 90.09441 | | +0.99194431 | −0.12181380 | |
| $a$ | 2.1481461 | $\Omega$ | 276.90244 | | +0.09776976 | +0.91067249 | |
| $e$ | 0.1798281 | $i$ | 2.00625 | | +0.08054544 | +0.39476197 | |
| $P$ | 3.15 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 691 | 0.1− | 0.2+ | 2004 01 24 | 704 | (1.8+ | 0.0 ) | 2005 05 30 | E12 | (0.5+ | 1.5+) |
| 1993 10 10 | 691 | 0.2− | 0.0 | 2004 01 24 | 704 | 0.6+ | 0.2+ | 2005 05 30 | E12 | 0.2+ | 0.9− |
| 1993 10 10 | 691 | 0.1+ | 0.1+ | 2004 01 24 | 704 | 0.3+ | 1.2+ | 2005 06 14 | G96 | 0.4− | 0.0 |
| 1999 07 16 | 704 | 0.0 | 0.1− | 2004 01 26 | 699 | 0.6+ | 0.4+ | 2005 06 14 | G96 | 0.5− | 0.2− |
| 1999 07 16 | 704 | 0.4+ | 0.9− | 2004 01 26 | 699 | 0.4+ | 0.6+ | 2005 06 14 | G96 | 0.6− | 1.2− |
| 1999 07 16 | 704 | 0.2+ | 0.8+ | 2004 01 26 | 699 | 1.5+ | 0.1+ | 2005 06 14 | G96 | 0.7− | 0.3− |
| 1999 07 16 | 704 | 0.6+ | 0.3+ | 2004 01 26 | 699 | 0.4− | 0.7− | 2005 06 26 | 644 | 0.7+ | 0.3− |
| 1999 07 16 | 704 | 0.3+ | 1.0+ | 2004 02 11 | 644 | 0.5+ | 0.7+ | 2005 06 26 | 644 | 0.4+ | 0.0 |
| 1999 08 03 | 691 | 0.1+ | 1.0+ | 2004 02 11 | 691 | 0.2+ | 0.7+ | 2005 06 26 | 644 | 0.4+ | 0.2+ |
| 1999 08 03 | 691 | 0.1− | 0.3+ | 2004 02 11 | 644 | 0.8− | 1.0+ | 2006 10 31 | G96 | 0.4− | 0.1− |
| 1999 08 03 | 691 | 0.2+ | 0.5+ | 2004 02 11 | 691 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 1999 08 08 | 691 | 0.8+ | 0.2+ | 2004 02 11 | 644 | 0.2+ | 0.7+ | 2006 10 31 | G96 | 0.2− | 0.7− |
| 1999 08 08 | 691 | 0.4− | 0.7+ | 2004 02 11 | 691 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 1999 08 08 | 691 | 0.2− | 0.8+ | 2004 02 26 | 704 | 0.6+ | 1.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 1999 08 12 | 691 | 0.4− | 0.7− | 2004 02 26 | 704 | 0.9+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 1999 08 12 | 691 | 0.7− | 0.1+ | 2004 02 26 | 704 | 0.3+ | 1.0+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 1999 08 12 | 691 | 0.5− | 0.2+ | 2004 02 26 | 704 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.7− | 0.1− |
| 2004 01 24 | 704 | 0.0 | 1.5+ | 2005 05 30 | E12 | 0.3+ | 0.1+ | | | | |
| 2004 01 24 | 704 | 0.5+ | 1.4+ | 2005 05 30 | E12 | 0.5− | 0.2− | | | | |

**(137220)∗ 1999 PF$_8$ = 1996 TD$_{42}$ = 2000 YT$_{24}$**

Discovered 1999 Aug. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 26906, *MPO* 93752)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.79873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30796857 | $\omega$ | 192.05496 | | +0.41000386 | +0.91078754 | |
| $a$ | 2.1716931 | $\Omega$ | 102.16599 | | −0.83263520 | +0.39551285 | |
| $e$ | 0.1721177 | $i$ | 2.85029 | | −0.37231097 | +0.11847215 | |
| $P$ | 3.20 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 809 | 0.7+ | 0.6+ | 2002 06 06 | 704 | 0.6+ | 1.1− | 2005 05 03 | 704 | 1.1+ | 0.7+ |
| 1996 10 07 | 809 | 1.3+ | 0.3+ | 2002 06 06 | 704 | (0.3+ | 1.7−) | 2005 05 03 | 704 | 1.0+ | 0.3− |
| 1996 10 07 | 809 | (2.4+ | 0.5−) | 2002 06 06 | 704 | (0.1− | 1.7−) | 2005 05 03 | 704 | 0.8+ | 0.4+ |
| 1996 10 08 | 809 | 1.5+ | 0.0 | 2002 06 08 | 704 | 0.5− | 0.4− | 2005 05 03 | 704 | 0.3+ | 0.2− |
| 1996 10 08 | 809 | 1.3+ | 1.3− | 2002 06 08 | 704 | 0.9− | 0.9+ | 2005 05 03 | 704 | 1.1+ | 0.2+ |
| 1996 10 08 | 809 | 1.8+ | 0.1+ | 2002 06 08 | 704 | 1.4− | 0.2− | 2005 05 13 | 691 | 0.0 | 0.0 |
| 1999 07 14 | 704 | 0.2− | 0.9+ | 2002 07 04 | 644 | (1.1− | 2.4−) | 2005 05 13 | 691 | 0.1+ | 0.2− |
| 1999 07 14 | 704 | 0.2+ | 0.6+ | 2002 07 04 | 644 | 0.1− | 0.2+ | 2005 05 13 | 691 | 0.3+ | 0.1− |
| 1999 07 14 | 704 | 0.4+ | 0.5+ | 2002 07 04 | 644 | 0.5− | 0.2+ | 2005 05 13 | 703 | 0.6− | 0.3+ |
| 1999 07 14 | 704 | 1.2+ | 0.5+ | 2004 01 28 | 691 | 0.4− | 0.1+ | 2005 05 13 | 703 | 0.1+ | 0.2+ |
| 1999 07 20 | 699 | 0.2+ | 0.2+ | 2004 01 28 | 691 | 0.4− | 0.1+ | 2005 05 13 | 703 | 0.1− | 0.4− |
| 1999 07 20 | 699 | 0.7+ | 0.4+ | 2004 01 28 | 691 | 0.2− | 0.2− | 2005 05 13 | 703 | 1.2− | 0.1− |
| 1999 07 20 | 699 | 0.1+ | 0.1+ | 2005 03 16 | G96 | 0.0 | 0.4− | 2005 06 28 | 644 | 0.1− | 0.4− |
| 1999 08 12 | 699 | 1.6− | 0.5− | 2005 03 16 | G96 | 0.6− | 0.1+ | 2005 06 28 | 644 | 0.0 | 0.1− |
| 1999 08 12 | 699 | 0.5− | 1.5+ | 2005 03 16 | G96 | 0.5− | 0.5− | 2005 06 28 | 644 | 0.5+ | 0.1− |
| 1999 08 12 | 699 | 0.2+ | 0.2− | 2005 03 16 | G96 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.3+ |
| 1999 08 13 | 703 | 1.5− | 0.5+ | 2005 04 13 | 699 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.7− | 0.1+ |
| 1999 08 13 | 703 | 1.5− | 0.3+ | 2005 04 13 | 699 | (1.2+ | 1.5−) | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 1999 08 13 | 703 | 1.0− | 1.2+ | 2005 04 13 | 699 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.0 |
| 1999 08 13 | 703 | 1.2− | 1.1+ | 2005 04 13 | 704 | 0.6+ | 0.6+ | 2006 11 12 | G96 | 0.3+ | 0.0 |
| 2000 12 28 | 691 | 0.3− | 0.1+ | 2005 04 13 | 699 | 0.6+ | 0.8− | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2000 12 28 | 691 | 0.4− | 0.2+ | 2005 04 13 | 704 | 0.5+ | 0.6+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2000 12 28 | 691 | 0.3− | 0.1+ | 2005 04 13 | 704 | 0.2+ | 0.6− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2000 12 30 | 691 | 0.1− | 0.1− | 2005 04 13 | 704 | 0.1− | 0.3− | 2006 11 19 | H07 | 0.9+ | 0.3− |
| 2000 12 30 | 691 | 0.1− | 0.3+ | 2005 04 13 | 704 | 0.4+ | 0.2+ | 2006 11 19 | H07 | (0.6− | 2.6−) |
| 2000 12 30 | 691 | 0.4+ | 1.0+ | 2005 04 15 | 699 | 0.3− | 0.9+ | 2006 11 19 | H07 | (0.2− | 1.8+) |
| 2002 06 04 | 644 | 0.1− | 0.2+ | 2005 04 15 | 699 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2002 06 04 | 644 | 0.1+ | 0.2+ | 2005 04 15 | 699 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.3− | 1.0+ |
| 2002 06 04 | 644 | 1.2+ | 0.8− | 2005 04 15 | 699 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.1+ |
| 2002 06 06 | 704 | 0.6− | 0.5− | 2005 04 18 | 691 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2002 06 06 | 704 | 0.8− | 0.5− | 2005 04 18 | 703 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2− | 1.0+ |
| 2002 06 06 | 704 | 0.3− | 0.4+ | 2005 04 18 | 703 | 0.4+ | 0.7+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2002 06 06 | 704 | 0.6+ | 0.1+ | 2005 04 18 | 691 | 0.5+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2002 06 06 | 704 | 1.1− | 0.3+ | 2005 04 18 | 703 | 0.4− | 0.6+ | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2002 06 06 | 704 | 1.3− | 0.3+ | 2005 04 18 | 703 | 0.7− | 0.5+ | 2006 12 01 | G96 | 0.2+ | 0.3+ |
| 2002 06 06 | 704 | 0.1− | 0.8− | 2005 04 18 | 691 | 0.5+ | 0.1+ | | | | |

**(137221)∗ 1999 RX**

Discovered 1999 Sept. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.85596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28406310 | $\omega$ | 99.33645 | | +0.98491803 | −0.16135047 | |
| $a$ | 2.2918851 | $\Omega$ | 269.96724 | | +0.12380794 | +0.90944402 | |
| $e$ | 0.1650015 | $i$ | 3.58160 | | +0.12086383 | +0.38324613 | |
| $P$ | 3.47 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.5+ | 0.0 | 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.5− | 0.0 |
| 1999 08 12 | 699 | 0.5− | 0.3− | 2003 12 18 | 704 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.2− | 0.9− |
| 1999 08 12 | 699 | 0.1− | 0.4− | 2003 12 18 | 704 | 0.5+ | 0.1+ | 2006 09 12 | 699 | 0.4− | 0.4+ |
| 1999 09 04 | 703 | 0.9− | 0.5− | 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 09 12 | 699 | 1.3+ | 1.0+ |
| 1999 09 04 | 703 | 0.6− | 0.9− | 2003 12 21 | 704 | 0.5+ | 0.2+ | 2006 09 12 | 699 | 0.6− | 0.4+ |
| 1999 09 04 | 703 | 0.8+ | 0.2− | 2003 12 21 | 704 | 0.6+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1− |
| 1999 09 04 | 703 | 0.4− | 0.6+ | 2003 12 21 | 704 | 0.7+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.0 |
| 1999 09 05 | 699 | 0.5− | 0.7− | 2003 12 24 | 704 | 0.7+ | 1.1+ | 2006 09 17 | 691 | 0.3− | 0.1+ |
| 1999 09 05 | 699 | 0.2+ | 0.8+ | 2003 12 24 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.3+ |
| 1999 09 05 | 703 | 0.4+ | 0.9+ | 2003 12 24 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.2+ |
| 1999 09 05 | 699 | 0.3+ | 0.1− | 2005 03 09 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.6− |
| 1999 09 05 | 703 | 0.2+ | 0.3+ | 2005 03 09 | 691 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.5− | 0.4− |
| 1999 09 05 | 703 | 0.3− | 0.2− | 2005 03 09 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.8+ | 0.5+ |
| 1999 09 05 | 703 | 0.7− | 1.2− | 2006 08 18 | 704 | 0.9+ | 0.7− | 2006 09 18 | 704 | 0.1− | 0.2+ |
| 1999 09 07 | 704 | 0.4+ | 1.3+ | 2006 08 18 | 704 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.3+ | 0.3+ |
| 1999 09 07 | 704 | 0.4+ | 0.1+ | 2006 08 18 | 704 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.0 | 0.5+ |
| 1999 09 07 | 704 | 0.2+ | 1.0− | 2006 08 18 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.6+ |
| 1999 09 08 | 703 | 0.9− | 0.7+ | 2006 08 24 | 704 | 0.6+ | 0.3− | 2006 09 19 | 699 | (1.6− | 0.3+) |
| 1999 09 08 | 703 | 0.3+ | 0.3+ | 2006 08 24 | 704 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.8+ |
| 1999 09 08 | 703 | 0.8− | 0.7− | 2006 08 24 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 1999 09 08 | 703 | 0.4+ | 0.3− | 2006 08 24 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 0.1+ | 0.6− | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 0.1+ | 0.6− | 2006 08 27 | 699 | 0.0 | 0.4+ | 2006 09 19 | 691 | (3.4− | 2.6+) |
| 1999 09 09 | 704 | 0.5+ | 0.3− | 2006 08 27 | 699 | 0.6− | 0.2+ | 2006 09 25 | 704 | 0.7+ | 1.0+ |
| 1999 09 09 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 09 25 | 704 | 1.0+ | 0.0 |
| 1999 09 09 | 704 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.1− |
| 1999 10 13 | 704 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.6− | 0.2− | 2006 09 25 | 704 | 0.7+ | 0.3− |
| 1999 10 13 | 704 | 0.4+ | 0.4− | 2006 08 28 | 703 | (1.8− | 1.5+) | 2006 09 25 | 704 | 0.2+ | 0.2+ |
| 1999 10 13 | 704 | 0.2+ | 1.0+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.2− | 0.3+ |
| 1999 10 13 | 704 | 0.4+ | 0.4+ | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.6+ | 0.1+ |
| 1999 10 13 | 704 | 0.9+ | 1.0+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.3+ |
| 2002 06 12 | 644 | 0.6− | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.7+ | 0.3− |
| 2002 06 12 | 644 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 703 | 0.5− | 0.4− |
| 2002 06 12 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 703 | 1.3− | 0.5+ |
| 2003 11 21 | 704 | 0.7+ | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.5+ | 2006 10 20 | 703 | 0.9− | 0.5+ |
| 2003 11 21 | 704 | 0.8+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 703 | 0.0 | 1.2+ |
| 2003 11 21 | 704 | 0.9+ | 0.4− | 2006 08 30 | 704 | 0.4+ | 0.6− | 2006 10 21 | 703 | 0.7− | 0.4− |
| 2003 11 21 | 704 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.6− | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.3− |
| 2003 11 21 | 704 | 0.5+ | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.6+ | 0.6− |
| 2003 11 23 | 704 | (1.7+ | 0.8−) | 2006 08 30 | 704 | 0.0 | 0.5− | 2006 10 21 | 703 | (0.4− | 1.7−) |
| 2003 11 23 | 704 | 0.9+ | 0.5− | 2006 08 30 | 704 | 0.8− | 0.1+ | 2006 11 10 | 704 | (2.1− | 0.4+) |
| 2003 11 23 | 704 | 0.7+ | 0.9− | 2006 09 01 | 704 | 0.5− | 1.0− | 2006 11 10 | 704 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 704 | 1.3+ | 0.5+ | 2006 09 01 | 704 | 0.2+ | 0.5− | 2006 11 10 | 704 | 0.1+ | 0.1+ |
| 2003 11 26 | 291 | 0.8− | 0.1+ | 2006 09 01 | 704 | 0.6− | 0.0 | 2006 11 10 | 704 | 0.8− | 0.5+ |
| 2003 11 26 | 291 | 1.1− | 0.0 | 2006 09 01 | 704 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2003 11 26 | 291 | 0.8− | 0.1− | 2006 09 11 | 703 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2003 12 18 | 704 | 0.4+ | 0.3+ | 2006 09 11 | 703 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.6− |

**(137222)∗ 1999 RB$_1$**

Discovered 1999 Sept. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.84364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29359510 | $\omega$ | 54.11656 | | −0.18804974 | +0.98151880 | |
| $a$ | 2.2420064 | $\Omega$ | 205.11462 | | −0.92590349 | −0.18921007 | |
| $e$ | 0.1654970 | $i$ | 4.79389 | | −0.32762789 | −0.02864252 | |
| $P$ | 3.36 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 0.0 | 0.3+ | 2005 03 13 | 703 | 0.6− | 0.5+ | 2006 10 11 | 691 | 0.2− | 0.1+ |
| 1999 09 04 | 703 | 0.6+ | 0.1+ | 2005 03 13 | 703 | 0.4− | 0.8+ | 2006 10 11 | 691 | 0.4− | 0.6+ |
| 1999 09 04 | 703 | 0.4− | 1.3+ | 2005 03 17 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.4− | 0.1+ |
| 1999 09 04 | 703 | 0.0 | 1.1+ | 2005 03 17 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 1999 09 05 | 703 | 0.3+ | 1.4+ | 2005 03 17 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.4− |
| 1999 09 05 | 703 | 0.9− | 0.7+ | 2005 04 04 | 704 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 1999 09 05 | 703 | 0.3− | 1.0+ | 2005 04 04 | 704 | 0.9− | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.5− |
| 1999 09 05 | 703 | 0.3+ | 0.0 | 2005 04 04 | 704 | 0.1− | 1.0+ | 2006 10 19 | 691 | 0.2+ | 0.5− |
| 1999 09 07 | 704 | 0.1+ | 0.9− | 2005 04 04 | 704 | 0.1− | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 1999 09 07 | 704 | 0.7− | 0.2− | 2005 04 04 | 704 | 0.8− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 0.8− | 0.1− | 2005 04 07 | 704 | 1.0+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 1999 09 07 | 704 | 0.1+ | 0.4− | 2005 04 07 | 704 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.0 |
| 1999 09 07 | 704 | 0.1− | 0.1+ | 2005 04 07 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 1999 09 09 | 704 | 0.2− | 0.4− | 2005 04 07 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 1999 09 09 | 704 | 0.2− | 0.4− | 2005 04 07 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 1999 09 09 | 704 | 0.1− | 0.4+ | 2005 04 09 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.4− |
| 1999 09 09 | 704 | 0.6+ | 0.8+ | 2005 04 09 | 704 | 0.5+ | 0.5− | 2006 10 23 | 691 | 0.5− | 0.5− |
| 1999 09 09 | 704 | 0.5+ | 1.6+ | 2005 04 09 | 704 | 0.7+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.4− |
| 1999 09 14 | 704 | 0.3+ | 0.3− | 2005 04 09 | 704 | 0.1+ | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 1999 09 14 | 704 | 0.8+ | 0.2+ | 2005 04 09 | 704 | 0.8+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 1999 09 14 | 704 | 0.5− | 0.2− | 2005 04 12 | 704 | 0.6− | 1.0+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1999 09 14 | 704 | 0.3+ | 0.3− | 2005 04 12 | 704 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 1999 09 14 | 703 | 0.4− | 0.3− | 2005 04 12 | 704 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 1999 09 14 | 703 | 0.4+ | 0.2+ | 2005 04 12 | 704 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 1999 09 14 | 703 | 0.4− | 0.0 | 2005 04 12 | 704 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 1999 09 14 | 703 | 0.2− | 0.5− | 2005 04 13 | 699 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 1999 10 15 | 704 | 0.6− | 0.0 | 2005 04 13 | 699 | 0.4+ | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 1999 10 15 | 704 | 0.9− | 0.1+ | 2005 04 13 | 699 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 1999 10 15 | 704 | 0.2− | 0.2+ | 2005 04 18 | 703 | 0.1− | 0.0 | 2006 11 11 | 703 | (1.7− | 0.5+) |
| 1999 10 15 | 704 | 0.8+ | 1.4− | 2005 04 18 | 703 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.8+ |
| 2002 06 09 | 704 | 1.1− | 1.1+ | 2005 04 18 | 703 | 0.5− | 0.6+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2002 06 09 | 704 | 0.2− | 0.9+ | 2005 04 18 | 703 | 0.3− | 1.3+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2002 06 09 | 704 | 0.2+ | 1.3+ | 2005 05 04 | 703 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.0− | 0.4+ |
| 2002 06 09 | 704 | (2.0+ | 0.6+) | 2005 05 04 | 703 | 0.4− | 0.8− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2002 06 13 | 704 | 0.4+ | 0.8+ | 2005 05 04 | 703 | 0.6− | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2002 06 13 | 704 | 0.5+ | 0.2+ | 2005 05 04 | 703 | (2.5− | 0.3+) | 2006 11 11 | 703 | 0.3+ | 1.4+ |
| 2002 06 13 | 704 | 0.2+ | 0.3+ | 2005 05 06 | G96 | 0.5− | 0.1− | 2006 11 13 | 291 | 0.2+ | 0.6+ |
| 2002 06 13 | 704 | 0.5+ | 0.3+ | 2005 05 06 | G96 | 0.3− | 0.3+ | 2006 11 13 | 291 | 0.0 | 0.4+ |
| 2002 07 05 | 704 | 0.2+ | 0.2+ | 2005 05 06 | G96 | 0.3− | 0.3+ | 2006 11 13 | 291 | 0.1+ | 0.4+ |
| 2002 07 05 | 704 | 0.1+ | 0.8+ | 2005 05 06 | G96 | 0.3− | 0.1− | 2006 11 13 | 291 | 0.2+ | 0.4+ |
| 2002 07 05 | 704 | 0.7+ | 0.4+ | 2006 09 15 | 703 | 0.4− | 0.1− | 2006 11 13 | 291 | 0.2+ | 0.6+ |
| 2002 07 05 | 704 | 0.7− | 0.4+ | 2006 09 15 | 703 | 0.4+ | 0.1− | 2006 11 13 | 291 | 0.2+ | 0.5+ |
| 2002 07 05 | 704 | 0.8− | 0.1+ | 2006 09 15 | 703 | 0.8− | 1.1+ | 2006 11 13 | 704 | 0.0 | 0.0 |
| 2003 12 01 | 704 | 0.7− | 0.6+ | 2006 09 15 | 703 | 1.0− | 0.0 | 2006 11 13 | 704 | 0.0 | 0.6+ |
| 2003 12 01 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 13 | 704 | 0.2− | 0.5+ |
| 2003 12 01 | 704 | 0.5− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 11 13 | 291 | 0.2+ | 0.3+ |
| 2003 12 01 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 13 | 291 | 0.3+ | 0.4+ |
| 2005 03 03 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 291 | 0.0 | 0.2+ |
| 2005 03 03 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 13 | 291 | 0.1+ | 0.1+ |
| 2005 03 03 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 291 | 0.2+ | 0.2+ |
| 2005 03 07 | 704 | 0.5+ | 0.3+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 13 | 291 | 0.3+ | 0.2+ |
| 2005 03 07 | 704 | 1.4+ | 0.6+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2005 03 07 | 704 | 0.1+ | 0.4− | 2006 09 24 | 691 | 0.3− | 0.4+ | 2006 11 21 | 704 | (0.4− | 1.8+) |
| 2005 03 07 | 704 | 0.6+ | 0.2+ | 2006 09 27 | 704 | 1.1+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2005 03 07 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 1.2+ | 1.1+ | 2006 11 21 | 704 | 1.0− | 0.7+ |
| 2005 03 09 | 699 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.3+ | 2006 11 27 | 703 | 0.9− | 0.5− |
| 2005 03 09 | 699 | 0.5+ | 0.4+ | 2006 09 27 | 704 | (1.7+ | 2.4+) | 2006 11 27 | 703 | 1.0+ | 0.1− |
| 2005 03 09 | 699 | 1.4+ | 0.1− | 2006 10 02 | 691 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.4− |
| 2005 03 09 | 699 | 0.4+ | 0.6+ | 2006 10 02 | 691 | 0.4− | 0.3+ | 2006 11 27 | 703 | 0.9− | 0.1− |
| 2005 03 13 | 703 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.2+ | | | | |
| 2005 03 13 | 703 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.2+ | | | | |

**(137223)∗ 1999 RM$_7$ = 1999 SZ$_{24}$ = 2001 FD$_{115}$**

Discovered 1999 Sept. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 4024), M. E. Sansaturio (d, *ibid.*), G. V. Williams (*MPO* 11532)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.46353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28428343 | $\omega$ | 60.90176 | | +0.37072161 | −0.92855584 | |
| $a$ | 2.2907007 | $\Omega$ | 7.41151 | | +0.79377194 | +0.30633043 | |
| $e$ | 0.0669777 | $i$ | 8.33346 | | +0.48217382 | +0.20963232 | |
| $P$ | 3.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.0 | 0.6− | 2003 12 18 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 1999 09 03 | 691 | 0.0 | 0.1+ | 2003 12 18 | 704 | 0.6− | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.3− |
| 1999 09 03 | 691 | 0.2+ | 0.0 | 2003 12 18 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 1.3− | 0.1− |
| 1999 09 08 | 691 | 0.1− | 0.4− | 2003 12 18 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 1.0− | 0.2− |
| 1999 09 08 | 691 | 0.2− | 0.3− | 2003 12 18 | 704 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.1+ |
| 1999 09 08 | 691 | 0.1− | 0.3− | 2003 12 18 | 704 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.5− | 0.3− |
| 1999 09 30 | 703 | 0.1+ | 0.3+ | 2003 12 18 | 704 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1999 09 30 | 703 | 0.3+ | 0.1+ | 2003 12 28 | 704 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 1999 09 30 | 703 | 0.9− | 1.9+ | 2003 12 28 | 704 | 0.9+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 1999 09 30 | 703 | 1.0+ | 0.5+ | 2003 12 28 | 704 | 1.5+ | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.5+ |
| 1999 10 09 | 704 | 1.2+ | 0.1− | 2003 12 28 | 704 | 0.8+ | 0.0 | 2006 09 29 | 704 | 1.2+ | 0.2− |
| 1999 10 09 | 704 | 0.3+ | 1.0+ | 2003 12 28 | 704 | 0.8+ | 0.3+ | 2006 09 29 | 704 | 0.8+ | 0.1+ |
| 1999 10 09 | 704 | 1.1− | 0.1+ | 2003 12 30 | 704 | 0.2− | 0.4− | 2006 09 29 | 704 | 0.8+ | 0.5− |
| 1999 10 09 | 704 | 1.1+ | 0.5+ | 2003 12 30 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 1999 10 09 | 704 | 0.4− | 0.4− | 2003 12 30 | 704 | (1.9+ | 0.7+) | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 2001 03 03 | 704 | 0.6+ | 1.1+ | 2003 12 30 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 03 03 | 704 | (1.6− | 0.7+) | 2003 12 30 | 704 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2001 03 03 | 704 | 0.5+ | 0.0 | 2004 01 19 | 704 | 0.2− | 1.0− | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2001 03 03 | 704 | 0.6+ | 1.0+ | 2004 01 19 | 704 | 1.2− | 1.0− | 2006 10 12 | 644 | 0.4+ | 0.3+ |
| 2001 03 19 | 704 | 0.3+ | 0.0 | 2004 01 19 | 704 | 0.8+ | 0.4− | 2006 10 17 | 703 | (0.1+ | 1.6+) |
| 2001 03 19 | 704 | 0.0 | 0.8+ | 2004 01 19 | 704 | (2.1− | 1.6+) | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 2001 03 19 | 704 | 1.1− | 0.5+ | 2006 09 14 | 703 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.3− |
| 2001 03 19 | 704 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.8+ |
| 2001 03 19 | 704 | 0.4+ | 0.4− | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2001 03 20 | 608 | 0.3+ | 0.7− | 2006 09 14 | 703 | 0.2− | 1.1+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2001 03 20 | 608 | 0.3+ | 0.6− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2001 03 20 | 608 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2003 12 17 | 704 | 0.3− | 0.9− | 2006 09 15 | 691 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2003 12 17 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.6− | 1.3− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2003 12 17 | 704 | 0.1− | 0.4− | 2006 09 18 | 699 | 1.4+ | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2003 12 17 | 704 | 0.5− | 0.9− | 2006 09 18 | 699 | 0.6− | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2003 12 17 | 704 | 0.4− | 0.6− | 2006 09 18 | 699 | 0.6− | 0.8+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2003 12 18 | 704 | 0.1+ | 0.4− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1− |

**(137224)∗ 1999 RW$_9$**

Discovered 1999 Sept. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.96495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27622382 | $\omega$ | 214.76528 | | +0.82477597 | −0.56545943 | |
| $a$ | 2.3350452 | $\Omega$ | 179.66779 | | +0.53576440 | +0.78119094 | |
| $e$ | 0.1611602 | $i$ | 4.74838 | | +0.18083448 | +0.26456821 | |
| $P$ | 3.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | 0.2− | 0.0 | 1999 10 15 | 704 | 0.6− | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.2− |
| 1998 04 27 | 691 | 0.2− | 0.0 | 1999 10 15 | 704 | 0.1− | 0.7− | 2006 08 30 | 704 | 0.0 | 0.2− |
| 1998 04 27 | 691 | 0.5− | 0.1+ | 1999 10 15 | 704 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 0.3− | 0.5− |
| 1999 09 04 | 699 | 0.4− | 0.5+ | 1999 10 15 | 704 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.0 |
| 1999 09 04 | 699 | 0.4− | 1.0+ | 2001 03 29 | 691 | 0.5+ | 0.6+ | 2006 08 30 | 704 | 0.2+ | 0.3+ |
| 1999 09 04 | 699 | 0.9− | 1.8− | 2001 03 29 | 691 | 0.5+ | 0.7+ | 2006 08 30 | 704 | 0.0 | 0.3+ |
| 1999 09 07 | 691 | 0.3− | 0.0 | 2001 03 29 | 691 | 0.5+ | 0.7+ | 2006 08 30 | 704 | 0.5+ | 0.3− |
| 1999 09 07 | 704 | 1.0+ | 0.0 | 2001 04 27 | 691 | 0.5+ | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.3− |
| 1999 09 07 | 691 | 0.6− | 0.1+ | 2001 04 27 | 691 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.8− |
| 1999 09 07 | 704 | 0.3+ | 1.1+ | 2001 04 27 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.6+ |
| 1999 09 07 | 704 | 0.6+ | 0.6− | 2003 12 01 | 704 | 0.4− | 0.2+ | 2006 09 17 | 704 | 0.2+ | 0.2− |
| 1999 09 07 | 691 | 0.4− | 0.1+ | 2003 12 01 | 704 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 1.0− | 0.1− |
| 1999 09 07 | 704 | 0.8+ | 0.5+ | 2003 12 01 | 704 | 1.0− | 0.1+ | 2006 09 17 | 704 | 0.7− | 0.3+ |
| 1999 09 08 | 691 | 0.1+ | 0.2+ | 2003 12 01 | 704 | 0.5− | 0.0 | 2006 09 17 | 704 | 0.0 | 0.0 |
| 1999 09 08 | 691 | 0.0 | 0.3+ | 2003 12 01 | 704 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.1+ |
| 1999 09 08 | 691 | 0.1+ | 0.1+ | 2005 03 14 | G96 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.4+ |
| 1999 09 09 | 704 | 0.2+ | 0.7+ | 2005 03 14 | G96 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.5+ | 0.4+ |
| 1999 09 09 | 704 | 0.2+ | 0.1− | 2005 03 14 | G96 | 0.4− | 0.3− | 2006 09 18 | 699 | 0.5− | 0.0 |
| 1999 09 09 | 704 | 0.4+ | 0.1+ | 2005 03 14 | G96 | 0.6− | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.1− |
| 1999 09 09 | 704 | 0.9+ | 0.3+ | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.5+ |
| 1999 09 09 | 704 | 0.6− | 0.6+ | 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.1+ |
| 1999 09 29 | 703 | 0.1− | 0.5+ | 2005 04 16 | 691 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.5+ |
| 1999 09 29 | 703 | 0.7− | 0.5+ | 2006 08 18 | 704 | 1.0− | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.9+ |
| 1999 09 29 | 703 | 0.0 | 0.1+ | 2006 08 18 | 699 | 0.6+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 1999 09 29 | 703 | 0.8− | 0.1+ | 2006 08 18 | 704 | 0.6+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 1999 10 02 | 704 | 0.2− | 1.0+ | 2006 08 18 | 704 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 1999 10 02 | 704 | 0.5+ | 1.6+ | 2006 08 18 | 699 | 1.0− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 1999 10 02 | 704 | 0.2− | 0.1+ | 2006 08 18 | 699 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.8+ | 0.3− |
| 1999 10 02 | 704 | 0.8− | 0.0 | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 1.2+ | 0.1− |
| 1999 10 07 | 703 | 0.6+ | 0.2+ | 2006 08 22 | 644 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2+ |
| 1999 10 07 | 703 | 0.7− | 0.8+ | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 1999 10 07 | 703 | 0.5+ | 0.2− | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1999 10 07 | 703 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 1999 10 07 | 704 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 1999 10 07 | 704 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 1999 10 07 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 1999 10 07 | 704 | 0.9+ | 0.3+ | 2006 08 28 | 699 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 1999 10 07 | 704 | 1.0+ | 0.2− | 2006 08 28 | 699 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 1999 10 15 | 704 | 0.9− | 0.0 | 2006 08 28 | 699 | 0.1− | 0.4+ | | | | |

**(137225)∗ 1999 RB$_{15}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.09010 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29500864 | $\omega$ | 236.85733 | | +0.84273690 | −0.53813872 | |
| $a$ | 2.2348389 | $\Omega$ | 155.69060 | | +0.50467131 | +0.78060634 | |
| $e$ | 0.2047873 | $i$ | 1.97476 | | +0.18735364 | +0.31790009 | |
| $P$ | 3.34 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 17 | 691 | 0.3− | 0.7+ | 1999 09 10 | 704 | 0.4− | 0.6− | 1999 09 11 | 704 | 0.9+ | 0.3− |
| 1999 08 17 | 691 | 0.6− | 0.8+ | 1999 09 10 | 704 | 0.0 | 0.9+ | 1999 09 11 | 704 | 0.5+ | 0.8− |
| 1999 08 17 | 691 | 0.3− | 0.9+ | 1999 09 10 | 704 | 0.2− | 0.3− | 1999 09 11 | 704 | 0.6+ | 0.0 |
| 1999 08 21 | 691 | 0.5− | 0.8+ | 1999 09 10 | 704 | 0.4+ | 0.5+ | 1999 09 11 | 704 | 0.5+ | 0.0 |
| 1999 08 21 | 691 | 0.4− | 0.9+ | 1999 09 10 | 704 | 0.6+ | 0.9+ | 1999 09 11 | 704 | 0.0 | 0.2+ |
| 1999 08 21 | 691 | 0.6− | 0.4+ | 1999 09 10 | 704 | 1.0+ | 0.0 | 1999 09 11 | 704 | 0.2+ | 1.0− |
| 1999 09 07 | 704 | 0.4− | 0.7+ | 1999 09 10 | 704 | 0.8+ | 0.0 | 1999 09 11 | 704 | 1.6+ | 1.2− |
| 1999 09 07 | 704 | 0.1− | 1.1− | 1999 09 10 | 704 | 1.0+ | 0.4− | 1999 09 11 | 704 | 0.6+ | 0.4− |
| 1999 09 07 | 704 | 0.3+ | 1.4− | 1999 09 10 | 704 | 0.3− | 0.2+ | 1999 09 11 | 704 | 1.0+ | 0.4− |
| 1999 09 08 | 704 | 0.0 | 0.4− | 1999 09 10 | 704 | 0.9− | 0.6+ | 1999 09 11 | 704 | 0.3− | 0.3− |
| 1999 09 08 | 704 | 0.2+ | 0.7+ | 1999 09 10 | 704 | 0.4+ | 0.9+ | 1999 09 11 | 704 | 0.8+ | 0.5− |
| 1999 09 08 | 704 | 0.9− | 0.8− | 1999 09 11 | 704 | 0.2+ | 0.2+ | 1999 09 11 | 704 | 0.6+ | 0.5− |
| 1999 09 08 | 704 | 0.5+ | 0.0 | 1999 09 11 | 704 | 0.4+ | 0.1− | 1999 09 11 | 704 | 0.9+ | 0.8− |
| 1999 09 08 | 704 | 0.3+ | 0.3+ | 1999 09 11 | 704 | 0.8+ | 1.1− | 1999 09 11 | 704 | 0.5+ | 0.6− |
| 1999 09 08 | 704 | 0.2+ | 0.2+ | 1999 09 11 | 704 | 0.5+ | 0.2− | 1999 09 11 | 704 | 0.3− | 0.6− |
| 1999 09 08 | 704 | 0.4+ | 0.0 | 1999 09 11 | 704 | 0.3+ | 0.1− | 1999 09 14 | 704 | 0.2+ | 0.2− |
| 1999 09 08 | 704 | 0.4− | 0.3+ | 1999 09 11 | 704 | 0.0 | 0.4+ | 1999 09 14 | 704 | 0.5+ | 0.0 |
| 1999 09 08 | 704 | 0.1− | 0.7+ | 1999 09 11 | 704 | 0.1+ | 0.0 | 1999 09 14 | 704 | 0.7+ | 0.2+ |
| 1999 09 09 | 704 | 0.4+ | 0.5+ | 1999 09 11 | 704 | 0.1+ | 0.2− | 1999 09 14 | 704 | 0.1− | 0.4− |
| 1999 09 09 | 704 | 0.3+ | 0.0 | 1999 09 11 | 704 | 0.4− | 0.4− | 1999 09 14 | 704 | 0.1− | 0.1+ |
| 1999 09 09 | 704 | 1.6− | 0.5− | 1999 09 11 | 704 | 0.6+ | 0.0 | 2001 03 16 | 691 | 0.5− | 0.2− |
| 1999 09 09 | 704 | 0.2− | 0.1− | 1999 09 11 | 704 | 0.6+ | 0.5− | 2001 03 16 | 691 | 0.4− | 0.4+ |
| 1999 09 09 | 704 | 0.2+ | 0.3+ | 1999 09 11 | 704 | 1.0− | 0.4+ | 2001 03 16 | 691 | 1.0+ | 0.1+ |
| 1999 09 09 | 704 | 0.1+ | 0.4− | 1999 09 11 | 704 | 0.2+ | 0.7− | 2001 05 22 | 807 | 1.1+ | 0.2− |
| 1999 09 09 | 704 | 0.7− | 0.4− | 1999 09 11 | 704 | 0.8+ | 0.4− | 2001 05 23 | 807 | 0.1− | 0.0 |
| 1999 09 09 | 704 | 0.1+ | 0.1− | 1999 09 11 | 704 | 0.3− | 0.3− | 2004 01 24 | 704 | 0.5− | 0.3+ |
| 1999 09 09 | 704 | 0.6+ | 1.0− | 1999 09 11 | 704 | 0.2+ | 0.2− | 2004 01 24 | 704 | 1.3+ | 1.2− |
| 1999 09 09 | 704 | 0.5− | 0.1+ | 1999 09 11 | 704 | 0.9− | 0.3+ | 2004 01 24 | 704 | 1.1+ | 0.3− |
| 1999 09 09 | 704 | 0.8+ | 0.5− | 1999 09 11 | 704 | 1.2− | 0.0 | 2004 01 24 | 704 | 0.0 | 0.9+ |
| 1999 09 09 | 704 | 0.1− | 0.7+ | 1999 09 11 | 704 | 0.1− | 0.3− | 2004 03 01 | 691 | 0.1+ | 0.4+ |
| 1999 09 09 | 704 | 0.5+ | 0.4+ | 1999 09 11 | 704 | 0.7+ | 0.6− | 2004 03 01 | 691 | 0.1− | 0.1− |
| 1999 09 09 | 704 | 0.1− | 0.6− | 1999 09 11 | 704 | 0.0 | 0.0 | 2004 03 01 | 691 | 0.6− | 0.0 |
| 1999 09 09 | 704 | 0.2− | 0.0 | 1999 09 11 | 704 | 0.2+ | 0.6+ | 2005 05 15 | G96 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 1.2− | 0.1+ | 1999 09 11 | 704 | 0.3+ | 0.4− | 2005 05 15 | G96 | 0.4+ | 0.1− |
| 1999 09 09 | 704 | 0.9+ | 0.3+ | 1999 09 11 | 704 | 0.1− | 0.3− | 2005 05 15 | G96 | 0.9+ | 0.3− |
| 1999 09 09 | 704 | 0.3− | 0.6+ | 1999 09 11 | 704 | 0.6− | 0.1+ | 2005 05 15 | G96 | 0.4− | 0.0 |
| 1999 09 09 | 704 | 0.1+ | 0.8− | 1999 09 11 | 704 | 1.2− | 0.5− | 2005 05 19 | G96 | 0.3− | 0.6+ |
| 1999 09 09 | 704 | 0.2+ | 0.1+ | 1999 09 11 | 704 | 0.2+ | 1.2− | 2005 05 19 | G96 | 0.1− | 0.0 |
| 1999 09 09 | 704 | 0.1+ | 0.6− | 1999 09 11 | 704 | 0.1+ | 0.3− | 2005 05 19 | G96 | 0.1− | 0.1+ |
| 1999 09 09 | 704 | 1.0− | 0.1+ | 1999 09 11 | 704 | 0.4+ | 0.5− | 2005 05 19 | G96 | 0.0 | 0.4+ |
| 1999 09 09 | 704 | 0.5− | 0.9+ | 1999 09 11 | 704 | 0.8− | 0.9− | 2006 11 17 | 704 | 1.0− | 0.3− |
| 1999 09 09 | 704 | 0.1+ | 0.1+ | 1999 09 11 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.8− | 0.4+ |
| 1999 09 09 | 704 | 0.3− | 0.0 | 1999 09 11 | 704 | 0.1+ | 0.9− | 2006 11 17 | 704 | 0.1+ | 1.1− |
| 1999 09 09 | 704 | 0.5+ | 0.0 | 1999 09 11 | 704 | 0.9+ | 0.2− | 2006 11 17 | 704 | 0.5+ | 0.0 |
| 1999 09 09 | 704 | 0.4− | 0.0 | 1999 09 11 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.3− |
| 1999 09 09 | 704 | 0.2+ | 0.6+ | 1999 09 11 | 704 | 0.4− | 0.1+ | 2006 11 18 | 691 | 0.8+ | 0.7+ |
| 1999 09 09 | 704 | 0.0 | 0.6+ | 1999 09 11 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 1999 09 09 | 704 | 0.2+ | 0.6+ | 1999 09 11 | 704 | 0.1+ | 0.7− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 1999 09 09 | 704 | 0.6− | 0.4+ | 1999 09 11 | 704 | 0.5+ | 0.4− | 2006 11 20 | 704 | 1.1+ | 0.8+ |
| 1999 09 09 | 704 | 0.2+ | 0.1+ | 1999 09 11 | 704 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 1999 09 09 | 704 | 0.6− | 0.2− | 1999 09 11 | 704 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.4− | 0.4− |
| 1999 09 09 | 704 | 1.5− | 0.7+ | 1999 09 11 | 704 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.5− | 0.1− |
| 1999 09 09 | 704 | 0.2− | 0.4+ | 1999 09 11 | 704 | 0.4− | 0.8− | 2006 11 29 | 704 | 1.1− | 0.3+ |
| 1999 09 09 | 704 | 0.2− | 0.1− | 1999 09 11 | 704 | 0.6− | 0.4− | 2006 11 29 | 704 | 0.7− | 0.1+ |
| 1999 09 09 | 704 | 0.4+ | 0.4− | 1999 09 11 | 704 | 0.3+ | 0.9− | 2006 11 29 | 704 | 0.4− | 0.2+ |
| 1999 09 10 | 704 | 0.2+ | 0.1− | 1999 09 11 | 704 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.3+ |

**(137226)∗ 1999 RA$_{19}$ = 2002 LV$_{49}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31257)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.45928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29412935 | $\omega$ | 154.07691 | | +0.86663412 | +0.49891596 | |
| $a$ | 2.2392907 | $\Omega$ | 175.98282 | | −0.46993708 | +0.81977859 | |
| $e$ | 0.1715066 | $i$ | 4.34495 | | −0.16764382 | +0.28115108 | |
| $P$ | 3.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 10 | 292 | 1.3− | 0.6− | 2002 06 09 | 644 | 0.3+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 1999 08 10 | 292 | 1.2− | 0.8− | 2002 06 09 | 644 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 1999 08 10 | 292 | 1.1− | 1.4− | 2002 06 09 | 644 | 0.0 | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 1999 08 22 | 699 | 0.2+ | 1.5+ | 2002 07 03 | 644 | 0.4+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 699 | 0.5+ | 0.9+ | 2002 07 03 | 644 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 1999 08 22 | 699 | 0.7+ | 0.8+ | 2002 07 03 | 644 | 0.7+ | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 1999 09 05 | 699 | 0.6+ | 0.5+ | 2005 03 09 | G96 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1999 09 05 | 699 | 0.8+ | 0.1− | 2005 03 09 | G96 | 0.4− | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.4+ |
| 1999 09 05 | 699 | 0.7+ | 0.8+ | 2005 03 09 | G96 | 0.5+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 1999 09 07 | 704 | 1.3− | 0.5+ | 2005 03 09 | G96 | 1.1− | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1999 09 07 | 704 | 0.5− | 0.4+ | 2005 03 17 | 691 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 1999 09 07 | 704 | 0.4− | 0.3+ | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 1999 09 08 | 704 | 0.1− | 1.1+ | 2005 04 01 | 691 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.2+ |
| 1999 09 08 | 704 | 0.2+ | 0.1+ | 2005 04 01 | 691 | 0.3− | 0.4− | 2006 11 10 | 644 | 0.4+ | 0.4+ |
| 1999 09 08 | 704 | 0.3− | 0.2+ | 2005 04 01 | 691 | 0.0 | 0.1+ | 2006 11 13 | 104 | (0.2+ | 2.1−) |
| 1999 09 09 | 704 | 0.1+ | 0.6− | 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 11 13 | 104 | 0.7− | 0.6+ |
| 1999 09 09 | 704 | 0.7+ | 0.6− | 2005 04 12 | 691 | 0.2+ | 0.0 | 2006 11 13 | 104 | 0.3+ | 0.4− |
| 1999 09 09 | 704 | 0.2− | 0.1+ | 2005 04 12 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.8+ |
| 1999 09 09 | 704 | 0.5− | 0.9− | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 1999 09 09 | 704 | 0.2− | 0.7− | 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 1.1+ | 0.3+ |
| 1999 09 14 | 704 | 0.4+ | 1.1− | 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 1999 09 14 | 704 | 0.7+ | 0.1+ | 2005 05 11 | G96 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 1999 09 14 | 704 | 0.4+ | 0.6− | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3+ |
| 1999 09 14 | 704 | 1.0+ | 0.4− | 2005 05 11 | G96 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 1999 09 14 | 704 | 0.2+ | 0.2− | 2005 05 11 | G96 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.8− | 1.3+ |
| 2002 06 08 | 704 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2002 06 08 | 704 | 0.6− | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2002 06 08 | 704 | 0.5− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2002 06 08 | 704 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2002 06 08 | 704 | 0.1− | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | | | | |

**(137227)∗ 1999 RR$_{19}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.57205 | | (2000.0) | | | |
| $n$ | 0.28166972 | $\omega$ | 174.44423 | | +0.93234261 | +0.36082244 |
| $a$ | 2.3048497 | $\Omega$ | 164.34326 | | −0.33498025 | +0.88625509 |
| $e$ | 0.2134680 | $i$ | 4.95992 | | −0.13610839 | +0.29044635 |
| $P$ | 3.50 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 699 | 0.1+ | 0.7+ | 2005 03 12 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.6− |
| 1999 08 22 | 699 | 1.3+ | 0.6+ | 2005 04 09 | G96 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.2− |
| 1999 08 22 | 699 | 1.6+ | 1.2+ | 2005 04 09 | G96 | 0.5+ | 0.3− | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 1999 09 04 | 691 | 0.7− | 0.1− | 2005 04 09 | G96 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.4+ |
| 1999 09 04 | 691 | 0.8− | 0.2− | 2005 04 09 | G96 | 0.6+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.3+ |
| 1999 09 04 | 691 | 0.7− | 0.4− | 2005 05 10 | G96 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.1− | 1.1+ |
| 1999 09 07 | 704 | 0.4− | 0.3− | 2005 05 10 | G96 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.3− | 0.3+ |
| 1999 09 07 | 704 | 0.8+ | 0.3− | 2005 05 10 | G96 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.2− | 0.3+ |
| 1999 09 07 | 704 | 0.4− | 0.7− | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.1− |
| 1999 09 07 | 704 | 0.2+ | 0.0 | 2006 08 21 | 704 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 1999 09 07 | 704 | 0.1+ | 1.6− | 2006 08 21 | 704 | 0.6+ | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 1999 09 08 | 704 | 0.4+ | 1.7− | 2006 08 21 | 704 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.2+ |
| 1999 09 08 | 704 | 0.6+ | 0.8− | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1999 09 08 | 704 | 1.0+ | 0.7+ | 2006 08 23 | 644 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 0.6+ | 1.8+ | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 1999 09 09 | 704 | 0.0 | 0.4+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 1999 09 09 | 704 | 1.7+ | 0.7+ | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.4+ | 0.1− |
| 1999 09 09 | 704 | 1.9+ | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.4− | 0.5+ |
| 1999 09 09 | 704 | (2.3+ | 0.4+) | 2006 08 25 | 704 | 0.4− | 0.7+ | 2006 09 28 | 704 | 0.3− | 0.2− |
| 1999 09 11 | 699 | 0.6− | 0.2+ | 2006 08 25 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 1999 09 11 | 699 | 0.4− | 0.1− | 2006 08 25 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 1999 09 11 | 699 | 0.6+ | 0.3− | 2006 08 27 | 699 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.0 |
| 1999 09 14 | 704 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 1.0− | 0.3− |
| 1999 09 14 | 704 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.3+ | 0.5− | 2006 10 02 | G96 | 0.3− | 0.6− |
| 1999 09 14 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.6− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 1999 09 14 | 704 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 1999 09 14 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.3+ | 0.6− | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2002 06 02 | 644 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 06 02 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.5+ | 1.0− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2002 06 02 | 644 | 0.2− | 0.3− | 2006 09 12 | 703 | 0.6− | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2002 06 10 | 644 | 0.7− | 0.3− | 2006 09 12 | 703 | 0.5− | 0.5− | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2002 06 10 | 644 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 10 17 | 106 | 1.3+ | 0.3+ |
| 2002 06 10 | 644 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 106 | 0.4+ | 0.9+ |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 09 16 | 699 | 0.1+ | 0.5+ | 2006 10 17 | 106 | 1.0+ | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.3− | 0.4+ | 2006 10 17 | 106 | 0.4− | 0.3+ |
| 2005 03 10 | G96 | 0.1− | 0.4+ | 2006 09 16 | 699 | 0.6− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2005 03 10 | G96 | 0.5− | 0.2+ | 2006 09 16 | 699 | 0.5+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2005 03 11 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2005 03 11 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.8+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2005 03 12 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.7+ | 0.7− |

**(137228)∗ 1999 RT$_{20}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.47320 | | (2000.0) | | | |
| $n$ | 0.27213056 | $\omega$ | 27.07158 | | +0.99333639 | +0.10492688 |
| $a$ | 2.3584020 | $\Omega$ | 326.79877 | | −0.11505660 | +0.87880069 |
| $e$ | 0.1311568 | $i$ | 4.99506 | | −0.00669345 | +0.46551014 |
| $P$ | 3.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 1.3+ | 1999 10 09 | 704 | 0.8+ | 0.6− | 2005 03 13 | 691 | 0.5+ | 0.0 |
| 1999 09 07 | 704 | 0.8+ | 0.5− | 2001 01 24 | 691 | 0.4− | 0.2+ | 2005 03 13 | 691 | 0.4+ | 0.1+ |
| 1999 09 07 | 704 | 0.5− | 0.8+ | 2001 01 24 | 691 | 0.3− | 0.9+ | 2005 04 02 | 644 | 0.9+ | 0.6+ |
| 1999 09 07 | 704 | 0.4+ | 0.5+ | 2001 01 24 | 691 | 0.4− | 0.5+ | 2005 04 02 | 644 | 1.2+ | 0.1− |
| 1999 09 07 | 704 | 0.2− | 1.5+ | 2003 11 19 | 704 | 0.2+ | 0.0 | 2005 04 02 | 644 | 0.5+ | 0.9+ |
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2003 11 19 | 704 | 0.1− | 0.1− | 2006 07 25 | 644 | 0.6− | 0.6+ |
| 1999 09 07 | 704 | 0.1− | 0.6+ | 2003 11 19 | 704 | 0.4+ | 0.6− | 2006 07 25 | 644 | 0.6− | 0.7+ |
| 1999 09 07 | 704 | 0.0 | 1.1+ | 2003 11 19 | 704 | 0.2− | 0.4− | 2006 07 25 | 644 | 0.5− | 0.6+ |
| 1999 09 08 | 704 | 0.3− | 0.6− | 2003 11 19 | 704 | 0.4+ | 0.3+ | 2006 08 20 | 644 | 0.6− | 0.7+ |
| 1999 09 08 | 704 | 0.1+ | 0.8+ | 2003 11 20 | 704 | 0.5+ | 0.6+ | 2006 08 20 | 644 | 0.5− | 0.8+ |
| 1999 09 08 | 704 | 0.1− | 0.1− | 2003 11 20 | 704 | 0.8+ | 0.3+ | 2006 08 20 | 644 | 0.6− | 0.7+ |
| 1999 09 09 | 704 | 1.1− | 0.6+ | 2003 11 20 | 704 | 0.5+ | 0.8+ | 2006 08 24 | 644 | 0.5− | 0.6+ |
| 1999 09 09 | 704 | 0.4− | 0.3+ | 2003 11 20 | 704 | 0.8+ | 0.4+ | 2006 08 24 | 644 | 0.2− | 0.7+ |
| 1999 09 09 | 704 | 0.1− | 0.4− | 2003 11 20 | 704 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.0 |
| 1999 09 09 | 704 | 0.2+ | 0.3+ | 2003 12 04 | 704 | 0.3− | 0.1+ | 2006 08 29 | 704 | 0.1− | 1.0− |
| 1999 09 09 | 704 | 0.0 | 0.6+ | 2003 12 04 | 704 | 0.4− | 0.3+ | 2006 08 29 | 704 | 0.6+ | 1.5− |
| 1999 10 04 | 704 | (0.8− | 2.0−) | 2003 12 04 | 704 | 0.5− | 0.5− | 2006 08 29 | 704 | 0.9+ | 1.5− |
| 1999 10 04 | 704 | (2.1− | 1.1−) | 2003 12 04 | 704 | 0.4− | 0.2+ | 2006 08 29 | 704 | (1.1+ | 1.5−) |
| 1999 10 04 | 704 | (1.6− | 2.1−) | 2003 12 18 | 704 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.5− | 0.5− | 2003 12 18 | 704 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.1+ | 0.0 | 2003 12 18 | 704 | 0.2+ | 0.5− | 2006 11 18 | G96 | 0.9− | 0.4− |
| 1999 10 09 | 704 | 0.1− | 0.6− | 2005 03 13 | 691 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.2+ |

**(137229)∗ 1999 RD$_{21}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.16348 | | (2000.0) | | | |
| $n$ | 0.28481740 | $\omega$ | 85.96096 | | +0.38373471 | −0.92293649 |
| $a$ | 2.2878368 | $\Omega$ | 341.38286 | | +0.80466744 | +0.35044757 |
| $e$ | 0.2136565 | $i$ | 5.49902 | | +0.45305406 | +0.15929449 |
| $P$ | 3.46 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.6− | 1.5+ | 2004 02 12 | 291 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.2− | 0.1− |
| 1999 09 04 | 699 | 0.0 | 1.7+ | 2004 02 12 | 291 | 0.5− | 0.1+ | 2006 09 25 | 704 | 0.5− | 0.1− |
| 1999 09 04 | 699 | 1.0+ | 1.5+ | 2004 02 14 | 608 | 0.2+ | 0.9+ | 2006 09 25 | 683 | 0.9+ | 0.0 |
| 1999 09 07 | 704 | 0.2− | 0.7+ | 2004 02 14 | 608 | (0.8+ | 1.5+) | 2006 09 25 | 683 | 0.8+ | 0.8− |
| 1999 09 07 | 704 | 1.4+ | 0.5+ | 2004 02 14 | 608 | 0.5+ | 0.8+ | 2006 09 25 | 683 | 1.4+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.5− | 2006 09 26 | 683 | 0.7− | 0.6− | | |
| 1999 09 07 | 704 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.7+ | 0.4− | 2006 09 26 | 683 | (0.2− | 1.6−) | | |
| 1999 09 08 | 704 | 0.2− | 0.1− | 2004 02 16 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 683 | 0.7− | 0.3− | | |
| 1999 09 08 | 704 | 0.0 | 0.0 | 2004 02 16 | 704 | 1.2+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ | | |
| 1999 09 08 | 704 | 0.1− | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | | |
| 1999 10 08 | 704 | 1.3+ | 0.8− | 2004 02 23 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ | | |
| 1999 10 08 | 704 | 0.9+ | 1.7− | 2004 02 23 | 704 | 0.6+ | 0.5+ | 2006 09 28 | 683 | 0.8+ | 1.2− | | |
| 1999 10 08 | 704 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2006 09 28 | 683 | 1.3+ | 1.0− | | |
| 1999 10 09 | 704 | 0.4− | 0.6− | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 683 | 1.0+ | 0.0 | | |
| 1999 10 09 | 704 | 0.7− | 0.6− | 2004 02 23 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.1+ | | |
| 1999 10 09 | 704 | 0.3− | 0.1− | 2004 02 29 | 691 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.1− | | |
| 1999 10 09 | 704 | 0.2− | 0.4− | 2004 02 29 | 691 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.2− | | |
| 1999 10 09 | 704 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.2+ | | |
| 1999 10 13 | 704 | 0.6+ | 0.1− | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.5+ | 0.2− | | |
| 1999 10 13 | 704 | 0.4+ | 0.3− | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 09 29 | 683 | 0.7− | 0.1+ | | |
| 1999 10 13 | 704 | (0.5− | 2.1+) | 2006 08 24 | 644 | 0.4− | 0.3+ | 2006 09 29 | 683 | 0.7− | 1.0− | | |
| 1999 10 13 | 704 | 0.0 | 0.1+ | 2006 08 29 | 699 | 0.2− | 0.9+ | 2006 09 29 | 683 | (2.1− | 0.6−) | | |
| 1999 10 13 | 704 | 0.0 | 0.1+ | 2006 08 29 | 699 | 1.0− | 0.5+ | 2006 09 30 | 683 | 1.5− | 1.1− | | |
| 1999 10 15 | 704 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.6− | 1.5+ | 2006 09 30 | 683 | 1.5− | 0.5− | | |
| 1999 10 15 | 704 | 0.0 | 0.5− | 2006 08 29 | 699 | 0.5+ | 0.9+ | 2006 10 03 | 704 | 0.7− | 0.1− | | |
| 1999 10 15 | 704 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.9− | 0.1+ | 2006 10 03 | 704 | 0.4− | 0.3+ | | |
| 1999 10 15 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 1.1− | 0.4− | 2006 10 03 | 704 | 0.2− | 0.4+ | | |
| 1999 10 15 | 704 | 0.8− | 0.4− | 2006 09 14 | 703 | 0.5− | 0.3− | 2006 10 03 | 704 | 0.2− | 0.4+ | | |
| 1999 10 16 | 704 | 0.9− | 0.2− | 2006 09 14 | 703 | 0.3− | 0.0 | 2006 10 03 | 704 | 0.2+ | 0.4+ | | |
| 1999 10 16 | 704 | 0.3− | 0.2+ | 2006 09 15 | 683 | 1.3+ | 0.3− | 2006 10 16 | 683 | 1.0+ | 0.7− | | |
| 1999 10 16 | 704 | 0.1+ | 0.4− | 2006 09 15 | 683 | 0.2+ | 0.5− | 2006 10 16 | 683 | 0.1+ | 0.2− | | |
| 1999 10 16 | 704 | 0.0 | 0.2− | 2006 09 15 | 683 | 0.5− | 0.0 | 2006 10 16 | 683 | 0.7+ | 0.1+ | | |
| 1999 10 16 | 704 | 0.3− | 0.7− | 2006 09 16 | 683 | 0.6− | 1.2− | 2006 10 17 | 683 | 0.7− | 0.4− | | |
| 2002 07 12 | 644 | 0.2− | 0.7+ | 2006 09 16 | 683 | 1.0+ | 0.8− | 2006 10 17 | 683 | 0.7− | 1.1+ | | |
| 2002 07 12 | 644 | 0.4− | 0.8+ | 2006 09 16 | 683 | 1.4+ | 0.9+ | 2006 10 17 | 683 | 0.5− | 0.5+ | | |
| 2002 07 12 | 644 | 0.3− | 1.1+ | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.3− | | |
| 2003 11 20 | 704 | 0.5+ | 1.3+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.5− | | |
| 2003 11 20 | 704 | (1.6+ | 0.1−) | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.0 | | |
| 2003 11 20 | 704 | 0.6+ | 0.6+ | 2006 09 17 | 683 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.8− | | |
| 2003 11 20 | 704 | 1.1+ | 0.6− | 2006 09 17 | 683 | 0.1− | 1.0− | 2006 10 19 | 683 | 0.2+ | 0.5− | | |
| 2003 12 19 | 704 | 0.9− | 1.0− | 2006 09 17 | 683 | 0.1+ | 0.6− | 2006 10 19 | 683 | 0.0 | 0.9+ | | |
| 2003 12 19 | 704 | 0.4− | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 19 | 704 | 0.7+ | 0.2+ | | |
| 2003 12 19 | 704 | 0.7+ | 1.0− | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 19 | 683 | 0.9+ | 0.1+ | | |
| 2004 01 13 | 699 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 19 | 704 | (0.2− | 1.9+) | | |
| 2004 01 13 | 699 | 0.1− | 0.4− | 2006 09 18 | 704 | 0.8+ | 1.0+ | 2006 10 19 | 704 | 1.1− | 0.3− | | |
| 2004 01 13 | 699 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 704 | 0.3− | 1.1− | | |
| 2004 01 13 | 699 | 0.0 | 0.2+ | 2006 09 18 | 683 | 0.8− | 0.9− | 2006 10 20 | 683 | 1.5− | 0.4− | | |
| 2004 01 18 | 644 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.5− | 0.2+ | 2006 10 20 | 683 | (1.8− | 0.9+) | | |
| 2004 01 18 | 644 | 0.2− | 0.1+ | 2006 09 18 | 704 | 1.2− | 1.1+ | 2006 10 20 | 683 | (2.2− | 0.9+) | | |
| 2004 01 18 | 644 | 0.1− | 0.0 | 2006 09 18 | 683 | (0.3− | 1.6−) | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2004 01 22 | 704 | 0.5+ | 0.1− | 2006 09 18 | 683 | 0.5− | 1.1− | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2004 01 22 | 704 | 0.6+ | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.8+ | 0.6+ | 2006 10 22 | 683 | 1.4+ | 0.3− | | |
| 2004 01 22 | 704 | 0.4− | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 22 | 683 | (1.6− | 2.1+) | | |
| 2004 01 22 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 10 22 | 683 | (0.2+ | 2.0+) | | |
| 2004 01 30 | 704 | 0.9− | 0.9+ | 2006 09 19 | 683 | (2.1+ | 0.7−) | 2006 10 26 | 704 | 0.1− | 0.3+ | | |
| 2004 01 30 | 704 | 0.1− | 0.6+ | 2006 09 19 | 683 | 1.5+ | 0.7− | 2006 10 26 | 704 | 0.6+ | 0.3+ | | |
| 2004 01 30 | 704 | 0.1− | 0.1− | 2006 09 19 | 683 | (1.8+ | 0.3−) | 2006 10 26 | 704 | 1.0+ | 0.1+ | | |
| 2004 01 30 | 704 | 0.5+ | 1.2+ | 2006 09 21 | 683 | 0.4− | 0.1− | 2006 10 29 | 704 | 0.2− | 0.4+ | | |
| 2004 01 30 | 704 | 0.0 | 0.5+ | 2006 09 21 | 683 | 0.6− | 1.1− | 2006 10 29 | 704 | 0.4+ | 0.0 | | |
| 2004 02 10 | 644 | 0.4+ | 0.0 | 2006 09 21 | 683 | 0.8+ | 1.2+ | 2006 10 29 | 704 | (0.1− | 2.3+) | | |
| 2004 02 10 | 644 | 0.3+ | 0.0 | 2006 09 25 | 704 | 1.2+ | 0.1− | 2006 10 29 | 704 | 0.2+ | 1.1+ | | |
| 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 1.1− | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.9+ | | |
| 2004 02 12 | 291 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.2− | 1.4+ | | | | | | |

**(137230)∗ 1999 RG$_{22}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.79464 | (2000.0) | | | | |
| $n$ | 0.27560595 | $\omega$ | 75.17843 | | +0.32319899 | −0.94588562 |
| $a$ | 2.3385339 | $\Omega$ | 355.62848 | | +0.65336989 | +0.24523159 |
| $e$ | 0.2991284 | $i$ | 22.38740 | | +0.68458030 | +0.21251318 |
| $P$ | 3.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 566 | 0.0 | 0.1+ | 1999 10 19 | 704 | 0.5+ | 0.5+ | 2004 03 18 | 645 | 0.0 | 0.0 | | |
| 1997 04 03 | 566 | 0.3+ | 0.7+ | 1999 10 30 | 703 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.0 | 0.6+ | | |
| 1997 04 03 | 566 | 0.5+ | 0.3+ | 1999 10 30 | 703 | 0.3− | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.2+ | | |
| 1999 08 12 | 699 | 0.6+ | 0.1+ | 1999 10 30 | 703 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.4+ | | |
| 1999 08 12 | 699 | 0.2− | 0.1+ | 1999 10 30 | 703 | 0.3+ | 0.4+ | 2004 03 23 | 704 | 0.0 | 0.4+ | | |
| 1999 08 12 | 699 | 0.8+ | 1.3+ | 1999 11 05 | 704 | 0.3+ | 0.2+ | 2004 04 14 | 704 | 0.1− | 0.2+ | | |
| 1999 09 04 | 699 | 0.6+ | 0.1+ | 1999 11 05 | 704 | 0.1+ | 0.2+ | 2004 04 14 | 704 | 0.9+ | 0.1+ | | |
| 1999 09 04 | 699 | 0.4− | 1.0+ | 1999 11 05 | 704 | 0.0 | 0.3− | 2004 04 14 | 704 | 0.5+ | 0.0 | | |
| 1999 09 04 | 699 | 0.5+ | 0.2+ | 1999 11 05 | 704 | 0.0 | 0.3− | 2004 04 14 | 704 | 0.7+ | 0.0 | | |
| 1999 09 07 | 704 | 0.0 | 0.6− | 1999 11 05 | 704 | 0.4+ | 0.8− | 2004 04 14 | 704 | 0.8+ | 0.6+ | | |
| 1999 09 07 | 704 | 0.0 | 0.7+ | 1999 11 10 | 703 | 0.3+ | 0.5− | 2004 04 20 | 704 | 1.1+ | 0.5+ | | |
| 1999 09 07 | 704 | 0.2− | 0.3− | 1999 11 10 | 703 | 0.0 | 0.5− | 2004 04 20 | 704 | 1.2+ | 0.0 | | |
| 1999 09 07 | 704 | 0.2− | 0.0 | 1999 11 10 | 703 | 0.2− | 0.1− | 2004 04 20 | 704 | 0.6+ | 0.3+ | | |
| 1999 09 07 | 704 | 0.0 | 0.2+ | 1999 11 10 | 703 | 0.6+ | 0.0 | 2004 04 20 | 704 | 1.0+ | 0.4+ | | |
| 1999 09 08 | 704 | 0.1+ | 0.4+ | 2003 11 04 | 704 | 0.9+ | 0.5+ | 2004 04 20 | 704 | 0.4+ | 0.9+ | | |
| 1999 09 08 | 704 | 0.1+ | 0.3− | 2003 11 04 | 704 | 0.5+ | 0.6+ | 2004 04 22 | 704 | 0.3+ | 0.6+ | | |
| 1999 09 08 | 704 | 0.3− | 0.1+ | 2003 11 04 | 704 | 1.1− | 0.1+ | 2004 04 22 | 704 | 0.1+ | 0.0 | | |
| 1999 09 08 | 704 | 0.1− | 0.2− | 2003 12 03 | 704 | 0.3− | 0.0 | 2004 04 22 | 704 | 0.6+ | 0.1− | | |
| 1999 09 09 | 704 | 0.3+ | 0.6− | 2003 12 03 | 704 | 0.3− | 0.1− | 2006 07 30 | E12 | 0.7− | 0.2+ | | |
| 1999 09 09 | 704 | 0.0 | 0.5− | 2003 12 03 | 704 | 0.1+ | 0.0 | 2006 07 30 | E12 | 0.0 | 0.5+ | | |
| 1999 09 09 | 704 | 0.3− | 0.5− | 2003 12 03 | 704 | 0.4− | 0.1+ | 2006 07 30 | E12 | 0.3− | 0.3+ | | |
| 1999 09 09 | 704 | 0.3+ | 0.6− | 2003 12 03 | 704 | 0.1+ | 0.1+ | 2006 07 30 | E12 | 0.1+ | 0.2− | | |
| 1999 09 09 | 120 | 0.0 | 0.0 | 2003 12 03 | 699 | 0.5− | 0.8− | 2006 08 28 | E12 | 0.1− | 0.0 | | |
| 1999 09 09 | 120 | 0.5+ | 0.2− | 2003 12 03 | 699 | 0.4− | 0.2− | 2006 08 28 | E12 | 0.6− | 0.6+ | | |
| 1999 09 11 | 120 | 0.5+ | 0.3+ | 2003 12 03 | 699 | 0.3− | 0.1− | 2006 08 28 | E12 | 0.3+ | 0.2+ | | |
| 1999 09 11 | 120 | 0.1− | 0.1− | 2003 12 03 | 699 | 0.4− | 0.2− | 2006 09 14 | 644 | 0.1− | 0.4+ | | |
| 1999 09 14 | 704 | 0.3+ | 0.2+ | 2003 12 17 | 704 | 0.8+ | 1.0− | 2006 09 14 | 644 | 0.1− | 0.5+ | | |
| 1999 09 14 | 704 | 0.4+ | 0.7− | 2003 12 17 | 704 | 0.8+ | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.6+ | | |
| 1999 09 14 | 704 | 0.4+ | 0.8− | 2003 12 17 | 704 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.0 | 0.5+ | | |
| 1999 09 14 | 704 | 0.3− | 0.0 | 2003 12 17 | 704 | 0.7+ | 0.2− | 2006 09 26 | 703 | 0.8− | 0.5+ | | |
| 1999 09 14 | 704 | 0.8+ | 0.2− | 2004 01 19 | 704 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.0 | | |
| 1999 09 14 | 703 | 0.5+ | 0.2− | 2004 01 19 | 704 | 0.3− | 0.1+ | 2006 09 26 | 703 | 1.4− | 0.4− | | |
| 1999 09 14 | 703 | 0.4− | 0.1+ | 2004 01 19 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.5− | | |
| 1999 09 14 | 703 | 0.1− | 0.3− | 2004 01 19 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1+ | | |
| 1999 09 14 | 703 | 0.7− | 0.6− | 2004 01 19 | 704 | 0.3− | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.3− | | |
| 1999 09 16 | 691 | 0.2− | 0.2+ | 2004 01 27 | 703 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.5+ | 0.1+ | | |
| 1999 09 16 | 691 | 0.3− | 0.3− | 2004 01 27 | 703 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.3+ | | |
| 1999 09 16 | 691 | 0.1− | 0.2− | 2004 01 27 | 703 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 1999 09 17 | 739 | 0.9− | 0.1− | 2004 01 27 | 703 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.4+ | | |
| 1999 09 17 | 739 | 0.6− | 0.2+ | 2004 02 01 | 703 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.3− | 1.1+ | | |
| 1999 09 17 | 739 | 0.8− | 0.1+ | 2004 02 01 | 703 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.3+ | | |
| 1999 09 17 | 739 | 0.3− | 0.3− | 2004 02 01 | 703 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.8− | | |
| 1999 09 17 | 468 | 1.1− | 0.4− | 2004 02 01 | 703 | 0.7+ | 0.2− | 2006 11 11 | 703 | 1.3− | 0.3− | | |
| 1999 09 18 | 468 | 0.1− | 0.2− | 2004 02 02 | 699 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.2− | | |
| 1999 09 18 | 468 | (2.8− | 1.0−) | 2004 02 02 | 699 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.1+ | | |
| 1999 09 28 | 848 | 0.7− | 0.1− | 2004 02 02 | 699 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.1+ | | |
| 1999 09 28 | 848 | 0.9− | 0.1+ | 2004 02 02 | 699 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.1− | | |
| 1999 09 28 | 848 | 0.0 | 0.3+ | 2004 02 09 | 644 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2+ | | |
| 1999 10 04 | 704 | 0.4+ | 0.3+ | 2004 02 09 | 644 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.0 | | |
| 1999 10 04 | 704 | (1.7+ | 2.0+) | 2004 02 09 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1+ | | |
| 1999 10 04 | 704 | 0.7+ | 0.8+ | 2004 02 11 | 704 | 0.3− | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 1999 10 04 | 704 | 0.9+ | 1.0+ | 2004 02 11 | 704 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.4+ | | |
| 1999 10 04 | 704 | 0.4+ | 0.0 | 2004 02 11 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.8+ | | |
| 1999 10 07 | 704 | 0.2− | 0.8+ | 2004 02 11 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 1.5+ | 0.1− | | |
| 1999 10 07 | 704 | 0.2− | 0.6+ | 2004 02 11 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.2+ | | |
| 1999 10 07 | 704 | 0.4− | 0.2+ | 2004 02 18 | 703 | 0.1− | 0.1+ | 2006 11 18 | 703 | 0.0 | 0.3− | | |
| 1999 10 07 | 704 | 0.2− | 0.6+ | 2004 02 18 | 703 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.3+ | | |
| 1999 10 07 | 704 | 0.0 | 0.1+ | 2004 02 18 | 703 | 0.1+ | 0.3− | 2006 11 18 | 703 | 0.1− | 0.1− | | |
| 1999 10 19 | 704 | 0.1+ | 0.6+ | 2004 02 18 | 703 | 0.0 | 0.0 | 2006 11 18 | 703 | 0.7− | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.5+ | 0.3− | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 11 18 | 703 | 0.2+ | 0.1− |
| 1999 10 19 | 704 | 1.0+ | 0.4+ | 2004 03 17 | 645 | 0.1− | 0.1− | | | | |
| 1999 10 19 | 704 | 0.3+ | 0.7+ | 2004 03 18 | 645 | 0.0 | 0.0 | | | | |

**(137231)∗ 1999 RQ$_{22}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.73353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28639854 | $\omega$ | 202.01446 | | +0.93039455 | −0.36654000 | |
| $a$ | 2.2794086 | $\Omega$ | 179.44377 | | +0.36655860 | +0.93036691 | |
| $e$ | 0.2231652 | $i$ | 23.02627 | | −0.00088443 | +0.00811443 | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 22 | 704 | 0.9− | 1.8+ | 1999 10 07 | 106 | 0.1+ | 0.7− | 2006 09 06 | 644 | 0.0 | 0.1+ |
| 1999 07 22 | 704 | 0.0 | 0.1− | 1999 10 07 | 106 | 1.0− | 0.5− | 2006 09 06 | 644 | 0.0 | 0.1+ |
| 1999 07 22 | 704 | 0.8− | 0.3+ | 1999 10 07 | 106 | 0.6− | 0.3− | 2006 09 06 | 644 | 0.1− | 0.0 |
| 1999 08 11 | 704 | 1.1+ | 1.8+ | 1999 10 07 | 106 | 0.5− | 0.8+ | 2006 09 16 | 699 | 0.4− | 0.4+ |
| 1999 08 11 | 704 | 0.5+ | 0.4+ | 1999 10 08 | 704 | 0.7− | 0.3+ | 2006 09 16 | 699 | 0.1+ | 0.1+ |
| 1999 08 11 | 704 | 1.2+ | 0.6+ | 1999 10 08 | 704 | 0.7− | 0.0 | 2006 09 16 | 699 | 0.3+ | 0.1+ |
| 1999 08 11 | 704 | 0.7+ | 0.1− | 1999 10 08 | 704 | 0.5− | 0.1+ | 2006 09 16 | 699 | 0.2+ | 0.4− |
| 1999 09 07 | 704 | 0.2+ | 0.6− | 1999 11 08 | 703 | 1.5− | 1.9+ | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 1999 09 07 | 704 | 0.2− | 0.1− | 1999 11 08 | 703 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 0.3+ | 0.0 |
| 1999 09 07 | 704 | 0.5+ | 0.1+ | 1999 11 08 | 703 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.2− | 0.3+ |
| 1999 09 07 | 704 | 0.1+ | 0.7+ | 1999 11 08 | 703 | 0.5− | 0.3+ | 2006 09 18 | 703 | 1.1+ | 0.3− |
| 1999 09 07 | 704 | 0.9+ | 0.3+ | 1999 11 10 | 704 | 0.8− | 0.6− | 2006 09 26 | 703 | 0.9− | 0.1− |
| 1999 09 08 | 704 | 0.5+ | 0.7− | 1999 11 10 | 704 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.8− | 0.5− |
| 1999 09 08 | 704 | 0.4+ | 0.0 | 1999 11 10 | 704 | 0.9+ | 0.4− | 2006 09 26 | 703 | 0.4− | 0.2− |
| 1999 09 08 | 704 | 0.1− | 0.1− | 1999 11 10 | 704 | 0.6+ | 0.0 | 2006 09 29 | 699 | 0.0 | 0.0 |
| 1999 09 08 | 704 | 0.7+ | 0.6− | 1999 11 10 | 704 | 0.4+ | 0.1− | 2006 09 29 | 699 | 0.3− | 0.1− |
| 1999 09 09 | 704 | 1.0+ | 0.4+ | 2001 03 30 | 691 | 0.6− | 0.2− | 2006 09 29 | 699 | 0.2− | 0.3− |
| 1999 09 09 | 704 | 0.0 | 0.4− | 2001 03 30 | 691 | 0.0 | 0.8− | 2006 09 29 | 699 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 0.4+ | 0.3+ | 2001 03 30 | 691 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 1999 09 09 | 704 | 0.1+ | 0.4+ | 2001 04 13 | 691 | 0.2+ | 1.0+ | 2006 09 30 | 704 | 1.1+ | 0.5+ |
| 1999 09 09 | 704 | 0.5+ | 0.7− | 2001 04 13 | 691 | 0.1+ | 0.9+ | 2006 09 30 | 704 | 0.2− | 0.7+ |
| 1999 10 02 | 704 | 1.1+ | 0.6− | 2001 04 13 | 691 | 0.6+ | 0.7+ | 2006 09 30 | 704 | 0.2+ | 1.0+ |
| 1999 10 02 | 704 | 0.1+ | 0.2− | 2004 01 28 | 704 | 0.2− | 0.8+ | 2006 10 21 | 703 | (2.9+ | 0.1+) |
| 1999 10 02 | 704 | 0.2− | 0.3− | 2004 01 28 | 704 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.3− |
| 1999 10 02 | 704 | 0.3− | 1.0− | 2004 01 28 | 704 | 1.2+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.4− |
| 1999 10 02 | 704 | 1.0− | 0.1− | 2006 08 21 | 704 | 1.0+ | 0.4+ | 2006 10 21 | 703 | (0.1− | 1.6−) |
| 1999 10 02 | 704 | 0.5+ | 0.5− | 2006 08 21 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.1+ |
| 1999 10 02 | 704 | 0.4+ | 0.7− | 2006 08 21 | 704 | 0.5− | 0.1− | 2006 10 21 | 703 | (0.8− | 2.2+) |
| 1999 10 02 | 704 | 0.7+ | 0.1− | 2006 08 21 | 704 | 0.6+ | 0.9+ | 2006 10 21 | 703 | 0.8− | 0.5+ |
| 1999 10 02 | 704 | 0.3+ | 0.0 | 2006 08 21 | 704 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 1999 10 02 | 704 | 1.0+ | 0.1− | 2006 08 23 | 704 | 0.3− | 1.0+ | 2006 10 25 | E12 | 0.2+ | 0.3− |
| 1999 10 06 | 106 | 0.3− | 0.1+ | 2006 08 23 | 704 | (1.6+ | 1.3+) | 2006 10 25 | E12 | 0.5+ | 0.5+ |
| 1999 10 06 | 106 | 0.4− | 0.5− | 2006 08 23 | 704 | (1.6+ | 0.7+) | 2006 10 25 | E12 | 0.8+ | 0.2+ |
| 1999 10 06 | 106 | 1.0− | 0.1+ | 2006 08 23 | 704 | 0.3− | 0.6+ | 2006 10 25 | E12 | 0.0 | 0.2− |
| 1999 10 07 | 704 | 0.3− | 1.2− | 2006 08 23 | 704 | 1.3+ | 0.4+ | 2006 10 31 | 703 | 0.1+ | 0.7− |
| 1999 10 07 | 704 | 0.0 | 0.0 | 2006 08 28 | 704 | 1.4− | 0.3+ | 2006 10 31 | 703 | 0.7− | 0.0 |
| 1999 10 07 | 704 | 0.1+ | 1.1− | 2006 08 28 | 704 | 0.0 | 0.8− | 2006 10 31 | 703 | 0.4− | 0.4− |
| 1999 10 07 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 0.8+ | 0.9+ | 2006 10 31 | 703 | 0.0 | 0.5− |
| 1999 10 07 | 704 | 0.0 | 0.7+ | 2006 08 28 | 704 | 1.1+ | 0.6− | 2006 11 14 | 704 | (2.2+ | 0.9+) |
| 1999 10 07 | 704 | 0.4− | 0.5− | 2006 08 28 | 704 | 0.7+ | 1.1+ | 2006 11 14 | 704 | (1.9+ | 0.0 ) |
| 1999 10 07 | 704 | 0.2− | 0.4+ | 2006 08 31 | 704 | 0.5+ | 0.0 | 2006 11 14 | 704 | (3.5+ | 0.8−) |
| 1999 10 07 | 704 | 0.5− | 0.3+ | 2006 08 31 | 704 | 0.2− | 0.5− | 2006 11 14 | 704 | (1.4+ | 1.9+) |
| 1999 10 07 | 704 | 0.9− | 0.8+ | 2006 08 31 | 704 | (1.6− | 0.7+) | 2006 11 14 | 704 | 0.3− | 0.6+ |
| 1999 10 07 | 704 | 0.7− | 0.7+ | 2006 08 31 | 704 | 0.7− | 1.0+ | | | | |

**(137232)∗ 1999 RZ$_{23}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.99171 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29217505 | $\omega$ | 147.55660 | | +0.35086335 | +0.93379978 | |
| $a$ | 2.2492651 | $\Omega$ | 142.84962 | | −0.88202068 | +0.35469297 | |
| $e$ | 0.1361684 | $i$ | 6.66499 | | −0.31453844 | +0.04701997 | |
| $P$ | 3.37 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 19 | 691 | 0.0 | 0.3− | 2005 04 01 | 699 | 1.0+ | 0.3− | 2005 05 13 | 704 | 0.3+ | 0.4+ |
| 1996 11 19 | 691 | 0.1+ | 0.1+ | 2005 04 01 | 699 | 0.4+ | 0.2+ | 2005 05 13 | 704 | 1.2− | 0.5+ |
| 1996 11 19 | 691 | 0.0 | 0.1+ | 2005 04 01 | 699 | 0.7+ | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.9+ |
| 1999 09 07 | 704 | 0.3+ | 0.8+ | 2005 04 04 | 703 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.2− |
| 1999 09 07 | 704 | 0.5+ | 0.4− | 2005 04 04 | 703 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 1.1+ | 1.2+ |
| 1999 09 07 | 704 | 0.5− | 0.6+ | 2005 04 04 | 703 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.2− |
| 1999 09 08 | 704 | 0.2− | 0.5− | 2005 04 04 | 703 | 0.7− | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 1999 09 08 | 704 | 1.0− | 1.0− | 2005 04 13 | 704 | (1.6+ | 0.2+) | 2006 10 16 | 703 | 0.7+ | 0.3− |
| 1999 09 08 | 704 | 0.3− | 0.3+ | 2005 04 13 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 1999 09 08 | 704 | 0.3− | 0.0 | 2005 04 13 | 704 | 0.8+ | 0.7− | 2006 10 16 | 703 | 1.4+ | 1.0+ |
| 1999 09 08 | 704 | 0.2− | 0.2− | 2005 04 13 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | (1.7+ | 1.9+) |
| 1999 09 09 | 704 | 0.2+ | 0.6− | 2005 04 13 | 703 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.6+ | 0.2+ |
| 1999 09 09 | 704 | 0.3− | 0.3+ | 2005 04 13 | 703 | 0.7− | 0.3+ | 2006 10 16 | 703 | (2.1+ | 0.6+) |
| 1999 09 09 | 704 | 0.1+ | 0.5− | 2005 04 13 | 703 | 0.8− | 0.2+ | 2006 10 16 | 703 | 1.6+ | 0.6+ |
| 1999 09 09 | 704 | 0.1− | 0.3− | 2005 04 13 | 703 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.2− | 0.6+ |
| 1999 09 09 | 704 | 0.1− | 0.4− | 2005 05 06 | 704 | 0.7− | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.8+ |
| 1999 09 14 | 704 | 0.5+ | 0.2− | 2005 05 06 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.8− |
| 1999 09 14 | 704 | 0.3+ | 0.3− | 2005 05 06 | 704 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.1− | 0.2− |
| 1999 09 14 | 704 | 0.4+ | 0.3+ | 2005 05 06 | 704 | 0.4+ | 0.3− | 2006 11 13 | 703 | 0.8− | 0.0 |
| 1999 09 14 | 704 | 0.2+ | 1.0− | 2005 05 06 | 704 | 1.4+ | 0.4− | 2006 11 13 | 703 | 1.2− | 0.8− |
| 1999 10 16 | 704 | 0.3+ | 0.4+ | 2005 05 11 | 703 | 0.0 | 0.6− | 2006 11 13 | 703 | 0.8+ | 0.1− |
| 1999 10 16 | 704 | 0.3− | 0.5+ | 2005 05 11 | 703 | 0.8− | 0.6+ | 2006 11 13 | 703 | (3.8+ | 0.1+) |
| 1999 10 16 | 704 | 0.1+ | 1.0+ | 2005 05 11 | 703 | 0.3+ | 0.5− | 2006 11 19 | 703 | 1.6− | 1.0− |
| 1999 10 16 | 704 | 0.3− | 1.0+ | 2005 05 11 | 703 | 1.1− | 0.7− | 2006 11 19 | 703 | 1.1+ | 1.2− |
| 1999 10 16 | 704 | 0.3+ | 2.0+ | 2005 05 13 | 704 | 0.4− | 0.2+ | 2006 11 19 | 703 | 0.7− | 0.4+ |
| 2005 04 01 | 699 | 0.6+ | 0.3+ | 2005 05 13 | 704 | 0.3+ | 0.4− | 2006 11 19 | 703 | 0.8− | 0.1+ |

**(137233)∗ 1999 RE$_{24}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.95100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29743940 | $\omega$ | 16.47256 | | +0.44466015 | −0.89391831 | |
| $a$ | 2.2226464 | $\Omega$ | 47.16532 | | +0.81286028 | +0.37625874 | |
| $e$ | 0.1189519 | $i$ | 4.41549 | | +0.37621206 | +0.24359683 | |
| $P$ | 3.31 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 1.6− | 0.7− | 2001 03 26 | 704 | 0.1+ | 0.3− | 2004 02 15 | 704 | 0.5+ | 0.2+ |
| 1998 05 01 | 704 | 1.3− | 1.6− | 2001 03 26 | 704 | 0.2+ | 0.4+ | 2004 02 15 | 704 | 0.5+ | 0.5+ |
| 1998 05 01 | 704 | (1.0− | 2.2−) | 2001 03 26 | 608 | 0.1+ | 0.5− | 2004 02 15 | 704 | 0.3+ | 0.4+ |
| 1998 05 01 | 704 | (1.4− | 2.8−) | 2001 03 26 | 608 | 0.1− | 0.1+ | 2004 02 16 | 691 | 0.0 | 0.0 |
| 1999 08 22 | 703 | 1.6+ | 1.1+ | 2001 03 26 | 608 | 0.3+ | 0.2+ | 2004 02 16 | 691 | 0.4− | 0.1+ |
| 1999 08 22 | 703 | 0.4+ | 1.3+ | 2001 03 29 | 704 | 0.6+ | 0.5+ | 2004 02 16 | 691 | 0.0 | 0.1+ |
| 1999 08 22 | 703 | (0.6+ | 2.2+) | 2001 03 29 | 704 | 0.2+ | 1.0+ | 2004 02 24 | 608 | 0.1− | 0.3+ |
| 1999 08 22 | 703 | 0.6+ | 1.3+ | 2001 03 29 | 704 | 0.6+ | 1.1+ | 2004 02 24 | 608 | 0.1− | 0.5+ |
| 1999 09 05 | 699 | 0.4+ | 1.8+ | 2002 08 13 | 704 | 1.2− | 0.4− | 2004 02 24 | 608 | 0.5− | 0.4+ |
| 1999 09 05 | 699 | 1.2− | 1.2+ | 2002 08 13 | 704 | 0.4− | 1.0− | 2004 03 10 | 703 | 0.7− | 0.8+ |
| 1999 09 05 | 699 | 0.0 | 0.5+ | 2002 08 13 | 704 | 0.3− | 0.5− | 2004 03 10 | 703 | 0.4− | 0.5+ |
| 1999 09 07 | 704 | 0.2− | 0.1+ | 2002 08 13 | 704 | 0.1− | 0.3− | 2004 03 10 | 703 | 0.3− | 0.3+ |
| 1999 09 07 | 704 | 0.1+ | 0.4+ | 2002 08 30 | 644 | 0.6− | 0.5+ | 2004 03 10 | 703 | 0.1+ | 0.0 |
| 1999 09 07 | 704 | 0.4− | 0.2− | 2002 08 30 | 644 | 0.3+ | 0.6+ | 2004 04 22 | 704 | 1.4+ | 0.3− |
| 1999 09 07 | 704 | 0.9− | 0.5− | 2002 08 30 | 644 | 0.3− | 0.1+ | 2004 04 22 | 704 | 0.4+ | 0.3+ |
| 1999 09 07 | 704 | 0.3− | 0.0 | 2002 08 30 | 644 | 0.2+ | 0.6+ | 2004 04 22 | 704 | 0.7− | 1.1+ |
| 1999 09 08 | 704 | 0.3− | 0.1− | 2002 08 30 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.6+ |
| 1999 09 08 | 704 | 0.4− | 0.1+ | 2002 08 30 | 644 | 0.7+ | 0.4+ | 2006 09 27 | 704 | 0.5− | 0.0 |
| 1999 09 08 | 704 | 0.1+ | 0.5+ | 2003 11 20 | 704 | 1.4+ | 0.3+ | 2006 09 27 | 704 | 0.2− | 1.2+ |
| 1999 09 08 | 704 | 0.4− | 0.3+ | 2003 11 20 | 704 | 1.3+ | 0.3+ | 2006 10 23 | 704 | 0.5+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.0 | 0.9+ | 2003 11 20 | 704 | 0.0 | 0.6+ | 2006 10 23 | 704 | 0.5+ | 0.2+ |
| 1999 09 09 | 704 | 1.0− | 0.8+ | 2003 12 19 | 704 | 0.0 | 0.5+ | 2006 10 23 | 704 | 0.4+ | 0.3+ |
| 1999 09 09 | 704 | 0.2− | 0.4+ | 2003 12 19 | 704 | 0.8+ | 0.2+ | 2006 10 23 | 704 | 0.3+ | 0.8+ |
| 1999 09 09 | 704 | 1.1+ | 0.4+ | 2003 12 19 | 704 | 0.0 | 0.6+ | 2006 10 23 | 704 | 0.6+ | 0.1+ |
| 1999 09 09 | 704 | 0.6− | 1.4+ | 2003 12 19 | 704 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 1999 09 09 | 704 | 1.4+ | 1.6+ | 2004 01 13 | 699 | 0.8− | 0.4− | 2006 11 10 | 691 | 0.1− | 0.2− |
| 1999 09 14 | 704 | 0.0 | 1.7− | 2004 01 13 | 699 | 0.4− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 1999 09 14 | 704 | 1.1+ | 0.2− | 2004 01 13 | 699 | 0.1− | 0.3− | 2006 11 16 | 704 | 1.1− | 0.2+ |
| 1999 09 14 | 704 | 0.4+ | 0.6− | 2004 01 13 | 699 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.4+ |
| 1999 09 14 | 704 | 0.0 | 0.1− | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.5+ | 0.1− |
| 1999 10 07 | 704 | 0.8− | 1.4+ | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.2− |
| 1999 10 07 | 704 | 0.2+ | 0.6+ | 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.6+ | 1.0− |
| 1999 10 07 | 704 | 0.6− | 1.3+ | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1999 10 08 | 704 | 1.3− | 0.0 | 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.4− | 0.2− |
| 1999 10 08 | 704 | 0.6− | 0.3+ | 2004 01 18 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.2− |
| 1999 10 08 | 704 | 0.4− | 0.4− | 2004 01 28 | 703 | 0.6− | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 1999 10 08 | 704 | 0.6− | 0.1+ | 2004 01 28 | 703 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.4− |
| 1999 10 15 | 704 | 0.1+ | 0.7+ | 2004 01 28 | 703 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.0 |
| 1999 10 15 | 704 | 0.8− | 0.0 | 2004 01 28 | 703 | 0.9− | 0.4+ | 2006 11 18 | 704 | 0.7+ | 0.0 |
| 1999 10 15 | 704 | 0.8− | 0.1+ | 2004 01 30 | 704 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.4+ |
| 1999 10 15 | 704 | 0.3− | 0.4+ | 2004 01 30 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.4− |
| 1999 10 15 | 704 | 0.1− | 0.4+ | 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.2− |
| 1999 12 07 | 704 | 1.3− | 0.8− | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.2− |
| 1999 12 07 | 704 | 0.2+ | 0.6− | 2004 01 30 | 704 | 0.6+ | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 1999 12 07 | 704 | 0.3+ | 1.5− | 2004 02 10 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2001 03 03 | 704 | 0.9+ | 0.3− | 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2001 03 03 | 704 | 0.2+ | 1.1+ | 2004 02 10 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2001 03 03 | 704 | (0.5− | 1.6+) | 2004 02 11 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2001 03 03 | 704 | 0.6+ | 1.4+ | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2001 03 23 | 699 | 1.2+ | 0.5− | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9+ | 1.4+ |
| 2001 03 23 | 699 | 0.2+ | 0.5− | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2001 03 23 | 699 | 0.4+ | 0.4− | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.4− | 0.2− |
| 2001 03 23 | 699 | 0.4+ | 0.8+ | 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2001 03 23 | 699 | 0.9+ | 0.6+ | 2004 02 14 | 703 | 1.1− | 0.9+ | 2006 11 28 | 704 | 0.1− | 0.4− |
| 2001 03 23 | 699 | 0.5+ | 0.3+ | 2004 02 14 | 703 | 0.8+ | 0.0 | 2006 11 28 | 704 | 1.1+ | 0.3− |
| 2001 03 23 | 699 | 1.3+ | 0.9+ | 2004 02 14 | 703 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 1.8+ | 0.2− |
| 2001 03 23 | 699 | 0.1− | 0.1+ | 2004 02 14 | 703 | 1.0− | 0.8− | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2001 03 26 | 704 | 0.2+ | 0.4+ | 2004 02 15 | 704 | 0.4+ | 0.3+ | | | | |
| 2001 03 26 | 704 | 0.4+ | 0.4+ | 2004 02 15 | 704 | 0.3+ | 0.3+ | | | | |

**(137234)∗ 1999 RT$_{24}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.84306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29902457 | $\omega$ | 87.22705 | | +0.55489246 | −0.83050771 | |
| $a$ | 2.2147844 | $\Omega$ | 328.91253 | | +0.72109478 | +0.50921986 | |
| $e$ | 0.1374399 | $i$ | 5.38860 | | +0.41486947 | +0.22572566 | |
| $P$ | 3.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.5+ | 0.1+ | 1999 10 28 | 703 | 0.8− | 1.7+ | 2004 02 22 | 691 | 0.3− | 0.0 |
| 1999 09 07 | 704 | 0.0 | 1.0− | 1999 10 28 | 703 | 0.6− | 0.2+ | 2004 02 22 | 691 | 0.5− | 0.0 |
| 1999 09 07 | 704 | 0.1− | 0.2− | 1999 11 04 | 703 | 0.3− | 0.7+ | 2004 02 26 | 704 | 0.4+ | 0.3+ |
| 1999 09 07 | 704 | 0.3− | 0.6+ | 1999 11 04 | 703 | 0.5− | 0.6+ | 2004 02 26 | 704 | 0.3+ | 0.5+ |
| 1999 09 07 | 704 | 0.0 | 0.0 | 1999 11 04 | 703 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.7+ | 0.1+ |
| 1999 09 08 | 704 | 0.3+ | 0.1+ | 1999 11 04 | 703 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.6+ | 0.4+ |
| 1999 09 08 | 704 | 0.1− | 0.1− | 2002 07 14 | 644 | 0.1+ | 0.8+ | 2004 02 26 | 704 | 0.2+ | 0.2+ |
| 1999 09 08 | 704 | 0.1+ | 0.3+ | 2002 07 14 | 644 | 0.1− | 1.0+ | 2004 03 11 | 644 | 0.1+ | 0.0 |
| 1999 09 08 | 704 | 0.7+ | 0.3− | 2002 07 14 | 644 | 0.0 | 0.8+ | 2004 03 11 | 644 | 0.3− | 0.4+ |
| 1999 09 09 | 704 | 0.5+ | 0.0 | 2002 07 23 | 644 | 0.1− | 0.6+ | 2004 03 11 | 644 | 0.1− | 0.4− |
| 1999 09 09 | 704 | 0.7− | 0.4− | 2002 07 23 | 644 | 0.4− | 0.6+ | 2004 03 15 | 704 | 0.9+ | 0.4+ |
| 1999 09 09 | 704 | 0.2+ | 0.9− | 2002 07 23 | 644 | 0.0 | 1.0+ | 2004 03 15 | 704 | 0.5+ | 0.0 |
| 1999 09 09 | 704 | 0.6+ | 0.4+ | 2002 08 08 | 644 | 0.2− | 0.5+ | 2004 03 15 | 704 | 1.0+ | 0.1+ |
| 1999 09 09 | 704 | 0.1− | 0.7+ | 2002 08 08 | 644 | 0.2− | 0.8+ | 2004 03 15 | 704 | 1.1+ | 0.5+ |
| 1999 09 29 | 703 | 0.4− | 0.4+ | 2002 08 08 | 644 | 0.2− | 0.6+ | 2004 03 15 | 704 | (3.6+ | 0.2−) |
| 1999 09 29 | 703 | 0.0 | 0.2+ | 2002 08 18 | 644 | 0.3− | 0.0 | 2004 03 18 | 691 | 0.2− | 0.1+ |
| 1999 09 29 | 703 | 0.6− | 0.7+ | 2002 08 18 | 644 | 0.3− | 0.1+ | 2004 03 18 | 691 | 0.4− | 0.8+ |
| 1999 09 29 | 703 | 0.5− | 0.4+ | 2002 08 18 | 644 | 0.5− | 0.2− | 2004 03 18 | 691 | 0.1− | 0.1+ |
| 1999 10 04 | 704 | 0.0 | 0.7− | 2003 12 22 | 704 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.7+ |
| 1999 10 04 | 704 | 1.7− | 0.1− | 2003 12 22 | 704 | 0.5+ | 0.8− | 2004 03 18 | 704 | 0.4+ | 1.0+ |
| 1999 10 04 | 704 | 0.1− | 0.6− | 2003 12 22 | 704 | 0.7+ | 1.0− | 2004 03 18 | 704 | 0.2+ | 0.6+ |
| 1999 10 04 | 704 | 0.1+ | 0.7− | 2003 12 22 | 704 | 0.5+ | 0.0 | 2004 03 18 | 704 | 0.0 | 0.9+ |
| 1999 10 04 | 704 | 0.1− | 0.8− | 2004 01 22 | 704 | 0.1+ | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.8+ |
| 1999 10 04 | 704 | 0.1+ | 0.2− | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2004 03 23 | 704 | (1.8+ | 0.8−) |
| 1999 10 04 | 704 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.3+ | 1.2+ | 2004 03 23 | 704 | 0.2+ | 0.1− |
| 1999 10 04 | 704 | 0.3+ | 0.4+ | 2004 01 23 | 699 | 0.1+ | 0.7− | 2004 03 23 | 704 | 0.6+ | 0.0 |
| 1999 10 04 | 704 | 0.0 | 0.4+ | 2004 01 23 | 699 | 0.6− | 0.7− | 2004 03 23 | 704 | 0.2− | 0.4+ |
| 1999 10 04 | 704 | 0.4+ | 0.4+ | 2004 01 23 | 699 | 1.0− | 0.3− | 2004 03 23 | 704 | 0.3+ | 0.7+ |
| 1999 10 04 | 704 | 1.3+ | 1.3+ | 2004 01 23 | 699 | 0.6− | 1.0+ | 2004 03 27 | 704 | (0.8+ | 1.5+) |
| 1999 10 04 | 704 | 0.2− | 0.6+ | 2004 02 11 | 291 | 0.5+ | 0.2− | 2004 03 27 | 704 | 0.8+ | 0.4+ |
| 1999 10 07 | 704 | 0.8− | 1.5+ | 2004 02 11 | 291 | 0.1− | 0.3− | 2004 03 27 | 704 | 0.8+ | 0.1− |
| 1999 10 07 | 704 | 0.0 | 0.1+ | 2004 02 11 | 291 | 0.0 | 0.4− | 2006 11 04 | 850 | 0.4− | 0.3− |
| 1999 10 07 | 704 | 0.5− | 0.5− | 2004 02 11 | 703 | 0.5+ | 0.8+ | 2006 11 04 | 850 | 0.5− | 0.5− |
| 1999 10 07 | 704 | 0.5− | 0.2+ | 2004 02 11 | 703 | 0.3+ | 1.3+ | 2006 11 04 | 850 | 0.3− | 0.2− |
| 1999 10 07 | 704 | 0.4+ | 0.3− | 2004 02 11 | 703 | 0.8− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.3− |
| 1999 10 19 | 704 | 0.5+ | 0.1+ | 2004 02 11 | 703 | 0.4− | 0.1+ | 2006 11 08 | 644 | 0.6− | 0.2− |
| 1999 10 19 | 704 | 0.2+ | 0.6− | 2004 02 18 | 704 | 0.6+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1999 10 19 | 704 | 0.1+ | 0.1− | 2004 02 18 | 704 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.1+ |
| 1999 10 19 | 704 | 0.0 | 0.2+ | 2004 02 18 | 704 | 0.7+ | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.2− |
| 1999 10 19 | 704 | 0.3+ | 0.6− | 2004 02 18 | 704 | 0.5+ | 0.2+ | 2006 11 27 | 704 | 0.8+ | 0.4+ |
| 1999 10 28 | 703 | 0.1+ | 0.1− | 2004 02 18 | 704 | 0.2+ | 0.1+ | 2006 11 27 | 704 | 0.1− | 1.1+ |
| 1999 10 28 | 703 | 0.5− | 0.6+ | 2004 02 22 | 691 | 0.4− | 0.1+ | | | | |

**(137235)∗ 1999 RY$_{24}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.75667 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27551692 | $\omega$ | 165.04761 | | +0.99451943 | −0.09904648 | |
| $a$ | 2.3390376 | $\Omega$ | 200.72496 | | +0.08356363 | +0.94546918 | |
| $e$ | 0.1115594 | $i$ | 5.42870 | | +0.06283483 | +0.31028667 | |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 0.1− | 1999 10 16 | 704 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.5+ | 0.4+ |
| 1999 09 07 | 704 | 0.6+ | 0.9− | 2001 02 19 | 608 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.3− | 0.1− |
| 1999 09 07 | 704 | 0.1− | 0.7− | 2001 02 19 | 608 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.0 | 0.1+ |
| 1999 09 07 | 704 | 0.1+ | 0.7− | 2001 02 19 | 608 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 1999 09 07 | 704 | 0.3+ | 0.1− | 2001 02 20 | 645 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.2+ |
| 1999 09 08 | 704 | 0.4− | 0.0 | 2001 02 20 | 645 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.2− |
| 1999 09 08 | 704 | 0.3+ | 0.4− | 2003 12 22 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.4− | 0.1+ |
| 1999 09 08 | 704 | 0.0 | 0.6− | 2003 12 22 | 704 | 0.3+ | 0.2− | 2006 08 29 | 691 | (1.1− | 1.8+) |
| 1999 09 08 | 704 | 1.5− | 0.0 | 2003 12 22 | 704 | 0.3− | 0.4+ | 2006 08 29 | 691 | 0.6− | 0.0 |
| 1999 09 29 | 703 | (2.7− | 0.2+) | 2003 12 22 | 704 | 0.9− | 0.0 | 2006 08 29 | 691 | 0.5+ | 1.1+ |
| 1999 09 29 | 703 | 1.2− | 0.5+ | 2003 12 22 | 704 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.5− | 1.5+ |
| 1999 09 29 | 703 | 0.9− | 0.3− | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.6− | 0.5− |
| 1999 09 29 | 703 | 0.2− | 0.3+ | 2005 03 10 | G96 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.6+ | 1.0+ |
| 1999 10 04 | 704 | 0.4+ | 1.0− | 2005 03 10 | G96 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.3− | 0.6+ |
| 1999 10 04 | 704 | 1.0+ | 0.2− | 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.4+ |
| 1999 10 04 | 704 | 0.0 | 0.4− | 2005 03 13 | 691 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.0 | 0.4− |
| 1999 10 04 | 704 | 0.9− | 0.6− | 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.6+ | 0.7− |
| 1999 10 06 | 704 | 0.5+ | 0.3− | 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 0.7+ | 0.8− |
| 1999 10 06 | 704 | 0.4+ | 0.7− | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.1− | 0.9− |
| 1999 10 06 | 704 | 0.0 | 0.3+ | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.2− | 0.3− |
| 1999 10 06 | 704 | 0.1+ | 0.3+ | 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 09 11 | 703 | 0.2+ | 0.1− |
| 1999 10 06 | 704 | 0.2+ | 0.1+ | 2005 05 06 | G96 | 0.6− | 0.0 | 2006 09 11 | 703 | 0.3− | 0.2+ |
| 1999 10 07 | 703 | 0.7+ | 0.5+ | 2005 05 06 | G96 | 0.5+ | 0.3− | 2006 09 14 | 691 | 0.4− | 1.4+ |
| 1999 10 07 | 703 | 0.2+ | 1.2+ | 2005 05 06 | G96 | 0.5− | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.0 |
| 1999 10 07 | 703 | 0.6− | 1.0+ | 2005 05 06 | G96 | 0.4− | 0.2− | 2006 09 14 | 691 | 0.2− | 0.0 |
| 1999 10 07 | 703 | 1.0− | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.4+ | 0.1+ |
| 1999 10 07 | 704 | 0.3− | 0.6+ | 2005 05 13 | G96 | 0.3− | 0.2− | 2006 09 18 | 704 | 0.7+ | 0.2+ |
| 1999 10 07 | 704 | 0.1− | 0.3− | 2005 05 13 | G96 | 0.4− | 0.2− | 2006 09 18 | 704 | 0.3+ | 0.2− |
| 1999 10 07 | 704 | 0.5− | 0.3+ | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 09 18 | 704 | 0.4− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.3− | 1.3+ | 2006 08 16 | 644 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.2− | 0.4+ |
| 1999 10 07 | 704 | 0.3+ | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.2− |
| 1999 10 09 | 704 | 0.6+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.7− | 0.3+ |
| 1999 10 09 | 704 | 0.8+ | 0.2+ | 2006 08 18 | 699 | 0.4− | 0.7+ | 2006 09 25 | 704 | 0.6− | 0.5− |
| 1999 10 09 | 704 | 0.5+ | 0.4− | 2006 08 18 | 699 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.6− |
| 1999 10 09 | 704 | 0.4− | 1.2− | 2006 08 18 | 699 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.6+ | 2006 08 18 | 699 | 1.0− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 1999 10 15 | 704 | 0.6− | 0.8+ | 2006 08 24 | 704 | (2.0+ | 4.6−) | 2006 09 28 | G96 | 0.0 | 0.5− |
| 1999 10 15 | 704 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.1+ | 1.5+ | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 1999 10 15 | 704 | 0.2+ | 0.2+ | 2006 08 24 | 704 | 0.6+ | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 1999 10 16 | 704 | 1.2+ | 0.6− | 2006 08 24 | 704 | 1.2+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 1.4− |
| 1999 10 16 | 704 | 0.3− | 0.3+ | 2006 08 24 | 704 | 0.8+ | 0.2− | | | | |
| 1999 10 16 | 704 | 0.2− | 0.5+ | 2006 08 27 | 699 | 0.8+ | 0.4− | | | | |

**(137236)∗ 1999 RA$_{25}$ = 2003 XJ$_6$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55872)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.88194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27698553 | $\omega$ | 46.89705 | | +0.91716528 | −0.39597979 | |
| $a$ | 2.3307624 | $\Omega$ | 336.32316 | | +0.32549438 | +0.80924839 | |
| $e$ | 0.1055979 | $i$ | 6.40654 | | +0.22991574 | +0.43395512 | |
| $P$ | 3.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.3+ | 0.9− | 2003 12 24 | 106 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 0.1− | 0.2+ | 2003 12 27 | 704 | 0.8+ | 0.2− | 2006 08 30 | 704 | 1.5+ | 0.1− |
| 1999 09 07 | 704 | 0.4− | 0.3+ | 2003 12 27 | 704 | 0.6+ | 0.5+ | 2006 09 01 | 704 | 1.4− | 0.1− |
| 1999 09 07 | 704 | 0.4+ | 0.3− | 2003 12 27 | 704 | 0.9+ | 0.4− | 2006 09 01 | 704 | 0.9+ | 0.3+ |
| 1999 09 07 | 704 | 0.1− | 0.8− | 2003 12 27 | 704 | 0.1+ | 0.6− | 2006 09 01 | 704 | (1.7+ | 2.0−) |
| 1999 09 08 | 704 | 0.2+ | 0.7− | 2003 12 29 | 704 | 0.0 | 0.0 | 2006 09 01 | 704 | 0.4+ | 0.4+ |
| 1999 09 08 | 704 | 0.3+ | 0.2− | 2003 12 29 | 704 | 0.2+ | 0.0 | 2006 09 01 | 704 | 0.5− | 1.5+ |
| 1999 09 08 | 704 | 0.6+ | 1.1− | 2003 12 29 | 704 | 0.3+ | 0.0 | 2006 09 11 | 703 | 0.5− | 0.4− |
| 1999 09 08 | 704 | 0.6− | 1.5− | 2003 12 29 | 704 | 0.2+ | 0.2− | 2006 09 11 | 703 | 0.6+ | 0.0 |
| 1999 09 09 | 704 | 1.4+ | 0.4− | 2006 08 19 | 691 | 0.4− | 0.2+ | 2006 09 11 | 703 | 0.1− | 0.4+ |
| 1999 09 09 | 704 | 0.2+ | 1.5− | 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 09 11 | 703 | 0.0 | 0.3− |
| 1999 09 09 | 704 | 0.7+ | 0.4+ | 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.2+ |
| 1999 09 09 | 704 | 0.6+ | 0.0 | 2006 08 19 | A50 | 0.5− | 0.8+ | 2006 09 17 | 704 | 0.4− | 0.0 |
| 1999 09 29 | 703 | 1.5+ | 0.2− | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.3− | 0.3+ |
| 1999 09 29 | 703 | 0.4− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.1− | 0.4− |
| 1999 09 29 | 703 | 0.0 | 0.6− | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.4− | 0.3+ |
| 1999 09 29 | 703 | 0.2+ | 0.6− | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.4− | 0.3− |
| 1999 10 04 | 704 | (1.0+ | 2.1+) | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.5− | 0.1− |
| 1999 10 04 | 704 | 0.4+ | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.0 | 0.4− |
| 1999 10 04 | 704 | 0.6− | 0.8− | 2006 08 25 | 704 | 1.1− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.9− |
| 2001 02 19 | 704 | 0.2+ | 0.2− | 2006 08 25 | 704 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.5− |
| 2001 02 19 | 704 | 0.9+ | 0.7+ | 2006 08 25 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.3+ |
| 2001 02 19 | 704 | 0.5+ | 0.6+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.4+ |
| 2001 02 19 | 704 | 0.8+ | 1.3+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.1+ |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | (0.7− | 1.5+) |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 1.4− | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.5− |
| 2003 11 19 | 704 | 1.3− | 0.4− | 2006 08 27 | 699 | 0.4− | 0.8+ | 2006 09 27 | 704 | 0.0 | 1.1+ |
| 2003 11 19 | 704 | (1.4− | 2.2−) | 2006 08 27 | 699 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.1+ |
| 2003 11 19 | 704 | (1.8− | 0.8−) | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.7+ | 0.2− |
| 2003 11 19 | 704 | 1.3− | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 09 27 | 704 | 0.6+ | 0.6+ |
| 2003 12 03 | 704 | 1.1− | 1.1+ | 2006 08 28 | 703 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.4+ |
| 2003 12 03 | 704 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.4+ |
| 2003 12 03 | 704 | (1.1− | 1.6+) | 2006 08 29 | 704 | 0.5+ | 0.6+ | 2006 09 29 | 704 | 0.3− | 0.4+ |
| 2003 12 03 | 704 | 0.5− | 0.5+ | 2006 08 29 | 704 | 0.5+ | 0.6+ | 2006 09 29 | 704 | 1.0+ | 1.4+ |
| 2003 12 03 | 704 | 0.7− | 0.9+ | 2006 08 29 | 704 | 0.7+ | 0.1− | 2006 09 30 | 699 | 0.2− | 1.0+ |
| 2003 12 04 | 704 | (0.9+ | 1.6+) | 2006 08 30 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 699 | 0.5+ | 0.3+ |
| 2003 12 04 | 704 | 1.1+ | 1.1+ | 2006 08 30 | 704 | 0.4− | 0.0 | 2006 09 30 | 699 | 1.3− | 0.2− |
| 2003 12 04 | 704 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.3− | 0.9+ | 2006 09 30 | 699 | 0.2+ | 0.3− |
| 2003 12 04 | 704 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.8+ | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2003 12 04 | 704 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2003 12 17 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2003 12 17 | 704 | 1.1+ | 0.8+ | 2006 08 30 | 704 | 0.1− | 0.9− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 12 17 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2003 12 17 | 704 | 0.3+ | 0.5− | 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 24 | 106 | 0.2− | 0.7− | 2006 08 30 | 704 | 0.6− | 0.2− | | | | |
| 2003 12 24 | 106 | 0.6− | 0.8− | 2006 08 30 | 704 | 0.2− | 0.1+ | | | | |

**(137237)∗ 1999 RG$_{26}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.55305 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28269929 | $\omega$ | 354.19158 | | +0.94467897 | −0.32638490 | |
| $a$ | 2.2992502 | $\Omega$ | 24.93347 | | +0.30394679 | +0.83389898 | |
| $e$ | 0.2725685 | $i$ | 4.41794 | | +0.12328015 | +0.44506786 | |
| $P$ | 3.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 699 | 0.3− | 0.4+ | 1999 11 06 | 704 | 0.0 | 0.6+ | 2006 09 19 | 704 | 0.2− | 1.0+ |
| 1999 08 22 | 699 | 0.5+ | 1.6+ | 1999 11 09 | 704 | 0.1− | 0.0 | 2006 09 19 | 704 | 0.3− | 0.1− |
| 1999 08 22 | 699 | 0.9− | 0.2+ | 1999 11 09 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 704 | 1.3− | 0.3+ |
| 1999 09 07 | 704 | 0.8+ | 0.6+ | 1999 11 09 | 704 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.0 |
| 1999 09 07 | 704 | 0.8− | 0.1+ | 1999 11 09 | 704 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 1999 09 07 | 704 | 1.0− | 0.5+ | 1999 11 09 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.2+ |
| 1999 09 08 | 704 | 0.4− | 0.4+ | 1999 11 12 | 704 | 0.3+ | 0.3− | 2006 09 25 | 704 | 0.8− | 0.2+ |
| 1999 09 08 | 704 | 0.1+ | 0.7− | 1999 11 12 | 704 | 0.1− | 0.8− | 2006 09 25 | 704 | 0.5− | 0.1+ |
| 1999 09 08 | 704 | 0.1+ | 0.7+ | 1999 11 12 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 704 | (0.3− | 1.9−) |
| 1999 09 08 | 704 | 0.0 | 0.9+ | 1999 11 12 | 704 | 0.3− | 0.4− | 2006 09 25 | 704 | (1.7− | 0.2+) |
| 1999 09 08 | 704 | 0.5− | 0.1+ | 1999 11 12 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.5− | 0.6+ |
| 1999 09 09 | 704 | 0.1− | 0.1− | 1999 11 14 | 049 | 0.1− | 0.9− | 2006 09 27 | 704 | 0.3− | 0.7− |
| 1999 09 09 | 704 | 0.4− | 0.4+ | 1999 11 14 | 049 | 0.3− | 0.8− | 2006 09 27 | 704 | 0.3− | 0.1− |
| 1999 09 09 | 704 | 0.1− | 0.1+ | 1999 11 14 | 049 | 0.5− | 0.7− | 2006 09 27 | 704 | 0.1− | 0.2− |
| 1999 09 09 | 704 | 0.7− | 0.1+ | 1999 11 16 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.3− |
| 1999 09 09 | 704 | 0.3− | 0.5− | 1999 11 16 | 704 | 0.6+ | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.0 |
| 1999 09 14 | 704 | 0.3− | 0.9− | 1999 11 16 | 704 | 2.0+ | 1.1− | 2006 10 01 | 704 | 0.0 | 0.2− |
| 1999 09 14 | 704 | 0.1+ | 0.0 | 1999 12 05 | 704 | 0.9− | 0.5+ | 2006 10 01 | 704 | 0.2− | 0.1− |
| 1999 09 14 | 704 | 0.1+ | 1.1− | 1999 12 05 | 704 | 0.8− | 0.7− | 2006 10 01 | 704 | 0.2+ | 0.0 |
| 1999 09 14 | 704 | 0.3− | 0.4− | 1999 12 05 | 704 | 1.1− | 1.5− | 2006 10 01 | 704 | 0.6+ | 0.2− |
| 1999 09 14 | 704 | 0.1+ | 0.3+ | 1999 12 07 | 704 | 0.2+ | 0.8+ | 2006 10 15 | 703 | 0.7− | 0.0 |
| 1999 09 30 | 703 | 0.0 | 0.2− | 1999 12 07 | 704 | 0.7+ | 0.9+ | 2006 10 15 | 703 | 0.3− | 0.2+ |
| 1999 09 30 | 703 | 0.3+ | 0.1+ | 1999 12 07 | 704 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.4+ |
| 1999 09 30 | 703 | 0.1− | 0.4− | 1999 12 07 | 704 | 0.8+ | 0.3+ | 2006 10 15 | 703 | 0.3− | 0.2+ |
| 1999 09 30 | 703 | 0.3+ | 0.1+ | 2001 04 16 | 645 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 10 02 | 704 | 0.3+ | 0.4− | 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 10 02 | 704 | 0.2− | 0.3− | 2004 01 18 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 10 02 | 704 | 0.1− | 0.0 | 2004 01 18 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 10 02 | 704 | 0.0 | 0.6− | 2004 01 18 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 1999 10 02 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 10 07 | 703 | 0.3− | 0.1+ | 2004 04 16 | 645 | 0.2− | 0.1− | 2006 10 23 | 704 | 0.2+ | 0.8+ |
| 1999 10 07 | 703 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.8+ | 0.4+ |
| 1999 10 07 | 703 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.2− | 0.6+ |
| 1999 10 07 | 703 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 10 23 | 704 | 0.7− | 0.0 |
| 1999 10 07 | 704 | 0.3+ | 0.1− | 2006 08 19 | 699 | 0.1+ | 0.2− | 2006 10 28 | 704 | 0.5+ | 0.3− |
| 1999 10 07 | 704 | 0.1− | 0.6− | 2006 08 19 | 699 | 0.1+ | 0.3+ | 2006 10 28 | 704 | 0.3− | 0.0 |
| 1999 10 07 | 704 | 0.0 | 0.7+ | 2006 08 19 | 699 | 0.2+ | 0.4+ | 2006 10 28 | 704 | 0.4+ | 0.1+ |
| 1999 10 07 | 704 | 0.1+ | 0.1− | 2006 08 19 | 699 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.3+ | 0.8+ |
| 1999 10 07 | 704 | 0.2− | 0.3− | 2006 08 28 | 704 | 0.9− | 1.5− | 2006 10 28 | 704 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.1− | 0.3+ | 2006 08 28 | 704 | (0.1+ | 1.6−) | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 1999 10 09 | 704 | 0.2− | 0.1+ | 2006 08 28 | 704 | 1.1+ | 1.2− | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 1999 10 09 | 704 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.1+ | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 1999 10 09 | 704 | 0.1− | 0.1− | 2006 08 28 | 704 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 1999 10 09 | 704 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 10 31 | 704 | 0.1− | 1.1+ |
| 1999 10 15 | 704 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 31 | 704 | 0.9− | 0.7− |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 31 | 704 | 0.8− | 0.2+ |
| 1999 10 15 | 704 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.3− |
| 1999 10 15 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.0 |
| 1999 10 15 | 704 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 29 | 703 | 0.1− | 0.1− | 2006 09 16 | 704 | 1.1+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.7− |
| 1999 10 29 | 703 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 1.0+ | 0.8− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 1999 10 29 | 703 | 0.4− | 0.1+ | 2006 09 16 | 704 | 1.1+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 1999 10 29 | 703 | 0.5+ | 0.2− | 2006 09 16 | 704 | 0.3+ | 0.8+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 1999 10 31 | 699 | 0.4+ | 0.1− | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 1999 10 31 | 699 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 1999 10 31 | 699 | 2.0+ | 0.4+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.4− |
| 1999 11 03 | 703 | 0.0 | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 1999 11 03 | 703 | 0.4− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 1999 11 03 | 703 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2+ | 1.2− |
| 1999 11 03 | 703 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 1999 11 06 | 704 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.7+ |
| 1999 11 06 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.2− | 2006 11 22 | 704 | 0.6− | 1.2+ |
| 1999 11 06 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.0 | | | | |
| 1999 11 06 | 704 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.3+ | 0.4− | | | | |

**(137238)∗ 1999 RN$_{29}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.93345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28269259 | $\omega$ | 254.13524 | | +0.18573603 | −0.98195042 | |
| $a$ | 2.2992866 | $\Omega$ | 185.54431 | | +0.98185930 | +0.18688414 | |
| $e$ | 0.3573281 | $i$ | 21.69411 | | +0.03813703 | −0.02911500 | |
| $P$ | 3.49 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.2− | 0.3+ | 2004 01 27 | 704 | 0.9− | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.4− |
| 1999 09 08 | 704 | 0.5− | 0.5− | 2004 02 20 | 704 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.1− |
| 1999 09 08 | 704 | 0.5− | 0.5− | 2004 02 20 | 704 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1999 09 08 | 704 | 0.7− | 0.1+ | 2004 02 20 | 704 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1999 09 08 | 704 | 0.5+ | 0.1− | 2004 02 20 | 704 | 0.1− | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1999 09 09 | 704 | 0.6+ | 0.1+ | 2004 02 20 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 703 | (2.7− | 0.5−) |
| 1999 09 09 | 704 | 0.5+ | 0.4− | 2004 02 20 | 608 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.3+ |
| 1999 09 09 | 704 | 0.8+ | 0.0 | 2004 02 20 | 608 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.2+ |
| 1999 09 09 | 704 | 0.2+ | 0.4− | 2004 02 20 | 608 | 0.6+ | 0.6+ | 2006 09 26 | 704 | 1.3+ | 0.8+ |
| 1999 09 09 | 704 | 0.5+ | 0.6− | 2004 02 27 | 608 | 0.1+ | 0.7+ | 2006 09 26 | 704 | (1.9− | 0.9+) |
| 1999 09 16 | 704 | 0.6− | 0.7− | 2004 02 27 | 608 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 1.3+ | 0.5+ |
| 1999 09 16 | 704 | 0.1− | 0.5− | 2004 02 27 | 608 | 0.3+ | 1.1+ | 2006 09 26 | 704 | (3.0+ | 1.6−) |
| 1999 09 16 | 704 | 0.3+ | 0.2+ | 2004 03 16 | 704 | 0.4− | 0.4− | 2006 09 28 | 691 | (2.0− | 1.3+) |
| 1999 09 16 | 704 | 0.5− | 0.9+ | 2004 03 16 | 704 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 1999 10 08 | 704 | 0.2+ | 0.7+ | 2004 03 16 | 704 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 1999 10 08 | 704 | 0.2− | 0.9+ | 2004 03 16 | 704 | 0.2− | 0.3− | 2006 09 29 | 699 | 0.1+ | 0.2+ |
| 1999 10 08 | 704 | 0.4− | 1.3+ | 2004 03 16 | 704 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.9+ |
| 1999 10 08 | 704 | 0.1+ | 0.6+ | 2004 04 15 | 704 | (0.9+ | 1.7+) | 2006 09 29 | 699 | 0.3− | 0.6+ |
| 2001 04 18 | 644 | 0.4− | 0.2+ | 2004 04 15 | 704 | 0.6+ | 0.5+ | 2006 09 29 | 699 | 0.8+ | 0.9+ |
| 2001 04 18 | 644 | 0.6− | 0.6+ | 2004 04 15 | 704 | 0.6+ | 1.3+ | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2001 04 18 | 644 | 0.5− | 0.8+ | 2004 04 15 | 704 | 0.5+ | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2003 11 26 | 704 | 0.5+ | 0.9− | 2004 04 19 | 704 | 0.7+ | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2003 11 26 | 704 | 1.3+ | 0.4+ | 2004 04 19 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2003 11 26 | 704 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.4− |
| 2003 11 29 | 704 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2003 11 29 | 704 | 0.1+ | 0.3+ | 2004 04 19 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 2003 11 29 | 704 | 0.5+ | 0.2+ | 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.7− | 1.2+ |
| 2003 11 29 | 704 | 0.3+ | 0.4+ | 2005 07 05 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2003 11 29 | 704 | 0.0 | 0.4+ | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2003 12 15 | 644 | 0.1+ | 0.2− | 2006 08 10 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.8− |
| 2003 12 15 | 644 | 0.2− | 0.2− | 2006 08 10 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 2003 12 15 | 644 | 0.0 | 0.2− | 2006 08 10 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2003 12 16 | 704 | 0.7+ | 0.1+ | 2006 09 04 | 203 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2003 12 16 | 704 | 0.1− | 0.1+ | 2006 09 04 | 203 | 0.1− | 0.2− | 2006 11 18 | 703 | 0.8− | 0.3− |
| 2003 12 16 | 704 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.2− | 0.7− | 2006 11 18 | 703 | 0.9− | 0.1− |
| 2003 12 16 | 704 | 0.2− | 0.9− | 2006 09 11 | 703 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2003 12 20 | 608 | 0.7− | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.6− | 2006 11 18 | 703 | 0.6− | 0.2+ |
| 2003 12 20 | 608 | 0.9− | 0.6+ | 2006 09 11 | 703 | 0.2+ | 0.1+ | 2006 11 18 | 703 | 0.4+ | 0.5+ |
| 2003 12 20 | 608 | 0.5− | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.3− | 1.2+ |
| 2004 01 27 | 704 | 0.8− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 1.1+ |
| 2004 01 27 | 704 | 0.2− | 0.4− | 2006 09 19 | 699 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2004 01 27 | 704 | 0.4− | 0.6− | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 11 21 | 704 | 1.7− | 2.2+ |
| 2004 01 27 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.6− | 1.2− | | | | |

**(137239)∗ 1999 RB$_{31}$ = 1998 FV$_{124}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (MPC 39309)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.10560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28715047 | $\omega$ | 312.79933 | | +0.55101879 | +0.83118294 | |
| $a$ | 2.2754276 | $\Omega$ | 349.81779 | | −0.58891807 | +0.32428275 | |
| $e$ | 0.1652486 | $i$ | 24.83593 | | −0.59123075 | +0.45163660 | |
| $P$ | 3.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 22 | 691 | 0.2+ | 0.2+ | 1999 09 18 | 704 | 0.1+ | 0.1+ | 2005 03 19 | E12 | 0.4+ | 0.3− |
| 1991 02 22 | 691 | 0.2+ | 0.5+ | 1999 09 18 | 704 | 0.2− | 0.6+ | 2005 03 19 | E12 | 0.2+ | 0.5− |
| 1991 02 22 | 691 | 0.1+ | 0.1+ | 1999 09 18 | 704 | 0.4− | 0.5+ | 2005 04 02 | E12 | 0.5+ | 0.4− |
| 1998 03 24 | 704 | 0.7− | 1.7− | 1999 09 18 | 704 | 0.1+ | 0.3− | 2005 04 02 | E12 | 0.2+ | 0.1− |
| 1998 03 24 | 704 | 0.8− | 0.5− | 1999 10 03 | 704 | 0.9+ | 0.5− | 2005 04 02 | E12 | (1.7− | 3.6+) |
| 1998 03 24 | 704 | 1.1− | 0.8− | 1999 10 03 | 704 | 0.2− | 0.6+ | 2005 04 02 | E12 | 0.1− | 0.7+ |
| 1998 03 24 | 704 | 1.2− | 1.1− | 1999 10 03 | 704 | 0.6+ | 0.2− | 2005 04 06 | 699 | 1.0− | 1.3+ |
| 1998 03 24 | 704 | (3.1− | 0.6+) | 1999 10 03 | 704 | 0.3+ | 0.5− | 2005 04 06 | 699 | 1.1+ | 1.0+ |
| 1998 03 25 | 704 | 1.2− | 0.1+ | 1999 10 11 | 699 | 0.6+ | 0.6+ | 2005 04 06 | 699 | 0.5− | 0.7− |
| 1998 03 25 | 704 | 1.1− | 0.5− | 1999 10 11 | 699 | 0.4− | 0.8+ | 2005 04 06 | 699 | 1.0+ | 0.1− |
| 1998 03 25 | 704 | 1.1− | 0.8− | 1999 10 11 | 699 | 0.1− | 0.1− | 2005 04 13 | E12 | 0.4+ | 0.5+ |
| 1998 03 25 | 704 | 1.0− | 0.4− | 1999 10 12 | 704 | 0.4− | 0.1+ | 2005 04 13 | E12 | 0.2+ | 0.1− |
| 1998 03 25 | 704 | (4.0− | 2.2−) | 1999 10 12 | 704 | 0.4+ | 0.2+ | 2005 04 13 | E12 | 0.4+ | 0.4+ |
| 1998 04 01 | 704 | 1.9− | 1.3− | 1999 10 12 | 704 | 0.8+ | 0.1− | 2005 04 13 | E12 | 0.1+ | 0.6− |
| 1998 04 01 | 704 | 0.4− | 0.3− | 1999 10 12 | 704 | 0.5+ | 0.5+ | 2005 04 14 | 703 | 0.4− | 0.5+ |
| 1998 04 01 | 704 | 1.9+ | 1.1− | 1999 10 12 | 704 | 0.4+ | 0.0 | 2005 04 14 | 703 | 0.5− | 1.3+ |
| 1998 04 01 | 704 | 1.0+ | 0.8− | 1999 10 13 | 704 | 0.4+ | 0.3− | 2005 04 14 | 703 | 0.2− | 0.8+ |
| 1999 09 06 | 703 | 0.5− | 0.4− | 1999 10 13 | 704 | 0.1− | 0.4− | 2005 04 14 | 703 | 0.3− | 0.2− |
| 1999 09 06 | 703 | 0.2+ | 0.4− | 1999 10 13 | 704 | 0.3+ | 0.2− | 2006 10 16 | 704 | 0.4− | 1.1+ |
| 1999 09 06 | 703 | 0.4− | 0.2+ | 1999 10 13 | 704 | 0.2+ | 0.4− | 2006 10 16 | 704 | 0.2+ | 0.4+ |
| 1999 09 06 | 703 | (2.3+ | 0.8+) | 1999 10 13 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 704 | 0.2+ | 1.0+ |
| 1999 09 08 | 704 | 0.3− | 0.2− | 1999 10 19 | 699 | 0.0 | 0.3+ | 2006 10 16 | 704 | 0.3− | 0.8+ |
| 1999 09 08 | 704 | 0.2+ | 0.5− | 1999 10 19 | 699 | 1.8− | 0.3+ | 2006 11 01 | 703 | 1.5+ | 0.9− |
| 1999 09 08 | 704 | 0.7− | 0.3− | 1999 10 19 | 699 | 0.5+ | 1.1− | 2006 11 01 | 703 | 0.6− | 0.1− |
| 1999 09 08 | 704 | 0.4+ | 1.1− | 2005 03 09 | E12 | 0.5+ | 0.3+ | 2006 11 01 | 703 | 0.6− | 0.2+ |
| 1999 09 08 | 704 | 0.2− | 0.8− | 2005 03 09 | E12 | 0.1+ | 0.2− | 2006 11 01 | 703 | 0.0 | 0.1− |
| 1999 09 09 | 704 | 0.2+ | 0.4− | 2005 03 09 | E12 | 0.1− | 0.1+ | 2006 11 13 | 704 | 0.0 | 0.1+ |
| 1999 09 09 | 704 | 1.2+ | 0.7− | 2005 03 09 | E12 | 0.3+ | 0.2− | 2006 11 13 | 704 | 0.4+ | 0.6− |
| 1999 09 09 | 704 | 0.3+ | 0.5− | 2005 03 19 | E12 | 0.5+ | 0.0 | 2006 11 13 | 704 | 0.3− | 0.3− |
| 1999 09 18 | 704 | 0.5+ | 0.1+ | 2005 03 19 | E12 | 0.1− | 0.2+ | 2006 11 13 | 704 | 1.1− | 0.2+ |

**(137240)∗ 1999 RD$_{35}$**

Discovered 1999 Sept. 7 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.02218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27608412 | $\omega$ | 199.79214 | | +0.72152966 | −0.66993677 | |
| $a$ | 2.3358329 | $\Omega$ | 205.07505 | | +0.67775765 | +0.73502823 | |
| $e$ | 0.2168857 | $i$ | 24.36953 | | +0.14156100 | −0.10449031 | |
| $P$ | 3.57 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 23 | 704 | 0.0 | 0.7− | 1999 10 15 | 704 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.3− |
| 1999 07 23 | 704 | 0.9− | 0.2+ | 1999 10 15 | 704 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 1999 07 23 | 704 | 0.5− | 0.1− | 1999 10 15 | 704 | 0.3+ | 0.2− | 2006 09 21 | 699 | 0.2+ | 0.1+ |
| 1999 07 23 | 704 | 0.0 | 0.9+ | 1999 10 15 | 704 | 0.6+ | 0.6− | 2006 09 21 | 699 | 0.1+ | 0.3− |
| 1999 09 07 | 703 | 0.3+ | 0.6+ | 1999 10 15 | 704 | 0.7+ | 0.5− | 2006 09 21 | 699 | 0.1+ | 0.8+ |
| 1999 09 07 | 703 | 0.1+ | 0.5+ | 1999 10 15 | 120 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.7+ | 0.1− |
| 1999 09 07 | 703 | 0.1− | 0.4+ | 1999 10 15 | 120 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.3+ | 0.9+ |
| 1999 09 07 | 703 | 0.7− | 1.0+ | 1999 10 15 | 120 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 12 | 703 | 0.2− | 1.1+ | 1999 10 19 | 704 | 0.2− | 0.1− | 2006 09 28 | 703 | 1.0− | 0.8− |
| 1999 09 12 | 703 | 0.3− | 0.3+ | 1999 10 19 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 1999 09 12 | 703 | 0.8− | 0.1+ | 1999 10 19 | 704 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.1+ |
| 1999 09 12 | 703 | 0.2+ | 0.1− | 1999 10 19 | 704 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.2+ |
| 1999 09 19 | 848 | 0.3− | 0.2+ | 1999 10 19 | 704 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.1+ |
| 1999 09 19 | 848 | 1.1+ | 0.1+ | 1999 10 30 | 699 | (2.4+ | 0.5+) | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 1999 09 19 | 848 | 0.6+ | 0.2+ | 1999 10 30 | 699 | 0.6− | 1.3+ | 2006 10 23 | 703 | 0.2− | 0.3− |
| 1999 10 02 | 757 | 1.0− | 0.7+ | 1999 10 30 | 699 | 0.1− | 1.1+ | 2006 10 23 | 703 | 0.3− | 0.0 |
| 1999 10 02 | 757 | 0.6− | 0.5− | 1999 11 03 | 703 | 0.2+ | 0.5+ | 2006 10 23 | 703 | 0.5− | 0.1+ |
| 1999 10 02 | 703 | 0.1− | 0.6+ | 1999 11 03 | 703 | 0.4+ | 0.6+ | 2006 10 23 | 703 | 0.0 | 0.1− |
| 1999 10 02 | 703 | 0.1− | 0.1+ | 1999 11 03 | 703 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.0 | 0.3− |
| 1999 10 02 | 703 | 0.2+ | 0.3+ | 1999 11 03 | 703 | 0.2− | 0.4+ | 2006 10 29 | 703 | 0.3− | 0.5− |
| 1999 10 02 | 703 | (3.0− | 1.2−) | 1999 11 06 | 704 | 0.7− | 0.2+ | 2006 10 29 | 703 | 0.4− | 0.0 |
| 1999 10 03 | 757 | 0.2− | 0.1− | 1999 11 06 | 704 | 0.7− | 0.1+ | 2006 10 29 | 703 | 0.8− | 0.2− |
| 1999 10 03 | 757 | 0.1+ | 0.6+ | 1999 11 06 | 704 | 0.5− | 0.3+ | 2006 11 06 | 644 | 0.2− | 0.6+ |
| 1999 10 03 | 704 | 0.1− | 0.2+ | 1999 11 06 | 704 | 1.1− | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 1999 10 03 | 704 | 0.2+ | 0.6+ | 1999 11 06 | 704 | 0.5− | 0.3+ | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 1999 10 03 | 704 | 0.1+ | 0.4+ | 1999 11 12 | 120 | 1.3− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.4− |
| 1999 10 03 | 704 | 0.2− | 0.6+ | 1999 11 12 | 120 | 1.1− | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.3− |
| 1999 10 03 | 704 | 0.0 | 0.8+ | 2000 01 10 | 704 | 0.9+ | 1.0− | 2006 11 13 | 703 | 0.2− | 0.8− |
| 1999 10 06 | 704 | 0.1− | 0.4− | 2000 01 10 | 704 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.6− |
| 1999 10 06 | 704 | 0.2− | 0.3− | 2000 01 10 | 704 | 0.2+ | 0.9− | 2006 11 15 | 704 | 0.2− | 0.7+ |
| 1999 10 06 | 704 | 0.3− | 0.0 | 2000 01 10 | 704 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.2+ | 1.0+ |
| 1999 10 06 | 704 | 0.3− | 0.1− | 2004 02 20 | 704 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.8− | 0.6+ |
| 1999 10 06 | 704 | 0.3− | 0.1+ | 2004 02 20 | 704 | 0.3+ | 0.0 | 2006 11 15 | 704 | 0.0 | 0.4+ |
| 1999 10 07 | 704 | 0.2+ | 0.2+ | 2004 02 20 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 704 | 0.2− | 0.5+ |
| 1999 10 07 | 704 | 0.2+ | 0.2− | 2004 02 20 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.5+ |
| 1999 10 07 | 704 | 0.1+ | 1.0− | 2005 05 15 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 1999 10 07 | 704 | 0.3+ | 0.5− | 2005 05 15 | 644 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 1999 10 07 | 704 | 0.0 | 0.9− | 2005 05 15 | 644 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.6+ | 0.2− |
| 1999 10 07 | 704 | 0.6− | 0.9− | 2005 05 20 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.2− |
| 1999 10 07 | 704 | 0.4+ | 0.8− | 2005 05 20 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 1.4− | 0.2+ |
| 1999 10 07 | 704 | 0.2+ | 0.9− | 2005 05 20 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 1999 10 07 | 704 | 0.7+ | 0.9− | 2005 05 27 | 461 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.8− | 0.4+ |
| 1999 10 07 | 704 | 0.8+ | 0.4− | 2005 05 27 | 461 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.8+ |
| 1999 10 07 | 120 | 0.2− | 0.2− | 2005 05 27 | 461 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 1.0− | 0.8+ |
| 1999 10 08 | 120 | 0.0 | 0.4− | 2005 05 27 | 461 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 1999 10 10 | 704 | 0.2+ | 0.5− | 2005 05 27 | 461 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.2+ |
| 1999 10 10 | 704 | 0.2+ | 0.8− | 2006 08 23 | 704 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 1999 10 10 | 704 | (1.5− | 4.7+) | 2006 08 23 | 704 | 0.8+ | 0.8− | 2006 11 21 | 704 | 0.8+ | 0.8+ |
| 1999 10 10 | 704 | 0.5+ | 1.0− | 2006 08 23 | 704 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 1999 10 11 | 684 | 0.0 | 0.2− | 2006 09 02 | 106 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 1999 10 11 | 684 | 0.0 | 0.0 | 2006 09 02 | 106 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 1999 10 11 | 684 | 0.0 | 0.1− | 2006 09 02 | 106 | 0.3+ | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.2+ |
| 1999 10 11 | 684 | 0.1− | 0.2− | 2006 09 02 | 106 | 0.6+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 1999 10 11 | 684 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 1999 10 12 | 691 | 0.4+ | 0.3− | 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.0 | 0.3− |
| 1999 10 12 | 691 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.1+ | 0.3+ |
| 1999 10 12 | 691 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.1+ |
| 1999 10 14 | 120 | 0.6+ | 0.6− | 2006 09 17 | 703 | (1.6+ | 0.4−) | 2006 11 27 | 703 | 0.1− | 0.3− |
| 1999 10 14 | 120 | 0.7+ | 0.3− | 2006 09 17 | 703 | 0.2− | 0.4− | | | | |

**(137241)∗ 1999 RV$_{36}$**

Discovered 1999 Sept. 11 by F. B. Zoltowski at Woomera.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.25491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27979413 | $\omega$ | 338.71259 | | +0.99785206 | | +0.05510164 |
| $a$ | 2.3151386 | $\Omega$ | 18.23627 | | −0.03045260 | | +0.86900256 |
| $e$ | 0.1422667 | $i$ | 6.50028 | | −0.05799912 | | +0.49172996 |
| $P$ | 3.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.7+ | 0.2− | 2005 05 08 | G96 | 0.2− | 0.8+ | 2006 09 12 | 704 | 0.3− | 0.6+ |
| 1999 09 04 | 699 | 0.6+ | 0.2− | 2006 08 07 | E12 | 0.4+ | 0.7− | 2006 09 12 | 704 | (0.8− | 1.8−) |
| 1999 09 04 | 699 | 0.6+ | 0.2+ | 2006 08 07 | E12 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.2− |
| 1999 09 07 | 704 | 0.2+ | 1.7− | 2006 08 07 | E12 | 0.3− | 0.0 | 2006 09 14 | 703 | 1.1− | 0.2+ |
| 1999 09 07 | 704 | 0.2+ | 0.1+ | 2006 08 07 | E12 | 0.1+ | 0.4− | 2006 09 14 | 703 | 1.0− | 0.1+ |
| 1999 09 07 | 704 | 0.4+ | 0.0 | 2006 08 14 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.3+ |
| 1999 09 07 | 704 | 0.1− | 1.6− | 2006 08 14 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.6+ | 0.3+ |
| 1999 09 11 | 426 | 0.1− | 0.0 | 2006 08 14 | 644 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.2+ | 1.4+ |
| 1999 09 11 | 426 | 0.5− | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.2− | 0.5− |
| 1999 09 11 | 426 | 0.0 | 0.9+ | 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 09 19 | 704 | 0.3− | 0.3+ |
| 1999 09 13 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 19 | 704 | 0.8− | 1.5+ |
| 1999 09 13 | 704 | 0.5− | 0.8+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.4+ | 0.3− |
| 1999 09 13 | 704 | 0.5+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 19 | 704 | 1.0+ | 0.0 |
| 1999 09 13 | 704 | 0.4− | 1.0− | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.1− |
| 1999 09 13 | 426 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 1999 09 13 | 426 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.3− |
| 1999 09 13 | 426 | 0.6− | 0.1+ | 2006 08 20 | 644 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.6− | 0.2− |
| 1999 09 16 | 426 | 0.3− | 0.3− | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.0 |
| 1999 09 16 | 426 | 0.0 | 0.2+ | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.7+ | 0.1+ |
| 1999 09 16 | 426 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.1− | 0.8+ | 2006 09 25 | 699 | 0.9+ | 0.6+ |
| 1999 10 03 | 426 | 0.2+ | 0.0 | 2006 08 23 | 704 | 0.3− | 1.1+ | 2006 09 26 | 704 | 0.5− | 0.1+ |
| 1999 10 03 | 426 | 0.0 | 0.1− | 2006 08 23 | 704 | 0.1− | 0.6− | 2006 09 26 | 704 | 0.7+ | 0.3+ |
| 1999 10 03 | 426 | 0.0 | 0.3+ | 2006 08 23 | 704 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.4+ | 0.2− |
| 1999 10 08 | 704 | 0.4+ | 0.5− | 2006 08 23 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.7+ | 0.4+ |
| 1999 10 08 | 704 | 0.4− | 0.1+ | 2006 08 23 | 704 | 0.0 | 0.4+ | 2006 09 28 | 704 | (1.1− | 2.5+) |
| 1999 10 08 | 704 | 0.3− | 1.2+ | 2006 08 30 | 699 | 0.8− | 0.4− | 2006 09 28 | 704 | 0.3− | 0.8+ |
| 2003 11 20 | 704 | 0.6+ | 0.0 | 2006 08 30 | 699 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.4+ | 0.2+ |
| 2003 11 20 | 704 | 0.8− | 0.8+ | 2006 08 30 | 699 | 0.1− | 0.0 | 2006 09 30 | 703 | 1.1− | 0.3+ |
| 2003 11 20 | 704 | 0.4+ | 1.3+ | 2006 08 30 | 699 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.7− |
| 2003 11 20 | 704 | 0.3− | 0.7+ | 2006 08 31 | 704 | 0.7+ | 0.4− | 2006 09 30 | 703 | 0.7− | 0.3+ |
| 2005 03 12 | 691 | 0.5+ | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 2005 03 12 | 691 | 0.2+ | 0.5+ | 2006 08 31 | 704 | 0.6− | 0.8+ | 2006 11 17 | G96 | 0.3+ | 0.1+ |
| 2005 03 12 | 691 | 0.2+ | 0.6+ | 2006 08 31 | 704 | 0.9− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2005 05 08 | G96 | 0.0 | 0.5+ | 2006 09 12 | 704 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2005 05 08 | G96 | 0.2+ | 0.4+ | 2006 09 12 | 704 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 09 12 | 704 | 0.1− | 0.0 | | | | |

**(137242)∗ 1999 RY$_{53}$ = 1996 VP$_{31}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 5595)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.01050 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29413493 | $\omega$ | 178.69067 | | +0.87168751 | | +0.48749859 |
| $a$ | 2.2392624 | $\Omega$ | 151.95752 | | −0.45058551 | | +0.83744411 |
| $e$ | 0.2087653 | $i$ | 6.11257 | | −0.19270076 | | +0.24704753 |
| $P$ | 3.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 03 | 691 | 0.6+ | 0.3− | 2002 06 10 | 644 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.4+ |
| 1996 11 03 | 691 | 0.0 | 0.3− | 2002 06 10 | 644 | 0.5+ | 0.4− | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 1996 11 19 | 691 | 0.0 | 0.3− | 2002 06 10 | 644 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.5+ |
| 1996 11 19 | 691 | 0.1− | 0.4− | 2005 03 11 | 695 | 0.2− | 0.2− | 2006 11 01 | 703 | 0.7+ | 0.7+ |
| 1999 08 12 | 699 | 0.7− | 0.5+ | 2005 03 11 | 691 | 0.2− | 0.3+ | 2006 11 01 | 703 | 0.6+ | 0.1+ |
| 1999 08 12 | 699 | 0.4+ | 0.7+ | 2005 03 11 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 703 | 0.7+ | 0.6− |
| 1999 08 12 | 699 | (2.5+ | 0.7+) | 2005 03 11 | 691 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.4− | 1.0+ |
| 1999 09 07 | 704 | 0.7+ | 0.2+ | 2005 03 11 | 695 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 1999 09 07 | 704 | 0.1+ | 0.1− | 2005 03 12 | 695 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 1999 09 07 | 704 | 1.2+ | 0.4− | 2006 09 18 | 703 | (1.3− | 1.5+) | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 1999 09 09 | 704 | 0.3− | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.7− | 0.2+ |
| 1999 09 09 | 704 | 0.7− | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 11 13 | 703 | 0.6− | 1.3+ |
| 1999 09 09 | 704 | 0.3+ | 0.8− | 2006 09 18 | 703 | 0.1− | 0.5+ | 2006 11 13 | 703 | 0.5− | 0.0 |
| 1999 09 09 | 704 | 0.6− | 0.8− | 2006 10 16 | 703 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.6− | 0.1− |
| 1999 09 09 | 704 | 1.4− | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.1+ | 2006 11 19 | 703 | (1.9− | 0.4+) |
| 2002 06 02 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.7+ |
| 2002 06 02 | 644 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.9− | 0.3+ | 2006 11 19 | 703 | 0.1− | 0.7+ |
| 2002 06 02 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.2− | 0.1− |

**(137243)∗ 1999 RP$_{59}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.30748 | | (2000.0) | | | |
| $n$ | 0.27944261 | $\omega$ | 16.37111 | | +0.97657796 | −0.21501879 |
| $a$ | 2.3170796 | $\Omega$ | 356.02014 | | +0.18244110 | +0.84696270 |
| $e$ | 0.1352553 | $i$ | 6.53563 | | +0.11406460 | +0.48623153 |
| $P$ | 3.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.7+ | 0.1+ | 2003 12 12 | 644 | 0.4− | 0.6+ | 2006 08 16 | E12 | 0.1− | 0.1− |
| 1999 08 13 | 699 | 0.3− | 0.1− | 2003 12 17 | 704 | 0.2+ | 0.3− | 2006 08 16 | E12 | 0.2+ | 0.3+ |
| 1999 08 13 | 699 | 0.3+ | 0.9+ | 2003 12 17 | 704 | 0.7+ | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.2+ |
| 1999 09 07 | 704 | 0.4− | 0.3+ | 2003 12 17 | 704 | 0.1− | 0.1− | 2006 08 17 | 644 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 1.2− | 0.6− | 2003 12 17 | 704 | 0.4− | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.1− |
| 1999 09 07 | 704 | 0.7− | 1.0+ | 2003 12 17 | 704 | 0.4+ | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.0 |
| 1999 09 07 | 704 | 0.2− | 0.1+ | 2003 12 27 | 704 | 0.6− | 1.4+ | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 1999 09 07 | 704 | 0.3− | 1.0+ | 2003 12 27 | 704 | 0.6− | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.1− |
| 1999 09 13 | 704 | 0.3+ | 0.4+ | 2003 12 27 | 704 | (1.7− | 1.1+) | 2006 08 23 | 644 | 0.0 | 0.1+ |
| 1999 09 13 | 704 | 0.2− | 0.2− | 2003 12 27 | 704 | 0.2+ | 1.0+ | 2006 08 23 | 644 | 0.1+ | 0.1− |
| 1999 09 13 | 704 | 0.1− | 0.4+ | 2003 12 29 | 704 | 0.2+ | 0.6+ | 2006 08 23 | 644 | 0.0 | 0.2− |
| 1999 09 13 | 704 | 0.2+ | 1.2+ | 2003 12 29 | 704 | 0.3− | 0.5+ | 2006 08 28 | 704 | 0.0 | 0.7− |
| 1999 09 13 | 704 | 0.3− | 0.4+ | 2003 12 29 | 704 | 0.0 | 0.2+ | 2006 08 28 | 704 | 0.4− | 0.1− |
| 2001 02 17 | 704 | (1.6+ | 0.8+) | 2003 12 29 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 704 | 0.7+ | 0.6+ |
| 2001 02 17 | 704 | 0.2− | 0.1− | 2003 12 29 | 704 | 0.0 | 0.1− | 2006 08 28 | 704 | 0.1+ | 0.3− |
| 2001 02 17 | 704 | 0.1+ | 0.6+ | 2005 03 03 | 691 | 0.3+ | 0.2− | 2006 08 28 | E12 | 0.2+ | 0.1+ |
| 2001 02 17 | 704 | 1.5− | 0.6− | 2005 03 03 | 691 | 0.3+ | 0.5− | 2006 08 28 | E12 | 0.4− | 0.5+ |
| 2003 10 30 | 704 | 0.8+ | 0.0 | 2005 03 03 | 691 | 0.3+ | 0.3− | 2006 08 28 | E12 | 0.1+ | 0.0 |
| 2003 10 30 | 704 | 1.2+ | 1.3− | 2005 03 11 | G96 | 0.1+ | 0.5+ | 2006 08 28 | E12 | 0.3+ | 0.5+ |
| 2003 10 30 | 704 | 0.2+ | 0.2− | 2005 03 11 | G96 | 0.9− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2003 11 19 | 704 | 0.1− | 0.5+ | 2005 03 11 | G96 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.1− |
| 2003 11 19 | 704 | 0.2− | 0.5− | 2005 03 11 | G96 | 0.4− | 0.6+ | 2006 09 14 | 644 | 0.4− | 0.2− |
| 2003 11 19 | 704 | 0.1− | 0.1− | 2005 03 13 | G96 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.8− |
| 2003 11 19 | 704 | 0.7+ | 0.1− | 2005 03 13 | G96 | 0.8− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2003 11 19 | 704 | 0.4− | 0.3+ | 2005 03 13 | G96 | 0.5− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.8− |
| 2003 12 03 | 704 | 0.6− | 0.4− | 2005 03 13 | G96 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2003 12 03 | 704 | 0.2+ | 0.5− | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2003 12 03 | 704 | 0.2− | 0.2− | 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2003 12 03 | 704 | 0.3− | 0.3+ | 2005 03 17 | 691 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.6− | 0.0 |
| 2003 12 12 | 644 | 0.4− | 0.1− | 2006 08 16 | E12 | 0.1+ | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2003 12 12 | 644 | 0.4− | 0.2+ | 2006 08 16 | E12 | 0.6− | 0.3− | | | | |

**(137244)∗ 1999 RY$_{59}$ = 2002 NJ$_{29}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33079)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 122.29655 | | (2000.0) | | | |
| $n$ | 0.32359285 | $\omega$ | 16.65779 | | +0.74056538 | +0.66649951 |
| $a$ | 2.1012131 | $\Omega$ | 301.22710 | | −0.62739520 | +0.64011000 |
| $e$ | 0.0800238 | $i$ | 5.75059 | | −0.24070351 | +0.38214865 |
| $P$ | 3.05 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.4+ | 1.8+ | 2002 08 17 | 644 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.8+ | 0.1− |
| 1999 08 12 | 699 | 0.4+ | 0.0 | 2002 08 27 | 644 | 0.2+ | 0.8+ | 2004 02 10 | 644 | 0.4+ | 0.4+ |
| 1999 08 12 | 699 | 0.1+ | 0.6+ | 2002 08 27 | 644 | 0.1− | 0.8+ | 2004 02 10 | 644 | 0.3+ | 0.6+ |
| 1999 09 04 | 703 | 0.4− | 0.1+ | 2002 08 27 | 644 | 0.0 | 0.8+ | 2004 02 10 | 644 | 0.0 | 0.4+ |
| 1999 09 04 | 703 | 1.2− | 0.2+ | 2004 01 16 | 644 | 1.3+ | 1.2+ | 2004 02 14 | 691 | 0.1− | 0.4+ |
| 1999 09 04 | 703 | 1.1− | 0.6+ | 2004 01 16 | 644 | 0.9+ | 1.1+ | 2004 02 14 | 691 | 0.1− | 0.4+ |
| 1999 09 04 | 703 | 1.6− | 0.4+ | 2004 01 16 | 644 | 1.3+ | 1.2+ | 2004 02 14 | 691 | 0.0 | 0.5+ |
| 1999 09 07 | 704 | 0.5− | 0.5− | 2004 01 19 | 691 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 1.4− | 0.7+ |
| 1999 09 07 | 704 | 1.2+ | 0.5+ | 2004 01 19 | 691 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.6− | 1.0+ |
| 1999 09 07 | 704 | 0.6+ | 0.2− | 2004 01 19 | 691 | 0.4+ | 0.3+ | 2004 02 26 | 704 | (0.6− | 2.2+) |
| 1999 09 07 | 704 | 0.4+ | 1.4+ | 2004 01 21 | 704 | 0.7+ | 0.7+ | 2005 06 29 | 703 | 0.1+ | 0.8+ |
| 1999 09 09 | 704 | 1.2− | 0.4− | 2004 01 21 | 704 | 1.2+ | 0.1+ | 2005 06 29 | 703 | 0.4− | 0.4+ |
| 1999 09 09 | 704 | 0.3+ | 0.9− | 2004 01 21 | 704 | 0.6+ | 0.6+ | 2005 06 29 | 703 | (1.7− | 0.3+) |
| 1999 09 09 | 704 | 0.4− | 0.7− | 2004 01 21 | 704 | 0.8+ | 0.1+ | 2005 06 29 | 703 | 0.1− | 0.0 |
| 1999 09 09 | 704 | 0.5+ | 0.3+ | 2004 01 24 | 704 | 0.3+ | 0.7+ | 2005 07 02 | 691 | 0.1+ | 0.0 |
| 2001 02 02 | 704 | 0.6+ | 0.8+ | 2004 01 24 | 704 | 0.3+ | 0.3+ | 2005 07 02 | 691 | 0.0 | 0.1− |
| 2001 02 02 | 704 | 0.1+ | 0.2+ | 2004 01 24 | 704 | 0.3+ | 0.6+ | 2005 07 02 | 691 | 0.1− | 0.0 |
| 2001 02 02 | 704 | 0.1− | 0.3+ | 2004 01 24 | 704 | 0.3+ | 1.0+ | 2005 08 01 | E12 | 0.0 | 0.3+ |
| 2001 02 02 | 704 | 0.2+ | 0.9− | 2004 01 24 | 704 | 0.4− | 1.4+ | 2005 08 01 | E12 | 0.2+ | 0.1+ |
| 2001 02 02 | 704 | 0.4− | 0.2+ | 2004 01 26 | 699 | 0.2− | 0.2+ | 2005 08 01 | E12 | 0.3+ | 0.5+ |
| 2002 07 05 | 704 | 0.6+ | 0.5+ | 2004 01 26 | 699 | 0.6− | 0.5+ | 2005 08 01 | E12 | 0.0 | 0.5+ |
| 2002 07 05 | 704 | 0.3+ | 1.2+ | 2004 01 26 | 699 | (1.6− | 0.5+) | 2005 08 02 | 704 | 0.3− | 0.6+ |
| 2002 07 05 | 704 | 1.3− | 0.7+ | 2004 01 26 | 699 | 0.3+ | 1.0+ | 2005 08 02 | 704 | (1.4+ | 1.7−) |
| 2002 07 05 | 704 | 1.3− | 0.5+ | 2004 01 27 | 704 | 0.2− | 0.5+ | 2005 08 02 | 704 | 0.7− | 1.1+ |
| 2002 07 13 | 608 | 0.2− | 0.1− | 2004 01 27 | 704 | (0.0 | 2.2+) | 2005 08 02 | 704 | 0.3− | 0.2+ |
| 2002 07 13 | 608 | 0.3− | 0.2+ | 2004 01 27 | 704 | 0.9− | 1.2− | 2005 08 06 | 704 | 0.4− | 0.1+ |
| 2002 07 13 | 608 | 0.0 | 0.6+ | 2004 01 27 | 704 | 0.0 | 0.9+ | 2005 08 06 | 704 | 0.2− | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.4+ | 2004 01 28 | 704 | 0.2+ | 0.6− | 2005 08 06 | 704 | 0.1+ | 0.2+ |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2004 01 28 | 704 | 0.2+ | 0.2− | 2005 08 06 | 704 | 0.5+ | 0.8− |
| 2002 07 14 | 644 | 0.0 | 0.5+ | 2004 01 28 | 704 | 0.2+ | 0.7+ | 2005 08 06 | 704 | 0.0 | 0.2+ |
| 2002 07 18 | 644 | 0.1− | 0.6+ | 2004 01 28 | 704 | 0.3− | 0.6− | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2002 07 18 | 644 | 0.2− | 0.5+ | 2004 01 28 | 704 | 0.9− | 0.2+ | 2005 10 27 | G96 | 0.5+ | 0.4+ |
| 2002 07 18 | 644 | 0.2− | 0.5+ | 2004 01 29 | 704 | 0.1+ | 0.1− | 2005 10 27 | G96 | 0.6− | 0.1− |
| 2002 08 06 | 644 | 0.3+ | 0.5+ | 2004 01 29 | 704 | 0.7− | 0.2+ | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2004 01 29 | 704 | 1.1− | 0.7− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2002 08 06 | 644 | 0.5+ | 0.2+ | 2004 01 29 | 704 | 0.3− | 0.7− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 08 14 | 704 | 1.0− | 0.1+ | 2004 01 29 | 704 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2002 08 14 | 704 | 1.1− | 1.0+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 08 14 | 704 | 0.6+ | 0.3+ | 2004 01 30 | 691 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2004 01 30 | 704 | 1.2+ | 1.2+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2002 08 17 | 644 | 0.5− | 0.4+ | 2004 01 30 | 691 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.1− | 0.4+ | 2004 01 30 | 704 | 0.3− | 0.9+ | 2006 11 21 | G96 | 0.6− | 0.1− |
| 2002 08 17 | 644 | 0.2− | 0.2+ | 2004 01 30 | 704 | (2.1+ | 0.3−) | 2006 11 28 | G96 | 0.3− | 0.1+ |
| 2002 08 17 | 644 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.8+ | 0.4− | 2006 11 28 | G96 | 0.6− | 0.2− |
| 2002 08 17 | 644 | 0.2+ | 0.5+ | 2004 01 30 | 704 | 0.5+ | 0.3− | 2006 11 28 | G96 | 0.3− | 0.1− |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2006 11 28 | G96 | 0.0 | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.5+ | 2004 01 30 | 704 | 0.7+ | 0.2− | | | | |

**(137245)∗ 1999 RW$_{62}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.31774 | | (2000.0) | | | |
| $n$ | 0.28558827 | $\omega$ | 176.23842 | | +0.99423177 | −0.10599644 |
| $a$ | 2.2837180 | $\Omega$ | 189.89110 | | +0.09574857 | +0.94595560 |
| $e$ | 0.1343397 | $i$ | 5.46806 | | +0.04832587 | +0.30648451 |
| $P$ | 3.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 699 | 0.4+ | 0.7− | 2005 04 12 | 704 | (1.7+ | 1.4+) | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 1999 08 08 | 699 | 0.0 | 0.5− | 2005 04 12 | 704 | 0.8+ | 1.0+ | 2006 09 26 | 704 | 0.5− | 0.3− |
| 1999 08 08 | 699 | 1.2− | 1.4+ | 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.6− | 0.4− |
| 1999 09 05 | 699 | 0.5− | 1.2+ | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.0 |
| 1999 09 05 | 699 | 0.1− | 0.5+ | 2005 04 14 | 691 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.5+ | 0.2− |
| 1999 09 05 | 699 | 0.9− | 0.6− | 2005 04 18 | 691 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.0 |
| 1999 09 07 | 704 | 0.7+ | 1.0− | 2005 04 18 | 691 | 0.4− | 0.0 | 2006 09 27 | 704 | 1.0− | 0.3+ |
| 1999 09 07 | 704 | 0.4+ | 0.3− | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.4− | 1.3+ |
| 1999 09 07 | 704 | 0.6+ | 0.4− | 2005 05 04 | 691 | 0.1− | 0.4− | 2006 09 27 | 704 | 0.3+ | 0.0 |
| 1999 09 07 | 704 | 0.9+ | 0.1− | 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.7+ |
| 1999 09 07 | 704 | 1.4+ | 0.1+ | 2005 05 04 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 1999 09 09 | 704 | 0.9+ | 0.6− | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.4+ |
| 1999 09 09 | 704 | 0.9+ | 1.1− | 2005 05 10 | G96 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 1999 09 09 | 704 | 0.2− | 0.7− | 2005 05 10 | G96 | 0.6− | 0.3− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 1999 09 09 | 704 | 0.7+ | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 1999 10 06 | 704 | 0.2− | 0.6− | 2006 08 21 | 691 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.2− |
| 1999 10 06 | 704 | 0.0 | 1.1− | 2006 08 21 | 691 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.2− |
| 1999 10 06 | 704 | 0.1+ | 1.5− | 2006 08 21 | 691 | 0.2− | 0.2− | 2006 09 29 | 704 | 1.1+ | 0.4− |
| 1999 10 06 | 704 | 0.3+ | 1.4− | 2006 08 24 | 704 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.2− | 0.7+ |
| 1999 10 06 | 704 | 0.1+ | 1.7− | 2006 08 24 | 704 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.6+ | 0.0 |
| 1999 10 08 | 704 | 0.1− | 1.3− | 2006 08 24 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.3− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.2+ | 0.1− | 2006 08 24 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 704 | 0.1− | 1.3+ |
| 1999 10 08 | 704 | 0.5+ | 1.6− | 2006 08 28 | 703 | 1.4− | 1.0+ | 2006 10 01 | 703 | 0.4− | 0.4+ |
| 1999 10 15 | 704 | 0.5− | 0.9− | 2006 08 28 | 703 | 0.3+ | 0.9+ | 2006 10 01 | 703 | 0.2+ | 0.3+ |
| 1999 10 15 | 704 | 0.2− | 0.9− | 2006 08 28 | 703 | 0.5+ | 0.9+ | 2006 10 01 | 703 | (1.8− | 0.3+) |
| 1999 10 15 | 704 | (2.1− | 0.6−) | 2006 08 28 | 703 | 0.6+ | 1.0+ | 2006 10 01 | 703 | 0.8− | 1.3+ |
| 1999 10 15 | 704 | 0.0 | 0.4− | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 0.5− | 0.5− | 2006 08 30 | 704 | 0.2+ | 0.7− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 06 09 | 704 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 06 09 | 704 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2002 06 09 | 704 | 0.3− | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2002 06 09 | 704 | 0.3− | 0.6+ | 2006 09 01 | 704 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 06 09 | 704 | 1.0+ | 0.1− | 2006 09 01 | 704 | 0.1+ | 1.3+ | 2006 10 12 | 644 | 0.9− | 0.4− |
| 2005 04 05 | G96 | 0.3− | 0.3− | 2006 09 01 | 704 | 1.0+ | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2005 04 05 | G96 | 0.1− | 0.5− | 2006 09 01 | 704 | 0.2− | 1.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2005 04 05 | G96 | 0.1+ | 0.5− | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2005 04 05 | G96 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2005 04 06 | G96 | 0.6− | 0.2− | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2005 04 06 | G96 | 0.5− | 0.3− | 2006 09 12 | 224 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2005 04 06 | G96 | 0.3− | 0.3− | 2006 09 13 | 224 | 0.9− | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2005 04 06 | G96 | 0.7− | 0.2− | 2006 09 13 | 224 | 1.1− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2005 04 09 | 691 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.4+ | 0.5− | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2005 04 09 | 691 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.7+ | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2005 04 09 | 691 | 0.0 | 0.0 | 2006 09 16 | 699 | 1.0+ | 0.3+ | 2006 10 24 | 644 | 0.1− | 0.4+ |
| 2005 04 10 | 691 | 0.5+ | 0.8+ | 2006 09 16 | 699 | 0.1− | 0.5+ | 2006 10 24 | 644 | 0.0 | 0.5+ |
| 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.2− | 0.4+ |
| 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2005 04 10 | 691 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.8+ | 2006 11 11 | 703 | 0.8+ | 0.5− |
| 2005 04 11 | 691 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2005 04 11 | 691 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.7+ | 1.1− |
| 2005 04 11 | 699 | (2.2− | 0.0 ) | 2006 09 20 | 704 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2005 04 11 | 699 | 0.4− | 1.5+ | 2006 09 20 | 704 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2005 04 11 | 699 | 0.4+ | 1.1+ | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 2005 04 11 | 699 | 1.0+ | 0.1+ | 2006 09 25 | 699 | 0.8− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2005 04 12 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.3+ |

**(137246)∗ 1999 RN$_{63}$ = 2002 LN$_{35}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31260)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.40124 | | (2000.0) | | | |
| $n$ | 0.29755418 | $\omega$ | 125.40841 | | +0.66883671 | +0.74334900 |
| $a$ | 2.2220748 | $\Omega$ | 186.59352 | | −0.70601477 | +0.63115132 |
| $e$ | 0.1602740 | $i$ | 4.73202 | | −0.23281023 | +0.22154071 |
| $P$ | 3.31 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.3− | 0.1+ | 2002 06 09 | 704 | 0.5− | 1.0+ | 2005 05 07 | 691 | 0.2+ | 0.1+ |
| 1999 09 05 | 699 | 0.0 | 0.1+ | 2002 06 13 | 704 | 0.7+ | 0.2− | 2005 05 07 | 691 | 0.2− | 0.0 |
| 1999 09 05 | 699 | 0.8− | 1.0− | 2002 06 13 | 704 | 0.1+ | 0.1+ | 2005 05 07 | 691 | 0.1+ | 0.5+ |
| 1999 09 07 | 704 | 0.1− | 0.7− | 2002 06 13 | 704 | 0.4− | 0.2− | 2005 05 11 | G96 | 0.1− | 0.2− |
| 1999 09 07 | 704 | 0.7− | 0.3+ | 2002 06 13 | 704 | (1.7+ | 1.3+) | 2005 05 11 | G96 | 0.1− | 0.3− |
| 1999 09 07 | 704 | 0.2− | 0.3− | 2002 06 13 | 704 | 0.2− | 0.2− | 2005 05 11 | G96 | 0.1+ | 0.2− |
| 1999 09 07 | 704 | 0.1+ | 0.3+ | 2002 06 17 | 644 | 0.5+ | 1.1+ | 2005 05 11 | G96 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 0.0 | 0.1+ | 2002 06 17 | 644 | 0.7+ | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.3+ |
| 1999 09 14 | 704 | 0.3− | 0.3− | 2002 06 17 | 644 | 0.5+ | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.6+ |
| 1999 09 14 | 704 | 0.7− | 0.3+ | 2005 04 05 | G96 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.3+ |
| 1999 09 14 | 704 | 0.7+ | 0.8+ | 2005 04 05 | G96 | 0.8− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.2+ |
| 1999 09 14 | 704 | 0.8+ | 0.1− | 2005 04 05 | G96 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 1999 10 06 | 704 | 0.9+ | 0.3− | 2005 04 05 | G96 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.4+ |
| 1999 10 06 | 704 | 0.1+ | 0.5− | 2005 04 05 | G96 | 0.2− | 0.6− | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 1999 10 06 | 704 | 0.7+ | 1.0− | 2005 04 05 | G96 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.3+ |
| 1999 10 06 | 704 | 0.5+ | 0.4− | 2005 04 05 | G96 | 0.3− | 0.3− | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 1999 10 06 | 704 | 0.8+ | 0.4− | 2005 04 05 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.4+ |
| 2002 06 09 | 704 | 0.1− | 1.2+ | 2005 04 12 | 704 | 0.0 | 1.4+ | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 2002 06 09 | 704 | 0.8− | 0.4+ | 2005 04 12 | 704 | 1.1+ | 0.1− | | | | |
| 2002 06 09 | 704 | 0.7− | 0.2− | 2005 04 12 | 704 | 1.1+ | 0.4+ | | | | |

**(137247)∗ 1999 RG$_{66}$ = 1993 TH$_{31}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17030)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.99950 | | (2000.0) | | | |
| $n$ | 0.31728294 | $\omega$ | 184.52409 | | +0.91389613 | +0.40543931 |
| $a$ | 2.1289800 | $\Omega$ | 151.53018 | | −0.37109999 | +0.85468550 |
| $e$ | 0.0814278 | $i$ | 2.44284 | | −0.16455592 | +0.32424014 |
| $P$ | 3.11 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 19 | 691 | 0.0 | 0.4+ | 2002 07 22 | 644 | 0.2− | 0.5+ | 2004 02 11 | 691 | 0.2+ | 0.4+ |
| 1993 09 19 | 691 | 0.2− | 0.4− | 2002 08 06 | 644 | 0.2+ | 0.8+ | 2004 02 11 | 691 | 0.0 | 0.5+ |
| 1993 09 19 | 691 | 0.3− | 0.3− | 2002 08 06 | 644 | 0.2+ | 0.4+ | 2004 02 16 | 704 | 0.1− | 0.7+ |
| 1993 10 09 | 809 | 1.0+ | 2.3+ | 2002 08 06 | 644 | 0.0 | 0.3+ | 2004 02 16 | 704 | 0.7+ | 0.8+ |
| 1993 10 09 | 809 | (1.7+ | 2.9+) | 2002 08 07 | 644 | 0.3− | 0.4+ | 2004 02 16 | 704 | 0.4− | 0.1− |
| 1993 10 09 | 809 | (1.3+ | 3.7+) | 2002 08 07 | 644 | 0.2− | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.5+ |
| 1993 10 11 | 809 | (0.4+ | 2.7+) | 2002 08 07 | 644 | 0.3− | 0.5+ | 2005 06 10 | 691 | 0.1+ | 0.3+ |
| 1993 10 11 | 809 | (0.2+ | 2.6+) | 2002 08 08 | 699 | (2.3− | 1.4+) | 2005 06 10 | 691 | 0.1+ | 0.4+ |
| 1993 10 11 | 809 | (1.5+ | 2.7+) | 2002 08 08 | 699 | 0.9− | 0.0 | 2005 06 10 | 691 | 0.2+ | 0.3+ |
| 1996 10 10 | 809 | (0.4− | 3.0−) | 2002 08 08 | 699 | 0.5− | 0.3+ | 2005 06 27 | 599 | 0.1− | 0.6+ |
| 1996 10 10 | 809 | (1.6− | 4.6−) | 2002 08 08 | 699 | 0.7− | 0.5+ | 2005 06 27 | 599 | 0.3− | 0.5+ |
| 1996 10 10 | 809 | (2.0− | 4.4−) | 2002 08 11 | 644 | 0.1+ | 1.4+ | 2005 06 27 | 599 | 0.6− | 0.2− |
| 1999 09 04 | 699 | 0.2+ | 1.1+ | 2002 08 11 | 644 | 0.3+ | 1.4+ | 2005 06 27 | 599 | 0.2− | 0.1+ |
| 1999 09 04 | 699 | 0.4− | 1.3+ | 2002 08 11 | 644 | 0.3+ | 1.4+ | 2005 07 04 | G96 | 0.4− | 0.2− |
| 1999 09 04 | 699 | 0.3+ | 1.0+ | 2002 08 14 | 704 | 0.1− | 0.9+ | 2005 07 04 | G96 | 0.1− | 0.2− |
| 1999 09 07 | 704 | 0.1− | 1.3− | 2002 08 14 | 704 | 0.6− | 1.0+ | 2005 07 04 | G96 | 0.7− | 0.2− |
| 1999 09 07 | 704 | 0.1− | 0.2− | 2002 08 14 | 704 | 0.1− | 1.0+ | 2005 07 04 | G96 | 0.2− | 0.1− |
| 1999 09 07 | 704 | 0.1+ | 0.3− | 2002 08 14 | 704 | 0.0 | 0.6+ | 2005 07 06 | 691 | 0.0 | 0.2− |
| 1999 09 07 | 704 | 0.4− | 0.2+ | 2002 08 14 | 704 | 0.1− | 0.0 | 2005 07 06 | 691 | 0.0 | 0.3− |
| 1999 09 07 | 704 | 0.2− | 0.1+ | 2002 08 15 | 699 | 0.4+ | 1.1+ | 2005 07 06 | 691 | 0.1+ | 0.2− |
| 1999 09 09 | 704 | 0.2+ | 0.3− | 2002 08 15 | 699 | 0.3+ | 0.2+ | 2005 08 06 | 704 | 0.8− | 0.3− |
| 1999 09 09 | 704 | 0.6− | 0.8− | 2002 08 15 | 699 | 0.5+ | 0.2+ | 2005 08 06 | 704 | 0.1− | 0.3+ |
| 1999 09 09 | 704 | 0.3− | 0.2− | 2002 08 15 | 699 | 0.1+ | 0.5+ | 2005 08 06 | 704 | 0.9+ | 0.7+ |
| 1999 09 09 | 704 | 0.6− | 0.7− | 2004 01 30 | 704 | (0.2− | 1.8+) | 2005 08 06 | 704 | 0.0 | 0.3− |
| 1999 10 01 | 704 | 0.7+ | 1.3+ | 2004 01 30 | 704 | 0.3+ | 1.0+ | 2005 10 28 | G96 | 0.1− | 0.1+ |
| 1999 10 01 | 704 | 1.3+ | 1.7+ | 2004 01 30 | 691 | 0.0 | 0.5+ | 2005 10 28 | G96 | 0.3+ | 0.3− |
| 1999 10 01 | 704 | 0.0 | 0.3− | 2004 01 30 | 704 | 0.1− | 0.2+ | 2005 10 28 | G96 | 0.4− | 0.3+ |
| 1999 10 01 | 704 | 0.0 | 0.7− | 2004 01 30 | 704 | 0.4− | 0.2− | 2005 10 28 | G96 | 0.1− | 0.1+ |
| 1999 10 01 | 704 | 0.7− | 0.3− | 2004 01 30 | 704 | 0.5+ | 1.3+ | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2001 02 03 | 691 | 0.6+ | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 02 03 | 691 | 0.1+ | 0.4+ | 2004 01 30 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2001 02 03 | 691 | 0.2+ | 0.4+ | 2004 02 03 | 608 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2002 07 14 | 704 | 1.3− | 1.1+ | 2004 02 03 | 608 | 0.1+ | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 07 14 | 704 | 0.7+ | 0.3− | 2004 02 03 | 608 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.3− |
| 2002 07 14 | 704 | (0.4− | 2.0+) | 2004 02 10 | 644 | 0.1− | 1.0+ | 2006 11 18 | G96 | 0.5+ | 0.0 |
| 2002 07 14 | 704 | 0.9− | 0.3+ | 2004 02 10 | 644 | 0.1− | 0.9+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2004 02 10 | 644 | 0.1− | 0.2+ | | | | |
| 2002 07 22 | 644 | 0.3+ | 0.5+ | 2004 02 11 | 691 | 0.2+ | 0.3+ | | | | |

**(137248)∗ 1999 RD$_{74}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.95931 | | (2000.0) | | | |
| $n$ | 0.29051659 | $\omega$ | 234.28280 | | +0.90401951 | −0.42411345 |
| $a$ | 2.2578171 | $\Omega$ | 150.70292 | | +0.41902103 | +0.85425529 |
| $e$ | 0.1507130 | $i$ | 6.29245 | | +0.08467648 | +0.30062547 |
| $P$ | 3.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.8+ | 0.3+ | 2003 12 16 | 699 | 1.4+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.1− |
| 1999 08 12 | 699 | 0.1+ | 0.4+ | 2003 12 16 | 699 | 0.4− | 0.4− | 2006 09 30 | 699 | (1.8− | 0.4+) |
| 1999 08 12 | 699 | 1.3− | 0.0 | 2003 12 16 | 699 | (1.1− | 1.8+) | 2006 09 30 | 699 | 0.1− | 0.5+ |
| 1999 09 07 | 704 | 0.4− | 0.3+ | 2003 12 22 | 704 | 1.1+ | 0.5+ | 2006 09 30 | 699 | 0.3− | 0.2− |
| 1999 09 07 | 704 | 0.3+ | 0.1+ | 2003 12 22 | 704 | (2.0+ | 0.4−) | 2006 09 30 | 703 | 0.3− | 0.2+ |
| 1999 09 07 | 704 | 0.4− | 0.1+ | 2003 12 22 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.4− |
| 1999 09 07 | 704 | 0.4− | 0.5− | 2003 12 22 | 704 | 0.9+ | 0.2+ | 2006 09 30 | 699 | 0.2+ | 0.2+ |
| 1999 09 07 | 704 | 0.1+ | 0.5− | 2003 12 22 | 704 | 0.9+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 1999 09 09 | 704 | (1.6+ | 2.9+) | 2004 01 13 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.3− |
| 1999 09 09 | 704 | 0.9+ | 0.6− | 2004 01 13 | 699 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1999 09 09 | 704 | 0.5− | 0.0 | 2004 01 13 | 699 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 1999 09 09 | 704 | 1.1− | 1.2− | 2004 01 13 | 699 | 0.5− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 1999 09 09 | 704 | (0.9− | 2.2−) | 2004 01 17 | 608 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 1999 09 11 | 699 | 1.0− | 0.8+ | 2004 01 17 | 608 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.6+ | 1.1+ |
| 1999 09 11 | 699 | 0.2− | 2.0+ | 2004 01 17 | 608 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.9+ | 0.3+ |
| 1999 09 11 | 699 | 0.3− | 1.2+ | 2004 01 23 | 704 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.1− |
| 1999 09 14 | 704 | 0.6+ | 0.0 | 2004 01 23 | 704 | 0.9+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 1999 09 14 | 704 | 0.2+ | 0.0 | 2004 01 23 | 704 | 0.3− | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.5− |
| 1999 09 14 | 704 | 0.2+ | 0.3+ | 2004 01 23 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.2− | 0.2− |
| 1999 09 14 | 704 | 0.5+ | 0.4− | 2004 01 23 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 1999 09 14 | 704 | 0.4+ | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.5− | 2006 11 10 | 644 | 0.1− | 0.3− |
| 1999 09 30 | 704 | 0.4− | 1.6+ | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 1999 09 30 | 704 | 0.0 | 1.2+ | 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 1999 09 30 | 704 | 0.8− | 0.6+ | 2004 01 30 | 704 | 0.6+ | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.3− |
| 1999 09 30 | 704 | 0.3− | 1.2+ | 2005 05 04 | 691 | 0.6+ | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.1− |
| 1999 09 30 | 704 | 0.3− | 1.5+ | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.6+ |
| 1999 10 16 | 704 | 0.1+ | 0.5+ | 2005 05 04 | 691 | 0.4+ | 0.5+ | 2006 11 13 | 703 | 0.9− | 0.8+ |
| 1999 10 16 | 704 | 0.2+ | 0.1+ | 2005 05 07 | 703 | 0.2+ | 1.0+ | 2006 11 19 | 703 | 0.0 | 0.1+ |
| 1999 10 16 | 704 | 1.0+ | 0.0 | 2005 05 07 | 703 | 1.0+ | 0.4+ | 2006 11 19 | 703 | 0.7− | 0.4+ |
| 1999 10 16 | 704 | 0.3− | 0.5− | 2005 05 07 | 703 | (1.6− | 1.4+) | 2006 11 19 | 703 | 0.2− | 0.2+ |
| 1999 10 16 | 704 | 0.5+ | 0.5− | 2005 05 07 | 703 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 05 11 | 699 | 0.7− | 0.8+ | 2006 11 21 | 704 | (2.2− | 0.1−) |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2005 05 11 | 699 | 0.0 | 1.3− | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2001 03 16 | 691 | 0.2+ | 0.1+ | 2005 05 11 | 699 | 1.0− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2001 03 16 | 691 | 0.1− | 0.7+ | 2005 05 11 | 699 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2001 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.2+ | | | | |
| 2003 12 16 | 699 | 1.3− | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.0 | | | | |

### (137249)∗ 1999 RS$_{74}$ = 2005 JO$_{67}$

Discovered 1999 Sept. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.48054 | | (2000.0) | | | |
| $n$ | 0.29571394 | $\omega$ | 323.99470 | | −0.40539911 | −0.91123209 |
| $a$ | 2.2312840 | $\Omega$ | 149.72660 | | +0.86887005 | −0.40886630 |
| $e$ | 0.0277053 | $i$ | 8.30916 | | +0.28410632 | −0.04984398 |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 691 | 0.8− | 0.1+ | 2005 03 31 | 691 | 0.5+ | 0.7+ | 2006 09 18 | 703 | 0.4− | 0.6+ |
| 1999 09 05 | 691 | 0.1+ | 0.1+ | 2005 03 31 | 691 | 0.6+ | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.5− |
| 1999 09 05 | 691 | 0.3+ | 0.3+ | 2005 03 31 | 691 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.9+ | 0.5+ |
| 1999 09 13 | 691 | 0.1− | 0.0 | 2005 04 18 | 703 | 1.1− | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.2− |
| 1999 09 13 | 691 | 0.1− | 0.3− | 2005 04 18 | 703 | 0.4− | 0.8− | 2006 09 18 | 699 | (1.8− | 0.4+) |
| 1999 09 13 | 691 | 0.1− | 0.0 | 2005 04 18 | 703 | 1.1− | 0.1− | 2006 09 18 | 699 | 0.6− | 1.2+ |
| 1999 09 18 | 691 | 0.2+ | 0.1+ | 2005 04 18 | 703 | 0.7− | 0.5+ | 2006 09 18 | 699 | 0.5+ | 0.2+ |
| 1999 09 18 | 691 | 0.2+ | 0.1+ | 2005 05 04 | 703 | 0.6+ | 1.0− | 2006 09 18 | 699 | 0.4− | 0.4+ |
| 1999 09 18 | 691 | 0.3+ | 0.3+ | 2005 05 04 | 703 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.9− | 0.3+ |
| 2003 10 21 | 704 | (1.5− | 1.8+) | 2005 05 04 | 703 | 0.5− | 0.7− | 2006 09 26 | 703 | 0.3+ | 0.7− |
| 2003 10 21 | 704 | 1.1− | 0.2+ | 2005 05 04 | 703 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.2− | 0.6+ |
| 2003 10 21 | 704 | (2.1− | 1.0+) | 2005 05 11 | 703 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.1− |
| 2003 10 29 | 699 | 1.3+ | 0.6− | 2005 05 11 | 703 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2003 10 29 | 699 | 0.0 | 0.8− | 2005 05 11 | 703 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2003 10 29 | 699 | 0.8+ | 0.2+ | 2005 05 11 | 703 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2003 10 29 | 699 | 0.5− | 0.9+ | 2005 05 20 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2003 12 22 | 691 | 0.3− | 0.4+ | 2005 05 20 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.7− |
| 2003 12 22 | 691 | 0.1− | 0.6+ | 2005 05 20 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.2+ |
| 2003 12 22 | 691 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2003 12 26 | 608 | 0.7+ | 0.7− | 2006 09 12 | 703 | 0.2− | 1.2+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2003 12 26 | 608 | 0.3− | 0.5+ | 2006 09 12 | 703 | 0.4+ | 0.1− | | | | |
| 2003 12 26 | 608 | 0.4+ | 0.4+ | 2006 09 12 | 703 | 1.1− | 1.2− | | | | |

### (137250)∗ 1999 RO$_{75}$ = 2005 JG$_{87}$

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.80665 | | (2000.0) | | | |
| $n$ | 0.29104662 | $\omega$ | 123.25423 | | +0.68360023 | +0.72963865 |
| $a$ | 2.2550751 | $\Omega$ | 189.93213 | | −0.69931272 | +0.64780044 |
| $e$ | 0.1581367 | $i$ | 5.93580 | | −0.20893168 | +0.21904800 |
| $P$ | 3.39 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 01 | 691 | 0.1− | 0.5− | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 1995 05 01 | 691 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 1995 05 01 | 691 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.9− | 0.1− | 2006 09 30 | G96 | 0.1+ | 1.1− |
| 1999 09 04 | 703 | 0.2− | 0.7+ | 2005 04 02 | 644 | 0.8+ | 0.6+ | 2006 10 13 | D35 | 0.2− | 0.6+ |
| 1999 09 04 | 703 | 0.1+ | 1.5+ | 2005 04 02 | 644 | 0.5+ | 0.1+ | 2006 10 13 | D35 | 0.3+ | 0.7+ |
| 1999 09 04 | 703 | 0.1+ | 0.7+ | 2005 04 02 | 644 | 0.9+ | 1.1+ | 2006 10 13 | D35 | 0.0 | 0.4+ |
| 1999 09 04 | 703 | 0.6− | 0.8− | 2005 05 09 | G96 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 1999 09 07 | 704 | 0.2− | 0.2− | 2005 05 09 | G96 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 1999 09 07 | 704 | 0.9+ | 0.5+ | 2005 05 09 | G96 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 1999 09 07 | 704 | 0.1+ | 1.0+ | 2005 05 09 | G96 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.6− |
| 1999 09 07 | 704 | 0.1− | 1.2+ | 2005 05 12 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.1− |
| 1999 09 07 | 704 | 0.0 | 0.9+ | 2005 05 12 | 691 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 1999 09 14 | 704 | 0.0 | 0.6− | 2005 05 12 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.5+ |
| 1999 09 14 | 704 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 1999 09 14 | 704 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1999 09 14 | 704 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.4− |
| 1999 10 06 | 704 | 0.0 | 0.7− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 0.5+ | 1.0− | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 1999 10 06 | 704 | 0.1− | 0.9− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 1999 10 06 | 704 | 0.5− | 1.4− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.2− | 0.7+ |
| 1999 10 06 | 704 | 0.2+ | 1.1− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.3+ | 0.2+ |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.8+ |

### (137251)∗ 1999 RC$_{76}$

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.34872 | | (2000.0) | | | |
| $n$ | 0.27705639 | $\omega$ | 220.40021 | | +0.53737859 | −0.84309236 |
| $a$ | 2.3303649 | $\Omega$ | 197.12582 | | +0.79057629 | +0.51206405 |
| $e$ | 0.2248322 | $i$ | 3.98851 | | +0.29362114 | +0.16427319 |
| $P$ | 3.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 11 | 691 | 0.8+ | 0.7− | 2001 04 26 | 691 | 0.2+ | 0.3+ | 2006 08 25 | 704 | 1.1− | 0.5+ |
| 1994 04 11 | 691 | 0.0 | 0.4+ | 2001 04 26 | 691 | 0.1+ | 0.5+ | 2006 08 25 | 704 | 1.4− | 0.0 |
| 1994 04 11 | 691 | 0.6− | 0.2+ | 2001 04 26 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.6+ | 0.3− |
| 1994 04 16 | 691 | 0.3+ | 0.2+ | 2003 12 22 | 704 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.7+ | 0.1− |
| 1994 04 16 | 691 | 0.4− | 0.1+ | 2003 12 22 | 704 | 0.6+ | 0.7+ | 2006 08 30 | 704 | (1.6− | 0.3+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 16 | 691 | 0.0 | 0.2− | 2003 12 22 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.3− | 0.3+ |
| 1999 09 07 | 704 | 0.2+ | 0.9+ | 2003 12 22 | 704 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.8− | 0.4+ |
| 1999 09 07 | 704 | 0.2+ | 0.6− | 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 09 15 | 691 | 0.2+ | 0.5+ |
| 1999 09 07 | 704 | 0.0 | 1.1− | 2004 01 23 | 704 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.5+ |
| 1999 09 07 | 704 | 0.6− | 1.9− | 2004 01 23 | 704 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.4+ |
| 1999 09 07 | 704 | 0.1− | 1.3− | 2004 01 23 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 1999 09 07 | 704 | 0.0 | 0.4− | 2004 01 23 | 704 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 1999 09 07 | 704 | 0.3+ | 1.4− | 2004 01 30 | 704 | 0.7− | 1.1+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 1999 09 14 | 704 | 0.9− | 0.6+ | 2004 01 30 | 704 | 0.7− | 0.7+ | 2006 09 19 | 691 | 0.1− | 0.5+ |
| 1999 09 14 | 704 | 0.3− | 0.2− | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.5+ |
| 1999 09 14 | 704 | 0.1− | 1.0− | 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.2+ |
| 1999 09 14 | 704 | 0.1− | 0.5− | 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.0 |
| 1999 10 02 | 691 | 0.2+ | 0.0 | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 1999 10 02 | 691 | 0.3+ | 0.0 | 2005 04 11 | G96 | 0.4− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 1999 10 02 | 691 | 0.1+ | 0.1− | 2006 08 19 | 699 | 0.2− | 0.6− | 2006 09 27 | G96 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.0 | 0.3− | 2006 08 19 | 699 | 0.9− | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 1999 10 06 | 704 | 0.2+ | 0.1− | 2006 08 19 | 699 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 0.1+ | 0.1− | 2006 08 19 | 699 | 0.9− | 0.8− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 1999 10 06 | 704 | 0.1+ | 0.1− | 2006 08 24 | 704 | 0.3− | 0.8+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 1999 10 06 | 704 | 0.2+ | 0.1− | 2006 08 24 | 704 | (0.3− | 1.9+) | 2006 11 16 | G96 | 0.2− | 0.0 |
| 1999 10 15 | 704 | 0.7+ | 0.2+ | 2006 08 24 | 704 | (2.1+ | 1.0−) | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 1999 10 15 | 704 | 0.2− | 0.7+ | 2006 08 24 | 704 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.7− | 0.6− |
| 1999 10 15 | 704 | 0.1+ | 0.1− | 2006 08 24 | 704 | (0.6− | 1.9+) | 2006 11 16 | G96 | 0.3− | 0.4− |
| 1999 10 15 | 704 | 0.3− | 1.0+ | 2006 08 25 | 704 | 1.3− | 0.3+ | | | | |
| 1999 10 15 | 704 | 0.0 | 0.0 | 2006 08 25 | 704 | 1.0− | 0.1− | | | | |

**(137252)∗ 1999 RG$_{82}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.37963 | | (2000.0) | | | |
| $n$ | 0.28972887 | $\omega$ | 332.97054 | | +0.18859905 | +0.98009154 |
| $a$ | 2.2619077 | $\Omega$ | 307.83576 | | −0.88621737 | +0.14262687 |
| $e$ | 0.1506834 | $i$ | 4.50665 | | −0.42314201 | +0.13812365 |
| $P$ | 3.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 1.2− | 0.1+ | 2003 12 23 | 704 | 0.0 | 0.3− | 2006 09 18 | 704 | 0.3+ | 0.2+ |
| 1999 09 07 | 704 | 0.6− | 0.9+ | 2003 12 23 | 704 | 0.7+ | 0.3− | 2006 09 20 | 699 | 0.8+ | 1.3+ |
| 1999 09 07 | 704 | 1.0+ | 0.0 | 2003 12 23 | 704 | 0.8+ | 1.3− | 2006 09 20 | 699 | 0.5+ | 0.6+ |
| 1999 09 07 | 704 | 1.0+ | 0.1+ | 2003 12 23 | 704 | 0.1− | 0.2− | 2006 09 20 | 699 | 0.9− | 0.6+ |
| 1999 09 07 | 704 | 0.0 | 1.1− | 2005 03 03 | 691 | 0.7− | 0.7+ | 2006 09 20 | 699 | 0.9+ | 0.8+ |
| 1999 09 09 | 704 | 0.3− | 0.0 | 2005 03 03 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.5− |
| 1999 09 09 | 704 | 0.7− | 0.7+ | 2005 03 03 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.0 |
| 1999 09 09 | 704 | 1.4− | 0.8+ | 2005 03 07 | 704 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.1− | 0.3+ |
| 1999 09 09 | 704 | 0.3− | 0.8+ | 2005 03 07 | 704 | 0.3+ | 0.1− | 2006 09 30 | 703 | (2.1+ | 0.5−) |
| 1999 09 09 | 704 | 1.2− | 1.6+ | 2005 03 07 | 704 | 0.6+ | 0.4− | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 1999 10 01 | 703 | 0.0 | 0.9+ | 2005 03 07 | 704 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 1999 10 01 | 703 | 1.7− | 0.7− | 2005 03 11 | 699 | 0.6+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 1999 10 01 | 703 | 0.3− | 0.8+ | 2005 03 11 | 699 | 0.5− | 1.1+ | 2006 10 17 | 703 | 0.7− | 0.7+ |
| 1999 10 01 | 703 | 1.0− | 1.9+ | 2005 03 11 | 699 | 0.0 | 0.7− | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 1999 10 09 | 704 | 0.2+ | 0.7− | 2005 03 11 | 699 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.5− |
| 1999 10 09 | 704 | 0.6+ | 0.6− | 2005 04 05 | 703 | 0.8+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.1− |
| 1999 10 09 | 704 | 0.1− | 0.6− | 2005 04 05 | 703 | (1.1− | 2.1+) | 2006 10 19 | 644 | 0.1− | 0.5+ |
| 1999 10 09 | 704 | 1.2+ | 0.1+ | 2005 04 05 | 703 | 0.2− | 1.5+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.7+ | 0.8− | 2005 04 05 | 703 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2005 04 07 | 704 | 1.0+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2005 04 07 | 704 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.5+ | 0.1− |
| 1999 10 15 | 704 | 0.0 | 0.1+ | 2005 04 07 | 704 | 0.5+ | 0.9− | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 1999 10 15 | 704 | 0.7+ | 0.1+ | 2005 04 13 | 699 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1999 10 15 | 704 | 0.9+ | 0.4+ | 2005 04 13 | 699 | 0.7+ | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1999 10 15 | 704 | 0.5+ | 0.4+ | 2005 04 13 | 699 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 10 16 | 645 | 0.1+ | 0.0 | 2005 04 13 | 699 | 0.8+ | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 1999 10 16 | 645 | 0.1+ | 0.0 | 2006 09 16 | 703 | 1.3+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2003 11 20 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.4+ | 0.3+ |
| 2003 11 20 | 704 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.1+ | 1.1− | 2006 11 14 | 703 | 1.8− | 1.1+ |
| 2003 11 20 | 704 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 11 14 | 703 | 2.5− | 0.8+ |
| 2003 11 20 | 704 | 0.5− | 1.1+ | 2006 09 18 | 704 | 1.5+ | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.7− |
| 2003 11 20 | 704 | 0.4− | 0.4+ | 2006 09 18 | 704 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.8− | 0.7− |

**(137253)∗ 1999 RO$_{86}$ = 2002 JK$_{61}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29074)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.48331 | | (2000.0) | | | |
| $n$ | 0.28794280 | $\omega$ | 179.20598 | | −0.07622677 | +0.99557893 |
| $a$ | 2.2712515 | $\Omega$ | 86.42111 | | −0.91511551 | −0.04799774 |
| $e$ | 0.2661325 | $i$ | 3.15226 | | −0.39592055 | −0.08073917 |
| $P$ | 3.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.1+ | 0.7+ | 2002 05 16 | 608 | 0.2− | 0.4− | 2005 03 01 | 691 | 0.2+ | 0.2+ |
| 1999 08 12 | 699 | 0.8− | 0.8+ | 2002 05 16 | 608 | 0.5− | 0.6− | 2005 03 01 | 691 | 0.3+ | 0.1+ |
| 1999 08 12 | 699 | 1.0+ | 0.9+ | 2002 05 19 | 644 | 0.2+ | 0.6+ | 2005 03 01 | 691 | 0.2+ | 0.2+ |
| 1999 08 22 | 703 | 1.0− | 1.4+ | 2002 05 19 | 644 | 0.4+ | 0.5+ | 2005 03 02 | 703 | (1.3+ | 1.6−) |
| 1999 08 22 | 703 | 0.4− | 0.6+ | 2002 05 19 | 644 | 0.2+ | 0.6+ | 2005 03 02 | 703 | 0.1− | 0.5− |
| 1999 08 22 | 703 | 0.7− | 0.0 | 2002 06 02 | 699 | 0.5+ | 0.2+ | 2005 03 02 | 703 | 0.8− | 1.0+ |
| 1999 08 22 | 703 | 0.7− | 0.1+ | 2002 06 02 | 699 | 0.1+ | 0.7+ | 2005 03 02 | 703 | 0.5− | 0.8+ |
| 1999 09 05 | 699 | 0.4+ | 1.9+ | 2002 06 02 | 699 | 0.7+ | 0.5+ | 2005 03 04 | 704 | (2.0+ | 0.0 ) |
| 1999 09 05 | 699 | (0.3+ | 2.1+) | 2002 06 02 | 699 | 0.1+ | 0.4+ | 2005 03 04 | 704 | 0.7− | 0.3− |
| 1999 09 05 | 699 | (0.0 | 2.1+) | 2002 06 04 | 704 | 0.5+ | 1.0+ | 2005 03 04 | 704 | 0.3+ | 1.0+ |
| 1999 09 07 | 704 | 0.1+ | 1.2− | 2002 06 04 | 704 | 0.7+ | 0.8+ | 2005 03 04 | 704 | 0.5− | 1.4+ |
| 1999 09 07 | 704 | 0.6+ | 0.0 | 2002 06 04 | 704 | 0.0 | 1.4+ | 2005 03 09 | 704 | 0.2− | 0.2+ |
| 1999 09 07 | 704 | 0.1− | 0.6− | 2002 06 06 | 704 | 0.8+ | 0.7+ | 2005 03 09 | 704 | 0.4+ | 0.2− |
| 1999 09 07 | 704 | 0.8− | 0.4+ | 2002 06 06 | 704 | 0.8+ | 0.5+ | 2005 03 09 | 704 | 0.1− | 0.7+ |
| 1999 09 14 | 704 | 0.2− | 1.0+ | 2002 06 06 | 704 | 0.1+ | 0.1− | 2005 03 09 | 704 | 0.3− | 0.1+ |
| 1999 09 14 | 704 | 0.5− | 0.3+ | 2002 06 06 | 704 | 0.2+ | 0.3+ | 2005 03 09 | 704 | 0.4+ | 1.3+ |
| 1999 09 14 | 704 | 0.4+ | 0.5+ | 2002 06 06 | 704 | 0.3− | 0.3+ | 2005 03 12 | 704 | 0.9− | 1.1+ |
| 1999 09 14 | 704 | 0.1+ | 0.1+ | 2002 06 08 | 704 | (5.4+ | 0.7−) | 2005 03 12 | 704 | 0.2+ | 0.7+ |
| 1999 09 14 | 704 | 0.4− | 0.1+ | 2002 06 08 | 704 | (5.1+ | 1.6−) | 2005 03 12 | 704 | 0.1− | 0.7+ |
| 1999 10 08 | 704 | 0.7+ | 0.2− | 2002 06 08 | 704 | (5.0+ | 1.4−) | 2005 03 12 | 704 | (1.6− | 0.3+) |
| 1999 10 08 | 704 | 0.4+ | 0.7− | 2002 06 08 | 704 | (4.7+ | 1.1−) | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 1999 10 08 | 704 | 0.5+ | 0.9− | 2002 06 08 | 704 | (3.9+ | 1.0−) | 2006 09 17 | 691 | 0.4− | 0.3+ |
| 2002 04 09 | 704 | 0.9+ | 0.7− | 2003 11 19 | 691 | 0.2− | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2002 04 09 | 704 | 0.9− | 0.4− | 2003 11 19 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.3+ | 0.2+ |
| 2002 04 09 | 704 | 0.7− | 1.2− | 2003 11 19 | 691 | 0.0 | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2002 04 09 | 704 | 0.2− | 0.2− | 2003 12 21 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 04 12 | 608 | 0.9− | 0.0 | 2003 12 21 | 691 | 0.1− | 0.4+ | 2006 09 29 | 699 | 0.2+ | 0.9− |
| 2002 04 12 | 608 | 1.0− | 0.3− | 2003 12 21 | 691 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.7− | 0.9+ |
| 2002 04 12 | 608 | 1.0− | 0.1+ | 2005 01 17 | 703 | 0.9+ | 0.4+ | 2006 09 29 | 699 | 0.1− | 0.9− |
| 2002 04 17 | 704 | 0.5+ | 1.3+ | 2005 01 17 | 703 | 1.4− | 0.2+ | 2006 09 29 | 699 | 1.0− | 0.3− |
| 2002 04 17 | 704 | 0.4+ | 1.3+ | 2005 01 17 | 703 | 0.6− | 0.0 | 2006 10 01 | 704 | 0.7− | 0.6+ |
| 2002 04 17 | 704 | 0.3+ | 1.1+ | 2005 01 17 | 703 | 0.4+ | 0.4− | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 2002 04 17 | 704 | 0.2+ | 1.0+ | 2005 02 01 | 691 | 0.5+ | 0.1+ | 2006 10 01 | 704 | 0.8+ | 0.1+ |
| 2002 04 17 | 704 | (0.2+ | 1.5+) | 2005 02 01 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 1.0+ | 0.3+ |
| 2002 04 22 | 644 | 0.1+ | 0.5+ | 2005 02 01 | 691 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.5− | 0.4+ |
| 2002 04 22 | 644 | 0.4+ | 0.6+ | 2005 02 02 | 703 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.4− | 0.5+ |
| 2002 04 22 | 644 | 0.3+ | 0.5+ | 2005 02 02 | 703 | 0.4+ | 0.2− | 2006 10 01 | 691 | 0.3− | 0.7+ |
| 2002 04 30 | 644 | 0.2− | 0.3+ | 2005 02 02 | 703 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 04 30 | 644 | 0.1+ | 0.4+ | 2005 02 02 | 703 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 04 30 | 644 | 0.3+ | 0.6+ | 2005 02 03 | 704 | 0.9− | 0.8− | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2002 05 08 | 704 | 0.1+ | 0.9+ | 2005 02 03 | 704 | 0.6+ | 0.8− | 2006 10 16 | 703 | 0.9− | 1.1+ |
| 2002 05 08 | 704 | 0.1+ | 0.9+ | 2005 02 03 | 704 | 0.6+ | 0.5− | 2006 10 16 | 703 | (1.9+ | 1.8+) |
| 2002 05 08 | 704 | 0.1+ | 1.0+ | 2005 02 03 | 704 | 0.4+ | 1.0+ | 2006 10 16 | 703 | 1.1− | 0.8+ |
| 2002 05 08 | 704 | 0.1+ | 0.8+ | 2005 02 03 | 704 | 1.2+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.7+ |
| 2002 05 08 | 704 | 0.3+ | 1.0+ | 2005 02 04 | 704 | 1.4+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2002 05 10 | 704 | 0.7+ | 0.7− | 2005 02 04 | 704 | 0.9+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2002 05 10 | 704 | 0.6+ | 0.1+ | 2005 02 04 | 704 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2002 05 10 | 704 | 1.0+ | 0.4− | 2005 02 04 | 704 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2002 05 10 | 704 | 0.1− | 0.3− | 2005 02 04 | 699 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2002 05 12 | 704 | 0.2− | 0.5+ | 2005 02 04 | 699 | 1.2− | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 05 12 | 704 | 0.2− | 0.4+ | 2005 02 04 | 699 | 1.2− | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 704 | 0.2+ | 1.1+ | 2005 02 04 | 699 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 05 14 | 699 | 0.3+ | 0.0 | 2005 02 09 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 05 14 | 699 | 0.1+ | 0.4+ | 2005 02 09 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 1.0− | 0.2+ |
| 2002 05 14 | 699 | 0.2+ | 0.1+ | 2005 02 09 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 05 14 | 699 | 0.9− | 1.0+ | 2005 02 09 | G96 | 0.1− | 0.3− | 2006 10 22 | 703 | 1.0+ | 0.1− |
| 2002 05 16 | 704 | (3.4− | 1.7+) | 2005 02 14 | 704 | 0.4+ | 1.1+ | 2006 10 22 | 703 | 0.2− | 0.8+ |
| 2002 05 16 | 704 | 0.2+ | 0.7+ | 2005 02 14 | 704 | 0.4− | 0.5+ | 2006 11 11 | 703 | 1.0− | 0.3+ |
| 2002 05 16 | 704 | 0.1+ | 0.4+ | 2005 02 14 | 704 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.3+ |
| 2002 05 16 | 704 | 0.0 | 0.3+ | 2005 02 14 | 704 | 0.7+ | 1.1+ | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2002 05 16 | 608 | 0.4− | 0.4− | 2005 02 14 | 704 | 0.4+ | 1.4+ | 2006 11 11 | 703 | 0.5+ | 0.3− |

**(137254)∗ 1999 RL$_{87}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.14371 | | (2000.0) | | | |
| $n$ | 0.26322685 | $\omega$ | 47.00351 | | +0.78748672 | +0.61627740 |
| $a$ | 2.4112889 | $\Omega$ | 274.95003 | | −0.56783370 | +0.72029971 |
| $e$ | 0.1970164 | $i$ | 0.47016 | | −0.23964465 | +0.31838734 |
| $P$ | 3.74 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 699 | 0.2+ | 0.8+ | 2002 04 09 | 644 | 0.2+ | 0.6+ | 2003 11 17 | 703 | 1.0− | 0.7+ |
| 1999 08 22 | 699 | 0.5+ | 0.5+ | 2002 04 09 | 644 | 0.3+ | 0.9+ | 2003 11 17 | 703 | 1.1− | 0.5− |
| 1999 08 22 | 699 | 0.0 | 1.5+ | 2002 04 09 | 644 | 0.4+ | 0.6+ | 2003 11 17 | 703 | 1.1− | 0.4− |
| 1999 09 04 | 699 | 0.3+ | 1.3+ | 2002 04 18 | 644 | 0.2+ | 0.9+ | 2003 11 17 | 703 | 0.3− | 0.5+ |
| 1999 09 04 | 699 | 0.0 | 1.0+ | 2002 04 18 | 644 | 0.4+ | 0.6+ | 2003 11 18 | 644 | 0.5+ | 0.2+ |
| 1999 09 04 | 699 | 0.6+ | 1.4+ | 2002 04 18 | 644 | 0.3+ | 0.7+ | 2003 11 18 | 644 | 0.8+ | 0.3+ |
| 1999 09 07 | 704 | 0.5+ | 0.7+ | 2002 05 09 | 644 | 0.5+ | 0.8+ | 2003 11 18 | 644 | 0.5+ | 0.1+ |
| 1999 09 07 | 704 | 0.9+ | 0.6+ | 2002 05 09 | 644 | 0.5+ | 1.0+ | 2003 11 20 | 691 | 0.0 | 0.1+ |
| 1999 09 07 | 704 | 0.5− | 0.9+ | 2002 05 09 | 644 | 0.8+ | 0.8+ | 2003 11 20 | 291 | 0.3− | 0.0 |
| 1999 09 07 | 704 | 0.2− | 0.8+ | 2003 08 31 | 291 | 0.7− | 0.5+ | 2003 11 20 | 691 | 0.3+ | 0.2+ |
| 1999 09 07 | 704 | 0.5+ | 0.4+ | 2003 08 31 | 291 | 0.6− | 0.5+ | 2003 11 20 | 291 | 0.3− | 0.1− |
| 1999 09 14 | 704 | 0.7+ | 0.2+ | 2003 08 31 | 291 | 0.7− | 0.5+ | 2003 11 20 | 691 | 0.2+ | 0.1+ |
| 1999 09 14 | 704 | 0.6+ | 0.1+ | 2003 10 02 | 704 | 0.0 | 1.2+ | 2003 11 20 | 291 | 0.0 | 0.2− |
| 1999 09 14 | 704 | 0.9+ | 0.0 | 2003 10 02 | 704 | 1.9− | 1.1+ | 2003 11 21 | 704 | 0.1+ | 0.5+ |
| 1999 09 14 | 704 | 1.1+ | 0.9+ | 2003 10 02 | 704 | 0.7− | 0.1+ | 2003 11 21 | 704 | 0.7+ | 0.2+ |
| 1999 09 14 | 704 | 0.6+ | 0.2− | 2003 10 02 | 704 | 0.4+ | 1.4− | 2003 11 21 | 704 | 0.1+ | 0.9+ |
| 1999 09 14 | 703 | 0.6+ | 0.6+ | 2003 10 19 | 691 | 0.4+ | 0.1− | 2003 11 21 | 704 | 0.3+ | 0.9+ |
| 1999 09 14 | 703 | 0.2− | 0.5+ | 2003 10 19 | 691 | 0.2+ | 0.0 | 2003 12 01 | 704 | 0.4+ | 0.6+ |
| 1999 09 14 | 703 | 0.6+ | 0.1+ | 2003 10 19 | 691 | 0.1+ | 0.0 | 2003 12 01 | 704 | 0.2− | 0.5+ |
| 1999 09 14 | 703 | 0.5− | 0.4+ | 2003 10 24 | 704 | 0.6− | 0.4+ | 2003 12 01 | 704 | 0.4+ | 0.1− |
| 1999 10 10 | 691 | 0.1+ | 0.4− | 2003 10 24 | 704 | 0.8− | 0.8+ | 2003 12 01 | 704 | 0.9− | 1.1+ |
| 1999 10 10 | 691 | 0.0 | 0.5− | 2003 10 24 | 704 | 0.8+ | 0.6+ | 2003 12 01 | 704 | 0.5+ | 0.7+ |
| 1999 10 10 | 691 | 0.1+ | 0.5− | 2003 10 24 | 704 | 0.2+ | 1.1+ | 2005 03 08 | G96 | 1.2− | 0.0 |
| 1999 10 15 | 704 | 0.4+ | 1.0− | 2003 10 24 | 704 | (0.5− | 2.3+) | 2005 03 08 | G96 | 0.1− | 0.1− |
| 1999 10 15 | 704 | 0.2+ | 0.5− | 2003 10 29 | 703 | 0.3+ | 0.1− | 2005 03 08 | G96 | 0.4− | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.4− | 2003 10 29 | 703 | 1.4− | 0.7− | 2005 03 08 | G96 | 0.2− | 0.2− |
| 1999 10 15 | 704 | 1.6+ | 1.8− | 2003 10 29 | 703 | 0.2+ | 0.2+ | 2006 05 25 | 568 | 0.1+ | 1.0+ |
| 1999 10 15 | 691 | 0.3− | 0.3− | 2003 10 29 | 703 | (2.4− | 0.2−) | 2006 05 25 | 568 | 0.2− | 1.1+ |
| 1999 10 15 | 704 | 0.2− | 0.9− | 2003 11 02 | 704 | 0.3+ | 0.5− | 2006 05 25 | 568 | 0.1− | 1.3+ |
| 1999 10 15 | 691 | 0.3− | 0.3− | 2003 11 02 | 704 | 0.1− | 0.8+ | 2006 05 26 | 568 | 0.4− | 1.3+ |
| 1999 10 15 | 691 | 0.4− | 0.3− | 2003 11 02 | 704 | 0.0 | 0.8+ | 2006 06 04 | 704 | 0.0 | 0.4− |
| 1999 10 16 | 645 | 0.1− | 0.2− | 2003 11 02 | 704 | 0.3+ | 0.7+ | 2006 06 04 | G96 | 0.3+ | 0.5+ |
| 1999 10 16 | 645 | 0.0 | 0.3− | 2003 11 03 | 704 | 0.4− | 1.8+ | 2006 06 04 | G96 | 0.2+ | 0.5+ |
| 1999 11 16 | 691 | 0.1− | 0.1+ | 2003 11 03 | 704 | 0.1+ | 1.5+ | 2006 06 04 | 704 | 0.1+ | 0.4+ |
| 1999 11 16 | 691 | 0.0 | 0.5+ | 2003 11 03 | 704 | 0.5− | 1.0+ | 2006 06 04 | G96 | 0.5+ | 0.5+ |
| 1999 11 16 | 691 | 0.2− | 0.3+ | 2003 11 03 | 704 | 0.8+ | 1.4+ | 2006 06 04 | G96 | 0.3+ | 0.5+ |
| 1999 11 17 | 691 | 0.0 | 0.1+ | 2003 11 16 | 691 | 0.2+ | 0.1+ | 2006 06 04 | 704 | 0.2− | 1.1+ |
| 1999 11 17 | 691 | 0.0 | 0.1+ | 2003 11 16 | 691 | 0.1+ | 0.0 | | | | |
| 1999 11 17 | 691 | 0.3− | 0.4+ | 2003 11 16 | 691 | 0.0 | 0.1+ | | | | |

**(137255)∗ 1999 RO$_{87}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.11671 | | (2000.0) | | | |
| $n$ | 0.28233282 | $\omega$ | 11.62164 | | +0.98016473 | −0.19818435 |
| $a$ | 2.3012394 | $\Omega$ | 359.80862 | | +0.17523761 | +0.86727005 |
| $e$ | 0.1473865 | $i$ | 4.33420 | | +0.09256825 | +0.45668986 |
| $P$ | 3.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.4+ | 1.5+ | 2003 12 28 | 704 | 0.5+ | 1.0− | 2006 09 25 | G96 | 0.0 | 0.4− |
| 1999 09 04 | 699 | 1.6+ | 1.2+ | 2003 12 28 | 704 | 1.0+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.4− |
| 1999 09 04 | 699 | 1.5+ | 0.5+ | 2003 12 28 | 704 | 0.2− | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 1999 09 07 | 704 | 0.6+ | 0.1+ | 2003 12 28 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.6+ |
| 1999 09 07 | 704 | 0.2+ | 0.2+ | 2003 12 28 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.0 |
| 1999 09 07 | 704 | 0.4+ | 0.2+ | 2003 12 30 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.5− |
| 1999 09 07 | 704 | 0.3+ | 0.5+ | 2003 12 30 | 704 | 0.3− | 0.5+ | 2006 09 26 | 704 | 0.4− | 0.0 |
| 1999 09 07 | 704 | 0.1− | 0.5− | 2003 12 30 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 704 | 1.0− | 0.3− |
| 1999 09 11 | 561 | 0.4+ | 0.4+ | 2003 12 30 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.9+ |
| 1999 09 11 | 561 | 0.3+ | 0.4+ | 2004 01 16 | 691 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.9− |
| 1999 09 11 | 561 | 0.3+ | 0.4+ | 2004 01 16 | 691 | 0.6− | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.3+ |
| 1999 09 14 | 704 | 0.5+ | 0.1+ | 2004 01 16 | 691 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.1− | 0.7+ |
| 1999 09 14 | 704 | 0.4− | 0.4− | 2005 03 17 | G96 | 0.5− | 0.1+ | 2006 09 27 | 704 | 0.6− | 0.1− |
| 1999 09 14 | 704 | 0.6+ | 0.6− | 2005 03 17 | G96 | 0.9− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 1999 09 14 | 704 | 0.5+ | 0.2− | 2005 03 17 | G96 | 0.6− | 0.0 | 2006 09 28 | G96 | 0.1− | 0.1− |
| 1999 09 14 | 704 | 0.3+ | 0.1+ | 2005 03 17 | G96 | 1.4− | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.0 |
| 1999 09 14 | 703 | 1.4+ | 0.7− | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.7+ | 1.4− |
| 1999 09 14 | 703 | 0.2+ | 0.0 | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 1999 09 14 | 703 | 0.7+ | 1.1+ | 2005 04 16 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.5+ |
| 1999 09 14 | 703 | 0.7+ | 1.1+ | 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 1999 10 02 | 691 | 0.3+ | 0.2− | 2005 04 16 | 691 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.1− |
| 1999 10 02 | 691 | 0.0 | 0.2− | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.1− |
| 1999 10 02 | 691 | 0.2+ | 0.4− | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.7− |
| 1999 10 08 | 704 | 0.6− | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 1999 10 08 | 704 | 0.9− | 0.6+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.6+ |
| 1999 10 08 | 704 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.4− | 0.1+ |
| 1999 10 08 | 704 | 1.1− | 0.2+ | 2006 08 17 | 644 | 0.3+ | 0.4− | 2006 10 01 | 704 | 0.2+ | 0.6+ |
| 1999 10 09 | 704 | 0.5− | 0.4− | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.7− | 0.0 | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.8− | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.1− | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 1999 10 09 | 691 | 0.1− | 0.3− | 2006 08 25 | 704 | 0.9+ | 1.2+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.4− | 1.1+ | 2006 08 25 | 704 | 0.9+ | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 1.2− | 0.4− | 2006 08 25 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1999 10 09 | 691 | 0.0 | 0.3− | 2006 08 25 | 704 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 1.0− | 0.3+ | 2006 09 16 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 1999 10 09 | 691 | 0.1+ | 0.2− | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.5− | 0.3+ |
| 1999 10 09 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 1999 10 09 | 704 | 1.3− | 0.5− | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.6− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 1999 10 30 | 691 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1999 10 30 | 691 | 0.0 | 0.4− | 2006 09 17 | 704 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 1999 10 30 | 691 | 0.3− | 0.3− | 2006 09 17 | 704 | 0.5− | 1.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 1999 11 14 | 691 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.5− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 1999 11 14 | 691 | 0.3− | 0.4− | 2006 09 18 | 699 | (0.8+ | 1.7+) | 2006 10 20 | G96 | 0.1− | 0.1− |
| 1999 11 14 | 691 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2003 12 18 | 704 | 0.3+ | 1.4− | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 12 18 | 704 | 0.1− | 0.5− | 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | (0.3+ | 1.8−) | 2006 09 20 | 704 | 0.8− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2003 12 18 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.5+ | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2003 12 23 | 704 | 0.4+ | 1.2+ | 2006 09 20 | 704 | 1.3− | 1.1+ | 2006 11 06 | 644 | 0.3+ | 0.1+ |
| 2003 12 23 | 704 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.6− | 1.0+ | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2003 12 23 | 704 | 0.8+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.3− | | | | |

**(137256)∗ 1999 RS$_{87}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.31838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28680348 | $\omega$ | 43.63254 | | +0.56898061 | −0.82225745 | |
| $a$ | 2.2772626 | $\Omega$ | 11.70651 | | +0.73672581 | +0.50297986 | |
| $e$ | 0.1968808 | $i$ | 3.50362 | | +0.36537124 | +0.26627793 | |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 14 | 691 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.2− | 0.1+ | 2006 10 25 | 106 | 0.1+ | 0.3− |
| 1994 03 14 | 691 | 0.7− | 0.5− | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 10 27 | 683 | (0.9− | 2.5−) |
| 1994 03 14 | 691 | 0.7− | 0.3− | 2004 02 23 | 704 | 0.6+ | 0.3− | 2006 10 27 | 683 | (0.7− | 3.0−) |
| 1999 09 04 | 699 | 1.1+ | 1.7+ | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 683 | (1.9− | 1.2−) |
| 1999 09 04 | 699 | 0.5+ | 0.6+ | 2004 02 23 | 704 | 0.6+ | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1999 09 04 | 699 | 0.9+ | 1.6+ | 2004 02 26 | 695 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 1999 09 07 | 704 | 0.0 | 1.0− | 2004 02 26 | 695 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 1999 09 07 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.6+ | 0.1+ | 2006 10 28 | 683 | 1.0+ | 0.6− |
| 1999 09 07 | 704 | 0.6+ | 0.9+ | 2006 08 28 | 703 | 0.1+ | 0.4+ | 2006 10 28 | 683 | 1.2+ | 1.0− |
| 1999 09 14 | 704 | 0.7+ | 0.7− | 2006 08 28 | 703 | 0.0 | 0.3+ | 2006 10 28 | 683 | 0.3+ | 0.6+ |
| 1999 09 14 | 704 | 0.9+ | 1.0− | 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 10 29 | 704 | 0.1− | 0.4− |
| 1999 09 14 | 704 | 0.7+ | 0.9− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 29 | 704 | (0.2− | 1.8−) |
| 1999 09 14 | 704 | 0.6+ | 0.2− | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 29 | 704 | 0.2+ | 0.2+ |
| 1999 09 14 | 704 | 0.2− | 0.2− | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 10 29 | 704 | 0.3+ | 0.2− |
| 1999 10 07 | 704 | 1.0− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.2+ | 2006 10 29 | 704 | 0.3− | 0.3+ |
| 1999 10 07 | 704 | 0.8− | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.3+ | 2006 10 31 | 683 | 0.7+ | 0.8− |
| 1999 10 07 | 704 | 0.2− | 0.0 | 2006 09 27 | 704 | 1.1− | 0.2− | 2006 10 31 | 683 | 0.9+ | 1.1− |
| 1999 10 07 | 704 | 0.9− | 0.5− | 2006 09 27 | 704 | 0.6− | 0.5− | 2006 10 31 | 683 | 0.6+ | 0.2− |
| 1999 10 14 | 691 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 1999 10 14 | 691 | 0.1− | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1999 10 14 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 1999 11 06 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.5− | 0.2− | 2006 11 07 | 644 | 0.9+ | 0.3+ |
| 1999 11 06 | 691 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.5− | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 1999 11 06 | 691 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.8− | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.1− |
| 1999 11 09 | 691 | 0.3− | 1.1− | 2006 09 29 | 704 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1999 11 09 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.7− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 1999 11 09 | 691 | 0.1− | 0.8− | 2006 09 29 | 704 | 0.6+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2004 01 13 | 699 | 0.5+ | 1.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 01 13 | 699 | 0.4− | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 01 13 | 699 | 0.5− | 0.2− | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2004 01 13 | 699 | 0.3+ | 1.3− | 2006 10 19 | 644 | 0.1+ | 0.3− | 2006 11 11 | 683 | (1.5+ | 0.0 ) |
| 2004 01 30 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 11 | 683 | (1.7+ | 1.1+) |
| 2004 01 30 | 704 | 0.9+ | 0.7− | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 11 | 683 | 0.2− | 1.4+ |
| 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | (0.2− | 2.1−) |
| 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2004 02 02 | 704 | 1.2+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.8− |
| 2004 02 02 | 704 | 1.3+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2004 02 02 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 13 | 683 | (1.6− | 0.1−) |
| 2004 02 02 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 13 | 683 | (1.8− | 1.2+) |
| 2004 02 13 | 699 | 0.9− | 0.1− | 2006 10 21 | 703 | 0.3− | 0.6− | 2006 11 13 | 683 | (2.6− | 0.4+) |
| 2004 02 13 | 699 | 0.8− | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.3− | 2006 11 14 | 683 | 0.8− | 0.1+ |
| 2004 02 13 | 699 | 0.7− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.2+ | 2006 11 14 | 683 | (1.3− | 1.7+) |
| 2004 02 13 | 699 | 0.3− | 0.8+ | 2006 10 21 | 703 | 0.5+ | 0.3− | 2006 11 14 | 683 | (2.9− | 0.1+) |
| 2004 02 15 | 704 | 0.3− | 0.2+ | 2006 10 23 | 683 | (1.7− | 3.8−) | 2006 11 16 | 704 | 0.7+ | 0.3+ |
| 2004 02 15 | 704 | 0.3− | 0.0 | 2006 10 23 | 704 | 0.6− | 0.4+ | 2006 11 16 | 704 | 0.9+ | 0.1− |
| 2004 02 15 | 704 | 0.2+ | 0.9+ | 2006 10 23 | 704 | 0.2+ | 0.1− | 2006 11 16 | 704 | 1.1+ | 0.1+ |
| 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 10 23 | 683 | (0.7− | 1.9−) | 2006 11 16 | 704 | 0.5− | 0.4+ |
| 2004 02 15 | 704 | 0.3+ | 0.6+ | 2006 10 23 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 10 23 | 683 | 0.5− | 0.6− | 2006 11 19 | 704 | 0.7− | 0.4− |
| 2004 02 18 | 691 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.7+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2004 02 18 | 691 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.9− | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2004 02 18 | 608 | 0.0 | 0.7− | 2006 10 25 | 106 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.7+ | 0.0 |
| 2004 02 18 | 608 | 0.1+ | 0.5− | 2006 10 25 | 106 | 0.4+ | 0.0 | | | | |
| 2004 02 18 | 608 | 0.2− | 0.3− | 2006 10 25 | 106 | 0.3+ | 0.1− | | | | |

**(137257)∗ 1999 RQ$_{88}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.68860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27998722 | $\omega$ | 209.00747 | | +0.80596711 | −0.59182097 | |
| $a$ | 2.3140740 | $\Omega$ | 187.31922 | | +0.56070352 | +0.77018740 | |
| $e$ | 0.1743112 | $i$ | 5.78591 | | +0.18981195 | +0.23782200 | |
| $P$ | 3.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | (7.2− | 7.6−) | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.5+ | 0.1+ |
| 1992 09 30 | 691 | 0.2− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.2+ |
| 1992 09 30 | 691 | 0.5− | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.2+ |
| 1994 04 02 | 691 | 0.1− | 0.5+ | 2006 08 23 | 644 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.6+ | 1.4− |
| 1994 04 02 | 691 | 0.1+ | 0.2− | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.8+ | 0.5+ |
| 1994 04 02 | 691 | 0.1− | 0.6− | 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | 1.3+ | 0.4+ |
| 1999 09 07 | 704 | 1.0+ | 1.4− | 2006 08 24 | 704 | (0.6+ | 2.3+) | 2006 09 27 | 704 | 0.9− | 0.9+ |
| 1999 09 07 | 704 | 1.1+ | 0.2+ | 2006 08 24 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.8− | 0.5+ |
| 1999 09 07 | 704 | 0.5+ | 0.3− | 2006 08 24 | 704 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.9− | 0.7+ |
| 1999 09 07 | 704 | 1.1+ | 1.4− | 2006 08 24 | 704 | (0.6− | 1.8+) | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 1.3+ | 0.5− | 2006 08 26 | 704 | 0.2− | 0.6+ | 2006 09 27 | 704 | 0.6− | 0.4− |
| 1999 09 09 | 704 | 0.8+ | 0.3+ | 2006 08 26 | 704 | (0.4− | 1.8+) | 2006 09 29 | 704 | 0.4+ | 0.3+ |
| 1999 09 09 | 704 | 1.4+ | 0.0 | 2006 08 26 | 704 | (0.4+ | 1.9+) | 2006 09 29 | 704 | 1.1− | 0.0 |
| 1999 09 09 | 704 | 0.7+ | 0.1+ | 2006 08 27 | 699 | 0.8− | 0.5− | 2006 09 29 | 704 | 1.1+ | 0.0 |
| 1999 09 09 | 704 | 0.9+ | 0.4+ | 2006 08 27 | 699 | 0.3− | 0.4− | 2006 09 29 | 704 | 0.1− | 0.1− |
| 1999 09 15 | 691 | 0.0 | 0.3− | 2006 08 27 | 699 | (2.2+ | 1.9+) | 2006 09 30 | 704 | 0.7+ | 0.4+ |
| 1999 09 15 | 691 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.2− | 0.2− | 2006 09 30 | 704 | 0.5+ | 0.4+ |
| 1999 09 15 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 09 30 | 704 | 0.2+ | 0.1+ |
| 1999 10 07 | 704 | 1.3− | 0.6− | 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.6+ | 0.5+ |
| 1999 10 07 | 704 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.1− | 2006 09 30 | 704 | 0.0 | 0.1+ |
| 1999 10 07 | 704 | 0.8+ | 0.4+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.3− |
| 1999 10 07 | 704 | 0.9− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 1999 10 07 | 704 | 0.6− | 1.3+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 1999 10 15 | 704 | 0.7− | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1999 10 15 | 704 | 0.4− | 0.5− | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 1999 10 15 | 704 | 0.2+ | 0.4− | 2006 08 30 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 1999 10 15 | 704 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | 0.5− | 0.2− | 2006 08 30 | 704 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2− |
| 1999 11 15 | 704 | 1.1− | 1.5+ | 2006 09 01 | 704 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1999 11 15 | 704 | 0.4+ | 0.4+ | 2006 09 01 | 704 | 0.5− | 0.5− | 2006 10 27 | G96 | 0.3− | 0.0 |
| 1999 11 15 | 704 | 0.5− | 0.8+ | 2006 09 01 | 704 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 1999 11 15 | 704 | 1.1− | 0.4+ | 2006 09 01 | 704 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 1999 11 15 | 704 | 0.4+ | 0.2+ | 2006 09 01 | 704 | 1.1+ | 0.5− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 1999 12 07 | 704 | 0.9+ | 1.6− | 2006 09 12 | 703 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1999 12 07 | 704 | 0.3+ | 0.1− | 2006 09 12 | 703 | 0.9− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.6+ | 1.0− | 2006 09 12 | 703 | 0.6− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 1.3+ | 0.9− | 2006 09 12 | 703 | 0.0 | 0.5+ | 2006 11 11 | 703 | 1.3− | 0.0 |
| 2001 03 25 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.8− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2001 03 25 | 691 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 11 11 | 703 | (1.8+ | 0.7+) |
| 2001 03 25 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2001 04 23 | 691 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.2− | 1.2+ |
| 2001 04 23 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.8+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2001 04 23 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.6− | 0.5+ |
| 2003 12 20 | 704 | 0.9+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2003 12 20 | 704 | 0.9− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2003 12 20 | 704 | 0.3+ | 1.0+ | 2006 09 19 | 703 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2003 12 20 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.2+ |
| 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.7+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 04 30 | 691 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.2− | 1.3+ | 2006 11 18 | 703 | 1.5+ | 1.0− |
| 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 1.1+ | 2006 11 18 | 703 | 0.3+ | 0.0 |
| 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 703 | 0.7+ | 0.1+ |
| 2006 08 15 | 644 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.6+ | 0.1+ | 2006 11 18 | 703 | 1.1− | 0.5− |
| 2006 08 15 | 644 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.2+ | | | | |

**(137258)∗ 1999 RP$_{95}$ = 2002 JO$_{6}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29076)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.51573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27532731 | $\omega$ | 190.46718 | | +0.97871201 | +0.19958922 | |
| $a$ | 2.3401113 | $\Omega$ | 157.84478 | | −0.17794861 | +0.94131495 | |
| $e$ | 0.2088268 | $i$ | 7.28526 | | −0.10225993 | +0.27219536 | |
| $P$ | 3.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.2− | 0.9+ | 2002 05 07 | 291 | 0.3+ | 0.2− | 2006 08 29 | 704 | 0.7− | 0.8− | |
| 1999 08 13 | 699 | 1.0− | 0.7+ | 2005 03 11 | 691 | 0.2− | 0.5+ | 2006 08 29 | 704 | 0.3− | 0.1− | |
| 1999 08 13 | 699 | 0.7+ | 0.9− | 2005 03 11 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 704 | 0.5− | 1.6+ | |
| 1999 08 22 | 699 | 0.3− | 0.6+ | 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 09 12 | 704 | 0.7+ | 0.5+ | |
| 1999 08 22 | 699 | 0.4− | 1.0+ | 2006 06 22 | 699 | 1.1− | 0.0 | 2006 09 12 | 704 | 0.2+ | 0.2+ | |
| 1999 08 22 | 699 | 0.4− | 0.3+ | 2006 06 22 | 699 | 1.2− | 0.0 | 2006 09 12 | 704 | (3.0+ | 2.4−) | |
| 1999 09 07 | 704 | 0.4+ | 0.6+ | 2006 06 22 | 699 | 0.2+ | 0.4− | 2006 09 14 | 703 | 1.0− | 0.1+ | |
| 1999 09 07 | 704 | 0.1− | 0.1− | 2006 06 22 | 699 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.4− | 0.7+ | |
| 1999 09 07 | 704 | 0.7+ | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.3− | 0.1+ | |
| 1999 09 07 | 704 | 0.7+ | 0.7+ | 2006 08 14 | 644 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.6− | |
| 1999 09 07 | 704 | 0.5− | 0.3+ | 2006 08 14 | 644 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.8+ | 0.1+ | |
| 1999 09 14 | 704 | 0.2+ | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.2− | 0.3+ | |
| 1999 09 14 | 704 | 0.4+ | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.3− | 0.6− | |
| 1999 09 14 | 704 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.7+ | 0.2− | |
| 1999 09 14 | 704 | 0.7+ | 0.9+ | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.2− | 0.1− | |
| 1999 09 14 | 704 | 0.0 | 1.1+ | 2006 08 17 | 644 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.0 | |
| 1999 10 02 | 704 | 0.3− | 0.8+ | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.2− | |
| 1999 10 02 | 704 | 0.4− | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.2− | 0.2+ | |
| 1999 10 02 | 704 | 0.6− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.8+ | 0.3− | |
| 1999 10 02 | 704 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.1+ | |
| 1999 10 02 | 704 | 0.4+ | 0.9− | 2006 08 19 | 699 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.2+ | |
| 1999 10 08 | 704 | 1.0− | 0.2+ | 2006 08 19 | 699 | 0.1+ | 0.4− | 2006 09 20 | 704 | 0.0 | 0.4+ | |
| 1999 10 08 | 704 | 0.2− | 0.4− | 2006 08 19 | 699 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.6+ | 0.6+ | |
| 1999 10 08 | 704 | 0.3− | 0.3− | 2006 08 19 | 699 | 0.3− | 0.4− | 2006 09 27 | 704 | 1.1+ | 0.8+ | |
| 1999 10 08 | 704 | 0.1+ | 0.5− | 2006 08 28 | 699 | 0.3− | 0.2+ | 2006 09 27 | 704 | 1.9+ | 1.1+ | |
| 1999 10 08 | 704 | 0.4− | 0.9− | 2006 08 28 | 699 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.8+ | 0.2− | |
| 2002 05 06 | 291 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.3− | 0.5− | |
| 2002 05 06 | 291 | 0.2− | 0.4+ | 2006 08 28 | 699 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.1− | 0.3− | |
| 2002 05 06 | 291 | 0.1− | 0.2+ | 2006 08 29 | 704 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.5− | 0.4− | |
| 2002 05 07 | 291 | 0.3+ | 0.1− | 2006 08 29 | 704 | 0.9− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.4− | |
| 2002 05 07 | 291 | 0.2+ | 0.1− | 2006 08 29 | 704 | 0.4+ | 0.4− | | | | | |

**(137259)∗ 1999 RZ$_{96}$ = 1999 SC$_{24}$**

Discovered 1999 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 4024)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.16430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29232536 | $\omega$ | 84.31169 | | +0.57805492 | −0.81369655 | |
| $a$ | 2.2484939 | $\Omega$ | 330.11010 | | +0.69156640 | +0.52836081 | |
| $e$ | 0.1137325 | $i$ | 7.05897 | | +0.43311478 | +0.24234849 | |
| $P$ | 3.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.9− | 1.1− | 2003 12 28 | 704 | 0.1+ | 1.1− | 2006 09 18 | 703 | 0.7+ | 1.0− | |
| 1999 09 07 | 704 | (2.3− | 1.3−) | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.8+ | |
| 1999 09 07 | 704 | 1.5− | 1.3− | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 10 23 | 703 | (0.1− | 1.9+) | |
| 1999 09 09 | 704 | 0.2− | 1.1+ | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 703 | (2.9+ | 0.9+) | |
| 1999 09 09 | 704 | 1.1+ | 0.7+ | 2004 01 30 | 704 | 0.5− | 0.0 | 2006 10 23 | 703 | 0.3− | 0.4− | |
| 1999 09 09 | 704 | 0.7− | 1.2+ | 2004 01 30 | 704 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.8− | 0.9− | |
| 1999 09 09 | 704 | 0.5− | 1.1+ | 2004 01 30 | 704 | 0.5− | 0.1+ | 2006 10 29 | 703 | 0.1+ | 0.7− | |
| 1999 09 09 | 704 | (2.4− | 1.8+) | 2004 01 30 | 704 | 0.4− | 0.0 | 2006 10 29 | 703 | 0.4− | 0.3− | |
| 1999 09 29 | 703 | (2.8− | 0.5−) | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 10 29 | 703 | 0.5− | 0.8− | |
| 1999 09 29 | 703 | 0.1+ | 0.2+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.0 | |
| 1999 09 29 | 703 | 0.4+ | 0.1+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.3− | |
| 1999 09 29 | 703 | 0.5− | 0.9+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.4+ | 0.2− | |
| 1999 10 09 | 704 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.0 | |
| 1999 10 09 | 704 | 0.2+ | 0.1− | 2004 02 15 | 704 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.1+ | |
| 1999 10 09 | 704 | 0.5+ | 0.3+ | 2004 02 15 | 704 | 0.3+ | 0.2− | 2006 11 15 | 704 | 0.4+ | 0.2+ | |
| 1999 10 09 | 704 | 0.0 | 0.3+ | 2004 02 15 | 704 | 0.1+ | 0.0 | 2006 11 15 | 704 | 1.0+ | 0.8− | |
| 2002 08 09 | 807 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.4+ | |
| 2002 08 09 | 807 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.1+ | 0.1+ | |
| 2003 12 23 | 704 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 11 17 | 644 | 0.2+ | 0.2+ | |
| 2003 12 23 | 704 | 0.1+ | 1.1+ | 2004 02 23 | 704 | 0.5+ | 0.1− | 2006 11 17 | 644 | 0.3+ | 0.0 | |
| 2003 12 23 | 704 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 11 21 | 703 | 0.2− | 0.3+ | |
| 2003 12 23 | 704 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 11 21 | 703 | 0.0 | 0.3− | |
| 2003 12 23 | 704 | 0.4+ | 0.1+ | 2004 04 14 | 645 | 0.0 | 0.1− | 2006 11 21 | 703 | 0.2− | 0.1− | |
| 2003 12 28 | 704 | 0.3+ | 0.3+ | 2004 04 14 | 645 | 0.1− | 0.2− | 2006 11 21 | 703 | 0.0 | 0.1− | |
| 2003 12 28 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.3− | | | | | |
| 2003 12 28 | 704 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.3+ | 0.3+ | | | | | |

**(137260)∗ 1999 RM$_{101}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.10588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29706067 | $\omega$ | 107.47432 | | +0.58235342 | +0.81160065 | |
| $a$ | 2.2245352 | $\Omega$ | 198.37481 | | −0.79061669 | +0.55210321 | |
| $e$ | 0.1845795 | $i$ | 8.49576 | | −0.18918176 | +0.19101419 | |
| $P$ | 3.32 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 06 | 691 | 0.3− | 1.0+ | 2002 06 14 | 704 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.3+ | |
| 1992 05 06 | 691 | 0.8+ | 0.4+ | 2002 06 14 | 704 | 0.8− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.3+ | |
| 1992 05 06 | 691 | 0.3− | 0.2+ | 2005 03 03 | 691 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.3+ | |
| 1999 09 08 | 704 | 0.0 | 0.3− | 2005 03 03 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2+ | |
| 1999 09 08 | 704 | 1.0+ | 1.0+ | 2005 03 03 | 691 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.6+ | |
| 1999 09 08 | 704 | 0.4+ | 0.4− | 2005 03 14 | G96 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.6+ | |
| 1999 09 09 | 704 | 0.1+ | 0.5− | 2005 03 14 | G96 | 0.4− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.6+ | |
| 1999 09 09 | 704 | 0.3− | 1.1− | 2005 03 14 | G96 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.6+ | |
| 1999 09 09 | 704 | 1.2+ | 0.2+ | 2005 03 14 | G96 | 0.6− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | |
| 1999 09 09 | 704 | 0.9+ | 0.2+ | 2005 05 06 | G96 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.5+ | |
| 1999 09 09 | 704 | 0.1+ | 0.9− | 2005 05 06 | G96 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.6+ | |
| 1999 09 14 | 703 | 0.5+ | 0.8+ | 2005 05 06 | G96 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.6+ | |
| 1999 09 14 | 703 | 1.8− | 0.7+ | 2005 05 06 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 703 | (1.9+ | 0.5+) | |
| 1999 09 14 | 703 | 0.8− | 0.2+ | 2006 09 28 | 621 | 0.2− | 1.0− | 2006 11 11 | 703 | 0.4+ | 0.3− | |
| 1999 09 14 | 703 | 1.2− | 0.0 | 2006 09 28 | 621 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.3+ | |
| 1999 10 08 | 704 | 0.4− | 0.2+ | 2006 09 28 | 621 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3+ | |
| 1999 10 08 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.8+ | 2006 11 17 | G96 | 0.2+ | 0.4+ | |
| 1999 10 08 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.9+ | 2006 11 17 | G96 | 0.1− | 0.2+ | |
| 2002 06 09 | 644 | 0.1− | 0.6− | 2006 10 16 | 703 | 1.2− | 0.9+ | 2006 11 20 | 704 | 0.3− | 0.4+ | |
| 2002 06 09 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 1.3− | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.4+ | |
| 2002 06 09 | 644 | 0.1+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.0 | |
| 2002 06 14 | 704 | 0.1+ | 1.0+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | | | | | |
| 2002 06 14 | 704 | (0.1+ | 2.0+) | 2006 10 18 | 691 | 0.1+ | 0.0 | | | | | |

**(137261)∗ 1999 RS$_{109}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.77666 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28536650 | $\omega$ | 35.10744 | | +0.91748080 | +0.39144510 | |
| $a$ | 2.2849010 | $\Omega$ | 301.69811 | | −0.38132383 | +0.81491735 | |
| $e$ | 0.1911518 | $i$ | 4.76710 | | −0.11323040 | +0.42741132 | |
| $P$ | 3.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.3+ | 0.3+ | 1999 10 09 | 699 | 1.0− | 1.3+ | 2006 09 28 | 703 | 0.8+ | 0.0 | |
| 1999 09 08 | 704 | 0.5− | 0.0 | 1999 10 10 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.2+ | |
| 1999 09 08 | 704 | 0.7− | 0.0 | 1999 10 10 | 704 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.0 | |
| 1999 09 08 | 704 | 0.7+ | 0.5+ | 1999 10 10 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.5− | |
| 1999 09 08 | 704 | 0.1+ | 0.0 | 1999 10 10 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.7+ | 0.2− | 1999 10 10 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.4− | | |
| 1999 09 09 | 704 | 0.1− | 0.0 | 1999 10 20 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.1− | | |
| 1999 09 09 | 704 | 0.4+ | 0.6+ | 1999 10 20 | 704 | 0.4− | 0.3− | 2006 10 21 | 704 | 0.7− | 0.3+ | | |
| 1999 09 09 | 704 | 0.3+ | 0.2− | 1999 10 20 | 704 | 0.9+ | 1.6− | 2006 10 21 | 704 | 0.1+ | 0.7+ | | |
| 1999 09 09 | 704 | 0.1− | 0.5− | 1999 10 20 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 704 | 0.5− | 1.3+ | | |
| 1999 09 09 | 704 | 0.1+ | 0.2− | 1999 10 20 | 704 | 0.9+ | 0.1+ | 2006 10 21 | 704 | 0.7+ | 0.3+ | | |
| 1999 09 09 | 704 | 0.5+ | 1.2− | 1999 11 05 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 704 | 0.6+ | 0.5− | | |
| 1999 09 09 | 704 | 0.0 | 1.0− | 1999 11 05 | 704 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.4− | | |
| 1999 09 09 | 704 | 0.2− | 0.3+ | 1999 11 05 | 704 | 0.8+ | 0.3− | 2006 10 27 | 703 | 0.2+ | 1.0+ | | |
| 1999 09 18 | 703 | 0.1− | 0.3+ | 2003 12 28 | 704 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.3+ | 1.2− | | |
| 1999 09 18 | 703 | 1.0− | 0.6+ | 2003 12 28 | 704 | 0.7− | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.2+ | | |
| 1999 09 18 | 703 | 0.6− | 0.1− | 2003 12 28 | 704 | 0.2+ | 0.5− | 2006 11 07 | 644 | 0.1− | 0.3+ | | |
| 1999 09 18 | 703 | 0.8− | 0.6+ | 2003 12 28 | 704 | 0.1− | 0.1− | 2006 11 07 | 644 | 0.0 | 0.1− | | |
| 1999 10 04 | 704 | 0.6+ | 0.3+ | 2004 01 17 | 644 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.3− | | |
| 1999 10 04 | 704 | 0.6+ | 0.0 | 2004 01 17 | 644 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.5− | | |
| 1999 10 04 | 704 | 0.8+ | 0.5− | 2004 01 17 | 644 | 0.5+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.6+ | | |
| 1999 10 04 | 704 | 0.4− | 0.8− | 2005 04 08 | 735 | 0.3+ | 0.7− | 2006 11 14 | 703 | 0.0 | 0.0 | | |
| 1999 10 04 | 704 | (2.5+ | 1.7−) | 2005 04 08 | 735 | 0.4− | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.5− | | |
| 1999 10 08 | 699 | 0.1− | 1.0+ | 2005 04 08 | 735 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.3− | | |
| 1999 10 08 | 699 | 0.2− | 0.7− | 2005 04 09 | 735 | 0.3+ | 0.5− | 2006 11 14 | 703 | 0.0 | 0.6− | | |
| 1999 10 08 | 699 | 0.1− | 1.1+ | 2005 04 09 | 735 | 0.6− | 0.5+ | 2006 11 14 | 703 | 0.6− | 0.5− | | |
| 1999 10 09 | 703 | 0.3− | 0.1− | 2005 04 09 | 735 | 0.3+ | 0.1− | 2006 11 18 | 185 | 0.0 | 0.2+ | | |
| 1999 10 09 | 703 | 0.3+ | 0.2+ | 2005 04 14 | 703 | 0.9+ | 0.0 | 2006 11 18 | 185 | 0.7+ | 0.5+ | | |
| 1999 10 09 | 703 | 0.6− | 0.2− | 2005 04 14 | 703 | 0.2− | 0.8− | 2006 11 18 | 185 | 0.4+ | 0.0 | | |
| 1999 10 09 | 703 | 0.1+ | 0.4+ | 2005 04 14 | 703 | 0.6− | 0.4+ | 2006 11 18 | 185 | 0.8+ | 0.2+ | | |
| 1999 10 09 | 699 | 0.0 | 1.6− | 2005 04 14 | 703 | (1.9− | 0.1−) | | | | | | |
| 1999 10 09 | 699 | 1.4− | 0.6− | 2006 09 28 | 703 | 0.2+ | 0.2+ | | | | | | |

**(137262)∗ 1999 RF$_{120}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.59827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29244207 | $\omega$ | 341.00534 | | +0.59209126 | +0.80429173 | |
| $a$ | 2.2478957 | $\Omega$ | 325.24851 | | −0.72744682 | +0.50649859 | |
| $e$ | 0.2079431 | $i$ | 5.07521 | | −0.34676948 | +0.31076356 | |
| $P$ | 3.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 21 | 699 | 0.1− | 0.8+ | 2002 05 17 | 704 | (2.2− | 0.2+) | 2006 09 26 | 691 | 0.0 | 0.1+ | | |
| 1999 07 21 | 699 | (0.7− | 2.2+) | 2002 05 17 | 704 | (1.4− | 1.6+) | 2006 09 28 | 703 | 0.2+ | 0.2− | | |
| 1999 07 21 | 699 | 0.8− | 1.0+ | 2002 05 17 | 704 | (0.8− | 3.2+) | 2006 09 28 | 703 | 0.1+ | 0.8− | | |
| 1999 08 07 | 699 | 0.1− | 0.6+ | 2003 12 23 | 704 | 1.0− | 0.1+ | 2006 09 28 | 703 | 0.8+ | 0.7− | | |
| 1999 08 07 | 699 | 0.1+ | 0.5+ | 2003 12 23 | 704 | 0.5− | 0.4+ | 2006 09 28 | 703 | 0.3− | 0.3− | | |
| 1999 08 07 | 699 | 0.3− | 1.9+ | 2003 12 23 | 704 | 1.2− | 0.4+ | 2006 09 30 | 691 | 0.4+ | 0.2− | | |
| 1999 08 08 | 699 | 0.8− | 0.1+ | 2005 03 04 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.2− | | |
| 1999 08 08 | 699 | 0.2+ | 0.7+ | 2005 03 04 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.4+ | 0.2− | | |
| 1999 08 08 | 699 | 0.3− | 1.2− | 2005 03 04 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.1+ | | |
| 1999 09 06 | 699 | 0.5− | 0.5+ | 2005 03 17 | 703 | 0.9− | 0.4+ | 2006 10 17 | 703 | 0.3− | 1.3+ | | |
| 1999 09 06 | 699 | 0.1+ | 0.2− | 2005 03 17 | 703 | 0.5− | 0.6− | 2006 10 17 | 703 | 0.6− | 0.3− | | |
| 1999 09 06 | 699 | 1.3− | 1.1+ | 2005 03 17 | 703 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.7+ | | |
| 1999 09 07 | 704 | 0.5+ | 1.1+ | 2005 03 17 | 703 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− | | |
| 1999 09 07 | 704 | 0.8− | 0.7+ | 2005 04 01 | 224 | 0.1− | 1.4+ | 2006 10 19 | G96 | 0.4+ | 0.3− | | |
| 1999 09 07 | 704 | 0.0 | 0.8− | 2005 04 01 | 224 | 0.4+ | 0.6− | 2006 10 19 | G96 | 0.1+ | 0.3− | | |
| 1999 09 09 | 704 | 1.0− | 1.7− | 2005 04 01 | 224 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.5− | | |
| 1999 09 09 | 704 | 0.2+ | 0.5− | 2006 08 12 | 644 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 1999 09 09 | 704 | 0.0 | 0.1+ | 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 1999 09 09 | 704 | 0.6+ | 1.1− | 2006 08 12 | 644 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 1999 09 09 | 704 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2− | | |
| 1999 09 13 | 704 | 0.6+ | 0.2− | 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 1999 09 13 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 703 | 0.4+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 1999 09 13 | 704 | 0.5+ | 0.8+ | 2006 09 16 | 703 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 1999 09 13 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 704 | (1.5− | 0.4+) | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 1999 09 13 | 704 | 0.1+ | 0.1− | 2006 09 18 | 704 | 0.7− | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 1999 10 15 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 704 | 0.8+ | 0.3− | 2006 10 31 | 703 | 1.2− | 0.5− | | |
| 1999 10 15 | 704 | 0.7− | 0.2+ | 2006 09 18 | 704 | 0.2+ | 0.4− | 2006 10 31 | 703 | 0.2− | 0.8+ | | |
| 1999 10 15 | 704 | 0.4− | 0.8+ | 2006 09 20 | 699 | 0.4− | 0.6− | 2006 10 31 | 703 | 0.8− | 0.2+ | | |
| 1999 10 15 | 704 | 0.4− | 0.4+ | 2006 09 20 | 699 | (1.0− | 1.8+) | 2006 10 31 | 703 | 0.3− | 0.2− | | |
| 1999 10 15 | 704 | 0.1− | 1.0− | 2006 09 20 | 699 | 0.8+ | 0.8+ | 2006 11 07 | 644 | 0.3− | 0.1+ | | |
| 2001 01 14 | 691 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.1− | | |
| 2001 01 14 | 691 | 0.6+ | 0.9+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.3+ | 0.1+ | | |
| 2001 01 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.3+ | | | | | | |

**(137263)∗ 1999 RQ$_{120}$ = 2002 LE$_2$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31263)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.13286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31273313 | $\omega$ | 39.72594 | | +0.86163259 | +0.50390395 | |
| $a$ | 2.1495792 | $\Omega$ | 289.91571 | | −0.48049757 | +0.77146579 | |
| $e$ | 0.1740023 | $i$ | 3.69440 | | −0.16343608 | +0.38848596 | |
| $P$ | 3.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.4+ | 0.0 | 2002 06 02 | 644 | 0.5+ | 0.4+ | 2004 01 19 | 699 | 0.7+ | 0.4− | | |
| 1996 11 08 | 691 | 0.2+ | 0.1− | 2002 06 02 | 644 | 0.4+ | 0.2+ | 2004 01 19 | 699 | 0.7− | 0.1+ | | |
| 1996 11 08 | 691 | 0.1+ | 0.1− | 2002 06 04 | 644 | 0.3+ | 0.0 | 2004 01 19 | 699 | 0.2+ | 0.2+ | | |
| 1999 07 13 | 704 | 0.5+ | 0.3− | 2002 06 04 | 644 | 0.0 | 0.2+ | 2004 01 19 | 699 | 1.0+ | 1.0+ | | |
| 1999 07 13 | 704 | 0.5− | 0.3− | 2002 06 04 | 644 | 0.4+ | 0.3+ | 2004 01 22 | 644 | 0.3+ | 0.6+ | | |
| 1999 07 13 | 704 | 0.2− | 0.2+ | 2002 06 06 | 704 | 0.5− | 0.0 | 2004 01 22 | 644 | 0.2− | 0.8+ | | |
| 1999 07 13 | 704 | 0.1− | 0.8+ | 2002 06 06 | 704 | 0.3− | 0.5+ | 2004 01 22 | 644 | 0.3+ | 0.6+ | | |
| 1999 08 12 | 699 | 0.1+ | 0.7+ | 2002 06 06 | 704 | 0.2+ | 0.5+ | 2004 02 26 | 704 | 0.6− | 0.3− | | |
| 1999 08 12 | 699 | 0.8− | 0.9+ | 2002 06 06 | 704 | 1.0− | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.6+ | | |
| 1999 08 12 | 699 | 0.6− | 1.0+ | 2002 06 06 | 704 | 0.5− | 0.2− | 2004 02 26 | 704 | 0.2− | 0.5− | | |
| 1999 09 06 | 699 | 0.9+ | 1.4+ | 2002 06 08 | 704 | 0.2+ | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 | | |
| 1999 09 06 | 699 | 0.0 | 0.7+ | 2002 06 08 | 704 | 0.3+ | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.0 | | |
| 1999 09 06 | 699 | (0.2+ | 3.2+) | 2002 06 08 | 704 | 0.2− | 0.1+ | 2005 06 26 | 644 | 0.6+ | 0.3+ | | |
| 1999 09 07 | 704 | 0.3− | 0.2+ | 2002 06 08 | 704 | 0.5− | 0.4− | 2005 06 26 | 644 | 0.8+ | 0.3+ | | |
| 1999 09 07 | 704 | 0.0 | 0.1− | 2002 06 08 | 704 | 0.4− | 0.3+ | 2005 06 26 | 644 | 0.5+ | 0.1+ | | |
| 1999 09 07 | 704 | 0.0 | 0.2+ | 2002 06 09 | 704 | 0.5− | 0.3+ | 2006 09 25 | 691 | 0.7+ | 0.3+ | | |
| 1999 09 07 | 704 | 0.2+ | 0.3+ | 2002 06 09 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | | |
| 1999 09 07 | 704 | 0.1− | 0.2+ | 2002 06 09 | 704 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.4+ | | |
| 1999 09 09 | 704 | 0.6− | 0.1+ | 2002 07 05 | 704 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.6− | 0.2− | | |
| 1999 09 09 | 704 | 0.4− | 0.1− | 2002 07 05 | 704 | 0.6− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 1999 09 09 | 704 | 0.3− | 0.0 | 2002 07 05 | 704 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.2− | | |
| 1999 09 09 | 704 | 0.3− | 0.1− | 2002 07 05 | 704 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.4− | 0.4− | | |
| 1999 09 09 | 704 | 0.4− | 0.3+ | 2003 12 18 | 291 | 0.4− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.3− | | |
| 1999 09 14 | 704 | 0.2+ | 0.1− | 2003 12 18 | 291 | 0.7− | 0.6+ | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 1999 09 14 | 704 | 0.5+ | 0.3− | 2003 12 18 | 291 | (1.7− | 1.3+) | 2006 11 14 | G96 | 0.3− | 0.3− | | |
| 1999 09 14 | 704 | 0.1− | 1.0− | 2003 12 29 | 691 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− | | |
| 1999 10 08 | 704 | 0.4− | 0.4+ | 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.2+ | | |
| 1999 10 08 | 704 | 0.8− | 0.7+ | 2003 12 29 | 691 | 0.4+ | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.1− | | |
| 1999 10 08 | 704 | 1.1− | 0.6+ | 2004 01 16 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.3− | | |
| 1999 10 08 | 704 | 0.6− | 0.9− | 2004 01 16 | 691 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.3− | | |
| 2002 06 02 | 644 | 0.7+ | 0.1+ | 2004 01 16 | 691 | 0.1+ | 0.4+ | | | | | | |

**(137264)∗ 1999 RT$_{121}$ = 2004 BY$_{67}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. Kretlow (*MPO* 60540)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.84380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29708542 | $\omega$ | 122.78219 | | +0.92051442 | −0.36951606 | |
| $a$ | 2.2244116 | $\Omega$ | 259.17881 | | +0.30111310 | +0.87795866 | |
| $e$ | 0.2160626 | $i$ | 7.42495 | | +0.24896607 | +0.30437884 | |
| $P$ | 3.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 06 | 699 | 0.0 | 1.4+ | 2004 01 29 | 704 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.9+ | 0.8+ | | |
| 1999 09 06 | 699 | 1.1− | 0.5+ | 2004 02 17 | 608 | 0.1+ | 0.4− | 2006 11 16 | 704 | 1.0+ | 0.7+ | | |
| 1999 09 06 | 699 | 0.5− | 1.4+ | 2004 02 17 | 608 | 0.4− | 0.1− | 2006 11 16 | 704 | 1.0+ | 0.6+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.2− | 1.0− | 2004 02 17 | 608 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.0 |
| 1999 09 09 | 704 | 0.0 | 0.1+ | 2004 02 18 | 704 | 0.6− | 0.2+ | 2006 11 16 | 704 | 1.1+ | 0.8+ |
| 1999 09 09 | 704 | 0.4+ | 0.9− | 2004 02 18 | 704 | 0.2+ | 0.7+ | 2006 11 16 | 704 | 0.8+ | 0.5+ |
| 1999 09 09 | 704 | 0.1− | 0.6− | 2004 02 18 | 704 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.8+ | 1.3+ |
| 1999 09 14 | 704 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.5− | 0.4+ | 2006 11 16 | 704 | 0.8+ | 0.2+ |
| 1999 09 14 | 704 | 0.2+ | 0.3+ | 2005 05 11 | 644 | 0.2+ | 0.8+ | 2006 11 19 | 704 | 0.5+ | 0.4− |
| 1999 09 14 | 704 | 0.3+ | 0.8+ | 2005 05 11 | 644 | 0.3+ | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 1999 09 14 | 704 | 0.3+ | 0.2+ | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 1.1+ | 0.2− |
| 1999 09 14 | 704 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.6− | 2006 11 19 | 704 | (0.1− | 3.0−) |
| 2003 12 22 | 704 | (1.3+ | 1.8−) | 2006 08 29 | 703 | 0.4+ | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.5− |
| 2003 12 22 | 704 | 0.1+ | 1.2− | 2006 08 29 | 703 | 0.5− | 0.8+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.2+ | 0.5− | 2006 08 29 | 703 | 0.3− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.5+ | 0.9− | 2006 08 30 | 704 | 0.0 | 0.7− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.3− | 1.0− | 2006 08 30 | 704 | 1.0+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2003 12 28 | 699 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.5+ | 0.5− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2003 12 28 | 699 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.2− | 0.5− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2003 12 28 | 699 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2003 12 28 | 699 | 0.3− | 0.1+ | 2006 09 18 | 704 | 1.0− | 0.5− | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2004 01 24 | 704 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.1+ | 0.7+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2004 01 24 | 704 | 0.3− | 0.7+ | 2006 09 18 | 704 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2004 01 24 | 704 | (1.0+ | 1.8+) | 2006 09 18 | 704 | 1.0+ | 0.9+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2004 01 24 | 704 | 0.0 | 0.8+ | 2006 09 20 | 704 | 0.3− | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.4− |
| 2004 01 24 | 704 | 0.4− | 0.6+ | 2006 09 20 | 704 | 1.1− | 0.3− | 2006 11 23 | 703 | 0.1− | 0.3− |
| 2004 01 24 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 1.1− | 0.2− | 2006 11 23 | 703 | 0.2− | 0.1− |
| 2004 01 24 | 704 | 0.4− | 0.6+ | 2006 11 13 | G96 | 0.3− | 0.3− | 2006 11 23 | 703 | 0.0 | 0.4− |
| 2004 01 24 | 704 | 0.3− | 0.5+ | 2006 11 13 | G96 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.6− | 0.4− |
| 2004 01 24 | 704 | 0.6+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2004 01 24 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.1− |
| 2004 01 27 | 704 | 0.1+ | 0.5− | 2006 11 14 | 703 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2004 01 27 | 704 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.1− | 2006 11 24 | 691 | 0.2− | 0.3− |
| 2004 01 27 | 704 | 0.1− | 0.5− | 2006 11 14 | 703 | 0.9− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2004 01 27 | 704 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.3− |
| 2004 01 27 | 704 | 0.3− | 0.5− | 2006 11 15 | 704 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.3− | 0.1+ |
| 2004 01 29 | 704 | 0.9+ | 0.4+ | 2006 11 15 | 704 | 0.6− | 0.1+ | 2006 11 28 | 704 | 0.8− | 0.0 |
| 2004 01 29 | 704 | 0.3− | 0.8+ | 2006 11 15 | 704 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.9− | 0.3− |
| 2004 01 29 | 704 | 0.6+ | 0.1− | 2006 11 15 | 704 | 0.9− | 0.9+ | 2006 11 28 | 704 | 0.4− | 0.2− |
| 2004 01 29 | 704 | 0.9+ | 0.4− | 2006 11 16 | 704 | 1.4+ | 0.5+ | | | | |

**(137265)∗ 1999 RO$_{125}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.33549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28241528 | $\omega$ | 46.40286 | | +0.98149957 | +0.18504455 | |
| $a$ | 2.3007915 | $\Omega$ | 302.87550 | | −0.18816826 | +0.88481900 | |
| $e$ | 0.1746519 | $i$ | 3.35596 | | −0.03537370 | +0.42761414 | |
| $P$ | 3.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 699 | 0.3− | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.4− | 0.5− |
| 1999 08 08 | 699 | 0.3− | 0.4− | 2006 08 24 | 704 | 1.0− | 1.4+ | 2006 09 17 | 703 | 0.2+ | 0.4+ |
| 1999 08 08 | 699 | 0.9− | 0.3− | 2006 08 24 | 704 | 0.5− | 0.7+ | 2006 09 18 | 704 | 0.3− | 0.2+ |
| 1999 08 22 | 699 | 0.8+ | 1.1+ | 2006 08 24 | 704 | 0.6− | 0.5+ | 2006 09 18 | 704 | 0.2+ | 0.1− |
| 1999 08 22 | 699 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.5− | 0.1− |
| 1999 08 22 | 699 | 0.7− | 0.4+ | 2006 08 24 | 704 | 0.2− | 0.6+ | 2006 09 18 | 704 | 0.2− | 0.3+ |
| 1999 09 05 | 699 | 0.4− | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.5+ | 2006 09 18 | 704 | 0.2− | 0.0 |
| 1999 09 05 | 699 | 1.0− | 0.2− | 2006 08 28 | 699 | 0.1− | 0.6+ | 2006 09 20 | 699 | 0.9− | 0.4+ |
| 1999 09 05 | 699 | 0.7− | 0.8+ | 2006 08 28 | 699 | 1.0+ | 0.1− | 2006 09 20 | 699 | 0.3− | 0.0 |
| 1999 09 07 | 704 | 0.2+ | 0.5− | 2006 08 28 | 699 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.3− | 0.5+ |
| 1999 09 07 | 704 | 0.8+ | 0.2− | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.4− |
| 1999 09 07 | 704 | 0.2+ | 0.2− | 2006 08 29 | 703 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.2− |
| 1999 09 07 | 704 | 0.7+ | 0.8− | 2006 08 29 | 703 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.7− |
| 1999 09 07 | 704 | 0.9+ | 0.3+ | 2006 08 29 | 703 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.0 | 0.6− |
| 1999 09 09 | 704 | 1.0+ | 0.1− | 2006 08 29 | 691 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.5+ | 0.5− |
| 1999 09 09 | 704 | 0.1+ | 0.9− | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.4− |
| 1999 09 09 | 704 | 0.1− | 0.4− | 2006 08 29 | 691 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.4+ | 1.0+ |
| 1999 09 09 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 1.5+ | 0.8+ | 2006 09 26 | 704 | 0.3+ | 0.0 |
| 1999 09 09 | 704 | 0.5+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.9− |
| 1999 09 14 | 704 | 1.1+ | 0.9− | 2006 08 30 | 704 | 0.0 | 0.8+ | 2006 09 26 | 704 | 0.1+ | 0.4− |
| 1999 09 14 | 704 | 0.8+ | 0.9− | 2006 08 31 | 704 | 0.3− | 0.2+ | 2006 09 28 | G92 | 0.3+ | 0.1− |
| 1999 09 14 | 704 | 0.1− | 1.7− | 2006 08 31 | 704 | 0.3− | 0.5+ | 2006 09 28 | G92 | 0.0 | 0.0 |
| 1999 09 14 | 704 | 0.0 | 0.7− | 2006 08 31 | 704 | 0.1+ | 0.1+ | 2006 09 28 | G92 | 0.1− | 0.3− |
| 1999 09 14 | 704 | 0.5− | 0.5− | 2006 08 31 | 704 | 0.4+ | 0.3− | 2006 09 29 | G92 | 0.7+ | 0.3+ |
| 2003 12 18 | 704 | 0.2+ | 0.6+ | 2006 08 31 | 704 | 0.1− | 0.1+ | 2006 09 29 | G92 | 0.3+ | 0.0 |
| 2003 12 18 | 704 | 0.4− | 1.3− | 2006 08 31 | 704 | 0.8− | 0.5+ | 2006 09 29 | 704 | 0.6+ | 0.4+ |
| 2003 12 18 | 704 | 0.1+ | 0.2+ | 2006 08 31 | 704 | 0.5− | 0.3+ | 2006 09 29 | G92 | 0.4− | 0.1− |
| 2003 12 18 | 704 | 0.7− | 0.5+ | 2006 08 31 | 704 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.6+ |
| 2003 12 22 | 704 | (0.4− | 1.7+) | 2006 08 31 | 704 | 0.0 | 0.4− | 2006 09 29 | 704 | 0.2+ | 0.9− |
| 2003 12 22 | 704 | (1.8+ | 2.7+) | 2006 09 01 | 704 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.7+ | 0.9+ |
| 2003 12 22 | 704 | (0.0 | 2.8+) | 2006 09 01 | 704 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2003 12 27 | 704 | 0.0 | 0.0 | 2006 09 01 | 704 | 0.3+ | 0.0 | 2006 09 30 | 699 | 0.3+ | 0.1+ |
| 2003 12 27 | 704 | 0.5+ | 0.6+ | 2006 09 01 | 704 | 0.1− | 0.3− | 2006 09 30 | 704 | 1.1− | 0.5+ |
| 2003 12 27 | 704 | 0.6+ | 0.9+ | 2006 09 01 | 704 | 0.2+ | 0.5− | 2006 09 30 | 699 | 0.1+ | 0.5+ |
| 2003 12 27 | 704 | 0.2+ | 0.5+ | 2006 09 02 | 152 | 0.4+ | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.2− |
| 2005 03 03 | 691 | 0.3− | 0.7+ | 2006 09 02 | 152 | 0.4+ | 0.2− | 2006 09 30 | 699 | 0.3− | 0.3− |
| 2005 03 03 | 691 | 0.0 | 0.4− | 2006 09 02 | 152 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 1.1− | 0.2+ |
| 2005 03 03 | 691 | 0.4+ | 0.2+ | 2006 09 11 | 703 | 0.3+ | 0.0 | 2006 09 30 | 699 | 0.2+ | 0.2− |
| 2006 08 06 | 699 | 0.7+ | 1.1+ | 2006 09 11 | 703 | 0.8− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2006 08 06 | 699 | 0.1− | 0.8+ | 2006 09 11 | 703 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2006 08 06 | 699 | 0.6− | 0.2+ | 2006 09 11 | 703 | 0.6+ | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2006 08 06 | 699 | 1.1− | 0.8+ | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 08 19 | 644 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 08 19 | 644 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2006 08 19 | 644 | 0.1− | 0.1− | 2006 09 16 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 1.8− | 0.8+ |
| 2006 08 19 | A50 | 0.1− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.9− | 0.7− |
| 2006 08 19 | A50 | 0.3− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 1.4− | 1.5− |
| 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.4− | 0.7+ | | | | |

**(137266)∗ 1999 RU$_{125}$ = 2001 FM$_{111}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11546)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.99482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29901857 | $\omega$ | 158.40237 | | +0.27688411 | −0.95947700 | |
| $a$ | 2.2148141 | $\Omega$ | 275.49308 | | +0.87373451 | +0.27405998 | |
| $e$ | 0.1541799 | $i$ | 3.01387 | | +0.39990399 | +0.06553642 | |
| $P$ | 3.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.2+ | 0.6+ | 2004 01 30 | 704 | 0.6+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1999 09 07 | 704 | 0.9+ | 0.2+ | 2004 01 30 | 704 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 0.5− | 1.9+ | 2004 01 30 | 704 | 1.1+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 1999 09 07 | 704 | 0.1− | 0.2− | 2004 02 02 | 704 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 1999 09 09 | 704 | 0.1+ | 0.4+ | 2004 02 02 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 1999 09 09 | 704 | 0.4+ | 0.0 | 2004 02 02 | 704 | 0.2− | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 1999 09 09 | 704 | 0.1− | 0.2+ | 2004 02 02 | 704 | 0.5+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 1999 09 09 | 704 | 0.8− | 1.4+ | 2004 02 02 | 704 | 0.6+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 1999 09 14 | 704 | 1.8− | 0.4+ | 2004 02 11 | 644 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.2− | 0.4+ |
| 1999 09 14 | 704 | 0.1− | 0.0 | 2004 02 11 | 644 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.2− | 0.9+ |
| 1999 09 14 | 704 | 0.1+ | 0.1− | 2004 02 11 | 644 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.3− | 0.7+ |
| 2001 03 18 | 704 | 0.4+ | 0.0 | 2004 02 11 | 703 | 0.2+ | 0.3+ | 2006 11 15 | 704 | (0.3− | 1.6+) |
| 2001 03 18 | 704 | 0.6+ | 1.2+ | 2004 02 11 | 703 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.5+ |
| 2001 03 18 | 704 | (0.7+ | 1.5+) | 2004 02 11 | 699 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.8− | 0.5+ |
| 2001 03 19 | 699 | 0.3+ | 0.7+ | 2004 02 11 | 703 | 0.4− | 1.2− | 2006 11 16 | 704 | 0.2− | 1.4+ |
| 2001 03 19 | 699 | 0.1+ | 0.5+ | 2004 02 11 | 703 | 0.7− | 1.2− | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2001 03 19 | 699 | 0.0 | 0.2+ | 2004 02 11 | 699 | 0.5− | 0.5− | 2006 11 16 | 704 | 0.2+ | 0.2− |
| 2001 03 19 | 699 | 0.3+ | 0.2− | 2004 02 11 | 699 | 0.5− | 0.5− | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2001 03 29 | 699 | 0.4− | 0.6+ | 2004 02 11 | 699 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.3− | 0.1+ |
| 2001 03 29 | 699 | 1.3− | 0.9+ | 2004 02 17 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.8+ |
| 2001 03 29 | 699 | 0.2+ | 1.2+ | 2004 02 17 | 644 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 2001 03 29 | 608 | 0.1− | 0.9− | 2004 02 17 | 704 | 0.3+ | 1.1+ | 2006 11 16 | 704 | 0.2− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 608 | 0.0 | 1.0− | 2004 02 17 | 644 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 03 29 | 699 | 0.5+ | 0.6+ | 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 03 29 | 608 | 0.1− | 1.0− | 2004 02 17 | 704 | 0.0 | 0.8+ | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2003 10 24 | 691 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2003 10 24 | 691 | 0.2+ | 0.2+ | 2004 02 17 | 704 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.8− |
| 2003 10 24 | 691 | 0.0 | 0.1+ | 2004 02 22 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2003 10 25 | 691 | 0.0 | 0.4+ | 2004 02 22 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2003 10 25 | 691 | 0.5− | 0.3+ | 2004 02 22 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2003 10 25 | 691 | 0.2+ | 0.2+ | 2004 03 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2003 11 21 | 704 | 1.0− | 0.3+ | 2004 03 08 | 644 | 0.2+ | 0.6+ | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2003 11 21 | 704 | (1.5− | 1.7+) | 2004 03 08 | 644 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2003 11 21 | 704 | (0.1+ | 1.9+) | 2004 03 10 | 644 | 0.3+ | 0.5+ | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2003 12 16 | 699 | 0.7− | 1.1− | 2004 03 10 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2003 12 16 | 699 | 0.8− | 0.6− | 2004 03 10 | 644 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2003 12 16 | 699 | 0.6+ | 0.6+ | 2004 03 10 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.2− |
| 2003 12 16 | 699 | 0.0 | 0.1− | 2004 03 10 | 644 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2004 01 04 | 699 | 0.4− | 0.6+ | 2004 03 10 | 644 | 0.3+ | 0.2+ | 2006 11 25 | 691 | 0.2+ | 0.2− |
| 2004 01 04 | 699 | 0.3+ | 0.3− | 2006 08 29 | 703 | 0.2+ | 0.3+ | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2004 01 04 | 699 | 1.0+ | 0.8− | 2006 08 29 | 703 | 0.0 | 0.7− | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2004 01 04 | 699 | 0.7+ | 0.9− | 2006 08 29 | 703 | 0.2− | 0.6− | 2006 11 27 | 291 | 0.3+ | 0.1− |
| 2004 01 21 | 704 | 1.0− | 0.7− | 2006 08 29 | 703 | 0.3+ | 0.1− | 2006 11 27 | 291 | 0.2− | 0.1− |
| 2004 01 21 | 704 | 1.3− | 0.8− | 2006 09 18 | 703 | 0.6− | 1.2+ | 2006 11 27 | 291 | 0.3− | 0.1− |
| 2004 01 21 | 704 | 1.5− | 0.8− | 2006 09 18 | 703 | 0.0 | 1.3+ | 2006 11 28 | 704 | 0.5− | 0.2− |
| 2004 01 21 | 704 | 0.4− | 1.0− | 2006 09 18 | 703 | (0.2− | 1.6+) | 2006 11 28 | 704 | 0.2− | 0.2+ |
| 2004 01 24 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 703 | 0.6+ | 1.2+ | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2004 01 24 | 704 | 1.0+ | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2004 01 24 | 704 | 0.9+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.3− | 0.5+ |
| 2004 01 24 | 704 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.4+ | 0.0 |
| 2004 01 24 | 704 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.2− | 0.0 |
| 2004 01 28 | 691 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.3+ | 0.4− | 2006 12 01 | 704 | 0.5− | 0.0 |
| 2004 01 28 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2004 01 28 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.4− | 0.2− | 2006 12 01 | 704 | 0.5− | 0.3+ |
| 2004 01 30 | 704 | 1.2+ | 0.2− | 2006 10 27 | 703 | 0.3− | 0.1− | | | | |
| 2004 01 30 | 704 | 0.6+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.0 | | | | |

**(137267)∗ 1999 RS$_{131}$ = 2003 WV$_{137}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55883)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.63642 | | (2000.0) | | | |
| $n$ | 0.28312783 | $\omega$ | 146.25055 | | +0.89146866 | −0.44591941 |
| $a$ | 2.2969296 | $\Omega$ | 240.42925 | | +0.39263664 | +0.84870733 |
| $e$ | 0.1171387 | $i$ | 5.29388 | | +0.22609756 | +0.28434443 |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.4− | 0.3− | 2003 12 04 | 704 | 0.4− | 0.7+ | 2006 08 28 | 704 | 0.1− | 0.3+ |
| 1999 09 08 | 704 | 0.4− | 0.4+ | 2003 12 04 | 704 | 0.4+ | 0.8+ | 2006 08 28 | 704 | 0.2− | 0.3+ |
| 1999 09 08 | 704 | 0.3− | 0.2+ | 2003 12 04 | 704 | 0.2− | 0.5+ | 2006 08 29 | 703 | 0.7+ | 0.5+ |
| 1999 09 09 | 704 | 1.0+ | 0.6+ | 2003 12 04 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.3− | 0.9+ |
| 1999 09 09 | 704 | 0.3− | 0.7− | 2003 12 19 | 704 | (1.8+ | 1.0−) | 2006 08 29 | 703 | 0.4+ | 1.0+ |
| 1999 09 09 | 704 | 0.0 | 0.3− | 2003 12 19 | 704 | (2.0+ | 0.6−) | 2006 08 29 | 703 | 0.1− | 0.7+ |
| 1999 09 09 | 704 | 0.3+ | 0.2− | 2003 12 19 | 704 | (1.8+ | 0.4−) | 2006 08 30 | 699 | 0.0 | 0.1+ |
| 1999 09 09 | 704 | 0.9− | 0.1− | 2003 12 19 | 704 | (2.0+ | 0.5−) | 2006 08 30 | 699 | 0.4− | 0.1+ |
| 1999 09 14 | 704 | 1.1+ | 0.1+ | 2003 12 19 | 704 | (1.7+ | 1.2−) | 2006 08 30 | 699 | 0.9− | 0.7+ |
| 1999 09 14 | 704 | 0.1+ | 1.2− | 2003 12 21 | 704 | 0.3+ | 0.2− | 2006 08 30 | 699 | 0.8− | 0.3+ |
| 1999 09 14 | 704 | 0.6+ | 0.4− | 2003 12 21 | 704 | 1.0+ | 0.8− | 2006 09 01 | 704 | 0.1− | 0.1− |
| 1999 09 14 | 704 | 1.4+ | 0.2− | 2003 12 21 | 704 | 0.5+ | 0.3− | 2006 09 01 | 704 | 0.4− | 0.2+ |
| 1999 09 14 | 704 | 0.1− | 0.2+ | 2003 12 21 | 704 | 0.3+ | 0.6− | 2006 09 01 | 704 | 0.2− | 0.5+ |
| 2001 01 26 | 704 | (1.6+ | 0.6+) | 2003 12 23 | 704 | 0.9− | 0.3− | 2006 09 11 | 703 | 1.2− | 0.7− |
| 2001 01 26 | 704 | 0.3+ | 0.4+ | 2003 12 23 | 704 | 1.4− | 0.1+ | 2006 09 11 | 703 | 0.1+ | 0.3+ |
| 2001 01 26 | 704 | 0.2− | 0.9+ | 2003 12 23 | 704 | 0.8− | 0.5− | 2006 09 11 | 703 | 0.1− | 0.4− |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2003 12 23 | 704 | (1.6− | 0.1−) | 2006 09 11 | 703 | 0.1+ | 0.5− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 12 23 | 704 | (1.7− | 0.4−) | 2006 09 18 | 703 | 0.7− | 0.1+ |
| 2003 09 29 | 704 | 0.1− | 0.7− | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.5+ |
| 2003 09 29 | 704 | (0.7− | 2.0−) | 2004 01 17 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.4− |
| 2003 09 29 | 704 | 0.5+ | 0.1− | 2004 01 17 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.0 |
| 2003 09 29 | 704 | 0.1− | 0.3− | 2005 04 12 | 691 | 0.3+ | 0.0 | 2006 09 20 | 699 | 0.1− | 0.5+ |
| 2003 11 21 | 704 | 0.0 | 0.2+ | 2005 04 12 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 699 | 0.7− | 0.9+ |
| 2003 11 21 | 704 | 0.0 | 0.2+ | 2005 04 12 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.3− | 0.3+ |
| 2003 11 21 | 704 | 0.1+ | 0.2+ | 2005 04 15 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 0.6+ | 0.4+ |
| 2003 11 21 | 704 | 0.1+ | 0.4+ | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.5+ | 0.8+ |
| 2003 11 21 | 704 | 0.1+ | 0.0 | 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.2− |
| 2003 11 23 | 704 | 0.4+ | 1.0+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.4+ |
| 2003 11 23 | 704 | 0.0 | 0.5− | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.2+ | 1.1+ |
| 2003 11 23 | 704 | 0.3+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2003 11 23 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 12 01 | 704 | 0.0 | 0.5− | 2006 08 27 | 699 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 12 01 | 704 | (1.9+ | 2.3−) | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.6− | 0.2+ |
| 2003 12 01 | 704 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2003 12 01 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 704 | 0.8− | 0.7− | 2006 11 19 | 704 | 0.6+ | 0.7+ |
| 2003 12 01 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 704 | 0.0 | 0.1− | | | | |
| 2003 12 04 | 704 | 0.5+ | 0.9+ | 2006 08 28 | 704 | 0.3− | 0.2− | | | | |

**(137268)∗ 1999 RO$_{139}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.19895 | | (2000.0) | | | |
| $n$ | 0.29259563 | $\omega$ | 224.52731 | | +0.99879248 | −0.01590019 |
| $a$ | 2.2471091 | $\Omega$ | 136.31976 | | +0.03128316 | +0.93539600 |
| $e$ | 0.1985296 | $i$ | 3.85929 | | −0.03788072 | +0.35324427 |
| $P$ | 3.37 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 18 | 691 | 0.4− | 0.0 | 2003 12 19 | 704 | 0.2+ | 0.8+ | 2006 10 27 | 704 | 0.6+ | 0.3− |
| 1993 12 18 | 691 | 0.3− | 0.2+ | 2003 12 19 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 704 | 1.2+ | 0.1− |
| 1993 12 18 | 691 | 0.4− | 0.6− | 2003 12 19 | 704 | 0.7− | 0.6+ | 2006 10 27 | 704 | 0.3+ | 0.2− |
| 1998 03 18 | 691 | 0.5− | 0.1− | 2003 12 21 | 645 | 0.2+ | 0.0 | 2006 10 27 | 704 | (1.2+ | 1.6−) |
| 1998 03 18 | 691 | 0.6− | 0.2− | 2003 12 21 | 645 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.6− | 0.7+ |
| 1998 03 18 | 691 | 0.8− | 0.2− | 2005 04 14 | 691 | 0.4+ | 0.7+ | 2006 11 01 | 703 | 0.2+ | 0.5− |
| 1998 03 21 | 691 | 0.2+ | 0.5− | 2005 04 14 | 691 | 0.5+ | 0.5+ | 2006 11 01 | 703 | 0.2− | 1.2− |
| 1998 03 21 | 691 | 0.1+ | 0.4− | 2005 04 14 | 691 | 0.2+ | 0.8+ | 2006 11 01 | 703 | 0.0 | 0.8− |
| 1998 03 21 | 691 | 0.3+ | 0.4− | 2006 08 28 | 703 | 0.9+ | 0.6− | 2006 11 01 | 703 | 0.3− | 0.0 |
| 1999 08 03 | 691 | 0.4− | 0.1− | 2006 08 28 | 703 | (0.2+ | 1.9−) | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1999 08 03 | 691 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.9− | 1.3− | 2006 11 08 | 644 | 0.0 | 0.2− |
| 1999 08 03 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.5− | 1.4+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 1999 08 08 | 699 | 0.3+ | 1.6+ | 2006 09 17 | 683 | (2.6− | 0.9+) | 2006 11 11 | 703 | 0.4− | 0.1− |
| 1999 08 08 | 699 | 0.7− | 1.9+ | 2006 09 17 | 683 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 1999 08 08 | 699 | 0.3+ | 1.3+ | 2006 09 17 | 683 | 1.3− | 1.0+ | 2006 11 11 | 644 | 0.1− | 0.1− |
| 1999 09 06 | 699 | 0.3− | 0.2− | 2006 09 18 | 683 | 1.1− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 1999 09 06 | 699 | 0.4+ | 1.1+ | 2006 09 18 | 683 | 0.4+ | 1.1+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 1999 09 06 | 699 | 1.3+ | 0.5− | 2006 09 18 | 683 | 0.7− | 0.0 | 2006 11 11 | 644 | 0.1− | 0.0 |
| 1999 09 07 | 704 | 1.2− | 0.1+ | 2006 09 19 | 683 | 1.0− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.0 |
| 1999 09 07 | 704 | 0.2+ | 0.0 | 2006 09 19 | 683 | 1.2− | 0.5+ | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 1999 09 07 | 704 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.3+ |
| 1999 09 07 | 704 | 0.8+ | 0.6+ | 2006 09 30 | 703 | 0.8+ | 0.2− | 2006 11 14 | 704 | 0.0 | 0.2+ |
| 1999 09 07 | 704 | 0.9+ | 0.6+ | 2006 09 30 | 703 | 0.0 | 0.6− | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 1999 09 09 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.4− | 2006 11 14 | 704 | 0.0 | 0.5+ |
| 1999 09 09 | 704 | 0.3− | 0.8− | 2006 10 03 | 704 | (0.1+ | 2.1+) | 2006 11 17 | 704 | 0.4+ | 0.9+ |
| 1999 09 09 | 704 | 0.3+ | 1.0− | 2006 10 03 | 704 | 0.4+ | 0.3− | 2006 11 17 | 704 | 0.2− | 0.3− |
| 1999 09 09 | 704 | 0.3+ | 0.8− | 2006 10 03 | 704 | 0.7+ | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.0 |
| 1999 09 13 | 704 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.4− |
| 1999 09 13 | 704 | 0.5− | 0.2+ | 2006 10 03 | 704 | 0.0 | 0.8− | 2006 11 19 | 703 | 0.3− | 0.6+ |
| 1999 09 13 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.4+ | 0.8+ |
| 1999 09 13 | 704 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.2+ |
| 1999 09 13 | 704 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.0 |
| 1999 09 16 | 691 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.7− |
| 1999 09 16 | 691 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.9− | 0.2− | 2006 11 20 | 704 | (0.4− | 2.5+) |
| 1999 09 16 | 691 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.5− | 0.2− | 2006 11 20 | 704 | (0.2− | 1.6+) |
| 1999 10 15 | 704 | 1.3+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 20 | 704 | 1.0+ | 1.3+ |
| 1999 10 15 | 704 | 0.5+ | 0.1− | 2006 10 22 | 704 | (1.7− | 0.7−) | 2006 11 20 | 704 | 0.5+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 704 | 1.5− | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.5+ |
| 1999 10 15 | 704 | 0.4+ | 0.9− | 2006 10 22 | 704 | (1.8− | 1.1−) | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2002 06 09 | 704 | 0.4− | 0.8− | 2006 10 22 | 704 | 1.4− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.5+ |
| 2002 06 09 | 704 | 0.4− | 0.0 | 2006 10 22 | 704 | 0.9− | 0.8− | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2002 06 09 | 704 | 0.3+ | 1.0+ | 2006 10 22 | 703 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2002 06 09 | 704 | 0.9− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2003 12 19 | 704 | 0.3+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2003 12 19 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.0 | 0.5− |

**(137269)∗ 1999 RH$_{141}$ = 2001 BJ$_{54}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 10390)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.05439 | | (2000.0) | | | |
| $n$ | 0.27151765 | $\omega$ | 93.41200 | | +0.59359658 | −0.80204509 |
| $a$ | 2.3619498 | $\Omega$ | 319.93326 | | +0.69158007 | +0.55038027 |
| $e$ | 0.1016062 | $i$ | 5.89249 | | +0.41153385 | +0.23195954 |
| $P$ | 3.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.7− | 0.1+ | 2001 02 22 | 704 | 0.2+ | 0.4+ | 2003 11 24 | 699 | 0.4+ | 0.3+ |
| 1999 09 07 | 704 | 0.1− | 0.1+ | 2001 02 22 | 704 | 0.1+ | 0.8+ | 2003 11 24 | 691 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 0.4− | 0.9+ | 2001 02 22 | 704 | 0.5+ | 0.1− | 2003 11 24 | 699 | 0.4− | 0.2+ |
| 1999 09 07 | 704 | 0.2+ | 1.7+ | 2003 09 21 | 699 | 0.3− | 1.0− | 2003 11 24 | 691 | 0.0 | 0.0 |
| 1999 09 09 | 704 | 0.2− | 0.6− | 2003 09 21 | 699 | 0.6− | 0.7− | 2003 11 24 | 699 | 0.5+ | 0.1+ |
| 1999 09 09 | 704 | 0.0 | 0.4− | 2003 09 21 | 699 | 1.2+ | 0.2+ | 2003 11 24 | 699 | 0.5+ | 0.1− |
| 1999 09 09 | 704 | 0.3+ | 0.4+ | 2003 09 21 | 699 | 0.1− | 0.3+ | 2003 11 24 | 691 | 0.1− | 0.1− |
| 1999 09 14 | 704 | 1.5+ | 0.5+ | 2003 10 05 | 704 | 0.3+ | 1.0+ | 2003 12 17 | 644 | 0.2+ | 0.0 |
| 1999 09 14 | 704 | 0.5+ | 0.8− | 2003 10 05 | 704 | 0.5− | 1.5+ | 2003 12 17 | 644 | 0.1+ | 0.3+ |
| 1999 09 14 | 704 | 0.4+ | 0.4+ | 2003 10 05 | 704 | 1.2− | 0.1+ | 2003 12 17 | 644 | 0.3+ | 0.0 |
| 1999 09 14 | 704 | 0.5+ | 0.1− | 2003 10 05 | 704 | 0.5− | 0.5+ | 2003 12 28 | 704 | 0.5+ | 0.9− |
| 1999 10 08 | 704 | 1.0− | 1.6− | 2003 10 16 | 644 | 0.4− | 0.2+ | 2003 12 28 | 704 | 0.1− | 0.4− |
| 1999 10 08 | 704 | 0.4− | 0.2− | 2003 10 16 | 644 | 0.2− | 0.3+ | 2003 12 28 | 704 | 0.2− | 0.1− |
| 1999 10 08 | 704 | 1.0− | 0.5− | 2003 10 16 | 644 | 0.1+ | 0.2+ | 2003 12 28 | 704 | 0.2− | 0.0 |
| 2001 01 18 | 691 | 0.4− | 0.1+ | 2003 10 22 | 704 | 0.2− | 0.1+ | 2005 04 12 | G92 | 0.1− | 1.0+ |
| 2001 01 18 | 691 | 0.4− | 0.2+ | 2003 10 22 | 704 | 0.8+ | 0.0 | 2005 04 12 | G92 | 0.6+ | 0.4+ |
| 2001 01 18 | 691 | 0.4− | 0.1+ | 2003 10 22 | 704 | 0.3+ | 0.1− | 2005 04 12 | G92 | 0.4+ | 0.6+ |
| 2001 01 21 | 704 | 0.0 | 0.1− | 2003 10 22 | 704 | 0.4+ | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.9+ |
| 2001 01 21 | 704 | 0.0 | 0.1+ | 2003 10 22 | 704 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.3− | 0.5+ |
| 2001 01 21 | 704 | 0.1+ | 0.4+ | 2003 11 02 | 704 | 0.3− | 0.5− | 2006 08 14 | 644 | 0.1+ | 0.5+ |
| 2001 01 21 | 704 | 0.3+ | 0.3+ | 2003 11 02 | 704 | 0.2+ | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.5+ |
| 2001 02 16 | 699 | 0.2+ | 0.5− | 2003 11 02 | 704 | 0.1+ | 0.8− | 2006 08 14 | 644 | 0.4− | 0.7+ |
| 2001 02 16 | 699 | 0.7+ | 0.3+ | 2003 11 02 | 704 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.1− | 0.8+ |
| 2001 02 16 | 699 | 0.1+ | 0.2− | 2003 11 14 | 644 | 0.1− | 0.1− | 2006 08 20 | 644 | 0.2− | 0.6+ |
| 2001 02 16 | 699 | 0.6+ | 0.5+ | 2003 11 14 | 644 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.3− | 0.5+ |
| 2001 02 19 | 704 | 1.1+ | 0.5+ | 2003 11 14 | 644 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.1− | 0.7+ |
| 2001 02 19 | 704 | 0.0 | 0.0 | 2003 11 19 | 704 | 0.9− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2001 02 19 | 704 | 0.5+ | 0.3+ | 2003 11 19 | 704 | 0.3− | 0.5+ | 2006 10 19 | G96 | 0.4− | 0.0 |
| 2001 02 19 | 704 | 1.1+ | 0.1+ | 2003 11 19 | 704 | 0.3− | 0.9+ | 2006 10 19 | G96 | 0.4− | 0.3− |
| 2001 02 22 | 704 | 0.6+ | 0.4+ | 2003 11 19 | 704 | 0.2− | 0.5+ | 2006 10 19 | G96 | 0.6+ | 0.5− |
| 2001 02 22 | 704 | 0.6+ | 0.2+ | 2003 11 19 | 704 | 0.3− | 0.6+ | | | | |

**(137270)∗ 1999 RW$_{143}$ = 2002 KM$_{5}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31264)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.25211 | | (2000.0) | | | |
| $n$ | 0.29308404 | $\omega$ | 78.18950 | | +0.58063253 | +0.81363780 |
| $a$ | 2.2446120 | $\Omega$ | 227.34581 | | −0.76164408 | +0.53010073 |
| $e$ | 0.2054763 | $i$ | 2.28443 | | −0.28768761 | +0.23871897 |
| $P$ | 3.36 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 23 | 704 | 0.2+ | 1.0− | 2002 05 21 | 704 | 0.6+ | 0.3− | 2005 05 14 | G96 | 0.4− | 0.2+ |
| 1999 07 23 | 704 | 0.9+ | 0.2+ | 2002 05 21 | 704 | 0.8+ | 0.3− | 2005 05 14 | G96 | 0.4− | 0.1+ |
| 1999 07 23 | 704 | 1.2+ | 0.5− | 2002 05 21 | 704 | 0.7+ | 0.7− | 2005 05 14 | G96 | 0.1− | 0.3+ |
| 1999 08 22 | 699 | (0.3− | 2.4+) | 2002 05 21 | 704 | 0.6− | 0.1− | 2006 08 28 | 703 | 0.1− | 0.7+ |
| 1999 08 22 | 699 | (0.8+ | 2.9+) | 2002 06 06 | 704 | 0.2+ | 0.8− | 2006 08 28 | 703 | 0.9− | 0.5− |
| 1999 08 22 | 699 | (0.6+ | 2.1+) | 2002 06 06 | 704 | 0.1+ | 1.1− | 2006 08 28 | 703 | 0.4− | 0.0 |
| 1999 09 04 | 699 | 0.4+ | 1.6+ | 2002 06 06 | 704 | (3.5− | 1.3−) | 2006 08 28 | 703 | 0.8− | 0.9− |
| 1999 09 04 | 699 | 0.2+ | 0.9+ | 2002 06 06 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 703 | (1.9− | 1.0−) |
| 1999 09 04 | 699 | 0.2+ | 1.0+ | 2002 06 06 | 704 | 0.5− | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.6+ |
| 1999 09 07 | 704 | 0.4+ | 0.1− | 2002 06 08 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.7− | 0.2− |
| 1999 09 07 | 704 | 0.3+ | 0.3+ | 2002 06 08 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 1.0− |
| 1999 09 07 | 704 | 0.1+ | 0.4− | 2002 06 08 | 704 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 1999 09 07 | 704 | 0.1+ | 0.5− | 2002 06 08 | 704 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.1+ |
| 1999 09 07 | 704 | 0.2+ | 0.9− | 2002 06 08 | 704 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 1999 09 09 | 704 | 0.2+ | 0.7+ | 2002 06 16 | 644 | (0.0 | 1.6+) | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1999 09 09 | 704 | 0.6+ | 0.1+ | 2002 06 16 | 644 | 0.4+ | 1.3+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 1999 09 09 | 704 | 0.1− | 0.3+ | 2002 06 16 | 644 | 0.4+ | 1.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 1999 09 09 | 704 | 0.0 | 0.1+ | 2002 06 18 | 704 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1999 09 09 | 704 | 0.5+ | 0.3− | 2002 06 18 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 1999 09 14 | 704 | 0.5+ | 0.3+ | 2002 06 18 | 704 | 0.1+ | 1.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1999 09 14 | 704 | 0.2+ | 0.7+ | 2002 06 18 | 704 | 0.3+ | 1.0+ | 2006 10 23 | 704 | 0.0 | 0.1− |
| 1999 09 14 | 704 | 0.2+ | 0.8+ | 2002 06 18 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 704 | 0.2+ | 0.4− |
| 1999 09 14 | 704 | 0.1− | 0.4+ | 2002 07 04 | 644 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.4+ | 0.3− |
| 1999 09 14 | 704 | 0.1+ | 0.6+ | 2002 07 04 | 644 | 0.4+ | 0.0 | 2006 10 28 | 704 | 0.6− | 0.2+ |
| 1999 09 29 | 703 | 0.6− | 0.9+ | 2002 07 04 | 644 | 0.3+ | 0.0 | 2006 10 28 | 704 | (2.2+ | 1.7+) |
| 1999 09 29 | 703 | 0.0 | 0.9+ | 2002 07 05 | 704 | 0.9+ | 0.2+ | 2006 10 28 | 704 | (0.8− | 2.0+) |
| 1999 09 29 | 703 | 0.1− | 0.3+ | 2002 07 05 | 704 | 0.3+ | 0.0 | 2006 10 28 | 704 | (0.5− | 1.9+) |
| 1999 09 29 | 703 | 0.0 | 0.1− | 2002 07 05 | 704 | 0.6+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 1999 10 02 | 704 | 0.7− | 0.2+ | 2002 07 05 | 704 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 1999 10 02 | 704 | 0.4− | 0.4− | 2002 07 05 | 704 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 1999 10 02 | 704 | 0.1+ | 0.1− | 2003 12 23 | 704 | 0.4− | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 1999 10 02 | 704 | 0.3− | 0.4+ | 2003 12 23 | 704 | 0.3+ | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 1999 10 02 | 704 | 0.5+ | 0.0 | 2003 12 23 | 704 | 0.8+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.7+ | 0.4+ | 2003 12 23 | 704 | 0.7+ | 0.8+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1999 10 06 | 704 | 0.7+ | 0.2− | 2005 03 03 | 691 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.4− | 0.2+ |
| 1999 10 06 | 704 | 0.1+ | 0.4− | 2005 03 03 | 691 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1999 10 06 | 704 | 0.1− | 0.2+ | 2005 03 03 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1999 10 06 | 704 | 0.2− | 0.2+ | 2005 03 07 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1999 10 07 | 691 | 0.2− | 0.1− | 2005 03 07 | 704 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1999 10 07 | 691 | 0.5− | 0.2− | 2005 03 07 | 704 | 0.0 | 0.4+ | 2006 11 11 | 703 | (0.0 | 3.3+) |
| 1999 10 07 | 691 | 0.5− | 0.4− | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.7+ |
| 1999 10 07 | 704 | 0.4+ | 0.3− | 2005 03 11 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 1999 10 07 | 704 | 0.3+ | 1.5+ | 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1999 10 07 | 704 | 0.1− | 0.7+ | 2005 03 11 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 1999 10 07 | 704 | 1.2+ | 0.5− | 2005 03 13 | 703 | 0.7− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 1999 10 07 | 704 | 0.3− | 0.8+ | 2005 03 13 | 703 | 1.1− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 1999 10 11 | 691 | 0.2− | 0.1− | 2005 03 13 | 703 | 1.2− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 1999 10 11 | 691 | 0.2− | 0.1− | 2005 03 13 | 703 | 0.1+ | 0.4+ | 2006 11 12 | 703 | 0.1+ | 0.0 |
| 1999 10 11 | 691 | 0.2− | 0.1− | 2005 03 17 | 691 | 0.4+ | 0.4+ | 2006 11 12 | 703 | 0.2− | 0.5− |
| 1999 10 15 | 704 | 0.6+ | 0.7+ | 2005 03 17 | 691 | 0.3+ | 0.3+ | 2006 11 12 | 703 | 0.2− | 0.1− |
| 1999 10 15 | 699 | 0.1− | 0.1+ | 2005 03 17 | 691 | 0.4+ | 0.2+ | 2006 11 12 | 703 | 0.8− | 0.2− |
| 1999 10 15 | 704 | 1.0+ | 0.3+ | 2005 03 31 | 699 | 0.4− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 1999 10 15 | 704 | 0.8+ | 0.1+ | 2005 03 31 | 699 | 0.0 | 1.0+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 1999 10 15 | 699 | 0.1+ | 1.9+ | 2005 03 31 | 699 | (1.6+ | 1.3+) | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 1999 10 15 | 704 | 0.3+ | 0.1+ | 2005 03 31 | 699 | 0.7+ | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.5+ |
| 1999 10 15 | 704 | 0.1− | 0.1+ | 2005 04 04 | 704 | 0.7+ | 0.7− | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 1999 10 15 | 699 | 0.5− | 0.5+ | 2005 04 04 | 704 | 0.4+ | 0.7− | 2006 11 17 | 703 | 0.0 | 0.6+ |
| 1999 10 16 | 691 | 0.1− | 0.1− | 2005 04 04 | 704 | 0.5+ | 0.7− | 2006 11 18 | 704 | 0.4− | 0.5− |
| 1999 10 16 | 691 | 0.1− | 0.1− | 2005 04 04 | 704 | 0.7− | 0.8− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 1999 10 16 | 691 | 0.1− | 0.0 | 2005 04 04 | 704 | 0.3+ | 1.4− | 2006 11 18 | 704 | 0.6+ | 0.1− |
| 1999 10 19 | 691 | 0.2+ | 0.3− | 2005 04 05 | 703 | 0.5− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.1− |
| 1999 10 19 | 691 | 0.3− | 0.1− | 2005 04 05 | 703 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.8− | 1.0+ |
| 1999 10 19 | 691 | 0.3− | 0.1− | 2005 04 05 | 703 | 1.3− | 0.1− | 2006 11 18 | 704 | 0.6+ | 1.2− |
| 1999 10 30 | 691 | 0.1+ | 0.0 | 2005 04 05 | 703 | 0.0 | 1.1− | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 1999 10 30 | 691 | 0.2+ | 0.2− | 2005 04 07 | 704 | 0.9+ | 0.5+ | 2006 11 18 | 704 | (0.4+ | 2.6+) |
| 1999 10 30 | 691 | 0.1− | 0.1+ | 2005 04 07 | 704 | 1.1+ | 0.8+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 1999 11 05 | 691 | 0.3− | 0.1− | 2005 04 07 | 704 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.0 | 0.0 | 2005 04 07 | 704 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 1999 11 05 | 691 | 0.3− | 0.0 | 2005 04 09 | 704 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 1999 11 12 | 704 | 0.1− | 0.9− | 2005 04 09 | 704 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 1999 11 12 | 704 | 0.4− | 0.4+ | 2005 04 09 | 704 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 1999 11 12 | 704 | 0.2+ | 0.1+ | 2005 04 09 | 704 | (1.7− | 1.7+) | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 1999 11 16 | 691 | 0.1+ | 0.0 | 2005 04 09 | 704 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 1999 11 16 | 691 | 0.1+ | 0.0 | 2005 04 12 | 704 | 0.4− | 1.2+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 1999 11 16 | 691 | 0.1+ | 0.1− | 2005 04 12 | 704 | 0.7− | 0.7+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 1999 12 07 | 704 | 0.6− | 0.7+ | 2005 04 12 | 704 | 0.3+ | 1.0+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 1999 12 07 | 704 | 1.0− | 0.8+ | 2005 04 12 | 704 | 0.7+ | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.5+ |
| 1999 12 07 | 704 | 0.3− | 0.3− | 2005 04 12 | 704 | 0.3− | 0.8+ | 2006 11 27 | 703 | 0.0 | 0.5− |
| 2002 05 09 | 704 | 0.7− | 0.2+ | 2005 04 18 | 703 | 0.7− | 0.8+ | 2006 11 27 | 703 | 0.2+ | 1.1− |
| 2002 05 09 | 704 | 0.7− | 0.9− | 2005 04 18 | 703 | 0.1+ | 0.6+ | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2002 05 09 | 704 | 0.7− | 0.3− | 2005 04 18 | 703 | 0.1− | 0.6+ | 2006 11 29 | 704 | 0.4− | 0.1+ |
| 2002 05 09 | 704 | 0.0 | 0.6− | 2005 04 18 | 703 | (1.9− | 0.5+) | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2002 05 09 | 704 | 1.2− | 0.6− | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.1+ |
| 2002 05 16 | 704 | 0.3+ | 0.2− | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 11 29 | 704 | 1.1− | 0.4+ |
| 2002 05 16 | 704 | 0.3− | 1.3+ | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.8+ |
| 2002 05 16 | 704 | 0.7− | 0.8+ | 2005 05 08 | G96 | 0.3− | 0.1+ | | | | |
| 2002 05 21 | 704 | 0.1− | 0.2+ | 2005 05 14 | G96 | 0.1− | 0.1+ | | | | |

**(137271)∗ 1999 RC$_{147}$ = 2002 JY$_{58}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29085)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.37039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29079924 | $\omega$ | 61.63123 | | +0.69319161 | +0.71689567 | |
| $a$ | 2.2563539 | $\Omega$ | 252.45614 | | −0.68560236 | +0.62398188 | |
| $e$ | 0.1808932 | $i$ | 4.47961 | | −0.22233936 | +0.31097783 | |
| $P$ | 3.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.2+ | 0.2− | 2002 05 17 | 704 | 0.6− | 0.0 | 2006 08 30 | 699 | 0.1− | 1.1− |
| 1996 12 04 | 691 | 0.1+ | 0.2− | 2002 05 17 | 704 | 1.5− | 0.0 | 2006 08 30 | 699 | (2.1+ | 1.2−) |
| 1996 12 04 | 691 | 0.4+ | 0.2− | 2002 05 29 | 608 | 0.3+ | 1.3− | 2006 08 30 | 699 | 0.9− | 0.3+ |
| 1996 12 13 | 691 | 0.1− | 0.8+ | 2002 05 29 | 608 | 0.0 | 1.0− | 2006 09 26 | 691 | 0.3+ | 0.2+ |
| 1996 12 13 | 691 | 0.3− | 0.7+ | 2002 05 29 | 608 | 0.4− | 0.8− | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 1996 12 13 | 691 | 0.2− | 0.5+ | 2002 06 05 | 644 | 0.4+ | 1.1+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 1999 08 22 | 699 | 0.2− | 0.7− | 2002 06 05 | 644 | 0.5− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 1999 08 22 | 699 | 0.0 | 0.4+ | 2002 06 05 | 644 | 0.3+ | 0.9+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 1999 08 22 | 699 | 0.3+ | 0.6+ | 2002 06 05 | 644 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 1999 09 05 | 703 | 0.0 | 0.3− | 2002 06 05 | 644 | 0.4+ | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1999 09 05 | 703 | 0.3− | 0.4+ | 2002 06 05 | 644 | 0.4+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 1999 09 05 | 703 | 0.1− | 0.7+ | 2002 06 08 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 1999 09 05 | 703 | 1.5− | 0.0 | 2002 06 08 | 704 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1999 09 09 | 704 | 0.6+ | 0.4+ | 2002 06 08 | 704 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 1999 09 09 | 704 | 0.1− | 0.1+ | 2002 06 08 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 0.1− | 0.4+ | 2002 06 08 | 704 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− |
| 1999 09 09 | 704 | 1.1+ | 1.0− | 2002 06 09 | 704 | 0.3+ | 0.8− | 2006 10 21 | 691 | 0.3− | 0.2− |
| 1999 09 09 | 704 | 0.1− | 0.6− | 2002 06 09 | 704 | 1.0+ | 0.6+ | 2006 10 21 | 691 | 0.7− | 1.2− |
| 1999 09 14 | 704 | 0.1+ | 0.5+ | 2002 06 09 | 704 | 0.4+ | 1.4+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 1999 09 14 | 704 | 0.6− | 0.1+ | 2002 06 09 | 704 | (0.9+ | 2.1+) | 2006 10 29 | 691 | 0.0 | 0.1− |
| 1999 09 14 | 704 | 0.9+ | 0.8+ | 2002 06 11 | 644 | 0.1− | 0.6+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 1999 09 14 | 704 | 0.0 | 0.3− | 2002 06 11 | 644 | 0.2− | 0.8+ | 2006 10 29 | 704 | 0.2+ | 0.6+ |
| 1999 09 14 | 704 | 0.5− | 0.4+ | 2002 06 11 | 644 | 0.3+ | 0.2+ | 2006 10 29 | 704 | 0.1+ | 0.4− |
| 2002 05 09 | 704 | (0.6+ | 1.6+) | 2004 01 13 | 691 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.1− | 1.1+ |
| 2002 05 09 | 704 | (1.4+ | 2.9+) | 2004 01 13 | 691 | 0.2− | 0.1+ | 2006 10 29 | 704 | 0.2− | 0.7+ |
| 2002 05 09 | 704 | 1.3− | 0.5+ | 2004 01 13 | 691 | 1.1− | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 05 09 | 704 | 0.0 | 0.8+ | 2005 03 03 | 691 | 0.6+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2002 05 09 | 704 | 0.2+ | 1.3+ | 2005 03 03 | 691 | 0.9+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.3− |
| 2002 05 11 | 704 | 0.6− | 1.1+ | 2005 03 03 | 691 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.3+ |
| 2002 05 11 | 704 | 0.2− | 0.8+ | 2005 03 13 | 703 | 0.2− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2002 05 11 | 704 | 1.1− | 0.3+ | 2005 03 13 | 703 | 0.7− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 05 11 | 704 | 0.0 | 0.0 | 2005 03 13 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2002 05 11 | 704 | 0.1− | 0.3+ | 2005 03 13 | 703 | (2.1− | 0.1+) | 2006 11 22 | 704 | 1.0+ | 1.1+ |
| 2002 05 17 | 704 | 0.5+ | 0.1− | 2006 08 30 | 699 | 0.6+ | 1.0+ | 2006 11 22 | 704 | 0.5+ | 1.5+ |

**(137272)∗ 1999 RU$_{154}$ = 2004 BP$_{84}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55885)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.21427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29082768 | $\omega$ | 94.22994 | | +0.96274757 | −0.26836155 | |
| $a$ | 2.2562067 | $\Omega$ | 281.33931 | | +0.23273814 | +0.88481636 | |
| $e$ | 0.2324822 | $i$ | 1.93777 | | +0.13765923 | +0.38089642 | |
| $P$ | 3.39 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 699 | (1.0+ | 2.4+) | 2004 02 26 | 704 | 0.5+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 1999 08 22 | 699 | (0.6+ | 2.1+) | 2004 02 26 | 704 | 1.1− | 1.1− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 1999 08 22 | 699 | 1.4+ | 0.8+ | 2005 01 20 | 809 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 0.1+ | 0.4+ | 2005 01 20 | 809 | 0.2+ | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.2− |
| 1999 09 07 | 704 | 0.2− | 0.7+ | 2005 01 20 | 809 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.2+ |
| 1999 09 07 | 704 | 0.3− | 0.7+ | 2005 05 16 | G96 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.2+ |
| 1999 09 07 | 704 | 0.2− | 0.1+ | 2005 05 16 | G96 | 0.4+ | 0.5+ | 2006 11 16 | 704 | 0.8− | 0.0 |
| 1999 09 07 | 704 | 0.4− | 0.3+ | 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.3+ |
| 1999 09 09 | 704 | 0.1− | 0.2+ | 2005 05 16 | G96 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 1999 09 09 | 704 | 0.3− | 0.6+ | 2006 09 17 | 699 | 1.0− | 0.0 | 2006 11 16 | 704 | 0.2− | 0.1− |
| 1999 09 09 | 704 | 0.6− | 1.1− | 2006 09 17 | 699 | (0.3− | 1.5+) | 2006 11 17 | 704 | 0.5− | 1.2+ |
| 1999 09 09 | 704 | 0.4− | 0.4+ | 2006 09 17 | 699 | 0.7+ | 0.3− | 2006 11 17 | 704 | 0.9+ | 1.0− |
| 1999 09 09 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 699 | 0.7+ | 0.2+ | 2006 11 17 | 704 | 0.5− | 0.2− |
| 1999 09 14 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 1999 09 14 | 704 | 0.4− | 0.4+ | 2006 09 17 | 699 | 1.1+ | 0.2− | 2006 11 17 | 704 | 0.4− | 0.2+ |
| 1999 09 14 | 704 | 0.6− | 0.8+ | 2006 09 17 | 699 | 0.1− | 1.3+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 1999 09 14 | 704 | 0.5− | 0.4+ | 2006 09 17 | 699 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.7− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | (0.4− | 2.0+) | 2006 11 19 | 704 | (1.6− | 0.4−) |
| 2004 01 16 | 644 | 0.2− | 0.4+ | 2006 09 19 | 703 | (2.4− | 0.3+) | 2006 11 19 | 704 | (0.4− | 1.6−) |
| 2004 01 16 | 644 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.9− | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.7− |
| 2004 01 16 | 644 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2004 01 19 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2004 01 19 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 01 19 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2004 01 24 | 704 | 0.6− | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 01 24 | 704 | 0.5− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.4− |
| 2004 01 24 | 704 | 0.3− | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2004 01 24 | 704 | (2.2− | 1.9+) | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.4− |
| 2004 01 26 | 699 | 0.4− | 1.2− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.2− |
| 2004 01 26 | 699 | 1.1− | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.2− | 1.0− |
| 2004 01 26 | 699 | 0.2+ | 0.5− | 2006 10 29 | 704 | 0.6+ | 0.3+ | 2006 11 23 | A94 | (4.1+ | 3.0+) |
| 2004 01 26 | 699 | 0.2− | 0.6− | 2006 10 29 | 704 | 0.3+ | 0.0 | 2006 11 23 | A94 | 0.3+ | 0.2+ |
| 2004 01 28 | 704 | 0.2+ | 0.9+ | 2006 10 29 | 704 | 0.9− | 0.0 | 2006 11 23 | A94 | 0.6+ | 0.2+ |
| 2004 01 28 | 704 | 0.6+ | 0.3+ | 2006 10 29 | 704 | (0.1+ | 1.6−) | 2006 11 27 | 704 | 0.4+ | 1.2− |
| 2004 01 28 | 704 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.7+ |
| 2004 01 28 | 704 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.1− | 0.1− |
| 2004 01 29 | 704 | 0.3− | 0.9+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 27 | 704 | 0.2− | 0.7+ |
| 2004 01 29 | 704 | 0.6+ | 1.4+ | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2004 01 29 | 704 | 0.8− | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2004 01 29 | 704 | 0.6+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2004 01 30 | 704 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.3+ | 0.3− |
| 2004 01 30 | 704 | 1.2+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.1− | 0.2− |
| 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.3+ |
| 2004 01 30 | 704 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.1− |
| 2004 01 30 | 704 | 0.4+ | 1.3+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.1− | 0.3− |
| 2004 02 26 | 704 | 1.2+ | 1.2+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.5+ | 0.1− |
| 2004 02 26 | 704 | 1.0+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.2+ | | | | |

**(137273)∗ 1999 RX$_{154}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.93707 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28305488 | $\omega$ | 77.36395 | | +0.72879083 | −0.68265598 | |
| $a$ | 2.2973242 | $\Omega$ | 325.64428 | | +0.58582495 | +0.66194820 | |
| $e$ | 0.1639985 | $i$ | 5.42326 | | +0.35450395 | +0.30952446 | |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 07 | 691 | 0.0 | 0.2+ | 2006 07 25 | G96 | 0.6− | 0.2− | 2006 09 18 | 704 | 0.5− | 0.1+ |
| 1994 03 07 | 691 | 0.3− | 0.0 | 2006 07 25 | G96 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.6− |
| 1994 03 07 | 691 | 0.5+ | 0.1+ | 2006 08 15 | 644 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.6+ |
| 1999 09 07 | 704 | 0.1+ | 0.1− | 2006 08 15 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.6− |
| 1999 09 07 | 704 | 0.5− | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.6− |
| 1999 09 07 | 704 | 0.2− | 1.3− | 2006 08 20 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.2+ |
| 1999 09 07 | 704 | 0.1+ | 0.4− | 2006 08 20 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.5+ | 0.6− |
| 1999 09 07 | 704 | 0.1− | 0.9− | 2006 08 20 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.1− |
| 1999 09 09 | 704 | 0.3− | 0.2− | 2006 08 25 | 704 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.0 |
| 1999 09 09 | 704 | 0.2+ | 0.5− | 2006 08 25 | 704 | 0.5− | 0.8+ | 2006 09 25 | 704 | 1.0− | 0.3+ |
| 1999 09 09 | 704 | 0.7− | 0.5− | 2006 08 25 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 704 | 0.5− | 0.7− |
| 1999 09 09 | 704 | 0.7− | 0.0 | 2006 08 27 | 699 | 1.0+ | 0.8+ | 2006 09 25 | 704 | 0.6+ | 0.4− |
| 1999 09 09 | 704 | 0.1− | 0.2− | 2006 08 27 | 699 | 0.9− | 0.4− | 2006 09 25 | 704 | 0.1+ | 0.2− |
| 1999 09 14 | 704 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.0 | 0.4− |
| 1999 09 14 | 704 | 1.4− | 1.7+ | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.1− | 0.1+ |
| 1999 09 14 | 704 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.5− | 0.6− | 2006 09 25 | 699 | 0.7− | 0.4+ |
| 1999 09 14 | 704 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.6− | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.0 |
| 1999 09 14 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 1.3+ | 2006 09 26 | 704 | 0.4+ | 0.7− |
| 1999 10 13 | 704 | 1.3+ | 1.1− | 2006 08 28 | 703 | 0.5+ | 0.4+ | 2006 09 26 | 704 | (1.7− | 0.6+) |
| 1999 10 13 | 704 | 0.8+ | 0.3− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.4+ |
| 1999 10 13 | 704 | 1.4+ | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.2+ |
| 1999 10 13 | 704 | 0.9+ | 0.2− | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.2− |
| 1999 10 13 | 704 | 1.1+ | 0.4− | 2006 08 30 | 704 | 0.3+ | 0.5− | 2006 09 26 | 704 | 0.1+ | 0.4+ |
| 2003 12 04 | 704 | 0.5− | 0.3+ | 2006 08 30 | 704 | 0.6+ | 1.3+ | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 2003 12 04 | 704 | 0.9− | 0.3− | 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.7+ | 1.0+ |
| 2003 12 04 | 704 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 1.1− | 0.4− | 2006 09 29 | 704 | 1.0+ | 0.2− |
| 2003 12 17 | 704 | 0.1− | 0.4− | 2006 08 30 | 704 | (1.5+ | 0.5−) | 2006 09 29 | 704 | 0.5+ | 0.4− |
| 2003 12 17 | 704 | 0.3+ | 0.3− | 2006 09 01 | 704 | 0.9− | 1.3+ | 2006 09 29 | 704 | 0.9+ | 0.3− |
| 2003 12 17 | 704 | 0.3+ | 0.1+ | 2006 09 01 | 704 | 0.6− | 0.6− | 2006 09 29 | 704 | 0.3+ | 0.0 |
| 2003 12 17 | 704 | 0.1− | 0.3− | 2006 09 01 | 704 | 0.3+ | 0.8− | 2006 09 30 | 704 | (0.1+ | 1.7−) |
| 2003 12 23 | 704 | 0.8− | 0.3+ | 2006 09 12 | 703 | 0.3+ | 0.4− | 2006 09 30 | 704 | 0.7+ | 0.5+ |
| 2003 12 23 | 704 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.6− | 0.7− | 2006 09 30 | 704 | 0.6+ | 0.4+ |
| 2003 12 23 | 704 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.3− | 1.0− | 2006 09 30 | 704 | 1.0+ | 0.5+ |
| 2003 12 23 | 704 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.7− | 0.5− | 2006 10 10 | 644 | 0.1− | 0.5− |
| 2003 12 28 | 704 | 0.8+ | 0.2+ | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2003 12 28 | 704 | 0.6+ | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2003 12 28 | 704 | 0.4+ | 1.1+ | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2003 12 28 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 704 | 0.3− | 1.0+ | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2003 12 28 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.5+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2006 07 25 | G96 | 0.4− | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.5+ | | | | |
| 2006 07 25 | G96 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.9− | 0.3+ | | | | |

**(137274)∗ 1999 RR$_{156}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.91811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29189253 | $\omega$ | 65.85258 | | +0.80645241 | −0.58839429 | |
| $a$ | 2.2507161 | $\Omega$ | 330.09067 | | +0.49091707 | +0.72143905 | |
| $e$ | 0.1481588 | $i$ | 6.74193 | | +0.32959816 | +0.36512718 | |
| $P$ | 3.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 1.1+ | 1.4+ | 2003 12 18 | 704 | 0.3+ | 1.0+ | 2006 09 18 | 703 | 0.4− | 0.6− |
| 1999 08 12 | 699 | (0.1− | 2.0+) | 2003 12 18 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.2+ |
| 1999 08 12 | 699 | 0.7+ | 1.0+ | 2003 12 18 | 704 | 0.9+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1999 09 07 | 704 | 0.3− | 0.4− | 2003 12 18 | 704 | (0.1− | 1.7+) | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 0.7+ | 0.7− | 2003 12 21 | 645 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 1999 09 07 | 704 | 0.9+ | 0.0 | 2003 12 21 | 645 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 1999 09 07 | 704 | 0.7+ | 1.2− | 2003 12 23 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 1999 09 07 | 704 | 0.6− | 1.2− | 2003 12 23 | 704 | 0.6+ | 0.8− | 2006 10 19 | 703 | 0.0 | 0.7+ |
| 1999 09 07 | 704 | 0.1− | 0.3− | 2003 12 23 | 704 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.5+ | 0.1+ |
| 1999 09 07 | 704 | 0.2− | 0.4− | 2003 12 23 | 704 | 0.8− | 0.3− | 2006 10 20 | 704 | (2.0− | 0.8+) |
| 1999 09 07 | 704 | 0.5+ | 0.9− | 2003 12 28 | 704 | 0.0 | 0.0 | 2006 10 20 | 704 | 0.6− | 1.0+ |
| 1999 09 07 | 704 | 0.4+ | 0.5− | 2003 12 28 | 704 | (0.3+ | 1.8+) | 2006 10 20 | 704 | 0.6− | 0.3+ |
| 1999 09 07 | 704 | 0.6+ | 0.5− | 2003 12 28 | 704 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 1999 09 09 | 704 | 0.1+ | 0.7− | 2003 12 28 | 704 | 0.1− | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 1999 09 09 | 704 | 0.0 | 0.2+ | 2003 12 28 | 704 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 1999 09 09 | 704 | 0.3− | 0.0 | 2004 01 13 | 699 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 1999 09 09 | 704 | 0.4− | 0.4− | 2004 01 13 | 699 | 0.2+ | 0.8− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 1999 09 09 | 704 | 0.3− | 0.2− | 2004 01 13 | 699 | 0.1− | 1.2+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 1999 09 14 | 704 | 0.0 | 0.4+ | 2004 01 13 | 699 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.1− |
| 1999 09 14 | 704 | 0.3− | 0.4− | 2004 01 16 | 106 | 0.5− | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 1999 09 14 | 704 | 0.7− | 0.0 | 2004 01 16 | 106 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 1999 09 14 | 704 | 0.1+ | 0.0 | 2004 01 16 | 106 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.6− |
| 1999 11 07 | 704 | 0.0 | 0.6+ | 2004 01 31 | 704 | 0.6− | 0.5+ | 2006 11 15 | 703 | 0.4+ | 0.3− |
| 1999 11 07 | 704 | (0.3− | 2.0+) | 2004 01 31 | 704 | 0.0 | 1.4+ | 2006 11 15 | 703 | 0.2+ | 0.4+ |
| 1999 11 07 | 704 | 0.3+ | 0.4+ | 2004 01 31 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2000 12 23 | 645 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.4− | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2000 12 23 | 645 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.1+ | 1.0− | 2006 11 16 | 704 | 0.3+ | 0.2− |
| 2003 11 20 | 704 | 0.1− | 0.8+ | 2004 02 15 | 704 | 0.0 | 1.0− | 2006 11 16 | 704 | (1.3+ | 2.2−) |
| 2003 11 20 | 704 | 1.1+ | 0.2− | 2004 02 15 | 704 | 0.5+ | 0.0 | 2006 11 16 | 704 | 0.7− | 1.0+ |
| 2003 11 20 | 704 | 0.7+ | 0.2− | 2004 02 23 | 704 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.5− | 0.5− |
| 2003 11 20 | 704 | 1.3+ | 0.9+ | 2004 02 23 | 704 | 0.3− | 0.3− | 2006 11 22 | 703 | 0.0 | 0.0 |
| 2003 12 17 | 699 | 0.2− | 0.3+ | 2004 02 23 | 704 | (0.1− | 1.7−) | 2006 11 22 | 703 | 0.2− | 0.2− |
| 2003 12 17 | 699 | (0.9+ | 2.0+) | 2004 02 23 | 704 | 1.0− | 0.3− | 2006 11 22 | 703 | 0.5− | 0.0 |
| 2003 12 17 | 699 | 0.4− | 0.2+ | 2004 02 23 | 704 | (0.1+ | 1.6−) | 2006 11 22 | 703 | 0.3− | 0.4− |
| 2003 12 17 | 699 | 0.7− | 0.4− | 2006 09 18 | 703 | 0.1− | 0.5− | | | | |
| 2003 12 18 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.0 | | | | |

**(137275)∗ 1999 RP$_{160}$ = 2002 JB$_{73}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29088)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.03567 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28784130 | $\omega$ | 166.83138 | | +0.65250334 | +0.75433223 | |
| $a$ | 2.2717854 | $\Omega$ | 143.82279 | | −0.70587806 | +0.63972484 | |
| $e$ | 0.1374577 | $i$ | 7.03206 | | −0.27563664 | +0.14742804 | |
| $P$ | 3.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 19 | 691 | 0.0 | 0.1+ | 2002 06 14 | 704 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.7+ | 1.0+ |
| 1996 11 19 | 691 | 0.1+ | 0.1− | 2002 07 07 | 644 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.6− |
| 1996 11 19 | 691 | 0.0 | 0.3+ | 2002 07 07 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.9− |
| 1999 09 07 | 699 | 0.6− | 0.1+ | 2002 07 07 | 644 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.1− |
| 1999 09 07 | 704 | 0.1+ | 0.5+ | 2003 12 01 | 704 | (1.7− | 1.3+) | 2006 09 26 | 704 | 0.0 | 0.8− |
| 1999 09 07 | 699 | 0.0 | 0.3+ | 2003 12 01 | 704 | (1.5− | 1.5+) | 2006 09 26 | 704 | 0.1− | 0.4− |
| 1999 09 07 | 704 | 0.0 | 0.7+ | 2003 12 01 | 704 | 0.9− | 0.6+ | 2006 09 26 | 704 | 0.7+ | 0.9− |
| 1999 09 07 | 704 | 0.0 | 0.0 | 2003 12 27 | 704 | 1.0+ | 0.7+ | 2006 09 26 | 703 | (0.7− | 2.5+) |
| 1999 09 07 | 699 | 1.6+ | 0.0 | 2003 12 27 | 704 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 1999 09 07 | 704 | 0.2− | 0.3− | 2003 12 27 | 704 | 1.3+ | 1.2+ | 2006 09 26 | 703 | 0.6− | 0.9− |
| 1999 09 07 | 704 | 0.1+ | 0.1− | 2003 12 27 | 704 | (1.8+ | 1.0−) | 2006 09 26 | 703 | 0.5− | 0.4− |
| 1999 09 08 | 703 | 1.1− | 0.5+ | 2005 03 18 | 703 | 0.7− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.7+ |
| 1999 09 08 | 703 | 0.0 | 0.1− | 2005 03 18 | 703 | 0.9− | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.1+ |
| 1999 09 08 | 703 | 0.3+ | 0.0 | 2005 03 18 | 703 | 0.0 | 0.6− | 2006 09 29 | 699 | 0.3− | 0.4+ |
| 1999 09 08 | 703 | 1.0− | 0.4− | 2005 03 18 | 703 | 0.4+ | 0.3− | 2006 09 29 | 699 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 1.1+ | 0.0 | 2005 04 16 | 703 | 0.3− | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.3+ | 0.2+ | 2005 04 16 | 703 | 0.9− | 0.9+ | 2006 09 30 | 704 | 1.4+ | 0.1+ |
| 1999 09 09 | 704 | 0.9− | 1.4− | 2005 04 16 | 703 | 0.9+ | 1.2+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 1999 09 09 | 704 | 0.3− | 0.9− | 2005 04 16 | 703 | 0.4− | 0.9+ | 2006 09 30 | 704 | 0.0 | 0.3+ |
| 1999 09 14 | 704 | 0.1− | 0.2− | 2006 08 19 | 699 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.3+ |
| 1999 09 14 | 704 | 1.1− | 0.9+ | 2006 08 19 | 699 | 0.6− | 0.2− | 2006 09 30 | 704 | 0.2− | 0.3+ |
| 1999 09 14 | 704 | 0.4− | 0.4− | 2006 08 19 | 699 | 1.2− | 0.8− | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2002 05 08 | 704 | 0.1+ | 1.3+ | 2006 08 31 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.5− | 0.7+ |
| 2002 05 08 | 704 | 0.7− | 0.7+ | 2006 08 31 | 704 | 0.6+ | 0.9− | 2006 09 30 | 704 | 1.1− | 0.2− |
| 2002 05 08 | 704 | 0.6+ | 1.2+ | 2006 08 31 | 704 | (1.7+ | 0.3+) | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2002 05 08 | 704 | (0.9+ | 2.3+) | 2006 08 31 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.0 |
| 2002 05 13 | 704 | 0.9+ | 0.6+ | 2006 09 16 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 05 13 | 704 | (1.9+ | 1.3−) | 2006 09 16 | 704 | 0.6− | 1.0+ | 2006 10 16 | 703 | 0.1+ | 1.1− |
| 2002 05 13 | 704 | (1.9+ | 0.3+) | 2006 09 16 | 704 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.9− | 0.9− |
| 2002 05 13 | 704 | 0.5+ | 0.3− | 2006 09 16 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 06 04 | 704 | 0.5+ | 0.2− | 2006 09 18 | 703 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 06 04 | 704 | 0.9+ | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.2− | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2002 06 04 | 704 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 10 22 | 703 | 1.2− | 0.9− |
| 2002 06 10 | 704 | 0.5+ | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2002 06 10 | 704 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.2− | 2006 10 22 | 703 | 1.4− | 0.1− |
| 2002 06 10 | 704 | 0.3+ | 0.0 | 2006 09 21 | 699 | 0.9+ | 0.1− | 2006 10 28 | 703 | 0.1+ | 1.4+ |
| 2002 06 10 | 704 | (2.0+ | 0.7+) | 2006 09 21 | 699 | 0.6− | 0.2+ | 2006 10 28 | 703 | 0.9+ | 0.9+ |
| 2002 06 14 | 704 | 1.0− | 0.2+ | 2006 09 21 | 699 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.6+ | 0.8+ |
| 2002 06 14 | 704 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.6− | 0.4+ | 2006 10 28 | 703 | 0.2− | 1.0+ |

**(137276)∗ 1999 RT$_{162}$ = 2002 LV$_{21}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31266)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.31673 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28685388 | $\omega$ | 51.45048 | | +0.84903609 | +0.52428622 | |
| $a$ | 2.2769958 | $\Omega$ | 276.83919 | | −0.50289044 | +0.76407094 | |
| $e$ | 0.1994879 | $i$ | 3.76988 | | −0.16198434 | +0.37592493 | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 0.7− | 0.3− | 2002 05 17 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 1999 09 04 | 703 | 0.1− | 0.0 | 2002 05 17 | 704 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 1999 09 04 | 703 | 0.0 | 0.8+ | 2002 06 08 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2− |
| 1999 09 04 | 703 | 0.1− | 0.0 | 2002 06 08 | 704 | 0.3+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 1999 09 08 | 699 | 0.7+ | 0.1− | 2002 06 08 | 704 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.1− |
| 1999 09 08 | 704 | 0.1+ | 0.0 | 2002 06 08 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 1999 09 08 | 704 | 0.1− | 0.1+ | 2002 06 09 | 704 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.0 |
| 1999 09 08 | 699 | 0.7+ | 0.8+ | 2002 06 09 | 704 | 0.9− | 0.2− | 2006 10 17 | 703 | (2.0+ | 0.2−) |
| 1999 09 08 | 704 | 0.2+ | 0.4+ | 2002 06 09 | 704 | 1.3− | 1.0+ | 2006 10 17 | 703 | 0.2+ | 0.5+ |
| 1999 09 08 | 704 | 0.0 | 0.1− | 2002 06 09 | 704 | (2.3− | 0.1+) | 2006 10 17 | 703 | 0.9− | 0.1− |
| 1999 09 08 | 699 | 0.2− | 0.1− | 2002 06 17 | 644 | 0.5+ | 0.6− | 2006 10 17 | 703 | 0.2− | 0.2− |
| 1999 09 09 | 704 | 0.6+ | 0.0 | 2002 06 17 | 644 | 0.4+ | 0.6− | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 1999 09 09 | 704 | 0.7+ | 0.2− | 2002 06 17 | 644 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.5+ |
| 1999 09 09 | 704 | 0.3+ | 0.2− | 2005 03 03 | 691 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.5+ |
| 1999 09 09 | 704 | 0.3− | 0.5− | 2005 03 03 | 691 | 0.6+ | 0.0 | 2006 10 19 | 704 | 0.4− | 0.9+ |
| 1999 09 09 | 704 | 0.9+ | 0.1+ | 2005 03 03 | 691 | 0.4+ | 0.5+ | 2006 10 19 | 704 | 0.2+ | 0.2+ |
| 1999 09 10 | 704 | 0.1+ | 1.1+ | 2005 03 13 | 703 | 0.0 | 1.1+ | 2006 10 19 | 704 | 0.2− | 1.3+ |
| 1999 09 10 | 704 | 0.3+ | 0.4+ | 2005 03 13 | 703 | 1.3− | 0.3+ | 2006 10 19 | 704 | 0.0 | 0.1− |
| 1999 09 10 | 704 | 0.5+ | 0.0 | 2005 03 13 | 703 | (0.2− | 2.3+) | 2006 10 19 | 644 | 0.2− | 0.0 |
| 1999 10 01 | 703 | 0.3− | 0.4− | 2005 03 13 | 703 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1999 10 01 | 703 | 0.3+ | 0.3− | 2005 04 03 | 644 | 0.2+ | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1999 10 01 | 703 | 0.2+ | 0.0 | 2005 04 03 | 644 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 10 01 | 703 | 0.5+ | 0.0 | 2005 04 03 | 644 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 1999 10 04 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 1999 10 04 | 704 | 0.2− | 0.5+ | 2006 08 30 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1999 10 04 | 704 | 0.5− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1999 10 04 | 704 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1999 10 04 | 704 | 0.5− | 0.3− | 2006 09 18 | 704 | 0.6+ | 0.3+ | 2006 10 26 | 704 | (1.8+ | 1.2+) |
| 1999 10 07 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 704 | 0.4+ | 0.7+ | 2006 10 26 | 704 | 1.4+ | 0.6+ |
| 1999 10 07 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.6+ | 0.5+ | 2006 10 26 | 704 | (2.8+ | 0.9−) |
| 1999 10 07 | 704 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.6+ | 1.2+ | 2006 10 29 | 704 | 0.3− | 0.4− |
| 1999 10 07 | 704 | 1.2− | 0.5+ | 2006 09 18 | 704 | 0.1− | 0.8− | 2006 10 29 | 704 | 1.1− | 0.5+ |
| 1999 10 07 | 704 | 1.3− | 0.4− | 2006 09 20 | 699 | 0.5+ | 0.4+ | 2006 10 29 | 704 | 0.4− | 0.3+ |
| 1999 10 09 | 704 | 0.1− | 0.6+ | 2006 09 20 | 699 | 0.7− | 0.4+ | 2006 10 29 | 704 | 0.4− | 0.1− |
| 1999 10 09 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 699 | 0.3− | 0.5− | 2006 10 29 | 704 | 0.2+ | 0.3+ |
| 1999 10 09 | 704 | 0.8+ | 0.3− | 2006 09 20 | 699 | 0.1+ | 0.0 | 2006 11 06 | 644 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.5+ | 0.2− | 2006 09 28 | 691 | 0.2− | 0.2− | 2006 11 06 | 644 | 0.6+ | 0.3+ |
| 1999 10 09 | 704 | 0.5− | 0.4− | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.1− |
| 1999 11 01 | 703 | 0.8− | 0.1+ | 2006 09 28 | 691 | (0.4− | 2.8−) | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 1999 11 01 | 703 | 1.0− | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 19 | 704 | (1.7+ | 0.7+) |
| 1999 11 01 | 703 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 1999 11 01 | 703 | 0.2− | 1.2+ | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.4− |
| 1999 11 06 | 704 | 0.3− | 1.0− | 2006 09 30 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 1999 11 06 | 704 | 0.8− | 0.4− | 2006 10 10 | 644 | 0.5− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3− |
| 1999 11 06 | 704 | 1.2− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 1999 11 06 | 704 | 0.4− | 1.0− | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.4− |
| 1999 11 06 | 704 | 1.0− | 0.3− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2002 05 17 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | | | | |
| 2002 05 17 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | | | | |

**(137277)∗ 1999 RT$_{164}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.05473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28987288 | $\omega$ | 47.20609 | | +0.97093596 | −0.22802756 | |
| $a$ | 2.2611584 | $\Omega$ | 325.78622 | | +0.16384900 | +0.85472217 | |
| $e$ | 0.1618223 | $i$ | 7.42989 | | +0.17446163 | +0.46631904 | |
| $P$ | 3.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 29 | 261 | 1.1− | 0.1− | 2001 02 01 | 691 | 0.1+ | 0.0 | 2004 02 15 | 704 | 1.1+ | 0.1+ |
| 1989 10 29 | 261 | (8.1+ | 1.2+) | 2001 02 01 | 691 | 0.1+ | 0.0 | 2005 05 11 | 644 | 0.0 | 0.9+ |
| 1999 09 04 | 703 | 0.2− | 0.6+ | 2001 02 01 | 691 | 0.2+ | 0.4+ | 2005 05 11 | 644 | 0.0 | 1.0+ |
| 1999 09 04 | 703 | 0.6− | 0.5+ | 2001 02 22 | 704 | 1.0+ | 0.0 | 2005 05 11 | 644 | 0.4− | 0.8+ |
| 1999 09 04 | 703 | 0.2− | 0.4+ | 2001 02 22 | 704 | 0.3− | 0.9+ | 2006 08 24 | 704 | 0.5− | 0.9+ |
| 1999 09 04 | 703 | 0.2− | 1.1+ | 2001 02 22 | 704 | 0.7+ | 1.4+ | 2006 08 24 | 704 | 0.1− | 0.4+ |
| 1999 09 07 | 704 | 0.5− | 0.6+ | 2001 02 22 | 704 | 1.1+ | 1.1+ | 2006 08 24 | 704 | 0.0 | 0.7+ |
| 1999 09 07 | 704 | 0.2+ | 0.6+ | 2003 11 20 | 704 | 0.2− | 1.2+ | 2006 08 24 | 704 | 0.3− | 0.4+ |
| 1999 09 07 | 704 | 0.5− | 0.4+ | 2003 11 20 | 704 | 0.2+ | 0.1+ | 2006 08 24 | 704 | (2.1+ | 0.3+) |
| 1999 09 07 | 704 | 0.2− | 0.5+ | 2003 11 20 | 704 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.3− | 0.4− |
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2003 11 20 | 704 | 0.7+ | 0.2− | 2006 09 28 | 703 | 0.0 | 0.0 |
| 1999 09 09 | 704 | 0.8− | 0.3+ | 2003 11 20 | 704 | 0.7+ | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.4+ |
| 1999 09 09 | 704 | 0.9− | 0.1+ | 2003 12 16 | 703 | 1.0− | 0.9+ | 2006 09 28 | 703 | 0.1+ | 0.2− |
| 1999 09 09 | 704 | 0.2− | 0.6− | 2003 12 16 | 703 | 0.6− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 1999 09 09 | 704 | 0.6− | 0.5+ | 2003 12 16 | 703 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 1999 09 09 | 704 | 1.4− | 0.5− | 2003 12 16 | 703 | 0.7+ | 1.1− | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 1999 09 14 | 704 | 0.5− | 0.1− | 2003 12 17 | 699 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 1999 09 14 | 704 | 0.1− | 0.0 | 2003 12 17 | 699 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 1999 09 14 | 704 | 0.9+ | 0.3+ | 2003 12 17 | 699 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.5+ | 0.2− |
| 1999 09 14 | 704 | 0.0 | 0.3− | 2003 12 17 | 699 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 1999 09 14 | 704 | 0.5− | 0.2+ | 2003 12 18 | 704 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 1999 09 14 | 703 | 0.1− | 0.5+ | 2003 12 18 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 1999 09 14 | 703 | 0.1+ | 0.5+ | 2003 12 18 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.5− | 0.5− |
| 1999 09 14 | 703 | 0.2− | 0.8+ | 2003 12 18 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.2− |
| 1999 09 14 | 703 | 0.5+ | 0.4+ | 2003 12 18 | 704 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.5− |
| 1999 10 01 | 703 | 0.3− | 1.0+ | 2003 12 23 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 1999 10 01 | 703 | 0.2+ | 0.8+ | 2003 12 23 | 704 | 0.2− | 0.1+ | 2006 10 20 | 704 | 0.4+ | 0.1+ |
| 1999 10 01 | 703 | 0.2+ | 0.7+ | 2003 12 23 | 704 | 0.2+ | 1.1+ | 2006 10 20 | 704 | 0.2− | 0.2− |
| 1999 10 01 | 703 | 0.1− | 0.1+ | 2003 12 23 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 704 | 0.0 | 0.3+ |
| 1999 10 02 | 704 | 0.1− | 0.4+ | 2003 12 23 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 704 | 0.1− | 0.2+ |
| 1999 10 02 | 704 | 0.6+ | 0.3+ | 2003 12 28 | 704 | 0.1− | 1.0+ | 2006 10 20 | 704 | 0.1− | 0.5+ |
| 1999 10 02 | 704 | (2.0+ | 0.5+) | 2003 12 28 | 704 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 1999 10 02 | 704 | 0.5− | 0.1+ | 2003 12 28 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.2− |
| 1999 10 02 | 704 | 0.4+ | 0.7+ | 2003 12 28 | 704 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 1999 10 07 | 703 | 0.4+ | 0.7+ | 2003 12 28 | 704 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.5− |
| 1999 10 07 | 703 | 0.2+ | 0.6+ | 2004 01 13 | 699 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.4+ | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 703 | 0.5+ | 0.5+ | 2004 01 13 | 699 | 0.3− | 0.9− | 2006 10 27 | 703 | 0.2+ | 0.7− |
| 1999 10 07 | 703 | 0.1+ | 0.6+ | 2004 01 13 | 699 | 0.6− | 0.6− | 2006 10 27 | 703 | 0.0 | 0.8− |
| 1999 10 09 | 704 | 0.1+ | 0.5− | 2004 01 13 | 699 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 1999 10 09 | 704 | 0.1− | 0.4− | 2004 01 31 | 704 | 0.7+ | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.0 |
| 1999 10 09 | 704 | 0.2+ | 1.1− | 2004 01 31 | 704 | 1.1+ | 0.1− | 2006 11 16 | 704 | 0.4− | 0.4− |
| 1999 10 09 | 704 | 0.8− | 1.7− | 2004 01 31 | 704 | (1.7+ | 0.0 ) | 2006 11 16 | 704 | 0.3− | 0.6− |
| 1999 11 06 | 704 | 0.2− | 0.2− | 2004 01 31 | 704 | 0.9+ | 0.3− | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 1999 11 06 | 704 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.9− |
| 1999 11 06 | 704 | 0.9+ | 1.6+ | 2004 02 15 | 704 | 0.4+ | 0.3− | 2006 11 22 | 703 | 0.1+ | 0.3− |
| 1999 11 06 | 704 | 0.5+ | 0.0 | 2004 02 15 | 704 | 0.0 | 0.4− | 2006 11 22 | 703 | 0.1+ | 0.3− |
| 1999 11 06 | 704 | 0.1+ | 0.3+ | 2004 02 15 | 704 | 0.3+ | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.4− |

**(137278)∗ 1999 RU$_{165}$ = 2003 YP$_{14}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55887)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 311.91648 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.28128124 | $\omega$ | 63.50002 | | +0.59398124 | −0.80424572 | |
| *a* | 2.3069714 | $\Omega$ | 349.99091 | | +0.69273328 | +0.52356706 | |
| *e* | 0.1567823 | *i* | 6.39796 | | +0.40903166 | +0.28118739 | |
| *P* | 3.50 | *H* | 16.2 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.1− | 0.1+ | 2003 12 17 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.0 |
| 1999 09 03 | 691 | 0.2− | 0.0 | 2003 12 17 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 1999 09 03 | 691 | 0.1− | 0.0 | 2003 12 18 | 704 | 0.9+ | 0.6+ | 2006 09 14 | 703 | 1.4− | 0.2+ |
| 1999 09 09 | 704 | 0.5− | 0.2+ | 2003 12 18 | 704 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.3− |
| 1999 09 09 | 704 | 1.0+ | 0.0 | 2003 12 18 | 704 | 0.1− | 0.7+ | 2006 09 17 | 704 | 0.3− | 0.6− |
| 1999 09 09 | 704 | 0.5+ | 1.0+ | 2003 12 18 | 704 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.6+ |
| 1999 09 09 | 704 | 0.0 | 0.6+ | 2003 12 21 | 704 | 0.9+ | 0.0 | 2006 09 17 | 704 | 0.3+ | 0.4− |
| 1999 09 09 | 704 | 1.0− | 0.2+ | 2003 12 21 | 704 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.2− | 0.0 |
| 1999 09 11 | 699 | (1.1− | 2.9+) | 2003 12 21 | 704 | 0.4+ | 0.8− | 2006 09 17 | 704 | 0.2+ | 0.1− |
| 1999 09 11 | 699 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.9− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.4+ |
| 1999 09 11 | 699 | 0.5− | 1.1+ | 2003 12 27 | 704 | 0.6− | 0.2+ | 2006 09 20 | 704 | 0.2− | 1.4+ |
| 1999 09 14 | 704 | 0.7+ | 0.1− | 2003 12 27 | 704 | 0.9− | 0.6+ | 2006 09 20 | 644 | 0.2+ | 0.5− |
| 1999 09 14 | 704 | 0.4− | 0.1− | 2003 12 27 | 704 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.2+ |
| 1999 09 14 | 704 | 0.1+ | 1.2+ | 2003 12 27 | 704 | 0.7− | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.0 |
| 1999 09 14 | 704 | 0.2− | 0.3− | 2003 12 29 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.7+ |
| 1999 09 14 | 704 | 0.6+ | 0.1+ | 2003 12 29 | 704 | 1.1+ | 1.1− | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 1999 09 14 | 703 | 1.9− | 1.8− | 2003 12 29 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.2− |
| 1999 09 14 | 703 | 0.7− | 1.7+ | 2003 12 29 | 704 | 1.1+ | 1.2− | 2006 09 20 | 644 | 0.0 | 0.0 |
| 1999 09 14 | 703 | (2.1− | 0.4+) | 2003 12 29 | 704 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.1− |
| 1999 09 14 | 703 | 0.1− | 0.7+ | 2003 12 29 | 704 | 0.9+ | 1.1− | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 1999 10 08 | 704 | 0.2− | 0.9− | 2003 12 29 | 704 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1999 10 08 | 704 | 0.3− | 0.5+ | 2003 12 29 | 704 | 0.8+ | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 1999 10 08 | 704 | 0.3− | 0.8+ | 2003 12 29 | 704 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1999 10 15 | 704 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 1.2+ | 0.6+ |
| 1999 10 15 | 704 | 0.6+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.1− |
| 1999 10 15 | 704 | 0.7+ | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 1999 10 15 | 704 | 0.4− | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.3+ |
| 2001 02 20 | 691 | 0.5+ | 0.9+ | 2006 08 18 | 704 | 0.2− | 0.8+ | 2006 09 27 | 704 | 0.3+ | 0.7+ |
| 2001 02 20 | 691 | 0.7+ | 0.8+ | 2006 08 18 | 704 | 0.5− | 0.6+ | 2006 09 29 | 704 | 0.2− | 0.7+ |
| 2001 02 20 | 691 | 0.6+ | 0.7+ | 2006 08 18 | 704 | 0.5+ | 0.0 | 2006 09 29 | 704 | 0.8− | 0.5+ |
| 2001 03 18 | 704 | 0.1+ | 0.0 | 2006 08 18 | 704 | 1.1− | 0.9+ | 2006 09 29 | 704 | (1.5− | 0.0 ) |
| 2001 03 18 | 704 | 1.0+ | 0.9+ | 2006 08 18 | 691 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.8− | 1.4+ |
| 2001 03 18 | 704 | 0.1− | 1.1+ | 2006 08 18 | 691 | 0.2− | 0.6+ | 2006 09 30 | 699 | 0.2− | 0.5+ |
| 2001 03 18 | 699 | 0.1+ | 0.9+ | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.3− | 0.7+ |
| 2001 03 18 | 704 | 0.5− | 0.1− | 2006 08 21 | 704 | 0.5− | 0.3+ | 2006 09 30 | 699 | 0.4− | 0.1+ |
| 2001 03 18 | 704 | 0.7+ | 0.0 | 2006 08 21 | 704 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.6− |
| 2001 03 18 | 699 | 0.4+ | 0.2+ | 2006 08 21 | 704 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2001 03 18 | 699 | 1.3− | 0.4− | 2006 08 27 | 699 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 03 18 | 699 | (2.1− | 2.4+) | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2001 03 27 | 608 | 0.1+ | 0.6+ | 2006 08 27 | 699 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 03 27 | 608 | 0.4− | 0.6+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 03 27 | 608 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 11 19 | 704 | 0.7+ | 0.3− | 2006 08 27 | 699 | 0.6− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 11 19 | 704 | 0.1− | 0.1+ | 2006 08 27 | 699 | 1.5+ | 0.6− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 11 19 | 704 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2003 11 19 | 704 | 0.7+ | 0.8+ | 2006 08 28 | 703 | 0.4+ | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 11 19 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2003 12 03 | 704 | 0.4− | 0.5+ | 2006 08 29 | 704 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2003 12 03 | 704 | 0.8− | 0.1− | 2006 08 29 | 704 | 0.8+ | 0.7− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2003 12 03 | 704 | 0.9− | 0.2+ | 2006 08 29 | 704 | 0.5+ | 1.4− | 2006 11 18 | 703 | 1.5− | 0.5− |
| 2003 12 03 | 704 | 1.0− | 0.4− | 2006 08 30 | 704 | 1.5+ | 0.9− | 2006 11 18 | 703 | 0.5− | 0.1+ |
| 2003 12 17 | 704 | 0.6− | 0.6+ | 2006 08 30 | 704 | 0.6+ | 1.5− | 2006 11 18 | 703 | 1.1− | 2.8− |
| 2003 12 17 | 704 | 0.7− | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.5− | 2006 11 18 | 703 | 0.5+ | 0.7− |
| 2003 12 17 | 704 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.8− | | | | |

**(137279)∗ 1999 RP$_{168}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 359.61765 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.27660407 | $\omega$ | 346.99607 | | +0.91689141 | +0.39861113 | |
| *a* | 2.3329047 | $\Omega$ | 349.44266 | | −0.35546975 | +0.79217258 | |
| *e* | 0.1351678 | *i* | 6.41687 | | −0.18152519 | +0.46213827 | |
| *P* | 3.56 | *H* | 16.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 691 | (0.7− | 23.3−) | 2003 12 03 | 704 | 0.2− | 0.4+ | 2006 08 23 | 644 | 0.2− | 0.2+ |
| 1998 04 23 | 691 | (0.9+ | 23.0−) | 2003 12 03 | 704 | 1.0+ | 0.2− | 2006 08 23 | 644 | 0.3− | 0.2+ |
| 1998 04 23 | 691 | (0.4− | 26.1−) | 2003 12 03 | 704 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.1− | 0.2+ |
| 1999 09 03 | 691 | 0.2+ | 0.1+ | 2003 12 03 | 704 | 0.6− | 0.4− | 2006 08 24 | 644 | 0.2− | 0.3+ |
| 1999 09 03 | 691 | 0.2+ | 0.0 | 2005 03 04 | 691 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 1999 09 03 | 691 | 0.1+ | 0.2+ | 2005 03 04 | 691 | 0.4+ | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 1999 09 07 | 704 | 0.1+ | 0.5+ | 2005 03 04 | 691 | 0.4+ | 0.3+ | 2006 08 28 | E12 | 0.4− | 0.2+ |
| 1999 09 07 | 704 | 0.1+ | 0.5+ | 2005 03 08 | 699 | 1.0+ | 0.4+ | 2006 08 28 | E12 | 0.6+ | 0.2− |
| 1999 09 07 | 704 | 0.1+ | 0.1− | 2005 03 08 | 699 | 1.1− | 0.8+ | 2006 08 28 | E12 | 0.1+ | 0.0 |
| 1999 09 07 | 704 | 0.8− | 0.5+ | 2005 03 08 | 699 | 0.2− | 0.7+ | 2006 08 28 | E12 | 0.5+ | 0.4+ |
| 1999 09 07 | 704 | 0.7− | 0.3− | 2005 03 08 | 699 | 0.1− | 1.3+ | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 1999 09 09 | 704 | 0.2− | 0.2+ | 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 1999 09 09 | 704 | 0.6+ | 1.5+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.4− | 0.4+ |
| 1999 09 09 | 704 | 0.3− | 1.0− | 2005 03 11 | G96 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.9+ | 0.7− |
| 1999 09 09 | 704 | 1.2− | 0.5− | 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 09 16 | 699 | 1.0− | 0.7− |
| 1999 09 09 | 704 | 1.0− | 0.6+ | 2005 03 16 | 691 | 0.2+ | 0.4+ | 2006 09 16 | 704 | 0.4+ | 1.2− |
| 1999 09 11 | 699 | 0.5+ | 0.9+ | 2005 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.2+ | 1.1+ |
| 1999 09 11 | 699 | 0.3− | 0.8+ | 2005 03 16 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 704 | (1.9+ | 0.4−) |
| 1999 09 11 | 699 | 0.3+ | 0.1− | 2005 03 17 | 703 | 1.1+ | 1.4+ | 2006 09 16 | 704 | 0.6+ | 0.2− |
| 1999 09 14 | 704 | 0.5− | 1.3+ | 2005 03 17 | 703 | (0.2+ | 2.4+) | 2006 09 16 | 699 | 0.1− | 0.6− |
| 1999 09 14 | 704 | 1.0− | 0.1− | 2005 03 17 | 703 | 0.6+ | 0.7+ | 2006 09 16 | 699 | 1.3+ | 1.1+ |
| 1999 09 14 | 704 | 0.6− | 0.8+ | 2005 03 17 | 703 | (1.3+ | 1.6+) | 2006 10 19 | 703 | 0.2− | 0.3+ |
| 1999 09 14 | 704 | 0.2− | 0.4− | 2005 04 06 | G96 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.4+ | 1.0+ |
| 1999 09 14 | 704 | 0.5− | 0.6+ | 2005 04 06 | G96 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.7+ | 0.2+ |
| 1999 10 15 | 704 | 0.3− | 0.6+ | 2005 04 06 | G96 | 0.4+ | 0.4− | 2006 10 19 | 703 | 0.1− | 0.5− |
| 1999 10 15 | 704 | 0.1+ | 0.2− | 2005 04 06 | G96 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 1999 10 15 | 704 | 0.7− | 0.2+ | 2006 08 16 | E12 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.9+ | 2006 08 16 | E12 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.3+ |
| 1999 10 15 | 704 | 0.4− | 0.3− | 2006 08 16 | E12 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2003 11 19 | 704 | 0.1+ | 1.0− | 2006 08 16 | E12 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2003 11 19 | 704 | 0.2+ | 0.6+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 11 19 | 704 | 0.0 | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 11 19 | 704 | 0.4− | 1.3+ | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2003 11 19 | 704 | 0.5− | 0.3+ | 2006 08 23 | 704 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.6+ | 0.2− |
| 2003 11 24 | 704 | 0.4+ | 0.4− | 2006 08 23 | 704 | 0.2− | 1.4− | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2003 11 24 | 704 | 0.2− | 0.4+ | 2006 08 23 | 704 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2003 11 24 | 704 | 0.2− | 0.1− | 2006 08 23 | 704 | 0.9− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4+ |

**(137280)∗ 1999 RQ$_{178}$ = 2005 ES$_{186}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74621)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.36198 | | (2000.0) | | | |
| $n$ | 0.28642972 | $\omega$ | 277.07441 | | +0.37477337 | +0.92658821 |
| $a$ | 2.2792432 | $\Omega$ | 15.05199 | | −0.79594204 | +0.33887256 |
| $e$ | 0.1101537 | $i$ | 6.92074 | | −0.47541686 | +0.16309406 |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.3− | 0.1+ | 2005 04 04 | 703 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 0.3− | 0.1− |
| 1996 12 07 | 691 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.5+ | 1.5+ | 2006 09 18 | 699 | 0.4+ | 0.5+ |
| 1996 12 07 | 691 | (3.0+ | 3.6+) | 2005 04 04 | 703 | 0.6− | 1.0+ | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 1998 04 03 | 809 | (11.1+ | 4.1+) | 2005 04 04 | 703 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2− |
| 1998 04 03 | 809 | (8.9+ | 2.8+) | 2005 04 04 | G96 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2− |
| 1998 04 03 | 809 | (9.9+ | 3.3+) | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2− | 1.0+ |
| 1999 09 09 | 704 | 0.3− | 1.1+ | 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.2+ |
| 1999 09 09 | 704 | 0.2− | 0.9+ | 2005 04 04 | 704 | 0.6+ | 0.2+ | 2006 09 27 | 704 | 0.7+ | 0.5+ |
| 1999 09 09 | 704 | 0.2− | 1.3+ | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.5− | 1.4+ |
| 1999 09 09 | 704 | 0.1+ | 0.6+ | 2005 04 04 | 704 | 0.4+ | 1.1+ | 2006 10 01 | 704 | 0.7− | 0.3+ |
| 1999 09 09 | 704 | 1.0+ | 0.3+ | 2005 04 04 | 704 | 0.3+ | 0.8+ | 2006 10 01 | 704 | 1.0− | 0.0 |
| 1999 09 13 | 704 | 0.5− | 0.9+ | 2005 04 07 | 704 | 0.3− | 1.0+ | 2006 10 01 | 704 | 0.6− | 0.5+ |
| 1999 09 13 | 704 | 0.0 | 0.5− | 2005 04 07 | 704 | 1.2+ | 1.2+ | 2006 10 01 | 704 | 1.1− | 0.4+ |
| 1999 09 13 | 704 | 0.3− | 0.4+ | 2005 04 07 | 704 | 1.0+ | 0.9+ | 2006 10 01 | 704 | (1.1− | 1.7+) |
| 1999 09 13 | 704 | 0.1− | 0.4+ | 2005 04 07 | 704 | 0.3+ | 0.8+ | 2006 10 02 | 691 | 0.2− | 0.4+ |
| 1999 09 13 | 704 | 0.2− | 0.2+ | 2005 04 12 | 704 | 1.1+ | 0.7+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 1999 10 01 | 704 | 0.3− | 0.4+ | 2005 04 12 | 704 | 0.7− | 1.3− | 2006 10 02 | 691 | 0.8− | 0.0 |
| 1999 10 01 | 704 | 0.6− | 0.2+ | 2005 04 12 | 704 | 0.5+ | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 1999 10 01 | 704 | 0.1− | 0.3+ | 2005 04 12 | 704 | 0.7+ | 1.4+ | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 1999 10 01 | 704 | 0.0 | 0.1− | 2005 05 04 | 703 | 0.8− | 0.8+ | 2006 10 16 | G96 | 0.4− | 0.1− |
| 1999 10 01 | 704 | 0.4− | 0.1− | 2005 05 04 | 703 | 0.5+ | 0.2− | 2006 10 16 | 703 | (0.5+ | 2.2+) |
| 1999 10 01 | 704 | 0.1− | 0.2+ | 2005 05 04 | 703 | 0.3+ | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 1999 10 01 | 704 | 0.3− | 0.3+ | 2005 05 04 | 703 | 1.2− | 0.1+ | 2006 10 16 | 703 | 1.3+ | 0.7+ |
| 1999 10 01 | 704 | 0.3− | 0.2− | 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.6+ |
| 2003 12 17 | 704 | 0.3− | 1.0+ | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 10 16 | 703 | 1.5+ | 0.4+ |
| 2003 12 17 | 704 | 0.7+ | 0.1+ | 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2003 12 17 | 704 | 0.8+ | 0.6+ | 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2005 03 01 | 691 | 0.4+ | 0.4− | 2006 09 12 | 703 | 0.9− | 1.2− | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2005 03 01 | 691 | 0.6+ | 0.2− | 2006 09 12 | 703 | 0.9− | 0.5− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2005 03 01 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | (1.9+ | 0.7−) | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2005 03 10 | G96 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.2− | 0.7− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 03 10 | G96 | 0.1+ | 0.1+ | 2006 09 17 | 704 | (0.9+ | 1.6+) | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.7+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2005 03 10 | G96 | 0.4− | 0.3− | 2006 09 17 | 704 | 1.2+ | 1.2− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2005 03 13 | 703 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2005 03 13 | 703 | 0.7− | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.9− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2005 03 13 | 703 | 0.5− | 0.3+ | 2006 09 18 | 699 | 1.0+ | 0.2− | | | | |
| 2005 03 13 | 703 | 0.3− | 1.0+ | 2006 09 18 | 699 | 0.6+ | 0.1+ | | | | |

**(137281)∗ 1999 RL$_{181}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.26676 | | (2000.0) | | | |
| $n$ | 0.28733961 | $\omega$ | 196.86631 | | +0.99926788 | +0.00593456 |
| $a$ | 2.2744290 | $\Omega$ | 162.66171 | | +0.00502737 | +0.95896107 |
| $e$ | 0.1645637 | $i$ | 7.28613 | | −0.03792663 | +0.28347566 |
| $P$ | 3.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 699 | 1.1+ | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 1999 08 22 | 699 | 0.3+ | 1.0+ | 2006 09 15 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 1999 08 22 | 699 | 0.8+ | 1.8+ | 2006 09 15 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 1999 09 05 | 699 | 0.1− | 1.4+ | 2006 09 15 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 1999 09 05 | 699 | 0.7+ | 1.0+ | 2006 09 16 | 699 | 0.6− | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 1999 09 05 | 699 | 0.2+ | 1.2+ | 2006 09 16 | 699 | 0.9− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.6− |
| 1999 09 07 | 704 | 0.4− | 0.7− | 2006 09 16 | 699 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 1999 09 07 | 704 | 0.9− | 0.9− | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 1999 09 07 | 704 | 0.8− | 1.6− | 2006 09 20 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 0.7− | 1.4− | 2006 09 20 | 699 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.4+ | 0.6− |
| 1999 09 07 | 704 | 0.4− | 0.5− | 2006 09 20 | 699 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.1+ |
| 1999 09 09 | 704 | 1.0− | 0.5− | 2006 09 20 | 699 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.5+ | 0.4− |
| 1999 09 09 | 704 | 1.3− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.9+ | 0.9− |
| 1999 09 09 | 704 | 1.2− | 0.7− | 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 1999 09 09 | 704 | 0.6+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 1999 09 09 | 704 | 0.4+ | 0.9+ | 2006 09 22 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 1999 09 11 | 699 | 1.0+ | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 1999 09 11 | 699 | 1.5+ | 0.3− | 2006 09 22 | 704 | 0.5+ | 0.7− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 1999 09 11 | 699 | 0.5+ | 0.4− | 2006 09 22 | 704 | 0.3+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 1999 09 14 | 704 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.6− |
| 1999 09 14 | 704 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.3+ | 0.9+ | 2006 10 28 | 703 | 0.5− | 0.6− |
| 1999 09 14 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.0 |
| 1999 09 14 | 704 | 0.3− | 0.3− | 2006 09 26 | 704 | 1.2+ | 0.7+ | 2006 10 28 | 703 | 0.6+ | 0.9+ |
| 1999 09 14 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.6− | 0.3+ | 2006 11 10 | 704 | 0.6− | 0.0 |
| 1999 10 08 | 704 | 1.2− | 1.5+ | 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 11 10 | 704 | 0.6− | 0.6− |
| 1999 10 08 | 704 | 1.2+ | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 10 | 704 | 0.3− | 0.7− |
| 1999 10 08 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 11 10 | 704 | 0.0 | 0.5− |
| 2000 12 23 | 645 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 11 10 | 704 | 0.3− | 0.0 |
| 2000 12 23 | 645 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.5+ | 0.2+ |
| 2005 04 07 | 691 | 0.3+ | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.7− | 0.3− |
| 2005 04 07 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.3+ | 2006 11 16 | 703 | 0.2− | 0.4+ |
| 2005 04 07 | 691 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.7+ | 0.0 |
| 2005 05 15 | 644 | 0.3− | 0.4+ | 2006 10 01 | 704 | 0.8+ | 0.1+ | | | | |
| 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.0 | | | | |

**(137282)∗ 1999 RJ$_{182}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.58278 | | (2000.0) | | | |
| $n$ | 0.27722588 | $\omega$ | 316.87557 | | +0.62770420 | +0.77826440 |
| $a$ | 2.3294150 | $\Omega$ | 351.95273 | | −0.67691137 | +0.53485596 |
| $e$ | 0.1239476 | $i$ | 7.01099 | | −0.38441961 | +0.32898880 |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 703 | 0.7− | 1.2+ | 2005 03 04 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 704 | 0.3+ | 0.3+ |
| 1999 08 22 | 703 | (0.7− | 2.2+) | 2005 03 04 | 691 | 0.0 | 0.4+ | 2006 08 28 | 704 | 0.2− | 0.6− |
| 1999 08 22 | 703 | 0.6+ | 0.1+ | 2005 03 04 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 704 | 0.1− | 0.2+ |
| 1999 08 22 | 703 | 0.8+ | 0.5+ | 2005 03 04 | G96 | 0.1− | 0.1+ | 2006 08 28 | 704 | 0.1+ | 0.6+ |
| 1999 09 04 | 699 | 0.6+ | 0.2+ | 2005 03 04 | G96 | 0.2− | 0.1− | 2006 08 28 | 704 | 0.5− | 0.4+ |
| 1999 09 04 | 699 | (0.7+ | 2.2+) | 2005 03 04 | G96 | 0.5− | 0.3− | 2006 08 28 | 703 | 0.6− | 1.1+ |
| 1999 09 04 | 699 | 0.7+ | 1.6+ | 2005 03 04 | G96 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.3− |
| 1999 09 09 | 704 | 0.6− | 0.3− | 2005 03 08 | 704 | (1.9+ | 0.5+) | 2006 08 28 | 703 | 0.3− | 0.3− |
| 1999 09 09 | 704 | 0.3+ | 0.4+ | 2005 03 08 | 704 | 0.5+ | 0.4+ | 2006 08 28 | 703 | 1.0− | 1.1− |
| 1999 09 09 | 704 | 0.2+ | 0.0 | 2005 03 08 | 704 | 1.3+ | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.1+ |
| 1999 09 09 | 704 | 0.3+ | 0.2+ | 2005 03 08 | 704 | 1.2+ | 0.9+ | 2006 08 28 | 699 | 0.4+ | 0.2+ |
| 1999 09 14 | 704 | 1.7− | 0.9− | 2005 03 10 | 695 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.9+ | 1.1+ |
| 1999 09 14 | 704 | 0.8− | 0.8− | 2005 03 10 | 695 | 0.2− | 0.3+ | 2006 08 28 | 699 | 0.8− | 0.0 |
| 1999 09 14 | 704 | 0.4− | 0.5− | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.2− |
| 1999 09 14 | 704 | 0.7− | 0.1− | 2005 04 02 | G96 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 1999 09 14 | 704 | 0.4− | 0.5− | 2005 04 02 | G96 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.7− | 0.3+ |
| 1999 10 02 | 691 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.5− | 0.7− | 2006 09 14 | 703 | 0.1− | 0.3− |
| 1999 10 02 | 691 | 0.1+ | 0.0 | 2005 04 11 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.5+ | 0.3− |
| 1999 10 02 | 691 | 0.2+ | 0.0 | 2005 04 11 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.2+ | 0.5+ | 2005 04 11 | 691 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 1999 10 06 | 704 | 0.0 | 0.5+ | 2005 05 08 | G96 | 0.4− | 0.1− | 2006 09 25 | 688 | 0.8− | 0.6+ |
| 1999 10 06 | 704 | 0.1+ | 0.5+ | 2005 05 08 | G96 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.3− | 0.6+ |
| 1999 10 06 | 704 | 0.2− | 0.6+ | 2005 05 08 | G96 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.6+ | 0.3− |
| 1999 10 06 | 704 | 0.2− | 0.3+ | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.8− | 0.8− |
| 1999 10 09 | 691 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.7+ |
| 1999 10 09 | 691 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 09 25 | 688 | 0.2− | 0.3+ |
| 1999 10 09 | 691 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.5+ | 0.3− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.2+ | 0.3− | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.5+ | 1.0− |
| 1999 10 15 | 704 | 0.5+ | 0.9+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.2− |
| 1999 11 14 | 691 | 0.1− | 0.3− | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.7− |
| 1999 11 14 | 691 | 0.1− | 0.3− | 2006 08 23 | 704 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.5+ | 1.1− |
| 1999 11 14 | 691 | 0.1− | 0.4− | 2006 08 23 | 704 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2003 11 19 | 704 | 0.4+ | 0.9+ | 2006 08 23 | 704 | 1.0+ | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2003 11 19 | 704 | 0.4− | 0.9+ | 2006 08 23 | 704 | 0.4+ | 0.9+ | 2006 10 27 | G96 | 0.6+ | 0.1+ |
| 2003 11 19 | 704 | 0.5− | 0.6+ | 2006 08 23 | 704 | 0.2+ | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2003 11 19 | 704 | 0.0 | 0.4+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 1.8− | 0.6− |
| 2003 11 19 | 704 | 0.8+ | 0.6+ | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2005 03 03 | 703 | 0.8− | 0.4+ | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2005 03 03 | 703 | 1.4− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 03 03 | 703 | 0.8+ | 0.8+ | 2006 08 24 | 644 | 0.0 | 0.2+ | | | | |
| 2005 03 03 | 703 | 0.9+ | 1.2− | 2006 08 24 | 644 | 0.1− | 0.0 | | | | |

**(137283)**∗ **1999 RQ$_{182}$ = 2002 JT$_{137}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31268)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.70737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27226645 | $\omega$ | 22.67466 | | +0.97176045 | | +0.23493354 |
| $a$ | 2.3576173 | $\Omega$ | 323.71521 | | −0.22181818 | | +0.87754447 |
| $e$ | 0.2438649 | $i$ | 2.13894 | | −0.08048805 | | +0.41799752 |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.0 | 0.5− | 1999 10 15 | 704 | 0.4+ | 0.1− | 2003 12 20 | 704 | 0.7+ | 0.6+ |
| 1999 08 12 | 699 | 0.1− | 0.1+ | 1999 10 15 | 704 | (0.5+ | 2.2−) | 2003 12 20 | 704 | 0.1− | 0.4− |
| 1999 08 12 | 699 | 0.0 | 1.0+ | 1999 10 15 | 704 | 0.2− | 1.2− | 2003 12 20 | 704 | 0.3+ | 0.7+ |
| 1999 08 22 | 703 | 0.5− | 0.8+ | 1999 10 15 | 704 | 0.0 | 1.3− | 2003 12 20 | 704 | 0.2+ | 1.4+ |
| 1999 08 22 | 703 | 0.3− | 1.0+ | 1999 10 17 | 691 | 0.3− | 0.2− | 2003 12 20 | 704 | 0.0 | 0.6+ |
| 1999 08 22 | 703 | 0.7+ | 1.5+ | 1999 10 17 | 691 | 0.2− | 0.3− | 2003 12 21 | 704 | 0.1+ | 0.5+ |
| 1999 08 22 | 699 | 0.3+ | 0.9+ | 1999 10 17 | 691 | 0.2− | 0.2− | 2003 12 21 | 704 | 0.5− | 0.2+ |
| 1999 08 22 | 703 | 0.7+ | 1.9+ | 1999 10 18 | 012 | 0.6+ | 0.2− | 2003 12 21 | 704 | 0.1+ | 0.7+ |
| 1999 08 22 | 699 | 0.7+ | 1.2+ | 1999 10 18 | 012 | 0.2+ | 0.0 | 2003 12 21 | 704 | 0.3+ | 0.1+ |
| 1999 08 22 | 699 | 0.1− | 0.7+ | 1999 10 18 | 012 | 0.1+ | 0.9− | 2003 12 22 | 704 | 0.1− | 0.1+ |
| 1999 09 04 | 699 | 0.5− | 1.1+ | 1999 10 18 | 012 | 0.3+ | 0.0 | 2003 12 22 | 704 | 0.2− | 0.1+ |
| 1999 09 04 | 699 | 0.3+ | 0.6+ | 1999 10 18 | 012 | 0.2+ | 0.1− | 2003 12 22 | 704 | 0.1+ | 0.5+ |
| 1999 09 04 | 699 | 0.1+ | 0.3+ | 1999 11 03 | 691 | 0.0 | 0.2− | 2003 12 22 | 704 | (0.3+ | 2.6+) |
| 1999 09 07 | 704 | 0.0 | 0.1− | 1999 11 03 | 691 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.6+ | 1.0+ |
| 1999 09 07 | 704 | 0.1− | 0.6+ | 1999 11 03 | 691 | 0.1− | 0.3− | 2003 12 22 | 704 | 1.1− | 0.6− |
| 1999 09 07 | 704 | 0.5+ | 0.5+ | 1999 11 14 | 704 | 0.1− | 0.5− | 2003 12 22 | 704 | 0.6− | 1.4+ |
| 1999 09 07 | 704 | 0.3+ | 0.3+ | 1999 11 14 | 704 | 0.9− | 0.9− | 2003 12 22 | 704 | 0.5− | 0.1− |
| 1999 09 07 | 704 | 0.3+ | 0.3+ | 1999 11 14 | 704 | 0.0 | 0.5− | 2003 12 22 | 704 | 0.3− | 0.2− |
| 1999 09 09 | 704 | 0.5+ | 0.8+ | 2002 05 09 | 644 | 0.2+ | 0.4+ | 2003 12 22 | 704 | (0.4− | 2.2+) |
| 1999 09 09 | 704 | 0.0 | 0.1− | 2002 05 09 | 644 | 0.1+ | 0.4+ | 2003 12 22 | 704 | 0.5− | 0.4− |
| 1999 09 09 | 704 | 0.3+ | 0.0 | 2002 05 09 | 644 | 0.5+ | 0.3+ | 2003 12 22 | 704 | 0.2+ | 0.4− |
| 1999 09 09 | 704 | 0.3+ | 0.2+ | 2002 05 11 | 704 | 1.2− | 0.3+ | 2003 12 22 | 704 | 1.0− | 1.1+ |
| 1999 09 09 | 704 | 0.6+ | 0.4+ | 2002 05 11 | 704 | 0.1+ | 0.9+ | 2003 12 22 | 704 | 0.5+ | 0.7− |
| 1999 09 14 | 704 | 0.6+ | 0.4+ | 2002 05 11 | 704 | 0.6− | 0.0 | 2003 12 27 | 704 | 0.9− | 0.4+ |
| 1999 09 14 | 704 | 0.1+ | 0.0 | 2002 05 11 | 704 | 0.4− | 0.4+ | 2003 12 27 | 704 | 0.1− | 0.9− |
| 1999 09 14 | 704 | 1.0+ | 0.1− | 2002 05 11 | 704 | 0.4− | 0.1+ | 2003 12 27 | 704 | 0.8− | 0.1− |
| 1999 09 14 | 704 | 0.5− | 1.1+ | 2002 05 18 | 644 | 0.4+ | 0.3+ | 2003 12 27 | 704 | 0.2− | 0.5− |
| 1999 09 14 | 704 | 0.1+ | 0.6− | 2002 05 18 | 644 | 0.2− | 0.5+ | 2005 03 03 | 691 | 0.1− | 0.3+ |
| 1999 10 07 | 691 | 0.2− | 0.2− | 2002 05 18 | 644 | 0.7+ | 0.5+ | 2005 03 03 | 691 | 0.3+ | 0.0 |
| 1999 10 07 | 691 | 0.1− | 0.2− | 2003 11 20 | 704 | 0.0 | 0.5+ | 2005 03 03 | 691 | 0.2+ | 0.5− |
| 1999 10 07 | 691 | 0.1− | 0.2− | 2003 11 20 | 704 | 0.4+ | 0.4− | 2005 03 11 | G96 | 0.1− | 0.0 |
| 1999 10 07 | 704 | 0.8− | 0.5− | 2003 11 20 | 704 | 0.1+ | 0.2+ | 2005 03 11 | G96 | 0.4− | 0.2− |
| 1999 10 07 | 704 | 0.1− | 0.2− | 2003 11 20 | 704 | 0.3− | 0.5− | 2005 03 11 | G96 | 0.2− | 0.3− |
| 1999 10 07 | 704 | 0.3− | 0.2− | 2003 11 20 | 704 | 0.1− | 0.0 | 2005 03 11 | G96 | 0.2− | 0.3− |
| 1999 10 07 | 704 | 1.2− | 0.2− | 2003 11 24 | 704 | 0.5− | 1.0+ | 2005 03 13 | 691 | 0.0 | 0.4+ |
| 1999 10 07 | 704 | 0.4− | 0.4− | 2003 11 24 | 704 | 0.1+ | 0.7+ | 2005 03 13 | 691 | 0.1− | 0.0 |
| 1999 10 09 | 704 | 0.4− | 0.4− | 2003 11 24 | 704 | 0.9− | 1.2− | 2005 03 13 | 691 | 0.2+ | 0.1+ |
| 1999 10 09 | 704 | 0.2− | 0.4− | 2003 12 04 | 704 | 0.9+ | 0.0 | 2006 06 30 | 704 | 1.1+ | 0.5− |
| 1999 10 09 | 704 | 0.2− | 0.3− | 2003 12 04 | 704 | 0.4+ | 0.3+ | 2006 06 30 | 704 | 0.7− | 0.5− |
| 1999 10 09 | 704 | 0.4+ | 0.6+ | 2003 12 04 | 704 | 0.5+ | 0.1− | 2006 06 30 | 704 | 0.0 | 1.5+ |
| 1999 10 12 | 691 | 0.2− | 0.0 | 2003 12 04 | 704 | 0.9+ | 1.3+ | 2006 10 28 | G96 | 0.8− | 0.5− |
| 1999 10 12 | 691 | 0.3− | 0.1− | 2003 12 19 | 704 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 1999 10 12 | 691 | 0.3− | 0.2− | 2003 12 19 | 704 | 0.8+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.0 |
| 1999 10 13 | 645 | 0.1+ | 0.1+ | 2003 12 19 | 704 | 0.5+ | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 1999 10 13 | 645 | 0.1+ | 0.1+ | 2003 12 19 | 704 | 0.7+ | 0.1+ | | | | |

**(137284)**∗ **1999 RZ$_{182}$ = 1999 QK$_3$ = 2002 GS$_{173}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 13878), G. V. Williams (*MPO* 33085)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.01239 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28943367 | $\omega$ | 129.10924 | | +0.45783302 | | +0.88873808 |
| $a$ | 2.2634453 | $\Omega$ | 168.07338 | | −0.84628464 | | +0.44362898 |
| $e$ | 0.2853568 | $i$ | 6.41743 | | −0.27238067 | | +0.11549004 |
| $P$ | 3.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.4+ | 0.7+ | 1999 09 14 | 704 | 1.0− | 0.7− | 2005 05 10 | G96 | 0.2− | 0.6− |
| 1999 08 12 | 699 | 1.3+ | 1.9+ | 2002 04 10 | 704 | 0.3+ | 0.0 | 2005 05 10 | G96 | 0.3− | 0.2− |
| 1999 08 12 | 699 | 0.5+ | 1.0+ | 2002 04 10 | 704 | 1.2+ | 0.3− | 2005 05 10 | G96 | 0.2− | 0.4− |
| 1999 08 22 | 703 | 0.6+ | 0.4+ | 2002 04 10 | 704 | 0.5− | 0.5+ | 2005 05 10 | G96 | 0.1+ | 0.3− |
| 1999 08 22 | 703 | 0.6+ | 0.2+ | 2002 04 10 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | (4.2− | 2.7+) |
| 1999 08 22 | 703 | 0.9− | 0.7+ | 2002 04 16 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | (0.6+ | 4.5+) |
| 1999 08 22 | 703 | 1.2+ | 0.1− | 2002 04 16 | 704 | 0.5− | 1.0+ | 2006 10 16 | 703 | 0.6+ | 0.5+ |
| 1999 09 07 | 704 | 0.1− | 0.1− | 2002 04 16 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 1.0− | 1.3+ |
| 1999 09 07 | 704 | 0.5− | 1.1+ | 2002 04 16 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 1999 09 07 | 704 | 0.2− | 0.1+ | 2002 05 07 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.4+ |
| 1999 09 07 | 704 | 0.5+ | 0.5+ | 2002 05 07 | 644 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.5− | 0.3− |
| 1999 09 07 | 704 | 0.2− | 0.6− | 2002 05 07 | 644 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.6− | 0.6+ |
| 1999 09 09 | 704 | 0.1− | 1.6− | 2005 03 09 | G96 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.0 |
| 1999 09 09 | 704 | 0.2+ | 0.7− | 2005 03 09 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 0.4− | 0.1− | 2005 03 09 | G96 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 1999 09 09 | 704 | 0.0 | 0.3+ | 2005 03 09 | G96 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.4+ |
| 1999 09 09 | 704 | 0.3− | 0.4− | 2005 04 02 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 1999 09 14 | 704 | 0.3− | 1.1− | 2005 04 02 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.4− | 0.4+ |
| 1999 09 14 | 704 | 0.1− | 1.6− | 2005 04 02 | G96 | 0.6+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.3+ |
| 1999 09 14 | 704 | 0.2+ | 1.4− | 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.2− | 0.2+ |

**(137285)**∗ **1999 RY$_{184}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.39506 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29119966 | $\omega$ | 296.66727 | | +0.88355135 | | +0.46467898 |
| $a$ | 2.2542849 | $\Omega$ | 35.72827 | | −0.38624279 | | +0.79351280 |
| $e$ | 0.1755638 | $i$ | 5.73966 | | −0.26486511 | | +0.39295150 |
| $P$ | 3.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.1− | 0.6+ | 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.8− |
| 1999 09 04 | 699 | 1.5− | 1.3+ | 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.3− |
| 1999 09 04 | 699 | 0.9+ | 0.0 | 2005 04 11 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 1999 09 09 | 704 | 0.5− | 0.1+ | 2005 05 08 | 691 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 1999 09 09 | 704 | 0.2+ | 0.1− | 2005 05 08 | 691 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.5+ | 1.4+ |
| 1999 09 09 | 704 | 0.3− | 0.1− | 2005 05 08 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 1.2+ |
| 1999 09 09 | 704 | 0.8+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | (1.0− | 2.6+) |
| 1999 09 09 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | (1.6+ | 1.3+) |
| 1999 09 13 | 704 | 1.5− | 0.7+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.4− |
| 1999 09 13 | 704 | 0.1+ | 1.7+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 1.4+ | 0.9− |
| 1999 09 13 | 704 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.8+ |
| 1999 09 13 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.1− |
| 1999 10 07 | 704 | 0.9− | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 1999 10 07 | 704 | 0.4− | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 1999 10 16 | 704 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 1999 10 16 | 704 | 0.7− | 0.3+ | 2006 10 22 | 644 | 0.7+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 1999 10 16 | 704 | 0.5− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 1999 10 16 | 704 | 1.0− | 0.8+ | 2006 10 28 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2003 12 28 | 704 | 0.5− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.2− |
| 2003 12 28 | 704 | 0.9+ | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2003 12 28 | 704 | 0.2− | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2003 12 28 | 704 | 0.7+ | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 20 | G96 | 0.2− | 0.4− |
| 2005 03 09 | G96 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2005 03 09 | G96 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2005 03 09 | G96 | 0.6− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2005 03 09 | G96 | 0.7− | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | (0.6+ | 2.7+) |
| 2005 03 11 | 691 | 0.1− | 0.8+ | 2006 11 08 | 644 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.9+ |
| 2005 03 11 | 691 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2005 03 11 | 691 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.5− | 1.2− |
| 2005 04 01 | 691 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.5− |
| 2005 04 01 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.5− | 0.2+ |
| 2005 04 01 | 691 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.2− |

**(137286)∗ 1999 RR$_{186}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 95.78866 | | (2000.0) | | | |
| $n$ | 0.29909962 | $\omega$ | 110.36975 | | +0.16915947 | +0.98554002 |
| $a$ | 2.2144140 | $\Omega$ | 169.35504 | | −0.92288240 | +0.16187746 |
| $e$ | 0.2186042 | $i$ | 3.03956 | | −0.34593807 | +0.05006551 |
| $P$ | 3.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 691 | 0.4− | 0.1+ | 2005 03 09 | 699 | 0.2+ | 0.4+ | 2005 04 13 | 704 | 1.4+ | 0.6+ |
| 1999 09 04 | 691 | 0.5− | 0.1+ | 2005 03 09 | 699 | 1.1+ | 0.1− | 2005 04 13 | 699 | 0.5− | 0.0 |
| 1999 09 04 | 691 | 0.6− | 0.1− | 2005 03 09 | 699 | 0.7+ | 0.5+ | 2005 04 13 | 704 | 0.4+ | 0.2+ |
| 1999 09 07 | 704 | 0.6+ | 1.3+ | 2005 03 13 | 703 | 0.1− | 0.3+ | 2005 04 13 | 699 | 0.4− | 0.8+ |
| 1999 09 07 | 704 | 0.4− | 1.3+ | 2005 03 13 | 703 | 1.0− | 0.4+ | 2005 04 13 | 704 | 0.5+ | 0.4+ |
| 1999 09 07 | 704 | 0.8+ | 1.3+ | 2005 03 13 | 703 | 0.7− | 0.5+ | 2005 04 14 | 704 | 1.0+ | 1.2− |
| 1999 09 07 | 704 | 0.4+ | 1.2+ | 2005 03 13 | 703 | 0.3− | 0.7+ | 2005 04 14 | 704 | (1.1+ | 1.9−) |
| 1999 09 07 | 704 | 0.1+ | 1.7+ | 2005 03 31 | 699 | 0.1+ | 0.2+ | 2005 04 14 | 704 | 0.4+ | 0.3+ |
| 1999 09 09 | 704 | 0.3+ | 0.8− | 2005 03 31 | 699 | 0.5+ | 0.8+ | 2005 04 14 | 704 | 0.7+ | 1.0− |
| 1999 09 09 | 704 | 0.7+ | 0.9+ | 2005 03 31 | 699 | 0.7− | 0.6− | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 1999 09 09 | 704 | 0.1+ | 0.2− | 2005 03 31 | 699 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 1999 09 09 | 704 | 0.5+ | 0.4− | 2005 04 04 | 703 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.3+ |
| 1999 09 14 | 704 | 0.2+ | 1.0+ | 2005 04 04 | 703 | 0.6− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1999 09 14 | 704 | 0.8+ | 0.7+ | 2005 04 04 | 703 | 0.8− | 1.0+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 1999 09 14 | 704 | 0.4− | 1.0+ | 2005 04 04 | 704 | 0.5− | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 1999 09 14 | 704 | 0.6− | 0.4− | 2005 04 04 | 704 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.5+ | 0.5− |
| 1999 10 08 | 704 | 0.3− | 0.0 | 2005 04 04 | 704 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.1+ |
| 1999 10 08 | 704 | 0.2− | 0.4+ | 2005 04 04 | 704 | 0.2+ | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 1999 10 08 | 704 | 0.3− | 0.5− | 2005 04 04 | 704 | 0.6− | 0.2+ | 2006 10 18 | 691 | 0.4− | 0.3+ |
| 2002 06 09 | 704 | 0.2− | 0.3− | 2005 04 09 | 704 | 0.5− | 0.1− | 2006 10 18 | 691 | 0.4− | 0.2+ |
| 2002 06 09 | 704 | 0.4− | 0.2+ | 2005 04 09 | 704 | 0.6+ | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.3+ |
| 2002 06 09 | 704 | 0.2− | 0.0 | 2005 04 09 | 704 | 0.0 | 0.8+ | 2006 11 12 | G96 | 0.2− | 0.1+ |
| 2002 06 09 | 704 | 0.1+ | 0.2− | 2005 04 09 | 704 | (2.5+ | 0.5−) | 2006 11 12 | G96 | 0.1+ | 0.6+ |
| 2002 06 18 | 704 | (2.5− | 0.8+) | 2005 04 09 | 704 | 0.8+ | 1.4+ | 2006 11 12 | G96 | 0.1− | 0.4+ |
| 2002 06 18 | 704 | 0.1+ | 0.4− | 2005 04 12 | 704 | 0.9+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 06 18 | 704 | 0.1− | 0.1− | 2005 04 12 | 704 | 0.6+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2002 06 18 | 704 | 1.0+ | 0.0 | 2005 04 12 | 704 | (1.9+ | 0.4−) | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2002 07 05 | 704 | 0.6+ | 0.2+ | 2005 04 12 | 704 | 0.9+ | 1.0+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2002 07 05 | 704 | 0.6− | 0.4+ | 2005 04 12 | 704 | (1.8+ | 1.6+) | 2006 11 28 | 704 | 0.7− | 0.9+ |
| 2002 07 05 | 704 | 0.3− | 0.4+ | 2005 04 13 | 699 | 0.2− | 0.6+ | 2006 11 28 | 704 | 0.3+ | 1.7+ |
| 2002 07 05 | 704 | 0.2− | 0.2+ | 2005 04 13 | 704 | 0.9+ | 0.7+ | 2006 11 28 | 704 | 0.9+ | 1.1+ |
| 2005 03 09 | 699 | 0.5+ | 1.5+ | 2005 04 13 | 699 | 1.0− | 0.1− | | | | |

**(137287)∗ 1999 RM$_{188}$**

Discovered 1999 Sept. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.28564 | | (2000.0) | | | |
| $n$ | 0.31111556 | $\omega$ | 327.97972 | | +0.80964288 | −0.58268112 |
| $a$ | 2.1570236 | $\Omega$ | 67.82013 | | +0.55326087 | +0.71763389 |
| $e$ | 0.1626664 | $i$ | 4.36234 | | +0.19591022 | +0.38142407 |
| $P$ | 3.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 30 | 691 | 1.1+ | 0.3+ | 1999 10 16 | 704 | 0.8− | 0.6+ | 2003 12 22 | 691 | 0.3+ | 0.1− |
| 1995 05 30 | 691 | 0.5− | 0.2+ | 2001 04 16 | 645 | 0.3− | 0.1+ | 2003 12 22 | 691 | 0.6+ | 0.1− |
| 1995 05 30 | 691 | 1.7+ | 0.0 | 2001 04 16 | 645 | 0.3− | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.2+ |
| 1999 09 04 | 699 | 0.6+ | 0.4+ | 2002 08 13 | 644 | 0.2− | 0.3+ | 2004 02 13 | 691 | 0.3+ | 0.0 |
| 1999 09 04 | 699 | 0.9− | 1.5+ | 2002 08 13 | 704 | 0.5− | 0.1− | 2004 02 13 | 691 | 0.2+ | 0.2+ |
| 1999 09 04 | 699 | 0.2+ | 0.5+ | 2002 08 13 | 704 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.5+ | 1.0+ |
| 1999 09 09 | 704 | 1.4+ | 0.2+ | 2002 08 13 | 704 | 0.3− | 0.9− | 2004 03 15 | 704 | 0.9+ | 0.7+ |
| 1999 09 09 | 704 | 0.2+ | 0.1− | 2002 08 13 | 644 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.3+ | 1.0+ |
| 1999 09 09 | 704 | 0.4− | 0.0 | 2002 08 13 | 704 | 0.1− | 0.4− | 2004 03 15 | 704 | 0.8+ | 0.8+ |
| 1999 09 09 | 704 | 0.4− | 0.7+ | 2002 08 13 | 704 | 0.7+ | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 1999 09 13 | 704 | 0.7− | 0.4+ | 2002 08 13 | 644 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.5+ | 0.5+ |
| 1999 09 13 | 704 | 0.4− | 0.5+ | 2002 08 30 | 644 | 0.0 | 0.7+ | 2006 11 01 | 691 | 0.5+ | 0.2+ |
| 1999 09 13 | 704 | 0.0 | 0.8+ | 2002 08 30 | 644 | 0.4+ | 0.8+ | 2006 11 27 | G96 | 0.1− | 0.3− |
| 1999 09 13 | 704 | 0.4− | 1.7+ | 2002 08 30 | 644 | 0.1+ | 1.0+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 1999 10 16 | 704 | 0.4− | 0.7+ | 2003 12 22 | 691 | 0.4+ | 0.7+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 1999 10 16 | 704 | 1.6− | 0.4+ | 2003 12 22 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 1999 10 16 | 704 | 0.7− | 0.2− | 2003 12 22 | 691 | 0.3+ | 0.1+ | | | | |
| 1999 10 16 | 704 | 1.1− | 0.7+ | 2003 12 22 | 691 | 0.0 | 0.2+ | | | | |

**(137288)∗ 1999 RX$_{190}$**

Discovered 1999 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.47733 | | (2000.0) | | | |
| $n$ | 0.29628167 | $\omega$ | 25.46904 | | +0.23875889 | +0.96725312 |
| $a$ | 2.2284327 | $\Omega$ | 258.44049 | | −0.90530731 | +0.18963002 |
| $e$ | 0.1923236 | $i$ | 5.04261 | | −0.35130167 | +0.16870641 |
| $P$ | 3.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 703 | 0.2+ | 0.6+ | 2003 12 22 | 704 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 1999 09 07 | 703 | 0.2− | 0.2+ | 2003 12 22 | 704 | (0.7+ | 2.7+) | 2006 10 19 | 703 | 0.4+ | 0.7− |
| 1999 09 07 | 703 | 0.5− | 0.6+ | 2004 01 21 | 704 | 0.4− | 0.2+ | 2006 10 19 | 703 | (1.6− | 0.1+) |
| 1999 09 07 | 703 | 1.6− | 0.2+ | 2004 01 21 | 704 | 0.3− | 1.5+ | 2006 10 27 | 703 | 0.2− | 0.8− |
| 1999 09 08 | 704 | 0.7+ | 0.4− | 2004 01 21 | 704 | 0.2− | 0.8+ | 2006 10 27 | 703 | 0.4− | 1.2− |
| 1999 09 08 | 704 | 0.7− | 0.6+ | 2004 01 21 | 704 | 1.2+ | 0.9+ | 2006 10 27 | 703 | 0.6− | 0.5− |
| 1999 09 08 | 704 | 0.0 | 0.8− | 2005 03 17 | 704 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.0 |
| 1999 09 08 | 704 | 0.2− | 1.0− | 2005 03 17 | 704 | 0.4− | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1999 09 08 | 704 | 0.3+ | 0.5− | 2005 03 17 | 704 | 0.4− | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.7+ |
| 1999 09 10 | 704 | 0.2− | 0.0 | 2005 03 17 | 704 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 1999 09 10 | 704 | 0.4− | 0.1+ | 2005 03 17 | 704 | 0.5− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.1− |
| 1999 09 10 | 704 | 0.6− | 0.7+ | 2005 04 06 | 699 | (1.6+ | 0.1+) | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 1999 09 11 | 704 | 0.3+ | 0.5− | 2005 04 06 | 699 | (1.8+ | 0.0 ) | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 1999 09 11 | 704 | 0.2− | 0.2− | 2005 04 06 | 699 | 1.2+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 09 11 | 704 | 0.1− | 0.1− | 2005 04 06 | 699 | (2.4+ | 0.0 ) | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 09 11 | 704 | 0.3+ | 0.5− | 2005 04 14 | 703 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 1999 09 29 | 703 | 0.2− | 0.7+ | 2005 04 14 | 703 | 0.7+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1999 09 29 | 703 | 0.0 | 0.6+ | 2005 04 14 | 703 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 1999 09 29 | 703 | 0.6− | 0.3+ | 2005 04 14 | 703 | 1.1+ | 1.4+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 1999 09 29 | 703 | 0.6− | 0.7+ | 2005 04 19 | 703 | 1.2+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 1999 10 04 | 704 | 0.3+ | 0.2− | 2005 04 19 | 703 | 0.2− | 0.9− | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 1999 10 04 | 704 | 0.4− | 0.1− | 2005 04 19 | 703 | 0.5+ | 0.6+ | 2006 11 16 | 704 | 0.4+ | 0.6− |
| 1999 10 04 | 704 | 0.3− | 0.2− | 2005 04 19 | 703 | 0.2+ | 0.7− | 2006 11 16 | 704 | 0.2− | 0.2− |
| 1999 10 04 | 704 | 1.3+ | 0.9− | 2005 05 06 | 703 | 0.5− | 0.6+ | 2006 11 16 | 704 | 1.0+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 0.3+ | 0.8− | 2005 05 06 | 703 | 1.3− | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.0 |
| 1999 10 09 | 704 | 0.6+ | 0.0 | 2005 05 06 | 703 | 0.3− | 1.5+ | 2006 11 16 | 704 | 0.0 | 0.3− |
| 1999 10 09 | 704 | 0.5− | 0.4+ | 2005 05 06 | 703 | 0.6− | 0.8+ | 2006 11 16 | 704 | 0.7− | 0.3+ |
| 1999 10 09 | 704 | 0.7+ | 1.3+ | 2005 05 13 | 699 | 0.5+ | 0.8+ | 2006 11 16 | 704 | 0.6− | 0.0 |
| 1999 10 09 | 704 | 0.2+ | 1.1+ | 2005 05 13 | 699 | 0.8+ | 0.3+ | 2006 11 16 | 704 | 0.5− | 1.2+ |
| 1999 10 09 | 704 | 0.6+ | 0.2+ | 2005 05 13 | 699 | 0.8+ | 1.0− | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2002 06 11 | 704 | 0.8− | 0.5+ | 2005 05 13 | 699 | 0.7+ | 0.8+ | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 2002 06 11 | 704 | 0.2− | 0.5+ | 2005 06 09 | 703 | 0.5− | 0.7− | 2006 11 19 | 704 | 1.1− | 0.1− |
| 2002 06 11 | 704 | 0.8− | 0.0 | 2005 06 09 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2002 06 11 | 704 | 0.4− | 0.2− | 2005 06 09 | 703 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2002 07 05 | 704 | 0.4+ | 0.6+ | 2005 06 09 | 703 | 1.2− | 0.8− | 2006 11 19 | 704 | 0.4+ | 1.1+ |
| 2002 07 05 | 704 | 0.5+ | 0.7+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2002 07 05 | 704 | 1.0+ | 1.2+ | 2006 10 04 | G96 | 0.4− | 0.3− | 2006 11 19 | 704 | (0.5− | 1.5+) |
| 2002 07 05 | 704 | 0.9+ | 1.3+ | 2006 10 04 | G96 | 0.7− | 0.0 | 2006 11 19 | 704 | (1.3− | 1.6+) |
| 2002 07 05 | 704 | (0.8+ | 1.8+) | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | (0.0 | 1.7+) |
| 2003 12 21 | 704 | 1.0+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | (0.8+ | 1.6+) |
| 2003 12 21 | 704 | 0.9− | 0.2+ | 2006 10 19 | 703 | 0.8+ | 0.6− | 2006 11 22 | 704 | 0.6+ | 0.8+ |
| 2003 12 21 | 704 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | (1.5− | 0.1+) |
| 2003 12 21 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.2+ | 2006 11 22 | 704 | (0.1+ | 2.2+) |
| 2003 12 22 | 704 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.3− | 0.4+ |

**(137289)∗ 1999 RP$_{193}$ = 2005 GB$_{12}$**

Discovered 1999 Sept. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 74622)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.27584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27558731 | $\omega$ | 135.80680 | | +0.12266681 | +0.99002653 | |
| $a$ | 2.3386393 | $\Omega$ | 141.08502 | | −0.93839983 | +0.13842742 | |
| $e$ | 0.0979309 | $i$ | 6.33239 | | −0.32304584 | −0.02617855 | |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.4− | 0.5− | 2002 08 28 | 644 | 0.2− | 0.2− | 2005 05 08 | 691 | 0.0 | 0.1+ |
| 1995 07 24 | 691 | 0.4+ | 0.1− | 2002 08 28 | 644 | 0.1− | 0.1− | 2005 05 08 | 691 | 0.1+ | 0.1+ |
| 1998 04 03 | 691 | 0.0 | 0.2− | 2002 08 28 | 644 | 0.1− | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.3+ |
| 1998 04 03 | 691 | 0.1+ | 0.4+ | 2005 03 18 | 703 | 0.7− | 1.3+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 1998 04 03 | 691 | 0.1+ | 0.4+ | 2005 03 18 | 703 | 1.0− | 1.0− | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 1999 09 15 | 691 | 0.2− | 0.4+ | 2005 03 18 | 703 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 1999 09 15 | 691 | 0.4− | 0.4+ | 2005 03 18 | 703 | 0.6+ | 0.7− | 2006 10 02 | G96 | 0.3− | 0.0 |
| 1999 09 15 | 691 | 0.8+ | 0.1− | 2005 04 01 | 699 | 0.5− | 1.3+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 1999 09 18 | 691 | 0.2− | 0.2+ | 2005 04 01 | 699 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.7− |
| 1999 09 18 | 691 | 0.0 | 0.0 | 2005 04 01 | 699 | (1.6+ | 1.2+) | 2006 10 16 | 703 | 0.9+ | 0.5− |
| 1999 09 18 | 691 | 0.4− | 0.1+ | 2005 04 01 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 1.1+ | 0.1− |
| 1999 10 09 | 704 | 0.4− | 0.8+ | 2005 04 04 | 703 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 1999 10 09 | 704 | 0.8+ | 0.9+ | 2005 04 04 | 703 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 1999 10 09 | 704 | 0.2+ | 0.2− | 2005 04 04 | 703 | 0.7− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.9+ |
| 2002 07 14 | 704 | (2.2+ | 3.1+) | 2005 04 04 | 703 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.7+ | 1.0+ |
| 2002 07 14 | 704 | (1.9+ | 2.9+) | 2005 04 13 | 704 | 0.6+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 07 14 | 704 | (2.6+ | 3.0+) | 2005 04 13 | 704 | (1.6+ | 0.3+) | 2006 10 21 | 644 | 0.3− | 0.7+ |
| 2002 07 22 | 644 | 0.1+ | 0.2+ | 2005 04 13 | 704 | 1.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.6+ |
| 2002 07 22 | 644 | 0.1− | 0.4+ | 2005 04 13 | 704 | 0.8+ | 0.8+ | 2006 10 22 | 703 | 0.7− | 0.4− |
| 2002 07 22 | 644 | 0.1− | 0.4+ | 2005 04 13 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 1.1− | 0.4− |
| 2002 08 07 | 644 | 0.1+ | 0.0 | 2005 04 16 | 683 | 0.4− | 0.7+ | 2006 10 22 | 703 | 0.5− | 0.7+ |
| 2002 08 07 | 644 | 0.0 | 0.3+ | 2005 04 16 | 683 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.4− | 1.5+ |
| 2002 08 07 | 644 | 0.3+ | 0.0 | 2005 04 16 | 683 | 0.7+ | 1.0− | | | | |

**(137290)∗ 1999 RK$_{202}$ = 1999 TO$_{165}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 1668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.40372 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27803931 | $\omega$ | 135.50478 | | +0.28551991 | −0.95590696 | |
| $a$ | 2.3248695 | $\Omega$ | 297.79330 | | +0.85621928 | +0.28663537 | |
| $e$ | 0.1514723 | $i$ | 4.45429 | | +0.43054260 | +0.06389087 | |
| $P$ | 3.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 566 | 1.9− | 0.3− | 2003 12 17 | 691 | 0.3− | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.0 |
| 1997 01 10 | 566 | 0.5− | 0.6− | 2003 12 17 | 691 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.4+ |
| 1997 01 10 | 566 | 1.0− | 0.5− | 2003 12 18 | 704 | 0.5+ | 0.4+ | 2006 08 18 | 644 | 0.5− | 0.5+ |
| 1999 09 08 | 704 | 0.8+ | 1.5− | 2003 12 18 | 704 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.0 | 0.1+ |
| 1999 09 08 | 704 | 0.1− | 0.3− | 2003 12 18 | 704 | 0.1− | 0.6+ | 2006 08 29 | 703 | 0.0 | 0.7− |
| 1999 09 08 | 704 | 0.3− | 1.1− | 2003 12 18 | 704 | 1.0+ | 0.4+ | 2006 08 29 | 703 | 1.1− | 0.1+ |
| 1999 09 08 | 704 | 0.1+ | 0.8+ | 2003 12 18 | 704 | 0.3+ | 0.9+ | 2006 08 29 | 703 | 0.0 | 0.5− |
| 1999 09 18 | 704 | 0.6+ | 0.3− | 2003 12 22 | 704 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.7− | 0.6− |
| 1999 09 18 | 704 | 0.2+ | 0.4+ | 2003 12 22 | 704 | 0.3+ | 0.1− | 2006 09 12 | 703 | 0.0 | 0.3+ |
| 1999 09 18 | 704 | 0.1+ | 1.4− | 2003 12 22 | 704 | 0.9+ | 1.7+ | 2006 09 12 | 703 | 0.0 | 0.4+ |
| 1999 09 30 | 703 | 0.9− | 0.0 | 2003 12 22 | 704 | 0.2+ | 1.0+ | 2006 09 12 | 703 | 0.4− | 0.1+ |
| 1999 09 30 | 703 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.6− | 1.2− | 2006 09 15 | 704 | 1.0− | 0.8+ |
| 1999 09 30 | 703 | 0.4− | 0.7+ | 2003 12 25 | 608 | 0.2− | 1.0+ | 2006 09 15 | 704 | 0.1− | 0.5+ |
| 1999 09 30 | 703 | 1.0− | 0.4− | 2003 12 25 | 608 | 0.2+ | 0.8+ | 2006 09 15 | 704 | 1.8+ | 0.7− |
| 1999 10 09 | 703 | 0.3− | 0.5+ | 2003 12 25 | 608 | 0.0 | 0.8+ | 2006 09 18 | 704 | 0.1+ | 0.6− |
| 1999 10 09 | 703 | 0.8+ | 0.2+ | 2003 12 27 | 704 | 0.5+ | 0.0 | 2006 09 18 | 704 | 0.0 | 0.1− |
| 1999 10 09 | 703 | 0.6+ | 0.5− | 2003 12 27 | 704 | 0.9− | 0.2− | 2006 09 18 | 704 | 0.1+ | 0.0 |
| 1999 10 09 | 703 | 0.2− | 0.0 | 2003 12 27 | 704 | 1.4+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 1.3+ |
| 1999 10 10 | 704 | 0.7+ | 0.1− | 2003 12 27 | 704 | 0.5+ | 0.5− | 2006 09 18 | 704 | 0.0 | 0.4+ |
| 1999 10 10 | 704 | 0.5+ | 0.0 | 2003 12 27 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 1999 10 10 | 704 | 0.4+ | 0.8− | 2003 12 28 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 1999 10 10 | 704 | 0.7+ | 0.5− | 2003 12 28 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.7− | 1.1+ |
| 1999 10 10 | 704 | 0.7+ | 0.8− | 2003 12 28 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.5− | 1.1+ |
| 1999 10 12 | 704 | 1.0+ | 0.0 | 2004 01 21 | 704 | 0.4+ | 0.2− | 2006 09 20 | 699 | 0.5+ | 0.1− |
| 1999 10 12 | 704 | 0.5+ | 0.1− | 2004 01 21 | 704 | 0.6+ | 0.2− | 2006 09 20 | 699 | 0.4+ | 0.2+ |
| 1999 10 12 | 704 | 0.8+ | 0.3− | 2004 01 21 | 704 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.1− | 1.0+ |
| 1999 10 12 | 704 | 0.6− | 0.3+ | 2004 01 21 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 1.2− | 0.6+ |
| 1999 10 12 | 704 | 0.1− | 0.6− | 2004 01 21 | 704 | 0.0 | 0.4− | 2006 09 25 | 704 | 0.1− | 0.7+ |
| 1999 10 12 | 704 | 0.1− | 0.5− | 2004 01 24 | 704 | (2.2+ | 0.6−) | 2006 09 25 | 704 | 0.3− | 1.2− |
| 1999 10 12 | 704 | 0.1+ | 0.2− | 2004 01 24 | 704 | 0.4+ | 0.5− | 2006 09 25 | 704 | 0.9+ | 0.2− |
| 1999 10 12 | 704 | 0.2− | 0.3− | 2004 01 24 | 704 | 0.8+ | 0.1− | 2006 09 25 | 704 | 0.8+ | 0.2− |
| 1999 10 12 | 704 | 0.4− | 0.1+ | 2004 01 24 | 704 | 1.3+ | 0.4− | 2006 09 27 | 704 | 1.1+ | 0.5− |
| 1999 10 20 | 704 | (2.0+ | 1.7+) | 2004 01 24 | 704 | 0.5− | 1.5+ | 2006 09 27 | 704 | 0.4− | 0.5+ |
| 1999 10 20 | 704 | 1.7+ | 0.6+ | 2004 01 30 | 704 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.7− | 0.1− |
| 1999 10 20 | 704 | 0.9+ | 0.8+ | 2004 01 30 | 704 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.2− | 0.0 |
| 1999 10 29 | 703 | 1.5− | 0.9− | 2004 01 30 | 704 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 1999 10 29 | 703 | 0.7− | 0.1+ | 2004 01 30 | 704 | 0.6+ | 0.3− | 2006 09 29 | 704 | 0.0 | 1.2− |
| 1999 10 29 | 703 | 1.2+ | 0.7+ | 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.2− | 0.5+ |
| 1999 10 29 | 703 | (4.5− | 0.6+) | 2005 01 19 | 809 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.2− |
| 2003 11 20 | 704 | 0.6− | 0.1− | 2005 01 19 | 809 | 0.9+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.0 |
| 2003 11 20 | 704 | 0.6+ | 0.1− | 2005 01 19 | 809 | 0.7+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.0 |
| 2003 11 20 | 704 | 0.5− | 0.6+ | 2006 08 18 | 699 | 0.5− | 0.5− | 2006 10 01 | 703 | 0.2− | 0.2− |
| 2003 11 20 | 704 | 0.0 | 0.1+ | 2006 08 18 | 699 | 0.8− | 0.7+ | 2006 10 01 | 703 | 0.2− | 0.6− |
| 2003 11 20 | 704 | 0.3+ | 0.5+ | 2006 08 18 | 699 | 1.7− | 1.3+ | 2006 10 01 | 703 | 0.3− | 0.3+ |
| 2003 12 17 | 691 | 0.3− | 0.0 | 2006 08 18 | 699 | 0.0 | 0.5+ | 2006 10 01 | 703 | 0.2+ | 0.3− |

**(137291)∗ 1999 RD$_{206}$ = 2002 JB$_{111}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29096)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.25984 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28905110 | $\omega$ | 41.67517 | | +0.74222026 | +0.66401595 | |
| $a$ | 2.2654421 | $\Omega$ | 276.48108 | | −0.63643211 | +0.65610804 | |
| $e$ | 0.2539752 | $i$ | 5.22639 | | −0.20991250 | +0.35861547 | |
| $P$ | 3.41 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 23 | 704 | 0.0 | 0.5+ | 2002 05 17 | 704 | 0.3− | 0.9− | 2006 10 27 | 703 | 0.1− | 0.0 |
| 1999 07 23 | 704 | 0.7− | 0.6+ | 2002 05 17 | 704 | 0.8+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 1999 07 23 | 704 | 0.7− | 1.8+ | 2002 05 17 | 704 | 0.2− | 1.0− | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 1999 07 23 | 704 | 0.3− | 1.1− | 2002 05 30 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1999 07 23 | 704 | 0.8− | 0.9+ | 2002 05 30 | 644 | 0.2+ | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 1999 09 08 | 704 | 0.5+ | 0.6− | 2002 05 30 | 644 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 1999 09 08 | 704 | 0.3− | 1.1− | 2002 06 06 | 704 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 1999 09 08 | 704 | 0.0 | 0.5− | 2002 06 06 | 704 | 0.4+ | 0.4+ | 2006 11 02 | 703 | 0.3− | 0.7− |
| 1999 09 08 | 704 | 0.3− | 0.1+ | 2002 06 06 | 704 | 0.2+ | 0.6− | 2006 11 02 | 703 | 0.5− | 0.8− |
| 1999 09 08 | 704 | 0.6− | 0.8− | 2002 06 06 | 704 | 0.1− | 0.4+ | 2006 11 02 | 703 | 0.6− | 0.0 |
| 1999 09 18 | 704 | 0.4+ | 0.1+ | 2002 06 06 | 704 | 0.2− | 0.7+ | 2006 11 02 | 703 | 1.3− | 0.6− |
| 1999 09 18 | 704 | 0.6− | 1.0− | 2002 06 07 | 608 | 0.6+ | 0.7− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 1999 09 18 | 704 | 0.3− | 0.2− | 2002 06 07 | 608 | 0.4+ | 0.7− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 1999 09 18 | 704 | 0.3− | 0.2− | 2002 06 07 | 608 | 0.6+ | 0.9− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 1999 09 18 | 704 | 0.4+ | 0.3− | 2002 06 08 | 704 | 0.9+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 1999 09 29 | 703 | 0.6− | 0.3+ | 2002 06 08 | 704 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 1999 09 29 | 703 | 1.2− | 0.5+ | 2002 06 08 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 703 | 0.7+ | 0.0 |
| 1999 09 29 | 703 | 0.7− | 0.1− | 2002 06 08 | 704 | 0.3+ | 1.2+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 1999 09 29 | 703 | 0.5− | 0.4+ | 2002 06 08 | 704 | (0.8+ | 1.6+) | 2006 11 14 | 703 | 0.4− | 0.2+ |
| 1999 10 03 | 704 | 0.0 | 0.2− | 2002 06 17 | 704 | (1.1− | 2.3+) | 2006 11 14 | 703 | 0.3− | 0.2+ |
| 1999 10 03 | 704 | 0.2− | 0.1− | 2002 06 17 | 704 | (1.6− | 1.2+) | 2006 11 14 | 703 | 0.3− | 0.1− |
| 1999 10 03 | 704 | 0.4− | 0.3− | 2002 06 17 | 704 | 0.5− | 0.5+ | 2006 11 15 | 704 | 0.6+ | 0.5+ |
| 1999 10 03 | 704 | 0.4− | 0.3+ | 2002 06 17 | 704 | 0.3+ | 1.4+ | 2006 11 15 | 704 | 0.0 | 0.5+ |
| 1999 10 03 | 704 | 0.6− | 0.3+ | 2002 06 17 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.6+ |
| 1999 10 10 | 704 | 0.5+ | 0.0 | 2002 06 25 | 608 | 0.3− | 0.5− | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 1999 10 10 | 704 | 1.0+ | 0.4− | 2002 06 25 | 608 | 0.1+ | 0.5− | 2006 11 16 | 704 | 0.0 | 0.4− |
| 1999 10 10 | 704 | 1.1+ | 0.8− | 2002 06 25 | 608 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.7− | 0.2+ |
| 1999 10 10 | 704 | 0.8+ | 0.5− | 2005 03 03 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.3− |
| 1999 10 10 | 704 | 0.9+ | 0.7− | 2005 03 03 | 691 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.5+ |
| 1999 10 20 | 704 | 0.4+ | 0.1+ | 2005 03 03 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 1999 10 20 | 704 | 0.4+ | 0.8+ | 2006 08 29 | 703 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.0 |
| 1999 10 20 | 704 | 0.1+ | 0.2− | 2006 08 29 | 703 | 1.0− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.7− |
| 1999 10 20 | 704 | 0.8+ | 0.1+ | 2006 08 29 | 703 | 0.8+ | 0.4− | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 1999 10 20 | 704 | 0.3+ | 0.3− | 2006 08 29 | 703 | 0.6− | 0.6+ | 2006 11 19 | 704 | 0.5+ | 0.3− |
| 1999 11 05 | 704 | 0.3+ | 0.9+ | 2006 10 19 | 703 | 0.6− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 1999 11 05 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 1999 11 05 | 704 | 0.1+ | 0.9− | 2006 10 19 | 703 | 0.0 | 0.8− | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 1999 11 05 | 704 | 0.3− | 0.5+ | 2006 10 19 | 703 | 1.2+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 1999 11 05 | 704 | 0.5+ | 0.8+ | 2006 10 20 | A50 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.4− | 1.3− |
| 1999 11 05 | 704 | 0.2− | 1.4+ | 2006 10 20 | A50 | 0.5− | 0.0 | 2006 11 22 | 704 | 1.2+ | 1.0+ |
| 1999 11 05 | 704 | 0.4+ | 1.8+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2002 05 11 | 704 | 0.5− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 05 11 | 704 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 22 | 703 | 0.1− | 0.4− |
| 2002 05 11 | 704 | 1.3− | 1.5+ | 2006 10 27 | 703 | 0.1+ | 0.2− | 2006 11 22 | 703 | 0.4+ | 0.1+ |
| 2002 05 11 | 704 | 1.4− | 0.6− | 2006 10 27 | 703 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.4+ | 1.2− |
| 2002 05 11 | 704 | (1.6− | 0.1−) | 2006 10 27 | 703 | 0.3− | 0.3+ | 2006 11 22 | 703 | 0.7− | 0.2+ |

**(137292)∗ 1999 RL$_{206}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.13499 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28937340 | $\omega$ | 159.54066 | | +0.98994098 | +0.04921054 | |
| $a$ | 2.2637597 | $\Omega$ | 199.14403 | | −0.05140998 | +0.99859032 | |
| $e$ | 0.1684167 | $i$ | 23.85856 | | +0.13180999 | +0.01989211 | |
| $P$ | 3.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.5− | 0.3− | 1999 10 16 | 704 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.6− |
| 1999 09 08 | 704 | 0.5− | 0.0 | 1999 10 16 | 704 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.7− | 0.7− |
| 1999 09 08 | 704 | 0.5− | 0.1− | 1999 10 16 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.8− | 0.5+ |
| 1999 09 08 | 704 | 0.1− | 0.2+ | 1999 10 19 | 704 | 0.7+ | 0.4− | 2006 09 18 | 703 | 0.5+ | 0.1+ |
| 1999 09 08 | 704 | 0.5− | 0.6− | 1999 10 19 | 704 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.8+ |
| 1999 09 18 | 704 | 0.5+ | 0.1− | 1999 10 19 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.2+ |
| 1999 09 18 | 704 | 0.0 | 0.1+ | 1999 10 19 | 704 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.6+ |
| 1999 09 18 | 704 | 0.1− | 0.0 | 1999 10 29 | 703 | 0.7− | 1.1+ | 2006 09 19 | 683 | 0.2− | 1.0− |
| 1999 09 18 | 704 | 0.0 | 0.4+ | 1999 10 29 | 703 | 0.2− | 0.9+ | 2006 09 19 | 683 | 0.0 | 0.1− |
| 1999 09 18 | 704 | 0.3+ | 0.1− | 1999 10 29 | 703 | 0.7− | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.6+ |
| 1999 10 01 | 589 | 0.1− | 0.1+ | 1999 10 29 | 703 | 1.2− | 0.1+ | 2006 09 19 | 683 | (0.8+ | 1.8+) |
| 1999 10 01 | 589 | 0.6+ | 0.2+ | 1999 11 03 | 703 | 0.6− | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.5− |
| 1999 10 01 | 589 | 0.4+ | 0.2− | 1999 11 03 | 703 | 1.1− | 1.0+ | 2006 09 19 | 699 | 0.9− | 0.9+ |
| 1999 10 03 | 589 | 1.4+ | 0.1+ | 1999 11 03 | 703 | 0.1− | 0.1− | 2006 09 21 | 683 | 1.3− | 0.3− |
| 1999 10 03 | 589 | 0.7− | 0.1+ | 1999 11 03 | 703 | 0.2− | 0.2− | 2006 09 21 | 683 | (1.2− | 1.9+) |
| 1999 10 03 | 589 | 0.3+ | 1.3+ | 1999 11 07 | 704 | 0.1+ | 0.6− | 2006 09 21 | 683 | (2.8− | 0.4−) |
| 1999 10 03 | 589 | 0.2− | 0.9+ | 1999 11 07 | 704 | 0.3− | 0.6− | 2006 09 30 | 699 | 0.5− | 1.4+ |
| 1999 10 04 | 704 | 0.2+ | 0.6− | 1999 11 07 | 704 | 0.3+ | 0.4− | 2006 09 30 | 699 | (1.5+ | 0.4+) |
| 1999 10 04 | 704 | 0.0 | 0.2− | 1999 11 07 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 699 | 0.5+ | 0.7− |
| 1999 10 04 | 704 | 0.2+ | 0.1+ | 1999 11 15 | 704 | 0.8+ | 0.0 | 2006 09 30 | 699 | 0.8+ | 1.5+ |
| 1999 10 04 | 704 | 0.1− | 0.4+ | 1999 11 15 | 704 | 0.6+ | 1.0− | 2006 10 17 | 703 | 1.1+ | 0.3− |
| 1999 10 04 | 704 | 0.1− | 0.1− | 1999 11 15 | 704 | 0.1+ | 0.7− | 2006 10 17 | 703 | 0.9− | 0.5− |
| 1999 10 08 | 699 | 0.0 | 1.2+ | 1999 11 15 | 704 | 0.4+ | 1.7− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 1999 10 08 | 699 | 1.0− | 1.4+ | 1999 11 15 | 704 | 0.2− | 0.8− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 1999 10 08 | 699 | 0.1+ | 1.9+ | 2002 07 13 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.1+ | 0.6− |
| 1999 10 09 | 703 | 0.1− | 0.6+ | 2002 07 13 | 704 | 0.6+ | 0.3− | 2006 10 17 | 703 | 0.3− | 0.5− |
| 1999 10 09 | 703 | 0.5− | 0.2+ | 2002 07 13 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 1999 10 09 | 703 | 1.2− | 0.4− | 2002 07 13 | 704 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.2− | 0.0 |
| 1999 10 09 | 703 | 0.1− | 0.5+ | 2002 07 13 | 704 | 0.6+ | 0.1+ | 2006 10 28 | 703 | 0.6+ | 0.0 |
| 1999 10 09 | 704 | 0.6+ | 0.2− | 2005 01 17 | 809 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 1999 10 09 | 704 | 0.9+ | 0.2+ | 2005 01 17 | 809 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.4+ |
| 1999 10 09 | 704 | 0.2+ | 0.4− | 2005 01 17 | 809 | 0.2− | 0.1+ | 2006 11 10 | 704 | 0.9+ | 0.1− |
| 1999 10 09 | 704 | 0.2+ | 0.3− | 2005 04 10 | 691 | 0.1− | 0.2+ | 2006 11 10 | 704 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.0 | 0.3− | 2005 04 10 | 691 | 0.2− | 0.3+ | 2006 11 10 | 704 | 0.2+ | 0.1+ |
| 1999 10 15 | 704 | 0.4− | 0.7− | 2005 04 10 | 691 | 0.1− | 0.2+ | 2006 11 10 | 704 | 0.4− | 0.6+ |
| 1999 10 15 | 704 | 0.0 | 0.3− | 2005 05 16 | 644 | 0.1+ | 0.2− | 2006 11 23 | 703 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.3− | 2005 05 16 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.3+ | 0.7+ |
| 1999 10 15 | 704 | 0.2+ | 0.5− | 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 11 23 | 703 | 1.0+ | 0.3+ |
| 1999 10 16 | 704 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.0 | 2006 11 23 | 703 | 0.1+ | 0.5+ |
| 1999 10 16 | 704 | 0.3+ | 1.0− | 2006 08 28 | 703 | 0.2+ | 0.5− | | | | |

**(137293)∗ 1999 RL$_{208}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.99563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28126118 | $\omega$ | 75.84732 | | +0.95271778 | −0.28792936 | |
| $a$ | 2.3070810 | $\Omega$ | 300.80620 | | +0.21641772 | +0.86726868 | |
| $e$ | 0.1283203 | $i$ | 6.49022 | | +0.21328901 | +0.40613017 | |
| $P$ | 3.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.2+ | 0.4+ | 2003 12 18 | 691 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.6+ | 0.5− |
| 1999 09 08 | 704 | 0.4− | 0.1+ | 2003 12 18 | 691 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.0 | 0.1− |
| 1999 09 08 | 704 | 0.0 | 0.5+ | 2003 12 18 | 691 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.8+ | 0.3+ |
| 1999 09 08 | 704 | 1.2− | 0.4+ | 2003 12 22 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.9+ | 0.6+ |
| 1999 09 18 | 704 | 0.4+ | 0.6− | 2003 12 22 | 704 | 0.2− | 0.2− | 2006 09 22 | 704 | 1.0+ | 0.5+ |
| 1999 09 18 | 704 | 0.2− | 0.8+ | 2003 12 22 | 704 | 0.2− | 0.5− | 2006 09 22 | 704 | 0.9+ | 0.4+ |
| 1999 09 18 | 704 | 1.1+ | 0.1− | 2003 12 22 | 704 | 0.1+ | 0.2− | 2006 09 22 | 699 | 0.1+ | 0.6− |
| 1999 10 03 | 704 | 0.2− | 0.2− | 2003 12 22 | 704 | 0.5+ | 1.0− | 2006 09 22 | 704 | 1.3+ | 0.3+ |
| 1999 10 03 | 703 | 0.3+ | 0.5+ | 2003 12 25 | 106 | 0.3+ | 0.2− | 2006 09 22 | 699 | 0.1− | 0.3+ |
| 1999 10 03 | 704 | 0.0 | 0.5+ | 2003 12 25 | 106 | 0.4− | 0.1− | 2006 09 22 | 699 | 0.4− | 0.1+ |
| 1999 10 03 | 703 | 0.2− | 0.0 | 2003 12 25 | 106 | 0.5− | 0.7− | 2006 09 22 | 699 | 0.6− | 0.0 |
| 1999 10 03 | 704 | 0.8− | 0.1− | 2003 12 27 | 704 | 0.4+ | 1.1+ | 2006 09 27 | 703 | 0.6− | 0.2− |
| 1999 10 03 | 703 | 0.2+ | 0.1− | 2003 12 27 | 704 | 0.2+ | 1.2+ | 2006 09 27 | 703 | 0.6− | 0.6− |
| 1999 10 03 | 704 | 0.5− | 1.1− | 2003 12 27 | 704 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.7− | 0.2− |
| 1999 10 03 | 703 | 0.3− | 0.5+ | 2003 12 27 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 703 | 0.2− | 0.1− |
| 1999 10 03 | 704 | 0.4− | 0.5− | 2003 12 27 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.5− |
| 1999 10 09 | 703 | 0.3− | 0.1− | 2004 01 13 | 644 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 1999 10 09 | 703 | 0.5+ | 1.5− | 2004 01 13 | 644 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.2+ |
| 1999 10 09 | 703 | 0.2+ | 0.3+ | 2004 01 13 | 644 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.1− |
| 1999 10 09 | 703 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 1999 10 10 | 704 | 0.4+ | 0.5− | 2004 01 22 | 704 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 1999 10 10 | 704 | 0.0 | 0.7− | 2004 01 22 | 704 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6+ | 0.5− | 2004 01 22 | 704 | 0.9− | 1.4+ | 2006 10 09 | 644 | 0.2+ | 0.4+ | | |
| 1999 10 10 | 704 | 0.5+ | 1.2− | 2004 01 22 | 704 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.5− | 0.1+ | | |
| 1999 10 10 | 704 | 0.5+ | 1.0− | 2004 01 30 | 704 | 0.3+ | 0.8− | 2006 10 09 | 644 | 0.2− | 0.1+ | | |
| 1999 11 04 | 704 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 1999 11 04 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.2+ | | |
| 1999 11 04 | 704 | 0.5+ | 0.1+ | 2004 01 30 | 704 | 1.0+ | 0.2− | 2006 10 09 | 644 | 0.3− | 0.3+ | | |
| 1999 11 04 | 704 | 0.4+ | 0.8+ | 2004 01 30 | 704 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.4− | 0.3+ | | |
| 2002 06 08 | 704 | 0.8− | 1.4+ | 2006 08 20 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.3+ | | |
| 2002 06 08 | 704 | 0.3− | 1.2+ | 2006 08 20 | 644 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 2002 06 08 | 704 | 0.2− | 0.8+ | 2006 08 20 | 644 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.1− | | |
| 2002 07 05 | 704 | 0.4+ | 0.4− | 2006 08 29 | 699 | 0.6− | 1.0− | 2006 10 19 | 703 | 0.1− | 0.2− | | |
| 2002 07 05 | 704 | 0.2+ | 0.5− | 2006 08 29 | 699 | 0.9− | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.0 | | |
| 2002 07 05 | 704 | 0.1+ | 0.5− | 2006 08 29 | 699 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.1− | | |
| 2002 07 05 | 704 | 0.0 | 0.6− | 2006 08 29 | 699 | 1.0+ | 0.3+ | 2006 11 22 | 683 | 0.1+ | 0.3− | | |
| 2003 12 04 | 704 | 0.2+ | 1.2+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 11 22 | 683 | 0.2+ | 0.9+ | | |
| 2003 12 04 | 704 | 1.1+ | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 11 22 | 683 | 0.3+ | 0.6− | | |
| 2003 12 04 | 704 | 0.3− | 0.2− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.3− | | |
| 2003 12 17 | 699 | 0.9− | 0.1− | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.4− | | |
| 2003 12 17 | 699 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.7− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.2+ | | |
| 2003 12 17 | 699 | 0.2− | 0.6− | 2006 09 16 | 703 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.5+ | | |
| 2003 12 17 | 699 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.3− | 0.8+ | | | | | | |

**(137294)∗ 1999 RE$_{215}$**

Discovered 1999 Sept. 7 by C. A. Trujillo, J. X. Luu and D. C. Jewitt at Mauna Kea.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.22130 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00326966 | $\omega$ | 113.03687 | | −0.13341335 | +0.99098716 | |
| $a$ | 44.9574090 | $\Omega$ | 149.28868 | | −0.91770242 | −0.11893621 | |
| $e$ | 0.1088218 | $i$ | 1.35258 | | −0.37419667 | −0.06163302 | |
| $P$ | 301 | $H$ | 6.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 568 | 0.1+ | 0.2+ | 2000 05 30 | 568 | 0.7− | 0.1− | 2002 11 05 | 568 | 0.4− | 0.4− | | |
| 1999 09 07 | 568 | 0.1− | 0.0 | 2000 05 31 | 568 | 0.7− | 0.2− | 2002 11 06 | 568 | 0.7− | 0.5− | | |
| 1999 09 07 | 568 | 0.1− | 0.0 | 2000 06 01 | 568 | 1.0− | 0.1− | 2006 08 21 | 807 | 0.0 | 0.0 | | |
| 1999 10 09 | 568 | 0.1+ | 0.1− | 2000 08 26 | 807 | 0.2− | 0.3+ | 2006 08 21 | 807 | 0.2− | 0.2− | | |
| 1999 10 09 | 568 | 0.3+ | 0.3− | 2000 08 26 | 807 | 0.2− | 0.2+ | 2006 10 19 | 695 | 0.2− | 0.1+ | | |
| 1999 11 09 | 568 | 0.2+ | 0.0 | 2001 07 18 | 568 | 0.2+ | 0.1+ | 2006 10 19 | 695 | 0.1+ | 0.0 | | |
| 1999 11 10 | 568 | 0.3+ | 0.1+ | 2001 07 19 | 568 | 0.0 | 0.1− | 2006 10 20 | 695 | 0.2+ | 0.2+ | | |

**(137295)∗ 1999 RB$_{216}$**

Discovered 1999 Sept. 8 by C. A. Trujillo, D. C. Jewitt and J. X. Luu at Mauna Kea.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.69156 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00302438 | $\omega$ | 208.46497 | | +0.91124383 | −0.41154258 | |
| $a$ | 47.3564221 | $\Omega$ | 175.73624 | | +0.40713424 | +0.89406035 | |
| $e$ | 0.2894055 | $i$ | 12.70521 | | +0.06226066 | +0.17688639 | |
| $P$ | 326 | $H$ | 7.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 568 | 0.3− | 0.1− | 2000 08 27 | 568 | 0.5− | 0.8− | 2006 09 25 | 688 | 0.1− | 0.0 | | |
| 1999 09 08 | 568 | 0.4− | 0.1− | 2000 08 27 | 568 | 0.2− | 0.5− | 2006 09 25 | 688 | 0.2+ | 0.5+ | | |
| 1999 09 08 | 568 | 0.0 | 0.1+ | 2000 08 27 | 568 | 0.4− | 0.7− | 2006 09 29 | 705 | 0.1− | 0.3− | | |
| 1999 09 10 | 568 | 0.2− | 0.4− | 2000 08 29 | 568 | 0.4− | 0.6− | 2006 09 29 | 705 | 0.2− | 0.0 | | |
| 1999 09 10 | 568 | 0.1+ | 0.3− | 2000 08 29 | 568 | 0.7− | 0.7− | 2006 10 01 | 705 | 0.1+ | 0.1− | | |
| 1999 09 13 | 568 | 0.1− | 0.0 | 2000 09 19 | 695 | 0.1+ | 0.0 | 2006 10 01 | 705 | 0.0 | 0.1+ | | |
| 1999 09 13 | 568 | 0.0 | 0.2− | 2000 09 19 | 695 | 0.1− | 0.1+ | 2006 10 02 | 705 | 0.1+ | 0.2− | | |
| 1999 10 08 | 568 | 0.3+ | 0.2+ | 2001 07 20 | 568 | 0.1− | 0.3+ | 2006 10 02 | 705 | 0.0 | 0.2− | | |
| 1999 10 08 | 568 | 0.5+ | 0.2+ | 2001 07 21 | 568 | 0.2+ | 0.0 | 2006 10 22 | 705 | 0.1+ | 0.0 | | |
| 1999 11 09 | 568 | 0.6+ | 0.0 | 2002 11 07 | 568 | 0.0 | 0.5− | 2006 10 22 | 705 | 0.0 | 0.2+ | | |
| 1999 11 09 | 568 | 0.7+ | 0.0 | 2002 11 07 | 568 | 0.3+ | 0.5− | 2006 10 23 | 705 | 0.1+ | 0.0 | | |
| 2000 08 27 | 807 | 0.1+ | 0.2+ | 2006 09 17 | 705 | 0.0 | 0.1− | 2006 10 23 | 705 | 0.1− | 0.1− | | |
| 2000 08 27 | 807 | 0.2+ | 0.0 | 2006 09 17 | 705 | 0.1− | 0.2− | | | | | | |

**(137296)∗ 1999 RL$_{219}$ = 1994 AM$_{12}$**

Discovered 1999 Sept. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 17039)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.27808 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29218313 | $\omega$ | 212.91355 | | +0.99798748 | +0.02397709 | |
| $a$ | 2.2492236 | $\Omega$ | 145.56552 | | −0.00413497 | +0.94839320 | |
| $e$ | 0.2135067 | $i$ | 5.95888 | | −0.06327629 | +0.31618894 | |
| $P$ | 3.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 09 | 691 | 0.2− | 0.3+ | 2003 12 22 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 699 | 0.0 | 0.9+ | | |
| 1991 03 09 | 691 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.1+ | | |
| 1991 03 09 | 691 | 0.3+ | 0.0 | 2003 12 22 | 704 | 0.7+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 1994 01 11 | 691 | 0.4− | 0.5− | 2003 12 22 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 1994 01 11 | 691 | 0.1+ | 0.1− | 2005 04 02 | 691 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 1994 01 11 | 691 | 0.7+ | 1.1− | 2005 04 02 | 691 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.3− | | |
| 1994 01 19 | 691 | 0.1+ | 0.2+ | 2005 04 02 | 691 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.8+ | | |
| 1994 01 19 | 691 | 0.4− | 0.0 | 2006 09 09 | 941 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.2− | 0.2+ | | |
| 1994 01 19 | 691 | 0.4− | 0.7+ | 2006 09 09 | 941 | 0.2− | 0.7− | 2006 10 16 | 703 | 0.3− | 0.2+ | | |
| 1999 07 21 | 699 | 0.1+ | 1.4+ | 2006 09 09 | 941 | 0.5− | 0.6− | 2006 10 22 | 703 | 0.5+ | 0.3+ | | |
| 1999 07 21 | 699 | 0.9+ | 0.3+ | 2006 09 09 | 941 | 0.2− | 0.6− | 2006 10 22 | 703 | 0.5+ | 0.2− | | |
| 1999 07 21 | 699 | 0.5+ | 1.5+ | 2006 09 14 | 703 | 0.4+ | 0.8− | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 1999 09 06 | 699 | 0.3− | 0.2+ | 2006 09 14 | 703 | 1.0− | 0.9− | 2006 10 31 | 704 | 0.1− | 0.1− | | |
| 1999 09 06 | 699 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 31 | 704 | 0.4+ | 0.6+ | | |
| 1999 09 06 | 699 | 1.1+ | 0.4+ | 2006 09 14 | 703 | 0.6+ | 0.8− | 2006 10 31 | 704 | 1.3+ | 0.7+ | | |
| 1999 09 07 | 704 | 0.8− | 0.5− | 2006 09 19 | 704 | 0.0 | 0.4+ | 2006 10 31 | 704 | (0.3+ | 1.8+) | | |
| 1999 09 07 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.6+ | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.1+ | | |
| 1999 09 07 | 704 | 0.3− | 0.2+ | 2006 09 19 | 704 | 0.3− | 0.5− | 2006 11 08 | 644 | 0.2− | 0.3+ | | |
| 1999 09 07 | 704 | 0.7− | 0.2+ | 2006 09 19 | 704 | 0.1− | 0.8− | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 1999 09 07 | 704 | 0.1+ | 0.7− | 2006 09 22 | 704 | 0.4− | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.3+ | | |
| 1999 10 15 | 704 | 0.6− | 0.1− | 2006 09 22 | 704 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.2+ | | |
| 1999 10 15 | 704 | 0.4− | 0.5− | 2006 09 22 | 704 | 0.2+ | 0.7+ | 2006 11 13 | 644 | 0.2− | 0.1+ | | |
| 1999 10 15 | 704 | 0.2− | 0.8− | 2006 09 22 | 704 | 0.3− | 0.0 | 2006 11 19 | 703 | 0.3− | 0.5+ | | |
| 1999 10 15 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.6− | 2006 11 19 | 703 | 0.8+ | 0.4+ | | |
| 2002 06 10 | 644 | 0.1− | 0.4− | 2006 09 30 | 699 | 0.2− | 1.4+ | 2006 11 19 | 703 | 0.1+ | 1.0+ | | |
| 2002 06 10 | 644 | 0.2− | 0.4− | 2006 09 30 | 699 | 0.5− | 0.5+ | 2006 11 19 | 703 | 0.1+ | 1.1+ | | |
| 2002 06 10 | 644 | 0.2− | 0.6− | 2006 09 30 | 703 | 1.0− | 0.2− | 2006 11 21 | 704 | (0.3− | 1.8+) | | |
| 2002 07 03 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 699 | 0.3− | 0.3+ | 2006 11 21 | 704 | (1.1− | 2.5+) | | |
| 2002 07 03 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 11 21 | 704 | (2.2− | 2.6+) | | |
| 2002 07 03 | 644 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 21 | 704 | (2.1− | 1.0+) | | |

**(137297)∗ 1999 RC$_{226}$**

Discovered 1999 Sept. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.45637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28137585 | $\omega$ | 90.99879 | | +0.92471812 | +0.36843653 | |
| $a$ | 2.3064542 | $\Omega$ | 247.38732 | | −0.37726958 | +0.85365678 | |
| $e$ | 0.1428579 | $i$ | 5.94806 | | −0.05063662 | +0.36813670 | |
| $P$ | 3.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 0.6− | 0.0 | 2003 11 21 | 704 | 0.5+ | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.6+ | | |
| 1999 09 04 | 703 | 0.1+ | 0.0 | 2003 11 24 | 691 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.5− | 0.3− | | |
| 1999 09 04 | 703 | 0.8+ | 0.4+ | 2003 11 24 | 691 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.1− | 0.1− | | |
| 1999 09 04 | 703 | 0.9− | 0.1+ | 2003 11 24 | 691 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.5+ | 0.5− | | |
| 1999 09 09 | 704 | 0.1− | 1.0+ | 2003 12 01 | 291 | 0.3− | 0.1+ | 2006 09 11 | 703 | 0.1− | 1.2− | | |
| 1999 09 09 | 704 | 1.0− | 0.4+ | 2003 12 01 | 291 | 0.7− | 1.1+ | 2006 09 11 | 703 | (0.8− | 3.9−) | | |
| 1999 09 09 | 704 | 1.0+ | 1.0+ | 2003 12 01 | 291 | 0.6− | 0.1+ | 2006 09 11 | 703 | (1.1+ | 3.2−) | | |
| 1999 09 09 | 704 | 0.4+ | 0.5− | 2003 12 17 | 644 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.2− | | |
| 1999 09 14 | 703 | (3.9− | 0.4+) | 2003 12 17 | 644 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.5+ | 0.4+ | | |
| 1999 09 14 | 703 | 1.2− | 1.6+ | 2003 12 17 | 644 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1+ | | |
| 1999 09 14 | 703 | 0.2+ | 0.0 | 2003 12 19 | 704 | 0.5+ | 0.8− | 2006 09 17 | 691 | 0.0 | 0.1− | | |
| 1999 09 14 | 703 | 0.4− | 0.3+ | 2003 12 19 | 704 | 0.1− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.1+ | 0.7+ | 2003 12 19 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.3− |
| 2002 05 18 | 644 | 0.0 | 0.5+ | 2003 12 19 | 704 | (1.9+ | 0.3−) | 2006 09 19 | 699 | 0.1+ | 0.1− |
| 2002 05 18 | 644 | 0.2+ | 0.4+ | 2003 12 21 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 699 | 0.9− | 0.2− |
| 2002 06 03 | 644 | 0.3− | 0.1+ | 2003 12 21 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 699 | (0.4− | 1.6+) |
| 2002 06 03 | 644 | 0.2+ | 0.2+ | 2003 12 21 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2− |
| 2002 06 03 | 644 | 0.3− | 0.3+ | 2003 12 21 | 704 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.0 | 0.1− |
| 2002 06 08 | 704 | 0.1+ | 0.4+ | 2003 12 21 | 704 | 0.4− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2002 06 08 | 704 | 0.6− | 0.6+ | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2002 06 08 | 704 | 0.6+ | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.1− |
| 2002 06 08 | 704 | (1.2+ | 1.6+) | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.3− | 0.5− |
| 2002 06 11 | 644 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 09 26 | 703 | 1.0− | 0.0 |
| 2002 06 11 | 644 | 0.5+ | 0.6+ | 2006 08 27 | 699 | 0.1+ | 0.2− | 2006 09 26 | 703 | 1.0− | 1.4+ |
| 2002 06 12 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 1.1+ | 1.1+ |
| 2002 06 12 | 644 | 0.0 | 1.1+ | 2006 08 27 | 699 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.4+ | 0.1− |
| 2002 06 12 | 644 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.7− | 0.1+ | 2006 09 29 | 699 | 1.1+ | 0.3+ |
| 2002 06 25 | 644 | 0.0 | 0.3+ | 2006 08 29 | 704 | 1.1+ | 0.1− | 2006 09 29 | 699 | (1.2− | 2.0−) |
| 2002 06 25 | 644 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 2002 06 25 | 644 | 0.1+ | 0.4− | 2006 08 29 | 703 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.7− | 1.1− |
| 2003 11 21 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 1.3− | 0.3− |
| 2003 11 21 | 704 | 0.3+ | 1.2+ | 2006 08 29 | 703 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2003 11 21 | 704 | 0.3+ | 0.2− | 2006 08 29 | 704 | 0.3+ | 0.4− | | | | |
| 2003 11 21 | 704 | 0.7+ | 0.0 | 2006 08 30 | 699 | 0.4− | 0.3− | | | | |

**(137298)∗ 1999 RF$_{226}$ = 1999 TK$_{295}$**

Discovered 1999 Sept. 4 by the Catalina Sky Survey.

Id. M. E. Sansaturio (d, *MPO* 6441)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.60575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28533009 | $\omega$ | 153.61029 | | +0.72716563 | −0.67987694 | |
| $a$ | 2.2850954 | $\Omega$ | 249.56155 | | +0.61056512 | +0.70372002 | |
| $e$ | 0.0981367 | $i$ | 5.80986 | | +0.31375210 | +0.20626553 | |
| $P$ | 3.45 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 29 | 691 | 0.5+ | 0.4− | 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 09 27 | 683 | 0.6+ | 1.1− |
| 1998 05 29 | 691 | 0.3+ | 0.1− | 2005 05 11 | 691 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.6− | 0.7− |
| 1998 05 29 | 691 | 0.2+ | 0.5+ | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 09 27 | 683 | 0.5− | 0.5+ |
| 1999 09 04 | 703 | 0.2− | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.1− |
| 1999 09 04 | 703 | 0.3+ | 0.2+ | 2005 05 19 | 644 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.7− | 0.0 |
| 1999 09 04 | 703 | 0.4− | 0.5+ | 2006 08 29 | 699 | 1.4+ | 0.8+ | 2006 09 27 | 683 | 1.0− | 1.0+ |
| 1999 09 04 | 703 | 0.3+ | 0.5+ | 2006 08 29 | 699 | 0.3+ | 1.0+ | 2006 09 27 | 703 | 0.5− | 0.6− |
| 1999 09 09 | 704 | 0.1− | 0.1− | 2006 08 29 | 699 | 0.5+ | 0.2− | 2006 09 27 | 703 | 0.1− | 0.2− |
| 1999 09 09 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 699 | 0.7+ | 0.7+ | 2006 09 27 | 703 | 0.2− | 0.3− |
| 1999 09 09 | 704 | 0.2− | 0.7+ | 2006 08 31 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 1999 09 09 | 704 | 0.8+ | 0.0 | 2006 08 31 | 704 | 1.1− | 0.0 | 2006 09 27 | 703 | 0.2− | 0.2− |
| 1999 09 09 | 704 | 0.3− | 0.4− | 2006 08 31 | 704 | 0.2− | 0.0 | 2006 09 28 | 683 | 0.2− | 0.7− |
| 1999 10 01 | 703 | 1.2− | 0.3+ | 2006 08 31 | 704 | (1.6− | 0.2−) | 2006 09 28 | 683 | 0.8− | 0.6+ |
| 1999 10 01 | 703 | 0.5− | 0.0 | 2006 08 31 | 704 | 0.0 | 0.7− | 2006 09 28 | 683 | 0.7− | 0.4+ |
| 1999 10 01 | 703 | 0.2− | 0.6− | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 03 | 704 | 0.2+ | 0.1− |
| 1999 10 01 | 703 | 1.0− | 0.8+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 03 | 704 | 0.2+ | 0.1− |
| 1999 10 09 | 704 | 0.2− | 0.8− | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.5+ |
| 1999 10 09 | 704 | 0.2+ | 1.3− | 2006 09 16 | 703 | 0.3+ | 0.0 | 2006 10 03 | 704 | 0.1− | 0.7+ |
| 1999 10 09 | 704 | 0.9+ | 0.6− | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 1999 10 09 | 704 | 0.5− | 0.4− | 2006 09 16 | 703 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.6+ | 0.9− |
| 1999 10 09 | 704 | (0.7− | 2.0−) | 2006 09 16 | 703 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.2− |
| 2001 03 19 | 608 | 0.3− | 0.4− | 2006 09 19 | 699 | 0.9+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2001 03 19 | 608 | 0.6− | 0.1− | 2006 09 19 | 699 | 1.0+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 03 19 | 608 | 0.6− | 0.7− | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2003 12 19 | 704 | 0.4− | 0.2+ | 2006 09 26 | 683 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2003 12 19 | 704 | 0.3− | 0.1+ | 2006 09 26 | 683 | 0.5− | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 12 19 | 704 | 0.4− | 0.0 | 2006 09 26 | 683 | 0.5− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2003 12 23 | 704 | 0.7+ | 0.5+ | 2006 09 27 | 699 | 0.2+ | 0.7− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 699 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2003 12 23 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 699 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2005 05 11 | 691 | 0.6− | 0.2+ | 2006 09 27 | 699 | 0.2+ | 0.1− | | | | |

**(137299)∗ 1999 RK$_{229}$ = 2004 AN$_{7}$**

Discovered 1999 Sept. 7 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 55894)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.93848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29635706 | $\omega$ | 271.87204 | | +0.88647434 | −0.45055951 | |
| $a$ | 2.2280548 | $\Omega$ | 114.92050 | | +0.45724472 | +0.81755774 | |
| $e$ | 0.1776181 | $i$ | 6.68919 | | +0.07134783 | +0.35860210 | |
| $P$ | 3.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 03 | 691 | 0.1− | 1.5+ | 2004 01 19 | 703 | 0.9+ | 0.4− | 2006 09 18 | 703 | 0.2+ | 0.5+ |
| 1996 12 03 | 691 | 0.4− | 0.7+ | 2004 01 22 | 704 | 0.7− | 1.0+ | 2006 09 18 | 703 | 0.0 | 0.1+ |
| 1996 12 03 | 691 | 0.8− | 1.1+ | 2004 01 22 | 704 | 0.2− | 1.2+ | 2006 09 18 | 703 | 0.2− | 0.2− |
| 1999 09 07 | 699 | 0.6− | 0.3+ | 2004 01 22 | 704 | 0.9− | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.1+ |
| 1999 09 07 | 699 | (1.1+ | 2.1−) | 2004 01 22 | 704 | 0.3− | 0.9+ | 2006 10 01 | 703 | 0.3+ | 0.4− |
| 1999 09 07 | 699 | 0.3+ | 0.1− | 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.2+ | 0.5− |
| 1999 09 08 | 703 | 0.9+ | 0.5+ | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.8+ | 0.7− |
| 1999 09 08 | 703 | 0.0 | 1.1+ | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.2− | 0.6− |
| 1999 09 08 | 703 | 1.2− | 0.5+ | 2004 01 30 | 704 | 0.6− | 0.1− | 2006 10 03 | 704 | 0.3+ | 0.4− |
| 1999 09 08 | 703 | 0.9+ | 1.0+ | 2004 01 30 | 704 | 0.7+ | 0.9+ | 2006 10 03 | 704 | 0.8+ | 0.1− |
| 1999 09 11 | 704 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 10 03 | 704 | 0.7+ | 1.4+ |
| 1999 09 11 | 704 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.4+ | 1.1+ |
| 1999 09 11 | 704 | 0.0 | 0.6+ | 2004 02 10 | 703 | (1.8+ | 0.7+) | 2006 11 19 | 704 | 0.1− | 1.0− |
| 1999 09 11 | 704 | 0.5+ | 1.4+ | 2004 02 10 | 703 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 1.0− | 0.6+ |
| 2003 10 24 | 691 | 0.6+ | 0.1− | 2004 02 10 | 703 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2003 10 24 | 691 | 0.1− | 0.2+ | 2004 02 10 | 703 | 0.6+ | 0.8+ | 2006 11 25 | 704 | 0.6− | 0.1− |
| 2003 10 24 | 691 | 0.1− | 0.3− | 2004 02 12 | 691 | 0.3+ | 0.0 | 2006 11 25 | 704 | 0.4− | 0.2+ |
| 2003 12 21 | 704 | 0.6+ | 1.4+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 704 | 0.4− | 0.5− |
| 2003 12 21 | 704 | 0.6+ | 0.0 | 2004 02 12 | 691 | 0.3+ | 0.0 | 2006 11 25 | 704 | 0.0 | 1.3+ |
| 2003 12 21 | 704 | 1.3− | 0.4− | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 11 25 | 704 | 0.1− | 0.4− |
| 2004 01 13 | 699 | 0.8− | 0.1− | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 11 25 | 703 | 1.2+ | 0.4+ |
| 2004 01 13 | 699 | 0.5− | 0.9+ | 2005 05 10 | 691 | 0.4+ | 0.7+ | 2006 11 25 | 703 | 0.4+ | 0.8+ |
| 2004 01 13 | 699 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 11 25 | 703 | 0.1+ | 1.2− |
| 2004 01 13 | 699 | 0.7− | 0.5− | 2005 05 10 | 691 | 0.2+ | 0.7+ | 2006 11 25 | 703 | 2.8− | 1.8− |
| 2004 01 17 | 644 | 0.2+ | 0.4+ | 2005 06 08 | 691 | 0.2− | 0.7+ | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2004 01 17 | 644 | 0.4+ | 0.2+ | 2005 06 08 | 691 | 0.2+ | 0.7+ | 2006 11 28 | 704 | 0.3+ | 0.3+ |
| 2004 01 17 | 644 | 0.4+ | 0.7+ | 2005 06 08 | 691 | 0.0 | 0.6+ | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 2004 01 19 | 703 | 1.3+ | 0.4+ | 2005 06 12 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2004 01 19 | 703 | 0.4− | 0.6− | 2005 06 12 | 691 | 0.0 | 0.5+ | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2004 01 19 | 703 | (1.2+ | 1.9−) | 2005 06 12 | 691 | 0.1+ | 0.8+ | | | | |

**(137300)∗ 1999 RC$_{233}$ = 2003 YL$_{90}$**

Discovered 1999 Sept. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 55895)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.66978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28691287 | $\omega$ | 163.85630 | | +0.73815374 | −0.67105198 | |
| $a$ | 2.2766837 | $\Omega$ | 238.50244 | | +0.60961091 | +0.70754199 | |
| $e$ | 0.1541454 | $i$ | 4.66953 | | +0.28896989 | +0.22152556 | |
| $P$ | 3.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 699 | 0.4+ | 0.6− | 2004 03 18 | 291 | 1.1+ | 0.5+ | 2006 09 25 | 704 | 0.7+ | 1.3+ |
| 1999 09 08 | 699 | 0.1+ | 0.2+ | 2004 03 18 | 291 | 0.5+ | 0.5+ | 2006 09 25 | 704 | 0.3− | 1.0+ |
| 1999 09 08 | 699 | 0.1− | 0.1− | 2004 03 18 | 291 | 1.0+ | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.7+ |
| 1999 09 09 | 704 | 1.5− | 0.3+ | 2005 05 04 | 644 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.0 | 0.2+ |
| 1999 09 09 | 704 | 0.1− | 0.8+ | 2005 05 04 | 644 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.4+ |
| 1999 09 09 | 704 | 0.3+ | 0.1− | 2005 05 04 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 1999 09 09 | 704 | 1.6+ | 1.5− | 2005 05 10 | G96 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.7+ |
| 1999 09 14 | 704 | 0.7− | 0.4− | 2005 05 10 | G96 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.5− | 0.1+ |
| 1999 09 14 | 704 | 0.2− | 0.5− | 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 09 30 | 683 | 0.9− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.1+ | 0.7+ | 2005 05 10 | G96 | 0.2− | 0.4+ | 2006 09 30 | 683 | 0.2− | 1.2− |
| 1999 09 14 | 704 | 0.3+ | 0.7+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.0 |
| 1999 09 14 | 704 | 0.2+ | 0.2+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.4+ |
| 2003 10 24 | 704 | (2.3− | 0.8+) | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 683 | 0.3− | 0.1− |
| 2003 10 24 | 704 | 0.2+ | 0.6+ | 2005 05 12 | G96 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2003 10 24 | 704 | (2.2− | 0.2+) | 2005 05 12 | G96 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2003 10 24 | 704 | 0.4− | 0.3+ | 2005 05 12 | G96 | 0.3− | 0.2+ | 2006 10 03 | 704 | 0.7− | 0.8+ |
| 2003 11 02 | 704 | 1.1+ | 0.8+ | 2005 05 12 | G96 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.2+ | 1.1− |
| 2003 11 02 | 704 | 0.3+ | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.3− | 0.8− |
| 2003 11 02 | 704 | 0.1− | 0.3− | 2005 05 12 | G96 | 0.4+ | 0.2+ | 2006 10 03 | 704 | 0.2− | 1.4− |
| 2003 11 02 | 704 | 0.5− | 0.3− | 2005 05 12 | G96 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.5+ | 0.5− |
| 2003 11 18 | 699 | 0.5+ | 0.5+ | 2005 05 12 | G96 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2003 11 18 | 699 | (1.7+ | 0.5+) | 2005 05 16 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2003 11 18 | 699 | 0.2+ | 0.0 | 2005 05 16 | 691 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2003 11 18 | 699 | 0.5− | 0.8− | 2005 05 16 | 691 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2003 12 19 | 608 | 0.5− | 0.9+ | 2005 06 14 | G96 | 0.5− | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2003 12 19 | 608 | 0.1+ | 0.1+ | 2005 06 14 | G96 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2003 12 19 | 608 | 0.3+ | 0.3+ | 2005 06 14 | G96 | 0.2+ | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2003 12 21 | 645 | 0.3− | 0.2− | 2005 06 14 | G96 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.8− | 0.4+ |
| 2003 12 21 | 645 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | (2.1− | 0.6+) | 2006 09 14 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2003 12 22 | 704 | 0.7− | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 22 | 704 | 0.7− | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 1.4− | 0.5+ | 2006 09 16 | 703 | 1.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 1.0− | 0.2+ | 2006 09 16 | 703 | 0.0 | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 01 23 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 703 | 1.0+ | 0.1− | 2006 10 29 | 704 | 0.1+ | 0.5− |
| 2004 01 23 | 704 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.2− | 0.7+ | 2006 10 29 | 704 | 0.6− | 0.0 |
| 2004 01 23 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 704 | 0.3− | 1.0+ | 2006 10 29 | 704 | (2.3− | 0.9+) |
| 2004 01 23 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 1.0+ | 2006 10 29 | 704 | 0.6− | 0.0 |
| 2004 01 30 | 704 | 0.1− | 1.3+ | 2006 09 18 | 704 | 0.0 | 0.7+ | 2006 10 29 | 704 | 0.7− | 0.9− |
| 2004 01 30 | 704 | 0.0 | 0.6+ | 2006 09 18 | 704 | 0.7+ | 1.0+ | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 1.5− | 1.4+ | 2006 09 19 | 699 | 0.3− | 0.6+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2004 01 30 | 704 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2004 01 30 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.2− | 0.5− |
| 2004 03 17 | 291 | 1.0+ | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 11 22 | 704 | 0.5− | 1.1+ |
| 2004 03 17 | 291 | 1.0+ | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2004 03 17 | 291 | 1.3+ | 0.4+ | 2006 09 25 | 704 | (0.4+ | 1.5+) | 2006 11 22 | 704 | 0.1− | 0.8+ |

**(137301)∗ 1999 RP$_{239}$**

Discovered 1999 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.61934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28492663 | $\omega$ | 17.79208 | | +0.40810601 | | +0.89786796 |
| $a$ | 2.2872520 | $\Omega$ | 276.55928 | | −0.85651175 | | +0.31394508 |
| $e$ | 0.1735206 | $i$ | 9.57060 | | −0.31597012 | | +0.30866102 |
| $P$ | 3.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | (0.6+ | 2.4+) | 2003 12 18 | 704 | (0.2+ | 2.0−) | 2006 09 17 | 703 | 0.3− | 0.5+ |
| 1999 09 08 | 704 | (1.1+ | 2.3+) | 2003 12 18 | 704 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.7− | 0.2− |
| 1999 09 08 | 704 | 1.0− | 0.4+ | 2003 12 18 | 704 | 0.6− | 0.9+ | 2006 09 17 | 703 | 0.5+ | 1.3− |
| 1999 09 08 | 704 | 0.5− | 0.5+ | 2003 12 18 | 704 | 0.7+ | 0.4− | 2006 09 17 | 703 | 0.1+ | 0.1+ |
| 1999 09 13 | 703 | 0.2+ | 1.1+ | 2003 12 18 | 704 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 09 13 | 703 | 0.6+ | 0.4− | 2003 12 19 | 704 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1999 09 13 | 703 | 0.7+ | 0.1− | 2003 12 19 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1999 09 13 | 703 | 0.7− | 0.5− | 2003 12 19 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 1999 10 03 | 704 | 0.4− | 0.1+ | 2003 12 19 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.9− | 0.4+ |
| 1999 10 03 | 704 | 0.4+ | 0.7+ | 2003 12 22 | 704 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.0 | 0.3− |
| 1999 10 03 | 703 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.2− | 0.8+ | 2006 10 19 | 703 | 0.1− | 0.0 |
| 1999 10 03 | 704 | 0.6+ | 0.2+ | 2003 12 22 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 1999 10 03 | 703 | 0.1− | 0.1+ | 2005 04 03 | 704 | 0.6+ | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 1999 10 03 | 703 | 0.2+ | 0.7+ | 2005 04 03 | 704 | (1.8+ | 0.5+) | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 1999 10 03 | 704 | 0.9− | 0.7+ | 2005 04 03 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.7− |
| 1999 10 03 | 703 | 1.0− | 0.5+ | 2005 04 07 | 644 | 0.5+ | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 1999 10 12 | 704 | 0.6+ | 0.1+ | 2005 04 07 | 644 | 0.9+ | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.0 |
| 1999 10 12 | 704 | 0.1+ | 1.3− | 2005 04 07 | 644 | 0.7+ | 0.6+ | 2006 10 27 | 703 | 0.8+ | 0.8− |
| 1999 10 12 | 704 | (2.2− | 0.4−) | 2005 04 13 | E12 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.7+ |
| 1999 11 04 | 704 | 0.4+ | 0.6− | 2005 04 13 | E12 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.8+ |
| 1999 11 04 | 704 | 0.9+ | 1.5− | 2005 04 13 | E12 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.6+ | 1.0+ |
| 1999 11 04 | 704 | 0.8+ | 0.1+ | 2005 04 13 | E12 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.0 | 1.4+ |
| 2002 07 05 | 704 | 0.5− | 0.4+ | 2005 04 15 | 699 | 0.2− | 0.7− | 2006 11 23 | 703 | 0.1+ | 0.1+ |
| 2002 07 05 | 704 | 0.3− | 0.7+ | 2005 04 15 | 699 | 0.0 | 0.8+ | 2006 11 23 | 703 | 0.3− | 1.2+ |
| 2002 07 05 | 704 | 0.1+ | 0.5+ | 2005 04 15 | 699 | 0.6− | 0.9+ | 2006 11 23 | 703 | 0.0 | 0.6− |
| 2002 07 05 | 704 | 0.3+ | 0.7+ | 2005 04 15 | 699 | (1.9− | 1.7+) | 2006 11 23 | 703 | 0.2+ | 0.3+ |

**(137302)∗ 1999 RB$_{254}$ = 2005 EU$_{243}$**

Discovered 1999 Sept. 4 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 74625)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.14348 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28356764 | $\omega$ | 177.79415 | | +0.96549257 | | +0.25941887 |
| $a$ | 2.2945540 | $\Omega$ | 167.10024 | | −0.24048569 | | +0.92188509 |
| $e$ | 0.1847896 | $i$ | 5.89629 | | −0.09995369 | | +0.28780155 |
| $P$ | 3.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.4+ | 0.4− | 2006 08 18 | 699 | 0.6− | 0.2− | 2006 09 20 | 704 | 0.4− | 0.1+ |
| 1999 08 12 | 699 | 0.6+ | 0.3+ | 2006 08 18 | 699 | 0.4− | 0.9− | 2006 09 20 | 704 | 0.5− | 0.1− |
| 1999 08 12 | 699 | 0.7+ | 0.6+ | 2006 08 18 | 699 | 0.1+ | 0.7− | 2006 09 20 | 704 | 0.3− | 0.1− |
| 1999 09 04 | 703 | 0.6+ | 0.4− | 2006 08 27 | 691 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.9− | 0.6+ |
| 1999 09 04 | 703 | 0.5+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.5+ |
| 1999 09 04 | 703 | 1.9− | 0.5− | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.9+ |
| 1999 09 04 | 703 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.4+ | 1.2− | 2006 09 25 | 699 | 0.6− | 0.0 |
| 1999 09 09 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.3+ | 0.7+ |
| 1999 09 09 | 704 | 0.6− | 0.9+ | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 1999 09 09 | 704 | 0.4− | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.5− | 2006 09 25 | G96 | 0.3− | 0.4− |
| 1999 09 09 | 704 | 0.3− | 0.5+ | 2006 08 28 | 699 | 0.4+ | 1.0+ | 2006 09 25 | G96 | 0.4− | 0.3− |
| 2003 12 01 | 704 | 0.8+ | 0.1+ | 2006 08 28 | 699 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2003 12 01 | 704 | 0.3− | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2003 12 01 | 704 | 0.2+ | 1.0+ | 2006 08 28 | 699 | 0.6+ | 0.4+ | 2006 09 27 | 704 | 1.1− | 1.1+ |
| 2003 12 01 | 704 | 0.4− | 0.8+ | 2006 08 29 | 704 | 0.9+ | 0.1+ | 2006 09 27 | 704 | 0.8− | 0.8+ |
| 2005 03 11 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.0 |
| 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.3+ |
| 2005 03 11 | 691 | 0.8+ | 0.1+ | 2006 08 29 | 704 | 0.1+ | 1.0+ | 2006 10 17 | G96 | 0.2− | 0.7− |
| 2005 03 16 | 691 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.5+ | 1.0+ | 2006 10 17 | G96 | 0.8+ | 0.3− |
| 2005 03 16 | 691 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 1.0+ | 0.8− | 2006 10 17 | G96 | 0.1+ | 0.7− |
| 2005 03 16 | 691 | 0.4− | 0.3+ | 2006 08 30 | 704 | 0.4− | 0.7+ | 2006 10 17 | G96 | 0.0 | 1.1− |
| 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 08 30 | 704 | 0.4+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2005 04 11 | G96 | 0.5− | 0.2− | 2006 08 30 | 704 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2005 04 11 | G96 | 0.3+ | 0.8+ | 2006 09 17 | 704 | 0.6− | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.6− |
| 2005 04 11 | G96 | 0.5− | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2006 08 15 | 958 | 0.5− | 0.4+ | 2006 09 17 | 704 | 0.7− | 0.6+ | 2006 11 11 | G96 | 0.4− | 0.1+ |
| 2006 08 15 | 958 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2006 08 15 | 958 | 0.4+ | 0.1+ | 2006 09 17 | 704 | 0.3− | 1.2+ | 2006 11 11 | G96 | 0.0 | 0.7− |
| 2006 08 16 | 644 | 0.1+ | 0.4− | 2006 09 18 | 699 | (0.9− | 1.6+) | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2006 08 16 | 644 | 0.0 | 0.5− | 2006 09 18 | 699 | (1.8+ | 0.7+) | 2006 11 27 | G96 | 0.5− | 0.2+ |
| 2006 08 16 | 644 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.7+ | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2006 08 18 | 699 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.3+ | 1.1+ | 2006 11 27 | G96 | 0.3− | 0.0 |

**(137303)∗ 1999 SX$_{9}$**

Discovered 1999 Sept. 23 by M. M. M. Santangelo at Monte Agliale.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.39097 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29123135 | $\omega$ | 326.74211 | | +0.99865206 | | −0.01092465 |
| $a$ | 2.2541214 | $\Omega$ | 33.99439 | | +0.03331232 | | +0.88459420 |
| $e$ | 0.1539683 | $i$ | 5.20699 | | −0.03980400 | | +0.46623359 |
| $P$ | 3.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.3+ | 0.1− | 1999 10 11 | 159 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.3− | 1.0+ |
| 1999 09 14 | 704 | 0.3− | 0.3− | 1999 10 11 | 159 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.2+ | 0.5+ | 1999 10 11 | 159 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.7+ |
| 1999 09 23 | 159 | 0.1− | 1.4+ | 1999 10 11 | 159 | 0.7+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.3− |
| 1999 09 23 | 159 | 0.2− | 0.4+ | 1999 10 15 | 704 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 1999 09 23 | 159 | 0.3− | 0.5+ | 1999 10 15 | 704 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 1999 09 23 | 159 | 0.2+ | 0.5+ | 1999 10 15 | 704 | 0.2+ | 0.6− | 2006 11 15 | 704 | 0.3+ | 0.5− |
| 1999 09 23 | 159 | 0.8+ | 0.5+ | 1999 10 15 | 704 | 1.2− | 1.2− | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 1999 10 01 | 703 | 0.4− | 0.2+ | 1999 10 15 | 704 | 0.0 | 0.2+ | 2006 11 15 | 704 | 1.2+ | 0.2− |
| 1999 10 01 | 703 | 0.3+ | 0.6+ | 1999 11 12 | 159 | 0.8− | 1.0+ | 2006 11 15 | 704 | 0.5− | 1.5− |
| 1999 10 01 | 703 | 0.0 | 0.9+ | 1999 11 12 | 159 | 1.6− | 0.6+ | 2006 11 16 | 704 | 0.9+ | 0.4+ |
| 1999 10 01 | 703 | 0.1− | 0.5+ | 1999 11 12 | 159 | (2.6− | 0.2+) | 2006 11 16 | 704 | 0.2+ | 0.8+ |
| 1999 10 02 | 159 | 0.2− | 0.6+ | 1999 11 26 | 159 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.0 | 0.8− |
| 1999 10 02 | 159 | 0.1+ | 0.5+ | 1999 11 26 | 159 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.5+ | 0.7+ |
| 1999 10 02 | 159 | 0.0 | 0.6+ | 1999 11 26 | 159 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.4+ | 0.5− |
| 1999 10 02 | 159 | 0.1+ | 0.6+ | 1999 11 26 | 159 | 1.1+ | 1.2+ | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 1999 10 02 | 159 | 0.8− | 0.8+ | 2003 12 28 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 1999 10 02 | 704 | 0.5+ | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.5+ | 0.3+ |
| 1999 10 02 | 704 | 1.1+ | 0.6− | 2003 12 28 | 704 | 0.0 | 1.2+ | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 1999 10 02 | 704 | 1.2+ | 0.6− | 2005 04 11 | G96 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.4− |
| 1999 10 02 | 704 | 1.0+ | 1.0+ | 2005 04 11 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.3− |
| 1999 10 02 | 704 | 0.6+ | 0.1+ | 2005 04 11 | G96 | 0.1− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 1999 10 06 | 159 | 1.5− | 0.7− | 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 1999 10 06 | 159 | 0.1+ | 0.7− | 2005 05 16 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 1999 10 06 | 159 | 0.8− | 0.3− | 2005 05 16 | 691 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 1999 10 06 | 159 | 0.1+ | 0.8− | 2005 05 16 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 1.1− | 0.9+ |
| 1999 10 06 | 159 | 0.9− | 0.5− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.5− | 1.0+ |
| 1999 10 06 | 159 | 0.8− | 0.5− | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.8− | 0.4+ |
| 1999 10 07 | 704 | 0.3+ | 1.1− | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8− | 0.6+ |
| 1999 10 07 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.2− | 0.2− |
| 1999 10 07 | 704 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.7− | 0.3+ |
| 1999 10 07 | 704 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.9− | 0.6− | 2006 11 27 | 704 | 0.8+ | 0.1− |
| 1999 10 07 | 704 | 0.2+ | 0.4+ | 2006 10 20 | G96 | 0.6− | 0.9− | 2006 11 27 | 704 | 1.2+ | 0.1+ |
| 1999 10 09 | 704 | 0.8− | 0.3− | 2006 10 20 | G96 | 0.0 | 0.5− | 2006 11 28 | 704 | 1.7− | 0.3− |
| 1999 10 09 | 704 | 0.3+ | 1.2− | 2006 11 01 | G96 | 0.3− | 0.5− | 2006 11 28 | 704 | 2.4− | 0.0 |
| 1999 10 09 | 704 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.2− |
| 1999 10 09 | 704 | 0.4+ | 0.5+ | 2006 11 01 | G96 | 0.5− | 0.6− | 2006 11 28 | 704 | 0.1− | 2.6+ |
| 1999 10 09 | 704 | 1.8− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.8+ | | | | |

**(137304)∗ 1999 SK$_{12}$**

Discovered 1999 Sept. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 41.75048 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.29104216 | $\omega$ | 348.44387 | | +0.76102552 | +0.64750750 |
| $a$ | 2.2550981 | $\Omega$ | 331.08198 | | −0.58846140 | +0.66329841 |
| $e$ | 0.2801479 | $i$ | 4.70644 | | −0.27304458 | +0.37519229 |
| $P$ | 3.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.5− | 0.4− | 1999 10 15 | 704 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 1999 07 16 | 704 | 0.9+ | 0.5− | 1999 11 02 | 703 | 0.8− | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 1999 07 16 | 704 | (1.1+ | 2.4−) | 1999 11 02 | 703 | 1.2+ | 1.1− | 2006 10 20 | A50 | 0.3+ | 0.4+ |
| 1999 08 22 | 699 | 0.8+ | 0.1+ | 1999 11 02 | 703 | 0.4+ | 0.0 | 2006 10 20 | A50 | 0.1− | 0.1+ |
| 1999 08 22 | 699 | 1.0+ | 0.6+ | 1999 11 02 | 703 | 0.8− | 1.1+ | 2006 10 20 | 704 | 0.7+ | 0.1− |
| 1999 08 22 | 699 | 0.6+ | 0.5+ | 1999 11 14 | 704 | 0.4+ | 0.7− | 2006 10 20 | 704 | 0.7+ | 0.9− |
| 1999 09 07 | 704 | 0.3− | 0.1− | 1999 11 14 | 704 | 0.4− | 0.5− | 2006 10 20 | 704 | 0.4+ | 0.8− |
| 1999 09 07 | 704 | 0.2− | 0.5+ | 1999 11 14 | 704 | 0.1− | 0.5− | 2006 10 20 | 704 | 0.1− | 0.8+ |
| 1999 09 07 | 704 | 0.2− | 0.5+ | 1999 11 14 | 704 | 0.9− | 1.0− | 2006 10 20 | 704 | 0.1− | 0.6− |
| 1999 09 07 | 704 | 0.2− | 0.2+ | 2000 11 24 | I03 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.3− |
| 1999 09 07 | 704 | 0.2− | 0.8+ | 2000 11 24 | I03 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.0 |
| 1999 09 08 | 704 | 0.2− | 0.2+ | 2000 11 24 | I03 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.5− |
| 1999 09 08 | 704 | 0.8− | 0.6+ | 2000 11 25 | I03 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.2+ |
| 1999 09 08 | 704 | 0.4− | 0.0 | 2000 11 25 | I03 | 0.2+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1999 09 08 | 704 | 0.6− | 0.3+ | 2000 11 25 | I03 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 1999 09 09 | 704 | 0.3− | 0.2+ | 2001 01 02 | 691 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1999 09 09 | 704 | 0.0 | 0.6+ | 2001 01 02 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1999 09 09 | 704 | 0.4− | 0.0 | 2001 01 02 | 691 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 1999 09 09 | 704 | 0.7− | 0.2+ | 2002 05 01 | 644 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 1999 09 09 | 704 | 0.1+ | 0.1− | 2002 05 01 | 644 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 1999 09 09 | 704 | 0.1+ | 0.1+ | 2002 05 01 | 644 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.8− | 1.2+ |
| 1999 09 09 | 704 | 0.3+ | 0.1+ | 2002 05 10 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.0 |
| 1999 09 09 | 704 | 0.3+ | 0.7+ | 2002 05 10 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.5− |
| 1999 09 09 | 704 | 0.6+ | 0.9+ | 2002 05 10 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.1− |
| 1999 09 09 | 704 | (1.6+ | 2.2+) | 2002 05 11 | 704 | 0.8+ | 0.5+ | 2006 11 16 | 704 | 1.0− | 1.3− |
| 1999 09 14 | 704 | 0.6− | 1.0− | 2002 05 11 | 704 | 0.6+ | 0.8+ | 2006 11 16 | 704 | (1.6− | 0.6+) |
| 1999 09 14 | 704 | 0.2− | 0.2+ | 2002 05 11 | 704 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.8+ |
| 1999 09 14 | 704 | 0.4− | 0.3+ | 2002 05 17 | 704 | 0.4+ | 0.9+ | 2006 11 16 | 704 | 0.0 | 1.2+ |
| 1999 09 14 | 704 | 0.6− | 0.1− | 2002 05 17 | 704 | 0.8− | 0.1+ | 2006 11 22 | 703 | 0.6− | 0.1− |
| 1999 09 14 | 704 | 1.0− | 0.1− | 2002 05 17 | 704 | 0.1+ | 0.7+ | 2006 11 22 | 703 | 0.0 | 0.1+ |
| 1999 09 27 | 699 | 0.5− | 0.8+ | 2003 11 24 | 695 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.2+ |
| 1999 09 27 | 699 | 0.1− | 1.0+ | 2003 11 24 | 695 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.3+ |
| 1999 09 27 | 699 | (0.3+ | 3.4+) | 2003 12 28 | 704 | 1.0+ | 1.0+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 1999 10 03 | 699 | 0.7+ | 0.4+ | 2003 12 28 | 704 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.1− |
| 1999 10 03 | 699 | 0.2+ | 1.0+ | 2003 12 28 | 704 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 1999 10 03 | 699 | 0.1− | 0.5+ | 2006 10 18 | H06 | 1.2+ | 0.6− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.3− | 0.1− | 2006 10 18 | H06 | 0.7+ | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 1999 10 15 | 704 | 0.2+ | 0.5− | 2006 10 18 | H06 | 0.3− | 0.4− | 2006 11 25 | G96 | 0.2− | 0.3− |
| 1999 10 15 | 704 | 0.5+ | 0.5− | 2006 10 19 | 703 | 0.6− | 0.4− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 1999 10 15 | 704 | 0.7+ | 0.9− | 2006 10 19 | 703 | 0.5+ | 0.1+ | | | | |

**(137305)∗ 1999 SO$_{14}$ = 2003 YJ$_{178}$ = 2006 OK$_{12}$**

Discovered 1999 Sept. 30 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 103152)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 347.86638 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27157446 | $\omega$ | 183.91962 | | +0.95704252 | +0.28979117 |
| $a$ | 2.3616204 | $\Omega$ | 159.22729 | | −0.26528629 | +0.88842468 |
| $e$ | 0.1985162 | $i$ | 1.53866 | | −0.11701625 | +0.35598126 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 703 | 0.2+ | 0.1+ | 2003 12 29 | 691 | 0.0 | 0.1− | 2006 07 23 | G96 | 0.3− | 0.3+ |
| 1999 09 30 | 703 | 0.1− | 0.1− | 2003 12 29 | 691 | 0.2− | 0.1− | 2006 07 25 | 644 | 0.2− | 0.0 |
| 1999 09 30 | 703 | 0.6+ | 0.5+ | 2003 12 29 | 691 | 0.2− | 0.0 | 2006 07 25 | 644 | 0.0 | 0.0 |
| 1999 09 30 | 703 | 0.1+ | 0.3+ | 2005 03 08 | G96 | 0.2− | 0.3− | 2006 07 25 | 644 | 0.2− | 0.0 |
| 1999 10 02 | 704 | 0.0 | 0.1+ | 2005 03 08 | G96 | 0.3+ | 0.6− | 2006 08 13 | 644 | 0.1+ | 0.2− |
| 1999 10 02 | 704 | 0.4− | 1.0− | 2005 03 08 | G96 | 0.1− | 0.1− | 2006 08 13 | 644 | 0.3+ | 0.1− |
| 1999 10 02 | 704 | 1.4+ | 0.7+ | 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.3+ | 0.2− |
| 1999 10 02 | 704 | 0.0 | 0.8+ | 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 08 14 | 644 | 0.3+ | 0.1− |
| 1999 10 07 | 703 | (0.1− | 2.1+) | 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.1− |
| 1999 10 07 | 703 | 0.5− | 0.1− | 2005 04 04 | G96 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 1999 10 07 | 703 | 0.2− | 0.1+ | 2005 04 04 | G96 | 0.2+ | 0.2+ | 2006 08 15 | 644 | 0.3+ | 0.1− |
| 1999 10 07 | 703 | 0.5− | 0.3− | 2006 06 04 | G96 | 0.0 | 0.4+ | 2006 08 15 | 644 | 0.3+ | 0.1− |
| 1999 10 09 | 704 | 0.4− | 0.1− | 2006 06 04 | G96 | 0.2− | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.2− |
| 1999 10 09 | 704 | 0.1− | 0.5− | 2006 06 04 | G96 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.3+ | 0.1− |
| 1999 10 09 | 704 | 0.5− | 0.0 | 2006 06 04 | G96 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.3+ | 0.1− |
| 1999 10 09 | 704 | 0.2− | 0.3+ | 2006 06 22 | 644 | 0.3− | 0.3+ | 2006 08 20 | 644 | 0.3+ | 0.2− |
| 1999 10 09 | 704 | 0.2+ | 0.2− | 2006 06 22 | 644 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2003 12 23 | 704 | 0.2+ | 0.6+ | 2006 06 22 | 644 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.5− | 0.5− |
| 2003 12 23 | 704 | 0.8+ | 0.0 | 2006 07 23 | G96 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.7+ | 0.2+ |
| 2003 12 23 | 704 | 0.6− | 1.2+ | 2006 07 23 | G96 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.5+ | 0.7− |
| 2003 12 23 | 704 | 1.0+ | 0.5− | 2006 07 23 | G96 | 0.3− | 0.1+ | | | | |

**(137306)∗ 1999 SU$_{16}$**

Discovered 1999 Sept. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 1.11071 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.28271857 | $\omega$ | 135.84922 | | +0.99355650 | −0.07453889 |
| $a$ | 2.2991457 | $\Omega$ | 228.62641 | | +0.04281503 | +0.94433117 |
| $e$ | 0.1511829 | $i$ | 6.53295 | | +0.10493978 | +0.32044124 |
| $P$ | 3.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.9+ | 0.3− | 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 1999 09 08 | 704 | 0.9+ | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.4− | 0.1− |
| 1999 09 08 | 704 | 0.2+ | 0.7− | 2005 05 14 | G96 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.2− |
| 1999 09 08 | 704 | 1.2+ | 0.4− | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 09 08 | 704 | 0.5+ | 0.1− | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 1999 09 18 | 703 | 0.9− | 0.1+ | 2005 05 14 | G96 | 0.5− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 1999 09 18 | 703 | 0.0 | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 1999 09 18 | 703 | 0.5− | 0.7+ | 2006 08 20 | 644 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1999 09 18 | 703 | 0.9− | 0.5+ | 2006 08 20 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1999 09 29 | 703 | 0.9− | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.0 |
| 1999 09 29 | 703 | 1.0− | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 1999 09 29 | 703 | 1.6− | 0.9− | 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.2− |
| 1999 09 29 | 703 | 1.0− | 0.4− | 2006 09 16 | 703 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.1− |
| 1999 10 04 | 704 | 1.8+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 1999 10 04 | 704 | 0.9+ | 0.1− | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 10 04 | 704 | 1.3+ | 0.2− | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.6− | 0.3+ |
| 1999 10 19 | 704 | 1.1+ | 1.1− | 2006 09 19 | 699 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 1999 10 19 | 704 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 1999 10 19 | 704 | 0.8− | 0.2− | 2006 09 27 | 699 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 1999 10 19 | 704 | 0.2+ | 1.3− | 2006 09 27 | 699 | 0.8− | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2003 12 01 | 704 | 0.0 | 0.5+ | 2006 09 27 | 699 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.6+ |
| 2003 12 01 | 704 | (0.2+ | 1.6+) | 2006 09 27 | 703 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2003 12 01 | 704 | 0.0 | 0.6+ | 2006 09 27 | 703 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2005 04 16 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.7+ | 0.2− | 2006 11 19 | 704 | (1.6+ | 0.9+) |
| 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 683 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.9− |
| 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 683 | 0.4+ | 1.4− | 2006 11 19 | 704 | 0.1+ | 0.9+ |
| 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 683 | 0.5+ | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 10 03 | 704 | 0.2− | 0.8+ | 2006 11 22 | 704 | 0.1− | 1.3+ |
| 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.0 | 0.9+ | 2006 11 22 | 704 | 0.3− | 0.7+ |
| 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 10 03 | 704 | 0.3+ | 1.3+ | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.2+ | | | | |
| 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.4− | 0.7+ | | | | |

**(137307)∗ 1999 SZ$_{27}$ = 2002 NO$_7$**

Discovered 1999 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33092)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.49090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28196200 | $\omega$ | 135.94287 | | +0.85261468 | −0.35161891 | |
| $a$ | 2.3032566 | $\Omega$ | 248.39401 | | +0.28436241 | +0.93282265 | |
| $e$ | 0.2066347 | $i$ | 24.56658 | | +0.43839050 | +0.07877850 | |
| $P$ | 3.50 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 27 | 704 | 1.9+ | 1.9− | 2002 07 09 | 704 | 0.3− | 0.3+ | 2006 10 04 | 703 | 0.2− | 0.1− |
| 1999 09 27 | 704 | 1.3+ | 0.1− | 2002 07 09 | 704 | 0.0 | 1.1+ | 2006 10 04 | 703 | 0.0 | 0.3+ |
| 1999 09 27 | 704 | 1.6+ | 1.8− | 2002 07 13 | 704 | 0.1+ | 0.2− | 2006 10 04 | 703 | 0.5− | 0.3− |
| 1999 10 16 | 704 | 0.3− | 0.4− | 2002 07 13 | 704 | 0.6− | 0.1− | 2006 10 04 | 704 | 1.2+ | 0.2+ |
| 1999 10 16 | 704 | 0.2− | 0.4− | 2002 07 13 | 704 | 0.4− | 0.0 | 2006 10 04 | 704 | 0.9+ | 0.2− |
| 1999 10 16 | 704 | 0.2+ | 0.2+ | 2002 07 13 | 704 | 0.0 | 0.3− | 2006 10 04 | 704 | 0.3+ | 0.2+ |
| 1999 10 16 | 704 | 0.4− | 0.2− | 2003 09 28 | 704 | 0.5+ | 0.4+ | 2006 10 04 | 704 | 1.2+ | 0.3− |
| 1999 10 16 | 704 | 0.2− | 0.2− | 2003 09 28 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 704 | 0.1− | 0.3+ |
| 1999 11 05 | 699 | 0.3− | 0.8+ | 2003 09 28 | 704 | (0.1+ | 1.6+) | 2006 10 16 | 704 | 0.2+ | 0.2+ |
| 1999 11 05 | 699 | 0.6− | 1.0+ | 2003 12 13 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 704 | 0.5− | 0.5+ |
| 1999 11 05 | 699 | 0.3+ | 0.8+ | 2003 12 13 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 704 | (1.7+ | 0.2+) |
| 1999 12 08 | 703 | 0.2− | 0.2+ | 2003 12 13 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 704 | 0.0 | 0.2+ |
| 1999 12 08 | 703 | 0.3+ | 0.7+ | 2003 12 13 | 704 | 1.3+ | 0.7+ | 2006 11 01 | 703 | 0.0 | 0.3− |
| 1999 12 08 | 703 | 0.7− | 0.5+ | 2004 01 28 | 704 | 0.3+ | 0.5− | 2006 11 01 | 703 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.6− | 1.4− | 2004 01 28 | 704 | (1.7− | 0.8+) | 2006 11 01 | 703 | 0.2− | 0.1− |
| 1999 12 08 | 703 | 0.4− | 0.2+ | 2004 01 28 | 704 | 1.0− | 0.0 | 2006 11 01 | 703 | 0.0 | 0.2− |
| 1999 12 08 | 704 | 0.4− | 0.5− | 2004 01 28 | 704 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.1− |
| 1999 12 08 | 704 | 0.5− | 0.4− | 2006 09 07 | 628 | (2.1− | 1.2+) | 2006 11 16 | 703 | 0.3− | 0.0 |
| 1999 12 08 | 704 | 0.5− | 0.7− | 2006 09 07 | 628 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.1+ | 0.1+ |
| 2002 06 14 | 704 | 0.0 | 0.5+ | 2006 09 07 | 628 | (2.4− | 1.0+) | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2002 06 14 | 704 | 0.2− | 1.0+ | 2006 09 07 | 628 | 0.4− | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2002 06 14 | 704 | 0.0 | 0.3+ | 2006 09 07 | 628 | (2.3− | 1.0+) | 2006 11 22 | 703 | 0.7− | 0.4− |
| 2002 06 14 | 704 | 1.4− | 0.4+ | 2006 09 07 | 628 | 0.3− | 0.0 | 2006 11 22 | 703 | 0.1+ | 0.3+ |
| 2002 06 14 | 704 | 0.0 | 0.5+ | 2006 09 12 | 704 | 0.3+ | 0.1− | 2006 11 22 | 703 | 0.1− | 0.1− |
| 2002 07 09 | 644 | 0.0 | 0.0 | 2006 09 12 | 704 | 1.0+ | 0.4− | 2006 11 28 | 704 | 0.6− | 0.7+ |
| 2002 07 09 | 644 | 0.1+ | 0.1− | 2006 09 12 | 704 | 0.1− | 0.4+ | 2006 11 28 | 704 | 1.9− | 1.4+ |
| 2002 07 09 | 644 | 0.1− | 0.1− | 2006 09 12 | 704 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 1.1− | 0.4+ |
| 2002 07 09 | 704 | (1.8+ | 1.4+) | 2006 09 12 | 704 | 0.3− | 0.6+ | 2006 11 28 | 704 | 0.1+ | 0.7+ |
| 2002 07 09 | 704 | 0.4+ | 0.6− | 2006 10 04 | 703 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2002 07 09 | 704 | 0.1− | 0.6+ | 2006 10 04 | 704 | 0.0 | 0.3+ | | | | |

**(137308)∗ 1999 TF$_2$**

Discovered 1999 Oct. 2 by C. W. Juels at Fountain Hills.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.17867 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28654632 | $\omega$ | 173.20147 | | +0.86453148 | −0.49908550 | |
| $a$ | 2.2786248 | $\Omega$ | 216.92986 | | +0.45634710 | +0.82885700 | |
| $e$ | 0.2593429 | $i$ | 5.64991 | | +0.21055319 | +0.25280376 | |
| $P$ | 3.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 704 | 0.9+ | 0.5+ | 1999 11 09 | 704 | 0.2+ | 0.3− | 2006 10 23 | 704 | 0.5+ | 0.4− |
| 1999 09 18 | 704 | 1.1+ | 0.3− | 1999 11 12 | 704 | 0.3− | 1.0+ | 2006 10 23 | 704 | 0.2+ | 0.3+ |
| 1999 09 18 | 704 | 1.3+ | 0.4− | 1999 11 12 | 704 | 1.1+ | 0.0 | 2006 10 23 | 704 | 0.8− | 0.0 |
| 1999 09 18 | 704 | 1.0+ | 0.0 | 1999 11 12 | 704 | 1.1+ | 0.7− | 2006 10 25 | 704 | 0.7+ | 0.2+ |
| 1999 09 18 | 704 | 0.1+ | 1.1− | 1999 11 12 | 704 | 0.1− | 0.0 | 2006 10 25 | 704 | 0.2− | 0.0 |
| 1999 10 01 | 703 | 0.2+ | 0.4+ | 1999 11 12 | 704 | 0.0 | 1.8− | 2006 10 25 | 704 | 0.1− | 0.2+ |
| 1999 10 01 | 703 | 0.2− | 1.0+ | 1999 11 16 | 704 | 1.0− | 1.5+ | 2006 10 28 | 704 | 0.9− | 0.5+ |
| 1999 10 01 | 703 | 0.2+ | 0.0 | 1999 11 16 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 704 | 1.5− | 0.2− |
| 1999 10 01 | 703 | 0.0 | 0.0 | 1999 11 16 | 704 | 0.5+ | 0.2− | 2006 10 28 | 704 | 0.8− | 0.0 |
| 1999 10 02 | 678 | 0.0 | 0.3− | 1999 12 05 | 704 | 0.3+ | 0.5− | 2006 10 28 | 704 | 0.6− | 0.4+ |
| 1999 10 02 | 678 | 0.8− | 0.5− | 1999 12 05 | 704 | 0.8+ | 1.0− | 2006 10 28 | 704 | 0.7− | 0.1+ |
| 1999 10 03 | 678 | 0.4− | 0.3− | 1999 12 05 | 704 | 0.5+ | 0.4− | 2006 11 02 | 704 | 0.1+ | 1.4+ |
| 1999 10 03 | 678 | 0.0 | 0.5− | 1999 12 05 | 704 | 0.5− | 0.4+ | 2006 11 02 | 704 | 0.0 | 0.2+ |
| 1999 10 04 | 704 | 0.7− | 0.5− | 1999 12 05 | 704 | 0.7+ | 0.2− | 2006 11 02 | 704 | 0.6− | 0.2+ |
| 1999 10 04 | 704 | 0.3− | 0.0 | 1999 12 07 | 704 | 0.7+ | 0.3− | 2006 11 02 | 703 | 1.3+ | 0.1− |
| 1999 10 04 | 704 | 0.7− | 1.5+ | 1999 12 07 | 704 | 0.1+ | 0.4− | 2006 11 02 | 703 | 0.2+ | 0.6− |
| 1999 10 07 | 704 | 0.0 | 0.9− | 1999 12 07 | 704 | 0.7+ | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.4− |
| 1999 10 07 | 704 | 0.3− | 0.1− | 1999 12 07 | 704 | 0.3+ | 0.9− | 2006 11 02 | 703 | 0.2+ | 0.2− |
| 1999 10 07 | 704 | 0.4− | 0.5− | 1999 12 07 | 704 | 0.8+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 1999 10 07 | 704 | 0.4− | 0.5− | 2000 01 05 | 704 | 0.4− | 0.3− | 2006 11 11 | 691 | 0.2− | 0.1− |
| 1999 10 10 | 678 | 0.2+ | 0.7− | 2000 01 05 | 704 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 1999 10 10 | 678 | 0.1− | 0.7+ | 2000 01 05 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.3− |
| 1999 10 10 | 704 | 0.2+ | 0.4− | 2000 01 05 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 1999 10 10 | 704 | 0.2− | 0.4− | 2000 01 05 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 1999 10 10 | 704 | 0.5+ | 0.2− | 2004 01 14 | 644 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.7− | 0.2+ |
| 1999 10 10 | 704 | 0.0 | 0.3− | 2004 01 14 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.5− | 0.7+ |
| 1999 10 10 | 704 | 0.3+ | 0.0 | 2004 01 14 | 644 | 0.2− | 0.1− | 2006 11 14 | 704 | 1.4− | 0.5+ |
| 1999 10 13 | 699 | 0.2− | 0.5+ | 2004 02 18 | 691 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.7− | 0.4+ |
| 1999 10 13 | 699 | 0.2+ | 0.4+ | 2004 02 18 | 691 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.7− | 0.2+ |
| 1999 10 13 | 704 | 0.4− | 0.2− | 2004 02 18 | 704 | 0.1+ | 0.6− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 1999 10 13 | 699 | 0.2− | 0.6+ | 2004 02 18 | 704 | 0.7+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 1999 10 13 | 704 | 0.3− | 0.2− | 2004 02 18 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 1999 10 13 | 704 | 0.3− | 0.3− | 2004 02 18 | 704 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.1+ | 1.1+ |
| 1999 10 13 | 704 | 0.3− | 0.2− | 2004 02 26 | 704 | 0.5− | 0.0 | 2006 11 17 | 704 | 0.4− | 0.3+ |
| 1999 10 13 | 704 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.9+ |
| 1999 10 14 | 678 | 0.6+ | 0.6− | 2004 02 26 | 704 | 0.8+ | 0.8+ | 2006 11 17 | 704 | 0.8+ | 1.3+ |
| 1999 10 14 | 678 | 0.0 | 1.2+ | 2004 02 26 | 704 | 1.2+ | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 1999 10 15 | 704 | 1.0− | 0.3− | 2005 05 08 | G96 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 1999 10 15 | 704 | 0.5− | 0.2− | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | (2.9+ | 1.3+) |
| 1999 10 15 | 704 | 0.7− | 0.0 | 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.1− |
| 1999 10 15 | 704 | 0.4− | 0.0 | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 1999 10 15 | 704 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.7− |
| 1999 10 16 | 678 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 1.5+ | 0.7− | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 1999 10 16 | 678 | 0.8− | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.2− |
| 1999 10 20 | 704 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.8+ | 2006 11 18 | 704 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 20 | 704 | 0.7+ | 0.0 | 2006 09 16 | 703 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 0.3− | 0.3− |
| 1999 10 20 | 704 | 0.2+ | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.2+ | 2006 11 18 | 704 | (2.3+ | 0.8+) |
| 1999 10 20 | 704 | 0.4+ | 0.4− | 2006 09 16 | 703 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 1999 10 20 | 704 | 0.1+ | 0.5− | 2006 09 16 | 703 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 1999 10 28 | 678 | 1.0− | 0.2+ | 2006 09 27 | 704 | 1.3+ | 0.7+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 1999 10 28 | 678 | 0.2+ | 0.8+ | 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 1999 10 28 | 678 | 0.2− | 0.6+ | 2006 09 27 | 704 | 0.9+ | 0.7− | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 1999 11 01 | 703 | 0.5− | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 1999 11 01 | 703 | 0.3− | 0.2+ | 2006 09 27 | 704 | 1.1+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 1999 11 01 | 703 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 1999 11 01 | 699 | 0.5− | 0.8+ | 2006 09 27 | 704 | (2.0+ | 0.1−) | 2006 11 24 | 691 | 0.1− | 0.1− |
| 1999 11 01 | 703 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 24 | 691 | 0.4− | 0.1− |
| 1999 11 01 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 1999 11 01 | 699 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 25 | 704 | 0.5+ | 0.1− |
| 1999 11 05 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 25 | 704 | 0.2+ | 0.1− |
| 1999 11 05 | 704 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 25 | 704 | 1.1+ | 0.4− |
| 1999 11 05 | 704 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 25 | 704 | 0.1− | 0.4− |
| 1999 11 05 | 704 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.2− | 0.1+ |
| 1999 11 05 | 704 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.3− | 0.1− |
| 1999 11 09 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.5− | 0.1− |
| 1999 11 09 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.1+ |
| 1999 11 09 | 704 | 0.2− | 0.1+ | 2006 10 23 | 704 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.2− | 0.0 |
| 1999 11 09 | 704 | 0.0 | 0.2− | 2006 10 23 | 704 | 0.9+ | 0.2− | | | | |

**(137309)∗ 1999 TM$_5$**

Discovered 1999 Oct. 1 by K. Korlević and M. Jurić at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.35151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27502547 | $\omega$ | 70.53738 | | −0.14267597 | −0.98860494 | |
| $a$ | 2.3418232 | $\Omega$ | 27.80053 | | +0.86512372 | −0.14812049 | |
| $e$ | 0.1918122 | $i$ | 5.90698 | | +0.48083730 | −0.02684406 | |
| $P$ | 3.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 120 | 0.8− | 0.7− | 2003 12 01 | 703 | 0.2+ | 0.9− | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 1999 10 01 | 120 | 0.3+ | 0.4− | 2003 12 04 | 704 | 0.2+ | 0.9− | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 1999 10 02 | 703 | 0.1+ | 0.3+ | 2003 12 04 | 704 | 1.2+ | 1.4− | 2006 09 18 | 703 | 0.3+ | 0.6− |
| 1999 10 02 | 703 | 0.9+ | 0.4+ | 2003 12 04 | 704 | (1.5+ | 0.5−) | 2006 09 18 | 703 | 0.4+ | 0.1+ |
| 1999 10 02 | 703 | 0.0 | 0.2− | 2003 12 04 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.2− |
| 1999 10 02 | 703 | 0.1+ | 0.8− | 2003 12 04 | 704 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.7+ | 0.3− |
| 1999 10 04 | 704 | 0.1+ | 0.8− | 2003 12 17 | 699 | 0.7− | 0.4− | 2006 09 18 | 699 | 0.4− | 0.3+ |
| 1999 10 04 | 704 | 0.3+ | 1.0+ | 2003 12 17 | 699 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.1− |
| 1999 10 04 | 704 | 0.6− | 0.2+ | 2003 12 17 | 699 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.2+ |
| 1999 10 04 | 704 | 1.9+ | 0.4+ | 2003 12 17 | 699 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.3+ |
| 1999 10 06 | 120 | 1.4− | 0.4+ | 2003 12 18 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 704 | 1.0+ | 1.5+ |
| 1999 10 06 | 120 | 0.2+ | 0.5− | 2003 12 18 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 704 | 1.5+ | 0.9+ |
| 1999 10 06 | 120 | 1.4+ | 0.6+ | 2003 12 18 | 704 | 0.5− | 0.3+ | 2006 09 19 | 704 | 0.0 | 0.9+ |
| 1999 10 07 | 704 | 0.9+ | 0.6− | 2003 12 18 | 704 | 0.2+ | 0.0 | 2006 09 19 | H06 | 0.1− | 0.5− |
| 1999 10 07 | 704 | 0.0 | 0.5− | 2003 12 18 | 704 | 0.1+ | 0.1+ | 2006 09 19 | H06 | (1.6+ | 0.5−) |
| 1999 10 07 | 704 | 0.5+ | 0.7− | 2003 12 27 | 704 | 0.2− | 0.3+ | 2006 09 19 | H06 | 0.0 | 0.1− |
| 1999 10 07 | 704 | 0.4− | 0.1− | 2003 12 27 | 704 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.0 |
| 1999 10 07 | 704 | 0.2+ | 0.4− | 2003 12 27 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.0 |
| 1999 10 07 | 120 | 0.8+ | 0.4− | 2003 12 27 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.1− |
| 1999 10 07 | 120 | 1.4+ | 1.0− | 2003 12 27 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.3− |
| 1999 10 08 | 120 | (2.2− | 1.1−) | 2003 12 29 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.7+ | 0.0 |
| 1999 10 08 | 120 | (0.6+ | 2.3−) | 2003 12 29 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.2− |
| 1999 10 09 | 704 | 0.2+ | 0.4− | 2003 12 29 | 704 | 0.0 | 0.5+ | 2006 09 22 | 704 | 0.4− | 1.1+ |
| 1999 10 09 | 704 | 0.5+ | 0.3− | 2003 12 29 | 704 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.0 | 0.7+ |
| 1999 10 09 | 704 | 0.7+ | 0.6− | 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.3+ |
| 1999 10 09 | 704 | 0.8+ | 0.7− | 2004 01 18 | 691 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.5+ | 0.5+ |
| 1999 10 09 | 704 | 0.4+ | 0.4− | 2004 01 18 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.2− | 0.2− |
| 1999 10 15 | 704 | 0.5− | 0.5+ | 2004 01 18 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 1999 10 15 | 704 | 0.4− | 0.0 | 2004 01 19 | 704 | (2.1− | 0.4+) | 2006 09 26 | 704 | 0.3− | 1.0+ |
| 1999 10 15 | 704 | 0.1− | 0.4− | 2004 01 19 | 704 | (2.0− | 0.6+) | 2006 09 26 | 704 | 0.1− | 0.1− |
| 1999 10 15 | 704 | 0.3− | 0.3− | 2004 01 19 | 704 | (1.9− | 0.7+) | 2006 09 26 | 704 | 0.1− | 0.3− |
| 1999 10 15 | 704 | 0.3− | 0.2− | 2004 01 19 | 704 | (2.7− | 0.0 ) | 2006 09 26 | 704 | 0.4− | 0.4− |
| 1999 10 16 | 120 | 0.3− | 0.6+ | 2004 01 19 | 704 | (2.2− | 0.4+) | 2006 09 26 | 704 | 0.3− | 0.3− |
| 1999 10 16 | 120 | 0.5− | 0.3− | 2004 01 27 | 703 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.4− | 0.4− |
| 1999 10 16 | 120 | 0.6− | 0.1− | 2004 01 27 | 703 | 0.4+ | 0.6+ | 2006 09 28 | 704 | 0.3− | 0.9− |
| 1999 10 16 | 120 | 0.6+ | 0.4+ | 2004 01 27 | 703 | 1.1+ | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.5− |
| 1999 10 19 | 704 | 0.2+ | 0.5+ | 2004 01 27 | 703 | 0.4+ | 0.4+ | 2006 09 28 | 704 | 0.5− | 0.1− |
| 1999 10 19 | 704 | 1.0+ | 0.6− | 2004 01 31 | 704 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 1999 10 19 | 704 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.5− | 1.0+ |
| 1999 10 19 | 704 | 0.4+ | 0.2− | 2004 01 31 | 704 | 0.9− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 1999 10 19 | 120 | 0.5+ | 0.3− | 2004 01 31 | 704 | 0.7− | 0.0 | 2006 09 30 | 703 | (0.1+ | 1.7+) |
| 1999 10 19 | 120 | 1.0+ | 0.9+ | 2004 01 31 | 704 | 0.3− | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1999 11 01 | 703 | 1.8− | 0.3− | 2004 02 11 | 703 | 0.1+ | 0.9− | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 1999 11 01 | 703 | 0.6− | 0.1+ | 2004 02 11 | 703 | 0.7− | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 1999 11 01 | 703 | (2.8+ | 0.4−) | 2004 02 11 | 703 | 1.1− | 0.8+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 1999 11 01 | 703 | 0.7− | 1.1+ | 2004 02 11 | 703 | 1.1− | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 1999 11 04 | 703 | 0.8− | 0.1+ | 2004 02 14 | 704 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 1999 11 04 | 703 | 1.5− | 1.1+ | 2004 02 14 | 704 | 0.6− | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 1999 11 04 | 703 | 0.7+ | 0.2+ | 2004 02 14 | 704 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2− |
| 1999 11 04 | 703 | 0.7+ | 0.6− | 2004 02 14 | 704 | (1.9− | 0.3+) | 2006 10 10 | 644 | 0.0 | 0.1− |
| 1999 11 05 | 704 | 0.3− | 0.2+ | 2004 02 14 | 106 | 0.3+ | 0.6− | 2006 10 10 | 644 | 0.1− | 0.2− |
| 1999 11 05 | 704 | 0.7− | 0.7+ | 2004 02 14 | 106 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1999 11 05 | 704 | 0.2− | 0.1− | 2004 02 14 | 106 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1999 11 05 | 704 | 0.2− | 0.1+ | 2004 04 20 | 704 | (0.0 | 1.8+) | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 1999 11 08 | 120 | 1.0− | 0.4+ | 2004 04 20 | 704 | (0.3+ | 3.4+) | 2006 10 12 | 644 | 0.4− | 0.2− |
| 1999 11 08 | 120 | 0.1+ | 0.3+ | 2004 04 20 | 704 | 0.1+ | 1.5+ | 2006 10 12 | 644 | 0.3− | 0.2− |
| 1999 11 14 | 704 | 0.4+ | 0.5− | 2004 04 20 | 704 | (0.2− | 1.8+) | 2006 10 12 | 644 | 0.2− | 0.2− |
| 1999 11 14 | 704 | 0.2− | 0.0 | 2004 04 22 | 704 | 1.0+ | 0.4+ | 2006 10 16 | 703 | 0.8+ | 0.1+ |
| 1999 11 14 | 704 | 0.5− | 0.0 | 2004 04 22 | 704 | 0.5+ | 1.3+ | 2006 10 16 | 703 | 0.8− | 0.1+ |
| 1999 11 14 | 704 | 1.0− | 0.0 | 2004 04 22 | 704 | 0.7+ | 1.0+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 1999 11 14 | 704 | 0.2− | 0.6− | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.4− |
| 2002 07 15 | 644 | 0.4− | 0.4+ | 2006 08 16 | 644 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 07 15 | 644 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 07 15 | 644 | 0.4− | 0.6− | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 08 11 | 644 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 08 11 | 644 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 08 11 | 644 | (0.5− | 1.8+) | 2006 08 24 | 644 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2003 11 19 | 704 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2003 11 19 | 704 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.0 | 0.5+ | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2003 11 19 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 699 | 1.5− | 0.4+ | 2006 10 24 | 644 | 0.2− | 0.0 |
| 2003 11 19 | 704 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2003 12 01 | 703 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.5− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2003 12 01 | 703 | 1.0− | 0.5− | 2006 08 28 | 699 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.4− |
| 2003 12 01 | 703 | (1.6− | 1.2−) | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |

**(137310)∗ 1999 TF$_9$**

Discovered 1999 Oct. 7 by K. Korlević and M. Jurić at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.95091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28476108 | $\omega$ | 345.24830 | | +0.99183102 | −0.12159352 | |
| $a$ | 2.2881384 | $\Omega$ | 21.84756 | | +0.12499590 | +0.86617433 | |
| $e$ | 0.1860523 | $i$ | 5.94626 | | +0.02544126 | +0.48472368 | |
| $P$ | 3.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 01 | 691 | 0.4+ | 0.4+ | 1999 12 04 | 699 | 1.0+ | 0.1− | 2006 10 21 | 704 | 1.0− | 0.5− |
| 1998 06 01 | 691 | 0.1+ | 0.0 | 1999 12 04 | 699 | 0.6− | 1.7+ | 2006 10 21 | 704 | 0.0 | 0.4+ |
| 1998 06 01 | 691 | 0.2+ | 0.1+ | 2001 03 04 | 691 | 0.1− | 0.1+ | 2006 10 21 | 704 | 0.4− | 1.3+ |
| 1999 10 06 | 691 | 0.1− | 0.2− | 2001 03 04 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 1999 10 06 | 691 | 0.0 | 0.1− | 2001 03 04 | 691 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.0 |
| 1999 10 06 | 691 | 0.1− | 0.2− | 2003 12 27 | 704 | 1.0− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 |
| 1999 10 07 | 704 | 0.8− | 0.2+ | 2003 12 27 | 704 | 1.1+ | 0.6− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 1999 10 07 | 704 | 0.2+ | 0.7+ | 2003 12 27 | 704 | 0.5+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 1999 10 07 | 704 | 1.1− | 0.1− | 2003 12 27 | 704 | 1.3+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 1999 10 07 | 704 | 0.8− | 0.3+ | 2004 01 26 | 699 | 0.7− | 0.4− | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 1999 10 07 | 704 | 0.5− | 0.3− | 2004 01 26 | 699 | 0.6+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 1999 10 07 | 120 | 0.4− | 0.7+ | 2004 01 26 | 699 | 0.5− | 0.8− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 1999 10 07 | 120 | 0.6+ | 0.3+ | 2004 01 26 | 699 | 0.2− | 0.6− | 2006 10 27 | 703 | 0.1− | 0.1− |
| 1999 10 08 | 120 | 0.1− | 0.0 | 2005 05 16 | G96 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 1999 10 08 | 120 | 0.2− | 0.0 | 2005 05 16 | G96 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 703 | 0.5− | 0.5+ | 2005 05 16 | G96 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.3+ | | |
| 1999 10 09 | 703 | 0.4+ | 0.3+ | 2005 05 16 | G96 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.7+ | 1.0− | | |
| 1999 10 09 | 703 | 0.2− | 0.5+ | 2006 08 25 | 704 | 0.4− | 0.1− | 2006 10 29 | 704 | (1.9+ | 0.0 ) | | |
| 1999 10 09 | 703 | 0.0 | 0.6+ | 2006 08 25 | 704 | 1.2+ | 0.2+ | 2006 10 29 | 704 | (1.9+ | 0.1−) | | |
| 1999 10 10 | 704 | 0.6+ | 0.5− | 2006 08 25 | 704 | 1.2+ | 0.6+ | 2006 10 29 | 704 | (1.6+ | 0.0 ) | | |
| 1999 10 10 | 704 | 0.1+ | 0.7− | 2006 08 25 | 704 | 0.8+ | 0.3− | 2006 10 29 | 704 | 0.4+ | 0.7+ | | |
| 1999 10 10 | 704 | 0.1− | 0.7− | 2006 08 28 | 703 | (1.7+ | 0.0 ) | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 1999 10 10 | 704 | 0.5+ | 0.4− | 2006 08 28 | 703 | 1.1+ | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 1999 10 10 | 704 | 0.1+ | 1.6− | 2006 08 28 | 703 | 1.0+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 1999 10 12 | 691 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.2+ | | |
| 1999 10 12 | 691 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.3+ | | |
| 1999 10 12 | 691 | 0.0 | 0.3− | 2006 08 28 | 703 | (0.8+ | 1.5−) | 2006 11 11 | 703 | 0.6− | 0.0 | | |
| 1999 10 15 | 704 | 0.6+ | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.1− | | |
| 1999 10 15 | 704 | (2.0+ | 2.0+) | 2006 08 28 | 703 | 0.6+ | 1.0+ | 2006 11 13 | 644 | 0.2− | 0.0 | | |
| 1999 10 15 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 11 13 | 644 | 0.2− | 0.0 | | |
| 1999 10 15 | 704 | 1.1+ | 0.7+ | 2006 09 16 | 703 | 0.0 | 1.1+ | 2006 11 13 | 644 | 0.2− | 0.1+ | | |
| 1999 10 20 | 691 | 0.3+ | 0.8− | 2006 09 16 | 703 | (0.2+ | 2.3+) | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 1999 10 20 | 691 | 0.3+ | 0.8− | 2006 09 17 | 704 | (1.7+ | 0.4+) | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 1999 10 20 | 691 | 0.5+ | 0.9− | 2006 09 17 | 704 | 0.7+ | 0.8+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 1999 10 20 | 704 | 0.4− | 0.1+ | 2006 09 17 | 704 | (1.5− | 1.5+) | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 1999 10 20 | 704 | 0.7− | 0.1− | 2006 09 17 | 704 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.7− | | |
| 1999 10 20 | 704 | 0.4− | 0.2+ | 2006 09 20 | 704 | 0.4− | 1.2− | 2006 11 16 | 704 | (1.9− | 3.3+) | | |
| 1999 10 20 | 704 | 0.5− | 0.0 | 2006 09 20 | 704 | 1.5− | 0.4− | 2006 11 16 | 704 | (2.7− | 0.8+) | | |
| 1999 10 20 | 704 | 0.8− | 0.4+ | 2006 09 20 | 704 | 1.4− | 1.2− | 2006 11 16 | 704 | (2.6− | 0.6+) | | |
| 1999 11 04 | 704 | 0.3+ | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.7+ | 2006 11 16 | 704 | (0.0 | 3.4−) | | |
| 1999 11 04 | 704 | 0.1− | 0.8+ | 2006 09 20 | 704 | (1.6− | 0.7−) | 2006 11 17 | 704 | 0.2+ | 0.2+ | | |
| 1999 11 04 | 704 | 0.0 | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.1− | | |
| 1999 11 04 | 703 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.6− | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.6+ | | |
| 1999 11 04 | 704 | 0.3− | 1.1+ | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.7− | | |
| 1999 11 04 | 703 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 1.1− | 0.3− | | |
| 1999 11 04 | 704 | 0.4− | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1+ | | |
| 1999 11 04 | 703 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.5+ | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.1+ | | |
| 1999 11 04 | 703 | 0.4+ | 0.8+ | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.6+ | | |
| 1999 11 10 | 120 | 1.9+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.1− | | |
| 1999 11 10 | 120 | 1.6− | 0.1− | 2006 10 13 | 691 | 0.5+ | 0.0 | 2006 11 19 | 704 | 0.5− | 0.2− | | |
| 1999 11 14 | 704 | 0.9+ | 0.6− | 2006 10 13 | 691 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.4− | | |
| 1999 11 14 | 704 | 0.3+ | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.0 | | |
| 1999 11 14 | 704 | 0.9+ | 0.3− | 2006 10 17 | 461 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.6− | | |
| 1999 11 14 | 704 | 0.3+ | 0.7− | 2006 10 17 | 461 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 1999 11 14 | 704 | 0.2− | 0.5− | 2006 10 17 | 461 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.4− | | |
| 1999 11 16 | 704 | 1.1− | 0.8− | 2006 10 19 | 704 | 0.7+ | 1.1+ | 2006 12 01 | 704 | 0.3+ | 0.9+ | | |
| 1999 11 16 | 704 | 0.1+ | 0.1− | 2006 10 19 | 704 | 0.8− | 0.2+ | 2006 12 01 | 704 | 0.2− | 0.0 | | |
| 1999 11 16 | 704 | 1.1+ | 0.2+ | 2006 10 19 | 704 | 1.4− | 0.4+ | 2006 12 01 | 704 | 0.6− | 0.2− | | |
| 1999 11 16 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.0 | 1.1+ | | |
| 1999 11 16 | 704 | 0.7+ | 0.5− | 2006 10 19 | 704 | (0.8+ | 1.9+) | | | | | | |
| 1999 12 04 | 699 | 0.4+ | 0.4+ | 2006 10 21 | 704 | 0.5− | 0.5+ | | | | | | |

**(137311)∗ 1999 TX$_9$ = 2001 HJ$_{28}$**

Discovered 1999 Oct. 9 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 12940)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.17515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27991067 | $\omega$ | 12.96876 | | +0.47143387 | −0.81325504 | |
| $a$ | 2.3144959 | $\Omega$ | 50.06491 | | +0.76421240 | +0.18367172 | |
| $e$ | 0.2766042 | $i$ | 26.41595 | | +0.44014715 | +0.55216025 | |
| $P$ | 3.52 | $H$ | 13.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 703 | 0.3− | 0.2− | 2001 04 27 | 704 | 1.2− | 0.3+ | 2004 05 31 | 703 | 0.5+ | 0.1+ | | |
| 1999 10 09 | 703 | 0.3− | 1.3+ | 2001 04 27 | 704 | 0.6− | 0.1− | 2004 06 10 | 704 | 0.8+ | 0.2− | | |
| 1999 10 09 | 703 | 0.1− | 1.0+ | 2001 04 29 | 704 | 0.8− | 0.1+ | 2004 06 10 | 704 | 0.5+ | 0.7+ | | |
| 1999 10 09 | 703 | 0.1− | 0.2− | 2001 04 29 | 704 | 0.1+ | 0.6+ | 2004 06 10 | 704 | 0.1+ | 0.0 | | |
| 1999 10 10 | 849 | 0.6+ | 0.9+ | 2001 04 29 | 704 | 0.1− | 0.6+ | 2004 06 10 | 704 | 0.2+ | 0.4+ | | |
| 1999 10 10 | 849 | 0.4+ | 1.2+ | 2001 04 29 | 704 | 0.2− | 0.4+ | 2004 06 10 | 704 | 0.6+ | 0.2+ | | |
| 1999 10 10 | 849 | (3.8+ | 2.1+) | 2001 04 29 | 704 | 0.1− | 1.4+ | 2004 06 18 | 699 | 0.4+ | 0.5− | | |
| 1999 10 10 | 739 | 0.6− | 0.0 | 2001 05 14 | 608 | 0.9+ | 1.2− | 2004 06 18 | 699 | 0.6+ | 0.4− | | |
| 1999 10 10 | 739 | 0.5+ | 0.9+ | 2001 05 14 | 608 | 0.2− | 0.9− | 2004 06 18 | 703 | 0.1+ | 0.5+ | | |
| 1999 10 10 | 739 | 0.2+ | 0.4+ | 2001 05 14 | 608 | 0.2+ | 1.2− | 2004 06 18 | 699 | 0.1− | 0.1+ | | |
| 1999 10 10 | 734 | 0.2+ | 0.3− | 2001 05 17 | 704 | 1.2− | 0.0 | 2004 06 18 | 703 | 0.3− | 0.7+ | | |
| 1999 10 10 | 734 | 0.4− | 0.3− | 2001 05 17 | 704 | 0.8− | 0.3− | 2004 06 18 | 703 | 0.7− | 0.2− | | |
| 1999 10 10 | 734 | 0.9− | 0.4− | 2001 05 17 | 704 | 0.5+ | 0.4− | 2004 06 18 | 703 | 0.7− | 0.8+ | | |
| 1999 10 10 | 734 | 0.3− | 0.1+ | 2001 05 17 | 704 | 0.3− | 0.8− | 2004 06 18 | 699 | 0.4− | 0.4+ | | |
| 1999 10 12 | 739 | 0.4+ | 0.8− | 2001 05 22 | 608 | 1.3+ | 0.9+ | 2004 06 19 | 704 | 0.9+ | 0.2+ | | |
| 1999 10 12 | 739 | 0.1− | 1.5− | 2001 05 22 | 608 | 1.4+ | 1.4+ | 2004 06 19 | 704 | 0.3+ | 0.3+ | | |
| 1999 10 12 | 739 | 0.1+ | 1.2− | 2001 05 22 | 608 | 0.9+ | 0.7+ | 2004 06 19 | 704 | 0.2+ | 0.1+ | | |
| 1999 10 13 | 046 | 0.1− | 0.1− | 2001 05 24 | 704 | 0.4− | 0.1− | 2004 06 19 | 704 | 0.1+ | 0.4− | | |
| 1999 10 13 | 046 | 0.2− | 0.2− | 2001 05 24 | 704 | 0.6− | 0.7+ | 2004 07 05 | 703 | 0.6− | 0.9− | | |
| 1999 10 13 | 046 | 0.0 | 0.2− | 2001 05 24 | 704 | 1.0− | 0.2− | 2004 07 05 | 703 | 0.3+ | 0.4+ | | |
| 1999 10 13 | 046 | 0.2− | 0.2− | 2001 05 24 | 704 | 0.2− | 0.4+ | 2004 07 05 | 703 | 0.8− | 0.5− | | |
| 1999 11 01 | 704 | 0.3+ | 0.5− | 2001 05 24 | 704 | 0.4− | 1.3− | 2004 07 05 | 703 | 0.0 | 1.1+ | | |
| 1999 11 01 | 704 | 0.2+ | 0.4− | 2001 06 11 | 699 | 0.2− | 0.1− | 2006 08 23 | 704 | 0.8− | 0.5+ | | |
| 1999 11 01 | 704 | 0.2+ | 0.5− | 2001 06 11 | 699 | 0.9− | 0.3+ | 2006 08 23 | 704 | 0.4− | 0.7+ | | |
| 1999 11 01 | 704 | 0.3+ | 0.3− | 2001 06 11 | 699 | 1.1− | 0.0 | 2006 08 23 | 704 | 0.4− | 0.6+ | | |
| 1999 11 01 | 704 | 0.4+ | 0.3+ | 2001 06 11 | 699 | 0.6− | 0.2− | 2006 08 23 | 704 | 0.4− | 0.3+ | | |
| 1999 11 02 | 704 | 0.3− | 0.4− | 2001 06 16 | 704 | 0.3− | 0.3− | 2006 08 23 | 704 | 0.2− | 0.2+ | | |
| 1999 11 02 | 704 | 0.1+ | 0.5− | 2001 06 16 | 704 | 0.5− | 0.0 | 2006 08 28 | 704 | 0.4− | 0.4+ | | |
| 1999 11 02 | 704 | 0.2− | 0.8− | 2001 06 16 | 704 | 0.8− | 0.4+ | 2006 08 28 | 704 | 0.2− | 0.0 | | |
| 1999 11 02 | 704 | 0.1+ | 0.7− | 2004 01 30 | 704 | 0.1+ | 0.2− | 2006 08 28 | 704 | 0.3− | 0.3+ | | |
| 1999 11 02 | 704 | 0.1+ | 0.7− | 2004 01 30 | 704 | 0.0 | 0.8+ | 2006 08 28 | 704 | 0.2− | 0.7+ | | |
| 1999 12 04 | 699 | 0.3+ | 0.7− | 2004 01 30 | 704 | 0.0 | 1.1− | 2006 08 28 | 704 | 0.7− | 0.6+ | | |
| 1999 12 04 | 699 | 0.2+ | 0.6− | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 09 01 | 704 | 0.7− | 0.5+ | | |
| 1999 12 04 | 699 | 0.2+ | 0.7− | 2004 01 30 | 704 | 1.1+ | 0.5+ | 2006 09 01 | 704 | 0.7− | 0.4+ | | |
| 1999 12 19 | 704 | 0.1− | 1.2− | 2004 02 16 | 704 | 1.0+ | 1.0− | 2006 09 01 | 704 | 0.5− | 0.5+ | | |
| 1999 12 19 | 704 | 1.8− | 0.5− | 2004 02 16 | 704 | (3.0+ | 0.7+) | 2006 09 01 | 704 | 0.8− | 0.4+ | | |
| 1999 12 19 | 704 | 0.7+ | 0.5− | 2004 02 16 | 704 | (1.7+ | 0.0 ) | 2006 09 01 | 704 | 0.7− | 0.8+ | | |
| 1999 12 19 | 704 | 0.9+ | 0.3− | 2004 02 16 | 704 | (0.6+ | 1.6+) | 2006 09 16 | 704 | 0.2+ | 0.5− | | |
| 1999 12 19 | 704 | 0.8+ | 0.3− | 2004 03 01 | 704 | (1.5+ | 0.1−) | 2006 09 16 | 704 | 0.0 | 0.2+ | | |
| 1999 12 20 | 704 | 0.1+ | 0.7− | 2004 03 01 | 704 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.2− | 0.1+ | | |
| 1999 12 20 | 704 | 0.1− | 0.5− | 2004 03 01 | 704 | 0.5+ | 1.1+ | 2006 09 16 | 704 | 0.2− | 0.3− | | |
| 1999 12 20 | 704 | 0.0 | 0.5− | 2004 03 01 | 704 | 0.6+ | 0.9+ | 2006 09 16 | 704 | 0.0 | 0.3− | | |
| 1999 12 20 | 704 | 0.5− | 0.1− | 2004 03 01 | 704 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.8− | 0.4+ | | |
| 1999 12 20 | 704 | 0.1+ | 0.6− | 2004 03 19 | 703 | 0.9+ | 0.2− | 2006 09 19 | 704 | 0.3− | 0.7+ | | |
| 1999 12 20 | 704 | 0.7− | 0.6+ | 2004 03 19 | 703 | 0.1− | 0.7+ | 2006 09 19 | 704 | 0.8− | 0.6+ | | |
| 1999 12 20 | 704 | 0.1− | 0.4− | 2004 03 19 | 703 | 0.5+ | 1.0+ | 2006 09 19 | 704 | 0.4− | 0.5+ | | |
| 1999 12 20 | 704 | 0.9− | 0.3+ | 2004 03 19 | 703 | 0.8+ | 0.6+ | 2006 09 19 | 704 | 0.9− | 0.9+ | | |
| 1999 12 20 | 704 | 0.3+ | 0.4− | 2004 03 29 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.7− | 0.4− | | |
| 1999 12 20 | 704 | 1.2− | 0.6+ | 2004 03 29 | 704 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.7− | | |
| 1999 12 28 | 704 | 0.0 | 0.5− | 2004 03 29 | 704 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.6− | | |
| 1999 12 28 | 704 | 0.2− | 0.5− | 2004 03 29 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.7− | 1.4− | | |
| 1999 12 28 | 704 | 0.0 | 0.4− | 2004 03 29 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 1.0− | 0.2− | | |
| 1999 12 28 | 704 | 0.2+ | 0.4− | 2004 04 08 | 644 | 0.3+ | 0.1+ | 2006 09 21 | 704 | 1.0− | 0.4− | | |
| 1999 12 28 | 704 | 0.2− | 0.0 | 2004 04 08 | 644 | 0.1+ | 0.1− | 2006 09 21 | 704 | 0.1+ | 1.3+ | | |
| 1999 12 30 | 699 | 1.1+ | 0.4− | 2004 04 08 | 644 | 0.3+ | 0.1− | 2006 09 21 | 704 | 0.5− | 0.1+ | | |
| 1999 12 30 | 699 | 0.3+ | 0.4− | 2004 04 14 | 704 | 0.2− | 0.1+ | 2006 09 21 | 704 | 0.9+ | 0.3+ | | |
| 1999 12 30 | 699 | 0.6+ | 0.3− | 2004 04 14 | 704 | 0.8+ | 0.5+ | 2006 09 23 | 704 | 0.9+ | 0.1+ | | |
| 2000 01 25 | 704 | 0.3+ | 0.3+ | 2004 04 14 | 704 | 0.7+ | 0.1− | 2006 09 23 | 704 | 0.7+ | 0.1− | | |
| 2000 01 25 | 704 | 0.1− | 0.7+ | 2004 04 14 | 704 | 0.8+ | 0.4+ | 2006 09 23 | 704 | 0.2+ | 0.2+ | | |
| 2000 01 25 | 704 | 0.2− | 0.9+ | 2004 04 14 | 704 | 0.5+ | 0.4+ | 2006 09 23 | 704 | 0.2− | 0.6+ | | |
| 2000 01 25 | 704 | 0.8− | 0.7+ | 2004 04 25 | 608 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.4− | 0.8+ | | |
| 2000 01 25 | 704 | 1.2− | 1.1+ | 2004 04 25 | 608 | 0.0 | 0.2− | 2006 09 27 | 704 | (2.2− | 0.3+) | | |
| 2000 03 17 | 704 | 0.9+ | 0.2+ | 2004 04 25 | 608 | 0.2+ | 0.2− | 2006 09 27 | 704 | 1.5− | 0.9+ | | |
| 2000 03 17 | 704 | 0.4+ | 0.1− | 2004 04 26 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.6− | 0.8+ | | |
| 2000 03 17 | 704 | 0.1− | 0.3+ | 2004 04 26 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.8+ | | |
| 2000 03 25 | 704 | 0.1+ | 0.0 | 2004 04 26 | 704 | 0.1− | 0.2− | 2006 09 29 | 704 | (0.0 | 2.1+) | | |
| 2000 03 25 | 704 | 0.2+ | 0.2− | 2004 04 26 | 704 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.1− | | |
| 2000 03 25 | 704 | 0.3+ | 0.3− | 2004 04 26 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.1+ | | |
| 2000 03 25 | 704 | (1.0− | 2.1+) | 2004 05 12 | 703 | (2.0− | 0.4−) | 2006 09 29 | 704 | 0.8+ | 0.0 | | |
| 2000 03 25 | 704 | 0.5− | 1.0− | 2004 05 12 | 703 | 1.1− | 0.1− | 2006 09 29 | 704 | 0.6+ | 0.1− | | |
| 2000 04 26 | 704 | 0.4− | 0.4+ | 2004 05 12 | 703 | 0.6− | 0.3+ | 2006 10 19 | 704 | 0.1− | 0.8+ | | |
| 2000 04 26 | 704 | 0.1+ | 0.3+ | 2004 05 12 | 703 | 0.9− | 0.7− | 2006 10 19 | 704 | 0.6− | 0.2+ | | |
| 2000 04 26 | 704 | (1.6− | 2.1+) | 2004 05 13 | 704 | 0.6+ | 0.0 | 2006 10 19 | 704 | 0.1− | 0.1+ | | |
| 2000 04 26 | 704 | 0.3+ | 0.0 | 2004 05 13 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 704 | 0.3− | 0.2+ | | |
| 2000 04 26 | 704 | 0.8+ | 1.1− | 2004 05 13 | 704 | 1.0+ | 0.1− | 2006 10 19 | 704 | (2.0+ | 2.0+) | | |
| 2001 04 18 | 704 | 0.1+ | 0.8+ | 2004 05 13 | 704 | 1.4+ | 0.6+ | 2006 10 20 | H51 | 0.1+ | 0.0 | | |
| 2001 04 18 | 704 | 0.2+ | 0.2− | 2004 05 13 | 704 | 0.3+ | 1.0+ | 2006 10 20 | H51 | 1.1+ | 0.6+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 18 | 704 | 0.1+ | 0.4+ | 2004 05 24 | 704 | 0.4+ | 0.8+ | 2006 10 20 | H51 | 0.0 | 0.1+ | | |
| 2001 04 18 | 704 | 0.7+ | 1.0− | 2004 05 24 | 704 | 0.5+ | 0.6+ | 2006 11 13 | 704 | 0.1+ | 0.2+ | | |
| 2001 04 18 | 608 | 0.7+ | 0.6− | 2004 05 24 | 704 | 1.1+ | 0.0 | 2006 11 13 | 704 | 0.3+ | 0.2+ | | |
| 2001 04 18 | 608 | 0.4+ | 0.5− | 2004 05 24 | 704 | 0.3− | 0.5− | 2006 11 13 | 704 | 0.1+ | 0.3+ | | |
| 2001 04 18 | 608 | 0.6+ | 0.6− | 2004 05 24 | 704 | (2.5+ | 0.1+) | 2006 11 13 | 704 | 0.4+ | 0.3+ | | |
| 2001 04 27 | 704 | 1.3− | 0.5+ | 2004 05 31 | 703 | 0.1− | 0.5+ | 2006 11 13 | 704 | 0.2− | 0.2+ | | |
| 2001 04 27 | 704 | 1.0− | 0.8− | 2004 05 31 | 703 | 0.1− | 0.8− | | | | | | |
| 2001 04 27 | 704 | 0.8− | 0.2− | 2004 05 31 | 703 | 0.5− | 1.0− | | | | | | |

**(137312)∗ 1999 TK$_{10}$**

Discovered 1999 Oct. 10 by P. G. Comba at Prescott.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.62954 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12487184 | $\omega$ | 218.60006 | | +0.77440348 | −0.63269017 | |
| $a$ | 3.9642380 | $\Omega$ | 180.65492 | | +0.60891994 | +0.74596975 | |
| $e$ | 0.1733594 | $i$ | 7.79253 | | +0.17180149 | +0.20792375 | |
| $P$ | 7.89 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 10 | 910 | 0.4+ | 0.6+ | 1999 11 01 | 684 | 0.8− | 0.1− | 2002 03 13 | 704 | 0.5+ | 0.8+ | | |
| 1998 09 10 | 910 | 0.4+ | 0.5+ | 1999 11 06 | 704 | 0.2− | 0.4+ | 2002 03 16 | 684 | 0.9− | 0.6− | | |
| 1998 09 10 | 910 | 0.3+ | 0.4+ | 1999 11 06 | 704 | 0.3− | 0.1− | 2002 03 16 | 684 | 0.3− | 0.6− | | |
| 1999 10 07 | 704 | 0.2+ | 0.1+ | 1999 11 06 | 704 | 0.2− | 1.2+ | 2002 03 20 | 684 | 0.4+ | 1.3− | | |
| 1999 10 07 | 704 | 0.4− | 0.2− | 1999 11 06 | 704 | 0.1− | 1.9+ | 2002 03 20 | 684 | 0.6+ | 1.0− | | |
| 1999 10 07 | 704 | 0.4− | 0.5+ | 2001 01 04 | 704 | 0.1+ | 1.4+ | 2004 05 09 | 291 | 0.1− | 0.7+ | | |
| 1999 10 07 | 704 | 0.6− | 0.1− | 2001 01 04 | 704 | 0.1+ | 0.8+ | 2004 05 09 | 291 | 0.1− | 0.3+ | | |
| 1999 10 10 | 684 | 0.2+ | 0.2− | 2001 01 04 | 704 | 0.3+ | 1.5+ | 2004 05 09 | 291 | 0.0 | 0.3+ | | |
| 1999 10 10 | 684 | 0.4− | 0.0 | 2002 02 11 | 704 | 0.1+ | 0.7− | 2006 08 14 | E12 | 0.9+ | 0.3+ | | |
| 1999 10 11 | 684 | 0.3− | 0.4+ | 2002 02 11 | 704 | 0.3+ | 0.5− | 2006 08 14 | E12 | 0.0 | 0.0 | | |
| 1999 10 11 | 684 | 0.2− | 0.1− | 2002 02 11 | 704 | 0.2− | 0.4− | 2006 08 14 | E12 | 0.8− | 1.0+ | | |
| 1999 10 15 | 704 | 0.6+ | 0.3+ | 2002 02 11 | 704 | 1.6+ | 0.4− | 2006 08 14 | E12 | 1.0+ | 0.1− | | |
| 1999 10 15 | 704 | 0.6+ | 0.7− | 2002 02 13 | 645 | 0.1− | 0.1+ | 2006 08 14 | E12 | 0.3− | 0.2+ | | |
| 1999 10 15 | 704 | 0.5+ | 0.2+ | 2002 02 13 | 645 | 0.1− | 0.1+ | 2006 08 21 | 644 | 0.2+ | 0.0 | | |
| 1999 10 15 | 704 | 0.0 | 0.2+ | 2002 02 20 | 704 | 1.9+ | 0.3− | 2006 08 21 | 644 | 0.0 | 0.0 | | |
| 1999 10 31 | 684 | 0.5− | 0.7− | 2002 02 20 | 704 | 0.8+ | 0.6+ | 2006 08 21 | 644 | 0.4− | 0.2+ | | |
| 1999 10 31 | 684 | 0.1+ | 0.3− | 2002 02 20 | 704 | 0.2− | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.2− | | |
| 1999 10 31 | 684 | 0.3− | 0.6− | 2002 03 13 | 704 | 0.6+ | 1.0+ | 2006 09 28 | G96 | 0.0 | 0.1+ | | |
| 1999 11 01 | 684 | 0.2+ | 0.0 | 2002 03 13 | 704 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 1999 11 01 | 684 | 0.1+ | 0.1+ | 2002 03 13 | 704 | 0.4+ | 0.3− | 2006 09 28 | G96 | 0.4− | 0.1+ | | |

**(137313)∗ 1999 TR$_{12}$**

Discovered 1999 Oct. 12 by P. G. Comba at Prescott.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.95197 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27129327 | $\omega$ | 356.79692 | | +0.99996184 | +0.00865242 | |
| $a$ | 2.3632520 | $\Omega$ | 2.70822 | | −0.00733844 | +0.90697990 | |
| $e$ | 0.1964664 | $i$ | 1.46705 | | −0.00474078 | +0.42108503 | |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.5+ | 0.0 | 2004 01 30 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.8− | | |
| 1999 10 06 | 704 | 0.1+ | 0.5− | 2005 03 08 | G96 | 0.4− | 0.2− | 2006 08 28 | 699 | 0.4+ | 0.3− | | |
| 1999 10 06 | 704 | 0.7− | 0.6− | 2005 03 08 | G96 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.2+ | | |
| 1999 10 06 | 704 | 0.5+ | 0.3+ | 2005 03 08 | G96 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | | |
| 1999 10 12 | 684 | 1.1+ | 0.8− | 2005 03 08 | G96 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.4− | 0.5− | | |
| 1999 10 12 | 684 | 0.8+ | 0.8− | 2005 04 09 | G96 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.5− | 0.2− | | |
| 1999 10 12 | 684 | 0.4+ | 0.4− | 2005 04 09 | G96 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.3+ | 0.8+ | | |
| 1999 10 13 | 684 | 0.3+ | 0.1− | 2005 04 09 | G96 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.2+ | 0.4+ | | |
| 1999 10 13 | 684 | 0.9+ | 0.3− | 2005 04 09 | G96 | 0.4+ | 0.3− | 2006 08 29 | 704 | 1.3+ | 0.1+ | | |
| 1999 10 15 | 704 | 0.4− | 1.7+ | 2006 07 25 | 644 | 0.8− | 0.4+ | 2006 08 29 | 704 | 0.3+ | 1.1+ | | |
| 1999 10 15 | 704 | 0.7+ | 0.5+ | 2006 07 25 | 644 | 0.1− | 0.1− | 2006 08 29 | 704 | 0.2− | 0.4+ | | |
| 1999 10 15 | 704 | 0.5+ | 0.4+ | 2006 07 25 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.7+ | | |
| 1999 10 15 | 704 | 0.0 | 0.2− | 2006 08 13 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | (0.5− | 2.0+) | | |
| 1999 10 15 | 704 | 0.4− | 0.7+ | 2006 08 13 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | (2.3− | 0.4−) | | |
| 1999 10 29 | 703 | 0.3+ | 0.1+ | 2006 08 13 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.5− | 0.4+ | | |
| 1999 10 29 | 703 | 0.4− | 0.3+ | 2006 08 15 | 644 | 0.3− | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.1− | | |
| 1999 10 29 | 703 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.5− | | |
| 1999 10 29 | 703 | 1.0− | 0.4− | 2006 08 15 | 644 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.3− | | |
| 1999 11 04 | 704 | 0.7+ | 0.0 | 2006 08 19 | 699 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− | | |
| 1999 11 04 | 704 | 0.2− | 0.6− | 2006 08 19 | 699 | 0.4+ | 0.7+ | 2006 10 17 | G96 | 1.3+ | 0.2− | | |
| 1999 11 04 | 704 | 1.2− | 0.8+ | 2006 08 19 | 699 | 1.3− | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.8− | | |
| 1999 11 04 | 704 | 0.7− | 0.5− | 2006 08 19 | 699 | 0.8+ | 0.0 | 2006 10 17 | G96 | (1.5− | 1.5−) | | |
| 1999 11 14 | 704 | 0.7− | 0.6− | 2006 08 23 | 704 | 0.1− | 0.9+ | 2006 10 27 | G96 | 0.2+ | 0.6− | | |
| 1999 11 14 | 704 | 0.7− | 0.3+ | 2006 08 23 | 704 | 0.6− | 0.5+ | 2006 10 27 | G96 | 0.7+ | 0.1− | | |
| 1999 11 14 | 704 | 0.4− | 0.3+ | 2006 08 23 | 704 | 0.4− | 1.2− | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 1999 11 14 | 704 | 0.2+ | 0.2− | 2006 08 23 | 704 | (2.1− | 1.7+) | 2006 10 27 | G96 | 0.3+ | 0.7− | | |
| 2004 01 30 | 691 | 0.1+ | 0.4+ | 2006 08 23 | 704 | 0.6− | 0.2+ | | | | | | |
| 2004 01 30 | 691 | 0.2− | 0.0 | 2006 08 28 | 699 | (1.6− | 1.0+) | | | | | | |

**(137314)∗ 1999 TQ$_{14}$**

Discovered 1999 Oct. 12 by P. Kušnirák at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.59328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30140833 | $\omega$ | 353.79326 | | +0.98849363 | −0.15115721 | |
| $a$ | 2.2030916 | $\Omega$ | 14.90430 | | +0.13970708 | +0.89804352 | |
| $e$ | 0.1209589 | $i$ | 1.25711 | | +0.05798514 | +0.41312145 | |
| $P$ | 3.27 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 05 | 691 | (2.7+ | 0.4+) | 1999 10 16 | 557 | 0.3+ | 0.1− | 2002 08 08 | 644 | 0.5− | 0.1− | | |
| 1994 01 05 | 691 | (3.2+ | 0.2−) | 1999 10 17 | 557 | 0.9− | 0.3+ | 2002 08 08 | 644 | 0.6− | 0.4− | | |
| 1994 01 05 | 691 | 1.6+ | 0.6+ | 1999 10 17 | 557 | 0.3+ | 0.5+ | 2002 08 29 | 644 | 0.3− | 0.4+ | | |
| 1994 01 19 | 691 | 0.7− | 0.1− | 1999 10 17 | 557 | 0.4+ | 0.7+ | 2002 08 29 | 644 | 0.5− | 0.3+ | | |
| 1994 01 19 | 691 | 0.7− | 0.4− | 1999 10 19 | 557 | 0.0 | 0.4+ | 2002 08 29 | 644 | 0.4+ | 0.9+ | | |
| 1994 01 19 | 691 | 1.0− | 0.9− | 1999 10 19 | 557 | 0.3+ | 0.2+ | 2002 09 06 | 557 | (0.5+ | 1.8+) | | |
| 1999 10 04 | 557 | 0.3− | 0.1− | 1999 10 19 | 557 | 0.1− | 0.0 | 2002 09 06 | 557 | 0.9+ | 1.0+ | | |
| 1999 10 04 | 557 | 0.6− | 0.1+ | 1999 10 19 | 704 | 0.5+ | 0.2+ | 2002 09 06 | 557 | 0.6+ | 0.2− | | |
| 1999 10 04 | 557 | 0.8+ | 0.4− | 1999 10 19 | 704 | 2.0+ | 0.5− | 2004 02 12 | 691 | 0.7+ | 0.1− | | |
| 1999 10 09 | 704 | 0.3− | 0.1− | 1999 10 19 | 704 | 0.3+ | 0.2+ | 2004 02 12 | 691 | 0.4+ | 0.4+ | | |
| 1999 10 09 | 704 | 0.9+ | 0.2+ | 1999 10 19 | 704 | 0.6− | 1.1+ | 2004 02 12 | 691 | 0.7+ | 0.7+ | | |
| 1999 10 09 | 704 | 0.4− | 0.1+ | 1999 10 31 | 557 | 0.0 | 0.5− | 2006 10 22 | G96 | 1.0− | 0.0 | | |
| 1999 10 09 | 704 | 0.3+ | 0.8− | 1999 10 31 | 557 | 0.6− | 0.3− | 2006 10 22 | G96 | 0.8− | 0.4+ | | |
| 1999 10 09 | 704 | 0.3− | 0.3+ | 1999 11 15 | 557 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.6− | 0.0 | | |
| 1999 10 12 | 557 | 0.4+ | 0.1− | 1999 11 15 | 557 | 0.5− | 0.8+ | 2006 10 22 | G96 | 0.7− | 0.1+ | | |
| 1999 10 12 | 557 | 0.1− | 0.2− | 2002 07 29 | 644 | 0.9− | 0.5− | 2006 11 15 | G96 | 0.4− | 0.2+ | | |
| 1999 10 15 | 557 | 0.2+ | 0.3+ | 2002 07 29 | 644 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.7− | 0.0 | | |
| 1999 10 15 | 557 | 0.1+ | 0.1+ | 2002 07 29 | 644 | 0.8− | 0.1− | 2006 11 15 | G96 | 0.5− | 0.4+ | | |
| 1999 10 16 | 557 | 0.2+ | 0.4+ | 2002 08 08 | 644 | 0.6− | 0.6− | 2006 11 15 | G96 | 0.6− | 0.0 | | |

**(137315)∗ 1999 TB$_{20}$**

Discovered 1999 Oct. 15 by BAO Schmidt CCD Asteroid Program at Xinglong.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.89695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27439540 | $\omega$ | 329.36062 | | +0.87273260 | −0.48080095 | |
| $a$ | 2.3454067 | $\Omega$ | 59.61153 | | +0.46545308 | +0.76714471 | |
| $e$ | 0.1488098 | $i$ | 5.63264 | | +0.14727944 | +0.42464037 | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.4− | 0.2+ | 2003 12 18 | 704 | 0.1− | 0.5+ | 2006 08 30 | 699 | 0.2− | 0.5+ | | |
| 1999 10 09 | 704 | 0.3− | 0.1− | 2003 12 23 | 704 | 1.0+ | 1.0+ | 2006 08 30 | 699 | 1.5− | 0.1+ | | |
| 1999 10 09 | 704 | 0.8− | 0.2− | 2003 12 23 | 704 | 1.1+ | 0.7+ | 2006 08 30 | 699 | 0.2+ | 0.5+ | | |
| 1999 10 09 | 704 | 0.7+ | 0.1− | 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.9− | 0.7+ | | |
| 1999 10 15 | 327 | 1.4− | 1.0− | 2003 12 27 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.7− | 0.1− | | |
| 1999 10 15 | 327 | 0.9− | 0.6− | 2003 12 27 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4− | 0.3+ | | |
| 1999 10 15 | 327 | 1.1− | 0.8− | 2003 12 27 | 691 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.3+ | | |
| 1999 10 18 | 327 | 0.6− | 0.6− | 2003 12 28 | 704 | (2.2− | 1.1+) | 2006 09 21 | 699 | 0.8+ | 0.4− | | |
| 1999 10 18 | 327 | 0.1+ | 1.0+ | 2003 12 28 | 704 | 0.5− | 0.6+ | 2006 09 21 | 699 | 0.8− | 0.9+ | | |
| 1999 10 18 | 327 | 0.4+ | 0.3+ | 2003 12 28 | 704 | (1.8− | 0.8+) | 2006 09 21 | 699 | 0.6+ | 0.3− | | |
| 1999 11 06 | 704 | 1.3+ | 0.9+ | 2003 12 28 | 704 | 1.2− | 0.2+ | 2006 09 21 | 699 | 0.5− | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 06 | 704 | 0.6+ | 0.3+ | 2005 04 11 | G96 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 1999 11 06 | 704 | (2.6+ | 0.5+) | 2005 04 11 | G96 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 1999 11 06 | 704 | 1.8+ | 0.3− | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.0 |
| 1999 11 06 | 704 | 1.4+ | 0.3− | 2005 04 11 | G96 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.4− | 0.2− |
| 1999 11 15 | 704 | 0.5− | 1.1− | 2005 04 30 | 691 | 0.5+ | 0.4+ | 2006 10 02 | 703 | 0.3− | 1.0− |
| 1999 11 15 | 704 | 0.1− | 0.2+ | 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.3+ | 0.2+ |
| 1999 11 15 | 704 | 0.8− | 1.7+ | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.9+ | 1.1+ |
| 1999 11 15 | 704 | 0.3+ | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.3+ | 2006 10 02 | 703 | 1.0+ | 0.3− |
| 1999 11 15 | 704 | 0.4+ | 0.5+ | 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.4− | 0.0 | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.6+ |
| 2003 12 18 | 704 | 0.5+ | 0.2− | 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2003 12 18 | 704 | 1.1+ | 0.1+ | 2006 08 30 | 699 | 1.0+ | 0.6+ | | | | |

**(137316)∗ 1999 TQ$_{20}$ = 2005 FA$_9$**

Discovered 1999 Oct. 5 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Id. A. Doppler (*MPO* 74630)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 359.52084 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27254375 | $\omega$ | 312.55173 | | +0.91802337 | | +0.39604869 | | |
| $a$ | 2.3560178 | $\Omega$ | 24.13642 | | −0.34843959 | | +0.82914296 | | |
| $e$ | 0.2027766 | $i$ | 2.72712 | | −0.18926950 | | +0.39454707 | | |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 703 | 0.3− | 0.4− | 1999 11 09 | 704 | (2.3+ | 1.8+) | 2006 08 17 | 644 | 0.3− | 0.1+ |
| 1999 10 02 | 703 | 0.7− | 1.1− | 1999 11 09 | 704 | 1.4+ | 0.8+ | 2006 08 17 | 644 | 0.1− | 0.1+ |
| 1999 10 02 | 703 | 0.8− | 1.2+ | 1999 11 09 | 704 | 1.1− | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.2− |
| 1999 10 02 | 703 | 0.8+ | 0.4+ | 1999 11 12 | 704 | 0.3+ | 1.0− | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 1999 10 04 | 704 | 0.3− | 0.2− | 1999 11 12 | 704 | 0.5+ | 1.1− | 2006 08 20 | 644 | 0.0 | 0.1− |
| 1999 10 04 | 704 | 0.4+ | 0.5− | 1999 11 12 | 704 | 0.5− | 0.4+ | 2006 08 23 | 704 | 0.8+ | 0.2− |
| 1999 10 04 | 704 | 1.1+ | 0.2− | 2002 05 11 | 704 | 0.6+ | 0.9+ | 2006 08 23 | 704 | 0.1+ | 0.8− |
| 1999 10 05 | 683 | 0.4+ | 0.6+ | 2002 05 11 | 704 | 0.4+ | 0.2+ | 2006 08 23 | 704 | 1.0+ | 0.9− |
| 1999 10 05 | 683 | 0.6+ | 0.7+ | 2002 05 11 | 704 | 0.8+ | 0.4+ | 2006 08 23 | 704 | 0.1− | 1.0− |
| 1999 10 05 | 683 | 0.1+ | 1.3+ | 2002 05 11 | 704 | 0.8− | 0.6+ | 2006 08 23 | 704 | 0.4+ | 0.8− |
| 1999 10 08 | 683 | 0.0 | 0.0 | 2003 12 18 | 704 | 0.7− | 0.4+ | 2006 08 23 | 644 | 0.2+ | 0.0 |
| 1999 10 08 | 683 | 0.7+ | 0.2+ | 2003 12 18 | 704 | 0.5+ | 0.5− | 2006 08 23 | 644 | 0.1− | 0.2− |
| 1999 10 08 | 683 | 0.6− | 0.5+ | 2003 12 18 | 704 | 0.0 | 0.8− | 2006 08 23 | 644 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.3+ | 0.5− | 2003 12 18 | 704 | (0.8− | 1.7−) | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.3− | 0.2− | 2003 12 18 | 704 | 0.7+ | 0.0 | 2006 08 24 | 644 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.4+ | 0.2− | 2003 12 27 | 704 | 0.2− | 0.9− | 2006 08 24 | 644 | 0.2− | 0.1− |
| 1999 10 09 | 704 | 0.4+ | 0.3− | 2003 12 27 | 704 | 0.3+ | 1.4− | 2006 08 28 | 699 | 0.2− | 0.2+ |
| 1999 10 09 | 704 | 0.0 | 0.2− | 2003 12 27 | 704 | 0.4+ | 1.3− | 2006 08 28 | 699 | 0.9+ | 0.2− |
| 1999 10 13 | 699 | 0.0 | 0.7+ | 2005 03 03 | 691 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.1+ |
| 1999 10 13 | 699 | 1.0− | 1.9+ | 2005 03 03 | 691 | 0.5+ | 0.2− | 2006 08 28 | 699 | 0.0 | 0.8− |
| 1999 10 13 | 699 | 0.2− | 0.2+ | 2005 03 03 | 691 | 0.0 | 0.6+ | 2006 08 28 | E12 | 0.1+ | 0.0 |
| 1999 10 15 | 704 | 0.4− | 0.4+ | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 08 28 | E12 | 0.5+ | 0.2+ |
| 1999 10 15 | 704 | 0.6− | 0.1− | 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 08 28 | E12 | 0.3+ | 0.2+ |
| 1999 10 15 | 704 | 0.8− | 0.1− | 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 08 28 | E12 | 0.5+ | 0.2− |
| 1999 10 15 | 704 | 1.7− | 1.3− | 2005 03 10 | G96 | 0.2− | 0.4+ | 2006 08 31 | 704 | 0.2− | 0.3+ |
| 1999 10 15 | 704 | 1.6− | 0.1− | 2005 03 16 | G96 | 0.0 | 0.7+ | 2006 08 31 | 704 | 0.6+ | 1.1− |
| 1999 10 19 | 704 | 0.9+ | 0.1− | 2005 03 16 | G96 | 0.8− | 0.5− | 2006 08 31 | 704 | 0.6− | 0.5+ |
| 1999 10 19 | 704 | 0.6+ | 0.2+ | 2005 03 16 | G96 | 0.6− | 0.2+ | 2006 08 31 | 704 | 0.6− | 0.3− |
| 1999 10 19 | 704 | 0.7+ | 0.6+ | 2005 03 16 | G96 | 0.6− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1− |
| 1999 10 19 | 704 | 0.0 | 0.8+ | 2006 07 25 | 644 | 0.4− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2− |
| 1999 10 19 | 557 | 0.1− | 0.2+ | 2006 07 25 | 644 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 1999 10 19 | 557 | 0.2+ | 0.9+ | 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.2− |
| 1999 11 01 | 703 | 0.7− | 0.2− | 2006 08 14 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.8+ |
| 1999 11 01 | 703 | 0.9− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 1999 11 01 | 703 | 0.6+ | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.5− | 0.6− |
| 1999 11 01 | 703 | 0.6− | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 1999 11 05 | 704 | 0.3+ | 0.3+ | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 10 20 | 695 | 0.2− | 0.2+ |
| 1999 11 05 | 704 | 0.1− | 0.2− | 2006 08 14 | 644 | 0.2− | 0.1− | | | | |
| 1999 11 05 | 704 | 0.1− | 0.9+ | 2006 08 17 | 644 | 0.0 | 0.1+ | | | | |

**(137317)∗ 1999 TY$_{21}$ = 2001 FG$_{12}$**

Discovered 1999 Oct. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 12943)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 284.24989 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27469238 | $\omega$ | 53.65234 | | +0.20151767 | | −0.97881801 | | |
| $a$ | 2.3437159 | $\Omega$ | 24.79542 | | +0.86879370 | | +0.16158509 | | |
| $e$ | 0.1354775 | $i$ | 4.94327 | | +0.45231420 | | +0.12572018 | | |
| $P$ | 3.59 | $H$ | 16.4 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.1+ | 0.3− | 2001 04 16 | 691 | 0.2− | 0.1+ | 2005 05 12 | 644 | 0.3− | 0.1+ |
| 1999 10 03 | 691 | 0.1+ | 1.3− | 2003 11 20 | 704 | 0.8+ | 0.6+ | 2005 05 12 | 644 | 0.4− | 0.3− |
| 1999 10 03 | 691 | 0.1+ | 0.3− | 2003 11 20 | 704 | 0.5+ | 0.8+ | 2006 08 22 | 644 | 0.4+ | 1.1+ |
| 1999 10 06 | 691 | 0.4+ | 0.4+ | 2003 11 20 | 704 | 0.1− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.4+ |
| 1999 10 06 | 691 | 0.0 | 0.2+ | 2003 11 20 | 704 | 0.0 | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.7+ |
| 1999 10 06 | 691 | 0.1+ | 0.0 | 2003 11 24 | 704 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.7+ |
| 1999 10 07 | 703 | 1.3− | 0.6+ | 2003 11 24 | 704 | 0.3− | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.4+ |
| 1999 10 07 | 703 | 1.3+ | 1.0+ | 2003 11 24 | 704 | 0.1+ | 0.4− | 2006 08 24 | 644 | 0.0 | 0.6+ |
| 1999 10 07 | 703 | 0.1+ | 1.0+ | 2003 11 24 | 704 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.3+ |
| 1999 10 07 | 703 | 0.7− | 0.7+ | 2003 12 04 | 704 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.5− | 0.2− |
| 1999 10 09 | 704 | 0.0 | 0.3+ | 2003 12 04 | 704 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.0 |
| 1999 10 09 | 704 | 0.1+ | 0.1− | 2003 12 04 | 704 | 0.2− | 0.4− | 2006 09 14 | 703 | (1.8+ | 1.7−) |
| 1999 10 09 | 704 | 0.8− | 0.3+ | 2003 12 04 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 1.1− |
| 1999 10 09 | 704 | 0.9− | 0.2+ | 2003 12 04 | 704 | 0.5− | 1.2− | 2006 09 30 | 703 | 1.4− | 0.1− |
| 1999 10 09 | 704 | 0.4− | 0.1+ | 2003 12 17 | 704 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.8− | 1.3+ |
| 2001 03 19 | 699 | (2.1− | 1.1+) | 2003 12 17 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 1.5+ | 0.1− |
| 2001 03 19 | 699 | 0.4+ | 1.0− | 2003 12 17 | 704 | 0.1+ | 0.7+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2001 03 19 | 699 | 1.3− | 1.0+ | 2003 12 17 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2001 03 19 | 699 | 1.0+ | 0.4+ | 2003 12 17 | 704 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2001 03 23 | 699 | 0.8+ | 0.8− | 2003 12 23 | 704 | 0.7− | 0.3− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 03 23 | 699 | 1.2+ | 0.2− | 2003 12 23 | 704 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 03 23 | 699 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.4+ | 0.3− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 03 23 | 699 | 0.3− | 1.0− | 2003 12 23 | 704 | 0.5− | 0.3− | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2001 04 16 | 691 | 0.2+ | 0.5+ | 2003 12 23 | 704 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2001 04 16 | 691 | 0.0 | 0.3+ | 2005 05 12 | 644 | 0.2− | 0.6+ | | | | |

**(137318)∗ 1999 TG$_{22}$ = 2001 FM$_{41}$**

Discovered 1999 Oct. 3 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 12943)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 259.70897 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29137481 | $\omega$ | 327.70443 | | −0.78073999 | | −0.62476808 | | |
| $a$ | 2.2533814 | $\Omega$ | 173.59974 | | +0.59142639 | | −0.74428124 | | |
| $e$ | 0.0957253 | $i$ | 5.39690 | | +0.20164300 | | −0.23603028 | | |
| $P$ | 3.38 | $H$ | 17.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 04 | 691 | 0.3− | 0.1+ | 2001 03 19 | 699 | (1.7+ | 0.7+) | 2004 01 23 | 704 | 0.2+ | 0.7− |
| 1994 02 04 | 691 | 0.1+ | 0.2− | 2001 03 20 | 691 | 0.3+ | 0.3+ | 2004 01 23 | 704 | 0.7+ | 0.0 |
| 1994 02 04 | 691 | 0.1+ | 0.1− | 2001 03 20 | 691 | 0.3+ | 0.2+ | 2004 01 23 | 704 | 0.1+ | 0.0 |
| 1994 02 04 | 691 | 0.1− | 0.0 | 2001 03 20 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | (0.6− | 1.9+) |
| 1994 02 04 | 691 | 0.2+ | 0.2− | 2001 03 20 | 608 | (0.8− | 1.6−) | 2006 10 16 | 703 | 1.3+ | 0.4+ |
| 1994 02 04 | 691 | 0.2− | 0.0 | 2001 03 20 | 608 | 0.6− | 1.1− | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 1999 10 03 | 691 | 0.2+ | 1.0+ | 2001 03 20 | 608 | 0.5− | 1.4− | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 1999 10 03 | 691 | 0.0 | 0.2+ | 2001 03 24 | 704 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 1999 10 03 | 691 | 0.1+ | 0.2+ | 2001 03 24 | 704 | 0.7+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 1999 10 06 | 691 | 0.4− | 0.1− | 2001 03 24 | 704 | 1.2− | 0.1− | 2006 10 18 | 691 | 0.3− | 0.2− |
| 1999 10 06 | 691 | 0.1+ | 0.1+ | 2001 03 24 | 704 | (1.7+ | 0.2+) | 2006 11 01 | 703 | 0.6− | 0.7+ |
| 1999 10 06 | 691 | 0.3− | 0.1+ | 2001 04 16 | 645 | 0.1− | 0.1+ | 2006 11 01 | 703 | 1.0− | 0.4+ |
| 1999 10 09 | 704 | 0.2+ | 0.9− | 2001 04 16 | 645 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.9+ | 1.0− |
| 1999 10 09 | 704 | 0.1− | 1.5− | 2002 08 05 | 599 | 0.3− | 0.7+ | 2006 11 01 | 703 | 0.0 | 0.9− |
| 1999 10 09 | 704 | 0.4− | 0.5− | 2002 08 05 | 599 | 0.2− | 1.1+ | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2001 02 22 | 704 | 0.3+ | 0.9+ | 2002 08 07 | 599 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2001 02 22 | 704 | 0.4− | 0.4+ | 2002 08 07 | 599 | 0.4− | 1.5+ | 2006 11 08 | 644 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 704 | 0.6+ | 0.4+ | 2002 08 07 | 599 | 0.1− | 0.9+ | 2006 11 13 | 703 | 1.4− | 0.4+ | | |
| 2001 02 22 | 704 | 0.5− | 0.4− | 2002 08 16 | 644 | 0.4+ | 0.9+ | 2006 11 13 | 703 | 0.4− | 0.9+ | | |
| 2001 03 18 | 704 | 0.6− | 1.3+ | 2002 08 16 | 644 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.9− | 0.8− | | |
| 2001 03 18 | 704 | 0.0 | 0.6+ | 2002 08 16 | 644 | 0.6+ | 0.7+ | 2006 11 13 | 703 | (2.0− | 0.5+) | | |
| 2001 03 18 | 704 | 0.8+ | 1.0+ | 2003 12 22 | 704 | 0.7+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.3− | | |
| 2001 03 18 | 704 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.6+ | 0.8+ | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2001 03 18 | 704 | 0.3+ | 0.4+ | 2003 12 22 | 704 | 0.2+ | 1.1+ | 2006 11 23 | G96 | 0.2− | 0.3− | | |
| 2001 03 19 | 699 | 0.5+ | 0.1+ | 2003 12 22 | 704 | 0.4+ | 1.2+ | 2006 11 23 | G96 | 0.5+ | 0.1− | | |
| 2001 03 19 | 699 | (1.6+ | 0.1+) | 2003 12 22 | 704 | 0.1+ | 0.8+ | | | | | | |
| 2001 03 19 | 699 | (1.8+ | 0.5+) | 2004 01 23 | 704 | 0.2+ | 0.2+ | | | | | | |

**(137319)∗ 1999 TV$_{23}$**

Discovered 1999 Oct. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.92535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23014197 | $\omega$ | 330.86851 | | +0.52430249 | −0.85119999 | |
| $a$ | 2.6371743 | $\Omega$ | 87.50092 | | +0.78580225 | +0.47288430 | |
| $e$ | 0.1097832 | $i$ | 1.36390 | | +0.32805748 | +0.22768183 | |
| $P$ | 4.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 691 | 0.1+ | 0.1− | 2001 02 21 | 691 | 0.3− | 0.1+ | 2004 12 19 | G96 | 0.5− | 0.3+ | | |
| 1999 09 18 | 691 | 0.1− | 0.1− | 2001 02 21 | 691 | 0.1+ | 0.2+ | 2004 12 19 | G96 | 0.0 | 0.0 | | |
| 1999 09 18 | 691 | 0.2+ | 0.1− | 2001 03 19 | 691 | 0.6+ | 0.2+ | 2005 01 17 | 691 | 0.1− | 0.2+ | | |
| 1999 10 04 | 691 | 0.1+ | 0.1+ | 2001 03 19 | 691 | 0.2+ | 0.0 | 2005 01 17 | 691 | 0.1+ | 0.0 | | |
| 1999 10 04 | 691 | 0.4− | 0.1− | 2001 03 19 | 691 | 0.0 | 0.3+ | 2005 01 17 | 691 | 0.1+ | 0.2+ | | |
| 1999 10 04 | 691 | 0.2− | 0.2− | 2003 08 23 | 644 | 0.0 | 1.0+ | 2006 03 25 | 691 | 0.0 | 0.3+ | | |
| 1999 10 06 | 691 | 0.1− | 0.0 | 2003 08 23 | 644 | 0.1− | 1.2+ | 2006 03 25 | 691 | 0.2− | 0.2+ | | |
| 1999 10 06 | 691 | 0.3− | 0.2+ | 2003 08 23 | 644 | 0.0 | 1.1+ | 2006 03 25 | 691 | 0.5− | 0.1− | | |
| 1999 10 06 | 691 | 0.3+ | 0.4+ | 2003 08 25 | 644 | 0.2− | 1.0+ | 2006 04 07 | 691 | 0.2+ | 0.2− | | |
| 2001 02 16 | 209 | 0.3+ | 0.4− | 2003 08 25 | 644 | 0.0 | 1.0+ | 2006 04 07 | 691 | 0.0 | 0.4+ | | |
| 2001 02 16 | 209 | 0.7+ | 0.0 | 2003 08 25 | 644 | 0.0 | 0.8+ | 2006 04 07 | 691 | 0.2+ | 0.0 | | |
| 2001 02 17 | 209 | (2.3+ | 0.9−) | 2004 12 19 | G96 | 0.1+ | 0.1− | | | | | | |
| 2001 02 21 | 691 | 0.2− | 0.3+ | 2004 12 19 | G96 | 0.3− | 0.2− | | | | | | |

**(137320)∗ 1999 TZ$_{28}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.26437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29453782 | $\omega$ | 95.79112 | | +0.53996050 | +0.84121726 | |
| $a$ | 2.2372199 | $\Omega$ | 206.94940 | | −0.79478109 | +0.49854546 | |
| $e$ | 0.1870843 | $i$ | 3.56956 | | −0.27706618 | +0.20929870 | |
| $P$ | 3.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.0 | 2.0+ | 2005 04 07 | 704 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.0 | | |
| 1999 09 05 | 699 | 0.7− | 0.3+ | 2005 04 07 | 704 | 0.7+ | 1.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 1999 09 05 | 699 | 0.3− | 0.1+ | 2005 04 07 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 1999 09 07 | 704 | 0.1+ | 0.1− | 2005 04 07 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 1999 09 07 | 704 | 0.8+ | 0.2+ | 2005 04 09 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 1999 09 07 | 704 | 0.5+ | 0.5+ | 2005 04 09 | 691 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.2− | | |
| 1999 09 30 | 703 | 0.9− | 0.2− | 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.2− | | |
| 1999 09 30 | 703 | 0.4− | 0.9+ | 2005 04 09 | 691 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.3− | | |
| 1999 09 30 | 703 | 0.1− | 0.0 | 2005 04 09 | 691 | (1.2− | 1.8+) | 2006 10 23 | G96 | 0.3− | 0.2− | | |
| 1999 09 30 | 703 | 0.5+ | 0.3+ | 2005 04 09 | 691 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 1999 10 04 | 704 | 0.0 | 0.1− | 2005 04 09 | G96 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2− | | |
| 1999 10 04 | 704 | 0.2+ | 1.3+ | 2005 04 09 | G96 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.3+ | | |
| 1999 10 04 | 704 | 0.2+ | 0.2− | 2005 04 09 | G96 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 1999 10 04 | 704 | 0.3+ | 1.0+ | 2005 04 09 | G96 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.3+ | | |
| 1999 10 04 | 704 | 0.3+ | 0.7+ | 2005 04 11 | 699 | 0.5+ | 0.4+ | 2006 11 11 | 691 | 1.1− | 1.4+ | | |
| 1999 10 06 | 704 | 0.0 | 0.5+ | 2005 04 11 | 699 | 0.5− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.6− | | |
| 1999 10 06 | 704 | 0.1+ | 0.4+ | 2005 04 11 | 699 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.6− | | |
| 1999 10 06 | 704 | 0.1+ | 0.3+ | 2005 04 11 | 699 | 1.0+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.5− | | |
| 1999 10 06 | 704 | 0.0 | 0.6+ | 2005 04 12 | 704 | (1.2+ | 2.3+) | 2006 11 11 | G96 | 0.1− | 0.6− | | |
| 1999 10 06 | 704 | 0.1+ | 0.5+ | 2005 04 12 | 704 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 0.8+ | 0.0 | | |
| 1999 10 07 | 703 | 0.7− | 0.8+ | 2005 04 12 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.4+ | | |
| 1999 10 07 | 703 | 0.5− | 0.5+ | 2005 04 12 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.1+ | | |
| 1999 10 07 | 703 | 0.5− | 0.6+ | 2005 04 15 | 699 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.2+ | | |
| 1999 10 07 | 703 | 0.6− | 0.9+ | 2005 04 15 | 699 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.4− | | |
| 1999 10 09 | 704 | 1.2− | 0.5+ | 2005 04 15 | 699 | 0.6+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.7+ | | |
| 1999 10 09 | 704 | 0.5− | 0.0 | 2005 04 15 | 699 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.6− | 0.3− | | |
| 1999 10 09 | 704 | 0.6− | 0.5+ | 2005 04 18 | 703 | 1.0− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 1999 10 09 | 704 | 0.2− | 0.2− | 2005 04 18 | 703 | (1.5− | 0.7+) | 2006 11 20 | 704 | 0.9− | 0.3+ | | |
| 1999 10 09 | 704 | 0.1− | 0.6+ | 2005 04 18 | 703 | 0.9− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 1.0+ | | |
| 1999 10 15 | 704 | 0.5− | 0.0 | 2005 04 18 | 703 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.1− | | |
| 1999 10 15 | 704 | 0.4− | 0.1− | 2005 04 30 | 644 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.7− | 0.5+ | | |
| 1999 10 15 | 704 | 0.1+ | 1.3+ | 2005 04 30 | 644 | 0.4+ | 0.5+ | 2006 11 20 | 704 | 0.8+ | 1.1+ | | |
| 1999 10 15 | 704 | 0.1− | 0.3+ | 2005 04 30 | 644 | 0.4+ | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.1− | | |
| 2002 07 05 | 704 | 0.1− | 0.4+ | 2005 05 04 | G96 | 0.3− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1+ | | |
| 2002 07 05 | 704 | 0.0 | 0.1+ | 2005 05 04 | G96 | 0.3− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2002 07 05 | 704 | 0.4− | 0.2− | 2005 05 04 | G96 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.5− | 0.4− | | |
| 2002 07 05 | 704 | 0.4+ | 0.2+ | 2005 05 04 | G96 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.2− | | |
| 2005 03 11 | G96 | 0.3− | 0.2− | 2005 05 08 | 703 | (0.6+ | 1.7+) | 2006 11 21 | 704 | 0.7− | 0.2+ | | |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2005 05 08 | 703 | 0.9− | 0.4+ | 2006 11 21 | 704 | 0.8− | 1.0+ | | |
| 2005 03 11 | G96 | 0.2− | 0.2− | 2005 05 08 | 703 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 2005 03 11 | G96 | 0.2− | 0.2− | 2005 05 08 | 703 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.5− | 0.4− | | |
| 2005 04 04 | 704 | 0.1+ | 1.1+ | 2005 05 23 | 644 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.5+ | | |
| 2005 04 04 | 704 | 0.4+ | 0.1+ | 2005 05 23 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.9− | 0.6+ | | |
| 2005 04 04 | 704 | 1.1+ | 0.5+ | 2005 05 23 | 644 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.8− | 0.1− | | |
| 2005 04 04 | 704 | 0.9+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.5+ | | |
| 2005 04 04 | 704 | 0.6+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.5+ | | |
| 2005 04 05 | 699 | 0.1+ | 1.1+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.8+ | 0.1+ | | |
| 2005 04 05 | 699 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.7+ | 0.1+ | | |
| 2005 04 05 | 699 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.5+ | | |
| 2005 04 05 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 0.8+ | 0.5+ | | |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.9+ | 1.0− | 2006 11 30 | 291 | 0.0 | 0.1+ | | |
| 2005 04 05 | G96 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.6− | 2006 11 30 | 291 | 0.3+ | 0.1− | | |
| 2005 04 05 | G96 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.3+ | 2006 11 30 | 291 | 0.5+ | 0.3− | | |
| 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− | | | | | | |

**(137321)∗ 1999 TN$_{29}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.33783 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27297836 | $\omega$ | 174.44092 | | +0.97407875 | −0.22466644 | |
| $a$ | 2.3535164 | $\Omega$ | 198.60626 | | +0.20422759 | +0.92356098 | |
| $e$ | 0.2332370 | $i$ | 4.74152 | | +0.09727121 | +0.31074122 | |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.1− | 0.1− | 1999 10 07 | 704 | 0.1− | 0.0 | 2003 12 01 | 704 | 0.4+ | 0.4− | | |
| 1999 09 05 | 699 | 0.7− | 0.6+ | 1999 10 07 | 704 | 0.3+ | 0.5− | 2003 12 01 | 704 | 0.7+ | 0.2+ | | |
| 1999 09 05 | 699 | 0.5+ | 0.8+ | 1999 10 07 | 704 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.5− | 0.0 | | |
| 1999 09 07 | 704 | 0.8+ | 0.2+ | 1999 10 07 | 704 | 0.3− | 0.4+ | 2003 12 22 | 704 | 0.2− | 0.1− | | |
| 1999 09 07 | 704 | 0.9+ | 0.1+ | 1999 10 07 | 704 | 0.6+ | 0.5− | 2003 12 22 | 704 | 0.3+ | 0.9+ | | |
| 1999 09 07 | 704 | 0.2+ | 0.2+ | 1999 10 09 | 704 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.5− | 0.1− | | |
| 1999 09 07 | 704 | 0.9− | 0.6+ | 1999 10 09 | 704 | 0.3+ | 0.1− | 2003 12 22 | 704 | 0.1− | 0.9+ | | |
| 1999 09 07 | 704 | 1.1− | 1.4− | 1999 10 09 | 704 | 0.2+ | 0.1+ | 2005 03 10 | G96 | 0.1− | 0.2+ | | |
| 1999 09 30 | 703 | 0.8− | 0.0 | 1999 10 09 | 704 | 0.1− | 0.2− | 2005 03 10 | G96 | 0.1− | 0.2− | | |
| 1999 09 30 | 703 | 0.7− | 0.0 | 1999 10 09 | 704 | 0.5− | 0.1− | 2005 03 10 | G96 | 0.1− | 0.2− | | |
| 1999 09 30 | 703 | 1.1− | 0.4+ | 1999 10 29 | 703 | 1.3− | 0.1+ | 2005 03 10 | G96 | 0.0 | 0.1− | | |
| 1999 09 30 | 703 | 0.8− | 0.8− | 1999 10 29 | 703 | 0.3+ | 0.8+ | 2006 08 18 | 644 | 0.4− | 0.6+ | | |
| 1999 10 04 | 704 | 0.1+ | 0.5− | 1999 10 29 | 703 | 0.5− | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.5+ | | |
| 1999 10 04 | 704 | 0.7− | 1.2− | 1999 10 29 | 703 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.4+ | | |
| 1999 10 04 | 704 | 0.7− | 0.0 | 1999 10 31 | 699 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.1+ | 1.3− | | |
| 1999 10 04 | 704 | 0.0 | 0.3− | 1999 10 31 | 699 | 1.0− | 1.0− | 2006 08 30 | 704 | 0.9+ | 0.1− | | |
| 1999 10 04 | 704 | 1.8+ | 0.1− | 1999 10 31 | 699 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.7+ | 0.7− | | |
| 1999 10 06 | 704 | 0.5+ | 0.3+ | 1999 11 03 | 703 | 0.5− | 0.8+ | 2006 08 30 | 704 | 0.1− | 0.5+ | | |
| 1999 10 06 | 704 | 0.5+ | 0.1+ | 1999 11 03 | 703 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 1999 10 06 | 704 | 0.1+ | 0.1− | 1999 11 03 | 703 | 0.9+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.8+ | 0.0 | 1999 11 03 | 703 | 0.9+ | 0.0 | 2006 10 22 | G96 | 0.2− | 0.0 | |
| 1999 10 06 | 704 | 0.4+ | 0.1+ | 1999 11 12 | 704 | 0.3− | 0.9+ | 2006 11 18 | G96 | 0.2− | 0.2− | |
| 1999 10 07 | 703 | 0.2− | 0.4+ | 1999 11 12 | 704 | 0.5− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.0 | |
| 1999 10 07 | 703 | 0.4− | 0.0 | 1999 11 12 | 704 | 1.2+ | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.2− | |
| 1999 10 07 | 703 | 0.7+ | 0.7− | 2003 12 01 | 704 | 0.2− | 1.3− | 2006 11 18 | G96 | 0.1− | 0.0 | |
| 1999 10 07 | 703 | 0.9+ | 0.2+ | 2003 12 01 | 704 | 0.3+ | 0.8− | | | | | |

**(137322)∗ 1999 TR$_{32}$ = 2002 JT$_{70}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29112)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 18.64591 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.27591426 | $\omega$ | 105.93693 | | +0.64830346 | +0.76120059 | |
| *a* | 2.3367914 | $\Omega$ | 204.50100 | | −0.71298927 | +0.59929425 | |
| *e* | 0.2569774 | *i* | 2.29707 | | −0.26711221 | +0.24783072 | |
| *P* | 3.57 | *H* | 16.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 1.0+ | 1.3− | 2002 05 13 | 704 | (1.9+ | 0.4+) | 2006 08 28 | 699 | 0.1− | 0.2− | |
| 1999 09 07 | 704 | 1.0+ | 1.4− | 2002 05 18 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.3+ | |
| 1999 09 07 | 704 | 1.2+ | 0.3− | 2002 05 18 | 644 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.2+ | |
| 1999 09 07 | 704 | 0.9− | 0.4+ | 2002 05 18 | 644 | 1.1+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.2− | |
| 1999 09 07 | 704 | 0.9− | 1.8+ | 2002 05 19 | 644 | 0.3+ | 0.5+ | 2006 08 28 | 699 | 0.3− | 0.1− | |
| 1999 09 30 | 703 | 0.6− | 0.3− | 2002 05 19 | 644 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.3− | |
| 1999 09 30 | 703 | 1.8− | 0.0 | 2002 05 19 | 644 | 0.5+ | 0.6+ | 2006 08 28 | 703 | (1.7− | 0.0 ) | |
| 1999 09 30 | 703 | 0.7+ | 1.2+ | 2003 12 29 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.2− | |
| 1999 09 30 | 703 | 0.5− | 0.3+ | 2003 12 29 | 691 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 0.6+ | 0.2− | |
| 1999 10 04 | 704 | 0.9− | 0.9− | 2003 12 29 | 691 | 0.4− | 0.4+ | 2006 08 30 | 704 | 0.8+ | 0.4+ | |
| 1999 10 04 | 704 | 0.2− | 0.6− | 2005 04 09 | G96 | 0.3− | 0.2− | 2006 08 30 | 704 | 1.2+ | 0.4+ | |
| 1999 10 04 | 704 | (2.1+ | 0.6−) | 2005 04 09 | G96 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.6+ | |
| 1999 10 06 | 704 | 0.3− | 0.0 | 2005 04 09 | G96 | 0.4− | 0.9+ | 2006 08 30 | 704 | 0.3− | 0.3+ | |
| 1999 10 06 | 704 | 0.3+ | 0.1− | 2005 04 09 | G96 | 0.5− | 0.3+ | 2006 08 30 | 704 | (1.6− | 0.7+) | |
| 1999 10 06 | 704 | 0.0 | 0.2− | 2006 06 19 | 703 | 1.2+ | 0.9− | 2006 08 30 | 704 | 1.0− | 0.4+ | |
| 1999 10 06 | 704 | 0.1− | 0.1− | 2006 06 19 | 703 | (0.3− | 2.8+) | 2006 08 30 | 704 | 0.9+ | 1.4+ | |
| 1999 10 06 | 704 | 0.4+ | 0.1+ | 2006 06 19 | 703 | 0.4+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.2+ | |
| 1999 10 07 | 703 | 0.6+ | 0.3+ | 2006 06 19 | 703 | 0.7+ | 0.7+ | 2006 08 30 | 704 | 0.3+ | 0.6+ | |
| 1999 10 07 | 703 | 0.6+ | 0.7+ | 2006 06 20 | 703 | (0.8− | 1.9−) | 2006 09 01 | 704 | 0.3+ | 0.3+ | |
| 1999 10 07 | 703 | 0.2+ | 0.2+ | 2006 06 20 | 703 | 0.6+ | 0.8− | 2006 09 01 | 704 | 0.2+ | 0.9+ | |
| 1999 10 07 | 703 | 0.3+ | 0.8+ | 2006 06 20 | 703 | 0.5− | 0.0 | 2006 09 01 | 704 | 0.2+ | 0.2+ | |
| 1999 10 07 | 704 | 0.4+ | 0.1+ | 2006 06 20 | 703 | (1.7+ | 3.7+) | 2006 09 12 | 704 | 0.5+ | 0.1− | |
| 1999 10 07 | 704 | 0.2− | 0.3− | 2006 06 23 | 644 | 0.3+ | 0.2− | 2006 09 12 | 704 | 0.3− | 0.1− | |
| 1999 10 07 | 704 | 0.2− | 0.4+ | 2006 06 23 | 644 | 0.1− | 0.0 | 2006 09 12 | 704 | 0.3+ | 1.0+ | |
| 1999 10 07 | 704 | 0.1− | 0.2+ | 2006 06 23 | 644 | 0.4− | 0.1− | 2006 09 12 | 704 | 1.3− | 0.7+ | |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2006 08 16 | A50 | 0.3− | 0.0 | 2006 09 12 | 704 | 0.6+ | 0.4− | |
| 1999 10 09 | 704 | 0.0 | 0.1+ | 2006 08 16 | A50 | 0.3− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.1− | |
| 1999 10 09 | 704 | 0.1+ | 0.5+ | 2006 08 18 | 704 | 0.3− | 0.6− | 2006 09 14 | 644 | 0.2− | 0.1− | |
| 1999 10 09 | 704 | 0.3+ | 0.3+ | 2006 08 18 | 704 | 0.4− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.0 | |
| 1999 10 09 | 704 | 0.1− | 0.5+ | 2006 08 18 | 704 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.1− | |
| 1999 12 05 | 691 | 0.5− | 0.0 | 2006 08 18 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.2− | |
| 1999 12 05 | 691 | 0.1− | 0.1− | 2006 08 18 | 704 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− | |
| 1999 12 05 | 691 | 0.1− | 0.1+ | 2006 08 19 | 699 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.3− | |
| 2002 04 10 | 704 | 0.5− | 0.0 | 2006 08 19 | 644 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.4− | 0.4− | |
| 2002 04 10 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 699 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.1− | |
| 2002 04 10 | 704 | 0.9+ | 0.1+ | 2006 08 19 | 644 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.6− | 0.4− | |
| 2002 04 10 | 704 | 0.1− | 0.2+ | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 10 19 | G96 | (0.7− | 1.8−) | |
| 2002 04 14 | 704 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.1+ | |
| 2002 04 14 | 704 | 0.6+ | 0.0 | 2006 08 20 | 644 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.3+ | |
| 2002 04 14 | 704 | 0.2− | 0.6+ | 2006 08 20 | 644 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.3− | |
| 2002 04 14 | 704 | 0.2+ | 0.7+ | 2006 08 20 | 644 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− | |
| 2002 04 14 | 704 | 0.5+ | 0.2+ | 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.1− | |
| 2002 05 08 | 704 | 1.0− | 0.1− | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.4− | 0.3− | |
| 2002 05 08 | 704 | 0.4− | 0.4+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.1− | |
| 2002 05 08 | 704 | 1.2− | 0.5+ | 2006 08 23 | A50 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.0 | 0.2− | |
| 2002 05 08 | 704 | 0.7− | 0.4− | 2006 08 23 | A50 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− | |
| 2002 05 13 | 704 | (2.3+ | 0.6−) | 2006 08 24 | 608 | 0.0 | 1.4− | 2006 11 21 | G96 | 0.1+ | 0.2− | |
| 2002 05 13 | 704 | 0.1− | 0.5+ | 2006 08 24 | 608 | 0.4+ | 1.5− | | | | | |
| 2002 05 13 | 704 | 1.3+ | 0.0 | 2006 08 24 | 608 | (0.3+ | 1.6−) | | | | | |

**(137323)∗ 1999 TF$_{35}$ = 1999 UA$_{52}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (d, *MPO* 1669)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 319.69019 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.27960678 | $\omega$ | 229.36463 | | +0.45528115 | −0.88588343 | |
| *a* | 2.3161726 | $\Omega$ | 194.35725 | | +0.88607424 | +0.46061151 | |
| *e* | 0.2764801 | *i* | 21.04578 | | +0.08712929 | −0.05520496 | |
| *P* | 3.52 | *H* | 15.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.3+ | 0.2+ | 2004 03 16 | 704 | 0.6+ | 0.0 | 2006 09 20 | 958 | 0.0 | 0.3− | |
| 1999 09 08 | 704 | 0.2+ | 0.5− | 2004 03 16 | 704 | (1.9+ | 0.7+) | 2006 09 20 | 958 | 0.4+ | 0.1− | |
| 1999 09 08 | 704 | 0.2− | 0.1+ | 2004 03 16 | 704 | 0.8+ | 0.7− | 2006 09 21 | 699 | 0.3− | 0.1+ | |
| 1999 09 08 | 704 | 0.2− | 1.0− | 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 09 21 | 699 | 0.1+ | 0.0 | |
| 1999 09 08 | 704 | 0.3− | 0.9− | 2004 03 20 | 704 | 1.3+ | 0.3− | 2006 09 21 | 699 | 0.7− | 0.3− | |
| 1999 09 18 | 703 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.8+ | 0.7− | 2006 09 21 | 699 | 0.3+ | 0.3+ | |
| 1999 09 18 | 703 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.5− | |
| 1999 09 18 | 703 | 0.2+ | 0.3+ | 2004 03 26 | 699 | 0.3− | 0.9+ | 2006 09 27 | 703 | 0.0 | 0.1− | |
| 1999 09 18 | 703 | 0.1− | 0.0 | 2004 03 26 | 699 | 0.2+ | 1.1+ | 2006 09 27 | 703 | 0.0 | 0.3− | |
| 1999 09 30 | 703 | 0.5− | 0.2+ | 2004 03 26 | 699 | 0.5− | 0.1− | 2006 09 27 | 703 | 0.4+ | 0.6− | |
| 1999 09 30 | 703 | 0.3− | 0.5+ | 2004 03 26 | 699 | (1.3− | 1.5+) | 2006 09 29 | 699 | 0.7+ | 0.4+ | |
| 1999 09 30 | 703 | 0.5− | 0.1+ | 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.2− | 0.3+ | |
| 1999 09 30 | 703 | 0.2− | 0.1+ | 2005 05 04 | 691 | 0.2− | 0.3+ | 2006 09 29 | 699 | 0.6+ | 0.3− | |
| 1999 10 04 | 704 | 0.1− | 0.1− | 2005 05 04 | 691 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.5+ | |
| 1999 10 04 | 704 | 0.4+ | 0.7− | 2006 08 10 | 644 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.2+ | 0.3− | |
| 1999 10 04 | 704 | 0.5+ | 0.6− | 2006 08 10 | 644 | 0.3− | 0.3+ | 2006 10 01 | 703 | 0.0 | 0.1− | |
| 1999 10 04 | 704 | 0.4+ | 0.5− | 2006 08 10 | 644 | 0.4− | 0.3+ | 2006 10 01 | 703 | (1.7− | 0.5+) | |
| 1999 10 04 | 704 | 0.6+ | 0.5− | 2006 08 25 | 704 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.4+ | 0.2− | |
| 1999 10 07 | 704 | 0.6+ | 0.1+ | 2006 08 25 | 704 | 0.8− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.3− | |
| 1999 10 07 | 704 | 0.1− | 0.4− | 2006 08 25 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.1− | |
| 1999 10 07 | 704 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.3− | |
| 1999 10 07 | 704 | 0.5+ | 0.3+ | 2006 08 29 | 699 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.4− | |
| 1999 10 07 | 704 | 1.0+ | 0.4− | 2006 08 29 | 699 | 0.3− | 0.1+ | 2006 10 28 | 704 | 0.7+ | 1.5+ | |
| 1999 10 15 | 704 | 0.1− | 0.4+ | 2006 08 29 | 699 | 0.6− | 0.0 | 2006 10 28 | 704 | 0.9+ | 0.1+ | |
| 1999 10 15 | 704 | 0.3− | 0.1− | 2006 08 29 | 699 | 0.3− | 0.3+ | 2006 10 28 | 704 | 0.7+ | 1.0+ | |
| 1999 10 15 | 704 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.4+ | 0.3+ | 2006 10 28 | 704 | 0.2− | 0.3+ | |
| 1999 10 15 | 704 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.0 | 0.3+ | |
| 1999 10 15 | 704 | 0.2− | 0.1+ | 2006 09 01 | 704 | 0.0 | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.0 | |
| 1999 10 31 | 699 | 0.1− | 0.1− | 2006 09 01 | 106 | 0.8+ | 0.3− | 2006 11 06 | 644 | 0.5+ | 0.1+ | |
| 1999 10 31 | 699 | 0.6− | 0.1+ | 2006 09 01 | 106 | 0.2− | 0.6− | 2006 11 09 | 644 | 0.2− | 0.2− | |
| 1999 10 31 | 699 | 0.7− | 0.3+ | 2006 09 01 | 106 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− | |
| 1999 11 06 | 703 | 0.6− | 0.1+ | 2006 09 01 | 106 | 0.3+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− | |
| 1999 11 06 | 703 | 0.4− | 0.5+ | 2006 09 16 | 703 | 0.4+ | 0.2− | 2006 11 10 | 704 | 0.5− | 0.1− | |
| 1999 11 06 | 703 | 1.2− | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.4− | 2006 11 10 | 704 | 0.1− | 0.2+ | |
| 1999 11 06 | 703 | 0.8− | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 11 10 | 704 | 0.5− | 0.9+ | |
| 1999 11 07 | 704 | 1.0+ | 1.8− | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 11 10 | 704 | 0.9+ | 0.4+ | |
| 1999 11 07 | 704 | 0.9+ | 1.3− | 2006 09 16 | 683 | 0.1+ | 0.2− | 2006 11 10 | 704 | 0.0 | 0.2− | |
| 1999 11 07 | 704 | 0.7+ | 0.7− | 2006 09 16 | 683 | 0.7+ | 0.9− | 2006 11 11 | 703 | 0.1− | 0.8+ | |
| 1999 11 07 | 704 | 0.4+ | 0.9− | 2006 09 16 | 683 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.2+ | |
| 2003 12 27 | 608 | 0.1+ | 1.1− | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.3− | 0.3+ | |
| 2003 12 27 | 608 | 0.2+ | 0.9− | 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.9− | 0.7+ | |
| 2003 12 27 | 608 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 11 14 | 704 | 1.4+ | 1.2+ | |
| 2004 01 03 | 704 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.6− | 2006 11 14 | 704 | 0.0 | 0.8+ | |
| 2004 01 03 | 704 | 0.4− | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.9+ | |
| 2004 01 03 | 704 | 0.6+ | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | (1.7+ | 0.4+) | |
| 2004 01 03 | 704 | 0.2− | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 11 14 | 704 | (1.8+ | 0.6+) | |
| 2004 01 11 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.2+ | |
| 2004 01 11 | 644 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.3+ | |
| 2004 01 11 | 644 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 11 17 | 704 | (1.8− | 0.9+) | |
| 2004 01 16 | 644 | 0.4− | 0.2− | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.7+ | |
| 2004 01 16 | 644 | 0.5− | 0.0 | 2006 09 17 | 683 | 0.3− | 0.4− | 2006 11 17 | 704 | 0.4− | 0.5+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.4− | 0.2+ | 2006 09 17 | 683 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.5+ | | |
| 2004 02 20 | 608 | 0.3− | 0.6− | 2006 09 17 | 683 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.5+ | | |
| 2004 02 20 | 608 | 0.2− | 0.7− | 2006 09 20 | G92 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.2+ | 1.1+ | | |
| 2004 02 20 | 608 | 0.4− | 0.6− | 2006 09 20 | G92 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.8+ | | |
| 2004 03 16 | 704 | 0.3+ | 0.4− | 2006 09 20 | G92 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.9+ | | |
| 2004 03 16 | 704 | 0.2− | 0.6+ | 2006 09 20 | 958 | 0.1− | 0.1+ | | | | | | |

**(137324)∗ 1999 TX$_{35}$**

Discovered 1999 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.72874 | | (2000.0) | | | |
| $n$ | 0.27555679 | $\omega$ | 348.50184 | | +0.98867378 | −0.12944801 |
| $a$ | 2.3388120 | $\Omega$ | 19.43347 | | +0.14931449 | +0.79734226 |
| $e$ | 0.1676125 | $i$ | 13.19436 | | +0.01514398 | +0.58948158 |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 703 | 0.2− | 0.5+ | 1999 11 01 | 699 | 0.5+ | 0.7− | 2006 09 14 | 703 | 0.4+ | 0.0 | | |
| 1999 10 02 | 703 | 0.0 | 0.4+ | 1999 11 04 | 704 | 1.0+ | 0.1− | 2006 09 14 | 703 | 0.1− | 0.1− | | |
| 1999 10 02 | 703 | 0.5− | 0.6+ | 1999 11 04 | 704 | 0.7+ | 1.3− | 2006 09 14 | 703 | 0.7+ | 0.1+ | | |
| 1999 10 02 | 703 | 0.9− | 0.3+ | 1999 11 04 | 703 | 0.2+ | 1.5+ | 2006 09 21 | 699 | 0.7− | 0.4+ | | |
| 1999 10 06 | 704 | 0.2+ | 0.2− | 1999 11 04 | 704 | 1.0+ | 1.3− | 2006 09 21 | 699 | 0.1+ | 0.9+ | | |
| 1999 10 06 | 704 | 0.3+ | 0.1− | 1999 11 04 | 703 | 0.6− | 0.3− | 2006 09 21 | 699 | 0.9− | 0.2− | | |
| 1999 10 06 | 704 | 0.1− | 0.1− | 1999 11 04 | 704 | 0.5+ | 0.3− | 2006 09 26 | 703 | 0.6− | 0.1− | | |
| 1999 10 06 | 704 | 0.2+ | 0.1− | 1999 11 04 | 703 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.2+ | | |
| 1999 10 06 | 704 | 0.1+ | 0.2+ | 1999 11 04 | 703 | 0.7+ | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.0 | | |
| 1999 10 07 | 704 | 0.2− | 0.3− | 1999 11 05 | 704 | 0.7+ | 0.8− | 2006 09 26 | 703 | 0.3− | 0.5+ | | |
| 1999 10 07 | 704 | 0.0 | 0.1− | 1999 11 05 | 704 | 0.4+ | 0.1− | 2006 09 26 | 703 | 0.3− | 0.1+ | | |
| 1999 10 07 | 704 | 0.0 | 0.2+ | 1999 11 05 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.8+ | 0.3− | | |
| 1999 10 07 | 704 | 0.3− | 0.2+ | 1999 11 05 | 704 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.2− | | |
| 1999 10 10 | 704 | 1.6+ | 0.3+ | 1999 11 05 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.1− | | |
| 1999 10 10 | 704 | 0.3+ | 1.1− | 2003 12 30 | 704 | 0.1+ | 0.8+ | 2006 10 02 | 703 | 0.6+ | 0.6+ | | |
| 1999 10 10 | 704 | 0.2+ | 0.0 | 2003 12 30 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 703 | (0.4+ | 1.7+) | | |
| 1999 10 10 | 704 | 0.1+ | 0.1+ | 2003 12 30 | 704 | 0.2+ | 0.8+ | 2006 10 02 | 703 | (2.7+ | 1.4+) | | |
| 1999 10 13 | 704 | 0.6− | 0.4− | 2004 01 11 | 644 | 0.2− | 0.9+ | 2006 10 02 | 703 | 0.2− | 0.1− | | |
| 1999 10 13 | 704 | 0.3− | 0.2− | 2004 01 11 | 644 | 0.0 | 0.7+ | 2006 10 10 | 644 | 0.4− | 0.4+ | | |
| 1999 10 13 | 704 | 0.2− | 0.6− | 2004 01 11 | 644 | 0.4+ | 1.1+ | 2006 10 10 | 644 | 0.2− | 0.3+ | | |
| 1999 10 13 | 704 | 0.2− | 0.7− | 2005 03 11 | G96 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.2− | 0.6+ | | |
| 1999 10 13 | 704 | 0.0 | 1.1− | 2005 03 11 | G96 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3− | 0.6+ | | |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.5+ | | |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 1999 10 15 | 704 | 0.2+ | 0.5+ | 2005 04 05 | 644 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.1+ | | |
| 1999 10 15 | 704 | 0.2+ | 0.1+ | 2005 04 05 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.1− | | |
| 1999 10 15 | 704 | 0.0 | 0.1+ | 2005 04 05 | 644 | 0.5+ | 0.8+ | 2006 10 19 | 703 | 0.2+ | 0.5+ | | |
| 1999 10 15 | 704 | 0.1+ | 0.1+ | 2005 04 11 | 691 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.6− | | |
| 1999 10 18 | 691 | 0.2− | 0.2− | 2005 04 11 | 691 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 1999 10 18 | 691 | 0.6− | 0.1− | 2005 04 11 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.1+ | | |
| 1999 10 18 | 691 | 0.4− | 0.2+ | 2005 04 15 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 1999 10 21 | 704 | 0.2− | 1.2+ | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.6+ | | |
| 1999 10 21 | 704 | 0.0 | 0.5+ | 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 1999 10 21 | 704 | 0.1− | 0.6+ | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 1999 10 21 | 704 | 0.5− | 0.5+ | 2006 08 16 | 644 | 0.4− | 0.1− | 2006 11 18 | 703 | 0.2+ | 0.0 | | |
| 1999 10 21 | 704 | 0.3− | 0.1+ | 2006 08 16 | 644 | 0.3+ | 0.2+ | 2006 11 18 | 703 | 0.0 | 0.1+ | | |
| 1999 10 30 | 703 | 0.6+ | 1.2+ | 2006 09 12 | 704 | 0.2− | 0.1− | 2006 11 18 | 703 | 0.2− | 0.6− | | |
| 1999 10 30 | 703 | 0.8− | 1.0+ | 2006 09 12 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 703 | 0.9− | 0.5+ | | |
| 1999 10 30 | 703 | 0.3− | 0.1− | 2006 09 12 | 704 | 0.2− | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 1999 10 30 | 703 | 0.1+ | 0.4+ | 2006 09 12 | 704 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.3+ | | |
| 1999 11 01 | 699 | 0.5+ | 0.3+ | 2006 09 12 | 704 | (1.7+ | 0.8+) | 2006 11 21 | G96 | 0.3− | 0.0 | | |
| 1999 11 01 | 699 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.3+ | 0.1+ | | |

**(137325)∗ 1999 TQ$_{37}$ = 2004 DV$_{18}$**

Discovered 1999 Oct. 1 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 60544)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.27617 | | (2000.0) | | | |
| $n$ | 0.28024792 | $\omega$ | 131.94878 | | +0.86069980 | −0.49854705 |
| $a$ | 2.3126387 | $\Omega$ | 258.19638 | | +0.43034489 | +0.82072806 |
| $e$ | 0.1326365 | $i$ | 6.05089 | | +0.27202782 | +0.27902740 |
| $P$ | 3.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 703 | 0.1− | 0.6− | 2003 11 23 | 704 | 0.5+ | 0.0 | 2006 08 30 | 699 | 0.3+ | 0.0 | | |
| 1999 09 05 | 703 | 0.6− | 0.5− | 2003 11 23 | 704 | 0.5+ | 0.1− | 2006 08 30 | 699 | 0.1− | 0.1− | | |
| 1999 09 05 | 703 | 0.5+ | 0.2+ | 2003 12 19 | 704 | 0.1− | 0.1− | 2006 09 11 | 703 | (1.8− | 1.1−) | | |
| 1999 09 05 | 703 | 1.0− | 1.0+ | 2003 12 19 | 704 | 0.4− | 0.5− | 2006 09 11 | 703 | (1.7− | 0.3+) | | |
| 1999 10 01 | 703 | 0.3− | 0.1− | 2003 12 19 | 704 | 0.2− | 0.1+ | 2006 09 11 | 703 | (1.1− | 1.8−) | | |
| 1999 10 01 | 703 | 0.6− | 0.2− | 2003 12 19 | 704 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 0.5− | 0.1− | | |
| 1999 10 01 | 703 | 1.5− | 0.1+ | 2003 12 19 | 704 | 0.5− | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.6+ | | |
| 1999 10 01 | 703 | 0.0 | 0.5− | 2003 12 23 | 704 | (2.4− | 0.8+) | 2006 09 18 | 703 | 0.4+ | 0.5+ | | |
| 1999 10 07 | 703 | 0.0 | 0.4− | 2003 12 23 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.2+ | | |
| 1999 10 07 | 703 | 0.3+ | 1.1+ | 2003 12 23 | 704 | 0.7− | 0.3− | 2006 09 18 | 703 | 1.6− | 0.1− | | |
| 1999 10 07 | 703 | 0.3− | 1.1− | 2003 12 23 | 704 | 0.4− | 0.4+ | 2006 09 23 | 703 | 0.3− | 0.1+ | | |
| 1999 10 07 | 703 | 0.2+ | 0.2+ | 2004 01 13 | 691 | 0.0 | 0.1+ | 2006 09 23 | 703 | 0.5+ | 0.0 | | |
| 1999 10 09 | 704 | 1.4+ | 0.4− | 2004 01 13 | 691 | 0.1− | 0.1+ | 2006 09 23 | 703 | 0.4− | 0.5− | | |
| 1999 10 09 | 704 | 0.8+ | 0.4+ | 2004 01 13 | 691 | 0.1− | 0.2+ | 2006 09 30 | 699 | 0.3− | 0.2− | | |
| 1999 10 09 | 704 | 1.2+ | 0.8− | 2004 02 16 | 704 | 0.1+ | 0.2− | 2006 09 30 | 699 | 0.1+ | 1.1+ | | |
| 1999 10 09 | 704 | 0.5+ | 0.0 | 2004 02 16 | 704 | 0.3+ | 0.0 | 2006 09 30 | 699 | 0.3+ | 0.3+ | | |
| 1999 10 09 | 704 | 0.8+ | 0.7− | 2004 02 16 | 704 | 1.0+ | 0.2− | 2006 09 30 | 699 | 0.2− | 0.1+ | | |
| 2001 02 20 | 704 | 0.3− | 0.3+ | 2004 02 16 | 704 | (1.6+ | 1.6−) | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 2001 02 20 | 704 | (1.2− | 1.9+) | 2004 02 22 | 704 | 0.9+ | 0.9+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2001 02 20 | 704 | 0.3+ | 0.4+ | 2004 02 22 | 704 | 0.8+ | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2001 02 20 | 704 | (0.4+ | 1.9+) | 2004 02 22 | 704 | 0.4+ | 0.5− | 2006 11 10 | 704 | 0.6+ | 0.7+ | | |
| 2001 02 20 | 704 | 0.8+ | 0.1+ | 2004 02 22 | 704 | 0.6+ | 0.5− | 2006 11 10 | 704 | (0.2+ | 1.7+) | | |
| 2003 10 24 | 704 | 0.2− | 0.4− | 2006 08 28 | 704 | (2.4− | 1.4+) | 2006 11 10 | 704 | 0.1+ | 0.8− | | |
| 2003 10 24 | 704 | 0.1− | 0.4+ | 2006 08 28 | 704 | 1.3− | 0.7+ | 2006 11 10 | 704 | 0.3+ | 0.2+ | | |
| 2003 10 24 | 704 | 0.2− | 0.1− | 2006 08 28 | 704 | 1.4− | 0.3+ | 2006 11 10 | 704 | 1.1+ | 0.5+ | | |
| 2003 10 24 | 704 | 0.0 | 0.3+ | 2006 08 28 | 704 | (0.2− | 1.8+) | 2006 11 19 | 704 | 0.9+ | 0.4− | | |
| 2003 11 23 | 704 | 0.3− | 0.5− | 2006 08 28 | 704 | 0.2− | 0.3+ | 2006 11 19 | 704 | 1.2+ | 0.4+ | | |
| 2003 11 23 | 704 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.3− | | |

**(137326)∗ 1999 TT$_{40}$**

Discovered 1999 Oct. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.80112 | | (2000.0) | | | |
| $n$ | 0.28892937 | $\omega$ | 24.33889 | | +0.59575323 | −0.80062878 |
| $a$ | 2.2660784 | $\Omega$ | 29.21781 | | +0.71380192 | +0.49137167 |
| $e$ | 0.1714856 | $i$ | 7.51133 | | +0.36819141 | +0.34285192 |
| $P$ | 3.41 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.3− | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1− | | |
| 1999 09 14 | 704 | 0.7+ | 0.7+ | 2004 01 24 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.4− | | |
| 1999 09 14 | 704 | 0.6− | 0.6+ | 2004 01 24 | 704 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 1999 09 14 | 704 | 0.2− | 0.2+ | 2004 01 24 | 704 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 1999 09 14 | 704 | 0.0 | 0.3− | 2004 01 24 | 704 | 1.1+ | 0.8+ | 2006 11 11 | 703 | 0.1− | 0.2− | | |
| 1999 10 02 | 699 | 0.3− | 0.6+ | 2004 01 24 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.7− | | |
| 1999 10 02 | 699 | 0.3− | 0.2− | 2004 01 24 | 704 | 0.1+ | 0.6+ | 2006 11 14 | 703 | 0.4+ | 0.6− | | |
| 1999 10 02 | 704 | 0.3− | 0.1+ | 2004 01 24 | 704 | 0.7+ | 0.1− | 2006 11 14 | 703 | 0.2− | 0.4− | | |
| 1999 10 02 | 704 | 0.3− | 0.6− | 2004 01 24 | 704 | 0.4+ | 0.0 | 2006 11 14 | 703 | 0.7+ | 0.1− | | |
| 1999 10 02 | 699 | 0.3+ | 1.0+ | 2004 01 28 | 703 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.6+ | 0.7− | | |
| 1999 10 02 | 704 | 0.2+ | 0.9− | 2004 01 28 | 703 | 0.5+ | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.6− | | |
| 1999 10 02 | 704 | 0.5− | 0.1− | 2004 01 28 | 703 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.7− | | |
| 1999 10 02 | 704 | 0.5+ | 0.4+ | 2004 01 28 | 703 | 0.9+ | 0.4+ | 2006 11 14 | G96 | 0.4+ | 0.7− | | |
| 1999 10 05 | 703 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.6+ | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.7− | | |
| 1999 10 05 | 703 | 0.5− | 0.2+ | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.8− | | |
| 1999 10 05 | 703 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.7− | | |
| 1999 10 05 | 703 | 0.6− | 0.6+ | 2004 01 30 | 704 | 0.1− | 1.1+ | 2006 11 15 | G96 | 0.0 | 0.8− | | |
| 1999 10 07 | 703 | 0.7− | 0.6+ | 2004 01 31 | 704 | 1.0+ | 0.7− | 2006 11 15 | 691 | 0.2+ | 0.3− | | |
| 1999 10 07 | 703 | 0.7− | 0.5+ | 2004 01 31 | 704 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.6+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 703 | 0.2− | 0.6+ | 2004 01 31 | 704 | 0.6− | 1.0+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 1999 10 07 | 703 | 0.4− | 0.6+ | 2004 01 31 | 704 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.5+ | 0.2− |
| 1999 10 07 | 704 | 0.7− | 0.2− | 2004 01 31 | 704 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 1999 10 07 | 704 | 0.4− | 0.1− | 2004 02 10 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.8+ |
| 1999 10 07 | 704 | 0.0 | 0.4+ | 2004 02 10 | 644 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.5+ | 0.1− |
| 1999 10 07 | 704 | 0.9− | 0.1− | 2004 02 10 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 1999 10 07 | 704 | 0.5+ | 0.3+ | 2004 02 13 | 691 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.8+ |
| 1999 10 15 | 704 | 0.3− | 0.1− | 2004 02 13 | 691 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 1999 10 15 | 704 | 0.9− | 0.1− | 2004 02 13 | 691 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.6+ |
| 1999 10 15 | 704 | 1.2− | 0.2+ | 2004 02 14 | 703 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 1999 10 15 | 704 | 0.6+ | 0.9+ | 2004 02 14 | 703 | 0.6− | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2004 02 14 | 703 | 0.0 | 0.7− | 2006 11 16 | 704 | 0.4− | 0.6+ |
| 1999 11 03 | 703 | 0.8+ | 0.0 | 2004 02 14 | 703 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.6− | 0.6− |
| 1999 11 03 | 703 | (0.6+ | 2.8+) | 2004 02 15 | 704 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 1999 11 03 | 703 | 0.1− | 0.5− | 2004 02 15 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 1999 11 03 | 703 | 0.7− | 0.4+ | 2004 02 15 | 704 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.4− | 0.1− |
| 1999 11 06 | 704 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.6+ | 0.0 | 2006 11 16 | 704 | 1.0− | 0.5− |
| 1999 11 06 | 704 | 0.3− | 0.2+ | 2004 02 15 | 704 | (0.2+ | 1.8+) | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 1999 11 06 | 704 | 0.4+ | 0.2+ | 2004 03 14 | 704 | 0.4− | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 1999 11 06 | 704 | 0.3+ | 0.3+ | 2004 03 14 | 704 | (1.5− | 0.1−) | 2006 11 16 | 704 | 0.3− | 0.2− |
| 1999 11 06 | 704 | 0.7+ | 0.2+ | 2004 03 14 | 704 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.4− | 0.3− |
| 1999 11 12 | 704 | 0.1+ | 0.7− | 2004 03 14 | 704 | 1.0− | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.7+ |
| 1999 11 12 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.4+ | 1.3+ | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 1999 11 12 | 704 | 1.5+ | 0.7+ | 2004 03 23 | 704 | 0.5− | 0.4+ | 2006 11 16 | 704 | 1.1− | 0.1− |
| 1999 11 12 | 704 | 0.2+ | 0.3− | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.4+ |
| 1999 11 12 | 704 | 0.5+ | 0.9+ | 2004 03 23 | 704 | 0.8+ | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 2001 03 20 | 699 | 1.4+ | 0.0 | 2005 02 14 | 809 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2001 03 20 | 699 | 0.2+ | 0.1+ | 2005 02 14 | 809 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.5− | 0.7+ |
| 2001 03 20 | 699 | 0.6− | 0.2+ | 2005 02 14 | 809 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.1+ | 1.3+ |
| 2001 03 20 | 699 | 0.9+ | 0.9+ | 2005 02 14 | 809 | 0.1+ | 0.1− | 2006 11 17 | 704 | (0.2+ | 2.4+) |
| 2001 03 26 | 704 | (1.3+ | 1.6−) | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.7− | 0.3+ |
| 2001 03 26 | 704 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2001 03 26 | 704 | 0.4+ | 1.0+ | 2006 09 16 | 703 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.2− |
| 2002 07 06 | 644 | 0.2− | 0.7+ | 2006 09 16 | 703 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.9− | 0.3+ |
| 2002 07 06 | 644 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.2− | 0.6+ |
| 2002 07 06 | 644 | 0.2− | 0.8+ | 2006 09 27 | 704 | 0.9− | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2002 07 27 | 644 | 0.7− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3− | 0.9+ |
| 2002 07 27 | 644 | 0.2− | 0.9+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.6− | 1.1+ |
| 2002 07 27 | 644 | 0.5− | 1.0+ | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.3− | 1.0+ |
| 2003 12 19 | 704 | 1.1− | 0.2+ | 2006 09 27 | 704 | 0.8+ | 0.8− | 2006 11 19 | 704 | 0.4− | 1.0+ |
| 2003 12 19 | 704 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.0 | 2006 11 22 | 704 | 1.0+ | 0.5− |
| 2003 12 19 | 704 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.2− | 0.2− | 2006 11 22 | 704 | 1.3+ | 0.5− |
| 2003 12 19 | 704 | 0.0 | 1.1− | 2006 10 19 | 704 | 0.6− | 0.2− | 2006 11 22 | 704 | 1.3+ | 0.7− |
| 2003 12 19 | 704 | 0.7+ | 0.6+ | 2006 10 19 | 704 | 0.3− | 0.2− | 2006 11 22 | 704 | 1.3+ | 0.1− |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 10 19 | 704 | 0.6− | 0.5+ | 2006 11 22 | 704 | 1.2+ | 0.4− |
| 2004 01 17 | 644 | 0.2+ | 0.1− | 2006 10 19 | 704 | 0.5+ | 0.5+ | 2006 11 28 | 704 | 0.0 | 1.5− |
| 2004 01 17 | 644 | 0.2+ | 0.3− | 2006 10 21 | 704 | 0.6+ | 0.7+ | 2006 11 28 | 704 | 1.1+ | 0.7+ |
| 2004 01 20 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 704 | 0.3− | 0.7+ | 2006 11 28 | 704 | 0.6+ | 1.3+ |
| 2004 01 20 | 704 | 0.1− | 1.2+ | 2006 10 21 | 704 | 0.7+ | 0.2+ | 2006 11 28 | 704 | 1.3− | 0.4+ |
| 2004 01 20 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 704 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.8− |
| 2004 01 23 | 704 | 0.6− | 0.3+ | 2006 10 27 | 691 | (0.4+ | 1.9+) | 2006 12 01 | G96 | 0.3+ | 1.0− |
| 2004 01 23 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2004 01 23 | 704 | (0.6− | 2.2+) | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.9− |
| 2004 01 23 | 704 | 0.6− | 0.8− | 2006 10 31 | 691 | 0.1− | 0.2− | | | | |
| 2004 01 23 | 704 | 0.6+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.4− | | | | |

**(137327)∗ 1999 TK$_{41}$**

Discovered 1999 Oct. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.30438 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27178278 | $\omega$ | 241.41750 | | +0.00064787 | +0.99872706 |
| $a$ | 2.3604135 | $\Omega$ | 28.75302 | | −0.87696070 | +0.02480529 |
| $e$ | 0.2159275 | $i$ | 6.01852 | | −0.48056165 | −0.04391988 |
| $P$ | 3.63 | $H$ | 16.6 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.7− | 0.6+ | 2002 07 16 | 644 | 0.1+ | 1.0+ | 2005 03 16 | 703 | 0.3− | 0.5− |
| 1998 04 21 | 704 | 0.3+ | 0.4− | 2002 07 16 | 644 | 0.1+ | 0.3+ | 2005 03 16 | 703 | 0.3− | 1.3− |
| 1998 04 21 | 704 | (1.5− | 2.3+) | 2002 07 16 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.5+ |
| 1998 04 21 | 704 | 0.8− | 0.4+ | 2002 08 04 | 644 | 0.3− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.1+ |
| 1998 04 21 | 704 | 0.3+ | 1.5− | 2002 08 04 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.1+ |
| 1999 10 02 | 691 | 0.3− | 0.0 | 2002 08 04 | 644 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.5− | 0.4− |
| 1999 10 02 | 691 | 0.7− | 0.3+ | 2005 03 02 | 703 | 0.9+ | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.1+ |
| 1999 10 02 | 691 | 0.3− | 0.2+ | 2005 03 02 | 703 | 0.7− | 0.8+ | 2006 09 18 | 703 | 0.1+ | 0.6− |
| 1999 10 07 | 691 | 0.7+ | 0.1+ | 2005 03 02 | 703 | 0.7+ | 1.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 1999 10 07 | 691 | 0.0 | 0.1+ | 2005 03 02 | 703 | 1.1+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 1999 10 07 | 691 | 0.5+ | 0.2+ | 2005 03 04 | 704 | 0.7+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1999 10 13 | 691 | 0.1+ | 0.1− | 2005 03 04 | 704 | 0.1− | 0.7+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 1999 10 13 | 691 | 0.2+ | 0.0 | 2005 03 04 | 704 | 0.8+ | 1.0+ | 2006 11 14 | G96 | 0.3− | 0.7− |
| 1999 10 13 | 691 | 0.1− | 0.2− | 2005 03 04 | 704 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.5− | 0.6− |
| 2000 02 05 | 695 | 0.3− | 0.6− | 2005 03 09 | 704 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.6− |
| 2000 02 05 | 695 | 0.2− | 0.5+ | 2005 03 09 | 704 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.4− | 0.6− |
| 2002 06 13 | 644 | 0.2− | 0.4+ | 2005 03 09 | 704 | 0.9+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2002 06 13 | 644 | 0.0 | 0.1+ | 2005 03 12 | 704 | 0.1− | 0.6+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2002 06 13 | 644 | 0.2+ | 0.3+ | 2005 03 12 | 704 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2002 07 06 | 644 | 0.2− | 0.1+ | 2005 03 12 | 704 | 0.2+ | 1.0+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2002 07 06 | 644 | 0.1+ | 0.3+ | 2005 03 16 | 703 | 0.8− | 0.4− | | | | |
| 2002 07 06 | 644 | 0.1− | 0.1+ | 2005 03 16 | 703 | 0.3+ | 0.3+ | | | | |

**(137328)∗ 1999 TJ$_{42}$ = 2003 YC$_{125}$**

Discovered 1999 Oct. 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55904)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.92436 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28617010 | $\omega$ | 144.83062 | | −0.52681697 | −0.84980579 |
| $a$ | 2.2806215 | $\Omega$ | 336.94544 | | +0.76946498 | −0.46824753 |
| $e$ | 0.1096320 | $i$ | 2.50950 | | +0.36109212 | −0.24202143 |
| $P$ | 3.44 | $H$ | 17.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 691 | 0.4− | 0.5+ | 2001 04 16 | 645 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.4+ |
| 1999 09 04 | 691 | 0.2+ | 0.3+ | 2001 04 16 | 645 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 1999 09 04 | 691 | (2.6− | 0.1−) | 2003 12 04 | 704 | 0.4+ | 0.8+ | 2006 09 17 | 691 | 0.1− | 0.6+ |
| 1999 10 03 | 691 | 0.2− | 0.7− | 2003 12 04 | 704 | 0.3+ | 0.5− | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 1999 10 03 | 691 | 0.0 | 0.1− | 2003 12 04 | 704 | 0.6+ | 0.4− | 2006 09 25 | 691 | 0.5− | 0.2− |
| 1999 10 03 | 691 | 0.1− | 0.2− | 2003 12 22 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.4+ |
| 1999 10 09 | 691 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | (1.5+ | 2.6+) |
| 1999 10 09 | 691 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 1999 10 09 | 691 | 0.8− | 0.6− | 2003 12 27 | 704 | 0.5+ | 0.5− | 2006 10 17 | 703 | 0.2+ | 1.5+ |
| 1999 10 16 | 691 | 0.6+ | 0.3+ | 2003 12 27 | 704 | 0.7− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.9+ |
| 1999 10 16 | 691 | 0.0 | 0.2+ | 2003 12 27 | 704 | 0.2− | 0.6− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 1999 10 16 | 691 | 0.5+ | 0.4+ | 2003 12 27 | 704 | 0.5+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 02 03 | 691 | 0.3+ | 0.4+ | 2003 12 27 | 704 | 0.0 | 0.9− | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2001 02 03 | 691 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 0.2+ | 0.5− | 2006 10 31 | G96 | 0.6+ | 0.7− |
| 2001 02 03 | 691 | 0.6+ | 0.2+ | 2003 12 29 | 704 | 0.2− | 1.2+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 03 26 | 691 | 0.1− | 0.6+ | 2003 12 29 | 704 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2001 03 26 | 691 | 0.2− | 0.1+ | 2003 12 29 | 704 | 0.8− | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 03 26 | 691 | 0.0 | 0.3+ | 2003 12 29 | 704 | 0.8− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1+ |

**(137329)∗ 1999 TO$_{45}$ = 2005 EM$_{194}$**

Discovered 1999 Oct. 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74633)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.57676 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27421600 | $\omega$ | 331.49918 | | +0.46521733 | +0.88500338 |
| $a$ | 2.3464295 | $\Omega$ | 326.21561 | | −0.80571029 | +0.41470011 |
| $e$ | 0.1302440 | $i$ | 1.90545 | | −0.36661118 | +0.21164319 |
| $P$ | 3.59 | $H$ | 16.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.2− | 0.2− | 2005 04 04 | 703 | 0.5+ | 0.8− | 2006 09 17 | 704 | 0.4− | 0.2+ | |
| 1999 10 03 | 691 | 0.0 | 0.3− | 2005 04 04 | 703 | 0.1+ | 1.3+ | 2006 09 20 | 704 | 0.1+ | 0.7+ | |
| 1999 10 03 | 691 | 0.2+ | 0.3− | 2005 04 04 | 703 | 0.8− | 1.0+ | 2006 09 20 | 704 | 0.5+ | 0.9+ | |
| 1999 10 08 | 691 | 0.3+ | 0.1− | 2005 04 05 | G96 | 0.5− | 0.2+ | 2006 09 20 | 704 | 0.4− | 1.2+ | |
| 1999 10 08 | 691 | 0.2+ | 0.0 | 2005 04 05 | G96 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.3+ | |
| 1999 10 08 | 691 | 0.3+ | 0.0 | 2005 04 05 | G96 | 0.2− | 0.1− | 2006 09 20 | 704 | (0.4+ | 1.8+) | |
| 1999 10 13 | 704 | 0.8+ | 0.8− | 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.2+ | |
| 1999 10 13 | 704 | 1.9+ | 0.2− | 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.2− | |
| 1999 10 13 | 704 | 0.7− | 0.0 | 2005 04 12 | G96 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.4+ | 0.6+ | |
| 1999 10 13 | 704 | 0.4+ | 0.2− | 2005 04 12 | G96 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.0 | |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2005 04 12 | G96 | 0.0 | 0.0 | 2006 09 29 | 704 | 1.3− | 0.2+ | |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.4+ | |
| 1999 10 14 | 645 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.8+ | 0.6− | |
| 1999 10 14 | 645 | 0.2− | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.6+ | 0.7− | |
| 2003 12 17 | 691 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 01 | 703 | 0.6− | 1.3+ | |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.6+ | 2006 10 01 | 703 | 0.4− | 1.1+ | |
| 2003 12 17 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.2− | 0.1+ | |
| 2005 03 01 | 691 | 0.0 | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 10 01 | 703 | (0.5+ | 1.8+) | |
| 2005 03 01 | 691 | 0.4+ | 0.5− | 2006 08 18 | 699 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2005 03 01 | 691 | 0.4+ | 0.1+ | 2006 08 18 | 699 | 0.5− | 1.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2005 03 11 | G96 | 0.5− | 0.2+ | 2006 08 18 | 699 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.5+ | |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2006 08 18 | 699 | 1.0− | 1.1+ | 2006 10 23 | G96 | 0.2− | 0.1− | |
| 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.1− | |
| 2005 03 11 | G96 | 0.3− | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.1− | |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.3− | 0.1− | |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.5− | 0.1− | |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.1− | |
| 2005 04 02 | 926 | 0.1+ | 0.5+ | 2006 08 28 | 691 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.9− | |
| 2005 04 02 | 926 | 0.2+ | 0.0 | 2006 09 17 | 704 | 1.0− | 0.8− | 2006 11 14 | G96 | 0.0 | 0.4− | |
| 2005 04 02 | 926 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.1+ | | | | | |
| 2005 04 04 | 703 | 0.1− | 0.3− | 2006 09 17 | 704 | 1.3− | 1.5− | | | | | |

**(137330)∗ 1999 TS$_{45}$ = 2001 FD$_{149}$**

Discovered 1999 Oct. 3 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 12946)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.32364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27628072 | $\omega$ | 250.77415 | | −0.38061197 | −0.92341917 | |
| $a$ | 2.3347246 | $\Omega$ | 221.70454 | | +0.87383305 | −0.34170186 | |
| $e$ | 0.0918927 | $i$ | 4.25063 | | +0.30257284 | −0.17474804 | |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.1− | 0.3− | 2001 03 29 | 699 | 0.5− | 1.3+ | 2006 09 25 | 704 | 0.3+ | 0.8+ | |
| 1999 10 03 | 691 | 0.2− | 0.2− | 2001 03 29 | 699 | 0.4− | 1.1+ | 2006 09 25 | 704 | 0.3+ | 0.1+ | |
| 1999 10 03 | 691 | 0.2− | 0.6− | 2001 03 29 | 699 | 0.9− | 1.0+ | 2006 09 25 | 704 | 1.4+ | 0.4+ | |
| 1999 10 08 | 691 | 0.1− | 0.0 | 2001 04 24 | 699 | (1.7+ | 0.9+) | 2006 09 26 | 691 | 0.6− | 0.1+ | |
| 1999 10 08 | 691 | 0.0 | 0.1+ | 2001 04 24 | 699 | 1.1+ | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.2+ | |
| 1999 10 08 | 691 | 0.0 | 0.0 | 2001 04 24 | 699 | 1.4+ | 0.8+ | 2006 09 26 | 691 | 0.6− | 0.3+ | |
| 1999 10 13 | 691 | 0.1− | 0.0 | 2001 04 24 | 699 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.2+ | |
| 1999 10 13 | 691 | 0.2− | 0.0 | 2003 12 19 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 691 | 0.3+ | 0.5+ | |
| 1999 10 13 | 691 | 0.3− | 0.1− | 2003 12 19 | 704 | 0.9− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.3+ | |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2003 12 19 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 291 | 0.1− | 0.1+ | |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2003 12 19 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 291 | 0.0 | 0.1+ | |
| 1999 11 12 | 704 | 0.0 | 1.0− | 2003 12 22 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 291 | 0.0 | 0.1+ | |
| 1999 11 12 | 704 | 0.8− | 0.7+ | 2003 12 22 | 704 | 0.3− | 0.4− | 2006 10 09 | 644 | 0.1− | 0.3+ | |
| 1999 11 12 | 704 | 0.2+ | 0.1− | 2003 12 22 | 704 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.1− | |
| 1999 11 12 | 704 | 0.2+ | 0.6+ | 2003 12 22 | 704 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.6− | 0.5+ | |
| 1999 11 12 | 704 | 0.7+ | 0.6+ | 2005 07 05 | G96 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.1+ | |
| 2001 03 18 | 608 | 0.5− | 1.5− | 2005 07 05 | G96 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.1+ | |
| 2001 03 18 | 608 | 0.3− | 1.3− | 2005 07 05 | G96 | 0.1+ | 0.4− | 2006 10 17 | 703 | 1.3+ | 0.2− | |
| 2001 03 18 | 608 | 0.5− | 1.1− | 2005 07 05 | G96 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.7+ | |
| 2001 03 20 | 699 | 0.1− | 1.0+ | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.3− | |
| 2001 03 20 | 699 | 0.7+ | 0.7− | 2006 09 17 | 703 | 0.2− | 1.1− | 2006 10 22 | G96 | 0.1− | 0.2− | |
| 2001 03 20 | 699 | (1.8− | 0.0 ) | 2006 09 17 | 703 | 1.5− | 0.9− | 2006 10 22 | G96 | 0.1+ | 0.2− | |
| 2001 03 20 | 699 | 0.5+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 1.3− | 2006 10 22 | G96 | 0.1+ | 0.3− | |
| 2001 03 24 | 704 | 0.9+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ | |
| 2001 03 24 | 704 | 1.0+ | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.2+ | |
| 2001 03 24 | 704 | 1.2+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.1+ | |
| 2001 03 24 | 704 | (0.7− | 1.9+) | 2006 09 18 | 704 | (0.8+ | 2.1+) | 2006 10 31 | G96 | 0.0 | 0.5− | |
| 2001 03 26 | 608 | 0.3− | 0.9+ | 2006 09 18 | 704 | 1.0+ | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.0 | |
| 2001 03 26 | 608 | 0.3− | 1.4+ | 2006 09 18 | 704 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.3− | |
| 2001 03 26 | 608 | 0.1− | 0.6+ | 2006 09 18 | 704 | (0.7+ | 1.8+) | 2006 10 31 | G96 | 0.0 | 0.2+ | |
| 2001 03 29 | 699 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.7− | 0.3+ | | | | | |

**(137331)∗ 1999 TX$_{53}$**

Discovered 1999 Oct. 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.10604 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28240049 | $\omega$ | 182.54855 | | +0.80286712 | −0.59291620 | |
| $a$ | 2.3008718 | $\Omega$ | 214.06142 | | +0.54890632 | +0.77584673 | |
| $e$ | 0.1062080 | $i$ | 6.36450 | | +0.23260749 | +0.21566697 | |
| $P$ | 3.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.1+ | 0.2− | 2005 05 18 | 644 | 0.8− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.3− | |
| 1999 10 06 | 691 | 0.1+ | 0.4− | 2005 05 18 | 644 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.1− | |
| 1999 10 06 | 691 | 0.2+ | 0.1− | 2005 05 18 | 644 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.1− | 0.2− | |
| 1999 10 07 | 691 | 0.1+ | 0.0 | 2005 06 10 | 691 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.2− | |
| 1999 10 07 | 691 | 0.6− | 0.2− | 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.1− | |
| 1999 10 07 | 691 | 0.2− | 0.2− | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.0 | |
| 1999 10 10 | 704 | 0.7+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ | |
| 1999 10 10 | 704 | 0.2+ | 0.6+ | 2005 06 14 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.6− | |
| 1999 10 10 | 704 | 1.8+ | 1.2− | 2005 06 14 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | (2.7− | 0.2−) | |
| 1999 10 10 | 704 | 0.4− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.1− | |
| 1999 10 13 | 704 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.3+ | |
| 1999 10 13 | 704 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (1.7+ | 1.3−) | |
| 1999 10 13 | 704 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.1− | |
| 1999 10 13 | 704 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.1− | |
| 1999 10 13 | 704 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 1.0+ | |
| 1999 10 15 | 704 | 1.1+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.1− | |
| 1999 10 15 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.0 | |
| 1999 10 15 | 704 | 0.8+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.0 | |
| 1999 10 20 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 683 | 0.9+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− | |
| 1999 10 20 | 704 | 0.8− | 0.5− | 2006 10 20 | 683 | 0.7+ | 0.2− | 2006 11 17 | 703 | 2.2− | 1.5+ | |
| 1999 10 20 | 704 | 0.3+ | 1.0− | 2006 10 20 | 683 | 0.1+ | 0.9+ | 2006 11 17 | 703 | 0.0 | 0.3+ | |
| 1999 10 20 | 704 | 1.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.1+ | 0.5+ | |
| 1999 10 20 | 704 | 0.3− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.8− | 1.2+ | |
| 1999 11 09 | 704 | 0.2− | 1.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.3+ | |
| 1999 11 09 | 704 | 0.2− | 0.3+ | 2006 10 22 | 683 | 1.2+ | 0.8− | 2006 11 18 | 704 | 1.0− | 1.9+ | |
| 1999 11 09 | 704 | 0.3− | 0.7− | 2006 10 22 | 683 | 0.2− | 1.0+ | 2006 11 18 | 704 | 0.0 | 2.3+ | |
| 1999 11 12 | 704 | 0.0 | 0.1− | 2006 10 22 | 683 | 0.5+ | 0.9− | 2006 11 18 | 704 | 1.2− | 1.1+ | |
| 1999 11 12 | 704 | 0.5− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.1+ | |
| 1999 11 12 | 704 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 2004 04 13 | 645 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.3+ | |
| 2004 04 13 | 645 | 0.0 | 0.1+ | 2006 10 23 | 683 | 0.8− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.3+ | |
| 2005 05 14 | G96 | 0.1− | 0.4− | 2006 10 23 | 683 | 0.9− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.4+ | |
| 2005 05 14 | G96 | 0.9− | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.3+ | 0.2+ | |
| 2005 05 14 | G96 | 0.2− | 0.8+ | 2006 10 27 | 691 | 0.2+ | 0.2− | | | | | |
| 2005 05 14 | G96 | 0.5− | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.2− | | | | | |

**(137332)∗ 1999 TS$_{58}$**

Discovered 1999 Oct. 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.32321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27452654 | $\omega$ | 192.61779 | | +0.99784641 | +0.06451492 | |
| $a$ | 2.3446598 | $\Omega$ | 163.66921 | | −0.05592433 | +0.93114927 | |
| $e$ | 0.2059648 | $i$ | 2.41496 | | −0.03427857 | +0.35888558 | |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.3− | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 1999 10 06 | 691 | 0.3− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 27 | 704 | 0.0 | 0.2+ |
| 1999 10 06 | 691 | 0.2− | 0.2− | 2006 09 12 | 703 | 1.3− | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.4− |
| 1999 10 09 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | 1.1− | 1.4+ | 2006 09 28 | 704 | 0.4− | 0.2− |
| 1999 10 09 | 691 | 0.2+ | 0.1− | 2006 09 12 | 703 | (1.5− | 0.6+) | 2006 09 28 | 704 | 0.1− | 0.1− |
| 1999 10 09 | 691 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.4+ | 0.5− | 2006 09 28 | 704 | 0.1+ | 0.1+ |
| 1999 10 15 | 691 | 0.4− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.8− | 0.1− |
| 1999 10 15 | 691 | 0.3+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 09 29 | A41 | 0.8− | 0.5− |
| 1999 10 15 | 691 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.4+ | 0.3+ | 2006 09 29 | A41 | 0.9− | 0.3− |
| 1999 11 01 | 703 | 0.1+ | 0.7+ | 2006 09 17 | 704 | 0.3+ | 0.1+ | 2006 09 29 | A41 | 0.7− | 0.1+ |
| 1999 11 01 | 703 | 0.6− | 0.2− | 2006 09 17 | 704 | 0.1− | 0.2− | 2006 10 01 | G92 | 0.1− | 0.9− |
| 1999 11 01 | 703 | 1.0+ | 0.2− | 2006 09 17 | 704 | 0.5+ | 1.1− | 2006 10 01 | G92 | 0.0 | 0.1− |
| 1999 11 01 | 703 | 1.3− | 0.0 | 2006 09 17 | 704 | 0.4− | 0.8− | 2006 10 01 | 704 | 0.9− | 0.3+ |
| 1999 11 04 | 704 | 0.5− | 0.9+ | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.2+ |
| 1999 11 04 | 704 | 0.7− | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.4− | 0.3+ |
| 1999 11 04 | 704 | 1.8+ | 0.3− | 2006 09 18 | 699 | 0.6+ | 0.2+ | 2006 10 01 | G92 | 0.4− | 0.2− |
| 1999 11 04 | 704 | 0.6− | 1.0− | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.1+ |
| 1999 11 15 | 704 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.7− | 0.1+ |
| 1999 11 15 | 704 | 0.4+ | 0.8− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 1999 11 15 | 704 | (3.1+ | 1.0−) | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 1999 11 17 | 704 | 1.2+ | 0.4− | 2006 09 19 | 703 | 1.2− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 1999 11 17 | 704 | 1.5+ | 1.0− | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1999 11 17 | 704 | 1.3+ | 1.0− | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2003 12 21 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.7+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2003 12 21 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 1.3+ |
| 2003 12 21 | 691 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.1− | 2006 10 17 | 703 | (0.3− | 2.0+) |
| 2004 01 31 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.5− | 0.3− | 2006 10 17 | 703 | (0.4− | 2.3+) |
| 2004 01 31 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.9− | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2004 01 31 | 691 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 10 19 | 695 | 0.1− | 0.0 |
| 2005 04 04 | G96 | 1.0− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 695 | 0.2− | 0.0 |
| 2005 04 04 | G96 | 0.6− | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2005 04 04 | G96 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 04 04 | G96 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2005 04 11 | 691 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2005 04 11 | 691 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 04 11 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 05 10 | G96 | 0.3− | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2005 05 10 | G96 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 05 10 | G96 | 0.1+ | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2005 05 10 | G96 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.1+ | 0.9+ | | | | |

**(137333)∗ 1999 TN$_{63}$ = 2001 FF$_{96}$**

Discovered 1999 Oct. 7 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 11575)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.17788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27001275 | $\omega$ | 143.12895 | | −0.95678789 | +0.27161835 | |
| $a$ | 2.3707178 | $\Omega$ | 52.95491 | | −0.28804861 | −0.83641684 | |
| $e$ | 0.0774633 | $i$ | 7.47450 | | −0.03981128 | −0.47605708 | |
| $P$ | 3.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.3− | 1.3+ | 2001 03 26 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 1.2− | 0.4+ |
| 1999 10 07 | 691 | 0.4+ | 0.2− | 2001 03 26 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 703 | (1.8− | 0.5−) |
| 1999 10 07 | 691 | 0.0 | 0.1− | 2001 03 26 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | (1.8− | 0.7−) |
| 1999 10 11 | 691 | 0.4+ | 0.2− | 2001 03 26 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 1.2− | 0.2+ |
| 1999 10 11 | 691 | 0.3+ | 0.3− | 2001 03 26 | 704 | 0.2+ | 0.3− | 2006 10 02 | G96 | 0.2− | 0.3− |
| 1999 10 11 | 691 | 0.3+ | 0.5− | 2001 03 27 | 608 | 0.4+ | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 1999 10 16 | 691 | 0.9− | 0.5+ | 2001 03 27 | 608 | 0.5+ | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 1999 10 16 | 691 | 0.7− | 0.8+ | 2001 03 27 | 608 | 0.5+ | 0.7+ | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 1999 10 16 | 691 | 0.4− | 0.9+ | 2001 03 30 | 704 | 0.7− | 0.8− | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 1.0+ | 0.2− | 2001 03 30 | 704 | 0.4+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 0.8+ | 0.4− | 2001 03 30 | 704 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.6+ |
| 1999 11 12 | 704 | 0.1− | 0.8− | 2001 03 30 | 704 | 1.4+ | 1.2− | 2006 10 02 | G96 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.1+ | 0.4− | 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 1999 11 13 | 691 | 0.1+ | 0.4− | 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 1999 11 13 | 691 | 0.2+ | 0.4− | 2001 04 23 | 699 | 0.4+ | 0.8− | 2006 10 03 | G96 | 0.1− | 0.1− |
| 1999 11 13 | 691 | 0.1− | 0.3− | 2001 04 23 | 699 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2001 03 04 | 704 | 0.1− | 1.0− | 2001 04 23 | 699 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.8+ |
| 2001 03 04 | 704 | 0.4+ | 1.1+ | 2001 04 23 | 699 | 1.2+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2001 03 04 | 704 | 0.3− | 0.0 | 2001 04 24 | 699 | 1.1+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2001 03 04 | 704 | 1.1+ | 0.1+ | 2001 04 24 | 699 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2001 03 04 | 704 | 0.4− | 1.2+ | 2001 04 24 | 699 | 0.8+ | 0.2− | 2006 10 16 | 291 | 0.1− | 0.2+ |
| 2001 03 16 | 704 | 0.0 | 0.3− | 2001 04 24 | 699 | 0.4− | 0.2+ | 2006 10 16 | 291 | 0.2− | 0.3+ |
| 2001 03 16 | 704 | 0.3− | 0.0 | 2003 12 17 | 704 | 0.1− | 0.3+ | 2006 10 16 | 291 | 0.2− | 0.3+ |
| 2001 03 16 | 704 | 0.3+ | 1.0− | 2003 12 17 | 704 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 03 16 | 704 | 0.3− | 0.8− | 2003 12 17 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 03 18 | 608 | 0.2− | 0.5+ | 2003 12 17 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2001 03 18 | 608 | 0.3+ | 0.3+ | 2003 12 18 | 704 | 1.0+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2001 03 18 | 608 | 0.0 | 0.3+ | 2003 12 18 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2001 03 19 | 699 | 0.6+ | 0.7+ | 2003 12 18 | 704 | 0.2+ | 0.6− | 2006 10 22 | 703 | 0.1− | 0.8+ |
| 2001 03 19 | 699 | 0.3− | 1.0+ | 2003 12 18 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.7+ | 0.6+ |
| 2001 03 19 | 699 | 0.1+ | 1.3+ | 2003 12 18 | 704 | 0.5− | 0.6− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2001 03 19 | 645 | 0.1− | 0.0 | 2003 12 18 | 704 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2001 03 19 | 645 | 0.1− | 0.0 | 2003 12 18 | 704 | 0.4+ | 0.6− | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2001 03 19 | 699 | (1.8+ | 0.3+) | 2003 12 18 | 704 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.1+ |

**(137334)∗ 1999 TC$_{67}$**

Discovered 1999 Oct. 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.11626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27514004 | $\omega$ | 305.06383 | | +0.29807344 | +0.95448946 | |
| $a$ | 2.3411731 | $\Omega$ | 342.26986 | | −0.86461814 | +0.26549213 | |
| $e$ | 0.1095323 | $i$ | 1.90149 | | −0.40445976 | +0.13588159 | |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | (0.6− | 2.2−) | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 09 22 | 184 | 0.1− | 0.2+ |
| 1998 04 22 | 704 | 0.5+ | 0.2+ | 2005 03 17 | 691 | 0.5+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.5+ |
| 1998 04 22 | 704 | 0.8+ | 1.6+ | 2005 03 17 | 691 | 0.3+ | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.3+ |
| 1998 04 22 | 704 | 0.4− | 1.2+ | 2005 03 17 | 691 | 0.6+ | 0.6+ | 2006 09 23 | 691 | 0.3− | 0.4+ |
| 1999 10 06 | 704 | 0.1− | 0.2+ | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.0 |
| 1999 10 06 | 704 | 0.6+ | 0.1+ | 2005 04 05 | G96 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 1999 10 06 | 704 | 0.1− | 0.2+ | 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 1999 10 06 | 704 | 0.4+ | 0.0 | 2005 04 05 | G96 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.1+ | 0.1+ | 2005 04 06 | G96 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 1999 10 08 | 691 | 0.1+ | 0.2− | 2005 04 06 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 1999 10 08 | 691 | 0.2+ | 0.1− | 2005 04 06 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 1999 10 08 | 691 | 0.1− | 0.3− | 2005 04 06 | G96 | 0.5− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 1999 10 13 | 704 | 1.5+ | 0.8− | 2005 04 07 | G96 | 0.3− | 0.0 | 2006 10 17 | 703 | (0.8+ | 1.5−) |
| 1999 10 13 | 704 | 0.5+ | 0.1+ | 2005 04 07 | G96 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.7− |
| 1999 10 13 | 704 | 1.0− | 0.7+ | 2005 04 07 | G96 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.8− | 1.0+ |
| 1999 10 13 | 704 | 0.8− | 0.1+ | 2005 04 07 | G96 | 0.1− | 0.2+ | 2006 10 17 | 703 | (2.3− | 0.8−) |
| 1999 10 13 | 704 | 0.5− | 0.4+ | 2006 08 28 | 703 | 1.1− | 0.5− | 2006 10 20 | G96 | 0.4− | 0.2+ |
| 1999 10 13 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.8+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.3+ |
| 1999 10 13 | 691 | 0.2+ | 0.1− | 2006 08 28 | 703 | (1.9− | 0.0 ) | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 1999 10 13 | 691 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 1999 11 16 | 691 | 0.5+ | 0.4− | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 25 | 850 | 0.4− | 0.6+ |
| 1999 11 16 | 691 | 0.1− | 0.5− | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 25 | 850 | 0.2− | 0.1+ |
| 1999 11 16 | 691 | 0.2− | 0.4− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 25 | 850 | 0.8+ | 0.3− |
| 2003 11 29 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 25 | 850 | 0.4− | 0.1+ |
| 2003 11 29 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2003 11 29 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2003 12 29 | 691 | 0.4− | 0.4+ | 2006 09 21 | 184 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.2+ |
| 2003 12 29 | 691 | 0.1− | 0.3+ | 2006 09 22 | 184 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3+ |

**(137335)∗ 1999 TE$_{68}$ = 1997 EC$_{5}$ = 2003 YV$_{178}$**

Discovered 1999 Oct. 8 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 1123), A. Doppler (*MPO* 84502)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 278.03764 | | (2000.0) | | | |
| $n$ | 0.26838888 | $\omega$ | 276.92453 | | −0.13396358 | −0.99098603 |
| $a$ | 2.3802708 | $\Omega$ | 180.77511 | | +0.92765812 | −0.12516480 |
| $e$ | 0.1455068 | $i$ | 2.84027 | | +0.34857448 | −0.04775421 |
| $P$ | 3.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.1+ | 0.7− | 2004 01 17 | 691 | 0.2− | 0.1+ | 2005 06 17 | G96 | 0.1− | 0.2+ |
| 1997 03 04 | 691 | 0.3+ | 0.4− | 2004 01 17 | 691 | 0.2− | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 1997 03 04 | 691 | 0.1+ | 0.5− | 2004 01 18 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 1997 03 07 | 691 | 0.3− | 0.7− | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 1997 03 07 | 691 | 0.5− | 0.7− | 2004 01 18 | 691 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 1997 03 07 | 691 | 0.6− | 0.6− | 2004 01 21 | 704 | 1.1+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 1999 10 08 | 691 | 0.2− | 0.3− | 2004 01 21 | 704 | 1.0+ | 1.2+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 1999 10 08 | 691 | 0.1− | 0.5− | 2004 01 21 | 704 | 0.2+ | 0.9+ | 2006 09 25 | G96 | 0.8+ | 0.1− |
| 1999 10 08 | 691 | 0.2− | 0.4− | 2004 01 21 | 704 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.2+ |
| 1999 10 11 | 691 | 0.2+ | 0.4− | 2004 01 30 | 704 | 0.6− | 0.8+ | 2006 09 25 | G96 | 0.2+ | 0.3+ |
| 1999 10 11 | 691 | 0.2+ | 0.5− | 2004 01 30 | 704 | 0.1+ | 1.4+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 1999 10 11 | 691 | 0.0 | 0.4− | 2004 01 30 | 704 | 0.5− | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 1999 10 17 | 691 | 0.3− | 0.1+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.7− |
| 1999 10 17 | 691 | 0.1− | 0.1− | 2004 02 16 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | (0.5− | 2.1+) |
| 1999 10 17 | 691 | 0.2+ | 0.1− | 2004 02 16 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.4− |
| 1999 10 30 | 691 | 0.0 | 0.1− | 2004 02 16 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | 1.4+ | 1.0+ |
| 1999 10 30 | 691 | 0.6+ | 0.0 | 2004 02 16 | 704 | 0.9+ | 1.4+ | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 1999 10 30 | 691 | 0.1− | 0.4− | 2004 02 16 | 704 | 0.3+ | 0.3+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 1999 11 04 | 704 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 0.9+ | 0.6− | 2006 10 16 | G96 | 0.6− | 0.3− |
| 1999 11 04 | 704 | 0.1− | 0.7− | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 1999 11 04 | 704 | 0.4− | 0.3− | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2003 12 23 | 704 | 0.2− | 0.4+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.0 |
| 2003 12 23 | 704 | 0.9+ | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2003 12 23 | 704 | 0.3+ | 0.4− | 2005 06 17 | G96 | 0.7− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2+ |
| 2003 12 23 | 704 | 0.9+ | 0.1− | 2005 06 17 | G96 | 0.4− | 0.4+ | | | | |
| 2004 01 17 | 691 | 0.1− | 0.2+ | 2005 06 17 | G96 | 0.4− | 0.4+ | | | | |

**(137336)∗ 1999 TG$_{68}$ = 2005 LQ$_{25}$**

Discovered 1999 Oct. 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74635)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 207.08953 | | (2000.0) | | | |
| $n$ | 0.25655324 | $\omega$ | 331.43846 | | −0.81889631 | −0.57392055 |
| $a$ | 2.4529256 | $\Omega$ | 173.53091 | | +0.53451081 | −0.76572067 |
| $e$ | 0.1398482 | $i$ | 2.49410 | | +0.20906226 | −0.29032232 |
| $P$ | 3.84 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 691 | 0.2+ | 0.3− | 2001 05 02 | 644 | 0.3+ | 0.7+ | 2005 06 13 | 691 | 0.0 | 0.3− |
| 1999 10 08 | 691 | 0.4+ | 0.4− | 2003 12 21 | 704 | 0.1+ | 0.3+ | 2005 06 13 | 691 | 0.2− | 0.1− |
| 1999 10 08 | 691 | 0.6+ | 0.3− | 2003 12 21 | 704 | 0.5+ | 0.1− | 2005 06 13 | 691 | 0.0 | 0.3− |
| 1999 10 14 | 691 | 0.1− | 0.2+ | 2003 12 21 | 704 | 1.0− | 0.7+ | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 1999 10 14 | 691 | 0.2− | 0.0 | 2004 01 16 | 644 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 1999 10 14 | 691 | 0.2− | 0.1− | 2004 01 16 | 644 | 0.1− | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.4− |
| 1999 10 16 | 691 | (0.2− | 2.3−) | 2004 01 16 | 644 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.4− | 0.1+ |
| 1999 10 16 | 691 | (0.6− | 2.7−) | 2005 05 15 | G96 | 0.6− | 0.2− | 2006 09 25 | G96 | 0.4− | 0.0 |
| 1999 10 16 | 691 | (0.7− | 2.8−) | 2005 05 15 | G96 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.0 |
| 1999 11 01 | 691 | 0.1− | 0.1+ | 2005 05 15 | G96 | 0.7− | 0.5− | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 1999 11 01 | 691 | 0.1− | 0.3+ | 2005 05 15 | G96 | 0.6− | 0.2− | 2006 10 16 | G96 | 0.3− | 0.1+ |
| 1999 11 01 | 691 | 0.3− | 0.2+ | 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.2+ |
| 2001 05 02 | 644 | 0.0 | 0.8+ | 2005 06 08 | 691 | 0.3+ | 0.3+ | 2006 10 16 | G96 | 0.4+ | 0.2+ |
| 2001 05 02 | 644 | 0.6+ | 0.8+ | 2005 06 08 | 691 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.3+ |

**(137337)∗ 1999 TX$_{76}$**

Discovered 1999 Oct. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 283.22536 | | (2000.0) | | | |
| $n$ | 0.28965921 | $\omega$ | 312.21869 | | −0.75934832 | −0.65068421 |
| $a$ | 2.2622703 | $\Omega$ | 187.18814 | | +0.59801046 | −0.69761431 |
| $e$ | 0.1079471 | $i$ | 0.19915 | | +0.25646368 | −0.29990720 |
| $P$ | 3.40 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.7− | 0.5+ | 2004 02 14 | 691 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.7+ |
| 1992 10 03 | 691 | 0.5− | 0.4+ | 2004 02 14 | 691 | 0.3+ | 0.2+ | 2004 03 18 | 704 | (0.1− | 2.7+) |
| 1992 10 03 | 691 | (2.2− | 3.0−) | 2004 02 17 | 704 | 0.1+ | 0.2− | 2004 03 27 | 691 | 0.1− | 0.4+ |
| 1999 10 02 | 691 | 0.3+ | 0.2− | 2004 02 17 | 704 | 0.1− | 1.0+ | 2004 03 27 | 691 | 0.1− | 0.6+ |
| 1999 10 02 | 691 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.3+ | 0.4− | 2004 03 27 | 691 | 0.2+ | 0.5+ |
| 1999 10 02 | 691 | 0.2− | 0.2− | 2004 02 17 | 704 | 0.4+ | 1.0+ | 2005 07 05 | 691 | 0.1+ | 0.4+ |
| 1999 10 10 | 691 | 0.2− | 0.1+ | 2004 02 17 | 704 | 0.0 | 0.9+ | 2005 07 05 | 691 | 0.1+ | 0.4+ |
| 1999 10 10 | 691 | 0.3− | 0.0 | 2004 02 21 | 118 | 0.5− | 0.2+ | 2005 07 05 | 691 | 0.1− | 0.0 |
| 1999 10 10 | 691 | 0.4− | 0.0 | 2004 02 21 | 118 | 0.1+ | 0.5+ | 2005 07 09 | 691 | 0.3− | 0.6+ |
| 1999 10 13 | 691 | 0.1− | 0.2+ | 2004 02 21 | 118 | 0.1− | 0.6+ | 2005 07 09 | 691 | 0.5− | 0.6+ |
| 1999 10 13 | 691 | 0.2+ | 0.6+ | 2004 02 22 | 691 | 0.0 | 0.3+ | 2005 07 09 | 691 | 0.2− | 0.4+ |
| 1999 10 13 | 691 | 0.1+ | 0.1+ | 2004 02 22 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 1999 11 16 | 691 | 0.9+ | 0.3− | 2004 02 22 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1999 11 16 | 691 | 0.4+ | 0.8− | 2004 02 26 | 704 | 0.8+ | 0.1− | 2006 11 11 | G96 | 0.2− | 0.0 |
| 1999 11 16 | 691 | 0.8+ | 0.6− | 2004 02 26 | 704 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2004 02 26 | 704 | 0.7+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.5− | 0.8+ | 2004 02 26 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 09 14 | 644 | 0.4− | 0.7+ | 2004 03 18 | 691 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2002 09 28 | 291 | 0.2− | 1.1+ | 2004 03 18 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 09 28 | 291 | 0.0 | 0.7+ | 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.5+ |
| 2002 09 28 | 291 | 0.2− | 1.0+ | 2004 03 18 | 704 | 0.5− | 1.5+ | 2006 11 19 | 691 | 0.3− | 0.3+ |
| 2004 02 14 | 691 | 0.0 | 0.3+ | 2004 03 18 | 704 | (1.2+ | 1.8+) | | | | |

**(137338)∗ 1999 TH$_{77}$ = 2001 HN$_{2}$**

Discovered 1999 Oct. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 13611)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 220.22407 | | (2000.0) | | | |
| $n$ | 0.27939564 | $\omega$ | 154.91407 | | −0.99951914 | −0.01476680 |
| $a$ | 2.3173393 | $\Omega$ | 24.28678 | | +0.00083669 | −0.89184504 |
| $e$ | 0.1945693 | $i$ | 3.80099 | | +0.03099647 | −0.45209996 |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.3− | 0.0 | 2001 04 30 | 704 | 0.2+ | 0.2− | 2003 12 28 | 704 | 0.6− | 0.3− |
| 1999 10 03 | 691 | 0.0 | 0.0 | 2001 04 30 | 704 | 0.2+ | 0.7+ | 2004 01 16 | 691 | 0.1+ | 0.2− |
| 1999 10 03 | 691 | 0.2− | 0.1− | 2001 05 03 | 608 | 0.3− | 0.5+ | 2004 01 16 | 691 | 0.0 | 0.0 |
| 1999 10 10 | 691 | 0.3− | 0.2+ | 2001 05 03 | 608 | 0.1− | 0.6+ | 2004 01 16 | 691 | 0.6+ | 0.2− |
| 1999 10 10 | 691 | 0.4− | 0.1+ | 2001 05 03 | 608 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.8+ | 0.6− |
| 1999 10 10 | 691 | 0.4− | 0.1+ | 2001 05 12 | 699 | 0.3− | 1.0− | 2006 07 21 | G96 | 0.1− | 0.0 |
| 1999 10 16 | 691 | 0.6+ | 0.0 | 2001 05 12 | 699 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.3+ |
| 1999 10 16 | 691 | 0.5+ | 0.3− | 2001 05 12 | 699 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.7+ | 0.1− |
| 1999 10 16 | 691 | 0.6+ | 0.2− | 2001 05 12 | 699 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2001 04 16 | 919 | 1.3+ | 0.6− | 2001 05 21 | 704 | 0.8+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2001 04 16 | 919 | 1.2+ | 0.5+ | 2001 05 21 | 704 | 0.1− | 1.0− | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2001 04 16 | 919 | 0.5− | 0.2− | 2001 05 21 | 704 | 0.2+ | 1.1+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 04 16 | 608 | 0.3− | 1.4+ | 2001 05 21 | 704 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.5− | 0.0 |
| 2001 04 16 | 608 | 0.1+ | 0.9+ | 2001 05 24 | 699 | 0.6+ | 0.3+ | 2006 10 20 | 691 | 0.9− | 0.1− |
| 2001 04 16 | 608 | 0.2+ | 1.2+ | 2001 05 24 | 699 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.7− | 0.1+ |
| 2001 04 17 | 704 | (1.6+ | 0.9+) | 2001 05 24 | 699 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.7+ |
| 2001 04 17 | 704 | 0.1− | 0.3+ | 2001 05 24 | 699 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 04 17 | 704 | 0.5+ | 0.1− | 2003 12 18 | 704 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2001 04 17 | 704 | 0.1− | 1.4+ | 2003 12 18 | 704 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 04 18 | 704 | (2.1− | 1.2+) | 2003 12 18 | 704 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.2+ |
| 2001 04 18 | 704 | 0.4+ | 0.3− | 2003 12 18 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 04 18 | 704 | 0.6− | 0.2− | 2003 12 18 | 704 | 0.6− | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 04 18 | 704 | 0.3+ | 0.7+ | 2003 12 18 | 704 | 0.3− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.4+ |
| 2001 04 18 | 704 | 0.6− | 0.4+ | 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 691 | 0.3+ | 0.3+ | 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.4+ | | |
| 2001 04 23 | 691 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.9+ | 0.4+ | | |
| 2001 04 23 | 691 | 0.1+ | 0.2+ | 2003 12 23 | 704 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.1− | | |
| 2001 04 24 | 608 | 0.4− | 0.1− | 2003 12 23 | 704 | 0.3+ | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 2001 04 24 | 608 | 0.5− | 0.2+ | 2003 12 23 | 704 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.2+ | | |
| 2001 04 24 | 608 | 0.8− | 0.2+ | 2003 12 23 | 704 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.2+ | | |
| 2001 04 30 | 704 | 1.2+ | 0.2− | 2003 12 28 | 704 | 0.5− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.5+ | | |
| 2001 04 30 | 704 | 1.3− | 0.8+ | 2003 12 28 | 704 | 0.3− | 0.1+ | | | | | | |

**(137339)∗ 1999 TD$_{78}$ = 2002 GK$_{131}$**

Discovered 1999 Oct. 11 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 60545)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.17146 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28053209 | $\omega$ | 307.77544 | | +0.61488625 | +0.78861580 | |
| $a$ | 2.3110767 | $\Omega$ | 0.16842 | | −0.70734233 | +0.55159742 | |
| $e$ | 0.2241359 | $i$ | 2.79540 | | −0.34868573 | +0.27170831 | |
| $P$ | 3.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.6− | 0.9− | 2002 04 14 | 704 | 0.6+ | 0.2+ | 2005 02 09 | G96 | 0.2+ | 0.9− | | |
| 1999 08 13 | 699 | 1.0− | 0.6− | 2002 04 14 | 704 | 0.4− | 0.8+ | 2005 02 09 | G96 | 0.1− | 0.0 | | |
| 1999 08 13 | 699 | 0.2− | 1.2− | 2002 04 14 | 704 | 0.4+ | 1.0+ | 2006 07 25 | 644 | 0.1− | 0.0 | | |
| 1999 09 14 | 691 | 0.8− | 0.0 | 2002 04 14 | 704 | 0.2− | 0.1+ | 2006 07 25 | 644 | 0.3+ | 0.1− | | |
| 1999 09 14 | 691 | 0.1+ | 0.2− | 2002 04 14 | 704 | 0.9− | 0.1− | 2006 07 25 | 644 | 0.5+ | 0.1− | | |
| 1999 09 14 | 691 | (2.6+ | 0.0 ) | 2003 10 23 | 691 | 0.4+ | 0.1− | 2006 08 20 | 644 | 0.1+ | 0.1+ | | |
| 1999 10 11 | 691 | 0.0 | 0.2+ | 2003 10 23 | 691 | 0.0 | 0.3− | 2006 08 20 | 644 | 0.2+ | 0.2+ | | |
| 1999 10 11 | 691 | 0.1+ | 0.4+ | 2003 10 23 | 691 | 0.3+ | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.1+ | | |
| 1999 10 11 | 691 | 0.2+ | 0.1+ | 2003 12 18 | 691 | 0.4− | 0.4+ | 2006 08 23 | 704 | 0.3− | 0.3− | | |
| 1999 10 13 | 691 | 0.1+ | 0.6+ | 2003 12 18 | 691 | 0.7− | 0.0 | 2006 08 23 | 704 | 0.1− | 0.3+ | | |
| 1999 10 13 | 691 | 1.3+ | 0.8+ | 2003 12 18 | 691 | 0.7− | 0.2+ | 2006 08 23 | 704 | 0.6− | 0.5+ | | |
| 1999 10 13 | 691 | 0.1− | 0.7+ | 2005 02 09 | 691 | 0.2+ | 0.6+ | 2006 08 23 | 704 | 0.5+ | 0.2− | | |
| 2002 04 12 | 704 | 0.6+ | 1.1+ | 2005 02 09 | 691 | 0.6+ | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.2− | | |
| 2002 04 12 | 704 | 0.8+ | 0.0 | 2005 02 09 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2002 04 12 | 704 | 0.0 | 1.4+ | 2005 02 09 | G96 | 0.3+ | 0.3− | 2006 09 30 | G96 | 1.1− | 1.2+ | | |
| 2002 04 12 | 704 | 0.4− | 1.8+ | 2005 02 09 | G96 | 0.0 | 0.6− | 2006 09 30 | G96 | 0.2− | 0.0 | | |

**(137340)∗ 1999 TB$_{83}$ = 1998 HB$_{64}$**

Discovered 1999 Oct. 12 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 2116)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.74063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29558816 | $\omega$ | 50.05415 | | −0.83753251 | +0.54619713 | |
| $a$ | 2.2319169 | $\Omega$ | 163.03670 | | −0.51516791 | −0.78060780 | |
| $e$ | 0.1579082 | $i$ | 2.83336 | | −0.18204759 | −0.30384233 | |
| $P$ | 3.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.3− | 0.3− | 2001 02 02 | 704 | 0.2− | 0.2+ | 2002 09 04 | 644 | 0.8− | 1.5+ | | |
| 1998 03 29 | 704 | 0.4+ | 1.4+ | 2001 02 02 | 704 | 0.3− | 0.3+ | 2002 09 04 | 644 | 0.3− | 1.2+ | | |
| 1998 03 29 | 704 | 0.5+ | 1.1− | 2001 02 02 | 704 | 0.4− | 0.2− | 2002 09 04 | 644 | 0.6− | 1.4+ | | |
| 1998 03 29 | 704 | 0.4− | 0.9+ | 2001 02 02 | 704 | 0.8− | 1.3+ | 2003 12 23 | 704 | 0.4+ | 0.6+ | | |
| 1998 03 29 | 704 | 1.4+ | 1.2− | 2001 02 02 | 704 | 0.8+ | 1.4+ | 2003 12 23 | 704 | 0.8+ | 0.3− | | |
| 1998 04 21 | 704 | 0.3+ | 0.4+ | 2001 02 14 | 046 | 0.0 | 0.0 | 2003 12 23 | 704 | 0.4− | 0.1+ | | |
| 1998 04 21 | 704 | 0.9− | 0.1+ | 2001 02 14 | 046 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.0 | | |
| 1998 04 21 | 704 | 1.7+ | 1.0− | 2001 02 14 | 046 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.0 | | |
| 1998 04 21 | 704 | 0.4+ | 0.4− | 2001 02 16 | 699 | 1.0− | 1.3+ | 2006 09 30 | G96 | 0.4+ | 0.2+ | | |
| 1998 04 21 | 704 | 1.5+ | 0.5− | 2001 02 16 | 699 | 0.8− | 1.0+ | 2006 09 30 | G96 | 0.6+ | 0.0 | | |
| 1998 04 22 | 704 | 0.0 | 0.5− | 2001 02 16 | 699 | (0.2+ | 3.3+) | 2006 09 30 | G96 | 0.0 | 0.3+ | | |
| 1998 04 22 | 704 | 0.1− | 0.5− | 2001 02 16 | 699 | (0.4− | 2.0+) | 2006 09 30 | G96 | 0.1− | 0.3− | | |
| 1998 04 22 | 704 | 1.3− | 0.5+ | 2001 02 19 | 704 | 1.1+ | 1.3+ | 2006 09 30 | G96 | 0.4+ | 0.1+ | | |
| 1998 04 22 | 704 | 0.1− | 1.4− | 2001 02 19 | 704 | 0.5+ | 1.3+ | 2006 09 30 | G96 | 0.2+ | 0.1+ | | |
| 1998 04 22 | 704 | 1.1− | 0.1− | 2001 02 19 | 704 | (1.6+ | 1.5+) | 2006 10 17 | G96 | 0.5+ | 0.3− | | |
| 1999 10 12 | 691 | 0.2+ | 0.5− | 2001 02 22 | 704 | 0.7+ | 0.8− | 2006 10 17 | G96 | 1.0+ | 0.9− | | |
| 1999 10 12 | 691 | 0.2+ | 0.4− | 2001 02 22 | 699 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.7+ | 1.3+ | | |
| 1999 10 12 | 691 | 0.4− | 0.1+ | 2001 02 22 | 704 | 0.5− | 0.9+ | 2006 10 17 | G96 | 0.7+ | 0.3+ | | |
| 1999 10 16 | 691 | 0.1+ | 0.2− | 2001 02 22 | 699 | 0.4− | 1.1− | 2006 10 18 | 691 | 0.2+ | 0.1+ | | |
| 1999 10 16 | 691 | 0.3+ | 0.3− | 2001 02 22 | 704 | 0.5+ | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.1+ | | |
| 1999 10 16 | 691 | 0.0 | 0.3− | 2001 02 22 | 699 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.0 | | |
| 1999 10 20 | 691 | 0.5+ | 0.2− | 2001 02 22 | 704 | 0.7− | 1.0+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 1999 10 20 | 691 | 0.1− | 0.5− | 2001 02 22 | 699 | (0.2+ | 1.7+) | 2006 10 22 | 691 | 0.0 | 0.1+ | | |
| 1999 10 20 | 691 | 0.2+ | 0.2− | 2001 02 22 | 704 | 1.1− | 0.8+ | 2006 10 22 | 691 | 0.1+ | 0.1− | | |
| 1999 10 30 | 691 | 0.3− | 0.1+ | 2002 08 15 | 291 | 0.5− | 0.7+ | 2006 10 25 | 850 | (2.3+ | 1.4−) | | |
| 1999 10 30 | 691 | 0.8+ | 0.3+ | 2002 08 15 | 291 | 0.6− | 0.7+ | 2006 10 25 | 850 | (3.4+ | 1.9+) | | |
| 1999 10 30 | 691 | 0.4− | 0.2− | 2002 08 15 | 291 | 0.7− | 0.8+ | | | | | | |

**(137341)∗ 1999 TD$_{83}$**

Discovered 1999 Oct. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.61221 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17796238 | $\omega$ | 11.10224 | | −0.70961591 | −0.70397478 | |
| $a$ | 3.1302853 | $\Omega$ | 124.10961 | | +0.64369659 | −0.66469708 | |
| $e$ | 0.1124721 | $i$ | 2.03540 | | +0.28653091 | −0.25019453 | |
| $P$ | 5.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.8− | 0.4− | 2002 03 15 | 691 | 0.1+ | 0.1− | 2005 10 29 | G96 | 0.3− | 0.2− | | |
| 1996 03 12 | 691 | 0.2+ | 0.1− | 2002 03 15 | 691 | 0.4− | 0.0 | 2005 10 29 | G96 | 0.0 | 0.1− | | |
| 1996 03 12 | 691 | 0.1− | 0.7− | 2002 03 15 | 691 | 0.4+ | 0.3+ | 2005 11 06 | 691 | 0.2− | 0.4+ | | |
| 1999 10 12 | 691 | 0.2− | 0.1− | 2002 04 14 | 644 | 0.3+ | 0.2+ | 2005 11 06 | 691 | 0.1− | 0.3+ | | |
| 1999 10 12 | 691 | 0.1− | 0.3− | 2002 04 14 | 644 | 0.1− | 0.6+ | 2005 11 06 | 691 | 0.2− | 0.5+ | | |
| 1999 10 12 | 691 | 0.1+ | 0.4− | 2002 04 14 | 644 | 0.1+ | 0.2+ | 2005 12 01 | G96 | 0.2+ | 0.1− | | |
| 1999 10 16 | 691 | 0.1− | 0.0 | 2002 04 14 | 691 | 0.1+ | 0.5+ | 2005 12 01 | G96 | 0.2− | 0.1+ | | |
| 1999 10 16 | 691 | 0.1+ | 0.8− | 2002 04 14 | 691 | 0.2+ | 0.5+ | 2005 12 01 | G96 | 0.2+ | 0.1+ | | |
| 1999 10 16 | 691 | 0.0 | 0.8− | 2002 04 14 | 691 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.3+ | 0.2− | | |
| 1999 10 20 | 691 | 0.5+ | 0.1+ | 2004 07 16 | 807 | 0.5− | 0.4+ | 2006 10 23 | 691 | 0.9+ | 0.4− | | |
| 1999 10 20 | 691 | 0.1+ | 0.3+ | 2004 07 16 | 807 | 0.5− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.0 | | |
| 1999 10 20 | 691 | 0.2+ | 0.1− | 2005 10 25 | 691 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.5+ | 0.6− | | |
| 1999 10 30 | 691 | 0.2+ | 0.2− | 2005 10 25 | 691 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− | | |
| 1999 10 30 | 691 | 0.2+ | 0.1+ | 2005 10 25 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 1.1− | 0.1− | | |
| 1999 10 30 | 691 | 0.9+ | 0.2− | 2005 10 29 | 691 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.7− | 0.7− | | |
| 1999 11 04 | 691 | 0.0 | 0.0 | 2005 10 29 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 1999 11 04 | 691 | 0.1+ | 0.2− | 2005 10 29 | 691 | 0.0 | 0.4+ | | | | | | |
| 1999 11 04 | 691 | 0.1− | 0.6+ | 2005 10 29 | G96 | 0.0 | 0.1− | | | | | | |

**(137342)∗ 1999 TU$_{85}$**

Discovered 1999 Oct. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.68122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27125053 | $\omega$ | 231.76019 | | +0.79784991 | −0.60281773 | |
| $a$ | 2.3635002 | $\Omega$ | 165.30773 | | +0.56115401 | +0.73848671 | |
| $e$ | 0.1906760 | $i$ | 1.53743 | | +0.22032181 | +0.30207310 | |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 691 | 0.2− | 0.3− | 2004 01 16 | 691 | 0.0 | 0.4+ | 2006 08 27 | 691 | 0.6− | 0.3+ | | |
| 1999 10 14 | 691 | 0.3− | 0.3− | 2004 01 16 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 0.6− | 1.1+ | | |
| 1999 10 14 | 691 | 0.5− | 0.3− | 2004 01 16 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 1.4+ | 0.8+ | | |
| 1999 10 16 | 691 | 0.4− | 0.5+ | 2004 01 24 | 704 | (0.9− | 3.4+) | 2006 08 28 | 703 | 0.1+ | 0.4+ | | |
| 1999 10 16 | 691 | 0.2− | 0.5+ | 2004 01 24 | 704 | (1.7+ | 3.0+) | 2006 08 28 | 703 | 0.2+ | 0.3− | | |
| 1999 10 16 | 691 | 0.4− | 0.3+ | 2004 01 24 | 704 | 1.6+ | 1.5+ | 2006 08 28 | 703 | 0.6+ | 0.3+ | | |
| 1999 11 01 | 691 | 0.5+ | 0.2+ | 2004 01 24 | 704 | 1.4+ | 0.4+ | 2006 08 28 | 703 | 0.9− | 0.7− | | |
| 1999 11 01 | 691 | 0.6+ | 0.1+ | 2004 02 17 | 645 | 0.1− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.5+ | | |
| 1999 11 01 | 691 | 0.9+ | 0.2+ | 2004 02 17 | 645 | 0.1− | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.1− | | |
| 1999 11 09 | 691 | 0.4− | 0.0 | 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.6− | | |
| 1999 11 09 | 691 | 0.3− | 0.0 | 2005 05 08 | 691 | 0.0 | 0.5+ | 2006 09 12 | 703 | 0.3+ | 1.0− | | |
| 1999 11 09 | 691 | 0.6− | 0.1+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 09 13 | 644 | 0.7+ | 0.5− | | |
| 1999 11 15 | 704 | 1.0+ | 0.5− | 2005 05 11 | 807 | 0.1− | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.2+ | | |
| 1999 11 15 | 704 | 0.0 | 1.1− | 2005 05 11 | 807 | 0.1− | 0.5+ | 2006 09 13 | 644 | 0.4+ | 0.3− | | |
| 1999 11 15 | 704 | 0.6+ | 0.2+ | 2006 08 18 | 691 | 0.9+ | 0.2+ | 2006 09 13 | 644 | 0.3− | 0.2+ | | |
| 1999 11 15 | 704 | 1.2+ | 0.2− | 2006 08 18 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.0 | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 0.8+ | 0.2− | 2006 08 18 | 691 | 0.4− | 1.1+ | 2006 09 13 | 644 | 0.3− | 0.4+ |
| 1999 11 17 | 704 | 0.3+ | 0.1− | 2006 08 27 | 691 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1999 11 17 | 704 | 0.1− | 1.2− | 2006 08 27 | 699 | 0.4+ | 0.7− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 1999 11 17 | 704 | 0.1+ | 0.4− | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 1999 11 17 | 704 | 1.3+ | 0.1− | 2006 08 27 | 699 | 0.4+ | 1.3+ | 2006 09 26 | G96 | 0.2− | 0.2− |

**(137343)∗ 1999 TV$_{85}$**

Discovered 1999 Oct. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.14452 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28051548 | $\omega$ | 286.60097 | | +0.98834705 | −0.14991665 | |
| $a$ | 2.3111679 | $\Omega$ | 82.02694 | | +0.14782942 | +0.90406088 | |
| $e$ | 0.2171225 | $i$ | 1.52553 | | +0.03628465 | +0.40024857 | |
| $P$ | 3.51 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 691 | 0.2+ | 0.2− | 2005 05 14 | G96 | 0.6− | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 1999 10 14 | 691 | 0.2+ | 0.2− | 2005 05 14 | G96 | 0.7− | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 1999 10 14 | 691 | 0.1+ | 0.4− | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 1999 10 16 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 1999 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 1999 10 16 | 691 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 1999 11 12 | 704 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.8− | 0.5− |
| 1999 11 12 | 704 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.5+ | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.5+ |
| 1999 11 12 | 704 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 1999 11 12 | 704 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.8− | 0.4− |
| 1999 11 12 | 704 | 1.0− | 1.3− | 2006 10 24 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 1999 12 03 | 691 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.8+ |
| 1999 12 03 | 691 | 0.2− | 0.1− | 2006 10 24 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.7− | 1.0+ |
| 1999 12 03 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.7+ | 1.2+ |
| 1999 12 17 | 691 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.5+ | 0.9+ |
| 1999 12 17 | 691 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.1− |
| 1999 12 17 | 691 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.6− | 0.3+ | 2006 11 21 | 704 | 0.4+ | 1.4− |
| 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2004 01 28 | 691 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.2+ |
| 2005 04 12 | 695 | 0.9+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2005 04 12 | 695 | 1.1+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2005 05 14 | G96 | 0.5− | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | | | |

**(137344)∗ 1999 TB$_{89}$ = 1999 RY$_{142}$**

Discovered 1999 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 1669)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.15800 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28880469 | $\omega$ | 346.73904 | | +0.96857900 | +0.24870462 | |
| $a$ | 2.2667305 | $\Omega$ | 358.85902 | | −0.22407094 | +0.87113568 | |
| $e$ | 0.1825859 | $i$ | 2.46989 | | −0.10792097 | +0.42340128 | |
| $P$ | 3.41 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 0.3− | 2003 12 28 | 691 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.3+ | 0.6− |
| 1999 09 07 | 704 | 0.8− | 0.0 | 2003 12 28 | 691 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 0.5+ | 0.0 | 2003 12 28 | 691 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.2− | 0.1− |
| 1999 09 07 | 704 | 0.3− | 0.2− | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2004 01 22 | 704 | 0.4− | 0.6+ | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 1999 09 09 | 704 | 1.2− | 1.3+ | 2004 01 22 | 704 | 0.6− | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.8+ |
| 1999 09 09 | 704 | 0.1− | 0.4+ | 2004 01 22 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.8+ |
| 1999 09 09 | 704 | 0.5+ | 0.3+ | 2005 03 15 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 1999 09 09 | 704 | 0.5− | 0.3− | 2005 03 15 | G96 | 1.2− | 0.5− | 2006 11 12 | G96 | 0.1− | 0.2− |
| 1999 09 09 | 704 | 0.9− | 0.1− | 2005 03 15 | G96 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 1999 09 09 | 704 | 0.4+ | 0.4+ | 2005 03 15 | G96 | 0.6− | 0.5+ | 2006 11 12 | G96 | 0.3− | 0.1− |
| 1999 09 09 | 704 | 0.0 | 0.5+ | 2005 04 11 | 691 | 0.4+ | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 1999 09 09 | 704 | 0.3− | 0.1− | 2005 04 11 | 691 | 0.5+ | 0.5+ | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 1999 09 09 | 704 | 1.0− | 0.1+ | 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.6+ |
| 1999 09 09 | 704 | 0.9+ | 1.0+ | 2005 04 15 | 691 | 0.5+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.6+ |
| 1999 09 14 | 704 | 0.0 | 0.3− | 2005 04 15 | 691 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.5− | 0.8+ |
| 1999 09 14 | 704 | 0.4− | 0.5+ | 2005 04 15 | 691 | 0.2− | 1.2+ | 2006 11 16 | 704 | 0.4− | 0.9+ |
| 1999 09 14 | 704 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 1999 09 14 | 704 | 0.3− | 1.1− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 1999 09 14 | 703 | 0.7− | 1.2+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 1999 09 14 | 703 | 0.2− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 1999 09 14 | 703 | 0.3− | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 18 | 291 | 0.1− | 0.8+ |
| 1999 09 14 | 703 | 0.1+ | 0.2− | 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 18 | 291 | 0.1+ | 0.2− |
| 1999 09 29 | 703 | 0.0 | 1.4+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 18 | 291 | 0.2+ | 0.0 |
| 1999 09 29 | 703 | 0.2+ | 1.1+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 1999 09 29 | 703 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 1999 09 29 | 703 | 0.3− | 0.5+ | 2006 10 17 | 691 | (3.7− | 2.0+) | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 1999 10 02 | 704 | 0.3+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 1999 10 02 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 18 | D35 | 0.1− | 0.3+ |
| 1999 10 02 | 704 | 0.1− | 0.5− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 18 | D35 | 0.2+ | 0.4+ |
| 1999 10 02 | 704 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.2− | 0.1− | 2006 11 18 | D35 | 0.5+ | 0.4+ |
| 1999 10 07 | 704 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.8− | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 1999 10 07 | 704 | 0.8− | 0.8+ | 2006 10 27 | 703 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.1− | 1.2+ |
| 1999 10 07 | 704 | 1.1+ | 0.5− | 2006 10 27 | 703 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 1999 10 07 | 704 | 0.5+ | 0.8− | 2006 10 29 | 704 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 1999 10 07 | 704 | 0.4− | 0.0 | 2006 10 29 | 704 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.6+ |
| 1999 10 09 | 704 | 0.3+ | 0.3+ | 2006 10 29 | 704 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.8+ |
| 1999 10 09 | 704 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.4+ | 0.0 | 2006 11 22 | 704 | 1.3− | 0.2+ |
| 1999 10 09 | 704 | 0.5+ | 0.4+ | 2006 10 29 | 704 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.3− | 1.2+ |
| 1999 10 09 | 704 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 1.1− | 0.2+ |
| 1999 10 09 | 704 | 0.6+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 27 | 185 | 0.9+ | 0.4+ |
| 1999 10 15 | 704 | 0.8− | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 27 | 185 | 0.0 | 0.4− |
| 1999 10 15 | 704 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 27 | 185 | 1.3+ | 0.1+ |
| 1999 10 15 | 704 | 0.1+ | 0.6− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 27 | 185 | 0.4+ | 0.1− |
| 2003 12 16 | 691 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2003 12 16 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1+ | 1.0+ |
| 2003 12 16 | 691 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.7− | 0.8+ |
| 2003 12 22 | 704 | 0.8+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2003 12 22 | 704 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2003 12 22 | 704 | 0.4+ | 1.1+ | 2006 11 10 | 644 | 0.4− | 0.1− | | | | |

**(137345)∗ 1999 TK$_{89}$ = 2002 LU$_{16}$**

Discovered 1999 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31277)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.39132 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29134421 | $\omega$ | 301.03803 | | +0.88636387 | +0.46271799 | |
| $a$ | 2.2535392 | $\Omega$ | 31.40737 | | −0.41374623 | +0.80698848 | |
| $e$ | 0.2234657 | $i$ | 1.74270 | | −0.20778148 | +0.36696276 | |
| $P$ | 3.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.5+ | 0.9+ | 2005 03 17 | 691 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.7− |
| 1999 09 04 | 699 | 0.3+ | 0.9+ | 2005 03 17 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 1999 09 04 | 699 | 0.6+ | 1.4+ | 2005 03 17 | 691 | 0.0 | 0.6+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 0.2− | 0.2+ | 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 0.2− | 0.2+ | 2005 04 02 | G96 | 0.1+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1999 09 07 | 704 | 0.6− | 0.5− | 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 1999 09 07 | 704 | 0.3− | 0.3+ | 2005 04 02 | G96 | 0.6+ | 0.2+ | 2006 11 18 | 704 | (0.4− | 3.1+) |
| 1999 09 07 | 704 | 0.9− | 0.4+ | 2005 04 04 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | (0.9− | 2.8+) |
| 1999 09 14 | 704 | 0.7+ | 0.0 | 2005 04 04 | 691 | 0.6+ | 0.1+ | 2006 11 18 | 704 | (0.6− | 1.8+) |
| 1999 09 14 | 704 | 0.7− | 0.1− | 2005 04 04 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 1.1+ |
| 1999 09 14 | 704 | 0.1− | 0.7+ | 2005 05 04 | G96 | 0.7− | 0.2− | 2006 11 20 | H55 | 0.0 | 0.0 |
| 1999 09 14 | 704 | 0.1− | 0.4+ | 2005 05 04 | G96 | 0.4− | 0.1− | 2006 11 20 | H55 | 0.1+ | 0.1+ |
| 1999 09 14 | 704 | 0.1+ | 0.5+ | 2005 05 04 | G96 | 0.1− | 0.3+ | 2006 11 20 | H55 | 0.2+ | 0.0 |
| 1999 10 02 | 699 | 1.2+ | 0.7+ | 2005 05 04 | G96 | 0.9− | 0.0 | 2006 11 20 | H55 | 0.1− | 0.1+ |
| 1999 10 02 | 704 | 0.5− | 0.8+ | 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 11 20 | H55 | 0.2− | 0.0 |
| 1999 10 02 | 699 | 0.7− | 0.1− | 2005 05 13 | G96 | 0.6− | 0.2+ | 2006 11 20 | 704 | (1.3+ | 2.1−) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 704 | 0.2− | 0.4− | 2005 05 13 | G96 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.8− | 0.1− |
| 1999 10 02 | 704 | 1.2+ | 0.1− | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 1999 10 02 | 699 | 0.5+ | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.1− | 0.4− |
| 1999 10 02 | 704 | 0.3− | 0.5+ | 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 1999 10 02 | 704 | 0.7− | 0.2− | 2006 07 22 | G96 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 1999 10 07 | 703 | 0.6+ | 0.4+ | 2006 07 22 | G96 | 0.4− | 0.2− | 2006 11 20 | G96 | 0.0 | 0.1− |
| 1999 10 07 | 703 | 0.2− | 0.0 | 2006 09 16 | 703 | (3.1− | 0.7+) | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 1999 10 07 | 703 | 0.5− | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 1999 10 07 | 703 | (2.2− | 0.1−) | 2006 09 16 | 703 | 0.5+ | 0.9− | 2006 11 20 | 704 | 1.2+ | 0.1+ |
| 1999 10 07 | 704 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 1999 10 07 | 704 | 1.6− | 1.4+ | 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.3− | 0.6+ |
| 1999 10 07 | 704 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.6− | 0.5− | 2006 11 20 | 704 | 0.5− | 0.1− |
| 1999 10 07 | 704 | 0.5+ | 0.1− | 2006 09 27 | G96 | 0.6− | 0.7− | 2006 11 20 | G96 | 0.0 | 0.3− |
| 1999 10 15 | 704 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.4− | 0.6− | 2006 11 20 | 704 | 0.3+ | 0.1− |
| 1999 10 15 | 704 | 0.2+ | 0.7− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | 1.1− | 1.4+ |
| 1999 10 15 | 704 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 1999 10 15 | 704 | 0.1− | 0.8− | 2006 10 17 | G96 | 0.8+ | 0.2− | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 1999 10 15 | 704 | 0.6− | 1.1− | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2002 06 06 | 704 | (0.1+ | 1.5+) | 2006 10 29 | G96 | 0.7+ | 0.0 | 2006 11 20 | 704 | 0.6− | 0.8+ |
| 2002 06 06 | 704 | 0.6+ | 1.4+ | 2006 10 29 | G96 | 0.1− | 0.1− | 2006 11 21 | H55 | 0.0 | 0.1+ |
| 2002 06 06 | 704 | 0.8+ | 1.3+ | 2006 10 29 | G96 | 0.2+ | 0.0 | 2006 11 21 | H55 | 0.2+ | 0.2+ |
| 2002 06 06 | 704 | (0.2+ | 1.7+) | 2006 10 29 | G96 | 0.1+ | 0.3− | 2006 11 21 | H55 | 0.2− | 0.0 |
| 2002 06 08 | 704 | 0.4− | 0.7+ | 2006 10 29 | 291 | 0.0 | 0.1− | 2006 11 21 | H55 | 0.1+ | 0.1+ |
| 2002 06 08 | 704 | 0.6− | 0.9+ | 2006 10 29 | 291 | 0.0 | 0.0 | 2006 11 21 | H55 | 0.1+ | 0.1+ |
| 2002 06 08 | 704 | 0.0 | 0.5+ | 2006 10 29 | 291 | 0.0 | 0.1− | 2006 11 21 | H55 | 0.1− | 0.1+ |
| 2002 06 08 | 704 | 0.7− | 0.7+ | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.8+ |
| 2002 06 08 | 704 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | (0.1− | 2.6−) |
| 2003 12 17 | 691 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2003 12 17 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2003 12 17 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2003 12 22 | 704 | 0.2+ | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.2− | 0.6− |
| 2003 12 22 | 704 | 0.0 | 1.3+ | 2006 11 11 | 703 | 0.5+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2003 12 22 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.0 |

**(137346)∗ 1999 TP$_{90}$**

Discovered 1999 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.32252 | | (2000.0) | | +0.99366224 | −0.08430605 |
| $n$ | 0.28573748 | $\omega$ | 323.43553 | | +0.10953892 | +0.87470023 |
| $a$ | 2.2829229 | $\Omega$ | 41.59352 | | −0.02523065 | +0.47727561 |
| $e$ | 0.1913319 | $i$ | 6.43055 | | | |
| $P$ | 3.45 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.5− | 0.3+ | 2005 05 01 | 644 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 1999 09 05 | 699 | 0.2− | 1.1+ | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 1999 09 05 | 699 | 0.0 | 1.4+ | 2006 08 23 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 704 | 0.1− | 0.3+ |
| 1999 09 14 | 704 | 0.0 | 1.0− | 2006 08 23 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 1999 09 14 | 704 | 0.5− | 0.5− | 2006 08 23 | 704 | 0.2+ | 0.9+ | 2006 10 23 | 704 | 0.3− | 1.0− |
| 1999 09 14 | 704 | 0.1− | 1.1− | 2006 08 23 | 704 | 0.1− | 0.8+ | 2006 10 23 | 704 | 0.7− | 0.6− |
| 1999 09 14 | 704 | 0.1+ | 0.7− | 2006 08 23 | 704 | 0.7− | 0.1+ | 2006 10 23 | 704 | 0.1+ | 0.2+ |
| 1999 10 02 | 704 | 0.7− | 0.1− | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 23 | 704 | 0.4− | 1.0− |
| 1999 10 02 | 704 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 10 28 | 704 | (1.8− | 0.1+) |
| 1999 10 02 | 704 | 0.3+ | 0.0 | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 28 | 704 | 0.3− | 0.3− |
| 1999 10 02 | 704 | 1.7+ | 0.3+ | 2006 09 15 | 644 | 0.1+ | 0.3− | 2006 10 28 | 704 | 0.4− | 0.3− |
| 1999 10 02 | 704 | 0.8+ | 0.1− | 2006 09 15 | 644 | 0.1− | 0.0 | 2006 10 28 | 704 | 1.0− | 0.5− |
| 1999 10 07 | 704 | 0.6+ | 0.1− | 2006 09 15 | 644 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.9− | 0.4− |
| 1999 10 07 | 704 | 0.3− | 0.3− | 2006 09 20 | 699 | 0.2− | 0.7− | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 1999 10 07 | 704 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 1999 10 07 | 704 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 1999 10 07 | 704 | 0.4− | 0.3− | 2006 09 20 | 699 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.2− |
| 1999 10 08 | 704 | 0.0 | 1.1− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3− |
| 1999 10 08 | 704 | 0.0 | 0.6− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 1999 10 08 | 704 | 0.3+ | 0.5− | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 1999 11 07 | 704 | 1.2+ | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 1999 11 07 | 704 | 0.6+ | 0.6− | 2006 09 20 | 644 | 0.6− | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 1999 11 07 | 704 | 0.9+ | 1.1− | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 1999 12 07 | 704 | 0.5− | 0.1− | 2006 09 22 | 704 | 0.7+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 0.6− | 1.0+ | 2006 09 22 | 704 | 1.1+ | 1.2+ | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 0.3− | 0.8+ | 2006 09 22 | 704 | 0.3+ | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2003 12 18 | 704 | 0.3+ | 0.6− | 2006 09 22 | 704 | (0.4− | 1.5+) | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2003 12 18 | 704 | 0.5+ | 0.5− | 2006 09 26 | 704 | 0.4+ | 0.8+ | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2003 12 18 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.8+ | 1.5+ | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2003 12 27 | 704 | (2.9− | 1.3+) | 2006 09 26 | 704 | 0.5+ | 1.5+ | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2003 12 27 | 704 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.2+ | 1.3+ | 2006 11 17 | 703 | 1.2− | 0.7− |
| 2003 12 27 | 704 | 0.4− | 0.6− | 2006 09 26 | 704 | 0.0 | 0.7+ | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2003 12 27 | 704 | 0.3− | 0.4+ | 2006 09 28 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.4+ | 0.1+ |
| 2003 12 27 | 704 | 1.0+ | 0.8+ | 2006 09 28 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2003 12 29 | 704 | 0.0 | 0.6+ | 2006 09 28 | 704 | 0.0 | 1.4+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2003 12 29 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2003 12 29 | 704 | 0.2− | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2003 12 29 | 704 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2003 12 29 | 704 | 0.2− | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2004 01 03 | 704 | 0.3+ | 0.5− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 1.0+ | 0.1− |
| 2004 01 03 | 704 | 0.8+ | 0.3− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2004 01 03 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2004 01 03 | 704 | 1.3− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2004 01 16 | 699 | 0.7+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2004 01 16 | 699 | 0.7+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2004 01 16 | 699 | 0.6− | 0.4− | 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2004 01 16 | 699 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2004 01 21 | 704 | 0.7− | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 1.2+ | 0.3+ |
| 2004 01 21 | 704 | 0.7+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2004 01 21 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2004 01 22 | 704 | (2.6+ | 1.1−) | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.4− |
| 2004 01 22 | 704 | 0.9+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 26 | 958 | 0.4+ | 0.7− |
| 2004 02 11 | 703 | 0.8− | 1.3− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 26 | 958 | 0.4+ | 0.0 |
| 2004 02 11 | 703 | 1.1− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 26 | 958 | 0.1− | 0.1− |
| 2004 02 11 | 703 | 1.0− | 0.9+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.5+ |
| 2004 02 11 | 703 | (2.2− | 1.6+) | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.7− | 0.6+ |
| 2005 04 16 | 691 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.6− |
| 2005 04 16 | 691 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.1− | 0.6+ |
| 2005 04 16 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.3− | 0.8− |
| 2005 04 17 | 691 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.8+ | 0.6+ |
| 2005 04 17 | 691 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.7+ |
| 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 | | | | |

**(137347)∗ 1999 TL$_{94}$**

Discovered 1999 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.68399 | | (2000.0) | | +0.83304053 | −0.54928006 |
| $n$ | 0.27357878 | $\omega$ | 351.09835 | | +0.51337866 | +0.72322075 |
| $a$ | 2.3500717 | $\Omega$ | 42.43766 | | +0.20612090 | +0.41862055 |
| $e$ | 0.1564415 | $i$ | 5.59934 | | | |
| $P$ | 3.60 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 1.5− | 0.6+ | 2003 11 20 | 704 | 0.5+ | 0.3+ | 2005 04 16 | 691 | 0.4+ | 0.8+ |
| 1999 10 01 | 703 | 0.6− | 0.5+ | 2003 11 20 | 704 | 0.3+ | 0.4+ | 2005 04 16 | 691 | 0.3+ | 0.8+ |
| 1999 10 01 | 703 | 1.3− | 0.8+ | 2003 11 24 | 704 | 0.8+ | 0.7+ | 2005 05 08 | G96 | 0.4− | 0.2+ |
| 1999 10 01 | 703 | 0.0 | 0.4+ | 2003 11 24 | 704 | 0.6+ | 0.2+ | 2005 05 08 | G96 | 0.2+ | 0.0 |
| 1999 10 02 | 704 | 0.1− | 0.0 | 2003 11 24 | 704 | 1.6+ | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.2+ |
| 1999 10 02 | 704 | 0.2− | 0.4+ | 2003 11 24 | 704 | 0.6+ | 0.6+ | 2005 05 08 | G96 | 0.1+ | 0.1− |
| 1999 10 02 | 704 | 0.8+ | 0.2+ | 2003 11 24 | 704 | 0.9+ | 0.6− | 2006 08 23 | 644 | 0.4− | 0.1− |
| 1999 10 02 | 704 | 0.4− | 0.1+ | 2003 12 04 | 704 | 0.3+ | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.2+ |
| 1999 10 02 | 704 | 0.6+ | 0.1+ | 2003 12 04 | 704 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.2+ |
| 1999 10 07 | 704 | 0.2− | 0.1+ | 2003 12 04 | 704 | 1.0+ | 0.8+ | 2006 08 24 | 644 | 0.3− | 0.1+ |
| 1999 10 07 | 704 | 0.5− | 1.5+ | 2003 12 17 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.2− |
| 1999 10 07 | 704 | 0.3− | 1.1− | 2003 12 17 | 644 | 0.3− | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.7− | 0.5+ | 2003 12 17 | 644 | 0.3− | 0.1+ | 2006 08 27 | 122 | 0.1+ | 1.2+ |
| 1999 10 09 | 704 | 0.2− | 0.6+ | 2003 12 23 | 704 | 1.1+ | 0.1− | 2006 08 27 | 122 | 0.1− | 1.0+ |
| 1999 10 09 | 704 | 0.7+ | 0.2+ | 2003 12 23 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 122 | 0.4+ | 0.4+ |
| 1999 10 09 | 704 | 0.0 | 0.5+ | 2003 12 23 | 704 | 0.0 | 1.1+ | 2006 08 28 | E12 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.3+ | 0.7+ | 2003 12 23 | 704 | 0.1+ | 0.5+ | 2006 08 28 | E12 | 0.3− | 0.4+ |
| 1999 10 09 | 704 | 0.3+ | 0.4+ | 2003 12 27 | 704 | 0.4+ | 0.6− | 2006 08 28 | E12 | 0.0 | 0.3+ |
| 1999 10 15 | 704 | 0.0 | 1.4− | 2003 12 27 | 704 | 0.0 | 0.6− | 2006 08 28 | E12 | 0.2− | 0.2− |
| 1999 10 15 | 704 | 0.3+ | 0.1− | 2003 12 27 | 704 | 0.2− | 0.7− | 2006 09 14 | 644 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.4− | 0.6+ | 2003 12 28 | 704 | 1.0− | 1.8+ | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2003 12 28 | 704 | 0.6− | 0.5− | 2006 09 14 | 644 | 0.5+ | 0.3− |
| 1999 10 15 | 704 | 0.1− | 0.2+ | 2003 12 28 | 704 | 1.5− | 1.9+ | 2006 09 17 | 699 | 0.6+ | 0.4+ |
| 1999 10 30 | 703 | 1.1+ | 0.8+ | 2003 12 28 | 704 | 0.2− | 0.4− | 2006 09 17 | 699 | 0.9+ | 0.3− |
| 1999 10 30 | 703 | 0.5− | 0.4+ | 2003 12 28 | 704 | 1.4− | 0.9+ | 2006 09 17 | 699 | 0.7+ | 0.5− |
| 1999 10 30 | 703 | 0.0 | 0.3− | 2003 12 28 | 704 | 0.3− | 0.2− | 2006 09 17 | 699 | 1.1+ | 1.1− |
| 1999 10 30 | 703 | 0.4− | 1.0− | 2003 12 28 | 704 | 1.1− | 0.7+ | 2006 09 20 | 703 | 0.7− | 0.7+ |
| 1999 11 06 | 704 | 0.7+ | 0.0 | 2003 12 28 | 704 | 0.2+ | 0.5− | 2006 09 20 | 703 | 0.1− | 0.4+ |
| 1999 11 06 | 704 | 1.4+ | 1.6− | 2003 12 28 | 704 | 1.5− | 0.1− | 2006 09 20 | 703 | 0.4+ | 0.3+ |
| 1999 11 06 | 704 | 0.7− | 0.0 | 2003 12 28 | 704 | 0.1− | 0.6− | 2006 09 20 | 703 | 0.6− | 0.4+ |
| 1999 11 06 | 704 | 0.4+ | 1.1− | 2005 04 04 | G96 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 1.2− | 0.2+ |
| 1999 11 06 | 704 | 0.7− | 0.5+ | 2005 04 04 | G96 | 0.1+ | 0.2− | 2006 09 26 | 703 | 1.1− | 0.0 |
| 2003 11 20 | 704 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2003 11 20 | 704 | 0.4+ | 0.7− | 2005 04 04 | G96 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2003 11 20 | 704 | 0.5+ | 0.2+ | 2005 04 16 | 691 | 0.4+ | 0.7+ | | | | |

**(137348)∗ 1999 TZ$_{94}$**

Discovered 1999 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.44677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28419159 | $\omega$ | 327.49363 | | +0.76634246 | −0.63348445 | |
| $a$ | 2.2911942 | $\Omega$ | 72.19066 | | +0.61080698 | +0.66692858 | |
| $e$ | 0.2362307 | $i$ | 6.44370 | | +0.19908305 | +0.39230564 | |
| $P$ | 3.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.9− | 0.2+ | 2004 02 15 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 1999 09 08 | 703 | 1.3− | 0.7+ | 2004 02 15 | 704 | 0.9+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 09 08 | 703 | 1.0− | 0.5+ | 2004 02 15 | 704 | 1.2+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 1999 09 08 | 703 | 0.2− | 0.8− | 2004 03 10 | 703 | (1.6− | 0.1+) | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 09 14 | 704 | 0.4− | 0.2+ | 2004 03 10 | 703 | (2.2− | 0.3+) | 2006 10 21 | 644 | 0.2− | 0.2− |
| 1999 09 14 | 704 | 0.2+ | 0.6+ | 2004 03 10 | 703 | 1.4− | 0.8− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 1999 09 14 | 704 | 0.7− | 0.1+ | 2004 03 10 | 703 | 1.0− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 09 14 | 704 | 0.1+ | 0.4+ | 2005 05 08 | G96 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 1999 09 14 | 704 | 0.6+ | 0.5− | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 10 02 | 704 | 0.4− | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1999 10 02 | 704 | 0.4− | 0.3− | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 1999 10 02 | 704 | 0.8− | 0.1− | 2005 05 18 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.5+ |
| 1999 10 02 | 704 | 0.9− | 0.1+ | 2005 05 18 | 644 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 1999 10 02 | 704 | 0.4− | 0.0 | 2005 05 18 | 644 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.3+ |
| 1999 10 08 | 704 | 0.1− | 0.1− | 2005 05 18 | 644 | 0.0 | 0.1+ | 2006 10 27 | 704 | 0.3+ | 0.1+ |
| 1999 10 08 | 704 | 0.1+ | 0.1+ | 2005 05 18 | 644 | 0.0 | 0.3+ | 2006 10 27 | 704 | 0.3+ | 0.1− |
| 1999 10 08 | 704 | 0.1+ | 0.1− | 2005 05 18 | 644 | 0.4− | 0.5+ | 2006 10 27 | 704 | 0.2+ | 0.3− |
| 1999 10 08 | 704 | 0.0 | 0.2− | 2005 06 14 | 691 | 0.4+ | 0.5+ | 2006 10 27 | 704 | 0.1+ | 0.4− |
| 1999 10 08 | 704 | 0.6+ | 0.3− | 2005 06 14 | 691 | 0.4+ | 0.5+ | 2006 10 27 | 704 | 0.1+ | 0.4− |
| 1999 10 12 | 699 | 0.3+ | 0.5+ | 2005 06 14 | 691 | 0.4+ | 0.5+ | 2006 10 28 | 703 | 0.6+ | 0.5− |
| 1999 10 12 | 699 | 0.9− | 1.0+ | 2006 08 23 | 704 | 0.0 | 1.4+ | 2006 10 28 | 703 | 0.1− | 0.4− |
| 1999 10 12 | 699 | 0.3− | 1.1+ | 2006 08 23 | 704 | (0.9+ | 1.9+) | 2006 10 28 | 703 | 0.1+ | 0.5− |
| 1999 11 04 | 699 | 0.1− | 1.2+ | 2006 08 23 | 704 | 1.4+ | 0.6+ | 2006 10 28 | 703 | 0.0 | 0.4− |
| 1999 11 04 | 699 | 0.3− | 0.3+ | 2006 09 27 | G92 | 0.1+ | 0.4+ | 2006 10 31 | 704 | 0.4− | 1.2+ |
| 1999 11 04 | 699 | 0.9+ | 0.1+ | 2006 09 27 | G92 | 0.3+ | 0.3+ | 2006 10 31 | 704 | 0.9− | 0.2− |
| 1999 11 05 | 703 | 0.2+ | 0.2+ | 2006 09 27 | G92 | 0.4+ | 0.2+ | 2006 10 31 | 704 | 0.3− | 0.8− |
| 1999 11 05 | 703 | 0.8+ | 0.5+ | 2006 09 28 | G92 | 0.1− | 0.5+ | 2006 10 31 | 704 | 0.5− | 0.0 |
| 1999 11 05 | 703 | 0.5− | 0.3+ | 2006 09 28 | G92 | 0.1+ | 0.3+ | 2006 10 31 | 704 | 0.7− | 0.5− |
| 1999 11 05 | 703 | 0.2+ | 0.1− | 2006 09 28 | G92 | 0.2− | 0.4+ | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 1999 11 07 | 704 | 0.7+ | 1.2− | 2006 09 29 | 699 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.1− |
| 1999 11 07 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.4− |
| 1999 11 07 | 704 | 0.3+ | 0.6− | 2006 09 29 | 699 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.7− |
| 1999 11 07 | 704 | 0.6+ | 0.6− | 2006 09 29 | 699 | 0.3− | 0.2− | 2006 11 13 | 703 | 0.4− | 0.4− |
| 1999 11 07 | 704 | 0.8+ | 1.0− | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 11 13 | 703 | 1.1− | 0.9− |
| 1999 12 03 | 704 | (0.4+ | 2.3+) | 2006 09 30 | 703 | 1.1− | 0.4− | 2006 11 13 | 703 | 1.2− | 0.8− |
| 1999 12 03 | 704 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 14 | 704 | 1.2+ | 1.4+ |
| 1999 12 03 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 11 14 | 704 | 0.5+ | 1.0+ |
| 1999 12 03 | 704 | 1.1+ | 0.8+ | 2006 10 01 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 704 | (0.9+ | 1.7+) |
| 2003 12 23 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 704 | (0.8− | 2.0+) | 2006 11 14 | 704 | 1.0+ | 1.4+ |
| 2003 12 23 | 704 | 1.0+ | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 704 | (0.4− | 1.6+) |
| 2003 12 23 | 704 | 0.2− | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.5+ | 0.7− |
| 2003 12 23 | 704 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.4+ | 0.2− |
| 2003 12 23 | 704 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.4+ | 0.1+ |
| 2004 01 28 | 703 | 1.0− | 0.3− | 2006 10 01 | 704 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2004 01 28 | 703 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.8+ | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2004 01 28 | 703 | 0.3+ | 0.7− | 2006 10 03 | G92 | 0.7− | 0.3+ | 2006 11 20 | 704 | 0.5+ | 0.2+ |
| 2004 01 28 | 703 | 0.3+ | 0.3+ | 2006 10 03 | G92 | 0.4− | 0.6+ | 2006 11 20 | 704 | 0.7+ | 0.3− |
| 2004 01 30 | 704 | 0.8+ | 1.2+ | 2006 10 03 | G92 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2004 01 30 | 704 | 0.3+ | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.7+ | 1.3+ |
| 2004 01 30 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.4+ |
| 2004 02 10 | 644 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.1− |
| 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.4+ |
| 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2004 02 11 | 644 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.4− | 2006 11 20 | 704 | 0.5− | 0.7+ |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 22 | G96 | 0.0 | 0.6− |
| 2004 02 13 | 691 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.5− |
| 2004 02 15 | 704 | 0.6+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.0 | | | | |

**(137349)∗ 1999 TQ$_{97}$**

Discovered 1999 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.70253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12423334 | $\omega$ | 229.81983 | | +0.85584797 | −0.51444710 | |
| $a$ | 3.9778092 | $\Omega$ | 160.95015 | | +0.51026465 | +0.82285479 | |
| $e$ | 0.1801979 | $i$ | 9.44442 | | +0.08458268 | +0.24135900 | |
| $P$ | 7.93 | $H$ | 13.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.5+ | 0.0 | 2000 12 20 | 704 | 0.0 | 0.0 | 2002 02 07 | 704 | 0.3− | 0.8− |
| 1999 09 14 | 704 | 0.1+ | 0.2− | 2000 12 20 | 704 | 0.6− | 0.4+ | 2002 02 11 | 704 | 0.4+ | 0.1− |
| 1999 09 14 | 704 | 0.1+ | 1.2+ | 2000 12 20 | 704 | 0.1− | 1.0− | 2002 02 11 | 704 | 0.4+ | 0.2+ |
| 1999 09 14 | 704 | 0.0 | 0.8+ | 2000 12 20 | 704 | 0.7− | 0.4+ | 2002 02 11 | 704 | 0.3+ | 0.1+ |
| 1999 09 14 | 704 | 0.7+ | 0.0 | 2001 01 19 | 704 | 0.1+ | 0.6+ | 2002 02 11 | 704 | 0.6+ | 0.2+ |
| 1999 10 02 | 703 | 0.0 | 0.5+ | 2001 01 19 | 704 | 0.5− | 0.5+ | 2002 02 11 | 704 | 0.7+ | 0.2+ |
| 1999 10 02 | 703 | 1.0− | 1.0+ | 2001 01 19 | 704 | 0.2+ | 0.2+ | 2002 02 22 | 704 | 0.6− | 0.5+ |
| 1999 10 02 | 703 | 0.5− | 0.8+ | 2002 01 13 | 704 | 0.1− | 0.4+ | 2002 02 22 | 704 | 0.3+ | 0.3− |
| 1999 10 02 | 703 | 0.5− | 1.1+ | 2002 01 13 | 704 | 0.4− | 0.2+ | 2002 02 22 | 704 | (2.4− | 1.1+) |
| 1999 10 02 | 704 | 0.6+ | 0.2+ | 2002 01 13 | 704 | 0.3+ | 1.0+ | 2002 02 22 | 704 | (1.9− | 0.2+) |
| 1999 10 02 | 704 | 0.7− | 0.4+ | 2002 01 19 | 704 | 0.9− | 0.6− | 2002 03 13 | 644 | 0.1+ | 0.5+ |
| 1999 10 02 | 704 | 0.6− | 0.7+ | 2002 01 19 | 704 | 1.0+ | 0.3+ | 2002 03 13 | 644 | 0.3− | 0.4+ |
| 1999 10 02 | 704 | 0.4+ | 0.6+ | 2002 01 19 | 704 | 0.1− | 0.4+ | 2002 03 13 | 644 | 0.3+ | 0.4+ |
| 1999 10 02 | 704 | 0.1− | 0.7+ | 2002 01 19 | 704 | 0.5+ | 0.1+ | 2003 03 26 | 691 | 0.0 | 0.8+ |
| 1999 10 08 | 704 | 0.2− | 0.2+ | 2002 01 19 | 704 | 1.2− | 0.5− | 2003 03 26 | 691 | 0.2+ | 0.9+ |
| 1999 10 08 | 704 | 0.2− | 0.0 | 2002 02 05 | 644 | 0.1− | 0.3− | 2003 03 26 | 691 | 0.4+ | 0.5+ |
| 1999 10 08 | 704 | 0.2+ | 0.5+ | 2002 02 05 | 644 | 0.0 | 0.3− | 2006 08 13 | 644 | 0.1− | 1.0+ |
| 1999 10 08 | 704 | 0.6− | 0.5− | 2002 02 05 | 644 | 0.0 | 0.2− | 2006 08 13 | 644 | 0.1− | 0.9+ |
| 1999 10 08 | 704 | 0.3− | 0.0 | 2002 02 06 | 644 | 0.0 | 0.8+ | 2006 08 13 | 644 | 0.1− | 0.8+ |
| 2000 11 27 | 704 | 0.2+ | 0.0 | 2002 02 06 | 644 | 0.1− | 1.1+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2000 11 27 | 704 | 0.2− | 1.4− | 2002 02 06 | 644 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.2+ |
| 2000 11 27 | 704 | 0.4− | 0.5− | 2002 02 07 | 704 | (1.8+ | 1.0+) | 2006 10 19 | G96 | 0.2+ | 0.5+ |
| 2000 11 27 | 704 | 1.4+ | 1.0+ | 2002 02 07 | 704 | 0.5+ | 0.4− | 2006 10 19 | G96 | 0.1− | 0.5+ |
| 2000 11 27 | 704 | 0.6+ | 0.2− | 2002 02 07 | 704 | 0.8− | 0.7− | | | | |
| 2000 11 27 | 704 | 0.1+ | 0.1+ | 2002 02 07 | 704 | 0.6− | 0.4− | | | | |

**(137350)*** **1999 TK$_{100}$**

Discovered 1999 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.85304 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29678500 | $\omega$ | 234.95074 | | +0.23538835 | +0.96616563 | |
| $a$ | 2.2259125 | $\Omega$ | 49.02112 | | −0.84003253 | +0.25681031 | |
| $e$ | 0.2004071 | $i$ | 8.02797 | | −0.48881251 | +0.02392558 | |
| $P$ | 3.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.2+ | 0.2− | 2005 04 05 | 704 | 1.0+ | 0.2+ | 2005 05 23 | 644 | 0.1− | 0.5+ |
| 1996 11 08 | 691 | 0.2+ | 0.0 | 2005 04 05 | 704 | 0.9+ | 0.3− | 2005 06 04 | 703 | 0.5− | 0.9+ |
| 1996 11 08 | 691 | 0.1+ | 0.1− | 2005 04 09 | 704 | 0.4+ | 0.0 | 2005 06 04 | 703 | 0.0 | 0.1+ |
| 1999 09 08 | 703 | 0.2− | 1.5+ | 2005 04 09 | 704 | 0.3+ | 0.9+ | 2005 06 04 | 703 | 0.7− | 0.7+ |
| 1999 09 08 | 703 | 1.3− | 0.2− | 2005 04 09 | 704 | 0.7+ | 0.6+ | 2005 06 04 | 703 | (0.3+ | 2.3+) |
| 1999 09 08 | 703 | 0.7+ | 0.5+ | 2005 04 09 | 704 | 0.3+ | 0.0 | 2005 06 04 | 703 | 0.4− | 0.8+ |
| 1999 09 08 | 703 | 0.9− | 0.2+ | 2005 04 10 | 608 | 1.1+ | 0.6+ | 2005 06 04 | 703 | 0.0 | 0.1+ |
| 1999 09 08 | 703 | 1.6− | 1.1+ | 2005 04 10 | 608 | 0.8+ | 0.4+ | 2005 06 04 | 703 | 0.2− | 0.4− |
| 1999 09 08 | 703 | 1.0+ | 1.4+ | 2005 04 10 | 608 | 1.2+ | 0.5+ | 2005 06 04 | 703 | (0.4+ | 1.7+) |
| 1999 09 08 | 703 | 0.5+ | 0.7+ | 2005 04 13 | 704 | 0.3+ | 0.1+ | 2005 07 04 | E12 | (1.7− | 0.5+) |
| 1999 09 08 | 703 | 0.9− | 1.0+ | 2005 04 13 | 704 | 0.2+ | 0.4+ | 2005 07 04 | E12 | 0.4+ | 0.1+ |
| 1999 09 14 | 704 | 0.1+ | 0.2− | 2005 04 13 | 704 | 0.2+ | 0.2+ | 2005 07 04 | E12 | 0.5+ | 0.4+ |
| 1999 09 14 | 704 | 0.1− | 0.3+ | 2005 04 13 | 704 | 0.2+ | 0.1+ | 2005 07 04 | E12 | 0.1+ | 0.0 |
| 1999 09 14 | 704 | 0.1− | 1.5+ | 2005 04 13 | 704 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 1999 09 14 | 704 | 0.7− | 0.5− | 2005 04 15 | 699 | (0.7− | 5.3+) | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 1999 09 14 | 704 | 0.0 | 1.2+ | 2005 04 15 | 699 | 0.3− | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 1999 10 02 | 704 | 0.2− | 0.8+ | 2005 04 15 | 699 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 1999 10 02 | 704 | 0.7− | 0.1+ | 2005 04 15 | 699 | (0.1+ | 2.0+) | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 1999 10 02 | 704 | 1.3− | 0.5+ | 2005 04 18 | 703 | 0.1− | 0.4+ | 2006 11 09 | 691 | 0.3− | 0.2+ |
| 1999 10 02 | 704 | 0.7− | 0.7+ | 2005 04 18 | 703 | 0.4− | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 1999 10 05 | 703 | 0.3− | 1.3+ | 2005 04 18 | 703 | 0.6− | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1999 10 05 | 703 | 0.3+ | 0.7+ | 2005 04 18 | 703 | 0.8− | 0.2− | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 1999 10 05 | 703 | 1.1− | 0.8+ | 2005 04 19 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 1999 10 05 | 703 | 0.1− | 0.0 | 2005 04 19 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.0 |
| 1999 10 08 | 704 | 0.0 | 0.4− | 2005 04 19 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 1999 10 08 | 704 | 0.7− | 0.5+ | 2005 05 03 | 704 | 1.0+ | 0.8+ | 2006 11 11 | 703 | 0.9− | 0.6− |
| 1999 10 08 | 704 | 0.4− | 0.5− | 2005 05 03 | 704 | 1.0+ | 0.8− | 2006 11 11 | 703 | 0.8− | 0.3− |
| 1999 10 08 | 704 | 0.2− | 0.2− | 2005 05 03 | 704 | 0.2+ | 0.8+ | 2006 11 13 | 691 | 0.0 | 0.5+ |
| 1999 10 08 | 704 | 1.0− | 0.7+ | 2005 05 03 | 704 | 0.5− | 1.0+ | 2006 11 13 | 691 | 0.2− | 0.5+ |
| 2003 12 17 | 704 | 0.7− | 0.5+ | 2005 05 03 | 608 | 0.1+ | 0.7− | 2006 11 13 | 691 | 0.2− | 0.4+ |
| 2003 12 17 | 704 | 0.2+ | 0.0 | 2005 05 03 | 704 | 1.3+ | 0.2− | 2006 11 13 | 644 | 0.3− | 0.2+ |
| 2003 12 17 | 704 | 0.4− | 0.4+ | 2005 05 03 | 608 | 0.1+ | 0.5− | 2006 11 13 | 644 | 0.3− | 0.6+ |
| 2005 03 18 | 703 | (0.1− | 1.5+) | 2005 05 03 | 608 | 0.3− | 0.3− | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2005 03 18 | 703 | 0.8− | 1.2+ | 2005 05 08 | 703 | 0.6+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2005 03 18 | 703 | 0.2− | 1.0+ | 2005 05 08 | 703 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.0 | 1.4+ |
| 2005 03 18 | 703 | 0.6− | 0.2+ | 2005 05 08 | 703 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2005 04 01 | 699 | 0.0 | 0.1+ | 2005 05 08 | 703 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.2− |
| 2005 04 01 | 699 | 0.6− | 0.3+ | 2005 05 11 | 699 | 0.7+ | 0.1− | 2006 11 21 | 704 | 0.6− | 1.2+ |
| 2005 04 01 | 699 | 0.2+ | 1.2+ | 2005 05 11 | 699 | 1.1+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2005 04 01 | 699 | 1.1+ | 0.5+ | 2005 05 11 | 699 | 1.1+ | 0.5+ | 2006 11 21 | 704 | (1.3+ | 1.6+) |
| 2005 04 04 | 703 | 1.0− | 0.3+ | 2005 05 11 | 699 | 0.4− | 1.4+ | 2006 11 21 | 704 | 0.5− | 0.6+ |
| 2005 04 04 | 703 | 0.3− | 0.5+ | 2005 05 13 | 703 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 1.2+ |
| 2005 04 04 | 703 | 0.1− | 0.2− | 2005 05 13 | 703 | 0.3− | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2005 04 04 | 703 | 0.1− | 0.1− | 2005 05 13 | 703 | 0.2− | 0.6− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2005 04 05 | 704 | 0.1− | 0.1− | 2005 05 13 | 703 | 0.1− | 0.8+ | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2005 04 05 | 704 | 0.9+ | 1.2+ | 2005 05 23 | 644 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2005 04 05 | 704 | 1.0+ | 0.3− | 2005 05 23 | 644 | 0.0 | 0.3+ | | | | |

**(137351)*** **1999 TO$_{100}$**

Discovered 1999 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.14584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28681524 | $\omega$ | 249.09593 | | +0.98143618 | −0.18208485 | |
| $a$ | 2.2772003 | $\Omega$ | 121.35107 | | +0.19146211 | +0.91185934 | |
| $e$ | 0.1736905 | $i$ | 4.04455 | | +0.01119334 | +0.36790984 | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 1.2− | 0.0 | 2004 01 27 | 691 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1999 09 14 | 704 | 0.8− | 0.3+ | 2004 01 30 | 704 | 1.4+ | 0.3− | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 1999 09 14 | 704 | 0.7+ | 0.0 | 2004 01 30 | 704 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 1999 09 14 | 704 | 0.5− | 0.1+ | 2004 01 30 | 704 | 1.0+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 1999 09 14 | 704 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.6+ | 1.5+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1999 10 02 | 704 | 0.0 | 0.1− | 2004 02 13 | 691 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1999 10 02 | 704 | 0.6+ | 0.5− | 2004 02 13 | 691 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 10 02 | 704 | 0.2− | 0.5− | 2004 02 13 | 691 | 0.6+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1999 10 02 | 704 | 0.3+ | 0.3+ | 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 1999 10 08 | 704 | 0.7− | 0.2− | 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 1999 10 08 | 704 | 1.3+ | 0.9− | 2005 04 11 | 691 | 0.1− | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 1999 10 08 | 704 | 0.4− | 1.2− | 2005 05 04 | 691 | 0.7+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 1999 10 08 | 704 | 0.2+ | 1.3− | 2005 05 04 | 691 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.4+ |
| 1999 10 08 | 704 | 0.1− | 0.6− | 2005 05 04 | 691 | 0.5+ | 0.7+ | 2006 11 11 | 644 | 0.2− | 0.1+ |
| 1999 10 12 | 699 | 0.6− | 0.8+ | 2005 05 11 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 1999 10 12 | 699 | 0.6− | 1.3+ | 2005 05 11 | 691 | 0.0 | 0.5+ | 2006 11 11 | 644 | 0.2− | 0.1+ |
| 1999 10 12 | 699 | 0.6+ | 0.7+ | 2005 05 11 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.7− | 0.5− |
| 1999 11 05 | 703 | 0.9− | 0.3− | 2006 09 14 | 703 | 0.0 | 0.4+ | 2006 11 11 | 644 | 0.3− | 0.3+ |
| 1999 11 05 | 703 | 1.9+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.3− | 2006 11 11 | 644 | 0.5− | 0.3+ |
| 1999 11 05 | 703 | 1.7+ | 0.6− | 2006 09 14 | 703 | 0.6− | 0.5+ | 2006 11 11 | 644 | 0.4− | 0.2− |
| 1999 11 05 | 703 | 0.2− | 0.9+ | 2006 09 14 | 703 | 0.5+ | 0.8− | 2006 11 11 | 644 | 0.6− | 0.1+ |
| 2003 10 24 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 1.0+ | 0.5+ |
| 2003 10 24 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.6+ | 0.9+ |
| 2003 10 24 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.9+ | 0.9+ |
| 2003 10 26 | 291 | 0.8− | 1.2+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.7+ | 0.3+ |
| 2003 10 26 | 291 | 0.6− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.5+ | 0.6+ |
| 2003 10 26 | 291 | 0.9− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.6+ |
| 2003 12 18 | 291 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.9+ |
| 2003 12 18 | 291 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.6+ |
| 2003 12 18 | 291 | 1.2− | 0.1− | 2006 10 16 | 703 | 0.8− | 0.2+ | 2006 11 17 | 704 | 0.1− | 1.0+ |
| 2004 01 16 | 691 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 19 | 703 | 0.8+ | 1.3+ |
| 2004 01 16 | 691 | 0.5+ | 0.1− | 2006 10 22 | 704 | (3.1− | 1.0+) | 2006 11 19 | 703 | (1.6+ | 1.3+) |
| 2004 01 16 | 691 | 0.4+ | 0.2− | 2006 10 22 | 704 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.2− | 0.1+ |
| 2004 01 19 | 703 | 0.2+ | 0.1+ | 2006 10 22 | 704 | 1.1− | 0.5+ | 2006 11 19 | 703 | 0.5− | 0.3+ |
| 2004 01 19 | 703 | (2.1+ | 0.5+) | 2006 10 22 | 704 | 0.6− | 1.1+ | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2004 01 19 | 703 | 0.3− | 0.7+ | 2006 10 22 | 703 | 1.1− | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.6+ |
| 2004 01 19 | 703 | 1.1− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2004 01 21 | 704 | 0.5− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.9+ | 0.2− |
| 2004 01 21 | 704 | 0.4− | 0.8− | 2006 10 22 | 703 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2004 01 21 | 704 | 0.5− | 0.0 | 2006 10 27 | 704 | 0.2− | 0.8+ | 2006 11 20 | 704 | 1.2+ | 0.1− |
| 2004 01 21 | 704 | 0.4− | 0.5+ | 2006 10 27 | 704 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2004 01 24 | 704 | 0.3− | 0.1− | 2006 10 27 | 704 | 0.2− | 0.8+ | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2004 01 24 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 704 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2004 01 24 | 704 | 0.4+ | 0.1+ | 2006 11 01 | 703 | 0.4+ | 0.0 | 2006 11 20 | 704 | 1.3− | 1.1− |
| 2004 01 24 | 704 | 0.6+ | 0.5− | 2006 11 01 | 703 | 1.0+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2004 01 24 | 704 | 0.2− | 0.4− | 2006 11 01 | 703 | 0.4− | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 11 01 | 703 | 0.2− | 0.5− | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2004 01 27 | 691 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.1− |

**(137352)*** **1999 TY$_{103}$**

Discovered 1999 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.26349 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28042471 | $\omega$ | 356.37178 | | +0.86035094 | +0.50864909 | |
| $a$ | 2.3116666 | $\Omega$ | 332.97582 | | −0.46580964 | +0.75855582 | |
| $e$ | 0.1282867 | $i$ | 4.13298 | | −0.20692423 | +0.40727040 | |
| $P$ | 3.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.6+ | 0.3+ | 2005 04 05 | 699 | 0.9+ | 0.5+ | 2006 09 27 | 683 | 0.9− | 0.3− |
| 1999 10 01 | 703 | 0.6− | 1.2+ | 2005 04 05 | 699 | (1.3+ | 1.7+) | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 1999 10 01 | 703 | 0.2+ | 0.2− | 2005 04 05 | 699 | 0.6+ | 1.4+ | 2006 09 27 | 683 | 0.0 | 0.3+ |
| 1999 10 01 | 703 | 0.2+ | 0.5+ | 2005 04 05 | 699 | 0.5− | 1.1+ | 2006 09 27 | 683 | 0.4− | 0.1− |
| 1999 10 03 | 704 | 1.0+ | 1.5− | 2005 04 06 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 1999 10 03 | 704 | 0.8+ | 0.9− | 2005 04 06 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1999 10 03 | 704 | 0.7− | 1.1− | 2005 04 06 | 691 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.1− |
| 1999 10 03 | 704 | 0.1− | 1.3− | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 1.1+ | 0.1− |
| 1999 10 03 | 704 | 0.4+ | 0.1+ | 2005 05 01 | 644 | 0.5+ | 0.2+ | 2006 09 29 | 704 | 0.8+ | 0.8+ |
| 1999 10 07 | 704 | 0.4+ | 0.9− | 2005 05 01 | 644 | 0.5+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.1− |
| 1999 10 07 | 704 | 0.4+ | 0.6− | 2006 08 06 | 699 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.2− | 1.4+ |
| 1999 10 07 | 704 | 0.3+ | 0.3− | 2006 08 06 | 699 | 0.3− | 0.1+ | 2006 09 30 | 683 | 0.3+ | 0.3+ |
| 1999 10 07 | 704 | 1.1+ | 1.0− | 2006 08 06 | 699 | 0.5− | 0.7− | 2006 09 30 | 683 | 0.2+ | 0.5+ |
| 1999 10 07 | 704 | 0.1− | 0.4− | 2006 08 06 | 699 | 0.2− | 0.3+ | 2006 09 30 | 683 | 0.1− | 0.7+ |
| 1999 10 10 | 704 | 0.3− | 0.5− | 2006 08 24 | 644 | 0.5− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 1999 10 10 | 704 | 0.5− | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1999 10 10 | 704 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 1999 10 10 | 704 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 704 | (1.5− | 1.7+) |
| 1999 10 10 | 704 | 0.5− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 03 | 704 | 0.4− | 1.3+ |
| 1999 10 14 | 645 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.2− | 0.4+ | 2006 10 03 | 704 | (1.4− | 2.2+) |
| 1999 10 14 | 645 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 10 03 | 704 | (0.8− | 2.0+) |
| 1999 10 20 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 691 | 0.6− | 0.0 | 2006 10 03 | 704 | (0.6− | 2.3+) |
| 1999 10 20 | 704 | 1.1+ | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 1999 10 20 | 704 | 1.2+ | 0.3− | 2006 09 18 | 704 | 0.3+ | 1.2+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 1999 10 20 | 704 | 0.5+ | 0.6− | 2006 09 18 | 704 | 1.0− | 1.0+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 1999 10 20 | 704 | 1.1+ | 0.1− | 2006 09 18 | 704 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 1999 11 04 | 703 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.7− | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 1999 11 04 | 703 | 0.3+ | 0.1− | 2006 09 18 | 704 | 0.7− | 0.9+ | 2006 10 17 | 703 | 0.4− | 0.5− |
| 1999 11 04 | 704 | 0.3− | 0.4− | 2006 09 18 | 699 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 1999 11 04 | 703 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 1999 11 04 | 704 | 1.6+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 1999 11 04 | 703 | 1.1− | 0.1− | 2006 09 21 | 683 | (2.1+ | 1.3−) | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 11 04 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 683 | (2.5+ | 1.7−) | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1999 11 04 | 704 | 0.6+ | 0.1+ | 2006 09 21 | 683 | 1.4+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 03 18 | 691 | 0.2− | 0.6+ | 2006 09 25 | 704 | 0.6− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 03 18 | 691 | 0.2− | 0.7+ | 2006 09 25 | 704 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 03 18 | 691 | 0.2− | 1.0+ | 2006 09 25 | 704 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2003 12 23 | 704 | 1.4+ | 1.5− | 2006 09 25 | 704 | 0.8− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | (1.8+ | 0.6−) | 2006 09 25 | 704 | 0.3− | 0.6+ | 2006 10 29 | 704 | 0.1− | 0.7+ |
| 2003 12 23 | 704 | 1.0+ | 0.1+ | 2006 09 25 | 683 | (1.1+ | 1.8−) | 2006 10 29 | 704 | 0.8− | 0.4+ |
| 2003 12 23 | 704 | 1.3+ | 0.0 | 2006 09 25 | 683 | 0.3+ | 0.0 | 2006 10 29 | 704 | 0.4+ | 0.4+ |
| 2003 12 23 | 704 | (1.7+ | 1.0−) | 2006 09 25 | 683 | 1.5+ | 0.7− | 2006 10 29 | 704 | 0.2− | 0.2+ |
| 2003 12 28 | 704 | (0.9− | 1.8+) | 2006 09 26 | 683 | 0.3+ | 0.2− | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2003 12 28 | 704 | 0.5− | 0.0 | 2006 09 26 | 683 | 0.6+ | 0.0 | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2003 12 28 | 704 | (0.6+ | 1.7−) | 2006 09 26 | 683 | 0.4− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.3+ |

**(137353)∗ 1999 TW$_{104}$ = 2002 LY$_{17}$**

Discovered 1999 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31279)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.89393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27972178 | $\omega$ | 96.60203 | | +0.88071290 | +0.47127790 | |
| $a$ | 2.3155377 | $\Omega$ | 235.29089 | | −0.45414297 | +0.81181658 | |
| $e$ | 0.2027543 | $i$ | 3.30199 | | −0.13453237 | +0.34474772 | |
| $P$ | 3.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 691 | 0.2+ | 0.2+ | 1999 10 20 | 704 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.0 | 0.5+ |
| 1998 04 23 | 691 | 0.4+ | 1.0+ | 1999 10 20 | 704 | 0.6− | 0.4− | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 1998 04 23 | 691 | 0.0 | 0.2+ | 1999 10 20 | 704 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.6+ |
| 1999 10 01 | 691 | 0.0 | 0.1+ | 1999 11 05 | 704 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.3+ | 1.3− |
| 1999 10 01 | 691 | 0.1− | 0.1− | 1999 11 05 | 704 | 0.6− | 0.3− | 2006 09 25 | 704 | 0.9+ | 0.3− |
| 1999 10 01 | 691 | 0.2− | 0.0 | 1999 11 05 | 704 | 1.3− | 1.0− | 2006 09 25 | 704 | 0.7+ | 0.1+ |
| 1999 10 03 | 704 | 0.7+ | 0.3+ | 1999 11 14 | 704 | (1.8− | 2.2+) | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 1999 10 03 | 704 | 0.8− | 0.3− | 1999 11 14 | 704 | 0.8− | 0.4− | 2006 09 25 | 704 | 0.5+ | 0.2− |
| 1999 10 03 | 704 | 1.0− | 0.3+ | 1999 11 14 | 704 | 1.4− | 0.9+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 1999 10 03 | 704 | 0.5− | 1.1+ | 1999 11 14 | 704 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.5+ | 0.3− |
| 1999 10 06 | 691 | 0.4+ | 0.5+ | 2002 06 06 | 704 | 0.7− | 0.3− | 2006 09 25 | 691 | 0.7− | 0.3+ |
| 1999 10 06 | 691 | 0.7+ | 0.4+ | 2002 06 06 | 704 | 0.7− | 0.0 | 2006 09 27 | 699 | 0.2− | 0.1+ |
| 1999 10 06 | 691 | 0.9+ | 0.7+ | 2002 06 06 | 704 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.3+ | 0.3+ |
| 1999 10 07 | 704 | 0.4− | 0.1− | 2002 06 06 | 704 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.2+ | 0.2− |
| 1999 10 07 | 704 | 1.1− | 0.3+ | 2002 06 06 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 699 | 0.3+ | 0.1− |
| 1999 10 07 | 704 | 0.5− | 0.6− | 2002 06 08 | 704 | 0.8− | 0.2− | 2006 09 29 | 704 | 0.3− | 0.1+ |
| 1999 10 07 | 704 | 0.0 | 0.5+ | 2002 06 08 | 704 | 1.0+ | 0.0 | 2006 09 29 | 704 | 0.6− | 0.2+ |
| 1999 10 07 | 704 | 0.6− | 0.7+ | 2002 06 08 | 704 | 0.9+ | 0.2− | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 1999 10 10 | 704 | 0.8+ | 0.4− | 2002 07 05 | 704 | (1.6− | 1.0−) | 2006 09 29 | 704 | 0.1+ | 0.1− |
| 1999 10 10 | 704 | 0.4− | 0.7− | 2002 07 05 | 704 | 0.5+ | 0.3− | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 1999 10 10 | 704 | 0.6+ | 0.1+ | 2002 07 05 | 704 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.3− | 0.4+ |
| 1999 10 10 | 704 | 0.6+ | 1.5− | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 1999 10 10 | 704 | 0.7+ | 0.8− | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 1999 10 13 | 704 | 0.6+ | 0.5− | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 1999 10 13 | 704 | 0.3+ | 0.4− | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 1999 10 13 | 704 | 0.1+ | 0.4− | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.3+ | 0.7− | 2006 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 1999 10 13 | 704 | 0.4+ | 0.5− | 2006 09 17 | 703 | 0.6− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.2+ | 0.6− | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 1999 10 15 | 704 | 0.2− | 0.3− | 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1999 10 15 | 704 | 0.0 | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1999 10 15 | 704 | 0.2+ | 0.4− | 2006 09 17 | 703 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 1999 10 15 | 704 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 1999 10 16 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 1999 10 16 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.6+ | 0.3− | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 1999 10 16 | 704 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.8+ |
| 1999 10 16 | 704 | 0.3+ | 0.1− | 2006 09 18 | 703 | (1.2− | 1.7+) | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 1999 10 20 | 704 | 0.9− | 0.0 | 2006 09 18 | 703 | (0.6+ | 2.1+) | 2006 11 22 | 704 | 0.2+ | 0.9+ |
| 1999 10 20 | 704 | 0.4− | 0.2− | 2006 09 19 | 699 | 0.8− | 0.1− | 2006 11 22 | 704 | 0.1− | 1.5+ |

**(137354)∗ 1999 TA$_{105}$**

Discovered 1999 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.94559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28887627 | $\omega$ | 125.02244 | | +0.99894885 | +0.02819715 | |
| $a$ | 2.2663561 | $\Omega$ | 233.38855 | | −0.03965378 | +0.92708889 | |
| $e$ | 0.2122591 | $i$ | 2.58052 | | +0.02299504 | +0.37377949 | |
| $P$ | 3.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 703 | 0.2− | 0.6+ | 1999 10 20 | 704 | 0.6+ | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.6− |
| 1999 10 02 | 703 | 0.3+ | 0.0 | 1999 11 05 | 704 | 1.2+ | 1.8− | 2006 11 11 | G96 | 0.1− | 0.7− |
| 1999 10 02 | 703 | 0.4+ | 0.3− | 1999 11 05 | 704 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− |
| 1999 10 02 | 703 | 0.1− | 0.1+ | 1999 11 05 | 704 | 1.1− | 0.2− | 2006 11 15 | 703 | 0.5− | 0.3− |
| 1999 10 03 | 704 | 0.0 | 0.2+ | 1999 11 08 | 704 | 0.4− | 1.0+ | 2006 11 15 | 703 | 0.0 | 0.5− |
| 1999 10 03 | 704 | 0.4− | 0.3− | 1999 11 08 | 704 | 0.4− | 0.3− | 2006 11 15 | 703 | 0.5− | 0.2− |
| 1999 10 03 | 704 | 0.4+ | 0.7+ | 1999 11 08 | 704 | 0.7− | 1.1− | 2006 11 15 | 703 | 0.6− | 0.2+ |
| 1999 10 03 | 704 | 0.7+ | 0.2+ | 1999 11 14 | 704 | 0.4− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 1999 10 07 | 704 | 0.3+ | 0.0 | 1999 11 14 | 704 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.1+ | 1.0+ |
| 1999 10 07 | 704 | 0.0 | 0.1− | 1999 11 14 | 704 | 0.9− | 1.0− | 2006 11 15 | 691 | 0.4+ | 0.0 |
| 1999 10 07 | 704 | 0.6− | 0.2+ | 1999 11 14 | 704 | 0.4− | 1.4− | 2006 11 17 | 704 | 1.2− | 0.9+ |
| 1999 10 07 | 704 | 0.2− | 0.3+ | 1999 11 14 | 704 | 0.7− | 0.3− | 2006 11 17 | 704 | 0.9+ | 1.1+ |
| 1999 10 07 | 704 | 0.4+ | 0.4− | 2004 02 12 | 691 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.7+ | 0.4+ |
| 1999 10 10 | 704 | 1.2+ | 1.1− | 2004 02 12 | 691 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6− | 0.2− | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (1.6+ | 0.2+) |
| 1999 10 10 | 704 | 0.0 | 0.2+ | 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.5− | 0.2+ |
| 1999 10 10 | 704 | 0.8− | 0.2− | 2005 04 07 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.3+ | 1.1+ |
| 1999 10 10 | 704 | 0.1+ | 0.8− | 2005 04 07 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 1999 10 13 | 704 | 0.2− | 0.5+ | 2005 06 01 | G96 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.2− |
| 1999 10 13 | 704 | 0.2− | 0.4+ | 2005 06 01 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.6− | 0.3+ | 2005 06 01 | G96 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 1999 10 13 | 704 | 0.3− | 0.4+ | 2005 06 01 | G96 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 1999 10 13 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.4+ | 0.3+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 11 21 | 704 | (0.5+ | 1.8+) |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 1.5+ | 1.2− | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 1999 10 15 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | (0.2+ | 1.8−) | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 1999 10 15 | 704 | 0.1+ | 1.8+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.5− | 1.1− |
| 1999 10 15 | 704 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.0 | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 1999 10 16 | 704 | 0.0 | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 1999 10 16 | 704 | 0.2− | 1.0+ | 2006 10 28 | G96 | 1.0− | 0.7− | 2006 12 01 | 704 | 0.5− | 0.1+ |
| 1999 10 16 | 704 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 12 01 | 691 | 0.0 | 0.3− |
| 1999 10 16 | 704 | 0.0 | 1.0+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.0 | 0.3+ |
| 1999 10 16 | 704 | 0.4− | 1.1+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.4− | 0.9+ |
| 1999 10 20 | 704 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.6− | 0.9− |
| 1999 10 20 | 704 | 0.4+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.1− | 0.3+ |
| 1999 10 20 | 704 | 0.8+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1+ | | | | |
| 1999 10 20 | 704 | 0.8+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.6− | | | | |

**(137355)∗ 1999 TS$_{106}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.47496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28515080 | $\omega$ | 98.44195 | | +0.95556252 | +0.27869612 | |
| $a$ | 2.2860531 | $\Omega$ | 245.42021 | | −0.29446655 | +0.88718488 | |
| $e$ | 0.1583350 | $i$ | 6.06399 | | −0.01377420 | +0.36773830 | |
| $P$ | 3.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 02 | 691 | 0.9− | 0.4− | 2003 12 19 | 704 | 0.0 | 0.7+ | 2006 09 28 | 704 | 1.3+ | 0.2− |
| 1994 02 02 | 691 | 0.5− | 0.8− | 2003 12 19 | 704 | 0.4+ | 0.8+ | 2006 09 28 | 704 | 1.5+ | 0.5+ |
| 1994 02 02 | 691 | (3.0− | 1.5−) | 2003 12 23 | 704 | 0.9+ | 0.9+ | 2006 09 28 | 704 | (1.6+ | 0.4−) |
| 1999 09 05 | 703 | 0.0 | 0.0 | 2003 12 23 | 704 | 0.9+ | 0.3+ | 2006 10 03 | 704 | 0.2− | 0.1− |
| 1999 09 05 | 703 | 0.1+ | 0.4+ | 2003 12 23 | 704 | 0.8+ | 1.1+ | 2006 10 03 | 704 | 0.4− | 0.1− |
| 1999 09 05 | 703 | 0.5− | 1.0+ | 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 10 03 | 704 | 0.5− | 0.1− |
| 1999 09 05 | 703 | 0.2− | 1.3+ | 2003 12 23 | 704 | 0.2+ | 0.7+ | 2006 10 03 | 704 | 0.4− | 0.2+ |
| 1999 09 08 | 704 | 0.3− | 1.0− | 2006 08 29 | 699 | 0.3− | 0.0 | 2006 10 03 | 704 | 0.0 | 0.0 |
| 1999 09 08 | 704 | 0.1− | 0.7− | 2006 08 29 | 699 | 0.1− | 0.7+ | 2006 10 16 | H67 | 0.5+ | 0.8− |
| 1999 09 08 | 704 | 1.6+ | 1.1− | 2006 08 29 | 699 | 0.3− | 0.5− | 2006 10 16 | H67 | 0.1− | 0.3− |
| 1999 09 08 | 704 | 0.8+ | 0.8− | 2006 08 29 | 699 | 0.2− | 0.4+ | 2006 10 16 | H67 | 0.0 | 0.1+ |
| 1999 10 01 | 703 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.3+ | 0.6− | 2006 10 16 | H67 | 0.5+ | 0.1− |
| 1999 10 01 | 703 | 0.7− | 0.3+ | 2006 09 01 | 704 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 1999 10 01 | 703 | 0.4− | 0.1− | 2006 09 01 | 704 | 0.4− | 1.1+ | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 1999 10 01 | 703 | 1.2− | 0.6+ | 2006 09 14 | 644 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.2− |
| 1999 10 04 | 704 | 0.5+ | 0.0 | 2006 09 14 | 644 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 1999 10 04 | 704 | 0.1− | 0.5− | 2006 09 14 | 644 | 1.1+ | 0.1− | 2006 10 23 | 703 | 0.7− | 1.3− |
| 1999 10 04 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.8− | 0.6− | 2006 10 23 | 703 | 0.2− | 0.2− |
| 1999 10 04 | 704 | 0.4+ | 0.2− | 2006 09 16 | 703 | 0.6− | 0.4− | 2006 10 23 | 703 | 0.2+ | 0.2+ |
| 1999 10 04 | 704 | 0.0 | 1.6− | 2006 09 16 | 703 | 0.8− | 0.5− | 2006 10 23 | 703 | 0.7+ | 0.1+ |
| 1999 10 09 | 704 | 0.9+ | 0.4− | 2006 09 16 | 703 | 0.5− | 0.5− | 2006 10 29 | 704 | 0.5− | 1.1+ |
| 1999 10 09 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.2− | 2006 10 29 | 704 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.4+ | 0.3− | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 29 | 704 | 1.0+ | 1.3+ |
| 1999 10 09 | 704 | 0.3+ | 0.4− | 2006 09 19 | 699 | (0.7− | 1.9+) | 2006 11 16 | 704 | 1.3− | 1.3− |
| 1999 10 09 | 704 | 0.8+ | 0.2− | 2006 09 27 | 699 | 0.0 | 0.4− | 2006 11 16 | 704 | (0.4− | 1.8−) |
| 1999 11 06 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 699 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.7+ |
| 1999 11 06 | 704 | 0.2− | 0.4− | 2006 09 27 | 699 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.1− | 0.0 |
| 1999 11 06 | 704 | 0.4+ | 0.1− | 2006 09 27 | 699 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2002 06 06 | 704 | 0.9− | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2002 06 06 | 704 | 0.4− | 0.1+ | 2006 09 27 | 703 | 0.8− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 06 06 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.8− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2002 06 06 | 704 | 0.5+ | 0.8+ | 2006 09 27 | 703 | 0.9− | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2002 06 06 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 703 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 1.2+ |
| 2002 06 16 | 644 | 0.5+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2002 06 16 | 644 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.8+ | 1.0+ |
| 2002 06 16 | 644 | 0.6+ | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2003 12 19 | 704 | 1.3+ | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2003 12 19 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 1.4+ | 0.5+ | | | | |

**(137356)∗ 1999 TN$_{108}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.40849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28826822 | $\omega$ | 56.62714 | | +0.97674548 | −0.19552155 | |
| $a$ | 2.2695419 | $\Omega$ | 314.47315 | | +0.13159070 | +0.87064355 | |
| $e$ | 0.1440915 | $i$ | 7.08183 | | +0.16926945 | +0.45138800 | |
| $P$ | 3.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.5+ | 0.1− | 2004 01 13 | 699 | 0.3− | 0.2+ | 2005 05 12 | 644 | 0.4+ | 0.6+ |
| 1999 09 08 | 704 | 0.1− | 0.4+ | 2004 01 13 | 699 | 0.2+ | 0.6− | 2005 05 12 | 644 | 0.0 | 0.9+ |
| 1999 09 08 | 704 | 0.4+ | 0.8+ | 2004 01 13 | 699 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.2+ |
| 1999 09 08 | 704 | 0.5− | 1.5+ | 2004 01 13 | 699 | 0.3− | 0.8− | 2006 09 17 | 703 | 0.1+ | 0.4− |
| 1999 09 08 | 704 | 0.0 | 1.1+ | 2004 01 19 | 699 | 0.3+ | 0.3− | 2006 09 17 | 703 | 0.8+ | 0.0 |
| 1999 10 03 | 703 | 0.1+ | 0.6+ | 2004 01 19 | 699 | 0.7+ | 0.3− | 2006 09 17 | 703 | 0.1+ | 0.7+ |
| 1999 10 03 | 703 | 0.3− | 0.7+ | 2004 01 19 | 699 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 1999 10 03 | 703 | 0.4− | 0.2+ | 2004 01 19 | 699 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1999 10 03 | 703 | 1.4− | 0.9+ | 2004 01 20 | 704 | 0.2+ | 0.9− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 1999 10 04 | 704 | 0.1+ | 0.2+ | 2004 01 20 | 704 | 0.5− | 0.7− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 1999 10 04 | 704 | 0.7− | 0.1− | 2004 01 20 | 704 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1999 10 04 | 704 | 0.3+ | 0.3− | 2004 01 20 | 704 | 0.1− | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1999 10 04 | 704 | 0.2+ | 0.0 | 2004 01 22 | 704 | 0.3− | 0.7− | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 1999 10 04 | 704 | 1.1+ | 0.3+ | 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.1− |
| 1999 10 10 | 704 | 0.2− | 0.1− | 2004 01 22 | 704 | 0.6+ | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.5− |
| 1999 10 10 | 704 | 0.5− | 0.1− | 2004 01 22 | 704 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 1999 10 10 | 704 | 0.3− | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 10 20 | 704 | 0.0 | 0.3+ |
| 1999 10 10 | 704 | 0.4− | 0.4− | 2004 01 24 | 704 | 0.6− | 0.1− | 2006 10 20 | 704 | 0.5− | 0.0 |
| 1999 10 10 | 704 | 0.2+ | 0.6− | 2004 01 24 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 704 | 0.9− | 1.0+ |
| 1999 10 19 | 704 | 0.7+ | 1.0− | 2004 01 24 | 704 | 0.6− | 0.3+ | 2006 10 20 | 704 | 0.6− | 1.4+ |
| 1999 10 19 | 704 | 0.5+ | 0.5− | 2004 01 24 | 704 | 0.7+ | 0.8+ | 2006 10 20 | 704 | 0.2− | 1.1+ |
| 1999 10 19 | 704 | 0.1+ | 0.4− | 2004 01 30 | 704 | 0.5+ | 1.0+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 1999 10 19 | 704 | 0.2+ | 0.6− | 2004 01 30 | 704 | 0.8− | 1.0+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 1999 10 19 | 704 | 0.6− | 0.6− | 2004 01 30 | 704 | 0.0 | 1.0+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2000 12 23 | 645 | 0.0 | 0.1− | 2004 01 30 | 704 | 1.1− | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2000 12 23 | 645 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.0 | 1.3+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.1− | 0.6+ | 2004 02 15 | 704 | 0.8+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.7+ | 2004 02 15 | 704 | 0.4+ | 0.9+ | 2006 10 27 | 703 | 0.3+ | 0.1+ |
| 2003 12 22 | 704 | 0.1− | 0.7+ | 2004 02 15 | 704 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.5− | 0.4− |
| 2003 12 22 | 704 | 0.0 | 0.6+ | 2005 05 11 | 644 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.9− | 0.9+ |
| 2003 12 22 | 704 | 0.3− | 0.1+ | 2005 05 11 | 644 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2003 12 27 | 704 | 0.4+ | 0.3+ | 2005 05 11 | 644 | 0.4+ | 0.8+ | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2003 12 27 | 704 | 0.1− | 0.8− | 2005 05 11 | 644 | 0.0 | 0.7+ | 2006 11 22 | 703 | 0.4+ | 0.3− |
| 2003 12 27 | 704 | 0.6+ | 0.5− | 2005 05 11 | 644 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.2+ | 0.6− |
| 2003 12 27 | 704 | 0.3− | 0.4+ | 2005 05 11 | 644 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.0 | 0.2− |
| 2003 12 27 | 704 | 0.3+ | 0.0 | 2005 05 12 | 644 | 0.6+ | 0.7+ | | | | |

**(137357)∗ 1999 TQ$_{108}$ = 2002 LL$_{19}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31279)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.91288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28808636 | $\omega$ | 71.21151 | | +0.85894767 | +0.50993133 | |
| $a$ | 2.2704969 | $\Omega$ | 258.10534 | | −0.48594246 | +0.78299454 | |
| $e$ | 0.1726672 | $i$ | 2.73425 | | −0.16145847 | +0.35621565 | |
| $P$ | 3.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 23 | 704 | (2.1+ | 1.1+) | 1999 10 11 | 704 | 0.6+ | 0.4− | 2006 10 21 | 691 | 0.3− | 0.0 | |
| 1999 07 23 | 704 | 0.2+ | 0.5− | 1999 10 11 | 704 | (1.1− | 3.6−) | 2006 10 21 | 691 | 0.1− | 0.0 | |
| 1999 07 23 | 704 | 0.5+ | 1.2+ | 1999 10 15 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.2− | |
| 1999 07 23 | 704 | 0.3− | 0.7+ | 1999 10 15 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.0 | |
| 1999 07 23 | 704 | 0.5+ | 0.1− | 1999 10 15 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1− | |
| 1999 09 07 | 704 | 0.1− | 0.5− | 1999 10 15 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 1999 09 07 | 704 | 0.3+ | 0.6− | 1999 10 16 | 704 | 1.4+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1+ | |
| 1999 09 07 | 704 | 0.2+ | 0.4− | 1999 10 16 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 1999 09 07 | 704 | 0.6+ | 0.2− | 1999 10 16 | 704 | 0.9+ | 1.5− | 2006 10 29 | 704 | (1.2+ | 1.8+) | |
| 1999 09 07 | 704 | 0.1+ | 0.5+ | 1999 10 16 | 704 | 0.7+ | 0.4+ | 2006 10 29 | 704 | 0.2+ | 0.3− | |
| 1999 09 08 | 699 | (2.7+ | 0.7−) | 2002 06 06 | 704 | 0.4+ | 0.3+ | 2006 10 29 | 704 | 0.2+ | 0.7+ | |
| 1999 09 08 | 699 | 0.6+ | 0.7− | 2002 06 06 | 704 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.1− | |
| 1999 09 08 | 699 | 0.2+ | 0.0 | 2002 06 06 | 704 | 0.4+ | 0.6+ | 2006 11 07 | 644 | 0.1+ | 0.0 | |
| 1999 09 29 | 703 | 0.1− | 0.6+ | 2002 06 06 | 704 | 0.5+ | 1.2+ | 2006 11 07 | 644 | 0.0 | 0.0 | |
| 1999 09 29 | 703 | 0.6− | 1.4+ | 2002 06 08 | 704 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.0 | |
| 1999 09 29 | 703 | 2.0− | 0.9+ | 2002 06 08 | 704 | 0.4− | 0.8+ | 2006 11 16 | 704 | (0.9− | 2.8+) | |
| 1999 09 29 | 703 | 1.1+ | 0.5+ | 2002 06 08 | 704 | 0.5− | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.9+ | |
| 1999 10 04 | 704 | 0.2− | 0.3+ | 2005 03 09 | 691 | 0.4+ | 0.5+ | 2006 11 16 | 704 | 0.6− | 1.2+ | |
| 1999 10 04 | 704 | 0.3+ | 0.8− | 2005 03 09 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.1+ | |
| 1999 10 04 | 704 | 0.5− | 0.3− | 2005 03 09 | 691 | 0.1+ | 0.8+ | 2006 11 17 | 691 | 0.2+ | 0.3+ | |
| 1999 10 04 | 704 | 0.1+ | 0.4− | 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 691 | 0.2+ | 0.1+ | |
| 1999 10 04 | 704 | 0.2− | 0.4− | 2005 03 13 | 691 | 0.3+ | 0.7+ | 2006 11 19 | 704 | (2.8− | 2.7+) | |
| 1999 10 07 | 704 | 1.4− | 0.4− | 2005 03 13 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 704 | (1.9− | 3.1+) | |
| 1999 10 07 | 704 | 0.4− | 0.3+ | 2005 03 17 | G96 | 0.9− | 0.1+ | 2006 11 19 | 704 | (1.5− | 2.8+) | |
| 1999 10 07 | 704 | 1.3− | 0.1− | 2005 03 17 | G96 | 0.3− | 1.0− | 2006 11 19 | 704 | (1.5− | 3.2+) | |
| 1999 10 07 | 704 | 0.3+ | 0.0 | 2005 03 17 | G96 | 0.9− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1+ | |
| 1999 10 07 | 704 | 1.3− | 0.6+ | 2005 03 17 | G96 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.1+ | |
| 1999 10 09 | 704 | 0.6− | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ | |
| 1999 10 09 | 704 | 0.8− | 0.4+ | 2006 09 30 | 691 | 0.4− | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.0 | |
| 1999 10 09 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 691 | 0.3− | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.3+ | |
| 1999 10 09 | 704 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.3+ | 0.1+ | |
| 1999 10 09 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.1+ | |
| 1999 10 09 | 704 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.6− | |
| 1999 10 09 | 704 | 0.1+ | 0.8− | 2006 10 17 | 691 | (2.0− | 0.4−) | 2006 11 22 | 704 | 0.7− | 0.2− | |
| 1999 10 09 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.9− | |
| 1999 10 09 | 704 | 0.4− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.3+ | |
| 1999 10 09 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1+ | |
| 1999 10 10 | 704 | 0.6− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.0 | |
| 1999 10 10 | 704 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1− | |
| 1999 10 10 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 1.3− | 0.2+ | |
| 1999 10 10 | 704 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.9− | 0.9+ | |
| 1999 10 10 | 704 | 0.3− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.2− | |
| 1999 10 11 | 704 | 1.2+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.0 | | | | | |

**(137358)∗ 1999 TE$_{111}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.16128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28855288 | $\omega$ | 98.35374 | | +0.59013197 | −0.80336800 | |
| $a$ | 2.2680491 | $\Omega$ | 315.16234 | | +0.68910005 | +0.55266551 | |
| $e$ | 0.0953968 | $i$ | 6.48612 | | +0.42057743 | +0.22172210 | |
| $P$ | 3.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 1.5− | 0.6− | 2001 03 19 | 699 | 0.6− | 0.6− | 2004 01 20 | 704 | 1.3+ | 0.4− | |
| 1999 09 08 | 704 | 0.7+ | 0.8− | 2001 03 19 | 699 | 0.4+ | 0.3+ | 2004 01 20 | 704 | 0.4+ | 0.4+ | |
| 1999 09 08 | 704 | 0.0 | 1.2− | 2003 12 17 | 699 | 0.5+ | 0.4− | 2004 01 20 | 704 | 0.3+ | 0.4+ | |
| 1999 09 08 | 704 | 0.7− | 1.6− | 2003 12 17 | 699 | 0.4− | 0.5− | 2004 01 20 | 704 | 0.0 | 0.8+ | |
| 1999 09 08 | 704 | 0.8+ | 0.9− | 2003 12 17 | 699 | 0.4+ | 0.3+ | 2004 01 22 | 704 | 0.4− | 0.4+ | |
| 1999 09 18 | 703 | 0.5− | 0.1− | 2003 12 17 | 699 | 0.8− | 0.5− | 2004 01 22 | 704 | 0.2− | 0.2+ | |
| 1999 09 18 | 703 | 1.1− | 0.1+ | 2003 12 18 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.2− | 0.1+ | |
| 1999 09 18 | 703 | 0.4− | 0.2+ | 2003 12 18 | 704 | 0.3+ | 0.6− | 2004 01 22 | 704 | 0.3− | 0.3+ | |
| 1999 09 18 | 703 | 0.3− | 0.2+ | 2003 12 18 | 704 | 0.5+ | 0.8− | 2006 09 17 | 703 | 1.0+ | 0.3+ | |
| 1999 09 29 | 703 | 0.2+ | 0.3+ | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.8− | 0.4+ | |
| 1999 09 29 | 703 | 0.5+ | 0.3+ | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.1− | |
| 1999 09 29 | 703 | (0.9− | 2.5−) | 2003 12 23 | 704 | 0.7− | 0.7+ | 2006 09 17 | 703 | 0.2+ | 0.2+ | |
| 1999 09 29 | 703 | 0.1− | 0.2− | 2003 12 23 | 704 | 0.5− | 0.8+ | 2006 10 27 | 703 | 0.3+ | 0.2− | |
| 1999 10 04 | 704 | 0.4+ | 0.8+ | 2003 12 23 | 704 | (0.6− | 1.6−) | 2006 10 27 | 703 | 0.1− | 0.4− | |
| 1999 10 04 | 704 | 0.9+ | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.0 | |
| 1999 10 04 | 704 | (2.6+ | 1.1+) | 2003 12 28 | 704 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.2+ | 0.3+ | |
| 1999 10 10 | 704 | 0.2+ | 0.7+ | 2003 12 28 | 704 | 0.0 | 0.2+ | 2006 11 15 | 703 | 1.0− | 0.3+ | |
| 1999 10 10 | 704 | 0.5+ | 0.6+ | 2003 12 28 | 704 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.1+ | |
| 1999 10 10 | 704 | 0.2− | 0.6+ | 2003 12 28 | 704 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.1− | |
| 1999 10 10 | 704 | 0.2+ | 0.6+ | 2004 01 13 | 699 | 0.8− | 0.5+ | 2006 11 15 | 703 | 0.3+ | 0.4− | |
| 1999 10 10 | 704 | 0.6+ | 0.1+ | 2004 01 13 | 699 | 0.2+ | 0.0 | 2006 11 22 | 703 | 0.1− | 1.0+ | |
| 2001 03 18 | 608 | 0.2+ | 0.4− | 2004 01 13 | 699 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.3+ | 0.3− | |
| 2001 03 18 | 608 | 0.3− | 0.3− | 2004 01 13 | 699 | 0.7− | 0.4− | 2006 11 22 | 703 | 0.4− | 0.3+ | |
| 2001 03 18 | 608 | 0.1+ | 0.1− | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.4+ | 0.1− | |
| 2001 03 19 | 699 | 0.2− | 0.6+ | 2004 01 15 | 691 | 0.0 | 0.2+ | | | | | |
| 2001 03 19 | 699 | 0.3+ | 0.0 | 2004 01 15 | 691 | 0.0 | 0.2+ | | | | | |

**(137359)∗ 1999 TS$_{113}$ = 2001 FJ$_{52}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11582)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.82850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27356991 | $\omega$ | 91.56570 | | +0.16005561 | −0.98690275 | |
| $a$ | 2.3501225 | $\Omega$ | 349.16148 | | +0.85775295 | +0.14914396 | |
| $e$ | 0.1198431 | $i$ | 6.14498 | | +0.48851006 | +0.06147396 | |
| $P$ | 3.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 0.5+ | 0.6− | 2003 11 19 | 704 | 0.7+ | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.2+ | |
| 1999 10 04 | 704 | 0.5− | 0.7− | 2003 11 19 | 704 | 1.1+ | 0.6+ | 2006 08 25 | 704 | 0.2+ | 0.6+ | |
| 1999 10 04 | 704 | 0.1+ | 0.5− | 2003 11 19 | 704 | 0.3+ | 0.3+ | 2006 08 25 | 704 | 0.5+ | 0.0 | |
| 1999 10 04 | 704 | 1.8− | 1.6+ | 2003 11 19 | 704 | 0.3− | 0.5+ | 2006 08 25 | 704 | 0.1− | 0.2− | |
| 1999 10 04 | 704 | 0.5− | 0.8+ | 2003 12 03 | 704 | (2.6− | 1.4−) | 2006 08 25 | 704 | 0.6+ | 0.6+ | |
| 1999 10 09 | 704 | 0.2− | 0.3− | 2003 12 03 | 704 | 0.9− | 0.1+ | 2006 08 25 | 704 | 0.3+ | 0.2− | |
| 1999 10 09 | 704 | 0.4− | 0.0 | 2003 12 03 | 704 | 1.1− | 0.8+ | 2006 08 28 | 703 | 0.4+ | 0.3+ | |
| 1999 10 09 | 704 | 0.0 | 0.3− | 2003 12 03 | 704 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.2+ | |
| 1999 10 09 | 704 | 0.6− | 0.1+ | 2003 12 17 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.3− | |
| 1999 10 09 | 704 | 0.1− | 0.3+ | 2003 12 17 | 704 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.1− | |
| 1999 10 13 | 704 | 0.2− | 0.1+ | 2003 12 17 | 704 | 0.5+ | 0.2− | 2006 08 29 | 704 | 0.3− | 1.0+ | |
| 1999 10 13 | 704 | 0.3+ | 0.2+ | 2003 12 17 | 704 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.5+ | 1.0+ | |
| 1999 10 13 | 704 | 0.4+ | 0.2+ | 2003 12 23 | 552 | 0.3− | 0.2− | 2006 08 29 | 704 | 0.8− | 1.0+ | |
| 1999 10 13 | 704 | 0.7+ | 0.3+ | 2003 12 23 | 552 | 0.4+ | 0.4+ | 2006 09 12 | 704 | 1.3+ | 0.7+ | |
| 1999 10 13 | 704 | 0.6+ | 0.6+ | 2003 12 23 | 552 | 0.4+ | 0.2+ | 2006 09 12 | 704 | 0.5− | 0.7+ | |
| 1999 10 15 | 704 | 0.0 | 0.3− | 2003 12 27 | 704 | 0.2− | 0.1+ | 2006 09 12 | 704 | 0.8+ | 0.4+ | |
| 1999 10 15 | 704 | 0.0 | 0.5− | 2003 12 27 | 704 | 0.7− | 0.7+ | 2006 09 12 | 704 | 0.5− | 0.2+ | |
| 1999 10 15 | 704 | 0.2+ | 1.4− | 2003 12 27 | 704 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.4− | 0.2+ | |
| 1999 10 15 | 704 | 0.0 | 0.8− | 2003 12 27 | 704 | 0.1− | 0.2− | 2006 09 14 | 644 | 0.4− | 0.1− | |
| 1999 10 15 | 704 | 0.2− | 0.0 | 2003 12 29 | 704 | 0.6− | 1.1+ | 2006 09 14 | 644 | 0.2− | 0.1− | |
| 1999 10 16 | 704 | 0.5+ | 1.2− | 2003 12 29 | 704 | 0.8− | 0.5+ | 2006 09 17 | 704 | 0.4+ | 0.7+ | |
| 1999 10 16 | 704 | 0.3+ | 0.1− | 2003 12 29 | 704 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.2− | 0.1+ | |
| 1999 10 16 | 704 | 0.4+ | 0.3− | 2003 12 29 | 704 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.4− | 0.5+ | |
| 1999 10 16 | 704 | 0.5+ | 0.1− | 2003 12 29 | 704 | 1.1+ | 0.5− | 2006 09 17 | 704 | 0.6+ | 1.1− | |
| 1999 10 19 | 704 | 0.6+ | 0.8− | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.4− | |
| 1999 10 19 | 704 | 0.1− | 0.6− | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.0 | |
| 1999 10 19 | 704 | 1.9+ | 1.0+ | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 09 20 | 704 | 1.4− | 0.8− | |
| 1999 10 19 | 704 | (2.9+ | 1.4+) | 2006 08 18 | 699 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.9+ | |
| 2001 03 18 | 704 | 0.5+ | 0.6+ | 2006 08 18 | 699 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | |
| 2001 03 18 | 704 | 0.4+ | 0.5+ | 2006 08 18 | 699 | 0.7+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.2− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.1+ | 1.1+ | 2006 08 18 | 699 | 1.3− | 0.4− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 03 20 | 608 | 0.4+ | 0.4− | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2001 03 20 | 608 | 0.4+ | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2001 03 20 | 608 | 0.4+ | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 03 24 | 704 | 0.3− | 0.3+ | 2006 08 21 | 644 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2001 03 24 | 704 | 0.2+ | 0.5+ | 2006 08 21 | 644 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2001 03 24 | 704 | 0.2+ | 0.6+ | 2006 08 21 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2001 03 24 | 704 | 0.4− | 1.2+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 03 29 | 608 | 0.2+ | 0.0 | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 03 29 | 608 | 0.2+ | 0.2− | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 03 29 | 608 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.2+ | | | | |
| 2003 11 19 | 704 | 0.4+ | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.2+ | | | | |

**(137360)∗ 1999 TF$_{114}$ = 2001 FP$_{42}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11582)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.77140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28149500 | $\omega$ | 41.74204 | | +0.62486655 | −0.78056469 | |
| $a$ | 2.3058033 | $\Omega$ | 9.62372 | | +0.68830465 | +0.54101607 | |
| $e$ | 0.1543795 | $i$ | 5.54074 | | +0.36848134 | +0.31308206 | |
| $P$ | 3.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 0.2− | 2003 11 20 | 704 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.1− | 0.5− |
| 1999 09 07 | 704 | 0.2− | 0.6− | 2003 11 20 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 0.1+ | 0.2+ | 2003 11 20 | 704 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.2+ | 0.1− |
| 1999 09 07 | 704 | 0.4+ | 1.0+ | 2003 11 20 | 704 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 0.1− | 0.2− | 2003 11 23 | 699 | 0.1− | 0.3+ | 2006 09 21 | A50 | 0.3− | 0.3− |
| 1999 09 14 | 734 | 0.7+ | 0.8+ | 2003 11 23 | 699 | 1.0− | 0.3+ | 2006 09 21 | A50 | 0.6+ | 0.3+ |
| 1999 09 14 | 734 | 0.6+ | 0.1+ | 2003 11 23 | 699 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 1999 09 14 | 734 | 0.1+ | 0.0 | 2003 11 23 | 699 | 0.4+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.2+ |
| 1999 09 14 | 734 | 1.9+ | 1.0+ | 2003 12 17 | 703 | (1.5− | 0.6−) | 2006 09 23 | 691 | 0.3+ | 0.3+ |
| 1999 09 14 | 734 | 0.6+ | 0.4+ | 2003 12 17 | 703 | 0.0 | 1.5− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 1999 09 18 | 691 | 0.3+ | 0.7− | 2003 12 17 | 703 | 0.2+ | 0.5− | 2006 09 25 | G96 | 0.4+ | 0.5− |
| 1999 09 18 | 691 | 0.4+ | 0.8− | 2003 12 17 | 703 | 0.0 | 1.1− | 2006 09 25 | 688 | 0.0 | 0.1+ |
| 1999 09 18 | 691 | 0.4+ | 0.7− | 2003 12 18 | 704 | 0.1+ | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 1999 09 30 | 703 | 0.8− | 0.0 | 2003 12 18 | 704 | (0.1+ | 1.7−) | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 1999 09 30 | 703 | 1.4− | 0.4+ | 2003 12 18 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 688 | 0.4+ | 0.1− |
| 1999 09 30 | 703 | 0.5− | 0.3+ | 2003 12 18 | 704 | 0.0 | 0.5− | 2006 09 27 | 704 | 0.3+ | 0.4+ |
| 1999 09 30 | 703 | 0.3− | 0.4− | 2003 12 18 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1999 10 02 | 699 | 0.6+ | 0.7+ | 2003 12 27 | 704 | 0.3− | 0.1− | 2006 09 27 | 704 | 1.2− | 0.1+ |
| 1999 10 02 | 699 | 1.8+ | 1.1+ | 2003 12 27 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1999 10 02 | 699 | 0.4− | 0.6+ | 2003 12 27 | 704 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.0 | 0.7+ |
| 1999 10 04 | 704 | 0.4− | 0.4− | 2003 12 27 | 704 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1999 10 04 | 704 | 0.6− | 0.8− | 2003 12 27 | 704 | 0.7+ | 0.1− | 2006 09 27 | 704 | 0.4− | 0.4+ |
| 1999 10 04 | 704 | 0.2− | 0.2− | 2003 12 29 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.8+ | 1.2+ |
| 1999 10 04 | 704 | 1.1− | 0.4− | 2003 12 29 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 1999 10 04 | 704 | 0.5− | 0.7+ | 2003 12 29 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.8+ |
| 1999 10 07 | 703 | 0.2+ | 0.5+ | 2003 12 29 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 1999 10 07 | 703 | 0.4− | 0.6+ | 2003 12 29 | 704 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.4− |
| 1999 10 07 | 703 | 0.3− | 0.2+ | 2004 01 03 | 704 | 0.7− | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.3+ |
| 1999 10 07 | 703 | 0.5+ | 0.0 | 2004 01 03 | 704 | 0.9− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1999 10 07 | 704 | 0.7− | 1.2− | 2004 01 03 | 704 | 0.7− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1999 10 07 | 704 | 1.7− | 1.8− | 2004 01 03 | 704 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 1999 10 07 | 704 | 1.2− | 1.1− | 2004 01 03 | 704 | 1.1− | 0.1+ | 2006 10 01 | 704 | 1.3− | 0.6+ |
| 1999 10 09 | 704 | 0.3+ | 0.7− | 2004 01 16 | 699 | (1.4− | 1.8−) | 2006 10 01 | 704 | 1.4− | 0.7+ |
| 1999 10 09 | 704 | 0.4+ | 0.8− | 2004 01 16 | 699 | 0.4− | 0.4− | 2006 10 01 | 704 | 1.0− | 0.5+ |
| 1999 10 09 | 704 | 0.4+ | 0.3− | 2004 01 16 | 699 | 0.6− | 0.1− | 2006 10 01 | 704 | 1.5− | 0.4+ |
| 1999 10 09 | 704 | 0.2+ | 0.8− | 2004 01 16 | 699 | 0.5− | 0.2− | 2006 10 01 | 704 | 1.4− | 1.0+ |
| 1999 10 09 | 704 | 0.6+ | 0.5− | 2004 01 18 | 691 | 0.2− | 0.0 | 2006 10 03 | 291 | 0.2− | 0.0 |
| 1999 10 15 | 704 | 0.3− | 0.8− | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 10 03 | 291 | 0.2− | 0.1+ |
| 1999 10 15 | 704 | 0.1+ | 0.4− | 2004 01 18 | 691 | 0.1− | 0.2− | 2006 10 03 | 291 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | 0.3− | 0.0 | 2004 01 19 | 704 | 1.3+ | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 1999 10 15 | 704 | 0.4− | 0.4− | 2004 01 19 | 704 | 0.3− | 0.9+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 1999 10 29 | 703 | 0.5− | 1.6+ | 2004 01 19 | 704 | 1.4+ | 0.9+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 1999 10 29 | 703 | 1.0− | 0.1+ | 2004 01 19 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 1999 10 29 | 703 | 1.2− | 0.1+ | 2004 01 31 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 1999 10 29 | 703 | 0.9+ | 0.2+ | 2004 01 31 | 704 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 1999 11 06 | 704 | 0.8+ | 0.3+ | 2004 01 31 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.4− |
| 1999 11 06 | 704 | 0.1+ | 0.2− | 2004 01 31 | 704 | 0.4+ | 0.4− | 2006 10 16 | 703 | (1.5− | 0.2+) |
| 1999 11 06 | 704 | 0.5+ | 0.0 | 2004 01 31 | 704 | 1.2− | 0.3+ | 2006 10 16 | 703 | (1.6− | 0.7−) |
| 1999 11 06 | 704 | 0.9+ | 0.0 | 2004 02 14 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 1.3− | 0.5− |
| 1999 11 06 | 704 | 0.8+ | 0.2− | 2004 02 14 | 704 | 0.1+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.9− |
| 1999 11 16 | 704 | 0.5+ | 0.2+ | 2004 02 14 | 704 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.8− |
| 1999 11 16 | 704 | 1.5+ | 1.0− | 2004 02 14 | 704 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.4+ |
| 1999 11 16 | 704 | 0.8+ | 1.0+ | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.7− |
| 2001 02 22 | 704 | 0.9+ | 0.8+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 10 17 | 106 | 0.1− | 0.1+ |
| 2001 02 22 | 704 | 0.7+ | 1.1+ | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 10 17 | 106 | 0.4+ | 0.6− |
| 2001 02 22 | 704 | 0.0 | 1.0+ | 2006 08 29 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 106 | 0.1− | 0.3− |
| 2001 03 18 | 704 | 0.0 | 0.4− | 2006 08 29 | 704 | 0.5− | 0.1+ | 2006 10 17 | 106 | 0.1− | 0.1+ |
| 2001 03 18 | 704 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2001 03 18 | 704 | 0.0 | 0.1+ | 2006 09 12 | 703 | 1.0+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 03 18 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 03 18 | 704 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 03 23 | 699 | 0.1− | 0.8+ | 2006 09 12 | 703 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 03 23 | 699 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 03 23 | 699 | 0.1− | 0.9+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.6− |
| 2001 03 23 | 699 | (1.7+ | 0.5−) | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.5− |
| 2001 03 24 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2001 03 24 | 704 | 0.1− | 0.0 | 2006 09 17 | 704 | 1.0− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.6− |
| 2001 03 24 | 704 | 1.4+ | 0.3+ | 2006 09 17 | 704 | 0.9− | 0.4+ | 2006 11 21 | 704 | 1.4− | 1.9+ |
| 2001 03 29 | 704 | 0.7+ | 1.2+ | 2006 09 17 | 704 | 0.5− | 0.3+ | 2006 11 21 | 704 | 1.0− | 1.4+ |
| 2001 03 29 | 704 | (0.4− | 2.0+) | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.2+ | 1.2+ |
| 2001 03 29 | 704 | (2.1− | 2.7+) | 2006 09 19 | 703 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.9+ | 1.3+ |
| 2003 10 25 | 704 | 0.5− | 0.6− | 2006 09 19 | 703 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2003 10 25 | 704 | 0.6− | 0.8− | 2006 09 19 | 703 | 0.5+ | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2003 10 25 | 704 | 0.1+ | 0.9− | 2006 09 20 | 704 | 0.1− | 1.2+ | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2003 10 25 | 704 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.5− | 0.8+ |
| 2003 10 25 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3− | 0.6+ |
| 2003 11 20 | 704 | (0.3− | 1.6+) | 2006 09 20 | 704 | 0.7− | 0.1− | | | | |

**(137361)∗ 1999 TQ$_{114}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.76302 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29102164 | $\omega$ | 324.89574 | | +0.84082365 | +0.54130862 | |
| $a$ | 2.2552041 | $\Omega$ | 2.33189 | | −0.49230969 | +0.76528997 | |
| $e$ | 0.1820967 | $i$ | 1.06098 | | −0.22504833 | +0.34830481 | |
| $P$ | 3.39 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.4− | 0.4+ | 2003 12 29 | 704 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 1999 09 05 | 699 | 0.1− | 0.4+ | 2003 12 29 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 1999 09 05 | 699 | 0.3− | 0.8+ | 2003 12 29 | 704 | 0.8+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 09 07 | 691 | 0.4− | 0.4+ | 2003 12 29 | 704 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1999 09 07 | 691 | 0.5− | 0.1+ | 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1999 09 07 | 691 | 0.6− | 0.2+ | 2003 12 29 | 704 | 0.4+ | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 1999 09 30 | 703 | 0.5− | 0.0 | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 1999 09 30 | 703 | 0.5− | 0.0 | 2004 01 27 | 691 | 0.4+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 1999 09 30 | 703 | 0.8+ | 0.2+ | 2004 01 27 | 691 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.7− |
| 1999 09 30 | 703 | 0.5− | 0.2+ | 2004 01 27 | 691 | 0.7+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.8− |
| 1999 10 02 | 699 | 0.2− | 1.5+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.5− | 0.1+ |
| 1999 10 02 | 699 | 0.2+ | 1.6+ | 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.2− | 1.2− |
| 1999 10 02 | 699 | 0.2+ | 0.9+ | 2005 03 11 | G96 | 0.3− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 1999 10 04 | 704 | 0.0 | 0.8+ | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.3+ | 0.2+ |
| 1999 10 04 | 704 | 0.3+ | 0.0 | 2005 04 05 | G96 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 1999 10 04 | 704 | 0.8+ | 0.4+ | 2005 04 05 | G96 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 1999 10 04 | 704 | 0.8+ | 0.8− | 2005 04 05 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.0 |
| 1999 10 04 | 704 | 0.7+ | 0.4− | 2005 04 05 | G96 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 1999 10 07 | 703 | 0.3− | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 1.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 703 | 0.0 | 0.6+ | 2005 04 17 | 691 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.5− | 0.1− |
| 1999 10 07 | 703 | 0.4− | 0.2+ | 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 1999 10 07 | 703 | 0.3+ | 0.7+ | 2005 05 12 | G96 | 0.3− | 0.7+ | 2006 11 20 | 691 | 0.5+ | 0.2+ |
| 1999 10 07 | 704 | 0.3+ | 0.9− | 2005 05 12 | G96 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 1999 10 07 | 704 | 0.2− | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.5+ | 2006 11 21 | 704 | (0.1− | 1.8+) |
| 1999 10 07 | 704 | 0.4+ | 0.1− | 2005 05 12 | G96 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 1999 10 07 | 704 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.8+ | 1.0+ |
| 1999 10 07 | 704 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 21 | 704 | 1.2+ | 0.2− |
| 1999 10 09 | 704 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 1999 10 09 | 704 | 0.3+ | 0.6− | 2006 09 27 | G96 | 1.1+ | 0.7− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 1999 10 09 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.4− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 1999 10 09 | 704 | 0.7+ | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.8+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 1999 10 09 | 704 | 0.1+ | 0.9− | 2006 10 16 | 703 | 0.2+ | 0.9+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2003 12 14 | 291 | 1.0− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2003 12 14 | 291 | 0.8− | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2003 12 14 | 291 | 0.7− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2003 12 18 | 704 | 0.8− | 1.1+ | 2006 10 21 | 691 | 1.4− | 0.7− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2003 12 18 | 704 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | | | |
| 2003 12 18 | 704 | 0.1− | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.3− | | | | |

**(137362)∗ 1999 TC$_{117}$ = 2002 OE**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33101)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.16701 | | (2000.0) | | | |
| $n$ | 0.29546039 | $\omega$ | 326.25779 | | +0.78311430 | +0.62185284 |
| $a$ | 2.2325603 | $\Omega$ | 355.27916 | | −0.55456153 | +0.69426276 |
| $e$ | 0.1625279 | $i$ | 3.88142 | | −0.28141339 | +0.36235102 |
| $P$ | 3.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 0.2+ | 1.0− | 1999 10 19 | 704 | 0.1− | 0.1− | 2005 04 14 | 703 | 0.3+ | 0.2+ |
| 1999 10 04 | 704 | 0.4+ | 1.5+ | 1999 10 19 | 704 | 0.0 | 1.8− | 2005 04 14 | 703 | 0.7− | 0.5+ |
| 1999 10 04 | 704 | 0.1+ | 0.9+ | 2002 06 13 | 644 | 0.2− | 0.5+ | 2005 04 14 | 703 | 0.4+ | 0.3+ |
| 1999 10 09 | 704 | 0.1− | 0.0 | 2002 06 13 | 644 | 0.3− | 0.8+ | 2005 05 01 | E12 | 0.5+ | 0.4+ |
| 1999 10 09 | 704 | 0.1− | 0.3+ | 2002 06 13 | 644 | 0.0 | 0.6+ | 2005 05 01 | E12 | 0.5− | 0.6− |
| 1999 10 09 | 704 | 0.1+ | 0.2+ | 2002 07 16 | 644 | 0.0 | 0.3+ | 2005 05 01 | E12 | 0.4− | 0.4− |
| 1999 10 09 | 704 | 0.3− | 0.2+ | 2002 07 16 | 644 | 0.0 | 0.1+ | 2005 05 01 | E12 | 0.7− | 0.4+ |
| 1999 10 09 | 704 | 0.1− | 0.4− | 2002 07 16 | 644 | 0.0 | 0.2+ | 2005 05 18 | 644 | 0.2+ | 0.3+ |
| 1999 10 13 | 704 | 1.2− | 0.4+ | 2002 07 17 | 644 | 0.2+ | 0.4+ | 2005 05 18 | 644 | 0.3+ | 0.1+ |
| 1999 10 13 | 704 | 0.4− | 0.2+ | 2002 07 17 | 644 | 0.3+ | 0.6+ | 2005 05 18 | 644 | 0.2+ | 0.6+ |
| 1999 10 13 | 704 | 0.0 | 0.3− | 2002 07 17 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 1999 10 13 | 704 | 0.1− | 0.7− | 2003 12 22 | 704 | 1.0+ | 0.6+ | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 1999 10 13 | 704 | 1.6− | 0.0 | 2003 12 22 | 704 | 0.9+ | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.1− | 2003 12 22 | 704 | 0.2+ | 1.1+ | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 1999 10 15 | 704 | 0.3− | 0.0 | 2004 01 22 | 704 | 0.5+ | 0.6+ | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 1999 10 15 | 704 | 0.0 | 0.3+ | 2004 01 22 | 704 | 0.6− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.0 |
| 1999 10 19 | 704 | 0.9+ | 0.3+ | 2004 01 22 | 704 | 0.3+ | 1.4+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 1999 10 19 | 704 | 0.7+ | 0.5+ | 2004 01 22 | 704 | 0.6− | 0.2− | | | | |
| 1999 10 19 | 704 | 1.2+ | 0.2− | 2005 04 14 | 703 | (1.7− | 0.9+) | | | | |

**(137363)∗ 1999 TD$_{117}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.04236 | | (2000.0) | | | |
| $n$ | 0.28180166 | $\omega$ | 173.47730 | | +0.88487079 | −0.46448117 |
| $a$ | 2.3041302 | $\Omega$ | 214.27142 | | +0.42449673 | +0.83539183 |
| $e$ | 0.1337246 | $i$ | 3.61542 | | +0.19184945 | +0.29390090 |
| $P$ | 3.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.6− | 0.1+ | 2005 05 04 | G96 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.5− | 0.4+ |
| 1999 10 01 | 703 | 0.3+ | 0.3− | 2005 05 04 | G96 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.3− |
| 1999 10 01 | 703 | 0.7+ | 0.9+ | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.2− | 0.0 |
| 1999 10 01 | 703 | 1.1+ | 0.2− | 2005 05 10 | G96 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.7− | 0.1+ |
| 1999 10 04 | 704 | 0.3− | 0.5− | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1999 10 04 | 704 | 1.2+ | 1.2− | 2005 05 10 | G96 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1999 10 04 | 704 | 0.3+ | 0.0 | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.5+ |
| 1999 10 04 | 704 | 0.5+ | 1.1− | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 10 15 | 106 | (1.9− | 1.0+) |
| 1999 10 04 | 704 | 0.7+ | 0.5− | 2005 06 13 | G96 | 0.1− | 0.1− | 2006 10 15 | 106 | 0.2+ | 1.2+ |
| 1999 10 07 | 704 | 0.3+ | 0.6+ | 2005 06 13 | G96 | 0.6− | 0.2+ | 2006 10 15 | 106 | 0.0 | 0.7+ |
| 1999 10 07 | 704 | 0.0 | 0.3− | 2005 06 13 | G96 | 0.6− | 0.0 | 2006 10 15 | 106 | 0.7+ | 0.0 |
| 1999 10 07 | 704 | 0.5− | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 1999 10 07 | 704 | 0.3− | 1.5+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 1999 10 09 | 704 | 0.4− | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 1999 10 09 | 704 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 1999 10 09 | 704 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.1− |
| 1999 10 09 | 704 | 0.2+ | 0.5− | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 1999 10 15 | 704 | 0.8− | 0.3− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.4− |
| 1999 10 15 | 704 | 1.1− | 0.5− | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 10 15 | 704 | 1.1− | 0.4− | 2006 09 18 | 704 | 0.7− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 1999 10 19 | 704 | 0.4− | 0.0 | 2006 09 18 | 704 | (1.6− | 0.3−) | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 10 19 | 704 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.6+ | 0.7− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 10 19 | 704 | 0.3− | 0.2+ | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 1999 10 19 | 704 | 0.3− | 0.1+ | 2006 09 18 | 704 | 0.7+ | 1.0− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 1999 11 03 | 049 | 0.2+ | 1.0+ | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 1999 11 03 | 049 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 1999 11 03 | 049 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 1999 11 06 | 704 | (4.0+ | 2.8−) | 2006 09 18 | 699 | (1.9− | 2.6+) | 2006 11 01 | G96 | 0.0 | 0.1− |
| 1999 11 06 | 704 | (3.1+ | 4.0−) | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.5+ | 0.0 |
| 1999 11 06 | 704 | (1.2+ | 2.7−) | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.1+ |
| 2003 12 22 | 704 | 0.6+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.0 | 0.8+ | 2006 09 21 | A50 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 09 21 | A50 | 0.2+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2003 12 22 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 704 | 0.3+ | 1.2+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 1.0− | 0.8+ | 2006 09 25 | 704 | 0.8− | 1.0+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2004 01 23 | 704 | 0.8+ | 1.0+ | 2006 09 25 | 704 | (0.0 | 1.6+) | 2006 11 02 | G96 | 0.2− | 0.1+ |
| 2004 01 23 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.3+ | 2006 11 02 | G96 | 0.2− | 0.6+ |
| 2004 01 23 | 704 | 0.1− | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.2+ | 0.3+ |
| 2005 04 02 | G96 | 0.6− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.3− | 2006 11 02 | G96 | 0.2− | 0.2+ |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.0 | 2006 11 02 | G96 | 0.4+ | 0.2+ |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 02 | G96 | 0.2− | 0.1− |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.5+ | 0.2+ | 2006 11 02 | G96 | 0.2− | 0.1− |
| 2005 04 17 | 691 | 0.5+ | 0.5+ | 2006 09 26 | 691 | 1.5− | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.5+ |
| 2005 04 17 | 691 | 0.5+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2005 04 17 | 691 | 0.4+ | 0.6+ | 2006 09 27 | 699 | 0.9+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2005 05 03 | 691 | 0.0 | 0.4+ | 2006 09 27 | 699 | 0.5− | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2005 05 03 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 699 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 699 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2005 05 04 | G96 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.2− |

**(137364)∗ 1999 TZ$_{118}$ = 2002 LD$_{18}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31279)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.81928 | | (2000.0) | | | |
| $n$ | 0.28044740 | $\omega$ | 128.52059 | | +0.73584947 | +0.67711981 |
| $a$ | 2.3115419 | $\Omega$ | 188.86583 | | −0.63249951 | +0.68421794 |
| $e$ | 0.1727145 | $i$ | 2.17857 | | −0.24180558 | +0.27084050 |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.4− | 1.1+ | 2006 09 12 | 703 | 0.7+ | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.4+ |
| 1999 10 01 | 703 | 0.8− | 0.1+ | 2006 09 12 | 703 | (2.1+ | 0.8+) | 2006 09 29 | 704 | 0.5+ | 0.5+ |
| 1999 10 01 | 703 | 1.4− | 0.5+ | 2006 09 15 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.8+ |
| 1999 10 01 | 703 | 0.4− | 0.3+ | 2006 09 15 | 704 | 0.3− | 0.8+ | 2006 09 29 | 704 | 0.3+ | 1.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 0.5+ | 1.1− | 2006 09 15 | 704 | 0.5+ | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.1− |
| 1999 10 04 | 704 | 0.5+ | 0.8− | 2006 09 16 | 644 | 0.1+ | 1.3− | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 1999 10 04 | 704 | 0.1− | 0.2+ | 2006 09 16 | 644 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.3− | 0.2+ |
| 1999 10 04 | 704 | 0.8+ | 0.5− | 2006 09 16 | 644 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.5− | 0.2+ |
| 1999 10 04 | 704 | 1.2− | 1.5+ | 2006 09 17 | 704 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.2− | 1.1+ |
| 1999 10 09 | 704 | 0.4+ | 0.4− | 2006 09 17 | 704 | 0.9− | 0.6+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 1999 10 09 | 704 | 0.6+ | 1.1− | 2006 09 17 | 704 | 0.7− | 0.7− | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 1999 10 09 | 704 | 0.8+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 1999 10 15 | 704 | 0.9+ | 0.7+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.5− | 1.3+ |
| 1999 10 15 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.4+ |
| 1999 10 15 | 704 | 1.5− | 1.3+ | 2006 09 18 | H07 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 1999 10 15 | 704 | 0.0 | 0.5+ | 2006 09 18 | H07 | 0.5− | 0.2+ | 2006 10 16 | 703 | (0.1+ | 1.6+) |
| 2002 06 06 | 704 | 0.6− | 0.4− | 2006 09 18 | H07 | 0.7− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2002 06 06 | 704 | 1.1− | 0.4+ | 2006 09 18 | H07 | 0.0 | 0.5− | 2006 10 16 | G96 | 0.3+ | 0.5− |
| 2002 06 06 | 704 | 0.3− | 0.3+ | 2006 09 18 | H07 | 0.1− | 0.4− | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2002 06 06 | 704 | 0.1+ | 0.5+ | 2006 09 18 | H07 | 0.3− | 0.5− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2002 06 08 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 703 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 2002 06 08 | 704 | 0.6+ | 0.7− | 2006 09 19 | 699 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2002 06 08 | 704 | 0.2+ | 0.7− | 2006 09 19 | 703 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.8− |
| 2002 06 08 | 704 | 0.5+ | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2005 03 01 | 691 | 0.6+ | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2005 03 01 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2005 03 01 | 691 | 0.4+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2005 04 05 | G96 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2005 04 05 | G96 | 0.6− | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 04 05 | G96 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 09 21 | A50 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2005 04 12 | G96 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2005 04 12 | G96 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.6− |
| 2005 04 12 | G96 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2005 05 04 | G96 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2005 05 04 | G96 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2005 05 04 | G96 | 0.1− | 0.5+ | 2006 09 27 | 704 | (1.6− | 0.2+) | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | (1.6− | 1.1+) | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 09 27 | 704 | (2.9− | 0.6−) | 2006 11 21 | G96 | 0.5+ | 0.5− |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | (2.5− | 0.2+) | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 09 12 | 703 | 0.0 | 1.2+ | 2006 09 27 | 704 | (2.1− | 0.7+) | | | | |
| 2006 09 12 | 703 | 0.2− | 0.8+ | 2006 09 29 | 704 | 0.7+ | 0.0 | | | | |

**(137365)∗ 1999 TU$_{120}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.16149 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27520196 | $\omega$ | 104.92933 | | +0.87631656 | −0.48105405 | |
| $a$ | 2.3408219 | $\Omega$ | 283.83062 | | +0.43122424 | +0.80702773 | |
| $e$ | 0.2320158 | $i$ | 1.51182 | | +0.21474390 | +0.34248101 | |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.6− | 0.1− | 2003 12 27 | 691 | 0.0 | 0.4+ | 2006 08 21 | 644 | 0.1− | 0.2− |
| 1999 10 01 | 703 | 0.5− | 0.3− | 2003 12 27 | 691 | 0.2+ | 0.1− | 2006 08 21 | 644 | 0.2− | 0.1+ |
| 1999 10 01 | 703 | 0.4+ | 0.5+ | 2003 12 27 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.3+ |
| 1999 10 01 | 703 | 1.0− | 0.1+ | 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.0 |
| 1999 10 04 | 704 | 1.6− | 0.5− | 2003 12 28 | 691 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.2+ |
| 1999 10 04 | 704 | 0.3+ | 1.1− | 2003 12 28 | 691 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.9− | 0.3+ |
| 1999 10 04 | 704 | 0.6− | 0.1− | 2003 12 29 | 699 | (1.5+ | 1.1+) | 2006 08 28 | 703 | 0.2− | 0.2− |
| 1999 10 04 | 704 | 0.7− | 0.2+ | 2003 12 29 | 699 | 0.0 | 0.6+ | 2006 08 28 | 703 | 1.0− | 0.5+ |
| 1999 10 04 | 704 | 1.3− | 0.0 | 2003 12 29 | 699 | 0.7− | 0.9+ | 2006 08 28 | 699 | 0.1+ | 1.0+ |
| 1999 10 10 | 704 | 0.5+ | 0.4− | 2003 12 29 | 699 | 0.2+ | 0.7− | 2006 08 28 | 703 | 0.3− | 0.1+ |
| 1999 10 10 | 704 | 0.3+ | 0.1− | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.2+ |
| 1999 10 10 | 704 | 0.2+ | 0.2− | 2004 01 15 | 691 | 0.2− | 0.2+ | 2006 08 29 | 704 | 0.4− | 0.0 |
| 1999 10 10 | 704 | 0.2− | 0.5− | 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 08 29 | 704 | 1.1+ | 0.6− |
| 1999 10 10 | 704 | 0.2+ | 0.3− | 2004 01 21 | 704 | 0.6+ | 1.2+ | 2006 08 29 | 704 | 0.6− | 0.1− |
| 1999 10 13 | 699 | 0.0 | 1.8+ | 2004 01 21 | 704 | 1.4+ | 0.6+ | 2006 08 29 | 704 | 0.3+ | 0.2+ |
| 1999 10 13 | 699 | 1.0+ | 0.2+ | 2004 01 21 | 704 | 0.4+ | 0.4+ | 2006 08 29 | 704 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.3+ | 0.0 | 2004 01 21 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.2+ |
| 1999 10 13 | 704 | 0.1+ | 0.0 | 2005 04 12 | G96 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.3− |
| 1999 10 13 | 699 | 0.5+ | 0.0 | 2005 04 12 | G96 | 0.4− | 0.1− | 2006 09 14 | 703 | 1.0− | 0.4− |
| 1999 10 13 | 704 | 0.1+ | 0.3+ | 2005 04 12 | G96 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.5+ |
| 1999 10 13 | 704 | 0.8+ | 0.5+ | 2005 04 12 | G96 | 1.0+ | 0.3+ | 2006 09 17 | 704 | 1.0+ | 0.1− |
| 1999 10 13 | 704 | 0.1+ | 0.6+ | 2006 06 20 | G96 | 0.6+ | 0.2+ | 2006 09 17 | 704 | 1.3+ | 0.4− |
| 1999 10 15 | 704 | 0.2− | 1.0− | 2006 06 20 | G96 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.6+ |
| 1999 10 15 | 704 | 0.2+ | 1.0− | 2006 06 20 | G96 | 0.6− | 0.5− | 2006 09 18 | 699 | 0.6+ | 1.2+ |
| 1999 10 15 | 704 | 0.2− | 0.4− | 2006 06 20 | G96 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.6− | 0.2− |
| 1999 10 15 | 704 | 0.4+ | 0.0 | 2006 08 18 | 704 | (1.9+ | 1.2+) | 2006 09 18 | 699 | 0.7− | 0.1+ |
| 1999 10 15 | 704 | 0.6+ | 0.9− | 2006 08 18 | 704 | 0.6+ | 0.9+ | 2006 09 18 | 699 | 0.1− | 0.2− |
| 1999 10 19 | 704 | 0.2+ | 0.2+ | 2006 08 18 | 704 | 0.3− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.2− |
| 1999 10 19 | 704 | 0.4+ | 0.4− | 2006 08 18 | 704 | 0.8+ | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 1999 10 19 | 704 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 1999 10 19 | 704 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 1999 10 19 | 704 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 1999 11 05 | 704 | 1.0+ | 1.0+ | 2006 08 21 | 704 | 0.3− | 0.5+ | 2006 10 19 | G96 | 0.4− | 0.4− |
| 1999 11 05 | 704 | 0.1− | 0.0 | 2006 08 21 | 704 | 0.1− | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 1999 11 05 | 704 | 0.8+ | 0.7− | 2006 08 21 | 704 | 0.5− | 0.8+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2001 05 21 | 807 | 0.0 | 0.3+ | 2006 08 21 | 704 | 0.4− | 0.6+ | | | | |
| 2001 05 22 | 807 | 0.1+ | 0.1+ | 2006 08 21 | 704 | 0.6− | 0.7+ | | | | |

**(137366)∗ 1999 TV$_{120}$ = 2005 EH$_{101}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74640)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.43388 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28256530 | $\omega$ | 310.38687 | | +0.69182185 | +0.72202768 | |
| $a$ | 2.2999770 | $\Omega$ | 3.41745 | | −0.61748452 | +0.59707963 | |
| $e$ | 0.1490296 | $i$ | 7.37604 | | −0.37429320 | +0.34953103 | |
| $P$ | 3.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.8+ | 0.3+ | 2005 04 14 | 703 | 0.0 | 0.7+ | 2006 10 03 | 704 | 0.3+ | 0.1+ |
| 1999 10 01 | 703 | 0.6+ | 0.1+ | 2005 04 14 | 703 | 0.8− | 0.2+ | 2006 10 16 | 683 | 1.0− | 0.9− |
| 1999 10 01 | 703 | 0.8− | 0.5+ | 2005 04 14 | 703 | (2.8− | 0.3+) | 2006 10 16 | 683 | 0.8− | 0.9− |
| 1999 10 01 | 703 | 0.4+ | 0.5+ | 2005 04 14 | 703 | 1.4− | 1.1− | 2006 10 16 | 683 | 0.2− | 0.1+ |
| 1999 10 04 | 704 | 0.3− | 0.3+ | 2005 04 30 | 691 | 0.5+ | 0.4+ | 2006 10 17 | 683 | (1.0− | 1.9−) |
| 1999 10 04 | 704 | 0.2− | 0.4− | 2005 04 30 | 691 | 0.4+ | 0.4+ | 2006 10 17 | 683 | (1.6− | 3.2−) |
| 1999 10 04 | 704 | 1.0− | 0.6− | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 683 | (1.2− | 1.8−) |
| 1999 10 04 | 704 | 0.3− | 0.5+ | 2005 05 14 | G96 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 1999 10 04 | 704 | (2.1− | 1.0−) | 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 1999 10 10 | 704 | 0.3+ | 0.1− | 2005 05 14 | G96 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.1+ | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.3+ | 0.0 | 2006 09 06 | 644 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 1999 10 10 | 704 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1999 10 10 | 704 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 1999 10 13 | 704 | 1.1+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 10 13 | 704 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 20 | 683 | 1.0− | 1.1− |
| 1999 10 13 | 704 | 0.1+ | 0.6− | 2006 09 14 | 703 | 1.0− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 0.1− | 0.8− | 2006 09 14 | 703 | 1.3− | 0.3− | 2006 10 20 | 683 | (0.4− | 2.0−) |
| 1999 10 13 | 704 | 0.4+ | 0.8− | 2006 09 14 | 644 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 1999 10 15 | 704 | 0.4− | 0.3− | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 683 | 0.5+ | 0.9− |
| 1999 10 15 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 683 | 0.2− | 0.5+ |
| 1999 10 15 | 704 | 0.5− | 1.1+ | 2006 09 17 | 704 | (2.3+ | 0.2−) | 2006 10 22 | 683 | 1.1+ | 0.5+ |
| 1999 10 15 | 704 | 0.3− | 0.4− | 2006 09 17 | 704 | 0.6+ | 1.0− | 2006 10 22 | 683 | 0.8+ | 0.1− |
| 1999 10 20 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 1.3+ | 0.2+ | 2006 10 23 | 683 | 0.1− | 0.6− |
| 1999 10 20 | 704 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.2− | 0.2+ | 2006 10 23 | 683 | 0.5+ | 0.5+ |
| 1999 10 20 | 704 | 0.5+ | 1.4− | 2006 09 17 | 704 | 0.4+ | 1.1− | 2006 10 23 | 683 | 0.1+ | 0.9− |
| 1999 10 20 | 704 | 1.6+ | 0.7− | 2006 09 18 | 699 | (1.7+ | 0.8−) | 2006 10 26 | 704 | 0.8+ | 0.1+ |
| 1999 10 20 | 704 | 0.8− | 0.9− | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 10 26 | 704 | 0.7+ | 0.3+ |
| 2004 01 19 | 691 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.6+ | 2006 10 26 | 704 | 0.8+ | 0.4− |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 27 | 683 | 0.2+ | 0.1+ |
| 2004 01 19 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 27 | 683 | 0.2− | 1.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 03 | 691 | 0.1− | 0.7− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 27 | 683 | 0.1− | 1.3− |
| 2005 03 03 | 691 | 0.4− | 0.8− | 2006 09 20 | 704 | 0.8− | 0.0 | 2006 10 28 | 683 | 0.3− | 0.6− |
| 2005 03 03 | 691 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.3− | 2006 10 28 | 683 | (0.4+ | 1.7+) |
| 2005 03 10 | G96 | 0.6− | 0.4− | 2006 09 20 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 683 | 0.2− | 0.7+ |
| 2005 03 10 | G96 | 0.7− | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.9+ | 2006 10 31 | 683 | 0.3− | 0.8− |
| 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 10 31 | 683 | (1.3− | 1.6+) |
| 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.0 | 0.4− | 2006 10 31 | 683 | (1.8− | 1.0+) |
| 2005 03 13 | 703 | 1.0− | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.9+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2005 03 13 | 703 | (1.9− | 0.1+) | 2006 09 25 | 704 | 0.4+ | 1.0+ | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2005 03 13 | 703 | (2.0− | 0.7−) | 2006 09 25 | 704 | 0.5− | 0.5+ | 2006 11 06 | 644 | 0.1+ | 0.5+ |
| 2005 03 13 | 703 | 0.6+ | 1.0− | 2006 09 25 | 704 | 0.1+ | 0.7+ | 2006 11 14 | 703 | 1.0+ | 0.5− |
| 2005 04 02 | 644 | 0.2+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.5+ | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2005 04 02 | 644 | 0.2+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.7− | 0.3− |
| 2005 04 02 | 644 | 0.4+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.7− | 0.3− |
| 2005 04 04 | 704 | 0.2− | 0.5− | 2006 09 29 | 704 | 0.7− | 0.5+ | 2006 11 15 | 704 | 1.0− | 0.0 |
| 2005 04 04 | 704 | 1.3+ | 1.0+ | 2006 09 29 | 704 | 0.3− | 0.3− | 2006 11 15 | 704 | 0.6− | 0.1− |
| 2005 04 04 | 704 | 0.5+ | 0.7+ | 2006 09 29 | 704 | 1.4− | 0.7+ | 2006 11 15 | 704 | 0.3− | 1.1+ |
| 2005 04 04 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.8− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2005 04 04 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2005 04 12 | 704 | 0.3+ | 1.1+ | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2005 04 12 | 704 | 1.3+ | 1.0+ | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 704 | (2.1+ | 1.3+) | 2006 10 03 | 704 | 0.3+ | 0.3+ | | | | |
| 2005 04 12 | 704 | 1.3+ | 1.3+ | 2006 10 03 | 704 | 0.4+ | 1.0+ | | | | |

**(137367)∗ 1999 TC$_{123}$ = 2006 QA$_1$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 103155)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.91982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27407843 | $\omega$ | 350.82847 | | +0.99773550 | +0.06670642 | |
| $a$ | 2.3472147 | $\Omega$ | 5.36920 | | −0.05439117 | +0.87550546 | |
| $e$ | 0.1684834 | $i$ | 5.27927 | | −0.03956607 | +0.47858169 | |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 0.2+ | 1.2− | 2005 05 12 | 691 | 0.1+ | 0.6+ | 2006 08 28 | 699 | 0.4+ | 0.3+ |
| 1999 10 04 | 704 | 1.6− | 0.6+ | 2005 05 12 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 1.8+ | 0.3− |
| 1999 10 04 | 704 | 1.1− | 0.9+ | 2006 08 14 | 644 | 0.2− | 0.0 | 2006 08 28 | 699 | 1.3+ | 0.9− |
| 1999 10 04 | 704 | 1.2− | 1.2+ | 2006 08 14 | 644 | 0.2− | 0.0 | 2006 09 12 | 704 | 0.3+ | 0.1+ |
| 1999 10 10 | 704 | 0.3+ | 0.2+ | 2006 08 14 | 644 | 0.4− | 0.1− | 2006 09 12 | 704 | 0.7+ | 0.2− |
| 1999 10 10 | 704 | 0.4− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 12 | 704 | 0.2+ | 0.5+ |
| 1999 10 10 | 704 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.2− | 0.7− |
| 1999 10 10 | 704 | 0.4+ | 0.7+ | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.7− | 0.7− |
| 1999 10 10 | 704 | 0.4+ | 0.9+ | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.8− | 0.9− |
| 1999 10 13 | 704 | 1.0+ | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.4− | 1.2− |
| 1999 10 13 | 704 | 0.4+ | 1.6+ | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 16 | 704 | 0.7+ | 0.8+ |
| 1999 10 13 | 704 | 1.1− | 1.0+ | 2006 08 17 | 461 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.7+ | 0.0 |
| 1999 10 13 | 704 | 0.6− | 0.8+ | 2006 08 17 | 461 | 0.0 | 0.0 | 2006 09 16 | 704 | 0.3+ | 1.2− |
| 1999 10 15 | 704 | 0.1+ | 0.1+ | 2006 08 17 | 461 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.5− | 0.7− |
| 1999 10 15 | 704 | 0.5+ | 0.4+ | 2006 08 18 | 699 | 0.3− | 0.8+ | 2006 09 18 | 699 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.2+ | 0.3+ | 2006 08 18 | 699 | 0.3− | 0.7+ | 2006 09 18 | 699 | 0.2+ | 0.3+ |
| 1999 10 16 | 704 | 0.5+ | 0.1− | 2006 08 18 | 699 | 1.0− | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.2− |
| 1999 10 16 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 461 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.1+ | 0.8+ |
| 1999 10 16 | 704 | 0.0 | 1.3− | 2006 08 19 | 461 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.5− | 1.2+ |
| 1999 10 16 | 704 | 0.9+ | 0.3− | 2006 08 19 | 461 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.7− | 1.4+ |
| 1999 10 16 | 704 | 0.1− | 0.9− | 2006 08 19 | 461 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.1+ | 0.4+ |
| 1999 10 20 | 704 | 1.2− | 1.8− | 2006 08 19 | 461 | 0.2− | 0.0 | 2006 09 30 | 703 | 1.0+ | 0.0 |
| 1999 10 20 | 704 | 0.5− | 0.3− | 2006 08 19 | 461 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.9+ | 1.1− |
| 1999 10 20 | 704 | 1.0+ | 1.1− | 2006 08 19 | 461 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.1− |
| 2003 12 23 | 704 | 0.8+ | 0.0 | 2006 08 22 | 461 | 0.0 | 0.0 | 2006 09 30 | 703 | (2.2− | 1.5−) |
| 2003 12 23 | 704 | 0.2+ | 0.8+ | 2006 08 22 | 461 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2003 12 23 | 704 | 1.0+ | 0.8+ | 2006 08 22 | 461 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2003 12 28 | 704 | 0.3− | 0.0 | 2006 08 23 | 704 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 0.3− | 0.5− |
| 2003 12 28 | 704 | 0.2− | 0.5− | 2006 08 23 | 704 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.0 | 0.0 |
| 2003 12 28 | 704 | 0.6− | 0.1− | 2006 08 23 | 704 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.5− | 0.6− |
| 2003 12 28 | 704 | 0.6− | 1.4+ | 2006 08 23 | 704 | 0.7+ | 1.3+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2005 03 17 | 691 | 0.2+ | 0.3− | 2006 08 24 | 644 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.5− | 0.2− |
| 2005 03 17 | 691 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2005 03 17 | 691 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.2+ | | | | |
| 2005 05 12 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 699 | 1.0− | 0.7+ | | | | |

**(137368)∗ 1999 TE$_{124}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.27153 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28016306 | $\omega$ | 292.54092 | | +0.99808787 | +0.00809640 | |
| $a$ | 2.3131056 | $\Omega$ | 67.04002 | | +0.01847252 | +0.90700536 | |
| $e$ | 0.1808264 | $i$ | 3.81590 | | −0.05898613 | +0.42104124 | |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.1+ | 0.4+ | 2005 04 06 | 691 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.2+ | 0.3− |
| 1999 10 03 | 703 | 0.9− | 0.4− | 2005 04 06 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.0 |
| 1999 10 03 | 703 | 0.6+ | 0.2+ | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.3− |
| 1999 10 03 | 703 | (0.5− | 3.5−) | 2005 04 10 | 691 | 0.4+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.2− |
| 1999 10 04 | 704 | 0.1+ | 0.2+ | 2005 04 10 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.4+ | 0.6+ |
| 1999 10 04 | 704 | 0.0 | 0.8− | 2005 04 10 | 695 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.8+ |
| 1999 10 04 | 704 | 0.7− | 0.7+ | 2005 04 10 | 695 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.6− | 0.8+ |
| 1999 10 04 | 704 | 0.1− | 0.6+ | 2005 04 11 | 695 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1− | 0.7+ |
| 1999 10 04 | 704 | 0.6+ | 0.7+ | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.9+ | 0.6− | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 704 | 0.3+ | 0.4+ |
| 1999 10 09 | 704 | 0.2+ | 0.0 | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.1+ |
| 1999 10 09 | 704 | 0.4− | 0.4+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.2+ |
| 1999 10 09 | 704 | 0.4+ | 0.1+ | 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 1999 10 09 | 704 | 0.5+ | 0.2− | 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.4+ |
| 1999 10 15 | 704 | 0.3+ | 1.1+ | 2005 04 20 | 705 | (1.5− | 1.2+) | 2006 09 30 | 704 | 1.2− | 0.0 |
| 1999 10 15 | 704 | 0.5+ | 0.0 | 2005 04 20 | 705 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.7+ |
| 1999 10 15 | 704 | 0.4− | 0.0 | 2005 04 20 | 705 | 0.8+ | 0.0 | 2006 09 30 | 704 | 0.4− | 0.6+ |
| 1999 10 15 | 704 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.7+ | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.7+ |
| 1999 11 06 | 704 | 0.5− | 0.5+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.0 | 0.5+ |
| 1999 11 06 | 704 | 0.1− | 0.2+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.7+ |
| 1999 11 06 | 704 | 1.4− | 1.7− | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.7− | 0.3− |
| 1999 11 06 | 704 | 0.8+ | 1.9− | 2005 05 14 | 691 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.5+ | 0.3+ |
| 1999 11 15 | 704 | 0.2+ | 0.6− | 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 1999 11 15 | 704 | 0.2+ | 0.7− | 2005 05 14 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.7+ |
| 1999 11 15 | 704 | 0.6+ | 0.2− | 2006 08 19 | 699 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 1999 11 15 | 704 | 1.2− | 1.1+ | 2006 08 19 | 699 | 0.8− | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.1− |
| 1999 11 15 | 704 | 0.5− | 0.1− | 2006 08 19 | 699 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2003 12 16 | 691 | 0.0 | 0.3+ | 2006 08 19 | 699 | (0.3+ | 1.6+) | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2003 12 16 | 691 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 2003 12 16 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2003 12 22 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 0.8+ | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.9+ | 0.1− | 2006 09 19 | 704 | 0.7− | 1.3+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 0.8+ | 0.4+ | 2006 09 19 | 704 | 0.8− | 1.5+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2003 12 22 | 704 | 0.8− | 0.9− | 2006 09 19 | 704 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2003 12 28 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 1.0− | 0.7+ | 2006 10 22 | 703 | 0.2− | 1.3+ |
| 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2003 12 28 | 691 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2004 01 22 | 704 | 0.0 | 0.9+ | 2006 09 21 | 699 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2004 01 22 | 704 | 0.6− | 0.0 | 2006 09 21 | 699 | 0.1− | 0.5+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 1.1+ | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | (1.6− | 0.1+) | 2006 09 22 | 704 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.4− | 0.3+ | | | | |
| 2005 04 06 | 691 | 0.5− | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.0 | | | | |

**(137369)∗ 1999 TQ$_{124}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.96345 | | (2000.0) | | | |
| $n$ | 0.28147806 | $\omega$ | 348.02176 | | +0.89489474 | +0.44572792 |
| $a$ | 2.3058958 | $\Omega$ | 345.44714 | | −0.40183478 | +0.78320622 |
| $e$ | 0.1441451 | $i$ | 5.05414 | | −0.19414481 | +0.43349122 |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 1.2+ | 1.2+ | 2004 01 19 | 691 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 1999 09 05 | 699 | 1.3− | 0.0 | 2004 01 19 | 691 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.1− | 0.5+ |
| 1999 09 05 | 699 | (0.5− | 2.6+) | 2005 03 03 | 691 | 0.0 | 0.0 | 2006 09 25 | 704 | (0.2+ | 1.5+) |
| 1999 09 30 | 703 | 0.3− | 0.1+ | 2005 03 03 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.3+ | 1.4− |
| 1999 09 30 | 703 | 0.2+ | 0.8+ | 2005 03 03 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.6+ |
| 1999 09 30 | 703 | 0.5− | 0.4+ | 2005 03 14 | G96 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.8− |
| 1999 09 30 | 703 | 0.4− | 1.3+ | 2005 03 14 | G96 | 0.9− | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.4+ |
| 1999 10 04 | 704 | 0.2− | 1.3− | 2005 03 14 | G96 | 0.5− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.6+ |
| 1999 10 04 | 704 | 1.9− | 0.5− | 2005 03 14 | G96 | 0.6− | 0.2− | 2006 09 27 | 699 | (1.9− | 0.4−) |
| 1999 10 04 | 704 | 0.4+ | 0.3+ | 2005 04 05 | 699 | (0.6+ | 2.2−) | 2006 09 27 | 699 | 0.7− | 0.1+ |
| 1999 10 04 | 704 | 0.9+ | 0.1− | 2005 04 05 | 699 | 0.3+ | 0.4+ | 2006 09 27 | 699 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.1+ | 0.9− | 2005 04 05 | 699 | 0.6− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.4+ |
| 1999 10 09 | 704 | 0.1+ | 0.5− | 2005 04 05 | 699 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.6+ | 0.9+ |
| 1999 10 09 | 704 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.2+ | 1.1+ |
| 1999 10 09 | 704 | 0.6− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.2− |
| 1999 10 11 | 704 | 0.5− | 1.4− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.1+ |
| 1999 10 11 | 704 | 0.4+ | 0.5− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 1999 10 11 | 704 | 0.1− | 0.4− | 2006 08 17 | 644 | 0.2− | 0.4+ | 2006 10 01 | 691 | 0.4− | 1.2− |
| 1999 10 11 | 704 | 0.0 | 0.2− | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.4− | 1.3− |
| 1999 10 13 | 704 | 0.8+ | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.5+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 1.5+ | 0.5+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 1999 10 13 | 704 | 0.4− | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 1999 10 13 | 704 | 0.6+ | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.3− |
| 1999 10 15 | 704 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 1999 10 15 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.3− |
| 1999 10 15 | 704 | 0.2− | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 1999 10 16 | 704 | 1.0+ | 1.5− | 2006 09 17 | 703 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 1999 10 16 | 704 | 0.3+ | 0.6− | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 1999 10 16 | 704 | 0.5+ | 0.7− | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 1999 10 16 | 704 | 0.3+ | 0.2− | 2006 09 17 | 703 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 1999 10 19 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 1999 10 19 | 704 | 0.1− | 0.8+ | 2006 09 18 | 704 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 1999 10 19 | 704 | 1.6− | 0.2− | 2006 09 18 | 704 | 0.4− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 1999 10 19 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2001 02 02 | 691 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.8− | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2001 02 02 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 02 02 | 691 | 1.5+ | 0.6+ | 2006 09 19 | 699 | 0.5+ | 0.7+ | | | | |
| 2004 01 19 | 691 | 0.4− | 0.5− | 2006 09 19 | 699 | 0.7− | 0.1− | | | | |

**(137370)∗ 1999 TA$_{126}$ = 2005 JA$_{113}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74642)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.92606 | | (2000.0) | | | |
| $n$ | 0.27973057 | $\omega$ | 339.50189 | | +0.95069922 | +0.31008248 |
| $a$ | 2.3154892 | $\Omega$ | 2.44707 | | −0.26800357 | +0.82874736 |
| $e$ | 0.1755552 | $i$ | 5.99092 | | −0.15602914 | +0.46586122 |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 26 | 691 | 0.1− | 0.4+ | 2005 05 10 | 691 | 0.7+ | 0.6+ | 2006 09 20 | 704 | 0.2− | 1.1+ |
| 1992 10 26 | 691 | 0.1− | 0.4− | 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.1− | 0.9+ |
| 1992 10 26 | 691 | 1.8− | 0.3+ | 2005 05 14 | G96 | 0.3+ | 0.2+ | 2006 09 24 | 291 | 0.1− | 0.1+ |
| 1999 10 01 | 703 | 0.6+ | 0.6− | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 09 24 | 291 | 0.0 | 0.1+ |
| 1999 10 01 | 703 | (4.2− | 0.9+) | 2005 05 14 | G96 | 0.6− | 0.5+ | 2006 09 24 | 291 | 0.1− | 0.1+ |
| 1999 10 01 | 703 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.0 | 0.5− |
| 1999 10 01 | 703 | 0.9+ | 0.3+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 1999 10 04 | 704 | 0.7+ | 0.4− | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 1999 10 04 | 704 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 1999 10 04 | 704 | 0.7+ | 1.2+ | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.4− | 0.0 |
| 1999 10 07 | 704 | 0.4+ | 0.7+ | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.2+ |
| 1999 10 07 | 704 | 0.7+ | 0.8− | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.2− | 0.0 |
| 1999 10 07 | 704 | 0.2− | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 1999 10 07 | 704 | 0.2− | 0.5− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.1− | 0.1+ |
| 1999 10 07 | 704 | 0.0 | 0.9− | 2006 08 28 | 703 | 1.2− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 1.7+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.1− |
| 1999 10 09 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.6+ | 0.1+ |
| 1999 10 09 | 704 | 1.0+ | 1.1+ | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.3+ | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 704 | (1.6− | 0.3−) |
| 1999 10 13 | 704 | 1.4+ | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 29 | 704 | (1.7− | 0.4−) |
| 1999 10 13 | 704 | 1.1+ | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 29 | 704 | (1.7− | 0.4+) |
| 1999 10 13 | 704 | 1.3+ | 0.3− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.8+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.2+ | 1.1+ |
| 1999 10 13 | 704 | 1.5+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.7− | 1.4+ |
| 2003 12 01 | 691 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.8− | 0.6+ | 2006 10 01 | 704 | 0.3+ | 1.3+ |
| 2003 12 01 | 691 | 0.2− | 0.2+ | 2006 09 17 | 704 | 1.0− | 0.1+ | 2006 10 01 | 704 | 0.7+ | 0.4− |
| 2003 12 01 | 691 | 0.4− | 0.1− | 2006 09 17 | 704 | (2.1− | 2.3+) | 2006 10 17 | 703 | 0.2+ | 0.9− |
| 2003 12 29 | 704 | 1.2+ | 1.1+ | 2006 09 17 | 704 | 0.3− | 1.1− | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2003 12 29 | 704 | 1.1+ | 0.9+ | 2006 09 17 | 704 | 1.0− | 1.1− | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2003 12 29 | 704 | (0.5+ | 1.6+) | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2005 03 10 | G96 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.9+ | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2005 05 10 | 691 | 0.5+ | 0.8+ | 2006 09 20 | 704 | 0.1+ | 0.6+ | | | | |
| 2005 05 10 | 691 | 0.5+ | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.8+ | | | | |

**(137371)∗ 1999 TF$_{126}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.13020 | | (2000.0) | | | |
| $n$ | 0.27547598 | $\omega$ | 98.83837 | | −0.50528725 | −0.86275886 |
| $a$ | 2.3392693 | $\Omega$ | 21.54173 | | +0.77096007 | −0.46080788 |
| $e$ | 0.1563849 | $i$ | 2.84417 | | +0.38769236 | −0.20809430 |
| $P$ | 3.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.8− | 0.6+ | 2001 04 27 | 704 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1+ |
| 1999 10 01 | 703 | 0.8− | 0.2+ | 2001 04 27 | 704 | 0.7+ | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.0 |
| 1999 10 01 | 703 | 0.0 | 0.8− | 2001 04 27 | 704 | 0.5+ | 0.9+ | 2006 08 24 | 644 | 0.4− | 0.3− |
| 1999 10 01 | 703 | (2.5+ | 3.2+) | 2001 04 27 | 704 | 0.0 | 1.0+ | 2006 08 24 | 644 | 0.0 | 0.0 |
| 1999 10 04 | 704 | 0.4+ | 0.1+ | 2001 05 18 | 699 | 0.4− | 0.2− | 2006 08 24 | 644 | 0.4− | 0.3+ |
| 1999 10 04 | 704 | 0.2+ | 0.2+ | 2001 05 18 | 699 | 0.5− | 0.4+ | 2006 08 24 | 644 | 0.5+ | 0.0 |
| 1999 10 04 | 704 | 0.1+ | 1.4+ | 2001 05 18 | 699 | 0.8+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 1999 10 04 | 704 | 0.1− | 0.3− | 2001 05 18 | 699 | 0.8− | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.0 |
| 1999 10 07 | 704 | 0.3− | 0.6− | 2003 10 24 | 704 | 0.2− | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 1999 10 07 | 704 | 0.5+ | 0.1− | 2003 10 24 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 644 | 0.1− | 0.3+ |
| 1999 10 07 | 704 | 0.5− | 0.7− | 2003 10 24 | 704 | 0.5+ | 0.7+ | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 1999 10 07 | 704 | 0.3+ | 1.2− | 2003 10 24 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 644 | 0.4− | 0.5+ |
| 1999 10 07 | 704 | 0.0 | 0.8+ | 2003 10 24 | 704 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.8+ |
| 1999 10 07 | 704 | 0.3+ | 0.9+ | 2003 11 24 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.8− |
| 1999 10 07 | 704 | 0.5− | 1.5+ | 2003 11 24 | 704 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.4− |
| 1999 10 09 | 704 | (2.7+ | 0.7−) | 2003 11 24 | 704 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.5− | 0.3+ |
| 1999 10 09 | 704 | 0.9+ | 0.4− | 2003 11 24 | 704 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.6− | 0.3+ |
| 1999 10 09 | 704 | 1.8− | 0.2+ | 2003 11 24 | 704 | 0.2+ | 0.6− | 2006 09 19 | 699 | 0.9+ | 0.2− |
| 1999 10 15 | 704 | 0.9+ | 0.8+ | 2003 12 04 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.5− | 0.1− |
| 1999 10 15 | 704 | 0.5+ | 1.5+ | 2003 12 04 | 704 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.7+ | 0.8+ |
| 1999 10 15 | 704 | 0.1− | 0.9+ | 2003 12 04 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 704 | (1.7+ | 0.6+) |
| 1999 10 15 | 704 | 0.3− | 0.4+ | 2003 12 04 | 704 | 0.2− | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.1− |
| 1999 11 06 | 704 | 0.6− | 0.5− | 2003 12 04 | 704 | 0.0 | 0.8+ | 2006 09 20 | 644 | 0.0 | 0.1− |
| 1999 11 06 | 704 | 0.7− | 1.3− | 2003 12 18 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.0 |
| 1999 11 06 | 704 | 0.2+ | 1.6− | 2003 12 18 | 704 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.1− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 06 | 704 | 0.9+ | 0.7− | 2003 12 18 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 1999 11 09 | 704 | 0.6+ | 1.5− | 2003 12 18 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.7+ |
| 1999 11 09 | 704 | 0.5+ | 1.6− | 2003 12 18 | 704 | 0.8+ | 0.5− | 2006 09 20 | 644 | 0.3+ | 0.1+ |
| 1999 11 09 | 704 | 1.4+ | 1.1− | 2003 12 22 | 704 | (0.7− | 2.8+) | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2001 03 18 | 704 | 0.6+ | 0.7+ | 2003 12 22 | 704 | (0.2− | 2.1+) | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2001 03 18 | 704 | 0.4+ | 0.8+ | 2003 12 22 | 704 | (0.3+ | 1.9+) | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2001 03 18 | 704 | 0.2− | 0.5+ | 2003 12 22 | 704 | (4.7+ | 0.2+) | 2006 10 16 | 703 | 1.5− | 0.7− |
| 2001 03 18 | 704 | 0.2− | 0.9+ | 2003 12 22 | 704 | (4.7+ | 1.0+) | 2006 10 16 | 703 | 1.3− | 0.1− |
| 2001 03 18 | 704 | 0.7− | 0.7+ | 2003 12 27 | 704 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.8+ |
| 2001 03 29 | 699 | 0.5− | 0.8+ | 2003 12 27 | 704 | 0.5− | 0.2+ | 2006 10 16 | 703 | (0.2− | 1.9+) |
| 2001 03 29 | 699 | 0.5+ | 0.9+ | 2003 12 27 | 704 | 0.7− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2001 03 29 | 699 | 1.4− | 0.9+ | 2003 12 27 | 704 | 0.3− | 0.7+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2001 03 29 | 699 | 0.7− | 0.5+ | 2003 12 27 | 704 | 0.5− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2001 04 15 | 608 | 1.2+ | 0.8− | 2004 02 23 | 704 | (0.1+ | 1.6+) | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2001 04 15 | 608 | 0.8+ | 1.5− | 2004 02 23 | 704 | (1.0+ | 1.6+) | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2001 04 15 | 608 | 0.8+ | 0.3− | 2004 02 23 | 704 | (1.5+ | 0.5+) | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2001 04 18 | 704 | 1.2+ | 0.7− | 2004 02 23 | 704 | (2.0+ | 0.3−) | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 04 18 | 704 | 0.8+ | 1.1− | 2006 08 20 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 04 18 | 704 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.0 | 0.1+ | | | | |
| 2001 04 18 | 704 | 0.4− | 0.9+ | 2006 08 20 | 644 | 0.3− | 0.4+ | | | | |

**(137372)∗ 1999 TM$_{126}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.99239 | | (2000.0) | | +0.67099781 | −0.74077025 |
| $n$ | 0.28232699 | $\omega$ | 64.55754 | | +0.63443751 | +0.59592012 |
| $a$ | 2.3012711 | $\Omega$ | 343.17473 | | +0.38373296 | +0.31006233 |
| $e$ | 0.0883926 | $i$ | 6.33903 | | | |
| $P$ | 3.49 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.7− | 0.4+ | 2003 12 17 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.7+ |
| 1999 10 01 | 703 | 0.3− | 0.1+ | 2003 12 17 | 699 | 0.2− | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 1999 10 01 | 703 | 0.7− | 0.2− | 2003 12 17 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1− |
| 1999 10 01 | 703 | 1.5− | 0.7+ | 2003 12 19 | 704 | 1.4+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.1− |
| 1999 10 04 | 704 | 1.2+ | 0.3− | 2003 12 19 | 704 | 0.5+ | 0.1− | 2006 09 19 | 703 | 1.3− | 0.2− |
| 1999 10 04 | 704 | 0.6+ | 0.7− | 2003 12 19 | 704 | 0.7− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.9+ |
| 1999 10 04 | 704 | 1.4+ | 0.2− | 2003 12 27 | 691 | 0.1− | 0.1+ | 2006 09 25 | 704 | (0.2− | 1.8+) |
| 1999 10 10 | 704 | 0.3− | 0.4+ | 2003 12 27 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.1− | 0.9+ |
| 1999 10 10 | 704 | 0.2− | 0.3+ | 2003 12 27 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.4− | 1.1− |
| 1999 10 10 | 704 | 0.6+ | 0.4+ | 2003 12 28 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 1.3− | 1.3− |
| 1999 10 10 | 704 | 0.5+ | 0.5− | 2003 12 28 | 704 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.9− |
| 1999 10 10 | 704 | 0.4+ | 1.0+ | 2003 12 28 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 1.3− | 0.0 |
| 1999 10 20 | 704 | 0.4− | 0.1− | 2003 12 28 | 704 | 0.5− | 0.1− | 2006 10 03 | 704 | 0.5+ | 0.9+ |
| 1999 10 20 | 704 | 0.4+ | 0.8− | 2003 12 28 | 704 | 0.2− | 0.5+ | 2006 10 03 | 704 | 0.1+ | 0.0 |
| 1999 10 20 | 704 | 0.2− | 0.6− | 2006 09 14 | 644 | 0.4− | 0.4+ | 2006 10 03 | 704 | 0.2− | 0.0 |
| 1999 10 20 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.6+ | 2006 10 03 | 704 | 0.6− | 0.4+ |
| 1999 10 20 | 704 | 0.5− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 03 | 704 | (1.6− | 0.5−) |
| 2001 01 23 | 691 | 0.6+ | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 01 23 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 01 23 | 691 | 0.2+ | 0.6+ | 2006 09 14 | 644 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2001 03 18 | 704 | 0.3+ | 0.0 | 2006 09 17 | 691 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2001 03 18 | 704 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.6− |
| 2001 03 18 | 704 | 1.0+ | 1.2+ | 2006 09 17 | 691 | 0.5+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2001 03 18 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2002 07 08 | 644 | 0.6− | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 07 08 | 644 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.2− | 1.4− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 07 08 | 644 | 0.4− | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 08 05 | 644 | 0.1− | 1.2+ | 2006 09 18 | 704 | 0.9+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 08 05 | 644 | 0.6− | 0.9+ | 2006 09 18 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 08 05 | 644 | 0.1− | 1.0+ | 2006 09 18 | 704 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2003 12 17 | 699 | 0.0 | 0.3− | 2006 09 18 | 704 | 1.4+ | 1.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 12 17 | 699 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.9+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 12 17 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.5+ | 1.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 12 17 | 699 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.5− | 0.4− | | | | |

**(137373)∗ 1999 TD$_{128}$ = 2004 CK$_{42}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60545)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.51447 | | (2000.0) | | +0.11939324 | −0.99276289 |
| $n$ | 0.29747351 | $\omega$ | 72.43679 | | +0.88256393 | +0.10015840 |
| $a$ | 2.2224765 | $\Omega$ | 10.73084 | | +0.45478145 | +0.06625817 |
| $e$ | 0.1054776 | $i$ | 3.98104 | | | |
| $P$ | 3.31 | $H$ | 16.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.9− | 1.3+ | 2002 08 29 | 644 | 0.1+ | 1.3+ | 2004 02 17 | 704 | 0.2+ | 0.3+ |
| 1999 10 01 | 703 | 2.0− | 0.2+ | 2002 08 29 | 644 | 0.1+ | 0.7+ | 2004 03 14 | 703 | 0.3− | 0.8− |
| 1999 10 01 | 703 | 0.5− | 1.0+ | 2002 08 29 | 644 | 0.4+ | 0.6+ | 2004 03 14 | 703 | 1.2− | 0.9− |
| 1999 10 01 | 703 | 0.8− | 0.1+ | 2003 12 25 | 645 | 0.1− | 0.2− | 2004 03 14 | 703 | 0.3− | 0.6− |
| 1999 10 04 | 704 | 0.7− | 1.0+ | 2003 12 25 | 645 | 0.1− | 0.2− | 2004 03 14 | 703 | 0.0 | 0.3− |
| 1999 10 04 | 704 | 0.2+ | 1.1+ | 2004 01 23 | 704 | (0.4− | 1.8+) | 2004 03 14 | 704 | 0.7+ | 0.0 |
| 1999 10 04 | 704 | 0.7+ | 0.3+ | 2004 01 23 | 704 | 0.7+ | 0.3+ | 2004 03 14 | 704 | 0.1− | 0.2+ |
| 1999 10 09 | 704 | 1.1+ | 0.1+ | 2004 01 23 | 704 | 0.1− | 1.2+ | 2004 03 14 | 704 | 0.3+ | 0.4+ |
| 1999 10 09 | 704 | 0.6+ | 0.1+ | 2004 01 23 | 704 | 0.8+ | 1.1+ | 2004 03 18 | 691 | 0.2+ | 0.2+ |
| 1999 10 09 | 704 | 0.0 | 0.5+ | 2004 01 23 | 704 | 0.8+ | 0.1+ | 2004 03 18 | 691 | 0.3+ | 0.1+ |
| 1999 10 09 | 704 | 0.2− | 0.1+ | 2004 01 30 | 704 | 1.1+ | 0.6+ | 2004 03 18 | 691 | 0.3+ | 0.3+ |
| 1999 10 09 | 704 | 0.4− | 0.6+ | 2004 01 30 | 704 | 0.4− | 0.5+ | 2004 03 27 | 691 | 0.2+ | 0.1+ |
| 1999 10 15 | 704 | 0.6− | 0.4− | 2004 01 30 | 704 | 0.4+ | 0.6+ | 2004 03 27 | 691 | 0.2− | 0.4+ |
| 1999 10 15 | 704 | 0.3− | 0.9+ | 2004 01 30 | 704 | 0.8− | 1.2+ | 2004 03 27 | 691 | 0.2+ | 0.2+ |
| 1999 10 15 | 704 | 0.1+ | 0.5+ | 2004 02 10 | 644 | 0.0 | 0.5+ | 2006 11 19 | 691 | 1.0− | 0.6+ |
| 2001 04 30 | 691 | 0.3+ | 0.4+ | 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.6+ | 0.7− |
| 2001 04 30 | 691 | 0.3+ | 0.4+ | 2004 02 10 | 644 | 0.6+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 04 30 | 691 | 0.1− | 0.4+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2002 07 06 | 291 | 0.3− | 0.3+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2002 07 06 | 291 | 0.4− | 0.4+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.7+ | 0.6− |
| 2002 07 06 | 291 | 0.3− | 0.2+ | 2004 02 17 | 704 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.4+ | 0.7+ |
| 2002 08 18 | 644 | 0.2− | 0.7+ | 2004 02 17 | 704 | 0.3+ | 0.7+ | 2006 11 27 | 704 | 0.0 | 0.2+ |
| 2002 08 18 | 644 | 0.3+ | 0.7+ | 2004 02 17 | 704 | 0.4− | 0.7+ | 2006 11 27 | 704 | 0.1+ | 1.2+ |
| 2002 08 18 | 644 | 0.5− | 0.6+ | 2004 02 17 | 704 | 0.2− | 0.5+ | | | | |

**(137374)∗ 1999 TJ$_{128}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.95138 | | (2000.0) | | +0.95824982 | −0.28103201 |
| $n$ | 0.27967562 | $\omega$ | 326.36428 | | +0.27515005 | +0.85616637 |
| $a$ | 2.3157925 | $\Omega$ | 50.04773 | | +0.07778006 | +0.43358985 |
| $e$ | 0.1861587 | $i$ | 3.94274 | | | |
| $P$ | 3.52 | $H$ | 17.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.5− | 0.9− | 2005 04 06 | G96 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.8+ |
| 1999 10 03 | 703 | 0.1+ | 0.4+ | 2005 04 06 | G96 | 0.2+ | 0.4+ | 2006 09 28 | 704 | 0.3− | 0.6+ |
| 1999 10 03 | 703 | 0.7− | 0.8+ | 2005 04 06 | G96 | 0.2+ | 0.7+ | 2006 09 30 | 704 | 0.3− | 0.7+ |
| 1999 10 03 | 703 | 0.1+ | 0.0 | 2005 05 11 | G96 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 1999 10 04 | 704 | 0.4+ | 0.1− | 2005 05 11 | G96 | 0.4+ | 0.6− | 2006 09 30 | 704 | 0.2− | 0.7+ |
| 1999 10 04 | 704 | 0.5+ | 0.5− | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.4+ |
| 1999 10 04 | 704 | 0.6+ | 0.0 | 2005 05 11 | G96 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.0 |
| 1999 10 09 | 704 | 0.8− | 0.0 | 2006 09 16 | 704 | 0.6− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 1999 10 09 | 704 | 0.2− | 0.1− | 2006 09 16 | 704 | 0.5− | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.3+ |
| 1999 10 09 | 704 | 0.3− | 0.4+ | 2006 09 16 | 704 | 0.4− | 0.7+ | 2006 10 01 | 691 | 0.3+ | 0.1+ |
| 1999 10 09 | 704 | 0.1− | 0.6− | 2006 09 16 | 704 | 0.8− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 1999 10 15 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | (3.3− | 1.1−) | 2006 10 11 | 644 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.7+ | 0.8− | 2006 09 18 | 699 | 0.2+ | 0.4− | 2006 10 15 | 106 | 0.5− | 0.1+ | | |
| 1999 10 19 | 704 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.7− | 0.5− | 2006 10 15 | 106 | 0.0 | 0.2− | | |
| 1999 10 19 | 704 | 1.3+ | 1.2− | 2006 09 22 | 704 | 0.5− | 0.4+ | 2006 10 15 | 106 | 0.6+ | 0.5− | | |
| 1999 10 19 | 704 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.8− | 0.0 | 2006 10 15 | 106 | 0.4+ | 0.2+ | | |
| 1999 11 01 | 703 | 0.8+ | 0.1− | 2006 09 22 | 704 | 0.3− | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 1999 11 01 | 703 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.6− | 0.8− | 2006 10 19 | 644 | 0.2− | 0.5− | | |
| 1999 11 01 | 703 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 1999 11 01 | 703 | 0.2− | 0.2− | 2006 09 25 | 688 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.3− | | |
| 1999 11 12 | 704 | (2.6+ | 0.9−) | 2006 09 25 | 688 | 0.5+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 1999 11 12 | 704 | 0.5− | 0.6− | 2006 09 26 | 704 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 1999 11 12 | 704 | 0.7+ | 0.7− | 2006 09 26 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 1999 11 12 | 704 | 1.6− | 1.3− | 2006 09 26 | 704 | 0.8− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.2− | 0.0 | | |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.5− | 0.3− | | |
| 2004 01 18 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.7+ | | |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.4+ | | |
| 2005 04 06 | G96 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.3+ | 0.0 | | | | | | |

**(137375)∗ 1999 TM$_{131}$**

Discovered 1999 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.28737 | | (2000.0) | | | |
| $n$ | 0.28218899 | $\omega$ | 213.38511 | | +0.59778618 | −0.80091496 |
| $a$ | 2.3020213 | $\Omega$ | 199.97186 | | +0.75581741 | +0.57740819 |
| $e$ | 0.0599931 | $i$ | 5.78902 | | +0.26719231 | +0.15854025 |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 29 | 703 | 1.4− | 0.7− | 2005 05 14 | G96 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.5− | | |
| 1999 09 29 | 703 | 0.9− | 0.0 | 2005 05 14 | 644 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.2+ | | |
| 1999 09 29 | 703 | 1.1+ | 0.4+ | 2005 05 14 | 644 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.0 | 0.5− | | |
| 1999 09 29 | 703 | 1.3− | 0.4− | 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.6− | 0.4− | | |
| 1999 10 06 | 704 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.5+ | | |
| 1999 10 06 | 704 | 0.9+ | 0.5+ | 2006 09 17 | 703 | 0.7− | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.1+ | | |
| 1999 10 06 | 704 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.7− | 2006 10 02 | 691 | 0.1− | 0.3+ | | |
| 1999 10 06 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 1.0+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | | |
| 1999 10 06 | 704 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.2+ | | |
| 1999 10 09 | 704 | 0.4+ | 0.8− | 2006 09 18 | 704 | 0.9− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 1999 10 09 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 704 | 0.0 | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 1999 10 09 | 704 | 0.0 | 0.7+ | 2006 09 18 | 704 | 0.9− | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.4+ | | |
| 1999 10 09 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.7− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.6− | | |
| 1999 10 09 | 704 | 0.2− | 0.4+ | 2006 09 19 | 699 | 1.0+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.4+ | | |
| 1999 12 05 | 695 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.3+ | 1.1− | | |
| 1999 12 05 | 695 | 0.5+ | 0.0 | 2006 09 19 | 699 | 1.1+ | 0.4− | 2006 10 17 | G96 | 0.7− | 0.4− | | |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.4− | 2006 10 17 | 703 | 0.4− | 0.9− | | |
| 2001 02 22 | 645 | 0.1− | 0.0 | 2006 09 20 | 704 | 1.1+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.7− | | |
| 2001 03 02 | 699 | 0.2+ | 0.0 | 2006 09 20 | 704 | 1.0+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.3− | | |
| 2001 03 02 | 699 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.9+ | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.3+ | | |
| 2001 03 02 | 699 | 0.2− | 0.5− | 2006 09 21 | A50 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.4+ | | |
| 2001 03 02 | 699 | 0.1+ | 0.8+ | 2006 09 21 | A50 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2001 03 15 | 699 | 0.1− | 0.3− | 2006 09 21 | A50 | 0.9+ | 1.4− | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2001 03 15 | 699 | 1.0+ | 0.4+ | 2006 09 21 | A50 | (2.0+ | 1.3−) | 2006 10 20 | 644 | 0.2− | 0.5+ | | |
| 2001 03 15 | 699 | 0.9+ | 0.7+ | 2006 09 21 | 185 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.2+ | | |
| 2001 03 15 | 699 | 0.2+ | 0.5+ | 2006 09 21 | 185 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2005 03 12 | G96 | 0.6− | 0.1− | 2006 09 22 | 185 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.6− | 0.1− | | |
| 2005 03 12 | G96 | 0.1− | 0.0 | 2006 09 22 | 185 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− | | |
| 2005 03 12 | G96 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.2− | 0.7− | 2006 10 28 | G96 | 0.2− | 0.1− | | |
| 2005 03 12 | G96 | 1.0− | 0.0 | 2006 09 25 | 704 | 0.8− | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.0 | | |
| 2005 05 13 | 691 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.6+ | 2006 11 21 | G96 | 0.1− | 0.1− | | |
| 2005 05 13 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.3− | | |
| 2005 05 13 | 691 | (0.8− | 2.6+) | 2006 09 27 | 699 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2− | | |
| 2005 05 14 | G96 | 0.0 | 0.1− | 2006 09 27 | 699 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.2+ | | | | | | |
| 2005 05 14 | G96 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.0 | 1.4− | | | | | | |

**(137376)∗ 1999 TT$_{133}$ = 2002 LK$_{21}$**

Discovered 1999 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 60546)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.79375 | | (2000.0) | | | |
| $n$ | 0.28425542 | $\omega$ | 298.57401 | | −0.13837523 | +0.99030846 |
| $a$ | 2.2908512 | $\Omega$ | 323.46612 | | −0.90153423 | −0.13092383 |
| $e$ | 0.2323346 | $i$ | 1.14474 | | −0.40998576 | −0.04634757 |
| $P$ | 3.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | (1.0− | 2.2−) | 2005 03 08 | 704 | 0.6+ | 0.5+ | 2005 05 13 | G96 | 0.5− | 0.1− | | |
| 1998 03 03 | 704 | 0.8− | 0.6− | 2005 03 08 | G96 | 0.3− | 0.3− | 2005 05 13 | G96 | 0.1− | 0.0 | | |
| 1998 03 03 | 704 | 0.6− | 0.4− | 2005 03 08 | 704 | 0.8+ | 0.8+ | 2006 07 22 | G96 | 0.5− | 0.1− | | |
| 1998 03 03 | 704 | (3.0− | 0.2−) | 2005 03 09 | 699 | (2.1+ | 0.9−) | 2006 07 22 | G96 | 0.1− | 0.1+ | | |
| 1999 10 01 | 703 | 0.4− | 1.0+ | 2005 03 09 | 699 | 0.7+ | 0.0 | 2006 07 22 | G96 | 0.3− | 0.2+ | | |
| 1999 10 01 | 703 | 1.1− | 0.1+ | 2005 03 09 | 699 | 0.2+ | 0.8+ | 2006 07 22 | G96 | 0.5− | 0.3+ | | |
| 1999 10 01 | 703 | 0.4+ | 1.3+ | 2005 03 09 | 699 | 1.1+ | 0.2+ | 2006 09 14 | 703 | (2.0+ | 0.3+) | | |
| 1999 10 01 | 703 | 1.0+ | 0.5+ | 2005 03 12 | 695 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.8+ | | |
| 1999 10 06 | 704 | 0.1+ | 0.2+ | 2005 03 12 | 695 | 0.2− | 0.1+ | 2006 09 14 | 703 | 1.2− | 1.1+ | | |
| 1999 10 06 | 704 | 0.2+ | 0.1− | 2005 03 17 | 704 | 0.8+ | 0.8+ | 2006 09 14 | 703 | (1.5− | 0.1−) | | |
| 1999 10 06 | 704 | 0.4+ | 0.1+ | 2005 03 17 | 704 | 1.0+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | | |
| 1999 10 06 | 704 | 0.3+ | 0.1+ | 2005 03 17 | 704 | 1.3+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.5+ | | |
| 1999 10 06 | 704 | 0.1− | 0.2+ | 2005 03 17 | 704 | 0.6+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | | |
| 1999 10 07 | 704 | 0.3− | 0.7− | 2005 03 17 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | | |
| 1999 10 07 | 704 | 0.1− | 0.1− | 2005 03 17 | 703 | 1.4− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.2+ | | |
| 1999 10 07 | 704 | 0.8+ | 1.1− | 2005 03 17 | 703 | 1.4− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.3+ | | |
| 1999 10 09 | 704 | 0.6+ | 0.8− | 2005 03 17 | 703 | (1.6− | 0.5−) | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 1999 10 09 | 704 | 0.9− | 0.1+ | 2005 03 17 | 703 | 1.1− | 0.8− | 2006 09 26 | 691 | 0.4+ | 0.0 | | |
| 1999 10 09 | 704 | 0.6− | 1.1+ | 2005 03 30 | 703 | (1.5− | 0.2+) | 2006 09 26 | 691 | 0.2+ | 0.0 | | |
| 2002 06 06 | 704 | 0.2+ | 0.8+ | 2005 03 30 | 703 | 0.9− | 0.3− | 2006 09 27 | 704 | 1.2− | 0.3+ | | |
| 2002 06 06 | 704 | 0.1− | 0.8+ | 2005 03 30 | 703 | 1.0− | 0.6+ | 2006 09 27 | 704 | 0.1+ | 0.9+ | | |
| 2002 06 06 | 704 | 0.2− | 0.6+ | 2005 03 30 | 703 | (1.6− | 1.7+) | 2006 09 27 | 704 | 0.0 | 0.3+ | | |
| 2002 06 08 | 704 | (0.3+ | 1.7+) | 2005 03 30 | 644 | 0.0 | 0.1+ | 2006 09 30 | 683 | 1.1− | 0.2+ | | |
| 2002 06 08 | 704 | 0.1− | 0.9+ | 2005 03 30 | 644 | 0.0 | 0.2+ | 2006 09 30 | 683 | 1.2+ | 0.9− | | |
| 2002 06 08 | 704 | 0.3− | 0.8+ | 2005 03 30 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 683 | (1.9− | 0.5+) | | |
| 2002 06 08 | 704 | 0.1− | 0.9+ | 2005 04 02 | G96 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2005 02 09 | 704 | 1.1+ | 0.0 | 2005 04 02 | G96 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.3− | 0.0 | | |
| 2005 02 09 | 704 | 0.4+ | 0.3− | 2005 04 02 | G96 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1+ | | |
| 2005 02 09 | 704 | 0.3− | 0.9− | 2005 04 02 | G96 | 0.2− | 0.0 | 2006 10 03 | 683 | (2.3+ | 1.1+) | | |
| 2005 02 09 | 704 | 0.8+ | 0.1+ | 2005 04 04 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 683 | (0.5+ | 2.8+) | | |
| 2005 03 03 | 703 | 0.1+ | 0.4+ | 2005 04 04 | 691 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.4− | 0.1− | | |
| 2005 03 03 | 703 | 0.2− | 0.1+ | 2005 04 04 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | | |
| 2005 03 03 | 703 | 0.2− | 0.5+ | 2005 04 04 | 704 | 1.0+ | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.1+ | | |
| 2005 03 03 | 703 | 0.6+ | 0.9+ | 2005 04 04 | 704 | 0.1+ | 0.5− | 2006 10 15 | 691 | 0.3− | 0.1− | | |
| 2005 03 03 | 703 | 0.3− | 0.1− | 2005 04 04 | 704 | 1.0+ | 0.3− | 2006 10 15 | 691 | 0.4− | 0.2− | | |
| 2005 03 03 | 703 | 0.2+ | 0.2+ | 2005 04 06 | 699 | 0.9+ | 0.4+ | 2006 10 15 | 691 | 0.4− | 0.0 | | |
| 2005 03 03 | 703 | 0.3− | 0.7+ | 2005 04 06 | 699 | 0.3+ | 1.1+ | 2006 10 21 | 703 | 1.1− | 0.1+ | | |
| 2005 03 03 | 703 | 0.7− | 0.7+ | 2005 04 06 | 699 | 0.7+ | 0.9+ | 2006 10 21 | 703 | 1.1− | 0.4+ | | |
| 2005 03 08 | 699 | 0.5+ | 0.4+ | 2005 04 06 | 699 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.3− | | |
| 2005 03 08 | 699 | 0.8+ | 0.5− | 2005 04 09 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | 1.2− | 1.1+ | | |
| 2005 03 08 | 699 | 0.8+ | 0.9− | 2005 04 09 | G96 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 2005 03 08 | 699 | 0.3− | 1.0+ | 2005 04 09 | G96 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.3− | | |
| 2005 03 08 | 704 | 0.8+ | 0.3− | 2005 04 09 | G96 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− | | |
| 2005 03 08 | 704 | 1.2+ | 0.8+ | 2005 04 12 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.1− | | |
| 2005 03 08 | G96 | 0.1− | 0.2− | 2005 04 12 | 691 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 2005 03 08 | G96 | 0.4− | 0.5− | 2005 04 12 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.0 | | |
| 2005 03 08 | 704 | 0.3+ | 0.3− | 2005 05 13 | G96 | 0.2+ | 0.1+ | | | | | | |
| 2005 03 08 | G96 | 0.2− | 0.2− | 2005 05 13 | G96 | 0.3− | 0.2+ | | | | | | |

**(137377)∗ 1999 TD$_{135}$ = 1999 RO$_{215}$ = 2004 CK$_{87}$**

Discovered 1999 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60546)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.47893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29309797 | $\omega$ | 134.54964 | | −0.30553751 | −0.95211526 | |
| $a$ | 2.2445408 | $\Omega$ | 333.23499 | | +0.86646783 | −0.27317843 | |
| $e$ | 0.1480815 | $i$ | 1.41326 | | +0.39481682 | −0.13729558 | |
| $P$ | 3.36 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 561 | 0.2+ | 1.0+ | 2004 02 18 | 704 | 0.2+ | 0.3+ | 2004 03 26 | 691 | 0.1− | 0.1+ | |
| 1999 09 14 | 561 | 0.5+ | 0.4+ | 2004 02 18 | 704 | 0.4+ | 0.1− | 2004 03 26 | 691 | 0.2− | 0.0 | |
| 1999 09 14 | 561 | 0.1+ | 0.1+ | 2004 02 18 | 291 | 0.3+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.4− | |
| 1999 10 06 | 704 | 0.3− | 0.3− | 2004 02 18 | 291 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 1.2+ | 0.7− | |
| 1999 10 06 | 704 | 0.9− | 0.5− | 2004 02 26 | 704 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.5− | 1.1− | |
| 1999 10 06 | 704 | 0.7− | 0.2− | 2004 02 26 | 704 | 0.6+ | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.4− | |
| 1999 10 06 | 704 | 0.5− | 0.6+ | 2004 02 26 | 704 | 0.5− | 0.1+ | 2006 11 10 | 691 | 0.5+ | 0.1− | |
| 1999 10 06 | 704 | 0.5− | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.0 | |
| 1999 10 09 | 704 | 0.6+ | 0.4− | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.1− | |
| 1999 10 09 | 704 | 0.2+ | 0.1− | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.5− | 0.0 | |
| 1999 10 09 | 704 | 0.4− | 1.4+ | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1− | |
| 1999 10 09 | 704 | 0.5+ | 0.5+ | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1− | |
| 2001 05 26 | 291 | (2.4− | 1.3+) | 2004 03 11 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.1+ | |
| 2001 05 26 | 291 | (2.3− | 1.9+) | 2004 03 11 | 644 | 0.4+ | 0.0 | 2006 11 18 | 704 | 1.1− | 0.1− | |
| 2001 05 26 | 291 | 0.2− | 0.6+ | 2004 03 11 | 644 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.3− | |
| 2002 08 17 | 644 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.9+ | 0.8− | |
| 2002 08 17 | 644 | 0.1+ | 1.0+ | 2004 03 15 | 704 | 0.8+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 1.0− | |
| 2002 08 17 | 644 | 0.4− | 0.9+ | 2004 03 15 | 704 | (0.1− | 2.6+) | 2006 11 20 | 691 | 0.3+ | 0.1+ | |
| 2002 08 18 | 644 | 0.2+ | 1.1+ | 2004 03 15 | 704 | 0.6+ | 0.5+ | 2006 11 20 | 691 | 0.6− | 0.7+ | |
| 2002 08 18 | 644 | 0.4+ | 0.8+ | 2004 03 17 | 691 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.0 | |
| 2002 08 18 | 644 | 0.7− | 1.0+ | 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.4+ | |
| 2002 08 19 | 644 | 0.2− | 0.5+ | 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.0 | 1.5+ | |
| 2002 08 19 | 644 | 0.4− | 0.6+ | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 11 21 | 704 | (2.1+ | 1.4+) | |
| 2002 08 27 | 644 | 0.5− | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.5− | 2006 11 21 | 704 | 1.2+ | 0.1+ | |
| 2002 08 27 | 644 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.3− | 2006 11 24 | 691 | 0.2− | 0.0 | |
| 2004 02 11 | 703 | 0.3+ | 1.0− | 2004 03 18 | 704 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.3− | 0.1− | |
| 2004 02 11 | 703 | 0.3+ | 0.5+ | 2004 03 18 | 704 | 0.5− | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.0 | |
| 2004 02 11 | 703 | 1.0− | 0.1+ | 2004 03 25 | 704 | 0.4+ | 1.2− | 2006 11 30 | 691 | 0.1− | 0.1+ | |
| 2004 02 11 | 703 | 0.4− | 0.1− | 2004 03 25 | 704 | 0.0 | 0.1+ | 2006 11 30 | 691 | 0.1− | 0.1− | |
| 2004 02 18 | 704 | 0.1− | 0.9+ | 2004 03 25 | 704 | 0.8− | 0.2+ | 2006 11 30 | 691 | 0.2− | 0.1+ | |
| 2004 02 18 | 291 | 0.1− | 0.4+ | 2004 03 26 | 691 | 0.2+ | 0.1− | | | | | |

**(137378)∗ 1999 TS$_{136}$**

Discovered 1999 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.47409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27359032 | $\omega$ | 20.49801 | | +0.87109066 | −0.49080890 | |
| $a$ | 2.3500056 | $\Omega$ | 8.95683 | | +0.43344630 | +0.75150845 | |
| $e$ | 0.1158331 | $i$ | 6.46898 | | +0.23092284 | +0.44084202 | |
| $P$ | 3.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 703 | 0.5+ | 0.6+ | 2003 12 17 | 704 | 0.9− | 0.0 | 2006 09 16 | 704 | 0.6− | 0.3+ | |
| 1999 10 02 | 703 | 0.9− | 0.2− | 2003 12 17 | 704 | 0.7+ | 0.1+ | 2006 09 16 | 704 | 0.3− | 0.7+ | |
| 1999 10 02 | 703 | 0.3− | 0.2+ | 2003 12 27 | 704 | 0.0 | 1.1+ | 2006 09 16 | 704 | 0.0 | 0.7+ | |
| 1999 10 02 | 703 | 1.0− | 0.8+ | 2003 12 27 | 704 | 0.7+ | 0.9+ | 2006 09 16 | 704 | 0.8− | 0.1− | |
| 1999 10 06 | 704 | 0.4+ | 0.0 | 2003 12 27 | 704 | 0.6+ | 0.4+ | 2006 09 22 | 704 | 0.9+ | 0.8+ | |
| 1999 10 06 | 704 | 0.4+ | 0.1+ | 2003 12 27 | 704 | 0.9+ | 0.4+ | 2006 09 22 | 704 | 1.0− | 0.9− | |
| 1999 10 06 | 704 | 0.5+ | 0.1+ | 2003 12 29 | 704 | 0.0 | 0.8+ | 2006 09 22 | 704 | 0.0 | 0.2+ | |
| 1999 10 06 | 704 | 0.0 | 0.3+ | 2003 12 29 | 704 | 0.3+ | 0.2− | 2006 09 22 | 704 | 0.7+ | 0.1+ | |
| 1999 10 06 | 704 | 0.3+ | 0.1+ | 2003 12 29 | 704 | 0.6− | 0.2+ | 2006 09 25 | 699 | 0.9− | 0.1+ | |
| 1999 10 10 | 704 | 0.9+ | 0.2+ | 2003 12 29 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.0 | |
| 1999 10 10 | 704 | 0.4+ | 0.3+ | 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.4+ | 0.2− | |
| 1999 10 10 | 704 | 0.1+ | 0.1− | 2005 04 14 | 691 | 0.4+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.2+ | |
| 1999 10 10 | 704 | 0.3+ | 0.2− | 2005 04 14 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.2+ | 0.6− | |
| 1999 10 10 | 704 | 0.4+ | 0.0 | 2005 05 01 | 644 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.6− | 0.4+ | |
| 1999 10 13 | 704 | 0.2+ | 0.1+ | 2005 05 01 | 644 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.5− | 0.2− | |
| 1999 10 13 | 704 | 0.5− | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.1+ | |
| 1999 10 13 | 704 | 0.1+ | 0.0 | 2006 08 23 | 704 | 1.1+ | 0.8+ | 2006 09 30 | 703 | 0.0 | 0.2+ | |
| 1999 10 13 | 704 | 0.3+ | 0.3− | 2006 08 23 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.5+ | |
| 1999 10 13 | 704 | 0.5− | 0.2− | 2006 08 23 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.6+ | |
| 1999 10 15 | 704 | 0.1+ | 0.4− | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.0 | 1.3+ | |
| 1999 10 15 | 704 | 0.5+ | 0.5− | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 10 20 | G96 | 1.1− | 0.4− | |
| 1999 10 15 | 704 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.3− | |
| 1999 10 20 | 704 | 0.3+ | 0.6− | 2006 08 28 | 704 | 0.5− | 1.5+ | 2006 10 20 | G96 | 0.0 | 0.3− | |
| 1999 10 20 | 704 | 0.5− | 1.1− | 2006 08 28 | 704 | 1.0− | 1.5+ | 2006 11 11 | G96 | 0.2+ | 0.6− | |
| 1999 10 20 | 704 | (2.1+ | 0.5−) | 2006 08 28 | 704 | 0.2− | 1.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− | |
| 1999 10 20 | 704 | 0.2+ | 0.7− | 2006 08 31 | 704 | 0.8− | 0.4− | 2006 11 11 | G96 | 0.3− | 0.6− | |
| 1999 11 05 | 704 | 0.2− | 0.2+ | 2006 08 31 | 704 | 0.6− | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.5− | |
| 1999 11 05 | 704 | 0.4− | 0.0 | 2006 08 31 | 704 | 0.2+ | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.3− | |
| 1999 11 05 | 704 | 1.4− | 0.3− | 2006 09 12 | 704 | 0.2+ | 0.9− | 2006 11 17 | G96 | 0.3− | 0.4− | |
| 2001 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 12 | 704 | 0.8− | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.3− | |
| 2001 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 704 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.5− | 0.0 | |
| 2001 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 704 | 0.6− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.5− | |
| 2003 12 03 | 704 | (1.6+ | 1.1+) | 2006 09 14 | 703 | 0.1− | 0.8+ | 2006 11 21 | G96 | 0.3− | 0.3− | |
| 2003 12 03 | 704 | 0.6+ | 1.2+ | 2006 09 14 | 703 | 1.2+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1− | |
| 2003 12 03 | 704 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.9+ | 0.8+ | 2006 11 21 | G96 | 0.0 | 0.2− | |
| 2003 12 03 | 704 | 0.4− | 1.3+ | 2006 09 14 | 703 | (0.4+ | 1.8+) | | | | | |
| 2003 12 17 | 704 | 1.1− | 0.4+ | 2006 09 16 | 704 | 0.0 | 0.5+ | | | | | |

**(137379)∗ 1999 TV$_{138}$ = 1997 CM$_{21}$**

Discovered 1999 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 1156)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.83788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26911428 | $\omega$ | 48.89363 | | +0.60436099 | −0.79670831 | |
| $a$ | 2.3759915 | $\Omega$ | 3.92495 | | +0.72233338 | +0.54692575 | |
| $e$ | 0.1788143 | $i$ | 1.60193 | | +0.33612837 | +0.25715382 | |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 691 | 0.3+ | 0.2+ | 1999 10 10 | 704 | 0.1+ | 0.7+ | 2003 12 22 | 704 | 0.3+ | 0.7+ | |
| 1997 02 06 | 691 | 0.3+ | 0.2+ | 1999 10 10 | 704 | 0.1− | 0.4+ | 2003 12 22 | 704 | 0.5+ | 0.2− | |
| 1997 02 06 | 691 | 0.4+ | 0.2+ | 1999 10 15 | 704 | 0.3− | 0.2+ | 2004 01 22 | 704 | 0.0 | 0.1+ | |
| 1997 02 10 | 691 | 0.1− | 0.8− | 1999 10 15 | 704 | 0.1+ | 0.6− | 2004 01 22 | 704 | 0.7+ | 0.6+ | |
| 1997 02 10 | 691 | 0.2− | 0.1− | 1999 10 15 | 704 | 1.0− | 0.3− | 2004 01 22 | 704 | 0.6+ | 0.0 | |
| 1997 02 10 | 691 | 0.2+ | 0.1+ | 1999 10 15 | 704 | 0.1− | 0.5− | 2004 01 22 | 704 | 0.2+ | 0.3+ | |
| 1997 02 13 | 691 | 0.0 | 0.2− | 1999 10 15 | 704 | 0.1+ | 0.3− | 2005 05 14 | G96 | 0.2− | 0.3− | |
| 1997 02 13 | 691 | 0.1− | 0.1+ | 1999 10 20 | 704 | 1.7+ | 0.8− | 2005 05 14 | G96 | 0.9− | 0.1− | |
| 1997 02 13 | 691 | 0.7− | 0.1+ | 1999 10 20 | 704 | 0.1− | 0.0 | 2005 05 14 | G96 | 0.4− | 0.1+ | |
| 1999 10 02 | 703 | 0.2− | 0.2− | 1999 10 20 | 704 | 0.6+ | 0.1− | 2005 05 14 | G96 | 0.7− | 0.1− | |
| 1999 10 02 | 703 | 0.3+ | 0.7+ | 1999 10 20 | 704 | 0.8+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.2+ | |
| 1999 10 02 | 703 | 0.5+ | 0.1+ | 1999 10 20 | 704 | 1.8+ | 1.0+ | 2006 08 16 | 644 | 0.0 | 0.1− | |
| 1999 10 02 | 703 | 1.0− | 0.2+ | 1999 11 05 | 704 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | |
| 1999 10 06 | 704 | 0.1+ | 0.3− | 1999 11 05 | 704 | 0.1− | 0.4− | 2006 08 16 | 644 | 0.0 | 0.2+ | |
| 1999 10 06 | 704 | 0.0 | 0.5− | 1999 11 05 | 704 | 0.4− | 0.6− | 2006 08 16 | 644 | 0.0 | 0.4+ | |
| 1999 10 06 | 704 | 0.4− | 0.5− | 1999 11 05 | 704 | 0.5− | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.4+ | |
| 1999 10 06 | 704 | 0.2+ | 0.7− | 1999 11 05 | 704 | 0.9− | 1.6− | 2006 08 19 | 699 | 0.6+ | 0.8+ | |
| 1999 10 06 | 691 | 0.3− | 0.2− | 1999 11 12 | 120 | 1.6+ | 0.7+ | 2006 08 19 | 699 | 0.2− | 0.6+ | |
| 1999 10 06 | 704 | 0.1− | 0.8− | 1999 11 12 | 120 | 0.3+ | 0.5− | 2006 08 19 | 699 | 0.1+ | 0.1− | |
| 1999 10 06 | 691 | 0.1− | 0.5+ | 1999 11 14 | 704 | 0.4+ | 0.0 | 2006 08 19 | 699 | 0.4− | 0.3+ | |
| 1999 10 06 | 691 | 0.3− | 0.6− | 1999 11 14 | 704 | 0.1− | 0.1+ | 2006 08 28 | 703 | 1.2+ | 0.4− | |
| 1999 10 07 | 704 | 1.0+ | 0.8+ | 1999 11 14 | 704 | 0.1+ | 1.3− | 2006 08 28 | 703 | 0.5− | 0.4+ | |
| 1999 10 07 | 704 | 0.4+ | 0.4+ | 1999 11 14 | 704 | 0.7− | 0.6− | 2006 08 28 | 703 | 0.4+ | 0.0 | |
| 1999 10 07 | 704 | 0.7− | 0.2− | 1999 11 14 | 704 | (0.0 | 2.4−) | 2006 08 28 | 703 | 0.7− | 0.6+ | |
| 1999 10 07 | 704 | 0.4+ | 0.7+ | 2003 12 18 | 704 | 0.9− | 0.3− | 2006 08 29 | 704 | 0.7+ | 0.5− | |
| 1999 10 09 | 703 | 0.3− | 0.4+ | 2003 12 18 | 704 | 0.7− | 0.3+ | 2006 08 29 | 704 | 0.4+ | 0.9+ | |
| 1999 10 09 | 703 | 0.2− | 1.3+ | 2003 12 18 | 704 | 0.2− | 0.3− | 2006 08 29 | 704 | 0.7− | 1.1+ | |
| 1999 10 09 | 703 | 0.4− | 0.4− | 2003 12 18 | 704 | 0.8− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.9− | |
| 1999 10 09 | 703 | 0.2+ | 0.4+ | 2003 12 18 | 704 | 0.2+ | 1.1+ | 2006 10 20 | G96 | 0.0 | 0.5− | |
| 1999 10 10 | 704 | 0.4− | 0.5− | 2003 12 22 | 704 | 0.3+ | 1.0+ | 2006 10 20 | G96 | 0.2− | 0.4− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6+ | 0.2− | 2003 12 22 | 704 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.9− | 0.4− | | |
| 1999 10 10 | 704 | 0.5− | 0.5+ | 2003 12 22 | 704 | 0.3+ | 0.6+ | | | | | | |

**(137380)∗ 1999 TO$_{144}$ = 1999 RG$_{92}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (d, *MPO* 2807)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.49206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29255720 | $\omega$ | 120.47949 | | +0.62410954 | | +0.78130110 |
| $a$ | 2.2473059 | $\Omega$ | 188.14984 | | −0.73372377 | | +0.58276242 |
| $e$ | 0.1667674 | $i$ | 3.02230 | | −0.26858279 | | +0.22350962 |
| $P$ | 3.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 910 | 0.7+ | 0.2− | 2005 04 05 | G96 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.3+ | | |
| 1998 03 02 | 910 | 0.5+ | 0.2− | 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 1998 03 02 | 910 | 0.6+ | 0.1+ | 2005 04 09 | 691 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 1999 09 07 | 704 | 0.2+ | 0.9+ | 2005 04 09 | 691 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.5− | 0.2+ | | |
| 1999 09 07 | 704 | 0.1+ | 0.7+ | 2005 04 09 | 691 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.3+ | | |
| 1999 09 07 | 704 | 0.6+ | 0.9+ | 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 1999 09 07 | 704 | 0.0 | 0.1+ | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2+ | | |
| 1999 09 07 | 704 | 0.0 | 1.6+ | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.3+ | | |
| 1999 09 09 | 704 | 0.3+ | 0.6− | 2005 04 11 | 699 | 0.6− | 0.6+ | 2006 11 01 | 691 | 0.7+ | 0.5− | | |
| 1999 09 09 | 704 | 0.9− | 0.6− | 2005 04 11 | 699 | 0.8− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.3+ | | |
| 1999 09 09 | 704 | 0.6− | 1.2− | 2005 04 11 | 699 | 0.3+ | 0.6+ | 2006 11 02 | 703 | 0.2+ | 0.7+ | | |
| 1999 09 29 | 703 | 1.3− | 0.9+ | 2005 04 11 | 699 | 0.3+ | 0.9+ | 2006 11 02 | 703 | 0.5+ | 0.7− | | |
| 1999 09 29 | 703 | 0.4− | 0.7+ | 2005 04 12 | 704 | 0.4+ | 0.9+ | 2006 11 02 | 703 | 0.4+ | 0.2− | | |
| 1999 09 29 | 703 | 0.3+ | 0.5+ | 2005 04 12 | 704 | 0.2+ | 0.4− | 2006 11 02 | 703 | 0.3+ | 0.0 | | |
| 1999 09 29 | 703 | 0.6− | 1.1+ | 2005 04 12 | 704 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.5+ | | |
| 1999 10 07 | 704 | 0.8− | 0.2+ | 2005 04 12 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.5+ | | |
| 1999 10 07 | 704 | (2.6− | 0.6+) | 2005 04 12 | 704 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.4+ | | |
| 1999 10 07 | 704 | 0.3− | 0.2− | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.3+ | | |
| 1999 10 07 | 704 | 0.3− | 0.1+ | 2005 04 18 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | |
| 1999 10 07 | 704 | 0.5− | 0.7− | 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.0 | | |
| 1999 10 09 | 704 | 1.2+ | 0.5− | 2005 04 18 | 703 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.6− | 0.4− | | |
| 1999 10 09 | 704 | 0.1− | 0.5− | 2005 04 18 | 703 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.9− | 0.5− | | |
| 1999 10 09 | 704 | 0.2+ | 0.5+ | 2005 04 18 | 703 | 0.0 | 1.1+ | 2006 11 11 | 703 | 1.0+ | 0.7+ | | |
| 1999 10 09 | 704 | 1.1+ | 0.4− | 2005 04 18 | 703 | 0.9− | 0.3− | 2006 11 11 | 703 | 1.3− | 1.2− | | |
| 1999 10 09 | 704 | 0.7+ | 0.6− | 2005 05 08 | 691 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 1999 10 15 | 704 | 0.5− | 0.2+ | 2005 05 08 | 691 | 0.0 | 0.6+ | 2006 11 12 | G96 | 0.1− | 0.2− | | |
| 1999 10 15 | 704 | 0.3− | 0.0 | 2005 05 08 | 703 | 0.3+ | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.1− | | |
| 1999 10 15 | 704 | 0.0 | 0.1− | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.3+ | 0.1+ | | |
| 1999 10 15 | 704 | 0.5− | 0.1+ | 2005 05 08 | 703 | 0.0 | 0.1+ | 2006 11 14 | 704 | 1.2+ | 1.5+ | | |
| 1999 10 15 | 704 | 0.5− | 0.1− | 2005 05 08 | 703 | 0.2+ | 0.4− | 2006 11 14 | 704 | (0.7+ | 1.5+) | | |
| 2002 06 11 | 704 | 0.1− | 0.9+ | 2005 05 08 | 703 | 1.3− | 0.8− | 2006 11 14 | 704 | 0.5− | 1.2+ | | |
| 2002 06 11 | 704 | 0.0 | 0.6+ | 2005 05 13 | 703 | 1.0− | 0.2+ | 2006 11 14 | 704 | 0.1− | 1.3+ | | |
| 2002 06 11 | 704 | 0.4+ | 0.7+ | 2005 05 13 | 703 | 1.1− | 0.7− | 2006 11 14 | 704 | 0.5− | 0.8+ | | |
| 2002 06 11 | 704 | 0.6+ | 1.1+ | 2005 05 13 | 703 | (2.0− | 0.3+) | 2006 11 17 | 704 | (0.2− | 2.5+) | | |
| 2002 06 11 | 704 | 0.4+ | 0.9+ | 2005 05 13 | 703 | (1.5− | 0.2+) | 2006 11 17 | 704 | 0.3− | 1.2+ | | |
| 2005 03 10 | G96 | 0.4− | 0.2+ | 2006 07 22 | G96 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 1.3− | 0.6+ | | |
| 2005 03 10 | G96 | 0.3− | 0.6+ | 2006 07 22 | G96 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 1.5− | 1.0+ | | |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 07 22 | G96 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.3− | | |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 07 22 | G96 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.6− | | |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.0 | | |
| 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.4+ | | |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.0 | | |
| 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.7− | | |
| 2005 04 04 | 704 | 0.7+ | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 11 21 | 704 | 1.0+ | 0.1− | | |
| 2005 04 04 | 704 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 21 | 704 | 0.3+ | 0.7− | | |
| 2005 04 04 | 704 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.9+ | | |
| 2005 04 04 | 704 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.9− | 0.3− | 2006 11 28 | 704 | 0.3− | 1.2+ | | |
| 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.4+ | | |
| 2005 04 05 | G96 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.8+ | | |

**(137381)∗ 1999 TQ$_{149}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.72522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27959329 | $\omega$ | 120.89370 | | +0.67528015 | | −0.73692587 |
| $a$ | 2.3162471 | $\Omega$ | 286.59778 | | +0.66532907 | | +0.62653463 |
| $e$ | 0.2072574 | $i$ | 1.83040 | | +0.31832993 | | +0.25376096 |
| $P$ | 3.53 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 07 | 691 | 0.4+ | 0.1− | 2004 01 05 | 703 | (0.7− | 2.1−) | 2006 09 19 | 699 | 0.7+ | 0.3+ | | |
| 1997 02 07 | 691 | 0.1+ | 0.0 | 2004 01 05 | 703 | (2.0+ | 0.4−) | 2006 09 19 | 699 | 0.4− | 0.6+ | | |
| 1997 02 07 | 691 | 0.6+ | 0.0 | 2004 01 05 | 703 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.3+ | | |
| 1999 10 01 | 703 | 0.1+ | 0.3− | 2004 01 13 | 699 | 0.8− | 0.2− | 2006 09 25 | 691 | 0.4− | 0.2+ | | |
| 1999 10 01 | 703 | 0.8− | 0.5+ | 2004 01 13 | 699 | 0.9+ | 1.0− | 2006 09 25 | 691 | 0.1− | 0.4+ | | |
| 1999 10 01 | 703 | 0.2− | 0.5− | 2004 01 13 | 699 | 0.1+ | 0.5− | 2006 09 25 | 704 | 0.3− | 0.7+ | | |
| 1999 10 01 | 703 | 0.7− | 0.1+ | 2004 01 13 | 699 | 0.3+ | 0.6− | 2006 09 25 | 704 | 0.3− | 0.2+ | | |
| 1999 10 04 | 704 | 1.8+ | 0.7+ | 2004 01 24 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 704 | 0.0 | 0.6+ | | |
| 1999 10 04 | 704 | 0.6+ | 0.2− | 2004 01 24 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.1+ | | |
| 1999 10 04 | 704 | 0.7+ | 0.4− | 2004 01 24 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 704 | 0.2− | 0.3+ | | |
| 1999 10 04 | 704 | 0.0 | 1.7− | 2004 01 24 | 704 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.8− | 0.3+ | | |
| 1999 10 04 | 704 | 1.0− | 0.4− | 2004 01 24 | 704 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.6+ | 0.3− | | |
| 1999 10 07 | 704 | 1.0− | 1.0+ | 2004 01 27 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.5+ | 0.6+ | | |
| 1999 10 07 | 704 | 0.0 | 0.2+ | 2004 01 27 | 704 | 0.5+ | 1.4+ | 2006 09 29 | 704 | 0.0 | 0.0 | | |
| 1999 10 07 | 704 | 1.0− | 1.2− | 2004 01 27 | 704 | 0.7+ | 0.5+ | 2006 09 29 | 704 | 0.8+ | 0.9− | | |
| 1999 10 07 | 704 | 0.6+ | 0.4+ | 2004 01 27 | 704 | 0.6+ | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | | |
| 1999 10 07 | 704 | 0.0 | 0.6− | 2004 01 27 | 704 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.0 | | |
| 1999 10 10 | 704 | 0.2− | 0.3+ | 2004 01 30 | 704 | 0.9+ | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.2+ | | |
| 1999 10 10 | 704 | 0.4+ | 0.0 | 2004 01 30 | 704 | 1.0+ | 0.7+ | 2006 10 01 | 704 | 0.7+ | 1.1+ | | |
| 1999 10 10 | 704 | 0.6+ | 0.0 | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.8+ | | |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2004 01 30 | 704 | (1.6+ | 1.3−) | 2006 10 01 | 704 | 0.4+ | 0.5+ | | |
| 1999 10 10 | 704 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2006 10 01 | 704 | 0.9+ | 0.8+ | | |
| 1999 10 13 | 699 | 0.7− | 0.9+ | 2004 02 16 | 704 | 0.0 | 0.9+ | 2006 10 01 | 704 | 0.6+ | 0.5+ | | |
| 1999 10 13 | 699 | 0.6+ | 0.6+ | 2004 02 16 | 704 | 0.6− | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | | |
| 1999 10 13 | 704 | 0.1+ | 0.7− | 2004 02 16 | 704 | 0.5− | 1.2+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 1999 10 13 | 699 | 0.7− | 0.7+ | 2004 02 16 | 704 | 1.0− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 1999 10 13 | 704 | 0.3+ | 0.7− | 2004 02 26 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.2+ | | |
| 1999 10 13 | 704 | 1.0+ | 1.1− | 2004 02 26 | 704 | 0.5+ | 0.5− | 2006 10 17 | 703 | 0.2− | 0.4− | | |
| 1999 10 13 | 704 | 0.6− | 1.0− | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.2+ | | |
| 1999 10 13 | 704 | 0.4+ | 1.4− | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.1− | | |
| 1999 10 15 | 704 | 0.4− | 1.0− | 2004 02 26 | 704 | 0.8+ | 0.0 | 2006 10 19 | 704 | 0.3− | 0.8− | | |
| 1999 10 15 | 704 | 0.1− | 0.6− | 2004 02 26 | 704 | 0.2− | 0.2− | 2006 10 19 | 704 | (2.2+ | 1.0+) | | |
| 1999 10 15 | 704 | 0.1− | 0.8− | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 10 19 | 704 | 0.4− | 0.2− | | |
| 1999 10 15 | 704 | 0.5− | 0.5− | 2004 02 26 | 704 | 0.2− | 0.3− | 2006 10 19 | 704 | 0.2− | 0.0 | | |
| 1999 10 15 | 704 | 0.7− | 0.4− | 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 10 19 | 704 | 0.3− | 1.4− | | |
| 1999 10 20 | 704 | 0.2+ | 1.2− | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 10 19 | 704 | 0.2+ | 0.3− | | |
| 1999 10 20 | 704 | 0.3+ | 0.6− | 2006 08 17 | 644 | 0.5− | 0.2+ | 2006 10 19 | 704 | 0.1− | 0.2− | | |
| 1999 10 20 | 704 | 0.1+ | 0.4− | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 10 19 | 704 | 1.1− | 0.9+ | | |
| 1999 10 20 | 704 | 0.2− | 0.5− | 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 1999 10 20 | 704 | 0.1+ | 1.0− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 1999 11 04 | 703 | 0.0 | 0.3− | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.4− | 0.2+ | | |
| 1999 11 04 | 703 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 1999 11 04 | 703 | 0.1+ | 0.5+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.4− | | |
| 1999 11 04 | 703 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 1999 11 05 | 704 | 0.0 | 0.3+ | 2006 09 15 | 704 | 0.4+ | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 1999 11 05 | 704 | 0.0 | 0.0 | 2006 09 15 | 704 | (1.7+ | 0.1+) | 2006 11 06 | 644 | 0.1− | 0.0 | | |
| 1999 11 05 | 704 | 0.3+ | 0.4− | 2006 09 15 | 704 | 0.1− | 0.5+ | 2006 11 06 | 644 | 0.1+ | 0.1+ | | |
| 1999 11 05 | 704 | 0.4+ | 0.5− | 2006 09 15 | 704 | 0.3− | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.0 | | |
| 1999 11 05 | 704 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.7+ | | |
| 1999 11 14 | 704 | 1.5+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.1− | 1.3+ | | |
| 1999 11 14 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 1.3+ | 0.5+ | | |
| 1999 11 14 | 704 | 1.0+ | 0.5− | 2006 09 17 | 703 | (0.8− | 3.1−) | 2006 11 18 | 704 | 0.6− | 1.3+ | | |
| 1999 11 14 | 704 | 0.3+ | 0.3− | 2006 09 17 | 703 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.2+ | | |
| 1999 11 14 | 704 | (0.3+ | 2.3−) | 2006 09 17 | 703 | 0.7+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.4− | | |
| 2001 03 25 | 688 | 0.3− | 1.1+ | 2006 09 17 | 703 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.9+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 688 | 0.5− | 0.6+ | 2006 09 18 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.8+ | 0.1− |
| 2003 12 19 | 291 | 0.5− | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.5+ | 0.4− |
| 2003 12 19 | 291 | 0.6− | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.9− |
| 2003 12 19 | 291 | 1.4− | 0.1+ | 2006 09 18 | 704 | 0.4− | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.8− |
| 2004 01 05 | 703 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.7+ | 2006 11 20 | G96 | 0.3+ | 1.0− |

**(137382)∗ 1999 TF$_{150}$ = 2005 JP$_{148}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 84506)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.35260 | | (2000.0) | | +0.96046240 | +0.27125057 |
| $n$ | 0.27536233 | $\omega$ | 270.43842 | | −0.22232677 | +0.88288561 |
| $a$ | 2.3399129 | $\Omega$ | 73.82382 | | −0.16757917 | +0.38332249 |
| $e$ | 0.1398925 | $i$ | 3.74501 | | | |
| $P$ | 3.58 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.8− | 0.8− | 2006 07 21 | 699 | 1.9− | 0.9− | 2006 09 16 | 704 | 0.8− | 0.1+ |
| 1999 10 03 | 703 | 1.5+ | 0.2+ | 2006 07 21 | 699 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.1− | 0.7+ |
| 1999 10 03 | 703 | 0.4+ | 0.6+ | 2006 07 21 | 699 | 0.2+ | 0.3− | 2006 09 16 | 704 | 0.2+ | 0.9− |
| 1999 10 03 | 703 | 0.6+ | 0.8+ | 2006 07 21 | 699 | 0.6+ | 0.6− | 2006 09 19 | 704 | 0.2+ | 0.2− |
| 1999 10 07 | 704 | 0.8− | 0.7+ | 2006 08 17 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 704 | 0.1− | 1.3− |
| 1999 10 07 | 704 | 0.7− | 1.1− | 2006 08 17 | 644 | 0.3+ | 0.4− | 2006 09 19 | 704 | 1.6− | 0.1− |
| 1999 10 07 | 704 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.4− | 2006 09 19 | 704 | 0.1− | 0.3+ |
| 1999 10 07 | 704 | 0.3− | 0.3+ | 2006 08 23 | 704 | (2.3+ | 0.1−) | 2006 09 21 | 699 | 0.0 | 1.0+ |
| 1999 10 09 | 704 | 0.4+ | 0.4− | 2006 08 23 | 704 | 0.4+ | 0.1+ | 2006 09 21 | 699 | 0.1+ | 1.2+ |
| 1999 10 09 | 704 | 0.2+ | 0.4− | 2006 08 23 | 704 | 0.2+ | 1.0+ | 2006 09 21 | 699 | 0.2+ | 1.1+ |
| 1999 10 09 | 704 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.1+ | 0.3− | 2006 09 21 | 699 | 0.2− | 0.6+ |
| 1999 10 09 | 704 | 0.2+ | 0.1− | 2006 08 23 | 644 | 0.0 | 0.3− | 2006 09 21 | 699 | 0.3− | 0.2− |
| 1999 10 09 | 704 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.2− | 2006 09 21 | 699 | 0.2+ | 1.1+ |
| 1999 10 15 | 704 | 0.7− | 0.1− | 2006 08 28 | 704 | 0.3+ | 0.3+ | 2006 09 21 | 699 | (2.0− | 2.3+) |
| 1999 10 15 | 704 | 0.7− | 0.2+ | 2006 08 28 | 704 | 0.3− | 0.4+ | 2006 09 21 | 699 | 0.4+ | 0.5+ |
| 1999 10 15 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.0 |
| 1999 10 15 | 704 | 0.0 | 0.7+ | 2006 08 28 | 704 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.6+ | 0.2− |
| 2004 01 21 | 704 | 0.6− | 1.3+ | 2006 08 28 | 704 | 0.3− | 0.4− | 2006 09 22 | 704 | 0.2+ | 0.4− |
| 2004 01 21 | 704 | 0.1+ | 1.1+ | 2006 08 30 | 699 | 0.7+ | 0.2− | 2006 09 22 | 704 | 0.3− | 0.2− |
| 2004 01 21 | 704 | 0.3+ | 1.5+ | 2006 08 30 | 699 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.5+ |
| 2005 03 11 | 695 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.3− | 0.4+ |
| 2005 03 11 | 695 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.6− | 0.8+ |
| 2005 04 05 | 699 | 0.5+ | 0.6+ | 2006 09 12 | 704 | 1.1+ | 0.5− | 2006 09 26 | 704 | 0.2+ | 0.6+ |
| 2005 04 05 | 699 | 0.0 | 1.8+ | 2006 09 12 | 704 | 0.2+ | 0.8+ | 2006 09 28 | 704 | 1.6− | 2.8+ |
| 2005 04 05 | 699 | 0.1+ | 0.9+ | 2006 09 12 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.4− |
| 2005 04 05 | 699 | 0.0 | 0.7+ | 2006 09 12 | 704 | 0.7− | 0.0 | 2006 09 28 | 704 | 0.3− | 0.8+ |
| 2005 05 03 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 704 | 0.2− | 1.0− | 2006 09 28 | 704 | 0.3− | 1.2+ |
| 2005 05 03 | 691 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.4+ |
| 2005 05 03 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.8− |
| 2005 05 12 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.1− |
| 2005 05 12 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.0 | 0.6− |
| 2005 05 12 | 691 | 0.1− | 0.2+ | 2006 09 16 | 704 | 0.4− | 0.5+ | | | | |

**(137383)∗ 1999 TL$_{151}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.21956 | | (2000.0) | | +0.92455180 | −0.37997632 |
| $n$ | 0.28506746 | $\omega$ | 221.41700 | | +0.36856792 | +0.87261249 |
| $a$ | 2.2864987 | $\Omega$ | 160.85690 | | +0.09675566 | +0.30686389 |
| $e$ | 0.2230924 | $i$ | 5.01563 | | | |
| $P$ | 3.46 | $H$ | 16.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.1− | 0.2+ | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 10 31 | A50 | 1.1− | 0.3− |
| 1999 10 04 | 703 | 0.1+ | 0.7+ | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 11 01 | 703 | 0.7− | 0.4− |
| 1999 10 04 | 703 | 0.0 | 0.6+ | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 11 01 | 703 | 0.7− | 0.1− |
| 1999 10 04 | 703 | 0.3+ | 0.0 | 2006 09 17 | 699 | 0.4+ | 0.4+ | 2006 11 01 | 703 | 0.3+ | 0.2− |
| 1999 10 07 | 704 | 0.8+ | 0.3+ | 2006 09 17 | 699 | 0.0 | 0.1− | 2006 11 01 | 703 | (1.9− | 0.3−) |
| 1999 10 07 | 704 | 0.6+ | 0.7+ | 2006 09 17 | 699 | 0.8− | 0.7+ | 2006 11 13 | 703 | 0.3− | 0.0 |
| 1999 10 07 | 704 | 0.6+ | 1.4− | 2006 09 17 | 699 | 1.1− | 0.6− | 2006 11 13 | 703 | 0.2− | 0.1− |
| 1999 10 07 | 704 | 1.2+ | 1.1− | 2006 09 28 | 683 | (1.7+ | 0.9−) | 2006 11 13 | 703 | 0.2− | 0.3− |
| 1999 10 09 | 704 | (0.3− | 2.0−) | 2006 09 28 | 683 | (2.6+ | 0.0 ) | 2006 11 13 | 703 | 0.7− | 0.3+ |
| 1999 10 09 | 704 | 0.3+ | 0.7− | 2006 09 28 | 683 | (2.1+ | 0.0 ) | 2006 11 13 | 644 | 0.3+ | 0.1+ |
| 1999 10 09 | 704 | 0.4− | 0.7− | 2006 09 30 | 699 | 0.2+ | 1.1− | 2006 11 13 | 644 | 0.5+ | 0.0 |
| 1999 10 09 | 704 | 0.2− | 1.0− | 2006 09 30 | 699 | 0.9− | 1.1+ | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 1999 11 02 | 703 | 0.0 | 0.6+ | 2006 09 30 | 699 | 0.5− | 0.2− | 2006 11 19 | 703 | 0.5+ | 0.6+ |
| 1999 11 02 | 703 | 1.0− | 1.7+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.1+ | 0.5+ |
| 1999 11 02 | 703 | 0.5− | 0.3− | 2006 09 30 | 699 | 1.4+ | 0.7− | 2006 11 19 | 703 | 0.3+ | 0.6+ |
| 1999 11 02 | 703 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.5+ | 0.1+ |
| 1999 11 06 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 20 | 704 | (0.3− | 2.1+) |
| 1999 11 06 | 704 | 0.7− | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 11 20 | 704 | (0.4− | 2.4+) |
| 1999 11 06 | 704 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.9+ | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.2+ |
| 1999 11 06 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.9+ | 2006 11 20 | 704 | 0.1+ | 1.3+ |
| 1999 11 07 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 11 20 | 704 | (1.6− | 0.1−) |
| 1999 11 07 | 704 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 1999 11 07 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.5− | 2006 11 23 | G96 | 0.6+ | 0.4− |
| 1999 11 07 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.2− | 1.2− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 1999 11 07 | 704 | 0.6− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.7+ | 0.5− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.6+ | 1.0− | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 10 27 | 704 | (2.2− | 0.4+) | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2004 01 31 | 691 | 0.2+ | 0.1− | 2006 10 27 | 704 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2004 01 31 | 691 | 0.2+ | 0.1− | 2006 10 27 | 704 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2004 01 31 | 691 | 0.0 | 0.1+ | 2006 10 31 | A50 | 0.5− | 0.2− | | | | |

**(137384)∗ 1999 TS$_{154}$ = 2004 CM$_4$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60547)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.41688 | | (2000.0) | | +0.37111022 | −0.92858527 |
| $n$ | 0.27329292 | $\omega$ | 66.67127 | | +0.81355012 | +0.32380003 |
| $a$ | 2.3517102 | $\Omega$ | 1.55155 | | +0.44767557 | +0.18133652 |
| $e$ | 0.2181349 | $i$ | 5.44437 | | | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.1+ | 0.1− | 2003 12 17 | 644 | 0.3+ | 0.2− | 2006 08 28 | 703 | 1.2− | 0.2− |
| 1997 02 02 | 691 | 0.3− | 0.2− | 2004 01 18 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | (1.5− | 0.7+) |
| 1997 02 02 | 691 | 0.0 | 0.0 | 2004 01 18 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | 1.2− | 0.7+ |
| 1999 10 07 | 704 | 0.6− | 0.4− | 2004 01 18 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 1999 10 07 | 704 | 0.7− | 0.8− | 2004 01 30 | 704 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 1999 10 07 | 704 | 0.7− | 0.5− | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.8+ |
| 1999 10 07 | 704 | 1.3− | 0.6− | 2004 01 30 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.3+ |
| 1999 10 10 | 704 | 0.6− | 0.1− | 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.6− | 1.0+ |
| 1999 10 10 | 704 | 0.1− | 0.8− | 2004 01 30 | 704 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.5+ |
| 1999 10 10 | 704 | 0.4+ | 0.0 | 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.6+ | 0.4+ |
| 1999 10 10 | 704 | 1.2+ | 0.4− | 2004 02 10 | 644 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.7− |
| 1999 10 10 | 704 | 0.2− | 0.2+ | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 704 | (2.5− | 1.9+) |
| 1999 10 15 | 704 | 0.3+ | 0.6− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.3+ | 1.3+ |
| 1999 10 15 | 704 | 0.3− | 0.6+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.9− | 0.9+ |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.1− | 1.0+ |
| 1999 10 15 | 704 | 0.2+ | 0.2+ | 2004 02 13 | 699 | 0.3− | 0.6− | 2006 09 25 | 699 | 0.4+ | 0.1+ |
| 1999 10 15 | 704 | 0.4+ | 0.2− | 2004 02 13 | 699 | 0.5− | 0.2− | 2006 09 25 | 699 | 0.2− | 0.0 |
| 1999 10 21 | 704 | 0.3+ | 0.8− | 2004 02 13 | 699 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.8− | 0.5+ |
| 1999 10 21 | 704 | 0.7+ | 0.0 | 2004 02 13 | 699 | 1.0+ | 0.4+ | 2006 09 25 | 699 | 1.3− | 0.6+ |
| 1999 10 21 | 704 | 0.6+ | 0.2− | 2004 02 15 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.7− | 0.8+ |
| 1999 10 21 | 704 | 0.5+ | 0.7− | 2004 02 15 | 704 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.5+ | 0.5+ |
| 1999 10 31 | 703 | 0.3+ | 0.1+ | 2004 02 15 | 704 | 0.6+ | 0.1− | 2006 09 27 | 704 | (1.6− | 1.0+) |
| 1999 10 31 | 703 | 0.2− | 0.3− | 2004 02 15 | 704 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 1999 10 31 | 703 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 1999 10 31 | 703 | 0.2− | 0.9+ | 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 1999 11 01 | 699 | 0.1− | 0.7+ | 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 699 | 0.6− | 0.4− | 2004 02 18 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 1999 11 01 | 699 | 0.8+ | 0.6+ | 2004 02 18 | 608 | 0.2− | 1.0+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 1999 11 04 | 704 | 0.4+ | 0.2− | 2004 02 18 | 608 | 0.2− | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 1999 11 04 | 704 | 0.4+ | 0.8− | 2004 02 18 | 608 | 0.7− | 0.7+ | 2006 11 11 | G96 | 0.3− | 0.0 |
| 1999 11 04 | 704 | 0.4+ | 0.2− | 2006 08 27 | 699 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.7− | 0.2− |
| 1999 11 04 | 704 | 0.5+ | 0.8− | 2006 08 27 | 699 | 1.1+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1999 11 04 | 704 | 0.3+ | 0.2− | 2006 08 27 | 699 | 0.6+ | 0.5+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2003 12 17 | 644 | 0.9+ | 0.1− | 2006 08 27 | 699 | 0.6+ | 0.8− | | | | |
| 2003 12 17 | 644 | 0.5+ | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.3+ | | | | |

**(137385)∗ 1999 TC$_{155}$ = 1999 UX$_{61}$ = 1999 VL$_{228}$ = 2002 JR$_{49}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11068), G. V. Williams (*MPO* 29134)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.39558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27998032 | $\omega$ | 66.10205 | | +0.76708434 | +0.63839425 | |
| $a$ | 2.3141120 | $\Omega$ | 254.16243 | | −0.61000699 | +0.69512902 | |
| $e$ | 0.2757595 | $i$ | 3.78561 | | −0.19867836 | +0.33052751 | |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.6+ | 0.3+ | 2002 05 11 | 704 | 0.0 | 0.1− | 2006 09 21 | 704 | 0.2+ | 0.4− |
| 1999 10 07 | 704 | 0.1− | 0.3+ | 2002 05 11 | 704 | 0.1− | 0.3+ | 2006 09 21 | 704 | 0.9+ | 0.9+ |
| 1999 10 07 | 704 | 0.1+ | 0.4− | 2002 05 11 | 704 | 0.4+ | 0.5+ | 2006 09 21 | 704 | 0.1+ | 0.5+ |
| 1999 10 10 | 704 | 2.0+ | 0.1− | 2002 05 11 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.3+ |
| 1999 10 10 | 704 | 1.1+ | 0.5− | 2002 05 11 | 704 | 0.3− | 0.6+ | 2006 09 25 | 704 | 0.6− | 0.3+ |
| 1999 10 10 | 704 | 1.0+ | 0.1− | 2002 05 13 | 704 | 1.0+ | 0.5− | 2006 09 25 | 704 | 1.1+ | 0.1− |
| 1999 10 10 | 704 | 0.9+ | 0.7− | 2002 05 13 | 704 | 0.6+ | 0.8− | 2006 09 25 | 704 | 0.2− | 0.1+ |
| 1999 10 10 | 704 | (1.7+ | 2.2−) | 2002 05 13 | 704 | 1.3+ | 1.2− | 2006 09 25 | 704 | 0.2− | 0.5+ |
| 1999 10 21 | 704 | 1.0− | 1.0− | 2002 05 13 | 704 | (1.6+ | 0.4−) | 2006 09 27 | 699 | 0.2+ | 0.3+ |
| 1999 10 21 | 704 | 0.6− | 0.9− | 2002 05 13 | 704 | (1.0+ | 1.9−) | 2006 09 27 | 699 | 0.1− | 0.7+ |
| 1999 10 21 | 704 | 0.3+ | 0.1− | 2002 05 18 | 644 | 0.2− | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.2+ |
| 1999 10 21 | 704 | 0.1− | 0.9− | 2002 05 18 | 644 | 0.1− | 0.2+ | 2006 09 27 | 699 | 0.3− | 0.6+ |
| 1999 10 30 | 703 | 0.6− | 0.2− | 2002 05 18 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 1999 10 30 | 703 | (2.6− | 0.9−) | 2002 06 08 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.4+ |
| 1999 10 30 | 703 | 1.1− | 0.3+ | 2002 06 08 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.1+ | 0.8+ |
| 1999 10 30 | 703 | 0.5− | 0.4+ | 2002 06 08 | 704 | 0.8− | 0.8+ | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 1999 11 04 | 704 | 1.4− | 0.6− | 2005 03 08 | 691 | 0.4+ | 0.1+ | 2006 10 03 | 704 | 1.0+ | 0.0 |
| 1999 11 04 | 704 | 0.1+ | 0.2− | 2005 03 08 | 691 | 0.1− | 0.5+ | 2006 10 03 | 704 | 0.8− | 0.8+ |
| 1999 11 04 | 704 | 0.3− | 0.1+ | 2005 03 08 | 691 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 0.1− | 1.5+ |
| 1999 11 04 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 03 | 704 | (0.4+ | 1.8+) |
| 2002 05 06 | 699 | 1.4− | 0.5+ | 2006 09 14 | 644 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.5− | 0.0 |
| 2002 05 06 | 699 | 0.5− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.2− | 2006 10 19 | 704 | 0.3+ | 0.6+ |
| 2002 05 06 | 699 | (0.6− | 1.8+) | 2006 09 16 | 703 | 0.2− | 0.4− | 2006 10 19 | 704 | 0.5− | 0.8+ |
| 2002 05 06 | 699 | (1.4+ | 3.2+) | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2002 05 08 | 699 | 1.1− | 0.7+ | 2006 09 16 | 703 | 0.3+ | 1.1− | 2006 10 19 | 704 | 1.3− | 0.8− |
| 2002 05 08 | 699 | 0.4+ | 1.0− | 2006 09 16 | 703 | 0.5+ | 0.7− | 2006 10 19 | 704 | 0.2− | 0.4+ |
| 2002 05 08 | 699 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.5− | 0.1+ |
| 2002 05 08 | 699 | 0.5+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 10 19 | 704 | 1.1− | 0.3− |
| 2002 05 09 | 704 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2002 05 09 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.4− | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2002 05 09 | 704 | 0.2+ | 0.3− | 2006 09 21 | 704 | 1.0+ | 1.4+ | 2006 11 06 | 644 | 0.6− | 0.0 |

**(137386)∗ 1999 TK$_{155}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.81904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28064412 | $\omega$ | 40.31920 | | +0.68704636 | −0.72652543 | |
| $a$ | 2.3104616 | $\Omega$ | 6.31383 | | +0.63736207 | +0.59510256 | |
| $e$ | 0.2191179 | $i$ | 5.90689 | | +0.34890814 | +0.34353128 | |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 04 | 691 | 0.2− | 0.3− | 2004 01 23 | 704 | 1.4− | 0.6+ | 2006 09 29 | 704 | (0.8+ | 2.2+) |
| 1997 02 04 | 691 | 0.5− | 0.9− | 2004 01 23 | 704 | 0.2− | 1.1+ | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 1997 02 04 | 691 | 0.5− | 0.6− | 2004 01 23 | 704 | 0.5+ | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 1999 10 07 | 704 | 0.8− | 0.3− | 2004 01 23 | 704 | 0.7− | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.1− |
| 1999 10 07 | 704 | 0.8+ | 0.7+ | 2004 01 30 | 704 | (1.1+ | 1.9+) | 2006 10 03 | 704 | (1.9+ | 0.5+) |
| 1999 10 07 | 704 | 0.3+ | 0.9− | 2004 01 30 | 704 | 1.4+ | 0.0 | 2006 10 03 | 704 | 1.3+ | 0.8+ |
| 1999 10 10 | 704 | 0.8− | 0.6− | 2004 01 30 | 704 | 1.4+ | 0.0 | 2006 10 03 | 704 | 0.1+ | 1.2+ |
| 1999 10 10 | 704 | 0.8− | 0.3− | 2004 02 13 | 691 | 0.3+ | 0.1+ | 2006 10 03 | 704 | 0.3+ | 0.7+ |
| 1999 10 10 | 704 | 0.1− | 0.1− | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 1.4+ | 0.8+ |
| 1999 10 10 | 704 | 0.1− | 1.2− | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 1.3− | 0.3− | 2006 08 21 | 704 | 0.2+ | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.3+ | 0.8− | 2006 08 21 | 704 | 0.3+ | 0.3+ | 2006 10 03 | 691 | 0.1− | 0.0 |
| 1999 10 15 | 704 | 0.1− | 0.7− | 2006 08 21 | 704 | 0.4− | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.2− |
| 1999 10 15 | 704 | 0.7+ | 0.1− | 2006 08 21 | 704 | 0.3+ | 0.6− | 2006 10 17 | 691 | 0.1− | 0.2− |
| 1999 10 15 | 704 | 0.9+ | 0.0 | 2006 08 21 | 704 | 0.5− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.7+ | 0.6− | 2006 08 28 | 703 | 0.5− | 1.4− | 2006 10 17 | 703 | (2.4+ | 0.8−) |
| 1999 10 21 | 704 | 0.0 | 1.4− | 2006 08 28 | 703 | (2.1− | 0.5−) | 2006 10 17 | 703 | 0.1− | 0.3− |
| 1999 10 21 | 704 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.5− | 0.8− | 2006 10 17 | 703 | 0.5− | 0.2− |
| 1999 10 21 | 704 | 0.1− | 0.5− | 2006 08 28 | 703 | 1.1+ | 0.5− | 2006 10 19 | 704 | 0.1− | 1.3+ |
| 1999 10 21 | 704 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.0 | 0.5+ | 2006 10 19 | 704 | 1.1+ | 0.1− |
| 1999 10 21 | 704 | 0.8+ | 0.7− | 2006 08 30 | 699 | 0.1+ | 0.1+ | 2006 10 19 | 704 | (2.5+ | 0.7−) |
| 1999 10 31 | 703 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.4− | 0.5+ | 2006 10 19 | 704 | 0.3+ | 0.8+ |
| 1999 10 31 | 703 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 19 | 704 | 0.0 | 0.0 |
| 1999 10 31 | 703 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.1− | 1.0− |
| 1999 10 31 | 703 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 1999 11 01 | 699 | 0.2+ | 1.2+ | 2006 09 18 | 699 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.6− | 0.6− |
| 1999 11 01 | 699 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.8− |
| 1999 11 01 | 699 | 0.1− | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 26 | 704 | 0.8+ | 0.5− |
| 1999 11 04 | 704 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 26 | 704 | 0.3+ | 0.3− |
| 1999 11 04 | 704 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 10 26 | 704 | 0.6+ | 0.1+ |
| 1999 11 04 | 704 | 2.0+ | 0.5− | 2006 09 20 | 704 | 0.9+ | 0.5+ | 2006 10 29 | 704 | 0.5− | 0.1− |
| 1999 11 04 | 704 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 1.4+ | 0.5+ |
| 1999 11 11 | 703 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.6− | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.6+ |
| 1999 11 11 | 703 | 0.9− | 1.0+ | 2006 09 20 | 704 | 0.9− | 0.6+ | 2006 10 29 | 704 | 0.8− | 0.9+ |
| 1999 11 11 | 703 | 0.7− | 0.8+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.2+ | 0.5+ |
| 1999 11 11 | 703 | 0.3+ | 0.4+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 1.3− |
| 1999 11 12 | 723 | 0.8− | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 1.5− |
| 1999 11 12 | 699 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.5+ | 0.6+ | 2006 11 14 | 703 | 0.4− | 0.3+ |
| 1999 11 12 | 723 | 1.3+ | 0.3+ | 2006 09 27 | 704 | 0.8+ | 1.3+ | 2006 11 14 | 703 | 0.1+ | 0.6− |
| 1999 11 12 | 699 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.7+ | 1.0+ | 2006 11 19 | 704 | 0.8− | 0.8+ |
| 1999 11 12 | 723 | 0.0 | 0.1− | 2006 09 27 | 704 | 1.0+ | 0.0 | 2006 11 19 | 704 | 0.9− | 0.1− |
| 1999 11 12 | 699 | 0.5− | 0.2− | 2006 09 29 | 704 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.5− | 1.1+ |
| 2004 01 18 | 644 | 0.5+ | 1.0+ | 2006 09 29 | 704 | 0.8+ | 0.5+ | 2006 11 19 | 704 | 1.6− | 0.5+ |
| 2004 01 18 | 644 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.8− | 0.9+ | 2006 11 19 | 704 | 2.0− | 0.7+ |
| 2004 01 18 | 644 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.3− | | | | |

**(137387)∗ 1999 TB$_{156}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.06904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26518128 | $\omega$ | 355.93941 | | +0.90814318 | −0.41842973 | |
| $a$ | 2.3994267 | $\Omega$ | 28.80865 | | +0.38491929 | +0.82146068 | |
| $e$ | 0.1819418 | $i$ | 1.65001 | | +0.16466060 | +0.38745182 | |
| $P$ | 3.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 25 | 691 | 0.2− | 0.7− | 1999 11 11 | 703 | 1.4− | 0.7− | 2003 12 19 | 704 | 0.5+ | 1.4+ |
| 1993 01 25 | 691 | 0.3− | 0.0 | 1999 11 11 | 703 | 0.4− | 0.3+ | 2003 12 19 | 704 | 0.4+ | 0.3+ |
| 1993 01 25 | 691 | 0.6− | 0.2+ | 1999 11 11 | 703 | 1.1− | 0.3− | 2003 12 19 | 704 | 1.2− | 0.5+ |
| 1997 02 06 | 691 | 0.1− | 0.7− | 1999 11 13 | 120 | 1.5+ | 0.3− | 2003 12 19 | 704 | 0.5− | 0.4+ |
| 1997 02 06 | 691 | 0.3+ | 0.0 | 1999 11 13 | 120 | 1.0+ | 0.9− | 2003 12 19 | 704 | 0.5− | 0.1+ |
| 1997 02 06 | 691 | 0.4− | 0.0 | 1999 11 14 | 704 | 1.0+ | 0.0 | 2003 12 21 | 704 | 1.1+ | 0.7+ |
| 1999 10 02 | 691 | 0.1+ | 0.4− | 1999 11 14 | 704 | 0.5+ | 0.8− | 2003 12 21 | 704 | 0.2− | 0.9+ |
| 1999 10 02 | 691 | 0.3+ | 0.4− | 1999 11 14 | 704 | 0.0 | 1.2− | 2003 12 21 | 704 | 1.2+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.1+ | 0.4− | 1999 11 14 | 704 | 0.9+ | 0.8− | 2003 12 21 | 704 | 0.1− | 0.2+ |
| 1999 10 07 | 704 | 0.4+ | 0.1+ | 1999 11 14 | 704 | 0.1+ | 0.6− | 2003 12 21 | 704 | 0.4− | 1.3+ |
| 1999 10 07 | 704 | 1.3− | 0.4+ | 1999 11 16 | 704 | 0.5+ | 0.6− | 2003 12 22 | 704 | 0.4− | 0.2− |
| 1999 10 07 | 704 | 1.1− | 0.1− | 1999 11 16 | 704 | 0.9+ | 0.4− | 2003 12 22 | 704 | 0.6− | 0.3− |
| 1999 10 10 | 704 | 1.2− | 1.4+ | 1999 11 16 | 704 | 1.6+ | 0.8− | 2003 12 22 | 704 | 0.4− | 0.1+ |
| 1999 10 10 | 704 | 0.7− | 1.0+ | 1999 11 16 | 704 | 1.9− | 0.4− | 2003 12 22 | 704 | 0.0 | 0.2+ |
| 1999 10 10 | 704 | 0.2+ | 1.0+ | 1999 11 16 | 704 | 0.4+ | 0.3− | 2004 01 22 | 704 | 0.7− | 0.4− |
| 1999 10 10 | 704 | 0.0 | 1.7+ | 1999 11 17 | 691 | 0.4+ | 0.0 | 2004 01 22 | 704 | 0.2− | 0.0 |
| 1999 10 10 | 691 | 0.3+ | 0.2− | 1999 11 17 | 691 | 0.3+ | 0.0 | 2004 01 22 | 704 | 1.0− | 0.2− |
| 1999 10 10 | 691 | 0.3+ | 0.2− | 1999 11 17 | 691 | 0.2+ | 0.1− | 2005 04 02 | G96 | 0.1− | 0.0 |
| 1999 10 10 | 691 | 0.3+ | 0.1− | 1999 12 04 | 703 | 0.0 | 0.1+ | 2005 04 02 | G96 | 0.2− | 0.0 |
| 1999 10 15 | 704 | 0.2+ | 0.6+ | 1999 12 04 | 699 | 0.2− | 0.5+ | 2005 04 02 | G96 | 0.5− | 1.0+ |
| 1999 10 15 | 704 | 0.2+ | 1.0+ | 1999 12 04 | 703 | 0.1+ | 0.4− | 2005 04 02 | G96 | 0.7+ | 0.3+ |
| 1999 10 15 | 704 | 0.2+ | 0.2− | 1999 12 04 | 703 | 0.3− | 0.4+ | 2005 04 09 | 691 | 0.7+ | 0.6+ |
| 1999 10 15 | 704 | 0.1− | 0.8− | 1999 12 04 | 699 | 1.0+ | 0.1+ | 2005 04 09 | 691 | 0.8+ | 0.3+ |
| 1999 10 15 | 704 | 0.5− | 0.3+ | 1999 12 04 | 703 | 0.4− | 0.6+ | 2005 04 09 | 691 | 0.4+ | 0.2+ |
| 1999 10 19 | 691 | 0.6− | 0.6+ | 1999 12 04 | 699 | 0.1+ | 0.5+ | 2006 08 14 | 644 | 0.6− | 0.2+ |
| 1999 10 19 | 691 | 0.6− | 0.5+ | 1999 12 07 | 704 | (1.4+ | 2.3−) | 2006 08 14 | 644 | 0.5− | 0.1+ |
| 1999 10 19 | 691 | 0.5− | 0.5+ | 1999 12 07 | 704 | (0.8− | 2.6−) | 2006 08 14 | 644 | 0.6− | 0.1+ |
| 1999 10 21 | 704 | 1.1+ | 1.0− | 1999 12 07 | 704 | (1.8+ | 3.0−) | 2006 08 28 | 703 | (0.9+ | 1.9−) |
| 1999 10 21 | 704 | 0.4+ | 0.8− | 1999 12 07 | 704 | (1.2− | 2.1−) | 2006 08 28 | 703 | 0.1− | 1.1− |
| 1999 10 21 | 704 | 0.9− | 0.4+ | 2000 01 04 | 704 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.4+ |
| 1999 10 21 | 704 | 0.1− | 1.6+ | 2000 01 04 | 704 | 0.1− | 0.6− | 2006 08 28 | 703 | 1.3− | 0.7+ |
| 1999 10 29 | 691 | 0.2+ | 0.3+ | 2000 01 04 | 704 | 0.9− | 1.5− | 2006 09 14 | 644 | 0.5− | 0.1+ |
| 1999 10 29 | 703 | 0.3− | 0.2+ | 2001 03 16 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 1999 10 29 | 703 | 0.5− | 0.2− | 2001 03 16 | 691 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 1999 10 29 | 691 | 0.4+ | 0.2+ | 2001 03 16 | 691 | 0.3+ | 0.5+ | 2006 10 10 | E12 | 0.2− | 0.5+ |
| 1999 10 29 | 703 | 0.3+ | 0.8+ | 2003 11 21 | 704 | (0.7+ | 1.6−) | 2006 10 10 | E12 | 0.6− | 0.7+ |
| 1999 10 29 | 703 | 0.7− | 0.2+ | 2003 11 21 | 704 | 0.6+ | 0.1+ | 2006 10 10 | E12 | 0.1+ | 1.2+ |
| 1999 10 29 | 691 | 0.4+ | 0.1+ | 2003 11 21 | 704 | 0.1+ | 0.3− | 2006 10 10 | E12 | 0.1− | 0.1− |
| 1999 11 04 | 704 | 0.4− | 0.5+ | 2003 11 21 | 704 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 1999 11 04 | 704 | 0.4− | 0.5+ | 2003 12 18 | 704 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− |
| 1999 11 04 | 704 | 0.4− | 0.8+ | 2003 12 18 | 704 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 1999 11 04 | 704 | 0.3− | 0.3+ | 2003 12 18 | 704 | 0.2+ | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 1999 11 04 | 704 | 0.7− | 1.0+ | 2003 12 18 | 704 | 0.6+ | 0.5+ | | | | |
| 1999 11 11 | 703 | 0.2− | 0.4+ | 2003 12 18 | 704 | 0.2+ | 0.1+ | | | | |

**(137388)∗ 1999 TY$_{156}$ = 2003 YN$_{141}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.93185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28510848 | $\omega$ | 77.47997 | | +0.26262832 | −0.96487104 | |
| $a$ | 2.2862794 | $\Omega$ | 357.26329 | | +0.81759352 | +0.22642960 | |
| $e$ | 0.0569203 | $i$ | 8.53651 | | +0.51241312 | +0.13324228 | |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 691 | 0.5− | 0.3+ | 2003 12 17 | 704 | 0.9+ | 0.6− | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 1999 09 14 | 691 | 0.3− | 0.5+ | 2003 12 28 | 704 | 0.5− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.4+ |
| 1999 09 14 | 691 | 0.4− | 0.2+ | 2003 12 28 | 704 | 0.9− | 0.5− | 2006 09 29 | 704 | 0.6− | 1.1+ |
| 1999 10 09 | 704 | 0.4+ | 0.3+ | 2003 12 28 | 704 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.5− |
| 1999 10 09 | 704 | 0.1− | 0.8− | 2003 12 28 | 704 | 0.6− | 0.2− | 2006 09 29 | 704 | 0.7+ | 0.6+ |
| 1999 10 09 | 704 | 1.0+ | 0.1+ | 2003 12 28 | 704 | 0.8− | 0.3− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 0.9− | 0.4− | 2003 12 30 | 704 | 0.1− | 0.9+ | 2006 10 01 | 691 | 0.6+ | 0.2− |
| 1999 10 09 | 704 | 0.1+ | 0.2− | 2003 12 30 | 704 | 0.0 | 0.9+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 1999 10 10 | 704 | 0.4− | 0.3+ | 2003 12 30 | 704 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 1999 10 10 | 704 | 0.5− | 0.6− | 2003 12 30 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1999 10 10 | 704 | 1.1+ | 0.6+ | 2003 12 30 | 704 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 1999 10 13 | 704 | 0.2− | 0.3− | 2006 07 21 | G96 | 1.0− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.4− |
| 1999 10 13 | 704 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 1999 10 13 | 704 | 0.1+ | 0.9− | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 1.1+ | 0.0 | 2006 07 21 | G96 | 0.4− | 0.0 | 2006 10 17 | 703 | 1.2− | 0.0 |
| 1999 10 13 | 704 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.7+ | 0.2− | 2006 10 19 | 683 | 0.5+ | 1.4− |
| 1999 10 13 | 704 | 1.3+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.3+ | 2006 10 19 | 683 | (3.2+ | 0.1−) |
| 1999 10 13 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.9+ | 0.9− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.4+ | 0.4− | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2001 02 20 | 645 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 02 20 | 645 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 03 27 | 691 | 0.8+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 03 27 | 691 | 1.0+ | 0.6+ | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 03 27 | 691 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 1.3− | 0.7− | 2006 11 14 | 703 | 2.5+ | 1.6− |
| 2002 07 06 | 644 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.9+ | 1.1− | 2006 11 14 | 703 | 1.3− | 1.1− |
| 2002 07 06 | 644 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.9+ | 0.1− | 2006 11 14 | 703 | 1.5− | 0.8− |
| 2003 12 17 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.5+ | 2006 11 14 | 703 | 2.2− | 0.5+ |
| 2003 12 17 | 704 | 1.1+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.2+ | | | | |

**(137389)∗ 1999 TL$_{157}$ = 1994 CO$_5$ = 1999 TK$_{181}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 1162), T. B. Spahr (d, *ibid.*), G. V. Williams (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.76581 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29428088 | $\omega$ | 218.29476 | | +0.31181081 | −0.95007132 | |
| $a$ | 2.2385219 | $\Omega$ | 213.54153 | | +0.87690656 | +0.29252283 | |
| $e$ | 0.1059430 | $i$ | 1.22046 | | +0.36579899 | +0.10860423 | |
| $P$ | 3.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 11 | 691 | 0.1+ | 0.3− | 2004 01 30 | 704 | 0.2+ | 1.1+ | 2006 11 17 | 644 | 0.1+ | 0.1− |
| 1994 02 11 | 691 | 0.1− | 0.3− | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 11 17 | 644 | 0.4+ | 0.2+ |
| 1994 02 11 | 691 | 0.0 | 0.3− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.1− |
| 1994 02 16 | 691 | 0.3− | 0.1− | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 644 | 0.7+ | 0.2+ |
| 1994 02 16 | 691 | 0.2− | 0.2− | 2004 02 11 | 699 | 0.7− | 0.5+ | 2006 11 17 | 644 | 0.0 | 0.5− |
| 1994 02 16 | 691 | 0.2− | 1.0− | 2004 02 11 | 699 | (1.0− | 1.6−) | 2006 11 18 | 704 | 0.2− | 0.5− |
| 1999 09 14 | 691 | 0.8− | 0.2+ | 2004 02 11 | 699 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 1999 09 14 | 691 | 0.4− | 0.2+ | 2004 02 11 | 699 | 0.2− | 0.4+ | 2006 11 18 | 704 | 1.2+ | 1.2− |
| 1999 09 14 | 691 | 0.7− | 0.1+ | 2004 02 17 | 704 | 0.5+ | 0.4+ | 2006 11 18 | 704 | 0.9+ | 0.0 |
| 1999 09 29 | 703 | 0.4− | 0.5+ | 2004 02 17 | 704 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 1999 09 29 | 703 | 0.9+ | 0.5+ | 2004 02 17 | 704 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 1999 09 29 | 703 | (3.7− | 0.3+) | 2004 02 17 | 704 | 0.0 | 0.9+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 1999 09 29 | 703 | 0.1+ | 0.0 | 2004 02 17 | 704 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 0.9+ | 0.7− | 2004 02 26 | 704 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 1999 10 09 | 704 | 0.1+ | 0.7− | 2004 02 26 | 704 | 0.5+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 1999 10 09 | 704 | 0.0 | 0.7+ | 2004 02 26 | 704 | 0.8+ | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.7+ |
| 1999 10 09 | 704 | 0.2+ | 0.3− | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.3− |
| 1999 10 09 | 704 | 0.3− | 0.5+ | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 1999 10 10 | 704 | 0.2− | 0.9+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.5− | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 1999 10 11 | 704 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 1999 10 11 | 704 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 1999 10 11 | 704 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 1999 10 11 | 704 | 0.2− | 0.8+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.8− | 0.3− |
| 1999 10 11 | 704 | 1.5+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 1999 10 15 | 704 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.2+ | 0.4− |
| 1999 10 15 | 704 | 0.1+ | 0.7− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 1.2− | 0.4− |
| 1999 10 15 | 704 | 1.8+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 27 | 691 | 0.4− | 0.3+ |
| 1999 10 16 | 704 | 1.2+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.1− | 0.4− |
| 1999 10 16 | 704 | 0.7+ | 0.6− | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 1999 10 16 | 704 | 0.8− | 1.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 27 | 704 | 0.8− | 1.2+ |
| 2004 01 21 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.7− | 2006 11 27 | 704 | 0.6− | 0.1− |
| 2004 01 21 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | 2006 11 27 | 704 | 1.6− | 0.3+ |
| 2004 01 21 | 704 | 0.8+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2004 01 21 | 704 | 0.8+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.4+ | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 0.2+ | 1.5+ | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 12 01 | 704 | 0.7+ | 0.2+ |
| 2004 01 24 | 704 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.3− | 0.5− | 2006 12 01 | 704 | 1.0+ | 0.4+ |
| 2004 01 24 | 704 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2004 01 24 | 704 | 0.0 | 0.9+ | 2006 11 11 | G96 | 0.5+ | 0.6− | 2006 12 01 | 704 | 0.6− | 1.0+ |
| 2004 01 30 | 704 | (1.6− | 1.0+) | 2006 11 15 | 691 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.7− | 0.1− |
| 2004 01 30 | 704 | 0.1+ | 0.9+ | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.1+ | 0.5+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 704 | 0.5+ | 1.5+ | 2006 11 15 | 691 | 0.1+ | 0.2− | |
| 2004 01 30 | 704 | 1.0− | 1.0+ | 2006 11 17 | 644 | 0.2+ | 0.0 | |

**(137390)∗ 1999 TS$_{157}$ = 1999 TX$_{167}$ = 2003 YQ$_{128}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 2807), G. V. Williams (*MPO* 60547)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.73111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29090541 | $\omega$ | 61.26111 | | +0.61326258 | −0.78967878 | |
| $a$ | 2.2558048 | $\Omega$ | 350.84960 | | +0.68007704 | +0.53933284 | |
| $e$ | 0.0896612 | $i$ | 6.42252 | | +0.40175145 | +0.29245086 | |
| $P$ | 3.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 29 | 703 | (2.1− | 1.0−) | 2002 07 14 | 644 | 0.0 | 0.6+ | 2004 02 11 | 699 | 0.3− | 0.4+ | |
| 1999 09 29 | 703 | 0.8− | 0.3+ | 2002 08 11 | 644 | 0.4− | 0.2+ | 2004 02 14 | 704 | (0.8+ | 1.5−) | |
| 1999 09 29 | 703 | 1.2− | 0.5+ | 2002 08 11 | 644 | 0.3− | 0.1+ | 2004 02 14 | 704 | 0.3+ | 0.7− | |
| 1999 09 29 | 703 | 0.3+ | 0.6+ | 2002 08 11 | 644 | 0.4− | 0.5+ | 2004 02 14 | 704 | 0.0 | 1.0− | |
| 1999 10 09 | 704 | 0.7− | 0.3− | 2003 12 18 | 704 | 0.1+ | 0.2+ | 2004 02 14 | 704 | 0.3+ | 0.6− | |
| 1999 10 09 | 704 | 0.2+ | 0.5+ | 2003 12 18 | 704 | (0.1+ | 1.5+) | 2004 02 14 | 704 | 0.8+ | 0.1− | |
| 1999 10 09 | 704 | 0.6+ | 0.3+ | 2003 12 18 | 704 | (1.0− | 2.4−) | 2006 10 19 | 703 | 0.4+ | 0.2+ | |
| 1999 10 09 | 704 | 0.2+ | 0.6− | 2003 12 18 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.5+ | |
| 1999 10 10 | 704 | 0.8+ | 0.8− | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.1+ | |
| 1999 10 10 | 704 | 0.4− | 0.1− | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.1+ | |
| 1999 10 10 | 704 | 0.1+ | 0.8− | 2003 12 27 | 704 | 0.2+ | 0.2+ | 2006 10 20 | A50 | 0.1+ | 0.2+ | |
| 1999 10 10 | 704 | 0.0 | 0.5− | 2003 12 27 | 704 | 0.1− | 0.1+ | 2006 10 20 | A50 | 0.2− | 0.5+ | |
| 1999 10 10 | 704 | 0.4+ | 0.1− | 2003 12 27 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.0 | |
| 1999 10 10 | 704 | 0.0 | 0.1− | 2003 12 27 | 704 | 0.6+ | 0.7+ | 2006 10 27 | 703 | 0.7− | 0.0 | |
| 1999 10 10 | 704 | 1.3+ | 0.2− | 2003 12 27 | 704 | 1.1+ | 1.1+ | 2006 10 27 | 703 | 0.1+ | 0.1− | |
| 1999 10 10 | 704 | 0.1+ | 0.1− | 2003 12 29 | 704 | 0.2− | 1.0+ | 2006 10 27 | 703 | 0.2− | 0.5− | |
| 1999 10 10 | 704 | 0.0 | 0.2+ | 2003 12 29 | 704 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3+ | |
| 1999 10 10 | 704 | 0.6− | 0.8− | 2003 12 29 | 704 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.0 | |
| 1999 10 11 | 704 | 0.1+ | 0.2+ | 2003 12 29 | 704 | 0.3− | 1.1+ | 2006 11 09 | 644 | 0.0 | 0.4+ | |
| 1999 10 11 | 704 | 0.4+ | 0.1− | 2003 12 29 | 704 | 0.7− | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.0 | |
| 1999 10 11 | 704 | 0.4+ | 0.2− | 2004 01 31 | 704 | 1.1+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.4+ | |
| 1999 10 11 | 704 | 0.2+ | 0.1− | 2004 01 31 | 704 | 0.6− | 1.0− | 2006 11 13 | 644 | 0.2+ | 0.2+ | |
| 1999 10 11 | 704 | 0.0 | 0.4+ | 2004 01 31 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.3− | |
| 2001 03 31 | 691 | 0.1+ | 0.1+ | 2004 01 31 | 704 | 0.3+ | 1.1+ | 2006 11 16 | 704 | 0.5− | 1.1+ | |
| 2001 03 31 | 691 | 0.2+ | 0.2+ | 2004 01 31 | 704 | 0.0 | 0.5+ | 2006 11 16 | 704 | (2.1− | 0.5−) | |
| 2001 03 31 | 691 | 0.1+ | 0.2+ | 2004 02 11 | 699 | 0.7− | 0.9− | 2006 11 17 | 644 | 0.2− | 0.2+ | |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2004 02 11 | 699 | 1.0− | 0.3− | 2006 11 17 | 644 | 0.1− | 0.1+ | |
| 2002 07 14 | 644 | 0.1− | 0.4+ | 2004 02 11 | 699 | 0.8− | 1.0− | 2006 11 17 | 644 | 0.0 | 0.1+ | |

**(137391)∗ 1999 TF$_{158}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.09531 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26838983 | $\omega$ | 66.33991 | | +0.59770725 | −0.80147714 | |
| $a$ | 2.3802652 | $\Omega$ | 346.89916 | | +0.70064371 | +0.53402567 | |
| $e$ | 0.2125544 | $i$ | 4.93643 | | +0.38967221 | +0.26916720 | |
| $P$ | 3.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.1− | 0.1+ | 2003 11 20 | 704 | 0.2+ | 0.4+ | 2004 01 31 | 704 | 0.3− | 0.2+ | |
| 1993 01 23 | 691 | (3.4+ | 0.3+) | 2003 11 20 | 704 | 0.4− | 0.9+ | 2004 01 31 | 704 | (0.5+ | 1.7+) | |
| 1993 01 23 | 691 | 0.1− | 0.3− | 2003 12 17 | 699 | 1.0− | 0.3+ | 2004 02 15 | 704 | 0.7− | 0.4− | |
| 1999 10 07 | 704 | 1.0− | 0.5− | 2003 12 17 | 699 | 0.0 | 0.1+ | 2004 02 15 | 704 | 0.4+ | 0.2− | |
| 1999 10 07 | 704 | 1.9− | 0.8− | 2003 12 17 | 699 | 0.1− | 0.1− | 2004 02 15 | 704 | 0.3+ | 0.2− | |
| 1999 10 07 | 704 | 0.7− | 0.4− | 2003 12 17 | 699 | 0.5− | 0.1+ | 2004 02 15 | 704 | 0.6+ | 0.3− | |
| 1999 10 12 | 704 | 0.3+ | 0.0 | 2003 12 18 | 704 | 0.0 | 0.3+ | 2004 02 15 | 704 | 0.3− | 0.4+ | |
| 1999 10 12 | 704 | 0.1− | 0.3− | 2003 12 18 | 704 | 0.3− | 0.8+ | 2006 08 15 | 644 | 0.1− | 0.6+ | |
| 1999 10 12 | 704 | 0.2+ | 0.5− | 2003 12 18 | 704 | 0.6+ | 0.6− | 2006 08 15 | 644 | 0.0 | 0.5+ | |
| 1999 10 12 | 704 | 0.0 | 0.2− | 2003 12 18 | 704 | 0.0 | 0.7+ | 2006 08 15 | 644 | 0.2− | 0.5+ | |
| 1999 10 12 | 704 | 0.2+ | 0.1− | 2003 12 18 | 704 | 0.2− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.5+ | |
| 1999 10 22 | 704 | 0.6+ | 0.6− | 2003 12 23 | 704 | 0.3− | 0.2− | 2006 08 16 | 644 | 0.1− | 0.4+ | |
| 1999 10 22 | 704 | 0.4+ | 1.8− | 2003 12 23 | 704 | 0.8+ | 0.2+ | 2006 08 16 | 644 | 0.7− | 0.0 | |
| 1999 10 22 | 704 | 0.6+ | 0.2+ | 2003 12 23 | 704 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.4+ | |
| 1999 10 22 | 704 | 0.4− | 1.0− | 2003 12 23 | 704 | 1.1+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.3+ | |
| 1999 10 22 | 704 | 0.1− | 1.0− | 2003 12 23 | 704 | 0.8+ | 0.5− | 2006 08 17 | 644 | 0.2− | 0.4+ | |
| 1999 10 29 | 699 | 0.2+ | 0.9+ | 2003 12 28 | 704 | 0.0 | 0.6+ | 2006 08 18 | 644 | 0.3− | 0.4+ | |
| 1999 10 29 | 699 | 0.4+ | 0.4− | 2003 12 28 | 704 | 0.0 | 0.6+ | 2006 08 18 | 644 | 0.4− | 0.4+ | |
| 1999 10 29 | 699 | 0.1− | 0.8+ | 2003 12 28 | 704 | 0.3− | 0.0 | 2006 08 18 | 644 | 0.3− | 0.3+ | |
| 1999 10 31 | 703 | 0.6− | 0.4+ | 2003 12 28 | 704 | 0.1− | 0.2+ | 2006 08 19 | 699 | 0.3− | 0.5+ | |
| 1999 10 31 | 703 | 0.2+ | 0.7+ | 2003 12 28 | 704 | 0.2+ | 0.7+ | 2006 08 19 | 699 | 0.1− | 1.3+ | |
| 1999 10 31 | 703 | 0.3− | 0.1+ | 2003 12 30 | 704 | 0.0 | 0.8+ | 2006 08 19 | 699 | 0.1− | 0.9+ | |
| 1999 10 31 | 703 | 0.2+ | 0.5+ | 2003 12 30 | 704 | 0.9− | 0.4+ | 2006 08 19 | 699 | 0.6− | 0.4+ | |
| 1999 11 03 | 704 | 0.1+ | 0.8− | 2003 12 30 | 704 | 0.2+ | 0.7+ | 2006 08 20 | 644 | 0.1− | 0.6+ | |
| 1999 11 03 | 704 | 0.2+ | 0.5− | 2003 12 30 | 704 | 0.2− | 1.0+ | 2006 08 20 | 644 | 0.2− | 0.4+ | |
| 1999 11 03 | 704 | 0.2− | 0.2− | 2003 12 30 | 704 | 0.1+ | 1.3+ | 2006 08 20 | 644 | 0.3− | 0.5+ | |
| 1999 11 03 | 704 | 1.5+ | 0.3+ | 2004 01 18 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1+ | |
| 1999 11 09 | 699 | 0.1+ | 0.1− | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1+ | |
| 1999 11 09 | 699 | 0.4+ | 0.3+ | 2004 01 18 | 691 | 1.1+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1− | |
| 1999 11 09 | 699 | 0.7+ | 0.2+ | 2004 01 19 | 699 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.0 | |
| 2000 01 06 | 704 | 0.9+ | 0.3+ | 2004 01 19 | 699 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1− | |
| 2000 01 06 | 704 | 1.0+ | 0.1+ | 2004 01 19 | 699 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.0 | |
| 2000 01 06 | 704 | 0.4+ | 0.4− | 2004 01 19 | 699 | 0.2− | 0.9+ | 2006 10 20 | G96 | 0.1+ | 0.1+ | |
| 2003 11 20 | 704 | (0.9− | 1.8+) | 2004 01 31 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.0 | |
| 2003 11 20 | 704 | (1.2− | 1.8+) | 2004 01 31 | 704 | 0.4+ | 0.1− | | | | | |

**(137392)∗ 1999 TS$_{159}$ = 2005 MK$_{18}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84506)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.47724 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28900178 | $\omega$ | 228.91226 | | +0.30766709 | −0.95040698 | |
| $a$ | 2.2656998 | $\Omega$ | 203.28807 | | +0.90382947 | +0.30685634 | |
| $e$ | 0.0622820 | $i$ | 6.60427 | | +0.29737729 | +0.05065330 | |
| $P$ | 3.41 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 1.0− | 1.0− | 2005 06 28 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | |
| 1999 10 09 | 704 | 0.5− | 1.0− | 2005 06 28 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 1999 10 09 | 704 | 0.3− | 0.4− | 2005 06 29 | 291 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ | |
| 1999 10 09 | 704 | 0.2− | 0.6− | 2005 06 29 | 291 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 1999 10 09 | 704 | 0.4+ | 0.2+ | 2005 06 29 | 291 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.4+ | |
| 1999 10 11 | 704 | 0.2− | 0.7+ | 2005 07 03 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 1999 10 11 | 704 | 0.8+ | 0.7+ | 2005 07 03 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.5+ | |
| 1999 10 11 | 704 | 0.8+ | 0.3− | 2005 07 03 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.7+ | |
| 1999 10 13 | 704 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.5− | 0.4+ | |
| 1999 10 13 | 704 | 0.1+ | 0.8− | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.4− | |
| 1999 10 13 | 704 | 0.1+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.0 | |
| 1999 10 13 | 704 | 1.0+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− | |
| 1999 10 13 | 704 | 0.2+ | 0.7− | 2006 10 04 | 703 | (0.8+ | 1.6−) | 2006 10 31 | G96 | 0.2+ | 0.1− | |
| 2001 03 18 | 699 | 0.2+ | 0.8− | 2006 10 04 | 703 | (1.2+ | 1.6−) | 2006 11 09 | 644 | 0.0 | 0.3+ | |
| 2001 03 18 | 699 | 0.0 | 0.6+ | 2006 10 04 | 703 | 0.6+ | 0.6− | 2006 11 09 | 644 | 0.3+ | 0.2+ | |
| 2001 03 18 | 699 | 0.6+ | 0.9− | 2006 10 04 | 703 | 1.1+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | |
| 2001 03 18 | 699 | 0.1+ | 0.9+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.5+ | |
| 2001 03 29 | 704 | 0.5+ | 1.0+ | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.8− | |
| 2001 03 29 | 704 | 0.3− | 1.0+ | 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.0 | |
| 2001 03 29 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.1− | |
| 2001 03 29 | 704 | 0.7+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.3− | |
| 2001 03 29 | 704 | 0.5− | 1.2+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.5− | |
| 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.9+ | 2006 11 17 | 703 | 1.4− | 1.1− | |
| 2005 06 10 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 1.0− | 0.2− | |
| 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.6− | 0.3+ | |
| 2005 06 27 | 644 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.7− | 0.0 | |
| 2005 06 27 | 644 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.5+ | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | 644 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.1+ | |
| 2005 06 28 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.1+ | |

**(137393)∗ 1999 TW$_{159}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.84036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28063156 | $\omega$ | 187.05626 | | −0.01421069 | −0.99908213 | |
| $a$ | 2.3105305 | $\Omega$ | 263.76377 | | +0.91936433 | +0.00283488 | |
| $e$ | 0.1163159 | $i$ | 2.32973 | | +0.39315045 | −0.04274175 | |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 1.6− | 0.0 | 2003 12 18 | 704 | 0.2− | 0.5+ | 2006 09 12 | 703 | 1.2− | 0.8+ | |
| 1999 10 09 | 704 | 0.0 | 0.6− | 2003 12 18 | 704 | 0.2+ | 1.0+ | 2006 09 13 | 644 | 0.3+ | 0.4+ | |
| 1999 10 09 | 704 | 1.0+ | 0.5− | 2003 12 24 | 704 | 0.0 | 0.7− | 2006 09 13 | 644 | 0.3+ | 0.5+ | |
| 1999 10 09 | 704 | 0.1+ | 0.3− | 2003 12 24 | 704 | 0.6− | 0.4− | 2006 09 13 | 644 | 0.3+ | 0.5+ | |
| 1999 10 13 | 704 | 0.4− | 1.2− | 2003 12 24 | 704 | 0.0 | 0.6− | 2006 09 16 | 699 | 0.3− | 1.2+ | |
| 1999 10 13 | 704 | 0.7+ | 0.9− | 2003 12 30 | 704 | 0.0 | 0.3− | 2006 09 16 | 699 | 0.2− | 0.3+ | |
| 1999 10 13 | 704 | 0.1− | 1.0− | 2003 12 30 | 704 | 0.1− | 0.6− | 2006 09 16 | 699 | 0.5+ | 0.9+ | |
| 1999 10 13 | 704 | 0.6+ | 1.4− | 2003 12 30 | 704 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.4+ | 0.9+ | |
| 1999 10 13 | 704 | 1.0+ | 1.3− | 2003 12 30 | 704 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.1− | 0.2+ | |
| 1999 10 16 | 645 | 0.2+ | 0.1+ | 2003 12 30 | 704 | 0.0 | 0.3− | 2006 09 18 | 704 | 1.0− | 1.4+ | |
| 1999 10 16 | 645 | 0.1+ | 0.0 | 2004 01 21 | 704 | 1.1− | 0.7+ | 2006 09 18 | 704 | 1.3− | 0.6+ | |
| 1999 11 03 | 691 | 0.3− | 0.3− | 2004 01 21 | 704 | 1.1− | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.0 | |
| 1999 11 03 | 691 | 0.4− | 0.2− | 2004 01 21 | 704 | (2.1− | 1.1+) | 2006 09 19 | 703 | 0.8+ | 0.8− | |
| 1999 11 03 | 691 | 0.0 | 0.3− | 2005 02 09 | 809 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.2+ | |
| 1999 11 14 | 691 | 0.2+ | 0.5− | 2005 02 09 | 809 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.6+ | |
| 1999 11 14 | 691 | 0.1+ | 0.7− | 2005 02 09 | 809 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.7− | |
| 1999 11 14 | 691 | 0.1− | 0.4− | 2005 02 09 | 809 | 0.5− | 0.2+ | 2006 09 20 | 691 | 0.2− | 0.7+ | |
| 2001 03 19 | 704 | 0.4− | 0.6+ | 2005 06 14 | G96 | 0.6− | 0.0 | 2006 09 20 | 691 | 0.0 | 0.6+ | |
| 2001 03 19 | 704 | 1.3+ | 0.2+ | 2005 06 14 | G96 | 0.4− | 0.9− | 2006 09 20 | 691 | 0.0 | 0.6+ | |
| 2001 03 19 | 704 | 0.7+ | 0.5+ | 2005 06 14 | G96 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 2001 03 19 | 704 | 0.8+ | 1.1+ | 2005 06 14 | G96 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ | |
| 2001 03 19 | 704 | 0.4+ | 0.9+ | 2006 08 29 | 703 | 1.3− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.0 | |
| 2001 03 19 | 704 | 0.8+ | 0.3+ | 2006 08 29 | 703 | 1.2− | 0.9+ | 2006 11 14 | G96 | 0.2+ | 0.2− | |
| 2001 03 19 | 704 | 0.9+ | 0.3+ | 2006 08 29 | 703 | 0.4+ | 0.9+ | 2006 11 14 | G96 | 0.7+ | 0.3− | |
| 2001 03 19 | 704 | (0.1− | 2.1+) | 2006 08 29 | 703 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.4− | |
| 2003 12 18 | 704 | 0.2+ | 0.9+ | 2006 09 12 | 703 | 0.8− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.1− | |
| 2003 12 18 | 704 | 0.0 | 1.1+ | 2006 09 12 | 703 | 0.4− | 0.1+ | | | | | |
| 2003 12 18 | 704 | 0.3+ | 0.9+ | 2006 09 12 | 703 | 0.1+ | 1.1+ | | | | | |

**(137394)∗ 1999 TK$_{162}$ = 2003 YA$_{39}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55924)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.33650 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27746425 | $\omega$ | 329.25204 | | +0.60630625 | −0.79244700 | |
| $a$ | 2.3280807 | $\Omega$ | 83.34295 | | +0.74254754 | +0.53423168 | |
| $e$ | 0.1497323 | $i$ | 3.83813 | | +0.28463288 | +0.29432000 | |
| $P$ | 3.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 566 | 0.6+ | 1.1− | 2003 12 27 | 704 | 0.0 | 1.3+ | 2006 09 12 | 703 | (2.1− | 0.4+) | |
| 1997 02 03 | 566 | 0.1+ | 0.9− | 2003 12 27 | 704 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.4− | 0.1+ | |
| 1997 02 03 | 566 | 0.3+ | 1.1− | 2003 12 29 | 699 | 0.0 | 1.4− | 2006 09 18 | 703 | 0.1− | 0.5− | |
| 1999 10 09 | 704 | 0.6− | 1.6+ | 2003 12 29 | 699 | (2.4− | 1.5−) | 2006 09 18 | 703 | 0.3+ | 0.8− | |
| 1999 10 09 | 704 | 0.5+ | 0.3+ | 2003 12 29 | 699 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.0 | |
| 1999 10 09 | 704 | 0.9− | 0.6− | 2003 12 29 | 699 | 0.4+ | 1.1− | 2006 09 18 | 699 | 0.1+ | 0.2+ | |
| 1999 10 09 | 704 | 0.3+ | 0.5+ | 2004 01 22 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.8+ | |
| 1999 10 09 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | |
| 1999 10 11 | 704 | 0.0 | 0.6− | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.4+ | |
| 1999 10 11 | 704 | 0.3− | 0.4− | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.1+ | |
| 1999 10 11 | 704 | 0.4− | 0.2+ | 2004 01 22 | 704 | 0.5− | 0.0 | 2006 09 20 | 644 | 0.3− | 0.1− | |
| 1999 10 11 | 704 | 0.9+ | 0.4− | 2004 01 30 | 704 | 0.6+ | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.2+ | |
| 1999 10 11 | 704 | 0.2− | 0.2− | 2004 01 30 | 704 | 0.5+ | 1.2+ | 2006 09 26 | 704 | 0.5− | 0.0 | |
| 1999 10 12 | 704 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 1.2− | 0.9+ | |
| 1999 10 12 | 704 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.4− | 2006 09 26 | 704 | 0.2− | 0.0 | |
| 1999 10 12 | 704 | 0.3+ | 0.1− | 2004 01 30 | 704 | 0.3− | 0.4− | 2006 09 26 | 704 | 0.1+ | 0.4+ | |
| 1999 10 19 | 704 | 0.7− | 0.1+ | 2004 02 15 | 704 | (0.7+ | 2.1+) | 2006 09 26 | 704 | (1.3− | 1.7+) | |
| 1999 10 19 | 704 | 0.4+ | 0.3− | 2004 02 15 | 704 | (0.3− | 2.1+) | 2006 09 30 | 703 | (5.7− | 1.2−) | |
| 1999 10 19 | 704 | 0.4+ | 0.9− | 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.4+ | |
| 1999 10 19 | 704 | 0.1− | 0.2− | 2004 02 15 | 704 | 0.4− | 1.4+ | 2006 09 30 | 703 | 0.1− | 0.1+ | |
| 1999 10 19 | 704 | 0.9+ | 0.8− | 2004 02 15 | 704 | 0.1− | 1.2+ | 2006 09 30 | 704 | 0.4+ | 0.6+ | |
| 1999 12 07 | 704 | 0.2+ | 1.3− | 2005 05 08 | G96 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.9+ | 1.0+ | |
| 1999 12 07 | 704 | 0.4+ | 1.0− | 2005 05 08 | G96 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.3− | 0.0 | |
| 1999 12 07 | 704 | 0.1− | 0.4− | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1+ | |
| 1999 12 07 | 704 | 0.4− | 0.7− | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1+ | |
| 2003 12 19 | 704 | (0.4+ | 1.9+) | 2005 05 14 | G96 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.3− | 0.2− | |
| 2003 12 19 | 704 | 0.2+ | 1.0+ | 2005 05 14 | G96 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1− | |
| 2003 12 19 | 704 | 0.2− | 0.5+ | 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.4+ | |
| 2003 12 21 | 691 | 0.1− | 0.2− | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.5+ | |
| 2003 12 21 | 691 | 0.0 | 0.1− | 2005 05 20 | G96 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | |
| 2003 12 21 | 691 | 0.1− | 0.1− | 2005 05 20 | G96 | 0.3− | 1.2+ | 2006 10 22 | 703 | 0.2− | 0.3− | |
| 2003 12 22 | 704 | 0.3− | 0.3+ | 2005 05 20 | G96 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.8+ | |
| 2003 12 22 | 704 | 0.0 | 0.8+ | 2005 05 20 | G96 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.6+ | |
| 2003 12 22 | 704 | 0.8+ | 1.3+ | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 1.0− | |
| 2003 12 22 | 704 | 0.2+ | 1.1+ | 2006 08 23 | 644 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.2− | |
| 2003 12 22 | 704 | 0.0 | 0.9+ | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1+ | |
| 2003 12 27 | 704 | 0.4+ | 1.0− | 2006 09 12 | 703 | 0.9+ | 0.6− | 2006 11 23 | G96 | 0.2+ | 0.1+ | |
| 2003 12 27 | 704 | 0.5− | 0.0 | 2006 09 12 | 703 | (1.6+ | 1.4+) | 2006 11 23 | G96 | 0.3+ | 0.2− | |
| 2003 12 27 | 704 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.1+ | 0.0 | | | | | |

**(137395)∗ 1999 TZ$_{163}$ = 2004 CZ$_{102}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60547)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.21269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28707673 | $\omega$ | 208.93405 | | +0.85931892 | −0.51141001 | |
| $a$ | 2.2758173 | $\Omega$ | 181.85176 | | +0.49605149 | +0.83605539 | |
| $e$ | 0.2192111 | $i$ | 9.88776 | | +0.12451468 | +0.19867355 | |
| $P$ | 3.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 1.8− | 0.7+ | 1999 12 03 | 704 | 0.6− | 0.3− | 2004 03 27 | 704 | (0.3− | 1.7+) | |
| 1999 10 09 | 704 | 0.5− | 0.5− | 1999 12 03 | 704 | 0.9− | 0.7+ | 2004 03 27 | 704 | 0.1− | 1.1+ | |
| 1999 10 09 | 704 | 0.9− | 0.8+ | 1999 12 03 | 704 | 1.1− | 0.7+ | 2005 06 03 | 691 | 0.3− | 1.5+ | |
| 1999 10 09 | 704 | 0.4+ | 0.5+ | 2002 07 09 | 704 | 0.4− | 1.1+ | 2005 06 03 | 691 | 0.3− | 0.8+ | |
| 1999 10 12 | 704 | 0.2− | 0.1+ | 2002 07 09 | 704 | 0.8+ | 0.5+ | 2005 06 03 | 691 | 0.1− | 0.5+ | |
| 1999 10 12 | 704 | 0.9+ | 0.7+ | 2002 07 09 | 704 | 0.4+ | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.4− | |
| 1999 10 12 | 704 | 0.8+ | 0.2− | 2002 07 09 | 704 | 1.3+ | 1.2+ | 2006 10 02 | 703 | 0.1− | 0.2− | |
| 1999 10 12 | 704 | 0.3− | 0.3+ | 2004 02 12 | 644 | 0.1− | 0.5+ | 2006 10 02 | 703 | 0.6+ | 0.7− | |
| 1999 10 12 | 704 | 0.2+ | 0.4+ | 2004 02 12 | 644 | 0.1− | 0.3− | 2006 10 02 | 703 | 0.2− | 0.1− | |
| 1999 10 12 | 699 | 0.6− | 1.3+ | 2004 02 12 | 644 | 0.2+ | 0.1+ | 2006 10 02 | D35 | 0.0 | 0.5+ | |
| 1999 10 12 | 699 | 1.3− | 1.5+ | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 10 02 | D35 | 0.2− | 0.1− | |
| 1999 10 12 | 699 | (1.3+ | 6.1+) | 2004 02 19 | 704 | 0.3− | 0.7+ | 2006 10 02 | D35 | 0.0 | 0.3+ | |
| 1999 10 19 | 704 | 0.0 | 0.5+ | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 10 03 | 704 | 1.2− | 1.0+ | |
| 1999 10 19 | 704 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.6+ | 1.2+ | 2006 10 03 | 704 | 0.5− | 0.0 | |
| 1999 10 19 | 704 | 0.3+ | 0.2− | 2004 02 19 | 704 | 0.7+ | 0.0 | 2006 10 03 | 704 | 0.1− | 0.3+ | |
| 1999 10 19 | 704 | 0.1+ | 0.4+ | 2004 02 23 | 704 | 0.9+ | 0.4− | 2006 11 15 | 703 | 0.1− | 0.3− | |
| 1999 10 19 | 704 | 0.3+ | 0.3− | 2004 02 23 | 704 | 1.1+ | 0.6− | 2006 11 15 | 703 | 0.5+ | 0.5+ | |
| 1999 11 06 | 704 | 0.4− | 0.3− | 2004 02 23 | 704 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.6− | 0.4− | |
| 1999 11 06 | 704 | 0.2+ | 0.2+ | 2004 02 23 | 704 | 1.3+ | 1.1+ | 2006 11 15 | 703 | (1.7− | 3.0−) | |
| 1999 11 06 | 704 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.0 | |
| 1999 11 06 | 704 | 0.3− | 0.3− | 2004 02 26 | 704 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.4+ | |
| 1999 11 06 | 704 | 0.8+ | 0.6− | 2004 02 26 | 704 | 0.8+ | 0.2− | 2006 11 20 | 704 | 0.5+ | 0.4+ | |
| 1999 11 16 | 699 | 1.2+ | 0.1+ | 2004 03 15 | 704 | (5.5− | 0.7−) | 2006 11 20 | 704 | 1.0+ | 0.1− | |
| 1999 11 16 | 699 | 0.1− | 1.5+ | 2004 03 15 | 704 | 0.1− | 0.4− | 2006 11 20 | 704 | (2.2+ | 1.1−) | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 699 | 0.4+ | 0.2+ | 2004 03 15 | 704 | (1.9+ | 0.5+) | 2006 11 21 | 703 | 0.2+ | 0.0 |
| 1999 11 17 | 703 | 0.3+ | 0.5+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 11 21 | 703 | 0.4− | 0.1− |
| 1999 11 17 | 703 | 0.4+ | 0.7+ | 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 11 21 | 703 | (1.3+ | 3.7−) |
| 1999 11 17 | 703 | 1.3− | 0.1+ | 2004 03 21 | 691 | 0.3− | 0.2+ | 2006 11 21 | 703 | (3.9+ | 1.5−) |
| 1999 11 17 | 703 | 0.8+ | 0.4+ | 2004 03 27 | 704 | 0.0 | 1.4+ | | | | |

**(137396)∗ 1999 TY$_{164}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.83732 | | (2000.0) | | | |
| $n$ | 0.28111053 | $\omega$ | 197.44348 | | +0.70386183 | −0.68165169 |
| $a$ | 2.3079052 | $\Omega$ | 208.85680 | | +0.69106575 | +0.72219462 |
| $e$ | 0.1578692 | $i$ | 24.45872 | | +0.16433702 | −0.11741340 |
| $P$ | 3.51 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 704 | 1.0+ | 0.1− | 2001 03 18 | 608 | 0.5+ | 0.9+ | 2006 10 17 | 703 | 0.4− | 1.2− |
| 1999 09 18 | 704 | 0.5+ | 0.1+ | 2001 03 18 | 608 | 0.9+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 1999 09 18 | 704 | 1.0+ | 0.2+ | 2001 03 24 | 699 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 1999 09 18 | 704 | 0.6+ | 0.7+ | 2001 03 24 | 699 | 0.8− | 0.9+ | 2006 10 23 | 703 | 0.2+ | 0.3+ |
| 1999 09 18 | 704 | 0.1+ | 0.1+ | 2001 03 24 | 699 | 1.0− | 0.5− | 2006 10 23 | 703 | 0.0 | 0.6+ |
| 1999 10 03 | 704 | 0.5+ | 0.1− | 2001 03 24 | 699 | 0.6− | 0.6− | 2006 10 23 | 703 | 0.3+ | 0.1− |
| 1999 10 03 | 704 | 0.4− | 0.9− | 2005 04 05 | 644 | 0.2− | 1.1+ | 2006 10 23 | 703 | 0.1+ | 0.3+ |
| 1999 10 03 | 704 | 0.5+ | 0.7+ | 2005 04 05 | 644 | 0.2+ | 0.0 | 2006 10 26 | 703 | 0.3+ | 0.3− |
| 1999 10 03 | 704 | 0.4− | 0.6− | 2005 04 05 | 644 | (1.5+ | 1.6−) | 2006 10 26 | 703 | 0.4+ | 0.4− |
| 1999 10 03 | 704 | 0.3− | 0.9− | 2006 08 23 | A35 | 0.2+ | 0.3+ | 2006 10 26 | 703 | 0.1+ | 0.1− |
| 1999 10 10 | 704 | 0.2− | 0.1+ | 2006 08 23 | A35 | 0.5+ | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.7− |
| 1999 10 10 | 704 | 0.1− | 0.4− | 2006 08 23 | A35 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.5− |
| 1999 10 10 | 704 | 0.1− | 0.6+ | 2006 09 16 | 703 | 1.0− | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.3− |
| 1999 10 10 | 704 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.5− | 0.1− | 2006 11 13 | 703 | 0.6− | 0.3− |
| 1999 10 10 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.1+ |
| 1999 10 13 | 704 | 0.9− | 1.1− | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.1− |
| 1999 10 13 | 704 | 0.8− | 0.7− | 2006 09 16 | 703 | 0.6− | 0.2− | 2006 11 15 | 704 | 0.7+ | 0.8− |
| 1999 10 13 | 704 | 0.7− | 0.4− | 2006 09 16 | 703 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.4− | 0.3+ |
| 1999 10 13 | 704 | 0.8− | 0.7− | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 1999 10 13 | 704 | 1.2− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.1− |
| 1999 10 20 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.5− | 0.3− | 2006 11 16 | 704 | 0.0 | 0.4− |
| 1999 10 20 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.0 |
| 1999 10 20 | 704 | 0.5+ | 1.1+ | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.3− | 0.3+ |
| 1999 10 20 | 704 | 0.5+ | 0.7+ | 2006 09 17 | 703 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 1999 10 20 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 703 | 0.1− | 1.0− | 2006 11 19 | 704 | 0.3+ | 1.0+ |
| 1999 11 04 | 703 | 0.6− | 0.4− | 2006 09 17 | 703 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 1999 11 04 | 703 | 1.7− | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 1999 11 04 | 703 | 0.1− | 0.2− | 2006 09 22 | 699 | 0.9− | 0.6+ | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 1999 11 04 | 703 | 0.7+ | 0.6+ | 2006 09 22 | 699 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.2− |
| 1999 11 05 | 704 | 0.6+ | 0.1+ | 2006 09 22 | 699 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 1999 11 05 | 704 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 1999 11 05 | 704 | 0.9+ | 0.4− | 2006 09 28 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 1999 11 05 | 704 | 0.4− | 0.7+ | 2006 09 28 | 703 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2001 03 18 | 608 | 1.0+ | 0.3− | 2006 09 28 | 703 | 0.6− | 0.2− | | | | |

**(137397)∗ 1999 TH$_{165}$ = 1997 EC$_{21}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 6941)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.94668 | | (2000.0) | | | |
| $n$ | 0.26637540 | $\omega$ | 131.00036 | | −0.12693515 | −0.99096470 |
| $a$ | 2.3922504 | $\Omega$ | 326.21850 | | +0.88507268 | −0.09343915 |
| $e$ | 0.1858962 | $i$ | 4.46820 | | +0.44781002 | −0.09621895 |
| $P$ | 3.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.2+ | 0.0 | 2001 04 16 | 699 | 0.1− | 0.2− | 2003 11 24 | 704 | 0.4− | 0.2− |
| 1997 03 04 | 691 | 0.2+ | 0.1− | 2001 04 16 | 699 | 1.0+ | 0.7− | 2003 11 24 | 704 | 0.3+ | 0.3− |
| 1997 03 04 | 691 | 0.1− | 0.6− | 2001 04 16 | 699 | 1.0+ | 0.2+ | 2003 11 24 | 704 | 0.8− | 0.2− |
| 1997 03 11 | 691 | 0.0 | 0.0 | 2001 04 16 | 699 | 0.4− | 1.0+ | 2003 11 24 | 704 | 0.2+ | 0.2+ |
| 1997 03 11 | 691 | 0.1− | 0.0 | 2003 11 18 | 644 | 0.1+ | 0.3+ | 2003 11 24 | 704 | 0.0 | 0.1+ |
| 1997 03 11 | 691 | 0.7− | 0.2− | 2003 11 18 | 644 | 0.1+ | 0.3+ | 2003 11 24 | 704 | 0.4+ | 0.6+ |
| 1999 10 10 | 704 | 0.4+ | 0.7+ | 2003 11 18 | 644 | 0.0 | 0.2− | 2003 11 24 | 704 | 0.1− | 0.1+ |
| 1999 10 10 | 704 | 0.3+ | 0.9− | 2003 11 19 | 704 | 0.3− | 0.3− | 2003 12 04 | 704 | 0.2+ | 0.5− |
| 1999 10 10 | 704 | 0.0 | 0.2− | 2003 11 19 | 704 | 0.4+ | 0.8− | 2003 12 04 | 704 | (0.5+ | 1.6−) |
| 1999 10 10 | 704 | 1.0+ | 0.5− | 2003 11 19 | 704 | 0.6− | 0.9− | 2003 12 04 | 704 | (0.4− | 2.8−) |
| 1999 10 10 | 704 | 0.9+ | 0.3− | 2003 11 19 | 704 | 0.2− | 0.8− | 2003 12 04 | 704 | 0.4+ | 0.3− |
| 1999 10 11 | 704 | 0.1+ | 0.2− | 2003 11 19 | 704 | 0.6− | 1.0− | 2003 12 04 | 704 | 0.2+ | 0.1− |
| 1999 10 11 | 704 | 0.3+ | 0.2− | 2003 11 20 | 704 | 0.2− | 1.1+ | 2003 12 18 | 704 | 0.3+ | 0.1+ |
| 1999 10 11 | 704 | 0.2+ | 0.5− | 2003 11 20 | 704 | 0.3− | 0.2+ | 2003 12 18 | 704 | 0.2+ | 1.1+ |
| 1999 10 11 | 704 | 0.1+ | 0.3− | 2003 11 20 | 704 | 0.2− | 0.7+ | 2003 12 18 | 704 | 0.2+ | 0.6+ |
| 1999 10 11 | 704 | 0.1− | 0.3− | 2003 11 20 | 704 | 0.2− | 0.2+ | 2003 12 18 | 704 | 0.7− | 0.2+ |
| 1999 10 11 | 704 | 0.1− | 0.1+ | 2003 11 21 | 704 | 1.2+ | 0.1+ | 2004 01 11 | 644 | 0.1+ | 0.4+ |
| 1999 10 11 | 704 | 0.7− | 0.3− | 2003 11 21 | 704 | 0.0 | 0.3− | 2004 01 11 | 644 | 0.1+ | 0.2+ |
| 1999 10 11 | 704 | 0.6− | 0.0 | 2003 11 21 | 704 | 0.4− | 0.6− | 2004 01 11 | 644 | 0.1+ | 0.4+ |
| 1999 10 11 | 704 | 0.4− | 0.2+ | 2003 11 21 | 704 | 0.0 | 0.1− | 2004 01 20 | 704 | 0.4+ | 0.4+ |
| 1999 10 11 | 704 | 0.4− | 0.5+ | 2003 11 21 | 704 | 0.1+ | 0.1+ | 2004 01 20 | 704 | 0.5− | 0.7+ |
| 1999 10 12 | 704 | 0.1− | 0.0 | 2003 11 21 | 644 | 0.1− | 0.2+ | 2004 01 20 | 704 | 0.4+ | 0.2+ |
| 1999 10 12 | 704 | 0.3− | 0.3+ | 2003 11 21 | 644 | 0.1+ | 0.1+ | 2005 02 14 | 809 | 0.1+ | 0.4+ |
| 1999 10 12 | 704 | 0.0 | 0.0 | 2003 11 21 | 644 | 0.0 | 0.2+ | 2005 02 14 | 809 | 0.2+ | 0.5+ |
| 1999 10 12 | 704 | 0.3− | 0.7− | 2003 11 21 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 1999 10 13 | 704 | 0.7+ | 0.1+ | 2003 11 21 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.3− |
| 1999 10 13 | 704 | 0.6+ | 0.1+ | 2003 11 21 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 1999 10 13 | 704 | 0.3+ | 0.3+ | 2003 11 23 | 704 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1999 10 13 | 704 | 0.7− | 0.3+ | 2003 11 23 | 704 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.1+ |
| 1999 10 13 | 704 | 0.4− | 0.8+ | 2003 11 23 | 704 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.5− | 0.4+ |
| 2001 03 24 | 699 | 0.1+ | 0.3+ | 2003 11 23 | 704 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.7− |
| 2001 03 24 | 699 | 0.5+ | 0.5− | 2003 11 23 | 704 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 03 24 | 699 | 0.5− | 0.2+ | 2003 11 24 | 704 | 0.2− | 0.1+ | | | | |
| 2001 03 24 | 699 | 1.0− | 0.7+ | 2003 11 24 | 704 | 0.3− | 0.4− | | | | |

**(137398)∗ 1999 TW$_{170}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.94792 | | (2000.0) | | | |
| $n$ | 0.26890538 | $\omega$ | 18.93862 | | +0.74176947 | −0.66980300 |
| $a$ | 2.3772219 | $\Omega$ | 23.21923 | | +0.60371838 | +0.64494308 |
| $e$ | 0.1325946 | $i$ | 4.91716 | | +0.29206535 | +0.36798418 |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 703 | 0.3+ | 1.0− | 1999 11 14 | 704 | 1.3− | 1.3+ | 2003 12 27 | 704 | 0.6− | 0.8− |
| 1999 10 09 | 703 | 0.8− | 0.9+ | 1999 11 14 | 704 | 0.4+ | 1.0+ | 2003 12 27 | 704 | 0.1− | 0.7− |
| 1999 10 09 | 703 | 0.0 | 0.6− | 1999 11 14 | 704 | 0.4− | 0.7+ | 2003 12 27 | 704 | 0.5+ | 0.3− |
| 1999 10 09 | 703 | 1.6− | 0.2− | 1999 11 14 | 704 | 0.9− | 0.3− | 2003 12 28 | 704 | 0.3+ | 0.3− |
| 1999 10 10 | 704 | 0.3+ | 0.0 | 1999 11 14 | 704 | 0.2− | 0.5− | 2003 12 28 | 704 | 1.8− | 0.7− |
| 1999 10 10 | 704 | 0.1− | 0.2− | 2001 03 14 | 691 | 0.2+ | 0.3+ | 2003 12 28 | 704 | 1.9+ | 0.3− |
| 1999 10 10 | 704 | 0.5+ | 1.6− | 2001 03 14 | 691 | 0.3+ | 0.3+ | 2003 12 28 | 704 | 0.3− | 0.5+ |
| 1999 10 10 | 704 | 1.0+ | 0.2+ | 2001 03 14 | 691 | 0.0 | 0.1+ | 2003 12 28 | 704 | 0.5+ | 0.1− |
| 1999 10 10 | 704 | 0.2+ | 1.6− | 2001 04 16 | 645 | 0.0 | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | 0.8+ | 0.0 | 2001 04 16 | 645 | 0.1− | 0.1− | 2003 12 28 | 704 | 0.8− | 0.4+ |
| 1999 10 15 | 704 | 0.0 | 0.1− | 2003 11 20 | 704 | 0.1− | 0.0 | 2003 12 28 | 704 | 0.3− | 0.3− |
| 1999 10 15 | 704 | 0.2+ | 1.0+ | 2003 11 20 | 704 | 0.3+ | 0.7+ | 2003 12 28 | 704 | 0.2− | 0.9+ |
| 1999 10 15 | 704 | 0.8+ | 0.1− | 2003 11 20 | 704 | 0.4+ | 0.1− | 2005 03 11 | G96 | 0.1+ | 0.2− |
| 1999 10 15 | 704 | 1.0+ | 1.1+ | 2003 11 20 | 704 | 0.0 | 0.2+ | 2005 03 11 | G96 | 0.3− | 0.1+ |
| 1999 10 20 | 704 | 0.0 | 0.3− | 2003 11 20 | 704 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.3− | 0.2+ |
| 1999 10 20 | 704 | 0.6− | 0.3− | 2003 11 24 | 704 | 0.1+ | 0.8− | 2005 03 11 | G96 | 0.0 | 0.8+ |
| 1999 10 20 | 704 | 0.0 | 0.1+ | 2003 11 24 | 704 | 0.3− | 0.5− | 2005 04 17 | 691 | 0.3+ | 0.3+ |
| 1999 10 20 | 704 | 0.1+ | 0.6+ | 2003 11 24 | 704 | 0.6− | 0.5− | 2005 04 17 | 691 | 0.3+ | 0.3+ |
| 1999 10 20 | 704 | 0.9+ | 0.2− | 2003 11 24 | 704 | 0.1+ | 0.2− | 2005 04 17 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 703 | 1.5− | 1.6+ | 2003 11 24 | 704 | 0.3+ | 0.2+ | 2006 08 23 | 704 | 0.8+ | 0.1+ |
| 1999 10 30 | 703 | 0.0 | 0.5+ | 2003 12 17 | 704 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.2− | 0.6+ |
| 1999 10 30 | 703 | 0.9− | 0.6+ | 2003 12 17 | 704 | 0.3+ | 0.4− | 2006 08 23 | 704 | 0.1− | 0.0 |
| 1999 10 30 | 703 | 0.7− | 0.3+ | 2003 12 17 | 704 | 1.2+ | 0.0 | 2006 08 24 | 644 | 0.4− | 0.4+ |
| 1999 11 05 | 704 | 0.6− | 0.5+ | 2003 12 17 | 704 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.6− | 0.3+ |
| 1999 11 05 | 704 | 0.7+ | 1.2+ | 2003 12 24 | 704 | 0.4− | 0.5+ | 2006 08 24 | 644 | 0.4− | 0.3+ |
| 1999 11 05 | 704 | 0.2− | 0.0 | 2003 12 24 | 704 | 0.7+ | 0.8+ | | | | |
| 1999 11 05 | 704 | 0.3+ | 0.3+ | 2003 12 24 | 704 | 0.7− | 0.8+ | | | | |

**(137399)∗ 1999 TY$_{171}$ = 1999 VP$_{229}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 21170)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.46993 | | (2000.0) | | | |
| $n$ | 0.27315501 | $\omega$ | 255.49071 | | −0.01166766 | −0.99985463 |
| $a$ | 2.3525016 | $\Omega$ | 195.19418 | | +0.93471958 | −0.00648909 |
| $e$ | 0.1638783 | $i$ | 2.71904 | | +0.35519457 | −0.01576738 |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.0 | 0.2− | 2004 01 17 | 691 | 0.2− | 0.3− | 2004 02 17 | 645 | 0.1− | 0.1− |
| 1999 10 10 | 704 | 0.2− | 0.2+ | 2004 01 17 | 608 | 0.3+ | 0.8+ | 2004 02 17 | 645 | 0.1− | 0.1− |
| 1999 10 10 | 704 | 0.2− | 0.0 | 2004 01 17 | 608 | 0.4+ | 0.9+ | 2004 04 13 | 645 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2004 01 17 | 608 | 0.3− | 1.4+ | 2004 04 13 | 645 | 0.1− | 0.1+ |
| 1999 10 10 | 704 | 0.0 | 0.3+ | 2004 01 18 | 644 | 0.0 | 0.0 | 2004 04 14 | 645 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 0.4+ | 0.6− | 2004 01 18 | 644 | 0.2− | 0.0 | 2004 04 14 | 645 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 1.1+ | 0.3+ | 2004 01 18 | 644 | 0.1− | 0.1− | 2004 04 15 | 645 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 1.4− | 0.0 | 2004 01 21 | 704 | 0.6+ | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.2+ | 1.0+ | 2004 01 21 | 704 | 0.9+ | 0.4+ | 2004 04 16 | 645 | 0.0 | 0.0 |
| 1999 11 04 | 691 | 0.0 | 0.2− | 2004 01 21 | 704 | 1.1+ | 0.3− | 2004 04 16 | 645 | 0.0 | 0.1− |
| 1999 11 04 | 691 | 0.1− | 0.2− | 2004 01 24 | 704 | 0.2+ | 1.1− | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 1999 11 04 | 691 | 0.0 | 0.2− | 2004 01 24 | 704 | 0.1− | 0.6− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.2− | 0.8− | 2004 01 24 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.1− | 0.4− | 2004 01 24 | 704 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.2− |
| 1999 11 12 | 704 | 0.2+ | 0.1+ | 2004 01 30 | 704 | (0.2− | 1.6+) | 2006 09 28 | G96 | 0.3− | 0.3− |
| 1999 11 12 | 704 | 0.5+ | 0.5+ | 2004 01 30 | 704 | 0.0 | 1.5+ | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 1999 11 12 | 704 | 0.3+ | 0.1+ | 2004 01 30 | 704 | 0.2+ | 1.1+ | 2006 09 28 | G96 | 0.3− | 0.0 |
| 2002 08 07 | 644 | 0.2+ | 0.9+ | 2004 01 30 | 704 | (0.6+ | 1.6+) | 2006 10 24 | 644 | 0.2+ | 0.4+ |
| 2002 08 07 | 644 | 0.1+ | 0.3+ | 2004 01 30 | 704 | (0.9+ | 1.5+) | 2006 10 24 | 644 | 0.5− | 0.6+ |
| 2002 08 07 | 644 | 0.3− | 0.7+ | 2004 02 11 | 699 | 0.6− | 0.8+ | 2006 10 24 | 644 | 0.0 | 0.6+ |
| 2003 12 23 | 704 | 1.0+ | 0.5+ | 2004 02 11 | 699 | 0.0 | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2003 12 23 | 704 | 0.3+ | 0.3− | 2004 02 11 | 699 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.7− | 0.4− |
| 2003 12 23 | 704 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 1.1+ | 0.4− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2003 12 23 | 704 | 0.2+ | 0.8+ | 2004 02 16 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2004 01 13 | 699 | 0.3− | 0.5− | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2004 01 13 | 699 | 0.1− | 0.0 | 2004 02 16 | 691 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2004 01 13 | 699 | 0.6− | 0.3+ | 2004 02 16 | 704 | 0.7− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2004 01 13 | 699 | 0.2− | 0.2− | 2004 02 16 | 704 | 0.7+ | 1.1+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2004 01 17 | 691 | 0.1− | 0.4− | 2004 02 16 | 704 | 0.1+ | 0.2+ | | | | |
| 2004 01 17 | 691 | 0.1− | 0.2− | 2004 02 16 | 704 | 0.3− | 1.0+ | | | | |

**(137400)∗ 1999 TC$_{177}$ = 1992 SX$_{7}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 1169)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.07266 | | (2000.0) | | | |
| $n$ | 0.29046467 | $\omega$ | 6.39583 | | +0.90909857 | −0.41586983 |
| $a$ | 2.2580861 | $\Omega$ | 18.23761 | | +0.37867786 | +0.80062877 |
| $e$ | 0.0772954 | $i$ | 4.45924 | | +0.17361699 | +0.43133033 |
| $P$ | 3.39 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 26 | 691 | 0.1− | 0.5+ | 2002 07 15 | 644 | 0.6− | 0.1− | 2006 11 13 | 291 | 0.3+ | 0.4+ |
| 1992 09 26 | 691 | 0.1− | 0.1+ | 2002 07 15 | 644 | 0.6− | 0.1− | 2006 11 13 | 291 | 0.3+ | 0.2+ |
| 1992 09 26 | 691 | 0.1− | 0.0 | 2002 07 15 | 644 | 0.6− | 0.2− | 2006 11 13 | 291 | (1.3− | 1.6+) |
| 1992 09 27 | 691 | 0.6− | 0.2+ | 2002 08 13 | 704 | 0.4+ | 0.1− | 2006 11 16 | 291 | 0.2− | 0.0 |
| 1992 09 27 | 691 | 0.2− | 0.3+ | 2002 08 13 | 704 | 1.1+ | 1.0+ | 2006 11 16 | 291 | 0.2− | 0.1+ |
| 1992 09 27 | 691 | 0.3− | 0.2+ | 2002 08 13 | 704 | 0.0 | 0.3− | 2006 11 16 | 291 | 0.3− | 0.0 |
| 1999 10 04 | 691 | 0.4+ | 0.0 | 2002 08 13 | 704 | 0.2− | 1.5+ | 2006 11 17 | 691 | 0.3− | 0.3− |
| 1999 10 04 | 691 | 0.3+ | 0.0 | 2002 08 13 | 704 | 0.4− | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1999 10 04 | 691 | 0.3+ | 0.0 | 2002 08 29 | 644 | 0.3− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1999 10 09 | 703 | 0.5+ | 0.5+ | 2002 08 29 | 644 | 0.4− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 1999 10 09 | 703 | 0.4− | 0.7+ | 2002 08 29 | 644 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 1999 10 09 | 703 | 0.6− | 0.9+ | 2002 08 30 | 644 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 1999 10 09 | 703 | (2.3− | 0.9+) | 2002 08 30 | 644 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.1− | 0.2− | 2002 08 30 | 644 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 1999 10 10 | 704 | 0.3− | 0.5+ | 2004 01 30 | 704 | 0.6+ | 0.6+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 1999 10 10 | 704 | 0.5− | 0.3− | 2004 01 30 | 704 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 1999 10 10 | 704 | 0.3+ | 0.3− | 2004 01 30 | 704 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.8− | 0.1+ |
| 1999 10 11 | 691 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 1999 10 11 | 691 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 0.8− | 0.0 |
| 1999 10 11 | 691 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 1.3+ | 0.5+ | 2006 11 22 | 704 | 0.7− | 0.1+ |
| 1999 10 15 | 704 | 0.0 | 0.3− | 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.9+ |
| 1999 10 15 | 704 | 0.2− | 0.1− | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 11 23 | 644 | 0.2− | 0.4− |
| 1999 10 15 | 704 | 0.8− | 1.2− | 2006 10 04 | G96 | 0.8− | 0.5+ | 2006 11 23 | 644 | 0.3− | 0.0 |
| 1999 10 20 | 704 | 1.5+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 23 | 644 | 0.1+ | 0.6+ |
| 1999 10 20 | 704 | 0.4+ | 0.8+ | 2006 10 04 | G96 | 0.2− | 0.2+ | 2006 11 25 | 691 | 0.5+ | 0.4− |
| 1999 10 20 | 704 | 0.6+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.4+ | 2006 11 25 | 691 | 0.3+ | 0.3− |
| 1999 10 20 | 704 | 1.5+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 25 | 691 | 0.4+ | 0.3− |
| 1999 11 14 | 704 | 0.1+ | 0.7− | 2006 10 20 | G96 | 0.5− | 0.2− | 2006 11 27 | 704 | 0.6+ | 1.2+ |
| 1999 11 14 | 704 | 0.4− | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.0 | 2006 11 27 | 704 | 1.2+ | 1.3+ |
| 1999 11 14 | 704 | 0.1− | 1.0− | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 27 | 704 | 1.0+ | 0.2+ |
| 1999 11 14 | 704 | 1.1− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.4− |
| 2001 03 30 | 691 | 0.6+ | 0.8+ | 2006 11 13 | G96 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.7+ |
| 2001 03 30 | 691 | 0.9+ | 0.7+ | 2006 11 13 | G96 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.3+ | 0.3− |
| 2001 03 30 | 691 | 0.4+ | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.0 | | | | |

**(137401)∗ 1999 TM$_{177}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.12215 | | (2000.0) | | | |
| $n$ | 0.27127708 | $\omega$ | 178.66764 | | +0.94062744 | −0.33725373 |
| $a$ | 2.3633461 | $\Omega$ | 201.16710 | | +0.31043712 | +0.90055177 |
| $e$ | 0.1980495 | $i$ | 6.11584 | | +0.13729100 | +0.27434728 |
| $P$ | 3.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 19 | 691 | 0.3− | 0.4+ | 1999 12 05 | 704 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.7− | 0.3+ |
| 1994 04 19 | 691 | 0.2− | 0.5+ | 1999 12 05 | 704 | 0.9− | 0.2− | 2006 09 19 | 699 | 0.6− | 0.1− |
| 1999 10 02 | 703 | 0.0 | 0.2+ | 2003 12 22 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.2+ |
| 1999 10 02 | 703 | 0.0 | 0.0 | 2003 12 22 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.2+ |
| 1999 10 02 | 703 | 0.1− | 0.1+ | 2003 12 22 | 691 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.2+ |
| 1999 10 02 | 703 | 0.3− | 0.2+ | 2003 12 25 | 608 | 0.7− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.3+ |
| 1999 10 03 | 704 | (1.1+ | 2.3+) | 2003 12 25 | 608 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.6− |
| 1999 10 03 | 704 | 0.4+ | 1.1+ | 2003 12 25 | 608 | (0.2− | 2.9+) | 2006 09 19 | 703 | 0.4− | 0.1− |
| 1999 10 03 | 704 | 0.9+ | 0.7− | 2005 03 10 | G96 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.4+ |
| 1999 10 03 | 704 | 0.5+ | 0.6+ | 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.6+ |
| 1999 10 10 | 704 | 0.1− | 0.2− | 2005 03 10 | G96 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.5− | 0.8+ |
| 1999 10 10 | 704 | 0.2+ | 0.4− | 2005 03 10 | G96 | 0.2− | 0.2− | 2006 09 25 | 704 | 0.9− | 0.4+ |
| 1999 10 10 | 704 | 0.0 | 0.2+ | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.3− | 0.6+ |
| 1999 10 10 | 704 | 0.2− | 0.1+ | 2005 04 02 | G96 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1999 10 10 | 704 | 0.3+ | 0.2+ | 2005 04 02 | G96 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.7+ | 0.1− | 2005 04 02 | G96 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 1.2+ | 1.0− | 2005 04 17 | 691 | 0.6+ | 0.6+ | 2006 09 29 | 699 | 0.1+ | 0.3− |
| 1999 10 15 | 704 | (0.1+ | 2.5−) | 2005 04 17 | 691 | 0.6+ | 0.4+ | 2006 09 29 | 704 | 1.1+ | 0.2+ |
| 1999 10 15 | 704 | 1.2+ | 1.0− | 2005 04 17 | 691 | 0.6+ | 0.7+ | 2006 09 29 | 699 | 0.3− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 20 | 704 | 0.1− | 0.7− | 2006 08 25 | A50 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | | |
| 1999 10 20 | 704 | 0.1+ | 0.9+ | 2006 08 25 | A50 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.5+ | 0.2+ | | |
| 1999 10 20 | 704 | 0.7+ | 0.5− | 2006 08 27 | 699 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.7+ | 0.2− | | |
| 1999 10 20 | 704 | 0.3+ | 0.7− | 2006 08 27 | 699 | 0.5+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.2+ | | |
| 1999 10 20 | 704 | 0.4+ | 0.7− | 2006 08 27 | 699 | 0.4− | 1.0+ | 2006 09 29 | 704 | 0.7+ | 0.5+ | | |
| 1999 11 01 | 703 | 1.8− | 0.1+ | 2006 08 27 | 699 | 0.2− | 0.3+ | 2006 09 29 | 699 | 0.9− | 0.1+ | | |
| 1999 11 01 | 703 | 0.4− | 0.9+ | 2006 08 29 | 703 | 0.5− | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.1+ | | |
| 1999 11 01 | 703 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 09 30 | 704 | 0.6− | 1.2+ | | |
| 1999 11 01 | 703 | 0.6− | 0.7+ | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 09 30 | 704 | 1.4+ | 0.3− | | |
| 1999 11 04 | G91 | 0.1− | 0.5+ | 2006 08 29 | 703 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.5− | 0.3− | | |
| 1999 11 05 | 704 | 0.6− | 0.6+ | 2006 08 30 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.1− | 0.2− | | |
| 1999 11 05 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.4+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.3− | | |
| 1999 11 05 | 704 | 0.1− | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.3− | | |
| 1999 11 05 | 704 | 0.1+ | 0.7+ | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.5− | | |
| 1999 11 05 | 704 | 0.6− | 1.1+ | 2006 08 30 | 699 | 0.3+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.5− | | |
| 1999 11 13 | 699 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.1+ | | |
| 1999 11 13 | 699 | 0.9− | 0.2+ | 2006 08 30 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 703 | (0.9− | 1.5−) | | |
| 1999 11 13 | 699 | 0.0 | 0.6− | 2006 08 30 | 699 | 0.4− | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.4+ | | |
| 1999 11 15 | 704 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.5− | | |
| 1999 11 15 | 704 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.1− | 0.2− | | |
| 1999 11 15 | 704 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 1.0+ | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.2− | | |
| 1999 11 15 | 704 | 0.2+ | 0.4− | 2006 09 01 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.1− | | |
| 1999 11 15 | 704 | 0.0 | 0.1− | 2006 09 01 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.1+ | | |
| 1999 11 17 | 704 | 0.8+ | 0.0 | 2006 09 11 | 703 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1− | 0.4+ | | |
| 1999 11 17 | 704 | 0.4+ | 0.5+ | 2006 09 11 | 703 | 0.1− | 1.1− | 2006 11 11 | 703 | 1.1− | 0.8− | | |
| 1999 11 17 | 704 | 0.1+ | 0.2+ | 2006 09 11 | 703 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.1+ | | |
| 1999 11 17 | 704 | 0.4+ | 0.4+ | 2006 09 11 | 703 | 0.3− | 0.5− | 2006 11 16 | G96 | 0.3− | 0.5− | | |
| 1999 11 17 | 704 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.3− | | |
| 1999 12 05 | 704 | 0.7− | 0.5− | 2006 09 18 | 704 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.5− | | |
| 1999 12 05 | 704 | 0.9− | 0.5− | 2006 09 18 | 704 | 0.5+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 1999 12 05 | 704 | 0.2− | 0.2+ | 2006 09 18 | 704 | 1.4− | 1.3− | | | | | | |

**(137402)∗ 1999 TS$_{177}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.01818 | | (2000.0) | | | |
| $n$ | 0.28296506 | $\omega$ | 325.28587 | | +0.99628063 | +0.05922100 |
| $a$ | 2.2978103 | $\Omega$ | 31.49656 | | −0.02114817 | +0.87223062 |
| $e$ | 0.2278520 | $i$ | 6.88089 | | −0.08353239 | +0.48549625 |
| $P$ | 3.48 | $H$ | 16.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5+ | 0.4+ | 2005 04 10 | G96 | 0.6− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1− | | |
| 1999 10 10 | 704 | 0.1− | 0.2− | 2005 04 17 | 691 | 0.7+ | 0.3+ | 2006 11 15 | 704 | 1.1+ | 1.2− | | |
| 1999 10 10 | 704 | 0.2+ | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 11 15 | 704 | 0.7− | 0.5+ | | |
| 1999 10 10 | 704 | (2.3+ | 0.3−) | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.8− | 0.3+ | | |
| 1999 10 10 | 704 | 0.2+ | 0.5+ | 2005 05 11 | G96 | 0.3− | 0.1+ | 2006 11 15 | 704 | 0.4− | 0.3+ | | |
| 1999 10 12 | 704 | 0.8+ | 1.3− | 2005 05 11 | G96 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.5+ | 1.3+ | | |
| 1999 10 12 | 704 | 0.4− | 0.1− | 2005 05 11 | G96 | 1.0− | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.6+ | | |
| 1999 10 12 | 704 | 0.8− | 0.8− | 2005 05 11 | G96 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.8+ | | |
| 1999 10 12 | 704 | 0.5− | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.9+ | | |
| 1999 10 12 | 704 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.1+ | | |
| 1999 11 03 | 704 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.0 | | |
| 1999 11 03 | 704 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 1.1+ | 0.0 | | |
| 1999 11 03 | 699 | 0.2− | 0.4+ | 2006 10 16 | 703 | 1.1− | 0.4− | 2006 11 19 | 704 | 0.8+ | 0.3+ | | |
| 1999 11 03 | 704 | 0.9+ | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.0 | | |
| 1999 11 03 | 704 | 0.7+ | 0.4− | 2006 10 16 | 703 | 0.8+ | 1.1− | 2006 11 22 | 704 | (0.9+ | 2.2+) | | |
| 1999 11 03 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.6+ | 1.2− | 2006 11 22 | 704 | 0.7− | 0.7+ | | |
| 1999 11 03 | 704 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | (0.8− | 1.7+) | | |
| 1999 11 03 | 699 | 0.0 | 0.7− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | (0.2− | 1.5+) | | |
| 1999 11 14 | 703 | 0.9− | 0.7− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 22 | 704 | (0.2− | 3.0+) | | |
| 1999 11 14 | 703 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.2+ | 0.1+ | 2006 11 28 | 704 | (1.7− | 3.9+) | | |
| 1999 11 14 | 703 | 0.4− | 0.9− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 28 | 704 | 1.0− | 2.2+ | | |
| 1999 11 14 | 703 | 1.8− | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.6− | 1.6+ | | |
| 1999 11 16 | 704 | 0.3+ | 2.0− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 1.2− | 0.7+ | | |
| 1999 11 16 | 704 | 0.8+ | 1.0− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 30 | 291 | 0.1− | 0.1+ | | |
| 1999 11 16 | 704 | 0.9+ | 0.6− | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 30 | 291 | 0.2− | 0.1− | | |
| 1999 11 16 | 704 | 1.0+ | 0.7− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 30 | 291 | 0.2− | 0.0 | | |
| 1999 11 16 | 704 | 1.0+ | 0.5− | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.2− | | |
| 2004 01 17 | 644 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1− | 0.4− | | |
| 2004 01 17 | 644 | 0.2+ | 0.1+ | 2006 11 02 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2004 01 17 | 644 | 0.0 | 0.3+ | 2006 11 02 | 691 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.7− | | |
| 2004 02 17 | 691 | 0.2− | 0.5− | 2006 11 02 | 691 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.8+ | 0.5− | | |
| 2004 02 17 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.7+ | 0.3+ | | |
| 2004 02 17 | 691 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.8+ | 0.8+ | | |
| 2005 04 10 | G96 | 0.4− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.2+ | 1.1− | | |
| 2005 04 10 | G96 | 0.4− | 0.0 | 2006 11 15 | 691 | 0.3− | 0.0 | 2006 12 01 | 704 | 1.3+ | 1.5− | | |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.0 | | | | | | |

**(137403)∗ 1999 TE$_{178}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.48208 | | (2000.0) | | | |
| $n$ | 0.26977171 | $\omega$ | 247.56537 | | +0.54753672 | −0.83672788 |
| $a$ | 2.3721298 | $\Omega$ | 169.22120 | | +0.78517577 | +0.50981653 |
| $e$ | 0.2330690 | $i$ | 2.90750 | | +0.28931393 | +0.19993389 |
| $P$ | 3.65 | $H$ | 16.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6+ | 0.4+ | 2004 01 24 | 704 | 0.6+ | 0.3− | 2006 08 19 | 691 | 0.1− | 0.6+ | | |
| 1999 10 10 | 704 | 0.3+ | 0.2− | 2004 01 26 | 699 | 0.2− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.4+ | | |
| 1999 10 10 | 704 | 0.3− | 0.1+ | 2004 01 26 | 699 | 1.1+ | 0.6− | 2006 08 28 | 703 | 0.3− | 0.0 | | |
| 1999 10 10 | 704 | 0.8+ | 1.1+ | 2004 01 26 | 699 | 0.1− | 0.8− | 2006 08 28 | 703 | 0.6− | 0.5+ | | |
| 1999 10 15 | 704 | 0.1+ | 0.4+ | 2004 01 26 | 699 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.7+ | | |
| 1999 10 15 | 704 | 0.3− | 0.3+ | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.6+ | | |
| 1999 10 15 | 704 | 0.1− | 1.1+ | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.1+ | 0.1− | | |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 08 29 | 704 | 0.2+ | 0.3+ | | |
| 1999 10 20 | 704 | 0.4+ | 0.3− | 2004 01 30 | 704 | 0.6+ | 1.3+ | 2006 08 29 | 704 | 0.0 | 1.2+ | | |
| 1999 10 20 | 704 | 0.4+ | 0.5− | 2004 01 30 | 704 | 0.5− | 0.3+ | 2006 08 29 | 704 | 0.2− | 0.4+ | | |
| 1999 10 20 | 704 | 0.4+ | 0.4+ | 2004 01 30 | 704 | 0.4+ | 0.9+ | 2006 09 12 | 699 | (1.4− | 1.7+) | | |
| 1999 10 20 | 704 | 0.6+ | 0.1− | 2004 01 30 | 704 | 0.3+ | 0.6+ | 2006 09 12 | 699 | 0.2+ | 1.2+ | | |
| 1999 10 20 | 704 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2006 09 12 | 699 | 0.2− | 0.6+ | | |
| 1999 11 05 | 704 | 0.7− | 0.2− | 2004 02 10 | 644 | 0.3+ | 0.5+ | 2006 09 12 | 699 | 0.4− | 1.0+ | | |
| 1999 11 05 | 704 | 0.8− | 0.3− | 2004 02 10 | 644 | 0.6+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 1999 11 05 | 704 | 0.5− | 0.2− | 2004 02 10 | 644 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.1− | | |
| 1999 11 05 | 704 | 0.1+ | 0.2+ | 2004 02 11 | 703 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1+ | | |
| 1999 11 05 | 704 | 0.2+ | 0.3− | 2004 02 11 | 703 | 0.9− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.0 | | |
| 1999 11 17 | 704 | 1.1− | 0.4− | 2004 02 11 | 703 | (2.0+ | 0.5−) | 2006 10 17 | G96 | 0.3+ | 0.5− | | |
| 1999 11 17 | 704 | 1.0+ | 1.1− | 2004 02 11 | 703 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.4− | | |
| 1999 11 17 | 704 | 0.6− | 0.1− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.4− | 0.6− | | |
| 1999 11 17 | 704 | 0.2− | 0.8− | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.2− | | |
| 2004 01 13 | 699 | 0.7− | 0.9+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2004 01 13 | 699 | 0.2− | 0.3− | 2004 02 12 | 704 | 1.1− | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2004 01 13 | 699 | 1.2− | 0.2+ | 2004 02 16 | 704 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.6− | 0.6− | | |
| 2004 01 13 | 699 | 0.8− | 0.9+ | 2004 02 16 | 704 | 0.5+ | 1.2+ | 2006 10 28 | G96 | 0.2− | 0.1− | | |
| 2004 01 21 | 704 | 0.4+ | 0.6− | 2004 02 16 | 704 | 1.4− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2004 01 21 | 704 | 0.3+ | 0.8+ | 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.1+ | | |
| 2004 01 21 | 704 | 0.3+ | 1.2+ | 2005 05 10 | G96 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2004 01 24 | 704 | 0.9+ | 0.5− | 2005 05 10 | G96 | 0.4+ | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.1− | | |
| 2004 01 24 | 704 | 1.1+ | 0.6− | 2005 05 10 | G96 | 0.2+ | 0.4+ | | | | | | |
| 2004 01 24 | 704 | 0.8+ | 0.3− | 2006 08 19 | 691 | 0.1− | 0.4+ | | | | | | |

**(137404)∗ 1999 TT$_{178}$ = 2001 KZ$_4$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12956)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.4− | 0.7− | 2006 08 25 | 704 | 1.3+ | 1.0+ | 2006 09 27 | 704 | 1.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.1+ | 0.1+ | 2006 08 25 | 704 | 1.3+ | 0.4+ | 2006 09 27 | 704 | 1.3+ | 0.6+ |
| 1999 10 15 | 704 | 0.2− | 0.3− | 2006 08 25 | 704 | (1.6+ | 0.6+) | 2006 09 27 | 691 | 0.1− | 0.1− |
| 1999 10 15 | 704 | 0.2− | 0.4− | 2006 08 25 | 704 | 0.5− | 0.2− | 2006 09 27 | 704 | 1.0+ | 0.3+ |
| 1999 10 15 | 704 | 0.1− | 0.2− | 2006 08 28 | 704 | 0.5− | 0.8− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 1999 10 21 | 704 | 0.4− | 1.9− | 2006 08 28 | 704 | 1.1− | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.8+ |
| 1999 10 21 | 704 | 0.7− | 0.6− | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.3+ |
| 1999 10 21 | 704 | 0.4+ | 0.3− | 2006 08 28 | 704 | 0.4− | 0.6+ | 2006 09 29 | 704 | 1.2− | 0.1− |
| 1999 10 21 | 704 | 0.6− | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 09 29 | 704 | (1.6− | 0.1+) |
| 1999 10 21 | 704 | 0.5− | 0.9− | 2006 08 28 | 703 | 0.1− | 0.4− | 2006 09 29 | 704 | 1.4− | 0.2− |
| 1999 10 30 | 703 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.8− | 2006 09 29 | 704 | 1.5− | 0.1+ |
| 1999 10 30 | 703 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 09 29 | 704 | (1.5− | 0.1+) |
| 1999 10 30 | 703 | 0.2− | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.5− | 0.1− |
| 1999 10 30 | 703 | 0.0 | 0.5+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.4− | 0.2+ |
| 1999 11 04 | 704 | 0.4− | 1.4− | 2006 09 12 | 703 | 0.8− | 0.4− | 2006 10 01 | 704 | 0.7− | 0.6+ |
| 1999 11 04 | 704 | 0.7+ | 0.1− | 2006 09 12 | 703 | 0.2+ | 0.6− | 2006 10 01 | 704 | 0.4− | 0.2+ |
| 1999 11 04 | 704 | 1.2+ | 0.8+ | 2006 09 12 | 703 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.3− | 0.0 |
| 1999 11 04 | 704 | 0.5+ | 0.6− | 2006 09 12 | 703 | 0.2+ | 0.7− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.6+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 1999 11 11 | 703 | 0.5− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 1999 11 11 | 703 | 0.3+ | 0.9− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 1999 11 11 | 703 | 0.7+ | 0.3+ | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 |
| 1999 11 11 | 703 | 1.8+ | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 0.6− | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2003 12 18 | 704 | 0.7− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 2003 12 18 | 704 | 0.6+ | 0.6+ | 2006 09 17 | 704 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.5+ |
| 2003 12 18 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2003 12 18 | 704 | (1.3+ | 1.6+) | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 12 19 | 704 | 0.9− | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2003 12 19 | 704 | 0.1− | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2003 12 19 | 704 | 0.1+ | 1.3+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2003 12 19 | 704 | 0.2− | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2003 12 28 | 704 | 1.1+ | 0.3− | 2006 09 20 | 704 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2003 12 28 | 704 | 0.7+ | 0.1− | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2003 12 28 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2005 03 17 | G96 | (0.7+ | 3.4−) | 2006 09 20 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2005 03 17 | G96 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.5− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2005 03 17 | G96 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.2− | 0.1− |
| 2005 03 17 | G96 | 0.1+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2005 04 14 | 703 | 0.4+ | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2005 04 14 | 703 | (0.5− | 1.7+) | 2006 09 25 | 704 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.5− | 1.3+ |
| 2005 04 14 | 703 | 1.4+ | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.4+ | 2006 11 22 | 704 | (0.4− | 1.5+) |
| 2005 04 14 | 703 | (0.1+ | 2.0+) | 2006 09 25 | 704 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.6− | 1.1+ |

**(137407)∗ 1999 TK$_{180}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.98447 | | (2000.0) | | | |
| $n$ | 0.28207113 | $\omega$ | 1.36663 | | +0.97078718 | −0.23845146 |
| $a$ | 2.3026625 | $\Omega$ | 12.52589 | | +0.21895802 | +0.83486497 |
| $e$ | 0.1193711 | $i$ | 7.07289 | | +0.09813073 | +0.49612637 |
| $P$ | 3.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.4− | 0.1+ | 1999 10 13 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.2− |
| 1994 03 10 | 691 | 0.2+ | 0.0 | 1999 10 15 | 704 | 0.5+ | 0.8− | 2006 09 27 | 704 | 0.2+ | 0.2− |
| 1999 10 02 | 703 | 0.3− | 0.8+ | 1999 10 15 | 704 | 0.1+ | 0.2− | 2006 09 27 | 704 | (0.4+ | 1.5−) |
| 1999 10 02 | 703 | 1.2− | 1.3+ | 1999 10 15 | 704 | 0.9+ | 0.4+ | 2006 10 03 | 691 | 0.2− | 0.3+ |
| 1999 10 02 | 703 | 0.9− | 0.5+ | 1999 10 21 | 704 | 0.2− | 0.3+ | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 1999 10 02 | 703 | 0.2− | 0.3+ | 1999 10 21 | 704 | 0.2+ | 0.1− | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 1999 10 03 | 704 | 0.1+ | 1.2+ | 1999 10 21 | 704 | 0.5+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1999 10 03 | 704 | 0.5+ | 0.1+ | 1999 10 21 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 1999 10 03 | 704 | 0.0 | 0.4− | 1999 11 04 | 704 | 0.4+ | 1.3− | 2006 10 11 | 644 | 0.0 | 0.3− |
| 1999 10 09 | 703 | 1.5− | 0.2+ | 1999 11 04 | 704 | 0.3+ | 0.8− | 2006 10 17 | 691 | 0.3+ | 0.2− |
| 1999 10 09 | 703 | 0.2− | 0.7− | 1999 11 04 | 704 | 0.1+ | 1.6− | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 1999 10 09 | 703 | 0.5− | 0.3+ | 1999 11 04 | 704 | 0.8− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 1999 10 09 | 703 | 0.1− | 0.9+ | 2002 07 06 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 1999 10 10 | 704 | 0.3− | 0.4+ | 2002 07 06 | 644 | 0.1− | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 1999 10 10 | 704 | 0.0 | 0.2− | 2002 07 06 | 644 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 1999 10 10 | 704 | 0.1− | 0.1+ | 2003 12 27 | 704 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 1999 10 10 | 704 | 0.3− | 0.0 | 2003 12 27 | 704 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 10 10 | 704 | 0.5− | 0.2+ | 2003 12 27 | 704 | 0.5+ | 1.2+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 1999 10 10 | 704 | 0.5− | 0.0 | 2003 12 27 | 704 | 0.0 | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 1999 10 10 | 704 | 0.2+ | 0.1− | 2003 12 27 | 704 | 1.1+ | 1.1+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.1+ | 0.4− | 2003 12 29 | 703 | 0.4− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.6− |
| 1999 10 10 | 704 | 0.3+ | 0.7+ | 2003 12 29 | 703 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 1999 10 11 | 704 | 0.7+ | 0.5− | 2003 12 29 | 703 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1999 10 11 | 704 | 0.5+ | 0.8− | 2003 12 29 | 703 | 0.5− | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 1999 10 11 | 704 | 0.9− | 1.0− | 2004 01 16 | 699 | 1.2+ | 0.5+ | 2006 10 29 | 704 | 0.9+ | 0.0 |
| 1999 10 11 | 704 | 0.3+ | 0.8+ | 2004 01 16 | 699 | 0.7+ | 0.0 | 2006 10 29 | 704 | 0.2+ | 1.0− |
| 1999 10 11 | 704 | (0.8− | 2.2+) | 2004 01 16 | 699 | 0.7− | 0.8+ | 2006 10 29 | 704 | 1.1+ | 1.4− |
| 1999 10 11 | 704 | 0.5− | 0.5+ | 2004 01 16 | 699 | 1.0+ | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 1999 10 11 | 704 | 0.0 | 0.6+ | 2004 01 18 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 1999 10 11 | 704 | 0.6− | 1.8+ | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 1999 10 12 | 704 | 0.1+ | 0.9+ | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.3− | 0.1− |
| 1999 10 12 | 704 | 0.1+ | 0.3+ | 2004 01 19 | 704 | 0.7+ | 0.7− | 2006 11 07 | 644 | 0.4− | 0.2− |
| 1999 10 12 | 704 | 0.2− | 0.5+ | 2004 01 19 | 704 | 0.2+ | 0.8− | 2006 11 07 | 644 | 1.1− | 0.3+ |
| 1999 10 12 | 704 | 0.3− | 0.1+ | 2004 01 19 | 704 | (2.1+ | 0.1−) | 2006 11 18 | 704 | 0.7+ | 0.5+ |
| 1999 10 12 | 704 | 0.3+ | 0.3+ | 2004 01 19 | 704 | (2.8+ | 0.5+) | 2006 11 18 | 704 | 0.7− | 1.0+ |
| 1999 10 13 | 704 | 0.1+ | 0.2− | 2005 05 19 | 644 | 0.1+ | 0.8+ | 2006 11 18 | 704 | 1.2− | 0.0 |
| 1999 10 13 | 704 | 0.9+ | 0.2+ | 2005 05 19 | 644 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 1999 10 13 | 704 | 0.0 | 0.4+ | 2005 05 19 | 644 | 0.6+ | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 1999 10 13 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.0 | 2006 11 22 | 704 | (0.7− | 2.0+) |
| 1999 10 13 | 704 | 0.5+ | 0.5− | 2006 08 28 | 703 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 1999 10 13 | 704 | 1.7− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 11 22 | 704 | (0.3+ | 1.5+) |
| 1999 10 13 | 704 | 0.7+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 1.0+ | 2006 11 22 | 704 | (1.6− | 1.0+) |
| 1999 10 13 | 704 | 1.2− | 0.3− | 2006 09 20 | 699 | 1.1− | 0.2+ | 2006 11 25 | G96 | 0.5+ | 0.5− |
| 1999 10 13 | 704 | 0.6+ | 0.4+ | 2006 09 20 | 699 | 0.1+ | 0.6+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 1999 10 13 | 704 | 1.0+ | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.5+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 1999 10 13 | 704 | 0.5+ | 0.7− | 2006 09 20 | 699 | 0.6− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.6− |
| 1999 10 13 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 0.9+ | 0.5+ | | | | |

**(137408)∗ 1999 TK$_{183}$ = 1997 BP$_6$**

Discovered 1999 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 1172)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.67807 | | (2000.0) | | | |
| $n$ | 0.28175432 | $\omega$ | 308.85933 | | +0.74465542 | −0.66445417 |
| $a$ | 2.3043883 | $\Omega$ | 92.87736 | | +0.63029131 | +0.66891171 |
| $e$ | 0.1249847 | $i$ | 3.62569 | | +0.21959318 | +0.33325333 |
| $P$ | 3.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 30 | 683 | 0.1− | 1.3− | 2003 12 29 | 699 | 0.8+ | 0.5− | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 1997 01 30 | 683 | 0.6− | 1.3− | 2003 12 29 | 699 | 0.6− | 0.6+ | 2006 09 20 | 644 | 0.3+ | 0.4+ |
| 1997 01 30 | 683 | (4.2+ | 1.4−) | 2003 12 29 | 699 | 0.5+ | 0.4+ | 2006 09 20 | 644 | 0.6− | 0.6+ |
| 1997 01 30 | 683 | (0.6− | 2.2+) | 2003 12 29 | 699 | 0.8+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.2− |
| 1997 01 31 | 683 | 0.3− | 0.2− | 2004 01 16 | 644 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 1997 01 31 | 683 | 0.1+ | 0.0 | 2004 01 16 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 1997 01 31 | 683 | 0.0 | 0.3+ | 2004 01 16 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 1997 02 01 | 683 | 1.7− | 0.7− | 2004 01 16 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 1997 02 01 | 683 | 0.4− | 0.9− | 2004 01 16 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.1− |
| 1997 02 01 | 683 | 0.4+ | 0.0 | 2004 01 16 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 1999 10 04 | 703 | 0.3+ | 1.0+ | 2004 01 17 | 644 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 1999 10 04 | 703 | 0.3+ | 0.7+ | 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 1999 10 04 | 703 | 1.1+ | 0.2− | 2004 01 17 | 644 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1999 10 04 | 703 | 0.7− | 0.2+ | 2004 01 19 | 703 | (3.1− | 1.4+) | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 10 11 | 704 | 0.1− | 0.1− | 2004 01 19 | 703 | 0.9− | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.7− |
| 1999 10 11 | 704 | 0.3+ | 0.6− | 2004 01 19 | 703 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.9− |
| 1999 10 11 | 704 | 0.0 | 0.1+ | 2004 01 19 | 703 | 0.9− | 0.4+ | 2006 10 16 | 703 | (1.6− | 0.1+) |
| 1999 10 11 | 704 | 0.9− | 0.2− | 2004 01 22 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.9− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 704 | 0.8− | 0.3− | 2004 01 22 | 704 | 0.8+ | 0.9− | 2006 10 19 | 644 | 0.1− | 0.1+ | |
| 1999 10 12 | 704 | 0.2− | 0.3− | 2004 01 22 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.1− | |
| 1999 10 12 | 704 | 0.2− | 0.5+ | 2004 01 22 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.3− | |
| 1999 10 12 | 704 | 0.6− | 0.4+ | 2004 01 22 | 704 | (0.8+ | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 1999 10 12 | 704 | 0.2+ | 1.0+ | 2004 01 30 | 704 | 0.9+ | 1.4− | 2006 10 20 | 644 | 0.1− | 0.3− | |
| 1999 10 19 | 704 | 0.4− | 0.2+ | 2004 01 30 | 704 | (0.2− | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 1999 10 19 | 704 | 0.3+ | 0.2− | 2004 01 30 | 704 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 1999 10 19 | 704 | 0.1− | 0.5− | 2004 01 30 | 704 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2+ | |
| 1999 10 19 | 704 | 0.4+ | 0.9− | 2004 01 30 | 704 | 1.2+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 1999 10 19 | 704 | 0.4+ | 0.0 | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 1999 11 06 | 704 | 0.8+ | 0.0 | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 1999 11 06 | 704 | 0.2− | 1.0− | 2004 01 30 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 1999 11 06 | 704 | 0.4+ | 0.5− | 2004 02 15 | 704 | 0.5− | 1.1− | 2006 10 27 | 704 | 1.0− | 0.9+ | |
| 1999 11 06 | 704 | 0.6+ | 0.4+ | 2004 02 15 | 704 | 0.1+ | 0.7− | 2006 10 27 | 704 | 0.5+ | 0.3+ | |
| 1999 11 15 | 704 | 0.3− | 0.1+ | 2004 02 15 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 704 | 0.7− | 1.2+ | |
| 1999 11 15 | 704 | 0.0 | 0.3− | 2005 06 01 | 691 | 0.0 | 0.3+ | 2006 10 27 | 704 | 0.0 | 0.5+ | |
| 1999 11 15 | 704 | 0.0 | 1.2+ | 2005 06 01 | 691 | 0.0 | 0.4+ | 2006 10 27 | 704 | 0.4− | 0.8+ | |
| 1999 11 15 | 704 | 0.1+ | 0.5+ | 2005 06 01 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.9+ | 0.4+ | |
| 2001 03 22 | 691 | 0.0 | 0.5+ | 2005 06 08 | 691 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.4+ | 0.7+ | |
| 2001 03 22 | 691 | 0.4+ | 0.2+ | 2005 06 08 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.2+ | 0.3− | |
| 2001 03 22 | 691 | 0.4+ | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.3+ | |
| 2003 12 27 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 699 | 0.1+ | 0.9+ | 2006 11 17 | 704 | 0.0 | 1.6+ | |
| 2003 12 27 | 704 | 0.5− | 1.1+ | 2006 09 20 | 699 | (0.0 | 1.6+) | 2006 11 17 | 704 | 0.5+ | 0.7+ | |
| 2003 12 27 | 704 | 0.1− | 0.5+ | 2006 09 20 | 699 | (0.7+ | 2.6+) | 2006 11 17 | 704 | 1.1+ | 0.5+ | |
| 2003 12 27 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 699 | 0.5− | 0.0 | | | | | |

**(137409)∗ 1999 TJ$_{186}$ = 2003 YA$_{126}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55931)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.17355 | | (2000.0) | | | |
| $n$ | 0.26780618 | $\omega$ | 7.75017 | | +0.96005900 | +0.27421288 |
| $a$ | 2.3837222 | $\Omega$ | 336.10803 | | −0.26351336 | +0.81930454 |
| $e$ | 0.1414154 | $i$ | 7.89384 | | −0.09406072 | +0.50353487 |
| $P$ | 3.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 1.0+ | 0.9− | 2003 11 19 | 704 | 0.7+ | 0.1− | 2006 08 23 | 704 | 0.5− | 0.0 | |
| 1999 10 12 | 704 | 0.9+ | 0.1− | 2003 11 19 | 704 | 0.2− | 0.1− | 2006 08 23 | 704 | 0.0 | 0.4+ | |
| 1999 10 12 | 704 | 0.6+ | 1.0− | 2003 12 03 | 704 | 1.3− | 1.1+ | 2006 08 23 | 704 | 0.2+ | 0.1− | |
| 1999 10 12 | 704 | 0.7+ | 1.4− | 2003 12 03 | 704 | 0.0 | 0.2+ | 2006 08 23 | 704 | 0.0 | 0.3+ | |
| 1999 10 12 | 704 | 0.4− | 0.5− | 2003 12 03 | 704 | 0.3+ | 0.8+ | 2006 08 28 | 704 | 0.1− | 0.7+ | |
| 1999 10 13 | 704 | 0.3+ | 0.1− | 2003 12 03 | 704 | 0.4− | 1.3+ | 2006 08 28 | 703 | 0.1− | 1.0+ | |
| 1999 10 13 | 704 | 0.6− | 0.9− | 2003 12 17 | 704 | 0.2− | 0.4− | 2006 08 28 | 704 | 0.2+ | 0.4+ | |
| 1999 10 13 | 704 | 0.0 | 0.4− | 2003 12 17 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.8+ | |
| 1999 10 13 | 704 | 0.8− | 0.5+ | 2003 12 17 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.4+ | |
| 1999 10 13 | 704 | 0.2− | 0.0 | 2003 12 17 | 704 | 0.0 | 0.1+ | 2006 08 28 | 704 | 1.0− | 1.4+ | |
| 1999 10 13 | 704 | 0.8− | 0.2− | 2003 12 27 | 704 | 0.7+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.5+ | |
| 1999 10 13 | 704 | 0.6+ | 0.6− | 2003 12 27 | 704 | 0.4− | 1.0+ | 2006 08 28 | 704 | 0.3− | 0.5− | |
| 1999 10 13 | 704 | 0.8− | 0.5− | 2003 12 27 | 704 | (0.2+ | 1.9+) | 2006 08 31 | 704 | 1.1− | 0.9+ | |
| 1999 10 13 | 704 | 0.3+ | 0.6− | 2003 12 29 | 704 | 0.0 | 0.7+ | 2006 08 31 | 704 | (0.4− | 1.6+) | |
| 1999 10 13 | 704 | 1.5− | 0.1− | 2003 12 29 | 704 | 0.2+ | 1.1+ | 2006 08 31 | 704 | 0.2− | 0.4+ | |
| 1999 10 28 | 703 | 0.1+ | 0.4+ | 2003 12 29 | 704 | 0.0 | 0.8+ | 2006 08 31 | 704 | 0.0 | 0.5− | |
| 1999 10 28 | 703 | 0.0 | 0.1+ | 2003 12 29 | 704 | 0.2+ | 1.2+ | 2006 09 14 | 644 | 0.1+ | 0.6+ | |
| 1999 10 28 | 703 | 0.3+ | 0.1− | 2003 12 29 | 704 | 0.1− | 1.0+ | 2006 09 14 | 644 | 0.1− | 0.5+ | |
| 1999 10 28 | 703 | 0.0 | 0.1+ | 2005 03 13 | 703 | 0.7+ | 1.2+ | 2006 09 14 | 644 | 0.1+ | 0.5+ | |
| 1999 11 03 | 704 | 0.4+ | 0.4− | 2005 03 13 | 703 | 1.4− | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.5+ | |
| 1999 11 03 | 704 | 1.8+ | 0.3− | 2005 03 13 | 703 | 0.5− | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.3+ | |
| 1999 11 03 | 704 | 0.4+ | 0.3+ | 2005 03 13 | 703 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3+ | |
| 1999 11 03 | 704 | 0.5+ | 1.0− | 2006 08 17 | 644 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.4+ | |
| 1999 11 03 | 704 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.5+ | 0.1+ | |
| 2001 02 27 | 691 | 0.3+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.5+ | 0.2− | |
| 2001 02 27 | 691 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.4+ | 0.1+ | |
| 2001 02 27 | 691 | 0.5+ | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.6+ | 0.0 | |
| 2003 11 19 | 704 | 0.2− | 0.5+ | 2006 08 20 | 644 | 0.3− | 0.5+ | | | | | |
| 2003 11 19 | 704 | 0.1− | 1.1+ | 2006 08 23 | 704 | 0.3+ | 0.6− | | | | | |

**(137410)∗ 1999 TQ$_{186}$ = 2004 BR$_5$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55931)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.70717 | | (2000.0) | | | |
| $n$ | 0.28321882 | $\omega$ | 83.84773 | | +0.90319185 | −0.42001538 |
| $a$ | 2.2964376 | $\Omega$ | 300.95686 | | +0.34158866 | +0.82816946 |
| $e$ | 0.1352130 | $i$ | 5.92323 | | +0.25992627 | +0.37110973 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 0.2− | 2004 01 12 | 644 | 0.1+ | 0.5+ | 2006 09 28 | 703 | 0.4+ | 0.0 | |
| 1999 10 12 | 704 | 0.3− | 0.6+ | 2004 01 12 | 644 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.6− | |
| 1999 10 12 | 704 | 0.5− | 0.6+ | 2004 01 12 | 644 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.2− | |
| 1999 10 12 | 704 | 0.5− | 0.2− | 2004 01 16 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.0 | |
| 1999 10 12 | 704 | 0.3− | 0.2+ | 2004 01 16 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.5+ | 0.2+ | |
| 1999 10 13 | 704 | 0.2+ | 1.0+ | 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 10 19 | 703 | (1.7− | 0.6−) | |
| 1999 10 13 | 704 | 0.0 | 0.4+ | 2004 01 17 | 644 | 0.5+ | 0.3+ | 2006 10 19 | A50 | 0.3+ | 0.1+ | |
| 1999 10 13 | 704 | 0.1+ | 0.4+ | 2004 01 17 | 644 | 0.1− | 0.2− | 2006 10 19 | A50 | 0.4− | 0.5+ | |
| 1999 10 13 | 704 | 0.3+ | 0.6+ | 2004 01 17 | 644 | 0.9+ | 0.3+ | 2006 10 19 | A50 | 0.4+ | 0.3+ | |
| 1999 10 13 | 704 | 0.5+ | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.1+ | 2006 10 19 | A50 | 0.6− | 0.4− | |
| 1999 10 13 | 704 | 0.1− | 0.1− | 2004 01 21 | 704 | 0.0 | 0.3− | 2006 10 21 | 704 | 0.6− | 0.7− | |
| 1999 10 13 | 704 | 0.1+ | 0.2+ | 2004 01 21 | 704 | 0.3− | 0.3+ | 2006 10 21 | 704 | 0.7− | 0.0 | |
| 1999 10 13 | 704 | 0.3+ | 0.2+ | 2004 01 21 | 704 | 0.0 | 0.1− | 2006 10 21 | 704 | 0.1+ | 1.0− | |
| 1999 10 13 | 704 | 0.5+ | 0.1− | 2004 01 22 | 644 | 0.4+ | 0.0 | 2006 10 21 | 704 | 0.6− | 0.3− | |
| 1999 10 13 | 704 | 0.4+ | 0.0 | 2004 01 22 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | |
| 1999 11 03 | 704 | 1.0+ | 0.3− | 2004 01 22 | 644 | 0.7+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.0 | |
| 1999 11 03 | 704 | (1.6+ | 2.3−) | 2004 01 24 | 704 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 | |
| 1999 11 03 | 704 | 0.1− | 1.3− | 2004 01 24 | 704 | 0.0 | 1.1+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | |
| 1999 11 03 | 704 | 0.0 | 1.2− | 2004 01 24 | 704 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | |
| 1999 11 03 | 704 | 0.0 | 1.1− | 2004 01 24 | 704 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.0 | |
| 1999 11 09 | 703 | 0.7− | 0.5− | 2004 01 24 | 704 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.1+ | |
| 1999 11 09 | 703 | 1.1+ | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.0 | |
| 1999 11 09 | 703 | (2.3− | 0.5+) | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.7− | |
| 1999 11 09 | 703 | 1.7− | 1.1+ | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.2− | 0.4+ | |
| 2002 07 05 | 644 | 0.2− | 0.1− | 2004 02 17 | 645 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.5+ | |
| 2002 07 05 | 644 | 0.1+ | 0.1+ | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.6+ | 0.5+ | |
| 2002 07 05 | 644 | 0.0 | 0.1+ | 2004 04 14 | 645 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.2− | 0.3− | |
| 2003 12 29 | 691 | 0.2− | 0.3+ | 2004 04 14 | 645 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.5− | 1.2+ | |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.8+ | 0.4− | 2006 11 15 | 703 | 0.3− | 0.6− | |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.1− | 1.0− | 2006 11 15 | 703 | 0.5+ | 0.2− | |

**(137411)∗ 1999 TS$_{188}$ = 2003 YD$_{21}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55931)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.67104 | | (2000.0) | | | |
| $n$ | 0.28655662 | $\omega$ | 36.39714 | | +0.92874507 | +0.35708254 |
| $a$ | 2.2785702 | $\Omega$ | 302.39027 | | −0.36185519 | +0.81478057 |
| $e$ | 0.1851946 | $i$ | 6.77540 | | −0.08058173 | +0.45675451 |
| $P$ | 3.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.0 | 0.3+ | 2003 12 19 | 691 | 0.5+ | 0.2+ | 2006 10 23 | 703 | 0.4+ | 0.6− | |
| 1999 10 12 | 704 | 0.0 | 0.1− | 2003 12 19 | 691 | 0.4+ | 0.0 | 2006 10 23 | 703 | 1.2+ | 0.3− | |
| 1999 10 12 | 704 | 0.1− | 0.2− | 2003 12 19 | 691 | 0.1− | 0.1− | 2006 10 23 | 703 | 0.1+ | 0.5− | |
| 1999 10 12 | 704 | 0.3+ | 0.4− | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.7− | 0.2+ | |
| 1999 10 12 | 704 | 0.4+ | 0.1− | 2003 12 21 | 645 | 0.1− | 0.0 | 2006 10 29 | 703 | 0.0 | 0.1+ | |
| 1999 10 13 | 704 | 0.3+ | 0.2+ | 2004 01 13 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 703 | 0.7− | 0.4− | |
| 1999 10 13 | 704 | 0.2+ | 0.1− | 2004 01 13 | 691 | 0.0 | 0.2+ | 2006 10 29 | 703 | 0.5− | 0.2− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1− | 0.1+ | 2004 01 13 | 691 | 0.2+ | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.2− |
| 1999 10 13 | 704 | 0.1− | 0.4− | 2004 01 24 | 704 | (0.2+ | 1.6+) | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 1999 10 13 | 704 | 0.5− | 0.0 | 2004 01 24 | 704 | 0.6+ | 1.4+ | 2006 11 02 | G96 | 0.2+ | 0.4− |
| 1999 11 03 | 704 | 0.2− | 0.4+ | 2004 01 24 | 704 | (1.7+ | 0.8+) | 2006 11 02 | G96 | 0.0 | 0.1− |
| 1999 11 03 | 704 | 0.1− | 0.6− | 2004 01 24 | 704 | 0.5+ | 0.6− | 2006 11 15 | 703 | 0.4− | 0.8+ |
| 1999 11 03 | 704 | 0.8+ | 0.5+ | 2004 01 24 | 704 | 0.6− | 1.1+ | 2006 11 15 | 703 | 0.7− | 0.6+ |
| 1999 11 03 | 704 | 0.8+ | 0.1+ | 2005 05 05 | 644 | 0.4+ | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.1− |
| 1999 11 03 | 704 | 1.0+ | 0.2− | 2005 05 05 | 644 | 0.5+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.7+ |
| 1999 11 09 | 703 | (2.3− | 0.4+) | 2005 05 05 | 644 | 0.4+ | 0.2− | 2006 11 15 | 704 | 1.3+ | 0.4− |
| 1999 11 09 | 703 | 0.5− | 1.2− | 2006 10 02 | 704 | 0.1− | 0.2+ | 2006 11 15 | 704 | 1.4+ | 1.4+ |
| 1999 11 09 | 703 | (3.3− | 0.3−) | 2006 10 02 | 704 | 0.4+ | 0.8+ | 2006 11 15 | 704 | 0.5− | 0.7+ |
| 1999 11 09 | 703 | 1.5− | 0.5+ | 2006 10 02 | 704 | 0.9+ | 1.1+ | 2006 11 15 | 704 | 0.4− | 0.1+ |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2006 10 19 | 703 | 1.0− | 0.1− | 2006 11 21 | 703 | 0.0 | 0.2+ |
| 2001 02 20 | 645 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.2− | 2006 11 21 | 703 | 0.3− | 0.9− |
| 2003 12 17 | 691 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.3− | 2006 11 21 | 703 | 0.8− | 0.1+ |
| 2003 12 17 | 691 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.8− | 0.4− | 2006 11 21 | 703 | 0.2− | 0.1− |
| 2003 12 17 | 691 | 0.2+ | 0.3− | 2006 10 23 | 703 | 0.5− | 0.5− | | | | |

**(137412)∗ 1999 TM$_{189}$ = 2002 NB$_{26}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33109)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 112.89479 | | (2000.0) | | +0.40779464 | +0.90721373 |
| $n$ | 0.29884617 | $\omega$ | 356.40481 | | −0.83479391 | +0.32461771 |
| $a$ | 2.2156658 | $\Omega$ | 297.63780 | | −0.36989546 | +0.26755670 |
| $e$ | 0.1667764 | $i$ | 6.69490 | | | |
| $P$ | 3.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.8− | 0.6− | 2002 08 12 | 704 | 0.1− | 0.0 | 2002 09 22 | 644 | 0.3− | 0.0 |
| 1999 10 12 | 704 | 0.2− | 0.7− | 2002 08 12 | 704 | 0.0 | 1.2− | 2003 12 19 | 691 | 0.0 | 0.2+ |
| 1999 10 12 | 704 | 0.3− | 0.3+ | 2002 08 12 | 704 | 0.0 | 0.6− | 2003 12 19 | 691 | 0.0 | 0.1+ |
| 1999 10 12 | 704 | 0.3+ | 0.3− | 2002 08 12 | 704 | 0.2− | 0.1− | 2003 12 19 | 691 | 0.0 | 0.3+ |
| 1999 10 13 | 704 | 0.6+ | 0.7− | 2002 08 13 | 699 | 0.4+ | 0.8+ | 2003 12 21 | 645 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 1.1+ | 0.3− | 2002 08 13 | 699 | 0.0 | 0.1− | 2003 12 21 | 645 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.1− | 0.1+ | 2002 08 13 | 699 | 0.6+ | 0.1+ | 2003 12 21 | 691 | 0.2+ | 0.4+ |
| 1999 10 13 | 704 | 0.1− | 0.0 | 2002 08 13 | 699 | 0.4+ | 0.3+ | 2003 12 21 | 691 | 0.2− | 0.2+ |
| 1999 10 13 | 704 | 0.4− | 0.4− | 2002 08 16 | 644 | 0.1− | 0.5+ | 2003 12 21 | 691 | 0.3− | 0.1+ |
| 1999 11 03 | 704 | 0.3+ | 0.3+ | 2002 08 16 | 644 | 0.1− | 0.5+ | 2004 01 13 | 691 | 0.2+ | 0.1+ |
| 1999 11 03 | 704 | 0.6+ | 0.8+ | 2002 08 16 | 644 | 0.2− | 0.6+ | 2004 01 13 | 691 | 0.2+ | 0.3+ |
| 1999 11 03 | 704 | 1.0− | 0.1+ | 2002 08 17 | 608 | 0.7− | 0.5+ | 2004 01 13 | 691 | 0.0 | 0.3+ |
| 2002 07 09 | 704 | 0.1+ | 0.4+ | 2002 08 17 | 608 | 0.5− | 0.6+ | 2004 01 31 | 691 | 0.3+ | 0.3+ |
| 2002 07 09 | 704 | 0.1+ | 1.0+ | 2002 08 17 | 608 | 0.3− | 0.3+ | 2004 01 31 | 691 | 0.1+ | 0.1+ |
| 2002 07 09 | 704 | (1.7− | 0.5+) | 2002 08 26 | 644 | 0.2− | 0.2+ | 2004 01 31 | 691 | 0.2+ | 0.2+ |
| 2002 07 09 | 704 | 0.7− | 0.5+ | 2002 08 26 | 644 | 0.3− | 0.3+ | 2005 11 25 | G96 | 0.0 | 0.5+ |
| 2002 07 09 | 704 | 0.2− | 1.0+ | 2002 08 26 | 644 | 0.1+ | 0.3+ | 2005 11 25 | G96 | 0.5− | 0.4− |
| 2002 07 14 | 704 | 0.8− | 0.8+ | 2002 09 06 | 704 | 0.5− | 0.0 | 2005 11 25 | G96 | 0.2− | 0.0 |
| 2002 07 14 | 704 | 0.6+ | 0.7− | 2002 09 06 | 704 | 0.1+ | 0.2+ | 2005 11 25 | G96 | 0.5− | 0.1− |
| 2002 07 14 | 704 | 1.2+ | 1.0− | 2002 09 06 | 704 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.6− |
| 2002 07 14 | 704 | 0.4+ | 0.9− | 2002 09 06 | 704 | 0.6+ | 0.2+ | 2006 11 18 | 691 | 0.4− | 0.1+ |
| 2002 07 14 | 704 | 0.1+ | 0.1+ | 2002 09 06 | 704 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2002 08 09 | 704 | (3.8− | 0.2+) | 2002 09 13 | 644 | 0.4− | 0.1+ | 2006 11 26 | 691 | 0.1− | 0.1+ |
| 2002 08 09 | 704 | (3.0− | 0.3+) | 2002 09 13 | 644 | 0.4− | 0.1− | 2006 11 26 | 691 | 0.6+ | 0.3− |
| 2002 08 09 | 704 | (3.0− | 0.4+) | 2002 09 13 | 644 | 0.5− | 0.0 | 2006 11 26 | 691 | 0.2− | 0.1− |
| 2002 08 09 | 704 | (3.5− | 0.1+) | 2002 09 22 | 644 | 0.0 | 0.1− | | | | |
| 2002 08 12 | 704 | 0.4+ | 0.1+ | 2002 09 22 | 644 | 0.0 | 0.0 | | | | |

**(137413)∗ 1999 TY$_{189}$ = 2002 LV$_{7}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31286)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.04286 | | (2000.0) | | +0.80959716 | +0.56926130 |
| $n$ | 0.28163346 | $\omega$ | 57.88379 | | −0.57519790 | +0.72075173 |
| $a$ | 2.3050475 | $\Omega$ | 267.03446 | | −0.11704624 | +0.39554838 |
| $e$ | 0.2652274 | $i$ | 8.24170 | | | |
| $P$ | 3.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.1+ | 0.2+ | 2002 06 06 | 704 | 0.6+ | 0.2− | 2004 01 30 | 691 | 0.0 | 0.1+ |
| 1999 10 12 | 704 | 0.6+ | 0.3+ | 2002 06 06 | 704 | 0.5+ | 0.4− | 2004 01 30 | 691 | 0.1− | 0.2+ |
| 1999 10 12 | 704 | 0.2+ | 0.1+ | 2002 06 06 | 704 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.5− |
| 1999 10 12 | 704 | 0.3+ | 0.3+ | 2002 06 08 | 704 | 0.1− | 0.8+ | 2006 09 28 | 703 | 0.4+ | 0.1− |
| 1999 10 12 | 704 | 0.2+ | 0.0 | 2002 06 08 | 704 | 1.1− | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.4− |
| 1999 10 13 | 704 | 0.1− | 0.1+ | 2002 06 08 | 704 | (1.2− | 1.9+) | 2006 09 28 | 703 | 0.6+ | 0.2− |
| 1999 10 13 | 704 | 0.0 | 0.1+ | 2002 06 08 | 704 | (1.4− | 2.0+) | 2006 10 19 | 703 | 0.8− | 0.1+ |
| 1999 10 13 | 704 | 0.1+ | 0.3+ | 2002 06 10 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.4− |
| 1999 10 13 | 704 | 0.4+ | 0.3+ | 2002 06 10 | 704 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.2− |
| 1999 10 13 | 704 | 0.6+ | 0.1+ | 2002 06 10 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.2− | 0.4− |
| 1999 10 28 | 703 | 0.7− | 0.1+ | 2002 06 10 | 704 | 0.1− | 0.0 | 2006 10 20 | 704 | 0.3+ | 0.4+ |
| 1999 10 28 | 703 | 0.0 | 0.0 | 2002 06 10 | 704 | 0.0 | 0.5+ | 2006 10 20 | 704 | 0.8+ | 0.1− |
| 1999 10 28 | 703 | 0.5− | 1.2+ | 2002 06 17 | 644 | 0.2+ | 0.2− | 2006 10 20 | 704 | 0.4+ | 0.2+ |
| 1999 10 28 | 703 | 0.1+ | 0.5− | 2002 06 17 | 644 | 0.4− | 0.2− | 2006 10 20 | 704 | 1.0+ | 0.3+ |
| 1999 11 03 | 704 | 0.3+ | 0.5+ | 2002 06 17 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.7− |
| 1999 11 03 | 704 | 0.6− | 0.3− | 2002 06 17 | 704 | 0.3− | 0.1+ | 2006 10 27 | 703 | 1.2− | 0.5− |
| 1999 11 03 | 704 | 0.2− | 0.7− | 2002 06 17 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 1.1− | 0.4− |
| 1999 11 10 | 703 | 0.9− | 1.1+ | 2002 06 17 | 704 | 0.5− | 0.3+ | 2006 10 27 | 703 | 1.2+ | 0.6+ |
| 1999 11 10 | 703 | 1.1− | 0.1+ | 2002 06 17 | 704 | 0.1− | 1.3+ | 2006 11 07 | 644 | 0.3+ | 0.4+ |
| 1999 11 10 | 703 | 0.3− | 1.6+ | 2002 06 17 | 704 | 0.9− | 1.1+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 1999 11 10 | 703 | 0.1+ | 0.0 | 2003 12 19 | 704 | 0.0 | 1.0− | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2002 05 11 | 704 | (1.8+ | 1.3+) | 2003 12 19 | 704 | 0.3+ | 0.2− | 2006 11 23 | 703 | 0.4− | 0.3+ |
| 2002 05 11 | 704 | 0.7+ | 0.2+ | 2003 12 19 | 704 | 0.4+ | 0.7+ | 2006 11 23 | 703 | 0.1− | 0.8− |
| 2002 05 11 | 704 | 1.1+ | 0.1− | 2003 12 19 | 704 | 0.0 | 0.6+ | 2006 11 23 | 703 | 0.1+ | 0.1− |
| 2002 06 06 | 704 | 0.3+ | 1.1− | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.3+ | 1.0− |

**(137414)∗ 1999 TB$_{190}$ = 2002 PV$_{37}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33109)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.69902 | | (2000.0) | | −0.01630167 | −0.99006977 |
| $n$ | 0.27951093 | $\omega$ | 166.74440 | | +0.90373180 | +0.04515743 |
| $a$ | 2.3167021 | $\Omega$ | 284.05693 | | +0.42778861 | −0.13312649 |
| $e$ | 0.1741797 | $i$ | 8.27583 | | | |
| $P$ | 3.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.8+ | 1.5+ | 2004 01 23 | 704 | 0.2+ | 0.2− | 2006 09 06 | H55 | 0.4− | 0.0 |
| 1999 10 12 | 704 | 0.4− | 0.8+ | 2004 01 23 | 704 | 0.4+ | 0.3− | 2006 09 17 | 703 | 0.7− | 0.9+ |
| 1999 10 12 | 704 | 0.5− | 0.4− | 2004 01 23 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 703 | 0.6+ | 1.1+ |
| 1999 10 12 | 704 | 0.3+ | 0.2+ | 2004 01 23 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.3+ |
| 1999 10 12 | 704 | 0.0 | 0.0 | 2004 01 23 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.1− |
| 1999 10 13 | 704 | 0.0 | 0.6− | 2004 01 28 | 608 | (1.0+ | 1.5−) | 2006 09 28 | 703 | 0.6− | 0.1+ |
| 1999 10 13 | 704 | 0.5+ | 0.9+ | 2004 01 28 | 608 | (0.6+ | 1.9−) | 2006 09 28 | 703 | 0.8− | 0.7− |
| 1999 10 13 | 704 | 0.7− | 0.2− | 2004 01 28 | 608 | 0.6+ | 1.4− | 2006 09 28 | 703 | 0.4+ | 0.6− |
| 1999 10 13 | 704 | 0.5+ | 0.8+ | 2004 01 29 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 703 | 0.3+ | 0.1+ |
| 1999 10 13 | 704 | 0.4− | 0.5+ | 2004 01 29 | 699 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 1999 11 03 | 704 | (2.9+ | 1.7−) | 2004 01 29 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 1999 11 03 | 704 | 0.9+ | 0.2− | 2004 01 29 | 699 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 1999 11 03 | 704 | 0.5+ | 1.6− | 2004 01 29 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 1999 11 10 | 703 | 0.9− | 0.1− | 2004 01 29 | 704 | 0.0 | 0.7+ | 2006 10 19 | 703 | 0.2− | 0.3− |
| 1999 11 10 | 703 | 0.2− | 0.2− | 2004 01 29 | 699 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 1999 11 10 | 703 | 0.4− | 0.2− | 2004 01 29 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.1− |
| 1999 11 10 | 703 | 0.8+ | 0.4− | 2004 01 29 | 699 | 0.2− | 0.2− | 2006 10 21 | 704 | (1.5− | 2.2+) |
| 1999 12 08 | 704 | 0.1+ | 1.1− | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 704 | 0.9− | 1.2+ |
| 1999 12 08 | 704 | 0.1− | 1.9− | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 10 21 | 704 | 0.5− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.2− | 0.8− | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2002 08 05 | 644 | 0.1− | 0.5+ | 2004 02 13 | 699 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 08 05 | 644 | 0.0 | 0.4+ | 2004 02 13 | 699 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 08 05 | 644 | 0.0 | 0.5+ | 2004 02 13 | 699 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.3− | 0.3+ | 2004 02 13 | 699 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.2+ | 0.3+ | 2004 02 14 | 608 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.3+ | 2004 02 14 | 608 | 0.3− | 0.6+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2002 08 14 | 291 | 0.2− | 0.4+ | 2004 02 14 | 608 | 0.2− | 0.7+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2002 08 14 | 291 | 0.2− | 0.4+ | 2004 02 18 | 704 | 0.1+ | 0.9+ | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2002 08 14 | 291 | 0.2− | 0.6+ | 2004 02 18 | 704 | 0.7− | 0.7+ | 2006 10 27 | 703 | 0.3+ | 0.2+ |
| 2003 12 23 | 704 | 1.1+ | 0.3+ | 2004 02 18 | 704 | 0.3+ | 0.9+ | 2006 10 27 | 703 | 0.4+ | 0.2− |
| 2003 12 23 | 704 | 1.1+ | 1.2+ | 2004 02 18 | 704 | 0.9− | 0.8+ | 2006 10 27 | 703 | 0.6+ | 0.5− |
| 2003 12 23 | 704 | 0.6− | 0.7+ | 2004 02 18 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.7+ | 0.3− |
| 2003 12 28 | 699 | 0.8+ | 0.5+ | 2004 02 19 | 608 | 0.1+ | 0.7− | 2006 11 15 | 703 | 0.6+ | 0.6− |
| 2003 12 28 | 699 | 0.8+ | 0.3− | 2004 02 19 | 608 | 0.2+ | 0.7− | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2003 12 28 | 699 | 0.6+ | 0.6− | 2004 02 19 | 608 | 0.2+ | 0.7− | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2003 12 28 | 699 | 0.4+ | 0.8− | 2004 02 24 | 151 | (2.8− | 0.9+) | 2006 11 15 | 703 | 0.3+ | 1.1− |
| 2004 01 14 | 644 | 0.1− | 0.3+ | 2004 02 24 | 151 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.0 | 1.5+ |
| 2004 01 14 | 644 | 0.1+ | 0.2+ | 2006 08 12 | 644 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2004 01 14 | 644 | 0.0 | 0.3+ | 2006 08 12 | 644 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.5− | 1.0+ |
| 2004 01 22 | 644 | 0.1+ | 0.0 | 2006 08 12 | 644 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.6+ |
| 2004 01 22 | 644 | 0.3− | 0.2+ | 2006 09 06 | H55 | 0.4− | 0.1+ | | | | |
| 2004 01 22 | 644 | 0.0 | 0.4+ | 2006 09 06 | H55 | 0.3− | 0.4+ | | | | |

**(137415)∗ 1999 TY$_{192}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 290.24454 | | (2000.0) | | +0.49915307 | −0.86453442 |
| $n$ | 0.26455844 | $\omega$ | 88.84547 | | +0.73928876 | +0.46012990 |
| $a$ | 2.4031910 | $\Omega$ | 330.97597 | | +0.45199374 | +0.20214030 |
| $e$ | 0.1451254 | $i$ | 6.92953 | | | |
| $P$ | 3.73 | $H$ | 16.1 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.7+ | 0.5− | 1999 11 10 | 703 | 0.2+ | 1.2+ | 2006 08 19 | 699 | 0.0 | 1.1+ |
| 1995 10 23 | 691 | 0.5− | 0.2− | 1999 12 05 | 699 | 0.4− | 0.6− | 2006 08 19 | 699 | 0.0 | 0.6+ |
| 1995 10 23 | 691 | 0.6− | 0.1− | 1999 12 05 | 699 | 0.5− | 0.5+ | 2006 08 19 | 699 | 0.6− | 1.1+ |
| 1997 03 18 | 599 | 0.2+ | 0.9+ | 1999 12 05 | 699 | 0.4+ | 0.4+ | 2006 08 19 | 699 | 0.4+ | 0.9+ |
| 1997 03 18 | 599 | 0.6+ | 0.6− | 2002 07 12 | 644 | 0.5− | 0.0 | 2006 08 29 | 704 | 0.1+ | 0.0 |
| 1999 10 12 | 704 | 0.1− | 0.4− | 2002 07 12 | 644 | 0.8+ | 0.1− | 2006 08 29 | 704 | 0.3− | 0.7− |
| 1999 10 12 | 704 | 0.3+ | 1.3− | 2002 07 12 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.1− | 1.0+ |
| 1999 10 12 | 704 | 1.0+ | 1.0− | 2003 12 03 | 704 | 0.7− | 0.6+ | 2006 09 14 | 703 | 1.4− | 0.5+ |
| 1999 10 12 | 704 | 0.5+ | 1.3− | 2003 12 03 | 704 | 0.5− | 0.5+ | 2006 09 14 | 703 | 1.3− | 0.5− |
| 1999 10 12 | 704 | 0.9+ | 0.8− | 2003 12 03 | 704 | 0.2+ | 0.8+ | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 1999 10 13 | 704 | 0.2− | 0.4− | 2003 12 17 | 704 | 0.3− | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.0 |
| 1999 10 13 | 704 | 0.1− | 0.6− | 2003 12 17 | 704 | 0.6− | 0.2+ | 2006 09 18 | 699 | 1.2+ | 0.3+ |
| 1999 10 13 | 704 | 1.0+ | 0.3− | 2003 12 17 | 704 | 0.7− | 0.9+ | 2006 09 18 | 699 | 0.3+ | 1.1+ |
| 1999 10 13 | 704 | 0.1+ | 0.8− | 2003 12 17 | 704 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.7− | 0.8+ |
| 1999 10 13 | 704 | 0.7+ | 0.2− | 2003 12 27 | 704 | (2.2+ | 2.3+) | 2006 09 18 | 699 | 0.6− | 0.8+ |
| 1999 11 03 | 704 | 0.1− | 0.4− | 2003 12 27 | 704 | (1.4− | 1.7+) | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 1999 11 03 | 704 | 0.1+ | 0.9− | 2003 12 27 | 704 | 0.1− | 1.0+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 1999 11 03 | 704 | 0.6+ | 0.2− | 2003 12 27 | 704 | (2.2+ | 1.8+) | 2006 09 26 | G96 | 0.4+ | 0.2+ |
| 1999 11 03 | 704 | 0.4+ | 0.3− | 2003 12 29 | 704 | 0.7+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2+ |
| 1999 11 03 | 704 | 0.6+ | 0.3− | 2003 12 29 | 704 | (1.7− | 0.5+) | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1999 11 09 | 699 | 0.9+ | 0.1+ | 2003 12 29 | 704 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 1999 11 09 | 699 | 1.0− | 0.2+ | 2003 12 29 | 704 | 0.6+ | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 1999 11 09 | 699 | 0.8+ | 0.9+ | 2003 12 29 | 704 | 0.1+ | 0.8+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 1999 11 10 | 703 | 0.5− | 0.4+ | 2006 08 15 | 644 | 0.1− | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.6− |
| 1999 11 10 | 703 | 0.5− | 1.3+ | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 1999 11 10 | 703 | 0.3− | 1.0+ | 2006 08 15 | 644 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.2− |

**(137416)∗ 1999 TW$_{193}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.39620 | | (2000.0) | | +0.94203331 | −0.33532069 |
| $n$ | 0.27351464 | $\omega$ | 12.21537 | | +0.29980494 | +0.82581158 |
| $a$ | 2.3504391 | $\Omega$ | 7.40746 | | +0.15063284 | +0.45342615 |
| $e$ | 0.2024672 | $i$ | 5.13765 | | | |
| $P$ | 3.60 | $H$ | 16.4 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.6+ | 0.0 | 2004 01 31 | 704 | (1.1− | 1.8+) | 2006 09 19 | 704 | 0.2+ | 0.0 |
| 1999 10 12 | 704 | 1.1− | 0.4+ | 2004 01 31 | 704 | 0.4+ | 0.8+ | 2006 09 19 | 704 | 0.1− | 0.4+ |
| 1999 10 12 | 704 | 0.8+ | 1.0− | 2004 01 31 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 1999 10 12 | 704 | 1.2+ | 1.7− | 2004 02 20 | 240 | 0.5− | 0.1− | 2006 09 19 | 704 | 0.7+ | 0.2− |
| 1999 10 12 | 704 | 0.5+ | 0.4− | 2004 02 20 | 240 | 0.4− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 1999 10 15 | 704 | 0.1− | 0.9− | 2004 02 20 | 240 | 0.5− | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.7+ |
| 1999 10 15 | 704 | 0.3− | 0.6− | 2005 04 12 | G96 | 1.2+ | 0.5+ | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.1− | 0.5− | 2005 04 12 | G96 | 0.1+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.6− | 2005 04 12 | G96 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.2− |
| 1999 10 20 | 557 | 0.3− | 0.5− | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 1999 10 20 | 557 | 0.0 | 0.4− | 2005 04 12 | G96 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.3+ | 0.2+ |
| 1999 10 20 | 557 | 0.9+ | 0.6− | 2005 04 12 | G96 | 0.0 | 0.6+ | 2006 09 22 | 704 | 1.0− | 0.4+ |
| 1999 10 20 | 557 | 0.4+ | 0.3− | 2005 04 12 | G96 | 0.3− | 0.7+ | 2006 09 22 | 704 | 0.2+ | 0.1− |
| 1999 10 22 | 704 | 0.2− | 1.0− | 2005 04 12 | G96 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.4− | 0.5+ |
| 1999 10 22 | 704 | 1.0− | 0.7− | 2005 04 12 | G96 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.2+ | 1.4+ |
| 1999 10 22 | 704 | 0.7− | 0.9− | 2005 04 12 | G96 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.3− |
| 1999 10 22 | 704 | 1.7− | 0.9− | 2005 04 12 | G96 | 0.2+ | 0.7+ | 2006 09 25 | 699 | 0.3+ | 0.2+ |
| 1999 10 22 | 704 | 0.8− | 1.1− | 2005 04 12 | G96 | 0.5+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.5− |
| 1999 10 29 | 703 | 0.1− | 0.9+ | 2005 04 12 | G96 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.1− | 1.0+ |
| 1999 10 29 | 703 | 0.1+ | 0.5+ | 2005 04 12 | G96 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.2− |
| 1999 10 29 | 703 | 0.2+ | 0.5+ | 2005 04 12 | G96 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.2+ | 1.0+ |
| 1999 10 29 | 703 | 0.7+ | 0.7+ | 2006 08 20 | 291 | 0.6− | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.2+ |
| 1999 11 03 | 704 | 1.1+ | 0.7− | 2006 08 20 | 291 | 0.5− | 0.4− | 2006 09 28 | 704 | 0.1+ | 1.1+ |
| 1999 11 03 | 704 | 0.4+ | 0.2− | 2006 08 20 | 291 | 0.4− | 0.1− | 2006 09 28 | 704 | 0.3+ | 0.1+ |
| 1999 11 03 | 704 | 0.4+ | 0.7− | 2006 08 21 | 291 | 0.3− | 0.1+ | 2006 09 28 | 704 | 0.5− | 0.3+ |
| 1999 11 03 | 704 | 0.0 | 0.0 | 2006 08 21 | 291 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.3+ | 0.3− |
| 1999 11 03 | 704 | 0.4− | 1.7+ | 2006 08 21 | 291 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 1999 11 09 | 699 | 0.7+ | 0.1− | 2006 08 23 | 704 | 1.0+ | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.2− |
| 1999 11 09 | 699 | 0.3− | 0.1+ | 2006 08 23 | 704 | 0.1− | 0.9+ | 2006 09 30 | 703 | 0.7− | 0.1+ |
| 1999 11 09 | 699 | 0.9+ | 0.4+ | 2006 08 23 | 704 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 1999 11 11 | 703 | 0.5+ | 0.1− | 2006 08 23 | 704 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 1999 11 11 | 703 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 1999 11 11 | 703 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 1999 11 11 | 703 | 0.4+ | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2000 01 06 | 704 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2000 01 06 | 704 | 0.0 | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.3+ | 0.2− |
| 2000 01 06 | 704 | 0.2+ | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2003 11 20 | 704 | 0.5+ | 0.3+ | 2006 08 30 | 699 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2003 11 20 | 704 | 0.9+ | 0.1− | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2003 11 20 | 704 | 0.5+ | 1.0− | 2006 08 30 | 704 | (0.1− | 1.6−) | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | (1.6− | 0.7+) | 2006 08 30 | 699 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.6− | 0.6+ | 2006 08 30 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2003 12 18 | 704 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2003 12 18 | 704 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.3+ | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2003 12 23 | 704 | 0.4+ | 1.4+ | 2006 08 30 | 699 | 0.9− | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2003 12 23 | 704 | 0.4+ | 0.1− | 2006 08 31 | 704 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2003 12 23 | 704 | 0.7− | 1.3+ | 2006 08 31 | 704 | 0.2− | 1.1+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2003 12 23 | 704 | 0.4+ | 0.2+ | 2006 08 31 | 704 | 0.0 | 0.9+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2003 12 28 | 704 | 0.7+ | 1.2+ | 2006 08 31 | 704 | 1.3+ | 0.8+ | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2003 12 28 | 704 | 0.7+ | 0.5+ | 2006 09 12 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 12 | 704 | 0.0 | 1.2+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2003 12 28 | 704 | 1.1+ | 1.0+ | 2006 09 12 | 704 | 0.5− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2003 12 28 | 704 | 0.4+ | 0.7+ | 2006 09 12 | 704 | (0.3− | 1.6+) | 2006 11 11 | 703 | 0.5+ | 1.0+ |
| 2004 01 16 | 703 | 1.1− | 0.0 | 2006 09 12 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2004 01 16 | 703 | 1.2− | 1.0− | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 11 11 | 703 | (1.7+ | 1.4+) |
| 2004 01 16 | 703 | (2.0− | 0.2+) | 2006 09 14 | 703 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2004 01 16 | 703 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2004 01 18 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 704 | 0.3+ | 1.4− | 2006 11 21 | G96 | 0.3− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.1− | 0.4− | 2006 11 27 | 703 | 1.4+ | 0.3+ |
| 2004 01 26 | 699 | 0.3− | 0.7+ | 2006 09 16 | 704 | 0.1+ | 1.5− | 2006 11 27 | 703 | 2.3− | 1.9+ |
| 2004 01 26 | 699 | 0.6+ | 0.7+ | 2006 09 16 | 704 | 0.6+ | 0.6+ | 2006 11 27 | 703 | 0.8+ | 1.2+ |
| 2004 01 26 | 699 | 0.0 | 0.5+ | 2006 09 16 | 704 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.8− | 1.5+ |
| 2004 01 26 | 699 | 0.4+ | 0.5+ | 2006 09 19 | 704 | 0.1+ | 1.3+ | | | | |
| 2004 01 31 | 704 | (0.3+ | 1.8+) | 2006 09 19 | 704 | 0.3+ | 0.2− | | | | |

**(137417)∗ 1999 TW**$_{194}$

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.77104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27593451 | $\omega$ | 339.50788 | | +0.99414023 | +0.10637342 | |
| $a$ | 2.3366771 | $\Omega$ | 14.42594 | | −0.08527800 | +0.88109535 | |
| $e$ | 0.1988378 | $i$ | 4.42766 | | −0.06642942 | +0.46082065 | |
| $P$ | 3.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 16 | 691 | 0.7− | 0.3+ | 2005 04 17 | 691 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.3− | 0.9+ |
| 1998 05 16 | 691 | 1.0+ | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.5+ |
| 1998 05 16 | 691 | 0.6+ | 1.2+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.3− |
| 1999 10 03 | 704 | 0.2− | 0.3− | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.4+ | 0.5− |
| 1999 10 03 | 704 | 0.2− | 0.6− | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.3+ | 0.0 |
| 1999 10 03 | 704 | 0.1− | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 1999 10 03 | 704 | 0.9− | 0.1− | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1999 10 12 | 704 | 0.4+ | 0.5− | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1999 10 12 | 704 | 0.5− | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.2− | 0.7+ |
| 1999 10 12 | 704 | 0.5− | 0.0 | 2006 08 24 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.7+ |
| 1999 10 12 | 704 | 0.5− | 0.0 | 2006 09 12 | 703 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.3− | 1.0+ |
| 1999 10 12 | 704 | 0.7− | 0.5+ | 2006 09 12 | 703 | 0.8− | 0.4+ | 2006 10 01 | 704 | 0.0 | 1.5+ |
| 1999 10 13 | 704 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 1999 10 13 | 704 | 0.2− | 0.2− | 2006 09 12 | 703 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 1999 10 13 | 704 | 0.3− | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 1999 10 13 | 704 | 0.1+ | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.3− | 0.5− | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 1999 10 15 | 704 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.6+ | 0.6− | 2006 10 09 | 644 | 0.3+ | 0.2+ |
| 1999 10 15 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.3− | 0.7− | 2006 10 16 | 703 | (0.3+ | 1.7+) |
| 1999 10 15 | 704 | 0.5− | 0.2+ | 2006 09 17 | 704 | 0.2+ | 0.9− | 2006 10 16 | 703 | 0.2+ | 1.4+ |
| 1999 10 15 | 704 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.5+ | 0.8− | 2006 10 16 | 703 | 1.2+ | 1.1+ |
| 1999 10 15 | 704 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.8− | 2006 10 16 | 703 | 0.5+ | 1.4+ |
| 1999 10 22 | 704 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 1999 10 22 | 704 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 16 | G96 | 0.5+ | 0.2− |
| 1999 10 22 | 704 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 1999 10 22 | 704 | 0.8+ | 0.6+ | 2006 09 18 | 699 | 0.3+ | 0.4− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 1999 10 22 | 704 | 1.3+ | 0.3− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.0 |
| 1999 10 29 | 703 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.5− | 0.1− |
| 1999 10 29 | 703 | 1.5+ | 1.2+ | 2006 09 19 | 691 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.6− | 0.2+ |
| 1999 10 29 | 703 | 0.3− | 0.8+ | 2006 09 19 | 703 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.0 |
| 1999 10 29 | 703 | 1.0+ | 1.0+ | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 1999 11 03 | 704 | 0.2− | 0.5− | 2006 09 19 | 291 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1999 11 03 | 704 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1999 11 03 | 704 | 0.7+ | 0.3− | 2006 09 19 | 291 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 11 03 | 704 | 0.6− | 0.6− | 2006 09 19 | 291 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1999 11 03 | 704 | 0.4+ | 0.7− | 2006 09 19 | 703 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1999 11 11 | 703 | 0.3− | 0.7+ | 2006 09 20 | 704 | 1.0+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 11 | 703 | 0.5+ | 0.9+ | 2006 09 20 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 11 11 | 703 | 0.5+ | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 11 11 | 703 | 0.1− | 0.5− | 2006 09 20 | 704 | 0.3− | 0.5+ | 2006 10 23 | 704 | (0.2+ | 1.7+) |
| 1999 11 16 | 704 | (2.1+ | 0.4+) | 2006 09 20 | 704 | 0.8+ | 0.4+ | 2006 10 23 | 704 | 0.3+ | 0.9+ |
| 1999 11 16 | 704 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.1− | 0.3+ |
| 1999 11 16 | 704 | 0.5+ | 1.1− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2001 03 15 | 691 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 03 15 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 03 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2003 12 23 | 704 | 0.5+ | 1.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2003 12 23 | 704 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2003 12 23 | 704 | (0.4+ | 2.1+) | 2006 09 27 | 704 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2003 12 23 | 704 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2005 03 10 | G96 | 0.4− | 0.2− | 2006 09 27 | 704 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.7− | 1.4+ |
| 2005 03 10 | G96 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 1.5− | 0.0 |
| 2005 03 10 | G96 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.8− | 0.2+ |
| 2005 03 10 | G96 | 1.1− | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.9− | 0.5− |
| 2005 04 17 | 691 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.7− | 0.2+ |
| 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.0 | | | | |

**(137418)∗ 1999 TK**$_{195}$

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.28046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28195996 | $\omega$ | 191.00018 | | −0.29963897 | −0.94829475 | |
| $a$ | 2.3032677 | $\Omega$ | 276.49909 | | +0.88312703 | −0.23418348 | |
| $e$ | 0.1791373 | $i$ | 6.04654 | | +0.36097527 | −0.21423158 | |
| $P$ | 3.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 0.2+ | 2002 09 13 | 644 | 0.7− | 0.3+ | 2004 03 16 | 704 | 0.5+ | 0.4+ |
| 1999 10 12 | 704 | 0.9− | 0.4− | 2003 12 21 | 704 | 1.0− | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.5− |
| 1999 10 12 | 704 | 0.5+ | 0.2− | 2003 12 21 | 704 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.2+ |
| 1999 10 12 | 704 | 0.2− | 0.2+ | 2003 12 21 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.5+ |
| 1999 10 12 | 704 | 0.2+ | 1.4− | 2003 12 21 | 704 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.4− |
| 1999 10 13 | 704 | 0.5− | 0.3− | 2004 01 23 | 704 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 1999 10 13 | 704 | 0.5− | 0.2+ | 2004 01 23 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.3− |
| 1999 10 13 | 704 | 1.1− | 0.5− | 2004 01 23 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 1999 10 13 | 704 | 0.4+ | 0.4− | 2004 01 23 | 704 | 0.6+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.4− |
| 1999 11 03 | 704 | 0.4− | 0.7+ | 2004 01 28 | 704 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 1999 11 03 | 704 | 0.8+ | 0.9− | 2004 01 28 | 704 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 1999 11 03 | 704 | 1.0+ | 0.4+ | 2004 01 28 | 704 | 0.0 | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 1999 11 03 | 704 | 0.3− | 1.0− | 2004 01 28 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 1999 11 03 | 704 | 0.9− | 0.9− | 2004 01 28 | 704 | 0.6+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 1999 11 10 | 703 | 0.2− | 0.5+ | 2004 01 29 | 699 | 0.7− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 1999 11 10 | 703 | 0.2− | 0.4+ | 2004 01 29 | 699 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 1999 11 10 | 703 | 0.5+ | 0.2+ | 2004 01 29 | 699 | 0.2− | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1999 11 10 | 703 | 0.7+ | 0.1+ | 2004 01 29 | 699 | 0.7+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 1999 12 08 | 704 | 0.4− | 1.6+ | 2004 02 02 | 608 | 0.5+ | 0.9− | 2006 11 14 | 703 | 0.0 | 0.4+ |
| 1999 12 08 | 704 | 0.4+ | 0.8− | 2004 02 02 | 608 | 0.4+ | 0.9− | 2006 11 14 | 703 | 0.2− | 0.5+ |
| 1999 12 08 | 704 | 1.1+ | 1.0− | 2004 02 02 | 608 | 0.1− | 0.7− | 2006 11 14 | 703 | 0.0 | 0.1− |
| 1999 12 08 | 704 | 0.9+ | 0.4− | 2004 02 17 | 703 | 0.5− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.4+ |
| 2002 08 16 | 644 | 0.2− | 0.6+ | 2004 02 17 | 703 | 0.8− | 0.6+ | 2006 11 16 | 704 | 0.7− | 0.8+ |
| 2002 08 16 | 644 | 0.0 | 0.2+ | 2004 02 17 | 703 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2002 08 16 | 644 | 0.1+ | 0.4+ | 2004 02 17 | 703 | 0.5− | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2002 08 17 | 608 | 0.7− | 1.1+ | 2004 02 19 | 704 | 0.9+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.4− |
| 2002 08 17 | 608 | 0.7− | 0.5+ | 2004 02 19 | 704 | 0.4+ | 0.7+ | 2006 11 22 | 703 | 0.3+ | 1.4+ |
| 2002 08 17 | 608 | 0.1− | 0.5+ | 2004 02 19 | 704 | 0.8+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2002 08 19 | 644 | 0.4− | 0.6+ | 2004 02 19 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 703 | 0.5+ | 0.2+ |
| 2002 08 19 | 644 | 0.5− | 0.9+ | 2004 02 19 | 704 | 0.2+ | 1.0+ | 2006 11 22 | 703 | 0.0 | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.6+ | 2004 03 15 | 703 | (0.4− | 1.7+) | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2002 08 26 | 644 | 0.4+ | 0.8+ | 2004 03 15 | 703 | 0.7+ | 0.9+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2002 08 26 | 644 | 0.3+ | 0.8+ | 2004 03 15 | 703 | 0.3− | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2002 08 26 | 644 | 0.3− | 0.5+ | 2004 03 15 | 703 | 0.7− | 0.9+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2004 03 16 | 704 | 0.6+ | 0.3− | | | | |
| 2002 09 13 | 644 | 0.2+ | 0.2+ | 2004 03 16 | 704 | 0.1+ | 0.5+ | | | | |

**(137419)∗ 1999 TN**$_{195}$

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.72240 | | (2000.0) | | | |
| $n$ | 0.27565141 | $\omega$ | 4.08633 | | +0.82624519 | +0.56062425 |
| $a$ | 2.3382767 | $\Omega$ | 321.64628 | | −0.51930506 | +0.72027031 |
| $e$ | 0.1515879 | $i$ | 5.08037 | | −0.21826850 | +0.40854759 |
| $P$ | 3.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 14 | 691 | 0.0 | 0.1− | 2006 08 30 | 704 | (1.6− | 0.6−) | 2006 09 27 | 699 | 0.5+ | 0.5+ |
| 1994 03 14 | 691 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.9− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.0 |
| 1994 03 14 | 691 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 1999 10 12 | 704 | 0.5− | 0.8− | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.2+ |
| 1999 10 12 | 704 | 0.5+ | 0.8− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.2+ |
| 1999 10 12 | 704 | 0.4+ | 0.8− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.1− | 0.7+ |
| 1999 10 12 | 704 | 0.5+ | 0.6− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.0 | 0.1+ |
| 1999 10 12 | 704 | 0.5+ | 0.1+ | 2006 09 14 | 644 | 0.4− | 0.5+ | 2006 10 03 | 704 | 0.0 | 0.8+ |
| 1999 10 13 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 10 03 | 704 | 0.4− | 1.2+ |
| 1999 10 13 | 704 | 0.0 | 0.7− | 2006 09 16 | 703 | 0.4+ | 0.4− | 2006 10 03 | 704 | 0.3+ | 0.8+ |
| 1999 10 13 | 704 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.8− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 1999 10 13 | 704 | 0.2+ | 0.3− | 2006 09 16 | 703 | 0.0 | 0.5− | 2006 10 10 | 644 | 0.1− | 0.2− |
| 1999 10 13 | 704 | 0.6+ | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.2− |
| 1999 11 03 | 704 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.1− |
| 1999 11 03 | 704 | 0.3− | 0.9+ | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.3− |
| 1999 11 03 | 704 | 0.9+ | 0.1+ | 2006 09 18 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.6− |
| 1999 11 03 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 0.1− | 1.2+ | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 1999 11 10 | 703 | 0.3− | 0.3− | 2006 09 18 | 704 | (0.5− | 1.8+) | 2006 10 19 | 683 | 0.3− | 0.5− |
| 1999 11 10 | 703 | 0.7− | 0.3+ | 2006 09 18 | 704 | 0.1− | 0.3+ | 2006 10 19 | 683 | 0.4− | 0.6− |
| 1999 11 10 | 703 | 0.5+ | 0.4− | 2006 09 18 | 704 | 1.2− | 0.6+ | 2006 10 19 | 683 | 0.2+ | 1.0+ |
| 1999 11 10 | 703 | 1.4− | 0.2− | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 10 20 | 683 | 0.6+ | 0.9− |
| 2003 12 18 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.9− | 0.1+ | 2006 10 20 | 683 | 0.3− | 0.2− |
| 2003 12 18 | 704 | 0.1+ | 1.2+ | 2006 09 18 | 699 | 0.2+ | 0.5− | 2006 10 20 | 683 | 0.2− | 0.3− |
| 2003 12 18 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2005 03 09 | 691 | 0.2+ | 1.0+ | 2006 09 21 | 704 | 1.1+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2005 03 09 | 691 | 0.2+ | 0.4+ | 2006 09 21 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2005 03 09 | 691 | 0.3+ | 0.5+ | 2006 09 21 | 704 | 0.7+ | 0.4+ | 2006 10 22 | 683 | 0.0 | 0.1+ |
| 2005 04 03 | 644 | 0.6+ | 0.6+ | 2006 09 21 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 683 | (0.9− | 1.5+) |
| 2005 04 03 | 644 | 0.7+ | 0.7+ | 2006 09 23 | 104 | 0.4− | 0.2+ | 2006 10 22 | 683 | 1.5− | 1.1+ |
| 2005 04 03 | 644 | 0.9+ | 1.1+ | 2006 09 23 | 104 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2005 05 01 | 644 | 0.1+ | 0.3+ | 2006 09 23 | 104 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2005 05 01 | 644 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.7+ | 0.9+ | 2006 10 23 | 683 | (1.6+ | 0.4+) |
| 2006 08 29 | 699 | 0.4− | 0.3+ | 2006 09 25 | 704 | 0.4− | 0.4+ | 2006 10 23 | 683 | 0.3− | 1.4+ |
| 2006 08 29 | 699 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.2− | 0.3+ | 2006 10 23 | 683 | 0.6− | 1.0+ |
| 2006 08 29 | 699 | 0.1+ | 0.8− | 2006 09 27 | 699 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2006 08 29 | 699 | 1.2− | 0.3− | 2006 09 27 | 699 | 1.2+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2006 08 30 | 704 | (2.4− | 0.9−) | 2006 09 27 | 699 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1+ |

**(137420)∗ 1999 TT$_{195}$ = 2002 PF$_9$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33110)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.28718 | | (2000.0) | | | |
| $n$ | 0.27218437 | $\omega$ | 163.09965 | | +0.25433603 | −0.96079659 |
| $a$ | 2.3580912 | $\Omega$ | 272.06078 | | +0.87405041 | +0.27720911 |
| $e$ | 0.0858049 | $i$ | 6.34117 | | +0.41394331 | +0.00500177 |
| $P$ | 3.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 1.3+ | 0.3+ | 2002 08 06 | 644 | 0.2+ | 0.7+ | 2006 09 26 | 683 | (1.7− | 2.6−) |
| 1999 10 12 | 704 | 0.1− | 0.0 | 2002 08 06 | 644 | 0.1− | 0.6+ | 2006 09 26 | 683 | (1.7− | 2.1−) |
| 1999 10 12 | 704 | 1.0+ | 0.7+ | 2002 08 16 | 644 | 0.4− | 0.4+ | 2006 09 27 | 683 | (2.1+ | 1.0−) |
| 1999 10 12 | 704 | 1.1+ | 0.5− | 2002 08 16 | 644 | 0.3− | 0.5+ | 2006 09 27 | 683 | (1.6+ | 1.0−) |
| 1999 10 12 | 704 | 0.7+ | 0.6− | 2002 08 16 | 644 | 0.0 | 0.5+ | 2006 09 27 | 703 | 0.8− | 0.7− |
| 1999 10 13 | 704 | 1.1+ | 0.5+ | 2003 12 19 | 704 | 1.4+ | 0.8+ | 2006 09 27 | 703 | 0.1+ | 0.5− |
| 1999 10 13 | 704 | 0.3+ | 0.4− | 2003 12 19 | 704 | 0.3− | 0.6+ | 2006 09 27 | 683 | (1.1+ | 2.0−) |
| 1999 10 13 | 704 | 0.5+ | 0.4− | 2003 12 19 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 703 | 1.1− | 0.3− |
| 1999 10 13 | 704 | 0.2+ | 0.0 | 2003 12 19 | 704 | 0.6+ | 0.6+ | 2006 09 27 | 703 | 0.7− | 0.3+ |
| 1999 11 03 | 704 | 0.7+ | 0.9− | 2003 12 19 | 704 | 0.8+ | 0.8+ | 2006 09 28 | 683 | 0.1− | 0.3+ |
| 1999 11 03 | 704 | 0.2− | 1.0− | 2003 12 21 | 704 | 0.1− | 0.2+ | 2006 09 28 | 683 | 0.8+ | 0.2− |
| 1999 11 03 | 704 | 0.0 | 0.4− | 2003 12 21 | 704 | 0.0 | 0.2− | 2006 09 28 | 683 | 0.8+ | 0.3− |
| 1999 11 03 | 704 | 0.4+ | 0.2− | 2003 12 21 | 704 | 0.4− | 0.1+ | 2006 10 03 | 703 | (0.9− | 1.6−) |
| 1999 11 13 | 703 | 1.0+ | 1.3+ | 2003 12 21 | 704 | 0.0 | 1.2+ | 2006 10 03 | 703 | 0.3+ | 0.3− |
| 1999 11 13 | 703 | 0.6− | 1.1− | 2003 12 21 | 704 | 0.4− | 0.4+ | 2006 10 03 | 703 | 0.4+ | 0.2− |
| 1999 11 13 | 703 | 0.7− | 0.3+ | 2003 12 23 | 704 | 0.2+ | 0.4+ | 2006 10 03 | 703 | 0.1+ | 0.5− |
| 1999 11 13 | 703 | 0.2− | 0.5+ | 2003 12 23 | 704 | 0.4− | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 1999 12 08 | 704 | 1.5− | 0.9− | 2003 12 23 | 704 | 0.8+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 12 08 | 704 | 0.8− | 0.9− | 2003 12 23 | 704 | 0.3+ | 0.9+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 1999 12 08 | 704 | 0.8− | 0.9− | 2003 12 23 | 704 | 0.4− | 1.1+ | 2006 10 17 | 703 | 0.6+ | 0.2− |
| 1999 12 08 | 704 | 1.3− | 1.0− | 2006 08 29 | 699 | (1.8+ | 1.2+) | 2006 10 17 | 703 | 1.1− | 0.2− |
| 1999 12 08 | 704 | 1.0− | 0.3− | 2006 08 29 | 699 | (1.6− | 0.2+) | 2006 10 17 | 703 | 0.4+ | 0.5− |
| 2002 07 21 | 644 | 0.1− | 0.6+ | 2006 08 29 | 699 | (1.9− | 0.5−) | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2002 07 21 | 644 | 0.4− | 0.5+ | 2006 08 29 | 699 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 07 21 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 08 05 | 644 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2002 08 05 | 644 | 0.3− | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 08 05 | 644 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 08 06 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 683 | (1.2− | 2.5−) | 2006 10 23 | 644 | 0.0 | 0.2+ |

**(137421)∗ 1999 TR$_{199}$ = 2001 EH$_{23}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 150.99645 | | (2000.0) | | | |
| $n$ | 0.27868217 | $\omega$ | 315.96074 | | −0.61489524 | +0.78218405 |
| $a$ | 2.3212928 | $\Omega$ | 275.83766 | | −0.69273903 | −0.59661727 |
| $e$ | 0.0738372 | $i$ | 5.79575 | | −0.37685076 | −0.17954370 |
| $P$ | 3.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.6+ | 0.1− | 2002 08 16 | 644 | 0.3− | 0.5+ | 2006 09 24 | 113 | (0.2− | 1.8+) |
| 1999 10 12 | 704 | 0.3− | 0.5− | 2002 08 17 | 608 | 0.3+ | 1.0− | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 1999 10 12 | 704 | 0.2+ | 1.0− | 2002 08 17 | 608 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1999 10 12 | 704 | 0.2+ | 0.9− | 2002 08 17 | 608 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 1999 10 13 | 704 | 0.2+ | 0.1+ | 2002 09 01 | 608 | 0.3+ | 1.4+ | 2006 10 19 | 703 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.3− | 0.5− | 2002 09 01 | 608 | 0.0 | 1.4+ | 2006 10 19 | 703 | 0.2+ | 0.6− |
| 1999 10 13 | 704 | 1.1+ | 0.1+ | 2002 09 01 | 608 | 0.1+ | 1.2+ | 2006 10 19 | 703 | 0.0 | 0.3+ |
| 1999 10 13 | 704 | (2.3+ | 0.5+) | 2002 09 05 | 699 | 0.1− | 0.6− | 2006 10 19 | 703 | 0.3− | 0.2− |
| 1999 11 03 | 704 | 0.2+ | 0.0 | 2002 09 05 | 699 | 0.2+ | 0.8+ | 2006 10 19 | A50 | 0.1+ | 0.0 |
| 1999 11 03 | 704 | 0.4+ | 0.2+ | 2002 09 05 | 699 | 0.2+ | 0.2+ | 2006 10 19 | A50 | 0.0 | 0.6+ |
| 1999 11 03 | 704 | 0.5− | 0.4+ | 2002 09 05 | 699 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 1999 11 14 | 703 | 0.3− | 0.2+ | 2002 09 06 | 704 | 0.8+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 1999 11 14 | 703 | 1.4− | 0.6+ | 2002 09 06 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 1999 11 14 | 703 | 0.0 | 0.1− | 2002 09 06 | 704 | 0.6+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.7− |
| 1999 11 14 | 703 | 1.0− | 0.6+ | 2002 09 06 | 704 | 0.9+ | 0.9+ | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2001 03 03 | 704 | 0.1+ | 0.1− | 2002 09 06 | 704 | 0.2+ | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2001 03 03 | 704 | 0.2+ | 0.4− | 2002 09 13 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.6+ |
| 2001 03 03 | 704 | 0.6+ | 0.4+ | 2002 09 13 | 644 | 0.5− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2001 03 03 | 704 | 0.4+ | 0.5+ | 2002 09 13 | 644 | 0.6− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.6+ |
| 2001 03 03 | 704 | 0.2+ | 0.9+ | 2002 09 15 | 608 | 0.6− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2001 03 15 | 608 | 0.4+ | 0.3− | 2002 09 15 | 608 | 1.3− | 0.2− | 2006 11 14 | 703 | 1.2− | 0.1+ |
| 2001 03 15 | 608 | 0.4+ | 0.2− | 2002 09 15 | 608 | 0.5− | 0.4− | 2006 11 14 | 703 | (1.8− | 0.4+) |
| 2001 03 15 | 608 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.5− | 0.1− | 2006 11 14 | 703 | 0.7− | 0.2+ |
| 2001 03 17 | 704 | 0.5+ | 0.4+ | 2002 10 04 | 704 | 0.6+ | 1.4+ | 2006 11 14 | 703 | 0.3− | 0.1+ |
| 2001 03 17 | 704 | 0.4+ | 0.1+ | 2002 10 04 | 704 | 0.4+ | 0.9+ | 2006 11 19 | 704 | (1.7+ | 0.3−) |
| 2001 03 17 | 704 | 0.4− | 0.2− | 2002 10 09 | 699 | (1.6− | 0.5−) | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2001 03 26 | 704 | 0.1− | 1.0+ | 2002 10 09 | 699 | 0.6− | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2001 03 26 | 704 | 0.4− | 0.0 | 2002 10 09 | 699 | 1.0− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2001 03 26 | 704 | 0.3− | 1.0+ | 2002 10 09 | 699 | 0.5+ | 1.3− | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2001 03 26 | 704 | 0.9− | 1.3+ | 2002 10 13 | 644 | 0.4− | 0.4+ | 2006 11 23 | 703 | 0.3+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.3− | 0.8+ | 2002 10 13 | 644 | 0.1− | 0.5+ | 2006 11 23 | 703 | 0.5+ | 0.2− |
| 2001 03 26 | 608 | 0.0 | 0.2+ | 2002 10 13 | 644 | 0.5− | 0.5+ | 2006 11 23 | 703 | 0.4− | 0.4+ |
| 2001 03 26 | 608 | 0.5+ | 0.0 | 2003 11 21 | 704 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.4+ | 0.3+ |
| 2001 03 26 | 608 | 0.3+ | 0.2+ | 2003 11 21 | 704 | 0.5+ | 1.3+ | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2002 08 12 | 704 | 0.4− | 0.4+ | 2003 11 21 | 704 | 0.5+ | 0.3+ | 2006 11 25 | G96 | 0.6+ | 0.2− |
| 2002 08 12 | 704 | 0.2+ | 0.0 | 2003 11 21 | 704 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2002 08 12 | 704 | 0.1− | 0.2+ | 2003 12 21 | 704 | 0.5+ | 1.2+ | 2006 11 25 | G96 | 0.3+ | 0.6− |
| 2002 08 12 | 704 | 0.2− | 0.5+ | 2003 12 21 | 704 | 0.5+ | 0.8+ | 2006 11 29 | 704 | 0.7− | 1.2− |
| 2002 08 12 | 704 | 0.5− | 0.3− | 2003 12 21 | 704 | 1.0+ | 0.9+ | 2006 11 29 | 704 | 0.1− | 0.4− |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2006 09 24 | 113 | 0.2− | 0.6− | 2006 11 29 | 704 | 0.1− | 1.1− |
| 2002 08 16 | 644 | 0.3− | 0.3+ | 2006 09 24 | 113 | 0.0 | 0.6− | 2006 11 29 | 704 | 0.3− | 1.2− |

**(137422)∗ 1999 TE$_{202}$ = 2004 CP$_3$**

Discovered 1999 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60549)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 276.50804 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.29142569 | $\omega$ | 242.21292 | | | −0.67204987 | | −0.73850703 | |
| $a$ | 2.2531192 | $\Omega$ | 250.12033 | | | +0.69812459 | | −0.60739228 | |
| $e$ | 0.0526808 | $i$ | 3.31456 | | | +0.24692311 | | −0.29271485 | |
| $P$ | 3.38 | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 691 | 0.3− | 0.1+ | 2004 01 13 | 699 | (1.7− | 0.5+) | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1999 10 11 | 691 | 0.3− | 0.0 | 2004 01 13 | 699 | 1.2− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 1999 10 11 | 691 | 0.2− | 0.2− | 2004 01 18 | 644 | 0.1+ | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 1999 10 13 | 704 | 1.2+ | 1.2+ | 2004 01 18 | 644 | 0.0 | 0.6+ | 2006 11 10 | 691 | 0.2− | 0.7+ |
| 1999 10 13 | 704 | 0.9+ | 1.2+ | 2004 01 18 | 644 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 1.6+ | 0.4+ | 2004 01 24 | 704 | (2.4+ | 0.1+) | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 1999 10 14 | 645 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.9+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 1999 10 14 | 645 | 0.1− | 0.1− | 2004 01 24 | 704 | 1.3+ | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.2− |
| 1999 10 15 | 704 | 0.9+ | 0.1− | 2004 02 10 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | (2.4− | 0.2−) |
| 1999 10 15 | 704 | 0.1− | 0.3− | 2004 02 10 | 644 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.6+ | 0.0 | 2004 02 10 | 644 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 1999 10 20 | 704 | 0.4+ | 1.1+ | 2004 02 11 | 699 | 0.2+ | 0.4− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 1999 10 20 | 704 | 1.2+ | 0.4+ | 2004 02 11 | 699 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.4− |
| 1999 10 20 | 704 | 0.5− | 0.9+ | 2004 02 11 | 699 | 0.5− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.4− |
| 1999 10 20 | 704 | 0.4+ | 0.1+ | 2004 02 11 | 699 | (1.6− | 0.6−) | 2006 11 18 | 691 | 0.1− | 0.3− |
| 2001 05 21 | 807 | 0.3+ | 0.7+ | 2004 02 17 | 704 | 0.6− | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.2+ |
| 2001 05 22 | 807 | 0.2+ | 0.4+ | 2004 02 17 | 704 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2002 08 16 | 644 | 0.2− | 0.6+ | 2004 02 17 | 704 | 1.1− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2002 08 16 | 644 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2002 08 16 | 644 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2002 08 28 | 644 | 0.6− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 1.5+ | 0.2− |
| 2002 08 28 | 644 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2003 12 29 | 691 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.7− | 0.5− |
| 2003 12 29 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.5− | 0.3− |
| 2003 12 29 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.5− | 0.3− |
| 2004 01 13 | 699 | 0.1+ | 0.8− | 2006 11 01 | G96 | (1.9− | 2.7+) | | | | |
| 2004 01 13 | 699 | 0.6+ | 1.2− | 2006 11 01 | G96 | 0.3− | 0.4− | | | | |

**(137423)∗ 1999 TO$_{202}$ = 2002 HQ$_{10}$**

Discovered 1999 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 29139)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 321.62915 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.22679956 | $\omega$ | 54.91000 | | | −0.05168773 | | +0.99609283 | |
| $a$ | 2.6630209 | $\Omega$ | 212.35309 | | | −0.95428478 | | −0.07040077 | |
| $e$ | 0.0768453 | $i$ | 7.68979 | | | −0.29439587 | | +0.05331802 | |
| $P$ | 4.35 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 23 | 691 | 0.3− | 0.5+ | 2002 04 14 | 704 | 0.1+ | 1.5− | 2003 08 28 | 644 | 0.4− | 0.1+ |
| 1995 11 23 | 691 | 0.4− | 0.3+ | 2002 04 14 | 704 | 0.1+ | 1.5+ | 2003 08 28 | 644 | 0.4− | 0.0 |
| 1995 11 23 | 691 | 0.4− | 0.3+ | 2002 04 14 | 704 | 0.6+ | 1.7− | 2003 08 28 | 644 | 0.3− | 0.1− |
| 1999 10 06 | 704 | 0.0 | 0.4+ | 2002 04 14 | 704 | 0.7+ | 1.2+ | 2003 09 16 | 699 | 1.2− | 0.1+ |
| 1999 10 06 | 704 | 0.4+ | 0.3+ | 2002 04 14 | 644 | 0.0 | 0.4+ | 2003 09 16 | 699 | 0.4+ | 0.2− |
| 1999 10 06 | 704 | 0.1+ | 0.6+ | 2002 04 14 | 644 | 0.2+ | 0.5+ | 2003 09 16 | 699 | 0.5− | 0.1+ |
| 1999 10 06 | 704 | 0.0 | 0.5+ | 2002 04 14 | 644 | 0.3− | 0.3+ | 2003 09 16 | 699 | 0.6+ | 1.2+ |
| 1999 10 06 | 704 | 0.2+ | 0.9+ | 2002 04 21 | 858 | 0.3+ | 0.6− | 2003 09 18 | 644 | 0.4− | 0.0 |
| 1999 10 13 | 704 | 0.7+ | 0.1− | 2002 04 21 | 858 | 0.0 | 0.5+ | 2003 09 18 | 644 | 0.2− | 0.2+ |
| 1999 10 13 | 704 | 0.9+ | 0.5− | 2002 04 22 | 858 | 0.3− | 1.3+ | 2003 09 18 | 644 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.3− | 0.6− | 2002 04 22 | 858 | 1.2− | 1.3+ | 2003 09 20 | 246 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.3+ | 0.1− | 2002 04 22 | 858 | 0.1+ | 0.8+ | 2003 09 20 | 246 | 0.7− | 0.3+ |
| 1999 10 13 | 704 | 0.2+ | 0.0 | 2002 05 07 | 858 | 0.2+ | 1.3+ | 2003 09 20 | 246 | 0.5− | 0.3+ |
| 1999 10 15 | 704 | 1.0+ | 0.2− | 2002 05 07 | 858 | 0.2− | 0.6+ | 2003 09 20 | 246 | 0.1− | 0.4+ |
| 1999 10 15 | 704 | 1.2+ | 0.5+ | 2002 05 08 | 858 | 0.3+ | 0.6+ | 2003 09 20 | 246 | 0.3+ | 0.3+ |
| 1999 10 15 | 704 | 1.3+ | 0.0 | 2002 05 08 | 858 | 1.2− | 0.2− | 2003 09 20 | 246 | 0.1− | 0.0 |
| 2002 02 19 | 691 | 0.6+ | 0.1+ | 2002 05 08 | 858 | 0.1− | 0.7− | 2003 09 23 | 644 | 0.0 | 0.2− |
| 2002 02 19 | 691 | 1.0+ | 0.0 | 2002 05 08 | 704 | 0.3− | 0.9− | 2003 09 23 | 644 | 0.0 | 0.0 |
| 2002 02 19 | 691 | 0.1− | 0.1− | 2002 05 08 | 704 | 0.3+ | 1.1− | 2003 09 23 | 644 | 0.0 | 0.2− |
| 2002 04 09 | 704 | 0.4− | 0.4− | 2002 05 08 | 704 | 0.0 | 0.3− | 2003 09 27 | 704 | 0.8− | 0.1− |
| 2002 04 09 | 704 | 0.3− | 0.9− | 2002 05 08 | 704 | 0.2+ | 0.1+ | 2003 09 27 | 704 | 1.2− | 0.2+ |
| 2002 04 09 | 704 | 0.9− | 0.8− | 2002 05 08 | 704 | 0.4+ | 0.0 | 2003 09 27 | 704 | 0.8+ | 0.1− |
| 2002 04 09 | 704 | 0.0 | 1.6− | 2002 05 10 | 704 | 0.4− | 0.7+ | 2003 09 30 | 691 | 0.0 | 0.2+ |
| 2002 04 12 | 691 | 0.2− | 0.3+ | 2002 05 10 | 704 | 0.7− | 0.7+ | 2003 09 30 | 691 | 0.1+ | 0.3+ |
| 2002 04 12 | 691 | 0.2− | 0.3+ | 2002 05 10 | 704 | 0.4− | 1.7+ | 2003 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 04 12 | 691 | 0.3− | 0.1+ | 2003 08 22 | 599 | 0.1− | 0.4− | 2006 02 24 | 644 | 0.1+ | 0.4+ |
| 2002 04 14 | 704 | 0.7+ | 1.4− | 2003 08 22 | 599 | 0.1− | 0.1− | 2006 02 24 | 644 | 0.1− | 0.3+ |
| 2002 04 14 | 704 | 0.1+ | 1.1+ | 2003 08 23 | 599 | 0.3+ | 0.1− | 2006 02 24 | 644 | 0.3+ | 0.5+ |
| 2002 04 14 | 704 | 0.9+ | 1.4− | 2003 08 23 | 599 | 0.0 | 0.0 | 2006 03 25 | 644 | 0.2+ | 0.7+ |
| 2002 04 14 | 704 | 0.3+ | 1.2+ | 2003 08 23 | 644 | 0.1+ | 0.1− | 2006 03 25 | 644 | 0.2+ | 0.6+ |
| 2002 04 14 | 704 | 0.7+ | 1.3− | 2003 08 23 | 644 | 0.0 | 0.2− | 2006 03 25 | 644 | 0.0 | 0.9+ |
| 2002 04 14 | 704 | 0.5+ | 1.5+ | 2003 08 23 | 644 | 0.1+ | 0.0 | | | | |

**(137424)∗ 1999 TY$_{202}$ = 2005 EZ$_{163}$**

Discovered 1999 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74650)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 57.08470 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.27801232 | $\omega$ | 285.08519 | | | +0.37291121 | | +0.92771783 | |
| $a$ | 2.3250200 | $\Omega$ | 6.87934 | | | −0.78900754 | | +0.32648887 | |
| $e$ | 0.1190649 | $i$ | 7.98499 | | | −0.48826667 | | +0.18095480 | |
| $P$ | 3.55 | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3− | 0.8− | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.9+ |
| 1999 10 06 | 704 | 0.1+ | 0.4− | 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.1+ | 1.1+ |
| 1999 10 06 | 704 | 0.1+ | 0.2− | 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 09 26 | 704 | 1.0− | 0.9− |
| 1999 10 06 | 704 | 0.5− | 0.4− | 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.5+ |
| 1999 10 06 | 704 | 0.6− | 0.6− | 2005 04 02 | G96 | 0.6− | 0.7+ | 2006 09 26 | 704 | 0.9− | 0.4− |
| 1999 10 13 | 704 | 0.9+ | 0.4− | 2005 04 02 | G96 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.3− | 0.1− |
| 1999 10 13 | 704 | 0.1+ | 0.2− | 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.4− |
| 1999 10 13 | 704 | 0.3− | 0.0 | 2005 04 04 | 703 | 0.9− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.6+ |
| 1999 10 13 | 704 | 0.1+ | 0.3+ | 2005 04 04 | 703 | 0.2− | 1.0+ | 2006 09 27 | 704 | 0.2+ | 0.9+ |
| 1999 10 13 | 704 | 0.2− | 0.5− | 2005 04 04 | 703 | 0.6+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.3− |
| 1999 10 19 | 704 | 0.8+ | 0.7− | 2005 04 04 | 703 | (2.5− | 0.8−) | 2006 09 28 | 691 | 0.5+ | 0.0 |
| 1999 10 19 | 704 | 0.9+ | 0.2− | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 1999 10 19 | 704 | 0.7+ | 1.4− | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 1999 10 19 | 704 | 0.6+ | 0.9+ | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.3+ | 1.0+ |
| 2003 11 19 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.8− | 0.3− | 2006 09 28 | 704 | 0.1− | 1.0− |
| 2003 11 19 | 704 | 0.7+ | 1.0+ | 2006 08 28 | 703 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.4+ | 1.3+ |
| 2003 11 19 | 704 | (2.2+ | 0.4+) | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 09 28 | 704 | 0.0 | 0.5− |
| 2003 12 04 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 1.2− | 0.1− | 2006 09 28 | 704 | 0.4+ | 0.7+ |
| 2003 12 04 | 704 | 0.1− | 0.6+ | 2006 09 13 | 644 | 0.3− | 0.6+ | 2006 09 28 | 704 | 0.2− | 0.1− |
| 2003 12 04 | 704 | 1.0− | 0.9+ | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.5+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 04 | 704 | (1.1+ | 1.5−) | 2006 09 13 | 644 | 0.4− | 0.4+ | 2006 09 28 | 704 | (0.4+ | 1.8+) |
| 2003 12 17 | 704 | 0.9− | 0.3− | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 30 | 704 | (1.2+ | 1.7+) |
| 2003 12 17 | 704 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.3+ | 1.5+ |
| 2003 12 17 | 704 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.8+ |
| 2005 03 01 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.6− | 0.1+ | 2006 09 30 | 704 | 0.5− | 0.3− |
| 2005 03 01 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.3− | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2005 03 01 | 691 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.6− | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2005 03 10 | G96 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.5− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.7+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2005 03 10 | G96 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2005 03 12 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 1.1+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 1.3+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.5− | 0.5− |
| 2005 03 13 | 703 | 0.3− | 0.6− | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2005 03 13 | 703 | 0.7− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2005 03 13 | 703 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 0.9− | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2005 03 13 | 703 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | G96 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.1− | | | | |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1− | | | | |

**(137425)∗ 1999 TV$_{205}$**

Discovered 1999 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.99920 | | (2000.0) | | | |
| $n$ | 0.28487634 | $\omega$ | 68.38720 | | +0.99098616 | +0.12792431 |
| $a$ | 2.2875212 | $\Omega$ | 284.24576 | | −0.13299563 | +0.90382629 |
| $e$ | 0.1524772 | $i$ | 2.35172 | | −0.01608079 | +0.40833003 |
| $P$ | 3.46 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.0 | 0.8− | 2002 07 22 | 644 | 0.2+ | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 1997 01 09 | 691 | 0.1+ | 0.3− | 2002 07 22 | 644 | 0.1− | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1997 01 09 | 691 | 0.3+ | 0.2− | 2002 07 22 | 644 | 0.1+ | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 1999 10 13 | 704 | 0.9+ | 0.7+ | 2002 08 07 | 644 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 1999 10 13 | 704 | 0.3+ | 1.1+ | 2002 08 07 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.5− | 1.0− |
| 1999 10 13 | 704 | 1.3+ | 0.1+ | 2002 08 07 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.3+ |
| 1999 10 15 | 704 | 0.7− | 0.5− | 2002 08 27 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.1+ |
| 1999 10 15 | 704 | 0.9− | 0.1+ | 2002 08 27 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 1.1− | 0.6− |
| 1999 10 15 | 704 | 0.7+ | 1.0− | 2002 08 27 | 644 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.4− | 0.6− |
| 1999 11 03 | 704 | 0.6+ | 0.2− | 2004 01 19 | 691 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.6− | 0.6+ |
| 1999 11 03 | 704 | 1.3+ | 0.2− | 2004 01 19 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.1− |
| 1999 11 03 | 704 | 0.2− | 0.4+ | 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.4− | 1.1− |
| 1999 11 03 | 704 | 0.8− | 0.7+ | 2004 01 30 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.7− | 0.4+ |
| 1999 11 14 | 704 | 0.9− | 0.1− | 2004 01 30 | 691 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.6+ | 1.5− |
| 1999 11 14 | 704 | 1.1− | 0.5− | 2004 01 30 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.3− | 1.0+ |
| 1999 11 14 | 704 | 1.1− | 0.2− | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 1999 11 14 | 704 | 0.6− | 1.3− | 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.2+ |
| 1999 11 14 | 704 | 0.9− | 0.1− | 2005 05 12 | G96 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.4+ | 0.1+ |
| 1999 12 07 | 704 | 0.1+ | 1.3− | 2005 05 12 | G96 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.4+ | 0.2+ |
| 1999 12 07 | 704 | 0.9+ | 0.3− | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.5+ | 0.2− | 2006 10 04 | G96 | 0.4+ | 0.0 | 2006 11 27 | 704 | 0.3− | 0.9+ |
| 1999 12 07 | 704 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 11 27 | 704 | 0.5− | 0.3+ |
| 1999 12 07 | 704 | 1.2− | 0.6− | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2002 07 04 | 644 | 0.7− | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.1− |
| 2002 07 04 | 644 | 0.1+ | 1.2+ | 2006 10 20 | G96 | 0.1− | 0.1+ | 2006 12 01 | 704 | 1.1+ | 0.3+ |
| 2002 07 04 | 644 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.9+ |

**(137426)∗ 1999 TM$_{207}$ = 2001 FU$_{164}$**

Discovered 1999 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 14791)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 258.32414 | | (2000.0) | | | |
| $n$ | 0.26443692 | $\omega$ | 140.84092 | | +0.10898390 | −0.97528621 |
| $a$ | 2.4039272 | $\Omega$ | 302.09766 | | +0.84550715 | +0.19262269 |
| $e$ | 0.0984148 | $i$ | 13.11318 | | +0.52272380 | −0.10822801 |
| $P$ | 3.73 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.2− | 0.2+ | 2001 03 18 | 608 | 0.5− | 0.2+ | 2003 12 30 | 704 | 0.0 | 0.3+ |
| 1995 08 25 | 691 | 0.2− | 0.1+ | 2001 03 24 | 699 | 0.6+ | 0.5+ | 2004 01 11 | 644 | 0.0 | 0.1− |
| 1995 08 25 | 691 | 0.2− | 0.0 | 2001 03 24 | 699 | 1.0+ | 0.3− | 2004 01 11 | 644 | 0.1− | 0.2+ |
| 1999 10 14 | 704 | 0.3− | 0.5− | 2001 03 24 | 699 | 1.5+ | 0.3− | 2004 01 11 | 644 | 0.6+ | 0.2+ |
| 1999 10 14 | 704 | 0.1+ | 0.3+ | 2001 03 24 | 699 | 1.6+ | 1.9+ | 2004 01 17 | 644 | 0.1− | 0.3+ |
| 1999 10 14 | 704 | 0.0 | 0.1− | 2002 06 13 | 644 | 0.0 | 0.3+ | 2004 01 17 | 644 | 0.2+ | 0.2− |
| 1999 10 14 | 704 | 0.2+ | 0.6− | 2002 06 13 | 644 | 0.1+ | 0.3+ | 2004 01 17 | 644 | 0.7− | 0.4− |
| 1999 10 14 | 704 | 0.0 | 0.0 | 2002 06 13 | 644 | 0.0 | 0.2+ | 2006 07 21 | 703 | 0.0 | 1.9− |
| 1999 10 15 | 704 | 0.2− | 0.6+ | 2003 11 04 | 704 | 0.1+ | 1.0+ | 2006 07 21 | 703 | 1.5− | 1.1− |
| 1999 10 15 | 704 | 0.5+ | 0.0 | 2003 11 04 | 704 | 0.5+ | 0.5+ | 2006 07 21 | 703 | 0.2+ | 1.0− |
| 1999 10 15 | 704 | 0.3− | 0.3+ | 2003 11 04 | 704 | 0.5+ | 0.3− | 2006 07 21 | 703 | 0.9− | 0.6− |
| 1999 10 15 | 704 | 0.4+ | 0.3− | 2003 11 20 | 704 | 0.4− | 0.1+ | 2006 08 14 | 644 | 0.3+ | 0.6+ |
| 1999 10 15 | 704 | 0.1− | 0.0 | 2003 11 20 | 704 | 0.7− | 0.0 | 2006 08 14 | 644 | 0.2+ | 1.0+ |
| 1999 10 15 | 704 | 0.3+ | 1.0+ | 2003 11 20 | 704 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.8+ |
| 1999 10 15 | 704 | 0.4− | 0.3− | 2003 11 20 | 704 | 0.5− | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.7+ |
| 1999 10 15 | 704 | 0.8− | 0.2+ | 2003 11 20 | 704 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.4+ | 0.4+ |
| 1999 10 15 | 704 | 0.1+ | 0.2− | 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.6+ |
| 1999 10 15 | 704 | 0.7− | 0.1− | 2003 12 17 | 704 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.8+ | 0.1− |
| 1999 10 16 | 704 | 0.3− | 1.2+ | 2003 12 17 | 704 | 0.3+ | 0.4− | 2006 08 29 | 703 | 0.4− | 1.2+ |
| 1999 10 16 | 704 | 0.9+ | 0.1+ | 2003 12 17 | 704 | 0.4− | 0.9− | 2006 08 29 | 703 | 0.6+ | 0.7+ |
| 1999 10 16 | 704 | 1.3+ | 0.1− | 2003 12 17 | 704 | 0.7− | 0.0 | 2006 08 29 | 703 | 0.7− | 1.2+ |
| 1999 10 16 | 704 | 0.3+ | 0.1+ | 2003 12 30 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.4− |
| 1999 10 16 | 704 | 0.8+ | 0.3− | 2003 12 30 | 704 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.7− | 1.6− |
| 2001 03 18 | 608 | 0.3− | 0.8+ | 2003 12 30 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 2001 03 18 | 608 | 1.2− | 0.8+ | 2003 12 30 | 704 | 0.3− | 0.7+ | 2006 09 14 | 703 | 0.4+ | 0.2+ |

**(137427)∗ 1999 TF$_{211}$**

Discovered 1999 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.07247 | | (2000.0) | | | |
| $n$ | 0.25745634 | $\omega$ | 161.12206 | | −0.87663517 | −0.46434110 |
| $a$ | 2.4471861 | $\Omega$ | 348.44132 | | +0.31899266 | −0.36469053 |
| $e$ | 0.6142496 | $i$ | 38.99629 | | +0.36021447 | −0.80708622 |
| $P$ | 3.83 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 699 | 1.3+ | 0.8+ | 2003 11 02 | 130 | 0.2+ | 0.0 | 2004 03 25 | 704 | 0.2+ | 0.3+ |
| 1999 10 06 | 699 | 1.5+ | 0.2+ | 2003 11 02 | 130 | 0.1+ | 0.5+ | 2004 03 25 | 704 | 0.1+ | 0.2+ |
| 1999 10 06 | 699 | (2.6+ | 1.0+) | 2003 11 02 | 130 | 0.3+ | 0.3+ | 2004 03 25 | 704 | 0.1+ | 0.1+ |
| 1999 10 14 | 704 | 0.5+ | 0.1− | 2003 11 07 | 084 | 0.3+ | 0.3+ | 2004 03 25 | 704 | 0.0 | 0.2+ |
| 1999 10 14 | 704 | 0.5+ | 1.3− | 2003 11 08 | 084 | 0.2− | 0.6+ | 2004 03 25 | A32 | 0.1+ | 0.0 |
| 1999 10 14 | 704 | 0.0 | 0.5− | 2003 11 17 | 670 | 0.2+ | 0.1+ | 2004 03 25 | A32 | 0.0 | 0.2+ |
| 1999 10 14 | 704 | 0.7− | 0.8+ | 2003 11 17 | 670 | 0.3+ | 0.3+ | 2004 03 25 | A32 | 0.4− | 0.2+ |
| 1999 10 14 | 704 | 1.0+ | 0.8− | 2003 12 05 | 704 | 0.9+ | 0.8− | 2004 03 25 | A32 | 0.0 | 0.2+ |
| 1999 10 15 | 704 | 0.6+ | 0.7− | 2003 12 05 | 704 | 0.4+ | 0.7+ | 2004 03 28 | 670 | 0.1+ | 0.2− |
| 1999 10 15 | 704 | 0.4+ | 0.5− | 2003 12 05 | 704 | 1.4+ | 0.9− | 2004 03 28 | 670 | 0.1− | 0.2+ |
| 1999 10 15 | 704 | 0.1+ | 0.4− | 2003 12 05 | 704 | 0.4+ | 0.7+ | 2004 03 28 | 113 | 0.0 | 0.3+ |
| 1999 10 15 | 704 | 0.5+ | 0.0 | 2003 12 07 | 240 | 0.1− | 0.3+ | 2004 03 28 | 113 | 0.5+ | 0.0 |
| 1999 10 15 | 704 | 0.3+ | 0.3− | 2003 12 07 | 240 | 0.1− | 0.1+ | 2004 03 28 | 113 | 0.5+ | 0.0 |
| 1999 10 16 | 704 | 0.1− | 0.4− | 2003 12 07 | 240 | 0.0 | 0.2+ | 2004 03 28 | 113 | 0.0 | 0.1+ |
| 1999 10 16 | 704 | 0.2+ | 0.0 | 2003 12 07 | 240 | 0.2+ | 0.4+ | 2004 03 28 | 113 | 0.1+ | 0.2+ |
| 1999 10 16 | 704 | 0.2− | 0.5− | 2003 12 09 | 198 | 0.4− | 0.3+ | 2004 03 28 | 084 | 0.3− | 0.4+ |
| 1999 10 16 | 704 | 0.4− | 0.2− | 2003 12 09 | 198 | 0.6− | 0.4+ | 2004 03 29 | A30 | 1.0− | 0.8+ |
| 1999 11 11 | 699 | 0.0 | 1.8+ | 2003 12 09 | 198 | 1.1− | 0.1+ | 2004 03 29 | A30 | (1.7+ | 1.7−) |
| 1999 11 11 | 699 | 1.1+ | 0.7− | 2003 12 13 | 084 | 0.0 | 0.1− | 2004 03 29 | A30 | 0.0 | 0.3+ |
| 2002 08 19 | 644 | 0.0 | 0.4− | 2003 12 19 | H72 | 0.7− | 0.1− | 2004 03 29 | A30 | 0.1− | 0.6− |
| 2002 08 19 | 644 | 1.1− | 0.6+ | 2003 12 19 | H72 | (2.8− | 0.2−) | 2004 03 29 | A30 | (1.7− | 1.9+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.6− | 0.4+ | 2003 12 20 | H72 | 0.2− | 0.5− | 2004 03 29 | A30 | 0.2+ | 0.2− |
| 2002 09 16 | 644 | 0.5+ | 0.0 | 2003 12 20 | H72 | 0.3− | 1.5+ | 2004 03 29 | A30 | (1.6+ | 0.6−) |
| 2002 09 16 | 644 | 0.0 | 0.5+ | 2003 12 20 | H72 | 0.1+ | 1.1− | 2004 03 29 | A30 | 0.4− | 0.2+ |
| 2002 09 16 | 644 | 0.7− | 0.3+ | 2003 12 26 | 130 | 0.0 | 0.1+ | 2004 04 01 | 084 | 0.1+ | 0.8+ |
| 2003 08 04 | 246 | 0.0 | 0.5+ | 2003 12 26 | 130 | 0.3+ | 0.0 | 2004 04 02 | 084 | 0.1+ | 0.7+ |
| 2003 08 04 | 246 | 0.2+ | 0.5+ | 2003 12 26 | 130 | 0.3+ | 0.1+ | 2004 04 03 | 084 | 0.1+ | 0.1+ |
| 2003 08 04 | 246 | 0.6+ | 0.2+ | 2003 12 26 | 130 | 0.0 | 0.0 | 2004 04 04 | D85 | 1.1+ | 0.7− |
| 2003 08 04 | 246 | 0.4+ | 0.2+ | 2003 12 28 | H72 | 1.1+ | 0.1− | 2004 04 04 | D85 | 0.7+ | 0.4− |
| 2003 08 04 | 246 | 0.1+ | 0.2+ | 2003 12 28 | H72 | (0.2− | 2.6−) | 2004 04 04 | D85 | 0.9+ | 0.1+ |
| 2003 08 04 | 246 | 0.1− | 0.3+ | 2003 12 28 | H72 | 0.9− | 1.1− | 2004 04 04 | 084 | 0.3+ | 0.4− |
| 2003 08 05 | 246 | 0.2+ | 0.1+ | 2004 01 01 | 084 | 0.6+ | 0.2− | 2004 04 05 | 084 | 0.5− | 0.6+ |
| 2003 08 05 | 246 | 0.6− | 0.3+ | 2004 01 02 | 084 | 0.2− | 0.2+ | 2004 04 06 | 084 | 0.0 | 0.1− |
| 2003 08 05 | 246 | 0.1− | 0.5+ | 2004 01 03 | 084 | 0.4− | 0.1+ | 2004 04 06 | J93 | 0.1− | 1.4+ |
| 2003 08 05 | 246 | 0.4+ | 0.1+ | 2004 01 07 | 084 | 0.7− | 0.0 | 2004 04 06 | J93 | 0.1− | 1.3+ |
| 2003 08 23 | 198 | 0.0 | 0.6+ | 2004 01 09 | 084 | 0.3− | 0.1+ | 2004 04 06 | J93 | 0.1− | 0.0 |
| 2003 08 23 | 198 | 0.5+ | 0.3+ | 2004 01 17 | H72 | 0.1− | 0.7+ | 2004 04 06 | J93 | 0.6+ | 0.6− |
| 2003 08 23 | 198 | 0.8+ | 0.1− | 2004 01 18 | 938 | 0.0 | 0.2+ | 2004 04 07 | 084 | 0.3− | 0.4+ |
| 2003 09 20 | 734 | 0.4+ | 0.5− | 2004 01 23 | 084 | 0.1− | 0.0 | 2004 04 08 | 084 | 0.2− | 0.1− |
| 2003 09 20 | 734 | (3.6− | 0.3+) | 2004 02 06 | 084 | 0.2+ | 0.2+ | 2004 04 09 | 084 | 0.2+ | 0.3− |
| 2003 09 24 | 240 | 1.2+ | 0.2+ | 2004 02 14 | 750 | 0.1+ | 0.1+ | 2004 04 12 | 240 | 0.6− | 0.5+ |
| 2003 09 24 | 240 | 0.6+ | 0.2+ | 2004 02 14 | 750 | 0.1+ | 0.2+ | 2004 04 12 | 240 | 0.4− | 0.2+ |
| 2003 09 24 | 240 | 0.7+ | 0.1+ | 2004 02 14 | 750 | 0.2+ | 0.1+ | 2004 04 12 | 240 | 0.5− | 0.1+ |
| 2003 09 24 | 240 | 0.1− | 0.3− | 2004 02 14 | 750 | 0.0 | 0.2+ | 2004 04 12 | 240 | 0.0 | 0.2− |
| 2003 09 24 | 240 | 0.3− | 0.3− | 2004 02 19 | H72 | 0.8+ | 0.5− | 2004 04 12 | 240 | 0.1− | 0.3− |
| 2003 09 30 | 151 | 0.5− | 0.7+ | 2004 02 19 | H72 | 0.8+ | 0.0 | 2004 04 12 | 240 | 0.1− | 0.3− |
| 2003 09 30 | 151 | 0.7− | 0.2+ | 2004 02 19 | H72 | 0.6+ | 0.8− | 2004 04 12 | 240 | 0.2− | 0.0 |
| 2003 09 30 | 151 | 0.3− | 0.5− | 2004 02 19 | H72 | 0.7− | 0.1− | 2004 04 12 | 240 | 0.0 | 0.2− |
| 2003 09 30 | 151 | 0.9− | 0.0 | 2004 02 19 | 084 | 0.3− | 0.1+ | 2004 04 12 | 240 | 0.0 | 0.2− |
| 2003 10 03 | 830 | 0.1− | 0.1+ | 2004 02 20 | H72 | (2.2− | 0.2+) | 2004 04 13 | 084 | 0.0 | 0.0 |
| 2003 10 03 | 830 | 0.2− | 0.0 | 2004 02 20 | H72 | 0.5+ | 1.3+ | 2004 04 16 | H72 | 0.6− | 0.1− |
| 2003 10 03 | 830 | 0.3− | 0.3+ | 2004 02 20 | H72 | (0.6− | 2.1+) | 2004 04 16 | H72 | (1.4+ | 2.7−) |
| 2003 10 03 | 830 | 0.4− | 0.1− | 2004 02 20 | H72 | (0.2− | 3.1+) | 2004 04 16 | H72 | 0.1− | 0.8− |
| 2003 10 04 | G90 | (1.0− | 2.0−) | 2004 03 04 | 084 | 0.4− | 0.1+ | 2004 04 18 | H72 | 0.8+ | 0.2+ |
| 2003 10 04 | G90 | 0.0 | 0.2− | 2004 03 08 | 355 | 0.5− | 1.1− | 2004 04 18 | H72 | 0.2+ | 0.5− |
| 2003 10 04 | G90 | 0.0 | 1.1− | 2004 03 08 | 355 | 0.1− | 0.3− | 2004 04 18 | H72 | 0.4− | 0.0 |
| 2003 10 08 | 084 | 0.8− | 0.3+ | 2004 03 08 | 355 | 0.4+ | 0.2+ | 2004 04 18 | H72 | 0.7+ | 0.1− |
| 2003 10 13 | 151 | (1.9+ | 0.1−) | 2004 03 08 | 355 | 0.9− | 0.5− | 2004 04 20 | 434 | 0.0 | 0.5− |
| 2003 10 13 | 151 | 0.7− | 0.5+ | 2004 03 09 | 084 | 0.1− | 0.2+ | 2004 04 20 | 434 | 0.2+ | 0.2− |
| 2003 10 13 | 240 | 0.2− | 0.3+ | 2004 03 10 | 084 | 0.2− | 0.1+ | 2004 04 20 | 434 | 0.1+ | 0.3− |
| 2003 10 13 | 240 | 0.0 | 0.0 | 2004 03 11 | 704 | 0.2+ | 0.1+ | 2004 04 23 | J87 | 0.6+ | 0.1+ |
| 2003 10 13 | 240 | 0.4− | 0.0 | 2004 03 11 | 704 | 0.1− | 0.2+ | 2004 04 23 | J87 | 0.1− | 0.4− |
| 2003 10 14 | 704 | 0.4− | 0.4− | 2004 03 11 | 704 | 0.1− | 0.2− | 2004 04 23 | J87 | 0.2− | 0.0 |
| 2003 10 14 | 704 | 0.1− | 0.1+ | 2004 03 11 | 704 | 0.3− | 0.1− | 2004 05 10 | 428 | 0.4+ | 0.7− |
| 2003 10 14 | 704 | 0.0 | 0.6− | 2004 03 11 | 084 | 0.2− | 0.4+ | 2004 05 10 | 428 | 0.5+ | 0.6− |
| 2003 10 14 | 704 | (1.6− | 0.3−) | 2004 03 12 | 084 | 0.0 | 0.3+ | 2004 05 27 | 428 | 0.2− | 0.3− |
| 2003 10 14 | 704 | 1.4− | 0.0 | 2004 03 13 | 084 | 0.3− | 0.0 | 2004 05 27 | 428 | 0.1+ | 0.3− |
| 2003 10 16 | 084 | 0.2+ | 0.0 | 2004 03 14 | 938 | 0.3− | 0.3+ | 2004 05 27 | 428 | 0.0 | 0.1− |
| 2003 10 18 | 704 | 0.1− | 0.9+ | 2004 03 14 | 938 | 0.2− | 0.2− | 2004 05 30 | E17 | 0.2+ | 0.0 |
| 2003 10 18 | 704 | 0.1− | 0.6+ | 2004 03 15 | 938 | 0.1+ | 0.3− | 2004 05 30 | E17 | 0.3+ | 0.1− |
| 2003 10 18 | 704 | 0.1+ | 0.5+ | 2004 03 16 | J93 | 0.1− | 1.0− | 2004 05 30 | E17 | 0.0 | 0.0 |
| 2003 10 18 | 704 | 0.2− | 0.5+ | 2004 03 16 | J93 | 0.3+ | 0.1− | 2004 07 09 | 474 | 0.4− | 0.1+ |
| 2003 10 18 | 704 | 0.2+ | 0.7+ | 2004 03 16 | J93 | 0.5+ | 1.4− | 2004 07 09 | 474 | 0.4− | 0.1− |
| 2003 10 18 | 084 | 0.2− | 0.1+ | 2004 03 16 | J93 | 0.2+ | 0.1+ | 2004 07 09 | 474 | 0.8+ | 0.7+ |
| 2003 10 19 | 670 | 0.5+ | 1.0− | 2004 03 17 | 215 | 0.1− | 0.2+ | 2004 07 10 | 474 | 0.4+ | 0.2− |
| 2003 10 19 | 670 | 1.0− | 0.4− | 2004 03 17 | 215 | 0.3− | 0.4+ | 2004 07 10 | 474 | 1.0+ | 0.5+ |
| 2003 10 19 | 670 | 0.1− | 0.1+ | 2004 03 19 | 434 | 0.6+ | 0.2+ | 2004 07 10 | 474 | (1.5+ | 0.1−) |
| 2003 10 19 | 084 | 0.2+ | 0.1− | 2004 03 19 | 434 | 0.2− | 0.4+ | 2004 07 10 | 474 | 0.1+ | 0.2− |
| 2003 10 22 | 084 | 0.7− | 0.3+ | 2004 03 19 | 434 | 0.2− | 0.4+ | 2004 07 10 | 474 | (3.1+ | 1.2−) |
| 2003 10 24 | 084 | 0.3+ | 0.0 | 2004 03 19 | 434 | 0.1+ | 1.1+ | 2004 07 10 | 474 | (3.1+ | 1.2−) |
| 2003 10 25 | 830 | 0.3− | 0.4+ | 2004 03 19 | 084 | 0.3+ | 0.1+ | 2006 07 29 | H55 | (0.9− | 1.7−) |
| 2003 10 25 | 830 | (2.6+ | 2.0+) | 2004 03 20 | H72 | (1.3− | 1.7+) | 2006 07 29 | H55 | 0.7− | 1.5− |
| 2003 10 25 | 830 | 0.3+ | 0.1+ | 2004 03 20 | H72 | 0.3− | 0.5+ | 2006 07 29 | H55 | (2.1− | 2.2−) |
| 2003 10 25 | 830 | 1.0− | 0.3+ | 2004 03 20 | H72 | 0.1+ | 0.5+ | 2006 08 27 | 691 | 0.4− | 0.4+ |
| 2003 10 28 | 151 | 0.2− | 0.2+ | 2004 03 20 | H72 | 0.2− | 0.4+ | 2006 08 27 | 691 | 1.2− | 0.6+ |
| 2003 10 28 | 151 | 0.1+ | 0.1− | 2004 03 20 | H72 | 0.6− | 0.3− | 2006 08 27 | 691 | 0.3− | 0.3+ |
| 2003 10 28 | 151 | 0.1− | 0.0 | 2004 03 21 | H72 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2003 10 28 | 151 | 0.5− | 0.2− | 2004 03 21 | H72 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2003 10 28 | 151 | 0.1− | 0.1− | 2004 03 21 | H72 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2003 10 28 | 151 | 0.1− | 0.1+ | 2004 03 21 | H72 | 1.5− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.5− |
| 2003 10 28 | 151 | 0.2+ | 0.3− | 2004 03 21 | H72 | 1.4− | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2003 10 30 | 084 | 0.3− | 0.9− | 2004 03 21 | H72 | 0.2+ | 0.6− | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2003 11 01 | 084 | 0.0 | 0.7− | 2004 03 21 | H72 | 0.2+ | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.3+ |
| 2003 11 02 | 130 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 0.3+ | 0.1+ | 2006 10 16 | G96 | 1.4− | 0.9− |

**(137428)∗ 1999 TJ$_{211}$**

Discovered 1999 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.39237 | | (2000.0) | | | |
| $n$ | 0.28976153 | $\omega$ | 172.06736 | | +0.85261455 | −0.51984037 |
| $a$ | 2.2617377 | $\Omega$ | 219.40183 | | +0.47471648 | +0.81301010 |
| $e$ | 0.1479592 | $i$ | 4.79422 | | +0.21838658 | +0.26226050 |
| $P$ | 3.40 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1− | 1.1− | 2004 01 29 | 704 | 0.2+ | 1.0− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1999 10 09 | 704 | 0.7+ | 0.5+ | 2004 01 29 | 704 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 1999 10 09 | 704 | 0.6− | 0.1− | 2005 05 08 | G96 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.0 |
| 1999 10 09 | 704 | 0.0 | 0.3+ | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 1999 10 09 | 704 | 0.6− | 0.4+ | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.2+ | 0.8+ | 2005 05 08 | G96 | 0.1+ | 1.2+ | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 1999 10 13 | 704 | 0.3+ | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 1999 10 13 | 704 | 0.7+ | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.8− |
| 1999 10 13 | 704 | 0.1− | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 1999 10 13 | 704 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 1999 10 15 | 704 | 0.3− | 0.5− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 1999 10 15 | 704 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 1999 10 15 | 704 | 0.4+ | 0.2− | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.5− |
| 1999 10 15 | 704 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.3− |
| 1999 10 16 | 704 | 0.4− | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 1999 10 16 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 1.4− | 0.3− |
| 1999 10 16 | 704 | 0.2− | 0.8− | 2006 10 12 | 691 | 0.6+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.0 |
| 1999 10 16 | 704 | 0.2+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 1999 11 15 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.3− |
| 1999 11 15 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.9+ |
| 1999 11 15 | 691 | 0.0 | 0.4− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2004 01 16 | 644 | 0.5− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | (1.0+ | 1.6+) |
| 2004 01 16 | 644 | 0.5− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.9+ | 0.3+ |
| 2004 01 16 | 644 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2004 01 17 | 608 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1− | 1.4+ |
| 2004 01 17 | 608 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.5+ | 1.3+ |
| 2004 01 17 | 608 | 0.6+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2004 01 23 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2004 01 23 | 704 | 0.3− | 0.2+ | 2006 10 27 | G96 | (1.8+ | 1.0−) | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2004 01 23 | 704 | 0.2− | 0.0 | 2006 10 27 | G96 | (0.7+ | 1.5−) | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2004 01 23 | 704 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2004 01 26 | 699 | 1.1+ | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.9− | 0.1− |
| 2004 01 26 | 699 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.6+ | 0.3− |
| 2004 01 26 | 699 | 0.9− | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.9− | 0.4+ |
| 2004 01 26 | 699 | 0.4− | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.0 | | | | |
| 2004 01 29 | 704 | 0.5+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | | | |

**(137429)∗ 1999 TX$_{212}$**

Discovered 1999 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.88095 | | (2000.0) | | | |
| $n$ | 0.29180860 | $\omega$ | 144.82854 | | +0.99344121 | −0.09285091 |
| $a$ | 2.2511477 | $\Omega$ | 220.66029 | | +0.06639990 | +0.94358538 |
| $e$ | 0.1431826 | $i$ | 5.87843 | | +0.09308926 | +0.31784485 |
| $P$ | 3.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 704 | 0.2− | 1.0− | 1999 11 05 | 704 | 0.7− | 1.1− | 2006 10 21 | G96 | 0.6− | 0.2− |
| 1999 09 18 | 704 | 0.1− | 0.8− | 1999 11 05 | 704 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1999 09 18 | 704 | 0.7− | 0.5− | 1999 11 05 | 704 | 0.6+ | 0.7− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 1999 09 18 | 704 | 0.5+ | 1.7− | 1999 11 14 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 1999 09 18 | 704 | 0.6− | 1.4− | 1999 11 14 | 704 | 1.1+ | 0.4+ | 2006 11 02 | 703 | 0.2+ | 0.8− |
| 1999 10 01 | 703 | 0.2+ | 0.3+ | 1999 11 14 | 704 | 1.7+ | 1.1− | 2006 11 02 | 703 | 0.4− | 0.5+ |
| 1999 10 01 | 703 | 0.5+ | 0.0 | 1999 11 14 | 704 | 0.5+ | 0.4− | 2006 11 02 | 703 | 0.5− | 0.7+ |
| 1999 10 01 | 703 | 0.2− | 0.2− | 1999 11 14 | 704 | 0.2− | 0.7− | 2006 11 02 | 703 | 1.5− | 0.5+ |
| 1999 10 01 | 703 | 0.2+ | 1.2+ | 1999 12 07 | 704 | 1.5+ | 0.6− | 2006 11 12 | D35 | 0.2− | 0.1− |
| 1999 10 03 | 704 | 0.4+ | 0.9− | 1999 12 07 | 704 | 0.0 | 0.1+ | 2006 11 12 | D35 | 0.1− | 0.1− |
| 1999 10 03 | 704 | 0.1+ | 0.5+ | 1999 12 07 | 704 | 1.3− | 0.1+ | 2006 11 12 | D35 | 0.3− | 0.1+ |
| 1999 10 03 | 704 | 0.4− | 0.3+ | 2002 05 23 | 644 | 0.8− | 0.4+ | 2006 11 16 | G96 | 0.5− | 0.1+ |
| 1999 10 03 | 704 | 0.8+ | 0.2+ | 2002 05 23 | 644 | 0.6− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 1999 10 03 | 704 | 0.5+ | 0.4+ | 2002 05 23 | 644 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 1999 10 10 | 704 | 0.3+ | 0.0 | 2002 06 10 | 644 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 1999 10 10 | 704 | 0.0 | 0.3− | 2002 06 10 | 644 | 0.4− | 0.8+ | 2006 11 17 | 704 | 0.0 | 0.3− |
| 1999 10 10 | 704 | (1.0− | 2.5+) | 2002 06 10 | 644 | 0.2− | 0.8+ | 2006 11 17 | 704 | 0.7+ | 0.7+ |
| 1999 10 10 | 704 | 0.2− | 0.1+ | 2002 07 03 | 644 | 0.0 | 1.4+ | 2006 11 17 | 704 | 1.1+ | 1.0+ |
| 1999 10 10 | 704 | 0.1+ | 0.4− | 2002 07 03 | 644 | 0.1+ | 1.3+ | 2006 11 17 | 704 | 1.0− | 0.3− |
| 1999 10 13 | 699 | 0.2+ | 1.7+ | 2002 07 03 | 644 | 0.3+ | 1.4+ | 2006 11 17 | 704 | 0.6+ | 0.3+ |
| 1999 10 13 | 699 | 0.4− | 0.3+ | 2002 07 09 | 704 | 1.3+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 1999 10 13 | 699 | 0.2− | 0.7+ | 2002 07 09 | 704 | 0.8+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 0.1− | 0.5− | 2002 07 09 | 704 | (1.5+ | 0.2−) | 2006 11 18 | 691 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.0 | 0.3− | 2002 07 09 | 704 | 0.5+ | 0.7− | 2006 11 20 | 704 | 1.1+ | 0.5− |
| 1999 10 15 | 704 | 0.3− | 0.1− | 2002 07 09 | 704 | 1.1+ | 0.7− | 2006 11 20 | 704 | 0.8+ | 0.7+ |
| 1999 10 15 | 704 | 0.2+ | 0.2− | 2002 07 18 | 704 | 0.5+ | 1.0+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 1999 10 15 | 704 | 0.1+ | 0.7− | 2002 07 18 | 704 | 0.1− | 0.8+ | 2006 11 22 | 691 | 0.5− | 0.3− |
| 1999 10 20 | 704 | 0.4− | 0.9− | 2002 07 18 | 704 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 1999 10 20 | 704 | 0.0 | 0.3− | 2004 01 28 | 645 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.0 |
| 1999 10 20 | 704 | 1.1− | 0.1− | 2004 01 28 | 645 | 0.1+ | 0.0 | 2006 11 25 | 704 | 0.2+ | 1.4+ |
| 1999 10 20 | 704 | 0.7− | 0.0 | 2004 02 17 | 704 | 0.1− | 0.6+ | 2006 11 25 | 704 | 1.2+ | 1.4+ |
| 1999 10 20 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 704 | 0.3− | 0.3− | 2006 11 25 | 704 | 0.4− | 0.7+ |
| 1999 11 01 | 699 | 0.4+ | 0.6+ | 2004 02 17 | 704 | 0.2+ | 0.7− | 2006 11 25 | 704 | 0.2+ | 0.9+ |
| 1999 11 01 | 699 | 0.0 | 0.0 | 2005 05 20 | G96 | 0.5− | 0.2+ | 2006 11 25 | 704 | 0.3− | 0.4+ |
| 1999 11 01 | 699 | 0.1+ | 0.6− | 2005 05 20 | G96 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 1.3+ |
| 1999 11 04 | 703 | 0.7− | 0.8+ | 2005 05 20 | G96 | 0.7− | 0.2+ | 2006 11 29 | 704 | 0.4− | 1.4+ |
| 1999 11 04 | 703 | 0.3− | 0.8+ | 2005 05 20 | G96 | 0.7− | 0.4+ | 2006 11 29 | 704 | 0.9+ | 0.9+ |
| 1999 11 04 | 703 | 1.2− | 0.4+ | 2005 06 16 | G96 | 0.5+ | 0.9+ | 2006 11 29 | 704 | 0.2− | 0.9+ |
| 1999 11 04 | 703 | 0.2− | 0.4+ | 2005 06 16 | G96 | 0.6− | 0.0 | 2006 11 29 | 704 | 0.1− | 1.6+ |
| 1999 11 05 | 704 | 0.1− | 0.4+ | 2005 06 16 | G96 | 1.0− | 0.0 | | | | |
| 1999 11 05 | 704 | 0.1+ | 0.6− | 2005 06 16 | G96 | 0.5− | 0.2+ | | | | |

**(137430)∗ 1999 TA$_{213}$ = 2001 FO$_{14}$**

Discovered 1999 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11598)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.09216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27390839 | $\omega$ | 160.07555 | | −0.93258399 | | −0.36094676 |
| $a$ | 2.3481860 | $\Omega$ | 358.76004 | | +0.31640589 | | −0.81463712 |
| $e$ | 0.1577234 | $i$ | 5.64399 | | +0.17370783 | | −0.45396453 |
| $P$ | 3.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.7+ | 1.4+ | 2001 04 01 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 699 | (1.8− | 0.3−) |
| 1999 10 10 | 704 | 1.1+ | 0.2− | 2001 04 01 | 704 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.3− |
| 1999 10 10 | 704 | 0.5− | 0.7+ | 2001 04 01 | 704 | 1.0− | 0.6− | 2006 09 18 | 699 | 0.7− | 0.5+ |
| 1999 10 13 | 704 | 0.9− | 0.2+ | 2001 04 01 | 704 | 0.2+ | 0.4− | 2006 09 18 | 699 | 0.6− | 0.5+ |
| 1999 10 13 | 704 | 0.6− | 0.2+ | 2001 04 01 | 704 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.9+ | 0.9+ |
| 1999 10 13 | 704 | 0.3− | 0.2+ | 2001 04 18 | 704 | 1.2+ | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.7+ |
| 1999 10 13 | 704 | 0.7− | 0.1+ | 2001 04 18 | 704 | 0.9+ | 1.4+ | 2006 09 20 | 704 | 1.1− | 1.4+ |
| 1999 10 13 | 704 | 0.5− | 0.1+ | 2001 04 18 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.3− | 0.2+ |
| 1999 10 15 | 704 | 0.1− | 0.6+ | 2001 04 18 | 704 | 0.9+ | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.9+ |
| 1999 10 15 | 704 | 0.1+ | 0.8+ | 2001 04 24 | 699 | 0.6+ | 0.4+ | 2006 09 22 | A50 | 0.5− | 0.1+ |
| 1999 10 15 | 704 | 0.4+ | 1.0− | 2001 04 24 | 699 | 0.5− | 0.3− | 2006 09 25 | 699 | 0.1− | 0.7+ |
| 1999 10 15 | 704 | 0.7− | 0.5+ | 2001 04 24 | 699 | 1.0+ | 0.6+ | 2006 09 25 | 699 | 0.2+ | 0.5− |
| 1999 10 15 | 704 | 0.5− | 0.4− | 2001 04 24 | 699 | 0.5+ | 0.7+ | 2006 09 25 | 699 | 0.7− | 1.0+ |
| 1999 10 20 | 704 | 1.0− | 0.1− | 2002 08 18 | 644 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.9+ | 0.1+ |
| 1999 10 20 | 704 | 1.2+ | 0.7+ | 2002 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.9− | 0.7+ |
| 1999 10 20 | 704 | (1.1+ | 2.3+) | 2002 08 18 | 644 | 0.1− | 0.3+ | 2006 09 27 | 704 | 1.0− | 0.1− |
| 2001 01 21 | 704 | (2.0− | 0.4+) | 2003 11 19 | 704 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.4+ |
| 2001 01 21 | 704 | 0.1+ | 0.2+ | 2003 11 19 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 1.3− | 0.6+ |
| 2001 01 21 | 704 | 0.3+ | 0.4− | 2003 11 19 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.5+ |
| 2001 01 21 | 704 | (3.5+ | 0.7+) | 2003 11 19 | 704 | 0.1− | 0.1− | 2006 09 30 | 703 | (2.3− | 0.9+) |
| 2001 02 22 | 704 | 0.4− | 0.1− | 2003 11 21 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2001 02 22 | 704 | 0.4− | 0.3+ | 2003 11 21 | 644 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.6+ |
| 2001 02 22 | 704 | 0.1+ | 0.2+ | 2003 11 21 | 644 | 0.4− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.5+ |
| 2001 02 22 | 704 | 0.3− | 0.2− | 2003 11 21 | 644 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.6+ |
| 2001 02 22 | 704 | 0.0 | 0.5+ | 2003 11 21 | 644 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.3− |
| 2001 03 18 | 704 | 0.1+ | 0.4− | 2003 11 21 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.6− |
| 2001 03 18 | 704 | 0.1− | 1.1+ | 2003 12 04 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 703 | (1.8− | 0.4+) |
| 2001 03 18 | 704 | 0.4+ | 0.1+ | 2003 12 04 | 704 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.9− | 0.8+ |
| 2001 03 18 | 704 | 0.1+ | 0.2− | 2003 12 04 | 704 | 0.9+ | 0.7− | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2001 03 18 | 704 | 0.5+ | 0.0 | 2003 12 04 | 704 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2001 03 19 | 699 | 0.4− | 1.0+ | 2003 12 04 | 704 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.1+ |
| 2001 03 19 | 699 | 0.5− | 1.1+ | 2003 12 18 | 691 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2001 03 19 | 699 | 0.5− | 0.2+ | 2003 12 18 | 704 | 0.7− | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.5− |
| 2001 03 19 | 699 | 0.3− | 1.2+ | 2003 12 18 | 704 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 03 23 | 699 | 0.7+ | 0.6+ | 2003 12 18 | 704 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2001 03 23 | 699 | 1.1+ | 0.3+ | 2003 12 18 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.1− | 2.1+ |
| 2001 03 23 | 699 | 0.9+ | 0.9+ | 2003 12 18 | 704 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.6− |
| 2001 03 23 | 699 | 1.1+ | 0.4+ | 2003 12 18 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.8− |
| 2001 03 24 | 704 | 0.1+ | 0.6+ | 2003 12 27 | 704 | (2.0+ | 1.2−) | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2001 03 24 | 704 | 1.1+ | 0.2+ | 2003 12 27 | 704 | 0.3− | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 03 24 | 704 | 0.1− | 0.1+ | 2003 12 27 | 704 | 0.7+ | 1.0− | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2001 03 24 | 704 | 0.1+ | 0.3− | 2003 12 27 | 704 | 0.4+ | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2001 03 24 | 704 | 0.3+ | 0.1+ | 2003 12 28 | 704 | (0.5+ | 1.6+) | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2001 03 26 | 691 | 0.2− | 0.4+ | 2003 12 28 | 704 | 0.1− | 1.3+ | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2001 03 26 | 691 | 0.1− | 0.4+ | 2003 12 28 | 704 | (0.5+ | 1.7+) | 2006 10 23 | G96 | 0.9− | 0.7− |
| 2001 03 26 | 691 | 0.0 | 0.4+ | 2004 01 17 | 644 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2001 03 29 | 704 | 0.7+ | 0.5+ | 2004 01 17 | 644 | 0.1+ | 0.5+ | 2006 10 24 | 644 | 0.0 | 0.5+ |
| 2001 03 29 | 704 | 0.4+ | 0.3+ | 2004 01 17 | 644 | 0.1+ | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2001 03 29 | 704 | 0.9+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.5+ |
| 2001 03 29 | 704 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | | | | |
| 2001 03 29 | 704 | (1.8+ | 0.0 ) | 2006 09 15 | 691 | 0.1+ | 0.1+ | | | | |

**(137431)∗ 1999 TU$_{215}$**

Discovered 1999 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.77387 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27782949 | $\omega$ | 276.87792 | | +0.98719434 | | −0.15054315 |
| $a$ | 2.3260399 | $\Omega$ | 91.79016 | | +0.15908173 | | +0.90449269 |
| $e$ | 0.1948984 | $i$ | 3.02607 | | +0.01184625 | | +0.39903601 |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.3+ | 1.2− | 2004 01 31 | 691 | 0.0 | 0.4+ | 2006 09 22 | 704 | 0.8− | 0.1− |
| 1999 10 04 | 703 | 0.2+ | 0.3+ | 2004 01 31 | 691 | 0.0 | 0.5+ | 2006 09 22 | 704 | 0.5− | 0.1+ |
| 1999 10 04 | 703 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.4− | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.1+ |
| 1999 10 04 | 703 | 1.5+ | 0.2+ | 2005 04 11 | G96 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.2+ | 1.1+ |
| 1999 10 09 | 704 | 0.3+ | 0.9− | 2005 04 11 | G96 | 0.7− | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.1− |
| 1999 10 09 | 704 | 0.3− | 0.1− | 2005 04 11 | G96 | 0.7+ | 0.7− | 2006 09 26 | 704 | 0.5+ | 0.7+ |
| 1999 10 09 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 699 | 0.6− | 1.4+ | 2006 09 26 | 704 | (1.6+ | 0.6+) |
| 1999 10 09 | 704 | 0.0 | 0.9− | 2006 08 28 | 699 | 0.1− | 0.1+ | 2006 09 28 | 704 | (0.1+ | 1.7+) |
| 1999 10 11 | 704 | 0.9+ | 0.7− | 2006 08 28 | 699 | 0.1− | 0.4+ | 2006 09 28 | 704 | (0.1− | 1.7+) |
| 1999 10 11 | 704 | 0.9+ | 0.7− | 2006 08 28 | 699 | 1.1− | 0.5+ | 2006 09 28 | 704 | 0.1+ | 1.3+ |
| 1999 10 11 | 704 | 0.8+ | 0.6− | 2006 09 12 | 703 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.5+ | 1.2+ |
| 1999 10 11 | 704 | 1.2+ | 0.9− | 2006 09 12 | 703 | 0.7− | 0.5− | 2006 09 30 | 703 | 0.6− | 0.3+ |
| 1999 10 11 | 704 | 0.1− | 1.1− | 2006 09 12 | 703 | 0.0 | 0.2+ | 2006 09 30 | 703 | (2.6− | 1.6+) |
| 1999 10 15 | 704 | 0.3+ | 0.7− | 2006 09 12 | 703 | 0.7− | 0.7+ | 2006 09 30 | 703 | (1.3+ | 3.2+) |
| 1999 10 15 | 704 | 0.2+ | 0.8− | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.6− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.5+ | 1.2− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 1999 10 15 | 704 | 0.2+ | 1.3− | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.3+ |
| 1999 10 15 | 704 | 0.5+ | 1.0− | 2006 09 16 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 704 | 0.0 | 0.8+ |
| 1999 10 19 | 704 | 0.0 | 1.3− | 2006 09 16 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 704 | 0.4− | 1.0+ |
| 1999 10 19 | 704 | 0.6− | 0.9− | 2006 09 16 | 704 | 0.8+ | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.6+ |
| 1999 10 19 | 704 | 0.8− | 0.7− | 2006 09 16 | 704 | 0.9+ | 0.8+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 1999 10 19 | 704 | 0.7− | 0.6− | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 1999 10 19 | 704 | 0.1− | 0.7− | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 10 09 | 644 | 0.2− | 0.0 |
| 1999 11 05 | 704 | 0.4− | 1.0− | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.6− | 1.0+ |
| 1999 11 05 | 704 | 0.0 | 0.7− | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.4− | 0.3− |
| 1999 11 05 | 704 | 0.1− | 0.5− | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 1999 11 05 | 704 | 0.7+ | 0.6− | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 1999 11 15 | 704 | 0.4+ | 0.4− | 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.7+ |
| 1999 11 15 | 704 | 0.9− | 1.7+ | 2006 09 18 | 699 | 0.3+ | 0.5− | 2006 10 16 | 703 | 1.2− | 0.1+ |
| 1999 11 15 | 704 | 1.0+ | 0.5− | 2006 09 19 | 704 | 0.7− | 1.2− | 2006 10 16 | 703 | (1.7− | 0.2+) |
| 1999 11 15 | 704 | 0.0 | 1.6+ | 2006 09 19 | 704 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2006 09 19 | 704 | 0.4− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 09 19 | 704 | (1.7− | 1.0+) | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 704 | 1.1+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 01 22 | 704 | (1.6+ | 0.5+) | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2004 01 22 | 704 | 1.0+ | 1.3+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.1− | 0.7+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2004 01 31 | 691 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.2+ | | | | |

**(137432)∗ 1999 TD$_{216}$**

Discovered 1999 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.29227 | | (2000.0) | | | |
| $n$ | 0.27451732 | $\omega$ | 233.87752 | | +0.89212238 | −0.45139496 |
| $a$ | 2.3447122 | $\Omega$ | 152.94070 | | +0.42676361 | +0.82816415 |
| $e$ | 0.1761148 | $i$ | 2.39122 | | +0.14829184 | +0.33224498 |
| $P$ | 3.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 11 | 691 | 0.1+ | 0.0 | 2003 12 27 | 691 | 0.6+ | 0.5+ | 2006 09 14 | 703 | 0.3+ | 0.7− |
| 1997 01 11 | 691 | 0.1− | 0.3+ | 2003 12 27 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.7− |
| 1997 01 11 | 691 | 0.1+ | 0.2− | 2003 12 27 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.9− |
| 1997 01 17 | 691 | (3.0− | 0.5+) | 2004 01 21 | 704 | (1.1+ | 1.8+) | 2006 09 17 | 704 | 0.2+ | 0.3+ |
| 1997 01 17 | 691 | (5.2+ | 6.0−) | 2004 01 21 | 704 | 0.5+ | 1.0+ | 2006 09 17 | 704 | 0.1+ | 0.3+ |
| 1997 01 17 | 691 | 0.1− | 0.9− | 2004 01 21 | 704 | 0.3− | 1.0+ | 2006 09 17 | 704 | 0.0 | 0.5+ |
| 1999 10 09 | 704 | 0.8+ | 1.0− | 2004 01 21 | 704 | 0.3+ | 1.0− | 2006 09 17 | 704 | 0.3− | 0.6+ |
| 1999 10 09 | 704 | 1.7+ | 0.5− | 2004 01 21 | 704 | 0.2+ | 1.1+ | 2006 09 17 | 704 | 0.2− | 0.5+ |
| 1999 10 09 | 704 | 0.4+ | 0.6− | 2005 04 06 | G96 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.4− |
| 1999 10 09 | 704 | 0.7+ | 0.4− | 2005 04 06 | G96 | 0.2− | 0.7− | 2006 09 18 | 699 | 0.1− | 0.3+ |
| 1999 10 15 | 704 | 0.6− | 0.5+ | 2005 04 06 | G96 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.7+ |
| 1999 10 15 | 704 | 0.5− | 0.0 | 2005 04 06 | G96 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.8+ |
| 1999 10 15 | 704 | 1.1− | 0.6− | 2005 04 10 | G96 | 0.2− | 0.4+ | 2006 09 20 | 704 | 1.0+ | 1.4+ |
| 1999 10 15 | 704 | 0.1+ | 0.9+ | 2005 04 10 | G96 | 0.3− | 0.6+ | 2006 09 20 | 704 | (0.3− | 1.8+) |
| 1999 10 15 | 704 | 0.1− | 0.3− | 2005 04 10 | G96 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.7− |
| 1999 10 19 | 704 | 0.5− | 1.1− | 2005 04 10 | G96 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.6+ | 0.2+ |
| 1999 10 19 | 704 | 0.8+ | 0.4− | 2006 08 27 | 699 | 0.3− | 0.3+ | 2006 09 25 | 699 | 0.5+ | 0.3− |
| 1999 10 19 | 704 | 0.5+ | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 1999 10 19 | 704 | 0.4− | 0.4+ | 2006 08 27 | 699 | 0.7− | 0.5+ | 2006 09 25 | 699 | 0.1− | 1.0+ |
| 1999 10 19 | 704 | 0.5+ | 0.0 | 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 1999 11 05 | 704 | 0.5− | 0.3− | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.8+ | 0.2− |
| 1999 11 05 | 704 | 0.5− | 0.8+ | 2006 08 27 | 699 | 0.9− | 0.4+ | 2006 09 27 | 704 | 0.4+ | 0.2− |
| 1999 11 05 | 704 | 0.4+ | 0.1− | 2006 08 27 | 699 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.2+ |
| 1999 11 05 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.8− | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.0 |
| 1999 11 05 | 704 | 0.2+ | 0.8− | 2006 08 28 | 703 | (0.3− | 1.8−) | 2006 09 30 | 703 | 0.4− | 0.1− |
| 1999 11 15 | 704 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.1− | 1.0+ |
| 1999 11 15 | 704 | 0.4− | 0.9− | 2006 08 28 | 703 | 0.0 | 1.1− | 2006 09 30 | 703 | 0.4− | 0.8+ |
| 1999 11 15 | 704 | 0.3+ | 1.2− | 2006 08 28 | 703 | 0.5+ | 1.3− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 11 15 | 704 | 0.1+ | 0.4− | 2006 08 28 | 703 | 1.1− | 0.5− | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 1999 11 15 | 704 | 0.2+ | 0.8− | 2006 08 28 | 703 | 0.5+ | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2003 12 19 | 704 | 0.5+ | 0.3− | 2006 08 31 | 704 | 1.3+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2003 12 19 | 704 | 0.8+ | 0.0 | 2006 08 31 | 704 | 0.4+ | 0.5− | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2003 12 19 | 704 | 0.6− | 1.0− | 2006 08 31 | 704 | 0.8+ | 0.4+ | 2006 11 17 | G96 | 0.5− | 0.2− |
| 2003 12 21 | 645 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.8+ | 2006 11 17 | G96 | 0.4+ | 0.1+ |
| 2003 12 21 | 645 | 0.1− | 0.1+ | 2006 08 31 | 704 | 1.1− | 0.6+ | | | | |

**(137433)∗ 1999 TT$_{216}$**

Discovered 1999 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.47036 | | (2000.0) | | | |
| $n$ | 0.28874657 | $\omega$ | 21.80743 | | +0.92677548 | +0.37531663 |
| $a$ | 2.2670347 | $\Omega$ | 316.13939 | | −0.34773825 | +0.84222292 |
| $e$ | 0.2034008 | $i$ | 1.23945 | | −0.14200467 | +0.38703744 |
| $P$ | 3.41 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 1.2− | 0.5+ | 1999 11 06 | 704 | 0.5− | 0.2+ | 2005 05 01 | 644 | 0.2− | 0.4+ |
| 1999 10 10 | 704 | 0.4− | 0.2+ | 1999 11 11 | 703 | 0.7+ | 0.2− | 2005 05 01 | 644 | 0.6+ | 0.3+ |
| 1999 10 10 | 704 | 0.3+ | 0.1− | 1999 11 11 | 703 | 0.2+ | 0.1− | 2005 05 01 | 644 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 1.3− | 0.8+ | 1999 11 11 | 703 | 0.4− | 0.4+ | 2005 05 14 | 644 | 0.3+ | 0.5+ |
| 1999 10 10 | 704 | (2.0− | 0.7−) | 1999 11 11 | 703 | 0.1− | 1.1+ | 2005 05 14 | 644 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.4+ | 0.1− | 1999 11 14 | 704 | 0.1− | 1.9− | 2005 05 14 | 644 | 0.0 | 0.5+ |
| 1999 10 13 | 704 | 0.3+ | 0.0 | 1999 11 14 | 704 | 1.1− | 1.8− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 1999 10 13 | 704 | 0.1+ | 0.1− | 1999 11 14 | 704 | 0.1+ | 0.9− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 1999 10 13 | 704 | 0.0 | 0.3− | 1999 11 14 | 704 | 1.6− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.1− | 0.1+ | 1999 11 14 | 704 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 1999 10 15 | 704 | 0.6+ | 0.6+ | 2002 06 12 | 644 | 0.1− | 1.0+ | 2006 11 18 | 704 | 0.6− | 0.4+ |
| 1999 10 15 | 704 | 0.3− | 1.9+ | 2002 06 12 | 644 | 0.7− | 0.5+ | 2006 11 18 | 704 | 1.1− | 0.8+ |
| 1999 10 15 | 704 | 0.1+ | 1.0+ | 2002 06 12 | 644 | 0.1− | 1.1+ | 2006 11 20 | 691 | 1.2+ | 0.9+ |
| 1999 10 15 | 704 | 0.5+ | 1.1+ | 2002 07 05 | 704 | 0.8+ | 0.0 | 2006 11 20 | 691 | 0.2− | 0.0 |
| 1999 10 21 | 704 | 0.4+ | 1.1− | 2002 07 05 | 704 | 0.3− | 1.1+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 1999 10 21 | 704 | 0.5− | 1.1− | 2002 07 05 | 704 | 0.2+ | 0.7+ | 2006 11 24 | 703 | 1.4− | 0.9− |
| 1999 10 21 | 704 | 1.3+ | 0.2− | 2002 07 05 | 704 | (0.9+ | 1.6+) | 2006 11 24 | 703 | 2.1− | 2.3+ |
| 1999 11 04 | 704 | 0.2− | 0.1+ | 2004 01 16 | 691 | 0.2+ | 0.1− | 2006 11 24 | 703 | 0.8− | 1.7+ |
| 1999 11 04 | 704 | 0.7− | 0.3− | 2004 01 16 | 691 | 0.2+ | 0.2− | 2006 11 24 | 703 | 2.1+ | 1.3+ |
| 1999 11 04 | 704 | 1.2+ | 0.8+ | 2004 01 16 | 691 | 0.3+ | 0.2− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.2+ | 0.1+ | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.1− |
| 1999 11 04 | 704 | 0.4− | 0.3− | 2004 01 27 | 691 | 0.7− | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 1999 11 06 | 704 | 0.9+ | 0.6+ | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 11 30 | 691 | 0.2− | 0.7− |
| 1999 11 06 | 704 | 0.1+ | 0.6+ | 2005 04 14 | 691 | 0.2− | 0.4+ | 2006 11 30 | 691 | 0.1− | 0.3+ |
| 1999 11 06 | 704 | 1.2+ | 0.6− | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 11 30 | 691 | 0.2+ | 0.0 |
| 1999 11 06 | 704 | 0.1− | 0.1+ | 2005 04 14 | 691 | 0.1+ | 0.5+ | | | | |

**(137434)∗ 1999 TQ$_{219}$**

Discovered 1999 Oct. 1 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.56971 | | (2000.0) | | | |
| $n$ | 0.27670103 | $\omega$ | 41.97642 | | +0.98862339 | −0.14067567 |
| $a$ | 2.3323597 | $\Omega$ | 326.00127 | | +0.09969512 | +0.87788032 |
| $e$ | 0.1568853 | $i$ | 5.46318 | | +0.11262631 | +0.45775157 |
| $P$ | 3.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 704 | 0.6− | 0.2− | 2006 07 18 | G96 | 0.1− | 0.2− | 2006 09 13 | 644 | 0.3− | 0.0 |
| 1999 09 18 | 704 | 0.4− | 1.2− | 2006 07 18 | G96 | 0.0 | 0.6− | 2006 09 13 | 644 | 0.2− | 0.1− |
| 1999 09 18 | 704 | 0.2+ | 0.1− | 2006 07 21 | 703 | 1.3− | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.3− |
| 1999 09 18 | 704 | 0.2− | 1.2− | 2006 07 21 | 699 | 1.2+ | 1.3+ | 2006 09 16 | 699 | 0.3− | 0.5+ |
| 1999 09 18 | 704 | 0.5− | 0.0 | 2006 07 21 | 703 | (1.6− | 0.7+) | 2006 09 16 | 699 | 0.3− | 0.2+ |
| 1999 10 01 | 703 | 0.1− | 0.1+ | 2006 07 21 | 703 | 0.7− | 0.8− | 2006 09 18 | 704 | 0.6− | 0.3+ |
| 1999 10 01 | 703 | 0.2− | 0.2− | 2006 07 21 | 699 | 0.3− | 0.7+ | 2006 09 18 | 704 | 0.7− | 0.8+ |
| 1999 10 01 | 703 | 0.6+ | 0.5− | 2006 07 21 | 703 | 0.0 | 0.6+ | 2006 09 18 | 704 | 0.8− | 0.3+ |
| 1999 10 01 | 703 | 0.5− | 0.0 | 2006 07 21 | 699 | 0.7− | 0.8+ | 2006 09 18 | 704 | 0.7− | 0.1+ |
| 1999 10 03 | 704 | 0.0 | 0.8+ | 2006 07 21 | 699 | 0.1+ | 0.4− | 2006 09 18 | 704 | 0.6− | 1.2+ |
| 1999 10 03 | 704 | 0.5− | 1.4+ | 2006 08 21 | 704 | 1.2+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.4− |
| 1999 10 03 | 704 | 0.6+ | 0.3+ | 2006 08 21 | 704 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.7+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.6− | 1.5+ | 2006 08 21 | 704 | 0.9+ | 0.3− | 2006 09 19 | 703 | 0.2− | 0.9− |
| 1999 10 03 | 704 | 0.6− | 0.1+ | 2006 08 21 | 704 | 0.7+ | 0.6− | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 1999 10 10 | 704 | 0.5+ | 0.2+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.7+ |
| 1999 10 10 | 704 | 0.6+ | 0.3− | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.9− |
| 1999 10 10 | 704 | 0.7+ | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 1999 10 10 | 704 | 0.9+ | 0.5− | 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.2+ |
| 1999 10 10 | 704 | 0.7+ | 0.6− | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.7+ | 0.5+ |
| 1999 10 14 | 645 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.6+ |
| 1999 10 14 | 645 | 0.0 | 0.2− | 2006 08 24 | 704 | 0.0 | 1.0+ | 2006 09 25 | 704 | 0.5− | 0.1+ |
| 1999 10 21 | 704 | 0.7+ | 0.7− | 2006 08 24 | 704 | 0.1− | 0.6+ | 2006 09 25 | 704 | 0.3− | 0.6− |
| 1999 10 21 | 704 | 0.0 | 0.2+ | 2006 08 24 | 704 | 0.2− | 0.5+ | 2006 09 25 | 704 | 0.3+ | 0.4+ |
| 1999 10 21 | 704 | 1.3+ | 0.5− | 2006 08 24 | 704 | 0.8− | 1.0+ | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 1999 10 30 | 703 | 1.1− | 1.3− | 2006 08 24 | 704 | 0.6− | 0.7+ | 2006 09 25 | 699 | 0.1− | 0.5− |
| 1999 10 30 | 703 | 0.2+ | 1.2+ | 2006 08 26 | 704 | 0.7− | 0.8+ | 2006 09 25 | 699 | 0.3− | 0.3+ |
| 1999 10 30 | 703 | 0.0 | 0.0 | 2006 08 26 | 704 | 0.3− | 0.3+ | 2006 09 25 | 699 | 0.5+ | 0.4− |
| 1999 10 30 | 703 | 1.8+ | 0.9− | 2006 08 26 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | (1.8+ | 1.4−) |
| 2000 12 23 | 645 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.3− | 0.7− |
| 2000 12 23 | 645 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.8+ |
| 2003 12 18 | 704 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.2+ | 0.2− | 2006 09 26 | 704 | 1.1− | 0.1− |
| 2003 12 18 | 704 | 0.6− | 1.2+ | 2006 08 28 | 703 | 0.4− | 0.8− | 2006 09 26 | 704 | (0.5+ | 1.6+) |
| 2003 12 18 | 704 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.6− | 2006 09 29 | 704 | 0.4+ | 0.3+ |
| 2003 12 23 | 704 | (0.0 | 1.9+) | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 09 29 | 704 | (0.3+ | 1.7+) |
| 2003 12 23 | 704 | 0.3− | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 09 29 | 704 | 0.9+ | 0.8+ |
| 2003 12 23 | 704 | (0.2− | 1.6+) | 2006 08 29 | 691 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | (2.3+ | 1.2−) | 2006 08 29 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.5+ |
| 2003 12 23 | 704 | 0.9− | 0.2− | 2006 08 29 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.3+ |
| 2003 12 28 | 704 | 0.7+ | 0.7+ | 2006 08 30 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 704 | (0.2− | 1.6+) |
| 2003 12 28 | 704 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.5+ | 2006 09 30 | 699 | 1.0+ | 0.1+ |
| 2003 12 28 | 704 | 0.4+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.2− | 2006 09 30 | 704 | 0.2+ | 0.4+ |
| 2003 12 28 | 704 | 0.0 | 0.6+ | 2006 08 30 | 704 | 0.1− | 0.1− | 2006 09 30 | 699 | 0.0 | 0.1+ |
| 2003 12 28 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.6+ | 0.0 | 2006 09 30 | 704 | 0.7− | 1.2+ |
| 2004 01 22 | 704 | 0.4+ | 0.1− | 2006 09 01 | 704 | 0.5− | 1.0+ | 2006 09 30 | 699 | 0.8+ | 0.2+ |
| 2004 01 22 | 704 | 0.6+ | 0.4+ | 2006 09 01 | 704 | 0.4− | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.6+ |
| 2004 01 22 | 704 | 0.0 | 0.5+ | 2006 09 01 | 704 | 0.6− | 0.0 | 2006 09 30 | 699 | 0.1+ | 1.0− |
| 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.3− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2004 01 22 | 704 | 0.4− | 0.6+ | 2006 09 01 | 704 | 0.5− | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 04 06 | 691 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.7− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2005 04 06 | 691 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.0 | 0.4− | 2006 11 13 | 703 | 0.7− | 0.4+ |
| 2005 04 06 | 691 | 0.4− | 0.0 | 2006 09 12 | 703 | 0.5− | 0.2− | 2006 11 13 | 703 | 0.3+ | 1.6+ |
| 2006 07 18 | G96 | 0.2− | 0.2− | 2006 09 12 | 703 | 0.2− | 1.0− | 2006 11 13 | 703 | 0.9− | 1.1+ |
| 2006 07 18 | G96 | 0.2− | 0.2− | 2006 09 13 | 644 | 0.3− | 0.1+ | 2006 11 13 | 703 | 1.2+ | 0.5− |

**(137435)∗ 1999 TE$_{220}$**

Discovered 1999 Oct. 1 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.20618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27429570 | $\omega$ | 125.17755 | | +0.98764010 | −0.12512721 | |
| $a$ | 2.3459750 | $\Omega$ | 242.17866 | | +0.08476979 | +0.93298040 | |
| $e$ | 0.1317930 | $i$ | 6.12692 | | +0.13183742 | +0.33747705 | |
| $P$ | 3.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.3+ | 0.3− | 1999 12 07 | 704 | 0.5− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.1+ |
| 1999 09 08 | 704 | 0.0 | 0.3− | 1999 12 07 | 704 | 0.2− | 0.7+ | 2006 08 25 | A50 | 0.1+ | 0.8+ |
| 1999 09 08 | 704 | 1.3− | 0.1+ | 1999 12 07 | 704 | 0.7− | 0.2− | 2006 08 25 | A50 | 0.6− | 0.3+ |
| 1999 09 08 | 704 | 0.1+ | 0.4− | 2003 12 19 | 704 | 1.0− | 0.7+ | 2006 08 27 | 699 | 0.0 | 0.5+ |
| 1999 10 01 | 703 | 0.1− | 0.2+ | 2003 12 19 | 704 | 0.6− | 0.8+ | 2006 08 27 | 699 | 0.2− | 0.1− |
| 1999 10 01 | 703 | 0.5− | 0.3+ | 2003 12 19 | 704 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 1.3+ | 0.2− |
| 1999 10 01 | 703 | 0.7+ | 0.7− | 2003 12 19 | 704 | 0.4− | 0.7+ | 2006 08 27 | 699 | 0.2− | 0.1+ |
| 1999 10 01 | 703 | 0.1+ | 0.1+ | 2003 12 19 | 704 | 0.3− | 0.5+ | 2006 08 28 | 704 | 0.7+ | 0.9+ |
| 1999 10 03 | 704 | 0.1+ | 1.1+ | 2003 12 21 | 704 | 0.2− | 0.8+ | 2006 08 28 | 704 | 0.8− | 0.5− |
| 1999 10 03 | 704 | 1.0+ | 0.5+ | 2003 12 21 | 704 | 0.4+ | 0.5+ | 2006 08 28 | 704 | 0.4− | 0.7− |
| 1999 10 03 | 704 | 1.3+ | 0.9+ | 2003 12 21 | 704 | 0.6+ | 1.2+ | 2006 08 28 | 704 | 1.1− | 0.5− |
| 1999 10 03 | 704 | 0.6+ | 0.5+ | 2003 12 21 | 704 | 0.2+ | 1.2+ | 2006 08 30 | 699 | 0.4− | 0.4+ |
| 1999 10 03 | 704 | 0.6+ | 0.4− | 2003 12 21 | 704 | 0.8+ | 0.7+ | 2006 08 30 | 699 | 0.4− | 0.1+ |
| 1999 10 10 | 704 | 1.0+ | 0.3+ | 2003 12 21 | 704 | 0.5+ | 0.4+ | 2006 08 30 | 699 | 0.3− | 0.4+ |
| 1999 10 10 | 704 | 0.7+ | 0.1+ | 2003 12 21 | 704 | 1.0+ | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.1+ |
| 1999 10 10 | 704 | 0.0 | 0.1− | 2003 12 21 | 704 | 1.2+ | 0.4− | 2006 09 11 | 703 | 1.0− | 0.0 |
| 1999 10 10 | 704 | 0.5+ | 0.3+ | 2003 12 21 | 704 | 0.8+ | 0.3+ | 2006 09 11 | 703 | 0.8− | 0.2+ |
| 1999 10 10 | 704 | 1.1+ | 0.1+ | 2003 12 23 | 704 | 0.1− | 0.6− | 2006 09 11 | 703 | 0.1+ | 0.3+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2003 12 23 | 704 | 1.0− | 1.1− | 2006 09 11 | 703 | 0.2− | 0.2+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.3− |
| 1999 10 14 | 645 | 0.1− | 0.0 | 2003 12 23 | 704 | 0.8− | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.2+ |
| 1999 10 14 | 645 | 0.1− | 0.0 | 2003 12 23 | 704 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 1999 10 20 | 704 | 0.1− | 0.2− | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 1999 10 20 | 704 | 0.3+ | 0.3− | 2005 04 10 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 1.0+ |
| 1999 10 20 | 704 | 1.2− | 0.4− | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.4+ | 0.8+ |
| 1999 10 20 | 704 | 0.2+ | 0.4− | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.9− | 0.8+ |
| 1999 10 20 | 704 | 0.2+ | 0.4− | 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.0 | 1.1+ |
| 1999 11 05 | 704 | 0.6− | 0.2− | 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 1.3+ |
| 1999 11 05 | 704 | 0.2− | 0.4− | 2005 05 01 | 644 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.2− | 0.5+ |
| 1999 11 05 | 704 | 0.5+ | 0.7+ | 2005 05 01 | 644 | 0.4+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.1− |
| 1999 11 05 | 704 | 0.1+ | 0.2− | 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 1.1+ | 0.3+ |
| 1999 11 05 | 704 | 0.4− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.0 | | | | |
| 1999 12 07 | 704 | 1.1− | 0.4− | 2006 08 17 | 644 | 0.0 | 0.0 | | | | |

**(137436)∗ 1999 TE$_{226}$ = 2006 OA$_6$**

Discovered 1999 Oct. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 103158)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.41265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26302539 | $\omega$ | 324.13266 | | +0.43545715 | +0.90019425 | |
| $a$ | 2.4125201 | $\Omega$ | 331.68065 | | −0.82333403 | +0.39591322 | |
| $e$ | 0.1747971 | $i$ | 0.63200 | | −0.36400295 | +0.18139193 | |
| $P$ | 3.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.3− | 1.3+ | 2005 02 09 | G96 | 0.2− | 0.2− | 2006 08 20 | 644 | 0.4− | 0.1− |
| 1998 04 21 | 704 | 1.6+ | 0.6− | 2005 02 09 | G96 | 0.0 | 0.2− | 2006 08 28 | 703 | 1.1+ | 0.7+ |
| 1998 04 21 | 704 | 1.5− | 0.3− | 2005 02 09 | G96 | 0.3− | 0.1+ | 2006 08 28 | 703 | (0.4− | 4.1+) |
| 1998 04 21 | 704 | (4.9− | 5.0+) | 2005 02 09 | G96 | 0.8− | 0.2− | 2006 08 28 | 703 | 0.9− | 0.3+ |
| 1999 10 02 | 691 | 0.1+ | 0.1+ | 2005 03 08 | G96 | 0.4− | 0.4+ | 2006 08 29 | 704 | 0.5− | 0.7+ |
| 1999 10 02 | 691 | 0.1+ | 0.3− | 2005 03 08 | G96 | 0.1− | 0.3+ | 2006 08 29 | 704 | 0.4− | 0.8− |
| 1999 10 02 | 691 | 0.3+ | 0.1− | 2005 03 08 | G96 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.2+ | 0.2+ |
| 1999 10 06 | 704 | 0.6− | 0.5+ | 2005 03 08 | G96 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.5− | 0.2− |
| 1999 10 06 | 704 | 0.6+ | 0.6+ | 2005 03 08 | G96 | 0.0 | 0.2− | 2006 08 29 | 704 | 0.1+ | 0.4− |
| 1999 10 06 | 704 | 0.6+ | 1.4+ | 2005 03 08 | G96 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.1− |
| 1999 10 06 | 704 | 0.1+ | 0.4+ | 2005 03 08 | G96 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 1999 10 06 | 704 | 0.4+ | 0.5− | 2005 03 08 | G96 | 0.3+ | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 1999 10 10 | 691 | 0.2− | 0.0 | 2006 06 21 | 644 | 0.4− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 1999 10 10 | 691 | 0.4− | 0.0 | 2006 06 21 | 644 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.2+ |
| 1999 10 10 | 691 | 0.3− | 0.1− | 2006 06 21 | 644 | 0.4− | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.1+ |
| 2001 01 24 | 691 | 0.3+ | 0.4+ | 2006 07 19 | 644 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.5+ |
| 2001 01 24 | 691 | 0.5+ | 0.6+ | 2006 07 19 | 644 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.4+ |
| 2001 01 24 | 691 | 0.5+ | 0.2+ | 2006 07 19 | 644 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.6+ | 0.6+ |
| 2002 06 09 | 704 | 0.5− | 0.8− | 2006 07 21 | 704 | 0.4+ | 1.5+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 06 09 | 704 | 0.4− | 0.8− | 2006 07 21 | 704 | 0.6+ | 1.9+ | 2006 10 20 | G96 | 0.7+ | 0.2+ |
| 2002 06 09 | 704 | 0.6+ | 0.4− | 2006 07 21 | 704 | 0.6− | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2003 11 19 | 691 | 0.4− | 0.1+ | 2006 07 21 | 704 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2003 11 19 | 691 | 0.0 | 0.2− | 2006 08 12 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2006 08 12 | 644 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2003 12 14 | 691 | 0.1+ | 0.1+ | 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2003 12 14 | 691 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.4− | 0.1+ | | | | |
| 2003 12 14 | 691 | 0.1− | 0.4− | 2006 08 20 | 644 | 0.4− | 0.0 | | | | |

**(137437)∗ 1999 TG$_{229}$**

Discovered 1999 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.63707 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28087339 | $\omega$ | 85.24780 | | +0.56526804 | +0.82349231 | |
| $a$ | 2.3092041 | $\Omega$ | 219.30084 | | −0.78384564 | +0.51796773 | |
| $e$ | 0.2105252 | $i$ | 4.37299 | | −0.25701761 | +0.23145160 | |
| $P$ | 3.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.0 | 1.3+ | 2002 06 16 | 644 | 0.1+ | 1.4+ | 2006 09 25 | 704 | 0.4− | 0.8+ | |
| 1999 09 08 | 704 | 0.1− | 0.1+ | 2002 06 16 | 644 | 0.2+ | 1.2+ | 2006 09 25 | 704 | 0.5− | 0.2− | |
| 1999 09 08 | 704 | 0.5− | 0.9− | 2003 11 29 | 691 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.2− | |
| 1999 09 08 | 704 | 0.5− | 0.7− | 2003 11 29 | 691 | 0.3− | 0.3+ | 2006 09 27 | 699 | 0.8− | 0.3− | |
| 1999 10 04 | 704 | 0.8+ | 0.1− | 2003 11 29 | 691 | 0.5+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3− | |
| 1999 10 04 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.1− | |
| 1999 10 04 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 699 | 0.3+ | 0.2− | |
| 1999 10 07 | 703 | 0.8− | 0.4+ | 2006 08 30 | 704 | 0.9+ | 0.5− | 2006 09 27 | 699 | 0.0 | 0.2+ | |
| 1999 10 07 | 703 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.6− | 0.6− | 2006 09 29 | 704 | (1.5− | 1.5+) | |
| 1999 10 07 | 703 | 0.6− | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.7− | 2006 09 29 | 704 | 0.6− | 0.8+ | |
| 1999 10 07 | 703 | 1.0− | 0.9− | 2006 09 06 | 644 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.1− | 0.7+ | |
| 1999 10 13 | 704 | 0.4− | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.1+ | |
| 1999 10 13 | 704 | 0.8+ | 0.5+ | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 01 | 704 | 1.2− | 0.4+ | |
| 1999 10 13 | 704 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 10 01 | 704 | 1.1+ | 0.0 | |
| 1999 10 13 | 704 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.1+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.0 | |
| 1999 10 13 | 704 | 0.3− | 0.5+ | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ | |
| 1999 10 13 | 704 | 0.0 | 0.4− | 2006 09 13 | 644 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 1999 10 13 | 704 | 0.3+ | 1.0+ | 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ | |
| 1999 10 13 | 704 | 1.9+ | 0.9− | 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.2+ | |
| 1999 10 13 | 704 | 0.2+ | 0.4+ | 2006 09 14 | A50 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.3− | 0.2+ | |
| 1999 10 13 | 704 | 0.4+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 2002 04 21 | 291 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.0 | 0.4+ | |
| 2002 04 21 | 291 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.5− | 0.4− | 2006 10 12 | 644 | 0.4+ | 0.1+ | |
| 2002 04 21 | 291 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.7− | 2006 10 16 | 703 | 0.7− | 0.6+ | |
| 2002 05 08 | 699 | 0.9− | 0.6− | 2006 09 18 | 704 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.9+ | |
| 2002 05 08 | 699 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 0.6− | 0.5− | 2006 10 16 | 703 | 0.4− | 0.3− | |
| 2002 05 08 | 699 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.4+ | |
| 2002 05 08 | 699 | (1.6− | 0.7+) | 2006 09 18 | 704 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.3− | 0.5+ | |
| 2002 05 10 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 704 | 1.5− | 1.1+ | 2006 10 19 | 644 | 0.2+ | 0.3+ | |
| 2002 05 10 | 704 | 0.1− | 0.5+ | 2006 09 18 | 704 | 0.2− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.2+ | |
| 2002 05 10 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 704 | 0.8− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.1− | |
| 2002 05 16 | 704 | 0.3+ | 0.3− | 2006 09 18 | 704 | 1.1+ | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2002 05 16 | 704 | 0.3− | 1.2− | 2006 09 18 | 704 | 0.8+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | |
| 2002 05 16 | 704 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.1− | |
| 2002 05 16 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− | |
| 2002 06 10 | 704 | 0.0 | 0.8+ | 2006 09 19 | 699 | 0.6− | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.2− | |
| 2002 06 10 | 704 | 0.8+ | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.5− | 2006 10 23 | G96 | 0.3+ | 0.4− | |
| 2002 06 10 | 704 | 0.8+ | 0.9− | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1− | |
| 2002 06 10 | 704 | (2.6+ | 2.0−) | 2006 09 25 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.0 | |
| 2002 06 11 | 644 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.0 | |
| 2002 06 11 | 644 | 0.3+ | 0.3− | 2006 09 25 | 704 | 0.5+ | 1.1+ | 2006 11 15 | G96 | 0.2− | 0.2− | |
| 2002 06 11 | 644 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.3− | 0.2+ | | | | | |
| 2002 06 16 | 644 | 0.0 | 1.3+ | 2006 09 25 | 704 | 0.2− | 0.2+ | | | | | |

**(137438)∗ 1999 TP$_{232}$**

Discovered 1999 Oct. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.15355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29223067 | $\omega$ | 285.00483 | | +0.84047531 | −0.52853986 | |
| $a$ | 2.2489796 | $\Omega$ | 107.03281 | | +0.53263564 | +0.76543743 | |
| $e$ | 0.1200167 | $i$ | 7.17128 | | +0.09950141 | +0.36708468 | |
| $P$ | 3.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 05 | 703 | 0.6+ | 0.8− | 2002 07 28 | 608 | 0.5+ | 0.5− | 2005 06 17 | G96 | 0.0 | 0.4+ | |
| 1999 10 05 | 703 | 0.5− | 1.0− | 2002 07 28 | 608 | 0.8+ | 0.9− | 2005 06 17 | G96 | 0.3+ | 0.0 | |
| 1999 10 05 | 703 | 0.7+ | 1.1+ | 2002 07 28 | 608 | 0.8+ | 0.3− | 2005 06 17 | G96 | 0.1+ | 0.2+ | |
| 1999 10 05 | 703 | 0.8+ | 1.0− | 2002 08 13 | 704 | 0.9− | 1.1+ | 2005 06 17 | G96 | 0.5+ | 0.2+ | |
| 1999 10 08 | 704 | 0.9− | 0.3+ | 2002 08 13 | 704 | 1.4− | 1.4+ | 2006 11 17 | 704 | 0.3− | 0.2+ | |
| 1999 10 08 | 704 | 0.2− | 0.3− | 2002 08 13 | 704 | 0.9− | 0.2− | 2006 11 17 | 704 | 0.7− | 0.3+ | |
| 1999 10 08 | 704 | 0.4+ | 0.1− | 2002 08 13 | 704 | 0.2− | 1.4+ | 2006 11 17 | 704 | 0.1− | 0.2− | |
| 1999 10 08 | 704 | 0.2− | 1.0− | 2002 08 30 | 644 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.2− | 0.4+ | |
| 1999 10 08 | 704 | 1.0− | 0.1− | 2002 08 30 | 644 | 0.4+ | 0.2− | 2006 11 17 | 704 | 1.2− | 1.0+ | |
| 1999 11 02 | 703 | 0.1+ | 0.7− | 2002 08 30 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.6+ | |
| 1999 11 02 | 703 | 0.4+ | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.7− | 2006 11 20 | 704 | 0.6+ | 0.3− | |
| 1999 11 02 | 703 | 1.4+ | 0.3− | 2004 02 15 | 704 | 0.7+ | 0.9+ | 2006 11 20 | 704 | 0.1− | 0.1+ | |
| 1999 11 02 | 703 | 0.1− | 1.2+ | 2004 02 15 | 704 | (1.0+ | 2.4+) | 2006 11 20 | 704 | 0.5+ | 0.1− | |
| 2002 07 14 | 644 | 0.4− | 0.1+ | 2004 02 15 | 704 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.1− | 0.4− | |
| 2002 07 14 | 644 | 0.2+ | 0.3+ | 2004 02 15 | 704 | (1.8+ | 0.2+) | 2006 11 29 | 704 | 0.9+ | 1.3+ | |
| 2002 07 14 | 644 | 0.1− | 0.4+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.6− | |
| 2002 07 14 | 644 | 0.2+ | 0.3+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.7+ | |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.5− | 0.9+ | |
| 2002 07 14 | 644 | 0.3+ | 0.4+ | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.3+ | |

**(137439)∗ 1999 TL$_{233}$**

Discovered 1999 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.55350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28999263 | $\omega$ | 39.38557 | | +0.44835559 | +0.88770552 | |
| $a$ | 2.2605359 | $\Omega$ | 257.48179 | | −0.84478007 | +0.38255671 | |
| $e$ | 0.2435630 | $i$ | 6.15512 | | −0.29210256 | +0.25618209 | |
| $P$ | 3.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.1− | 0.7− | 2002 06 03 | 735 | 0.4− | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.2− | |
| 1999 09 08 | 704 | 0.3− | 0.1− | 2002 06 03 | 735 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.5− | 0.4+ | |
| 1999 09 08 | 704 | 0.2+ | 0.1− | 2002 06 06 | 735 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.1+ | |
| 1999 09 08 | 704 | 1.0+ | 0.9− | 2002 06 06 | 735 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 1.1− | 0.0 | |
| 1999 09 08 | 704 | 0.9− | 0.2− | 2002 06 06 | 735 | 0.2− | 0.8+ | 2006 10 19 | 703 | 0.1+ | 0.6+ | |
| 1999 10 03 | 704 | 0.6− | 0.9+ | 2002 06 08 | 704 | 0.1− | 0.4+ | 2006 10 27 | 703 | (0.6− | 1.7−) | |
| 1999 10 03 | 704 | 0.4+ | 0.0 | 2002 06 08 | 704 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.0 | 0.7+ | |
| 1999 10 03 | 704 | 0.8+ | 0.6+ | 2002 06 08 | 704 | 0.5− | 0.8+ | 2006 10 27 | 703 | 0.2− | 0.4− | |
| 1999 10 03 | 704 | 0.0 | 0.4− | 2002 06 08 | 704 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.1+ | |
| 1999 10 09 | 703 | 0.6− | 0.6+ | 2002 06 08 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 703 | 1.0+ | 0.5− | |
| 1999 10 09 | 703 | 0.0 | 0.1− | 2002 06 09 | 704 | 1.1− | 0.6− | 2006 11 14 | 703 | 0.0 | 0.2− | |
| 1999 10 09 | 703 | 0.1+ | 0.8+ | 2002 06 09 | 704 | 0.3− | 0.9− | 2006 11 14 | 703 | 0.1− | 0.2− | |
| 1999 10 09 | 703 | 0.7− | 0.1− | 2002 06 09 | 704 | 0.5− | 0.6− | 2006 11 14 | 703 | 0.6− | 0.1− | |
| 1999 10 10 | 704 | (1.2+ | 2.8−) | 2002 06 09 | 704 | 0.5− | 0.7− | 2006 11 18 | G96 | 0.0 | 0.2− | |
| 1999 10 10 | 704 | 0.4+ | 1.2− | 2002 06 09 | 704 | (0.8− | 1.8−) | 2006 11 18 | G96 | 0.2− | 0.4− | |
| 1999 10 10 | 704 | 0.7+ | 0.3− | 2002 06 18 | 291 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4− | 0.3− | |
| 2002 05 11 | 704 | 0.2+ | 0.5− | 2002 06 18 | 291 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.2− | 0.4− | |
| 2002 05 11 | 704 | 0.5+ | 0.1+ | 2002 06 18 | 291 | 0.0 | 0.1− | 2006 11 19 | 704 | (0.1− | 3.4+) | |
| 2002 05 11 | 704 | 0.1+ | 0.4+ | 2002 06 18 | 704 | 0.4− | 0.7− | 2006 11 19 | 704 | 0.8+ | 1.0+ | |
| 2002 05 17 | 704 | 0.2+ | 0.5− | 2002 06 18 | 704 | 0.3+ | 1.0− | 2006 11 19 | 704 | 0.1+ | 0.7+ | |
| 2002 05 17 | 704 | 1.2+ | 0.5+ | 2002 06 18 | 704 | (0.2− | 1.6−) | 2006 11 19 | 704 | 0.1− | 1.2+ | |
| 2002 05 17 | 704 | 0.2+ | 0.2− | 2005 03 13 | 703 | 0.9− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.6− | |
| 2002 05 17 | 704 | 0.5+ | 0.6− | 2005 03 13 | 703 | 1.1− | 1.3− | 2006 11 22 | 704 | 0.3+ | 0.1+ | |
| 2002 05 17 | 704 | 0.5+ | 0.4− | 2005 03 13 | 703 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.2+ | 0.1− | |
| 2002 06 01 | 735 | 0.6+ | 0.4+ | 2005 03 13 | 703 | 1.1+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.2+ | |
| 2002 06 01 | 735 | 0.5+ | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 27 | 104 | 0.9+ | 0.7+ | |
| 2002 06 01 | 735 | 0.7− | 0.7+ | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 27 | 104 | 0.2− | 0.1− | |
| 2002 06 03 | 735 | 0.3+ | 0.5+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 27 | 104 | 0.4− | 0.2− | |

**(137440)∗ 1999 TX$_{235}$**

Discovered 1999 Oct. 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.38490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28999910 | $\omega$ | 345.77056 | | +0.63257813 | −0.76686776 | |
| $a$ | 2.2605023 | $\Omega$ | 64.87024 | | +0.72178417 | +0.53294822 | |
| $e$ | 0.1117727 | $i$ | 6.87910 | | +0.28084253 | +0.35760318 | |
| $P$ | 3.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.3− | 0.5+ | 2004 01 28 | 703 | 0.2+ | 0.1− | 2006 11 02 | 703 | 0.2− | 0.2+ |
| 1999 10 03 | 703 | 0.4+ | 1.4+ | 2004 01 28 | 703 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.9− | 0.6− |
| 1999 10 03 | 703 | 0.7− | 0.4− | 2004 01 28 | 703 | 0.7+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 1999 10 03 | 703 | 0.3+ | 0.5+ | 2004 01 28 | 703 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 1999 10 09 | 704 | 0.4+ | 1.1+ | 2004 01 31 | 704 | 0.8+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2− |
| 1999 10 09 | 704 | 0.3− | 0.0 | 2004 01 31 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 1999 10 09 | 704 | 1.1− | 0.1− | 2004 01 31 | 704 | 1.0+ | 0.5+ | 2006 11 17 | 704 | 0.3− | 0.5− |
| 1999 10 09 | 704 | 0.5− | 0.7+ | 2004 01 31 | 704 | 0.7+ | 0.8+ | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 1999 10 09 | 704 | 0.2− | 0.1− | 2004 01 31 | 704 | 0.8+ | 0.3− | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 1999 11 02 | 703 | 1.2− | 0.2+ | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 1999 11 02 | 703 | 0.7− | 0.0 | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 1999 11 02 | 703 | 0.4− | 0.8+ | 2004 02 10 | 644 | 0.3+ | 0.4+ | 2006 11 17 | 644 | 0.3+ | 0.0 |
| 1999 11 02 | 703 | 0.9+ | 0.4+ | 2004 02 14 | 703 | 0.3− | 0.2+ | 2006 11 18 | 691 | 0.6+ | 0.1+ |
| 1999 11 06 | 704 | 0.3+ | 0.4− | 2004 02 14 | 703 | 0.1+ | 1.1+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 1999 11 06 | 704 | 0.9+ | 1.0− | 2004 02 14 | 703 | 0.3+ | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 1999 11 06 | 704 | 1.3+ | 0.4+ | 2004 02 14 | 703 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 1999 11 06 | 704 | 0.5− | 0.5− | 2004 02 15 | 704 | 0.9+ | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2002 07 16 | 644 | 0.3− | 0.6+ | 2004 02 15 | 704 | 0.9− | 1.2+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 07 16 | 644 | 0.0 | 1.1+ | 2004 02 15 | 704 | 0.9− | 0.6+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2002 07 16 | 644 | 0.0 | 1.2+ | 2004 02 15 | 704 | 0.8− | 1.5+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 08 13 | 704 | 0.7− | 0.5− | 2004 02 15 | 704 | 0.8− | 1.3+ | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2002 08 13 | 704 | 0.8− | 0.8− | 2004 02 22 | 703 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 08 13 | 704 | (0.4+ | 1.5+) | 2004 02 22 | 703 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2+ | 1.1+ |
| 2002 08 13 | 704 | 0.7+ | 0.6+ | 2004 02 22 | 703 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2003 12 27 | 704 | 0.6− | 0.2− | 2004 02 22 | 703 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2003 12 27 | 704 | 0.5− | 0.1− | 2004 04 15 | 645 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2003 12 27 | 704 | 0.7+ | 0.3+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2003 12 27 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2003 12 29 | 704 | 0.5+ | 1.0+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2003 12 29 | 704 | 0.8+ | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2003 12 29 | 704 | (1.6+ | 1.2+) | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2003 12 29 | 704 | (1.6+ | 1.2+) | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2004 01 13 | 699 | 1.4− | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2004 01 13 | 699 | 0.9− | 0.9+ | 2006 10 31 | G96 | 0.5− | 0.1− | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2004 01 13 | 699 | 1.0− | 1.3− | 2006 10 31 | G96 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.2+ |
| 2004 01 13 | 699 | 1.0+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.6+ | 0.3− |
| 2004 01 20 | 704 | 0.3+ | 0.8− | 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.4− |
| 2004 01 20 | 704 | 0.1+ | 0.7− | 2006 11 02 | 703 | 0.9− | 0.3− | 2006 11 27 | 704 | 0.3− | 1.1− |
| 2004 01 20 | 704 | 0.0 | 1.0− | 2006 11 02 | 703 | 1.3+ | 0.2− | 2006 11 27 | 704 | 0.1− | 1.6− |
| 2004 01 20 | 704 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.3− | 0.7+ | 2006 11 27 | 704 | (0.3+ | 3.3−) |

**(137441)∗ 1999 TG$_{238}$ = 2003 WP$_{126}$**

Discovered 1999 Oct. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 55939)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.56630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27226904 | $\omega$ | 24.05349 | | −0.09899443 | −0.98845531 | |
| $a$ | 2.3576023 | $\Omega$ | 71.79092 | | +0.89228136 | −0.13920006 | |
| $e$ | 0.2114398 | $i$ | 6.93523 | | +0.44049299 | +0.05982851 | |
| $P$ | 3.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.4+ | 0.5+ | 2003 12 17 | 699 | 0.7− | 0.2− | 2004 01 19 | 704 | 1.4+ | 0.5− |
| 1999 10 04 | 703 | 0.3+ | 0.2+ | 2003 12 17 | 699 | 0.4− | 0.0 | 2004 01 19 | 704 | 1.2+ | 1.1− |
| 1999 10 04 | 703 | 0.3+ | 1.0+ | 2003 12 18 | 704 | 0.2− | 0.3+ | 2004 01 19 | 704 | 1.5+ | 0.7− |
| 1999 10 04 | 703 | 1.1+ | 0.3+ | 2003 12 18 | 704 | 0.5− | 0.1+ | 2004 01 19 | 704 | (2.2+ | 0.9−) |
| 1999 10 09 | 704 | 0.3− | 0.4+ | 2003 12 18 | 704 | 0.5− | 0.3− | 2004 01 19 | 704 | 1.0+ | 0.3− |
| 1999 10 09 | 704 | 0.1− | 0.6− | 2003 12 18 | 704 | 0.3− | 0.1− | 2004 01 31 | 704 | 0.5− | 0.3+ |
| 1999 10 09 | 704 | 0.4− | 0.7− | 2003 12 18 | 704 | 0.1− | 0.5+ | 2004 01 31 | 704 | 0.3− | 0.3− |
| 1999 10 09 | 704 | 0.4− | 0.3− | 2003 12 23 | 704 | 0.0 | 0.4− | 2004 01 31 | 704 | 0.4+ | 0.4+ |
| 1999 10 09 | 704 | 0.7− | 0.8− | 2003 12 23 | 704 | 0.1+ | 0.8+ | 2004 01 31 | 704 | 0.2+ | 0.2+ |
| 1999 11 02 | 703 | 0.2− | 0.3− | 2003 12 23 | 704 | 0.1+ | 0.7+ | 2004 01 31 | 704 | 0.3+ | 0.0 |
| 1999 11 02 | 703 | 0.0 | 0.8+ | 2003 12 23 | 704 | 0.1− | 0.6+ | 2004 02 14 | 704 | 0.3+ | 0.0 |
| 1999 11 02 | 703 | 1.1− | 0.0 | 2003 12 23 | 704 | 0.2− | 0.0 | 2004 02 14 | 704 | 0.0 | 0.2+ |
| 1999 11 02 | 703 | 0.4− | 0.1− | 2003 12 28 | 704 | 1.3+ | 0.1+ | 2004 02 14 | 704 | 0.9− | 0.3− |
| 1999 11 06 | 704 | 0.9+ | 0.1+ | 2003 12 28 | 704 | 0.2− | 0.3+ | 2004 02 14 | 704 | 0.4− | 0.5+ |
| 1999 11 06 | 704 | 0.3− | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.3− | 2004 02 14 | 704 | 0.6− | 0.2+ |
| 1999 11 06 | 704 | 0.7+ | 0.0 | 2003 12 28 | 704 | 0.2− | 0.6+ | 2006 08 23 | 644 | 0.2− | 1.2+ |
| 1999 11 06 | 704 | 0.7− | 0.4− | 2003 12 29 | 704 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.6+ |
| 1999 11 06 | 704 | 1.0+ | 0.1+ | 2003 12 29 | 704 | 0.7− | 0.2+ | 2006 08 23 | 644 | 0.3+ | 0.6+ |
| 2001 05 24 | 807 | 0.3+ | 0.2+ | 2003 12 29 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.6− |
| 2001 05 24 | 807 | 0.0 | 0.4+ | 2003 12 29 | 704 | 0.8− | 0.5− | 2006 09 14 | 703 | 0.7− | 0.3+ |
| 2003 11 20 | 704 | 1.9+ | 1.9+ | 2003 12 29 | 704 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.3+ |
| 2003 11 20 | 704 | 0.1− | 1.1+ | 2003 12 30 | 704 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 2003 11 20 | 704 | 0.8− | 0.6+ | 2003 12 30 | 704 | 0.1− | 0.3− | 2006 09 20 | 703 | 0.8+ | 0.1+ |
| 2003 11 20 | 704 | 0.1− | 0.1+ | 2003 12 30 | 704 | 0.0 | 0.5− | 2006 09 20 | 703 | 0.7+ | 0.9− |
| 2003 11 20 | 704 | 0.1+ | 0.2− | 2003 12 30 | 704 | 0.1− | 0.3− | 2006 09 20 | 703 | 0.8− | 0.0 |
| 2003 11 24 | 704 | 0.1+ | 1.0+ | 2003 12 30 | 704 | 0.2+ | 0.2− | 2006 09 20 | 703 | 0.3− | 0.0 |
| 2003 11 24 | 704 | 0.5− | 1.2− | 2004 01 16 | 699 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.8− |
| 2003 11 24 | 704 | 0.4+ | 0.4− | 2004 01 16 | 699 | 0.6− | 0.5+ | 2006 09 26 | 703 | 1.0− | 0.3+ |
| 2003 12 17 | 699 | 0.8+ | 0.8− | 2004 01 16 | 699 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2003 12 17 | 699 | 0.3+ | 0.5− | 2004 01 16 | 699 | 0.7− | 0.3− | 2006 09 26 | 703 | 0.3+ | 0.9− |

**(137442)∗ 1999 TJ$_{239}$**

Discovered 1999 Oct. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.32799 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28283168 | $\omega$ | 76.26335 | | −0.75794663 | −0.63868553 | |
| $a$ | 2.2985327 | $\Omega$ | 63.86831 | | +0.52672647 | −0.71919542 | |
| $e$ | 0.1030817 | $i$ | 8.49712 | | +0.38480662 | −0.27356671 | |
| $P$ | 3.48 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.2+ | 0.6+ | 2001 05 25 | 704 | 1.2+ | 0.4+ | 2004 04 20 | 704 | 0.2− | 0.7+ |
| 1999 10 04 | 703 | 0.1− | 0.4− | 2001 05 25 | 704 | 0.5+ | 0.6+ | 2004 04 23 | 704 | 0.3+ | 0.1+ |
| 1999 10 04 | 703 | 0.1− | 0.3− | 2001 05 25 | 704 | 1.2+ | 0.0 | 2004 04 23 | 704 | 0.3− | 0.1− |
| 1999 10 04 | 703 | 0.4+ | 0.1+ | 2002 08 13 | 704 | 0.6+ | 0.5− | 2004 04 23 | 704 | 0.2+ | 0.9+ |
| 1999 10 09 | 704 | 0.6− | 0.0 | 2002 08 13 | 704 | 0.2− | 1.3+ | 2004 05 12 | 704 | 0.7+ | 1.0+ |
| 1999 10 09 | 704 | 0.6− | 0.3− | 2002 08 13 | 704 | 0.3+ | 1.0+ | 2004 05 12 | 704 | 0.2+ | 1.2+ |
| 1999 10 09 | 704 | 1.1− | 0.1+ | 2002 08 13 | 704 | 0.5− | 0.1− | 2004 05 12 | 704 | 0.2− | 1.2+ |
| 1999 10 09 | 704 | 0.1+ | 0.2− | 2002 08 20 | 644 | 0.4− | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.6− | 0.1+ | 2002 08 20 | 644 | 0.5+ | 0.7+ | 2006 09 20 | 644 | 0.3+ | 0.1+ |
| 1999 10 12 | 699 | 0.1− | 0.5+ | 2002 08 20 | 644 | 0.2− | 0.7+ | 2006 09 20 | 644 | 0.2+ | 0.3+ |
| 1999 10 12 | 699 | 0.8− | 0.4− | 2003 09 29 | 704 | 1.0+ | 1.4+ | 2006 09 22 | 704 | 0.6+ | 0.4− |
| 1999 10 12 | 699 | 0.2− | 0.1+ | 2003 09 29 | 704 | 0.7+ | 0.0 | 2006 09 22 | 704 | 0.5+ | 0.5+ |
| 1999 11 03 | 699 | 0.0 | 0.9− | 2003 09 29 | 704 | 0.8+ | 0.6+ | 2006 09 22 | 704 | 0.5− | 1.0+ |
| 1999 11 03 | 699 | 1.0+ | 1.3+ | 2003 09 29 | 704 | 1.2+ | 1.2+ | 2006 09 22 | 704 | 0.5+ | 1.4+ |
| 1999 11 03 | 699 | 0.4− | 0.2+ | 2003 10 22 | 704 | 0.4+ | 0.9− | 2006 09 22 | 704 | 0.4+ | 0.9+ |
| 1999 11 06 | 704 | 0.3+ | 0.4+ | 2003 10 22 | 704 | (1.5− | 0.5+) | 2006 09 26 | 704 | 0.2+ | 0.0 |
| 1999 11 06 | 704 | 0.2− | 0.3+ | 2003 10 22 | 704 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.7+ |
| 1999 11 06 | 704 | 0.4+ | 0.1+ | 2003 10 22 | 704 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.5+ |
| 1999 11 06 | 704 | 0.4− | 0.1− | 2003 10 24 | 704 | (2.2+ | 0.1−) | 2006 09 26 | 704 | 0.3− | 0.0 |
| 1999 11 17 | 704 | 0.8+ | 0.8+ | 2003 10 24 | 704 | (3.0+ | 0.5−) | 2006 09 26 | 704 | 0.7− | 0.1+ |
| 1999 11 17 | 704 | 0.1+ | 0.6+ | 2003 10 24 | 704 | (2.7+ | 0.4−) | 2006 09 30 | 703 | 0.2− | 0.7+ |
| 1999 11 17 | 704 | 0.1− | 1.1− | 2003 10 24 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.8+ |
| 2001 01 04 | 704 | 0.0 | 0.5+ | 2003 10 24 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2001 01 04 | 704 | 0.4− | 0.5+ | 2003 11 02 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.6+ |
| 2001 01 04 | 704 | 0.7+ | 0.4− | 2003 11 02 | 704 | 0.4− | 0.9− | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 2001 01 04 | 704 | 1.4− | 0.9− | 2003 11 02 | 704 | 1.0+ | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2001 01 04 | 704 | 0.0 | 0.9+ | 2003 11 02 | 704 | (1.6+ | 1.6−) | 2006 10 01 | 704 | 0.3− | 0.2+ |
| 2001 01 26 | 704 | 0.4+ | 0.2+ | 2003 11 02 | 704 | 0.4+ | 0.7− | 2006 10 01 | 704 | 0.1+ | 0.1+ |
| 2001 01 26 | 704 | 0.1+ | 0.8+ | 2003 11 20 | 704 | 0.1− | 0.4+ | 2006 10 01 | 704 | (1.8− | 0.3+) |
| 2001 01 26 | 704 | 0.5− | 0.1+ | 2003 11 20 | 704 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 01 26 | 704 | 0.8+ | 0.7+ | 2003 11 20 | 704 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2001 01 26 | 704 | 0.8+ | 0.2+ | 2003 11 20 | 704 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 02 16 | 704 | 1.1− | 0.2+ | 2003 11 20 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2001 02 16 | 704 | 0.5+ | 0.6− | 2003 11 24 | 704 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 02 16 | 704 | 0.3− | 0.3+ | 2003 11 24 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 02 16 | 704 | 0.3− | 0.2+ | 2003 11 24 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.9− |
| 2001 02 16 | 704 | 0.4+ | 1.0+ | 2003 12 04 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.7− |
| 2001 03 04 | 704 | 0.4+ | 0.5+ | 2003 12 04 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2001 03 04 | 704 | 0.1− | 0.0 | 2003 12 04 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 704 | 0.3+ | 0.1− | 2003 12 04 | 704 | 0.8+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2001 03 04 | 704 | 0.5+ | 0.6+ | 2003 12 04 | 704 | 0.4+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.4+ | | |
| 2001 03 04 | 704 | 0.4− | 0.4+ | 2003 12 17 | 699 | 0.7− | 0.5− | 2006 10 19 | 644 | 0.3− | 0.4+ | | |
| 2001 03 16 | 704 | 0.1− | 0.6+ | 2003 12 17 | 699 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2001 03 16 | 704 | 0.1+ | 0.5− | 2003 12 17 | 704 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2001 03 16 | 704 | 0.2+ | 0.4+ | 2003 12 17 | 699 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2001 03 16 | 704 | 0.8+ | 0.4− | 2003 12 17 | 704 | 0.1− | 0.1− | 2006 10 22 | 704 | 0.1− | 0.4+ | | |
| 2001 03 16 | 704 | 0.2− | 0.3− | 2003 12 17 | 699 | 0.5− | 0.5− | 2006 10 22 | 704 | 0.6− | 0.4+ | | |
| 2001 03 20 | 608 | 0.1+ | 0.8+ | 2003 12 17 | 704 | 0.2− | 0.1− | 2006 10 22 | 704 | 0.5− | 0.7+ | | |
| 2001 03 20 | 608 | 0.3+ | 0.6+ | 2003 12 17 | 704 | 0.3− | 0.0 | 2006 10 22 | 704 | 0.2− | 0.1+ | | |
| 2001 03 20 | 608 | 0.4+ | 0.3+ | 2003 12 23 | 704 | (1.8+ | 0.4−) | 2006 10 22 | 704 | 0.2− | 0.2− | | |
| 2001 03 21 | 699 | 0.0 | 0.6+ | 2003 12 23 | 704 | 1.1+ | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.0 | | |
| 2001 03 21 | 699 | 0.7+ | 0.8+ | 2003 12 23 | 704 | (1.8+ | 0.4−) | 2006 10 22 | 703 | 0.4+ | 0.2+ | | |
| 2001 03 21 | 699 | 0.5+ | 0.6+ | 2003 12 23 | 704 | 1.1+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.2− | | |
| 2001 03 21 | 699 | 0.2− | 0.3+ | 2003 12 23 | 704 | 1.0+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.0 | | |
| 2001 03 30 | 704 | 0.5− | 0.0 | 2003 12 27 | 704 | 0.7+ | 0.3− | 2006 10 27 | 704 | (1.5− | 0.1−) | | |
| 2001 03 30 | 704 | 0.5− | 0.8+ | 2003 12 27 | 704 | 1.2+ | 0.5+ | 2006 10 27 | 704 | 1.4− | 0.2+ | | |
| 2001 03 30 | 704 | 0.9− | 0.3+ | 2003 12 27 | 704 | 0.5+ | 0.3− | 2006 10 27 | 704 | 0.6− | 0.1+ | | |
| 2001 03 30 | 704 | 0.1− | 0.3+ | 2003 12 27 | 704 | 0.8+ | 0.1− | 2006 10 27 | 704 | 0.9− | 0.1+ | | |
| 2001 03 30 | 704 | 0.6− | 0.8+ | 2003 12 27 | 704 | 0.8+ | 0.2− | 2006 10 27 | 704 | 1.0− | 0.4− | | |
| 2001 03 30 | 608 | 0.1+ | 1.1+ | 2003 12 29 | 704 | 1.0− | 0.1− | 2006 10 31 | 704 | 0.3+ | 0.9+ | | |
| 2001 03 30 | 608 | 0.1+ | 0.9+ | 2003 12 29 | 704 | 1.4− | 0.2− | 2006 10 31 | 704 | 0.7− | 1.2+ | | |
| 2001 03 30 | 608 | 0.2+ | 0.9+ | 2003 12 29 | 704 | (1.6− | 0.2−) | 2006 10 31 | 704 | 0.2− | 0.9+ | | |
| 2001 03 31 | 704 | 0.2− | 0.4+ | 2003 12 29 | 704 | 1.3− | 0.0 | 2006 10 31 | 704 | 0.3+ | 1.4+ | | |
| 2001 03 31 | 704 | 0.6+ | 0.2− | 2003 12 29 | 704 | 0.3− | 0.8+ | 2006 11 13 | 703 | 0.5− | 0.3− | | |
| 2001 03 31 | 704 | 0.7+ | 0.1+ | 2004 01 19 | 704 | (5.0− | 0.4−) | 2006 11 13 | 703 | 0.4+ | 0.1− | | |
| 2001 03 31 | 704 | 0.1− | 0.5− | 2004 01 19 | 704 | (5.0− | 0.5−) | 2006 11 13 | 703 | 0.9− | 0.6− | | |
| 2001 03 31 | 704 | 0.1− | 0.6− | 2004 01 19 | 704 | (4.8− | 0.9−) | 2006 11 13 | 703 | 0.1+ | 0.0 | | |
| 2001 04 15 | 704 | 0.1+ | 0.0 | 2004 01 19 | 704 | (5.1− | 0.6−) | 2006 11 14 | 704 | 0.0 | 1.2+ | | |
| 2001 04 15 | 704 | 0.1+ | 0.2+ | 2004 01 19 | 704 | (4.5− | 0.8−) | 2006 11 14 | 704 | 0.1+ | 1.2+ | | |
| 2001 04 15 | 704 | 0.0 | 0.1+ | 2004 01 23 | A35 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.0 | 1.0+ | | |
| 2001 04 15 | 704 | 0.3− | 0.9+ | 2004 01 23 | A35 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.0 | 0.8+ | | |
| 2001 04 15 | 704 | 0.0 | 0.4+ | 2004 01 23 | A35 | 0.2− | 0.3− | 2006 11 14 | 704 | (0.2+ | 1.9+) | | |
| 2001 04 27 | 704 | 0.3+ | 0.8+ | 2004 01 31 | 704 | 0.2− | 0.6− | 2006 11 17 | 704 | 0.4− | 0.4+ | | |
| 2001 04 27 | 704 | 0.2− | 0.5+ | 2004 01 31 | 704 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.3+ | 0.7− | | |
| 2001 04 27 | 704 | 0.3− | 0.1+ | 2004 01 31 | 704 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.4− | 0.9− | | |
| 2001 04 27 | 704 | 0.0 | 0.3− | 2004 02 02 | 704 | 0.7− | 1.4− | 2006 11 17 | 704 | 0.6− | 0.1− | | |
| 2001 05 15 | 608 | 1.4+ | 0.0 | 2004 02 02 | 704 | 1.1− | 0.9− | 2006 11 17 | 704 | 0.4− | 0.5− | | |
| 2001 05 15 | 608 | 1.3+ | 0.3+ | 2004 02 02 | 704 | 0.2− | 0.9− | 2006 11 20 | 704 | 0.7+ | 0.1+ | | |
| 2001 05 15 | 608 | 1.3+ | 0.1− | 2004 02 02 | 704 | 0.8− | 0.3− | 2006 11 20 | 704 | 1.7− | 0.6+ | | |
| 2001 05 23 | 704 | 0.6+ | 1.0+ | 2004 03 23 | 704 | 0.4+ | 1.1− | 2006 11 20 | 704 | 0.9− | 1.1+ | | |
| 2001 05 23 | 704 | (1.9+ | 0.8+) | 2004 03 23 | 704 | 0.9+ | 0.0 | 2006 11 20 | 704 | 0.7− | 0.2− | | |
| 2001 05 23 | 704 | 0.1+ | 1.4+ | 2004 03 23 | 704 | 0.5+ | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.2− | | |
| 2001 05 23 | 699 | 0.1+ | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.1− | | |
| 2001 05 23 | 704 | 0.8+ | 0.9+ | 2004 03 23 | 704 | 0.2+ | 1.1− | 2006 11 20 | 704 | 0.3− | 0.5+ | | |
| 2001 05 23 | 704 | 1.1+ | 0.8+ | 2004 04 20 | 704 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 0.6+ | 0.6− | | |
| 2001 05 23 | 699 | 0.1− | 0.4+ | 2004 04 20 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.5+ | | |
| 2001 05 23 | 699 | 0.5+ | 0.9+ | 2004 04 20 | 704 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 1.3− | 0.8− | | |
| 2001 05 23 | 699 | 0.4+ | 0.5+ | 2004 04 20 | 704 | 0.7+ | 0.4+ | | | | | | |

**(137443)∗ 1999 TK$_{240}$ = 2005 EF$_{237}$ = 2005 FH$_9$**

Discovered 1999 Oct. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 74652)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.74872 | | (2000.0) | | | |
| $n$ | 0.27211234 | $\omega$ | 179.93712 | | +0.78796600 | +0.61482374 |
| $a$ | 2.3585073 | $\Omega$ | 142.05862 | | −0.56493447 | +0.74335886 |
| $e$ | 0.1710218 | $i$ | 3.09402 | | −0.24486451 | +0.26345659 |
| $P$ | 3.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 06 | 691 | 0.2+ | 0.3+ | 2005 04 18 | 691 | 0.6+ | 1.1+ | 2006 08 31 | 704 | (1.7+ | 0.7+) | | |
| 1994 03 06 | 691 | 0.0 | 0.3− | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 09 12 | 704 | (1.5− | 0.6+) | | |
| 1994 03 06 | 691 | 0.2− | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.3− | 2006 09 12 | 704 | 1.4− | 1.4+ | | |
| 1998 03 22 | 691 | 0.5− | 0.5− | 2006 08 14 | 644 | 0.2+ | 0.1− | 2006 09 12 | 704 | 0.2− | 0.2+ | | |
| 1998 03 22 | 691 | 0.4− | 0.2− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 12 | 704 | (1.7+ | 0.3−) | | |
| 1998 03 22 | 691 | 0.5− | 0.1− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 12 | 704 | 1.0− | 1.0+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.4− | 1.0+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.4− | | |
| 1999 10 04 | 703 | (0.3+ | 2.2+) | 2006 08 17 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.0 | 0.7− | | |
| 1999 10 04 | 703 | 0.8+ | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.0 | | |
| 1999 10 04 | 703 | 1.4− | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.0 | 0.2− | | |
| 1999 10 09 | 704 | 0.0 | 0.7− | 2006 08 18 | 704 | 0.7+ | 0.2− | 2006 09 16 | 704 | 0.4− | 0.6+ | | |
| 1999 10 09 | 704 | 0.1− | 1.3+ | 2006 08 18 | 704 | 0.8+ | 0.1+ | 2006 09 16 | 704 | 1.0+ | 0.4+ | | |
| 1999 10 09 | 704 | 0.0 | 1.3+ | 2006 08 18 | 704 | 1.0− | 0.6− | 2006 09 16 | 704 | 0.2− | 0.2+ | | |
| 1999 10 09 | 704 | 0.1+ | 0.6+ | 2006 08 21 | 704 | 0.5− | 0.3− | 2006 09 16 | 704 | 0.1− | 0.4+ | | |
| 1999 10 09 | 704 | 0.2− | 0.4+ | 2006 08 21 | 704 | 0.6− | 0.1− | 2006 09 16 | 704 | 1.0− | 0.9+ | | |
| 1999 10 19 | 704 | 0.8+ | 0.2− | 2006 08 21 | 704 | 0.7− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.1− | | |
| 1999 10 19 | 704 | 0.5+ | 0.6− | 2006 08 21 | 704 | 0.5− | 0.2− | 2006 09 18 | 699 | 0.5− | 0.9+ | | |
| 1999 10 19 | 704 | 0.3− | 0.2− | 2006 08 21 | 704 | 0.8− | 0.3− | 2006 09 18 | 699 | 0.6− | 0.5+ | | |
| 1999 10 19 | 704 | 0.5+ | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.4− | | |
| 1999 10 19 | 704 | 0.3+ | 0.9+ | 2006 08 23 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 704 | (1.3− | 1.6+) | | |
| 2002 06 06 | 704 | (0.2− | 1.6−) | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.2− | 0.7+ | | |
| 2002 06 06 | 704 | (0.8− | 3.0−) | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 19 | 704 | 1.0− | 0.1− | | |
| 2002 06 06 | 704 | 0.5+ | 1.3− | 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 1.3− | 0.3− | | |
| 2002 06 06 | 704 | (1.0+ | 2.3−) | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 09 19 | 704 | 0.5− | 0.8− | | |
| 2002 06 18 | 704 | 0.2+ | 0.1− | 2006 08 25 | 704 | 0.1− | 1.3+ | 2006 09 20 | 644 | 0.0 | 0.2− | | |
| 2002 06 18 | 704 | (2.4+ | 0.9+) | 2006 08 25 | 704 | 0.4+ | 1.0+ | 2006 09 20 | 644 | 0.4− | 0.1− | | |
| 2002 06 18 | 704 | 1.0+ | 0.6+ | 2006 08 25 | 704 | 0.4− | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.0 | | |
| 2002 06 18 | 704 | 0.6+ | 0.1− | 2006 08 25 | 704 | (1.4− | 2.2+) | 2006 09 22 | 704 | 0.5+ | 0.5+ | | |
| 2005 03 03 | 691 | 0.2+ | 0.9+ | 2006 08 25 | 704 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.3+ | 0.8+ | | |
| 2005 03 03 | 691 | 0.1+ | 0.7+ | 2006 08 28 | 691 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.8+ | | |
| 2005 03 03 | 691 | 0.0 | 0.6+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.0 | | |
| 2005 03 03 | 683 | (3.9+ | 1.8+) | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.9+ | 0.1+ | | |
| 2005 03 03 | 683 | (0.8− | 3.4−) | 2006 08 29 | 704 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 1.0+ | | |
| 2005 03 03 | 683 | (0.2+ | 10.2−) | 2006 08 29 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.2+ | 0.1− | | |
| 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 704 | 0.2− | 0.8+ | 2006 09 25 | 699 | 0.4− | 0.4+ | | |
| 2005 03 11 | 691 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2005 03 11 | 691 | 0.6+ | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.2− | | |
| 2005 03 16 | G96 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.6+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2005 03 16 | G96 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2005 03 16 | G96 | 0.5− | 0.5+ | 2006 08 31 | 704 | (1.6+ | 0.3−) | 2006 11 27 | G96 | 0.1− | 0.2− | | |
| 2005 03 16 | G96 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.6+ | 0.5− | 2006 11 27 | G96 | 0.7− | 0.2+ | | |
| 2005 04 18 | 691 | 0.6+ | 0.4+ | 2006 08 31 | 704 | 1.0+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.2+ | | |
| 2005 04 18 | 691 | 0.3+ | 0.9+ | 2006 08 31 | 704 | 0.6+ | 0.4+ | 2006 11 27 | G96 | 0.5− | 0.0 | | |

**(137444)∗ 1999 TE$_{245}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.16648 | | (2000.0) | | | |
| $n$ | 0.28294553 | $\omega$ | 115.28013 | | +0.82911775 | −0.43945824 |
| $a$ | 2.2979161 | $\Omega$ | 272.48178 | | +0.30072046 | +0.87168079 |
| $e$ | 0.2878691 | $i$ | 20.23831 | | +0.47130772 | +0.21690793 |
| $P$ | 3.48 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 1.1+ | 0.0 | 2002 08 18 | 628 | 0.0 | 0.3+ | 2003 01 29 | 608 | 0.5− | 0.3+ | | |
| 1999 10 12 | 704 | 1.2+ | 1.4− | 2002 08 18 | 628 | 0.0 | 0.2+ | 2003 01 29 | 608 | 0.1− | 0.3+ | | |
| 1999 10 12 | 704 | 0.9+ | 0.6− | 2002 08 18 | 628 | 0.1− | 0.3+ | 2003 01 31 | 704 | 0.2+ | 0.3− | | |
| 1999 10 12 | 704 | 0.1+ | 0.5+ | 2002 08 28 | 704 | 0.5− | 0.8− | 2003 01 31 | 704 | 0.1+ | 0.3− | | |
| 1999 10 21 | 704 | 0.7− | 0.5− | 2002 08 28 | 704 | 0.4− | 0.8− | 2003 01 31 | 704 | 0.3+ | 0.4− | | |
| 1999 10 21 | 704 | 0.5− | 0.1+ | 2002 08 28 | 704 | 0.0 | 0.5− | 2003 01 31 | 704 | 0.2+ | 0.4− | | |
| 1999 10 21 | 704 | 0.4+ | 0.4− | 2002 08 28 | 704 | 0.4− | 0.9− | 2003 01 31 | 704 | 0.5− | 0.1− | | |
| 1999 10 21 | 704 | 0.9− | 1.1− | 2002 08 28 | 704 | 0.5− | 0.5− | 2003 02 07 | 704 | 0.6+ | 0.9+ | | |
| 1999 10 21 | 704 | 0.5− | 0.4− | 2002 08 31 | 951 | 1.2+ | 0.4− | 2003 02 07 | 704 | 1.1+ | 0.9+ | | |
| 1999 11 08 | 703 | 1.0+ | 0.0 | 2002 08 31 | 951 | 0.0 | 0.4+ | 2003 02 07 | 704 | 0.9+ | 1.0+ | | |
| 1999 11 08 | 703 | 0.9− | 0.6− | 2002 08 31 | 951 | 0.5− | 0.2+ | 2003 02 07 | 704 | 0.2− | 1.0+ | | |
| 1999 11 08 | 703 | 0.2+ | 0.0 | 2002 09 12 | 951 | 0.4− | 1.3− | 2003 02 23 | 699 | 0.4− | 0.2+ | | |
| 1999 11 08 | 703 | 0.4− | 0.9+ | 2002 09 12 | 951 | 0.3− | 0.2+ | 2003 02 23 | 699 | 0.3− | 0.3− | | |
| 1999 12 05 | 704 | 1.2− | 1.3− | 2002 11 03 | 704 | 0.1+ | 0.3+ | 2003 02 23 | 699 | 0.3+ | 0.2+ | | |
| 1999 12 05 | 704 | 0.2+ | 0.2− | 2002 11 03 | 704 | 0.2+ | 0.6+ | 2003 02 23 | 699 | 0.1− | 0.1− | | |
| 1999 12 05 | 704 | 0.2+ | 0.7+ | 2002 11 03 | 704 | 0.2+ | 0.5+ | 2003 03 07 | 699 | 0.6− | 0.3− | | |
| 1999 12 05 | 704 | 0.3− | 0.3+ | 2002 11 03 | 704 | (1.8+ | 0.1−) | 2003 03 07 | 699 | 1.0− | 0.3+ | | |
| 1999 12 05 | 704 | 0.0 | 0.3+ | 2002 11 13 | 704 | 0.2+ | 0.7− | 2003 03 07 | 699 | 0.3− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 703 | 0.3+ | 0.1− | 2002 11 13 | 704 | 0.1+ | 0.6− | 2003 03 07 | 699 | 0.3− | 0.4+ | | |
| 1999 12 13 | 703 | 0.0 | 0.2+ | 2002 11 13 | 704 | 0.5+ | 0.2− | 2004 03 19 | E12 | (1.4− | 1.6+) | | |
| 1999 12 13 | 703 | 0.6+ | 0.0 | 2002 11 13 | 704 | 0.1+ | 0.5− | 2004 03 19 | E12 | (1.1− | 2.1+) | | |
| 1999 12 13 | 703 | 0.2+ | 0.1+ | 2002 11 13 | 704 | 0.2− | 1.3− | 2004 03 19 | E12 | 0.2− | 0.2+ | | |
| 1999 12 14 | 704 | 0.2+ | 0.3− | 2002 11 14 | 704 | (0.8− | 1.6+) | 2004 03 19 | E12 | (0.8− | 1.9+) | | |
| 1999 12 14 | 704 | 0.9− | 0.6− | 2002 11 14 | 704 | 1.3− | 1.4+ | 2004 03 26 | 704 | 0.1+ | 0.2+ | | |
| 1999 12 14 | 704 | 0.1− | 0.8+ | 2002 11 14 | 704 | (1.2− | 1.9+) | 2004 03 26 | 704 | 0.5+ | 0.2− | | |
| 1999 12 14 | 704 | 0.7− | 1.1− | 2002 11 14 | 704 | (1.6− | 1.8+) | 2004 03 26 | 704 | 0.0 | 0.7+ | | |
| 1999 12 14 | 704 | 0.9− | 0.3+ | 2002 11 14 | 704 | (1.0− | 2.1+) | 2004 03 26 | 704 | 0.4+ | 1.1+ | | |
| 1999 12 16 | 699 | 1.1+ | 1.7+ | 2002 12 02 | 704 | 0.7+ | 0.2− | 2004 03 26 | 704 | 0.1+ | 0.2− | | |
| 1999 12 16 | 699 | 0.6− | 0.4+ | 2002 12 02 | 704 | 0.7+ | 0.2+ | 2004 04 12 | E12 | 0.3− | 0.4+ | | |
| 1999 12 16 | 699 | 0.2+ | 1.1+ | 2002 12 02 | 704 | 1.3+ | 0.0 | 2004 04 12 | E12 | (0.8+ | 1.6+) | | |
| 2000 01 07 | 699 | 0.2+ | 0.1+ | 2002 12 02 | 704 | 1.0+ | 0.1+ | 2004 04 12 | E12 | 0.2− | 0.2+ | | |
| 2000 01 07 | 699 | 0.0 | 0.2+ | 2002 12 02 | 704 | 1.0+ | 0.4+ | 2004 04 12 | E12 | 0.2− | 1.2+ | | |
| 2000 01 07 | 699 | 0.2+ | 0.4+ | 2002 12 10 | 704 | 0.5− | 0.0 | 2004 04 24 | 699 | 1.0+ | 0.2− | | |
| 2000 01 11 | 704 | 0.7− | 1.7− | 2002 12 10 | 704 | 0.4− | 0.4− | 2004 04 24 | 699 | 0.9+ | 0.0 | | |
| 2000 01 11 | 704 | 0.9− | 1.4− | 2002 12 10 | 704 | 0.1+ | 0.7− | 2004 04 24 | 699 | 0.3− | 0.8+ | | |
| 2000 01 11 | 704 | 1.5− | 1.4− | 2002 12 11 | 699 | 0.1− | 0.2− | 2004 04 24 | 699 | 0.4+ | 0.1− | | |
| 2000 01 11 | 704 | 0.8− | 1.2− | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.4− | | |
| 2000 01 11 | 704 | (2.3− | 1.4−) | 2002 12 11 | 699 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.3− | | |
| 2000 01 11 | 704 | 0.5− | 0.8− | 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.7+ | 0.1− | | |
| 2000 01 11 | 704 | 1.3− | 1.2− | 2002 12 11 | 699 | 0.0 | 0.2− | 2006 10 01 | 703 | 1.3− | 0.0 | | |
| 2000 02 08 | 704 | 0.2− | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 703 | (1.7− | 0.6+) | | |
| 2000 02 08 | 704 | 1.7+ | 0.6− | 2002 12 11 | 699 | 0.3− | 0.1+ | 2006 10 01 | 703 | 0.6− | 0.1− | | |
| 2000 02 08 | 704 | 0.6+ | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 703 | 0.5− | 0.0 | | |
| 2000 02 08 | 704 | 0.2+ | 0.9+ | 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.9+ | 0.9− | | |
| 2002 06 11 | 704 | 0.1+ | 0.6+ | 2002 12 31 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.8+ | 0.8+ | | |
| 2002 06 11 | 704 | 0.1− | 0.4+ | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.1− | | |
| 2002 06 11 | 704 | 0.5− | 0.6+ | 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.0 | | |
| 2002 06 11 | 704 | 0.7− | 0.6+ | 2002 12 31 | 704 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.0 | | |
| 2002 06 11 | 704 | 0.3− | 0.9+ | 2003 01 07 | 704 | 0.2+ | 0.9+ | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2002 06 16 | 941 | 0.7+ | 0.3+ | 2003 01 07 | 704 | 0.9+ | 0.7+ | 2006 11 20 | 704 | 1.1+ | 0.5+ | | |
| 2002 06 16 | 941 | 0.2− | 0.2− | 2003 01 07 | 704 | 0.4+ | 0.7+ | 2006 11 20 | 704 | 0.1+ | 1.4+ | | |
| 2002 06 16 | 941 | 0.4− | 0.6+ | 2003 01 07 | 704 | 0.4+ | 1.1+ | 2006 11 20 | 704 | 0.7+ | 0.1+ | | |
| 2002 08 01 | 704 | 0.1+ | 0.4− | 2003 01 07 | 704 | 0.3+ | 0.9+ | 2006 11 20 | 704 | 0.9+ | 1.2− | | |
| 2002 08 01 | 704 | 0.4+ | 0.4− | 2003 01 08 | 704 | 0.8− | 0.2− | 2006 11 20 | 704 | (0.5+ | 1.6+) | | |
| 2002 08 01 | 704 | 0.1− | 0.5− | 2003 01 08 | 704 | 0.7− | 0.1+ | 2006 11 20 | 704 | 0.1− | 1.4+ | | |
| 2002 08 01 | 704 | 0.1+ | 0.1− | 2003 01 08 | 704 | (1.7− | 0.7+) | 2006 11 20 | 704 | 0.4+ | 1.3+ | | |
| 2002 08 01 | 704 | 0.1− | 0.5− | 2003 01 08 | 704 | 0.8− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 1.2+ | | |
| 2002 08 17 | 704 | 0.2+ | 0.7+ | 2003 01 08 | 704 | 0.6− | 0.4+ | 2006 12 01 | 703 | 0.7− | 0.2+ | | |
| 2002 08 17 | 704 | 0.1− | 0.8+ | 2003 01 28 | 608 | 0.4− | 0.6+ | 2006 12 01 | 703 | 0.5+ | 0.3− | | |
| 2002 08 17 | 704 | 0.3+ | 0.9− | 2003 01 28 | 608 | 0.6− | 0.9+ | 2006 12 01 | 703 | 0.2− | 0.1− | | |
| 2002 08 17 | 704 | 0.1− | 0.8+ | 2003 01 28 | 608 | 0.7− | 0.7+ | 2006 12 01 | 703 | 0.1− | 0.3+ | | |
| 2002 08 17 | 704 | 0.1+ | 0.7+ | 2003 01 29 | 608 | 0.5− | 0.6+ | | | | | | |

**(137445)∗ 1999 TE$_{247}$**

Discovered 1999 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.30562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27852787 | $\omega$ | 322.83202 | | −0.99718615 | +0.02176916 | |
| $a$ | 2.3221501 | $\Omega$ | 218.60431 | | +0.00175952 | −0.94984815 | |
| $e$ | 0.0465139 | $i$ | 6.60196 | | −0.07494460 | −0.31195287 | |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.0 | 0.2− | 2001 03 29 | 699 | 0.4− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | | |
| 1999 10 06 | 704 | 0.6− | 0.5+ | 2001 03 29 | 699 | 0.1+ | 1.3+ | 2006 10 16 | 691 | 0.2− | 0.1+ | | |
| 1999 10 06 | 704 | 0.2− | 0.1+ | 2001 03 29 | 699 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ | | |
| 1999 10 06 | 704 | 0.4− | 0.0 | 2001 03 29 | 699 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.2+ | | |
| 1999 10 06 | 704 | 0.7− | 0.3− | 2002 08 16 | 644 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3+ | | |
| 1999 10 10 | 691 | 0.3+ | 0.2+ | 2002 08 16 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.3+ | | |
| 1999 10 10 | 691 | 0.4+ | 0.0 | 2002 08 16 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 1999 10 10 | 691 | 0.3+ | 0.1− | 2002 08 26 | 644 | 1.3+ | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 1999 10 19 | 691 | 0.3− | 0.2− | 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 1999 10 19 | 691 | 0.3− | 0.1+ | 2002 08 26 | 644 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.0 | | |
| 1999 10 19 | 691 | 0.0 | 0.2− | 2002 08 27 | 644 | 0.7− | 0.9+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 1999 10 29 | 691 | 0.0 | 0.2+ | 2002 08 27 | 644 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 1999 10 29 | 691 | 0.2− | 0.2+ | 2002 08 27 | 644 | 0.4− | 1.1+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 1999 10 29 | 691 | 0.2− | 0.1+ | 2002 09 05 | 699 | 0.7− | 0.6+ | 2006 11 10 | 644 | 0.3+ | 0.4+ | | |
| 1999 11 12 | 704 | 0.1+ | 0.0 | 2002 09 05 | 699 | 0.7+ | 0.9+ | 2006 11 10 | 644 | 0.3− | 0.3+ | | |
| 1999 11 12 | 704 | 0.4+ | 0.4+ | 2002 09 05 | 699 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.1+ | | |
| 1999 11 12 | 704 | 0.0 | 0.2− | 2002 09 05 | 699 | 0.3+ | 1.2+ | 2006 11 11 | G96 | 0.4+ | 0.4− | | |
| 1999 11 12 | 704 | 0.6+ | 0.0 | 2002 09 11 | 608 | 0.3− | 0.6− | 2006 11 11 | G96 | 0.5+ | 0.3− | | |
| 1999 11 12 | 704 | 0.3− | 0.6− | 2002 09 11 | 608 | 0.0 | 0.6− | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2001 03 03 | 704 | 1.2+ | 0.0 | 2002 09 11 | 608 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.1− | | |
| 2001 03 03 | 704 | 0.0 | 0.6+ | 2003 12 01 | 704 | 0.5+ | 0.3− | 2006 11 13 | G96 | 0.1− | 0.0 | | |
| 2001 03 03 | 704 | 0.2+ | 0.6+ | 2003 12 01 | 704 | 0.7− | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.3− | | |
| 2001 03 03 | 704 | 0.8+ | 0.4+ | 2003 12 01 | 704 | 0.3+ | 0.8+ | 2006 11 13 | G96 | 0.5+ | 0.5− | | |
| 2001 03 05 | 608 | 0.2+ | 0.2− | 2003 12 20 | 704 | (2.6− | 1.3+) | 2006 11 17 | 703 | 0.2− | 0.0 | | |
| 2001 03 05 | 608 | 0.1+ | 0.3+ | 2003 12 20 | 704 | (2.0− | 1.7+) | 2006 11 17 | 703 | 1.1− | 0.4− | | |
| 2001 03 05 | 608 | 0.3+ | 0.1+ | 2003 12 20 | 704 | (1.6− | 2.3+) | 2006 11 17 | 703 | 0.0 | 0.3− | | |
| 2001 03 24 | 699 | 0.1− | 0.4+ | 2005 07 12 | G96 | 0.6− | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.4− | | |
| 2001 03 24 | 699 | 0.4− | 0.4+ | 2005 07 12 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.4− | 0.5+ | | |
| 2001 03 24 | 699 | 0.7+ | 0.8+ | 2005 07 12 | G96 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.0 | | |
| 2001 03 24 | 699 | 0.9+ | 0.9+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.7+ | | |
| 2001 03 24 | 704 | 0.4− | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | (0.5+ | 3.2+) | | |
| 2001 03 24 | 704 | 0.5+ | 0.9− | 2006 10 11 | 644 | 0.1− | 0.8− | 2006 11 25 | 703 | 1.0− | 0.1+ | | |
| 2001 03 24 | 704 | 0.6− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 25 | 703 | 0.3− | 0.0 | | |
| 2001 03 24 | 704 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 703 | 0.7+ | 0.0 | | |
| 2001 03 24 | 704 | 0.2+ | 1.3+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.1− | 0.1+ | | |

**(137446)∗ 1999 TW$_{252}$ = 2003 YM$_{68}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55940)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.97812 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28631250 | $\omega$ | 245.64229 | | +0.89470623 | −0.44570995 | |
| $a$ | 2.2798653 | $\Omega$ | 140.80885 | | +0.42464754 | +0.82866478 | |
| $e$ | 0.1048080 | $i$ | 2.63412 | | +0.13847462 | +0.33861088 | |
| $P$ | 3.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | (3.2− | 2.7+) | 2004 01 15 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.2− | | |
| 1999 10 01 | 703 | 1.7− | 2.0+ | 2004 01 15 | 691 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.4− | | |
| 1999 10 01 | 703 | (2.1− | 0.0 ) | 2004 01 15 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.5− | | |
| 1999 10 01 | 703 | (6.2− | 4.5+) | 2004 01 21 | 704 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 1999 10 09 | 704 | 0.4+ | 1.1− | 2004 01 21 | 704 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 1999 10 09 | 704 | 0.8+ | 0.4+ | 2004 01 21 | 704 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.0 | | |
| 1999 10 09 | 704 | 0.5− | 0.4− | 2004 01 21 | 704 | 0.5+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 1999 10 09 | 704 | 0.1+ | 0.4− | 2004 01 22 | 704 | (2.2+ | 0.8+) | 2006 11 09 | 644 | 0.2− | 0.2− | | |
| 1999 10 09 | 704 | 0.2− | 0.2+ | 2004 01 22 | 704 | 0.1+ | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.1− | | |
| 1999 10 13 | 691 | 0.2+ | 0.0 | 2004 01 22 | 704 | 0.8+ | 1.1+ | 2006 11 09 | 644 | 0.0 | 0.3− | | |
| 1999 10 13 | 691 | 0.1+ | 0.1− | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.2− | | |
| 1999 10 13 | 691 | 0.0 | 0.3− | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2− | | |
| 2002 07 13 | 644 | 0.0 | 0.3+ | 2004 01 27 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.5− | | |
| 2002 07 13 | 644 | 0.2+ | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.2+ | 1.3− | | |
| 2002 07 13 | 644 | 0.0 | 0.4+ | 2006 10 03 | 704 | 1.0+ | 1.3+ | 2006 11 11 | 703 | 0.4+ | 0.1− | | |
| 2002 07 20 | 644 | (2.9− | 0.5+) | 2006 10 03 | 704 | 0.7− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.5− | | |
| 2002 07 20 | 644 | 0.5− | 0.6+ | 2006 10 03 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 1.0+ | 0.7+ | | |
| 2002 07 20 | 644 | 0.1+ | 0.3− | 2006 10 03 | 704 | 0.9− | 0.4+ | 2006 11 14 | 704 | 1.0+ | 0.4− | | |
| 2003 12 19 | 704 | 1.0+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.8+ | 0.1+ | | |
| 2003 12 19 | 704 | 0.1+ | 0.9− | 2006 10 16 | 703 | 0.8− | 0.3+ | 2006 11 14 | 704 | 1.2+ | 0.3+ | | |
| 2003 12 19 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.2− | | |
| 2003 12 19 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.4+ | | |
| 2003 12 19 | 704 | 1.1− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.3+ | | |
| 2003 12 22 | 691 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.8+ | | |
| 2003 12 22 | 691 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.5+ | 0.5+ | | |
| 2003 12 22 | 691 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.0 | | |
| 2003 12 27 | 691 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.7− | | |
| 2003 12 27 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.9+ | 0.3+ | | |
| 2003 12 27 | 691 | 0.7− | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.6− | | |

**(137447)∗ 1999 TN$_{254}$**

Discovered 1999 Oct. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.69393 | | (2000.0) | | | |
| $n$ | 0.27326201 | $\omega$ | 308.28549 | | +0.93172691 | −0.28309984 |
| $a$ | 2.3518875 | $\Omega$ | 69.20256 | | +0.35936508 | +0.80904307 |
| $e$ | 0.1967909 | $i$ | 14.08241 | | −0.05236133 | +0.51507648 |
| $P$ | 3.61 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.6− | 0.1+ | 2003 11 28 | 699 | 1.4− | 0.3+ | 2004 01 19 | 704 | 0.2+ | 0.0 | |
| 1999 10 08 | 704 | 0.0 | 0.3− | 2003 12 14 | 691 | 0.1− | 0.1− | 2004 01 19 | 704 | 0.0 | 0.1− | |
| 1999 10 08 | 704 | 0.1− | 0.3+ | 2003 12 14 | 691 | 0.2− | 0.1− | 2004 01 19 | 704 | 0.3+ | 0.1+ | |
| 1999 10 08 | 704 | 0.4+ | 0.3+ | 2003 12 14 | 691 | 0.1− | 0.1− | 2004 01 19 | 704 | 0.1+ | 0.2− | |
| 1999 10 08 | 704 | 0.0 | 0.1+ | 2003 12 17 | 704 | 0.4+ | 0.1+ | 2005 04 13 | 703 | (2.4− | 1.0−) | |
| 1999 10 14 | 699 | 1.4+ | 0.7− | 2003 12 17 | 704 | 0.1− | 0.1+ | 2005 04 13 | 703 | 0.7− | 1.0− | |
| 1999 10 14 | 699 | 0.9+ | 0.7+ | 2003 12 17 | 704 | 1.0+ | 0.3+ | 2005 04 13 | 703 | 0.5− | 1.1− | |
| 1999 10 14 | 699 | 1.2+ | 0.3+ | 2003 12 17 | 704 | 0.2− | 0.4+ | 2005 04 13 | 703 | 0.8− | 0.9− | |
| 1999 10 31 | 699 | 0.4+ | 0.3+ | 2003 12 28 | 704 | 0.8+ | 0.2− | 2006 07 29 | E12 | 0.2− | 0.0 | |
| 1999 10 31 | 699 | 0.3+ | 0.3+ | 2003 12 28 | 704 | 0.5+ | 0.5+ | 2006 07 29 | E12 | 0.0 | 0.1− | |
| 1999 10 31 | 699 | 0.5− | 0.2− | 2003 12 28 | 704 | 0.4+ | 0.0 | 2006 07 29 | E12 | 0.0 | 0.1− | |
| 1999 11 07 | 704 | 1.1− | 1.2− | 2003 12 28 | 704 | 0.4+ | 0.6− | 2006 08 25 | 428 | 0.1+ | 0.0 | |
| 1999 11 07 | 704 | 1.1− | 0.0 | 2003 12 28 | 704 | 0.5+ | 0.5− | 2006 08 26 | 428 | 0.1+ | 0.2− | |
| 1999 11 07 | 704 | 0.9− | 0.1− | 2003 12 29 | 704 | 0.3− | 0.1− | 2006 09 03 | E12 | 0.6− | 0.0 | |
| 1999 12 03 | 704 | 0.9+ | 1.6− | 2003 12 29 | 704 | 0.3+ | 0.3+ | 2006 09 03 | E12 | 1.1+ | 0.3+ | |
| 1999 12 03 | 704 | 0.0 | 0.5− | 2003 12 29 | 704 | 0.1+ | 0.0 | 2006 09 03 | E12 | 0.6− | 0.5+ | |
| 1999 12 03 | 704 | 0.0 | 0.2− | 2003 12 29 | 704 | 0.7+ | 0.2+ | 2006 09 03 | E12 | 0.5− | 0.1+ | |
| 1999 12 03 | 704 | 0.4− | 0.3+ | 2003 12 29 | 704 | 0.1+ | 1.2+ | 2006 09 14 | E12 | 0.0 | 0.4− | |
| 2003 11 20 | 704 | 0.1+ | 0.8− | 2004 01 14 | 644 | 0.1− | 0.3+ | 2006 09 14 | E12 | 0.2− | 0.1− | |
| 2003 11 20 | 704 | (2.6+ | 0.8−) | 2004 01 14 | 644 | 0.1+ | 0.4+ | 2006 09 14 | E12 | 0.2+ | 0.1− | |
| 2003 11 20 | 704 | (3.4+ | 2.4−) | 2004 01 14 | 644 | 0.2+ | 0.0 | 2006 09 28 | E12 | 0.2+ | 0.1+ | |
| 2003 11 20 | 704 | 1.3+ | 1.4− | 2004 01 16 | 644 | 1.0− | 0.3+ | 2006 09 28 | E12 | 0.4+ | 0.1+ | |
| 2003 11 28 | 699 | 0.4+ | 1.0− | 2004 01 16 | 644 | 0.8− | 0.3+ | 2006 09 28 | E12 | 0.1+ | 0.2− | |
| 2003 11 28 | 699 | 0.9− | 0.4− | 2004 01 16 | 644 | 0.7− | 0.3+ | 2006 09 28 | E12 | 0.2+ | 0.6− | |
| 2003 11 28 | 699 | 1.5− | 0.7+ | 2004 01 19 | 704 | 0.2+ | 0.3+ | | | | | |

**(137448)∗ 1999 TS$_{257}$ = 2002 GB$_{53}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 49724)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.59225 | | (2000.0) | | | |
| $n$ | 0.27490475 | $\omega$ | 134.20952 | | +0.63572901 | +0.77186230 |
| $a$ | 2.3425088 | $\Omega$ | 175.23973 | | −0.73497601 | +0.60874929 |
| $e$ | 0.2860560 | $i$ | 6.07858 | | −0.23592139 | +0.18344725 |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.4+ | 0.3+ | 2006 07 31 | 941 | 0.3− | 0.5− | 2006 09 12 | 704 | 1.3− | 0.8− | |
| 1999 09 05 | 699 | 0.4+ | 0.5+ | 2006 07 31 | 941 | 0.3− | 0.5− | 2006 09 12 | 704 | (2.7− | 0.6+) | |
| 1999 09 05 | 699 | 0.3+ | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.0 | 0.1− | |
| 1999 10 09 | 704 | 0.2− | 0.2− | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.6+ | 0.4+ | |
| 1999 10 09 | 704 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.4− | |
| 1999 10 09 | 704 | 0.2− | 0.1+ | 2006 08 18 | 704 | 0.2+ | 0.6− | 2006 09 17 | 704 | 0.2+ | 0.1− | |
| 1999 10 09 | 704 | 0.2− | 0.0 | 2006 08 18 | 704 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.3− | 1.0− | |
| 1999 10 09 | 704 | 0.1+ | 0.4+ | 2006 08 18 | 704 | 0.2− | 0.9− | 2006 09 18 | 699 | 0.8− | 0.5+ | |
| 1999 10 15 | 704 | 0.1− | 0.2+ | 2006 08 18 | 704 | 0.4− | 0.7− | 2006 09 18 | 699 | 0.3+ | 0.7+ | |
| 1999 10 15 | 704 | 0.2− | 0.5+ | 2006 08 19 | 699 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.5+ | |
| 1999 10 15 | 704 | 0.7− | 0.1− | 2006 08 19 | 699 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.3+ | |
| 1999 10 15 | 704 | 0.6− | 0.2+ | 2006 08 19 | 699 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.0 | |
| 2002 04 05 | 699 | 0.9+ | 1.2+ | 2006 08 19 | 699 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.3+ | 0.2+ | |
| 2002 04 05 | 699 | 0.4+ | 1.1− | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.3− | |
| 2002 04 05 | 699 | 0.8+ | 0.4+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.0 | 0.1+ | |
| 2002 04 05 | 699 | 0.4− | 0.8+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 22 | 104 | 0.1+ | 0.6+ | |
| 2002 04 08 | 644 | 0.1+ | 0.5+ | 2006 08 24 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 104 | 0.4− | 0.4+ | |
| 2002 04 08 | 644 | 0.3+ | 0.7+ | 2006 08 24 | 704 | 0.3+ | 0.1+ | 2006 09 22 | 104 | 0.5+ | 0.3+ | |
| 2002 04 08 | 644 | 0.0 | 0.1+ | 2006 08 24 | 704 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | |
| 2002 04 10 | 704 | 0.3+ | 1.2+ | 2006 08 24 | 704 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.4− | |
| 2002 04 10 | 704 | (0.1− | 1.6+) | 2006 08 24 | 704 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− | |
| 2002 04 10 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.3− | 0.4− | |
| 2002 05 07 | 644 | 0.2− | 0.3+ | 2006 08 28 | 699 | (1.4− | 1.6−) | 2006 09 27 | 704 | (1.5− | 2.1+) | |
| 2002 05 07 | 644 | 0.3− | 0.5+ | 2006 08 28 | 699 | 0.4− | 0.3+ | 2006 09 27 | 704 | (0.7+ | 2.5+) | |
| 2002 05 07 | 644 | 0.0 | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | (2.3+ | 0.6+) | |
| 2005 04 06 | G96 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 1.1+ | 0.5+ | |
| 2005 04 06 | G96 | 0.5− | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 1.2+ | 1.0+ | |
| 2005 04 06 | G96 | 0.0 | 0.6− | 2006 08 30 | 704 | 0.3+ | 0.7+ | 2006 10 16 | G96 | 0.2+ | 0.2− | |
| 2005 04 06 | G96 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.1− | |
| 2006 05 08 | G96 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.5− | |
| 2006 05 08 | G96 | 0.4− | 0.4− | 2006 08 30 | 704 | 0.5+ | 0.6− | 2006 10 16 | G96 | 0.1+ | 0.1− | |
| 2006 05 08 | G96 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.1+ | |
| 2006 05 08 | G96 | 0.2− | 0.7− | 2006 08 30 | 704 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.2+ | |
| 2006 06 01 | 703 | 0.8− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.5+ | 0.2+ | |
| 2006 06 01 | 703 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.0 | |
| 2006 06 01 | 703 | 0.3− | 0.5+ | 2006 08 30 | 704 | 0.3− | 1.0+ | 2006 11 17 | G96 | 0.0 | 0.1+ | |
| 2006 06 01 | 703 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 1.3+ | 0.7+ | 2006 11 17 | G96 | 0.4− | 0.2− | |
| 2006 06 12 | 644 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.3− | 0.5− | 2006 11 17 | G96 | 0.2− | 0.1− | |
| 2006 06 12 | 644 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.6+ | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.3− | |
| 2006 06 12 | 644 | 0.3− | 0.4− | 2006 09 01 | 704 | 0.3− | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.1− | |
| 2006 07 01 | 703 | 0.7− | 1.0− | 2006 09 01 | 704 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.7− | |
| 2006 07 01 | 703 | 0.6− | 1.2− | 2006 09 01 | 704 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.0 | |
| 2006 07 01 | 703 | 0.0 | 0.8− | 2006 09 01 | 704 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 0.1− | 0.1− | |
| 2006 07 01 | 703 | 0.5− | 0.2− | 2006 09 12 | 704 | 0.7− | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.3+ | |
| 2006 07 31 | 941 | 0.3− | 0.5− | 2006 09 12 | 704 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.4− | 0.1− | |
| 2006 07 31 | 941 | 0.2− | 0.5− | 2006 09 12 | 704 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.3− | 0.1+ | |

**(137449)∗ 1999 TB$_{264}$ = 2004 CR$_{113}$**

Discovered 1999 Oct. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60550)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.32204 | | (2000.0) | | | |
| $n$ | 0.28995261 | $\omega$ | 254.78721 | | −0.21006962 | −0.97721193 |
| $a$ | 2.2607439 | $\Omega$ | 207.39629 | | +0.92049955 | −0.18718846 |
| $e$ | 0.0744097 | $i$ | 3.79513 | | +0.32947130 | −0.10008655 |
| $P$ | 3.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 1.4+ | 0.2− | 2002 09 14 | 644 | 0.4− | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.1− | |
| 1999 10 10 | 704 | 0.4− | 0.9− | 2002 09 14 | 644 | 0.6− | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.1− | |
| 1999 10 10 | 704 | 0.1− | 0.4− | 2002 09 14 | 644 | 0.0 | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.2− | |
| 1999 10 10 | 704 | 1.5− | 0.1+ | 2002 09 14 | 644 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1− | |
| 1999 10 15 | 691 | 0.3+ | 0.3− | 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.2+ | |
| 1999 10 15 | 691 | 0.5+ | 0.5− | 2004 01 23 | 704 | 0.6+ | 0.5− | 2006 11 17 | 704 | 1.2+ | 0.5+ | |
| 1999 10 15 | 691 | 0.4+ | 0.1+ | 2004 01 23 | 704 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.4− | 0.3+ | |
| 1999 10 20 | 691 | 1.1− | 0.3+ | 2004 01 23 | 704 | 0.8+ | 0.6− | 2006 11 17 | 704 | 0.9− | 0.3− | |
| 1999 10 20 | 691 | 0.1− | 0.5+ | 2004 01 23 | 704 | 0.6+ | 0.5+ | 2006 11 17 | H07 | 0.0 | 0.4+ | |
| 1999 10 20 | 691 | 0.0 | 0.3− | 2004 01 23 | 704 | 0.6+ | 0.0 | 2006 11 17 | H07 | 0.1+ | 0.8+ | |
| 1999 10 30 | 691 | 0.2− | 0.1+ | 2004 02 03 | 608 | 0.3+ | 0.0 | 2006 11 19 | H07 | 0.5− | 1.4− | |
| 1999 10 30 | 691 | 0.1+ | 0.2+ | 2004 02 03 | 608 | 0.9+ | 0.9+ | 2006 11 19 | H07 | 1.4− | 0.8− | |
| 1999 10 30 | 691 | 0.3− | 0.2+ | 2004 02 03 | 608 | 0.3+ | 0.2− | 2006 11 19 | H07 | 0.3− | 0.3+ | |
| 2001 03 23 | 691 | 0.4− | 0.7+ | 2004 02 13 | 699 | 0.4+ | 0.9− | 2006 11 20 | 704 | 0.5− | 0.7− | |
| 2001 03 23 | 691 | 0.2− | 0.6+ | 2004 02 13 | 699 | 0.7+ | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.1− | |
| 2001 03 23 | 691 | 0.2− | 0.5+ | 2004 02 13 | 699 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.3− | 1.1+ | |
| 2002 08 16 | 644 | 0.5+ | 0.4+ | 2004 02 13 | 699 | (2.9− | 1.6+) | 2006 11 20 | 704 | 0.3− | 0.8+ | |
| 2002 08 16 | 644 | 0.2+ | 0.3+ | 2004 02 17 | 704 | 1.1+ | 0.5+ | 2006 11 20 | H07 | 0.2+ | 0.6+ | |
| 2002 08 16 | 644 | 0.0 | 0.5+ | 2004 02 17 | 704 | (2.2+ | 0.6+) | 2006 11 20 | H07 | 0.2− | 0.1− | |
| 2002 08 17 | 608 | 0.4+ | 0.2+ | 2004 02 17 | 704 | (0.3+ | 2.1+) | 2006 11 20 | H07 | 0.6+ | 0.3+ | |
| 2002 08 17 | 608 | 0.5+ | 0.4+ | 2004 02 17 | 704 | 0.6− | 1.0+ | 2006 11 20 | H07 | 0.2− | 0.4+ | |
| 2002 08 17 | 608 | 0.1+ | 0.0 | 2004 02 26 | 704 | (2.0− | 1.4−) | 2006 11 29 | 704 | 0.4− | 0.1− | |
| 2002 08 26 | 644 | 0.4+ | 1.1+ | 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.6+ | |
| 2002 08 26 | 644 | 0.5+ | 0.9+ | 2004 02 26 | 704 | 1.1+ | 0.2− | 2006 11 29 | 704 | 1.9− | 0.6+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.9+ | 0.1+ | 2004 02 26 | 704 | 0.3− | 1.2+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.0 | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2002 08 28 | 644 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 12 01 | G96 | 0.6+ | 0.2− |
| 2002 09 14 | 644 | 0.4− | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.0 | | | | |

**(137450)∗ 1999 TG$_{273}$**

Discovered 1999 Oct. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.09285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27945806 | $\omega$ | 118.82953 | | +0.14388465 | −0.94970761 | |
| $a$ | 2.3169943 | $\Omega$ | 319.69547 | | +0.68975756 | +0.29777534 | |
| $e$ | 0.1409669 | $i$ | 25.46540 | | +0.70959969 | −0.09687778 | |
| $P$ | 3.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 22 | 704 | 1.3+ | 0.7+ | 2003 11 03 | 645 | 0.1− | 0.0 | 2006 09 01 | 704 | 1.2+ | 0.8+ |
| 1999 07 22 | 704 | 0.1+ | 1.2− | 2003 11 03 | 645 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.6− | 0.3− |
| 1999 07 22 | 704 | 0.8+ | 0.1− | 2003 11 05 | 704 | 0.4− | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.0 |
| 1999 07 22 | 704 | 0.9+ | 0.6− | 2003 11 05 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.7− | 0.0 |
| 1999 07 22 | 704 | 0.3+ | 1.1− | 2003 11 05 | 704 | (0.2− | 2.1+) | 2006 09 16 | 703 | 0.8− | 0.7− |
| 1999 09 06 | 703 | 0.5− | 0.6+ | 2004 01 17 | 830 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.5+ | 0.1− |
| 1999 09 06 | 703 | 0.5− | 0.1− | 2004 01 17 | 830 | 0.3− | 0.1+ | 2006 09 21 | 699 | 0.4− | 0.2− |
| 1999 09 06 | 703 | 0.3− | 0.2− | 2004 01 17 | 830 | 0.1+ | 0.4− | 2006 09 21 | 699 | 0.0 | 0.2+ |
| 1999 09 06 | 703 | (3.9+ | 0.9−) | 2004 02 03 | 704 | 0.7+ | 0.5− | 2006 09 21 | 699 | 0.4− | 0.1− |
| 1999 09 13 | 703 | 0.5− | 0.4− | 2004 02 03 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.3− |
| 1999 09 13 | 703 | 0.5− | 0.4− | 2004 02 03 | 704 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.0 |
| 1999 09 13 | 703 | 0.4− | 0.1+ | 2004 02 03 | 704 | 1.4+ | 0.4+ | 2006 09 28 | 703 | 0.3− | 0.0 |
| 1999 09 13 | 703 | 0.3− | 0.1− | 2004 02 03 | 704 | 1.1+ | 0.3+ | 2006 09 28 | 703 | 0.2+ | 0.1− |
| 1999 10 05 | 704 | 1.0+ | 0.9− | 2004 02 10 | 704 | 0.5− | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 1999 10 05 | 704 | 0.6+ | 0.5− | 2004 02 10 | 704 | 0.3+ | 0.8+ | 2006 09 29 | 704 | 0.5+ | 0.0 |
| 1999 10 05 | 704 | 0.4+ | 0.7− | 2004 02 10 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.6+ | 0.1+ |
| 1999 10 05 | 704 | 1.6+ | 0.2− | 2004 03 20 | 704 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.3+ | 0.6+ |
| 1999 10 13 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 703 | (2.3+ | 1.8+) |
| 1999 10 13 | 704 | 0.4+ | 0.1+ | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 10 20 | 703 | 0.5− | 0.5− |
| 1999 10 13 | 704 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 0.9− | 1.0+ | 2006 10 20 | 703 | 0.8− | 0.0 |
| 1999 10 13 | 704 | 0.2+ | 0.3− | 2006 08 25 | 704 | 0.2− | 0.6+ | 2006 11 15 | 185 | 0.8− | 0.1+ |
| 1999 10 13 | 704 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.3− | 0.3+ | 2006 11 15 | 185 | 0.6− | 0.2+ |
| 1999 11 03 | 704 | 0.1− | 0.6+ | 2006 08 25 | 704 | 0.5− | 0.4+ | 2006 11 15 | 185 | 1.0− | 0.6+ |
| 1999 11 03 | 704 | 0.1− | 0.2− | 2006 08 29 | 699 | 0.4− | 0.2+ | 2006 11 15 | 185 | 0.2− | 0.1+ |
| 1999 11 03 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 699 | 0.7− | 0.4+ | 2006 11 23 | 703 | 0.1− | 0.8− |
| 1999 11 03 | 704 | 0.2+ | 0.0 | 2006 08 29 | 699 | 0.3− | 0.2+ | 2006 11 23 | 703 | 0.4− | 0.3− |
| 2002 07 27 | 644 | 0.0 | 0.2− | 2006 09 01 | 704 | 1.0+ | 0.7+ | 2006 11 23 | 703 | 0.8− | 0.3− |
| 2002 07 27 | 644 | 0.2− | 0.5+ | 2006 09 01 | 704 | 0.8+ | 0.9+ | 2006 11 23 | 703 | 0.1− | 0.7− |
| 2002 07 27 | 644 | 0.1− | 0.4− | 2006 09 01 | 704 | 1.2+ | 1.1+ | | | | |

**(137451)∗ 1999 TD$_{280}$**

Discovered 1999 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.98603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28365161 | $\omega$ | 311.21701 | | +0.99665813 | +0.07967109 | |
| $a$ | 2.2941011 | $\Omega$ | 44.22216 | | −0.06505541 | +0.90765634 | |
| $e$ | 0.1148458 | $i$ | 1.48135 | | −0.04939996 | +0.41208311 | |
| $P$ | 3.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 1.0+ | 1.0− | 2005 05 08 | G96 | 0.6− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 1999 09 07 | 704 | 0.1− | 0.3− | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 1.2+ | 1.4− | 2005 05 08 | G96 | (2.2− | 1.1−) | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1999 10 07 | 703 | 0.2− | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1999 10 07 | 703 | 0.1− | 0.6+ | 2006 08 18 | 644 | 0.5− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 1999 10 07 | 703 | 0.4− | 0.4+ | 2006 08 18 | 644 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 1999 10 07 | 703 | 0.1+ | 0.9+ | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.3+ |
| 1999 10 07 | 704 | 0.7− | 1.8− | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.1+ |
| 1999 10 07 | 704 | 0.1− | 0.7− | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.9− | 0.3+ |
| 1999 10 07 | 704 | 0.9+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.3+ |
| 1999 10 15 | 704 | 0.1− | 0.9− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 1999 10 15 | 704 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 1999 10 15 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 1.0− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 1999 10 15 | 704 | 0.4+ | 0.7− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.4+ |
| 2003 12 18 | 704 | 0.1+ | 1.4+ | 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2003 12 18 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 703 | 1.2− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2003 12 18 | 704 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.8− | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2005 03 10 | G96 | 0.8− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2005 03 10 | G96 | 1.0− | 0.6+ | 2006 09 17 | 704 | 0.7+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 17 | 704 | 1.4+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2005 04 02 | G96 | 0.4− | 0.2− | 2006 09 17 | 704 | 1.0− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2006 09 17 | 704 | 1.1+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2005 04 10 | 695 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2005 04 10 | 695 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2005 04 12 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 691 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2005 04 12 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.2+ |
| 2005 04 12 | 691 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 11 06 | 644 | 0.4+ | 0.0 |
| 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 0.6+ | 1.2− | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.2− | 2006 11 14 | G96 | 0.6− | 0.4− |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.3− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2005 04 17 | 691 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.9− | 0.2− | | | | |
| 2005 05 08 | G96 | 0.8− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.4+ | | | | |

**(137452)∗ 1999 TW$_{281}$ = 2001 BJ$_{19}$**

Discovered 1999 Oct. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 60550)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.70363 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24209682 | $\omega$ | 217.49274 | | +0.76556991 | +0.62605551 | |
| $a$ | 2.5496271 | $\Omega$ | 103.08351 | | −0.54728695 | +0.75482284 | |
| $e$ | 0.0701261 | $i$ | 8.75031 | | −0.33820069 | +0.19569613 | |
| $P$ | 4.07 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 03 | 691 | 0.3− | 0.0 | 2002 05 08 | 704 | 2.1− | 0.7− | 2004 12 16 | 599 | 0.0 | 0.0 |
| 1995 09 03 | 691 | 0.4− | 0.1+ | 2002 05 08 | 704 | 1.2− | 0.5+ | 2004 12 16 | 599 | 0.2− | 0.4+ |
| 1995 09 03 | 691 | 0.2− | 0.1+ | 2002 05 08 | 704 | 0.8− | 1.0− | 2004 12 18 | G96 | 0.3− | 0.0 |
| 1997 01 10 | 691 | 0.1+ | 0.2− | 2002 05 18 | 704 | 1.6+ | 1.1+ | 2004 12 18 | G96 | 0.2− | 0.2+ |
| 1997 01 10 | 691 | 0.2+ | 0.3+ | 2002 05 18 | 704 | 1.3+ | 0.2+ | 2004 12 18 | G96 | 0.4+ | 0.5+ |
| 1997 01 10 | 691 | 0.3+ | 0.2+ | 2002 05 18 | 704 | 0.8+ | 0.9+ | 2004 12 18 | G96 | 0.7− | 0.3+ |
| 1999 10 08 | 704 | 0.1− | 1.3+ | 2002 05 18 | 704 | 0.8+ | 0.2+ | 2005 01 15 | 704 | 0.3− | 0.8+ |
| 1999 10 08 | 704 | 0.3− | 0.4+ | 2002 05 18 | 704 | 1.5+ | 0.5+ | 2005 01 15 | 704 | 0.2− | 0.2− |
| 1999 10 08 | 704 | 0.0 | 0.6+ | 2003 09 01 | 704 | 0.3− | 0.2+ | 2005 01 15 | 704 | 0.2− | 0.1+ |
| 1999 10 16 | 704 | 0.8− | 0.3+ | 2003 09 01 | 704 | 0.2− | 0.4+ | 2005 01 17 | 704 | 0.3− | 1.1− |
| 1999 10 16 | 704 | 0.2+ | 0.7+ | 2003 09 01 | 704 | 0.6− | 0.5+ | 2005 01 17 | 704 | 0.5+ | 0.2− |
| 1999 10 16 | 704 | 0.1− | 1.4+ | 2003 09 19 | 699 | 0.2+ | 0.5+ | 2005 01 17 | 704 | 0.2+ | 0.9− |
| 1999 10 16 | 704 | 0.2− | 0.2+ | 2003 09 19 | 699 | 0.3+ | 0.0 | 2005 01 17 | 704 | 0.4+ | 0.8− |
| 1999 10 16 | 704 | 0.2− | 0.4− | 2003 09 19 | 699 | 0.1− | 0.1− | 2005 02 03 | 704 | 1.1− | 0.4+ |
| 2001 01 19 | 704 | 0.5− | 0.3+ | 2003 09 19 | 699 | 1.6+ | 0.0 | 2005 02 03 | 704 | 0.7− | 0.3+ |
| 2001 01 19 | 704 | 1.0+ | 0.1+ | 2003 09 24 | 644 | 0.0 | 0.0 | 2005 02 03 | 704 | 0.5+ | 0.1+ |
| 2001 01 19 | 704 | 0.8− | 1.4+ | 2003 09 24 | 644 | 0.0 | 0.2− | 2005 02 03 | 704 | 0.3+ | 0.1+ |
| 2001 01 19 | 704 | 0.1+ | 0.9+ | 2003 09 24 | 644 | 0.0 | 0.1+ | 2006 06 01 | 691 | 0.3− | 0.7+ |
| 2001 01 21 | 704 | 0.4+ | 1.1+ | 2003 10 17 | 644 | 0.1+ | 0.3+ | 2006 06 01 | 691 | 0.1+ | 0.7+ |
| 2001 01 21 | 704 | 0.1+ | 0.8+ | 2003 10 17 | 644 | 0.1+ | 0.2+ | 2006 06 01 | 691 | 0.2− | 0.6+ |
| 2001 01 21 | 704 | 0.3− | 1.2− | 2003 10 17 | 644 | 0.1− | 0.3+ | 2006 06 17 | A50 | 1.7+ | 1.1− |
| 2001 01 21 | 704 | 1.2+ | 0.2− | 2004 12 15 | 599 | 0.1+ | 0.4+ | 2006 06 17 | A50 | 1.5+ | 0.8− |
| 2002 05 08 | 704 | 1.3− | 0.0 | 2004 12 16 | 599 | 0.2− | 0.1− | | | | |

**(137453)∗ 1999 TL$_{283}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 13.85906 | | (2000.0) | | |
| $n$ | 0.28354356 | $\omega$ | 188.69881 | +0.98874826 | −0.14958894 |
| $a$ | 2.2946838 | $\Omega$ | 179.90382 | +0.14251907 | +0.94167888 |
| $e$ | 0.1404160 | $i$ | 5.69059 | +0.04544439 | +0.30143662 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.3− | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 11 01 | 703 | 0.8− | 0.4− |
| 1999 10 09 | 704 | 0.3− | 1.1+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.8+ | 0.2− |
| 1999 10 09 | 704 | 0.0 | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 11 01 | 703 | 1.1+ | 0.6− |
| 1999 10 09 | 704 | 0.3− | 0.1− | 2006 07 21 | G96 | 0.5− | 0.3− | 2006 11 01 | 703 | 0.6− | 1.3− |
| 1999 10 09 | 704 | 1.0− | 0.8+ | 2006 09 30 | 703 | 0.9− | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 1999 10 19 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.2+ |
| 1999 10 19 | 704 | 0.9+ | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.5+ |
| 1999 10 19 | 704 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.9− | 0.1− | 2006 11 13 | 703 | 0.3+ | 0.2+ |
| 1999 10 19 | 704 | 0.6+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 1999 10 19 | 704 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.4− | 2006 11 14 | 704 | 0.2+ | 0.6+ |
| 1999 10 29 | 703 | (2.6− | 1.1−) | 2006 10 02 | G96 | 0.4− | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.8+ |
| 1999 10 29 | 703 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.4− | 2006 11 14 | 704 | 0.7+ | 0.4+ |
| 1999 10 29 | 703 | 0.1− | 1.5+ | 2006 10 03 | 704 | 0.3+ | 1.4+ | 2006 11 17 | 704 | 0.8+ | 1.0+ |
| 1999 10 29 | 703 | (2.5− | 0.4−) | 2006 10 03 | 704 | 0.9+ | 0.5+ | 2006 11 17 | 704 | 0.4+ | 1.9− |
| 2001 03 26 | 695 | 0.0 | 0.4+ | 2006 10 03 | 704 | 0.4− | 0.6− | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2001 03 26 | 695 | 0.3+ | 0.4+ | 2006 10 03 | 704 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.5+ | 2006 11 19 | 703 | (3.2− | 0.1−) |
| 2002 07 03 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.6− | 1.1+ | 2006 11 19 | 703 | 1.3− | 1.0+ |
| 2002 07 03 | 644 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.2+ | 2.1+ |
| 2002 07 03 | 644 | 0.2− | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 19 | 703 | 1.5+ | 2.0+ |
| 2004 03 18 | 645 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.9− | 0.3− |
| 2005 04 04 | G96 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2005 04 04 | G96 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.7− | 0.2− |
| 2005 04 04 | G96 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2005 04 04 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 704 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2005 05 08 | 691 | 0.2+ | 0.7+ | 2006 10 22 | 704 | 0.1+ | 0.7− | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2005 05 08 | 691 | 0.3+ | 0.5+ | 2006 10 22 | 704 | 0.9− | 0.7− | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2005 05 08 | 691 | 0.6+ | 0.9+ | 2006 10 22 | 704 | (2.3− | 0.1+) | 2006 11 23 | G96 | 0.0 | 0.5− |

**(137454)∗ 1999 TT$_{283}$ = 2002 KA$_5$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31291)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 13.99367 | | (2000.0) | | |
| $n$ | 0.27500983 | $\omega$ | 270.55547 | +0.85400968 | +0.50889480 |
| $a$ | 2.3419120 | $\Omega$ | 58.85871 | −0.41278463 | +0.78930689 |
| $e$ | 0.2629956 | $i$ | 7.25835 | −0.31666436 | +0.34354143 |
| $P$ | 3.58 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.0 | 0.7− | 2002 05 21 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.0 |
| 1992 11 28 | 691 | 0.1+ | 0.7− | 2002 06 03 | 644 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.3− | 0.6− |
| 1992 11 28 | 691 | 0.4+ | 0.8− | 2002 06 03 | 644 | 0.2− | 0.5+ | 2006 09 21 | 699 | 0.5− | 0.4+ |
| 1992 11 28 | 691 | 0.4− | 0.1+ | 2002 06 03 | 644 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.1+ |
| 1992 11 28 | 691 | 0.1+ | 0.3+ | 2002 06 04 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.2− |
| 1999 10 09 | 704 | 0.3+ | 0.4+ | 2002 06 04 | 644 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.1+ |
| 1999 10 09 | 704 | 0.1+ | 0.2+ | 2002 06 04 | 644 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.1+ |
| 1999 10 09 | 704 | 0.0 | 0.8+ | 2002 06 05 | 699 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.3+ | 0.2− |
| 1999 10 09 | 704 | 0.4+ | 0.2+ | 2002 06 05 | 699 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 1999 10 09 | 704 | 0.5− | 0.0 | 2002 06 05 | 699 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.2− |
| 1999 10 19 | 704 | 0.3− | 0.2+ | 2002 06 05 | 699 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 0.0 | 0.1− |
| 1999 10 19 | 704 | 0.1+ | 0.1+ | 2002 06 08 | 704 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.4− | 0.3− |
| 1999 10 19 | 704 | 0.7− | 0.8+ | 2002 06 08 | 704 | 0.4+ | 0.8− | 2006 09 26 | 703 | 0.1+ | 0.7− |
| 1999 10 19 | 704 | 0.4− | 0.4+ | 2002 06 08 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.2− |
| 1999 10 19 | 704 | 0.0 | 0.8+ | 2002 06 08 | 704 | 0.6− | 1.0− | 2006 09 26 | 703 | 0.2+ | 0.5− |
| 1999 10 29 | 703 | 0.5− | 0.4+ | 2002 06 08 | 704 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.5+ | 0.0 |
| 1999 10 29 | 703 | 0.3+ | 1.0+ | 2002 06 10 | 644 | 0.1+ | 0.9+ | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 1999 10 29 | 703 | (3.4− | 1.9−) | 2002 06 10 | 644 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 1999 10 29 | 703 | 1.3+ | 0.8− | 2002 06 10 | 644 | 0.1+ | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 1999 11 05 | 704 | 0.0 | 0.3+ | 2003 12 28 | 704 | (0.0 | 2.6+) | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 1999 11 05 | 704 | 0.9− | 0.2+ | 2003 12 28 | 704 | 0.2− | 1.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 1999 11 05 | 704 | 0.5− | 1.1+ | 2003 12 28 | 704 | 0.4+ | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 1999 11 05 | 704 | 0.6− | 0.9+ | 2006 07 31 | E12 | 0.5+ | 0.4− | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 1999 11 05 | 704 | 0.5+ | 0.9+ | 2006 07 31 | E12 | 0.1− | 0.3− | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2002 05 16 | 704 | 0.4− | 0.5− | 2006 07 31 | E12 | 0.2+ | 0.3− | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2002 05 16 | 704 | 0.7− | 0.5− | 2006 07 31 | E12 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.2− | 0.2+ |
| 2002 05 16 | 704 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.1+ | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2002 05 16 | 704 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.5− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2002 05 19 | 644 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.8+ | 0.1− | 2006 10 28 | 703 | 1.2− | 0.2− |
| 2002 05 19 | 644 | 0.1+ | 0.5+ | 2006 08 30 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2002 05 19 | 644 | 0.0 | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.5+ | 1.1− |
| 2002 05 21 | 704 | 0.0 | 0.6− | 2006 09 20 | 703 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2002 05 21 | 704 | 0.2− | 0.1− | 2006 09 20 | 703 | 0.0 | 0.1− | | | | |
| 2002 05 21 | 704 | 0.3− | 0.1− | 2006 09 20 | 703 | 0.4+ | 0.3+ | | | | |

**(137455)∗ 1999 TE$_{285}$ = 2002 PB$_{125}$**

Discovered 1999 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33117)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 312.99818 | | (2000.0) | | |
| $n$ | 0.28133307 | $\omega$ | 4.42862 | +0.08373893 | −0.98848630 |
| $a$ | 2.3066880 | $\Omega$ | 80.80373 | +0.91029355 | +0.02442892 |
| $e$ | 0.1046499 | $i$ | 7.33481 | +0.40540528 | +0.14932539 |
| $P$ | 3.50 | $H$ | 16.4 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1+ | 0.3+ | 2004 01 18 | 644 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.6+ | 0.9+ | 2004 01 18 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1999 10 09 | 704 | 1.3− | 0.0 | 2004 01 18 | 644 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 0.3− | 0.7− | 2004 01 18 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1999 10 19 | 704 | 1.0+ | 0.4+ | 2004 01 18 | 644 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1999 10 19 | 704 | 1.1+ | 0.6− | 2004 01 18 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 10 19 | 704 | 0.3+ | 0.3− | 2004 01 30 | 704 | 0.9+ | 0.3− | 2006 11 13 | 703 | 0.4+ | 0.8+ |
| 1999 10 19 | 704 | 1.2+ | 0.1− | 2004 01 30 | 704 | 0.8+ | 0.1− | 2006 11 13 | 703 | 0.3+ | 0.9+ |
| 1999 10 19 | 704 | 0.5+ | 0.2+ | 2004 01 30 | 704 | 1.4+ | 0.1− | 2006 11 13 | 703 | 0.2− | 0.3+ |
| 1999 11 05 | 704 | 0.9− | 0.5− | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.2+ |
| 1999 11 05 | 704 | 0.0 | 0.3− | 2004 02 14 | 703 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 1999 11 05 | 704 | 0.3+ | 0.0 | 2004 02 14 | 703 | 0.3− | 0.2− | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 1999 11 05 | 704 | 1.8− | 0.6− | 2004 02 14 | 703 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 1999 11 17 | 703 | 0.7+ | 0.3+ | 2004 02 14 | 703 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 1999 11 17 | 703 | 0.5− | 0.2− | 2004 02 15 | 704 | 0.1+ | 0.9+ | 2006 11 14 | 704 | 0.7− | 0.4+ |
| 1999 11 17 | 703 | 0.1+ | 0.5+ | 2004 02 15 | 704 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.7− | 0.5+ |
| 1999 11 17 | 703 | 0.7− | 0.2+ | 2004 02 15 | 704 | 0.6− | 0.6+ | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 2001 05 24 | 645 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.6− | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.4− | 0.0 | 2006 11 17 | 704 | (1.1+ | 1.8+) |
| 2002 08 13 | 644 | 0.3− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.1+ |
| 2002 08 13 | 644 | 0.6− | 0.3+ | 2004 02 16 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.1− | 0.7+ |
| 2002 08 13 | 644 | 0.3− | 0.4+ | 2004 02 16 | 691 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.8+ | 0.2+ |
| 2002 08 16 | 608 | 0.0 | 0.1− | 2004 02 18 | 644 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.9− | 0.4− |
| 2002 08 16 | 608 | 0.6+ | 0.4− | 2004 02 18 | 644 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.5+ |
| 2002 08 16 | 608 | 0.2− | 0.3− | 2004 02 18 | 644 | 0.0 | 0.7+ | 2006 11 19 | 703 | 0.4− | 0.2+ |
| 2003 12 17 | 644 | 0.3+ | 0.1+ | 2004 02 22 | 703 | 0.3− | 1.1+ | 2006 11 19 | 703 | 0.2− | 0.2+ |
| 2003 12 17 | 644 | 0.1+ | 0.1+ | 2004 02 22 | 703 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.6− |
| 2003 12 17 | 644 | 0.1+ | 0.4+ | 2004 02 22 | 703 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.6− |
| 2003 12 19 | 704 | 0.3− | 0.6− | 2004 02 22 | 703 | 0.6− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.1+ | 0.4+ | 2004 03 17 | 645 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2003 12 19 | 704 | 0.6+ | 0.3− | 2004 03 17 | 645 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.5− |
| 2003 12 19 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.7− | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2003 12 19 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.5− |
| 2003 12 28 | 704 | 0.3− | 0.8− | 2006 10 16 | 703 | 0.1+ | 0.7− | 2006 11 20 | 704 | 0.3− | 0.6− |
| 2003 12 28 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.8− | 2006 11 20 | 704 | 0.5− | 0.1− |
| 2003 12 28 | 704 | 0.1− | 0.5+ | 2006 11 01 | 703 | 0.9+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 1.1− |
| 2003 12 28 | 704 | 0.9+ | 0.4+ | 2006 11 01 | 703 | 1.1+ | 1.0+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2003 12 28 | 704 | 0.6+ | 0.3− | 2006 11 01 | 703 | 1.2+ | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2004 01 13 | 699 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.7+ | 1.3+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2004 01 13 | 699 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2004 01 13 | 699 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.1+ | | | | |
| 2004 01 13 | 699 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | | | | |

**(137456)∗ 1999 TF$_{288}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.10447 | | (2000.0) | | | |
| $n$ | 0.27753685 | $\omega$ | 14.62902 | | −0.28175309 | −0.95919387 |
| $a$ | 2.3276747 | $\Omega$ | 91.74009 | | +0.87791153 | −0.26769194 |
| $e$ | 0.1924202 | $i$ | 1.35941 | | +0.38715184 | −0.09103921 |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.0 | 0.3− | 2004 01 22 | 704 | 0.0 | 0.5+ | 2004 03 01 | 691 | 0.1+ | 0.0 |
| 1995 07 22 | 691 | 0.1− | 0.5− | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2004 03 01 | 691 | 0.0 | 0.0 |
| 1995 07 22 | 691 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.1− | 0.3+ | 2004 03 10 | 644 | 0.0 | 0.2+ |
| 1995 07 27 | 691 | 0.2+ | 0.8+ | 2004 01 30 | 704 | 1.5+ | 0.4− | 2004 03 10 | 644 | 0.2− | 0.0 |
| 1995 07 27 | 691 | 0.4+ | 1.2+ | 2004 01 30 | 704 | 0.4− | 0.7− | 2004 03 10 | 644 | 0.0 | 0.1+ |
| 1995 07 27 | 691 | 0.4+ | 0.5+ | 2004 01 30 | 704 | 1.5+ | 0.7− | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 1995 08 01 | 691 | 0.5− | 0.4+ | 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 09 27 | G96 | 1.1− | 0.2− |
| 1995 08 01 | 691 | 0.5− | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 09 27 | G96 | 0.8− | 0.1+ |
| 1995 08 01 | 691 | 0.3− | 0.2+ | 2004 01 31 | 704 | 0.5− | 1.1+ | 2006 09 27 | G96 | 0.0 | 0.4+ |
| 1999 10 10 | 704 | 0.6− | 0.2+ | 2004 01 31 | 704 | 0.3+ | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1999 10 10 | 704 | 0.4− | 0.1+ | 2004 01 31 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 1999 10 10 | 704 | 0.6+ | 0.4+ | 2004 01 31 | 704 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 1999 10 10 | 704 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.4+ |
| 1999 10 10 | 704 | 0.3− | 0.7− | 2004 02 10 | 703 | 0.5− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 1999 10 20 | 704 | 0.2− | 0.2+ | 2004 02 10 | 703 | 0.0 | 0.5+ | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 1999 10 20 | 704 | 0.2+ | 0.7− | 2004 02 10 | 703 | 0.6− | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.4+ |
| 1999 10 20 | 704 | 0.4− | 1.6− | 2004 02 10 | 703 | 0.2+ | 1.1+ | 2006 10 15 | 703 | 0.1+ | 0.4− |
| 1999 10 30 | 691 | 0.0 | 0.8− | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.2+ |
| 1999 10 30 | 691 | 0.5+ | 0.1− | 2004 02 12 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.0 | 1.0+ |
| 1999 10 30 | 691 | 0.3+ | 0.9− | 2004 02 12 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 1999 11 12 | 704 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.0 | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 1999 11 12 | 704 | 0.9+ | 0.4− | 2004 02 16 | 704 | 0.9+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.1− | 0.8+ | 2004 02 16 | 704 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.7+ | 0.9+ |
| 1999 11 12 | 704 | 0.0 | 0.4+ | 2004 02 16 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 1999 11 12 | 704 | 1.2− | 1.2+ | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.7+ |
| 2001 04 24 | 291 | 0.3− | 0.1+ | 2004 02 19 | 608 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.8− | 0.3− |
| 2001 04 24 | 291 | 0.2+ | 0.1+ | 2004 02 19 | 608 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2001 04 24 | 291 | 0.0 | 0.1+ | 2004 02 19 | 608 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2003 12 22 | 704 | 0.5+ | 0.1− | 2004 02 23 | 704 | 0.4+ | 0.2− | 2006 10 22 | G96 | 0.4− | 0.1− |
| 2003 12 22 | 704 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.4+ | 0.5− | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2003 12 22 | 704 | 0.1+ | 1.3+ | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.5+ | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.6+ | 0.3− |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2004 01 22 | 704 | 0.1− | 0.0 | 2004 03 01 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− |

**(137457)∗ 1999 TC$_{289}$ = 2003 YW$_{128}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68576)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.19370 | | (2000.0) | | | |
| $n$ | 0.28695624 | $\omega$ | 66.46637 | | +0.43901939 | −0.89845922 |
| $a$ | 2.2764543 | $\Omega$ | 357.47034 | | +0.76955962 | +0.37931942 |
| $e$ | 0.0527031 | $i$ | 7.47954 | | +0.46372402 | +0.22110589 |
| $P$ | 3.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1− | 0.1− | 2002 08 30 | 644 | 0.2− | 0.4+ | 2006 08 29 | 703 | (1.7− | 0.5−) |
| 1999 10 10 | 704 | 0.5+ | 0.5− | 2002 08 30 | 644 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.4− |
| 1999 10 10 | 704 | 0.1− | 0.5− | 2002 08 30 | 644 | 0.2+ | 0.0 | 2006 10 20 | A50 | 0.4− | 0.5+ |
| 1999 10 10 | 704 | 0.6+ | 0.0 | 2003 12 21 | 645 | 0.2− | 0.1− | 2006 10 20 | A50 | 0.5+ | 0.2+ |
| 1999 10 10 | 704 | 0.3+ | 0.4− | 2003 12 21 | 645 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 1999 10 21 | 704 | 1.1+ | 0.2− | 2003 12 27 | 704 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 1999 10 21 | 704 | 1.0+ | 0.1− | 2003 12 27 | 704 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 1999 10 21 | 704 | 0.7− | 0.2− | 2003 12 27 | 704 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.1− | 0.1− |
| 1999 10 21 | 704 | 0.5− | 0.0 | 2003 12 27 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.4+ |
| 1999 11 04 | 704 | 0.4+ | 0.4+ | 2003 12 27 | 704 | 1.4+ | 0.8+ | 2006 11 14 | 703 | 0.1+ | 0.8+ |
| 1999 11 04 | 704 | 0.4− | 1.0− | 2003 12 29 | 704 | 1.5+ | 0.8+ | 2006 11 14 | 703 | 0.3− | 0.4− |
| 1999 11 04 | 704 | 0.4− | 0.4− | 2003 12 29 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 1999 11 04 | 704 | 0.7− | 0.9+ | 2003 12 29 | 704 | 1.3+ | 0.6+ | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2001 03 23 | 699 | 0.3+ | 0.6+ | 2003 12 29 | 704 | 0.7+ | 0.6+ | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2001 03 23 | 699 | 0.9− | 1.2− | 2003 12 29 | 704 | 0.3+ | 0.0 | 2006 11 22 | 703 | 0.6− | 0.6+ |
| 2001 03 23 | 699 | (0.4− | 1.9+) | 2004 02 14 | 704 | 1.0+ | 0.9+ | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2001 03 23 | 699 | 0.6+ | 0.3+ | 2004 02 14 | 704 | 0.3+ | 1.3+ | 2006 11 22 | 703 | 0.3− | 0.3− |
| 2002 08 11 | 644 | 0.3− | 0.5+ | 2004 02 14 | 704 | 0.5+ | 1.3+ | 2006 11 22 | 703 | 1.1− | 0.5+ |
| 2002 08 11 | 644 | 0.4− | 0.5+ | 2006 08 29 | 703 | (2.9+ | 2.0−) | | | | |
| 2002 08 11 | 644 | 0.7− | 0.5+ | 2006 08 29 | 703 | 0.0 | 0.0 | | | | |

**(137458)∗ 1999 TD$_{290}$ = 2002 QW$_{11}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34796)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 296.09322 | | (2000.0) | | | |
| $n$ | 0.27904433 | $\omega$ | 277.24321 | | −0.11891412 | −0.99290428 |
| $a$ | 2.3192839 | $\Omega$ | 179.58414 | | +0.94590314 | −0.11350747 |
| $e$ | 0.1100212 | $i$ | 5.74466 | | +0.30187196 | −0.03545629 |
| $P$ | 3.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2004 01 23 | 704 | 1.0+ | 0.3+ | 2006 09 15 | 644 | 0.2+ | 0.0 |
| 1999 10 10 | 704 | 0.3− | 0.7− | 2004 01 23 | 704 | 0.8+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 1999 10 10 | 704 | 0.9+ | 0.1− | 2004 01 29 | 704 | 0.9+ | 0.3− | 2006 09 19 | 691 | 0.1− | 0.2− |
| 1999 10 10 | 704 | 0.7− | 0.9− | 2004 01 29 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.2− |
| 1999 10 20 | 704 | 1.0− | 0.2+ | 2004 01 29 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.4− | 0.1− |
| 1999 10 20 | 704 | 0.7− | 0.1+ | 2004 01 29 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.0 | 0.3+ |
| 1999 10 20 | 704 | 1.3− | 0.4− | 2004 01 29 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.6− |
| 1999 11 05 | 704 | 0.2− | 0.4− | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.6+ | 0.0 |
| 1999 11 05 | 704 | 0.2+ | 0.6+ | 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.4− |
| 1999 11 05 | 704 | 0.5+ | 0.4− | 2004 02 11 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.8+ | 0.8− |
| 1999 11 05 | 704 | 1.1+ | 1.1+ | 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 1999 12 05 | 704 | 0.3+ | 0.7+ | 2004 02 23 | 704 | 0.8− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.6− |
| 1999 12 05 | 704 | 0.6+ | 1.0+ | 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 1999 12 05 | 704 | 0.7− | 0.4+ | 2004 02 23 | 704 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 08 12 | 704 | 0.3− | 1.0+ | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 08 12 | 704 | (0.1+ | 2.1+) | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2002 08 12 | 704 | (1.0+ | 1.7+) | 2004 02 26 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.9+ |
| 2002 08 12 | 704 | (0.1− | 2.3+) | 2004 02 26 | 704 | 0.7− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2002 08 12 | 704 | 0.5+ | 1.2+ | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.3− | 1.0− |
| 2002 08 17 | 644 | 0.4+ | 0.3+ | 2004 03 08 | 644 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 08 17 | 644 | 0.1− | 0.5+ | 2004 03 08 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2002 08 17 | 644 | 0.3− | 0.6+ | 2004 03 08 | 644 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 08 26 | 644 | 0.0 | 0.6+ | 2004 03 10 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 08 26 | 644 | 0.1+ | 0.8+ | 2004 03 10 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.2− | 0.5+ | 2004 03 10 | 644 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 08 27 | 644 | 0.0 | 0.3+ | 2004 03 16 | 699 | 0.4− | 1.1− | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2002 08 27 | 644 | 0.4+ | 0.8+ | 2004 03 16 | 699 | 0.9− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2002 08 27 | 644 | 0.3− | 0.8+ | 2004 03 16 | 699 | 0.8− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2002 09 06 | 704 | 0.6− | 1.2+ | 2004 03 16 | 699 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2002 09 06 | 704 | 0.4− | 0.9+ | 2004 03 18 | 704 | 0.5− | 0.3− | 2006 10 22 | 704 | (2.0+ | 0.7+) |
| 2002 09 06 | 704 | 0.3− | 1.3+ | 2004 03 18 | 704 | 0.0 | 0.3− | 2006 10 22 | 704 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.7− | 0.8+ | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 704 | 0.2+ | 0.3+ |
| 2002 09 14 | 644 | 0.5− | 0.7+ | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 10 22 | 704 | 1.3+ | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 704 | 0.7+ | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.8+ | 2004 03 20 | 704 | 0.4− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2004 01 06 | 608 | (0.6+ | 1.7+) | 2004 03 20 | 704 | (2.6− | 0.1+) | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2004 01 06 | 608 | 0.2+ | 1.3+ | 2004 03 20 | 704 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2004 01 06 | 608 | (0.6+ | 2.3+) | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2004 01 17 | 644 | 0.3− | 0.6+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.7− | 0.9+ |
| 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 07 21 | G96 | 0.4− | 0.3− | 2006 11 14 | 704 | 1.9+ | 1.1+ |
| 2004 01 17 | 644 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 2004 01 23 | 704 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 11 14 | 704 | 1.8− | 0.3+ |
| 2004 01 23 | 704 | 0.9+ | 0.4+ | 2006 09 15 | 644 | 0.1+ | 0.2+ | | | | |
| 2004 01 23 | 704 | 1.2+ | 0.4+ | 2006 09 15 | 644 | 0.1+ | 0.1+ | | | | |

**(137459)∗ 1999 TH$_{293}$ = 2002 ND$_{50}$**

Discovered 1999 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33118)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.03331 | | (2000.0) | | | |
| $n$ | 0.29000870 | $\omega$ | 8.84223 | | +0.70823925 | +0.70332279 |
| $a$ | 2.2604524 | $\Omega$ | 306.27855 | | −0.65226374 | +0.61878636 |
| $e$ | 0.1814170 | $i$ | 4.34734 | | −0.27009105 | +0.34991498 |
| $P$ | 3.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.3+ | 0.2+ | 2002 07 17 | 644 | 0.0 | 0.3+ | 2004 01 22 | 704 | (2.7− | 0.9+) |
| 1999 10 12 | 704 | 0.1− | 0.0 | 2002 07 17 | 644 | 0.2− | 0.4+ | 2004 01 22 | 704 | (1.6− | 1.1+) |
| 1999 10 12 | 704 | 0.1− | 0.3− | 2002 08 06 | 644 | 0.3+ | 0.4+ | 2004 01 31 | 691 | 0.1+ | 0.2+ |
| 1999 10 12 | 704 | 0.3− | 0.2− | 2002 08 06 | 644 | 0.1+ | 0.4+ | 2004 01 31 | 691 | 0.0 | 0.2+ |
| 1999 10 12 | 704 | 0.3+ | 0.3− | 2002 08 06 | 644 | 0.2+ | 0.5+ | 2004 01 31 | 691 | 0.1+ | 0.1+ |
| 1999 10 22 | 704 | 0.4+ | 0.6− | 2002 08 07 | 644 | 0.1− | 0.3+ | 2005 05 04 | 644 | 0.3+ | 0.2+ |
| 1999 10 22 | 704 | 0.9+ | 0.8− | 2002 08 07 | 644 | 0.4− | 0.4+ | 2005 05 04 | 644 | 0.4+ | 0.5+ |
| 1999 10 22 | 704 | 1.1+ | 0.2− | 2002 08 07 | 644 | 0.0 | 0.2+ | 2005 05 04 | 644 | 0.1+ | 0.2+ |
| 1999 11 03 | 704 | 1.2+ | 0.0 | 2002 08 08 | 644 | 0.0 | 1.0+ | 2005 05 04 | 644 | 0.5+ | 0.2+ |
| 1999 11 03 | 704 | 0.2− | 1.2− | 2002 08 08 | 644 | 0.1+ | 1.0+ | 2005 05 04 | 644 | 0.3+ | 0.4+ |
| 1999 11 03 | 704 | 0.0 | 0.4− | 2002 08 08 | 644 | 0.1− | 1.0+ | 2005 05 04 | 644 | 0.7+ | 0.3+ |
| 1999 11 03 | 704 | 0.4+ | 0.2− | 2002 08 14 | 704 | 0.1+ | 0.3− | 2006 11 15 | 704 | 0.4− | 1.2+ |
| 1999 11 17 | 689 | 0.3− | 0.2− | 2002 08 14 | 704 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.5− | 0.4+ |
| 1999 11 17 | 689 | 0.3− | 0.6− | 2002 08 14 | 704 | 0.1+ | 0.3− | 2006 11 15 | 704 | 0.1− | 1.0+ |
| 1999 11 17 | 689 | 0.3− | 0.6− | 2002 08 14 | 704 | 0.4− | 1.3− | 2006 11 16 | 704 | (1.6+ | 1.1+) |
| 2002 05 23 | 644 | 0.5− | 0.0 | 2002 08 14 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | (1.6+ | 0.8+) |
| 2002 05 23 | 644 | 0.4− | 0.2+ | 2002 10 03 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.2− | 1.0+ |
| 2002 05 23 | 644 | 0.2− | 0.2− | 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.4+ | 0.9+ |
| 2002 06 08 | 704 | 0.9− | 0.1+ | 2002 10 03 | 704 | 0.2+ | 1.1+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2002 06 08 | 704 | 0.8− | 0.8+ | 2002 10 03 | 704 | (0.0 | 2.1+) | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2002 06 08 | 704 | 1.1− | 0.1+ | 2002 10 03 | 704 | 0.8+ | 0.7+ | 2006 11 17 | 691 | 0.2− | 0.0 |
| 2002 06 12 | 608 | 0.2− | 0.6− | 2003 12 19 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.9+ |
| 2002 06 12 | 608 | 0.0 | 0.6− | 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.6+ |
| 2002 06 12 | 608 | 0.1− | 0.3− | 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1+ | 1.1+ |
| 2002 06 25 | 644 | 0.1− | 0.6+ | 2003 12 27 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 2002 06 25 | 644 | 0.2− | 0.8+ | 2003 12 27 | 704 | 0.4+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 2002 06 25 | 644 | 0.3− | 0.6+ | 2003 12 27 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | 0.0 | 0.6+ | 2003 12 27 | 704 | 0.2− | 0.9− | 2006 11 22 | 704 | 0.7+ | 0.4+ |
| 2002 07 05 | 704 | 0.0 | 0.4+ | 2003 12 27 | 704 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 07 05 | 704 | 0.1− | 0.8+ | 2003 12 27 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 07 05 | 704 | 0.0 | 1.1+ | 2004 01 13 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 07 13 | 608 | 0.3− | 0.6− | 2004 01 13 | 691 | 0.0 | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2002 07 13 | 608 | 0.4− | 0.7− | 2004 01 13 | 691 | 0.5− | 1.1+ | 2006 11 25 | 691 | 0.1− | 0.4− |
| 2002 07 13 | 608 | 0.2− | 0.6− | 2004 01 22 | 704 | (2.1− | 2.3+) | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2002 07 17 | 644 | 0.2− | 0.3+ | 2004 01 22 | 704 | (1.2+ | 1.6+) | | | | |

**(137460)∗ 1999 TN$_{313}$**

Discovered 1999 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.90188 | | (2000.0) | | | |
| $n$ | 0.18381240 | $\omega$ | 192.02133 | | −0.06317585 | −0.99754848 |
| $a$ | 3.0635115 | $\Omega$ | 261.60627 | | +0.91815134 | −0.04627459 |
| $e$ | 0.0630498 | $i$ | 1.74339 | | +0.39116101 | −0.05249476 |
| $P$ | 5.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 28 | 691 | 0.0 | 0.1− | 2002 03 13 | 704 | (0.7+ | 1.9+) | 2005 11 11 | 691 | 0.9− | 0.0 |
| 1995 12 28 | 691 | 0.1− | 0.0 | 2002 03 13 | 704 | (0.6+ | 2.1+) | 2005 11 11 | 691 | 0.2+ | 0.4+ |
| 1995 12 28 | 691 | 0.1+ | 0.1− | 2002 04 19 | 291 | 0.2+ | 0.3+ | 2005 11 11 | 691 | 0.0 | 0.3+ |
| 1999 09 15 | 691 | 0.3− | 0.8+ | 2002 04 19 | 291 | 0.3+ | 0.4+ | 2005 12 10 | 691 | 0.2+ | 0.0 |
| 1999 09 15 | 691 | 0.2− | 0.2+ | 2002 04 19 | 291 | 0.1+ | 0.6+ | 2005 12 10 | 691 | 0.1+ | 0.2+ |
| 1999 09 15 | 691 | 0.0 | 0.2+ | 2004 08 22 | 691 | 0.2− | 0.3+ | 2005 12 10 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 1.2+ | 1.1+ | 2004 08 22 | 691 | 0.0 | 0.6+ | 2006 02 24 | G96 | 0.1+ | 0.5+ |
| 1999 10 06 | 704 | 0.7+ | 0.1+ | 2004 08 22 | 691 | 0.1− | 0.6+ | 2006 02 24 | G96 | 0.3+ | 0.1+ |
| 1999 10 06 | 704 | 1.5+ | 0.1− | 2005 10 26 | 691 | 0.3+ | 0.1− | 2006 02 24 | G96 | 0.0 | 0.1+ |
| 1999 10 17 | 691 | 0.3− | 0.5− | 2005 10 26 | 691 | 0.1+ | 0.2+ | 2006 02 24 | G96 | 0.1+ | 0.3+ |
| 1999 10 17 | 691 | 0.2+ | 0.6− | 2005 10 26 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 1999 10 17 | 691 | 0.5+ | 0.2− | 2005 10 27 | G96 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 1999 11 03 | 691 | 0.1− | 0.2− | 2005 10 27 | G96 | 0.5+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 1999 11 03 | 691 | 0.4− | 0.2− | 2005 10 27 | G96 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 1999 11 03 | 691 | 0.6− | 0.1− | 2005 10 27 | G96 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.7− | 0.3− |
| 2002 03 13 | 704 | 0.9+ | 1.3+ | 2005 10 30 | 691 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.2+ |
| 2002 03 13 | 704 | 0.4+ | 1.5+ | 2005 10 30 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2002 03 13 | 704 | 0.3+ | 1.1+ | 2005 10 30 | 691 | 0.3− | 0.3+ | 2006 12 01 | G96 | 0.5− | 0.0 |

**(137461)∗ 1999 TJ$_{316}$ = 2002 OH$_{1}$**

Discovered 1999 Oct. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33119)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.09678 | | (2000.0) | | | |
| $n$ | 0.27265490 | $\omega$ | 44.86748 | | −0.09537149 | +0.99255267 |
| $a$ | 2.3553774 | $\Omega$ | 219.84244 | | −0.94327949 | −0.11443321 |
| $e$ | 0.1331817 | $i$ | 6.79341 | | −0.31800641 | +0.04176417 |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 699 | 0.8− | 0.4− | 2002 07 21 | 644 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.3+ |
| 1998 05 24 | 699 | 1.1+ | 0.2− | 2002 08 12 | 704 | 0.3+ | 1.1+ | 2006 09 18 | 699 | 0.7+ | 0.3− |
| 1998 05 24 | 699 | 0.1+ | 0.7+ | 2002 08 12 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 699 | (3.1− | 0.3−) |
| 1998 06 21 | 691 | 0.1− | 1.1+ | 2002 08 12 | 704 | 1.3− | 0.4+ | 2006 09 25 | 704 | 1.2+ | 0.1− |
| 1998 06 21 | 691 | 0.1+ | 0.2− | 2002 08 13 | 699 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.6+ | 0.2+ |
| 1998 06 21 | 691 | 0.2− | 0.0 | 2002 08 13 | 699 | 0.6− | 0.1− | 2006 09 25 | 704 | 0.1− | 0.3− |
| 1998 06 29 | 691 | 0.6+ | 0.3− | 2002 08 13 | 699 | 0.7− | 0.1+ | 2006 09 26 | 683 | (0.4− | 2.9−) |
| 1998 06 29 | 691 | 0.3+ | 0.0 | 2002 08 13 | 699 | 0.3− | 0.2− | 2006 09 26 | 683 | 0.9− | 1.1− |
| 1998 06 29 | 691 | 1.1+ | 0.3− | 2002 08 15 | 644 | 0.1− | 0.2− | 2006 09 27 | 683 | 0.5+ | 0.6− |
| 1998 07 24 | 691 | 0.5− | 0.4+ | 2002 08 15 | 644 | 0.2− | 0.2− | 2006 09 27 | 683 | (3.9+ | 1.0−) |
| 1998 07 24 | 691 | 0.8− | 1.3+ | 2002 08 15 | 644 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 1999 10 10 | 691 | 0.4+ | 0.1+ | 2002 08 16 | 848 | 0.5− | 0.6− | 2006 09 27 | 683 | (4.4+ | 0.7−) |
| 1999 10 10 | 691 | 0.3+ | 0.1+ | 2002 08 16 | 848 | 1.1− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 1999 10 10 | 691 | 0.2− | 0.1+ | 2002 08 16 | 848 | 0.4+ | 1.1− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 1999 10 19 | 691 | 1.0− | 0.1+ | 2002 08 25 | 644 | 0.3+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 1999 10 19 | 691 | 0.2− | 0.4+ | 2002 08 25 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 1999 10 19 | 691 | 0.4− | 0.3+ | 2002 08 25 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 1999 10 29 | 691 | 0.4+ | 0.4+ | 2002 09 04 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 1999 10 29 | 691 | 0.1+ | 0.4+ | 2002 09 04 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 1999 10 29 | 691 | 0.0 | 0.4+ | 2002 09 04 | 644 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 02 20 | 645 | 0.1+ | 0.3+ | 2005 04 05 | 699 | 0.6+ | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.3+ | 2005 04 05 | 699 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2002 07 12 | 644 | 0.3+ | 0.2− | 2005 04 05 | 699 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 2002 07 12 | 644 | 0.4+ | 0.2− | 2005 04 05 | 699 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2002 07 12 | 644 | 0.6+ | 0.4− | 2005 04 11 | 699 | 0.3+ | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2002 07 17 | 704 | 0.4+ | 0.1− | 2005 04 11 | 699 | 0.3− | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 07 17 | 704 | 0.2− | 0.7+ | 2005 04 11 | 699 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 07 17 | 704 | 0.3+ | 1.3+ | 2005 04 14 | 703 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 07 18 | 704 | 0.2− | 0.1− | 2005 04 14 | 703 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 07 18 | 704 | 1.1− | 0.1+ | 2005 04 14 | 703 | (0.3− | 1.7+) | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 07 18 | 704 | 0.4− | 0.0 | 2005 04 14 | 703 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 07 18 | 704 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2002 07 18 | 704 | 0.8− | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2002 07 21 | 644 | 0.2− | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2002 07 21 | 644 | 0.2− | 0.7+ | 2006 09 18 | 699 | (1.8− | 1.0−) | 2006 11 15 | G96 | 0.2+ | 0.3− |

**(137462)∗ 1999 TN$_{316}$ = 2002 NR$_{46}$**

Discovered 1999 Oct. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33119)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.21495 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28204898 | $\omega$ | 85.14584 | | +0.52512559 | | +0.85076568 |
| $a$ | 2.3027830 | $\Omega$ | 216.55570 | | −0.79410703 | | +0.48098392 |
| $e$ | 0.1661183 | $i$ | 2.02026 | | −0.30600187 | | +0.21178343 |
| $P$ | 3.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.0 | 0.2+ | 2002 08 07 | 644 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 1999 10 10 | 691 | 0.1− | 0.1+ | 2002 08 27 | 644 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 1999 10 10 | 691 | 0.0 | 0.7− | 2002 08 27 | 644 | 0.2+ | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.2+ |
| 1999 10 19 | 691 | 0.2− | 0.2+ | 2002 08 27 | 644 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 1999 10 19 | 691 | 0.3− | 0.2+ | 2005 03 11 | G96 | 0.1− | 0.7+ | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 1999 10 19 | 691 | 0.2− | 0.0 | 2005 03 11 | G96 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.4+ | 0.2+ |
| 1999 10 29 | 691 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 1999 10 29 | 691 | 0.4+ | 0.4+ | 2005 03 11 | G96 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 1999 10 29 | 691 | 0.5+ | 0.5+ | 2005 04 05 | G96 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 1999 11 16 | 691 | 0.3− | 0.1− | 2005 04 05 | G96 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 1999 11 16 | 691 | 0.2− | 0.1− | 2005 04 05 | G96 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1999 11 16 | 691 | 0.1− | 0.3− | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2002 07 04 | 644 | 0.3+ | 0.5+ | 2005 04 17 | 691 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2002 07 04 | 644 | 0.2+ | 0.3+ | 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 07 04 | 644 | 0.4+ | 0.9+ | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 07 13 | 608 | 0.6+ | 0.3− | 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2002 07 13 | 608 | 0.3+ | 0.3− | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2002 07 13 | 608 | 0.2− | 0.6− | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.6+ |
| 2002 07 14 | 704 | 0.8− | 0.7− | 2005 05 08 | G96 | 0.7− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 07 14 | 704 | 0.5− | 0.3+ | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 07 14 | 704 | 0.7− | 0.3+ | 2005 06 13 | G96 | 0.8− | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 07 14 | 704 | 0.5− | 0.0 | 2005 06 13 | G96 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2002 08 07 | 644 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.4+ | 0.6+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2002 08 07 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.1− | | | | |

**(137463)∗ 1999 TT$_{320}$ = 2004 BD$_{63}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68577)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.99191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28637427 | $\omega$ | 30.05995 | | +0.98831497 | | +0.14916215 |
| $a$ | 2.2795374 | $\Omega$ | 321.32216 | | −0.14793369 | | +0.88905942 |
| $e$ | 0.1176580 | $i$ | 2.87740 | | −0.03673059 | | +0.43280942 |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 1.2+ | 0.5− | 2002 08 28 | 644 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 1999 10 10 | 704 | 0.9+ | 0.0 | 2002 08 28 | 644 | 0.2+ | 0.2+ | 2006 11 02 | 691 | 0.2+ | 0.0 |
| 1999 10 10 | 704 | 1.1+ | 0.4+ | 2002 08 28 | 644 | 0.1+ | 0.4+ | 2006 11 02 | 691 | 0.1− | 0.1+ |
| 1999 10 10 | 704 | 0.6+ | 0.1+ | 2003 12 21 | 691 | 0.2+ | 0.4− | 2006 11 02 | 691 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.6+ | 0.8− | 2003 12 21 | 691 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1999 10 21 | 704 | 0.9− | 0.2+ | 2003 12 21 | 691 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1999 10 21 | 704 | 0.4− | 1.4− | 2003 12 28 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 1999 10 21 | 704 | 0.3− | 0.6− | 2003 12 28 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1999 10 21 | 704 | 0.4− | 1.1− | 2003 12 28 | 691 | 0.3− | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 1999 11 04 | 704 | 0.1− | 0.9− | 2004 01 15 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 1999 11 04 | 704 | 0.0 | 0.1+ | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.4+ | 1.2+ |
| 1999 11 04 | 704 | 0.5+ | 0.2+ | 2004 01 15 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.5− |
| 1999 11 04 | 704 | 0.9− | 1.0− | 2004 01 22 | 704 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.0 | 0.8+ |
| 2001 03 26 | 691 | 0.2+ | 0.1− | 2004 01 22 | 704 | 0.0 | 1.3− | 2006 11 16 | 704 | 0.5+ | 0.5− |
| 2001 03 26 | 691 | 0.9− | 0.7− | 2004 01 22 | 704 | 1.4+ | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2001 03 26 | 691 | 0.3− | 0.3+ | 2004 01 22 | 704 | (0.1− | 1.9−) | 2006 11 16 | 704 | 1.3+ | 0.7− |
| 2002 07 05 | 644 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 0.5+ | 0.3− | 2006 11 19 | 704 | 1.1− | 0.8− |
| 2002 07 05 | 644 | 0.1+ | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2002 07 05 | 644 | 0.1+ | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 07 14 | 644 | 0.0 | 0.1+ | 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2002 07 14 | 644 | 0.0 | 0.3− | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.3− |
| 2002 07 14 | 644 | 0.0 | 0.1+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2002 07 22 | 644 | 0.1+ | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 07 22 | 644 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.9− | 0.7+ |
| 2002 07 22 | 644 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.8− | 0.2− |
| 2002 08 08 | 644 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.3+ | | | | |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1− | 0.2+ | | | | |

**(137464)∗ 1999 TV$_{320}$**

Discovered 1999 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.67007 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27956731 | $\omega$ | 307.04965 | | +0.94917522 | | +0.30259460 |
| $a$ | 2.3163906 | $\Omega$ | 35.57158 | | −0.22012812 | | +0.83490097 |
| $e$ | 0.1550225 | $i$ | 8.56332 | | −0.22496670 | | +0.45975741 |
| $P$ | 3.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 27 | 691 | 0.6+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 10 28 | 704 | 0.5+ | 0.8− |
| 1998 05 27 | 691 | (3.9+ | 4.1−) | 2006 09 28 | 683 | 0.4+ | 0.4+ | 2006 10 28 | 683 | (1.6− | 1.4−) |
| 1998 05 27 | 691 | 1.1+ | 0.6+ | 2006 09 28 | 683 | (1.1− | 1.7+) | 2006 10 28 | 704 | 0.4− | 1.0+ |
| 1999 10 10 | 704 | 0.1− | 0.3− | 2006 09 28 | 683 | (1.4− | 1.5+) | 2006 10 28 | 683 | (1.0− | 2.8−) |
| 1999 10 10 | 704 | 0.4− | 0.7− | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.4+ | 0.0 |
| 1999 10 10 | 704 | 0.4− | 1.0− | 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 10 28 | 683 | (2.7− | 1.0−) |
| 1999 10 10 | 704 | 0.4+ | 1.2− | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.3+ |
| 1999 10 10 | 704 | 0.4− | 0.7− | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1− |
| 1999 10 21 | 704 | 0.4− | 1.3+ | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 10 28 | 704 | 0.1− | 0.5− |
| 1999 10 21 | 704 | 0.5− | 1.2+ | 2006 09 30 | 703 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 1999 10 21 | 704 | 0.4+ | 0.9+ | 2006 09 30 | 703 | 0.2+ | 0.5− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 1999 10 21 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.5+ | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 1999 11 04 | 704 | 0.2+ | 0.1+ | 2006 10 04 | 683 | 1.0+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 1999 11 04 | 704 | 0.1− | 0.1− | 2006 10 04 | 683 | 0.8+ | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1999 11 04 | 704 | 0.0 | 0.1+ | 2006 10 16 | 683 | 0.6− | 0.4− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1999 11 04 | 704 | 0.2+ | 1.0+ | 2006 10 16 | 683 | 1.0− | 0.6− | 2006 10 28 | G96 | 0.3− | 0.2− |
| 1999 11 14 | 703 | 0.3− | 0.3+ | 2006 10 16 | 683 | 0.1− | 0.5+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 1999 11 14 | 703 | 0.8− | 0.1− | 2006 10 17 | 683 | 1.1+ | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 1999 11 14 | 703 | 1.6− | 0.7+ | 2006 10 17 | 683 | 0.6+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 1999 11 14 | 703 | 0.3+ | 0.1− | 2006 10 17 | 683 | 0.4+ | 0.0 | 2006 10 31 | 683 | 1.2− | 1.3− |
| 2003 12 30 | 704 | 1.3− | 0.0 | 2006 10 18 | 691 | (2.6− | 0.5+) | 2006 10 31 | 683 | (1.7− | 2.3−) |
| 2003 12 30 | 704 | 0.7+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.5+ | 2006 10 31 | 683 | (1.6− | 1.6−) |
| 2003 12 30 | 704 | 1.3+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2005 04 12 | 691 | 0.4+ | 0.9+ | 2006 10 19 | 683 | 0.4− | 0.7− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 683 | 0.4− | 1.5− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 683 | 1.0− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2005 05 01 | 644 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2005 05 01 | 644 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.3+ | 0.5+ | 2006 11 10 | 644 | 0.4− | 0.3+ |
| 2005 05 01 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 01 | 644 | 0.0 | 0.6+ | 2006 10 20 | 683 | (2.2+ | 0.6−) | 2006 11 13 | G96 | 0.1− | 0.3− | | |
| 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.6− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.5− | | |
| 2005 05 01 | 644 | 0.2− | 0.2+ | 2006 10 20 | 683 | 1.5+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.2+ | | |
| 2005 05 04 | 568 | 0.1− | 0.6+ | 2006 10 20 | 683 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.1+ | | |
| 2005 05 04 | 568 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.2+ | | |
| 2005 05 04 | 568 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.1+ | | |
| 2005 05 05 | 568 | 0.1− | 1.1+ | 2006 10 22 | 683 | (1.1− | 1.6−) | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 10 22 | 683 | (1.0− | 1.7−) | 2006 11 18 | 704 | 0.1− | 0.9+ | | |
| 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 10 22 | 683 | (2.3− | 1.2−) | 2006 11 18 | 704 | 0.4− | 0.6+ | | |
| 2005 05 08 | G96 | 0.1− | 0.4+ | 2006 10 27 | 683 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.6− | | |
| 2005 05 08 | G96 | (0.7+ | 1.6+) | 2006 10 27 | 683 | 0.2− | 0.6− | 2006 11 18 | 704 | 0.0 | 0.5+ | | |
| 2006 09 20 | 644 | 0.5− | 0.4+ | 2006 10 27 | 683 | 0.3− | 0.0 | 2006 11 28 | 704 | 1.1+ | 0.3+ | | |
| 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.8+ | 0.2+ | | |
| 2006 09 20 | 644 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 28 | 704 | (1.6+ | 1.1+) | | |
| 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.8+ | | |
| 2006 09 26 | 704 | 0.5− | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.4− | 0.5+ | | |

**(137465)∗ 1999 UG$_3$ = 2003 YC$_{88}$**

Discovered 1999 Oct. 19 by W. Bickel at Bergisch Gladbach.

Id. G. V. Williams (*MPO* 55945)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.66398 | | (2000.0) | | +0.66028990 | −0.75099316 |
| $n$ | 0.26664274 | $\omega$ | 55.70701 | | +0.67448373 | +0.59600919 |
| $a$ | 2.3906512 | $\Omega$ | 352.96418 | | +0.33028616 | +0.28422230 |
| $e$ | 0.1002746 | $i$ | 2.40979 | | | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 621 | 0.1+ | 0.2− | 1999 11 16 | 621 | 0.0 | 0.1+ | 2006 08 18 | 691 | 0.2− | 0.3+ | | |
| 1999 10 19 | 621 | 0.1− | 0.0 | 2003 12 18 | 246 | 0.2+ | 0.3− | 2006 08 22 | 644 | 0.2− | 0.3− | | |
| 1999 10 19 | 621 | 0.2− | 0.2− | 2003 12 18 | 246 | 0.2+ | 0.1− | 2006 08 22 | 644 | 0.2− | 0.3+ | | |
| 1999 10 19 | 621 | 0.2+ | 0.2− | 2003 12 18 | 246 | 0.4+ | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.1+ | | |
| 1999 10 20 | 621 | 0.0 | 0.1+ | 2003 12 18 | 246 | 0.5+ | 0.3− | 2006 08 27 | 691 | 0.2− | 0.3+ | | |
| 1999 10 20 | 621 | 0.2− | 0.1− | 2003 12 19 | 704 | 1.0+ | 0.3+ | 2006 08 27 | 691 | 0.3− | 0.4+ | | |
| 1999 10 20 | 621 | 0.4+ | 0.2+ | 2003 12 19 | 704 | 0.7+ | 0.7+ | 2006 08 27 | 691 | 0.3− | 0.3+ | | |
| 1999 10 20 | 621 | 0.6+ | 0.0 | 2003 12 19 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | (2.6− | 2.3+) | | |
| 1999 10 20 | 621 | 0.0 | 0.1+ | 2003 12 19 | 704 | 0.2− | 0.2− | 2006 09 14 | 703 | (1.6+ | 4.6+) | | |
| 1999 10 31 | 621 | 0.4− | 0.3+ | 2003 12 19 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.1+ | | |
| 1999 10 31 | 621 | 0.1− | 0.2− | 2003 12 19 | 704 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.8+ | | |
| 1999 10 31 | 621 | 0.2+ | 0.0 | 2003 12 19 | 704 | 0.0 | 0.4+ | 2006 09 17 | 704 | 1.4+ | 0.9− | | |
| 1999 11 04 | 621 | 0.4+ | 0.0 | 2003 12 19 | 704 | 1.2− | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.1+ | | |
| 1999 11 04 | 621 | 0.0 | 0.2− | 2003 12 22 | 704 | 0.5− | 0.4− | 2006 09 17 | 704 | 0.4+ | 0.3− | | |
| 1999 11 04 | 621 | 0.0 | 0.7− | 2003 12 22 | 704 | 0.5− | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.1− | | |
| 1999 11 04 | 704 | 0.1− | 0.0 | 2003 12 22 | 704 | 0.9− | 0.9− | 2006 09 17 | 704 | 0.7+ | 0.1− | | |
| 1999 11 04 | 704 | 1.3− | 0.4− | 2003 12 27 | 704 | 0.1+ | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.5− | | |
| 1999 11 04 | 704 | 1.0+ | 0.9− | 2003 12 27 | 704 | 0.3− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 1999 11 04 | 704 | 0.2− | 0.8− | 2003 12 27 | 704 | 0.4+ | 0.5− | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 1999 11 04 | 704 | 0.2− | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.1− | | |
| 1999 11 14 | 704 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.3− | 1.3+ | 2006 10 16 | G96 | 0.0 | 0.0 | | |
| 1999 11 14 | 704 | 0.7+ | 0.6− | 2004 01 22 | 704 | 0.4− | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.2− | | |
| 1999 11 14 | 704 | 0.4+ | 0.3− | 2004 01 22 | 704 | 0.3+ | 0.9+ | 2006 10 16 | G96 | 0.2+ | 0.1− | | |
| 1999 11 14 | 704 | 0.2+ | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 1999 11 15 | 621 | 0.1− | 0.2+ | 2005 05 07 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.9− | | |
| 1999 11 15 | 621 | 0.2− | 0.2+ | 2005 05 07 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.5− | 0.4− | | |
| 1999 11 15 | 621 | 0.1− | 0.3+ | 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 1999 11 16 | 621 | 0.0 | 0.1+ | 2006 08 18 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.4− | | |
| 1999 11 16 | 621 | 0.2− | 0.2+ | 2006 08 18 | 691 | 0.0 | 0.3+ | | | | | | |

**(137466)∗ 1999 UB$_4$**

Discovered 1999 Oct. 27 at Starkenburg Sternwarte, Heppenheim.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.55116 | | (2000.0) | | +0.40174061 | −0.91547259 |
| $n$ | 0.26758455 | $\omega$ | 38.47064 | | +0.82772178 | +0.35241412 |
| $a$ | 2.3850383 | $\Omega$ | 27.86376 | | +0.39176668 | +0.19420148 |
| $e$ | 0.1717159 | $i$ | 2.78156 | | | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.1− | 0.0 | 1999 11 15 | 691 | 0.1− | 0.4− | 2004 01 17 | 644 | 0.4− | 0.2+ | | |
| 1999 10 14 | 645 | 0.0 | 0.0 | 1999 11 15 | 691 | 0.2− | 0.4− | 2004 01 17 | 644 | 0.3− | 0.1+ | | |
| 1999 10 15 | 704 | 0.0 | 0.5+ | 1999 11 16 | 704 | 1.6+ | 0.7− | 2004 01 17 | 644 | 0.3− | 0.5+ | | |
| 1999 10 15 | 704 | 0.1− | 0.5+ | 1999 11 16 | 704 | 0.7+ | 0.3+ | 2004 01 22 | 704 | 0.0 | 0.2+ | | |
| 1999 10 15 | 704 | 0.2+ | 0.3+ | 1999 11 16 | 704 | 1.3+ | 0.0 | 2004 01 22 | 704 | 0.2− | 1.2+ | | |
| 1999 10 15 | 704 | 0.7+ | 0.0 | 2003 10 24 | 704 | 0.7− | 0.5+ | 2004 01 22 | 704 | 0.4− | 0.9+ | | |
| 1999 10 20 | 704 | 0.2+ | 0.4+ | 2003 10 24 | 704 | 0.5− | 0.0 | 2004 01 22 | 704 | 0.1+ | 0.2+ | | |
| 1999 10 20 | 704 | 0.2+ | 0.3+ | 2003 10 24 | 704 | 0.4+ | 0.1− | 2004 01 22 | 704 | 0.1− | 0.2+ | | |
| 1999 10 20 | 704 | 0.5+ | 0.4− | 2003 12 04 | 704 | 0.6+ | 0.5− | 2005 05 11 | 691 | 0.1+ | 0.0 | | |
| 1999 10 20 | 704 | 0.4− | 0.3+ | 2003 12 04 | 704 | 0.1+ | 0.6− | 2005 05 11 | 691 | 0.5− | 0.1− | | |
| 1999 10 27 | 611 | 1.3− | 0.2+ | 2003 12 04 | 704 | 0.2− | 1.0+ | 2005 05 11 | 691 | 0.0 | 0.2− | | |
| 1999 10 27 | 611 | 0.7+ | 0.0 | 2003 12 04 | 704 | 1.2+ | 0.1− | 2005 05 16 | 691 | 0.1+ | 0.1− | | |
| 1999 10 29 | 611 | (0.9− | 2.1+) | 2003 12 14 | 691 | 0.2+ | 0.2+ | 2005 05 16 | 691 | 0.2+ | 0.1+ | | |
| 1999 10 29 | 611 | 1.3− | 0.9+ | 2003 12 14 | 691 | 0.1+ | 0.3+ | 2005 05 16 | 691 | 0.0 | 0.0 | | |
| 1999 11 03 | 611 | 0.5− | 0.8+ | 2003 12 14 | 691 | 0.2+ | 0.2+ | 2006 08 13 | 644 | 0.2− | 0.4+ | | |
| 1999 11 03 | 611 | 0.6+ | 0.9− | 2003 12 18 | 704 | 0.9− | 0.3− | 2006 08 13 | 644 | 0.1+ | 0.5+ | | |
| 1999 11 04 | 704 | 0.8− | 0.3+ | 2003 12 18 | 704 | 0.0 | 0.6+ | 2006 08 13 | 644 | 0.0 | 0.6+ | | |
| 1999 11 04 | 704 | 0.4+ | 0.1− | 2003 12 18 | 704 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.0 | | |
| 1999 11 04 | 704 | 0.2− | 0.1− | 2003 12 18 | 704 | 0.5− | 0.0 | 2006 08 16 | 644 | 0.2− | 0.5+ | | |
| 1999 11 04 | 704 | 0.2+ | 0.1+ | 2003 12 18 | 704 | 0.4− | 0.3− | 2006 08 16 | 644 | 0.4− | 0.4+ | | |
| 1999 11 04 | 704 | 0.5+ | 0.3+ | 2003 12 22 | 704 | 0.0 | 0.4+ | 2006 08 17 | 644 | 0.3− | 0.4+ | | |
| 1999 11 10 | 691 | 0.0 | 0.2− | 2003 12 22 | 704 | 0.4+ | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.4+ | | |
| 1999 11 10 | 691 | 0.1+ | 0.2− | 2003 12 22 | 704 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.5+ | | |
| 1999 11 10 | 691 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.0 | 1.1− | 2006 08 18 | 644 | 0.2− | 0.0 | | |
| 1999 11 12 | 704 | 0.1− | 0.4− | 2003 12 22 | 704 | 0.3− | 0.1+ | 2006 08 18 | 644 | 0.6− | 0.5+ | | |
| 1999 11 12 | 704 | 0.3+ | 0.0 | 2003 12 27 | 704 | 0.2+ | 0.8− | 2006 08 18 | 644 | 0.0 | 0.3+ | | |
| 1999 11 12 | 704 | 0.3+ | 0.0 | 2003 12 27 | 704 | 0.1+ | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.2+ | | |
| 1999 11 12 | 704 | 0.1+ | 0.6− | 2003 12 27 | 704 | 0.7+ | 0.8+ | 2006 08 24 | 644 | 0.0 | 0.3+ | | |
| 1999 11 12 | 704 | 0.0 | 0.3− | 2003 12 27 | 704 | 0.3+ | 0.6− | 2006 08 24 | 644 | 0.2− | 0.3+ | | |
| 1999 11 13 | 739 | 0.3− | 0.1− | 2003 12 27 | 704 | 0.5+ | 0.1− | 2006 09 13 | 644 | 0.2− | 0.6+ | | |
| 1999 11 13 | 739 | 1.7+ | 0.9+ | 2003 12 28 | 691 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.0 | 0.5+ | | |
| 1999 11 13 | 739 | 0.1− | 0.3− | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.5+ | | |
| 1999 11 15 | 691 | 0.1− | 0.3− | 2003 12 28 | 691 | 0.2− | 0.1+ | | | | | | |

**(137467)∗ 1999 UN$_9$**

Discovered 1999 Oct. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.02173 | | (2000.0) | | +0.41077341 | −0.91173135 |
| $n$ | 0.26107939 | $\omega$ | 109.73095 | | +0.83469200 | +0.37753250 |
| $a$ | 2.4244933 | $\Omega$ | 316.01514 | | +0.36681666 | +0.16191095 |
| $e$ | 0.2316272 | $i$ | 0.27551 | | | |
| $P$ | 3.78 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 21 | 704 | 1.1+ | 0.4− | 1999 12 08 | 704 | 0.0 | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.7+ | | |
| 1999 10 21 | 704 | 0.9+ | 0.6− | 1999 12 12 | 703 | 0.6− | 0.5− | 2003 12 30 | 704 | 0.0 | 0.1+ | | |
| 1999 10 21 | 704 | 0.0 | 1.4− | 1999 12 12 | 703 | 0.6− | 0.2− | 2003 12 30 | 704 | 0.0 | 0.0 | | |
| 1999 10 29 | 703 | 1.7− | 0.7+ | 1999 12 12 | 703 | 0.5− | 0.3− | 2003 12 30 | 704 | 0.1+ | 0.0 | | |
| 1999 10 29 | 703 | 0.4+ | 0.8+ | 1999 12 12 | 703 | 0.3− | 0.1− | 2003 12 30 | 704 | 0.0 | 0.2+ | | |
| 1999 10 29 | 703 | 0.4+ | 1.5+ | 2001 04 13 | 691 | 0.2+ | 0.4+ | 2003 12 30 | 704 | 0.0 | 0.1+ | | |
| 1999 10 29 | 703 | 0.2− | 0.3+ | 2001 04 13 | 691 | 0.1+ | 0.2+ | 2004 01 21 | 704 | 0.1+ | 0.3− | | |
| 1999 11 01 | 703 | 0.0 | 0.3+ | 2001 04 13 | 691 | 0.1+ | 0.1− | 2004 01 21 | 704 | 0.2+ | 0.2− | | |
| 1999 11 01 | 703 | 0.5− | 0.8+ | 2003 11 21 | 704 | 0.3− | 0.5− | 2004 01 21 | 704 | 0.4− | 0.1+ | | |
| 1999 11 01 | 703 | 0.6− | 1.0+ | 2003 11 21 | 704 | 0.7− | 0.7− | 2004 01 21 | 704 | 0.2+ | 0.5− | | |
| 1999 11 01 | 703 | 0.8− | 0.8+ | 2003 11 21 | 704 | 0.4− | 0.2− | 2004 01 21 | 704 | 0.7+ | 0.6− | | |
| 1999 11 04 | 704 | 0.1+ | 0.0 | 2003 11 21 | 704 | 1.1− | 0.6+ | 2004 01 24 | 704 | 0.5+ | 0.1+ | | |
| 1999 11 04 | 704 | 0.3+ | 0.1− | 2003 11 21 | 704 | 0.5− | 0.5− | 2004 01 24 | 704 | 0.6+ | 0.3+ | | |
| 1999 11 04 | 704 | 0.2+ | 0.1+ | 2003 11 23 | 704 | (1.5− | 0.2+) | 2004 01 24 | 704 | (2.4+ | 1.2+) | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.0 | 0.8− | 2003 11 23 | 704 | 0.5− | 0.1− | 2004 01 24 | 704 | 0.7+ | 0.8+ |
| 1999 11 04 | 704 | 0.1+ | 0.1− | 2003 11 23 | 704 | 0.6− | 0.6+ | 2004 01 30 | 704 | 0.1+ | 0.4+ |
| 1999 11 12 | 704 | 0.0 | 0.3+ | 2003 11 23 | 704 | 0.7+ | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 0.3− | 0.1− | 2003 12 16 | 699 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.9− | 0.7+ | 2003 12 16 | 699 | 0.0 | 0.6− | 2004 01 30 | 704 | 0.6+ | 0.4+ |
| 1999 11 12 | 704 | 0.3− | 0.0 | 2003 12 16 | 699 | 0.4− | 0.4− | 2004 01 30 | 704 | 0.1− | 0.7− |
| 1999 11 12 | 704 | 0.2− | 0.2+ | 2003 12 16 | 699 | 0.3− | 0.2− | 2004 02 26 | 704 | 0.3− | 0.1− |
| 1999 11 16 | 704 | 0.1+ | 0.4− | 2003 12 18 | 291 | 0.5− | 0.0 | 2004 02 26 | 704 | 0.2+ | 0.4− |
| 1999 11 16 | 704 | 0.2− | 0.5− | 2003 12 18 | 291 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.7+ | 0.0 |
| 1999 11 16 | 704 | 0.1− | 0.3− | 2003 12 18 | 291 | 1.3+ | 0.3− | 2004 03 18 | 704 | 0.3− | 0.3− |
| 1999 11 16 | 704 | 0.0 | 0.5− | 2003 12 19 | 704 | (2.1− | 1.2−) | 2004 03 18 | 704 | 0.9− | 0.8+ |
| 1999 11 16 | 704 | 0.4+ | 0.1+ | 2003 12 19 | 704 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.7− | 0.2− |
| 1999 12 04 | 691 | 0.3+ | 0.0 | 2003 12 19 | 704 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.2+ | 1.5+ |
| 1999 12 04 | 691 | 0.1− | 0.2+ | 2003 12 19 | 704 | 0.6− | 0.7+ | 2004 03 18 | 704 | 0.2− | 1.2+ |
| 1999 12 04 | 691 | 0.2+ | 0.0 | 2003 12 22 | 678 | 0.4− | 0.2+ | 2005 05 11 | 691 | 0.0 | 0.3− |
| 1999 12 07 | 704 | 0.3+ | 0.0 | 2003 12 22 | 678 | 0.6− | 0.1+ | 2005 05 11 | 691 | 0.0 | 0.3− |
| 1999 12 07 | 704 | 0.3+ | 0.3− | 2003 12 22 | 678 | 0.1− | 0.1− | 2005 05 11 | 691 | 0.4− | 0.1+ |
| 1999 12 07 | 704 | 0.3− | 0.1− | 2003 12 24 | 608 | 0.2+ | 0.2− | 2006 08 20 | 644 | 0.1− | 0.6+ |
| 1999 12 07 | 704 | 0.3+ | 0.6− | 2003 12 24 | 608 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.0 | 0.6+ |
| 1999 12 07 | 704 | 0.1+ | 0.8− | 2003 12 24 | 608 | 0.2+ | 0.1− | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 1999 12 08 | 704 | 0.8+ | 0.5+ | 2003 12 28 | 704 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 1999 12 08 | 704 | 0.3+ | 0.5− | 2003 12 28 | 704 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.3+ |
| 1999 12 08 | 704 | 0.1+ | 0.4+ | 2003 12 28 | 704 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.5+ | 0.1+ |
| 1999 12 08 | 704 | 0.1− | 0.4− | 2003 12 28 | 704 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.5− | 0.3+ |

**(137468)∗ 1999 UT$_{11}$ = 2001 HE$_{22}$**

Discovered 1999 Oct. 29 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 12966)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.76536 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27124044 | $\omega$ | 317.84271 | | −0.92496761 | | −0.37993079 |
| $a$ | 2.3635588 | $\Omega$ | 199.83382 | | +0.35563301 | | −0.85660793 |
| $e$ | 0.1332652 | $i$ | 1.58001 | | +0.13401525 | | −0.34910665 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 691 | 0.3− | 0.3− | 2001 04 18 | 704 | (0.4− | 1.6−) | 2006 07 22 | G96 | 0.8− | 0.2− |
| 1999 10 19 | 691 | 0.3− | 0.4− | 2001 04 23 | 704 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 1999 10 19 | 691 | 0.1− | 0.1− | 2001 04 23 | 704 | 0.6− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3+ |
| 1999 10 29 | 691 | 0.2+ | 0.0 | 2001 04 23 | 704 | 0.4− | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 1999 10 29 | 691 | 0.3+ | 0.3+ | 2001 04 23 | 704 | 0.1+ | 1.4+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 1999 10 29 | 691 | 0.3+ | 0.2+ | 2001 04 24 | 608 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.5− |
| 1999 11 03 | 691 | 0.5− | 0.4+ | 2001 04 24 | 608 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 1999 11 03 | 691 | 0.4− | 0.4+ | 2001 04 24 | 608 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 1999 11 03 | 691 | 0.2+ | 0.7+ | 2001 04 27 | 704 | 0.1+ | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 0.5− | 1.0+ | 2001 04 27 | 704 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 1999 11 09 | 704 | 0.4+ | 0.5+ | 2001 04 27 | 704 | 0.0 | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 1999 11 09 | 704 | (2.4− | 0.2+) | 2001 04 30 | 704 | (1.6+ | 0.4+) | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 1999 11 09 | 704 | 0.0 | 0.8+ | 2001 04 30 | 704 | 0.5− | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.2− |
| 1999 11 12 | 704 | 0.9+ | 1.4+ | 2001 04 30 | 704 | 1.0+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1− |
| 1999 11 12 | 704 | 0.6− | 0.6+ | 2001 04 30 | 704 | 1.0− | 0.3− | 2006 10 17 | 703 | 0.2− | 0.9+ |
| 1999 11 12 | 704 | 0.6− | 0.2+ | 2001 04 30 | 704 | 0.2− | 0.5+ | 2006 10 17 | 703 | 1.0+ | 0.9+ |
| 1999 11 12 | 704 | 0.8− | 1.0+ | 2003 12 01 | 704 | 0.1− | 1.3+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 0.2+ | 0.6+ | 2003 12 01 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 1.0− | 0.3+ |
| 1999 11 16 | 691 | 0.5+ | 1.0− | 2003 12 01 | 704 | 0.7− | 0.1+ | 2006 10 19 | 644 | 0.8− | 0.0 |
| 1999 11 16 | 691 | 0.2+ | 0.1− | 2003 12 01 | 704 | 0.9− | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 1999 11 16 | 691 | 0.3+ | 0.1− | 2003 12 19 | 704 | 0.8+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 1999 11 28 | 691 | 0.2− | 0.0 | 2003 12 19 | 704 | 0.6+ | 0.8− | 2006 11 02 | G96 | 0.0 | 0.5+ |
| 1999 11 28 | 691 | 0.2− | 0.0 | 2003 12 19 | 704 | 0.2+ | 0.1− | 2006 11 02 | G96 | 1.0+ | 0.0 |
| 1999 11 28 | 691 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.0 | 0.3− | 2006 11 02 | G96 | 0.1− | 0.8+ |
| 2001 04 16 | 699 | 0.2− | 0.2+ | 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 11 02 | G96 | 0.2− | 0.8+ |
| 2001 04 16 | 699 | 0.6+ | 0.9+ | 2003 12 23 | 704 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2001 04 16 | 699 | 0.2+ | 1.0+ | 2003 12 23 | 704 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2001 04 16 | 699 | 0.2+ | 0.4+ | 2003 12 23 | 704 | 0.6− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2001 04 18 | 704 | (0.0 | 2.4+) | 2006 07 22 | G96 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2001 04 18 | 704 | 0.2+ | 0.8+ | 2006 07 22 | G96 | 0.6− | 0.3− | | | | |
| 2001 04 18 | 704 | 1.3+ | 0.7+ | 2006 07 22 | G96 | 0.4− | 0.2+ | | | | |

**(137469)∗ 1999 UE$_{14}$**

Discovered 1999 Oct. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.34910 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27543808 | $\omega$ | 35.17694 | | −0.04268673 | | −0.99344263 |
| $a$ | 2.3394839 | $\Omega$ | 57.49083 | | +0.88541000 | | −0.08679697 |
| $e$ | 0.1891371 | $i$ | 7.22533 | | +0.46284661 | | +0.07441794 |
| $P$ | 3.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.1+ | 0.2− | 2003 12 18 | 704 | 0.1− | 0.5− | 2004 02 14 | 704 | 0.1− | 0.1+ |
| 1999 10 04 | 703 | 0.1+ | 0.0 | 2003 12 18 | 704 | 0.7− | 1.0− | 2004 02 14 | 704 | 0.5+ | 0.4− |
| 1999 10 04 | 703 | 1.8− | 0.8+ | 2003 12 18 | 704 | 0.1+ | 0.6+ | 2004 02 14 | 704 | 0.0 | 0.2− |
| 1999 10 04 | 703 | 0.2− | 0.5+ | 2003 12 18 | 704 | 0.1+ | 0.3− | 2004 02 14 | 704 | 0.5+ | 0.3− |
| 1999 10 09 | 704 | 1.2− | 0.1+ | 2003 12 27 | 704 | 0.3− | 0.3− | 2004 02 14 | 704 | 0.2+ | 0.6− |
| 1999 10 09 | 704 | 0.4− | 0.3+ | 2003 12 27 | 704 | 1.5+ | 0.2+ | 2004 03 20 | 703 | 0.2− | 0.4+ |
| 1999 10 09 | 704 | 0.2+ | 0.2+ | 2003 12 27 | 704 | 1.2+ | 0.6+ | 2004 03 20 | 703 | 1.4− | 0.4+ |
| 1999 10 09 | 704 | 0.6− | 0.0 | 2003 12 27 | 704 | 0.7+ | 0.1+ | 2004 03 20 | 703 | 0.7− | 1.1+ |
| 1999 10 09 | 704 | 1.2− | 0.4+ | 2003 12 27 | 704 | 1.3+ | 0.1− | 2004 03 20 | 703 | 0.2− | 0.1+ |
| 1999 10 19 | 704 | 0.1− | 0.9+ | 2003 12 29 | 704 | 0.8+ | 0.4+ | 2004 03 23 | 704 | 0.7− | 0.4+ |
| 1999 10 19 | 704 | 0.2+ | 0.0 | 2003 12 29 | 704 | 1.1+ | 1.1+ | 2004 03 23 | 704 | (0.1− | 1.7+) |
| 1999 10 19 | 704 | 0.2− | 0.5+ | 2003 12 29 | 704 | 0.1+ | 0.2− | 2004 03 23 | 704 | (2.0+ | 1.2+) |
| 1999 10 19 | 704 | 0.0 | 0.2+ | 2003 12 29 | 704 | 0.9+ | 0.4+ | 2004 03 23 | 704 | 0.5− | 0.3+ |
| 1999 10 19 | 704 | 0.2− | 0.7+ | 2003 12 29 | 704 | 0.4+ | 0.9+ | 2006 08 28 | 699 | 0.7+ | 1.0+ |
| 1999 10 29 | 703 | 1.6− | 0.5− | 2004 01 04 | 699 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.8+ | 0.1− |
| 1999 10 29 | 703 | 0.5+ | 0.7+ | 2004 01 04 | 699 | 0.1− | 0.3+ | 2006 08 28 | 699 | (1.7− | 0.4+) |
| 1999 10 29 | 703 | 0.2+ | 1.0+ | 2004 01 04 | 699 | 1.3− | 0.1− | 2006 08 28 | 699 | 0.7+ | 0.4+ |
| 1999 10 29 | 703 | 0.1+ | 0.0 | 2004 01 04 | 699 | 0.8+ | 0.4− | 2006 09 18 | 699 | 0.8+ | 0.4+ |
| 1999 11 03 | 703 | 0.3− | 0.3− | 2004 01 13 | 699 | 0.2− | 0.9− | 2006 09 18 | 699 | 0.3− | 0.9+ |
| 1999 11 03 | 703 | 0.0 | 0.1+ | 2004 01 13 | 699 | 0.4− | 0.4− | 2006 09 18 | 699 | 0.0 | 0.5+ |
| 1999 11 03 | 703 | 0.6− | 0.0 | 2004 01 13 | 699 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.6+ |
| 1999 11 03 | 703 | 0.5− | 0.7+ | 2004 01 13 | 699 | 1.1− | 0.1+ | 2006 09 19 | 703 | 1.0− | 0.3+ |
| 1999 11 05 | 704 | 0.4+ | 0.1− | 2004 01 17 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 1999 11 05 | 704 | 0.5+ | 0.2+ | 2004 01 17 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.7+ |
| 1999 11 05 | 704 | 0.5+ | 0.1+ | 2004 01 17 | 644 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.6+ |
| 1999 11 05 | 704 | 0.7+ | 0.2+ | 2004 01 17 | 644 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 1999 11 05 | 704 | 0.5− | 1.0+ | 2004 01 17 | 644 | 0.4− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 1999 11 15 | 704 | 0.4+ | 0.1− | 2004 01 17 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.7− | 0.2− |
| 1999 11 15 | 704 | 0.6+ | 0.5− | 2004 01 17 | 644 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.3+ | 1.1+ |
| 1999 11 15 | 704 | 1.0+ | 0.9− | 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.8− | 0.2− |
| 1999 11 15 | 704 | 0.4+ | 0.3− | 2004 01 17 | 644 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.8− | 0.2+ |
| 1999 11 15 | 704 | 0.7+ | 0.7− | 2004 01 30 | 703 | 0.6+ | 0.5+ | 2006 10 02 | 703 | 0.7− | 0.1− |
| 2001 04 16 | 691 | 0.5+ | 1.1+ | 2004 01 30 | 703 | 0.6+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2001 04 16 | 691 | 0.4+ | 1.2+ | 2004 01 30 | 703 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2001 04 16 | 691 | 0.4+ | 1.0+ | 2004 01 30 | 703 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 05 24 | 807 | 0.4+ | 1.0+ | 2004 01 31 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2001 05 24 | 807 | 0.5+ | 0.1+ | 2004 01 31 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | (1.5− | 2.2+) |
| 2003 11 20 | 704 | 0.1− | 0.6+ | 2004 01 31 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | (0.4+ | 1.5+) |
| 2003 11 20 | 704 | 1.1+ | 0.3− | 2004 01 31 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2003 11 20 | 704 | 0.6+ | 0.0 | 2004 01 31 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 2003 11 20 | 704 | 0.0 | 0.6− | 2004 02 02 | 704 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2003 11 24 | 704 | 0.8+ | 0.9+ | 2004 02 02 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.2+ |
| 2003 11 24 | 704 | 0.4− | 0.0 | 2004 02 02 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.3− |
| 2003 11 24 | 704 | 0.8− | 0.0 | 2004 02 02 | 704 | 0.0 | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2003 11 24 | 704 | 0.2− | 0.1− | 2004 02 02 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.4− |
| 2003 11 30 | 703 | 0.8− | 0.4− | 2004 02 13 | 699 | 0.1+ | 0.9+ | 2006 10 22 | 703 | 0.1+ | 0.9− |
| 2003 11 30 | 703 | 0.2+ | 0.4− | 2004 02 13 | 699 | 0.4+ | 1.4+ | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2003 11 30 | 703 | 0.4+ | 0.6− | 2004 02 13 | 699 | 0.4− | 0.3− | 2006 11 17 | 704 | 0.1− | 0.4+ |
| 2003 11 30 | 703 | (0.4− | 1.7−) | 2004 02 13 | 699 | 0.1− | 0.1− | 2006 11 17 | 704 | 1.3− | 1.1+ |
| 2003 12 17 | 644 | 0.1− | 0.2+ | 2004 02 13 | 699 | 0.7− | 0.2− | 2006 11 17 | 704 | 0.8+ | 1.6+ |
| 2003 12 17 | 644 | 0.1− | 0.3+ | 2004 02 13 | 699 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.4− | 0.2+ |
| 2003 12 17 | 644 | 0.0 | 0.3+ | 2004 02 13 | 699 | 0.5− | 0.1− | | | | |
| 2003 12 18 | 704 | 0.1+ | 0.0 | 2004 02 13 | 699 | 0.3− | 0.3+ | | | | |

**(137470)∗ 1999 UX$_{15}$ = 2003 YO$_{64}$**

Discovered 1999 Oct. 29 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 55948)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| $M$ | 353.59097 | | (2000.0) | **P** | **Q** |
| $n$ | 0.27735478 | $\omega$ | 264.11103 | +0.96709236 | −0.24753319 |
| $a$ | 2.3286932 | $\Omega$ | 110.20936 | +0.25111386 | +0.89146793 |
| $e$ | 0.1662037 | $i$ | 3.59352 | +0.04091684 | +0.37948947 |
| $P$ | 3.55 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | 0.1+ | 0.4+ | 2004 01 19 | 699 | 1.4+ | 0.3− | 2006 09 27 | 691 | 0.4− | 0.0 |
| 1998 04 27 | 691 | 0.0 | 0.6+ | 2004 01 24 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.4+ |
| 1998 04 27 | 691 | 0.1+ | 0.5+ | 2004 01 24 | 704 | 0.1− | 0.5+ | 2006 09 28 | 704 | (0.6+ | 1.6+) |
| 1999 10 09 | 704 | 0.8− | 0.3+ | 2004 01 24 | 704 | 0.8− | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.6+ |
| 1999 10 09 | 704 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.7− | 0.0 | 2006 09 28 | 704 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.5− | 0.1− | 2004 01 24 | 704 | 0.2− | 0.4+ | 2006 09 28 | 704 | 0.7+ | 0.5− |
| 1999 10 09 | 704 | 0.7− | 0.2− | 2005 04 02 | 691 | 0.2+ | 0.9+ | 2006 09 30 | 704 | 0.5+ | 0.3+ |
| 1999 10 09 | 704 | 1.1− | 0.5− | 2005 04 02 | 691 | 0.2+ | 0.8+ | 2006 09 30 | 704 | 0.6− | 0.3+ |
| 1999 10 12 | 699 | 0.1+ | 0.3− | 2005 04 02 | 691 | 0.6+ | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.0 |
| 1999 10 12 | 699 | 1.4+ | 1.2+ | 2005 04 12 | 691 | 0.3+ | 0.6+ | 2006 09 30 | 704 | 0.1+ | 0.3− |
| 1999 10 12 | 699 | 0.9+ | 1.2− | 2005 04 12 | 691 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.6− | 0.3+ |
| 1999 10 19 | 704 | 0.0 | 0.4+ | 2005 04 12 | 691 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 1999 10 19 | 704 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 1999 10 19 | 704 | 0.1− | 0.8+ | 2006 09 12 | 703 | (1.6− | 1.0+) | 2006 10 01 | 691 | 0.0 | 0.2− |
| 1999 10 19 | 704 | 0.5− | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.1+ | 2006 10 15 | 106 | 0.0 | 0.2− |
| 1999 10 29 | 703 | 0.5− | 0.5+ | 2006 09 12 | 703 | 0.3+ | 0.1+ | 2006 10 15 | 106 | 0.0 | 0.2− |
| 1999 10 29 | 703 | 0.3+ | 0.6+ | 2006 09 16 | 704 | 0.3− | 1.1+ | 2006 10 15 | 106 | 0.0 | 0.1− |
| 1999 10 29 | 703 | 0.6− | 0.5+ | 2006 09 16 | 704 | 0.3− | 0.2+ | 2006 10 15 | 106 | 0.3− | 0.2+ |
| 1999 10 29 | 703 | 0.2+ | 0.5+ | 2006 09 16 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 1999 11 03 | 703 | 0.4+ | 0.4+ | 2006 09 16 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | 1.1− | 0.1+ |
| 1999 11 03 | 703 | 0.3+ | 0.9+ | 2006 09 16 | 704 | 0.7− | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 1999 11 03 | 703 | 0.5+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 1999 11 03 | 703 | 1.0− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 16 | 106 | 0.4+ | 0.2− |
| 1999 11 05 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.7− | 0.1+ | 2006 10 16 | 106 | 0.0 | 0.2− |
| 1999 11 05 | 704 | 0.5+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 10 16 | 106 | 0.3− | 0.2− |
| 1999 11 05 | 704 | 0.5− | 0.5− | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 10 16 | 106 | 0.3+ | 0.4− |
| 1999 11 05 | 704 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 1999 11 05 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 1.1+ | 2006 09 18 | 699 | 0.1− | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2003 12 19 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 704 | 0.3+ | 0.9− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 0.8+ | 2006 09 19 | 704 | (0.7+ | 1.7−) | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2006 09 19 | 704 | 1.2− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.8+ |
| 2003 12 19 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 09 19 | 704 | (3.2− | 3.0+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 12 21 | 704 | 0.6+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 21 | 704 | 0.3+ | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 21 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 12 29 | 699 | 0.0 | 0.3+ | 2006 09 22 | 704 | 1.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 12 29 | 699 | 0.6− | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2003 12 29 | 699 | (1.6+ | 0.8−) | 2006 09 22 | 704 | 0.9+ | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.1− |
| 2003 12 29 | 699 | 1.1+ | 0.1− | 2006 09 22 | 704 | 0.9+ | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2004 01 13 | 699 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.8+ | 0.3− | 2006 11 10 | 644 | 0.2− | 0.2− |
| 2004 01 13 | 699 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.6+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2004 01 13 | 699 | 0.1− | 1.2+ | 2006 09 26 | 704 | 0.3− | 0.9+ | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2004 01 13 | 699 | 0.7− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 01 19 | 699 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.3− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 01 19 | 699 | 0.2+ | 0.3− | 2006 09 26 | 704 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2004 01 19 | 699 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.5+ | 0.0 |

**(137471)∗ 1999 UN$_{16}$**

Discovered 1999 Oct. 29 by the Catalina Sky Survey.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| $M$ | 0.42058 | | (2000.0) | **P** | **Q** |
| $n$ | 0.27606897 | $\omega$ | 339.77910 | +0.99970625 | −0.00381955 |
| $a$ | 2.3359183 | $\Omega$ | 20.48380 | +0.01430866 | +0.89005545 |
| $e$ | 0.1880639 | $i$ | 3.92170 | −0.01956200 | +0.45583628 |
| $P$ | 3.57 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 14 | 691 | 0.2+ | 1.0+ | 2003 12 23 | 704 | 0.7− | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.3+ |
| 1994 03 14 | 691 | 0.3− | 0.7− | 2003 12 23 | 704 | 0.7+ | 0.2− | 2006 09 27 | 704 | 0.4− | 0.7+ |
| 1994 03 14 | 691 | 0.5− | 0.2− | 2003 12 23 | 704 | 0.8− | 0.7+ | 2006 09 27 | 704 | 0.3− | 0.7+ |
| 1999 09 30 | 691 | 0.4+ | 0.1+ | 2003 12 23 | 704 | 0.5− | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.9+ |
| 1999 09 30 | 691 | 0.5+ | 0.3+ | 2003 12 23 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.2+ |
| 1999 09 30 | 691 | 0.4+ | 0.1+ | 2003 12 28 | 704 | 0.5+ | 0.9− | 2006 09 28 | 704 | 0.3− | 0.5+ |
| 1999 10 01 | 691 | 0.1− | 0.2+ | 2003 12 28 | 704 | 0.5+ | 0.9+ | 2006 09 28 | 704 | 0.2+ | 0.2+ |
| 1999 10 01 | 703 | 0.3− | 0.4+ | 2003 12 28 | 704 | 0.0 | 1.2− | 2006 09 28 | 704 | 0.3− | 0.8+ |
| 1999 10 01 | 703 | 1.1− | 0.3+ | 2005 03 10 | G96 | 0.6− | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 1999 10 01 | 691 | 0.1− | 0.0 | 2005 03 10 | G96 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 1999 10 01 | 703 | 0.9+ | 0.2+ | 2005 03 10 | G96 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1999 10 01 | 703 | 0.7− | 0.1+ | 2005 03 10 | G96 | 0.6− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 1999 10 01 | 691 | 0.2− | 0.0 | 2005 04 05 | G96 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.1+ | 0.0 |
| 1999 10 03 | 704 | 0.2− | 0.4+ | 2005 04 05 | G96 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.0 |
| 1999 10 03 | 704 | 1.1− | 0.6+ | 2005 04 05 | G96 | 0.1+ | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 1999 10 03 | 704 | 0.9− | 0.3+ | 2005 04 05 | G96 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.2− |
| 1999 10 03 | 704 | 0.1− | 0.2+ | 2005 04 09 | 691 | 0.7+ | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 1999 10 03 | 704 | 1.0− | 0.3− | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 1999 10 07 | 691 | 0.0 | 0.1− | 2005 04 09 | 691 | 0.5+ | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1999 10 07 | 691 | 0.2− | 0.1+ | 2005 04 17 | 691 | 0.7+ | 0.5+ | 2006 09 30 | G96 | 0.5+ | 0.0 |
| 1999 10 07 | 704 | 0.3− | 0.7+ | 2005 04 17 | 691 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1999 10 07 | 704 | 0.5− | 0.2+ | 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 1999 10 07 | 691 | 0.2− | 0.2+ | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 1999 10 07 | 704 | 0.3− | 0.8+ | 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 0.3+ | 0.3+ | 2005 05 12 | G96 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.6− | 0.1− | 2005 05 12 | G96 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 1999 10 10 | 704 | 0.0 | 0.0 | 2006 08 28 | 704 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 1999 10 10 | 704 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.6+ | 0.6− | 2006 10 17 | 703 | 0.0 | 0.3− |
| 1999 10 10 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.9− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 10 15 | 704 | 0.6+ | 0.2− | 2006 08 28 | 704 | (1.1− | 2.1+) | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 1999 10 15 | 704 | 0.2+ | 0.5− | 2006 09 17 | 704 | 0.6− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.7+ | 0.0 | 2006 09 17 | 704 | 0.7− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 1999 10 15 | 704 | 0.7+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 10 21 | 704 | 0.2− | 0.6− | 2006 09 17 | 704 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 1999 10 21 | 704 | 0.6+ | 0.6− | 2006 09 17 | 704 | 0.6− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 1999 10 21 | 704 | 0.4+ | 0.6− | 2006 09 17 | 608 | 0.4− | 1.1− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 1999 10 21 | 704 | 0.3+ | 0.2− | 2006 09 17 | 608 | 0.1+ | 1.3− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 1999 10 21 | 704 | 0.7+ | 0.7− | 2006 09 17 | 608 | 0.3− | 1.2− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 1999 10 29 | 703 | 0.4− | 0.5− | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 1999 10 29 | 703 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 1999 10 29 | 703 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 1999 10 29 | 703 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1999 11 03 | 703 | 0.0 | 0.3− | 2006 09 20 | 704 | (1.7+ | 0.5−) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1999 11 03 | 703 | 0.4− | 1.2+ | 2006 09 20 | 704 | 0.9+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 11 03 | 703 | 0.5− | 0.2+ | 2006 09 20 | 704 | (2.1+ | 1.0−) | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 1999 11 03 | 703 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.5− | 0.3− | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 11 11 | G96 | 1.2+ | 0.7− |
| 1999 11 04 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 11 11 | G96 | (0.4+ | 2.0−) |
| 1999 11 04 | 704 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.9− |
| 1999 11 04 | 704 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.6− | 0.7+ | 2006 11 18 | 704 | 0.4− | 0.1− |
| 1999 11 11 | 703 | 0.5+ | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.3− | 1.0− |
| 1999 11 11 | 703 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.2− | 1.1+ | 2006 11 18 | 704 | 1.1− | 0.2− |
| 1999 11 11 | 703 | 0.7− | 0.0 | 2006 09 22 | 704 | 0.7− | 0.0 | 2006 11 18 | 704 | 0.7− | 0.9− |
| 1999 11 11 | 703 | 0.7+ | 0.1− | 2006 09 22 | 704 | 0.8− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.3− |
| 1999 11 14 | 704 | 1.0− | 1.8+ | 2006 09 26 | 704 | 0.2+ | 0.3− | 2006 11 18 | 704 | (1.6− | 1.4−) |
| 1999 11 14 | 704 | 0.7+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.0 | 2006 11 18 | 704 | 1.4− | 0.6+ |
| 1999 11 14 | 704 | 0.4− | 0.2+ | 2006 09 26 | 704 | 1.1+ | 0.5− | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 1999 11 14 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.9− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.0 | 0.3− | 2006 09 26 | 704 | 0.9+ | 0.3− | 2006 11 21 | 704 | 0.5+ | 1.4+ |
| 1999 11 16 | 704 | 0.9− | 0.7+ | 2006 09 26 | 704 | 0.0 | 0.6− | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 1999 11 16 | 704 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.6+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 1999 11 16 | 704 | 0.0 | 0.5− | 2006 09 26 | 704 | (1.6+ | 0.0 ) | 2006 11 21 | 704 | 0.3+ | 0.6− |

**(137472)∗ 1999 UW$_{16}$**

Discovered 1999 Oct. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.22852 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27689152 | $\omega$ | 57.02670 | | +0.38203072 | | −0.92412030 |
| $a$ | 2.3312899 | $\Omega$ | 10.52150 | | +0.83386932 | | +0.34126512 |
| $e$ | 0.1935523 | $i$ | 2.31052 | | +0.39838987 | | +0.17187141 |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.1+ | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.0 |
| 1999 10 02 | 691 | 0.1− | 0.2+ | 2004 02 10 | 644 | 0.3+ | 0.2− | 2006 09 24 | 691 | 0.0 | 0.0 |
| 1999 10 02 | 691 | 0.1− | 0.2+ | 2004 02 10 | 644 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.6− | 0.5+ |
| 1999 10 06 | 704 | 0.1+ | 0.4− | 2004 02 10 | 703 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 1999 10 06 | 704 | 0.5+ | 1.0− | 2004 02 10 | 644 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 1999 10 06 | 704 | 0.2+ | 0.3+ | 2004 02 10 | 703 | 0.7− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 1999 10 06 | 704 | 0.1− | 0.6− | 2004 02 10 | 703 | 1.3− | 0.2− | 2006 09 27 | 704 | (2.2+ | 0.7+) |
| 1999 10 06 | 704 | 0.9− | 0.6− | 2004 02 10 | 703 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.0 | 0.1− |
| 1999 10 10 | 691 | 0.5+ | 0.4− | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.0 | 0.8+ |
| 1999 10 10 | 691 | 0.6+ | 0.3− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.8− | 0.8+ |
| 1999 10 10 | 691 | 0.6+ | 0.3− | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.3+ |
| 1999 10 15 | 704 | 0.2+ | 0.2+ | 2004 02 16 | 704 | 0.5+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 1999 10 15 | 704 | 0.7− | 0.4− | 2004 02 16 | 704 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.2− | 0.0 |
| 1999 10 15 | 704 | 0.3− | 0.1+ | 2004 02 16 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | 0.3− | 0.0 | 2004 02 16 | 704 | 0.2+ | 0.7+ | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 1999 10 15 | 704 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 704 | 0.7− | 0.3+ |
| 1999 10 29 | 703 | 0.0 | 0.3+ | 2004 02 19 | 608 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 0.8− | 0.1− |
| 1999 10 29 | 703 | 1.1− | 1.4+ | 2004 02 19 | 608 | 0.5− | 0.8+ | 2006 09 29 | 704 | 0.3− | 0.1− |
| 1999 10 29 | 703 | 0.3− | 0.6− | 2004 02 19 | 608 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.5+ | 0.1− |
| 1999 10 29 | 703 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.5+ |
| 1999 11 03 | 703 | 0.4− | 0.5+ | 2004 02 23 | 704 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.1− |
| 1999 11 03 | 703 | 0.7+ | 0.8+ | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 10 01 | 704 | 0.3+ | 0.4− |
| 1999 11 03 | 703 | 0.7− | 0.5+ | 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 1999 11 03 | 703 | 0.0 | 0.5+ | 2004 03 19 | 644 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.4− | 0.4+ |
| 1999 11 04 | 704 | 0.0 | 0.7− | 2004 03 19 | 644 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.1+ |
| 1999 11 04 | 704 | 0.2− | 0.4− | 2004 03 19 | 644 | 0.5+ | 0.3+ | 2006 10 15 | 106 | 0.7+ | 0.3− |
| 1999 11 04 | 704 | 0.1− | 0.1− | 2006 08 20 | 644 | 0.3− | 0.5+ | 2006 10 15 | 106 | 0.0 | 0.1− |
| 1999 11 04 | 704 | 0.6+ | 0.1− | 2006 08 20 | 644 | 0.1− | 0.4+ | 2006 10 15 | 106 | 0.1+ | 0.6− |
| 1999 11 04 | 704 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.1+ | 0.7+ | 2006 10 15 | 106 | 0.5+ | 1.0− |
| 1999 11 07 | 704 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 1999 11 07 | 704 | 0.5− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.7+ | 0.3− |
| 1999 11 07 | 704 | 1.1− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 1999 11 07 | 704 | 0.6− | 0.4+ | 2006 09 16 | 644 | 0.3− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 1999 11 14 | 704 | 0.4− | 0.5+ | 2006 09 16 | 644 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 1999 11 14 | 704 | 0.3+ | 0.2− | 2006 09 16 | 644 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 1999 11 14 | 704 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.1− | 0.3+ |
| 1999 11 14 | 704 | 0.3− | 0.5− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.7− |
| 1999 11 14 | 704 | 0.1− | 0.6− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.6− |
| 1999 11 16 | 704 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.8+ | 0.8− |
| 1999 11 16 | 704 | 0.0 | 0.7− | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 1999 11 16 | 704 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 1999 11 16 | 704 | 0.3+ | 1.3+ | 2006 09 19 | 699 | 1.0− | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 1999 11 16 | 704 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2002 07 14 | 644 | 0.8− | 1.2+ | 2006 09 20 | 704 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2002 07 14 | 644 | 0.2− | 1.1+ | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 07 14 | 644 | 0.2− | 1.2+ | 2006 09 20 | 704 | 0.9− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2004 01 19 | 703 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2004 01 19 | 703 | 0.6− | 0.6− | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2004 01 19 | 703 | 0.5+ | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2004 01 19 | 703 | 0.8− | 0.4− | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.0 | 0.0 | 2006 09 24 | 958 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2004 01 22 | 704 | 0.2+ | 0.0 | 2006 09 24 | 958 | 0.5+ | 0.3− | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 09 24 | 958 | 1.1+ | 0.4+ | | | | |
| 2004 01 22 | 704 | 0.1− | 0.0 | 2006 09 24 | 691 | 1.4+ | 0.2− | | | | |

**(137473)∗ 1999 UY$_{16}$ = 1981 UW$_{8}$**

Discovered 1999 Oct. 30 by the Catalina Sky Survey.

Id. M. E. Sansaturio (*MPO* 55948), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.51890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27158103 | $\omega$ | 49.10334 | | +0.49888470 | | −0.86649853 |
| $a$ | 2.3615824 | $\Omega$ | 11.00900 | | +0.76569398 | | +0.43140044 |
| $e$ | 0.2261421 | $i$ | 5.15459 | | +0.40598866 | | +0.25114529 |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 10 30 | 381 | 0.4+ | 0.1− | 1999 11 03 | 703 | 0.2+ | 0.4+ | 2003 12 27 | 704 | 0.1− | 0.6+ |
| 1981 10 30 | 381 | 0.2− | 0.8− | 1999 11 03 | 703 | 1.6− | 0.5− | 2003 12 27 | 704 | 0.4− | 0.8+ |
| 1999 09 05 | 699 | 0.3− | 1.0+ | 1999 11 06 | 704 | 0.3+ | 0.1+ | 2003 12 28 | 691 | (1.9− | 0.0 ) |
| 1999 09 05 | 699 | 0.8+ | 0.6+ | 1999 11 06 | 704 | 0.1− | 0.2− | 2003 12 28 | 691 | 0.3− | 0.2− |
| 1999 09 05 | 699 | 0.4− | 0.1+ | 1999 11 06 | 704 | 0.8− | 0.4+ | 2003 12 28 | 691 | 0.3− | 0.2− |
| 1999 10 01 | 703 | 0.1+ | 0.3+ | 1999 12 07 | 704 | 0.2− | 0.6− | 2003 12 29 | 704 | 0.0 | 0.5− |
| 1999 10 01 | 703 | 0.6+ | 0.1+ | 1999 12 07 | 704 | 0.2+ | 0.5− | 2003 12 29 | 704 | 0.9− | 0.4− |
| 1999 10 01 | 703 | 0.2− | 0.3+ | 1999 12 07 | 704 | 0.1+ | 0.1+ | 2003 12 29 | 704 | 0.0 | 0.5− |
| 1999 10 01 | 703 | 0.3− | 0.1− | 2003 11 20 | 704 | 0.0 | 0.9− | 2003 12 29 | 704 | (1.3+ | 1.6−) |
| 1999 10 04 | 704 | 0.3− | 0.4− | 2003 11 20 | 704 | 0.4− | 0.2− | 2003 12 29 | 704 | 0.1+ | 0.2− |
| 1999 10 04 | 704 | 0.1+ | 0.1+ | 2003 11 20 | 704 | 0.5+ | 0.1+ | 2004 01 19 | 704 | (1.5+ | 1.0+) |
| 1999 10 04 | 704 | 0.8− | 0.4+ | 2003 11 20 | 704 | 0.4+ | 1.2− | 2004 01 19 | 704 | 1.4+ | 0.2+ |
| 1999 10 04 | 704 | 0.1− | 0.4− | 2003 11 20 | 704 | 0.2− | 0.1+ | 2004 01 19 | 704 | 1.5+ | 0.9+ |
| 1999 10 04 | 704 | 0.5− | 0.1+ | 2003 12 17 | 699 | 0.8− | 0.5− | 2004 01 19 | 704 | (1.6+ | 0.7+) |
| 1999 10 07 | 704 | 1.5+ | 0.7− | 2003 12 17 | 699 | 0.1− | 0.5− | 2004 01 19 | 704 | (2.2+ | 0.7+) |
| 1999 10 07 | 704 | 0.0 | 1.4− | 2003 12 17 | 704 | 0.5− | 0.4+ | 2004 01 31 | 704 | 0.1− | 0.7− |
| 1999 10 07 | 704 | 1.8+ | 0.9− | 2003 12 17 | 699 | 0.7− | 0.1− | 2004 01 31 | 704 | 1.0− | 0.2− |
| 1999 10 07 | 704 | 0.3+ | 0.6− | 2003 12 17 | 704 | 0.3− | 0.5+ | 2004 01 31 | 704 | 0.3+ | 0.8− |
| 1999 10 08 | 699 | 0.3+ | 0.2+ | 2003 12 17 | 699 | 0.9− | 0.1− | 2004 01 31 | 704 | 0.1− | 0.2− |
| 1999 10 08 | 699 | 0.1− | 0.5− | 2003 12 17 | 704 | 0.4− | 0.6+ | 2004 02 14 | 704 | 0.3− | 1.0+ |
| 1999 10 08 | 699 | 0.5− | 1.4+ | 2003 12 17 | 704 | 0.3− | 0.1+ | 2004 02 14 | 704 | 0.9+ | 0.4+ |
| 1999 10 09 | 704 | 0.1+ | 0.5+ | 2003 12 18 | 704 | 0.0 | 0.4+ | 2004 02 14 | 704 | 0.4− | 0.9+ |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2003 12 18 | 704 | 0.7+ | 0.4+ | 2004 02 14 | 704 | 0.1+ | 1.3+ |
| 1999 10 09 | 704 | 0.6+ | 0.3+ | 2003 12 18 | 704 | 0.1− | 1.0+ | 2006 08 16 | E12 | 0.5+ | 0.0 |
| 1999 10 09 | 704 | 0.4+ | 0.3+ | 2003 12 18 | 704 | 0.7+ | 1.0− | 2006 08 16 | E12 | 0.4− | 0.2+ |
| 1999 10 09 | 704 | 0.1− | 0.3− | 2003 12 19 | 291 | 0.4+ | 0.3+ | 2006 08 16 | E12 | 0.4− | 0.3+ |
| 1999 10 15 | 704 | 0.2− | 0.5+ | 2003 12 19 | 291 | 0.5+ | 0.2+ | 2006 08 16 | E12 | 0.2− | 0.9+ |
| 1999 10 15 | 704 | 0.6− | 0.3+ | 2003 12 19 | 291 | 0.5+ | 0.3+ | 2006 08 24 | 644 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | 0.3− | 0.1+ | 2003 12 19 | 704 | 0.0 | 1.2− | 2006 08 24 | 644 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | 0.6− | 0.3− | 2003 12 19 | 704 | 0.3+ | 0.7− | 2006 08 24 | 644 | 0.3− | 0.4+ |
| 1999 10 30 | 703 | 0.8− | 0.8+ | 2003 12 19 | 704 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.4+ | 0.6− |
| 1999 10 30 | 703 | 0.3+ | 0.7− | 2003 12 19 | 704 | 0.3− | 0.5− | 2006 11 23 | G96 | 0.1− | 0.6− |
| 1999 10 30 | 703 | 0.8+ | 0.5+ | 2003 12 19 | 704 | 0.8− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 1999 10 30 | 703 | 0.4− | 0.3− | 2003 12 27 | 704 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.5+ |
| 1999 11 03 | 703 | 0.5− | 0.5+ | 2003 12 27 | 704 | 0.0 | 1.0+ | | | | |
| 1999 11 03 | 703 | 1.0+ | 0.3− | 2003 12 27 | 704 | 0.2− | 0.6+ | | | | |

**(137474)∗ 1999 UT$_{17}$ = 2005 GS$_{14}$**

Discovered 1999 Oct. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74658)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.17492 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28147099 | $\omega$ | 137.67655 | | +0.60958995 | | +0.79268138 |
| $a$ | 2.3059344 | $\Omega$ | 169.87551 | | −0.73825927 | | +0.57113554 |
| $e$ | 0.1720289 | $i$ | 2.44679 | | −0.28874443 | | +0.21321450 |
| $P$ | 3.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.9− | 0.3+ | 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.7+ |
| 1999 10 07 | 704 | 0.4− | 0.2+ | 2005 04 04 | 703 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.7+ |
| 1999 10 07 | 704 | 0.5+ | 0.2− | 2005 04 04 | 703 | 0.6− | 0.6− | 2006 09 20 | 704 | 0.5− | 1.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.2+ | 1.5+ | 2006 09 20 | 704 | 0.2+ | 0.3− | | |
| 1999 10 15 | 704 | 0.5+ | 0.0 | 2005 04 04 | 703 | 0.3+ | 1.1+ | 2006 09 20 | 704 | 0.0 | 0.8− | | |
| 1999 10 15 | 704 | 0.5− | 0.1− | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.9− | 0.3+ | | |
| 1999 10 15 | 704 | 0.1− | 0.6+ | 2006 07 22 | G96 | 0.6+ | 0.7− | 2006 09 24 | 688 | 0.7− | 0.3+ | | |
| 1999 10 20 | 691 | 0.2+ | 0.3− | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 09 24 | 688 | 0.1+ | 0.1+ | | |
| 1999 10 20 | 691 | 0.3+ | 0.5− | 2006 07 22 | G96 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.3− | 0.2+ | | |
| 1999 10 20 | 691 | 0.5+ | 0.2− | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 1999 10 30 | 691 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 25 | 691 | (1.2− | 2.9+) | | |
| 1999 10 30 | 691 | 0.3+ | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.5+ | | |
| 1999 10 30 | 691 | 0.1+ | 0.2− | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.9− | 0.7+ | | |
| 1999 11 04 | 691 | 0.1− | 0.3− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.5− | | |
| 1999 11 04 | 691 | 0.0 | 0.3− | 2006 09 06 | 644 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.2− | 0.6+ | | |
| 1999 11 04 | 691 | 0.2− | 0.3− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.1+ | | |
| 2002 06 10 | 704 | 0.4− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.5− | 0.2− | | |
| 2002 06 10 | 704 | 0.5+ | 0.4− | 2006 09 14 | 703 | 1.3+ | 0.7− | 2006 10 01 | 704 | 0.3+ | 0.2+ | | |
| 2002 06 10 | 704 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.8− | 2006 10 10 | 644 | 0.1− | 0.3+ | | |
| 2002 06 10 | 704 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2002 06 10 | 704 | 0.3− | 0.5+ | 2006 09 14 | 703 | 0.7+ | 0.7− | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2003 12 23 | 704 | 0.4− | 0.8+ | 2006 09 14 | 703 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2003 12 23 | 704 | 0.8− | 0.0 | 2006 09 14 | 703 | 0.5− | 1.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2003 12 23 | 704 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.4+ | | |
| 2005 03 04 | G96 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.7− | 0.2+ | | |
| 2005 03 04 | G96 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.2+ | | |
| 2005 03 04 | G96 | 0.2+ | 0.2+ | 2006 09 16 | 644 | 0.7− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2005 03 04 | G96 | 0.2− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2005 04 02 | G96 | 0.4+ | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.1− | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.3− | | |
| 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.3− | 0.2− | | |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.4+ | 0.1− | | |
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 23 | 704 | 1.3+ | 0.2+ | | |
| 2005 04 02 | G96 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 1.1− | 1.1+ | | |
| 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 23 | 704 | 0.3− | 0.2+ | | |
| 2005 04 02 | G96 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.6− | | | | | | |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.1− | | | | | | |

**(137475)∗ 1999 UD$_{19}$**

Discovered 1999 Oct. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.14089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28114649 | $\omega$ | 333.11623 | | +0.98436619 | −0.16682087 | |
| $a$ | 2.3077084 | $\Omega$ | 36.62588 | | +0.17378705 | +0.86768849 | |
| $e$ | 0.1653028 | $i$ | 5.43584 | | +0.02865756 | +0.46828140 | |
| $P$ | 3.51 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.9+ | 0.4− | 2005 04 11 | G96 | 0.7− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.3− | | |
| 1999 10 10 | 704 | 0.5+ | 0.3− | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.4− | | |
| 1999 10 10 | 704 | 0.4+ | 0.4− | 2005 04 11 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.1+ | | |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2006 08 28 | 703 | 0.9− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 1999 10 10 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.3− | | |
| 1999 10 19 | 691 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.6+ | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 1999 10 19 | 691 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 1999 10 19 | 691 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 1999 10 20 | 704 | 1.5+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 1999 10 20 | 704 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1− | | |
| 1999 10 20 | 704 | 0.3− | 0.4− | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 1999 10 20 | 704 | 0.4− | 1.0− | 2006 09 20 | 699 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 1999 10 30 | 691 | 0.2+ | 0.5− | 2006 09 20 | 699 | (1.6− | 2.4+) | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 1999 10 30 | 691 | 0.2+ | 0.6− | 2006 09 20 | 699 | 0.1+ | 0.6+ | 2006 11 07 | 644 | 0.2− | 0.1− | | |
| 1999 10 30 | 691 | 0.4+ | 0.3− | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.3+ | 0.0 | | |
| 1999 11 04 | 691 | 0.2+ | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.8+ | 2006 11 07 | 644 | 0.1+ | 0.1− | | |
| 1999 11 04 | 691 | 0.2+ | 0.5− | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.1+ | | |
| 1999 11 04 | 691 | 0.3+ | 0.6− | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 1999 11 09 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 1.2+ | 2006 11 11 | 691 | 0.4+ | 0.2+ | | |
| 1999 11 09 | 704 | 0.2− | 0.5− | 2006 09 27 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.3+ | | |
| 1999 11 09 | 704 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 1999 11 09 | 704 | 0.2− | 0.5− | 2006 09 27 | 704 | 0.6+ | 1.0+ | 2006 11 11 | G96 | 0.3− | 0.1− | | |
| 1999 11 09 | 704 | 0.1− | 0.7− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.0 | | |
| 1999 11 12 | 704 | 0.5+ | 0.3− | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.5− | 0.2− | | |
| 1999 11 12 | 704 | 0.7+ | 0.9− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7− | 0.2+ | | |
| 1999 11 12 | 704 | 0.7+ | 0.7− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.3− | | |
| 1999 11 12 | 704 | 0.0 | 0.6− | 2006 10 01 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.1− | | |
| 1999 11 12 | 704 | 0.4+ | 0.6− | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.2− | | |
| 1999 11 14 | 704 | 0.7− | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.1− | | |
| 1999 11 14 | 704 | 0.0 | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 1.2+ | | |
| 1999 11 14 | 704 | 0.9− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.2− | 0.1− | | |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.6+ | | |
| 2005 04 02 | G96 | 0.9− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.9− | 0.5+ | | |
| 2005 04 02 | G96 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.4− | 0.1− | 2006 11 18 | 704 | 1.8− | 1.3+ | | |
| 2005 04 02 | G96 | 1.0− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.0− | 1.5+ | | |
| 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 1.5− | 0.1− | | |
| 2005 04 07 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.4− | 1.2+ | | |
| 2005 04 07 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.7+ | | |
| 2005 04 07 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 1.1− | 1.4+ | | |
| 2005 04 11 | G96 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.3+ | 2006 11 21 | 704 | (3.5− | 0.7+) | | |

**(137476)∗ 1999 UC$_{20}$ = 2001 HJ$_{8}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 12968)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.68987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29072731 | $\omega$ | 18.43282 | | +0.24173180 | −0.96999939 | |
| $a$ | 2.2567260 | $\Omega$ | 57.58578 | | +0.88638059 | +0.20990748 | |
| $e$ | 0.0873110 | $i$ | 1.75301 | | +0.39483564 | +0.12263781 | |
| $P$ | 3.39 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.6+ | 0.2+ | 2004 01 30 | 704 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 1994 03 05 | 691 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.1− | 0.9+ | 2006 11 14 | 691 | 0.2+ | 0.6− | | |
| 1994 03 05 | 691 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 11 14 | 691 | 0.4− | 0.1+ | | |
| 1999 10 12 | 691 | 0.0 | 0.2− | 2004 02 01 | A16 | 0.9+ | 0.4+ | 2006 11 14 | 691 | 0.4− | 0.3+ | | |
| 1999 10 12 | 691 | 0.0 | 0.1− | 2004 02 12 | 691 | 0.2+ | 0.3− | 2006 11 16 | 703 | 0.9+ | 0.6+ | | |
| 1999 10 12 | 691 | 0.2+ | 0.0 | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.3− | 0.1− | | |
| 1999 10 20 | 691 | 0.2+ | 0.3− | 2004 02 12 | 691 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.6+ | 0.2+ | | |
| 1999 10 20 | 691 | 0.3+ | 0.1− | 2004 02 13 | 699 | 0.4− | 0.0 | 2006 11 16 | 703 | 0.4+ | 0.2+ | | |
| 1999 10 20 | 691 | 0.3+ | 0.0 | 2004 02 15 | 704 | 0.8− | 0.9+ | 2006 11 18 | 704 | 0.2− | 0.6+ | | |
| 1999 10 31 | 691 | 0.1− | 0.0 | 2004 02 15 | 704 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.0 | 1.0+ | | |
| 1999 10 31 | 691 | 0.7− | 0.9− | 2004 02 15 | 704 | 0.2− | 0.9− | 2006 11 18 | 704 | 0.3+ | 0.4+ | | |
| 1999 10 31 | 691 | 0.2− | 0.1− | 2004 02 17 | 645 | 0.1− | 0.3− | 2006 11 18 | 704 | (0.0 | 1.6+) | | |
| 1999 11 04 | 691 | 0.0 | 0.1− | 2004 02 17 | 645 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.7+ | | |
| 1999 11 04 | 691 | 0.3+ | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.5+ | | |
| 1999 11 04 | 691 | 0.1+ | 0.5− | 2006 09 28 | G96 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.7+ | 1.2+ | | |
| 2001 04 18 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3+ | 2006 11 21 | 704 | (0.2+ | 2.4+) | | |
| 2001 04 18 | 691 | 0.5− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.2− | | |
| 2001 04 18 | 691 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.6− | 0.4− | 2006 11 27 | G96 | 0.2+ | 0.1+ | | |
| 2001 04 23 | 691 | 0.1− | 0.4− | 2006 10 17 | G96 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.6+ | 0.5+ | | |
| 2001 04 23 | 691 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.0 | | |
| 2001 04 23 | 691 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.1− | | |
| 2004 01 19 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.6− | 0.5− | | |
| 2004 01 19 | 691 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.3+ | 0.0 | | |
| 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 1.4+ | 0.5+ | 2006 11 27 | 703 | 0.8− | 0.3+ | | |
| 2004 01 22 | 704 | 0.3− | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.6+ | | |
| 2004 01 22 | 704 | (0.2− | 1.6+) | 2006 11 11 | 703 | 0.8− | 0.0 | 2006 11 29 | 704 | 0.4+ | 1.7+ | | |
| 2004 01 22 | 704 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.4+ | 1.2+ | 2006 11 29 | 704 | 0.4− | 1.0+ | | |
| 2004 01 22 | 704 | 0.1− | 1.3+ | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.7+ | 0.2− | | |
| 2004 01 30 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.5− | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.6− | | |
| 2004 01 30 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.1− | 0.3− | | |
| 2004 01 30 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.1+ | | |
| 2004 01 30 | 704 | 0.7− | 1.0+ | 2006 11 11 | 703 | 0.8− | 1.3+ | 2006 12 01 | G96 | 0.5− | 0.3− | | |

**(137477)∗ 1999 UG$_{20}$ = 1999 TO$_{325}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 11069)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.05864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28832934 | $\omega$ | 107.31956 | | −0.99944939 | −0.01727399 | |
| $a$ | 2.2692211 | $\Omega$ | 71.69788 | | +0.00427973 | −0.91377553 | |
| $e$ | 0.0414078 | $i$ | 1.70987 | | +0.03290305 | −0.40585204 | |
| $P$ | 3.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.0 | 0.7− | 2001 03 19 | 704 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 1999 10 09 | 704 | 0.0 | 0.2+ | 2001 03 19 | 704 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.2+ |
| 1999 10 09 | 704 | 0.3+ | 0.4− | 2001 03 19 | 704 | 0.7− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.1+ |
| 1999 10 09 | 704 | 0.7− | 0.8− | 2001 03 19 | 704 | 0.7− | 1.2+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1999 10 09 | 704 | 0.2− | 0.2− | 2001 03 19 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.5+ |
| 1999 10 12 | 691 | 0.1− | 0.1− | 2001 03 19 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 1999 10 12 | 691 | 0.0 | 0.1− | 2001 03 19 | 704 | 1.2+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.4+ |
| 1999 10 12 | 691 | 0.0 | 0.1+ | 2001 03 26 | 704 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 1999 10 20 | 691 | 0.5+ | 0.2− | 2001 03 26 | 704 | 0.9+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.4+ |
| 1999 10 20 | 691 | 0.4+ | 0.5− | 2001 03 26 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 1999 10 20 | 691 | 0.4+ | 0.1− | 2001 03 26 | 704 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1999 10 31 | 691 | 0.1+ | 0.1− | 2001 03 29 | 699 | (0.6− | 1.7+) | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1999 10 31 | 691 | 0.0 | 0.2− | 2001 03 29 | 699 | 1.1− | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1999 10 31 | 691 | 0.1− | 0.3− | 2001 03 29 | 699 | 0.3− | 0.0 | 2006 10 27 | 683 | 1.3+ | 1.3+ |
| 1999 11 04 | 691 | 0.2− | 0.4− | 2001 03 29 | 699 | 0.3− | 0.8+ | 2006 10 27 | 683 | 0.6− | 0.5− |
| 1999 11 04 | 691 | 0.2+ | 0.4− | 2002 07 29 | 644 | 0.3− | 1.2+ | 2006 10 27 | 683 | (2.5− | 2.1+) |
| 1999 11 04 | 691 | 0.1− | 0.2− | 2002 07 29 | 644 | 0.2− | 1.4+ | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 1999 11 10 | 691 | 0.4+ | 0.0 | 2002 07 29 | 644 | 0.2− | 1.4+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 1999 11 10 | 691 | 0.1+ | 0.2− | 2002 08 12 | 807 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 1999 11 10 | 691 | 0.0 | 0.6− | 2002 08 12 | 807 | 0.3− | 0.2+ | 2006 11 17 | 703 | 1.2− | 0.7+ |
| 2001 02 17 | 704 | 0.1− | 0.6− | 2002 08 29 | 644 | 0.3− | 0.6+ | 2006 11 17 | 703 | 1.0− | 1.3+ |
| 2001 02 17 | 704 | 1.0− | 0.7− | 2002 08 29 | 644 | 0.4+ | 0.8+ | 2006 11 17 | 703 | 0.8− | 0.5+ |
| 2001 02 17 | 704 | 0.1− | 1.1− | 2002 08 29 | 644 | 0.1− | 0.6+ | 2006 11 17 | 703 | 0.5+ | 0.2+ |
| 2001 03 03 | 704 | 1.0− | 0.4− | 2003 12 18 | 704 | 0.2+ | 0.8− | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2001 03 03 | 704 | 0.2− | 0.5+ | 2003 12 18 | 704 | 0.6+ | 0.3+ | 2006 11 21 | 704 | 0.5− | 1.0+ |
| 2001 03 03 | 704 | 0.1+ | 0.6− | 2003 12 18 | 704 | 0.4− | 0.2+ | 2006 11 21 | 704 | 1.1− | 0.3− |
| 2001 03 03 | 704 | 0.2− | 0.2− | 2005 02 12 | 809 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.2+ | 1.4+ |
| 2001 03 03 | 704 | 0.3− | 0.7+ | 2005 02 12 | 809 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2001 03 15 | 699 | 1.0+ | 0.6+ | 2005 02 12 | 809 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2001 03 15 | 699 | (1.5+ | 0.7+) | 2005 02 13 | 809 | 0.3− | 0.5+ | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2001 03 15 | 699 | 0.6+ | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2001 03 15 | 699 | 0.9+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3− | | | | |
| 2001 03 19 | 704 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | | | |

**(137478)∗ 1999 UP$_{21}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.38611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28073805 | $\omega$ | 82.18842 | | +0.34291987 | +0.93935066 | |
| $a$ | 2.3099462 | $\Omega$ | 207.86815 | | −0.86611585 | +0.31406192 | |
| $e$ | 0.2274092 | $i$ | 0.62857 | | −0.36366098 | +0.13778767 | |
| $P$ | 3.51 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.1+ | 0.1− | 2005 05 13 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.2+ |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2005 05 13 | G96 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 1999 10 15 | 704 | 0.1+ | 0.6+ | 2005 05 13 | G96 | 0.1+ | 0.7− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 0.2− | 0.7− | 2005 05 13 | G96 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.4+ | 1.2+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 1999 10 15 | 704 | 1.0+ | 0.2− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 1999 10 20 | 691 | 0.0 | 0.3− | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1999 10 20 | 691 | 0.2+ | 0.3− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.6+ |
| 1999 10 20 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 1999 10 31 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.2− |
| 1999 10 31 | 691 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4+ |
| 1999 10 31 | 691 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.3+ |
| 1999 11 04 | 691 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 1999 11 04 | 691 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.5− | 1.2+ | 2006 11 11 | G96 | 0.2+ | 0.1+ |
| 1999 11 04 | 691 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.5− | 0.1− |
| 2002 07 05 | 704 | 0.2− | 0.7− | 2006 10 21 | 703 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.7− | 1.5− |
| 2002 07 05 | 704 | 0.1− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2002 07 05 | 704 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2002 07 05 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2002 07 05 | 704 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2005 03 08 | G96 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.5− | 0.0 |
| 2005 03 08 | G96 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.2− |
| 2005 03 08 | G96 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2005 03 08 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.1− | | | | |

**(137479)∗ 1999 UC$_{24}$**

Discovered 1999 Oct. 28 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.75986 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28027656 | $\omega$ | 26.96234 | | +0.95957393 | +0.27541374 | |
| $a$ | 2.3124811 | $\Omega$ | 316.91985 | | −0.27112082 | +0.84914877 | |
| $e$ | 0.1394782 | $i$ | 4.87207 | | −0.07557359 | +0.45065913 | |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4+ | 0.1+ | 1999 11 11 | 703 | 1.6− | 1.1+ | 2006 08 30 | 699 | 0.3− | 0.6+ |
| 1999 10 12 | 704 | 1.2+ | 0.5− | 1999 11 11 | 703 | 0.9− | 0.8+ | 2006 08 30 | 699 | 0.3+ | 0.6+ |
| 1999 10 12 | 704 | 0.3+ | 0.9− | 2001 02 20 | 645 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.3− | 0.6− |
| 1999 10 12 | 704 | 0.4+ | 0.3− | 2001 02 20 | 645 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.3− | 0.2− |
| 1999 10 12 | 704 | 0.5+ | 0.1− | 2003 12 18 | 704 | 0.8+ | 0.4− | 2006 09 18 | 704 | 0.2− | 0.8− |
| 1999 10 12 | 704 | 0.3+ | 0.5− | 2003 12 18 | 704 | 0.9+ | 1.0+ | 2006 09 18 | 704 | 0.3− | 0.3− |
| 1999 10 12 | 704 | 0.4− | 0.8− | 2003 12 18 | 704 | 0.8+ | 0.5+ | 2006 09 18 | 704 | 0.3− | 0.6− |
| 1999 10 12 | 704 | 0.2− | 0.9− | 2003 12 22 | 704 | 0.5+ | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.1+ |
| 1999 10 12 | 704 | 0.2− | 0.2− | 2003 12 22 | 704 | 0.3− | 0.6− | 2006 09 25 | 704 | 0.4− | 0.1+ |
| 1999 10 12 | 704 | 0.9+ | 0.6− | 2003 12 22 | 704 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.6+ |
| 1999 10 12 | 704 | 1.1− | 0.1− | 2003 12 22 | 704 | 0.7+ | 1.0+ | 2006 09 25 | 704 | 0.7+ | 0.9− |
| 1999 10 12 | 704 | 0.6+ | 0.0 | 2003 12 22 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 704 | (1.7+ | 0.7+) |
| 1999 10 12 | 704 | 0.8+ | 0.1+ | 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 1999 10 12 | 704 | 0.7− | 1.4− | 2003 12 28 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 1999 10 12 | 704 | 0.8− | 0.1− | 2003 12 28 | 691 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 1999 10 28 | 703 | 0.0 | 0.5+ | 2004 01 14 | H36 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.5− | 0.0 |
| 1999 10 28 | 703 | 0.9+ | 0.0 | 2004 01 14 | H36 | 1.1− | 0.2− | 2006 09 30 | 703 | 1.2− | 0.2− |
| 1999 10 28 | 703 | 0.9+ | 1.5− | 2004 01 14 | H36 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.2− |
| 1999 10 28 | 703 | 0.8− | 0.1+ | 2004 01 15 | H36 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.9− | 0.0 |
| 1999 11 04 | 704 | 0.6− | 0.5− | 2004 01 15 | H36 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.3+ |
| 1999 11 04 | 704 | 0.0 | 0.1− | 2004 01 15 | H36 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.6− | 0.3+ |
| 1999 11 04 | 704 | 0.9+ | 0.3+ | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.5− | 0.1+ |
| 1999 11 04 | 704 | 0.8+ | 0.0 | 2004 01 22 | 704 | 1.3− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 1999 11 04 | 703 | 0.2− | 0.7+ | 2004 01 22 | 704 | 0.8+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1999 11 04 | 704 | 0.8+ | 0.3+ | 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 1999 11 04 | 703 | 0.2+ | 0.7− | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 1999 11 04 | 703 | 0.7+ | 0.2+ | 2005 04 12 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 1999 11 04 | 703 | 0.1− | 1.0− | 2005 04 12 | 691 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.5+ | 0.6+ |
| 1999 11 09 | 703 | 0.2+ | 0.7− | 2005 04 12 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 1999 11 09 | 703 | 0.2+ | 1.0+ | 2005 04 16 | 691 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 1999 11 09 | 703 | 0.2− | 0.5− | 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 1999 11 09 | 703 | 0.1+ | 0.2− | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 1999 11 11 | 703 | 0.4− | 1.1+ | 2006 08 30 | 699 | 0.4+ | 1.1+ | | | | |
| 1999 11 11 | 703 | 0.2+ | 0.8− | 2006 08 30 | 699 | 0.3− | 0.1− | | | | |

**(137480)∗ 1999 UD$_{30}$ = 2001 HU$_{10}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 12968)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.04386 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28039290 | $\omega$ | 103.49238 | | −0.69516906 | −0.71366839 | |
| $a$ | 2.3118414 | $\Omega$ | 31.11122 | | +0.57807309 | −0.62622070 | |
| $e$ | 0.1680577 | $i$ | 9.59491 | | +0.42728384 | −0.31388701 | |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.3− | 0.2− | 2001 03 24 | 699 | (1.7+ | 1.8+) | 2003 12 29 | 704 | 0.0 | 0.0 | |
| 1999 10 09 | 704 | 0.0 | 0.3+ | 2001 03 24 | 699 | (0.1+ | 1.6+) | 2003 12 29 | 704 | 0.6− | 0.2− | |
| 1999 10 09 | 704 | 0.1− | 0.2+ | 2001 04 17 | 704 | 0.5+ | 1.0+ | 2003 12 29 | 704 | (2.0+ | 0.2+) | |
| 1999 10 09 | 704 | 0.2+ | 0.1− | 2001 04 17 | 704 | (1.6− | 0.0 ) | 2006 09 18 | 703 | (3.5− | 0.1+) | |
| 1999 10 09 | 704 | 0.0 | 0.4+ | 2001 04 17 | 704 | 0.2− | 1.3+ | 2006 09 18 | 703 | 0.6− | 1.1+ | |
| 1999 10 20 | 691 | 0.3+ | 0.2+ | 2001 04 17 | 704 | 0.7+ | 0.6+ | 2006 09 18 | 703 | (1.1− | 1.6+) | |
| 1999 10 20 | 691 | 0.4+ | 0.1+ | 2001 04 23 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | (1.5− | 1.1+) | |
| 1999 10 20 | 691 | 0.4+ | 0.1+ | 2001 04 23 | 704 | 0.5+ | 1.1+ | 2006 09 28 | 691 | 0.3− | 0.4+ | |
| 1999 10 31 | 691 | 0.3− | 0.1+ | 2001 04 23 | 704 | 0.0 | 0.9+ | 2006 09 28 | 691 | 0.3− | 0.4+ | |
| 1999 10 31 | 691 | 0.2− | 0.1− | 2001 04 23 | 704 | 0.4+ | 0.0 | 2006 09 28 | 691 | 0.5− | 0.5+ | |
| 1999 10 31 | 691 | 0.2− | 0.1− | 2001 04 23 | 704 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.7− | 1.4− | |
| 1999 11 05 | 691 | 0.3− | 0.1+ | 2001 04 30 | 691 | 0.5+ | 0.3+ | 2006 10 16 | 703 | (3.0+ | 1.5−) | |
| 1999 11 05 | 691 | 0.0 | 0.2+ | 2001 04 30 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.2+ | |
| 1999 11 05 | 691 | 0.4− | 0.0 | 2001 04 30 | 691 | 0.4+ | 0.4+ | 2006 10 16 | 703 | (1.6− | 0.4−) | |
| 1999 11 09 | 691 | 0.4+ | 0.4− | 2003 11 19 | 704 | 0.9− | 0.5+ | 2006 10 19 | 291 | 0.3+ | 0.6+ | |
| 1999 11 09 | 691 | 0.2+ | 0.3− | 2003 11 19 | 704 | 0.1+ | 0.1− | 2006 10 19 | 291 | 0.3− | 0.5+ | |
| 1999 11 09 | 691 | 0.0 | 0.4− | 2003 11 19 | 704 | 1.0− | 0.5+ | 2006 10 19 | 291 | 0.1− | 0.5+ | |
| 1999 11 09 | 691 | 0.2+ | 0.1− | 2003 11 19 | 704 | 0.8+ | 0.7− | 2006 10 20 | 644 | 0.5− | 0.2+ | |
| 1999 11 09 | 691 | 0.1+ | 0.2− | 2003 11 19 | 704 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.3− | 1.0+ | |
| 1999 11 09 | 691 | 0.1+ | 0.0 | 2003 12 17 | 704 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.6− | 0.3+ | |
| 1999 11 12 | 691 | 0.1− | 0.2− | 2003 12 17 | 704 | 1.0+ | 1.4+ | 2006 11 14 | G96 | 0.3− | 0.2− | |
| 1999 11 12 | 691 | 0.1− | 0.1− | 2003 12 17 | 704 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.3+ | |
| 1999 11 12 | 691 | 0.2− | 0.1+ | 2003 12 17 | 704 | 0.6+ | 1.5+ | 2006 11 14 | G96 | 0.0 | 0.1+ | |
| 2001 03 24 | 699 | 0.3+ | 0.1+ | 2003 12 17 | 704 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.2+ | |
| 2001 03 24 | 699 | 0.4− | 1.2+ | 2003 12 29 | 704 | 0.1+ | 0.2+ | | | | | |

**(137481)∗ 1999 UJ$_{30}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.29771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28692067 | $\omega$ | 149.46905 | | −0.99629318 | +0.00968815 | |
| $a$ | 2.2766424 | $\Omega$ | 31.43412 | | −0.05295877 | −0.85209411 | |
| $e$ | 0.0772729 | $i$ | 9.43319 | | +0.06778844 | −0.52329893 | |
| $P$ | 3.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.5− | 0.2+ | 2001 03 16 | 704 | (1.6− | 1.0−) | 2006 10 16 | 691 | 0.0 | 0.3+ | |
| 1999 10 09 | 704 | 0.4+ | 0.7+ | 2001 03 16 | 704 | 0.8+ | 0.7+ | 2006 10 16 | 691 | (0.4− | 1.9+) | |
| 1999 10 09 | 704 | 0.3− | 0.5− | 2001 03 16 | 704 | 0.5− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.2+ | |
| 1999 10 19 | 691 | 0.0 | 0.3− | 2001 03 18 | 699 | (2.0− | 0.2+) | 2006 10 20 | 691 | 0.6− | 0.2+ | |
| 1999 10 19 | 691 | 0.1− | 0.1− | 2001 03 18 | 699 | 0.6+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ | |
| 1999 10 19 | 691 | 0.0 | 0.2− | 2001 03 18 | 699 | 0.7− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.2+ | |
| 1999 10 31 | 691 | 0.1+ | 0.2− | 2001 03 18 | 699 | 1.1− | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.2− | |
| 1999 10 31 | 691 | 0.3+ | 0.5− | 2001 03 30 | 012 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.6− | 0.0 | |
| 1999 10 31 | 691 | 0.3+ | 0.2− | 2001 03 30 | 012 | (2.1+ | 0.4+) | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 1999 11 05 | 691 | 0.5+ | 0.4− | 2001 03 30 | 012 | 0.8+ | 1.0− | 2006 10 27 | G96 | 0.0 | 0.0 | |
| 1999 11 05 | 691 | 0.2+ | 0.0 | 2001 03 30 | 012 | (2.3− | 0.7−) | 2006 10 27 | G96 | 0.4+ | 0.2− | |
| 1999 11 05 | 691 | 0.1+ | 0.2− | 2001 03 30 | 012 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.2− | 0.1− | |
| 1999 11 12 | 691 | 0.2+ | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | |
| 1999 11 12 | 691 | 0.1+ | 0.5− | 2003 12 28 | 704 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.2− | |
| 1999 11 12 | 691 | 0.2+ | 0.3− | 2003 12 28 | 704 | 0.5− | 0.3− | 2006 11 15 | 691 | 0.5− | 0.3+ | |
| 2001 02 16 | 704 | 0.9+ | 0.6+ | 2003 12 30 | 704 | (0.2+ | 1.6−) | 2006 11 15 | 691 | 0.3− | 0.3+ | |
| 2001 02 16 | 704 | 1.0− | 0.4− | 2003 12 30 | 704 | 0.1+ | 0.4− | 2006 11 17 | 691 | 0.3+ | 0.1+ | |
| 2001 02 16 | 704 | 0.2− | 0.0 | 2003 12 30 | 704 | 0.3+ | 0.6− | 2006 11 17 | 691 | 0.1− | 0.1+ | |
| 2001 02 16 | 704 | 0.9+ | 1.3− | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.4+ | 0.2+ | |
| 2001 02 16 | 704 | 1.0− | 0.5− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.1+ | |
| 2001 03 04 | 704 | (1.9− | 0.5−) | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 11 21 | 691 | 0.1− | 0.2+ | |
| 2001 03 04 | 704 | 0.8+ | 0.5− | 2006 09 26 | G96 | 0.5− | 0.2+ | 2006 11 21 | 691 | 0.3+ | 0.0 | |
| 2001 03 04 | 704 | (0.8− | 1.7+) | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.4− | |
| 2001 03 04 | 704 | 0.2− | 0.8+ | 2006 10 12 | 691 | 0.2− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.2+ | |
| 2001 03 16 | 704 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.1− | |

**(137482)∗ 1999 UM$_{30}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.55883 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28450265 | $\omega$ | 155.68297 | | +0.94762343 | +0.31934232 | |
| $a$ | 2.2895238 | $\Omega$ | 185.70229 | | −0.30136141 | +0.88829163 | |
| $e$ | 0.2638873 | $i$ | 3.17624 | | −0.10578812 | +0.33008857 | |
| $P$ | 3.46 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.1− | 0.9− | 2002 06 14 | 291 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1+ | |
| 1999 08 13 | 699 | 0.3− | 0.9− | 2002 06 14 | 291 | 1.2+ | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.1+ | |
| 1999 08 13 | 699 | 0.5+ | 0.2+ | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.1+ | |
| 1999 09 05 | 699 | 0.5+ | 0.1− | 2003 12 21 | 645 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.6− | 0.6+ | |
| 1999 09 05 | 699 | 0.1+ | 0.1− | 2006 07 22 | G96 | 0.5− | 0.3− | 2006 10 22 | 691 | 0.6− | 0.1− | |
| 1999 09 05 | 699 | 0.6− | 0.4+ | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− | |
| 1999 10 01 | 699 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.0 | 0.2− | 2006 10 23 | 704 | 0.5+ | 0.2+ | |
| 1999 10 01 | 699 | 0.6+ | 1.5+ | 2006 07 22 | G96 | 1.2− | 0.2+ | 2006 10 23 | 704 | (2.7+ | 1.6−) | |
| 1999 10 01 | 699 | (1.6+ | 2.3+) | 2006 08 28 | 703 | 0.1− | 0.8+ | 2006 10 23 | 704 | 1.0− | 0.4+ | |
| 1999 10 04 | 704 | 0.8− | 0.4+ | 2006 08 28 | 703 | 0.7+ | 0.0 | 2006 10 23 | 704 | 0.4− | 0.5+ | |
| 1999 10 04 | 704 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 10 23 | 704 | 0.7+ | 0.4− | |
| 1999 10 04 | 704 | 0.2+ | 1.0+ | 2006 08 28 | 703 | (2.6− | 0.5−) | 2006 10 31 | G96 | 0.0 | 0.1− | |
| 1999 10 04 | 704 | 0.6+ | 1.4+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− | |
| 1999 10 04 | 704 | 1.9+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.0 | |
| 1999 10 07 | 704 | 0.4− | 0.6− | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− | |
| 1999 10 07 | 704 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.1+ | |
| 1999 10 07 | 704 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.5− | 0.1+ | |
| 1999 10 07 | 704 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.4− | 0.3+ | |
| 1999 10 07 | 704 | 0.5− | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.1− | |
| 1999 10 09 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 704 | (0.3+ | 2.5+) | 2006 11 11 | 703 | 0.3− | 0.1+ | |
| 1999 10 09 | 704 | 0.6− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.1− | |
| 1999 10 09 | 704 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.1+ | |
| 1999 10 09 | 704 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 13 | 644 | 0.3− | 0.2+ | |
| 1999 10 09 | 704 | 0.5− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.4− | 0.2+ | |
| 1999 10 11 | 704 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.3− | 0.1+ | |
| 1999 10 11 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 1.0+ | 2006 11 14 | 704 | 0.8+ | 0.2− | |
| 1999 10 11 | 704 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 14 | 704 | 1.5− | 0.4+ | |
| 1999 10 11 | 704 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 11 14 | 704 | 1.0+ | 0.2+ | |
| 1999 10 11 | 704 | 0.6− | 0.2− | 2006 09 30 | 703 | (0.9− | 1.6+) | 2006 11 14 | 704 | (2.6− | 0.6−) | |
| 1999 10 13 | 699 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.5− | 0.6+ | |
| 1999 10 13 | 699 | 0.7− | 0.2− | 2006 10 03 | 704 | 0.9+ | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.0 | |
| 1999 10 13 | 699 | 1.1+ | 0.2+ | 2006 10 03 | 704 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.4− | 0.0 | |
| 1999 10 15 | 704 | 0.0 | 0.4− | 2006 10 03 | 704 | 1.3+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.0 | |
| 1999 10 15 | 704 | 0.3− | 0.5− | 2006 10 03 | 704 | 0.3+ | 1.3− | 2006 11 16 | G96 | 0.1− | 0.1− | |
| 1999 10 15 | 704 | 1.1− | 0.2− | 2006 10 16 | 683 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.4+ | 0.3+ | |
| 1999 10 15 | 704 | 1.2− | 0.2− | 2006 10 16 | 683 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.1− | 0.4+ | |
| 1999 10 15 | 704 | 0.3− | 0.6− | 2006 10 16 | 683 | 0.4− | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.6− | |
| 1999 10 31 | 691 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.6− | 0.4− | 2006 11 17 | 704 | 1.2+ | 0.5+ | |
| 1999 10 31 | 691 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.1− | |
| 1999 10 31 | 691 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.0 | |
| 1999 11 05 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 1.3− | 0.1− | |
| 1999 11 05 | 691 | 0.1+ | 0.1− | 2006 10 17 | 683 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.6+ | |
| 1999 11 05 | 691 | 0.2+ | 0.1− | 2006 10 17 | 683 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.1+ | |
| 2002 05 12 | 644 | 0.1− | 0.4+ | 2006 10 17 | 683 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.6− | |
| 2002 05 12 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 683 | 1.0+ | 0.9+ | 2006 11 21 | 704 | 0.7+ | 0.3+ | |
| 2002 05 12 | 644 | 0.0 | 0.4+ | 2006 10 19 | 683 | (2.2+ | 1.7+) | 2006 11 21 | 704 | 0.9+ | 0.7− | |
| 2002 06 14 | 291 | 0.5− | 0.4+ | 2006 10 19 | 683 | 1.2+ | 0.7+ | 2006 11 21 | 704 | 0.7+ | 0.4+ | |

**(137483)∗ 1999 UT$_{32}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.04902 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26922732 | $\omega$ | 131.36652 | | −0.93323633 | | −0.35841636 |
| $a$ | 2.3753264 | $\Omega$ | 27.65708 | | +0.31172892 | | −0.84196015 |
| $e$ | 0.1240405 | $i$ | 3.04420 | | +0.17859181 | | −0.40328750 |
| $P$ | 3.66 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.1+ | 0.1− | 2001 04 26 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.6+ |
| 1999 10 14 | 645 | 0.2+ | 0.1+ | 2001 04 26 | 691 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.4− | 0.5+ |
| 1999 10 20 | 691 | 0.2+ | 0.4− | 2003 11 26 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.3− | 0.1− |
| 1999 10 20 | 691 | 0.3+ | 0.4− | 2003 11 26 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.0 | 1.1+ |
| 1999 10 20 | 691 | 0.3+ | 0.4− | 2003 11 26 | 691 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.4− |
| 1999 10 31 | 691 | 0.1− | 0.0 | 2003 12 29 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.3− |
| 1999 10 31 | 691 | 0.3− | 0.2− | 2003 12 29 | 691 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.6+ |
| 1999 10 31 | 691 | 0.1+ | 0.1− | 2003 12 29 | 691 | 0.2− | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1999 11 05 | 691 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.6− | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.6− |
| 1999 11 05 | 691 | 0.5− | 0.3− | 2006 08 18 | 691 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.2− |
| 1999 11 05 | 691 | 0.7− | 0.0 | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.7− | 0.6+ |
| 2001 04 26 | 691 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.7− |

**(137484)∗ 1999 UK$_{34}$ = 2005 GZ$_{160}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74660)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.73645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28029814 | $\omega$ | 45.02947 | | −0.31290898 | | +0.94962863 |
| $a$ | 2.3123625 | $\Omega$ | 206.74982 | | −0.88176915 | | −0.29715660 |
| $e$ | 0.1391136 | $i$ | 2.18115 | | −0.35294636 | | −0.09951597 |
| $P$ | 3.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2005 05 14 | 644 | 0.3+ | 0.5− |
| 1999 10 31 | 691 | 0.1− | 0.1+ | 2005 04 07 | 691 | 0.1+ | 0.3+ | 2005 05 14 | 644 | 0.1− | 0.1− |
| 1999 10 31 | 691 | 0.4+ | 0.2− | 2005 04 07 | 691 | 0.0 | 0.3+ | 2005 05 14 | G96 | 0.1− | 0.1− |
| 1999 11 05 | 691 | 0.2+ | 0.2− | 2005 04 07 | 691 | 0.2+ | 0.7+ | 2005 05 14 | G96 | 0.0 | 0.1+ |
| 1999 11 05 | 691 | 0.3− | 0.0 | 2005 04 13 | 699 | 0.1+ | 0.6− | 2005 05 14 | G96 | 0.7− | 0.1− |
| 1999 11 05 | 691 | 0.0 | 0.1− | 2005 04 13 | 699 | 1.3+ | 0.6+ | 2005 05 14 | G96 | 0.1− | 0.3− |
| 1999 11 12 | 691 | 0.1− | 0.3+ | 2005 04 13 | 699 | 0.8+ | 1.3+ | 2006 10 04 | G96 | 0.0 | 0.1− |
| 1999 11 12 | 691 | 0.1+ | 0.3− | 2005 04 13 | 699 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 1999 11 12 | 691 | 0.2− | 0.2+ | 2005 04 16 | 691 | 0.3+ | 1.4+ | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2002 08 08 | 644 | 0.1− | 0.5− | 2005 04 16 | 691 | 0.2+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.1+ | 0.3− | 2005 04 16 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.5− | 0.6+ |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2005 04 18 | 703 | 1.1− | 0.8− | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.3− | 2005 04 18 | 703 | 0.9− | 0.1+ | 2006 10 19 | 691 | 0.5− | 0.4+ |
| 2002 08 17 | 644 | 0.2− | 0.6− | 2005 04 18 | 703 | (2.1− | 1.4+) | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2002 08 17 | 644 | 0.2+ | 0.3− | 2005 04 18 | 703 | 1.0− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 08 17 | 644 | 0.4− | 0.3− | 2005 05 09 | 704 | 1.1+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.2− | 2005 05 09 | 704 | 1.0+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2002 08 17 | 644 | 0.1− | 0.2− | 2005 05 09 | 704 | 0.7+ | 0.3− | 2006 10 28 | 691 | 0.2− | 0.5+ |
| 2002 08 27 | 644 | 0.2+ | 0.9+ | 2005 05 13 | 704 | 0.3− | 0.9+ | 2006 10 28 | 691 | 0.5− | 0.4+ |
| 2002 08 27 | 644 | 0.5+ | 0.4+ | 2005 05 13 | 704 | 0.6− | 1.1+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2002 08 27 | 644 | 0.0 | 0.8+ | 2005 05 13 | 704 | 0.5+ | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2005 03 11 | G96 | 0.4− | 0.1− | 2005 05 13 | 704 | 0.1+ | 0.8+ | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2005 05 13 | 704 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.5+ | 0.3+ |
| 2005 03 11 | G96 | 0.4− | 0.0 | 2005 05 14 | 644 | 0.1+ | 0.0 | | | | |

**(137485)∗ 1999 UR$_{35}$ = 2002 PO$_{132}$**

Discovered 1999 Oct. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33124)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.34503 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28419127 | $\omega$ | 336.71370 | | +0.38813226 | | +0.92157525 |
| $a$ | 2.2911959 | $\Omega$ | 316.12370 | | −0.84390393 | | +0.35224133 |
| $e$ | 0.2178224 | $i$ | 0.59844 | | −0.37037753 | | +0.16317200 |
| $P$ | 3.47 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.6− | 0.2+ | 2002 08 17 | 644 | 0.1+ | 0.6+ | 2005 05 08 | G96 | 0.3− | 0.1+ |
| 1999 10 30 | 691 | 0.2− | 0.4+ | 2002 08 17 | 644 | 0.0 | 0.5+ | 2005 05 08 | G96 | 0.1− | 0.1+ |
| 1999 10 30 | 691 | 0.8− | 0.3+ | 2002 08 17 | 644 | 0.3+ | 0.6+ | 2005 05 12 | 691 | 0.4+ | 0.6+ |
| 1999 11 06 | 691 | 0.4+ | 0.3+ | 2002 08 18 | 608 | (0.6− | 1.7+) | 2005 05 12 | 691 | 0.4+ | 0.7+ |
| 1999 11 06 | 691 | 0.2+ | 0.4+ | 2002 08 18 | 608 | (1.0− | 1.6+) | 2005 05 12 | 691 | 0.5+ | 0.4+ |
| 1999 11 06 | 691 | 0.3+ | 0.2+ | 2002 08 18 | 608 | (1.2− | 1.9+) | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 1999 11 09 | 704 | 0.6− | 0.8+ | 2002 08 27 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 1999 11 09 | 704 | 0.8− | 0.6+ | 2002 08 27 | 644 | 0.1− | 0.4+ | 2006 10 17 | 691 | 0.5+ | 0.0 |
| 1999 11 09 | 704 | 1.2+ | 0.7+ | 2002 08 27 | 644 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 1999 11 14 | 704 | 0.1+ | 0.4+ | 2005 03 10 | G96 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.6− | 0.4+ |
| 1999 11 14 | 704 | 0.4− | 0.1− | 2005 03 10 | G96 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 1999 11 14 | 704 | 0.4− | 1.1+ | 2005 03 10 | G96 | 0.7− | 0.5− | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 1999 11 14 | 704 | 0.4− | 0.7+ | 2005 03 10 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2001 02 13 | 691 | 0.0 | 0.2− | 2005 04 02 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2001 02 13 | 691 | 0.0 | 0.3+ | 2005 04 02 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 02 13 | 691 | 0.2+ | 0.4+ | 2005 04 02 | 691 | 0.1− | 0.9+ | 2006 11 12 | G96 | 0.3− | 0.2− |
| 2002 07 05 | 704 | 0.4− | 0.9+ | 2005 04 04 | 704 | 0.2− | 0.7+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2002 07 05 | 704 | 0.4− | 0.3+ | 2005 04 04 | 704 | 0.1+ | 0.9+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2002 07 05 | 704 | 0.6− | 0.1− | 2005 04 04 | 704 | 0.7+ | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2002 08 08 | 644 | 0.1+ | 0.2+ | 2005 04 07 | 704 | 0.4− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2002 08 08 | 644 | 0.3+ | 0.3+ | 2005 04 07 | 704 | 0.0 | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2002 08 08 | 644 | 0.1+ | 0.3+ | 2005 04 07 | 704 | 1.1+ | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2002 08 14 | 704 | 0.3− | 0.5+ | 2005 05 03 | 691 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 1.2+ | 1.4+ |
| 2002 08 14 | 704 | 0.7− | 0.9+ | 2005 05 03 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.9+ | 0.1+ |
| 2002 08 14 | 704 | 0.1+ | 1.3+ | 2005 05 03 | 691 | 0.4+ | 0.4+ | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 2002 08 14 | 704 | 0.9− | 1.1+ | 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.9+ |
| 2002 08 14 | 704 | (1.2− | 2.1+) | 2005 05 08 | G96 | 0.2− | 0.4+ | | | | |

**(137486)∗ 1999 UY$_{35}$**

Discovered 1999 Oct. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.33895 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28153952 | $\omega$ | 94.45629 | | +0.28741346 | | +0.95719037 |
| $a$ | 2.3055602 | $\Omega$ | 192.41173 | | −0.92990789 | | +0.27026882 |
| $e$ | 0.0969630 | $i$ | 9.19691 | | −0.22948818 | | +0.10364057 |
| $P$ | 3.50 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.5− | 0.9− | 2005 03 17 | 703 | 1.5− | 0.0 | 2006 09 12 | 703 | (1.8+ | 1.2−) |
| 1998 03 20 | 704 | (2.4+ | 0.5+) | 2005 04 04 | 703 | 0.5− | 0.4+ | 2006 09 12 | 703 | (1.5− | 1.7−) |
| 1998 03 20 | 704 | 1.6+ | 0.2+ | 2005 04 04 | 703 | 1.0− | 0.5+ | 2006 09 12 | 703 | 0.4+ | 0.8+ |
| 1998 03 20 | 704 | 0.6− | 0.7− | 2005 04 04 | 703 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.3− | 0.4+ |
| 1999 10 07 | 691 | 0.3− | 0.1− | 2005 04 04 | 703 | 0.1+ | 0.8− | 2006 09 12 | 703 | 0.5− | 1.4+ |
| 1999 10 07 | 691 | 0.1− | 0.2− | 2005 04 05 | G96 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.1− | 0.1− |
| 1999 10 07 | 691 | 0.3− | 0.2− | 2005 04 05 | G96 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.3− | 0.0 |
| 1999 10 13 | 645 | 0.1− | 0.1− | 2005 04 05 | G96 | 0.1− | 0.2+ | 2006 09 12 | 703 | (1.5− | 0.4+) |
| 1999 10 13 | 645 | 0.1+ | 0.1− | 2005 04 05 | G96 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.3− | 0.7+ |
| 1999 10 15 | 704 | 0.2− | 1.3− | 2005 04 09 | 704 | 0.3− | 1.4− | 2006 09 16 | 699 | 0.2− | 0.5+ |
| 1999 10 15 | 704 | 0.3− | 0.3− | 2005 04 09 | 704 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.2+ | 0.6+ |
| 1999 10 15 | 704 | 0.4− | 0.3+ | 2005 04 09 | 704 | 0.2+ | 0.9− | 2006 09 16 | 699 | 0.7+ | 0.0 |
| 1999 10 15 | 704 | 0.0 | 1.5− | 2005 04 09 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 1.1+ | 1.2+ |
| 1999 10 15 | 704 | 0.2+ | 0.7− | 2005 04 12 | G96 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.9+ | 0.6+ |
| 1999 10 31 | 691 | 0.1+ | 0.0 | 2005 04 12 | G96 | 0.1− | 0.2− | 2006 09 18 | 704 | 1.0+ | 0.2− |
| 1999 10 31 | 691 | 0.3− | 0.3+ | 2005 04 12 | G96 | 0.3− | 0.1− | 2006 09 18 | 704 | 1.1+ | 0.3− |
| 1999 10 31 | 691 | 0.3+ | 0.1− | 2005 04 12 | G96 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.9− |
| 1999 11 06 | 691 | 0.0 | 0.3+ | 2005 04 15 | 703 | 0.4− | 1.1− | 2006 09 19 | 699 | 0.1+ | 0.4+ |
| 1999 11 06 | 691 | 0.2+ | 0.1− | 2005 04 15 | 703 | (0.4− | 2.4+) | 2006 09 19 | 703 | 0.0 | 0.5− |
| 1999 11 06 | 691 | 0.8+ | 0.0 | 2005 04 15 | 703 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.2+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 11 | 691 | 0.2+ | 0.1+ | 2005 04 15 | 703 | (0.2+ | 1.8+) | 2006 09 19 | 703 | 0.4− | 0.1− |
| 1999 11 11 | 691 | 0.1− | 0.6+ | 2005 05 04 | G96 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.2+ |
| 1999 11 11 | 691 | 0.1+ | 0.2+ | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 09 20 | 691 | 0.0 | 0.4+ |
| 2002 07 09 | 704 | 0.1+ | 0.3− | 2005 05 04 | G96 | 0.2− | 0.3− | 2006 09 20 | 691 | 0.0 | 0.6+ |
| 2002 07 09 | 704 | 0.1+ | 0.2+ | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 09 20 | 691 | 0.2+ | 0.7+ |
| 2002 07 09 | 704 | 0.0 | 0.5+ | 2005 05 13 | G96 | 0.0 | 0.2− | 2006 09 23 | 106 | 0.8− | 0.5− |
| 2002 07 09 | 704 | 0.3+ | 0.0 | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 09 24 | 106 | 0.3− | 0.2+ |
| 2002 07 09 | 704 | 0.8− | 0.7+ | 2005 05 13 | G96 | 0.1− | 0.1− | 2006 09 24 | 106 | 0.2+ | 0.1− |
| 2003 11 23 | 699 | 0.3− | 1.0+ | 2005 05 13 | G96 | 0.3− | 0.3− | 2006 09 24 | 106 | 0.1− | 0.2− |
| 2003 11 23 | 699 | (0.7− | 2.2+) | 2006 08 21 | 691 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.4− | 0.3− |
| 2003 11 23 | 699 | (2.0− | 0.4−) | 2006 08 21 | 691 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2003 11 23 | 699 | 1.3− | 0.4+ | 2006 08 21 | 691 | 0.6− | 0.7+ | 2006 10 03 | G96 | 0.1+ | 0.5− |
| 2005 03 08 | 691 | 0.3+ | 0.6+ | 2006 08 27 | 699 | 0.4+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2005 03 08 | 691 | 0.4+ | 0.4+ | 2006 08 27 | 699 | 1.1+ | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2005 03 08 | 691 | 0.3+ | 0.5+ | 2006 08 27 | 699 | 0.5− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2005 03 13 | 691 | 0.5+ | 0.5+ | 2006 08 27 | 699 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2005 03 13 | 691 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.7− | 0.4− | 2006 10 24 | 644 | 0.1− | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.2+ | 0.7− | 2006 10 24 | 644 | 0.3− | 0.3+ |
| 2005 03 17 | 691 | 0.5+ | 0.6+ | 2006 08 29 | 703 | 0.6+ | 0.6− | 2006 10 24 | 644 | 0.2− | 0.3+ |
| 2005 03 17 | 691 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.1+ | 0.7− | 2006 11 11 | G96 | 0.0 | 0.2+ |
| 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.1+ | 0.9+ | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2005 03 17 | 703 | 0.7− | 0.3− | 2006 08 30 | 704 | 0.7− | 0.7− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2005 03 17 | 703 | 1.1− | 0.5− | 2006 08 30 | 704 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2005 03 17 | 703 | 0.6− | 0.0 | 2006 08 30 | 704 | 0.6− | 0.3+ | | | | |

### (137487)∗ 1999 UA$_{37}$

Discovered 1999 Oct. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 329.16229 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28221043 | $\omega$ | 20.33597 | | +0.60920939 | | −0.79212318 | | |
| $a$ | 2.3019047 | $\Omega$ | 32.16483 | | +0.71749293 | | +0.53045039 | | |
| $e$ | 0.1690564 | $i$ | 4.03724 | | +0.33773927 | | +0.30193253 | | |
| $P$ | 3.49 | $H$ | 16.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.4− | 0.6+ | 2003 10 24 | 691 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.9− | 0.0 |
| 1999 10 01 | 703 | 0.8− | 0.2+ | 2003 10 24 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1999 10 01 | 703 | 0.4− | 1.0+ | 2003 12 28 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 1999 10 01 | 703 | 1.1+ | 0.1+ | 2003 12 28 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 1999 10 04 | 691 | 0.0 | 0.2− | 2003 12 28 | 704 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 1999 10 04 | 691 | 0.2+ | 0.6− | 2003 12 28 | 704 | 0.7+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− |
| 1999 10 04 | 691 | 0.1+ | 0.3− | 2003 12 28 | 704 | 1.0− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 1999 10 07 | 704 | 0.6+ | 0.2− | 2003 12 29 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 10 07 | 704 | 0.7− | 0.6− | 2003 12 29 | 704 | 1.3+ | 0.6− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 1999 10 07 | 704 | 0.0 | 0.3− | 2003 12 29 | 704 | 0.9+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 1999 10 07 | 704 | (2.3− | 0.8−) | 2003 12 29 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 10 07 | 704 | 0.2− | 0.6− | 2004 01 13 | 699 | 0.1+ | 0.4− | 2006 10 28 | 704 | 0.5+ | 0.8+ |
| 1999 10 09 | 704 | 0.1+ | 0.0 | 2004 01 13 | 699 | 0.3+ | 0.3− | 2006 10 28 | 704 | 0.7− | 0.2− |
| 1999 10 09 | 704 | 0.4+ | 0.2+ | 2004 01 13 | 699 | 0.4− | 0.3− | 2006 10 28 | 704 | 1.0− | 0.4+ |
| 1999 10 09 | 704 | 0.2+ | 0.4+ | 2004 01 13 | 699 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1999 10 09 | 704 | 0.2− | 0.0 | 2004 01 31 | 704 | 0.7− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.4− | 0.0 | 2004 01 31 | 704 | 0.2+ | 0.6− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 1999 10 11 | 691 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.8− | 0.4− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 1999 10 11 | 691 | 0.1+ | 0.2− | 2004 01 31 | 704 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.1− | 1.2+ |
| 1999 10 11 | 691 | 0.2+ | 0.2− | 2004 01 31 | 704 | 0.3− | 0.6+ | 2006 11 02 | G96 | (1.4+ | 1.9+) |
| 1999 10 15 | 704 | 0.5− | 0.2− | 2004 02 15 | 704 | 0.2+ | 0.9+ | 2006 11 02 | G96 | 0.3− | 1.0+ |
| 1999 10 15 | 704 | 1.3+ | 0.7+ | 2004 02 15 | 704 | 0.3+ | 0.5+ | 2006 11 02 | G96 | 0.2+ | 0.9+ |
| 1999 10 15 | 704 | 0.9− | 0.1− | 2004 02 15 | 704 | 0.6− | 0.3+ | 2006 11 02 | G96 | 0.3+ | 0.2+ |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.1− | 0.4+ | 2006 11 02 | G96 | 0.2− | 0.1− |
| 1999 10 15 | 704 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.3− | 0.4+ | 2006 11 02 | G96 | 0.0 | 0.1− |
| 1999 10 16 | 691 | 0.3+ | 0.2− | 2006 08 19 | 699 | 0.3+ | 1.2+ | 2006 11 02 | G96 | 0.4− | 0.1+ |
| 1999 10 16 | 691 | 0.1+ | 0.0 | 2006 08 19 | 699 | 0.7− | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.0 |
| 1999 10 16 | 691 | 0.3+ | 0.3− | 2006 08 19 | 699 | 0.3+ | 0.5+ | 2006 11 02 | G96 | 0.1− | 0.1− |
| 1999 10 16 | 691 | 0.1+ | 0.1− | 2006 08 19 | 699 | 0.7− | 1.1+ | 2006 11 02 | G96 | 0.2+ | 0.0 |
| 1999 10 16 | 691 | 0.5+ | 0.3− | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 11 02 | G96 | 0.1− | 0.0 |
| 1999 10 16 | 691 | 0.0 | 0.2− | 2006 09 16 | 644 | 0.4+ | 0.5+ | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 1999 10 17 | 691 | 0.3+ | 0.2− | 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 11 06 | 644 | 0.8− | 0.4+ |
| 1999 10 17 | 691 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.7− | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 1999 10 17 | 691 | 0.3+ | 0.1− | 2006 09 18 | 699 | 1.4+ | 1.1− | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 1999 10 20 | 691 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 1999 10 20 | 691 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 1999 10 20 | 691 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 1999 11 12 | 704 | 0.5− | 0.9+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 1999 11 12 | 704 | 0.0 | 0.8+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 1999 11 12 | 704 | 1.1− | 1.5+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2001 03 24 | 691 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2001 03 24 | 691 | 0.2− | 1.2+ | 2006 09 20 | 644 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2001 03 24 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 04 29 | 691 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.3+ | 1.0+ | 2006 11 25 | G92 | 0.5+ | 0.3− |
| 2001 04 29 | 691 | 0.3+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.5+ | 2006 11 25 | G92 | 0.6+ | 0.4+ |
| 2001 04 29 | 691 | 0.1− | 1.3− | 2006 10 01 | 704 | 0.2+ | 0.7+ | 2006 11 25 | G92 | 0.3− | 0.5+ |
| 2002 07 12 | 644 | 0.6− | 0.8+ | 2006 10 01 | 704 | 1.0− | 0.1− | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2002 07 12 | 644 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2002 07 12 | 644 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2003 10 24 | 691 | 0.6+ | 0.1− | 2006 10 15 | 703 | 0.3+ | 0.7− | 2006 11 27 | G96 | 0.1− | 0.1− |

### (137488)∗ 1999 UG$_{44}$

Discovered 1999 Oct. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 12.55760 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28500695 | $\omega$ | 125.47981 | | +0.94018486 | | −0.32855196 | | |
| $a$ | 2.2868223 | $\Omega$ | 253.85007 | | +0.27424576 | | +0.88675070 | | |
| $e$ | 0.1507304 | $i$ | 5.37837 | | +0.20209327 | | +0.32515659 | | |
| $P$ | 3.46 | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.1+ | 0.2− | 2004 01 28 | 704 | 1.1+ | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.3− |
| 1999 10 12 | 704 | 0.2− | 0.0 | 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 1.2+ | 0.2+ |
| 1999 10 12 | 704 | 0.0 | 0.0 | 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 1.0+ | 0.1+ |
| 1999 10 12 | 704 | 0.3− | 0.4+ | 2004 02 11 | 644 | 0.3− | 0.8+ | 2006 11 16 | 704 | 0.2+ | 0.2− |
| 1999 10 12 | 704 | 0.4− | 0.1+ | 2005 06 14 | G96 | 0.7− | 0.2+ | 2006 11 16 | 704 | 0.6− | 0.0 |
| 1999 10 22 | 704 | 0.4+ | 0.3+ | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.2− |
| 1999 10 22 | 704 | 0.1+ | 0.2− | 2005 06 14 | G96 | 0.1+ | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1999 10 22 | 704 | 0.3+ | 0.7+ | 2005 06 14 | G96 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 1999 10 22 | 704 | 1.1+ | 0.3− | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.4− |
| 1999 10 22 | 704 | 1.0+ | 0.3− | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.3− |
| 1999 10 29 | 703 | 0.2+ | 1.7+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 1999 10 29 | 703 | 1.4− | 0.7− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 1999 10 29 | 703 | 0.6+ | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 1999 10 29 | 703 | 0.8+ | 0.3+ | 2006 10 19 | 703 | 0.6+ | 1.3+ | 2006 11 18 | 704 | 0.8+ | 0.3+ |
| 1999 11 01 | 699 | 1.2+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 1999 11 01 | 699 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 1999 11 01 | 699 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 1.0+ | 1.0− | 2006 11 20 | 704 | 0.6− | 0.5+ |
| 1999 11 11 | 703 | 0.1+ | 1.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 1999 11 11 | 703 | 0.9− | 0.1− | 2006 10 19 | 703 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.1− | 0.0 |
| 1999 11 11 | 703 | 1.0− | 1.6− | 2006 10 20 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 1999 11 11 | 703 | 0.7− | 0.5− | 2006 10 20 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 1999 11 16 | 704 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 1.2− | 1.2+ |
| 1999 11 16 | 704 | 1.4− | 0.5− | 2006 10 20 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.7− | 0.5+ |
| 1999 11 16 | 704 | 0.8+ | 1.3− | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | 0.7− | 0.4− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 2002 07 03 | 644 | 0.1− | 0.7+ | 2006 11 11 | 703 | 1.1− | 0.4− | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2002 07 03 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.5− | 0.7+ |
| 2002 07 03 | 644 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2002 07 12 | 644 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2002 07 12 | 644 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 07 12 | 644 | 0.2− | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2002 07 21 | 644 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.6+ | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2002 07 21 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.4− | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2002 07 21 | 644 | 0.0 | 1.0+ | 2006 11 15 | 704 | 1.1+ | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2002 07 29 | 644 | 0.2− | 0.2+ | 2006 11 15 | 704 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2002 07 29 | 644 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 0.4− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.7+ | 1.0+ | 2006 12 01 | 704 | 0.5+ | 0.1+ | | |
| 2004 01 28 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | (0.5+ | 1.8+) | 2006 12 01 | 704 | 0.6+ | 0.2− | | |
| 2004 01 28 | 704 | 0.7+ | 1.3+ | 2006 11 16 | 704 | 0.5− | 1.5− | 2006 12 01 | 704 | 0.2− | 0.1+ | | |
| 2004 01 28 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | 1.1− | 1.2− | 2006 12 01 | 704 | 1.1+ | 0.6− | | |
| 2004 01 28 | 704 | 0.1− | 0.4+ | 2006 11 16 | 704 | (0.3+ | 2.3−) | | | | | | |

**(137489)∗ 1999 UN$_{45}$ = 2002 PF$_{12}$**

Discovered 1999 Oct. 31 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 33125)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.59117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28085771 | $\omega$ | 180.89471 | | +0.39573523 | −0.91245474 | |
| $a$ | 2.3092901 | $\Omega$ | 245.79925 | | +0.84328985 | +0.40589893 | |
| $e$ | 0.2081411 | $i$ | 6.54835 | | +0.36366997 | +0.05169533 | |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 1.0+ | 2002 08 07 | 644 | 0.1+ | 0.5+ | 2006 10 25 | 106 | 0.4− | 0.1+ |
| 1999 10 12 | 704 | 0.0 | 0.2+ | 2002 08 07 | 644 | 0.2+ | 0.8+ | 2006 10 25 | 106 | 0.1+ | 0.7− |
| 1999 10 12 | 704 | 1.2+ | 1.1− | 2002 08 07 | 644 | 0.2− | 1.1+ | 2006 10 25 | 106 | 0.0 | 0.4− |
| 1999 10 12 | 704 | 0.0 | 0.2− | 2004 02 12 | 644 | 0.0 | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 1999 10 12 | 704 | (2.4+ | 2.3−) | 2004 02 12 | 644 | 0.1+ | 0.6+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 1999 10 31 | 703 | 0.5+ | 0.1− | 2004 02 12 | 644 | 1.0+ | 1.1+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 1999 10 31 | 703 | 0.6− | 0.1+ | 2004 02 14 | 608 | 0.1− | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.3− |
| 1999 10 31 | 703 | 0.5+ | 0.2− | 2004 02 14 | 608 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.7+ |
| 1999 10 31 | 703 | 0.1− | 0.0 | 2004 02 14 | 608 | 0.3+ | 0.3− | 2006 10 29 | 704 | 0.7− | 0.1− |
| 1999 11 01 | 699 | 0.3+ | 0.8+ | 2004 02 19 | 704 | 0.3− | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.9+ |
| 1999 11 01 | 699 | 0.8+ | 0.5+ | 2004 02 19 | 704 | 0.2+ | 0.4+ | 2006 10 31 | 703 | 0.6+ | 0.0 |
| 1999 11 01 | 699 | 0.7− | 0.6+ | 2004 02 19 | 704 | 0.4+ | 0.5+ | 2006 10 31 | 703 | 0.0 | 0.1− |
| 1999 11 04 | 704 | 0.4− | 0.0 | 2004 02 19 | 704 | 0.4− | 0.8+ | 2006 10 31 | 703 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 0.0 | 0.7− | 2004 02 19 | 704 | 0.7+ | 0.6+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 0.1− | 0.6− | 2004 03 13 | 644 | 0.3+ | 0.9+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 0.3− | 0.4− | 2004 03 13 | 644 | 0.1+ | 0.9+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 1999 11 04 | 704 | 0.4+ | 0.1+ | 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 1999 11 11 | 703 | 0.4− | 0.9− | 2006 09 28 | 703 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1999 11 11 | 703 | 0.9+ | 0.9− | 2006 09 28 | 703 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1999 11 11 | 703 | 1.2− | 0.8+ | 2006 09 28 | 703 | 0.1− | 0.3+ | 2006 11 14 | 703 | 1.0− | 0.4− |
| 1999 11 11 | 703 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.6− | 0.1+ |
| 1999 11 16 | 704 | 0.6+ | 1.2− | 2006 10 17 | 703 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.3+ |
| 1999 11 16 | 704 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.0 | 2006 11 14 | 703 | 1.1− | 0.5− |
| 1999 11 16 | 704 | 0.2− | 1.0− | 2006 10 17 | 703 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 1.5+ | 0.2− |
| 1999 11 16 | 704 | 1.5− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.9+ |
| 1999 11 16 | 704 | 0.2− | 0.7− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 1999 12 04 | 703 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 1999 12 04 | 703 | 1.1+ | 0.8+ | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 1999 12 04 | 703 | 0.1− | 0.7− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3− |
| 1999 12 04 | 703 | 1.8+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2002 08 05 | 644 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.3− | 0.4− |
| 2002 08 05 | 644 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.1− | 1.2+ |
| 2002 08 05 | 644 | 0.3− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 1.7+ | 1.8+ |
| 2002 08 05 | 644 | 0.4− | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.4+ |
| 2002 08 05 | 644 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.3+ |
| 2002 08 05 | 644 | 0.1+ | 0.9+ | 2006 10 25 | 106 | 0.5+ | 0.4− | | | | |

**(137490)∗ 1999 UQ$_{50}$ = 2005 EV$_{269}$**

Discovered 1999 Oct. 30 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 74662)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.83283 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27186965 | $\omega$ | 205.89004 | | +0.80843042 | +0.58605998 | |
| $a$ | 2.3599107 | $\Omega$ | 118.12461 | | −0.52871388 | +0.76377993 | |
| $e$ | 0.1767094 | $i$ | 3.54516 | | −0.25865399 | +0.27050678 | |
| $P$ | 3.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.2− | 0.5− | 2006 07 21 | 703 | 0.7− | 0.4− | 2006 09 12 | 704 | 0.3− | 0.3+ |
| 1994 04 02 | 691 | 0.6+ | 1.0+ | 2006 07 21 | 699 | 0.6− | 0.9+ | 2006 09 12 | 704 | 0.2+ | 0.5− |
| 1994 04 02 | 691 | 0.6− | 0.4+ | 2006 07 21 | 703 | (0.6− | 1.9−) | 2006 09 12 | 704 | 0.2+ | 0.6+ |
| 1998 04 21 | 910 | 1.2+ | 1.2− | 2006 07 21 | 703 | 1.2+ | 0.7− | 2006 09 14 | 703 | 0.0 | 0.4+ |
| 1998 04 22 | 910 | 1.0+ | 0.7− | 2006 07 21 | 699 | 0.7− | 0.9+ | 2006 09 14 | 703 | 0.2− | 0.0 |
| 1998 04 22 | 910 | 0.8+ | 0.5− | 2006 07 21 | 703 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.5− |
| 1999 10 20 | 704 | 0.3+ | 0.2− | 2006 07 21 | 699 | (1.5+ | 0.5+) | 2006 09 14 | 703 | 0.3+ | 0.3+ |
| 1999 10 20 | 704 | 0.0 | 0.6− | 2006 07 21 | 699 | 0.2− | 0.6− | 2006 09 16 | 704 | 0.1+ | 1.2+ |
| 1999 10 20 | 704 | 1.0− | 0.3− | 2006 08 21 | 644 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.4− | 0.4+ |
| 1999 10 20 | 704 | 0.3− | 0.7+ | 2006 08 21 | 644 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.2− | 0.8+ |
| 1999 10 30 | 703 | 0.6− | 1.3+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 16 | 704 | 0.5− | 0.0 |
| 1999 10 30 | 703 | 1.6+ | 0.1− | 2006 08 23 | 704 | 0.5− | 0.5− | 2006 09 19 | 699 | 0.0 | 0.1+ |
| 1999 10 30 | 703 | 1.1− | 0.6− | 2006 08 23 | 704 | 0.1+ | 0.2− | 2006 09 19 | 704 | 0.0 | 0.9− |
| 1999 10 30 | 703 | 0.2+ | 0.2− | 2006 08 23 | 704 | 0.5+ | 0.9− | 2006 09 19 | 699 | 0.6− | 0.6+ |
| 1999 11 05 | 704 | 0.5− | 1.1− | 2006 08 23 | 704 | 0.6− | 0.0 | 2006 09 19 | 704 | 0.3+ | 0.2− |
| 1999 11 05 | 704 | 0.0 | 0.5+ | 2006 08 27 | 699 | 0.3− | 0.4+ | 2006 09 19 | 704 | 0.4+ | 0.0 |
| 1999 11 05 | 704 | 0.3+ | 0.8− | 2006 08 27 | 699 | (2.4− | 2.2+) | 2006 09 19 | 699 | 0.2+ | 0.5+ |
| 1999 11 05 | 704 | 0.1− | 0.7− | 2006 08 27 | 699 | 0.3− | 0.6− | 2006 09 22 | 704 | 0.2− | 0.1+ |
| 2003 12 23 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 704 | 0.8+ | 0.1+ | 2006 09 22 | 704 | 0.6− | 0.2− |
| 2003 12 23 | 704 | 1.6+ | 0.7− | 2006 08 28 | 704 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.8+ |
| 2003 12 23 | 704 | 1.1+ | 0.3+ | 2006 08 28 | 704 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.5+ |
| 2003 12 23 | 704 | (2.2+ | 1.1+) | 2006 08 28 | 704 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.1− |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2006 08 28 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | (0.7− | 1.6+) |
| 2005 03 11 | G96 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.5− | 0.3− |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2006 08 30 | 704 | 1.2− | 0.3− | 2006 09 26 | 704 | 0.7+ | 0.4− |
| 2005 03 11 | G96 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.7+ | 0.9− | 2006 09 26 | 704 | 0.0 | 1.0− |
| 2005 03 18 | 703 | 1.4− | 0.2+ | 2006 08 30 | 699 | 1.0+ | 0.8+ | 2006 09 26 | 704 | 0.4− | 0.2+ |
| 2005 03 18 | 703 | 1.0− | 1.0− | 2006 08 30 | 704 | 0.1− | 0.6− | 2006 09 28 | 704 | 1.1+ | 0.1+ |
| 2005 03 18 | 703 | 0.8− | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.7+ | 0.3+ |
| 2005 03 18 | 703 | 0.5− | 0.0 | 2006 08 30 | 699 | 0.0 | 0.0 | 2006 09 28 | 704 | 1.1+ | 0.8+ |
| 2005 04 04 | 703 | 0.3− | 0.5− | 2006 08 30 | 704 | 1.1− | 0.2− | 2006 09 28 | 704 | 0.4− | 0.5− |
| 2005 04 04 | 703 | 0.1− | 0.7+ | 2006 08 30 | 699 | 0.6+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2005 04 04 | 703 | 0.8+ | 0.2+ | 2006 09 12 | 704 | 0.5+ | 0.1− | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2005 04 04 | 703 | 0.3− | 0.4+ | 2006 09 12 | 704 | 0.3− | 0.9+ | 2006 11 09 | 644 | 0.4− | 0.1+ |

**(137491)∗ 1999 UD$_{51}$**

Discovered 1999 Oct. 31 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.52340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27734246 | $\omega$ | 349.53253 | | +0.21952330 | −0.96543727 | |
| $a$ | 2.3287622 | $\Omega$ | 87.68049 | | +0.90495711 | +0.14769780 | |
| $e$ | 0.2104969 | $i$ | 8.08348 | | +0.36450259 | +0.21474691 | |
| $P$ | 3.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.6+ | 0.5− | 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 1999 10 19 | 704 | 0.5+ | 0.6+ | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 1999 10 19 | 704 | 0.4− | 0.0 | 2004 02 11 | 644 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.5+ |
| 1999 10 19 | 704 | 0.2− | 0.1+ | 2004 02 14 | 608 | 0.5+ | 0.3− | 2006 09 26 | 703 | 0.2− | 0.5+ |
| 1999 10 19 | 704 | 1.4− | 0.1+ | 2004 02 14 | 608 | 0.4+ | 0.3− | 2006 09 29 | 699 | 0.8+ | 0.6+ |
| 1999 10 31 | 703 | 0.1+ | 0.4+ | 2004 02 14 | 608 | 0.2+ | 0.5− | 2006 09 29 | 699 | (1.6− | 1.3+) |
| 1999 10 31 | 703 | 0.2+ | 0.2+ | 2004 02 18 | 704 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.9+ | 0.2− |
| 1999 10 31 | 703 | 0.4− | 0.1+ | 2004 02 18 | 704 | 0.2− | 0.3− | 2006 09 29 | 699 | 0.6+ | 1.1+ |
| 1999 10 31 | 703 | 0.2− | 1.5+ | 2004 02 18 | 704 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.2− | 0.2+ |
| 1999 11 05 | 704 | 0.3− | 0.7− | 2004 02 18 | 704 | 0.2+ | 0.0 | 2006 09 30 | 704 | (1.7+ | 0.8+) |
| 1999 11 05 | 704 | 0.5− | 0.1+ | 2004 02 18 | 704 | 0.9+ | 0.2+ | 2006 09 30 | 704 | 1.3+ | 1.2+ |
| 1999 11 05 | 704 | 0.4− | 0.4− | 2004 02 18 | 608 | 0.2+ | 0.7− | 2006 09 30 | 704 | 0.0 | 0.5+ |
| 1999 11 05 | 704 | 0.5+ | 0.4− | 2004 02 18 | 608 | 0.4+ | 0.5− | 2006 09 30 | 704 | 0.5+ | 0.7+ |
| 1999 11 17 | 703 | 0.2+ | 0.2+ | 2004 02 18 | 608 | 0.1− | 0.7− | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 1999 11 17 | 703 | 0.4− | 0.3+ | 2004 03 10 | 703 | (2.3− | 0.3+) | 2006 10 17 | 703 | (1.5− | 0.5+) |
| 1999 11 17 | 703 | 0.1− | 0.3− | 2004 03 10 | 703 | 1.3− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 1999 11 17 | 703 | 0.4+ | 0.3+ | 2004 03 10 | 703 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 1999 12 05 | 704 | 0.7+ | 0.8− | 2004 03 10 | 703 | (0.9− | 1.8+) | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 1999 12 05 | 704 | 0.2+ | 0.1+ | 2004 03 14 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 1999 12 05 | 704 | 0.1+ | 0.5− | 2004 03 14 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 1999 12 05 | 704 | 0.1− | 0.8− | 2004 03 14 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.7+ | 1.3− | 2004 03 14 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2000 01 05 | 704 | 0.2− | 0.3+ | 2004 03 23 | 704 | 0.2− | 1.1+ | 2006 10 22 | 644 | 0.7− | 0.2− |
| 2000 01 05 | 704 | 1.2+ | 0.3+ | 2004 03 23 | 704 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.0 | 0.4+ |
| 2000 01 05 | 704 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.1− | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2000 01 05 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.8− | 0.9+ | 2006 10 28 | 703 | 0.3− | 0.6+ |
| 2000 01 05 | 704 | 0.3+ | 0.0 | 2004 03 23 | 704 | 0.2− | 0.7+ | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2002 08 30 | 644 | 0.5− | 0.5+ | 2006 09 17 | 608 | 0.7+ | 1.4− | 2006 11 10 | 704 | 0.2− | 0.1− |
| 2002 08 30 | 644 | 0.2− | 0.5+ | 2006 09 17 | 608 | 0.8+ | 1.4− | 2006 11 10 | 704 | 0.3− | 0.2− |
| 2002 08 30 | 644 | 0.0 | 0.7+ | 2006 09 17 | 608 | 0.6+ | 1.4− | 2006 11 10 | 704 | 0.1− | 0.2− |
| 2004 01 29 | 703 | 0.1− | 1.0+ | 2006 09 19 | 703 | 0.7− | 0.2− | 2006 11 10 | 704 | 0.9− | 1.1+ |
| 2004 01 29 | 703 | 0.0 | 0.1− | 2006 09 19 | 703 | 1.0− | 0.9− | 2006 11 16 | 703 | 0.2− | 0.4− |
| 2004 01 29 | 703 | 0.7+ | 1.1+ | 2006 09 19 | 703 | (2.1+ | 1.7+) | 2006 11 16 | 703 | 0.2− | 1.0− |
| 2004 01 29 | 703 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.9+ | 2006 11 16 | 703 | 0.2− | 0.8− |
| 2004 02 11 | 644 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.7+ | 2006 11 16 | 703 | 0.8− | 0.2− |
| 2004 02 11 | 644 | 0.0 | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.4− | | | | |
| 2004 02 11 | 644 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.4− | 0.1− | | | | |

**(137492)∗ 1999 UM$_{51}$**

Discovered 1999 Oct. 31 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.45610 | | (2000.0) | | +0.33120430 | −0.94229817 |
| $n$ | 0.28405808 | $\omega$ | 277.53747 | | +0.90248460 | +0.30128107 |
| $a$ | 2.2919120 | $\Omega$ | 152.96266 | | +0.27536385 | +0.14595844 |
| $e$ | 0.1326581 | $i$ | 6.15816 | | | |
| $P$ | 3.47 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.9+ | 0.2− | 2004 02 14 | 691 | 0.1− | 0.1− | 2006 10 01 | 703 | (0.1+ | 2.4−) |
| 1999 10 09 | 704 | 0.3− | 0.1− | 2004 02 22 | 691 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 10 09 | 704 | 0.6+ | 0.0 | 2004 02 22 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1999 10 09 | 704 | 0.2− | 0.4+ | 2004 02 22 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.8− | 0.5+ | 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 10 19 | 704 | 0.2+ | 0.5− | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 1999 10 19 | 704 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 1999 10 19 | 704 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.7+ | 0.4+ | 2006 10 30 | 703 | 0.0 | 0.2+ |
| 1999 10 19 | 704 | 0.4+ | 0.7− | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 10 30 | 703 | 0.0 | 0.3+ |
| 1999 10 19 | 704 | 0.8+ | 1.0− | 2004 02 27 | 830 | 1.2− | 0.7− | 2006 10 30 | 703 | 0.4− | 0.7+ |
| 1999 10 31 | 703 | 1.0+ | 1.5+ | 2004 02 27 | 830 | 0.5+ | 0.2+ | 2006 10 30 | 703 | 0.2+ | 0.5+ |
| 1999 10 31 | 703 | 0.0 | 0.5+ | 2004 02 27 | 830 | 0.4− | 0.4+ | 2006 11 05 | 644 | 0.2+ | 0.2+ |
| 1999 10 31 | 703 | 0.8− | 0.5+ | 2004 02 27 | 830 | 0.6+ | 0.2+ | 2006 11 05 | 644 | 0.1+ | 0.5+ |
| 1999 10 31 | 703 | 0.1+ | 0.2− | 2004 02 28 | 830 | 0.1− | 0.5+ | 2006 11 05 | 644 | 0.4+ | 0.7+ |
| 1999 11 05 | 704 | 1.2+ | 1.3+ | 2004 02 28 | 830 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 1999 11 05 | 704 | 0.5− | 0.7− | 2004 02 28 | 830 | 0.9+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 1999 11 05 | 704 | 0.7+ | 0.7− | 2004 02 28 | 830 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.4− |
| 1999 11 05 | 704 | 0.6+ | 1.1− | 2004 03 19 | 704 | 1.2+ | 0.9+ | 2006 11 15 | 703 | 0.3− | 0.5− |
| 1999 11 16 | 703 | 1.5− | 0.6− | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 11 19 | 704 | (1.9− | 0.1−) |
| 1999 11 16 | 703 | 0.6− | 1.5− | 2004 03 19 | 704 | 1.1+ | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 1999 11 16 | 703 | (2.5− | 1.5+) | 2004 03 19 | 704 | 0.2+ | 0.4− | 2006 11 19 | 704 | 1.0− | 0.4− |
| 1999 11 16 | 703 | 1.5− | 0.1− | 2004 03 19 | 704 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.9− | 0.3+ |
| 2002 08 06 | 644 | 0.3− | 0.6+ | 2004 03 27 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.1+ |
| 2002 08 06 | 644 | 0.0 | 0.6+ | 2004 03 27 | 691 | 0.1− | 0.1− | 2006 11 25 | 704 | 0.1− | 0.3+ |
| 2002 08 06 | 644 | 0.3− | 0.7+ | 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 11 25 | 704 | 1.9+ | 1.2− |
| 2002 08 11 | 807 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 11 25 | 704 | 0.2− | 0.7+ |
| 2002 08 11 | 807 | 0.2− | 0.5+ | 2006 09 18 | 703 | 1.3− | 0.3+ | 2006 11 25 | 704 | 1.2− | 0.5+ |
| 2002 08 27 | 644 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.4− | 1.1+ | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.8+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2002 08 27 | 644 | 0.1+ | 0.9+ | 2006 10 01 | 703 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2004 02 14 | 691 | 0.1− | 0.1+ | 2006 10 01 | 703 | 0.5+ | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.5+ | 0.0 | | | | |

**(137493)∗ 1999 UO$_{51}$ = 2002 NP$_{12}$**

Discovered 1999 Oct. 31 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 33126)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.30668 | | (2000.0) | | +0.97746821 | +0.19080440 |
| $n$ | 0.28696304 | $\omega$ | 232.81112 | | −0.14736748 | +0.92305635 |
| $a$ | 2.2764183 | $\Omega$ | 116.02871 | | −0.15112485 | +0.33400697 |
| $e$ | 0.1864276 | $i$ | 5.76593 | | | |
| $P$ | 3.43 | $H$ | 15.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2+ | 1.0+ | 2002 07 09 | 644 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.0 |
| 1999 10 09 | 704 | 1.0+ | 0.2+ | 2002 07 14 | 644 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.6− |
| 1999 10 09 | 704 | 0.6+ | 0.0 | 2002 07 14 | 644 | 0.1+ | 0.4+ | 2004 02 23 | 704 | 0.8− | 0.3− |
| 1999 10 09 | 704 | 1.1+ | 0.1− | 2002 07 14 | 644 | 0.1+ | 0.2+ | 2005 05 04 | 691 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.3+ | 0.8+ | 2002 07 18 | 808 | 0.1+ | 0.1− | 2005 05 04 | 691 | 0.2+ | 0.4+ |
| 1999 10 19 | 704 | 0.4+ | 0.2+ | 2002 07 18 | 808 | 0.4+ | 0.7+ | 2005 05 04 | 691 | 0.2+ | 0.3+ |
| 1999 10 19 | 704 | 0.1− | 0.1− | 2002 08 13 | 704 | 0.7+ | 0.2+ | 2005 05 07 | 703 | 0.0 | 0.5− |
| 1999 10 19 | 704 | 0.1+ | 0.5+ | 2002 08 13 | 704 | 0.6− | 0.5− | 2005 05 07 | 703 | 0.1− | 1.1− |
| 1999 10 19 | 704 | 0.6+ | 0.4+ | 2002 08 13 | 704 | 0.1− | 0.2− | 2005 05 07 | 703 | 0.2− | 0.3− |
| 1999 10 19 | 704 | 0.2+ | 0.1− | 2002 08 29 | 644 | 0.2− | 0.3+ | 2005 05 07 | 703 | 0.2− | 0.6− |
| 1999 10 31 | 703 | 0.7− | 0.3− | 2002 08 29 | 644 | 0.1− | 0.1+ | 2005 05 08 | 704 | 0.3− | 0.8+ |
| 1999 10 31 | 703 | 0.0 | 0.7+ | 2002 08 29 | 644 | 0.3− | 0.2+ | 2005 05 08 | 704 | 0.1+ | 0.2+ |
| 1999 10 31 | 703 | 0.5− | 1.0+ | 2004 01 16 | 644 | 0.4+ | 0.4+ | 2005 05 08 | 704 | 0.5+ | 1.1+ |
| 1999 10 31 | 703 | 0.7− | 0.6+ | 2004 01 16 | 644 | 0.5+ | 0.1+ | 2005 05 11 | 699 | 0.6+ | 1.2+ |
| 1999 11 05 | 704 | 0.1+ | 0.7− | 2004 01 16 | 644 | 0.5+ | 0.4+ | 2005 05 11 | 699 | 0.2− | 0.1+ |
| 1999 11 05 | 704 | 0.4− | 0.3− | 2004 01 17 | 644 | 1.1+ | 0.2+ | 2005 05 11 | 699 | 1.2+ | 0.4+ |
| 1999 11 05 | 704 | 0.0 | 0.1+ | 2004 01 17 | 644 | 0.1+ | 0.6+ | 2005 05 11 | 699 | 0.1+ | 0.7+ |
| 1999 11 05 | 704 | 0.1− | 0.4− | 2004 01 17 | 644 | 0.3+ | 0.2+ | 2005 05 14 | 644 | 0.5+ | 0.3+ |
| 1999 11 05 | 704 | 0.3+ | 0.5− | 2004 01 22 | 704 | 0.3+ | 0.8− | 2005 05 14 | 644 | 0.1+ | 0.2+ |
| 1999 11 16 | 703 | 0.8− | 0.5+ | 2004 01 22 | 704 | 0.3+ | 0.3− | 2005 05 14 | 644 | 0.4+ | 0.2+ |
| 1999 11 16 | 703 | 0.1+ | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.9− | 2006 11 14 | 704 | 0.3+ | 0.5+ |
| 1999 11 16 | 703 | 0.8− | 0.0 | 2004 01 22 | 704 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 1999 11 16 | 703 | 0.1+ | 0.6+ | 2004 01 22 | 704 | 0.6+ | 0.8− | 2006 11 14 | 704 | 0.1+ | 1.2+ |
| 1999 12 16 | 704 | 0.2− | 0.1− | 2004 01 24 | 704 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 1999 12 16 | 704 | 0.3+ | 0.4+ | 2004 01 24 | 704 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 1999 12 16 | 704 | 1.4− | 0.5− | 2004 01 24 | 704 | 0.0 | 1.5+ | 2006 11 17 | 704 | 0.4+ | 0.1− |
| 1999 12 16 | 704 | 0.0 | 0.1− | 2004 01 24 | 704 | 0.4− | 0.8+ | 2006 11 17 | 704 | 0.8− | 0.3+ |
| 2002 05 16 | 644 | 0.2+ | 0.7+ | 2004 01 24 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2002 05 16 | 644 | 0.1+ | 0.5+ | 2004 01 26 | 699 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.9+ |
| 2002 05 16 | 644 | 0.2+ | 0.6+ | 2004 01 26 | 699 | 0.8− | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 06 25 | 644 | 0.3+ | 0.5+ | 2004 01 26 | 699 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 06 25 | 644 | 0.1+ | 0.2+ | 2004 01 26 | 699 | 0.9+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 06 25 | 644 | 0.3+ | 0.7+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 07 04 | 644 | 0.1+ | 0.1+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.8+ |
| 2002 07 04 | 644 | 0.1− | 0.0 | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2002 07 04 | 644 | 0.1− | 0.3+ | 2004 01 30 | 704 | (0.3− | 1.6+) | 2006 11 20 | 704 | (0.3+ | 1.8+) |
| 2002 07 05 | 704 | (1.6− | 0.3+) | 2004 01 30 | 704 | 0.5− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 1.0+ |
| 2002 07 05 | 704 | 1.0− | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.2+ | 0.2− |
| 2002 07 05 | 704 | 0.8− | 0.1− | 2004 01 30 | 704 | 0.5− | 1.3+ | 2006 11 29 | 704 | 0.4− | 0.0 |
| 2002 07 05 | 704 | 1.3− | 0.0 | 2004 01 30 | 704 | 0.3− | 0.6+ | 2006 11 29 | 704 | 0.4− | 0.4+ |
| 2002 07 05 | 704 | 1.2− | 0.4− | 2004 02 12 | 691 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3− | 0.0 |
| 2002 07 08 | 644 | 0.3+ | 0.4+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2002 07 08 | 644 | 0.8+ | 1.3+ | 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2002 07 08 | 644 | 0.3+ | 0.3+ | 2004 02 17 | 644 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2002 07 09 | 644 | 0.1− | 0.0 | 2004 02 17 | 644 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2002 07 09 | 644 | 0.2− | 0.1+ | 2004 02 17 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.0 |

**(137494)∗ 1999 UJ$_{52}$ = 2001 HV$_{26}$**

Discovered 1999 Oct. 31 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 12970)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 243.52391 | | (2000.0) | | −0.75478496 | −0.64103686 |
| $n$ | 0.26903294 | $\omega$ | 21.80074 | | +0.57626733 | −0.74934422 |
| $a$ | 2.3764704 | $\Omega$ | 117.56376 | | +0.31339372 | −0.16599692 |
| $e$ | 0.1871008 | $i$ | 9.03289 | | | |
| $P$ | 3.66 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 703 | 0.5+ | 0.1− | 2002 08 30 | 644 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.7+ | 1.0+ |
| 1999 10 09 | 703 | 1.4+ | 0.1− | 2002 08 30 | 644 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.4− | 0.9+ |
| 1999 10 09 | 703 | 1.5− | 0.6+ | 2003 12 19 | 704 | 0.7− | 0.2− | 2004 03 19 | 704 | 0.3− | 0.4+ |
| 1999 10 09 | 703 | 0.2+ | 1.2− | 2003 12 19 | 704 | 1.2− | 0.3− | 2004 03 19 | 704 | (1.4− | 2.4+) |
| 1999 10 31 | 703 | (0.1− | 2.1+) | 2003 12 19 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.7− | 0.6+ |
| 1999 10 31 | 703 | 0.8− | 0.2+ | 2003 12 19 | 704 | 0.4− | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.6+ |
| 1999 10 31 | 703 | 1.4− | 1.0+ | 2003 12 20 | 704 | 1.2+ | 0.1+ | 2004 04 14 | 704 | 0.1− | 0.1− |
| 1999 10 31 | 703 | 0.9− | 1.0+ | 2003 12 20 | 704 | 1.4+ | 0.2− | 2004 04 14 | 699 | 1.1+ | 0.5− |
| 1999 11 06 | 704 | 0.2+ | 0.0 | 2003 12 20 | 704 | 1.3+ | 0.5+ | 2004 04 14 | 704 | 0.9+ | 0.2+ |
| 1999 11 06 | 704 | 0.7+ | 0.0 | 2003 12 20 | 704 | (1.8+ | 0.6−) | 2004 04 14 | 704 | 0.2+ | 1.0− |
| 1999 11 06 | 704 | 1.5+ | 0.7− | 2003 12 21 | 704 | (2.8+ | 1.4−) | 2004 04 14 | 699 | 1.0+ | 0.5+ |
| 1999 11 06 | 704 | 0.8+ | 1.4+ | 2003 12 21 | 704 | 1.3− | 0.8− | 2004 04 14 | 704 | 0.0 | 0.1+ |
| 1999 11 06 | 704 | 0.9− | 1.3+ | 2003 12 21 | 704 | 0.7+ | 0.1− | 2004 04 14 | 699 | 0.8+ | 0.1+ |
| 1999 12 14 | 704 | 1.0− | 0.2− | 2003 12 21 | 704 | 0.6+ | 0.7− | 2004 04 14 | 699 | 0.7+ | 0.8+ |
| 1999 12 14 | 704 | 0.3− | 0.3− | 2003 12 21 | 704 | 0.5− | 0.4+ | 2004 04 19 | 704 | 0.2− | 0.0 |
| 1999 12 14 | 704 | 1.2− | 1.6− | 2003 12 21 | 704 | 0.8+ | 0.3+ | 2004 04 19 | 704 | 0.0 | 0.1+ |
| 1999 12 14 | 704 | 0.8+ | 1.2− | 2003 12 21 | 704 | 1.1+ | 0.8− | 2004 04 19 | 704 | 0.3− | 0.6+ |
| 2000 01 11 | 704 | 0.8+ | 1.0− | 2003 12 21 | 704 | (0.1+ | 3.4−) | 2004 04 19 | 704 | 0.3− | 0.3+ |
| 2000 01 11 | 704 | 1.7+ | 0.4− | 2003 12 21 | 704 | (1.9+ | 2.0−) | 2004 04 19 | 704 | 0.0 | 0.8+ |
| 2000 01 11 | 704 | 0.2+ | 0.8+ | 2003 12 21 | 704 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.5− | 1.3+ |
| 2001 04 26 | 919 | 0.3+ | 1.0+ | 2003 12 21 | 704 | (2.0− | 0.4+) | 2006 08 28 | 699 | 1.2− | 1.2− |
| 2001 04 26 | 919 | 0.8+ | 0.2+ | 2003 12 23 | 704 | (1.6+ | 1.4+) | 2006 08 28 | 699 | 0.1+ | 0.6+ |
| 2001 04 26 | 919 | 0.2+ | 0.0 | 2003 12 23 | 704 | (1.5+ | 3.3+) | 2006 08 28 | 699 | 0.4− | 1.3+ |
| 2001 04 27 | 608 | (2.1− | 1.0+) | 2003 12 23 | 704 | (1.4+ | 3.0+) | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 2001 04 27 | 608 | (1.9− | 1.1+) | 2003 12 23 | 704 | (1.6+ | 3.6+) | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2001 04 27 | 608 | (2.3− | 0.9+) | 2003 12 23 | 704 | (1.8+ | 1.9+) | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 2001 04 29 | 919 | 0.1+ | 1.5+ | 2004 01 21 | 704 | 0.1− | 0.5− | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2001 04 29 | 919 | 0.6− | 0.4− | 2004 01 21 | 704 | 0.8− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.3− |
| 2001 04 29 | 919 | 0.0 | 1.0+ | 2004 01 21 | 704 | 0.7− | 0.5− | 2006 09 13 | 644 | 0.1+ | 0.1− |
| 2001 05 26 | 704 | 0.3+ | 0.6+ | 2004 01 21 | 704 | 0.8− | 0.3− | 2006 09 17 | 699 | 0.9− | 0.3+ |
| 2001 05 26 | 704 | 0.4− | 1.3+ | 2004 01 21 | 704 | 1.0− | 0.9− | 2006 09 17 | 699 | 0.5+ | 0.5− |
| 2001 05 26 | 704 | 0.8− | 0.7+ | 2004 01 24 | 704 | 0.5− | 0.2− | 2006 09 17 | 699 | (1.0− | 2.0+) |
| 2001 06 15 | 704 | (1.6+ | 0.7+) | 2004 01 24 | 704 | 0.7+ | 0.9− | 2006 09 17 | 699 | 0.1− | 1.0+ |
| 2001 06 15 | 704 | 1.1+ | 0.7+ | 2004 01 24 | 704 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.7− |
| 2001 06 15 | 704 | 1.3− | 0.4− | 2004 01 24 | 704 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2001 06 15 | 704 | 0.5+ | 0.4+ | 2004 01 30 | 704 | 0.5− | 1.0+ | 2006 09 19 | 703 | 0.8+ | 0.5+ |
| 2001 06 15 | 704 | 0.5− | 0.5+ | 2004 01 30 | 704 | 0.8− | 0.8+ | 2006 09 19 | 703 | 0.4− | 0.5− |
| 2001 06 15 | 608 | 0.6+ | 1.2− | 2004 01 30 | 704 | 0.4− | 1.4+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 06 15 | 608 | 0.0 | 0.4− | 2004 01 30 | 704 | 0.3− | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2001 06 15 | 608 | 0.3+ | 0.6− | 2004 01 30 | 704 | 0.5− | 1.2+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2002 08 19 | 644 | 0.4− | 0.7+ | 2004 02 15 | 704 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.9+ | 0.6+ |
| 2002 08 19 | 644 | 0.2+ | 0.5+ | 2004 02 15 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.9+ |
| 2002 08 19 | 644 | 0.3+ | 0.8+ | 2004 02 15 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.4+ |
| 2002 08 30 | 644 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.5+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.9+ |

**(137495)∗ 1999 UH$_{53}$ = 2004 BO$_{105}$**

Discovered 1999 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60553)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.39191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28322917 | $\omega$ | 110.67667 | | +0.33194131 | −0.94112928 | |
| $a$ | 2.2963816 | $\Omega$ | 319.75623 | | +0.82443523 | +0.32239406 | |
| $e$ | 0.1638389 | $i$ | 5.68159 | | +0.45839013 | +0.10167467 | |
| $P$ | 3.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4+ | 0.8− | 2004 01 24 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.0 | 0.4− |
| 1999 10 12 | 704 | 0.7− | 0.3− | 2004 01 30 | 704 | 0.8+ | 1.2+ | 2006 09 28 | 703 | 0.8+ | 0.8− |
| 1999 10 12 | 704 | 0.6− | 0.2+ | 2004 01 30 | 704 | 0.3− | 0.8+ | 2006 09 28 | 703 | 0.8− | 0.3− |
| 1999 10 12 | 704 | 0.3− | 0.3− | 2004 01 30 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.3− |
| 1999 10 12 | 704 | 0.8− | 0.5+ | 2004 01 30 | 704 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.6− |
| 1999 10 21 | 704 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.6+ | 0.3− | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 1999 10 21 | 704 | 0.5+ | 0.4+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.7− |
| 1999 10 21 | 704 | 0.3− | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 21 | 704 | 0.2+ | 0.7+ |
| 1999 10 21 | 704 | 0.2− | 0.7+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 21 | 704 | 0.5− | 0.3− |
| 1999 10 28 | 703 | 0.6+ | 0.5+ | 2004 02 17 | 704 | 0.3− | 0.0 | 2006 10 21 | 704 | 0.3− | 0.7+ |
| 1999 10 28 | 703 | 0.7+ | 0.1− | 2004 02 17 | 704 | 0.5− | 0.0 | 2006 10 21 | 704 | 0.2+ | 0.6+ |
| 1999 10 28 | 703 | 0.8+ | 0.5+ | 2004 02 17 | 704 | 0.2− | 0.2− | 2006 10 21 | 704 | 0.8− | 0.8+ |
| 1999 10 28 | 703 | 0.5− | 0.3+ | 2004 02 17 | 704 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.5− |
| 1999 11 04 | 704 | 0.3− | 0.1− | 2004 02 17 | 704 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.5− |
| 1999 11 04 | 704 | 0.5+ | 1.1− | 2004 02 26 | 704 | 0.5+ | 0.8− | 2006 10 27 | 703 | (1.1− | 1.9−) |
| 1999 11 04 | 704 | 0.4− | 0.6− | 2004 02 26 | 704 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.8+ | 1.0− |
| 1999 11 04 | 704 | 0.3− | 0.6+ | 2004 02 26 | 704 | 0.2− | 0.9− | 2006 10 29 | 104 | 0.6+ | 0.3+ |
| 1999 11 04 | 704 | 0.1+ | 0.9+ | 2004 02 26 | 704 | 0.4+ | 0.1+ | 2006 10 29 | 104 | (1.7+ | 0.2−) |
| 2002 08 08 | 644 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.0 | 0.3− | 2006 10 29 | 104 | 0.4+ | 0.3+ |
| 2002 08 08 | 644 | 0.2− | 0.5+ | 2004 03 01 | 691 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2002 08 08 | 644 | 0.4− | 1.1+ | 2004 03 01 | 691 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.8− | 0.0 |
| 2004 01 24 | 704 | 0.3− | 0.1+ | 2004 03 01 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.7+ | 0.9+ |
| 2004 01 24 | 704 | 0.4− | 0.4+ | 2004 03 01 | 704 | 0.7− | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.3− |
| 2004 01 24 | 704 | 0.3− | 0.2+ | 2004 03 01 | 704 | 1.1− | 1.0− | | | | |
| 2004 01 24 | 704 | 0.4− | 0.3+ | 2004 03 01 | 704 | 0.4+ | 0.6− | | | | |

**(137496)∗ 1999 UM$_{53}$**

Discovered 1999 Oct. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.41921 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27332397 | $\omega$ | 59.42527 | | +0.18036416 | +0.98057135 | |
| $a$ | 2.3515321 | $\Omega$ | 221.19306 | | −0.93778777 | +0.14778204 | |
| $e$ | 0.1149924 | $i$ | 6.72522 | | −0.29668648 | +0.12899725 | |
| $P$ | 3.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 1.1− | 0.1− | 2002 07 18 | 704 | 0.2+ | 0.3− | 2006 09 17 | 691 | 0.3− | 0.1+ |
| 1995 10 24 | 691 | 0.7− | 0.1− | 2002 07 18 | 704 | 0.3+ | 0.1− | 2006 09 18 | 699 | (2.2− | 0.3−) |
| 1995 10 24 | 691 | 0.6− | 0.2− | 2002 07 18 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 0.7− | 0.1+ |
| 1998 05 24 | 704 | 1.0+ | 0.6− | 2002 08 12 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.0 |
| 1998 05 24 | 704 | 0.9− | 0.1+ | 2002 08 12 | 704 | 0.2+ | 0.1− | 2006 09 18 | 699 | 1.0+ | 0.3+ |
| 1998 05 24 | 704 | (2.7− | 0.6+) | 2002 08 12 | 704 | 0.2+ | 1.4+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 1998 05 24 | 704 | 1.6− | 0.3− | 2002 08 12 | 704 | 0.4+ | 0.6− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 1999 10 19 | 691 | 0.1+ | 0.4+ | 2002 08 25 | 644 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 1999 10 19 | 691 | 0.2+ | 0.2+ | 2002 08 25 | 644 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 1999 10 19 | 691 | 0.2+ | 0.5+ | 2002 08 25 | 644 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 1999 10 29 | 691 | 0.5+ | 0.4+ | 2002 09 03 | 644 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 1999 10 29 | 691 | 0.5+ | 0.2+ | 2002 09 03 | 644 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.3+ |
| 1999 10 29 | 691 | 0.3+ | 0.5+ | 2002 09 03 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.7− |
| 1999 11 16 | 691 | 0.2+ | 0.2− | 2005 04 05 | 699 | 0.1− | 0.8− | 2006 10 17 | 703 | 0.6− | 0.4− |
| 1999 11 16 | 691 | 0.3+ | 0.0 | 2005 04 05 | 699 | 1.4− | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.7− |
| 1999 11 16 | 691 | 0.2+ | 0.1− | 2005 04 05 | 699 | 1.4+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2002 07 09 | 704 | 0.3+ | 0.1− | 2005 04 05 | 699 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2002 07 09 | 704 | 1.3+ | 0.4− | 2005 04 06 | 691 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2002 07 09 | 704 | 0.2+ | 0.3− | 2005 04 06 | 691 | 0.1− | 0.5+ | 2006 10 19 | G96 | 0.6− | 0.3− |
| 2002 07 09 | 704 | 0.9+ | 0.8− | 2005 04 06 | 691 | 0.1− | 0.6+ | 2006 11 11 | 703 | 1.7+ | 0.8+ |
| 2002 07 09 | 704 | 0.3+ | 0.2− | 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.9+ | 0.3+ |
| 2002 07 12 | 644 | 0.0 | 0.9+ | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2002 07 12 | 644 | 0.1+ | 0.9+ | 2005 04 10 | 691 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.7+ |
| 2002 07 12 | 644 | 0.1+ | 0.7+ | 2005 04 11 | 699 | 1.0+ | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2002 07 14 | 704 | 1.2+ | 0.6+ | 2005 04 11 | 699 | 1.3+ | 0.5+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2002 07 14 | 704 | 1.1+ | 0.3+ | 2005 04 11 | 699 | 0.8− | 1.1+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2002 07 14 | 704 | 0.9+ | 0.4+ | 2005 04 11 | 699 | 0.6− | 0.4− | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2002 07 14 | 704 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.4+ | | | | |
| 2002 07 18 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.1− | | | | |

**(137497)∗ 1999 VH**

Discovered 1999 Nov. 1 by L. Šarounová at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.62459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27965664 | $\omega$ | 304.60451 | | +0.28722706 | −0.95727629 | |
| $a$ | 2.3158973 | $\Omega$ | 128.66806 | | +0.89227461 | +0.25467425 | |
| $e$ | 0.1925939 | $i$ | 2.45961 | | +0.34834844 | +0.13697860 | |
| $P$ | 3.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 691 | 0.1− | 0.2− | 2004 01 24 | 704 | 0.2− | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 1997 02 10 | 691 | 0.4− | 0.5− | 2004 01 24 | 704 | 0.8+ | 0.5− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 1997 02 10 | 691 | 0.3+ | 0.4− | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 1999 10 10 | 704 | 0.6− | 1.2− | 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 1999 10 10 | 704 | 0.1+ | 0.2− | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.6− | 0.1+ |
| 1999 10 10 | 704 | 0.3− | 0.0 | 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 10 15 | 703 | 0.5− | 0.2+ |
| 1999 10 10 | 704 | 0.8+ | 0.1− | 2004 02 12 | 691 | 0.3− | 0.0 | 2006 10 15 | 703 | 0.7+ | 0.1+ |
| 1999 10 10 | 704 | 0.2+ | 1.8+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.4− | 0.3+ |
| 1999 10 12 | 012 | (1.4− | 2.7+) | 2004 02 17 | 704 | 0.4− | 0.8− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 10 13 | 012 | 0.0 | 1.3+ | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 1999 10 29 | 703 | 0.2− | 0.2+ | 2004 02 17 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 1999 10 29 | 703 | (2.2− | 1.4−) | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 1999 10 29 | 703 | 0.5− | 0.6− | 2004 02 20 | 608 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.5− |
| 1999 10 29 | 703 | 1.3− | 1.4− | 2004 02 20 | 608 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.4− | 0.3− |
| 1999 11 01 | 557 | 0.3+ | 1.0+ | 2004 02 20 | 608 | 0.1− | 0.6− | 2006 10 21 | G96 | 0.3+ | 0.6− |
| 1999 11 01 | 557 | 0.4+ | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 1999 11 01 | 557 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 1999 11 01 | 557 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 1999 11 01 | 557 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 1999 11 03 | 703 | 0.6+ | 0.3+ | 2004 02 23 | 704 | 0.1+ | 1.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 1999 11 03 | 703 | 0.7− | 0.0 | 2004 03 20 | 691 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 1999 11 03 | 703 | 0.1− | 0.6+ | 2004 03 20 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 1999 11 03 | 703 | 2.0− | 1.1+ | 2004 03 20 | 691 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 1999 11 05 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.9+ | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 1999 11 05 | 704 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.9+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 1999 11 05 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 1999 11 15 | 704 | 0.5− | 1.9− | 2006 09 30 | 703 | 0.6− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 11 15 | 704 | 0.8+ | 0.6− | 2006 09 30 | 703 | 1.0− | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 1999 11 15 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 1999 11 15 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.9+ | 0.2− |
| 1999 11 15 | 704 | 1.1+ | 0.4− | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 2001 05 15 | 691 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.5+ | 0.0 | 2006 11 11 | 703 | 1.4− | 0.1+ |
| 2001 05 15 | 691 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | (1.8+ | 0.1−) |
| 2001 05 15 | 691 | 0.6+ | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 01 24 | 704 | 0.7+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2004 01 24 | 704 | 0.7+ | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2004 01 24 | 704 | 0.6+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.1− |

**(137498)∗ 1999 VP$_8$**

Discovered 1999 Nov. 7 by S. Sposetti at Gnosca.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.51332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27417728 | $\omega$ | 14.24060 | | −0.16000003 | −0.98269967 | |
| $a$ | 2.3466505 | $\Omega$ | 85.02879 | | +0.89625346 | −0.18422417 | |
| $e$ | 0.1904463 | $i$ | 5.37266 | | +0.41367828 | +0.01904760 | |
| $P$ | 3.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 703 | 0.4− | 0.4+ | 2003 10 25 | 691 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.4+ | 0.1+ |
| 1999 10 02 | 703 | 0.8− | 0.1+ | 2003 10 27 | 291 | 0.6− | 0.1+ | 2004 02 15 | 704 | 0.1+ | 0.5+ |
| 1999 10 02 | 703 | 1.2− | 0.1− | 2003 10 27 | 291 | 0.1+ | 0.4+ | 2004 02 15 | 704 | 0.5+ | 0.6+ |
| 1999 10 02 | 703 | 0.2− | 0.2+ | 2003 10 27 | 291 | 0.8− | 0.2− | 2004 02 15 | 704 | 0.1+ | 0.3+ |
| 1999 10 09 | 704 | 1.0− | 0.5− | 2003 10 29 | 704 | 0.6+ | 0.5+ | 2004 02 15 | 704 | 0.7+ | 0.3+ |
| 1999 10 09 | 704 | 0.8− | 0.1− | 2003 10 29 | 704 | 1.1+ | 0.4+ | 2004 02 18 | 644 | 0.0 | 0.3− |
| 1999 10 09 | 704 | 1.0− | 0.6− | 2003 10 29 | 704 | 0.4+ | 0.9+ | 2004 02 18 | 644 | 0.4+ | 0.0 |
| 1999 10 09 | 704 | 0.7− | 0.5+ | 2003 10 29 | 704 | 0.5+ | 0.4+ | 2004 02 18 | 644 | 0.1− | 0.3− |
| 1999 10 09 | 704 | 0.8− | 0.2− | 2003 10 29 | 704 | 0.2+ | 0.4+ | 2004 02 22 | 703 | 0.2+ | 0.1− |
| 1999 10 19 | 704 | 0.6+ | 0.6− | 2003 11 02 | 704 | 0.0 | 0.1+ | 2004 02 22 | 703 | 0.3− | 0.0 |
| 1999 10 19 | 704 | 0.2+ | 0.2− | 2003 11 02 | 704 | 0.6+ | 0.2− | 2004 02 22 | 703 | 0.1+ | 0.2+ |
| 1999 10 19 | 704 | 0.1− | 0.2− | 2003 11 02 | 704 | 1.2+ | 0.5− | 2004 02 22 | 703 | 0.0 | 0.4+ |
| 1999 10 19 | 704 | 0.2+ | 0.7− | 2003 11 20 | 704 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.7− | 0.6+ |
| 1999 10 19 | 704 | 0.1− | 1.0− | 2003 11 20 | 704 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.3+ |
| 1999 11 05 | 704 | 0.0 | 0.0 | 2003 11 20 | 704 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.3− | 0.3+ |
| 1999 11 05 | 704 | 0.3− | 0.1+ | 2003 11 20 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.9+ | 0.0 |
| 1999 11 05 | 704 | 0.3− | 0.0 | 2003 11 20 | 704 | 0.4− | 0.1− | 2004 04 14 | 704 | 0.9+ | 0.6+ |
| 1999 11 05 | 704 | 0.1+ | 0.5+ | 2003 11 24 | 704 | 0.6+ | 0.7+ | 2004 04 14 | 704 | 0.3+ | 0.4+ |
| 1999 11 05 | 704 | 0.4− | 0.2+ | 2003 11 24 | 704 | 0.4+ | 0.4+ | 2004 04 14 | 704 | 0.7+ | 0.2− |
| 1999 11 06 | 704 | 0.3+ | 0.0 | 2003 11 24 | 704 | 0.7+ | 0.9+ | 2004 04 14 | 704 | 0.2+ | 1.0− |
| 1999 11 06 | 704 | 0.0 | 0.3− | 2003 11 24 | 704 | 0.3+ | 0.9+ | 2004 04 20 | 704 | 1.0+ | 0.6+ |
| 1999 11 06 | 704 | 0.0 | 0.1− | 2003 11 24 | 704 | (0.2+ | 2.2+) | 2004 04 20 | 704 | 0.7+ | 0.0 |
| 1999 11 06 | 704 | 0.2+ | 0.2− | 2003 11 27 | 703 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.0 | 0.7+ |
| 1999 11 06 | 704 | 0.1+ | 0.3+ | 2003 11 27 | 703 | 1.0+ | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.3+ |
| 1999 11 07 | 143 | 1.2+ | 0.3− | 2003 11 27 | 703 | (2.0+ | 0.4−) | 2004 04 20 | 704 | 1.1+ | 0.2− |
| 1999 11 07 | 143 | 0.3+ | 0.2− | 2003 11 27 | 703 | 0.1− | 0.8− | 2004 04 20 | 704 | 0.5+ | 1.1+ |
| 1999 11 07 | 143 | 0.4+ | 0.6− | 2003 12 05 | 703 | 0.4+ | 0.3+ | 2004 04 22 | 704 | 0.7+ | 0.3+ |
| 1999 11 08 | 143 | 0.2+ | 0.8+ | 2003 12 05 | 703 | 0.0 | 0.2− | 2004 04 22 | 704 | 0.4+ | 0.1+ |
| 1999 11 08 | 143 | 0.6+ | 0.6+ | 2003 12 05 | 703 | 0.1+ | 1.0+ | 2004 04 22 | 704 | 0.3− | 1.1+ |
| 1999 11 08 | 143 | 0.5+ | 0.2+ | 2003 12 05 | 703 | 0.4+ | 0.9+ | 2004 04 22 | 704 | 0.6− | 0.9+ |
| 1999 11 08 | 143 | 0.8+ | 0.0 | 2003 12 16 | 699 | 0.0 | 0.6+ | 2006 08 28 | 699 | 1.2+ | 0.5− |
| 1999 11 12 | 143 | (0.7− | 3.1+) | 2003 12 16 | 699 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.3− | 0.6− |
| 1999 11 12 | 143 | (0.6− | 3.5+) | 2003 12 16 | 699 | 0.3+ | 0.1+ | 2006 08 28 | 699 | (1.6− | 0.0 ) |
| 1999 11 12 | 143 | (0.5− | 3.4+) | 2003 12 16 | 699 | 0.1− | 0.5− | 2006 08 28 | 699 | 0.4− | 0.8− |
| 1999 11 12 | 143 | (0.5+ | 3.1+) | 2003 12 17 | 703 | 0.2− | 1.1− | 2006 09 12 | 703 | 0.5+ | 1.2+ |
| 1999 11 13 | 143 | 0.2+ | 0.1− | 2003 12 17 | 703 | 0.6− | 0.2− | 2006 09 12 | 703 | 0.9− | 0.9+ |
| 1999 11 13 | 143 | 0.7+ | 0.1+ | 2003 12 17 | 703 | 0.5− | 0.1− | 2006 09 12 | 703 | 0.8+ | 1.2+ |
| 1999 11 13 | 143 | 0.4+ | 0.3+ | 2003 12 17 | 703 | 0.3− | 0.1− | 2006 09 12 | 703 | (2.3− | 0.0 ) |
| 1999 11 14 | 699 | 0.6− | 0.6− | 2003 12 19 | 704 | 0.0 | 0.6− | 2006 09 16 | 704 | 0.1+ | 1.1+ |
| 1999 11 14 | 699 | 1.0− | 0.3− | 2003 12 19 | 704 | (0.3+ | 1.6−) | 2006 09 16 | 704 | 1.0+ | 1.1+ |
| 1999 11 14 | 699 | 0.7− | 0.9+ | 2003 12 19 | 704 | 0.4+ | 0.7− | 2006 09 16 | 704 | 0.3+ | 0.5− |
| 1999 11 17 | 704 | 0.2+ | 0.6+ | 2003 12 19 | 704 | 0.1+ | 0.5− | 2006 09 18 | 703 | 0.2− | 0.4− |
| 1999 11 17 | 704 | 0.6+ | 0.5+ | 2003 12 19 | 704 | 0.6+ | 0.1− | 2006 09 18 | 703 | 0.3− | 0.2+ |
| 1999 11 17 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.4− | 0.5+ |
| 1999 11 17 | 704 | 0.1+ | 0.6+ | 2003 12 22 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.5− | 0.0 |
| 1999 11 25 | 143 | 1.0− | 1.1+ | 2003 12 22 | 704 | 0.1+ | 0.3− | 2006 09 19 | 704 | 0.8− | 1.0+ |
| 1999 11 25 | 143 | 0.9− | 0.4+ | 2003 12 22 | 704 | 1.1+ | 1.4− | 2006 09 19 | 704 | (1.6− | 0.3+) |
| 1999 11 25 | 143 | 0.1− | 1.4+ | 2003 12 22 | 704 | 0.1− | 0.8+ | 2006 09 19 | 704 | (2.5− | 0.9+) |
| 1999 11 26 | 143 | 0.7+ | 0.0 | 2003 12 28 | 704 | 0.9− | 0.2+ | 2006 09 19 | 704 | (0.9− | 1.9+) |
| 1999 11 26 | 143 | 0.7+ | 0.0 | 2003 12 28 | 704 | 0.7− | 1.1+ | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 1999 12 05 | 704 | 0.6+ | 0.5− | 2003 12 28 | 704 | 0.6− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 1999 12 05 | 704 | 0.7+ | 0.2− | 2003 12 28 | 704 | 0.1− | 1.1+ | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 1999 12 05 | 704 | 0.1+ | 1.7− | 2003 12 28 | 704 | (0.3− | 1.7+) | 2006 09 22 | 704 | (2.4+ | 0.5+) |
| 1999 12 05 | 704 | 0.2− | 1.1− | 2004 01 04 | 699 | 0.1+ | 0.6+ | 2006 09 22 | 704 | 0.2+ | 1.4+ |
| 1999 12 14 | 704 | 0.4+ | 0.1− | 2004 01 04 | 699 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.6− | 1.2+ |
| 1999 12 14 | 704 | 0.9− | 1.1− | 2004 01 04 | 699 | 0.1− | 0.8− | 2006 09 22 | 704 | 0.6+ | 0.2+ |
| 1999 12 14 | 704 | 0.5+ | 0.6+ | 2004 01 04 | 699 | 0.5− | 0.3− | 2006 09 26 | 703 | 0.7− | 0.3− |
| 1999 12 14 | 704 | 0.3− | 0.5+ | 2004 01 05 | 703 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.5− | 0.2− |
| 1999 12 14 | 704 | 0.3+ | 1.3+ | 2004 01 05 | 703 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.3− | 0.3− |
| 2000 01 05 | 704 | 0.0 | 0.8+ | 2004 01 05 | 703 | 0.9− | 0.2− | 2006 09 26 | 703 | 0.5− | 0.2− |
| 2000 01 05 | 704 | 0.5− | 0.5+ | 2004 01 05 | 703 | 0.8− | 0.8− | 2006 09 30 | 703 | 0.4+ | 0.0 |
| 2000 01 05 | 704 | 1.0+ | 0.7+ | 2004 01 13 | 699 | 0.2− | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2000 01 05 | 704 | 0.6+ | 0.9+ | 2004 01 13 | 699 | 0.2− | 0.9− | 2006 09 30 | 703 | 0.2+ | 0.3− |
| 2000 01 07 | 704 | 0.3− | 0.6+ | 2004 01 13 | 699 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.6− |
| 2000 01 07 | 704 | 0.6− | 0.3− | 2004 01 13 | 699 | 0.0 | 0.0 | 2006 09 30 | 704 | (0.4− | 1.7+) |
| 2000 01 07 | 704 | 0.1− | 0.1+ | 2004 01 28 | 703 | 0.7− | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.4+ |
| 2001 04 18 | 691 | 0.1+ | 0.7+ | 2004 01 28 | 703 | (2.6+ | 1.3−) | 2006 09 30 | 704 | (1.2− | 3.4+) |
| 2001 04 18 | 691 | 0.3+ | 0.7+ | 2004 01 28 | 703 | 0.7− | 0.4+ | 2006 09 30 | 704 | 0.4− | 0.5+ |
| 2001 04 18 | 691 | 0.2− | 0.4+ | 2004 01 28 | 703 | 0.5− | 0.3+ | 2006 10 02 | 703 | 0.5+ | 1.1+ |
| 2001 05 16 | 691 | 0.3+ | 0.5+ | 2004 01 30 | 704 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.5− | 1.5+ |
| 2001 05 16 | 691 | 0.3+ | 0.5+ | 2004 01 30 | 704 | 0.6+ | 0.5+ | 2006 10 02 | 703 | (0.3− | 1.6−) |
| 2001 05 16 | 691 | (2.5+ | 0.8−) | 2004 01 30 | 704 | 0.2+ | 0.6+ | 2006 10 02 | 703 | 0.3+ | 1.0+ |
| 2001 05 24 | 699 | (1.7+ | 0.0 ) | 2004 01 30 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.0 |
| 2001 05 24 | 699 | (2.9+ | 0.6+) | 2004 01 30 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2001 05 24 | 699 | (1.6+ | 0.8+) | 2004 02 10 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2001 05 24 | 699 | 0.5+ | 0.6+ | 2004 02 10 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2002 08 11 | 644 | 0.5− | 0.0 | 2004 02 10 | 644 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 08 11 | 644 | 0.6− | 0.1+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.2− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.6− | 0.5+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.2− | | |
| 2002 08 16 | 644 | 0.2− | 0.7+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.2+ | | |
| 2002 08 16 | 644 | 0.2+ | 0.4+ | 2004 02 13 | 699 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.8− | 0.1+ | | |
| 2002 08 16 | 644 | 0.2+ | 0.5+ | 2004 02 13 | 699 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2003 10 25 | 691 | 0.1+ | 0.1− | 2004 02 13 | 699 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.2+ | | |
| 2003 10 25 | 691 | 0.2− | 0.0 | 2004 02 13 | 699 | 0.2− | 0.1− | | | | | | |

**(137499)∗ 1999 VS$_{11}$**

Discovered 1999 Nov. 5 at Farpoint Observatory, Eskridge.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.37495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27104431 | $\omega$ | 41.22285 | | −0.06514187 | −0.99448942 | |
| $a$ | 2.3646989 | $\Omega$ | 52.67312 | | +0.88632271 | −0.09548292 | |
| $e$ | 0.2012252 | $i$ | 5.92917 | | +0.45846329 | +0.04328760 | |
| $P$ | 3.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 22 | 704 | 0.7+ | 1.1+ | 1999 12 07 | 704 | 0.5+ | 0.1+ | 2004 02 23 | 704 | 0.2− | 0.1+ | | |
| 1999 10 22 | 704 | 0.1− | 0.4+ | 1999 12 07 | 704 | 0.6+ | 0.1− | 2004 02 23 | 704 | 0.5− | 0.3− | | |
| 1999 10 22 | 704 | 0.8+ | 0.7+ | 1999 12 07 | 704 | 0.1+ | 1.1− | 2004 02 23 | 704 | 0.0 | 0.6− | | |
| 1999 10 30 | 703 | 0.6+ | 0.3+ | 1999 12 08 | 704 | 0.2− | 0.1+ | 2004 03 10 | 703 | 1.3− | 0.7+ | | |
| 1999 10 30 | 703 | 0.0 | 0.2+ | 1999 12 08 | 704 | 1.0− | 0.4+ | 2004 03 10 | 703 | 1.4− | 0.4− | | |
| 1999 10 30 | 703 | 0.4+ | 0.3+ | 1999 12 08 | 704 | 0.6+ | 0.0 | 2004 03 10 | 703 | 0.3+ | 0.7+ | | |
| 1999 10 30 | 703 | 0.1− | 1.7+ | 1999 12 08 | 704 | 0.3+ | 0.2− | 2004 03 10 | 703 | 0.7− | 1.1+ | | |
| 1999 11 03 | 704 | 0.3+ | 0.8+ | 1999 12 13 | 703 | 0.4− | 0.8− | 2004 03 12 | H36 | 0.2− | 0.3− | | |
| 1999 11 03 | 704 | 1.0+ | 0.1+ | 1999 12 13 | 703 | 0.6− | 0.2− | 2004 03 12 | H36 | 0.2− | 0.4− | | |
| 1999 11 03 | 704 | 1.5− | 1.3− | 1999 12 13 | 703 | 0.2− | 1.6+ | 2004 03 12 | H36 | 0.4− | 0.5− | | |
| 1999 11 05 | 734 | 1.6− | 0.2− | 1999 12 13 | 703 | 0.4− | 0.7+ | 2004 03 14 | 704 | 0.4+ | 0.0 | | |
| 1999 11 05 | 734 | 0.9− | 1.0+ | 2000 01 08 | 734 | 0.4− | 0.3− | 2004 03 14 | 704 | 0.1+ | 0.1+ | | |
| 1999 11 05 | 734 | 1.4− | 1.1− | 2000 01 08 | 734 | 0.1− | 0.2− | 2004 03 14 | 704 | 0.0 | 0.4+ | | |
| 1999 11 06 | 734 | 0.0 | 0.1− | 2002 08 17 | 644 | 0.4− | 0.1− | 2004 03 14 | 704 | 0.3+ | 0.2− | | |
| 1999 11 06 | 734 | 0.0 | 0.4− | 2002 08 17 | 644 | 0.4− | 0.5+ | 2004 04 14 | 644 | 0.3+ | 0.2+ | | |
| 1999 11 06 | 734 | 0.3+ | 0.1− | 2002 08 17 | 644 | 0.2− | 0.6+ | 2004 04 14 | 644 | 0.0 | 0.0 | | |
| 1999 11 06 | 734 | 0.3+ | 0.4− | 2002 08 30 | 644 | 0.2− | 0.4+ | 2004 04 14 | 644 | 0.5+ | 0.1+ | | |
| 1999 11 09 | 704 | 0.5+ | 0.6− | 2002 08 30 | 644 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.4+ | | |
| 1999 11 09 | 704 | 0.7+ | 1.4− | 2002 08 30 | 644 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.2− | 0.4− | | |
| 1999 11 09 | 704 | 0.8+ | 1.1− | 2003 11 20 | 704 | 0.9+ | 1.3+ | 2006 09 18 | 703 | 0.6− | 0.5+ | | |
| 1999 11 09 | 704 | 0.7+ | 0.8− | 2003 11 20 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 703 | 0.7− | 1.4− | | |
| 1999 11 09 | 704 | 0.7+ | 1.1− | 2003 11 20 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.6+ | | |
| 1999 11 10 | 734 | 0.8+ | 0.6− | 2003 11 20 | 704 | 0.5+ | 1.4+ | 2006 09 18 | 699 | 0.1+ | 0.1− | | |
| 1999 11 10 | 734 | 0.6+ | 0.6− | 2003 12 19 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | 1.1− | 1.0+ | | |
| 1999 11 10 | 734 | 0.9+ | 0.9− | 2003 12 19 | 704 | 0.9+ | 0.1− | 2006 09 18 | 699 | 0.5− | 0.8+ | | |
| 1999 11 12 | 704 | 0.2+ | 0.3− | 2003 12 19 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.9+ | 0.5+ | | |
| 1999 11 12 | 704 | 0.3+ | 0.4− | 2003 12 19 | 704 | 0.7− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.5+ | | |
| 1999 11 12 | 704 | 0.1+ | 0.6− | 2003 12 27 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 1.1+ | 1.1+ | | |
| 1999 11 12 | 704 | 0.3+ | 0.9− | 2003 12 27 | 704 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.9+ | 0.5− | | |
| 1999 11 12 | 704 | 0.3+ | 1.0− | 2003 12 27 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 1.1− | 0.2+ | | |
| 1999 11 13 | 734 | 0.4− | 0.7− | 2003 12 27 | 704 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.4− | 1.2+ | | |
| 1999 11 13 | 734 | 0.4+ | 0.6− | 2003 12 27 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | | |
| 1999 11 13 | 734 | 0.1+ | 0.8− | 2003 12 28 | 699 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.4+ | | |
| 1999 11 13 | 734 | 0.3+ | 0.5− | 2003 12 28 | 699 | 0.8− | 0.9+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | | |
| 1999 11 16 | 704 | 0.7+ | 0.4+ | 2003 12 28 | 699 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.5− | | |
| 1999 11 16 | 704 | 0.7+ | 0.0 | 2003 12 28 | 699 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.8− | | |
| 1999 11 16 | 704 | 0.3+ | 0.6+ | 2003 12 29 | 704 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1− | | |
| 1999 11 16 | 704 | 0.1+ | 0.3+ | 2003 12 29 | 704 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 1999 11 16 | 704 | 0.1− | 0.5− | 2003 12 29 | 704 | (0.8− | 2.5+) | 2006 10 21 | 644 | 0.1− | 0.7+ | | |
| 1999 11 19 | 699 | 0.5− | 0.3+ | 2003 12 29 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.7+ | | |
| 1999 11 19 | 699 | 0.8− | 0.8− | 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.6+ | | |
| 1999 11 19 | 699 | 0.5− | 0.1− | 2004 01 30 | 704 | 1.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.8+ | | |
| 1999 11 27 | 734 | 0.2+ | 0.5− | 2004 01 30 | 704 | 0.6+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.8+ | | |
| 1999 11 27 | 734 | 0.2+ | 0.4− | 2004 01 30 | 704 | 1.0+ | 0.4+ | 2006 10 22 | 703 | 1.1− | 0.5+ | | |
| 1999 11 27 | 734 | 0.0 | 0.2− | 2004 01 30 | 704 | 0.9+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.5− | | |
| 1999 11 27 | 734 | 0.1− | 0.1− | 2004 02 15 | 704 | 0.3+ | 1.2+ | 2006 10 22 | 703 | (1.0− | 1.5+) | | |
| 1999 12 04 | 691 | 0.2− | 0.0 | 2004 02 15 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.8+ | | |
| 1999 12 04 | 691 | 0.2− | 0.2+ | 2004 02 15 | 704 | 0.1− | 1.0+ | 2006 10 28 | 682 | 0.4− | 0.1− | | |
| 1999 12 04 | 691 | 0.0 | 0.1+ | 2004 02 15 | 704 | 0.2+ | 0.9+ | 2006 10 28 | 682 | (0.4− | 2.5−) | | |
| 1999 12 05 | 703 | 0.9− | 0.6+ | 2004 02 16 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.1+ | | |
| 1999 12 05 | 703 | 0.6− | 0.5+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.2+ | | |
| 1999 12 05 | 703 | 0.0 | 0.3− | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.3+ | | |
| 1999 12 05 | 703 | 0.5+ | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.6− | 2006 11 23 | G96 | 0.0 | 0.3+ | | |
| 1999 12 07 | 704 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.9− | 1.3− | | | | | | |

**(137500)∗ 1999 VG$_{13}$ = 2000 AL**

Discovered 1999 Nov. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (d, *MPO* 1669)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.29368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28613622 | $\omega$ | 91.63244 | | −0.61842936 | −0.74692892 | |
| $a$ | 2.2808015 | $\Omega$ | 40.16028 | | +0.48127597 | −0.60566608 | |
| $e$ | 0.2356678 | $i$ | 22.25160 | | +0.62122344 | −0.27434612 | |
| $P$ | 3.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.7+ | 0.5+ | 2002 10 06 | 608 | 0.4+ | 1.3− | 2002 11 07 | 704 | 0.0 | 0.4− | | |
| 1999 11 01 | 704 | (2.3+ | 0.2−) | 2002 10 09 | 704 | 0.3− | 0.1+ | 2002 11 07 | 704 | 0.6− | 0.2− | | |
| 1999 11 01 | 704 | 0.2− | 0.5− | 2002 10 09 | 704 | 0.3+ | 0.2+ | 2002 11 11 | 704 | 1.0− | 0.4+ | | |
| 1999 11 01 | 704 | 0.4+ | 1.1− | 2002 10 09 | 704 | 0.0 | 0.4+ | 2002 11 11 | 704 | 0.2+ | 1.1+ | | |
| 1999 11 01 | 704 | 0.9+ | 0.1− | 2002 10 09 | 704 | 0.0 | 0.4+ | 2002 11 11 | 704 | 0.2− | 0.5+ | | |
| 1999 11 02 | 704 | 0.4− | 1.3− | 2002 10 09 | 704 | 0.1+ | 0.6+ | 2002 11 11 | 704 | 0.3− | 0.0 | | |
| 1999 11 02 | 704 | 0.8− | 1.8− | 2002 10 10 | 704 | 0.3− | 0.2+ | 2002 11 20 | 644 | 0.4− | 0.2+ | | |
| 1999 11 02 | 704 | 0.6− | 0.4− | 2002 10 10 | 704 | 0.2− | 0.6− | 2002 11 20 | 644 | 0.1− | 0.3+ | | |
| 1999 11 02 | 704 | 0.3− | 0.1− | 2002 10 10 | 704 | 0.2− | 0.3+ | 2002 11 20 | 644 | 0.5− | 0.1− | | |
| 1999 12 04 | 699 | 0.3− | 0.9− | 2002 10 10 | 704 | 0.2− | 0.3+ | 2002 12 01 | 608 | 0.3+ | 0.2+ | | |
| 1999 12 04 | 699 | 0.0 | 0.2− | 2002 10 10 | 704 | 0.1− | 0.1+ | 2002 12 01 | 608 | 0.5+ | 0.1+ | | |
| 1999 12 04 | 699 | 0.4− | 0.3− | 2002 10 11 | 704 | 0.4− | 0.2+ | 2002 12 01 | 608 | 0.0 | 1.2− | | |
| 1999 12 28 | 704 | 0.1+ | 0.6− | 2002 10 11 | 704 | 0.5− | 0.3− | 2002 12 05 | 704 | 0.8+ | 0.6+ | | |
| 1999 12 28 | 704 | 0.5+ | 0.5− | 2002 10 11 | 704 | 0.5+ | 0.0 | 2002 12 05 | 704 | 0.3− | 0.6+ | | |
| 1999 12 28 | 704 | 1.1+ | 0.4− | 2002 10 11 | 704 | 0.5+ | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.1− | | |
| 1999 12 28 | 704 | 1.2+ | 0.1− | 2002 10 11 | 704 | 0.1− | 0.4+ | 2002 12 05 | 704 | (1.6+ | 0.7−) | | |
| 1999 12 28 | 704 | 1.3+ | 0.0 | 2002 10 12 | 704 | 0.0 | 0.3− | 2002 12 10 | 704 | 0.8+ | 0.0 | | |
| 1999 12 30 | 699 | 0.5+ | 0.3− | 2002 10 12 | 704 | 0.2+ | 0.4+ | 2002 12 10 | 704 | 1.2+ | 0.5− | | |
| 1999 12 30 | 699 | 0.1− | 0.4− | 2002 10 12 | 704 | 0.0 | 0.1− | 2002 12 10 | 704 | 0.5− | 0.6+ | | |
| 1999 12 30 | 699 | 0.4+ | 0.2− | 2002 10 12 | 704 | 0.3− | 0.3+ | 2004 04 21 | 704 | 0.3+ | 0.3+ | | |
| 2000 01 02 | 678 | 1.1− | 0.1− | 2002 10 15 | 644 | 0.2+ | 0.1+ | 2004 04 21 | 704 | 0.5+ | 0.8− | | |
| 2000 01 02 | 678 | 0.5− | 0.6− | 2002 10 15 | 644 | 0.1+ | 0.3+ | 2004 04 21 | 704 | 0.1− | 0.9+ | | |
| 2000 01 03 | 678 | 0.2+ | 0.3− | 2002 10 15 | 644 | 0.1+ | 0.2+ | 2004 04 21 | 704 | 0.5+ | 0.9− | | |
| 2000 01 03 | 678 | 0.1− | 0.5+ | 2002 10 30 | 704 | 0.7+ | 0.3− | 2004 04 25 | 704 | 0.1− | 0.1+ | | |
| 2000 01 25 | 704 | 0.2− | 0.2+ | 2002 10 30 | 704 | 0.3− | 0.3+ | 2004 04 25 | 704 | 0.1+ | 0.7− | | |
| 2000 01 25 | 704 | 0.0 | 0.3− | 2002 10 30 | 704 | 0.3− | 1.0+ | 2004 04 25 | 704 | 0.8− | 0.9+ | | |
| 2000 01 25 | 704 | 0.6− | 0.1+ | 2002 10 30 | 704 | 0.3+ | 0.7+ | 2004 04 25 | 704 | 0.3+ | 0.3+ | | |
| 2000 01 25 | 704 | 0.9− | 0.8− | 2002 10 30 | 704 | 0.3− | 1.0+ | 2005 09 01 | E12 | 0.3+ | 0.1+ | | |
| 2000 01 25 | 704 | 0.9− | 0.9− | 2002 10 31 | 704 | 0.2− | 0.6− | 2005 09 01 | E12 | (2.4+ | 1.0+) | | |
| 2000 03 25 | 704 | 0.1− | 0.2+ | 2002 10 31 | 704 | 0.3+ | 0.2− | 2005 09 01 | E12 | (1.8+ | 0.4−) | | |
| 2000 03 25 | 704 | 0.6− | 0.0 | 2002 10 31 | 704 | 0.1− | 0.7− | 2005 09 01 | E12 | 0.3+ | 0.3− | | |
| 2000 03 25 | 704 | 0.5+ | 0.3− | 2002 10 31 | 704 | 0.1− | 0.6− | 2006 10 27 | 703 | 0.5− | 1.0+ | | |
| 2000 03 25 | 704 | 0.1− | 0.6+ | 2002 10 31 | 704 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.2+ | | |
| 2000 03 25 | 704 | 0.2− | 0.5+ | 2002 11 06 | 644 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.0 | 0.2+ | | |
| 2002 10 06 | 704 | 0.1− | 0.5− | 2002 11 06 | 644 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.9+ | | |
| 2002 10 06 | 704 | 0.5− | 0.5+ | 2002 11 06 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 704 | (2.2+ | 3.4+) | | |
| 2002 10 06 | 704 | 0.2− | 0.5− | 2002 11 07 | 704 | 0.7− | 0.6− | 2006 11 13 | 704 | 2.3+ | 2.2+ | | |
| 2002 10 06 | 608 | 0.1+ | 1.4− | 2002 11 07 | 704 | 0.9− | 0.1− | 2006 11 13 | 704 | 0.8+ | 2.6+ | | |
| 2002 10 06 | 608 | 0.5+ | 1.4− | 2002 11 07 | 704 | 0.4− | 0.4− | | | | | | |

**(137501)∗ 1999 VE$_{15}$**

Discovered 1999 Nov. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.90096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29545022 | $\omega$ | 140.68356 | | −0.01100982 | −0.99979047 | |
| $a$ | 2.2326116 | $\Omega$ | 309.94021 | | +0.91166051 | −0.00294641 | |
| $e$ | 0.0646510 | $i$ | 1.28970 | | +0.41079666 | −0.02025671 | |
| $P$ | 3.34 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.2+ | 1.3− | 2004 01 21 | 704 | 0.1− | 0.3− | 2006 11 11 | 703 | (1.1− | 1.6+) |
| 1996 12 12 | 691 | 0.1+ | 0.7− | 2004 01 21 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.5− | 1.2+ |
| 1996 12 12 | 691 | 0.3+ | 0.6− | 2004 01 21 | 704 | 0.5+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 1997 02 03 | 691 | 0.3− | 0.2− | 2004 01 21 | 704 | 0.4− | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 1997 02 03 | 691 | 0.5+ | 0.7− | 2004 01 24 | 704 | 0.3+ | 0.9− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 1997 02 03 | 691 | 0.6+ | 0.2− | 2004 01 24 | 704 | 0.3+ | 0.9− | 2006 11 15 | 704 | (1.8+ | 0.1−) |
| 1999 10 06 | 704 | 0.6+ | 0.6− | 2004 01 24 | 704 | 0.3− | 0.1+ | 2006 11 15 | 704 | 1.1+ | 0.1− |
| 1999 10 06 | 704 | 0.8+ | 0.8− | 2004 01 24 | 704 | 0.1+ | 0.5− | 2006 11 15 | 704 | (1.6+ | 0.1+) |
| 1999 10 06 | 704 | 1.0+ | 0.6− | 2004 01 24 | 704 | 0.0 | 0.4− | 2006 11 15 | 704 | (2.7+ | 0.6+) |
| 1999 10 06 | 704 | 1.1+ | 0.7− | 2004 01 27 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1999 11 02 | 691 | 0.1− | 0.5− | 2004 01 27 | 691 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 1999 11 02 | 691 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 1999 11 02 | 691 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.3− | 0.9+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 1999 11 03 | 691 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.0 |
| 1999 11 03 | 691 | 0.3− | 0.4+ | 2004 01 30 | 704 | 0.2− | 1.1+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 1999 11 03 | 691 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.6+ |
| 1999 11 14 | 691 | 0.1− | 0.1− | 2004 02 16 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.6− |
| 1999 11 14 | 691 | 0.2− | 0.1− | 2004 02 16 | 691 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 1999 11 14 | 691 | 0.1− | 0.4+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2001 03 18 | 704 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2001 03 18 | 704 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2001 03 18 | 704 | 0.6+ | 0.8+ | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.6− | 0.0 |
| 2001 03 18 | 704 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.0 |
| 2001 03 18 | 704 | 1.1+ | 0.5+ | 2006 11 09 | 691 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.8− | 0.5− |
| 2003 12 28 | 691 | 0.1− | 0.7+ | 2006 11 09 | 691 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2003 12 28 | 691 | 0.8+ | 0.3+ | 2006 11 09 | 691 | 0.4− | 0.4+ | 2006 12 01 | G96 | 0.2− | 0.0 |
| 2003 12 28 | 691 | 0.1+ | 0.4− | 2006 11 09 | D35 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2003 12 29 | 699 | 0.6− | 0.2+ | 2006 11 09 | D35 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 12 29 | 699 | 0.5− | 0.6+ | 2006 11 09 | D35 | 0.0 | 0.9+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2003 12 29 | 699 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 1.4+ | | | | |
| 2003 12 29 | 699 | 0.5− | 1.2+ | 2006 11 11 | 703 | 0.1+ | 0.5+ | | | | |

**(137502)∗ 1999 VP$_{19}$**

Discovered 1999 Nov. 10 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.71403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28379628 | $\omega$ | 313.43488 | | +0.99693111 | +0.00323342 | |
| $a$ | 2.2933213 | $\Omega$ | 46.54634 | | +0.03348943 | +0.88548922 | |
| $e$ | 0.1959675 | $i$ | 6.18547 | | −0.07075890 | +0.46464867 | |
| $P$ | 3.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.1− | 0.2− | 1999 11 25 | 120 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 1999 10 07 | 691 | 0.1+ | 0.5− | 1999 11 25 | 120 | 1.2+ | 1.3− | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 1999 10 07 | 691 | 0.1+ | 0.1− | 1999 12 07 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 1.3− | 0.8+ |
| 1999 10 08 | 703 | 0.1− | 0.3+ | 1999 12 07 | 704 | 0.0 | 0.3− | 2006 10 28 | 704 | 0.5− | 0.4− |
| 1999 10 08 | 703 | 0.8+ | 1.0+ | 1999 12 07 | 704 | 0.3+ | 0.4+ | 2006 10 28 | 704 | 0.6− | 1.0+ |
| 1999 10 08 | 703 | 1.5− | 0.4− | 1999 12 07 | 704 | 0.4+ | 0.1− | 2006 10 28 | 704 | 1.5− | 0.3− |
| 1999 10 08 | 703 | 0.6− | 0.3+ | 1999 12 07 | 704 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.1− |
| 1999 10 10 | 704 | 0.4− | 0.2+ | 1999 12 08 | 704 | 1.3+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1999 10 10 | 704 | 0.1+ | 0.3+ | 1999 12 08 | 704 | 0.5+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.9− | 0.4+ | 1999 12 08 | 704 | 0.5− | 0.0 | 2006 10 28 | 704 | 0.1+ | 0.9+ |
| 1999 10 10 | 704 | 0.6− | 1.4+ | 2002 07 06 | 644 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 1999 10 10 | 704 | (1.0− | 2.2+) | 2002 07 06 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1999 10 11 | 691 | 0.8+ | 0.4+ | 2002 07 06 | 644 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 1999 10 11 | 691 | 1.1+ | 0.4+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 1999 10 11 | 691 | 1.0+ | 0.4+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1999 10 21 | 704 | 0.2− | 0.7+ | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 1999 10 21 | 704 | 0.1− | 0.1+ | 2005 05 04 | G96 | 0.4− | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 1999 10 21 | 704 | 0.2− | 0.2+ | 2005 05 04 | G96 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 1999 10 21 | 704 | 0.6− | 0.6− | 2005 05 04 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 1999 10 21 | 704 | 0.9− | 0.8− | 2005 05 04 | G96 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 1999 11 01 | 703 | 1.2− | 0.5+ | 2005 05 13 | 704 | (2.0+ | 1.1−) | 2006 11 11 | 703 | 0.0 | 0.2− |
| 1999 11 01 | 703 | 0.0 | 0.3+ | 2005 05 13 | 704 | 1.5+ | 0.8− | 2006 11 14 | 691 | 0.2− | 0.3− |
| 1999 11 01 | 703 | 1.4− | 0.1+ | 2005 05 13 | G96 | 0.1− | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.3− |
| 1999 11 01 | 703 | 0.3− | 0.3− | 2005 05 13 | 704 | (0.2+ | 1.9−) | 2006 11 14 | 691 | 0.0 | 0.3− |
| 1999 11 04 | 704 | 0.2− | 0.0 | 2005 05 13 | G96 | 0.1− | 0.5+ | 2006 11 17 | 704 | (2.1+ | 0.4+) |
| 1999 11 04 | 704 | 0.5− | 0.4− | 2005 05 13 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.7+ | 0.7+ |
| 1999 11 04 | 704 | 0.0 | 0.4− | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 11 17 | 704 | 1.3+ | 0.9+ |
| 1999 11 04 | 704 | 0.2+ | 0.1− | 2005 05 13 | G96 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.5− |
| 1999 11 04 | 704 | 0.2+ | 0.5+ | 2005 05 19 | 644 | 0.4+ | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 1999 11 09 | 704 | 0.2− | 0.3− | 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.2− |
| 1999 11 09 | 704 | 0.2− | 0.2+ | 2005 05 19 | 644 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 1999 11 09 | 704 | 0.5− | 0.5− | 2005 05 19 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 1999 11 09 | 704 | 0.3− | 0.2− | 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.9+ |
| 1999 11 09 | 704 | 0.3− | 0.2− | 2005 05 19 | 644 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 1999 11 10 | 691 | 0.0 | 0.1− | 2006 08 29 | 703 | 1.0− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 1999 11 10 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.5+ | 0.1+ | 2006 11 21 | 691 | 1.1+ | 0.5+ |
| 1999 11 10 | 691 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.7+ | 0.7− | 2006 11 21 | 691 | 0.2− | 0.0 |
| 1999 11 10 | 120 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.9− | 0.4+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 1999 11 10 | 120 | 0.9− | 0.5− | 2006 09 16 | 703 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 1999 11 12 | 704 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.5+ | 1.3+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 1999 11 12 | 704 | 0.3− | 1.2+ | 2006 09 16 | 703 | 0.9+ | 1.2+ | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 1999 11 12 | 704 | 1.1− | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.4− | 0.1− | 2006 09 19 | 699 | 1.0+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 1999 11 12 | 704 | 0.7− | 0.2− | 2006 09 19 | 699 | 1.2+ | 0.4+ | 2006 11 25 | 691 | 0.5− | 0.2+ |
| 1999 11 12 | 120 | 0.8+ | 0.1− | 2006 09 19 | 699 | 0.6+ | 0.3− | 2006 11 25 | 691 | 0.4− | 0.1+ |
| 1999 11 12 | 120 | 0.1− | 0.2+ | 2006 09 19 | 699 | (1.2− | 1.6+) | 2006 11 25 | 691 | 0.5− | 0.1+ |
| 1999 11 15 | 691 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.4+ | 0.6− | 2006 11 27 | 704 | 1.2− | 0.5+ |
| 1999 11 15 | 691 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.1− | 0.8− | 2006 11 27 | 704 | 0.2− | 0.0 |
| 1999 11 15 | 691 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.3− | 0.3+ | 2006 11 27 | 704 | 0.2+ | 0.3− |
| 1999 11 16 | 704 | 0.4− | 0.6+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 12 01 | 704 | 1.2+ | 0.2− |
| 1999 11 16 | 704 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 12 01 | 704 | 1.2+ | 0.0 |
| 1999 11 16 | 704 | 0.5− | 0.5+ | 2006 09 28 | G96 | 0.4− | 0.3− | 2006 12 01 | 704 | 1.6+ | 0.1− |
| 1999 11 16 | 704 | 1.1− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 12 01 | 704 | 1.3+ | 0.1− |
| 1999 11 16 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 12 01 | 704 | 1.1+ | 0.1+ |

**(137503)∗ 1999 VZ$_{19}$**

Discovered 1999 Nov. 10 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.57351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28617321 | $\omega$ | 287.97664 | | +0.77832709 | +0.62547539 | |
| $a$ | 2.2806050 | $\Omega$ | 33.36795 | | −0.53188429 | +0.70310663 | |
| $e$ | 0.2145916 | $i$ | 5.70320 | | −0.33362560 | +0.33826262 | |
| $P$ | 3.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 21 | 691 | 0.4+ | 0.7− | 1999 11 16 | 704 | 0.2− | 1.0− | 2006 10 21 | 691 | 0.6− | 0.5+ |
| 1998 03 21 | 691 | 0.3+ | 0.6− | 1999 11 16 | 704 | 0.6+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 1998 03 21 | 691 | 0.5− | 0.5− | 1999 11 16 | 704 | 0.4− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 1999 10 07 | 704 | 0.2− | 0.5+ | 2003 12 18 | 691 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 1999 10 07 | 704 | 0.5− | 0.1− | 2003 12 18 | 691 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3− |
| 1999 10 07 | 704 | 0.2− | 0.1− | 2003 12 18 | 691 | 0.2− | 0.1− | 2006 10 29 | 704 | 0.3− | 0.0 |
| 1999 10 07 | 704 | 0.4− | 0.4+ | 2003 12 23 | 704 | 0.6+ | 1.2− | 2006 10 29 | 704 | 0.4+ | 0.7+ |
| 1999 10 07 | 704 | 0.0 | 0.6+ | 2003 12 23 | 704 | 0.6− | 0.5+ | 2006 10 29 | 704 | 0.1− | 0.9+ |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2003 12 23 | 704 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1999 10 10 | 704 | 1.3+ | 0.6+ | 2003 12 23 | 704 | 1.1− | 0.9− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 1999 10 10 | 704 | 0.8+ | 0.0 | 2005 03 09 | G96 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 0.3+ | 0.8− | 2005 03 09 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 1999 10 10 | 704 | 0.8+ | 0.1+ | 2005 03 09 | G96 | 0.4− | 0.3+ | 2006 11 09 | 691 | 0.3− | 0.1− |
| 1999 10 15 | 704 | 0.0 | 0.6+ | 2005 03 09 | G96 | 0.5− | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.1+ |
| 1999 10 15 | 704 | 0.2− | 0.0 | 2005 04 01 | 699 | 0.1+ | 1.2+ | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.5+ | 0.0 | 2005 04 01 | 699 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 0.4+ | 0.3− | 2005 04 01 | 699 | (1.6+ | 1.0+) | 2006 11 09 | 644 | 0.2− | 0.1− |
| 1999 10 20 | 704 | 0.5+ | 0.0 | 2005 04 01 | 699 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 20 | 691 | 0.1+ | 0.3− | 2005 04 02 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.6+ |
| 1999 10 20 | 704 | 0.6+ | 0.5− | 2005 04 02 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 1999 10 20 | 704 | 0.2+ | 0.1− | 2005 04 02 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 1999 10 20 | 691 | 0.0 | 0.3− | 2005 04 04 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 1999 10 20 | 704 | 0.1+ | 0.5− | 2005 04 04 | 704 | 0.3+ | 0.9− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 1999 10 20 | 691 | 0.0 | 0.4− | 2005 04 04 | 704 | 0.0 | 1.0+ | 2006 11 13 | 691 | 0.2− | 0.3+ |
| 1999 10 20 | 704 | 0.2+ | 0.6+ | 2005 04 04 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 1999 10 29 | 699 | 1.3+ | 0.9+ | 2005 04 09 | 704 | 0.6+ | 1.4− | 2006 11 15 | 704 | 1.3+ | 0.3− |
| 1999 10 29 | 699 | 0.6− | 0.8+ | 2005 04 09 | 704 | 0.2+ | 0.2− | 2006 11 15 | 704 | (0.6+ | 3.4−) |
| 1999 10 29 | 699 | 0.2+ | 0.8+ | 2005 04 09 | 704 | 0.8+ | 0.8− | 2006 11 15 | 704 | 0.9+ | 0.8+ |
| 1999 10 31 | 691 | 0.4+ | 0.3− | 2005 04 09 | 704 | 1.1+ | 0.2+ | 2006 11 15 | 704 | 0.4+ | 1.4+ |
| 1999 10 31 | 691 | 0.4+ | 0.5− | 2005 04 11 | 699 | 0.3+ | 0.4− | 2006 11 15 | 704 | 1.2+ | 0.9+ |
| 1999 10 31 | 691 | 0.4+ | 0.4− | 2005 04 11 | 699 | 0.1+ | 0.6+ | 2006 11 15 | 704 | (3.3+ | 0.3−) |
| 1999 11 04 | 704 | 0.3+ | 0.3+ | 2005 04 11 | 699 | (0.9+ | 1.7+) | 2006 11 15 | 704 | 0.9+ | 0.6+ |
| 1999 11 04 | 704 | 0.0 | 0.5− | 2005 04 11 | 699 | (1.3− | 1.9+) | 2006 11 15 | 704 | (3.2+ | 1.5+) |
| 1999 11 04 | 704 | 0.6+ | 0.2− | 2005 04 18 | 703 | 0.4− | 1.0− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1999 11 04 | 703 | 0.3+ | 0.1+ | 2005 04 18 | 703 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1999 11 04 | 704 | 0.2+ | 0.4− | 2005 04 18 | 703 | 0.5− | 0.8+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1999 11 04 | 703 | 0.6− | 0.6+ | 2005 04 18 | 703 | 1.4− | 1.3+ | 2006 11 16 | 704 | (0.4+ | 1.8+) |
| 1999 11 04 | 704 | 0.6+ | 0.5− | 2005 04 30 | A13 | 0.5+ | 0.1− | 2006 11 16 | 704 | (0.9+ | 2.2+) |
| 1999 11 04 | 703 | 0.1− | 0.3+ | 2005 04 30 | A13 | 0.7− | 0.2− | 2006 11 16 | 704 | 0.7− | 0.9+ |
| 1999 11 04 | 703 | 0.5+ | 0.3− | 2005 04 30 | A13 | 0.5− | 0.4+ | 2006 11 16 | 704 | 0.1− | 1.2+ |
| 1999 11 05 | 691 | 0.2+ | 0.5− | 2005 05 06 | G96 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.9+ |
| 1999 11 05 | 691 | 0.3+ | 0.5− | 2005 05 06 | G96 | 0.1− | 0.8+ | 2006 11 17 | 704 | 0.5+ | 0.2+ |
| 1999 11 05 | 691 | 0.3+ | 0.4− | 2005 05 06 | G96 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 1.2− | 1.1+ |
| 1999 11 10 | 704 | 0.1− | 0.2− | 2005 05 06 | G96 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.9+ | 0.7+ |
| 1999 11 10 | 704 | 0.5+ | 0.4+ | 2006 08 28 | 703 | 1.4− | 0.9− | 2006 11 17 | 704 | 0.3+ | 0.5+ |
| 1999 11 10 | 704 | 1.3− | 0.4− | 2006 08 28 | 703 | 0.9− | 0.7− | 2006 11 19 | 704 | 0.8− | 1.0+ |
| 1999 11 10 | 704 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.9+ |
| 1999 11 10 | 704 | 1.0− | 1.0− | 2006 08 28 | 703 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 1999 11 10 | 120 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.0 |
| 1999 11 10 | 120 | 1.7+ | 0.4− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 1999 11 12 | 120 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 1999 11 12 | 120 | 1.1+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 1999 11 14 | 691 | 0.8− | 0.0 | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.2− |
| 1999 11 14 | 691 | 1.2− | 0.0 | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 1999 11 14 | 691 | 1.2− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3− | 0.0 |
| 1999 11 16 | 704 | 0.7+ | 0.0 | 2006 10 21 | 691 | 0.5− | 0.4+ | | | | |

**(137504)∗ 1999 VO$_{21}$**

Discovered 1999 Nov. 12 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.25137 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27895253 | $\omega$ | 114.57285 | | +0.92055270 | +0.36684897 | |
| $a$ | 2.3197927 | $\Omega$ | 224.23896 | | −0.39002354 | +0.88217007 | |
| $e$ | 0.3175200 | $i$ | 11.08892 | | +0.02154904 | +0.29529273 | |
| $P$ | 3.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 0.5− | 0.1+ | 1999 11 16 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 1999 09 04 | 703 | 1.2− | 0.3− | 1999 11 16 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.0 |
| 1999 09 04 | 703 | 0.2+ | 0.6+ | 1999 11 17 | 704 | 0.5+ | 0.5− | 2006 10 17 | 703 | 0.8− | 0.2+ |
| 1999 09 04 | 703 | 1.7− | 0.3− | 1999 11 17 | 704 | 0.6− | 0.5− | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 1999 10 03 | 704 | 0.8+ | 0.6− | 1999 11 17 | 704 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 1999 10 03 | 704 | 0.4− | 1.0− | 1999 11 17 | 704 | 0.7+ | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 1999 10 03 | 704 | 0.3− | 0.0 | 1999 11 17 | 704 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 1999 10 03 | 704 | 0.1− | 0.3− | 1999 12 07 | 704 | 0.0 | 0.6+ | 2006 10 26 | 704 | 0.7− | 0.5+ |
| 1999 10 07 | 704 | 0.4+ | 0.8− | 1999 12 07 | 704 | 0.1+ | 0.8+ | 2006 10 26 | 704 | 0.4− | 0.5+ |
| 1999 10 07 | 704 | 0.4+ | 0.7+ | 1999 12 07 | 704 | 0.8+ | 0.8+ | 2006 10 26 | 704 | 0.3− | 0.4− |
| 1999 10 07 | 704 | 0.6− | 0.3+ | 1999 12 07 | 704 | 0.2+ | 1.0+ | 2006 10 29 | 704 | (1.8− | 2.3+) |
| 1999 10 07 | 704 | 0.6− | 0.9− | 1999 12 07 | 704 | 0.1− | 0.5+ | 2006 10 29 | 704 | (0.1− | 3.0+) |
| 1999 10 12 | 704 | 0.1− | 0.7− | 2002 05 17 | 644 | 0.1− | 0.6+ | 2006 10 29 | 704 | (1.7− | 1.6+) |
| 1999 10 12 | 704 | 0.1+ | 0.7− | 2002 05 17 | 644 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.9− | 1.4+ |
| 1999 10 12 | 704 | 0.1+ | 0.4− | 2002 05 17 | 644 | 0.1− | 0.5+ | 2006 10 29 | 704 | 1.1− | 0.3+ |
| 1999 10 12 | 704 | 0.0 | 0.1− | 2002 06 11 | 644 | 0.3+ | 1.3+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 1999 10 12 | 704 | 0.0 | 0.7− | 2002 06 11 | 644 | 0.0 | 0.8+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 1999 10 15 | 704 | 0.1+ | 0.1− | 2002 06 11 | 644 | 0.1+ | 1.4+ | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 1999 10 15 | 704 | 0.5− | 0.0 | 2002 06 20 | 950 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.2− | 0.0 | 2002 06 20 | 950 | 0.0 | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.4− | 0.2− | 2002 06 20 | 950 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 1999 10 15 | 704 | 0.2+ | 0.3− | 2003 11 30 | 291 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.0 |
| 1999 10 22 | 704 | 0.3− | 0.4+ | 2003 11 30 | 291 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 1.0− | 0.3− |
| 1999 10 22 | 704 | 0.6− | 0.3− | 2003 11 30 | 291 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 1999 10 22 | 704 | 1.2− | 0.0 | 2006 08 23 | 704 | 0.0 | 1.4+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 1999 10 22 | 704 | 1.2− | 0.5− | 2006 08 23 | 704 | 0.3+ | 1.2+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 1999 10 22 | 704 | 0.6− | 0.1− | 2006 08 23 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 1999 11 04 | 704 | 0.9+ | 0.5+ | 2006 08 23 | 704 | 1.0+ | 0.7+ | 2006 11 17 | 703 | 0.8− | 0.7− |
| 1999 11 04 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.7− | 0.2+ |
| 1999 11 04 | 704 | 1.4+ | 0.3+ | 2006 09 17 | 703 | 0.6− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 1999 11 04 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 1999 11 04 | 704 | 1.2+ | 0.3− | 2006 09 21 | 704 | 0.3+ | 0.8+ | 2006 11 19 | 704 | 1.9− | 0.6+ |
| 1999 11 09 | 704 | 0.4+ | 0.3+ | 2006 09 21 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.9+ |
| 1999 11 09 | 704 | 0.3+ | 0.4+ | 2006 09 21 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 1.5− | 0.4− |
| 1999 11 09 | 704 | 0.3+ | 0.2+ | 2006 09 21 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 1.5+ |
| 1999 11 09 | 704 | 0.5+ | 0.9+ | 2006 09 23 | 699 | 0.7+ | 0.3− | 2006 11 19 | 704 | 0.6− | 0.5+ |
| 1999 11 11 | 703 | 0.3− | 0.9− | 2006 09 23 | 699 | 0.1+ | 1.0− | 2006 11 19 | 704 | 1.0− | 0.5+ |
| 1999 11 11 | 703 | 0.1− | 0.6+ | 2006 09 23 | 699 | 1.3+ | 0.8+ | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 1999 11 11 | 703 | 0.5+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.7− | 0.7+ |
| 1999 11 11 | 703 | 0.4− | 0.4− | 2006 09 28 | 703 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.9− | 0.5− |
| 1999 11 12 | 704 | 0.2− | 0.7− | 2006 09 28 | 703 | 0.3− | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 1999 11 12 | 704 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.5+ | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 1999 11 12 | 704 | 0.2+ | 0.8− | 2006 09 30 | 704 | 0.5+ | 0.5− | 2006 11 20 | G96 | 0.2− | 0.4− |
| 1999 11 12 | 704 | 0.5+ | 0.4− | 2006 09 30 | 704 | 1.2+ | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.8− |
| 1999 11 12 | 704 | 0.0 | 1.0− | 2006 09 30 | 704 | 1.2+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 1999 11 12 | 120 | 0.7− | 0.2− | 2006 09 30 | 704 | (1.7+ | 0.1−) | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 1999 11 12 | 120 | 0.1+ | 0.4+ | 2006 09 30 | 704 | 1.2+ | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 1999 11 13 | 120 | 0.8− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 1999 11 13 | 120 | 0.4− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 1999 11 16 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | |

**(137505)∗ 1999 VZ$_{21}$**

Discovered 1999 Nov. 12 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.79896 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27047488 | $\omega$ | 146.29239 | | +0.94791312 | +0.31842118 | |
| $a$ | 2.3680167 | $\Omega$ | 195.14675 | | −0.29879890 | +0.87988374 | |
| $e$ | 0.2373945 | $i$ | 1.81736 | | −0.11036270 | +0.35272166 | |
| $P$ | 3.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.4+ | 0.1+ | 2006 07 21 | 703 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.4+ |
| 1995 07 03 | 691 | 0.3+ | 0.1+ | 2006 07 21 | 699 | 0.6− | 0.2− | 2006 09 19 | 699 | 0.1− | 0.8+ |
| 1995 07 03 | 691 | 0.4+ | 0.3+ | 2006 07 21 | 703 | 0.3− | 0.4+ | 2006 09 19 | 184 | 0.0 | 0.4+ |
| 1997 02 15 | 691 | 0.3− | 0.5+ | 2006 07 21 | 699 | 0.2+ | 0.9+ | 2006 09 19 | 184 | 0.0 | 0.1+ |
| 1997 02 15 | 691 | 0.8+ | 0.9+ | 2006 07 21 | 703 | 0.1+ | 0.5+ | 2006 09 19 | 184 | 0.3− | 0.3+ |
| 1997 02 15 | 691 | 0.6− | 0.1+ | 2006 07 21 | 699 | 0.7− | 0.6− | 2006 09 19 | 958 | 0.3− | 0.4− |
| 1998 05 23 | 691 | (2.0− | 0.2−) | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 19 | 958 | 0.1+ | 0.6− |
| 1998 05 23 | 691 | 1.8− | 1.9+ | 2006 08 15 | 644 | 0.1− | 0.7− | 2006 09 19 | 958 | 0.2− | 0.2+ |
| 1998 05 23 | 691 | 0.5− | 0.7+ | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.2− | 1.0+ |
| 1999 11 04 | 704 | 0.5− | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.7+ |
| 1999 11 04 | 704 | 0.1− | 1.0+ | 2006 08 19 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.3− | 0.9+ |
| 1999 11 04 | 704 | 0.5− | 0.2− | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.5− | 0.3+ |
| 1999 11 10 | 120 | 0.2+ | 0.0 | 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.4+ |
| 1999 11 10 | 120 | 0.2− | 0.8+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 27 | 704 | 1.0+ | 0.1− |
| 1999 11 12 | 120 | 0.8+ | 1.5− | 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 1.2+ | 0.6− |
| 1999 11 12 | 120 | 0.7− | 0.1− | 2006 08 21 | 704 | 0.7+ | 0.7+ | 2006 09 27 | 704 | 0.9+ | 0.4+ |
| 1999 11 13 | 704 | 0.3− | 0.0 | 2006 08 21 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.1+ |
| 1999 11 13 | 704 | 0.4− | 0.5+ | 2006 08 21 | 704 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.8+ |
| 1999 11 13 | 704 | 0.2+ | 0.1+ | 2006 08 21 | 704 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 1999 11 13 | 704 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 1999 11 13 | 704 | 0.7− | 0.7− | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1− | 0.0 |
| 1999 11 13 | 120 | 1.2+ | 0.2− | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 1999 11 13 | 120 | 0.8+ | 0.1+ | 2006 08 25 | 704 | 0.7+ | 0.7− | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 1999 11 15 | 704 | 0.4− | 0.1+ | 2006 08 25 | 704 | 0.7+ | 1.2+ | 2006 09 29 | 704 | 0.4− | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 0.3− | 0.2− | 2006 08 25 | 704 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.3− | 0.9+ | | |
| 1999 11 15 | 704 | 0.6− | 0.2+ | 2006 08 25 | 704 | (0.1− | 1.5+) | 2006 09 29 | 704 | 0.0 | 0.3− | | |
| 1999 11 15 | 704 | 0.2− | 0.3− | 2006 08 27 | 699 | 0.6+ | 0.1− | 2006 09 30 | 699 | 0.3+ | 0.3+ | | |
| 1999 11 15 | 704 | 0.7− | 0.0 | 2006 08 27 | 699 | 0.3− | 0.5− | 2006 09 30 | 704 | 0.1− | 0.0 | | |
| 1999 11 17 | 704 | 0.3+ | 1.4+ | 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 09 30 | 699 | 0.2− | 1.0+ | | |
| 1999 11 17 | 704 | 0.2− | 0.2− | 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.3+ | | |
| 1999 11 17 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.2− | 2006 09 30 | 699 | 0.4+ | 0.8+ | | |
| 1999 11 17 | 704 | 0.2− | 0.6+ | 2006 08 28 | 703 | 0.4+ | 0.3− | 2006 09 30 | 704 | 0.1− | 0.6+ | | |
| 1999 11 17 | 704 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 30 | 699 | 0.5− | 0.0 | | |
| 1999 11 29 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 1999 11 29 | 691 | 0.2+ | 0.1− | 2006 08 29 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 1999 11 29 | 691 | 0.1+ | 0.3− | 2006 08 29 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 1999 12 04 | 703 | (0.9+ | 4.0+) | 2006 08 29 | 704 | 0.6+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.2− | | |
| 1999 12 04 | 703 | 0.1− | 0.2− | 2006 09 01 | 704 | 0.3− | 0.5− | 2006 10 27 | G96 | 0.3− | 0.2− | | |
| 1999 12 04 | 703 | (2.1− | 0.1+) | 2006 09 01 | 704 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 1999 12 04 | 703 | 0.2+ | 0.1− | 2006 09 01 | 704 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.4− | | |
| 1999 12 05 | 703 | 0.4+ | 0.1− | 2006 09 01 | 704 | 0.3− | 0.4− | 2006 11 10 | 704 | 0.4+ | 0.6+ | | |
| 1999 12 05 | 703 | 1.0− | 0.3+ | 2006 09 01 | 704 | 0.1− | 0.4− | 2006 11 10 | 704 | 0.8+ | 0.7+ | | |
| 1999 12 05 | 703 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 11 10 | 704 | 0.3+ | 0.8+ | | |
| 1999 12 05 | 703 | 1.3− | 0.5+ | 2006 09 13 | 644 | 0.4− | 0.4− | 2006 11 10 | 704 | 0.7+ | 1.2+ | | |
| 1999 12 07 | 704 | 0.6− | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.6+ | | |
| 1999 12 07 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 699 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 1999 12 07 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 699 | 0.4− | 0.1+ | 2006 11 11 | 703 | (0.6+ | 1.8−) | | |
| 1999 12 07 | 704 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.2− | | |
| 1999 12 07 | 704 | 1.2− | 0.0 | 2006 09 16 | 699 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2001 02 20 | 645 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.2− | | |
| 2001 02 20 | 645 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3− | 0.1− | | |
| 2005 03 17 | 691 | 0.6+ | 0.5+ | 2006 09 17 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.1− | | |
| 2005 03 17 | 691 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.5− | 0.1− | | |
| 2005 03 17 | 691 | 1.0+ | 0.5+ | 2006 09 17 | 704 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 2005 04 04 | G96 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2005 04 04 | G96 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.4− | 0.5− | | |
| 2005 04 04 | G96 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.1+ | 2006 11 27 | 703 | 0.0 | 1.3+ | | |
| 2005 04 04 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.7+ | 2006 11 27 | 703 | 0.3− | 0.2− | | |
| 2006 07 21 | 699 | (1.7− | 0.5+) | 2006 09 19 | 703 | 0.7− | 0.4− | 2006 11 27 | 703 | 0.5− | 0.1+ | | |
| 2006 07 21 | 703 | 0.5− | 0.3− | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 11 27 | 703 | 0.3− | 0.5+ | | |

**(137506)∗ 1999 VA$_{22}$**

Discovered 1999 Nov. 12 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.47690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26525105 | $\omega$ | 202.09766 | | +0.99802699 | +0.06225966 | |
| $a$ | 2.3990059 | $\Omega$ | 154.32877 | | −0.05443824 | +0.92246763 | |
| $e$ | 0.2317426 | $i$ | 1.07335 | | −0.03128252 | +0.38102127 | |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 21 | 704 | 0.9+ | 0.7− | 1999 11 17 | 691 | 0.1+ | 0.2+ | 2006 07 19 | 644 | 0.1− | 0.4+ | | |
| 1999 10 21 | 704 | 0.3+ | 0.7− | 1999 11 30 | 691 | 0.0 | 0.0 | 2006 07 19 | 644 | 0.2− | 0.0 | | |
| 1999 10 21 | 704 | 0.2+ | 0.7− | 1999 11 30 | 691 | 0.4− | 0.2− | 2006 07 19 | 644 | 0.4− | 0.2+ | | |
| 1999 11 09 | 704 | 0.3+ | 0.1+ | 1999 11 30 | 691 | 0.0 | 0.0 | 2006 07 19 | D35 | 0.3+ | 0.3+ | | |
| 1999 11 09 | 704 | 0.4+ | 0.2− | 1999 12 04 | 703 | 0.1+ | 0.7+ | 2006 07 19 | D35 | 0.3+ | 0.2+ | | |
| 1999 11 09 | 704 | 0.5+ | 0.1− | 1999 12 04 | 703 | 0.9− | 0.6− | 2006 07 19 | D35 | 0.2+ | 0.4+ | | |
| 1999 11 09 | 704 | 0.3− | 0.2+ | 1999 12 04 | 703 | 1.5− | 0.1+ | 2006 07 20 | 644 | 0.1− | 0.0 | | |
| 1999 11 12 | 704 | 0.4+ | 0.5+ | 1999 12 04 | 703 | 0.5− | 0.2− | 2006 07 20 | 644 | 0.2+ | 0.2+ | | |
| 1999 11 12 | 704 | 0.3− | 0.0 | 1999 12 07 | 704 | 0.3+ | 0.0 | 2006 07 20 | 644 | 0.1+ | 0.0 | | |
| 1999 11 12 | 704 | 0.6− | 0.2− | 1999 12 07 | 704 | 0.6− | 0.4+ | 2006 08 13 | 644 | 0.2− | 0.1+ | | |
| 1999 11 12 | 704 | 0.1− | 0.0 | 1999 12 07 | 704 | 1.2+ | 1.2+ | 2006 08 13 | 644 | 0.0 | 0.1− | | |
| 1999 11 12 | 704 | 0.2− | 0.6+ | 1999 12 07 | 704 | 0.9+ | 1.0+ | 2006 08 13 | 644 | 0.1− | 0.0 | | |
| 1999 11 12 | 120 | 0.1− | 0.7− | 1999 12 07 | 704 | 0.2+ | 0.4+ | 2006 08 14 | 644 | 0.1− | 0.0 | | |
| 1999 11 12 | 120 | 1.5− | 0.5− | 2001 02 20 | 645 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.0 | | |
| 1999 11 13 | 704 | 0.7− | 0.6+ | 2001 02 20 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.1− | 0.0 | | |
| 1999 11 13 | 704 | 0.3− | 0.1+ | 2005 04 04 | G96 | 0.2− | 0.0 | 2006 08 15 | 644 | 0.1+ | 0.2− | | |
| 1999 11 13 | 704 | 0.2+ | 0.3+ | 2005 04 04 | G96 | 0.5− | 0.4+ | 2006 08 15 | 644 | 0.3+ | 0.0 | | |
| 1999 11 13 | 704 | 0.7+ | 0.3+ | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.0 | | |
| 1999 11 13 | 704 | 0.3+ | 0.4− | 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.1− | | |
| 1999 11 13 | 120 | 0.5+ | 0.4− | 2005 05 06 | G96 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.1− | 0.1− | | |
| 1999 11 13 | 120 | 0.8+ | 1.1+ | 2005 05 06 | G96 | 0.3+ | 0.4− | 2006 08 20 | 644 | 0.1− | 0.0 | | |
| 1999 11 15 | 704 | 0.5− | 0.9+ | 2005 05 06 | G96 | 0.4− | 0.4− | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 1999 11 15 | 704 | 0.6+ | 0.6− | 2005 05 06 | G96 | 0.9+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 1999 11 15 | 704 | 0.0 | 0.2− | 2006 05 24 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1− | 0.3− | | |
| 1999 11 15 | 704 | 0.7+ | 0.9− | 2006 05 24 | G96 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1− | | |
| 1999 11 15 | 704 | 0.3+ | 0.3− | 2006 05 24 | G96 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 1999 11 17 | 704 | 0.2+ | 0.0 | 2006 05 24 | G96 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.1− | | |
| 1999 11 17 | 704 | 0.3− | 0.1− | 2006 07 18 | D35 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.6− | 0.4− | | |
| 1999 11 17 | 691 | 0.1+ | 0.3+ | 2006 07 18 | D35 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.0 | | |
| 1999 11 17 | 704 | 0.4+ | 1.0+ | 2006 07 18 | D35 | 0.2+ | 0.5+ | 2006 11 23 | G96 | 0.5+ | 0.5− | | |
| 1999 11 17 | 691 | 0.1− | 0.1+ | 2006 07 19 | 644 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.8+ | 0.9+ | | |
| 1999 11 17 | 704 | 0.1+ | 1.4− | 2006 07 19 | 644 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.5− | | |
| 1999 11 17 | 704 | 1.4− | 1.1− | 2006 07 19 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.4− | 0.2− | | |

**(137507)∗ 1999 VH$_{23}$**

Discovered 1999 Nov. 8 by R. Pacheco and À. López at Observatorio Astronómico de Mallorca.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.21740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27353969 | $\omega$ | 17.94190 | | +0.78872344 | −0.61348998 | |
| $a$ | 2.3502956 | $\Omega$ | 20.05658 | | +0.54904316 | +0.67421727 | |
| $e$ | 0.1112668 | $i$ | 6.58215 | | +0.27652657 | +0.41117043 | |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | (5.2− | 3.9−) | 1999 11 16 | 704 | 1.7+ | 1.0− | 2006 09 28 | 691 | 0.2− | 0.1− | | |
| 1999 10 06 | 704 | (2.2− | 2.7−) | 1999 11 16 | 704 | 0.5− | 1.0− | 2006 09 30 | 704 | (1.4+ | 3.5+) | | |
| 1999 10 06 | 704 | 0.1+ | 0.1− | 1999 11 16 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 704 | 0.8+ | 0.4+ | | |
| 1999 10 12 | 704 | 0.1− | 0.4− | 1999 11 16 | 704 | 0.6+ | 0.4− | 2006 09 30 | 704 | 0.4+ | 0.3+ | | |
| 1999 10 12 | 704 | 0.2− | 0.5− | 2001 04 16 | 691 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.4− | | |
| 1999 10 12 | 704 | 0.3+ | 0.4+ | 2001 04 16 | 691 | 0.3+ | 0.3− | 2006 09 30 | 704 | (1.7+ | 0.2+) | | |
| 1999 10 12 | 704 | 0.2+ | 0.8− | 2001 04 16 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.5− | | |
| 1999 10 12 | 704 | 0.1− | 0.3− | 2003 12 27 | 704 | 0.0 | 0.9+ | 2006 09 30 | G96 | 0.4+ | 0.6− | | |
| 1999 10 13 | 704 | 0.2− | 0.0 | 2003 12 27 | 704 | (0.6+ | 2.0+) | 2006 09 30 | G96 | 0.2+ | 0.4− | | |
| 1999 10 13 | 704 | 0.5− | 0.7− | 2003 12 27 | 704 | 0.5+ | 0.6+ | 2006 10 09 | 644 | 0.7+ | 0.1− | | |
| 1999 10 13 | 704 | 0.3− | 0.7− | 2003 12 27 | 704 | 1.3+ | 1.2+ | 2006 10 09 | 644 | 0.1+ | 0.4− | | |
| 1999 10 13 | 704 | 0.5− | 0.2− | 2004 01 16 | 699 | 0.6− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 1999 10 13 | 704 | 0.4− | 0.6− | 2004 01 16 | 699 | 0.7− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.1+ | | |
| 1999 10 22 | 704 | 0.0 | 0.4+ | 2004 01 16 | 699 | 0.2− | 0.4− | 2006 10 16 | 703 | (1.8− | 0.6+) | | |
| 1999 10 22 | 704 | 1.1+ | 0.1+ | 2004 01 16 | 699 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.2+ | | |
| 1999 10 22 | 704 | 0.7+ | 0.4− | 2006 08 28 | 699 | 0.6− | 1.3+ | 2006 10 16 | 703 | 0.5− | 1.3+ | | |
| 1999 10 22 | 704 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 1999 10 22 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.5− | | |
| 1999 10 29 | 703 | 1.3+ | 0.1− | 2006 08 28 | 699 | 0.4+ | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.5− | | |
| 1999 10 29 | 703 | 1.1− | 0.5+ | 2006 09 18 | 699 | 0.7− | 0.8− | 2006 10 20 | G96 | 0.2+ | 0.3− | | |
| 1999 10 29 | 703 | 1.1− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.4+ | | |
| 1999 10 29 | 703 | 1.3+ | 0.2+ | 2006 09 18 | 699 | 1.2+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2− | | |
| 1999 11 03 | 704 | 1.3− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 1999 11 03 | 704 | 0.7− | 0.0 | 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 10 23 | 644 | 0.4+ | 0.1− | | |
| 1999 11 03 | 704 | 0.4− | 1.0+ | 2006 09 26 | 704 | 0.5− | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.0 | | |
| 1999 11 03 | 704 | 0.7+ | 0.5− | 2006 09 26 | 704 | 0.6− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 1999 11 08 | 620 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.4+ | 2006 11 11 | G96 | (1.8− | 2.1−) | | |
| 1999 11 08 | 620 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.1+ | | |
| 1999 11 08 | 620 | 0.0 | 1.1+ | 2006 09 28 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.7+ | 0.5− | | |
| 1999 11 13 | 620 | 1.2+ | 0.7− | 2006 09 28 | 704 | 0.0 | 1.1+ | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 1999 11 13 | 620 | 0.8− | 0.6+ | 2006 09 28 | 704 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.0 | | |
| 1999 11 14 | 620 | (2.3− | 1.4+) | 2006 09 28 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.5− | 0.2− | | |
| 1999 11 16 | 704 | 0.4− | 0.6+ | 2006 09 28 | 704 | 1.0− | 1.2+ | 2006 11 21 | G96 | 0.2− | 0.2− | | |

**(137508)∗ 1999 VV$_{27}$**

Discovered 1999 Nov. 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.03698 | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27823099 | $\omega$ | 35.30825 | +0.33434556 | | −0.94072924 | |
| $a$ | 2.3238016 | $\Omega$ | 35.25787 | +0.84042286 | | +0.27026677 | |
| $e$ | 0.2105537 | $i$ | 5.66025 | +0.42650026 | | +0.20490088 | |
| $P$ | 3.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.7+ | 0.8+ | 2003 12 28 | 699 | 0.3+ | 0.8− | 2006 09 29 | 699 | 0.9+ | 0.7− |
| 1999 10 03 | 704 | 0.7+ | 0.9+ | 2003 12 28 | 699 | 0.3− | 0.6− | 2006 09 29 | 699 | 0.4+ | 0.3+ |
| 1999 10 03 | 704 | 1.2+ | 1.9+ | 2003 12 28 | 699 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.6+ | 0.6+ |
| 1999 10 10 | 704 | 0.0 | 0.5+ | 2003 12 28 | 699 | 1.1− | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 1999 10 10 | 704 | 0.2+ | 0.6+ | 2004 01 18 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.8− | 0.3+ |
| 1999 10 10 | 704 | 0.9+ | 0.6− | 2004 01 18 | 644 | 0.3− | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.2+ | 1.3+ | 2004 01 18 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.1+ |
| 1999 10 10 | 704 | 0.4− | 1.0+ | 2004 01 30 | 704 | (1.7+ | 0.3+) | 2006 10 01 | 704 | 0.5− | 0.5− |
| 1999 10 15 | 704 | 0.3+ | 1.1− | 2004 01 30 | 704 | 0.5+ | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 0.0 | 1.2− | 2004 01 30 | 704 | 0.3+ | 1.4+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 1999 10 15 | 704 | 0.1− | 1.2− | 2004 01 30 | 704 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 0.0 | 1.8− | 2004 02 10 | 644 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.7− | 1.7− | 2004 02 10 | 644 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 1999 10 21 | 704 | 0.5+ | 1.2− | 2004 02 10 | 644 | 0.5− | 1.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 1999 10 21 | 704 | 0.3+ | 0.4+ | 2004 02 12 | 644 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.8− | 0.1+ |
| 1999 10 21 | 704 | 0.4+ | 0.1+ | 2004 02 12 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.1+ | 0.0 |
| 1999 10 21 | 704 | 0.0 | 1.9+ | 2004 02 12 | 644 | 0.3− | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.0 |
| 1999 11 01 | 699 | 0.4− | 0.9+ | 2004 02 16 | 704 | 1.2+ | 0.2+ | 2006 10 15 | 703 | 0.2+ | 0.2− |
| 1999 11 01 | 699 | 0.0 | 0.1− | 2004 02 16 | 704 | 0.8+ | 0.9+ | 2006 10 20 | 644 | 0.4− | 0.1− |
| 1999 11 01 | 699 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 1999 11 03 | 703 | 0.5− | 0.3+ | 2004 02 16 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 1999 11 03 | 703 | 0.0 | 0.3− | 2004 02 16 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 703 | 0.9− | 0.2− |
| 1999 11 03 | 703 | 0.4+ | 0.6+ | 2004 02 17 | 608 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.4− |
| 1999 11 03 | 703 | 0.7− | 0.6+ | 2004 02 17 | 608 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.4− |
| 1999 11 04 | 704 | 1.1− | 0.7− | 2004 02 17 | 608 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 1999 11 04 | 704 | 0.1+ | 0.7− | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1999 11 04 | 704 | 0.1+ | 0.3− | 2004 03 16 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1999 11 04 | 704 | 0.1+ | 0.6− | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1999 11 05 | 704 | 0.6− | 0.8− | 2004 03 20 | 704 | 1.5+ | 0.0 | 2006 10 22 | G96 | 0.2− | 0.1− |
| 1999 11 05 | 704 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 1999 11 05 | 704 | 0.6+ | 1.4− | 2004 03 20 | 704 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 1999 11 05 | 704 | 0.2− | 1.3− | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 1999 11 05 | 704 | 0.5− | 0.5− | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 704 | 0.2− | 0.6+ |
| 1999 11 06 | 704 | 0.3− | 0.8− | 2006 08 18 | 644 | 0.2− | 0.6+ | 2006 10 23 | 704 | 0.2+ | 0.6+ |
| 1999 11 06 | 704 | 0.5+ | 0.4− | 2006 08 18 | 644 | 0.3− | 0.7+ | 2006 10 23 | 704 | 0.4+ | 0.3+ |
| 1999 11 06 | 704 | 0.6+ | 0.1− | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 10 23 | 704 | 0.5− | 0.3+ |
| 1999 11 06 | 704 | 0.0 | 1.7− | 2006 09 16 | 644 | 0.1+ | 0.4+ | 2006 10 23 | 704 | 0.6− | 0.9+ |
| 1999 11 06 | 704 | 0.2+ | 1.1− | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 1999 11 11 | 703 | 0.3+ | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 1999 11 11 | 703 | 0.5− | 0.6+ | 2006 09 22 | 704 | 1.4− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 1999 11 11 | 703 | 0.7− | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 1999 11 11 | 703 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 1.1+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 1999 11 14 | 704 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.6− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 1999 11 14 | 704 | 0.3− | 0.1+ | 2006 09 22 | 704 | 1.0− | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 1999 11 14 | 704 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.6− | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 1999 11 14 | 704 | 0.5+ | 0.2− | 2006 09 25 | 699 | 0.6− | 1.2+ | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 1999 11 14 | 704 | 0.2+ | 0.6− | 2006 09 25 | 699 | 0.6− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.1− |
| 1999 11 16 | 704 | 0.9+ | 0.7− | 2006 09 25 | 699 | 1.1− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 1999 11 16 | 704 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 1999 11 16 | 704 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.9− | 0.3+ | 2006 11 21 | 704 | (0.8+ | 2.1+) |
| 1999 11 16 | 704 | 0.8+ | 0.2− | 2006 09 26 | 704 | 0.8+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.1− |
| 1999 11 16 | 704 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.5− | 1.1+ |
| 1999 12 04 | 703 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 25 | G92 | 0.1− | 0.1+ |
| 1999 12 04 | 703 | 0.1− | 0.9+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 25 | G92 | 0.5+ | 0.5+ |
| 1999 12 04 | 703 | 0.7− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 11 25 | G92 | 0.9+ | 0.6+ |
| 1999 12 04 | 703 | 0.4− | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2001 04 26 | 691 | 0.3+ | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.2− |
| 2001 04 26 | 691 | 0.2+ | 0.8+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.2+ |
| 2001 04 26 | 691 | 0.2+ | 0.7+ | 2006 09 29 | 699 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.1− |

**(137509)∗ 1999 VA$_{29}$ = 2002 PS$_{88}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33128)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.37586 | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28184591 | $\omega$ | 59.09577 | −0.33178027 | | −0.94157193 | |
| $a$ | 2.3038890 | $\Omega$ | 50.39507 | +0.83778768 | | −0.32235602 | |
| $e$ | 0.1267244 | $i$ | 4.31740 | +0.43362848 | | −0.09761602 | |
| $P$ | 3.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 22 | 704 | 0.6+ | 0.1+ | 2002 09 08 | 608 | 1.3− | 0.4− | 2006 08 28 | 703 | 0.4+ | 0.7+ |
| 1999 10 22 | 704 | 0.4− | 1.0− | 2002 09 08 | 608 | 0.3+ | 0.4− | 2006 09 28 | G96 | (2.1+ | 0.6−) |
| 1999 10 22 | 704 | 0.2− | 0.1− | 2002 09 08 | 608 | 0.0 | 0.4− | 2006 09 28 | G96 | 0.8+ | 1.3− |
| 1999 10 22 | 704 | 0.3− | 0.1− | 2002 09 13 | 608 | 0.8− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 1999 11 01 | 703 | 0.6− | 0.1+ | 2002 09 13 | 608 | 1.0− | 0.6− | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 1999 11 01 | 703 | 0.1− | 0.5+ | 2002 09 13 | 608 | 0.8− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.2− |
| 1999 11 01 | 703 | 0.0 | 0.2+ | 2003 12 23 | 704 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 1999 11 01 | 703 | 0.8− | 0.6+ | 2003 12 23 | 704 | 0.1− | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 1999 11 03 | 704 | 0.8− | 0.7− | 2003 12 23 | 704 | 0.1− | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.1− |
| 1999 11 03 | 704 | 0.9+ | 0.9− | 2003 12 23 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 1999 11 03 | 704 | 0.5− | 0.3− | 2003 12 25 | 645 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 1999 11 03 | 704 | 0.7+ | 0.2− | 2003 12 25 | 645 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 1999 11 03 | 704 | 0.4+ | 0.2− | 2003 12 28 | 704 | 0.2+ | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 1999 11 09 | 704 | 0.7+ | 0.5+ | 2003 12 28 | 704 | 0.5+ | 1.0+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 1999 11 09 | 704 | 0.5+ | 0.9− | 2003 12 28 | 704 | (0.4+ | 1.5+) | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 1999 11 09 | 704 | 0.2+ | 1.0− | 2003 12 28 | 704 | (0.9+ | 1.6+) | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 1999 11 09 | 704 | 0.4+ | 0.2− | 2003 12 28 | 699 | 0.6− | 1.0+ | 2006 10 28 | 704 | 0.1+ | 0.1− |
| 1999 11 09 | 704 | 0.1+ | 0.5− | 2003 12 28 | 699 | 0.3+ | 0.7− | 2006 10 28 | 704 | 0.5+ | 0.3+ |
| 1999 11 12 | 699 | 1.1+ | 0.5− | 2003 12 28 | 699 | 0.4− | 0.1+ | 2006 10 28 | 704 | 0.6− | 0.1− |
| 1999 11 12 | 699 | 0.8− | 0.1+ | 2003 12 28 | 699 | 0.7+ | 0.1+ | 2006 10 28 | 704 | 0.3− | 0.6+ |
| 1999 11 12 | 699 | 0.6− | 0.4− | 2004 01 23 | 704 | 0.4+ | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.3+ | 1.2− | 2004 01 23 | 704 | 0.4− | 1.0− | 2006 11 09 | 691 | 0.1+ | 0.3+ |
| 1999 11 12 | 704 | 0.6+ | 0.7− | 2004 01 23 | 704 | 0.1− | 0.3− | 2006 11 09 | 691 | 0.3+ | 0.2+ |
| 1999 11 12 | 704 | 0.1+ | 1.3− | 2004 01 23 | 699 | 1.2− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 1.0+ | 1.4− | 2004 01 23 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.2+ | 1.2− | 2004 01 23 | 699 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1999 11 14 | 704 | 0.2+ | 0.4− | 2004 01 23 | 704 | 0.0 | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1999 11 14 | 704 | 0.6+ | 0.4− | 2004 01 23 | 699 | 0.5− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 11 14 | 704 | 0.2+ | 0.5− | 2004 01 23 | 699 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1999 11 14 | 704 | 0.5+ | 0.2− | 2004 01 29 | 703 | 0.6+ | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 1999 11 14 | 704 | 0.2− | 0.1+ | 2004 01 29 | 703 | 1.1− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 1999 11 14 | 704 | 0.5+ | 0.2− | 2004 01 29 | 703 | 0.6− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 1999 11 14 | 704 | 0.9+ | 0.1+ | 2004 01 29 | 703 | 0.3− | 1.2+ | 2006 11 11 | 703 | (3.6− | 0.5+) |
| 1999 11 14 | 704 | 0.8+ | 0.2− | 2004 01 30 | 704 | 0.5+ | 1.2− | 2006 11 11 | 703 | 0.5− | 0.4− |
| 1999 11 14 | 704 | 0.4+ | 0.1− | 2004 01 30 | 704 | (2.0+ | 0.4+) | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 1999 11 16 | 704 | 0.4+ | 0.1+ | 2004 01 30 | 704 | 0.7+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 1999 11 16 | 704 | 0.6+ | 0.5+ | 2004 01 30 | 704 | 0.7+ | 0.6+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 1999 11 16 | 704 | 0.3+ | 0.1+ | 2004 01 30 | 704 | 0.4+ | 0.9+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 1999 11 16 | 704 | 0.2+ | 0.1+ | 2004 02 11 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.0 | 0.3− |
| 1999 11 16 | 704 | 0.2+ | 0.6+ | 2004 02 11 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.2− |
| 1999 12 02 | 699 | 0.7+ | 0.5− | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.2+ |
| 1999 12 02 | 699 | 0.4+ | 1.8+ | 2004 02 16 | 704 | 0.2− | 0.7+ | 2006 11 17 | 704 | 0.4+ | 0.9+ |
| 1999 12 02 | 699 | 1.1− | 0.8+ | 2004 02 16 | 704 | 1.1+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.4+ |
| 1999 12 04 | 703 | 0.8− | 0.7− | 2004 02 16 | 704 | 0.6+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 1999 12 04 | 703 | 0.4+ | 0.5− | 2004 02 16 | 704 | 0.8+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 1999 12 04 | 703 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.9+ | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 1999 12 04 | 703 | 0.4+ | 0.0 | 2004 02 18 | 608 | 1.4+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 1999 12 07 | 704 | 0.7− | 0.6− | 2004 02 18 | 608 | 0.9+ | 0.9− | 2006 11 18 | 704 | 1.0− | 0.3+ |
| 1999 12 07 | 704 | 0.2− | 0.1+ | 2004 02 18 | 608 | 0.9+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 1999 12 07 | 704 | 1.3− | 0.7− | 2004 02 23 | 608 | 1.0− | 1.2+ | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 1999 12 07 | 704 | 0.4− | 0.4+ | 2004 02 23 | 608 | 0.4− | 1.3+ | 2006 11 18 | 704 | 0.7− | 0.1− |
| 1999 12 07 | 704 | 0.2− | 0.2− | 2004 02 23 | 608 | 0.2− | 1.4+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.5− | 0.1− | 2004 03 14 | 704 | 0.6+ | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.8− | 0.4+ | 2004 03 14 | 704 | 0.1− | 0.7+ | 2006 11 20 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.5− | 0.1− | 2004 03 14 | 704 | 0.6+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 1.0+ | | |
| 1999 12 08 | 704 | 0.6+ | 0.2+ | 2004 03 14 | 704 | 1.2− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.7+ | | |
| 1999 12 08 | 704 | 0.3+ | 0.3− | 2004 03 14 | 704 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2002 08 13 | 291 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.0 | 1.2+ | 2006 11 21 | 704 | (0.6+ | 1.6−) | | |
| 2002 08 13 | 291 | 0.2− | 0.5+ | 2004 03 20 | 704 | 0.4+ | 0.8+ | 2006 11 21 | 704 | 0.6− | 1.2+ | | |
| 2002 08 13 | 291 | 0.2− | 0.5+ | 2004 03 20 | 704 | (0.7− | 1.8+) | 2006 11 24 | G96 | 0.4+ | 0.2− | | |
| 2002 08 14 | 291 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.3− | 0.8+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2002 08 14 | 291 | 0.3− | 0.8+ | 2004 03 20 | 704 | 0.4− | 0.8+ | 2006 11 24 | G96 | 0.4+ | 0.2− | | |
| 2002 08 14 | 291 | 0.1− | 0.7+ | 2004 03 22 | 704 | 0.6+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2002 08 19 | 644 | (0.2+ | 1.6+) | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2006 11 27 | 704 | 2.5+ | 0.1+ | | |
| 2002 08 19 | 644 | (0.1+ | 1.7+) | 2004 03 22 | 704 | 0.5+ | 0.0 | 2006 11 27 | 704 | 0.3− | 1.0− | | |
| 2002 08 19 | 644 | (0.0 | 1.8+) | 2004 03 22 | 704 | 0.8+ | 0.7+ | 2006 11 27 | 704 | 2.1− | 0.1− | | |
| 2002 08 29 | 644 | 0.4− | 0.8+ | 2004 04 20 | 704 | 1.0+ | 0.1− | 2006 11 27 | 704 | 1.7− | 1.9− | | |
| 2002 08 29 | 644 | 0.2− | 0.9+ | 2004 04 20 | 704 | 1.4+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2002 08 29 | 644 | 0.3− | 1.1+ | 2004 04 20 | 704 | 1.2+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2002 08 30 | 644 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.8+ | 2006 12 01 | G96 | 0.4+ | 0.0 | | |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 08 28 | 703 | 1.3− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.0 | | |
| 2002 08 30 | 644 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.2+ | | | | | | |

**(137510)∗ 1999 VL$_{30}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.00922 | | (2000.0) | | | |
| $n$ | 0.26447066 | $\omega$ | 149.40063 | | +0.80317654 | −0.58995097 |
| $a$ | 2.4037228 | $\Omega$ | 246.98150 | | +0.52673392 | +0.76821482 |
| $e$ | 0.1311835 | $i$ | 5.16504 | | +0.27831424 | +0.24860379 |
| $P$ | 3.73 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.4+ | 0.1+ | 1999 12 08 | 704 | 0.9− | 0.2+ | 2006 08 30 | 699 | 0.1− | 0.4+ | | |
| 1999 11 03 | 704 | 0.3+ | 0.6− | 2002 07 13 | 644 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.2+ | 1.0+ | | |
| 1999 11 03 | 704 | 0.1+ | 0.3+ | 2002 07 13 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.7− | 0.4+ | | |
| 1999 11 03 | 704 | 0.3− | 0.6+ | 2002 07 13 | 644 | 0.2− | 0.0 | 2006 08 30 | 699 | 0.2+ | 0.3+ | | |
| 1999 11 03 | 704 | 0.0 | 0.5+ | 2002 07 21 | 644 | 0.3− | 0.3+ | 2006 09 11 | 703 | 0.9+ | 0.3+ | | |
| 1999 11 09 | 704 | 0.6+ | 0.4− | 2002 07 21 | 644 | 0.4+ | 0.7+ | 2006 09 11 | 703 | 0.6− | 0.7+ | | |
| 1999 11 09 | 704 | 0.6+ | 0.8− | 2002 07 21 | 644 | 0.4− | 1.0+ | 2006 09 11 | 703 | 0.5− | 0.2+ | | |
| 1999 11 09 | 704 | 0.7+ | 0.1− | 2003 12 19 | 704 | 0.8− | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.9+ | | |
| 1999 11 09 | 704 | 0.7+ | 0.4− | 2003 12 19 | 704 | 0.1− | 1.0+ | 2006 09 18 | 704 | 0.2− | 0.6+ | | |
| 1999 11 09 | 704 | 0.7+ | 0.2− | 2003 12 19 | 704 | 1.3+ | 0.5+ | 2006 09 18 | 704 | 0.6+ | 0.3+ | | |
| 1999 11 12 | 704 | 0.1+ | 0.4+ | 2003 12 19 | 704 | 0.1− | 0.6+ | 2006 09 18 | 704 | 1.1+ | 0.3+ | | |
| 1999 11 12 | 704 | 0.3+ | 0.1+ | 2003 12 21 | 645 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.8+ | 0.6− | | |
| 1999 11 12 | 704 | 0.2+ | 0.8− | 2003 12 21 | 645 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.4+ | 0.1+ | | |
| 1999 11 12 | 704 | 0.2+ | 0.5− | 2004 01 16 | 644 | 0.9− | 0.5+ | 2006 09 19 | 699 | 0.6− | 0.4− | | |
| 1999 11 12 | 704 | 0.8+ | 0.4− | 2004 01 16 | 644 | 0.9− | 0.4+ | 2006 09 19 | 699 | 0.9− | 1.4+ | | |
| 1999 11 16 | 704 | 0.1+ | 0.1− | 2004 01 16 | 644 | 0.7− | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.6− | | |
| 1999 11 16 | 704 | 0.4− | 0.3+ | 2004 01 23 | 704 | 0.5+ | 0.3− | 2006 09 19 | 703 | 0.1− | 0.3− | | |
| 1999 11 16 | 704 | 0.3+ | 0.5+ | 2004 01 23 | 704 | 0.9+ | 0.3− | 2006 09 19 | 699 | 0.0 | 0.2+ | | |
| 1999 11 16 | 704 | 0.0 | 0.4+ | 2004 01 23 | 704 | 0.8+ | 0.0 | 2006 09 19 | 703 | 0.5− | 0.0 | | |
| 1999 12 03 | 699 | 0.0 | 1.6− | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.3− | | |
| 1999 12 03 | 699 | 0.3− | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.3− | | |
| 1999 12 03 | 699 | 0.3+ | 0.0 | 2006 08 22 | 644 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.7+ | | |
| 1999 12 05 | 703 | 0.2+ | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.5+ | | |
| 1999 12 05 | 703 | 0.5− | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.9+ | 0.6+ | | |
| 1999 12 05 | 703 | 1.6− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.5− | 0.4− | | |
| 1999 12 05 | 703 | 0.4− | 0.0 | 2006 08 25 | A50 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.0 | 0.6− | | |
| 1999 12 07 | 704 | 0.1− | 0.6− | 2006 08 25 | A50 | 0.1+ | 0.7− | 2006 09 26 | 703 | 0.3+ | 0.9− | | |
| 1999 12 07 | 704 | 0.2+ | 0.8− | 2006 08 27 | 699 | 0.4+ | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.2+ | | |
| 1999 12 07 | 704 | 0.1− | 0.5− | 2006 08 27 | 699 | 0.6− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.2+ | | |
| 1999 12 07 | 704 | 0.5− | 0.3− | 2006 08 27 | 699 | 0.3− | 0.1− | 2006 10 15 | 106 | 0.4− | 0.1+ | | |
| 1999 12 07 | 704 | 0.7+ | 0.1+ | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 10 15 | 106 | 0.1+ | 0.6− | | |
| 1999 12 08 | 704 | 0.9− | 0.7− | 2006 08 29 | 703 | 0.1+ | 0.5+ | 2006 10 15 | 106 | 0.1− | 1.0− | | |
| 1999 12 08 | 704 | 0.3+ | 0.4− | 2006 08 29 | 703 | 0.4− | 0.3− | 2006 10 15 | 106 | 0.9+ | 1.4− | | |
| 1999 12 08 | 704 | 0.8− | 0.7− | 2006 08 29 | 703 | 0.2− | 0.2− | | | | | | |
| 1999 12 08 | 704 | 0.6− | 0.6− | 2006 08 29 | 703 | 0.0 | 0.4− | | | | | | |

**(137511)∗ 1999 VW$_{32}$ = 2002 PW$_{22}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33129)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.61661 | | (2000.0) | | | |
| $n$ | 0.27916620 | $\omega$ | 152.85985 | | +0.96874645 | −0.24598765 |
| $a$ | 2.3186089 | $\Omega$ | 221.42096 | | +0.21792413 | +0.90550763 |
| $e$ | 0.1146205 | $i$ | 2.76750 | | +0.11848790 | +0.34575427 |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 1.6+ | 0.5− | 2002 08 06 | 644 | 0.3− | 0.8− | 2006 11 10 | 644 | 0.1− | 0.2+ | | |
| 1992 11 26 | 691 | 0.6− | 0.0 | 2002 08 07 | 644 | 0.0 | 1.0− | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 1992 11 26 | 691 | 0.5− | 0.5− | 2002 08 07 | 644 | 0.1− | 0.9− | 2006 11 11 | 703 | 0.5+ | 1.0− | | |
| 1999 11 03 | 704 | 0.1− | 0.4− | 2002 08 07 | 644 | 0.2− | 0.9− | 2006 11 11 | 703 | 0.0 | 1.0+ | | |
| 1999 11 03 | 704 | 0.8+ | 0.4+ | 2002 08 12 | 608 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.1− | 0.1+ | | |
| 1999 11 03 | 704 | 1.4+ | 1.6− | 2002 08 12 | 608 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.4+ | | |
| 1999 11 03 | 704 | 0.1− | 0.7− | 2002 08 12 | 608 | 0.5− | 0.7− | 2006 11 11 | G96 | 0.2+ | 0.1+ | | |
| 1999 11 09 | 704 | 0.3+ | 0.7+ | 2002 08 17 | 644 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.0 | | |
| 1999 11 09 | 704 | 0.1+ | 0.3+ | 2002 08 17 | 644 | 0.1− | 0.9+ | 2006 11 11 | G96 | 0.4+ | 0.3+ | | |
| 1999 11 09 | 704 | 0.5+ | 0.2+ | 2002 08 17 | 644 | 0.2+ | 1.1+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 1999 11 09 | 704 | 0.2+ | 0.3+ | 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.0 | | |
| 1999 11 09 | 704 | 0.3− | 0.3+ | 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.1− | | |
| 1999 11 12 | 704 | 0.7− | 0.3− | 2002 08 26 | 644 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.0 | | |
| 1999 11 12 | 704 | 0.0 | 0.1+ | 2002 08 27 | 644 | 0.2+ | 1.1+ | 2006 11 17 | 703 | 0.9− | 0.3− | | |
| 1999 11 12 | 704 | 0.6+ | 0.3− | 2002 08 27 | 644 | 0.4− | 1.1+ | 2006 11 17 | 703 | 0.4+ | 0.3+ | | |
| 1999 11 12 | 704 | 0.1− | 0.3− | 2002 08 27 | 644 | 0.1− | 0.8+ | 2006 11 17 | 703 | 0.1+ | 0.4+ | | |
| 1999 11 12 | 704 | 0.2− | 0.3+ | 2004 01 29 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.3+ | | |
| 1999 11 13 | 704 | 0.9+ | 1.1− | 2004 01 29 | 704 | 0.6+ | 1.1+ | 2006 11 18 | 704 | 0.0 | 1.2+ | | |
| 1999 11 13 | 704 | 0.0 | 1.3− | 2004 01 29 | 704 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.6− | 1.0+ | | |
| 1999 11 13 | 704 | 0.3+ | 0.0 | 2004 01 29 | 704 | (1.9− | 0.9+) | 2006 11 18 | 704 | 0.2+ | 0.4+ | | |
| 1999 11 13 | 704 | 1.6+ | 1.3− | 2004 01 29 | 704 | 0.2− | 1.1+ | 2006 11 18 | 704 | 0.7− | 0.7+ | | |
| 1999 11 13 | 704 | 0.3+ | 0.6− | 2005 02 11 | 809 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.0 | 1.0+ | | |
| 1999 11 17 | 704 | 0.2− | 0.0 | 2005 02 11 | 809 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.3+ | 1.0+ | | |
| 1999 11 17 | 704 | 0.2− | 0.3− | 2005 02 11 | 809 | 0.7+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.6+ | | |
| 1999 11 17 | 704 | 0.3− | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.8+ | | |
| 1999 11 17 | 704 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.7+ | | |
| 1999 11 17 | 691 | 1.1− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1− | 1.1+ | | |
| 1999 11 17 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 1999 11 17 | 691 | 0.2− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2− | | |
| 1999 11 30 | 691 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.0 | | |
| 1999 11 30 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 1999 11 30 | 691 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.0 | | |
| 1999 12 07 | 704 | 0.7+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.1− | | |
| 1999 12 07 | 704 | 0.6− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.2+ | | |
| 1999 12 07 | 704 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 1999 12 07 | 704 | 0.4− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.5− | | |
| 1999 12 08 | 704 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 1.7− | 0.1+ | | |
| 1999 12 08 | 704 | 0.2− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 1.2− | 0.7− | | |
| 1999 12 08 | 704 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.2− | | |
| 1999 12 08 | 704 | 1.4− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.2− | 1.1− | | |
| 2002 07 14 | 704 | 0.9+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.6− | 0.3+ | | |
| 2002 07 14 | 704 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.3+ | 1.6− | | |
| 2002 07 14 | 704 | 0.8+ | 0.5− | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.6− | | |
| 2002 08 06 | 644 | 0.0 | 1.0− | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.7− | | |
| 2002 08 06 | 644 | 0.2− | 0.8− | 2006 11 10 | 644 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.1+ | 0.9− | | |

**(137512)∗ 1999 VZ$_{33}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.12710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27155415 | $\omega$ | 278.97499 | | −0.91752333 | −0.38704263 | |
| $a$ | 2.3617382 | $\Omega$ | 238.30209 | | +0.39384164 | −0.85249970 | |
| $e$ | 0.0592940 | $i$ | 6.16501 | | +0.05513340 | −0.35134352 | |
| $P$ | 3.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.3− | 0.7+ | 1999 12 18 | 691 | 0.0 | 0.0 | 2003 12 22 | 644 | 0.0 | 0.4+ | |
| 1999 11 03 | 704 | 0.1− | 0.4− | 1999 12 18 | 691 | 0.2− | 0.0 | 2003 12 22 | 644 | 0.4+ | 0.0 | |
| 1999 11 03 | 704 | 0.4+ | 1.1− | 2001 03 24 | 699 | 0.3− | 0.1+ | 2003 12 22 | 644 | 0.1+ | 0.5+ | |
| 1999 11 09 | 703 | 0.4− | 0.4+ | 2001 03 24 | 699 | 0.7− | 0.3+ | 2004 01 18 | 644 | 0.1− | 0.4+ | |
| 1999 11 09 | 703 | 0.8− | 1.1+ | 2001 03 24 | 699 | 0.8− | 0.4− | 2004 01 18 | 644 | 0.1− | 0.4+ | |
| 1999 11 09 | 703 | 0.0 | 0.3+ | 2001 03 24 | 699 | 1.0+ | 0.7− | 2004 01 18 | 644 | 0.1− | 0.5+ | |
| 1999 11 09 | 703 | 0.3− | 0.1+ | 2001 04 16 | 699 | 0.2− | 0.5+ | 2005 06 12 | 163 | (8.1+ | 7.6+) | |
| 1999 11 09 | 704 | 0.6+ | 0.7− | 2001 04 16 | 699 | 0.9+ | 0.5− | 2005 06 12 | 163 | (7.9+ | 4.1+) | |
| 1999 11 09 | 704 | 0.8− | 0.6− | 2001 04 16 | 699 | 0.1− | 0.3− | 2006 10 04 | G96 | 0.3+ | 0.3− | |
| 1999 11 09 | 704 | 0.1− | 0.1+ | 2001 04 16 | 699 | 1.0− | 0.5+ | 2006 10 04 | G96 | 0.5+ | 0.1+ | |
| 1999 11 09 | 704 | 0.1− | 0.1+ | 2001 05 18 | 699 | 1.0+ | 0.9+ | 2006 10 04 | G96 | 0.2+ | 0.1− | |
| 1999 11 12 | 704 | 0.3+ | 0.2− | 2001 05 18 | 699 | 0.2+ | 1.2+ | 2006 10 04 | G96 | 0.2− | 0.1− | |
| 1999 11 12 | 704 | 0.1+ | 0.7− | 2001 05 18 | 699 | 1.2+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | |
| 1999 11 12 | 704 | 0.2+ | 0.5− | 2001 05 18 | 699 | 1.0+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | |
| 1999 11 12 | 704 | 0.0 | 0.5− | 2002 08 03 | 599 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 1999 11 16 | 704 | (2.5− | 1.9+) | 2002 08 03 | 599 | 0.8− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 1999 11 16 | 704 | 0.5+ | 0.2− | 2002 08 03 | 599 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 1999 11 16 | 704 | 0.1− | 0.7+ | 2002 08 12 | 704 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 1999 12 05 | 691 | 0.2+ | 0.1− | 2002 08 12 | 704 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.9+ | 0.6− | |
| 1999 12 05 | 691 | 0.2+ | 0.0 | 2002 08 12 | 704 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.4− | 0.7+ | |
| 1999 12 05 | 691 | 0.3+ | 0.1+ | 2002 08 16 | 644 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.9− | 0.9− | |
| 1999 12 07 | 704 | 0.3+ | 0.4− | 2002 08 16 | 644 | 0.4− | 0.7− | 2006 10 17 | 703 | 0.1− | 0.8+ | |
| 1999 12 07 | 704 | 0.2− | 0.2+ | 2002 08 16 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.3+ | |
| 1999 12 07 | 704 | 0.9+ | 0.2− | 2002 08 27 | 644 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 1999 12 08 | 704 | 0.3+ | 0.1− | 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | |
| 1999 12 08 | 704 | 0.8+ | 0.1− | 2002 08 27 | 644 | 0.1− | 0.6+ | 2006 11 13 | 703 | 0.3+ | 0.9+ | |
| 1999 12 08 | 704 | 0.2− | 1.2− | 2002 09 13 | 644 | 0.5− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.2− | |
| 1999 12 08 | 704 | 0.4− | 0.1+ | 2002 09 13 | 644 | 0.5− | 0.2+ | 2006 11 13 | 703 | 0.9+ | 0.0 | |
| 1999 12 12 | 703 | 0.8− | 0.4− | 2002 09 13 | 644 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.9− | 0.6+ | |
| 1999 12 12 | 703 | 0.4− | 0.6+ | 2003 12 22 | 704 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.0 | |
| 1999 12 12 | 703 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.1− | |
| 1999 12 12 | 703 | 0.5+ | 1.0+ | 2003 12 22 | 704 | 0.2− | 0.8+ | 2006 11 17 | G96 | 0.3+ | 0.0 | |
| 1999 12 18 | 691 | 0.2− | 0.1+ | 2003 12 22 | 704 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.1− | |

**(137513)∗ 1999 VY$_{35}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.73602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26234643 | $\omega$ | 197.89290 | | +0.43488952 | −0.89966131 | |
| $a$ | 2.4166807 | $\Omega$ | 226.34885 | | +0.83254105 | +0.41799268 | |
| $e$ | 0.2002955 | $i$ | 3.04845 | | +0.34314210 | +0.12606209 | |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.1− | 0.1− | 2003 11 21 | 704 | (1.7+ | 2.2+) | 2004 03 18 | 704 | 0.7+ | 1.2+ | |
| 1999 10 12 | 704 | 0.6− | 0.9− | 2003 12 01 | 704 | 0.5− | 0.6− | 2004 03 18 | 704 | 0.7+ | 0.0 | |
| 1999 10 12 | 704 | 0.5− | 0.0 | 2003 12 01 | 704 | 0.3+ | 0.8− | 2004 03 18 | 704 | 1.0+ | 0.1+ | |
| 1999 10 12 | 704 | 1.0− | 0.4− | 2003 12 01 | 704 | 0.6+ | 1.3− | 2006 08 13 | 644 | 0.1− | 0.4+ | |
| 1999 11 03 | 704 | (2.2+ | 0.3+) | 2003 12 18 | 644 | 0.1+ | 0.5+ | 2006 08 13 | 644 | 0.2− | 0.3+ | |
| 1999 11 03 | 704 | 1.5+ | 0.7− | 2003 12 18 | 644 | 0.1+ | 0.6+ | 2006 08 13 | 644 | 0.1− | 0.5+ | |
| 1999 11 03 | 704 | (2.2+ | 1.6−) | 2003 12 18 | 644 | 0.2+ | 0.5+ | 2006 08 19 | 699 | 0.3+ | 0.3+ | |
| 1999 11 09 | 704 | 0.0 | 0.1+ | 2003 12 22 | 703 | 0.1+ | 1.1+ | 2006 08 19 | 699 | 1.0− | 0.4+ | |
| 1999 11 09 | 704 | 0.2+ | 0.1− | 2003 12 22 | 703 | 0.3+ | 0.6+ | 2006 08 19 | 699 | 0.1+ | 0.6+ | |
| 1999 11 09 | 704 | 0.1− | 0.5− | 2003 12 22 | 703 | 0.8+ | 0.0 | 2006 08 19 | 699 | 0.7− | 0.6− | |
| 1999 11 09 | 704 | 0.6+ | 0.6− | 2003 12 22 | 703 | 1.5− | 1.0+ | 2006 08 22 | 644 | 0.1− | 0.1+ | |
| 1999 11 09 | 704 | 0.1− | 0.3− | 2003 12 23 | 704 | 1.3+ | 0.2− | 2006 08 22 | 644 | 0.2− | 0.2+ | |
| 1999 11 12 | 704 | 0.3− | 0.1− | 2003 12 23 | 704 | 1.2+ | 1.1+ | 2006 08 22 | 644 | 0.3− | 0.1+ | |
| 1999 11 12 | 704 | 0.5− | 0.3+ | 2003 12 23 | 704 | 0.7+ | 0.8+ | 2006 08 28 | 699 | (0.2+ | 1.7+) | |
| 1999 11 12 | 704 | 0.4− | 0.2− | 2003 12 23 | 704 | (1.8+ | 1.1+) | 2006 08 28 | 699 | 0.3+ | 0.9+ | |
| 1999 11 12 | 704 | 0.4+ | 0.2+ | 2003 12 23 | 704 | 0.9+ | 0.7+ | 2006 08 28 | 699 | (0.6− | 1.8+) | |
| 1999 11 12 | 704 | 0.1− | 0.4+ | 2003 12 27 | 608 | 1.2+ | 0.4+ | 2006 08 28 | 699 | (1.1+ | 1.8+) | |
| 1999 11 17 | 704 | 0.2− | 1.3− | 2003 12 27 | 608 | 0.7+ | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.6− | |
| 1999 11 17 | 704 | 0.1+ | 1.2− | 2003 12 27 | 608 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.6− | |
| 1999 11 17 | 704 | 0.2+ | 0.2− | 2004 01 13 | 699 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.0 | 0.3+ | |
| 1999 11 17 | 704 | 0.5− | 0.1− | 2004 01 13 | 699 | 0.2− | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.2− | |
| 1999 11 17 | 704 | 0.2− | 1.6− | 2004 01 13 | 699 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.4− | 0.2+ | |
| 1999 11 17 | 704 | 0.1+ | 0.1+ | 2004 01 13 | 699 | 1.3− | 0.3+ | 2006 08 30 | 704 | 0.1+ | 0.2− | |
| 1999 11 17 | 704 | 0.2+ | 1.0− | 2004 01 21 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.9+ | |
| 1999 11 17 | 704 | 0.4− | 0.0 | 2004 01 21 | 704 | 0.1+ | 0.7+ | 2006 08 30 | 704 | (1.7+ | 0.3+) | |
| 1999 11 17 | 704 | 0.2− | 1.0− | 2004 01 21 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.6+ | |
| 1999 11 17 | 704 | 1.8+ | 0.8+ | 2004 01 21 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.7+ | |
| 1999 12 07 | 704 | 0.4+ | 0.6− | 2004 01 21 | 704 | 0.6+ | 1.0+ | 2006 09 14 | 703 | 1.0− | 0.2+ | |
| 1999 12 07 | 704 | 0.4− | 0.1− | 2004 01 24 | 704 | 0.7− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.4+ | |
| 1999 12 07 | 704 | 0.5+ | 0.4− | 2004 01 24 | 704 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.5+ | |
| 1999 12 07 | 704 | 0.6+ | 1.1+ | 2004 01 24 | 704 | 0.1− | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.3+ | |
| 1999 12 07 | 704 | 0.1− | 0.3− | 2004 01 24 | 704 | 1.2− | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.4+ | |
| 1999 12 08 | 704 | 0.0 | 0.0 | 2004 01 24 | 704 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.4+ | |
| 1999 12 08 | 704 | 0.2− | 0.3− | 2004 01 26 | 699 | 0.6+ | 0.0 | 2006 09 28 | G96 | 0.5− | 0.3− | |
| 1999 12 08 | 704 | 0.3− | 0.1− | 2004 01 26 | 699 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.1− | |
| 1999 12 08 | 704 | 0.0 | 0.0 | 2004 01 26 | 699 | 1.4− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.1− | |
| 1999 12 08 | 704 | 0.5− | 0.2− | 2004 01 26 | 699 | 0.7− | 0.8+ | 2006 10 01 | 691 | 0.3+ | 0.4+ | |
| 2001 04 29 | 691 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.9+ | 1.0+ | 2006 10 01 | 691 | 0.0 | 0.6+ | |
| 2001 04 29 | 691 | 0.2+ | 0.1+ | 2004 01 30 | 704 | 0.7+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.6+ | |
| 2001 04 29 | 691 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.6+ | 0.9+ | 2006 11 16 | G96 | 0.2− | 0.0 | |
| 2003 11 21 | 704 | (0.3+ | 2.4+) | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4+ | |
| 2003 11 21 | 704 | 0.3+ | 1.0+ | 2004 01 30 | 704 | 0.7+ | 1.3+ | 2006 11 16 | G96 | 0.1− | 0.2+ | |
| 2003 11 21 | 704 | (0.3− | 1.8+) | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2+ | |
| 2003 11 21 | 704 | 0.8+ | 0.4+ | 2004 03 17 | 645 | 0.1− | 0.0 | | | | | |

**(137514)∗ 1999 VG$_{37}$ = 2002 NK$_{38}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33130)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.98374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28777279 | $\omega$ | 160.38090 | | +0.64521539 | −0.75712438 | |
| $a$ | 2.2721460 | $\Omega$ | 249.29592 | | +0.68554465 | +0.63283513 | |
| $e$ | 0.2129090 | $i$ | 6.27692 | | +0.33723230 | +0.16211841 | |
| $P$ | 3.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | (0.3+ | 2.1−) | 2002 07 09 | 704 | 0.4− | 0.3− | 2004 02 16 | 703 | 0.9− | 0.2− | |
| 1999 10 13 | 704 | (2.2+ | 2.6−) | 2002 07 09 | 704 | 0.0 | 0.6+ | 2004 02 16 | 703 | 0.2− | 0.2− | |
| 1999 10 13 | 704 | (2.0+ | 2.3−) | 2002 07 12 | 644 | 0.2+ | 0.2+ | 2004 02 16 | 703 | (1.0− | 1.6+) | |
| 1999 10 13 | 704 | 1.6+ | 0.9− | 2002 07 12 | 644 | 0.0 | 0.1+ | 2004 03 16 | 703 | 1.1+ | 0.2+ | |
| 1999 11 03 | 704 | 0.2+ | 0.8+ | 2002 07 12 | 644 | 0.3+ | 0.2+ | 2004 03 16 | 703 | 0.0 | 1.4+ | |
| 1999 11 03 | 704 | 0.6+ | 0.2− | 2002 07 18 | 704 | 0.3+ | 0.3− | 2004 03 16 | 703 | 0.2+ | 0.2− | |
| 1999 11 03 | 704 | 0.2+ | 0.0 | 2002 07 18 | 704 | 0.7+ | 0.2+ | 2004 03 16 | 703 | 0.9+ | 0.3+ | |
| 1999 11 03 | 704 | 0.0 | 0.1− | 2002 07 18 | 704 | 0.3+ | 1.3+ | 2004 03 17 | 704 | 0.8+ | 0.4+ | |
| 1999 11 03 | 704 | 0.8− | 0.7− | 2002 07 21 | 644 | 0.2− | 0.1+ | 2004 03 17 | 704 | 0.3+ | 0.7+ | |
| 1999 11 12 | 704 | 0.2+ | 0.1− | 2002 07 21 | 644 | 0.0 | 0.4+ | 2004 03 17 | 704 | 0.6− | 1.2− | |
| 1999 11 12 | 704 | 0.3+ | 0.3+ | 2002 07 21 | 644 | 0.3− | 0.2+ | 2004 03 17 | 704 | 0.3+ | 0.6+ | |
| 1999 11 12 | 704 | 0.3+ | 0.1+ | 2002 08 05 | 644 | 0.5− | 0.6+ | 2004 03 17 | 704 | 0.6+ | 0.7− | |
| 1999 11 12 | 704 | 0.7+ | 0.4+ | 2002 08 05 | 644 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.3− | 0.9+ | |
| 1999 11 12 | 704 | 0.8+ | 0.7− | 2002 08 05 | 644 | 0.3− | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | |
| 1999 11 16 | 704 | 0.1− | 0.5− | 2002 08 12 | 704 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.7+ | |
| 1999 11 16 | 704 | 0.4+ | 0.4− | 2002 08 12 | 704 | 0.8− | 0.1− | 2004 03 18 | 704 | 0.7− | 1.1+ | |
| 1999 11 16 | 704 | 0.2+ | 0.3+ | 2002 08 12 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.3− | |
| 1999 11 16 | 704 | 0.4− | 0.1+ | 2002 08 12 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.1+ | 0.3+ | |
| 1999 11 16 | 704 | 0.1+ | 0.3+ | 2002 08 13 | 699 | 0.9− | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.2+ | |
| 1999 12 05 | 691 | 0.5− | 0.1− | 2002 08 13 | 699 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.3− | 0.3+ | |
| 1999 12 05 | 691 | 0.5− | 0.0 | 2002 08 13 | 699 | 0.6− | 0.8+ | 2004 03 20 | 704 | 1.1+ | 0.8+ | |
| 1999 12 05 | 691 | 0.5− | 0.0 | 2002 08 13 | 699 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.8+ | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.2+ | 0.1− | 2002 08 15 | 644 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.3+ | 0.1+ |
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2002 08 15 | 644 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 1999 12 07 | 704 | 0.2+ | 0.3− | 2002 08 15 | 644 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.2+ | 0.2+ |
| 1999 12 07 | 704 | 0.3+ | 0.0 | 2002 08 16 | 644 | 0.6− | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.2+ | 0.3− | 2002 08 16 | 644 | 0.1− | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.3+ |
| 1999 12 08 | 704 | 0.2+ | 0.0 | 2002 08 16 | 644 | 0.0 | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 1999 12 08 | 704 | 0.4+ | 0.5− | 2002 08 16 | 608 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 1999 12 08 | 704 | 0.1+ | 0.1+ | 2002 08 16 | 608 | 0.2− | 1.0− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 1999 12 08 | 704 | 0.1+ | 0.1+ | 2002 08 16 | 608 | 0.3− | 1.1− | 2006 11 01 | G96 | 0.3+ | 0.4+ |
| 2000 01 05 | 704 | 0.3+ | 0.3+ | 2002 09 04 | 644 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2000 01 05 | 704 | 0.6+ | 0.1− | 2002 09 04 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2000 01 05 | 704 | 0.5− | 0.6+ | 2002 09 04 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2000 01 05 | 704 | 0.1− | 0.7− | 2002 09 21 | 644 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.7− | 0.3− |
| 2000 01 05 | 704 | 1.0− | 0.3− | 2002 09 21 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.3+ |
| 2000 01 06 | 704 | 0.4+ | 0.1+ | 2002 09 21 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | (0.5+ | 1.7+) |
| 2000 01 06 | 704 | 0.5+ | 0.5− | 2002 10 01 | 699 | 0.1− | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2000 01 06 | 704 | 0.1− | 0.4+ | 2002 10 01 | 699 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.8− | 1.5+ |
| 2000 01 06 | 704 | 0.5+ | 0.0 | 2002 10 01 | 699 | 0.5+ | 0.4+ | 2006 11 18 | 704 | 1.5− | 1.4+ |
| 2000 01 06 | 704 | 0.4+ | 0.1+ | 2002 10 01 | 699 | (1.6− | 1.8−) | 2006 11 18 | 704 | 0.8− | 1.5+ |
| 2000 02 02 | 704 | 0.4+ | 0.5+ | 2002 10 05 | 704 | 0.3− | 0.7+ | 2006 11 29 | 704 | 1.3+ | 1.0+ |
| 2000 02 02 | 704 | 0.1− | 0.7+ | 2002 10 05 | 704 | 0.5− | 0.2− | 2006 11 29 | 704 | 0.8+ | 0.4− |
| 2000 02 02 | 704 | 0.9− | 0.6+ | 2002 10 05 | 704 | 0.5+ | 0.0 | 2006 11 29 | 704 | 1.0− | 0.8+ |
| 2002 07 09 | 704 | 1.0+ | 0.2+ | 2004 02 16 | 703 | (1.3+ | 1.6+) | 2006 11 29 | 704 | 0.0 | 0.5+ |

**(137515)∗ 1999 VC$_{38}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.93148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27128440 | $\omega$ | 133.57079 | | +0.86883704 | | −0.49469648 |
| $a$ | 2.3633035 | $\Omega$ | 256.08826 | | +0.44811818 | | +0.80287847 |
| $e$ | 0.2088518 | $i$ | 1.17706 | | +0.21050486 | | +0.33265832 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2− | 0.3− | 2004 01 22 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 0.1− | 0.2+ |
| 1999 10 06 | 704 | 0.4− | 0.4− | 2004 01 22 | 704 | 0.0 | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.2+ |
| 1999 10 06 | 704 | 0.2− | 0.5− | 2004 01 22 | 704 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.7− | 1.0+ |
| 1999 10 06 | 704 | 0.2− | 0.3− | 2004 01 22 | 704 | 0.2− | 0.6+ | 2006 09 26 | 704 | 0.4+ | 0.3+ |
| 1999 10 06 | 704 | 0.3− | 0.4− | 2004 01 24 | 704 | 0.7+ | 1.3+ | 2006 09 26 | 704 | 0.8+ | 0.0 |
| 1999 10 12 | 704 | 0.2+ | 0.3− | 2004 01 24 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.2− |
| 1999 10 12 | 704 | 0.4+ | 0.8− | 2004 01 24 | 704 | (2.1+ | 0.6+) | 2006 09 26 | 704 | 0.8+ | 0.5− |
| 1999 10 12 | 704 | 0.0 | 0.7− | 2004 01 24 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 1.0+ | 0.9− |
| 1999 10 12 | 704 | 1.4+ | 0.4− | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.8− |
| 1999 11 03 | 704 | 0.9− | 1.3− | 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.7+ | 0.4− |
| 1999 11 03 | 704 | 0.7+ | 0.6− | 2004 01 28 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.6− |
| 1999 11 03 | 704 | 0.6+ | 1.5− | 2004 02 11 | 699 | (0.1+ | 1.7−) | 2006 09 27 | 704 | 0.1− | 0.9− |
| 1999 11 09 | 704 | 0.7− | 0.1+ | 2004 02 11 | 699 | 0.0 | 0.7+ | 2006 09 27 | 704 | 0.2+ | 1.0− |
| 1999 11 09 | 704 | 0.5− | 0.4+ | 2004 02 11 | 699 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 1.0+ |
| 1999 11 09 | 704 | 0.8− | 0.4+ | 2004 02 11 | 699 | 0.5− | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.4+ |
| 1999 11 09 | 704 | 0.3− | 0.3+ | 2004 02 14 | 691 | 0.1+ | 0.5− | 2006 09 29 | 704 | 0.3− | 0.0 |
| 1999 11 09 | 704 | 0.3− | 0.6+ | 2004 02 14 | 691 | 0.3− | 0.1− | 2006 09 29 | 704 | 1.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.1− | 0.1− | 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 0.2− | 0.4− | 2004 02 26 | 704 | (0.5− | 1.9+) | 2006 09 30 | 704 | (0.3+ | 1.7+) |
| 1999 11 12 | 704 | 0.3− | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 704 | 1.3− | 0.9+ |
| 1999 11 12 | 704 | 0.4− | 0.6− | 2004 02 26 | 704 | (0.2− | 1.6+) | 2006 09 30 | 704 | 0.7− | 1.0+ |
| 1999 11 12 | 704 | 0.1+ | 0.1− | 2004 02 26 | 704 | (0.1− | 2.3+) | 2006 09 30 | 704 | 0.7− | 0.9+ |
| 1999 11 16 | 704 | 0.1+ | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 291 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | 0.3− | 0.1− | 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 09 30 | 291 | 0.1− | 0.3+ |
| 1999 11 16 | 704 | 0.1− | 0.3− | 2005 04 17 | 691 | 0.4+ | 0.0 | 2006 09 30 | 291 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | 0.5− | 0.2− | 2005 05 04 | G96 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.0 | 0.0 |
| 1999 11 16 | 704 | 0.3+ | 0.6− | 2005 05 04 | G96 | 0.1− | 0.2+ | 2006 10 01 | 703 | 0.2+ | 0.2+ |
| 1999 11 17 | 704 | 1.5− | 0.7− | 2005 05 04 | G96 | 0.5− | 0.3+ | 2006 10 01 | 703 | 0.1− | 0.4+ |
| 1999 11 17 | 704 | 0.2− | 0.9− | 2005 05 04 | G96 | 0.3− | 0.1+ | 2006 10 01 | 703 | 0.2+ | 0.1+ |
| 1999 11 17 | 704 | 0.2− | 0.2− | 2005 06 01 | G96 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 1999 11 17 | 704 | 0.1− | 0.5− | 2005 06 01 | G96 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1999 11 17 | 704 | 0.4+ | 1.1− | 2005 06 01 | G96 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 1999 12 04 | 703 | 0.6+ | 0.1− | 2005 06 01 | G96 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 1999 12 04 | 703 | 0.3+ | 0.9+ | 2006 08 21 | 704 | 0.7+ | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 1999 12 04 | 703 | 0.1− | 0.9+ | 2006 08 21 | 704 | 0.4− | 0.4− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 1999 12 04 | 703 | 0.4+ | 0.1− | 2006 08 21 | 704 | 1.5− | 1.1+ | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 1999 12 05 | 703 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 1999 12 05 | 703 | 0.7− | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 1999 12 05 | 703 | 0.4− | 0.4+ | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.3+ |
| 1999 12 05 | 703 | (0.5+ | 4.1+) | 2006 09 01 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 1999 12 07 | 704 | 0.8+ | 0.5− | 2006 09 01 | 704 | 0.2+ | 0.1− | 2006 11 10 | 704 | (0.2− | 2.0+) |
| 1999 12 07 | 704 | 0.8+ | 0.4− | 2006 09 01 | 704 | 0.4− | 0.3+ | 2006 11 10 | 704 | (1.4− | 1.7+) |
| 1999 12 07 | 704 | 1.0+ | 0.1+ | 2006 09 01 | 704 | 0.1− | 0.3+ | 2006 11 10 | 704 | (1.1− | 1.9+) |
| 1999 12 07 | 704 | 0.5+ | 0.4− | 2006 09 01 | 704 | 0.3− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.4+ |
| 1999 12 07 | 704 | 0.9+ | 0.9− | 2006 09 12 | 703 | 0.2− | 0.3− | 2006 11 10 | 704 | 0.4+ | 0.0 |
| 1999 12 08 | 704 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.4− | 0.7− | 2006 11 11 | 703 | 1.1− | 0.3− |
| 1999 12 08 | 704 | 0.6+ | 0.2+ | 2006 09 12 | 703 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 1999 12 08 | 704 | 0.8+ | 0.2− | 2006 09 12 | 703 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.3− | 0.6+ |
| 1999 12 08 | 704 | 0.4+ | 1.0− | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 1999 12 08 | 704 | 0.1− | 0.4− | 2006 09 16 | 699 | 1.0− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2003 10 25 | 691 | 0.4− | 0.1− | 2006 09 16 | 699 | 0.5+ | 0.5+ | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2003 10 25 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.6+ | 0.5+ | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2003 10 25 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 1.4+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2004 01 16 | 644 | 0.4+ | 0.9+ | 2006 09 17 | 704 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2004 01 16 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.5+ | 0.4− | 2006 11 18 | 704 | 1.0+ | 0.7+ |
| 2004 01 16 | 644 | 0.3+ | 0.7+ | 2006 09 17 | 704 | (2.6+ | 0.0 ) | 2006 11 18 | 703 | 0.1− | 0.2− |
| 2004 01 17 | 644 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.5− | 0.2+ | 2006 11 18 | 703 | 0.0 | 0.3+ |
| 2004 01 17 | 644 | 0.7+ | 0.4+ | 2006 09 20 | 704 | 0.8− | 0.5+ | 2006 11 18 | 704 | 0.9− | 0.9+ |
| 2004 01 17 | 644 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.3− | 0.4+ | 2006 11 18 | 703 | 0.8− | 0.5− |
| 2004 01 21 | 704 | 0.2− | 1.4+ | 2006 09 20 | 704 | 0.0 | 0.6+ | 2006 11 18 | 704 | 1.2− | 1.3+ |
| 2004 01 21 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 11 18 | 703 | 0.7− | 0.0 |
| 2004 01 21 | 704 | 0.5− | 0.8+ | 2006 09 20 | 704 | 0.4− | 0.5+ | | | | |
| 2004 01 22 | 704 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.1− | 0.4+ | | | | |

**(137516)∗ 1999 VY$_{41}$ = 2002 PU$_{159}$**

Discovered 1999 Nov. 4 by Spacewatch at Kitt Peak.

Id. K. E. Smalley (*MPO* 46385)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.77313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28141850 | $\omega$ | 274.20760 | | −0.12962928 | | +0.99146991 |
| $a$ | 2.3062212 | $\Omega$ | 348.31807 | | −0.88112371 | | −0.12144935 |
| $e$ | 0.1276244 | $i$ | 3.83793 | | −0.45477166 | | −0.04730204 |
| $P$ | 3.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.2+ | 1.0+ | 2002 07 23 | 644 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 1998 04 21 | 704 | 0.6+ | 1.3+ | 2002 07 23 | 644 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 1998 04 21 | 704 | 1.1+ | 0.7− | 2002 08 08 | 644 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1− |
| 1998 04 21 | 704 | 1.5+ | 0.6+ | 2002 08 08 | 644 | 0.6+ | 0.9− | 2006 10 03 | 691 | 0.1+ | 0.1− |
| 1999 10 13 | 704 | 0.7+ | 1.2+ | 2002 08 08 | 644 | 0.2+ | 0.2− | 2006 10 03 | 691 | 0.2+ | 0.2− |
| 1999 10 13 | 704 | 1.0− | 1.0+ | 2002 08 15 | 644 | 0.0 | 0.3− | 2006 10 03 | 691 | 0.1+ | 0.0 |
| 1999 10 13 | 704 | 0.3+ | 0.7+ | 2002 08 15 | 644 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.6+ |
| 1999 10 13 | 704 | 0.3+ | 0.4+ | 2002 08 15 | 644 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.5+ |
| 1999 10 13 | 704 | 0.6− | 1.3+ | 2002 08 18 | 644 | 0.5− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.4+ |
| 1999 11 04 | 691 | 0.2− | 0.4− | 2002 08 18 | 644 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 |
| 1999 11 04 | 691 | 0.4− | 0.2− | 2002 08 18 | 644 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.5− | 0.2− |
| 1999 11 04 | 691 | 0.1− | 0.3− | 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 |
| 1999 11 11 | 691 | 0.2+ | 0.4− | 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 1999 11 11 | 691 | 0.3+ | 0.4− | 2002 08 29 | 644 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 1999 11 11 | 691 | 0.2+ | 0.2− | 2005 05 06 | 703 | 1.2− | 1.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 1999 11 13 | 691 | 0.1− | 0.1− | 2005 05 06 | 703 | (1.5− | 2.2+) | 2006 11 10 | 691 | 0.0 | 0.3− |
| 1999 11 13 | 691 | 0.2− | 0.1+ | 2005 05 06 | 703 | 0.8− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 1999 11 13 | 691 | 0.4− | 0.3+ | 2005 05 06 | 703 | 1.0− | 0.7− | 2006 11 10 | 691 | 0.4− | 0.1− |
| 2002 07 15 | 644 | 0.0 | 0.0 | 2005 05 10 | 699 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2002 07 15 | 644 | 0.0 | 0.3+ | 2005 05 10 | 699 | (0.7+ | 2.1+) | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2002 07 15 | 644 | 0.0 | 0.3+ | 2005 05 10 | 699 | 0.7+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2002 07 23 | 644 | 0.1− | 0.0 | 2005 05 10 | 699 | 0.5− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.1− |

**(137517)∗ 1999 VT$_{42}$ = 1999 VL$_{44}$**

Discovered 1999 Nov. 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (d, MPC 38194)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.47068 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28516356 | $\omega$ | 38.03770 | | +0.98043045 | | +0.19571264 |
| $a$ | 2.2859850 | $\Omega$ | 310.66221 | | −0.18679825 | | +0.89072338 |
| $e$ | 0.1825002 | $i$ | 1.60729 | | −0.06214943 | | +0.41025410 |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.3− | 0.3− | 1999 11 13 | 691 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 1999 10 10 | 704 | 0.6− | 0.9+ | 1999 11 13 | 691 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 1999 10 10 | 704 | 1.1− | 0.0 | 1999 11 14 | 704 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 1999 10 10 | 704 | 0.1+ | 0.3− | 1999 11 14 | 704 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.3+ | 0.1+ |
| 1999 10 10 | 704 | 0.3− | 0.2− | 1999 11 14 | 704 | 0.5+ | 0.4− | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 1999 10 13 | 704 | 0.4− | 0.4+ | 1999 11 14 | 704 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.3− | 0.1+ | 1999 11 14 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.7+ |
| 1999 10 13 | 704 | 0.1+ | 0.4+ | 2001 02 20 | 645 | 0.0 | 0.1− | 2006 11 15 | 704 | 1.5− | 0.9− |
| 1999 10 13 | 704 | 0.6− | 0.8+ | 2001 02 20 | 645 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.4− | 0.6− |
| 1999 10 13 | 704 | 0.4− | 0.9+ | 2003 12 21 | 691 | 0.1− | 0.3− | 2006 11 15 | 704 | 1.3− | 0.9− |
| 1999 10 15 | 704 | 0.4+ | 0.1− | 2003 12 21 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 0.4+ | 0.7− | 2003 12 21 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.7+ | 0.3+ | 2003 12 28 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 1999 10 21 | 704 | 0.3+ | 0.6+ | 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 1.4+ |
| 1999 10 21 | 704 | 0.7+ | 0.9+ | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.2− | 1.1+ |
| 1999 10 21 | 704 | 0.2+ | 0.7− | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.3− | 0.8+ |
| 1999 11 03 | 703 | 0.2− | 0.2+ | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | (1.4− | 1.7+) |
| 1999 11 03 | 703 | 0.7− | 0.7− | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 1999 11 03 | 703 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 1999 11 03 | 703 | 1.3+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 1999 11 04 | 691 | 0.4+ | 0.3− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 1999 11 04 | 691 | 0.2+ | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 1999 11 04 | 704 | 0.1− | 1.6− | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.0 |
| 1999 11 04 | 704 | 0.3+ | 0.4− | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 1.2+ | 0.4− |
| 1999 11 04 | 691 | 0.3+ | 0.3− | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 1999 11 04 | 703 | 0.3+ | 0.9+ | 2006 10 29 | 704 | 0.5+ | 0.3− | 2006 11 22 | 704 | 1.0+ | 0.2+ |
| 1999 11 04 | 704 | 0.1+ | 1.2− | 2006 10 29 | 704 | 0.2+ | 0.7− | 2006 11 22 | 704 | 0.5+ | 0.3− |
| 1999 11 04 | 703 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.9− | 1.1− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 1999 11 04 | 704 | 0.1− | 0.3− | 2006 10 29 | 704 | (0.2+ | 1.7+) | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 1999 11 04 | 703 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 1999 11 04 | 703 | 1.4− | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.4− |
| 1999 11 11 | 691 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 1999 11 11 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.6− | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 1999 11 11 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.9− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 1999 11 13 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.2− |

**(137518)∗ 1999 VA$_{43}$**

Discovered 1999 Nov. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.22461 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26879976 | $\omega$ | 154.09123 | | +0.83980738 | | +0.54286537 |
| $a$ | 2.3778445 | $\Omega$ | 173.02462 | | −0.50437920 | | +0.78331852 |
| $e$ | 0.2232911 | $i$ | 2.14968 | | −0.20081134 | | +0.30283541 |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.4+ | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.3− |
| 1995 08 20 | 809 | 0.5+ | 0.7+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.8− | 0.0 |
| 1995 08 27 | 809 | (0.1− | 3.4−) | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.7− | 0.4+ |
| 1995 09 17 | 809 | 0.0 | 0.8− | 2006 08 21 | 704 | 0.0 | 0.9+ | 2006 09 16 | 699 | 0.7− | 1.0+ |
| 1995 09 20 | 809 | 0.0 | 0.2− | 2006 08 21 | 704 | 0.8− | 0.2− | 2006 09 16 | 699 | 0.7+ | 0.1+ |
| 1995 09 22 | 809 | 0.5− | 0.6− | 2006 08 21 | 704 | 0.5+ | 0.3− | 2006 09 17 | 704 | 0.4− | 1.1+ |
| 1999 11 04 | 691 | 0.8+ | 0.0 | 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.7+ | 1.4+ |
| 1999 11 04 | 691 | 0.9+ | 0.2− | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.3− | 1.3+ |
| 1999 11 04 | 691 | 0.5+ | 0.5− | 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.0 | 0.3+ |
| 1999 11 10 | 691 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.1− | 0.0 | 2006 09 19 | D35 | 0.0 | 0.2− |
| 1999 11 10 | 691 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.1− | 2006 09 19 | D35 | 0.1− | 0.1+ |
| 1999 11 10 | 691 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 19 | D35 | 0.1− | 0.0 |
| 1999 11 11 | 691 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.6− | 2006 09 20 | 704 | 1.5+ | 0.5+ |
| 1999 11 11 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.4− | 2006 09 20 | 704 | 0.6+ | 0.2− |
| 1999 11 11 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.4− | 2006 09 20 | 704 | 1.0+ | 0.0 |
| 1999 11 15 | 704 | 0.6− | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.5− | 2006 09 20 | 704 | 0.9+ | 0.5− |
| 1999 11 15 | 704 | 0.0 | 0.5− | 2006 08 28 | 691 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.0 |
| 1999 11 15 | 704 | 0.1+ | 1.0+ | 2006 08 28 | 691 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.7+ |
| 1999 11 28 | 691 | 0.5− | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.1− | 2006 09 30 | 703 | (1.6+ | 0.3+) |
| 1999 11 28 | 691 | 0.5− | 0.3+ | 2006 09 01 | 704 | 0.2− | 0.6− | 2006 09 30 | 703 | 0.4− | 0.7− |
| 1999 11 28 | 691 | 0.7− | 0.1+ | 2006 09 01 | 704 | 0.4+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 01 | 704 | 1.1+ | 0.8− | 2006 10 19 | 695 | 0.2+ | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.4+ | 2006 09 01 | 704 | 0.2+ | 0.8− | 2006 10 19 | 695 | 0.1+ | 0.1− |
| 2005 04 02 | G96 | 0.8− | 0.0 | 2006 09 12 | 703 | 0.4+ | 0.0 | 2006 10 20 | 695 | 0.2+ | 0.1− |
| 2005 04 02 | G96 | 0.5+ | 0.6+ | 2006 09 12 | 703 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2005 04 04 | G96 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 1.3+ | 0.6− | 2006 11 15 | G96 | 0.4− | 0.0 |
| 2005 04 04 | G96 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2005 04 04 | G96 | 0.5+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2005 04 04 | G96 | 0.5− | 0.3− | 2006 09 13 | 644 | 0.1+ | 0.5− | | | | |

**(137519)∗ 1999 VW$_{43}$**

Discovered 1999 Nov. 1 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.92209 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28850916 | $\omega$ | 347.40440 | | +0.92106044 | | −0.38829219 |
| $a$ | 2.2682781 | $\Omega$ | 35.48974 | | +0.36156413 | | +0.82445816 |
| $e$ | 0.2584350 | $i$ | 2.92366 | | +0.14463420 | | +0.41170125 |
| $P$ | 3.42 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.0 | 0.3− | 1999 11 09 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 703 | 0.3+ | 1.1− |
| 1999 09 05 | 699 | 1.6− | 0.3+ | 1999 11 09 | 704 | 0.1− | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 1999 09 05 | 699 | 0.9− | 1.8+ | 1999 11 09 | 704 | 1.3+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.5− |
| 1999 10 03 | 703 | 0.1− | 0.2+ | 1999 11 09 | 704 | 0.7− | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 1999 10 03 | 703 | 0.3− | 0.5+ | 1999 11 12 | 704 | 0.6+ | 0.5− | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 1999 10 03 | 703 | 0.1− | 0.0 | 1999 11 12 | 704 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 1999 10 03 | 703 | 0.2− | 0.5+ | 1999 11 12 | 704 | 1.1− | 0.2+ | 2006 11 10 | 691 | 1.3− | 0.3− |
| 1999 10 04 | 704 | 0.0 | 0.2− | 1999 11 16 | 704 | (2.3+ | 0.0 ) | 2006 11 10 | 691 | 0.3+ | 0.8− |
| 1999 10 04 | 704 | 0.3− | 0.2− | 1999 11 16 | 704 | 1.0+ | 1.8+ | 2006 11 10 | 691 | 0.6+ | 0.9− |
| 1999 10 04 | 704 | 0.2− | 0.2− | 1999 11 16 | 704 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 1999 10 04 | 704 | 0.0 | 0.5+ | 1999 11 16 | 704 | 0.2+ | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1999 10 04 | 704 | 0.1− | 0.6+ | 1999 12 05 | 704 | 0.9+ | 1.8− | 2006 11 15 | 704 | 0.2− | 0.4+ |
| 1999 10 07 | 704 | 0.3− | 0.3+ | 1999 12 05 | 704 | 0.4+ | 0.9− | 2006 11 15 | 704 | 0.5− | 1.0+ |
| 1999 10 07 | 704 | 1.1− | 1.0+ | 1999 12 05 | 704 | 0.2+ | 0.3− | 2006 11 15 | 704 | 0.1+ | 0.5+ |
| 1999 10 07 | 704 | 0.5− | 0.2+ | 1999 12 05 | 704 | 0.7+ | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.8+ |
| 1999 10 07 | 704 | 0.2− | 0.3+ | 1999 12 07 | 704 | (0.1− | 2.0−) | 2006 11 15 | 704 | 0.1+ | 1.1+ |
| 1999 10 09 | 704 | 0.3− | 0.8+ | 1999 12 07 | 704 | 0.4− | 0.9− | 2006 11 16 | 704 | 0.1+ | 1.0+ |
| 1999 10 09 | 704 | 0.1+ | 0.4+ | 1999 12 07 | 704 | 0.1− | 0.7− | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 1999 10 09 | 704 | 0.8+ | 0.4+ | 1999 12 07 | 704 | 0.0 | 1.0− | 2006 11 16 | 704 | 1.3− | 1.3+ |
| 1999 10 09 | 704 | 0.4− | 0.4+ | 2001 03 21 | 691 | 0.4+ | 0.6+ | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2001 03 21 | 691 | 0.7+ | 0.3+ | 2006 11 16 | 704 | 1.0− | 1.0+ |
| 1999 10 13 | 699 | 0.5− | 0.2+ | 2001 03 21 | 691 | 0.0 | 1.0+ | 2006 11 16 | 704 | 0.0 | 0.8+ |
| 1999 10 13 | 699 | 0.9− | 0.7+ | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 1.2− | 0.2− |
| 1999 10 13 | 699 | 0.5− | 0.5+ | 2004 01 22 | 704 | 0.9+ | 0.8+ | 2006 11 16 | 704 | 0.4+ | 0.3− |
| 1999 10 15 | 704 | 0.7+ | 0.2+ | 2004 01 22 | 704 | 0.7+ | 0.0 | 2006 11 16 | 691 | (2.6+ | 2.6+) |
| 1999 10 15 | 704 | 0.5+ | 0.1+ | 2004 01 22 | 704 | 1.3+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 1999 10 15 | 704 | 1.1+ | 0.3− | 2004 02 13 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.6+ | 0.1− |
| 1999 10 15 | 704 | 0.8+ | 0.2+ | 2004 02 13 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 1999 10 15 | 704 | 1.0+ | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 1999 10 19 | 704 | 0.2+ | 0.3− | 2004 02 19 | 704 | (0.1+ | 1.6+) | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 1999 10 19 | 704 | 0.4+ | 0.3− | 2004 02 19 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 1999 10 19 | 704 | 0.5− | 0.1− | 2004 02 19 | 704 | 0.0 | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 1999 10 19 | 704 | 0.2+ | 0.3+ | 2004 02 19 | 704 | 0.9− | 0.8+ | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 1999 10 19 | 704 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 1999 11 01 | 703 | 0.6− | 0.3− | 2004 02 23 | 704 | 0.8+ | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.7− | 0.2+ | 2004 02 23 | 704 | 0.2− | 0.1+ | 2006 11 22 | 704 | (2.6+ | 0.3+) |
| 1999 11 01 | 703 | 0.1− | 0.6+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 1999 11 01 | 703 | 0.7− | 0.9+ | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 1999 11 04 | 703 | 0.6− | 0.0 | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 1999 11 04 | 703 | 0.7− | 0.2+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 11 27 | 704 | 0.5+ | 1.0− |
| 1999 11 04 | 703 | 0.5− | 0.6− | 2006 08 29 | 703 | 0.9− | 0.9+ | 2006 11 27 | 704 | 0.8+ | 0.5− |
| 1999 11 04 | 703 | 0.7− | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.4− | 2006 11 27 | 704 | 0.5+ | 1.1− |
| 1999 11 05 | 704 | 0.3− | 0.3+ | 2006 08 29 | 703 | (1.6+ | 0.4−) | 2006 11 28 | 704 | 0.7− | 0.9− |
| 1999 11 05 | 704 | 0.1− | 0.4+ | 2006 08 29 | 703 | 0.5+ | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 1999 11 05 | 704 | 0.4− | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.5− | 0.6− |
| 1999 11 05 | 704 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.1− |
| 1999 11 05 | 704 | 1.5− | 1.2+ | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 11 28 | 704 | 0.2− | 0.8− |

**(137520)∗ 1999 VP$_{44}$**

Discovered 1999 Nov. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.57596 | | (2000.0) | | +0.52500685 | −0.85026478 |
| $n$ | 0.27293076 | $\omega$ | 82.29968 | | +0.73997899 | +0.47787073 |
| $a$ | 2.3537900 | $\Omega$ | 335.91542 | | +0.42047462 | +0.22065669 |
| $e$ | 0.1936290 | $i$ | 5.29382 | | | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 07 | 691 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.5+ | 0.7+ | 2006 08 19 | 691 | 0.4− | 0.4+ |
| 1997 02 07 | 691 | 0.1+ | 0.1− | 2003 12 23 | 704 | 0.4+ | 0.3+ | 2006 08 21 | 704 | 0.3+ | 0.1− |
| 1997 02 07 | 691 | 0.3− | 0.1+ | 2003 12 23 | 704 | 0.2+ | 1.0+ | 2006 08 21 | 704 | 0.4+ | 0.2+ |
| 1999 10 01 | 703 | (2.6− | 1.1−) | 2003 12 28 | 704 | 0.2+ | 0.6+ | 2006 08 21 | 704 | 0.1+ | 0.6+ |
| 1999 10 01 | 703 | 0.0 | 1.0− | 2003 12 28 | 704 | 0.2+ | 0.6+ | 2006 08 21 | 704 | 0.4− | 0.1+ |
| 1999 10 01 | 703 | 0.6− | 0.9+ | 2003 12 28 | 704 | 0.1+ | 0.1+ | 2006 08 25 | 704 | 0.4+ | 1.2− |
| 1999 10 01 | 703 | 0.2+ | 0.6+ | 2003 12 28 | 704 | 0.0 | 0.5+ | 2006 08 25 | 704 | 0.4− | 0.6− |
| 1999 10 10 | 704 | 0.6− | 0.2+ | 2003 12 28 | 704 | 0.1− | 0.3+ | 2006 08 25 | 704 | 0.6− | 0.9+ |
| 1999 10 10 | 704 | 1.2− | 0.3+ | 2004 01 13 | 699 | 0.4− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 1999 10 10 | 704 | 0.9− | 0.1+ | 2004 01 13 | 699 | 1.0− | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.6+ |
| 1999 10 10 | 704 | 1.1− | 0.0 | 2004 01 13 | 699 | 0.2+ | 0.3− | 2006 08 27 | 691 | 0.0 | 0.6+ |
| 1999 10 10 | 704 | 0.9− | 0.2− | 2004 01 13 | 699 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.4− | 1.2+ |
| 1999 10 14 | 645 | 0.2+ | 0.2− | 2004 01 16 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.7− | 0.8− |
| 1999 10 14 | 645 | 0.1+ | 0.2− | 2004 01 16 | 691 | 0.2− | 0.2+ | 2006 08 28 | 703 | 1.0− | 1.0− |
| 1999 11 04 | 703 | 0.0 | 0.6+ | 2004 01 16 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.5+ |
| 1999 11 04 | 704 | 0.9+ | 0.5+ | 2004 01 19 | 699 | 0.7− | 0.1+ | 2006 09 12 | 704 | 0.0 | 0.3− |
| 1999 11 04 | 703 | 0.7+ | 0.4+ | 2004 01 19 | 699 | 0.7− | 0.2− | 2006 09 12 | 704 | 0.3+ | 0.9+ |
| 1999 11 04 | 703 | 0.3− | 0.8+ | 2004 01 19 | 699 | 0.5− | 0.7− | 2006 09 12 | 704 | 0.9+ | 0.4− |
| 1999 11 04 | 704 | 0.7+ | 0.9− | 2004 01 19 | 699 | 0.5+ | 1.1− | 2006 09 12 | 704 | 0.3− | 0.9− |
| 1999 11 04 | 703 | 0.1− | 0.4− | 2004 02 15 | 704 | 1.0+ | 0.9+ | 2006 09 14 | 703 | 0.6− | 0.3− |
| 1999 11 04 | 704 | 0.4+ | 1.1− | 2004 02 15 | 704 | 0.9+ | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 1999 11 11 | 703 | 0.1− | 0.3+ | 2004 02 15 | 704 | 1.0+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.6+ |
| 1999 11 11 | 703 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.8+ | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.5+ |
| 1999 11 11 | 703 | 0.5+ | 0.4+ | 2004 02 15 | 704 | 0.7+ | 0.0 | 2006 09 20 | 704 | 0.8− | 0.2+ |
| 1999 11 11 | 703 | (1.0+ | 2.3+) | 2004 02 23 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 704 | 0.6+ | 0.1− |
| 2003 12 18 | 704 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.6− |
| 2003 12 18 | 704 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.8+ | 0.2− | 2006 09 20 | 704 | 0.4− | 0.3+ |
| 2003 12 18 | 704 | 0.3− | 0.4− | 2004 02 23 | 704 | 0.6− | 0.6+ | 2006 09 25 | 699 | 0.5− | 1.1+ |
| 2003 12 18 | 704 | 0.4− | 0.6− | 2004 02 23 | 704 | 1.6+ | 0.7− | 2006 09 25 | 699 | (2.2+ | 1.1+) |
| 2003 12 18 | 704 | 0.2− | 0.3+ | 2004 03 23 | 291 | 0.7+ | 0.4+ | 2006 09 25 | 699 | 1.6+ | 0.6+ |
| 2003 12 21 | 704 | 0.1+ | 1.7+ | 2004 03 23 | 291 | 0.3+ | 0.2+ | 2006 09 25 | 699 | (2.6+ | 0.1+) |
| 2003 12 21 | 704 | 0.8− | 0.2− | 2004 03 23 | 291 | 0.6+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2003 12 21 | 704 | 0.4− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2003 12 21 | 704 | 0.9− | 0.1− | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.2+ |
| 2003 12 21 | 704 | 0.7− | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2003 12 23 | 704 | 0.0 | 0.5+ | 2006 08 19 | 691 | 0.2− | 0.3+ | | | | |
| 2003 12 23 | 704 | 0.6+ | 0.8+ | 2006 08 19 | 691 | 0.3− | 0.3+ | | | | |

**(137521)∗ 1999 VZ$_{46}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.30071 | | (2000.0) | | +0.83517302 | +0.54410272 |
| $n$ | 0.28357052 | $\omega$ | 111.31636 | | −0.54159317 | +0.78823486 |
| $a$ | 2.2945384 | $\Omega$ | 215.85724 | | −0.09572288 | +0.28746832 |
| $e$ | 0.1642885 | $i$ | 7.87316 | | | |
| $P$ | 3.48 | $H$ | 16.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.5+ | 0.9− | 2002 07 09 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 0.1+ | 0.7− | 2002 07 09 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 0.5+ | 0.6− | 2002 07 09 | 704 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.0 | 1.0− | 2002 07 09 | 704 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 1999 10 06 | 704 | 0.2− | 0.4− | 2002 08 12 | 704 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 1999 10 10 | 691 | 0.1+ | 0.1− | 2002 08 12 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.3− | 1.4− |
| 1999 10 10 | 691 | 0.0 | 0.1− | 2002 08 12 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 1999 10 10 | 691 | 0.2+ | 0.0 | 2002 08 12 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.2− | 1.3− |
| 1999 10 21 | 704 | 0.3− | 1.2− | 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 1999 10 21 | 704 | 0.8− | 0.1− | 2005 04 12 | G96 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 1999 10 21 | 704 | 0.4+ | 1.3+ | 2005 04 12 | G96 | 0.4− | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 1999 11 04 | 704 | 0.8+ | 0.0 | 2005 04 12 | G96 | 0.6− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 1999 11 04 | 704 | 0.0 | 0.4− | 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 1999 11 04 | 704 | 1.8− | 1.3− | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | (1.8+ | 0.0 ) |
| 1999 11 04 | 704 | 0.6− | 1.5− | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.8+ |
| 1999 11 12 | 704 | 0.6+ | 1.2+ | 2005 05 01 | 644 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.5+ | 0.7+ |
| 1999 11 12 | 704 | 1.4+ | 0.2− | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.2− | 1.1+ |
| 1999 11 12 | 704 | 0.4− | 0.2− | 2005 05 01 | 644 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.4− | 0.1+ |
| 1999 11 12 | 704 | 0.3− | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.3+ |
| 1999 11 12 | 704 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.8+ | 0.7+ |
| 2002 06 10 | 704 | (2.0− | 0.6+) | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.8− | 1.6+ |
| 2002 06 10 | 704 | 1.0− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.5+ | 2006 11 28 | 704 | 0.3− | 0.9+ |
| 2002 06 10 | 704 | (2.2− | 1.2+) | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.1− |
| 2002 06 10 | 704 | 0.8− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.2+ | | | | |
| 2002 07 09 | 704 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1+ | | | | |

**(137522)∗ 1999 VD$_{48}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.83638 | | (2000.0) | | +0.51866674 | −0.85486097 |
| $n$ | 0.28499556 | $\omega$ | 63.44753 | | +0.71178708 | +0.44085011 |
| $a$ | 2.2868832 | $\Omega$ | 355.23775 | | +0.47364962 | +0.27361269 |
| $e$ | 0.1510357 | $i$ | 9.74642 | | | |
| $P$ | 3.46 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 12 | 703 | 0.9− | 0.6− | 2002 07 16 | 644 | 0.6− | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.8+ |
| 1999 09 12 | 703 | (2.2− | 1.0−) | 2002 07 16 | 644 | 0.4− | 0.1+ | 2006 08 29 | 703 | 0.5+ | 0.0 |
| 1999 09 12 | 703 | 0.8− | 0.5+ | 2002 07 16 | 644 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.4+ |
| 1999 09 12 | 703 | (0.2+ | 2.1−) | 2002 07 29 | 644 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.3− |
| 1999 10 03 | 704 | (2.3+ | 1.6+) | 2002 07 29 | 644 | 0.1− | 1.2+ | 2006 09 18 | 703 | 0.3− | 0.4+ |
| 1999 10 03 | 704 | 1.5+ | 0.3− | 2002 07 29 | 644 | 0.1− | 1.2+ | 2006 09 18 | 703 | 0.8− | 0.6− |
| 1999 10 03 | 704 | 0.7+ | 0.4+ | 2002 08 30 | 644 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.9− |
| 1999 10 03 | 704 | 1.1+ | 0.2− | 2002 08 30 | 644 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.4− |
| 1999 10 12 | 704 | 0.1+ | 0.4− | 2002 08 30 | 644 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.2− |
| 1999 10 12 | 704 | 0.4− | 0.3− | 2004 01 30 | 704 | 0.3+ | 1.0+ | 2006 10 29 | 703 | 0.8+ | 0.5+ |
| 1999 10 12 | 704 | 0.5− | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2006 10 29 | 703 | 0.4+ | 0.6+ |
| 1999 10 12 | 704 | 0.5− | 0.4− | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2006 10 29 | 703 | 0.9+ | 0.8+ |
| 1999 10 12 | 704 | 0.7− | 0.5+ | 2004 01 30 | 704 | 0.0 | 0.6+ | 2006 10 29 | 703 | 0.1+ | 0.1− |
| 1999 10 28 | 703 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.9+ | 2006 11 14 | 644 | 0.2+ | 0.0 |
| 1999 10 28 | 703 | 0.5+ | 0.3− | 2004 02 16 | 704 | 0.2+ | 0.4− | 2006 11 14 | 704 | 0.5− | 0.2− |
| 1999 10 28 | 703 | 0.2− | 0.2+ | 2004 02 16 | 704 | 0.3− | 0.1− | 2006 11 14 | 644 | 0.1+ | 0.1+ |
| 1999 10 28 | 703 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.2+ | 0.5− | 2006 11 14 | 704 | 0.0 | 0.4+ |
| 1999 11 03 | 704 | 0.2+ | 0.5− | 2004 02 16 | 704 | 0.0 | 0.2+ | 2006 11 14 | 644 | 0.1+ | 0.0 |
| 1999 11 03 | 704 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.2+ | 0.1− |
| 1999 11 03 | 704 | 0.7− | 0.7− | 2004 02 27 | 608 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.3− | 0.0 |
| 1999 11 03 | 704 | 1.4+ | 0.7+ | 2004 02 27 | 608 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.5+ | 0.6− | 2004 02 27 | 608 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.4− | 0.2− |
| 1999 11 04 | 704 | 0.8+ | 0.3− | 2004 04 19 | 704 | 1.3+ | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.9+ |
| 1999 11 04 | 704 | 0.3+ | 0.0 | 2004 04 19 | 704 | 0.0 | 0.5+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 1999 11 04 | 704 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 11 17 | 644 | 0.1− | 0.0 |
| 1999 11 04 | 704 | 0.9− | 0.3+ | 2006 08 29 | 703 | 1.4− | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.1− |
| 1999 11 04 | 704 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.2+ | | | | |

**(137523)∗ 1999 VJ$_{49}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.39977 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26957968 | $\omega$ | 147.17089 | | +0.79842245 | −0.59595789 |
| $a$ | 2.3732561 | $\Omega$ | 249.64611 | | +0.53080969 | +0.76394550 |
| $e$ | 0.1120690 | $i$ | 5.24861 | | +0.28418773 | +0.24742971 |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 1.2+ | 0.7+ | 1999 12 04 | 703 | 0.1+ | 0.5+ | 2006 08 21 | 691 | 0.0 | 0.0 |
| 1999 10 12 | 704 | 0.5+ | 0.1− | 1999 12 04 | 703 | 0.6− | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.0 |
| 1999 10 12 | 704 | 0.5+ | 0.3− | 1999 12 07 | 704 | 1.0+ | 0.8+ | 2006 08 21 | 691 | 0.0 | 0.0 |
| 1999 10 12 | 704 | 1.5+ | 0.8− | 1999 12 07 | 704 | 0.1+ | 0.5− | 2006 08 27 | 699 | 0.1− | 0.0 |
| 1999 10 22 | 704 | 0.1− | 0.3+ | 1999 12 07 | 704 | 0.7− | 0.5+ | 2006 08 27 | 699 | 0.3+ | 0.5+ |
| 1999 10 22 | 704 | 1.2+ | 1.3− | 2002 07 03 | 644 | 0.2− | 1.1+ | 2006 08 27 | 699 | 0.1+ | 0.4+ |
| 1999 10 22 | 704 | 1.1+ | 0.5− | 2002 07 03 | 644 | 0.3− | 0.7+ | 2006 08 27 | 699 | 0.6+ | 0.6+ |
| 1999 10 29 | 703 | 0.2+ | 0.1+ | 2002 07 03 | 644 | 0.1+ | 0.8+ | 2006 08 28 | 704 | 0.6− | 0.0 |
| 1999 10 29 | 703 | 0.6+ | 0.4− | 2003 12 19 | 704 | 0.2+ | 0.4+ | 2006 08 28 | 704 | 0.0 | 0.2+ |
| 1999 10 29 | 703 | 0.7− | 0.4+ | 2003 12 19 | 704 | 0.3− | 0.1− | 2006 08 28 | 704 | (0.4+ | 1.7−) |
| 1999 10 29 | 703 | 0.8− | 0.2+ | 2003 12 19 | 704 | 0.1− | 0.1+ | 2006 08 28 | 704 | 1.0− | 0.9+ |
| 1999 11 03 | 704 | 0.8− | 0.2+ | 2003 12 19 | 704 | 0.3+ | 0.7− | 2006 08 29 | 703 | 0.3− | 0.1+ |
| 1999 11 03 | 704 | 0.1+ | 1.3+ | 2003 12 19 | 704 | 0.7− | 0.3− | 2006 08 29 | 703 | 0.4+ | 0.7+ |
| 1999 11 03 | 704 | 0.4− | 0.7+ | 2003 12 23 | 704 | 0.2− | 0.4+ | 2006 08 29 | 703 | 0.2+ | 0.7+ |
| 1999 11 03 | 704 | 0.1− | 0.0 | 2003 12 23 | 704 | 0.6− | 0.1− | 2006 08 29 | 703 | 0.2− | 0.3+ |
| 1999 11 03 | 704 | 0.2− | 0.1+ | 2003 12 23 | 704 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.3− |
| 1999 11 04 | 704 | 0.5− | 0.1− | 2003 12 23 | 704 | 0.5− | 0.3+ | 2006 09 12 | 703 | 0.1− | 0.7− |
| 1999 11 04 | 704 | 1.2+ | 0.9+ | 2003 12 23 | 704 | 0.3− | 0.2− | 2006 09 12 | 703 | 0.5− | 0.4− |
| 1999 11 04 | 704 | 0.8− | 0.6− | 2003 12 27 | 704 | 0.8+ | 0.6+ | 2006 09 12 | 703 | (2.5− | 1.6+) |
| 1999 11 04 | 704 | 0.7− | 0.1+ | 2003 12 27 | 704 | 0.4+ | 0.7− | 2006 09 12 | 224 | 0.3− | 0.3− |
| 1999 11 04 | 704 | 0.3+ | 0.8+ | 2003 12 27 | 704 | 0.4+ | 0.5+ | 2006 09 12 | 224 | 0.5− | 0.1+ |
| 1999 11 06 | 704 | 0.9− | 1.0+ | 2003 12 27 | 704 | 1.4+ | 0.7+ | 2006 09 12 | 224 | 0.2− | 0.0 |
| 1999 11 06 | 704 | 0.4+ | 1.7− | 2003 12 28 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.1+ | 1.0− |
| 1999 11 06 | 704 | 1.1+ | 2.0− | 2003 12 28 | 704 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.6− |
| 1999 11 06 | 704 | (2.0+ | 1.9−) | 2003 12 28 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.4− |
| 1999 11 11 | 703 | 1.0− | 0.3+ | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.7− |
| 1999 11 11 | 703 | 0.4− | 0.8− | 2003 12 28 | 704 | 0.7+ | 0.1+ | 2006 09 20 | 699 | 0.6+ | 0.6+ |
| 1999 11 11 | 703 | 0.8− | 0.1− | 2003 12 28 | 704 | 0.9+ | 0.1− | 2006 09 20 | 699 | 0.6− | 0.3+ |
| 1999 11 11 | 703 | 0.1+ | 0.3+ | 2003 12 28 | 704 | 0.2− | 0.0 | 2006 09 20 | 699 | (0.2− | 1.9+) |
| 1999 11 14 | 704 | 0.1− | 0.3− | 2003 12 28 | 704 | 0.4+ | 0.4− | 2006 09 20 | 699 | 0.0 | 0.2− |
| 1999 11 14 | 704 | 0.2− | 0.2− | 2003 12 29 | 704 | 0.3− | 0.0 | 2006 09 30 | 699 | 0.4+ | 0.5+ |
| 1999 11 14 | 704 | 0.0 | 0.1− | 2003 12 29 | 704 | 0.5− | 0.3+ | 2006 09 30 | 699 | 0.4+ | 1.0+ |
| 1999 11 14 | 704 | 1.2− | 0.3− | 2003 12 29 | 704 | 0.2− | 0.1− | 2006 09 30 | 699 | 0.5− | 0.9− |
| 1999 11 14 | 704 | 0.3+ | 0.2+ | 2003 12 30 | 704 | 0.1+ | 0.4− | 2006 09 30 | 699 | 0.7+ | 0.6+ |
| 1999 11 14 | 703 | 0.8− | 0.6− | 2003 12 30 | 704 | 0.2− | 0.9+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 1999 11 14 | 704 | 0.6+ | 0.4+ | 2003 12 30 | 704 | 0.1+ | 0.8+ | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 1999 11 14 | 703 | 0.2− | 0.1− | 2003 12 30 | 704 | 0.4− | 0.9+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 1999 11 14 | 703 | 0.2− | 0.6+ | 2003 12 30 | 704 | 0.1− | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 1999 11 16 | 704 | 0.9+ | 0.0 | 2004 01 03 | 704 | (1.1+ | 2.4+) | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 1999 11 16 | 704 | 0.3+ | 0.0 | 2004 01 03 | 704 | (1.6+ | 1.3+) | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 1999 11 16 | 704 | 0.9+ | 0.1− | 2004 01 03 | 704 | (0.2+ | 3.7+) | 2006 10 23 | 644 | 0.0 | 0.0 |
| 1999 11 16 | 704 | 0.7− | 0.5− | 2005 05 16 | G96 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 1999 11 16 | 704 | 0.0 | 1.4− | 2005 05 16 | G96 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 1999 12 04 | 703 | 0.4− | 0.4+ | 2005 05 16 | G96 | 0.0 | 0.1− | | | | |
| 1999 12 04 | 703 | 0.3− | 1.8− | 2005 05 16 | G96 | 0.2− | 0.3− | | | | |

**(137524)∗ 1999 VM$_{49}$ = 1997 EL$_{12}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 37834)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.34453 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26862956 | $\omega$ | 147.02759 | | +0.89956818 | −0.42799972 |
| $a$ | 2.3788489 | $\Omega$ | 238.55064 | | +0.37536651 | +0.85955169 |
| $e$ | 0.2422430 | $i$ | 5.86267 | | +0.22333173 | +0.27926175 |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 691 | 0.1− | 0.5− | 1999 11 04 | 704 | 0.4− | 0.2− | 1999 12 13 | 691 | 0.1− | 0.8− |
| 1997 03 03 | 691 | 0.2− | 0.8− | 1999 11 04 | 704 | 0.7− | 0.8+ | 1999 12 13 | 691 | 0.1− | 0.7− |
| 1997 03 03 | 691 | 0.8− | 0.5− | 1999 11 14 | 704 | 0.2− | 0.8− | 1999 12 13 | 691 | 0.2− | 0.8− |
| 1997 03 04 | 691 | 0.1+ | 0.0 | 1999 11 14 | 704 | 0.2+ | 0.0 | 2003 12 22 | 691 | 0.1+ | 0.6+ |
| 1997 03 04 | 691 | 0.1+ | 0.0 | 1999 11 14 | 704 | 0.5− | 0.5+ | 2003 12 22 | 691 | 0.1+ | 0.6+ |
| 1997 03 04 | 691 | 0.2+ | 0.1− | 1999 11 14 | 704 | 0.7− | 0.8− | 2003 12 22 | 691 | 0.2+ | 0.6+ |
| 1997 03 10 | 691 | 0.1− | 0.7− | 1999 11 14 | 704 | 0.0 | 0.2− | 2004 04 16 | 645 | 0.0 | 0.1+ |
| 1997 03 10 | 691 | 0.4− | 0.5− | 1999 11 14 | 704 | 0.3+ | 0.4− | 2004 04 16 | 645 | 0.1+ | 0.2+ |
| 1997 03 10 | 691 | 0.2− | 0.3− | 1999 11 14 | 704 | 0.3+ | 0.3− | 2006 07 21 | 703 | 0.7+ | 1.4+ |
| 1999 10 12 | 704 | 0.5− | 0.8+ | 1999 11 14 | 704 | 0.6+ | 0.1− | 2006 07 21 | 703 | 1.1+ | 0.2+ |
| 1999 10 12 | 704 | 0.3+ | 0.5− | 1999 11 14 | 704 | 0.6+ | 0.6+ | 2006 07 21 | 703 | 0.2− | 0.0 |
| 1999 10 12 | 704 | 0.7− | 0.0 | 1999 11 14 | 704 | 0.2+ | 0.2+ | 2006 07 21 | 703 | 0.4− | 0.3− |
| 1999 10 12 | 704 | 0.2− | 1.4− | 1999 11 15 | 691 | 0.4+ | 0.2+ | 2006 07 26 | 644 | 0.1− | 0.2− |
| 1999 10 15 | 704 | 0.3− | 0.5+ | 1999 11 15 | 691 | 0.6+ | 0.3+ | 2006 07 26 | 644 | 0.0 | 0.8− |
| 1999 10 15 | 704 | 0.3− | 0.1− | 1999 11 15 | 691 | 0.5+ | 0.1+ | 2006 07 26 | 644 | 0.0 | 0.4− |
| 1999 10 15 | 704 | 0.2− | 1.5− | 1999 11 16 | 704 | (1.1− | 2.3−) | 2006 08 18 | 644 | 0.5− | 0.4− |
| 1999 11 03 | 704 | 1.3+ | 0.5+ | 1999 11 16 | 704 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.3− |
| 1999 11 03 | 704 | 0.6− | 0.2− | 1999 11 16 | 704 | 0.4− | 0.5+ | 2006 08 18 | 644 | 0.3− | 0.3− |
| 1999 11 03 | 704 | 0.4− | 0.7+ | 1999 11 16 | 704 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.6− |
| 1999 11 03 | 704 | 0.8− | 0.0 | 1999 11 16 | 704 | 0.6− | 0.6+ | 2006 09 25 | G96 | 0.4− | 0.5− |
| 1999 11 03 | 704 | 0.7− | 0.6− | 1999 11 30 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 1999 11 04 | 704 | 0.0 | 0.2− | 1999 11 30 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.5+ | 1.1− |
| 1999 11 04 | 704 | 0.3− | 1.2− | 1999 11 30 | 691 | 0.0 | 0.1+ | | | | |

**(137525)∗ 1999 VM$_{50}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.68103 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27223768 | $\omega$ | 81.52413 | | +0.80269412 | −0.59616116 |
| $a$ | 2.3577833 | $\Omega$ | 315.06928 | | +0.53754276 | +0.73523301 |
| $e$ | 0.2160420 | $i$ | 1.34308 | | +0.25832138 | +0.32252798 |
| $P$ | 3.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.2+ | 0.7+ | 2006 07 25 | G96 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.4− |
| 1999 11 03 | 704 | 1.2+ | 0.5+ | 2006 07 25 | G96 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 1999 11 03 | 704 | 1.0+ | 0.7− | 2006 07 25 | G96 | 0.1− | 0.2+ | 2006 09 20 | 704 | (0.7− | 2.0−) |
| 1999 11 03 | 704 | 0.6+ | 0.4− | 2006 07 25 | G96 | 0.3− | 0.1+ | 2006 09 20 | 704 | (0.6− | 2.2+) |
| 1999 11 04 | 704 | 0.1+ | 1.0− | 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.5+ |
| 1999 11 04 | 704 | 1.2+ | 0.2+ | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.4+ |
| 1999 11 04 | 704 | 0.3+ | 0.0 | 2006 08 23 | 644 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.0 |
| 1999 11 04 | 704 | 0.2− | 0.3− | 2006 08 25 | 704 | 0.4+ | 1.1+ | 2006 09 25 | 699 | 0.4− | 0.4− |
| 1999 11 04 | 704 | 0.9− | 1.1− | 2006 08 25 | 704 | 0.0 | 1.0+ | 2006 09 25 | 699 | 0.5− | 0.2+ |
| 1999 11 14 | 704 | 0.4− | 0.9− | 2006 08 25 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 699 | 0.3− | 0.4− |
| 1999 11 14 | 704 | 0.6− | 0.5− | 2006 08 25 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 699 | (1.7− | 0.1+) |
| 1999 11 14 | 704 | 0.2− | 0.5− | 2006 08 27 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.7+ | 0.7+ |
| 1999 11 14 | 704 | 0.6− | 0.1+ | 2006 08 27 | 699 | 0.7+ | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.1+ |
| 1999 11 14 | 704 | 0.4− | 0.0 | 2006 08 27 | 699 | 0.7− | 1.2+ | 2006 09 26 | 704 | (0.6− | 1.7+) |
| 1999 11 16 | 704 | (1.0− | 2.1−) | 2006 08 27 | 699 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.5+ | 0.5+ |
| 1999 11 16 | 704 | (0.4− | 2.5−) | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 27 | 704 | (1.7+ | 0.2+) |
| 1999 11 16 | 704 | 0.1− | 1.0− | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 09 27 | 704 | (1.7+ | 0.0 ) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 704 | (0.6+ | 2.0−) | 2006 08 28 | 703 | 0.3− | 0.5+ | 2006 09 27 | 704 | (1.2+ | 1.8+) |
| 1999 12 07 | 704 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.4− |
| 1999 12 07 | 704 | 0.3+ | 0.4− | 2006 09 12 | 703 | 0.2− | 0.7− | 2006 09 28 | G96 | 0.3− | 0.2− |
| 1999 12 07 | 704 | 0.4− | 0.2− | 2006 09 12 | 703 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 1999 12 07 | 704 | 0.6+ | 0.9− | 2006 09 12 | 703 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2001 03 26 | 695 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.0 | 0.9− | 2006 09 29 | 704 | 0.2− | 1.2+ |
| 2001 03 26 | 695 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.7− | 0.2− | 2006 09 29 | 704 | 0.3− | 0.6+ |
| 2003 12 22 | 291 | 0.4− | 0.5+ | 2006 09 16 | 699 | 1.1− | 0.3− | 2006 09 29 | 704 | (0.1− | 1.6+) |
| 2003 12 22 | 291 | 0.3− | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.0 |
| 2003 12 22 | 291 | 0.5− | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.3+ |
| 2004 01 17 | 644 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2004 01 17 | 644 | 0.6+ | 0.1+ | 2006 09 16 | 699 | 0.3− | 1.2+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2004 01 17 | 644 | 0.5+ | 0.1+ | 2006 09 16 | 699 | 0.6− | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2004 01 21 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 0.8− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 01 21 | 704 | 0.3+ | 0.3− | 2006 09 17 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2004 01 21 | 704 | 0.5+ | 1.1+ | 2006 09 17 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2004 01 24 | 704 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.4− |
| 2004 01 24 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.9+ |
| 2004 01 24 | 704 | (0.3− | 1.8+) | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2004 01 28 | 691 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2004 01 28 | 691 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2004 01 28 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.9+ | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2004 01 29 | 704 | 0.8− | 0.8+ | 2006 09 19 | 703 | 0.6− | 0.6− | 2006 11 14 | G96 | 0.5+ | 0.6− |
| 2004 01 29 | 704 | 0.8− | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2+ |
| 2004 01 29 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.8+ | 0.4− | | | | |

**(137526)∗ 1999 VB$_{51}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.12706 | | (2000.0) | | | |
| $n$ | 0.27494755 | $\omega$ | 340.84627 | | +0.85955053 | +0.51083390 |
| $a$ | 2.3422657 | $\Omega$ | 348.39959 | | −0.45868785 | +0.75830812 |
| $e$ | 0.1622587 | $i$ | 4.24563 | | −0.22534051 | +0.40499077 |
| $P$ | 3.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.5− | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.3+ | 0.7+ |
| 1994 03 05 | 691 | 0.6+ | 0.1− | 2005 05 14 | G96 | 0.7− | 0.5+ | 2006 09 29 | 704 | 0.1+ | 0.6+ |
| 1994 03 05 | 691 | 0.6+ | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.6+ |
| 1999 10 12 | 704 | 0.2− | 1.5− | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.5+ |
| 1999 10 12 | 704 | 0.4+ | 0.6− | 2006 08 17 | 644 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.7+ |
| 1999 10 12 | 704 | 0.6− | 0.8− | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.7+ | 0.6− |
| 1999 10 12 | 704 | 0.5+ | 1.2− | 2006 08 24 | 644 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.7+ | 0.9+ |
| 1999 10 12 | 704 | 0.1− | 1.1− | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.0 |
| 1999 10 29 | 703 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.9− | 2006 10 01 | 704 | 0.2+ | 0.2+ |
| 1999 10 29 | 703 | 1.6− | 1.6− | 2006 08 28 | 703 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.5+ | 0.6+ |
| 1999 10 29 | 703 | 0.7+ | 0.3− | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.1+ | 0.4+ |
| 1999 10 29 | 703 | 0.3− | 0.5− | 2006 08 28 | 703 | 0.2+ | 0.6− | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1999 11 03 | 704 | 0.6− | 0.5+ | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.4+ |
| 1999 11 03 | 704 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 1999 11 03 | 704 | 0.9+ | 0.2− | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 1999 11 03 | 704 | 0.8+ | 0.4+ | 2006 09 15 | 704 | 0.8+ | 0.7− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 1.1− | 0.4− | 2006 09 15 | 704 | 0.0 | 0.6+ | 2006 10 17 | 703 | (0.2+ | 1.7+) |
| 1999 11 04 | 704 | 0.0 | 0.5+ | 2006 09 15 | 704 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.8− |
| 1999 11 04 | 704 | 0.2+ | 0.2− | 2006 09 15 | 704 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 1999 11 04 | 704 | 0.2− | 0.8− | 2006 09 17 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.9− | 0.9− |
| 1999 11 04 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 1999 11 04 | 704 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 1999 11 04 | 704 | 0.3− | 1.0+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.1+ |
| 1999 11 04 | 704 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 1999 11 04 | 704 | 0.3+ | 1.1+ | 2006 09 17 | 703 | 1.1− | 1.3− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2003 12 23 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 703 | 1.0− | 0.4− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2003 12 23 | 704 | 0.3+ | 1.1+ | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2003 12 23 | 704 | 0.0 | 0.5− | 2006 09 17 | 703 | 1.3− | 0.8− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2003 12 23 | 704 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 0.7− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 12 30 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2003 12 30 | 704 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.4− | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2003 12 30 | 704 | 0.4− | 0.6+ | 2006 09 19 | 699 | 0.5+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2005 03 11 | G96 | 0.3− | 0.3− | 2006 09 20 | 704 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.5+ | 0.3+ |
| 2005 03 11 | G96 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.5− | 0.2+ |
| 2005 03 11 | G96 | 0.7− | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2005 04 30 | 691 | 0.3+ | 0.2+ | 2006 09 21 | A50 | 1.1+ | 0.3+ | 2006 11 20 | G96 | 0.5− | 0.4− |
| 2005 04 30 | 691 | 0.3+ | 0.4+ | 2006 09 21 | A50 | 0.7+ | 0.5− | 2006 11 20 | G96 | 0.5− | 0.8− |
| 2005 04 30 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 699 | 0.0 | 0.6+ | 2006 11 20 | G96 | 0.5− | 0.7− |
| 2005 05 14 | G96 | 0.2− | 0.2+ | 2006 09 27 | 699 | 0.3+ | 0.8+ | 2006 11 20 | G96 | 0.4− | 0.2− |
| 2005 05 14 | G96 | 0.3− | 0.3+ | 2006 09 27 | 699 | 0.1− | 0.1− | | | | |

**(137527)∗ 1999 VA$_{52}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.70623 | | (2000.0) | | | |
| $n$ | 0.27856414 | $\omega$ | 190.13619 | | −0.55404521 | −0.83228455 |
| $a$ | 2.3219485 | $\Omega$ | 293.51101 | | +0.76518474 | −0.50045282 |
| $e$ | 0.1748651 | $i$ | 1.14598 | | +0.32791190 | −0.23843115 |
| $P$ | 3.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.0 | 0.3+ | 2004 01 24 | 704 | 0.0 | 0.3+ | 2005 06 08 | 691 | 0.2− | 0.2− |
| 1992 11 28 | 691 | 0.2+ | 0.7− | 2004 01 24 | 704 | 1.2− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 1992 11 28 | 691 | 0.1− | 0.4− | 2004 01 29 | 704 | 0.5+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 1999 11 03 | 704 | 0.0 | 1.7− | 2004 01 29 | 704 | 0.3+ | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 1999 11 03 | 704 | 1.3− | 0.8− | 2004 01 29 | 704 | 0.6+ | 1.1+ | 2006 09 28 | G96 | 0.4+ | 0.0 |
| 1999 11 03 | 704 | 1.2− | 0.9− | 2004 01 29 | 704 | 0.4− | 0.4− | 2006 10 11 | 691 | 0.3− | 0.6+ |
| 1999 11 04 | 704 | 0.6− | 0.5− | 2004 02 14 | 691 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.5+ |
| 1999 11 04 | 704 | 0.8− | 0.1− | 2004 02 14 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.4+ |
| 1999 11 04 | 704 | 1.1− | 0.8− | 2004 02 14 | 691 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ |
| 1999 11 14 | 704 | 0.8+ | 0.6− | 2004 02 17 | 608 | 0.6− | 0.6− | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 1999 11 14 | 704 | 0.1− | 0.5− | 2004 02 17 | 608 | 0.4− | 0.8− | 2006 10 15 | 691 | 0.0 | 0.2− |
| 1999 11 14 | 704 | 0.4+ | 0.7− | 2004 02 17 | 608 | 0.2− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1999 11 14 | 704 | 0.7+ | 0.0 | 2004 02 18 | 704 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 1999 11 14 | 704 | 0.2+ | 0.5− | 2004 02 18 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1999 11 16 | 704 | 0.3+ | 0.5− | 2004 02 18 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 11 16 | 704 | 0.9+ | 0.8− | 2004 02 18 | 704 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 1999 11 16 | 704 | 0.5+ | 0.2− | 2004 02 18 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.1− |
| 1999 11 16 | 704 | 0.6+ | 0.7− | 2004 02 18 | 333 | 0.5− | 0.2+ | 2006 10 21 | H07 | 0.6+ | 0.7+ |
| 1999 11 16 | 704 | 0.3+ | 0.8− | 2004 02 18 | 333 | 0.8− | 0.1+ | 2006 10 21 | H07 | 0.7+ | 0.8+ |
| 1999 11 17 | 704 | 0.5+ | 0.1+ | 2004 02 18 | 333 | 0.1− | 0.0 | 2006 10 21 | H07 | 1.1− | 0.2+ |
| 1999 11 17 | 704 | 0.0 | 0.4− | 2004 02 26 | 704 | 0.7+ | 0.4+ | 2006 10 23 | 691 | 0.4+ | 0.2+ |
| 1999 11 17 | 704 | 0.0 | 0.8− | 2004 02 26 | 704 | (0.8+ | 2.7−) | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 1999 11 17 | 704 | 0.3+ | 0.8+ | 2004 02 26 | 704 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 1999 11 17 | 704 | 0.4+ | 0.7− | 2004 02 26 | 704 | 1.1+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 1999 11 17 | 704 | 0.9+ | 0.0 | 2004 02 26 | 704 | 0.7+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 1999 11 17 | 704 | 1.0+ | 1.5− | 2004 03 01 | 333 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 1999 11 17 | 704 | 0.0 | 1.0+ | 2004 03 01 | 333 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 1999 12 07 | 704 | 0.1− | 0.5− | 2004 03 01 | 333 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 1999 12 07 | 704 | 0.5+ | 0.1− | 2004 03 01 | 333 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.5+ | 0.3− | 2004 03 11 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 1999 12 07 | 704 | 0.1+ | 0.6− | 2004 03 11 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 1999 12 07 | 704 | 0.2− | 1.1− | 2004 03 11 | 644 | 1.5+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.2− |
| 1999 12 08 | 704 | 0.8+ | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.2− |
| 1999 12 08 | 704 | 0.6+ | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.8− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 1999 12 08 | 704 | 0.3− | 0.6− | 2004 03 15 | 704 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 1999 12 08 | 704 | 0.1− | 0.5− | 2004 03 15 | 704 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 10 10 | 291 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 10 10 | 291 | 0.1+ | 0.2+ | 2004 03 16 | 608 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2002 10 10 | 291 | 0.3+ | 0.1+ | 2004 03 16 | 608 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.2− | 0.8+ |
| 2003 12 21 | 704 | 0.8+ | 0.2+ | 2004 03 16 | 608 | 0.6+ | 0.5− | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2003 12 21 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2003 12 21 | 704 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.7+ | 0.2− | 2006 11 22 | 704 | (0.0 | 1.8+) |
| 2003 12 21 | 704 | 0.5− | 0.4+ | 2004 03 18 | 704 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.0 | 1.2+ |
| 2003 12 21 | 704 | 0.1− | 0.6+ | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 11 22 | 704 | (0.4+ | 1.5+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 699 | 0.7+ | 0.1− | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.9+ | |
| 2003 12 28 | 699 | 0.1− | 0.4+ | 2004 03 26 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.9− | 1.0+ | |
| 2003 12 28 | 699 | 1.0+ | 0.2+ | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.8+ | 1.1− | |
| 2003 12 28 | 699 | 0.2+ | 0.7+ | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.6− | 0.7− | |
| 2004 01 24 | 704 | 0.6+ | 0.1− | 2005 06 08 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.6+ | 0.9+ | |
| 2004 01 24 | 704 | 0.3+ | 0.0 | 2005 06 08 | 691 | 0.0 | 0.2+ | | | | | |

**(137528)∗ 1999 VP$_{54}$ = 1999 VW$_{173}$ = 2002 LO$_{21}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. S. Nakano (d, MPC 39649), G. V. Williams (*MPO* 31297)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.28008 | | (2000.0) | | +0.77258551 | +0.63471807 |
| $n$ | 0.27762544 | $\omega$ | 115.49623 | | −0.59494990 | +0.71513879 |
| $a$ | 2.3271795 | $\Omega$ | 205.11389 | | −0.22168954 | +0.29276183 |
| $e$ | 0.1436273 | $i$ | 2.11183 | | | |
| $P$ | 3.55 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.8+ | 0.2− | 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 1.1− | 0.1− | |
| 1999 10 07 | 704 | 0.2+ | 0.2− | 2005 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 1.1− | 0.2− | |
| 1999 10 07 | 704 | 0.3+ | 0.1+ | 2005 04 01 | 699 | 0.7+ | 1.2+ | 2006 09 25 | 691 | 0.3− | 0.1− | |
| 1999 10 07 | 704 | 0.5− | 1.0+ | 2005 04 01 | 699 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.1− | |
| 1999 10 10 | 704 | 0.2+ | 0.4+ | 2005 04 01 | 699 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.2− | 0.0 | |
| 1999 10 10 | 704 | 0.3− | 0.6+ | 2005 04 01 | 699 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1− | |
| 1999 10 10 | 704 | 0.1+ | 0.5+ | 2005 04 04 | 704 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.1− | |
| 1999 10 15 | 704 | 0.0 | 0.4+ | 2005 04 04 | 704 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.0 | |
| 1999 10 15 | 704 | 0.3+ | 0.1+ | 2005 04 04 | 704 | 0.3− | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.1− | |
| 1999 10 15 | 704 | 0.2− | 0.1+ | 2005 04 04 | 704 | 0.3− | 0.9+ | 2006 09 27 | 704 | 0.9+ | 0.3− | |
| 1999 10 15 | 704 | 0.2− | 1.0− | 2005 04 04 | 704 | 0.6− | 0.7+ | 2006 09 27 | 704 | 0.4− | 0.4+ | |
| 1999 10 15 | 704 | 0.4+ | 0.5+ | 2005 04 05 | 699 | 1.3− | 0.8+ | 2006 09 27 | 704 | 0.2− | 0.1− | |
| 1999 10 20 | 704 | 0.3+ | 0.1+ | 2005 04 05 | 699 | 0.3+ | 1.0+ | 2006 09 27 | 704 | 0.2+ | 0.3− | |
| 1999 10 20 | 704 | 0.6+ | 0.2− | 2005 04 05 | 699 | 1.0− | 0.4+ | 2006 09 27 | 704 | 0.9− | 0.5+ | |
| 1999 10 20 | 704 | 0.7+ | 0.5− | 2005 04 05 | 699 | 0.7− | 1.0+ | 2006 09 29 | 704 | 0.5− | 0.3− | |
| 1999 10 20 | 704 | 0.8− | 0.3− | 2005 04 07 | 704 | 0.3+ | 1.0+ | 2006 09 29 | 704 | 0.1− | 0.2+ | |
| 1999 10 29 | 703 | 0.3− | 0.2+ | 2005 04 07 | 704 | 1.1+ | 1.0+ | 2006 09 29 | 704 | 0.6− | 0.2+ | |
| 1999 10 29 | 703 | 0.3+ | 0.5+ | 2005 04 07 | 704 | (1.5+ | 0.9+) | 2006 09 29 | 704 | 0.8− | 0.4+ | |
| 1999 10 29 | 703 | 0.2− | 0.6+ | 2005 05 04 | 691 | 0.6+ | 0.4+ | 2006 09 29 | 704 | 0.2− | 0.1− | |
| 1999 10 29 | 703 | 0.4+ | 0.5+ | 2005 05 04 | 691 | 0.5+ | 0.4+ | 2006 09 29 | 691 | 0.1+ | 0.2+ | |
| 1999 11 04 | 704 | 0.3− | 0.8+ | 2005 05 04 | 691 | 0.6+ | 0.4+ | 2006 09 29 | 691 | 0.1+ | 0.4+ | |
| 1999 11 04 | 704 | 0.2+ | 1.4− | 2005 05 13 | 691 | 0.5+ | 0.2+ | 2006 09 29 | 691 | 0.0 | 0.2+ | |
| 1999 11 04 | 704 | 0.0 | 0.9− | 2005 05 13 | 691 | 0.3+ | 0.5+ | 2006 10 03 | 691 | 0.1− | 0.2+ | |
| 1999 11 04 | 704 | 0.6+ | 0.4+ | 2005 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.3+ | |
| 1999 11 04 | 704 | 0.3− | 1.3− | 2005 05 13 | G96 | 0.5− | 0.1+ | 2006 10 03 | 691 | 0.7− | 0.1− | |
| 1999 11 05 | 691 | 0.5− | 0.0 | 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.0 | |
| 1999 11 05 | 691 | 0.6− | 0.1+ | 2005 05 13 | G96 | 0.8− | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.2− | |
| 1999 11 05 | 691 | 0.4− | 0.0 | 2005 05 13 | G96 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.1− | |
| 1999 11 09 | 704 | 0.1− | 0.2+ | 2006 08 06 | 699 | 0.5− | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.0 | |
| 1999 11 09 | 704 | 0.6+ | 0.4+ | 2006 08 06 | 699 | 0.9+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.3+ | |
| 1999 11 09 | 704 | 0.0 | 0.0 | 2006 08 06 | 699 | 0.9− | 0.8− | 2006 10 19 | 644 | 0.1− | 0.3+ | |
| 1999 11 09 | 704 | 0.3+ | 0.4+ | 2006 08 06 | 699 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.3+ | |
| 1999 11 12 | 704 | 0.4− | 0.8− | 2006 09 14 | 703 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | |
| 1999 11 12 | 704 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | |
| 1999 11 12 | 704 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.1− | 0.4+ | 2006 10 23 | 704 | 1.4+ | 0.1− | |
| 1999 11 12 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.2+ | 2006 10 23 | 704 | 1.2+ | 0.4+ | |
| 1999 11 12 | 704 | 0.6+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.1− | 1.5+ | |
| 1999 11 12 | 691 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.7+ | 1.3+ | |
| 1999 11 12 | 691 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3− | |
| 1999 11 12 | 691 | 0.2+ | 0.0 | 2006 09 16 | 644 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.1− | |
| 2002 06 06 | 704 | 0.6+ | 0.6− | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2002 06 06 | 704 | 0.5+ | 0.6+ | 2006 09 16 | 644 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− | |
| 2002 06 06 | 704 | 0.1+ | 0.6− | 2006 09 17 | 704 | 0.6− | 0.5+ | 2006 11 06 | 644 | 0.1+ | 0.3+ | |
| 2002 06 06 | 704 | 0.6+ | 0.6+ | 2006 09 17 | 704 | 0.7+ | 0.5+ | 2006 11 06 | 644 | 0.2+ | 0.0 | |
| 2002 06 08 | 704 | 0.2− | 0.6− | 2006 09 17 | 704 | (0.5− | 1.5+) | 2006 11 06 | 644 | 0.2+ | 0.0 | |
| 2002 06 08 | 704 | 0.1+ | 0.5− | 2006 09 17 | 704 | 0.3+ | 1.5+ | 2006 11 06 | 644 | 0.1− | 0.4+ | |
| 2002 06 08 | 704 | 0.9− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.1+ | |
| 2002 06 08 | 704 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.1+ | |
| 2005 03 10 | G96 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.7− | 2006 11 11 | 703 | 0.9− | 0.3+ | |
| 2005 03 10 | G96 | 0.7− | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.6+ | |
| 2005 03 10 | G96 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.5+ | 0.1+ | |
| 2005 03 10 | G96 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.1− | |
| 2005 03 13 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.8− | 2006 11 11 | G96 | 0.2− | 0.2− | |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 1.0− | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.4+ | |
| 2005 03 13 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | 1.1− | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.0 | |
| 2005 03 17 | 691 | 0.1+ | 0.1− | 2006 09 20 | 704 | 1.2− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.1− | |

**(137529)∗ 1999 VR$_{54}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.84193 | | (2000.0) | | +0.04525983 | −0.99832070 |
| $n$ | 0.27329602 | $\omega$ | 43.81450 | | +0.90150602 | +0.02522338 |
| $a$ | 2.3516924 | $\Omega$ | 43.62906 | | +0.43039336 | +0.05214950 |
| $e$ | 0.1806882 | $i$ | 3.00382 | | | |
| $P$ | 3.61 | $H$ | 17.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.3+ | 0.0 | 2004 01 12 | 644 | 0.0 | 0.2+ | 2006 08 18 | 691 | 0.1+ | 0.2+ | |
| 1999 10 10 | 704 | 0.6+ | 0.5+ | 2004 01 12 | 644 | 0.5+ | 0.4+ | 2006 08 27 | 691 | 0.3− | 0.2+ | |
| 1999 10 10 | 704 | 0.7+ | 0.6− | 2004 01 13 | 699 | 0.8+ | 0.3+ | 2006 08 27 | 691 | 0.4− | 0.2+ | |
| 1999 10 10 | 704 | 1.0+ | 0.8+ | 2004 01 13 | 699 | 0.7+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.1+ | |
| 1999 10 10 | 704 | 1.3+ | 0.3+ | 2004 01 13 | 699 | 0.9+ | 0.2− | 2006 09 14 | 644 | 0.2− | 0.3+ | |
| 1999 10 15 | 704 | 0.2+ | 0.6+ | 2004 01 13 | 699 | 0.7− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.2+ | |
| 1999 10 15 | 704 | 0.0 | 0.5+ | 2004 01 20 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.3+ | |
| 1999 10 15 | 704 | 0.1+ | 0.5− | 2004 01 20 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.5+ | |
| 1999 10 15 | 704 | 1.1− | 0.8− | 2004 01 20 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.5+ | 0.0 | |
| 1999 10 29 | 703 | 0.2− | 0.7− | 2004 01 26 | 699 | 0.9− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.4+ | |
| 1999 10 29 | 703 | 1.0− | 0.9+ | 2004 01 26 | 699 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.2+ | |
| 1999 10 29 | 703 | 0.7+ | 0.3+ | 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.0 | 1.4− | |
| 1999 10 29 | 703 | 0.7− | 0.0 | 2004 01 26 | 699 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.2− | 1.2+ | |
| 1999 11 04 | 704 | 1.3+ | 0.1− | 2004 01 30 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | |
| 1999 11 04 | 704 | 0.5− | 1.4− | 2004 01 30 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.5+ | |
| 1999 11 04 | 704 | 0.7+ | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.8+ | |
| 1999 11 04 | 704 | 0.5+ | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.2+ | |
| 1999 11 04 | 691 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.6− | 1.0+ | |
| 1999 11 04 | 704 | 0.5+ | 0.3− | 2004 01 31 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 1.0− | 0.1+ | |
| 1999 11 04 | 691 | 0.1− | 0.3− | 2004 01 31 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.5− | |
| 1999 11 04 | 691 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.1− | |
| 1999 11 09 | 704 | 0.0 | 0.8− | 2004 01 31 | 704 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.2− | 1.2+ | |
| 1999 11 09 | 704 | 0.2− | 0.4− | 2004 01 31 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.1− | 1.2+ | |
| 1999 11 09 | 704 | 0.2− | 1.0− | 2004 02 10 | 703 | 0.1− | 0.3− | 2006 09 25 | 699 | 1.0− | 0.5− | |
| 1999 11 09 | 704 | 0.5+ | 1.1− | 2004 02 10 | 703 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.9− | 1.0+ | |
| 1999 11 12 | 704 | 1.9− | 0.2− | 2004 02 10 | 703 | 1.1+ | 0.3− | 2006 09 25 | 699 | 0.5− | 0.1+ | |
| 1999 11 12 | 704 | 0.7− | 0.0 | 2004 02 10 | 703 | 0.7− | 1.0− | 2006 09 30 | 703 | 0.7+ | 0.0 | |
| 1999 11 12 | 704 | 0.7+ | 0.3− | 2004 02 15 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.2+ | |
| 1999 11 12 | 704 | 0.6+ | 0.2− | 2004 02 15 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.1+ | |
| 1999 11 12 | 704 | 0.2− | 0.0 | 2004 02 15 | 704 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.3− | |
| 1999 11 14 | 691 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.6+ | |
| 1999 11 14 | 691 | 0.0 | 0.2− | 2004 02 15 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ | |
| 1999 11 14 | 691 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | |
| 2001 04 27 | I03 | 0.2+ | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− | |
| 2001 04 27 | I03 | 0.2+ | 0.9+ | 2004 02 23 | 704 | 0.4− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | |
| 2001 04 27 | I03 | 0.4+ | 0.9+ | 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.1+ | |
| 2003 12 03 | 704 | (1.2+ | 2.3−) | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.1− | |
| 2003 12 03 | 704 | (1.7+ | 2.4−) | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.0 | 1.2+ | |
| 2003 12 03 | 704 | 0.2+ | 1.5− | 2004 04 15 | 645 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.6+ | |
| 2003 12 03 | 704 | 0.4− | 1.0− | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.5− | 0.0 | |
| 2003 12 28 | 704 | 0.1+ | 0.2− | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− | |
| 2003 12 28 | 704 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.2+ | |
| 2003 12 28 | 704 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.1− | |
| 2003 12 28 | 704 | 0.3+ | 0.2+ | 2006 08 16 | 644 | 0.3+ | 0.7+ | 2006 11 15 | G96 | 0.5+ | 0.2+ | |
| 2003 12 28 | 704 | 0.9− | 0.6+ | 2006 08 18 | 691 | 0.0 | 0.2+ | | | | | |
| 2004 01 12 | 644 | 0.3+ | 0.5+ | 2006 08 18 | 691 | 0.0 | 0.2+ | | | | | |

**(137530)∗ 1999 VH$_{58}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.33257 | | (2000.0) | | +0.00965418 | −0.98843946 |
| $n$ | 0.27658564 | $\omega$ | 222.47276 | | +0.96366143 | +0.04959252 |
| $a$ | 2.3330083 | $\Omega$ | 227.58044 | | +0.26695212 | −0.14327599 |
| $e$ | 0.1580917 | $i$ | 11.82730 | | | |
| $P$ | 3.56 | $H$ | 17.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.4+ | 0.5− | 2000 01 06 | 699 | 1.7+ | 1.2+ | 2006 09 17 | 703 | 0.0 | 0.1− |
| 1999 10 07 | 704 | 1.0+ | 0.2− | 2000 01 07 | 704 | 0.2+ | 1.4+ | 2006 09 28 | 703 | 0.7+ | 0.4− |
| 1999 10 07 | 704 | 0.8+ | 1.1− | 2000 01 07 | 704 | 1.0+ | 1.3+ | 2006 09 28 | 703 | 0.0 | 0.3+ |
| 1999 10 12 | 704 | 0.4+ | 0.2− | 2000 01 07 | 704 | 1.5+ | 1.2+ | 2006 09 28 | 703 | 0.1+ | 0.6+ |
| 1999 10 12 | 704 | 0.3− | 0.0 | 2001 04 24 | 691 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.5+ |
| 1999 10 12 | 704 | 0.6− | 0.1+ | 2001 04 24 | 691 | 0.5− | 0.5+ | 2006 09 30 | 704 | 1.2+ | 0.6− |
| 1999 10 12 | 704 | 0.3+ | 0.0 | 2001 04 24 | 691 | 0.5− | 0.5+ | 2006 09 30 | 704 | (2.0+ | 1.2−) |
| 1999 10 12 | 704 | 0.6+ | 0.4− | 2001 05 15 | 699 | (0.1− | 2.1+) | 2006 09 30 | 704 | (2.6+ | 0.2+) |
| 1999 10 20 | 699 | 1.3− | 0.0 | 2001 05 15 | 699 | 1.1+ | 1.4+ | 2006 10 15 | 104 | 0.4+ | 0.0 |
| 1999 10 20 | 699 | 0.6− | 0.9+ | 2001 05 15 | 699 | 0.2− | 1.1+ | 2006 10 15 | 104 | 0.3+ | 0.3+ |
| 1999 10 20 | 699 | 0.3− | 0.4+ | 2001 05 15 | 699 | 1.3+ | 0.8+ | 2006 10 15 | 104 | 0.4− | 0.1+ |
| 1999 10 22 | 704 | 0.2− | 0.5− | 2002 07 20 | 644 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 1999 10 22 | 704 | 0.3+ | 0.2− | 2002 07 20 | 644 | 0.3+ | 1.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 1999 10 22 | 704 | 0.5+ | 0.0 | 2002 07 20 | 644 | 0.1− | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 1999 10 22 | 704 | 1.4+ | 0.7+ | 2002 08 03 | 644 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.9+ |
| 1999 11 01 | 703 | 0.6− | 0.2− | 2002 08 03 | 644 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 0.7− | 0.4+ |
| 1999 11 01 | 703 | 0.1+ | 0.8+ | 2002 08 03 | 644 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 1999 11 01 | 703 | 0.3− | 0.1+ | 2002 08 11 | 704 | (1.5+ | 0.5+) | 2006 10 17 | 703 | (1.1+ | 2.1+) |
| 1999 11 01 | 703 | 0.2− | 0.4+ | 2002 08 11 | 704 | 0.3+ | 0.9− | 2006 10 19 | 704 | 0.1+ | 1.1+ |
| 1999 11 04 | 704 | 0.5+ | 0.9− | 2002 08 11 | 704 | 0.9+ | 0.1− | 2006 10 19 | 704 | 0.3+ | 0.8+ |
| 1999 11 04 | 704 | 0.1+ | 1.0− | 2002 08 11 | 704 | 0.2+ | 0.6− | 2006 10 19 | 704 | (1.6− | 0.1−) |
| 1999 11 04 | 704 | 0.1+ | 0.6− | 2002 08 11 | 704 | 0.6+ | 0.5− | 2006 10 19 | 704 | 0.6− | 0.0 |
| 1999 11 04 | 704 | 0.4− | 0.5− | 2002 08 25 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 704 | 0.5+ | 1.0+ |
| 1999 11 04 | 704 | 0.2− | 0.9− | 2002 08 25 | 644 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 1999 11 05 | 699 | 0.6− | 0.1+ | 2002 08 25 | 644 | 0.6+ | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 1999 11 05 | 699 | 0.6+ | 0.6+ | 2002 10 05 | 645 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 1999 11 05 | 699 | 0.5− | 0.0 | 2002 10 05 | 645 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1999 11 09 | 704 | 0.0 | 0.0 | 2003 11 24 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 11 09 | 704 | 0.0 | 0.2− | 2003 11 24 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.0 |
| 1999 11 09 | 704 | 0.4− | 0.1− | 2003 11 24 | 644 | 0.1+ | 0.3+ | 2006 10 25 | 106 | 0.3− | 0.6− |
| 1999 11 09 | 704 | 0.5+ | 0.8− | 2003 11 29 | 704 | 0.3+ | 0.6− | 2006 10 25 | 106 | 0.3− | 0.5− |
| 1999 11 09 | 704 | 0.1+ | 0.2+ | 2003 11 29 | 704 | 0.6+ | 0.1+ | 2006 10 25 | 106 | 0.4+ | 0.1− |
| 1999 11 12 | 699 | 0.7+ | 0.1− | 2003 11 29 | 704 | 0.8+ | 0.2− | 2006 10 25 | 106 | 0.1− | 0.2− |
| 1999 11 12 | 699 | 0.2+ | 0.3− | 2003 11 29 | 704 | 0.4− | 0.2+ | 2006 10 26 | 104 | 0.2− | 0.1− |
| 1999 11 12 | 704 | 0.0 | 0.5− | 2003 11 29 | 704 | 0.2+ | 0.4+ | 2006 10 26 | 104 | 0.2− | 0.3+ |
| 1999 11 12 | 699 | 0.4− | 0.4+ | 2004 01 16 | 644 | 0.3− | 0.3+ | 2006 10 26 | 104 | 0.3+ | 0.7+ |
| 1999 11 12 | 704 | 0.3+ | 0.6− | 2004 01 16 | 644 | 0.0 | 0.3+ | 2006 10 29 | 704 | 0.0 | 0.4+ |
| 1999 11 12 | 704 | 0.1− | 0.3− | 2004 01 16 | 644 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.7− | 0.1+ |
| 1999 11 12 | 704 | 0.3− | 0.6− | 2004 01 28 | 704 | 0.1− | 0.5+ | 2006 10 29 | 704 | 0.3+ | 0.2+ |
| 1999 11 12 | 704 | 0.2− | 0.7− | 2004 01 28 | 704 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.4+ | 0.3+ |
| 1999 11 12 | 691 | 0.1+ | 0.3− | 2004 01 28 | 704 | 0.3− | 0.7+ | 2006 10 29 | 704 | 0.0 | 0.1+ |
| 1999 11 12 | 691 | 0.0 | 0.2− | 2004 01 28 | 704 | 0.7+ | 0.3+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 1999 11 12 | 691 | 0.1+ | 0.4− | 2004 01 28 | 704 | 0.7− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 1999 11 15 | 704 | 0.5+ | 1.4− | 2004 01 29 | 699 | (0.2− | 1.8+) | 2006 11 07 | 644 | 0.2− | 0.1− |
| 1999 11 15 | 704 | 0.6− | 0.1+ | 2004 01 29 | 699 | 0.5− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 1999 11 15 | 704 | 0.4− | 0.0 | 2004 01 29 | 699 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.3− | 0.0 |
| 1999 11 15 | 704 | 0.4− | 0.1+ | 2004 01 29 | 699 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.7− | 0.3+ |
| 1999 11 15 | 704 | 0.4− | 0.1+ | 2004 02 04 | 608 | 0.6+ | 0.2− | 2006 11 11 | 703 | 1.0− | 0.1+ |
| 1999 11 17 | 704 | 0.5− | 0.2− | 2004 02 04 | 608 | 1.0+ | 0.4− | 2006 11 16 | 704 | 0.4− | 0.8+ |
| 1999 11 17 | 704 | 0.0 | 0.0 | 2004 02 04 | 608 | 0.8+ | 0.5− | 2006 11 16 | 704 | 0.7− | 0.1+ |
| 1999 11 17 | 704 | 0.4− | 0.1+ | 2004 02 19 | 704 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.8+ |
| 1999 11 17 | 704 | 1.0− | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.0 | 2006 11 16 | 704 | (1.8− | 0.2+) |
| 1999 11 17 | 704 | 0.3− | 0.1+ | 2004 02 19 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 1999 12 02 | 699 | 0.5− | 0.7+ | 2004 02 19 | 704 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 1999 12 02 | 699 | 0.2− | 0.0 | 2004 02 19 | 704 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 1999 12 02 | 699 | 1.4− | 0.3+ | 2004 03 13 | 644 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.7− |
| 1999 12 04 | 703 | 0.7− | 0.0 | 2004 03 13 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 1999 12 04 | 703 | 0.1− | 0.3+ | 2004 03 13 | 644 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 1999 12 04 | 703 | 0.3− | 0.0 | 2004 03 16 | 703 | (1.9+ | 0.8+) | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 1999 12 04 | 703 | 0.2− | 0.1− | 2004 03 16 | 703 | 0.6− | 0.7+ | 2006 11 19 | 704 | 0.8− | 0.0 |
| 1999 12 06 | 704 | 0.0 | 0.8− | 2004 03 16 | 704 | 0.8+ | 0.0 | 2006 11 19 | 704 | 1.1+ | 0.1− |
| 1999 12 06 | 704 | 0.1+ | 0.7− | 2004 03 16 | 703 | (1.7− | 1.3+) | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 1999 12 06 | 704 | 0.2+ | 0.7− | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 1.0+ | 0.5− |
| 1999 12 06 | 704 | 0.1+ | 0.0 | 2004 03 16 | 703 | 0.8− | 0.5+ | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 1999 12 06 | 704 | 0.1− | 0.8− | 2004 03 16 | 704 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.8+ | 0.4+ |
| 1999 12 12 | 703 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.5+ |
| 1999 12 12 | 703 | 0.2− | 0.1− | 2004 03 26 | 699 | (1.7− | 0.2−) | 2006 11 22 | 704 | 0.4+ | 0.3+ |
| 1999 12 12 | 703 | 0.2+ | 0.6+ | 2004 03 26 | 699 | 0.2+ | 0.2+ | 2006 11 26 | 704 | 0.5+ | 1.1+ |
| 1999 12 12 | 703 | 0.7− | 0.1− | 2004 03 26 | 699 | (1.6− | 0.4+) | 2006 11 26 | 704 | 0.4− | 0.2− |
| 1999 12 14 | 704 | 0.9+ | 0.2− | 2004 03 26 | 699 | 0.5+ | 0.1+ | 2006 11 26 | 704 | 0.2+ | 1.1+ |
| 1999 12 14 | 704 | 0.1+ | 0.7− | 2004 04 16 | 704 | 0.1− | 0.6+ | 2006 11 26 | 704 | 0.4+ | 0.6+ |
| 1999 12 14 | 704 | 0.5+ | 0.9− | 2004 04 16 | 704 | 0.9− | 1.4+ | 2006 11 27 | 703 | 0.6− | 0.4− |
| 1999 12 14 | 704 | 1.2+ | 0.7− | 2004 04 16 | 704 | 1.1+ | 1.2− | 2006 11 27 | 703 | 0.2− | 0.0 |
| 2000 01 05 | 704 | 0.2− | 1.6+ | 2004 04 16 | 704 | (0.6+ | 1.7+) | 2006 11 27 | 703 | 0.2+ | 0.0 |
| 2000 01 05 | 704 | 0.3+ | 1.1+ | 2006 08 12 | 644 | 0.5− | 0.3+ | 2006 11 27 | 703 | 1.0− | 0.2− |
| 2000 01 05 | 704 | 0.2+ | 1.8+ | 2006 08 12 | 644 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.6+ |
| 2000 01 05 | 704 | 0.5+ | 1.6+ | 2006 08 12 | 644 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.5− | 0.9+ |
| 2000 01 05 | 704 | (0.8+ | 2.7+) | 2006 09 17 | 703 | 0.4− | 0.7− | 2006 11 28 | 704 | 0.2+ | 0.3+ |
| 2000 01 06 | 699 | 1.1− | 0.3+ | 2006 09 17 | 703 | 0.4+ | 0.1− | 2006 11 28 | 704 | 0.4− | 0.1+ |
| 2000 01 06 | 699 | 0.7− | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.8− | 0.2− |

**(137531)∗ 1999 VX$_{58}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.77071 | | (2000.0) | | +0.75711405 | −0.64711762 |
| $n$ | 0.28155947 | $\omega$ | 353.91546 | | +0.60443308 | +0.64188669 |
| $a$ | 2.3054513 | $\Omega$ | 46.82279 | | +0.24786883 | +0.41136391 |
| $e$ | 0.1374335 | $i$ | 7.05273 | | | |
| $P$ | 3.50 | $H$ | 16.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 691 | 0.3+ | 0.4− | 2004 02 11 | 644 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 1999 10 08 | 691 | 0.2+ | 0.4− | 2004 02 11 | 644 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 1999 10 08 | 691 | 0.2+ | 0.4− | 2004 02 11 | 644 | 0.5+ | 0.7+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 1999 11 01 | 703 | 1.1− | 0.2− | 2004 02 11 | 644 | 0.4+ | 0.8+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 1999 11 01 | 703 | 0.1− | 0.6+ | 2004 02 11 | 644 | 0.6+ | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 1999 11 01 | 703 | 0.1− | 0.7+ | 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 1999 11 01 | 703 | 0.1+ | 0.3+ | 2004 02 13 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.4− |
| 1999 11 04 | 704 | 0.2− | 0.9− | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 1999 11 04 | 704 | 0.6− | 0.4− | 2004 02 15 | 704 | (3.5+ | 1.0−) | 2006 11 13 | 644 | 0.0 | 0.4− |
| 1999 11 04 | 704 | 0.1+ | 0.1− | 2004 02 15 | 704 | (4.3+ | 1.3−) | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 1999 11 04 | 704 | 0.6+ | 0.3− | 2004 02 15 | 704 | (5.2+ | 1.1−) | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 1999 11 04 | 704 | 0.1− | 0.2− | 2004 02 15 | 704 | (4.0+ | 1.2−) | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 1999 11 09 | 704 | 0.4+ | 0.0 | 2004 02 15 | 704 | (3.8+ | 1.1−) | 2006 11 17 | 704 | 1.5− | 0.9+ |
| 1999 11 09 | 704 | 0.2+ | 0.1− | 2004 03 17 | 645 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.2− |
| 1999 11 09 | 704 | 0.4+ | 0.4− | 2004 03 17 | 645 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.0 | 0.5+ |
| 1999 11 09 | 704 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.2− | 0.9− | 2006 11 17 | 704 | 0.7− | 0.6+ |
| 1999 11 09 | 704 | (2.3+ | 2.0−) | 2006 08 28 | 703 | (2.0− | 1.4−) | 2006 11 17 | 704 | 0.7− | 0.7+ |
| 1999 11 12 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.7− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.5+ | 0.4− | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 1999 11 12 | 704 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.5+ | 0.1− | 2006 09 16 | 703 | 0.2− | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 1999 11 12 | 704 | 0.2+ | 0.0 | 2006 09 16 | 703 | 1.0− | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 1999 11 16 | 704 | 0.2+ | 0.8− | 2006 09 16 | 703 | 1.2+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.2− |
| 1999 11 16 | 704 | 0.9− | 1.1− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 1999 11 16 | 704 | 0.9+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.6+ |
| 1999 11 16 | 704 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 1.0+ | 0.9+ |
| 1999 11 16 | 704 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2002 07 29 | 644 | 0.1− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2002 07 29 | 644 | 0.5− | 0.8+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 1.0+ | 1.0+ |
| 2002 07 29 | 644 | 0.1− | 0.8+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.0+ | 0.8+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2002 08 30 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2002 08 30 | 644 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.8+ |
| 2004 01 28 | 703 | 0.8− | 1.0+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2004 01 28 | 703 | 0.2+ | 1.1+ | 2006 10 20 | 691 | 0.7− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2004 01 28 | 703 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.4− |
| 2004 01 28 | 703 | 0.6− | 0.8+ | 2006 10 26 | 106 | 0.9+ | 1.4− | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2004 01 30 | 704 | 0.4− | 0.3− | 2006 10 26 | 106 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.3− | 0.5− |
| 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 10 26 | 106 | 0.4− | 1.0− | 2006 11 27 | 703 | 0.7+ | 0.2+ |
| 2004 01 30 | 704 | 0.1+ | 0.1− | 2006 10 26 | 106 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.8− | 0.3+ |
| 2004 01 30 | 704 | 0.7− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 1.0+ |
| 2004 02 10 | 644 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 1.1− | 0.2+ |
| 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 1.2− | 0.7+ |
| 2004 02 10 | 644 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.9− | 2006 11 29 | 704 | 0.2− | 0.6+ |
| 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.6+ | 0.6− | | | | |

**(137532)∗ 1999 VL$_{59}$ = 2000 WH$_{149}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 84515)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.18566 | | (2000.0) | | | |
| $n$ | 0.12561124 | $\omega$ | 109.37871 | | +0.98485399 | −0.17140038 |
| $a$ | 3.9486658 | $\Omega$ | 260.49723 | | +0.14745853 | +0.90736985 |
| $e$ | 0.0960238 | $i$ | 1.52009 | | +0.09120633 | +0.38379924 |
| $P$ | 7.85 | $H$ | 14.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3+ | 0.2− | 2003 03 27 | 691 | 0.3− | 0.2− | 2006 08 27 | 699 | 1.2+ | 0.5+ |
| 1999 10 06 | 704 | 0.6+ | 0.5− | 2003 03 27 | 691 | 0.0 | 0.2+ | 2006 08 27 | 699 | 0.9+ | 0.7− |
| 1999 10 06 | 704 | 0.3− | 0.4− | 2003 03 27 | 691 | 0.0 | 0.8+ | 2006 08 27 | 699 | 1.2− | 1.2+ |
| 1999 10 06 | 704 | 0.1− | 0.7− | 2003 04 08 | 691 | 0.5− | 0.0 | 2006 08 27 | 699 | 0.4− | 0.8+ |
| 1999 10 06 | 704 | 0.2− | 1.4− | 2003 04 08 | 691 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.7+ |
| 1999 11 04 | 704 | 0.2+ | 1.5+ | 2003 04 08 | 691 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.5+ |
| 1999 11 04 | 704 | 1.0− | 0.6+ | 2003 04 26 | 691 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.6+ |
| 1999 11 04 | 704 | 0.2+ | 0.1− | 2003 04 26 | 691 | 0.5+ | 0.4+ | 2006 09 20 | 704 | (0.2+ | 1.7+) |
| 1999 11 12 | 704 | 0.8− | 0.1+ | 2003 04 26 | 691 | 0.3+ | 0.8+ | 2006 09 20 | 704 | 0.5− | 1.0+ |
| 1999 11 12 | 704 | 0.9+ | 0.1− | 2003 05 05 | 291 | 1.0+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.5+ |
| 1999 11 12 | 704 | 0.9+ | 1.1− | 2003 05 05 | 291 | 0.7+ | 0.2+ | 2006 09 20 | 704 | 1.3− | 0.7+ |
| 1999 11 15 | 691 | 0.1+ | 0.0 | 2003 05 05 | 291 | 0.9+ | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.1+ |
| 1999 11 15 | 691 | 0.2+ | 0.2+ | 2005 06 03 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.3− | 0.6+ |
| 1999 11 15 | 691 | 0.3+ | 0.2+ | 2005 06 03 | 691 | 0.2− | 0.3− | 2006 09 23 | 691 | 0.2− | 0.4+ |
| 2000 11 27 | 691 | 0.5− | 0.6+ | 2005 06 03 | 691 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.4− | 0.6+ |
| 2000 11 27 | 691 | 0.6− | 0.3+ | 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.9+ | 0.3+ |
| 2000 11 27 | 691 | 0.5− | 0.5+ | 2005 06 13 | G96 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.1− | 0.1− |
| 2002 03 10 | 291 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.3− | 1.0+ |
| 2002 03 10 | 291 | 0.4+ | 0.0 | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2002 03 10 | 291 | 0.6+ | 0.2+ | 2005 06 16 | 691 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.3+ |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2005 06 16 | 691 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2002 03 12 | 645 | 0.0 | 0.1+ | 2005 06 16 | 691 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.0 |

**(137533)∗ 1999 VQ$_{61}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.63192 | | (2000.0) | | | |
| $n$ | 0.27763060 | $\omega$ | 82.36996 | | +0.68924494 | +0.72360974 |
| $a$ | 2.3271506 | $\Omega$ | 231.26732 | | −0.68181487 | +0.63075958 |
| $e$ | 0.1600425 | $i$ | 2.67997 | | −0.24509159 | +0.28023435 |
| $P$ | 3.55 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3− | 1.8+ | 2005 05 03 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 683 | (2.4− | 0.4+) |
| 1999 10 06 | 704 | 0.0 | 0.1+ | 2005 05 03 | 691 | 0.5+ | 0.6+ | 2006 10 19 | 683 | (2.9− | 0.2+) |
| 1999 10 06 | 704 | 1.5+ | 0.2− | 2005 05 03 | 691 | 0.4+ | 0.8+ | 2006 10 19 | 683 | (4.2− | 0.5+) |
| 1999 10 15 | 704 | 0.7− | 0.5− | 2005 05 12 | 691 | 0.1+ | 0.5+ | 2006 10 20 | H07 | 0.1− | 0.6+ |
| 1999 10 15 | 704 | 0.6− | 1.3+ | 2005 05 12 | 691 | 0.3+ | 0.8+ | 2006 10 20 | H07 | 0.9− | 0.4+ |
| 1999 10 15 | 704 | 0.4+ | 0.5− | 2005 05 12 | 691 | 0.0 | 0.6+ | 2006 10 20 | H07 | 0.7− | 0.6+ |
| 1999 10 15 | 704 | 0.4+ | 0.6+ | 2006 08 06 | 699 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1999 10 29 | 691 | 0.1− | 0.5+ | 2006 08 06 | 699 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 1999 10 29 | 691 | 0.1+ | 0.4+ | 2006 08 06 | 699 | 0.7− | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1999 10 29 | 691 | 0.0 | 0.3+ | 2006 08 06 | 699 | 0.6− | 0.9+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.6− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 1999 11 04 | 704 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.3+ | 1.4+ |
| 1999 11 04 | 704 | 0.8− | 0.3− | 2006 10 03 | 704 | 0.2+ | 1.0+ | 2006 10 28 | 704 | 0.2− | 0.0 |
| 1999 11 04 | 704 | 0.5− | 0.3+ | 2006 10 03 | 704 | 0.5+ | 0.1− | 2006 10 28 | 704 | 0.2− | 0.0 |
| 1999 11 09 | 704 | 0.4− | 0.6+ | 2006 10 03 | 704 | (1.0+ | 2.6−) | 2006 10 28 | 704 | 0.3+ | 0.5+ |
| 1999 11 09 | 704 | 0.3− | 0.1+ | 2006 10 03 | 704 | 0.4+ | 0.7− | 2006 10 28 | G96 | 0.3− | 0.5+ |
| 1999 11 09 | 704 | 0.8+ | 1.0− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.6+ |
| 1999 11 09 | 704 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.4+ |
| 1999 11 09 | 704 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 1999 11 12 | 704 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 1999 11 12 | 704 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 11 12 | 704 | 0.5+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1999 11 12 | 704 | 1.1− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 11 | 691 | (1.8+ | 0.8−) |
| 1999 11 12 | 704 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2002 07 05 | 704 | 0.5− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.9+ | 1.0+ |
| 2002 07 05 | 704 | (0.8− | 1.8+) | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.1− |
| 2002 07 05 | 704 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2002 07 05 | 704 | 0.3+ | 1.2+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 683 | 0.2+ | 0.9+ | 2006 11 20 | G96 | 0.4− | 0.8− |
| 2005 03 17 | 691 | (0.5+ | 1.6−) | 2006 10 17 | 683 | 0.7− | 1.0+ | 2006 11 20 | G96 | 0.1− | 0.0 |
| 2005 03 17 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 1.1− | 0.7+ | 2006 11 20 | G96 | 0.4− | 0.4− |
| 2005 04 04 | 704 | 1.5+ | 0.8+ | 2006 10 17 | 703 | 0.4+ | 0.1− | 2006 11 20 | G96 | 0.1− | 0.8− |
| 2005 04 04 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.4− | | | | |
| 2005 04 04 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.2+ | | | | |

**(137534)∗ 1999 VT$_{61}$ = 2004 AT$_{26}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64689)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.95493 | | (2000.0) | | | |
| $n$ | 0.28072544 | $\omega$ | 203.14492 | | +0.33024292 | −0.94015921 |
| $a$ | 2.3100153 | $\Omega$ | 227.68547 | | +0.88278127 | +0.33910449 |
| $e$ | 0.0653695 | $i$ | 6.51537 | | +0.33412100 | +0.03329879 |
| $P$ | 3.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 29 | 691 | 0.2+ | 0.0 | 2002 08 25 | 644 | 0.6− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 1999 10 29 | 691 | 0.3+ | 0.2− | 2002 08 25 | 644 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 1999 10 29 | 691 | 0.2+ | 0.0 | 2004 01 13 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 1999 11 04 | 704 | 0.3− | 0.8− | 2004 01 13 | 644 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 1999 11 04 | 704 | 0.2+ | 1.1− | 2004 01 13 | 644 | 0.0 | 0.8+ | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 1999 11 04 | 704 | 1.5− | 1.0− | 2004 01 17 | 608 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 1999 11 04 | 704 | 0.4− | 0.3− | 2004 01 17 | 608 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1999 11 04 | 704 | 0.2− | 0.7− | 2004 01 17 | 608 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.1+ | 0.4− | 2004 01 29 | 704 | 0.4+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.7+ | 0.0 | 2004 01 29 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 1.4+ | 0.6− |
| 1999 11 12 | 704 | 0.1− | 0.8− | 2004 01 29 | 704 | 0.1+ | 1.2+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 1999 11 12 | 704 | 0.4− | 0.3− | 2004 01 29 | 704 | 1.3+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 1999 11 12 | 704 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.6+ | 0.4− | 2006 11 11 | 703 | 0.7− | 1.1− |
| 2002 07 21 | 644 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.4− | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2002 07 21 | 644 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 07 21 | 644 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 13 | 644 | 0.4− | 0.3+ |
| 2002 08 05 | 644 | 0.2+ | 1.1+ | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.9+ |
| 2002 08 05 | 644 | 0.4+ | 1.2+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.2− |
| 2002 08 05 | 644 | 0.7+ | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | (1.6− | 0.3−) |
| 2002 08 08 | 699 | (1.0− | 1.6+) | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.7+ |
| 2002 08 08 | 699 | 0.7+ | 0.7− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | (0.1− | 1.7+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 699 | 0.2+ | 1.1+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | 1.4− | 0.3+ |
| 2002 08 08 | 699 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2002 08 12 | 704 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2002 08 12 | 704 | 1.1− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 1.0− | 1.3+ |
| 2002 08 12 | 704 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 26 | 704 | 0.2+ | 0.8+ |
| 2002 08 12 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 26 | 704 | 0.1+ | 0.1+ |
| 2002 08 25 | 644 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | 2006 11 26 | 704 | 0.5− | 1.3+ |

**(137535)∗ 1999 VE$_{62}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.43579 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26416887 | $\omega$ | 210.80766 | | +0.21190429 | −0.97726554 | |
| $a$ | 2.4055532 | $\Omega$ | 226.95937 | | +0.89857911 | +0.19763817 | |
| $e$ | 0.1586405 | $i$ | 0.54671 | | +0.38425533 | +0.07675425 | |
| $P$ | 3.73 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.0 | 0.2− | 1999 11 11 | 703 | 1.0− | 0.3+ | 2005 01 17 | 809 | 0.2− | 0.1− |
| 1999 10 03 | 691 | 0.1− | 0.5− | 1999 11 11 | 703 | 0.4+ | 0.4+ | 2005 01 17 | 809 | 0.0 | 0.1+ |
| 1999 10 03 | 691 | 0.0 | 0.4− | 1999 11 12 | 704 | 0.4+ | 0.3+ | 2005 05 10 | G96 | 0.7− | 0.3− |
| 1999 10 10 | 691 | 0.2− | 0.0 | 1999 11 12 | 704 | 0.2+ | 0.9+ | 2005 05 10 | G96 | 0.4+ | 0.3− |
| 1999 10 10 | 691 | 0.2− | 0.0 | 1999 11 12 | 704 | 0.1+ | 0.7+ | 2005 05 10 | G96 | 0.0 | 0.2− |
| 1999 10 10 | 691 | 0.3− | 0.1+ | 1999 11 12 | 704 | 0.2+ | 0.5+ | 2005 05 10 | G96 | 0.2− | 0.2− |
| 1999 10 19 | 691 | 0.0 | 0.1− | 1999 11 12 | 704 | 0.6+ | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.2− |
| 1999 10 19 | 691 | 0.0 | 0.1+ | 1999 11 17 | 691 | 0.6− | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.1− |
| 1999 10 19 | 691 | 0.1− | 0.2+ | 1999 11 17 | 691 | 0.1− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.0 |
| 1999 10 29 | 691 | 0.1+ | 0.1+ | 1999 11 17 | 691 | 0.0 | 0.3− | 2005 05 10 | G96 | 0.0 | 0.3− |
| 1999 10 29 | 691 | 0.1+ | 0.1+ | 1999 12 07 | 704 | 1.1+ | 0.3− | 2005 06 11 | 691 | 0.1+ | 0.3+ |
| 1999 10 29 | 691 | 0.0 | 0.1+ | 1999 12 07 | 704 | 1.0+ | 0.1− | 2005 06 11 | 691 | 0.0 | 0.4− |
| 1999 11 04 | 704 | 0.0 | 0.4+ | 1999 12 07 | 704 | 1.7+ | 1.2− | 2005 06 11 | 691 | 0.6+ | 0.2+ |
| 1999 11 04 | 704 | 0.1+ | 0.0 | 2001 03 25 | 695 | 0.5+ | 0.2+ | 2006 07 18 | G96 | 0.4− | 0.4− |
| 1999 11 04 | 704 | 0.4+ | 0.8+ | 2001 03 25 | 695 | 0.4+ | 0.2+ | 2006 07 18 | G96 | 0.1− | 0.3− |
| 1999 11 04 | 704 | 0.0 | 0.3+ | 2001 03 27 | 691 | 0.4+ | 0.4+ | 2006 07 18 | G96 | 0.5− | 0.3− |
| 1999 11 09 | 704 | 0.2+ | 0.2+ | 2001 03 27 | 691 | 0.3− | 0.6+ | 2006 07 18 | G96 | 0.3− | 0.1− |
| 1999 11 09 | 704 | 0.1+ | 0.8+ | 2001 03 27 | 691 | 0.3− | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 1999 11 09 | 704 | 0.2− | 0.9+ | 2002 07 04 | 291 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 1999 11 09 | 704 | 0.3+ | 0.8+ | 2002 07 04 | 291 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1999 11 11 | 703 | 1.0− | 0.2+ | 2002 07 04 | 291 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.6+ | 0.2+ |
| 1999 11 11 | 703 | 0.2+ | 0.2+ | 2005 01 17 | 809 | 0.3+ | 0.1− | | | | |

**(137536)∗ 1999 VC$_{63}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.17860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27503472 | $\omega$ | 345.83445 | | +0.79351074 | −0.60490734 | |
| $a$ | 2.3417707 | $\Omega$ | 51.58546 | | +0.56628084 | +0.69391651 | |
| $e$ | 0.1935016 | $i$ | 4.87172 | | +0.22286031 | +0.39059825 | |
| $P$ | 3.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5+ | 0.9− | 1999 12 07 | 704 | 1.4+ | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| 1999 10 10 | 704 | 0.1+ | 0.7− | 1999 12 07 | 704 | 1.0+ | 0.4− | 2006 09 18 | 699 | 0.5+ | 1.1+ |
| 1999 10 10 | 704 | 0.6+ | 0.4− | 1999 12 07 | 704 | 1.1+ | 0.5− | 2006 09 18 | 699 | 0.4− | 0.0 |
| 1999 10 10 | 704 | 0.0 | 1.0− | 2004 01 17 | 644 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.5+ |
| 1999 11 04 | 704 | 0.3− | 0.1+ | 2004 01 17 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 1999 11 04 | 704 | 0.2− | 0.3+ | 2004 01 17 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.4− | 0.2+ |
| 1999 11 04 | 704 | 0.7− | 0.4− | 2004 02 17 | 691 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.4+ |
| 1999 11 04 | 704 | 0.2+ | 0.4− | 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.5+ | 0.0 |
| 1999 11 04 | 704 | 0.8− | 0.3− | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.7− | 0.2+ |
| 1999 11 09 | 704 | 0.5− | 0.2+ | 2005 05 09 | G96 | 0.6− | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.6+ |
| 1999 11 09 | 704 | 0.1− | 1.0+ | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.9− |
| 1999 11 09 | 704 | 0.4− | 0.1+ | 2005 05 09 | G96 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.4− |
| 1999 11 09 | 704 | 0.2+ | 1.5+ | 2005 05 09 | G96 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.5+ |
| 1999 11 09 | 704 | 0.1− | 1.2+ | 2005 05 11 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 0.5− | 0.4− | 2005 05 11 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 1.0− | 1.0+ |
| 1999 11 12 | 704 | 0.0 | 0.1− | 2005 05 11 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.5+ |
| 1999 11 12 | 704 | 0.4+ | 0.1+ | 2005 05 13 | G96 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 1999 11 12 | 704 | 0.2+ | 0.0 | 2005 05 13 | G96 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.4− | 0.0 |
| 1999 11 12 | 704 | 0.2+ | 0.1− | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.5+ |
| 1999 11 17 | 691 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.0 | 0.4− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 1999 11 17 | 691 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.2+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 1999 11 17 | 691 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.7− | 0.6− | 2006 10 09 | 644 | 0.3− | 0.3+ |
| 1999 11 30 | 691 | 0.5+ | 0.2− | 2006 09 12 | 703 | 0.0 | 1.3− | 2006 10 16 | 703 | 0.9− | 0.9+ |
| 1999 11 30 | 691 | 0.5+ | 0.1+ | 2006 09 12 | 703 | 1.2+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 1999 11 30 | 691 | 0.4+ | 0.1+ | 2006 09 13 | 644 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.4+ |
| 1999 11 30 | 691 | 0.3− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 1999 11 30 | 691 | 0.4− | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 1999 11 30 | 691 | 0.3− | 0.2+ | 2006 09 18 | 703 | 1.0+ | 0.0 | 2006 10 16 | 703 | 1.4+ | 0.1− |
| 1999 12 04 | 691 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.6− |
| 1999 12 04 | 691 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 1999 12 04 | 691 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.9− | 0.1− | | | | |

**(137537)∗ 1999 VR$_{66}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.57933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26843776 | $\omega$ | 169.14519 | | +0.83714947 | −0.54283500 | |
| $a$ | 2.3799818 | $\Omega$ | 223.95018 | | +0.49431115 | +0.80339297 | |
| $e$ | 0.1212412 | $i$ | 5.55337 | | +0.23417356 | +0.24472413 | |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.1+ | 0.4− | 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.1− | 0.0 |
| 1995 10 23 | 691 | 0.4+ | 0.9− | 2005 04 07 | 691 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.1− | 0.6+ |
| 1995 10 23 | 691 | 0.3+ | 0.5− | 2005 04 11 | G96 | 0.4+ | 0.4− | 2006 09 25 | 704 | 0.3− | 0.0 |
| 1999 11 04 | 704 | 0.4− | 0.3+ | 2005 04 11 | G96 | 0.1− | 0.5+ | 2006 09 25 | 704 | 1.4− | 0.6+ |
| 1999 11 04 | 704 | 0.1− | 0.1− | 2005 04 11 | G96 | 0.1+ | 0.1− | 2006 09 25 | 704 | 1.3+ | 0.0 |
| 1999 11 04 | 704 | (2.1+ | 0.3+) | 2005 04 11 | G96 | 0.4+ | 0.6− | 2006 11 10 | 291 | 0.1+ | 0.0 |
| 1999 11 04 | 704 | 1.9+ | 1.6+ | 2005 05 07 | G96 | 0.3− | 0.4+ | 2006 11 10 | 291 | 0.1+ | 0.1+ |
| 1999 11 09 | 704 | 1.1− | 0.9− | 2005 05 07 | G96 | 0.7− | 0.3+ | 2006 11 10 | 291 | 0.4+ | 0.1+ |
| 1999 11 09 | 704 | 0.5− | 0.9− | 2005 05 07 | G96 | 0.3− | 0.3+ | 2006 11 11 | 291 | 0.1− | 0.1− |
| 1999 11 09 | 704 | 0.1+ | 0.2− | 2005 05 07 | G96 | 0.5− | 0.1+ | 2006 11 11 | 291 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.5+ | 0.8− | 2006 08 18 | 644 | 0.7− | 0.2+ | 2006 11 11 | 291 | 0.1+ | 0.1+ |
| 1999 11 09 | 704 | 0.8− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 11 14 | 291 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 0.5− | 0.0 | 2006 08 18 | 644 | 0.4− | 0.1+ | 2006 11 14 | 291 | 0.2− | 0.4+ |
| 1999 11 12 | 704 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.5+ | 0.5− | 2006 11 14 | 291 | 0.1− | 0.1+ |
| 1999 11 12 | 704 | 0.3− | 0.3− | 2006 08 29 | 703 | 1.0− | 0.6− | 2006 11 17 | 291 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.3− | 2006 11 17 | 291 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 0.5+ | 0.0 | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 11 17 | 291 | 0.2+ | 0.2+ |
| 1999 11 14 | 704 | 0.6− | 0.3+ | 2006 08 31 | A13 | 1.1− | 0.6− | 2006 11 20 | 291 | 0.5+ | 0.1− |
| 1999 11 14 | 704 | 0.8+ | 1.6+ | 2006 08 31 | A13 | 0.1+ | 0.1− | 2006 11 20 | 291 | 0.0 | 0.2+ |
| 1999 11 14 | 704 | 1.2+ | 0.3+ | 2006 08 31 | A13 | 0.2− | 0.8− | 2006 11 20 | 291 | 0.1+ | 0.2− |
| 1999 11 17 | 704 | 0.5− | 0.7+ | 2006 09 11 | 703 | 0.2+ | 0.5+ | 2006 11 21 | 291 | 0.2− | 0.1+ |
| 1999 11 17 | 704 | 0.9− | 0.3+ | 2006 09 11 | 703 | 0.7− | 0.3+ | 2006 11 21 | 291 | 0.0 | 0.2+ |
| 1999 11 17 | 704 | 0.1− | 0.2− | 2006 09 11 | 703 | 0.1+ | 0.6− | 2006 11 21 | 291 | 0.2+ | 0.2+ |
| 1999 12 05 | 691 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.4+ | 0.4− | 2006 11 22 | 291 | 0.2− | 0.4+ |
| 1999 12 05 | 691 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.4− | 0.0 | 2006 11 22 | 291 | 0.0 | 0.3+ |
| 1999 12 05 | 691 | 0.3+ | 0.3− | 2006 09 13 | 644 | 0.9− | 0.0 | 2006 11 22 | 291 | 0.3+ | 0.1+ |
| 1999 12 07 | 704 | 1.2− | 0.2− | 2006 09 13 | 644 | 0.7− | 0.1+ | 2006 11 25 | 291 | 0.1− | 0.4+ |
| 1999 12 07 | 704 | 1.0− | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.6+ | 2006 11 25 | 291 | 0.2+ | 0.4+ |
| 1999 12 07 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.6+ | 2006 11 25 | 291 | 0.2− | 0.3− |
| 2005 04 07 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.7− | | | | |

**(137538)∗ 1999 VJ$_{67}$ = 2001 HF$_{19}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12989)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.07469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27299401 | $\omega$ | 244.65834 | | −0.21152887 | −0.97716950 | |
| $a$ | 2.3534265 | $\Omega$ | 217.57080 | | +0.90803578 | −0.18895671 | |
| $e$ | 0.1221914 | $i$ | 1.86861 | | +0.36156129 | −0.09713459 | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 1.0− | 0.5+ | 2002 08 27 | 644 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.4+ | 0.0 | |
| 1995 09 29 | 691 | 0.8− | 0.4+ | 2002 08 27 | 644 | 0.4− | 0.6+ | 2006 09 14 | 703 | 0.5− | 1.4+ | |
| 1995 09 29 | 691 | 0.5− | 0.4+ | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | (2.2+ | 0.5−) | |
| 1999 11 04 | 704 | 0.9− | 0.0 | 2003 12 29 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.3− | |
| 1999 11 04 | 704 | 1.2+ | 0.5+ | 2003 12 29 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | |
| 1999 11 04 | 704 | 1.1+ | 0.9− | 2004 01 19 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2− | |
| 1999 11 09 | 704 | 0.3+ | 0.6+ | 2004 01 19 | 703 | 0.4− | 0.8+ | 2006 09 15 | 691 | 0.3+ | 0.5− | |
| 1999 11 09 | 704 | 0.7+ | 0.4+ | 2004 01 19 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.3+ | |
| 1999 11 09 | 704 | 0.0 | 0.1+ | 2004 01 19 | 703 | 0.4− | 0.7− | 2006 09 19 | 691 | 0.2− | 0.2+ | |
| 1999 11 09 | 704 | 0.3+ | 0.1− | 2004 01 19 | 703 | 0.6+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.3+ | |
| 1999 11 09 | 704 | 0.6+ | 0.2+ | 2004 01 19 | 703 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.3+ | 0.1+ | |
| 1999 11 12 | 704 | 0.4+ | 0.6− | 2004 01 19 | 691 | 0.4+ | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.0 | |
| 1999 11 12 | 704 | 0.3+ | 0.3+ | 2004 01 21 | 704 | 0.8+ | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | |
| 1999 11 12 | 704 | 0.2+ | 0.0 | 2004 01 21 | 704 | 0.1− | 0.7+ | 2006 09 30 | 691 | 0.1+ | 0.2− | |
| 1999 11 12 | 704 | 0.5+ | 0.2+ | 2004 01 21 | 704 | 0.6+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1− | |
| 1999 11 12 | 704 | 0.7+ | 0.7+ | 2004 01 21 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.2+ | |
| 1999 11 16 | 704 | 0.5+ | 0.3+ | 2004 01 21 | 704 | 0.4+ | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | |
| 1999 11 16 | 704 | 0.7+ | 0.4+ | 2004 01 24 | 704 | 0.9− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.2+ | |
| 1999 11 16 | 704 | 0.1+ | 0.5− | 2004 01 24 | 704 | 1.3− | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | |
| 1999 11 16 | 704 | 0.5− | 0.2+ | 2004 01 24 | 704 | 0.7− | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.3+ | |
| 1999 11 16 | 704 | 0.1+ | 0.5− | 2004 01 26 | 699 | 0.4− | 0.8− | 2006 10 17 | 703 | 0.1+ | 0.7− | |
| 1999 12 03 | 691 | 0.3+ | 0.3+ | 2004 01 26 | 699 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.3− | |
| 1999 12 03 | 691 | 0.1− | 0.5+ | 2004 01 26 | 699 | 0.9− | 0.6− | 2006 10 17 | 703 | 0.2− | 0.3+ | |
| 1999 12 03 | 691 | 0.1− | 0.4+ | 2004 01 26 | 699 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.3− | 0.8+ | |
| 1999 12 17 | 691 | 0.0 | 0.8− | 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2+ | |
| 1999 12 17 | 691 | 0.2+ | 0.4− | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.4+ | |
| 1999 12 17 | 691 | 0.1+ | 0.4− | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.0 | |
| 2001 04 24 | 291 | 0.9+ | 0.3+ | 2004 01 30 | 704 | 1.0+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.5− | |
| 2001 04 24 | 291 | 1.1+ | 0.2+ | 2004 01 30 | 704 | 0.5− | 0.8+ | 2006 10 31 | G96 | 0.3− | 0.4− | |
| 2001 04 24 | 291 | 1.1+ | 0.5+ | 2004 01 30 | 704 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1+ | |
| 2001 04 27 | 691 | 0.3− | 0.3+ | 2004 01 30 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.0 | |
| 2001 04 27 | 691 | 0.3− | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.9− | |
| 2001 04 27 | 691 | 0.3− | 0.2+ | 2004 02 17 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.4− | |
| 2001 05 14 | 691 | 0.5− | 0.3− | 2004 02 17 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.1− | |
| 2001 05 14 | 691 | 0.6− | 0.2− | 2004 02 17 | 644 | 0.4+ | 0.3+ | 2006 11 13 | G96 | 0.5− | 0.2− | |
| 2001 05 14 | 691 | 0.9− | 0.4− | 2004 02 22 | 704 | 0.9− | 0.5− | 2006 11 13 | G96 | 0.2− | 0.1+ | |
| 2001 05 23 | 291 | 0.2+ | 0.7+ | 2004 02 22 | 704 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.5+ | |
| 2001 05 23 | 291 | 1.3+ | 0.5+ | 2004 02 22 | 704 | 1.1− | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.0 | |
| 2001 05 23 | 291 | 0.1− | 0.5− | 2004 03 18 | 645 | 0.1− | 0.0 | | | | | |
| 2002 08 27 | 644 | 0.4− | 0.4+ | 2004 03 18 | 645 | 0.1− | 0.1− | | | | | |

**(137539)∗ 1999 VD$_{69}$ = 2004 BJ$_{59}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55968)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.62634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27870013 | $\omega$ | 298.06642 | | −0.64048132 | −0.76793926 | |
| $a$ | 2.3211931 | $\Omega$ | 191.76985 | | +0.71653379 | −0.59414398 | |
| $e$ | 0.1616734 | $i$ | 2.04481 | | +0.27633855 | −0.23929528 | |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.5− | 1.1− | 2004 01 30 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | |
| 1999 11 04 | 704 | 0.0 | 0.4− | 2004 01 30 | 704 | 0.5+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2+ | |
| 1999 11 04 | 704 | 0.1− | 1.3− | 2004 01 30 | 704 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.4+ | 0.4+ | |
| 1999 11 09 | 704 | 0.5− | 0.5− | 2004 02 10 | 644 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.2+ | |
| 1999 11 09 | 704 | 0.5− | 0.2− | 2004 02 10 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.6+ | 0.2+ | |
| 1999 11 09 | 704 | 0.8+ | 0.2− | 2004 02 10 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.3+ | |
| 1999 11 09 | 704 | 0.1− | 0.5+ | 2004 02 11 | 699 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.0 | 1.1+ | |
| 1999 11 12 | 704 | 0.9+ | 0.7− | 2004 02 11 | 699 | 0.4− | 0.3− | 2006 10 21 | 703 | 0.9+ | 0.2− | |
| 1999 11 12 | 704 | 0.0 | 1.5− | 2004 02 11 | 699 | 0.9− | 0.4− | 2006 10 21 | 703 | 0.8+ | 0.7+ | |
| 1999 11 12 | 704 | 0.5+ | 1.0− | 2004 02 11 | 699 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 1999 11 12 | 704 | 0.6+ | 0.7− | 2004 02 17 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 1999 11 12 | 704 | 1.1+ | 0.3− | 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2001 05 22 | 691 | 0.1+ | 0.6+ | 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.8− | 0.1+ | |
| 2001 05 22 | 691 | 0.2+ | 0.7+ | 2004 02 17 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.0 | |
| 2001 05 22 | 691 | 0.1+ | 0.5+ | 2004 02 17 | 704 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.7− | 0.1− | |
| 2003 12 18 | 644 | 0.2+ | 0.2− | 2004 02 17 | 704 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.6− | 0.0 | |
| 2003 12 18 | 644 | 0.2+ | 0.3+ | 2004 02 17 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 1.0− | 0.1+ | |
| 2003 12 18 | 644 | 0.1− | 0.1+ | 2004 02 22 | 704 | 0.5− | 0.1− | 2006 10 23 | 691 | 0.6− | 0.0 | |
| 2004 01 13 | 699 | 0.2+ | 0.8− | 2004 02 22 | 704 | 0.7− | 0.3+ | 2006 10 27 | G96 | 0.6+ | 0.1+ | |
| 2004 01 13 | 699 | 1.5− | 0.1− | 2004 02 22 | 704 | 1.2− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.3− | |
| 2004 01 13 | 699 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− | |
| 2004 01 13 | 699 | 0.3− | 0.5− | 2004 03 18 | 704 | 0.6− | 0.7+ | 2006 10 27 | G96 | 0.5+ | 0.0 | |
| 2004 01 13 | 699 | 0.8+ | 0.3− | 2004 03 18 | 704 | 0.9+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.1− | |
| 2004 01 13 | 699 | 0.3+ | 0.9+ | 2004 03 18 | 704 | (0.4+ | 1.7+) | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2004 01 13 | 699 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.1− | |
| 2004 01 13 | 699 | 0.6− | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.7− | |
| 2004 01 24 | 704 | 0.9+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.5− | |
| 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 1.1+ | 0.2− | |
| 2004 01 24 | 704 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.3− | |
| 2004 01 24 | 704 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.3− | |
| 2004 01 24 | 704 | 0.8+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.3− | |
| 2004 01 25 | 608 | 0.6+ | 1.1+ | 2006 09 25 | G96 | 0.9+ | 0.5− | 2006 11 16 | G96 | 1.1+ | 0.1− | |
| 2004 01 25 | 608 | 0.5+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.7+ | 2006 11 20 | 691 | 0.6+ | 0.4+ | |
| 2004 01 25 | 608 | 0.6+ | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.0 | |
| 2004 01 26 | 699 | 0.6− | 0.1− | 2006 10 11 | 691 | 0.6− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2+ | |
| 2004 01 26 | 699 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.4+ | |
| 2004 01 26 | 699 | 0.0 | 0.3− | 2006 10 15 | 691 | 1.1− | 1.2+ | 2006 11 27 | 703 | 0.0 | 0.8+ | |
| 2004 01 26 | 699 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.2+ | |
| 2004 01 30 | 704 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.2− | |

**(137540)∗ 1999 VE$_{69}$ = 2004 AZ$_{24}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.47179 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28041333 | $\omega$ | 315.37799 | | +0.96106919 | −0.27268620 | |
| $a$ | 2.3117291 | $\Omega$ | 60.49464 | | +0.26566336 | +0.86757246 | |
| $e$ | 0.1147900 | $i$ | 2.93680 | | +0.07595393 | +0.41588492 | |
| $P$ | 3.51 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 1.1− | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.2+ | |
| 1999 11 04 | 704 | 0.5+ | 0.0 | 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.3+ | |
| 1999 11 04 | 704 | 0.8− | 0.5− | 2005 05 13 | G96 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 1.2+ | |
| 1999 11 04 | 704 | 0.1− | 0.2− | 2005 05 13 | G96 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.6− | |
| 1999 11 09 | 704 | 0.0 | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.0 | |
| 1999 11 09 | 704 | 0.8+ | 0.0 | 2005 05 13 | G96 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.4− | |
| 1999 11 09 | 704 | 1.3+ | 0.6− | 2006 09 30 | 703 | 0.2− | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.6+ | |
| 1999 11 09 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.3− | |
| 1999 11 12 | 704 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.6− | 2006 11 14 | G96 | 0.4+ | 0.0 | |
| 1999 11 12 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.8− | 0.3− | 2006 11 14 | G96 | 0.1− | 0.4− | |
| 1999 11 12 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.5+ | 0.2− | |
| 1999 11 12 | 704 | 0.2+ | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.1+ | |
| 1999 11 12 | 704 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 18 | 704 | (1.3− | 1.8+) | |
| 2003 12 21 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 1.2+ | |
| 2003 12 21 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.2+ | |
| 2003 12 21 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 1.0− | |
| 2003 12 28 | 691 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.0 | 0.8+ | |
| 2003 12 28 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | (0.4+ | 1.8+) | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 691 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 25 | 703 | 0.5− | 0.3− |
| 2004 01 15 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.1+ | 0.7− |
| 2004 01 15 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.5− | 2006 11 25 | 703 | 0.4− | 0.1− |
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 25 | 703 | 0.2+ | 0.3− |
| 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2004 01 22 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.6+ | 0.6+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2004 01 22 | 704 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.2+ | | | | |
| 2004 01 27 | 691 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.2+ | | | | |

**(137541)∗ 1999 VN$_{70}$ = 2004 CE$_{83}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60555)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.99316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27845401 | $\omega$ | 307.72997 | | +0.59074849 | −0.80673450 | |
| $a$ | 2.3225606 | $\Omega$ | 106.05417 | | +0.74477975 | +0.53854827 | |
| $e$ | 0.2009386 | $i$ | 0.83404 | | +0.31035358 | +0.24319790 | |
| $P$ | 3.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 691 | 0.8+ | 0.3+ | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1999 10 14 | 691 | 0.5+ | 0.3+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 10 14 | 691 | 0.8+ | 0.2+ | 2004 02 17 | 704 | 1.0+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1999 10 21 | 704 | 0.3− | 0.8+ | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.4− |
| 1999 10 21 | 704 | 0.0 | 0.4− | 2004 02 17 | 704 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.1− | 0.3− |
| 1999 10 21 | 704 | 0.1− | 0.4+ | 2004 02 17 | 704 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1− |
| 1999 11 01 | 703 | 0.7− | 0.6+ | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 691 | 0.5− | 0.2− |
| 1999 11 01 | 703 | 0.8− | 0.2+ | 2004 02 23 | 704 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 1999 11 01 | 703 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 1999 11 01 | 703 | 0.8− | 0.1− | 2004 02 23 | 704 | 1.2+ | 0.2+ | 2006 10 23 | 704 | 0.3− | 0.1+ |
| 1999 11 04 | 704 | 0.6− | 1.1− | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.1+ | 0.4+ |
| 1999 11 04 | 704 | 0.3− | 0.6− | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.6+ | 0.2+ |
| 1999 11 04 | 704 | 0.8− | 0.0 | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1999 11 04 | 704 | 0.1+ | 0.3− | 2004 03 20 | 691 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 1999 11 09 | 704 | 0.4+ | 0.5− | 2004 03 20 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1999 11 09 | 704 | 0.2+ | 0.5− | 2004 03 20 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1999 11 09 | 704 | 0.4− | 0.4− | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1999 11 12 | 704 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.1− | 0.7− | 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.5+ | 1.2+ |
| 1999 11 12 | 704 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (1.0− | 3.6+) |
| 1999 11 12 | 704 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 1999 11 12 | 704 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.2+ | 1.0+ | 2006 11 11 | 703 | 1.0− | 0.3+ |
| 1999 11 14 | 704 | 0.8+ | 0.6− | 2006 08 28 | 703 | (0.3+ | 1.9+) | 2006 11 13 | 704 | 0.4+ | 0.5− |
| 1999 11 14 | 704 | 0.5− | 0.2− | 2006 08 28 | 703 | (0.2− | 1.6+) | 2006 11 13 | 704 | 0.7+ | 0.1+ |
| 1999 11 14 | 704 | 0.7+ | 0.4− | 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 11 13 | 704 | 0.9− | 0.3+ |
| 1999 11 14 | 704 | 0.7+ | 0.1− | 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 11 13 | 704 | 0.3− | 0.7+ |
| 1999 11 14 | 704 | 0.5+ | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 1999 11 17 | 704 | 0.5+ | 0.1+ | 2006 10 02 | 691 | 0.5+ | 0.6− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 1999 11 17 | 704 | 1.2− | 0.9+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 1999 11 17 | 704 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 1999 11 17 | 704 | 1.1− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 1999 11 17 | 704 | 0.2− | 0.3− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.5+ |
| 1999 12 04 | 703 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.7+ | 0.1− |
| 1999 12 04 | 703 | 0.6+ | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.8+ |
| 1999 12 04 | 703 | 0.7− | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 1999 12 04 | 703 | 0.6− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 1999 12 07 | 691 | 0.2− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 1999 12 07 | 691 | 0.1− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 1999 12 07 | 691 | 0.0 | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2001 04 24 | 291 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 04 24 | 291 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2001 04 24 | 291 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2004 02 11 | 291 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2004 02 11 | 291 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.9− | 0.7+ |
| 2004 02 11 | 291 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.5− | 1.2+ |
| 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.4− | | | | |

**(137542)∗ 1999 VQ$_{70}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.24309 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27569972 | $\omega$ | 302.23170 | | +0.99812495 | +0.01317992 | |
| $a$ | 2.3380035 | $\Omega$ | 57.07824 | | +0.01398141 | +0.90163330 | |
| $e$ | 0.1475582 | $i$ | 4.08342 | | −0.05959121 | +0.43230046 | |
| $P$ | 3.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.8− | 0.7− | 2004 01 16 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1994 04 06 | 691 | 0.1− | 0.6− | 2004 01 17 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 1994 04 06 | 691 | 0.2− | 0.6− | 2004 01 17 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.2− |
| 1999 10 08 | 691 | 0.3− | 0.3− | 2004 01 17 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 1999 10 08 | 691 | 1.0− | 0.2− | 2005 04 06 | G96 | 0.3+ | 0.5− | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 1999 10 08 | 691 | 0.6+ | 0.2− | 2005 04 06 | G96 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 1999 10 14 | 691 | 0.1− | 0.3− | 2005 04 06 | G96 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1999 10 14 | 691 | 0.1− | 0.3− | 2005 04 06 | G96 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 1999 10 14 | 691 | 0.0 | 0.5− | 2005 04 16 | 691 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1999 10 16 | 691 | 0.2− | 0.4+ | 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 10 15 | 703 | (2.8+ | 0.1+) |
| 1999 10 16 | 691 | 0.0 | 0.5+ | 2005 04 16 | 691 | 0.1+ | 0.7+ | 2006 10 15 | 703 | 0.5− | 0.8− |
| 1999 10 16 | 691 | 0.3− | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 10 15 | 703 | 1.3− | 0.5− |
| 1999 11 04 | 704 | 0.3+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 10 15 | 703 | 0.9− | 0.3+ |
| 1999 11 04 | 704 | 0.0 | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2− |
| 1999 11 04 | 704 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 1999 11 09 | 704 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.7+ | 0.1− |
| 1999 11 09 | 704 | 0.1+ | 0.4− | 2006 09 17 | 691 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1999 11 09 | 704 | 0.2+ | 0.4− | 2006 09 18 | 699 | 0.4+ | 0.5− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1999 11 09 | 704 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 1999 11 12 | 704 | 0.5+ | 0.0 | 2006 09 18 | 699 | 0.9+ | 1.3− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1999 11 12 | 704 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.6+ | 1.0− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.4+ | 0.3− | 2006 09 22 | 704 | 0.5+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.0 | 1.2− | 2006 09 22 | 704 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 1999 11 17 | 704 | 0.3+ | 0.4− | 2006 09 22 | 704 | 0.2− | 0.7+ | 2006 10 21 | 703 | 0.0 | 1.0− |
| 1999 11 17 | 704 | 0.5+ | 0.2− | 2006 09 26 | 704 | 0.1+ | 0.7− | 2006 10 21 | 703 | 0.6− | 0.4− |
| 1999 11 17 | 704 | 0.8+ | 1.2+ | 2006 09 26 | 704 | 0.9− | 0.9− | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 1999 11 17 | 704 | 1.3+ | 0.3− | 2006 09 26 | 704 | 0.2− | 1.0− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 1999 12 03 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 12 03 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 1999 12 03 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 1999 12 07 | 704 | 0.1− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− |
| 1999 12 07 | 704 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 1999 12 07 | 704 | 0.3− | 0.9− | 2006 09 29 | 699 | (1.7− | 0.7+) | 2006 11 06 | 644 | 0.1+ | 0.4+ |
| 1999 12 07 | 704 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.5+ | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.4+ |
| 2003 12 22 | 704 | 0.1+ | 0.5− | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2003 12 22 | 704 | 0.9+ | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2003 12 22 | 704 | 0.4− | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 01 16 | 691 | 0.3− | 0.2+ | 2006 10 01 | 704 | 1.4+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.3− |

**(137543)∗ 1999 VW$_{70}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.88205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28336363 | $\omega$ | 129.38957 | | +0.96220457 | +0.27007638 | |
| $a$ | 2.2956551 | $\Omega$ | 214.98187 | | −0.26482720 | +0.89806000 | |
| $e$ | 0.2344413 | $i$ | 3.49442 | | −0.06347375 | +0.34719878 | |
| $P$ | 3.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.7− | 0.2− | 2005 05 08 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | (1.5− | 0.6+) |
| 1992 11 18 | 691 | (3.7+ | 0.2−) | 2005 05 08 | G96 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.1− | 1.4+ |
| 1992 11 18 | 691 | 0.4+ | 0.1+ | 2005 05 08 | G96 | 0.8− | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.4+ |
| 1999 10 12 | 704 | 0.7+ | 1.1− | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 1999 10 12 | 704 | 0.5+ | 0.5− | 2005 05 10 | 807 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 1999 10 12 | 704 | 0.3− | 0.9− | 2005 05 10 | 807 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 1999 10 12 | 704 | 0.5+ | 0.4− | 2006 09 27 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 1999 10 12 | 704 | 1.4+ | 1.3− | 2006 09 27 | G96 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 1999 10 15 | 704 | 1.4− | 0.4− | 2006 09 27 | G96 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.7+ | 0.8+ |
| 1999 10 15 | 704 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 1999 10 15 | 704 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 1999 10 15 | 704 | 0.3+ | 1.6− | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 1999 11 04 | 704 | 1.1+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 1.1+ | 0.9+ | 2006 10 19 | G96 | 0.4+ | 0.5− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 1999 11 04 | 704 | 0.7+ | 0.2− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 1999 11 12 | 704 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 1999 11 12 | 704 | 0.2+ | 0.6− | 2006 11 01 | G96 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.1− | 0.6− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.1+ |
| 1999 11 12 | 704 | 0.5− | 0.4− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.4− | 0.4+ |
| 1999 11 12 | 704 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.2− |
| 2004 01 18 | 644 | 0.0 | 1.1− | 2006 11 11 | 703 | 0.3− | 0.6− | 2006 11 27 | 703 | 0.3+ | 0.2+ |
| 2004 01 18 | 644 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.7+ | 0.0 | 2006 11 29 | 704 | 1.0− | 0.3+ |
| 2004 01 18 | 644 | 0.1− | 0.6− | 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.3− |
| 2005 04 15 | 691 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.7− |
| 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.2− | 1.0− | 2006 11 29 | 704 | 0.4− | 0.1− |
| 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.2− |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2005 04 17 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | (0.4− | 1.7+) | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2005 04 17 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.2− | 2006 12 01 | 691 | 0.5− | 0.3+ |

**(137544)∗ 1999 VG$_{72}$**

Discovered 1999 Nov. 12 by BAO Schmidt CCD Asteroid Program at Xinglong.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.53719 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27329270 | $\omega$ | 146.34927 | | +0.78885098 | −0.61284142 | |
| $a$ | 2.3517114 | $\Omega$ | 251.51413 | | +0.55257463 | +0.74019155 | |
| $e$ | 0.2126648 | $i$ | 2.79551 | | +0.26902677 | +0.27666200 | |
| $P$ | 3.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 1.7+ | 1.1− | 2004 01 29 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.0 |
| 1999 10 06 | 704 | 0.6+ | 0.5− | 2004 01 29 | 704 | 0.6− | 1.0+ | 2006 09 18 | 699 | 0.1+ | 0.2+ |
| 1999 10 06 | 704 | 0.2+ | 0.8− | 2004 02 13 | 699 | 0.4+ | 0.9+ | 2006 09 18 | 699 | 0.2− | 0.6− |
| 1999 10 06 | 704 | 1.0+ | 0.7− | 2004 02 13 | 699 | 1.3+ | 0.6+ | 2006 09 21 | 704 | 0.1− | 0.7+ |
| 1999 11 09 | 704 | 0.9+ | 0.6− | 2004 02 13 | 699 | 0.2− | 1.0+ | 2006 09 21 | 704 | 0.7+ | 0.5+ |
| 1999 11 09 | 704 | 0.6+ | 1.2− | 2004 02 13 | 699 | (0.3− | 1.7+) | 2006 09 21 | 704 | 0.3+ | 0.5+ |
| 1999 11 09 | 704 | 0.2+ | 1.0− | 2004 02 17 | 704 | 0.7+ | 0.6+ | 2006 09 21 | 704 | 0.2− | 0.4+ |
| 1999 11 09 | 704 | 0.6+ | 1.3− | 2004 02 17 | 704 | 1.1+ | 0.3+ | 2006 09 25 | 704 | 0.2+ | 0.0 |
| 1999 11 09 | 704 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.2− |
| 1999 11 12 | 327 | 0.1+ | 0.4− | 2004 02 17 | 691 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.2− | 0.2+ |
| 1999 11 12 | 327 | 0.2+ | 0.4− | 2004 02 17 | 704 | 0.7+ | 0.7+ | 2006 09 25 | 704 | 0.3− | 0.2− |
| 1999 11 12 | 327 | 0.1+ | 0.8− | 2004 02 17 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.0 |
| 1999 11 16 | 704 | 0.2+ | 0.6− | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 1999 11 16 | 704 | 0.1− | 0.1− | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.5+ |
| 1999 11 16 | 704 | 0.3− | 0.1+ | 2004 02 19 | 608 | 0.8− | 0.5− | 2006 09 29 | 704 | 0.7− | 0.1+ |
| 1999 11 16 | 327 | 0.5+ | 0.3− | 2004 02 19 | 608 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.1− | 0.2− |
| 1999 11 16 | 327 | 0.2+ | 0.6− | 2004 02 19 | 608 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.3− | 0.1− |
| 1999 11 16 | 327 | 0.5+ | 1.2− | 2004 03 01 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 0.6− | 0.5+ | 2004 03 01 | 691 | 0.1− | 0.1+ | 2006 10 19 | 704 | 0.7+ | 1.2+ |
| 1999 12 07 | 704 | 0.6− | 0.4+ | 2004 03 01 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 704 | 0.4+ | 0.3+ |
| 1999 12 07 | 704 | 0.8− | 0.0 | 2004 03 10 | 644 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 12 08 | 704 | 0.5− | 0.1+ | 2004 03 10 | 644 | 0.3− | 0.4+ | 2006 10 19 | 704 | 0.6+ | 0.8+ |
| 1999 12 08 | 704 | 0.8− | 0.2+ | 2004 03 10 | 644 | 0.3− | 0.1+ | 2006 10 19 | 704 | 0.4− | 0.4+ |
| 1999 12 08 | 704 | 0.8− | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 1999 12 08 | 704 | 0.7− | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 0.2− | 0.9+ |
| 1999 12 08 | 704 | 1.1− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 07 13 | 644 | 0.6+ | 1.2+ | 2006 09 15 | 683 | 1.0+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 07 13 | 644 | 0.6− | 0.6+ | 2006 09 15 | 683 | (1.4+ | 1.7+) | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 07 13 | 644 | 0.4− | 0.6+ | 2006 09 15 | 683 | 0.4+ | 0.1+ | 2006 10 29 | 704 | 0.6− | 0.5+ |
| 2002 07 20 | 644 | 0.4− | 0.4+ | 2006 09 16 | 683 | (2.0+ | 0.3−) | 2006 10 29 | 704 | 0.5− | 0.4+ |
| 2002 07 20 | 644 | 0.3− | 0.4+ | 2006 09 16 | 683 | (2.3+ | 0.6+) | 2006 10 29 | 704 | (2.4− | 1.0+) |
| 2002 07 20 | 644 | 0.2+ | 0.2+ | 2006 09 16 | 683 | 1.5+ | 0.4− | 2006 10 29 | 704 | 1.2− | 0.5+ |
| 2004 01 17 | 608 | 0.0 | 0.3+ | 2006 09 17 | 683 | 0.6+ | 0.5− | 2006 10 29 | 704 | 0.5− | 0.3+ |
| 2004 01 17 | 608 | 0.6+ | 0.2+ | 2006 09 17 | 683 | (2.6+ | 0.2+) | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2004 01 17 | 608 | 0.3+ | 0.2+ | 2006 09 17 | 683 | 1.3+ | 0.9+ | 2006 11 06 | 644 | 0.1− | 0.2− |
| 2004 01 24 | 704 | 1.2+ | 0.5+ | 2006 09 18 | 704 | 0.8− | 0.6+ | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2004 01 24 | 704 | 1.1+ | 0.7+ | 2006 09 18 | 704 | 0.9− | 0.8+ | 2006 11 22 | 704 | 1.0− | 0.0 |
| 2004 01 24 | 704 | 0.1− | 0.5− | 2006 09 18 | 704 | 1.0− | 0.7+ | 2006 11 22 | 704 | 0.3− | 0.3− |
| 2004 01 24 | 704 | 0.2+ | 0.4− | 2006 09 18 | 704 | 0.9− | 1.0+ | 2006 11 22 | 704 | 1.1− | 0.0 |
| 2004 01 29 | 704 | 0.5− | 0.1+ | 2006 09 18 | 704 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2004 01 29 | 704 | 1.0− | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.2− | | | | |

**(137545)∗ 1999 VP$_{75}$ = 1994 JU$_4$**

Discovered 1999 Nov. 5 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (MPC 39319)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.12968 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26822791 | $\omega$ | 25.96909 | | −0.39769918 | +0.91557973 | |
| $a$ | 2.3812230 | $\Omega$ | 220.67108 | | −0.85692509 | −0.39385643 | |
| $e$ | 0.0898664 | $i$ | 5.24483 | | −0.32789441 | −0.08118422 | |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 04 | 691 | 0.4− | 0.0 | 2005 04 07 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.2− |
| 1994 05 04 | 691 | 0.1− | 0.3+ | 2005 04 12 | 704 | 0.6+ | 0.1+ | 2006 09 24 | 104 | 0.3− | 0.4− |
| 1994 05 04 | 691 | 0.7− | 0.1+ | 2005 04 12 | 704 | 0.0 | 0.8+ | 2006 09 24 | 104 | 1.5+ | 1.4+ |
| 1994 05 11 | 691 | 0.0 | 0.0 | 2005 04 12 | 704 | 0.4− | 1.0− | 2006 09 24 | 104 | 0.9− | 0.0 |
| 1994 05 11 | 691 | 1.0+ | 0.7− | 2005 04 12 | 704 | 0.6+ | 0.9+ | 2006 09 27 | 691 | (0.7− | 1.8−) |
| 1994 05 11 | 691 | 0.2− | 0.8+ | 2005 05 04 | 699 | 1.1− | 0.9+ | 2006 09 27 | 691 | 0.1− | 0.3− |
| 1999 11 05 | 691 | 0.6+ | 0.1− | 2005 05 04 | 699 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 1999 11 05 | 691 | 0.8+ | 0.4+ | 2005 05 04 | G96 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 1999 11 05 | 691 | 0.1− | 0.2− | 2005 05 04 | 699 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 1999 11 12 | 704 | 0.0 | 0.5+ | 2005 05 04 | G96 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 1.1+ | 1.3+ | 2005 05 04 | 704 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.7− | 0.9+ |
| 1999 11 12 | 704 | 0.3− | 0.1+ | 2005 05 04 | G96 | 0.4− | 0.1− | 2006 10 17 | 703 | (2.0+ | 2.3+) |
| 1999 11 12 | 691 | 0.1− | 0.5+ | 2005 05 04 | 699 | 1.3+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.0 |
| 1999 11 12 | 691 | 0.0 | 1.0+ | 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 10 17 | 703 | 1.4− | 0.2+ |
| 1999 11 12 | 691 | 0.2+ | 0.7+ | 2005 05 04 | 704 | 1.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 11 16 | 691 | 0.4− | 0.3− | 2005 05 04 | 704 | 1.2+ | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.2− |
| 1999 11 16 | 691 | 0.4− | 0.2− | 2005 05 09 | 704 | 1.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 16 | 691 | 0.4− | 0.1− | 2005 05 09 | 704 | 0.3− | 0.6− | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2002 08 16 | 644 | 0.5+ | 0.5+ | 2005 05 09 | 704 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.6+ | 0.1+ |
| 2002 08 16 | 644 | 0.6+ | 0.0 | 2005 05 09 | 704 | (1.1− | 1.7−) | 2006 10 31 | G96 | 0.5+ | 0.1+ |
| 2002 08 16 | 644 | 0.4+ | 0.4+ | 2005 05 13 | 704 | 1.0+ | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.6+ | 0.4+ | 2005 05 13 | 704 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 09 06 | 704 | 0.5+ | 1.3+ | 2005 05 13 | 704 | (1.7+ | 1.1+) | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2002 09 06 | 704 | (1.6+ | 0.6+) | 2005 05 13 | 704 | (2.3+ | 0.3+) | 2006 11 15 | G96 | 0.5− | 0.3− |
| 2005 04 07 | 691 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.6− | 0.5− |
| 2005 04 07 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.3− | 0.0 | | | | |

**(137546)∗ 1999 VY$_{76}$ = 2005 GP$_{181}$**

Discovered 1999 Nov. 5 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 74672)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.13848 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27872105 | $\omega$ | 233.87991 | | +0.71498121 | | +0.69605163 |
| $a$ | 2.3210770 | $\Omega$ | 81.90632 | | −0.61824784 | | +0.67332258 |
| $e$ | 0.1927106 | $i$ | 3.80390 | | −0.32645287 | | +0.24929665 |
| $P$ | 3.54 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.1− | 0.1− | 2002 07 05 | 644 | 0.2− | 0.1− | 2005 05 07 | 691 | 0.0 | 0.0 | |
| 1999 11 05 | 691 | 0.0 | 0.1− | 2002 07 05 | 644 | 0.0 | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.0 | |
| 1999 11 05 | 691 | 0.1+ | 0.2− | 2002 07 15 | 644 | 0.1+ | 1.0+ | 2006 09 30 | G96 | 0.3− | 0.0 | |
| 1999 11 11 | 691 | 0.2− | 0.3− | 2002 07 15 | 644 | 0.1+ | 0.8+ | 2006 09 30 | G96 | 0.4− | 0.2− | |
| 1999 11 11 | 691 | 0.4− | 0.3− | 2002 07 15 | 644 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.2− | |
| 1999 11 11 | 691 | 0.3− | 0.1− | 2002 08 06 | 644 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.3+ | |
| 1999 11 16 | 691 | 0.1+ | 0.1+ | 2002 08 06 | 644 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.5+ | |
| 1999 11 16 | 691 | 0.0 | 0.2+ | 2002 08 06 | 644 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.5+ | |
| 1999 11 16 | 691 | 0.3+ | 0.3+ | 2002 08 29 | 644 | 0.1+ | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.3+ | |
| 1999 11 29 | 691 | 0.1− | 0.1− | 2002 08 29 | 644 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 1999 11 29 | 691 | 0.0 | 0.1+ | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3+ | |
| 1999 11 29 | 691 | 0.1− | 0.5− | 2005 04 12 | 691 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.0 | |
| 1999 12 18 | 691 | 0.3+ | 0.2− | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.0 | |
| 1999 12 18 | 691 | 0.2+ | 0.8+ | 2005 04 12 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3+ | |
| 1999 12 18 | 691 | 0.2+ | 0.1+ | 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.0 | |
| 2002 07 05 | 644 | 0.2− | 0.2− | 2005 05 07 | 691 | 0.0 | 0.2+ | | | | | |

**(137547)∗ 1999 VZ$_{76}$ = 2002 RM$_{192}$**

Discovered 1999 Nov. 5 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37188)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.15944 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26727248 | $\omega$ | 80.51991 | | −0.45341348 | | +0.89122982 |
| $a$ | 2.3868945 | $\Omega$ | 162.50394 | | −0.83168255 | | −0.41853012 |
| $e$ | 0.1509837 | $i$ | 2.13650 | | −0.32050015 | | −0.17476251 |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.1+ | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.2− | |
| 1999 11 05 | 691 | 0.0 | 0.1− | 2005 05 04 | 691 | 0.2+ | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.1− | |
| 1999 11 05 | 691 | 0.7− | 0.7− | 2005 05 04 | 704 | 1.4+ | 0.1− | 2005 05 19 | G96 | 0.6− | 0.1− | |
| 1999 11 11 | 691 | 0.4+ | 0.2+ | 2005 05 04 | 704 | 0.3+ | 0.3+ | 2005 05 30 | 699 | 1.5+ | 0.6+ | |
| 1999 11 11 | 691 | 0.5+ | 0.2+ | 2005 05 04 | 704 | 0.5− | 0.3+ | 2005 05 30 | 699 | 0.3+ | 0.8+ | |
| 1999 11 11 | 691 | 0.5+ | 0.4+ | 2005 05 09 | 699 | 0.1+ | 1.1+ | 2005 05 30 | 699 | 1.0+ | 0.8+ | |
| 1999 11 16 | 691 | 0.3− | 0.2+ | 2005 05 09 | 699 | 0.2− | 0.4+ | 2005 05 30 | 699 | 0.9+ | 0.6− | |
| 1999 11 16 | 691 | 0.2− | 0.2+ | 2005 05 09 | 699 | 0.1+ | 0.2− | 2005 06 04 | 703 | 0.4− | 0.4− | |
| 1999 11 16 | 691 | 0.1− | 0.2+ | 2005 05 09 | 699 | 0.9+ | 0.4+ | 2005 06 04 | 703 | 0.1+ | 0.6− | |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2005 06 04 | 703 | 0.2− | 0.8+ | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 05 10 | 691 | 0.3+ | 0.3+ | 2005 06 04 | 703 | 0.1− | 0.3− | |
| 2002 09 12 | 644 | 0.3− | 0.4+ | 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.5− | 0.1+ | |
| 2002 09 12 | 644 | 0.5− | 0.4+ | 2005 05 13 | 704 | 0.5+ | 0.5− | 2006 09 18 | 691 | 0.5− | 0.3+ | |
| 2002 09 12 | 644 | 0.3− | 0.5+ | 2005 05 13 | 704 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.2+ | |
| 2002 09 15 | 644 | 0.5− | 0.3+ | 2005 05 13 | 704 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | |
| 2002 09 15 | 644 | 0.3− | 0.4+ | 2005 05 13 | 704 | 0.5− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.7+ | |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2005 05 16 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | |
| 2004 01 13 | 691 | 0.6− | 0.4+ | 2005 05 16 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.4− | 0.5+ | |
| 2004 01 13 | 691 | 0.1+ | 0.2+ | 2005 05 16 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | |
| 2004 01 13 | 691 | 0.1+ | 0.3+ | 2005 05 17 | G96 | 0.5− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.3+ | |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2005 05 17 | G96 | 0.4− | 0.1+ | 2006 10 29 | 291 | 0.2+ | 0.2+ | |
| 2005 04 16 | 691 | 0.2+ | 0.1+ | 2005 05 17 | G96 | 0.6− | 0.3+ | 2006 10 29 | 291 | 0.0 | 0.2+ | |
| 2005 04 16 | 691 | (0.2+ | 2.5−) | 2005 05 17 | G96 | 0.2− | 0.4+ | 2006 10 29 | 291 | 0.1+ | 0.4+ | |
| 2005 05 04 | 691 | 0.0 | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.2− | | | | | |

**(137548)∗ 1999 VE$_{77}$ = 2001 KY$_{3}$**

Discovered 1999 Nov. 5 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 12991)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.49289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26341754 | $\omega$ | 70.69172 | | −0.82744783 | | −0.55338693 |
| $a$ | 2.4101251 | $\Omega$ | 75.60150 | | +0.47114575 | | −0.77655788 |
| $e$ | 0.1513905 | $i$ | 5.64990 | | +0.30553523 | | −0.30119888 |
| $P$ | 3.74 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.1+ | 0.5− | 2001 05 17 | 704 | 0.7+ | 0.1+ | 2004 02 23 | 704 | 0.1− | 1.3− | |
| 1999 11 05 | 691 | 0.1+ | 0.3− | 2001 05 17 | 704 | 0.7+ | 0.8− | 2004 02 23 | 704 | 0.8− | 0.4+ | |
| 1999 11 05 | 691 | 0.2+ | 0.3− | 2001 05 17 | 704 | 0.7+ | 1.0+ | 2004 02 23 | 704 | 0.3+ | 0.2− | |
| 1999 11 11 | 691 | 0.2− | 0.2− | 2001 05 17 | 704 | 0.3− | 0.1− | 2004 02 23 | 704 | (1.8+ | 0.1−) | |
| 1999 11 11 | 691 | 0.4− | 0.2− | 2001 05 21 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.7− | 1.1− | |
| 1999 11 11 | 691 | 0.2− | 0.1− | 2001 05 21 | 704 | 0.9− | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.1− | |
| 1999 11 13 | 704 | 0.7+ | 0.2+ | 2001 05 21 | 704 | 0.5− | 1.1+ | 2006 09 18 | 703 | 1.0− | 1.2+ | |
| 1999 11 13 | 704 | 1.4− | 0.8+ | 2001 05 24 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 703 | (1.5+ | 0.1+) | |
| 1999 11 13 | 704 | 0.0 | 0.3+ | 2001 05 24 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | (2.4− | 0.8−) | |
| 1999 11 14 | 704 | 0.3+ | 0.1− | 2001 05 24 | 704 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.5+ | |
| 1999 11 14 | 704 | 0.0 | 0.1− | 2001 05 24 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 699 | (1.7+ | 0.6−) | |
| 1999 11 14 | 704 | 0.4+ | 0.2− | 2001 05 24 | 704 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.8+ | |
| 1999 11 14 | 704 | 0.2+ | 0.3+ | 2002 09 16 | 644 | 0.1+ | 0.3− | 2006 09 20 | 644 | 0.1+ | 0.1+ | |
| 1999 11 14 | 704 | 0.7− | 0.5+ | 2002 09 16 | 644 | 0.0 | 0.4− | 2006 09 20 | 644 | 0.5− | 0.1− | |
| 1999 11 15 | 704 | 0.5+ | 0.7− | 2002 09 16 | 644 | 0.7+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.3+ | |
| 1999 11 15 | 704 | 0.5+ | 0.2− | 2003 11 23 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.8− | 0.7+ | |
| 1999 11 15 | 704 | 0.9+ | 0.0 | 2003 11 23 | 704 | 0.7− | 0.6+ | 2006 09 26 | 703 | 1.1− | 0.3− | |
| 1999 11 15 | 704 | 0.0 | 0.7− | 2003 11 23 | 704 | 0.6− | 0.8+ | 2006 09 26 | 703 | 0.1+ | 0.4+ | |
| 1999 11 15 | 704 | 0.4+ | 0.7− | 2003 11 23 | 704 | 0.5− | 1.0+ | 2006 09 26 | 703 | 0.1− | 0.5+ | |
| 1999 11 17 | 704 | 0.5− | 0.5+ | 2003 11 23 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.8+ | |
| 1999 11 17 | 704 | 0.5− | 0.3− | 2003 12 18 | 704 | 0.4+ | 0.9+ | 2006 09 30 | 703 | 0.1+ | 1.1+ | |
| 1999 11 17 | 704 | 0.1+ | 0.5− | 2003 12 18 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.1+ | |
| 1999 11 17 | 704 | 0.4+ | 1.4− | 2003 12 18 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.1+ | |
| 1999 11 29 | 691 | 0.4+ | 0.0 | 2003 12 18 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.5+ | |
| 1999 11 29 | 691 | 0.4+ | 0.0 | 2003 12 18 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | |
| 1999 11 29 | 691 | 0.6+ | 0.0 | 2003 12 27 | 704 | (0.4− | 1.9−) | 2006 10 11 | 644 | 0.0 | 0.4+ | |
| 1999 12 05 | 703 | 0.2+ | 0.1− | 2003 12 27 | 704 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.6+ | 0.8− | |
| 1999 12 05 | 703 | 0.8− | 0.5+ | 2003 12 27 | 704 | 0.9+ | 0.3− | 2006 10 16 | 703 | 0.1+ | 1.3+ | |
| 1999 12 05 | 703 | (3.2− | 0.8+) | 2004 01 22 | 704 | 0.0 | 0.8+ | 2006 10 16 | 703 | (1.7+ | 0.6+) | |
| 1999 12 05 | 703 | 0.6− | 0.9− | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.2+ | |
| 1999 12 07 | 704 | 1.0− | 1.4+ | 2004 01 22 | 704 | 0.9− | 0.8+ | 2006 10 23 | 644 | 0.3+ | 0.3+ | |
| 1999 12 07 | 704 | 0.8− | 1.9+ | 2004 01 22 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 1999 12 07 | 704 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.0 | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.3+ | |
| 1999 12 07 | 704 | 0.9− | 0.2− | 2004 02 23 | 704 | 0.1− | 1.0+ | | | | | |

**(137549)∗ 1999 VW$_{77}$ = 2001 GY$_{1}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12993)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.45397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27749192 | $\omega$ | 5.16649 | | +0.81557527 | | −0.57788540 |
| $a$ | 2.3279259 | $\Omega$ | 30.19708 | | +0.52876029 | | +0.72338246 |
| $e$ | 0.2191419 | $i$ | 3.39164 | | +0.23505221 | | +0.37784424 |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 22 | 704 | 0.2+ | 0.3− | 2004 01 23 | 704 | 0.7− | 0.7− | 2006 10 20 | 703 | 0.5− | 0.0 | |
| 1999 10 22 | 704 | 0.2+ | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.5+ | 2006 10 20 | 703 | 0.1− | 0.0 | |
| 1999 10 22 | 704 | 0.8+ | 0.1− | 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 1999 10 22 | 704 | 0.4+ | 0.7− | 2004 02 13 | 691 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.7− | |
| 1999 11 03 | 704 | 1.4+ | 1.2− | 2004 02 16 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.0 | |
| 1999 11 03 | 704 | 0.8+ | 0.7+ | 2004 02 16 | 704 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.1+ | |
| 1999 11 03 | 704 | 1.0+ | 0.3− | 2004 02 16 | 704 | 0.6+ | 1.1+ | 2006 10 21 | 703 | 0.1+ | 0.0 | |
| 1999 11 03 | 704 | 0.5+ | 0.1− | 2005 05 12 | G96 | 0.4− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 1999 11 05 | 704 | 0.8− | 0.1− | 2005 05 12 | G96 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 1999 11 05 | 704 | 0.8− | 0.4+ | 2005 05 12 | G96 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 0.1+ | 0.5+ | 2005 05 12 | G96 | 0.6− | 0.4+ | 2006 10 23 | 704 | 0.6+ | 1.2− |
| 1999 11 05 | 704 | 0.3− | 0.5+ | 2006 08 24 | 644 | 0.5− | 0.2+ | 2006 10 23 | 704 | 0.5+ | 0.8+ |
| 1999 11 06 | 704 | 0.5− | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.1− | 2006 10 23 | 704 | (0.8+ | 2.1−) |
| 1999 11 06 | 704 | 1.3− | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 10 23 | 704 | 0.1− | 0.0 |
| 1999 11 06 | 704 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.5+ | 2006 10 27 | 691 | 0.3− | 0.4− |
| 1999 11 06 | 704 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.4− |
| 1999 11 06 | 704 | 0.0 | 1.4+ | 2006 09 19 | 691 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.3− | 0.4− |
| 1999 11 09 | 703 | 0.1+ | 1.1+ | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1999 11 09 | 703 | 1.7− | 0.7+ | 2006 09 20 | 644 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1999 11 09 | 703 | (2.6− | 0.5−) | 2006 09 20 | 644 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 1999 11 09 | 703 | 0.6+ | 1.1+ | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 1999 11 14 | 704 | 0.4− | 0.9− | 2006 09 23 | 691 | 0.3− | 0.5+ | 2006 10 28 | 704 | 0.3+ | 1.1+ |
| 1999 11 14 | 704 | 0.2− | 0.5− | 2006 09 23 | 691 | 1.0+ | 0.2+ | 2006 10 28 | 704 | 0.5+ | 0.6+ |
| 1999 11 14 | 704 | 0.4+ | 0.7− | 2006 09 27 | 704 | (0.8+ | 1.6+) | 2006 10 28 | 704 | 0.0 | 0.5+ |
| 1999 11 14 | 704 | 0.3+ | 1.1− | 2006 09 27 | 704 | (1.7− | 1.1+) | 2006 10 28 | 704 | 0.6+ | 0.2+ |
| 1999 11 14 | 704 | 0.0 | 1.3− | 2006 09 27 | 704 | 0.4− | 0.6− | 2006 10 28 | 704 | 0.1− | 0.2+ |
| 1999 11 16 | 704 | 0.2+ | 0.9− | 2006 09 27 | 704 | 0.1− | 1.1+ | 2006 10 31 | 691 | 0.2− | 0.3− |
| 1999 11 16 | 704 | 0.1− | 1.1− | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 1999 11 16 | 704 | 0.3+ | 1.4− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 1999 11 16 | 704 | 0.4+ | 1.6− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 1999 11 16 | 704 | 0.3+ | 0.6− | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 1999 12 08 | 704 | 0.3+ | 0.3− | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2− | 0.7− |
| 1999 12 08 | 704 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.2− |
| 1999 12 08 | 704 | 0.0 | 0.2− | 2006 10 16 | 185 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 1999 12 13 | 703 | 0.2− | 0.2+ | 2006 10 16 | 185 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 1999 12 13 | 703 | 0.7+ | 0.1+ | 2006 10 16 | 185 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.2− | 0.2− |
| 1999 12 13 | 703 | 0.1+ | 0.3− | 2006 10 17 | 185 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 1999 12 13 | 703 | 1.0− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2001 04 13 | 691 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2001 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 04 13 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2001 04 16 | 691 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2001 04 16 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2001 04 16 | 691 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2004 01 23 | 704 | 1.4+ | 1.1+ | 2006 10 20 | 703 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2004 01 23 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 703 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2004 01 23 | 704 | 1.4+ | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 1.0− | 1.3+ |

**(137550)∗ 1999 VV$_{78}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.17168 | | (2000.0) | | | |
| $n$ | 0.27497394 | $\omega$ | 301.72249 | | +0.90702394 | +0.41464117 |
| $a$ | 2.3421158 | $\Omega$ | 33.94090 | | −0.32802993 | +0.80500896 |
| $e$ | 0.1433018 | $i$ | 7.54892 | | −0.26401501 | +0.42430328 |
| $P$ | 3.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 1.1− | 0.3+ | 2003 12 17 | 704 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.9− | 0.0 |
| 1999 10 01 | 703 | 0.8− | 0.3+ | 2003 12 17 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.5+ |
| 1999 10 01 | 703 | 1.3− | 0.2+ | 2003 12 17 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.4+ |
| 1999 10 01 | 703 | 1.1− | 0.7+ | 2003 12 17 | 704 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.0 |
| 1999 10 03 | 704 | 0.1+ | 0.7− | 2003 12 27 | 704 | (0.4− | 1.8+) | 2006 09 20 | 644 | 0.3+ | 0.2− |
| 1999 10 03 | 704 | 1.3+ | 0.8− | 2003 12 27 | 704 | 0.6− | 0.7+ | 2006 09 20 | 644 | 0.4+ | 0.3− |
| 1999 10 03 | 704 | 0.2+ | 0.4+ | 2003 12 27 | 704 | 1.5+ | 0.2− | 2006 09 22 | 704 | 1.5+ | 0.3+ |
| 1999 10 03 | 704 | 0.2− | 0.7+ | 2005 03 12 | 691 | 0.0 | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.1− |
| 1999 10 10 | 704 | 0.6− | 0.2− | 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.7+ | 1.3+ |
| 1999 10 10 | 704 | 0.1− | 0.0 | 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.8+ | 0.4+ |
| 1999 10 10 | 704 | 1.0− | 0.1+ | 2005 03 18 | 703 | 0.3+ | 0.6− | 2006 09 22 | 704 | 0.7+ | 0.5+ |
| 1999 10 10 | 704 | 0.2+ | 0.0 | 2005 03 18 | 703 | 1.2− | 1.3+ | 2006 09 26 | 704 | 0.3− | 0.5+ |
| 1999 10 10 | 704 | 1.0+ | 0.3+ | 2005 03 18 | 703 | 0.3− | 1.1+ | 2006 09 26 | 704 | 0.2+ | 0.2− |
| 1999 10 15 | 704 | 0.0 | 0.6− | 2005 03 18 | 703 | 0.6− | 1.2+ | 2006 09 26 | 704 | 0.7+ | 0.2− |
| 1999 10 15 | 704 | 0.0 | 0.1+ | 2005 04 01 | 691 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.1− | 0.6− | 2005 04 01 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.3− | 0.5− | 2005 04 01 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.3− |
| 1999 10 15 | 704 | 0.8− | 0.3− | 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 1999 10 20 | 704 | 0.4− | 0.5− | 2005 04 11 | G96 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 1999 10 20 | 704 | 0.6− | 0.1− | 2005 04 11 | G96 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.1+ |
| 1999 10 20 | 704 | 0.9+ | 0.0 | 2005 04 11 | G96 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.9+ |
| 1999 10 20 | 704 | 1.0+ | 0.3− | 2005 04 12 | 704 | 0.7+ | 0.9+ | 2006 09 28 | 704 | 0.5− | 0.2+ |
| 1999 10 20 | 704 | 0.2+ | 1.0− | 2005 04 12 | 704 | 1.2+ | 1.2+ | 2006 09 28 | 704 | 0.2+ | 0.6+ |
| 1999 10 29 | 703 | 0.5− | 0.3+ | 2005 04 12 | 704 | 0.3+ | 0.9+ | 2006 09 28 | 704 | 0.1+ | 0.1+ |
| 1999 10 29 | 703 | 0.3− | 0.5+ | 2005 05 13 | 691 | 0.6+ | 0.4+ | 2006 09 28 | 704 | 0.3+ | 0.5+ |
| 1999 10 29 | 703 | 0.5− | 0.8+ | 2005 05 13 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.4+ |
| 1999 10 29 | 703 | 0.3− | 1.2+ | 2005 05 13 | 691 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.5+ | 0.7+ |
| 1999 11 04 | 704 | 0.1− | 0.2+ | 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 1999 11 04 | 704 | 0.3+ | 0.0 | 2006 08 22 | 644 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 1999 11 04 | 704 | 0.1− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.1+ | 1.3+ |
| 1999 11 04 | 704 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.3− | 1.1+ | 2006 09 30 | 704 | 0.7− | 1.1+ |
| 1999 11 04 | 704 | 0.5− | 0.6+ | 2006 08 28 | 699 | 0.2− | 0.5+ | 2006 09 30 | 704 | 1.0− | 1.3+ |
| 1999 11 05 | 704 | 0.3− | 0.5+ | 2006 08 28 | 699 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.6− | 0.3+ |
| 1999 11 05 | 704 | 0.3− | 0.1− | 2006 08 28 | 699 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.5− |
| 1999 11 05 | 704 | 0.1− | 0.4− | 2006 08 30 | 704 | 0.6− | 1.1+ | 2006 09 30 | 704 | 0.9− | 1.1+ |
| 1999 11 05 | 704 | 0.7+ | 0.2+ | 2006 08 30 | 704 | 0.5− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 1999 11 05 | 704 | 0.5+ | 0.1− | 2006 08 30 | 704 | 1.1− | 1.1+ | 2006 09 30 | 703 | 0.4− | 0.7− |
| 1999 11 06 | 704 | 0.0 | 0.1+ | 2006 08 30 | 704 | 1.0− | 1.3+ | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 1999 11 06 | 704 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.1− | 1.0− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 1999 11 06 | 704 | 0.3+ | 0.8+ | 2006 09 12 | 703 | 0.3− | 1.2− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 1999 11 06 | 704 | 0.1− | 0.4− | 2006 09 12 | 703 | 0.5− | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 1999 11 06 | 704 | 0.3− | 0.4+ | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1999 11 14 | 704 | 0.8+ | 0.3− | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 1999 11 14 | 704 | 0.6+ | 0.5− | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 1999 11 14 | 704 | 0.5− | 0.3− | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3− | 0.0 |
| 1999 11 14 | 704 | 0.1− | 0.7− | 2006 09 16 | 704 | 0.2− | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 1999 11 14 | 704 | 0.1+ | 1.0− | 2006 09 16 | 704 | 0.2+ | 1.5− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1999 11 15 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 704 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 1999 11 15 | 691 | 0.1+ | 0.5+ | 2006 09 16 | 704 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.3− | 0.2− |
| 1999 11 15 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2003 12 03 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2003 12 03 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 1.1− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.6− |
| 2003 12 03 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2003 12 03 | 704 | 0.0 | 0.6+ | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.4− |

**(137551)∗ 1999 VL$_{84}$**

Discovered 1999 Nov. 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 203.76593 | | (2000.0) | | | |
| $n$ | 0.27509238 | $\omega$ | 307.53605 | | −0.99787586 | −0.05336059 |
| $a$ | 2.3414435 | $\Omega$ | 229.43730 | | +0.06338611 | −0.92768320 |
| $e$ | 0.0633565 | $i$ | 2.81946 | | −0.01503234 | −0.36953555 |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 29 | 691 | 0.1+ | 0.1− | 2002 09 14 | 644 | 0.1+ | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.6− |
| 1999 10 29 | 691 | 0.3+ | 0.3− | 2002 09 14 | 644 | 0.2+ | 1.4+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 1999 10 29 | 691 | 0.2+ | 0.2− | 2003 12 19 | 704 | 0.9− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.3− |
| 1999 11 06 | 691 | 0.1− | 0.0 | 2003 12 19 | 704 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.2− |
| 1999 11 06 | 691 | 0.2− | 0.1− | 2003 12 19 | 704 | 0.7+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.0 |
| 1999 11 06 | 691 | 0.1− | 0.0 | 2003 12 19 | 704 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.4− |
| 1999 11 09 | 704 | 0.8+ | 0.2+ | 2003 12 23 | 704 | 1.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 1999 11 09 | 704 | 0.5+ | 0.5+ | 2003 12 23 | 704 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 1999 11 09 | 704 | 0.4+ | 0.4+ | 2003 12 23 | 704 | 1.1+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.4− | 0.8+ | 2003 12 23 | 704 | 0.4+ | 1.0+ | 2006 10 15 | 691 | 0.0 | 0.2− |
| 1999 11 12 | 704 | 0.1+ | 0.9+ | 2003 12 23 | 704 | 0.4+ | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 1.0− | 0.1+ | 2005 02 09 | 809 | 0.5− | 0.3− | 2006 10 15 | 691 | 0.3− | 0.2+ |
| 1999 11 12 | 704 | 0.8− | 0.9+ | 2005 02 09 | 809 | 0.6− | 0.3− | 2006 10 21 | 703 | 0.6− | 1.4− |
| 1999 11 12 | 691 | 0.0 | 1.1+ | 2005 02 09 | 809 | 0.4− | 0.1− | 2006 10 21 | 703 | 1.1− | 0.8− |
| 1999 11 12 | 691 | 0.0 | 1.0+ | 2005 02 10 | 809 | 0.6− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.6+ |
| 1999 11 12 | 691 | 0.3− | 1.1+ | 2005 02 10 | 809 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.1− |
| 1999 11 17 | 691 | 0.3+ | 0.0 | 2005 02 10 | 809 | 0.4− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.5− |
| 1999 11 17 | 691 | 0.1+ | 0.0 | 2006 09 15 | 291 | 0.6+ | 0.0 | 2006 10 27 | 691 | 0.5− | 0.3− |
| 1999 11 17 | 691 | 0.1+ | 0.1− | 2006 09 15 | 291 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.4− | 0.3− |
| 1999 11 29 | 691 | 0.4− | 0.7− | 2006 09 15 | 291 | 0.6+ | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 29 | 691 | 0.5− | 0.9− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.2− |
| 1999 11 29 | 691 | 0.6− | 0.6− | 2006 09 15 | 691 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.3− |
| 2002 08 17 | 644 | 0.1+ | 1.2+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2002 08 17 | 644 | 0.0 | 1.2+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.3− | 0.6− |
| 2002 08 17 | 644 | 0.2− | 1.3+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2002 09 14 | 644 | 0.4+ | 1.1+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.7+ | 0.1− |

**(137552)∗ 1999 VG$_{85}$**

Discovered 1999 Nov. 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 138.46005 | | (2000.0) | | −0.36299956 | +0.92897151 |
| $n$ | 0.28025461 | $\omega$ | 25.05375 | | −0.87156681 | −0.36599607 |
| $a$ | 2.3126019 | $\Omega$ | 223.76067 | | −0.32954912 | −0.05530655 |
| $e$ | 0.0792937 | $i$ | 6.00945 | | | |
| $P$ | 3.52 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2+ | 0.5+ | 2002 08 28 | 644 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 1999 10 06 | 704 | 0.1− | 0.5+ | 2002 09 12 | 608 | 0.8− | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 1999 10 06 | 704 | 0.1− | 0.1− | 2002 09 12 | 608 | 0.9− | 0.7+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 1999 10 06 | 704 | 0.4− | 1.1+ | 2002 09 12 | 608 | 0.9− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.1+ | 0.7+ | 2002 09 13 | 644 | 0.5− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 1999 11 06 | 691 | 0.3+ | 0.3+ | 2002 09 13 | 644 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.9+ |
| 1999 11 06 | 691 | 0.4+ | 0.2+ | 2002 09 13 | 644 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 1999 11 06 | 691 | 0.6+ | 0.0 | 2005 06 27 | G96 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 1999 11 09 | 704 | (2.4− | 1.7+) | 2005 06 27 | G96 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 1999 11 09 | 704 | 0.4− | 0.4+ | 2005 06 27 | G96 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 1999 11 09 | 704 | 1.2+ | 0.1+ | 2005 06 27 | G96 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 1999 11 12 | 704 | 0.3− | 0.1− | 2005 07 11 | G96 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.3− |
| 1999 11 12 | 704 | 0.8− | 0.3− | 2005 07 11 | G96 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 1999 11 12 | 704 | 0.5− | 0.1− | 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 1999 11 12 | 704 | 0.1− | 0.5+ | 2005 07 11 | G96 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 1999 11 12 | 704 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 10 | 644 | 0.3− | 0.1− |
| 1999 11 12 | 691 | 0.0 | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 1999 11 12 | 691 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.5− | 2006 11 10 | 644 | 0.2− | 0.4+ |
| 1999 11 12 | 691 | 0.0 | 0.3− | 2006 10 03 | G96 | 0.5+ | 0.4− | 2006 11 10 | 644 | 0.0 | 0.0 |
| 1999 11 17 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.6− |
| 1999 11 17 | 691 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 1999 11 17 | 691 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.8+ | 1.0− |
| 1999 11 29 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 1999 11 29 | 691 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 1999 11 29 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2001 03 26 | 608 | 0.1+ | 0.7+ | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2001 03 26 | 608 | 0.2− | 1.3+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.5− |
| 2001 03 26 | 608 | 0.4+ | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2002 08 11 | 704 | 0.5+ | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2002 08 11 | 704 | 0.5+ | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2002 08 11 | 704 | 0.2− | 1.4− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2002 08 11 | 704 | 1.3+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 08 11 | 704 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.5− |
| 2002 08 14 | 699 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 08 14 | 699 | (1.5− | 0.4−) | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.5− | 0.4+ |
| 2002 08 14 | 699 | (1.9+ | 0.2+) | 2006 11 01 | 691 | 0.5− | 0.3+ | 2006 11 27 | 703 | 0.7+ | 0.7+ |
| 2002 08 14 | 699 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 27 | 703 | 1.0+ | 1.4+ |
| 2002 08 28 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 1.4+ | 0.4− |
| 2002 08 28 | 644 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.2+ | 1.7+ |

**(137553)∗ 1999 VY$_{85}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.04901 | | (2000.0) | | +0.48286070 | −0.87488057 |
| $n$ | 0.27098201 | $\omega$ | 34.76407 | | +0.78293520 | +0.41196935 |
| $a$ | 2.3650613 | $\Omega$ | 26.42354 | | +0.39224740 | +0.25468654 |
| $e$ | 0.1449171 | $i$ | 4.87394 | | | |
| $P$ | 3.64 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.4+ | 0.0 | 1999 11 07 | 704 | 0.4− | 0.5+ | 2004 01 19 | 704 | 0.8+ | 1.0+ |
| 1999 09 30 | 691 | 0.5+ | 0.1+ | 1999 11 14 | 704 | 0.6+ | 0.3− | 2004 01 19 | 704 | 0.8+ | 0.3+ |
| 1999 09 30 | 691 | 0.5+ | 0.1− | 1999 11 14 | 704 | 1.1− | 1.3− | 2005 01 17 | 809 | 0.1+ | 1.0+ |
| 1999 10 07 | 691 | 0.3+ | 0.1− | 1999 11 14 | 704 | 0.2− | 0.5− | 2005 01 17 | 809 | 0.0 | 0.2+ |
| 1999 10 07 | 691 | 0.1− | 0.1− | 1999 11 14 | 704 | 0.6+ | 0.5− | 2005 01 17 | 809 | 0.0 | 0.1+ |
| 1999 10 07 | 691 | 0.3− | 0.4− | 1999 11 14 | 704 | 0.0 | 0.7− | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 1999 10 10 | 704 | 0.5+ | 0.3− | 1999 11 16 | 704 | 1.3− | 0.9+ | 2006 08 17 | 644 | 0.7− | 0.4+ |
| 1999 10 10 | 704 | 0.8− | 0.4+ | 1999 11 16 | 704 | 0.3− | 0.4− | 2006 08 17 | 644 | 0.2+ | 0.1− |
| 1999 10 10 | 704 | 0.1+ | 0.3− | 1999 11 16 | 704 | 0.0 | 1.0− | 2006 08 30 | 699 | 0.1+ | 0.5+ |
| 1999 10 10 | 704 | 0.0 | 0.9− | 2003 12 17 | 699 | 0.1− | 0.8+ | 2006 08 30 | 699 | 0.8+ | 0.3+ |
| 1999 10 10 | 704 | 0.2− | 0.5+ | 2003 12 17 | 699 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.7− | 0.1+ |
| 1999 10 13 | 691 | 0.1+ | 0.0 | 2003 12 17 | 699 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.2− | 0.0 |
| 1999 10 13 | 691 | 0.0 | 0.0 | 2003 12 17 | 699 | 0.7+ | 0.6− | 2006 09 14 | 703 | 1.0− | 0.1+ |
| 1999 10 13 | 691 | 0.2+ | 0.1+ | 2003 12 18 | 704 | 1.0+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.0 |
| 1999 10 15 | 704 | 0.6− | 0.1− | 2003 12 18 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.1− | 1.2+ |
| 1999 10 15 | 704 | 0.1− | 1.4+ | 2003 12 18 | 704 | 0.5+ | 1.3+ | 2006 09 16 | 704 | 0.0 | 0.3− |
| 1999 10 15 | 704 | 0.4− | 0.3− | 2003 12 18 | 704 | 0.6+ | 0.3+ | 2006 09 16 | 704 | 0.1− | 1.0− |
| 1999 10 15 | 704 | 0.3+ | 0.8+ | 2003 12 28 | 704 | 0.8+ | 0.3+ | 2006 09 16 | 704 | 0.8+ | 0.4− |
| 1999 10 15 | 704 | (0.2− | 2.1+) | 2003 12 28 | 704 | 0.4+ | 0.7− | 2006 09 16 | 704 | 0.3+ | 0.5− |
| 1999 11 04 | 704 | 0.8+ | 0.0 | 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 1999 11 04 | 704 | 0.7+ | 0.2+ | 2003 12 28 | 704 | (2.3+ | 0.9−) | 2006 09 20 | 644 | 0.0 | 0.4+ |
| 1999 11 04 | 704 | 1.3+ | 0.0 | 2004 01 11 | 699 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.6+ |
| 1999 11 04 | 704 | 0.1+ | 0.8+ | 2004 01 11 | 699 | 0.7− | 0.9+ | 2006 09 30 | 291 | 0.3− | 0.5+ |
| 1999 11 04 | 704 | 0.2+ | 0.1− | 2004 01 11 | 699 | 1.3− | 0.5− | 2006 09 30 | 291 | 0.1− | 0.5+ |
| 1999 11 07 | 704 | 0.4− | 0.5+ | 2004 01 11 | 699 | (4.4− | 2.3+) | 2006 09 30 | 291 | 0.1− | 0.3+ |
| 1999 11 07 | 704 | 0.7− | 0.0 | 2004 01 16 | 699 | 1.2− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 1999 11 07 | 704 | 0.4+ | 0.3+ | 2004 01 16 | 699 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.5− | 0.2− |
| 1999 11 07 | 704 | 1.5− | 0.9− | 2004 01 16 | 699 | (2.3− | 0.5+) | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 1999 11 07 | 704 | 0.5− | 0.3+ | 2004 01 16 | 699 | 0.6− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 1999 11 07 | 704 | 1.0− | 1.4− | 2004 01 19 | 704 | 0.6+ | 0.7+ | | | | |

**(137554)∗ 1999 VA$_{86}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.64105 | | (2000.0) | | +0.93927848 | +0.33952910 |
| $n$ | 0.27505162 | $\omega$ | 309.92981 | | −0.27703948 | +0.83585863 |
| $a$ | 2.3416748 | $\Omega$ | 30.31809 | | −0.20249709 | +0.43134712 |
| $e$ | 0.2513785 | $i$ | 5.65690 | | | |
| $P$ | 3.58 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.0 | 0.5+ | 2003 12 28 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.4− | 0.5+ |
| 1999 10 03 | 704 | 0.3+ | 0.4+ | 2003 12 28 | 704 | 0.0 | 0.2− | 2006 09 21 | 699 | 0.1− | 0.1− |
| 1999 10 03 | 704 | 0.7+ | 1.2− | 2003 12 28 | 704 | 0.9+ | 0.7+ | 2006 09 21 | 699 | 0.0 | 0.1+ |
| 1999 10 03 | 704 | 0.3− | 0.0 | 2003 12 28 | 704 | 0.5+ | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.0 |
| 1999 10 07 | 691 | 0.1+ | 0.2− | 2005 03 11 | 691 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.5+ | 0.2− |
| 1999 10 07 | 691 | 0.8− | 0.8− | 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.4+ | 0.5− |
| 1999 10 07 | 691 | 0.1− | 0.1− | 2005 03 11 | 691 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.0 | 1.2+ |
| 1999 10 10 | 704 | 0.5+ | 0.7+ | 2005 05 09 | G96 | 0.7− | 0.4+ | 2006 09 22 | 704 | 0.6− | 0.6+ |
| 1999 10 10 | 704 | 0.6− | 0.4− | 2005 05 09 | G96 | 0.6− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.0 |
| 1999 10 10 | 704 | 0.6+ | 0.3+ | 2005 05 09 | G96 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.4+ |
| 1999 10 10 | 704 | 0.1+ | 0.8+ | 2005 05 09 | G96 | 0.5− | 0.1− | 2006 09 26 | 704 | 0.1− | 0.3+ |
| 1999 10 10 | 704 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.6− | 0.2+ |
| 1999 10 12 | 691 | 0.3+ | 0.0 | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.5− | 0.3− |
| 1999 10 12 | 691 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.3− | 0.2− |
| 1999 10 12 | 691 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.7− | 0.5− |
| 1999 10 15 | 704 | 0.2+ | 0.2+ | 2006 08 21 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.0 | 0.3+ | 2006 08 21 | 644 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.2− | 0.4− |
| 1999 10 15 | 704 | 0.3− | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 28 | 608 | 0.8+ | 0.9+ |
| 1999 10 15 | 704 | 0.4− | 0.8+ | 2006 08 22 | 644 | 0.4− | 0.1− | 2006 09 28 | 608 | 1.2+ | 1.4+ |
| 1999 10 15 | 704 | 0.4− | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 28 | 608 | 0.0 | 1.3+ |
| 1999 10 29 | 703 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.4− |
| 1999 10 29 | 703 | 0.8− | 0.1+ | 2006 08 30 | 699 | 0.8+ | 0.8+ | 2006 09 30 | 703 | 0.0 | 0.4− |
| 1999 10 29 | 703 | 0.5− | 0.8+ | 2006 08 30 | 699 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 1999 10 29 | 703 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 1999 11 04 | 704 | 0.6+ | 0.2+ | 2006 08 31 | 704 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1999 11 04 | 704 | 0.6+ | 0.4+ | 2006 08 31 | 704 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 1999 11 04 | 704 | 0.8+ | 0.6+ | 2006 08 31 | 704 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 1999 11 04 | 704 | 0.5+ | 0.1+ | 2006 09 12 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.8+ | 0.3+ | 2006 09 12 | 704 | 0.6+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 1999 11 07 | 704 | 0.7− | 0.5− | 2006 09 12 | 704 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1999 11 07 | 704 | 0.3+ | 0.1− | 2006 09 12 | 704 | (0.9+ | 1.5−) | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1999 11 07 | 704 | 0.0 | 0.6+ | 2006 09 12 | 704 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1999 11 07 | 704 | 0.6− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1999 11 07 | 704 | 0.5− | 0.4− | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.2− | 0.0 |
| 1999 11 07 | 704 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.0 | 0.1+ |
| 1999 11 07 | 704 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 1999 11 07 | 704 | 1.0− | 0.2− | 2006 09 15 | 704 | 0.9+ | 0.5− | 2006 10 19 | 703 | 0.1− | 0.2+ |
| 1999 11 11 | 703 | 0.3− | 0.6− | 2006 09 15 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 1999 11 11 | 703 | 0.9− | 0.4− | 2006 09 15 | 704 | 0.6− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 11 11 | 703 | 0.0 | 0.1+ | 2006 09 15 | 703 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 11 11 | 703 | 0.7− | 1.1+ | 2006 09 15 | 703 | 0.7− | 0.6− | 2006 11 10 | 704 | 0.3+ | 0.4+ |
| 1999 11 14 | 704 | 0.4+ | 0.1− | 2006 09 15 | 703 | 0.3− | 0.1− | 2006 11 10 | 704 | 0.4+ | 0.1− |
| 1999 11 14 | 704 | 0.3− | 0.4+ | 2006 09 15 | 703 | 0.5− | 0.1− | 2006 11 10 | 704 | 0.2− | 0.4− |
| 1999 11 14 | 704 | 0.2+ | 0.4− | 2006 09 16 | 704 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 1999 11 14 | 704 | 0.1− | 0.5− | 2006 09 16 | 704 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 1999 11 14 | 704 | 0.6− | 0.4− | 2006 09 16 | 704 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.7+ | 0.2− |
| 1999 11 16 | 704 | 0.1− | 0.1− | 2006 09 16 | 704 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 1999 11 16 | 704 | 1.5+ | 0.6+ | 2006 09 16 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 703 | 0.5− | 0.3+ |
| 1999 11 16 | 704 | 0.4+ | 0.9− | 2006 09 19 | 704 | 0.4+ | 0.0 | 2006 11 18 | 703 | 0.2− | 0.4− |
| 1999 11 16 | 704 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 703 | 1.2+ | 0.8− |
| 1999 11 16 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 704 | 0.4+ | 0.4+ | 2006 11 18 | 703 | 0.2− | 1.0− |
| 1999 12 11 | 557 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.5+ | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.4− |
| 1999 12 11 | 557 | 0.9+ | 0.5− | 2006 09 19 | 704 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.9− | 1.3− |
| 1999 12 11 | 557 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.6+ | 0.3+ |
| 2003 12 18 | 691 | 0.3− | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.2− | 0.9− |
| 2003 12 18 | 691 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.0 | 0.3− | | | | |
| 2003 12 18 | 691 | 0.0 | 0.3+ | 2006 09 21 | 699 | 0.2+ | 0.5− | | | | |

**(137555)∗ 1999 VE$_{86}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 245.51951 | | (2000.0) | | | |
| $n$ | 0.26850340 | $\omega$ | 115.09357 | | −0.58107312 | −0.81381003 |
| $a$ | 2.3795940 | $\Omega$ | 10.44432 | | +0.72945027 | −0.52525475 |
| $e$ | 0.1440031 | $i$ | 2.59295 | | +0.36091042 | −0.24863764 |
| $P$ | 3.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.1+ | 0.1+ | 2001 04 01 | 704 | 1.3+ | 0.4+ | 2004 01 22 | 704 | 0.0 | 1.0− |
| 1999 10 03 | 691 | 0.1+ | 0.2− | 2001 04 01 | 704 | 1.0+ | 1.4+ | 2004 01 22 | 704 | 0.4+ | 0.6− |
| 1999 10 03 | 691 | 0.1+ | 0.1− | 2001 04 01 | 704 | 0.3+ | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.4− |
| 1999 10 06 | 704 | 0.4+ | 0.0 | 2001 04 01 | 704 | 0.2+ | 0.4− | 2004 01 22 | 704 | 0.1+ | 0.2− |
| 1999 10 06 | 704 | 0.6+ | 0.4− | 2001 04 18 | 704 | 1.3− | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.2− |
| 1999 10 06 | 704 | 1.0+ | 0.1− | 2001 04 18 | 704 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.2− | 0.3− |
| 1999 10 06 | 704 | 0.6+ | 0.0 | 2001 04 18 | 704 | 0.6− | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.3− |
| 1999 10 06 | 704 | 0.0 | 0.5− | 2001 04 18 | 704 | 0.1− | 0.4+ | 2004 02 15 | 704 | 0.2− | 0.3− |
| 1999 10 10 | 704 | 0.7+ | 0.7− | 2002 08 18 | 644 | 0.1+ | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.2+ |
| 1999 10 10 | 704 | 0.1+ | 0.1− | 2002 08 18 | 644 | 0.1− | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.7+ |
| 1999 10 10 | 704 | 0.0 | 1.3− | 2002 08 18 | 644 | 0.2− | 0.5+ | 2004 03 19 | 704 | 0.3− | 0.5− |
| 1999 10 10 | 704 | 0.5+ | 0.6− | 2002 09 04 | 644 | 0.3− | 0.5+ | 2006 08 18 | 691 | 0.1+ | 0.3+ |
| 1999 10 10 | 691 | 0.1− | 0.2− | 2002 09 04 | 644 | 0.5− | 0.4+ | 2006 08 18 | 691 | 0.1+ | 0.3+ |
| 1999 10 10 | 691 | 0.0 | 0.0 | 2002 09 04 | 644 | 0.4− | 0.2+ | 2006 08 18 | 691 | 0.3− | 0.9− |
| 1999 10 10 | 691 | 0.1− | 0.0 | 2003 10 24 | 704 | 0.3− | 0.6+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 1999 10 15 | 704 | 1.3− | 0.2+ | 2003 10 24 | 704 | 0.4+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 1999 10 15 | 704 | 1.5− | 0.2+ | 2003 10 24 | 704 | 0.2− | 0.7+ | 2006 08 27 | 691 | 0.0 | 0.3+ |
| 1999 10 15 | 704 | 0.4− | 0.4+ | 2003 10 24 | 704 | 0.6− | 0.3+ | 2006 09 16 | 699 | 1.0+ | 0.6+ |
| 1999 10 15 | 704 | 0.3− | 0.0 | 2003 11 24 | 704 | 0.7+ | 0.8+ | 2006 09 16 | 699 | 1.3− | 0.1− |
| 1999 11 04 | 704 | 0.4+ | 0.1+ | 2003 11 24 | 704 | 1.4+ | 0.3− | 2006 09 16 | 699 | 1.0− | 0.6+ |
| 1999 11 04 | 704 | 1.2+ | 0.3+ | 2003 11 24 | 704 | 0.9+ | 0.4+ | 2006 09 16 | 699 | 0.5− | 0.2− |
| 1999 11 04 | 704 | 0.3+ | 0.3+ | 2003 11 24 | 704 | (1.5− | 0.3+) | 2006 09 20 | 704 | 0.2+ | 0.9+ |
| 1999 11 04 | 704 | 1.3+ | 0.2− | 2003 12 04 | 704 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.2− | 0.0 |
| 1999 11 07 | 704 | 0.6− | 0.0 | 2003 12 04 | 704 | 0.4+ | 0.3− | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 1999 11 07 | 704 | 0.3+ | 0.5− | 2003 12 04 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.7− | 0.1− |
| 1999 11 07 | 704 | 0.6− | 1.0+ | 2003 12 04 | 704 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.5+ | 0.1− |
| 1999 11 07 | 704 | 0.8+ | 0.1− | 2003 12 04 | 704 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.4+ |
| 1999 11 07 | 704 | 0.1+ | 0.5+ | 2003 12 18 | 704 | 0.3+ | 1.3+ | 2006 09 20 | 704 | 0.1− | 0.2+ |
| 1999 11 11 | 703 | (2.0− | 1.4+) | 2003 12 18 | 704 | 0.3+ | 1.3+ | 2006 09 20 | 644 | 0.2− | 0.4+ |
| 1999 11 11 | 703 | 0.8− | 0.3+ | 2003 12 18 | 704 | 0.6+ | 1.2+ | 2006 09 25 | 699 | 1.1− | 0.9− |
| 1999 11 11 | 703 | 0.4− | 1.1+ | 2003 12 20 | 704 | 0.1− | 1.0+ | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 1999 11 11 | 703 | 1.4− | 0.3− | 2003 12 20 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 1.2+ | 0.8− |
| 1999 11 14 | 704 | 0.8− | 0.2− | 2003 12 20 | 704 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.7+ | 0.8− |
| 1999 11 14 | 704 | 0.5− | 0.1− | 2003 12 20 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 1999 11 14 | 704 | 0.9+ | 0.4+ | 2003 12 22 | 704 | 0.1− | 0.1+ | 2006 10 16 | 703 | (0.5− | 1.5−) |
| 1999 11 14 | 704 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 1999 11 14 | 704 | 0.4− | 0.6− | 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.7+ |
| 1999 11 16 | 704 | 0.3+ | 0.9− | 2003 12 22 | 704 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.4− | 0.1+ |
| 1999 11 16 | 704 | 0.4+ | 1.7− | 2003 12 22 | 704 | 0.7− | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.4+ |
| 1999 11 16 | 704 | 0.6+ | 0.6− | 2003 12 27 | 704 | 0.5− | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 1999 11 16 | 704 | (2.2+ | 0.8−) | 2003 12 27 | 704 | 0.7− | 0.2− | 2006 10 16 | G96 | 0.4+ | 0.1+ |
| 1999 12 04 | 699 | 0.4+ | 0.8+ | 2003 12 27 | 704 | (1.2+ | 1.5−) | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 1999 12 04 | 699 | 0.4− | 0.7+ | 2003 12 27 | 704 | 1.4− | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 1999 12 04 | 699 | 0.6+ | 0.3− | 2003 12 29 | A35 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2001 04 01 | 704 | 0.5+ | 0.0 | 2003 12 29 | A35 | 0.5− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.0 |

**(137556)∗ 1999 VA$_{89}$ = 2002 SQ$_{26}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37188)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.97233 | | (2000.0) | | | |
| $n$ | 0.30258264 | $\omega$ | 279.52172 | | −0.28628905 | −0.95813545 |
| $a$ | 2.1973878 | $\Omega$ | 187.11777 | | +0.89090393 | −0.26470615 |
| $e$ | 0.1023508 | $i$ | 1.79398 | | +0.35260286 | −0.10911975 |
| $P$ | 3.26 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.1− | 0.5− | 2002 10 03 | 704 | 0.7− | 0.2+ | 2004 04 16 | 704 | 0.3+ | 1.4+ |
| 1999 11 04 | 704 | 0.4− | 0.9− | 2002 10 04 | 644 | 0.2− | 1.3+ | 2004 04 16 | 704 | (1.7+ | 1.3+) |
| 1999 11 04 | 704 | 0.4− | 0.2+ | 2002 10 04 | 644 | 0.1− | 1.4+ | 2004 04 16 | 704 | 0.4+ | 0.3+ |
| 1999 11 04 | 704 | 0.0 | 1.0+ | 2002 10 04 | 644 | (0.0 | 1.6+) | 2004 04 16 | 704 | 0.1− | 1.2+ |
| 1999 11 04 | 704 | 0.8− | 0.7+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.4+ |
| 1999 11 09 | 704 | 0.3− | 0.8− | 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 04 20 | 691 | 0.2+ | 0.5+ |
| 1999 11 09 | 704 | 0.2− | 0.4+ | 2002 10 06 | 608 | 0.2− | 0.8− | 2004 04 20 | 691 | 0.2+ | 0.5+ |
| 1999 11 09 | 704 | 0.4+ | 0.9− | 2002 10 06 | 608 | 0.3− | 0.9− | 2004 04 20 | 291 | 0.2+ | 0.5+ |
| 1999 11 09 | 704 | 0.6− | 0.3+ | 2002 10 06 | 608 | 0.0 | 0.8− | 2004 04 20 | 291 | 0.3− | 0.3+ |
| 1999 11 09 | 704 | 0.9− | 0.1+ | 2002 10 07 | 704 | 0.6+ | 0.7− | 2004 04 20 | 291 | 0.2− | 0.3− |
| 1999 11 15 | 704 | 0.4− | 1.0+ | 2002 10 07 | 704 | (1.7+ | 1.3+) | 2004 04 21 | 704 | 0.1− | 0.8+ |
| 1999 11 15 | 704 | 0.1+ | 1.1+ | 2002 10 07 | 704 | 0.3− | 1.1+ | 2004 04 21 | 704 | 0.4− | 1.3+ |
| 1999 11 15 | 704 | 0.2+ | 0.8+ | 2002 10 07 | 704 | 1.2+ | 1.1+ | 2004 04 21 | 704 | 0.0 | 0.8+ |
| 1999 11 15 | 704 | 0.4+ | 0.6+ | 2002 10 07 | 704 | 0.0 | 1.2+ | 2004 04 21 | 704 | 0.1+ | 0.8+ |
| 1999 11 15 | 704 | 0.2− | 0.2− | 2002 10 10 | 645 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.9− | 0.9+ |
| 1999 11 16 | 691 | 0.3+ | 0.1− | 2002 10 10 | 645 | 0.0 | 0.0 | 2004 04 24 | E12 | 0.4− | 0.4+ |
| 1999 11 16 | 691 | 0.2+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 04 24 | E12 | (1.6− | 0.6−) |
| 1999 11 16 | 691 | 0.1+ | 0.2+ | 2002 10 11 | 704 | (1.1+ | 1.6+) | 2004 04 24 | E12 | 0.0 | 0.1− |
| 1999 11 17 | 704 | 1.0− | 0.5+ | 2002 10 11 | 704 | 0.8− | 1.0+ | 2004 04 24 | E12 | 0.1− | 1.1+ |
| 1999 11 17 | 704 | 0.2− | 0.7+ | 2002 10 11 | 704 | 0.4− | 0.7+ | 2005 07 29 | 644 | 0.4− | 0.2+ |
| 1999 11 17 | 704 | 0.8+ | 0.1+ | 2004 03 14 | 703 | 0.1− | 0.1+ | 2005 07 29 | 644 | 0.3+ | 0.2+ |
| 1999 11 17 | 704 | 0.1+ | 0.1− | 2004 03 14 | 703 | 0.2+ | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 704 | 1.3− | 0.4+ | 2004 03 14 | 703 | 1.2+ | 0.0 | 2005 07 31 | 644 | 0.1+ | 0.0 | |
| 2002 09 05 | 704 | 1.0+ | 0.4+ | 2004 03 14 | 703 | (1.6− | 2.1+) | 2005 07 31 | 644 | 0.1− | 0.0 | |
| 2002 09 05 | 704 | 0.7+ | 0.0 | 2004 03 14 | 644 | 0.3− | 0.4+ | 2005 07 31 | 644 | 0.2+ | 0.1+ | |
| 2002 09 05 | 704 | 0.0 | 1.0+ | 2004 03 14 | 644 | 0.0 | 0.6+ | 2005 08 22 | 644 | 0.1− | 0.1+ | |
| 2002 09 13 | 291 | 0.2− | 0.5+ | 2004 03 14 | 644 | 0.4+ | 0.7+ | 2005 08 22 | 644 | 0.7− | 0.3− | |
| 2002 09 13 | 291 | 0.4− | 0.3+ | 2004 03 18 | 704 | 1.1+ | 0.2− | 2005 08 22 | 644 | 0.1− | 0.5+ | |
| 2002 09 13 | 291 | 0.4− | 0.3+ | 2004 03 18 | 704 | 1.1+ | 0.3− | 2005 08 22 | 644 | 0.0 | 0.2− | |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2004 03 18 | 704 | 1.5+ | 0.0 | 2005 08 22 | 644 | 0.2− | 0.0 | |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2004 03 27 | 704 | 1.3+ | 0.0 | 2005 08 22 | 644 | 0.3− | 0.1− | |
| 2002 09 14 | 644 | 0.4− | 0.1+ | 2004 03 27 | 704 | 0.0 | 1.2+ | 2006 10 27 | G96 | (0.6− | 2.0−) | |
| 2002 09 29 | 608 | 0.4− | 0.0 | 2004 03 27 | 704 | 1.1+ | 1.4+ | 2006 10 27 | G96 | 0.2+ | 0.2− | |
| 2002 09 29 | 608 | 0.2− | 0.1+ | 2004 03 31 | 704 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1+ | |
| 2002 09 29 | 608 | 0.2− | 0.5− | 2004 03 31 | 704 | 0.5+ | 0.6− | 2006 10 27 | G96 | 0.1− | 0.2+ | |
| 2002 09 30 | 704 | 0.3− | 0.1+ | 2004 03 31 | 704 | 0.6+ | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.1+ | |
| 2002 09 30 | 704 | 0.2− | 0.3+ | 2004 03 31 | 704 | 0.4+ | 0.4− | 2006 11 21 | G96 | 0.0 | 0.5+ | |
| 2002 09 30 | 704 | 0.2− | 0.6− | 2004 04 11 | 703 | (1.7− | 0.2−) | 2006 11 21 | G96 | 0.3− | 0.4+ | |
| 2002 09 30 | 704 | 0.3− | 0.1+ | 2004 04 11 | 703 | 0.5− | 0.6− | 2006 11 21 | G96 | 0.1− | 0.1+ | |
| 2002 10 02 | 704 | 0.0 | 0.9+ | 2004 04 11 | 703 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.1+ | |
| 2002 10 02 | 704 | (1.6+ | 0.1−) | 2004 04 11 | 703 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 | |
| 2002 10 02 | 704 | 0.3+ | 1.0+ | 2004 04 15 | 699 | (1.6− | 1.1+) | 2006 11 23 | G96 | 0.5+ | 0.3+ | |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 04 15 | 699 | (1.7− | 0.2−) | 2006 11 23 | G96 | 0.5+ | 0.0 | |
| 2002 10 03 | 704 | 0.7+ | 0.6+ | 2004 04 15 | 699 | (2.6− | 0.6+) | | | | | |
| 2002 10 03 | 704 | 0.7− | 0.5− | 2004 04 15 | 699 | (0.3+ | 2.6−) | | | | | |

**(137557)∗ 1999 VH$_{89}$ = 2001 HN$_{17}$**

Discovered 1999 Nov. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12995)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.30047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27151322 | $\omega$ | 238.80438 | | +0.20727198 | −0.97823402 | |
| $a$ | 2.3619756 | $\Omega$ | 199.24043 | | +0.90739724 | +0.19599677 | |
| $e$ | 0.1680499 | $i$ | 1.70853 | | +0.36560714 | +0.06814301 | |
| $P$ | 3.63 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.2+ | 0.1+ | 2001 05 01 | 691 | 0.3+ | 0.3+ | 2005 02 14 | 809 | 0.0 | 0.2+ | |
| 1995 10 02 | 691 | 0.2+ | 0.1− | 2001 05 01 | 691 | 0.3− | 1.0+ | 2005 02 14 | 809 | 0.0 | 0.1+ | |
| 1995 10 02 | 691 | 0.0 | 0.3− | 2004 01 24 | 704 | 1.5+ | 0.2− | 2006 08 28 | 691 | 0.1− | 0.7+ | |
| 1999 10 29 | 691 | 0.1+ | 0.3+ | 2004 01 24 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 691 | 0.4− | 0.7+ | |
| 1999 10 29 | 691 | 0.3+ | 0.3+ | 2004 01 24 | 704 | 0.9+ | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.6+ | |
| 1999 10 29 | 691 | 0.2+ | 0.4+ | 2004 01 24 | 608 | 0.3− | 0.7− | 2006 09 17 | 704 | 1.0− | 0.5− | |
| 1999 11 04 | 704 | 0.4+ | 0.4+ | 2004 01 24 | 608 | 0.0 | 0.8− | 2006 09 17 | 704 | 0.3+ | 0.8+ | |
| 1999 11 04 | 704 | 0.8+ | 0.1− | 2004 01 24 | 608 | 0.4− | 0.6− | 2006 09 17 | 704 | 0.5+ | 1.1+ | |
| 1999 11 04 | 704 | 0.2− | 0.5+ | 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 10 01 | 703 | 1.2− | 0.9− | |
| 1999 11 04 | 704 | 0.9− | 1.0+ | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.2+ | 0.3− | |
| 1999 11 09 | 704 | 0.5− | 1.2+ | 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 01 | 703 | 0.6− | 0.5+ | |
| 1999 11 09 | 704 | 0.5− | 0.9+ | 2004 01 30 | 704 | 0.6+ | 0.9+ | 2006 10 01 | 703 | 0.3+ | 0.8+ | |
| 1999 11 09 | 704 | 1.2− | 0.9+ | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.4+ | |
| 1999 11 09 | 704 | 0.6− | 0.3− | 2004 01 30 | 704 | (0.6+ | 2.2+) | 2006 10 12 | 644 | 0.1+ | 0.8+ | |
| 1999 11 09 | 704 | 0.2− | 0.0 | 2004 01 30 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 1.1+ | |
| 1999 11 12 | 704 | (2.1+ | 0.2−) | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.1− | |
| 1999 11 12 | 704 | 0.0 | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.1− | |
| 1999 11 12 | 704 | 0.7− | 0.3+ | 2004 02 11 | 691 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.1+ | |
| 1999 11 12 | 704 | 0.8− | 0.1− | 2004 02 11 | 699 | 1.0+ | 1.5+ | 2006 10 19 | G96 | 0.3− | 0.3+ | |
| 1999 11 16 | 691 | 0.1− | 0.1− | 2004 02 11 | 699 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.2− | 0.2+ | |
| 1999 11 16 | 691 | 0.1+ | 0.2− | 2004 02 11 | 699 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− | |
| 1999 11 16 | 691 | 0.3− | 0.1− | 2004 02 11 | 699 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 | |
| 2001 04 24 | 691 | 0.7+ | 0.3+ | 2004 02 17 | 644 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.0 | |
| 2001 04 24 | 691 | 0.6+ | 0.4+ | 2004 02 17 | 644 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.3+ | |
| 2001 04 24 | 691 | 0.4+ | 0.1+ | 2004 02 17 | 644 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.1+ | |
| 2001 04 26 | 691 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.8+ | 0.7+ | 2006 11 21 | G96 | 0.3− | 0.2+ | |
| 2001 04 26 | 691 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.7− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1− | |
| 2001 04 26 | 691 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.4+ | 0.6+ | | | | | |
| 2001 05 01 | 691 | 0.3− | 0.2+ | 2004 02 26 | 704 | 1.0− | 1.1+ | | | | | |

**(137558)∗ 1999 VY$_{89}$**

Discovered 1999 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.38080 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27653243 | $\omega$ | 53.36175 | | +0.30827109 | −0.95054047 | |
| $a$ | 2.3333077 | $\Omega$ | 18.79168 | | +0.83085115 | +0.24958580 | |
| $e$ | 0.0956698 | $i$ | 6.76941 | | +0.46330909 | +0.18487766 | |
| $P$ | 3.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 11 | 691 | 0.1− | 0.1− | 2003 12 18 | 704 | 0.7− | 0.9− | 2006 09 26 | 691 | 0.1+ | 0.0 | |
| 1994 04 11 | 691 | 0.4− | 0.3− | 2003 12 18 | 704 | 0.0 | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | |
| 1994 04 11 | 691 | 0.2+ | 0.0 | 2003 12 18 | 704 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.4+ | 0.2+ | |
| 1999 10 02 | 703 | 0.7+ | 0.0 | 2003 12 18 | 704 | 0.7− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.0 | |
| 1999 10 02 | 703 | 0.1− | 0.1− | 2003 12 27 | 704 | 0.6− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2+ | |
| 1999 10 02 | 703 | 0.6+ | 0.7+ | 2003 12 27 | 704 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.3− | |
| 1999 10 02 | 703 | 1.1− | 0.1− | 2003 12 27 | 704 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.2+ | |
| 1999 10 09 | 704 | 0.2+ | 0.3− | 2003 12 29 | 704 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.5− | 0.5+ | |
| 1999 10 09 | 704 | 1.1+ | 0.1− | 2003 12 29 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.7+ | |
| 1999 10 09 | 704 | 0.1+ | 0.0 | 2003 12 29 | 704 | 0.2− | 0.9− | 2006 10 16 | 703 | 0.0 | 1.5+ | |
| 1999 10 09 | 704 | 0.3+ | 0.6− | 2003 12 29 | 704 | 0.1+ | 1.1+ | 2006 10 16 | 703 | 0.1− | 1.0+ | |
| 1999 10 09 | 704 | 1.1+ | 0.2+ | 2003 12 29 | 704 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 1999 10 15 | 704 | 0.6− | 0.3+ | 2005 01 17 | 809 | 0.3− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 1999 10 15 | 704 | 0.6+ | 0.4+ | 2005 01 17 | 809 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.4− | 0.1+ | |
| 1999 10 15 | 704 | 1.0− | 1.0+ | 2005 01 17 | 809 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.4− | |
| 1999 10 19 | 704 | 0.4+ | 0.9− | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.0 | |
| 1999 10 19 | 704 | 0.5+ | 1.3− | 2006 08 22 | 644 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.3− | |
| 1999 10 19 | 704 | 0.9+ | 0.2+ | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2− | |
| 1999 10 19 | 704 | 0.3+ | 1.0− | 2006 08 29 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.1+ | |
| 1999 10 19 | 704 | 0.8+ | 1.3− | 2006 08 29 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 1999 11 05 | 704 | 0.0 | 0.6− | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1− | |
| 1999 11 05 | 704 | 0.3+ | 1.3− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2− | |
| 1999 11 05 | 704 | 1.2+ | 0.7− | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.0 | |
| 1999 11 09 | 704 | 0.6− | 0.4− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1− | |
| 1999 11 09 | 704 | 1.4− | 0.7− | 2006 09 16 | 699 | (3.1+ | 1.1+) | 2006 10 22 | 644 | 0.4− | 0.5− | |
| 1999 11 09 | 704 | 0.1− | 0.4+ | 2006 09 16 | 699 | 0.4− | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.2+ | |
| 1999 11 09 | 704 | 0.7− | 0.0 | 2006 09 16 | 699 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.0 | |
| 1999 11 09 | 704 | 0.4− | 0.2− | 2006 09 16 | 699 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.3− | |
| 1999 11 14 | 704 | 1.0+ | 0.5+ | 2006 09 19 | 699 | 0.4+ | 1.4− | 2006 10 23 | 644 | 0.2− | 0.2− | |
| 1999 11 14 | 704 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 1999 11 14 | 704 | 0.1+ | 0.4− | 2006 09 19 | 699 | 0.5− | 0.6+ | 2006 10 24 | 644 | 0.7− | 0.2− | |
| 2003 11 19 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.6+ | 0.1+ | 2006 10 24 | 644 | 0.3+ | 0.1− | |
| 2003 11 19 | 704 | 1.4+ | 0.3− | 2006 09 19 | 703 | 0.6+ | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.2+ | |
| 2003 11 19 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.0 | |
| 2003 11 19 | 704 | 0.4+ | 0.0 | 2006 09 19 | 703 | 1.3− | 0.2− | 2006 10 24 | 644 | 0.3− | 0.1− | |
| 2003 11 19 | 704 | 0.5+ | 0.8+ | 2006 09 22 | 704 | 0.1− | 0.5− | 2006 10 24 | 644 | 0.0 | 0.1− | |
| 2003 12 03 | 704 | 0.4+ | 0.2− | 2006 09 22 | 704 | 1.4− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.5− | |
| 2003 12 03 | 704 | 0.6+ | 0.8+ | 2006 09 22 | 704 | 0.5− | 0.5− | 2006 11 15 | G96 | 0.1− | 0.1− | |
| 2003 12 03 | 704 | 0.4+ | 1.2+ | 2006 09 22 | 704 | 1.4− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.4− | |
| 2003 12 03 | 704 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3− | |
| 2003 12 17 | 704 | 1.4− | 1.0+ | 2006 09 25 | 699 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.4− | |
| 2003 12 17 | 704 | (0.4− | 1.7−) | 2006 09 25 | 699 | 0.8− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.5− | |
| 2003 12 17 | 704 | 1.0− | 1.4− | 2006 09 25 | 699 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.2− | |
| 2003 12 17 | 704 | (0.0 | 1.8−) | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.2− | |
| 2003 12 17 | 704 | 0.6+ | 1.4− | 2006 09 26 | 691 | 0.0 | 0.0 | | | | | |

**(137559)∗ 1999 VE$_{90}$**

Discovered 1999 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.88757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28133911 | $\omega$ | 126.67045 | | +0.86715826 | +0.49800258 | |
| $a$ | 2.3066550 | $\Omega$ | 203.46309 | | −0.46121166 | +0.79884930 | |
| $e$ | 0.2433598 | $i$ | 0.78798 | | −0.18793710 | +0.33739181 | |
| $P$ | 3.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 21 | 691 | 0.3− | 0.3− | 2005 03 09 | G96 | 0.6− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 1992 10 21 | 691 | 0.2− | 0.1− | 2005 03 09 | G96 | 0.4− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1992 10 21 | 691 | 0.1− | 0.9− | 2005 03 09 | G96 | 0.8− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1992 10 22 | 691 | 0.0 | 0.6− | 2005 04 02 | G96 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1992 10 22 | 691 | 0.5+ | 0.8− | 2005 04 02 | G96 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.5− | 0.6+ |
| 1992 10 22 | 691 | 0.5+ | 1.0− | 2005 04 02 | G96 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.0 | 0.6+ |
| 1999 10 02 | 703 | 0.2− | 0.1+ | 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.1+ |
| 1999 10 02 | 703 | 0.4− | 0.7+ | 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.7+ |
| 1999 10 02 | 703 | 0.4− | 0.4+ | 2005 04 02 | G96 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.3+ | 0.1− |
| 1999 10 02 | 703 | 0.3+ | 0.1+ | 2005 04 02 | G96 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.0 | 1.0− |
| 1999 10 04 | 704 | 0.9+ | 1.0− | 2005 04 02 | G96 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.5− | 0.6+ |
| 1999 10 04 | 704 | 1.6+ | 2.0− | 2006 07 22 | G96 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 1999 10 04 | 704 | 0.5+ | 0.5+ | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 1999 10 10 | 704 | 0.4− | 0.1− | 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 10 10 | 704 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1999 10 10 | 704 | 0.8+ | 0.0 | 2006 08 06 | 699 | 1.2− | 0.7− | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 1999 10 10 | 704 | 0.6+ | 0.3− | 2006 08 06 | 699 | 0.7− | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 1999 10 10 | 704 | 0.1− | 0.3− | 2006 08 06 | 699 | 0.6− | 0.8− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 1999 10 15 | 704 | 0.4− | 0.3+ | 2006 08 06 | 699 | 1.1− | 0.8+ | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 1999 10 15 | 704 | 0.0 | 0.3+ | 2006 08 25 | 704 | 0.8− | 0.8+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 1999 10 15 | 704 | 0.1+ | 0.4+ | 2006 08 25 | 704 | 0.2− | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 1999 10 15 | 704 | 0.2+ | 0.6+ | 2006 08 25 | 704 | (1.3− | 1.7+) | 2006 10 20 | 695 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 0.9+ | 1.4+ | 2006 08 25 | 704 | 0.2+ | 0.6− | 2006 10 20 | 695 | 0.1− | 0.1+ |
| 1999 10 18 | 327 | 0.5− | 0.6− | 2006 08 25 | 704 | 0.8+ | 0.4− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1999 10 18 | 327 | 0.6− | 0.7− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1999 10 18 | 327 | 0.6− | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 10 19 | 704 | 0.0 | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 1999 10 19 | 704 | 0.2+ | 0.7− | 2006 09 17 | 704 | 0.5− | 1.0+ | 2006 10 28 | 691 | 0.3− | 0.4+ |
| 1999 10 19 | 704 | 0.2+ | 0.4− | 2006 09 17 | 704 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 1999 10 19 | 704 | 0.1− | 0.7− | 2006 09 17 | 704 | 0.4− | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1999 10 19 | 704 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.7− | 1.1+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 1999 11 05 | 704 | 1.4+ | 0.0 | 2006 09 17 | 704 | 0.6− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 1999 11 05 | 704 | 0.7+ | 0.3− | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.4− |
| 1999 11 05 | 704 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.3− | 0.4+ |
| 1999 11 05 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 1999 11 06 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 1999 11 06 | 704 | 0.9+ | 1.6+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 11 06 | 644 | 0.7− | 0.3+ |
| 1999 11 06 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 1999 11 06 | 704 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.6+ |
| 1999 11 09 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 0.6+ | 0.8− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 1999 11 09 | 704 | 0.6+ | 0.9+ | 2006 09 20 | 704 | 0.5+ | 0.6− | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 1999 11 09 | 704 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.2− |
| 1999 11 09 | 704 | 0.6− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 1.0− | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2002 06 08 | 608 | 0.7+ | 0.3− | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2002 06 08 | 608 | 0.1− | 0.9− | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2002 06 08 | 608 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2005 03 09 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.1+ |

**(137560)∗ 1999 VL$_{92}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.48595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28023919 | $\omega$ | 318.68240 | | +0.96821238 | +0.24395215 | |
| $a$ | 2.3126867 | $\Omega$ | 27.34559 | | −0.18603300 | +0.84996356 | |
| $e$ | 0.1356624 | $i$ | 6.90760 | | −0.16720200 | +0.46695748 | |
| $P$ | 3.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.1− | 0.1+ | 2003 11 19 | 704 | 0.9− | 0.0 | 2006 09 19 | 704 | 0.3+ | 0.7+ |
| 1999 10 01 | 703 | 1.5− | 0.3+ | 2003 11 19 | 704 | 0.2− | 1.3+ | 2006 09 19 | 704 | 0.4+ | 1.4+ |
| 1999 10 01 | 703 | 0.0 | 0.6− | 2003 11 19 | 704 | 0.1− | 0.9+ | 2006 09 19 | 704 | (1.9+ | 0.3+) |
| 1999 10 01 | 703 | 1.5− | 0.6− | 2003 12 17 | 704 | 0.3+ | 0.1− | 2006 09 20 | 691 | 0.1+ | 0.5+ |
| 1999 10 04 | 691 | 0.1+ | 0.2− | 2003 12 17 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 1999 10 04 | 691 | 0.3+ | 0.1− | 2003 12 17 | 704 | 0.6+ | 0.9+ | 2006 09 20 | 691 | 0.0 | 0.6+ |
| 1999 10 04 | 691 | 0.1+ | 0.1− | 2003 12 17 | 704 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.3− | 1.3+ |
| 1999 10 04 | 704 | 0.4− | 0.3− | 2003 12 18 | 704 | 0.2− | 1.0+ | 2006 09 22 | 704 | 0.1+ | 0.3+ |
| 1999 10 04 | 704 | 0.5− | 1.4− | 2003 12 18 | 704 | 0.1+ | 0.7+ | 2006 09 22 | 704 | (0.5− | 1.6+) |
| 1999 10 04 | 704 | 0.2− | 0.3+ | 2003 12 18 | 704 | 0.7− | 0.5− | 2006 09 22 | 704 | 0.1+ | 1.3+ |
| 1999 10 04 | 704 | 0.9− | 0.6− | 2003 12 18 | 704 | 0.7+ | 0.4+ | 2006 09 22 | 704 | 0.2+ | 0.8+ |
| 1999 10 04 | 704 | 1.3− | 0.6+ | 2003 12 29 | 704 | 0.2+ | 1.2+ | 2006 09 26 | 704 | 0.1− | 0.1− |
| 1999 10 07 | 704 | 0.1+ | 0.4+ | 2003 12 29 | 704 | 0.7+ | 1.0+ | 2006 09 26 | 704 | 0.5− | 0.6+ |
| 1999 10 07 | 704 | 0.2− | 0.6+ | 2003 12 29 | 704 | 0.9+ | 0.5+ | 2006 09 26 | 704 | (0.9− | 2.6+) |
| 1999 10 07 | 704 | 0.3+ | 0.4+ | 2003 12 29 | 704 | 0.2+ | 1.4+ | 2006 09 26 | 704 | 0.1− | 0.1− |
| 1999 10 07 | 704 | 0.1+ | 0.4+ | 2005 03 09 | G96 | 0.9+ | 0.4− | 2006 09 26 | 704 | 0.6− | 0.3+ |
| 1999 10 07 | 704 | 0.9− | 0.4− | 2005 03 09 | G96 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.5+ |
| 1999 10 09 | 704 | 0.1− | 0.3+ | 2005 03 09 | G96 | 0.3+ | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.5+ |
| 1999 10 09 | 704 | 1.2+ | 0.6− | 2005 03 09 | G96 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.5− | 0.5+ |
| 1999 10 09 | 704 | 0.9+ | 0.0 | 2005 03 11 | 691 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.7− | 0.2+ |
| 1999 10 09 | 704 | 0.2+ | 0.2− | 2005 03 11 | 691 | 0.4+ | 0.4+ | 2006 09 28 | 704 | 1.4− | 0.1+ |
| 1999 10 09 | 704 | 1.1+ | 0.0 | 2005 03 11 | 691 | 0.3+ | 1.0+ | 2006 09 28 | 704 | 0.0 | 0.3+ |
| 1999 10 11 | 691 | 0.4+ | 0.4− | 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 1999 10 11 | 691 | 0.2+ | 0.2− | 2005 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.0 |
| 1999 10 11 | 691 | 0.0 | 0.3− | 2005 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 703 | (3.0− | 1.4−) |
| 1999 10 15 | 704 | 1.3− | 0.2− | 2005 04 04 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.3− |
| 1999 10 15 | 704 | 0.5− | 0.8− | 2005 04 04 | 691 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.8− | 0.4+ |
| 1999 10 15 | 704 | 0.8− | 0.2+ | 2005 04 04 | 691 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.7− | 0.6+ |
| 1999 10 15 | 704 | 0.2− | 1.1− | 2005 05 04 | G96 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.8− | 0.2+ |
| 1999 10 16 | 691 | 0.2+ | 0.2− | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.7− | 0.4+ |
| 1999 10 16 | 691 | 0.4+ | 0.3− | 2005 05 04 | G96 | 0.0 | 0.2− | 2006 09 30 | 704 | 1.0− | 0.3− |
| 1999 10 16 | 691 | 0.4+ | 0.1− | 2005 05 04 | G96 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 10 20 | 691 | 0.3+ | 0.2− | 2005 05 08 | 703 | 0.1+ | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 1999 10 20 | 691 | 0.5+ | 0.3− | 2005 05 08 | 703 | (0.4− | 1.8+) | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 1999 10 20 | 691 | 0.7+ | 0.2− | 2005 05 08 | 703 | (1.6− | 0.3+) | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1999 10 31 | 691 | 0.0 | 0.3− | 2005 05 08 | 703 | (1.7− | 1.5+) | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 1999 10 31 | 691 | 0.0 | 0.3− | 2006 08 28 | 704 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1999 10 31 | 691 | 0.1+ | 0.2− | 2006 08 28 | 704 | 0.3+ | 0.6− | 2006 10 17 | 703 | 0.4+ | 1.0+ |
| 1999 11 04 | 691 | 0.2− | 0.2− | 2006 08 28 | 704 | 0.6+ | 0.1− | 2006 10 17 | 703 | (0.0 | 2.2+) |
| 1999 11 04 | 691 | 0.2− | 0.2− | 2006 08 28 | 704 | 0.1− | 0.9− | 2006 10 17 | 703 | (0.6+ | 2.8+) |
| 1999 11 04 | 691 | 0.3− | 0.3− | 2006 09 12 | 703 | 0.8− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 1.2+ |
| 1999 11 06 | 704 | 0.9− | 0.3− | 2006 09 12 | 703 | 0.4− | 0.7+ | 2006 10 19 | 644 | 0.5− | 0.3+ |
| 1999 11 06 | 704 | 0.3− | 0.3− | 2006 09 12 | 703 | 0.6+ | 1.0+ | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 1999 11 06 | 704 | 0.7+ | 0.7+ | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 1999 11 06 | 704 | 1.0+ | 0.2− | 2006 09 16 | 704 | 0.7− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 1999 11 06 | 704 | 0.3− | 0.1− | 2006 09 16 | 704 | 0.6− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 1999 11 09 | 704 | 0.3− | 0.9− | 2006 09 16 | 704 | 0.5− | 1.5+ | 2006 10 19 | 644 | 0.6− | 0.1+ |
| 1999 11 09 | 704 | 0.0 | 0.3− | 2006 09 16 | 704 | 0.9− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 1999 11 09 | 704 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 1999 11 09 | 704 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 1999 11 09 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 11 11 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 1999 11 11 | 691 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.8− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 11 | 691 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.9+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 1999 11 12 | 704 | 1.1+ | 0.4− | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.5− | 0.1− |
| 1999 11 12 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 699 | 0.6− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 1999 11 12 | 704 | 1.5+ | 0.5+ | 2006 09 19 | 704 | (1.8+ | 1.1+) | | | | |
| 2003 11 19 | 704 | 1.1− | 0.1+ | 2006 09 19 | 704 | 0.6+ | 1.5+ | | | | |

**(137561)∗ 1999 VH$_{94}$ = 2002 JA$_{100}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29174)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.02654 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28130947 | $\omega$ | 115.08627 | | +0.75190603 | +0.65890292 | |
| $a$ | 2.3068170 | $\Omega$ | 203.71693 | | −0.62286778 | +0.69905452 | |
| $e$ | 0.2405253 | $i$ | 3.13628 | | −0.21603945 | +0.27779438 | |
| $P$ | 3.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | 0.2+ | 0.2+ | 2002 05 21 | 704 | (0.1+ | 1.6+) | 2006 09 21 | 683 | 0.9+ | 0.3− |
| 1994 02 16 | 691 | 0.1+ | 0.0 | 2002 05 21 | 704 | 0.3+ | 0.2+ | 2006 09 22 | 683 | 0.6+ | 0.3+ |
| 1994 02 16 | 691 | 0.1− | 0.4+ | 2002 05 21 | 704 | 0.2+ | 0.4+ | 2006 09 22 | 683 | 0.6+ | 0.3− |
| 1999 10 02 | 703 | 1.0+ | 0.5+ | 2002 06 05 | 704 | 1.2+ | 0.1+ | 2006 09 22 | 683 | 0.2+ | 1.4+ |
| 1999 10 02 | 703 | 0.5+ | 0.6+ | 2002 06 05 | 704 | 0.5+ | 0.9+ | 2006 09 25 | 683 | 0.5+ | 1.1− |
| 1999 10 02 | 703 | 0.1+ | 0.4+ | 2002 06 05 | 704 | 0.5+ | 0.8+ | 2006 09 25 | 683 | (1.6+ | 0.6−) |
| 1999 10 02 | 703 | 0.0 | 0.2− | 2002 06 05 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 683 | 0.9+ | 0.3− |
| 1999 10 04 | 704 | 0.0 | 0.2− | 2002 06 06 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 1999 10 04 | 704 | 0.1− | 0.2+ | 2002 06 06 | 704 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.1− | 0.7+ |
| 1999 10 04 | 704 | 1.2− | 1.3− | 2002 06 06 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.7+ |
| 1999 10 04 | 704 | 0.2+ | 0.1− | 2002 06 06 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.4+ |
| 1999 10 04 | 704 | 0.2+ | 1.0− | 2002 06 08 | 704 | 0.6− | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.4+ |
| 1999 10 04 | 691 | 0.4− | 0.3− | 2002 06 08 | 704 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.5+ |
| 1999 10 04 | 691 | 0.3− | 0.3− | 2002 06 08 | 704 | (6.2+ | 2.1−) | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 1999 10 04 | 691 | 0.4− | 0.3− | 2002 06 08 | 704 | 1.3− | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.1+ |
| 1999 10 07 | 704 | 0.5− | 0.4− | 2002 06 08 | 704 | (1.6− | 0.1−) | 2006 09 29 | 704 | 0.8+ | 0.3+ |
| 1999 10 07 | 704 | 0.5+ | 0.5+ | 2002 06 08 | 608 | (0.9+ | 1.6+) | 2006 10 03 | 704 | 0.0 | 0.3− |
| 1999 10 07 | 704 | 0.8− | 0.1− | 2002 06 08 | 608 | (1.4+ | 1.7+) | 2006 10 03 | 704 | 1.4+ | 0.2− |
| 1999 10 07 | 704 | 0.7− | 0.1− | 2002 06 08 | 608 | 1.1+ | 1.4+ | 2006 10 03 | 704 | 0.5+ | 0.6+ |
| 1999 10 10 | 704 | 0.3+ | 0.9− | 2002 06 10 | 704 | (1.1− | 2.3−) | 2006 10 03 | 704 | 0.0 | 0.2+ |
| 1999 10 10 | 704 | 1.1+ | 0.5− | 2002 06 10 | 704 | 0.2− | 0.9− | 2006 10 03 | 704 | 0.8+ | 0.4− |
| 1999 10 10 | 704 | 0.1+ | 0.5− | 2002 06 10 | 704 | 0.6− | 1.3− | 2006 10 18 | H07 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.4+ | 0.1+ | 2002 06 10 | 704 | 0.0 | 0.6− | 2006 10 18 | H07 | 0.2− | 0.3− |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2002 06 10 | 704 | 0.8− | 0.5− | 2006 10 18 | H07 | 0.1+ | 0.6− |
| 1999 10 15 | 704 | 0.7+ | 0.5+ | 2002 06 11 | 704 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 1999 10 15 | 704 | 0.8+ | 0.3+ | 2002 06 11 | 704 | 0.7− | 1.0+ | 2006 10 20 | H07 | 0.1− | 0.3− |
| 1999 10 15 | 704 | 1.0+ | 0.5+ | 2002 06 11 | 704 | 0.4− | 0.1− | 2006 10 20 | H07 | 0.5− | 0.3+ |
| 1999 10 15 | 704 | 1.3+ | 0.3+ | 2002 06 11 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 10 19 | 704 | 0.2+ | 0.9− | 2002 06 11 | 644 | 0.4+ | 0.7− | 2006 10 20 | H07 | 0.5− | 0.2− |
| 1999 10 19 | 704 | 0.1+ | 1.4− | 2002 06 11 | 644 | 0.5+ | 0.8− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 1999 10 19 | 704 | 0.0 | 1.0− | 2002 06 11 | 644 | 0.4+ | 0.7− | 2006 10 21 | 703 | 0.3− | 0.2− |
| 1999 10 19 | 704 | 0.1+ | 0.8− | 2002 06 18 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.1− |
| 1999 10 19 | 704 | 0.0 | 1.5− | 2002 06 18 | 704 | (0.1+ | 1.6+) | 2006 10 21 | 703 | 0.9− | 0.2+ |
| 1999 11 01 | 703 | (2.4− | 1.2−) | 2002 06 18 | 704 | (0.9+ | 2.0+) | 2006 10 21 | 703 | 0.1− | 0.2− |
| 1999 11 01 | 703 | 0.1+ | 0.6+ | 2002 06 18 | 704 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 11 01 | 703 | 0.2− | 1.2+ | 2002 06 18 | 704 | (1.3+ | 1.6+) | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1999 11 01 | 703 | 1.1− | 0.6+ | 2002 07 04 | 644 | 0.7+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 11 05 | 704 | 0.4− | 1.5+ | 2002 07 04 | 644 | 1.1+ | 0.9+ | 2006 10 23 | 704 | 0.1− | 0.3+ |
| 1999 11 05 | 704 | 0.4+ | 1.2+ | 2002 07 04 | 644 | 0.7+ | 0.7+ | 2006 10 23 | 704 | 0.2+ | 1.0+ |
| 1999 11 05 | 704 | 0.0 | 0.8+ | 2005 03 11 | G96 | 0.2+ | 0.2+ | 2006 10 23 | 704 | 0.9− | 0.8+ |
| 1999 11 05 | 704 | 0.2− | 0.7+ | 2005 03 11 | G96 | 0.2+ | 0.4+ | 2006 10 23 | 704 | 0.8− | 0.7+ |
| 1999 11 05 | 704 | 0.1+ | 0.4− | 2005 03 11 | G96 | 0.3+ | 0.2+ | 2006 10 23 | 704 | 0.1− | 0.4+ |
| 1999 11 09 | 704 | 0.4− | 0.2+ | 2005 03 11 | G96 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 1999 11 09 | 704 | 0.5− | 0.2+ | 2005 03 13 | 703 | 0.8+ | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 1999 11 09 | 704 | 0.3+ | 0.7+ | 2005 03 13 | 703 | 0.1+ | 1.3+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 1999 11 09 | 704 | 0.2− | 0.1+ | 2005 03 13 | 703 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 1999 11 09 | 704 | 0.7− | 0.0 | 2005 03 13 | 703 | (0.0 | 1.6+) | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 0.8+ | 0.3− | 2006 08 25 | 704 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 0.7+ | 0.5+ | 2006 08 25 | 704 | 1.3− | 1.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.4+ | 0.0 | 2006 08 25 | 704 | 0.7− | 1.0+ | 2006 10 28 | 704 | 0.2− | 0.4+ |
| 1999 11 12 | 704 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.1− | 0.5+ | 2006 10 28 | 704 | 0.6+ | 0.1+ |
| 1999 11 12 | 704 | 0.6+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.8− | 0.2+ |
| 2002 05 09 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.8− | 0.3+ |
| 2002 05 09 | 704 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2002 05 09 | 704 | 0.6− | 0.5+ | 2006 09 17 | 704 | 0.7+ | 0.2− | 2006 11 01 | 691 | 1.0− | 0.8− |
| 2002 05 09 | 704 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2002 05 09 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 05 15 | 704 | 0.9− | 0.3− | 2006 09 17 | 704 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2002 05 15 | 704 | 0.7− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2002 05 15 | 704 | 0.5− | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.7+ | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2002 05 16 | 704 | 0.3− | 0.4− | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 05 16 | 704 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.9− | 0.5− |
| 2002 05 16 | 704 | 0.7+ | 0.7− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 05 16 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 1.0− |
| 2002 05 16 | 704 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2002 05 16 | 704 | 0.5− | 0.3+ | 2006 09 20 | 704 | (1.6+ | 0.4−) | 2006 11 16 | 691 | 0.2− | 0.3+ |
| 2002 05 16 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2002 05 16 | 704 | 0.6− | 0.3− | 2006 09 20 | 704 | 0.5+ | 0.2+ | 2006 11 20 | G96 | 0.4− | 0.1− |
| 2002 05 16 | 704 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.5− | 2006 11 20 | G96 | 0.5+ | 0.1+ |
| 2002 05 16 | 704 | 0.7− | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.3− | 2006 11 20 | G96 | 0.2+ | 0.2+ |
| 2002 05 21 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 683 | 0.9+ | 0.8− | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2002 05 21 | 704 | 0.1− | 0.2− | 2006 09 21 | 683 | 1.0+ | 1.0− | | | | |

**(137562)∗ 1999 VX$_{95}$ = 2001 FX$_{195}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74674)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.35113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27244291 | $\omega$ | 42.85856 | | +0.25036002 | −0.96785595 | |
| $a$ | 2.3565991 | $\Omega$ | 32.66407 | | +0.87581206 | +0.21585774 | |
| $e$ | 0.1815313 | $i$ | 2.54585 | | +0.41264161 | +0.12907478 | |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.4+ | 0.2− | 2003 12 18 | 704 | 0.0 | 0.3+ | 2004 02 15 | 704 | 0.5+ | 0.1+ |
| 1999 10 04 | 691 | 0.3+ | 0.3− | 2003 12 18 | 704 | 0.6+ | 0.1+ | 2004 02 15 | 704 | 0.2− | 0.1+ |
| 1999 10 04 | 691 | 0.3+ | 0.2− | 2003 12 18 | 704 | 0.8+ | 0.6+ | 2004 02 15 | 704 | 0.4+ | 0.2− |
| 1999 10 09 | 703 | 0.7− | 0.8+ | 2003 12 18 | 704 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 0.3+ | 1.5+ |
| 1999 10 09 | 703 | 0.5− | 0.3+ | 2003 12 18 | 704 | 0.4+ | 0.5+ | 2006 08 27 | 699 | 0.6− | 1.2+ |
| 1999 10 09 | 703 | 0.7− | 1.1+ | 2003 12 22 | 704 | 0.2− | 0.1− | 2006 08 27 | 699 | 0.0 | 1.5+ |
| 1999 10 09 | 703 | (2.1+ | 0.1−) | 2003 12 22 | 704 | 0.1+ | 0.2− | 2006 08 27 | 699 | (2.8− | 1.5+) |
| 1999 10 11 | 691 | 0.1− | 0.2− | 2003 12 22 | 704 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.5− | 0.7+ |
| 1999 10 11 | 691 | 0.1− | 0.3− | 2003 12 22 | 704 | 0.1+ | 1.0+ | 2006 08 30 | 699 | 1.1− | 1.1+ |
| 1999 10 11 | 691 | 0.0 | 0.1− | 2003 12 22 | 704 | 0.6+ | 0.1+ | 2006 08 30 | 699 | (0.1+ | 1.7+) |
| 1999 11 09 | 704 | 0.5+ | 0.0 | 2004 01 13 | 699 | 0.0 | 0.2+ | 2006 08 30 | 699 | (1.6− | 1.1+) |
| 1999 11 09 | 704 | 0.5+ | 0.3− | 2004 01 13 | 699 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.1− | 0.0 |
| 1999 11 09 | 704 | 0.8+ | 0.1− | 2004 01 13 | 699 | 0.0 | 0.3+ | 2006 09 14 | 703 | (0.1− | 2.5+) |
| 1999 11 09 | 704 | 0.8+ | 0.1+ | 2004 01 13 | 699 | 0.5− | 0.4− | 2006 09 14 | 703 | (1.6− | 0.5−) |
| 1999 11 09 | 704 | 1.2+ | 0.1+ | 2004 01 18 | 691 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.6+ |
| 1999 11 12 | 704 | 0.1− | 0.5+ | 2004 01 18 | 691 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.2− |
| 1999 11 12 | 704 | 0.4− | 0.0 | 2004 01 18 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 1.1+ | 0.5+ |
| 1999 11 12 | 704 | 0.2+ | 0.5+ | 2004 01 20 | 704 | 0.7+ | 0.5− | 2006 09 14 | 703 | 0.2+ | 0.2+ |
| 1999 11 14 | 704 | 0.7− | 1.7+ | 2004 01 20 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 703 | (0.7+ | 1.9+) |
| 1999 11 14 | 704 | 1.4− | 0.2− | 2004 01 20 | 704 | 0.8+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 1999 11 14 | 704 | 0.5− | 1.2− | 2004 01 22 | 704 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.5− | 0.2+ |
| 1999 11 14 | 704 | 0.2− | 0.7− | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2+ |
| 1999 11 14 | 704 | 0.9− | 0.9− | 2004 01 22 | 704 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 03 27 | 807 | 0.2− | 0.9+ | 2004 01 22 | 704 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2001 03 27 | 807 | 0.2+ | 0.2+ | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2001 03 27 | 807 | 0.2+ | 0.7+ | 2004 01 26 | 699 | 0.9− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2001 03 27 | 807 | 0.3+ | 0.8+ | 2004 01 26 | 699 | 1.0− | 0.2+ | 2006 10 20 | G96 | 0.5− | 0.1− |
| 2003 11 20 | 704 | 0.0 | 1.1+ | 2004 01 26 | 699 | 0.7− | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2003 11 20 | 704 | 0.2− | 1.0+ | 2004 01 26 | 699 | 0.1− | 0.7− | 2006 11 17 | G96 | 0.0 | 0.9− |
| 2003 11 20 | 704 | 1.1− | 1.0+ | 2004 01 31 | 704 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.8− | 0.0 |
| 2003 11 20 | 704 | 0.1+ | 0.8+ | 2004 01 31 | 704 | 0.2− | 1.0− | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2003 12 16 | 699 | 0.7− | 0.2+ | 2004 01 31 | 704 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.7− | 0.3− |
| 2003 12 16 | 699 | 0.9− | 0.3− | 2004 01 31 | 704 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2003 12 16 | 699 | 1.2− | 0.3+ | 2004 01 31 | 704 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2003 12 16 | 699 | 0.1− | 0.4− | 2004 02 15 | 704 | 0.4+ | 1.5+ | 2006 11 17 | G96 | 0.6− | 0.3− |

**(137563)∗ 1999 VB$_{96}$ = 2002 QF$_{85}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 93783)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 72.79126 | | (2000.0) | | | |
| $n$ | 0.29044060 | $\omega$ | 132.66945 | | +0.86050461 | +0.50920873 |
| $a$ | 2.2582109 | $\Omega$ | 196.73809 | | −0.48168061 | +0.80337152 |
| $e$ | 0.0459078 | $i$ | 3.07256 | | −0.16587830 | +0.30870809 |
| $P$ | 3.39 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.0 | 0.5− | 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.1+ |
| 1999 10 30 | 691 | 0.2+ | 0.1− | 2002 08 18 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 1999 10 30 | 691 | 0.1+ | 0.6− | 2002 08 18 | 644 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 1999 11 09 | 704 | 0.1+ | 0.1+ | 2002 08 27 | 644 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 1999 11 09 | 704 | 0.5+ | 0.1+ | 2002 08 27 | 644 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.5+ | 0.1+ |
| 1999 11 09 | 704 | 0.1− | 0.4+ | 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.0 |
| 1999 11 12 | 704 | 0.1+ | 0.3+ | 2002 08 27 | 644 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 1999 11 12 | 704 | 0.9− | 1.2+ | 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 1999 11 12 | 704 | 0.5− | 1.2+ | 2002 08 27 | 644 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.4+ | 0.1+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.7− | 0.4+ | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2004 01 17 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2002 08 16 | 608 | 0.5+ | 0.0 | 2004 01 17 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 08 16 | 608 | 0.1− | 0.6+ | 2004 01 17 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2002 08 16 | 608 | 0.0 | 0.6+ | 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.0 |
| 2002 08 17 | 644 | 0.1− | 0.1+ | 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2002 08 17 | 644 | 0.1− | 0.1+ | 2004 04 16 | 645 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.4− | 0.1− |

**(137564)∗ 1999 VD$_{100}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.64765 | | (2000.0) | | | |
| $n$ | 0.27367362 | $\omega$ | 296.99329 | | +0.95000282 | +0.30742293 |
| $a$ | 2.3495287 | $\Omega$ | 45.16033 | | −0.25214923 | +0.85854824 |
| $e$ | 0.2209670 | $i$ | 4.41962 | | −0.18416134 | +0.41034871 |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.9− | 0.2+ | 2006 08 28 | 699 | 0.6− | 0.2− | 2006 09 26 | 704 | 0.4− | 0.6+ |
| 1999 11 09 | 704 | 0.3− | 0.4+ | 2006 08 28 | 699 | 0.5− | 0.0 | 2006 09 26 | 704 | (0.4+ | 1.8+) |
| 1999 11 09 | 704 | 0.1+ | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.7− | 2006 09 28 | 704 | 0.1+ | 0.4+ |
| 1999 11 09 | 704 | 0.4− | 0.6+ | 2006 08 30 | 704 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.8+ | 0.4+ |
| 1999 11 12 | 704 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 704 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 0.1− | 0.5− | 2006 08 30 | 704 | 0.2− | 0.7− | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 1999 11 12 | 704 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 09 28 | 704 | (0.4+ | 1.6+) |
| 1999 11 12 | 704 | 0.3− | 0.2− | 2006 09 12 | 703 | 0.4− | 0.8− | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 1999 11 12 | 704 | 0.6+ | 1.0− | 2006 09 12 | 703 | 0.4+ | 0.8− | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 1999 11 16 | 704 | 0.3+ | 0.4− | 2006 09 12 | 703 | 0.4− | 0.6− | 2006 09 30 | 704 | 0.1− | 0.8+ |
| 1999 11 16 | 704 | 0.2− | 0.8− | 2006 09 12 | 703 | 0.1− | 0.6− | 2006 09 30 | 704 | 0.0 | 0.7+ |
| 1999 11 16 | 704 | 0.6+ | 0.7− | 2006 09 16 | 704 | 0.4− | 1.1+ | 2006 09 30 | 704 | 0.3− | 0.5+ |
| 1999 12 07 | 704 | 0.3+ | 0.1− | 2006 09 16 | 704 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.8− |
| 1999 12 07 | 704 | 0.8+ | 0.8+ | 2006 09 16 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.8− |
| 1999 12 07 | 704 | 0.8+ | 0.5− | 2006 09 16 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.8− |
| 2003 12 27 | 691 | 0.7+ | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2003 12 27 | 691 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2003 12 27 | 691 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2005 04 01 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 704 | (1.8+ | 0.8+) | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2005 04 01 | 691 | 0.5+ | 0.4+ | 2006 09 19 | 704 | 0.2+ | 1.1+ | 2006 10 22 | 703 | 0.7− | 0.4− |
| 2005 04 01 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 704 | 0.9+ | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.6− |
| 2005 04 10 | G96 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.5− | 1.1+ | 2006 10 22 | 703 | 0.2− | 1.2− |
| 2005 04 10 | G96 | 0.1− | 0.8+ | 2006 09 19 | 704 | 0.0 | 0.9+ | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2005 04 10 | G96 | 0.3+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 11 06 | 644 | 0.5− | 0.1+ |
| 2005 05 09 | G96 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2005 05 09 | G96 | 0.5− | 0.1+ | 2006 09 22 | 704 | 0.3− | 0.7+ | 2006 11 11 | 703 | 0.6+ | 0.7+ |
| 2005 05 09 | G96 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.2− | 1.3+ | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2005 05 09 | G96 | 0.2− | 0.6+ | 2006 09 22 | 704 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.9+ |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.6− | 0.7+ | 2006 11 11 | 703 | 1.0− | 0.5+ |
| 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.3− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | 1.0+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2006 08 28 | 699 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.8+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2006 08 28 | 699 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.4− |

**(137565)∗ 1999 VW$_{101}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.87440 | | (2000.0) | | | |
| $n$ | 0.27235122 | $\omega$ | 235.39948 | | +0.35129785 | +0.92269669 |
| $a$ | 2.3571280 | $\Omega$ | 55.94313 | | −0.78395607 | +0.38262072 |
| $e$ | 0.1540097 | $i$ | 11.05131 | | −0.51186200 | +0.04724618 |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.1− | 0.1− | 2005 04 01 | 699 | 1.2+ | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.4− |
| 1999 10 07 | 691 | 0.1+ | 0.1− | 2005 04 01 | 699 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.7− | 0.6+ |
| 1999 10 07 | 691 | 0.2− | 0.7− | 2005 04 04 | 703 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.8+ | 0.8+ |
| 1999 10 08 | 691 | 0.2+ | 0.3− | 2005 04 04 | 703 | 0.4− | 0.4+ | 2006 09 29 | 699 | (1.6+ | 0.3−) |
| 1999 10 08 | 691 | 0.0 | 0.5− | 2005 04 04 | 703 | 0.6− | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.1+ |
| 1999 10 08 | 691 | 0.7− | 0.2− | 2005 04 04 | 703 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.3− | 0.3+ |
| 1999 10 14 | 691 | 0.0 | 0.2− | 2005 04 08 | 704 | (2.1+ | 3.1−) | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 1999 10 14 | 691 | 0.1+ | 0.0 | 2005 04 08 | 704 | 0.5+ | 1.4+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 1999 10 14 | 691 | 0.1− | 0.1− | 2005 04 08 | 704 | 1.4+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 1999 11 09 | 704 | 0.9+ | 0.4+ | 2005 04 08 | 704 | 0.5− | 1.3+ | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 1999 11 09 | 704 | 0.2− | 1.4+ | 2005 04 08 | 704 | 1.2+ | 1.0− | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 1999 11 09 | 704 | 0.1− | 0.3+ | 2005 04 09 | 699 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 1.1− |
| 1999 11 09 | 704 | 0.5+ | 0.6+ | 2005 04 09 | 699 | 0.2+ | 1.3+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 1999 11 09 | 704 | 0.7+ | 0.8+ | 2005 04 09 | 699 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.6+ | 0.3+ | 2005 04 09 | 699 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 0.1− | 1.0+ | 2005 04 15 | 699 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.1+ | 0.4+ | 2005 04 15 | 699 | 0.5+ | 0.4− | 2006 10 22 | 703 | (0.4+ | 2.9+) |
| 1999 11 12 | 704 | 0.1− | 0.2+ | 2005 04 15 | 699 | 0.3− | 0.3+ | 2006 10 22 | 703 | (0.1− | 2.1+) |
| 1999 11 17 | 691 | 0.1+ | 0.1− | 2005 04 15 | 699 | (1.6+ | 0.2−) | 2006 10 22 | 703 | (0.5− | 1.8+) |
| 1999 11 17 | 691 | 0.2+ | 0.0 | 2005 05 08 | 703 | 0.8− | 1.4+ | 2006 10 22 | 703 | (1.4+ | 2.5+) |
| 1999 11 17 | 691 | 0.0 | 0.1− | 2005 05 08 | 703 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.7+ |
| 2003 12 17 | 704 | 0.2− | 1.3+ | 2005 05 08 | 703 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2003 12 17 | 704 | 0.2+ | 0.0 | 2005 05 08 | 703 | 1.2+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2003 12 17 | 704 | (0.6+ | 1.7+) | 2006 09 16 | 699 | (1.3+ | 1.6+) | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2005 03 10 | 703 | (1.5− | 1.1−) | 2006 09 16 | 699 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2005 03 10 | 703 | 0.7+ | 1.5− | 2006 09 16 | 699 | 0.6− | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2005 03 10 | 703 | 0.4− | 0.4− | 2006 09 16 | 699 | 0.2− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2005 03 10 | 703 | (1.8− | 1.3−) | 2006 09 18 | 703 | 1.0− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2005 03 12 | 704 | 0.9+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2005 03 12 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 0.7+ | 0.2− | 2006 10 28 | 703 | (1.9+ | 2.3+) |
| 2005 03 12 | 704 | 0.1− | 0.4− | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.4− | 0.6+ |
| 2005 03 18 | 703 | 0.4− | 0.8− | 2006 09 25 | 699 | 1.2− | 0.8+ | 2006 10 28 | 703 | (1.7− | 0.5+) |
| 2005 03 18 | 703 | 1.2− | 0.8− | 2006 09 25 | 699 | 1.5+ | 0.3− | 2006 10 28 | 703 | 0.2− | 0.8+ |
| 2005 03 18 | 703 | 0.3− | 0.4− | 2006 09 25 | 699 | 1.2− | 0.5+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 03 18 | 703 | 0.8− | 0.1− | 2006 09 25 | 699 | (0.5+ | 1.6+) | 2006 11 23 | G96 | 0.5− | 0.1− |
| 2005 04 01 | 699 | (2.3+ | 1.2+) | 2006 09 26 | 703 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 04 01 | 699 | 0.3+ | 0.8+ | 2006 09 26 | 703 | (0.1+ | 1.6+) | 2006 11 23 | G96 | 0.2+ | 0.2− |

**(137566)∗ 1999 VO$_{104}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.49314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28073023 | $\omega$ | 294.24368 | | +0.96792721 | +0.23045679 | |
| $a$ | 2.3099891 | $\Omega$ | 52.58521 | | −0.15933012 | +0.87095286 | |
| $e$ | 0.1363073 | $i$ | 7.23534 | | −0.19424427 | +0.43397094 | |
| $P$ | 3.51 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.3+ | 0.1+ | 2004 01 18 | 691 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.2− | 0.4+ |
| 1999 10 02 | 691 | 0.2+ | 0.1− | 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 1999 10 02 | 691 | 0.2− | 0.1− | 2004 01 18 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 1999 10 09 | 691 | 0.3+ | 0.0 | 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.7+ | 1.2+ |
| 1999 10 09 | 691 | 0.2+ | 0.1− | 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 1999 10 09 | 691 | 0.3+ | 0.0 | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 1999 10 10 | 691 | 0.2− | 0.4− | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.1− |
| 1999 10 10 | 691 | 0.3− | 0.1+ | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 1999 10 10 | 691 | 0.3− | 0.4− | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.1− |
| 1999 11 09 | 704 | 0.8+ | 0.6+ | 2005 05 10 | G96 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.2− |
| 1999 11 09 | 704 | 0.3+ | 0.7− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.6+ | 0.6− |
| 1999 11 09 | 704 | 0.7+ | 0.6− | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.3+ |
| 1999 11 12 | 704 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.3− | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.5+ |
| 1999 11 12 | 704 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 1999 11 12 | 704 | 0.5− | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | (0.6+ | 1.5+) |
| 2002 07 16 | 644 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 07 16 | 644 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2002 07 16 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.6+ | 2006 11 21 | 704 | 0.1+ | 0.9+ |
| 2002 08 13 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.0 |
| 2002 08 13 | 644 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2002 08 13 | 644 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.7+ |

**(137567)∗ 1999 VZ$_{104}$ = 2004 BU$_{46}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 55975)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.95394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27237012 | $\omega$ | 283.92891 | | −0.76102020 | −0.64846959 | |
| $a$ | 2.3570190 | $\Omega$ | 215.64999 | | +0.60667051 | −0.70139900 | |
| $e$ | 0.1631247 | $i$ | 1.80076 | | +0.22978063 | −0.29584901 | |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 04 | 566 | 0.5+ | 0.6− | 2004 01 26 | 699 | 0.8− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 1997 04 04 | 566 | 1.0− | 1.3− | 2004 01 30 | 704 | 0.8+ | 0.9+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 1997 04 04 | 566 | 0.5− | 0.8− | 2004 01 30 | 704 | 0.9+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1999 11 09 | 704 | 0.6+ | 0.6− | 2004 01 30 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.3+ | 0.2− | 2004 01 30 | 704 | 0.6+ | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 1999 11 09 | 704 | 1.0+ | 0.2− | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.4− | 0.3+ |
| 1999 11 09 | 704 | 0.8+ | 0.7+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 1.0+ | 0.9− | 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.5+ | 0.1+ |
| 1999 11 12 | 704 | 0.4+ | 1.1− | 2004 02 12 | 691 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.3+ |
| 1999 11 12 | 704 | 0.1+ | 0.3− | 2004 02 16 | 704 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.8− | 0.1+ |
| 1999 11 12 | 704 | 0.3+ | 0.6− | 2004 02 16 | 704 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 0.7+ | 0.8− | 2004 02 16 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 1999 11 17 | 704 | 1.1− | 0.7+ | 2004 02 17 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 11 17 | 704 | 0.8− | 0.7+ | 2004 02 17 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 1999 11 17 | 704 | 0.9− | 0.2+ | 2004 02 17 | 644 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 1999 12 04 | 691 | 0.3+ | 1.2− | 2004 02 22 | 704 | 0.8− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 1999 12 04 | 691 | 0.3− | 1.0− | 2004 02 22 | 704 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.4+ |
| 1999 12 04 | 691 | 0.1+ | 0.2− | 2004 02 22 | 704 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2004 01 13 | 699 | 0.4− | 0.4+ | 2004 02 22 | 704 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2004 01 13 | 699 | 1.2− | 0.4− | 2004 02 24 | 830 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2004 01 13 | 699 | 0.3− | 0.0 | 2004 02 24 | 830 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2004 01 13 | 699 | 0.4− | 0.5− | 2004 02 24 | 830 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2004 01 21 | 704 | 0.2− | 0.4− | 2004 02 26 | 830 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2004 01 21 | 704 | 0.6− | 0.4− | 2004 02 26 | 830 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2004 01 21 | 704 | 0.2− | 0.7− | 2004 02 26 | 830 | 0.4− | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2004 01 21 | 704 | 0.3− | 0.6− | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2004 01 24 | 704 | 1.4+ | 0.7+ | 2004 03 18 | 704 | 0.4+ | 0.4− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2004 01 24 | 704 | 1.0+ | 1.2+ | 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2004 01 24 | 704 | 0.7+ | 1.0+ | 2004 03 18 | 704 | 0.7+ | 0.2− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2004 01 24 | 704 | 0.9+ | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.5− | 0.7− |
| 2004 01 24 | 704 | 0.8+ | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.8− |
| 2004 01 26 | 699 | 0.9− | 0.8− | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2004 01 26 | 699 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 01 26 | 699 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.4− | 0.0 | | | | |

**(137568)∗ 1999 VW$_{106}$ = 2002 NL$_{37}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33137)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.16839 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27777946 | $\omega$ | 98.23854 | | +0.82788018 | +0.55355884 | |
| $a$ | 2.3263192 | $\Omega$ | 228.20427 | | −0.55046092 | +0.77083951 | |
| $e$ | 0.1342776 | $i$ | 6.97099 | | −0.10773661 | +0.31524445 | |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.5− | 0.0 | 2002 08 13 | 699 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 1999 11 09 | 704 | 0.6− | 0.5− | 2002 08 13 | 699 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.4− | 0.1+ |
| 1999 11 09 | 704 | 0.1− | 0.2− | 2002 08 15 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 1999 11 09 | 704 | 0.2− | 0.6− | 2002 08 15 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1999 11 09 | 704 | 0.2− | 0.8− | 2002 08 15 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.5+ |
| 1999 11 12 | 704 | 0.7− | 0.0 | 2002 09 04 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 1999 11 12 | 704 | 0.6− | 0.0 | 2002 09 04 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.5+ |
| 1999 11 12 | 704 | 0.6− | 0.4− | 2002 09 04 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 1999 11 12 | 704 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.1+ |
| 1999 11 17 | 691 | 0.4+ | 0.1− | 2005 05 01 | 644 | 0.9+ | 0.5+ | 2006 11 11 | 703 | 0.9+ | 1.0− |
| 1999 11 17 | 691 | 0.2+ | 0.0 | 2005 05 01 | 644 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 1999 11 17 | 691 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 1999 11 29 | 691 | 0.2+ | 0.1− | 2005 05 14 | G96 | 0.5− | 1.4− | 2006 11 12 | G96 | 0.3− | 0.3− |
| 1999 11 29 | 691 | 0.1+ | 0.1− | 2005 05 14 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.1− | 0.3− |
| 1999 11 29 | 691 | 0.1+ | 0.1− | 2005 05 14 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2002 07 09 | 704 | 0.1− | 0.2+ | 2005 06 01 | G96 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2002 07 09 | 704 | 0.3+ | 0.6− | 2005 06 01 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2002 07 09 | 704 | 1.1+ | 0.2+ | 2005 06 01 | G96 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2002 07 12 | 644 | 0.1− | 0.2+ | 2005 06 01 | G96 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.7+ |
| 2002 07 12 | 644 | 0.3− | 0.1+ | 2005 06 12 | G96 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.3− | 0.6− |
| 2002 07 12 | 644 | 0.2− | 0.3+ | 2005 06 12 | G96 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 1.2+ | 1.3+ |
| 2002 07 20 | 644 | 0.1+ | 0.0 | 2005 06 12 | G96 | 0.6− | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 07 20 | 644 | 0.2− | 0.0 | 2005 06 12 | G96 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2002 07 20 | 644 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2002 08 06 | 644 | 0.3− | 0.7− | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 08 06 | 644 | 0.3− | 0.5− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 08 06 | 644 | 0.3− | 0.7− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.2+ |
| 2002 08 07 | 644 | 0.0 | 0.5− | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2002 08 07 | 644 | 0.2− | 0.5− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2002 08 07 | 644 | 0.2− | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.1+ | 0.1− |
| 2002 08 11 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | (2.0+ | 0.1−) |
| 2002 08 11 | 644 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2002 08 11 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2002 08 12 | 704 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | 0.5+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.6+ |
| 2002 08 12 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.8− | 0.1− |
| 2002 08 12 | 704 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.8+ | 0.1+ |
| 2002 08 13 | 699 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.2+ | | | | |
| 2002 08 13 | 699 | 0.3− | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | | | |

**(137569)∗ 1999 VJ$_{108}$ = 1995 UA$_{41}$ = 1999 XM$_{48}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 1205)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| *M* | 288.39542 | | (2000.0) | | | |
| *n* | 0.26502922 | $\omega$ | 214.47957 | | +0.18342948 | −0.98197026 |
| *a* | 2.4003443 | $\Omega$ | 224.99961 | | +0.91584249 | +0.18759756 |
| *e* | 0.1650422 | *i* | 3.70521 | | +0.35719206 | +0.02327175 |
| *P* | 3.72 | *H* | 16.6 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.1− | 0.2− | 1999 12 07 | 704 | 0.2− | 0.3− | 2004 01 27 | 704 | 0.1− | 0.5+ |
| 1995 10 23 | 691 | 0.3− | 0.2− | 1999 12 07 | 704 | 0.3− | 1.1− | 2004 01 27 | 704 | 0.5+ | 1.4+ |
| 1995 10 23 | 691 | 0.1− | 0.0 | 1999 12 08 | 704 | 0.8− | 0.2− | 2004 01 27 | 704 | 0.3− | 0.3+ |
| 1995 10 28 | 691 | 0.6+ | 0.3− | 1999 12 08 | 704 | 0.1− | 1.0− | 2004 01 27 | 704 | 0.2− | 1.1+ |
| 1995 10 28 | 691 | 0.3+ | 0.0 | 1999 12 08 | 704 | 0.4− | 0.1+ | 2004 01 27 | 704 | 0.0 | 0.6+ |
| 1995 10 28 | 691 | 0.2+ | 0.1+ | 1999 12 08 | 704 | 0.0 | 0.3+ | 2004 01 28 | 704 | 0.1− | 0.4+ |
| 1999 11 09 | 704 | 0.1+ | 0.4− | 1999 12 08 | 704 | 0.5− | 0.5− | 2004 01 28 | 704 | 0.9+ | 0.7+ |
| 1999 11 09 | 704 | 0.8− | 0.2+ | 1999 12 12 | 691 | 0.2+ | 0.3− | 2004 01 28 | 704 | 0.2− | 0.8+ |
| 1999 11 09 | 704 | 0.6− | 0.5− | 1999 12 12 | 691 | 0.2+ | 0.3− | 2004 01 28 | 704 | 0.4− | 0.3+ |
| 1999 11 09 | 704 | 0.8+ | 0.0 | 1999 12 12 | 691 | 0.2+ | 0.2− | 2004 01 30 | 704 | 0.9− | 0.8− |
| 1999 11 12 | 704 | 0.6+ | 1.1− | 1999 12 31 | 691 | 0.4− | 0.2− | 2004 01 30 | 704 | 0.0 | 0.7+ |
| 1999 11 12 | 704 | 0.6+ | 0.8− | 1999 12 31 | 691 | 0.5− | 0.3+ | 2004 01 30 | 704 | 0.3− | 0.1− |
| 1999 11 12 | 704 | 0.3+ | 0.8− | 1999 12 31 | 691 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.2− |
| 1999 11 12 | 704 | 0.4+ | 0.8− | 2000 01 11 | 691 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.0 | 1.1− |
| 1999 11 12 | 704 | 0.2− | 0.7− | 2000 01 11 | 691 | 0.5+ | 0.0 | 2006 08 29 | 703 | 1.2− | 0.7− |
| 1999 11 15 | 704 | 0.2+ | 0.3+ | 2000 01 11 | 691 | 0.5+ | 0.1− | 2006 08 29 | 703 | 0.3+ | 1.9+ |
| 1999 11 15 | 704 | 1.2+ | 0.0 | 2003 12 23 | 704 | 0.1− | 1.1+ | 2006 08 29 | 703 | 0.2+ | 0.9+ |
| 1999 11 15 | 704 | 1.4+ | 0.0 | 2003 12 23 | 704 | 0.4− | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.4+ |
| 1999 11 15 | 704 | 0.4− | 0.8+ | 2003 12 23 | 704 | 0.2− | 0.4+ | 2006 08 29 | 691 | 0.6− | 0.3+ |
| 1999 11 17 | 704 | 0.8− | 0.5− | 2003 12 23 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.7+ |
| 1999 11 17 | 704 | 0.2− | 0.1+ | 2004 01 17 | 608 | 1.7+ | 1.5+ | 2006 08 30 | 704 | 0.4− | 0.8+ |
| 1999 11 17 | 704 | 0.9− | 0.0 | 2004 01 17 | 608 | 1.6+ | 0.4+ | 2006 08 30 | 704 | 0.3+ | 1.1+ |
| 1999 11 17 | 704 | 0.2+ | 0.8+ | 2004 01 17 | 608 | 1.8+ | 0.4+ | 2006 08 30 | 704 | 0.4+ | 1.0+ |
| 1999 11 17 | 704 | 0.3+ | 0.1− | 2004 01 18 | 644 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.6+ | 0.4+ |
| 1999 12 03 | 699 | 0.1+ | 0.2− | 2004 01 18 | 644 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.5− | 0.6+ |
| 1999 12 03 | 699 | 0.2+ | 0.2+ | 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.8− | 0.7+ |
| 1999 12 03 | 699 | 0.7+ | 0.7+ | 2004 01 23 | 704 | 0.5+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.4+ |
| 1999 12 04 | 703 | 1.0− | 0.6+ | 2004 01 23 | 704 | 0.2− | 0.3− | 2006 09 16 | 644 | 0.4− | 0.5+ |
| 1999 12 04 | 703 | 0.7− | 0.2− | 2004 01 23 | 704 | 0.5+ | 0.9+ | 2006 09 16 | 644 | 0.7− | 0.8+ |
| 1999 12 04 | 703 | 0.1− | 0.7+ | 2004 01 23 | 704 | 0.9− | 0.8+ | 2006 09 16 | 644 | 0.3− | 0.3+ |
| 1999 12 04 | 703 | 0.2+ | 0.3− | 2004 01 23 | 704 | 1.0− | 0.5+ | 2006 09 17 | 703 | 0.5+ | 0.4+ |
| 1999 12 07 | 704 | 0.5− | 0.1+ | 2004 01 24 | 704 | 0.3+ | 0.9+ | 2006 09 17 | 703 | 0.4− | 0.0 |
| 1999 12 07 | 704 | 0.8− | 0.3− | 2004 01 24 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 703 | 0.0 | 1.3+ |
| 1999 12 07 | 704 | 0.1− | 0.2− | 2004 01 24 | 704 | 0.7+ | 0.0 | 2006 09 17 | 703 | 1.0− | 0.2+ |

**(137570)∗ 1999 VF$_{109}$ = 2004 BG$_{57}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68599)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| *M* | 263.60980 | | (2000.0) | | | |
| *n* | 0.27158166 | $\omega$ | 246.61094 | | −0.56248108 | −0.82416189 |
| *a* | 2.3615787 | $\Omega$ | 237.78138 | | +0.78425759 | −0.50649802 |
| *e* | 0.0599293 | *i* | 4.48266 | | +0.26183022 | −0.25341060 |
| *P* | 3.63 | *H* | 16.5 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.7− | 0.9+ | 2004 01 23 | 704 | 0.6+ | 0.5− | 2006 10 12 | 691 | 0.3+ | 0.7+ |
| 1999 11 09 | 704 | 1.4− | 0.6+ | 2004 01 23 | 704 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.3− | 0.1− |
| 1999 11 09 | 704 | 0.8− | 0.6+ | 2004 01 23 | 704 | 0.5− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 1999 11 09 | 704 | 0.5− | 0.2− | 2004 01 24 | 704 | 0.7+ | 1.0+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 0.1+ | 0.6− | 2004 01 24 | 704 | (1.5+ | 2.2+) | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 1999 11 12 | 704 | 0.2− | 0.4− | 2004 01 24 | 704 | 1.3+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 1.0− |
| 1999 11 12 | 704 | 1.5+ | 0.1+ | 2004 01 24 | 704 | (1.2+ | 1.9+) | 2006 10 20 | 691 | 0.4− | 0.1− |
| 1999 11 12 | 704 | 1.4+ | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 0.3+ | 0.2+ | 2004 02 26 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.6− |
| 1999 12 07 | 704 | 0.2+ | 0.8− | 2004 02 26 | 704 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1999 12 07 | 704 | 0.5+ | 0.9− | 2004 02 26 | 704 | 1.0− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 2.0− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 05 22 | 807 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 05 23 | 807 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 01 18 | 644 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.4− | 0.0 |
| 2004 01 18 | 644 | 0.4− | 0.1− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2004 01 18 | 644 | 0.3− | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 01 23 | 704 | 0.5+ | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.2− | | | | |

**(137571)∗ 1999 VT$_{110}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| *M* | 305.37431 | | (2000.0) | | | |
| *n* | 0.28115717 | $\omega$ | 240.04303 | | −0.32498369 | −0.94267097 |
| *a* | 2.3076500 | $\Omega$ | 229.12201 | | +0.89859037 | −0.28278158 |
| *e* | 0.1364891 | *i* | 5.75933 | | +0.29482358 | −0.17721743 |
| *P* | 3.51 | *H* | 17.4 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.1+ | 0.8− | 2004 02 14 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1999 11 09 | 704 | 0.1+ | 1.1− | 2004 02 14 | 644 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 1999 11 09 | 704 | 0.5− | 0.9+ | 2004 03 23 | 291 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 1999 11 12 | 704 | 0.7+ | 0.3− | 2004 03 23 | 291 | 0.0 | 0.5+ | 2006 11 18 | 704 | 1.0+ | 0.4+ |
| 1999 11 12 | 704 | 1.0+ | 1.0− | 2004 03 23 | 291 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 1999 11 12 | 704 | 0.2+ | 1.1− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.5+ |
| 1999 11 12 | 704 | 0.3+ | 1.2− | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 1999 11 12 | 704 | 0.9+ | 1.3− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 1999 11 30 | 691 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 1999 11 30 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 1999 11 30 | 691 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.8− |
| 1999 12 09 | 691 | 0.8− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.1+ | 0.6− |
| 1999 12 09 | 691 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.4− | 1.2− |
| 1999 12 09 | 691 | 0.8− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.6− | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 1999 12 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.2+ |
| 1999 12 16 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.9− |
| 1999 12 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.0 | 2006 11 27 | 703 | 1.0− | 0.9− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.5− | 1.3+ | 2006 11 27 | 703 | 0.5− | 1.1− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.2− | 0.3+ | 2006 11 29 | 704 | 0.9+ | 0.2− |
| 2002 10 11 | 645 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.2+ |
| 2002 10 11 | 645 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.4+ | 1.1− |
| 2004 02 14 | 644 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.2+ | | | | |

**(137572)∗ 1999 VC$_{112}$ = 2004 FG$_{52}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60556)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| *M* | 337.55156 | | (2000.0) | | | |
| *n* | 0.29831040 | $\omega$ | 43.19454 | | −0.48937028 | −0.87134431 |
| *a* | 2.2183179 | $\Omega$ | 76.13422 | | +0.78976353 | −0.46017880 |
| *e* | 0.0498467 | *i* | 2.10843 | | +0.36985172 | −0.17027791 |
| *P* | 3.30 | *H* | 17.1 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 12 | 691 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.8+ | 0.4− | 2004 04 11 | 644 | 0.2+ | 0.5+ |
| 1994 03 12 | 691 | 0.1− | 0.1− | 2004 03 19 | 704 | (0.5+ | 1.8−) | 2005 08 27 | 644 | 0.2− | 0.4+ |
| 1994 03 12 | 691 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.7− | 2005 08 27 | 644 | 0.1− | 0.4+ |
| 1999 11 09 | 704 | 0.3− | 0.7− | 2004 03 19 | 704 | 0.1− | 0.2+ | 2005 08 27 | 644 | 0.2− | 0.7+ |
| 1999 11 09 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.4+ | 0.3− | 2005 08 31 | 691 | 0.4− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.8+ | 0.6+ | 2004 03 20 | 704 | 0.7+ | 0.5− | 2005 08 31 | 691 | 0.2− | 0.5+ |
| 1999 11 09 | 704 | 1.2+ | 0.7+ | 2004 03 20 | 704 | 0.6+ | 0.3− | 2005 08 31 | 691 | 0.2− | 0.5+ |
| 1999 11 09 | 704 | 0.6+ | 0.6+ | 2004 03 22 | 704 | 1.3+ | 0.1− | 2005 11 06 | G96 | 0.5− | 0.3− |
| 1999 11 12 | 704 | 0.7− | 0.7+ | 2004 03 22 | 704 | 1.5+ | 0.4− | 2005 11 06 | G96 | 0.2+ | 0.2+ |
| 1999 11 12 | 704 | 0.6− | 1.0+ | 2004 03 22 | 704 | (2.1+ | 0.1+) | 2005 11 06 | G96 | 0.3+ | 0.5+ |
| 1999 11 12 | 704 | 0.6− | 0.9+ | 2004 03 24 | 699 | 0.3+ | 1.1+ | 2005 11 06 | G96 | 0.1− | 0.0 |
| 1999 11 29 | 691 | 0.3+ | 0.2+ | 2004 03 24 | 699 | 1.2+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 1999 11 29 | 691 | 0.0 | 0.4+ | 2004 03 24 | 699 | 0.8+ | 0.7+ | 2006 10 23 | G96 | 0.7− | 0.3− |
| 1999 11 29 | 691 | 0.2+ | 0.2+ | 2004 03 24 | 699 | 0.4− | 0.3+ | 2006 10 23 | G96 | 0.6− | 0.1+ |
| 1999 12 08 | 704 | (1.6+ | 3.7+) | 2004 03 28 | 704 | 0.1+ | 0.9+ | 2006 10 23 | G96 | 0.6− | 0.1− |
| 1999 12 08 | 704 | 0.4− | 0.2+ | 2004 03 28 | 704 | (2.6− | 0.3+) | 2006 11 16 | G96 | 0.1− | 0.1− |
| 1999 12 08 | 704 | 0.1− | 0.1+ | 2004 03 28 | 704 | (1.7− | 1.8+) | 2006 11 16 | G96 | 0.9− | 0.2+ |
| 2002 10 11 | 704 | 0.8− | 0.1− | 2004 03 28 | 704 | (1.9− | 1.4+) | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2004 03 28 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.7− | 0.2− |
| 2002 10 11 | 704 | 0.9− | 0.2+ | 2004 03 28 | 704 | 0.1− | 1.3+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2002 10 11 | 704 | (2.1− | 1.0+) | 2004 03 28 | 691 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2004 03 19 | 704 | 0.2+ | 0.3− | 2004 03 28 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2004 03 19 | 704 | 0.2+ | 0.4+ | 2004 04 11 | 644 | 0.0 | 0.7+ | 2006 11 24 | G96 | 0.4− | 0.1+ |
| 2004 03 19 | 704 | 0.3− | 0.0 | 2004 04 11 | 644 | 0.2− | 0.9+ | | | | |

**(137573)∗ 1999 VR$_{113}$ = 2002 PH$_{82}$**

Discovered 1999 Nov. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 33138)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.97665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29696745 | $\omega$ | 40.56958 | | +0.99909612 | | +0.02574246 |
| $a$ | 2.2250007 | $\Omega$ | 317.91814 | | −0.03783579 | | +0.90125211 |
| $e$ | 0.2017838 | $i$ | 2.89317 | | +0.01937530 | | +0.43252972 |
| $P$ | 3.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 12 | 691 | 0.4− | 0.2− | 2002 08 16 | 608 | 0.6− | 0.4− | 2002 10 29 | 704 | 0.0 | 0.8+ |
| 1994 02 12 | 691 | 0.0 | 0.4− | 2002 08 17 | 644 | 0.1− | 0.1+ | 2002 10 29 | 704 | 0.3− | 0.3+ |
| 1999 11 03 | 704 | 1.0+ | 0.3+ | 2002 08 17 | 644 | 0.1− | 0.1+ | 2002 10 29 | 704 | 0.6+ | 0.7+ |
| 1999 11 03 | 704 | 0.0 | 1.0− | 2002 08 17 | 644 | 0.0 | 0.1− | 2002 10 29 | 704 | 0.3+ | 1.2+ |
| 1999 11 03 | 704 | 0.5− | 0.3− | 2002 08 26 | 644 | (1.5+ | 0.1+) | 2002 10 29 | 704 | 0.4+ | 0.7+ |
| 1999 11 03 | 704 | 0.1− | 0.3− | 2002 08 26 | 644 | 0.1+ | 0.7− | 2002 12 05 | 704 | 0.8− | 0.1+ |
| 1999 11 03 | 704 | 0.2+ | 0.3− | 2002 08 26 | 644 | 0.1+ | 0.6− | 2002 12 05 | 704 | 0.0 | 0.1− |
| 1999 11 04 | 703 | 1.3− | 0.0 | 2002 08 27 | 644 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 0.2+ | 0.5+ |
| 1999 11 04 | 703 | 0.4− | 0.1− | 2002 08 27 | 644 | 0.1− | 0.4+ | 2002 12 06 | 704 | 0.9− | 0.3− |
| 1999 11 04 | 703 | 0.1− | 1.0+ | 2002 08 27 | 644 | 0.2+ | 0.4+ | 2002 12 06 | 704 | 1.0− | 0.4+ |
| 1999 11 04 | 703 | 0.1− | 0.3− | 2002 09 01 | 699 | 0.2+ | 0.1+ | 2002 12 06 | 704 | 0.4− | 0.6+ |
| 1999 11 09 | 703 | 0.7− | 0.5+ | 2002 09 01 | 699 | 0.5− | 0.4+ | 2002 12 06 | 704 | 0.2+ | 0.6+ |
| 1999 11 09 | 703 | 0.2− | 0.0 | 2002 09 01 | 699 | 0.8+ | 0.2+ | 2004 01 24 | 704 | 0.0 | 0.7+ |
| 1999 11 09 | 703 | 0.2+ | 0.5+ | 2002 09 01 | 699 | 0.8+ | 0.3+ | 2004 01 24 | 704 | 0.4+ | 0.4+ |
| 1999 11 09 | 703 | 0.1+ | 0.3+ | 2002 09 03 | 608 | 0.3− | 0.8+ | 2004 01 24 | 704 | 0.1+ | 1.0+ |
| 1999 11 16 | 704 | 0.2+ | 0.1− | 2002 09 03 | 608 | 0.3− | 1.2+ | 2004 02 11 | 644 | 0.5+ | 0.6+ |
| 1999 11 16 | 704 | 0.6+ | 0.5− | 2002 09 03 | 608 | 0.3− | 0.9+ | 2004 02 11 | 644 | 0.5+ | 0.6+ |
| 1999 11 16 | 704 | 0.9+ | 0.5+ | 2002 09 05 | 704 | 0.4− | 0.1+ | 2004 02 11 | 644 | 0.4+ | 0.9+ |
| 1999 11 16 | 704 | 0.3+ | 0.1− | 2002 09 05 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 704 | 1.3+ | 0.3− |
| 1999 11 16 | 704 | 0.8+ | 0.0 | 2002 09 05 | 704 | 0.7− | 0.2− | 2004 02 17 | 704 | 0.4+ | 1.2+ |
| 1999 12 08 | 704 | 0.5+ | 0.3− | 2002 09 05 | 704 | 0.3− | 0.1− | 2004 02 17 | 704 | (0.5+ | 1.6+) |
| 1999 12 08 | 704 | 0.2− | 0.7+ | 2002 09 05 | 704 | 0.3− | 0.5+ | 2004 02 22 | 691 | 0.2+ | 0.5+ |
| 1999 12 08 | 704 | 0.8+ | 0.1− | 2002 09 13 | 704 | 0.0 | 0.4+ | 2004 02 22 | 691 | 0.3+ | 0.3+ |
| 1999 12 08 | 704 | 0.5+ | 0.2− | 2002 09 13 | 704 | 0.5− | 0.9+ | 2004 02 22 | 691 | 0.4+ | 0.4+ |
| 1999 12 08 | 704 | 0.3+ | 0.6− | 2002 09 13 | 704 | 0.2− | 0.7+ | 2004 02 26 | 704 | 1.1+ | 0.4+ |
| 1999 12 13 | 703 | 0.8+ | 1.7− | 2002 09 13 | 704 | 0.2− | 0.5+ | 2004 02 26 | 704 | 0.3+ | 0.1+ |
| 1999 12 13 | 703 | 0.6− | 0.7+ | 2002 09 14 | 644 | 0.5− | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.9+ |
| 1999 12 13 | 703 | 0.3+ | 0.2− | 2002 09 14 | 644 | 0.7− | 0.0 | 2004 02 26 | 704 | 0.7+ | 1.2+ |
| 1999 12 13 | 703 | 0.1− | 0.1+ | 2002 09 14 | 644 | 0.3− | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.5+ |
| 2000 01 06 | 704 | 0.7− | 0.0 | 2002 10 03 | 704 | 0.3+ | 0.1− | 2004 02 29 | 691 | 0.3+ | 0.6+ |
| 2000 01 06 | 704 | 0.6− | 0.1− | 2002 10 03 | 704 | 0.5− | 0.2− | 2004 02 29 | 691 | 0.1− | 0.4+ |
| 2000 01 06 | 704 | 1.7− | 0.7− | 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 03 18 | 691 | 0.1+ | 0.5+ |
| 2000 01 06 | 704 | 0.6− | 0.4− | 2002 10 05 | 704 | 1.0− | 0.9− | 2004 03 18 | 691 | 0.1+ | 0.6+ |
| 2002 07 23 | 644 | 0.2+ | 0.3− | 2002 10 05 | 704 | 0.5+ | 0.4− | 2004 03 18 | 691 | 0.5+ | 0.3+ |
| 2002 07 23 | 644 | 0.0 | 0.1− | 2002 10 05 | 704 | 0.6− | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.3− |
| 2002 07 23 | 644 | 0.1+ | 0.0 | 2002 10 05 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.2− |
| 2002 07 23 | 608 | 0.5− | 0.1+ | 2002 10 05 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.4+ |
| 2002 07 23 | 608 | 0.3− | 0.1− | 2002 10 06 | 699 | 0.6+ | 0.7+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 07 23 | 608 | 0.2− | 0.0 | 2002 10 06 | 699 | 0.4− | 0.5+ | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2002 07 29 | 644 | 0.2− | 0.3+ | 2002 10 06 | 699 | 0.6+ | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.4− |
| 2002 07 29 | 644 | 0.2− | 0.4+ | 2002 10 06 | 704 | 0.5− | 0.4+ | 2006 10 03 | G96 | 0.3− | 0.1− |
| 2002 07 29 | 644 | 0.4− | 0.3+ | 2002 10 06 | 699 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2002 08 08 | 644 | 0.2− | 0.4− | 2002 10 06 | 704 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.3− | 2002 10 06 | 704 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.4− | 2002 10 06 | 704 | 0.4− | 0.5+ | 2006 10 31 | G96 | (1.6− | 1.1−) |
| 2002 08 09 | 704 | 0.9− | 0.2+ | 2002 10 07 | 704 | 0.3+ | 1.2+ | 2006 11 16 | G96 | 0.4− | 0.4+ |
| 2002 08 09 | 704 | 0.5− | 0.9+ | 2002 10 07 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2002 08 09 | 704 | 0.2− | 1.3− | 2002 10 07 | 704 | (0.8− | 1.7+) | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2002 08 14 | 704 | 0.4− | 0.6+ | 2002 10 07 | 704 | 0.6+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2002 08 14 | 704 | 0.7+ | 0.6+ | 2002 10 07 | 704 | 0.7+ | 1.0+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2002 08 14 | 704 | 0.7+ | 0.6+ | 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2002 08 14 | 704 | 0.5− | 0.6+ | 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2002 08 14 | 704 | 1.0+ | 1.1+ | 2002 10 11 | 704 | 0.1+ | 1.1+ | 2006 11 21 | G96 | 0.5− | 0.1+ |
| 2002 08 16 | 608 | 0.3− | 0.6− | 2002 10 11 | 704 | 0.0 | 0.1− | | | | |
| 2002 08 16 | 608 | 0.5− | 0.8− | 2002 10 11 | 704 | 0.2+ | 0.0 | | | | |

**(137574)∗ 1999 VF$_{120}$**

Discovered 1999 Nov. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.49667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27357587 | $\omega$ | 318.46735 | | +0.99754313 | | +0.02679047 |
| $a$ | 2.3500883 | $\Omega$ | 40.13728 | | +0.00649276 | | +0.88465559 |
| $e$ | 0.1604396 | $i$ | 5.76311 | | −0.06975353 | | +0.46547476 |
| $P$ | 3.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.7− | 0.0 | 1999 10 30 | 703 | 1.7− | 0.8+ | 2005 04 01 | 691 | 0.1+ | 0.4+ |
| 1999 09 14 | 704 | 0.3− | 0.2− | 1999 10 30 | 703 | 1.1− | 1.0+ | 2005 05 02 | 691 | 0.5+ | 0.5+ |
| 1999 09 14 | 704 | 0.4− | 0.2+ | 1999 10 30 | 703 | 0.3− | 1.0+ | 2005 05 02 | 691 | 0.3+ | 0.2+ |
| 1999 09 14 | 704 | 0.3− | 0.2+ | 1999 11 04 | 691 | 0.3− | 0.0 | 2005 05 02 | 691 | 0.1+ | 0.5+ |
| 1999 09 14 | 704 | 0.5− | 0.0 | 1999 11 04 | 691 | 0.3− | 0.0 | 2005 05 12 | 691 | 0.2+ | 0.3+ |
| 1999 10 02 | 703 | 0.2− | 0.4+ | 1999 11 04 | 691 | 0.3− | 0.3+ | 2005 05 12 | 691 | 0.2+ | 0.2+ |
| 1999 10 02 | 703 | 0.9− | 0.4+ | 1999 11 10 | 691 | 0.0 | 0.3− | 2005 05 12 | 691 | 0.3+ | 0.1+ |
| 1999 10 02 | 703 | 0.9− | 0.3+ | 1999 11 10 | 691 | 0.1+ | 0.2− | 2006 08 16 | E12 | 0.4− | 0.2+ |
| 1999 10 02 | 703 | 0.2− | 0.0 | 1999 11 10 | 691 | 0.0 | 0.2− | 2006 08 16 | E12 | 0.2− | 0.2+ |
| 1999 10 07 | 704 | 0.5− | 0.7+ | 1999 12 09 | 691 | 0.2+ | 0.5− | 2006 08 16 | E12 | 0.1+ | 0.0 |
| 1999 10 07 | 704 | 0.7+ | 0.6+ | 1999 12 09 | 691 | 0.1+ | 0.2− | 2006 08 16 | E12 | 0.2− | 0.0 |
| 1999 10 07 | 704 | 0.3+ | 0.1+ | 1999 12 09 | 691 | 0.1− | 0.3− | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 1999 10 07 | 704 | 0.1+ | 0.5+ | 2003 12 23 | 704 | 0.3+ | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 1999 10 07 | 704 | 0.0 | 0.6+ | 2003 12 23 | 704 | 0.3− | 0.4+ | 2006 09 13 | 644 | 0.3− | 0.3+ |
| 1999 10 09 | 704 | 0.5+ | 0.5+ | 2003 12 23 | 704 | 0.4+ | 1.2+ | 2006 09 14 | 644 | 0.1− | 0.3+ |
| 1999 10 09 | 704 | 0.5+ | 0.0 | 2003 12 23 | 704 | 0.8− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 1999 10 09 | 704 | 0.4+ | 0.6+ | 2003 12 30 | 704 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.7+ | 0.3+ | 2003 12 30 | 704 | 0.5+ | 0.7+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 1999 10 09 | 704 | 0.6+ | 0.4+ | 2003 12 30 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 1999 10 15 | 704 | 0.1− | 1.3+ | 2003 12 30 | 704 | 0.0 | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 1999 10 15 | 704 | 0.5+ | 0.1+ | 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.5+ | 0.7− |
| 1999 10 15 | 704 | 1.2+ | 0.2− | 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.3+ |
| 1999 10 15 | 704 | 0.2− | 0.4− | 2005 03 11 | 691 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.5+ | 0.0 | 2005 04 01 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 699 | 0.2− | 0.2+ |
| 1999 10 30 | 703 | 0.0 | 2.0+ | 2005 04 01 | 691 | 0.5− | 0.1+ | | | | |

**(137575)∗ 1999 VT$_{121}$ = 2003 UU$_{19}$**

Discovered 1999 Nov. 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55977)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.92839 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27976069 | $\omega$ | 72.02894 | | −0.37940761 | | −0.92297603 |
| $a$ | 2.3153230 | $\Omega$ | 40.45770 | | +0.80679973 | | −0.36418207 |
| $e$ | 0.1701796 | $i$ | 5.70803 | | +0.45290624 | | −0.12444549 |
| $P$ | 3.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.4+ | 0.3− | 2004 01 28 | 703 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 1999 11 04 | 691 | 0.5+ | 0.4− | 2004 01 28 | 703 | 0.5− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.7+ |
| 1999 11 04 | 691 | 0.5+ | 0.3− | 2004 01 30 | 704 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.3− |
| 1999 11 10 | 691 | 0.3+ | 0.4− | 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 1999 11 10 | 691 | 0.1+ | 0.4− | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.5− | 0.4+ |
| 1999 11 10 | 691 | 0.1+ | 0.5− | 2004 01 30 | 704 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.0 | 0.3− |
| 1999 11 12 | 704 | 0.4+ | 1.7− | 2004 01 30 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.6+ | 0.0 | 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.2− | 0.4− | 2004 02 10 | 644 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 1.2− | 0.1− | 2004 02 10 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 1999 11 12 | 704 | 0.4+ | 0.8+ | 2004 02 10 | 644 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 11 15 | 691 | 0.1− | 0.3− | 2004 02 10 | 644 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1999 11 15 | 691 | 0.1+ | 0.3− | 2004 02 10 | 644 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 1.1− |
| 1999 11 15 | 691 | 0.1+ | 0.3− | 2004 02 13 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.0 |
| 2001 04 27 | 691 | 0.4+ | 0.7+ | 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.0 | 0.4− |
| 2001 04 27 | 691 | 0.2+ | 0.6+ | 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2001 04 27 | 691 | 0.1− | 0.6+ | 2004 02 15 | 704 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 08 30 | 644 | 0.4− | 0.6+ | 2004 02 15 | 704 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 08 30 | 644 | 0.4− | 0.0 | 2004 02 15 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 08 30 | 644 | 0.5− | 0.1+ | 2004 02 15 | 704 | 0.6− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2003 10 22 | 291 | 0.3− | 0.5+ | 2004 03 10 | 703 | 1.1− | 0.7− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2003 10 22 | 291 | 0.3− | 0.5+ | 2004 03 10 | 703 | 0.8− | 1.3− | 2006 10 22 | 691 | 0.5− | 0.2− |
| 2003 10 22 | 291 | 0.4− | 0.3+ | 2004 03 10 | 703 | 0.7− | 1.0− | 2006 10 23 | 691 | 0.7− | 0.1+ |
| 2003 10 23 | 291 | 0.4− | 0.1+ | 2004 03 10 | 703 | 0.7− | 0.6+ | 2006 10 23 | 691 | 0.8− | 0.1+ |
| 2003 10 23 | 291 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 10 23 | 691 | 0.7− | 0.0 |
| 2003 10 23 | 291 | 0.0 | 0.4+ | 2004 03 23 | 704 | 0.7+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2003 12 19 | 704 | 0.9+ | 0.7+ | 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2003 12 19 | 704 | 0.4+ | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2003 12 19 | 704 | 0.8+ | 0.4− | 2006 09 19 | 691 | 0.6− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2003 12 29 | 704 | (1.9+ | 0.5+) | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2003 12 29 | 704 | (1.7+ | 0.8+) | 2006 09 19 | 691 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2003 12 29 | 704 | (3.3+ | 0.9+) | 2006 09 23 | 691 | 0.0 | 0.4+ | 2006 11 13 | 704 | 0.6− | 0.2+ |
| 2003 12 29 | 704 | (2.2+ | 1.5+) | 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 704 | 0.3− | 0.8− |
| 2004 01 18 | 644 | 0.3+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.4+ | 2006 11 13 | 704 | 0.4+ | 0.4+ |
| 2004 01 18 | 644 | 0.5+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.3+ | 0.1− |
| 2004 01 18 | 644 | 0.5+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2004 01 20 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2004 01 20 | 704 | 0.7+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.3+ | 0.2− |
| 2004 01 20 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 2004 01 28 | 703 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.5− | 0.4+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2004 01 28 | 703 | 0.1− | 0.3− | 2006 10 15 | 691 | 0.4+ | 0.0 | | | | |

**(137576)∗ 1999 VZ$_{123}$ = 1995 UH$_{83}$**

Discovered 1999 Nov. 5 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 93784)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.02533 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26535651 | $\omega$ | 152.91700 | | +0.73379292 | +0.67930384 | |
| $a$ | 2.3983702 | $\Omega$ | 164.28163 | | −0.62962277 | +0.68535557 | |
| $e$ | 0.2068012 | $i$ | 2.05366 | | −0.25519233 | +0.26236241 | |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1+ | 0.7+ | 2006 08 17 | 644 | 0.4− | 0.0 | 2006 09 01 | 704 | 1.1− | 0.7+ |
| 1995 10 20 | 691 | 0.2+ | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.4− | 0.2+ |
| 1995 10 20 | 691 | 0.2+ | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 01 | 704 | 0.5− | 0.7+ |
| 1995 10 26 | 691 | 0.2− | 0.6− | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 01 | 704 | 0.8− | 0.7+ |
| 1995 10 26 | 691 | 0.3− | 0.1− | 2006 08 18 | 699 | 1.0− | 0.4− | 2006 09 14 | 703 | 0.7+ | 0.6+ |
| 1995 10 26 | 691 | 0.3− | 0.2− | 2006 08 18 | 699 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.5+ | 0.4+ |
| 1999 11 05 | 691 | 0.1− | 0.3− | 2006 08 18 | 699 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.5+ | 0.1+ |
| 1999 11 05 | 691 | 0.2+ | 0.5− | 2006 08 18 | 699 | 1.3− | 0.1− | 2006 09 14 | 703 | 0.3− | 1.0+ |
| 1999 11 05 | 691 | 0.0 | 0.3− | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.2− | 0.2− |
| 1999 11 10 | 691 | 0.0 | 0.2− | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.5+ | 0.9− |
| 1999 11 10 | 691 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.4+ |
| 1999 11 10 | 691 | 0.1− | 0.3− | 2006 08 21 | 704 | 0.5+ | 0.7− | 2006 09 17 | 704 | 0.1− | 1.0+ |
| 1999 11 15 | 704 | 0.8+ | 0.6+ | 2006 08 21 | 704 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.2+ | 0.1− |
| 1999 11 15 | 704 | 0.6− | 0.2+ | 2006 08 21 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.2− | 0.5+ |
| 1999 11 15 | 704 | 0.3− | 0.5+ | 2006 08 21 | 704 | 0.5+ | 0.4− | 2006 09 18 | 699 | 0.3− | 0.2+ |
| 1999 11 15 | 704 | 0.7− | 0.0 | 2006 08 21 | 704 | 0.8+ | 0.9− | 2006 09 18 | 699 | 0.3+ | 0.4− |
| 1999 11 16 | 691 | 0.3− | 0.0 | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.0 | 0.2− |
| 1999 11 16 | 691 | 0.4− | 0.0 | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.1− | 0.2− |
| 1999 11 16 | 691 | 0.3− | 0.2+ | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.9+ |
| 1999 11 28 | 691 | 0.2+ | 0.2+ | 2006 08 25 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.2+ |
| 1999 11 28 | 691 | 0.6+ | 0.2+ | 2006 08 25 | 704 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.4− |
| 1999 11 28 | 691 | 0.3+ | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.5− |
| 2001 02 03 | 691 | 0.3+ | 0.8+ | 2006 08 25 | 704 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2001 02 03 | 691 | 0.5+ | 1.3+ | 2006 08 25 | 704 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2001 02 03 | 691 | 0.4+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2001 03 16 | 691 | 0.3− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.2+ |
| 2001 03 16 | 691 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1− |
| 2001 03 16 | 691 | 0.2+ | 0.9+ | 2006 08 28 | 699 | 0.7− | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2004 02 27 | 695 | 0.0 | 0.5+ | 2006 08 28 | 691 | 0.2− | 0.0 | 2006 10 13 | 122 | 0.2+ | 0.2− |
| 2004 02 27 | 695 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 10 13 | 122 | 0.2+ | 0.0 |
| 2006 08 06 | 699 | (1.3− | 1.6+) | 2006 08 28 | 699 | 0.1+ | 0.9+ | 2006 10 13 | 122 | 0.2+ | 0.3− |
| 2006 08 06 | 699 | 1.3+ | 0.9+ | 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.8− |
| 2006 08 06 | 699 | 0.2− | 1.0+ | 2006 08 28 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3− | 0.2− |
| 2006 08 06 | 699 | 1.1− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.6− |
| 2006 08 16 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.8+ | 0.6− |
| 2006 08 16 | 644 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.6− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2006 08 17 | 644 | 0.2+ | 0.1− | 2006 09 01 | 704 | 0.1− | 0.6− | 2006 11 17 | G96 | 0.4+ | 0.0 |

**(137577)∗ 1999 VW$_{125}$ = 1997 CL$_{27}$**

Discovered 1999 Nov. 6 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 2173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.83881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26758132 | $\omega$ | 134.30720 | | −0.98572765 | +0.16295490 | |
| $a$ | 2.3850575 | $\Omega$ | 55.11546 | | −0.16537317 | −0.89029876 | |
| $e$ | 0.1537180 | $i$ | 2.95369 | | −0.03150734 | −0.42522208 | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 08 | 566 | 0.3− | 1.0− | 1999 12 17 | 691 | 0.3+ | 0.0 | 2001 04 18 | 704 | 0.8+ | 0.5+ |
| 1997 02 08 | 566 | 0.2− | 0.9− | 2001 03 20 | 608 | 0.8− | 0.1+ | 2001 04 18 | 704 | 0.5− | 0.9− |
| 1997 02 08 | 566 | 0.8− | 0.7− | 2001 03 20 | 608 | 0.7− | 0.3+ | 2001 04 30 | 704 | 0.9+ | 0.1− |
| 1997 02 15 | 691 | 0.6− | 0.2+ | 2001 03 20 | 608 | 0.5− | 0.1+ | 2001 04 30 | 704 | 0.5+ | 1.8+ |
| 1997 02 15 | 691 | 0.5− | 0.1− | 2001 03 24 | 704 | 0.4+ | 0.9− | 2001 04 30 | 704 | 0.5+ | 1.9+ |
| 1997 02 15 | 691 | 0.8− | 0.0 | 2001 03 24 | 704 | 0.8+ | 0.1− | 2001 04 30 | 704 | 0.4+ | 1.4+ |
| 1997 03 05 | 704 | 0.3− | 0.6+ | 2001 03 24 | 704 | 2.0+ | 0.4+ | 2002 09 15 | 644 | 0.7− | 0.4+ |
| 1997 03 05 | 704 | (4.6+ | 0.8+) | 2001 03 28 | 704 | 0.3− | 0.3− | 2002 09 15 | 644 | 0.2− | 0.9+ |
| 1999 11 06 | 691 | 0.1+ | 0.7+ | 2001 03 28 | 704 | 0.4− | 1.0− | 2002 09 15 | 644 | 0.3− | 0.4− |
| 1999 11 06 | 691 | 0.0 | 0.5+ | 2001 03 28 | 704 | 0.2− | 0.0 | 2003 12 22 | 704 | 0.5+ | 0.0 |
| 1999 11 06 | 691 | 0.2+ | 0.8+ | 2001 04 01 | 704 | 0.3+ | 0.6+ | 2003 12 22 | 704 | 0.3+ | 0.1+ |
| 1999 11 12 | 704 | 0.7− | 1.1+ | 2001 04 01 | 704 | 0.2− | 0.4+ | 2003 12 22 | 704 | 0.1+ | 0.3+ |
| 1999 11 12 | 704 | 0.4− | 1.1+ | 2001 04 01 | 704 | 0.1+ | 0.8+ | 2003 12 22 | 704 | 0.4+ | 0.8+ |
| 1999 11 12 | 704 | 0.5− | 1.1+ | 2001 04 01 | 704 | 0.5+ | 0.7− | 2003 12 22 | 704 | 0.7+ | 0.4+ |
| 1999 11 12 | 704 | 0.7− | 0.0 | 2001 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.1− |
| 1999 11 13 | 691 | 0.1− | 0.4+ | 2001 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.0 |
| 1999 11 13 | 691 | 0.2+ | 0.3+ | 2001 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.1− |
| 1999 11 13 | 691 | 0.1+ | 0.2+ | 2001 04 16 | 699 | 1.0+ | 1.5+ | 2006 09 25 | 691 | 0.7− | 0.3+ |
| 1999 12 07 | 691 | 0.4+ | 0.2+ | 2001 04 16 | 699 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.1− |
| 1999 12 07 | 691 | 0.2+ | 0.1+ | 2001 04 16 | 699 | 1.5+ | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.0 |
| 1999 12 07 | 691 | 0.4+ | 0.0 | 2001 04 16 | 699 | 0.8+ | 1.2+ | 2006 10 02 | 691 | 0.6− | 0.1+ |
| 1999 12 17 | 691 | 0.1+ | 0.0 | 2001 04 18 | 704 | 1.4+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.3− |
| 1999 12 17 | 691 | 0.6+ | 0.0 | 2001 04 18 | 704 | 0.3− | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.2− |

**(137578)∗ 1999 VN$_{127}$**

Discovered 1999 Nov. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.69176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28163095 | $\omega$ | 351.14082 | | +0.67862567 | −0.73309928 | |
| $a$ | 2.3050612 | $\Omega$ | 56.10812 | | +0.67715971 | +0.60070708 | |
| $e$ | 0.1539916 | $i$ | 3.11345 | | +0.28446778 | +0.31893018 | |
| $P$ | 3.50 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.7− | 1.2+ | 2004 01 17 | 644 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.6+ |
| 1999 10 07 | 704 | 0.4− | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 1999 10 07 | 704 | 0.8− | 0.0 | 2004 01 22 | 704 | 0.7+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 1999 10 09 | 704 | 0.7+ | 0.5+ | 2004 01 22 | 704 | 1.0+ | 0.4− | 2006 10 21 | 703 | 0.8− | 0.1+ |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2004 01 22 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 703 | 0.7− | 0.3− |
| 1999 10 09 | 704 | 1.8− | 2.0− | 2004 01 22 | 704 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.4− |
| 1999 11 01 | 691 | 0.3+ | 0.1− | 2004 01 26 | 699 | 1.2− | 0.8− | 2006 10 21 | 703 | 0.7− | 1.0+ |
| 1999 11 01 | 691 | 0.4+ | 0.2− | 2004 01 26 | 699 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 1999 11 01 | 691 | 0.4+ | 0.0 | 2004 01 26 | 699 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 11 09 | 691 | 0.1− | 0.3− | 2004 01 26 | 699 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.7+ |
| 1999 11 09 | 691 | 0.2+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.6− | 0.5− |
| 1999 11 09 | 691 | 0.1+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 1.1+ | 0.1− |
| 1999 11 13 | 691 | 0.2− | 0.2− | 2006 09 17 | 691 | 0.5− | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 1999 11 13 | 691 | 0.0 | 0.1− | 2006 10 02 | 850 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.2+ |
| 1999 11 13 | 691 | 0.1+ | 0.3− | 2006 10 02 | 850 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 1999 12 02 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 850 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 1999 12 02 | 691 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 1999 12 02 | 691 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 04 15 | 691 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2001 04 15 | 691 | 0.1+ | 0.9+ | 2006 10 15 | 703 | 0.6− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2001 04 15 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.3+ |
| 2004 01 17 | 644 | 0.2+ | 1.1+ | 2006 10 15 | 703 | 0.9− | 0.4+ | | | | |
| 2004 01 17 | 644 | 0.1− | 0.7+ | 2006 10 15 | 703 | 0.1− | 0.1+ | | | | |

**(137579)∗ 1999 VH$_{130}$**

Discovered 1999 Nov. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.76655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28498499 | $\omega$ | 2.93836 | | +0.73240897 | −0.68003924 | |
| $a$ | 2.2869397 | $\Omega$ | 39.97669 | | +0.62361266 | +0.65024722 | |
| $e$ | 0.1049701 | $i$ | 2.99085 | | +0.27328438 | +0.33871105 | |
| $P$ | 3.46 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1+ | 0.5+ | 2003 12 28 | 704 | 0.7− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.0 | 0.3+ | 2003 12 28 | 704 | 0.8+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 1999 10 09 | 704 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.0 | 0.1− | 2004 01 18 | 691 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 10 11 | 704 | 1.0− | 0.3+ | 2004 01 18 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 1999 10 11 | 704 | 0.4+ | 0.0 | 2004 01 18 | 691 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 1999 10 11 | 704 | 0.1− | 0.1+ | 2004 01 20 | 704 | (0.7+ | 1.6+) | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 1999 10 11 | 704 | 0.4− | 0.2− | 2004 01 20 | 704 | 0.4− | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 1999 10 11 | 704 | 0.9− | 0.8− | 2004 01 20 | 704 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 1999 10 11 | 704 | 0.0 | 0.3− | 2004 01 22 | 704 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 1999 10 11 | 704 | 0.3− | 0.6− | 2004 01 22 | 704 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1999 10 11 | 704 | 0.4+ | 0.3− | 2004 01 22 | 704 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 1999 10 11 | 704 | 0.2− | 0.1− | 2004 01 22 | 704 | 0.1− | 0.5− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 1999 10 11 | 704 | 0.2− | 0.3− | 2004 01 22 | 704 | (0.1− | 1.5−) | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 1999 10 11 | 704 | 0.6− | 0.8− | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 |
| 1999 10 11 | 704 | 0.0 | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 1999 10 11 | 704 | 0.5− | 0.8− | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1+ | 1.0− |
| 1999 11 01 | 691 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.7+ |
| 1999 11 01 | 691 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 1999 11 01 | 691 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 1999 11 09 | 704 | 0.7+ | 0.7+ | 2006 09 30 | 703 | 1.0− | 0.8+ | 2006 11 11 | G96 | 0.7− | 0.5− |
| 1999 11 09 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 1999 11 09 | 704 | 1.1+ | 1.0+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 1999 11 09 | 704 | 0.6+ | 1.3+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.2− |
| 1999 11 12 | 691 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.0 |
| 1999 11 12 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1999 11 12 | 691 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.5+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 1999 11 13 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.1− |
| 1999 11 13 | 691 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 1999 11 13 | 691 | 0.2− | 0.3− | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2001 03 14 | 691 | 0.3+ | 0.6+ | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 03 14 | 691 | 0.2− | 0.4+ | 2006 10 16 | 683 | (2.1− | 0.1−) | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2001 03 14 | 691 | 0.6+ | 0.3+ | 2006 10 16 | 683 | 1.1− | 1.3+ | 2006 11 27 | 703 | 0.3− | 1.0+ |
| 2003 12 22 | 704 | 0.3+ | 1.4+ | 2006 10 16 | 683 | (0.4+ | 1.5+) | 2006 11 27 | 703 | 0.3+ | 0.0 |
| 2003 12 22 | 704 | 0.2− | 0.4− | 2006 10 19 | 683 | (2.1+ | 1.1−) | 2006 11 27 | 703 | 0.3+ | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.1+ | 2006 10 19 | 683 | (2.1+ | 1.4−) | 2006 11 27 | 703 | 0.8− | 0.9− |
| 2003 12 22 | 704 | 0.4+ | 1.3− | 2006 10 19 | 683 | 0.1+ | 0.2+ | | | | |
| 2003 12 28 | 704 | (1.4+ | 1.5+) | 2006 10 20 | 644 | 0.3+ | 0.0 | | | | |

**(137580)∗ 1999 VO$_{136}$ = 2004 CW$_{59}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60556)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.56703 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27362583 | $\omega$ | 7.06711 | | +0.44094855 | −0.89214423 | |
| $a$ | 2.3498023 | $\Omega$ | 56.81387 | | +0.81762095 | +0.35414766 | |
| $e$ | 0.1533380 | $i$ | 6.73844 | | +0.37021665 | +0.28046053 | |
| $P$ | 3.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.7− | 0.1− | 2004 01 30 | 704 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.7+ |
| 1999 11 09 | 704 | 0.3+ | 0.7− | 2004 01 30 | 704 | 0.9− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 1999 11 09 | 704 | 0.2− | 0.6− | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.0+ |
| 1999 11 09 | 704 | 0.2− | 0.6− | 2004 02 10 | 644 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 1999 11 09 | 704 | 0.7− | 0.0 | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 1999 11 14 | 704 | 0.4+ | 1.1− | 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 1999 11 14 | 704 | 0.3− | 0.8− | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 1999 11 14 | 704 | 0.6+ | 0.6− | 2004 02 10 | 644 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1999 11 14 | 704 | 0.4+ | 1.3− | 2004 02 15 | 704 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 1999 11 14 | 704 | 0.7− | 0.1+ | 2004 02 15 | 704 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1999 11 16 | 704 | 0.9+ | 0.2− | 2004 02 15 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 16 | 704 | 0.5+ | 1.6− | 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1999 11 16 | 704 | 0.3− | 1.5− | 2004 03 09 | 644 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1999 11 16 | 704 | 1.8+ | 0.8− | 2004 03 09 | 644 | 0.2− | 0.5+ | 2006 10 22 | 704 | 0.2+ | 0.1− |
| 1999 11 16 | 704 | 1.2+ | 0.4− | 2004 03 09 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 704 | 0.1+ | 0.3+ |
| 1999 12 15 | 704 | 0.1− | 0.0 | 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 704 | 0.3+ | 0.8− |
| 1999 12 15 | 704 | 0.1− | 0.7+ | 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 704 | 0.4− | 0.1− |
| 1999 12 15 | 704 | 1.0− | 0.3− | 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 704 | 0.0 | 0.0 |
| 1999 12 15 | 704 | 0.1+ | 1.1+ | 2004 03 18 | 644 | 0.3+ | 0.2+ | 2006 10 27 | 704 | 1.2− | 1.3+ |
| 1999 12 15 | 704 | 0.0 | 0.5+ | 2004 03 18 | 644 | 0.2+ | 0.3+ | 2006 10 27 | 704 | (0.2+ | 1.7+) |
| 2000 01 03 | 704 | 0.6− | 1.0− | 2004 03 18 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 704 | 0.4− | 1.3+ |
| 2000 01 03 | 704 | 0.1− | 0.7+ | 2004 03 23 | 704 | 1.0+ | 0.1+ | 2006 10 27 | 704 | 0.5− | 0.9+ |
| 2000 01 03 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 10 27 | 704 | 0.7− | 0.4− |
| 2000 01 03 | 704 | 0.6+ | 0.9− | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.0 |
| 2000 01 03 | 704 | 1.0+ | 0.7+ | 2004 03 23 | 704 | 0.1− | 0.5− | 2006 11 13 | 703 | 0.6− | 1.3+ |
| 2000 01 03 | 704 | 0.8− | 1.0− | 2006 09 15 | 644 | 0.3− | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.7− |
| 2000 01 03 | 704 | 1.3+ | 0.6+ | 2006 09 15 | 644 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.1+ | 1.0+ |
| 2000 01 04 | 704 | 0.3+ | 0.0 | 2006 09 15 | 644 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.2− | 1.2+ |
| 2000 01 04 | 704 | 0.1+ | 0.8− | 2006 09 20 | 644 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.4+ | 1.1+ |
| 2000 01 04 | 704 | 0.8− | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.5+ | 1.3+ |
| 2000 01 04 | 704 | 0.2− | 0.4− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.2+ | 0.5+ |
| 2000 01 04 | 704 | 0.5− | 1.1− | 2006 09 22 | 704 | 0.4+ | 0.9− | 2006 11 14 | 704 | 0.2+ | 0.5+ |
| 2001 05 24 | 691 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2001 05 24 | 691 | 0.5+ | 0.4+ | 2006 09 22 | 704 | 0.6− | 0.9+ | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2001 05 24 | 691 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.0 | 2006 11 17 | 704 | (0.8+ | 2.2+) |
| 2002 08 13 | 644 | 0.2− | 0.9+ | 2006 09 26 | 704 | 0.2− | 0.7+ | 2006 11 17 | 704 | (0.0 | 3.5+) |
| 2002 08 13 | 644 | 0.3− | 0.8+ | 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2002 08 13 | 644 | 0.3− | 0.7+ | 2006 09 26 | 704 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2002 08 19 | 644 | 0.5− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.6+ | | |
| 2003 12 19 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.3− | 2006 11 20 | 704 | 1.0+ | 0.1+ | | |
| 2003 12 19 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.5+ | | |
| 2003 12 19 | 704 | 0.1− | 0.8+ | 2006 10 01 | 704 | 1.1− | 1.0+ | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2003 12 27 | 704 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.9+ | 0.9+ | 2006 11 21 | 691 | 0.3− | 0.3+ | | |
| 2003 12 27 | 704 | 0.2+ | 1.1+ | 2006 10 01 | 704 | (1.8− | 0.2−) | 2006 11 21 | 691 | 0.3− | 0.2+ | | |
| 2003 12 27 | 704 | 0.0 | 0.8− | 2006 10 01 | 704 | 0.6+ | 1.0+ | 2006 11 21 | 691 | 0.2− | 0.1+ | | |
| 2003 12 27 | 704 | 0.4+ | 0.2+ | 2006 10 01 | 704 | (1.0+ | 2.8+) | 2006 11 21 | 704 | 0.1− | 0.1− | | |
| 2003 12 27 | 704 | 0.0 | 0.5+ | 2006 10 03 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.4+ | | |
| 2004 01 28 | 703 | (3.3− | 2.0+) | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.0 | | |
| 2004 01 28 | 703 | 0.7+ | 1.1− | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.0 | | |
| 2004 01 28 | 703 | 0.1+ | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.6− | 0.4+ | | |
| 2004 01 28 | 703 | 0.3− | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 26 | 704 | 0.1+ | 0.4− | | |
| 2004 01 30 | 699 | 0.2− | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 26 | 704 | 0.0 | 0.0 | | |
| 2004 01 30 | 699 | 0.7− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 26 | 704 | 0.1+ | 0.7+ | | |
| 2004 01 30 | 699 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.2− | 0.6− | | |
| 2004 01 30 | 699 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.5− | 0.4+ | | |
| 2004 01 30 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.2− | | |
| 2004 01 30 | 704 | (0.3+ | 2.7+) | 2006 10 16 | 703 | 0.4− | 0.6+ | 2006 11 27 | 703 | 0.1− | 0.9− | | |

**(137581)∗ 1999 VV$_{137}$ = 2002 RE$_{88}$**

Discovered 1999 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34810)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.26182 | | (2000.0) | | | |
| $n$ | 0.30310959 | $\omega$ | 125.47850 | | +0.56086333 | −0.82773252 |
| $a$ | 2.1948404 | $\Omega$ | 290.39722 | | +0.75357191 | +0.51893211 |
| $e$ | 0.1500346 | $i$ | 1.04319 | | +0.34287273 | +0.21346742 |
| $P$ | 3.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.3+ | 0.4− | 2002 10 04 | 704 | 0.1− | 0.2+ | 2005 08 06 | 704 | 0.1− | 0.1− | | |
| 1999 11 12 | 704 | 0.1− | 0.2− | 2002 10 04 | 704 | 0.1− | 0.1+ | 2005 08 06 | 704 | 0.1+ | 0.8− | | |
| 1999 11 12 | 704 | 0.7+ | 0.1− | 2002 10 04 | 704 | 0.0 | 0.2+ | 2005 08 06 | 704 | 0.4− | 0.7− | | |
| 1999 11 12 | 704 | 0.2− | 0.1+ | 2002 10 07 | 704 | 0.6− | 0.1+ | 2005 08 06 | 704 | 1.0+ | 0.2− | | |
| 1999 11 12 | 704 | 0.2− | 0.2+ | 2002 10 07 | 704 | 0.1− | 0.4+ | 2005 08 15 | E12 | 0.2+ | 0.1+ | | |
| 1999 11 14 | 704 | 0.9+ | 0.1− | 2002 10 07 | 704 | 0.0 | 0.8+ | 2005 08 15 | E12 | 0.1− | 0.0 | | |
| 1999 11 14 | 704 | 0.1− | 0.4− | 2002 10 07 | 704 | 0.0 | 0.1− | 2005 08 15 | E12 | 0.2+ | 0.3+ | | |
| 1999 11 14 | 704 | 0.0 | 0.6− | 2002 10 07 | 704 | 0.4− | 0.3+ | 2005 08 15 | E12 | 0.2− | 0.2+ | | |
| 1999 11 14 | 704 | 0.1− | 0.8− | 2002 10 10 | 291 | 0.1− | 0.3− | 2005 08 22 | 644 | 0.2− | 0.2+ | | |
| 1999 11 14 | 704 | 0.2− | 1.3− | 2002 10 10 | 291 | 0.0 | 0.3− | 2005 08 22 | 644 | 0.1− | 0.1+ | | |
| 1999 12 05 | 703 | 0.3− | 0.2+ | 2002 10 10 | 291 | 0.0 | 0.3− | 2005 08 22 | 644 | 0.7+ | 0.3+ | | |
| 1999 12 05 | 703 | 0.6+ | 0.1+ | 2002 10 11 | 704 | 0.8+ | 0.5+ | 2005 08 25 | 644 | 0.2− | 0.2+ | | |
| 1999 12 05 | 703 | (2.8+ | 1.6−) | 2002 10 11 | 704 | 0.7+ | 0.3+ | 2005 08 25 | 644 | 0.4− | 0.3+ | | |
| 1999 12 05 | 703 | 0.1+ | 1.1− | 2002 10 11 | 704 | 0.9+ | 0.1+ | 2005 08 25 | 644 | 0.2− | 0.1+ | | |
| 1999 12 07 | 704 | 0.3− | 0.6− | 2002 10 11 | 704 | 0.5+ | 0.2+ | 2005 08 26 | 699 | 0.5− | 0.6+ | | |
| 1999 12 07 | 704 | 0.3+ | 0.2− | 2002 10 31 | 699 | 0.5− | 0.3+ | 2005 08 26 | 699 | 0.2+ | 0.2+ | | |
| 1999 12 07 | 704 | 0.1+ | 0.3− | 2002 10 31 | 699 | 0.7− | 0.9+ | 2005 08 26 | 699 | 1.2− | 0.2+ | | |
| 2000 01 03 | 704 | 0.5− | 0.4+ | 2002 10 31 | 699 | 0.0 | 0.5+ | 2005 08 26 | 699 | 0.3+ | 0.1− | | |
| 2000 01 03 | 704 | (1.7− | 2.2+) | 2002 10 31 | 699 | 0.5+ | 0.9+ | 2005 08 27 | 644 | 0.2− | 0.3+ | | |
| 2000 01 03 | 704 | 0.8− | 1.6+ | 2002 10 31 | 704 | 0.0 | 0.5− | 2005 08 27 | 644 | 0.1+ | 0.3+ | | |
| 2000 01 04 | 704 | 0.2+ | 0.5+ | 2002 10 31 | 704 | 0.6+ | 1.0− | 2005 08 27 | 644 | 0.1− | 0.2+ | | |
| 2000 01 04 | 704 | (0.1− | 2.4+) | 2002 10 31 | 704 | 0.1− | 1.1− | 2005 08 29 | 699 | 0.8+ | 0.5+ | | |
| 2000 01 04 | 704 | 0.5− | 1.4+ | 2002 10 31 | 704 | 0.8+ | 0.1− | 2005 08 29 | 699 | 0.0 | 0.4+ | | |
| 2000 01 04 | 704 | 0.3− | 1.5+ | 2002 11 02 | 608 | 0.3− | 0.9+ | 2005 08 29 | 699 | 0.8− | 0.5+ | | |
| 2000 01 30 | 704 | 0.5− | 1.2+ | 2002 11 02 | 608 | 0.5− | 0.6+ | 2005 08 29 | 699 | 0.0 | 0.2− | | |
| 2000 01 30 | 704 | 0.4+ | 0.8+ | 2002 11 02 | 608 | 0.3− | 0.4+ | 2005 09 06 | 699 | 0.4+ | 0.8− | | |
| 2000 01 30 | 704 | 0.2+ | 0.4+ | 2002 11 06 | 704 | 0.1+ | 0.6+ | 2005 09 06 | 699 | 0.9− | 0.8+ | | |
| 2000 01 30 | 704 | 0.3+ | 0.0 | 2002 11 06 | 704 | 0.3− | 0.6+ | 2005 09 06 | 699 | 0.1+ | 0.2− | | |
| 2002 08 16 | 608 | 0.2+ | 1.0− | 2002 11 06 | 704 | 0.0 | 0.2+ | 2005 09 06 | 699 | 0.7+ | 0.0 | | |
| 2002 08 16 | 608 | 0.3+ | 1.1− | 2002 11 06 | 704 | 0.2+ | 0.0 | 2005 09 13 | 703 | 0.5− | 0.0 | | |
| 2002 08 16 | 608 | 0.4+ | 0.7− | 2002 11 21 | 644 | 0.5+ | 0.3+ | 2005 09 13 | 703 | 0.2+ | 0.2− | | |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2002 11 21 | 644 | 0.1+ | 0.5+ | 2005 09 13 | 703 | (0.2+ | 2.2+) | | |
| 2002 09 05 | 704 | 0.8+ | 0.4+ | 2002 11 21 | 644 | 0.5+ | 0.3+ | 2005 09 13 | 703 | 0.9+ | 1.2+ | | |
| 2002 09 05 | 704 | 0.2− | 0.6+ | 2002 12 05 | 704 | 0.6− | 0.7− | 2005 09 17 | 644 | 0.4− | 0.3+ | | |
| 2002 09 05 | 704 | 0.7− | 0.3+ | 2002 12 05 | 704 | 0.3+ | 0.4− | 2005 09 17 | 644 | 0.4− | 0.3+ | | |
| 2002 09 07 | 704 | 0.4+ | 0.1+ | 2002 12 05 | 704 | 1.4+ | 0.7+ | 2005 09 17 | 644 | 0.1+ | 0.4+ | | |
| 2002 09 07 | 704 | 0.3+ | 0.9+ | 2004 03 27 | 704 | 0.1+ | 1.0+ | 2005 11 30 | G96 | 0.1− | 0.5− | | |
| 2002 09 07 | 704 | 0.4− | 0.5+ | 2004 03 27 | 704 | 1.2+ | 0.7+ | 2005 11 30 | G96 | 0.3− | 0.4+ | | |
| 2002 09 07 | 704 | 0.3− | 1.2+ | 2004 03 27 | 704 | (0.4+ | 1.7+) | 2005 11 30 | G96 | 0.5− | 0.0 | | |
| 2002 09 28 | 608 | 1.2− | 0.9− | 2004 03 31 | 704 | 0.2+ | 0.6+ | 2005 11 30 | G96 | 0.3− | 0.3− | | |
| 2002 09 28 | 608 | 1.1− | 0.7− | 2004 03 31 | 704 | (0.9− | 1.6+) | 2006 10 22 | G96 | 0.0 | 0.0 | | |
| 2002 09 28 | 608 | (1.5− | 0.0 ) | 2004 03 31 | 704 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.1+ | | |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2004 03 31 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.9− | 0.1+ | | |
| 2002 10 02 | 704 | 0.3− | 0.0 | 2004 04 13 | 691 | 0.0 | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2004 04 13 | 691 | (1.1− | 1.6+) | 2006 11 16 | 691 | 0.1− | 0.4+ | | |
| 2002 10 02 | 704 | 0.6− | 0.3+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 691 | 1.3+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2005 06 17 | G96 | 0.9+ | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2005 06 17 | G96 | 0.5+ | 0.3− | 2006 11 20 | G96 | 0.3− | 0.1− | | |
| 2002 10 03 | 704 | 0.1− | 0.1− | 2005 06 17 | G96 | 0.4+ | 0.2− | 2006 11 20 | G96 | 0.1− | 0.2− | | |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2005 06 17 | G96 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.6− | 1.5− | | |
| 2002 10 03 | 704 | 0.6− | 0.5+ | 2005 07 28 | 644 | 0.2− | 0.2+ | 2006 11 20 | G96 | 2.9− | 0.9− | | |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2005 07 28 | 644 | 0.0 | 0.2+ | | | | | | |
| 2002 10 04 | 704 | 0.3− | 0.3+ | 2005 07 28 | 644 | 0.1− | 0.0 | | | | | | |

**(137582)∗ 1999 VE$_{139}$ = 2003 YW$_{31}$**

Discovered 1999 Nov. 9 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55980)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 219.04552 | | (2000.0) | | | |
| $n$ | 0.26924207 | $\omega$ | 64.18605 | | −0.97162938 | −0.22998914 |
| $a$ | 2.3752397 | $\Omega$ | 102.47755 | | +0.19169306 | −0.90238555 |
| $e$ | 0.1326479 | $i$ | 3.23793 | | +0.13852839 | −0.36442464 |
| $P$ | 3.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.0 | 0.0 | 2003 12 18 | 291 | 1.4− | 0.0 | 2004 01 21 | 704 | 0.5− | 1.3− | | |
| 1999 11 09 | 691 | 0.2+ | 0.1− | 2003 12 19 | 704 | 0.7+ | 0.3+ | 2004 01 21 | 704 | 0.5− | 0.1+ | | |
| 1999 11 09 | 691 | 0.1− | 0.1+ | 2003 12 19 | 704 | 0.2+ | 0.5+ | 2004 01 24 | 704 | 0.5+ | 0.3+ | | |
| 1999 11 15 | 704 | 1.4− | 1.1+ | 2003 12 19 | 704 | 0.4− | 0.1+ | 2004 01 24 | 704 | 0.8+ | 0.3− | | |
| 1999 11 15 | 704 | 1.8− | 0.0 | 2003 12 21 | 704 | 1.0+ | 0.3+ | 2004 01 24 | 704 | 1.2+ | 1.0+ | | |
| 1999 11 15 | 704 | 0.1+ | 0.1− | 2003 12 21 | 704 | 0.1− | 1.4− | 2004 01 30 | 704 | 0.4− | 0.3− | | |
| 1999 11 15 | 704 | 0.3+ | 0.3+ | 2003 12 21 | 704 | 0.7+ | 1.0− | 2004 01 30 | 704 | 0.3+ | 0.3+ | | |
| 1999 11 15 | 704 | 0.1+ | 1.0− | 2003 12 21 | 704 | 1.2+ | 0.7+ | 2004 01 30 | 704 | 0.9+ | 1.1+ | | |
| 1999 11 15 | 691 | 0.2− | 0.1− | 2003 12 28 | 704 | 0.0 | 0.7+ | 2004 01 30 | 704 | 0.1+ | 0.6+ | | |
| 1999 11 15 | 691 | 0.4+ | 0.9− | 2003 12 28 | 704 | 1.3+ | 0.4+ | 2006 09 17 | 691 | 0.5− | 0.4+ | | |
| 1999 11 15 | 691 | 0.3− | 0.3− | 2003 12 28 | 704 | 0.9+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.9+ | | |
| 1999 11 28 | 691 | 0.1+ | 0.0 | 2003 12 28 | 704 | 1.1+ | 1.0+ | 2006 09 17 | 691 | 0.5− | 0.1+ | | |
| 1999 11 28 | 691 | 0.2+ | 0.0 | 2003 12 29 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.5+ | 0.2+ | | |
| 1999 11 28 | 691 | 0.2+ | 0.1− | 2003 12 29 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.3+ | | |
| 1999 12 07 | 704 | 1.1+ | 0.6+ | 2003 12 29 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.5+ | | |
| 1999 12 07 | 704 | 0.4+ | 1.2+ | 2003 12 30 | 704 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.1+ | | |
| 1999 12 07 | 704 | 0.3+ | 0.5+ | 2003 12 30 | 704 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.3− | | |
| 2001 05 18 | 691 | 0.0 | 0.2+ | 2003 12 30 | 704 | 0.0 | 1.0+ | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2001 05 18 | 691 | 0.1+ | 0.4+ | 2003 12 30 | 704 | 0.7+ | 0.2+ | 2006 11 23 | G96 | 0.4− | 0.4− | | |
| 2001 05 18 | 691 | 0.1+ | 0.2+ | 2003 12 30 | 704 | 0.9− | 0.6+ | 2006 11 23 | G96 | 0.6+ | 0.2− | | |
| 2003 12 18 | 291 | 0.5− | 0.2+ | 2004 01 21 | 704 | 0.2− | 0.3− | | | | | | |
| 2003 12 18 | 291 | 0.6− | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.9− | | | | | | |

**(137583)∗ 1999 VE$_{141}$**

Discovered 1999 Nov. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.68696 | | (2000.0) | | | |
| $n$ | 0.28504634 | $\omega$ | 298.68173 | | +0.91989708 | +0.38442151 |
| $a$ | 2.2866116 | $\Omega$ | 38.85358 | | −0.30265556 | +0.82163970 |
| $e$ | 0.1724741 | $i$ | 7.09830 | | −0.24937717 | +0.42086613 |
| $P$ | 3.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5+ | 0.3+ | 2003 12 28 | 704 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 1999 10 10 | 704 | 0.4+ | 0.4− | 2003 12 28 | 704 | 1.0− | 1.2+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 1999 10 10 | 704 | 0.6+ | 0.3− | 2003 12 28 | 704 | 0.3− | 0.6− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 1999 10 10 | 704 | 0.3+ | 0.5− | 2003 12 28 | 704 | 0.2+ | 1.2− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 10 21 | 704 | 0.8− | 0.7− | 2005 04 07 | 691 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 10 21 | 704 | 0.0 | 0.1− | 2005 04 07 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 10 21 | 704 | 0.5+ | 0.2+ | 2005 04 07 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 1999 10 21 | 704 | 0.6− | 0.7− | 2005 04 11 | G96 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 1999 10 30 | 691 | 0.1− | 0.1− | 2005 04 11 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1999 10 30 | 691 | 0.2− | 0.2− | 2005 04 11 | G96 | 0.5− | 0.3+ | 2006 11 11 | 703 | 1.0+ | 0.2− |
| 1999 10 30 | 691 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 11 11 | 703 | (2.0− | 4.5−) |
| 1999 11 04 | 704 | 0.9+ | 0.4− | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 1999 11 04 | 704 | 1.6− | 0.3− | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 1999 11 04 | 704 | 0.9+ | 0.4+ | 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 1999 11 04 | 704 | 0.2− | 0.1− | 2005 05 07 | G96 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 1999 11 04 | 704 | 0.2+ | 0.8+ | 2005 05 07 | G96 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 1999 11 10 | 691 | 0.1− | 0.1− | 2005 05 07 | G96 | 0.3− | 0.1+ | 2006 11 13 | 644 | 0.4− | 0.2− |
| 1999 11 10 | 691 | 0.1− | 0.0 | 2005 05 07 | G96 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.5− | 0.1+ |
| 1999 11 10 | 691 | 0.0 | 0.2+ | 2005 05 14 | 644 | 0.2+ | 0.7+ | 2006 11 13 | 644 | 0.5− | 0.1− |
| 1999 11 11 | 703 | 0.3+ | 0.4+ | 2005 05 14 | 644 | 0.0 | 0.4+ | 2006 11 15 | 704 | 1.1+ | 0.4− |
| 1999 11 11 | 703 | 0.4− | 0.3− | 2005 05 14 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 704 | 0.8+ | 0.8+ |
| 1999 11 11 | 703 | 0.6− | 0.5+ | 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.8+ | 0.8+ |
| 1999 11 11 | 703 | 0.3+ | 0.1− | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 704 | (1.7+ | 0.6+) |
| 1999 11 14 | 704 | 0.3+ | 0.0 | 2005 05 14 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1999 11 14 | 704 | 0.5+ | 0.1− | 2005 06 27 | 644 | 0.1− | 0.8+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1999 11 14 | 704 | 0.5+ | 0.1+ | 2005 06 27 | 644 | 0.2+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1999 11 14 | 703 | 0.3+ | 0.2+ | 2005 06 27 | 644 | 0.9+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 1999 11 14 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.1− |
| 1999 11 14 | 703 | 1.5− | 0.7+ | 2006 08 29 | 703 | (0.6− | 1.6+) | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 1999 11 14 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 1.0− | 1.2+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 1999 11 14 | 703 | 0.6+ | 0.3− | 2006 08 29 | 703 | 0.8− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.3− |
| 1999 11 14 | 703 | 0.5− | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 21 | 691 | 0.0 | 0.2− |
| 1999 11 15 | 691 | 0.7− | 0.8+ | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 1999 11 15 | 691 | 0.3− | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 1999 11 15 | 691 | 0.3− | 0.7+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 23 | 703 | 0.8+ | 0.9+ |
| 1999 11 16 | 704 | 0.7+ | 0.7− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.9+ | 0.2− |
| 1999 11 16 | 704 | 1.5+ | 1.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 23 | 703 | 1.2− | 0.0 |
| 1999 11 16 | 704 | 0.7− | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.4+ | 0.7− |
| 1999 11 16 | 704 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 28 | 704 | 1.9− | 1.5+ |
| 2002 07 06 | 644 | 0.0 | 0.7+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 28 | 704 | 1.5− | 1.2+ |
| 2002 07 06 | 644 | 0.3− | 0.8+ | 2006 10 17 | G96 | 0.4− | 0.6− | 2006 11 28 | 704 | 0.0 | 1.2+ |
| 2002 07 06 | 644 | 0.1− | 0.6+ | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 28 | 704 | 1.2+ | 0.4− |
| 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.2+ | | | | |
| 2003 12 28 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | |

**(137584)∗ 1999 VK$_{142}$**

Discovered 1999 Nov. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.58140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26443102 | $\omega$ | 253.11896 | | +0.59918899 | −0.80055371 | |
| $a$ | 2.4039630 | $\Omega$ | 160.06054 | | +0.74452326 | +0.55291010 | |
| $e$ | 0.1707422 | $i$ | 1.56109 | | +0.29437676 | +0.23109343 | |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 1.5− | 1.0− | 2003 12 27 | 691 | 0.4+ | 0.5+ | 2006 08 19 | 699 | 0.5+ | 0.1+ |
| 1999 11 04 | 704 | 0.6+ | 0.2+ | 2003 12 27 | 691 | 0.4+ | 0.3+ | 2006 08 20 | 644 | 0.5− | 0.3+ |
| 1999 11 04 | 704 | 0.9− | 0.4− | 2003 12 29 | 699 | 0.7+ | 1.0+ | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 1999 11 10 | 691 | 0.4− | 0.4− | 2003 12 29 | 699 | 1.1− | 0.2− | 2006 08 20 | 644 | 0.4− | 0.2+ |
| 1999 11 10 | 691 | 0.1− | 0.0 | 2003 12 29 | 699 | 0.2− | 0.8+ | 2006 08 20 | 644 | 0.1− | 0.1+ |
| 1999 11 10 | 691 | 0.6− | 0.2+ | 2003 12 29 | 699 | 0.2+ | 0.2+ | 2006 08 20 | 644 | 0.4− | 0.4+ |
| 1999 11 15 | 704 | 1.3+ | 0.0 | 2004 01 24 | 704 | 0.7− | 0.5+ | 2006 08 20 | 644 | 0.3− | 0.2+ |
| 1999 11 15 | 704 | 0.7+ | 0.2− | 2004 01 24 | 704 | 1.5− | 1.0− | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 1999 11 15 | 704 | 0.4+ | 0.4− | 2004 01 24 | 704 | 0.6− | 0.1− | 2006 08 22 | 644 | 0.1− | 0.1+ |
| 1999 11 15 | 704 | 0.3+ | 0.1+ | 2004 01 24 | 704 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.4− | 0.0 |
| 1999 11 15 | 704 | 0.0 | 0.3− | 2005 05 08 | 691 | 0.3+ | 0.1− | 2006 08 25 | 947 | 0.5+ | 0.3− |
| 1999 11 15 | 691 | 0.4+ | 0.1− | 2005 05 08 | 691 | 0.4+ | 0.0 | 2006 08 25 | 947 | 0.0 | 0.4− |
| 1999 11 15 | 691 | 0.4+ | 0.2− | 2005 05 08 | 691 | 0.2+ | 0.1− | 2006 08 25 | 947 | 0.5+ | 0.7− |
| 1999 11 15 | 691 | 0.2+ | 0.1− | 2005 05 11 | G96 | 0.5− | 0.3− | 2006 08 28 | 691 | 0.0 | 0.0 |
| 1999 11 17 | 704 | 0.0 | 0.5− | 2005 05 11 | G96 | 0.3+ | 0.5+ | 2006 08 28 | 691 | 0.2− | 0.3+ |
| 1999 11 17 | 704 | 0.1+ | 0.0 | 2005 05 11 | G96 | 0.7− | 0.0 | 2006 08 28 | 691 | 0.3− | 0.2+ |
| 1999 11 17 | 704 | 0.8− | 0.8− | 2005 05 11 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | (1.9− | 0.1+) |
| 1999 11 17 | 704 | 0.5+ | 0.6+ | 2005 06 13 | G96 | 0.6− | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.5+ |
| 1999 12 07 | 704 | 0.2+ | 0.1+ | 2005 06 13 | G96 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.8+ |
| 1999 12 07 | 704 | 0.5+ | 1.0− | 2005 06 13 | G96 | 0.8− | 0.0 | 2006 08 28 | 703 | 0.5+ | 0.2+ |
| 1999 12 07 | 704 | 0.2+ | 0.4− | 2005 06 13 | G96 | 1.1− | 0.2+ | 2006 09 25 | G96 | 1.1+ | 1.1+ |
| 1999 12 07 | 704 | 0.2− | 0.1− | 2006 08 13 | 644 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 1999 12 19 | 704 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.5− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2003 12 19 | 704 | 0.0 | 0.8+ | 2006 08 13 | 644 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.7− | 0.3− |
| 2003 12 19 | 704 | 0.1+ | 1.4+ | 2006 08 13 | D35 | 0.4− | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2003 12 19 | 704 | 0.3+ | 0.3+ | 2006 08 13 | D35 | 0.1− | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 08 13 | D35 | 0.8+ | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.8+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2003 12 21 | 704 | 0.9− | 1.2+ | 2006 08 19 | 699 | 0.5+ | 0.4− | 2006 11 16 | G96 | 0.7+ | 0.3+ |
| 2003 12 21 | 704 | 1.1+ | 0.1+ | 2006 08 19 | 644 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2003 12 21 | 704 | 0.1− | 0.8+ | 2006 08 19 | 699 | (0.6+ | 1.7+) | 2006 11 16 | G96 | 0.5+ | 0.7+ |
| 2003 12 21 | 704 | 0.5+ | 0.1+ | 2006 08 19 | 644 | 0.4− | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2003 12 27 | 691 | 0.4+ | 0.2+ | 2006 08 19 | 644 | 0.3− | 0.1+ | | | | |

**(137585)∗ 1999 VJ$_{145}$ = 1994 GX$_5$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (MPC 40081)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.26927 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28665976 | $\omega$ | 220.02581 | | +0.47110584 | −0.88144825 | |
| $a$ | 2.2780237 | $\Omega$ | 201.93018 | | +0.83038204 | +0.45591088 | |
| $e$ | 0.2179087 | $i$ | 5.11399 | | +0.29753143 | +0.12326501 | |
| $P$ | 3.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 11 14 | 704 | (0.3+ | 2.0+) |
| 1994 04 06 | 691 | 0.5+ | 0.7+ | 2004 02 23 | 704 | 0.4− | 0.4− | 2006 11 14 | 704 | 1.3− | 1.0+ |
| 1994 04 06 | 691 | 0.8− | 0.3+ | 2004 02 23 | 704 | 1.1− | 1.1− | 2006 11 14 | 704 | (1.3+ | 1.7+) |
| 1994 04 07 | 691 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.6− | 2006 11 14 | 704 | 0.4+ | 0.4+ |
| 1999 10 06 | 704 | 0.4− | 0.7+ | 2004 02 26 | 704 | 1.3− | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.4− |
| 1999 10 06 | 704 | 0.3− | 0.4+ | 2004 02 26 | 704 | 1.2+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 1999 10 06 | 704 | 0.9− | 0.8+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 1999 10 06 | 704 | 0.8+ | 0.5+ | 2004 02 26 | 704 | 0.7+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.4+ | 0.2+ | 2004 03 15 | 704 | (0.4+ | 1.7−) | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 1999 10 09 | 704 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.5− |
| 1999 10 09 | 704 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 1999 10 09 | 704 | 0.4+ | 0.1+ | 2004 03 15 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.4− |
| 1999 10 09 | 704 | 0.1− | 0.4− | 2004 03 30 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.2− |
| 1999 10 13 | 699 | 0.7+ | 0.4− | 2004 03 30 | 691 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.1− |
| 1999 10 13 | 699 | 0.4+ | 1.9− | 2004 03 30 | 691 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.5− | 0.3− |
| 1999 10 13 | 699 | 0.1− | 0.5− | 2006 09 16 | 703 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.3− |
| 1999 10 15 | 704 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.9− | 0.4+ | 2006 11 19 | 704 | 1.2− | 0.8+ |
| 1999 10 15 | 704 | 0.5+ | 0.2− | 2006 09 16 | 703 | 0.2− | 1.5− | 2006 11 19 | 704 | 0.9− | 0.4+ |
| 1999 10 15 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 1.0− | 0.5− | 2006 11 19 | 704 | 1.0− | 0.5+ |
| 1999 10 15 | 704 | 0.9− | 0.2− | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.3− | 0.2+ |
| 1999 10 15 | 704 | 0.8− | 0.4− | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.9− | 0.3+ |
| 1999 10 16 | 120 | 1.3+ | 0.0 | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.7− | 0.6− |
| 1999 10 16 | 120 | 0.5− | 0.6+ | 2006 09 20 | 704 | 1.2+ | 0.2− | 2006 11 20 | 704 | 0.6− | 0.4− |
| 1999 10 19 | 704 | 0.0 | 0.7+ | 2006 09 28 | G96 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.1+ |
| 1999 10 19 | 704 | 0.2+ | 0.9+ | 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.4− |
| 1999 10 19 | 704 | 0.3+ | 0.8+ | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.4− | 0.5− |
| 1999 10 19 | 704 | 0.6+ | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 23 | 683 | (1.8+ | 1.8−) |
| 1999 10 19 | 704 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 23 | 683 | (2.1+ | 1.0−) |
| 1999 11 01 | 703 | 0.3+ | 1.4+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 23 | 683 | (1.6+ | 0.3+) |
| 1999 11 01 | 703 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 25 | 683 | 0.5+ | 0.5− |
| 1999 11 01 | 703 | 0.7− | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 683 | 0.2− | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.2+ | 0.9+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 25 | 683 | 0.7+ | 0.5− |
| 1999 11 09 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 28 | 683 | 1.0+ | 0.6+ |
| 1999 11 09 | 704 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 28 | 683 | 0.3+ | 1.4+ |
| 1999 11 09 | 704 | 0.3+ | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 28 | 683 | 0.9− | 0.1− |
| 1999 11 15 | 704 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.5− | 0.3+ |
| 1999 11 15 | 704 | 0.9− | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 1999 11 15 | 704 | 0.7− | 0.4− | 2006 11 02 | 703 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.4− | 0.1+ |
| 1999 11 15 | 704 | 0.3− | 1.2+ | 2006 11 02 | 703 | 0.1+ | 0.7− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 1999 11 15 | 704 | 0.5− | 0.2+ | 2006 11 02 | 703 | 0.5+ | 0.8− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2004 02 19 | 704 | 1.0+ | 0.8− | 2006 11 13 | 703 | 0.5− | 0.2− | 2006 11 30 | 683 | 0.8+ | 0.1− |
| 2004 02 19 | 704 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.1+ | 2006 11 30 | 683 | 0.7− | 0.4− |
| 2004 02 19 | 704 | 0.0 | 0.6− | 2006 11 13 | 703 | 0.2+ | 1.3− | 2006 11 30 | 683 | 1.8+ | 0.9− |
| 2004 02 19 | 704 | 0.5− | 0.2+ | 2006 11 13 | 703 | 0.7− | 0.1+ | | | | |

**(137586)∗ 1999 VS$_{145}$ = 1997 EO$_{10}$ = 1998 MO$_{24}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (MPC 39324)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.62877 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26205319 | $\omega$ | 348.48254 | | −0.80850100 | | −0.58845412 |
| $a$ | 2.4184832 | $\Omega$ | 155.46607 | | +0.54124817 | | −0.74815556 |
| $e$ | 0.0969834 | $i$ | 0.95473 | | +0.23103364 | | −0.30656972 |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 03 | 691 | 0.3− | 0.1− | 1999 11 09 | 704 | 1.0+ | 0.1+ | 2002 08 28 | 644 | 0.2− | 0.3− |
| 1991 10 03 | 691 | 0.1− | 0.2+ | 1999 11 09 | 704 | 0.4+ | 0.1+ | 2002 08 28 | 644 | 0.1+ | 0.1+ |
| 1991 10 03 | 691 | 0.0 | 0.3− | 1999 11 09 | 704 | 0.4− | 0.3+ | 2005 06 27 | G96 | 0.4− | 0.4+ |
| 1997 03 07 | 691 | 0.3+ | 0.2− | 1999 11 09 | 704 | 0.7+ | 0.3+ | 2005 06 27 | G96 | 1.0− | 0.7− |
| 1997 03 07 | 691 | 0.1+ | 0.2− | 1999 11 15 | 704 | 0.3− | 0.6− | 2005 06 27 | G96 | 0.3+ | 0.6− |
| 1997 03 07 | 691 | 0.2+ | 0.5− | 1999 11 15 | 704 | 0.2− | 0.4+ | 2005 06 27 | G96 | 0.1+ | 0.9− |
| 1997 03 09 | 691 | 0.4− | 0.3− | 1999 11 15 | 704 | 0.1− | 0.6+ | 2006 09 25 | G96 | 1.1− | 1.1− |
| 1997 03 09 | 691 | 0.1− | 0.4− | 1999 11 28 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 1997 03 09 | 691 | 0.3− | 0.4− | 1999 11 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.3− |
| 1998 06 26 | 568 | 1.2+ | 0.2− | 1999 11 28 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 1998 06 26 | 568 | 1.4+ | 0.2− | 1999 12 13 | 691 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.4− |
| 1998 06 27 | 568 | 0.7+ | 0.6− | 1999 12 13 | 691 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.3+ |
| 1998 06 27 | 568 | 0.5+ | 0.6− | 1999 12 13 | 691 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 1998 07 15 | 691 | 0.0 | 0.5− | 2001 05 24 | 807 | 0.1+ | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 1998 07 15 | 691 | 0.3− | 0.4− | 2001 05 24 | 807 | 0.3+ | 0.7+ | 2006 10 27 | G96 | 0.8+ | 0.7− |
| 1998 07 15 | 691 | 0.4+ | 0.2+ | 2001 05 25 | 691 | 0.5− | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1998 07 27 | 691 | 0.1− | 0.4+ | 2001 05 25 | 691 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 1998 07 27 | 691 | 0.1+ | 0.2+ | 2001 05 25 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 1998 07 27 | 691 | 0.4− | 0.1+ | 2002 08 28 | 644 | 0.1− | 0.1− | | | | |

**(137587)∗ 1999 VU$_{146}$**

Discovered 1999 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.52274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26934590 | $\omega$ | 111.55262 | | −0.67970975 | | −0.73341520 |
| $a$ | 2.3746292 | $\Omega$ | 21.27804 | | +0.66252719 | | −0.61965800 |
| $e$ | 0.1294845 | $i$ | 1.55364 | | +0.31472588 | | −0.27951049 |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.8+ | 0.6− | 2003 12 19 | 704 | 0.5+ | 0.7+ | 2004 01 30 | 704 | 0.3− | 0.4− |
| 1999 11 12 | 704 | 0.3+ | 0.9− | 2003 12 19 | 704 | 0.6+ | 0.0 | 2004 01 30 | 704 | 0.9− | 0.3+ |
| 1999 11 12 | 704 | 0.4+ | 0.0 | 2003 12 19 | 704 | 0.2− | 0.6+ | 2004 02 15 | 704 | 0.6− | 0.1− |
| 1999 11 12 | 704 | 1.0+ | 0.5− | 2003 12 19 | 704 | 0.1− | 0.5+ | 2004 02 15 | 704 | 0.1+ | 1.1− |
| 1999 11 12 | 704 | 0.8+ | 1.2− | 2003 12 19 | 691 | 0.4+ | 0.5+ | 2004 02 15 | 704 | 0.4− | 1.1− |
| 1999 11 15 | 704 | 0.2− | 0.7− | 2003 12 19 | 691 | 0.2+ | 0.1− | 2004 02 15 | 704 | 1.2− | 0.6− |
| 1999 11 15 | 704 | 0.8− | 0.6− | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.0 | 0.3+ |
| 1999 11 15 | 704 | 0.3+ | 1.0− | 2003 12 22 | 704 | 0.2+ | 1.1+ | 2006 09 14 | 691 | 0.1− | 0.1+ |
| 1999 11 15 | 704 | 0.3− | 1.4− | 2003 12 22 | 704 | 0.6+ | 0.0 | 2006 09 14 | 691 | 0.0 | 0.4+ |
| 1999 11 15 | 704 | 0.5− | 1.1− | 2003 12 22 | 704 | 0.3− | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 1999 11 16 | 704 | 0.3+ | 0.7+ | 2003 12 22 | 704 | 0.0 | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 1999 11 16 | 704 | 0.5+ | 0.7− | 2003 12 22 | 704 | 0.4− | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 1999 11 16 | 704 | 1.1− | 0.0 | 2003 12 27 | 704 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.4− | 0.1+ |
| 2001 04 27 | 691 | 0.1− | 0.3+ | 2003 12 27 | 704 | (4.4+ | 0.8+) | 2006 09 25 | 691 | 0.5− | 0.1+ |
| 2001 04 27 | 691 | 0.1− | 0.1+ | 2003 12 27 | 704 | 0.8− | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2001 04 27 | 691 | 1.2− | 0.5+ | 2003 12 29 | 699 | 0.5+ | 0.4− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2001 05 15 | 699 | 0.5+ | 0.3− | 2003 12 29 | 699 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2001 05 15 | 699 | (1.6− | 0.9+) | 2003 12 29 | 699 | 1.1+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2001 05 15 | 699 | 0.2− | 0.1+ | 2003 12 29 | 699 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 05 15 | 699 | 0.0 | 0.3− | 2004 01 13 | 699 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2001 05 26 | 291 | 0.6+ | 0.4+ | 2004 01 13 | 699 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.2+ |
| 2001 05 26 | 291 | 0.6+ | 0.4+ | 2004 01 13 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 2001 05 26 | 291 | 0.6+ | 0.2+ | 2004 01 13 | 699 | 0.3+ | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.7+ | 2004 01 13 | 699 | 0.4+ | 0.3− | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.4+ | 0.2− | 2004 01 13 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2004 01 13 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2002 08 29 | 644 | 0.2+ | 0.5+ | 2004 01 19 | 699 | 0.1− | 0.7− | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2002 08 29 | 644 | 0.5+ | 0.8+ | 2004 01 19 | 699 | 0.5− | 0.5− | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2002 08 29 | 644 | (0.1+ | 2.2+) | 2004 01 19 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 1.0+ |
| 2002 09 01 | 644 | 0.3− | 0.9+ | 2004 01 19 | 699 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2002 09 01 | 644 | 0.2+ | 0.5+ | 2004 01 20 | 704 | 0.7+ | 0.9+ | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2002 09 04 | 644 | 0.0 | 1.0+ | 2004 01 20 | 704 | 0.9+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2002 09 04 | 644 | 0.3− | 0.6+ | 2004 01 20 | 704 | 0.8+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2002 09 04 | 644 | 0.4− | 0.7+ | 2004 01 22 | 704 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.4− | 0.8+ | 2004 01 22 | 704 | 0.5+ | 0.9+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 09 15 | 644 | 0.9− | 0.4+ | 2004 01 22 | 704 | 0.7− | 1.3+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2002 09 15 | 644 | 0.2− | 0.9+ | 2004 01 22 | 704 | 0.2− | 0.7+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2004 01 22 | 704 | 0.2+ | 1.3+ | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2003 12 17 | 691 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.5+ | 1.7− |
| 2003 12 17 | 691 | 0.2+ | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.4+ | | | | |
| 2003 12 19 | 704 | 0.1+ | 0.4+ | 2004 01 30 | 704 | 0.2+ | 0.9+ | | | | |

**(137588)∗ 1999 VN$_{147}$ = 2001 DV$_{85}$**

Discovered 1999 Nov. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 10511)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.89152 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28096620 | $\omega$ | 206.05716 | | +0.76306151 | | −0.64629567 |
| $a$ | 2.3086955 | $\Omega$ | 194.21109 | | +0.59735074 | | +0.70889917 |
| $e$ | 0.2072248 | $i$ | 1.45839 | | +0.24679795 | | +0.28242499 |
| $P$ | 3.51 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.2+ | 0.6− | 2001 02 25 | 807 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.4− | 0.5+ | 2004 02 22 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.7− | 0.5− | 2004 02 22 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.5+ |
| 1999 11 04 | 704 | 1.1− | 0.5− | 2004 02 22 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 1.2+ |
| 1999 11 09 | 704 | 0.4− | 0.8− | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.3+ |
| 1999 11 09 | 704 | 0.4− | 0.1− | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.4+ |
| 1999 11 09 | 704 | 0.6− | 0.3+ | 2004 02 29 | 691 | 0.4− | 0.0 | 2006 11 12 | 703 | 0.0 | 0.2− |
| 1999 11 09 | 704 | 0.8− | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 11 12 | 703 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.4− | 0.4+ | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 11 12 | 703 | 0.2+ | 0.3− |
| 1999 11 13 | 704 | 0.3+ | 0.5− | 2004 03 18 | 691 | 0.3+ | 0.0 | 2006 11 12 | 703 | 0.1− | 0.4− |
| 1999 11 13 | 704 | 0.9− | 0.1− | 2005 02 16 | 809 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 1999 11 13 | 704 | 0.7+ | 0.5− | 2005 02 16 | 809 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 1999 11 13 | 704 | 0.6+ | 0.5+ | 2005 02 16 | 809 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 1999 11 13 | 704 | 0.4+ | 0.6− | 2006 09 16 | 703 | 1.0− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 1999 11 13 | 704 | 0.5+ | 1.3− | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 1999 11 13 | 704 | 2.0+ | 1.2− | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 1999 11 13 | 704 | 0.5+ | 0.5− | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 1999 11 13 | 704 | 0.6+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 1999 11 15 | 704 | 0.2− | 0.3− | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 1999 11 15 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 0.4− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.5− | | |
| 1999 11 15 | 704 | 0.1+ | 0.7− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.0 | | |
| 1999 11 15 | 704 | 0.4− | 0.6− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 1.3− | 0.1+ | | |
| 1999 11 17 | 704 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.7+ | 0.1+ | | |
| 1999 11 17 | 704 | 0.4+ | 1.1− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.7+ | | |
| 1999 11 17 | 704 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.0 | | |
| 1999 11 17 | 704 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.6+ | | |
| 1999 11 29 | 691 | 0.5+ | 0.3− | 2006 10 28 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.0 | | |
| 1999 11 29 | 691 | 0.3+ | 0.4− | 2006 10 28 | 704 | 0.1− | 0.7+ | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 1999 11 29 | 691 | 0.2+ | 0.4− | 2006 10 28 | 704 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.7+ | | |
| 1999 12 05 | 703 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.4+ | | |
| 1999 12 05 | 703 | 0.8− | 0.1− | 2006 10 28 | 704 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.0 | | |
| 1999 12 05 | 703 | 0.7+ | 0.3− | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 1999 12 05 | 703 | 0.3− | 0.7− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.4+ | | |
| 2001 02 23 | 807 | (0.1− | 1.7+) | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.8− | | |
| 2001 02 23 | 807 | 0.0 | 0.8+ | 2006 10 28 | G96 | 0.9+ | 0.7− | 2006 11 21 | 704 | (0.0 | 1.6+) | | |
| 2001 02 23 | 807 | 0.0 | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 26 | 704 | 0.1− | 0.2+ | | |
| 2001 02 23 | 807 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 26 | 704 | 0.6+ | 0.8+ | | |
| 2001 02 24 | 807 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 26 | 704 | 0.1+ | 0.8+ | | |
| 2001 02 24 | 807 | 0.0 | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.7− | 0.5+ | | |
| 2001 02 24 | 807 | 0.3+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 1.6+ | | |
| 2001 02 24 | 807 | 0.3+ | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.5+ | | |
| 2001 02 24 | 807 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.6+ | 1.1+ | | |
| 2001 02 25 | 807 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.6− | 0.0 | 2006 11 29 | 704 | 0.3+ | 1.0+ | | |
| 2001 02 25 | 807 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.5− | 0.2+ | | | | | | |
| 2001 02 25 | 807 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.2+ | | | | | | |

**(137589)∗ 1999 VR$_{149}$ = 2003 XF$_{42}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68604)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.81019 | | (2000.0) | | | |
| $n$ | 0.27063557 | $\omega$ | 311.42769 | | +0.95792716 | +0.28522664 |
| $a$ | 2.3670792 | $\Omega$ | 32.03802 | | −0.24207862 | +0.86275309 |
| $e$ | 0.1702977 | $i$ | 3.45379 | | −0.15418655 | +0.41749595 |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 703 | 0.7+ | 0.9− | 2006 08 20 | 691 | 0.2− | 0.4+ | 2006 09 22 | 704 | 0.7− | 1.2+ | | |
| 1999 11 04 | 703 | 0.1+ | 0.7− | 2006 08 23 | 704 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.9− | 1.0+ | | |
| 1999 11 04 | 703 | 0.4+ | 0.5+ | 2006 08 23 | 704 | 0.4− | 1.1+ | 2006 09 22 | 704 | 1.3− | 1.3+ | | |
| 1999 11 04 | 703 | 0.1+ | 0.5− | 2006 08 23 | 704 | 0.0 | 0.2+ | 2006 09 22 | 104 | 0.0 | 0.0 | | |
| 1999 11 14 | 704 | 0.6+ | 0.8− | 2006 08 23 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 104 | 0.3+ | 0.0 | | |
| 1999 11 14 | 704 | 0.3− | 0.5− | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 22 | 104 | 0.0 | 0.1+ | | |
| 1999 11 14 | 704 | 0.1− | 0.4− | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.0 | | |
| 1999 11 14 | 704 | 0.3− | 0.2− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.7− | 0.5− | | |
| 1999 11 14 | 704 | 0.2− | 0.3− | 2006 08 28 | 699 | (0.2− | 1.7+) | 2006 09 25 | 699 | 0.6− | 0.2+ | | |
| 1999 11 15 | 704 | 0.2− | 0.5− | 2006 08 28 | 699 | 0.1− | 1.2+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | | |
| 1999 11 15 | 704 | 0.0 | 0.4− | 2006 08 28 | 699 | 0.5+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.0 | | |
| 1999 11 15 | 704 | 0.6+ | 0.1− | 2006 08 28 | 699 | 0.5− | 1.0+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 1999 11 15 | 704 | 0.6+ | 0.1+ | 2006 08 29 | 691 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.2− | 0.2− | | |
| 1999 11 15 | 704 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1− | 0.2+ | | |
| 1999 11 16 | 704 | 0.8− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.4− | | |
| 1999 11 16 | 704 | 0.6− | 1.1+ | 2006 08 30 | 704 | 0.4− | 1.0− | 2006 09 26 | 704 | 0.3− | 0.1− | | |
| 1999 11 16 | 704 | 0.0 | 0.5+ | 2006 08 30 | 704 | 0.9− | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.5− | | |
| 1999 11 16 | 704 | 0.0 | 0.8+ | 2006 08 30 | 704 | 1.0+ | 0.4− | 2006 09 30 | 704 | 0.8+ | 0.8+ | | |
| 2001 03 26 | 695 | 0.0 | 0.6+ | 2006 08 30 | 704 | 1.4− | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.2− | | |
| 2001 03 26 | 695 | 0.0 | 0.6+ | 2006 09 12 | 703 | 0.3− | 1.1− | 2006 09 30 | 704 | 0.5+ | 0.3+ | | |
| 2003 12 14 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | (0.1+ | 1.9−) | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2003 12 14 | 691 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.1− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2003 12 14 | 691 | 0.3+ | 0.9+ | 2006 09 12 | 703 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 2003 12 22 | 704 | (0.1+ | 1.7+) | 2006 09 16 | 704 | (2.1− | 0.6+) | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2003 12 22 | 704 | 0.3− | 0.6+ | 2006 09 16 | 704 | 0.7− | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.2− | | |
| 2003 12 22 | 704 | 0.0 | 0.2− | 2006 09 16 | 704 | (1.6− | 0.8+) | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2003 12 22 | 704 | 0.8+ | 0.2− | 2006 09 16 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 09 16 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2003 12 28 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.3− | | |
| 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 09 16 | 699 | 0.9+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.5− | | |
| 2005 03 09 | G96 | 0.3− | 0.8+ | 2006 09 16 | 699 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− | | |
| 2005 03 09 | G96 | 0.1− | 0.5+ | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.5− | | |
| 2005 03 09 | G96 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2005 03 12 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 704 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 2005 03 12 | 691 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 2005 03 12 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.6− | 2006 10 23 | 644 | 0.3− | 0.2− | | |
| 2005 05 04 | G96 | 0.2− | 0.3+ | 2006 09 19 | 704 | 1.1− | 0.7+ | 2006 10 23 | 644 | 0.4− | 0.1+ | | |
| 2005 05 04 | G96 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.5− | | |
| 2005 05 04 | G96 | 0.4− | 0.2+ | 2006 09 19 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.5− | | |
| 2005 05 04 | G96 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.4+ | 0.4+ | | |
| 2005 05 13 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.4− | | |
| 2005 05 13 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 704 | 0.7− | 0.6+ | 2006 11 11 | 703 | 1.0− | 1.3+ | | |
| 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.1+ | | |
| 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.7− | | |
| 2006 08 16 | 644 | 0.5+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.4− | | |
| 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.5− | 1.0+ | | | | | | |
| 2006 08 20 | 691 | 0.1− | 0.2+ | 2006 09 22 | 704 | (0.1− | 1.9+) | | | | | | |

**(137590)∗ 1999 VF$_{151}$ = 2002 PQ$_{25}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.54482 | | (2000.0) | | | |
| $n$ | 0.27782198 | $\omega$ | 149.73009 | | +0.40237416 | −0.91505507 |
| $a$ | 2.3260818 | $\Omega$ | 276.53101 | | +0.83423537 | +0.37897593 |
| $e$ | 0.1783096 | $i$ | 1.59972 | | +0.37702306 | +0.13802707 |
| $P$ | 3.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 703 | 1.2− | 1.0+ | 2004 02 22 | 691 | 0.0 | 0.4+ | 2006 10 27 | 224 | 0.6+ | 0.2+ | | |
| 1999 11 09 | 703 | 1.8− | 0.5− | 2004 02 22 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 1999 11 09 | 703 | (0.2+ | 2.2−) | 2004 02 22 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 1999 11 09 | 703 | 1.2− | 0.4− | 2004 02 26 | 704 | 0.5+ | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 1999 11 14 | 704 | 0.7+ | 0.4− | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 10 29 | 704 | 0.3+ | 0.2− | | |
| 1999 11 14 | 704 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 1.0+ | 0.9+ | 2006 10 29 | 704 | 0.4+ | 0.0 | | |
| 1999 11 14 | 704 | 0.1+ | 0.6− | 2004 02 26 | 704 | 1.1+ | 0.6+ | 2006 10 29 | 704 | 0.3+ | 0.1− | | |
| 1999 11 14 | 704 | 0.3+ | 0.5+ | 2004 03 27 | 691 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.1− | 0.3+ | | |
| 1999 11 14 | 704 | 0.1+ | 0.2+ | 2004 03 27 | 691 | 0.3− | 0.7+ | 2006 10 29 | 704 | 0.9− | 0.3+ | | |
| 1999 11 15 | 704 | 0.7+ | 0.2− | 2004 03 27 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.2− | | |
| 1999 11 15 | 704 | 0.4+ | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.4+ | | |
| 1999 11 15 | 704 | 0.5+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 1999 11 15 | 704 | 0.6+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2− | | |
| 1999 11 15 | 704 | 0.4+ | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 1999 11 16 | 704 | 0.7+ | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 1999 11 16 | 704 | 1.2+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1− | | |
| 1999 11 16 | 704 | 1.0+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1− | | |
| 1999 11 16 | 704 | 1.2+ | 0.1− | 2006 10 17 | 691 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.2− | | |
| 1999 12 13 | 703 | 1.1− | 0.7+ | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.6− | | |
| 1999 12 13 | 703 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 1999 12 13 | 703 | 0.1− | 0.9− | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1− | | |
| 1999 12 13 | 703 | 0.5− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.1+ | | |
| 2000 01 09 | 691 | 0.7+ | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.7+ | 0.1− | | |
| 2000 01 09 | 691 | 0.2− | 0.5− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2000 01 09 | 691 | 0.8− | 1.3− | 2006 10 19 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.9+ | 0.3+ | | |
| 2002 08 06 | 644 | 0.9− | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.4+ | | |
| 2002 08 06 | 644 | 0.6− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.7+ | | |
| 2002 08 06 | 644 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 1.3+ | | |
| 2002 08 07 | 644 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.5+ | | |
| 2002 08 07 | 644 | 0.1− | 0.5+ | 2006 10 21 | 691 | 0.6− | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.0 | | |
| 2002 08 07 | 644 | 0.4− | 0.7+ | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.6+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 291 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.2+ | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2002 08 13 | 291 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.7− | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.1− |
| 2002 08 13 | 291 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.8− | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 10 23 | 691 | 0.9− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2004 02 11 | 644 | 0.6+ | 0.4+ | 2006 10 27 | 224 | (0.6+ | 1.8+) | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2004 02 11 | 644 | 0.6+ | 0.3+ | 2006 10 27 | 224 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 224 | (0.1− | 2.1+) | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 10 27 | 224 | 0.0 | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2004 02 14 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 224 | (0.5+ | 1.6+) | 2006 11 27 | 691 | 0.4+ | 0.1− |

**(137591)∗ 1999 VN$_{153}$ = 2005 GB$_{32}$**

Discovered 1999 Nov. 11 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74682)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.99486 | | (2000.0) | | | |
| $n$ | 0.26257804 | $\omega$ | 149.95892 | | +0.98901173 | +0.14660513 |
| $a$ | 2.4152594 | $\Omega$ | 201.63552 | | −0.14383325 | +0.92442847 |
| $e$ | 0.1811446 | $i$ | 2.96102 | | −0.03417316 | +0.35204963 |
| $P$ | 3.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1+ | 0.3+ | 2005 04 04 | G96 | 0.3− | 0.2− | 2005 05 08 | G96 | 0.5+ | 0.2− |
| 1995 10 15 | 691 | 0.1+ | 0.1+ | 2005 04 04 | G96 | 0.6− | 0.1− | 2005 05 08 | G96 | 0.4+ | 0.4− |
| 1995 10 15 | 691 | 0.3− | 0.0 | 2005 04 04 | G96 | 0.2− | 0.1+ | 2005 05 08 | G96 | 1.0+ | 0.2− |
| 1999 11 11 | 691 | 0.1− | 0.2− | 2005 04 05 | G96 | 0.5− | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 1999 11 11 | 691 | 0.3− | 0.1− | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 1999 11 11 | 691 | 0.3− | 0.0 | 2005 04 05 | G96 | 0.1− | 0.2− | 2006 09 13 | 644 | 0.0 | 0.2+ |
| 1999 11 15 | 704 | 0.6− | 0.2+ | 2005 04 05 | G96 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1999 11 15 | 704 | 0.5− | 0.1+ | 2005 04 06 | G96 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 1999 11 15 | 704 | 0.2+ | 1.2+ | 2005 04 06 | G96 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 1999 11 15 | 704 | 0.1+ | 0.3− | 2005 04 06 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.5− | 0.1+ |
| 1999 11 16 | 691 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.6− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 1999 11 16 | 691 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 1999 11 16 | 691 | 0.1− | 0.2− | 2005 04 06 | G96 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2+ |
| 1999 11 28 | 691 | 0.3+ | 0.2+ | 2005 04 06 | G96 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.0 |
| 1999 11 28 | 691 | 0.3+ | 0.0 | 2005 04 06 | G96 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 1999 11 28 | 691 | 0.2+ | 0.1+ | 2005 04 07 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.3+ |
| 2005 03 17 | 691 | 0.6+ | 0.5+ | 2005 04 07 | G96 | 0.3− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.2+ |
| 2005 03 17 | 691 | 0.5+ | 0.3+ | 2005 04 07 | G96 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2005 03 17 | 691 | 0.1+ | 0.1+ | 2005 04 07 | G96 | 0.1− | 0.3− | | | | |
| 2005 04 04 | G96 | 0.3− | 0.2+ | 2005 05 08 | G96 | 0.4− | 0.0 | | | | |

**(137592)∗ 1999 VU$_{153}$ = 2004 BW$_{69}$**

Discovered 1999 Nov. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55982)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.44391 | | (2000.0) | | | |
| $n$ | 0.27491558 | $\omega$ | 72.26644 | | −0.48918541 | −0.86919753 |
| $a$ | 2.3424472 | $\Omega$ | 47.24267 | | +0.75841307 | −0.46472452 |
| $e$ | 0.1574020 | $i$ | 5.63259 | | +0.43070553 | −0.16889869 |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.4− | 0.1− | 2003 12 29 | 704 | 0.3+ | 0.9+ | 2004 02 14 | 704 | 0.4+ | 0.5+ |
| 1999 11 12 | 704 | 0.4+ | 0.8− | 2003 12 29 | 704 | 0.5+ | 0.5+ | 2004 02 14 | 704 | 0.4+ | 0.4+ |
| 1999 11 12 | 704 | 1.1+ | 0.7− | 2003 12 29 | 704 | 0.2− | 1.5+ | 2004 02 14 | 704 | 0.9− | 1.2+ |
| 1999 11 12 | 704 | 0.0 | 0.1+ | 2004 01 13 | 699 | 0.7− | 0.8+ | 2004 02 17 | 691 | 0.3+ | 0.2+ |
| 1999 11 13 | 691 | 0.1− | 0.9− | 2004 01 13 | 699 | (0.4+ | 2.6+) | 2004 02 17 | 691 | 0.3+ | 0.1+ |
| 1999 11 13 | 691 | 0.5− | 0.6− | 2004 01 13 | 699 | 0.2− | 0.2− | 2004 02 17 | 691 | 0.3+ | 0.3+ |
| 1999 11 13 | 691 | 0.0 | 0.8− | 2004 01 13 | 699 | (1.9+ | 0.1+) | 2006 09 17 | 691 | 0.2− | 0.5+ |
| 1999 11 16 | 691 | 0.4+ | 0.2+ | 2004 01 20 | 704 | (3.1+ | 0.1−) | 2006 09 17 | 691 | 0.1+ | 0.4+ |
| 1999 11 16 | 691 | 0.4+ | 0.0 | 2004 01 20 | 704 | (2.5+ | 0.3−) | 2006 09 17 | 691 | 0.3− | 0.4+ |
| 1999 11 16 | 691 | 0.6+ | 0.1+ | 2004 01 20 | 704 | (1.8+ | 0.7−) | 2006 09 27 | 691 | 0.5− | 1.1+ |
| 2001 04 24 | 691 | 0.0 | 0.1+ | 2004 01 26 | 699 | 0.5− | 0.3− | 2006 09 27 | 691 | 0.5− | 0.8+ |
| 2001 04 24 | 691 | 0.8+ | 0.1− | 2004 01 26 | 699 | 0.3− | 0.7− | 2006 09 27 | 691 | 0.4− | 0.7+ |
| 2001 04 24 | 691 | 0.0 | 0.1+ | 2004 01 26 | 699 | (1.2+ | 1.6−) | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 05 26 | 291 | 0.3− | 0.4+ | 2004 01 26 | 699 | 0.9− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2001 05 26 | 291 | 0.1+ | 0.4+ | 2004 01 30 | 703 | 0.2− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 05 26 | 291 | 0.3− | 0.2+ | 2004 01 30 | 703 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.0 | 2004 01 30 | 703 | (1.5− | 0.8−) | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2002 08 30 | 644 | 0.7− | 0.6+ | 2004 01 30 | 703 | (2.5− | 1.9−) | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2002 08 30 | 644 | 0.5− | 0.3+ | 2004 02 14 | 704 | 0.5+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2003 12 29 | 704 | 0.4+ | 1.3+ | 2004 02 14 | 704 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.1− |

**(137593)∗ 1999 VM$_{158}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.48765 | | (2000.0) | | | |
| $n$ | 0.27186700 | $\omega$ | 120.73541 | | +0.99647211 | +0.01077280 |
| $a$ | 2.3599260 | $\Omega$ | 238.76624 | | −0.03931859 | +0.93608111 |
| $e$ | 0.1435576 | $i$ | 5.58594 | | +0.07414439 | +0.35161926 |
| $P$ | 3.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 0.9+ | 1999 11 14 | 704 | 0.2+ | 0.7+ | 2006 08 31 | 704 | 0.6− | 1.2+ |
| 1999 10 12 | 704 | 0.6− | 0.3+ | 1999 11 14 | 703 | 1.4− | 0.5+ | 2006 08 31 | 704 | 0.5− | 0.0 |
| 1999 10 12 | 704 | 0.2− | 0.5− | 1999 11 14 | 703 | 0.2+ | 0.3− | 2006 09 15 | 704 | 0.0 | 0.7+ |
| 1999 10 12 | 704 | 0.5− | 0.0 | 1999 11 16 | 704 | 0.2− | 0.3− | 2006 09 15 | 704 | 1.5− | 1.1+ |
| 1999 10 12 | 704 | 0.6− | 0.2+ | 1999 11 16 | 704 | 0.8+ | 1.9− | 2006 09 15 | 704 | 0.0 | 0.8+ |
| 1999 10 13 | 704 | 0.1+ | 0.3+ | 1999 11 16 | 704 | 1.2+ | 0.0 | 2006 09 15 | 704 | 0.2+ | 0.7+ |
| 1999 10 13 | 704 | 0.6− | 1.0+ | 1999 11 16 | 704 | 0.8− | 0.5− | 2006 09 15 | 704 | 0.6+ | 0.7+ |
| 1999 10 13 | 704 | 0.3− | 0.2+ | 1999 11 16 | 704 | 0.5+ | 0.3− | 2006 09 20 | 699 | 1.3+ | 0.8+ |
| 1999 10 13 | 704 | 0.2+ | 0.3+ | 1999 12 02 | 691 | 1.3+ | 0.5− | 2006 09 20 | 699 | 0.2− | 1.3+ |
| 1999 10 13 | 704 | 0.7+ | 0.2+ | 1999 12 02 | 691 | 1.7+ | 0.3− | 2006 09 20 | 699 | 0.1+ | 0.6− |
| 1999 10 15 | 704 | 0.6− | 0.3+ | 1999 12 02 | 691 | 0.2− | 0.2− | 2006 09 22 | 703 | 0.3− | 0.4− |
| 1999 10 15 | 704 | 0.3− | 0.5− | 1999 12 07 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 703 | 0.3− | 0.6− |
| 1999 10 15 | 704 | 0.6− | 0.4− | 1999 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 22 | 703 | 0.5− | 0.5− |
| 1999 10 15 | 704 | 0.2+ | 0.1+ | 1999 12 07 | 704 | 0.7+ | 1.4+ | 2006 09 22 | 703 | 0.1− | 0.5− |
| 1999 10 15 | 704 | 0.2+ | 0.4− | 1999 12 07 | 704 | 0.0 | 0.3+ | 2006 09 23 | 106 | 0.1− | 0.8+ |
| 1999 10 22 | 704 | 0.4− | 0.7− | 2003 12 19 | 704 | 0.7+ | 0.3+ | 2006 09 23 | 106 | 0.3+ | 0.7− |
| 1999 10 22 | 704 | 1.0− | 0.8− | 2003 12 19 | 704 | 0.0 | 0.9+ | 2006 09 23 | 106 | 0.3+ | 0.0 |
| 1999 10 22 | 704 | 1.2+ | 1.7− | 2003 12 19 | 704 | 0.3+ | 0.0 | 2006 09 23 | 106 | 0.2− | 0.3− |
| 1999 10 22 | 704 | 1.0− | 0.4− | 2003 12 19 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.5− |
| 1999 11 03 | 704 | 0.4− | 0.1− | 2003 12 22 | 704 | 0.3− | 1.4+ | 2006 09 29 | 699 | 0.3− | 0.0 |
| 1999 11 03 | 704 | 0.8+ | 0.7+ | 2003 12 22 | 704 | 0.4− | 1.2+ | 2006 09 29 | 699 | 0.9− | 0.9+ |
| 1999 11 03 | 704 | 0.5− | 0.4+ | 2003 12 22 | 704 | 0.0 | 1.2+ | 2006 09 29 | 699 | 0.4− | 0.1+ |
| 1999 11 03 | 704 | 1.0− | 0.8+ | 2003 12 22 | 704 | 0.1+ | 1.1+ | 2006 10 01 | 704 | 0.0 | 0.8− |
| 1999 11 03 | 704 | 1.7− | 0.3+ | 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.7+ | 0.6− |
| 1999 11 14 | 704 | 0.0 | 0.5− | 2005 04 15 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.1− | 1.0+ |
| 1999 11 14 | 704 | 0.3− | 0.7− | 2005 04 15 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.6− | 0.6+ |
| 1999 11 14 | 704 | 1.1− | 1.6− | 2006 08 27 | 699 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− |
| 1999 11 14 | 704 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 11 14 | 704 | 0.6− | 0.2+ | 2006 08 27 | 699 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 11 14 | 704 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 1999 11 14 | 703 | 1.0− | 1.1+ | 2006 08 31 | 704 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 1999 11 14 | 704 | 0.3− | 0.2+ | 2006 08 31 | 704 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 1999 11 14 | 703 | 0.6− | 0.0 | 2006 08 31 | 704 | 0.0 | 0.1− | | | | |

**(137594)∗ 1999 VA$_{161}$ = 1999 XO$_{44}$ = 2001 HE$_{29}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 2807), G. V. Williams (*MPO* 13002)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 209.36355 | | (2000.0) | | | |
| $n$ | 0.26215860 | $\omega$ | 113.57124 | | −0.92938055 | −0.36671384 |
| $a$ | 2.4178349 | $\Omega$ | 44.94659 | | +0.31320524 | −0.84380409 |
| $e$ | 0.1406015 | $i$ | 3.41684 | | +0.19533120 | −0.39181069 |
| $P$ | 3.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 02 | 691 | 0.0 | 0.1− | 2001 04 26 | 699 | 0.2+ | 0.1− | 2003 11 23 | 704 | 0.6+ | 0.0 |
| 1991 10 02 | 691 | 0.2− | 1.2− | 2001 04 26 | 699 | 0.2+ | 0.7+ | 2003 11 23 | 704 | 0.1− | 0.8+ |
| 1991 10 02 | 691 | 0.1− | 0.1+ | 2001 04 26 | 699 | 0.4+ | 0.1+ | 2003 11 23 | 704 | 0.3− | 0.4+ |
| 1999 11 09 | 703 | 1.3+ | 1.3+ | 2001 04 27 | 704 | 0.5− | 0.4+ | 2003 12 04 | 704 | 0.7+ | 0.8− |
| 1999 11 09 | 703 | 0.1− | 0.8+ | 2001 04 27 | 704 | 0.1− | 0.5− | 2003 12 04 | 704 | 0.9− | 0.2+ |
| 1999 11 09 | 703 | 1.2− | 0.4+ | 2001 04 27 | 704 | 0.2+ | 0.5− | 2003 12 04 | 704 | 0.3− | 0.3− |
| 1999 11 09 | 703 | 0.3+ | 0.7+ | 2001 04 29 | 704 | 0.8+ | 0.2+ | 2003 12 04 | 704 | 0.2− | 0.3+ |
| 1999 11 14 | 704 | 0.4+ | 0.7− | 2001 04 29 | 704 | 0.6+ | 0.6+ | 2003 12 18 | 704 | 0.2− | 0.5+ |
| 1999 11 14 | 704 | 1.2+ | 1.1− | 2001 04 29 | 704 | 0.8− | 0.1− | 2003 12 18 | 704 | 0.1− | 0.2− |
| 1999 11 14 | 704 | 0.1+ | 0.4− | 2001 05 12 | 699 | 0.0 | 1.0+ | 2003 12 18 | 704 | 0.5− | 0.6+ |
| 1999 11 14 | 704 | 0.1+ | 0.7− | 2001 05 12 | 699 | 0.1+ | 0.2− | 2003 12 22 | 704 | 1.1− | 0.1− |
| 1999 11 14 | 704 | 0.3+ | 0.4− | 2001 05 12 | 699 | 0.5− | 0.5− | 2003 12 22 | 704 | 0.8− | 0.1− |
| 1999 11 16 | 704 | 0.7+ | 0.2+ | 2001 05 12 | 699 | 0.2+ | 0.4+ | 2003 12 22 | 704 | 0.5− | 0.2− |
| 1999 11 16 | 704 | 0.2+ | 0.3− | 2001 05 15 | 699 | 0.1− | 0.4+ | 2003 12 22 | 704 | 0.8− | 0.4+ |
| 1999 11 16 | 704 | 0.9+ | 0.3− | 2001 05 15 | 699 | 0.3− | 0.4+ | 2003 12 22 | 704 | 0.8− | 0.0 |
| 1999 11 16 | 704 | 0.3+ | 0.6+ | 2001 05 15 | 699 | 0.3− | 0.6+ | 2004 01 22 | 704 | 0.4+ | 1.2− |
| 1999 11 16 | 704 | 0.1+ | 1.7+ | 2001 05 15 | 699 | 0.2− | 0.1− | 2004 01 22 | 704 | 0.0 | 0.2− |
| 1999 12 07 | 704 | 0.1+ | 0.8− | 2001 05 17 | 704 | 0.4− | 0.5+ | 2004 01 22 | 704 | (0.7+ | 1.7+) |
| 1999 12 07 | 704 | 0.2− | 0.0 | 2001 05 17 | 704 | 0.5− | 0.2− | 2006 09 30 | G96 | 0.2− | 0.0 |
| 1999 12 07 | 704 | 0.3+ | 0.3+ | 2001 05 17 | 704 | 1.0+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.3+ |
| 1999 12 07 | 704 | 1.2+ | 0.6+ | 2001 05 27 | 608 | 0.4+ | 1.2− | 2006 09 30 | G96 | 0.2+ | 0.3+ |
| 1999 12 08 | 704 | 1.5+ | 0.5− | 2001 05 27 | 608 | 0.1+ | 0.7− | 2006 09 30 | G96 | 0.5− | 0.2+ |
| 1999 12 08 | 704 | 0.3− | 0.2− | 2001 05 27 | 608 | 0.2+ | 0.6− | 2006 09 30 | 703 | 0.3− | 0.1− |
| 1999 12 08 | 704 | 0.3+ | 1.4+ | 2001 06 11 | 699 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.8+ |
| 1999 12 12 | 703 | 0.1+ | 0.9+ | 2001 06 11 | 699 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.4− |
| 1999 12 12 | 703 | 0.0 | 1.0− | 2001 06 11 | 699 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 1999 12 12 | 703 | 0.2+ | 1.1+ | 2001 06 11 | 699 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.7+ | 0.5+ |
| 1999 12 12 | 703 | 1.5− | 0.0 | 2002 09 15 | 644 | 0.2+ | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2001 04 25 | 608 | 0.4− | 0.7− | 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2001 04 25 | 608 | 0.0 | 0.6− | 2002 09 15 | 644 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2001 04 25 | 608 | 0.1− | 0.9− | 2003 11 23 | 704 | 0.4+ | 0.3− | | | | |
| 2001 04 26 | 699 | 0.1− | 0.4+ | 2003 11 23 | 704 | 0.2+ | 0.2− | | | | |

**(137595)∗ 1999 VP$_{161}$ = 1995 SO$_{32}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 1209)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.00748 | | (2000.0) | | | |
| $n$ | 0.26506041 | $\omega$ | 38.71782 | | +0.91741830 | −0.39781362 |
| $a$ | 2.4001560 | $\Omega$ | 344.71561 | | +0.35566358 | +0.83032976 |
| $e$ | 0.2035367 | $i$ | 2.03919 | | +0.17845751 | +0.39025224 |
| $P$ | 3.72 | $H$ | 16.5 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.2+ | 0.1− | 1999 11 14 | 704 | 0.5− | 0.5− | 2004 01 22 | 704 | (0.4+ | 1.7+) |
| 1995 09 21 | 691 | 0.4− | 0.2+ | 1999 11 14 | 704 | 0.3− | 0.5− | 2004 01 22 | 704 | 1.1+ | 1.0+ |
| 1995 09 21 | 691 | 0.4− | 0.3+ | 1999 11 14 | 704 | 0.4− | 0.2− | 2004 01 22 | 704 | 0.7− | 0.1+ |
| 1995 09 26 | 691 | 0.4− | 0.1+ | 1999 11 14 | 704 | 0.3− | 0.1− | 2004 01 22 | 704 | 0.2+ | 0.4+ |
| 1995 09 26 | 691 | 0.5− | 0.4+ | 1999 11 14 | 704 | 0.7− | 0.3+ | 2004 01 31 | 691 | 0.2+ | 0.5+ |
| 1995 09 26 | 691 | 0.1− | 0.5+ | 1999 11 16 | 704 | 0.4− | 0.4− | 2004 01 31 | 691 | 0.1− | 0.5+ |
| 1995 10 02 | 691 | 0.6− | 0.2+ | 1999 11 16 | 704 | 0.4− | 0.5− | 2004 01 31 | 691 | 0.0 | 0.5+ |
| 1995 10 02 | 691 | 0.8+ | 0.2− | 1999 11 16 | 704 | 0.7− | 0.3+ | 2006 08 15 | 644 | 0.2− | 0.1+ |
| 1995 10 02 | 691 | 0.6+ | 0.3+ | 1999 11 16 | 704 | 0.7− | 0.3− | 2006 08 15 | 644 | 0.2− | 0.8+ |
| 1999 10 13 | 704 | 0.1− | 0.8− | 1999 12 08 | 704 | (0.2+ | 2.4−) | 2006 08 15 | 644 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 1.0+ | 0.7− | 1999 12 08 | 704 | 0.1− | 0.7− | 2006 08 24 | 644 | 0.2+ | 0.2− |
| 1999 10 13 | 704 | 0.3− | 0.3− | 1999 12 08 | 704 | 0.6− | 0.6− | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 1999 10 13 | 704 | 0.5+ | 0.5− | 1999 12 08 | 704 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.3+ | 0.1+ |
| 1999 10 13 | 704 | 0.5− | 0.3− | 1999 12 08 | 704 | 0.6− | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.3− |
| 1999 10 22 | 704 | 1.2+ | 0.3− | 2003 12 22 | 704 | 0.6+ | 0.6− | 2006 08 28 | 703 | (1.9− | 1.8−) |
| 1999 10 22 | 704 | 1.1+ | 0.8+ | 2003 12 22 | 704 | 0.1− | 0.0 | 2006 08 28 | 703 | 1.0− | 1.5− |
| 1999 10 22 | 704 | 1.2+ | 0.5− | 2003 12 22 | 704 | 0.2− | 0.5+ | 2006 08 28 | 703 | (0.8+ | 1.8−) |
| 1999 10 22 | 704 | 0.1− | 1.5− | 2003 12 22 | 704 | 0.2− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.4+ |
| 1999 11 03 | 704 | 0.8+ | 1.0− | 2003 12 27 | 704 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.9+ |
| 1999 11 03 | 704 | 0.0 | 0.4+ | 2003 12 27 | 704 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.5+ | 0.5+ |
| 1999 11 03 | 704 | 1.0+ | 0.1+ | 2003 12 27 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.6+ |
| 1999 11 03 | 704 | 1.3+ | 0.5+ | 2003 12 27 | 704 | 0.0 | 1.0+ | | | | |

**(137596)∗ 1999 VV$_{161}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.76942 | | (2000.0) | | | |
| $n$ | 0.27350522 | $\omega$ | 13.74941 | | +0.72231864 | −0.68923515 |
| $a$ | 2.3504930 | $\Omega$ | 30.06760 | | +0.62332257 | +0.61336768 |
| $e$ | 0.1028116 | $i$ | 6.49375 | | +0.29954092 | +0.38566176 |
| $P$ | 3.60 | $H$ | 16.5 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.3− | 0.5− | 2003 12 18 | 704 | 1.0+ | 0.9+ | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 1999 10 15 | 704 | 0.2− | 1.4− | 2003 12 29 | 704 | (1.6+ | 1.3−) | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 1999 10 15 | 704 | 0.7− | 1.1− | 2003 12 29 | 704 | 0.7+ | 0.9+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 1999 10 15 | 704 | 0.7− | 0.9− | 2003 12 29 | 704 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.2− |
| 1999 10 15 | 704 | 0.4− | 1.1− | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− |
| 1999 11 03 | 704 | 0.3− | 0.2+ | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.3− | 0.2+ |
| 1999 11 03 | 704 | 1.0+ | 0.5− | 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.4+ | 0.8+ |
| 1999 11 03 | 704 | 0.2+ | 0.4− | 2004 02 11 | 703 | 0.6− | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 1999 11 03 | 704 | 1.0+ | 0.1− | 2004 02 11 | 703 | 0.5− | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.3+ |
| 1999 11 14 | 704 | 0.5− | 0.2+ | 2004 02 11 | 703 | 0.2− | 0.7+ | 2006 09 28 | 704 | 0.7+ | 0.3+ |
| 1999 11 14 | 704 | 0.2+ | 0.4+ | 2004 02 11 | 703 | (1.6− | 0.1−) | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 1999 11 14 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 1999 11 14 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.5− | 1.1− |
| 1999 11 14 | 704 | 0.2− | 0.0 | 2006 09 18 | 703 | 1.1+ | 0.1− | 2006 10 01 | 704 | 0.3+ | 1.1+ |
| 1999 11 16 | 704 | 0.5+ | 1.1+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.5− | 1.0+ |
| 1999 11 16 | 704 | 0.5+ | 0.9+ | 2006 09 18 | 699 | 0.4+ | 1.1+ | 2006 10 01 | 704 | 0.8− | 0.8+ |
| 1999 11 16 | 704 | (0.1+ | 2.4+) | 2006 09 18 | 699 | 0.2+ | 1.0− | 2006 10 01 | 704 | 0.8+ | 0.8+ |
| 1999 11 16 | 704 | 0.3+ | 1.8+ | 2006 09 18 | 699 | 1.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 16 | 704 | 1.0+ | 0.8+ | 2006 09 18 | 699 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.8− | 1.0− | 2006 09 22 | 704 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1999 12 08 | 704 | 0.1− | 0.3− | 2006 09 22 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 1999 12 08 | 704 | 0.2+ | 1.0− | 2006 09 22 | 704 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 1.3+ |
| 1999 12 08 | 704 | 0.2+ | 1.2− | 2006 09 26 | 704 | (0.4+ | 1.8+) | 2006 11 11 | 703 | 0.1− | 0.9+ |
| 2002 08 13 | 644 | 0.0 | 0.4+ | 2006 09 26 | 704 | (0.2+ | 1.6+) | 2006 11 11 | 703 | 0.3+ | 1.1+ |
| 2002 08 13 | 644 | 0.0 | 0.5+ | 2006 09 26 | 704 | (0.4− | 2.5+) | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2002 08 13 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.2− | 0.6− |
| 2002 08 31 | 644 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.7− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2002 08 31 | 644 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.6− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 08 31 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2003 12 18 | 704 | 0.5+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2003 12 18 | 704 | 0.6+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2003 12 18 | 704 | 0.1+ | 1.1− | 2006 09 26 | G96 | 0.1+ | 0.3− | | | | |

**(137597)∗ 1999 VW$_{161}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.96961 | | (2000.0) | | | |
| $n$ | 0.27404804 | $\omega$ | 332.37982 | | +0.99528220 | +0.09214745 |
| $a$ | 2.3473882 | $\Omega$ | 22.39481 | | −0.06760788 | +0.88318515 |
| $e$ | 0.2686779 | $i$ | 4.57175 | | −0.06958814 | +0.45988350 |
| $P$ | 3.60 | $H$ | 16.5 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.1− | 0.3+ | 2005 03 12 | 691 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.1− | 0.4− |
| 1999 10 03 | 703 | 1.0+ | 0.3+ | 2005 05 02 | 691 | 0.4+ | 0.2+ | 2006 09 22 | 704 | 0.3− | 0.4+ |
| 1999 10 03 | 703 | 0.8− | 0.3− | 2005 05 02 | 691 | 0.9+ | 0.2+ | 2006 09 22 | 704 | 0.0 | 0.0 |
| 1999 10 03 | 703 | 0.2− | 0.0 | 2005 05 02 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.2− |
| 1999 10 06 | 704 | 0.8+ | 1.7− | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.4− | 0.3− |
| 1999 10 06 | 704 | 1.0+ | 1.5− | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.3+ | 1.4− | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.5− | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 1.1+ | 1.0− | 2006 08 23 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.5− | 0.0 | |
| 1999 10 06 | 704 | 0.2− | 0.4− | 2006 08 23 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.4− | |
| 1999 10 12 | 704 | 0.3− | 1.1− | 2006 08 23 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 704 | 1.0− | 0.2− | |
| 1999 10 12 | 704 | 0.5− | 0.9− | 2006 08 23 | 704 | 0.5+ | 1.1+ | 2006 09 28 | 704 | 0.3− | 0.4+ | |
| 1999 10 12 | 704 | 0.5− | 0.8− | 2006 08 23 | 704 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.5− | 0.6− | |
| 1999 10 12 | 704 | 0.4− | 1.0− | 2006 08 28 | 704 | 0.8+ | 0.3+ | 2006 09 28 | 704 | 0.6− | 0.7− | |
| 1999 10 12 | 704 | 0.2− | 0.2− | 2006 08 28 | 704 | 0.5+ | 0.4− | 2006 09 30 | 703 | 0.0 | 0.5− | |
| 1999 10 15 | 704 | 0.5+ | 0.2− | 2006 08 28 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.2+ | |
| 1999 10 15 | 704 | 0.2+ | 0.2− | 2006 08 28 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.1− | |
| 1999 10 15 | 704 | 0.6− | 1.3− | 2006 08 28 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.7+ | 0.5+ | |
| 1999 10 15 | 704 | 1.2− | 0.6− | 2006 08 30 | 699 | 0.3+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.3+ | |
| 1999 10 15 | 704 | 0.2− | 0.4− | 2006 08 30 | 699 | 0.6+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.1+ | |
| 1999 10 22 | 704 | 0.7+ | 0.5+ | 2006 08 30 | 699 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.2+ | |
| 1999 10 22 | 704 | 0.4+ | 0.5+ | 2006 08 30 | 699 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.0 | |
| 1999 10 22 | 704 | 1.0+ | 0.8+ | 2006 08 31 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.1− | |
| 1999 10 22 | 704 | 1.0+ | 1.3+ | 2006 08 31 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.1+ | |
| 1999 10 22 | 704 | 0.7+ | 0.4+ | 2006 08 31 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.4+ | |
| 1999 10 29 | 703 | 1.7− | 0.2− | 2006 09 12 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 1999 10 29 | 703 | 0.5− | 0.9+ | 2006 09 12 | 704 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | |
| 1999 10 29 | 703 | 0.1+ | 0.8+ | 2006 09 12 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ | |
| 1999 10 29 | 703 | 0.7− | 0.7+ | 2006 09 12 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 695 | 0.0 | 0.2+ | |
| 1999 11 03 | 704 | 0.5− | 0.5− | 2006 09 12 | 704 | 0.3+ | 0.1− | 2006 10 20 | 695 | 0.1+ | 0.1+ | |
| 1999 11 03 | 704 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.2− | |
| 1999 11 03 | 699 | 0.4− | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− | |
| 1999 11 03 | 704 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | |
| 1999 11 03 | 699 | 0.1+ | 0.3− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | |
| 1999 11 03 | 704 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.0 | 2006 10 23 | 704 | 0.3− | 0.1− | |
| 1999 11 03 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.0 | 2006 10 23 | 704 | 0.2− | 0.6+ | |
| 1999 11 03 | 699 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 10 23 | 704 | (1.9+ | 0.3+) | |
| 1999 11 09 | 699 | 0.8− | 0.0 | 2006 09 14 | 644 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 1999 11 09 | 699 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.0 | 0.7− | 2006 11 09 | 644 | 0.2− | 0.0 | |
| 1999 11 09 | 699 | 0.3− | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2− | |
| 1999 11 14 | 704 | 0.3− | 0.6+ | 2006 09 16 | 704 | 1.2− | 1.0+ | 2006 11 15 | G96 | 0.1+ | 0.1− | |
| 1999 11 14 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 704 | 0.5− | 0.8+ | 2006 11 15 | G96 | 0.2− | 0.1− | |
| 1999 11 14 | 704 | 0.7+ | 1.7+ | 2006 09 16 | 704 | 0.1− | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.3− | |
| 1999 11 14 | 704 | 0.3− | 1.2+ | 2006 09 16 | 704 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.0 | |
| 1999 11 14 | 704 | 0.3+ | 0.7+ | 2006 09 16 | 704 | 0.4− | 0.3+ | 2006 11 18 | 703 | 0.7− | 0.4+ | |
| 1999 11 16 | 704 | 0.0 | 1.2+ | 2006 09 19 | 704 | 0.4− | 0.6+ | 2006 11 18 | 703 | 1.3+ | 0.2+ | |
| 1999 11 16 | 704 | 0.2− | 0.2+ | 2006 09 19 | 704 | 0.1+ | 0.5+ | 2006 11 18 | 703 | 0.1+ | 1.4− | |
| 1999 11 16 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 704 | 0.3+ | 0.4+ | 2006 11 18 | 703 | (1.7+ | 0.7−) | |
| 1999 11 16 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 704 | 0.6+ | 0.8+ | 2006 11 21 | G96 | 0.2− | 0.1− | |
| 1999 11 16 | 704 | 0.2+ | 1.0+ | 2006 09 19 | 704 | 0.6− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.0 | |
| 1999 12 08 | 704 | 0.1+ | 1.2− | 2006 09 20 | 644 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.0 | |
| 1999 12 08 | 704 | (0.5− | 2.3−) | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 1.1− | 0.1− | |
| 1999 12 08 | 704 | 0.3− | 1.2− | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.1− | |
| 2002 06 06 | 704 | 0.5− | 0.1+ | 2006 09 21 | 699 | 0.3− | 0.1+ | 2006 11 21 | 704 | (2.2− | 1.3−) | |
| 2002 06 06 | 704 | 0.5− | 1.0− | 2006 09 21 | 699 | 0.5+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 1.4− | |
| 2002 06 06 | 704 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 1.2+ | |
| 2005 03 08 | G96 | 1.0− | 0.4+ | 2006 09 21 | 699 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.1− | 0.1− | |
| 2005 03 08 | G96 | 0.5− | 0.7+ | 2006 09 21 | 699 | 0.1+ | 0.7+ | 2006 11 27 | 703 | 1.4+ | 0.5− | |
| 2005 03 08 | G96 | 0.7− | 0.5+ | 2006 09 21 | 699 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.9− | 0.0 | |
| 2005 03 08 | G96 | 0.8− | 0.7+ | 2006 09 21 | 699 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.9− | 0.2− | |
| 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.6− | 0.4− | 2006 11 27 | 703 | 0.2+ | 0.8− | |
| 2005 03 12 | 691 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.2+ | | | | | |

**(137598)∗ 1999 VA$_{164}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.28937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27058701 | $\omega$ | 135.73242 | | −0.80777823 | −0.58944646 | |
| $a$ | 2.3673624 | $\Omega$ | 8.15830 | | +0.52651211 | −0.72667610 | |
| $e$ | 0.1069932 | $i$ | 2.77491 | | +0.26510249 | −0.35283808 | |
| $P$ | 3.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 11 | 691 | 0.0 | 0.1− | 2002 09 04 | 644 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.1− | |
| 1997 02 11 | 691 | 0.2− | 0.1+ | 2002 09 04 | 644 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.5+ | |
| 1997 02 11 | 691 | 0.1+ | 0.3− | 2002 09 04 | 644 | 0.2− | 0.5+ | 2006 10 10 | 644 | 0.5− | 0.4+ | |
| 1999 10 06 | 704 | 0.9+ | 0.6− | 2003 12 14 | 691 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 | |
| 1999 10 06 | 704 | 0.5+ | 0.9− | 2003 12 14 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 1999 10 06 | 704 | 0.1+ | 1.2− | 2003 12 14 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | |
| 1999 10 06 | 704 | 1.7− | 1.4− | 2003 12 18 | 704 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | |
| 1999 10 12 | 704 | 0.6− | 0.7− | 2003 12 18 | 704 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.7+ | 0.5− | |
| 1999 10 12 | 704 | 0.1+ | 0.4− | 2003 12 18 | 704 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.0 | |
| 1999 10 12 | 704 | 0.9− | 0.0 | 2003 12 18 | 704 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.4+ | |
| 1999 11 03 | 704 | 0.6+ | 0.0 | 2003 12 18 | 704 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.5− | 0.3+ | |
| 1999 11 03 | 704 | 0.7− | 0.4− | 2003 12 22 | 704 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.8+ | |
| 1999 11 03 | 704 | 1.8+ | 0.9− | 2003 12 22 | 704 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.5− | 0.3− | |
| 1999 11 14 | 704 | 0.2+ | 0.1+ | 2003 12 22 | 704 | 0.0 | 0.9+ | 2006 10 17 | 703 | 0.0 | 0.1+ | |
| 1999 11 14 | 704 | 0.2+ | 0.4+ | 2003 12 22 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.5+ | |
| 1999 11 14 | 704 | 0.3− | 0.3+ | 2003 12 22 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | |
| 1999 11 14 | 704 | 0.1+ | 0.3− | 2003 12 27 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | |
| 1999 11 14 | 704 | 0.3− | 0.5+ | 2003 12 27 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 1999 11 16 | 704 | 1.1+ | 0.6− | 2003 12 27 | 704 | 0.6+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.1− | |
| 1999 11 16 | 704 | 0.7+ | 1.0− | 2003 12 27 | 704 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.3− | 0.2− | |
| 1999 11 16 | 704 | 0.3− | 0.1+ | 2003 12 27 | 704 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2− | |
| 2001 05 18 | 699 | 0.6+ | 0.6+ | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− | |
| 2001 05 18 | 699 | 0.8+ | 1.2+ | 2003 12 28 | 691 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.4+ | |
| 2001 05 18 | 699 | 0.3+ | 0.2+ | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 1.1− | 0.9− | |
| 2001 05 18 | 699 | 0.4+ | 1.1+ | 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 1.1+ | 0.1− | |
| 2001 05 26 | 291 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.8− | 2006 11 01 | G96 | 0.4− | 0.6+ | |
| 2001 05 26 | 291 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.1+ | |
| 2001 05 26 | 291 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.5− | 2006 11 01 | G96 | 0.3− | 0.0 | |
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.1+ | |
| 2002 08 18 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.5− | 0.2+ | |
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2+ | |
| 2002 09 01 | 644 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 1.2− | 2.5+ | |
| 2002 09 01 | 644 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 2.7+ | |

**(137599)∗ 1999 VN$_{164}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.79535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26382272 | $\omega$ | 179.00711 | | +0.50633454 | −0.85677778 | |
| $a$ | 2.4076568 | $\Omega$ | 240.56657 | | +0.79040313 | +0.50643479 | |
| $e$ | 0.1069757 | $i$ | 6.44498 | | +0.34480173 | +0.09724006 | |
| $P$ | 3.74 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1+ | 0.6+ | 1999 11 16 | 704 | 0.5− | 0.1− | 2005 05 19 | 644 | 0.8+ | 0.1+ | |
| 1999 10 13 | 704 | 0.5− | 0.3+ | 1999 11 16 | 704 | 1.1− | 0.1− | 2005 05 19 | 644 | 0.3+ | 0.3+ | |
| 1999 10 13 | 704 | 0.3+ | 0.3+ | 1999 12 07 | 704 | 0.3+ | 0.6− | 2005 05 19 | 644 | 0.2+ | 0.6+ | |
| 1999 10 13 | 704 | 0.6− | 0.5− | 1999 12 07 | 704 | 1.3+ | 0.5+ | 2006 08 17 | 644 | 0.3− | 0.1− | |
| 1999 10 13 | 704 | 0.1+ | 0.3− | 1999 12 07 | 704 | 0.9+ | 0.5+ | 2006 08 17 | 644 | 0.5− | 0.3− | |
| 1999 10 15 | 704 | 0.3− | 0.4− | 1999 12 07 | 704 | 0.9+ | 0.9+ | 2006 08 17 | 644 | 0.4− | 0.0 | |
| 1999 10 15 | 704 | 0.5− | 0.3− | 1999 12 07 | 704 | 1.0+ | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.2− | |
| 1999 10 15 | 704 | 0.2− | 0.5+ | 1999 12 16 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.4− | |
| 1999 10 15 | 704 | 0.7+ | 0.5− | 1999 12 16 | 691 | 0.2+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.4− | |
| 1999 10 22 | 704 | 0.7+ | 0.9+ | 1999 12 16 | 691 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.5− | 0.3− | |
| 1999 10 22 | 704 | 0.7+ | 0.2+ | 2002 07 03 | 644 | 0.4− | 0.9+ | 2006 08 22 | 644 | 0.3− | 0.2− | |
| 1999 10 22 | 704 | 0.8+ | 1.4− | 2002 07 03 | 644 | 0.3− | 1.0+ | 2006 08 22 | 644 | 0.5− | 0.4− | |
| 1999 11 03 | 704 | 1.2+ | 0.7+ | 2002 07 03 | 644 | 0.5− | 1.4+ | 2006 08 29 | 703 | 1.1− | 0.6+ | |
| 1999 11 03 | 704 | 0.1+ | 0.7− | 2002 08 05 | 644 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.5+ | |
| 1999 11 03 | 704 | 0.0 | 0.5− | 2002 08 05 | 644 | 0.2− | 0.3+ | 2006 08 29 | 703 | 1.0− | 0.4+ | |
| 1999 11 03 | 704 | 0.0 | 0.3− | 2002 08 05 | 644 | 0.3+ | 0.2− | 2006 08 29 | 703 | 0.8+ | 0.3+ | |
| 1999 11 14 | 704 | 0.6− | 0.4− | 2003 12 22 | 704 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.0 | |
| 1999 11 14 | 704 | 1.5− | 0.2− | 2003 12 22 | 704 | 0.9+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.2− | |
| 1999 11 14 | 704 | 1.2− | 0.1+ | 2003 12 22 | 704 | 0.4− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2− | |
| 1999 11 14 | 704 | 1.3− | 0.2+ | 2003 12 22 | 704 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 1.5− | 0.2− | 2005 05 16 | G96 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 1999 11 16 | 704 | 0.7− | 0.2+ | 2005 05 16 | G96 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 1999 11 16 | 704 | 0.8− | 0.3+ | 2005 05 16 | G96 | 0.3− | 0.1+ | | | | |
| 1999 11 16 | 704 | 0.1+ | 0.3+ | 2005 05 16 | G96 | 0.1− | 0.3+ | | | | |

**(137600)∗ 1999 VJ$_{169}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.32748 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27414438 | $\omega$ | 134.20085 | | −0.00142101 | −0.99980369 | |
| $a$ | 2.3468382 | $\Omega$ | 315.86904 | | +0.90919739 | +0.00693682 | |
| $e$ | 0.1762347 | $i$ | 1.62643 | | +0.41636292 | −0.01855994 | |
| $P$ | 3.60 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.0 | 0.3+ | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 1995 09 24 | 691 | 0.3− | 0.6+ | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 1995 09 24 | 691 | 0.2− | 0.1+ | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.7+ | 1.0+ |
| 1999 10 06 | 704 | 0.2+ | 0.5+ | 2004 03 11 | 644 | 0.1− | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 1999 10 06 | 704 | 1.8+ | 0.2− | 2004 03 11 | 644 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 1.0− | 1.0+ |
| 1999 10 06 | 704 | 0.5+ | 1.7+ | 2004 03 11 | 644 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.8+ | 0.1− |
| 1999 10 06 | 704 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 0.1+ | 1.3+ | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1999 11 14 | 704 | 1.0− | 0.1− | 2004 03 18 | 704 | 0.7+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− |
| 1999 11 14 | 704 | 0.5− | 0.5− | 2004 03 18 | 704 | 0.0 | 0.8− | 2006 10 21 | 644 | 0.4− | 0.3− |
| 1999 11 14 | 704 | 0.5− | 0.0 | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1999 11 14 | 704 | 1.6+ | 0.6+ | 2004 03 19 | 704 | (0.4+ | 1.9+) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 11 16 | 704 | 1.0− | 0.7− | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2006 10 25 | 106 | 0.3+ | 1.3+ |
| 1999 11 16 | 704 | 0.5− | 0.8− | 2004 03 19 | 704 | (0.1+ | 2.2+) | 2006 10 25 | 106 | 0.7+ | 0.8+ |
| 1999 11 16 | 704 | 0.8− | 0.5− | 2004 03 19 | 704 | 0.5+ | 0.4+ | 2006 10 25 | 106 | 0.6+ | 1.1+ |
| 1999 11 16 | 704 | 0.7− | 0.7− | 2004 03 26 | 691 | 0.1− | 0.2− | 2006 10 25 | 106 | 0.2+ | 0.7+ |
| 1999 12 07 | 704 | 0.5+ | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1999 12 07 | 704 | 0.6+ | 0.0 | 2004 03 26 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1− |
| 1999 12 07 | 704 | 0.3+ | 0.6− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1999 12 07 | 704 | 0.7+ | 1.0− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2004 02 11 | 644 | 0.5+ | 0.0 | 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 02 17 | 691 | 0.6− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2004 02 17 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.2− |
| 2004 02 26 | 704 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.2− | 0.3− |
| 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.4− | 0.5− |
| 2004 02 26 | 704 | 0.2− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.2− |
| 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.3− |

**(137601)∗ 1999 VO$_{170}$ = 2002 QG$_{64}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74684)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.93318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27359523 | $\omega$ | 52.06608 | | −0.06424888 | −0.99750428 | |
| $a$ | 2.3499775 | $\Omega$ | 41.64687 | | +0.90120799 | −0.07059766 | |
| $e$ | 0.1821896 | $i$ | 2.52527 | | +0.42859799 | −0.00108575 | |
| $P$ | 3.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.5− | 1.1+ | 2004 02 23 | 704 | (0.6+ | 1.6+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 0.9+ | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 1999 11 12 | 704 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 1.4+ | 1.5+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.4+ | 0.3+ | 2004 02 23 | 704 | 1.3+ | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 1999 11 14 | 704 | 0.4+ | 0.9− | 2006 09 19 | 691 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 1999 11 14 | 704 | 0.6− | 0.6− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.5+ |
| 1999 11 14 | 704 | 0.3+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.5+ | 0.1+ |
| 1999 11 14 | 704 | 0.2− | 1.0− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 1999 11 16 | 704 | 0.9+ | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 1999 11 16 | 704 | 0.6− | 0.7− | 2006 09 28 | 691 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 1999 11 16 | 704 | 0.1− | 0.4− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1999 12 07 | 704 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 0.0 | 1.3− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 1999 12 07 | 704 | 0.3− | 0.6− | 2006 10 11 | 691 | 0.7− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 1999 12 07 | 704 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 12 07 | 704 | 0.1+ | 0.5− | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.8− | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.2− |
| 2002 08 18 | 644 | 0.6− | 0.0 | 2006 10 15 | 691 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.7+ | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2002 08 28 | 644 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 08 28 | 644 | 0.5− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2002 08 30 | 644 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2002 08 30 | 644 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2002 08 30 | 644 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.6− |
| 2004 02 16 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2004 02 16 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.7− |
| 2004 02 16 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.2− | | | | |
| 2004 02 23 | 704 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.6− | | | | |

**(137602)∗ 1999 VF$_{171}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.54089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27365198 | $\omega$ | 328.84279 | | +0.97152794 | −0.22843631 | |
| $a$ | 2.3496526 | $\Omega$ | 44.50448 | | +0.23162004 | +0.85992271 | |
| $e$ | 0.1838082 | $i$ | 5.14429 | | +0.04985595 | +0.45645349 | |
| $P$ | 3.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 1.3+ | 0.3− | 2006 09 20 | 699 | 0.8− | 0.3+ | 2006 10 23 | 704 | 0.6+ | 0.4+ |
| 1999 11 03 | 704 | 0.7+ | 0.8− | 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 10 23 | 704 | 0.5+ | 0.0 |
| 1999 11 03 | 704 | 0.3+ | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.2+ | 0.2+ |
| 1999 11 14 | 704 | 0.9+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.0 | 0.5− |
| 1999 11 14 | 704 | 0.3− | 0.4− | 2006 09 26 | 704 | 0.2− | 0.3+ | 2006 10 28 | 704 | 0.1+ | 0.4− |
| 1999 11 14 | 704 | 0.4− | 0.6− | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 28 | 704 | 0.2+ | 0.4+ |
| 1999 11 14 | 704 | 0.5− | 0.6− | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 10 28 | 704 | 1.0+ | 0.7− |
| 1999 11 16 | 704 | 1.4− | 0.8− | 2006 09 26 | 704 | 0.7− | 0.6+ | 2006 10 28 | 704 | 1.5+ | 0.1+ |
| 1999 11 16 | 704 | 0.8− | 1.3− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.8+ |
| 1999 11 16 | 704 | 0.1+ | 0.5− | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 1999 11 16 | 704 | 1.3− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 1999 11 16 | 704 | 0.9+ | 1.0− | 2006 09 28 | 704 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 1999 12 15 | 704 | 0.3+ | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 1999 12 15 | 704 | 0.0 | 0.8+ | 2006 09 28 | 704 | 0.9− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 1999 12 15 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.7+ | 0.8+ | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 1999 12 15 | 704 | 0.7+ | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2000 01 03 | 704 | 0.2+ | 0.8− | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2000 01 03 | 704 | 0.2+ | 0.8− | 2006 09 30 | 703 | 0.8+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2000 01 03 | 704 | 0.0 | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 03 25 | 695 | 0.5+ | 0.8+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2001 03 25 | 695 | (1.4+ | 3.3+) | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2004 02 10 | 644 | (0.7+ | 1.9+) | 2006 10 15 | 703 | 1.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2004 02 10 | 644 | (1.1+ | 1.6+) | 2006 10 15 | 703 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.4+ |
| 2004 02 10 | 644 | 0.2+ | 1.2+ | 2006 10 15 | 703 | 0.2− | 0.0 | 2006 11 13 | 704 | 0.0 | 0.0 |
| 2004 02 17 | 644 | (0.6+ | 2.1+) | 2006 10 15 | 703 | 1.4+ | 0.2+ | 2006 11 13 | 704 | 0.2− | 0.7+ |
| 2004 02 17 | 644 | (0.3+ | 1.7+) | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 13 | 704 | 0.1− | 1.1+ |
| 2004 02 17 | 644 | (0.2+ | 1.7+) | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 13 | 704 | 0.2− | 0.4+ |
| 2004 02 17 | 644 | (0.8+ | 2.6+) | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 13 | 704 | 0.6− | 0.3+ |
| 2004 02 17 | 644 | (0.5+ | 2.2+) | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 2004 02 17 | 644 | (0.6+ | 2.0+) | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.7+ |
| 2005 04 07 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2− | 1.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.9− | 0.3+ |
| 2005 04 07 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | (0.1− | 3.3+) |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | (0.8+ | 1.9+) |
| 2005 04 17 | 691 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | (0.3− | 2.4+) |
| 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.9− | 0.7+ |
| 2005 04 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.8− | 0.7+ |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2005 06 01 | G96 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.5− | 2006 11 20 | 704 | 1.1− | 1.2+ |
| 2005 06 01 | G96 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.4+ |
| 2005 06 01 | G96 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.5− | 2006 11 21 | 691 | 0.1+ | 0.4+ |
| 2005 06 01 | G96 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2006 09 15 | 644 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2006 09 15 | 644 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2006 09 15 | 644 | 0.0 | 0.6− | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 1.1− | 0.0 |
| 2006 09 20 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2006 09 20 | 699 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | 1.0− | 0.3+ |
| 2006 09 20 | 699 | 0.3− | 0.4+ | 2006 10 23 | 704 | 0.6− | 0.1+ | | | | |

**(137603)∗ 1999 VJ$_{171}$ = 2002 NN$_{10}$**

Discovered 1999 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33143)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.29509 | | (2000.0) | | +0.81329693 | +0.57734958 |
| $n$ | 0.28441549 | $\omega$ | 59.21230 | | −0.55553027 | +0.73359729 |
| $a$ | 2.2899916 | $\Omega$ | 265.42921 | | −0.17301510 | +0.35847242 |
| $e$ | 0.2511612 | $i$ | 4.15468 | | | |
| $P$ | 3.47 | $H$ | 17.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 1.4+ | 0.6− | 2002 06 29 | 644 | 0.1+ | 1.0+ | 2005 04 06 | 691 | 0.3+ | 0.4+ |
| 1999 10 13 | 704 | 0.1+ | 1.2+ | 2002 06 29 | 644 | 0.3+ | 1.1+ | 2005 04 06 | 691 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.5+ | 1.0− | 2002 06 29 | 644 | 0.2+ | 1.2+ | 2005 04 06 | 691 | 0.2+ | 0.4+ |
| 1999 10 13 | 704 | 0.5− | 1.0+ | 2002 07 04 | 644 | 0.4− | 0.1+ | 2006 11 16 | 691 | 0.4− | 0.1+ |
| 1999 11 14 | 704 | 0.6+ | 0.3− | 2002 07 04 | 644 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.5− | 0.0 |
| 1999 11 14 | 704 | 0.6− | 0.0 | 2002 07 04 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.3+ | 0.9+ |
| 1999 11 14 | 704 | 0.3+ | 0.3+ | 2002 07 05 | 704 | 0.4− | 0.6+ | 2006 11 20 | 691 | 0.3+ | 0.3+ |
| 1999 11 16 | 704 | 1.0+ | 0.1− | 2002 07 05 | 704 | 0.2− | 0.5+ | 2006 11 20 | 691 | 0.3− | 0.2+ |
| 1999 11 16 | 704 | 0.2− | 0.2+ | 2002 07 05 | 704 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 1999 11 16 | 704 | 0.3− | 0.4+ | 2002 07 05 | 704 | 0.2+ | 0.8+ | 2006 11 21 | 704 | 0.4− | 0.8+ |
| 1999 11 16 | 704 | 1.3+ | 0.3+ | 2002 07 07 | 644 | 0.5+ | 0.6− | 2006 11 21 | 704 | 0.1− | 0.9+ |
| 1999 12 05 | 691 | 0.1− | 0.0 | 2002 07 07 | 644 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.5− |
| 1999 12 05 | 691 | 0.4− | 0.3− | 2002 07 07 | 644 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 1.0+ | 0.4+ |
| 1999 12 05 | 691 | 0.5− | 0.1− | 2002 07 14 | 704 | (0.0 | 1.8+) | 2006 11 22 | 704 | (0.6+ | 2.2+) |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2002 07 14 | 704 | (0.6− | 2.0+) | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2002 07 14 | 704 | (0.0 | 2.0+) | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2002 06 03 | 644 | 0.0 | 0.3+ | 2002 07 14 | 704 | 1.0− | 0.1− | 2006 11 22 | 704 | (2.1+ | 0.8+) |
| 2002 06 03 | 644 | 0.1− | 0.8+ | 2002 07 14 | 704 | (0.4− | 2.1+) | 2006 11 22 | 704 | 1.1+ | 0.9+ |
| 2002 06 03 | 644 | 0.1− | 0.4+ | 2002 10 04 | 704 | 0.6− | 0.4− | 2006 11 24 | 691 | 0.3− | 0.1+ |
| 2002 06 08 | 704 | 0.1+ | 1.2− | 2002 10 04 | 704 | 0.4− | 0.5+ | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2002 06 08 | 704 | 0.2− | 1.1− | 2002 10 04 | 704 | 0.2+ | 0.6− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2002 06 08 | 704 | 0.5− | 0.9− | 2002 10 04 | 704 | 0.1− | 0.4+ | 2006 11 26 | H07 | 0.7− | 0.0 |
| 2002 06 08 | 704 | 0.1+ | 0.6+ | 2004 01 15 | 691 | 0.5− | 0.4+ | 2006 11 26 | H07 | 0.2+ | 0.1+ |
| 2002 06 16 | 644 | 0.3− | 0.1+ | 2004 01 15 | 691 | 0.4− | 0.1+ | 2006 11 28 | H07 | 0.4− | 0.1− |
| 2002 06 16 | 644 | 0.2− | 0.5+ | 2004 01 15 | 691 | 0.0 | 0.0 | 2006 11 28 | H07 | 0.1− | 0.3+ |
| 2002 06 16 | 644 | 0.2− | 0.2+ | 2004 01 27 | 691 | 0.3+ | 0.3+ | 2006 11 28 | H07 | 0.2− | 0.5+ |
| 2002 06 18 | 704 | (2.0+ | 1.3+) | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 11 30 | 691 | 0.0 | 0.1− |
| 2002 06 18 | 704 | 0.4+ | 0.7+ | 2004 01 27 | 691 | 0.4+ | 0.3+ | 2006 11 30 | 691 | 0.2− | 0.3+ |
| 2002 06 18 | 704 | 0.5+ | 1.5+ | 2004 01 28 | 291 | 0.4+ | 0.2+ | 2006 11 30 | 691 | 0.8+ | 0.7− |
| 2002 06 18 | 704 | 0.3+ | 1.4+ | 2004 01 28 | 291 | 0.3+ | 0.2+ | | | | |
| 2002 06 18 | 704 | (0.7− | 1.6+) | 2004 01 28 | 291 | 0.7+ | 0.2− | | | | |

**(137604)∗ 1999 VP$_{173}$**

Discovered 1999 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.66269 | | (2000.0) | | +0.70927377 | −0.69776630 |
| $n$ | 0.28327759 | $\omega$ | 338.14561 | | +0.66187247 | +0.61022852 |
| $a$ | 2.2961199 | $\Omega$ | 66.51197 | | +0.24260164 | +0.37515776 |
| $e$ | 0.1556958 | $i$ | 6.27625 | | | |
| $P$ | 3.48 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.3− | 1.1+ | 2002 08 11 | 644 | 0.0 | 0.8+ | 2006 11 11 | 703 | 0.7− | 0.4− |
| 1999 11 01 | 703 | 0.5+ | 0.2− | 2002 08 11 | 644 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 1999 11 01 | 703 | 1.2− | 0.2+ | 2002 08 11 | 644 | 0.3− | 0.9+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 1999 11 01 | 703 | 0.7− | 0.2+ | 2004 01 28 | 703 | 0.6− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 1999 11 15 | 704 | 0.4+ | 0.5− | 2004 01 28 | 703 | 0.7+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 1999 11 15 | 704 | 0.7+ | 0.5− | 2004 01 28 | 703 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 1999 11 15 | 704 | 0.0 | 0.4− | 2004 01 28 | 703 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 1999 11 15 | 704 | 0.4− | 0.3− | 2004 02 15 | 704 | 0.1− | 0.7− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 1999 11 15 | 704 | 0.9+ | 0.4− | 2004 02 15 | 704 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.9+ |
| 1999 11 16 | 704 | 0.5− | 0.6− | 2004 02 15 | 704 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.0 |
| 1999 11 16 | 704 | 0.4− | 1.2− | 2004 02 15 | 704 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.6− |
| 1999 11 16 | 704 | 0.8+ | 0.7− | 2004 02 15 | 704 | 1.0− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 1999 11 16 | 704 | 0.9+ | 0.5− | 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 1.2− | 0.5+ |
| 1999 11 16 | 704 | 0.4− | 0.6− | 2004 03 16 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 1999 11 17 | 704 | 1.0− | 0.6− | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 1999 11 17 | 704 | 0.6− | 0.7− | 2005 08 08 | 807 | 0.1+ | 0.7+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 1999 11 17 | 704 | 0.6+ | 0.6− | 2005 08 08 | 807 | 0.0 | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 1999 11 17 | 704 | 0.0 | 1.4− | 2005 08 09 | 807 | 0.2+ | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 1999 12 05 | 691 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 1999 12 05 | 691 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 1999 12 05 | 691 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 1999 12 07 | 704 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 11 21 | 704 | 1.0− | 0.7+ |
| 1999 12 07 | 704 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.2+ | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.0 | 0.4− |
| 1999 12 07 | 704 | 0.9+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.1− |
| 1999 12 07 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.1+ | 0.1− |
| 1999 12 12 | 703 | 0.2− | 0.6− | 2006 11 09 | 644 | 0.0 | 0.5+ | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 1999 12 12 | 703 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.9+ |
| 1999 12 12 | 703 | 0.6− | 0.7− | 2006 11 10 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.8+ | 0.8+ |
| 1999 12 12 | 703 | 0.6+ | 0.6− | 2006 11 10 | 691 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 1999 12 13 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 1999 12 13 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 1999 12 13 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.9− | | | | |

**(137605)∗ 1999 VK$_{174}$**

Discovered 1999 Nov. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.34494 | | (2000.0) | | −0.62298017 | −0.66587793 |
| $n$ | 0.27839298 | $\omega$ | 46.17140 | | +0.54620237 | −0.74594390 |
| $a$ | 2.3229001 | $\Omega$ | 87.19378 | | +0.55996311 | −0.01320162 |
| $e$ | 0.2492356 | $i$ | 24.26661 | | | |
| $P$ | 3.54 | $H$ | 13.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 704 | 0.6− | 0.1− | 2003 09 28 | 704 | 0.3+ | 0.1− | 2004 02 03 | 704 | 0.2+ | 0.0 |
| 1999 09 30 | 704 | 0.8− | 0.3+ | 2003 09 28 | 704 | 0.0 | 0.0 | 2004 02 03 | 704 | 0.1+ | 0.1+ |
| 1999 09 30 | 704 | 0.5− | 0.5+ | 2003 10 22 | 704 | 0.4+ | 0.4+ | 2004 02 07 | 699 | 0.5− | 0.2− |
| 1999 09 30 | 704 | 0.8− | 0.1+ | 2003 10 22 | 699 | 0.1− | 0.1− | 2004 02 07 | 699 | 0.2− | 0.3− |
| 1999 09 30 | 704 | 1.3− | 0.2− | 2003 10 22 | 704 | 0.2− | 0.6+ | 2004 02 07 | 699 | 0.4− | 0.3− |
| 1999 11 08 | 703 | 0.3− | 0.6+ | 2003 10 22 | 699 | 0.4− | 0.1− | 2004 02 07 | 699 | 0.4− | 0.3− |
| 1999 11 08 | 703 | 0.0 | 0.2+ | 2003 10 22 | 704 | 0.5+ | 0.3+ | 2004 02 09 | 704 | 0.9+ | 0.2− |
| 1999 11 08 | 703 | 0.0 | 0.5+ | 2003 10 22 | 699 | 0.0 | 0.0 | 2004 02 09 | 704 | 0.9+ | 0.1− |
| 1999 11 08 | 703 | 0.1+ | 0.7+ | 2003 10 22 | 704 | 0.5+ | 0.3+ | 2004 02 09 | 704 | (1.8+ | 0.1−) |
| 1999 11 11 | 699 | 0.3− | 0.5+ | 2003 10 22 | 699 | 0.3− | 0.2− | 2004 02 09 | 704 | 1.3+ | 0.1− |
| 1999 11 11 | 699 | 0.0 | 0.3+ | 2003 10 22 | 704 | 0.6+ | 0.6+ | 2004 02 09 | 704 | 1.1+ | 0.1− |
| 1999 11 11 | 699 | 0.8+ | 0.8+ | 2003 10 24 | 704 | 0.3− | 0.8+ | 2004 03 10 | 704 | 0.2− | 1.1+ |
| 1999 11 13 | 704 | 0.2+ | 0.8+ | 2003 10 24 | 704 | 0.3− | 0.6+ | 2004 03 10 | 704 | 0.6+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 704 | 0.0 | 0.0 | 2003 10 24 | 704 | 0.3− | 0.6+ | 2004 03 10 | 704 | 0.8+ | 0.9+ | | |
| 1999 11 13 | 704 | 0.5− | 1.2+ | 2003 10 28 | 704 | 0.1− | 0.3− | 2004 03 10 | 704 | 0.4+ | 0.5+ | | |
| 1999 11 13 | 704 | 0.1− | 0.8+ | 2003 10 28 | 704 | 1.3+ | 0.2+ | 2004 03 10 | 704 | 0.6+ | 0.7− | | |
| 1999 11 13 | 704 | 0.2− | 0.3+ | 2003 10 28 | 704 | 0.0 | 0.1− | 2004 03 30 | 704 | 0.1− | 0.0 | | |
| 1999 11 15 | 699 | 0.5− | 0.0 | 2003 10 28 | 704 | 0.4+ | 0.3+ | 2004 03 30 | 704 | 0.2− | 0.0 | | |
| 1999 11 15 | 699 | 0.6+ | 0.3+ | 2003 10 28 | 704 | 0.2− | 1.5+ | 2004 03 30 | 704 | 0.0 | 0.0 | | |
| 1999 11 15 | 699 | 0.1+ | 0.1+ | 2003 10 28 | 608 | 0.7+ | 0.2+ | 2004 03 30 | 704 | 0.1− | 0.1− | | |
| 1999 12 01 | 704 | 0.5+ | 1.1+ | 2003 10 28 | 608 | 0.5+ | 0.3+ | 2004 03 30 | 704 | 0.3− | 0.3+ | | |
| 1999 12 01 | 704 | 0.1+ | 0.6+ | 2003 10 28 | 608 | 0.6+ | 0.3+ | 2004 04 13 | 704 | 0.0 | 0.5+ | | |
| 1999 12 01 | 704 | 0.0 | 1.1+ | 2003 11 02 | 704 | (2.8+ | 3.0−) | 2004 04 13 | 704 | 0.7+ | 1.0+ | | |
| 1999 12 01 | 704 | 0.8+ | 0.8+ | 2003 11 02 | 704 | 0.1− | 0.3+ | 2004 04 13 | 704 | 0.1+ | 0.7+ | | |
| 2000 01 09 | 704 | 1.6− | 0.5+ | 2003 11 02 | 704 | 0.1+ | 0.3− | 2004 04 13 | 704 | 1.2− | 0.8+ | | |
| 2000 01 09 | 704 | 1.0− | 0.5+ | 2003 11 02 | 704 | 0.1− | 0.4− | 2004 04 13 | 704 | 1.1+ | 0.9− | | |
| 2000 01 09 | 704 | 1.2− | 0.2+ | 2003 11 02 | 704 | 0.2+ | 0.4+ | 2004 04 27 | 704 | 0.2+ | 0.2+ | | |
| 2000 01 09 | 704 | 1.5− | 0.4+ | 2003 11 19 | 699 | 0.1− | 0.0 | 2004 04 27 | 704 | 0.4− | 0.3− | | |
| 2000 01 09 | 704 | 1.2− | 0.5+ | 2003 11 19 | 699 | 0.2− | 0.2+ | 2004 04 27 | 704 | 0.0 | 0.4+ | | |
| 2001 04 15 | 704 | 0.0 | 0.0 | 2003 11 19 | 699 | 0.2− | 0.2+ | 2004 05 09 | 704 | 0.7+ | 0.5+ | | |
| 2001 04 15 | 704 | 0.2+ | 0.1− | 2003 11 19 | 699 | 0.2− | 0.0 | 2004 05 09 | 704 | 0.6+ | 0.5+ | | |
| 2001 04 15 | 704 | 0.2+ | 0.3+ | 2003 11 20 | 704 | 0.8− | 0.4+ | 2004 05 09 | 704 | 0.7+ | 0.5+ | | |
| 2001 04 15 | 704 | 0.7− | 1.5+ | 2003 11 20 | 704 | 0.4+ | 0.1− | 2004 05 09 | 704 | 0.5+ | 0.6+ | | |
| 2001 04 15 | 704 | 0.6+ | 0.3+ | 2003 11 20 | 704 | 0.6− | 0.6+ | 2004 05 09 | 704 | 0.7+ | 0.3+ | | |
| 2001 05 17 | 720 | 0.8− | 1.0+ | 2003 11 20 | 704 | 0.6− | 0.3+ | 2004 05 25 | 704 | 0.1− | 0.1− | | |
| 2001 05 17 | 720 | 0.3+ | 1.1+ | 2003 11 20 | 704 | 0.6− | 0.4+ | 2004 05 25 | 704 | 0.4− | 0.2− | | |
| 2001 05 17 | 720 | 0.2+ | 0.2+ | 2003 11 24 | 704 | 0.3+ | 0.5+ | 2004 05 25 | 704 | 0.4+ | 0.5− | | |
| 2001 05 22 | 704 | 0.6− | 0.6+ | 2003 11 24 | 704 | 0.1+ | 0.3+ | 2004 05 29 | 704 | 0.8+ | 1.1+ | | |
| 2001 05 22 | 704 | 0.5+ | 0.6+ | 2003 11 24 | 704 | 0.1+ | 0.5+ | 2004 05 29 | 704 | 0.8+ | 1.0+ | | |
| 2001 05 22 | 704 | 0.3+ | 0.5+ | 2003 11 24 | 704 | 0.8+ | 0.1− | 2004 05 29 | 704 | 0.8+ | 1.3+ | | |
| 2001 05 22 | 704 | 0.0 | 0.2+ | 2003 11 24 | 704 | 0.0 | 0.8+ | 2004 05 29 | 704 | 0.9+ | 0.6+ | | |
| 2001 05 22 | 704 | 0.2+ | 0.6+ | 2003 12 04 | 704 | 0.6− | 0.5− | 2004 05 29 | 704 | 1.0+ | 0.0 | | |
| 2001 05 23 | 113 | 0.1+ | 0.0 | 2003 12 04 | 704 | 0.9− | 0.5− | 2004 06 08 | 704 | 0.6− | 0.9+ | | |
| 2001 05 24 | 113 | 0.2+ | 0.4− | 2003 12 04 | 704 | 0.5− | 0.5− | 2004 06 08 | 704 | 0.2− | 0.7+ | | |
| 2001 05 26 | 704 | 0.0 | 0.4+ | 2003 12 04 | 704 | 0.5− | 0.4− | 2004 06 08 | 704 | 0.9− | 0.7+ | | |
| 2001 05 26 | 704 | 0.3+ | 0.5− | 2003 12 04 | 704 | 0.5− | 0.3− | 2004 06 08 | 704 | 0.9− | 0.5+ | | |
| 2001 05 26 | 704 | 0.0 | 0.2+ | 2003 12 17 | 703 | 0.3− | 0.2+ | 2004 06 08 | 704 | 0.3− | 0.6+ | | |
| 2001 05 26 | 704 | 0.0 | 0.2+ | 2003 12 17 | 703 | 0.4− | 0.2+ | 2005 06 07 | E12 | 0.5− | 0.7+ | | |
| 2001 05 26 | 704 | 0.4+ | 0.2+ | 2003 12 17 | 704 | 0.6− | 0.2− | 2005 06 07 | E12 | 0.3− | 0.8+ | | |
| 2001 05 29 | 704 | 0.1− | 1.5+ | 2003 12 17 | 703 | 0.2− | 0.3+ | 2005 06 07 | E12 | 0.1+ | 0.2+ | | |
| 2001 05 29 | 704 | 0.4+ | 0.1− | 2003 12 17 | 703 | 0.0 | 0.3+ | 2005 06 07 | E12 | 0.2− | 0.7+ | | |
| 2001 05 29 | 704 | 0.2+ | 0.2− | 2003 12 17 | 704 | 0.8− | 0.1+ | 2005 07 05 | E12 | 0.2− | 0.6+ | | |
| 2001 05 29 | 704 | 0.1− | 0.3− | 2003 12 17 | 704 | 0.8− | 0.4− | 2005 07 05 | E12 | 0.0 | 0.1+ | | |
| 2001 06 15 | 704 | 0.2+ | 0.4+ | 2003 12 17 | 704 | 0.5+ | 0.5+ | 2005 07 05 | E12 | 0.1+ | 0.1+ | | |
| 2001 06 15 | 704 | 0.0 | 0.6+ | 2003 12 29 | 703 | 0.1+ | 0.0 | 2006 08 06 | E12 | 0.1− | 0.5+ | | |
| 2001 06 15 | 704 | 0.3+ | 0.5+ | 2003 12 29 | 703 | 0.1− | 0.2− | 2006 08 06 | E12 | (1.8− | 0.1+) | | |
| 2001 06 15 | 704 | 0.5+ | 0.5+ | 2003 12 29 | 703 | 0.0 | 0.2− | 2006 08 06 | E12 | 0.4+ | 0.2+ | | |
| 2001 06 15 | 704 | 0.4− | 0.5+ | 2003 12 29 | 703 | 0.1+ | 0.1− | 2006 08 06 | E12 | 0.9− | 1.0+ | | |
| 2001 06 21 | 704 | 0.6+ | 0.5+ | 2003 12 30 | 704 | 0.0 | 0.7+ | 2006 09 27 | 703 | 0.8− | 0.0 | | |
| 2001 06 21 | 704 | 0.9+ | 0.5+ | 2003 12 30 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 703 | 0.5− | 0.5− | | |
| 2001 06 21 | 704 | 0.5+ | 0.8+ | 2003 12 30 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 703 | 0.4− | 0.9− | | |
| 2001 06 21 | 704 | 0.3+ | 0.7+ | 2003 12 30 | 704 | 0.2− | 0.9+ | 2006 09 27 | 703 | 0.1− | 0.0 | | |
| 2001 06 21 | 704 | 0.8+ | 0.6+ | 2003 12 30 | 704 | 0.1+ | 0.7+ | 2006 10 03 | E12 | 0.2− | 0.3+ | | |
| 2001 07 13 | 644 | 0.3+ | 0.3+ | 2004 01 02 | 704 | (1.7− | 0.2+) | 2006 10 03 | E12 | 0.1− | 0.7+ | | |
| 2001 07 13 | 644 | 0.3+ | 0.3+ | 2004 01 02 | 704 | 1.4− | 0.5+ | 2006 10 03 | E12 | 0.3+ | 0.7+ | | |
| 2001 07 13 | 644 | 0.4+ | 0.3+ | 2004 01 02 | 704 | 1.4− | 0.4+ | 2006 10 03 | E12 | 0.3+ | 0.2+ | | |
| 2001 07 18 | 608 | 0.5+ | 0.5+ | 2004 01 02 | 704 | (2.2− | 0.2+) | 2006 10 11 | E12 | 0.0 | 0.5+ | | |
| 2001 07 18 | 608 | 0.7+ | 1.5+ | 2004 01 02 | 704 | (2.0− | 0.4+) | 2006 10 11 | E12 | 0.3− | 0.5+ | | |
| 2001 07 18 | 608 | 0.8+ | 0.9+ | 2004 01 27 | 703 | 0.3− | 0.0 | 2006 10 11 | E12 | 0.6− | 0.3+ | | |
| 2001 07 24 | 608 | 0.6+ | 0.0 | 2004 01 27 | 703 | 0.2− | 0.0 | 2006 10 11 | E12 | 0.0 | 0.5+ | | |
| 2001 07 24 | 608 | 0.7+ | 0.4− | 2004 01 27 | 703 | 0.2− | 0.1+ | 2006 10 30 | E12 | 0.2− | 0.1+ | | |
| 2001 07 24 | 608 | 0.4+ | 0.3− | 2004 01 27 | 703 | 0.1− | 0.0 | 2006 10 30 | E12 | 0.1− | 0.4+ | | |
| 2003 09 28 | 704 | 0.2+ | 0.6− | 2004 02 03 | 704 | 0.3+ | 1.4− | 2006 10 30 | E12 | 0.2− | 0.5+ | | |
| 2003 09 28 | 704 | 0.6+ | 0.1− | 2004 02 03 | 704 | 0.2+ | 0.4+ | 2006 10 30 | E12 | 0.1− | 0.2+ | | |
| 2003 09 28 | 704 | 0.0 | 0.7− | 2004 02 03 | 704 | 0.3+ | 0.3+ | | | | | | |

**(137606)∗ 1999 VJ$_{175}$**

Discovered 1999 Nov. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.57207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27619798 | $\omega$ | 83.06139 | | +0.97159521 | +0.23269590 | |
| $a$ | 2.3351909 | $\Omega$ | 263.47612 | | −0.23061976 | +0.89020047 | |
| $e$ | 0.2045588 | $i$ | 2.48482 | | −0.05307799 | +0.39165769 | |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.1+ | 0.9− | 2003 12 20 | 460 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.2− | 0.0 | | |
| 1999 10 07 | 704 | 0.6+ | 0.3− | 2003 12 20 | 460 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.1− | 0.1− | | |
| 1999 10 07 | 704 | 0.4− | 0.5+ | 2003 12 21 | 460 | 0.3+ | 0.6− | 2006 09 16 | 699 | 0.1− | 0.3− | | |
| 1999 10 07 | 704 | 1.5+ | 1.1+ | 2003 12 21 | 460 | 0.1+ | 1.0− | 2006 09 16 | 699 | 0.7− | 0.3+ | | |
| 1999 10 07 | 704 | 0.2+ | 0.6+ | 2003 12 24 | 460 | 0.5− | 0.1− | 2006 09 16 | 699 | 0.1+ | 0.0 | | |
| 1999 10 09 | 703 | 0.2− | 0.5+ | 2003 12 24 | 460 | 0.4− | 0.8+ | 2006 09 16 | 699 | 0.5− | 0.2− | | |
| 1999 10 09 | 703 | 0.4− | 0.8+ | 2005 03 14 | G96 | 0.6− | 0.2− | 2006 09 18 | 704 | 0.1+ | 0.3− | | |
| 1999 10 09 | 703 | 0.3− | 0.6+ | 2005 03 14 | G96 | 1.1− | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.3+ | | |
| 1999 10 09 | 703 | 0.3+ | 0.8+ | 2005 03 14 | G96 | 0.6+ | 0.1− | 2006 09 18 | 704 | 0.2+ | 0.1+ | | |
| 1999 10 10 | 704 | 0.9+ | 0.2− | 2005 03 14 | G96 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.1+ | | |
| 1999 10 10 | 704 | 0.2+ | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.2− | 0.3− | | |
| 1999 10 10 | 704 | 0.0 | 0.1+ | 2005 05 14 | G96 | 0.7− | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.1− | | |
| 1999 10 10 | 704 | 0.9+ | 0.7+ | 2005 05 14 | G96 | 0.6− | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.0 | | |
| 1999 10 10 | 704 | 0.8+ | 0.3+ | 2005 05 14 | G96 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.3− | | |
| 1999 10 15 | 704 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 20 | 691 | 0.2+ | 0.1+ | | |
| 1999 10 15 | 704 | 0.5+ | 0.8+ | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.2+ | 0.1+ | | |
| 1999 10 15 | 704 | 0.4+ | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 20 | 691 | 0.8+ | 0.2+ | | |
| 1999 10 15 | 704 | 0.6+ | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.0 | | |
| 1999 10 15 | 704 | 0.2+ | 0.9+ | 2006 08 18 | 644 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.5+ | 0.1+ | | |
| 1999 10 21 | 704 | 0.7− | 1.1− | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.3− | | |
| 1999 10 21 | 704 | 0.4+ | 0.5− | 2006 08 24 | 704 | (2.2+ | 0.4−) | 2006 09 25 | 704 | 0.0 | 0.3+ | | |
| 1999 10 21 | 704 | 0.1− | 0.3− | 2006 08 24 | 704 | 0.6+ | 1.0− | 2006 09 25 | 704 | 0.2+ | 0.1− | | |
| 1999 10 21 | 704 | 0.4+ | 0.3+ | 2006 08 24 | 704 | 0.9+ | 0.6+ | 2006 09 25 | 699 | 0.2− | 0.3+ | | |
| 1999 11 03 | 691 | 0.3− | 0.3− | 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 09 25 | 704 | 1.2− | 0.1− | | |
| 1999 11 03 | 691 | 0.0 | 0.3− | 2006 08 29 | 703 | 0.1− | 0.6+ | 2006 09 25 | 699 | 0.1− | 0.7+ | | |
| 1999 11 03 | 691 | 0.2− | 0.3− | 2006 08 29 | 703 | 0.2− | 0.6− | 2006 09 25 | 699 | 0.8− | 0.1+ | | |
| 1999 11 04 | 704 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.6+ | 0.5− | 2006 09 26 | 704 | 0.5− | 0.1+ | | |
| 1999 11 04 | 704 | 0.6− | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.2− | 0.4+ | | |
| 1999 11 04 | 704 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.3+ | | |
| 1999 11 04 | 704 | 0.2− | 0.5+ | 2006 08 30 | 704 | 0.6+ | 0.7− | 2006 09 26 | 704 | 0.0 | 0.1+ | | |
| 1999 11 04 | 704 | 1.1+ | 0.2+ | 2006 08 30 | 704 | 0.7+ | 0.5− | 2006 09 29 | 704 | 0.2+ | 0.4+ | | |
| 1999 11 10 | 691 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.5+ | 0.4− | 2006 09 29 | 704 | 0.1+ | 0.7+ | | |
| 1999 11 10 | 691 | 0.5− | 0.1− | 2006 09 01 | 704 | 0.6+ | 0.5− | 2006 09 29 | 704 | 0.3− | 0.7+ | | |
| 1999 11 10 | 691 | 0.4− | 0.2− | 2006 09 01 | 704 | (1.2+ | 1.6−) | 2006 09 29 | 704 | 0.5+ | 0.4+ | | |
| 1999 11 14 | 704 | 0.7+ | 0.4+ | 2006 09 01 | 704 | 1.1+ | 1.4− | 2006 09 29 | 704 | 0.3− | 0.6+ | | |
| 1999 11 14 | 704 | 0.7− | 1.3+ | 2006 09 01 | 704 | 1.5+ | 0.6− | 2006 10 01 | 704 | 0.7− | 0.5+ | | |
| 1999 11 14 | 704 | 0.4− | 1.0+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.1− | 0.4− | | |
| 1999 11 14 | 704 | 0.6+ | 0.3− | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.3+ | | |
| 1999 11 14 | 704 | 0.3− | 1.8+ | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.3+ | | |
| 1999 11 15 | 691 | 0.1+ | 0.5− | 2006 09 12 | 703 | 0.3− | 0.7− | 2006 10 01 | 704 | 0.3− | 0.0 | | |
| 1999 11 15 | 691 | 0.1− | 0.4− | 2006 09 12 | 703 | 0.7− | 0.2− | 2006 10 17 | 691 | 0.4− | 0.0 | | |
| 1999 11 15 | 691 | 0.1− | 0.6− | 2006 09 12 | 703 | 0.4− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.2+ | | |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2006 09 12 | 703 | 1.3− | 0.4− | 2006 10 17 | 691 | 0.2− | 0.1+ | | |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 | | | | | | |

**(137607)∗ 1999 VC$_{176}$ = 2002 LL$_8$**

Discovered 1999 Nov. 2 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 31304)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.98376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28343390 | $\omega$ | 217.12510 | | +0.89803511 | +0.43411498 | |
| $a$ | 2.2952757 | $\Omega$ | 117.00111 | | −0.38198594 | +0.84981087 | |
| $e$ | 0.2560414 | $i$ | 4.58690 | | −0.21821935 | +0.29894091 | |
| $P$ | 3.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 704 | 0.0 | 0.2+ | 2002 06 10 | 704 | (0.7− | 1.8+) | 2006 10 23 | 644 | 0.1+ | 0.3− | | |
| 1999 10 02 | 704 | 0.5− | 0.3− | 2002 06 10 | 704 | 1.0− | 0.1− | 2006 10 27 | 704 | 0.2+ | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 704 | 0.1− | 0.3− | 2005 04 04 | 703 | 0.2+ | 0.7+ | 2006 10 27 | 704 | 0.4+ | 0.4+ | | |
| 1999 10 02 | 704 | 0.1+ | 0.3− | 2005 04 04 | 703 | 0.7− | 0.3− | 2006 10 27 | 704 | 0.7+ | 0.3− | | |
| 1999 10 02 | 704 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.7− | 2006 10 27 | 704 | 0.4+ | 0.9− | | |
| 1999 10 04 | 703 | 0.5+ | 0.2− | 2005 04 04 | 703 | 0.2+ | 0.1+ | 2006 10 27 | 704 | 0.1− | 0.2− | | |
| 1999 10 04 | 703 | 0.9+ | 0.3− | 2006 08 28 | 704 | 0.3− | 0.2− | 2006 10 31 | 704 | 0.7− | 0.7+ | | |
| 1999 10 04 | 703 | 1.2+ | 0.2+ | 2006 08 28 | 704 | 0.0 | 0.5+ | 2006 10 31 | 704 | 0.7− | 0.6− | | |
| 1999 10 04 | 703 | 0.3+ | 0.1+ | 2006 08 28 | 704 | 0.7+ | 0.4+ | 2006 10 31 | 704 | (1.6− | 1.3+) | | |
| 1999 10 09 | 704 | 0.7− | 0.2+ | 2006 08 28 | 704 | 0.6− | 0.9− | 2006 10 31 | 704 | 0.5− | 0.4+ | | |
| 1999 10 09 | 704 | 0.3− | 0.2− | 2006 08 28 | 704 | 0.9− | 0.5+ | 2006 10 31 | 704 | 0.5+ | 0.5− | | |
| 1999 10 09 | 704 | 0.4− | 0.4− | 2006 08 31 | 704 | 0.4− | 1.2− | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 1999 10 09 | 704 | 0.5− | 0.0 | 2006 08 31 | 704 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.3− | 0.0 | | |
| 1999 10 09 | 704 | 0.3− | 0.0 | 2006 08 31 | 704 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.3− | 0.1+ | | |
| 1999 11 02 | 703 | 0.6− | 0.1+ | 2006 08 31 | 704 | 0.3− | 0.8− | 2006 11 13 | 703 | 0.3+ | 0.2− | | |
| 1999 11 02 | 703 | 0.3− | 0.2+ | 2006 09 22 | 185 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.7− | 0.3− | | |
| 1999 11 02 | 703 | 0.2− | 0.6+ | 2006 09 22 | 185 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.2+ | 0.4+ | | |
| 1999 11 02 | 703 | 0.1+ | 0.4+ | 2006 09 22 | 185 | 0.7+ | 0.1− | 2006 11 13 | 703 | 0.2− | 0.1− | | |
| 1999 11 03 | 699 | 0.6+ | 0.5+ | 2006 09 22 | 185 | 0.1+ | 0.4− | 2006 11 14 | 704 | (0.1+ | 1.7+) | | |
| 1999 11 03 | 699 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.7+ | 2006 11 14 | 704 | 0.1+ | 0.6+ | | |
| 1999 11 03 | 699 | 0.0 | 1.1+ | 2006 09 26 | 704 | 0.0 | 0.2− | 2006 11 14 | 704 | (0.7− | 2.5+) | | |
| 1999 11 06 | 704 | 0.5+ | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.4− | 0.1+ | | |
| 1999 11 06 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.7− | 2006 11 17 | 704 | 0.0 | 1.0+ | | |
| 1999 11 06 | 704 | 0.1− | 0.6− | 2006 09 26 | 704 | 0.1− | 0.5− | 2006 11 17 | 644 | 0.2− | 0.2+ | | |
| 1999 11 06 | 704 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.4+ | 0.8+ | | |
| 1999 11 06 | 704 | 0.6− | 0.7− | 2006 09 29 | 699 | 0.7− | 0.7− | 2006 11 17 | 704 | 0.0 | 1.3+ | | |
| 2002 05 21 | 704 | 0.4− | 0.8+ | 2006 09 29 | 699 | 0.4+ | 1.0+ | 2006 11 17 | 644 | 0.1− | 0.2+ | | |
| 2002 05 21 | 704 | 0.6+ | 0.6+ | 2006 09 29 | 699 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.5+ | 1.0+ | | |
| 2002 05 21 | 704 | 0.4− | 0.9+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.5+ | | |
| 2002 05 21 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 17 | 644 | 0.1− | 0.2+ | | |
| 2002 06 05 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.1+ | 0.1+ | | |
| 2002 06 05 | 704 | 0.3+ | 0.8+ | 2006 09 30 | 703 | 0.6− | 0.6− | 2006 11 19 | 703 | 0.0 | 0.6− | | |
| 2002 06 05 | 704 | 0.3+ | 1.4+ | 2006 10 11 | 644 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.2− | 0.3+ | | |
| 2002 06 05 | 704 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.3− | 0.4+ | | |
| 2002 06 09 | 704 | 0.7+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3− | 1.4+ | | |
| 2002 06 09 | 704 | 0.8+ | 0.6− | 2006 10 16 | 703 | 0.5+ | 0.3− | 2006 11 20 | 704 | 0.9− | 0.4+ | | |
| 2002 06 09 | 704 | 0.8+ | 0.4− | 2006 10 16 | 703 | 0.6+ | 0.5− | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2002 06 09 | 704 | 0.9+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.3− | 2006 11 20 | 704 | (0.1− | 2.0+) | | |
| 2002 06 09 | 704 | 0.9+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.6+ | 0.5+ | | |
| 2002 06 10 | 704 | 0.8− | 0.4− | 2006 10 22 | 703 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.8− | 1.4+ | | |
| 2002 06 10 | 704 | (0.2− | 2.4+) | 2006 10 22 | 703 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 1.0+ | | |
| 2002 06 10 | 704 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.0 | 1.0+ | | |
| 2002 06 10 | 704 | 0.3− | 1.5+ | 2006 10 22 | 703 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.2+ | 1.1+ | | |
| 2002 06 10 | 704 | 0.2− | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.0 | | | | | | |
| 2002 06 10 | 704 | 1.0− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.0 | | | | | | |

**(137608)∗ 1999 VZ$_{176}$**

Discovered 1999 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.07254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26963607 | $\omega$ | 270.04206 | | +0.08058149 | −0.99671269 | |
| $a$ | 2.3729253 | $\Omega$ | 175.31111 | | +0.95047233 | +0.07430194 | |
| $e$ | 0.1694799 | $i$ | 5.89265 | | +0.30018157 | +0.03229599 | |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.8− | 0.2− | 2003 12 20 | 704 | 0.2− | 0.2− | 2006 09 20 | 699 | 0.6+ | 0.5− | | |
| 1995 07 26 | 691 | 0.6− | 0.2− | 2003 12 20 | 704 | 0.1+ | 1.1− | 2006 09 20 | 699 | 0.5+ | 0.6+ | | |
| 1995 07 26 | 691 | 0.5− | 0.0 | 2003 12 20 | 704 | 0.3− | 0.8− | 2006 09 20 | 699 | 1.3− | 0.4− | | |
| 1995 10 02 | 691 | 0.6+ | 0.2+ | 2004 01 29 | 704 | 0.4+ | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.1− | | |
| 1995 10 02 | 691 | 0.5+ | 0.0 | 2004 01 29 | 704 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1+ | | |
| 1995 10 02 | 691 | 0.7+ | 0.0 | 2004 01 29 | 704 | 0.3+ | 1.3+ | 2006 09 25 | G96 | 0.4+ | 0.2+ | | |
| 1999 10 09 | 704 | 1.1− | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.7+ | 2006 09 25 | G96 | 0.2+ | 0.1− | | |
| 1999 10 09 | 704 | 0.6− | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.7+ | 0.2+ | | |
| 1999 10 09 | 704 | 0.2+ | 0.4+ | 2006 08 22 | 644 | 0.5+ | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.2− | | |
| 1999 10 19 | 704 | (1.5− | 2.6−) | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.3− | | |
| 1999 10 19 | 704 | 0.2− | 0.9− | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.5+ | | |
| 1999 10 19 | 704 | 1.2− | 1.4− | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.8− | 1.0+ | | |
| 1999 10 19 | 704 | 1.9− | 0.2− | 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.1− | | |
| 1999 10 30 | 703 | 0.3− | 0.8+ | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 1.5− | 0.2− | | |
| 1999 10 30 | 703 | 1.1+ | 0.6+ | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.1+ | | |
| 1999 10 30 | 703 | 1.3+ | 0.3− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.2− | 0.4+ | | |
| 1999 10 30 | 703 | 0.2− | 0.3+ | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.0 | | |
| 1999 11 05 | 704 | 0.8+ | 0.5+ | 2006 09 12 | 703 | 0.1− | 0.3− | 2006 10 16 | G96 | 0.4+ | 0.1+ | | |
| 1999 11 05 | 704 | 0.2+ | 0.8+ | 2006 09 12 | 703 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 1999 11 05 | 704 | 0.3+ | 0.3− | 2006 09 12 | 703 | 0.3− | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 1999 11 06 | 704 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 1999 11 06 | 704 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.5+ | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 1999 11 06 | 704 | 0.7− | 0.2− | 2006 09 17 | 703 | 0.6+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.7− | | |
| 1999 11 06 | 704 | 0.9+ | 0.1− | 2006 09 17 | 703 | 0.2+ | 1.1− | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 1999 11 06 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.8− | 0.4− | 2006 11 17 | G96 | 1.4+ | 2.4− | | |

**(137609)∗ 1999 VF$_{180}$ = 2001 FY$_{31}$**

Discovered 1999 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 13006)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.60284 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28856184 | $\omega$ | 9.60039 | | +0.18469800 | −0.97555735 | |
| $a$ | 2.2680021 | $\Omega$ | 69.82978 | | +0.89307402 | +0.11603237 | |
| $e$ | 0.1407359 | $i$ | 7.28675 | | +0.41025047 | +0.18661281 | |
| $P$ | 3.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.6− | 0.3+ | 2004 02 19 | 608 | 0.7− | 1.5+ | 2006 11 15 | 703 | 0.4− | 0.4+ | | |
| 1999 10 19 | 704 | 0.0 | 0.2+ | 2004 02 19 | 608 | 0.1− | 0.7+ | 2006 11 15 | 691 | 0.5− | 0.2+ | | |
| 1999 10 19 | 704 | 0.2− | 0.4+ | 2004 03 09 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.4− | 0.2+ | | |
| 1999 10 19 | 704 | 0.8− | 0.4+ | 2004 03 09 | 644 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.2+ | | |
| 1999 10 19 | 704 | 0.3− | 0.5+ | 2004 03 09 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.1+ | | |
| 1999 11 05 | 704 | 0.3+ | 1.0− | 2004 03 18 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 1999 11 05 | 704 | 0.8− | 0.4− | 2004 03 18 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.1− | | |
| 1999 11 05 | 704 | 0.7− | 0.2+ | 2004 03 18 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.3+ | | |
| 1999 11 08 | 704 | 0.5+ | 0.7+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.3− | | |
| 1999 11 08 | 704 | 0.4− | 0.9+ | 2004 03 23 | 704 | 0.4+ | 1.0− | 2006 11 18 | 704 | 0.6+ | 0.7+ | | |
| 1999 11 08 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.6− | 2006 11 18 | 704 | 0.1+ | 0.8+ | | |
| 2000 01 05 | 704 | 1.2+ | 1.0− | 2004 03 23 | 704 | 0.3+ | 0.3− | 2006 11 18 | 704 | 1.1+ | 0.1− | | |
| 2000 01 05 | 704 | 0.6+ | 0.5− | 2004 03 23 | 704 | 0.8+ | 1.1− | 2006 11 18 | 704 | (2.5− | 0.1+) | | |
| 2000 01 05 | 704 | 1.4+ | 0.3+ | 2004 03 25 | 704 | 0.7− | 0.3− | 2006 11 21 | 704 | 0.9− | 0.3− | | |
| 2001 03 22 | 691 | 0.7− | 0.1− | 2004 03 25 | 704 | 1.2− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.2+ | | |
| 2001 03 22 | 691 | 0.7− | 0.2+ | 2004 03 25 | 704 | 0.4− | 0.4− | 2006 11 21 | 704 | 1.3+ | 0.2− | | |
| 2001 03 22 | 691 | 0.8− | 0.1− | 2004 03 25 | 704 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.3+ | | |
| 2001 03 24 | 691 | 0.9+ | 0.1+ | 2004 04 14 | 644 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.2+ | | |
| 2001 03 24 | 691 | 0.8+ | 0.2+ | 2004 04 14 | 644 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.4− | 1.5− | | |
| 2001 03 24 | 691 | 0.8+ | 0.3+ | 2004 04 14 | 644 | 0.1− | 0.4+ | 2006 12 01 | 704 | 0.2− | 0.3− | | |
| 2004 02 16 | 704 | 0.4+ | 0.2− | 2006 10 21 | G96 | (1.8− | 0.7−) | 2006 12 01 | 691 | 0.2− | 0.1+ | | |
| 2004 02 16 | 704 | 0.6+ | 0.0 | 2006 10 21 | G96 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.2− | 0.9− | | |
| 2004 02 16 | 704 | 0.7+ | 0.6− | 2006 10 21 | G96 | 0.4− | 0.2− | 2006 12 01 | 704 | 0.5− | 0.2− | | |
| 2004 02 16 | 704 | 0.6+ | 0.2− | 2006 11 15 | 703 | 0.3− | 0.1− | 2006 12 01 | 691 | 0.3− | 0.1+ | | |
| 2004 02 16 | 704 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.2− | 0.7+ | 2006 12 01 | 704 | 0.3+ | 1.4− | | |
| 2004 02 19 | 608 | 0.5− | 1.2+ | 2006 11 15 | 703 | 0.0 | 0.2+ | 2006 12 01 | 691 | 1.7+ | 0.1− | | |

**(137610)∗ 1999 VB$_{183}$ = 1993 FM$_{72}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17085)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.52222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25644590 | $\omega$ | 245.44060 | | −0.62830994 | −0.77767553 | |
| $a$ | 2.4536100 | $\Omega$ | 243.50169 | | +0.72204543 | −0.57281172 | |
| $e$ | 0.1658957 | $i$ | 1.35428 | | +0.28961530 | −0.25905116 | |
| $P$ | 3.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.6+ | 1.0+ | 1999 11 12 | 704 | 0.1+ | 0.4− | 2003 12 19 | 704 | 0.0 | 0.6+ |
| 1993 03 22 | 809 | 0.5+ | 1.4+ | 1999 11 12 | 704 | 0.2+ | 0.9− | 2003 12 21 | 704 | 0.8− | 0.5+ |
| 1995 10 15 | 691 | 0.2− | 0.3− | 1999 12 13 | 691 | 0.2+ | 0.1− | 2003 12 21 | 704 | 0.5− | 0.4+ |
| 1995 10 15 | 691 | 0.1+ | 0.2− | 1999 12 13 | 691 | 0.3+ | 0.2− | 2003 12 21 | 704 | 0.2− | 0.4+ |
| 1995 10 15 | 691 | 0.4− | 0.0 | 1999 12 13 | 691 | 0.1+ | 0.1− | 2003 12 21 | 704 | 0.8− | 0.5+ |
| 1997 05 14 | 691 | 0.2+ | 0.8− | 2002 08 12 | 807 | 0.0 | 0.1− | 2003 12 21 | 704 | 0.7− | 0.5+ |
| 1997 05 14 | 691 | 0.1− | 0.5− | 2002 08 12 | 807 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.3+ | 0.1− |
| 1997 05 14 | 691 | 0.3− | 0.2+ | 2002 08 13 | 291 | 0.5− | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 1999 11 09 | 704 | (2.5+ | 0.4−) | 2002 08 13 | 291 | 0.6− | 1.1+ | 2006 08 27 | 691 | 0.3+ | 0.2+ |
| 1999 11 09 | 704 | 0.2+ | 1.0− | 2002 08 13 | 291 | 0.5− | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.3− |
| 1999 11 09 | 704 | 1.3+ | 0.2+ | 2003 12 19 | 704 | 0.3− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.5− |
| 1999 11 12 | 704 | 0.1− | 0.6− | 2003 12 19 | 704 | 0.3+ | 1.4+ | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 1999 11 12 | 704 | 1.0+ | 0.9− | 2003 12 19 | 704 | 0.1+ | 1.5+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 1999 11 12 | 704 | 0.8+ | 0.5− | 2003 12 19 | 704 | 0.1+ | 0.4+ | | | | |

**(137611)∗ 1999 VU$_{183}$ = 2002 PM$_{77}$**

Discovered 1999 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33144)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 337.98893 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.27610097 | $\omega$ | 345.24978 | | +0.57761283 | −0.81092882 | |
| *a* | 2.3357378 | $\Omega$ | 69.38354 | | +0.75871257 | +0.49101776 | |
| *e* | 0.1979757 | *i* | 5.73841 | | +0.30119536 | +0.31827033 | |
| *P* | 3.57 | *H* | 16.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.1+ | 0.8− | 2005 06 14 | G96 | 0.8− | 0.7+ | 2006 10 22 | 703 | 0.8− | 0.3+ |
| 1999 11 12 | 704 | 0.1− | 0.0 | 2005 06 14 | G96 | 1.2+ | 0.2− | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 1999 11 12 | 704 | (2.6− | 0.0 ) | 2005 06 14 | G96 | 0.8+ | 0.1+ | 2006 11 13 | 703 | 0.8− | 0.1− |
| 1999 11 12 | 704 | 1.0− | 0.9− | 2005 06 14 | G96 | 0.5+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.4− |
| 1999 11 12 | 704 | 0.6− | 1.4− | 2005 06 14 | G96 | 0.4− | 0.8+ | 2006 11 13 | 703 | 0.5− | 0.3+ |
| 1999 11 17 | 704 | 0.5+ | 0.1− | 2005 06 14 | G96 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.0 |
| 1999 11 17 | 704 | 0.1+ | 0.6− | 2005 06 14 | G96 | 0.4− | 0.1+ | 2006 11 14 | 704 | (0.3− | 1.9+) |
| 1999 11 17 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.8+ | 2006 11 14 | 704 | 0.5− | 0.2− |
| 1999 11 17 | 704 | 0.3− | 1.0− | 2006 09 16 | 644 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.4+ | 0.7+ |
| 1999 11 17 | 704 | 1.5+ | 0.4− | 2006 09 16 | 644 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.5+ |
| 1999 12 07 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.2+ | 1.1− | 2006 11 14 | 704 | 0.3+ | 0.8+ |
| 1999 12 07 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.3+ | 0.3+ |
| 1999 12 07 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.8− | 2006 11 17 | 704 | 0.1− | 0.2− |
| 1999 12 07 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.7− | 2006 11 17 | 704 | 0.1− | 0.4− |
| 1999 12 07 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.7− |
| 2002 08 11 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.2+ | 2006 11 20 | 704 | 1.2+ | 1.4+ |
| 2002 08 11 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.3− |
| 2002 08 13 | 644 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.8+ |
| 2002 08 13 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2002 08 13 | 644 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.4− | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.5+ |
| 2003 12 25 | 645 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.2− | 0.2+ | 2006 11 20 | 704 | 1.1+ | 0.1+ |
| 2003 12 25 | 645 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.4− | 1.3− | 2006 11 20 | 704 | 0.5+ | 0.5+ |
| 2004 02 20 | 049 | 0.6+ | 0.5+ | 2006 10 22 | 704 | 0.5− | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.9+ |
| 2004 02 20 | 049 | 0.3+ | 0.2+ | 2006 10 22 | 704 | (0.7− | 2.2−) | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2004 02 20 | 049 | 0.8− | 1.4− | 2006 10 22 | 704 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.9+ | 0.0 |
| 2004 02 20 | 049 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.7+ | | | | |
| 2005 06 14 | G96 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.3+ | | | | |

**(137612)∗ 1999 VQ$_{187}$**

Discovered 1999 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 243.64879 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26629955 | $\omega$ | 37.80584 | | −0.58463427 | −0.80667228 | |
| *a* | 2.3927046 | $\Omega$ | 88.13384 | | +0.72165400 | −0.56578961 | |
| *e* | 0.0999041 | *i* | 4.96505 | | +0.37069971 | −0.17076872 | |
| *P* | 3.70 | *H* | 15.9 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.8+ | 0.3+ | 2003 12 18 | 704 | 0.2− | 0.4+ | 2005 06 16 | G96 | 0.4− | 0.6+ |
| 1999 11 01 | 703 | 0.2− | 0.2− | 2003 12 18 | 704 | 0.2− | 0.1+ | 2005 06 16 | G96 | 0.1− | 0.4+ |
| 1999 11 01 | 703 | 0.8− | 0.1− | 2003 12 18 | 704 | 0.1− | 0.4+ | 2005 06 16 | G96 | 0.3− | 0.5+ |
| 1999 11 01 | 703 | 0.5− | 0.7+ | 2003 12 18 | 704 | 0.3+ | 0.4+ | 2005 06 16 | G96 | 0.0 | 0.6+ |
| 1999 11 04 | 704 | 0.6+ | 0.3− | 2003 12 21 | 704 | (0.8+ | 2.1+) | 2005 06 27 | G96 | 0.4+ | 0.6+ |
| 1999 11 04 | 704 | 0.4+ | 0.1− | 2003 12 21 | 704 | 0.6− | 0.2− | 2005 06 27 | G96 | 0.2+ | 0.5+ |
| 1999 11 04 | 704 | 0.9+ | 1.1+ | 2003 12 21 | 704 | 0.5+ | 0.2+ | 2005 06 27 | G96 | 0.1+ | 0.5+ |
| 1999 11 15 | 704 | 0.1− | 0.2− | 2003 12 21 | 704 | 0.0 | 0.4+ | 2005 06 27 | G96 | 0.0 | 0.6+ |
| 1999 11 15 | 704 | 0.1− | 0.5− | 2003 12 21 | 704 | 0.3+ | 0.5− | 2006 09 14 | 703 | (1.7− | 0.5+) |
| 1999 11 15 | 704 | 0.4− | 0.6− | 2003 12 23 | 106 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.6+ | 0.3− |
| 1999 11 15 | 704 | 0.2− | 0.7− | 2003 12 23 | 106 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.1− | 1.1+ |
| 1999 11 15 | 704 | 0.1− | 0.2+ | 2003 12 23 | 106 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.3− |
| 1999 11 17 | 704 | 1.1+ | 0.7− | 2003 12 24 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.9+ | 0.2− |
| 1999 11 17 | 704 | 0.3− | 1.2+ | 2003 12 24 | 704 | 0.2− | 1.1+ | 2006 09 18 | 699 | 0.7+ | 1.0+ |
| 1999 11 17 | 704 | 1.4− | 0.2− | 2003 12 24 | 704 | 0.3− | 0.8+ | 2006 09 18 | 699 | (1.8− | 2.5+) |
| 1999 11 17 | 704 | 1.0− | 1.3+ | 2003 12 24 | 106 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.8− | 0.5+ |
| 1999 12 12 | 703 | 0.1− | 0.7− | 2003 12 24 | 106 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.7− |
| 1999 12 12 | 703 | 0.1− | 0.1+ | 2003 12 25 | 106 | 0.1+ | 0.2− | 2006 09 30 | 703 | (1.7− | 0.5−) |
| 1999 12 12 | 703 | 0.7− | 0.4+ | 2003 12 25 | 106 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.8+ | 0.7− |
| 1999 12 12 | 703 | 1.0+ | 0.6+ | 2003 12 25 | 106 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 1.1− |
| 2001 05 26 | 608 | 0.6+ | 0.4+ | 2003 12 25 | 106 | 0.2− | 0.2+ | 2006 10 19 | 703 | (0.7+ | 1.6+) |
| 2001 05 26 | 608 | 0.4+ | 0.5+ | 2003 12 27 | 106 | 0.2+ | 0.0 | 2006 10 19 | 703 | 1.2− | 0.4− |
| 2001 05 26 | 608 | 0.3+ | 0.6+ | 2003 12 27 | 106 | 0.1− | 0.1− | 2006 10 19 | 703 | 1.0− | 1.1+ |
| 2002 08 11 | 644 | 0.2+ | 0.8+ | 2003 12 27 | 106 | 0.3+ | 0.2− | 2006 10 19 | 703 | (1.7− | 0.1+) |
| 2002 08 11 | 644 | 0.1+ | 0.5+ | 2003 12 27 | 704 | 0.7+ | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 08 11 | 644 | 0.4− | 1.0+ | 2003 12 27 | 704 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2003 12 27 | 704 | 0.7+ | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2003 12 27 | 704 | 0.4− | 0.3− | | | | |
| 2002 08 19 | 644 | 0.1− | 0.1+ | 2003 12 27 | 704 | 0.5+ | 0.2+ | | | | |

**(137613)∗ 1999 VW$_{188}$**

Discovered 1999 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 339.47274 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.27127892 | $\omega$ | 218.61402 | | +0.92327142 | −0.38395596 | |
| *a* | 2.3633353 | $\Omega$ | 163.95196 | | +0.36246244 | +0.86023595 | |
| *e* | 0.2406860 | *i* | 2.51969 | | +0.12724332 | +0.33551742 | |
| *P* | 3.63 | *H* | 16.9 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.0 | 0.5− | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 0.1− | 0.7+ |
| 1999 11 01 | 691 | 0.1− | 0.5− | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 01 | 704 | 0.6+ | 0.2+ |
| 1999 11 01 | 691 | 0.5− | 0.9− | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 01 | 704 | 1.0− | 0.3+ |
| 1999 11 04 | 704 | 0.1− | 0.7+ | 2006 08 20 | A50 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.4− | 0.9+ |
| 1999 11 04 | 704 | 0.1− | 0.2+ | 2006 08 20 | A50 | 0.1+ | 0.0 | 2006 09 01 | 152 | 0.3− | 0.4+ |
| 1999 11 04 | 704 | 0.4+ | 0.6+ | 2006 08 21 | 704 | 0.0 | 0.3+ | 2006 09 01 | 152 | 0.0 | 0.0 |
| 1999 11 04 | 704 | 0.8− | 0.5+ | 2006 08 21 | 704 | 0.4+ | 0.4+ | 2006 09 01 | 152 | 0.2+ | 0.2+ |
| 1999 11 04 | 704 | 0.9+ | 0.7+ | 2006 08 21 | 704 | 0.2− | 0.7+ | 2006 09 01 | 152 | 0.2− | 0.4+ |
| 1999 11 15 | 704 | 0.2+ | 0.6− | 2006 08 21 | 704 | 0.0 | 0.7+ | 2006 09 01 | 152 | 0.3+ | 0.4+ |
| 1999 11 15 | 704 | 0.2+ | 0.4− | 2006 08 21 | 704 | 0.2− | 0.1− | 2006 09 02 | 152 | 0.2− | 0.0 |
| 1999 11 15 | 704 | 0.0 | 0.8− | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 09 02 | 152 | 0.1− | 0.4+ |
| 1999 11 15 | 704 | 0.4− | 0.2− | 2006 08 21 | 644 | 0.3− | 0.2+ | 2006 09 02 | 152 | 0.5− | 0.5+ |
| 1999 11 15 | 704 | 0.4+ | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.2+ | 2006 09 02 | 152 | 0.1+ | 0.1+ |
| 1999 11 17 | 704 | 0.3+ | 1.2− | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 1.1− | 0.2+ |
| 1999 11 17 | 704 | 0.3+ | 0.4− | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.7− | 0.4− |
| 1999 11 17 | 704 | 0.5+ | 0.4− | 2006 08 23 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 1.1− | 0.1− |
| 1999 11 17 | 704 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | (2.4− | 2.8−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.4− | 0.0 | 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.1+ | 1.1+ |
| 1999 12 06 | 704 | 0.7+ | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.5− |
| 1999 12 06 | 704 | 1.9− | 1.7+ | 2006 08 25 | 704 | 0.6+ | 0.1− | 2006 09 17 | 704 | 0.4+ | 0.1+ |
| 1999 12 06 | 704 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.4+ | 0.1− | 2006 09 17 | 704 | 0.8+ | 0.3− |
| 1999 12 06 | 704 | 0.2− | 1.0+ | 2006 08 25 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.7+ | 0.6+ |
| 1999 12 14 | 704 | 0.5+ | 0.3+ | 2006 08 25 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.4+ |
| 1999 12 14 | 704 | 0.7+ | 0.5+ | 2006 08 25 | 704 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.1− |
| 1999 12 14 | 704 | 1.0+ | 0.2− | 2006 08 27 | 691 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.1+ |
| 1999 12 14 | 704 | 1.0+ | 1.0− | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.5+ |
| 2001 03 26 | 691 | 0.3+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.6+ | 2006 09 20 | 704 | 0.2+ | 0.1− |
| 2001 03 26 | 691 | 0.2+ | 0.6+ | 2006 08 28 | 699 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.1− | 0.0 |
| 2001 03 26 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.6− | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.1− |
| 2003 12 18 | 644 | 0.0 | 0.6+ | 2006 08 28 | 699 | 0.5− | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.4− |
| 2003 12 18 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.6+ | 0.2+ |
| 2003 12 18 | 644 | 0.7+ | 0.5+ | 2006 08 28 | 703 | 0.7− | 0.2− | 2006 09 25 | 699 | 1.0+ | 0.0 |
| 2004 01 17 | 644 | 0.3+ | 0.8+ | 2006 08 28 | 703 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.3− |
| 2004 01 17 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 699 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2004 01 17 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 699 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2004 01 19 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 704 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 01 19 | 703 | (1.6− | 0.2−) | 2006 08 29 | 704 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2004 01 19 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 704 | 0.7− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2004 01 19 | 703 | (1.9− | 0.3−) | 2006 08 30 | 704 | 1.3− | 0.3+ | 2006 09 27 | 704 | (0.7− | 2.2+) |
| 2004 01 19 | 703 | 0.1+ | 1.5+ | 2006 08 30 | 704 | 0.6+ | 0.8+ | 2006 09 27 | 704 | 0.2+ | 0.9− |
| 2004 01 19 | 703 | 0.4− | 0.8+ | 2006 08 30 | 704 | 0.4− | 0.8+ | 2006 09 27 | 704 | (1.8+ | 2.6+) |
| 2004 01 19 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.9− | 0.4+ | 2006 09 28 | 704 | (1.8+ | 0.2+) |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.6+ | 0.7− | 2006 09 28 | 704 | 0.5− | 0.2+ |
| 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 08 30 | 947 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.1− | 0.3+ |
| 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 947 | 0.4+ | 0.5− | 2006 09 28 | 704 | 0.3+ | 0.7− |
| 2004 04 13 | 645 | 0.1− | 0.2+ | 2006 08 30 | 947 | 0.9+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2004 04 13 | 645 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2006 08 15 | D35 | 0.3+ | 0.1+ | 2006 08 31 | 704 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2006 08 15 | D35 | 0.4+ | 0.2+ | 2006 08 31 | 704 | 0.5− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2006 08 15 | D35 | 0.3+ | 0.1+ | 2006 08 31 | 704 | 0.7− | 0.1− | 2006 11 11 | 703 | 0.7− | 0.9− |
| 2006 08 18 | 699 | 0.6+ | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3− | 1.8+ |
| 2006 08 18 | 699 | 0.1− | 0.5+ | 2006 08 31 | 947 | 0.3− | 0.6− | 2006 11 11 | 703 | 1.1− | 0.4− |
| 2006 08 18 | 699 | 1.0− | 0.5+ | 2006 08 31 | 947 | 0.0 | 0.4− | 2006 11 11 | 703 | 1.5− | 0.9+ |
| 2006 08 18 | 699 | 0.6+ | 0.5+ | 2006 08 31 | 947 | 0.1+ | 0.4− | | | | |

**(137614)∗ 1999 VN$_{189}$**

Discovered 1999 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.38570 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28125376 | $\omega$ | 141.12851 | | +0.96634231 | −0.23477120 |
| $a$ | 2.3071216 | $\Omega$ | 232.77012 | | +0.19045702 | +0.92774647 |
| $e$ | 0.2231592 | $i$ | 7.59172 | | +0.17294124 | +0.29011890 |
| $P$ | 3.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 15 | 691 | 0.5+ | 0.6− | 2002 06 10 | 644 | 0.6− | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 1994 04 15 | 691 | 0.2− | 0.1− | 2002 06 10 | 644 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 1994 04 15 | 691 | 0.5− | 0.4− | 2002 06 10 | 644 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 1999 10 06 | 704 | 0.6+ | 0.3− | 2002 07 18 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.0 |
| 1999 10 06 | 704 | 0.0 | 0.3+ | 2002 07 18 | 704 | 0.6+ | 0.8+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.6+ | 0.1− | 2002 07 18 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | (2.4− | 0.6+) |
| 1999 10 06 | 704 | 0.4+ | 0.3+ | 2004 01 29 | 704 | (1.8+ | 1.0+) | 2006 11 11 | 703 | 1.1− | 1.1− |
| 1999 10 06 | 704 | 0.3+ | 0.4+ | 2004 01 29 | 704 | 0.7+ | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 1999 10 12 | 704 | 0.2+ | 0.1+ | 2004 01 29 | 704 | 1.2+ | 0.1− | 2006 11 17 | 704 | 0.6+ | 0.0 |
| 1999 10 12 | 704 | 0.4− | 0.8+ | 2004 01 29 | 704 | (2.4+ | 1.2−) | 2006 11 17 | 704 | 1.5+ | 0.7+ |
| 1999 10 12 | 704 | 0.2+ | 0.0 | 2004 02 11 | 644 | 0.4+ | 0.8+ | 2006 11 17 | 704 | 0.5+ | 1.0+ |
| 1999 10 22 | 704 | 0.8+ | 0.2− | 2004 02 11 | 644 | 0.1+ | 0.7+ | 2006 11 17 | 704 | 1.0+ | 0.8+ |
| 1999 10 22 | 704 | 1.0+ | 0.1+ | 2004 02 11 | 644 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.2+ | 0.9+ |
| 1999 10 22 | 704 | 0.1− | 0.6+ | 2005 05 10 | G96 | (0.9− | 1.8−) | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 1999 10 22 | 704 | 0.3− | 0.8+ | 2005 05 10 | G96 | 0.6− | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 1999 10 22 | 704 | 0.4+ | 0.3− | 2005 05 10 | G96 | 0.6− | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 1999 11 03 | 704 | 0.6− | 0.2− | 2005 05 10 | G96 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 1999 11 03 | 704 | 0.0 | 0.6− | 2005 05 16 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | (0.5+ | 1.9+) |
| 1999 11 03 | 704 | 0.5+ | 0.1− | 2005 05 16 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 1999 11 03 | 704 | 0.4+ | 0.4− | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 1999 11 10 | 691 | 0.3− | 0.5− | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | (0.8+ | 1.9+) |
| 1999 11 10 | 691 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 1999 11 10 | 691 | 0.4− | 0.6− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.5− | 0.4− |
| 1999 11 15 | 704 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.3− | 0.9+ |
| 1999 11 15 | 704 | 0.3+ | 0.8− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 1999 11 15 | 704 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 1999 11 15 | 704 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 25 | 704 | 0.1− | 0.7+ |
| 1999 11 15 | 704 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 25 | 704 | 0.3+ | 1.3+ |
| 1999 11 17 | 704 | 0.4− | 1.1− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 25 | 704 | 0.1+ | 1.3+ |
| 1999 11 17 | 704 | 0.2− | 1.0− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.1+ | 0.3+ |
| 1999 11 17 | 704 | 0.4+ | 1.3− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.5− | 0.1− |
| 1999 11 17 | 704 | 0.5+ | 0.3− | 2006 10 28 | 704 | 0.8− | 0.9+ | 2006 11 27 | 703 | 0.1+ | 0.0 |
| 1999 11 17 | 704 | 0.6+ | 0.4− | 2006 10 28 | 704 | 0.1− | 1.2+ | 2006 11 27 | 703 | 0.5+ | 0.0 |
| 1999 12 06 | 704 | (1.4− | 3.0+) | 2006 10 28 | 704 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.7+ |
| 1999 12 06 | 704 | 1.5− | 1.8+ | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 1999 12 06 | 704 | 0.9+ | 1.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.6+ |
| 1999 12 14 | 704 | 0.1+ | 1.0− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 1999 12 14 | 704 | 0.0 | 1.3− | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 1999 12 14 | 704 | (2.2+ | 0.1+) | 2006 11 10 | 644 | 0.1− | 0.1− | | | | |

**(137615)∗ 1999 VR$_{191}$ = 2001 JJ$_3$**

Discovered 1999 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.25102 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28097711 | $\omega$ | 124.85460 | | −0.99561849 | +0.07085338 |
| $a$ | 2.3086358 | $\Omega$ | 59.27959 | | −0.09028377 | −0.89828280 |
| $e$ | 0.0985962 | $i$ | 4.07041 | | +0.02434448 | −0.43366785 |
| $P$ | 3.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.7− | 0.4+ | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.6+ | 0.5+ |
| 1999 11 12 | 704 | 0.9+ | 1.2− | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 1999 11 12 | 704 | 0.7+ | 0.6− | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.3+ | 1.1+ |
| 1999 11 14 | 704 | 0.5− | 1.7− | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− |
| 1999 11 14 | 704 | 0.5− | 0.0 | 2004 01 28 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 1999 11 14 | 704 | 0.0 | 0.5+ | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.4+ | 0.3+ |
| 1999 11 17 | 691 | 0.0 | 0.5− | 2004 01 31 | 704 | 0.3+ | 0.4+ | 2006 11 12 | 703 | 1.4− | 0.0 |
| 1999 11 17 | 691 | 0.1+ | 0.5− | 2004 01 31 | 704 | 1.3− | 0.9+ | 2006 11 12 | 703 | 0.1− | 0.3+ |
| 1999 11 17 | 691 | 0.0 | 0.4− | 2004 01 31 | 704 | 0.3+ | 0.2+ | 2006 11 12 | 703 | 0.7− | 0.6− |
| 1999 12 05 | 691 | 0.2+ | 0.6− | 2004 01 31 | 704 | 1.1− | 1.3− | 2006 11 12 | 703 | 0.8− | 1.1+ |
| 1999 12 05 | 691 | 0.3+ | 0.1+ | 2004 02 11 | 699 | 0.7− | 0.2+ | 2006 11 13 | 104 | 0.0 | 0.1+ |
| 1999 12 05 | 691 | 0.2+ | 0.0 | 2004 02 11 | 699 | (1.6+ | 0.4+) | 2006 11 14 | 104 | 0.0 | 0.2− |
| 2001 04 23 | 704 | 1.0+ | 0.1+ | 2004 02 11 | 699 | 0.1+ | 0.2− | 2006 11 14 | 104 | 0.1+ | 0.4+ |
| 2001 04 23 | 704 | 0.1− | 0.3+ | 2004 02 11 | 699 | (1.0− | 2.7−) | 2006 11 14 | 691 | 0.4+ | 0.3+ |
| 2001 04 23 | 704 | 0.3− | 0.1− | 2004 02 15 | 704 | (1.7+ | 0.7+) | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2001 05 15 | 699 | 0.5+ | 0.4− | 2004 02 15 | 704 | 0.1− | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2001 05 15 | 699 | 0.0 | 1.0+ | 2004 02 15 | 704 | (1.7+ | 0.2+) | 2006 11 16 | 703 | 0.6− | 0.1− |
| 2001 05 15 | 699 | 0.9− | 0.8+ | 2004 02 15 | 704 | 0.9+ | 0.8+ | 2006 11 16 | 703 | 0.8− | 0.1+ |
| 2001 05 15 | 699 | 0.4− | 0.8+ | 2004 02 15 | 704 | 0.2+ | 0.4+ | 2006 11 16 | 703 | 0.3− | 0.2+ |
| 2001 05 18 | 699 | (2.1+ | 0.1+) | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 16 | 703 | 1.0− | 0.2− |
| 2001 05 18 | 699 | 1.4+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.5− |
| 2001 05 18 | 699 | (1.7+ | 0.8+) | 2006 10 12 | 691 | 0.5− | 0.3+ | 2006 11 18 | 704 | 1.2+ | 0.2− |
| 2001 05 18 | 699 | (2.0+ | 1.2+) | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 18 | 704 | 1.4+ | 0.9+ |
| 2001 05 24 | 807 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2001 05 24 | 807 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.1− |
| 2003 12 22 | 704 | 1.1+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | (0.3+ | 3.9+) |
| 2003 12 22 | 704 | 0.4− | 0.7− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 1.4+ | 0.8− |
| 2003 12 22 | 704 | 0.2− | 1.1− | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.3+ | 1.0− |
| 2003 12 22 | 704 | 1.1+ | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.2− | 2006 11 27 | 703 | 0.8− | 0.3− |
| 2003 12 28 | 704 | 1.2+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 27 | 104 | 0.0 | 0.3+ |
| 2003 12 28 | 704 | 0.5− | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.1− | 2006 11 27 | 104 | 0.9− | 0.4− |
| 2003 12 28 | 704 | 0.4− | 0.4− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 104 | 0.9− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2003 12 28 | 704 | 0.3+ | 0.4− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2004 01 26 | 699 | 0.7− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2004 01 26 | 699 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.6− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2004 01 26 | 699 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.8− | 0.6+ | | | | |
| 2004 01 26 | 699 | 1.2− | 0.8+ | 2006 11 11 | 703 | 1.0− | 0.7+ | | | | |

**(137616)∗ 1999 VJ$_{192}$**

Discovered 1999 Nov. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.14467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27723069 | $\omega$ | 133.06559 | | −0.32540535 | −0.94440415 | |
| $a$ | 2.3293881 | $\Omega$ | 335.80472 | | +0.83078135 | −0.26179284 | |
| $e$ | 0.2044492 | $i$ | 6.58972 | | +0.45156806 | −0.19891034 | |
| $P$ | 3.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 03 | 691 | 0.3− | 0.3+ | 2004 01 23 | 699 | 0.1+ | 0.0 | 2004 03 19 | 644 | 0.1− | 0.3+ |
| 1995 08 03 | 691 | 0.4− | 0.2+ | 2004 01 23 | 699 | 0.3− | 0.0 | 2004 03 19 | 644 | 0.1− | 0.3+ |
| 1995 08 03 | 691 | 0.6− | 0.2+ | 2004 01 23 | 699 | 0.2− | 0.3− | 2004 03 19 | 644 | 0.1+ | 0.2+ |
| 1997 04 29 | 704 | 1.4+ | 0.5+ | 2004 01 23 | 699 | 0.4− | 0.3− | 2004 04 12 | 699 | 1.2+ | 0.3+ |
| 1997 04 29 | 704 | 0.5+ | 0.5− | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2004 04 12 | 699 | 0.1+ | 0.1− |
| 1997 04 29 | 704 | (0.6− | 2.8+) | 2004 01 30 | 704 | 0.4+ | 0.2− | 2004 04 12 | 699 | 0.5+ | 0.8+ |
| 1997 04 29 | 704 | 1.6+ | 0.9− | 2004 01 30 | 704 | 0.2− | 0.3− | 2004 04 12 | 699 | 0.0 | 0.1+ |
| 1997 04 29 | 704 | 0.8− | 0.4− | 2004 01 30 | 704 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 1999 10 12 | 704 | 0.9+ | 0.1− | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.6+ |
| 1999 10 12 | 704 | 1.1+ | 0.1− | 2004 02 10 | 333 | 0.6− | 0.2− | 2006 09 14 | 644 | 0.3− | 0.0 |
| 1999 10 12 | 704 | 0.4− | 0.5− | 2004 02 10 | 333 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 1999 11 01 | 699 | 0.2− | 0.1− | 2004 02 10 | 333 | 0.6− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 1999 11 01 | 699 | 0.5+ | 0.6+ | 2004 02 10 | 644 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 |
| 1999 11 01 | 699 | 0.6+ | 1.6− | 2004 02 10 | 703 | 0.2− | 0.6+ | 2006 09 18 | 704 | 0.3− | 0.4− |
| 1999 11 03 | 704 | (2.2+ | 2.1−) | 2004 02 10 | 703 | 0.8− | 0.3− | 2006 09 18 | 704 | 0.6− | 0.2+ |
| 1999 11 03 | 704 | 0.1+ | 0.3− | 2004 02 10 | 644 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.9+ |
| 1999 11 03 | 704 | 0.2+ | 0.4+ | 2004 02 10 | 703 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.4− | 0.8+ |
| 1999 11 11 | 703 | 0.4− | 0.0 | 2004 02 10 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.1− |
| 1999 11 11 | 703 | 0.1− | 0.4+ | 2004 02 10 | 703 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.4+ |
| 1999 11 11 | 703 | 1.0− | 0.8+ | 2004 02 11 | 699 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.1+ |
| 1999 11 11 | 703 | 0.7− | 0.0 | 2004 02 11 | 699 | 0.1− | 0.5− | 2006 09 18 | 699 | 0.2+ | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.8+ | 2004 02 11 | 699 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.6+ | 0.8+ |
| 2002 08 29 | 644 | 0.3− | 0.7+ | 2004 02 11 | 699 | 0.1− | 0.4− | 2006 09 25 | 704 | 0.8+ | 1.3+ |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2004 02 16 | 704 | 0.0 | 0.8+ | 2006 09 25 | 704 | 0.4+ | 0.5+ |
| 2003 10 25 | 704 | 0.6− | 0.4− | 2004 02 16 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.4− | 0.6+ |
| 2003 10 25 | 704 | 0.4+ | 0.2+ | 2004 02 16 | 704 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2003 10 25 | 704 | 0.6+ | 0.8+ | 2004 02 16 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 2003 11 20 | 704 | 0.1+ | 0.2+ | 2004 02 16 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.0 |
| 2003 11 20 | 704 | 0.4+ | 0.1− | 2004 02 19 | 608 | 1.3+ | 0.9+ | 2006 09 29 | 704 | 0.5− | 0.0 |
| 2003 11 20 | 704 | 0.5+ | 0.5+ | 2004 02 19 | 608 | 1.5+ | 0.8+ | 2006 10 03 | 704 | 0.6− | 0.8+ |
| 2003 11 20 | 704 | (1.6+ | 0.4+) | 2004 02 19 | 608 | 1.4+ | 0.1− | 2006 10 03 | 704 | 0.2+ | 0.7− |
| 2003 12 18 | 703 | 0.4− | 0.7− | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 0.5+ | 0.1+ |
| 2003 12 18 | 703 | 0.8− | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 0.1− | 0.5− |
| 2003 12 18 | 703 | 1.0− | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2003 12 18 | 703 | 1.2− | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2003 12 19 | 704 | 0.5− | 0.2+ | 2004 02 23 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2003 12 19 | 704 | 0.1− | 0.2+ | 2004 03 10 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 0.1+ | 2004 03 10 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 01 18 | 644 | 0.0 | 0.1− | 2004 03 10 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2004 01 18 | 644 | 0.1− | 0.1− | 2004 03 14 | 704 | 0.1− | 1.3+ | 2006 10 22 | 644 | 0.1+ | 0.5− |
| 2004 01 18 | 644 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.4− | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2004 01 18 | 644 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.4− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2004 01 18 | 644 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.2+ | 0.2− | 2006 10 23 | 683 | 0.5+ | 1.3− |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 03 18 | 704 | (0.3+ | 1.7+) | 2006 10 23 | 683 | 1.0+ | 0.8− |
| 2004 01 19 | 703 | 0.4+ | 0.1+ | 2004 03 18 | 704 | 0.3− | 0.5+ | 2006 10 23 | 683 | 0.1+ | 0.2− |
| 2004 01 19 | 703 | (1.7+ | 0.2+) | 2004 03 18 | 704 | 0.7+ | 1.2+ | 2006 10 28 | 683 | 0.6− | 0.2− |
| 2004 01 19 | 703 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.8+ | 0.3+ | 2006 10 28 | 683 | 0.4− | 0.2− |
| 2004 01 19 | 703 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.4− | 2006 10 28 | 683 | 0.0 | 0.7− |

**(137617)∗ 1999 VJ$_{195}$**

Discovered 1999 Nov. 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.96138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26896245 | $\omega$ | 209.94216 | | +0.82211160 | −0.56925538 | |
| $a$ | 2.3768856 | $\Omega$ | 184.78550 | | +0.54140686 | +0.78658278 | |
| $e$ | 0.1219404 | $i$ | 6.18680 | | +0.17609978 | +0.23924013 | |
| $P$ | 3.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.5− | 0.4+ | 2005 04 30 | 599 | 0.5+ | 0.4+ | 2006 09 01 | 704 | 0.6− | 0.4− |
| 1999 10 19 | 704 | 0.0 | 0.8+ | 2005 04 30 | 599 | 0.2+ | 0.2− | 2006 09 01 | 704 | 0.4+ | 0.2+ |
| 1999 10 19 | 704 | 1.0− | 1.1+ | 2005 04 30 | 599 | 0.5+ | 0.4+ | 2006 09 01 | 704 | 1.0+ | 1.0− |
| 1999 10 19 | 704 | 0.2+ | 0.1+ | 2005 04 30 | 599 | 0.1+ | 0.1+ | 2006 09 12 | 699 | 0.5+ | 1.3+ |
| 1999 10 19 | 704 | 0.5+ | 0.5+ | 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 09 12 | 699 | 0.7+ | 1.2+ |
| 1999 11 03 | 703 | 0.1− | 0.9+ | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 09 12 | 699 | 0.8+ | 1.1+ |
| 1999 11 03 | 703 | 0.4− | 1.3+ | 2005 05 14 | 644 | 0.4+ | 0.1+ | 2006 09 12 | 699 | 0.2− | 0.4+ |
| 1999 11 03 | 703 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.8− | 0.4− |
| 1999 11 03 | 703 | 0.5− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.6− | 0.2− |
| 1999 11 05 | 704 | 0.1+ | 0.6− | 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.1− | 0.4− |
| 1999 11 05 | 704 | 0.4− | 0.8− | 2006 08 18 | 704 | 0.9+ | 0.2− | 2006 09 14 | 703 | 0.6− | 0.4− |
| 1999 11 05 | 704 | 0.6+ | 0.2+ | 2006 08 18 | 699 | (0.8− | 2.1+) | 2006 09 18 | 704 | 0.0 | 0.5− |
| 1999 11 05 | 704 | 1.0+ | 0.8− | 2006 08 18 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 704 | 0.6− | 0.4+ |
| 1999 11 05 | 704 | 0.8− | 1.2− | 2006 08 18 | 699 | 0.3− | 0.1+ | 2006 09 18 | 704 | 0.1− | 0.1+ |
| 1999 11 14 | 699 | 0.2+ | 1.1+ | 2006 08 18 | 704 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.6− |
| 1999 11 14 | 699 | 0.3+ | 0.1− | 2006 08 18 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 704 | 0.1+ | 1.0− |
| 1999 11 14 | 699 | 0.4+ | 0.5+ | 2006 08 18 | 699 | 0.6− | 0.6− | 2006 09 18 | 704 | 0.2+ | 0.2− |
| 1999 11 17 | 704 | 0.1− | 0.6− | 2006 08 18 | 699 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.7− | 0.5+ |
| 1999 11 17 | 704 | 1.6− | 0.8+ | 2006 08 24 | 704 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.1− | 0.7+ |
| 1999 11 17 | 704 | (2.1− | 0.3+) | 2006 08 24 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.0 |
| 2000 01 08 | 704 | 0.7+ | 0.3+ | 2006 08 24 | 704 | 0.2+ | 0.2− | 2006 09 24 | 699 | 0.5− | 0.2+ |
| 2000 01 08 | 704 | 0.3+ | 0.2+ | 2006 08 24 | 704 | 0.1− | 0.0 | 2006 09 24 | 699 | 0.5+ | 0.4+ |
| 2000 01 08 | 704 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.4+ | 0.1+ | 2006 09 24 | 699 | 0.2+ | 0.7+ |
| 2001 05 22 | 807 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.4+ | 2006 09 24 | 699 | 0.1+ | 0.1− |
| 2001 05 23 | 807 | 0.6+ | 0.6+ | 2006 08 28 | 699 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2003 12 01 | 704 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.1+ | 0.6− | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2003 12 01 | 704 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 2003 12 01 | 704 | 0.5+ | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2003 12 01 | 704 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.1− | 0.3− | 2006 09 29 | 704 | (1.6− | 0.5+) |
| 2005 03 13 | G96 | 0.4− | 0.7− | 2006 08 28 | 703 | 0.9− | 1.3− | 2006 09 29 | 704 | 0.0 | 0.5+ |
| 2005 03 13 | G96 | 0.2− | 0.8− | 2006 08 28 | 703 | 0.1− | 0.6− | 2006 09 29 | 704 | 1.3− | 0.2+ |
| 2005 03 13 | G96 | 0.5− | 0.2− | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.9− | 1.3− |
| 2005 03 13 | G96 | 0.3− | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | (2.6− | 1.4−) |
| 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.4− |
| 2005 04 12 | G96 | 0.4− | 0.2+ | 2006 08 30 | 704 | 0.8+ | 0.2− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2005 04 12 | G96 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2005 04 12 | G96 | 0.4− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 1.0+ | 2006 11 18 | 703 | (2.2− | 3.6+) |
| 2005 04 27 | 599 | 0.2+ | 0.8+ | 2006 08 30 | 704 | 0.3+ | 0.0 | 2006 11 18 | 703 | 0.6− | 0.4− |
| 2005 04 27 | 599 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.8− | 0.2− | 2006 11 18 | 703 | 0.6− | 1.1+ |
| 2005 04 27 | 599 | 0.3+ | 1.0+ | 2006 08 30 | 704 | 0.9+ | 0.2− | 2006 11 18 | 703 | 0.4+ | 0.0 |
| 2005 04 27 | 599 | 0.3+ | 0.6+ | 2006 08 30 | 704 | 0.4− | 0.2− | | | | |

**(137618)∗ 1999 VT$_{197}$**

Discovered 1999 Nov. 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.01870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28568379 | $\omega$ | 324.90505 | | +0.37975255 | −0.92149891 | |
| $a$ | 2.2832089 | $\Omega$ | 102.65539 | | +0.86669171 | +0.32362845 | |
| $e$ | 0.1180701 | $i$ | 4.78622 | | +0.32347098 | +0.21471931 | |
| $P$ | 3.45 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.5+ | 0.7+ | 2004 01 23 | 699 | 0.4+ | 0.3− | 2006 11 13 | 703 | 0.8+ | 0.0 | |
| 1999 10 09 | 704 | 0.0 | 1.1+ | 2004 01 23 | 699 | 0.8− | 0.1+ | 2006 11 13 | 703 | 0.8− | 0.4− | |
| 1999 10 09 | 704 | 0.7− | 0.2+ | 2004 01 23 | 699 | 0.5− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.1+ | |
| 1999 10 09 | 704 | (2.8− | 0.3−) | 2004 01 30 | 704 | 0.8+ | 0.4− | 2006 11 14 | 704 | 0.4+ | 0.1− | |
| 1999 10 09 | 704 | 1.4− | 0.4+ | 2004 01 30 | 704 | 1.1+ | 0.1− | 2006 11 14 | 683 | 0.3+ | 0.1− | |
| 1999 10 19 | 704 | 0.6− | 0.4+ | 2004 01 30 | 704 | 1.4+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.1− | |
| 1999 10 19 | 704 | 0.0 | 0.2+ | 2004 01 30 | 704 | 1.3+ | 0.6− | 2006 11 14 | 683 | 0.2+ | 0.1− | |
| 1999 10 19 | 704 | 0.1− | 0.2+ | 2004 02 10 | 703 | (0.9+ | 1.6+) | 2006 11 14 | 704 | 0.2− | 0.1+ | |
| 1999 10 19 | 704 | 0.2− | 0.2+ | 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.2+ | 0.1+ | |
| 1999 10 19 | 704 | 0.1+ | 0.2+ | 2004 02 10 | 703 | 0.6+ | 0.9+ | 2006 11 14 | 683 | 0.6− | 0.2+ | |
| 1999 11 03 | 703 | 1.0− | 0.1+ | 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 683 | 0.3− | 0.6− | |
| 1999 11 03 | 703 | 0.8+ | 0.1− | 2004 02 10 | 703 | 0.3− | 0.4+ | 2006 11 15 | 683 | 0.0 | 0.7− | |
| 1999 11 03 | 703 | 0.6− | 0.5+ | 2004 02 10 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.2+ | |
| 1999 11 03 | 703 | 0.0 | 0.3− | 2004 02 10 | 703 | 0.3− | 1.1+ | 2006 11 17 | 704 | 0.2+ | 0.2+ | |
| 1999 11 06 | 704 | 1.4+ | 0.3− | 2004 02 13 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.1− | |
| 1999 11 06 | 704 | 0.3+ | 1.0+ | 2004 02 13 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.1+ | |
| 1999 11 06 | 704 | 0.5+ | 0.1− | 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.9+ | |
| 1999 11 06 | 704 | 0.4− | 1.0− | 2004 02 16 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | (0.9− | 1.7+) | |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2004 02 16 | 691 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.4+ | |
| 2002 08 08 | 644 | 0.3− | 0.5+ | 2004 02 16 | 691 | 0.8− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.2+ | |
| 2002 08 08 | 644 | 0.3− | 0.6+ | 2004 02 16 | 704 | 1.1− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.0 | |
| 2002 08 11 | 644 | 0.3− | 0.8+ | 2004 02 16 | 704 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.4+ | |
| 2002 08 11 | 644 | 0.2− | 1.0+ | 2004 02 16 | 704 | 0.2− | 0.4+ | 2006 11 20 | 704 | (1.9− | 0.7+) | |
| 2002 08 11 | 644 | 0.1− | 0.5+ | 2004 03 18 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.3− | 0.9− | |
| 2002 08 15 | 644 | 0.1− | 0.7+ | 2004 03 18 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.1+ | |
| 2002 08 15 | 644 | 0.3− | 0.3+ | 2004 03 18 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.7− | 0.4+ | |
| 2002 08 15 | 644 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 20 | 704 | 1.2− | 0.1+ | |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.3− | 0.1− | 2006 11 22 | 683 | 0.2− | 0.1+ | |
| 2002 08 18 | 644 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 22 | 683 | 1.2+ | 0.9+ | |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 22 | 683 | 0.1+ | 0.1+ | |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 23 | 683 | 0.5− | 0.1+ | |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 23 | 683 | 0.1− | 0.7+ | |
| 2002 08 29 | 644 | 0.0 | 0.3+ | 2006 10 30 | 703 | 0.5− | 0.1− | 2006 11 25 | 704 | 0.1+ | 0.4+ | |
| 2003 12 22 | 704 | 0.2+ | 1.3+ | 2006 10 30 | 703 | 0.5− | 0.3− | 2006 11 25 | 704 | 1.2+ | 0.6+ | |
| 2003 12 22 | 704 | 0.8+ | 0.8− | 2006 10 30 | 703 | 0.0 | 0.4− | 2006 11 25 | 704 | 0.6+ | 0.3− | |
| 2003 12 22 | 704 | 1.3+ | 0.7− | 2006 10 30 | 703 | 0.6− | 0.1+ | 2006 11 25 | 704 | 0.2− | 0.2− | |
| 2003 12 22 | 704 | 0.6+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 25 | 704 | 0.4+ | 0.4+ | |
| 2004 01 19 | 703 | 1.0+ | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 25 | 704 | 0.3+ | 0.4− | |
| 2004 01 19 | 703 | 0.7+ | 1.1− | 2006 11 09 | 644 | 0.4− | 0.2− | 2006 11 25 | 704 | 0.1− | 0.9+ | |
| 2004 01 19 | 703 | 0.3− | 0.1+ | 2006 11 10 | 683 | 0.8+ | 0.6− | 2006 11 28 | 683 | 0.2+ | 1.7− | |
| 2004 01 19 | 703 | 1.1+ | 1.0+ | 2006 11 10 | 683 | 0.2− | 0.2− | 2006 11 28 | 683 | 0.5+ | 1.4− | |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 11 10 | 683 | 1.3+ | 1.0+ | 2006 11 28 | 683 | 0.0 | 1.0− | |
| 2004 01 22 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 683 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.1+ | |
| 2004 01 22 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 683 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.6+ | 0.1+ | |
| 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 683 | 1.4+ | 0.3− | 2006 11 28 | 704 | 0.2− | 0.1− | |
| 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 683 | 0.7+ | 0.8− | 2006 11 28 | 704 | 0.3+ | 0.1− | |
| 2004 01 23 | 699 | 0.2− | 0.1+ | 2006 11 13 | 683 | 0.7+ | 0.0 | 2006 11 28 | 704 | 0.3− | 0.1+ | |

**(137619)∗ 1999 VG$_{204}$**

Discovered 1999 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.86377 | | (2000.0) | | | |
| $n$ | 0.29449699 | $\omega$ | 90.26345 | | −0.43687390 | −0.89846847 |
| $a$ | 2.2374267 | $\Omega$ | 25.78038 | | +0.78034991 | −0.40262622 |
| $e$ | 0.0494667 | $i$ | 5.74529 | | +0.44743180 | −0.17506152 |
| $P$ | 3.35 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.9− | 0.2+ | 2004 02 09 | 644 | 0.2− | 0.6+ | 2006 11 17 | 704 | 0.0 | 2.0− | |
| 1999 10 09 | 704 | 0.7− | 0.7− | 2004 02 09 | 644 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.1+ | |
| 1999 10 09 | 704 | 0.3+ | 0.7− | 2004 02 09 | 644 | 0.3− | 0.8+ | 2006 11 17 | G96 | 0.9− | 0.2+ | |
| 1999 10 09 | 704 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.1+ | |
| 1999 11 01 | 691 | 0.0 | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.2− | |
| 1999 11 01 | 691 | 0.2+ | 0.4− | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.0 | 0.4− | |
| 1999 11 01 | 691 | 0.1+ | 0.3− | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.4+ | |
| 1999 11 09 | 704 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.5− | |
| 1999 11 09 | 704 | 0.3− | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.2+ | 0.3− | |
| 1999 11 09 | 704 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.4− | |
| 1999 11 11 | 691 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 1.4+ | |
| 1999 11 11 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.8− | 0.5+ | |
| 1999 11 11 | 691 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.6− | 1.0+ | |
| 2001 03 19 | 699 | 0.2− | 0.6+ | 2006 10 20 | G96 | 0.5+ | 0.0 | 2006 11 21 | G96 | 1.0+ | 0.3+ | |
| 2001 03 19 | 699 | 0.2+ | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1− | |
| 2001 03 19 | 699 | 0.8− | 0.4− | 2006 10 27 | 703 | 0.8+ | 1.3− | 2006 11 21 | G96 | 0.0 | 0.1− | |
| 2001 03 19 | 699 | 0.5− | 1.0+ | 2006 10 27 | 703 | 0.3− | 0.8+ | 2006 11 21 | G96 | 0.1− | 0.0 | |
| 2001 04 16 | 645 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.9− | |
| 2001 04 16 | 645 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.2+ | |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 2.1− | 0.9− | 2006 11 22 | 704 | 0.6+ | 0.9+ | |
| 2004 01 28 | 691 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.6+ | 0.4− | | | | | |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 1.3− | 0.4+ | | | | | |

**(137620)∗ 1999 VD$_{207}$**

Discovered 1999 Nov. 11 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 242.29119 | | (2000.0) | | | |
| $n$ | 0.26850720 | $\omega$ | 123.57194 | | −0.69125453 | −0.72258225 |
| $a$ | 2.3795715 | $\Omega$ | 10.16543 | | +0.65020696 | −0.62588331 |
| $e$ | 0.1568364 | $i$ | 2.10620 | | +0.31527462 | −0.29350464 |
| $P$ | 3.67 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.4− | 0.1+ | 2002 08 19 | 644 | 0.2− | 0.4+ | 2003 12 30 | 704 | 0.5+ | 0.4− | |
| 1999 10 06 | 704 | 0.9− | 0.8− | 2002 08 19 | 644 | 0.2− | 0.7+ | 2003 12 30 | 704 | 0.4+ | 0.1+ | |
| 1999 10 06 | 704 | 0.3− | 0.8− | 2002 08 28 | 644 | 0.3− | 0.5+ | 2003 12 30 | 704 | 0.1+ | 0.5− | |
| 1999 10 06 | 704 | 0.0 | 0.3− | 2002 08 28 | 644 | 0.0 | 0.6+ | 2003 12 30 | 704 | 0.5+ | 1.1− | |
| 1999 10 06 | 704 | 0.3− | 0.3− | 2002 08 28 | 644 | 0.2+ | 0.7+ | 2004 01 22 | 704 | 0.4− | 0.0 | |
| 1999 11 04 | 704 | 0.8+ | 0.8− | 2003 12 04 | 704 | 1.3+ | 0.3+ | 2004 01 22 | 704 | 0.9− | 0.2+ | |
| 1999 11 04 | 704 | 0.2− | 0.8+ | 2003 12 04 | 704 | 0.5+ | 0.6+ | 2004 01 22 | 704 | 0.1− | 0.5+ | |
| 1999 11 04 | 704 | 1.1+ | 0.2− | 2003 12 04 | 704 | 0.6− | 0.1− | 2004 01 22 | 704 | 0.1− | 0.2+ | |
| 1999 11 11 | 703 | 0.5− | 0.8− | 2003 12 04 | 704 | 0.1− | 0.8+ | 2004 01 22 | 704 | 0.6− | 0.1− | |
| 1999 11 11 | 703 | 1.3− | 0.4+ | 2003 12 04 | 704 | 0.3+ | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.0 | |
| 1999 11 11 | 703 | 0.6+ | 0.5− | 2003 12 18 | 704 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− | |
| 1999 11 11 | 703 | 0.6− | 0.8+ | 2003 12 18 | 704 | 0.0 | 1.0+ | 2006 09 25 | G96 | 0.2− | 0.2− | |
| 1999 11 14 | 704 | 0.4+ | 0.5− | 2003 12 18 | 704 | 0.6− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.2− | |
| 1999 11 14 | 704 | 0.3+ | 0.3+ | 2003 12 18 | 704 | 0.4− | 0.6+ | 2006 10 16 | G96 | 0.1− | 0.1+ | |
| 1999 11 14 | 704 | 0.1+ | 0.3+ | 2003 12 18 | 704 | 0.5− | 0.6+ | 2006 10 16 | G96 | 0.3+ | 0.1− | |
| 1999 11 14 | 704 | 0.5+ | 0.8+ | 2003 12 22 | 704 | 0.5+ | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.3+ | |
| 1999 11 14 | 704 | 0.7+ | 0.4+ | 2003 12 22 | 704 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.1− | |
| 2001 05 15 | 699 | 1.0+ | 0.0 | 2003 12 22 | 704 | 0.6+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.0 | |
| 2001 05 15 | 699 | 0.1+ | 0.1+ | 2003 12 22 | 704 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.4+ | |
| 2001 05 15 | 699 | 0.4+ | 0.3+ | 2003 12 22 | 704 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2001 05 15 | 699 | 0.1+ | 0.7+ | 2003 12 27 | 704 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.1+ | |
| 2001 05 24 | 699 | 0.8+ | 0.7+ | 2003 12 27 | 704 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− | |
| 2001 05 24 | 699 | 1.2− | 0.6+ | 2003 12 27 | 704 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.4− | 0.2+ | |
| 2001 05 24 | 699 | 0.4− | 0.5+ | 2003 12 27 | 704 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.0 | |
| 2001 05 24 | 699 | 0.1− | 0.3− | 2003 12 27 | 704 | 0.8− | 0.9− | 2006 11 21 | G96 | 0.3− | 0.2− | |
| 2002 08 19 | 644 | 0.4− | 0.7+ | 2003 12 30 | 704 | 0.5+ | 0.4− | | | | | |

**(137621)∗ 1999 VL$_{207}$ = 2002 TP$_{355}$**

Discovered 1999 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 49752)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.31670 | | (2000.0) | | | |
| $n$ | 0.28957711 | $\omega$ | 306.03869 | | −0.99961304 | −0.01485149 |
| $a$ | 2.2626978 | $\Omega$ | 233.12201 | | +0.02270438 | −0.92412467 |
| $e$ | 0.0697629 | $i$ | 1.68493 | | −0.01607095 | −0.38180234 |
| $P$ | 3.40 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.9− | 0.8+ | 2004 01 31 | 691 | 0.1− | 0.3+ | 2005 07 04 | G96 | 0.3− | 0.2+ |
| 1999 11 12 | 704 | 0.5− | 1.0+ | 2004 02 11 | 644 | 0.0 | 0.5+ | 2005 07 04 | G96 | 0.3− | 0.1− |
| 1999 11 12 | 704 | 0.6− | 1.3+ | 2004 02 11 | 691 | 0.2+ | 0.3+ | 2005 07 07 | 691 | 0.4+ | 0.4+ |
| 1999 11 14 | 691 | 0.1− | 0.4+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2005 07 07 | 691 | 0.2+ | 0.1+ |
| 1999 11 14 | 691 | 0.1− | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.3+ | 2005 07 07 | 691 | 0.5+ | 0.1− |
| 1999 11 14 | 691 | 0.0 | 0.2+ | 2004 02 11 | 644 | 0.4+ | 0.6+ | 2005 07 15 | G96 | 0.6+ | 0.1+ |
| 1999 12 07 | 691 | 0.1+ | 0.1− | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2005 07 15 | G96 | 0.1− | 0.0 |
| 1999 12 07 | 691 | 0.2+ | 0.1− | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2005 07 15 | G96 | 0.3+ | 0.4+ |
| 1999 12 07 | 691 | 0.4+ | 0.1− | 2004 02 29 | 691 | 0.2+ | 0.7+ | 2005 07 15 | G96 | 0.1+ | 0.1− |
| 2001 04 23 | 704 | (0.3+ | 3.1−) | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2001 04 23 | 704 | 0.2− | 0.8− | 2005 06 27 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 04 23 | 704 | 0.7+ | 0.0 | 2005 06 27 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.5− | 0.1− |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2005 06 28 | 291 | 0.7− | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2002 10 11 | 645 | 0.1− | 0.1− | 2005 06 28 | 291 | 0.8− | 0.7+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2005 06 28 | 291 | 0.7− | 0.9+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 01 31 | 691 | 0.0 | 0.3+ | 2005 07 04 | G96 | 0.2− | 0.1+ | | | | |
| 2004 01 31 | 691 | 0.2+ | 0.3+ | 2005 07 04 | G96 | 0.2− | 0.3+ | | | | |

**(137622)∗ 1999 VR$_{207}$**

Discovered 1999 Nov. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.52917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27412044 | $\omega$ | 26.73735 | | −0.03180558 | +0.99659210 | |
| $a$ | 2.3469748 | $\Omega$ | 241.52515 | | −0.93181616 | −0.05710976 | |
| $e$ | 0.0854611 | $i$ | 4.96708 | | −0.36153429 | +0.05952022 | |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 23 | 691 | 0.3+ | 1.0+ | 2002 07 14 | 644 | 0.2+ | 1.1+ | 2006 09 16 | 703 | 0.4− | 0.4− |
| 1992 11 23 | 691 | 0.1− | 0.4+ | 2002 07 14 | 644 | 0.3+ | 1.1+ | 2006 09 16 | 644 | 0.1− | 0.1+ |
| 1992 11 23 | 691 | 0.1− | 0.3− | 2002 07 21 | 644 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.1− | 0.1+ |
| 1998 05 24 | 704 | 0.7+ | 1.3− | 2002 07 21 | 644 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.4+ | 0.0 |
| 1998 05 24 | 704 | 1.0− | 0.1+ | 2002 07 21 | 644 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.9+ | 0.2− |
| 1998 05 24 | 704 | 0.5− | 0.7− | 2002 08 16 | 644 | 0.6− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.8+ |
| 1998 05 24 | 704 | 0.0 | 1.6− | 2002 08 16 | 644 | 0.7− | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.2+ |
| 1999 10 13 | 704 | 0.1− | 0.2+ | 2002 08 16 | 644 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.2+ |
| 1999 10 13 | 704 | 0.7− | 0.1− | 2002 08 26 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 10 13 | 704 | 0.2− | 0.4− | 2002 08 26 | 644 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 1999 10 13 | 704 | 0.0 | 0.1+ | 2002 08 26 | 644 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 1999 10 13 | 704 | 0.4− | 0.2− | 2003 12 23 | 704 | 0.6− | 0.3+ | 2006 10 17 | 703 | 0.3− | 1.4+ |
| 1999 11 13 | 691 | 0.2+ | 0.3− | 2003 12 23 | 704 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.7+ |
| 1999 11 13 | 691 | 0.4+ | 0.1− | 2003 12 23 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | (2.1− | 0.4+) |
| 1999 11 13 | 691 | 0.3+ | 0.0 | 2005 04 06 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 1999 11 14 | 704 | 0.4− | 0.6+ | 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 11 14 | 704 | 0.4− | 0.4+ | 2005 04 06 | 691 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 1999 11 14 | 704 | 0.6+ | 0.1− | 2005 04 15 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 1999 11 14 | 704 | 0.0 | 1.0+ | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2005 04 15 | 691 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2005 04 15 | 691 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 06 24 | 644 | 0.2+ | 0.6+ | 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2002 06 24 | 644 | 0.3+ | 0.4+ | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2002 06 24 | 644 | 0.3+ | 0.2+ | 2005 04 18 | 703 | (1.6− | 0.4−) | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 07 12 | 644 | 0.3− | 0.4+ | 2005 04 18 | 703 | (3.9− | 1.8−) | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2002 07 12 | 644 | 0.1− | 0.2+ | 2005 04 18 | 703 | (3.3− | 3.2−) | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2002 07 12 | 644 | 0.1− | 0.3+ | 2005 04 18 | 703 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2002 07 14 | 704 | 0.4− | 0.3− | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2002 07 14 | 644 | 0.1− | 1.3+ | 2006 09 06 | 644 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2002 07 14 | 704 | 0.2− | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2002 07 14 | 704 | 0.6− | 0.1+ | 2006 09 16 | 703 | (1.7− | 0.9−) | 2006 11 20 | G96 | 0.2− | 0.4− |
| 2002 07 14 | 704 | 0.0 | 0.4− | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 11 20 | G96 | 0.4− | 0.0 |
| 2002 07 14 | 704 | 1.0− | 0.8+ | 2006 09 16 | 703 | 0.0 | 0.9− | 2006 11 20 | G96 | 0.1+ | 0.3− |

**(137623)∗ 1999 VB$_{211}$**

Discovered 1999 Nov. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.95177 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26628153 | $\omega$ | 273.66980 | | +0.35564125 | −0.93336627 | |
| $a$ | 2.3928126 | $\Omega$ | 155.32482 | | +0.89695474 | +0.32628270 | |
| $e$ | 0.2534386 | $i$ | 6.66350 | | +0.26266232 | +0.14955602 | |
| $P$ | 3.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.9+ | 0.6− | 2004 01 25 | 608 | 0.2− | 0.5− | 2004 02 17 | 704 | 0.1+ | 1.4− |
| 1999 10 19 | 704 | 1.1+ | 0.1− | 2004 01 25 | 608 | 0.2− | 0.6− | 2004 02 17 | 704 | 0.3− | 0.4− |
| 1999 10 19 | 704 | 0.6+ | 0.5+ | 2004 01 25 | 608 | 0.7− | 0.6− | 2004 02 17 | 704 | 1.1+ | 0.3− |
| 1999 10 19 | 704 | 0.7+ | 0.1− | 2004 01 29 | 704 | 0.3− | 0.1+ | 2004 02 17 | 704 | 0.1+ | 0.0 |
| 1999 10 19 | 704 | 0.7+ | 0.4− | 2004 01 29 | 704 | 0.9− | 0.4+ | 2004 02 22 | 704 | 0.9− | 0.5+ |
| 1999 10 31 | 703 | 0.2+ | 0.4− | 2004 01 29 | 704 | 0.4− | 0.2+ | 2004 02 22 | 704 | 0.3− | 0.4− |
| 1999 10 31 | 703 | 0.8− | 0.0 | 2004 01 29 | 704 | 0.4− | 0.2+ | 2004 02 22 | 704 | 0.3+ | 0.7+ |
| 1999 10 31 | 703 | 0.1− | 0.9+ | 2004 01 29 | 704 | 0.3− | 0.3− | 2005 05 10 | 691 | 0.5+ | 0.4+ |
| 1999 10 31 | 703 | 0.2− | 0.1+ | 2004 01 30 | 704 | 0.3− | 0.2+ | 2005 05 10 | 691 | 0.1+ | 0.6+ |
| 1999 11 13 | 699 | 0.4+ | 0.3− | 2004 01 30 | 704 | 0.2− | 0.2+ | 2005 05 10 | 691 | 0.2+ | 0.1+ |
| 1999 11 13 | 699 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2005 05 17 | G96 | 0.4− | 0.8+ |
| 1999 11 13 | 699 | 0.6− | 0.0 | 2004 01 30 | 704 | 0.3− | 0.1+ | 2005 05 17 | G96 | 1.2− | 0.1− |
| 1999 11 16 | 703 | 0.1− | 1.0+ | 2004 01 30 | 704 | 0.1+ | 0.3− | 2005 05 17 | G96 | 0.3− | 0.3+ |
| 1999 11 16 | 703 | 0.0 | 1.4+ | 2004 01 31 | 704 | 0.1− | 0.2+ | 2005 05 17 | G96 | 0.0 | 0.2− |
| 1999 11 16 | 703 | 0.3− | 1.0+ | 2004 01 31 | 704 | 0.4+ | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.3+ |
| 1999 11 16 | 703 | 0.2+ | 0.6+ | 2004 01 31 | 704 | 0.4+ | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.5+ |
| 1999 12 03 | 704 | 0.6− | 0.0 | 2004 01 31 | 704 | 0.4+ | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.4+ |
| 1999 12 03 | 704 | 0.4− | 0.4− | 2004 01 31 | 704 | 0.0 | 0.6+ | 2006 08 15 | 644 | 0.3− | 0.3+ |
| 1999 12 03 | 704 | 0.1− | 0.0 | 2004 02 02 | 704 | 0.4+ | 0.2− | 2006 08 15 | 644 | 0.1− | 0.3+ |
| 1999 12 03 | 704 | 0.3− | 0.2+ | 2004 02 02 | 704 | 0.7+ | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.4+ |
| 1999 12 03 | 704 | 0.7− | 0.6− | 2004 02 02 | 704 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 1999 12 14 | 704 | 0.9− | 1.0− | 2004 02 02 | 704 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.3+ |
| 1999 12 14 | 704 | 0.1+ | 0.2− | 2004 02 11 | 699 | 0.2− | 1.2− | 2006 09 30 | G96 | 0.3− | 0.1− |
| 1999 12 14 | 704 | 0.5− | 0.0 | 2004 02 11 | 699 | 0.5+ | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.2+ |
| 2004 01 13 | 699 | 0.2− | 0.2+ | 2004 02 11 | 699 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.3+ |
| 2004 01 13 | 699 | 0.7− | 0.3+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 01 13 | 699 | 0.2+ | 0.4+ | 2004 02 11 | 699 | 1.2− | 0.7− | 2006 10 20 | G96 | 0.5− | 0.2+ |
| 2004 01 13 | 699 | 0.5− | 0.3+ | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 0.2+ | 0.7+ | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.3+ |
| 2004 01 24 | 704 | 0.5+ | 1.0+ | 2004 02 17 | 644 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 01 24 | 704 | 0.7+ | 1.2+ | 2004 02 17 | 644 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.6+ |
| 2004 01 24 | 704 | 0.1− | 0.2+ | 2004 02 17 | 704 | (0.1− | 1.5−) | 2006 11 23 | G96 | 0.6+ | 0.9+ |
| 2004 01 24 | 704 | 0.3+ | 0.4+ | 2004 02 17 | 644 | 0.9+ | 0.4− | | | | |

**(137624)∗ 1999 VQ$_{213}$**

Discovered 1999 Nov. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.52055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26728696 | $\omega$ | 229.40034 | | +0.97592823 | −0.21511837 | |
| $a$ | 2.3868083 | $\Omega$ | 142.98125 | | +0.21374309 | +0.91072612 | |
| $e$ | 0.2107577 | $i$ | 3.41757 | | +0.04333576 | +0.35256493 | |
| $P$ | 3.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 06 | 691 | 0.3− | 0.4− | 1999 11 17 | 704 | 0.7− | 1.0+ | 2006 07 19 | 644 | 0.2+ | 0.1+ |
| 1995 06 06 | 691 | 0.6+ | 0.0 | 1999 11 17 | 704 | 0.5+ | 0.8− | 2006 07 19 | 644 | 0.0 | 0.2+ |
| 1995 06 06 | 691 | 0.2− | 0.2− | 1999 11 17 | 704 | 1.1+ | 1.1− | 2006 07 19 | 644 | 0.7− | 0.5− |
| 1999 10 01 | 703 | 0.0 | 0.0 | 2000 12 23 | 645 | 0.0 | 0.0 | 2006 07 20 | 644 | 0.0 | 0.1+ |
| 1999 10 01 | 703 | 0.5+ | 0.1− | 2000 12 23 | 645 | 0.1− | 0.0 | 2006 07 20 | 644 | 0.1− | 0.5+ |
| 1999 10 01 | 703 | (0.1+ | 2.5+) | 2003 12 19 | 704 | 0.1− | 0.3− | 2006 07 20 | 644 | 0.1− | 0.1+ |
| 1999 10 01 | 703 | 0.6− | 0.5+ | 2003 12 19 | 704 | 0.2− | 0.2− | 2006 07 26 | 644 | 0.1− | 0.1+ |
| 1999 10 19 | 704 | 0.3− | 0.4+ | 2003 12 19 | 704 | 0.0 | 0.4− | 2006 07 26 | 644 | 0.3− | 0.2+ |
| 1999 10 19 | 704 | 0.3− | 0.7+ | 2003 12 19 | 704 | (2.2− | 0.9−) | 2006 07 26 | 704 | 0.2+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.2+ | 0.1− | 2003 12 21 | 704 | 0.4+ | 0.2− | 2006 07 26 | 644 | 0.1− | 0.2+ | |
| 1999 10 19 | 704 | 0.2− | 0.2+ | 2003 12 21 | 704 | 0.8+ | 0.3− | 2006 07 26 | 704 | 0.3− | 0.5+ | |
| 1999 10 19 | 704 | 0.3+ | 0.0 | 2003 12 21 | 704 | 0.1+ | 0.4− | 2006 07 26 | 704 | 0.5+ | 0.8+ | |
| 1999 10 29 | 703 | 0.5− | 0.4− | 2003 12 21 | 704 | 0.6+ | 0.7− | 2006 07 26 | 704 | 0.1+ | 0.2+ | |
| 1999 10 29 | 703 | 0.4− | 0.2+ | 2003 12 21 | 704 | 0.3− | 0.2+ | 2006 08 11 | 644 | 0.1+ | 0.2+ | |
| 1999 10 29 | 703 | 1.1− | 0.0 | 2003 12 23 | 704 | 0.2− | 0.0 | 2006 08 11 | 644 | 0.0 | 0.1− | |
| 1999 10 29 | 703 | 0.7− | 0.2+ | 2003 12 23 | 704 | 0.1+ | 0.0 | 2006 08 11 | 644 | 0.4− | 0.1− | |
| 1999 11 05 | 704 | 0.2+ | 0.2+ | 2003 12 23 | 704 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1+ | |
| 1999 11 05 | 704 | 0.3+ | 0.5+ | 2003 12 23 | 704 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.1− | |
| 1999 11 05 | 704 | 0.2+ | 1.1+ | 2003 12 23 | 704 | 0.3− | 0.1− | 2006 09 26 | G96 | (0.6+ | 2.8+) | |
| 1999 11 05 | 704 | 0.1+ | 0.9+ | 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | |
| 1999 11 14 | 699 | 0.0 | 0.6+ | 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.2− | |
| 1999 11 14 | 699 | 1.0+ | 0.4+ | 2005 04 01 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.4− | |
| 1999 11 14 | 699 | 0.6− | 0.8+ | 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.1− | |
| 1999 11 17 | 704 | 0.2− | 0.2+ | 2005 05 04 | 691 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.3− | |
| 1999 11 17 | 704 | 0.0 | 1.1+ | 2005 05 04 | 691 | 0.1+ | 0.1+ | | | | | |

**(137625)∗ 1999 VT$_{219}$**

Discovered 1999 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.72015 | | (2000.0) | | | |
| $n$ | 0.28722203 | $\omega$ | 217.58668 | | +0.80402367 | −0.59459308 |
| $a$ | 2.2750497 | $\Omega$ | 178.88962 | | +0.56972112 | +0.76930242 |
| $e$ | 0.1571526 | $i$ | 6.63507 | | +0.17018750 | +0.23373673 |
| $P$ | 3.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 28 | 691 | 0.1− | 0.3− | 2002 07 21 | 644 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 0.4+ | 0.9− | |
| 1992 09 28 | 691 | (3.8+ | 0.1+) | 2002 07 21 | 644 | 0.3+ | 0.3+ | 2006 08 29 | 703 | 0.5+ | 1.0− | |
| 1992 09 28 | 691 | 0.1− | 0.3− | 2002 08 05 | 644 | 0.1+ | 0.6+ | 2006 08 29 | 703 | 0.3+ | 0.6− | |
| 1999 10 10 | 704 | 0.2− | 1.2+ | 2002 08 05 | 644 | 0.0 | 0.6+ | 2006 08 29 | 703 | 1.2− | 1.1− | |
| 1999 10 10 | 704 | 0.4− | 0.1+ | 2002 08 05 | 644 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.4+ | |
| 1999 10 10 | 704 | 0.0 | 0.7+ | 2002 08 16 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.1+ | 0.3− | |
| 1999 10 10 | 704 | 0.7+ | 1.2+ | 2002 08 16 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.2− | |
| 1999 10 19 | 704 | 0.6+ | 0.1− | 2002 08 16 | 644 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.2+ | |
| 1999 10 19 | 704 | 0.1+ | 0.3− | 2002 08 26 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.8− | 1.4+ | |
| 1999 10 19 | 704 | 0.4+ | 0.4+ | 2002 08 26 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.9− | 0.5+ | |
| 1999 10 19 | 704 | 0.7+ | 0.3+ | 2002 08 26 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.5− | 1.0+ | |
| 1999 10 19 | 704 | 0.1− | 0.2+ | 2002 08 26 | 644 | 0.2− | 0.6+ | 2006 11 19 | 704 | 1.1− | 1.2+ | |
| 1999 11 05 | 704 | 0.5+ | 0.7+ | 2002 08 26 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | (1.0− | 1.5+) | |
| 1999 11 05 | 704 | 0.2− | 0.4+ | 2002 08 26 | 644 | 0.2+ | 0.4+ | 2006 11 25 | 704 | 0.3− | 0.9− | |
| 1999 11 05 | 704 | 0.2+ | 0.5+ | 2004 01 23 | 704 | 0.7+ | 0.6+ | 2006 11 25 | 704 | 0.6+ | 0.1− | |
| 1999 11 05 | 704 | 0.7+ | 0.2− | 2004 01 23 | 704 | (1.8+ | 0.2+) | 2006 11 25 | 704 | 0.8− | 0.1+ | |
| 1999 11 05 | 704 | 0.1− | 0.6+ | 2004 01 23 | 704 | (1.9+ | 0.7+) | 2006 11 25 | 704 | 0.7− | 0.2− | |
| 1999 11 13 | 699 | 1.2− | 0.1+ | 2004 01 23 | 704 | 0.9+ | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.1+ | |
| 1999 11 13 | 699 | 0.2− | 0.5+ | 2004 03 20 | 691 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.7+ | 0.2− | |
| 1999 11 13 | 699 | 0.7− | 0.0 | 2004 03 20 | 691 | 0.1+ | 1.0+ | 2006 11 28 | 704 | 0.7+ | 0.4+ | |
| 2002 07 09 | 704 | 1.3− | 1.1+ | 2004 03 20 | 691 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.1− | 0.4+ | |
| 2002 07 09 | 704 | (0.3− | 2.0+) | 2005 06 10 | 691 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.2− | |
| 2002 07 09 | 704 | (0.1+ | 1.9+) | 2005 06 10 | 691 | 0.0 | 0.4+ | | | | | |
| 2002 07 21 | 644 | 0.2+ | 0.4+ | 2005 06 10 | 691 | 0.2− | 0.2+ | | | | | |

**(137626)∗ 1999 VG$_{220}$**

Discovered 1999 Nov. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.67493 | | (2000.0) | | | |
| $n$ | 0.28084522 | $\omega$ | 257.57839 | | −0.29125781 | +0.95661533 |
| $a$ | 2.3093585 | $\Omega$ | 355.46756 | | −0.83680393 | −0.25855471 |
| $e$ | 0.1358260 | $i$ | 5.43423 | | −0.46360335 | −0.13430034 |
| $P$ | 3.51 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 16 | 691 | 0.1− | 0.1+ | 2005 03 08 | 704 | 0.7− | 0.1− | 2005 05 08 | G96 | 0.5− | 0.1− | |
| 1999 09 16 | 691 | 0.2+ | 0.1− | 2005 03 08 | 704 | 0.6− | 1.3+ | 2005 05 08 | G96 | 0.1− | 0.1+ | |
| 1999 09 16 | 691 | 0.2+ | 0.0 | 2005 03 09 | 699 | 1.1− | 1.0− | 2005 05 08 | G96 | 0.4− | 0.2− | |
| 1999 10 06 | 704 | 0.4+ | 0.5− | 2005 03 09 | 699 | (1.9+ | 1.0+) | 2006 08 28 | 691 | 0.1− | 0.1− | |
| 1999 10 06 | 704 | 1.2+ | 0.2+ | 2005 03 09 | 699 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ | |
| 1999 10 06 | 704 | 0.3+ | 0.6+ | 2005 03 09 | 699 | 0.1+ | 0.8+ | 2006 08 28 | 691 | 0.1− | 0.3+ | |
| 1999 10 06 | 704 | 0.2− | 0.3− | 2005 03 10 | G96 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.3+ | |
| 1999 10 06 | 704 | 0.4+ | 0.4+ | 2005 03 10 | G96 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.2+ | |
| 1999 10 16 | 645 | 0.2+ | 0.2+ | 2005 03 10 | G96 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.5+ | |
| 1999 10 16 | 645 | 0.1+ | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.1− | 2006 09 19 | 699 | (0.2− | 1.7+) | |
| 1999 10 19 | 691 | 0.1− | 0.1− | 2005 03 14 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.6+ | |
| 1999 10 19 | 691 | 0.9− | 0.7− | 2005 03 14 | 704 | 1.1+ | 1.4+ | 2006 09 19 | 699 | 0.7− | 0.0 | |
| 1999 10 19 | 691 | 0.1+ | 0.3− | 2005 03 14 | 704 | 0.7+ | 0.5− | 2006 09 19 | 699 | 1.1− | 0.7+ | |
| 1999 11 03 | 691 | 0.2− | 0.7− | 2005 03 14 | 704 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.3+ | |
| 1999 11 03 | 691 | 0.1+ | 0.1− | 2005 03 17 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 699 | 0.7+ | 0.8+ | |
| 1999 11 03 | 691 | 0.6− | 0.1+ | 2005 03 17 | 704 | 1.3+ | 0.5+ | 2006 09 25 | 699 | (0.1− | 1.7+) | |
| 1999 11 14 | 691 | 0.2− | 0.7− | 2005 03 17 | 704 | 0.9+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− | |
| 1999 11 14 | 691 | 0.4− | 0.1+ | 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1− | |
| 1999 11 14 | 691 | 0.4− | 0.2− | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.0 | |
| 2003 12 19 | 691 | 0.3+ | 0.1+ | 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.3− | |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.0 | |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2005 04 09 | 699 | 0.8+ | 0.9− | 2006 10 01 | 703 | 0.2− | 0.5+ | |
| 2005 03 03 | 703 | 0.7− | 0.1− | 2005 04 09 | 699 | 0.5− | 0.8+ | 2006 10 01 | 703 | 0.6+ | 0.9+ | |
| 2005 03 03 | 703 | 0.1− | 0.6+ | 2005 04 09 | 699 | 0.5+ | 0.6+ | 2006 10 01 | 703 | 0.9− | 0.3+ | |
| 2005 03 03 | 703 | 0.1+ | 0.7− | 2005 04 09 | 699 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.6− | 0.4− | |
| 2005 03 03 | 703 | 0.3+ | 0.6+ | 2005 04 11 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.7+ | |
| 2005 03 08 | 699 | 0.3− | 0.4+ | 2005 04 11 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.1+ | |
| 2005 03 08 | 699 | 0.9+ | 0.9− | 2005 04 11 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.3+ | |
| 2005 03 08 | 699 | (2.1+ | 0.2−) | 2005 05 08 | G96 | 0.3− | 0.3− | 2006 10 23 | G96 | 0.2− | 0.3− | |
| 2005 03 08 | 704 | 0.0 | 0.9+ | 2005 05 08 | G96 | 0.3− | 0.4− | 2006 10 23 | G96 | 0.3− | 0.2− | |
| 2005 03 08 | 699 | 0.4− | 0.4− | 2005 05 08 | G96 | 0.7− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.1− | |
| 2005 03 08 | 704 | 1.1+ | 0.0 | 2005 05 08 | G96 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.2− | |
| 2005 03 08 | 704 | 0.7+ | 0.4+ | 2005 05 08 | G96 | 0.1− | 0.3− | | | | | |

**(137627)∗ 1999 VS$_{220}$**

Discovered 1999 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.74145 | | (2000.0) | | | |
| $n$ | 0.27935208 | $\omega$ | 98.85272 | | +0.38279545 | −0.92351722 |
| $a$ | 2.3175802 | $\Omega$ | 328.60598 | | +0.82833017 | +0.35468455 |
| $e$ | 0.1492569 | $i$ | 2.65801 | | +0.40906816 | +0.14599591 |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 691 | 0.3+ | 0.1− | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.5− | |
| 1997 02 10 | 691 | 0.3+ | 0.5− | 2004 02 13 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 1997 02 10 | 691 | 0.1− | 0.5− | 2004 02 13 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.1+ | |
| 1997 02 14 | 327 | 0.2+ | 0.7− | 2004 02 17 | 704 | (0.6+ | 2.4−) | 2006 10 21 | 691 | 0.1− | 0.2− | |
| 1997 02 14 | 327 | 1.0− | 0.2+ | 2004 02 17 | 704 | 1.4+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1+ | |
| 1997 02 14 | 327 | 0.8+ | 0.8− | 2004 02 17 | 704 | 0.2+ | 0.7− | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 1997 02 15 | 691 | 0.6− | 0.2− | 2004 02 17 | 704 | (0.1− | 1.6−) | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 1997 02 15 | 691 | 0.5− | 0.3− | 2004 02 17 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2− | |
| 1997 02 15 | 691 | 0.5− | 0.1− | 2004 02 18 | 049 | 0.8+ | 0.6− | 2006 10 23 | 691 | 0.2− | 1.1+ | |
| 1999 10 13 | 704 | 0.3+ | 0.2− | 2004 02 18 | 049 | 1.0+ | 1.0− | 2006 10 23 | 691 | 0.2− | 0.1− | |
| 1999 10 13 | 704 | 0.1+ | 1.1+ | 2004 02 18 | 049 | 0.8+ | 0.4− | 2006 10 23 | 691 | 1.3− | 0.2− | |
| 1999 10 13 | 704 | 0.6+ | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.2− | |
| 1999 10 13 | 704 | 1.0+ | 0.1+ | 2004 02 26 | 704 | 0.3+ | 0.7+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | |
| 1999 11 03 | 704 | 1.3+ | 0.1− | 2004 02 26 | 704 | 0.8+ | 1.0+ | 2006 10 28 | 691 | 0.4+ | 0.1− | |
| 1999 11 03 | 704 | 0.9− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.1+ | |
| 1999 11 03 | 704 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1− | |
| 1999 11 14 | 703 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.1− | |
| 1999 11 14 | 703 | 0.7− | 0.5− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 1999 11 14 | 703 | 0.5− | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1− | |
| 1999 11 14 | 703 | 1.1− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 | |
| 2004 01 24 | 704 | (0.0 | 2.4+) | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 | |
| 2004 01 24 | 704 | (1.7− | 1.0+) | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | |
| 2004 01 24 | 704 | 0.3− | 1.3+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | |
| 2004 01 24 | 704 | 1.0+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.8− | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.1+ | 1.4− |
| 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.0 | 0.2− |
| 2004 01 30 | 691 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.3+ |
| 2004 02 11 | 699 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2004 02 11 | 699 | 0.2+ | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.9− |
| 2004 02 11 | 699 | 0.8− | 0.6− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.4− | 1.1− |
| 2004 02 11 | 699 | (1.9− | 0.5+) | 2006 10 20 | 644 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.2− |

**(137628)∗ 1999 $VH_{222}$ = 1995 $OE_4$**

Discovered 1999 Nov. 4 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 6969)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 89.85400 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27752388 | $\omega$ | 306.37202 | | −0.07327861 | | +0.99711813 | |
| $a$ | 2.3277472 | $\Omega$ | 319.41194 | | −0.90507600 | | −0.07475942 | |
| $e$ | 0.1875705 | $i$ | 1.72972 | | −0.41888862 | | −0.01290191 | |
| $P$ | 3.55 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.4+ | 0.2− | 2002 07 18 | 644 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.3+ |
| 1995 07 22 | 691 | 0.9+ | 0.0 | 2002 07 18 | 644 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− |
| 1995 07 22 | 691 | 0.3− | 0.3+ | 2002 07 18 | 644 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 1995 07 27 | 691 | 0.8− | 0.5− | 2002 08 08 | 644 | 0.0 | 1.1− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 1995 07 27 | 691 | 0.3− | 0.0 | 2002 08 08 | 644 | 0.0 | 0.9− | 2006 09 26 | 691 | 0.0 | 0.1− |
| 1995 07 27 | 691 | 0.3− | 0.3− | 2002 08 08 | 644 | 0.2+ | 0.8− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 1995 08 03 | 691 | 0.1− | 0.1+ | 2005 03 11 | G96 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 1995 08 03 | 691 | 0.1+ | 0.3+ | 2005 03 11 | G96 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 1995 08 03 | 691 | 0.0 | 0.5+ | 2005 03 11 | G96 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.3− | 0.5− |
| 1999 11 04 | 691 | 0.0 | 0.3− | 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.0 |
| 1999 11 04 | 691 | 0.1+ | 0.1− | 2005 04 04 | 703 | 0.3+ | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.4− |
| 1999 11 04 | 691 | 0.0 | 0.5− | 2005 04 04 | 703 | 1.4− | 1.1+ | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 1999 11 15 | 691 | 0.3+ | 0.0 | 2005 04 04 | 703 | 0.9+ | 0.8+ | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 1999 11 15 | 691 | 0.2+ | 0.3+ | 2005 04 04 | 703 | 0.3+ | 0.8− | 2006 10 27 | 691 | 0.2+ | 0.4+ |
| 1999 11 15 | 691 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2002 07 14 | 644 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.4− | 0.2+ |
| 2002 07 14 | 644 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2002 07 14 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.5+ | 0.4+ | | | | |

**(137629)∗ 1999 $VN_{226}$ = 2005 $SK_{94}$**

Discovered 1999 Nov. 13 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 93787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 14.17132 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.15417684 | $\omega$ | 129.33549 | | +0.79744362 | | −0.53242466 | |
| $a$ | 3.4444770 | $\Omega$ | 264.62551 | | +0.42755658 | | +0.83061533 | |
| $e$ | 0.1460317 | $i$ | 16.56892 | | +0.42576877 | | +0.16310168 | |
| $P$ | 6.39 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 05 | 704 | 0.7− | 0.2− | 2005 08 27 | 699 | 0.1+ | 0.6− | 2006 11 16 | 704 | 0.3− | 1.3+ |
| 1999 10 05 | 704 | 0.5+ | 0.5− | 2005 08 27 | 699 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.1+ | 1.3+ |
| 1999 10 05 | 704 | 0.3− | 1.3− | 2005 08 29 | 644 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.3− | 1.4+ |
| 1999 10 05 | 704 | 0.9+ | 0.6− | 2005 08 29 | 644 | 0.0 | 0.2− | 2006 11 17 | 644 | 0.2+ | 0.2− |
| 1999 11 03 | 704 | 1.6+ | 1.3− | 2005 08 29 | 644 | 0.1− | 0.2− | 2006 11 17 | 644 | 0.2+ | 0.0 |
| 1999 11 03 | 704 | 0.5− | 0.7− | 2005 09 11 | 704 | 0.3+ | 0.2− | 2006 11 17 | 644 | 0.2+ | 0.0 |
| 1999 11 03 | 704 | 0.3+ | 1.0− | 2005 09 11 | 704 | 0.4− | 0.5− | 2006 11 19 | 704 | (0.2+ | 2.0−) |
| 1999 11 03 | 704 | 0.4+ | 0.9− | 2005 09 11 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.7− |
| 1999 11 13 | 703 | (4.9+ | 1.4−) | 2005 09 11 | 704 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.9− |
| 1999 11 13 | 703 | 2.0+ | 1.3− | 2005 09 11 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.9− |
| 1999 11 13 | 703 | 0.5+ | 1.1+ | 2005 09 25 | 644 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.5+ |
| 1999 11 13 | 703 | 1.0− | 0.2+ | 2005 09 25 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 691 | 1.2+ | 0.6− |
| 1999 11 14 | 703 | 0.4+ | 0.6+ | 2005 09 25 | 644 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 1999 11 14 | 703 | (2.6− | 0.1−) | 2005 09 30 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.3− |
| 1999 11 14 | 703 | 1.6− | 0.1+ | 2005 09 30 | 644 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.0 |
| 1999 11 14 | 703 | 0.8+ | 0.3− | 2005 09 30 | 644 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.5− | 0.3− |
| 2001 01 03 | 704 | 0.3+ | 0.4− | 2005 11 01 | 699 | 1.1− | 0.6+ | 2006 11 22 | 704 | 0.4− | 0.4− |
| 2001 01 03 | 704 | 0.0 | 0.5+ | 2005 11 01 | 699 | 1.2− | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2001 01 03 | 704 | 0.3− | 0.8+ | 2005 11 01 | 699 | 0.6− | 0.2+ | 2006 11 27 | 704 | 0.4− | 0.2+ |
| 2001 01 03 | 704 | 0.2− | 0.2− | 2005 11 01 | 699 | 0.0 | 0.7+ | 2006 11 27 | 704 | 0.1+ | 0.4+ |
| 2005 06 01 | 291 | 0.0 | 0.4+ | 2006 10 29 | 703 | 0.0 | 0.3+ | 2006 11 27 | 704 | 0.7− | 0.1+ |
| 2005 06 01 | 291 | 0.1+ | 0.4+ | 2006 10 29 | 703 | 0.2+ | 0.0 | 2006 11 27 | 704 | 0.5− | 0.1+ |
| 2005 06 01 | 291 | 0.0 | 0.5+ | 2006 10 29 | 703 | 0.6− | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.1− |
| 2005 06 17 | 699 | (1.9− | 1.0+) | 2006 11 14 | 703 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.0 | 0.5+ |
| 2005 06 17 | 699 | (1.7− | 0.1−) | 2006 11 14 | 703 | 0.5− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.9+ |
| 2005 06 17 | 699 | 0.9− | 1.2+ | 2006 11 14 | 703 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2005 06 17 | 699 | 1.1− | 0.5+ | 2006 11 14 | 703 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.4+ |
| 2005 08 27 | 699 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.2− | 1.1+ | | | | |
| 2005 08 27 | 699 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6− | 1.0+ | | | | |

**(137630)∗ 1999 WV**

Discovered 1999 Nov. 18 by T. Urata at the Nihondaira Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 24.27665 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29558727 | $\omega$ | 151.33193 | | +0.50798678 | | −0.85675084 | |
| $a$ | 2.2319214 | $\Omega$ | 268.01135 | | +0.77231260 | | +0.49880052 | |
| $e$ | 0.1779149 | $i$ | 5.11125 | | +0.38142193 | | +0.13105742 | |
| $P$ | 3.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1− | 0.1+ | 2000 01 03 | 704 | 0.1+ | 1.1+ | 2002 10 05 | 704 | 0.2+ | 0.0 |
| 1999 10 13 | 704 | 0.7+ | 0.3− | 2000 01 04 | 704 | 0.1+ | 0.4+ | 2002 10 05 | 644 | 0.6− | 0.4− |
| 1999 10 13 | 704 | 0.4+ | 1.2− | 2000 01 04 | 704 | 0.8− | 0.4+ | 2002 10 06 | 644 | 0.2+ | 0.1+ |
| 1999 10 13 | 704 | 0.4− | 0.3+ | 2000 01 04 | 704 | 0.6− | 1.9+ | 2002 10 06 | 644 | 0.1− | 0.0 |
| 1999 10 15 | 704 | 1.6+ | 0.4+ | 2000 01 04 | 704 | 0.5− | 0.8+ | 2002 10 06 | 644 | 0.1+ | 0.2+ |
| 1999 10 15 | 704 | 0.2+ | 0.4− | 2000 01 04 | 704 | 0.7− | 1.3+ | 2002 10 07 | 699 | 0.8− | 0.1+ |
| 1999 10 15 | 704 | 0.7+ | 0.6− | 2000 02 02 | 704 | 0.3− | 0.5+ | 2002 10 07 | 699 | 0.0 | 0.4+ |
| 1999 10 15 | 704 | 0.5+ | 0.8− | 2000 02 02 | 704 | 1.2− | 0.8− | 2002 10 07 | 699 | 0.3+ | 0.6+ |
| 1999 10 15 | 704 | 0.4+ | 0.7− | 2000 02 02 | 704 | 0.3− | 0.6+ | 2002 10 07 | 699 | 0.4− | 1.3+ |
| 1999 11 14 | 704 | 0.5+ | 0.5− | 2000 02 02 | 704 | 1.0− | 0.5+ | 2002 10 12 | 704 | 0.2+ | 0.6+ |
| 1999 11 14 | 704 | 0.2+ | 0.5− | 2000 02 02 | 704 | 0.6− | 0.8+ | 2002 10 12 | 704 | 0.0 | 0.4+ |
| 1999 11 14 | 704 | 0.2− | 0.6− | 2002 08 11 | 704 | 0.2+ | 0.8+ | 2002 10 12 | 704 | 0.2+ | 1.2+ |
| 1999 11 14 | 704 | 0.1+ | 0.5− | 2002 08 11 | 704 | 0.0 | 0.3+ | 2002 11 08 | 704 | 0.1+ | 0.0 |
| 1999 11 14 | 704 | 0.1− | 0.9− | 2002 08 11 | 704 | 0.5+ | 0.6+ | 2002 11 08 | 704 | 0.2+ | 0.5+ |
| 1999 11 16 | 704 | 0.3− | 0.3+ | 2002 08 11 | 704 | 0.1− | 1.0+ | 2002 11 08 | 704 | 0.7+ | 0.2+ |
| 1999 11 16 | 704 | 0.3− | 0.4− | 2002 08 11 | 704 | 0.1− | 0.9+ | 2004 03 17 | 703 | 0.5+ | 1.1+ |
| 1999 11 16 | 704 | 0.7− | 0.2− | 2002 08 14 | 699 | 0.1− | 0.0 | 2004 03 17 | 703 | 0.1− | 0.4− |
| 1999 11 16 | 704 | 0.2− | 0.1− | 2002 08 14 | 699 | 0.5+ | 1.4+ | 2004 03 17 | 703 | (0.1− | 2.1+) |
| 1999 11 16 | 704 | 1.1+ | 0.7+ | 2002 08 14 | 699 | 0.6− | 0.1+ | 2004 03 17 | 703 | 0.7+ | 0.8+ |
| 1999 11 18 | 385 | 0.2+ | 0.1− | 2002 08 14 | 699 | 0.0 | 0.4− | 2004 03 27 | 703 | 0.3− | 0.2+ |
| 1999 11 18 | 385 | 0.4− | 0.2− | 2002 08 28 | 644 | 0.1− | 0.1− | 2004 03 27 | 703 | 0.5+ | 0.5− |
| 1999 11 19 | 385 | 0.3− | 0.1− | 2002 08 28 | 644 | 0.0 | 0.2− | 2004 03 27 | 703 | 0.4− | 0.3+ |
| 1999 11 19 | 385 | 0.0 | 0.4+ | 2002 08 28 | 644 | 0.1+ | 0.1− | 2004 03 27 | 703 | (0.6− | 1.8+) |
| 1999 11 19 | 385 | 0.0 | 0.1− | 2002 09 05 | 699 | 0.3+ | 0.0 | 2004 03 31 | 704 | 0.4− | 0.3− |
| 1999 11 20 | 385 | 0.5+ | 0.6− | 2002 09 05 | 699 | 0.0 | 0.3+ | 2004 03 31 | 704 | (0.3− | 1.8+) |
| 1999 11 20 | 385 | 0.5+ | 0.4+ | 2002 09 05 | 699 | 0.5− | 0.7+ | 2004 03 31 | 704 | 0.3+ | 0.1+ |
| 1999 11 20 | 385 | 0.0 | 0.1− | 2002 09 05 | 699 | 0.7+ | 0.1− | 2004 03 31 | 704 | 1.1+ | 0.3+ |
| 1999 11 29 | 385 | 1.4+ | 0.1+ | 2002 09 07 | 704 | 0.1+ | 0.1+ | 2004 04 21 | 704 | 0.6+ | 0.4+ |
| 1999 11 29 | 385 | 0.8+ | 0.3− | 2002 09 07 | 704 | 0.1+ | 0.0 | 2004 04 21 | 704 | 1.1+ | 0.5+ |
| 1999 11 29 | 385 | 0.4+ | 0.6− | 2002 09 07 | 704 | 0.4− | 0.1+ | 2004 04 21 | 704 | 0.7+ | 0.5+ |
| 1999 12 07 | 704 | 0.0 | 0.7− | 2002 09 07 | 704 | 0.2+ | 0.4+ | 2004 04 26 | 699 | (1.8− | 1.0+) |
| 1999 12 07 | 704 | 0.2− | 1.0− | 2002 09 13 | 644 | 0.2+ | 0.8+ | 2004 04 26 | 699 | 0.4− | 0.6+ |
| 1999 12 07 | 704 | 0.1+ | 0.7− | 2002 09 13 | 644 | 0.2+ | 0.9+ | 2004 04 26 | 699 | 0.1− | 0.7+ |
| 1999 12 07 | 704 | 0.0 | 0.7− | 2002 09 13 | 644 | 0.1+ | 0.6+ | 2004 04 26 | 699 | 0.8− | 1.0+ |
| 1999 12 07 | 704 | 0.1+ | 0.6− | 2002 09 14 | 608 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.4− |
| 1999 12 10 | 704 | 0.5− | 1.1− | 2002 09 14 | 608 | 0.6− | 0.2+ | 2006 09 28 | G96 | 0.7− | 0.1− |
| 1999 12 10 | 704 | 0.7+ | 0.2− | 2002 09 14 | 608 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.8− | 0.0 |
| 1999 12 10 | 704 | 0.2− | 0.3− | 2002 09 25 | 608 | 1.4− | 0.7− | 2006 09 28 | G96 | 0.5− | 0.2+ |
| 1999 12 10 | 704 | 0.3+ | 0.1+ | 2002 09 25 | 608 | 1.3− | 1.4− | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 1999 12 30 | 888 | 0.5− | 0.3+ | 2002 09 25 | 608 | 1.4− | 0.8− | 2006 10 20 | 691 | 0.2+ | 0.2+ |
| 1999 12 30 | 888 | 0.3− | 0.0 | 2002 10 05 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.4+ |
| 1999 12 30 | 888 | 0.7− | 0.5+ | 2002 10 05 | 644 | 0.3− | 0.6− | 2006 10 23 | 691 | 0.4+ | 0.0 |
| 2000 01 03 | 704 | 0.3− | 1.8+ | 2002 10 05 | 704 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.3+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.1− | 0.7+ | 2002 10 05 | 704 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.6+ | 0.3+ |
| 2000 01 03 | 704 | 0.0 | 0.4+ | 2002 10 05 | 644 | 0.4− | 0.1− | | | | |
| 2000 01 03 | 704 | 0.9− | 0.1+ | 2002 10 05 | 704 | 0.1+ | 0.0 | | | | |

**(137631)∗ 1999 WU$_1$**

Discovered 1999 Nov. 25 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.41661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28746671 | $\omega$ | 316.59353 | | +0.94197900 | −0.30304241 | |
| $a$ | 2.2737585 | $\Omega$ | 61.56878 | | +0.33493310 | +0.82002463 | |
| $e$ | 0.1795230 | $i$ | 9.44865 | | +0.02225718 | +0.48551510 | |
| $P$ | 3.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 703 | 0.5− | 0.4− | 1999 11 27 | 120 | 0.3− | 0.9+ | 2004 02 10 | 644 | 0.3+ | 0.2+ |
| 1999 09 13 | 703 | 0.3− | 0.0 | 1999 11 30 | 120 | 1.7+ | 0.9+ | 2004 02 10 | 644 | 0.5+ | 0.5+ |
| 1999 09 13 | 703 | 0.0 | 0.2+ | 1999 11 30 | 120 | 0.2+ | 0.6− | 2004 02 10 | 644 | 0.2+ | 0.2− |
| 1999 09 13 | 703 | 0.2+ | 0.1+ | 1999 12 04 | 703 | 0.7− | 0.2+ | 2004 02 12 | 644 | 0.1+ | 0.1+ |
| 1999 10 08 | 703 | 0.2+ | 0.1− | 1999 12 04 | 703 | 0.8− | 0.5− | 2004 02 12 | 644 | 0.1+ | 0.2+ |
| 1999 10 08 | 703 | 0.5+ | 0.1+ | 1999 12 04 | 703 | 0.3+ | 0.2+ | 2004 02 12 | 644 | 0.0 | 0.3− |
| 1999 10 08 | 703 | 0.2− | 0.0 | 1999 12 04 | 703 | 0.6+ | 0.4+ | 2004 03 18 | 645 | 0.0 | 0.1− |
| 1999 10 08 | 703 | 0.9+ | 0.2− | 1999 12 06 | 704 | 0.9+ | 1.6− | 2004 03 18 | 645 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.8+ | 0.6+ | 1999 12 06 | 704 | 0.7− | 0.4+ | 2004 04 15 | 645 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.2− | 0.1− | 1999 12 06 | 704 | 0.1+ | 0.9+ | 2004 04 15 | 645 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.2− | 0.2+ | 1999 12 06 | 704 | 0.4− | 0.2− | 2006 08 29 | 703 | 0.1+ | 0.2− |
| 1999 10 09 | 704 | 0.0 | 0.2+ | 1999 12 06 | 704 | 0.1− | 1.8+ | 2006 08 29 | 703 | 0.9+ | 0.1− |
| 1999 10 09 | 704 | 0.2+ | 0.1− | 1999 12 07 | 704 | 0.1+ | 0.5− | 2006 08 29 | 703 | 0.9+ | 0.3− |
| 1999 10 17 | 699 | 0.0 | 0.2− | 1999 12 07 | 704 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.4− | 0.0 |
| 1999 10 17 | 699 | 0.3+ | 0.8− | 1999 12 07 | 704 | 0.2+ | 0.3− | 2006 09 27 | 704 | 1.2+ | 0.4+ |
| 1999 10 17 | 699 | 1.0+ | 1.2+ | 1999 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 1.1+ | 0.9+ |
| 1999 10 19 | 704 | 0.5+ | 0.2− | 1999 12 07 | 704 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.1+ |
| 1999 10 19 | 704 | 0.4+ | 0.1− | 1999 12 07 | 120 | 0.3− | 1.0− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 1999 10 19 | 699 | 0.4− | 0.0 | 1999 12 07 | 120 | 0.5+ | 1.1− | 2006 11 10 | 691 | 0.2− | 0.1− |
| 1999 10 19 | 704 | 0.4− | 0.1− | 1999 12 12 | 703 | 1.2+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 1999 10 19 | 704 | 0.1− | 0.3− | 1999 12 12 | 703 | 0.3+ | 0.5− | 2006 11 16 | 704 | 0.2− | 0.1− |
| 1999 10 19 | 699 | 1.2+ | 0.2+ | 1999 12 12 | 703 | 0.3+ | 1.3+ | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 1999 10 19 | 704 | 0.1+ | 0.3+ | 1999 12 12 | 703 | 1.2− | 0.7+ | 2006 11 16 | 704 | 0.7− | 0.2− |
| 1999 10 19 | 699 | 0.5+ | 0.2+ | 1999 12 13 | 120 | 0.1+ | 0.7− | 2006 11 16 | 704 | 0.5+ | 0.1− |
| 1999 11 05 | 704 | 0.0 | 0.4− | 1999 12 13 | 120 | 0.1+ | 1.0− | 2006 11 16 | 704 | 0.9− | 0.8+ |
| 1999 11 05 | 704 | 1.1− | 0.1− | 1999 12 13 | 120 | 1.0− | 1.3− | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 1999 11 05 | 704 | 0.0 | 0.0 | 2000 01 06 | 704 | 0.9− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 1999 11 05 | 704 | 0.7− | 0.2+ | 2000 01 06 | 704 | 1.0+ | 0.8− | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 1999 11 13 | 699 | 0.9+ | 0.0 | 2000 01 06 | 704 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.9+ | 0.4− |
| 1999 11 13 | 699 | 0.0 | 0.5+ | 2000 01 06 | 704 | 0.7− | 1.2− | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 1999 11 13 | 699 | 0.1− | 0.9+ | 2002 07 16 | 644 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 1999 11 15 | 704 | 0.2+ | 0.0 | 2002 07 16 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.4+ | 0.1− |
| 1999 11 15 | 704 | 0.3+ | 0.4+ | 2002 07 16 | 644 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 1999 11 15 | 704 | 0.1+ | 0.1− | 2002 07 27 | 644 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 1999 11 15 | 704 | 0.3+ | 0.2+ | 2002 07 27 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.3+ | 1.0+ |
| 1999 11 15 | 704 | 0.3+ | 0.3+ | 2002 07 27 | 644 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.2+ | 1.0+ |
| 1999 11 17 | 704 | 0.4− | 0.8− | 2002 08 13 | 644 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 1999 11 17 | 704 | 0.6− | 0.3− | 2002 08 13 | 644 | 0.8− | 1.2+ | 2006 11 22 | 704 | 0.5+ | 0.6+ |
| 1999 11 17 | 704 | 0.5− | 0.2− | 2002 08 13 | 644 | 0.0 | 0.4+ | 2006 11 24 | 691 | 0.6− | 0.8− |
| 1999 11 17 | 704 | 0.4− | 0.8− | 2003 12 19 | 704 | 0.4− | 0.8+ | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 1999 11 17 | 704 | 0.3− | 0.6− | 2003 12 19 | 704 | 1.0+ | 0.3− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 1999 11 17 | 704 | 0.9− | 0.8− | 2003 12 19 | 704 | 0.9+ | 1.0+ | 2006 11 27 | 704 | 0.7+ | 0.7+ |
| 1999 11 17 | 704 | 0.1+ | 0.2+ | 2003 12 19 | 704 | (1.8+ | 0.6+) | 2006 11 27 | 704 | 0.4+ | 0.2+ |
| 1999 11 17 | 704 | 1.1− | 0.2− | 2004 01 20 | 704 | 0.6− | 1.0+ | 2006 11 27 | 704 | 0.3+ | 0.7+ |
| 1999 11 17 | 704 | 0.4+ | 0.2− | 2004 01 20 | 704 | 0.1− | 0.9+ | 2006 11 28 | 704 | 1.7− | 0.2− |
| 1999 11 25 | 120 | 0.6+ | 0.6+ | 2004 01 20 | 704 | 0.6+ | 1.0+ | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 1999 11 25 | 120 | 0.4− | 0.1+ | 2004 01 20 | 704 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.7− | 0.2+ |
| 1999 11 25 | 120 | 0.5+ | 0.1− | 2004 01 31 | 704 | (0.9− | 1.7+) | 2006 11 28 | 704 | 0.9− | 1.8+ |
| 1999 11 26 | 120 | 0.3− | 0.5− | 2004 01 31 | 704 | 0.8− | 1.0+ | 2006 11 28 | 704 | 0.2+ | 1.4+ |
| 1999 11 26 | 120 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.2+ | 0.0 | | | | |
| 1999 11 27 | 120 | (2.4− | 0.2+) | 2004 01 31 | 704 | 0.1+ | 0.9+ | | | | |

**(137632)∗ 1999 WG$_2$**

Discovered 1999 Nov. 26 by E. Meyer at Linz.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.61490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28183346 | $\omega$ | 213.66549 | | +0.92056019 | −0.39056278 | |
| $a$ | 2.3039569 | $\Omega$ | 169.31988 | | +0.36453716 | +0.85404280 | |
| $e$ | 0.2110794 | $i$ | 1.68394 | | +0.14029114 | +0.34361551 | |
| $P$ | 3.50 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.3− | 0.0 | 2004 01 16 | 691 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.0 |
| 1992 10 01 | 691 | 0.5− | 0.4+ | 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.9+ | 0.4− |
| 1992 10 01 | 691 | 0.1− | 0.0 | 2004 01 16 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 704 | (2.2− | 0.3−) |
| 1999 10 01 | 703 | 0.1+ | 1.1+ | 2004 01 17 | 644 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 1999 10 01 | 703 | 2.0− | 1.0+ | 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 1999 10 01 | 703 | 0.0 | 1.0+ | 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2+ |
| 1999 10 01 | 703 | 1.3+ | 0.4+ | 2004 01 24 | 704 | (1.0+ | 2.4+) | 2006 09 20 | 704 | (2.2− | 0.1+) |
| 1999 10 04 | 704 | 0.3− | 0.0 | 2004 01 24 | 704 | 1.1− | 1.3+ | 2006 09 20 | 704 | 0.0 | 0.3− |
| 1999 10 04 | 704 | 0.6+ | 0.1− | 2004 01 24 | 704 | (1.7− | 0.2−) | 2006 09 20 | 704 | 1.4− | 0.6+ |
| 1999 10 04 | 704 | 0.5+ | 0.3+ | 2004 02 11 | 691 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.6− | 0.2− |
| 1999 10 07 | 704 | 1.5+ | 0.8+ | 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 1999 10 07 | 704 | 0.4− | 1.4+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 1999 10 07 | 704 | 0.9− | 0.1+ | 2004 02 17 | 645 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 1999 10 07 | 704 | 0.6− | 0.6+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.1+ | 0.3− | 2005 05 14 | G96 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.5+ | 0.5− | 2005 05 14 | G96 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.6+ |
| 1999 10 09 | 704 | 0.3− | 0.3− | 2005 05 14 | G96 | 0.5+ | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 1999 10 09 | 704 | 0.2− | 0.1− | 2005 05 14 | G96 | 0.0 | 0.4− | 2006 09 27 | 704 | 0.6− | 0.1+ |
| 1999 10 09 | 704 | 0.3− | 0.2− | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.6− |
| 1999 10 19 | 691 | 0.0 | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.1− | 0.9− |
| 1999 10 19 | 691 | 0.2+ | 0.4− | 2006 07 21 | G96 | 0.6− | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.1− |
| 1999 10 19 | 691 | 0.0 | 0.5− | 2006 07 21 | G96 | 0.5+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.3− |
| 1999 10 31 | 691 | 0.1+ | 0.3− | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.3+ | 0.0 |
| 1999 10 31 | 691 | 0.1+ | 0.3− | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.2− |
| 1999 10 31 | 691 | 0.1+ | 0.2− | 2006 07 22 | G96 | 0.0 | 0.4− | 2006 10 15 | 703 | 0.8− | 0.6− |
| 1999 11 05 | 691 | 0.1+ | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.3− | 2006 10 15 | 703 | 0.5− | 0.4− |
| 1999 11 05 | 691 | 0.1+ | 0.1− | 2006 07 22 | G96 | 0.1− | 0.4− | 2006 10 15 | 703 | 0.4+ | 0.1− |
| 1999 11 05 | 691 | 0.3+ | 0.2− | 2006 07 22 | G96 | 0.6− | 0.1− | 2006 10 15 | 703 | 0.4− | 0.4+ |
| 1999 11 26 | 540 | 1.7+ | 0.0 | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.0 |
| 1999 11 26 | 540 | 0.5− | 0.5+ | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.6− | 0.8− |
| 1999 11 27 | 540 | 1.7+ | 0.9− | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 1999 11 27 | 540 | 0.6+ | 1.5+ | 2006 08 18 | 644 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.4+ | 1.0− |
| 1999 11 27 | 540 | 0.6− | 0.6+ | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 1999 11 27 | 540 | 1.1+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 1999 11 28 | 540 | 0.4− | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1999 11 28 | 540 | 0.7− | 1.5+ | 2006 09 14 | 703 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1999 11 28 | 540 | 0.9+ | 1.2− | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 1999 11 28 | 540 | 0.4− | 1.3− | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 1999 11 30 | 540 | 1.5+ | 1.0− | 2006 09 14 | 703 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 1999 11 30 | 540 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 1999 11 30 | 540 | 0.1− | 0.9− | 2006 09 14 | 703 | 1.2+ | 0.6− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 11 30 | 540 | (2.0− | 2.0−) | 2006 09 14 | 703 | 1.1− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.1+ | 2006 11 06 | 644 | 0.3− | 0.3+ |
| 2003 12 29 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2003 12 29 | 691 | 0.4+ | 0.4+ | 2006 09 17 | 704 | (0.7− | 1.8+) | 2006 11 06 | 644 | 0.2+ | 0.2+ |

**(137633)∗ 1999 WR$_2$**

Discovered 1999 Nov. 26 by M. M. M. Santangelo at Monte Agliale.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.27478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26939459 | $\omega$ | 57.90228 | | +0.89795606 | −0.43976271 | |
| $a$ | 2.3743431 | $\Omega$ | 328.17734 | | +0.39224262 | +0.81710492 | |
| $e$ | 0.1985893 | $i$ | 1.83045 | | +0.19955112 | +0.37275771 | |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.2− | 0.5+ | 1999 12 13 | 703 | 0.7− | 0.2− | 2006 08 21 | 704 | 0.5− | 0.4+ |
| 1997 03 05 | 691 | 0.2− | 0.3+ | 1999 12 13 | 703 | 0.4− | 0.4+ | 2006 08 21 | 704 | 0.7+ | 0.1− |
| 1997 03 05 | 691 | 0.2− | 0.1− | 1999 12 17 | 159 | (0.4− | 2.0+) | 2006 08 25 | 704 | 0.4− | 0.2− |
| 1999 10 06 | 704 | 0.5− | 0.4− | 1999 12 17 | 159 | 0.7+ | 0.7+ | 2006 08 25 | 704 | 0.3+ | 0.0 |
| 1999 10 06 | 704 | 0.3+ | 0.1− | 2003 12 21 | 691 | 0.0 | 0.4+ | 2006 08 25 | 704 | 0.2+ | 0.5+ |
| 1999 10 06 | 704 | 0.0 | 0.1+ | 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 08 25 | 704 | 1.1− | 0.1− |
| 1999 10 06 | 704 | 0.2+ | 0.3+ | 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.2+ | 0.2+ |
| 1999 10 06 | 704 | 1.6+ | 0.7+ | 2003 12 22 | 704 | 1.0+ | 0.7+ | 2006 08 28 | 699 | 0.6− | 0.3+ |
| 1999 11 03 | 704 | 0.3+ | 0.9− | 2003 12 22 | 704 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.3− |
| 1999 11 03 | 704 | 0.1+ | 1.6− | 2003 12 22 | 704 | 0.9+ | 1.2+ | 2006 08 28 | 699 | 0.1+ | 0.5+ |
| 1999 11 03 | 704 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 1.0+ |
| 1999 11 03 | 704 | 0.4+ | 0.8− | 2003 12 27 | 704 | 0.1− | 1.0+ | 2006 08 28 | 703 | 0.8− | 0.4+ |
| 1999 11 03 | 704 | 0.4+ | 1.2− | 2003 12 27 | 704 | (0.3+ | 1.7+) | 2006 08 28 | 703 | 0.3− | 0.6+ |
| 1999 11 09 | 703 | 0.8− | 0.0 | 2003 12 27 | 704 | 0.1− | 1.2+ | 2006 08 28 | 699 | 0.7− | 0.3+ |
| 1999 11 09 | 703 | 0.7− | 0.1+ | 2003 12 27 | 704 | 0.4+ | 1.3+ | 2006 08 28 | 699 | 0.5− | 0.4− |
| 1999 11 09 | 703 | 0.3+ | 1.2− | 2004 01 19 | 699 | (1.9+ | 0.2−) | 2006 08 30 | 704 | 0.2+ | 0.8+ |
| 1999 11 09 | 703 | 0.2− | 0.2+ | 2004 01 19 | 699 | (1.6+ | 1.7+) | 2006 08 30 | 704 | 0.4+ | 0.1+ |
| 1999 11 14 | 704 | 0.2− | 0.2+ | 2004 01 19 | 699 | 0.0 | 0.8+ | 2006 08 30 | 704 | 0.7− | 0.5+ |
| 1999 11 14 | 704 | 0.1+ | 0.4− | 2004 01 19 | 699 | 1.4+ | 1.4+ | 2006 08 30 | 704 | (1.0− | 1.6+) |
| 1999 11 14 | 704 | 0.3+ | 0.3− | 2004 01 19 | 699 | 0.7+ | 0.4+ | 2006 09 01 | 704 | 0.6+ | 0.7+ |
| 1999 11 14 | 704 | 0.6+ | 0.3− | 2004 01 19 | 699 | 0.6+ | 0.0 | 2006 09 01 | 704 | 0.6− | 0.9+ |
| 1999 11 14 | 704 | 0.3+ | 1.0− | 2004 01 19 | 699 | 0.2− | 0.2+ | 2006 09 01 | 704 | 0.2− | 0.5+ |
| 1999 11 16 | 704 | 0.5+ | 0.2− | 2004 01 19 | 699 | 0.5+ | 0.8+ | 2006 09 01 | 704 | 0.7− | 1.2+ |
| 1999 11 16 | 704 | 1.0− | 0.3− | 2004 01 22 | 704 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.7+ |
| 1999 11 16 | 704 | 0.1+ | 0.8− | 2004 01 22 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.4− |
| 1999 11 16 | 704 | 0.3− | 0.2− | 2004 01 22 | 704 | 0.2− | 0.9+ | 2006 09 14 | 703 | 0.1+ | 0.0 |
| 1999 11 26 | 159 | 0.3− | 0.6+ | 2004 01 22 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.2− |
| 1999 11 26 | 159 | 0.7+ | 1.0+ | 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.9+ | 1.0+ |
| 1999 11 26 | 159 | 0.2− | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 0.8+ | 0.0 |
| 1999 11 26 | 159 | 0.3− | 0.8+ | 2004 01 24 | 704 | 0.9+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.5+ |
| 1999 11 26 | 159 | 0.0 | 1.2+ | 2004 01 24 | 704 | 0.2+ | 0.2− | 2006 09 17 | 704 | 1.1− | 0.3+ |
| 1999 11 28 | 159 | 0.7− | 0.0 | 2004 01 24 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.7+ |
| 1999 11 28 | 159 | 0.3− | 0.3− | 2004 01 24 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.1+ |
| 1999 11 28 | 159 | 0.3− | 0.2− | 2004 01 30 | 704 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.4− | 0.2+ |
| 1999 11 28 | 159 | 0.4+ | 0.4+ | 2004 01 30 | 704 | 0.0 | 0.8+ | 2006 09 18 | 699 | 0.6− | 0.3+ |
| 1999 11 28 | 159 | 0.3− | 0.5+ | 2004 01 30 | 704 | 0.9− | 0.6+ | 2006 09 20 | 704 | 0.8+ | 0.4− |
| 1999 11 28 | 159 | 0.1+ | 0.1+ | 2004 02 13 | 691 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.2+ |
| 1999 11 28 | 159 | 0.2− | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.2− |
| 1999 11 28 | 159 | 0.6+ | 0.2+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.4+ |
| 1999 11 28 | 159 | (1.1− | 2.5−) | 2005 04 14 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.2− |
| 1999 11 29 | 159 | 0.3− | 0.2+ | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.0 |
| 1999 11 29 | 159 | 0.3+ | 0.0 | 2005 04 14 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.2− |
| 1999 11 29 | 159 | 0.5− | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.6+ |
| 1999 11 29 | 159 | 1.4+ | 0.1− | 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.3− | 1.0+ |
| 1999 11 29 | 159 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.7+ | 0.9+ |
| 1999 12 05 | 703 | 0.1− | 0.3− | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.1+ | 1.0+ |
| 1999 12 05 | 703 | 0.1+ | 1.4+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.7+ | 0.9− |
| 1999 12 05 | 703 | 1.1− | 0.3− | 2006 08 17 | 644 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.6+ |
| 1999 12 05 | 703 | 0.2− | 0.4+ | 2006 08 18 | 699 | 1.1− | 0.9+ | 2006 11 11 | 703 | 0.8+ | 0.7− |
| 1999 12 06 | 691 | 0.1− | 0.7− | 2006 08 18 | 699 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 1999 12 06 | 691 | 0.1− | 0.5− | 2006 08 18 | 699 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 1.3+ |
| 1999 12 06 | 691 | 0.0 | 0.7− | 2006 08 18 | 699 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 1999 12 08 | 704 | 0.3+ | 0.3− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.0 |
| 1999 12 08 | 704 | 0.6+ | 0.9− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.6− | 0.6− |
| 1999 12 08 | 704 | 1.8+ | 1.0− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.6− | 0.4− |
| 1999 12 08 | 704 | 0.0 | 0.9− | 2006 08 20 | A50 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 1999 12 13 | 159 | 1.6+ | 0.2+ | 2006 08 20 | A50 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 1999 12 13 | 159 | 0.1+ | 1.2+ | 2006 08 21 | 704 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.2+ |
| 1999 12 13 | 703 | 0.4− | 1.2+ | 2006 08 21 | 704 | 0.5− | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 1999 12 13 | 703 | 0.3+ | 0.1+ | 2006 08 21 | 704 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3− |

**(137634)∗ 1999 WF$_5$**

Discovered 1999 Nov. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.72781 | | (2000.0) | | | |
| $n$ | 0.28945174 | $\omega$ | 309.78563 | | +0.96180330 | +0.26247444 |
| $a$ | 2.2633512 | $\Omega$ | 35.19739 | | −0.19124208 | +0.84744124 |
| $e$ | 0.2602422 | $i$ | 7.75002 | | −0.19585934 | +0.46146561 |
| $P$ | 3.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.1+ | 0.5− | 1999 12 07 | 704 | 0.2− | 0.8− | 2006 11 14 | 703 | 0.6− | 0.3− |
| 1999 09 14 | 704 | 0.1− | 0.7− | 2003 12 29 | 704 | 1.0+ | 0.5− | 2006 11 14 | 703 | 0.5+ | 0.5+ |
| 1999 09 14 | 704 | 0.0 | 0.4+ | 2003 12 29 | 704 | 0.4− | 0.7− | 2006 11 15 | 704 | 0.7+ | 0.4+ |
| 1999 09 14 | 704 | 0.0 | 0.2− | 2003 12 29 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.8+ | 0.1− |
| 1999 10 02 | 704 | 0.9− | 0.2+ | 2003 12 29 | 704 | 0.6− | 0.5− | 2006 11 15 | 704 | 1.3+ | 0.2+ |
| 1999 10 02 | 704 | 0.5− | 0.1− | 2005 04 01 | 691 | 0.1+ | 0.6+ | 2006 11 15 | 704 | 0.6+ | 0.4+ |
| 1999 10 02 | 704 | 0.5− | 0.2− | 2005 04 01 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 1999 10 02 | 704 | 0.5− | 0.2+ | 2005 04 01 | 691 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.4− |
| 1999 10 02 | 704 | 0.6− | 0.0 | 2005 04 11 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 1999 10 07 | 704 | 0.1− | 0.2− | 2005 04 11 | 691 | 0.5+ | 0.0 | 2006 11 16 | 704 | 0.9− | 0.5− |
| 1999 10 07 | 704 | 0.4− | 0.9+ | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.7+ | 0.1+ |
| 1999 10 07 | 704 | 0.3− | 1.0+ | 2005 04 18 | 691 | 0.3+ | 1.1+ | 2006 11 16 | 704 | 0.6− | 0.1− |
| 1999 10 07 | 704 | 0.3− | 0.0 | 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 1999 10 07 | 704 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.2− |
| 1999 10 08 | 704 | 0.0 | 0.1+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 1999 10 08 | 704 | 0.1− | 0.0 | 2005 05 08 | 691 | 0.3+ | 0.8+ | 2006 11 17 | 704 | 0.6+ | 0.2− |
| 1999 10 08 | 704 | 0.3− | 0.1− | 2005 05 08 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 1999 10 08 | 704 | 0.2− | 0.1+ | 2006 08 29 | 703 | (5.1− | 4.2−) | 2006 11 17 | 704 | 0.5+ | 0.3− |
| 1999 10 08 | 704 | 0.3+ | 0.1− | 2006 08 29 | 703 | (0.8+ | 1.9+) | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 1999 10 15 | 704 | 0.2+ | 0.9+ | 2006 08 29 | 703 | (4.4− | 1.4−) | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 1999 10 15 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 703 | (2.5− | 0.8+) | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 1999 10 15 | 704 | 0.0 | 0.3+ | 2006 09 16 | 703 | (1.3− | 1.7+) | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.7+ | 0.0 | 2006 09 16 | 703 | 0.4− | 0.7+ | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 1999 10 15 | 704 | 0.7+ | 0.5+ | 2006 09 16 | 703 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 1999 10 30 | 703 | 0.7+ | 0.3− | 2006 09 16 | 703 | 0.7− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.0 |
| 1999 10 30 | 703 | 1.5+ | 0.7+ | 2006 09 27 | 291 | 0.2− | 0.4+ | 2006 11 18 | 704 | (0.9+ | 1.6−) |
| 1999 10 30 | 703 | 1.1− | 0.9+ | 2006 09 27 | 291 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.9− |
| 1999 10 30 | 703 | 0.6+ | 0.1+ | 2006 09 27 | 291 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 1.1− |
| 1999 11 06 | 704 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.5+ | 1.2− |
| 1999 11 06 | 704 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.8− |
| 1999 11 06 | 704 | 0.4+ | 1.5+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.8+ | 1.0− |
| 1999 11 06 | 704 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 1999 11 06 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.8+ | 0.5− |
| 1999 11 12 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 1999 11 12 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.1− | 1.1+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 1999 11 12 | 704 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.0 | 2006 11 22 | 704 | (1.7− | 0.6−) |
| 1999 11 12 | 704 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 1999 11 28 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.3− |
| 1999 11 28 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.5− |
| 1999 11 28 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.8+ | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 1999 11 29 | 691 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.2+ | 0.5+ |
| 1999 11 29 | 691 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.4− | 2006 11 27 | 704 | 0.1+ | 0.4+ |
| 1999 11 29 | 691 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.6− | 0.2+ |
| 1999 12 06 | 691 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.1− | 1.1+ | 2006 11 28 | 704 | 2.5− | 1.3+ |
| 1999 12 06 | 691 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.2− | 0.9+ | 2006 11 28 | 704 | 0.3+ | 0.2+ |
| 1999 12 06 | 691 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.3+ | 0.8+ | 2006 11 28 | 704 | 0.3− | 0.1− |
| 1999 12 07 | 704 | 0.7+ | 0.0 | 2006 11 14 | 703 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.8− | 0.8− |
| 1999 12 07 | 704 | 0.7− | 0.7− | 2006 11 14 | 703 | 0.8− | 0.1− | 2006 11 28 | 704 | 1.1− | 0.1+ |

**(137635)∗ 1999 WD$_8$**

Discovered 1999 Nov. 28 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.63944 | | (2000.0) | | | |
| $n$ | 0.27464330 | $\omega$ | 28.81679 | | −0.23267821 | −0.96829527 |
| $a$ | 2.3439952 | $\Omega$ | 74.75994 | | +0.87326083 | −0.24915629 |
| $e$ | 0.1789105 | $i$ | 5.40680 | | +0.42810791 | −0.01803932 |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 0.3+ | 0.4− | 2004 01 29 | 703 | 0.6+ | 0.5+ | 2004 03 18 | 703 | 0.0 | 0.5− |
| 1999 11 15 | 704 | 0.4+ | 0.6− | 2004 01 29 | 703 | 0.6+ | 0.1+ | 2004 03 18 | 703 | 0.5+ | 0.3− |
| 1999 11 15 | 704 | 0.9− | 1.0− | 2004 01 30 | 704 | 1.0− | 0.8− | 2004 03 23 | 704 | 0.8+ | 0.5+ |
| 1999 11 15 | 704 | 0.9− | 0.2− | 2004 01 30 | 704 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.0 | 0.3+ |
| 1999 11 28 | 049 | (2.1+ | 0.0 ) | 2004 01 30 | 704 | 0.2− | 0.8+ | 2004 03 23 | 704 | 0.1+ | 1.1+ |
| 1999 11 28 | 049 | (2.4+ | 0.3−) | 2004 01 30 | 704 | (0.8+ | 1.6+) | 2004 03 23 | 704 | 0.4+ | 0.5+ |
| 1999 11 28 | 049 | (2.5+ | 0.3−) | 2004 01 30 | 704 | 0.3− | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.2+ |
| 1999 11 29 | 049 | 1.4+ | 0.2+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 1.3+ |
| 1999 11 30 | 049 | 1.2+ | 0.4+ | 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | (0.5− | 2.0−) |
| 1999 11 30 | 049 | 1.5+ | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 1.2+ |
| 1999 12 07 | 704 | 0.4+ | 0.1+ | 2004 02 15 | 049 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.3+ |
| 1999 12 07 | 704 | 0.4+ | 0.2− | 2004 02 15 | 049 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.2+ |
| 1999 12 07 | 704 | 0.1+ | 0.2+ | 2004 02 16 | 049 | 0.1− | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 1999 12 07 | 704 | 0.5− | 0.4− | 2004 02 16 | 704 | 0.3− | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.3+ |
| 1999 12 07 | 691 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.8+ | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 1999 12 07 | 691 | 0.3− | 0.1+ | 2004 02 16 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 1999 12 07 | 691 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 1999 12 08 | 704 | 1.4+ | 1.2− | 2004 02 18 | 608 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 1999 12 08 | 704 | 0.6− | 0.4− | 2004 02 18 | 608 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.7+ |
| 1999 12 08 | 704 | 0.1+ | 0.1+ | 2004 02 18 | 608 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 1999 12 08 | 704 | 0.2− | 0.2+ | 2004 02 20 | 049 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 1.5+ |
| 1999 12 13 | 691 | 0.2+ | 0.2− | 2004 02 20 | 049 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 1999 12 13 | 691 | 0.0 | 0.3− | 2004 02 20 | 049 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 1999 12 13 | 691 | 0.1+ | 0.3− | 2004 02 20 | 049 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2000 01 09 | 691 | 0.4+ | 0.6− | 2004 02 20 | 049 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2000 01 09 | 691 | 0.1+ | 0.7− | 2004 02 20 | 049 | 0.4− | 0.5− | 2006 11 07 | 644 | 0.1− | 0.4+ |
| 2000 01 09 | 691 | 0.2+ | 0.3− | 2004 02 27 | 704 | 0.9+ | 0.1+ | 2006 11 07 | 644 | 0.5− | 0.2+ |
| 2002 08 19 | 644 | 0.6− | 0.0 | 2004 02 27 | 704 | (2.1+ | 0.2+) | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2004 02 27 | 704 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.4+ |
| 2002 08 19 | 644 | 0.2− | 0.4+ | 2004 03 14 | 704 | 0.4− | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.2+ |
| 2003 12 28 | 704 | 0.3+ | 0.6+ | 2004 03 14 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.6− | 0.5+ |
| 2003 12 28 | 704 | 0.5+ | 0.2+ | 2004 03 14 | 704 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2003 12 28 | 704 | 1.1+ | 0.2+ | 2004 03 14 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | (0.1− | 1.6+) |
| 2004 01 29 | 703 | 0.5+ | 0.9+ | 2004 03 18 | 703 | 0.8+ | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2004 01 29 | 703 | 0.8− | 0.5+ | 2004 03 18 | 703 | (1.8− | 1.0+) | 2006 11 20 | 704 | 0.8− | 0.9+ |

**(137636)∗ 1999 WS$_8$ = 1997 AG$_{24}$**

Discovered 1999 Nov. 28 by S. Sposetti at Gnosca.

Id. G. V. Williams (MPC 37241)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.95589 | | (2000.0) | | | |
| $n$ | 0.29536517 | $\omega$ | 230.98878 | | +0.98849252 | +0.12539540 |
| $a$ | 2.2330401 | $\Omega$ | 121.65437 | | −0.08861388 | +0.93331591 |
| $e$ | 0.1386863 | $i$ | 5.70434 | | −0.12259736 | +0.33644823 |
| $P$ | 3.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.2+ | 0.3− | 1999 12 07 | 143 | 0.4+ | 0.9+ | 2002 10 04 | 704 | 1.1− | 0.1+ |
| 1997 01 09 | 691 | 0.3+ | 0.1+ | 1999 12 07 | 143 | 0.7+ | 0.2− | 2002 10 04 | 704 | 1.3− | 0.4− |
| 1997 01 11 | 691 | 1.6− | 1.0+ | 2000 01 05 | 704 | 0.5+ | 0.5− | 2002 10 04 | 704 | (1.9− | 0.6−) |
| 1997 01 11 | 691 | (2.3− | 1.0+) | 2000 01 05 | 704 | 1.1+ | 1.6− | 2002 10 05 | 704 | (0.7+ | 1.6+) |
| 1997 01 11 | 691 | 1.6− | 0.8+ | 2000 01 05 | 704 | (2.6+ | 0.5−) | 2002 10 05 | 704 | (1.6+ | 0.4+) |
| 1997 01 14 | 599 | 0.4− | 0.7− | 2000 01 05 | 704 | 0.7+ | 0.4+ | 2002 10 05 | 704 | 1.4+ | 0.6+ |
| 1997 01 14 | 599 | 0.9+ | 1.5− | 2001 03 23 | 143 | (2.1+ | 2.0+) | 2002 10 05 | 704 | 0.9+ | 1.1+ |
| 1997 01 14 | 910 | 0.8+ | 0.0 | 2001 03 23 | 143 | (3.9+ | 1.4+) | 2002 10 05 | 704 | (1.7+ | 0.6+) |
| 1997 01 14 | 910 | 0.7+ | 0.2− | 2001 03 26 | 704 | 1.1+ | 0.1+ | 2002 10 10 | 699 | 0.1− | 0.8+ |
| 1997 01 14 | 910 | 0.9+ | 0.4− | 2001 03 26 | 704 | 0.4− | 0.1+ | 2002 10 10 | 699 | 0.2− | 0.5+ |
| 1997 01 15 | 599 | 0.5+ | 0.0 | 2001 03 26 | 704 | 0.2+ | 0.3+ | 2002 10 10 | 699 | 0.4+ | 0.5+ |
| 1997 01 15 | 599 | 0.8+ | 0.1− | 2001 03 26 | 704 | 0.9+ | 1.3+ | 2002 10 10 | 699 | 0.3+ | 0.5+ |
| 1997 01 16 | 599 | 0.9+ | 0.3− | 2002 08 12 | 704 | 0.1− | 1.4+ | 2004 02 23 | 704 | 0.5+ | 1.1+ |
| 1997 01 16 | 599 | 1.0+ | 0.5− | 2002 08 12 | 704 | 0.2− | 1.3+ | 2004 02 23 | 704 | 0.3+ | 0.9+ |
| 1999 11 04 | 704 | 1.2+ | 0.8− | 2002 08 12 | 704 | 0.1+ | 0.9+ | 2004 02 23 | 704 | 0.3+ | 0.7+ |
| 1999 11 04 | 704 | 0.1− | 0.5− | 2002 08 31 | 699 | 0.6− | 1.2+ | 2004 02 23 | 704 | 0.1+ | 0.6+ |
| 1999 11 04 | 704 | 0.0 | 0.1+ | 2002 08 31 | 699 | 0.0 | 0.9+ | 2004 02 23 | 704 | 1.2+ | 1.0+ |
| 1999 11 04 | 704 | 1.1− | 1.0+ | 2002 08 31 | 699 | 0.1+ | 0.6+ | 2004 03 20 | 704 | (1.8+ | 1.8+) |
| 1999 11 28 | 143 | 0.2− | 0.1− | 2002 08 31 | 699 | 0.3− | 1.3+ | 2004 03 20 | 704 | (1.0+ | 1.5+) |
| 1999 11 28 | 143 | 0.0 | 1.4+ | 2002 09 16 | 644 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 1.3+ | 1.0+ |
| 1999 11 28 | 143 | 1.0− | 0.1− | 2002 09 16 | 644 | 0.2+ | 0.2+ | 2004 03 20 | 704 | (0.9+ | 1.9+) |
| 1999 11 29 | 143 | 0.1− | 0.7− | 2002 09 16 | 644 | 0.0 | 0.3+ | 2004 03 20 | 704 | (1.0+ | 1.8+) |
| 1999 11 29 | 143 | 0.4− | 0.3+ | 2002 09 28 | 608 | 1.2− | 1.3− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 1999 11 30 | 143 | 0.0 | 0.1− | 2002 09 28 | 608 | 1.3− | 1.2− | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 1999 11 30 | 143 | 0.1− | 0.5+ | 2002 09 28 | 608 | (1.6− | 0.9−) | 2006 11 18 | G96 | 0.3− | 0.2+ |
| 1999 12 06 | 704 | 0.5+ | 0.1+ | 2002 10 02 | 608 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.5− | 0.2+ |
| 1999 12 06 | 704 | 1.0+ | 0.4+ | 2002 10 02 | 608 | 0.0 | 0.6− | 2006 11 20 | G96 | 0.2− | 0.3− |
| 1999 12 06 | 704 | 1.8+ | 1.6− | 2002 10 02 | 608 | 0.1− | 0.8− | 2006 11 20 | G96 | 0.4− | 0.1+ |
| 1999 12 06 | 704 | 1.5+ | 0.1+ | 2002 10 04 | 704 | 1.4− | 0.7− | 2006 11 20 | G96 | 0.5− | 0.2+ |
| 1999 12 07 | 143 | 0.0 | 0.1− | 2002 10 04 | 704 | (1.7− | 0.1+) | 2006 11 20 | G96 | 0.2− | 0.2+ |

**(137637)∗ 1999 WS$_{10}$ = 2004 AO$_9$**

Discovered 1999 Nov. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 55995)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 231.50473 | | (2000.0) | | | |
| $n$ | 0.27825920 | $\omega$ | 307.63428 | | −0.99613048 | +0.00282697 |
| $a$ | 2.3236446 | $\Omega$ | 232.69790 | | +0.02677406 | −0.94221241 |
| $e$ | 0.1614722 | $i$ | 6.34007 | | −0.08370908 | −0.33500416 |
| $P$ | 3.54 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.0 | 0.1+ | 2004 01 23 | 699 | 0.7− | 0.2+ | 2005 07 30 | 644 | 0.1− | 0.3+ |
| 1999 11 28 | 691 | 0.1− | 0.0 | 2004 01 23 | 699 | 0.3+ | 1.2+ | 2005 07 30 | 644 | 0.1+ | 0.5+ |
| 1999 11 28 | 691 | 0.2+ | 0.4+ | 2004 01 27 | 699 | 0.6− | 0.4+ | 2005 07 30 | 644 | 0.1− | 0.5+ |
| 1999 12 02 | 691 | 0.5− | 0.2− | 2004 01 27 | 699 | 0.5− | 0.5− | 2005 07 30 | 644 | 0.0 | 0.3+ |
| 1999 12 02 | 691 | 0.5+ | 0.1+ | 2004 01 27 | 699 | 0.7+ | 0.5− | 2006 10 13 | 691 | 0.1− | 0.5+ |
| 1999 12 02 | 691 | 0.4+ | 0.6− | 2004 01 27 | 699 | 0.1− | 0.7+ | 2006 10 13 | 691 | 0.2+ | 0.6+ |
| 1999 12 03 | 691 | 0.2− | 0.3− | 2004 01 29 | 704 | 0.2− | 0.2+ | 2006 10 13 | 691 | 0.4− | 0.5+ |
| 1999 12 03 | 691 | 0.1− | 0.1+ | 2004 01 29 | 704 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.3− | 0.5+ |
| 1999 12 03 | 691 | 0.0 | 0.3− | 2004 01 29 | 704 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 1999 12 04 | 691 | 0.1+ | 0.6− | 2004 01 29 | 704 | 0.2+ | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 1999 12 04 | 691 | 0.0 | 0.7− | 2004 02 01 | 608 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.2− | 0.1− |
| 1999 12 04 | 691 | 0.1+ | 0.1+ | 2004 02 01 | 608 | 1.0+ | 0.0 | 2006 11 11 | G96 | 0.5− | 0.1− |
| 1999 12 05 | 691 | 0.1+ | 0.6− | 2004 02 01 | 608 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.4− | 0.2+ |
| 1999 12 05 | 691 | 0.1− | 0.5− | 2004 02 11 | 644 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.0 |
| 1999 12 05 | 691 | 0.1− | 0.7− | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 1999 12 07 | 691 | 0.0 | 0.0 | 2004 02 11 | 644 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 1999 12 07 | 691 | 0.2− | 0.0 | 2004 02 18 | 704 | 0.0 | 0.7+ | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 1999 12 07 | 691 | 0.2− | 0.2− | 2004 02 18 | 704 | 0.2− | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 1999 12 12 | 691 | 0.0 | 0.3+ | 2004 02 18 | 704 | 0.6+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.5+ |
| 1999 12 12 | 691 | 0.1+ | 0.4− | 2004 02 18 | 704 | 0.4+ | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.5+ |
| 1999 12 12 | 691 | 0.5+ | 0.1− | 2004 02 18 | 704 | 0.1− | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.6+ |
| 2004 01 14 | 644 | 0.1− | 0.2+ | 2004 03 11 | 644 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2004 01 14 | 644 | 0.1− | 0.3+ | 2004 03 11 | 644 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2004 01 14 | 644 | 0.3− | 0.0 | 2004 03 11 | 644 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2004 01 18 | 644 | 0.1+ | 0.5+ | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2004 01 18 | 644 | 0.3+ | 0.5+ | 2005 07 04 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2004 01 18 | 644 | 0.2+ | 0.5+ | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.1+ |
| 2004 01 23 | 699 | 0.4+ | 0.1+ | 2005 07 30 | 644 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2004 01 23 | 699 | 0.0 | 0.7+ | 2005 07 30 | 644 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.1− |

**(137638)∗ 1999 WS$_{11}$**

Discovered 1999 Nov. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.66952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29358106 | $\omega$ | 303.14872 | | +0.92440740 | +0.37874796 | |
| $a$ | 2.2420779 | $\Omega$ | 34.65537 | | −0.31829462 | +0.83100700 | |
| $e$ | 0.1555863 | $i$ | 4.53437 | | −0.21014161 | +0.40740317 | |
| $P$ | 3.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 703 | 0.1+ | 0.4+ | 1999 11 13 | 691 | 0.2+ | 0.1− | 2005 05 13 | 704 | 0.4+ | 0.9+ | |
| 1999 10 02 | 703 | 0.3− | 0.3+ | 1999 11 13 | 691 | 0.2+ | 0.0 | 2005 05 16 | G96 | 0.0 | 0.0 | |
| 1999 10 02 | 703 | 0.7− | 1.3+ | 1999 11 13 | 691 | 0.2+ | 0.2− | 2005 05 16 | G96 | 0.1− | 0.2− | |
| 1999 10 02 | 703 | 0.1− | 0.6+ | 1999 11 28 | 691 | 0.1+ | 0.1+ | 2005 05 16 | G96 | 0.1+ | 0.1− | |
| 1999 10 03 | 699 | 1.6+ | 0.1+ | 1999 11 28 | 691 | 0.1− | 0.2+ | 2005 05 16 | G96 | 0.0 | 0.0 | |
| 1999 10 03 | 699 | 0.1− | 1.7+ | 1999 11 28 | 691 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | |
| 1999 10 03 | 699 | 0.8− | 0.1− | 1999 12 03 | 691 | 1.0− | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.3+ | |
| 1999 10 04 | 704 | 0.4− | 0.8+ | 1999 12 03 | 691 | 1.0− | 0.3+ | 2005 05 19 | 644 | 0.0 | 0.0 | |
| 1999 10 04 | 704 | 1.0+ | 0.7+ | 1999 12 03 | 691 | 0.5− | 0.1+ | 2005 05 30 | 699 | 0.2+ | 0.3+ | |
| 1999 10 04 | 704 | 0.2+ | 0.5− | 2002 06 18 | 644 | (1.0+ | 1.9−) | 2005 05 30 | 699 | (2.1+ | 1.2+) | |
| 1999 10 07 | 704 | 0.7+ | 0.2− | 2002 06 18 | 644 | 0.0 | 0.6− | 2005 05 30 | 699 | 0.5− | 1.4+ | |
| 1999 10 07 | 704 | 0.6+ | 0.3− | 2002 06 18 | 644 | 0.3− | 0.2− | 2005 05 30 | 699 | 0.5− | 0.5+ | |
| 1999 10 07 | 704 | 0.2− | 0.3− | 2003 12 18 | 704 | 0.4+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.2+ | |
| 1999 10 07 | 704 | 0.5+ | 0.2+ | 2003 12 18 | 704 | 0.4+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.2+ | |
| 1999 10 07 | 704 | 0.4+ | 0.1+ | 2003 12 18 | 704 | 0.7− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ | |
| 1999 10 09 | 704 | 0.1+ | 0.6− | 2003 12 28 | 704 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.8− | |
| 1999 10 09 | 704 | 0.4+ | 0.2− | 2003 12 28 | 704 | 1.3+ | 0.2+ | 2006 11 14 | 703 | 0.1− | 0.4+ | |
| 1999 10 09 | 704 | 0.0 | 0.2− | 2003 12 28 | 704 | 0.5− | 0.7+ | 2006 11 14 | 703 | 0.1− | 0.5− | |
| 1999 10 09 | 704 | 0.4+ | 0.1− | 2003 12 28 | 704 | 1.3− | 0.1− | 2006 11 14 | 703 | 0.4+ | 0.1+ | |
| 1999 10 09 | 704 | 0.2− | 0.2− | 2004 01 16 | 703 | 1.0− | 0.2− | 2006 11 15 | 704 | 0.7− | 0.3+ | |
| 1999 10 13 | 704 | 0.3− | 0.0 | 2004 01 16 | 703 | (1.6− | 0.3+) | 2006 11 15 | 704 | 0.3− | 0.2− | |
| 1999 10 13 | 704 | 0.6− | 0.1− | 2004 01 16 | 703 | 1.0− | 0.8+ | 2006 11 15 | 704 | 0.8− | 0.9+ | |
| 1999 10 13 | 704 | 0.4− | 0.2+ | 2004 01 16 | 703 | 1.4− | 0.8+ | 2006 11 15 | 704 | 0.6− | 0.7− | |
| 1999 10 13 | 704 | 0.3− | 0.5− | 2004 01 18 | 691 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.0 | 0.0 | |
| 1999 10 13 | 704 | 0.4− | 0.1− | 2004 01 18 | 691 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.0 | |
| 1999 10 15 | 704 | 0.6− | 0.3+ | 2004 01 18 | 691 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.6− | 0.1− | |
| 1999 10 15 | 704 | 0.3− | 0.1+ | 2004 01 26 | 699 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.6− | |
| 1999 10 15 | 704 | 0.2+ | 0.0 | 2004 01 26 | 699 | (2.1− | 0.2+) | 2006 11 19 | 704 | 0.8− | 0.5− | |
| 1999 10 15 | 704 | 0.7− | 0.1+ | 2004 01 26 | 699 | 0.4+ | 0.5− | 2006 11 21 | 691 | 0.0 | 0.2+ | |
| 1999 10 15 | 704 | 0.4− | 0.2+ | 2004 01 26 | 699 | 0.1+ | 0.4− | 2006 11 21 | 691 | 0.1+ | 0.1+ | |
| 1999 10 19 | 691 | 0.2+ | 0.0 | 2005 05 04 | E12 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.3+ | |
| 1999 10 19 | 691 | 0.2+ | 0.2− | 2005 05 04 | E12 | 0.0 | 0.2+ | 2006 11 22 | 704 | (0.2− | 3.0+) | |
| 1999 10 19 | 691 | 0.3+ | 0.1− | 2005 05 04 | E12 | 0.8+ | 0.5+ | 2006 11 22 | 704 | (0.5− | 2.2+) | |
| 1999 11 01 | 691 | 0.0 | 0.2− | 2005 05 04 | E12 | 0.9+ | 0.6+ | 2006 11 22 | 704 | (0.1+ | 3.5+) | |
| 1999 11 01 | 691 | 0.1+ | 0.1− | 2005 05 07 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | (0.2+ | 2.7+) | |
| 1999 11 01 | 691 | 0.0 | 0.2− | 2005 05 07 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | (0.4+ | 2.9+) | |
| 1999 11 06 | 704 | 0.5+ | 0.6+ | 2005 05 07 | 691 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.4+ | 0.1− | |
| 1999 11 06 | 704 | 0.1− | 0.7+ | 2005 05 08 | E12 | 0.2+ | 0.1− | 2006 11 23 | 703 | 0.1+ | 0.4+ | |
| 1999 11 06 | 704 | 0.5− | 0.2− | 2005 05 08 | E12 | 0.7− | 0.1+ | 2006 11 23 | 703 | 0.1− | 0.8+ | |
| 1999 11 06 | 704 | 0.0 | 0.4+ | 2005 05 09 | 704 | 0.2+ | 0.9+ | 2006 11 23 | 703 | 0.7+ | 0.1+ | |
| 1999 11 06 | 704 | 0.0 | 0.3+ | 2005 05 09 | 704 | 1.4+ | 0.2− | 2006 11 25 | 691 | 0.1− | 0.4+ | |
| 1999 11 09 | 704 | 0.3+ | 0.3+ | 2005 05 09 | 704 | 0.6+ | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.0 | |
| 1999 11 09 | 704 | 0.2+ | 0.7+ | 2005 05 10 | 704 | 0.3− | 0.4− | 2006 11 25 | 691 | 0.1− | 0.1+ | |
| 1999 11 09 | 704 | 0.5+ | 0.6+ | 2005 05 10 | 704 | 0.1+ | 0.6+ | 2006 11 27 | 704 | 0.0 | 0.2+ | |
| 1999 11 09 | 704 | 0.6− | 0.3+ | 2005 05 10 | 704 | 0.4− | 0.6+ | 2006 11 27 | 704 | 0.0 | 0.8+ | |
| 1999 11 09 | 691 | 0.1− | 0.4− | 2005 05 10 | 704 | 1.0+ | 0.8+ | 2006 11 27 | 704 | 0.4+ | 0.0 | |
| 1999 11 09 | 691 | 0.1+ | 0.3− | 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 11 27 | 704 | 0.4+ | 0.5+ | |
| 1999 11 09 | 691 | 0.1+ | 0.3− | 2005 05 10 | G96 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.0 | 0.3+ | |
| 1999 11 12 | 704 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.3+ | 0.1− | 2006 11 27 | 704 | 0.1− | 1.0+ | |
| 1999 11 12 | 704 | 0.3+ | 0.7− | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 11 30 | A24 | 0.1+ | 0.6+ | |
| 1999 11 12 | 704 | 0.7+ | 0.8+ | 2005 05 13 | 704 | 0.6+ | 0.5+ | 2006 11 30 | A24 | 1.1− | 0.6− | |
| 1999 11 12 | 704 | 0.1+ | 0.4− | 2005 05 13 | 704 | 0.3+ | 0.7+ | | | | | |
| 1999 11 12 | 704 | 0.3− | 0.3+ | 2005 05 13 | 704 | 0.6+ | 0.8+ | | | | | |

**(137639)∗ 1999 WC$_{12}$**

Discovered 1999 Nov. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.93653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27539732 | $\omega$ | 233.26818 | | +0.77779989 | +0.62629472 | |
| $a$ | 2.3397147 | $\Omega$ | 87.89328 | | −0.55851394 | +0.72722684 | |
| $e$ | 0.2365024 | $i$ | 3.02564 | | −0.28825251 | +0.28088441 | |
| $P$ | 3.58 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.2+ | 0.5− | 2002 08 18 | 644 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ | |
| 1999 11 28 | 691 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | |
| 1999 11 28 | 691 | 0.2+ | 0.4− | 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ | |
| 1999 12 03 | 691 | 0.4− | 0.0 | 2002 08 29 | 644 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1− | |
| 1999 12 03 | 691 | 0.3− | 0.3− | 2005 04 12 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 1999 12 03 | 691 | 0.6+ | 0.6− | 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2− | |
| 2002 08 08 | 644 | 0.8− | 0.1− | 2005 04 12 | 691 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 | |
| 2002 08 08 | 644 | 0.0 | 0.1− | 2005 05 11 | G96 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.4− | |
| 2002 08 08 | 644 | 0.4− | 0.1+ | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.0 | |
| 2002 08 13 | 704 | 0.3+ | 0.3− | 2005 05 11 | G96 | 0.0 | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.2− | |
| 2002 08 13 | 704 | 0.1− | 0.2− | 2005 05 11 | G96 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.2− | |
| 2002 08 13 | 704 | 0.6+ | 0.8− | 2006 10 12 | 691 | 0.3− | 0.9+ | 2006 11 17 | 703 | 0.3+ | 0.5− | |
| 2002 08 13 | 704 | 0.2+ | 0.6− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.1− | |
| 2002 08 13 | 704 | 0.0 | 0.9− | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.4+ | 1.2− | |
| 2002 08 18 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 1.1+ | 0.5+ | |
| 2002 08 18 | 644 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.4+ | | | | | |

**(137640)∗ 1999 WW$_{12}$**

Discovered 1999 Nov. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.12264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27999576 | $\omega$ | 112.58262 | | −0.94567036 | +0.31983293 | |
| $a$ | 2.3140270 | $\Omega$ | 86.10998 | | −0.31565397 | −0.86009893 | |
| $e$ | 0.1655755 | $i$ | 3.35765 | | −0.07791117 | −0.39741255 | |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.5+ | 1.2− | 2001 05 29 | 691 | 0.7+ | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.1+ | |
| 1999 11 12 | 704 | 0.2+ | 0.4− | 2001 05 29 | 691 | 0.1+ | 0.6+ | 2004 02 13 | 691 | 0.3− | 0.2− | |
| 1999 11 12 | 704 | 0.3− | 0.8− | 2001 05 29 | 691 | 0.2+ | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.2+ | |
| 1999 11 12 | 704 | 0.8− | 0.9+ | 2003 12 21 | 691 | 0.2+ | 0.1− | 2004 02 15 | 704 | 0.6− | 0.2− | |
| 1999 11 15 | 704 | 0.4+ | 0.2− | 2003 12 21 | 691 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.6− | 0.3− | |
| 1999 11 15 | 704 | 0.0 | 0.4+ | 2003 12 21 | 691 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.4+ | 0.7+ | |
| 1999 11 15 | 704 | 0.0 | 0.8+ | 2003 12 22 | 704 | 0.3+ | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.1− | |
| 1999 11 15 | 704 | 0.5+ | 0.3+ | 2003 12 22 | 704 | 0.4+ | 0.5+ | 2004 02 23 | 704 | 0.5− | 0.3+ | |
| 1999 11 15 | 704 | (0.5+ | 2.0+) | 2003 12 22 | 704 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.5− | 0.4+ | |
| 1999 11 15 | 704 | 0.3+ | 0.4+ | 2003 12 22 | 704 | 0.6− | 1.0+ | 2004 02 23 | 704 | 0.2− | 0.8+ | |
| 1999 11 15 | 704 | (2.3+ | 0.2+) | 2003 12 22 | 704 | 0.8− | 0.5+ | 2004 02 23 | 704 | 0.7− | 0.5+ | |
| 1999 11 15 | 704 | 1.9+ | 0.5− | 2003 12 27 | 704 | (0.9+ | 2.8−) | 2004 03 19 | 704 | 0.5+ | 0.3+ | |
| 1999 11 30 | 691 | 0.2+ | 0.2− | 2003 12 27 | 704 | 0.1+ | 1.2− | 2004 03 19 | 704 | 0.2+ | 0.0 | |
| 1999 11 30 | 691 | 0.2+ | 0.2− | 2003 12 27 | 704 | 0.6+ | 0.3− | 2004 03 19 | 704 | 0.9− | 0.1+ | |
| 1999 11 30 | 691 | 0.1+ | 0.2− | 2003 12 27 | 704 | 0.2− | 1.2− | 2004 03 19 | 704 | 0.2− | 0.4− | |
| 1999 12 03 | 691 | 0.2− | 0.3− | 2003 12 27 | 704 | 0.3+ | 0.5− | 2005 08 01 | E12 | 0.4− | 0.1+ | |
| 1999 12 03 | 691 | 0.5− | 0.0 | 2003 12 29 | 699 | 0.7− | 0.1− | 2005 08 01 | E12 | 0.3− | 0.3− | |
| 1999 12 03 | 691 | 0.1− | 0.0 | 2003 12 29 | 699 | 1.3− | 0.5+ | 2005 08 01 | E12 | 0.9+ | 0.7+ | |
| 1999 12 04 | 691 | 0.0 | 0.5− | 2003 12 29 | 699 | (1.6+ | 0.9+) | 2005 08 01 | E12 | 0.0 | 0.2+ | |
| 1999 12 04 | 691 | 0.3− | 0.9− | 2003 12 29 | 699 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.6+ | |
| 1999 12 04 | 691 | 0.4− | 0.6− | 2004 01 16 | 644 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ | |
| 1999 12 04 | 691 | 0.0 | 0.2− | 2004 01 16 | 644 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.4+ | |
| 1999 12 04 | 691 | 0.3+ | 0.2− | 2004 01 16 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ | |
| 1999 12 04 | 691 | 0.1− | 0.5− | 2004 01 16 | 691 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.3+ | |
| 1999 12 07 | 691 | 0.2+ | 0.1− | 2004 01 16 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.3+ | |
| 1999 12 07 | 691 | 0.0 | 0.1− | 2004 01 16 | 691 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.5+ | |
| 1999 12 07 | 691 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.7+ | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.1+ | |
| 1999 12 12 | 691 | 1.2+ | 0.4− | 2004 01 22 | 704 | 0.7+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.2− | |
| 1999 12 12 | 691 | 1.3+ | 0.5+ | 2004 01 22 | 704 | 0.6+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.0 | |
| 1999 12 12 | 691 | 1.8+ | 0.5+ | 2004 01 22 | 704 | 1.3+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3+ | |
| 1999 12 12 | 691 | 1.3− | 0.0 | 2004 01 22 | 704 | (1.6+ | 0.7+) | 2006 11 10 | 691 | 0.3− | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 691 | 1.2− | 0.3+ | 2004 01 27 | 691 | (1.7+ | 0.4−) | 2006 11 10 | 691 | 0.2− | 0.2+ | | |
| 1999 12 12 | 691 | 0.7− | 0.1− | 2004 01 27 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.4+ | | |
| 2001 05 03 | 608 | 0.4− | 0.6− | 2004 01 27 | 691 | 0.1− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.6+ | | |
| 2001 05 03 | 608 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.4− | 0.4+ | | |
| 2001 05 03 | 608 | 0.4− | 0.3+ | 2004 01 30 | 704 | 0.4+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.3+ | | |
| 2001 05 17 | 704 | 1.2− | 0.7− | 2004 01 30 | 704 | 0.5+ | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.2+ | | |
| 2001 05 17 | 704 | 0.5+ | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.9+ | 2006 11 21 | 691 | 0.3− | 0.3+ | | |
| 2001 05 17 | 704 | 0.9− | 0.2+ | 2004 01 30 | 704 | 0.6− | 1.3+ | | | | | | |
| 2001 05 17 | 704 | 0.1− | 0.2+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | | | | | | |

**(137641)∗ 1999 WE$_{13}$ = 1996 XG$_{29}$**

Discovered 1999 Nov. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 37852)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.20568 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27400285 | $\omega$ | 94.89116 | | +0.91566151 | +0.39910268 | |
| $a$ | 2.3476463 | $\Omega$ | 241.59365 | | −0.38694637 | +0.84307586 | |
| $e$ | 0.1307315 | $i$ | 3.11258 | | −0.10879570 | +0.36047211 | |
| $P$ | 3.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.2+ | 0.2+ | 1999 12 07 | 691 | 0.4+ | 0.3− | 2006 09 18 | 704 | 0.3− | 0.6− | | |
| 1996 12 07 | 691 | 0.1− | 0.6+ | 2002 06 11 | 644 | 0.4− | 0.1+ | 2006 09 18 | 704 | 1.0+ | 0.1− | | |
| 1996 12 07 | 691 | 0.0 | 0.3+ | 2002 06 11 | 644 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.1− | | |
| 1996 12 12 | 691 | 0.4− | 0.1− | 2002 06 11 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.6+ | | |
| 1996 12 12 | 691 | 0.2+ | 0.3+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1− | 0.0 | | |
| 1996 12 12 | 691 | 0.0 | 0.4+ | 2004 01 30 | 691 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.1− | 0.0 | | |
| 1996 12 17 | 691 | 0.6− | 0.3+ | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.4− | 0.5+ | | |
| 1996 12 17 | 691 | 0.2− | 0.5+ | 2005 03 15 | G96 | 0.7− | 0.7+ | 2006 09 19 | 699 | 0.1+ | 0.0 | | |
| 1996 12 17 | 691 | 0.2− | 0.3+ | 2005 03 15 | G96 | 0.3− | 0.2+ | 2006 09 25 | 704 | 1.0+ | 0.7+ | | |
| 1999 10 06 | 704 | 0.1+ | 0.4+ | 2005 03 15 | G96 | 1.0− | 0.5− | 2006 09 25 | 704 | 0.3+ | 0.7+ | | |
| 1999 10 06 | 704 | 0.5− | 0.1+ | 2005 03 15 | G96 | 0.1− | 0.9+ | 2006 09 25 | 704 | 0.2− | 0.3− | | |
| 1999 10 06 | 704 | 0.6+ | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.8+ | | |
| 1999 10 06 | 704 | 0.3+ | 0.0 | 2005 04 17 | 691 | 0.6+ | 0.3+ | 2006 09 25 | 704 | 0.4+ | 0.1+ | | |
| 1999 10 06 | 704 | 1.1+ | 0.2+ | 2005 04 17 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 1999 11 10 | 691 | 0.1− | 0.3− | 2006 09 16 | 644 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.3− | 0.1+ | | |
| 1999 11 10 | 691 | 0.2− | 0.1− | 2006 09 16 | 644 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.2+ | | |
| 1999 11 10 | 691 | 0.0 | 0.3− | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.0 | 0.4+ | | |
| 1999 11 14 | 704 | 0.3+ | 0.6− | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.3+ | 0.1+ | | |
| 1999 11 14 | 704 | 0.4+ | 0.9− | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 09 27 | 699 | 0.6− | 0.3+ | | |
| 1999 11 14 | 704 | 1.9− | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.2+ | 0.5− | | |
| 1999 11 14 | 704 | 0.1+ | 1.7− | 2006 09 17 | 703 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.8− | 1.2+ | | |
| 1999 11 14 | 704 | 0.0 | 0.3− | 2006 09 17 | 291 | 0.1+ | 0.0 | 2006 09 29 | 704 | 1.5− | 1.0+ | | |
| 1999 11 14 | 691 | 0.1+ | 0.0 | 2006 09 17 | 291 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.5+ | | |
| 1999 11 14 | 691 | 0.1+ | 0.1− | 2006 09 17 | 291 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 1999 11 14 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 1999 11 16 | 704 | 0.8− | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.5− | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 1999 11 16 | 704 | 0.0 | 0.5− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.2− | | |
| 1999 11 16 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.4+ | | |
| 1999 11 30 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 1999 11 30 | 691 | 0.3+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.3− | 0.4+ | | |
| 1999 11 30 | 691 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.5− | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 1999 12 04 | 691 | 0.0 | 0.2− | 2006 09 18 | 291 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.0 | | |
| 1999 12 04 | 691 | 0.2− | 0.0 | 2006 09 18 | 291 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 1999 12 04 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 291 | 0.6− | 0.9− | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 1999 12 07 | 691 | 0.5+ | 0.4− | 2006 09 18 | 704 | 0.2− | 0.5+ | | | | | | |
| 1999 12 07 | 691 | 0.4+ | 0.4− | 2006 09 18 | 704 | 0.6− | 0.2+ | | | | | | |

**(137642)∗ 1999 WU$_{14}$ = 1995 SJ$_{24}$**

Discovered 1999 Nov. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 37853)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.38201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27486484 | $\omega$ | 106.80672 | | −0.99737885 | −0.06320710 | |
| $a$ | 2.3427355 | $\Omega$ | 69.58036 | | +0.04328971 | −0.91127106 | |
| $e$ | 0.0867069 | $i$ | 2.15363 | | +0.05797782 | −0.40692740 | |
| $P$ | 3.59 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.0 | 0.0 | 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.2− | | |
| 1995 09 19 | 691 | 1.0+ | 0.1+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.5+ | | |
| 1995 09 19 | 691 | 0.4− | 0.1− | 2003 12 21 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− | | |
| 1995 09 25 | 691 | 0.8− | 0.6+ | 2003 12 21 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 | | |
| 1995 09 25 | 691 | 0.1+ | 0.1+ | 2003 12 21 | 691 | 0.9+ | 0.7− | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 1995 09 25 | 691 | 0.0 | 0.4+ | 2004 01 13 | 691 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.3− | | |
| 1995 09 30 | 691 | 0.1− | 0.4+ | 2004 01 13 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.0 | | |
| 1995 09 30 | 691 | 0.1− | 0.0 | 2004 01 13 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.7− | 0.1+ | | |
| 1995 09 30 | 691 | 0.5− | 0.2+ | 2004 01 22 | 704 | 0.5− | 1.0+ | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 1999 11 17 | 691 | 0.2+ | 0.2− | 2004 01 22 | 704 | 0.6− | 1.2+ | 2006 10 31 | G96 | 0.5+ | 0.1+ | | |
| 1999 11 17 | 691 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 0.1− | 1.3+ | 2006 11 09 | 691 | 0.6+ | 0.3− | | |
| 1999 11 17 | 691 | 0.3+ | 0.1− | 2004 01 22 | 704 | (0.1− | 1.7+) | 2006 11 09 | 691 | 0.1− | 0.5+ | | |
| 1999 11 28 | 691 | 0.5− | 0.3− | 2004 01 22 | 704 | (0.5+ | 1.7+) | 2006 11 09 | 691 | 0.1+ | 0.4+ | | |
| 1999 11 28 | 691 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.4+ | | |
| 1999 11 28 | 691 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 1999 12 05 | 691 | 0.5+ | 0.7− | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3− | | |
| 1999 12 05 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 1999 12 05 | 691 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 11 | 691 | 0.1− | 0.1− | | |
| 2003 12 17 | 691 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.4− | | |
| 2003 12 17 | 691 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1− | 0.4+ | | |
| 2003 12 17 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.3+ | | |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.7+ | 0.5− | 2006 11 13 | 691 | 0.5+ | 0.5− | | |

**(137643)∗ 1999 WC$_{15}$ = 2002 LW$_{52}$**

Discovered 1999 Nov. 29 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 31306)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.81885 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27946941 | $\omega$ | 122.00030 | | +0.81891217 | +0.57383108 | |
| $a$ | 2.3169315 | $\Omega$ | 202.98667 | | −0.53485061 | +0.75670758 | |
| $e$ | 0.2254274 | $i$ | 1.47280 | | −0.20812899 | +0.31322761 | |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 23 | 691 | 0.2+ | 0.0 | 2005 04 02 | G96 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.9+ | 0.4− | | |
| 1992 10 23 | 691 | 0.2− | 0.1+ | 2005 04 02 | G96 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.6+ | | |
| 1992 10 23 | 691 | 0.1− | 0.2+ | 2005 04 02 | G96 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.0 | 0.7+ | | |
| 1999 10 09 | 704 | 0.5+ | 0.9− | 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 09 29 | 704 | 1.3− | 0.1+ | | |
| 1999 10 09 | 704 | 0.1− | 0.3+ | 2005 04 06 | G96 | 0.4− | 0.2− | 2006 10 01 | 704 | 1.5+ | 0.2+ | | |
| 1999 10 09 | 704 | 0.6+ | 0.1+ | 2005 04 06 | G96 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.1− | | |
| 1999 10 09 | 704 | 0.8+ | 0.2− | 2005 04 06 | G96 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.5+ | | |
| 1999 10 09 | 704 | 0.2+ | 0.6+ | 2005 04 06 | G96 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.9+ | | |
| 1999 10 15 | 704 | 1.8+ | 0.6+ | 2006 08 24 | 644 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.3− | 0.3+ | | |
| 1999 10 15 | 704 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.5− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 1999 10 15 | 704 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | | |
| 1999 10 19 | 704 | 0.1+ | 0.6− | 2006 09 17 | 704 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ | | |
| 1999 10 19 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.2+ | | |
| 1999 10 19 | 704 | 0.9− | 1.2+ | 2006 09 17 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 1999 10 19 | 704 | 0.5− | 0.2− | 2006 09 17 | 704 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.4− | 0.1+ | | |
| 1999 10 31 | 557 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.6− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.4− | | |
| 1999 10 31 | 557 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.3− | | |
| 1999 11 29 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2+ | | |
| 1999 11 29 | 691 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.2+ | | |
| 1999 11 29 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 1999 12 05 | 691 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.1− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 1999 12 05 | 691 | 1.0− | 0.7+ | 2006 09 18 | 699 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 1999 12 05 | 691 | 0.5− | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2002 05 18 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.8+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2002 05 18 | 644 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.7+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 06 08 | 291 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2002 06 08 | 291 | 0.5+ | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.9+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 06 08 | 291 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.4− | 0.6− |
| 2002 06 11 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.8− | 0.7− |
| 2002 06 11 | 644 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.5− | 0.0 |
| 2002 06 11 | 644 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.7− |
| 2005 03 12 | 691 | 0.3+ | 0.6+ | 2006 09 27 | 704 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2005 03 12 | 691 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.5− | 0.3− |
| 2005 03 12 | 691 | 0.4+ | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.8− | 0.5− |
| 2005 03 16 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2005 03 16 | 691 | 0.3+ | 0.1− | 2006 09 27 | 704 | 1.0− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2005 03 16 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.6+ | | | | |

**(137644)∗ 1999 WJ$_{15}$**

Discovered 1999 Nov. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.31764 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27357229 | $\omega$ | 71.26056 | | +0.50445076 | +0.86265358 | |
| $a$ | 2.3501089 | $\Omega$ | 229.09086 | | −0.80942662 | +0.45760360 | |
| $e$ | 0.1969791 | $i$ | 2.79514 | | −0.30059603 | +0.21547097 | |
| $P$ | 3.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.5− | 0.2+ | 1999 12 05 | 691 | 0.1+ | 0.5− | 2006 09 21 | 224 | 0.4− | 0.3+ |
| 1998 03 29 | 704 | 0.5− | 1.0− | 1999 12 05 | 691 | 0.1+ | 0.1− | 2006 09 22 | 224 | 0.5− | 0.2+ |
| 1998 03 29 | 704 | (3.0+ | 1.7+) | 2005 03 07 | 704 | 0.6+ | 0.9+ | 2006 09 25 | 704 | 0.5+ | 0.6− |
| 1998 03 29 | 704 | (2.2+ | 2.5+) | 2005 03 07 | 704 | 0.5− | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.3+ |
| 1998 04 22 | 704 | 1.1+ | 0.8+ | 2005 03 07 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 704 | 0.7+ | 0.5− |
| 1998 04 22 | 704 | 0.3− | 1.1− | 2005 03 09 | 704 | 0.8− | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.4+ |
| 1998 04 22 | 704 | (0.3+ | 2.2−) | 2005 03 09 | 704 | 0.6+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 1998 04 22 | 704 | 0.5+ | 1.0− | 2005 03 09 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 1.0+ |
| 1999 11 06 | 691 | 0.1+ | 0.1+ | 2005 03 09 | 704 | (0.1− | 2.8+) | 2006 09 29 | 704 | 0.1− | 0.9+ |
| 1999 11 06 | 691 | 0.1+ | 0.1− | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.4+ |
| 1999 11 06 | 691 | 0.1+ | 0.1+ | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1999 11 09 | 704 | 0.3+ | 0.3− | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.3− |
| 1999 11 09 | 704 | 0.5− | 0.2+ | 2005 03 17 | 703 | 0.9− | 1.1+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1999 11 09 | 704 | 1.0+ | 0.3+ | 2005 03 17 | 703 | 0.5− | 0.9+ | 2006 10 17 | 703 | 1.1− | 1.1+ |
| 1999 11 12 | 704 | 0.5+ | 0.2+ | 2005 03 17 | 703 | 0.2+ | 1.3− | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 1999 11 12 | 704 | 0.7+ | 0.5+ | 2005 03 17 | 703 | (0.1+ | 1.6−) | 2006 10 17 | 703 | 0.1+ | 0.9+ |
| 1999 11 12 | 704 | 0.4+ | 1.4+ | 2006 08 06 | 699 | 0.8− | 0.9+ | 2006 10 17 | 703 | 0.6+ | 0.6− |
| 1999 11 12 | 704 | 0.3+ | 0.4+ | 2006 08 06 | 699 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 1999 11 12 | 704 | 0.2− | 0.6+ | 2006 08 06 | 699 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 1999 11 12 | 691 | 0.0 | 0.2+ | 2006 08 06 | 699 | 0.7+ | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 1999 11 12 | 691 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 1999 11 12 | 691 | 0.0 | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | (0.1+ | 3.9+) | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 16 | 704 | (0.0 | 2.1+) | 2006 09 14 | 703 | 0.3− | 0.6− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 11 16 | 704 | (1.0+ | 2.6+) | 2006 09 14 | 703 | 1.2− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 1999 11 17 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1999 11 17 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 1999 11 17 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.5− | 1.0+ | 2006 10 31 | G96 | 0.5− | 0.3− |
| 1999 11 29 | 691 | 0.1− | 0.5− | 2006 09 18 | 704 | 0.4− | 0.8+ | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 1999 11 29 | 691 | 0.8− | 1.0− | 2006 09 18 | 704 | 0.7+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 1999 11 29 | 691 | 0.5− | 0.3− | 2006 09 18 | 704 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 1999 12 05 | 691 | 0.1− | 0.2− | 2006 09 21 | 224 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.2− |

**(137645)∗ 1999 WZ$_{15}$ = 1998 HG$_{41}$**

Discovered 1999 Nov. 29 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 2190)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.92700 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26840421 | $\omega$ | 232.46190 | | +0.36147066 | +0.92643318 | |
| $a$ | 2.3801802 | $\Omega$ | 59.04440 | | −0.81209805 | +0.36824505 | |
| $e$ | 0.2334127 | $i$ | 7.04430 | | −0.45807829 | +0.07821222 | |
| $P$ | 3.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 1.9+ | 0.1+ | 1999 11 12 | 704 | 1.2− | 0.0 | 2006 09 17 | 699 | 0.2+ | 0.2− |
| 1998 03 25 | 704 | 0.5+ | 0.3+ | 1999 11 12 | 704 | 0.7+ | 0.3− | 2006 09 17 | 699 | 0.0 | 0.6+ |
| 1998 03 25 | 704 | 1.1− | 0.5− | 1999 11 12 | 704 | 1.2+ | 1.2− | 2006 09 17 | 699 | 0.5− | 1.0− |
| 1998 03 25 | 704 | 0.7+ | 0.4+ | 1999 11 29 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.4+ | 0.3+ |
| 1998 04 20 | 704 | 1.7− | 1.3− | 1999 11 29 | 691 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.5+ |
| 1998 04 20 | 704 | 0.1+ | 0.3+ | 1999 11 29 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.1− |
| 1998 04 20 | 704 | 0.2− | 1.1− | 1999 12 06 | 691 | 0.1+ | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.4+ |
| 1998 04 20 | 704 | (5.9− | 0.9−) | 1999 12 06 | 691 | 0.5+ | 0.0 | 2006 09 30 | 608 | 1.1+ | 1.4+ |
| 1998 04 21 | 704 | 0.0 | 0.8− | 1999 12 06 | 691 | 0.0 | 0.1− | 2006 09 30 | 608 | 0.8+ | 1.5+ |
| 1998 04 21 | 704 | (0.5+ | 3.5−) | 1999 12 13 | 691 | 0.1+ | 0.3− | 2006 09 30 | 608 | 0.7+ | 0.4+ |
| 1998 04 21 | 704 | (2.8+ | 1.8−) | 1999 12 13 | 691 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.1− | 0.3− |
| 1998 04 21 | 704 | 1.4− | 0.1− | 1999 12 13 | 691 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 1.1+ | 1.0− | 2005 03 16 | 703 | (2.2+ | 2.1+) | 2006 10 22 | 644 | 0.2− | 0.1− |
| 1998 04 22 | 704 | 1.1− | 1.4− | 2005 03 16 | 703 | 0.4+ | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 1998 04 22 | 704 | 0.9− | 0.7+ | 2005 03 16 | 703 | 0.7− | 0.8− | 2006 10 22 | 644 | 0.4− | 0.2− |
| 1998 04 22 | 704 | 0.6− | 1.9− | 2005 03 16 | 703 | 0.5+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 1998 04 22 | 704 | 0.3− | 0.1+ | 2006 07 31 | E12 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 1998 04 22 | 704 | (3.1− | 0.8+) | 2006 07 31 | E12 | 0.7− | 0.8− | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 1999 10 02 | 691 | 0.0 | 0.0 | 2006 07 31 | E12 | 0.2+ | 0.6− | 2006 10 23 | 644 | 0.3+ | 0.3− |
| 1999 10 02 | 691 | 0.0 | 0.3+ | 2006 07 31 | E12 | 1.0+ | 1.2− | 2006 10 23 | 644 | 0.3− | 0.2− |
| 1999 10 02 | 691 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.3− | 0.1− |
| 1999 10 09 | 691 | 0.2− | 0.3− | 2006 09 14 | 644 | 0.4− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.2− |
| 1999 10 09 | 691 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.1− | 0.3− | | | | |
| 1999 10 09 | 691 | 0.0 | 0.1− | 2006 09 17 | 699 | 0.2− | 0.2− | | | | |

**(137646)∗ 1999 WB$_{16}$**

Discovered 1999 Nov. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.85850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26363282 | $\omega$ | 88.14868 | | −0.95858994 | −0.28215602 | |
| $a$ | 2.4088129 | $\Omega$ | 75.46090 | | +0.24284078 | −0.88071564 | |
| $e$ | 0.1245049 | $i$ | 2.28795 | | +0.14877391 | −0.38043126 | |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 26 | 691 | 0.3+ | 0.7+ | 2003 11 21 | 704 | 0.2− | 0.4+ | 2005 05 30 | E12 | 0.0 | 0.7+ |
| 1998 06 26 | 691 | 0.1+ | 0.0 | 2003 11 21 | 704 | 0.5+ | 0.7+ | 2005 05 30 | E12 | 1.0− | 0.7− |
| 1998 06 26 | 691 | 0.3+ | 0.1+ | 2003 11 21 | 704 | 1.2+ | 0.8+ | 2005 06 13 | G96 | 0.2− | 0.1+ |
| 1999 11 12 | 704 | 0.7+ | 0.8− | 2003 12 18 | 704 | 0.9− | 0.2− | 2005 06 13 | G96 | 0.3− | 0.3+ |
| 1999 11 12 | 704 | 0.9+ | 0.2− | 2003 12 18 | 704 | 0.4− | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.1+ |
| 1999 11 12 | 704 | 0.5− | 0.2− | 2003 12 18 | 704 | 0.3+ | 0.4+ | 2005 06 13 | G96 | 0.5− | 0.2+ |
| 1999 11 12 | 704 | 0.8+ | 1.3− | 2003 12 18 | 704 | 0.1− | 1.2+ | 2006 08 18 | 691 | 0.1+ | 0.2+ |
| 1999 11 29 | 691 | 0.0 | 0.1+ | 2003 12 18 | 704 | 0.8+ | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.0 |
| 1999 11 29 | 691 | 0.2− | 0.2− | 2003 12 21 | 704 | 0.7+ | 0.9+ | 2006 08 18 | 691 | 0.5+ | 0.5− |
| 1999 11 29 | 691 | 0.1− | 0.1− | 2003 12 21 | 704 | (0.4− | 2.0+) | 2006 08 19 | 291 | 0.3− | 0.3+ |
| 1999 12 05 | 691 | 0.1+ | 0.2− | 2003 12 21 | 704 | 0.4+ | 1.1+ | 2006 08 19 | 291 | 0.3− | 0.3+ |
| 1999 12 05 | 691 | 0.1− | 0.4− | 2003 12 21 | 704 | (2.0+ | 2.9+) | 2006 08 19 | 291 | 0.4− | 0.3+ |
| 1999 12 05 | 691 | 0.1+ | 0.0 | 2003 12 24 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.5+ | 0.7− |
| 1999 12 12 | 691 | 0.1+ | 0.5− | 2003 12 24 | 704 | 0.1− | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.5+ |
| 1999 12 12 | 691 | 0.5− | 0.3− | 2003 12 24 | 704 | 1.2− | 0.7− | 2006 09 18 | 703 | 0.4− | 0.9+ |
| 1999 12 12 | 691 | 0.2− | 0.2− | 2003 12 25 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.0 |
| 2002 08 29 | 644 | 0.4− | 0.0 | 2003 12 25 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2003 12 25 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2002 08 29 | 644 | 0.6− | 0.2+ | 2005 05 30 | E12 | (2.9− | 0.8−) | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2003 11 21 | 704 | 1.4+ | 0.6− | 2005 05 30 | E12 | 0.5+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.0 |

**(137647)∗ 1999 WR$_{16}$**

Discovered 1999 Nov. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.79960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28357669 | $\omega$ | 159.32317 | | +0.76927341 | −0.63834307 | |
| $a$ | 2.2945051 | $\Omega$ | 240.37472 | | +0.58172508 | +0.71734388 | |
| $e$ | 0.1594014 | $i$ | 1.78910 | | +0.26422404 | +0.27916999 | |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 1999 10 06 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1− |
| 1999 10 06 | 704 | 0.5+ | 0.2+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.2− | 0.6+ |
| 1999 10 06 | 704 | 0.1+ | 0.4+ | 2005 04 10 | 695 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.0 | 1.5+ |
| 1999 10 06 | 704 | 0.2+ | 0.2+ | 2005 04 10 | 695 | 0.2− | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.2+ |
| 1999 10 09 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 683 | (0.7+ | 2.9−) | 2006 10 29 | 704 | 1.3+ | 0.2− |
| 1999 10 09 | 704 | 0.4− | 0.5+ | 2006 10 17 | 683 | 1.4+ | 0.8− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 1.2+ | 1.4+ | 2006 10 17 | 683 | 0.5+ | 0.8− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 1999 10 09 | 704 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1999 11 30 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1999 11 30 | 691 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.3+ | 2006 11 10 | 691 | (1.2− | 2.5−) |
| 1999 11 30 | 691 | 0.7− | 0.3− | 2006 10 19 | 683 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.7− | 0.7− |
| 1999 12 06 | 691 | 0.2− | 0.0 | 2006 10 19 | 683 | (0.1+ | 2.0−) | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 1999 12 06 | 691 | 0.3− | 0.4− | 2006 10 19 | 683 | 1.0− | 1.0− | 2006 11 11 | 703 | 0.4+ | 0.5+ |
| 1999 12 06 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 1.0− | 0.6+ |
| 2003 12 29 | 691 | 1.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2003 12 29 | 691 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1− | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2003 12 29 | 691 | 0.2− | 0.3+ | 2006 10 20 | 683 | 0.6+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.2− |
| 2004 01 17 | 644 | 0.0 | 0.4+ | 2006 10 20 | 683 | (0.8+ | 1.7+) | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2004 01 17 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 683 | 0.5− | 1.2+ | 2006 11 17 | 703 | 1.0+ | 0.0 |
| 2004 01 17 | 644 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.6+ | 0.4+ |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.2+ |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 10 22 | 683 | 0.5− | 0.2− | 2006 11 18 | 691 | 1.3+ | 1.8− |
| 2004 01 30 | 704 | 0.6− | 0.3− | 2006 10 22 | 683 | 0.0 | 1.5+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2004 01 30 | 704 | 0.7− | 0.4− | 2006 10 22 | 683 | 0.3+ | 0.1− | | | | |
| 2004 01 30 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 | | | | |

**(137648)∗ 1999 WF$_{19}$**

Discovered 1999 Nov. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.23665 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27714842 | $\omega$ | 175.95513 | | +0.49707230 | −0.86751750 | |
| $a$ | 2.3298490 | $\Omega$ | 244.23752 | | +0.79553837 | +0.46401918 | |
| $e$ | 0.1575024 | $i$ | 1.16016 | | +0.34646475 | +0.17916356 | |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 21 | 704 | 1.5− | 0.9− | 2004 01 23 | 704 | 0.7+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.8− |
| 1999 10 21 | 704 | 1.0− | 0.1− | 2004 01 23 | 704 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 1999 10 21 | 704 | 0.4+ | 0.6− | 2004 01 23 | 704 | 0.2+ | 0.4− | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 1999 10 21 | 704 | 0.1− | 1.3+ | 2004 01 23 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 1999 11 01 | 703 | 0.2+ | 0.1+ | 2004 01 24 | 704 | 0.1− | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1− |
| 1999 11 01 | 703 | 1.0− | 0.4+ | 2004 01 24 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 691 | 0.2− | 0.2− |
| 1999 11 01 | 703 | 1.2− | 0.6− | 2004 01 24 | 704 | 0.9+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2− |
| 1999 11 01 | 703 | 0.6− | 0.7+ | 2004 01 24 | 704 | 0.6+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.3− |
| 1999 11 09 | 704 | 0.4− | 0.3+ | 2004 01 24 | 704 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1− |
| 1999 11 09 | 704 | 0.3− | 0.4− | 2004 01 30 | 704 | 0.1− | 1.4+ | 2006 10 15 | 691 | 0.1+ | 0.2− |
| 1999 11 09 | 704 | 0.4− | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 1999 11 09 | 691 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.9+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 1999 11 09 | 704 | 0.0 | 0.4+ | 2004 01 31 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 1999 11 09 | 691 | 0.1+ | 0.1− | 2004 01 31 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.2− |
| 1999 11 09 | 691 | 0.0 | 0.2− | 2004 01 31 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.0 |
| 1999 11 14 | 704 | 0.1+ | 0.1− | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.2+ |
| 1999 11 14 | 704 | 0.2− | 0.3− | 2004 02 10 | 644 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.6− | 0.6− |
| 1999 11 14 | 704 | 0.3+ | 0.3− | 2004 02 10 | 644 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 11 14 | 704 | 0.1+ | 0.1− | 2004 02 10 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 11 14 | 704 | 0.0 | 0.4− | 2004 02 10 | 644 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 1999 11 15 | 704 | 0.1+ | 0.0 | 2004 02 10 | 644 | 0.3− | 0.6+ | 2006 10 23 | 704 | 0.0 | 0.2+ |
| 1999 11 15 | 704 | 0.4+ | 0.5− | 2004 02 11 | 699 | 0.0 | 1.1− | 2006 10 23 | 704 | 1.2− | 0.7+ |
| 1999 11 15 | 704 | 0.5+ | 0.2+ | 2004 02 11 | 644 | 0.3− | 0.8+ | 2006 10 23 | 704 | 0.4− | 0.1− |
| 1999 11 15 | 704 | 0.5+ | 0.0 | 2004 02 11 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 1999 11 15 | 704 | 0.1+ | 0.5− | 2004 02 11 | 699 | 0.2− | 0.7− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 1999 11 15 | 704 | 0.7+ | 0.1+ | 2004 02 11 | 644 | 0.4− | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 1999 11 15 | 704 | 0.3+ | 0.4− | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 1999 11 15 | 704 | 0.1− | 0.3− | 2004 02 11 | 699 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.4− | 0.2+ |
| 1999 11 15 | 704 | 0.1+ | 0.0 | 2004 02 11 | 699 | 0.1− | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 1999 11 15 | 704 | 0.5+ | 0.1+ | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 1999 11 16 | 704 | 0.8+ | 0.3− | 2004 02 11 | 644 | 0.3− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1999 11 16 | 704 | 0.5+ | 0.4+ | 2004 02 17 | 704 | 0.5− | 1.0+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1999 11 16 | 704 | 1.6+ | 0.6+ | 2004 02 17 | 704 | 1.1+ | 1.1+ | 2006 11 11 | 703 | 0.4− | 0.8− |
| 1999 11 16 | 704 | 0.8− | 0.8− | 2004 02 17 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.5+ | 0.3− |
| 1999 11 16 | 704 | 0.3+ | 0.1+ | 2004 02 17 | 704 | (0.6+ | 1.7+) | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 1999 11 30 | 691 | 0.1+ | 0.1− | 2004 02 26 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.3− | 1.5+ |
| 1999 11 30 | 691 | 0.1+ | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 1999 11 30 | 691 | 0.0 | 0.3− | 2004 02 26 | 704 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 1999 12 07 | 691 | 0.0 | 0.3− | 2004 02 26 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 1999 12 07 | 691 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 1999 12 07 | 704 | 0.7+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 1999 12 07 | 691 | 0.0 | 0.5− | 2006 09 15 | 691 | 0.5− | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 1999 12 07 | 704 | 0.7+ | 0.4− | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 0.1− | 1.1− | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 1999 12 07 | 704 | 0.9+ | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2002 08 06 | 644 | 0.3− | 0.9+ | 2006 09 27 | 704 | 0.8+ | 0.0 | 2006 11 15 | G96 | 0.5− | 0.2− |
| 2002 08 06 | 644 | 0.0 | 0.9+ | 2006 09 27 | 704 | 0.2− | 1.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 08 06 | 644 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.0 | | | | |

**(137649)∗ 1999 WJ$_{20}$ = 1995 TW$_{8}$**

Discovered 1999 Nov. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17095)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.40699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26802654 | $\omega$ | 67.56207 | | +0.58833995 | −0.80853291 | |
| $a$ | 2.3824156 | $\Omega$ | 346.38045 | | +0.72289994 | +0.53225621 | |
| $e$ | 0.1918893 | $i$ | 2.78215 | | +0.36231448 | +0.25095390 | |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.5+ | 0.1− | 2003 12 21 | 691 | 0.0 | 0.2− | 2004 02 16 | 691 | 0.0 | 0.1+ |
| 1995 09 26 | 691 | 0.6+ | 0.4− | 2003 12 21 | 691 | 0.6+ | 0.2− | 2004 02 16 | 691 | 0.1+ | 0.1+ |
| 1995 09 26 | 691 | 0.6+ | 0.5− | 2003 12 23 | 704 | 0.1+ | 0.6+ | 2004 02 16 | 691 | 0.0 | 0.3+ |
| 1995 10 01 | 691 | 0.2− | 0.2+ | 2003 12 23 | 704 | 0.6− | 0.1− | 2006 08 18 | 644 | 0.2− | 0.6+ |
| 1995 10 01 | 691 | 0.9− | 0.7− | 2003 12 23 | 704 | 0.5− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 1995 10 01 | 691 | 0.1− | 0.1+ | 2003 12 28 | 691 | 0.2− | 0.2− | 2006 08 18 | 644 | 0.3− | 0.7+ |
| 1999 10 13 | 704 | 0.1+ | 0.5− | 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.7+ |
| 1999 10 13 | 704 | 0.4+ | 0.0 | 2003 12 28 | 691 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.5+ |
| 1999 10 13 | 704 | 0.5+ | 0.7+ | 2003 12 29 | 699 | 0.6+ | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.5+ |
| 1999 10 13 | 704 | 0.4+ | 1.0+ | 2003 12 29 | 699 | 0.9− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.1− |
| 1999 10 13 | 704 | 0.3+ | 0.6+ | 2003 12 29 | 699 | 0.6− | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.1− |
| 1999 11 03 | 704 | 0.0 | 1.0− | 2003 12 29 | 699 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.7− |
| 1999 11 03 | 704 | 0.1+ | 0.7− | 2004 01 22 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 703 | 0.9− | 0.5+ |
| 1999 11 03 | 704 | 0.1+ | 0.5− | 2004 01 22 | 704 | 0.6+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 1999 11 16 | 704 | 0.2− | 0.3+ | 2004 01 22 | 704 | 1.1+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1999 11 16 | 704 | 0.7− | 0.8− | 2004 01 22 | 704 | 0.6− | 1.1+ | 2006 09 30 | G96 | 0.3− | 0.2− |
| 1999 11 16 | 704 | 1.0− | 0.3− | 2004 01 22 | 704 | 0.1+ | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.4+ |
| 1999 11 16 | 704 | 0.9+ | 0.7+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.7− |
| 1999 11 17 | 704 | 0.6− | 0.5− | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1999 11 17 | 704 | 0.9− | 0.4+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4+ |
| 1999 11 17 | 704 | 0.9+ | 0.9− | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 1.7− | 1.9+ |
| 1999 11 17 | 704 | 0.4+ | 1.0+ | 2004 02 13 | 691 | 0.0 | 0.3+ | | | | |
| 2003 12 21 | 691 | 0.1− | 0.2− | 2004 02 13 | 691 | 0.1+ | 0.1− | | | | |

**(137650)∗ 1999 WZ$_{24}$ = 2005 KM$_{1}$**

Discovered 1999 Nov. 28 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 84521)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.47008 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27358590 | $\omega$ | 262.29018 | | +0.91213355 | +0.37252231 | |
| $a$ | 2.3500309 | $\Omega$ | 75.71256 | | −0.27057882 | +0.86058391 | |
| $e$ | 0.0594622 | $i$ | 10.16325 | | −0.30789527 | +0.34730744 | |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.0 | 0.0 | 2004 01 16 | 691 | 0.2+ | 0.2− | 2006 09 29 | 699 | 1.0− | 1.3+ |
| 1999 11 28 | 691 | 0.1+ | 0.0 | 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.5− | 0.0 |
| 1999 11 28 | 691 | 0.1+ | 0.3+ | 2005 05 14 | 644 | 0.4+ | 0.1+ | 2006 09 29 | 699 | 0.7+ | 1.1+ |
| 1999 12 07 | 704 | 0.3+ | 0.8− | 2005 05 14 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.7− |
| 1999 12 07 | 704 | 1.1− | 0.4− | 2005 05 14 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 703 | (0.3− | 1.8−) |
| 1999 12 07 | 704 | 0.6+ | 1.9− | 2005 05 16 | G96 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.5− |
| 1999 12 09 | 691 | 0.4− | 0.4− | 2005 05 16 | G96 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.3− |
| 1999 12 09 | 691 | 0.4+ | 0.4− | 2005 05 16 | G96 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.7+ |
| 1999 12 09 | 691 | 0.6+ | 0.2− | 2005 05 16 | G96 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.6+ |
| 2001 03 20 | 699 | 0.2+ | 1.3+ | 2005 05 19 | G96 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.3+ |
| 2001 03 20 | 699 | 0.3− | 0.7+ | 2005 05 19 | G96 | 0.1− | 0.4− | 2006 10 28 | 703 | 1.3− | 0.1+ |
| 2001 03 20 | 699 | (1.7+ | 2.0+) | 2005 05 19 | G96 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.1+ | 0.7+ |
| 2001 03 20 | 699 | 0.2− | 0.4+ | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 10 28 | 703 | 0.5− | 0.8+ |
| 2003 12 23 | 704 | 0.1− | 0.6+ | 2005 06 16 | G96 | 0.5+ | 0.5+ | 2006 10 28 | 703 | 1.0− | 1.0+ |
| 2003 12 23 | 704 | 0.4+ | 0.8+ | 2005 06 16 | G96 | 0.1+ | 0.0 | 2006 11 13 | 703 | 1.5− | 0.5− |
| 2003 12 23 | 704 | 0.3+ | 0.5+ | 2005 06 16 | G96 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.3+ |
| 2003 12 23 | 704 | 0.4+ | 1.2+ | 2005 06 16 | G96 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.1+ | 0.5− |
| 2003 12 23 | 704 | 0.4+ | 0.9+ | 2006 09 19 | 703 | 0.0 | 0.8+ | 2006 11 13 | 703 | (1.9− | 0.8+) |
| 2003 12 28 | 704 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.3+ | 0.9+ | 2006 11 19 | 703 | 0.5− | 0.2+ |
| 2003 12 28 | 704 | 0.5− | 1.1+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.0 |
| 2003 12 28 | 704 | 0.3+ | 1.3+ | 2006 09 19 | 703 | 0.3− | 0.4+ | 2006 11 19 | 703 | 0.3+ | 0.3− |
| 2004 01 16 | 691 | 0.0 | 0.3− | 2006 09 29 | 699 | (1.6− | 1.9+) | 2006 11 19 | 703 | 1.0+ | 0.5− |

**(137651)∗ 1999 WG$_{25}$ = 1999 WY$_{23}$ = 2002 RW$_{79}$**

Discovered 1999 Nov. 29 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (d, *MPO* 12345), G. V. Williams (*MPO* 34820)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.43400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27981993 | $\omega$ | 44.91215 | | −0.01544859 | +0.99976622 | |
| $a$ | 2.3149962 | $\Omega$ | 224.20932 | | −0.92335766 | −0.02006933 | |
| $e$ | 0.1809582 | $i$ | 1.24311 | | −0.38362999 | +0.00804471 | |
| $P$ | 3.52 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 0.8+ | 0.6− | 2002 10 03 | 704 | 0.1− | 0.6+ | 2005 06 04 | 704 | 0.2− | 0.2+ |
| 1998 05 24 | 704 | 0.9− | 0.6+ | 2002 10 03 | 704 | 0.1+ | 0.6+ | 2005 06 06 | 691 | 0.4− | 0.3+ |
| 1998 05 24 | 704 | 1.7+ | 1.7+ | 2002 10 03 | 704 | 1.0− | 0.1− | 2005 06 06 | 691 | 0.3− | 0.1+ |
| 1998 05 24 | 704 | 0.4+ | 1.2+ | 2005 05 04 | G96 | 0.2− | 0.1− | 2005 06 06 | 691 | 0.2− | 0.0 |
| 1998 05 24 | 704 | (2.0− | 0.8−) | 2005 05 04 | G96 | 0.2− | 0.3− | 2005 06 11 | 691 | 0.1− | 0.1− |
| 1999 11 17 | 691 | 0.2+ | 0.1+ | 2005 05 04 | G96 | 0.1+ | 0.2− | 2005 06 11 | 691 | 0.2− | 0.0 |
| 1999 11 17 | 691 | 0.2+ | 0.0 | 2005 05 04 | G96 | 0.1− | 0.1− | 2005 06 11 | 691 | 0.1− | 0.3− |
| 1999 11 17 | 691 | 0.2+ | 0.1− | 2005 05 04 | E12 | 1.1+ | 0.8+ | 2005 06 11 | 691 | 0.1− | 0.1+ |
| 1999 11 29 | 691 | 0.1− | 0.0 | 2005 05 04 | E12 | 0.1− | 0.4+ | 2005 06 11 | 691 | 0.0 | 0.1− |
| 1999 11 29 | 691 | 0.4− | 0.5− | 2005 05 04 | E12 | 0.0 | 0.6− | 2005 06 11 | 691 | 0.3− | 0.1− |
| 1999 11 29 | 691 | 0.3− | 0.1− | 2005 05 04 | E12 | 0.1− | 0.1− | 2005 06 11 | 703 | 1.0− | 0.4+ |
| 1999 12 07 | 691 | 0.4− | 0.2+ | 2005 05 09 | 704 | 0.8− | 0.8− | 2005 06 11 | 703 | 0.9+ | 1.1+ |
| 1999 12 07 | 691 | 0.1− | 0.0 | 2005 05 09 | 704 | 0.1− | 1.2+ | 2005 06 11 | 703 | 0.1+ | 0.6+ |
| 1999 12 07 | 691 | 0.2− | 0.1− | 2005 05 09 | 704 | 0.7− | 0.5+ | 2005 06 11 | 703 | (1.6− | 0.2+) |
| 2002 09 05 | 704 | 0.8+ | 0.0 | 2005 05 09 | 704 | 0.2+ | 0.6− | 2005 06 14 | 291 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2005 05 09 | 704 | 0.1− | 0.2− | 2005 06 14 | 291 | 0.1+ | 0.1− |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2005 05 11 | 644 | 0.2+ | 0.0 | 2005 06 14 | 291 | 0.1+ | 0.1− |
| 2002 09 05 | 645 | 0.1+ | 0.2− | 2005 05 11 | 644 | 0.3+ | 0.0 | 2005 06 15 | 691 | 0.4+ | 0.1+ |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2005 05 11 | 644 | 0.1+ | 0.1+ | 2005 06 15 | 691 | 0.3+ | 0.0 |
| 2002 09 07 | 704 | 0.5+ | 1.0+ | 2005 05 13 | G96 | 0.2− | 0.4− | 2005 06 15 | 691 | 0.3+ | 0.3+ |
| 2002 09 07 | 704 | 0.3− | 0.4+ | 2005 05 13 | G96 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2002 09 07 | 704 | 0.2+ | 0.6− | 2005 05 13 | G96 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | 0.5− | 0.7+ | 2005 05 13 | G96 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.8− |
| 2002 09 11 | 644 | 0.1− | 0.5+ | 2005 05 17 | 704 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2002 09 11 | 644 | 0.1− | 0.5+ | 2005 05 17 | 704 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2002 09 11 | 644 | 0.1+ | 0.5+ | 2005 05 17 | 704 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2005 05 18 | 644 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2005 05 18 | 644 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2005 05 18 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 09 15 | 699 | 0.1+ | 0.3− | 2005 05 18 | E12 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2002 09 15 | 699 | 0.1− | 0.2+ | 2005 05 18 | E12 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.6− |
| 2002 09 15 | 699 | (2.0− | 0.0 ) | 2005 05 18 | E12 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4− | 0.0 |
| 2002 09 15 | 699 | 0.4− | 0.7− | 2005 05 18 | E12 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2002 09 15 | 644 | 0.1+ | 0.7− | 2005 05 21 | 644 | 0.6+ | 0.5− | 2006 11 11 | G96 | 0.5+ | 0.0 |
| 2002 09 15 | 644 | 0.1+ | 0.7− | 2005 05 21 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.2− | 0.9− | 2005 05 21 | 644 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.7+ | 0.7+ |
| 2002 09 16 | 644 | 0.1− | 0.5− | 2005 05 29 | E12 | 0.3− | 0.2− | 2006 11 14 | 691 | 0.4+ | 0.1+ |
| 2002 09 16 | 644 | 0.0 | 0.5− | 2005 05 29 | E12 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.5+ |
| 2002 09 16 | 644 | 0.3− | 0.5− | 2005 05 29 | E12 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.6− | 0.9− |
| 2002 09 17 | 644 | 0.1− | 0.8+ | 2005 05 29 | E12 | 1.1+ | 0.3+ | 2006 11 16 | 703 | (2.7− | 0.8+) |
| 2002 09 17 | 644 | 0.2+ | 0.7+ | 2005 06 04 | 704 | 0.7− | 0.4− | 2006 11 16 | 703 | 0.7+ | 0.4+ |
| 2002 09 17 | 644 | 0.4+ | 0.8+ | 2005 06 04 | 703 | 0.5+ | 0.0 | 2006 11 16 | 703 | 0.8− | 0.9+ |
| 2002 09 18 | 644 | 0.4− | 0.2+ | 2005 06 04 | 703 | 0.2+ | 0.5− | 2006 11 21 | G96 | 0.2− | 0.3+ |
| 2002 09 18 | 644 | 0.1− | 0.2+ | 2005 06 04 | 704 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2002 09 18 | 644 | 0.0 | 0.2+ | 2005 06 04 | 703 | 1.1+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2005 06 04 | 703 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2005 06 04 | 704 | 0.5− | 0.3+ | | | | |

**(137652)∗ 1999 WJ$_{25}$**

Discovered 1999 Nov. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.84654 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27896225 | $\omega$ | 337.75345 | | −0.81416451 | +0.57761965 | |
| $a$ | 2.3197388 | $\Omega$ | 237.66435 | | −0.52163540 | −0.77233580 | |
| $e$ | 0.0966071 | $i$ | 4.01028 | | −0.25501502 | −0.26429711 | |
| $P$ | 3.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 24 | 691 | 0.5− | 0.0 | 2001 03 29 | 608 | 0.7+ | 0.6− | 2006 10 21 | 691 | 0.1+ | 0.3+ |
| 1992 11 24 | 691 | 0.5+ | 0.5− | 2001 03 29 | 608 | 0.6+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 1992 11 24 | 691 | 0.5+ | 0.3− | 2002 09 11 | 644 | 0.4− | 0.6− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 1994 05 02 | 691 | 0.4− | 0.2+ | 2002 09 11 | 644 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.3− | 0.4− |
| 1994 05 02 | 691 | 0.0 | 0.3+ | 2002 09 11 | 644 | 0.2− | 0.5− | 2006 10 31 | G96 | 0.4− | 0.2− |
| 1994 05 02 | 691 | 0.2− | 0.6+ | 2002 09 17 | 644 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 1998 06 26 | 809 | 1.4+ | 0.4+ | 2002 09 17 | 644 | 0.5− | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 1998 06 26 | 809 | 0.8+ | 0.8+ | 2002 09 17 | 644 | 1.0− | 0.8+ | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 1998 06 26 | 809 | 0.2+ | 0.7+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 12 | G96 | (1.8+ | 1.7−) |
| 1999 11 12 | 704 | 0.8− | 1.0− | 2002 10 30 | 645 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.6+ |
| 1999 11 12 | 704 | 0.0 | 0.8− | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 1999 11 12 | 704 | 0.7− | 0.0 | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 0.6− | 0.4+ | 2003 12 22 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.5+ |
| 1999 11 29 | 691 | 0.1+ | 0.3+ | 2003 12 22 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 1999 11 29 | 691 | 0.2+ | 0.2− | 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.3− | 1.4− |
| 1999 11 29 | 691 | 0.4+ | 0.2− | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | (2.0− | 1.1−) |
| 1999 12 07 | 691 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 12 01 | G96 | 1.2− | 0.3− |
| 1999 12 07 | 691 | 0.1+ | 0.1− | 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.5+ |
| 1999 12 07 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.7+ |
| 2001 03 29 | 608 | 0.7+ | 0.5− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.3+ |

**(137653)∗ 1999 XY = 2002 PC$_{55}$**

Discovered 1999 Dec. 2 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPO* 33151)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.28941 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27028328 | $\omega$ | 174.59032 | | +0.02906995 | −0.99654419 | |
| $a$ | 2.3691356 | $\Omega$ | 273.72744 | | +0.91414532 | +0.05799382 | |
| $e$ | 0.2020012 | $i$ | 4.47225 | | +0.40434301 | −0.05946755 | |
| $P$ | 3.65 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.4− | 0.3− | 2002 10 29 | 704 | 0.0 | 0.3− | 2006 08 06 | 699 | 0.3+ | 0.5+ |
| 1999 10 15 | 704 | 0.6− | 1.2− | 2002 10 29 | 704 | 0.1− | 0.0 | 2006 08 06 | 699 | 0.0 | 0.3+ |
| 1999 10 15 | 704 | 0.2− | 0.4− | 2003 10 26 | 699 | 0.5− | 0.5− | 2006 08 24 | 704 | 0.4+ | 0.9+ |
| 1999 10 15 | 704 | 0.7− | 0.7− | 2003 10 26 | 699 | 0.8+ | 0.1+ | 2006 08 24 | 704 | 0.4+ | 1.0+ |
| 1999 11 03 | 704 | 0.0 | 0.6− | 2003 10 26 | 699 | (1.0− | 1.9−) | 2006 08 24 | 704 | 0.8+ | 1.2+ |
| 1999 11 03 | 704 | 0.4− | 0.8− | 2003 10 26 | 699 | 0.4− | 0.0 | 2006 08 24 | 704 | (2.0+ | 1.2+) |
| 1999 11 03 | 704 | 0.2+ | 0.8− | 2003 11 23 | 704 | 1.4+ | 0.6+ | 2006 09 14 | 644 | 0.3− | 0.4+ |
| 1999 11 03 | 704 | 0.5− | 0.5− | 2003 11 23 | 704 | 0.4+ | 0.0 | 2006 09 14 | 644 | 0.5− | 0.4+ |
| 1999 12 02 | 411 | 1.5− | 0.2− | 2003 11 23 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 644 | 0.3− | 0.3+ |
| 1999 12 02 | 411 | 0.6− | 0.1+ | 2003 11 23 | 704 | 0.0 | 0.1− | 2006 09 16 | 703 | 1.4− | 0.1− |
| 1999 12 03 | 411 | 0.1− | 0.5− | 2003 12 13 | 703 | 0.5− | 0.4− | 2006 09 16 | 703 | (1.8− | 0.1−) |
| 1999 12 03 | 411 | 0.9− | 0.1+ | 2003 12 13 | 703 | 1.3− | 1.2+ | 2006 09 18 | 704 | 0.7+ | 0.6+ |
| 1999 12 07 | 946 | 0.2− | 0.7+ | 2003 12 13 | 703 | 0.6− | 0.1− | 2006 09 18 | 704 | 0.6+ | 0.6+ |
| 1999 12 07 | 946 | 0.2− | 0.0 | 2003 12 13 | 703 | 0.0 | 0.8+ | 2006 09 18 | 704 | 0.1− | 0.4− |
| 1999 12 07 | 946 | 0.0 | 0.3+ | 2003 12 21 | 704 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.2− | 1.2+ |
| 1999 12 07 | 704 | 0.3− | 0.1− | 2003 12 21 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 704 | 0.6− | 0.4+ |
| 1999 12 07 | 704 | 0.2− | 0.2+ | 2003 12 21 | 704 | 0.3+ | 0.2− | 2006 09 21 | 704 | 0.4+ | 0.2+ |
| 1999 12 07 | 704 | 0.3− | 0.3+ | 2003 12 21 | 704 | 0.3+ | 0.5+ | 2006 09 21 | 704 | 0.1+ | 0.6+ |
| 1999 12 07 | 704 | 0.3+ | 0.8+ | 2003 12 23 | 704 | (1.7+ | 0.8−) | 2006 09 21 | 704 | 1.1− | 0.1+ |
| 1999 12 07 | 946 | 0.2+ | 0.6+ | 2003 12 23 | 704 | 0.6+ | 0.7+ | 2006 09 22 | 704 | 1.3− | 0.5+ |
| 1999 12 08 | 946 | 0.0 | 0.6+ | 2003 12 23 | 704 | (1.7+ | 0.4−) | 2006 09 22 | 704 | 0.4− | 0.4+ |
| 1999 12 08 | 946 | 1.0− | 0.6+ | 2003 12 23 | 704 | (1.8+ | 0.2−) | 2006 09 22 | 704 | 1.1− | 0.6+ |
| 1999 12 10 | 704 | 0.2− | 0.3− | 2003 12 23 | 704 | 1.1+ | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.0 |
| 1999 12 10 | 704 | 0.5− | 0.6− | 2004 01 23 | 704 | (1.7+ | 1.3+) | 2006 09 25 | 704 | 0.1− | 0.4+ |
| 1999 12 10 | 704 | 0.2− | 0.2+ | 2004 01 23 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.2+ |
| 1999 12 10 | 704 | 0.4− | 0.1− | 2004 01 23 | 704 | 0.2+ | 1.0− | 2006 09 25 | 704 | 0.0 | 0.5+ |
| 1999 12 10 | 704 | 0.0 | 0.3− | 2004 01 28 | 704 | 1.4+ | 0.2+ | 2006 09 25 | 704 | 0.6− | 0.1+ |
| 1999 12 11 | 411 | 0.1− | 1.0− | 2004 01 28 | 704 | 0.7+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 1999 12 11 | 411 | 0.8− | 0.1+ | 2004 01 28 | 704 | 0.8− | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 1999 12 26 | 411 | 0.6+ | 0.3+ | 2004 01 28 | 704 | 0.1+ | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 1999 12 26 | 411 | 0.2+ | 0.6+ | 2004 01 28 | 704 | 0.5− | 0.2− | 2006 09 29 | 704 | 0.6− | 1.0+ |
| 2000 01 03 | 704 | 0.3+ | 0.1− | 2004 02 03 | 608 | 0.8+ | 0.2− | 2006 09 29 | 704 | 0.4+ | 0.5+ |
| 2000 01 03 | 704 | 0.4+ | 0.5− | 2004 02 03 | 608 | 0.5+ | 0.3− | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2000 01 03 | 704 | 0.5+ | 0.8+ | 2004 02 03 | 608 | 0.6+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.4+ |
| 2000 01 03 | 704 | 0.2+ | 0.3− | 2004 02 13 | 644 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.2− |
| 2000 01 03 | 704 | 0.0 | 0.1+ | 2004 02 13 | 644 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.7− | 0.1− |
| 2000 01 04 | 704 | 0.3+ | 0.2+ | 2004 02 13 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.4− |
| 2000 01 04 | 704 | 0.0 | 0.3− | 2004 02 14 | 699 | 0.9− | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.4− |
| 2000 01 04 | 691 | 0.2− | 0.2− | 2004 02 14 | 699 | 0.4− | 0.4+ | 2006 10 04 | 703 | 0.1+ | 0.2− |
| 2000 01 04 | 704 | 0.2+ | 0.1− | 2004 02 14 | 699 | 0.2− | 0.6+ | 2006 10 04 | 703 | 0.0 | 0.2+ |
| 2000 01 04 | 704 | 0.2+ | 0.1− | 2004 02 14 | 699 | 0.2− | 0.1− | 2006 10 04 | 703 | 0.1− | 0.1− |
| 2000 01 04 | 691 | 0.2+ | 0.5− | 2004 02 17 | 703 | 0.5+ | 0.1+ | 2006 10 04 | 703 | 0.2+ | 0.1− |
| 2000 01 04 | 704 | 0.0 | 0.2− | 2004 02 17 | 703 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2000 01 04 | 691 | 0.5+ | 0.6− | 2004 02 17 | 703 | 1.1+ | 0.0 | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2000 01 06 | 106 | 0.3+ | 0.3+ | 2004 02 17 | 703 | 0.1− | 0.9+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2000 01 06 | 106 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2000 01 06 | 106 | 0.1− | 0.2+ | 2004 02 19 | 704 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 01 12 | 691 | 0.2+ | 0.6− | 2004 02 19 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2000 01 12 | 691 | 0.0 | 0.6− | 2004 02 19 | 704 | 1.0+ | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2000 01 12 | 691 | 0.1+ | 0.4− | 2004 02 19 | 704 | 0.1+ | 1.2+ | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2000 02 03 | 704 | 0.2− | 0.5+ | 2004 02 19 | 608 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2000 02 03 | 704 | 0.2+ | 0.9+ | 2004 02 19 | 608 | 0.9+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2000 02 03 | 704 | 0.4+ | 1.0+ | 2004 02 19 | 608 | 0.9+ | 0.1+ | 2006 10 19 | 704 | (1.5+ | 0.5+) |
| 2000 02 03 | 704 | 0.2+ | 0.4+ | 2004 02 23 | 704 | (0.2+ | 1.8+) | 2006 10 19 | 704 | 0.1+ | 0.6+ |
| 2000 02 03 | 704 | 0.6+ | 0.7+ | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 10 19 | 704 | 0.3+ | 0.5+ |
| 2000 03 04 | 704 | 0.7+ | 0.1− | 2004 02 23 | 704 | 0.7− | 0.6+ | 2006 10 19 | 704 | 0.7− | 0.9+ |
| 2000 03 04 | 704 | 0.7+ | 0.8+ | 2004 02 23 | 704 | 0.3− | 0.9+ | 2006 10 19 | 704 | 0.1+ | 0.0 |
| 2000 03 04 | 704 | 0.2− | 0.4+ | 2004 02 24 | 608 | (0.4+ | 1.7+) | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2000 03 04 | 704 | 0.4− | 0.2+ | 2004 02 24 | 608 | (0.7+ | 1.5+) | 2006 10 19 | 644 | 0.6− | 0.3+ |
| 2000 03 04 | 704 | 0.1+ | 0.1+ | 2004 02 24 | 608 | 0.8+ | 1.4+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 07 30 | 608 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2002 07 30 | 608 | 0.2− | 0.3− | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 07 30 | 608 | 0.7− | 0.1− | 2004 02 26 | 704 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 08 09 | 704 | 1.0− | 0.2+ | 2004 02 26 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 08 09 | 704 | 1.0− | 0.4+ | 2004 02 26 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 08 09 | 704 | 0.4− | 0.6+ | 2004 03 13 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 08 09 | 704 | 0.4+ | 0.3+ | 2004 03 13 | 644 | 0.1+ | 0.2+ | 2006 10 26 | 704 | (2.7− | 0.3+) |
| 2002 08 12 | 704 | 0.0 | 0.4+ | 2004 03 13 | 644 | 0.2+ | 0.3+ | 2006 10 26 | 704 | (3.4− | 0.6+) |
| 2002 08 12 | 704 | 0.2− | 0.2+ | 2004 03 16 | 691 | 0.3− | 0.4+ | 2006 10 26 | 704 | (3.9− | 1.4+) |
| 2002 08 12 | 704 | 0.1− | 0.7+ | 2004 03 16 | 704 | 0.4+ | 0.2+ | 2006 10 26 | 704 | (2.6− | 0.0 ) |
| 2002 08 16 | 644 | 0.3− | 0.5+ | 2004 03 16 | 691 | 0.1− | 0.5+ | 2006 10 29 | 704 | 0.6− | 0.7+ |
| 2002 08 16 | 644 | 0.0 | 0.6+ | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.6+ |
| 2002 08 16 | 644 | 0.3− | 0.5+ | 2004 03 16 | 704 | 0.8+ | 0.7+ | 2006 10 29 | 704 | 0.5− | 0.4+ |
| 2002 08 19 | 644 | 0.2− | 0.8+ | 2004 03 16 | 691 | 0.2− | 0.4+ | 2006 10 29 | 704 | 0.4− | 0.5+ |
| 2002 08 19 | 644 | 0.1− | 0.6+ | 2004 03 16 | 704 | 0.0 | 0.3+ | 2006 10 29 | 704 | 0.0 | 0.5+ |
| 2002 08 19 | 644 | 0.2− | 0.6+ | 2004 03 16 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.1+ |
| 2002 08 26 | 644 | 0.0 | 0.5+ | 2004 03 17 | 608 | 1.0+ | 1.2+ | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2002 08 26 | 644 | 0.1− | 0.6+ | 2004 03 17 | 608 | 0.8+ | 1.2+ | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 2002 08 26 | 644 | 0.1+ | 0.5+ | 2004 03 17 | 608 | 0.9+ | 1.1+ | 2006 11 14 | 703 | 0.0 | 0.0 |
| 2002 08 27 | 644 | 0.5− | 0.6+ | 2004 03 19 | 704 | 0.7− | 0.7+ | 2006 11 15 | 704 | (0.3+ | 1.5+) |
| 2002 08 27 | 644 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 11 15 | 683 | 0.4+ | 0.4− |
| 2002 08 27 | 644 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.4+ |
| 2002 08 31 | 644 | 0.2− | 0.5− | 2004 03 19 | 704 | 0.3− | 0.3+ | 2006 11 15 | 683 | (1.6+ | 0.1−) |
| 2002 08 31 | 644 | 0.0 | 0.4− | 2004 03 19 | 704 | 0.1+ | 0.7+ | 2006 11 15 | 704 | 0.2− | 0.7+ |
| 2002 08 31 | 644 | 0.2− | 0.5− | 2004 03 21 | 704 | 0.1− | 0.5+ | 2006 11 15 | 704 | 0.2+ | 0.8+ |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2004 03 21 | 704 | 0.1− | 0.4+ | 2006 11 15 | 683 | 0.8+ | 0.1− |
| 2002 09 06 | 704 | 0.6− | 1.1+ | 2004 03 21 | 704 | 0.8− | 1.1+ | 2006 11 15 | 704 | 0.3− | 0.0 |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2004 03 21 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 704 | (0.7+ | 2.2+) |
| 2002 09 06 | 704 | 0.5+ | 0.5+ | 2004 03 31 | 703 | 0.4+ | 0.5− | 2006 11 16 | 704 | (0.0 | 2.0+) |
| 2002 09 06 | 704 | 0.5+ | 0.2+ | 2004 03 31 | 703 | (1.1+ | 1.5+) | 2006 11 16 | 704 | 1.4+ | 1.1+ |
| 2002 09 13 | 644 | 0.7− | 0.5+ | 2004 03 31 | 703 | 0.3+ | 0.7+ | 2006 11 16 | 704 | 1.3− | 1.4+ |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2004 03 31 | 703 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.4+ | 1.1− |
| 2002 09 13 | 644 | 0.4− | 0.5+ | 2004 04 09 | 703 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.3+ | 1.4+ |
| 2002 09 26 | 699 | 0.3+ | 0.5+ | 2004 04 09 | 703 | (5.6− | 0.6−) | 2006 11 19 | 704 | (0.4− | 1.8+) |
| 2002 09 26 | 699 | 0.1− | 0.4+ | 2004 04 09 | 703 | (3.6− | 2.0−) | 2006 11 19 | 704 | (2.6+ | 0.1+) |
| 2002 09 26 | 699 | 0.6+ | 0.0 | 2004 04 09 | 703 | (1.8− | 3.7−) | 2006 11 19 | 704 | 1.0+ | 0.6− |
| 2002 09 26 | 699 | 0.1+ | 0.2− | 2004 05 14 | 704 | 0.9+ | 0.4+ | 2006 11 19 | 704 | 1.5+ | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 0.1− | 2004 05 14 | 704 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.7− |
| 2002 10 04 | 704 | 0.6+ | 0.4− | 2004 05 14 | 704 | 0.6+ | 0.7+ | 2006 11 19 | 704 | 0.9+ | 0.6+ |
| 2002 10 04 | 704 | 0.1− | 1.2+ | 2004 05 14 | 704 | 0.9+ | 1.3+ | 2006 11 19 | 704 | 0.7− | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2004 05 14 | 704 | (0.6+ | 1.6+) | 2006 11 19 | 704 | 0.9+ | 0.6− |
| 2002 10 04 | 704 | 0.5+ | 0.9+ | 2006 08 06 | 699 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.1− | 1.1− |
| 2002 10 29 | 704 | 0.1− | 0.3− | 2006 08 06 | 699 | 1.0− | 0.1+ | | | | |

**(137654)**∗ **1999 XP$_2$ = 1995 SX$_{71}$ = 1999 XH$_{138}$**

Discovered 1999 Dec. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 11069), G. V. Williams (*MPO* 14797)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.64452 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27607305 | $\omega$ | 75.59677 | | −0.93402769 | −0.35271520 | |
| $a$ | 2.3358953 | $\Omega$ | 83.72533 | | +0.30194725 | −0.86403544 | |
| $e$ | 0.1462133 | $i$ | 3.25440 | | +0.19084062 | −0.35921408 | |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1+ | 0.4+ | 2004 01 13 | 699 | 1.1+ | 0.4− | 2004 02 26 | 704 | 0.5+ | 0.4− |
| 1995 09 19 | 691 | 0.1+ | 0.3+ | 2004 01 13 | 699 | 0.9+ | 0.4+ | 2004 02 26 | 704 | 0.1− | 0.0 |
| 1995 09 19 | 691 | 0.2− | 0.2+ | 2004 01 13 | 699 | 0.4+ | 0.4+ | 2004 02 26 | 704 | (0.7+ | 2.6−) |
| 1995 09 24 | 691 | 0.2− | 0.1+ | 2004 01 16 | 644 | 0.3− | 0.7+ | 2004 02 26 | 704 | 0.1+ | 0.9− |
| 1995 09 24 | 691 | 0.2− | 0.4+ | 2004 01 16 | 644 | 0.4− | 0.4+ | 2004 03 18 | 644 | 0.1− | 0.3+ |
| 1995 09 24 | 691 | 0.4− | 0.0 | 2004 01 16 | 644 | 0.4− | 0.4+ | 2004 03 18 | 644 | 0.1− | 0.3+ |
| 1999 11 15 | 704 | 0.3+ | 0.9+ | 2004 01 22 | 704 | 0.6+ | 1.0+ | 2004 03 18 | 644 | 0.3− | 0.3+ |
| 1999 11 15 | 704 | 0.5+ | 0.1+ | 2004 01 22 | 704 | 1.1+ | 1.5+ | 2006 09 30 | G96 | 0.1+ | 0.3+ |
| 1999 11 15 | 704 | 0.1+ | 0.8+ | 2004 01 22 | 704 | 0.1− | 1.1+ | 2006 09 30 | G96 | 0.3+ | 0.2+ |
| 1999 11 15 | 704 | 0.4+ | 0.6+ | 2004 01 22 | 704 | 1.2+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.3+ |
| 1999 12 02 | 691 | 0.2+ | 0.6− | 2004 01 22 | 704 | 0.7+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 02 | 691 | 0.6+ | 0.7− | 2004 01 30 | 704 | 0.3− | 1.0+ | 2006 09 30 | G96 | 0.0 | 0.5+ |
| 1999 12 02 | 691 | 0.1+ | 0.8− | 2004 01 30 | 704 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1+ |
| 1999 12 03 | 691 | 0.2+ | 0.6− | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 1999 12 03 | 691 | 0.5− | 0.7− | 2004 01 30 | 704 | 0.5+ | 0.3− | 2006 09 30 | G96 | 0.0 | 0.1− |
| 1999 12 03 | 691 | 0.1+ | 0.6− | 2004 02 02 | 704 | 0.0 | 0.6+ | 2006 10 11 | 691 | 0.2− | 0.1− |
| 1999 12 04 | 691 | 0.2+ | 0.6− | 2004 02 02 | 704 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.4+ |
| 1999 12 04 | 691 | 0.2+ | 0.8− | 2004 02 02 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.6+ |
| 1999 12 04 | 691 | 0.2+ | 1.0− | 2004 02 02 | 704 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ |
| 1999 12 04 | 691 | 0.3+ | 0.4− | 2004 02 02 | 704 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.0 |
| 1999 12 04 | 691 | 0.3+ | 1.1− | 2004 02 15 | 704 | 0.7− | 0.9+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 1999 12 04 | 691 | 0.2− | 0.8− | 2004 02 15 | 704 | 0.3− | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 1999 12 05 | 691 | 0.4+ | 0.7− | 2004 02 15 | 704 | 0.1− | 0.7+ | 2006 10 19 | 691 | 0.2− | 0.4+ |
| 1999 12 05 | 691 | 0.7+ | 0.5− | 2004 02 15 | 704 | 0.5− | 0.9+ | 2006 10 19 | 691 | 0.5+ | 0.2+ |
| 1999 12 05 | 691 | 0.6+ | 0.5− | 2004 02 15 | 704 | 0.4− | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 1999 12 07 | 691 | 0.2+ | 0.3− | 2004 02 17 | 644 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 1999 12 07 | 691 | 0.4+ | 0.2− | 2004 02 17 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 1999 12 07 | 691 | 0.3+ | 0.5− | 2004 02 17 | 644 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 1999 12 12 | 691 | 0.2− | 1.3+ | 2004 02 18 | 608 | 0.3− | 0.7− | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 1999 12 12 | 691 | 0.3− | 0.4+ | 2004 02 18 | 608 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.2− | 0.4+ |
| 1999 12 12 | 691 | 0.3− | 1.1− | 2004 02 18 | 608 | 0.4− | 0.3− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 1999 12 12 | 691 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.3− |
| 1999 12 12 | 691 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.3− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 1999 12 12 | 691 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 1999 12 13 | 691 | 1.2− | 1.1+ | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 11 27 | 291 | 0.1− | 0.2+ |
| 1999 12 13 | 691 | 1.0− | 1.5+ | 2004 02 23 | 704 | 0.3+ | 0.2− | 2006 11 27 | 291 | 0.1+ | 0.7+ |
| 2004 01 13 | 699 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 11 27 | 291 | 0.1− | 0.3+ |

**(137655)∗ 1999 XE$_3$ = 2001 FD$_{54}$**

Discovered 1999 Dec. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 11683)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.30486 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27145804 | $\omega$ | 320.85202 | | −0.99225260 | −0.10892833 |
| $a$ | 2.3622956 | $\Omega$ | 213.04117 | | +0.12219708 | −0.94248597 |
| $e$ | 0.0600477 | $i$ | 6.29077 | | −0.02241981 | −0.31599812 |
| $P$ | 3.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6− | 0.0 | 2001 04 23 | 704 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.1+ |
| 1999 10 10 | 704 | 1.0+ | 0.3− | 2001 04 27 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 704 | 0.3+ | 0.2+ |
| 1999 10 10 | 704 | 0.1− | 0.1+ | 2001 04 27 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 699 | 0.1+ | 1.0+ |
| 1999 10 10 | 704 | 0.8− | 0.1+ | 2001 04 27 | 704 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.3− |
| 1999 10 10 | 704 | 0.0 | 0.3− | 2001 04 27 | 704 | 0.5+ | 1.0+ | 2006 09 18 | 699 | 1.0+ | 0.3+ |
| 1999 11 04 | 704 | 0.8+ | 0.2+ | 2001 04 30 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 1.0+ | 0.2− |
| 1999 11 04 | 704 | 0.4− | 0.7+ | 2001 04 30 | 704 | 0.3− | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 1999 11 04 | 704 | 0.8+ | 0.6− | 2001 04 30 | 704 | 0.8+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 1.0− | 0.7+ | 2001 04 30 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 0.2− | 0.0 | 2001 05 18 | 699 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.3+ | 1.5+ |
| 1999 11 04 | 691 | 0.3− | 0.2− | 2001 05 18 | 699 | 0.4+ | 1.0+ | 2006 09 25 | 704 | (0.1+ | 1.6+) |
| 1999 11 04 | 691 | 0.5− | 0.2− | 2001 05 18 | 699 | 1.3+ | 0.9+ | 2006 09 25 | 704 | 0.1− | 0.8+ |
| 1999 11 04 | 691 | 0.3− | 0.2− | 2001 05 18 | 699 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 1.1+ |
| 1999 11 09 | 691 | 0.1− | 0.3+ | 2001 05 22 | 807 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 1.3+ |
| 1999 11 09 | 691 | 0.5− | 0.3+ | 2001 05 23 | 807 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 1.1+ |
| 1999 11 09 | 691 | 0.4− | 0.3+ | 2001 06 12 | 608 | 1.3+ | 1.4+ | 2006 09 29 | 704 | 0.1− | 0.7+ |
| 1999 11 14 | 691 | 0.2− | 0.2− | 2001 06 12 | 608 | 1.4+ | 1.1+ | 2006 10 03 | 704 | 0.6+ | 0.0 |
| 1999 11 14 | 691 | 0.3− | 0.2− | 2001 06 12 | 608 | (1.1+ | 1.7+) | 2006 10 03 | 704 | 0.3+ | 0.1+ |
| 1999 11 14 | 691 | 0.2− | 0.2− | 2001 06 16 | 704 | 0.1− | 0.3− | 2006 10 03 | 704 | 0.3+ | 1.1+ |
| 1999 11 15 | 704 | 0.0 | 0.3− | 2001 06 16 | 704 | 0.1+ | 1.1+ | 2006 10 03 | 704 | 0.1− | 0.2+ |
| 1999 11 15 | 704 | 0.8+ | 0.1+ | 2001 06 16 | 704 | 0.1− | 0.8+ | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 1999 11 15 | 704 | 0.1− | 0.4+ | 2002 08 12 | 704 | 0.5− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 1999 11 15 | 704 | 0.1− | 0.0 | 2002 08 12 | 704 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 1999 11 15 | 704 | 0.3+ | 0.1− | 2002 08 12 | 704 | 0.6+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 1999 11 17 | 704 | 0.2+ | 1.1+ | 2002 08 14 | 699 | 0.4+ | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 1999 11 17 | 704 | 0.9+ | 0.3− | 2002 08 14 | 699 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 1999 11 17 | 704 | 0.5+ | 0.1− | 2002 08 14 | 699 | 0.6+ | 1.1+ | 2006 10 15 | 691 | 0.3+ | 0.2+ |
| 1999 11 17 | 704 | 0.8+ | 0.7− | 2002 08 14 | 699 | (1.6+ | 0.4+) | 2006 10 15 | 691 | 0.2− | 0.3+ |
| 1999 11 17 | 704 | 0.2+ | 0.2− | 2002 08 18 | 608 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.1+ |
| 1999 12 04 | 703 | 0.8+ | 1.3+ | 2002 08 18 | 608 | 0.4− | 0.4+ | 2006 10 18 | 106 | 0.3− | 0.0 |
| 1999 12 04 | 703 | 0.1+ | 0.1+ | 2002 08 18 | 608 | 0.4− | 0.0 | 2006 10 18 | 106 | 0.1+ | 0.3− |
| 1999 12 04 | 703 | 0.1+ | 0.8+ | 2002 08 28 | 644 | 0.6− | 0.2− | 2006 10 18 | 106 | 0.2+ | 0.6+ |
| 1999 12 04 | 703 | 0.4+ | 0.2− | 2002 08 28 | 644 | 0.1− | 0.4+ | 2006 10 18 | 106 | 0.6− | 0.4+ |
| 1999 12 05 | 703 | 0.2+ | 0.5+ | 2002 08 28 | 644 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1999 12 05 | 703 | 0.1+ | 0.5+ | 2002 09 01 | 608 | 0.4− | 0.7− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1999 12 05 | 703 | 0.5+ | 0.1+ | 2002 09 01 | 608 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.4+ |
| 1999 12 05 | 703 | 0.1− | 0.6+ | 2002 09 01 | 608 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 1999 12 06 | 704 | 0.5+ | 0.4+ | 2002 09 06 | 704 | (0.8− | 2.0+) | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 1999 12 06 | 704 | 0.6+ | 0.6− | 2002 09 06 | 704 | 0.4+ | 1.4+ | 2006 10 21 | 703 | 0.7− | 0.2+ |
| 1999 12 06 | 704 | 0.9+ | 0.1+ | 2002 09 06 | 704 | 0.9+ | 1.1+ | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 1999 12 06 | 704 | 0.5+ | 0.7− | 2002 09 06 | 704 | 1.2+ | 1.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 12 06 | 704 | 0.2− | 0.1− | 2002 09 06 | 704 | (0.6+ | 2.2+) | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 12 14 | 704 | 1.0+ | 0.5− | 2002 09 13 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 12 14 | 704 | 0.4− | 0.6+ | 2002 09 13 | 644 | 0.2− | 0.3+ | 2006 10 23 | 704 | (1.6− | 0.4+) |
| 1999 12 14 | 704 | 0.1+ | 1.1+ | 2002 09 13 | 644 | 0.2− | 0.3+ | 2006 10 23 | 704 | (1.7− | 0.5+) |
| 1999 12 14 | 704 | 0.6− | 0.2+ | 2002 10 04 | 704 | 0.4+ | 1.0+ | 2006 10 23 | 704 | 1.0− | 0.7+ |
| 2001 03 18 | 704 | 0.4+ | 1.3+ | 2002 10 04 | 704 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 03 18 | 704 | 1.2+ | 0.2− | 2002 10 04 | 704 | 0.3− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 03 18 | 704 | 0.5− | 1.2+ | 2002 10 04 | 704 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 03 18 | 704 | (2.1− | 0.2+) | 2002 10 04 | 704 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2001 03 20 | 608 | 0.3− | 0.5+ | 2003 12 01 | 704 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2001 03 20 | 608 | 0.4− | 1.5+ | 2003 12 01 | 704 | 0.5+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2001 03 20 | 608 | 0.1− | 1.2+ | 2003 12 01 | 704 | 0.1− | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2001 03 24 | 704 | 0.2− | 0.3+ | 2003 12 01 | 704 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.5− | 0.2+ |
| 2001 03 24 | 704 | 0.8− | 0.1+ | 2003 12 01 | 704 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.4− | 0.0 |
| 2001 03 24 | 704 | 0.2− | 0.7+ | 2003 12 20 | 704 | 0.0 | 0.7+ | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2001 03 24 | 704 | 0.2− | 0.7+ | 2003 12 20 | 704 | 0.5+ | 0.9+ | 2006 11 11 | 703 | 0.8− | 0.2− |
| 2001 03 24 | 704 | 0.1+ | 0.1− | 2003 12 20 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.7− | 0.8+ |
| 2001 03 30 | 691 | 0.3− | 0.6+ | 2003 12 20 | 704 | 1.1+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2001 03 30 | 691 | 0.0 | 0.6+ | 2003 12 20 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.6+ |
| 2001 03 30 | 691 | 0.5+ | 1.0+ | 2005 07 12 | G96 | 1.0− | 0.4− | 2006 11 13 | G96 | 0.6+ | 0.0 |
| 2001 04 01 | 704 | 0.2+ | 0.9+ | 2005 07 12 | G96 | 0.7− | 0.2+ | 2006 11 13 | G96 | 0.6+ | 0.2− |
| 2001 04 01 | 704 | (0.8+ | 1.7+) | 2005 07 12 | G96 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2001 04 01 | 704 | 0.1+ | 1.0+ | 2006 08 06 | 699 | 1.5− | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2001 04 01 | 704 | 0.3− | 1.4+ | 2006 08 06 | 699 | (2.1− | 0.2−) | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2001 04 01 | 704 | 0.6+ | 1.0− | 2006 08 06 | 699 | 0.7+ | 0.7− | 2006 11 17 | 703 | 0.6− | 0.5+ |
| 2001 04 16 | 699 | 0.8+ | 0.3+ | 2006 08 06 | 699 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2001 04 16 | 699 | 1.5− | 1.2− | 2006 09 14 | 291 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.5+ |
| 2001 04 16 | 699 | 0.9+ | 0.7+ | 2006 09 14 | 291 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3− | 1.4+ |
| 2001 04 16 | 699 | 0.4+ | 0.3+ | 2006 09 14 | 291 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2001 04 16 | 608 | 0.4+ | 1.0+ | 2006 09 14 | 291 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2001 04 16 | 608 | 0.1+ | 0.9+ | 2006 09 14 | 291 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2001 04 16 | 608 | 0.0 | 1.0+ | 2006 09 14 | 291 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2001 04 18 | 704 | 0.8+ | 0.7+ | 2006 09 15 | 291 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2001 04 18 | 704 | 0.1− | 1.0+ | 2006 09 15 | 291 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.9+ |
| 2001 04 18 | 704 | 0.2+ | 0.6+ | 2006 09 15 | 291 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2001 04 18 | 704 | 0.5− | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2001 04 18 | 704 | (0.5+ | 1.7+) | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.7− |
| 2001 04 23 | 704 | 0.6+ | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2001 04 23 | 704 | 0.3+ | 0.9+ | 2006 09 17 | 704 | 0.7− | 0.9− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2001 04 23 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.5+ | 1.1+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2001 04 23 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.4− | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.1− |

**(137656)∗ 1999 XU$_6$**

Discovered 1999 Dec. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.16557 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26864613 | $\omega$ | 80.23241 | | +0.84252704 | −0.53830517 |
| $a$ | 2.3787510 | $\Omega$ | 312.33300 | | +0.48335735 | +0.77142771 |
| $e$ | 0.2041762 | $i$ | 1.50254 | | +0.23772645 | +0.33930345 |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.7− | 0.1+ | 2004 01 19 | 703 | 0.1− | 0.5+ | 2006 09 01 | 704 | 0.3+ | 0.9− |
| 1999 10 06 | 704 | 0.2− | 0.5− | 2004 01 19 | 703 | 0.4− | 0.4+ | 2006 09 01 | 704 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.3+ | 0.1− | 2004 01 19 | 703 | 1.4+ | 0.0 | 2006 09 14 | 703 | 0.9− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.0 | 0.1− | 2004 01 19 | 703 | (1.8+ | 0.0 ) | 2006 09 14 | 703 | 0.1− | 0.4− | | |
| 1999 10 06 | 704 | 0.2+ | 0.0 | 2004 01 21 | 704 | (0.1+ | 1.8+) | 2006 09 14 | 703 | 0.9− | 0.5− | | |
| 1999 11 03 | 704 | 0.0 | 0.2+ | 2004 01 21 | 704 | (0.6+ | 2.0+) | 2006 09 14 | 703 | 1.2− | 0.1+ | | |
| 1999 11 03 | 704 | 0.9− | 0.5− | 2004 01 21 | 704 | (0.8+ | 1.8+) | 2006 09 17 | 704 | 0.9+ | 0.9+ | | |
| 1999 11 03 | 704 | 0.1+ | 0.0 | 2004 01 21 | 704 | (2.0+ | 1.0+) | 2006 09 17 | 704 | 1.3+ | 1.3+ | | |
| 1999 11 03 | 704 | 0.4− | 0.1− | 2004 01 24 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 704 | 0.6+ | 1.2+ | | |
| 1999 11 03 | 704 | 0.4− | 0.5− | 2004 01 24 | 704 | (0.8+ | 2.1+) | 2006 09 17 | 704 | 0.7+ | 0.1− | | |
| 1999 11 14 | 704 | 0.3+ | 0.4− | 2004 01 24 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.3+ | 0.6+ | | |
| 1999 11 14 | 704 | 0.4+ | 0.2− | 2004 01 24 | 704 | (0.3− | 1.8+) | 2006 09 18 | 699 | 0.6+ | 1.0+ | | |
| 1999 11 14 | 704 | 0.5+ | 0.1− | 2004 01 24 | 704 | 0.3− | 0.6+ | 2006 09 18 | 699 | 0.5− | 1.1+ | | |
| 1999 11 14 | 704 | 0.7+ | 0.5− | 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.8+ | | |
| 1999 11 14 | 704 | 0.7+ | 0.0 | 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.5+ | | |
| 1999 11 16 | 704 | 0.2+ | 0.4− | 2004 01 28 | 691 | 0.4+ | 0.0 | 2006 09 20 | 704 | 1.1+ | 0.6+ | | |
| 1999 11 16 | 704 | 0.4+ | 0.4− | 2004 01 30 | 704 | 1.1+ | 0.3− | 2006 09 20 | 704 | 0.8+ | 0.5+ | | |
| 1999 11 16 | 704 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 1.4+ | 0.9+ | | |
| 1999 11 16 | 704 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 0.6+ | 0.7+ | 2006 09 20 | 704 | 0.3+ | 0.6+ | | |
| 1999 11 16 | 704 | 0.4+ | 0.3+ | 2004 04 14 | 645 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.9+ | 0.4+ | | |
| 1999 12 04 | 703 | 1.7− | 0.5− | 2004 04 14 | 645 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.7+ | | |
| 1999 12 04 | 703 | 0.1− | 0.2+ | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.8+ | 0.1− | | |
| 1999 12 04 | 703 | 0.5+ | 0.1+ | 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.2− | | |
| 1999 12 04 | 703 | 0.7+ | 0.1− | 2005 05 10 | 807 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.4+ | 0.4− | | |
| 1999 12 05 | 703 | 0.1− | 0.5+ | 2005 05 10 | 807 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.4+ | 1.2+ | | |
| 1999 12 05 | 703 | 0.7− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.0 | 1.0− | | |
| 1999 12 05 | 703 | 0.2− | 0.1− | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 1.1+ | 0.4+ | | |
| 1999 12 05 | 703 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.3− | | |
| 1999 12 06 | 691 | 0.0 | 0.2− | 2006 08 18 | 699 | 0.4− | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.0 | | |
| 1999 12 06 | 691 | 0.0 | 0.4− | 2006 08 18 | 699 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.4− | | |
| 1999 12 06 | 691 | 0.1− | 0.2− | 2006 08 18 | 699 | (2.2− | 1.5+) | 2006 09 27 | G96 | 0.2− | 0.1− | | |
| 1999 12 07 | 704 | 0.0 | 0.5− | 2006 08 18 | 699 | 0.4− | 0.4− | 2006 09 27 | G96 | 0.2− | 0.2− | | |
| 1999 12 07 | 704 | 0.3+ | 0.6− | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.6− | 0.3+ | | |
| 1999 12 07 | 704 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.4− | 1.1+ | | |
| 1999 12 07 | 704 | 0.5+ | 0.4− | 2006 08 18 | 644 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.6+ | 1.0+ | | |
| 1999 12 07 | 704 | 0.7+ | 0.4− | 2006 08 21 | 958 | 0.3− | 1.2− | 2006 10 09 | 644 | 0.4− | 0.1− | | |
| 1999 12 08 | 704 | 0.2+ | 0.6− | 2006 08 21 | 958 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.6− | 0.0 | | |
| 1999 12 08 | 704 | 0.3− | 1.2− | 2006 08 21 | 958 | 1.4+ | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.2+ | | |
| 1999 12 08 | 704 | 0.1+ | 0.5+ | 2006 08 25 | 704 | 1.1− | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.5− | | |
| 1999 12 08 | 704 | 0.2− | 0.1− | 2006 08 25 | 704 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.4− | 0.4− | | |
| 1999 12 08 | 704 | 0.5+ | 0.3− | 2006 08 25 | 704 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 1999 12 13 | 703 | 0.2− | 1.2+ | 2006 08 25 | 704 | 0.4− | 0.8+ | 2006 10 19 | G96 | 0.4− | 0.2− | | |
| 1999 12 13 | 703 | 0.5− | 1.2+ | 2006 08 25 | 704 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.1− | | |
| 1999 12 13 | 703 | 0.6− | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 1999 12 13 | 703 | 0.8− | 0.6+ | 2006 08 27 | 691 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 1999 12 14 | 691 | 0.2+ | 0.2− | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 1999 12 14 | 691 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.3− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 1999 12 14 | 691 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2+ | | |
| 2003 10 27 | 291 | (1.5− | 1.6+) | 2006 08 28 | 703 | 0.7− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.4− | | |
| 2003 10 27 | 291 | 0.7− | 0.4+ | 2006 08 28 | 699 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2003 10 27 | 291 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.2− | | |
| 2003 12 29 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2003 12 29 | 691 | (0.8− | 2.1+) | 2006 08 28 | 699 | 0.4− | 0.6+ | 2006 11 11 | 703 | 1.6+ | 0.9− | | |
| 2003 12 29 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.6− | 0.7− | | |
| 2004 01 16 | 644 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.0 | | |
| 2004 01 16 | 644 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.8− | 0.7+ | 2006 11 11 | 703 | 0.7− | 1.1− | | |
| 2004 01 16 | 644 | 0.6+ | 0.6+ | 2006 08 30 | 704 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2004 01 17 | 644 | 0.4+ | 0.5+ | 2006 08 30 | 704 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2004 01 17 | 644 | 0.6+ | 0.5+ | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.4− | | |
| 2004 01 17 | 644 | 0.5+ | 0.1+ | 2006 09 01 | 704 | 0.6− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |

**(137657)∗ 1999 XZ$_8$**

Discovered 1999 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.02410 | | (2000.0) | | | |
| $n$ | 0.28116973 | $\omega$ | 338.49075 | | +0.63169688 | −0.65653221 |
| $a$ | 2.3075813 | $\Omega$ | 69.69692 | | +0.75981141 | +0.41887808 |
| $e$ | 0.2330758 | $i$ | 26.07368 | | +0.15377147 | +0.62730105 |
| $P$ | 3.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 1.2− | 0.3− | 1999 12 15 | 704 | 0.3+ | 0.6+ | 2004 03 30 | 704 | 0.4− | 0.3+ | |
| 1999 10 08 | 704 | 1.1− | 0.5− | 1999 12 15 | 704 | 0.0 | 0.3+ | 2004 03 30 | 704 | 0.7− | 0.8+ | |
| 1999 10 08 | 704 | 0.7− | 0.2− | 1999 12 15 | 704 | 0.0 | 0.4+ | 2004 03 30 | 704 | 0.1− | 0.8+ | |
| 1999 10 08 | 704 | 1.2− | 0.1− | 1999 12 15 | 704 | 0.0 | 0.4+ | 2005 06 14 | G96 | 0.4− | 0.1+ | |
| 1999 10 08 | 704 | 1.1− | 0.1+ | 1999 12 15 | 704 | 0.5− | 0.4+ | 2005 06 14 | G96 | 0.1− | 0.4+ | |
| 1999 11 05 | 703 | 1.5+ | 0.1+ | 2000 01 05 | 106 | 0.3+ | 0.1− | 2005 06 14 | G96 | 0.1− | 0.5+ | |
| 1999 11 05 | 703 | 0.5+ | 0.0 | 2000 01 05 | 106 | 0.1+ | 0.2+ | 2005 06 14 | G96 | 0.4− | 0.4+ | |
| 1999 11 05 | 703 | 0.2+ | 0.1+ | 2000 01 05 | 106 | 0.1− | 0.2− | 2005 06 26 | 644 | 0.6+ | 0.2+ | |
| 1999 11 05 | 703 | 0.2− | 0.2+ | 2000 01 06 | 704 | 0.4+ | 0.2− | 2005 06 26 | 644 | 0.3+ | 0.3+ | |
| 1999 11 07 | 704 | 1.1− | 0.2− | 2000 01 06 | 704 | 0.3+ | 0.3− | 2005 06 26 | 644 | 0.3+ | 0.5+ | |
| 1999 11 07 | 704 | 0.4− | 0.2− | 2000 01 06 | 704 | 0.8+ | 0.2+ | 2006 08 05 | E12 | 0.7− | 1.1+ | |
| 1999 11 07 | 704 | 0.1+ | 0.2+ | 2000 01 06 | 704 | 0.8+ | 0.1+ | 2006 08 05 | E12 | 0.0 | 0.0 | |
| 1999 11 07 | 704 | 0.2− | 0.0 | 2000 01 06 | 704 | 1.1+ | 0.1− | 2006 08 05 | E12 | 0.7− | 0.3+ | |
| 1999 11 10 | 704 | 0.1− | 0.5− | 2000 01 31 | 704 | 0.4+ | 0.3+ | 2006 08 05 | E12 | 0.0 | 0.4+ | |
| 1999 11 10 | 704 | 0.2+ | 0.1− | 2000 01 31 | 704 | 0.1+ | 0.3− | 2006 10 09 | 644 | 0.5− | 0.1− | |
| 1999 11 10 | 704 | 0.3+ | 0.0 | 2000 01 31 | 704 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.3− | 0.0 | |
| 1999 11 10 | 704 | 0.1− | 0.6− | 2000 01 31 | 704 | 0.3+ | 1.0+ | 2006 10 09 | 644 | 0.3− | 0.1+ | |
| 1999 12 05 | 704 | 1.3+ | 0.4+ | 2000 01 31 | 704 | 0.6− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.0 | |
| 1999 12 05 | 704 | 0.2+ | 0.7+ | 2001 04 01 | 682 | 1.0+ | 0.7− | 2006 10 21 | 703 | 0.8− | 0.1− | |
| 1999 12 05 | 704 | 0.4− | 1.2− | 2001 04 01 | 682 | 0.0 | 1.2+ | 2006 10 21 | 703 | 0.1− | 0.1+ | |
| 1999 12 05 | 704 | 1.2+ | 1.0− | 2001 04 23 | 682 | 1.5+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.3− | |
| 1999 12 06 | 704 | 0.5− | 0.1+ | 2001 04 23 | 682 | 1.1+ | 1.2+ | 2006 11 01 | 703 | 0.5− | 0.5+ | |
| 1999 12 06 | 704 | 0.5− | 0.5− | 2004 01 11 | 644 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.7+ | 0.3+ | |
| 1999 12 06 | 704 | 0.0 | 0.6− | 2004 01 11 | 644 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.9+ | |
| 1999 12 06 | 704 | 0.1− | 1.1− | 2004 01 11 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 703 | 0.1+ | 0.7+ | |
| 1999 12 06 | 704 | 0.9+ | 0.7− | 2004 02 03 | 704 | 0.1− | 1.1− | 2006 11 07 | 644 | 0.2− | 0.1− | |
| 1999 12 07 | 704 | 0.3+ | 0.0 | 2004 02 03 | 704 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.2− | 0.0 | |
| 1999 12 07 | 704 | 0.1+ | 0.0 | 2004 02 03 | 704 | 0.8+ | 0.5+ | 2006 11 07 | 644 | 0.3− | 0.1− | |
| 1999 12 07 | 704 | 0.7+ | 0.3+ | 2004 02 10 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 703 | 0.4+ | 0.2+ | |
| 1999 12 07 | 704 | 0.4+ | 0.1− | 2004 02 10 | 704 | 0.8+ | 0.2+ | 2006 11 16 | 703 | 0.4+ | 0.0 | |
| 1999 12 07 | 704 | 0.5+ | 0.3+ | 2004 02 10 | 704 | 0.5− | 0.2+ | 2006 11 16 | 703 | 0.1+ | 0.1+ | |
| 1999 12 14 | 704 | 0.2− | 0.4− | 2004 02 10 | 704 | 0.1− | 0.4− | 2006 11 16 | 703 | 0.3+ | 0.2+ | |
| 1999 12 14 | 704 | 0.2− | 0.1+ | 2004 02 10 | 704 | 0.9+ | 0.5− | 2006 11 22 | 704 | 0.4− | 0.6+ | |
| 1999 12 14 | 704 | 0.4− | 0.5+ | 2004 03 22 | 703 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.5+ | |
| 1999 12 14 | 704 | 0.7− | 0.2+ | 2004 03 22 | 703 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.5− | 0.6+ | |
| 1999 12 14 | 704 | 0.5− | 0.4+ | 2004 03 22 | 703 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.7− | 0.3+ | |
| 1999 12 14 | 699 | 0.3+ | 0.5+ | 2004 03 22 | 703 | (2.4− | 2.0−) | 2006 11 22 | 704 | 0.2− | 0.6+ | |
| 1999 12 14 | 699 | 0.7+ | 0.1+ | 2004 03 30 | 704 | (0.3+ | 1.8+) | | | | | |
| 1999 12 14 | 699 | 0.4− | 0.2+ | 2004 03 30 | 704 | 0.5− | 0.8+ | | | | | |

**(137658)∗ 1999 XZ$_9$**

Discovered 1999 Dec. 5 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.57341 | | (2000.0) | | | |
| $n$ | 0.27086513 | $\omega$ | 317.80110 | | +0.82174943 | −0.56225070 |
| $a$ | 2.3657417 | $\Omega$ | 76.63821 | | +0.54498558 | +0.72786446 |
| $e$ | 0.2204501 | $i$ | 5.47018 | | +0.16648900 | +0.39253978 |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.3− | 0.2− | 1999 12 07 | 691 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.1+ | 0.4+ | |
| 1999 11 01 | 691 | 0.3− | 0.1− | 1999 12 07 | 691 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.0 | 0.8+ | |
| 1999 11 01 | 691 | 0.2− | 0.1− | 1999 12 07 | 691 | 0.2+ | 0.0 | 2004 02 13 | 699 | 0.2− | 1.6+ | |
| 1999 11 04 | 704 | 0.2− | 0.8− | 1999 12 07 | 704 | 0.4+ | 0.6+ | 2004 02 13 | 699 | 0.5− | 0.3+ | |
| 1999 11 04 | 704 | 0.3+ | 0.1+ | 1999 12 07 | 704 | 0.7+ | 0.1− | 2004 02 13 | 699 | 0.3+ | 0.5− | |
| 1999 11 04 | 704 | 0.9+ | 1.1+ | 1999 12 07 | 704 | 0.6+ | 0.3+ | 2004 02 13 | 699 | 0.1+ | 0.5+ | |
| 1999 11 04 | 704 | 0.3− | 0.7+ | 1999 12 07 | 704 | 0.4+ | 0.5− | 2004 02 15 | 704 | 0.4+ | 2.0+ | |
| 1999 11 04 | 704 | 0.2+ | 0.5+ | 1999 12 07 | 704 | 0.8+ | 0.1− | 2004 02 15 | 704 | 0.8+ | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.2− | 0.3− | 1999 12 08 | 704 | 1.0+ | 0.4− | 2004 02 15 | 704 | 0.6+ | 0.2− | | |
| 1999 11 14 | 704 | 0.3+ | 0.1− | 1999 12 08 | 704 | 0.6+ | 0.1+ | 2004 02 15 | 704 | 0.7+ | 0.9+ | | |
| 1999 11 14 | 704 | 0.8− | 0.3+ | 1999 12 08 | 704 | 0.5+ | 0.6− | 2004 02 17 | 645 | 0.0 | 0.1− | | |
| 1999 11 14 | 704 | 0.0 | 0.0 | 1999 12 08 | 704 | 0.3+ | 0.3− | 2004 02 17 | 645 | 0.1− | 0.1− | | |
| 1999 11 14 | 704 | 0.2+ | 0.1+ | 1999 12 08 | 704 | 0.0 | 0.2− | 2005 05 04 | 691 | 0.3+ | 0.3+ | | |
| 1999 11 15 | 704 | 0.5− | 0.2+ | 1999 12 12 | 691 | 0.6+ | 0.0 | 2005 05 04 | 691 | 0.2+ | 0.5+ | | |
| 1999 11 15 | 704 | 0.3+ | 0.9+ | 1999 12 12 | 691 | 0.6+ | 0.0 | 2005 05 04 | 691 | 0.2+ | 0.3+ | | |
| 1999 11 15 | 704 | 0.1− | 0.3+ | 1999 12 12 | 691 | 0.6+ | 0.1− | 2005 05 17 | G96 | 0.3− | 0.1− | | |
| 1999 11 15 | 704 | 0.2− | 0.1+ | 2000 01 06 | 704 | 0.5+ | 0.0 | 2005 05 17 | G96 | 0.7− | 0.3+ | | |
| 1999 11 15 | 704 | 0.2+ | 0.3+ | 2000 01 06 | 704 | 0.2+ | 0.1− | 2005 05 17 | G96 | 0.1− | 0.1+ | | |
| 1999 11 16 | 691 | 0.8− | 0.2+ | 2000 01 06 | 704 | 0.2− | 0.4+ | 2005 05 17 | G96 | 0.2− | 1.1+ | | |
| 1999 11 16 | 691 | 0.7− | 0.2+ | 2000 01 06 | 704 | 0.7+ | 0.2− | 2006 08 16 | 644 | 0.2− | 0.1+ | | |
| 1999 11 16 | 691 | 0.7− | 0.1+ | 2000 01 06 | 704 | 0.5+ | 0.0 | 2006 08 16 | 644 | 0.2− | 0.2+ | | |
| 1999 11 17 | 704 | 0.7+ | 0.7+ | 2000 01 08 | 691 | (0.2− | 2.3−) | 2006 08 16 | 644 | 0.0 | 0.4+ | | |
| 1999 11 17 | 704 | 0.2− | 0.4+ | 2000 01 08 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.3− | | |
| 1999 11 17 | 704 | 0.7+ | 0.2− | 2000 01 08 | 691 | 0.4+ | 0.2− | 2006 09 14 | 703 | 1.1− | 0.1+ | | |
| 1999 11 17 | 704 | 0.9+ | 0.5+ | 2003 12 28 | 704 | 1.0+ | 0.7+ | 2006 09 14 | 703 | 0.9− | 0.4− | | |
| 1999 11 17 | 704 | 0.1+ | 0.9+ | 2003 12 28 | 704 | 0.2− | 1.2+ | 2006 09 14 | 703 | 0.2− | 0.6− | | |
| 1999 11 29 | 691 | 0.0 | 0.0 | 2003 12 28 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.7− | 1.8+ | | |
| 1999 11 29 | 691 | 0.1+ | 0.0 | 2004 01 16 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 703 | 0.4+ | 1.0+ | | |
| 1999 11 29 | 691 | 0.1+ | 0.0 | 2004 01 16 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 703 | 0.1− | 1.8+ | | |
| 1999 12 04 | 703 | 0.3− | 0.5+ | 2004 01 16 | 644 | 0.5+ | 0.4+ | 2006 09 20 | 703 | 0.4+ | 1.1+ | | |
| 1999 12 04 | 703 | 0.0 | 0.1− | 2004 01 17 | 644 | 0.4+ | 0.5+ | 2006 09 21 | 699 | 0.3+ | 0.7+ | | |
| 1999 12 04 | 703 | 0.0 | 0.5+ | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.2+ | 0.1+ | | |
| 1999 12 04 | 703 | 0.2+ | 0.7+ | 2004 01 17 | 644 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 1.1+ | 0.3− | | |
| 1999 12 05 | 691 | 0.3− | 0.2− | 2004 01 26 | 699 | 0.0 | 1.0+ | 2006 09 21 | 699 | 0.3+ | 0.3+ | | |
| 1999 12 05 | 691 | 0.3− | 0.5− | 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.5− | 0.6+ | | |
| 1999 12 05 | 691 | 0.2− | 0.3− | 2004 01 26 | 699 | 0.8+ | 0.8+ | 2006 09 26 | 703 | 0.6− | 0.4+ | | |
| 1999 12 06 | 691 | 0.1− | 0.2− | 2004 01 26 | 699 | 1.4− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.6+ | | |
| 1999 12 06 | 691 | 0.1− | 0.4− | 2004 01 30 | 704 | 0.5+ | 1.4+ | 2006 09 26 | 703 | 0.9− | 0.8+ | | |
| 1999 12 06 | 691 | 0.5− | 0.1− | 2004 01 30 | 704 | 0.1+ | 0.4+ | | | | | | |

**(137659)∗ 1999 XD$_{12}$**

Discovered 1999 Dec. 6 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.99958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27855613 | $\omega$ | 110.16188 | | +0.22028759 | −0.97332254 | |
| $a$ | 2.3219930 | $\Omega$ | 326.90354 | | +0.84532938 | +0.22331243 | |
| $e$ | 0.2557110 | $i$ | 6.74783 | | +0.48671513 | +0.05267623 | |
| $P$ | 3.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.2+ | 0.0 | 2004 02 13 | 644 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.7− | 0.4− | | |
| 1999 10 14 | 704 | 0.3+ | 0.1+ | 2004 02 19 | 704 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.6+ | 1.2+ | | |
| 1999 10 14 | 704 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.4+ | 1.0+ | 2006 08 30 | 699 | 0.6− | 0.5+ | | |
| 1999 10 14 | 704 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.1+ | 0.9+ | 2006 08 30 | 699 | 0.2− | 0.6+ | | |
| 1999 10 14 | 704 | 0.4− | 0.2− | 2004 02 19 | 704 | 0.7+ | 0.6+ | 2006 09 16 | 703 | 0.4− | 0.4+ | | |
| 1999 10 21 | 699 | 0.2+ | 0.3− | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 09 16 | 703 | 0.9− | 0.1+ | | |
| 1999 10 21 | 699 | 0.1+ | 0.3+ | 2004 02 20 | 608 | 0.3+ | 0.9− | 2006 09 16 | 703 | 1.5− | 0.6− | | |
| 1999 10 21 | 699 | 1.9+ | 0.7+ | 2004 02 20 | 608 | 0.3+ | 0.4− | 2006 09 16 | 703 | 0.9− | 0.1+ | | |
| 1999 11 03 | 704 | 0.6+ | 0.3+ | 2004 02 20 | 608 | 0.4+ | 0.6− | 2006 09 20 | 699 | 0.3+ | 0.0 | | |
| 1999 11 03 | 704 | 0.0 | 0.1+ | 2004 02 25 | 704 | 0.4− | 0.7+ | 2006 09 20 | 699 | (0.5− | 1.8+) | | |
| 1999 11 03 | 704 | 0.4+ | 0.5− | 2004 02 25 | 704 | 0.2− | 1.1+ | 2006 09 20 | 699 | 0.2− | 0.5+ | | |
| 1999 11 03 | 704 | 0.2− | 0.0 | 2004 02 25 | 704 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.4+ | | |
| 1999 12 06 | 703 | 0.1− | 0.5− | 2004 02 25 | 704 | 0.1− | 1.1+ | 2006 09 28 | 703 | 0.0 | 0.6+ | | |
| 1999 12 06 | 703 | 0.2− | 0.2− | 2004 02 25 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.7+ | | |
| 1999 12 06 | 703 | 0.2− | 0.3− | 2004 03 13 | 644 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.3− | 0.7+ | | |
| 1999 12 06 | 703 | 0.6+ | 0.7+ | 2004 03 13 | 644 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.6+ | 0.1+ | | |
| 1999 12 07 | 703 | 0.2+ | 0.2+ | 2004 03 13 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.9+ | 0.0 | | |
| 1999 12 07 | 703 | 0.5+ | 0.4− | 2004 03 14 | 703 | 0.9+ | 0.6+ | 2006 09 30 | 704 | 0.9+ | 0.1− | | |
| 1999 12 07 | 703 | 0.5− | 0.1− | 2004 03 14 | 703 | (0.4+ | 1.6−) | 2006 10 17 | A50 | 0.5+ | 0.3+ | | |
| 1999 12 07 | 703 | 0.5− | 0.9+ | 2004 03 14 | 703 | 0.4+ | 0.7+ | 2006 10 17 | A50 | 0.0 | 0.2+ | | |
| 1999 12 10 | 704 | 0.2− | 0.5− | 2004 03 14 | 703 | (2.8+ | 0.3+) | 2006 10 18 | A50 | 0.1− | 0.5+ | | |
| 1999 12 10 | 704 | 0.7+ | 0.8− | 2004 03 16 | 704 | 0.4+ | 0.9+ | 2006 10 18 | A50 | 0.0 | 0.6+ | | |
| 1999 12 10 | 704 | 0.4− | 0.4− | 2004 03 16 | 704 | 0.1− | 0.3+ | 2006 10 19 | 703 | 1.2− | 1.2+ | | |
| 1999 12 10 | 704 | 0.1+ | 1.8− | 2004 03 16 | 704 | 1.1− | 0.5− | 2006 10 19 | 703 | (1.3+ | 1.5+) | | |
| 1999 12 15 | 704 | 0.3+ | 1.2− | 2004 03 16 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.4+ | | |
| 1999 12 15 | 704 | 1.1+ | 0.4− | 2004 03 16 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 703 | 0.6+ | 0.1− | | |
| 1999 12 15 | 704 | 0.2− | 0.8− | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.7+ | 0.1− | | |
| 1999 12 31 | 699 | 0.3+ | 0.3− | 2004 03 19 | 704 | 0.3− | 0.5+ | 2006 10 21 | 704 | 0.2− | 0.4+ | | |
| 1999 12 31 | 699 | 0.5− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 1.2+ | 2006 10 21 | 704 | 0.3− | 0.5+ | | |
| 1999 12 31 | 699 | 0.1+ | 0.7− | 2004 03 19 | 704 | 0.1− | 0.6+ | 2006 10 21 | 704 | 0.5+ | 0.6+ | | |
| 2000 01 03 | 704 | 1.2− | 0.8− | 2004 03 19 | 704 | 0.1− | 0.1+ | 2006 10 21 | 704 | 0.4− | 0.7+ | | |
| 2000 01 03 | 704 | 0.6− | 0.6− | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 704 | 0.1− | 0.3+ | | |
| 2000 01 03 | 704 | 0.2+ | 0.4− | 2004 03 23 | 704 | 0.4+ | 0.6− | 2006 10 27 | 703 | 0.2− | 0.4− | | |
| 2002 08 08 | 644 | 0.3− | 0.7+ | 2004 03 23 | 704 | 0.0 | 0.9− | 2006 10 27 | 703 | 0.2− | 0.2+ | | |
| 2002 08 08 | 644 | 0.1− | 0.7+ | 2004 03 23 | 704 | 1.1+ | 0.5− | 2006 10 27 | 703 | 0.3+ | 0.4+ | | |
| 2002 08 08 | 644 | 0.2− | 0.8+ | 2004 03 23 | 704 | 0.1− | 0.4− | 2006 10 27 | 703 | 0.4− | 0.2+ | | |
| 2003 11 20 | 691 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.2− | | |
| 2003 11 20 | 691 | 0.2+ | 0.3− | 2004 03 27 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.7− | | |
| 2003 11 20 | 691 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.7− | 0.5− | | |
| 2004 01 29 | 704 | 1.2+ | 0.8+ | 2004 03 27 | 704 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.4− | 0.5− | | |
| 2004 01 29 | 704 | 0.8+ | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.1− | 2006 11 17 | 704 | 1.0+ | 2.0+ | | |
| 2004 01 29 | 704 | 0.6+ | 1.4+ | 2006 08 29 | 703 | 1.2− | 0.9+ | 2006 11 17 | 704 | 0.2− | 0.7+ | | |
| 2004 01 29 | 704 | 0.6+ | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.9− | 2006 11 17 | 704 | 0.3− | 0.6+ | | |
| 2004 02 13 | 644 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.4− | 0.5+ | 2006 11 17 | 704 | 1.0− | 0.8+ | | |
| 2004 02 13 | 644 | 1.0− | 0.0 | 2006 08 29 | 703 | 1.0− | 0.5+ | | | | | | |

**(137660)∗ 1999 XO$_{12}$ = 1995 WR$_4$**

Discovered 1999 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 37862)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.75987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25817017 | $\omega$ | 167.87508 | | +0.51313943 | −0.83563545 | |
| $a$ | 2.4426731 | $\Omega$ | 250.96339 | | +0.76914570 | +0.54901743 | |
| $e$ | 0.1811840 | $i$ | 11.96415 | | +0.38092365 | +0.01712444 | |
| $P$ | 3.82 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 358 | (1.2+ | 2.2−) | 2002 08 12 | 704 | 0.0 | 1.2− | 2004 02 12 | 644 | 0.0 | 0.1+ | | |
| 1995 11 21 | 358 | (2.4+ | 2.9−) | 2002 08 12 | 704 | 0.0 | 1.1− | 2004 02 12 | 644 | 0.0 | 0.3+ | | |
| 1995 11 22 | 358 | 1.7− | 1.0+ | 2002 08 24 | 644 | 0.3+ | 0.3+ | 2004 02 12 | 644 | 0.1+ | 0.4+ | | |
| 1995 11 22 | 358 | 0.2+ | 1.0− | 2002 08 24 | 644 | 0.6+ | 0.7+ | 2004 02 19 | 704 | 0.1− | 0.9+ | | |
| 1999 10 22 | 704 | 1.0+ | 0.3− | 2002 08 24 | 644 | 0.4+ | 0.4+ | 2004 02 19 | 704 | 0.1− | 0.8− | | |
| 1999 10 22 | 704 | 0.0 | 0.6− | 2002 09 03 | 644 | 0.6+ | 1.2+ | 2004 02 19 | 704 | 0.2+ | 0.0 | | |
| 1999 10 22 | 704 | 0.4+ | 0.2+ | 2002 09 03 | 644 | 0.3+ | 1.4+ | 2004 02 19 | 704 | 0.0 | 0.7+ | | |
| 1999 10 22 | 704 | 0.7+ | 0.5− | 2002 09 03 | 644 | 0.4+ | 1.3+ | 2006 09 01 | 151 | 0.2− | 0.2− | | |
| 1999 12 05 | 704 | (2.2+ | 1.1−) | 2002 10 05 | 704 | (2.3− | 1.0+) | 2006 09 01 | 151 | 0.2− | 0.3− | | |
| 1999 12 05 | 704 | 0.4− | 0.8+ | 2002 10 05 | 704 | 1.5− | 0.4+ | 2006 09 01 | 151 | 0.2− | 0.3− | | |
| 1999 12 05 | 704 | 1.1+ | 0.2+ | 2002 10 05 | 704 | (1.7− | 1.4+) | 2006 09 11 | 703 | 1.0− | 0.2+ | | |
| 1999 12 05 | 704 | 0.5− | 1.0+ | 2002 10 05 | 704 | (1.2− | 1.7+) | 2006 09 11 | 703 | 0.4− | 0.2+ | | |
| 1999 12 05 | 704 | 1.2− | 0.1− | 2003 11 01 | 704 | 0.6+ | 0.5+ | 2006 09 11 | 703 | 0.2− | 0.4+ | | |
| 1999 12 05 | 704 | 0.0 | 0.1+ | 2003 11 01 | 704 | 0.9+ | 0.2− | 2006 09 11 | 703 | 0.1− | 0.1+ | | |
| 1999 12 05 | 704 | 0.1+ | 0.8− | 2003 11 01 | 704 | 0.4+ | 0.0 | 2006 09 15 | 704 | 0.5+ | 1.0+ | | |
| 1999 12 06 | 704 | 0.1− | 1.0− | 2003 12 23 | 608 | 1.0+ | 0.8+ | 2006 09 15 | 704 | 0.3+ | 0.7+ | | |
| 1999 12 06 | 704 | 0.4− | 0.6− | 2003 12 23 | 608 | 1.2+ | 0.4+ | 2006 09 15 | 704 | (1.6− | 2.0+) | | |
| 1999 12 06 | 704 | 0.5+ | 1.0+ | 2003 12 23 | 608 | 1.4+ | 1.4+ | 2006 09 15 | 704 | 0.0 | 0.8+ | | |
| 1999 12 06 | 704 | 0.0 | 0.8− | 2004 01 25 | 608 | 0.5− | 0.1− | 2006 09 15 | 704 | 0.7+ | 0.5+ | | |
| 1999 12 14 | 704 | 0.1+ | 0.5− | 2004 01 25 | 608 | 0.3− | 0.4− | 2006 09 20 | 699 | 0.0 | 0.1+ | | |
| 1999 12 14 | 704 | 0.6− | 0.5− | 2004 01 25 | 608 | 0.0 | 0.3− | 2006 09 20 | 699 | 1.4− | 0.1+ | | |
| 1999 12 14 | 704 | 0.4+ | 1.6− | 2004 01 27 | 699 | 0.2− | 0.4+ | 2006 09 20 | 699 | 0.1+ | 1.2+ | | |
| 1999 12 14 | 704 | 0.1+ | 0.5− | 2004 01 27 | 699 | 0.6− | 0.2+ | 2006 09 20 | 699 | 0.4− | 0.1− | | |
| 1999 12 14 | 704 | 0.0 | 0.2− | 2004 01 27 | 699 | 0.4− | 0.3+ | 2006 10 29 | 703 | 0.1− | 0.6− | | |
| 2000 01 07 | 704 | 0.1+ | 0.1− | 2004 01 27 | 699 | 0.1+ | 0.0 | 2006 10 29 | 703 | 0.1+ | 0.6+ | | |
| 2000 01 07 | 704 | 0.4+ | 1.3− | 2004 01 28 | 704 | 0.2− | 0.8+ | 2006 10 29 | 703 | 0.4+ | 0.4− | | |
| 2000 01 07 | 704 | 0.1− | 0.1− | 2004 01 28 | 704 | 0.2+ | 0.7+ | 2006 10 29 | 703 | 0.2+ | 0.5− | | |
| 2000 01 07 | 704 | 0.4− | 0.2+ | 2004 01 28 | 704 | 0.1− | 0.6+ | 2006 11 13 | 703 | (3.4+ | 0.5−) | | |
| 2000 01 07 | 704 | 0.6− | 0.1− | 2004 01 28 | 704 | (0.8− | 1.7+) | 2006 11 13 | 703 | 0.3− | 0.1− | | |
| 2000 01 11 | 704 | 0.3+ | 0.9+ | 2004 02 10 | 644 | 0.1− | 0.4+ | 2006 11 13 | 703 | (0.1+ | 1.9+) | | |
| 2000 01 11 | 704 | 0.2− | 0.6+ | 2004 02 10 | 644 | 0.0 | 0.6+ | 2006 11 13 | 703 | 0.0 | 0.8− | | |
| 2000 01 11 | 704 | 0.6+ | 0.3− | 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 11 19 | 703 | 1.4− | 0.4− | | |
| 2000 01 11 | 704 | 0.1− | 0.0 | 2004 02 10 | 644 | 0.1− | 0.3+ | 2006 11 19 | 703 | (1.9− | 0.2+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | (0.2− | 2.0−) | 2004 02 10 | 644 | 0.4+ | 0.6+ | 2006 11 19 | 703 | (1.0+ | 1.8−) |
| 2002 08 12 | 704 | (0.9− | 1.7−) | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 703 | (0.9− | 2.0−) |

**(137661)∗ 1999 XF$_{15}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.55553 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27958827 | $\omega$ | 158.61822 | | −0.33609324 | | −0.88573293 |
| $a$ | 2.3162748 | $\Omega$ | 309.48540 | | +0.79273137 | | −0.08247492 |
| $e$ | 0.2641073 | $i$ | 24.51064 | | +0.50854528 | | −0.45680966 |
| $P$ | 3.53 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.1− | 1.6+ | 2000 02 07 | 703 | 0.3+ | 0.4+ | 2002 12 09 | 699 | 0.5− | 0.1+ |
| 1999 12 06 | 704 | 0.7+ | 0.0 | 2000 02 10 | 704 | 0.2− | 0.6+ | 2002 12 09 | 699 | 0.3− | 0.1+ |
| 1999 12 06 | 704 | 1.3+ | 0.5− | 2000 02 10 | 704 | 0.3+ | 0.1− | 2002 12 09 | 699 | 0.1+ | 0.5+ |
| 1999 12 06 | 704 | 0.8+ | 0.7+ | 2000 02 10 | 704 | 0.3− | 0.7+ | 2005 07 06 | 691 | 0.2− | 0.1− |
| 1999 12 06 | 704 | 0.0 | 0.2+ | 2000 02 10 | 704 | 0.4+ | 0.6− | 2005 07 06 | 691 | 0.7− | 0.2+ |
| 1999 12 07 | 704 | 0.3+ | 0.9− | 2000 03 09 | 704 | 0.2+ | 0.1+ | 2005 07 06 | 691 | 0.0 | 0.3+ |
| 1999 12 07 | 704 | 0.0 | 0.4− | 2000 03 09 | 704 | 0.1+ | 0.5+ | 2005 07 18 | 644 | 0.6− | 0.3+ |
| 1999 12 07 | 704 | 0.3− | 1.1− | 2000 03 09 | 704 | 0.0 | 0.6+ | 2005 07 18 | 644 | 0.4− | 0.4+ |
| 1999 12 07 | 704 | 1.4+ | 0.9− | 2000 03 09 | 704 | 0.5+ | 0.3+ | 2005 07 18 | 644 | 0.4− | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 0.3− | 2000 03 09 | 704 | 0.1+ | 0.9+ | 2005 08 06 | 644 | 0.1− | 0.4+ |
| 1999 12 08 | 704 | 0.2− | 1.0− | 2000 03 11 | 608 | 0.4− | 0.3− | 2005 08 06 | 644 | 0.9− | 0.4+ |
| 1999 12 08 | 704 | 0.5+ | 0.9− | 2000 03 11 | 608 | 0.3− | 0.6+ | 2005 08 06 | 644 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.0 | 0.3− | 2000 03 11 | 608 | 0.1+ | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.3+ |
| 1999 12 08 | 704 | 0.6− | 0.3+ | 2002 08 17 | 704 | 0.7+ | 0.8+ | 2005 08 31 | 691 | 0.3− | 0.1+ |
| 2000 01 05 | 704 | 0.6+ | 0.6− | 2002 08 17 | 704 | 0.3− | 0.3+ | 2005 08 31 | 691 | 0.0 | 0.3+ |
| 2000 01 05 | 704 | 0.3+ | 0.6− | 2002 08 17 | 704 | 1.0− | 0.2+ | 2005 09 12 | 691 | 0.1+ | 0.3+ |
| 2000 01 05 | 704 | 1.9+ | 0.2+ | 2002 09 06 | 113 | 0.4+ | 0.3− | 2005 09 12 | 691 | 0.1+ | 0.4+ |
| 2000 01 06 | 699 | 0.7+ | 1.2+ | 2002 09 06 | 113 | (2.1− | 0.6−) | 2005 09 12 | 691 | 0.1− | 0.7+ |
| 2000 01 06 | 699 | 0.2− | 1.9+ | 2002 09 06 | 113 | 0.3− | 0.8− | 2006 10 27 | 703 | 0.4+ | 0.1− |
| 2000 01 06 | 699 | 1.2+ | 1.5+ | 2002 09 06 | 113 | 0.5+ | 1.1+ | 2006 10 27 | 703 | 0.5− | 1.1− |
| 2000 01 08 | 704 | 0.0 | 0.3+ | 2002 10 31 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 703 | (1.7+ | 0.7−) |
| 2000 01 08 | 704 | 0.0 | 0.1− | 2002 10 31 | 704 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2000 01 08 | 704 | 0.7+ | 0.3+ | 2002 10 31 | 704 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 1.7− |
| 2000 01 08 | 704 | 0.2− | 0.1+ | 2002 10 31 | 704 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.4− | 0.1− |
| 2000 01 08 | 704 | 0.2+ | 0.8+ | 2002 10 31 | 704 | 0.5− | 0.2+ | 2006 11 15 | 704 | (3.0− | 0.1−) |
| 2000 02 07 | 106 | 0.2− | 0.4+ | 2002 11 13 | 704 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.3+ | 0.2+ |
| 2000 02 07 | 106 | 0.3+ | 0.1+ | 2002 11 13 | 704 | 0.3− | 0.4− | 2006 11 23 | 703 | 0.7− | 0.0 |
| 2000 02 07 | 106 | 0.2+ | 0.3+ | 2002 11 13 | 704 | 0.5− | 0.5− | 2006 11 23 | 703 | 1.2+ | 0.3− |
| 2000 02 07 | 703 | 0.0 | 0.6+ | 2002 11 13 | 704 | 0.5− | 0.5− | 2006 11 23 | 703 | (0.7− | 3.0+) |
| 2000 02 07 | 703 | 0.4+ | 0.1+ | 2002 11 13 | 704 | 1.1− | 0.6− | | | | |
| 2000 02 07 | 703 | 0.0 | 0.5+ | 2002 12 09 | 699 | 0.3+ | 0.3+ | | | | |

**(137662)∗ 1999 XJ$_{16}$ = 2002 NL$_{17}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33153)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.59159 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28386144 | $\omega$ | 145.20633 | | +0.75548776 | | −0.53021292 |
| $a$ | 2.2929704 | $\Omega$ | 251.46619 | | +0.47015042 | | +0.84785375 |
| $e$ | 0.1713165 | $i$ | 23.94789 | | +0.45628591 | | +0.00427489 |
| $P$ | 3.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.5+ | 0.6− | 2002 07 07 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 1999 11 01 | 704 | 0.3+ | 0.9− | 2002 07 13 | 704 | 0.4+ | 0.6− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 1999 11 01 | 704 | 0.2− | 0.0 | 2002 07 13 | 704 | 0.4+ | 0.9− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1999 11 01 | 704 | 0.8− | 0.2+ | 2002 07 13 | 704 | 0.5+ | 0.8− | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 1999 11 01 | 704 | 0.3− | 1.2+ | 2002 07 13 | 704 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.7− | 0.5− |
| 1999 11 05 | G91 | 0.3− | 0.3− | 2002 07 13 | 704 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.3− | 1.0+ |
| 1999 12 05 | 703 | 0.1− | 0.3+ | 2002 07 14 | 704 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 1999 12 05 | 703 | 0.1− | 0.2− | 2002 07 14 | 704 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 1999 12 05 | 703 | 0.2− | 0.0 | 2002 07 14 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 1999 12 05 | 703 | 0.5− | 0.1+ | 2002 07 14 | 704 | 0.1− | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 1999 12 07 | 704 | 1.0+ | 0.2− | 2002 07 14 | 704 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 1999 12 07 | 704 | 0.0 | 0.3− | 2005 06 17 | G96 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 0.3+ | 0.4− | 2005 06 17 | G96 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 1999 12 07 | 704 | 0.3+ | 0.1− | 2005 06 17 | G96 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 1999 12 07 | 704 | 0.1+ | 0.3− | 2005 06 17 | G96 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.2− |
| 1999 12 08 | 704 | 0.1+ | 0.4− | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.2+ | 0.6− | 2005 07 05 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.3− |
| 1999 12 08 | 704 | 0.2+ | 0.9− | 2005 07 05 | 644 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 1999 12 08 | 704 | 0.3+ | 0.3− | 2005 07 11 | G96 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 1999 12 08 | 704 | 0.2− | 0.3− | 2005 07 11 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.0 |
| 1999 12 30 | 699 | (0.9− | 2.2+) | 2005 07 11 | G96 | 0.5− | 0.2− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 1999 12 30 | 699 | (0.8+ | 3.3+) | 2005 07 11 | G96 | 0.2− | 0.1− | 2006 11 24 | 691 | 0.2− | 0.1− |
| 1999 12 30 | 699 | 0.1+ | 1.4+ | 2006 10 29 | 704 | 0.2− | 0.8+ | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2000 01 05 | 704 | 0.3− | 0.6+ | 2006 10 29 | 704 | 0.1− | 1.3+ | 2006 11 27 | 704 | 0.1+ | 0.2− |
| 2000 01 05 | 704 | 1.6− | 0.9− | 2006 10 29 | 704 | 0.3+ | 1.0+ | 2006 11 27 | 704 | 0.1+ | 0.0 |
| 2000 01 05 | 704 | 0.6− | 0.7− | 2006 10 29 | 704 | (0.3− | 1.8+) | 2006 11 27 | 704 | 0.7+ | 0.3+ |
| 2000 01 05 | 704 | 0.8+ | 0.1− | 2006 10 29 | 704 | 0.5− | 0.6+ | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2000 01 05 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 1.4− | 1.5+ | 2006 12 01 | 704 | 1.2+ | 0.1− |
| 2000 01 07 | 704 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.8− | 1.0+ | 2006 12 01 | 704 | 0.2− | 0.5+ |
| 2000 01 07 | 704 | 0.4− | 0.6− | 2006 11 16 | 704 | 1.0− | 0.9+ | 2006 12 01 | 704 | 0.3+ | 0.2+ |
| 2000 01 07 | 704 | 0.4− | 0.4− | 2006 11 16 | 704 | 0.8− | 0.1− | 2006 12 01 | 704 | 0.1− | 0.4+ |
| 2000 01 07 | 704 | 1.1− | 1.4− | 2006 11 16 | 704 | 0.1− | 1.3+ | 2006 12 01 | 691 | 0.3+ | 0.1− |
| 2002 07 07 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.3+ | 0.2− |
| 2002 07 07 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.4+ | 0.1− |

**(137663)∗ 1999 XH$_{19}$**

Discovered 1999 Dec. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.73909 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28694366 | $\omega$ | 300.04480 | | +0.97250588 | | +0.21239076 |
| $a$ | 2.2765208 | $\Omega$ | 47.87394 | | −0.14324958 | | +0.86894841 |
| $e$ | 0.1388585 | $i$ | 7.39905 | | −0.18360794 | | +0.44701099 |
| $P$ | 3.43 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.8+ | 0.3+ | 2003 12 27 | 704 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.7− | 0.3− |
| 1999 09 14 | 704 | 0.1+ | 0.3+ | 2003 12 27 | 704 | 0.1+ | 0.2− | 2006 10 23 | 704 | 0.8+ | 0.3+ |
| 1999 09 14 | 704 | 0.2− | 0.9− | 2003 12 27 | 704 | 0.2− | 1.4+ | 2006 10 23 | 704 | 1.0+ | 1.0+ |
| 1999 09 14 | 704 | 0.7− | 1.6− | 2005 04 06 | G96 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.9+ | 0.2+ |
| 1999 10 02 | 704 | 0.0 | 0.1− | 2005 04 06 | G96 | 0.2+ | 0.4+ | 2006 10 23 | 704 | 0.4+ | 0.0 |
| 1999 10 02 | 704 | 0.2+ | 0.4− | 2005 04 06 | G96 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.9+ | 0.6+ |
| 1999 10 02 | 704 | 0.6+ | 0.1− | 2005 04 06 | G96 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1999 10 02 | 704 | 1.5+ | 1.0− | 2005 05 01 | 644 | 0.4+ | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1999 10 02 | 704 | 0.8+ | 0.5− | 2005 05 01 | 644 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1999 10 08 | 704 | 0.0 | 0.4− | 2005 05 01 | 644 | 0.2+ | 0.3+ | 2006 10 28 | 704 | (0.6− | 2.7+) |
| 1999 10 08 | 704 | 0.3+ | 0.6− | 2005 05 11 | G96 | 0.2+ | 0.6+ | 2006 10 28 | 704 | (0.1− | 2.8+) |
| 1999 10 08 | 704 | 0.4− | 0.7− | 2005 05 11 | G96 | 0.0 | 0.3+ | 2006 10 28 | 704 | (0.0 | 2.3+) |
| 1999 10 08 | 704 | 0.3+ | 0.5− | 2005 05 11 | G96 | 0.1− | 0.4+ | 2006 10 28 | 704 | (0.3− | 2.0+) |
| 1999 10 08 | 704 | 0.5− | 0.6− | 2005 05 11 | G96 | 0.4− | 0.4+ | 2006 10 28 | 704 | (0.1+ | 1.7+) |
| 1999 10 12 | 699 | 0.9− | 0.1− | 2005 05 14 | 644 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 1999 10 12 | 699 | (0.6+ | 2.1+) | 2005 05 14 | 644 | 0.7+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 1999 10 12 | 699 | 0.1+ | 0.1+ | 2005 05 14 | 644 | 0.6+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 1999 11 15 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.2+ |
| 1999 11 15 | 704 | 0.6− | 0.2+ | 2006 08 28 | 703 | 0.8+ | 0.7− | 2006 11 11 | 703 | 0.6+ | 0.5+ |
| 1999 11 15 | 704 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 1999 11 15 | 704 | 1.2− | 0.1− | 2006 08 28 | 703 | 0.6− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 1999 11 15 | 704 | 0.7+ | 0.3+ | 2006 09 15 | 683 | 0.1− | 1.1− | 2006 11 17 | 703 | 0.9− | 0.2+ |
| 1999 12 03 | 704 | 1.7+ | 0.5+ | 2006 09 15 | 683 | 0.2+ | 0.9− | 2006 11 17 | 703 | 0.6− | 0.1− |
| 1999 12 03 | 704 | (0.3+ | 2.3+) | 2006 09 22 | 224 | 0.7− | 0.4+ | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 1999 12 03 | 704 | 0.0 | 0.2+ | 2006 09 22 | 224 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 1999 12 03 | 704 | 0.1+ | 0.6+ | 2006 09 22 | 224 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.6− |
| 1999 12 07 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 1999 12 07 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.3+ | 0.6+ | 2006 11 18 | 704 | 0.5+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.6+ | 2006 11 21 | 704 | (0.9+ | 2.0−) | | |
| 1999 12 07 | 704 | 0.7+ | 1.0− | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.7+ | 1.4− | | |
| 2003 11 20 | 704 | 0.5+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.8+ | 1.2− | | |
| 2003 11 20 | 704 | 0.4+ | 0.4− | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | (1.4+ | 1.7−) | | |
| 2003 11 20 | 704 | 0.1− | 1.5− | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 1.1+ | 1.4− | | |
| 2003 11 20 | 704 | 0.1+ | 0.6− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.6− | | |
| 2003 12 17 | 699 | 1.3− | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.4− | | |
| 2003 12 17 | 699 | 0.4− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.3− | | |
| 2003 12 17 | 704 | 0.1− | 0.3− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.4− | | |
| 2003 12 17 | 699 | 1.2+ | 0.2− | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 26 | 704 | 0.6+ | 0.2+ | | |
| 2003 12 17 | 704 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 26 | 704 | 0.2+ | 0.9+ | | |
| 2003 12 17 | 699 | 1.1− | 0.6− | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 26 | 704 | 0.1− | 0.4+ | | |
| 2003 12 17 | 704 | (0.4+ | 1.9−) | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.1− | 0.6− | | |
| 2003 12 17 | 704 | 0.5− | 0.4− | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2003 12 18 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.5− | | |
| 2003 12 18 | 704 | 0.8+ | 0.1− | 2006 10 16 | 703 | 1.2− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.4− | | |
| 2003 12 18 | 704 | 0.2+ | 0.4− | 2006 10 19 | 691 | 0.2− | 0.4+ | 2006 11 28 | 704 | 2.0− | 2.2+ | | |
| 2003 12 19 | 704 | 0.3+ | 1.0− | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.8+ | | |
| 2003 12 19 | 704 | 0.8− | 1.0− | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.6− | | |
| 2003 12 19 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | 1.5− | 1.5+ | | |
| 2003 12 27 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.1+ | | | | | | |

**(137664)∗ 1999 XJ$_{22}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.27385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27574865 | $\omega$ | 160.21077 | | +0.99427665 | −0.10179223 | |
| $a$ | 2.3377270 | $\Omega$ | 205.69747 | | +0.08515109 | +0.93842881 | |
| $e$ | 0.2263739 | $i$ | 4.29029 | | +0.06452313 | +0.33013590 | |
| $P$ | 3.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.1+ | 0.9+ | 2004 01 18 | 644 | 0.1− | 1.0+ | 2006 09 25 | 704 | 0.8+ | 0.2+ | | |
| 1999 10 03 | 691 | 0.1+ | 0.3− | 2004 01 18 | 644 | 0.2− | 0.6+ | 2006 09 25 | 704 | 0.1+ | 0.3+ | | |
| 1999 10 03 | 703 | 0.6+ | 0.7+ | 2005 03 11 | G96 | 0.3+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 0.5+ | | |
| 1999 10 03 | 703 | 0.6+ | 1.2+ | 2005 03 11 | G96 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.5+ | | |
| 1999 10 03 | 703 | 0.3− | 0.2+ | 2005 03 11 | G96 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.2+ | | |
| 1999 10 03 | 691 | 0.0 | 0.3− | 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.2+ | | |
| 1999 10 03 | 691 | 0.0 | 0.4− | 2005 04 10 | 691 | 0.2− | 1.0+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 1999 10 10 | 704 | 0.2− | 0.0 | 2005 04 10 | 691 | 1.1+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.1− | | |
| 1999 10 10 | 704 | 0.5− | 0.2+ | 2005 04 10 | 691 | 0.5+ | 0.5+ | 2006 09 27 | 699 | 0.1− | 0.1+ | | |
| 1999 10 10 | 704 | 0.6− | 0.3+ | 2005 04 17 | 701 | 0.3− | 0.7+ | 2006 09 27 | 691 | 0.3− | 0.0 | | |
| 1999 10 10 | 704 | 1.0− | 0.3+ | 2005 04 17 | 701 | 0.1− | 0.3+ | 2006 09 27 | 699 | 0.1− | 0.2+ | | |
| 1999 10 15 | 704 | 0.3+ | 0.3− | 2005 04 17 | 701 | 0.5− | 0.8+ | 2006 09 27 | 699 | 0.1+ | 0.0 | | |
| 1999 10 15 | 704 | 0.5+ | 0.1− | 2005 05 04 | 568 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.1+ | | |
| 1999 10 15 | 704 | 0.4+ | 0.3− | 2005 05 04 | 568 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.1+ | | |
| 1999 10 15 | 704 | 0.0 | 0.2+ | 2005 05 04 | 568 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.2+ | | |
| 1999 10 21 | 704 | 0.1+ | 0.1− | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.2+ | | |
| 1999 10 21 | 704 | 0.0 | 0.4− | 2005 05 08 | G96 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.3− | 0.0 | | |
| 1999 10 21 | 704 | 0.1− | 0.5− | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 1999 10 21 | 704 | 0.9+ | 0.1+ | 2005 05 08 | G96 | 0.4+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 1999 10 21 | 704 | 0.3− | 0.8− | 2006 07 21 | 704 | 1.0+ | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 1999 10 29 | 703 | 0.3− | 0.2+ | 2006 07 21 | 704 | 0.6− | 0.8− | 2006 10 01 | 704 | 0.1− | 0.2− | | |
| 1999 10 29 | 703 | 0.4− | 0.9− | 2006 07 21 | 704 | 0.2− | 0.5+ | 2006 10 01 | 704 | 0.3− | 0.2+ | | |
| 1999 10 29 | 703 | 0.4+ | 0.5+ | 2006 07 21 | 703 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.5+ | | |
| 1999 10 29 | 703 | 0.3+ | 1.1+ | 2006 07 21 | 703 | 0.5+ | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.3+ | | |
| 1999 11 04 | 704 | 1.0− | 0.5− | 2006 07 21 | 703 | 1.1− | 0.3− | 2006 10 01 | 704 | 0.9− | 1.2+ | | |
| 1999 11 04 | 704 | 0.3+ | 0.2+ | 2006 07 21 | 703 | 1.5− | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.4+ | | |
| 1999 11 04 | 704 | 0.6+ | 0.3− | 2006 09 01 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.2− | | |
| 1999 11 04 | 704 | 0.1− | 0.3+ | 2006 09 01 | 704 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.3+ | | |
| 1999 11 04 | 704 | 0.6+ | 0.0 | 2006 09 01 | 704 | (2.0− | 0.9+) | 2006 10 17 | 703 | 0.2− | 0.2+ | | |
| 1999 11 15 | 704 | 0.1− | 0.2+ | 2006 09 01 | 704 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 1999 11 15 | 704 | 0.1− | 0.2+ | 2006 09 01 | 704 | 0.6− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 1999 11 15 | 704 | 0.1− | 0.1− | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 1999 11 15 | 704 | 0.3− | 0.5+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 1999 11 15 | 704 | 0.3− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 1999 11 15 | 704 | 0.3− | 0.0 | 2006 09 15 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 1999 11 15 | 704 | 0.1− | 0.2+ | 2006 09 15 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 704 | 0.3− | 0.2+ | | |
| 1999 11 15 | 704 | 0.3− | 0.0 | 2006 09 15 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 704 | 0.1+ | 0.6− | | |
| 1999 11 15 | 704 | 0.0 | 0.2+ | 2006 09 15 | 704 | 0.1+ | 0.1− | 2006 10 23 | 704 | 1.1+ | 1.1+ | | |
| 1999 11 15 | 704 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 23 | 704 | (2.2− | 0.0 ) | | |
| 1999 11 16 | 704 | 0.8+ | 0.7+ | 2006 09 17 | 703 | 0.9− | 0.9− | 2006 10 28 | G96 | 0.4+ | 0.3− | | |
| 1999 11 16 | 704 | 0.1+ | 0.3− | 2006 09 17 | 703 | (2.2+ | 2.8+) | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 1999 11 16 | 704 | 0.0 | 0.4+ | 2006 09 18 | 704 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.0 | | |
| 1999 11 16 | 704 | 0.1+ | 0.7− | 2006 09 18 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 1999 11 17 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.7+ | 0.9+ | | |
| 1999 11 17 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.1− | | |
| 1999 11 17 | 704 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.6+ | | |
| 1999 11 17 | 704 | 0.3− | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.3− | 2006 11 18 | 704 | 1.0+ | 1.0+ | | |
| 1999 12 04 | 703 | 0.0 | 1.0+ | 2006 09 19 | 699 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.3+ | | |
| 1999 12 04 | 703 | 1.3− | 0.7+ | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.6+ | | |
| 1999 12 04 | 703 | 0.0 | 1.2− | 2006 09 19 | 699 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 1999 12 04 | 703 | 0.5+ | 0.3+ | 2006 09 24 | 106 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.8+ | 1.3+ | | |
| 1999 12 06 | 704 | 0.3+ | 0.5+ | 2006 09 24 | 106 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.8− | 0.7− | | |
| 1999 12 06 | 704 | 0.0 | 0.5− | 2006 09 24 | 106 | 0.4− | 0.6− | 2006 11 21 | 704 | 1.2+ | 0.5+ | | |
| 1999 12 06 | 704 | 0.6+ | 0.2− | 2006 09 24 | 106 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.6+ | 0.9+ | | |
| 1999 12 06 | 704 | 0.6− | 1.1− | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.0 | 0.0 | | |
| 1999 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.0 | 1.0+ | | |
| 1999 12 07 | 704 | 0.1+ | 1.0− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.0 | | |
| 1999 12 07 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.5− | 0.5+ | | |
| 1999 12 07 | 704 | 1.8− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.8+ | | |
| 2004 01 18 | 644 | 0.3− | 1.0+ | 2006 09 25 | 704 | 0.9+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.6+ | | |

**(137665)∗ 1999 XR$_{24}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.10015 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27604116 | $\omega$ | 321.46287 | | +0.60298487 | −0.79569760 | |
| $a$ | 2.3360752 | $\Omega$ | 91.37977 | | +0.74537758 | +0.53638308 | |
| $e$ | 0.2313905 | $i$ | 3.28143 | | +0.28429124 | +0.28135124 | |
| $P$ | 3.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 20 | 704 | 0.3+ | 0.1− | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.9+ | 0.1+ | | |
| 1999 10 20 | 704 | 0.1+ | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.6+ | 2006 09 28 | 704 | 0.1− | 0.5+ | | |
| 1999 10 20 | 704 | 1.0− | 0.5+ | 2004 02 16 | 704 | 0.5+ | 1.3+ | 2006 09 28 | 704 | 0.1− | 0.7+ | | |
| 1999 11 01 | 703 | 0.0 | 0.4+ | 2004 02 16 | 704 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.3+ | | |
| 1999 11 01 | 703 | 0.0 | 0.2− | 2004 02 16 | 704 | 0.5+ | 0.9+ | 2006 09 29 | 704 | 0.2− | 0.5+ | | |
| 1999 11 01 | 703 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 09 29 | 704 | 0.8+ | 0.6− | | |
| 1999 11 01 | 703 | 0.4− | 0.1− | 2004 02 23 | 704 | (1.7+ | 0.3+) | 2006 09 29 | 704 | 0.1+ | 0.1+ | | |
| 1999 11 04 | 704 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.3+ | | |
| 1999 11 04 | 704 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.8+ | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.9+ | | |
| 1999 11 04 | 704 | 0.3− | 0.2− | 2004 02 23 | 704 | 0.7− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.4+ | | |
| 1999 11 04 | 704 | 0.2+ | 0.0 | 2005 06 14 | 291 | 0.4+ | 1.3+ | 2006 09 30 | 703 | 0.1− | 0.1+ | | |
| 1999 11 04 | 704 | 0.1+ | 0.4+ | 2005 06 14 | 291 | 0.1+ | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.7+ | | |
| 1999 11 15 | 704 | 0.3+ | 0.5+ | 2005 06 14 | 291 | 0.1+ | 1.1+ | 2006 09 30 | 704 | 1.2− | 0.1− | | |
| 1999 11 15 | 704 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.6− | 0.3+ | 2006 09 30 | 704 | 0.7− | 0.1+ | | |
| 1999 11 15 | 704 | 0.0 | 0.5− | 2006 09 12 | 703 | 0.1− | 0.2− | 2006 09 30 | 704 | 0.7− | 0.3+ | | |
| 1999 11 15 | 704 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.9− | 0.3+ | | |
| 1999 11 15 | 704 | 0.2+ | 0.6− | 2006 09 12 | 703 | 1.2+ | 0.0 | 2006 09 30 | 704 | 0.9− | 0.2− | | |
| 1999 11 17 | 704 | 0.0 | 0.6+ | 2006 09 16 | 704 | 0.8− | 0.6+ | 2006 09 30 | 704 | 0.3− | 0.7+ | | |
| 1999 11 17 | 704 | 0.5+ | 0.6+ | 2006 09 16 | 704 | 0.7+ | 0.6− | 2006 09 30 | 704 | 0.8− | 0.8+ | | |
| 1999 11 17 | 704 | 0.3+ | 0.4− | 2006 09 16 | 704 | 0.5− | 0.3− | 2006 09 30 | 704 | 0.9− | 0.2+ | | |
| 1999 11 17 | 704 | 0.8+ | 0.2− | 2006 09 16 | 704 | 0.4+ | 0.6− | 2006 09 30 | 704 | 1.4− | 0.1+ | | |
| 1999 11 17 | 704 | 0.6+ | 0.1− | 2006 09 16 | 704 | 0.6− | 0.5+ | 2006 10 01 | 704 | 0.6− | 0.3− | | |
| 1999 12 06 | 704 | 0.1− | 1.2+ | 2006 09 18 | 703 | 0.3− | 0.6− | 2006 10 01 | 704 | 0.1+ | 0.1+ | | |
| 1999 12 06 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.3− | 0.1− | | |
| 1999 12 06 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.0 | 0.1− | | |
| 1999 12 06 | 704 | 1.1+ | 1.0− | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.6− | 0.4+ | | |
| 1999 12 07 | 704 | 1.0− | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.3− | | |
| 1999 12 07 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.8+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.3− | | |
| 1999 12 07 | 704 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.6− | 0.2− | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.7− |
| 1999 12 07 | 704 | 0.5− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 01 05 | 704 | 0.5− | 0.5− | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2000 01 05 | 704 | 1.2+ | 0.6− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2000 01 05 | 704 | 1.3− | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2000 01 05 | 704 | 1.4− | 0.9− | 2006 09 22 | 704 | 0.6+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | (1.8+ | 0.6−) | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 1.0+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.3− |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2006 09 26 | 704 | 1.2+ | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2004 01 22 | 704 | (3.0+ | 0.7−) | 2006 09 26 | 704 | (1.8+ | 0.4−) | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2004 01 22 | 704 | (1.3+ | 1.6+) | 2006 09 26 | 704 | 0.8+ | 0.7+ | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 2004 01 22 | 704 | 0.7+ | 0.6− | 2006 09 26 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 1.4− | 0.6+ |
| 2004 01 22 | 704 | 0.0 | 0.9+ | 2006 09 26 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.2− |
| 2004 02 13 | 691 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.7+ | 0.3− | 2006 11 17 | 704 | 0.5+ | 0.0 |
| 2004 02 13 | 691 | 0.3+ | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.2− | | | | |

**(137666)∗ 1999 XG$_{25}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.31307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28535179 | $\omega$ | 332.75439 | | +0.71776267 | −0.67105337 | |
| $a$ | 2.2849795 | $\Omega$ | 70.67559 | | +0.66930470 | +0.59139568 | |
| $e$ | 0.1162201 | $i$ | 11.35241 | | +0.19195827 | +0.44714486 | |
| $P$ | 3.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6+ | 1.0− | 2001 04 16 | 645 | 0.2− | 0.1− | 2004 03 25 | 704 | 1.2+ | 0.6+ |
| 1999 10 10 | 704 | 0.3− | 0.5− | 2001 04 16 | 645 | 0.2− | 0.1− | 2004 03 25 | 704 | 0.5+ | 0.2+ |
| 1999 10 10 | 704 | 0.2+ | 0.2− | 2001 04 17 | 699 | 1.1+ | 0.3+ | 2004 03 25 | 704 | 0.6+ | 0.0 |
| 1999 10 10 | 704 | 0.6− | 1.2+ | 2001 04 17 | 699 | (1.8+ | 0.3+) | 2006 09 22 | 704 | (1.6+ | 0.6+) |
| 1999 10 20 | 704 | 0.5− | 0.0 | 2001 04 17 | 699 | 1.2+ | 0.5− | 2006 09 22 | 704 | 1.3+ | 1.1+ |
| 1999 10 20 | 704 | 0.3+ | 0.3+ | 2001 04 17 | 699 | 0.6+ | 0.9+ | 2006 09 22 | 704 | 0.5+ | 0.9+ |
| 1999 10 20 | 704 | 0.2+ | 0.2− | 2001 04 18 | 608 | (1.7+ | 1.2+) | 2006 09 22 | 704 | 1.0+ | 0.1+ |
| 1999 10 20 | 704 | 0.3− | 0.2− | 2001 04 18 | 608 | (1.4+ | 1.6+) | 2006 09 22 | 704 | 1.1+ | 0.2− |
| 1999 10 20 | 704 | 0.0 | 0.0 | 2001 04 18 | 608 | 0.8+ | 0.8+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1999 11 04 | 704 | 0.2+ | 0.5+ | 2001 04 26 | 608 | (2.5− | 0.6−) | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 1999 11 04 | 704 | 0.1+ | 0.0 | 2001 04 26 | 608 | (2.7− | 0.6−) | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 1999 11 04 | 704 | 0.3+ | 0.1− | 2001 04 26 | 608 | (2.9− | 0.7−) | 2006 11 11 | 291 | 0.0 | 0.2− |
| 1999 11 04 | 704 | 0.2+ | 0.4+ | 2001 04 27 | 704 | 0.5+ | 0.4− | 2006 11 11 | 291 | 0.5− | 0.1− |
| 1999 11 04 | 704 | 0.3− | 0.1− | 2001 04 27 | 704 | (1.5− | 1.6−) | 2006 11 11 | 291 | 0.5− | 0.3− |
| 1999 11 12 | 699 | 0.7− | 0.4+ | 2001 04 27 | 704 | 1.0+ | 0.1+ | 2006 11 11 | 291 | 0.3+ | 0.7− |
| 1999 11 12 | 699 | 0.8− | 0.6+ | 2001 04 27 | 704 | 0.4+ | 0.3− | 2006 11 11 | 291 | 0.2− | 0.1− |
| 1999 11 12 | 699 | 0.4− | 0.2+ | 2003 12 19 | 704 | (1.7+ | 0.4+) | 2006 11 11 | 291 | 0.2− | 0.2− |
| 1999 11 17 | 704 | 0.3− | 0.3− | 2003 12 19 | 704 | 0.4+ | 0.3− | 2006 11 11 | 291 | 0.3− | 0.2− |
| 1999 11 17 | 704 | 0.1+ | 0.4− | 2003 12 19 | 704 | 1.0+ | 0.2+ | 2006 11 11 | 291 | 0.3− | 0.1− |
| 1999 11 17 | 704 | 0.2− | 0.1+ | 2003 12 28 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 291 | 0.4− | 0.1− |
| 1999 11 17 | 704 | 0.0 | 0.2+ | 2003 12 28 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 291 | 0.3− | 0.0 |
| 1999 11 17 | 704 | 0.0 | 0.2− | 2003 12 28 | 699 | 1.1+ | 1.1− | 2006 11 11 | 291 | 0.2− | 0.0 |
| 1999 12 02 | 699 | 0.0 | 0.6+ | 2003 12 28 | 704 | 0.2+ | 0.2− | 2006 11 11 | 291 | 0.3− | 0.0 |
| 1999 12 02 | 699 | 0.9+ | 0.5− | 2003 12 28 | 699 | (0.3+ | 2.6−) | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 1999 12 02 | 699 | 0.5+ | 0.6− | 2003 12 28 | 704 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 1999 12 04 | 703 | 0.4+ | 0.6+ | 2003 12 28 | 699 | 0.6− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 1999 12 04 | 703 | 0.1− | 0.3− | 2003 12 28 | 699 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 1999 12 04 | 703 | 0.2− | 0.1+ | 2003 12 30 | 704 | 0.6+ | 1.0+ | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 1999 12 04 | 703 | 0.1+ | 0.6+ | 2003 12 30 | 704 | 0.7+ | 0.9+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 1999 12 06 | 704 | 0.9+ | 0.7− | 2003 12 30 | 704 | 0.8+ | 0.5+ | 2006 11 15 | 691 | 0.5+ | 0.1+ |
| 1999 12 06 | 704 | 0.2− | 0.1− | 2003 12 30 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 1.0+ |
| 1999 12 06 | 704 | 0.2+ | 0.4− | 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.4− | 1.1+ |
| 1999 12 06 | 704 | 0.2− | 1.0− | 2004 01 17 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.6− | 1.0+ |
| 1999 12 06 | 704 | 0.3+ | 1.0− | 2004 01 17 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.5− |
| 1999 12 07 | 704 | 0.6+ | 0.4− | 2004 01 31 | 704 | 0.6− | 0.2+ | 2006 11 17 | 704 | (2.0− | 0.1−) |
| 1999 12 07 | 704 | 0.8+ | 0.2− | 2004 01 31 | 704 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 1999 12 07 | 704 | 1.9+ | 0.4+ | 2004 01 31 | 704 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.8+ | 1.1− |
| 1999 12 07 | 704 | 0.2+ | 0.4− | 2004 01 31 | 704 | 0.7− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 1999 12 07 | 704 | 0.4+ | 0.8− | 2004 01 31 | 704 | 0.6− | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 1999 12 12 | 703 | 0.4+ | 1.0− | 2004 02 11 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | (1.5+ | 0.9+) |
| 1999 12 12 | 703 | 0.3+ | 0.1+ | 2004 02 11 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.7+ | 1.0+ |
| 1999 12 12 | 703 | 0.1− | 0.4+ | 2004 02 11 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 1999 12 12 | 703 | 0.7− | 0.0 | 2004 02 14 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.3+ |
| 1999 12 17 | 691 | 0.2+ | 0.5− | 2004 02 14 | 704 | 0.7− | 0.6− | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 1999 12 17 | 691 | 0.4− | 0.0 | 2004 02 14 | 704 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.4− | 0.2+ |
| 1999 12 17 | 691 | 0.2− | 0.0 | 2004 02 14 | 704 | 0.3− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2000 01 04 | 704 | 0.6− | 0.3+ | 2004 02 14 | 704 | 0.4− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2000 01 04 | 704 | 0.7− | 0.1+ | 2004 02 14 | 704 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.5− | 0.6+ |
| 2000 01 04 | 704 | 0.0 | 0.1− | 2004 02 14 | 644 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.5+ | 0.2+ |
| 2000 01 04 | 704 | 0.0 | 0.2+ | 2004 02 14 | 644 | 0.2− | 0.0 | 2006 11 27 | 704 | 1.1+ | 0.2+ |
| 2000 01 04 | 704 | 0.8− | 0.6+ | 2004 03 24 | 703 | 1.4− | 0.3− | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2000 01 06 | 704 | 0.1+ | 0.3+ | 2004 03 24 | 703 | 0.1− | 0.6− | 2006 12 01 | 704 | 0.1+ | 0.2− |
| 2000 01 06 | 704 | 0.1+ | 0.0 | 2004 03 24 | 703 | 0.9− | 0.1+ | 2006 12 01 | 704 | 0.9+ | 0.3− |
| 2000 01 06 | 704 | 0.3+ | 0.3+ | 2004 03 24 | 703 | (1.8− | 0.3+) | 2006 12 01 | 704 | 0.8− | 0.0 |
| 2000 01 06 | 704 | 0.8+ | 0.5− | 2004 03 25 | 704 | 0.5+ | 0.4+ | 2006 12 01 | 704 | 0.0 | 0.1+ |
| 2000 01 06 | 704 | 0.1+ | 0.4+ | 2004 03 25 | 704 | 0.4+ | 0.8+ | | | | |

**(137667)∗ 1999 XW$_{25}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.53291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28038632 | $\omega$ | 306.80335 | | +0.89820957 | −0.42877319 | |
| $a$ | 2.3118776 | $\Omega$ | 78.76849 | | +0.42816055 | +0.80356595 | |
| $e$ | 0.1562220 | $i$ | 5.66462 | | +0.09948922 | +0.41283812 | |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.2− | 0.1− | 1999 12 06 | 704 | 0.6+ | 0.1+ | 2006 11 02 | 703 | 0.7− | 0.3− |
| 1992 11 27 | 691 | 0.1− | 0.5− | 1999 12 07 | 704 | 0.6+ | 1.3− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 1992 11 27 | 691 | 0.1+ | 0.4− | 1999 12 07 | 704 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1997 01 10 | 691 | 0.2+ | 0.3+ | 1999 12 07 | 704 | 1.8+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1997 01 10 | 691 | 0.1− | 0.3− | 1999 12 07 | 704 | 0.9+ | 0.9− | 2006 11 10 | 644 | 0.3− | 0.1− |
| 1997 01 10 | 691 | 0.6+ | 0.0 | 1999 12 09 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 1999 11 01 | 691 | 0.6− | 0.3− | 1999 12 09 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 1999 11 01 | 691 | 0.5− | 0.2− | 1999 12 09 | 691 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.2+ |
| 1999 11 01 | 691 | 0.3− | 0.2− | 1999 12 12 | 691 | 0.5+ | 0.3+ | 2006 11 13 | 703 | 0.7− | 0.0 |
| 1999 11 04 | 704 | 1.2− | 0.9+ | 1999 12 12 | 691 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 1999 11 04 | 704 | 0.2− | 1.8+ | 1999 12 12 | 691 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.5− | 0.2+ |
| 1999 11 04 | 704 | 0.3+ | 0.8+ | 2002 08 13 | 704 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.7+ |
| 1999 11 14 | 704 | 0.0 | 0.7− | 2002 08 13 | 704 | (1.3− | 1.7+) | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 1999 11 14 | 704 | 0.5− | 0.2+ | 2002 08 13 | 704 | 0.5− | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.4+ |
| 1999 11 14 | 704 | 0.3+ | 0.1+ | 2002 08 13 | 704 | 0.1+ | 0.6+ | 2006 11 14 | 704 | 0.7+ | 1.1+ |
| 1999 11 14 | 704 | 0.1− | 0.4+ | 2004 02 16 | 691 | 0.3− | 0.7+ | 2006 11 14 | 704 | 0.3+ | 1.0+ |
| 1999 11 15 | 704 | 1.3+ | 1.0+ | 2004 02 16 | 691 | 0.3+ | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 1999 11 15 | 704 | 0.2+ | 0.3− | 2004 02 16 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 1999 11 15 | 704 | 0.1+ | 0.1− | 2005 05 19 | G96 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 1999 11 15 | 704 | 0.3− | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 1999 11 15 | 704 | 0.7+ | 0.4− | 2005 05 19 | G96 | 0.4+ | 0.0 | 2006 11 17 | 704 | 1.1+ | 1.0+ |
| 1999 11 15 | 691 | 0.6− | 0.2− | 2005 05 19 | G96 | 0.1− | 0.2+ | 2006 11 17 | 704 | 1.0+ | 0.2+ |
| 1999 11 15 | 691 | 0.6− | 0.2− | 2005 06 06 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.9− | 1.2+ |
| 1999 11 15 | 691 | 0.5− | 0.2− | 2005 06 06 | 691 | 0.3+ | 0.5+ | 2006 11 17 | 704 | (0.2+ | 2.0+) |
| 1999 11 17 | 704 | 1.1+ | 0.5+ | 2005 06 06 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.6− |
| 1999 11 17 | 704 | 0.4− | 0.3− | 2005 06 14 | 291 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 1999 11 17 | 704 | 0.0 | 0.4+ | 2005 06 14 | 291 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.7+ | 0.6− |
| 1999 11 17 | 704 | 1.1+ | 0.3+ | 2005 06 14 | 291 | 0.1+ | 0.5+ | 2006 11 18 | 704 | (0.1− | 1.7+) |
| 1999 11 17 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 1.0+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 1999 11 28 | 691 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.9+ | 0.3+ |
| 1999 11 28 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.0 | 1.0− | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 1999 11 28 | 691 | 0.2+ | 0.3− | 2006 09 18 | 703 | 1.4− | 0.9+ | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 1999 12 05 | 703 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 1999 12 05 | 703 | 0.5+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 1999 12 05 | 703 | 0.3− | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 1.1− |
| 1999 12 05 | 703 | 0.6+ | 0.4− | 2006 11 02 | 703 | 0.7− | 0.9+ | 2006 11 28 | 704 | 0.5− | 0.9− |
| 1999 12 06 | 704 | 0.7− | 1.3+ | 2006 11 02 | 703 | 0.6− | 0.8+ | 2006 11 28 | 704 | 0.3− | 0.8− |
| 1999 12 06 | 704 | 0.6+ | 0.6+ | 2006 11 02 | 703 | 1.2− | 0.3− | 2006 11 28 | 704 | 0.5− | 0.4− |

**(137668)∗ 1999 XK$_{28}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.08660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27638460 | $\omega$ | 320.87583 | | +0.60485355 | −0.79376021 | |
| $a$ | 2.3341396 | $\Omega$ | 91.81267 | | +0.74575713 | +0.53641456 | |
| $e$ | 0.1588802 | $i$ | 3.67168 | | +0.27928207 | +0.28671265 | |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.2− | 0.4− | 2002 08 08 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 1.3− | 0.1− |
| 1999 11 04 | 704 | 0.1− | 0.4− | 2002 08 08 | 644 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 1999 11 04 | 704 | 1.7− | 0.4− | 2002 08 08 | 644 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 1999 11 04 | 704 | 0.5+ | 0.6+ | 2002 08 11 | 644 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.4− | 0.1− |
| 1999 11 14 | 704 | 0.1− | 0.3+ | 2002 08 11 | 644 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 1999 11 14 | 704 | 0.3− | 0.3+ | 2002 08 13 | 704 | (3.6+ | 1.7+) | 2006 10 16 | 703 | 0.5− | 0.0 |
| 1999 11 14 | 704 | 0.3− | 0.3+ | 2002 08 13 | 704 | (3.2+ | 1.2+) | 2006 10 16 | 703 | 0.3− | 0.7− |
| 1999 11 14 | 704 | 1.1− | 1.1+ | 2002 08 13 | 704 | (2.6+ | 1.2+) | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 1999 11 15 | 704 | 0.0 | 0.0 | 2002 08 18 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 1999 11 15 | 704 | 0.1+ | 0.1− | 2002 08 18 | 644 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.5+ | 1.2+ |
| 1999 11 15 | 704 | 0.1− | 0.2+ | 2002 08 18 | 644 | 0.1− | 1.1− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 1999 11 15 | 704 | 0.1+ | 0.2− | 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1999 11 15 | 704 | 0.0 | 0.1− | 2002 08 29 | 644 | 0.3+ | 0.0 | 2006 10 22 | 704 | (2.7− | 0.8−) |
| 1999 11 15 | 704 | 0.1− | 0.5− | 2002 08 29 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 704 | (2.5+ | 1.3+) |
| 1999 11 15 | 704 | 0.3− | 0.4− | 2004 01 19 | 703 | 1.3− | 0.2+ | 2006 10 22 | 704 | 0.2+ | 0.3+ |
| 1999 11 15 | 704 | 0.2+ | 0.2− | 2004 01 19 | 703 | (0.3− | 1.7+) | 2006 10 22 | 704 | 1.4− | 0.4+ |
| 1999 11 15 | 704 | 0.3+ | 0.1+ | 2004 01 19 | 703 | 0.5− | 1.1+ | 2006 10 27 | 704 | 0.5− | 1.3+ |
| 1999 11 15 | 704 | 0.3+ | 0.7+ | 2004 01 19 | 703 | 0.3+ | 0.6− | 2006 10 27 | 704 | 0.4− | 0.5+ |
| 1999 11 17 | 704 | 0.3+ | 1.2− | 2004 01 22 | 704 | 1.0+ | 1.0+ | 2006 10 27 | 704 | 0.4− | 0.3+ |
| 1999 11 17 | 704 | 0.5+ | 1.1− | 2004 01 22 | 704 | 0.2− | 0.0 | 2006 10 27 | 704 | 0.6− | 0.3+ |
| 1999 11 17 | 704 | 0.2+ | 0.7− | 2004 01 22 | 704 | 1.5+ | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.9+ |
| 1999 11 17 | 704 | 0.8+ | 1.1− | 2004 01 22 | 704 | 1.1+ | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 1999 11 28 | 691 | 0.1+ | 0.7− | 2004 01 22 | 704 | 1.4+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 1.2+ |
| 1999 11 28 | 691 | 0.2− | 0.2− | 2004 02 13 | 691 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 1999 11 28 | 691 | 0.1− | 0.1− | 2004 02 13 | 691 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.0 |
| 1999 12 06 | 704 | 0.5− | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.8+ | 1.9+ |
| 1999 12 06 | 704 | 0.8− | 0.1− | 2004 02 16 | 704 | 0.0 | 0.7+ | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 1999 12 06 | 704 | 0.4− | 0.3+ | 2004 02 16 | 704 | 0.7+ | 0.4− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 1999 12 07 | 704 | 0.2+ | 1.1− | 2004 02 16 | 704 | 0.3− | 0.5+ | 2006 11 17 | 704 | 0.2+ | 1.1+ |
| 1999 12 07 | 704 | 0.1+ | 0.5+ | 2004 02 16 | 704 | 0.1+ | 0.6+ | 2006 11 20 | G96 | 0.4− | 0.0 |
| 1999 12 07 | 704 | 0.5+ | 0.5− | 2004 02 16 | 704 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.3− | 0.3− |
| 1999 12 07 | 704 | 0.3+ | 0.8− | 2005 06 27 | G96 | 0.3− | 0.2− | 2006 11 20 | G96 | 0.2− | 0.1− |
| 1999 12 09 | 691 | 0.3+ | 0.8− | 2005 06 27 | G96 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 1.4+ | 0.4+ |
| 1999 12 09 | 691 | 0.5+ | 0.1− | 2005 06 27 | G96 | 0.1− | 0.5+ | 2006 11 20 | G96 | 0.3− | 0.0 |
| 1999 12 09 | 691 | 0.5+ | 0.0 | 2005 06 27 | G96 | 0.9− | 1.1+ | 2006 11 20 | 704 | 0.5− | 0.3+ |
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.9+ | 0.6+ |
| 2002 07 14 | 644 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2002 07 14 | 644 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.6+ |

**(137669)∗ 1999 XX$_{28}$ = 2004 CV$_{12}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60561)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.94802 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27811672 | $\omega$ | 222.39525 | | +0.61478084 | −0.78866880 | |
| $a$ | 2.3244381 | $\Omega$ | 189.67547 | | +0.73401306 | +0.57528111 | |
| $e$ | 0.1693345 | $i$ | 2.31383 | | +0.28856428 | +0.21691741 | |
| $P$ | 3.54 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 1.8+ | 1.5− | 2004 02 12 | 691 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.5+ | 0.6+ |
| 1999 11 15 | 704 | 1.4+ | 1.0− | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 704 | 1.2+ | 0.2+ |
| 1999 11 15 | 704 | 1.4+ | 1.2− | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 683 | (0.9− | 1.7−) |
| 1999 11 15 | 704 | 0.5− | 0.3− | 2004 02 29 | 691 | 0.2− | 0.3+ | 2006 11 10 | 683 | 0.4− | 0.2− |
| 1999 11 17 | 704 | 0.5+ | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.5− | 2006 11 10 | 683 | 1.1− | 0.5− |
| 1999 11 17 | 704 | 0.3+ | 0.6− | 2004 03 18 | 704 | 0.7+ | 1.0+ | 2006 11 11 | 683 | 0.8+ | 0.2+ |
| 1999 11 17 | 704 | 0.3+ | 1.2− | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 11 11 | 683 | 0.7+ | 0.1+ |
| 1999 12 06 | 704 | 0.7+ | 0.3− | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 1999 12 06 | 704 | 0.4− | 0.2− | 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.5− |
| 1999 12 06 | 704 | 0.1− | 1.3− | 2004 03 20 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 1999 12 06 | 704 | 0.2+ | 0.2− | 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 1999 12 06 | 704 | 0.2+ | 0.3+ | 2004 03 23 | 704 | 1.0+ | 0.1+ | 2006 11 13 | 683 | 0.2− | 0.8− |
| 1999 12 07 | 704 | 0.1+ | 0.6+ | 2004 03 23 | 704 | 0.1− | 0.3+ | 2006 11 13 | 683 | 0.5+ | 0.0 |
| 1999 12 07 | 704 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.8− | 0.7+ | 2006 11 14 | 683 | 0.2− | 0.2− |
| 1999 12 07 | 704 | 0.9+ | 0.6+ | 2004 03 23 | 704 | 0.1− | 0.4+ | 2006 11 14 | 683 | 0.6− | 0.9+ |
| 1999 12 07 | 704 | 0.3+ | 1.2+ | 2005 06 17 | G96 | 0.6− | 0.7+ | 2006 11 14 | 683 | (1.8− | 0.2−) |
| 1999 12 07 | 704 | 0.2+ | 1.0+ | 2005 06 17 | G96 | 0.4− | 0.2+ | 2006 11 15 | 683 | 1.0− | 0.5+ |
| 1999 12 09 | 691 | 0.6− | 0.5− | 2005 06 17 | G96 | 1.1− | 0.4+ | 2006 11 15 | 683 | (0.3− | 1.7+) |
| 1999 12 09 | 691 | 0.7− | 0.6− | 2005 06 17 | G96 | 0.3− | 0.0 | 2006 11 15 | 683 | (0.0 | 2.2+) |
| 1999 12 09 | 691 | 0.6− | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 1999 12 16 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.2− |
| 1999 12 16 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 1999 12 16 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 1999 12 27 | 691 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 1999 12 27 | 691 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.8− | 1.0− |
| 1999 12 27 | 691 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.3− | 0.9− |
| 2000 01 12 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2000 01 12 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 1.2+ |
| 2000 01 12 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 2002 08 07 | 644 | 0.1+ | 1.0+ | 2006 10 19 | 644 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2002 08 07 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2002 08 07 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.8− | 0.6− | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2002 08 17 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.4− |
| 2002 08 17 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2002 08 17 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2002 08 27 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2002 08 27 | 644 | 0.3+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2002 08 27 | 644 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.9− | 1.5− | 2006 11 28 | 704 | 1.0+ | 0.0 |
| 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 1.1+ | 1.3− |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.4− | 1.1+ |
| 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.9+ | 1.7+ |
| 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.0 | 0.3+ | | | | |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.1− | 0.2+ | | | | |

**(137670)∗ 1999 XE$_{33}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.66240 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26098220 | $\omega$ | 34.73985 | | −0.60077374 | −0.79848984 | |
| $a$ | 2.4250952 | $\Omega$ | 92.21585 | | +0.72443430 | −0.56417125 | |
| $e$ | 0.1262733 | $i$ | 2.21005 | | +0.33803235 | −0.21005895 | |
| $P$ | 3.78 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 1.7− | 1.5− | 2002 11 08 | 645 | 0.1+ | 0.1− | 2004 04 10 | 644 | 0.3+ | 0.3+ |
| 1999 12 06 | 704 | 0.3− | 0.4− | 2002 11 08 | 645 | 0.1+ | 0.0 | 2004 04 10 | 644 | 0.1− | 0.7+ |
| 1999 12 06 | 704 | 0.7+ | 0.6− | 2003 11 20 | 691 | 0.1− | 0.2− | 2004 04 10 | 644 | 0.4+ | 0.4+ |
| 1999 12 06 | 704 | 0.1+ | 0.4− | 2003 11 20 | 691 | 0.1− | 0.5+ | 2004 04 10 | 644 | 0.1+ | 0.9+ |
| 1999 12 06 | 704 | 0.4+ | 0.5− | 2003 11 20 | 691 | 0.0 | 0.3+ | 2004 04 15 | 644 | 0.3+ | 0.2+ |
| 1999 12 07 | 704 | 0.2− | 0.1− | 2003 12 27 | 704 | 0.6− | 0.2− | 2004 04 15 | 644 | 0.1+ | 0.1+ |
| 1999 12 07 | 704 | 1.0− | 0.3− | 2003 12 27 | 704 | 0.1− | 0.3− | 2004 04 15 | 644 | 0.5+ | 0.1− |
| 1999 12 07 | 704 | 0.2− | 0.2+ | 2003 12 27 | 704 | 0.2− | 0.1− | 2004 05 21 | 704 | 0.0 | 0.6+ |
| 1999 12 07 | 704 | 0.6− | 0.0 | 2003 12 27 | 704 | 0.7+ | 0.1− | 2004 05 21 | 704 | 1.1+ | 0.9+ |
| 1999 12 07 | 704 | 0.0 | 0.1+ | 2004 02 13 | 644 | 0.1+ | 0.5+ | 2004 05 21 | 704 | 0.1+ | 0.4+ |
| 2000 01 06 | 704 | 1.4+ | 1.1− | 2004 02 13 | 644 | 0.0 | 0.4+ | 2004 05 21 | 704 | 0.0 | 0.7+ |
| 2000 01 06 | 704 | 0.2+ | 1.0− | 2004 02 13 | 644 | 0.1− | 0.1+ | 2004 05 21 | 704 | 0.6+ | 0.5+ |
| 2000 01 06 | 704 | 0.5− | 0.1− | 2004 02 16 | 703 | 1.4− | 0.7− | 2005 06 28 | G96 | 1.4+ | 0.6+ |
| 2000 01 30 | 703 | 0.2+ | 0.1− | 2004 02 16 | 703 | 0.4− | 0.1− | 2005 06 28 | G96 | 0.4− | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 703 | 0.2− | 0.6+ | 2004 02 16 | 703 | 0.5− | 0.2− | 2005 06 28 | G96 | 0.5− | 1.2+ | | |
| 2000 01 30 | 703 | 0.0 | 0.3− | 2004 02 16 | 703 | 0.8− | 0.3− | 2005 06 28 | G96 | 0.3− | 1.0+ | | |
| 2000 01 30 | 703 | 0.2− | 0.5− | 2004 02 18 | 704 | 0.6− | 0.9+ | 2005 06 30 | G96 | 0.3− | 0.8+ | | |
| 2000 02 03 | 704 | 0.2− | 0.0 | 2004 02 18 | 704 | (0.6− | 1.6−) | 2005 06 30 | G96 | 0.0 | 0.8+ | | |
| 2000 02 03 | 704 | 0.3+ | 0.2− | 2004 02 18 | 704 | 0.4+ | 0.9+ | 2005 06 30 | G96 | 0.2− | 0.7+ | | |
| 2000 02 03 | 704 | 0.1− | 0.4− | 2004 02 18 | 704 | 0.9+ | 1.3+ | 2006 09 30 | G96 | 0.2+ | 0.1− | | |
| 2000 02 03 | 704 | 0.6+ | 0.0 | 2004 02 18 | 704 | 0.4+ | 0.9+ | 2006 09 30 | G96 | 0.2− | 0.2− | | |
| 2000 02 03 | 704 | 0.6+ | 0.3− | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 2000 02 05 | 819 | 0.2+ | 0.5− | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.3− | | |
| 2000 02 05 | 819 | 1.2+ | 0.0 | 2004 02 23 | 704 | 0.0 | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.2+ | | |
| 2000 02 05 | 819 | 0.4+ | 0.9− | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.4+ | | |
| 2000 02 05 | 819 | 1.2+ | 0.4− | 2004 02 23 | 704 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | | |
| 2000 02 05 | 819 | 0.5+ | 0.2+ | 2004 02 25 | 704 | 0.4+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | | |
| 2000 02 08 | 819 | 0.5− | 0.9− | 2004 02 25 | 704 | 0.1− | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | | |
| 2000 02 08 | 819 | 0.0 | 0.2+ | 2004 02 25 | 704 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | | |
| 2000 02 08 | 819 | 0.1− | 0.8+ | 2004 02 25 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.4+ | | |
| 2000 02 08 | 819 | 0.2− | 0.8+ | 2004 02 25 | 704 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.4+ | | |
| 2000 02 10 | 819 | 0.7+ | 1.0− | 2004 02 26 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2+ | | |
| 2000 02 10 | 819 | 0.6− | 1.4− | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.3+ | | |
| 2000 02 10 | 819 | 0.6− | 1.2− | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2000 02 11 | 704 | (2.1+ | 1.2−) | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2000 02 11 | 704 | 0.8− | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2000 02 11 | 704 | 0.1+ | 0.6− | 2004 03 11 | 644 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 2000 02 11 | 704 | 0.9− | 0.8− | 2004 03 11 | 644 | 0.5− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2000 02 11 | 704 | 0.2− | 0.0 | 2004 03 11 | 644 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2000 02 26 | 703 | 0.7− | 0.6− | 2004 03 15 | 703 | 0.0 | 0.6− | 2006 10 31 | 691 | 0.2− | 0.1+ | | |
| 2000 02 26 | 703 | 0.2+ | 0.5+ | 2004 03 15 | 704 | 0.7+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2000 02 26 | 703 | 0.1− | 0.8− | 2004 03 15 | 703 | 0.3+ | 0.6+ | 2006 11 11 | 683 | 1.3− | 0.2+ | | |
| 2000 02 26 | 703 | 0.8− | 0.5+ | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 683 | (0.4− | 1.7+) | | |
| 2000 03 04 | 704 | 0.4+ | 0.4− | 2004 03 15 | 703 | 0.9+ | 0.5− | 2006 11 11 | 683 | (0.2− | 1.7+) | | |
| 2000 03 04 | 704 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.5− | | |
| 2000 03 04 | 704 | 0.5− | 1.3− | 2004 03 15 | 703 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.5+ | | |
| 2000 03 04 | 704 | 0.0 | 1.2− | 2004 03 15 | 704 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.6− | 0.3+ | | |
| 2000 03 04 | 704 | 0.4− | 0.7− | 2004 03 15 | 704 | 0.8+ | 0.3+ | 2006 11 15 | G96 | 0.6− | 0.1+ | | |
| 2000 03 26 | 699 | 0.1− | 0.0 | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.0 | | |
| 2000 03 26 | 699 | 0.1− | 0.5+ | 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.9− | 0.1+ | | |
| 2000 03 26 | 699 | 0.6− | 0.3+ | 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.6− | 0.1+ | | |
| 2000 03 26 | 699 | 0.3− | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.7+ | 2006 11 17 | 703 | 0.3− | 0.6− | | |
| 2002 09 27 | 644 | 0.7− | 0.1+ | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 11 17 | 703 | (1.7− | 0.5−) | | |
| 2002 09 27 | 644 | 0.8− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.0 | | |
| 2002 09 27 | 644 | 0.8− | 0.1− | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.7+ | 0.2+ | | |
| 2002 09 30 | 704 | 1.4− | 0.1− | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.1− | | |
| 2002 09 30 | 704 | 0.6− | 0.6− | 2004 03 20 | 699 | 0.0 | 0.5+ | 2006 11 18 | 704 | 1.1+ | 0.8+ | | |
| 2002 09 30 | 704 | (1.4− | 1.9−) | 2004 03 20 | 699 | (1.8+ | 0.6+) | 2006 11 18 | 704 | 0.5+ | 0.0 | | |
| 2002 09 30 | 704 | (2.1− | 0.3+) | 2004 03 20 | 699 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.3+ | | |
| 2002 09 30 | 704 | (1.6− | 0.1−) | 2004 03 20 | 699 | 0.6+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.1+ | | |
| 2002 10 01 | 699 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.9+ | 0.7+ | 2006 11 19 | 704 | 0.1− | 1.0+ | | |
| 2002 10 01 | 699 | 0.2− | 0.4+ | 2004 03 22 | 704 | 0.0 | 0.8+ | 2006 11 19 | 704 | 0.4+ | 0.2+ | | |
| 2002 10 01 | 699 | 0.4+ | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.9− | 0.1− | | |
| 2002 10 01 | 699 | 0.3− | 0.4+ | 2004 03 22 | 704 | 1.1+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2002 10 03 | 704 | 0.8− | 0.2− | 2004 03 22 | 704 | 1.0+ | 0.9+ | 2006 11 21 | 704 | 0.1+ | 0.9+ | | |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 03 23 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.3+ | | |
| 2002 10 03 | 704 | 0.2− | 1.0+ | 2004 03 23 | 691 | 0.3− | 0.4+ | 2006 11 21 | 704 | 1.1− | 1.0+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.4+ | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | (0.9− | 2.2+) | | |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2004 03 28 | 704 | 0.1− | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.8+ | | |
| 2002 10 07 | 699 | (0.1+ | 1.6+) | 2004 03 28 | 704 | 0.0 | 0.3+ | 2006 11 26 | 704 | 0.5+ | 0.2+ | | |
| 2002 10 07 | 699 | 0.2− | 0.4+ | 2004 03 28 | 704 | 0.2+ | 0.2+ | 2006 11 26 | 704 | 0.0 | 0.3+ | | |
| 2002 10 07 | 699 | 1.1− | 1.0− | 2004 03 28 | 704 | 0.7− | 0.0 | 2006 11 26 | 704 | 0.1+ | 0.6+ | | |
| 2002 10 07 | 699 | (2.2− | 1.1−) | 2004 03 28 | 704 | 0.0 | 0.4+ | 2006 11 28 | 704 | 1.2+ | 0.7+ | | |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 04 10 | 644 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 04 10 | 644 | 0.1+ | 0.8+ | 2006 11 28 | 704 | 0.3− | 0.7+ | | |

**(137671)∗ 1999 XP$_{35}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.82756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.57351780 | $\omega$ | 198.10411 | | −0.18082398 | −0.91612916 | |
| $a$ | 1.4347342 | $\Omega$ | 263.52266 | | +0.94100784 | −0.05536247 | |
| $e$ | 0.1841971 | $i$ | 21.10532 | | +0.28601911 | −0.39704202 | |
| $P$ | 1.72 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 05 02 | 260 | (1.9+ | 3.2−) | 1999 12 08 | 704 | 0.1− | 0.5+ | 2000 02 24 | 413 | 0.3+ | 0.3+ | | |
| 1976 05 02 | 260 | 0.9− | 1.5− | 1999 12 08 | 704 | 0.0 | 0.7− | 2000 03 02 | 422 | (8.1+ | 3.9−) | | |
| 1985 09 17 | 261 | 0.4+ | 0.9− | 1999 12 08 | 704 | 0.0 | 0.9− | 2000 03 02 | 422 | (7.3+ | 4.2−) | | |
| 1999 12 06 | 704 | 0.2− | 0.2− | 1999 12 08 | 704 | 0.2+ | 0.1− | 2000 03 02 | 422 | (7.6+ | 5.2−) | | |
| 1999 12 06 | 704 | 0.1− | 0.4− | 1999 12 09 | 675 | 1.2− | 1.0+ | 2000 03 04 | 474 | 0.1− | 0.1+ | | |
| 1999 12 06 | 704 | 0.1− | 0.0 | 1999 12 09 | 675 | 0.8− | 1.1+ | 2000 03 04 | 474 | 0.1+ | 0.3+ | | |
| 1999 12 06 | 704 | 0.3+ | 0.0 | 1999 12 13 | 703 | (1.2+ | 2.4−) | 2000 03 04 | 474 | 0.4− | 0.1− | | |
| 1999 12 06 | 704 | 0.4+ | 0.1− | 1999 12 13 | 703 | 0.6+ | 0.9+ | 2000 06 12 | 413 | 0.6+ | 0.5+ | | |
| 1999 12 07 | 719 | (2.8− | 2.9+) | 1999 12 13 | 703 | (1.9− | 3.1+) | 2000 06 12 | 413 | 1.2− | 0.2− | | |
| 1999 12 07 | 719 | 0.2+ | 0.5− | 1999 12 13 | 703 | 0.1− | 0.2+ | 2000 06 12 | 413 | 0.1+ | 0.4− | | |
| 1999 12 07 | 704 | 0.0 | 0.0 | 1999 12 15 | 360 | 0.2+ | 0.2− | 2004 09 02 | 568 | 0.1− | 0.2+ | | |
| 1999 12 07 | 704 | 0.8− | 0.4+ | 1999 12 15 | 360 | 0.3+ | 0.2− | 2004 09 02 | 568 | 0.1+ | 0.0 | | |
| 1999 12 07 | 704 | 0.1− | 0.2− | 1999 12 15 | 360 | 0.2+ | 0.3− | 2004 10 04 | G90 | 0.2+ | 0.2− | | |
| 1999 12 07 | 704 | 0.0 | 0.1+ | 1999 12 16 | 704 | 0.9− | 0.1− | 2004 10 04 | G90 | 0.3− | 0.1− | | |
| 1999 12 07 | 704 | 0.0 | 0.1+ | 1999 12 16 | 704 | 0.8− | 0.0 | 2004 10 04 | G90 | 0.0 | 0.1+ | | |
| 1999 12 07 | 658 | 0.3+ | 0.4− | 1999 12 16 | 704 | 0.8− | 0.4− | 2004 10 05 | G90 | (4.4− | 13.0−) | | |
| 1999 12 07 | 658 | 0.4+ | 0.1+ | 1999 12 16 | 704 | 1.3− | 0.2− | 2004 10 05 | G90 | 0.4+ | 0.6− | | |
| 1999 12 07 | 658 | 0.4+ | 0.0 | 1999 12 16 | 704 | 0.8− | 0.2+ | 2004 10 05 | G90 | 0.1+ | 0.5− | | |
| 1999 12 07 | 684 | 0.2− | 0.0 | 1999 12 30 | 413 | 0.4+ | 0.0 | 2004 11 03 | 448 | 0.3− | 0.1− | | |
| 1999 12 07 | 684 | 0.4− | 0.1− | 1999 12 30 | 413 | 0.7− | 0.6− | 2004 11 03 | 448 | 0.3− | 0.9− | | |
| 1999 12 07 | 402 | 0.1+ | 0.2− | 2000 01 03 | 422 | 0.0 | 0.4+ | 2004 11 03 | 448 | 0.8+ | 0.7− | | |
| 1999 12 07 | 402 | 0.3− | 0.4− | 2000 01 03 | 422 | 0.1− | 0.2+ | 2004 12 13 | 246 | 0.9− | 0.8+ | | |
| 1999 12 07 | 402 | 0.2− | 0.4− | 2000 01 03 | 422 | 0.2+ | 0.2+ | 2004 12 13 | 246 | 0.5+ | 1.3+ | | |
| 1999 12 07 | 402 | 0.0 | 0.3− | 2000 01 03 | 413 | 0.2+ | 0.0 | 2004 12 13 | 246 | (1.0+ | 1.9+) | | |
| 1999 12 07 | 587 | 1.4+ | 0.0 | 2000 01 03 | 413 | 0.2+ | 0.0 | 2004 12 13 | 246 | 1.0+ | 0.3+ | | |
| 1999 12 07 | 587 | 1.0+ | 0.8− | 2000 01 04 | 360 | 0.4+ | 0.5− | 2004 12 13 | 246 | (0.1− | 1.9+) | | |
| 1999 12 08 | 595 | 0.5+ | 0.6− | 2000 01 04 | 360 | 1.5+ | 0.7− | 2006 10 22 | G96 | 0.5− | 0.3− | | |
| 1999 12 08 | 595 | 0.4+ | 0.9+ | 2000 01 04 | 360 | 0.9+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.4− | | |
| 1999 12 08 | 595 | 0.4− | 0.1+ | 2000 01 15 | 422 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.1− | | |
| 1999 12 08 | 704 | 0.8+ | 0.9− | 2000 01 15 | 422 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.5− | 0.1+ | | |
| 1999 12 08 | 675 | 0.3− | 1.5+ | 2000 02 11 | 428 | 1.3− | 0.3− | | | | | | |
| 1999 12 08 | 675 | 0.4− | 1.5+ | 2000 02 24 | 413 | 0.3+ | 0.2+ | | | | | | |

**(137672)∗ 1999 XP$_{40}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.01781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28602398 | $\omega$ | 112.86070 | | −0.91056750 | −0.24929877 | |
| $a$ | 2.2813982 | $\Omega$ | 54.30537 | | +0.01250443 | −0.81391115 | |
| $e$ | 0.2297749 | $i$ | 23.95338 | | +0.41317124 | −0.52478449 | |
| $P$ | 3.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.8− | 0.8+ | 2004 02 09 | 699 | 0.6− | 0.0 | 2006 09 28 | G96 | 0.5− | 0.1+ | | |
| 1999 10 09 | 704 | 0.4+ | 0.2− | 2004 02 10 | 704 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.2− | 0.2+ | | |
| 1999 10 09 | 704 | 0.4+ | 0.4+ | 2004 02 10 | 704 | 1.0− | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.2− | | |
| 1999 11 04 | 704 | 0.7+ | 0.4− | 2004 02 10 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.9− | | |
| 1999 11 04 | 704 | 0.9− | 0.1+ | 2004 02 10 | 704 | 0.3− | 0.7+ | 2006 10 16 | 703 | (2.2+ | 0.3+) | | |
| 1999 11 04 | 704 | 1.0− | 0.3− | 2004 02 10 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | (1.6− | 1.0+) | | |
| 1999 11 04 | 704 | 0.0 | 1.2− | 2004 04 01 | 704 | 0.4+ | 0.7− | 2006 10 16 | 703 | 0.1+ | 0.1− | | |
| 1999 11 04 | 704 | 0.5− | 1.5− | 2004 04 01 | 704 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 1999 11 15 | 704 | 0.3+ | 0.1+ | 2004 04 01 | 704 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.3− | 0.1+ | | |
| 1999 11 15 | 704 | 0.0 | 0.5− | 2004 04 01 | 704 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 1999 11 15 | 704 | 0.0 | 0.0 | 2004 04 12 | 704 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.4− | 0.2− | | |
| 1999 11 15 | 704 | 0.1+ | 0.3+ | 2004 04 12 | 704 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.3− | 0.2− | | |
| 1999 11 15 | 704 | 0.5+ | 0.1− | 2004 04 12 | 704 | 0.1+ | 0.3− | 2006 10 29 | G96 | 0.1− | 0.0 | | |
| 1999 12 07 | 704 | 1.7+ | 0.3− | 2004 04 12 | 704 | 0.2+ | 0.2− | 2006 10 29 | G96 | 0.1− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1+ | 0.8+ | 2004 04 12 | 704 | 0.2+ | 0.5− | 2006 10 29 | G96 | 0.5− | 0.2− |
| 1999 12 07 | 704 | 1.4+ | 0.4− | 2004 04 27 | 704 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.5− |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2004 04 27 | 704 | 0.7+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 1999 12 08 | 704 | 0.1− | 0.5+ | 2004 04 27 | 704 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.6− |
| 1999 12 08 | 704 | 0.7− | 0.1+ | 2004 04 27 | 704 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.5− | 0.2− |
| 1999 12 08 | 704 | 0.5− | 0.3− | 2004 05 12 | 704 | 0.0 | 0.3+ | 2006 11 15 | 704 | 1.1− | 1.1+ |
| 1999 12 08 | 704 | 0.7− | 0.4+ | 2004 05 12 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 704 | (0.0 | 2.1+) |
| 1999 12 08 | 704 | 0.3− | 0.4− | 2004 05 12 | 704 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.9+ |
| 1999 12 12 | 703 | 0.2− | 0.2+ | 2004 05 24 | 703 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.1− |
| 1999 12 12 | 703 | 1.5+ | 0.9+ | 2004 05 24 | 703 | 0.3+ | 0.5− | 2006 11 16 | 704 | 0.4− | 0.0 |
| 1999 12 12 | 703 | 0.3+ | 0.2− | 2004 05 24 | 704 | (1.7+ | 0.8+) | 2006 11 16 | 704 | 1.4+ | 0.1− |
| 1999 12 12 | 703 | 0.1− | 0.2+ | 2004 05 24 | 703 | 0.6− | 0.9− | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2002 10 08 | 644 | 0.2− | 0.4+ | 2004 05 24 | 704 | 1.5+ | 0.9+ | 2006 11 16 | 704 | 0.6+ | 1.1+ |
| 2002 10 08 | 644 | 0.5− | 0.4+ | 2004 05 24 | 703 | 1.3− | 0.4− | 2006 11 16 | 704 | 0.1− | 0.4− |
| 2002 10 08 | 644 | 0.2− | 0.8+ | 2004 05 24 | 704 | (2.0+ | 0.9+) | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 2003 12 03 | 704 | 0.1+ | 0.3+ | 2004 05 24 | 704 | (2.0+ | 0.4+) | 2006 11 16 | 704 | 0.0 | 0.7+ |
| 2003 12 03 | 704 | 0.4− | 0.1+ | 2004 05 24 | 704 | (2.0+ | 0.8+) | 2006 11 16 | 704 | 0.1− | 0.8+ |
| 2003 12 03 | 704 | 0.8+ | 0.2− | 2004 05 24 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2003 12 03 | 704 | 0.7+ | 0.4− | 2004 05 24 | 703 | 0.5− | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2003 12 17 | 704 | 0.3− | 0.8− | 2004 05 24 | 703 | 0.6+ | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2003 12 17 | 704 | 0.6+ | 0.2− | 2004 05 24 | 703 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2003 12 17 | 704 | 0.7− | 0.4− | 2004 06 10 | 703 | (3.4− | 2.5+) | 2006 11 19 | 704 | 0.3+ | 0.5− |
| 2004 01 19 | 704 | 0.1− | 0.2+ | 2004 06 10 | 703 | 1.3− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 01 19 | 704 | 0.3− | 0.2− | 2004 06 10 | 703 | 1.3− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2004 01 19 | 704 | 0.3− | 0.6+ | 2004 06 10 | 703 | 1.0− | 0.3− | 2006 11 21 | G96 | 0.5− | 0.2− |
| 2004 01 19 | 704 | 0.2− | 0.1+ | 2004 06 19 | 704 | 0.4− | 0.5− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 01 19 | 704 | 0.0 | 0.3+ | 2004 06 19 | 704 | 0.6+ | 0.7+ | 2006 11 22 | 704 | 0.1− | 0.5− |
| 2004 02 03 | 704 | 0.6+ | 0.4+ | 2004 06 19 | 704 | (1.2+ | 1.8−) | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2004 02 03 | 704 | 0.1+ | 0.3− | 2004 06 19 | 704 | 0.8+ | 0.5− | 2006 11 22 | 704 | 0.2− | 0.4− |
| 2004 02 03 | 704 | 0.2+ | 0.1− | 2004 06 19 | 704 | 0.6+ | 1.0− | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2004 02 03 | 704 | 0.7+ | 0.1− | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2004 02 03 | 704 | 0.9+ | 0.3− | 2006 09 28 | G96 | 0.4− | 0.0 | 2006 11 27 | 704 | 0.4+ | 1.0+ |
| 2004 02 09 | 699 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.1+ | 0.8+ |
| 2004 02 09 | 699 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.3− | 0.0 | 2006 11 27 | 704 | 0.3− | 0.5+ |
| 2004 02 09 | 699 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.0 | | | | |

**(137673)∗ 1999 XX$_{40}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.64389 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28680242 | $\omega$ | 349.26170 | | +0.85585232 | −0.51511032 | |
| $a$ | 2.2772682 | $\Omega$ | 41.85052 | | +0.47957410 | +0.75652591 | |
| $e$ | 0.1662594 | $i$ | 4.01120 | | +0.19371499 | +0.40290186 | |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 21 | 704 | 0.9+ | 0.1+ | 1999 12 07 | 704 | 0.4− | 0.1− | 2004 02 16 | 704 | 0.1− | 0.1+ |
| 1999 10 21 | 704 | 0.1− | 1.0+ | 1999 12 07 | 704 | 0.7− | 0.5− | 2004 02 16 | 704 | 0.6+ | 0.4+ |
| 1999 10 21 | 704 | 2.0+ | 0.0 | 1999 12 08 | 704 | 0.4+ | 0.1− | 2004 02 16 | 691 | 0.2+ | 0.3+ |
| 1999 10 21 | 704 | 0.2+ | 0.6+ | 1999 12 08 | 704 | 0.9+ | 0.6− | 2004 02 16 | 704 | 0.8+ | 0.5+ |
| 1999 11 01 | 703 | 0.8+ | 0.4+ | 1999 12 08 | 704 | 0.1+ | 0.0 | 2004 02 16 | 691 | 0.2+ | 0.2+ |
| 1999 11 01 | 703 | 0.7− | 1.6+ | 1999 12 08 | 704 | 0.1− | 0.7− | 2004 03 16 | 691 | 0.2+ | 0.1+ |
| 1999 11 01 | 703 | 0.2− | 0.9+ | 1999 12 08 | 704 | 0.3+ | 0.1− | 2004 03 16 | 691 | 0.2+ | 0.4+ |
| 1999 11 01 | 703 | 0.5− | 0.3− | 1999 12 12 | 703 | 0.3+ | 0.8+ | 2004 03 16 | 691 | 0.2+ | 0.2+ |
| 1999 11 03 | 699 | 0.2− | 0.5+ | 1999 12 12 | 703 | 1.1− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 1999 11 03 | 699 | 1.8− | 1.0+ | 1999 12 12 | 703 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.4− | 0.3− |
| 1999 11 03 | 699 | 0.5+ | 0.3+ | 1999 12 12 | 703 | 0.1− | 0.6+ | 2006 11 10 | 691 | (1.7+ | 2.2−) |
| 1999 11 04 | 704 | 0.1+ | 0.1− | 2001 04 16 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 1999 11 04 | 704 | 0.2− | 0.5− | 2001 04 16 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.5− | 1.1+ |
| 1999 11 04 | 704 | 0.3+ | 0.1− | 2001 04 16 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 1999 11 04 | 704 | 0.5+ | 0.3− | 2002 08 11 | 644 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 0.9− | 0.9+ |
| 1999 11 04 | 704 | 0.4+ | 0.1− | 2002 08 11 | 644 | 0.8+ | 1.1+ | 2006 11 19 | 704 | 0.2+ | 1.3+ |
| 1999 11 14 | 704 | 0.3+ | 0.4− | 2002 08 11 | 644 | 0.2+ | 0.8+ | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 1999 11 14 | 704 | 0.4− | 0.2− | 2002 08 13 | 704 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 1999 11 14 | 704 | 0.3− | 0.0 | 2002 08 13 | 704 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.6− |
| 1999 11 14 | 704 | 0.2− | 0.1− | 2002 08 13 | 704 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.8− |
| 1999 11 14 | 704 | 0.3− | 0.2− | 2002 08 13 | 704 | 0.1− | 0.6− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 1999 11 16 | 704 | 0.2− | 0.2+ | 2002 08 13 | 704 | 0.4− | 0.6− | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 1999 11 16 | 704 | 0.0 | 0.1+ | 2002 08 30 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 1999 11 16 | 704 | 0.2+ | 0.2+ | 2002 08 30 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.0 |
| 1999 11 16 | 704 | 0.1+ | 0.4− | 2002 08 30 | 644 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.4− |
| 1999 11 16 | 704 | 0.3− | 0.0 | 2003 12 25 | 645 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.3− |
| 1999 12 07 | 704 | 0.2− | 0.5− | 2003 12 25 | 645 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.2− |
| 1999 12 07 | 704 | 0.4+ | 0.6− | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.4− |
| 1999 12 07 | 704 | 0.7− | 1.3− | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.4− |

**(137674)∗ 1999 XA$_{42}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.03070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27508446 | $\omega$ | 59.97243 | | −0.27358723 | −0.96182831 | |
| $a$ | 2.3414884 | $\Omega$ | 45.90671 | | +0.87956245 | −0.25271306 | |
| $e$ | 0.2875921 | $i$ | 0.48080 | | +0.38925561 | −0.10498762 | |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 14 | 691 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 1997 04 14 | 691 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 1997 04 14 | 691 | 0.5+ | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 1999 11 09 | 704 | 0.4+ | 0.6− | 2004 03 18 | 704 | 1.0+ | 1.3+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 1999 11 09 | 704 | 0.5+ | 0.4− | 2004 03 18 | 704 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 1999 11 09 | 704 | 0.8+ | 0.3− | 2004 03 21 | 699 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.3− | 0.0 |
| 1999 11 09 | 704 | 0.6+ | 0.5− | 2004 03 21 | 699 | 0.6+ | 0.8− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 1999 11 09 | 704 | 0.7+ | 0.2− | 2004 03 21 | 699 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 0.7+ | 0.7− | 2004 03 21 | 699 | 0.9− | 0.0 | 2006 10 17 | 703 | 1.3+ | 1.5+ |
| 1999 11 12 | 704 | 1.9+ | 1.7− | 2004 03 24 | 699 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.6+ | 1.1+ |
| 1999 11 12 | 704 | 1.7− | 0.9− | 2004 03 24 | 699 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.0 | 1.2− | 2004 03 24 | 699 | 1.0+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 1999 11 16 | 704 | 0.1+ | 0.1− | 2004 03 24 | 699 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 1999 11 16 | 704 | 0.6+ | 0.4+ | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1999 11 16 | 704 | 0.6− | 0.5+ | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 1999 11 16 | 704 | 0.2+ | 0.4+ | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 1999 11 16 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 12 04 | 703 | 0.2− | 0.6− | 2004 03 27 | 704 | 0.0 | 0.1+ | 2006 10 27 | G96 | 1.1− | 0.1− |
| 1999 12 04 | 703 | 0.6+ | 1.3+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.2− |
| 1999 12 04 | 703 | 0.8+ | 0.3− | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 1999 12 04 | 703 | 0.1− | 0.6+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 1999 12 05 | 691 | 0.5− | 0.1− | 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 11 02 | G96 | 0.1− | 0.7+ |
| 1999 12 05 | 691 | 0.2− | 0.0 | 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 11 02 | G96 | (0.2− | 2.9+) |
| 1999 12 05 | 691 | 0.2− | 0.0 | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 11 02 | G96 | 0.5− | 1.1+ |
| 1999 12 07 | 704 | 0.3− | 0.0 | 2004 04 13 | 644 | 0.0 | 0.7+ | 2006 11 02 | G96 | 0.1− | 1.2+ |
| 1999 12 07 | 704 | 0.1− | 0.0 | 2004 04 13 | 644 | 0.1+ | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.3+ |
| 1999 12 07 | 704 | 0.6− | 1.6+ | 2004 04 13 | 644 | 0.3+ | 0.2+ | 2006 11 02 | G96 | 0.2− | 0.2+ |
| 1999 12 07 | 704 | 0.4+ | 0.9− | 2004 04 15 | 691 | 0.2− | 0.5+ | 2006 11 02 | G96 | 0.3− | 0.2+ |
| 1999 12 07 | 704 | 0.2+ | 0.4− | 2004 04 15 | 691 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.5− | 0.3+ |
| 1999 12 08 | 704 | 0.1− | 0.3+ | 2004 04 15 | 691 | 0.2− | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.1+ |
| 1999 12 08 | 704 | 0.8+ | 0.6+ | 2004 04 22 | 691 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.0 |
| 1999 12 08 | 704 | 0.2− | 0.2+ | 2004 04 22 | 691 | 0.3− | 0.4+ | 2006 11 02 | G96 | 0.6− | 0.4+ |
| 1999 12 08 | 704 | 0.6+ | 0.2+ | 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 11 02 | G96 | 0.7− | 0.1+ |
| 1999 12 08 | 704 | 0.5− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 11 13 | G96 | 0.4− | 0.2− |
| 1999 12 12 | 703 | 0.8− | 1.0+ | 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.8+ | 0.3− |
| 1999 12 12 | 703 | 0.3− | 0.6− | 2006 07 21 | G96 | 0.6+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 1999 12 12 | 703 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.6− | 0.2− | 2006 11 13 | G96 | 0.5− | 0.4− |
| 1999 12 12 | 703 | 0.0 | 0.6− | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 1.7+ | 0.0 |
| 2004 02 26 | 704 | 1.3+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2004 02 26 | 704 | 0.6+ | 0.2− | 2006 09 15 | 691 | 0.1− | 0.7+ | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2004 02 26 | 704 | 0.9+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 1.4− | 0.2− |
| 2004 02 26 | 704 | 0.7+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2004 02 26 | 704 | 1.0+ | 0.4− | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2004 03 15 | 703 | (0.8+ | 1.5+) | 2006 09 26 | G96 | 0.5− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2004 03 15 | 703 | (0.5− | 2.5−) | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | (0.7− | 2.0+) | 2006 09 26 | G96 | 0.1− | 0.2+ | |
| 2004 03 15 | 703 | 0.0 | 0.9+ | 2006 09 26 | G96 | 0.3− | 0.1− | |

**(137675)∗ 1999 XF$_{42}$ = 1995 SC$_{83}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14799)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.44926 | | (2000.0) | | | |
| $n$ | 0.27471065 | $\omega$ | 142.35901 | | −0.39511580 | −0.91849967 |
| $a$ | 2.3436120 | $\Omega$ | 330.90471 | | +0.83486784 | −0.35197368 |
| $e$ | 0.1504241 | $i$ | 1.83277 | | +0.38324821 | −0.18020235 |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.8− | 1.8+ | 2004 01 24 | 704 | 0.5+ | 0.6+ | 2006 10 15 | 691 | 0.3− | 0.3− | |
| 1995 09 24 | 691 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.0 | |
| 1995 09 24 | 691 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | |
| 1995 09 29 | 691 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 683 | (1.9+ | 1.5+) | |
| 1995 09 29 | 691 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 10 16 | 683 | 0.6+ | 0.3+ | |
| 1995 09 29 | 691 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 683 | 0.7+ | 0.5− | |
| 1999 11 03 | 704 | 0.2+ | 0.5− | 2004 01 31 | 691 | 0.0 | 0.0 | 2006 10 17 | 683 | (1.9+ | 0.5+) | |
| 1999 11 03 | 704 | 0.1+ | 1.1− | 2004 01 31 | 691 | 0.8− | 0.3+ | 2006 10 17 | 683 | 0.3+ | 0.0 | |
| 1999 11 03 | 704 | 1.3+ | 0.9+ | 2004 01 31 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1− | 0.7− | |
| 1999 11 04 | 703 | 1.5− | 1.9+ | 2004 02 10 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.1− | |
| 1999 11 04 | 703 | 0.0 | 0.8− | 2004 02 10 | 644 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.6− | |
| 1999 11 04 | 703 | 1.4− | 0.8+ | 2004 02 10 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.3− | |
| 1999 11 04 | 703 | 0.6+ | 0.6− | 2004 02 11 | 333 | 0.1+ | 0.0 | 2006 10 19 | 683 | 1.0− | 0.1+ | |
| 1999 11 14 | 704 | 0.4+ | 0.1+ | 2004 02 11 | 333 | 0.2− | 0.0 | 2006 10 19 | 683 | (1.0+ | 2.1+) | |
| 1999 11 14 | 704 | 0.3− | 0.5− | 2004 02 11 | 333 | 0.2− | 0.1− | 2006 10 19 | 683 | (1.5+ | 1.8+) | |
| 1999 11 14 | 704 | 0.1+ | 0.2− | 2004 02 11 | 699 | 0.4− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.1+ | |
| 1999 11 14 | 704 | 0.1+ | 0.2− | 2004 02 11 | 699 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.0 | |
| 1999 11 14 | 704 | 0.6− | 0.2− | 2004 02 11 | 699 | 0.7− | 1.0− | 2006 10 19 | 644 | 0.2+ | 0.1− | |
| 1999 11 16 | 704 | 1.9+ | 0.8+ | 2004 02 11 | 699 | 0.2− | 0.5− | 2006 10 20 | 683 | 1.2+ | 0.2− | |
| 1999 11 16 | 704 | 1.6+ | 0.6+ | 2004 02 11 | 291 | 0.4− | 0.0 | 2006 10 20 | 683 | (2.7+ | 1.1+) | |
| 1999 11 16 | 704 | 0.9− | 0.9+ | 2004 02 11 | 291 | 0.3− | 0.1− | 2006 10 20 | 683 | 1.0− | 0.1+ | |
| 1999 11 16 | 704 | 0.5− | 0.5+ | 2004 02 11 | 291 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2− | |
| 1999 11 16 | 704 | 0.0 | 0.2+ | 2004 02 14 | 608 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.1− | |
| 1999 12 07 | 704 | 0.8− | 0.1+ | 2004 02 14 | 608 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.3− | |
| 1999 12 07 | 704 | 0.7+ | 0.2− | 2004 02 14 | 608 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.1+ | 0.2− | |
| 1999 12 07 | 704 | 0.7− | 1.8− | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.4+ | 0.2+ | |
| 1999 12 07 | 704 | 0.2− | 0.7− | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | (0.2− | 1.9−) | |
| 1999 12 08 | 704 | 1.0+ | 0.8− | 2004 02 16 | 704 | 0.1+ | 0.5+ | 2006 10 29 | 704 | 0.4+ | 0.2− | |
| 1999 12 08 | 704 | 0.5− | 0.9− | 2004 02 16 | 704 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.3− | |
| 1999 12 08 | 704 | 0.2+ | 0.3+ | 2004 02 16 | 704 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.2− | |
| 1999 12 08 | 704 | 0.3+ | 0.6− | 2004 02 19 | 608 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.0 | |
| 1999 12 08 | 704 | 0.9− | 0.6− | 2004 02 19 | 608 | 0.9+ | 0.4− | 2006 11 06 | 644 | 0.2− | 0.1+ | |
| 1999 12 13 | 703 | 0.9+ | 0.6− | 2004 02 19 | 608 | 0.7+ | 0.1− | 2006 11 06 | 644 | 0.6− | 0.4+ | |
| 1999 12 13 | 703 | 0.1+ | 1.4− | 2004 02 26 | 704 | 0.2+ | 0.5+ | 2006 11 06 | 644 | 0.1− | 0.3+ | |
| 1999 12 13 | 703 | 0.8+ | 0.6+ | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 11 11 | 703 | (1.5− | 0.7+) | |
| 1999 12 13 | 703 | 0.4− | 0.6− | 2004 02 26 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.5+ | 0.4+ | |
| 2002 08 27 | 644 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.4+ | 0.3− | |
| 2002 08 27 | 644 | 0.3− | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | |
| 2002 08 27 | 644 | 0.2− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.1+ | |
| 2003 11 29 | 703 | 0.6− | 1.1− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.0 | |
| 2003 11 29 | 703 | 1.4+ | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.8+ | |
| 2003 11 29 | 703 | (2.6− | 0.4−) | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.8− | |
| 2003 11 29 | 703 | 0.8− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.1− | |
| 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.0 | |
| 2004 01 18 | 644 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.9+ | 0.3+ | |
| 2004 01 18 | 644 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.4− | |
| 2004 01 24 | 704 | 0.8+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.4− | |
| 2004 01 24 | 704 | 0.5+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.4− | |
| 2004 01 24 | 704 | 0.7+ | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.3− | |
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.6− | |

**(137676)∗ 1999 XH$_{42}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.19435 | | (2000.0) | | | |
| $n$ | 0.27259782 | $\omega$ | 132.01262 | | +0.16565119 | −0.98591826 |
| $a$ | 2.3557062 | $\Omega$ | 308.43785 | | +0.89594242 | +0.16016064 |
| $e$ | 0.1851653 | $i$ | 1.67607 | | +0.41212482 | +0.04810150 |
| $P$ | 3.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 010 | 0.4+ | 0.6− | 2004 01 24 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.3− | |
| 1995 09 02 | 010 | (1.9+ | 2.8−) | 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.9− | 1.0− | |
| 1995 09 02 | 010 | (3.4+ | 5.0−) | 2004 01 24 | 704 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.2− | |
| 1999 10 13 | 704 | 0.7+ | 0.5+ | 2004 01 26 | 699 | 1.1− | 0.5− | 2006 09 17 | 704 | 0.6− | 1.5+ | |
| 1999 10 13 | 704 | 0.1− | 0.1+ | 2004 01 26 | 699 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.6+ | 0.3+ | |
| 1999 10 13 | 704 | 0.1− | 0.9+ | 2004 01 26 | 699 | (1.3+ | 1.6−) | 2006 09 17 | 704 | 0.3− | 0.6+ | |
| 1999 10 15 | 704 | 0.4+ | 0.5+ | 2004 01 26 | 699 | 0.4− | 0.4+ | 2006 09 17 | 704 | 0.2− | 0.9+ | |
| 1999 10 15 | 704 | 0.4+ | 1.0+ | 2004 01 30 | 704 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.7+ | |
| 1999 10 15 | 704 | 0.4+ | 0.4+ | 2004 01 30 | 704 | 0.0 | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.2− | |
| 1999 10 22 | 704 | 1.1+ | 0.1− | 2004 01 30 | 704 | 0.1− | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.1+ | |
| 1999 10 22 | 704 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.8− | 0.0 | |
| 1999 10 22 | 704 | 1.3+ | 0.5− | 2004 02 04 | 608 | 1.3+ | 0.4− | 2006 09 17 | 691 | 0.1− | 0.1+ | |
| 1999 11 03 | 704 | 0.7− | 0.5− | 2004 02 04 | 608 | 0.7+ | 0.3− | 2006 09 17 | 703 | 0.3− | 0.5+ | |
| 1999 11 03 | 704 | 0.5+ | 0.5− | 2004 02 04 | 608 | 1.0+ | 0.6− | 2006 09 17 | 703 | 0.5− | 0.3− | |
| 1999 11 03 | 704 | 0.1− | 0.7− | 2004 02 09 | 333 | 1.0− | 0.2− | 2006 09 17 | 703 | 0.6+ | 0.6− | |
| 1999 11 03 | 704 | 0.9+ | 1.0− | 2004 02 09 | 333 | 0.9− | 0.2− | 2006 09 19 | 699 | 0.1− | 0.0 | |
| 1999 11 03 | 704 | 0.4− | 0.0 | 2004 02 09 | 333 | 1.1− | 0.8− | 2006 09 19 | 699 | 0.3− | 0.5− | |
| 1999 11 04 | 703 | 0.0 | 0.3+ | 2004 02 11 | 699 | 0.6− | 0.8+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | |
| 1999 11 04 | 703 | 1.3− | 0.1− | 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.1+ | |
| 1999 11 04 | 703 | 0.1− | 0.1+ | 2004 02 11 | 699 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.6+ | |
| 1999 11 04 | 703 | 0.4− | 0.1− | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.3− | |
| 1999 11 05 | 699 | 0.6− | 0.7+ | 2004 02 11 | 699 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.1− | |
| 1999 11 05 | 699 | 0.2+ | 1.3+ | 2004 02 11 | 699 | 0.4− | 0.5− | 2006 09 20 | 704 | 0.9+ | 0.5+ | |
| 1999 11 05 | 699 | 0.2− | 0.6+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.5+ | |
| 1999 11 09 | 703 | 0.0 | 0.0 | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ | |
| 1999 11 09 | 703 | 0.0 | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.1+ | |
| 1999 11 09 | 703 | 0.4− | 0.5− | 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.3+ | |
| 1999 11 09 | 703 | 0.2+ | 0.5− | 2004 02 14 | 333 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.3+ | |
| 1999 11 14 | 704 | 0.3+ | 0.3− | 2004 02 14 | 333 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.1− | 1.1+ | |
| 1999 11 14 | 704 | 0.0 | 0.0 | 2004 02 14 | 608 | 1.0+ | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.3+ | |
| 1999 11 14 | 704 | 0.3+ | 0.1− | 2004 02 14 | 608 | 1.0+ | 0.5+ | 2006 09 25 | 704 | 0.7− | 0.6+ | |
| 1999 11 14 | 704 | 0.3+ | 1.4+ | 2004 02 14 | 608 | 0.9+ | 1.1+ | 2006 09 25 | 704 | 0.4+ | 0.1+ | |
| 1999 11 14 | 704 | 0.2+ | 0.0 | 2004 02 14 | 106 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.0 | |
| 1999 11 16 | 704 | 0.2− | 0.3− | 2004 02 14 | 106 | 0.0 | 0.9− | 2006 09 29 | 704 | 1.0+ | 0.4− | |
| 1999 11 16 | 704 | 0.1− | 0.2− | 2004 02 14 | 106 | 0.4− | 0.1− | 2006 09 29 | 704 | (2.0+ | 1.2−) | |
| 1999 11 16 | 704 | 0.1− | 0.7− | 2004 02 14 | 106 | 0.5− | 0.6− | 2006 09 29 | 704 | 0.5− | 0.7+ | |
| 1999 11 16 | 704 | 0.5+ | 0.1− | 2004 02 14 | 106 | 0.3− | 0.5− | 2006 10 01 | 704 | 0.8− | 1.0+ | |
| 1999 11 16 | 704 | 0.5+ | 0.0 | 2004 02 14 | 106 | 0.8− | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.7− | |
| 1999 12 07 | 704 | 0.8− | 1.2− | 2004 02 17 | 704 | (1.6− | 0.1−) | 2006 10 01 | 704 | 0.4+ | 0.9+ | |
| 1999 12 07 | 704 | 0.7− | 0.2− | 2004 02 17 | 704 | 0.9+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 1.3+ | |
| 1999 12 07 | 704 | 0.4− | 0.7− | 2004 02 17 | 704 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.3+ | 1.5+ | |
| 1999 12 07 | 704 | 0.6− | 0.3− | 2004 02 17 | 704 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1+ | |
| 1999 12 07 | 704 | 1.0− | 0.9− | 2004 02 17 | 704 | 0.3+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.1+ | |
| 1999 12 08 | 704 | 0.0 | 0.4− | 2004 02 19 | 608 | 1.4+ | 0.5− | 2006 10 02 | 691 | 0.1− | 0.0 | |
| 1999 12 08 | 704 | 0.6− | 0.6− | 2004 02 19 | 608 | 1.1+ | 0.1− | 2006 10 17 | 703 | 0.5− | 0.4+ | |
| 1999 12 08 | 704 | 0.3− | 0.2− | 2004 02 19 | 608 | 0.8+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.5− | |
| 1999 12 08 | 704 | 0.3+ | 0.3− | 2004 02 24 | 608 | 0.3− | 0.7+ | 2006 10 17 | 703 | 0.4+ | 0.1− | |
| 1999 12 08 | 704 | 0.3− | 0.1− | 2004 02 24 | 608 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.8− | |
| 1999 12 12 | 703 | 0.1− | 0.7− | 2004 02 24 | 608 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.3− | |
| 1999 12 12 | 703 | 0.5+ | 0.3− | 2004 02 26 | 704 | 0.6+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.0 | |
| 1999 12 12 | 703 | 0.3+ | 1.6− | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1− | |
| 1999 12 12 | 703 | 1.4+ | 0.6− | 2004 02 26 | 704 | 0.1+ | 0.6− | 2006 10 23 | 644 | 0.2− | 0.1− | |
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ | |
| 2000 01 04 | 704 | 0.4+ | 0.4− | 2004 02 26 | 704 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.1− | |
| 2000 01 04 | 704 | 0.4+ | 1.0+ | 2004 03 01 | 691 | 0.0 | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.2− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.9− | 0.3− | 2004 03 01 | 691 | 0.1+ | 0.3+ | 2006 11 06 | 644 | 0.2+ | 0.4− |
| 2000 01 06 | 704 | 0.1− | 0.4− | 2004 03 01 | 691 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2000 01 06 | 704 | 0.8+ | 0.3− | 2006 07 22 | G96 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.4+ | 0.0 |
| 2000 01 06 | 704 | 0.5+ | 0.5− | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2000 01 06 | 704 | 0.8+ | 0.7− | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2004 01 24 | 704 | 0.4+ | 0.3+ | 2006 07 22 | G96 | 0.5− | 0.2+ | | | | |
| 2004 01 24 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.6+ | | | | |

**(137677)∗ 1999 XA$_{44}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.82585 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27389985 | $\omega$ | 333.76027 | | +0.99839540 | −0.05047098 |
| $a$ | 2.3482348 | $\Omega$ | 29.16756 | | +0.05662081 | +0.89648910 |
| $e$ | 0.2380445 | $i$ | 3.02003 | | −0.00084042 | +0.44018174 |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.8+ | 0.4+ | 2006 08 28 | 704 | 0.5− | 0.3− | 2006 09 28 | 704 | 0.4− | 0.7− |
| 1999 11 03 | 704 | 0.1− | 1.6+ | 2006 08 28 | 704 | 1.3− | 0.8+ | 2006 09 28 | 704 | 0.3+ | 0.9− |
| 1999 11 03 | 704 | 0.7+ | 0.3+ | 2006 08 28 | 699 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.0 |
| 1999 11 03 | 704 | 0.2+ | 1.3+ | 2006 08 28 | 699 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.2− |
| 1999 11 09 | 703 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.4− | 2006 09 28 | 704 | 0.7− | 0.1+ |
| 1999 11 09 | 703 | 1.2− | 0.2+ | 2006 08 28 | 699 | 0.8− | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.9− |
| 1999 11 09 | 703 | 1.5− | 0.1− | 2006 09 16 | 704 | 0.8− | 0.2− | 2006 09 28 | 704 | 1.1− | 0.3− |
| 1999 11 09 | 703 | 0.6+ | 0.5+ | 2006 09 16 | 704 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 1999 11 12 | 699 | 0.5− | 0.7+ | 2006 09 16 | 704 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.4+ | 0.1+ |
| 1999 11 12 | 699 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 1999 11 12 | 699 | 0.7+ | 0.4− | 2006 09 18 | 703 | 0.8+ | 0.6+ | 2006 09 30 | 704 | 0.5+ | 0.8− |
| 1999 11 14 | 704 | 0.2− | 0.7− | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.9+ | 0.2− |
| 1999 11 14 | 704 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.0 |
| 1999 11 14 | 704 | 0.5+ | 0.6− | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 09 30 | 704 | 0.0 | 0.3− |
| 1999 11 14 | 704 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 1999 11 14 | 704 | 0.4− | 1.1− | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 09 30 | 704 | 0.1− | 0.2− |
| 1999 11 16 | 704 | 0.3− | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.4+ |
| 1999 11 16 | 704 | 0.7+ | 1.0− | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.1+ | 0.1− |
| 1999 11 16 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 1999 11 16 | 704 | 0.6+ | 1.0− | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 1999 11 16 | 704 | 0.1− | 0.7− | 2006 09 18 | 699 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 0.9+ | 0.7− |
| 1999 12 05 | 703 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.8+ |
| 1999 12 05 | 703 | 0.2− | 0.8+ | 2006 09 19 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 1999 12 05 | 703 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1999 12 05 | 703 | 0.8− | 0.4+ | 2006 09 19 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 1999 12 07 | 704 | 0.0 | 1.1− | 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.2+ | 0.1− | 2006 09 19 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 12 07 | 704 | 0.2+ | 0.7− | 2006 09 19 | 703 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 1999 12 07 | 704 | 0.1+ | 1.2− | 2006 09 19 | 704 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 1999 12 07 | 704 | 1.1+ | 0.3− | 2006 09 19 | 704 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 1999 12 08 | 704 | 0.1− | 0.1+ | 2006 09 21 | 608 | (2.3+ | 5.6+) | 2006 10 20 | G96 | 0.7+ | 0.0 |
| 1999 12 08 | 704 | 0.9+ | 0.1+ | 2006 09 21 | 608 | (3.1+ | 5.4+) | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 1999 12 08 | 704 | 0.8+ | 0.7− | 2006 09 21 | 608 | (3.3+ | 6.6+) | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 1999 12 08 | 704 | 0.6+ | 0.2+ | 2006 09 22 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 1999 12 08 | 704 | 0.3− | 0.5− | 2006 09 22 | 704 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 1999 12 13 | 703 | 1.0− | 1.0+ | 2006 09 22 | 704 | 0.4− | 0.3− | 2006 10 21 | 291 | 0.2+ | 0.2+ |
| 1999 12 13 | 703 | 0.0 | 0.4− | 2006 09 22 | 704 | 0.1− | 0.2+ | 2006 10 21 | 291 | 0.1+ | 0.2+ |
| 1999 12 13 | 703 | 0.3+ | 0.5+ | 2006 09 22 | 704 | 0.9− | 0.4+ | 2006 10 21 | 291 | 0.1+ | 0.3+ |
| 1999 12 13 | 703 | 0.9− | 1.3+ | 2006 09 26 | 704 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2003 12 21 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.8+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2003 12 21 | 691 | 0.3+ | 0.3− | 2006 09 26 | 704 | 1.2− | 1.0− | 2006 10 21 | G96 | 0.5+ | 0.2+ |
| 2003 12 21 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.7− | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2004 01 22 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 704 | (1.6+ | 0.1−) | 2006 11 10 | 704 | 0.6− | 0.4+ |
| 2004 01 22 | 704 | (0.2− | 2.7+) | 2006 09 26 | 704 | 0.9− | 0.8− | 2006 11 10 | 704 | 0.9− | 0.9+ |
| 2004 01 22 | 704 | 0.4− | 1.2+ | 2006 09 26 | 704 | 0.6+ | 0.4− | 2006 11 10 | 704 | 1.4− | 0.0 |
| 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.9− | 0.4− | 2006 11 11 | 703 | 1.4− | 0.3− |
| 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.1− | 0.7− |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2005 05 08 | G96 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2005 05 08 | G96 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.4− | 1.2− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2005 05 08 | G96 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 27 | 704 | 1.1− | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.8− | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 08 28 | 704 | 0.2− | 0.7+ | 2006 09 28 | 704 | 1.1− | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2006 08 28 | 704 | 0.1− | 0.9− | 2006 09 28 | 704 | 0.2− | 0.0 | | | | |

**(137678)∗ 1999 XW$_{44}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.84041 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27724113 | $\omega$ | 193.40850 | | +0.17308377 | −0.98174757 |
| $a$ | 2.3293296 | $\Omega$ | 246.67006 | | +0.91136856 | +0.18999207 |
| $e$ | 0.1451503 | $i$ | 4.92468 | | +0.37342918 | −0.00864483 |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.1+ | 1.0− | 2004 01 30 | 608 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 1999 11 14 | 704 | 0.4+ | 1.4− | 2004 01 30 | 608 | 0.2− | 0.3+ | 2006 10 29 | 704 | 0.0 | 0.3+ |
| 1999 11 14 | 704 | 0.1− | 1.7− | 2004 02 12 | 644 | 0.0 | 0.3+ | 2006 10 29 | 704 | 1.2− | 0.3+ |
| 1999 11 14 | 704 | 0.1− | 1.5− | 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.7− | 0.8+ |
| 1999 11 14 | 704 | 0.4+ | 1.7− | 2004 02 12 | 644 | 0.0 | 0.4+ | 2006 10 29 | 704 | 0.0 | 0.3+ |
| 1999 11 16 | 704 | 0.6+ | 1.0− | 2004 02 13 | 699 | (1.5− | 0.8+) | 2006 10 29 | 704 | (1.7− | 0.3−) |
| 1999 11 16 | 704 | 0.5+ | 1.3− | 2004 02 13 | 699 | (2.7− | 0.8+) | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 1999 11 16 | 704 | 0.4+ | 1.7− | 2004 02 13 | 699 | 0.0 | 0.7+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 1999 11 16 | 704 | 0.0 | 1.4− | 2004 02 13 | 699 | 0.9− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 1999 11 16 | 704 | 0.9+ | 1.1− | 2004 02 19 | 608 | 0.4− | 0.9− | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 1999 12 04 | 703 | 0.2− | 0.3+ | 2004 02 19 | 608 | 0.1− | 0.7− | 2006 11 07 | 644 | 0.3− | 0.1− |
| 1999 12 04 | 703 | 0.9− | 0.5− | 2004 02 19 | 608 | 0.0 | 1.0− | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 1999 12 04 | 703 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.8− | 0.6− |
| 1999 12 04 | 703 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 1999 12 07 | 704 | 0.1+ | 0.0 | 2004 02 23 | 704 | 1.0+ | 0.6+ | 2006 11 14 | 703 | 0.1− | 0.4+ |
| 1999 12 07 | 704 | 0.1+ | 0.6− | 2004 02 23 | 704 | 0.5+ | 0.5+ | 2006 11 14 | 703 | (3.3− | 2.6−) |
| 1999 12 07 | 704 | 0.1− | 0.1+ | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.3− |
| 1999 12 07 | 704 | 0.6− | 0.4+ | 2004 03 12 | 644 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1999 12 08 | 704 | 0.7+ | 0.3+ | 2004 03 12 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 1999 12 08 | 704 | 0.4− | 0.9− | 2004 03 15 | 704 | (1.8+ | 0.3+) | 2006 11 16 | 704 | 1.1+ | 1.0+ |
| 1999 12 08 | 704 | 0.0 | 0.5− | 2004 03 15 | 704 | 1.2+ | 1.0+ | 2006 11 16 | 704 | 0.0 | 0.3− |
| 1999 12 12 | 703 | 0.7− | 0.5+ | 2004 03 15 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.5− | 1.2+ |
| 1999 12 12 | 703 | 0.3− | 0.3+ | 2004 03 15 | 704 | 1.2+ | 0.5+ | 2006 11 18 | 691 | 0.7+ | 0.3+ |
| 1999 12 12 | 703 | 0.4+ | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.7− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 1999 12 12 | 703 | 0.3− | 0.1− | 2006 08 29 | 703 | 0.7+ | 0.9+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 04 23 | 691 | 0.2− | 0.3− | 2006 08 29 | 703 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2001 04 23 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.3+ | 1.4+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2001 04 23 | 691 | 0.5− | 0.2− | 2006 08 30 | 699 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 05 22 | 807 | 0.0 | 0.9+ | 2006 08 30 | 699 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 1.2+ |
| 2001 05 23 | 807 | 0.2+ | 0.9+ | 2006 08 30 | 699 | (0.5− | 1.6+) | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2002 07 21 | 644 | 0.5+ | 1.0+ | 2006 08 30 | 699 | 0.4− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 07 21 | 644 | 0.5+ | 1.1+ | 2006 09 25 | 704 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2002 07 21 | 644 | 0.2+ | 0.9+ | 2006 09 25 | 704 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 08 05 | 644 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 08 05 | 644 | 0.2+ | 0.9+ | 2006 09 28 | 703 | 0.1− | 0.6− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 08 05 | 644 | 0.2+ | 0.8+ | 2006 09 28 | 703 | 0.4+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2002 08 16 | 644 | 0.0 | 1.0+ | 2006 09 28 | 703 | (3.3− | 0.2+) | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 08 16 | 644 | 0.0 | 1.0+ | 2006 09 28 | 703 | (2.2− | 0.0 ) | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2002 08 16 | 644 | 0.1− | 1.0+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 08 26 | 644 | 0.5− | 0.5− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 1.0+ | 0.8+ |
| 2002 08 26 | 644 | 0.1+ | 0.4− | 2006 10 17 | 691 | 1.0− | 0.2+ | 2006 11 22 | 704 | (0.3+ | 2.4+) |
| 2002 08 26 | 644 | 0.8− | 0.5− | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.3− | 1.0+ |
| 2004 01 23 | 704 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.5+ | 1.4+ |
| 2004 01 23 | 704 | 0.6− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.2+ | 1.3+ |
| 2004 01 23 | 704 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2004 01 29 | 704 | 0.9+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.2+ | | |
| 2004 01 29 | 704 | 0.3+ | 1.2+ | 2006 10 21 | 691 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.7+ | 0.2+ | | |
| 2004 01 29 | 704 | 0.3+ | 1.0+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.8+ | 1.1+ | | |
| 2004 01 29 | 704 | 1.1+ | 1.2+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 28 | 704 | 1.0+ | 0.4+ | | |
| 2004 01 29 | 704 | 1.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 28 | 704 | 1.0+ | 0.5+ | | |
| 2004 01 30 | 608 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.8+ | 0.6− | | |

**(137679)∗ 1999 XC$_{45}$ = 1999 VM$_{29}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, MPC 38194)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.51454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27651240 | $\omega$ | 286.57757 | | +0.96563163 | +0.25569451 | |
| $a$ | 2.3334203 | $\Omega$ | 58.62925 | | −0.21274932 | +0.88066716 | |
| $e$ | 0.2318590 | $i$ | 3.13178 | | −0.14930937 | +0.39880530 | |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.3− | 0.4− | 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.2+ | | |
| 1999 11 03 | 704 | 1.8− | 0.2− | 2005 03 09 | G96 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.3− | | |
| 1999 11 03 | 704 | 0.4− | 0.5− | 2005 04 01 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.4− | | |
| 1999 11 03 | 704 | 0.6− | 0.2+ | 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.1+ | | |
| 1999 11 09 | 704 | 0.4− | 0.1+ | 2005 04 01 | 691 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.2− | | |
| 1999 11 09 | 704 | 0.2− | 0.0 | 2005 04 10 | G96 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− | | |
| 1999 11 09 | 704 | 0.2− | 0.2+ | 2005 04 10 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 1999 11 09 | 704 | 0.1+ | 0.5− | 2005 04 10 | G96 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 1999 11 09 | 704 | 0.2+ | 0.9− | 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 1999 11 12 | 704 | 0.2− | 0.4− | 2006 08 23 | 704 | 1.3− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 1999 11 12 | 704 | 0.0 | 0.1− | 2006 08 23 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1+ | | |
| 1999 11 12 | 704 | 0.3+ | 0.6− | 2006 08 23 | 704 | 0.8+ | 0.8+ | 2006 10 22 | 691 | 0.6− | 0.1− | | |
| 1999 11 12 | 704 | 0.6+ | 0.7+ | 2006 08 23 | 704 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 1999 11 12 | 704 | 0.1+ | 0.1− | 2006 08 23 | 704 | 1.1+ | 0.8+ | 2006 10 22 | 691 | 0.2− | 0.1+ | | |
| 1999 11 17 | 704 | 0.4− | 0.6− | 2006 08 28 | 704 | 0.2− | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.1+ | | |
| 1999 11 17 | 704 | 0.8+ | 1.1− | 2006 08 28 | 704 | 0.1+ | 1.2+ | 2006 10 23 | 704 | 0.2− | 0.1− | | |
| 1999 11 17 | 704 | 1.2+ | 0.2− | 2006 08 28 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.1− | 0.3− | | |
| 1999 11 17 | 691 | 0.1+ | 0.4− | 2006 08 28 | 704 | (0.3− | 2.2+) | 2006 10 23 | 704 | 0.6− | 0.0 | | |
| 1999 11 17 | 691 | 0.1− | 0.5− | 2006 09 20 | 699 | 0.3− | 0.1− | 2006 10 23 | 704 | 0.7+ | 0.1+ | | |
| 1999 11 17 | 691 | 0.2+ | 0.3− | 2006 09 20 | 699 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.4− | 0.4− | | |
| 1999 11 29 | 691 | 0.3+ | 0.5− | 2006 09 20 | 699 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.2− | 0.9+ | | |
| 1999 11 29 | 691 | 0.3+ | 0.5− | 2006 09 20 | 699 | 0.1− | 0.4+ | 2006 10 28 | 704 | 0.9+ | 0.2+ | | |
| 1999 11 29 | 691 | 0.4+ | 0.5− | 2006 09 22 | 704 | 0.5+ | 0.2− | 2006 10 28 | 704 | 0.3+ | 0.7+ | | |
| 1999 12 04 | 703 | 0.8+ | 1.1+ | 2006 09 22 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 0.3+ | 0.5+ | | |
| 1999 12 04 | 703 | 0.3+ | 0.7− | 2006 09 22 | 704 | 0.8− | 0.6+ | 2006 10 28 | 704 | 0.7+ | 0.9+ | | |
| 1999 12 04 | 703 | 0.2− | 1.4− | 2006 09 22 | 704 | (0.1− | 1.9+) | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 1999 12 04 | 703 | 0.5− | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 1999 12 07 | 704 | 0.3− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 1999 12 07 | 704 | 1.2+ | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 1999 12 07 | 704 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 1999 12 07 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | 1.4+ | 0.7− | 2006 11 07 | 644 | 0.0 | 0.1+ | | |
| 1999 12 08 | 704 | 0.0 | 1.1− | 2006 09 26 | 704 | 0.1+ | 1.1+ | 2006 11 07 | 644 | 0.4− | 0.0 | | |
| 1999 12 08 | 704 | 0.3+ | 0.4− | 2006 09 26 | 704 | 1.3+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 1999 12 08 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | (1.7+ | 0.2−) | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 1999 12 08 | 704 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 1999 12 08 | 704 | 0.1+ | 1.0− | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.4+ | | |
| 2001 03 26 | 695 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.2− | | |
| 2001 03 26 | 695 | 0.0 | 0.1+ | 2006 09 28 | 704 | 1.0+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.2− | | |
| 2003 12 19 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.9+ | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.0 | | |
| 2003 12 19 | 691 | 0.5+ | 0.3+ | 2006 09 28 | 704 | 0.2− | 1.0+ | 2006 11 16 | G96 | 0.3− | 0.1− | | |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.5− | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.2− | | |
| 2003 12 22 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1− | | |
| 2003 12 22 | 704 | 0.1+ | 0.8− | 2006 09 30 | 703 | 0.9− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2003 12 22 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2003 12 22 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.6− | | |
| 2003 12 22 | 704 | 1.1+ | 1.0− | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.2− | | |
| 2003 12 27 | 704 | (0.1+ | 2.0+) | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.9+ | | |
| 2003 12 27 | 704 | 0.1+ | 1.1+ | 2006 10 15 | 703 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.9− | 0.6+ | | |
| 2003 12 27 | 704 | 0.2− | 1.1+ | 2006 10 15 | 703 | 0.0 | 0.7+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2004 01 18 | 691 | 0.1− | 0.5+ | 2006 10 15 | 703 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2004 01 18 | 691 | 0.2− | 0.5+ | 2006 10 15 | 703 | 0.4+ | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.0 | | |
| 2004 01 18 | 691 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.1− | | |
| 2004 01 22 | 704 | 0.7+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.0 | | |
| 2004 01 22 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.4− | | |
| 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.4− | | |
| 2004 01 22 | 704 | 0.2+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.1− | | |
| 2004 01 22 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.1+ | | |
| 2005 03 09 | G96 | (2.4− | 0.9−) | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.2+ | | |
| 2005 03 09 | G96 | (0.2− | 1.7−) | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 11 21 | 704 | (1.9− | 0.6+) | | |

**(137680)∗ 1999 XW$_{45}$ = 2003 YY$_{38}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56005)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.25321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26628692 | $\omega$ | 138.48468 | | −0.27008517 | −0.96271625 | |
| $a$ | 2.3927803 | $\Omega$ | 327.17623 | | +0.87582086 | −0.23908204 | |
| $e$ | 0.1683535 | $i$ | 1.60821 | | +0.39998979 | −0.12655910 | |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 24 | 691 | 0.3+ | 0.8− | 2003 11 21 | 704 | (2.1− | 0.5+) | 2004 01 24 | 704 | 0.0 | 0.2− | | |
| 1993 01 24 | 691 | 0.2− | 0.8− | 2003 12 19 | 704 | 0.7+ | 1.1+ | 2004 01 24 | 704 | 0.1+ | 0.3+ | | |
| 1993 01 24 | 691 | 0.5+ | 0.6− | 2003 12 19 | 704 | 0.1− | 1.2+ | 2004 01 24 | 704 | 0.0 | 0.0 | | |
| 1995 10 17 | 691 | 0.1+ | 0.0 | 2003 12 19 | 704 | (0.6− | 1.8+) | 2004 01 27 | 691 | 0.3− | 0.0 | | |
| 1995 10 17 | 691 | 0.3+ | 0.0 | 2003 12 19 | 704 | 0.3− | 1.3+ | 2004 01 27 | 691 | 0.3− | 0.0 | | |
| 1995 10 17 | 691 | 0.1− | 0.1− | 2003 12 21 | 691 | 0.4− | 0.1− | 2004 01 27 | 691 | 0.3− | 0.0 | | |
| 1995 10 22 | 691 | (3.8+ | 3.7−) | 2003 12 21 | 691 | 0.2− | 0.1− | 2004 01 30 | 704 | 0.7+ | 1.0+ | | |
| 1995 10 22 | 691 | 0.0 | 0.7− | 2003 12 21 | 691 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.2− | 0.7+ | | |
| 1995 10 22 | 691 | 0.2− | 0.3− | 2003 12 22 | 704 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.7− | 0.0 | | |
| 1995 10 27 | 691 | 0.8− | 0.0 | 2003 12 22 | 704 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.2− | 0.4+ | | |
| 1995 10 27 | 691 | 0.8− | 0.0 | 2003 12 22 | 704 | 0.3+ | 0.6+ | 2004 01 30 | 704 | 0.1− | 1.0+ | | |
| 1995 10 27 | 691 | 1.0− | 0.3− | 2003 12 22 | 704 | 0.5− | 1.1+ | 2004 02 16 | 704 | 0.1+ | 0.3+ | | |
| 1999 11 14 | 704 | 0.6+ | 0.3+ | 2003 12 27 | 704 | 0.9+ | 0.9+ | 2004 02 16 | 704 | 0.3+ | 1.1+ | | |
| 1999 11 14 | 704 | 0.3+ | 0.3− | 2003 12 27 | 704 | 0.5+ | 1.1+ | 2004 02 16 | 704 | 0.5+ | 1.0+ | | |
| 1999 11 14 | 704 | 0.6+ | 1.1− | 2003 12 27 | 704 | 0.9+ | 0.2+ | 2004 02 16 | 704 | 0.7− | 0.1+ | | |
| 1999 11 14 | 704 | 0.4+ | 0.5− | 2003 12 27 | 704 | 1.2+ | 1.5+ | 2004 04 15 | 645 | 0.1− | 0.0 | | |
| 1999 11 14 | 704 | 0.3− | 1.4− | 2003 12 27 | 704 | 0.9+ | 0.9+ | 2004 04 15 | 645 | 0.1− | 0.0 | | |
| 1999 11 16 | 704 | 0.1− | 0.3+ | 2003 12 29 | 699 | 0.7− | 1.2− | 2004 04 16 | 645 | 0.1− | 0.0 | | |
| 1999 11 16 | 704 | 0.6− | 0.5− | 2003 12 29 | 699 | 0.3− | 0.3− | 2004 04 16 | 645 | 0.2− | 0.0 | | |
| 1999 11 16 | 704 | 0.1+ | 0.3− | 2003 12 29 | 699 | 0.2+ | 0.5+ | 2006 08 28 | 691 | 0.3+ | 0.2+ | | |
| 1999 11 16 | 704 | 0.5+ | 0.5− | 2003 12 29 | 699 | 0.3+ | 0.3− | 2006 08 28 | 691 | 0.3+ | 0.3+ | | |
| 1999 12 05 | 703 | 0.5+ | 0.4+ | 2004 01 19 | 703 | 0.6+ | 0.5+ | 2006 08 28 | 691 | 0.0 | 0.2+ | | |
| 1999 12 05 | 703 | 1.5− | 0.8+ | 2004 01 19 | 703 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.2+ | | |
| 1999 12 05 | 703 | 0.6+ | 0.2+ | 2004 01 19 | 703 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.1+ | | |
| 1999 12 05 | 703 | 0.6− | 0.5− | 2004 01 19 | 703 | 0.5− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.5+ | | |
| 1999 12 07 | 704 | 1.2+ | 0.3− | 2004 01 22 | 704 | 1.0+ | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.7+ | | |
| 1999 12 07 | 704 | 0.6+ | 1.3− | 2004 01 22 | 704 | 1.2+ | 0.2− | 2006 09 20 | 704 | 0.6+ | 0.8+ | | |
| 1999 12 07 | 704 | 0.9+ | 1.2− | 2004 01 22 | 704 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.8+ | 0.2+ | | |
| 1999 12 07 | 704 | 1.0+ | 0.7+ | 2004 01 22 | 704 | 0.8+ | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.4+ | | |
| 1999 12 08 | 704 | 0.7+ | 0.5− | 2004 01 22 | 704 | 1.0+ | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | | |
| 1999 12 08 | 704 | 0.4+ | 0.1− | 2004 01 24 | 704 | 0.6+ | 0.8− | 2006 09 23 | 691 | 0.2+ | 0.1− | | |
| 1999 12 08 | 704 | 0.4+ | 0.3+ | 2004 01 24 | 704 | 0.9+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.1+ | | |
| 1999 12 08 | 704 | 0.2+ | 0.2+ | 2004 01 24 | 704 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.5− | 0.1− | | |
| 2003 11 21 | 704 | (1.7+ | 1.6−) | 2004 01 24 | 704 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.0 | | |
| 2003 11 21 | 704 | 0.8+ | 0.2− | 2004 01 24 | 704 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.4− | 0.2+ | | |
| 2003 11 21 | 704 | 0.4− | 0.1+ | 2004 01 24 | 704 | 0.3+ | 1.3− | 2006 10 19 | G96 | 0.4− | 0.5− | | |

**(137681)∗ 1999 XT$_{46}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.22944 | | (2000.0) | | | |
| $n$ | 0.27581888 | $\omega$ | 155.97632 | | +0.81441404 | −0.57303233 |
| $a$ | 2.3373301 | $\Omega$ | 239.29768 | | +0.51369168 | +0.78524848 |
| $e$ | 0.1103808 | $i$ | 6.10564 | | +0.26990855 | +0.23456082 |
| $P$ | 3.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.6+ | 0.1− | 2002 08 15 | 644 | 0.1+ | 0.4+ | 2006 10 29 | 704 | 0.1+ | 1.1+ |
| 1999 11 09 | 704 | 0.0 | 0.6− | 2002 08 15 | 644 | 0.0 | 0.6+ | 2006 10 29 | 704 | 0.5− | 1.0+ |
| 1999 11 09 | 704 | 0.5+ | 0.0 | 2002 08 15 | 644 | 0.3− | 0.3+ | 2006 10 29 | 704 | 0.9+ | 0.5+ |
| 1999 11 09 | 704 | 0.7+ | 0.4+ | 2002 08 26 | 644 | 0.6− | 0.2− | 2006 10 29 | 704 | 0.5− | 0.2+ |
| 1999 11 09 | 704 | 0.2+ | 0.3− | 2002 08 26 | 644 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.7− | 0.9− |
| 1999 11 12 | 704 | 1.5+ | 0.3− | 2002 08 26 | 644 | 0.0 | 0.6+ | 2006 11 14 | 703 | (2.2+ | 2.5−) |
| 1999 11 12 | 704 | 0.1+ | 0.6− | 2004 01 28 | 645 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 1.1− | 1.3− |
| 1999 11 12 | 704 | 0.1− | 0.8− | 2004 01 28 | 645 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.7− | 1.0− |
| 1999 11 12 | 704 | 0.1− | 1.6− | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 0.6+ | 0.9− | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 1999 12 07 | 691 | 0.1− | 0.1+ | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 1999 12 07 | 704 | 0.2+ | 0.9− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 1999 12 07 | 704 | 0.7− | 1.8− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 1999 12 07 | 691 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 1999 12 07 | 704 | 0.4+ | 1.1− | 2006 09 28 | 703 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 1999 12 07 | 691 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.5+ | 1.3− | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 1999 12 07 | 704 | 0.4− | 0.2− | 2006 09 28 | 703 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 1999 12 08 | 704 | (2.1− | 1.5−) | 2006 09 28 | 703 | 0.6− | 0.7− | 2006 11 19 | 704 | 0.4+ | 0.7− |
| 1999 12 08 | 704 | 0.2− | 1.8− | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 1999 12 08 | 704 | 0.1− | 0.7− | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.0 |
| 1999 12 08 | 704 | 0.0 | 0.4+ | 2006 09 30 | 691 | 0.5− | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.2+ |
| 1999 12 17 | 691 | 0.2+ | 0.5− | 2006 10 17 | 691 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.2+ |
| 1999 12 17 | 691 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.3+ |
| 1999 12 17 | 691 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 23 | 691 | 0.4+ | 0.1+ |
| 2002 07 21 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2002 07 21 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 24 | A44 | 0.7− | 0.0 |
| 2002 07 21 | 644 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 24 | A44 | 1.2− | 0.4+ |
| 2002 08 05 | 644 | 0.0 | 0.5− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 24 | A44 | 1.1− | 0.2+ |
| 2002 08 05 | 644 | 0.2− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1− | | | | |
| 2002 08 05 | 644 | 0.4− | 0.2− | 2006 10 21 | 691 | 0.4− | 0.0 | | | | |

**(137682)∗ 1999 XD$_{48}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.32603 | | (2000.0) | | | |
| $n$ | 0.27331978 | $\omega$ | 15.60181 | | −0.06922459 | −0.99205340 |
| $a$ | 2.3515561 | $\Omega$ | 78.45491 | | +0.90342670 | −0.10700867 |
| $e$ | 0.1963212 | $i$ | 6.15575 | | +0.42311720 | +0.06617551 |
| $P$ | 3.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 02 | 691 | 0.5+ | 0.0 | 1999 12 17 | 691 | 0.1+ | 0.6− | 2006 09 21 | 699 | 0.3+ | 0.1+ |
| 1999 11 02 | 691 | 0.5+ | 0.1+ | 2000 01 06 | 691 | 0.5+ | 0.4− | 2006 09 21 | 699 | 0.5− | 0.9+ |
| 1999 11 02 | 691 | 0.6+ | 0.1+ | 2000 01 06 | 691 | 0.3+ | 0.5− | 2006 09 21 | 699 | 0.6− | 0.8+ |
| 1999 11 02 | 691 | 0.4+ | 0.3+ | 2000 01 06 | 691 | 0.4+ | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.5+ |
| 1999 11 02 | 691 | 0.5+ | 0.3+ | 2000 01 08 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.3− | 0.8+ |
| 1999 11 02 | 691 | 0.5+ | 0.3+ | 2000 01 08 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.6− | 0.7+ |
| 1999 11 04 | 704 | 0.2− | 0.3+ | 2000 01 08 | 691 | 0.1− | 0.2− | 2006 09 25 | 699 | 1.3− | 1.0+ |
| 1999 11 04 | 704 | 0.6− | 0.5+ | 2000 01 10 | 691 | 0.5+ | 0.2− | 2006 09 26 | 704 | 0.8+ | 0.4− |
| 1999 11 04 | 704 | 0.1− | 0.7− | 2000 01 10 | 691 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.4− | 1.3+ |
| 1999 11 04 | 704 | 0.1+ | 1.5− | 2000 01 10 | 691 | 0.4+ | 0.0 | 2006 09 26 | 704 | 1.3− | 0.5+ |
| 1999 11 14 | 704 | 0.3− | 0.5− | 2001 05 27 | 691 | 0.2+ | 0.4− | 2006 09 26 | 704 | (1.3− | 1.8+) |
| 1999 11 14 | 704 | 0.6− | 0.6− | 2001 05 27 | 691 | 0.3− | 0.2− | 2006 09 26 | 703 | 1.0− | 0.6+ |
| 1999 11 14 | 704 | 0.4− | 0.4− | 2001 05 27 | 691 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.4+ |
| 1999 11 14 | 704 | 0.8− | 1.1− | 2002 08 11 | 644 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 1999 11 14 | 704 | 0.4− | 1.2− | 2002 08 11 | 644 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.0 | 0.8− |
| 1999 11 15 | 704 | 0.4− | 0.0 | 2002 08 11 | 644 | 0.4− | 0.4− | 2006 09 29 | 699 | 1.0− | 1.2+ |
| 1999 11 15 | 704 | 0.6− | 0.1− | 2003 12 25 | 645 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.9− |
| 1999 11 15 | 704 | 1.3− | 0.3− | 2003 12 25 | 645 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.3+ |
| 1999 11 15 | 704 | 0.4− | 0.4− | 2004 01 29 | 703 | 0.3− | 1.0+ | 2006 09 29 | 699 | 0.2− | 0.7+ |
| 1999 11 15 | 704 | 0.4− | 0.1− | 2004 01 29 | 703 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.0 | 1.1+ |
| 1999 11 15 | 704 | 0.0 | 0.5− | 2004 01 29 | 703 | 0.2− | 0.9+ | 2006 09 30 | 704 | 1.1− | 0.2+ |
| 1999 11 15 | 704 | 0.5− | 0.2− | 2004 01 29 | 703 | 0.7− | 0.0 | 2006 09 30 | 704 | 0.7− | 1.1+ |
| 1999 11 15 | 704 | 0.2+ | 0.2− | 2004 01 30 | 699 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.0 | 0.5+ |
| 1999 11 15 | 704 | 0.5+ | 0.4− | 2004 01 30 | 699 | 0.1+ | 0.5− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 1999 11 15 | 704 | 0.3+ | 0.1+ | 2004 01 30 | 699 | 0.3+ | 0.4− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 1999 11 17 | 704 | 0.2+ | 0.2− | 2004 01 30 | 699 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 1999 11 17 | 704 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.2+ | 1.4+ | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 1999 11 17 | 704 | 0.3− | 0.8− | 2004 01 30 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 1999 11 17 | 704 | 0.1− | 0.5− | 2004 01 30 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.4− |
| 1999 11 17 | 704 | 0.1+ | 0.9− | 2004 01 30 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 1999 11 19 | 699 | 1.0− | 0.8+ | 2004 01 30 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 1999 11 19 | 699 | 0.4+ | 0.3+ | 2004 02 13 | 644 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 1999 11 19 | 699 | 1.1+ | 0.5+ | 2004 02 13 | 644 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 11 29 | 691 | 0.8− | 0.0 | 2004 02 13 | 644 | 0.1+ | 0.7+ | 2006 10 22 | 703 | 1.2− | 0.7+ |
| 1999 11 29 | 691 | 0.7− | 0.1− | 2004 02 14 | 608 | (1.9+ | 1.0+) | 2006 10 22 | 703 | 0.0 | 1.1+ |
| 1999 11 29 | 691 | 0.7− | 0.1− | 2004 02 14 | 608 | (2.0+ | 0.6+) | 2006 10 22 | 703 | (0.5− | 1.8+) |
| 1999 12 05 | 703 | 1.0− | 0.2+ | 2004 02 14 | 608 | (1.7+ | 0.7+) | 2006 10 22 | 703 | 0.6+ | 0.4+ |
| 1999 12 05 | 703 | 0.6− | 0.6+ | 2004 02 16 | 704 | 0.8+ | 1.4+ | 2006 10 23 | 644 | 0.1− | 0.7+ |
| 1999 12 05 | 703 | 0.4− | 0.6+ | 2004 02 16 | 704 | (0.1+ | 1.8+) | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 1999 12 05 | 703 | 0.1+ | 0.7+ | 2004 02 16 | 704 | (0.7+ | 1.7+) | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 1999 12 07 | 704 | 0.3− | 0.0 | 2004 02 16 | 704 | 0.9+ | 1.2+ | 2006 10 28 | 703 | 1.3+ | 0.8+ |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2004 02 16 | 704 | 0.3+ | 1.2+ | 2006 10 28 | 703 | 0.3− | 1.1+ |
| 1999 12 07 | 704 | 0.2− | 0.3− | 2004 02 17 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.8− | 0.7+ |
| 1999 12 07 | 704 | 0.1− | 0.1− | 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.1− | 1.0+ |
| 1999 12 07 | 704 | 0.8− | 0.3− | 2004 02 17 | 691 | (2.1+ | 1.4+) | 2006 11 10 | 644 | 0.4− | 0.5+ |
| 1999 12 08 | 704 | 0.4+ | 0.4+ | 2004 03 14 | 704 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.4+ | 0.3+ |
| 1999 12 08 | 704 | 0.2− | 1.0+ | 2004 03 14 | 704 | 0.1+ | 0.3− | 2006 11 10 | 704 | 0.3− | 0.0 |
| 1999 12 08 | 704 | 0.1− | 0.0 | 2004 03 14 | 704 | 0.7+ | 0.8− | 2006 11 10 | 644 | 0.0 | 0.4+ |
| 1999 12 08 | 704 | 0.2− | 0.0 | 2004 03 14 | 704 | 0.5− | 0.8+ | 2006 11 10 | 644 | 0.2+ | 0.4+ |
| 1999 12 08 | 704 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.3− | 0.6+ | 2006 11 10 | 704 | 0.9+ | 0.2+ |
| 1999 12 09 | 691 | 0.5+ | 0.1− | 2004 03 23 | 704 | 0.2− | 1.1+ | 2006 11 10 | 644 | 0.4− | 0.0 |
| 1999 12 09 | 691 | 0.6+ | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.6+ |
| 1999 12 09 | 691 | 0.3+ | 0.3− | 2004 03 23 | 704 | 0.3− | 0.9+ | 2006 11 10 | 704 | 0.1− | 0.6+ |
| 1999 12 17 | 691 | 0.2+ | 0.4− | 2004 03 23 | 704 | 0.2− | 0.6+ | 2006 11 10 | 704 | (1.5− | 0.3+) |
| 1999 12 17 | 691 | 0.2+ | 0.5− | 2006 09 21 | 699 | (1.6+ | 0.0 ) | | | | |

**(137683)∗ 1999 XS$_{50}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.63922 | | (2000.0) | | | |
| $n$ | 0.26928983 | $\omega$ | 280.06203 | | +0.87177388 | −0.48865857 |
| $a$ | 2.3749588 | $\Omega$ | 109.19785 | | +0.46273960 | +0.79788460 |
| $e$ | 0.1963025 | $i$ | 2.12228 | | +0.16087998 | +0.35297730 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 1.5+ | 0.6+ | 2004 01 16 | 644 | 0.5+ | 0.6+ | 2006 08 24 | 644 | 0.0 | 0.4+ |
| 1999 11 15 | 704 | 1.1+ | 0.2− | 2004 01 16 | 644 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.4+ | 0.7− |
| 1999 11 15 | 704 | 1.3+ | 0.1− | 2004 01 16 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.9− | 0.3− |
| 1999 11 17 | 704 | 0.1+ | 1.2+ | 2004 01 17 | 644 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.7+ |
| 1999 11 17 | 704 | 0.0 | 0.6− | 2004 01 17 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.5− |
| 1999 11 17 | 704 | 0.6+ | 0.4+ | 2004 01 17 | 644 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.2+ | 1.2+ |
| 1999 11 17 | 704 | 0.2− | 0.0 | 2004 01 17 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 1.2− | 0.8+ |
| 1999 11 17 | 704 | 0.1+ | 0.1− | 2004 01 17 | 644 | 0.3+ | 0.4+ | 2006 08 30 | 699 | 0.3− | 0.6+ |
| 1999 12 07 | 704 | 1.3− | 0.1− | 2004 01 17 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 1.5− | 0.0 |
| 1999 12 07 | 704 | 0.2− | 0.7− | 2004 01 19 | 703 | 0.6+ | 0.2− | 2006 09 12 | 704 | 1.2+ | 0.1+ |
| 1999 12 07 | 704 | 0.5− | 0.5− | 2004 01 19 | 703 | 0.7− | 0.9+ | 2006 09 12 | 704 | 0.0 | 0.3− |
| 1999 12 07 | 704 | 0.5− | 0.6− | 2004 01 19 | 703 | 0.5− | 0.8+ | 2006 09 12 | 704 | 0.7+ | 1.0+ |
| 1999 12 08 | 704 | 0.2− | 0.0 | 2004 01 19 | 703 | 0.5− | 1.2+ | 2006 09 12 | 704 | (2.9+ | 1.4+) |
| 1999 12 08 | 704 | 0.3− | 0.1− | 2004 01 24 | 704 | 0.6+ | 1.1+ | 2006 09 14 | 703 | 0.7− | 0.9+ |
| 1999 12 08 | 704 | 0.7+ | 0.3+ | 2004 01 24 | 704 | 0.3+ | 1.1+ | 2006 09 14 | 703 | 0.3− | 1.1− |
| 1999 12 08 | 704 | 0.6+ | 0.2− | 2004 01 24 | 704 | 0.5− | 0.7+ | 2006 09 14 | 703 | 0.5+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.1− | 0.4− | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 1.8− | 0.5+ |
| 1999 12 12 | 691 | 0.2− | 0.0 | 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.3+ | 1.9+ |
| 1999 12 12 | 691 | 0.1− | 0.0 | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.8+ | 0.6+ |
| 1999 12 12 | 691 | 0.2− | 0.1+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.7− | 0.1− |
| 1999 12 17 | 691 | 0.3− | 0.0 | 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.5+ |
| 1999 12 17 | 691 | 0.2− | 0.1− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.2+ | 2.1+ |
| 1999 12 17 | 691 | 0.1− | 0.2− | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.9+ | 0.3− |
| 2000 01 11 | 691 | 0.0 | 0.3+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 09 22 | 704 | (0.4+ | 3.3+) |
| 2000 01 11 | 691 | 0.2+ | 0.0 | 2005 04 16 | 691 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.1− |
| 2000 01 11 | 691 | 0.6+ | 0.3− | 2005 04 16 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.8− |
| 2001 03 24 | 691 | 0.0 | 0.4+ | 2005 04 16 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.8− |
| 2001 03 24 | 691 | 0.3− | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.9− |
| 2001 03 24 | 691 | 0.1+ | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.4+ | | | | |

**(137684)∗ 1999 XH$_{51}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.43036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27026262 | $\omega$ | 230.22176 | | +0.11251768 | −0.99363217 | |
| $a$ | 2.3692564 | $\Omega$ | 213.31918 | | +0.91491158 | +0.10591898 | |
| $e$ | 0.1630963 | $i$ | 0.61613 | | +0.38765522 | +0.03842252 | |
| $P$ | 3.65 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 08 | 691 | 0.4− | 0.6− | 1999 12 07 | 704 | 0.7+ | 0.9− | 2004 01 31 | 691 | 0.3+ | 0.2+ |
| 1997 04 08 | 691 | 0.0 | 0.5− | 1999 12 07 | 704 | 0.2+ | 0.0 | 2004 01 31 | 691 | 0.4+ | 0.3+ |
| 1997 04 08 | 691 | 0.3− | 0.4− | 1999 12 07 | 704 | 0.5+ | 1.4− | 2004 02 11 | 644 | 0.6+ | 0.9+ |
| 1997 04 09 | 691 | 0.1+ | 0.1+ | 1999 12 08 | 704 | 0.5+ | 0.5− | 2004 02 11 | 644 | 0.5+ | 0.9+ |
| 1997 04 09 | 691 | 0.4− | 0.0 | 1999 12 08 | 704 | 0.4− | 1.3− | 2004 02 11 | 644 | 0.4+ | 0.5+ |
| 1997 04 09 | 691 | 0.0 | 0.0 | 1999 12 08 | 704 | (1.5+ | 2.3−) | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 1999 11 09 | 704 | 0.5− | 0.0 | 1999 12 08 | 704 | 0.4− | 1.0− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 1999 11 09 | 704 | 0.5− | 0.1− | 2001 05 23 | 807 | 0.7+ | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.5+ |
| 1999 11 09 | 704 | 0.2+ | 0.2+ | 2001 05 23 | 807 | 1.0+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.4+ |
| 1999 11 09 | 704 | 0.2+ | 0.1− | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4+ |
| 1999 11 09 | 704 | 0.4+ | 0.3+ | 2003 12 21 | 645 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.4+ |
| 1999 11 12 | 704 | 0.1+ | 0.5− | 2004 01 24 | 704 | 1.2− | 1.2+ | 2006 09 25 | G96 | 0.3+ | 0.4+ |
| 1999 11 12 | 704 | 0.2+ | 0.6− | 2004 01 24 | 704 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.5− | 0.1+ |
| 1999 11 12 | 704 | 0.7+ | 0.6− | 2004 01 24 | 704 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 1999 11 12 | 704 | 0.1− | 1.6− | 2004 01 24 | 704 | 0.6+ | 0.8+ | 2006 10 28 | G96 | 0.4− | 0.3+ |
| 1999 12 07 | 704 | 0.7+ | 0.5− | 2004 01 31 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.0 |

**(137685)∗ 1999 XT$_{51}$ = 2004 BR$_{66}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.59318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27275883 | $\omega$ | 295.21782 | | +0.99753193 | −0.04622111 | |
| $a$ | 2.3547791 | $\Omega$ | 67.46839 | | +0.06411247 | +0.90653050 | |
| $e$ | 0.2354125 | $i$ | 3.28042 | | −0.02862919 | +0.41960226 | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2+ | 0.1+ | 2005 04 18 | 691 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.0 |
| 1999 11 09 | 704 | 0.0 | 0.2+ | 2005 04 18 | 691 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 1999 11 09 | 704 | 0.1+ | 0.2+ | 2005 04 18 | 691 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 1999 11 09 | 704 | 0.2+ | 0.2− | 2005 05 10 | G96 | 1.2− | 0.3− | 2006 10 09 | 644 | 0.2− | 0.0 |
| 1999 11 09 | 704 | 0.1− | 0.5+ | 2005 05 10 | G96 | 1.0+ | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 1999 11 12 | 704 | 0.4+ | 0.1+ | 2005 05 10 | G96 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.9− | 0.3+ |
| 1999 11 12 | 704 | 0.2− | 0.3− | 2005 05 10 | G96 | 0.5+ | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 1999 11 12 | 704 | 0.3− | 0.4− | 2006 09 12 | 703 | 0.6− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 1999 11 12 | 704 | 0.1− | 0.4− | 2006 09 12 | 703 | 0.8− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 1999 11 12 | 704 | 0.9− | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 1999 11 17 | 704 | 0.3+ | 0.7− | 2006 09 12 | 703 | 0.6− | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1999 11 17 | 704 | 0.4+ | 0.6− | 2006 09 13 | 644 | 0.0 | 0.5− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 1999 11 17 | 704 | 0.8+ | 0.9− | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.4− |
| 1999 11 17 | 704 | 0.9− | 0.3− | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.3− |
| 1999 12 05 | 703 | 0.5− | 0.6+ | 2006 09 16 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 1999 12 05 | 703 | 0.4− | 0.1+ | 2006 09 16 | 704 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.3− | 1.0− |
| 1999 12 05 | 703 | 0.3+ | 1.3+ | 2006 09 16 | 704 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 1999 12 05 | 703 | 0.4+ | 0.4+ | 2006 09 16 | 704 | 0.6− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1999 12 07 | 704 | 0.5+ | 1.1− | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1999 12 07 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1999 12 07 | 704 | 0.5+ | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 12 07 | 704 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 12 07 | 704 | 0.2+ | 0.6− | 2006 09 20 | 644 | 0.2+ | 0.3− | 2006 10 22 | 704 | 0.6− | 1.1+ |
| 1999 12 08 | 704 | 0.3− | 1.0− | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 22 | 704 | 0.6− | 0.3+ |
| 1999 12 08 | 704 | 0.5+ | 1.5− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 22 | 704 | (0.5+ | 1.9+) |
| 1999 12 08 | 704 | 0.1+ | 1.2− | 2006 09 22 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 704 | 0.1+ | 0.3+ |
| 1999 12 08 | 704 | 0.2+ | 0.7− | 2006 09 22 | 704 | 0.1+ | 1.4− | 2006 10 22 | 704 | 0.0 | 1.3+ |
| 1999 12 08 | 704 | 0.2+ | 1.0− | 2006 09 22 | 704 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2004 01 17 | 644 | 0.1+ | 0.8+ | 2006 09 22 | 704 | 0.3+ | 1.2+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2004 01 17 | 644 | 0.5+ | 0.7+ | 2006 09 22 | 704 | 0.1− | 0.4− | 2006 10 22 | 703 | 1.0− | 0.0 |
| 2004 01 17 | 644 | 0.2+ | 0.8+ | 2006 09 28 | 704 | 0.0 | 1.3+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2004 01 22 | 704 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.7+ | 0.8+ | 2006 11 10 | 704 | 0.2− | 0.3+ |
| 2004 01 22 | 704 | 0.7+ | 1.0+ | 2006 09 28 | 704 | 0.0 | 1.2+ | 2006 11 10 | 704 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 0.9+ | 2006 09 28 | 704 | 0.4+ | 1.1+ | 2006 11 10 | 704 | 0.4+ | 0.9+ |
| 2004 01 22 | 704 | 0.5+ | 1.2+ | 2006 09 28 | 704 | 0.5− | 0.2+ | 2006 11 10 | 704 | 0.7− | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 11 14 | 704 | 0.2+ | 1.6+ |
| 2004 01 27 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.1− | 1.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.8− | 0.0 | 2006 11 14 | 704 | 0.7− | 0.1+ |
| 2005 04 06 | G96 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2005 04 06 | G96 | 0.9− | 0.3− | 2006 09 30 | 704 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.5− | 0.4+ |
| 2005 04 06 | G96 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.4+ | 0.8+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2005 04 06 | G96 | 0.6− | 0.4+ | 2006 09 30 | 704 | 0.1+ | 1.3+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.6+ | 1.0+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2005 04 10 | 691 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.6+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.9+ | | | | |

**(137686)∗ 1999 XA$_{52}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.80858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24531439 | $\omega$ | 89.73018 | | +0.96000538 | −0.27873737 | |
| $a$ | 2.5272839 | $\Omega$ | 286.45458 | | +0.24470136 | +0.88106833 | |
| $e$ | 0.2167912 | $i$ | 1.57535 | | +0.13605481 | +0.38213098 | |
| $P$ | 4.02 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.7− | 1.3− | 2003 10 29 | 704 | 0.7− | 0.1+ | 2003 12 23 | 704 | 0.4− | 1.4+ |
| 1993 03 25 | 691 | 0.5+ | 0.0 | 2003 10 29 | 704 | 0.1+ | 0.6+ | 2003 12 23 | 704 | 0.3− | 1.0+ |
| 1993 03 25 | 691 | 0.4− | 0.6+ | 2003 10 29 | 704 | 0.6− | 0.1− | 2003 12 23 | 704 | 0.5− | 1.5+ |
| 1999 10 06 | 704 | 0.2− | 0.4− | 2003 10 29 | 704 | 0.7− | 0.2+ | 2003 12 23 | 704 | 0.6− | 0.1+ |
| 1999 10 06 | 704 | 0.0 | 0.2+ | 2003 10 29 | 704 | 0.7− | 1.1− | 2003 12 23 | 704 | 0.1+ | 0.1− |
| 1999 10 06 | 704 | 0.5− | 0.2− | 2003 10 30 | 608 | 0.3+ | 0.8+ | 2003 12 23 | 704 | 0.7− | 0.6+ |
| 1999 10 06 | 704 | 0.2− | 0.4+ | 2003 10 30 | 608 | 0.1+ | 1.1+ | 2003 12 23 | 704 | 0.8− | 0.4+ |
| 1999 10 06 | 704 | 0.1+ | 0.2+ | 2003 10 30 | 608 | 0.3+ | 0.8+ | 2003 12 27 | 704 | 0.6+ | 0.7+ |
| 1999 11 03 | 704 | 0.9+ | 0.3− | 2003 11 02 | 704 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.6+ |
| 1999 11 03 | 704 | 0.2− | 0.2+ | 2003 11 02 | 704 | 0.5+ | 0.5+ | 2003 12 27 | 704 | 0.6+ | 0.0 |
| 1999 11 03 | 704 | 0.3− | 0.9+ | 2003 11 02 | 704 | 0.4+ | 0.1+ | 2003 12 27 | 704 | 1.0+ | 1.0+ |
| 1999 11 14 | 704 | 0.5+ | 0.3− | 2003 11 02 | 704 | 0.2+ | 0.1+ | 2003 12 27 | 704 | 0.5+ | 0.3− |
| 1999 11 14 | 704 | 0.0 | 0.4− | 2003 11 19 | 699 | 0.2− | 0.4− | 2004 01 12 | 644 | 0.3− | 0.5+ |
| 1999 11 14 | 704 | 0.0 | 0.2− | 2003 11 19 | 699 | 0.4+ | 0.3+ | 2004 01 12 | 644 | 0.4− | 0.4+ |
| 1999 11 14 | 704 | 0.4+ | 0.5− | 2003 11 19 | 691 | 0.1+ | 0.2− | 2004 01 12 | 644 | 0.3− | 0.2+ |
| 1999 11 14 | 704 | 0.1+ | 0.2+ | 2003 11 19 | 699 | 0.1− | 0.1− | 2004 01 17 | 644 | 0.4− | 0.3+ |
| 1999 11 16 | 704 | 0.0 | 0.3+ | 2003 11 19 | 691 | 0.1+ | 0.2− | 2004 01 17 | 644 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | 0.4+ | 0.9+ | 2003 11 19 | 699 | 0.3+ | 0.1− | 2004 01 17 | 644 | 0.2− | 0.3+ |
| 1999 11 16 | 704 | 0.0 | 0.0 | 2003 11 19 | 691 | 0.2+ | 0.3− | 2004 01 21 | 704 | 0.2+ | 0.3+ |
| 1999 12 05 | 703 | 0.5+ | 0.2+ | 2003 11 21 | 704 | 0.5− | 0.6+ | 2004 01 21 | 704 | 0.8− | 0.8− |
| 1999 12 05 | 703 | 1.0+ | 0.0 | 2003 11 21 | 704 | 0.6− | 0.5− | 2004 01 21 | 704 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 703 | 0.8+ | 0.2− | 2003 11 21 | 704 | 0.1− | 0.2+ | 2004 01 21 | 704 | 0.4− | 0.8+ |
| 1999 12 05 | 703 | 0.2+ | 0.1− | 2003 11 21 | 704 | 0.3+ | 0.2− | 2005 03 03 | 691 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.3− | 0.3− | 2003 11 21 | 704 | 0.1− | 0.6+ | 2005 03 03 | 691 | 0.1+ | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 0.0 | 2003 11 21 | 644 | 0.0 | 0.0 | 2005 03 03 | 691 | 0.1+ | 0.0 |
| 1999 12 07 | 704 | 0.2− | 1.0− | 2003 11 21 | 644 | 0.3+ | 0.3+ | 2005 03 09 | 691 | 0.4+ | 0.2− |
| 1999 12 07 | 704 | 0.2+ | 1.0− | 2003 11 21 | 644 | 0.1+ | 0.0 | 2005 03 09 | 691 | 0.1+ | 0.5+ |
| 1999 12 07 | 704 | 0.4+ | 0.8− | 2003 11 21 | 644 | 0.1+ | 0.2+ | 2005 03 09 | 691 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.1− | 1.0− | 2003 11 21 | 644 | 0.5+ | 0.2− | 2005 03 10 | 695 | 0.4+ | 0.1− |
| 1999 12 08 | 704 | 0.3+ | 1.2− | 2003 11 21 | 644 | 0.1− | 0.2+ | 2005 03 10 | 695 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 0.4+ | 0.9− | 2003 11 23 | 704 | 0.6− | 0.4+ | 2005 03 11 | G96 | 0.1− | 0.1− |
| 1999 12 08 | 704 | 0.4+ | 0.8− | 2003 11 23 | 704 | 1.1+ | 0.4+ | 2005 03 11 | G96 | 0.2− | 0.2− |
| 1999 12 08 | 704 | 0.2+ | 0.8− | 2003 11 23 | 704 | 0.2− | 0.2− | 2005 03 11 | G96 | 0.0 | 0.2− |
| 1999 12 14 | 691 | 0.1− | 0.1− | 2003 11 23 | 704 | 0.3+ | 0.3− | 2005 03 11 | G96 | 0.2+ | 0.1+ |
| 1999 12 14 | 691 | 0.2− | 0.0 | 2003 12 17 | 644 | 0.1− | 0.1− | 2005 03 13 | 691 | 0.1+ | 0.0 |
| 1999 12 14 | 691 | 0.0 | 0.0 | 2003 12 17 | 699 | 0.4− | 0.5+ | 2005 03 13 | 691 | 0.1− | 0.2+ |
| 2003 09 22 | 704 | 1.6− | 0.7− | 2003 12 17 | 644 | 0.5− | 0.1− | 2005 03 13 | 691 | 0.2+ | 0.1+ |
| 2003 09 22 | 704 | 0.5− | 0.2+ | 2003 12 17 | 699 | 0.6+ | 0.1+ | 2005 04 06 | G96 | 0.4− | 0.0 |
| 2003 09 22 | 704 | 1.6− | 0.0 | 2003 12 17 | 644 | 0.5+ | 0.5+ | 2005 04 06 | G96 | 0.0 | 0.4− |
| 2003 09 22 | 704 | 1.2− | 0.6− | 2003 12 17 | 699 | 0.2+ | 0.8− | 2005 04 06 | G96 | 0.0 | 0.0 |
| 2003 10 24 | 704 | 0.2+ | 0.1− | 2003 12 17 | 699 | 0.4+ | 0.3− | 2005 04 06 | G96 | 0.9− | 0.2− |
| 2003 10 24 | 704 | 0.0 | 0.2− | 2003 12 19 | 704 | 0.8− | 0.3− | 2005 04 12 | G96 | 0.2− | 0.5− |
| 2003 10 24 | 704 | 0.0 | 0.6− | 2003 12 19 | 704 | 0.2− | 0.1+ | 2005 04 12 | G96 | 0.5− | 0.2− |
| 2003 10 24 | 704 | 0.2+ | 0.0 | 2003 12 19 | 704 | 0.0 | 0.2− | 2005 04 12 | G96 | 0.3− | 0.5− |
| 2003 10 24 | 704 | 0.8− | 0.2+ | 2003 12 19 | 704 | 0.3− | 0.1+ | 2005 04 12 | G96 | 0.6− | 0.3− |
| 2003 10 26 | 691 | 0.1+ | 0.3− | 2003 12 19 | 704 | 0.4− | 0.3− | 2006 05 25 | 568 | 0.4+ | 0.2+ |
| 2003 10 26 | 691 | 0.2+ | 0.0 | 2003 12 22 | 704 | (0.8+ | 2.1+) | 2006 05 25 | 568 | 0.2+ | 0.3+ |
| 2003 10 26 | 691 | 0.1− | 0.1− | 2003 12 22 | 704 | 1.4+ | 0.6+ | 2006 05 25 | 568 | 0.1+ | 0.3+ |
| 2003 10 27 | 691 | 0.0 | 0.1− | 2003 12 22 | 704 | 0.0 | 1.3+ | 2006 05 26 | 568 | 0.0 | 0.9+ |
| 2003 10 27 | 691 | 0.1− | 0.1+ | 2003 12 22 | 704 | 0.6+ | 0.5− | | | | |
| 2003 10 27 | 691 | 0.0 | 0.0 | 2003 12 23 | 704 | 0.4+ | 0.8+ | | | | |

**(137687)∗ 1999 XV$_{55}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.75975 | | (2000.0) | | | |
| $n$ | 0.26493558 | $\omega$ | 187.89326 | | +0.10632274 | −0.98540058 |
| $a$ | 2.4009099 | $\Omega$ | 256.07577 | | +0.91960171 | +0.14831194 |
| $e$ | 0.2157996 | $i$ | 7.87407 | | +0.37819065 | −0.08360182 |
| $P$ | 3.72 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1+ | 0.3+ | 2002 08 13 | 644 | 0.2− | 0.9+ | 2004 02 03 | 704 | 0.6− | 1.1− |
| 1999 10 13 | 704 | 0.4− | 0.2+ | 2002 08 13 | 644 | 0.2+ | 0.9+ | 2004 02 03 | 704 | 0.2− | 0.2− |
| 1999 10 13 | 704 | 0.3− | 0.3− | 2002 08 13 | 644 | 0.2− | 0.8+ | 2004 02 03 | 704 | 0.1+ | 0.1− |
| 1999 10 13 | 704 | 0.3+ | 1.1+ | 2002 08 14 | 644 | 0.3+ | 0.8+ | 2004 02 13 | 644 | 0.1+ | 0.0 |
| 1999 11 14 | 704 | 0.5+ | 0.1+ | 2002 08 14 | 644 | 0.1− | 0.7+ | 2004 02 13 | 644 | 0.1+ | 0.7+ |
| 1999 11 14 | 704 | 0.5− | 0.5− | 2002 08 14 | 644 | 0.0 | 0.8+ | 2004 02 13 | 644 | 0.1+ | 0.1+ |
| 1999 11 14 | 704 | 0.6+ | 0.1− | 2003 12 22 | 704 | 0.9+ | 0.3− | 2004 02 14 | 699 | 0.2+ | 0.3+ |
| 1999 11 14 | 704 | 0.2+ | 0.0 | 2003 12 22 | 704 | 0.4+ | 0.1− | 2004 02 14 | 699 | 0.2+ | 0.3− |
| 1999 11 14 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 1.1+ | 0.3+ | 2004 02 14 | 699 | 0.3− | 0.4+ |
| 1999 11 16 | 704 | 0.5− | 0.6− | 2003 12 22 | 704 | 0.3+ | 0.5+ | 2004 02 14 | 699 | 0.3− | 0.0 |
| 1999 11 16 | 704 | 0.4− | 0.3− | 2003 12 22 | 704 | 0.1+ | 0.1+ | 2004 02 16 | 703 | 0.2− | 0.1+ |
| 1999 11 16 | 704 | 0.9− | 0.2− | 2004 01 18 | 703 | 1.8+ | 1.4+ | 2004 02 16 | 703 | 0.1+ | 0.5+ |
| 1999 11 16 | 704 | 0.5− | 0.3+ | 2004 01 18 | 703 | 0.3− | 0.3+ | 2004 02 16 | 703 | 0.2− | 0.5+ |
| 1999 11 16 | 704 | 1.1− | 0.0 | 2004 01 18 | 703 | 1.5+ | 0.6+ | 2004 02 16 | 703 | 0.2+ | 0.1+ |
| 1999 12 07 | 704 | 0.3+ | 0.1− | 2004 01 18 | 703 | 0.7− | 0.4+ | 2004 02 18 | 704 | 0.4− | 0.1+ |
| 1999 12 07 | 704 | 0.9+ | 0.4− | 2004 01 25 | 608 | 0.6+ | 0.5+ | 2004 02 18 | 704 | 0.6− | 0.3+ |
| 1999 12 07 | 704 | 0.5+ | 0.6− | 2004 01 25 | 608 | 0.3+ | 0.7+ | 2004 02 18 | 704 | 0.3+ | 0.9+ |
| 1999 12 08 | 704 | 0.6+ | 0.5− | 2004 01 25 | 608 | 0.6+ | 0.9+ | 2005 06 14 | G96 | 0.5− | 0.3+ |
| 1999 12 08 | 704 | 0.4+ | 0.7− | 2004 01 27 | 699 | 0.3− | 0.2+ | 2005 06 14 | G96 | 0.5− | 0.7+ |
| 1999 12 08 | 704 | 0.3+ | 0.5− | 2004 01 27 | 699 | 1.6− | 0.2− | 2005 06 14 | G96 | 0.4− | 0.3+ |
| 1999 12 08 | 704 | 0.4+ | 0.3− | 2004 01 27 | 699 | 0.1− | 0.1+ | 2005 06 14 | G96 | 0.3− | 0.4+ |
| 1999 12 08 | 704 | 0.5+ | 0.5− | 2004 01 27 | 699 | 0.0 | 0.5− | 2006 09 15 | 704 | 0.2+ | 0.4+ |
| 1999 12 31 | 699 | 0.8− | 1.0+ | 2004 01 29 | 704 | 0.2− | 0.5+ | 2006 09 15 | 704 | 0.4+ | 0.2+ |
| 1999 12 31 | 699 | 0.2− | 0.2− | 2004 01 29 | 704 | 0.1− | 0.3+ | 2006 09 15 | 704 | 0.3+ | 0.1+ |
| 1999 12 31 | 699 | 0.2− | 0.6+ | 2004 01 29 | 704 | 0.2+ | 0.2+ | 2006 09 15 | 704 | 0.4− | 1.0+ |
| 1999 12 31 | 703 | 1.3− | 0.2+ | 2004 01 29 | 704 | 0.5+ | 1.4+ | 2006 09 18 | 703 | 1.6− | 0.2− |
| 1999 12 31 | 703 | 0.9− | 0.2− | 2004 01 29 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.4+ |
| 1999 12 31 | 703 | 0.6− | 0.2+ | 2004 01 30 | 704 | 0.5− | 0.2+ | 2006 09 18 | 703 | 1.0+ | 0.1+ |
| 1999 12 31 | 703 | 0.9− | 0.6+ | 2004 01 30 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 1.3+ |
| 2000 01 05 | 704 | 0.7+ | 0.2− | 2004 01 30 | 704 | 0.3− | 0.3+ | 2006 09 30 | 699 | 1.6+ | 1.6+ |
| 2000 01 05 | 704 | 0.6+ | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.6+ | 2006 09 30 | 699 | 0.2+ | 1.0− |
| 2000 01 05 | 704 | 0.6+ | 0.2− | 2004 01 30 | 704 | 1.0+ | 0.5+ | 2006 09 30 | 699 | 0.6− | 0.3− |
| 2000 01 05 | 704 | 0.5+ | 0.3− | 2004 02 02 | 704 | 0.4+ | 0.3− | 2006 09 30 | 699 | 0.3− | 0.9+ |
| 2000 01 05 | 704 | 0.1− | 0.1− | 2004 02 02 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 703 | 1.7− | 1.6− |
| 2002 08 05 | 644 | 0.4+ | 1.0+ | 2004 02 02 | 704 | 0.8+ | 0.1− | 2006 10 01 | 703 | 0.4+ | 2.3− |
| 2002 08 05 | 644 | 0.3+ | 1.0+ | 2004 02 02 | 704 | 0.6+ | 0.5− | 2006 10 01 | 703 | 0.5− | 0.8+ |
| 2002 08 05 | 644 | 0.4+ | 0.9+ | 2004 02 02 | 704 | 0.1+ | 0.4− | 2006 10 01 | 703 | (3.3− | 3.4+) |

**(137688)∗ 1999 XF$_{59}$ = 2003 YJ$_{167}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64696)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.53676 | | (2000.0) | | | |
| $n$ | 0.26658940 | $\omega$ | 300.13333 | | +0.99805355 | −0.04253247 |
| $a$ | 2.3909700 | $\Omega$ | 62.33817 | | +0.05776765 | +0.90606217 |
| $e$ | 0.1865876 | $i$ | 2.95168 | | −0.02349493 | +0.42100158 |
| $P$ | 3.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.1+ | 0.5+ | 2005 03 14 | G96 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.1+ | 0.8+ |
| 1999 11 09 | 704 | 0.1− | 0.2− | 2005 03 14 | G96 | 0.7− | 0.2− | 2006 08 31 | 704 | 0.3− | 1.1+ |
| 1999 11 09 | 704 | 0.3− | 0.1− | 2005 03 14 | G96 | 0.3− | 0.3− | 2006 09 12 | 704 | 0.4− | 0.1+ |
| 1999 11 09 | 704 | 0.5− | 0.3+ | 2005 04 05 | G96 | 0.4+ | 0.1− | 2006 09 12 | 704 | 0.4− | 0.4− |
| 1999 11 09 | 704 | 1.0+ | 0.3+ | 2005 04 05 | G96 | 0.4+ | 0.1− | 2006 09 12 | 704 | 0.5− | 0.0 |
| 1999 11 12 | 704 | 0.1− | 0.1− | 2005 04 05 | G96 | 0.3− | 0.1− | 2006 09 12 | 704 | 0.9− | 0.2− |
| 1999 11 12 | 704 | 0.1− | 0.0 | 2005 04 05 | G96 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.3+ |
| 1999 11 12 | 704 | 0.0 | 0.4+ | 2005 04 06 | G96 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.2+ | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.0 |
| 1999 11 12 | 704 | 0.3+ | 0.3+ | 2005 04 06 | G96 | 0.8− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 1999 11 16 | 704 | 0.2− | 1.6− | 2005 04 06 | G96 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.3+ |
| 1999 11 16 | 704 | 0.3− | 0.2+ | 2005 04 07 | G96 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.3− |
| 1999 11 16 | 704 | 0.0 | 0.4− | 2005 04 07 | G96 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 1999 11 16 | 704 | 0.8− | 0.3− | 2005 04 07 | G96 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.2− | 1.4− |
| 1999 12 07 | 704 | 0.2− | 0.2+ | 2005 04 07 | G96 | 0.4− | 0.2+ | 2006 09 16 | 704 | 0.4+ | 0.0 |
| 1999 12 07 | 704 | 0.1− | 0.0 | 2005 04 10 | 691 | 0.1+ | 0.5+ | 2006 09 16 | 704 | 0.3− | 0.6+ |
| 1999 12 07 | 704 | 0.6+ | 0.7− | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 1.2− | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 0.3− | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.4− | 1.3+ |
| 1999 12 07 | 704 | 0.3+ | 0.3− | 2005 04 11 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.9+ |
| 1999 12 08 | 704 | 0.2+ | 0.1− | 2005 04 11 | 691 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.7+ |
| 1999 12 08 | 704 | 0.3+ | 0.4− | 2005 04 11 | 691 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 1.3+ |
| 1999 12 08 | 704 | 0.6− | 0.5− | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.0 |
| 1999 12 08 | 704 | 0.0 | 1.0+ | 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.4+ |
| 1999 12 08 | 704 | 0.4+ | 0.5+ | 2005 04 14 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.5+ |
| 2003 12 17 | 691 | 0.5− | 0.3+ | 2005 05 04 | 691 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 2003 12 17 | 691 | 0.0 | 0.1+ | 2005 05 04 | 691 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.7+ | 0.2+ |
| 2003 12 17 | 691 | 0.2− | 0.1+ | 2005 05 04 | 691 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.4+ | 0.0 |
| 2003 12 27 | 691 | 0.1+ | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.4− | 0.2+ |
| 2003 12 27 | 704 | 1.3+ | 0.6− | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.6+ | 0.8+ |
| 2003 12 27 | 691 | 0.2− | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2003 12 27 | 704 | 0.3+ | 0.1− | 2005 05 10 | G96 | 1.5+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2003 12 27 | 691 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.6− | 1.2− |
| 2003 12 27 | 704 | 0.3− | 0.1− | 2006 08 23 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2003 12 30 | 704 | 1.0+ | 1.2+ | 2006 08 23 | 704 | 0.4− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2003 12 30 | 704 | 0.2− | 0.7+ | 2006 08 23 | 704 | 0.4− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2003 12 30 | 704 | 1.4+ | 0.5+ | 2006 08 23 | 704 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2003 12 30 | 704 | (1.3+ | 2.7−) | 2006 08 28 | 704 | (0.7− | 2.4+) | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2004 01 20 | 704 | (2.1+ | 0.2+) | 2006 08 28 | 704 | 0.3− | 0.6+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2004 01 20 | 704 | 1.1+ | 0.3+ | 2006 08 28 | 704 | 0.6− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 2004 01 20 | 704 | 0.7+ | 0.9+ | 2006 08 28 | 704 | 1.1− | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2004 01 22 | 704 | (2.0− | 1.5+) | 2006 08 30 | 699 | 0.5+ | 0.1− | 2006 11 25 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.3+ | 1.1+ | 2006 08 30 | 699 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.2− | | |
| 2004 01 22 | 704 | (0.9− | 1.8+) | 2006 08 30 | 699 | 0.5− | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.2− | | |
| 2004 01 22 | 704 | 0.2− | 1.3+ | 2006 08 31 | 704 | 0.4− | 0.3+ | | | | | | |
| 2005 03 14 | G96 | 0.8− | 0.2− | 2006 08 31 | 704 | 0.5+ | 0.0 | | | | | | |

**(137689)∗ 1999 XB$_{60}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.77793 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26774049 | $\omega$ | 237.52387 | | +0.49024905 | −0.87158212 | |
| $a$ | 2.3841122 | $\Omega$ | 183.11942 | | +0.80388736 | +0.45247992 | |
| $e$ | 0.1803288 | $i$ | 0.73204 | | +0.33678032 | +0.18869695 | |
| $P$ | 3.68 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.0 | 0.3+ | 1999 12 07 | 704 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.1− | | |
| 1997 03 05 | 691 | 0.0 | 0.6− | 1999 12 08 | 704 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.0 | | |
| 1997 03 05 | 691 | 0.3+ | 0.0 | 1999 12 08 | 704 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.6+ | 0.3− | | |
| 1997 03 10 | 691 | 0.3− | 0.4− | 1999 12 08 | 704 | 0.3+ | 1.5+ | 2006 09 28 | 701 | 1.1− | 0.2− | | |
| 1997 03 10 | 691 | 0.2+ | 0.0 | 1999 12 08 | 704 | 1.0− | 0.7+ | 2006 09 28 | 701 | 0.6− | 0.5− | | |
| 1997 03 10 | 691 | 0.5− | 0.6− | 1999 12 08 | 704 | 0.3+ | 0.0 | 2006 09 28 | 701 | 0.2− | 0.3− | | |
| 1997 04 09 | 691 | 0.3− | 0.0 | 2001 04 26 | 691 | 0.0 | 0.0 | 2006 09 28 | 701 | 1.1+ | 1.2+ | | |
| 1997 04 09 | 691 | 0.7− | 0.2− | 2001 04 26 | 691 | 0.6+ | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.5− | | |
| 1997 04 09 | 691 | 0.2− | 0.4− | 2001 04 26 | 691 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.6+ | 0.1− | | |
| 1999 11 09 | 704 | 0.5+ | 0.1− | 2004 02 11 | 291 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.3− | | |
| 1999 11 09 | 704 | 0.8+ | 0.4− | 2004 02 11 | 291 | 0.1+ | 0.5+ | 2006 10 16 | G96 | 0.2− | 0.2− | | |
| 1999 11 09 | 704 | 0.6+ | 0.3− | 2004 02 11 | 291 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 1999 11 12 | 704 | 0.6− | 1.1− | 2004 02 16 | 704 | (1.5+ | 1.6+) | 2006 10 20 | G96 | 0.2− | 0.1+ | | |
| 1999 11 12 | 704 | 0.4− | 0.1− | 2004 02 16 | 704 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.1− | | |
| 1999 11 12 | 704 | 0.1− | 0.6− | 2004 02 16 | 704 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.2+ | | |
| 1999 11 12 | 704 | 0.7+ | 0.2− | 2006 09 16 | 699 | 0.4− | 0.8+ | 2006 11 21 | G96 | 0.3− | 0.0 | | |
| 1999 12 07 | 704 | 0.1− | 0.1+ | 2006 09 16 | 699 | (0.6− | 1.8+) | 2006 11 21 | G96 | 0.5+ | 0.2− | | |
| 1999 12 07 | 704 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.4− | | |
| 1999 12 07 | 704 | 0.8+ | 0.6− | 2006 09 16 | 699 | 0.5− | 0.3− | 2006 11 21 | G96 | 0.5− | 0.5− | | |
| 1999 12 07 | 704 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2− | 0.2− | | | | | | |

**(137690)∗ 1999 XW$_{61}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.94476 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28654950 | $\omega$ | 82.97948 | | −0.40126358 | −0.91566364 | |
| $a$ | 2.2786080 | $\Omega$ | 30.71103 | | +0.82125263 | −0.37096965 | |
| $e$ | 0.1435180 | $i$ | 2.62631 | | +0.40562502 | −0.15473077 | |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 1.0+ | 1.4+ | 2004 02 16 | 703 | 0.8+ | 0.6+ | 2004 03 20 | 699 | 0.4+ | 0.4+ | | |
| 1999 11 03 | 704 | 0.7+ | 0.6+ | 2004 02 16 | 703 | 0.0 | 0.7− | 2004 03 20 | 699 | 0.7− | 0.4+ | | |
| 1999 11 03 | 704 | 0.1+ | 2.0+ | 2004 02 16 | 703 | 0.0 | 0.5+ | 2004 03 22 | 704 | 0.8+ | 0.0 | | |
| 1999 11 05 | 704 | 0.7− | 0.5+ | 2004 02 17 | 683 | 0.9+ | 1.3+ | 2004 03 22 | 704 | 1.0+ | 0.5− | | |
| 1999 11 05 | 704 | 0.8+ | 1.1+ | 2004 02 17 | 683 | 0.4− | 0.2+ | 2004 03 22 | 704 | 1.1+ | 0.0 | | |
| 1999 11 05 | 704 | 0.3− | 0.2+ | 2004 02 17 | 683 | (2.1− | 1.3+) | 2004 03 22 | 704 | 0.7+ | 0.2− | | |
| 1999 11 05 | 704 | 0.0 | 0.7+ | 2004 02 18 | 683 | 0.6− | 0.2+ | 2004 03 22 | 704 | (1.9+ | 0.2+) | | |
| 1999 11 06 | 704 | 0.7− | 0.3+ | 2004 02 18 | 683 | 0.0 | 0.3+ | 2004 03 23 | 691 | 0.0 | 0.0 | | |
| 1999 11 06 | 704 | 0.6− | 0.6+ | 2004 02 18 | 683 | (2.3− | 4.7+) | 2004 03 23 | 691 | 0.3+ | 0.3+ | | |
| 1999 11 06 | 704 | 0.6+ | 1.1+ | 2004 02 19 | 704 | 0.0 | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.0 | | |
| 1999 11 06 | 704 | 0.0 | 0.6+ | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2004 03 30 | 291 | 0.1− | 0.1+ | | |
| 1999 11 06 | 704 | 0.3− | 0.8+ | 2004 02 19 | 704 | 1.0+ | 0.1− | 2004 03 30 | 291 | 0.0 | 0.0 | | |
| 1999 11 14 | 704 | 0.3− | 0.5− | 2004 02 19 | 704 | 0.3+ | 0.1+ | 2004 03 30 | 291 | 0.1+ | 0.0 | | |
| 1999 11 14 | 704 | 0.1+ | 0.0 | 2004 02 19 | 704 | 0.5+ | 0.2+ | 2004 04 12 | 699 | (1.6− | 0.8+) | | |
| 1999 11 14 | 704 | 0.1− | 0.5− | 2004 02 23 | 704 | 0.8+ | 0.1− | 2004 04 12 | 699 | 0.1+ | 0.6+ | | |
| 1999 11 14 | 704 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.8+ | 0.3+ | 2004 04 12 | 699 | 0.8− | 1.2+ | | |
| 1999 11 14 | 704 | (2.5+ | 0.8−) | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2004 04 12 | 699 | 1.3− | 0.4− | | |
| 1999 11 16 | 704 | 0.7+ | 0.6− | 2004 02 23 | 704 | 1.5+ | 0.3+ | 2004 04 15 | 644 | 0.1+ | 0.3+ | | |
| 1999 11 16 | 704 | 0.4+ | 0.9− | 2004 03 11 | 644 | 0.3+ | 0.1+ | 2004 04 15 | 644 | 0.4+ | 0.2+ | | |
| 1999 11 16 | 704 | (0.5− | 2.3−) | 2004 03 11 | 644 | 0.3+ | 0.1+ | 2004 04 15 | 704 | 0.5+ | 1.4+ | | |
| 1999 12 07 | 704 | 0.4+ | 0.7− | 2004 03 11 | 644 | 0.2+ | 0.0 | 2004 04 15 | 644 | 0.5+ | 0.1− | | |
| 1999 12 07 | 704 | 0.6− | 2.0− | 2004 03 11 | 644 | 0.0 | 0.1+ | 2004 04 15 | 704 | 0.7+ | 0.5+ | | |
| 1999 12 07 | 704 | 0.1+ | 0.3− | 2004 03 11 | 644 | 0.2+ | 0.1+ | 2004 04 15 | 704 | 1.0+ | 0.4+ | | |
| 1999 12 08 | 704 | 0.1− | 1.0− | 2004 03 11 | 644 | 0.2− | 0.0 | 2004 04 15 | 704 | 0.5+ | 0.7+ | | |
| 1999 12 08 | 704 | 0.3+ | 0.8− | 2004 03 15 | 691 | 0.2− | 0.1+ | 2005 07 02 | 691 | 0.4+ | 0.7+ | | |
| 1999 12 08 | 704 | 0.0 | 0.3− | 2004 03 15 | 703 | 0.7− | 0.4+ | 2005 07 02 | 691 | 0.2− | 0.8+ | | |
| 1999 12 08 | 704 | 0.2− | 0.3− | 2004 03 15 | 704 | 0.4− | 0.6+ | 2005 07 02 | 691 | 0.2− | 0.7+ | | |
| 1999 12 13 | 703 | 0.4− | 0.6+ | 2004 03 15 | 703 | 0.7+ | 0.8+ | 2006 11 11 | 691 | 0.4+ | 0.0 | | |
| 1999 12 13 | 703 | 0.2− | 0.1+ | 2004 03 15 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2− | | |
| 1999 12 13 | 703 | 0.4− | 0.1+ | 2004 03 15 | 704 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 1999 12 13 | 703 | 0.3+ | 0.3+ | 2004 03 15 | 703 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.9+ | 0.2+ | | |
| 2001 05 23 | 807 | 0.0 | 0.6+ | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.7+ | | |
| 2001 05 23 | 807 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.2− | | |
| 2001 06 17 | 691 | 0.2− | 0.2+ | 2004 03 15 | 703 | 1.5− | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.1− | | |
| 2001 06 17 | 691 | 0.3− | 0.2− | 2004 03 15 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.2+ | 1.1+ | | |
| 2001 06 17 | 691 | 0.3− | 0.5− | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 11 21 | 704 | 1.1− | 0.1− | | |
| 2002 09 12 | 644 | 0.7− | 0.8+ | 2004 03 19 | 704 | 0.1+ | 0.3− | 2006 11 21 | 704 | (1.8− | 0.6+) | | |
| 2002 09 12 | 644 | 0.8− | 0.9+ | 2004 03 19 | 704 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.6− | 0.1− | | |
| 2002 09 12 | 644 | 0.6− | 0.7+ | 2004 03 19 | 704 | 0.2+ | 0.7− | 2006 11 21 | 704 | 1.2− | 1.4+ | | |
| 2003 11 20 | 691 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.1− | 0.8− | 2006 11 25 | 691 | 0.1+ | 0.1− | | |
| 2003 11 20 | 691 | 0.3− | 0.2− | 2004 03 19 | 704 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.1− | 0.1− | | |
| 2003 11 20 | 691 | 0.4− | 0.3− | 2004 03 20 | 699 | 0.5− | 0.5− | 2006 11 25 | 691 | 0.6− | 1.0+ | | |
| 2004 02 16 | 703 | (0.4− | 1.8+) | 2004 03 20 | 699 | 0.7− | 0.0 | | | | | | |

**(137691)∗ 1999 XC$_{62}$ = 1988 RS$_5$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56010)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.61723 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27646964 | $\omega$ | 240.39381 | | +0.99946758 | −0.01965047 | |
| $a$ | 2.3336609 | $\Omega$ | 120.72098 | | +0.02814141 | +0.92315618 | |
| $e$ | 0.2194509 | $i$ | 1.73622 | | −0.01651092 | +0.38392255 | |
| $P$ | 3.56 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 09 02 | 809 | 0.1− | 1.0− | 2004 01 24 | 704 | 0.3+ | 1.1+ | 2006 10 20 | A79 | 0.7− | 1.2+ | | |
| 1988 09 02 | 809 | 0.4− | 0.4+ | 2004 01 24 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 1988 09 02 | 809 | 0.7− | 1.7+ | 2004 01 24 | 704 | 0.6+ | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 1999 11 04 | 704 | 0.3+ | 0.3− | 2004 01 24 | 704 | (1.7+ | 0.0 ) | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 1999 11 04 | 704 | 0.6− | 0.3− | 2004 01 28 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.6+ | | |
| 1999 11 04 | 704 | 0.5+ | 0.7− | 2004 01 28 | 691 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.3+ | | |
| 1999 11 15 | 704 | 0.1+ | 0.1+ | 2004 01 28 | 691 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.5+ | | |
| 1999 11 15 | 704 | 0.3+ | 0.3− | 2004 01 30 | 704 | (0.5+ | 1.6+) | 2006 10 21 | 703 | 0.3− | 0.7+ | | |
| 1999 11 15 | 704 | 0.8+ | 0.3− | 2004 01 30 | 704 | 0.5+ | 1.3+ | 2006 10 21 | G96 | 0.3+ | 0.1− | | |
| 1999 11 15 | 704 | 0.4− | 0.1+ | 2004 01 30 | 704 | (0.9+ | 1.6+) | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 1999 11 15 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 645 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 1999 11 17 | 704 | 0.1+ | 0.5− | 2004 02 17 | 645 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 1999 11 17 | 704 | 0.8+ | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.1+ | | |
| 1999 11 17 | 704 | 0.4− | 0.2− | 2005 04 16 | 691 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.1− | | |
| 1999 11 17 | 704 | 1.0+ | 0.2− | 2005 04 16 | 691 | 0.2+ | 0.8+ | 2006 10 22 | 691 | 0.4− | 0.1+ | | |
| 1999 11 17 | 704 | 0.5+ | 0.3+ | 2006 08 06 | 699 | 0.7+ | 0.2+ | 2006 10 22 | 704 | 0.9− | 1.5− | | |
| 1999 11 30 | 691 | 0.3− | 0.3− | 2006 08 06 | 699 | 1.2+ | 0.6+ | 2006 10 22 | 704 | 0.1+ | 0.3− | | |
| 1999 11 30 | 691 | 0.3− | 0.2− | 2006 08 06 | 699 | 0.6− | 0.2+ | 2006 10 22 | 704 | 0.7− | 0.3− | | |
| 1999 11 30 | 691 | 0.2− | 0.3− | 2006 08 06 | 699 | 0.2+ | 1.1+ | 2006 10 22 | 704 | 0.7− | 0.2+ | | |
| 1999 12 04 | 703 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.6+ | 0.4+ | 2006 10 22 | 704 | 0.5− | 0.0 | | |
| 1999 12 04 | 703 | 0.6+ | 0.4− | 2006 08 28 | 703 | 0.1− | 0.5− | 2006 10 28 | 704 | 0.8+ | 0.4− | | |
| 1999 12 04 | 703 | 1.3− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 10 28 | 704 | 0.7+ | 0.8+ | | |
| 1999 12 04 | 703 | 0.1+ | 0.9+ | 2006 08 28 | 703 | 0.9− | 0.0 | 2006 10 28 | 704 | 0.1+ | 0.7+ | | |
| 1999 12 07 | 704 | 0.2+ | 0.3+ | 2006 08 31 | 704 | 0.3− | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.2+ | | |
| 1999 12 07 | 704 | 0.2− | 0.6+ | 2006 08 31 | 704 | 0.9+ | 0.8− | 2006 10 28 | 704 | 0.1+ | 0.1+ | | |
| 1999 12 07 | 704 | 0.1− | 0.3− | 2006 08 31 | 704 | 1.2− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 1999 12 07 | 704 | 0.6+ | 0.3− | 2006 08 31 | 704 | 0.4+ | 0.7− | 2006 10 31 | G96 | 0.2+ | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 1999 12 08 | 704 | 0.7− | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.5− |
| 1999 12 08 | 704 | 0.0 | 0.8− | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 1999 12 08 | 704 | 0.0 | 1.4− | 2006 09 23 | 691 | 0.5− | 0.5+ | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 1999 12 08 | 704 | 1.0− | 1.6− | 2006 09 23 | 691 | 0.3− | 0.4+ | 2006 11 07 | 644 | 0.3+ | 0.3+ |
| 1999 12 09 | 691 | 0.5+ | 0.3− | 2006 09 23 | 691 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 1999 12 09 | 691 | 0.4+ | 0.4− | 2006 09 27 | 704 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 1999 12 09 | 691 | 0.7+ | 0.5− | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 1999 12 12 | 691 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.0 | 1.2+ | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 1999 12 12 | 691 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 1999 12 12 | 691 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.7− | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2000 01 10 | 691 | 0.3+ | 0.6− | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2000 01 10 | 691 | 0.2+ | 0.6− | 2006 09 27 | 691 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2000 01 10 | 691 | 0.0 | 0.7− | 2006 09 27 | 691 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2001 03 28 | 691 | 0.1+ | 0.9+ | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2001 03 28 | 691 | 0.5+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2001 03 28 | 691 | 1.4+ | 1.4+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2004 01 19 | 691 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2004 01 19 | 691 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 1.1+ |
| 2004 01 19 | 691 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2004 01 21 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.6− |
| 2004 01 21 | 704 | 0.6+ | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.5− | 0.1− |
| 2004 01 21 | 704 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 2.0+ |
| 2004 01 21 | 704 | 0.7− | 0.6+ | 2006 10 19 | A79 | 0.3+ | 1.0+ | 2006 11 20 | 704 | 0.9− | 0.6+ |
| 2004 01 24 | 704 | (0.4+ | 1.6+) | 2006 10 19 | A79 | 0.3− | 0.1+ | 2006 11 20 | 704 | 1.2− | 0.7+ |

**(137692)∗ 1999 XU$_{62}$ = 2003 SY$_{32}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 56010)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.27985 | | (2000.0) | | | |
| $n$ | 0.22605328 | $\omega$ | 337.07037 | | +0.79298358 | −0.60402167 |
| $a$ | 2.6688787 | $\Omega$ | 60.33037 | | +0.57220555 | +0.69353765 |
| $e$ | 0.1058510 | $i$ | 5.25574 | | +0.20918379 | +0.39263640 |
| $P$ | 4.36 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.6+ | 1.0+ | 2003 09 18 | 246 | 0.1− | 0.6+ | 2005 03 09 | 703 | 2.2+ | 1.9+ |
| 1999 11 09 | 704 | 0.1− | 0.2+ | 2003 09 20 | 246 | 0.5+ | 0.2− | 2005 03 09 | 703 | 0.1+ | 0.8+ |
| 1999 11 09 | 704 | 0.2− | 0.3− | 2003 09 20 | 246 | 0.2+ | 0.0 | 2005 03 09 | 703 | 0.8− | 1.0+ |
| 1999 11 09 | 704 | 0.3− | 0.4+ | 2003 09 20 | 246 | 0.4+ | 0.3+ | 2005 03 09 | 703 | 0.4+ | 0.8+ |
| 1999 11 09 | 704 | 0.0 | 0.2+ | 2003 09 20 | 246 | 1.0+ | 0.0 | 2006 04 24 | G96 | 0.1+ | 0.2− |
| 1999 11 12 | 704 | 0.2− | 0.4+ | 2003 09 20 | 246 | 0.3− | 0.3+ | 2006 04 24 | G96 | 0.1+ | 0.2− |
| 1999 11 12 | 704 | 1.8− | 0.3+ | 2003 09 20 | 246 | 0.2+ | 0.0 | 2006 04 24 | G96 | 0.4+ | 0.1+ |
| 1999 11 12 | 704 | 0.1+ | 0.9+ | 2003 09 20 | 246 | 0.1− | 0.4+ | 2006 04 24 | G96 | 1.0+ | 0.6− |
| 1999 11 12 | 704 | 1.6− | 0.9+ | 2003 09 21 | 246 | 0.7− | 1.3+ | 2006 04 30 | 691 | 0.5− | 0.1+ |
| 1999 11 12 | 704 | 0.3− | 0.8+ | 2003 09 21 | 246 | 0.0 | 0.7+ | 2006 04 30 | 691 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.5+ | 0.5+ | 2003 09 21 | 246 | 0.6− | 0.9+ | 2006 04 30 | 691 | 0.2− | 0.0 |
| 1999 12 07 | 704 | 0.9+ | 0.4− | 2003 09 21 | 246 | 0.0 | 1.1+ | 2006 05 04 | 691 | 0.3+ | 0.4+ |
| 1999 12 07 | 704 | 0.3− | 0.6− | 2003 09 21 | 246 | 0.2− | 0.7+ | 2006 05 04 | 691 | 0.2+ | 0.4+ |
| 1999 12 07 | 704 | 0.4+ | 0.1− | 2003 09 21 | 246 | 0.3− | 1.3+ | 2006 05 04 | 691 | 0.1− | 0.3+ |
| 1999 12 08 | 704 | 0.7+ | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 05 20 | G96 | 0.4− | 0.0 |
| 1999 12 08 | 704 | 0.7+ | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 05 20 | G96 | 0.4− | 0.1− |
| 1999 12 08 | 704 | 0.6− | 0.9− | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 05 20 | G96 | 0.1− | 0.2+ |
| 1999 12 08 | 704 | 0.0 | 0.3− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 20 | 691 | 0.2+ | 0.3+ |
| 1999 12 08 | 704 | 1.1+ | 0.5− | 2003 10 29 | 699 | 1.0− | 1.0− | 2006 05 20 | G96 | 0.1− | 0.2+ |
| 2003 09 18 | 246 | 0.4+ | 0.8+ | 2003 10 29 | 699 | 0.4− | 1.2− | 2006 05 20 | 691 | 0.3+ | 0.2+ |
| 2003 09 18 | 246 | 0.0 | 0.1− | 2003 10 29 | 699 | 0.9+ | 0.6+ | 2006 05 20 | 691 | (0.0 | 3.7−) |
| 2003 09 18 | 246 | 0.1+ | 0.5+ | 2003 10 29 | 699 | 0.5+ | 0.5− | 2006 05 28 | 691 | 0.1− | 0.2− |
| 2003 09 18 | 246 | 0.4+ | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 28 | 691 | 0.1− | 0.4+ |
| 2003 09 18 | 246 | 0.8− | 0.6+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 28 | 691 | 0.4+ | 0.0 |

**(137693)∗ 1999 XG$_{63}$ = 2004 CM$_{70}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60563)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.84831 | | (2000.0) | | | |
| $n$ | 0.27178236 | $\omega$ | 333.19556 | | +0.63438775 | −0.77171210 |
| $a$ | 2.3604159 | $\Omega$ | 77.39536 | | +0.71721828 | +0.56595623 |
| $e$ | 0.1809657 | $i$ | 2.63483 | | +0.28835763 | +0.29009305 |
| $P$ | 3.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.3+ | 0.6− | 2005 06 13 | G96 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.1− |
| 1999 11 09 | 704 | 0.6− | 0.8− | 2005 06 13 | G96 | 0.6+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 1999 11 09 | 704 | 0.1+ | 0.9− | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1999 11 09 | 704 | 0.4− | 1.3− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 1999 11 12 | 704 | 0.9+ | 0.4− | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 1999 11 12 | 704 | 0.4− | 0.3− | 2006 09 18 | 703 | 0.8− | 1.2− | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 1999 11 12 | 704 | 1.5+ | 0.1− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 1999 12 07 | 704 | 0.2+ | 1.4+ | 2006 09 18 | 703 | 0.5− | 0.9− | 2006 09 27 | 691 | 0.2+ | 0.4+ |
| 1999 12 07 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1999 12 07 | 704 | 1.5+ | 0.6− | 2006 09 18 | 699 | 1.1− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 1999 12 07 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.5− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1999 12 08 | 704 | 1.2− | 0.2− | 2006 09 18 | 699 | 0.0 | 1.0− | 2006 10 16 | 703 | 0.3+ | 0.9+ |
| 1999 12 08 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.5− | 0.6− | 2006 10 16 | 703 | 0.3− | 0.8− |
| 1999 12 08 | 704 | 1.1− | 0.1+ | 2006 09 26 | 704 | (1.1+ | 1.7+) | 2006 10 16 | 703 | 0.9− | 0.2+ |
| 1999 12 08 | 704 | 0.4− | 0.3+ | 2006 09 26 | 704 | 1.2+ | 0.5− | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 1999 12 08 | 704 | 0.1+ | 0.6− | 2006 09 26 | 704 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2004 01 22 | 704 | 0.7+ | 1.1− | 2006 09 26 | 704 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2004 01 22 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.3+ | 0.4− | 2006 10 21 | 703 | (1.6+ | 0.2+) |
| 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | (2.0+ | 3.6+) |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.2+ | 0.8+ |
| 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 21 | 703 | (0.5+ | 2.0+) |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2004 02 16 | 704 | (0.6+ | 1.8+) | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2004 02 16 | 704 | 1.1+ | 1.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.7+ | 0.3+ |
| 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.1+ |
| 2005 06 13 | G96 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.1− | | | | |
| 2005 06 13 | G96 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.0 | | | | |

**(137694)∗ 1999 XW$_{64}$ = 2002 PE$_{11}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33157)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.99900 | | (2000.0) | | | |
| $n$ | 0.27843564 | $\omega$ | 163.93910 | | +0.76555969 | −0.64246254 |
| $a$ | 2.3226628 | $\Omega$ | 236.08685 | | +0.58566686 | +0.71783967 |
| $e$ | 0.1728535 | $i$ | 2.35235 | | +0.26629436 | +0.26823142 |
| $P$ | 3.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.6+ | 0.9− | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.6+ | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.2− | 0.1+ |
| 1999 11 09 | 704 | 0.0 | 0.2+ | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.5− | 0.0 |
| 1999 11 09 | 704 | 0.6+ | 0.5− | 2004 03 20 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 0.9− | 0.1+ |
| 1999 11 09 | 704 | 1.4+ | 0.4− | 2004 03 20 | 691 | 0.4− | 0.4+ | 2006 11 16 | 703 | 0.7− | 0.1− |
| 1999 11 12 | 704 | 0.0 | 0.0 | 2004 03 20 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.1+ |
| 1999 11 12 | 704 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 1.0+ | 0.1+ |
| 1999 11 17 | 704 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 1999 11 17 | 704 | 1.1− | 0.6− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 1999 11 17 | 704 | 1.1+ | 1.0− | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | (0.2+ | 1.8+) |
| 1999 12 07 | 704 | (0.5− | 2.8−) | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5− | 1.2+ |
| 1999 12 07 | 704 | 0.2+ | 0.7− | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 1999 12 07 | 704 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | (0.1− | 1.6+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.7− | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 1999 12 08 | 704 | (2.4− | 2.5−) | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 1.2+ |
| 1999 12 08 | 704 | 0.7− | 0.8− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 1999 12 08 | 704 | 1.1− | 1.2− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 1999 12 08 | 704 | 0.8− | 1.1− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.1− | 0.1+ |
| 2002 08 05 | 599 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 26 | 704 | 0.0 | 0.3+ |
| 2002 08 05 | 599 | (0.4− | 1.8+) | 2006 11 09 | 644 | 0.1− | 0.4+ | 2006 11 26 | 704 | 0.3− | 0.3− |
| 2002 08 05 | 599 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.3+ |
| 2002 08 06 | 644 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.7+ | 0.3− |
| 2002 08 06 | 644 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.0 | 0.0 |
| 2002 08 06 | 644 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2002 08 07 | 644 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4− | 0.3− |
| 2002 08 07 | 644 | 0.5− | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.4− | 0.4− |
| 2002 08 07 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.7+ | 2006 11 29 | 704 | 0.7− | 0.1+ |
| 2002 08 07 | 599 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.3− | 0.0 |
| 2002 08 07 | 599 | 0.4− | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2002 08 07 | 599 | 0.6− | 1.2+ | 2006 11 13 | 644 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2004 02 12 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | | | | |

**(137695)∗ 1999 XT$_{68}$ = 2002 QQ$_{36}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34827)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.76871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29468592 | $\omega$ | 263.93225 | | +0.51610034 | −0.85650252 | |
| $a$ | 2.2364702 | $\Omega$ | 154.99327 | | +0.79191707 | +0.47420820 | |
| $e$ | 0.2047690 | $i$ | 0.89781 | | +0.32635533 | +0.20378915 | |
| $P$ | 3.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.7− | 0.2− | 2002 08 28 | 644 | 1.0+ | 0.6+ | 2002 10 07 | 704 | 0.1+ | 0.2+ |
| 1999 10 12 | 704 | 1.5− | 0.6+ | 2002 08 31 | 291 | 0.1− | 0.1+ | 2002 10 07 | 704 | 0.0 | 0.7+ |
| 1999 10 12 | 704 | 0.3+ | 1.1− | 2002 08 31 | 291 | 0.1− | 0.1+ | 2002 10 09 | 291 | 0.2+ | 0.1− |
| 1999 10 22 | 704 | 0.6− | 0.7− | 2002 08 31 | 291 | 0.1− | 0.2+ | 2002 10 09 | 291 | 0.2+ | 0.0 |
| 1999 10 22 | 704 | 0.9− | 0.5− | 2002 09 04 | 699 | 0.2+ | 0.1+ | 2002 10 09 | 291 | 0.2+ | 0.0 |
| 1999 10 22 | 704 | 0.9− | 0.8− | 2002 09 04 | 699 | 0.1− | 0.4− | 2005 06 03 | 691 | 0.4+ | 0.8− |
| 1999 10 22 | 704 | 0.3− | 0.2+ | 2002 09 04 | 699 | 0.4− | 0.7− | 2005 06 03 | 691 | 0.0 | 0.1− |
| 1999 11 15 | 704 | 0.1+ | 0.5− | 2002 09 04 | 699 | 0.2+ | 1.0+ | 2005 06 03 | 691 | 0.3− | 0.6− |
| 1999 11 15 | 704 | 0.2+ | 0.2+ | 2002 09 05 | 704 | 1.2− | 0.8+ | 2005 06 14 | G96 | 0.8+ | 0.2− |
| 1999 11 15 | 704 | 0.2+ | 0.2+ | 2002 09 05 | 704 | 0.1+ | 0.2+ | 2005 06 14 | G96 | 0.5+ | 0.1− |
| 1999 11 15 | 704 | (2.5+ | 0.4+) | 2002 09 05 | 704 | 0.1+ | 0.5+ | 2005 06 14 | G96 | 0.3+ | 0.2+ |
| 1999 11 28 | 691 | 0.0 | 0.0 | 2002 09 05 | 704 | 0.3− | 0.5− | 2005 06 14 | G96 | 0.1+ | 0.1+ |
| 1999 11 28 | 691 | 0.1+ | 0.1− | 2002 09 05 | 704 | 0.8+ | 0.2− | 2005 06 16 | 691 | 0.3+ | 0.7− |
| 1999 11 28 | 691 | 0.6− | 0.9− | 2002 09 07 | 704 | 0.4− | 0.2+ | 2005 06 16 | 691 | 0.6− | 0.1+ |
| 1999 12 07 | 704 | 0.6+ | 0.4− | 2002 09 07 | 704 | 0.5− | 0.4+ | 2005 06 16 | 691 | 0.1+ | 0.4− |
| 1999 12 07 | 704 | 0.1+ | 0.9− | 2002 09 07 | 704 | 0.5− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1+ |
| 1999 12 07 | 704 | 0.2+ | 0.9− | 2002 09 07 | 704 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.2+ |
| 1999 12 07 | 704 | 0.1− | 0.5− | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.5+ |
| 1999 12 07 | 704 | 0.6+ | 0.2− | 2002 09 14 | 644 | 0.5− | 0.0 | 2006 09 28 | G96 | 0.2+ | 1.0− |
| 1999 12 08 | 704 | 0.4+ | 0.5− | 2002 09 14 | 644 | 0.6− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 1999 12 08 | 704 | 0.9+ | 0.3− | 2002 09 15 | 644 | 0.8− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 1999 12 08 | 704 | 0.9+ | 0.2− | 2002 09 15 | 644 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 1999 12 08 | 704 | 0.8+ | 0.1− | 2002 09 15 | 644 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 1999 12 08 | 704 | 0.5+ | 0.6+ | 2002 10 03 | 291 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.6+ |
| 2000 01 05 | 704 | 0.3+ | 0.6− | 2002 10 03 | 704 | 0.1− | 0.9− | 2006 11 15 | G96 | 0.3− | 0.6+ |
| 2000 01 05 | 704 | 0.6+ | 0.8+ | 2002 10 03 | 291 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2000 01 05 | 704 | 0.4− | 0.5+ | 2002 10 03 | 704 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.3− | 0.4+ |
| 2000 01 05 | 704 | 0.3− | 0.3+ | 2002 10 03 | 291 | 0.6+ | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2000 01 05 | 704 | 0.1− | 0.2+ | 2002 10 03 | 704 | 1.1+ | 0.8− | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2000 01 06 | 704 | 0.1+ | 1.1+ | 2002 10 03 | 704 | 0.1− | 0.9− | 2006 11 21 | G96 | 0.6− | 0.1− |
| 2000 01 06 | 704 | 0.0 | 0.6+ | 2002 10 03 | 704 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2000 01 06 | 704 | 0.1+ | 0.0 | 2002 10 05 | 704 | 0.9− | 0.5+ | 2006 12 01 | G96 | 0.1− | 0.2+ |
| 2000 01 06 | 704 | 0.0 | 0.1+ | 2002 10 05 | 704 | 0.7− | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.5+ |
| 2000 01 06 | 704 | 0.1− | 0.1+ | 2002 10 05 | 704 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.4+ | 0.2+ |
| 2002 08 28 | 644 | 0.2+ | 0.4+ | 2002 10 05 | 704 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2002 08 28 | 644 | 0.2+ | 0.2+ | 2002 10 07 | 704 | 0.4− | 0.1− | | | | |

**(137696)∗ 1999 XA$_{69}$ = 2004 BV$_{67}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56012)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.93285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26094270 | $\omega$ | 234.33754 | | −0.51362434 | −0.85758615 | |
| $a$ | 2.4253399 | $\Omega$ | 246.58977 | | +0.79645940 | −0.46477698 | |
| $e$ | 0.1537311 | $i$ | 1.69412 | | +0.31912767 | −0.22029153 | |
| $P$ | 3.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.3+ | 0.6− | 1999 12 27 | 691 | 1.6+ | 0.1− | 2004 01 27 | 691 | 0.1− | 0.1+ |
| 1991 10 08 | 691 | 0.9+ | 0.2+ | 1999 12 27 | 691 | 1.6+ | 0.5+ | 2004 01 30 | 704 | 1.5− | 0.0 |
| 1991 10 08 | 691 | 0.7+ | 0.0 | 2003 12 19 | 704 | (0.4− | 3.1+) | 2004 01 30 | 704 | 0.1− | 0.2− |
| 1995 10 23 | 691 | 0.4− | 0.2− | 2003 12 19 | 704 | (0.3− | 2.4+) | 2004 01 30 | 704 | 1.0− | 0.2− |
| 1995 10 23 | 691 | 0.9− | 0.1+ | 2003 12 19 | 704 | 0.7+ | 0.5+ | 2004 01 30 | 704 | (2.1− | 0.2−) |
| 1995 10 23 | 691 | (0.1− | 6.1−) | 2003 12 19 | 704 | (0.7− | 2.9+) | 2004 01 30 | 704 | 0.9− | 0.1− |
| 1995 11 16 | 691 | 0.8− | 0.0 | 2004 01 19 | 699 | 0.2− | 0.3− | 2004 02 16 | 704 | 0.8+ | 0.1+ |
| 1995 11 16 | 691 | 1.0− | 0.3− | 2004 01 19 | 699 | 0.4− | 0.4− | 2004 02 16 | 704 | 0.4− | 0.6+ |
| 1995 11 16 | 691 | 0.9− | 0.4− | 2004 01 19 | 699 | 0.3− | 0.5− | 2004 02 16 | 704 | 0.6− | 0.3− |
| 1999 12 07 | 704 | 0.9− | 0.1− | 2004 01 19 | 699 | 0.6− | 0.9+ | 2004 04 14 | 645 | 0.1+ | 0.1− |
| 1999 12 07 | 704 | 0.3− | 1.0− | 2004 01 24 | 704 | 0.8− | 0.0 | 2004 04 14 | 645 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 0.8− | 0.5− | 2004 01 24 | 704 | 0.1− | 0.7+ | 2006 08 21 | 691 | 0.1− | 0.0 |
| 1999 12 07 | 704 | 0.7− | 0.3− | 2004 01 24 | 704 | 0.4− | 0.6+ | 2006 08 21 | 691 | 0.2+ | 0.1+ |
| 1999 12 08 | 704 | 0.4− | 0.0 | 2004 01 26 | 699 | 0.5− | 0.6+ | 2006 08 21 | 691 | 0.1+ | 0.4+ |
| 1999 12 08 | 704 | 0.7− | 0.1+ | 2004 01 26 | 699 | 0.0 | 0.5− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 1999 12 08 | 704 | 0.2− | 0.3+ | 2004 01 26 | 699 | 0.7− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.2+ |
| 1999 12 08 | 704 | 0.4− | 0.6+ | 2004 01 26 | 699 | 0.9+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 1999 12 08 | 704 | 0.4− | 0.2+ | 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 1999 12 27 | 691 | 1.4+ | 0.2+ | 2004 01 27 | 691 | 0.1− | 0.2+ | | | | |

**(137697)∗ 1999 XM$_{69}$ = 2004 CV$_{108}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.58328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27534670 | $\omega$ | 157.66371 | | +0.59645379 | −0.79741335 | |
| $a$ | 2.3400015 | $\Omega$ | 255.60232 | | +0.72139440 | +0.58256520 | |
| $e$ | 0.1954042 | $i$ | 5.42147 | | +0.35189912 | +0.15732050 | |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 704 | 0.1+ | 0.5− | 2004 03 21 | 691 | 0.2+ | 0.4+ | 2006 10 29 | 704 | 1.4− | 0.9+ |
| 1999 11 16 | 704 | 0.1− | 0.6− | 2004 03 21 | 691 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1999 11 16 | 704 | 0.6− | 0.9− | 2006 08 29 | 703 | 0.9+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1999 11 16 | 704 | 0.4+ | 0.6− | 2006 08 29 | 703 | 0.5− | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1999 12 07 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.0 |
| 1999 12 07 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.2− | 0.0 |
| 1999 12 07 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.1+ |
| 1999 12 07 | 704 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 1999 12 08 | 704 | 1.0− | 1.5− | 2006 10 19 | 703 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 1999 12 08 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 1.0− | 0.7− | 2006 11 14 | 703 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.2+ | 1.3− | 2006 10 19 | 703 | 1.2+ | 0.1+ | 2006 11 16 | 704 | 0.4− | 1.3+ |
| 1999 12 08 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.1+ | 1.1+ |
| 2000 01 05 | 704 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.5− | 1.2+ |
| 2000 01 05 | 704 | 0.6− | 0.9− | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.6+ | 0.4− |
| 2000 01 05 | 704 | 0.1− | 1.1− | 2006 10 21 | 704 | (1.0+ | 1.6+) | 2006 11 18 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.2+ | 0.5− | 2006 10 21 | 704 | 0.6− | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2000 01 05 | 704 | 0.1− | 1.0− | 2006 10 21 | 704 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2000 01 06 | 704 | 0.6− | 0.4− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2000 01 06 | 704 | 0.2− | 0.2− | 2006 10 21 | 704 | 0.8+ | 0.1− | 2006 11 19 | 704 | 0.8− | 0.6− |
| 2000 01 06 | 704 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2000 01 06 | 704 | 0.3+ | 0.3− | 2006 10 21 | 704 | (0.4− | 1.6+) | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2000 01 06 | 704 | 0.2− | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2002 08 05 | 644 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2002 08 05 | 644 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.6− | 0.4+ |
| 2002 08 05 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | (1.5− | 1.4+) |
| 2004 02 15 | 703 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | (0.4− | 1.7+) |
| 2004 02 15 | 703 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 1.0+ | 0.5+ |
| 2004 02 15 | 703 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 02 15 | 703 | 1.0− | 0.6− | 2006 10 27 | 703 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2004 02 19 | 704 | 0.4+ | 0.9+ | 2006 10 27 | 703 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2004 02 19 | 704 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.2− | 2006 11 29 | 704 | 1.0− | 0.5+ |
| 2004 02 19 | 704 | 0.3− | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.8− |
| 2004 02 19 | 704 | 0.5+ | 0.0 | 2006 10 29 | 704 | (2.6− | 1.7+) | 2006 11 29 | 704 | 1.2+ | 0.3+ |
| 2004 02 19 | 704 | 1.0+ | 0.2+ | 2006 10 29 | 704 | 1.2− | 0.3+ | 2006 11 29 | 704 | 0.7− | 0.0 |
| 2004 03 21 | 691 | 0.2+ | 0.5+ | 2006 10 29 | 704 | 0.5− | 0.7− | 2006 11 29 | 704 | 0.6+ | 0.6+ |

**(137698)∗ 1999 XR$_{69}$ = 2002 PH$_{77}$ = 2004 CV$_{92}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 60564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 327.17622 | | (2000.0) | | +0.67331358 | −0.73143889 |
| *n* | 0.26815750 | *ω* | 325.55195 | | +0.70051207 | +0.58441813 |
| *a* | 2.3816398 | Ω | 81.86557 | | +0.23649875 | +0.35135823 |
| *e* | 0.1458963 | *i* | 6.25844 | | +0.23649875 | +0.35135823 |
| *P* | 3.68 | *H* | 16.4 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.9+ | 0.5− | 2004 01 30 | 704 | 1.2+ | 0.3− | 2006 09 19 | 703 | 0.3− | 0.3+ |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2004 02 15 | 704 | 1.0− | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.2− |
| 1999 12 07 | 704 | 0.5+ | 0.3− | 2004 02 15 | 704 | 0.2− | 0.9+ | 2006 09 26 | 703 | 0.0 | 0.0 |
| 1999 12 07 | 704 | 0.3+ | 0.7− | 2004 02 15 | 704 | 0.6− | 1.3+ | 2006 09 26 | 703 | 1.1− | 0.3− |
| 1999 12 08 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.6− | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.2− |
| 1999 12 08 | 704 | 1.1+ | 0.8− | 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.7− | 0.4− | 2004 02 18 | 691 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.3+ | 0.5− |
| 1999 12 08 | 704 | 0.3− | 0.9− | 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.2+ |
| 1999 12 08 | 704 | 0.5− | 0.2− | 2004 02 18 | 691 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.2− | 0.1+ |
| 2001 03 04 | 691 | 0.5+ | 0.3+ | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.3− | 1.0− |
| 2001 03 04 | 691 | 0.4+ | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.6− | 2006 10 02 | 703 | 0.1− | 0.0 |
| 2001 03 04 | 691 | 0.5+ | 0.5+ | 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.2− | 0.4− |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.8− | 0.3+ |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2005 05 20 | G96 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.4+ | 0.4+ |
| 2002 08 11 | 644 | 0.4− | 0.0 | 2005 05 20 | G96 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.5− | 0.4+ |
| 2002 08 11 | 644 | 0.3− | 0.2+ | 2005 05 20 | G96 | 0.1− | 0.7− | 2006 10 21 | 703 | 0.4− | 1.2+ |
| 2002 08 11 | 644 | 0.4− | 0.2+ | 2005 05 20 | G96 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 08 13 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2002 08 13 | 644 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 08 13 | 644 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 28 | 703 | 0.3+ | 1.4+ |
| 2004 01 30 | 704 | (2.2+ | 0.8−) | 2006 09 18 | 699 | 0.1− | 0.5+ | 2006 10 28 | 703 | 0.9+ | 0.2+ |
| 2004 01 30 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 703 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.8+ | 0.8+ |
| 2004 01 30 | 704 | 1.2+ | 1.4+ | 2006 09 19 | 703 | 0.2+ | 0.2+ | 2006 10 28 | 703 | (0.2− | 3.8+) |
| 2004 01 30 | 704 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.5+ | | | | |

**(137699)∗ 1999 XE$_{72}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 305.18278 | | (2000.0) | | +0.07095296 | −0.98014624 |
| *n* | 0.27047348 | *ω* | 5.60986 | | +0.90771364 | −0.01350839 |
| *a* | 2.3680249 | Ω | 80.41989 | | +0.41354761 | +0.19781526 |
| *e* | 0.1436422 | *i* | 10.82236 | | +0.41354761 | +0.19781526 |
| *P* | 3.64 | *H* | 15.6 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 1.1+ | 0.8− | 2001 05 18 | 608 | 0.7− | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.1+ |
| 1999 10 10 | 704 | 0.6+ | 0.4− | 2003 12 19 | 704 | 0.3+ | 1.0+ | 2006 09 26 | 703 | 0.7− | 0.7+ |
| 1999 10 10 | 704 | 0.0 | 0.8− | 2003 12 19 | 704 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.4+ |
| 1999 10 10 | 704 | 2.0+ | 1.3− | 2003 12 19 | 704 | 0.9+ | 0.6+ | 2006 09 26 | 703 | 0.2+ | 0.6+ |
| 1999 11 04 | 704 | 0.7− | 1.0− | 2003 12 19 | 704 | 1.2+ | 0.7+ | 2006 09 29 | 699 | 0.7− | 0.3− |
| 1999 11 04 | 704 | 0.4− | 1.8− | 2003 12 28 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 699 | 0.2− | 0.2+ |
| 1999 11 04 | 704 | 0.1− | 0.4− | 2003 12 28 | 704 | 0.7+ | 0.3− | 2006 09 29 | 699 | 0.2− | 0.2+ |
| 1999 11 04 | 704 | 0.3− | 0.2− | 2003 12 28 | 704 | 1.4+ | 1.2+ | 2006 09 29 | 699 | 0.4− | 0.7+ |
| 1999 11 15 | 704 | 0.5− | 0.2+ | 2003 12 28 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 704 | 0.0 | 1.4+ |
| 1999 11 15 | 704 | 0.0 | 0.5− | 2003 12 30 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 704 | 0.6+ | 0.2− |
| 1999 11 15 | 704 | 0.1+ | 0.0 | 2003 12 30 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.8− | 0.0 |
| 1999 11 15 | 704 | 0.1+ | 0.4− | 2003 12 30 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 704 | (2.0− | 1.2+) |
| 1999 11 15 | 704 | 0.1+ | 1.8− | 2003 12 30 | 704 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.4+ | 0.1+ |
| 1999 11 17 | 704 | 0.6+ | 0.4+ | 2004 01 30 | 699 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 1999 11 17 | 704 | 0.1+ | 0.3+ | 2004 01 30 | 699 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 1999 11 17 | 704 | 0.4+ | 0.8− | 2004 01 30 | 699 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 1999 11 17 | 704 | 0.0 | 0.3− | 2004 01 30 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.2− |
| 1999 11 17 | 704 | 0.2− | 0.5− | 2004 01 31 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 1999 12 07 | 704 | 0.2− | 0.3− | 2004 01 31 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2004 01 31 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 1999 12 07 | 704 | 0.0 | 0.3− | 2004 01 31 | 704 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.8− |
| 1999 12 07 | 704 | 0.1+ | 0.1+ | 2004 01 31 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.4− |
| 1999 12 08 | 704 | 1.6− | 1.6+ | 2004 02 11 | 644 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 1999 12 08 | 704 | 0.6− | 0.0 | 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 1999 12 08 | 704 | 0.4− | 0.6− | 2004 02 11 | 644 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 1999 12 08 | 704 | 0.0 | 0.7− | 2004 02 14 | 704 | 0.4+ | 0.3− | 2006 10 28 | 703 | 0.4+ | 0.0 |
| 1999 12 08 | 704 | 0.3− | 1.1− | 2004 02 14 | 704 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.4− | 0.0 |
| 2000 01 03 | 704 | 0.2− | 0.5− | 2004 02 14 | 704 | 0.3− | 0.7+ | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2000 01 03 | 704 | 0.1− | 0.9+ | 2004 02 14 | 704 | 0.1+ | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2000 01 03 | 704 | 0.2+ | 0.7+ | 2004 02 14 | 704 | 0.4− | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2000 01 03 | 704 | 0.5+ | 1.3+ | 2004 03 24 | 703 | (2.1− | 0.4−) | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2000 01 04 | 704 | 0.7+ | 0.6− | 2004 03 24 | 703 | 1.3− | 0.4− | 2006 11 10 | 704 | 0.2− | 1.1+ |
| 2000 01 04 | 704 | 1.1+ | 0.6− | 2004 03 24 | 703 | 1.0− | 0.4+ | 2006 11 10 | 704 | 1.0− | 0.1− |
| 2000 01 04 | 704 | 1.3+ | 1.3− | 2004 03 24 | 703 | (1.8− | 0.2+) | 2006 11 10 | 704 | 0.4− | 0.3− |
| 2000 01 04 | 704 | 0.9+ | 1.0− | 2004 03 25 | 704 | 0.9+ | 0.0 | 2006 11 10 | 704 | 0.6− | 0.4− |
| 2000 01 04 | 704 | 1.2+ | 0.6− | 2004 03 25 | 704 | 0.2− | 0.7+ | 2006 11 16 | 703 | 0.2+ | 0.2+ |
| 2000 01 30 | 704 | 0.4+ | 0.0 | 2004 03 25 | 704 | 0.7− | 1.0+ | 2006 11 16 | 703 | 0.8− | 0.1+ |
| 2000 01 30 | 704 | 0.9− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.8+ | 2006 11 16 | 703 | 1.2− | 0.4− |
| 2000 01 30 | 704 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.8+ | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 0.1− | 1.2+ | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.9+ | 0.1+ |
| 2000 02 11 | 704 | 0.8− | 0.3− | 2006 09 19 | 703 | 0.6− | 0.9+ | 2006 11 16 | 703 | 0.2− | 0.1+ |
| 2000 02 11 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.8− | 1.9+ |
| 2000 02 11 | 704 | 0.0 | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 11 16 | 703 | 1.3+ | 0.8+ |
| 2001 05 18 | 608 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.2− | 0.8+ | | | | |
| 2001 05 18 | 608 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.3+ | | | | |

**(137700)∗ 1999 XV$_{72}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 343.58104 | | (2000.0) | | +0.98862847 | −0.15037835 |
| *n* | 0.26252177 | *ω* | 187.50938 | | +0.13878083 | +0.91318670 |
| *a* | 2.4156045 | Ω | 181.13962 | | +0.05791052 | +0.37878278 |
| *e* | 0.1681663 | *i* | 0.90843 | | +0.05791052 | +0.37878278 |
| *P* | 3.75 | *H* | 16.9 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | (2.1+ | 0.1−) | 2006 06 20 | G96 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.0 | 0.2− | | | |
| 1999 12 07 | 704 | 0.9− | 1.3− | 2006 06 20 | G96 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.3− | 0.6− | | | |
| 1999 12 07 | 704 | 0.4− | 0.3− | 2006 06 20 | G96 | 0.3− | 0.4− | 2006 08 28 | 703 | 0.6− | 0.7− | | | |
| 1999 12 07 | 704 | 0.6− | 0.5+ | 2006 06 20 | G96 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.4− | 0.1− | | | |
| 1999 12 08 | 704 | 0.2+ | 0.1+ | 2006 08 01 | A50 | 0.0 | 0.5− | 2006 09 01 | 704 | 1.0+ | 1.1+ | | | |
| 1999 12 08 | 704 | 0.5− | 0.5− | 2006 08 06 | A50 | 0.3− | 0.0 | 2006 09 01 | 704 | 0.3− | 0.4+ | | | |
| 1999 12 08 | 704 | 1.1+ | 0.8− | 2006 08 06 | A50 | 0.4− | 0.1+ | 2006 09 01 | 704 | 0.0 | 0.6+ | | | |
| 1999 12 08 | 704 | 1.2+ | 0.5− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.3− | 1.1− | | | |
| 1999 12 08 | 704 | 0.3+ | 0.5− | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 11 | G92 | 0.3+ | 0.5− | | | |
| 1999 12 27 | 691 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 09 11 | G92 | 0.8+ | 0.3− | | | |
| 1999 12 27 | 691 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.2− | 2006 09 11 | G92 | 0.4+ | 0.0 | | | |
| 1999 12 27 | 691 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.2− | | | |
| 2000 01 02 | 691 | 0.0 | 0.4− | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.6− | 0.0 | | | |
| 2000 01 02 | 691 | 0.1+ | 0.3− | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.7+ | | | |
| 2000 01 02 | 691 | 0.1+ | 0.3− | 2006 08 19 | 691 | 0.6+ | 0.4+ | 2006 09 25 | 699 | 1.3− | 1.0+ | | | |
| 2002 06 29 | 644 | 0.1+ | 1.4− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.9+ | | | |
| 2002 06 29 | 644 | 0.1− | 1.3− | 2006 08 21 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 1.2+ | | | |
| 2002 06 29 | 644 | 0.1+ | 0.8− | 2006 08 21 | 704 | 0.1+ | 0.8− | 2006 09 25 | 699 | 0.5+ | 0.2+ | | | |
| 2002 07 13 | 644 | 0.1+ | 0.1− | 2006 08 21 | 704 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.5− | | | |
| 2002 07 13 | 644 | 0.4− | 0.4− | 2006 08 21 | 704 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.4− | | | |
| 2002 07 13 | 644 | 0.0 | 0.0 | 2006 08 21 | 704 | 0.7+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.6− | | | |
| 2003 12 19 | 691 | 0.3+ | 0.6+ | 2006 08 21 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− | | | |
| 2003 12 19 | 691 | 0.4− | 0.8+ | 2006 08 21 | 644 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.3− | | | |
| 2003 12 19 | 691 | 0.2+ | 0.4+ | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.4− | | | |
| 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.3− | | | |
| 2005 04 10 | 691 | 0.2+ | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.5− | | | |
| 2005 04 10 | 691 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.2− | 0.7+ | 2006 11 21 | G96 | 0.4− | 0.1+ | | | |
| 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.5− | 1.0+ | 2006 11 21 | G96 | 1.1− | 0.4− | | | |
| 2005 05 08 | G96 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.1+ | | | |
| 2005 05 08 | G96 | 0.1+ | 0.8+ | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.3− | | | |
| 2005 05 08 | G96 | 0.3+ | 0.2− | 2006 08 27 | 691 | 0.3− | 0.2+ | | | | | | | |

**(137701)∗ 1999 XR$_{73}$ = 1997 CM$_{13}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (MPC 38588)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 51.29453 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.29478761 | $\omega$ | 301.25958 | +0.91626970 | −0.39466195 | |
| $a$ | 2.2359559 | $\Omega$ | 82.06207 | +0.38699981 | +0.82808811 | |
| $e$ | 0.1797754 | $i$ | 3.96570 | +0.10334880 | +0.39813569 | |
| $P$ | 3.34 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 046 | 0.2+ | 0.7+ | 2000 01 04 | 704 | 0.6− | 1.0− | 2002 10 29 | 704 | 0.1− | 1.1+ | | | |
| 1997 02 06 | 046 | 1.0+ | 0.3+ | 2000 01 04 | 704 | 0.8− | 0.0 | 2002 10 29 | 704 | 0.4− | 1.5+ | | | |
| 1997 02 06 | 046 | 0.1+ | 0.7+ | 2002 08 12 | 704 | 0.8+ | 0.4− | 2002 11 07 | 704 | 0.5+ | 0.0 | | | |
| 1997 02 06 | 046 | 0.7+ | 1.1+ | 2002 08 12 | 704 | 0.6+ | 0.5+ | 2002 11 07 | 704 | 0.4− | 0.1− | | | |
| 1997 02 09 | 046 | 1.5+ | 0.5+ | 2002 08 12 | 704 | 0.0 | 0.5+ | 2002 11 07 | 704 | 0.4− | 0.0 | | | |
| 1997 02 09 | 046 | 1.0+ | 0.3− | 2002 08 12 | 704 | 1.2− | 0.4− | 2002 11 07 | 704 | 0.2− | 1.0+ | | | |
| 1997 02 09 | 046 | (2.3+ | 0.4+) | 2002 09 05 | 608 | 0.2+ | 0.2+ | 2002 11 11 | 704 | 0.7+ | 0.0 | | | |
| 1997 02 10 | 046 | 0.4− | 0.4− | 2002 09 05 | 608 | 0.3+ | 0.2− | 2002 11 11 | 704 | 0.2− | 0.4+ | | | |
| 1997 02 10 | 046 | 0.3+ | 0.7− | 2002 09 05 | 608 | 0.4+ | 0.1+ | 2002 11 11 | 704 | 1.2− | 0.7+ | | | |
| 1997 02 10 | 046 | 0.8− | 0.2− | 2002 09 11 | 608 | 0.8− | 0.6− | 2002 11 11 | 704 | 0.4− | 0.3+ | | | |
| 1997 02 15 | 691 | 0.4+ | 0.2+ | 2002 09 11 | 608 | 0.7− | 0.6− | 2004 03 11 | 644 | 0.2+ | 0.1+ | | | |
| 1997 02 15 | 691 | 0.6+ | 0.1+ | 2002 09 11 | 608 | 0.7− | 0.6− | 2004 03 11 | 644 | 0.7+ | 1.0+ | | | |
| 1997 02 15 | 691 | 0.4+ | 0.1− | 2002 09 13 | 704 | 0.2− | 0.5+ | 2004 03 11 | 644 | 0.8+ | 0.6+ | | | |
| 1998 06 26 | 691 | 1.0− | 0.9+ | 2002 09 13 | 704 | 0.6− | 0.6+ | 2004 03 15 | 703 | 0.3+ | 0.7+ | | | |
| 1998 06 26 | 691 | 0.1+ | 0.2+ | 2002 09 13 | 704 | 0.1+ | 0.6+ | 2004 03 15 | 704 | 1.2+ | 1.2+ | | | |
| 1998 06 26 | 691 | 0.4− | 0.0 | 2002 09 13 | 704 | 0.0 | 0.4+ | 2004 03 15 | 703 | 0.1− | 0.4+ | | | |
| 1998 07 01 | 691 | 0.8− | 0.8− | 2002 09 15 | 608 | 0.7+ | 0.2+ | 2004 03 15 | 704 | (1.8+ | 0.3+) | | | |
| 1998 07 01 | 691 | (3.5− | 4.8−) | 2002 09 15 | 608 | 0.6+ | 0.3− | 2004 03 15 | 703 | (1.1+ | 1.5+) | | | |
| 1998 07 01 | 691 | (2.6+ | 5.0−) | 2002 09 15 | 608 | 0.7+ | 0.4− | 2004 03 15 | 704 | 0.6+ | 0.1+ | | | |
| 1999 12 05 | 703 | 0.1− | 0.4+ | 2002 09 16 | 644 | 0.2− | 0.4+ | 2004 03 15 | 703 | (2.5+ | 0.1+) | | | |
| 1999 12 05 | 703 | (0.2+ | 4.6+) | 2002 09 16 | 644 | 0.1− | 0.5+ | 2004 03 15 | 704 | 1.0+ | 1.1− | | | |
| 1999 12 05 | 703 | 0.9− | 0.1+ | 2002 09 16 | 644 | 0.1− | 0.4+ | 2004 03 15 | 704 | 1.2+ | 0.6+ | | | |
| 1999 12 05 | 703 | 0.7− | 1.2+ | 2002 10 02 | 608 | 0.3+ | 1.0− | 2004 03 27 | 691 | 0.4+ | 0.5+ | | | |
| 1999 12 07 | 704 | 0.0 | 0.6− | 2002 10 02 | 608 | 0.1+ | 0.9+ | 2004 03 27 | 691 | 0.0 | 0.4+ | | | |
| 1999 12 07 | 704 | 0.1− | 0.7− | 2002 10 02 | 608 | 0.2− | 0.7+ | 2004 03 27 | 691 | 0.2+ | 0.5+ | | | |
| 1999 12 07 | 704 | 1.0− | 1.4− | 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.6− | 0.3+ | | | |
| 1999 12 08 | 704 | 1.0− | 0.6− | 2002 10 04 | 704 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.7− | 0.2− | | | |
| 1999 12 08 | 704 | 0.6− | 1.0− | 2002 10 04 | 704 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.4− | 0.1− | | | |
| 1999 12 08 | 704 | 0.6− | 0.4− | 2002 10 04 | 704 | 0.1− | 0.7+ | 2006 10 04 | G96 | 0.1− | 0.0 | | | |
| 1999 12 08 | 704 | 0.0 | 0.4− | 2002 10 05 | 704 | 0.2+ | 0.8+ | 2006 10 23 | G96 | 0.8− | 0.1+ | | | |
| 1999 12 08 | 704 | 0.4− | 0.0 | 2002 10 05 | 704 | 0.5− | 0.4+ | 2006 10 23 | G96 | 0.4− | 0.2− | | | |
| 2000 01 03 | 704 | 0.3+ | 0.0 | 2002 10 05 | 704 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.0 | | | |
| 2000 01 03 | 704 | 1.2+ | 0.7+ | 2002 10 05 | 704 | 0.0 | 0.7+ | 2006 10 23 | G96 | 0.8− | 0.1− | | | |
| 2000 01 03 | 704 | 0.2− | 0.2− | 2002 10 05 | 704 | 0.2+ | 1.1+ | 2006 11 22 | G96 | 0.2− | 0.0 | | | |
| 2000 01 04 | 704 | 0.3+ | 1.4− | 2002 10 29 | 704 | 0.2+ | 1.3+ | 2006 11 22 | G96 | 0.2− | 0.3+ | | | |
| 2000 01 04 | 704 | 0.5− | 0.2− | 2002 10 29 | 704 | 0.4− | 1.0+ | 2006 11 22 | G96 | 0.8− | 0.2− | | | |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2002 10 29 | 704 | 1.1+ | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.0 | | | |

**(137702)∗ 1999 XZ$_{75}$ = 2002 RJ$_{141}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34828)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 21.31361 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.28977202 | $\omega$ | 166.32182 | +0.62879227 | −0.77610371 | |
| $a$ | 2.2616831 | $\Omega$ | 244.69508 | +0.70834572 | +0.59707566 | |
| $e$ | 0.1617206 | $i$ | 3.02982 | +0.32072827 | +0.20288834 | |
| $P$ | 3.40 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 1.0− | 1.2+ | 2002 10 04 | 704 | 0.2+ | 0.7+ | 2004 03 26 | 704 | 0.7+ | 0.7+ | | | |
| 1999 12 07 | 704 | 0.1+ | 1.0+ | 2002 10 04 | 704 | 0.2− | 0.7+ | 2004 03 26 | 704 | 0.1− | 0.8+ | | | |
| 1999 12 07 | 704 | 0.0 | 0.6+ | 2002 10 04 | 704 | 0.1− | 0.3+ | 2004 03 26 | 704 | 0.5+ | 0.3+ | | | |
| 1999 12 07 | 704 | 0.8+ | 0.9+ | 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 03 26 | 704 | 0.1+ | 0.5+ | | | |
| 1999 12 08 | 704 | 0.5− | 0.5+ | 2002 10 05 | 645 | 0.1− | 0.1+ | 2004 03 26 | 704 | 0.1+ | 0.6+ | | | |
| 1999 12 08 | 704 | 0.0 | 0.4+ | 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 03 26 | 704 | 1.0+ | 1.1+ | | | |
| 1999 12 08 | 704 | 0.5− | 0.8+ | 2002 10 10 | 645 | 0.1− | 0.0 | 2004 03 26 | 704 | 0.5+ | 1.1+ | | | |
| 1999 12 08 | 704 | 0.3− | 0.8+ | 2002 10 10 | 645 | 0.1− | 0.0 | 2004 03 26 | 704 | 0.1+ | 1.5+ | | | |
| 1999 12 08 | 704 | 0.6− | 0.8+ | 2002 10 12 | 704 | 0.8+ | 1.0+ | 2004 03 26 | 704 | 0.6+ | 0.8+ | | | |
| 2000 01 05 | 704 | 0.0 | 0.5− | 2002 10 12 | 704 | 0.6+ | 0.0 | 2004 03 26 | 704 | 0.0 | 0.6+ | | | |
| 2000 01 05 | 704 | 0.2+ | 0.2− | 2002 10 12 | 704 | 0.9+ | 1.3+ | 2004 03 26 | 704 | 0.5+ | 0.1+ | | | |
| 2000 01 05 | 704 | 0.1+ | 0.5− | 2002 10 12 | 704 | 0.4+ | 1.4+ | 2004 03 26 | 704 | 0.0 | 0.1+ | | | |
| 2000 01 05 | 704 | (2.1+ | 0.5+) | 2002 11 05 | 699 | 0.0 | 0.4− | 2004 03 26 | 704 | 0.6+ | 0.2+ | | | |
| 2000 01 05 | 704 | 0.7− | 0.5+ | 2002 11 05 | 699 | 1.0− | 0.9+ | 2004 03 26 | 704 | 0.4− | 0.3+ | | | |
| 2000 01 06 | 704 | 0.5− | 0.9− | 2002 11 05 | 699 | 0.3− | 1.3+ | 2004 03 26 | 704 | 0.5+ | 0.9+ | | | |
| 2000 01 06 | 704 | 0.6+ | 0.9− | 2002 11 05 | 699 | (0.1− | 1.7+) | 2004 03 26 | 704 | 1.0+ | 1.0+ | | | |
| 2000 01 06 | 704 | 1.1+ | 0.7− | 2002 11 08 | 704 | 0.3− | 0.0 | 2004 03 26 | 704 | 0.5+ | 0.3+ | | | |
| 2000 01 06 | 704 | 0.1+ | 0.8− | 2002 11 08 | 704 | 0.1− | 0.2+ | 2004 03 26 | 704 | 0.9− | 0.5+ | | | |
| 2000 01 06 | 704 | 0.1− | 0.0 | 2002 11 08 | 704 | 0.5+ | 0.2+ | 2004 03 26 | 704 | (0.0 | 1.8+) | | | |
| 2002 07 14 | 704 | 0.2− | 0.2− | 2002 11 08 | 704 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.3− | 0.9+ | | | |
| 2002 07 14 | 704 | 0.1+ | 0.2− | 2002 11 08 | 704 | 0.3+ | 0.8+ | 2004 03 27 | 704 | 0.5− | 1.0+ | | | |
| 2002 07 14 | 704 | 0.7+ | 0.3− | 2002 11 12 | 704 | 0.0 | 0.7+ | 2004 03 27 | 704 | 0.0 | 0.7+ | | | |
| 2002 07 14 | 704 | 0.5− | 0.3− | 2002 11 12 | 704 | 0.7− | 0.2+ | 2004 03 27 | 704 | 0.6− | 1.4+ | | | |
| 2002 08 11 | 704 | 0.2+ | 0.6− | 2002 11 12 | 704 | 0.5+ | 0.7+ | 2004 03 30 | 704 | 0.3+ | 0.0 | | | |
| 2002 08 11 | 704 | 0.4+ | 0.7+ | 2002 11 12 | 704 | 0.4− | 0.6+ | 2004 03 30 | 704 | 1.0+ | 1.4+ | | | |
| 2002 08 11 | 704 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 0.9+ | 0.4+ | 2004 03 30 | 704 | 0.1− | 0.8+ | | | |
| 2002 08 11 | 704 | 0.2− | 1.3+ | 2002 12 05 | 704 | 0.9+ | 0.2− | 2004 03 30 | 704 | 0.5+ | 0.8+ | | | |
| 2002 08 16 | 704 | 0.2+ | 0.0 | 2002 12 05 | 704 | 0.9+ | 0.8+ | 2004 03 30 | 704 | 0.2+ | 0.3− | | | |
| 2002 08 16 | 704 | 0.3+ | 0.1− | 2002 12 05 | 704 | 0.2+ | 0.4− | 2004 03 31 | 704 | 0.8− | 0.7+ | | | |
| 2002 08 16 | 704 | 1.1− | 0.1− | 2002 12 05 | 704 | 0.0 | 0.5− | 2004 03 31 | 704 | 0.6+ | 0.7+ | | | |
| 2002 08 16 | 704 | 0.3− | 0.6+ | 2003 01 04 | 704 | 0.6+ | 0.4+ | 2004 03 31 | 704 | 0.2− | 1.4+ | | | |
| 2002 08 16 | 704 | 0.3+ | 0.9+ | 2003 01 04 | 704 | 0.0 | 0.2+ | 2005 06 26 | 644 | 0.5− | 0.2− | | | |
| 2002 08 28 | 644 | 0.2+ | 0.6+ | 2003 01 04 | 704 | 0.8+ | 0.6+ | 2005 06 26 | 644 | 0.5− | 0.2− | | | |
| 2002 08 28 | 644 | 0.1+ | 0.5+ | 2003 01 04 | 704 | 0.7− | 0.6+ | 2005 06 26 | 644 | 0.4− | 0.1− | | | |
| 2002 08 28 | 644 | 0.1+ | 0.6+ | 2003 01 04 | 704 | (0.7+ | 1.6+) | 2006 09 28 | G96 | 0.0 | 0.2− | | | |
| 2002 08 31 | 683 | 1.3+ | 0.7− | 2004 02 19 | 704 | 1.2+ | 0.1− | 2006 09 28 | G96 | 0.0 | 0.3− | | | |
| 2002 08 31 | 683 | 1.3− | 0.1+ | 2004 02 19 | 704 | 0.1+ | 1.0+ | 2006 09 28 | G96 | (2.2+ | 1.6−) | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 31 | 683 | (1.3+ | 1.5−) | 2004 02 19 | 704 | (0.5+ | 1.8+) | 2006 10 16 | 703 | 1.1+ | 0.0 |
| 2002 09 04 | 683 | 0.1− | 1.1+ | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | (0.4− | 2.4+) |
| 2002 09 04 | 683 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2002 09 04 | 683 | (2.3+ | 0.3+) | 2004 02 26 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.9− |
| 2002 09 06 | 704 | 0.6− | 0.3+ | 2004 03 16 | 704 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.7− | 0.5− |
| 2002 09 06 | 704 | 0.7− | 0.1+ | 2004 03 16 | 703 | 0.7+ | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2002 09 06 | 704 | 0.4− | 0.6+ | 2004 03 16 | 704 | (2.0+ | 0.3−) | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.6− | 0.1+ | 2004 03 16 | 703 | 0.8+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.7+ | 2004 03 16 | 703 | 0.3+ | 1.1+ | 2006 11 14 | 703 | 0.6+ | 0.2− |
| 2002 09 10 | 608 | 0.1+ | 0.2− | 2004 03 16 | 704 | 0.3+ | 0.7+ | 2006 11 14 | 703 | 1.0− | 0.3− |
| 2002 09 10 | 608 | 0.1− | 0.6+ | 2004 03 16 | 704 | 1.3+ | 0.8+ | 2006 11 14 | 703 | 0.6− | 0.0 |
| 2002 09 10 | 608 | 0.7− | 0.9+ | 2004 03 16 | 703 | 1.0+ | 0.8+ | 2006 11 14 | 703 | 0.7− | 0.2− |
| 2002 09 13 | 644 | 0.5− | 0.7+ | 2004 03 18 | 704 | 0.7+ | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.7+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2002 09 13 | 644 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 09 30 | 704 | (1.9− | 2.3+) | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2002 09 30 | 704 | 1.1− | 0.6+ | 2004 03 18 | 704 | 0.5+ | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2002 09 30 | 704 | 0.8− | 1.1+ | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2002 09 30 | 704 | 0.9− | 1.1+ | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 11 22 | G96 | 0.3+ | 0.4+ |
| 2002 10 01 | 699 | 0.3+ | 1.0+ | 2004 03 20 | 704 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2002 10 01 | 699 | 0.5+ | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.1− |
| 2002 10 01 | 699 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 11 27 | 703 | 0.2− | 1.2+ |
| 2002 10 01 | 699 | 0.4+ | 0.7+ | 2004 03 26 | 704 | 0.6+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2004 03 26 | 704 | 0.4+ | 0.2+ | | | | |

**(137703)∗ 1999 XE$_{78}$ = 2001 KA$_{76}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14162)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.89758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27236248 | $\omega$ | 28.06565 | | −0.12831922 | −0.99050658 | |
| $a$ | 2.3570630 | $\Omega$ | 69.34216 | | +0.89975169 | −0.13718341 | |
| $e$ | 0.1798594 | $i$ | 3.02042 | | +0.41711038 | −0.00879869 | |
| $P$ | 3.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.3− | 0.3− | 2004 01 22 | 704 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 1999 11 09 | 704 | 0.6− | 0.0 | 2004 01 22 | 704 | 0.6+ | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.7− | 0.3− | 2004 01 22 | 704 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 1999 11 09 | 704 | 1.1− | 0.1− | 2004 01 23 | 704 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 1999 11 09 | 704 | 0.7− | 0.1− | 2004 01 23 | 704 | 1.1+ | 1.1+ | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 1999 11 12 | 704 | 0.8− | 0.1− | 2004 01 23 | 704 | (1.7+ | 0.7+) | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.8− | 0.1− | 2004 01 23 | 704 | 0.6+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 0.5− | 0.2+ | 2004 01 23 | 704 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 1999 11 12 | 704 | 0.5− | 0.4+ | 2004 01 29 | 704 | 0.8+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1999 11 17 | 704 | 0.2− | 0.8− | 2004 01 29 | 704 | 0.6+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 1999 11 17 | 704 | 0.7− | 0.5− | 2004 01 29 | 704 | 0.0 | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 1999 11 17 | 704 | 1.1− | 0.3− | 2004 02 01 | 599 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 1999 11 17 | 704 | 0.4− | 0.5− | 2004 02 01 | 599 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 1999 11 17 | 704 | 0.7− | 0.7− | 2004 02 01 | 599 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1999 12 02 | 691 | 0.8+ | 0.3+ | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1999 12 02 | 691 | 1.2+ | 0.3+ | 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.1+ | 0.3− |
| 1999 12 02 | 691 | 1.3+ | 0.1+ | 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 1.4− | 0.6− | 2004 02 17 | 704 | 1.0− | 1.4+ | 2006 10 15 | 703 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 1.1− | 0.7− | 2004 02 17 | 704 | 1.2− | 1.2+ | 2006 10 15 | 703 | 0.2− | 0.6− |
| 1999 12 07 | 704 | 1.1− | 0.7− | 2004 02 17 | 704 | 0.7− | 1.5+ | 2006 10 17 | G96 | 0.1− | 0.4− |
| 1999 12 07 | 704 | 1.0− | 0.8− | 2004 02 17 | 704 | 0.9− | 1.1+ | 2006 10 17 | G96 | 0.4+ | 0.1− |
| 1999 12 08 | 704 | 0.8− | 0.8− | 2004 02 17 | 704 | 0.7− | 1.2+ | 2006 10 17 | G96 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 1.3− | 0.5− | 2004 02 18 | 608 | 0.7+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.2− |
| 1999 12 08 | 704 | 1.2− | 0.4− | 2004 02 18 | 608 | 0.9+ | 0.8+ | 2006 10 21 | 703 | 0.4+ | 0.7+ |
| 1999 12 08 | 704 | 1.3− | 0.7− | 2004 02 18 | 608 | 0.7+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.2− |
| 1999 12 08 | 704 | 0.8− | 0.6− | 2004 03 10 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2000 01 03 | 704 | 1.2+ | 0.8− | 2004 03 10 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.3− |
| 2000 01 03 | 704 | 0.3+ | 1.1− | 2004 03 10 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2000 01 03 | 704 | 0.9+ | 0.5− | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 01 03 | 704 | 0.3+ | 0.0 | 2004 03 15 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.7+ |
| 2000 01 03 | 704 | 0.6+ | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 704 | 0.2− | 0.0 |
| 2000 01 04 | 704 | 1.2+ | 1.1− | 2004 03 15 | 704 | 0.1+ | 0.1− | 2006 10 22 | 704 | 1.1− | 0.6+ |
| 2000 01 04 | 704 | 0.5+ | 0.8− | 2004 03 19 | 704 | 1.3+ | 0.5+ | 2006 10 22 | 704 | 0.1+ | 1.2+ |
| 2000 01 04 | 704 | 0.9+ | 0.3− | 2004 03 19 | 704 | 0.1+ | 1.1+ | 2006 10 22 | 704 | 0.1+ | 0.2− |
| 2000 01 04 | 704 | 0.5+ | 0.7− | 2004 03 19 | 704 | 0.1+ | 1.3+ | 2006 10 22 | 704 | 0.6− | 0.0 |
| 2000 01 04 | 704 | 0.5+ | 0.4− | 2004 03 19 | 704 | 0.1− | 0.9− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2000 01 05 | 704 | 0.4+ | 0.7− | 2004 03 19 | 704 | 0.9+ | 1.0+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2000 01 05 | 704 | 0.5+ | 0.3− | 2004 03 22 | 704 | 0.5− | 1.4+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2000 01 05 | 704 | 0.4+ | 0.2− | 2004 03 22 | 704 | 0.1− | 0.1+ | 2006 10 28 | 704 | (1.6− | 0.7−) |
| 2000 01 05 | 704 | 0.3+ | 0.4− | 2004 03 22 | 704 | 0.1− | 0.5+ | 2006 10 28 | 704 | (1.7− | 0.0 ) |
| 2000 01 05 | 704 | 1.4+ | 0.4− | 2004 03 22 | 704 | 1.0+ | 0.2+ | 2006 10 28 | 704 | 0.7− | 1.1+ |
| 2000 01 30 | 704 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.8+ | 2006 10 28 | 704 | 1.2− | 0.4− |
| 2000 01 30 | 704 | 0.0 | 1.0− | 2004 03 28 | 704 | 0.6+ | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2000 01 30 | 704 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2000 01 30 | 704 | 0.7− | 0.3− | 2004 03 28 | 704 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 05 29 | 608 | 0.7+ | 0.6− | 2006 09 18 | 699 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2001 05 29 | 608 | 0.5+ | 0.5− | 2006 09 18 | 699 | 1.0− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 05 29 | 608 | 0.6+ | 0.7− | 2006 09 18 | 699 | 0.2− | 0.5− | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2001 06 01 | 691 | 0.3− | 0.6+ | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2001 06 01 | 691 | 0.4− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 06 01 | 691 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.2+ |
| 2002 08 18 | 644 | 0.4+ | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.3+ | 0.8+ | 2006 09 22 | 704 | 0.7+ | 0.4+ | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 2002 08 18 | 644 | 0.3− | 1.0+ | 2006 09 22 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.9+ | 2006 09 22 | 704 | 0.9+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.6+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.3− |
| 2002 09 11 | 608 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.7+ |
| 2002 09 11 | 608 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.8− | 1.1+ | 2006 11 17 | 703 | 0.7+ | 0.9− |
| 2002 09 11 | 608 | 0.1+ | 1.0+ | 2006 09 27 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 1.4+ |
| 2003 12 18 | 703 | 1.5+ | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 2003 12 18 | 703 | 0.3+ | 0.6+ | 2006 09 27 | 704 | (0.8− | 1.8+) | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2003 12 18 | 703 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2003 12 18 | 703 | 0.7+ | 0.9− | 2006 09 30 | 703 | 0.4+ | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.2− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 11 20 | G96 | 0.2+ | 0.1− |
| 2003 12 22 | 704 | 0.3+ | 1.3+ | 2006 09 30 | 703 | 0.9− | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2003 12 22 | 704 | (1.6+ | 0.6+) | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2003 12 22 | 704 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.3+ | 2006 11 20 | G96 | 0.9− | 0.3+ |
| 2003 12 27 | 704 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2003 12 27 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 21 | 704 | 1.1− | 0.7+ |
| 2003 12 27 | 704 | 0.2− | 0.6− | 2006 09 30 | 703 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 1.0− | 0.3+ |
| 2004 01 22 | 704 | 1.0+ | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2004 01 22 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 1.2− | 0.4+ |

**(137704)∗ 1999 XV$_{78}$ = 2002 RW$_{212}$ = 2002 TU$_{174}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37205), A. Doppler (d, *ibid.*), G. V. Williams (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.68497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29481782 | $\omega$ | 233.91272 | | +0.73159072 | +0.67162674 | |
| $a$ | 2.2358031 | $\Omega$ | 83.57883 | | −0.58151257 | +0.70435721 | |
| $e$ | 0.2122336 | $i$ | 6.76249 | | −0.35583443 | +0.22977912 | |
| $P$ | 3.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.4− | 1.9− | 1999 12 08 | 704 | (2.3− | 2.2−) | 2002 10 16 | 644 | 0.3+ | 0.3− |
| 1998 04 21 | 704 | (1.4+ | 2.3−) | 1999 12 08 | 704 | 1.8− | 0.2+ | 2002 10 29 | 704 | 0.0 | 0.4− |
| 1998 04 21 | 704 | 0.4+ | 0.4− | 1999 12 08 | 704 | 0.2+ | 0.2+ | 2002 10 29 | 704 | 0.4+ | 0.1+ |
| 1998 04 21 | 704 | 1.8+ | 1.6+ | 2002 09 15 | 608 | 1.0− | 0.8− | 2002 10 29 | 704 | 0.2− | 0.1− |
| 1998 04 23 | 704 | (0.3− | 2.2+) | 2002 09 15 | 608 | 1.0− | 0.7− | 2002 10 29 | 704 | 0.7− | 0.5− |
| 1998 04 23 | 704 | 0.7+ | 1.6+ | 2002 09 15 | 608 | 1.0− | 0.6− | 2002 10 29 | 704 | 0.1− | 0.9− |
| 1998 04 23 | 704 | 1.0− | 1.4+ | 2002 09 19 | 644 | 0.3− | 0.2+ | 2002 11 06 | 644 | 0.3+ | 0.8+ |
| 1998 04 23 | 704 | 0.6− | 1.3− | 2002 09 19 | 644 | 0.2− | 0.1− | 2002 11 06 | 644 | 0.2+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 0.6+ | 0.4− | 2002 09 19 | 644 | 0.0 | 0.2+ | 2002 11 06 | 644 | 0.3+ | 0.8+ |
| 1999 11 15 | 704 | 1.4+ | 0.1− | 2002 10 04 | 704 | 0.5− | 0.1− | 2004 02 15 | 704 | 0.5+ | 0.5+ |
| 1999 11 15 | 704 | 0.2+ | 0.1+ | 2002 10 04 | 704 | 0.4+ | 0.5+ | 2004 02 15 | 704 | 0.6+ | 0.2+ |
| 1999 11 15 | 704 | 0.5+ | 0.9− | 2002 10 04 | 704 | 0.4+ | 0.1+ | 2004 02 15 | 704 | 0.7+ | 0.4− |
| 1999 11 15 | 704 | 0.1+ | 0.6+ | 2002 10 04 | 704 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.4+ |
| 1999 11 28 | 120 | 0.8− | 0.1+ | 2002 10 04 | 704 | 0.5+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 1999 11 28 | 120 | 1.7+ | 0.0 | 2002 10 06 | 704 | 0.7+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 1999 11 29 | 120 | 1.2− | 0.2+ | 2002 10 06 | 704 | 0.4+ | 0.5+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 1999 11 29 | 120 | (5.8+ | 1.1+) | 2002 10 06 | 704 | 0.4− | 0.8+ | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 1999 12 07 | 704 | 0.4+ | 0.2+ | 2002 10 06 | 704 | 0.1− | 0.7+ | 2006 12 01 | G96 | 0.4− | 0.2+ |
| 1999 12 07 | 704 | 0.3− | 0.1+ | 2002 10 06 | 704 | 0.7+ | 1.3+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 1999 12 07 | 704 | 0.5− | 0.5− | 2002 10 16 | 644 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.4− | 0.2+ |
| 1999 12 07 | 704 | 0.3− | 1.0− | 2002 10 16 | 644 | 0.3+ | 0.5− | | | | |

**(137705)∗ 1999 XL$_{81}$ = 2002 RV$_{126}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40029)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 322.27099 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.26657602 | $\omega$ | 330.72852 | | +0.54594275 | | −0.83006452 |
| *a* | 2.3910500 | $\Omega$ | 85.96452 | | +0.78916181 | | +0.46387603 |
| *e* | 0.0715251 | *i* | 6.54793 | | +0.28137191 | | +0.30953501 |
| *P* | 3.70 | *H* | 16.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.0 | 0.1− | 2003 12 28 | 704 | 1.1+ | 0.6+ | 2006 09 29 | 699 | 0.1+ | 0.1+ |
| 1999 12 07 | 704 | 0.0 | 1.0− | 2003 12 28 | 704 | 0.1+ | 1.1+ | 2006 09 29 | 699 | 0.7− | 0.8+ |
| 1999 12 07 | 704 | 0.7− | 0.0 | 2004 01 17 | 644 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.5+ |
| 1999 12 08 | 704 | 0.1+ | 0.5+ | 2004 01 17 | 644 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.9+ | 0.4+ |
| 1999 12 08 | 704 | 0.1+ | 0.9− | 2004 01 17 | 644 | 0.3+ | 0.6+ | 2006 09 30 | 704 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.9+ | 0.7+ | 2004 01 31 | 704 | 0.5− | 1.2+ | 2006 09 30 | 704 | 0.2+ | 1.3+ |
| 1999 12 08 | 704 | 0.7− | 0.8+ | 2004 01 31 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.9+ | 0.6− |
| 2001 03 20 | 691 | 0.6+ | 0.9+ | 2004 01 31 | 704 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2001 03 20 | 691 | 0.2+ | 0.8+ | 2004 01 31 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2001 03 20 | 691 | 0.3+ | 0.4+ | 2005 06 28 | G96 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2002 08 19 | 644 | 0.3+ | 0.1+ | 2005 06 28 | G96 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.3+ | 0.5+ | 2005 06 28 | G96 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3− |
| 2002 08 19 | 644 | 0.3+ | 0.2+ | 2005 06 28 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 30 | 644 | 0.5− | 0.2+ | 2005 07 11 | 701 | 1.2− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 30 | 644 | 0.7− | 0.3− | 2005 07 11 | 701 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 08 30 | 644 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 09 09 | 644 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.9+ | 1.0+ | 2006 10 22 | 703 | 0.2− | 0.9− |
| 2002 09 09 | 644 | 0.1+ | 1.3+ | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 22 | 703 | 1.5− | 0.2+ |
| 2002 09 09 | 644 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.3− |
| 2002 09 11 | 608 | 0.3− | 0.8+ | 2006 09 26 | 703 | 1.0− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 09 11 | 608 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.8− | 0.3− |
| 2002 09 11 | 608 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2003 12 28 | 704 | 0.9+ | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 09 29 | 699 | 0.5+ | 0.8+ | | | | |

**(137706)∗ 1999 XB$_{83}$ = 2004 DP$_{62}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 343.07951 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.27146351 | $\omega$ | 305.85949 | | +0.73179304 | | −0.67900917 |
| *a* | 2.3622639 | $\Omega$ | 96.98579 | | +0.64275890 | | +0.65906496 |
| *e* | 0.2173451 | *i* | 3.38043 | | +0.22658316 | | +0.32338818 |
| *P* | 3.63 | *H* | 16.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.9+ | 1.1− | 2004 02 23 | 704 | 1.0+ | 0.4− | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 1999 12 07 | 704 | 0.5− | 1.0− | 2004 02 23 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 12 07 | 704 | 0.1+ | 0.8− | 2004 02 23 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 12 07 | 704 | 0.1+ | 0.7− | 2004 03 01 | 291 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 12 08 | 704 | 0.9+ | 0.3− | 2004 03 01 | 291 | 0.4+ | 0.3+ | 2006 10 22 | 704 | 0.1+ | 0.6+ |
| 1999 12 08 | 704 | 0.5+ | 0.3− | 2004 03 01 | 291 | 0.5+ | 0.3+ | 2006 10 22 | 704 | 0.4− | 0.6+ |
| 1999 12 08 | 704 | 0.3+ | 0.6− | 2004 03 26 | 691 | 0.0 | 0.2+ | 2006 10 22 | 704 | 0.0 | 0.3+ |
| 1999 12 08 | 704 | 0.2+ | 0.5− | 2004 03 26 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 704 | 0.1− | 1.1+ |
| 1999 12 08 | 704 | 0.0 | 0.8− | 2004 03 26 | 691 | 0.1− | 0.6+ | 2006 10 22 | 704 | 0.2− | 0.3+ |
| 2000 01 03 | 704 | 1.1− | 0.4− | 2006 09 15 | 644 | 0.5− | 0.2+ | 2006 10 27 | 704 | 0.4− | 0.5+ |
| 2000 01 03 | 704 | 0.5− | 0.7− | 2006 09 15 | 644 | 0.2− | 0.2+ | 2006 10 27 | 704 | (2.5− | 1.6−) |
| 2000 01 03 | 704 | 0.5− | 0.1− | 2006 09 15 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 704 | 1.3− | 0.8+ |
| 2000 01 03 | 704 | 0.8− | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 27 | 704 | 0.4− | 1.0+ |
| 2000 01 04 | 704 | 0.4+ | 1.2+ | 2006 09 20 | 644 | 0.5− | 0.0 | 2006 10 27 | 704 | 0.2+ | 0.4− |
| 2000 01 04 | 704 | 0.2+ | 0.7+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.4+ |
| 2000 01 04 | 704 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.8− | 2006 11 14 | 704 | 0.2+ | 0.9+ |
| 2000 01 04 | 704 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.1− | 0.1+ |
| 2002 07 18 | 644 | 0.3− | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.6− | 2006 11 14 | 704 | 0.4+ | 0.0 |
| 2002 07 18 | 644 | 0.1− | 0.2+ | 2006 09 26 | 704 | 1.2+ | 1.1− | 2006 11 14 | 704 | 0.3− | 0.0 |
| 2002 07 18 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.6+ | 1.0− | 2006 11 17 | 704 | 0.7− | 0.2− |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.7+ |
| 2002 08 08 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.8− | 2006 11 17 | 704 | 1.0− | 0.4− |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.6+ | 0.5− | 2006 11 17 | 704 | 0.8− | 0.5− |
| 2002 08 29 | 644 | 0.3− | 0.7+ | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 20 | 704 | 1.7+ | 1.5+ |
| 2002 08 29 | 644 | 0.1+ | 0.5+ | 2006 10 03 | G96 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.7+ | 1.4+ |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2004 02 17 | 691 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.5− | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.5− |
| 2004 02 17 | 691 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2004 02 17 | 691 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.9+ | | | | |
| 2004 02 23 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.7− | 0.6+ | | | | |

**(137707)∗ 1999 XJ$_{83}$ = 2002 RO$_{36}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34828)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 336.04389 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.27186205 | $\omega$ | 330.68653 | | +0.53218986 | | −0.84471484 |
| *a* | 2.3599547 | $\Omega$ | 87.10628 | | +0.78742604 | | +0.46919654 |
| *e* | 0.1916233 | *i* | 3.26262 | | +0.31102119 | | +0.25751011 |
| *P* | 3.63 | *H* | 15.5 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.4− | 1.1− | 2002 08 14 | 704 | 0.8− | 0.3− | 2004 03 22 | 704 | 0.0 | 0.7+ |
| 1999 11 03 | 704 | 0.4− | 0.2+ | 2002 08 29 | 644 | 0.2+ | 0.3+ | 2004 03 22 | 704 | 0.9+ | 1.2+ |
| 1999 11 03 | 704 | 1.0+ | 0.1− | 2002 08 29 | 644 | 0.1− | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.9+ |
| 1999 11 03 | 704 | 0.3+ | 0.0 | 2002 08 29 | 644 | 0.1− | 0.4+ | 2004 03 26 | 703 | 0.5− | 0.2− |
| 1999 12 07 | 704 | 0.0 | 0.3+ | 2002 09 05 | 704 | 0.4− | 0.5− | 2004 03 26 | 703 | 0.4+ | 0.6+ |
| 1999 12 07 | 704 | 0.3− | 0.4− | 2002 09 05 | 704 | 0.1+ | 0.3− | 2004 03 26 | 703 | (0.1− | 1.5+) |
| 1999 12 07 | 704 | 0.1− | 0.0 | 2002 09 05 | 704 | 0.2+ | 0.0 | 2004 03 26 | 703 | 0.5+ | 0.8+ |
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2002 09 05 | 704 | 0.2− | 0.7+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 0.0 | 0.3+ | 2002 09 05 | 704 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 1999 12 08 | 704 | 0.0 | 0.1+ | 2002 09 06 | 704 | 0.2+ | 0.4− | 2006 10 03 | G96 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.1+ | 0.3− | 2002 09 06 | 704 | 0.5− | 1.2− | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1999 12 08 | 704 | 0.2+ | 0.1− | 2002 09 06 | 704 | 0.1− | 0.9+ | 2006 10 14 | D35 | 0.3+ | 0.2+ |
| 1999 12 08 | 704 | 0.2+ | 0.0 | 2002 09 06 | 704 | 0.4− | 0.7+ | 2006 10 14 | D35 | 0.2+ | 0.2+ |
| 1999 12 08 | 704 | 0.3+ | 0.0 | 2002 09 09 | 608 | 0.3− | 0.0 | 2006 10 14 | D35 | 0.1+ | 0.4+ |
| 1999 12 10 | 704 | 0.3− | 0.8+ | 2002 09 09 | 608 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 1999 12 10 | 704 | 0.1+ | 0.3− | 2002 09 09 | 608 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 1999 12 10 | 704 | 0.5− | 1.1− | 2002 09 15 | 644 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.1− |
| 1999 12 10 | 704 | 0.5− | 0.3+ | 2002 09 15 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 1999 12 29 | 739 | (3.7+ | 0.4−) | 2002 09 15 | 644 | 0.7− | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 1999 12 29 | 739 | 0.7+ | 0.1+ | 2002 09 15 | 644 | 0.4− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 1999 12 29 | 739 | (1.4− | 2.2+) | 2002 09 15 | 644 | 0.8− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 1999 12 29 | 739 | 1.0+ | 1.5+ | 2002 09 15 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 12 30 | 739 | 0.4+ | 0.2− | 2002 09 22 | 608 | 0.2+ | 0.9− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1999 12 30 | 739 | 0.0 | 0.0 | 2002 09 22 | 608 | (0.6− | 1.6−) | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 1999 12 30 | 739 | 0.1− | 0.2− | 2002 09 22 | 608 | 0.4− | 0.9− | 2006 10 22 | 704 | 0.2+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 739 | 0.1− | 0.7− | 2003 12 27 | 704 | 0.4+ | 0.2− | 2006 10 22 | 704 | 0.3+ | 0.7+ |
| 1999 12 31 | 739 | 0.3+ | 0.3− | 2003 12 27 | 704 | 1.2+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 1999 12 31 | 739 | 0.4+ | 0.2+ | 2003 12 27 | 704 | 1.4+ | 0.0 | 2006 10 22 | 704 | 0.7+ | 0.3− |
| 1999 12 31 | 739 | 0.9− | 0.2+ | 2004 01 22 | 704 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.8− | 0.8+ |
| 1999 12 31 | 739 | 0.2+ | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 704 | 0.0 | 0.3+ |
| 2000 01 01 | 739 | 0.6+ | 1.0− | 2004 01 22 | 704 | 0.4+ | 1.2+ | 2006 10 22 | 704 | 0.6+ | 0.6− |
| 2000 01 01 | 739 | 0.0 | 0.1− | 2004 01 22 | 704 | (0.4+ | 2.1+) | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2000 01 01 | 739 | 0.9+ | 0.4− | 2004 02 02 | 699 | 0.2− | 1.4− | 2006 10 27 | 704 | 0.7+ | 0.2+ |
| 2000 01 03 | 704 | (0.2+ | 2.2−) | 2004 02 02 | 699 | 1.0− | 0.4+ | 2006 10 27 | 704 | 0.9+ | 0.3− |
| 2000 01 03 | 704 | 0.9− | 0.5+ | 2004 02 02 | 699 | 0.3− | 0.5+ | 2006 10 27 | 704 | 1.3+ | 0.4− |
| 2000 01 03 | 704 | 0.2− | 0.1+ | 2004 02 02 | 699 | 0.4+ | 0.3− | 2006 10 27 | 704 | 1.0+ | 0.1+ |
| 2000 01 03 | 704 | 0.4− | 0.1− | 2004 02 17 | 704 | 0.1− | 0.8+ | 2006 10 27 | 704 | 0.8+ | 0.8+ |
| 2000 01 03 | 704 | 0.4− | 0.2− | 2004 02 17 | 704 | 0.0 | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2004 02 17 | 704 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.9+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.0 | 0.3− | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2000 01 04 | 704 | 0.1− | 0.0 | 2004 02 19 | 049 | 1.1− | 1.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2000 01 04 | 704 | 0.2− | 0.2+ | 2004 02 19 | 049 | (1.8− | 0.6−) | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2000 01 06 | 106 | 0.4− | 0.3− | 2004 02 19 | 049 | 1.2− | 0.9− | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2000 01 06 | 106 | 0.1− | 0.1+ | 2004 02 19 | 608 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2000 01 25 | 704 | 0.1− | 0.2− | 2004 02 19 | 608 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2000 01 25 | 704 | 0.0 | 0.2+ | 2004 02 19 | 608 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2000 01 25 | 704 | 0.5+ | 0.2− | 2004 02 23 | 704 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 2000 01 25 | 704 | 0.4+ | 0.6+ | 2004 02 23 | 704 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.5− | 1.5+ |
| 2000 01 25 | 704 | 0.0 | 0.7+ | 2004 02 23 | 704 | 0.3− | 0.2+ | 2006 11 14 | 704 | 1.3− | 0.8+ |
| 2000 01 31 | 704 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2000 01 31 | 704 | 0.2+ | 0.3− | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2000 01 31 | 704 | 0.0 | 0.4− | 2004 02 24 | 049 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2000 01 31 | 704 | 1.1− | 0.5− | 2004 02 24 | 049 | 0.5+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 07 23 | 644 | 0.0 | 0.8+ | 2004 02 24 | 049 | 1.1+ | 0.2+ | 2006 11 17 | 704 | 0.5+ | 0.2+ |
| 2002 07 23 | 644 | 0.4− | 0.7+ | 2004 03 15 | 704 | 0.3− | 1.0+ | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2002 07 23 | 644 | 0.2− | 0.9+ | 2004 03 15 | 703 | (1.8+ | 0.6+) | 2006 11 17 | 704 | 0.3+ | 0.0 |
| 2002 07 30 | 608 | 0.1+ | 0.3− | 2004 03 15 | 704 | 1.0+ | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.1− |
| 2002 07 30 | 608 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.7− | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2002 07 30 | 608 | 0.3+ | 0.0 | 2004 03 15 | 703 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.0 | 0.4− |
| 2002 08 03 | 644 | 0.0 | 0.4+ | 2004 03 15 | 704 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2002 08 03 | 644 | 0.1+ | 0.4+ | 2004 03 15 | 703 | 0.5+ | 0.9+ | 2006 11 19 | 704 | 0.6− | 0.6+ |
| 2002 08 03 | 644 | 0.1− | 0.5+ | 2004 03 15 | 704 | 0.1+ | 1.1+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2002 08 11 | 644 | 0.5+ | 1.5+ | 2004 03 15 | 703 | 0.2− | 0.7+ | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2002 08 11 | 644 | 0.1+ | 1.3+ | 2004 03 20 | 704 | 0.5+ | 0.9+ | 2006 11 20 | 704 | 1.3+ | 0.7− |
| 2002 08 11 | 644 | 0.5+ | 1.2+ | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2006 11 20 | 704 | 1.0− | 0.9− |
| 2002 08 14 | 704 | 0.3− | 1.5+ | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 11 20 | 704 | (0.4− | 1.6−) |
| 2002 08 14 | 704 | 0.6+ | 0.6+ | 2004 03 20 | 704 | 0.0 | 0.8+ | 2006 11 20 | 704 | (1.9− | 1.1−) |
| 2002 08 14 | 704 | 0.1+ | 0.6− | 2004 03 22 | 704 | (0.0 | 1.8+) | 2006 11 20 | 704 | 0.5− | 0.6− |
| 2002 08 14 | 704 | 0.5+ | 0.3+ | 2004 03 22 | 704 | 0.9+ | 0.9+ | | | | |

**(137708)∗ 1999 XK$_{89}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.11332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28127094 | $\omega$ | 336.56525 | | +0.24074400 | −0.96325070 | |
| $a$ | 2.3070277 | $\Omega$ | 99.33480 | | +0.90850549 | +0.18045075 | |
| $e$ | 0.0796661 | $i$ | 6.93379 | | +0.34155541 | +0.19896136 | |
| $P$ | 3.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.7− | 1.4+ | 2002 10 16 | 644 | 0.3− | 1.2+ | 2004 03 23 | 704 | 0.4+ | 0.3+ |
| 1999 12 07 | 704 | 0.3− | 0.6+ | 2002 10 16 | 644 | 0.5− | 1.2+ | 2004 03 23 | 704 | 0.2+ | 0.7+ |
| 1999 12 07 | 704 | 0.8− | 0.4+ | 2002 10 16 | 644 | 0.6− | 1.0+ | 2004 03 23 | 704 | 0.6+ | 1.0+ |
| 1999 12 08 | 704 | 0.7+ | 0.1+ | 2002 11 06 | 644 | 0.4− | 0.8+ | 2004 03 30 | 691 | 0.2+ | 0.1+ |
| 1999 12 08 | 704 | 0.7+ | 0.3+ | 2002 11 06 | 644 | 0.4− | 0.4+ | 2004 03 30 | 691 | 0.2+ | 0.1+ |
| 1999 12 08 | 704 | 0.5+ | 1.8+ | 2002 11 06 | 644 | 0.4− | 0.7+ | 2004 03 30 | 691 | 0.1+ | 0.0 |
| 2000 01 03 | 704 | 0.5− | 1.0− | 2004 03 11 | 644 | 0.0 | 0.2− | 2005 07 02 | 691 | 0.1+ | 0.1+ |
| 2000 01 03 | 704 | 0.2− | 0.8+ | 2004 03 11 | 644 | 0.0 | 0.5− | 2005 07 02 | 691 | 0.1− | 0.1+ |
| 2000 01 03 | 704 | 0.9+ | 0.2− | 2004 03 11 | 644 | 0.3− | 0.4+ | 2005 07 02 | 691 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.6+ | 0.0 | 2005 07 07 | 691 | 0.2+ | 0.1+ |
| 2000 01 04 | 704 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.7− | 1.3+ | 2005 07 07 | 691 | 0.0 | 0.0 |
| 2000 01 04 | 704 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.4+ | 0.1+ | 2005 07 07 | 691 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 0.5+ | 0.4− | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2005 07 11 | 691 | 0.1− | 0.4+ |
| 2000 01 05 | 691 | 0.1− | 0.2− | 2004 03 20 | 691 | 0.1+ | 0.2+ | 2005 07 11 | 691 | 0.1+ | 0.3− |
| 2000 01 05 | 691 | 0.1+ | 0.2− | 2004 03 20 | 691 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.1− | 0.5+ |
| 2000 01 05 | 691 | 0.2− | 0.4− | 2004 03 20 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2000 01 08 | 704 | 0.0 | 0.4+ | 2004 03 22 | 843 | 0.4− | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.8− |
| 2000 01 08 | 704 | 0.7+ | 0.1− | 2004 03 22 | 843 | (3.0− | 0.5+) | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2000 01 08 | 704 | 0.3+ | 0.6+ | 2004 03 22 | 843 | (2.3− | 1.3+) | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2000 01 08 | 704 | 0.2+ | 0.3− | 2004 03 23 | 843 | (1.8− | 1.4+) | 2006 12 01 | 704 | 0.8+ | 0.1− |
| 2000 01 08 | 704 | 0.5+ | 0.0 | 2004 03 23 | 843 | 0.8− | 0.8+ | 2006 12 01 | 704 | 0.3− | 0.1+ |
| 2002 10 04 | 704 | 1.1− | 0.7+ | 2004 03 23 | 843 | (2.2− | 1.4+) | 2006 12 01 | 704 | 0.3+ | 1.0+ |
| 2002 10 04 | 704 | 0.4− | 0.8+ | 2004 03 23 | 843 | 1.1− | 0.3+ | 2006 12 01 | 704 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 03 23 | 704 | 0.4+ | 1.0+ | | | | |
| 2002 10 04 | 704 | (0.4− | 2.1+) | 2004 03 23 | 704 | 0.9+ | 0.5+ | | | | |

**(137709)∗ 1999 XX$_{89}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.34744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26050133 | $\omega$ | 144.71861 | | +0.72579657 | −0.68292803 | |
| $a$ | 2.4280786 | $\Omega$ | 258.57811 | | +0.61019195 | +0.69460174 | |
| $e$ | 0.2070923 | $i$ | 4.83608 | | +0.31762419 | +0.22613652 | |
| $P$ | 3.78 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | (0.9− | 3.1−) | 2002 08 07 | 599 | 0.4− | 0.4+ | 2006 08 30 | 704 | 0.5− | 0.1− |
| 1999 12 07 | 704 | 0.8− | 0.3− | 2004 01 23 | 704 | 0.8+ | 0.0 | 2006 08 30 | 699 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.5− | 0.4+ | 2004 01 23 | 704 | (1.6+ | 0.4−) | 2006 08 30 | 704 | 0.3+ | 0.3+ |
| 1999 12 08 | 704 | 0.6− | 0.9+ | 2004 01 23 | 704 | 0.4− | 1.0+ | 2006 08 30 | 704 | 0.2− | 0.2+ |
| 1999 12 08 | 704 | 0.8+ | 0.5+ | 2004 01 23 | 704 | 1.2− | 0.8+ | 2006 08 30 | 699 | 0.4+ | 0.3+ |
| 1999 12 08 | 704 | 1.0− | 0.7− | 2004 01 29 | 704 | 1.5+ | 0.9+ | 2006 08 30 | 704 | 0.4− | 0.5+ |
| 2000 01 05 | 704 | 0.2+ | 0.8− | 2004 01 29 | 704 | 0.6+ | 1.0+ | 2006 08 30 | 704 | 0.0 | 0.1− |
| 2000 01 05 | 704 | 0.5+ | 0.8− | 2004 01 29 | 704 | 0.5+ | 0.8+ | 2006 08 30 | 699 | 0.4+ | 0.5+ |
| 2000 01 05 | 704 | 0.2+ | 1.0− | 2004 01 29 | 704 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.6+ | 1.0+ |
| 2000 01 05 | 704 | 0.0 | 1.3− | 2004 01 29 | 704 | 0.0 | 1.2+ | 2006 09 18 | 704 | 0.5+ | 0.4+ |
| 2000 01 05 | 704 | 0.1− | 0.9− | 2004 02 13 | 699 | 0.2+ | 0.7− | 2006 09 18 | 704 | 0.0 | 0.4+ |
| 2000 01 06 | 704 | 0.4+ | 0.2− | 2004 02 13 | 699 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.7+ |
| 2000 01 06 | 704 | 0.0 | 0.5− | 2004 02 13 | 699 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.3− | 0.6+ |
| 2000 01 06 | 704 | 1.0− | 0.2+ | 2004 02 13 | 699 | 0.5− | 0.6+ | 2006 09 19 | 699 | 0.5− | 0.1+ |
| 2000 01 07 | 704 | 0.0 | 0.3− | 2004 02 18 | 704 | (1.0+ | 1.9+) | 2006 09 19 | 703 | 0.6− | 0.6− |
| 2000 01 07 | 704 | 0.1− | 0.3− | 2004 02 18 | 704 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.6− |
| 2000 01 07 | 704 | 0.2+ | 0.4− | 2004 02 18 | 704 | 0.1− | 1.4+ | 2006 09 19 | 703 | 0.5+ | 0.2+ |
| 2000 01 07 | 704 | 0.4− | 0.6− | 2004 02 18 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2000 02 02 | 704 | 0.0 | 1.0+ | 2004 02 18 | 608 | 0.0 | 0.8+ | 2006 09 19 | 703 | 0.5+ | 0.2+ |
| 2000 02 02 | 704 | 0.2+ | 0.5+ | 2004 02 18 | 608 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2000 02 02 | 704 | 0.1+ | 0.7+ | 2004 02 18 | 608 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.2− |
| 2000 02 02 | 704 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.8+ | 0.7+ | 2006 09 26 | 703 | 0.5+ | 0.2+ |
| 2000 02 02 | 704 | 0.7− | 0.8+ | 2004 02 26 | 704 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.7+ | 0.1− |
| 2000 02 03 | 704 | 1.0+ | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.0 | 2006 09 26 | 704 | 1.3− | 1.1+ |
| 2000 02 03 | 704 | 0.8+ | 0.4− | 2004 03 11 | 644 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 1.2− | 0.1+ |
| 2000 02 03 | 704 | 0.6− | 0.0 | 2004 03 11 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.0 |
| 2002 07 14 | 704 | 0.8+ | 0.0 | 2004 03 11 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 1.0− | 0.1+ |
| 2002 07 14 | 704 | 0.1− | 1.0− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | (1.5− | 1.7+) |
| 2002 07 14 | 704 | 0.6+ | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.5+ |
| 2002 07 14 | 704 | 0.8+ | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.1+ |
| 2002 07 14 | 704 | 0.1+ | 0.4+ | 2006 08 24 | 704 | 0.3− | 0.5− | 2006 09 29 | 699 | 1.2+ | 0.2+ |
| 2002 07 22 | 644 | 0.1+ | 0.8+ | 2006 08 24 | 704 | 0.5− | 0.7− | 2006 09 30 | 704 | 1.1− | 0.9+ |
| 2002 07 22 | 644 | 0.0 | 0.9+ | 2006 08 24 | 704 | 0.3− | 0.6− | 2006 09 30 | 704 | 0.6+ | 0.6+ |
| 2002 07 22 | 644 | 0.3+ | 0.8+ | 2006 08 24 | 704 | 0.1− | 0.7− | 2006 09 30 | 704 | 0.5+ | 0.4+ |
| 2002 08 05 | 599 | 0.5− | 0.0 | 2006 08 24 | 704 | 0.4− | 0.9− | 2006 11 10 | 704 | 0.0 | 0.2− |
| 2002 08 05 | 599 | 0.3+ | 0.2+ | 2006 08 25 | A50 | 0.1+ | 0.8− | 2006 11 10 | 704 | 1.3+ | 0.4+ |
| 2002 08 05 | 599 | 0.3− | 0.2+ | 2006 08 25 | A50 | 0.4− | 0.4− | 2006 11 10 | 704 | 0.2− | 0.1− |
| 2002 08 06 | 644 | 0.4− | 0.6− | 2006 08 29 | 703 | 0.8− | 0.6+ | 2006 11 10 | 704 | 0.0 | 0.4+ |
| 2002 08 06 | 644 | 0.8− | 0.7− | 2006 08 29 | 703 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.1+ | 0.9− |
| 2002 08 06 | 644 | 0.6− | 0.5− | 2006 08 29 | 703 | 0.7− | 0.8+ | 2006 11 15 | 704 | 0.1+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 599 | 0.2− | 0.6− | 2006 08 29 | 703 | 0.0 | 1.2+ | 2006 11 15 | 704 | 0.7− | 0.4+ |
| 2002 08 07 | 599 | 0.5+ | 0.4+ | 2006 08 30 | 699 | 0.2+ | 0.3+ | 2006 11 15 | 704 | 0.5− | 0.3− |

**(137710)∗ 1999 XH$_{93}$ = 2002 QX$_4$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33160)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.60300 | | (2000.0) | | | |
| $n$ | 0.27392091 | $\omega$ | 340.27515 | | +0.07350508 | −0.99245367 |
| $a$ | 2.3481144 | $\Omega$ | 105.41238 | | +0.92812468 | +0.03206270 |
| $e$ | 0.2105632 | $i$ | 5.84327 | | +0.36494052 | +0.11835409 |
| $P$ | 3.60 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 12 11 | 261 | 0.5− | 0.2+ | 2002 09 16 | 644 | 0.4− | 0.4+ | 2006 09 26 | 704 | (1.7− | 0.3+) |
| 1988 12 11 | 261 | (2.9+ | 0.6−) | 2002 09 16 | 644 | 0.6− | 0.5+ | 2006 09 26 | 704 | 1.5+ | 0.5+ |
| 1988 12 13 | 261 | (7.0− | 2.5+) | 2002 09 27 | 704 | 1.1− | 0.1+ | 2006 09 26 | 704 | 0.8− | 0.3+ |
| 1988 12 13 | 261 | (4.4− | 1.6+) | 2002 09 27 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.0 |
| 1993 01 28 | 261 | (2.0− | 2.7+) | 2002 09 27 | 704 | 0.9− | 0.1+ | 2006 10 01 | 703 | 0.6+ | 0.6+ |
| 1993 01 28 | 261 | (3.6+ | 5.8−) | 2002 09 27 | 704 | (1.5+ | 2.1+) | 2006 10 01 | 703 | 0.2+ | 0.4− |
| 1999 10 21 | 704 | 0.2− | 0.2+ | 2002 10 01 | 608 | 0.5+ | 1.4+ | 2006 10 01 | 703 | 0.1+ | 0.3− |
| 1999 10 21 | 704 | 0.2+ | 0.5− | 2002 10 01 | 608 | (0.2+ | 1.6+) | 2006 10 01 | 703 | (1.9+ | 2.0−) |
| 1999 10 21 | 704 | 0.6+ | 0.7− | 2002 10 01 | 608 | 0.5+ | 1.4+ | 2006 10 03 | 704 | 0.5+ | 0.7+ |
| 1999 11 17 | 704 | 0.4+ | 0.4+ | 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 10 03 | 704 | 0.6− | 0.6+ |
| 1999 11 17 | 704 | 0.1+ | 0.7+ | 2002 10 04 | 704 | 0.3+ | 0.7+ | 2006 10 03 | 704 | 0.2− | 0.6− |
| 1999 11 17 | 704 | 0.4− | 1.4− | 2002 10 04 | 704 | 0.2+ | 0.6+ | 2006 10 03 | 704 | (1.6+ | 0.9+) |
| 1999 11 17 | 704 | 0.0 | 0.3+ | 2002 10 04 | 704 | 0.3+ | 1.4+ | 2006 10 03 | 704 | 0.0 | 1.5− |
| 1999 11 17 | 704 | 0.2+ | 0.3+ | 2002 10 04 | 704 | 0.5+ | 0.8+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 1999 12 05 | 699 | 0.1+ | 0.3+ | 2003 12 27 | 704 | 0.9+ | 0.4− | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 1999 12 05 | 699 | 0.5+ | 0.3+ | 2003 12 27 | 704 | 0.4+ | 0.9− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 1999 12 05 | 699 | 0.1+ | 0.8+ | 2003 12 27 | 704 | 1.3+ | 0.9− | 2006 11 02 | 704 | 1.3+ | 0.5+ |
| 1999 12 07 | 704 | 0.5+ | 0.2− | 2004 01 23 | 704 | 0.4− | 0.3+ | 2006 11 02 | 704 | 0.1+ | 0.0 |
| 1999 12 07 | 704 | 1.0+ | 0.6− | 2004 01 23 | 704 | 0.4− | 0.7+ | 2006 11 02 | 704 | 1.0+ | 0.6− |
| 1999 12 07 | 704 | 1.0+ | 0.3− | 2004 01 23 | 704 | 0.4− | 1.0+ | 2006 11 02 | 704 | 0.4− | 0.6+ |
| 1999 12 07 | 704 | 0.2+ | 0.7+ | 2004 01 23 | 704 | 0.3− | 0.4+ | 2006 11 05 | 644 | 0.0 | 0.2+ |
| 1999 12 08 | 704 | 0.8+ | 1.7− | 2004 01 23 | 704 | 0.4+ | 0.4+ | 2006 11 05 | 644 | 0.1+ | 0.1+ |
| 1999 12 08 | 704 | 1.3+ | 1.7− | 2004 02 19 | 704 | 0.7+ | 0.2+ | 2006 11 05 | 644 | 0.0 | 0.3+ |
| 1999 12 08 | 704 | 1.5+ | 0.7− | 2004 02 19 | 704 | 0.5+ | 0.7+ | 2006 11 10 | 644 | 1.4+ | 0.0 |
| 1999 12 08 | 704 | 1.2+ | 0.3− | 2004 02 19 | 704 | 0.2+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 1.5+ | 0.0 | 2004 02 19 | 704 | 0.1+ | 1.3+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 2000 01 02 | 691 | 0.5− | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.1+ | 0.5− |
| 2000 01 02 | 691 | 0.2− | 0.3+ | 2004 03 16 | 704 | 1.1+ | 0.8+ | 2006 11 14 | 704 | 0.1+ | 0.4− |
| 2000 01 02 | 691 | 1.3− | 0.2− | 2004 03 16 | 704 | (0.8+ | 2.0+) | 2006 11 14 | 704 | 0.1− | 0.6− |
| 2000 01 04 | 704 | 0.8+ | 0.3+ | 2004 03 16 | 704 | 0.6+ | 0.9+ | 2006 11 14 | 704 | 0.1− | 0.5− |
| 2000 01 04 | 704 | 1.2+ | 0.6+ | 2004 03 16 | 704 | 0.5+ | 1.0+ | 2006 11 14 | 704 | 0.2− | 0.6− |
| 2000 01 04 | 704 | 0.6+ | 1.0+ | 2004 03 16 | 704 | 0.7+ | 1.4+ | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2000 01 04 | 704 | 0.5+ | 1.3+ | 2004 03 23 | 704 | 0.6+ | 0.5+ | 2006 11 15 | 703 | 0.5− | 0.8− |
| 2000 01 04 | 704 | 0.5+ | 0.9+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 703 | (0.6− | 1.9−) |
| 2000 01 06 | 106 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.0 | 2006 11 15 | 703 | (1.3+ | 1.8−) |
| 2000 01 06 | 106 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2000 01 06 | 106 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.5+ | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2000 01 06 | 704 | 0.5+ | 0.4− | 2004 04 02 | 608 | 0.5+ | 0.7− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2000 01 06 | 704 | 0.2− | 0.5− | 2004 04 02 | 608 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.1− | 0.6− |
| 2000 01 06 | 704 | 0.3+ | 0.3− | 2004 04 02 | 608 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.1− | 0.6− |
| 2000 01 06 | 704 | 0.2+ | 0.4− | 2004 04 15 | 704 | 0.1− | 1.3+ | 2006 11 17 | 704 | 0.1+ | 0.6− |
| 2000 01 06 | 704 | 0.1+ | 0.4− | 2004 04 15 | 704 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.8− |
| 2000 01 11 | 704 | 0.4− | 0.1− | 2004 04 15 | 704 | 0.5+ | 0.2+ | 2006 11 17 | 704 | 0.4− | 1.1− |
| 2000 01 11 | 704 | 0.7− | 0.1− | 2004 04 15 | 704 | (0.2+ | 1.6+) | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2000 01 11 | 704 | 0.3− | 0.5− | 2004 04 21 | 704 | 0.2− | 0.7+ | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 2000 01 11 | 691 | 0.2− | 0.3− | 2004 04 21 | 704 | 0.1+ | 0.1− | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2000 01 11 | 704 | 0.5− | 0.3+ | 2004 04 21 | 704 | 0.1− | 1.0+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2000 01 11 | 691 | 0.2− | 0.4− | 2004 04 21 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2000 01 11 | 704 | 0.6− | 0.0 | 2004 04 21 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2000 01 11 | 691 | 0.2− | 0.4− | 2004 04 21 | 703 | 0.1− | 1.0− | 2006 11 19 | 704 | 0.6+ | 0.4− |
| 2000 01 13 | 699 | 0.7+ | 0.1+ | 2004 04 21 | 704 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2000 01 13 | 699 | 0.5+ | 0.0 | 2004 04 21 | 703 | 0.2+ | 0.4− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2000 01 13 | 699 | 0.9+ | 0.1− | 2004 04 21 | 703 | 0.1+ | 1.3+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2000 01 30 | 704 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.5− | 0.4− |
| 2000 01 30 | 704 | 0.5+ | 0.6+ | 2004 04 22 | 704 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.4− |
| 2000 01 30 | 704 | 0.9− | 0.3+ | 2004 04 22 | 704 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2000 01 30 | 704 | 0.5− | 0.1+ | 2004 04 22 | 704 | 0.0 | 0.9+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2000 01 31 | 704 | 0.3+ | 0.3+ | 2004 04 22 | 704 | 0.1− | 1.0+ | 2006 11 20 | 704 | 0.6− | 0.2− |
| 2000 01 31 | 704 | 0.1− | 0.4+ | 2004 04 23 | 704 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.6− | 0.5− |
| 2000 01 31 | 704 | 0.1− | 0.0 | 2004 04 23 | 704 | 0.2− | 0.5+ | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2000 01 31 | 704 | 0.1− | 0.3+ | 2004 04 23 | 704 | 0.3+ | 1.1+ | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2000 02 11 | 704 | 0.4+ | 0.2+ | 2004 04 23 | 704 | 0.1+ | 0.4+ | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2000 02 11 | 704 | 0.1+ | 0.0 | 2004 04 23 | 704 | 0.0 | 1.1+ | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2000 02 11 | 704 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.6+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2000 02 11 | 704 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.7+ | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 0.5− | 0.2− | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2002 08 16 | 608 | 0.3+ | 1.4+ | 2006 09 18 | 703 | 0.3+ | 1.2+ | 2006 11 25 | 704 | 0.8+ | 0.5+ |
| 2002 08 16 | 608 | (0.3+ | 1.7+) | 2006 09 19 | 704 | (1.7− | 0.5−) | 2006 11 25 | 704 | 0.4− | 1.0+ |
| 2002 08 16 | 608 | 0.0 | 1.1+ | 2006 09 19 | 704 | 0.1− | 0.8− | 2006 11 25 | 704 | 0.1+ | 0.2+ |
| 2002 08 17 | 644 | (0.2+ | 1.5+) | 2006 09 19 | 704 | 0.1− | 0.7+ | 2006 11 25 | 704 | 0.2+ | 0.6+ |
| 2002 08 17 | 644 | (0.0 | 1.6+) | 2006 09 19 | 704 | 0.2+ | 1.5− | 2006 11 25 | 704 | 0.2− | 0.1− |
| 2002 08 17 | 644 | (0.1− | 1.5+) | 2006 09 19 | 704 | 0.1+ | 0.0 | 2006 11 25 | 704 | 0.6− | 0.7+ |
| 2002 09 13 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.4+ | 2006 11 25 | 704 | 0.4− | 0.5+ |
| 2002 09 13 | 704 | 0.2− | 0.8+ | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 11 25 | 704 | 0.4+ | 1.6+ |
| 2002 09 13 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 11 25 | 704 | 0.4− | 0.1+ |
| 2002 09 13 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2002 09 13 | 704 | 0.3− | 0.3+ | 2006 09 22 | 704 | 0.9+ | 1.0+ | 2006 11 28 | 704 | 0.1− | 0.8+ |
| 2002 09 14 | 608 | 1.3− | 0.1− | 2006 09 22 | 704 | 0.0 | 1.0+ | 2006 11 28 | 704 | 0.3+ | 0.0 |
| 2002 09 14 | 608 | 1.1− | 0.1+ | 2006 09 22 | 704 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.6+ |
| 2002 09 14 | 608 | 1.4− | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.6+ |
| 2002 09 16 | 644 | 0.6− | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.3+ | | | | |

**(137711)∗ 1999 XJ$_{96}$ = 2002 PW$_{30}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33160)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.05770 | | (2000.0) | | | |
| $n$ | 0.27978419 | $\omega$ | 134.90161 | | +0.68970218 | −0.72202788 |
| $a$ | 2.3151933 | $\Omega$ | 271.40801 | | +0.64798935 | +0.64913440 |
| $e$ | 0.1662106 | $i$ | 3.13374 | | +0.32314193 | +0.23937474 |
| $P$ | 3.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1+ | 0.2− | 2002 09 01 | 699 | 0.0 | 0.7+ | 2004 03 15 | 704 | 0.2+ | 1.0+ |
| 1999 10 13 | 704 | 0.8− | 0.2− | 2002 09 03 | 608 | 0.3− | 1.5+ | 2004 03 15 | 704 | 0.1− | 0.5+ |
| 1999 10 13 | 704 | (2.5+ | 0.4+) | 2002 09 03 | 608 | (0.3− | 1.6+) | 2004 03 18 | 704 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 1.1+ | 0.3+ | 2002 09 03 | 608 | 0.5− | 1.0+ | 2004 03 18 | 704 | 0.4+ | 0.1+ |
| 1999 11 03 | 704 | 0.1+ | 0.4− | 2002 09 06 | 704 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.3+ |
| 1999 11 03 | 704 | 0.1+ | 0.0 | 2002 09 06 | 704 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.0 | 1.0+ |
| 1999 11 03 | 704 | 0.2+ | 0.4− | 2002 09 06 | 704 | 0.4− | 0.3− | 2004 03 18 | 704 | 0.2+ | 0.6+ |
| 1999 11 03 | 704 | 0.4− | 1.3− | 2002 09 06 | 704 | 0.3− | 0.6+ | 2004 03 27 | 704 | 0.5+ | 0.3+ |
| 1999 11 14 | 704 | 1.2+ | 0.8− | 2002 09 06 | 704 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.5+ |
| 1999 11 14 | 704 | 0.0 | 0.1− | 2002 09 13 | 704 | 0.3+ | 0.3− | 2004 03 27 | 704 | 0.8+ | 0.5+ |
| 1999 11 14 | 704 | 1.2+ | 0.1− | 2002 09 13 | 704 | 0.7+ | 0.7− | 2004 03 27 | 704 | 0.6+ | 0.9+ |
| 1999 11 14 | 704 | 0.9− | 1.0+ | 2002 09 13 | 704 | 1.1+ | 0.4− | 2006 09 18 | 704 | 0.2+ | 0.8− |
| 1999 11 16 | 704 | 0.2+ | 0.9− | 2002 09 13 | 704 | 1.0+ | 0.2− | 2006 09 18 | 704 | 0.6− | 0.3+ |
| 1999 11 16 | 704 | 0.2+ | 1.6− | 2002 09 13 | 608 | 0.6− | 0.8+ | 2006 09 18 | 704 | 0.1− | 0.7+ |
| 1999 11 16 | 704 | 0.1+ | 1.4− | 2002 09 13 | 608 | 0.5− | 1.0+ | 2006 09 18 | 703 | 0.7− | 0.5− |
| 1999 11 16 | 704 | 0.2+ | 0.6− | 2002 09 13 | 608 | 0.5− | 0.9+ | 2006 09 18 | 703 | 0.5+ | 0.2− |
| 1999 11 16 | 704 | 0.0 | 2.0− | 2002 09 14 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.4− | 1.0+ |
| 1999 12 07 | 704 | 0.6− | 0.1− | 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.7+ |
| 1999 12 07 | 704 | 0.1− | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 1999 12 07 | 704 | 0.5+ | 0.1+ | 2002 10 29 | 704 | 1.2− | 1.4+ | 2006 10 04 | G96 | 0.4− | 0.3− |
| 1999 12 07 | 704 | 1.1− | 0.4+ | 2002 10 29 | 704 | 0.4− | 0.6+ | 2006 10 04 | G96 | 0.3− | 0.3− |
| 1999 12 07 | 704 | 0.5− | 0.5− | 2002 10 29 | 704 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− |
| 1999 12 10 | 704 | 0.5+ | 0.4+ | 2002 11 08 | 704 | 0.3+ | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.7− | 0.5+ | 2002 11 08 | 704 | 0.8− | 0.6− | 2006 11 10 | 691 | 0.2− | 0.1− |
| 1999 12 10 | 704 | 0.5− | 0.3+ | 2002 11 08 | 704 | 0.5+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.1− |
| 1999 12 10 | 704 | 0.3+ | 0.3− | 2002 11 08 | 704 | (1.5− | 1.3+) | 2006 11 10 | 644 | 0.4− | 0.1+ |
| 2000 01 03 | 704 | 0.2− | 0.3+ | 2003 12 22 | 704 | 0.6− | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.5+ |
| 2000 01 03 | 704 | 0.9+ | 0.9+ | 2003 12 22 | 704 | 0.9+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.3− |
| 2000 01 03 | 704 | 0.1+ | 0.1− | 2003 12 22 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | (3.1− | 2.3+) |
| 2000 02 02 | 704 | 0.3− | 0.4− | 2003 12 22 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 703 | (0.4− | 3.3+) |
| 2000 02 02 | 704 | 0.3+ | 0.4+ | 2004 01 16 | 703 | (0.3+ | 1.5−) | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2000 02 02 | 704 | 0.4− | 0.9+ | 2004 01 16 | 703 | (0.3− | 1.9−) | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2000 02 02 | 704 | 0.7− | 1.4+ | 2004 01 16 | 703 | 0.9− | 0.3− | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2000 02 02 | 704 | 1.1− | 0.2+ | 2004 01 16 | 703 | 0.5+ | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2000 02 02 | 704 | 0.9− | 0.3+ | 2004 01 20 | 608 | 0.8+ | 0.0 | 2006 11 14 | 691 | 0.3− | 0.0 |
| 2000 02 02 | 704 | 0.2+ | 1.4+ | 2004 01 20 | 608 | 1.0+ | 0.6+ | 2006 11 15 | 704 | 0.0 | 0.6− |
| 2000 02 02 | 704 | 0.3− | 0.9+ | 2004 01 20 | 608 | 1.4+ | 1.0− | 2006 11 15 | 704 | 0.2− | 0.5+ |
| 2000 02 02 | 704 | 0.6+ | 0.6+ | 2004 01 24 | 704 | 0.8+ | 0.4+ | 2006 11 15 | 704 | 0.6+ | 0.2− |
| 2000 02 02 | 704 | 0.2− | 0.8+ | 2004 01 24 | 704 | 0.4− | 1.0+ | 2006 11 15 | 704 | 0.6− | 0.2+ |
| 2000 02 02 | 704 | 0.0 | 1.2+ | 2004 01 24 | 704 | (1.8− | 0.7−) | 2006 11 16 | 704 | 0.3+ | 1.3+ |
| 2002 07 14 | 704 | 0.1+ | 0.4+ | 2004 01 29 | 704 | (1.6+ | 0.4+) | 2006 11 16 | 704 | 0.0 | 1.1+ |
| 2002 07 14 | 704 | 0.5− | 1.4+ | 2004 01 29 | 704 | (1.6+ | 1.4+) | 2006 11 16 | 704 | 0.5− | 0.2+ |
| 2002 07 14 | 704 | 0.3− | 0.6+ | 2004 01 29 | 704 | 1.2+ | 1.3+ | 2006 11 16 | 704 | 0.4− | 0.8+ |
| 2002 07 14 | 704 | 0.4− | 1.1+ | 2004 01 29 | 699 | 0.8− | 0.6+ | 2006 11 16 | 704 | 1.5− | 0.7+ |
| 2002 07 14 | 704 | 0.8− | 1.4+ | 2004 01 29 | 699 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.5+ |
| 2002 07 23 | 644 | 0.6− | 0.3+ | 2004 01 29 | 699 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.5− | 0.8+ |
| 2002 07 23 | 644 | 0.3− | 0.3+ | 2004 01 29 | 699 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 2002 07 23 | 644 | 0.5− | 0.4+ | 2004 01 30 | 699 | 1.0+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.0 |
| 2002 08 06 | 644 | 0.3− | 0.5+ | 2004 01 30 | 699 | 0.7− | 0.4+ | 2006 11 16 | 704 | 0.4+ | 0.2− |
| 2002 08 06 | 644 | 0.1− | 0.4+ | 2004 01 30 | 699 | 0.3+ | 0.4+ | 2006 11 18 | 691 | 0.3+ | 0.2− |
| 2002 08 06 | 644 | 0.3− | 0.5+ | 2004 01 30 | 699 | 0.5− | 0.4− | 2006 11 18 | 691 | 0.3+ | 0.2− |
| 2002 08 07 | 644 | 0.1+ | 0.5+ | 2004 02 12 | 333 | 0.3− | 0.4+ | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2002 08 07 | 644 | 0.3− | 0.5+ | 2004 02 12 | 333 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2002 08 07 | 644 | 0.1− | 0.4+ | 2004 02 12 | 333 | 0.1+ | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2002 08 08 | 699 | 1.0− | 0.3− | 2004 02 12 | 333 | 0.7− | 1.0+ | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2002 08 08 | 699 | 0.7+ | 0.2+ | 2004 02 12 | 333 | 0.2− | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 08 08 | 699 | 0.2− | 0.1− | 2004 02 12 | 333 | 0.7− | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2002 08 08 | 699 | 0.3− | 0.2+ | 2004 02 16 | 333 | 0.4− | 0.3+ | 2006 11 22 | 691 | 0.5+ | 0.3− |
| 2002 08 09 | 704 | 1.1+ | 0.3+ | 2004 02 16 | 333 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2002 08 09 | 704 | 0.3− | 1.5+ | 2004 02 16 | 333 | 0.6− | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2002 08 09 | 704 | 0.5+ | 0.9+ | 2004 02 17 | 608 | (2.1+ | 0.6−) | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 08 09 | 704 | 0.2+ | 0.8+ | 2004 02 17 | 608 | 1.4+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2002 08 14 | 704 | 0.1+ | 1.4+ | 2004 02 17 | 608 | 1.2+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2002 08 14 | 704 | 0.2+ | 0.0 | 2004 02 18 | 704 | 0.7+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2002 08 14 | 704 | 0.7− | 0.2− | 2004 02 18 | 704 | 0.8+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2002 08 14 | 704 | 0.4+ | 0.3+ | 2004 02 18 | 704 | 0.9+ | 1.2+ | 2006 11 27 | 704 | 0.1+ | 0.3− |
| 2002 08 14 | 704 | 0.5+ | 0.8+ | 2004 02 18 | 704 | 0.5+ | 0.1− | 2006 11 27 | 704 | 0.3+ | 0.1− |
| 2002 08 17 | 644 | 0.3− | 0.5− | 2004 02 18 | 704 | 0.3− | 0.6+ | 2006 11 27 | 704 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.5− | 0.5− | 2004 02 20 | 704 | 0.4+ | 0.2+ | 2006 11 27 | 704 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.4− | 0.5− | 2004 02 20 | 704 | 0.6+ | 0.3− | 2006 11 28 | 704 | 0.0 | 0.2− |
| 2002 08 26 | 644 | 0.3− | 0.7+ | 2004 02 20 | 704 | 1.1+ | 0.3− | 2006 11 28 | 704 | 0.1− | 0.5− |
| 2002 08 26 | 644 | 0.0 | 0.6+ | 2004 02 20 | 704 | 0.7+ | 0.3− | 2006 11 28 | 704 | 0.1− | 1.1+ |
| 2002 08 26 | 644 | 0.3− | 0.8+ | 2004 02 25 | 333 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.9− | 0.4+ |
| 2002 08 27 | 644 | 0.3− | 0.0 | 2004 02 25 | 333 | 1.1− | 0.7+ | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2002 08 27 | 644 | 0.1+ | 0.1− | 2004 02 25 | 333 | 0.5− | 0.6+ | 2006 12 01 | 704 | 0.1+ | 0.5+ |
| 2002 08 27 | 644 | 0.3− | 0.0 | 2004 02 25 | 333 | 1.2− | 0.3+ | 2006 12 01 | 704 | 0.1+ | 0.2+ |
| 2002 09 01 | 699 | 0.3− | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.9+ | 2006 12 01 | 704 | 0.1− | 0.1+ |
| 2002 09 01 | 699 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.4+ | 0.4+ |
| 2002 09 01 | 699 | 0.7− | 1.1+ | 2004 03 15 | 704 | 0.4+ | 0.7+ | 2006 12 01 | 704 | 0.5− | 0.0 |

**(137712)∗ 1999 XU$_{96}$ = 2002 RR$_{10}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34831)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.83523 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28886743 | $\omega$ | 38.68606 | | +0.44478825 | | −0.89554562 |
| $a$ | 2.2664023 | $\Omega$ | 24.91181 | | +0.81404750 | | +0.39831336 |
| $e$ | 0.2085725 | $i$ | 1.72863 | | +0.37348371 | | +0.19835452 |
| $P$ | 3.41 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.4− | 0.2+ | 2000 01 04 | 704 | 0.7− | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.3+ |
| 1999 11 14 | 704 | 1.1− | 0.5+ | 2000 01 04 | 704 | 0.6+ | 0.5− | 2004 03 18 | 704 | 0.5− | 0.6+ |
| 1999 11 14 | 704 | (2.1− | 0.6+) | 2000 01 04 | 704 | 0.1− | 0.1+ | 2004 03 19 | 291 | 0.4− | 0.1+ |
| 1999 11 14 | 704 | 1.2− | 0.5+ | 2000 01 04 | 704 | 0.2− | 0.0 | 2004 03 19 | 291 | 0.0 | 0.3+ |
| 1999 11 14 | 704 | 1.2− | 0.3+ | 2000 01 04 | 704 | 0.2− | 0.7+ | 2004 03 19 | 291 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.3+ | 0.3− | 2000 01 04 | 704 | 0.2− | 0.3+ | 2004 03 23 | 704 | 1.2+ | 0.2+ |
| 1999 12 07 | 704 | 0.5+ | 1.1− | 2000 01 04 | 704 | 0.4+ | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.1− |
| 1999 12 07 | 704 | 0.3+ | 0.1− | 2000 01 04 | 704 | 0.3− | 0.0 | 2004 03 23 | 704 | (1.4+ | 2.3−) |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2000 01 04 | 704 | 0.2+ | 1.5+ | 2004 03 23 | 704 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2000 01 04 | 704 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.7+ | 0.8− |
| 1999 12 10 | 704 | 0.5− | 0.1− | 2000 01 04 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.1+ | 0.1− |
| 1999 12 10 | 704 | 0.9− | 0.6− | 2000 01 04 | 704 | 0.4+ | 0.6− | 2004 03 27 | 704 | 0.2+ | 0.2− |
| 1999 12 10 | 704 | 1.0+ | 0.8− | 2002 08 18 | 644 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.4+ | 0.4+ |
| 1999 12 10 | 704 | 0.4+ | 0.4+ | 2002 08 18 | 644 | 0.3+ | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.5+ |
| 2000 01 03 | 704 | 0.5+ | 0.9+ | 2002 08 18 | 644 | 0.2− | 0.4+ | 2004 03 27 | 704 | 0.7− | 0.6− |
| 2000 01 03 | 704 | 0.3+ | 0.4+ | 2002 09 04 | 644 | 0.2− | 0.5+ | 2004 04 19 | 691 | 0.0 | 0.2+ |
| 2000 01 03 | 704 | 0.6+ | 0.1− | 2002 09 04 | 644 | 0.4− | 0.5+ | 2004 04 19 | 691 | 0.0 | 0.5+ |
| 2000 01 03 | 704 | 0.3+ | 0.1+ | 2002 09 04 | 644 | 0.3− | 0.7+ | 2004 04 19 | 691 | 0.1+ | 0.0 |
| 2000 01 03 | 704 | 1.3+ | 0.7+ | 2002 09 05 | 704 | (0.3− | 1.7+) | 2006 09 19 | 691 | 0.3+ | 0.3+ |
| 2000 01 04 | 704 | 0.7− | 0.1− | 2002 09 05 | 704 | 0.9+ | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2000 01 04 | 704 | 0.1− | 0.6− | 2002 09 05 | 704 | 0.1− | 1.1+ | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 2000 01 04 | 704 | 0.2+ | 0.3− | 2002 09 05 | 704 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2000 01 04 | 704 | 0.2− | 0.1− | 2002 09 05 | 704 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2000 01 04 | 704 | 0.0 | 0.3+ | 2002 09 11 | 608 | 1.1− | 0.5− | 2006 10 31 | G96 | 0.3− | 0.2+ |
| 2000 01 04 | 704 | 0.3− | 0.1− | 2002 09 11 | 608 | 0.6− | 0.9− | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2000 01 04 | 704 | 0.5+ | 0.9+ | 2002 09 11 | 608 | 0.4− | 0.7− | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2000 01 04 | 704 | 0.1− | 1.4− | 2002 10 03 | 704 | 0.2+ | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2000 01 04 | 704 | 0.1+ | 0.9− | 2002 10 03 | 704 | 0.6− | 1.2+ | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2000 01 04 | 704 | 0.5− | 0.2− | 2002 10 03 | 704 | (0.4− | 1.7+) | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 1.2+ | 0.2− | 2004 03 18 | 704 | 0.9+ | 1.1+ | | | | |
| 2000 01 04 | 704 | 0.2− | 1.1+ | 2004 03 18 | 704 | 0.8+ | 0.2+ | | | | |

**(137713)∗ 1999 XX$_{96}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.36322 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27237262 | $\omega$ | 8.64417 | | +0.15683167 | | −0.97382082 |
| $a$ | 2.3570045 | $\Omega$ | 72.45750 | | +0.89549853 | | +0.06994833 |
| $e$ | 0.1290198 | $i$ | 9.93764 | | +0.41651676 | | +0.21628739 |
| $P$ | 3.62 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.4− | 0.1− | 2002 09 01 | 644 | 0.1+ | 0.2− | 2004 04 14 | 703 | 0.8+ | 0.1+ |
| 1999 11 12 | 704 | 0.4− | 0.0 | 2002 09 09 | 644 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.5− | 1.0+ |
| 1999 11 12 | 704 | 0.3− | 0.4− | 2002 09 09 | 644 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.2− |
| 1999 11 12 | 704 | 0.3− | 0.0 | 2002 09 09 | 644 | 0.3− | 0.4+ | 2006 10 01 | 704 | 0.7+ | 0.7− |
| 1999 11 12 | 704 | 0.5− | 0.1− | 2003 12 19 | 704 | 1.4− | 0.2− | 2006 10 01 | 704 | 0.4+ | 0.6+ |
| 1999 12 07 | 704 | 0.7+ | 1.0− | 2003 12 19 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 1999 12 07 | 704 | 0.3+ | 0.5− | 2003 12 19 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 1999 12 07 | 704 | 0.0 | 0.7− | 2003 12 28 | 704 | 0.8+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 1999 12 07 | 704 | 0.4− | 0.3− | 2003 12 28 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.2+ | 0.0 | 2003 12 28 | 704 | 1.3+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 1999 12 10 | 704 | 0.8− | 0.5+ | 2003 12 28 | 704 | 0.1− | 1.4+ | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 1999 12 10 | 704 | 1.0+ | 1.5− | 2003 12 28 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.3− |
| 1999 12 10 | 704 | 0.4+ | 0.6− | 2003 12 30 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2000 01 03 | 704 | 0.1− | 0.9− | 2003 12 30 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2000 01 03 | 704 | 0.2+ | 0.7− | 2003 12 30 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.2+ | 0.5− | 2003 12 30 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.3− | 0.6+ |
| 2000 01 03 | 046 | 0.6+ | 0.1+ | 2004 01 28 | 703 | (1.8+ | 1.6+) | 2006 10 31 | 704 | (1.4− | 1.9+) |
| 2000 01 03 | 046 | 0.5+ | 0.3+ | 2004 01 28 | 703 | (1.4+ | 1.8+) | 2006 10 31 | 704 | 0.4− | 0.2+ |
| 2000 01 03 | 046 | 0.4+ | 0.4+ | 2004 01 28 | 703 | (1.2+ | 1.8+) | 2006 10 31 | 704 | 0.4− | 0.4− |
| 2000 01 03 | 046 | 0.7+ | 0.8+ | 2004 01 28 | 703 | 0.7+ | 1.3+ | 2006 10 31 | 704 | (0.0 | 1.9+) |
| 2000 01 03 | 046 | 1.0+ | 0.8+ | 2004 01 30 | 699 | 0.7− | 0.7+ | 2006 10 31 | 704 | 0.8− | 0.0 |
| 2000 01 03 | 046 | 0.6+ | 0.0 | 2004 01 30 | 699 | 0.8− | 0.7+ | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2000 01 04 | 704 | 0.5− | 1.4− | 2004 01 30 | 699 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2000 01 04 | 704 | 0.0 | 0.4− | 2004 01 30 | 699 | 0.0 | 0.3+ | 2006 11 13 | 703 | 1.3+ | 0.2− |
| 2000 01 04 | 704 | 0.0 | 0.5− | 2004 01 31 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 703 | 0.8+ | 0.0 |
| 2000 01 04 | 704 | 0.7− | 0.9− | 2004 01 31 | 704 | 1.3+ | 0.4− | 2006 11 19 | 703 | 1.0− | 0.1+ |
| 2000 01 04 | 704 | 0.1− | 1.1− | 2004 01 31 | 704 | 0.6+ | 0.9+ | 2006 11 19 | 703 | 0.2+ | 0.1− |
| 2000 01 05 | 046 | 0.0 | 0.1+ | 2004 01 31 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2000 01 05 | 046 | 0.2+ | 0.5− | 2004 01 31 | 704 | 0.0 | 0.5+ | 2006 11 19 | 703 | 0.2− | 0.0 |
| 2000 01 05 | 046 | 0.1− | 0.4− | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.8+ |
| 2000 01 05 | 046 | 0.1+ | 0.2− | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.1+ |
| 2000 01 05 | 046 | 0.0 | 0.3+ | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 1.3+ |
| 2000 01 06 | 046 | 0.2− | 0.4+ | 2004 02 11 | 644 | 0.5− | 0.4+ | 2006 11 20 | 704 | 0.4− | 0.6+ |
| 2000 01 06 | 046 | 0.3+ | 0.0 | 2004 02 11 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.7− | 0.9+ |
| 2000 01 06 | 046 | 0.9+ | 0.1− | 2004 02 11 | 644 | 0.6− | 0.5+ | 2006 11 21 | 704 | 0.6− | 0.2− |
| 2000 01 06 | 046 | 0.3− | 0.0 | 2004 02 11 | 644 | 1.1+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2002 08 11 | 608 | 0.2− | 0.4+ | 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 1.0+ |
| 2002 08 11 | 608 | 0.1+ | 1.4+ | 2004 02 15 | 704 | (1.7− | 0.5+) | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2002 08 11 | 608 | 0.3− | 1.2+ | 2004 02 15 | 704 | (1.8− | 0.9+) | 2006 11 21 | 704 | 0.1− | 1.2+ |
| 2002 08 20 | 644 | 0.0 | 0.4+ | 2004 02 15 | 704 | 1.4− | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 08 20 | 644 | 0.2− | 0.7+ | 2004 02 15 | 704 | (1.7− | 1.4+) | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2002 08 20 | 644 | 0.3− | 0.3+ | 2004 04 14 | 703 | 0.9+ | 1.1− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 09 01 | 644 | 0.2+ | 0.4− | 2004 04 14 | 703 | 0.0 | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 09 01 | 644 | 0.7− | 0.4− | 2004 04 14 | 703 | 0.6− | 0.0 | | | | |

**(137714)∗ 1999 XY$_{96}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.27319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27085321 | $\omega$ | 336.34814 | | +0.68691341 | −0.71352869 | |
| $a$ | 2.3658110 | $\Omega$ | 69.94266 | | +0.68800922 | +0.57734977 | |
| $e$ | 0.1957967 | $i$ | 8.44406 | | +0.23407962 | +0.39691820 | |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 1.1+ | 0.4+ | 2000 01 04 | 704 | 0.4− | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.3+ |
| 1999 11 09 | 704 | 0.4+ | 0.4− | 2001 05 24 | 645 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.8− | 0.5+ |
| 1999 11 09 | 704 | 0.9+ | 0.5− | 2001 05 24 | 645 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.0 | 0.4+ |
| 1999 11 09 | 704 | 0.4+ | 0.6− | 2003 12 19 | 704 | 1.5+ | 1.1+ | 2006 09 25 | 703 | 0.2+ | 0.7+ |
| 1999 11 09 | 704 | 0.5+ | 0.5− | 2003 12 19 | 704 | 1.1+ | 1.2+ | 2006 09 25 | 703 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.6+ | 0.7− | 2003 12 19 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 703 | 0.9+ | 0.7+ |
| 1999 11 12 | 704 | 0.6+ | 0.3− | 2003 12 19 | 704 | 1.4+ | 1.0+ | 2006 10 04 | 703 | 0.7− | 0.1− |
| 1999 11 12 | 704 | 0.3+ | 0.5− | 2004 01 18 | 644 | 0.2+ | 0.8+ | 2006 10 04 | 703 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.1+ | 0.4− | 2004 01 18 | 644 | 0.4+ | 0.9+ | 2006 10 04 | 703 | (0.5− | 1.8+) |
| 1999 11 12 | 704 | 1.0+ | 0.9− | 2004 01 18 | 644 | 0.6+ | 0.8+ | 2006 10 04 | 703 | 0.0 | 0.8+ |
| 1999 11 17 | 704 | 0.6+ | 0.8− | 2004 01 20 | 704 | 0.1+ | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1999 11 17 | 704 | 0.2+ | 0.1− | 2004 01 20 | 704 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 1999 11 17 | 704 | 1.0− | 1.4− | 2004 01 20 | 704 | (0.1− | 1.9+) | 2006 10 10 | 644 | 0.2− | 0.0 |
| 1999 12 05 | 703 | 0.0 | 0.2− | 2004 01 28 | 703 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 1999 12 05 | 703 | 1.0− | 1.3+ | 2004 01 28 | 703 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 1999 12 05 | 703 | 0.9− | 0.4+ | 2004 01 28 | 703 | (1.6− | 0.2+) | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 1999 12 05 | 703 | 0.2− | 0.2− | 2004 01 28 | 703 | 0.7− | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.9+ |
| 1999 12 07 | 704 | 0.2+ | 0.6− | 2004 01 30 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 1999 12 07 | 704 | 0.3+ | 0.8− | 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 1999 12 07 | 704 | 0.4+ | 0.3− | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 1999 12 07 | 704 | 0.6+ | 0.3− | 2004 02 15 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.5+ | 0.7− | 2004 02 15 | 704 | 0.6+ | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 1999 12 10 | 704 | 0.3− | 0.2+ | 2004 02 15 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 1999 12 10 | 704 | (2.1+ | 1.1−) | 2004 02 15 | 704 | 0.5+ | 0.9+ | 2006 10 28 | 703 | 0.7− | 0.6+ |
| 1999 12 10 | 704 | 0.7+ | 0.3− | 2004 02 15 | 704 | 0.5− | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.9− |
| 1999 12 10 | 704 | 0.5+ | 0.1+ | 2004 02 18 | 735 | 1.3+ | 1.4+ | 2006 10 28 | 703 | 0.6− | 0.3+ |
| 2000 01 03 | 704 | 0.5− | 0.9− | 2004 02 18 | 735 | 0.5− | 1.4+ | 2006 10 28 | 703 | 0.8− | 0.4+ |
| 2000 01 03 | 704 | 0.2− | 1.6− | 2004 02 18 | 735 | 1.0− | 0.7+ | 2006 11 23 | 703 | 0.1− | 0.7+ |
| 2000 01 03 | 704 | 1.0− | 1.0− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.4+ |
| 2000 01 03 | 704 | 0.5− | 1.2− | 2006 09 13 | 644 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.2+ | 0.6+ |
| 2000 01 04 | 704 | 0.9− | 0.5− | 2006 09 13 | 644 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.7− | 0.3− |
| 2000 01 04 | 704 | 0.7+ | 0.4− | 2006 09 20 | 703 | 0.2− | 0.6+ | | | | |
| 2000 01 04 | 704 | 0.1− | 0.2− | 2006 09 20 | 703 | 0.7− | 0.6+ | | | | |

**(137715)∗ 1999 XA$_{98}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.24184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27126447 | $\omega$ | 0.95706 | | +0.23190835 | −0.97153989 | |
| $a$ | 2.3634193 | $\Omega$ | 75.63468 | | +0.89213804 | +0.19265836 | |
| $e$ | 0.1771333 | $i$ | 2.85535 | | +0.38769607 | +0.13781507 | |
| $P$ | 3.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.6+ | 0.4− | 2004 01 22 | 704 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.7+ | 1.3+ | 2004 01 22 | 704 | 0.6− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.4+ |
| 1999 12 07 | 704 | 0.4− | 0.1− | 2004 01 22 | 704 | 0.8− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.4+ |
| 1999 12 07 | 704 | 0.2+ | 0.2+ | 2004 01 23 | 699 | 0.3− | 0.1+ | 2006 09 19 | 704 | 0.8+ | 0.1− |
| 1999 12 10 | 704 | 0.2− | 0.4− | 2004 01 23 | 699 | 0.0 | 0.4− | 2006 09 19 | 704 | 0.1+ | 0.3+ |
| 1999 12 10 | 704 | 0.1− | 0.9− | 2004 01 23 | 699 | 0.4− | 0.7+ | 2006 09 19 | 704 | 0.6+ | 0.6+ |
| 1999 12 10 | 704 | 0.1+ | 0.6− | 2004 01 23 | 699 | 0.4− | 0.4− | 2006 09 19 | 704 | 0.1+ | 0.6+ |
| 1999 12 10 | 704 | 0.3− | 1.2− | 2004 01 29 | 704 | 1.3− | 0.7+ | 2006 09 22 | 704 | 1.1+ | 0.7− |
| 2000 01 03 | 704 | 0.1− | 0.6− | 2004 01 29 | 704 | 0.4+ | 0.9+ | 2006 09 22 | 704 | 0.6+ | 0.6+ |
| 2000 01 03 | 704 | 0.2+ | 0.6− | 2004 01 29 | 704 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.5+ | 0.0 |
| 2000 01 03 | 704 | 0.8+ | 0.5− | 2004 01 29 | 704 | (0.1+ | 2.1+) | 2006 09 22 | 704 | 0.6+ | 0.2+ |
| 2000 01 03 | 704 | 0.3+ | 0.4− | 2004 02 11 | 703 | 0.6+ | 0.6+ | 2006 09 22 | 704 | 0.5+ | 0.4− |
| 2000 01 03 | 704 | 0.3+ | 0.2− | 2004 02 11 | 703 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.1− | 0.9+ |
| 2000 01 04 | 704 | 0.4+ | 0.9− | 2004 02 11 | 703 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 0.3− | 0.6− | 2004 02 11 | 703 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.5− |
| 2000 01 04 | 704 | 0.4+ | 0.7− | 2004 02 14 | 608 | 0.8+ | 0.2− | 2006 09 26 | 704 | 0.4+ | 0.5+ |
| 2000 01 04 | 704 | 0.1+ | 0.7− | 2004 02 14 | 608 | 1.1+ | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.4− |
| 2000 01 04 | 704 | 0.6+ | 0.4− | 2004 02 14 | 608 | 1.5+ | 0.3+ | 2006 09 27 | 691 | 0.4− | 0.0 |
| 2000 01 30 | 704 | 0.1− | 0.8− | 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.4− | 0.1+ |
| 2000 01 30 | 704 | 0.3− | 0.6− | 2004 02 17 | 704 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.0 |
| 2000 01 30 | 704 | 0.7− | 0.2+ | 2004 02 17 | 704 | 0.3− | 0.9− | 2006 09 30 | 703 | 1.4− | 0.4+ |
| 2000 01 30 | 704 | 0.3− | 1.0− | 2004 02 17 | 704 | 0.1− | 1.0− | 2006 09 30 | 703 | (0.2− | 1.6+) |
| 2000 01 30 | 704 | 0.3+ | 0.6− | 2004 02 17 | 704 | 1.0− | 0.5− | 2006 09 30 | 703 | (1.0+ | 1.6+) |
| 2000 02 11 | 704 | 0.1− | 0.9+ | 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.2− | 1.1+ |
| 2000 02 11 | 704 | 0.5− | 0.4− | 2004 02 17 | 608 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.2− | 1.1+ |
| 2000 02 11 | 704 | 0.3− | 0.1+ | 2004 02 17 | 608 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.0 | 0.5+ |
| 2002 08 03 | 644 | 0.2− | 0.3+ | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2002 08 03 | 644 | 0.4− | 0.4+ | 2004 02 17 | 608 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 2002 08 03 | 644 | 0.4− | 0.2+ | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2002 08 11 | 644 | 0.0 | 0.6+ | 2004 02 22 | 333 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 08 11 | 644 | 0.3− | 0.2+ | 2004 02 22 | 333 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2002 08 11 | 644 | 0.3+ | 0.4− | 2004 02 22 | 333 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 08 12 | 699 | 0.2− | 0.4+ | 2004 02 22 | 333 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 08 12 | 699 | (2.3− | 0.3−) | 2004 02 22 | 333 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 08 12 | 699 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.1− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 08 12 | 699 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.3+ |
| 2002 08 18 | 644 | 0.9− | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.7+ | 2006 10 15 | 703 | 0.1+ | 0.4+ |
| 2002 08 18 | 644 | 0.6− | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.8+ | 2006 10 15 | 703 | 0.2− | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.7+ | 2004 03 14 | 704 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.2+ | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.6+ | 2004 03 14 | 704 | 0.3+ | 0.2− | 2006 10 15 | 703 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2004 03 14 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.1− | 1.1+ | 2004 03 14 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 1.1+ | 1.0+ | 2004 03 14 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 1.2+ | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.4+ |
| 2002 09 06 | 704 | (1.7− | 1.9+) | 2004 03 20 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 608 | (0.0 | 2.3+) | 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 704 | 0.3− | 0.2+ | | |
| 2002 09 09 | 608 | (0.0 | 2.4+) | 2004 03 26 | 691 | 0.0 | 0.2+ | 2006 10 22 | 704 | 0.1− | 0.7+ | | |
| 2002 09 09 | 608 | (0.2+ | 2.0+) | 2004 03 26 | 691 | (1.5+ | 1.7+) | 2006 10 22 | 704 | 0.1− | 0.9+ | | |
| 2002 09 15 | 644 | 0.6− | 0.5+ | 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.2− | 0.6− | | |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2004 03 26 | 703 | 0.6− | 0.5+ | 2006 10 22 | 704 | 0.4− | 0.6+ | | |
| 2002 09 15 | 644 | 0.5− | 0.3+ | 2004 03 26 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.3+ | | |
| 2003 12 01 | 704 | 1.0+ | 0.6+ | 2004 03 26 | 703 | 0.6− | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 01 | 704 | (1.6− | 0.8−) | 2004 03 26 | 703 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2003 12 01 | 704 | (0.3+ | 1.5+) | 2004 03 28 | 704 | (2.4+ | 0.6+) | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2003 12 01 | 704 | 0.4− | 0.6− | 2004 03 28 | 704 | 0.9+ | 1.4+ | 2006 10 22 | G96 | 0.3− | 0.1− | | |
| 2003 12 01 | 704 | 0.4− | 0.2− | 2004 03 28 | 704 | (0.3+ | 1.7+) | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2003 12 01 | 704 | 0.1− | 0.7+ | 2004 03 28 | 704 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2003 12 01 | 704 | 0.1+ | 0.2− | 2004 03 31 | 691 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.2− | | |
| 2003 12 01 | 704 | (0.5+ | 1.6+) | 2004 03 31 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | (2.6− | 3.6+) | | |
| 2003 12 18 | 703 | 0.2− | 0.6− | 2004 03 31 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | (2.2+ | 3.5+) | | |
| 2003 12 18 | 703 | 0.3+ | 0.0 | 2004 04 19 | 704 | 0.2− | 1.1+ | 2006 11 11 | 703 | 0.0 | 0.7− | | |
| 2003 12 18 | 703 | 1.0− | 0.1+ | 2004 04 19 | 704 | 0.2+ | 1.1+ | 2006 11 14 | 704 | (0.5− | 3.3+) | | |
| 2003 12 18 | 703 | (1.6− | 2.9−) | 2004 04 19 | 704 | 0.7+ | 0.5+ | 2006 11 14 | 704 | 0.6+ | 0.3+ | | |
| 2003 12 20 | 704 | 0.2+ | 1.0+ | 2004 04 19 | 704 | 0.1− | 1.0+ | 2006 11 14 | 704 | (0.4+ | 2.3+) | | |
| 2003 12 20 | 704 | 0.7+ | 0.3− | 2004 04 19 | 704 | 1.3+ | 0.1+ | 2006 11 14 | 704 | (1.8− | 1.8+) | | |
| 2003 12 20 | 704 | 0.8+ | 0.5+ | 2004 04 22 | 704 | (0.5+ | 1.7+) | 2006 11 18 | 704 | 0.0 | 0.0 | | |
| 2003 12 20 | 704 | 0.3+ | 0.9+ | 2004 04 22 | 704 | 1.2+ | 1.3+ | 2006 11 18 | G96 | 0.5+ | 0.1− | | |
| 2003 12 20 | 704 | 0.4+ | 1.4+ | 2004 04 22 | 704 | (1.7+ | 0.1−) | 2006 11 18 | G96 | 0.3+ | 0.2− | | |
| 2003 12 22 | 704 | (0.0 | 1.6+) | 2005 01 20 | 809 | 0.7+ | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.3+ | | |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2005 01 20 | 809 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2003 12 22 | 704 | 0.2+ | 0.0 | 2005 01 20 | 809 | 0.2+ | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.1− | | |
| 2003 12 22 | 704 | 0.0 | 0.4+ | 2005 01 20 | 809 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.1+ | | |
| 2003 12 22 | 704 | 0.5+ | 1.2+ | 2006 08 19 | 699 | 0.3+ | 1.0+ | 2006 11 18 | 704 | 0.0 | 1.3− | | |
| 2003 12 27 | 704 | 0.3+ | 0.6+ | 2006 08 19 | 699 | 0.1− | 0.8− | 2006 11 18 | 704 | 0.6− | 0.0 | | |
| 2003 12 27 | 704 | 0.8+ | 0.1− | 2006 08 19 | 699 | 0.5− | 0.7+ | 2006 11 21 | 704 | 0.3+ | 0.1− | | |
| 2003 12 27 | 704 | 0.1+ | 0.4+ | 2006 08 19 | 699 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 2003 12 27 | 704 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.2− | | |
| 2003 12 27 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.7− | 0.3− | 2006 11 21 | 704 | 0.6− | 0.7+ | | |
| 2004 01 22 | 704 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.7− | | | | | | |
| 2004 01 22 | 704 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.9− | 0.1+ | | | | | | |

**(137716)∗ 1999 XG$_{98}$ = 2000 AQ$_{13}$ = 2004 CS$_4$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 1670), G. V. Williams (*MPO* 60564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.36992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26685918 | $\omega$ | 328.34638 | | +0.70837785 | −0.70375318 | |
| $a$ | 2.3893583 | $\Omega$ | 76.48621 | | +0.65865971 | +0.63150971 | |
| $e$ | 0.2073691 | $i$ | 3.19259 | | +0.25370888 | +0.32546421 | |
| $P$ | 3.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.2+ | 1.2− | 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 09 19 | 704 | 0.0 | 0.6+ | | |
| 1999 12 07 | 704 | 0.1+ | 0.5− | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 09 19 | 704 | 0.0 | 0.2+ | | |
| 1999 12 07 | 704 | 0.3+ | 0.3− | 2004 02 23 | 704 | 0.8− | 0.6+ | 2006 09 20 | 644 | 0.6− | 0.1+ | | |
| 1999 12 10 | 704 | 0.5− | 1.0− | 2005 05 07 | G96 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.8− | 0.2− | | |
| 1999 12 10 | 704 | 0.0 | 0.3− | 2005 05 07 | G96 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.6− | 0.2+ | | |
| 1999 12 10 | 704 | 0.8+ | 0.9− | 2005 05 07 | G96 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.2− | 0.0 | | |
| 1999 12 10 | 704 | 0.2+ | 0.2− | 2005 05 07 | G96 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.6− | 0.2+ | | |
| 2000 01 03 | 704 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.0 | | |
| 2000 01 03 | 704 | 0.6− | 0.0 | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.7+ | 0.8− | | |
| 2000 01 03 | 704 | 0.0 | 0.9− | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 21 | 699 | 0.6− | 0.0 | | |
| 2000 01 03 | 704 | 0.5+ | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.2− | 2006 09 21 | 699 | 0.4− | 0.8+ | | |
| 2000 01 03 | 704 | 0.0 | 0.5− | 2006 08 21 | 644 | 0.3− | 0.4− | 2006 09 21 | 699 | 0.3− | 0.6+ | | |
| 2000 01 04 | 704 | 0.2+ | 0.0 | 2006 08 21 | 644 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.2− | 0.5+ | | |
| 2000 01 04 | 704 | 0.1+ | 0.2− | 2006 08 23 | 704 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.3+ | | |
| 2000 01 04 | 704 | 0.4− | 0.1+ | 2006 08 23 | 704 | 0.7− | 0.1+ | 2006 09 22 | 704 | 0.7+ | 0.8+ | | |
| 2000 01 04 | 704 | (2.1+ | 0.8+) | 2006 08 23 | 704 | 0.5− | 1.1+ | 2006 09 22 | 704 | 0.0 | 1.1+ | | |
| 2002 07 09 | 644 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.6+ | 0.4+ | 2006 09 22 | 704 | 0.2− | 0.2− | | |
| 2002 07 09 | 644 | 0.4− | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.1+ | 0.3+ | | |
| 2002 07 09 | 644 | 0.2− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.1+ | | |
| 2004 01 22 | 704 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.1− | | |
| 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 699 | 0.4+ | 0.4− | 2006 09 26 | 704 | 0.4+ | 0.1+ | | |
| 2004 01 22 | 704 | 0.3+ | 0.3+ | 2006 08 30 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.0 | | |
| 2004 01 30 | 704 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.0 | 0.4+ | 2006 09 28 | 704 | 1.4+ | 1.3+ | | |
| 2004 01 30 | 704 | 0.4− | 0.3+ | 2006 08 30 | 699 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 0.2− | 1.4+ | | |
| 2004 01 30 | 704 | 0.1− | 0.8+ | 2006 08 31 | 704 | 0.2+ | 0.1− | 2006 09 28 | 704 | 1.3+ | 1.0+ | | |
| 2004 01 30 | 704 | 0.1− | 1.0+ | 2006 08 31 | 704 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.4+ | | |
| 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1− | | |
| 2004 02 10 | 644 | 0.1+ | 0.9+ | 2006 09 12 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 1.0− | 0.1+ | | |
| 2004 02 10 | 644 | 0.3+ | 1.1+ | 2006 09 12 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.3+ | | |
| 2004 02 11 | 691 | 0.0 | 0.4+ | 2006 09 12 | 704 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.3− | 0.5+ | | |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 704 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.3− | 0.1+ | | |
| 2004 02 11 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.7− | 2006 10 09 | 644 | 0.2− | 0.4+ | | |
| 2004 02 14 | 608 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2004 02 14 | 608 | 1.0+ | 0.3− | 2006 09 14 | 703 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.3− | 0.2+ | | |
| 2004 02 14 | 608 | 0.7+ | 0.3+ | 2006 09 16 | 704 | 0.5− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2004 02 16 | 704 | (0.4+ | 2.0+) | 2006 09 16 | 704 | 0.3+ | 0.3− | 2006 11 25 | G96 | 0.1− | 0.8− | | |
| 2004 02 16 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 704 | 0.0 | 0.6− | 2006 11 25 | G96 | 0.6− | 0.2− | | |
| 2004 02 16 | 704 | (0.8+ | 2.2+) | 2006 09 16 | 704 | 0.7− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.5− | | |
| 2004 02 16 | 704 | 1.0+ | 0.7+ | 2006 09 19 | 704 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.6− | | |
| 2004 02 23 | 704 | 0.1− | 0.1− | 2006 09 19 | 704 | 0.3− | 0.8+ | | | | | | |
| 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 09 19 | 704 | 0.6+ | 0.1− | | | | | | |

**(137717)∗ 1999 XT$_{101}$ = 2002 PS$_{62}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33161)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.75549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26882966 | $\omega$ | 91.72631 | | +0.51976484 | −0.85396262 | |
| $a$ | 2.3776683 | $\Omega$ | 326.92081 | | +0.76501646 | +0.47793019 | |
| $e$ | 0.2254499 | $i$ | 2.55577 | | +0.38025561 | +0.20574394 | |
| $P$ | 3.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 699 | 0.7+ | 0.0 | 2004 01 29 | 704 | 1.3+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | | |
| 1999 12 03 | 699 | 0.4− | 0.7− | 2004 01 29 | 704 | 0.4+ | 1.2+ | 2006 09 17 | 691 | 0.3− | 0.1+ | | |
| 1999 12 03 | 699 | 0.4+ | 0.6− | 2004 02 13 | 291 | 0.4− | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.1+ | | |
| 1999 12 07 | 704 | 0.2+ | 0.8− | 2004 02 13 | 291 | 0.5+ | 0.4+ | 2006 09 18 | 704 | 0.3− | 0.9+ | | |
| 1999 12 07 | 704 | 0.1+ | 0.5− | 2004 02 13 | 291 | 0.6+ | 0.5+ | 2006 09 18 | 704 | 0.1− | 0.0 | | |
| 1999 12 07 | 704 | 0.0 | 0.8+ | 2004 02 14 | 703 | 0.4− | 1.2+ | 2006 09 18 | 704 | 0.3− | 0.4− | | |
| 1999 12 07 | 704 | 0.2+ | 0.0 | 2004 02 14 | 703 | 1.0− | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.3− | | |
| 1999 12 07 | 704 | 0.3− | 0.5+ | 2004 02 14 | 703 | 0.2+ | 0.5+ | 2006 09 18 | 704 | 0.9− | 1.2+ | | |
| 1999 12 10 | 704 | 0.2− | 0.9+ | 2004 02 14 | 703 | (1.6− | 0.1+) | 2006 09 21 | 704 | 0.1− | 0.6− | | |
| 1999 12 10 | 704 | 0.1− | 0.1+ | 2004 02 18 | 704 | 0.5+ | 0.4+ | 2006 09 21 | 704 | 0.2− | 0.7− | | |
| 1999 12 10 | 704 | 0.1+ | 0.5− | 2004 02 18 | 704 | 0.2+ | 0.8+ | 2006 09 21 | 704 | 0.1+ | 0.8− | | |
| 1999 12 10 | 704 | 0.3+ | 0.8− | 2004 02 18 | 704 | 0.1+ | 0.4+ | 2006 09 21 | 704 | 0.1+ | 1.5− | | |
| 1999 12 10 | 704 | 0.4+ | 0.6− | 2004 02 18 | 704 | 1.3− | 0.3− | 2006 09 25 | 704 | 0.4− | 1.0+ | | |
| 1999 12 15 | 704 | 0.6− | 0.2− | 2004 02 18 | 704 | 0.6− | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.4+ | | |
| 1999 12 15 | 704 | 0.2+ | 0.0 | 2004 02 19 | 608 | 0.1+ | 0.4− | 2006 09 25 | 704 | 0.6− | 0.0 | | |
| 1999 12 15 | 704 | 0.1+ | 0.8− | 2004 02 19 | 608 | 0.2+ | 0.5− | 2006 09 25 | 704 | 0.2− | 1.0+ | | |
| 1999 12 15 | 704 | 0.9− | 0.1− | 2004 02 19 | 608 | 0.5+ | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.4+ | | |
| 1999 12 15 | 704 | 0.5− | 0.9− | 2004 02 26 | 704 | 0.4+ | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 03 | 704 | 0.6− | 0.8− | 2004 02 26 | 704 | 1.1+ | 1.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | | |
| 2000 01 03 | 704 | 0.1− | 0.8− | 2004 02 26 | 704 | 0.7+ | 0.8+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | | |
| 2000 01 03 | 704 | 0.5− | 0.5− | 2004 02 26 | 704 | 0.7+ | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.5− | | |
| 2000 01 03 | 704 | 0.8+ | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 09 29 | 704 | 0.1+ | 0.6− | | |
| 2000 01 03 | 704 | 0.4− | 0.6− | 2004 03 12 | 644 | 0.1− | 0.7+ | 2006 09 29 | 704 | 0.0 | 0.3− | | |
| 2000 01 04 | 704 | 0.4− | 1.5− | 2004 03 12 | 644 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.0 | | |
| 2000 01 04 | 704 | 0.0 | 1.1− | 2004 03 12 | 644 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.2+ | | |
| 2000 01 04 | 704 | 0.8− | 1.1+ | 2004 03 15 | 703 | 0.7− | 1.2+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2000 01 04 | 704 | 0.7− | 0.1− | 2004 03 15 | 704 | (1.8+ | 1.0+) | 2006 10 01 | 691 | 0.1− | 0.3+ | | |
| 2000 01 04 | 704 | 0.2− | 0.0 | 2004 03 15 | 703 | 0.6+ | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 04 | 106 | 0.0 | 0.2+ | 2004 03 15 | 704 | (0.2− | 2.2+) | 2006 10 03 | 704 | 0.4− | 0.0 | | |
| 2000 01 04 | 106 | 0.2− | 0.2− | 2004 03 15 | 704 | 1.3+ | 0.9+ | 2006 10 03 | 704 | 0.2+ | 0.7+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 106 | 0.0 | 0.1+ | 2004 03 15 | 703 | 0.9− | 0.4+ | 2006 10 03 | 704 | 0.1+ | 1.0+ |
| 2000 01 30 | 704 | 0.6+ | 0.6+ | 2004 03 15 | 704 | 0.2+ | 0.8+ | 2006 10 03 | 704 | 0.3+ | 1.1+ |
| 2000 01 30 | 704 | 0.4+ | 0.8+ | 2004 03 15 | 703 | 1.0− | 0.1− | 2006 10 03 | 704 | 0.0 | 1.0+ |
| 2000 01 30 | 704 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.9+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2000 01 30 | 704 | 1.0+ | 0.3+ | 2004 03 18 | 704 | 0.5− | 0.7+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2000 01 30 | 704 | 0.2+ | 1.0+ | 2004 03 18 | 704 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2002 08 08 | 699 | 0.1− | 1.4+ | 2004 03 18 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 08 08 | 699 | 0.4+ | 0.5+ | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 08 08 | 699 | (0.1+ | 1.7+) | 2004 03 18 | 704 | 0.0 | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 08 08 | 699 | 0.6− | 1.0+ | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2004 03 27 | 704 | 1.2+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2002 08 08 | 644 | 0.3− | 0.2+ | 2004 03 27 | 704 | 1.3+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2002 08 12 | 608 | 0.3+ | 0.1− | 2004 03 27 | 704 | 0.9+ | 0.6+ | 2006 10 19 | 704 | 1.2− | 0.9+ |
| 2002 08 12 | 608 | 0.1− | 0.3− | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 704 | 0.6+ | 0.7− |
| 2002 08 12 | 608 | 0.0 | 0.3− | 2004 03 29 | 691 | 0.2+ | 0.0 | 2006 10 19 | 704 | 0.8− | 0.2+ |
| 2002 08 17 | 644 | 0.3− | 0.8+ | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 704 | (1.8− | 1.8+) |
| 2002 08 17 | 644 | 0.3− | 0.6+ | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 10 19 | 704 | 1.0− | 0.7+ |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 08 18 | 644 | 0.0 | 0.5+ | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.9+ | 2006 07 22 | G96 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 08 18 | 644 | 0.0 | 1.1+ | 2006 08 06 | 699 | 0.3+ | 0.4− | 2006 10 29 | 704 | 0.0 | 0.8+ |
| 2002 08 27 | 644 | 0.0 | 0.7+ | 2006 08 06 | 699 | 1.4− | 0.8+ | 2006 10 29 | 704 | 0.4+ | 0.3+ |
| 2002 08 27 | 644 | 0.0 | 0.7+ | 2006 08 06 | 699 | 0.1− | 0.5+ | 2006 10 29 | 704 | 0.0 | 0.7+ |
| 2002 08 27 | 644 | 0.0 | 0.8+ | 2006 08 06 | 699 | 0.7+ | 1.0+ | 2006 10 29 | 704 | 0.7+ | 0.0 |
| 2002 09 02 | 608 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 10 29 | 704 | 0.2− | 0.6− |
| 2002 09 02 | 608 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2002 09 02 | 608 | 1.2− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2004 01 29 | 704 | (2.0+ | 0.6−) | 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 11 06 | 644 | 0.3− | 0.2+ |

**(137718)∗ 1999 XA$_{102}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.33285 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27339751 | $\omega$ | 118.35353 | | +0.47958329 | −0.87598876 |
| $a$ | 2.3511103 | $\Omega$ | 302.89770 | | +0.78213174 | +0.45329328 |
| $e$ | 0.2273810 | $i$ | 3.51071 | | +0.39783139 | +0.16482991 |
| $P$ | 3.61 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.8+ | 0.3− | 2004 03 18 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.3− | 0.4+ |
| 1999 12 07 | 704 | 0.3+ | 0.7− | 2004 03 20 | 699 | (2.5− | 0.3+) | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 1999 12 07 | 704 | 0.2− | 0.0 | 2004 03 20 | 699 | (0.6+ | 1.6+) | 2006 10 27 | 703 | 0.4+ | 0.0 |
| 1999 12 07 | 704 | 0.2+ | 0.4− | 2004 03 20 | 699 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.1− | 0.9− | 2004 03 20 | 699 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 1999 12 10 | 704 | 0.0 | 0.5− | 2004 03 20 | 704 | 0.1+ | 1.0− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1999 12 10 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1999 12 10 | 704 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.7− | 1.1− | 2006 10 29 | 704 | 0.3+ | 0.1− |
| 1999 12 10 | 704 | 0.7+ | 0.9− | 2004 03 20 | 704 | 0.3+ | 0.9− | 2006 10 29 | 704 | 0.1− | 0.6+ |
| 2000 01 03 | 704 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 10 29 | 704 | 0.5+ | 1.0+ |
| 2000 01 03 | 704 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 29 | 704 | 0.2+ | 0.7+ |
| 2000 01 03 | 704 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 10 29 | 704 | 0.2− | 0.2+ |
| 2000 01 03 | 704 | 0.4− | 0.4− | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2000 01 03 | 704 | 0.2− | 0.1+ | 2004 03 27 | 704 | 1.0+ | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2000 01 04 | 704 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2000 01 04 | 704 | 0.1− | 0.1− | 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 11 02 | 703 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 0.3− | 0.4+ | 2004 04 12 | 691 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.5− |
| 2000 01 04 | 704 | 0.2+ | 0.0 | 2004 04 12 | 691 | 0.3− | 0.6+ | 2006 11 02 | 703 | 0.1− | 0.6− |
| 2000 01 04 | 704 | 0.2+ | 0.2+ | 2004 04 17 | 691 | 0.0 | 0.2+ | 2006 11 02 | 703 | (0.1+ | 1.8−) |
| 2000 01 08 | 704 | 0.4− | 0.3+ | 2004 04 17 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2000 01 08 | 704 | 0.2+ | 0.1− | 2004 04 17 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2000 01 08 | 704 | 0.8− | 0.5+ | 2004 04 24 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.9− | 0.6+ |
| 2000 01 08 | 704 | 0.1− | 0.4+ | 2004 04 24 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.4− | 1.1− |
| 2000 01 28 | 691 | 0.3+ | 0.0 | 2004 04 24 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | (4.4+ | 4.4+) |
| 2000 01 28 | 691 | 0.5+ | 0.4− | 2006 08 29 | 703 | 0.4− | 0.2− | 2006 11 14 | 703 | 0.4+ | 1.1+ |
| 2000 01 28 | 691 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.8− | 0.8− | 2006 11 14 | 703 | 0.4− | 0.2− |
| 2000 01 30 | 704 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.2+ |
| 2000 01 30 | 704 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.2− | 0.2− | 2006 11 15 | 704 | (1.7+ | 0.2−) |
| 2000 01 30 | 704 | 0.2− | 0.5− | 2006 08 30 | 704 | 0.8+ | 0.3+ | 2006 11 15 | 704 | (1.8+ | 0.1+) |
| 2000 01 30 | 704 | 0.9− | 0.5− | 2006 08 30 | 704 | 0.7+ | 0.7+ | 2006 11 15 | 704 | (1.8+ | 0.3−) |
| 2000 01 31 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.5+ | 0.2− | 2006 11 15 | 704 | (1.9+ | 0.2−) |
| 2000 01 31 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.6+ | 0.2+ | 2006 11 16 | 704 | 0.9+ | 0.7+ |
| 2000 01 31 | 704 | 0.7− | 1.0+ | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.3+ |
| 2002 08 08 | 644 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.8− | 0.7+ | 2006 11 16 | 704 | 0.4+ | 0.4+ |
| 2002 08 08 | 644 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.1− | 0.6+ | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 2002 08 12 | 699 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.3− |
| 2002 08 12 | 699 | 0.4+ | 0.6+ | 2006 09 18 | 703 | 0.8+ | 1.0+ | 2006 11 16 | 704 | 0.8+ | 0.6− |
| 2002 08 12 | 699 | 1.1+ | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.1− |
| 2002 08 12 | 699 | 0.3− | 1.4+ | 2006 09 25 | 704 | 0.7− | 0.5− | 2006 11 16 | 704 | 0.5+ | 0.4− |
| 2002 08 16 | 608 | 0.3− | 0.6− | 2006 09 25 | 704 | 1.1− | 0.6− | 2006 11 16 | 704 | 0.3− | 0.2− |
| 2002 08 16 | 608 | 0.4− | 0.8− | 2006 09 25 | 704 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2002 08 16 | 608 | 0.3− | 0.5− | 2006 09 25 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 08 17 | 644 | 0.3+ | 0.9+ | 2006 10 19 | 704 | 1.4+ | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 08 17 | 644 | 0.1− | 1.0+ | 2006 10 19 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2002 08 17 | 644 | 0.1+ | 0.8+ | 2006 10 19 | 704 | 0.6+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 704 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2002 09 05 | 704 | 0.1− | 0.7− | 2006 10 19 | 703 | (1.1− | 1.8−) | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | (0.3+ | 1.6−) | 2006 11 22 | 704 | 0.3− | 0.2− |
| 2002 09 05 | 704 | 0.7− | 1.3− | 2006 10 19 | 703 | (1.3+ | 1.5−) | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.7+ |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.9− |
| 2004 02 15 | 703 | (1.8+ | 2.3+) | 2006 10 20 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2004 02 15 | 703 | 0.5+ | 1.4− | 2006 10 20 | 704 | 0.5− | 0.9+ | 2006 11 28 | 704 | 1.1+ | 0.6− |
| 2004 02 15 | 703 | 0.2+ | 1.0+ | 2006 10 20 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.2− |
| 2004 02 15 | 703 | 0.2− | 0.5+ | 2006 10 20 | 704 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.4+ | 0.4+ |
| 2004 03 18 | 704 | 0.7+ | 0.5− | 2006 10 20 | 704 | 0.4− | 0.4− | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 0.7+ | 0.8− | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 12 01 | 704 | 0.6+ | 0.3+ |
| 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.2− | | | | |
| 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1− | | | | |

**(137719)∗ 1999 XS$_{102}$ = 2004 CH$_{42}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60565)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.71564 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26221917 | $\omega$ | 3.51338 | | +0.31103205 | −0.94872294 |
| $a$ | 2.4174626 | $\Omega$ | 68.37152 | | +0.87048811 | +0.26054816 |
| $e$ | 0.1917466 | $i$ | 3.47995 | | +0.38145709 | +0.17899565 |
| $P$ | 3.76 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.1+ | 0.6− | 2004 01 23 | 699 | 0.9+ | 1.0+ | 2006 08 28 | 699 | (2.0− | 0.2−) |
| 1995 12 27 | 691 | 0.0 | 0.1− | 2004 01 23 | 699 | 0.7+ | 0.2− | 2006 09 14 | 703 | 0.5− | 0.7+ |
| 1995 12 27 | 691 | 0.1+ | 0.2− | 2004 01 23 | 699 | (1.6+ | 0.1+) | 2006 09 14 | 703 | 0.3+ | 0.3+ |
| 1999 12 07 | 704 | 0.3− | 0.6+ | 2004 01 23 | 704 | 0.7+ | 0.0 | 2006 09 14 | 703 | 0.5+ | 1.5− |
| 1999 12 07 | 704 | 0.7− | 0.6− | 2004 01 23 | 699 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.2+ | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 0.2− | 2004 01 23 | 704 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.0 | 0.0 |
| 1999 12 10 | 704 | 0.2− | 0.8+ | 2004 01 23 | 704 | 0.6− | 1.1+ | 2006 09 30 | 703 | 1.1− | 0.2+ |
| 1999 12 10 | 704 | 0.0 | 0.8+ | 2004 01 23 | 704 | 0.2− | 0.9+ | 2006 09 30 | 703 | (1.7− | 0.8+) |
| 1999 12 10 | 704 | 0.4+ | 1.2+ | 2004 02 10 | 644 | 1.2+ | 0.4+ | 2006 09 30 | 703 | 1.1− | 1.3+ |
| 2000 01 03 | 704 | 0.7− | 1.4− | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.7+ |
| 2000 01 03 | 704 | 1.4+ | 1.7− | 2004 02 10 | 644 | 0.5+ | 0.4+ | 2006 10 10 | 644 | 0.3+ | 0.4+ |
| 2000 01 03 | 704 | 0.8− | 1.4− | 2004 02 16 | 691 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2000 01 03 | 704 | 0.8+ | 0.8− | 2004 02 16 | 704 | (0.3+ | 1.6+) | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2000 01 04 | 704 | 0.1+ | 1.1− | 2004 02 16 | 704 | 0.7+ | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2000 01 04 | 704 | 0.2− | 1.2− | 2004 02 16 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.6+ |
| 2000 01 04 | 704 | 0.0 | 0.5− | 2004 02 16 | 704 | (0.8+ | 2.1+) | 2006 10 20 | 291 | 0.1− | 0.6+ |
| 2000 01 04 | 704 | 0.7+ | 0.6− | 2004 02 16 | 704 | 0.7+ | 0.6+ | 2006 10 20 | 291 | 0.0 | 0.7+ |
| 2000 01 04 | 704 | 0.8+ | 0.1− | 2004 02 16 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 291 | 0.3− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.6− | 0.0 | 2004 03 14 | 703 | (0.6− | 1.7+) | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2002 08 16 | 644 | 0.2+ | 0.2− | 2004 03 14 | 703 | 0.0 | 1.2+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 08 16 | 644 | 0.0 | 0.2+ | 2004 03 14 | 703 | (0.2+ | 2.3+) | 2006 11 09 | 644 | 0.2+ | 0.5+ |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2004 03 14 | 703 | 0.5− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 08 28 | 699 | (1.8− | 0.6+) | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.6− | 0.4− | 2006 11 25 | G96 | 0.5− | 0.2− |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2006 08 28 | 699 | (1.8− | 0.9+) | 2006 11 25 | G96 | 0.8+ | 0.4− |

**(137720)∗ 1999 XU$_{102}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.71687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25715632 | $\omega$ | 56.40928 | | −0.41584545 | −0.90826014 | |
| $a$ | 2.4490891 | $\Omega$ | 58.22929 | | +0.81534203 | −0.39485071 | |
| $e$ | 0.1648390 | $i$ | 3.11633 | | +0.40285224 | −0.13840674 | |
| $P$ | 3.83 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3− | 0.8− | 2003 11 20 | 704 | 0.8+ | 0.8+ | 2004 04 19 | 704 | 0.1+ | 0.5+ |
| 1999 12 07 | 704 | 0.8+ | 0.2+ | 2003 11 20 | 704 | 0.7+ | 1.1+ | 2004 04 19 | 704 | 1.0− | 0.1− |
| 1999 12 07 | 704 | 0.2+ | 0.2+ | 2003 11 20 | 704 | 0.3+ | 0.6+ | 2004 04 22 | 704 | 0.5+ | 0.2+ |
| 1999 12 10 | 704 | 1.4+ | 1.4− | 2003 11 20 | 704 | 1.0+ | 0.3+ | 2004 04 22 | 704 | 0.3− | 0.3+ |
| 1999 12 10 | 704 | 0.6+ | 1.1− | 2003 12 05 | 703 | 0.3+ | 1.0+ | 2004 04 22 | 704 | 1.5+ | 0.2+ |
| 1999 12 10 | 704 | 1.4+ | 0.5− | 2003 12 05 | 703 | 1.5− | 0.4− | 2004 04 22 | 704 | 1.0+ | 0.2+ |
| 1999 12 15 | 704 | 0.4+ | 0.9− | 2003 12 05 | 703 | 0.1− | 0.2− | 2004 04 22 | 704 | 1.0− | 0.8+ |
| 1999 12 15 | 704 | 0.8+ | 0.3− | 2003 12 05 | 703 | 0.8+ | 1.1+ | 2006 08 18 | 691 | 0.2− | 0.4+ |
| 1999 12 15 | 704 | 0.2+ | 0.8− | 2003 12 19 | 704 | 0.0 | 0.6+ | 2006 08 18 | 691 | 0.4− | 0.1+ |
| 1999 12 15 | 704 | 0.1+ | 1.0− | 2003 12 19 | 704 | 0.3+ | 0.7+ | 2006 08 18 | 691 | (1.7− | 1.6+) |
| 1999 12 15 | 704 | 0.3+ | 1.0− | 2003 12 19 | 704 | 0.7+ | 0.9+ | 2006 08 24 | 644 | 0.8− | 0.4+ |
| 2000 01 03 | 704 | 0.3− | 0.4− | 2003 12 19 | 704 | 0.4+ | 0.9+ | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2000 01 03 | 704 | 0.6− | 0.6− | 2004 01 18 | 644 | 0.2+ | 0.5+ | 2006 08 24 | 644 | 0.6− | 0.8+ |
| 2000 01 03 | 704 | 0.4− | 0.9− | 2004 01 18 | 644 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.5+ |
| 2000 01 03 | 704 | 0.9− | 1.2− | 2004 01 18 | 644 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.6+ |
| 2000 01 03 | 704 | 0.5− | 1.1− | 2004 01 28 | 703 | 0.0 | 0.1+ | 2006 09 18 | 703 | 1.2+ | 0.5+ |
| 2000 01 04 | 704 | 0.8− | 0.6− | 2004 01 28 | 703 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.6+ |
| 2000 01 04 | 704 | 0.2+ | 0.6− | 2004 01 28 | 703 | 0.2− | 0.3− | 2006 09 18 | 699 | 1.1+ | 0.0 |
| 2000 01 04 | 704 | 1.3− | 0.4− | 2004 01 28 | 703 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.2+ | 0.9+ |
| 2000 01 04 | 704 | 0.8− | 1.0− | 2004 01 30 | 704 | 0.1− | 0.1+ | 2006 09 18 | 699 | (0.8− | 2.2+) |
| 2000 01 04 | 704 | 0.8− | 1.1− | 2004 01 30 | 704 | 0.1+ | 1.0+ | 2006 09 18 | 699 | 0.2− | 0.0 |
| 2000 01 08 | 704 | 0.6+ | 0.2+ | 2004 01 30 | 704 | 0.5− | 0.9+ | 2006 09 19 | 703 | 0.3+ | 0.4− |
| 2000 01 08 | 704 | 0.8− | 0.2− | 2004 01 30 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.1− |
| 2000 01 08 | 704 | 0.1− | 1.3+ | 2004 01 30 | 704 | 1.0− | 0.2− | 2006 09 19 | 703 | 0.5− | 0.2− |
| 2000 01 08 | 704 | 0.7− | 0.2+ | 2004 02 10 | 644 | 0.1− | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2000 01 08 | 704 | 0.7− | 0.3+ | 2004 02 10 | 644 | 0.1− | 0.8+ | 2006 09 26 | 704 | 0.2+ | 0.6+ |
| 2000 01 10 | 704 | 0.3+ | 0.1− | 2004 02 10 | 644 | 0.0 | 0.8+ | 2006 09 26 | 704 | 0.1− | 0.4+ |
| 2000 01 10 | 704 | 0.3+ | 0.3+ | 2004 02 14 | 608 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.5+ | 0.5+ |
| 2000 01 10 | 704 | 0.6− | 0.5− | 2004 02 14 | 608 | 0.4+ | 0.2− | 2006 09 26 | 704 | (0.4+ | 1.7+) |
| 2000 01 10 | 704 | 0.0 | 0.1+ | 2004 02 14 | 608 | 0.5+ | 0.2− | 2006 09 30 | 703 | 1.1− | 0.6− |
| 2000 01 10 | 704 | 0.1− | 0.1+ | 2004 02 16 | 704 | 1.1+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.9− |
| 2000 01 25 | 704 | 0.5− | 0.2+ | 2004 02 16 | 704 | 0.7+ | 0.4− | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2000 01 25 | 704 | 0.7+ | 0.6− | 2004 02 16 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | (1.0+ | 2.3−) |
| 2000 01 25 | 704 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.4+ | 0.3− | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2000 01 25 | 704 | 1.3+ | 0.5− | 2004 02 16 | 704 | 0.9+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.7+ |
| 2000 01 25 | 704 | 0.0 | 0.4− | 2004 02 18 | 644 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.7+ |
| 2000 01 30 | 704 | 0.5+ | 0.2+ | 2004 02 18 | 644 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2000 01 30 | 704 | 0.5− | 0.5− | 2004 02 18 | 644 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2000 01 30 | 704 | 0.1+ | 1.3+ | 2004 02 19 | 608 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2000 01 30 | 704 | 0.2− | 0.7+ | 2004 02 19 | 608 | 0.5+ | 0.6+ | 2006 10 23 | 644 | 0.6− | 0.0 |
| 2002 08 30 | 644 | 0.4− | 1.0+ | 2004 02 19 | 608 | 0.6+ | 0.8+ | 2006 10 23 | 644 | 0.6− | 0.6+ |
| 2002 08 30 | 644 | 0.6− | 1.1+ | 2004 02 26 | 704 | 0.2− | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2002 08 30 | 644 | 0.4− | 1.1+ | 2004 02 26 | 704 | 0.2− | 0.8+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2003 10 29 | 704 | 0.4+ | 0.2+ | 2004 02 26 | 704 | 0.5− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2003 10 29 | 704 | 0.1+ | 0.8− | 2004 02 26 | 704 | 1.0− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2003 10 29 | 704 | 0.3− | 0.0 | 2004 04 19 | 704 | 0.3− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2003 11 20 | 704 | 0.8+ | 0.5+ | 2004 04 19 | 704 | 0.8+ | 1.3+ | | | | |

**(137721)∗ 1999 XW$_{103}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.39532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27091942 | $\omega$ | 345.35292 | | +0.55464051 | −0.82944070 | |
| $a$ | 2.3654256 | $\Omega$ | 70.92051 | | +0.77031538 | +0.48167959 | |
| $e$ | 0.1782375 | $i$ | 4.02573 | | +0.31462377 | +0.28286552 | |
| $P$ | 3.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5+ | 0.0 | 2004 02 26 | 704 | 0.2+ | 0.7+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 0.5− | 0.8− | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.2− |
| 1999 12 07 | 704 | 1.4− | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 683 | 0.2+ | 0.5− |
| 1999 12 10 | 704 | 0.4− | 0.2− | 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 11 11 | 683 | 1.0+ | 0.2+ |
| 1999 12 10 | 704 | 0.5− | 0.1− | 2004 02 26 | 704 | 0.7− | 0.5+ | 2006 11 11 | 683 | 0.2+ | 0.1+ |
| 1999 12 10 | 704 | 1.0− | 0.2− | 2004 03 15 | 703 | 0.4− | 0.9+ | 2006 11 11 | 703 | 1.0+ | 0.4+ |
| 1999 12 10 | 704 | 1.0− | 0.2+ | 2004 03 15 | 703 | (0.7− | 2.2+) | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2000 01 03 | 704 | 0.6− | 0.4− | 2004 03 15 | 703 | 0.7+ | 1.3+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2000 01 03 | 704 | 0.9+ | 0.0 | 2004 03 15 | 703 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2000 01 03 | 704 | 0.8+ | 0.6− | 2004 03 19 | 644 | 0.0 | 0.6+ | 2006 11 13 | 683 | 0.4+ | 0.7− |
| 2000 01 03 | 704 | 0.8+ | 1.0− | 2004 03 19 | 644 | 0.0 | 0.6+ | 2006 11 13 | 683 | 0.3+ | 1.0− |
| 2000 01 03 | 704 | 0.6+ | 0.5− | 2004 03 19 | 644 | 0.0 | 0.6+ | 2006 11 13 | 683 | 0.8− | 0.2+ |
| 2000 01 04 | 704 | 0.5+ | 0.3− | 2004 03 20 | 704 | 0.4− | 1.2+ | 2006 11 14 | 683 | 0.1− | 0.7− |
| 2000 01 04 | 704 | 0.4+ | 0.5− | 2004 03 20 | 704 | 0.0 | 0.9− | 2006 11 14 | 683 | (0.8− | 1.6−) |
| 2000 01 04 | 704 | 0.3+ | 0.6− | 2004 03 20 | 704 | 1.2+ | 0.1+ | 2006 11 14 | 683 | 0.2− | 0.3+ |
| 2000 01 04 | 704 | 1.2+ | 0.2+ | 2004 03 20 | 704 | 1.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2000 01 08 | 704 | 0.1+ | 0.8− | 2004 03 22 | 704 | 0.8+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2000 01 08 | 704 | 1.0− | 0.3− | 2004 03 22 | 704 | 1.2+ | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2000 01 08 | 704 | 0.1− | 0.6− | 2004 03 22 | 704 | (0.1− | 1.7+) | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2000 01 08 | 704 | 0.4+ | 0.7− | 2006 08 28 | 703 | 1.0+ | 0.3− | 2006 11 17 | 703 | 0.0 | 0.4− |
| 2000 01 08 | 704 | 0.6− | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.7− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2000 01 08 | 704 | 0.2+ | 1.0− | 2006 08 28 | 703 | 1.4+ | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.5− |
| 2000 01 08 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 1.3+ | 1.4− | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2000 01 08 | 704 | 0.5+ | 0.8− | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2000 01 08 | 704 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2000 01 30 | 704 | 0.2− | 1.0+ | 2006 10 11 | 691 | 0.2− | 1.1+ | 2006 11 18 | 704 | 0.2+ | 0.4− |
| 2000 01 30 | 704 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.5− |
| 2000 01 30 | 704 | 0.3+ | 0.4− | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2000 01 30 | 704 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2000 01 30 | 704 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.7− | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2002 08 19 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2002 08 19 | 644 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2002 08 30 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2002 08 30 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2002 09 05 | 608 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2002 09 05 | 608 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2002 09 05 | 608 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3− | 2006 11 22 | 683 | 0.6+ | 0.1+ |
| 2002 09 16 | 644 | 0.7− | 0.6+ | 2006 10 22 | 704 | 0.6− | 0.2− | 2006 11 22 | 683 | 0.2− | 0.9− |
| 2002 09 16 | 644 | 0.2− | 0.7+ | 2006 10 22 | 704 | 1.4− | 1.3+ | 2006 11 22 | 683 | (1.6− | 1.1−) |
| 2002 09 16 | 644 | 0.4− | 0.8+ | 2006 10 22 | 704 | 0.7− | 1.2+ | 2006 11 25 | 683 | 0.6+ | 0.9− |
| 2004 02 15 | 703 | 0.4− | 0.7+ | 2006 10 22 | 704 | (2.0− | 0.2+) | 2006 11 25 | 683 | 0.5+ | 0.6− |
| 2004 02 15 | 703 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.5+ | 2006 11 25 | 683 | 1.2+ | 0.7− |
| 2004 02 15 | 703 | 0.3+ | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 28 | 683 | 1.0+ | 1.6− |
| 2004 02 15 | 703 | 0.4− | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.8+ | 2006 11 28 | 683 | 2.2+ | 0.5− |
| 2004 02 17 | 704 | 0.6+ | 1.0+ | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 1.0+ |
| 2004 02 17 | 704 | 0.2+ | 1.4+ | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 28 | 683 | 1.1+ | 0.2+ |
| 2004 02 17 | 704 | 0.6+ | 0.5+ | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.6− | 0.4+ |
| 2004 02 17 | 704 | 1.5+ | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.6− | 1.1+ |
| 2004 02 26 | 704 | 0.3+ | 1.1+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2004 02 26 | 704 | 0.2+ | 1.0+ | 2006 11 08 | 644 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.5− | 1.2+ |
| 2004 02 26 | 704 | 0.2− | 1.2+ | 2006 11 10 | 644 | 0.2− | 0.1− | | | | |

**(137722)∗ 1999 XN$_{104}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.29568 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28742749 | $\omega$ | 119.61903 | | +0.83710817 | −0.37513149 | |
| $a$ | 2.2739654 | $\Omega$ | 264.97381 | | +0.24943725 | +0.90952092 | |
| $e$ | 0.3043955 | $i$ | 23.55883 | | +0.48685827 | +0.17901971 | |
| $P$ | 3.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.7+ | 0.8+ | 2002 06 10 | 704 | 0.7+ | 0.8+ | 2006 10 23 | 704 | 0.2+ | 0.6+ |
| 1999 11 01 | 704 | 0.3− | 0.8+ | 2002 06 10 | 704 | 0.6− | 0.0 | 2006 10 23 | 704 | 0.3+ | 0.1− |
| 1999 11 01 | 704 | 0.6− | 0.7+ | 2002 06 10 | 704 | 0.9+ | 1.3− | 2006 10 23 | 704 | 0.0 | 0.2+ |
| 1999 11 01 | 704 | 0.8− | 0.8+ | 2002 06 10 | 704 | 1.1− | 0.9+ | 2006 10 23 | 704 | (1.0+ | 1.7+) |
| 1999 12 07 | 704 | 0.1− | 0.7− | 2002 06 10 | 704 | 0.3− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.1− | 0.6− | 2002 06 10 | 704 | 0.7− | 0.9+ | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 1999 12 07 | 704 | 0.0 | 0.7− | 2002 06 10 | 704 | 0.9− | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 1999 12 10 | 704 | 0.1+ | 0.3+ | 2002 06 10 | 704 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 1999 12 10 | 704 | 0.1+ | 0.7+ | 2002 06 10 | 704 | 1.4− | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 1999 12 10 | 704 | 0.3+ | 0.4− | 2002 06 10 | 704 | 1.2− | 1.3+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 1999 12 10 | 704 | 0.5+ | 0.1+ | 2002 06 10 | 704 | (0.5− | 2.4+) | 2006 11 01 | G96 | 0.3+ | 0.1+ |
| 2000 01 05 | 704 | 0.3− | 0.0 | 2002 06 23 | 644 | 0.1+ | 1.2+ | 2006 11 17 | 704 | 0.7− | 0.5− |
| 2000 01 05 | 704 | 0.2+ | 0.0 | 2002 06 23 | 644 | 0.1+ | 0.9+ | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2000 01 05 | 704 | 0.1+ | 0.3+ | 2002 06 23 | 644 | 0.2+ | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2000 01 05 | 704 | 0.4+ | 0.1− | 2002 08 12 | 704 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.0 | 1.3+ |
| 2000 01 05 | 704 | 0.3+ | 0.3+ | 2002 08 12 | 704 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2000 01 06 | 704 | 0.2+ | 0.6− | 2002 08 12 | 704 | 0.1+ | 0.3− | 2006 11 20 | 704 | (0.5− | 2.3−) |
| 2000 01 06 | 704 | 0.2+ | 0.1+ | 2002 09 10 | 239 | 1.3+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 1.2+ |
| 2000 01 06 | 704 | 0.0 | 0.1− | 2002 09 10 | 239 | 0.4+ | 0.2− | 2006 11 20 | 704 | 1.3+ | 0.1− |
| 2000 01 06 | 704 | 0.1+ | 0.2+ | 2002 09 10 | 239 | (2.6+ | 0.8−) | 2006 11 28 | 704 | 0.3− | 0.3− |
| 2000 01 06 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 809 | 0.1+ | 1.1+ | 2006 11 28 | 704 | 0.1+ | 0.1− |
| 2000 01 07 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 809 | 0.0 | 1.2+ | 2006 11 28 | 704 | 0.3− | 1.0− |
| 2000 01 07 | 704 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.4− |
| 2000 01 07 | 704 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.6− |
| 2000 01 07 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.0 | | | | |
| 2000 01 07 | 704 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.1+ | | | | |

**(137723)∗ 1999 XR$_{107}$**

Discovered 1999 Dec. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.49594 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27586086 | $\omega$ | 30.23601 | | +0.40185335 | −0.91225442 | |
| $a$ | 2.3370930 | $\Omega$ | 36.23860 | | +0.81093961 | +0.31425928 | |
| $e$ | 0.1970906 | $i$ | 7.71986 | | +0.42531264 | +0.26274129 | |
| $P$ | 3.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 703 | 0.1+ | 0.6+ | 2000 01 06 | 704 | 0.2+ | 1.5− | 2006 09 16 | 704 | 0.2+ | 0.9+ |
| 1999 09 18 | 703 | 0.2− | 0.5+ | 2000 01 31 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 1999 09 18 | 703 | 0.2− | 0.6+ | 2000 01 31 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.1− |
| 1999 09 18 | 703 | 0.3+ | 0.9+ | 2000 01 31 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.2− |
| 1999 10 02 | 703 | 1.1+ | 0.3− | 2000 01 31 | 704 | 0.9+ | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.1+ |
| 1999 10 02 | 703 | 0.3+ | 0.2+ | 2000 01 31 | 704 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.7− | 0.3+ |
| 1999 10 02 | 703 | 0.6+ | 0.2+ | 2001 04 16 | 699 | (0.3+ | 3.5+) | 2006 09 18 | 699 | 0.5− | 0.3+ |
| 1999 10 02 | 703 | 0.1+ | 0.2− | 2001 04 16 | 699 | (0.1+ | 1.8+) | 2006 09 18 | 699 | 0.7− | 0.5+ |
| 1999 10 07 | 691 | 0.3+ | 0.5+ | 2001 04 16 | 699 | 1.2+ | 1.4+ | 2006 09 18 | 699 | 0.0 | 0.8+ |
| 1999 10 07 | 691 | 0.3+ | 0.5+ | 2001 04 16 | 699 | 1.3− | 0.6− | 2006 09 19 | 704 | 0.4− | 0.6+ |
| 1999 10 07 | 691 | 0.4+ | 0.3+ | 2001 04 23 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 704 | 0.1+ | 0.8+ |
| 1999 10 10 | 704 | 0.8− | 0.2+ | 2001 04 23 | 704 | 0.4− | 0.9+ | 2006 09 19 | 704 | 0.1+ | 0.7+ |
| 1999 10 10 | 704 | 0.6− | 0.5+ | 2001 04 23 | 704 | 0.2+ | 1.1+ | 2006 09 19 | 704 | 1.1− | 0.8+ |
| 1999 10 10 | 704 | 0.4− | 0.4+ | 2001 05 01 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 704 | 0.3− | 0.5+ |
| 1999 10 10 | 704 | 0.6− | 1.0+ | 2001 05 01 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 1999 10 10 | 704 | 1.0− | 0.5+ | 2001 05 01 | 691 | 1.0+ | 0.8+ | 2006 09 20 | 644 | 0.5− | 0.1+ |
| 1999 10 10 | 699 | 0.7− | 0.4+ | 2003 11 19 | 704 | 0.9+ | 0.7+ | 2006 09 20 | 644 | 0.5− | 0.0 |
| 1999 10 10 | 699 | 0.4− | 0.7− | 2003 11 19 | 704 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.2+ |
| 1999 10 10 | 699 | 0.0 | 0.4+ | 2003 11 19 | 704 | 0.2+ | 0.7− | 2006 09 22 | 704 | 0.1+ | 0.3− |
| 1999 10 13 | 691 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.3+ | 0.0 | 2006 09 22 | 704 | 0.3− | 0.1+ |
| 1999 10 13 | 691 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.5+ |
| 1999 10 13 | 691 | 0.0 | 0.1− | 2003 12 19 | 704 | 0.4+ | 1.0+ | 2006 09 22 | 704 | 0.3− | 0.1− |
| 1999 10 15 | 704 | 0.2− | 0.5+ | 2003 12 19 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.9+ | 0.3− |
| 1999 10 15 | 704 | 0.6− | 0.4+ | 2003 12 19 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.6+ | 0.7− |
| 1999 10 15 | 704 | 0.3− | 0.0 | 2003 12 27 | 704 | 0.8+ | 0.7+ | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 1999 10 15 | 704 | 0.4− | 0.2+ | 2003 12 27 | 704 | 1.0+ | 0.3− | 2006 09 26 | 704 | 0.9+ | 0.3− |
| 1999 10 19 | 691 | 0.1− | 0.2− | 2003 12 27 | 704 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.9+ | 0.6− |
| 1999 10 19 | 691 | 0.2− | 0.2− | 2003 12 27 | 704 | 1.5+ | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.1− |
| 1999 10 19 | 691 | 0.1− | 0.2− | 2003 12 27 | 704 | 1.3+ | 1.2+ | 2006 09 26 | 704 | 0.6+ | 0.3− |
| 1999 10 21 | 704 | 0.2+ | 0.3− | 2003 12 28 | 699 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 1.0+ | 0.2− |
| 1999 10 21 | 704 | 0.4− | 0.0 | 2003 12 28 | 699 | 0.3− | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1999 10 21 | 704 | 0.1− | 0.5− | 2003 12 28 | 699 | 1.3+ | 0.4− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 1999 10 21 | 704 | 0.0 | 0.1+ | 2003 12 28 | 699 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 1999 10 21 | 704 | 0.5− | 0.3+ | 2003 12 29 | 704 | 0.8+ | 0.3+ | 2006 09 28 | 704 | 0.2+ | 0.4+ |
| 1999 10 29 | 703 | 0.2+ | 0.4+ | 2003 12 29 | 704 | 1.1+ | 1.0+ | 2006 09 28 | 704 | 0.1+ | 0.7+ |
| 1999 10 29 | 703 | 0.1+ | 0.1− | 2003 12 29 | 704 | 1.4+ | 0.8+ | 2006 09 28 | 704 | 0.1− | 0.2+ |
| 1999 10 29 | 703 | 0.2+ | 0.4− | 2003 12 29 | 704 | (1.7+ | 1.7+) | 2006 09 28 | 704 | 0.2+ | 0.5+ |
| 1999 10 29 | 703 | 0.1− | 0.0 | 2003 12 30 | 704 | 0.6+ | 0.0 | 2006 09 30 | 704 | 0.3− | 0.6+ |
| 1999 10 30 | 691 | 0.0 | 0.2− | 2003 12 30 | 704 | (2.8+ | 1.1+) | 2006 09 30 | 704 | 0.6+ | 0.1+ |
| 1999 10 30 | 691 | 0.1− | 0.2− | 2003 12 30 | 704 | 1.5+ | 0.9+ | 2006 09 30 | 704 | 0.4+ | 0.9+ |
| 1999 10 30 | 691 | 0.1− | 0.3− | 2003 12 30 | 704 | (1.4+ | 2.0+) | 2006 09 30 | 704 | 0.8+ | 0.5+ |
| 1999 11 03 | 699 | 0.7+ | 0.0 | 2004 01 13 | 699 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.7+ |
| 1999 11 03 | 699 | 0.1− | 0.3+ | 2004 01 13 | 699 | 1.0− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 1999 11 03 | 699 | 0.2+ | 0.4− | 2004 01 13 | 699 | 1.0− | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 1999 11 04 | 704 | 0.6− | 0.5− | 2004 01 13 | 699 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.1− | 0.0 |
| 1999 11 04 | 704 | 0.4+ | 0.0 | 2004 01 20 | 704 | 0.5− | 0.9+ | 2006 10 15 | 106 | 0.2− | 0.2− |
| 1999 11 04 | 704 | 0.0 | 0.4− | 2004 01 20 | 704 | 0.2− | 0.2+ | 2006 10 15 | 106 | 0.4− | 0.3− |
| 1999 11 04 | 704 | 0.3+ | 0.2− | 2004 01 20 | 704 | 0.6− | 0.5+ | 2006 10 15 | 106 | 0.0 | 0.5− |
| 1999 11 04 | 704 | 0.1+ | 0.6− | 2004 01 20 | 704 | 0.1− | 0.5+ | 2006 10 15 | 106 | 0.0 | 0.0 |
| 1999 11 11 | 703 | 0.2− | 0.2− | 2004 01 31 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | (1.6− | 0.8+) |
| 1999 11 11 | 703 | 1.1− | 0.3+ | 2004 01 31 | 704 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.4− | 0.1− |
| 1999 11 11 | 703 | 1.3+ | 0.4+ | 2004 01 31 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 703 | (3.1− | 0.6+) |
| 1999 11 11 | 703 | 0.4− | 0.4− | 2004 02 10 | 644 | 0.3+ | 0.0 | 2006 10 16 | 703 | (2.4− | 0.4−) |
| 1999 11 12 | 699 | 0.1− | 0.6+ | 2004 02 10 | 644 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.0 |
| 1999 11 12 | 699 | 0.5+ | 0.6− | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.5− | 0.1+ |
| 1999 11 12 | 699 | 0.1− | 0.2− | 2004 02 10 | 644 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.0 |
| 1999 11 14 | 704 | 0.4+ | 0.0 | 2004 02 10 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 11 14 | 704 | 0.4+ | 0.2− | 2004 02 10 | 644 | 0.1− | 0.1− | 2006 10 21 | 703 | (0.3− | 2.1+) |
| 1999 11 14 | 703 | 0.2− | 0.1+ | 2004 02 14 | 703 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 14 | 704 | 0.6+ | 0.6− | 2004 02 14 | 703 | 1.1− | 0.8− | 2006 10 21 | 703 | (0.1+ | 2.0+) |
| 1999 11 14 | 704 | 0.6+ | 0.6− | 2004 02 14 | 703 | 0.0 | 0.4+ | 2006 10 21 | 703 | (0.2− | 2.1+) |
| 1999 11 14 | 703 | 0.3− | 0.1+ | 2004 02 14 | 703 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 11 14 | 704 | 0.3+ | 0.8− | 2004 02 15 | 704 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.0 | 0.4+ |
| 1999 11 14 | 703 | 0.3+ | 0.1− | 2004 02 15 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 704 | 0.0 | 1.2+ |
| 1999 11 14 | 703 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 0.4− | 0.1− | 2006 10 22 | 704 | 1.0− | 0.4+ |
| 1999 11 16 | 704 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.4− | 0.3− | 2006 10 22 | 704 | 0.0 | 0.1− |
| 1999 11 16 | 704 | 0.1− | 0.2+ | 2004 02 15 | 704 | 0.2− | 0.1+ | 2006 10 22 | 704 | 0.8− | 0.3+ |
| 1999 11 16 | 704 | 0.1+ | 0.2+ | 2004 03 10 | 703 | 0.5− | 0.6+ | 2006 10 22 | 704 | 0.6− | 1.2− |
| 1999 11 16 | 704 | 0.2+ | 0.2− | 2004 03 10 | 703 | 0.6+ | 0.7+ | 2006 10 27 | 704 | 0.0 | 0.6− |
| 1999 11 16 | 704 | 0.9+ | 0.0 | 2004 03 10 | 703 | 0.5+ | 0.6+ | 2006 10 27 | 704 | 0.8− | 0.6+ |
| 1999 12 04 | 703 | 0.6− | 0.1+ | 2004 03 10 | 703 | 0.5− | 0.5− | 2006 10 27 | 704 | 0.2− | 0.3− |
| 1999 12 04 | 703 | 0.1− | 0.4+ | 2004 03 14 | 704 | 0.1− | 1.0+ | 2006 10 27 | 704 | 0.8+ | 1.4+ |
| 1999 12 04 | 703 | 0.3− | 0.4− | 2004 03 14 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.5− | 0.1+ |
| 1999 12 04 | 703 | 0.3− | 1.0+ | 2004 03 14 | 704 | 0.6+ | 0.5+ | 2006 11 10 | 704 | 0.4+ | 0.1+ |
| 1999 12 07 | 699 | 1.2+ | 0.1− | 2004 03 18 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.1+ |
| 1999 12 07 | 699 | 0.6− | 0.1+ | 2004 03 18 | 644 | 0.0 | 0.3+ | 2006 11 10 | 704 | 0.5+ | 1.2+ |
| 1999 12 07 | 699 | 0.4+ | 0.4+ | 2004 03 18 | 644 | 0.1− | 0.3+ | 2006 11 10 | 704 | 0.5− | 0.7+ |
| 1999 12 08 | 704 | 0.7+ | 1.3− | 2004 03 23 | 704 | 0.1+ | 1.1+ | 2006 11 10 | 644 | 0.6− | 0.0 |
| 1999 12 08 | 704 | 0.4+ | 0.2− | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 704 | 0.5− | 0.1+ |
| 1999 12 08 | 704 | 0.5+ | 0.7− | 2004 03 23 | 704 | 0.1+ | 0.2− | 2006 11 10 | 704 | 0.6− | 0.2+ |
| 1999 12 08 | 704 | 0.8+ | 0.3− | 2004 03 23 | 704 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1999 12 08 | 704 | 0.1+ | 0.1+ | 2004 04 14 | 704 | 0.9− | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 1999 12 12 | 703 | 0.8− | 0.3+ | 2004 04 14 | 704 | 0.1− | 1.0+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 1999 12 12 | 703 | 0.6− | 0.6+ | 2004 04 14 | 704 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 1999 12 12 | 703 | 0.0 | 0.2− | 2004 04 14 | 704 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 703 | 0.5− | 0.6− | 2005 01 22 | 809 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.7+ | 0.9+ |
| 2000 01 04 | 704 | 0.1− | 0.7− | 2005 01 22 | 809 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2000 01 04 | 704 | 0.3+ | 0.7− | 2006 09 12 | 703 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2000 01 04 | 704 | 0.2− | 0.7− | 2006 09 12 | 703 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.6− | 1.3+ |
| 2000 01 04 | 704 | 0.5+ | 0.7− | 2006 09 12 | 703 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2000 01 04 | 704 | 0.7+ | 0.7− | 2006 09 12 | 703 | 0.7− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2000 01 06 | 704 | 0.7+ | 1.5− | 2006 09 16 | 704 | 0.6− | 1.2+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2000 01 06 | 704 | 0.2+ | 0.9− | 2006 09 16 | 704 | (1.3− | 1.9+) | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2000 01 06 | 704 | 0.8+ | 1.1− | 2006 09 16 | 704 | 1.1− | 0.6+ | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2000 01 06 | 704 | 0.5+ | 1.3− | 2006 09 16 | 704 | 0.3− | 0.7+ | | | | |

**(137724)∗ 1999 XW$_{111}$ = 1994 JB$_7$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (MPC 37938)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.28269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27725773 | $\omega$ | 356.18561 | | +0.58206136 | −0.81136430 | |
| $a$ | 2.3292366 | $\Omega$ | 58.21075 | | +0.74771019 | +0.50805520 | |
| $e$ | 0.1435729 | $i$ | 3.62777 | | +0.31958418 | +0.28908112 | |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 05 | 691 | 0.0 | 0.2− | 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1994 05 05 | 691 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.8+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 1994 05 05 | 691 | 0.6− | 0.3+ | 2004 02 16 | 704 | 0.8+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1994 05 11 | 691 | 0.3+ | 0.5− | 2004 02 16 | 704 | 0.7+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1994 05 11 | 691 | 0.2− | 1.1− | 2004 02 16 | 704 | 0.8− | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.1− |
| 1994 05 11 | 691 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.4+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 1999 11 09 | 704 | 0.5− | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.1− | 0.3− | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 1999 11 09 | 704 | 0.3− | 0.4− | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 1999 11 09 | 704 | 0.4− | 0.5− | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.2− |
| 1999 11 09 | 704 | 0.5− | 0.1− | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 1999 11 12 | 704 | 0.3+ | 0.1+ | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 1999 11 12 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 1999 11 12 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 1999 11 12 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.5− |
| 1999 11 16 | 704 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.2− | 0.8+ | 2006 11 17 | 703 | 0.6− | 0.9− |
| 1999 11 16 | 704 | 0.0 | 0.5− | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | (1.7+ | 0.9−) |
| 1999 11 16 | 704 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.6− |
| 1999 12 07 | 704 | 0.0 | 0.7− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.1+ | 0.6− | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 1999 12 07 | 704 | 0.2− | 0.5− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.5− |
| 1999 12 07 | 704 | 0.6+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.4+ |
| 1999 12 07 | 704 | 0.3+ | 0.6− | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 1.2+ | 0.2+ |
| 1999 12 12 | 704 | 0.4+ | 1.1− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 1999 12 12 | 704 | 0.4+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 1.0+ | 0.3− |
| 1999 12 12 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | (1.1− | 2.0−) |
| 1999 12 12 | 704 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.4− |
| 1999 12 12 | 704 | 0.4+ | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 1.3+ | 0.3− |
| 1999 12 13 | 704 | 0.4− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.1− | 0.4− |
| 1999 12 13 | 704 | 0.5+ | 0.7− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 1999 12 13 | 704 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 1999 12 13 | 704 | 0.4+ | 1.8− | 2006 10 28 | 691 | 0.6− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 1999 12 13 | 704 | 1.5+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 1999 12 13 | 704 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 1999 12 13 | 704 | 0.8− | 1.0− | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 1999 12 13 | 704 | 1.1+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2002 08 11 | 644 | 0.7+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1− | 0.6− |
| 2002 08 11 | 644 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.6− | 0.5+ |
| 2002 08 11 | 644 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.6− | 0.4+ |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.1+ | | | | |

**(137725)∗ 1999 XY$_{111}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.41776 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27093929 | $\omega$ | 102.37202 | | +0.64207613 | −0.76658514 | |
| $a$ | 2.3653099 | $\Omega$ | 307.67724 | | +0.69876291 | +0.59014544 | |
| $e$ | 0.1835182 | $i$ | 0.66927 | | +0.31538649 | +0.25313156 | |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 809 | 0.2+ | 0.2− | 2004 02 17 | 704 | 0.1+ | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 1995 09 17 | 691 | 0.3+ | 0.8− | 2004 02 26 | 704 | 0.4− | 1.1+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1995 09 17 | 691 | 0.1+ | 0.6− | 2004 02 26 | 704 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.2− |
| 1995 09 17 | 691 | 0.1+ | 0.6− | 2004 02 26 | 704 | 0.9− | 0.6− | 2006 09 27 | 704 | 1.2+ | 0.0 |
| 1995 09 20 | 809 | (2.4+ | 0.5+) | 2004 02 26 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.5− |
| 1995 09 22 | 809 | 1.0+ | 0.3+ | 2005 06 14 | G96 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.9+ | 0.1+ |
| 1999 11 09 | 704 | 0.2+ | 0.3+ | 2005 06 14 | G96 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.7+ |
| 1999 11 09 | 704 | 0.2+ | 0.1+ | 2005 06 14 | G96 | 0.7+ | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.8+ |
| 1999 11 09 | 704 | 0.2− | 0.4+ | 2005 06 14 | G96 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.7+ |
| 1999 11 09 | 704 | 1.1+ | 0.7− | 2006 07 21 | G96 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.1− |
| 1999 11 09 | 704 | 0.5+ | 0.6+ | 2006 07 21 | G96 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 1999 11 12 | 704 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.6+ | 0.0 |
| 1999 11 12 | 704 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.2− | 0.2− |
| 1999 11 12 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.4+ |
| 1999 11 12 | 704 | 0.7+ | 0.4− | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.7+ |
| 1999 11 12 | 704 | 0.1+ | 0.1− | 2006 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 1999 11 16 | 704 | 0.8+ | 1.2− | 2006 09 17 | 704 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | 0.4+ | 1.3− | 2006 09 17 | 704 | 0.6− | 0.8− | 2006 10 02 | 691 | 0.4− | 0.4+ |
| 1999 11 16 | 704 | 0.0 | 0.3− | 2006 09 17 | 704 | 0.6− | 0.7+ | 2006 10 02 | 691 | 0.4− | 0.3+ |
| 1999 11 16 | 704 | 0.9− | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 1999 12 07 | 704 | 0.4− | 0.9− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 12 07 | 704 | 0.1+ | 0.5− | 2006 09 19 | 703 | 1.2− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1999 12 07 | 704 | 0.6− | 0.6− | 2006 09 19 | 699 | 1.2− | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.7+ |
| 1999 12 07 | 704 | 0.4− | 0.7− | 2006 09 19 | 703 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 12 12 | 704 | 1.3− | 1.9+ | 2006 09 19 | 703 | (2.3+ | 2.5+) | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 1999 12 12 | 704 | 0.9+ | 0.7+ | 2006 09 19 | 699 | 0.8− | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 1999 12 12 | 704 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.6+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 1999 12 12 | 704 | 0.0 | 1.5− | 2006 09 19 | 699 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.2− | 0.4− |
| 1999 12 12 | 704 | 0.9+ | 0.8− | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 1999 12 13 | 704 | 0.4+ | 0.4− | 2006 09 20 | 704 | 0.3+ | 0.6− | 2006 10 28 | G96 | 0.4− | 0.3− |
| 1999 12 13 | 704 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 1999 12 13 | 704 | 0.5− | 0.5− | 2006 09 20 | 704 | 0.5+ | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 1999 12 13 | 704 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3+ |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 09 21 | A50 | 0.8− | 0.4+ | 2006 11 15 | G96 | 0.5− | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.7− | 0.1− |
| 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.5− |
| 2004 02 17 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 691 | 0.0 | 0.4+ | | | | |
| 2004 02 17 | 704 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− | | | | |

**(137726)∗ 1999 XL$_{115}$ = 2002 PL$_{115}$ = 2002 QX$_{16}$**

Discovered 1999 Dec. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 34833)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.44417 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29404672 | $\omega$ | 157.80278 | | +0.47066972 | −0.87683659 | |
| $a$ | 2.2397102 | $\Omega$ | 264.00034 | | +0.79395384 | +0.46941619 | |
| $e$ | 0.1719619 | $i$ | 5.66206 | | +0.38484713 | +0.10395203 | |
| $P$ | 3.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 703 | 0.4− | 0.1+ | 2000 01 09 | 691 | 0.1+ | 0.4− | 2002 09 15 | 608 | (2.3− | 1.4+) |
| 1999 11 09 | 703 | 0.4− | 0.2+ | 2000 01 09 | 691 | 0.2+ | 0.5− | 2002 10 04 | 704 | 1.2+ | 0.5+ |
| 1999 11 09 | 703 | 0.9− | 0.1− | 2000 01 09 | 691 | 0.0 | 0.5− | 2002 10 04 | 704 | 0.7+ | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 703 | 0.6+ | 0.8+ | 2000 02 03 | 704 | 0.2− | 0.4+ | 2002 10 04 | 704 | 1.0+ | 0.8+ |
| 1999 11 14 | 704 | 0.2− | 0.0 | 2000 02 03 | 704 | 0.4− | 0.9+ | 2002 10 04 | 704 | 1.4+ | 0.6+ |
| 1999 11 14 | 704 | 0.0 | 0.0 | 2000 02 03 | 704 | 1.9− | 0.7+ | 2002 10 04 | 704 | 1.0+ | 0.5+ |
| 1999 11 14 | 704 | 0.4− | 0.1+ | 2002 08 12 | 704 | 0.1− | 0.8− | 2004 03 27 | 704 | 0.1+ | 1.4+ |
| 1999 11 14 | 704 | 0.4− | 0.4+ | 2002 08 12 | 704 | 0.7+ | 0.7− | 2004 03 27 | 704 | 0.3+ | 0.7+ |
| 1999 11 16 | 704 | 0.6+ | 0.5− | 2002 08 12 | 704 | 0.9+ | 0.6− | 2004 03 27 | 704 | 0.6+ | 0.2+ |
| 1999 11 16 | 704 | 0.5− | 0.1+ | 2002 08 12 | 704 | 0.5+ | 0.6+ | 2004 03 27 | 704 | 0.3+ | 0.4+ |
| 1999 11 16 | 704 | 0.3− | 0.0 | 2002 08 12 | 704 | 0.9+ | 0.4+ | 2004 03 27 | 704 | 0.7+ | 0.0 |
| 1999 11 16 | 704 | 0.1− | 0.5− | 2002 08 27 | 644 | 0.2− | 0.4+ | 2004 03 27 | 704 | 0.9+ | 0.8+ |
| 1999 11 16 | 704 | 0.3+ | 1.1− | 2002 08 27 | 644 | 0.2− | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.3− |
| 1999 12 04 | 703 | 0.4− | 0.5+ | 2002 08 27 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.8+ | 0.6+ |
| 1999 12 04 | 703 | 0.3− | 0.6+ | 2002 08 28 | 644 | 0.4− | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.1+ |
| 1999 12 04 | 703 | 0.1− | 0.5+ | 2002 08 28 | 644 | 0.0 | 0.4+ | 2004 04 16 | 644 | 0.3+ | 0.7+ |
| 1999 12 04 | 703 | 0.2+ | 0.9+ | 2002 08 28 | 644 | 0.2− | 0.4+ | 2004 04 16 | 644 | 0.7+ | 0.3+ |
| 1999 12 13 | 703 | 1.4− | 0.2+ | 2002 09 04 | 699 | 0.2− | 1.1+ | 2004 04 16 | 644 | 0.3+ | 0.4+ |
| 1999 12 13 | 703 | 0.2+ | 0.5+ | 2002 09 04 | 699 | 0.1+ | 0.4+ | 2005 06 05 | 691 | 0.9− | 1.4− |
| 1999 12 13 | 703 | 1.4− | 0.3+ | 2002 09 04 | 699 | 0.4− | 0.1− | 2005 06 05 | 691 | 0.1− | 0.3− |
| 1999 12 13 | 703 | 0.6− | 0.2+ | 2002 09 04 | 699 | (2.0+ | 0.3−) | 2005 06 05 | 691 | 0.2− | 0.1− |
| 1999 12 14 | 691 | 0.1+ | 0.1+ | 2002 09 07 | 704 | 0.6− | 0.8+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 1999 12 14 | 691 | 0.4− | 0.4+ | 2002 09 07 | 704 | 0.1− | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 1999 12 14 | 691 | 0.2+ | 0.0 | 2002 09 07 | 704 | 0.0 | 0.9+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 0.2− | 0.2− | 2002 09 07 | 704 | 0.1− | 0.9+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2000 01 04 | 704 | 0.4+ | 1.1− | 2002 09 12 | 644 | 0.3− | 0.4+ | 2006 11 22 | G96 | 0.4− | 0.2+ |
| 2000 01 04 | 704 | 0.6+ | 0.4− | 2002 09 12 | 644 | 0.7− | 0.5+ | 2006 11 22 | G96 | 0.1− | 0.3+ |
| 2000 01 04 | 704 | 1.1+ | 1.2− | 2002 09 12 | 644 | 0.6− | 0.3+ | 2006 11 22 | G96 | 0.7− | 0.3+ |
| 2000 01 06 | 704 | 1.2+ | 0.1+ | 2002 09 13 | 644 | 0.6− | 0.2− | 2006 11 22 | G96 | 0.4− | 0.1+ |
| 2000 01 06 | 704 | 0.5+ | 0.6− | 2002 09 13 | 644 | 0.3− | 0.2− | 2006 11 28 | 683 | 1.1+ | 1.5− |
| 2000 01 06 | 704 | 0.3− | 0.0 | 2002 09 13 | 644 | 0.2− | 0.6− | 2006 11 28 | 683 | 1.2+ | 0.5+ |
| 2000 01 06 | 704 | 1.3+ | 0.1− | 2002 09 15 | 608 | (1.7− | 1.8+) | 2006 11 28 | 683 | 1.2− | 0.4− |
| 2000 01 06 | 704 | 1.4+ | 0.2− | 2002 09 15 | 608 | (2.0− | 1.6+) | | | | |

**(137727)∗ 1999 XG$_{117}$ = 2002 NB$_{25}$**

Discovered 1999 Dec. 5 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 33164)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.86739 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.29809590 | $\omega$ | 56.36088 | | +0.93094929 | +0.35535412 |
| $a$ | 2.2193820 | $\Omega$ | 282.70087 | | −0.35701408 | +0.83750704 |
| $e$ | 0.2123694 | $i$ | 4.93999 | | −0.07664441 | +0.41509686 |
| $P$ | 3.31 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 0.9− | 2002 08 05 | 644 | 0.0 | 0.0 | 2002 10 06 | 704 | 0.3− | 0.2+ |
| 1999 10 12 | 704 | 0.4+ | 0.5+ | 2002 08 05 | 644 | 0.1+ | 0.1+ | 2002 10 06 | 704 | 0.0 | 0.5− |
| 1999 10 12 | 704 | 0.6+ | 0.8− | 2002 08 05 | 644 | 0.1+ | 0.1+ | 2002 10 08 | 699 | 0.7+ | 0.7− |
| 1999 10 12 | 704 | 0.6+ | 0.5− | 2002 08 06 | 644 | 0.3+ | 0.1− | 2002 10 08 | 699 | 0.1− | 0.1− |
| 1999 10 12 | 704 | 1.1+ | 0.5− | 2002 08 06 | 644 | 0.1+ | 0.0 | 2002 10 08 | 699 | 0.8+ | 0.5− |
| 1999 10 13 | 704 | 0.2+ | 0.2+ | 2002 08 06 | 644 | 0.3+ | 0.1− | 2002 10 08 | 699 | 0.3+ | 0.0 |
| 1999 10 13 | 704 | 0.1− | 0.6− | 2002 08 08 | 699 | 0.1− | 0.2+ | 2002 10 12 | 704 | 0.6− | 0.4− |
| 1999 10 13 | 704 | 0.4+ | 0.5− | 2002 08 08 | 699 | 0.1+ | 0.2+ | 2002 10 12 | 704 | 0.7+ | 0.8− |
| 1999 10 13 | 704 | 0.4+ | 0.1− | 2002 08 08 | 699 | 0.2+ | 0.1+ | 2002 10 12 | 704 | 0.6+ | 0.1− |
| 1999 10 13 | 704 | 0.4+ | 0.3− | 2002 08 08 | 699 | 0.1+ | 0.2+ | 2002 10 12 | 704 | 0.4+ | 0.7− |
| 1999 11 13 | 703 | 0.7− | 0.4+ | 2002 08 09 | 704 | 1.0− | 0.3− | 2002 10 28 | 608 | 0.3+ | 0.7− |
| 1999 11 13 | 703 | 0.1− | 0.6+ | 2002 08 09 | 704 | 0.1+ | 0.2− | 2002 10 28 | 608 | 0.1− | 1.0− |
| 1999 11 13 | 703 | 0.2− | 1.9+ | 2002 08 09 | 704 | 0.1+ | 0.3+ | 2002 10 28 | 608 | 0.4− | 1.4− |
| 1999 11 13 | 703 | (2.1− | 0.1+) | 2002 08 09 | 704 | 0.3+ | 0.2+ | 2002 11 08 | 704 | 0.4− | 0.9+ |
| 1999 12 05 | 703 | 0.4− | 0.2+ | 2002 08 09 | 704 | 0.3+ | 0.3+ | 2002 11 08 | 704 | 0.1− | 0.6+ |
| 1999 12 05 | 703 | 0.0 | 0.3+ | 2002 08 12 | 704 | 0.2+ | 0.5+ | 2002 11 08 | 704 | 0.5+ | 0.3− |
| 1999 12 05 | 703 | 0.3− | 0.2+ | 2002 08 12 | 704 | 0.3+ | 0.2− | 2002 11 08 | 704 | 0.1− | 0.3+ |
| 1999 12 05 | 703 | 0.2− | 0.6+ | 2002 08 12 | 704 | 0.1− | 0.3+ | 2002 11 12 | 704 | 0.2+ | 0.7+ |
| 1999 12 08 | 704 | 0.6− | 0.5+ | 2002 08 12 | 704 | 0.0 | 1.0+ | 2002 11 12 | 704 | 0.2+ | 0.4− |
| 1999 12 08 | 704 | 0.5+ | 0.3− | 2002 08 16 | 644 | 0.1+ | 0.2− | 2002 11 12 | 704 | 0.9− | 0.7+ |
| 1999 12 08 | 704 | 0.9− | 0.0 | 2002 08 16 | 644 | 0.2+ | 0.1− | 2002 11 12 | 704 | 0.3+ | 0.2− |
| 1999 12 08 | 704 | 0.2+ | 0.1+ | 2002 08 16 | 644 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.7+ | 0.9+ |
| 1999 12 08 | 704 | 0.7− | 0.2− | 2002 08 26 | 644 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.3+ | 1.1+ |
| 1999 12 13 | 703 | 0.3− | 0.1+ | 2002 08 26 | 644 | 0.3− | 0.0 | 2004 02 17 | 704 | 1.2+ | 0.8+ |
| 1999 12 13 | 703 | 0.9− | 0.2− | 2002 08 26 | 644 | 0.3− | 0.0 | 2004 02 17 | 704 | 0.7+ | 0.4+ |
| 1999 12 13 | 703 | 0.8− | 0.3− | 2002 09 06 | 704 | 0.4+ | 0.2+ | 2004 02 17 | 704 | 0.1+ | 0.5+ |
| 1999 12 13 | 703 | 0.4− | 0.7+ | 2002 09 06 | 704 | 0.1+ | 0.0 | 2005 01 19 | 809 | 0.3− | 0.2+ |
| 2000 01 06 | 704 | 0.6− | 0.1+ | 2002 09 06 | 704 | 0.4+ | 0.3+ | 2005 01 19 | 809 | 0.1+ | 0.2+ |
| 2000 01 06 | 704 | 0.1− | 0.9+ | 2002 09 06 | 704 | 0.1+ | 0.3− | 2005 05 22 | 644 | 0.3− | 0.2− |
| 2000 01 06 | 704 | 0.6+ | 1.0+ | 2002 09 06 | 704 | 0.1+ | 0.4− | 2005 05 22 | 644 | 0.2− | 0.2+ |
| 2000 01 06 | 704 | 0.2+ | 1.3+ | 2002 09 09 | 608 | 0.1− | 0.5− | 2005 05 22 | 644 | 0.2− | 0.5+ |
| 2002 06 25 | 608 | 0.1+ | 0.2+ | 2002 09 09 | 608 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.6− | 0.0 |
| 2002 06 25 | 608 | 0.3− | 0.3+ | 2002 09 09 | 608 | 0.3− | 0.4− | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2002 06 25 | 608 | 0.1− | 0.0 | 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.1− |
| 2002 07 09 | 704 | 0.6− | 0.4+ | 2002 09 13 | 644 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.6+ | 0.1+ |
| 2002 07 09 | 704 | 0.2− | 0.3+ | 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.2+ |
| 2002 07 09 | 704 | 0.6− | 0.4+ | 2002 10 04 | 704 | 0.3− | 0.2+ | 2006 10 29 | G96 | 0.3+ | 0.1− |
| 2002 07 09 | 704 | 1.2+ | 1.4+ | 2002 10 04 | 704 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.2− |
| 2002 07 09 | 704 | 0.6− | 0.6+ | 2002 10 04 | 704 | 0.0 | 0.6+ | 2006 10 29 | G96 | 0.3+ | 0.5− |
| 2002 07 14 | 704 | 0.1+ | 0.5+ | 2002 10 04 | 704 | 0.1− | 0.2+ | 2006 11 15 | G96 | 1.0− | 0.7+ |
| 2002 07 14 | 704 | 0.8− | 0.7+ | 2002 10 04 | 704 | 0.2+ | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2002 07 14 | 704 | 0.7− | 0.4+ | 2002 10 06 | 704 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 07 14 | 704 | 0.9− | 0.1− | 2002 10 06 | 704 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 07 14 | 704 | 1.2− | 1.1+ | 2002 10 06 | 704 | 0.2− | 0.0 | | | | |

**(137728)∗ 1999 XP$_{117}$**

Discovered 1999 Dec. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.90244 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27531869 | $\omega$ | 337.13136 | | +0.99175620 | −0.11205250 |
| $a$ | 2.3401602 | $\Omega$ | 29.51153 | | +0.12812195 | +0.85919235 |
| $e$ | 0.1799453 | $i$ | 7.24937 | | +0.00209793 | +0.49923215 |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3+ | 0.3− | 2003 12 29 | 704 | (1.9+ | 0.9−) | 2006 10 01 | 704 | 0.7+ | 1.3+ |
| 1999 10 06 | 704 | 0.9+ | 0.1− | 2004 01 27 | 703 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 1999 10 06 | 704 | 0.7+ | 0.4− | 2004 01 27 | 703 | 0.5− | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 0.8+ | 0.0 | 2004 01 27 | 703 | (0.1+ | 1.5+) | 2006 10 01 | 691 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 0.0 | 0.2+ | 2004 01 27 | 703 | 0.3− | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 1999 10 12 | 704 | 0.3+ | 0.4− | 2004 02 09 | 644 | 0.5+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 1999 10 12 | 704 | 0.3+ | 0.2+ | 2004 02 09 | 644 | 0.3+ | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 1999 10 12 | 704 | 0.8+ | 0.8− | 2004 02 09 | 644 | 0.3+ | 1.1+ | 2006 10 15 | 703 | 0.1− | 0.2+ |
| 1999 10 12 | 704 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.7+ | 2006 10 15 | 703 | 0.4− | 0.4− |
| 1999 10 12 | 704 | 0.8+ | 0.4− | 2005 05 01 | 644 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.2− | 0.2+ |
| 1999 10 22 | 704 | 0.4+ | 0.3− | 2005 05 01 | 644 | 0.2+ | 0.6+ | 2006 10 15 | 703 | 0.5− | 0.3− |
| 1999 10 22 | 704 | 0.2+ | 0.5− | 2006 08 19 | 699 | 0.4− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 10 22 | 704 | 0.0 | 0.3+ | 2006 08 19 | 699 | 0.6− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1999 10 22 | 704 | 0.4− | 0.3− | 2006 08 19 | 699 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1999 11 03 | 704 | 0.3− | 1.4− | 2006 08 19 | 699 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.8− |
| 1999 11 03 | 704 | 0.5+ | 0.8− | 2006 09 21 | 699 | 0.9− | 0.1− | 2006 10 21 | 703 | 0.4− | 0.4− |
| 1999 11 03 | 704 | 1.0+ | 0.6− | 2006 09 21 | 699 | 0.9− | 0.3+ | 2006 10 21 | 703 | 0.8+ | 0.1+ |
| 1999 11 03 | 704 | 0.1+ | 0.7− | 2006 09 21 | 699 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.2− |
| 1999 11 03 | 704 | 1.0+ | 0.8− | 2006 09 21 | 699 | 0.0 | 0.4− | 2006 10 23 | 704 | 0.6− | 0.8+ |
| 1999 11 09 | 703 | 1.4− | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.2+ | 0.7+ |
| 1999 11 09 | 703 | 0.6− | 0.0 | 2006 09 22 | 704 | 0.7− | 0.2− | 2006 10 23 | 704 | 0.3+ | 0.2− |
| 1999 11 09 | 703 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 704 | 0.7− | 0.2+ |
| 1999 11 09 | 703 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.2− | 0.5− | 2006 10 28 | 704 | 0.2− | 0.2− |
| 1999 11 16 | 704 | 0.3− | 0.4− | 2006 09 22 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 0.5+ | 0.8+ |
| 1999 11 16 | 704 | 0.1− | 0.7− | 2006 09 25 | 699 | 0.4− | 0.1− | 2006 10 28 | 704 | 0.2+ | 0.2+ |
| 1999 11 16 | 704 | 0.4+ | 0.5− | 2006 09 25 | 699 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 0.8− | 0.2+ |
| 1999 11 16 | 704 | 0.6+ | 0.9− | 2006 09 25 | 699 | 0.2− | 0.5+ | 2006 10 28 | 704 | 0.1− | 1.0+ |
| 1999 11 16 | 704 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 1999 12 05 | 703 | 1.6− | 0.7− | 2006 09 26 | 704 | 0.6− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1999 12 05 | 703 | 1.3− | 0.5+ | 2006 09 26 | 704 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 1999 12 05 | 703 | (1.8− | 2.6+) | 2006 09 26 | 704 | 0.9+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 1999 12 05 | 703 | 1.2− | 0.2− | 2006 09 26 | 704 | (1.6− | 0.6−) | 2006 11 11 | 703 | 0.4− | 0.1− |
| 1999 12 13 | 703 | 0.1− | 1.1+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 1999 12 13 | 703 | 1.3+ | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.6− |
| 1999 12 13 | 703 | 0.4− | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 1999 12 13 | 703 | 0.3− | 0.5+ | 2006 09 29 | 699 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2003 12 27 | 704 | 0.5+ | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | (2.3+ | 0.7+) | 2006 09 29 | 699 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.0 | | |
| 2003 12 27 | 704 | 0.4+ | 1.2+ | 2006 09 29 | 699 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.5+ | 0.3− | | |
| 2003 12 27 | 704 | 0.4− | 0.2+ | 2006 10 01 | 704 | 0.3+ | 1.2+ | 2006 11 27 | G96 | 0.1+ | 0.2− | | |
| 2003 12 29 | 704 | 0.3+ | 0.4− | 2006 10 01 | 704 | 0.2+ | 0.9+ | 2006 11 27 | G96 | 0.5+ | 0.4− | | |
| 2003 12 29 | 704 | 0.4+ | 0.0 | 2006 10 01 | 704 | 0.2− | 1.0+ | 2006 11 27 | G96 | 0.4+ | 0.2− | | |
| 2003 12 29 | 704 | 0.7+ | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.8+ | 2006 11 27 | G96 | 0.3+ | 0.4− | | |

**(137729)∗ 1999 XW$_{118}$**

Discovered 1999 Dec. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.94678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27445778 | $\omega$ | 336.45270 | | +0.83980743 | −0.54072965 | |
| $a$ | 2.3450513 | $\Omega$ | 56.36829 | | +0.50685489 | +0.74907466 | |
| $e$ | 0.2273845 | $i$ | 3.32705 | | +0.19447777 | +0.38275134 | |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.2+ | 0.5+ | 2005 05 08 | 691 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.8+ | | |
| 1999 11 03 | 704 | 0.3+ | 0.8− | 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.8+ | | |
| 1999 11 03 | 704 | 0.2+ | 1.8− | 2005 06 12 | G96 | 0.5− | 0.6+ | 2006 09 26 | 704 | 0.2− | 0.5+ | | |
| 1999 11 03 | 704 | 0.9+ | 0.7− | 2005 06 12 | G96 | 0.0 | 0.6− | 2006 09 26 | 704 | 0.2− | 0.2+ | | |
| 1999 11 03 | 704 | 0.1− | 1.3− | 2005 06 12 | G96 | (2.1− | 1.6−) | 2006 09 26 | 704 | 0.1+ | 0.7+ | | |
| 1999 11 09 | 703 | 0.7− | 0.7+ | 2005 06 12 | G96 | 0.0 | 0.8− | 2006 09 26 | 704 | 0.5− | 0.7+ | | |
| 1999 11 09 | 703 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.6− | 0.2− | 2006 09 26 | 704 | 0.1− | 1.0+ | | |
| 1999 11 09 | 703 | 0.4− | 0.6+ | 2006 09 12 | 703 | 0.4+ | 0.4− | 2006 09 26 | 704 | 0.1+ | 0.9+ | | |
| 1999 11 09 | 703 | 0.3+ | 0.6+ | 2006 09 12 | 703 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.1+ | 0.7+ | | |
| 1999 11 09 | 704 | 0.4+ | 0.5− | 2006 09 12 | 703 | 0.3− | 0.6+ | 2006 09 28 | 704 | 0.0 | 0.6+ | | |
| 1999 11 09 | 704 | 0.6+ | 0.6− | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.1− | 0.6+ | | |
| 1999 11 09 | 704 | 0.7+ | 0.6− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.1− | 0.4+ | | |
| 1999 11 09 | 704 | 0.6+ | 0.4− | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.4− | 0.7+ | | |
| 1999 11 09 | 704 | 1.0+ | 0.4− | 2006 09 16 | 704 | 0.3− | 1.0+ | 2006 09 30 | 703 | 0.1− | 0.5+ | | |
| 1999 11 12 | 704 | 0.2− | 0.4+ | 2006 09 16 | 704 | 1.1− | 0.0 | 2006 09 30 | 703 | 0.6− | 0.5+ | | |
| 1999 11 12 | 704 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 1.0− | 0.6− | | |
| 1999 11 12 | 704 | 0.4− | 0.4− | 2006 09 16 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.3+ | | |
| 1999 11 12 | 704 | 0.4− | 0.2− | 2006 09 18 | 703 | (1.5− | 0.5−) | 2006 09 30 | 704 | 0.1− | 0.1+ | | |
| 1999 11 12 | 704 | 0.4− | 0.8− | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 09 30 | 704 | 0.4+ | 0.1+ | | |
| 1999 11 16 | 704 | 0.5− | 0.4− | 2006 09 18 | 703 | 0.6− | 0.0 | 2006 09 30 | 704 | 0.5− | 0.0 | | |
| 1999 11 16 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.8− | 0.9+ | | |
| 1999 11 16 | 704 | 0.2− | 0.8− | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.9− | 0.2+ | | |
| 1999 11 16 | 704 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.2− | | |
| 1999 11 16 | 704 | 0.1− | 0.6− | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.1− | | |
| 1999 11 19 | 699 | 1.9− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.3− | | |
| 1999 11 19 | 699 | 0.2− | 0.7− | 2006 09 19 | 012 | 0.0 | 0.7− | 2006 10 02 | G96 | 0.4+ | 0.1− | | |
| 1999 11 19 | 699 | 0.7− | 1.1+ | 2006 09 19 | 012 | 0.3+ | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.1+ | | |
| 1999 12 05 | 703 | 1.0+ | 0.6+ | 2006 09 19 | 012 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 1999 12 05 | 703 | 0.6− | 0.3− | 2006 09 19 | 012 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.3+ | | |
| 1999 12 05 | 703 | 0.6+ | 1.9+ | 2006 09 19 | 012 | 0.1− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 1999 12 05 | 703 | 0.6− | 0.8+ | 2006 09 19 | 012 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 1999 12 07 | 704 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 1999 12 07 | 704 | 0.6+ | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.7+ | | |
| 1999 12 07 | 704 | 0.4+ | 0.4− | 2006 09 19 | 703 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.1+ | | |
| 1999 12 07 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.0 | | |
| 1999 12 13 | 703 | 0.0 | 1.0+ | 2006 09 20 | 012 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.0− | 0.7− | | |
| 1999 12 13 | 703 | 0.6− | 0.9+ | 2006 09 20 | 012 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.6+ | | |
| 1999 12 13 | 703 | 0.2+ | 0.8+ | 2006 09 20 | 012 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.1− | | |
| 1999 12 13 | 703 | 0.5+ | 0.4+ | 2006 09 20 | 012 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2001 04 15 | 691 | 0.4+ | 0.7+ | 2006 09 20 | 012 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.1− | 1.0+ | | |
| 2001 04 15 | 691 | 0.2+ | 1.1+ | 2006 09 21 | 682 | 0.2+ | 0.8− | 2006 10 22 | 703 | 0.6+ | 0.0 | | |
| 2001 04 15 | 691 | 0.5+ | 0.3+ | 2006 09 21 | 682 | 0.3+ | 0.6− | 2006 10 22 | 703 | 0.4− | 0.2+ | | |
| 2001 05 22 | 807 | 0.4+ | 0.4+ | 2006 09 21 | 682 | 0.5+ | 0.9− | 2006 10 22 | 703 | 0.2+ | 0.5+ | | |
| 2001 05 22 | 807 | 0.3+ | 0.2+ | 2006 09 22 | 704 | 0.5− | 1.1+ | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2004 02 11 | 691 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.6+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.1− | | |
| 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.3+ | | |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.2− | | |
| 2005 05 08 | 691 | 0.3− | 0.1− | 2006 09 22 | 704 | 0.3+ | 0.7+ | | | | | | |

**(137730)∗ 1999 XR$_{121}$**

Discovered 1999 Dec. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.73815 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28132204 | $\omega$ | 351.54857 | | +0.96360507 | −0.26622902 | |
| $a$ | 2.3067483 | $\Omega$ | 23.93403 | | +0.24863057 | +0.85920123 | |
| $e$ | 0.1650241 | $i$ | 3.42492 | | +0.09822475 | +0.43691573 | |
| $P$ | 3.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.6− | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.7− | 0.3+ | | |
| 1999 10 06 | 704 | 0.5− | 0.5− | 2004 02 23 | 704 | (1.9+ | 0.2+) | 2006 11 16 | 704 | 0.2− | 0.1− | | |
| 1999 10 06 | 704 | 1.2− | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.5+ | | |
| 1999 10 06 | 704 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.2− | | |
| 1999 10 06 | 704 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.1− | | |
| 1999 11 03 | 704 | 0.0 | 0.5+ | 2004 03 01 | 291 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.1+ | | |
| 1999 11 03 | 704 | 0.4+ | 0.0 | 2004 03 01 | 291 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.1+ | | |
| 1999 11 03 | 704 | 0.2− | 0.6− | 2004 03 01 | 291 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.2− | 0.2− | | |
| 1999 11 03 | 704 | 1.5+ | 0.3− | 2005 02 18 | 809 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.0 | | |
| 1999 11 03 | 704 | 0.9+ | 0.2− | 2005 02 18 | 809 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.2− | | |
| 1999 11 03 | 704 | 0.6+ | 0.4− | 2005 02 18 | 809 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.2+ | | |
| 1999 12 05 | 703 | 0.0 | 1.0− | 2005 02 18 | 809 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.4+ | | |
| 1999 12 05 | 703 | 0.4− | 0.4− | 2006 07 22 | G96 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.1+ | 1.1+ | | |
| 1999 12 05 | 703 | 0.4+ | 0.1− | 2006 07 22 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.3+ | | |
| 1999 12 05 | 703 | 0.6− | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.0 | | |
| 1999 12 13 | 703 | 0.4− | 0.8+ | 2006 07 22 | G96 | 1.0− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.2− | | |
| 1999 12 13 | 703 | 0.7+ | 0.3− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.2+ | 0.0 | | |
| 1999 12 13 | 703 | 0.7− | 0.7− | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.0 | | |
| 1999 12 13 | 703 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 21 | 691 | 0.2+ | 0.0 | | |
| 2002 08 11 | 644 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | (2.1+ | 0.3−) | | |
| 2002 08 11 | 644 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.6− | 2006 11 22 | 704 | (1.6+ | 0.3−) | | |
| 2002 08 11 | 644 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.9− | 2006 11 22 | 704 | (2.8+ | 1.3−) | | |
| 2002 08 13 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.9− | 2006 11 22 | 704 | (1.9+ | 0.1−) | | |
| 2002 08 13 | 704 | 0.8+ | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.0 | | |
| 2002 08 13 | 704 | 0.6− | 0.3+ | 2006 11 11 | 703 | 1.3− | 1.3+ | 2006 11 25 | 691 | 0.1+ | 0.0 | | |
| 2002 08 13 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.0+ | 1.0+ | 2006 11 25 | 691 | 0.2+ | 0.1− | | |
| 2002 08 18 | 644 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.0 | | |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.1+ | 2006 11 27 | 704 | 0.4+ | 0.3− | | |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.6+ | 1.0+ | 2006 11 27 | 704 | 0.5− | 1.3+ | | |
| 2002 08 29 | 644 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.6− | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.2+ | | |
| 2002 08 29 | 644 | 0.3− | 0.8+ | 2006 11 15 | 704 | 0.0 | 1.2− | 2006 11 28 | 704 | 0.2+ | 0.2− | | |
| 2002 08 29 | 644 | 0.0 | 0.8+ | 2006 11 15 | 704 | 0.7− | 1.0+ | 2006 11 28 | 704 | 0.2− | 0.1− | | |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 1.5− | 0.7− | 2006 11 28 | 704 | 0.3+ | 0.2+ | | |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.1+ | | |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.4+ | | | | | | |
| 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 1.1− | 0.4+ | | | | | | |

**(137731)∗ 1999 XW$_{121}$**

Discovered 1999 Dec. 7 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.58795 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28175147 | $\omega$ | 72.05175 | | +0.95388856 | −0.28971280 | |
| $a$ | 2.3044039 | $\Omega$ | 304.71971 | | +0.22632776 | +0.86601166 | |
| $e$ | 0.1521850 | $i$ | 5.48076 | | +0.19716077 | +0.40754178 | |
| $P$ | 3.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4+ | 0.4− | 2004 01 19 | 703 | 0.6+ | 0.4+ | 2004 02 11 | 699 | 0.3+ | 0.2+ | | |
| 1999 10 12 | 704 | 0.6+ | 0.6− | 2004 01 19 | 703 | 1.4+ | 0.5− | 2004 02 11 | 699 | 0.6+ | 0.3+ | | |
| 1999 10 12 | 704 | 0.4+ | 0.0 | 2004 01 19 | 691 | 0.0 | 0.0 | 2004 02 14 | 691 | 0.2− | 0.1+ | | |
| 1999 10 12 | 704 | 0.4+ | 0.2+ | 2004 01 19 | 691 | 0.1− | 0.1+ | 2004 02 14 | 691 | 0.2− | 0.0 | | |
| 1999 10 12 | 704 | 0.1+ | 0.5− | 2004 01 19 | 691 | 0.1+ | 0.0 | 2004 02 14 | 691 | 0.0 | 0.0 | | |
| 1999 10 13 | 704 | 0.7− | 0.7− | 2004 01 20 | 608 | 0.1+ | 1.1− | 2004 02 26 | 704 | 0.3+ | 0.8+ | | |
| 1999 10 13 | 704 | 0.4− | 0.4− | 2004 01 20 | 608 | 0.4+ | 1.1− | 2004 02 26 | 704 | 0.1+ | 0.5− | | |
| 1999 10 13 | 704 | 0.1+ | 1.1− | 2004 01 20 | 608 | 0.4+ | 0.5− | 2004 02 26 | 704 | 0.6+ | 1.5+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.5− | 1.3− | 2004 01 21 | 704 | 1.0+ | 0.6+ | 2004 02 26 | 704 | 0.1− | 0.2− |
| 1999 10 30 | 699 | 1.0− | 0.8+ | 2004 01 21 | 704 | (2.0+ | 0.6−) | 2004 02 26 | 704 | (1.9− | 1.2+) |
| 1999 10 30 | 699 | 0.9− | 1.1− | 2004 01 21 | 704 | 0.7+ | 0.5− | 2005 05 19 | 644 | 0.5+ | 0.6+ |
| 1999 10 30 | 699 | 1.3+ | 0.7+ | 2004 01 21 | 704 | (0.1+ | 1.7+) | 2005 05 19 | 644 | 0.6+ | 0.8+ |
| 1999 12 07 | 703 | 0.3− | 0.3+ | 2004 01 21 | 704 | 0.1+ | 0.2+ | 2005 05 19 | 644 | 0.6+ | 0.5+ |
| 1999 12 07 | 703 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.7− | 0.0 | 2006 10 20 | 704 | (0.6− | 1.5+) |
| 1999 12 07 | 703 | 0.5− | 0.3+ | 2004 01 24 | 704 | 0.9+ | 0.7+ | 2006 10 20 | 704 | 0.8− | 0.1+ |
| 1999 12 07 | 703 | 0.3− | 0.2− | 2004 01 24 | 704 | 0.4+ | 0.4− | 2006 10 20 | 704 | 0.8− | 0.6+ |
| 1999 12 08 | 704 | 0.7+ | 0.6+ | 2004 01 24 | 704 | 0.3− | 0.3+ | 2006 10 20 | 704 | 0.9− | 0.4+ |
| 1999 12 08 | 704 | 0.5+ | 0.4− | 2004 01 26 | 699 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.3+ |
| 1999 12 08 | 704 | 0.8+ | 0.0 | 2004 01 26 | 699 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.4+ |
| 1999 12 08 | 704 | 0.1+ | 0.1− | 2004 01 26 | 699 | 0.3− | 0.4− | 2006 10 27 | 703 | 0.4+ | 0.1− |
| 1999 12 08 | 704 | 0.3+ | 0.4− | 2004 01 26 | 699 | 0.1+ | 1.1− | 2006 10 27 | 703 | 0.1+ | 0.6+ |
| 1999 12 13 | 703 | 0.5+ | 0.0 | 2004 01 27 | H06 | 0.6− | 0.8− | 2006 11 14 | 703 | 0.1− | 0.2− |
| 1999 12 13 | 703 | 1.4+ | 0.3− | 2004 01 27 | H06 | (1.5− | 0.6−) | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 1999 12 13 | 703 | 0.5− | 0.7+ | 2004 01 27 | H06 | 1.0− | 0.0 | 2006 11 14 | 703 | 0.1− | 1.1− |
| 1999 12 13 | 703 | 0.6− | 0.2+ | 2004 01 29 | 704 | 1.1− | 1.0+ | 2006 11 14 | 703 | 1.0− | 0.7− |
| 2002 06 17 | 644 | 0.4− | 0.1+ | 2004 01 29 | 704 | 0.5− | 0.1+ | 2006 11 15 | 703 | 0.7+ | 0.1+ |
| 2002 06 17 | 644 | 0.5− | 0.2+ | 2004 01 29 | 704 | 0.5− | 1.1+ | 2006 11 15 | 703 | 0.1+ | 0.1+ |
| 2002 06 17 | 644 | 0.4− | 0.1+ | 2004 01 29 | 704 | 0.6− | 0.9+ | 2006 11 15 | 703 | 0.1− | 0.1− |
| 2002 07 09 | 644 | 0.0 | 0.3+ | 2004 01 29 | 704 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.4− |
| 2002 07 09 | 644 | 0.1− | 0.2+ | 2004 01 30 | 691 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.6+ |
| 2002 07 09 | 644 | 0.2+ | 0.3+ | 2004 01 30 | 691 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.1− | 0.9+ |
| 2002 07 19 | 644 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.4+ |
| 2002 07 19 | 644 | 0.3− | 0.1− | 2004 01 30 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.5+ | 1.3+ |
| 2002 07 19 | 644 | 0.3− | 0.1+ | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 2002 07 28 | 608 | 0.2− | 0.4+ | 2004 01 30 | 704 | 0.8− | 0.5− | 2006 11 22 | 703 | 0.5− | 0.4+ |
| 2002 07 28 | 608 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.8+ | 0.8+ | 2006 11 22 | 703 | 0.3− | 0.6+ |
| 2002 07 28 | 608 | 0.2+ | 1.0+ | 2004 01 30 | 704 | 0.5− | 0.2− | 2006 11 22 | 703 | 0.1− | 0.5+ |
| 2003 12 21 | 704 | (1.5+ | 0.2+) | 2004 01 30 | 704 | 0.3+ | 0.4− | 2006 11 22 | 703 | 0.0 | 0.5+ |
| 2003 12 21 | 704 | 0.9+ | 0.5− | 2004 01 30 | 704 | 0.1− | 1.1+ | 2006 12 01 | 704 | 0.2− | 0.3+ |
| 2003 12 21 | 704 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.0 | 0.7+ |
| 2003 12 21 | 704 | 0.0 | 1.0+ | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.4+ | 0.3− |
| 2004 01 19 | 703 | 0.7+ | 0.6+ | 2004 02 11 | 699 | 0.8+ | 0.0 | | | | |
| 2004 01 19 | 703 | 0.6+ | 1.0− | 2004 02 11 | 699 | 0.1+ | 0.3− | | | | |

**(137732)∗ 1999 XY$_{121}$ = 2002 ND$_{52}$**

Discovered 1999 Dec. 7 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 33165)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.13059 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28211348 | $\omega$ | 99.47124 | | +0.71318281 | | −0.69765101 |
| $a$ | 2.3024321 | $\Omega$ | 304.80497 | | +0.60612904 | | +0.66263702 |
| $e$ | 0.1590607 | $i$ | 4.76552 | | +0.35210492 | | +0.27238804 |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 1.0− | 1.0+ | 2004 01 23 | 699 | 0.6+ | 0.4− | 2006 09 25 | 704 | (2.6+ | 0.2+) |
| 1999 10 12 | 704 | 0.2− | 0.3− | 2004 01 23 | 699 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.2+ |
| 1999 10 12 | 704 | 0.2− | 0.9+ | 2004 01 23 | 699 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 1999 10 12 | 704 | 0.8− | 2.0+ | 2004 01 24 | 704 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.4− |
| 1999 10 12 | 704 | 0.3− | 0.9+ | 2004 01 24 | 704 | (0.8+ | 1.9+) | 2006 10 19 | 703 | 0.3− | 0.0 |
| 1999 10 13 | 704 | 0.3+ | 0.3+ | 2004 01 24 | 704 | 0.2− | 0.4+ | 2006 10 20 | 704 | (1.3− | 1.6−) |
| 1999 10 13 | 704 | 0.3− | 0.6+ | 2004 01 24 | 704 | 0.2− | 0.4+ | 2006 10 20 | 704 | (0.1− | 1.8−) |
| 1999 10 13 | 704 | 0.4− | 0.2+ | 2004 01 30 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 704 | 0.4+ | 0.8− |
| 1999 10 13 | 704 | 1.2− | 0.8+ | 2004 01 30 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 704 | 0.4+ | 1.0+ |
| 1999 10 13 | 704 | 1.0− | 0.5+ | 2004 01 30 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.3+ |
| 1999 11 03 | 704 | 1.0− | 0.6− | 2004 02 10 | 333 | 0.1− | 0.8+ | 2006 10 27 | 703 | 0.6+ | 0.1+ |
| 1999 11 03 | 704 | 0.7+ | 1.0− | 2004 02 10 | 333 | 0.5− | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.3+ |
| 1999 11 03 | 704 | 0.2− | 0.9− | 2004 02 10 | 333 | 0.3+ | 0.5− | 2006 10 27 | 703 | 0.4− | 0.4− |
| 1999 11 03 | 704 | 0.5+ | 0.8− | 2004 02 11 | 699 | 0.8+ | 1.1+ | 2006 11 02 | 703 | 0.2+ | 0.0 |
| 1999 11 03 | 704 | 0.2− | 0.9− | 2004 02 11 | 644 | 0.4+ | 0.0 | 2006 11 02 | 703 | 0.6− | 0.1− |
| 1999 11 13 | 703 | 0.1+ | 0.7+ | 2004 02 11 | 699 | 0.4− | 0.2+ | 2006 11 02 | 703 | 0.6+ | 0.3− |
| 1999 11 13 | 703 | 0.2− | 0.9+ | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 0.2− | 0.6− |
| 1999 11 13 | 703 | 0.1− | 0.3+ | 2004 02 11 | 699 | 0.6+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1999 11 13 | 703 | 0.3+ | 0.5+ | 2004 02 11 | 699 | 0.6+ | 0.5− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1999 12 07 | 703 | 0.7+ | 0.4− | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 1999 12 07 | 703 | 0.0 | 0.4− | 2004 02 12 | 333 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 1999 12 07 | 703 | 0.5− | 0.6+ | 2004 02 12 | 333 | 0.8− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 1999 12 07 | 703 | 0.2+ | 0.1− | 2004 02 12 | 333 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.0 |
| 1999 12 08 | 704 | 1.2+ | 0.4− | 2004 02 13 | 333 | 0.6+ | 0.9− | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 1999 12 08 | 704 | 0.2+ | 0.0 | 2004 02 13 | 333 | 0.1+ | 0.6− | 2006 11 14 | 703 | 0.1− | 0.4− |
| 1999 12 08 | 704 | 0.4+ | 0.1− | 2004 02 13 | 333 | 0.3+ | 0.3− | 2006 11 14 | 703 | 0.2− | 0.2− |
| 1999 12 08 | 704 | 0.4− | 0.9+ | 2004 02 13 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.7− |
| 1999 12 13 | 703 | 1.2+ | 1.1+ | 2004 02 13 | 691 | 1.3− | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.5− |
| 1999 12 13 | 703 | 1.2+ | 0.3+ | 2004 02 13 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.8+ | 1.1+ |
| 1999 12 13 | 703 | 0.2− | 0.8+ | 2004 02 14 | 608 | 0.1+ | 0.1− | 2006 11 16 | 704 | (1.3− | 1.5+) |
| 1999 12 13 | 703 | 0.1− | 0.8− | 2004 02 14 | 608 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.7− | 0.1− |
| 2002 07 14 | 644 | 0.1− | 0.7+ | 2004 02 14 | 608 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.9+ |
| 2002 07 14 | 644 | 0.3− | 0.7+ | 2004 02 16 | 333 | 0.0 | 0.1− | 2006 11 17 | 644 | 0.0 | 0.2− |
| 2002 07 14 | 644 | 0.4+ | 0.8+ | 2004 02 16 | 333 | 0.9− | 1.0+ | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2002 07 18 | 644 | 0.3+ | 0.7+ | 2004 02 16 | 333 | 0.3+ | 0.1− | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2002 07 18 | 644 | 0.3− | 0.6+ | 2004 02 17 | 704 | 0.4− | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 2002 07 18 | 644 | 0.2− | 0.8+ | 2004 02 17 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 644 | 0.1− | 0.2− |
| 2002 08 06 | 644 | 0.5− | 0.3+ | 2004 02 17 | 704 | 1.0+ | 0.3+ | 2006 11 17 | 644 | 0.1+ | 0.2− |
| 2002 08 06 | 644 | 0.7− | 0.2+ | 2004 02 17 | 704 | 0.6+ | 0.7+ | 2006 11 22 | 703 | 0.3+ | 0.4− |
| 2002 08 06 | 644 | 0.4− | 0.3+ | 2004 02 17 | 704 | 0.8+ | 1.0+ | 2006 11 22 | 703 | 0.2− | 0.5− |
| 2002 08 08 | 644 | 0.1− | 1.3+ | 2004 02 19 | 608 | 0.2+ | 0.5− | 2006 11 22 | 703 | 0.3− | 0.3− |
| 2002 08 08 | 644 | 0.1+ | 1.4+ | 2004 02 19 | 608 | 0.8+ | 0.6− | 2006 11 22 | 703 | 0.4− | 0.3− |
| 2002 08 08 | 644 | (0.2+ | 1.5+) | 2004 02 19 | 608 | 0.5+ | 0.3− | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2002 08 09 | 807 | 0.1− | 0.3+ | 2004 02 26 | 704 | (0.9− | 2.3+) | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2002 08 09 | 807 | 0.3− | 0.4+ | 2004 02 26 | 704 | (0.8− | 2.4+) | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2002 08 12 | 807 | 0.2− | 0.2+ | 2004 02 26 | 704 | (0.5− | 2.4+) | 2006 11 25 | G96 | 0.5− | 2.0− |
| 2002 08 12 | 807 | 0.5− | 0.0 | 2006 08 30 | 704 | 0.0 | 1.0+ | 2006 11 28 | 704 | 0.7− | 0.1+ |
| 2004 01 17 | 608 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2004 01 17 | 608 | 0.4− | 0.1+ | 2006 08 30 | 704 | 1.1− | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.3− |
| 2004 01 17 | 608 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.8+ | 0.1+ | 2006 11 28 | 704 | 0.7+ | 0.6− |
| 2004 01 23 | 699 | 0.0 | 0.5+ | 2006 09 25 | 704 | 1.0+ | 0.2+ | 2006 11 28 | 704 | 0.9− | 1.1+ |

**(137733)∗ 1999 XG$_{122}$**

Discovered 1999 Dec. 7 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.03835 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26740018 | $\omega$ | 268.68423 | | −0.89015964 | | −0.29339333 |
| $a$ | 2.3861345 | $\Omega$ | 254.16455 | | +0.39765469 | | −0.87376221 |
| $e$ | 0.1877674 | $i$ | 21.24598 | | −0.22245577 | | −0.38789167 |
| $P$ | 3.69 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.5− | 0.0 | 2001 06 27 | 608 | 0.6− | 0.1+ | 2004 02 11 | 644 | 0.1− | 0.2+ |
| 1999 10 14 | 704 | 0.0 | 0.1+ | 2001 06 27 | 608 | 0.2+ | 0.2+ | 2004 02 11 | 644 | 0.0 | 0.2+ |
| 1999 10 14 | 704 | 0.3+ | 1.1− | 2001 07 17 | 699 | 0.7+ | 0.2+ | 2004 02 11 | 644 | 0.0 | 0.2+ |
| 1999 10 14 | 704 | 0.5+ | 0.1+ | 2001 07 17 | 699 | 0.3− | 0.0 | 2004 02 18 | 704 | 0.1+ | 0.7+ |
| 1999 10 14 | 704 | 0.9+ | 0.1− | 2001 07 17 | 699 | 0.4− | 0.5+ | 2004 02 18 | 704 | 0.3− | 0.0 |
| 1999 12 05 | 699 | 0.8− | 0.9+ | 2001 07 17 | 699 | 0.6− | 0.2+ | 2004 02 18 | 704 | 0.1− | 0.1− |
| 1999 12 05 | 699 | 0.8− | 0.3− | 2003 10 24 | 704 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.3+ | 0.5+ |
| 1999 12 05 | 699 | 0.1+ | 0.3+ | 2003 10 24 | 704 | 0.5+ | 0.5+ | 2004 02 18 | 704 | 0.2+ | 0.3+ |
| 1999 12 07 | 703 | 0.1− | 1.2− | 2003 10 24 | 704 | 0.3+ | 0.2+ | 2004 03 15 | 704 | 0.4+ | 0.1− |
| 1999 12 07 | 703 | 1.3+ | 1.1+ | 2003 10 24 | 704 | 0.4+ | 0.3+ | 2004 03 15 | 704 | 0.7+ | 0.2+ |
| 1999 12 07 | 703 | 0.4− | 0.6− | 2003 12 01 | 704 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 0.8+ | 0.0 |
| 1999 12 07 | 703 | 1.2− | 0.0 | 2003 12 01 | 704 | 0.0 | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.3+ |
| 1999 12 13 | 703 | 0.4+ | 0.4− | 2003 12 01 | 704 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.3+ | 0.2− |
| 1999 12 13 | 703 | 1.5+ | 0.5+ | 2003 12 01 | 704 | 0.1+ | 0.3+ | 2006 09 24 | 113 | 0.1+ | 0.1+ |
| 1999 12 13 | 703 | 0.2− | 0.4+ | 2003 12 03 | 704 | 0.9− | 0.0 | 2006 09 24 | 113 | 0.0 | 0.1− |
| 1999 12 13 | 703 | 0.4− | 0.1+ | 2003 12 03 | 704 | 0.8− | 0.1+ | 2006 09 24 | 113 | 0.4+ | 0.0 |
| 1999 12 15 | 704 | 0.2+ | 0.9− | 2003 12 03 | 704 | 0.6− | 0.2− | 2006 09 24 | 699 | 0.1+ | 0.0 |
| 1999 12 15 | 704 | 0.1+ | 0.6− | 2003 12 03 | 704 | 0.6− | 0.0 | 2006 09 24 | 699 | 0.1+ | 1.0+ |
| 1999 12 15 | 704 | 0.6+ | 1.4− | 2003 12 03 | 704 | 0.7− | 0.1− | 2006 09 24 | 699 | 0.4− | 0.1+ |
| 2000 01 04 | 704 | 0.9− | 0.5− | 2003 12 20 | 704 | 0.6+ | 0.2− | 2006 09 24 | 699 | 0.0 | 1.2+ |
| 2000 01 04 | 704 | 0.5− | 0.6− | 2003 12 20 | 704 | 0.8+ | 0.3− | 2006 10 02 | 703 | 0.0 | 0.6+ |
| 2000 01 04 | 704 | 0.2− | 0.7− | 2003 12 20 | 704 | 1.2+ | 0.3− | 2006 10 02 | 704 | 0.7− | 0.6+ |
| 2000 01 04 | 704 | 0.7+ | 0.6− | 2003 12 20 | 704 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.1+ | 0.1+ |
| 2000 01 04 | 704 | 0.6− | 0.8− | 2003 12 20 | 704 | 0.7+ | 0.0 | 2006 10 02 | 703 | 0.9− | 0.2− |
| 2000 01 06 | 704 | 0.5− | 0.8− | 2004 01 12 | 644 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.4− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.1+ | 0.2− | 2004 01 12 | 644 | 0.0 | 0.2− | 2006 10 02 | 704 | 0.5+ | 0.8− |
| 2000 01 06 | 704 | 0.9+ | 0.7− | 2004 01 12 | 644 | 0.2− | 0.2+ | 2006 10 02 | 704 | 1.3− | 0.7+ |
| 2000 01 06 | 704 | 0.3− | 0.2− | 2004 01 13 | 644 | 0.2− | 0.2+ | 2006 10 02 | 704 | 0.4+ | 0.0 |
| 2000 02 05 | 695 | 0.3− | 0.2+ | 2004 01 13 | 644 | 0.2− | 0.3+ | 2006 10 20 | 703 | 0.2+ | 0.3+ |
| 2000 02 05 | 695 | 0.6− | 0.2+ | 2004 01 13 | 644 | 0.2− | 0.2+ | 2006 10 20 | 703 | 0.1+ | 0.1+ |
| 2001 06 20 | 608 | 0.6+ | 0.4− | 2004 01 28 | 608 | 0.5− | 0.8+ | 2006 10 20 | 703 | 0.5− | 0.0 |
| 2001 06 20 | 608 | 0.6+ | 0.8− | 2004 01 28 | 608 | 0.5− | 0.1+ | 2006 10 20 | 703 | 0.1− | 0.2− |
| 2001 06 20 | 608 | 0.8+ | 0.0 | 2004 01 28 | 608 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.4+ | 0.2+ |
| 2001 06 22 | 704 | 0.0 | 0.4+ | 2004 01 29 | 704 | 0.6+ | 0.1− | 2006 11 23 | 703 | 0.1− | 1.5+ |
| 2001 06 22 | 704 | 0.2− | 0.2+ | 2004 01 29 | 704 | 0.1− | 0.7+ | 2006 11 23 | 703 | 0.7+ | 1.0+ |
| 2001 06 22 | 704 | 0.4+ | 0.2− | 2004 01 29 | 704 | 0.4+ | 0.1+ | 2006 11 23 | 703 | 0.1+ | 1.2− |
| 2001 06 22 | 704 | 0.9− | 0.3− | 2004 01 29 | 704 | 0.7+ | 0.6− | | | | |
| 2001 06 27 | 608 | 0.2− | 0.5+ | 2004 01 29 | 704 | 0.3− | 0.4+ | | | | |

**(137734)∗ 1999 XC$_{123}$**

Discovered 1999 Dec. 7 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.80179 | | (2000.0) | | +0.98778781 | −0.12544996 |
| $n$ | 0.27777709 | $\omega$ | 63.78700 | | +0.07080656 | +0.88970945 |
| $a$ | 2.3263324 | $\Omega$ | 303.28909 | | +0.13878645 | +0.43895263 |
| $e$ | 0.1443654 | $i$ | 6.34625 | | | |
| $P$ | 3.55 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.3+ | 0.3− | 2003 12 22 | 704 | 1.1+ | 0.2− | 2004 02 26 | 704 | 1.1+ | 0.4+ |
| 1999 10 14 | 704 | 1.8+ | 0.8− | 2003 12 22 | 704 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.7+ | 0.2+ |
| 1999 10 14 | 704 | 0.4+ | 0.1+ | 2003 12 22 | 704 | 0.3+ | 0.4− | 2004 02 26 | 704 | 0.1− | 0.5+ |
| 1999 10 14 | 704 | 0.2+ | 0.6+ | 2003 12 22 | 704 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.8+ |
| 1999 10 14 | 704 | 0.2− | 0.1+ | 2004 01 16 | 691 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.4+ | 0.8+ |
| 1999 11 13 | 703 | 0.2− | 0.4+ | 2004 01 16 | 691 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.4+ | 0.6+ |
| 1999 11 13 | 703 | 0.1− | 0.1− | 2004 01 16 | 691 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.3+ | 0.4+ |
| 1999 11 13 | 703 | 0.4+ | 0.2+ | 2004 01 19 | 699 | 0.3− | 1.2− | 2005 05 12 | 644 | 0.0 | 0.6+ |
| 1999 11 13 | 703 | 0.2+ | 0.0 | 2004 01 19 | 699 | 1.0− | 0.1+ | 2005 05 12 | 644 | 0.1+ | 0.8+ |
| 1999 12 07 | 703 | 0.4− | 0.9+ | 2004 01 19 | 699 | 0.2− | 0.1+ | 2005 05 12 | 644 | 0.3+ | 0.7+ |
| 1999 12 07 | 703 | 0.6− | 0.8+ | 2004 01 19 | 699 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.5− | 0.4+ |
| 1999 12 07 | 703 | 0.0 | 0.2+ | 2004 01 19 | 703 | 0.7+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.2+ |
| 1999 12 07 | 703 | 0.1+ | 0.0 | 2004 01 19 | 703 | 0.4+ | 0.3− | 2006 09 17 | 703 | 0.3− | 0.1− |
| 1999 12 13 | 703 | 1.6− | 0.3+ | 2004 01 19 | 703 | 0.1+ | 0.9− | 2006 09 17 | 703 | 0.0 | 0.0 |
| 1999 12 13 | 703 | 0.8− | 0.5− | 2004 01 19 | 703 | 0.3− | 0.6− | 2006 09 28 | 703 | 0.5− | 0.8+ |
| 1999 12 13 | 703 | 0.6− | 0.2− | 2004 01 21 | 704 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.0 | 0.7+ |
| 1999 12 13 | 703 | 0.8− | 1.1− | 2004 01 21 | 704 | 0.1− | 0.5+ | 2006 09 28 | 703 | 0.6+ | 0.2+ |
| 2000 01 04 | 704 | 0.8+ | 0.6− | 2004 01 21 | 704 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.9+ |
| 2000 01 04 | 704 | 0.4+ | 0.4+ | 2004 01 21 | 704 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.3− |
| 2000 01 04 | 704 | 0.4+ | 0.4− | 2004 01 24 | 704 | 0.5− | 1.0+ | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2000 01 04 | 704 | 0.2+ | 1.1+ | 2004 01 24 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2002 06 12 | 644 | 0.9− | 0.2+ | 2004 01 24 | 704 | 0.2− | 0.3+ | 2006 10 21 | 704 | 1.4− | 0.4+ |
| 2002 06 12 | 644 | 0.9− | 0.0 | 2004 01 24 | 704 | 0.7− | 0.5+ | 2006 10 21 | 704 | 0.4+ | 1.0+ |
| 2002 06 12 | 644 | 0.6− | 0.2+ | 2004 01 24 | 704 | 0.4− | 0.9+ | 2006 10 21 | 704 | 0.3+ | 0.6+ |
| 2002 06 17 | 644 | 0.8− | 0.2+ | 2004 01 26 | 699 | 0.8− | 0.2− | 2006 10 21 | 704 | 0.4+ | 0.0 |
| 2002 06 17 | 644 | 0.8− | 0.5+ | 2004 01 26 | 699 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 06 17 | 644 | 0.6− | 0.3+ | 2004 01 26 | 699 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 07 28 | 608 | 1.2+ | 0.8+ | 2004 01 26 | 699 | 1.2− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 07 28 | 608 | 1.4+ | 1.0+ | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.0 |
| 2002 07 28 | 608 | 1.0+ | 1.4+ | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2002 08 13 | 704 | 0.2− | 0.9− | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2002 08 13 | 704 | 0.0 | 0.2+ | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.4− |
| 2002 08 13 | 704 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 10 30 | 203 | 0.0 | 0.2− |
| 2002 08 13 | 704 | 0.4− | 0.6+ | 2004 01 30 | 704 | 0.1+ | 0.0 | 2006 10 30 | 203 | 0.0 | 0.4− |
| 2002 08 13 | 704 | 0.7− | 0.3− | 2004 01 30 | 704 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.4− | 0.2− |
| 2003 12 19 | 704 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.5+ | 0.7− | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2003 12 19 | 704 | 0.4+ | 1.1+ | 2004 02 16 | 704 | 0.7+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.1− |
| 2003 12 19 | 704 | 0.1+ | 0.0 | 2004 02 16 | 704 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.0 |
| 2003 12 19 | 704 | 0.2+ | 0.2+ | 2004 02 16 | 704 | 1.0+ | 0.8+ | | | | |

**(137735)∗ 1999 XF$_{124}$ = 2002 QB$_{24}$**

Discovered 1999 Dec. 7 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 34835)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.00602 | | (2000.0) | | −0.37734586 | −0.92544162 |
| $n$ | 0.27302455 | $\omega$ | 137.25902 | | +0.82646713 | −0.31988141 |
| $a$ | 2.3532510 | $\Omega$ | 334.85257 | | +0.41780639 | −0.20306078 |
| $e$ | 0.1886065 | $i$ | 4.61273 | | | |
| $P$ | 3.61 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.0 | 0.1+ | 2003 12 28 | 699 | 0.9+ | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.9+ |
| 1999 10 12 | 704 | 1.4+ | 0.7− | 2003 12 28 | 699 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 1999 10 12 | 704 | 0.3+ | 1.7− | 2003 12 28 | 699 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.4+ |
| 1999 10 12 | 704 | 1.6+ | 0.8− | 2003 12 28 | 699 | 0.7− | 0.8+ | 2006 09 17 | 691 | 0.1− | 0.5+ |
| 1999 10 12 | 704 | 0.8+ | 0.2− | 2004 01 19 | 703 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.5− |
| 1999 10 13 | 704 | 0.2− | 0.0 | 2004 01 19 | 703 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 0.5− |
| 1999 10 13 | 704 | 0.9+ | 0.2− | 2004 01 19 | 703 | 1.0+ | 0.6+ | 2006 09 18 | 703 | 0.2− | 0.2+ |
| 1999 10 13 | 704 | 0.1− | 0.7− | 2004 01 19 | 703 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.1+ |
| 1999 10 13 | 704 | 1.2+ | 0.2+ | 2004 01 22 | 704 | 0.4− | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.4+ |
| 1999 10 13 | 704 | 0.6+ | 0.0 | 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.7+ | 0.7+ |
| 1999 11 05 | 699 | 1.1− | 1.0+ | 2004 01 22 | 704 | 0.4− | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.6+ |
| 1999 11 05 | 699 | 1.7+ | 0.8+ | 2004 01 22 | 704 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.1− |
| 1999 11 05 | 699 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.4− |
| 1999 11 09 | 703 | 0.3− | 0.1− | 2004 01 29 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.7+ | 0.5+ |
| 1999 11 09 | 703 | 1.0− | 0.5− | 2004 01 29 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 699 | 1.1− | 0.4+ |
| 1999 11 09 | 703 | 0.9− | 0.0 | 2004 01 29 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.9− |
| 1999 11 09 | 703 | 0.8− | 0.1+ | 2004 01 29 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 703 | (1.6+ | 1.2−) |
| 1999 12 07 | 703 | 0.2+ | 0.4− | 2004 01 29 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.4− | 0.2− |
| 1999 12 07 | 703 | 0.0 | 0.1+ | 2004 02 11 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.0 |
| 1999 12 07 | 703 | 0.5− | 0.0 | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 09 22 | 224 | 0.3+ | 0.5+ |
| 1999 12 07 | 703 | 0.5− | 0.4− | 2004 02 11 | 699 | 0.1− | 0.2+ | 2006 09 22 | 224 | 0.3+ | 0.3+ |
| 1999 12 10 | 704 | 0.8− | 0.0 | 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 09 22 | 224 | 0.9+ | 0.5+ |
| 1999 12 10 | 704 | 0.4+ | 0.1− | 2004 02 11 | 699 | 0.9− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1999 12 10 | 704 | 0.5+ | 0.6− | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.8− | 0.6+ |
| 1999 12 10 | 704 | 0.0 | 0.5− | 2004 02 11 | 699 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 1999 12 13 | 703 | 0.7+ | 0.3+ | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 1.1− | 0.1− |
| 1999 12 13 | 703 | 0.0 | 0.3− | 2004 02 11 | 644 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.3− | 0.3+ |
| 1999 12 13 | 703 | 0.5− | 0.0 | 2004 02 11 | 699 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.3− | 0.6+ |
| 1999 12 13 | 703 | 0.6− | 0.3+ | 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.7+ |
| 1999 12 15 | 704 | 0.2− | 0.8− | 2004 02 12 | 691 | 0.3− | 0.4+ | 2006 09 29 | 704 | 1.1− | 0.8+ |
| 1999 12 15 | 704 | 0.4− | 1.1− | 2004 02 12 | 691 | 0.3− | 0.8+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 1999 12 15 | 704 | 0.3+ | 1.1− | 2004 02 14 | 703 | 0.3+ | 1.2+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 08 17 | 644 | (1.2− | 1.8+) | 2004 02 14 | 703 | 0.4+ | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 08 17 | 644 | 0.3− | 0.7+ | 2004 02 14 | 703 | 1.4+ | 0.6− | 2006 10 03 | 704 | 0.7+ | 0.2− |
| 2002 08 17 | 644 | 0.5− | 0.8+ | 2004 02 14 | 703 | 0.6+ | 0.6+ | 2006 10 03 | 704 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.3− | 0.6+ | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 10 03 | 704 | 0.6− | 0.2+ |
| 2002 08 28 | 644 | 0.3− | 0.6+ | 2004 02 17 | 704 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.3+ |
| 2002 08 28 | 644 | 0.5− | 0.6+ | 2004 02 17 | 704 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.2+ | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 08 29 | 644 | 0.7+ | 0.1+ | 2004 02 17 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.4+ | 0.1+ | 2004 02 20 | 608 | 0.1− | 1.0+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | (0.0 | 1.7+) | 2004 02 20 | 608 | 0.1− | 1.2+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2004 02 20 | 608 | 0.1− | 0.9+ | 2006 10 16 | 683 | 0.2+ | 0.2− |
| 2002 09 05 | 704 | 0.5+ | 1.4+ | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 683 | 0.3+ | 0.1− |
| 2002 09 14 | 644 | 0.9− | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 683 | 0.6+ | 0.3+ |
| 2002 09 14 | 644 | 0.4− | 0.8+ | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 683 | 0.3+ | 0.2− |
| 2002 09 14 | 644 | 0.9− | 0.9+ | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 683 | 1.0− | 0.4+ |
| 2002 09 15 | 644 | 0.6− | 0.6+ | 2004 02 23 | 704 | 0.2+ | 0.9+ | 2006 10 17 | 683 | 0.1− | 0.6− |
| 2002 09 15 | 644 | 0.7− | 0.7+ | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.6− |
| 2002 09 15 | 644 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.6− |
| 2003 11 29 | 703 | (2.3+ | 0.2−) | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.9− |
| 2003 11 29 | 703 | 0.6+ | 1.3+ | 2004 02 26 | 704 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.9− |
| 2003 11 29 | 703 | 1.1− | 0.7− | 2004 02 26 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 683 | 0.7− | 0.0 |
| 2003 11 29 | 703 | 0.5+ | 0.2+ | 2004 03 15 | 704 | 1.3+ | 0.3+ | 2006 10 19 | 683 | 0.4− | 1.2+ |
| 2003 12 01 | 704 | 0.1− | 1.3− | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 683 | 0.4+ | 0.3+ |
| 2003 12 01 | 704 | 0.3+ | 0.3− | 2004 03 15 | 704 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2003 12 01 | 704 | 0.4+ | 0.1− | 2004 03 15 | 704 | 0.3− | 0.8+ | 2006 10 19 | 644 | 0.3− | 0.1− |
| 2003 12 01 | 704 | 0.5+ | 1.4− | 2004 03 15 | 704 | 0.7− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 704 | 0.1− | 0.3− | 2004 03 18 | 704 | 1.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2003 12 21 | 645 | 0.2− | 0.2− | 2004 03 18 | 704 | 1.0+ | 0.2+ | 2006 10 20 | 683 | 0.6+ | 0.2− | | |
| 2003 12 21 | 645 | 0.2− | 0.2− | 2004 03 18 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 683 | 0.9+ | 0.8+ | | |
| 2003 12 22 | 704 | 0.9+ | 0.3+ | 2004 03 18 | 704 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2003 12 22 | 704 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.7+ | 2006 10 20 | 683 | 0.5− | 0.3+ | | |
| 2003 12 22 | 704 | 0.9+ | 0.1+ | 2004 03 19 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 22 | 704 | 0.5+ | 0.2+ | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 683 | 0.3− | 0.8+ | | |
| 2003 12 22 | 704 | 1.2+ | 0.0 | 2004 03 19 | 644 | 0.6− | 0.2+ | 2006 10 22 | 683 | (1.4− | 2.0+) | | |
| 2003 12 25 | 645 | 0.2− | 0.2− | 2004 03 20 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 683 | (1.9− | 0.5+) | | |
| 2003 12 25 | 645 | 0.1− | 0.2− | 2004 03 20 | 691 | 0.3+ | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.2− | | |
| 2003 12 27 | 704 | 0.2+ | 0.4+ | 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.0 | | |
| 2003 12 27 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 1.0− | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.1− | | |
| 2003 12 27 | 704 | 1.0+ | 0.6− | 2006 09 14 | 703 | 0.2− | 0.2− | | | | | | |
| 2003 12 27 | 704 | 0.7+ | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.9+ | | | | | | |

**(137736)∗ 1999 XX$_{125}$**

Discovered 1999 Dec. 7 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.55688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26555094 | $\omega$ | 61.02874 | | +0.17076082 | −0.98465340 | |
| $a$ | 2.3971994 | $\Omega$ | 19.23972 | | +0.86168097 | +0.13149872 | |
| $e$ | 0.1060098 | $i$ | 6.27794 | | +0.47785630 | +0.11474217 | |
| $P$ | 3.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.2+ | 0.6− | 2003 12 17 | 704 | 0.4− | 0.8+ | 2006 08 22 | 644 | 0.1− | 0.1− | | |
| 1999 10 13 | 704 | 0.7+ | 0.4+ | 2003 12 17 | 704 | 0.5− | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.0 | | |
| 1999 10 13 | 704 | 1.3+ | 0.4− | 2003 12 27 | 704 | 0.2+ | 0.3− | 2006 08 22 | 644 | 0.2− | 0.2+ | | |
| 1999 10 13 | 704 | 1.2+ | 0.7+ | 2003 12 27 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.3+ | | |
| 1999 11 09 | 703 | 0.2+ | 0.3− | 2003 12 27 | 704 | 0.7+ | 0.4− | 2006 08 28 | 699 | 0.5− | 0.8+ | | |
| 1999 11 09 | 703 | 0.1− | 0.1+ | 2003 12 27 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.2+ | 1.0+ | | |
| 1999 11 09 | 703 | 0.4+ | 0.7− | 2003 12 27 | 704 | 0.6+ | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.8− | | |
| 1999 11 09 | 703 | 0.7− | 0.5+ | 2003 12 29 | 703 | (2.5− | 0.1−) | 2006 08 29 | 691 | 0.0 | 0.2+ | | |
| 1999 12 07 | 703 | 0.4− | 0.4− | 2003 12 29 | 703 | 0.3− | 0.4+ | 2006 08 29 | 691 | 0.2+ | 0.3+ | | |
| 1999 12 07 | 703 | 0.9− | 0.3+ | 2003 12 29 | 703 | (2.2− | 1.9−) | 2006 08 29 | 691 | 0.2+ | 0.1+ | | |
| 1999 12 07 | 703 | 0.0 | 0.3+ | 2003 12 29 | 704 | 1.2+ | 0.0 | 2006 09 14 | 703 | 1.2− | 0.2− | | |
| 1999 12 07 | 703 | 0.3+ | 1.2− | 2003 12 29 | 704 | 0.9+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.1− | | |
| 1999 12 13 | 703 | 0.0 | 1.1− | 2003 12 29 | 703 | (1.6− | 0.1−) | 2006 09 14 | 703 | 0.3− | 0.1+ | | |
| 1999 12 13 | 703 | 0.3+ | 0.4− | 2003 12 29 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.8+ | | |
| 1999 12 13 | 703 | 1.2− | 0.7− | 2003 12 29 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2− | | |
| 1999 12 13 | 703 | 0.5+ | 0.2+ | 2003 12 29 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | (2.8+ | 0.3−) | | |
| 2002 08 11 | 644 | 0.1− | 0.3+ | 2003 12 29 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.5− | 0.5+ | | |
| 2002 08 11 | 644 | 0.4− | 0.1+ | 2003 12 29 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.4− | | |
| 2002 08 11 | 644 | 0.2− | 0.0 | 2003 12 29 | 704 | 0.4− | 0.3− | 2006 10 10 | 644 | 0.3− | 0.5− | | |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2003 12 29 | 704 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.3− | 0.1− | | |
| 2002 08 30 | 644 | 0.3− | 0.6+ | 2003 12 30 | 704 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.1− | | |
| 2002 08 30 | 644 | 0.1− | 0.5+ | 2003 12 30 | 704 | 1.2+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ | | |
| 2003 12 17 | 703 | 0.3− | 0.4+ | 2003 12 30 | 704 | 0.8+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 2003 12 17 | 699 | 0.5+ | 0.7− | 2003 12 30 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 2003 12 17 | 703 | 0.1− | 0.5+ | 2003 12 30 | 704 | 0.8+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2003 12 17 | 699 | 0.1− | 0.3− | 2004 01 16 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1− | | |
| 2003 12 17 | 704 | 0.5− | 0.6+ | 2004 01 16 | 691 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3− | | |
| 2003 12 17 | 703 | 0.4− | 0.6+ | 2004 01 16 | 691 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.5− | | |
| 2003 12 17 | 699 | 0.8− | 0.1+ | 2004 01 19 | 704 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.3− | | |
| 2003 12 17 | 704 | 0.1+ | 0.3+ | 2004 01 19 | 704 | 0.1− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.7− | | |
| 2003 12 17 | 699 | 0.1− | 0.3− | 2004 01 19 | 704 | 1.0+ | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.3+ | | |
| 2003 12 17 | 703 | 0.4− | 0.0 | 2004 01 19 | 704 | 0.2+ | 0.6+ | | | | | | |

**(137737)∗ 1999 XD$_{128}$ = 2004 DJ$_{15}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60565)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.16364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27271758 | $\omega$ | 26.42522 | | +0.28708223 | −0.95721368 | |
| $a$ | 2.3550165 | $\Omega$ | 46.91560 | | +0.86980043 | +0.24456524 | |
| $e$ | 0.1836367 | $i$ | 2.85762 | | +0.40128669 | +0.15469262 | |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.5+ | 0.5− | 2004 01 22 | 704 | 0.8+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 1999 11 09 | 704 | 0.6+ | 0.9− | 2004 01 22 | 704 | 0.9+ | 1.1+ | 2006 10 10 | 644 | 0.2− | 0.2+ | | |
| 1999 11 09 | 704 | (2.4+ | 0.3−) | 2004 01 22 | 704 | 0.8+ | 1.3+ | 2006 10 10 | 644 | 0.4− | 0.5+ | | |
| 1999 11 09 | 704 | 0.8+ | 0.5− | 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 1999 11 09 | 704 | 0.2+ | 0.3− | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 1999 11 12 | 704 | 0.5+ | 0.5− | 2004 02 11 | 644 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 1999 11 12 | 704 | 0.1+ | 0.4− | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 10 15 | 703 | 1.1− | 0.7− | | |
| 1999 11 12 | 704 | 0.4+ | 0.0 | 2004 02 17 | 704 | (2.2+ | 1.1+) | 2006 10 15 | 703 | 0.4+ | 0.8+ | | |
| 1999 11 12 | 704 | 0.7+ | 0.9+ | 2004 02 17 | 704 | 0.1− | 1.3+ | 2006 10 15 | 703 | 0.8− | 0.9+ | | |
| 1999 11 14 | 704 | 0.4+ | 0.2− | 2004 02 17 | 704 | 0.1+ | 0.9+ | 2006 10 15 | 703 | 0.3− | 0.6+ | | |
| 1999 11 14 | 704 | 0.3− | 0.9− | 2004 02 17 | 704 | 0.3+ | 1.3+ | 2006 10 17 | G96 | (0.4− | 2.5−) | | |
| 1999 11 14 | 704 | 0.2− | 0.6− | 2004 02 19 | 704 | 0.5− | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.3− | | |
| 1999 11 14 | 704 | 0.5− | 0.1− | 2004 02 19 | 704 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.6− | 0.3− | | |
| 1999 11 14 | 704 | 0.4− | 0.3− | 2004 02 19 | 704 | 0.1+ | 0.6− | 2006 10 17 | G96 | 0.2− | 0.0 | | |
| 1999 11 16 | 704 | 0.4− | 0.1− | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.7+ | | |
| 1999 11 16 | 704 | 1.4+ | 0.2− | 2004 02 23 | 704 | 0.8+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.5+ | | |
| 1999 11 16 | 704 | 0.5− | 0.4− | 2004 02 23 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.1+ | | |
| 1999 11 16 | 704 | 0.1+ | 0.5− | 2004 02 23 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.6+ | | |
| 1999 12 07 | 704 | 0.2− | 0.3− | 2004 03 21 | 671 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 1999 12 07 | 704 | 0.3− | 0.6− | 2004 03 21 | 671 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 1999 12 07 | 704 | 0.1− | 0.3− | 2004 03 21 | 671 | 0.0 | 0.1+ | 2006 10 21 | 291 | 0.1+ | 0.6+ | | |
| 1999 12 07 | 704 | 0.1+ | 0.3− | 2004 03 21 | 671 | 0.3+ | 0.2− | 2006 10 21 | 291 | 0.1− | 0.4+ | | |
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2004 03 25 | 704 | 0.1+ | 0.7+ | 2006 10 21 | 291 | 0.3− | 0.4+ | | |
| 1999 12 13 | 704 | 0.8+ | 0.7− | 2004 03 25 | 704 | 0.9− | 0.9+ | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 1999 12 13 | 704 | 0.1− | 0.3+ | 2004 03 25 | 704 | (1.0− | 1.9+) | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 1999 12 13 | 704 | 1.1− | 1.7+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.6− | | |
| 1999 12 13 | 704 | 0.3− | 0.7− | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 1999 12 13 | 704 | 1.5− | 0.8+ | 2006 09 17 | 691 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 1999 12 13 | 704 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 1999 12 13 | 704 | 0.3+ | 0.6− | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 1999 12 13 | 704 | (0.1+ | 2.4+) | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.3− | | |
| 2001 05 02 | 691 | 0.2− | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.4− | | |
| 2001 05 02 | 691 | 0.4+ | 0.4+ | 2006 10 01 | 691 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2001 05 02 | 691 | 0.3+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.1+ | | | | | | |

**(137738)∗ 1999 XK$_{130}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.45131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25801078 | $\omega$ | 96.40348 | | −0.81574868 | −0.56591622 | |
| $a$ | 2.4436789 | $\Omega$ | 49.20418 | | +0.44834525 | −0.74925118 | |
| $e$ | 0.1750828 | $i$ | 9.08625 | | +0.36543212 | −0.34403706 | |
| $P$ | 3.82 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 704 | 0.2− | 0.2+ | 2003 12 17 | 699 | 0.5− | 0.3+ | 2004 02 11 | 704 | 0.0 | 0.1− | | |
| 1999 11 16 | 704 | 1.4− | 0.9− | 2003 12 17 | 704 | 0.3− | 0.7+ | 2004 02 11 | 704 | 0.4− | 0.1+ | | |
| 1999 11 16 | 704 | 0.4− | 0.7− | 2003 12 17 | 699 | 0.4− | 0.1+ | 2004 02 27 | 704 | 0.0 | 0.0 | | |
| 1999 12 12 | 704 | 0.1+ | 0.7− | 2003 12 17 | 704 | 0.0 | 0.6+ | 2004 02 27 | 704 | 0.2+ | 0.2+ | | |
| 1999 12 12 | 704 | 0.1− | 0.4− | 2003 12 17 | 699 | 0.4+ | 0.3− | 2004 02 27 | 704 | 0.1− | 0.2+ | | |
| 1999 12 12 | 704 | 0.1− | 1.0− | 2003 12 17 | 704 | 0.0 | 1.0+ | 2004 03 23 | 704 | 0.0 | 0.9+ | | |
| 1999 12 12 | 704 | 0.0 | 1.2− | 2003 12 17 | 704 | 0.3+ | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.2+ | | |
| 1999 12 12 | 704 | 0.1+ | 0.5− | 2003 12 18 | 691 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.1− | 0.1+ | | |
| 1999 12 13 | 704 | 0.1− | 0.4− | 2003 12 18 | 691 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.8+ | 0.8+ | | |
| 1999 12 13 | 704 | 0.0 | 0.3− | 2003 12 18 | 691 | 0.1− | 0.1− | 2006 08 27 | D35 | 0.1− | 0.8+ | | |
| 1999 12 13 | 704 | 0.1+ | 0.4− | 2003 12 28 | 704 | 0.7+ | 0.2+ | 2006 08 27 | D35 | 0.3− | 1.0+ | | |
| 1999 12 13 | 704 | 0.1− | 0.5− | 2003 12 28 | 704 | 0.2− | 0.4− | 2006 08 27 | D35 | 0.3− | 0.9+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.5+ | 0.2− | 2003 12 28 | 704 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 1.0+ | 0.0 |
| 2000 01 02 | 704 | 0.2− | 0.3− | 2003 12 29 | 704 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.9+ | 0.6− |
| 2000 01 02 | 704 | 0.3+ | 0.5+ | 2003 12 29 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.7− | 0.2+ |
| 2000 01 02 | 704 | 1.1+ | 0.1− | 2003 12 29 | 704 | 0.2− | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.0 |
| 2000 01 04 | 704 | 0.3− | 0.1+ | 2003 12 29 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.1+ | 0.4− |
| 2000 01 04 | 704 | 0.7− | 0.2− | 2003 12 29 | 704 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.4− |
| 2000 01 04 | 704 | 1.0+ | 0.4− | 2003 12 30 | 704 | 0.2+ | 0.2− | 2006 09 26 | 703 | 1.0− | 0.7− |
| 2000 01 04 | 704 | 0.3+ | 0.7− | 2003 12 30 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.2+ |
| 2000 01 04 | 704 | 1.3+ | 0.0 | 2003 12 30 | 704 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2000 02 11 | 704 | 0.5+ | 0.5− | 2003 12 30 | 704 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.5+ |
| 2000 02 11 | 704 | 1.0+ | 0.1+ | 2003 12 30 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2000 02 11 | 704 | 1.0+ | 0.3− | 2004 01 19 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.5+ |
| 2000 02 11 | 704 | 0.2+ | 0.6+ | 2004 01 19 | 704 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.8− | 0.4+ |
| 2002 09 14 | 608 | 1.1− | 0.1− | 2004 01 19 | 704 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 09 14 | 608 | 0.2− | 0.1+ | 2004 01 19 | 704 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 09 14 | 608 | 0.5− | 0.1+ | 2004 01 19 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2003 11 19 | 704 | 0.6− | 0.0 | 2004 02 09 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2003 11 19 | 704 | 0.1− | 0.0 | 2004 02 09 | 644 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2003 11 19 | 704 | 0.6+ | 0.3+ | 2004 02 09 | 644 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2003 11 19 | 704 | 0.6− | 0.3+ | 2004 02 11 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.8+ |
| 2003 11 19 | 704 | 0.5− | 0.1+ | 2004 02 11 | 704 | 0.1− | 0.4+ | | | | |
| 2003 12 17 | 699 | 0.1− | 0.5+ | 2004 02 11 | 704 | 0.4− | 0.3+ | | | | |

**(137739)∗ 1999 XO$_{130}$ = 1978 EQ$_8$ = 1995 WL$_{35}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 37948)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.86830 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26269856 | $\omega$ | 125.12627 | | −0.95947763 | −0.25823292 | |
| $a$ | 2.4145206 | $\Omega$ | 40.24671 | | +0.16610582 | −0.84160986 | |
| $e$ | 0.2287645 | $i$ | 10.05272 | | +0.22762148 | −0.47435072 | |
| $P$ | 3.75 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 03 03 | 033 | 0.3+ | 0.2− | 2003 11 19 | 704 | 0.4+ | 0.5+ | 2004 01 28 | 703 | (1.9− | 0.0 ) |
| 1978 03 04 | 033 | (4.1+ | 0.4−) | 2003 11 28 | 699 | 1.2− | 0.2+ | 2004 01 28 | 703 | 0.2+ | 0.3+ |
| 1978 03 04 | 033 | 0.0 | 0.0 | 2003 11 28 | 699 | 0.3+ | 0.6+ | 2004 01 28 | 703 | 0.4+ | 0.6+ |
| 1995 11 21 | 691 | 0.4− | 0.1+ | 2003 11 28 | 699 | 0.7− | 0.3+ | 2004 02 10 | 704 | 0.6+ | 0.0 |
| 1995 11 21 | 691 | 0.4− | 0.1− | 2003 11 28 | 699 | 0.7+ | 0.3+ | 2004 02 10 | 704 | 0.1+ | 0.1+ |
| 1995 11 21 | 691 | 0.4− | 0.3− | 2003 12 03 | 704 | 0.4+ | 0.7+ | 2004 02 10 | 704 | 0.2+ | 0.4+ |
| 1995 11 28 | 691 | 0.1− | 0.4− | 2003 12 03 | 704 | 0.2+ | 0.1+ | 2004 02 10 | 704 | 0.2+ | 0.3− |
| 1995 11 28 | 691 | 0.2− | 0.2− | 2003 12 03 | 704 | 0.2− | 0.1+ | 2004 02 16 | 644 | 0.0 | 0.2+ |
| 1995 11 28 | 691 | 0.2+ | 0.5− | 2003 12 03 | 704 | 0.2+ | 0.4− | 2004 02 16 | 644 | 0.0 | 0.1+ |
| 1999 12 07 | 703 | 0.3− | 0.5− | 2003 12 03 | 704 | 0.1− | 0.0 | 2004 02 16 | 644 | 0.1+ | 0.0 |
| 1999 12 07 | 703 | 0.7+ | 0.3− | 2003 12 17 | 703 | (1.3− | 1.9−) | 2004 02 26 | 703 | 0.6− | 0.4+ |
| 1999 12 07 | 703 | (3.1+ | 1.6−) | 2003 12 17 | 703 | 1.4− | 0.1− | 2004 02 26 | 703 | 0.7+ | 0.6+ |
| 1999 12 07 | 703 | 0.1− | 1.1+ | 2003 12 17 | 704 | 0.1+ | 0.2+ | 2004 02 26 | 703 | 0.0 | 0.3+ |
| 1999 12 12 | 704 | 0.4+ | 0.0 | 2003 12 17 | 703 | (2.1− | 0.5−) | 2004 02 26 | 703 | 0.3+ | 0.2+ |
| 1999 12 12 | 704 | 1.3+ | 1.3− | 2003 12 17 | 704 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.3+ | 0.0 |
| 1999 12 12 | 704 | (0.5+ | 2.6−) | 2003 12 17 | 703 | (1.9− | 0.1−) | 2004 03 23 | 704 | 0.2− | 0.5+ |
| 1999 12 13 | 704 | (2.5+ | 1.4−) | 2003 12 17 | 704 | 0.3+ | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.3+ |
| 1999 12 13 | 704 | 0.5+ | 0.6− | 2003 12 17 | 704 | (2.7+ | 0.4+) | 2004 03 25 | 704 | 0.3+ | 0.7− |
| 1999 12 13 | 704 | 0.4+ | 1.4− | 2003 12 17 | 699 | 0.2− | 0.1+ | 2004 03 25 | 704 | 0.3− | 0.1− |
| 1999 12 13 | 704 | 0.7+ | 0.9− | 2003 12 17 | 699 | 0.2+ | 0.2− | 2004 03 25 | 704 | 0.1− | 1.1+ |
| 1999 12 14 | 704 | 1.0+ | 0.5− | 2003 12 17 | 699 | 0.8− | 0.2+ | 2004 03 25 | 704 | 0.1+ | 0.9+ |
| 1999 12 14 | 704 | (2.7+ | 0.1−) | 2003 12 17 | 699 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.4− | 0.6+ |
| 1999 12 14 | 704 | (2.2+ | 0.5+) | 2003 12 29 | 703 | 0.1+ | 0.5+ | 2006 09 28 | 691 | 0.3− | 0.0 |
| 1999 12 15 | 704 | 0.8+ | 0.4+ | 2003 12 29 | 704 | 0.1− | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 1999 12 15 | 704 | 0.8+ | 0.5− | 2003 12 29 | 703 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 1999 12 15 | 704 | 0.0 | 0.1− | 2003 12 29 | 704 | 0.7− | 0.1+ | 2006 10 11 | 644 | 0.6+ | 0.2+ |
| 1999 12 15 | 704 | 1.1+ | 0.5+ | 2003 12 29 | 703 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 1999 12 15 | 704 | 0.5+ | 1.1− | 2003 12 29 | 704 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 1999 12 15 | 704 | 1.0+ | 0.6− | 2003 12 29 | 703 | 1.1− | 0.9− | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 1999 12 15 | 704 | 0.7+ | 0.0 | 2003 12 29 | 704 | 0.0 | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2000 01 02 | 704 | 0.9+ | 0.9− | 2003 12 29 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.2− | 2.3+ |
| 2000 01 02 | 704 | 0.2+ | 0.0 | 2004 01 11 | 699 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 2000 01 02 | 704 | 0.7+ | 0.5− | 2004 01 11 | 699 | 0.7− | 0.1+ | 2006 10 16 | 703 | 1.3+ | 0.2+ |
| 2003 11 19 | 704 | 0.6+ | 0.6+ | 2004 01 11 | 699 | 0.0 | 0.2+ | 2006 10 16 | 703 | 1.5− | 1.6+ |
| 2003 11 19 | 704 | 0.5− | 0.5+ | 2004 01 11 | 699 | 0.3+ | 0.1− | | | | |
| 2003 11 19 | 704 | 0.4− | 0.3− | 2004 01 28 | 703 | 0.1+ | 0.8+ | | | | |

**(137740)∗ 1999 XN$_{131}$ = 2005 JN$_{90}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74698)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.90042 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27257582 | $\omega$ | 308.14304 | | +0.96724585 | −0.22277706 | |
| $a$ | 2.3558330 | $\Omega$ | 65.02712 | | +0.25379159 | +0.85820816 | |
| $e$ | 0.1479872 | $i$ | 7.71402 | | −0.00502948 | +0.46243825 | |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.1− | 0.8− | 2005 05 13 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 1999 11 09 | 704 | 0.6− | 0.1− | 2005 05 13 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.7+ |
| 1999 11 09 | 704 | 0.5− | 0.0 | 2005 05 13 | 691 | 0.1+ | 0.2− | 2006 10 22 | 703 | 1.3− | 0.0 |
| 1999 11 09 | 704 | 0.1− | 0.9− | 2005 06 13 | G96 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.3+ |
| 1999 11 12 | 704 | 1.7− | 0.1+ | 2005 06 13 | G96 | 0.9− | 0.4+ | 2006 10 22 | 703 | 1.1+ | 0.3+ |
| 1999 11 12 | 704 | 0.7− | 0.1− | 2005 06 13 | G96 | 0.8− | 0.7+ | 2006 10 22 | 703 | 0.2− | 0.3− |
| 1999 11 12 | 704 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.9− | 0.4+ | 2006 10 27 | 704 | (1.7− | 0.4+) |
| 1999 11 12 | 704 | 0.6− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.1+ | 2006 10 27 | 704 | 0.6− | 0.5+ |
| 1999 11 12 | 704 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.2+ | 2006 10 27 | 704 | 0.1+ | 0.2− |
| 1999 12 12 | 704 | 1.4+ | 0.0 | 2006 09 26 | 703 | 0.3− | 0.5− | 2006 10 27 | 704 | 0.4+ | 1.0+ |
| 1999 12 12 | 704 | 0.4+ | 1.0+ | 2006 09 26 | 703 | 0.4− | 0.2+ | 2006 11 07 | 644 | 0.4+ | 0.6+ |
| 1999 12 12 | 704 | 1.0+ | 1.0− | 2006 09 29 | 699 | 0.6− | 0.8+ | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 1999 12 13 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 1.2− | 0.6− | 2006 11 07 | 644 | 0.2− | 0.5+ |
| 1999 12 13 | 704 | 0.8+ | 0.3− | 2006 09 29 | 699 | 0.2− | 0.7+ | 2006 11 13 | 703 | (0.3− | 1.8−) |
| 1999 12 13 | 704 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.8− | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 1999 12 13 | 704 | 1.0+ | 0.1+ | 2006 10 01 | 704 | 0.7+ | 0.1+ | 2006 11 13 | 703 | 0.8− | 0.9+ |
| 1999 12 13 | 704 | (2.9+ | 0.1−) | 2006 10 01 | 704 | 0.5+ | 0.3− | 2006 11 13 | 703 | 1.2− | 0.5+ |
| 2001 03 21 | 691 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 1.3+ | 0.5− | 2006 11 14 | 704 | 0.3+ | 0.3− |
| 2001 03 21 | 691 | 0.4− | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.5+ | 1.0+ |
| 2001 03 21 | 691 | 0.4+ | 0.2+ | 2006 10 03 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 0.4− | 0.2+ |
| 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 1.3+ | 0.8− | 2006 11 14 | 704 | 0.7+ | 0.7+ |
| 2005 05 03 | 691 | 0.0 | 0.3+ | 2006 10 03 | 704 | 0.9− | 0.1− | 2006 11 16 | 703 | 0.1− | 0.9+ |
| 2005 05 03 | 691 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.1+ | 0.6− | 2006 11 16 | 703 | 0.2− | 1.0+ |
| 2005 05 11 | G96 | 0.3− | 0.1− | 2006 10 03 | 704 | 0.3+ | 0.3− | 2006 11 16 | 703 | 0.3+ | 0.8+ |
| 2005 05 11 | G96 | 0.2+ | 0.2− | 2006 10 03 | 704 | 0.0 | 0.1− | 2006 11 16 | 703 | (1.9+ | 0.4+) |
| 2005 05 11 | G96 | 0.3+ | 0.1− | 2006 10 03 | 704 | 0.4+ | 0.8− | 2006 11 20 | 704 | 0.2− | 1.2+ |
| 2005 05 11 | G96 | 0.2− | 0.1− | 2006 10 03 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2005 05 12 | 691 | 0.3+ | 0.3+ | 2006 10 03 | 704 | 0.4+ | 1.1− | 2006 11 20 | 704 | 0.6− | 1.1+ |
| 2005 05 12 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 20 | 704 | 1.5− | 0.4+ |
| 2005 05 12 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | 1.1− | 0.7+ | 2006 11 20 | 704 | 0.2+ | 0.5+ |

**(137741)∗ 1999 XA$_{135}$**

Discovered 1999 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.45758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26989243 | $\omega$ | 87.12986 | | −0.90940221 | −0.03993149 | |
| $a$ | 2.3714224 | $\Omega$ | 90.32398 | | −0.12325114 | −0.92479895 | |
| $e$ | 0.2004477 | $i$ | 24.45655 | | +0.39723642 | −0.37835483 | |
| $P$ | 3.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.7− | 0.3− | 2003 11 21 | 644 | 0.3+ | 0.4+ | 2004 02 10 | 704 | 0.6− | 0.1+ |
| 1999 12 06 | 704 | 0.8+ | 0.1+ | 2003 11 21 | 644 | 0.4+ | 0.3+ | 2004 02 10 | 704 | 0.2− | 0.5− |
| 1999 12 06 | 704 | 0.1+ | 0.2+ | 2003 11 21 | 644 | 0.4+ | 0.3+ | 2004 04 13 | 704 | 0.5− | 0.8+ |
| 1999 12 06 | 704 | 0.2− | 0.1− | 2003 12 04 | 704 | (0.1− | 1.6+) | 2004 04 13 | 704 | 0.4− | 0.4+ |
| 1999 12 06 | 704 | 0.6+ | 0.2− | 2003 12 04 | 704 | 0.4− | 1.3+ | 2004 04 13 | 704 | 0.1+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.6+ | 0.6− | 2003 12 04 | 704 | 0.3+ | 0.1+ | 2004 04 13 | 704 | 0.2− | 0.4+ | | |
| 1999 12 14 | 704 | 0.9+ | 1.0− | 2003 12 04 | 704 | 0.7+ | 0.7+ | 2004 04 13 | 704 | 0.2− | 0.0 | | |
| 1999 12 14 | 704 | 0.3+ | 0.9− | 2003 12 04 | 704 | 0.3+ | 0.2+ | 2004 04 16 | A35 | 0.1+ | 0.6+ | | |
| 1999 12 14 | 704 | 0.2− | 0.6− | 2003 12 17 | 704 | 0.2+ | 0.0 | 2004 04 16 | A35 | 0.0 | 0.1+ | | |
| 1999 12 14 | 704 | 0.0 | 1.0− | 2003 12 17 | 704 | 0.1− | 0.2+ | 2004 04 16 | A35 | 0.1− | 0.2+ | | |
| 2000 01 05 | 704 | 0.6− | 0.2− | 2003 12 17 | 704 | 0.4− | 0.0 | 2004 05 09 | 704 | 0.7+ | 0.2− | | |
| 2000 01 05 | 704 | 0.0 | 0.3− | 2003 12 30 | 704 | 0.3+ | 0.2+ | 2004 05 09 | 704 | 0.2− | 0.4+ | | |
| 2000 01 05 | 704 | 0.2+ | 0.3+ | 2003 12 30 | 704 | 0.4+ | 0.2+ | 2004 05 09 | 704 | 0.5+ | 0.1− | | |
| 2000 01 05 | 704 | 0.1+ | 0.2− | 2003 12 30 | 704 | 0.9+ | 0.4− | 2005 08 05 | E12 | 0.6− | 0.8+ | | |
| 2000 01 05 | 704 | 0.5+ | 0.7+ | 2003 12 30 | 704 | 0.4+ | 0.1+ | 2005 08 05 | E12 | 0.2+ | 0.5+ | | |
| 2000 01 06 | 704 | 0.6+ | 1.2− | 2004 01 02 | 704 | 0.3+ | 0.1− | 2005 08 05 | E12 | 1.3− | 1.2+ | | |
| 2000 01 06 | 704 | 1.1− | 1.4− | 2004 01 02 | 704 | 0.7+ | 0.3− | 2005 08 05 | E12 | 0.3+ | 0.6+ | | |
| 2000 01 06 | 704 | 0.3+ | 0.3− | 2004 01 02 | 704 | (1.6+ | 0.3−) | 2005 08 25 | E12 | 0.5+ | 0.1+ | | |
| 2000 01 06 | 704 | 0.1− | 0.5− | 2004 01 31 | 703 | 0.0 | 0.4+ | 2005 08 25 | E12 | 0.1− | 0.9+ | | |
| 2000 01 06 | 704 | 0.3+ | 0.4− | 2004 01 31 | 703 | 0.4+ | 0.3+ | 2005 08 25 | E12 | 0.4+ | 0.5+ | | |
| 2000 01 07 | 704 | 0.0 | 0.7+ | 2004 01 31 | 703 | 0.3− | 0.2+ | 2005 08 25 | E12 | 0.1+ | 0.1+ | | |
| 2000 01 07 | 704 | 0.6− | 0.2− | 2004 01 31 | 703 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.3− | 0.6+ | | |
| 2000 01 07 | 704 | 0.2− | 0.3− | 2004 02 03 | 704 | 0.3− | 0.2− | 2006 11 01 | 703 | 0.2+ | 0.4− | | |
| 2000 01 07 | 704 | 0.4− | 0.9− | 2004 02 03 | 704 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.1+ | 0.6+ | | |
| 2000 01 07 | 704 | 1.3+ | 0.4− | 2004 02 03 | 704 | 0.1− | 0.1− | 2006 11 01 | 703 | 0.5− | 0.5+ | | |
| 2000 01 30 | 704 | 0.1+ | 0.8+ | 2004 02 03 | 704 | 0.0 | 0.1− | 2006 11 17 | 703 | 1.0− | 1.2+ | | |
| 2000 01 30 | 704 | 0.1+ | 1.4+ | 2004 02 03 | 704 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.6− | 1.0+ | | |
| 2000 01 30 | 704 | 1.0+ | 0.5+ | 2004 02 09 | 699 | 0.2− | 0.5− | 2006 11 17 | 703 | 0.8− | 1.1+ | | |
| 2003 10 25 | 704 | 0.5+ | 0.4+ | 2004 02 09 | 699 | 0.4− | 0.8+ | 2006 11 17 | 703 | 1.3− | 0.1+ | | |
| 2003 10 25 | 704 | 0.3+ | 1.3+ | 2004 02 09 | 699 | 0.6+ | 0.5+ | 2006 11 23 | 703 | 0.4− | 0.3+ | | |
| 2003 10 25 | 704 | 1.2+ | 0.4+ | 2004 02 09 | 699 | 0.1− | 0.4+ | 2006 11 23 | 703 | 1.9+ | 0.1− | | |
| 2003 11 19 | 704 | 0.6− | 1.3+ | 2004 02 10 | 704 | 0.5− | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.0 | | |
| 2003 11 19 | 704 | 0.0 | 0.0 | 2004 02 10 | 704 | 0.6− | 0.3+ | 2006 11 23 | 703 | 0.0 | 0.2+ | | |
| 2003 11 19 | 704 | 0.5− | 0.9+ | 2004 02 10 | 704 | 0.7− | 0.1− | | | | | | |

**(137742)∗ 1999 XH$_{136}$**

Discovered 1999 Dec. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.91098 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27206341 | $\omega$ | 64.69590 | | −0.16040216 | | −0.95672659 |
| $a$ | 2.3587901 | $\Omega$ | 37.21505 | | +0.69781198 | | −0.28387774 |
| $e$ | 0.2574647 | $i$ | 23.66745 | | +0.69808996 | | +0.06393485 |
| $P$ | 3.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 327 | 0.3− | 0.3+ | 2004 03 31 | 704 | 0.1+ | 0.1+ | 2004 05 16 | 704 | 0.6+ | 0.4− | | |
| 1995 10 28 | 327 | 0.8− | 0.3+ | 2004 03 31 | 704 | 0.5+ | 0.3+ | 2004 05 16 | 704 | 0.3+ | 0.9− | | |
| 1999 12 13 | 704 | 0.4+ | 0.4− | 2004 03 31 | 704 | 0.6− | 0.0 | 2004 05 16 | 704 | 1.0+ | 0.2+ | | |
| 1999 12 13 | 704 | 0.1− | 0.5− | 2004 04 11 | 703 | 0.8+ | 0.8+ | 2004 05 18 | 704 | 0.8+ | 0.3+ | | |
| 1999 12 13 | 704 | 0.1− | 0.0 | 2004 04 11 | 703 | 1.4− | 0.1− | 2004 05 18 | 704 | 1.3+ | 0.7− | | |
| 1999 12 13 | 704 | 0.3− | 0.3+ | 2004 04 11 | 703 | 1.0− | 0.0 | 2004 05 18 | 704 | 1.3+ | 0.3+ | | |
| 1999 12 13 | 704 | 0.1− | 0.2− | 2004 04 11 | 703 | 0.8− | 0.8+ | 2004 05 18 | 704 | 0.7+ | 0.3+ | | |
| 1999 12 14 | 704 | 0.5+ | 0.7+ | 2004 04 15 | 699 | 0.4− | 0.2− | 2004 05 18 | 704 | 0.8+ | 0.1− | | |
| 1999 12 14 | 704 | 0.1− | 0.0 | 2004 04 15 | 699 | 0.3− | 0.2+ | 2004 05 21 | 691 | 0.2+ | 0.2+ | | |
| 1999 12 14 | 704 | 0.4− | 0.1+ | 2004 04 15 | 699 | 1.1− | 0.3− | 2004 05 21 | 691 | 0.3+ | 0.1+ | | |
| 1999 12 14 | 704 | 0.8− | 0.2− | 2004 04 15 | 699 | 0.3− | 0.8− | 2004 05 21 | 691 | 0.2+ | 0.1+ | | |
| 1999 12 14 | 704 | 0.8− | 1.2+ | 2004 04 17 | 704 | 0.5+ | 0.1− | 2004 06 12 | 699 | 0.7− | 1.0+ | | |
| 1999 12 30 | 704 | 0.3+ | 0.1− | 2004 04 17 | 704 | 0.8+ | 0.5− | 2004 06 12 | 699 | 0.3− | 1.2+ | | |
| 1999 12 30 | 704 | 0.1+ | 0.3− | 2004 04 17 | 704 | 1.0+ | 0.2− | 2004 06 12 | 699 | 0.4+ | 1.3+ | | |
| 1999 12 30 | 704 | 0.4− | 0.3− | 2004 04 19 | 704 | 0.1− | 0.7+ | 2004 06 12 | 699 | 1.4− | 1.0+ | | |
| 1999 12 30 | 704 | 0.2− | 0.2− | 2004 04 19 | 704 | (1.8+ | 1.0+) | 2006 08 29 | 703 | 0.1+ | 0.2+ | | |
| 1999 12 30 | 704 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.4+ | 0.3+ | 2006 08 29 | 703 | 0.8− | 0.2+ | | |
| 2000 03 15 | 704 | 0.2− | 0.3− | 2004 04 19 | 704 | 0.4+ | 0.4+ | 2006 08 29 | 703 | 0.6− | 0.1+ | | |
| 2000 03 15 | 704 | 0.0 | 0.4− | 2004 04 19 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 703 | 0.9− | 0.3+ | | |
| 2000 03 15 | 704 | 0.1− | 0.0 | 2004 04 20 | 704 | 0.5− | 1.2+ | 2006 09 16 | 703 | (2.5− | 2.7+) | | |
| 2000 03 15 | 704 | 0.7− | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 703 | (2.2− | 0.6+) | | |
| 2000 03 26 | 704 | 0.5+ | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.6+ | 2006 09 16 | 703 | 0.7− | 0.3+ | | |
| 2000 03 26 | 704 | 0.7+ | 0.1+ | 2004 04 20 | 704 | 0.9+ | 0.8+ | 2006 09 16 | 703 | 0.7+ | 0.4+ | | |
| 2000 03 26 | 704 | 1.4+ | 0.1− | 2004 04 20 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.2+ | 1.1+ | | |
| 2000 03 26 | 704 | 0.7+ | 0.3+ | 2004 04 21 | 704 | 0.5+ | 0.0 | 2006 09 17 | 704 | 0.7− | 1.3+ | | |
| 2000 05 04 | 699 | 0.7+ | 0.5+ | 2004 04 21 | 704 | 0.4+ | 0.0 | 2006 09 17 | 704 | 1.0− | 0.9− | | |
| 2000 05 04 | 699 | 0.2− | 0.3+ | 2004 04 21 | 704 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.2− | 0.4+ | | |
| 2000 05 04 | 699 | 0.5+ | 0.4− | 2004 04 21 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.3+ | 1.0+ | | |
| 2000 05 04 | 699 | 0.1− | 0.9+ | 2004 04 21 | 704 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.7+ | 0.6+ | | |
| 2002 10 07 | 644 | 0.5− | 0.9+ | 2004 04 22 | 704 | 0.5+ | 0.8− | 2006 09 20 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 07 | 644 | 0.6− | 0.5+ | 2004 04 22 | 704 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.5− | 0.7+ | | |
| 2002 10 07 | 644 | 0.8− | 0.7+ | 2004 04 22 | 704 | 0.4+ | 0.7+ | 2006 09 25 | 704 | (0.2− | 2.0+) | | |
| 2004 03 16 | 704 | 1.2+ | 0.3− | 2004 04 22 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.8− | 0.6+ | | |
| 2004 03 16 | 704 | 0.5− | 0.5− | 2004 04 22 | 704 | 0.2− | 0.4+ | 2006 09 25 | 704 | 0.6+ | 0.5+ | | |
| 2004 03 16 | 704 | 0.1+ | 0.3− | 2004 04 22 | 704 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.4+ | 1.0− | | |
| 2004 03 16 | 704 | 0.5+ | 0.3− | 2004 04 22 | 704 | 0.2− | 0.8+ | 2006 09 29 | 704 | 0.1− | 0.0 | | |
| 2004 03 16 | 704 | 0.1− | 0.2+ | 2004 04 22 | 704 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.3− | 0.1+ | | |
| 2004 03 20 | 704 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.3+ | 0.8+ | 2006 09 29 | 704 | 0.0 | 0.0 | | |
| 2004 03 20 | 704 | 0.9− | 0.7− | 2004 04 22 | 704 | 0.8+ | 0.2− | 2006 09 29 | 704 | 0.0 | 0.2− | | |
| 2004 03 20 | 704 | 0.0 | 0.6− | 2004 04 25 | 703 | 0.0 | 0.8+ | 2006 10 01 | 704 | 0.2+ | 0.4+ | | |
| 2004 03 20 | 704 | 0.4− | 0.3− | 2004 04 25 | 703 | 0.4+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.8+ | | |
| 2004 03 20 | 704 | 0.5− | 0.0 | 2004 04 25 | 703 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.6− | 0.6+ | | |
| 2004 03 22 | 704 | 0.5− | 0.3+ | 2004 04 25 | 703 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.5+ | 0.9+ | | |
| 2004 03 22 | 704 | 0.5+ | 0.1+ | 2004 05 09 | 703 | 0.6− | 0.4− | 2006 10 23 | 703 | 0.6− | 0.5+ | | |
| 2004 03 22 | 704 | 0.0 | 1.0+ | 2004 05 09 | 703 | 0.7− | 0.1− | 2006 10 23 | 703 | 0.6− | 0.1+ | | |
| 2004 03 22 | 704 | 1.0+ | 0.9+ | 2004 05 09 | 703 | 0.9− | 0.5+ | 2006 10 23 | 703 | 0.7− | 0.5+ | | |
| 2004 03 22 | 704 | (1.7+ | 0.4−) | 2004 05 09 | 703 | 1.0− | 0.0 | 2006 10 23 | 703 | 0.3− | 0.7+ | | |
| 2004 03 27 | 699 | 0.9+ | 0.5− | 2004 05 12 | 699 | (1.5− | 1.7−) | 2006 10 29 | 703 | 1.5+ | 0.5− | | |
| 2004 03 27 | 699 | 0.2+ | 0.7− | 2004 05 12 | 699 | 0.1+ | 0.4− | 2006 10 29 | 703 | 0.5− | 0.4+ | | |
| 2004 03 27 | 699 | 0.1− | 1.3− | 2004 05 12 | 699 | 1.1− | 0.6+ | 2006 10 29 | 703 | 0.8− | 0.4+ | | |
| 2004 03 27 | 699 | 0.6− | 1.0− | 2004 05 12 | 699 | 0.7− | 0.3+ | 2006 10 29 | 703 | 1.1− | 0.1+ | | |
| 2004 03 31 | 704 | 0.0 | 0.9+ | 2004 05 16 | 704 | 0.9+ | 0.4+ | | | | | | |

**(137743)∗ 1999 XE$_{138}$**

Discovered 1999 Dec. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.23093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26866724 | $\omega$ | 168.84784 | | +0.66175710 | | −0.74370032 |
| $a$ | 2.3786265 | $\Omega$ | 239.64088 | | +0.67912396 | | +0.64820054 |
| $e$ | 0.1045518 | $i$ | 6.30767 | | +0.31759751 | | +0.16354174 |
| $P$ | 3.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.6− | 0.1+ | 1999 12 17 | 691 | 0.2− | 0.5− | 2006 09 27 | 703 | 1.0+ | 0.4− | | |
| 1999 11 09 | 704 | 0.4− | 0.6+ | 1999 12 17 | 691 | 0.2+ | 0.5− | 2006 09 27 | 703 | (3.0− | 3.3−) | | |
| 1999 11 09 | 704 | 0.2+ | 0.6+ | 1999 12 17 | 691 | 0.2+ | 0.3− | 2006 09 27 | 703 | 1.0+ | 1.2− | | |
| 1999 11 09 | 704 | (3.3+ | 0.1+) | 2003 12 22 | 691 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.3+ | 0.1− | | |
| 1999 11 12 | 704 | 0.8+ | 0.1+ | 2003 12 22 | 691 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.1+ | | |
| 1999 11 12 | 704 | 0.2− | 0.8− | 2003 12 22 | 691 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 1999 11 12 | 704 | 0.1− | 0.8− | 2004 01 14 | 644 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 1999 11 12 | 704 | 0.1− | 0.5− | 2004 01 14 | 644 | 0.1+ | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | | |
| 1999 11 12 | 704 | 1.0+ | 0.2− | 2004 01 14 | 644 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.0 | | |
| 1999 12 02 | 691 | 0.3+ | 0.4− | 2004 04 16 | 645 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.3+ | | |
| 1999 12 02 | 691 | 0.3+ | 0.3− | 2004 04 16 | 645 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.3+ | | |
| 1999 12 02 | 691 | 0.0 | 0.3− | 2005 02 14 | 809 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 1999 12 07 | 704 | 0.3− | 1.0− | 2005 02 14 | 809 | 0.9+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.1+ | | |
| 1999 12 07 | 704 | 0.1− | 1.0− | 2005 02 14 | 809 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.4+ | | |
| 1999 12 07 | 704 | 0.1− | 0.7+ | 2005 02 14 | 809 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.3+ | | |
| 1999 12 07 | 704 | 0.7+ | 0.2− | 2006 09 17 | 703 | (0.6− | 1.9−) | 2006 10 21 | 691 | 0.1− | 0.2+ | | |
| 1999 12 07 | 691 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.7− | 2006 10 23 | 691 | 0.2− | 0.4+ | | |
| 1999 12 07 | 691 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.7− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 1999 12 07 | 691 | 0.1− | 0.6+ | 2006 09 17 | 703 | 0.7− | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.1− | | |

**(137744)∗ 1999 XU$_{138}$ = 1995 XA$_4$ = 1995 YP$_{26}$**

Discovered 1999 Dec. 5 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 93790)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.56053 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26921627 | $\omega$ | 45.24677 | | −0.74767346 | −0.65085601 | |
| $a$ | 2.3753914 | $\Omega$ | 93.68094 | | +0.56585450 | −0.72829670 | |
| $e$ | 0.0538102 | $i$ | 7.58928 | | +0.34755300 | −0.21440701 | |
| $P$ | 3.66 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 14 | 691 | 0.0 | 0.3+ | 2002 10 15 | 644 | 0.3− | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 1995 12 14 | 691 | 0.4− | 0.0 | 2002 10 15 | 644 | 0.6− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.6+ |
| 1995 12 14 | 691 | 0.1+ | 0.2+ | 2002 10 15 | 644 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.6+ |
| 1995 12 20 | 691 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.3− | 1.4+ | 2006 10 31 | G96 | 0.0 | 0.5+ |
| 1995 12 20 | 691 | 0.3− | 0.2− | 2004 02 17 | 704 | 0.8+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.4+ |
| 1995 12 20 | 691 | 0.3− | 0.1+ | 2004 02 17 | 704 | 0.9+ | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.8− |
| 1999 12 05 | 691 | 0.2+ | 0.2− | 2004 03 10 | 703 | 0.2− | 0.7+ | 2006 11 14 | 704 | 1.1− | 0.7+ |
| 1999 12 05 | 691 | 0.2+ | 0.4− | 2004 03 10 | 703 | 0.2− | 0.7+ | 2006 11 14 | 704 | 0.5+ | 0.3+ |
| 1999 12 05 | 691 | 0.3+ | 0.1− | 2004 03 10 | 703 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.6− |
| 1999 12 07 | 691 | 0.0 | 0.0 | 2004 03 10 | 703 | (0.3− | 2.2+) | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 1999 12 07 | 691 | 0.0 | 0.3− | 2004 03 14 | 704 | 0.7+ | 1.0+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 1999 12 07 | 691 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.3− | 0.9+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 1999 12 14 | 691 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.7+ | 0.8+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 1999 12 14 | 691 | 0.5− | 0.4− | 2004 03 19 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.2− |
| 1999 12 14 | 691 | 0.0 | 0.2− | 2004 03 19 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.4+ |
| 1999 12 18 | 691 | 0.4+ | 0.3− | 2004 03 19 | 644 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.3− |
| 1999 12 18 | 691 | 0.3+ | 0.1− | 2004 03 25 | 704 | 0.5+ | 1.1+ | 2006 11 20 | 704 | (0.2− | 1.7+) |
| 1999 12 18 | 691 | 0.3+ | 0.3− | 2004 03 25 | 704 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2000 01 31 | 704 | 0.2+ | 0.5− | 2004 03 25 | 704 | 0.6− | 0.5+ | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2000 01 31 | 704 | 0.3− | 0.4+ | 2004 03 25 | 704 | 0.2+ | 1.3+ | 2006 11 29 | 704 | 1.7− | 0.5− |
| 2000 01 31 | 704 | 0.2+ | 0.7− | 2006 10 23 | G96 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.4− | 0.6+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.4− | 0.5+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.2+ | | | | |

**(137745)∗ 1999 XY$_{141}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.15593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26394394 | $\omega$ | 234.79997 | | −0.76654131 | −0.52262193 | |
| $a$ | 2.4069196 | $\Omega$ | 270.84811 | | +0.63983341 | −0.67131401 | |
| $e$ | 0.2863450 | $i$ | 21.91584 | | −0.05502384 | −0.52555097 | |
| $P$ | 3.73 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 704 | (4.2− | 1.0−) | 2003 10 24 | 704 | 0.3+ | 0.3− | 2004 03 17 | 704 | 0.3− | 0.1− |
| 1999 10 31 | 704 | 0.5− | 0.1+ | 2003 10 29 | 704 | 0.4− | 0.5+ | 2004 03 17 | 704 | 0.3− | 0.2− |
| 1999 10 31 | 704 | 0.3− | 0.5− | 2003 10 29 | 704 | 0.3+ | 0.1− | 2004 03 17 | 704 | (0.8− | 2.4−) |
| 1999 12 12 | 704 | 0.4− | 0.6− | 2003 10 29 | 704 | 0.3− | 0.3+ | 2004 03 31 | 704 | 0.0 | 0.4− |
| 1999 12 12 | 704 | 0.3+ | 0.7− | 2003 10 29 | 704 | 0.1+ | 0.6+ | 2004 03 31 | 704 | 0.3+ | 0.2+ |
| 1999 12 12 | 704 | 0.1+ | 0.1− | 2003 10 29 | 704 | 0.7− | 0.6+ | 2004 03 31 | 704 | 0.3+ | 0.3− |
| 1999 12 12 | 704 | 0.7+ | 0.4− | 2003 10 31 | 097 | 0.1− | 0.1− | 2004 03 31 | 704 | 0.2+ | 0.4+ |
| 1999 12 12 | 704 | 0.9+ | 0.0 | 2003 11 02 | 704 | 0.1− | 0.8+ | 2004 03 31 | 704 | 0.8+ | 0.5+ |
| 1999 12 15 | 704 | 0.2+ | 0.1− | 2003 11 02 | 704 | 0.3− | 0.7+ | 2004 04 17 | 704 | 0.7+ | 0.1− |
| 1999 12 15 | 704 | 0.0 | 0.1+ | 2003 11 02 | 704 | 0.1− | 0.1− | 2004 04 17 | 704 | 0.1+ | 0.5+ |
| 1999 12 15 | 704 | 0.4− | 0.1+ | 2003 11 02 | 704 | 1.2+ | 0.2− | 2004 04 17 | 704 | 0.1− | 0.7+ |
| 1999 12 15 | 704 | 0.7− | 1.3− | 2003 11 02 | 704 | 0.4+ | 0.1+ | 2004 04 17 | 704 | 0.1− | 0.2+ |
| 1999 12 16 | 704 | 0.6− | 0.0 | 2003 11 18 | 699 | 0.6+ | 0.2− | 2004 05 14 | E12 | 0.3+ | 0.1− |
| 1999 12 16 | 704 | 0.4− | 0.2− | 2003 11 18 | 699 | 0.2+ | 0.1+ | 2004 05 14 | E12 | 0.5− | 0.4+ |
| 1999 12 16 | 704 | 0.2− | 0.1− | 2003 11 18 | 699 | 0.1− | 0.7− | 2004 05 14 | E12 | 0.5+ | 0.1− |
| 1999 12 16 | 704 | 0.8− | 0.1− | 2003 11 18 | 699 | 0.0 | 0.1+ | 2004 05 14 | E12 | 0.2+ | 0.3− |
| 1999 12 16 | 704 | 0.3− | 0.1− | 2003 12 21 | 608 | 0.6− | 0.9− | 2005 06 15 | 691 | 0.3− | 0.7+ |
| 1999 12 31 | 699 | 0.2+ | 0.3+ | 2003 12 21 | 608 | 0.4− | 0.8− | 2005 06 15 | 691 | 0.2− | 0.7+ |
| 1999 12 31 | 699 | 0.1+ | 1.3+ | 2003 12 21 | 608 | 0.7− | 0.9− | 2005 06 15 | 691 | (1.4− | 2.0+) |
| 1999 12 31 | 699 | 1.0− | 0.4+ | 2003 12 26 | 608 | 0.8+ | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.6+ |
| 2000 01 03 | 704 | 0.3+ | 0.2− | 2003 12 26 | 608 | 0.9+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.2− |
| 2000 01 03 | 704 | 0.3+ | 0.1+ | 2003 12 26 | 608 | 0.5+ | 0.8+ | 2006 09 18 | 703 | 0.9− | 0.1+ |
| 2000 01 03 | 704 | 1.2+ | 0.5+ | 2003 12 27 | 683 | (0.4− | 2.9−) | 2006 09 18 | 703 | 1.1+ | 0.6+ |
| 2000 01 03 | 704 | 0.8+ | 0.0 | 2003 12 27 | 683 | 0.7+ | 1.1− | 2006 09 25 | 703 | 0.3+ | 1.0− |
| 2000 01 13 | 699 | 0.1− | 0.3+ | 2003 12 27 | 683 | (3.1− | 2.2−) | 2006 09 25 | 703 | 0.2− | 0.6+ |
| 2000 01 13 | 699 | 0.4+ | 1.2+ | 2003 12 28 | 699 | 0.8− | 0.2+ | 2006 09 25 | 703 | 0.1+ | 0.5+ |
| 2000 01 13 | 699 | 0.3− | 0.2+ | 2003 12 28 | 699 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.5+ | 0.6− |
| 2000 01 30 | 704 | 0.8− | 0.3+ | 2003 12 28 | 699 | 0.1− | 0.0 | 2006 10 20 | 703 | 0.7+ | 1.1+ |
| 2000 01 30 | 704 | 0.0 | 0.0 | 2003 12 28 | 699 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.9− | 0.4− |
| 2000 01 30 | 704 | 0.2+ | 0.3+ | 2004 01 28 | 704 | 0.2+ | 0.1− | 2006 10 20 | 703 | 0.6+ | 0.6+ |
| 2000 01 30 | 704 | 0.5+ | 0.7+ | 2004 01 28 | 704 | 0.2− | 0.4− | 2006 10 20 | 703 | 0.7− | 0.8+ |
| 2000 02 03 | 704 | 0.2− | 0.4+ | 2004 01 28 | 704 | 0.6− | 0.0 | 2006 10 27 | 703 | 0.7− | 0.7− |
| 2000 02 03 | 704 | 0.5+ | 0.0 | 2004 01 28 | 704 | 0.7− | 1.2+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2000 02 03 | 704 | 0.5+ | 0.3+ | 2004 01 28 | 704 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.6− |
| 2000 02 03 | 704 | 0.4+ | 0.2− | 2004 02 20 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.1+ |
| 2000 02 03 | 704 | 0.3− | 0.2+ | 2004 02 20 | 704 | 0.2+ | 0.7+ | 2006 11 22 | 703 | 0.2− | 0.7+ |
| 2003 10 24 | 704 | 0.3+ | 0.3− | 2004 02 20 | 704 | 1.1+ | 0.4+ | 2006 11 22 | 703 | 1.5− | 0.2+ |
| 2003 10 24 | 704 | 0.3+ | 0.2− | 2004 02 20 | 704 | 0.5− | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.7− |
| 2003 10 24 | 704 | 0.1+ | 0.3− | 2004 02 20 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 0.7+ | 0.5− |
| 2003 10 24 | 704 | 1.2+ | 0.1+ | 2004 03 17 | 704 | 0.0 | 0.4− | | | | |

**(137746)∗ 1999 XP$_{153}$ = 2002 TN$_{269}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37218)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.76703 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27879344 | $\omega$ | 225.40597 | | −0.32065540 | −0.94317390 | |
| $a$ | 2.3206752 | $\Omega$ | 243.48013 | | +0.89430315 | −0.27113208 | |
| $e$ | 0.1933143 | $i$ | 5.59232 | | +0.31209293 | −0.19212077 | |
| $P$ | 3.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5+ | 1.0− | 2002 10 04 | 704 | 0.2+ | 0.0 | 2004 04 25 | 704 | 1.1− | 0.2+ |
| 1999 12 07 | 704 | 0.9− | 1.1− | 2002 10 04 | 704 | 0.2− | 0.1− | 2004 04 25 | 704 | 1.2+ | 0.2− |
| 1999 12 07 | 704 | 0.4− | 1.1− | 2002 10 04 | 644 | 0.2+ | 0.4+ | 2004 04 25 | 704 | 0.1+ | 0.9+ |
| 1999 12 14 | 704 | 0.4− | 0.4+ | 2002 10 04 | 644 | 0.4+ | 0.2+ | 2004 05 15 | 704 | 0.9+ | 1.4+ |
| 1999 12 14 | 704 | 0.2− | 1.1+ | 2002 10 04 | 704 | 0.4+ | 1.0+ | 2004 05 15 | 704 | (0.6− | 1.8+) |
| 1999 12 14 | 704 | 0.3+ | 0.0 | 2002 10 04 | 644 | 0.2+ | 0.3+ | 2004 05 15 | 704 | (0.3+ | 2.2+) |
| 1999 12 14 | 704 | 0.4+ | 1.2+ | 2002 10 04 | 644 | 0.2+ | 0.3+ | 2005 07 08 | 691 | 0.2− | 0.3+ |
| 2000 01 05 | 699 | 0.3− | 1.2+ | 2002 10 04 | 644 | 0.1+ | 0.3+ | 2005 07 08 | 691 | 0.3− | 0.2+ |
| 2000 01 05 | 699 | 0.5+ | 1.0+ | 2002 10 04 | 704 | 0.5+ | 0.9+ | 2005 07 08 | 691 | 0.1+ | 0.5+ |
| 2000 01 05 | 699 | 0.8+ | 1.0+ | 2002 10 04 | 644 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2000 01 07 | 704 | 0.4− | 0.3+ | 2002 10 09 | 704 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2000 01 07 | 704 | 0.2− | 0.8− | 2002 10 09 | 704 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.7− |
| 2000 01 07 | 704 | 0.1+ | 0.9− | 2002 10 09 | 704 | 0.4− | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.7− |
| 2000 01 07 | 704 | 0.5− | 0.7− | 2002 10 09 | 704 | 0.9− | 0.1− | 2006 11 18 | G96 | 0.6− | 0.4− |
| 2000 01 07 | 704 | 0.5− | 0.5− | 2002 10 09 | 704 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.6− | 0.4− |
| 2000 02 04 | 704 | 0.9+ | 0.9+ | 2002 10 12 | 704 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.6− | 0.6− |
| 2000 02 04 | 704 | 0.4+ | 0.4+ | 2002 10 12 | 704 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.6− | 0.4− |
| 2000 02 04 | 704 | 0.2+ | 0.4+ | 2002 10 12 | 704 | 0.4− | 1.3− | 2006 11 29 | 704 | 0.0 | 1.6+ |
| 2000 02 04 | 704 | 0.3+ | 0.7+ | 2002 10 12 | 704 | 0.4+ | 0.3+ | 2006 11 29 | 704 | 1.3+ | 0.3+ |
| 2000 02 28 | 703 | 0.3+ | 1.4+ | 2002 10 12 | 704 | 0.7− | 1.3− | 2006 11 29 | 704 | 0.6+ | 2.4+ |
| 2000 02 28 | 703 | 0.5+ | 0.1− | 2002 10 31 | 644 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.6+ | 1.4+ |
| 2000 02 28 | 703 | 0.8− | 0.0 | 2002 10 31 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.8+ | 0.5+ |
| 2000 02 28 | 703 | 0.5− | 2.0− | 2002 10 31 | 644 | 0.4− | 0.6− | | | | |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2004 04 25 | 704 | 0.1+ | 0.8+ | | | | |

**(137747)∗ 1999 XC$_{154}$**

Discovered 1999 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.19945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26811815 | $\omega$ | 33.67017 | | −0.79169946 | −0.60335149 | |
| $a$ | 2.3818728 | $\Omega$ | 108.92810 | | +0.53579064 | −0.76110029 | |
| $e$ | 0.1665075 | $i$ | 5.81309 | | +0.29349677 | −0.23810361 | |
| $P$ | 3.68 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.0 | 1.0− | 2003 12 27 | 704 | 0.1− | 0.1− | 2004 04 13 | 703 | 0.6− | 0.5− |
| 1999 12 08 | 704 | 0.5− | 0.7− | 2003 12 27 | 704 | 0.2+ | 0.2− | 2004 04 13 | 703 | (0.6+ | 1.7−) |
| 1999 12 08 | 704 | 0.0 | 1.1− | 2003 12 27 | 704 | 0.9+ | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.8+ |
| 1999 12 08 | 704 | 0.0 | 0.1+ | 2003 12 27 | 704 | 1.0+ | 0.4− | 2004 04 20 | 704 | 0.0 | 0.3+ |
| 1999 12 08 | 704 | 1.2+ | 1.1− | 2004 01 23 | 704 | 0.5+ | 1.1− | 2004 04 20 | 704 | 0.1+ | 0.7+ |
| 1999 12 08 | 704 | (1.0+ | 2.0+) | 2004 01 23 | 704 | 0.0 | 0.2− | 2004 04 20 | 704 | 0.2+ | 0.6+ |
| 1999 12 08 | 704 | 0.3− | 0.5− | 2004 01 23 | 704 | 0.1− | 0.2− | 2004 04 20 | 704 | 0.3+ | 0.8+ |
| 1999 12 14 | 704 | 0.9+ | 0.4− | 2004 01 23 | 699 | 0.8− | 0.6+ | 2004 04 22 | 704 | 0.1+ | 0.4+ |
| 1999 12 14 | 704 | 0.1− | 0.9− | 2004 01 23 | 704 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.1+ | 0.1− |
| 1999 12 14 | 704 | 1.2− | 0.7− | 2004 01 23 | 699 | 0.3− | 0.3− | 2004 04 22 | 704 | 0.3+ | 0.3− |
| 1999 12 14 | 704 | 0.4− | 0.5− | 2004 01 23 | 704 | 0.3− | 0.6+ | 2004 04 22 | 704 | 0.3− | 0.0 |
| 2000 01 06 | 704 | 0.7− | 1.5− | 2004 01 23 | 699 | 0.5− | 0.4− | 2004 04 22 | 704 | 0.3+ | 0.2− |
| 2000 01 06 | 704 | 0.7− | 1.1− | 2004 01 23 | 699 | 0.9− | 0.4− | 2004 05 12 | 704 | 0.3+ | 1.4+ |
| 2000 01 06 | 704 | 0.4− | 0.8− | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2004 05 12 | 704 | 0.2+ | 0.8+ |
| 2000 01 06 | 704 | 0.5− | 1.3− | 2004 01 30 | 704 | 1.2+ | 0.6+ | 2004 05 12 | 704 | 0.5+ | 0.2− |
| 2000 01 06 | 704 | 0.0 | 0.7− | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2004 05 12 | 704 | 0.1− | 1.2+ |
| 2000 02 02 | 704 | 0.8+ | 1.4+ | 2004 01 30 | 704 | 0.8+ | 0.8+ | 2005 06 17 | G96 | 0.6− | 0.3− |
| 2000 02 02 | 704 | 0.5+ | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2005 06 17 | G96 | 0.1− | 0.2+ |
| 2000 02 02 | 704 | 0.6+ | 0.3− | 2004 02 11 | 644 | 0.2− | 0.1− | 2005 06 17 | G96 | 0.7− | 0.3− |
| 2000 02 03 | 704 | 0.9− | 0.1− | 2004 02 11 | 644 | 0.1− | 0.1− | 2005 06 17 | G96 | 0.1− | 0.4− |
| 2000 02 03 | 704 | 0.1− | 0.1+ | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2000 02 03 | 704 | 1.1+ | 0.3− | 2004 02 16 | 704 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2000 02 03 | 704 | 0.2+ | 0.2− | 2004 02 16 | 704 | 0.7+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 02 03 | 704 | 1.2+ | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.9+ |
| 2000 03 04 | 704 | 1.0+ | 0.8− | 2004 02 16 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2000 03 04 | 704 | 0.1+ | 0.3− | 2004 02 16 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2000 03 04 | 704 | 0.9− | 0.9− | 2004 02 17 | 608 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 2002 09 04 | 699 | (0.3− | 1.5+) | 2004 02 17 | 608 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.6+ | 1.2+ | 2004 02 17 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.8+ |
| 2002 09 04 | 699 | 0.1+ | 1.1+ | 2004 02 17 | 608 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.4− |
| 2002 09 04 | 699 | 0.8+ | 1.1+ | 2004 02 17 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.9− | 1.0+ |
| 2002 10 01 | 699 | 0.3+ | 1.3+ | 2004 02 17 | 691 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2002 10 01 | 699 | (0.5− | 1.6+) | 2004 02 18 | 291 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2002 10 01 | 699 | 0.5+ | 0.2− | 2004 02 18 | 291 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2002 10 01 | 699 | 0.7+ | 0.7+ | 2004 02 18 | 291 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2002 10 10 | 699 | 1.0− | 0.8+ | 2004 02 27 | 704 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2002 10 10 | 699 | (3.1− | 0.2+) | 2004 02 27 | 704 | 0.0 | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 10 10 | 699 | 1.2− | 1.1− | 2004 02 27 | 704 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.1− | 0.6+ |
| 2002 10 10 | 699 | (2.0− | 1.6+) | 2004 03 10 | 644 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 2003 10 25 | 691 | 0.3+ | 0.3− | 2004 03 10 | 644 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.7− | 0.4+ |
| 2003 10 25 | 691 | 0.0 | 0.1+ | 2004 03 10 | 644 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.9− | 0.6+ |
| 2003 10 25 | 691 | 0.2+ | 0.2− | 2004 03 14 | 704 | 0.5+ | 0.4+ | 2006 11 17 | 704 | 0.2− | 1.1+ |
| 2003 12 20 | 704 | 0.5+ | 1.0+ | 2004 03 14 | 704 | 0.7+ | 0.7+ | 2006 11 17 | 704 | 0.3+ | 0.3+ |
| 2003 12 20 | 704 | 0.7+ | 0.6+ | 2004 03 14 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2003 12 20 | 704 | 0.2+ | 1.2+ | 2004 03 14 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.2− |
| 2003 12 20 | 704 | 0.0 | 1.1+ | 2004 03 14 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.6− | 0.3+ |
| 2003 12 20 | 704 | 0.0 | 0.4+ | 2004 03 20 | 704 | 0.4+ | 0.1− | 2006 11 19 | 703 | 1.2− | 0.4+ |
| 2003 12 22 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.4+ | 2006 11 19 | 703 | 0.6− | 0.6+ |
| 2003 12 22 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 0.3+ | 0.2− |
| 2003 12 22 | 704 | 0.6+ | 0.8+ | 2004 03 20 | 704 | 0.3− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 0.3+ | 0.1− | 2004 03 20 | 704 | 0.6− | 0.8+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 0.3+ | 0.6+ | 2004 04 13 | 703 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 0.5+ | 0.3+ | 2004 04 13 | 703 | 0.3− | 0.8− | 2006 11 24 | G96 | 0.1+ | 0.4+ |

**(137748)∗ 1999 XQ$_{154}$ = 2004 BV$_{50}$**

Discovered 1999 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.02033 | | (2000.0) | | | |
| $n$ | 0.26355486 | $\omega$ | 334.50028 | | −0.29663365 | −0.95423332 |
| $a$ | 2.4092879 | $\Omega$ | 132.72979 | | +0.88481738 | −0.28960661 |
| $e$ | 0.1589359 | $i$ | 2.96866 | | +0.35931418 | −0.07461088 |
| $P$ | 3.74 | $H$ | 17.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.3+ | 0.1− | 2004 01 24 | 704 | 0.5+ | 0.4+ | 2004 02 22 | 704 | (2.7+ | 1.0+) |
| 1995 10 21 | 691 | 0.0 | 0.1− | 2004 01 26 | 699 | 0.8− | 0.6+ | 2004 02 22 | 704 | (3.1+ | 2.4+) |
| 1995 10 21 | 691 | 0.3+ | 0.2− | 2004 01 26 | 699 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 0.5+ | 1.2− |
| 1998 07 25 | 691 | 0.3− | 0.2+ | 2004 01 26 | 699 | 0.3+ | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.9− |
| 1998 07 25 | 691 | 0.2+ | 0.3+ | 2004 01 26 | 699 | 0.5+ | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.3− |
| 1998 07 25 | 691 | 0.4− | 0.5+ | 2004 01 28 | 691 | 0.1− | 0.3+ | 2004 02 26 | 704 | (0.7− | 2.8−) |
| 1999 12 05 | 120 | 0.0 | 0.4+ | 2004 01 28 | 691 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.4− | 0.2+ |
| 1999 12 05 | 120 | 1.6− | 0.3− | 2004 01 28 | 691 | 0.3− | 0.3+ | 2006 08 18 | 691 | 0.2+ | 0.2+ |
| 1999 12 08 | 704 | 0.2+ | 0.2− | 2004 01 30 | 704 | 0.6+ | 0.6+ | 2006 08 18 | 691 | 0.1+ | 0.1+ |
| 1999 12 08 | 704 | 0.5− | 0.2+ | 2004 01 30 | 704 | 0.2+ | 0.4− | 2006 08 18 | 691 | 0.3− | 0.2+ |
| 1999 12 08 | 704 | 0.4+ | 0.3− | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 08 19 | 291 | 0.2− | 0.2+ |
| 1999 12 08 | 704 | 1.1+ | 0.3− | 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 08 19 | 291 | 0.2− | 0.1+ |
| 1999 12 14 | 704 | 0.8− | 0.5− | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 08 19 | 291 | 0.2− | 0.1+ |
| 1999 12 14 | 704 | 0.3− | 0.5− | 2004 02 10 | 703 | 1.4− | 0.4+ | 2006 09 15 | 691 | 0.4− | 0.4+ |
| 1999 12 14 | 704 | 0.3+ | 1.3− | 2004 02 10 | 703 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.4− | 0.5+ |
| 2001 05 21 | 691 | 0.1− | 0.2+ | 2004 02 10 | 703 | 0.6+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.3+ |
| 2001 05 21 | 691 | 0.2+ | 0.4+ | 2004 02 10 | 703 | 0.5+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2001 05 21 | 691 | 0.2+ | 0.0 | 2004 02 14 | 691 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2001 06 16 | 691 | 0.2− | 0.3+ | 2004 02 14 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2001 06 16 | 691 | 0.4+ | 0.3+ | 2004 02 14 | 691 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 06 16 | 691 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.4− | 0.4− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2004 01 21 | 704 | 0.0 | 0.6+ | 2004 02 16 | 704 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2004 01 21 | 704 | 1.3+ | 0.2+ | 2004 02 16 | 704 | 0.5+ | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2004 01 21 | 704 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.8+ | 1.0− |
| 2004 01 21 | 704 | 0.5+ | 0.2+ | 2004 02 16 | 704 | 0.5− | 0.6+ | 2006 09 30 | 703 | 2.0− | 0.2+ |
| 2004 01 24 | 704 | 0.7+ | 0.6+ | 2004 02 17 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2004 01 24 | 704 | 0.7+ | 0.7+ | 2004 02 17 | 644 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.6+ | 1.8+ |
| 2004 01 24 | 704 | 0.4+ | 0.9+ | 2004 02 17 | 644 | 0.1− | 0.5+ | | | | |
| 2004 01 24 | 704 | 0.5+ | 0.4+ | 2004 02 22 | 704 | (2.8+ | 1.9+) | | | | |

**(137749)∗ 1999 XR$_{154}$**

Discovered 1999 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.53585 | | (2000.0) | | | |
| $n$ | 0.27753574 | $\omega$ | 316.44723 | | +0.40363006 | −0.91187351 |
| $a$ | 2.3276809 | $\Omega$ | 109.61963 | | +0.85964404 | +0.35005658 |
| $e$ | 0.2142748 | $i$ | 4.54424 | | +0.31320107 | +0.21435273 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 704 | 0.5+ | 0.3− | 2002 08 15 | 644 | 0.4+ | 0.8− | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 1999 11 17 | 704 | 0.3+ | 0.1+ | 2002 08 15 | 644 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.6+ |
| 1999 11 17 | 704 | 0.7+ | 0.1− | 2002 08 15 | 644 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 1999 11 17 | 704 | 0.5+ | 0.9− | 2004 02 18 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 1999 12 08 | 704 | 0.1+ | 0.2− | 2004 02 18 | 704 | 0.9+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 1999 12 08 | 704 | 0.1+ | 0.5− | 2004 02 18 | 704 | 0.8+ | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 1999 12 08 | 704 | 0.2− | 0.3− | 2004 03 11 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 1999 12 08 | 704 | 0.0 | 0.4− | 2004 03 11 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 644 | 0.2+ | 0.2+ |
| 1999 12 08 | 704 | 0.1+ | 0.4− | 2004 03 11 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 1999 12 14 | 704 | 1.1+ | 0.8− | 2006 09 14 | 703 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.3− |
| 1999 12 14 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.6− | 0.9− | 2006 11 11 | 644 | 0.3+ | 0.1+ |
| 1999 12 14 | 704 | 0.7− | 0.6− | 2006 09 14 | 703 | 0.7− | 0.1− | 2006 11 11 | 644 | 0.3+ | 0.1+ |
| 1999 12 14 | 704 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.7− | 0.9+ | 2006 11 14 | 704 | 0.3− | 0.3+ |
| 1999 12 14 | 704 | 0.1+ | 1.0− | 2006 09 18 | 703 | 0.9+ | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.6+ |
| 2000 01 05 | 704 | 0.6− | 0.4− | 2006 09 18 | 703 | 0.4− | 1.4− | 2006 11 14 | 704 | 0.2− | 0.9+ |
| 2000 01 05 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 2000 01 05 | 704 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.5+ | 0.1+ |
| 2000 01 05 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 17 | 704 | 0.6− | 0.5+ |
| 2000 01 05 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.5− | 0.3+ |
| 2000 01 06 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.4− | 0.5+ |
| 2000 01 06 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.4− | 2006 11 17 | 704 | 0.3− | 1.0+ |
| 2000 01 06 | 704 | 0.5− | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 1.1− | 0.3− |
| 2000 01 06 | 704 | 0.4− | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2000 01 06 | 704 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.9+ | | |
| 2000 01 07 | 704 | 0.4− | 0.7+ | 2006 10 27 | 704 | 1.2− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.6+ | | |
| 2000 01 07 | 704 | 0.4+ | 0.7− | 2006 10 27 | 704 | 1.1− | 0.0 | 2006 11 19 | 704 | 0.1+ | 1.2+ | | |
| 2000 01 07 | 704 | 0.1− | 0.3− | 2006 10 27 | 704 | 0.1+ | 0.3− | 2006 11 20 | 704 | 1.1− | 1.0+ | | |
| 2001 04 17 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 704 | 0.5− | 1.1+ | 2006 11 20 | 704 | 0.3+ | 0.0 | | |
| 2001 04 17 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 703 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.5+ | | |
| 2001 04 17 | 691 | 0.5+ | 0.6+ | 2006 11 01 | 703 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.9− | 1.1+ | | |
| 2001 05 23 | 691 | 0.2− | 0.5+ | 2006 11 01 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 1.1+ | 0.5+ | | |
| 2001 05 23 | 691 | 0.1+ | 0.7+ | 2006 11 01 | 703 | 0.9+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.1− | | |
| 2001 05 23 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.2− | | |
| 2002 08 08 | 644 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.1− | | |
| 2002 08 08 | 644 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.2− | | |
| 2002 08 08 | 644 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.2+ | | | | | | |

**(137750)∗ 1999 XB$_{157}$ = 2002 TE$_{103}$**

Discovered 1999 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37219)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.47237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28995988 | $\omega$ | 244.20932 | | −0.42394336 | −0.90264111 | |
| $a$ | 2.2607061 | $\Omega$ | 231.07685 | | +0.86138129 | −0.37652321 | |
| $e$ | 0.0990517 | $i$ | 5.47555 | | +0.27981118 | −0.20849294 | |
| $P$ | 3.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.7− | 0.8− | 2002 10 05 | 644 | 0.3− | 0.8+ | 2004 03 31 | 704 | 0.1+ | 0.4− | | |
| 1995 10 23 | 691 | 0.5− | 0.2− | 2002 10 05 | 644 | 0.4− | 0.7+ | 2004 03 31 | 704 | 0.1+ | 0.2− | | |
| 1995 10 23 | 691 | 0.4− | 0.5+ | 2002 10 06 | 644 | 0.2− | 0.9+ | 2004 03 31 | 704 | 0.2− | 0.3− | | |
| 1999 11 17 | 704 | 0.4+ | 0.1− | 2002 10 06 | 644 | 0.2− | 0.9+ | 2004 03 31 | 704 | 0.7+ | 0.3+ | | |
| 1999 11 17 | 704 | 0.6+ | 0.3− | 2002 10 06 | 644 | 0.1− | 0.8+ | 2004 04 16 | 644 | 0.2+ | 0.3+ | | |
| 1999 11 17 | 704 | 0.1− | 0.7− | 2002 10 09 | 704 | (3.0+ | 1.4+) | 2004 04 16 | 644 | 0.1+ | 0.3+ | | |
| 1999 11 17 | 704 | 0.3+ | 1.1− | 2002 10 09 | 704 | 0.4+ | 0.7+ | 2004 04 16 | 644 | 0.2+ | 0.4+ | | |
| 1999 12 08 | 704 | 0.4+ | 0.1+ | 2002 10 09 | 704 | 0.9+ | 0.9+ | 2004 04 17 | 704 | 0.1+ | 0.1+ | | |
| 1999 12 08 | 704 | 0.1− | 0.3+ | 2002 10 09 | 704 | 0.9+ | 0.6+ | 2004 04 17 | 704 | 0.7+ | 0.5+ | | |
| 1999 12 08 | 704 | 0.6+ | 0.2+ | 2002 10 09 | 704 | 1.1+ | 0.4+ | 2004 04 17 | 704 | 0.2+ | 0.4+ | | |
| 1999 12 08 | 704 | 0.0 | 0.3+ | 2002 10 12 | 704 | 0.9+ | 1.0+ | 2004 04 17 | 704 | 0.3− | 0.6+ | | |
| 1999 12 08 | 704 | 0.0 | 0.2+ | 2002 10 12 | 704 | 0.2+ | 1.3+ | 2004 04 17 | 699 | 0.1+ | 0.4− | | |
| 1999 12 08 | 704 | 0.3+ | 0.0 | 2002 10 12 | 704 | 1.0+ | 1.4+ | 2004 04 17 | 699 | 0.2+ | 0.2− | | |
| 1999 12 08 | 704 | 0.0 | 0.2+ | 2002 10 12 | 704 | 0.6+ | 0.6+ | 2004 04 17 | 699 | 0.2+ | 0.0 | | |
| 1999 12 08 | 704 | 0.3+ | 0.6+ | 2002 10 12 | 704 | 0.5+ | 1.5+ | 2004 04 17 | 699 | 0.0 | 0.4− | | |
| 1999 12 14 | 704 | 0.3− | 0.4− | 2002 11 08 | 704 | 0.6+ | 0.2+ | 2004 04 19 | 704 | 1.2− | 1.1+ | | |
| 1999 12 14 | 704 | 1.2+ | 1.2+ | 2002 11 08 | 704 | 0.4+ | 0.3− | 2004 04 19 | 704 | 0.3+ | 0.0 | | |
| 1999 12 14 | 704 | 0.2+ | 0.6− | 2002 11 08 | 704 | 0.5− | 0.5− | 2004 04 19 | 704 | 0.2+ | 0.3+ | | |
| 1999 12 14 | 704 | 1.0− | 1.0+ | 2002 11 08 | 704 | 0.2+ | 0.7+ | 2004 04 19 | 704 | 0.0 | 0.8+ | | |
| 2000 01 05 | 704 | 0.6− | 0.1+ | 2002 11 21 | 644 | 0.3− | 0.3+ | 2004 04 21 | 704 | (0.2+ | 2.1+) | | |
| 2000 01 05 | 704 | 0.3+ | 0.4− | 2002 11 21 | 644 | 0.6− | 0.3+ | 2004 04 21 | 704 | (0.3+ | 2.2+) | | |
| 2000 01 05 | 704 | 0.2− | 0.0 | 2002 11 21 | 644 | 0.4− | 0.2+ | 2004 04 21 | 704 | 0.5+ | 1.3+ | | |
| 2000 01 05 | 704 | 0.1− | 0.4+ | 2002 12 05 | 704 | 1.8− | 0.2− | 2004 04 21 | 704 | 0.3+ | 1.4+ | | |
| 2000 01 05 | 704 | 0.2+ | 0.7+ | 2002 12 05 | 704 | 0.6+ | 1.9+ | 2004 04 21 | 704 | 0.1+ | 1.8+ | | |
| 2000 01 06 | 704 | 0.3− | 0.5− | 2002 12 05 | 704 | 0.8+ | 0.5− | 2004 05 10 | 703 | 0.6− | 0.4− | | |
| 2000 01 06 | 704 | 0.2− | 0.3− | 2002 12 05 | 704 | 0.5+ | 1.2+ | 2004 05 10 | 703 | 0.9+ | 0.2+ | | |
| 2000 01 06 | 704 | 1.0+ | 0.9− | 2004 03 17 | 703 | 0.7+ | 0.6+ | 2004 05 10 | 703 | 0.1+ | 0.1+ | | |
| 2000 01 06 | 704 | 0.2+ | 0.3− | 2004 03 17 | 703 | 0.3+ | 0.6+ | 2004 05 10 | 703 | 0.8+ | 0.3− | | |
| 2000 01 06 | 704 | 0.6+ | 0.9− | 2004 03 17 | 703 | 0.2+ | 0.9+ | 2004 05 23 | 699 | 0.4− | 0.9+ | | |
| 2002 09 06 | 704 | 0.9+ | 0.6+ | 2004 03 17 | 704 | 0.2+ | 0.1− | 2004 05 23 | 699 | 1.0+ | 0.5+ | | |
| 2002 09 06 | 704 | 0.4− | 1.1+ | 2004 03 17 | 703 | 0.8− | 0.3+ | 2004 05 23 | 699 | 0.6+ | 0.6+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.5+ | 2004 03 17 | 704 | 0.3+ | 0.2+ | 2004 05 23 | 699 | 1.4+ | 1.5− | | |
| 2002 09 15 | 608 | 1.3− | 0.6− | 2004 03 17 | 704 | 0.2+ | 0.1+ | 2005 07 30 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 15 | 608 | 1.4− | 1.0− | 2004 03 17 | 704 | 0.4+ | 1.0− | 2005 07 30 | 644 | 0.2+ | 0.3+ | | |
| 2002 09 15 | 608 | 1.2− | 0.1− | 2004 03 19 | 704 | 0.5+ | 0.2− | 2005 07 30 | 644 | 0.2+ | 0.2+ | | |
| 2002 09 28 | 608 | 1.2− | 0.6− | 2004 03 19 | 704 | 0.5+ | 0.1+ | 2005 11 01 | G96 | 0.1− | 0.0 | | |
| 2002 09 28 | 608 | 1.1− | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2005 11 01 | G96 | 0.2+ | 0.2− | | |
| 2002 09 28 | 608 | 1.2− | 0.6− | 2004 03 19 | 704 | 0.4− | 0.1+ | 2005 11 01 | G96 | 0.1− | 0.0 | | |
| 2002 10 04 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.0 | 0.4+ | 2005 11 01 | G96 | 0.2+ | 0.3+ | | |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2004 03 20 | 699 | 0.2− | 0.7+ | 2006 11 28 | 704 | 1.4− | 2.4+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2004 03 20 | 699 | 0.7− | 0.6+ | 2006 11 28 | 704 | 0.6− | 0.4+ | | |
| 2002 10 04 | 704 | 0.5+ | 0.2− | 2004 03 20 | 699 | 0.1+ | 1.0+ | 2006 11 28 | 704 | 1.8− | 0.2+ | | |
| 2002 10 04 | 704 | 0.1+ | 0.4− | 2004 03 20 | 699 | 0.5− | 0.2− | 2006 11 28 | 704 | 1.5− | 0.2+ | | |
| 2002 10 05 | 644 | 0.3− | 0.6+ | 2004 03 31 | 704 | 0.1− | 0.3+ | 2006 11 28 | 704 | 1.4− | 0.3+ | | |

**(137751)∗ 1999 XB$_{159}$**

Discovered 1999 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.93576 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29701651 | $\omega$ | 290.91172 | | −0.91047758 | −0.41141000 | |
| $a$ | 2.2247557 | $\Omega$ | 224.82307 | | +0.39815570 | −0.84448998 | |
| $e$ | 0.0853380 | $i$ | 3.42390 | | +0.11181509 | −0.34289720 | |
| $P$ | 3.32 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.3+ | 0.0 | 2002 11 06 | 704 | 0.1+ | 0.7+ | 2004 05 15 | 704 | 0.5+ | 0.3+ | | |
| 1995 10 20 | 691 | 0.2− | 0.1− | 2002 11 06 | 608 | 0.2+ | 0.3+ | 2004 05 15 | 704 | 1.1+ | 0.3− | | |
| 1995 10 20 | 691 | 0.0 | 0.3− | 2002 11 06 | 608 | 0.1− | 0.2− | 2004 05 16 | 704 | 0.6+ | 0.6+ | | |
| 1999 12 08 | 704 | 0.5+ | 0.2+ | 2002 11 06 | 608 | 0.1− | 0.0 | 2004 05 16 | 704 | 0.3− | 0.3+ | | |
| 1999 12 08 | 704 | 0.2+ | 0.2+ | 2002 11 12 | 644 | 0.3− | 0.6+ | 2004 05 16 | 704 | 0.3− | 0.0 | | |
| 1999 12 08 | 704 | 0.3− | 1.0+ | 2002 11 12 | 644 | 0.4− | 0.6+ | 2004 05 16 | 704 | 0.2− | 0.1− | | |
| 1999 12 08 | 704 | 0.6+ | 0.4+ | 2002 11 12 | 644 | 0.5− | 0.6+ | 2004 05 16 | 704 | 0.2+ | 0.2+ | | |
| 1999 12 14 | 704 | 0.9− | 0.0 | 2002 11 22 | 644 | 0.3− | 0.9+ | 2004 05 19 | 704 | 0.5− | 1.1+ | | |
| 1999 12 14 | 704 | 0.3− | 0.1+ | 2002 11 22 | 644 | 0.2− | 1.1+ | 2004 05 19 | 704 | 0.2+ | 0.6+ | | |
| 1999 12 14 | 704 | 0.5− | 1.3− | 2002 11 22 | 644 | 0.1− | 1.0+ | 2004 05 19 | 704 | 1.1+ | 0.2+ | | |
| 1999 12 14 | 704 | 0.5+ | 0.2+ | 2002 12 10 | 704 | 1.0− | 1.3+ | 2004 05 19 | 704 | 0.2+ | 0.6+ | | |
| 1999 12 14 | 704 | 0.7− | 0.0 | 2002 12 10 | 704 | 0.3+ | 1.0+ | 2005 08 30 | 704 | 0.5+ | 0.4+ | | |
| 1999 12 16 | 704 | 0.2+ | 1.1− | 2002 12 10 | 704 | 0.5+ | 0.4+ | 2005 08 30 | 704 | 0.2− | 0.9− | | |
| 1999 12 16 | 704 | 0.1+ | 0.1− | 2002 12 10 | 704 | 0.6− | 0.5+ | 2005 08 30 | 704 | 0.5+ | 0.5+ | | |
| 1999 12 16 | 704 | (1.1− | 2.4+) | 2004 04 21 | 704 | 0.7+ | 0.5+ | 2005 08 30 | 704 | 0.3+ | 0.2− | | |
| 2000 01 05 | 704 | 0.6− | 0.2+ | 2004 04 21 | 704 | 0.5+ | 0.5+ | 2005 09 09 | 704 | 0.3+ | 0.6+ | | |
| 2000 01 05 | 704 | 0.9+ | 0.5+ | 2004 04 21 | 704 | (2.2+ | 2.1+) | 2005 09 09 | 704 | 0.8+ | 0.1+ | | |
| 2000 01 05 | 704 | 0.0 | 0.1− | 2004 04 21 | 704 | 0.9− | 1.5+ | 2005 09 09 | 704 | 0.4+ | 0.5− | | |
| 2000 01 05 | 704 | 0.4+ | 0.3− | 2004 04 25 | 704 | 1.1+ | 1.2+ | 2005 09 09 | 704 | 0.3− | 0.1+ | | |
| 2000 01 05 | 704 | 0.2+ | 0.1+ | 2004 04 25 | 704 | 0.9+ | 1.2+ | 2005 09 11 | 704 | 1.6− | 0.7− | | |
| 2002 10 02 | 704 | (2.5− | 0.6+) | 2004 04 25 | 704 | 0.4− | 0.1− | 2005 09 11 | 704 | 1.3− | 0.3+ | | |
| 2002 10 02 | 704 | 1.7− | 0.6+ | 2004 04 25 | 704 | 0.1+ | 0.4− | 2005 09 11 | 704 | 0.2+ | 0.3− | | |
| 2002 10 02 | 704 | 1.7− | 1.6+ | 2004 04 25 | 704 | 1.2+ | 1.6+ | 2005 09 12 | 704 | 0.2− | 0.4+ | | |
| 2002 10 11 | 704 | 1.0+ | 0.4+ | 2004 04 26 | 699 | 0.3+ | 1.3+ | 2005 09 12 | 704 | 0.1+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.4− | 0.2− | 2004 04 26 | 699 | 0.0 | 0.2+ | 2005 09 12 | 704 | 0.5− | 0.9+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.9+ | 2004 04 26 | 699 | 0.5− | 1.1+ | 2005 09 22 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.7+ | 1.1+ | 2004 04 26 | 699 | 0.5+ | 0.7+ | 2005 09 22 | 644 | 0.2+ | 0.2− | | |
| 2002 10 16 | 644 | 0.1− | 1.3+ | 2004 05 10 | 703 | 0.8+ | 0.3− | 2005 09 22 | 644 | 0.2+ | 0.0 | | |
| 2002 10 16 | 644 | 0.0 | 1.5+ | 2004 05 10 | 703 | 1.0− | 0.1− | 2005 10 01 | 703 | 0.5− | 1.7− | | |
| 2002 10 16 | 644 | 0.1− | 1.5+ | 2004 05 10 | 703 | 0.5+ | 0.2− | 2005 10 01 | 703 | 0.2+ | 1.1− | | |
| 2002 10 31 | 644 | 0.4− | 0.7+ | 2004 05 10 | 703 | 0.0 | 0.0 | 2005 10 01 | 703 | 1.3+ | 0.3+ | | |
| 2002 10 31 | 644 | 0.2− | 0.9+ | 2004 05 11 | 699 | 0.2+ | 0.8+ | 2005 10 01 | 703 | 0.3+ | 1.0+ | | |
| 2002 10 31 | 644 | 0.1− | 0.9+ | 2004 05 11 | 699 | 0.1− | 0.0 | 2005 10 07 | 704 | 1.1− | 0.4+ | | |
| 2002 11 04 | 699 | 0.9+ | 0.6− | 2004 05 11 | 699 | 1.2− | 0.8+ | 2005 10 07 | 704 | 0.1− | 1.3+ | | |
| 2002 11 04 | 699 | 0.7− | 0.6+ | 2004 05 11 | 699 | 0.5− | 0.9+ | 2005 10 07 | 704 | 0.3− | 0.5+ | | |
| 2002 11 04 | 699 | 0.3+ | 0.4− | 2004 05 14 | 691 | 0.1− | 0.2+ | 2005 10 30 | G96 | 0.1+ | 0.2− | | |
| 2002 11 04 | 699 | 1.1− | 1.4− | 2004 05 14 | 691 | 0.0 | 0.1+ | 2005 10 30 | G96 | 0.4+ | 0.0 | | |
| 2002 11 06 | 704 | 0.1+ | 0.8+ | 2004 05 14 | 691 | 0.0 | 0.2+ | 2005 10 30 | G96 | 0.3+ | 0.5− | | |
| 2002 11 06 | 704 | 0.0 | 0.7+ | 2004 05 15 | 704 | 0.4− | 0.5+ | 2005 10 30 | G96 | 0.1+ | 0.4− | | |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2004 05 15 | 704 | 0.4− | 0.1− | | | | | | |
| 2002 11 06 | 704 | 0.4− | 0.8+ | 2004 05 15 | 704 | 0.2+ | 1.4+ | | | | | | |

**(137752)∗ 1999 XU$_{160}$**

Discovered 1999 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.48078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26549940 | $\omega$ | 206.34495 | | −0.28590869 | −0.94971010 | |
| $a$ | 2.3975096 | $\Omega$ | 260.48864 | | +0.90045751 | −0.22068559 | |
| $e$ | 0.2297354 | $i$ | 7.43946 | | +0.32776897 | −0.22214544 | |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.2− | 0.3− | 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.7+ | 1.0+ |
| 1999 12 04 | 691 | 0.1− | 0.2+ | 2002 10 05 | 645 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.4+ | 0.6+ |
| 1999 12 04 | 691 | 0.1+ | 0.8+ | 2002 10 31 | 645 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.7− | 0.2+ |
| 1999 12 08 | 704 | 1.2+ | 1.1+ | 2002 10 31 | 645 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.0 | 0.4− |
| 1999 12 08 | 704 | 0.4− | 0.1+ | 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 09 20 | 699 | 1.0− | 0.4+ |
| 1999 12 08 | 704 | 0.4− | 0.4+ | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 09 28 | 703 | 1.3+ | 0.6+ |
| 1999 12 08 | 704 | 0.9− | 0.4+ | 2004 02 18 | 703 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.8− | 1.0+ |
| 1999 12 08 | 704 | 0.8− | 0.8− | 2004 02 18 | 703 | 1.1− | 0.0 | 2006 09 28 | 703 | (2.1+ | 1.0+) |
| 1999 12 14 | 704 | 0.3+ | 0.3− | 2004 02 18 | 703 | (0.2− | 3.7−) | 2006 09 28 | 703 | 0.6− | 1.3+ |
| 1999 12 14 | 704 | 0.3+ | 0.4+ | 2004 02 18 | 703 | 1.3+ | 1.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 1999 12 14 | 704 | 0.0 | 0.0 | 2004 03 17 | 704 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1999 12 14 | 704 | 0.1− | 0.5− | 2004 03 17 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2000 01 05 | 704 | 0.0 | 0.0 | 2004 03 17 | 704 | 0.3+ | 1.5+ | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2000 01 05 | 704 | 0.2+ | 0.1− | 2004 03 17 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2000 01 05 | 704 | 0.2+ | 0.2+ | 2004 03 17 | 704 | 1.4+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2000 01 05 | 704 | 0.3− | 1.1− | 2004 03 20 | 704 | 0.1+ | 1.2+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2000 01 05 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2000 01 07 | 704 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2000 01 07 | 704 | 0.1+ | 1.0− | 2004 03 20 | 704 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 2000 01 07 | 704 | 0.4+ | 1.1− | 2004 03 20 | 704 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2000 01 07 | 704 | 0.0 | 0.7− | 2004 03 23 | 704 | 0.8+ | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 09 12 | 644 | 0.1+ | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2002 09 12 | 644 | 0.0 | 0.5+ | 2004 03 23 | 704 | 1.0+ | 1.0+ | | | | |
| 2002 09 12 | 644 | 0.3− | 0.8+ | 2004 03 23 | 704 | 0.3+ | 0.7+ | | | | |

**(137753)∗ 1999 XP$_{161}$ = 2002 RJ$_{112}$**

Discovered 1999 Dec. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34839)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.88649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27511023 | $\omega$ | 92.58682 | | −0.85937886 | −0.50224276 | |
| $a$ | 2.3413422 | $\Omega$ | 57.28113 | | +0.41198169 | −0.79130815 | |
| $e$ | 0.1344960 | $i$ | 6.55348 | | +0.30288457 | −0.34868843 | |
| $P$ | 3.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.8− | 0.8− | 2004 02 15 | 704 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 1.1− | 0.1− |
| 1999 11 14 | 704 | 1.2+ | 0.4− | 2004 02 15 | 704 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.4+ | 0.7− |
| 1999 11 14 | 704 | 0.3+ | 0.4− | 2004 02 15 | 704 | 0.0 | 0.5− | 2006 11 02 | 703 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | 0.4+ | 0.2+ | 2004 02 16 | 691 | 0.0 | 0.7− | 2006 11 02 | 703 | 0.4− | 0.4− |
| 1999 11 16 | 704 | 0.0 | 1.4− | 2004 02 16 | 691 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 1999 11 16 | 704 | 0.0 | 1.0− | 2004 02 16 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.5− | 0.1− |
| 1999 12 13 | 704 | 1.0− | 0.3− | 2004 02 17 | 608 | 0.6+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 1999 12 13 | 704 | 0.4+ | 1.5− | 2004 02 17 | 608 | 0.8+ | 0.5− | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 1999 12 13 | 704 | 0.5+ | 1.0− | 2004 02 17 | 608 | 0.8+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 1999 12 13 | 704 | 0.1+ | 0.5− | 2004 02 27 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 1999 12 13 | 704 | 0.8+ | 1.6− | 2004 02 27 | 704 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 1999 12 14 | 704 | 0.8+ | 0.5− | 2004 02 27 | 704 | 0.7− | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.1− |
| 1999 12 14 | 704 | 0.2− | 0.7− | 2004 03 14 | 704 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.3− | 0.5+ |
| 1999 12 14 | 704 | 1.0+ | 0.1+ | 2004 03 14 | 704 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.5+ |
| 1999 12 15 | 704 | 0.1+ | 0.6− | 2004 03 14 | 704 | 0.3+ | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 1999 12 15 | 704 | 0.2− | 0.5− | 2004 03 14 | 704 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 1999 12 15 | 704 | 0.5+ | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 1999 12 15 | 704 | 0.4+ | 0.5− | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.5− |
| 1999 12 15 | 704 | 0.8− | 1.3− | 2004 03 23 | 704 | 0.3+ | 1.1+ | 2006 11 17 | 703 | 0.1+ | 0.9− |
| 2002 09 05 | 599 | 0.4− | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.5− |
| 2002 09 06 | 599 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.5+ | 1.3+ |
| 2002 09 06 | 599 | 0.0 | 0.3+ | 2004 03 26 | 703 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2002 09 06 | 599 | 0.3− | 0.8+ | 2004 03 26 | 703 | 0.4+ | 1.1+ | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2002 09 08 | 599 | 0.8− | 0.6+ | 2004 03 26 | 703 | 1.1− | 0.6− | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2002 09 08 | 599 | 0.0 | 0.3+ | 2004 03 26 | 703 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.9+ | 0.3+ |
| 2002 09 08 | 599 | 0.6− | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2004 01 28 | 703 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.9+ |
| 2004 01 28 | 703 | 0.2+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.9+ | 0.4− |
| 2004 01 28 | 703 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2004 01 28 | 703 | 0.8+ | 0.7+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 1.2+ |
| 2004 01 30 | 699 | 0.7− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.5+ | 2006 11 19 | 704 | 1.1− | 0.5+ |
| 2004 01 30 | 699 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.6− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2004 01 30 | 699 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2004 01 30 | 699 | 0.9− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2004 01 30 | 704 | 0.4+ | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.1+ | 0.5− |
| 2004 01 30 | 704 | 0.5+ | 0.9− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.2− | 1.5− |
| 2004 01 30 | 704 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.3+ |
| 2004 01 30 | 704 | 0.9+ | 1.0+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.1+ |
| 2004 01 30 | 704 | 0.4+ | 1.5+ | 2006 10 28 | 691 | 0.6− | 0.0 | 2006 11 29 | 704 | 0.3+ | 1.8+ |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 1.2+ | 0.4+ |
| 2004 02 11 | 644 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.0 | 2006 11 29 | 704 | 1.3+ | 0.6+ |
| 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 1.8+ | 0.9+ |
| 2004 02 15 | 704 | 0.2+ | 0.7− | 2006 11 01 | 691 | 0.0 | 0.1+ | | | | |
| 2004 02 15 | 704 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 | | | | |

**(137754)∗ 1999 XY$_{162}$**

Discovered 1999 Dec. 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.65360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23951005 | $\omega$ | 138.37909 | | −0.32770568 | +0.93628108 | |
| $a$ | 2.5679519 | $\Omega$ | 112.14171 | | −0.89888301 | −0.26777618 | |
| $e$ | 0.1062489 | $i$ | 7.84567 | | −0.29089229 | −0.22731839 | |
| $P$ | 4.12 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 691 | 0.2+ | 0.0 | 2005 04 01 | 699 | 0.2− | 1.1+ | 2005 05 15 | 644 | 0.5+ | 0.0 |
| 1999 12 08 | 691 | 0.6+ | 0.2− | 2005 04 01 | 699 | 0.2+ | 0.0 | 2005 05 15 | 644 | 0.4+ | 0.1+ |
| 1999 12 08 | 691 | 0.4+ | 0.0 | 2005 04 04 | 703 | 1.0− | 0.8− | 2006 09 18 | 703 | 0.6− | 1.2+ |
| 1999 12 15 | 691 | 0.3− | 0.0 | 2005 04 04 | 703 | 0.7− | 0.3− | 2006 09 18 | 703 | (1.1− | 1.9+) |
| 1999 12 15 | 691 | 0.4− | 0.1+ | 2005 04 04 | 703 | 0.2− | 0.5− | 2006 09 18 | 703 | (1.0− | 1.5+) |
| 1999 12 15 | 691 | 0.0 | 0.0 | 2005 04 04 | 703 | 1.2− | 0.3+ | 2006 09 18 | 703 | (1.8+ | 1.8+) |
| 2000 02 02 | 691 | 1.1− | 0.8+ | 2005 04 09 | 704 | 1.0+ | 0.6+ | 2006 10 02 | 703 | 0.3+ | 0.6− |
| 2000 02 02 | 691 | 0.2+ | 0.1− | 2005 04 09 | 704 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.2− | 1.5− |
| 2000 02 02 | 691 | 0.0 | 0.4− | 2005 04 09 | 704 | 1.1+ | 0.5+ | 2006 10 02 | 703 | 1.1− | 0.2− |
| 2000 02 07 | 691 | 0.1− | 0.1+ | 2005 04 09 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 703 | 0.0 | 0.3− |
| 2000 02 07 | 691 | 0.4+ | 0.0 | 2005 05 06 | 704 | 0.4+ | 1.2+ | 2006 10 11 | 644 | 0.0 | 0.8+ |
| 2000 02 07 | 691 | 0.2+ | 0.2− | 2005 05 06 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 2001 04 25 | 699 | 0.8− | 0.5− | 2005 05 06 | 704 | (0.9+ | 1.5+) | 2006 10 11 | 644 | 0.0 | 0.7+ |
| 2001 04 25 | 699 | 0.2+ | 0.8− | 2005 05 11 | 703 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.7+ |
| 2001 04 25 | 699 | 0.1− | 0.1+ | 2005 05 11 | 703 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.8+ |
| 2001 04 25 | 699 | 0.1+ | 0.1− | 2005 05 11 | 703 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.6+ |
| 2005 04 01 | 699 | (1.7− | 0.6+) | 2005 05 11 | 703 | 0.4− | 0.8− | | | | |
| 2005 04 01 | 699 | 0.2− | 1.2+ | 2005 05 15 | 644 | 1.1+ | 0.3− | | | | |

**(137755)∗ 1999 XB$_{164}$ = 1997 GO$_{10}$**

Discovered 1999 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 37963)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.97439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27138196 | $\omega$ | 280.76297 | | +0.09035614 | −0.99584906 | |
| $a$ | 2.3627371 | $\Omega$ | 164.04055 | | +0.92861672 | +0.08026419 | |
| $e$ | 0.1739914 | $i$ | 2.28728 | | +0.35987048 | +0.04292214 | |
| $P$ | 3.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.5+ | 0.1− | 2004 03 01 | 333 | 0.7− | 0.0 | 2006 10 15 | 703 | 0.2+ | 0.2− |
| 1997 04 03 | 704 | 0.1+ | 1.2+ | 2004 03 01 | 333 | 1.0− | 0.4+ | 2006 10 15 | 703 | 0.2+ | 0.4− |
| 1997 04 07 | 704 | 0.3+ | 1.2+ | 2004 03 01 | 333 | 1.1− | 0.4+ | 2006 10 15 | 703 | 0.3+ | 0.1− |
| 1997 04 07 | 704 | 0.5+ | 0.8+ | 2004 03 11 | 644 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 1999 12 08 | 704 | 0.6+ | 0.2− | 2004 03 11 | 644 | 0.7+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 1999 12 08 | 704 | 0.5− | 0.8− | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 1999 12 08 | 704 | 0.2− | 0.6− | 2004 03 15 | 704 | 1.2+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.3− |
| 1999 12 15 | 704 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.5+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 1999 12 15 | 704 | 0.3− | 0.6− | 2004 03 15 | 704 | 0.7− | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 1999 12 15 | 704 | 0.4− | 0.3− | 2004 03 15 | 704 | 1.1− | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 1999 12 15 | 704 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 1999 12 15 | 704 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.5+ | 0.6− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2000 01 05 | 704 | 0.4+ | 1.0+ | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2000 01 05 | 704 | 0.5+ | 0.2+ | 2004 03 18 | 704 | 0.9+ | 0.3− | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2000 01 05 | 704 | 0.1− | 1.0− | 2004 03 18 | 704 | 0.1− | 0.8− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2000 01 06 | 704 | 1.1+ | 0.4+ | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2000 01 06 | 704 | 0.5+ | 0.7− | 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.4+ |
| 2000 01 06 | 704 | 0.3− | 0.9− | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.1+ |
| 2004 01 24 | 704 | 0.8+ | 0.0 | 2004 03 31 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2004 01 24 | 704 | 1.5+ | 0.3+ | 2004 03 31 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.6− |
| 2004 01 24 | 704 | (2.0+ | 0.4+) | 2004 03 31 | 691 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2004 01 24 | 704 | (3.0+ | 0.5+) | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2004 01 24 | 704 | (2.0+ | 0.4+) | 2006 07 21 | G96 | 0.6− | 0.4− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2004 02 11 | 703 | 1.0− | 0.8− | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 02 11 | 703 | 0.3+ | 0.5− | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2004 02 11 | 703 | (1.8+ | 0.2+) | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2004 02 11 | 703 | (1.6− | 1.5−) | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2004 02 11 | 644 | 0.3− | 0.4− | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2004 02 11 | 644 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2004 02 11 | 644 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2004 02 18 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 11 06 | 644 | 0.1+ | 0.1− |
| 2004 02 18 | 704 | 0.7− | 0.3− | 2006 09 22 | 185 | 0.3+ | 1.3+ | 2006 11 06 | 644 | 0.3− | 0.2− |
| 2004 02 18 | 704 | 0.0 | 0.3+ | 2006 09 22 | 185 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 2004 02 18 | 704 | 0.3− | 0.1− | 2006 09 22 | 185 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2004 02 26 | 704 | 0.6+ | 0.2− | 2006 09 22 | 185 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.9+ |
| 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 09 30 | 703 | (2.3− | 0.4+) | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2004 02 26 | 704 | 0.7+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2004 02 26 | 704 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2004 02 26 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | | | |
| 2004 03 01 | 333 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.5+ | 0.6− | | | | |

**(137756)∗ 1999 XZ$_{166}$ = 2002 PQ$_{74}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33168)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.18590 | | (2000.0) | | | |
| $n$ | 0.28586900 | $\omega$ | 122.25709 | | +0.29177866 | −0.95342841 |
| $a$ | 2.2822226 | $\Omega$ | 310.58309 | | +0.84023249 | +0.29367036 |
| $e$ | 0.1254190 | $i$ | 5.77482 | | +0.45702797 | +0.06878941 |
| $P$ | 3.45 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.6+ | 0.2− | 2002 08 13 | 704 | (0.3− | 2.2+) | 2004 02 25 | 704 | 0.2+ | 0.1+ |
| 1999 10 14 | 704 | 0.6+ | 0.0 | 2002 08 13 | 704 | (0.6− | 2.3+) | 2004 02 25 | 704 | 0.3− | 0.3− |
| 1999 10 14 | 704 | 0.4+ | 0.0 | 2002 08 13 | 704 | (0.7− | 2.2+) | 2004 03 16 | 704 | 0.1+ | 0.0 |
| 1999 10 14 | 704 | 0.6+ | 0.0 | 2002 08 13 | 704 | (0.5− | 2.2+) | 2004 03 16 | 704 | 0.1− | 0.7− |
| 1999 10 14 | 704 | 0.6+ | 1.1+ | 2002 08 13 | 704 | (0.2− | 2.1+) | 2004 03 16 | 704 | 0.2+ | 0.1− |
| 1999 12 07 | 703 | 0.3+ | 0.2− | 2002 08 28 | 644 | 0.2+ | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.3+ |
| 1999 12 07 | 703 | 0.1+ | 0.1+ | 2002 08 28 | 644 | 0.0 | 0.5+ | 2004 03 16 | 704 | 0.1+ | 0.1+ |
| 1999 12 07 | 703 | 0.1+ | 0.2− | 2002 08 28 | 644 | 0.1+ | 0.4+ | 2004 03 19 | 704 | 0.8+ | 1.2+ |
| 1999 12 07 | 703 | 0.3+ | 0.3+ | 2002 09 01 | 608 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.7+ |
| 1999 12 10 | 704 | 0.2− | 0.3− | 2002 09 01 | 608 | 0.1+ | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.6+ |
| 1999 12 10 | 704 | 0.2− | 0.7− | 2002 09 01 | 608 | 0.0 | 0.3− | 2004 03 19 | 704 | 0.3+ | 0.5+ |
| 1999 12 10 | 704 | 0.0 | 0.5− | 2002 09 06 | 704 | 0.5+ | 0.9+ | 2004 03 19 | 704 | 0.2+ | 1.0+ |
| 1999 12 10 | 704 | 0.2− | 0.3− | 2002 09 06 | 704 | 0.3+ | 0.5+ | 2004 03 21 | 704 | 0.7+ | 0.2− |
| 1999 12 10 | 704 | 0.3+ | 0.2+ | 2002 09 06 | 704 | 0.2+ | 0.3+ | 2004 03 21 | 704 | 0.1− | 0.1+ |
| 1999 12 15 | 704 | 0.4+ | 1.5− | 2002 09 06 | 704 | 0.3+ | 0.3+ | 2004 03 21 | 704 | 0.3+ | 1.4+ |
| 1999 12 15 | 704 | 0.5− | 1.1− | 2002 09 06 | 704 | 0.6+ | 0.4+ | 2004 04 09 | 703 | 0.0 | 1.5+ |
| 1999 12 15 | 704 | 0.1− | 1.1− | 2002 09 13 | 644 | 0.4− | 0.6+ | 2004 04 09 | 703 | 0.5+ | 0.7+ |
| 1999 12 15 | 704 | 0.1− | 1.3− | 2002 09 13 | 644 | 0.3− | 0.7+ | 2004 04 09 | 703 | 1.1− | 1.2+ |
| 1999 12 15 | 704 | 0.6− | 1.3− | 2002 09 13 | 644 | 0.3− | 0.8+ | 2004 04 09 | 703 | 1.0− | 0.3− |
| 1999 12 16 | 723 | 0.5− | 0.0 | 2002 09 14 | 644 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.7+ | 0.1+ |
| 1999 12 16 | 723 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 08 30 | 704 | 0.8+ | 0.9+ |
| 1999 12 16 | 723 | 0.3− | 0.1+ | 2002 09 14 | 644 | 0.2− | 0.6+ | 2006 08 30 | 704 | 0.2+ | 1.0+ |
| 1999 12 31 | 699 | 0.3− | 0.9+ | 2002 09 16 | 608 | 0.9− | 0.2− | 2006 08 30 | 704 | 0.9+ | 0.8− |
| 1999 12 31 | 699 | 0.5+ | 0.7+ | 2002 09 16 | 608 | 1.0− | 0.1− | 2006 10 02 | 704 | 0.4− | 0.1+ |
| 1999 12 31 | 699 | 0.2− | 0.6+ | 2002 09 16 | 608 | (1.6− | 0.1−) | 2006 10 02 | 704 | 0.5− | 0.3+ |
| 2000 01 03 | 704 | 0.1+ | 0.2− | 2002 10 04 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 704 | 0.7+ | 0.2+ |
| 2000 01 03 | 704 | 0.3+ | 0.3− | 2002 10 04 | 704 | 0.3− | 0.4+ | 2006 10 02 | 704 | 0.7+ | 0.2+ |
| 2000 01 03 | 704 | 0.0 | 0.5− | 2002 10 04 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.7+ |
| 2000 01 03 | 704 | 0.2+ | 0.2+ | 2002 10 04 | 704 | 0.7+ | 0.2− | 2006 10 29 | 704 | 0.4− | 0.1− |
| 2000 01 03 | 704 | 0.3+ | 0.6− | 2002 10 12 | 704 | 0.5+ | 0.2+ | 2006 10 29 | 704 | 0.5− | 0.3+ |
| 2000 01 04 | 704 | 0.0 | 0.0 | 2002 10 12 | 704 | 0.5− | 0.4− | 2006 10 29 | 704 | 0.7− | 0.1− |
| 2000 01 04 | 704 | 0.1+ | 0.6− | 2002 10 12 | 704 | 0.3− | 0.5+ | 2006 10 29 | 704 | 0.0 | 0.7+ |
| 2000 01 04 | 704 | 0.6+ | 0.4− | 2002 11 12 | 704 | 0.9+ | 0.5+ | 2006 11 16 | 704 | (0.5+ | 2.0+) |
| 2000 01 04 | 704 | 0.8+ | 0.8− | 2002 11 12 | 704 | 0.4− | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2000 01 04 | 704 | 0.1+ | 0.8− | 2002 11 12 | 704 | 0.5− | 0.8− | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2000 01 13 | 699 | 1.5− | 0.3+ | 2004 01 29 | 704 | 1.0+ | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.5+ |
| 2000 01 13 | 699 | 0.1+ | 0.6+ | 2004 01 29 | 704 | 0.9+ | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2000 01 13 | 699 | 0.6− | 0.4+ | 2004 01 29 | 704 | 0.5+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2002 07 14 | 704 | 0.0 | 0.5+ | 2004 01 29 | 704 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2002 07 14 | 704 | 0.6− | 0.6+ | 2004 01 29 | 291 | 0.3+ | 1.1+ | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2002 07 14 | 704 | (1.7− | 1.1+) | 2004 01 29 | 291 | (0.2+ | 1.7+) | 2006 11 22 | 704 | 0.7− | 0.0 |
| 2002 08 12 | 704 | 1.2− | 1.2+ | 2004 01 29 | 291 | 0.5+ | 1.2+ | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2002 08 12 | 704 | 0.7− | 1.5+ | 2004 02 19 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2002 08 12 | 704 | 1.3− | 1.3+ | 2004 02 19 | 704 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.3+ |
| 2002 08 12 | 704 | 1.2− | 1.1+ | 2004 02 19 | 704 | 0.4+ | 0.3+ | 2006 11 27 | 704 | 0.2+ | 0.7+ |
| 2002 08 12 | 704 | 1.4− | 0.7+ | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 11 27 | 704 | 0.3+ | 0.2+ |
| 2002 08 12 | 699 | 0.8− | 1.1+ | 2004 02 19 | 704 | 1.0+ | 0.4+ | 2006 11 27 | 704 | 0.3+ | 0.6+ |
| 2002 08 12 | 699 | 0.5− | 0.7+ | 2004 02 20 | 608 | 0.4+ | 0.3+ | 2006 11 27 | 704 | 0.1− | 0.9+ |
| 2002 08 12 | 699 | 0.2+ | 0.6+ | 2004 02 20 | 608 | 0.5+ | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2002 08 12 | 699 | 0.7+ | 0.5+ | 2004 02 20 | 608 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 2002 08 12 | 608 | 0.4− | 0.2+ | 2004 02 25 | 704 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.8− | 0.2− |
| 2002 08 12 | 608 | 0.5− | 0.2+ | 2004 02 25 | 704 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.8− |
| 2002 08 12 | 608 | 0.6− | 0.0 | 2004 02 25 | 704 | 0.4+ | 0.9− | 2006 11 29 | 704 | 0.5+ | 1.4+ |

**(137757)∗ 1999 XK$_{171}$ = 2002 QV$_{40}$ = 2004 DZ$_{77}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34840), A. Doppler (*MPO* 74701)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.36560 | | (2000.0) | | | |
| $n$ | 0.26722363 | $\omega$ | 71.90958 | | +0.58580629 | −0.81033630 |
| $a$ | 2.3871854 | $\Omega$ | 342.20997 | | +0.72567323 | +0.53194754 |
| $e$ | 0.1942626 | $i$ | 2.55883 | | +0.36087303 | +0.24573745 |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.4− | 0.5− | 2004 02 17 | 704 | 0.3− | 0.3− | 2006 09 18 | 704 | (1.7+ | 1.3+) |
| 1999 12 10 | 704 | 0.4− | 0.8− | 2004 02 17 | 704 | 1.0+ | 0.1− | 2006 09 18 | 704 | (1.7+ | 1.8−) |
| 1999 12 10 | 704 | 0.3− | 0.1− | 2004 02 17 | 704 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.7+ |
| 1999 12 10 | 704 | 0.5− | 0.3− | 2004 02 17 | 608 | 0.2− | 1.0+ | 2006 09 18 | 699 | 0.6+ | 0.1+ |
| 1999 12 10 | 704 | 0.1+ | 0.1+ | 2004 02 17 | 608 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.4+ | 0.7− |
| 1999 12 15 | 704 | 0.4− | 1.3− | 2004 02 17 | 608 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.3− |
| 1999 12 15 | 704 | 0.4+ | 0.8− | 2004 02 18 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.8− | 0.8+ |
| 1999 12 15 | 704 | 0.2+ | 1.3− | 2004 02 18 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 1999 12 15 | 704 | 0.4+ | 0.6− | 2004 02 18 | 704 | 1.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | (0.4+ | 2.1−) | 2004 02 19 | 704 | 0.4+ | 1.5+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | | |
| 2000 01 03 | 704 | 1.4+ | 0.2+ | 2004 02 19 | 704 | (0.5− | 2.1+) | 2006 09 20 | 704 | 0.9+ | 0.0 | | |
| 2000 01 03 | 704 | 0.2− | 0.4+ | 2004 02 19 | 704 | 0.7+ | 0.7+ | 2006 09 20 | 704 | 0.4− | 0.5+ | | |
| 2000 01 03 | 704 | 1.4− | 1.3− | 2004 02 19 | 704 | 0.0 | 0.9+ | 2006 09 20 | 704 | 0.6− | 0.1+ | | |
| 2000 01 30 | 704 | 0.5− | 0.2− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 704 | (1.7− | 0.4+) | | |
| 2000 01 30 | 704 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.1+ | | |
| 2000 01 30 | 704 | 0.0 | 1.1+ | 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 09 21 | A50 | 0.8− | 0.4− | | |
| 2000 01 31 | 704 | 0.3− | 1.0+ | 2004 02 23 | 704 | 0.2− | 0.5− | 2006 09 21 | A50 | 1.1+ | 0.2− | | |
| 2000 01 31 | 704 | 0.6+ | 0.9+ | 2004 02 23 | 704 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.2+ | | |
| 2000 01 31 | 704 | 0.6+ | 1.5+ | 2004 02 23 | 704 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.2+ | | |
| 2002 07 29 | 644 | 0.0 | 0.3− | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2+ | | |
| 2002 07 29 | 644 | 0.0 | 0.4+ | 2004 02 26 | 704 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.7+ | 0.0 | | |
| 2002 07 29 | 644 | 0.3+ | 0.6+ | 2004 02 26 | 704 | 0.6− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.2− | | |
| 2002 08 08 | 644 | 0.5− | 0.8+ | 2004 02 26 | 704 | 0.1− | 0.8+ | 2006 09 29 | 704 | 0.0 | 0.3+ | | |
| 2002 08 08 | 644 | 0.5− | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.2− | 0.4+ | | |
| 2002 08 08 | 644 | 0.6− | 0.7+ | 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.8+ | | |
| 2002 08 14 | 704 | 0.4− | 0.3− | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.1− | | |
| 2002 08 14 | 704 | 0.6− | 0.6+ | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 | | |
| 2002 08 14 | 704 | 0.1+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.2− | 0.0 | | |
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.6+ | | |
| 2002 08 18 | 644 | 0.1− | 0.6+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.5+ | | |
| 2002 08 18 | 644 | 0.4− | 0.7+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.1− | | |
| 2002 08 29 | 291 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.6+ | | |
| 2002 08 29 | 291 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.4− | | |
| 2002 08 29 | 291 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2002 08 29 | 644 | 0.3− | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.2− | | |
| 2002 08 29 | 644 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.3− | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.2− | | |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.5− | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.2− | | |
| 2002 08 31 | 704 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 1.2− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 2002 08 31 | 704 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2002 08 31 | 704 | 1.1+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2004 02 11 | 291 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2004 02 11 | 291 | 0.3+ | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2004 02 11 | 291 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.9+ | 1.0+ | | |
| 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.4+ | 0.1− | | |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.6+ | 2006 10 29 | 704 | 0.1+ | 0.2− | | |
| 2004 02 11 | 644 | 0.1+ | 0.2− | 2006 09 16 | 644 | 0.6− | 0.6+ | 2006 10 29 | 704 | 0.3+ | 0.3− | | |
| 2004 02 17 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 644 | 0.3− | 0.5+ | 2006 10 29 | 704 | 1.1− | 0.4+ | | |
| 2004 02 17 | 704 | 0.4− | 0.4− | 2006 09 18 | 704 | 0.1− | 0.7− | | | | | | |

**(137758)∗ 1999 XH$_{173}$ = 2002 RL$_{50}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34840)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 4.02149 | | (2000.0) | | | | |
| $n$ | 0.28036325 | $\omega$ | 23.82174 | | +0.50524263 | −0.86101834 | |
| $a$ | 2.3120044 | $\Omega$ | 35.90817 | | +0.77499476 | +0.42307835 | |
| $e$ | 0.1458471 | $i$ | 5.68672 | | +0.37962220 | +0.28222709 | |
| $P$ | 3.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 699 | 1.2+ | 0.4− | 2002 10 30 | 704 | 0.7+ | 0.1+ | 2004 03 22 | 704 | 0.5+ | 0.8+ | | |
| 1999 12 03 | 699 | 0.3− | 0.4− | 2002 10 30 | 704 | 0.0 | 1.0+ | 2004 03 22 | 704 | 0.9+ | 0.6+ | | |
| 1999 12 03 | 699 | 0.0 | 0.8+ | 2002 11 06 | 704 | 0.5− | 0.0 | 2004 03 22 | 704 | 1.1+ | 0.3+ | | |
| 1999 12 10 | 704 | 0.5− | 0.1+ | 2002 11 06 | 704 | 0.9− | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.4+ | | |
| 1999 12 10 | 704 | 0.2− | 0.5− | 2002 11 06 | 704 | 0.1− | 0.3+ | 2004 03 22 | 704 | 1.0+ | 0.8+ | | |
| 1999 12 10 | 704 | 0.6− | 0.6− | 2002 11 06 | 704 | 1.0− | 0.5+ | 2004 03 22 | 704 | 0.4+ | 0.4+ | | |
| 1999 12 10 | 704 | 0.5− | 0.6− | 2002 11 06 | 704 | 1.3− | 1.1+ | 2004 03 22 | 704 | 0.6+ | 0.1− | | |
| 1999 12 10 | 704 | 0.6− | 0.4− | 2002 11 10 | 704 | 0.4− | 0.6− | 2004 03 22 | 704 | 0.2+ | 0.1+ | | |
| 1999 12 15 | 704 | 0.1− | 0.6− | 2002 11 10 | 704 | 0.5− | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | | |
| 1999 12 15 | 704 | 0.7− | 0.5− | 2002 11 10 | 704 | 0.5+ | 0.4+ | 2004 03 22 | 704 | 0.3− | 0.5+ | | |
| 1999 12 15 | 704 | 0.5+ | 0.6+ | 2002 11 10 | 704 | 0.1− | 1.4+ | 2004 03 23 | 704 | 0.6+ | 0.9+ | | |
| 1999 12 15 | 704 | 0.6+ | 0.7− | 2002 11 19 | 644 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.9+ | | |
| 1999 12 15 | 704 | 0.7+ | 0.2− | 2002 11 19 | 644 | 0.1+ | 0.7+ | 2004 03 23 | 704 | 0.8+ | 0.7+ | | |
| 1999 12 31 | 699 | 0.5+ | 0.5− | 2002 11 19 | 644 | 0.5− | 0.7+ | 2004 03 23 | 704 | 0.4+ | 1.0+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 699 | 0.6+ | 0.5− | 2002 11 30 | 608 | 0.6− | 0.5− | 2004 03 23 | 704 | 0.6+ | 0.4+ | | |
| 1999 12 31 | 699 | 0.6+ | 0.9− | 2002 11 30 | 608 | 0.3− | 0.7− | 2004 03 24 | 699 | 0.2− | 0.9+ | | |
| 2000 01 02 | 704 | 0.1− | 1.1− | 2002 11 30 | 608 | 0.6− | 0.4− | 2004 03 24 | 699 | 0.3− | 0.1+ | | |
| 2000 01 02 | 704 | 0.5− | 0.5− | 2002 12 05 | 704 | 0.3− | 0.9+ | 2004 03 24 | 699 | 0.4− | 0.3+ | | |
| 2000 01 02 | 704 | 0.9− | 1.0− | 2002 12 05 | 704 | 0.6− | 0.0 | 2004 03 24 | 699 | 0.4− | 0.0 | | |
| 2000 01 02 | 704 | 1.3− | 1.4− | 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 03 25 | 704 | 0.1+ | 1.2+ | | |
| 2000 01 02 | 704 | 1.0− | 0.5− | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2004 03 25 | 704 | 0.7+ | 0.8+ | | |
| 2000 01 29 | 704 | 0.0 | 0.2− | 2002 12 05 | 704 | 0.3+ | 0.5+ | 2004 03 25 | 704 | 0.6+ | 0.7+ | | |
| 2000 01 29 | 704 | 0.5+ | 0.3+ | 2003 01 04 | 704 | (0.1+ | 1.6+) | 2004 03 25 | 704 | 0.7+ | 1.0+ | | |
| 2000 01 29 | 704 | 1.1+ | 1.2− | 2003 01 04 | 704 | 0.3− | 1.0+ | 2004 04 08 | 608 | 0.2− | 0.2− | | |
| 2000 01 29 | 704 | 0.4− | 0.2+ | 2003 01 04 | 704 | 0.5− | 0.8+ | 2004 04 08 | 608 | 0.9− | 0.5+ | | |
| 2000 01 29 | 704 | 0.6+ | 0.0 | 2003 01 04 | 704 | 0.8+ | 0.9+ | 2004 04 08 | 608 | 0.2+ | 0.2+ | | |
| 2002 09 05 | 704 | (1.6− | 1.2+) | 2003 01 04 | 704 | 0.1+ | 0.1+ | 2004 04 10 | 644 | 0.5+ | 0.6+ | | |
| 2002 09 05 | 704 | 1.5− | 1.0+ | 2004 01 22 | 704 | 0.5+ | 0.1− | 2004 04 10 | 644 | 0.5+ | 0.6+ | | |
| 2002 09 05 | 704 | 1.1− | 1.2+ | 2004 01 22 | 704 | 0.3+ | 0.9+ | 2004 04 10 | 644 | 0.5+ | 0.6+ | | |
| 2002 09 05 | 704 | (2.1− | 2.1+) | 2004 01 22 | 704 | 0.3+ | 0.7+ | 2004 04 15 | 704 | 1.3− | 0.7+ | | |
| 2002 09 05 | 704 | (1.0− | 2.0+) | 2004 02 18 | 703 | 0.6− | 0.3− | 2004 04 15 | 704 | 0.3+ | 0.9− | | |
| 2002 09 06 | 704 | 0.5+ | 0.3+ | 2004 02 18 | 703 | 0.8− | 0.6+ | 2004 04 15 | 704 | 1.2+ | 0.7− | | |
| 2002 09 06 | 704 | 0.5+ | 0.8+ | 2004 02 18 | 703 | 0.9− | 0.6+ | 2004 04 15 | 704 | 0.6− | 0.8+ | | |
| 2002 09 06 | 704 | 0.4− | 0.9+ | 2004 02 18 | 703 | 0.9− | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.4+ | 0.6+ | 2004 02 19 | 704 | 0.6+ | 0.4− | 2004 04 19 | 704 | 0.3+ | 1.2+ | | |
| 2002 09 06 | 704 | 0.2+ | 1.2+ | 2004 02 19 | 704 | 0.8+ | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.2− | | |
| 2002 09 08 | 608 | 0.8− | 0.2+ | 2004 02 19 | 704 | 1.4+ | 0.6+ | 2004 04 19 | 704 | 0.4+ | 1.3+ | | |
| 2002 09 08 | 608 | 0.6− | 0.0 | 2004 02 19 | 704 | 1.0+ | 1.0+ | 2004 04 19 | 704 | 0.7+ | 0.1+ | | |
| 2002 09 08 | 608 | 0.7− | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.4+ | 2004 04 22 | 704 | 1.1+ | 0.4+ | | |
| 2002 09 17 | 608 | 1.4− | 0.8+ | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2004 04 22 | 704 | 1.1+ | 0.9+ | | |
| 2002 09 17 | 608 | 1.4− | 0.8+ | 2004 02 23 | 704 | 0.9+ | 0.6+ | 2004 04 22 | 704 | 1.3− | 1.1− | | |
| 2002 09 17 | 608 | 1.3− | 0.9+ | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2004 04 22 | 704 | 0.3+ | 0.8+ | | |
| 2002 09 29 | 608 | 0.3− | 0.4− | 2004 02 23 | 704 | 0.8+ | 0.7+ | 2004 04 23 | 703 | 0.4− | 0.1− | | |
| 2002 09 29 | 608 | 0.1− | 0.3− | 2004 02 25 | 683 | 0.8+ | 0.5+ | 2004 04 23 | 703 | 0.3+ | 1.1+ | | |
| 2002 09 29 | 608 | 0.3− | 0.3− | 2004 02 25 | 683 | 0.4+ | 0.1− | 2004 04 23 | 703 | 0.0 | 0.4− | | |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2004 02 25 | 683 | 0.4+ | 0.9+ | 2004 04 23 | 703 | (1.3+ | 1.6+) | | |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2004 02 26 | 683 | (0.2+ | 2.1+) | 2006 10 28 | 703 | 0.3− | 0.5− | | |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2004 02 26 | 683 | (1.0+ | 2.8+) | 2006 10 28 | 703 | 0.8− | 1.4+ | | |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2004 02 26 | 683 | (0.9+ | 2.5+) | 2006 10 28 | 703 | 0.7+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2004 02 27 | 683 | (0.4− | 1.9+) | 2006 10 28 | 703 | 0.8+ | 0.2− | | |
| 2002 10 06 | 704 | 0.1− | 0.8+ | 2004 02 27 | 683 | (1.8+ | 2.3+) | 2006 11 15 | 704 | 0.6+ | 0.9− | | |
| 2002 10 06 | 704 | 0.7− | 0.9+ | 2004 02 27 | 683 | 0.5+ | 1.4+ | 2006 11 15 | 704 | 0.8− | 0.4+ | | |
| 2002 10 06 | 704 | 0.3− | 1.1+ | 2004 03 01 | 683 | 0.6− | 1.2− | 2006 11 15 | 704 | 0.3+ | 1.4− | | |
| 2002 10 06 | 704 | 0.3− | 0.9+ | 2004 03 01 | 683 | 1.3+ | 0.3+ | 2006 11 15 | 704 | 1.5+ | 0.6+ | | |
| 2002 10 06 | 704 | 1.0− | 1.1+ | 2004 03 01 | 683 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.7+ | | |
| 2002 10 07 | 704 | 0.3− | 0.7+ | 2004 03 16 | 704 | 0.6+ | 1.4+ | 2006 11 16 | 704 | (1.6− | 0.3−) | | |
| 2002 10 07 | 704 | 0.1− | 0.6+ | 2004 03 16 | 704 | 0.0 | 1.1+ | 2006 11 16 | 704 | 0.0 | 0.5− | | |
| 2002 10 07 | 704 | 0.2− | 0.4+ | 2004 03 16 | 704 | (0.2+ | 1.7+) | 2006 11 16 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 07 | 704 | 0.3− | 0.4+ | 2004 03 16 | 704 | (0.5+ | 1.7+) | 2006 11 16 | 704 | 0.4+ | 0.7+ | | |
| 2002 10 07 | 704 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.5+ | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.5+ | | |
| 2002 10 11 | 704 | 0.1− | 1.2+ | 2004 03 17 | 333 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.3+ | 0.2− | | |
| 2002 10 11 | 704 | 0.4+ | 1.2+ | 2004 03 17 | 333 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.4+ | | |
| 2002 10 11 | 704 | (0.2+ | 1.6+) | 2004 03 17 | 333 | 0.6+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.1− | | |
| 2002 10 11 | 704 | 0.6+ | 1.4+ | 2004 03 19 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.9+ | 2004 03 19 | 704 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.9+ | | |
| 2002 10 11 | 704 | 0.4+ | 1.2+ | 2004 03 19 | 704 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.2− | 0.6+ | | |
| 2002 10 11 | 704 | 1.0+ | 1.2+ | 2004 03 19 | 704 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 0.0 | 0.7+ | | |
| 2002 10 16 | 644 | 0.4− | 0.9+ | 2004 03 19 | 704 | 0.2+ | 1.1+ | 2006 11 22 | 704 | 0.0 | 0.6+ | | |
| 2002 10 16 | 644 | (0.8− | 1.7+) | 2004 03 20 | 691 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.5− | 1.1+ | | |
| 2002 10 16 | 644 | 0.4− | 1.1+ | 2004 03 20 | 691 | 0.3+ | 0.2+ | 2006 11 27 | 704 | 0.2− | 0.0 | | |
| 2002 10 26 | 608 | 1.4− | 0.8+ | 2004 03 20 | 691 | 0.3− | 0.5+ | 2006 11 27 | 704 | 0.1+ | 0.3+ | | |
| 2002 10 26 | 608 | 1.1− | 1.2+ | 2004 03 20 | 333 | 0.7+ | 0.4+ | 2006 11 27 | 704 | 0.6− | 0.7+ | | |
| 2002 10 26 | 608 | 0.7− | 0.8+ | 2004 03 20 | 333 | 0.3+ | 1.1+ | | | | | | |
| 2002 10 30 | 704 | 0.0 | 0.8+ | 2004 03 20 | 333 | 0.3− | 0.8+ | | | | | | |

**(137759)∗ 1999 XM$_{173}$ = 2002 TP$_{202}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37222)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.57984 | | (2000.0) | | | |
| $n$ | 0.28320459 | $\omega$ | 29.08943 | | −0.01312822 | −0.99549305 |
| $a$ | 2.2965145 | $\Omega$ | 61.80260 | | +0.89556148 | −0.05348435 |
| $e$ | 0.1537537 | $i$ | 6.11754 | | +0.44474407 | +0.07831350 |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.9+ | 1.3+ | 2002 09 10 | 608 | 0.7− | 1.0− | 2004 03 24 | 699 | 0.0 | 0.2+ |
| 1999 12 10 | 704 | 0.2+ | 0.5+ | 2002 09 10 | 608 | 0.9− | 0.4− | 2004 03 24 | 699 | 1.4− | 0.8+ |
| 1999 12 10 | 704 | 0.3+ | 0.4+ | 2002 09 28 | 608 | (3.1− | 1.1−) | 2004 03 30 | 704 | 0.1+ | 1.4+ |
| 1999 12 10 | 704 | 0.5+ | 0.3+ | 2002 09 28 | 608 | (2.8− | 0.8−) | 2004 03 30 | 704 | 0.5+ | 1.2+ |
| 1999 12 10 | 704 | 0.3+ | 0.1+ | 2002 09 28 | 608 | (3.5− | 1.1−) | 2004 03 30 | 704 | 0.9+ | 1.0+ |
| 1999 12 15 | 704 | 0.6− | 0.2+ | 2002 10 04 | 704 | 0.7+ | 0.1− | 2004 03 30 | 704 | 0.4+ | 0.5+ |
| 1999 12 15 | 704 | 0.0 | 0.2+ | 2002 10 04 | 704 | 0.5− | 0.3− | 2004 03 30 | 704 | 0.5+ | 0.0 |
| 1999 12 15 | 704 | 0.4− | 0.2+ | 2002 10 04 | 704 | 0.3+ | 1.2+ | 2004 04 09 | E12 | 0.3− | 0.6+ |
| 1999 12 15 | 704 | 0.5− | 0.2− | 2002 10 04 | 704 | 0.1− | 0.4+ | 2004 04 09 | E12 | 0.3− | 0.7+ |
| 1999 12 15 | 704 | 0.4− | 0.8+ | 2002 10 04 | 704 | 0.6+ | 0.6+ | 2004 04 09 | E12 | 1.2− | 0.0 |
| 1999 12 31 | 699 | 0.6+ | 0.2− | 2002 10 08 | 699 | 0.4+ | 0.4+ | 2004 04 09 | E12 | 0.7− | 0.3+ |
| 1999 12 31 | 699 | 0.3− | 0.9+ | 2002 10 08 | 699 | 0.5+ | 0.9+ | 2004 04 16 | 704 | 0.7+ | 0.0 |
| 1999 12 31 | 699 | 0.1+ | 1.1+ | 2002 10 08 | 699 | 0.9− | 0.0 | 2004 04 16 | 704 | 0.8+ | 0.8− |
| 2000 01 02 | 691 | 0.3+ | 0.2− | 2002 10 08 | 699 | 0.7− | 0.2+ | 2004 04 16 | 704 | 0.5− | 0.3− |
| 2000 01 02 | 691 | 0.1+ | 0.2− | 2002 11 02 | 608 | 0.7− | 0.5− | 2004 04 16 | 704 | (1.8− | 1.4+) |
| 2000 01 02 | 691 | 0.2+ | 0.2− | 2002 11 02 | 608 | 0.5− | 0.1− | 2005 07 17 | 644 | 0.0 | 0.5+ |
| 2000 01 02 | 704 | 0.0 | 0.4− | 2002 11 02 | 608 | 0.5− | 0.1+ | 2005 07 17 | 644 | 0.0 | 0.6+ |
| 2000 01 02 | 704 | 0.2− | 0.1+ | 2002 11 06 | 644 | 0.2− | 0.4+ | 2005 07 17 | 644 | 0.2+ | 0.5+ |
| 2000 01 02 | 704 | 0.3− | 0.4− | 2002 11 06 | 644 | 0.1+ | 0.7+ | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2000 01 02 | 704 | 0.7− | 0.4+ | 2002 11 06 | 644 | 0.3− | 0.6+ | 2006 10 23 | G96 | 0.8+ | 0.1− |
| 2000 01 02 | 704 | 0.5+ | 0.1+ | 2002 11 11 | 704 | (0.0 | 2.3+) | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2000 01 03 | 691 | 0.3− | 0.3− | 2002 11 11 | 704 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2000 01 03 | 691 | 0.5+ | 0.1− | 2002 11 11 | 704 | (0.2− | 1.6+) | 2006 11 02 | G96 | 0.1− | 0.5− |
| 2000 01 03 | 691 | 0.4− | 0.3− | 2002 11 11 | 704 | 0.6+ | 1.0+ | 2006 11 02 | G96 | 0.3+ | 0.2− |
| 2000 01 04 | 704 | 0.4− | 0.4− | 2002 11 19 | 644 | 0.2+ | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.0 |
| 2000 01 04 | 704 | 0.3− | 0.5− | 2002 11 19 | 644 | 0.6− | 0.7+ | 2006 11 02 | G96 | 0.8+ | 0.0 |
| 2000 01 04 | 704 | 0.1+ | 0.2− | 2002 11 19 | 644 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.3− |
| 2000 01 04 | 704 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 704 | 0.7+ | 0.6+ |
| 2000 01 04 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.5+ | 1.2+ | 2006 11 16 | 704 | 1.3+ | 0.9+ |
| 2000 01 29 | 704 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 704 | 0.9+ | 0.6− |
| 2000 01 29 | 704 | 0.0 | 0.4+ | 2004 03 22 | 704 | 1.0+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 1.0+ |
| 2000 01 29 | 704 | 0.4− | 0.7− | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 11 22 | 704 | 1.1− | 1.3+ |
| 2000 01 29 | 704 | 0.3− | 0.1− | 2004 03 22 | 704 | (1.7+ | 0.2+) | 2006 11 22 | 704 | 0.6− | 0.6+ |
| 2000 01 29 | 704 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.4− | 0.2+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 1.4− | 0.8+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 03 24 | 699 | (0.7− | 1.6+) | | | | |
| 2002 09 10 | 608 | 1.0− | 0.6− | 2004 03 24 | 699 | 0.2+ | 0.8− | | | | |

**(137760)∗ 1999 XF$_{176}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.18827 | | (2000.0) | | | |
| $n$ | 0.28174809 | $\omega$ | 341.01055 | | +0.66210027 | −0.74052674 |
| $a$ | 2.3044222 | $\Omega$ | 67.34975 | | +0.70270664 | +0.56010548 |
| $e$ | 0.2134083 | $i$ | 7.16329 | | +0.26043543 | +0.37135158 |
| $P$ | 3.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.9− | 0.6− | 2002 09 13 | 704 | 0.3− | 0.7+ | 2002 12 07 | 704 | 0.1− | 0.4− |
| 1999 12 10 | 704 | 0.7+ | 0.2+ | 2002 09 13 | 699 | 0.4− | 0.0 | 2002 12 07 | 704 | 0.2+ | 0.6+ |
| 1999 12 10 | 704 | 0.1− | 0.1+ | 2002 09 13 | 699 | 0.0 | 0.2− | 2002 12 07 | 704 | 0.5+ | 0.4+ |
| 1999 12 10 | 704 | 1.2+ | 0.6+ | 2002 09 13 | 699 | 0.2− | 0.3+ | 2004 03 14 | 691 | 0.2+ | 0.6+ |
| 1999 12 10 | 704 | 0.0 | 0.1+ | 2002 09 13 | 699 | 0.3− | 0.1− | 2004 03 14 | 691 | 0.2+ | 0.7+ |
| 1999 12 15 | 704 | 0.5− | 0.1− | 2002 09 15 | 608 | (1.6− | 1.0−) | 2004 03 14 | 691 | 0.6+ | 0.3+ |
| 1999 12 15 | 704 | 0.3− | 1.2+ | 2002 09 15 | 608 | (1.7− | 1.2−) | 2004 03 23 | 704 | 0.0 | 1.2+ |
| 1999 12 15 | 704 | 0.8− | 0.0 | 2002 09 15 | 608 | (1.5− | 1.1−) | 2004 03 23 | 704 | 1.0+ | 1.3+ |
| 1999 12 15 | 704 | 1.0− | 1.5+ | 2002 09 17 | 644 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.4+ | 1.4+ |
| 2000 01 03 | 704 | 0.0 | 0.3+ | 2002 09 17 | 644 | 0.3+ | 0.4+ | 2004 03 23 | 704 | 0.3+ | 0.7+ |
| 2000 01 03 | 704 | 0.1+ | 0.2− | 2002 09 17 | 644 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.4+ | 1.4+ |
| 2000 01 03 | 704 | 1.2+ | 0.4− | 2002 09 27 | 704 | 0.8− | 0.4+ | 2004 03 28 | 703 | 0.3+ | 0.4− |
| 2000 01 03 | 704 | 0.6− | 0.6− | 2002 09 27 | 704 | 0.2− | 0.8+ | 2004 03 28 | 703 | 0.3+ | 1.4+ |
| 2000 01 03 | 704 | 0.4+ | 0.8− | 2002 09 27 | 704 | 0.3− | 0.2+ | 2004 03 28 | 703 | 0.6+ | 1.5+ |
| 2000 01 29 | 704 | 0.4+ | 0.1+ | 2002 09 27 | 704 | 0.5− | 0.4+ | 2004 03 28 | 703 | 0.3+ | 1.4+ |
| 2000 01 29 | 704 | 0.0 | 0.1− | 2002 09 27 | 704 | 0.8− | 0.4+ | 2006 09 18 | 691 | 0.4+ | 0.3+ |
| 2000 01 29 | 704 | 0.0 | 0.8− | 2002 10 02 | 608 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2000 01 29 | 704 | 0.6+ | 0.7− | 2002 10 02 | 608 | 0.0 | 0.8− | 2006 09 18 | 691 | 0.0 | 0.2− |
| 2000 01 29 | 704 | 0.2− | 0.7− | 2002 10 02 | 608 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.3− | 0.0 |
| 2002 08 30 | 699 | 1.0+ | 0.4+ | 2002 10 08 | 644 | 0.6− | 0.3+ | 2006 11 15 | 703 | (2.6− | 1.1+) |
| 2002 08 30 | 699 | 0.2+ | 0.5+ | 2002 10 08 | 644 | 0.5− | 0.8+ | 2006 11 15 | 703 | 0.1+ | 0.6− |
| 2002 08 30 | 699 | 1.4+ | 0.6+ | 2002 10 08 | 644 | 0.5− | 0.1+ | 2006 11 15 | 703 | 0.8− | 0.8+ |
| 2002 08 30 | 699 | 0.4+ | 0.3− | 2002 10 08 | 644 | 0.4− | 0.8+ | 2006 11 19 | 704 | 0.9− | 0.1− |
| 2002 09 01 | 644 | 0.3− | 0.5− | 2002 10 08 | 644 | 0.7− | 0.3+ | 2006 11 19 | 704 | (0.9+ | 2.5+) |
| 2002 09 01 | 644 | 0.4− | 0.5− | 2002 10 08 | 644 | 0.1− | 0.9+ | 2006 11 19 | 704 | 1.0− | 0.1+ |
| 2002 09 01 | 644 | 0.4− | 0.4− | 2002 10 10 | 699 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2002 09 13 | 704 | 0.0 | 0.8+ | 2002 10 10 | 699 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.3+ | 0.2+ |
| 2002 09 13 | 704 | 0.0 | 0.5+ | 2002 10 10 | 699 | 1.0− | 0.6+ | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2002 09 13 | 704 | 0.6+ | 0.0 | 2002 10 10 | 699 | 0.9− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2002 09 13 | 704 | 0.1+ | 0.3+ | 2002 10 24 | 608 | 0.9− | 0.2− | 2006 11 22 | 704 | 0.5− | 0.6+ |
| 2002 09 13 | 704 | 0.5+ | 0.1+ | 2002 10 24 | 608 | 0.2− | 0.6+ | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2002 09 13 | 704 | 0.2− | 0.5+ | 2002 10 24 | 608 | 0.5− | 0.4− | 2006 11 22 | 704 | 0.9+ | 0.8− |
| 2002 09 13 | 704 | 0.5+ | 0.2+ | 2002 11 18 | 644 | 0.3+ | 0.3+ | 2006 11 27 | 704 | 0.0 | 0.6+ |
| 2002 09 13 | 704 | 0.4− | 0.7+ | 2002 11 18 | 644 | 0.5+ | 0.2+ | 2006 11 27 | 704 | 0.1− | 0.0 |
| 2002 09 13 | 704 | 0.2− | 0.2+ | 2002 11 18 | 644 | 0.2+ | 0.5+ | 2006 11 27 | 704 | 0.6+ | 0.7+ |

**(137761)∗ 1999 XG$_{177}$ = 2002 TY$_{212}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37223)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 230.57003 | | (2000.0) | | | |
| $n$ | 0.24694767 | $\omega$ | 63.85989 | | −0.72362211 | −0.65570264 |
| $a$ | 2.5161282 | $\Omega$ | 74.34570 | | +0.52592464 | −0.72600053 |
| $e$ | 0.0544403 | $i$ | 12.93026 | | +0.44696120 | −0.20730962 |
| $P$ | 3.99 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 703 | 0.6− | 1.5+ | 2003 11 19 | 704 | 0.4+ | 0.2+ | 2004 01 30 | 699 | 0.3− | 0.1+ |
| 1999 12 08 | 703 | 0.6+ | 0.6+ | 2003 11 19 | 704 | 0.2− | 0.3− | 2004 01 30 | 699 | 0.4− | 0.1− |
| 1999 12 08 | 703 | 0.3+ | 0.3− | 2003 11 19 | 704 | 0.4− | 0.7+ | 2004 01 30 | 699 | 0.4− | 0.5− |
| 1999 12 08 | 703 | 0.2+ | 1.8− | 2003 11 21 | 644 | 0.3+ | 0.1+ | 2004 01 31 | 704 | (0.1− | 1.8+) |
| 1999 12 10 | 704 | 0.7− | 0.1− | 2003 11 21 | 644 | 0.2+ | 0.2+ | 2004 01 31 | 704 | (0.3+ | 1.7+) |
| 1999 12 10 | 704 | 0.0 | 1.1− | 2003 11 21 | 644 | 0.3+ | 0.2+ | 2004 01 31 | 704 | (0.1− | 1.8+) |
| 1999 12 10 | 704 | 0.3− | 0.7− | 2003 11 30 | 703 | 0.3− | 0.4− | 2004 01 31 | 704 | (0.8+ | 2.0+) |
| 1999 12 10 | 704 | 0.1− | 0.3− | 2003 11 30 | 703 | 0.8− | 0.2− | 2004 02 02 | 704 | 0.5− | 0.1+ |
| 1999 12 10 | 704 | 1.0− | 1.0− | 2003 11 30 | 703 | (2.3− | 0.1−) | 2004 02 02 | 704 | 0.4− | 0.3− |
| 1999 12 15 | 704 | 0.2− | 1.1− | 2003 11 30 | 703 | (2.0− | 0.7−) | 2004 02 02 | 704 | 0.5− | 0.1+ |
| 1999 12 15 | 704 | 0.0 | 0.8− | 2003 12 04 | 704 | 0.7− | 0.2+ | 2004 02 02 | 704 | 1.1− | 0.2+ |
| 1999 12 15 | 704 | 0.8− | 1.2− | 2003 12 04 | 704 | 0.7− | 1.1+ | 2004 02 11 | 704 | 0.4+ | 0.9+ |
| 1999 12 15 | 704 | 0.1+ | 0.8− | 2003 12 04 | 704 | 0.9− | 0.6+ | 2004 02 11 | 704 | 0.0 | 0.5+ |
| 1999 12 15 | 704 | (0.3+ | 2.2−) | 2003 12 04 | 704 | 0.5− | 0.7+ | 2004 02 11 | 704 | 0.1+ | 0.0 |
| 2000 01 02 | 704 | 0.2− | 0.6− | 2003 12 04 | 704 | 0.4− | 0.9+ | 2004 02 11 | 704 | 0.3+ | 1.1− |
| 2000 01 02 | 704 | 0.1− | 1.0− | 2003 12 18 | 704 | 0.1− | 0.1+ | 2004 02 11 | 704 | 0.0 | 0.7− |
| 2000 01 02 | 704 | 0.2+ | 0.8− | 2003 12 18 | 704 | 0.2− | 0.6+ | 2004 03 25 | 704 | 0.6+ | 0.1+ |
| 2000 01 02 | 704 | 0.0 | 0.8− | 2003 12 18 | 704 | 0.1− | 0.0 | 2004 03 25 | 704 | 0.7+ | 0.1− |
| 2000 01 02 | 704 | 0.1+ | 0.7− | 2003 12 18 | 704 | 0.0 | 0.4+ | 2004 03 25 | 704 | 0.6+ | 0.5− |
| 2000 01 10 | 699 | 0.2+ | 1.1− | 2003 12 18 | 704 | 0.1+ | 0.2+ | 2004 03 25 | 704 | 0.3+ | 0.5− |
| 2000 01 10 | 699 | 0.2+ | 0.2− | 2003 12 28 | 704 | 0.5+ | 0.2+ | 2004 03 25 | 704 | 1.3+ | 0.6− |
| 2000 01 10 | 699 | 0.6+ | 0.1− | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2005 06 04 | 704 | 0.1+ | 0.7+ |
| 2000 01 29 | 704 | 0.4+ | 0.2− | 2003 12 28 | 704 | 0.8+ | 0.3+ | 2005 06 04 | 704 | 0.3+ | 0.8+ |
| 2000 01 29 | 704 | 0.0 | 0.4+ | 2003 12 28 | 704 | 0.6+ | 0.1− | 2005 06 04 | 704 | 0.1− | 1.0+ |
| 2000 01 29 | 704 | 0.3+ | 0.3+ | 2003 12 28 | 704 | 0.5+ | 0.4+ | 2005 06 04 | 704 | 0.3+ | 1.1+ |
| 2000 01 29 | 704 | 0.0 | 0.5+ | 2003 12 30 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 699 | 0.4+ | 0.3+ |
| 2000 01 29 | 704 | 0.2− | 0.2+ | 2003 12 30 | 704 | 0.0 | 0.7+ | 2006 09 17 | 699 | 0.4− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 704 | 0.7− | 0.1− | 2003 12 30 | 704 | (0.2+ | 4.0+) | 2006 09 17 | 699 | 0.2− | 0.2+ |
| 2000 03 27 | 704 | 0.1− | 1.1+ | 2003 12 30 | 704 | 0.3+ | 0.5+ | 2006 09 17 | 699 | 0.5− | 0.7+ |
| 2000 03 27 | 704 | 0.6+ | 0.5+ | 2003 12 30 | 704 | 1.0+ | 1.3+ | 2006 09 22 | 703 | 0.0 | 0.1− |
| 2000 03 27 | 704 | 0.5− | 0.6+ | 2003 12 30 | 704 | 0.1− | 0.3+ | 2006 09 22 | 703 | 0.7− | 0.6+ |
| 2000 03 27 | 704 | 0.1− | 0.5− | 2003 12 30 | 704 | 0.6+ | 1.4+ | 2006 09 22 | 703 | 0.9− | 1.3+ |
| 2002 09 18 | 644 | 0.1− | 0.4+ | 2003 12 30 | 704 | 0.1+ | 0.5+ | 2006 09 22 | 703 | 0.1+ | 0.4− |
| 2002 09 18 | 644 | 0.1− | 0.3+ | 2004 01 18 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.6+ | 0.1+ |
| 2002 09 18 | 644 | 0.6− | 0.7+ | 2004 01 18 | 644 | 0.5− | 0.2+ | 2006 09 27 | 703 | 0.8+ | 0.3+ |
| 2002 10 01 | 608 | 0.2+ | 0.5− | 2004 01 18 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.1− |
| 2002 10 01 | 608 | 0.2+ | 0.4− | 2004 01 18 | 644 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.1+ | 0.1+ |
| 2002 10 01 | 608 | 0.1+ | 0.4− | 2004 01 18 | 703 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 2002 10 07 | 608 | 0.2+ | 0.7− | 2004 01 18 | 703 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.4+ | 0.0 |
| 2002 10 07 | 608 | 0.4+ | 0.5− | 2004 01 18 | 703 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.2− |
| 2002 10 07 | 608 | 0.3+ | 0.4− | 2004 01 18 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 10 08 | 644 | 0.6− | 0.6+ | 2004 01 18 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 10 08 | 644 | 0.4− | 0.6+ | 2004 01 18 | 703 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 08 | 644 | 0.4− | 0.7+ | 2004 01 19 | 704 | 0.7+ | 1.1+ | 2006 10 31 | 703 | 0.6− | 0.1+ |
| 2002 11 04 | 644 | 0.4+ | 0.5− | 2004 01 19 | 704 | 0.4+ | 0.4+ | 2006 10 31 | 703 | 0.5+ | 0.3+ |
| 2002 11 04 | 644 | 0.1− | 0.6− | 2004 01 19 | 704 | 0.6+ | 0.7+ | 2006 10 31 | 703 | 0.4+ | 0.5+ |
| 2002 11 04 | 644 | 0.1+ | 0.3− | 2004 01 19 | 704 | 0.4+ | 0.6+ | 2006 10 31 | 703 | 1.1− | 0.4+ |
| 2003 11 19 | 704 | 0.1− | 0.1+ | 2004 01 19 | 704 | 0.8+ | 0.6+ | | | | |
| 2003 11 19 | 704 | 0.1− | 0.5+ | 2004 01 30 | 699 | 0.3− | 0.4− | | | | |

**(137762)∗ 1999 XM$_{179}$ = 2002 RL$_{140}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34841)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.56996 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25218507 | $\omega$ | 45.94620 | | −0.41430076 | | −0.89924204 |
| $a$ | 2.4811697 | $\Omega$ | 69.01052 | | +0.78613035 | | −0.43131541 |
| $e$ | 0.1602436 | $i$ | 8.65027 | | +0.45864359 | | −0.07301210 |
| $P$ | 3.91 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.2− | 0.3− | 2003 12 27 | 704 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.6− |
| 1999 12 10 | 704 | 0.8+ | 0.4− | 2003 12 29 | 704 | 0.4− | 0.6+ | 2004 03 25 | 704 | 0.6+ | 0.5+ |
| 1999 12 10 | 704 | 1.3+ | 0.1− | 2003 12 29 | 704 | 0.6− | 0.9− | 2004 03 25 | 704 | 0.1+ | 0.5− |
| 1999 12 10 | 704 | 1.0+ | 1.1− | 2003 12 29 | 704 | 0.6+ | 0.0 | 2004 03 25 | 704 | 0.6+ | 0.2+ |
| 1999 12 15 | 704 | 0.8− | 1.5− | 2003 12 29 | 704 | 0.3− | 0.1− | 2004 03 25 | 704 | 0.3− | 0.1+ |
| 1999 12 15 | 704 | 0.0 | 0.3+ | 2003 12 29 | 704 | 0.7+ | 1.0+ | 2004 03 25 | 704 | 0.6− | 0.8− |
| 1999 12 15 | 704 | 0.1− | 0.3− | 2004 01 28 | 703 | 0.8+ | 0.1+ | 2004 04 14 | 644 | 0.0 | 0.3+ |
| 1999 12 15 | 704 | 0.3+ | 0.5+ | 2004 01 28 | 703 | 0.1+ | 0.2+ | 2004 04 14 | 644 | 0.5+ | 0.6+ |
| 2000 01 03 | 704 | 0.1+ | 0.3− | 2004 01 28 | 703 | 0.1+ | 0.0 | 2004 04 14 | 703 | (1.8− | 1.8+) |
| 2000 01 03 | 704 | 0.5− | 0.7+ | 2004 01 28 | 703 | 0.5+ | 0.7+ | 2004 04 14 | 703 | (0.9− | 1.8+) |
| 2000 01 03 | 704 | 0.2− | 0.5+ | 2004 01 30 | 699 | 0.1+ | 0.3− | 2004 04 14 | 644 | 0.0 | 0.3+ |
| 2000 01 29 | 704 | 0.1+ | 0.3− | 2004 01 30 | 699 | 0.1− | 0.2− | 2004 04 14 | 704 | 0.5− | 0.5+ |
| 2000 01 29 | 704 | 0.5− | 0.7− | 2004 01 30 | 699 | 0.1+ | 0.2− | 2004 04 14 | 703 | 0.9− | 1.1+ |
| 2000 01 29 | 704 | 0.4− | 0.6− | 2004 01 30 | 699 | 1.4− | 0.2+ | 2004 04 14 | 704 | 0.5+ | 0.6+ |
| 2000 01 29 | 704 | 0.0 | 0.5− | 2004 01 30 | 704 | 0.2− | 0.6+ | 2004 04 14 | 703 | 0.6− | 0.6+ |
| 2000 01 29 | 704 | 0.6− | 1.3− | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2004 04 14 | 704 | 0.4+ | 0.8+ |
| 2002 09 01 | 644 | 0.2+ | 0.2− | 2004 01 30 | 704 | 0.1− | 0.4+ | 2004 04 14 | 704 | 0.6+ | 0.9+ |
| 2002 09 01 | 644 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.0 | 0.4+ | 2006 09 17 | 699 | 0.4+ | 0.6+ |
| 2002 09 01 | 644 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 699 | (1.9+ | 0.8+) |
| 2002 09 11 | 608 | 1.2− | 1.2+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.7− | 0.9+ |
| 2002 09 11 | 608 | 0.4− | 0.2+ | 2004 02 11 | 644 | 0.2− | 0.2+ | 2006 09 17 | 699 | (1.0− | 2.1+) |
| 2002 09 11 | 608 | 0.3− | 0.4− | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.9− |
| 2002 09 13 | 699 | 0.6− | 0.7+ | 2004 02 11 | 644 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.1− | 1.0+ |
| 2002 09 13 | 699 | 0.5− | 0.1− | 2004 02 11 | 644 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.7+ | 0.1+ |
| 2002 09 13 | 699 | 0.8− | 1.2+ | 2004 02 11 | 644 | 0.7+ | 0.3− | 2006 09 19 | 703 | 0.8− | 0.7− |
| 2002 09 13 | 699 | 1.0+ | 0.4− | 2004 02 15 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 09 17 | 644 | 0.1− | 0.8+ | 2004 02 15 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 09 17 | 644 | 0.5− | 0.7+ | 2004 02 15 | 704 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 09 17 | 644 | 0.4− | 0.5+ | 2004 02 15 | 704 | 0.8− | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.1+ |
| 2003 11 21 | 699 | 0.2− | 0.1− | 2004 02 15 | 704 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.3− | 1.0+ |
| 2003 11 21 | 699 | 0.6+ | 0.4− | 2004 02 18 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.3− | 0.8+ |
| 2003 11 21 | 699 | 1.1− | 1.3− | 2004 02 18 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.3+ | 1.2− |
| 2003 11 21 | 699 | 1.5− | 0.7− | 2004 02 18 | 644 | 0.3− | 0.7− | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2003 12 19 | 704 | 0.5+ | 0.1+ | 2004 03 14 | 704 | 0.6+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2003 12 19 | 704 | 0.2− | 0.0 | 2004 03 14 | 704 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.5+ |
| 2003 12 19 | 704 | 0.1− | 0.2+ | 2004 03 14 | 704 | 0.5+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2003 12 19 | 704 | 0.4+ | 0.5+ | 2004 03 14 | 704 | 0.8+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.4+ | 0.1+ | 2004 03 14 | 704 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.6+ |
| 2003 12 27 | 704 | 0.6+ | 0.4+ | 2004 03 23 | 704 | 0.8+ | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2003 12 27 | 704 | 0.1+ | 0.6− | 2004 03 23 | 704 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.6+ |
| 2003 12 27 | 704 | 0.2+ | 0.6+ | 2004 03 23 | 704 | 0.3+ | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 0.3+ | 0.5+ | 2004 03 23 | 704 | 0.0 | 1.0+ | | | | |

**(137763)∗ 1999 XW$_{179}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.49552 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27419103 | $\omega$ | 326.18803 | | +0.94504224 | | −0.32066984 |
| $a$ | 2.3465720 | $\Omega$ | 52.64421 | | +0.31491672 | | +0.84036388 |
| $e$ | 0.1613817 | $i$ | 4.60120 | | +0.08787842 | | +0.43698901 |
| $P$ | 3.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.7+ | 0.5− | 2002 09 13 | 704 | 0.3+ | 0.6+ | 2004 02 18 | 691 | 0.0 | 0.2+ |
| 1999 12 10 | 704 | 0.3− | 0.6− | 2002 09 13 | 704 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.0 | 0.8+ |
| 1999 12 10 | 704 | 0.1+ | 0.8− | 2002 09 13 | 704 | 0.5− | 0.7+ | 2004 03 20 | 704 | 0.2− | 1.4+ |
| 1999 12 15 | 704 | 0.1− | 0.0 | 2002 09 13 | 704 | 0.5+ | 0.4+ | 2004 03 20 | 704 | 0.1+ | 0.5+ |
| 1999 12 15 | 704 | 0.2+ | 1.2− | 2002 09 13 | 704 | 0.2+ | 0.5+ | 2004 03 20 | 704 | 0.2+ | 0.8+ |
| 1999 12 15 | 704 | 0.1+ | 0.9− | 2002 09 16 | 644 | 0.1− | 0.0 | 2004 03 20 | 704 | (0.8+ | 1.7+) |
| 1999 12 15 | 704 | 0.2− | 0.0 | 2002 09 16 | 644 | 0.6− | 0.1+ | 2006 08 29 | 703 | 0.8− | 0.8+ |
| 2000 01 03 | 704 | 0.4+ | 1.0− | 2002 09 16 | 644 | 0.4− | 0.0 | 2006 08 29 | 703 | 1.5+ | 0.3− |
| 2000 01 03 | 704 | 0.6+ | 0.1+ | 2002 09 17 | 608 | 1.1− | 1.0− | 2006 08 29 | 703 | 0.2− | 0.9− |
| 2000 01 03 | 704 | 1.2− | 0.4− | 2002 09 17 | 608 | 1.0− | 1.0− | 2006 08 29 | 703 | 0.5+ | 0.3+ |
| 2000 01 03 | 704 | 0.1+ | 0.6+ | 2002 09 17 | 608 | 1.2− | 0.8− | 2006 11 10 | 691 | 0.0 | 0.4− |
| 2000 01 03 | 704 | 0.2− | 0.4− | 2002 10 03 | 704 | 1.0+ | 0.1− | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2000 01 04 | 704 | 0.2+ | 0.1+ | 2002 10 03 | 704 | 0.7+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2000 01 04 | 704 | 0.8+ | 0.3− | 2002 10 03 | 704 | 0.7+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.1+ | 0.9− | 2002 10 03 | 704 | 1.2+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2000 01 04 | 704 | 1.5+ | 1.3− | 2002 10 03 | 704 | 1.3+ | 0.3− | 2006 11 16 | 691 | (1.2+ | 1.6−) |
| 2000 01 29 | 704 | 0.8− | 0.1+ | 2002 10 05 | 704 | 0.2− | 0.5− | 2006 11 18 | 704 | (1.6− | 0.5+) |
| 2000 01 29 | 704 | 0.6− | 0.3− | 2002 10 05 | 704 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.0 |
| 2000 01 29 | 704 | 0.5− | 0.1+ | 2002 10 05 | 704 | 0.5+ | 0.6− | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2000 01 29 | 704 | 0.7− | 0.1− | 2002 10 05 | 704 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2000 01 29 | 704 | 0.6− | 1.3− | 2002 10 05 | 704 | 0.7− | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.6+ |
| 2001 05 18 | 691 | 1.0− | 0.5− | 2002 10 09 | 699 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.9+ | 0.1+ |
| 2001 05 18 | 691 | 0.5+ | 0.5− | 2002 10 09 | 699 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 1.0+ |
| 2001 05 18 | 691 | 0.6+ | 0.5− | 2002 10 09 | 699 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2002 08 14 | 704 | (0.1− | 2.1+) | 2002 10 09 | 699 | 0.3− | 0.3− | 2006 11 21 | 704 | 1.3− | 0.3+ |
| 2002 08 14 | 704 | (0.5+ | 2.1+) | 2002 10 11 | 704 | 0.1+ | 0.8− | 2006 11 21 | 704 | 0.9+ | 1.3+ |
| 2002 08 14 | 704 | (1.0− | 2.9+) | 2002 10 11 | 704 | 0.9+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2002 08 14 | 704 | 0.5+ | 0.8+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2002 08 14 | 704 | (0.3− | 1.6+) | 2002 10 11 | 704 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.4− |
| 2002 08 14 | 704 | 0.3− | 0.5+ | 2002 10 29 | 704 | 0.3− | 1.1+ | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2002 08 14 | 704 | 1.2− | 0.8+ | 2002 10 29 | 704 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2002 08 31 | 699 | 0.3− | 0.0 | 2002 10 29 | 704 | 0.2− | 1.2+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2002 08 31 | 699 | 0.2− | 0.3− | 2002 10 29 | 704 | 0.3+ | 0.7+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 08 31 | 699 | 0.9− | 0.6− | 2004 02 17 | 704 | (0.7− | 1.5+) | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 08 31 | 699 | 0.5− | 0.5− | 2004 02 17 | 704 | 0.7− | 0.7+ | 2006 11 27 | 704 | 0.1− | 0.0 |
| 2002 09 05 | 699 | 0.2− | 0.2− | 2004 02 17 | 704 | (0.4− | 2.6+) | 2006 11 27 | 704 | 0.6− | 1.3+ |
| 2002 09 05 | 699 | 1.0+ | 0.2− | 2004 02 17 | 704 | (0.1− | 2.4+) | 2006 11 27 | 704 | 0.2+ | 0.2+ |
| 2002 09 05 | 699 | 0.2− | 0.3− | 2004 02 18 | 691 | 0.2+ | 0.5+ | | | | |
| 2002 09 05 | 699 | 0.4+ | 0.7+ | 2004 02 18 | 691 | 0.1− | 0.5+ | | | | |

**(137764)∗ 1999 XX$_{179}$ = 2002 RR$_{15}$**

Discovered 1999 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34841)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.43492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26375089 | $\omega$ | 100.29611 | | +0.12595349 | −0.99153750 | |
| $a$ | 2.4080940 | $\Omega$ | 342.37499 | | +0.86468151 | +0.12526862 | |
| $e$ | 0.0826938 | $i$ | 5.96201 | | +0.48627318 | +0.03407580 | |
| $P$ | 3.74 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.1− | 1.0− | 2002 10 01 | 699 | 0.9+ | 0.2+ | 2004 03 14 | 703 | 1.3− | 0.1+ |
| 1999 12 10 | 704 | 0.4− | 0.4− | 2002 10 01 | 699 | 0.5+ | 0.0 | 2004 03 14 | 703 | 0.4+ | 0.6+ |
| 1999 12 10 | 704 | 0.1− | 0.5− | 2002 10 01 | 699 | 0.5+ | 0.6+ | 2004 03 14 | 703 | 0.0 | 1.0+ |
| 1999 12 15 | 704 | 0.6+ | 0.5+ | 2002 10 03 | 704 | 0.2− | 0.7+ | 2004 03 19 | 704 | (1.6− | 1.5+) |
| 1999 12 15 | 704 | 0.8− | 0.2− | 2002 10 03 | 704 | 1.0+ | 0.6+ | 2004 03 19 | 704 | 0.3− | 1.2+ |
| 1999 12 15 | 704 | 0.5− | 0.7− | 2002 10 03 | 704 | (4.2− | 0.8+) | 2004 03 19 | 704 | 0.8− | 0.4+ |
| 1999 12 15 | 704 | 0.4+ | 0.2+ | 2002 10 03 | 704 | 0.2+ | 0.7+ | 2004 03 19 | 704 | 0.6− | 1.5+ |
| 1999 12 15 | 704 | 1.2− | 0.8− | 2002 10 07 | 704 | 0.4− | 0.7+ | 2004 03 20 | 691 | 0.0 | 0.1+ |
| 1999 12 31 | 699 | 0.7− | 0.3− | 2002 10 07 | 704 | 0.1− | 0.1+ | 2004 03 20 | 691 | 0.0 | 0.2+ |
| 1999 12 31 | 699 | 0.9+ | 0.4+ | 2002 10 07 | 704 | 0.2− | 0.4+ | 2004 03 20 | 691 | 0.2− | 0.3+ |
| 1999 12 31 | 699 | 1.5+ | 0.4− | 2002 10 11 | 704 | 0.0 | 0.8+ | 2006 09 20 | 699 | 0.5− | 0.1− |
| 2000 01 04 | 704 | 0.9− | 0.4− | 2002 10 11 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 699 | 0.8+ | 0.1+ |
| 2000 01 04 | 704 | 0.8− | 0.7− | 2002 10 11 | 704 | 1.0+ | 1.2+ | 2006 09 20 | 699 | 0.7+ | 0.2+ |
| 2000 01 04 | 704 | 0.8− | 1.0− | 2002 10 11 | 704 | (1.0+ | 1.9+) | 2006 09 20 | 699 | 0.2− | 0.3+ |
| 2000 01 04 | 704 | 0.1− | 0.6− | 2003 12 22 | 704 | (2.2+ | 2.2+) | 2006 09 25 | 704 | 0.0 | 0.8− |
| 2000 01 04 | 704 | 1.0− | 1.7− | 2003 12 22 | 704 | (1.3+ | 2.3+) | 2006 09 25 | 704 | 0.9− | 1.1+ |
| 2000 01 29 | 704 | 0.0 | 1.1− | 2003 12 22 | 704 | (1.8+ | 0.5+) | 2006 09 25 | 704 | 0.0 | 0.5+ |
| 2000 01 29 | 704 | 0.2+ | 0.0 | 2003 12 22 | 704 | (2.0+ | 1.8+) | 2006 09 25 | 704 | 0.1− | 0.2− |
| 2000 01 29 | 704 | 0.8+ | 0.1+ | 2004 01 19 | 703 | 0.7+ | 0.6− | 2006 09 25 | 704 | 0.8− | 0.6+ |
| 2000 01 29 | 704 | 0.8+ | 0.4− | 2004 01 19 | 703 | (1.8+ | 1.2+) | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2002 08 13 | 704 | 0.3− | 0.3− | 2004 01 19 | 703 | 1.3+ | 0.9+ | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 2002 08 13 | 704 | 0.4+ | 0.1+ | 2004 01 19 | 703 | 0.3+ | 0.5+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 2002 08 13 | 704 | 0.7+ | 0.3+ | 2004 01 22 | 704 | 0.8− | 1.1+ | 2006 09 28 | 703 | 0.5+ | 0.1− |
| 2002 08 30 | 291 | 0.2− | 0.0 | 2004 01 22 | 704 | 1.0+ | 0.0 | 2006 09 28 | 703 | 0.4+ | 0.5− |
| 2002 08 30 | 291 | 0.0 | 0.1+ | 2004 01 22 | 704 | 1.0+ | 0.9+ | 2006 09 28 | 703 | 0.6+ | 0.4− |
| 2002 08 30 | 291 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.6− | 0.1− |
| 2002 09 04 | 699 | 0.5+ | 1.1+ | 2004 01 23 | 699 | 0.6− | 0.4− | 2006 09 28 | 703 | 0.8+ | 0.2− |
| 2002 09 04 | 699 | 1.2− | 0.2− | 2004 01 23 | 699 | (0.5− | 1.8+) | 2006 09 28 | 703 | 0.5− | 0.4− |
| 2002 09 04 | 699 | 0.8+ | 0.5− | 2004 01 23 | 699 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.4+ | 0.2− |
| 2002 09 04 | 699 | 0.2− | 0.0 | 2004 01 23 | 699 | 0.6− | 1.0+ | 2006 09 28 | 703 | 0.3− | 0.4− |
| 2002 09 05 | 704 | 0.4− | 0.8+ | 2004 01 29 | 704 | 1.0+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.6+ | 0.4− | 2004 01 29 | 704 | 1.0+ | 0.9+ | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 2002 09 05 | 645 | 0.2− | 0.0 | 2004 01 29 | 704 | 1.3+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 645 | 0.2− | 0.1+ | 2004 01 31 | 704 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.8− |
| 2002 09 05 | 704 | 0.0 | 0.8− | 2004 01 31 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 703 | 0.2− | 0.8− |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2004 01 31 | 704 | 0.3+ | 0.8+ | 2006 10 19 | 703 | 0.6− | 1.3− |
| 2002 09 07 | 704 | 0.4− | 0.6+ | 2004 02 11 | 699 | 0.7+ | 0.2− | 2006 10 19 | 703 | 0.5− | 0.8− |
| 2002 09 07 | 704 | 0.8+ | 0.3+ | 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.9+ | 2004 02 11 | 699 | 0.3− | 0.2− | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.7− | 0.5+ | 2004 02 11 | 644 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.2− | 0.5+ | 2004 02 11 | 699 | 1.0− | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2002 09 10 | 608 | 0.4− | 0.1− | 2004 02 11 | 644 | 1.0+ | 0.5+ | 2006 10 20 | G96 | 0.6+ | 0.6− |
| 2002 09 10 | 608 | 0.4− | 0.4+ | 2004 02 11 | 699 | 0.7+ | 0.6+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2002 09 10 | 608 | 0.8− | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 09 11 | 644 | 0.3− | 0.4+ | 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 09 11 | 644 | 0.4− | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.6− |
| 2002 09 11 | 644 | 0.4− | 0.5+ | 2004 02 14 | 703 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4− |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2004 02 14 | 703 | 0.3+ | 0.3+ | 2006 10 31 | 703 | 0.1+ | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2004 02 14 | 703 | 0.6− | 0.9− | 2006 10 31 | 703 | 0.1− | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 02 14 | 703 | 0.6+ | 0.1+ | 2006 10 31 | 703 | 0.2+ | 0.2− |
| 2002 09 15 | 699 | 1.0+ | 1.3+ | 2004 02 17 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 703 | 0.6− | 0.3+ |
| 2002 09 15 | 699 | 1.0+ | 1.5+ | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2002 09 15 | 699 | 0.2+ | 0.7+ | 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2002 09 15 | 699 | 0.3+ | 0.4+ | 2004 02 17 | 704 | 0.8+ | 0.8+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2002 09 17 | 644 | 0.7− | 0.7+ | 2004 02 17 | 704 | 0.7+ | 1.1+ | 2006 11 14 | 703 | 0.5− | 0.3+ |
| 2002 09 17 | 644 | 0.4− | 0.7+ | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 11 14 | 703 | 0.2+ | 1.2− |
| 2002 09 17 | 644 | 0.5− | 0.6+ | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.6− | 1.0− |
| 2002 09 17 | 608 | 1.2− | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.5+ | 0.3− |
| 2002 09 17 | 608 | 1.2− | 0.3+ | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.9+ | 0.3− |
| 2002 09 17 | 608 | 1.3− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.9− | 0.4− |
| 2002 09 18 | 644 | 0.9− | 0.4+ | 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.1+ |
| 2002 09 18 | 644 | 0.2− | 0.5+ | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2002 09 18 | 644 | 0.5− | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 185 | 0.3− | 0.2+ |
| 2002 10 01 | 699 | 0.1+ | 0.1+ | 2004 03 14 | 703 | 0.3− | 0.4+ | 2006 11 18 | 185 | 0.3+ | 0.4+ |

**(137765)∗ 1999 XT$_{182}$ = 2002 PL$_{79}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 33169)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.45798 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28363036 | $\omega$ | 33.30198 | | +0.73121151 | −0.68180256 | |
| $a$ | 2.2942157 | $\Omega$ | 9.77470 | | +0.59447483 | +0.62123505 | |
| $e$ | 0.1695362 | $i$ | 7.37553 | | +0.33455851 | +0.38628005 | |
| $P$ | 3.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.7− | 0.2− | 2002 09 16 | 644 | 0.1− | 0.5+ | 2004 03 15 | 703 | 1.1− | 0.8+ |
| 1999 10 14 | 704 | 0.7− | 0.1+ | 2002 09 16 | 644 | 0.1− | 0.4+ | 2004 03 15 | 704 | 1.1+ | 0.3− |
| 1999 10 14 | 704 | 0.5+ | 0.6+ | 2002 09 16 | 644 | 0.4− | 0.5+ | 2004 03 15 | 703 | 0.7− | 0.7− |
| 1999 10 14 | 704 | 0.1− | 0.0 | 2002 09 22 | 608 | 1.4− | 0.6− | 2004 03 15 | 704 | (1.6+ | 0.6−) |
| 1999 10 14 | 704 | 0.1− | 0.1− | 2002 09 22 | 608 | (1.6− | 0.5−) | 2004 03 15 | 703 | 0.1+ | 0.2− |
| 1999 12 12 | 704 | 0.3+ | 0.3− | 2002 09 22 | 608 | 1.2− | 0.1− | 2004 03 20 | 704 | 0.0 | 0.9+ |
| 1999 12 12 | 704 | 0.1+ | 0.5− | 2002 09 29 | 608 | (1.9+ | 1.9+) | 2004 03 20 | 704 | 0.1− | 0.5+ |
| 1999 12 12 | 704 | 0.2+ | 0.4− | 2002 09 29 | 608 | 0.7+ | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.0 |
| 1999 12 12 | 704 | 0.7+ | 0.6− | 2002 09 29 | 608 | 1.1+ | 0.9+ | 2004 03 20 | 704 | 0.5− | 0.9+ |
| 1999 12 12 | 704 | 0.5+ | 0.3− | 2002 10 03 | 704 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.3− | 0.4− |
| 1999 12 15 | 704 | 0.1− | 0.4− | 2002 10 03 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 704 | 0.1− | 0.2− |
| 1999 12 15 | 704 | 0.5+ | 0.5− | 2002 10 03 | 704 | 0.4+ | 1.4+ | 2004 03 20 | 704 | 0.0 | 0.0 |
| 1999 12 15 | 704 | 0.2+ | 0.6+ | 2002 10 06 | 608 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.4+ | 0.0 |
| 1999 12 15 | 704 | 0.4+ | 0.0 | 2002 10 06 | 608 | 0.2+ | 0.5− | 2004 03 26 | 703 | 0.2+ | 0.4+ |
| 2000 01 02 | 704 | 0.2+ | 0.1+ | 2002 10 06 | 608 | 0.2+ | 0.7− | 2004 03 26 | 703 | 1.1+ | 0.9+ |
| 2000 01 02 | 704 | 1.2− | 0.2+ | 2002 10 08 | 699 | 0.7+ | 0.1− | 2004 03 26 | 703 | 0.4− | 0.7+ |
| 2000 01 02 | 704 | 0.0 | 1.4− | 2002 10 08 | 699 | 0.8+ | 0.0 | 2004 03 26 | 703 | (1.1− | 1.9+) |
| 2000 01 02 | 704 | 0.4− | 0.3+ | 2002 10 08 | 699 | 0.6− | 0.3+ | 2004 04 12 | 703 | 0.9+ | 0.8+ |
| 2002 08 11 | 644 | 0.3+ | 0.5+ | 2002 10 08 | 699 | 0.4− | 0.0 | 2004 04 12 | 703 | 0.1+ | 1.0+ |
| 2002 08 11 | 644 | 0.0 | 0.4+ | 2004 02 12 | 644 | 0.1+ | 0.1+ | 2004 04 12 | 703 | 0.6+ | 1.3+ |
| 2002 08 11 | 644 | 0.2+ | 0.5+ | 2004 02 12 | 644 | 0.6+ | 0.0 | 2004 04 12 | 703 | 0.8+ | 1.3+ |
| 2002 08 13 | 704 | 0.8− | 0.6+ | 2004 02 12 | 644 | (1.6+ | 0.4+) | 2006 08 29 | 703 | 0.4− | 0.1− |
| 2002 08 13 | 704 | 0.1+ | 0.7− | 2004 02 17 | 704 | 0.5− | 0.5+ | 2006 08 29 | 703 | 0.1− | 0.2− |
| 2002 08 13 | 704 | 0.8− | 0.2− | 2004 02 17 | 704 | 0.2+ | 0.4− | 2006 08 29 | 703 | 0.1+ | 0.5+ |
| 2002 08 13 | 644 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.7− | 0.0 | 2006 08 29 | 703 | 0.1− | 0.1− |
| 2002 08 13 | 644 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.1− | 0.6− | 2006 11 14 | 704 | 0.3+ | 0.9+ |
| 2002 08 13 | 644 | 0.1− | 0.2− | 2004 02 17 | 704 | 0.5− | 0.2− | 2006 11 14 | 704 | 0.2+ | 1.0+ |
| 2002 08 19 | 644 | 0.2− | 0.4+ | 2004 02 19 | 608 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.2− | 0.1+ |
| 2002 08 19 | 644 | 0.3− | 0.6+ | 2004 02 19 | 608 | 0.3− | 0.6+ | 2006 11 14 | 704 | 0.3+ | 0.5− |
| 2002 08 19 | 644 | 0.4− | 0.4+ | 2004 02 19 | 608 | 0.2− | 0.7+ | 2006 11 14 | 704 | 0.5− | 1.2+ |
| 2002 09 03 | 608 | (0.4− | 5.6−) | 2004 02 24 | 608 | 0.3+ | 0.9− | 2006 12 01 | 704 | 0.8− | 0.4+ |
| 2002 09 03 | 608 | (0.1+ | 2.7−) | 2004 02 24 | 608 | 0.5+ | 1.0− | 2006 12 01 | 704 | 0.3+ | 0.4+ |
| 2002 09 03 | 608 | 0.3+ | 0.5− | 2004 02 24 | 608 | 0.4+ | 0.7− | 2006 12 01 | 704 | 0.4+ | 0.5+ |
| 2002 09 14 | 608 | (0.4− | 3.1+) | 2004 03 15 | 704 | 0.7+ | 0.2− | 2006 12 01 | 704 | 0.2+ | 1.0+ |
| 2002 09 14 | 608 | (0.4− | 2.7+) | 2004 03 15 | 703 | 0.3− | 0.4− | | | | |
| 2002 09 14 | 608 | (0.4− | 3.3+) | 2004 03 15 | 704 | 0.9+ | 0.7+ | | | | |

**(137766)∗ 1999 XM$_{184}$ = 2001 FU$_{167}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. A. Doppler (*MPO* 17108)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.91326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20083227 | $\omega$ | 27.95345 | | +0.34907282 | −0.93125299 | |
| $a$ | 2.8878883 | $\Omega$ | 41.85167 | | +0.82792832 | +0.25425866 | |
| $e$ | 0.1969520 | $i$ | 9.00922 | | +0.43895656 | +0.26099886 | |
| $P$ | 4.91 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.2− | 0.5− | 2001 03 21 | 699 | 0.3+ | 0.7+ | 2005 01 02 | 012 | 0.5− | 0.3+ |
| 1999 12 12 | 704 | 0.1− | 0.3− | 2001 03 21 | 699 | 0.1− | 0.6+ | 2005 01 02 | 012 | 0.2− | 0.2+ |
| 1999 12 12 | 704 | 0.0 | 0.3− | 2001 03 21 | 699 | 0.0 | 0.5+ | 2005 01 02 | 012 | 0.2+ | 0.0 |
| 1999 12 12 | 704 | 0.2− | 0.1+ | 2001 03 21 | 699 | 0.5− | 0.1+ | 2005 01 02 | 012 | 0.1+ | 0.2+ |
| 1999 12 12 | 704 | 0.0 | 0.5+ | 2003 07 08 | 644 | 0.4− | 0.7+ | 2005 01 03 | 012 | 0.0 | 0.1+ |
| 1999 12 15 | 704 | 0.1− | 0.2− | 2003 07 08 | 644 | 0.2− | 0.2+ | 2005 01 03 | 012 | 0.7+ | 0.1− |
| 1999 12 15 | 704 | 0.1+ | 0.5− | 2003 07 08 | 644 | 0.3− | 0.3+ | 2005 01 03 | 012 | 0.1− | 0.2+ |
| 1999 12 15 | 704 | 0.3+ | 0.5− | 2003 08 24 | 644 | 0.0 | 0.2− | 2006 04 09 | 691 | 0.0 | 0.3− |
| 1999 12 15 | 704 | 0.9+ | 0.0 | 2003 08 24 | 644 | 0.0 | 0.1+ | 2006 04 09 | 691 | 0.2+ | 0.3− |
| 1999 12 15 | 704 | 0.1+ | 1.7− | 2003 08 24 | 644 | 0.1+ | 0.3− | 2006 04 09 | 691 | 0.1+ | 0.1− |
| 2000 01 02 | 704 | 1.0+ | 0.4− | 2004 12 02 | 704 | 0.6+ | 1.0+ | 2006 04 19 | G96 | 0.4− | 0.2− |
| 2000 01 02 | 704 | 0.0 | 1.4− | 2004 12 02 | 704 | 0.5+ | 1.1+ | 2006 04 19 | G96 | 0.0 | 0.1− |
| 2000 01 02 | 704 | 0.3− | 0.6− | 2004 12 02 | 704 | 0.4+ | 2.0+ | 2006 04 19 | G96 | 0.1− | 0.1+ |
| 2000 01 02 | 704 | 1.0+ | 1.3− | 2004 12 02 | 704 | 0.5+ | 1.1+ | 2006 04 19 | G96 | 0.1− | 0.2− |
| 2000 01 02 | 704 | 0.6+ | 0.6− | 2004 12 22 | 703 | 0.0 | 0.3+ | 2006 05 19 | G96 | 0.2− | 0.5− |
| 2001 03 20 | 209 | 0.1+ | 0.2+ | 2004 12 22 | 703 | 0.5− | 0.2+ | 2006 05 19 | G96 | 0.0 | 0.5− |
| 2001 03 20 | 209 | 0.3+ | 0.1+ | 2004 12 22 | 703 | 0.9− | 0.2+ | 2006 05 19 | G96 | 0.3− | 0.1+ |
| 2001 03 20 | 209 | 0.4− | 0.5+ | 2004 12 22 | 703 | 1.6− | 1.4+ | 2006 05 19 | G96 | 0.2− | 0.3+ |

**(137767)∗ 1999 XG$_{186}$ = 2002 RP$_{166}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37226)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.63996 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28420920 | $\omega$ | 32.53958 | | +0.98502437 | −0.16887556 | |
| $a$ | 2.2910995 | $\Omega$ | 337.10663 | | +0.13280276 | +0.87169989 | |
| $e$ | 0.1827703 | $i$ | 5.12593 | | +0.10995643 | +0.46002211 | |
| $P$ | 3.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.5− | 1.3− | 2002 09 13 | 704 | 0.3− | 0.8− | 2002 10 11 | 704 | 0.3− | 1.0+ |
| 1999 12 12 | 704 | 0.3+ | 0.6− | 2002 09 13 | 704 | 0.7− | 0.8+ | 2002 10 11 | 704 | 0.3+ | 0.6+ |
| 1999 12 12 | 704 | 0.0 | 1.0− | 2002 09 13 | 704 | 0.2+ | 1.2+ | 2002 10 11 | 704 | 0.4− | 1.1+ |
| 1999 12 12 | 704 | 0.2+ | 0.8− | 2002 09 14 | 644 | 0.6− | 0.1+ | 2004 01 22 | 704 | 0.1− | 0.6+ |
| 1999 12 15 | 704 | 0.0 | 0.2+ | 2002 09 14 | 644 | 0.5− | 0.1+ | 2004 01 22 | 704 | 1.2+ | 0.4+ |
| 1999 12 15 | 704 | 0.1+ | 0.7− | 2002 09 14 | 644 | 0.2− | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.7+ |
| 1999 12 15 | 704 | 0.6+ | 0.1+ | 2002 09 14 | 608 | 0.5− | 0.2+ | 2004 01 22 | 704 | (0.1+ | 1.6+) |
| 1999 12 15 | 704 | 0.8+ | 0.7+ | 2002 09 14 | 608 | 0.2− | 0.3− | 2004 01 22 | 704 | 0.5+ | 0.4+ |
| 2000 01 04 | 704 | 0.0 | 0.2− | 2002 09 14 | 608 | 0.3− | 0.2− | 2004 02 11 | 644 | 0.2+ | 0.5+ |
| 2000 01 04 | 704 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.2− | 1.0+ | 2004 02 11 | 644 | 0.6+ | 0.8+ |
| 2000 01 04 | 704 | 0.4− | 0.4− | 2002 09 15 | 644 | 0.7− | 0.9+ | 2004 02 11 | 644 | 0.6+ | 0.6+ |
| 2000 01 04 | 704 | 0.8− | 0.5+ | 2002 09 15 | 644 | 0.5− | 1.0+ | 2004 02 12 | 291 | 0.2− | 0.3+ |
| 2002 07 23 | 644 | 1.2− | 0.0 | 2002 10 03 | 704 | 0.2+ | 0.1+ | 2004 02 12 | 291 | 0.1+ | 0.5+ |
| 2002 07 23 | 644 | 0.3− | 0.3+ | 2002 10 03 | 704 | 0.2+ | 0.1+ | 2004 02 12 | 291 | (1.8− | 0.0 ) |
| 2002 07 23 | 644 | 0.4− | 0.2+ | 2002 10 03 | 704 | 0.2+ | 0.4− | 2004 02 17 | 704 | 0.9+ | 1.4+ |
| 2002 07 30 | 608 | 0.2− | 0.6− | 2002 10 03 | 704 | 0.2+ | 0.2− | 2004 02 17 | 704 | 1.0+ | 0.1+ |
| 2002 07 30 | 608 | 0.5− | 0.6− | 2002 10 03 | 704 | 0.4− | 0.1+ | 2004 02 17 | 704 | 0.8+ | 1.0+ |
| 2002 07 30 | 608 | 0.2− | 0.5− | 2002 10 05 | 704 | 0.3+ | 0.3+ | 2004 02 17 | 704 | 0.8+ | 0.6+ |
| 2002 08 12 | 699 | 0.3− | 0.2+ | 2002 10 05 | 704 | 0.0 | 0.4+ | 2004 02 26 | 704 | (0.8− | 2.1+) |
| 2002 08 12 | 699 | 0.2− | 0.3− | 2002 10 05 | 704 | 0.4− | 0.2− | 2004 02 26 | 704 | 0.3− | 0.9+ |
| 2002 08 12 | 699 | 0.6− | 0.2− | 2002 10 05 | 704 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.9+ | 1.1+ |
| 2002 08 12 | 699 | 0.3− | 0.2+ | 2002 10 06 | 699 | 0.1− | 0.1+ | 2004 03 20 | 691 | 0.2+ | 0.5+ |
| 2002 08 14 | 704 | 0.0 | 0.2+ | 2002 10 06 | 699 | 0.5+ | 0.7+ | 2004 03 20 | 691 | 0.1+ | 0.6+ |
| 2002 08 14 | 704 | 0.5+ | 0.1+ | 2002 10 06 | 699 | 0.5+ | 0.7+ | 2004 03 20 | 691 | 0.1+ | 0.5+ |
| 2002 08 14 | 704 | 0.3+ | 0.3+ | 2002 10 06 | 699 | 0.2+ | 0.2+ | 2005 05 30 | E12 | 0.8+ | 0.4− |
| 2002 08 14 | 704 | 0.0 | 0.2− | 2002 10 07 | 291 | 0.5+ | 0.3+ | 2005 05 30 | E12 | 0.1+ | 0.3+ |
| 2002 08 14 | 704 | 0.6+ | 0.4+ | 2002 10 07 | 291 | 0.4+ | 0.3+ | 2005 05 30 | E12 | 0.2− | 0.3− |
| 2002 08 29 | 644 | 0.4− | 0.3+ | 2002 10 07 | 704 | 0.3− | 0.3+ | 2005 05 30 | E12 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | 0.7− | 0.4+ | 2002 10 07 | 704 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.0 |
| 2002 08 29 | 644 | 0.5− | 0.2+ | 2002 10 07 | 291 | 0.4+ | 0.2+ | 2006 11 15 | 704 | 0.8+ | 1.1− |
| 2002 09 03 | 608 | (1.4+ | 2.1+) | 2002 10 07 | 704 | (1.5− | 0.5+) | 2006 11 15 | 704 | 0.4+ | 0.7+ |
| 2002 09 03 | 608 | (1.6+ | 1.9+) | 2002 10 07 | 704 | 0.3− | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.2− |
| 2002 09 03 | 608 | (0.7+ | 1.7+) | 2002 10 08 | 699 | (1.6− | 0.4−) | 2006 11 27 | 704 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2002 10 08 | 699 | 1.4− | 0.9+ | 2006 11 27 | 704 | 0.5− | 0.5+ |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2002 10 08 | 699 | 0.0 | 0.2+ | 2006 11 27 | 704 | 0.6− | 0.4+ |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2002 10 08 | 699 | 0.9− | 0.4+ | 2006 11 27 | 704 | 0.5− | 0.7+ |
| 2002 09 05 | 704 | 0.5− | 0.4+ | 2002 10 11 | 704 | (0.2+ | 1.6+) | | | | |
| 2002 09 05 | 704 | 0.4+ | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.3+ | | | | |

**(137768)∗ 1999 XU$_{187}$ = 1985 RM$_5$ = 2002 KZ**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29202)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.81592 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28832940 | $\omega$ | 21.26558 | | +0.99760150 | −0.06031708 | |
| $a$ | 2.2692208 | $\Omega$ | 342.09183 | | +0.03586295 | +0.86999465 | |
| $e$ | 0.2223670 | $i$ | 6.34025 | | +0.05920378 | +0.48935791 | |
| $P$ | 3.42 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 09 15 | 095 | (1.2+ | 4.3−) | 2002 09 06 | 704 | 1.2− | 0.7+ | 2003 01 02 | 704 | 0.3− | 0.6+ |
| 1999 12 12 | 704 | 0.0 | 0.8− | 2002 09 15 | 644 | 0.2− | 0.3− | 2003 01 02 | 704 | 0.1− | 0.1− |
| 1999 12 12 | 704 | 0.3+ | 0.9− | 2002 09 15 | 644 | 0.0 | 0.2− | 2003 01 05 | 704 | 0.3+ | 0.4+ |
| 1999 12 12 | 704 | 0.6+ | 0.1− | 2002 09 15 | 644 | 0.0 | 0.4− | 2003 01 05 | 704 | (0.3− | 1.6+) |
| 1999 12 12 | 704 | 0.3+ | 0.5− | 2002 09 22 | 608 | 0.2+ | 0.6+ | 2003 01 05 | 704 | 0.6+ | 0.0 |
| 1999 12 12 | 704 | 0.3+ | 0.6− | 2002 09 22 | 608 | 0.1− | 0.3+ | 2003 11 20 | 691 | 0.1+ | 0.4+ |
| 1999 12 15 | 704 | 1.0− | 0.2− | 2002 09 22 | 608 | 0.2− | 0.6+ | 2003 11 20 | 691 | 0.1+ | 0.0 |
| 1999 12 15 | 704 | 0.9− | 0.4− | 2002 09 26 | 608 | (0.1+ | 1.7+) | 2003 11 20 | 691 | 0.1+ | 0.4+ |
| 1999 12 15 | 704 | 0.5− | 0.8− | 2002 09 26 | 608 | (0.3+ | 1.8+) | 2004 01 22 | 704 | 0.3+ | 0.3+ |
| 1999 12 15 | 704 | 0.6− | 0.5− | 2002 09 26 | 608 | 0.9+ | 1.2+ | 2004 01 22 | 704 | 0.4+ | 0.9+ |
| 1999 12 15 | 704 | 0.4− | 0.7− | 2002 09 27 | 704 | 0.2− | 0.4+ | 2004 01 22 | 704 | 0.5+ | 0.1+ |
| 2000 01 02 | 704 | 1.0+ | 0.2− | 2002 09 27 | 704 | 0.1− | 0.5+ | 2004 01 22 | 704 | 0.8+ | 0.1− |
| 2000 01 02 | 704 | 0.6+ | 1.3− | 2002 09 27 | 704 | 0.2+ | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.0 |
| 2000 01 02 | 704 | 0.5+ | 1.2+ | 2002 09 27 | 704 | 0.2− | 0.9+ | 2004 02 11 | 703 | 0.3+ | 1.4+ |
| 2000 01 02 | 704 | 0.2+ | 0.2− | 2002 09 29 | 608 | 0.4− | 0.5− | 2004 02 11 | 703 | 0.0 | 0.5− |
| 2000 01 30 | 704 | 0.5+ | 0.5− | 2002 09 29 | 608 | 0.5− | 0.4− | 2004 02 11 | 703 | 0.1+ | 0.7− |
| 2000 01 30 | 704 | 0.0 | 0.4− | 2002 09 29 | 608 | 0.7− | 0.6− | 2004 02 11 | 703 | 0.4− | 0.4− |
| 2000 01 30 | 704 | 0.3− | 0.6+ | 2002 10 03 | 704 | 0.0 | 0.6+ | 2004 02 11 | 699 | 0.1− | 0.9+ |
| 2000 01 30 | 704 | 0.1− | 0.1− | 2002 10 03 | 704 | 0.1− | 0.6+ | 2004 02 11 | 699 | 0.8+ | 0.2+ |
| 2000 02 11 | 704 | 0.1+ | 1.4+ | 2002 10 03 | 704 | 0.1+ | 1.0+ | 2004 02 11 | 699 | 0.2+ | 1.2+ |
| 2000 02 11 | 704 | 0.2+ | 1.1+ | 2002 10 03 | 704 | 0.1+ | 0.7+ | 2004 02 11 | 699 | 0.4− | 0.1− |
| 2000 02 11 | 704 | 0.0 | 0.7+ | 2002 10 03 | 704 | 0.6+ | 1.2+ | 2004 02 17 | 704 | 0.1+ | 1.4+ |
| 2000 02 11 | 704 | 0.2− | 0.9+ | 2002 10 04 | 704 | 0.1+ | 0.3+ | 2004 02 17 | 704 | 0.0 | 0.6+ |
| 2002 05 16 | 608 | 0.0 | 0.5− | 2002 10 04 | 704 | 0.1− | 0.5+ | 2004 02 17 | 704 | 0.5+ | 1.0+ |
| 2002 05 16 | 608 | 0.6+ | 1.5− | 2002 10 04 | 704 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.5+ | 1.1+ |
| 2002 05 16 | 608 | 0.5+ | 1.1− | 2002 10 04 | 704 | 0.5+ | 0.5+ | 2004 02 17 | 704 | 0.1+ | 1.3+ |
| 2002 05 17 | 644 | 0.5− | 0.3− | 2002 10 04 | 704 | 0.1− | 0.7+ | 2004 02 17 | 608 | 0.0 | 0.3+ |
| 2002 05 17 | 644 | 0.5− | 0.2+ | 2002 10 06 | 699 | 0.5+ | 0.2− | 2004 02 17 | 608 | 0.1+ | 1.0+ |
| 2002 05 17 | 644 | 0.0 | 0.0 | 2002 10 06 | 699 | 0.3+ | 0.4+ | 2004 02 17 | 608 | 0.1− | 0.5+ |
| 2002 07 24 | 644 | 0.2− | 1.1+ | 2002 10 06 | 699 | (1.9+ | 0.4−) | 2004 02 23 | 704 | 0.4+ | 0.4+ |
| 2002 07 24 | 644 | 0.3− | 0.9+ | 2002 10 06 | 699 | 0.4+ | 0.9− | 2004 02 23 | 704 | 0.6+ | 0.3+ |
| 2002 07 24 | 644 | 0.2− | 1.1+ | 2002 10 07 | 704 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.6+ | 0.4+ |
| 2002 08 05 | G78 | 0.6+ | 0.2+ | 2002 10 07 | 704 | 0.2− | 0.6+ | 2004 02 23 | 704 | 0.8+ | 0.5+ |
| 2002 08 05 | G78 | 0.1+ | 0.7− | 2002 10 07 | 704 | 0.4− | 0.5+ | 2004 02 23 | 704 | 1.5+ | 0.2+ |
| 2002 08 05 | G78 | 0.2+ | 0.3+ | 2002 10 07 | 704 | 0.0 | 0.7+ | 2004 03 14 | 703 | 0.1− | 1.0+ |
| 2002 08 14 | 704 | (1.7− | 0.6−) | 2002 10 07 | 704 | 0.2+ | 0.7+ | 2004 03 14 | 703 | 0.4+ | 1.0+ |
| 2002 08 14 | 704 | (1.9− | 0.2+) | 2002 10 08 | 699 | 0.3+ | 0.5+ | 2004 03 14 | 703 | 0.5+ | 0.7+ |
| 2002 08 14 | 704 | (2.2− | 0.2−) | 2002 10 08 | 699 | 0.0 | 0.3+ | 2004 03 14 | 703 | 0.1+ | 1.0+ |
| 2002 08 14 | 704 | (1.8− | 0.5+) | 2002 10 08 | 699 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.3− | 0.8− |
| 2002 08 14 | 704 | (2.5− | 0.3+) | 2002 10 08 | 699 | 0.5− | 0.8+ | 2004 03 15 | 704 | 0.8− | 1.3+ |
| 2002 08 16 | 608 | 0.6− | 0.5+ | 2002 10 11 | 704 | 0.0 | 0.2+ | 2004 03 15 | 704 | (1.7+ | 0.8+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 608 | 0.7− | 0.5+ | 2002 10 11 | 704 | 0.2− | 0.5+ | 2004 03 15 | 704 | 0.5+ | 1.0+ | | |
| 2002 08 16 | 608 | 0.5− | 0.5+ | 2002 10 11 | 704 | 0.0 | 0.0 | 2004 03 15 | 704 | (0.3+ | 1.9+) | | |
| 2002 08 17 | 644 | 0.1− | 0.7+ | 2002 10 11 | 704 | 0.2− | 0.2− | 2004 03 18 | 691 | 0.2+ | 0.3+ | | |
| 2002 08 17 | 644 | 0.0 | 0.9+ | 2002 10 11 | 704 | 0.3− | 0.1− | 2004 03 18 | 691 | 0.0 | 0.2+ | | |
| 2002 08 17 | 644 | 0.0 | 0.8+ | 2002 10 29 | 704 | 0.5− | 0.3− | 2004 03 18 | 691 | 0.3+ | 0.2+ | | |
| 2002 08 18 | 644 | 0.4− | 0.2+ | 2002 10 29 | 704 | 0.7+ | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.6+ | | |
| 2002 08 18 | 644 | 0.4− | 0.2+ | 2002 10 29 | 704 | 0.2+ | 0.7+ | 2004 03 19 | 704 | 1.2+ | 0.3+ | | |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2002 10 29 | 704 | 0.3+ | 0.7+ | 2004 03 19 | 704 | 0.2+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.6− | 0.4+ | 2002 10 29 | 704 | 0.1− | 0.7+ | 2004 03 19 | 704 | 0.3+ | 0.4+ | | |
| 2002 08 29 | 644 | 0.4− | 0.3+ | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.5+ | | |
| 2002 08 29 | 644 | 0.4− | 0.3+ | 2002 11 06 | 704 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.0 | 1.0+ | | |
| 2002 08 31 | 704 | 0.9− | 0.0 | 2002 11 06 | 704 | 0.5+ | 0.2+ | 2004 03 22 | 704 | 0.0 | 0.3+ | | |
| 2002 08 31 | 704 | 0.9− | 0.0 | 2002 11 06 | 704 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.5− | 0.6+ | | |
| 2002 08 31 | 704 | 1.1− | 0.2− | 2002 11 06 | 704 | 0.5+ | 0.1+ | 2004 03 22 | 704 | 0.8− | 0.0 | | |
| 2002 09 01 | 699 | 0.9+ | 0.4− | 2002 11 06 | 608 | 1.3− | 0.7− | 2004 03 22 | 704 | 0.6− | 0.6+ | | |
| 2002 09 01 | 699 | 0.3− | 0.3− | 2002 11 06 | 608 | 0.0 | 1.2− | 2004 03 27 | 691 | 0.4+ | 0.5+ | | |
| 2002 09 01 | 699 | 0.1+ | 0.1− | 2002 11 06 | 608 | 0.4− | 0.8− | 2004 03 27 | 691 | 0.4+ | 0.2+ | | |
| 2002 09 01 | 699 | 0.1− | 0.3− | 2002 12 02 | 608 | 0.8− | 0.9+ | 2004 03 27 | 691 | 0.5+ | 0.3+ | | |
| 2002 09 03 | 608 | (0.9+ | 1.7+) | 2002 12 02 | 608 | 0.6− | 0.8+ | 2005 02 15 | 809 | 0.3+ | 0.6+ | | |
| 2002 09 03 | 608 | 0.5+ | 1.4+ | 2002 12 02 | 608 | 1.1− | 0.3+ | 2005 02 15 | 809 | 0.4+ | 0.6+ | | |
| 2002 09 03 | 608 | 0.4+ | 1.2+ | 2002 12 06 | 704 | 1.3− | 1.4+ | 2005 02 15 | 809 | 0.1− | 0.0 | | |
| 2002 09 05 | 704 | 0.2− | 0.2− | 2002 12 06 | 704 | 1.2− | 1.0+ | 2006 10 29 | 704 | 0.5− | 1.0− | | |
| 2002 09 05 | 704 | 0.2− | 0.3− | 2002 12 06 | 704 | 0.5− | 0.5− | 2006 10 29 | 704 | 1.1+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2002 12 06 | 704 | (0.9− | 1.6−) | 2006 10 29 | 704 | 0.2− | 0.7+ | | |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 10 29 | 704 | 0.8+ | 0.1− | | |
| 2002 09 05 | 704 | 0.0 | 0.3− | 2002 12 11 | 704 | 0.6− | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.0 | | |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2002 12 11 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 644 | 0.7− | 0.2− | | |
| 2002 09 06 | 704 | 0.0 | 0.5+ | 2002 12 11 | 704 | 0.5+ | 0.0 | 2006 11 17 | 644 | 0.4− | 0.1− | | |
| 2002 09 06 | 704 | 0.2− | 0.0 | 2003 01 02 | 704 | 1.0− | 0.8+ | 2006 11 17 | 644 | 0.4− | 0.1− | | |
| 2002 09 06 | 704 | 0.5+ | 0.4− | 2003 01 02 | 704 | 0.6− | 0.0 | | | | | | |

**(137769)∗ 1999 XU$_{189}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.62517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27234243 | $\omega$ | 109.25081 | | +0.62738411 | −0.76777837 | |
| $a$ | 2.3571787 | $\Omega$ | 301.19796 | | +0.64513315 | +0.60597905 | |
| $e$ | 0.2241407 | $i$ | 8.74306 | | +0.43611053 | +0.20810039 | |
| $P$ | 3.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.2− | 0.8− | 2003 12 23 | 704 | 0.5+ | 0.0 | 2006 09 21 | 704 | 0.3+ | 0.2− | | |
| 1999 12 12 | 704 | 0.0 | 0.4− | 2004 01 29 | 704 | 0.0 | 0.2− | 2006 09 21 | 704 | 0.5+ | 0.3+ | | |
| 1999 12 12 | 704 | 0.1− | 0.2− | 2004 01 29 | 704 | 1.2+ | 0.4+ | 2006 09 21 | 704 | 0.0 | 0.2− | | |
| 1999 12 12 | 704 | 0.4+ | 0.6− | 2004 01 29 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 699 | 0.2− | 0.7+ | | |
| 1999 12 12 | 704 | 0.5+ | 0.0 | 2004 01 29 | 704 | 0.8+ | 0.2− | 2006 09 22 | 699 | 0.2− | 0.3+ | | |
| 1999 12 15 | 704 | 0.2− | 0.2− | 2004 02 12 | 644 | 0.1− | 0.1+ | 2006 09 22 | 699 | 0.2+ | 0.8+ | | |
| 1999 12 15 | 704 | 0.4− | 0.6− | 2004 02 12 | 644 | 0.0 | 0.2+ | 2006 09 22 | 699 | 0.1+ | 0.7+ | | |
| 1999 12 15 | 704 | 0.6− | 0.3− | 2004 02 12 | 644 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.4+ | | |
| 1999 12 15 | 704 | 1.4+ | 1.2− | 2004 02 12 | 644 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.6− | 0.2+ | | |
| 1999 12 15 | 704 | 0.6− | 0.4− | 2004 02 12 | 644 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.0 | | |
| 2000 01 02 | 704 | 0.4− | 0.1− | 2004 02 12 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 0.4− | 0.4+ | | |
| 2000 01 02 | 704 | 0.7− | 0.3− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 704 | 0.3− | 0.5− | | |
| 2000 01 02 | 704 | 0.9+ | 1.0− | 2004 02 19 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 704 | 0.4− | 0.6− | | |
| 2000 01 02 | 704 | 0.8− | 1.1− | 2004 02 19 | 704 | 1.4+ | 0.5+ | 2006 09 30 | 704 | 0.3− | 0.8+ | | |
| 2000 01 02 | 704 | 0.2+ | 0.3− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.2+ | | |
| 2000 01 04 | 704 | 0.2+ | 0.1− | 2004 02 19 | 704 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.3+ | | |
| 2000 01 04 | 704 | 0.1+ | 0.8− | 2004 02 20 | 704 | 0.2− | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2000 01 04 | 704 | 0.9+ | 0.1+ | 2004 02 20 | 704 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2000 01 04 | 704 | 0.0 | 1.6− | 2004 02 20 | 704 | 0.3+ | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2000 02 11 | 704 | 0.7− | 0.5+ | 2004 02 20 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2000 02 11 | 704 | 0.5− | 0.5+ | 2004 02 20 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2000 02 11 | 704 | 0.2− | 0.6+ | 2004 02 20 | 704 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.2+ | 0.1− | | |
| 2002 07 04 | 291 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.1+ | | |
| 2002 07 04 | 291 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.0 | | |
| 2002 07 04 | 291 | 0.4− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.3+ | | |
| 2002 07 14 | 644 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.9+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.4− | | |
| 2002 07 14 | 644 | 0.1+ | 0.4+ | 2004 02 23 | 704 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.2− | | |
| 2002 07 14 | 644 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 1.4− | 0.4− | | |
| 2002 07 22 | 644 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 704 | 0.1+ | 0.1+ | | |
| 2002 07 22 | 644 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 704 | 0.3+ | 0.0 | | |
| 2002 07 22 | 644 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 704 | 0.0 | 0.0 | | |
| 2002 07 28 | 608 | (1.5+ | 1.6+) | 2004 02 26 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 704 | 0.2+ | 0.8+ | | |
| 2002 07 28 | 608 | 1.5+ | 1.1+ | 2004 03 12 | 644 | 0.5+ | 0.3+ | 2006 10 21 | 704 | 0.4+ | 0.2+ | | |
| 2002 07 28 | 608 | (2.0+ | 1.3+) | 2004 03 12 | 644 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2002 08 07 | 644 | 0.1− | 0.2+ | 2004 03 12 | 644 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2002 08 07 | 644 | 0.2− | 0.2+ | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2004 03 21 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2002 08 12 | 448 | 0.1− | 0.6+ | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2002 08 12 | 448 | 0.1+ | 0.8+ | 2004 03 27 | 703 | 0.7+ | 1.2+ | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2002 08 12 | 448 | 0.4+ | 0.5+ | 2004 03 27 | 703 | (1.9+ | 1.2+) | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2004 03 27 | 703 | 0.9+ | 0.2− | 2006 10 23 | 644 | 0.4− | 0.3+ | | |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2004 03 27 | 703 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.3+ | | |
| 2002 08 28 | 644 | 0.4− | 0.7+ | 2006 08 24 | 704 | 0.2− | 0.0 | 2006 10 31 | 703 | 0.4− | 0.5− | | |
| 2003 11 23 | 291 | 0.2+ | 0.4+ | 2006 08 24 | 704 | 0.0 | 0.2+ | 2006 10 31 | 703 | 0.2− | 0.3− | | |
| 2003 11 23 | 291 | 0.6− | 0.2+ | 2006 08 24 | 704 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.4− | 0.4− | | |
| 2003 11 23 | 291 | 0.8− | 0.4+ | 2006 08 29 | 699 | 1.2+ | 0.0 | 2006 10 31 | 703 | 0.2− | 0.3− | | |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 699 | 0.5− | 0.8+ | 2006 11 23 | 703 | 0.4− | 0.0 | | |
| 2003 11 30 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 699 | 1.3+ | 0.0 | 2006 11 23 | 703 | 0.2− | 0.6+ | | |
| 2003 11 30 | 691 | 0.0 | 0.0 | 2006 08 29 | 699 | 0.6+ | 0.6+ | 2006 11 23 | 703 | 0.0 | 0.3− | | |
| 2003 12 22 | 291 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 11 23 | 703 | 0.3+ | 0.0 | | |
| 2003 12 22 | 291 | 0.4− | 0.6+ | 2006 09 16 | 703 | 0.7− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.5+ | | |
| 2003 12 22 | 291 | 0.5− | 0.7+ | 2006 09 16 | 703 | 0.5− | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.9+ | | |
| 2003 12 23 | 704 | (0.8− | 1.7+) | 2006 09 16 | 703 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.8+ | | |
| 2003 12 23 | 704 | 0.8+ | 0.8+ | 2006 09 21 | 704 | 0.0 | 1.4+ | 2006 11 29 | 704 | 0.3− | 1.4+ | | |

**(137770)∗ 1999 XD$_{195}$ = 2002 RF$_{91}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34842)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.08896 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26462720 | $\omega$ | 176.62972 | | −0.98930138 | −0.14552576 | |
| $a$ | 2.4027748 | $\Omega$ | 354.96782 | | +0.13096736 | −0.85499162 | |
| $e$ | 0.0501662 | $i$ | 6.70946 | | +0.06426759 | −0.49780677 | |
| $P$ | 3.72 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.5+ | 0.6− | 2002 11 06 | 704 | 1.4+ | 0.8+ | 2004 04 19 | 704 | (1.2+ | 1.8+) | | |
| 1999 12 12 | 704 | 0.1− | 0.7− | 2003 12 28 | 704 | 1.0+ | 0.6+ | 2004 04 19 | 704 | (0.5+ | 1.6+) | | |
| 1999 12 12 | 704 | (0.5− | 2.3−) | 2003 12 28 | 704 | 0.0 | 0.5+ | 2004 04 19 | 704 | 0.6+ | 1.1+ | | |
| 1999 12 15 | 704 | 0.1+ | 0.7− | 2003 12 28 | 704 | 0.3− | 0.7+ | 2004 04 19 | 704 | 0.4− | 0.5+ | | |
| 1999 12 15 | 704 | 0.8− | 1.1− | 2004 01 16 | 644 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.1+ | | |
| 1999 12 15 | 704 | 0.0 | 0.4− | 2004 01 16 | 644 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.1− | | |
| 2000 01 02 | 704 | 0.5− | 0.6− | 2004 01 16 | 644 | 0.3+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.1− | | |
| 2000 01 02 | 704 | 0.3+ | 0.7− | 2004 01 18 | 644 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.1− | | |
| 2000 01 02 | 704 | 0.0 | 1.3− | 2004 01 18 | 644 | 0.3+ | 0.0 | 2006 10 13 | 691 | 0.4− | 0.2+ | | |
| 2002 09 05 | 704 | 0.3− | 0.2− | 2004 01 18 | 644 | 0.4+ | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.3+ | | |
| 2002 09 05 | 704 | 1.0+ | 0.2− | 2004 01 20 | 704 | 0.3+ | 0.4− | 2006 10 13 | 691 | 0.1− | 0.2+ | | |
| 2002 09 05 | 704 | 0.9− | 0.5− | 2004 01 20 | 704 | 0.1+ | 0.1− | 2006 10 17 | 691 | 1.1+ | 0.2− | | |
| 2002 09 05 | 704 | 0.5+ | 0.1+ | 2004 01 20 | 704 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.3− | 0.1+ | | |
| 2002 09 07 | 704 | 0.4− | 0.5− | 2004 01 28 | 703 | 0.3− | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.9− | 0.1+ | 2004 01 28 | 703 | 0.5− | 1.1− | 2006 10 21 | 691 | 0.2− | 0.1− | | |
| 2002 09 07 | 704 | 0.1+ | 0.8+ | 2004 01 28 | 703 | 0.7− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.2− | | |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2004 01 28 | 703 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− | | |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2004 01 30 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.5+ | 0.2+ | | |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.2+ | | |
| 2002 09 14 | 644 | 0.5− | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.6− | 1.2+ | 2004 01 30 | 704 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.4− | | |
| 2002 10 03 | 704 | 1.0− | 0.3+ | 2004 01 30 | 704 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.3− | | |
| 2002 10 03 | 704 | 0.9− | 0.0 | 2004 02 10 | 644 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.1− | | |
| 2002 10 03 | 704 | 0.9− | 0.0 | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2− | 0.3− | 2004 02 10 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 291 | 0.0 | 0.2+ | | |
| 2002 10 04 | 644 | 0.3− | 0.2+ | 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 291 | 0.2+ | 0.0 | | |
| 2002 10 04 | 644 | 0.5− | 0.5+ | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 10 28 | 291 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 644 | 0.4− | 0.4+ | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2002 10 07 | 699 | 0.1+ | 0.8− | 2004 02 13 | 699 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.0 | | |
| 2002 10 07 | 699 | 0.8+ | 0.3+ | 2004 02 13 | 699 | 0.7− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.8− | | |
| 2002 10 07 | 699 | 0.4+ | 0.1+ | 2004 02 13 | 699 | 0.1− | 0.5+ | 2006 11 14 | 703 | (1.5− | 2.2−) | | |
| 2002 10 07 | 699 | (2.0+ | 0.5+) | 2004 02 13 | 699 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.4− | 0.7− | | |
| 2002 10 07 | 704 | 0.1− | 0.4+ | 2004 02 15 | 704 | (0.9+ | 2.0+) | 2006 11 14 | 703 | 0.7+ | 0.1+ | | |
| 2002 10 07 | 704 | 0.8− | 1.0+ | 2004 02 15 | 704 | (0.4+ | 2.1+) | 2006 11 14 | 703 | 1.2− | 0.7− | | |
| 2002 10 07 | 704 | 0.6− | 0.4+ | 2004 02 15 | 704 | (0.4+ | 1.8+) | 2006 11 23 | 703 | 0.7− | 1.4− | | |
| 2002 10 07 | 704 | 0.1− | 0.6+ | 2004 02 15 | 704 | (0.3+ | 2.3+) | 2006 11 23 | 703 | (0.1+ | 1.7−) | | |
| 2002 10 11 | 704 | 0.8− | 1.0+ | 2004 02 15 | 704 | (0.7+ | 1.8+) | 2006 11 23 | 703 | 1.1− | 1.1− | | |
| 2002 10 11 | 704 | 0.5− | 1.3+ | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.3− | 1.1− | | |
| 2002 10 11 | 704 | 0.1+ | 0.8+ | 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.9− | 0.9+ | 2004 02 18 | 691 | 0.3− | 0.9+ | 2006 11 29 | 704 | 0.1− | 0.5− | | |
| 2002 10 11 | 704 | 0.4− | 0.0 | 2004 03 19 | 704 | 0.4+ | 1.2+ | 2006 11 29 | 704 | 0.0 | 0.5+ | | |
| 2002 11 06 | 704 | 0.3+ | 1.2+ | 2004 03 19 | 704 | 0.6+ | 0.1− | 2006 11 29 | 704 | 0.9+ | 0.2+ | | |
| 2002 11 06 | 704 | 1.1+ | 0.9+ | 2004 03 19 | 704 | 1.0+ | 0.8+ | | | | | | |

**(137771)∗ 1999 XS$_{196}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.06786 | | (2000.0) | | | |
| $n$ | 0.26610341 | $\omega$ | 351.03970 | | +0.93743683 | −0.34516926 |
| $a$ | 2.3938803 | $\Omega$ | 29.28040 | | +0.32491335 | +0.82040115 |
| $e$ | 0.2355378 | $i$ | 5.33815 | | +0.12507396 | +0.45585099 |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.3− | 0.4+ | 2006 09 12 | F84 | 0.4+ | 0.2− | 2006 10 03 | G96 | 0.1+ | 0.4− | | |
| 1999 12 12 | 704 | 1.1− | 0.9− | 2006 09 16 | 704 | 0.4− | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.0 | | |
| 1999 12 12 | 704 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.5− | 1.2+ | 2006 10 03 | G96 | 0.6− | 0.2− | | |
| 1999 12 12 | 704 | 0.3− | 0.9+ | 2006 09 16 | 704 | 0.2+ | 1.3+ | 2006 10 03 | G96 | 0.3− | 0.1− | | |
| 1999 12 12 | 704 | 1.1+ | 0.4+ | 2006 09 16 | 704 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.2− | | |
| 1999 12 15 | 704 | 0.9− | 0.5− | 2006 09 16 | 704 | 0.2− | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.1− | | |
| 1999 12 15 | 704 | 0.3+ | 0.4− | 2006 09 16 | 704 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.2− | | |
| 1999 12 15 | 704 | 1.1+ | 0.8− | 2006 09 16 | 704 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.5− | | |
| 2000 01 02 | 704 | 0.3− | 0.1− | 2006 09 16 | 704 | 0.6− | 0.9+ | 2006 10 11 | 644 | 0.4+ | 0.0 | | |
| 2000 01 02 | 704 | 1.0− | 0.8− | 2006 09 16 | 704 | 0.1+ | 1.1+ | 2006 10 11 | 644 | 0.5+ | 0.1+ | | |
| 2000 01 02 | 704 | 1.6+ | 0.6− | 2006 09 19 | 699 | 0.4+ | 1.0+ | 2006 10 12 | 644 | 0.2+ | 0.1− | | |
| 2000 01 02 | 704 | 0.3− | 0.2− | 2006 09 19 | 704 | 1.1+ | 1.0− | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2000 01 04 | 704 | 0.6+ | 1.0− | 2006 09 19 | 699 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2000 01 04 | 704 | 0.3− | 0.5− | 2006 09 19 | 704 | 0.7+ | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.1− | | |
| 2000 01 04 | 704 | 0.2+ | 0.8− | 2006 09 19 | 704 | 0.3+ | 1.4− | 2006 10 16 | 703 | 1.0+ | 0.9+ | | |
| 2000 01 04 | 704 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.5+ | | |
| 2000 01 04 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 704 | (1.6− | 0.0 ) | 2006 10 16 | 703 | 0.2− | 0.1+ | | |
| 2002 07 06 | 644 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2002 07 06 | 644 | 0.1+ | 0.3− | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 07 06 | 644 | 0.3+ | 0.3− | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2002 07 15 | 644 | 0.2− | 0.3− | 2006 09 20 | 644 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.5− | | |
| 2002 07 15 | 644 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.5− | | |
| 2002 07 15 | 644 | 0.6− | 0.5− | 2006 09 22 | 704 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.4− | | |
| 2004 02 15 | 704 | 1.0+ | 1.4+ | 2006 09 22 | 704 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.4− | | |
| 2004 02 15 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 704 | 0.4− | 0.8+ | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2004 02 15 | 704 | (0.9+ | 1.7+) | 2006 09 22 | 704 | 0.5+ | 0.0 | 2006 10 23 | 644 | 0.3− | 0.2− | | |
| 2004 02 15 | 704 | (1.1+ | 1.6+) | 2006 09 25 | 699 | 0.5− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2004 02 15 | 704 | (1.1+ | 1.6+) | 2006 09 25 | 699 | 1.2− | 0.6+ | 2006 10 24 | 644 | 0.1− | 0.1− | | |
| 2004 03 18 | 291 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.4− | 1.3+ | 2006 10 24 | 644 | 0.0 | 0.4− | | |
| 2004 03 18 | 291 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.5+ | 2006 10 24 | 644 | 0.2− | 0.0 | | |
| 2004 03 18 | 291 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.8− | 0.7+ | 2006 11 11 | 703 | 1.1+ | 1.1− | | |
| 2006 08 21 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.6− | 1.4− | 2006 11 11 | 703 | 0.7+ | 0.1− | | |
| 2006 08 21 | 644 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.6− | 1.0− | 2006 11 11 | 703 | 0.2− | 0.7+ | | |
| 2006 08 21 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | (2.6− | 0.7+) | 2006 11 11 | 703 | 0.6+ | 0.6+ | | |
| 2006 08 28 | 699 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.6− | 0.0 | | |
| 2006 08 28 | 699 | 0.8− | 0.0 | 2006 09 28 | 704 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.1− | | |
| 2006 08 28 | 699 | 0.3+ | 0.6+ | 2006 09 28 | 704 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.0 | | |
| 2006 08 28 | 699 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2006 08 30 | 704 | 0.0 | 1.3− | 2006 09 28 | 704 | 0.8− | 0.5+ | 2006 11 18 | 703 | 0.8+ | 1.2− | | |
| 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 18 | 703 | 1.8− | 0.2− | | |
| 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 11 18 | 703 | 0.5− | 0.0 | | |
| 2006 08 30 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.8− | 2006 11 18 | 703 | 0.7− | 0.5− | | |
| 2006 09 12 | F84 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.4− | | | | | | |

**(137772)∗ 1999 XZ$_{197}$ = 2002 RL$_{16}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34843)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.02014 | | (2000.0) | | | |
| $n$ | 0.27117570 | $\omega$ | 60.84198 | | +0.76239325 | −0.64579349 |
| $a$ | 2.3639350 | $\Omega$ | 339.29469 | | +0.54568928 | +0.67590866 |
| $e$ | 0.1142382 | $i$ | 6.71130 | | +0.34782143 | +0.35510315 |
| $P$ | 3.63 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.3− | 0.1+ | 2002 10 07 | 704 | (1.0+ | 1.7+) | 2004 03 18 | 704 | 0.5+ | 0.9+ | | |
| 1999 12 12 | 704 | 0.0 | 0.0 | 2002 10 07 | 704 | 0.6− | 1.2− | 2004 03 18 | 704 | 0.1+ | 0.6+ | | |
| 1999 12 12 | 704 | 0.2+ | 0.4− | 2002 10 07 | 704 | (0.2− | 2.9+) | 2004 03 18 | 704 | 0.1− | 0.4− | | |
| 1999 12 12 | 704 | 0.0 | 0.8+ | 2002 10 07 | 704 | (0.6+ | 2.5+) | 2004 03 19 | 644 | 0.2+ | 0.4+ | | |
| 1999 12 12 | 704 | 0.1+ | 1.0− | 2002 10 07 | 704 | (0.6− | 2.5+) | 2004 03 19 | 644 | 0.0 | 0.5+ | | |
| 1999 12 12 | 704 | 0.1+ | 0.7− | 2002 10 09 | 699 | 0.5− | 0.7+ | 2004 03 19 | 644 | 0.1+ | 0.3+ | | |
| 1999 12 12 | 704 | 0.8− | 1.3− | 2002 10 09 | 699 | 0.8− | 0.4+ | 2004 03 26 | 691 | 0.2+ | 0.4+ | | |
| 1999 12 12 | 704 | 0.6− | 1.0− | 2002 10 09 | 699 | 0.2− | 1.3+ | 2004 03 26 | 691 | 0.1− | 0.2+ | | |
| 1999 12 12 | 704 | 0.2+ | 1.3− | 2002 10 09 | 699 | 1.0− | 0.3+ | 2004 03 26 | 691 | 0.3+ | 0.3+ | | |
| 1999 12 15 | 704 | 0.7+ | 0.5− | 2002 10 12 | 704 | 0.1− | 0.7+ | 2004 03 27 | 704 | 1.3− | 0.4+ | | |
| 1999 12 15 | 704 | 0.5+ | 0.7− | 2002 10 12 | 704 | 0.3+ | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.7− | | |
| 1999 12 15 | 704 | 0.1+ | 0.2− | 2002 10 12 | 704 | 0.2− | 0.7+ | 2004 03 27 | 704 | 0.4− | 0.8+ | | |
| 1999 12 15 | 704 | 0.3− | 0.3− | 2002 11 08 | 704 | 1.1− | 0.2− | 2006 08 29 | 703 | 0.3+ | 0.1+ | | |
| 1999 12 15 | 704 | 0.3− | 0.5− | 2002 11 08 | 704 | 0.6− | 1.0+ | 2006 08 29 | 703 | 0.3+ | 0.6− | | |
| 2000 01 02 | 704 | 0.3− | 0.2+ | 2002 11 08 | 704 | 1.0− | 0.1+ | 2006 08 29 | 703 | 0.3+ | 0.4− | | |
| 2000 01 02 | 704 | 0.5+ | 0.7− | 2002 11 08 | 704 | 0.6− | 0.4− | 2006 08 29 | 703 | 0.6− | 0.7+ | | |
| 2000 01 02 | 704 | 0.3+ | 1.2− | 2002 11 08 | 704 | 0.8+ | 0.2− | 2006 09 18 | 703 | 0.4− | 1.4− | | |
| 2000 01 02 | 704 | 1.1− | 0.1− | 2004 01 22 | 704 | 1.0+ | 0.5+ | 2006 09 18 | 703 | 1.0− | 0.2− | | |
| 2000 01 29 | 704 | 0.8− | 0.2+ | 2004 01 22 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.7+ | | |
| 2000 01 29 | 704 | 0.7+ | 0.7+ | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.4− | 1.2+ | | |
| 2000 01 29 | 704 | 0.1+ | 0.2+ | 2004 01 22 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.0 | | |
| 2000 01 29 | 704 | 0.2− | 0.2+ | 2004 01 22 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.1+ | 0.4− | | |
| 2000 01 29 | 704 | 0.1− | 0.1+ | 2004 01 29 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.1− | | |
| 2000 01 30 | 704 | 1.0− | 0.1− | 2004 01 29 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.2− | | |
| 2000 01 30 | 704 | 0.5− | 0.6+ | 2004 01 29 | 704 | 0.0 | 1.4+ | 2006 10 19 | 703 | 0.4+ | 0.1− | | |
| 2000 01 30 | 704 | 0.1+ | 0.3− | 2004 02 11 | 703 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.4+ | | |
| 2000 01 30 | 704 | 0.2− | 0.3+ | 2004 02 11 | 703 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.6+ | | |
| 2000 01 30 | 704 | 0.7+ | 0.1− | 2004 02 11 | 703 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.1+ | | |
| 2002 08 12 | 704 | 0.1− | 0.9+ | 2004 02 11 | 703 | 1.2+ | 0.7+ | 2006 10 20 | 704 | 0.2+ | 0.2− | | |
| 2002 08 12 | 704 | 0.3− | 0.2+ | 2004 02 11 | 699 | 0.2+ | 1.3+ | 2006 10 20 | 704 | 0.1+ | 1.2+ | | |
| 2002 08 12 | 704 | 0.0 | 0.1+ | 2004 02 11 | 699 | 0.3+ | 0.3− | 2006 10 20 | 704 | 1.2− | 0.7+ | | |
| 2002 08 12 | 704 | 0.0 | 0.4+ | 2004 02 11 | 699 | 0.4− | 0.1− | 2006 10 20 | 704 | 0.3+ | 0.3+ | | |
| 2002 08 12 | 704 | 0.2− | 0.3+ | 2004 02 11 | 699 | 0.3− | 0.0 | 2006 10 20 | 704 | 0.4− | 0.2+ | | |
| 2002 08 21 | 644 | 0.4− | 0.6+ | 2004 02 17 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 703 | 0.2+ | 0.1− | | |
| 2002 08 21 | 644 | 0.3− | 0.8+ | 2004 02 17 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 703 | 0.4+ | 0.4− | | |
| 2002 08 21 | 644 | 0.2− | 0.8+ | 2004 02 17 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 703 | 0.3+ | 0.1− | | |
| 2002 09 04 | 699 | 0.1+ | 0.2+ | 2004 02 17 | 704 | 0.9+ | 0.4+ | 2006 10 23 | 703 | 0.5+ | 0.2− | | |
| 2002 09 04 | 699 | 0.0 | 0.4+ | 2004 02 17 | 704 | 0.5+ | 0.4+ | 2006 10 29 | 703 | 0.3− | 0.4− | | |
| 2002 09 04 | 699 | 0.1+ | 0.5+ | 2004 02 17 | 608 | 1.2+ | 0.4− | 2006 10 29 | 703 | 0.5− | 0.5− | | |
| 2002 09 04 | 699 | 0.3+ | 0.5+ | 2004 02 17 | 608 | 1.2+ | 0.1+ | 2006 10 29 | 703 | 0.8− | 0.8− | | |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2004 02 17 | 608 | 1.1+ | 0.9− | 2006 10 29 | 703 | 0.5− | 1.0− | | |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2004 02 18 | 704 | (1.8+ | 0.9+) | 2006 11 02 | G96 | 0.1+ | 0.2− | | |
| 2002 09 05 | 704 | 0.1− | 0.7+ | 2004 02 18 | 704 | 0.9+ | 0.7+ | 2006 11 02 | G96 | 0.0 | 0.2− | | |
| 2002 09 05 | 704 | 0.1+ | 0.7+ | 2004 02 18 | 704 | 0.6+ | 0.9+ | 2006 11 02 | G96 | 0.1− | 0.3− | | |
| 2002 09 07 | 704 | 0.5− | 0.6+ | 2004 02 18 | 704 | 1.2+ | 1.1− | 2006 11 02 | G96 | 0.3+ | 0.1− | | |
| 2002 09 07 | 704 | 0.2− | 0.4+ | 2004 02 18 | 704 | 0.7+ | 1.1+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2002 09 07 | 704 | 0.4− | 0.7+ | 2004 02 23 | 704 | 0.2− | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 09 07 | 704 | 0.2− | 0.6+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.0 |
| 2002 09 12 | 644 | 0.4− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 2002 09 12 | 644 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.1+ |
| 2002 09 12 | 644 | 0.5− | 0.0 | 2004 02 26 | 704 | 0.4− | 0.7+ | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2002 09 14 | 644 | 0.5− | 0.4+ | 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.2− | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2004 02 26 | 704 | 1.0− | 0.3+ | 2006 11 15 | 704 | 0.4− | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2004 02 26 | 704 | 0.7− | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.0 |
| 2002 09 17 | 644 | 0.8− | 0.3+ | 2004 02 26 | 704 | 0.4− | 0.7+ | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2002 09 17 | 644 | 0.5− | 0.4+ | 2004 03 15 | 704 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.1− |
| 2002 09 17 | 644 | 0.7− | 0.4+ | 2004 03 15 | 704 | 1.2+ | 0.1− | 2006 11 21 | 703 | 0.0 | 0.3+ |
| 2002 09 18 | 644 | 0.5− | 0.6+ | 2004 03 15 | 704 | 0.1− | 0.3+ | 2006 11 21 | 703 | 0.5− | 0.2− |
| 2002 09 18 | 644 | 0.3+ | 0.5+ | 2004 03 15 | 704 | 0.4+ | 1.4+ | 2006 11 21 | 703 | 0.0 | 0.3+ |
| 2002 09 18 | 644 | 0.2− | 0.3+ | 2004 03 15 | 704 | (1.1+ | 2.3+) | 2006 11 21 | 703 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.8+ | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 0.6+ | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.8− | 0.8− |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 11 29 | 704 | 0.8+ | 0.5− |
| 2002 10 03 | 704 | 0.4− | 0.7+ | 2004 03 18 | 704 | 0.4− | 0.9+ | 2006 11 29 | 704 | 0.0 | 0.5+ |

**(137773)∗ 1999 XM$_{216}$ = 2002 RH$_{171}$**

Discovered 1999 Dec. 13 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 40032)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.96844 | | (2000.0) | | | |
| $n$ | 0.26221617 | $\omega$ | 248.28454 | | +0.98900050 | +0.11256876 |
| $a$ | 2.4174810 | $\Omega$ | 105.15004 | | −0.06927139 | +0.92565573 |
| $e$ | 0.1559032 | $i$ | 5.70487 | | −0.13068854 | +0.36123364 |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 691 | 0.4+ | 0.5− | 2004 02 11 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.9− | 0.4+ |
| 1999 12 12 | 691 | 0.1+ | 0.1+ | 2004 02 11 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.6+ |
| 1999 12 12 | 691 | 0.2+ | 0.2− | 2004 02 13 | 291 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 1999 12 13 | 691 | 0.2− | 0.2+ | 2004 02 13 | 291 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 1999 12 13 | 691 | 0.2− | 0.2− | 2004 02 13 | 291 | 1.0+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 1999 12 13 | 691 | 0.4− | 0.2+ | 2004 02 18 | 691 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 1999 12 16 | 691 | 0.1− | 0.4+ | 2004 02 18 | 691 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1999 12 16 | 691 | 0.1− | 0.4+ | 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 1999 12 16 | 691 | 0.4− | 0.2+ | 2004 02 26 | 695 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 2002 08 17 | 644 | (0.0 | 1.6+) | 2004 02 26 | 695 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2002 08 17 | 644 | (0.1− | 1.9+) | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 08 17 | 644 | (0.2− | 1.6+) | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.3+ |
| 2002 09 13 | 704 | 0.5+ | 0.6+ | 2005 05 04 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.6+ |
| 2002 09 13 | 704 | 0.4+ | 0.7+ | 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.7+ | 0.4− |
| 2002 09 13 | 699 | 0.8− | 0.5+ | 2005 05 04 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 1.2+ |
| 2002 09 13 | 704 | 0.0 | 0.8+ | 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2002 09 13 | 699 | 0.2+ | 0.6+ | 2005 05 10 | 691 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.3+ | 0.4+ |
| 2002 09 13 | 704 | 0.2− | 0.7+ | 2005 05 10 | 691 | 0.1− | 0.3+ | 2006 11 13 | 703 | 1.2+ | 0.1− |
| 2002 09 13 | 699 | 0.4+ | 0.4+ | 2005 05 14 | 691 | 0.0 | 0.6+ | 2006 11 13 | 703 | 0.6− | 0.9− |
| 2002 09 13 | 699 | 0.5− | 1.2+ | 2005 05 14 | 691 | 0.1− | 0.6+ | 2006 11 13 | 703 | 0.5+ | 0.5− |
| 2002 09 14 | 608 | 0.2− | 0.2− | 2005 05 14 | 691 | 0.1− | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.5+ |
| 2002 09 14 | 608 | 0.1− | 0.9− | 2006 09 29 | 699 | 1.2− | 0.7− | 2006 11 17 | 644 | 0.2− | 0.2+ |
| 2002 09 14 | 608 | 0.2+ | 0.8− | 2006 09 29 | 699 | 0.3− | 0.5− | 2006 11 17 | 644 | 0.2+ | 0.9+ |
| 2002 09 16 | 644 | 0.2− | 0.7+ | 2006 09 29 | 699 | 1.4− | 0.2+ | 2006 11 19 | 703 | 0.9+ | 1.5− |
| 2002 09 16 | 644 | 0.1− | 0.6+ | 2006 09 29 | 699 | 1.1− | 1.0+ | 2006 11 19 | 703 | 0.3− | 0.8+ |
| 2002 09 16 | 644 | 0.1− | 0.6+ | 2006 09 30 | 703 | (0.1+ | 1.7+) | 2006 11 19 | 703 | 0.4− | 0.4− |
| 2004 02 11 | 691 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 1.0− | 0.9+ | 2006 11 19 | 703 | (5.5− | 4.1−) |

**(137774)∗ 1999 XP$_{217}$ = 2004 EV$_{26}$**

Discovered 1999 Dec. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60567)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.66583 | | (2000.0) | | | |
| $n$ | 0.27082041 | $\omega$ | 111.51247 | | +0.39228798 | −0.91979844 |
| $a$ | 2.3660021 | $\Omega$ | 315.38725 | | +0.83912661 | +0.36185496 |
| $e$ | 0.1644362 | $i$ | 0.73412 | | +0.37679792 | +0.15176237 |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 691 | 0.1+ | 0.0 | 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.3− | 0.1− |
| 1999 12 13 | 691 | 0.4− | 0.2− | 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.1− |
| 1999 12 13 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 1.4− | 0.5+ |
| 1999 12 16 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 17 | 704 | 1.3+ | 1.0− |
| 1999 12 16 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.6− | 0.7+ |
| 1999 12 16 | 691 | 0.1+ | 0.3− | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 1999 12 27 | 691 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 18 | 704 | 1.1− | 0.2− |
| 1999 12 27 | 691 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 1999 12 27 | 691 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2000 01 02 | 691 | 0.4+ | 0.3− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2000 01 02 | 691 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.7− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2000 01 02 | 691 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 18 | A13 | 0.0 | 0.3− |
| 2000 01 06 | 691 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 18 | A13 | 0.1− | 0.4− |
| 2000 01 06 | 691 | 0.5− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.1+ | 2006 11 18 | A13 | 0.1+ | 0.2− |
| 2000 01 06 | 691 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.7+ |
| 2000 01 11 | 691 | 0.5+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2000 01 11 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.9+ |
| 2000 01 11 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 1.4+ | 0.2+ |
| 2002 08 28 | 644 | 0.6+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2002 08 28 | 644 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 09 14 | 644 | 0.4− | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 1.2− | 0.8+ |
| 2004 02 26 | 704 | 1.4− | 0.6+ | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 1.4− | 0.4+ |
| 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.6+ | 0.1+ |
| 2004 02 26 | 704 | 0.7+ | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 1.0− | 0.2+ |
| 2004 03 14 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.3+ | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.1+ |
| 2004 03 14 | 691 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2004 03 16 | 291 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.4+ | 0.3+ | 2006 11 29 | 704 | 0.5− | 1.2− |
| 2004 03 16 | 291 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2004 03 16 | 291 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.3+ | 0.2+ | | | | |
| 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.2+ | | | | |

**(137775)∗ 1999 XH$_{218}$ = 1999 XQ$_{243}$ = 2005 JH$_{144}$**

Discovered 1999 Dec. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (d, *MPO* 5148), A. Doppler (*MPO* 93792)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.81180 | | (2000.0) | | | |
| $n$ | 0.24366723 | $\omega$ | 141.66490 | | −0.56690539 | +0.82139582 |
| $a$ | 2.5386606 | $\Omega$ | 93.71537 | | −0.77045481 | −0.50174416 |
| $e$ | 0.1213631 | $i$ | 3.60050 | | −0.29157789 | −0.27122261 |
| $P$ | 4.04 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.7− | 0.4− | 2003 12 29 | 691 | 0.1− | 0.6− | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 1999 12 04 | 691 | 0.6− | 0.5− | 2003 12 29 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 1999 12 04 | 691 | 0.4− | 0.3− | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 1999 12 13 | 691 | 0.6+ | 0.3+ | 2004 01 27 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 704 | (1.5− | 1.4+) |
| 1999 12 13 | 691 | 0.5+ | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 704 | (1.9− | 1.1+) |
| 1999 12 13 | 691 | 0.8+ | 0.6+ | 2005 05 15 | G96 | 0.0 | 0.1− | 2006 10 01 | 704 | 1.0− | 1.2+ |
| 1999 12 16 | 691 | 0.3− | 0.0 | 2005 05 15 | G96 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 1999 12 16 | 691 | 0.2− | 0.1− | 2005 05 15 | G96 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 1999 12 16 | 691 | 0.1− | 0.2+ | 2005 05 15 | G96 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2005 05 19 | G96 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2005 05 19 | G96 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2003 12 17 | 691 | 0.2− | 0.1− | 2005 05 19 | G96 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.0 | 0.0 | 2005 05 19 | G96 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 12 17 | 691 | 0.0 | 0.3+ | 2005 06 06 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2003 12 28 | 704 | (0.1+ | 1.8+) | 2005 06 06 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2003 12 28 | 704 | 1.3− | 0.1− | 2005 06 06 | 691 | 0.5− | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2003 12 28 | 704 | 0.0 | 0.1+ | 2005 06 17 | 691 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2003 12 28 | 704 | 0.1+ | 0.6+ | 2005 06 17 | 691 | 0.3+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2003 12 29 | 691 | 0.2+ | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.1+ | | | | |

**(137776)∗ 1999 XJ$_{218}$**

Discovered 1999 Dec. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.46241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25876967 | $\omega$ | 0.10670 | | +0.06684129 | −0.99699770 | |
| $a$ | 2.4388989 | $\Omega$ | 86.06080 | | +0.91540120 | +0.04569107 | |
| $e$ | 0.1560444 | $i$ | 2.24543 | | +0.39695452 | +0.06251334 | |
| $P$ | 3.81 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 691 | 0.4+ | 0.0 | 2004 01 22 | 704 | (0.1+ | 1.5+) | 2006 08 18 | 691 | 0.5− | 0.2+ |
| 1999 12 13 | 691 | 0.2+ | 0.0 | 2004 01 22 | 704 | 1.1+ | 0.6+ | 2006 08 18 | 691 | 0.1+ | 0.2+ |
| 1999 12 13 | 691 | 0.4+ | 0.4− | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.2+ |
| 1999 12 16 | 691 | 0.4− | 0.2− | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.0 |
| 1999 12 16 | 691 | 0.6− | 0.0 | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 1999 12 16 | 691 | 0.1− | 0.3− | 2004 02 15 | 608 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.3− | 1.4+ |
| 2000 01 03 | 704 | 0.2− | 0.1− | 2004 02 15 | 608 | 0.3+ | 0.8− | 2006 09 18 | 703 | 0.1+ | 0.2− |
| 2000 01 03 | 704 | 0.2− | 0.7− | 2004 02 15 | 608 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.7+ |
| 2000 01 03 | 704 | 0.8+ | 0.4− | 2004 02 16 | 704 | 0.1+ | 0.8− | 2006 09 18 | 703 | (1.6− | 1.0−) |
| 2000 01 03 | 704 | 0.1− | 0.7− | 2004 02 16 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.9+ |
| 2000 01 03 | 704 | 0.1+ | 0.7+ | 2004 02 16 | 704 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.3− | 0.3+ |
| 2000 01 31 | 704 | 0.3+ | 1.2+ | 2004 02 16 | 704 | 0.4− | 0.2− | 2006 09 18 | 699 | (2.1+ | 0.6+) |
| 2000 01 31 | 704 | 0.5− | 0.9+ | 2004 02 16 | 704 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.8+ |
| 2000 01 31 | 704 | 0.2− | 1.2− | 2004 02 18 | 704 | (2.0+ | 0.7+) | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2002 08 18 | 644 | 1.0− | 0.6+ | 2004 02 18 | 704 | 1.4− | 0.6− | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2004 02 18 | 704 | 0.4− | 0.8+ | 2006 09 30 | G96 | 0.5+ | 0.0 |
| 2002 08 18 | 644 | 0.6− | 0.1+ | 2004 02 18 | 704 | 0.7− | 1.3− | 2006 09 30 | G96 | 0.4+ | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.2+ | 2004 02 18 | 704 | 1.0− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2004 02 19 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.1− |
| 2002 09 01 | 644 | 0.1− | 0.6+ | 2004 02 19 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.7− |
| 2002 09 01 | 644 | 0.4− | 0.2+ | 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 703 | 0.9+ | 0.1+ |
| 2002 09 04 | 644 | 0.1− | 0.6+ | 2004 02 19 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | (1.8− | 0.1+) |
| 2002 09 04 | 644 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.6− |
| 2002 09 04 | 644 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.5− |
| 2002 09 15 | 644 | 0.2− | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2002 09 15 | 644 | 0.8+ | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 1.0+ | 0.3− |
| 2002 09 15 | 644 | 0.4− | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.8+ | 0.2+ |
| 2002 09 16 | 644 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 1.3+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2002 09 16 | 644 | 0.1− | 0.2+ | 2004 03 20 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.8+ | 2004 03 20 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2004 01 22 | 704 | 0.5+ | 1.1+ | 2004 03 20 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2004 01 22 | 704 | 1.4+ | 1.3+ | 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− |

**(137777)∗ 1999 XN$_{218}$ = 2002 RP$_{221}$**

Discovered 1999 Dec. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37229)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.43876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26959811 | $\omega$ | 328.18352 | | +0.48599944 | −0.87038892 | |
| $a$ | 2.3731480 | $\Omega$ | 92.63055 | | +0.81749753 | +0.42081549 | |
| $e$ | 0.1862451 | $i$ | 4.53102 | | +0.30903452 | +0.25561191 | |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.1+ | 0.1+ | 2002 09 16 | 644 | 0.0 | 0.3+ | 2006 10 27 | 704 | 0.0 | 0.7+ |
| 1999 12 04 | 691 | 0.1+ | 0.2+ | 2004 02 15 | 703 | 0.4+ | 0.2+ | 2006 11 01 | 703 | 0.4− | 0.1− |
| 1999 12 04 | 691 | 0.1+ | 0.1+ | 2004 02 15 | 703 | 1.2+ | 0.0 | 2006 11 01 | 703 | 0.3+ | 0.3− |
| 1999 12 13 | 691 | 0.1+ | 0.3+ | 2004 02 15 | 703 | 0.9+ | 0.8+ | 2006 11 01 | 703 | 0.2− | 0.1+ |
| 1999 12 13 | 691 | 0.1+ | 0.3+ | 2004 02 15 | 703 | 0.5+ | 0.2− | 2006 11 01 | 703 | 0.0 | 0.2− |
| 1999 12 13 | 691 | 0.2+ | 0.3+ | 2004 03 14 | 703 | 1.0+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1999 12 16 | 691 | 0.3− | 0.0 | 2004 03 14 | 703 | 1.4− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 12 16 | 691 | 0.8+ | 0.3+ | 2004 03 14 | 703 | (1.6− | 0.1+) | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1999 12 16 | 691 | 0.2− | 0.0 | 2004 03 14 | 703 | 0.5− | 0.6+ | 2006 11 10 | 644 | 0.3+ | 0.2+ |
| 1999 12 17 | 691 | 0.6− | 0.0 | 2004 03 15 | 704 | 0.9+ | 1.0+ | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 1999 12 17 | 691 | 0.6− | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 1999 12 17 | 691 | 0.6− | 0.1+ | 2004 03 15 | 704 | 0.3− | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 1999 12 30 | 699 | 1.4+ | 0.4− | 2004 03 15 | 704 | 0.3+ | 1.1+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 1999 12 30 | 699 | 0.1− | 0.5+ | 2004 03 26 | 703 | 0.7− | 1.2+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 1999 12 30 | 699 | 0.3+ | 0.4+ | 2004 03 26 | 703 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.4− | 1.4− |
| 2000 01 03 | 704 | 0.0 | 0.1+ | 2004 03 26 | 703 | 0.0 | 1.3+ | 2006 11 14 | 704 | 0.2− | 1.4− |
| 2000 01 03 | 704 | 0.2− | 0.9− | 2004 03 26 | 703 | 0.5+ | 0.2+ | 2006 11 14 | 704 | 0.6− | 1.3− |
| 2000 01 03 | 704 | 0.1+ | 1.1− | 2006 09 20 | 644 | 0.4+ | 0.5+ | 2006 11 14 | 704 | 0.6− | 0.2− |
| 2000 01 03 | 704 | 0.2+ | 1.0− | 2006 09 20 | 644 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.5− | 1.4− |
| 2000 01 03 | 704 | 0.6− | 0.3− | 2006 09 20 | 644 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.6− |
| 2000 01 04 | 704 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.2− | 1.0− |
| 2000 01 04 | 704 | 0.7+ | 1.9− | 2006 10 16 | 703 | 0.2+ | 1.1− | 2006 11 17 | 704 | 1.1− | 0.1− |
| 2000 01 04 | 704 | 0.3+ | 1.1− | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.2− | 1.0− |
| 2000 01 04 | 704 | 0.5+ | 1.4− | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.9+ | 0.5+ |
| 2000 01 04 | 704 | 0.4+ | 1.6− | 2006 10 21 | G96 | 0.6+ | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2000 01 30 | 704 | 0.7+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2000 01 30 | 704 | 0.7− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2000 01 30 | 704 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.9+ |
| 2000 01 31 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2000 01 31 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2000 01 31 | 704 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.1+ |
| 2002 08 19 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 704 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2002 08 19 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2002 08 19 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 704 | 0.3− | 1.0+ | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2002 09 15 | 608 | 0.9− | 0.2− | 2006 10 22 | 704 | 0.7− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2002 09 15 | 608 | 0.6− | 0.2− | 2006 10 22 | 704 | 0.4− | 0.5+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 09 15 | 608 | 0.4− | 0.3− | 2006 10 27 | 704 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2002 09 16 | 644 | 0.1− | 0.4+ | 2006 10 27 | 704 | (0.5− | 1.9+) | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2002 09 16 | 644 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.4+ | 1.2+ | | | | |

**(137778)∗ 1999 XL$_{220}$ = 2002 RC$_{77}$**

Discovered 1999 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34845)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.38919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26716545 | $\omega$ | 102.36913 | | +0.11572840 | −0.99155683 | |
| $a$ | 2.3875319 | $\Omega$ | 340.69127 | | +0.82868118 | +0.12885291 | |
| $e$ | 0.1279518 | $i$ | 10.19002 | | +0.54762619 | +0.01455975 | |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.4− | 0.3− | 2004 02 18 | 704 | 0.6+ | 0.6+ | 2004 03 19 | 704 | 0.3− | 0.0 |
| 1999 12 12 | 704 | 0.6− | 0.5− | 2004 02 18 | 704 | 0.2− | 0.5− | 2004 03 19 | 704 | 0.1− | 0.0 |
| 1999 12 12 | 704 | 0.3− | 0.7+ | 2004 02 18 | 704 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.3+ | 0.1+ |
| 1999 12 12 | 704 | 0.1+ | 0.3− | 2004 02 18 | 608 | (1.5+ | 1.7+) | 2004 03 19 | 704 | 0.1+ | 0.1− |
| 1999 12 12 | 704 | 0.2+ | 0.0 | 2004 02 18 | 608 | 1.3+ | 1.2+ | 2004 03 27 | 704 | 0.6− | 1.3+ |
| 1999 12 16 | 704 | 0.1+ | 1.6− | 2004 02 18 | 608 | (1.4+ | 1.8+) | 2004 03 27 | 704 | 0.7+ | 0.3+ |
| 1999 12 16 | 704 | 0.2− | 0.3− | 2004 02 25 | 333 | 0.5− | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.4+ |
| 1999 12 16 | 704 | 0.1− | 1.4− | 2004 02 25 | 333 | 0.4− | 0.1− | 2004 03 30 | 691 | 0.3− | 0.3− |
| 1999 12 16 | 704 | 0.6+ | 0.3− | 2004 02 26 | 333 | 0.8− | 0.3− | 2004 03 30 | 691 | 0.0 | 0.1− |
| 1999 12 16 | 704 | 0.1+ | 0.6− | 2004 02 26 | 333 | 1.0− | 0.8− | 2004 03 30 | 691 | 0.3+ | 0.2− |
| 1999 12 31 | 699 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.7+ | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.3− |
| 1999 12 31 | 699 | 0.4+ | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.5− | 2006 09 28 | 703 | 0.8− | 0.4− |
| 1999 12 31 | 699 | 0.0 | 0.8+ | 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.1− | 0.3+ |
| 2000 01 29 | 704 | 0.7− | 0.6+ | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 0.1+ | 0.2+ |
| 2000 01 29 | 704 | 1.1+ | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.2+ |
| 2000 01 29 | 704 | 0.7− | 0.3+ | 2004 02 26 | 333 | 0.6− | 0.5− | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2000 01 29 | 704 | (2.3− | 0.1−) | 2004 02 29 | 291 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 1.0− | 0.8− | 2004 02 29 | 291 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.6+ | | |
| 2002 09 05 | 704 | 0.7+ | 0.0 | 2004 02 29 | 291 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.8+ | 2004 03 15 | 704 | 0.1+ | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.5+ | | |
| 2002 09 05 | 704 | 0.3− | 1.3+ | 2004 03 15 | 704 | 0.2+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.5− | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2002 09 05 | 704 | 0.6− | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2002 09 07 | 704 | (2.4− | 0.0 ) | 2004 03 15 | 704 | 0.8+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 09 07 | 704 | (1.1− | 1.6+) | 2004 03 16 | 704 | 0.9+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2002 09 07 | 704 | 0.4+ | 0.7+ | 2004 03 16 | 704 | 0.5− | 0.7− | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2004 03 16 | 704 | 1.2+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.3+ | | |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2004 03 16 | 704 | 1.2− | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.4− | | |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2004 03 16 | 704 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.1− | | |
| 2002 10 03 | 704 | 0.6− | 0.3− | 2004 03 17 | 704 | 1.4+ | 1.0+ | 2006 11 15 | 703 | 0.8+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.2− | 0.4− | 2004 03 17 | 704 | 0.4+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.1− | | |
| 2002 10 03 | 704 | 1.0− | 0.2+ | 2004 03 17 | 704 | 0.7+ | 0.3+ | 2006 11 22 | 703 | 0.3− | 0.1+ | | |
| 2004 01 22 | 704 | 0.1+ | 0.4− | 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 11 22 | 703 | 1.0− | 0.0 | | |
| 2004 01 22 | 704 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.1+ | | |
| 2004 01 22 | 704 | 0.9− | 0.3− | 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 11 22 | 703 | 0.6− | 0.1− | | |
| 2004 02 18 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.2− | 0.6+ | | | | | | |

**(137779)∗ 1999 XL$_{221}$ = 2002 PK$_{159}$**

Discovered 1999 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46390)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.40392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27917855 | $\omega$ | 54.43338 | | +0.74577591 | −0.66592319 | |
| $a$ | 2.3185405 | $\Omega$ | 347.28276 | | +0.57972023 | +0.66282486 | |
| $e$ | 0.1659522 | $i$ | 4.97601 | | +0.32824191 | +0.34235874 | |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.2− | 0.4− | 2004 01 22 | 704 | 0.5+ | 0.8+ | 2004 03 18 | 704 | 0.4− | 0.5+ | | |
| 1999 10 14 | 704 | 0.1+ | 0.9− | 2004 01 22 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.5+ | | |
| 1999 10 14 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.6+ | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.3− | | |
| 1999 10 14 | 704 | 0.6− | 0.2− | 2004 01 22 | 704 | 1.0+ | 0.5+ | 2004 03 18 | 704 | (0.0 | 2.7−) | | |
| 1999 10 14 | 704 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.9+ | 0.9+ | 2004 03 18 | 704 | 0.9+ | 0.3− | | |
| 1999 12 07 | 703 | 0.6− | 0.4− | 2004 01 30 | 704 | 0.5+ | 0.4+ | 2004 03 20 | 691 | 0.0 | 0.2− | | |
| 1999 12 07 | 703 | 0.9− | 0.0 | 2004 01 30 | 704 | 0.5+ | 1.1+ | 2004 03 20 | 691 | 0.0 | 0.1− | | |
| 1999 12 07 | 703 | 1.2− | 0.5+ | 2004 01 30 | 704 | 0.5+ | 0.9+ | 2004 03 20 | 691 | 0.0 | 0.0 | | |
| 1999 12 07 | 703 | 0.4− | 0.3− | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.7+ | | |
| 1999 12 15 | 704 | 1.1+ | 0.0 | 2004 02 10 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.5+ | | |
| 1999 12 15 | 704 | 0.4+ | 0.2+ | 2004 02 10 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.2− | | |
| 1999 12 15 | 704 | 0.9+ | 0.5+ | 2004 02 11 | 699 | 0.6− | 0.6+ | 2006 10 19 | 703 | 0.6− | 0.0 | | |
| 1999 12 15 | 704 | 0.5+ | 0.8+ | 2004 02 11 | 699 | 0.1+ | 0.7− | 2006 10 20 | 704 | 0.1+ | 0.6+ | | |
| 1999 12 16 | 704 | 0.6+ | 0.3− | 2004 02 11 | 699 | 0.2+ | 0.2+ | 2006 10 20 | 704 | (0.4+ | 1.7+) | | |
| 1999 12 16 | 704 | 0.6+ | 0.8− | 2004 02 11 | 699 | (2.3− | 1.4+) | 2006 10 20 | 704 | 1.0+ | 0.0 | | |
| 1999 12 16 | 704 | 0.2+ | 0.7− | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 10 20 | 704 | 0.2− | 1.3+ | | |
| 1999 12 16 | 704 | 0.0 | 0.7− | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.6− | 0.4+ | | |
| 2002 07 15 | 644 | 0.2− | 0.2+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.7− | 0.1+ | | |
| 2002 07 15 | 644 | 0.0 | 0.3+ | 2004 02 17 | 704 | 0.4+ | 1.0+ | 2006 10 27 | 703 | 0.9− | 0.8+ | | |
| 2002 07 15 | 644 | 0.4− | 0.1+ | 2004 02 17 | 704 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.7+ | | |
| 2002 08 08 | 644 | 0.2− | 0.3+ | 2004 02 17 | 704 | 0.2− | 0.7+ | 2006 11 02 | 703 | 0.6+ | 0.3− | | |
| 2002 08 08 | 644 | 1.1− | 0.3+ | 2004 02 17 | 704 | 0.5+ | 0.6+ | 2006 11 02 | 703 | 0.1− | 0.1+ | | |
| 2002 08 08 | 644 | 0.1− | 0.7+ | 2004 02 17 | 704 | 0.6+ | 0.8+ | 2006 11 02 | 703 | 0.4− | 0.1+ | | |
| 2002 08 13 | 704 | 1.0+ | 1.2+ | 2004 02 19 | 704 | 0.6+ | 0.2+ | 2006 11 02 | 703 | 0.3+ | 0.3+ | | |
| 2002 08 13 | 704 | 0.8+ | 0.7+ | 2004 02 19 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 08 13 | 704 | 1.0+ | 0.1+ | 2004 02 19 | 704 | 0.6+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2+ | | |
| 2002 08 13 | 704 | (1.6+ | 0.3+) | 2004 02 19 | 704 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | |
| 2002 08 13 | 704 | 0.1+ | 0.1+ | 2004 02 19 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.1− | | |
| 2002 08 15 | 644 | 0.6− | 0.3− | 2004 02 23 | 704 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.5+ | | |
| 2002 08 15 | 644 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 2002 08 15 | 644 | 0.3− | 0.2− | 2004 02 23 | 704 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.2− | | |
| 2002 08 18 | 644 | 0.6− | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.8+ | 2006 11 14 | 703 | 0.0 | 0.1+ | | |
| 2002 08 18 | 644 | 0.4− | 0.6+ | 2004 03 01 | 291 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.4− | | |
| 2002 08 18 | 644 | 0.3− | 0.5+ | 2004 03 01 | 291 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.4− | 0.4+ | 2004 03 01 | 291 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.1− | 0.1− | | |
| 2002 08 29 | 644 | 0.4− | 0.4+ | 2004 03 14 | 703 | 0.2− | 1.3+ | 2006 11 25 | G96 | 0.0 | 0.2− | | |
| 2002 08 29 | 644 | 0.4− | 0.5+ | 2004 03 14 | 703 | 0.9− | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.1− | | |
| 2003 12 25 | 645 | 0.2− | 0.2− | 2004 03 14 | 703 | 0.7+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.1− | | |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 03 14 | 703 | 0.5− | 0.3− | 2006 11 25 | G96 | 0.0 | 0.1− | | |

**(137780)∗ 1999 XO$_{223}$**

Discovered 1999 Dec. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.28879 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26580278 | $\omega$ | 246.75274 | | −0.96494265 | −0.24259675 | |
| $a$ | 2.3956849 | $\Omega$ | 279.08865 | | +0.26218234 | −0.87339032 | |
| $e$ | 0.1312624 | $i$ | 5.82186 | | +0.01208727 | −0.42229867 | |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.0 | 0.0 | 2004 02 14 | 644 | 0.3+ | 0.2− | 2005 07 06 | 691 | 0.2− | 0.2+ | | |
| 1999 12 04 | 691 | 0.0 | 0.1+ | 2004 02 14 | 644 | 0.6+ | 0.0 | 2005 07 06 | 691 | 0.0 | 0.3+ | | |
| 1999 12 04 | 691 | 0.0 | 0.1− | 2004 02 14 | 608 | 0.5+ | 0.6+ | 2005 07 06 | 691 | 0.2− | 0.3+ | | |
| 1999 12 13 | 691 | 0.3− | 0.3+ | 2004 02 14 | 608 | 0.1+ | 1.3+ | 2005 07 10 | 691 | 0.1− | 0.3+ | | |
| 1999 12 13 | 691 | 0.4− | 0.2+ | 2004 02 14 | 608 | 0.2+ | 0.5+ | 2005 07 10 | 691 | 0.4+ | 0.1+ | | |
| 1999 12 13 | 691 | 0.4− | 0.1+ | 2004 02 17 | 703 | 0.9+ | 1.0+ | 2005 07 10 | 691 | 0.0 | 0.4+ | | |
| 1999 12 17 | 691 | 0.2+ | 0.2+ | 2004 02 17 | 703 | 0.1+ | 1.0+ | 2005 07 11 | G96 | 0.1− | 0.1+ | | |
| 1999 12 17 | 691 | 0.1+ | 0.2− | 2004 02 17 | 703 | 0.0 | 0.1− | 2005 07 11 | G96 | 0.4− | 0.2− | | |
| 1999 12 17 | 691 | 0.0 | 0.2− | 2004 02 17 | 703 | 0.3+ | 0.1− | 2005 07 11 | G96 | 0.2− | 0.1− | | |
| 2000 01 05 | 704 | 0.3+ | 0.2− | 2004 02 19 | 704 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.0 | 1.4+ | | |
| 2000 01 05 | 704 | 1.2+ | 0.7− | 2004 02 19 | 704 | 0.3− | 0.2+ | 2006 10 18 | A50 | 0.0 | 0.2+ | | |
| 2000 01 05 | 704 | 0.5+ | 0.4− | 2004 02 19 | 704 | 0.0 | 0.6+ | 2006 10 19 | A50 | 0.1+ | 0.5+ | | |
| 2000 01 05 | 704 | 0.8+ | 0.6− | 2004 02 19 | 704 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2000 02 02 | 704 | 0.5+ | 0.3+ | 2004 02 19 | 704 | 1.0− | 1.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2000 02 02 | 704 | 0.1+ | 0.6+ | 2004 03 13 | 644 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2000 02 02 | 704 | 0.3− | 0.9+ | 2004 03 13 | 644 | 0.1− | 0.6+ | 2006 11 15 | 691 | 0.2+ | 0.3+ | | |
| 2004 01 28 | 704 | 0.5+ | 1.2+ | 2004 03 13 | 644 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2004 01 28 | 704 | 0.9+ | 0.4+ | 2004 03 13 | 644 | 0.9+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.2− | | |
| 2004 01 28 | 704 | 0.5+ | 0.2+ | 2004 03 13 | 644 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2004 01 28 | 704 | 0.7+ | 0.3+ | 2004 03 13 | 644 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.0 | | |
| 2004 01 29 | 699 | 0.6+ | 0.8− | 2004 03 16 | 704 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.3− | 0.2+ | | |
| 2004 01 29 | 699 | 0.8− | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 2004 01 29 | 699 | 0.7− | 1.0− | 2004 03 16 | 704 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.7+ | 0.4+ | | |
| 2004 01 29 | 699 | (0.8− | 1.8−) | 2004 03 16 | 704 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.2− | 0.3− | | |
| 2004 01 30 | 699 | 0.9+ | 0.2+ | 2004 03 16 | 704 | 0.1+ | 0.6− | 2006 11 19 | 704 | (1.6+ | 1.6+) | | |
| 2004 01 30 | 699 | 0.6− | 0.2− | 2005 06 18 | G96 | 0.4− | 0.3+ | 2006 11 19 | 704 | (0.5− | 2.0+) | | |
| 2004 01 30 | 699 | 0.9− | 0.4− | 2005 06 18 | G96 | 0.4− | 0.2+ | 2006 11 19 | 704 | 1.3− | 0.3+ | | |
| 2004 01 30 | 699 | 0.3− | 0.1− | 2005 06 18 | G96 | 0.5− | 0.5+ | | | | | | |
| 2004 02 14 | 644 | 0.1+ | 0.1− | 2005 06 18 | G96 | 0.5− | 0.3+ | | | | | | |

**(137781)∗ 1999 XX$_{224}$ = 2002 PB$_{48}$**

Discovered 1999 Dec. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.93023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26266955 | $\omega$ | 46.36990 | | +0.91319021 | +0.38515676 | |
| $a$ | 2.4146984 | $\Omega$ | 290.56813 | | −0.40273087 | +0.80285350 | |
| $e$ | 0.2597914 | $i$ | 8.17815 | | −0.06238174 | +0.45506101 | |
| $P$ | 3.75 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.6− | 0.7− | 2002 08 27 | 644 | 0.4− | 0.3− | 2004 01 24 | 704 | 0.5+ | 0.8+ | | |
| 1999 12 04 | 691 | 0.5− | 0.7− | 2002 09 04 | 699 | (1.5+ | 2.4−) | 2004 01 24 | 704 | 0.3− | 0.5+ | | |
| 1999 12 04 | 691 | 0.5− | 0.4− | 2002 09 04 | 699 | 0.1− | 0.4+ | 2005 05 04 | 644 | 0.1− | 0.5+ | | |
| 1999 12 13 | 691 | 0.2+ | 0.2+ | 2002 09 04 | 699 | 0.0 | 0.0 | 2005 05 04 | 644 | 0.1− | 0.3+ | | |
| 1999 12 13 | 691 | 0.2+ | 0.1+ | 2002 09 04 | 699 | 0.0 | 0.2+ | 2005 05 04 | 644 | 0.0 | 0.3+ | | |
| 1999 12 13 | 691 | 0.2+ | 0.3− | 2002 09 04 | 644 | 0.1− | 0.8− | 2005 05 11 | 644 | 0.5+ | 0.1+ | | |
| 1999 12 17 | 691 | 0.2− | 0.2− | 2002 09 04 | 644 | 0.2− | 0.8− | 2005 05 11 | 644 | 0.5+ | 0.1− | | |
| 1999 12 17 | 691 | 0.1− | 0.1− | 2002 09 04 | 644 | 0.3− | 0.7− | 2005 05 11 | 644 | 0.2+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 691 | 0.2+ | 0.1− | 2002 09 12 | 644 | 0.3+ | 0.6+ | 2006 10 17 | 704 | 0.3+ | 0.2− |
| 1999 12 27 | 691 | 0.4− | 0.2+ | 2002 09 12 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 704 | 0.5+ | 0.2− |
| 1999 12 27 | 691 | 0.2− | 0.0 | 2002 09 12 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 704 | 0.2− | 0.1+ |
| 1999 12 27 | 691 | 0.1− | 0.1+ | 2002 10 05 | 644 | 0.1+ | 0.7+ | 2006 10 23 | 703 | 0.4− | 0.4− |
| 2000 01 02 | 691 | 0.4+ | 0.3+ | 2002 10 05 | 644 | 0.2+ | 0.7+ | 2006 10 23 | 703 | 0.4− | 0.2+ |
| 2000 01 02 | 691 | 0.0 | 0.5+ | 2002 10 05 | 644 | 0.0 | 0.8+ | 2006 10 23 | 703 | 0.2− | 0.4− |
| 2000 01 02 | 691 | 0.5+ | 0.2+ | 2002 10 06 | 644 | 0.1+ | 0.8+ | 2006 10 23 | 703 | 0.1− | 0.6− |
| 2002 07 14 | 704 | 0.2+ | 0.6+ | 2002 10 06 | 644 | 0.3+ | 0.9+ | 2006 10 29 | 703 | 0.4− | 0.1− |
| 2002 07 14 | 704 | 0.0 | 0.5− | 2002 10 06 | 644 | 0.2+ | 1.0+ | 2006 10 29 | 703 | 0.3− | 0.8− |
| 2002 07 14 | 704 | 0.1− | 0.1+ | 2002 10 26 | 049 | 0.1− | 0.1+ | 2006 10 29 | 703 | 0.1+ | 0.3− |
| 2002 07 14 | 704 | 0.2− | 0.2− | 2002 10 26 | 049 | 0.3− | 0.3− | 2006 10 29 | 703 | 0.1+ | 0.3− |
| 2002 08 10 | 704 | 0.3− | 0.5− | 2002 10 26 | 049 | 0.7+ | 0.0 | 2006 11 13 | 104 | 0.2+ | 0.0 |
| 2002 08 10 | 704 | 0.1− | 0.1− | 2002 11 06 | 704 | 0.6+ | 0.1+ | 2006 11 13 | 104 | 0.1+ | 0.1− |
| 2002 08 10 | 704 | 0.1+ | 0.1+ | 2002 11 06 | 704 | 0.5+ | 0.2+ | 2006 11 13 | 104 | 0.0 | 0.1+ |
| 2002 08 10 | 704 | 0.4− | 0.0 | 2002 11 06 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 644 | 0.3+ | 0.2− |
| 2002 08 10 | 704 | 0.4− | 0.3− | 2002 11 06 | 704 | 0.2− | 0.1− | 2006 11 14 | 644 | 0.3+ | 0.0 |
| 2002 08 11 | 704 | 0.1+ | 0.3− | 2002 11 06 | 704 | 0.1+ | 0.3+ | 2006 11 14 | 644 | 0.2− | 0.1− |
| 2002 08 11 | 704 | 0.1− | 0.2− | 2002 12 01 | 704 | 0.6− | 0.6+ | 2006 11 15 | 703 | 0.7+ | 0.0 |
| 2002 08 11 | 704 | 0.1+ | 0.1− | 2002 12 01 | 704 | 0.1− | 0.6+ | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2002 08 11 | 704 | 0.3− | 0.7− | 2002 12 01 | 704 | 0.7+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2002 08 11 | 704 | 0.2− | 0.1− | 2002 12 01 | 704 | 0.2+ | 1.0+ | 2006 11 15 | 703 | 0.1− | 0.4− |
| 2002 08 11 | 704 | 0.1− | 0.3− | 2002 12 01 | 704 | 0.3− | 1.0+ | 2006 11 15 | 704 | 0.2+ | 0.1+ |
| 2002 08 11 | 704 | 0.1− | 0.4− | 2002 12 05 | 704 | 0.8− | 0.5+ | 2006 11 15 | 704 | 0.7+ | 0.4− |
| 2002 08 11 | 704 | 0.3+ | 0.8− | 2002 12 05 | 704 | 0.2− | 0.7+ | 2006 11 15 | 704 | 0.3− | 0.4− |
| 2002 08 11 | 704 | 0.3− | 0.4− | 2002 12 05 | 704 | 1.1− | 1.2+ | 2006 11 15 | 704 | 0.2− | 0.2+ |
| 2002 08 11 | 704 | 0.1+ | 0.3− | 2004 01 22 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.2− |
| 2002 08 16 | 704 | (1.6− | 0.6+) | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.1− |
| 2002 08 16 | 704 | 0.0 | 0.1− | 2004 01 22 | 704 | 1.1+ | 0.1− | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2002 08 16 | 704 | 0.2+ | 0.6+ | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 11 17 | 644 | 0.3− | 0.0 |
| 2002 08 27 | 644 | 0.3− | 0.2− | 2004 01 24 | 704 | 0.3+ | 0.7+ | | | | |
| 2002 08 27 | 644 | 0.4− | 0.2− | 2004 01 24 | 704 | 0.1+ | 0.2+ | | | | |

**(137782)∗ 1999 XF$_{226}$ = 2002 RE$_{37}$**

Discovered 1999 Dec. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 34845)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.08709 | | (2000.0) | | | |
| $n$ | 0.26711974 | $\omega$ | 130.50859 | | +0.36078224 | −0.93180377 |
| $a$ | 2.3878043 | $\Omega$ | 298.30129 | | +0.84146622 | +0.34358141 |
| $e$ | 0.1386761 | $i$ | 2.58583 | | +0.40220737 | +0.11701947 |
| $P$ | 3.69 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.2− | 0.2− | 2004 01 29 | 704 | 0.0 | 0.3− | 2006 08 29 | 703 | 0.8− | 0.2+ |
| 1999 12 07 | 691 | 0.1− | 0.2− | 2004 01 29 | 704 | (1.5− | 2.3+) | 2006 08 29 | 703 | 0.8− | 0.2+ |
| 1999 12 07 | 691 | 0.1− | 0.1− | 2004 01 29 | 699 | 0.0 | 0.8+ | 2006 08 29 | 703 | (2.2+ | 3.1−) |
| 1999 12 14 | 691 | 0.1+ | 0.2− | 2004 01 29 | 704 | 0.7− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 1999 12 14 | 691 | 0.0 | 0.4− | 2004 01 29 | 699 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 1999 12 14 | 691 | 0.1+ | 0.4− | 2004 01 29 | 699 | 0.9+ | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 1999 12 17 | 691 | 0.1− | 0.3− | 2004 01 29 | 699 | 0.3− | 0.7+ | 2006 10 15 | 691 | 0.1+ | 0.2+ |
| 1999 12 17 | 691 | 0.4+ | 0.4− | 2004 02 12 | 644 | 0.4+ | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.2+ |
| 1999 12 17 | 691 | 0.1+ | 0.4− | 2004 02 12 | 644 | 0.5+ | 0.6+ | 2006 10 15 | 691 | 0.1+ | 0.3+ |
| 2000 01 03 | 704 | 0.1+ | 0.1− | 2004 02 12 | 644 | 0.3+ | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2000 01 03 | 704 | 0.3− | 0.1+ | 2004 02 14 | 608 | 0.2− | 0.4− | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2000 01 03 | 704 | 1.3− | 1.0− | 2004 02 14 | 608 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2000 01 03 | 704 | 0.8− | 0.9+ | 2004 02 14 | 608 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 01 03 | 704 | 1.1− | 0.3+ | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2000 01 04 | 704 | 0.3+ | 0.6− | 2004 02 16 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 0.4− | 0.4+ | 2004 02 16 | 691 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 0.2− | 0.6+ | 2004 02 18 | 704 | 0.6+ | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 0.7− | 0.8+ | 2004 02 18 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2000 01 04 | 704 | 0.5− | 0.8+ | 2004 02 18 | 704 | (1.4+ | 1.8+) | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2000 01 27 | 691 | 0.2+ | 0.7− | 2004 02 18 | 704 | (0.5+ | 1.5+) | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2000 01 27 | 691 | 0.5+ | 0.6− | 2004 02 18 | 704 | 0.4+ | 1.4+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2000 01 27 | 691 | 0.0 | 0.8− | 2004 02 18 | 608 | 0.6+ | 0.5− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2000 01 30 | 704 | 0.6+ | 1.4+ | 2004 02 18 | 608 | 0.6+ | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2000 01 30 | 704 | 0.4+ | 0.3+ | 2004 02 18 | 608 | 0.5+ | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2000 01 30 | 704 | 0.5− | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 1.1− | 0.3+ |
| 2000 01 30 | 704 | 0.4− | 0.4+ | 2004 02 23 | 704 | 0.9+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2000 01 31 | 691 | 0.2+ | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2000 01 31 | 691 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.9+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2000 01 31 | 691 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 02 05 | 691 | 0.0 | 0.3+ | 2004 02 26 | 333 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2000 02 05 | 691 | 0.2− | 0.3+ | 2004 02 26 | 333 | 0.8− | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.7+ |
| 2000 02 05 | 691 | 0.3− | 0.3+ | 2004 02 26 | 333 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.5+ | 0.5+ |
| 2002 08 12 | 704 | 1.1− | 0.8+ | 2004 02 26 | 333 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.8+ | 0.2+ |
| 2002 08 12 | 704 | 0.5− | 0.5+ | 2004 03 15 | 704 | 0.1+ | 0.3− | 2006 11 14 | 703 | (0.4− | 1.6+) |
| 2002 08 12 | 704 | 0.7− | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.4− |
| 2002 08 12 | 704 | 0.4+ | 0.3+ | 2004 03 15 | 704 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.9− | 0.8+ |
| 2002 08 12 | 704 | 0.0 | 0.8+ | 2004 03 15 | 704 | 0.3+ | 0.6− | 2006 11 16 | 704 | 1.5− | 0.1+ |
| 2002 08 28 | 644 | 0.5− | 0.3− | 2004 03 15 | 704 | 0.0 | 0.4− | 2006 11 16 | 704 | (2.0− | 1.1+) |
| 2002 08 28 | 644 | 0.3− | 0.1− | 2004 03 16 | 704 | (1.7− | 0.6−) | 2006 11 16 | 704 | 0.6− | 0.0 |
| 2002 08 28 | 644 | 0.5− | 0.1− | 2004 03 16 | 704 | 1.0+ | 1.2+ | 2006 11 18 | G96 | 0.3+ | 1.3− |
| 2002 09 05 | 699 | 1.0+ | 0.1− | 2004 03 16 | 704 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 09 05 | 699 | 0.4+ | 0.8+ | 2004 03 16 | 704 | 0.7− | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2002 09 05 | 699 | 0.1+ | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 699 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2002 09 06 | 704 | 0.2− | 0.1+ | 2004 03 17 | 704 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.2+ | 0.3− | 2004 03 17 | 704 | 0.9− | 1.2+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2002 09 06 | 704 | 0.4+ | 0.3+ | 2004 03 17 | 704 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | 0.5− | 0.6− | 2004 03 17 | 704 | 0.8− | 0.8+ | 2006 11 19 | 704 | 0.3+ | 0.6− |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.9+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.7+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2004 03 18 | 704 | 1.1+ | 0.1+ | 2006 11 22 | 704 | 1.1− | 1.5+ |
| 2002 09 29 | 704 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2002 09 29 | 704 | 0.3+ | 0.9+ | 2004 03 20 | 704 | 1.0+ | 0.8+ | 2006 11 22 | 704 | 0.4− | 0.2− |
| 2002 09 29 | 704 | 0.5− | 0.7+ | 2004 03 20 | 704 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2004 03 20 | 704 | (1.8+ | 0.1+) | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.6− | 1.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.8+ |
| 2002 10 06 | 704 | (1.6+ | 1.0+) | 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2002 10 06 | 704 | 0.6+ | 0.9+ | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.1− |
| 2002 10 06 | 704 | 0.3− | 0.6+ | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2004 01 29 | 704 | 0.2+ | 0.6+ | 2006 08 29 | 703 | 0.9− | 1.0+ | 2006 11 29 | 704 | 0.2+ | 0.2− |

**(137783)∗ 1999 XQ$_{226}$ = 2002 RA$_{73}$**

Discovered 1999 Dec. 14 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 37230)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.86375 | | (2000.0) | | | |
| $n$ | 0.27154802 | $\omega$ | 99.08262 | | +0.45406002 | −0.89078475 |
| $a$ | 2.3617737 | $\Omega$ | 323.89501 | | +0.80482391 | +0.41884486 |
| $e$ | 0.1713987 | $i$ | 1.77199 | | +0.38221455 | +0.17627112 |
| $P$ | 3.63 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 691 | 0.7− | 0.3− | 2004 02 26 | 704 | 1.1+ | 0.9+ | 2006 11 14 | 703 | 0.1− | 0.0 |
| 1999 12 14 | 691 | 0.7− | 0.6− | 2004 02 26 | 704 | 0.1− | 0.9+ | 2006 11 15 | 704 | 0.8− | 1.3+ |
| 1999 12 14 | 691 | 1.0− | 0.9− | 2004 02 26 | 704 | 0.6+ | 0.7+ | 2006 11 15 | 704 | 0.0 | 0.2− |
| 1999 12 17 | 691 | 0.6− | 0.1− | 2004 02 26 | 704 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.5− | 1.1+ |
| 1999 12 17 | 691 | 0.5− | 0.2− | 2004 03 14 | 691 | 0.5+ | 0.0 | 2006 11 15 | 704 | 0.5− | 1.1+ |
| 1999 12 17 | 691 | 0.3− | 0.2− | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.8+ |
| 2000 01 03 | 704 | 0.6+ | 1.4+ | 2004 03 14 | 691 | 1.2+ | 1.0+ | 2006 11 16 | 704 | (1.3− | 2.6+) |
| 2000 01 03 | 704 | 1.7+ | 1.5− | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 704 | 0.9+ | 0.4+ |
| 2000 01 03 | 704 | (0.6− | 2.6−) | 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 11 16 | 704 | 0.7+ | 0.3+ |
| 2000 01 04 | 704 | 0.9+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 11 16 | 704 | 0.7+ | 0.2− |
| 2000 01 04 | 704 | 0.7+ | 0.5− | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.4+ |
| 2000 01 04 | 704 | 0.3− | 0.7− | 2004 03 18 | 704 | 1.2+ | 0.6+ | 2006 11 16 | 704 | 0.8− | 1.2+ |
| 2000 01 04 | 704 | 1.1+ | 0.1− | 2004 03 23 | 704 | 1.4+ | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.8+ |
| 2000 01 04 | 704 | 1.6+ | 0.1− | 2004 03 23 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.1+ | 1.0+ |
| 2000 01 05 | 691 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.5+ | 1.1+ | 2006 11 16 | 704 | 0.4+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.1+ | 0.2− | 2004 03 23 | 704 | (0.1− | 1.7+) | 2006 11 16 | 704 | (0.9− | 3.2+) | | |
| 2000 01 05 | 691 | 0.1+ | 0.2− | 2004 03 23 | 704 | (0.3− | 2.4+) | 2006 11 16 | 704 | 0.3+ | 0.8+ | | |
| 2000 01 08 | 691 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.3− | 1.2+ | | |
| 2000 01 08 | 691 | 0.1− | 0.6− | 2006 09 19 | 703 | 0.2+ | 0.7− | 2006 11 17 | 704 | 1.1− | 0.6+ | | |
| 2000 01 08 | 691 | 0.3+ | 0.4− | 2006 09 19 | 703 | 1.3− | 1.2− | 2006 11 17 | 704 | 0.6− | 0.8+ | | |
| 2002 09 05 | 704 | (1.8+ | 0.5+) | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.4− | 0.3− | | |
| 2002 09 05 | 704 | 0.5− | 1.2+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.9+ | 0.4+ | | |
| 2002 09 05 | 704 | 0.8+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.3+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2002 09 07 | 704 | 0.4− | 0.9+ | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2+ | | |
| 2002 09 07 | 704 | 0.1− | 0.9+ | 2006 10 19 | 695 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.4+ | | |
| 2002 09 07 | 704 | 0.3− | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.2+ | | |
| 2002 09 08 | 608 | 0.5− | 0.6− | 2006 10 19 | 695 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.1− | | |
| 2002 09 08 | 608 | 0.2+ | 0.2+ | 2006 10 19 | 695 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.5+ | | |
| 2002 09 08 | 608 | 0.0 | 0.4− | 2006 10 20 | 695 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.6+ | | |
| 2002 09 14 | 644 | 0.6− | 0.6+ | 2006 10 20 | 695 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.0 | | |
| 2002 09 14 | 644 | 1.2− | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.3+ | | |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.0 | | |
| 2004 01 18 | 691 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2+ | | |
| 2004 01 18 | 691 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.1− | | |
| 2004 01 18 | 691 | 0.1− | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | (0.2+ | 1.5+) | | |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.1+ | | |
| 2004 01 27 | 691 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.8+ | 0.7− | | |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.1− | 0.9+ | | |
| 2004 01 30 | 691 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 12 01 | 704 | 1.7+ | 0.8+ | | |
| 2004 01 30 | 691 | 0.5− | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.4− | 2006 12 01 | 704 | 1.4− | 0.4− | | |
| 2004 01 30 | 691 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.7− | 0.1− | | | | | | |
| 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 0.4− | 0.4− | | | | | | |

**(137784)∗ 1999 XV$_{228}$ = 2002 RF$_{161}$**

Discovered 1999 Dec. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 40032)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.79087 | | (2000.0) | | | |
| $n$ | 0.27242091 | $\omega$ | 107.24394 | | +0.35868329 | −0.93322381 |
| $a$ | 2.3567260 | $\Omega$ | 321.71590 | | +0.84306218 | +0.33350929 |
| $e$ | 0.1552582 | $i$ | 1.93937 | | +0.40073989 | +0.13365957 |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.4− | 0.4− | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | | |
| 1999 12 07 | 691 | 0.4− | 0.4− | 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | | |
| 1999 12 07 | 691 | 0.6− | 0.4− | 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.2− | | |
| 1999 12 14 | 691 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.7+ | 2006 11 16 | 704 | (0.1− | 2.3+) | | |
| 1999 12 14 | 691 | 0.2− | 0.2− | 2004 03 18 | 704 | 0.6+ | 1.1+ | 2006 11 16 | 704 | 1.2− | 0.6+ | | |
| 1999 12 14 | 691 | 0.3− | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.7+ | 2006 11 16 | 704 | (0.7+ | 1.6+) | | |
| 1999 12 18 | 691 | 0.4+ | 0.3− | 2004 03 18 | 704 | (3.2+ | 1.0+) | 2006 11 16 | 704 | 1.1− | 1.0+ | | |
| 1999 12 18 | 691 | 0.4+ | 0.3− | 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 691 | 0.4+ | 0.2+ | | |
| 1999 12 18 | 691 | 0.3+ | 0.2− | 2004 03 20 | 699 | (3.3− | 1.9+) | 2006 11 17 | 691 | 0.5+ | 0.2+ | | |
| 2002 09 07 | 704 | 0.4− | 0.7− | 2004 03 20 | 699 | 0.0 | 1.0+ | 2006 11 17 | 691 | 0.4+ | 0.1− | | |
| 2002 09 07 | 704 | 0.4− | 0.1− | 2004 03 20 | 699 | 0.4− | 0.5+ | 2006 11 19 | 704 | 1.1− | 0.5+ | | |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2004 03 20 | 699 | 0.8− | 1.2+ | 2006 11 19 | 704 | 1.2− | 0.5+ | | |
| 2002 09 07 | 704 | (1.7− | 0.3−) | 2004 03 21 | 691 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.9− | 0.8+ | | |
| 2002 09 07 | 704 | 0.4+ | 0.3+ | 2004 03 21 | 691 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.8− | 0.4+ | | |
| 2002 09 12 | 644 | 0.4− | 1.2+ | 2004 03 21 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.6− | 0.7+ | | |
| 2002 09 12 | 644 | 0.4− | 1.4+ | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.1− | | |
| 2002 09 12 | 644 | 0.1− | 1.3+ | 2004 03 30 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2002 09 14 | 644 | 0.3− | 0.7+ | 2004 03 30 | 691 | 0.4+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.1− | | |
| 2002 09 14 | 644 | 0.6− | 0.8+ | 2004 03 31 | 291 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 1.3+ | | |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2004 03 31 | 291 | 0.6+ | 0.2+ | 2006 11 22 | 704 | 0.3− | 1.3+ | | |
| 2002 09 15 | 699 | 0.1− | 1.2+ | 2004 03 31 | 291 | 0.7+ | 0.0 | 2006 11 22 | 704 | 0.4− | 0.4+ | | |
| 2002 09 15 | 699 | 0.4− | 0.8+ | 2004 04 24 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | (1.6− | 0.9+) | | |
| 2002 09 15 | 699 | (0.3− | 2.0+) | 2004 04 24 | 691 | 0.2− | 0.6+ | 2006 11 22 | 704 | 0.4− | 1.0+ | | |
| 2002 09 15 | 699 | 0.6+ | 0.7+ | 2004 04 24 | 691 | 0.1− | 0.3+ | 2006 11 25 | 691 | 0.3− | 0.6+ | | |
| 2002 09 17 | 644 | 0.3− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 25 | 691 | 0.0 | 0.2+ | | |
| 2002 09 17 | 644 | 0.6− | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 25 | 691 | 0.2− | 0.1+ | | |
| 2002 09 17 | 644 | 0.5− | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 27 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.3− | 0.8+ | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 11 27 | 704 | 0.9+ | 0.5− | | |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.0 | 2006 11 27 | 704 | 0.5+ | 0.6− | | |
| 2002 10 03 | 704 | 0.5+ | 0.8+ | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.5− | | |
| 2002 10 03 | 704 | 0.8− | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.7− | 1.5+ | | |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.3+ | 0.0 | | |
| 2002 10 11 | 704 | (1.8− | 1.2+) | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.4− | | |
| 2002 10 11 | 704 | 1.0− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.6+ | | | | | | |
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | | | | | |

**(137785)∗ 1999 XB$_{234}$**

Discovered 1999 Dec. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.78142 | | (2000.0) | | | |
| $n$ | 0.28567684 | $\omega$ | 252.27482 | | +0.99010151 | +0.03538698 |
| $a$ | 2.2832459 | $\Omega$ | 105.52929 | | +0.01592008 | +0.93313298 |
| $e$ | 0.2413316 | $i$ | 8.10369 | | −0.13944731 | +0.35778570 |
| $P$ | 3.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.2− | 0.2+ | 1999 12 05 | 704 | 0.4− | 0.8+ | 2004 04 15 | 645 | 0.0 | 0.0 | | |
| 1999 10 19 | 704 | 0.9+ | 0.2− | 1999 12 05 | 704 | 0.2+ | 1.5+ | 2004 04 15 | 645 | 0.2− | 0.1− | | |
| 1999 10 19 | 704 | 0.4− | 1.7+ | 1999 12 05 | 704 | 0.0 | 1.2+ | 2005 04 14 | 691 | 0.2− | 0.9+ | | |
| 1999 10 19 | 704 | 0.2− | 0.0 | 1999 12 14 | 704 | 0.5+ | 0.9+ | 2005 04 14 | 691 | 0.0 | 0.4+ | | |
| 1999 10 19 | 704 | 0.7− | 0.8− | 1999 12 14 | 704 | 0.5+ | 0.4+ | 2005 04 14 | 691 | 0.9+ | 1.0+ | | |
| 1999 11 05 | 704 | 1.0+ | 0.3− | 1999 12 14 | 704 | 0.6+ | 1.8− | 2005 04 18 | 691 | 0.1− | 0.6+ | | |
| 1999 11 05 | 704 | 0.6+ | 0.3− | 2002 06 11 | 644 | 0.6− | 0.1+ | 2005 04 18 | 691 | 0.0 | 0.8+ | | |
| 1999 11 05 | 704 | 0.9+ | 0.2− | 2002 06 11 | 644 | 0.3− | 0.1+ | 2005 04 18 | 691 | 0.4+ | 0.4+ | | |
| 1999 11 05 | 704 | 0.1+ | 0.5+ | 2002 06 11 | 644 | 0.4− | 0.0 | 2006 11 20 | 704 | 1.0+ | 1.5+ | | |
| 1999 11 17 | 703 | 0.7− | 0.5+ | 2002 07 05 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 1.1+ | | |
| 1999 11 17 | 703 | 0.3+ | 0.0 | 2002 07 05 | 704 | 1.0+ | 0.6+ | 2006 11 20 | 704 | 0.1+ | 1.1+ | | |
| 1999 11 17 | 703 | 0.6− | 0.9+ | 2002 07 05 | 704 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.1− | 1.1+ | | |
| 1999 11 17 | 703 | 1.4− | 0.4− | 2002 07 05 | 704 | 0.3+ | 0.8+ | 2006 11 20 | 704 | (1.0+ | 2.2+) | | |
| 1999 12 04 | 699 | 0.2+ | 0.1+ | 2004 01 30 | 704 | 1.2+ | 1.0+ | 2006 11 29 | 704 | 0.4− | 0.2+ | | |
| 1999 12 04 | 699 | 0.4− | 0.2− | 2004 01 30 | 704 | 0.9+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.8+ | | |
| 1999 12 04 | 699 | 0.6− | 0.5− | 2004 01 30 | 704 | 0.9+ | 0.2− | 2006 11 29 | 704 | 1.2− | 1.1+ | | |
| 1999 12 05 | 704 | 1.9− | 0.8+ | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.9− | 0.1+ | | |
| 1999 12 05 | 704 | 0.9− | 1.5+ | 2004 03 17 | 645 | 0.0 | 0.2− | 2006 11 29 | 704 | 1.3− | 0.8+ | | |

**(137786)∗ 1999 XE$_{237}$ = 1995 SM$_{47}$**

Discovered 1999 Dec. 5 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 2252)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.76441 | | (2000.0) | | | |
| $n$ | 0.27296117 | $\omega$ | 88.08440 | | −0.63639808 | −0.77078963 |
| $a$ | 2.3536152 | $\Omega$ | 41.48875 | | +0.68870586 | −0.58511250 |
| $e$ | 0.1657489 | $i$ | 2.56772 | | +0.34739276 | −0.25204507 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.4− | 0.3+ | 2006 10 15 | 691 | 0.3− | 0.7+ | | |
| 1995 09 26 | 691 | 0.3− | 0.2+ | 2004 02 16 | 704 | 0.4+ | 1.2+ | 2006 10 15 | 691 | 0.0 | 0.1+ | | |
| 1995 09 26 | 691 | 0.2− | 0.1− | 2004 02 20 | 704 | 0.6+ | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.4+ | | |
| 1995 09 30 | 691 | 0.1+ | 0.2+ | 2004 02 20 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.3+ | | |
| 1995 09 30 | 691 | 0.0 | 0.1+ | 2004 02 20 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.5+ | | |
| 1995 09 30 | 691 | 0.2+ | 0.1+ | 2004 02 20 | 608 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2+ | | |
| 1999 12 05 | 691 | 0.5+ | 0.4− | 2004 02 20 | 608 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.2+ | | |
| 1999 12 05 | 691 | 0.6+ | 0.4− | 2004 02 20 | 608 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 1999 12 05 | 691 | 0.5+ | 0.5− | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 1999 12 07 | 704 | 0.7+ | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.4− | | |
| 1999 12 07 | 704 | 0.0 | 0.5− | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 1999 12 07 | 704 | 0.8+ | 0.6− | 2004 02 23 | 704 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 1999 12 14 | 691 | 0.4− | 0.5− | 2004 02 23 | 704 | 0.4+ | 1.1+ | 2006 10 28 | 691 | 0.0 | 0.3− | | |
| 1999 12 14 | 691 | 0.1− | 0.4− | 2004 02 27 | 608 | 0.2+ | 0.8− | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 1999 12 14 | 691 | 0.5− | 0.1− | 2004 02 27 | 608 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.2− | 1.0+ | 2004 02 27 | 608 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2004 01 22 | 704 | 0.2+ | 1.4+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.5− |
| 2004 01 22 | 704 | 0.4− | 1.2+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2004 01 22 | 704 | 0.6− | 0.9+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2004 01 22 | 704 | 0.1− | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 01 23 | 704 | 0.3+ | 0.7− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2004 01 23 | 704 | 0.9+ | 1.3− | 2006 09 24 | 691 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2004 01 23 | 704 | 0.2+ | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 1.0+ | 0.1− |
| 2004 01 23 | 704 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2004 01 30 | 704 | 0.8+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2004 01 30 | 704 | 1.2+ | 0.3− | 2006 09 25 | G96 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.9+ | 2.5− |
| 2004 01 30 | 704 | 0.0 | 0.9+ | 2006 09 28 | 691 | 0.1− | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2004 02 10 | 644 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.9− | 0.8+ | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2004 02 10 | 644 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2004 02 10 | 644 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2004 02 16 | 704 | 1.1− | 1.0+ | 2006 10 11 | 691 | 0.2− | 0.6+ | 2006 11 21 | 691 | 0.3− | 0.3+ |
| 2004 02 16 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2004 02 16 | 704 | 0.1+ | 0.8+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | | | | |

**(137787)∗ 1999 XV$_{237}$**

Discovered 1999 Dec. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 138.67922 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19518957 | $\omega$ | 0.73387 | | +0.48606736 | | −0.86782725 | | |
| $a$ | 2.9432805 | $\Omega$ | 60.18886 | | +0.80120100 | | +0.39543159 | | |
| $e$ | 0.1189830 | $i$ | 6.81933 | | +0.34902075 | | +0.30084834 | | |
| $P$ | 5.05 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 703 | 0.6− | 0.2+ | 2004 09 16 | 691 | 0.0 | 0.2+ | 2004 12 16 | 691 | 0.0 | 0.1− |
| 1999 12 05 | 703 | 0.3− | 0.4− | 2004 09 16 | 691 | 0.0 | 0.3+ | 2004 12 16 | 691 | 0.1+ | 0.0 |
| 1999 12 05 | 703 | 1.1+ | 0.1− | 2004 12 02 | 704 | 0.3− | 0.9+ | 2004 12 16 | 704 | 0.7− | 1.4+ |
| 1999 12 05 | 703 | 0.3+ | 0.7− | 2004 12 02 | 644 | 0.3− | 0.1− | 2004 12 16 | 704 | 0.4− | 0.8+ |
| 1999 12 07 | 704 | 0.0 | 0.7− | 2004 12 02 | 704 | 1.8− | 0.0 | 2004 12 16 | 704 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.2+ | 0.7− | 2004 12 02 | 704 | (0.4+ | 3.1−) | 2004 12 16 | 704 | 0.1+ | 0.3− |
| 1999 12 07 | 704 | 0.1+ | 0.3− | 2004 12 02 | 704 | 0.9+ | 0.3− | 2004 12 19 | 704 | (3.6+ | 2.3+) |
| 1999 12 15 | 704 | 0.0 | 1.3− | 2004 12 02 | 644 | 0.2− | 0.1− | 2004 12 19 | 704 | 1.7+ | 0.6+ |
| 1999 12 15 | 704 | 0.2− | 1.0− | 2004 12 02 | 644 | 0.2− | 0.0 | 2004 12 19 | 704 | (2.1+ | 2.3+) |
| 1999 12 15 | 704 | 0.1− | 1.4− | 2004 12 08 | 704 | 0.7− | 0.1+ | 2004 12 19 | 704 | (2.0+ | 2.1+) |
| 2000 01 04 | 704 | (0.5+ | 2.2−) | 2004 12 08 | 704 | 0.2− | 0.6+ | 2004 12 19 | 704 | (2.9+ | 2.3+) |
| 2000 01 04 | 704 | 0.3− | 1.2− | 2004 12 08 | 704 | 0.4− | 0.6+ | 2005 01 07 | 704 | 0.2+ | 0.8− |
| 2000 01 04 | 704 | 0.7− | 1.6− | 2004 12 08 | 704 | 0.3− | 0.2+ | 2005 01 07 | 704 | 0.5+ | 0.0 |
| 2001 03 02 | 608 | 0.6+ | 0.4+ | 2004 12 08 | 704 | 0.3− | 0.6+ | 2005 01 07 | 704 | 1.1+ | 0.2− |
| 2001 03 02 | 608 | 0.3+ | 0.4+ | 2004 12 10 | 691 | 0.4− | 0.0 | 2005 01 07 | 704 | 1.3+ | 0.1+ |
| 2001 03 02 | 608 | 1.0+ | 0.3+ | 2004 12 10 | 691 | 0.2− | 0.3+ | 2006 03 23 | 703 | 0.1− | 0.1− |
| 2001 03 20 | 608 | 0.5+ | 0.2− | 2004 12 10 | 691 | 0.1− | 0.1+ | 2006 03 23 | 703 | 1.1+ | 0.9+ |
| 2001 03 20 | 608 | 0.5+ | 1.0− | 2004 12 10 | 704 | 0.5+ | 0.7+ | 2006 03 23 | 703 | 0.3− | 0.5+ |
| 2001 03 20 | 608 | 0.8+ | 0.3− | 2004 12 10 | 704 | 0.5+ | 0.4+ | 2006 03 23 | 703 | 0.9+ | 0.5+ |
| 2003 07 08 | 644 | 0.2− | 0.5+ | 2004 12 10 | 704 | 0.6+ | 0.7+ | 2006 04 02 | 703 | 1.6− | 0.9+ |
| 2003 07 08 | 644 | 0.1− | 0.4+ | 2004 12 10 | 704 | 0.7+ | 0.6+ | 2006 04 02 | 703 | 1.3− | 0.8+ |
| 2003 07 08 | 644 | 0.5− | 0.2+ | 2004 12 10 | 704 | 0.5+ | 0.8+ | 2006 04 02 | 703 | (1.9− | 2.7−) |
| 2004 09 16 | 691 | 0.0 | 0.1− | 2004 12 16 | 691 | 0.0 | 0.0 | 2006 04 02 | 703 | 1.1− | 0.7− |

**(137788)∗ 1999 XP$_{238}$**

Discovered 1999 Dec. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 180.64493 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25965156 | $\omega$ | 281.37117 | | −0.99504035 | | −0.04067948 | | |
| $a$ | 2.4333734 | $\Omega$ | 256.34546 | | +0.07205416 | | −0.92389307 | | |
| $e$ | 0.0898671 | $i$ | 5.36004 | | −0.06857774 | | −0.38048229 | | |
| $P$ | 3.80 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.3− | 0.9+ | 2001 05 18 | 699 | 1.4+ | 0.6− | 2003 12 30 | 704 | 1.3− | 0.7− |
| 1995 11 30 | 691 | 0.5− | 0.1+ | 2001 05 18 | 699 | 1.0− | 0.9+ | 2003 12 30 | 704 | 0.2− | 0.1− |
| 1995 11 30 | 691 | 0.3− | 0.3+ | 2002 08 16 | 644 | 0.1− | 0.5+ | 2003 12 30 | 704 | 0.8− | 0.3+ |
| 1999 12 04 | 691 | 0.4+ | 0.1− | 2002 08 16 | 644 | 0.1+ | 0.3+ | 2003 12 30 | 704 | 0.6− | 0.8− |
| 1999 12 04 | 691 | 0.5+ | 0.1− | 2002 08 16 | 644 | 0.2+ | 0.4+ | 2003 12 30 | 704 | 0.7− | 0.1− |
| 1999 12 04 | 691 | 0.3+ | 0.1− | 2002 09 13 | 644 | 0.7− | 0.8+ | 2003 12 30 | 704 | 0.3− | 0.8− |
| 1999 12 08 | 704 | 0.6− | 0.2+ | 2002 09 13 | 644 | 0.4− | 0.5+ | 2003 12 30 | 704 | 0.7− | 0.5+ |
| 1999 12 08 | 704 | 1.4− | 0.2− | 2002 09 13 | 644 | 0.1− | 0.4+ | 2004 01 28 | 691 | 0.2+ | 0.2+ |
| 1999 12 08 | 704 | 0.1+ | 0.4− | 2003 12 19 | 704 | 0.7− | 0.5+ | 2004 01 28 | 691 | 0.3+ | 0.1+ |
| 2000 01 08 | 691 | 0.1+ | 0.4− | 2003 12 19 | 704 | 0.2+ | 1.2+ | 2004 01 28 | 691 | 0.2+ | 0.1+ |
| 2000 01 08 | 691 | 0.3+ | 0.4− | 2003 12 19 | 704 | 0.2+ | 0.8+ | 2005 06 14 | G96 | 0.5+ | 0.4− |
| 2000 01 08 | 691 | 0.3+ | 0.3− | 2003 12 19 | 704 | 0.2− | 0.5+ | 2005 06 14 | G96 | 0.0 | 0.0 |
| 2001 04 16 | 704 | 0.8+ | 1.2+ | 2003 12 21 | 704 | 0.1+ | 0.3+ | 2005 06 14 | G96 | 0.3− | 0.2+ |
| 2001 04 16 | 704 | 1.1+ | 0.7− | 2003 12 21 | 704 | 0.6+ | 0.3− | 2005 06 14 | G96 | 0.2− | 0.0 |
| 2001 04 16 | 704 | 0.8+ | 0.3+ | 2003 12 21 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.3+ |
| 2001 04 16 | 704 | (0.7− | 1.8+) | 2003 12 23 | 704 | 0.0 | 0.9+ | 2006 09 17 | 703 | 0.9− | 0.2− |
| 2001 04 26 | 699 | 0.8− | 0.2+ | 2003 12 23 | 704 | 0.0 | 1.0+ | 2006 09 17 | 703 | 0.6+ | 0.4− |
| 2001 04 26 | 699 | 1.0− | 0.1+ | 2003 12 23 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.0 |
| 2001 04 26 | 699 | 0.5− | 0.7+ | 2003 12 23 | 704 | 0.3+ | 0.8+ | 2006 10 17 | 703 | 1.5+ | 1.1+ |
| 2001 04 26 | 699 | 0.5− | 0.9+ | 2003 12 30 | 704 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.7+ | 1.0− |
| 2001 05 18 | 699 | 1.1+ | 0.8+ | 2003 12 30 | 704 | (1.6− | 0.1+) | 2006 10 17 | 703 | 0.8− | 0.2+ |
| 2001 05 18 | 699 | 0.3+ | 0.4+ | 2003 12 30 | 704 | 1.0− | 0.9− | 2006 10 17 | 703 | 0.4+ | 1.0− |

**(137789)∗ 1999 XF$_{239}$ = 2002 PT$_{119}$**

Discovered 1999 Dec. 5 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 34846)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 345.95264 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28526112 | $\omega$ | 137.15464 | | +0.40841611 | | −0.90912347 | | |
| $a$ | 2.2854637 | $\Omega$ | 288.58895 | | +0.81239741 | | +0.40288969 | | |
| $e$ | 0.1398790 | $i$ | 4.95076 | | +0.41618114 | | +0.10570908 | | |
| $P$ | 3.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 02 | 691 | 0.5− | 0.7+ | 2004 01 29 | 699 | 1.1− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.8+ |
| 1995 07 02 | 691 | 0.4− | 0.5+ | 2004 01 29 | 699 | 1.1+ | 0.5− | 2004 03 19 | 704 | 0.4+ | 0.2+ |
| 1995 07 02 | 691 | 0.5− | 0.3+ | 2004 01 30 | 699 | 0.3+ | 0.2− | 2004 03 19 | 704 | (1.6+ | 0.4+) |
| 1999 11 09 | 703 | 0.0 | 0.7− | 2004 01 30 | 699 | 0.0 | 1.1+ | 2004 03 19 | 704 | 0.3+ | 1.4+ |
| 1999 11 09 | 703 | 0.4− | 0.4+ | 2004 01 30 | 699 | 0.1− | 0.6+ | 2004 03 19 | 704 | 1.1+ | 0.1+ |
| 1999 11 09 | 703 | 0.3+ | 0.2+ | 2004 01 30 | 699 | 0.7+ | 0.4+ | 2004 03 19 | 704 | 0.2− | 0.4+ |
| 1999 11 09 | 703 | 0.5− | 1.0+ | 2004 02 12 | 644 | 0.6+ | 0.8+ | 2004 03 19 | 704 | 0.0 | 0.3+ |
| 1999 12 05 | 703 | 0.1+ | 1.8+ | 2004 02 12 | 644 | 0.1+ | 0.7+ | 2004 03 20 | 704 | 1.0+ | 0.3− |
| 1999 12 05 | 703 | 0.3+ | 0.7+ | 2004 02 12 | 644 | 0.5− | 0.4+ | 2004 03 20 | 704 | 0.8− | 0.8+ |
| 1999 12 05 | 703 | 0.8+ | 0.5+ | 2004 02 18 | 608 | 0.2+ | 1.3+ | 2004 03 20 | 704 | 0.0 | 0.1+ |
| 1999 12 05 | 703 | 0.2+ | 0.3− | 2004 02 18 | 608 | 0.1− | 1.2+ | 2004 03 20 | 704 | 0.4− | 0.6+ |
| 1999 12 10 | 704 | 0.6− | 0.9− | 2004 02 18 | 608 | 0.4+ | 1.2+ | 2004 03 20 | 704 | 0.3+ | 0.1− |
| 1999 12 10 | 704 | 0.5− | 0.3− | 2004 02 19 | 704 | 1.0+ | 0.5+ | 2004 03 20 | 704 | 1.0+ | 0.5+ |
| 1999 12 10 | 704 | 0.6+ | 0.8+ | 2004 02 19 | 704 | 0.9+ | 0.4+ | 2004 03 20 | 704 | 1.2+ | 0.2+ |
| 2002 08 12 | 704 | 1.1− | 1.2+ | 2004 02 19 | 704 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.8− | 0.6+ |
| 2002 08 12 | 704 | 0.1+ | 0.1+ | 2004 02 19 | 704 | 1.4+ | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.4− |
| 2002 08 12 | 704 | 0.1− | 0.8+ | 2004 02 19 | 704 | (2.2+ | 0.0 ) | 2004 03 20 | 704 | 0.4− | 1.0+ |
| 2002 08 12 | 704 | 0.4− | 0.3− | 2004 02 26 | 704 | 1.5− | 0.5+ | 2006 11 15 | 704 | 0.2+ | 0.1− |
| 2002 08 12 | 704 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.9− | 0.2+ | 2006 11 15 | 704 | 1.1− | 0.3+ |
| 2002 08 13 | 699 | 1.2+ | 0.5+ | 2004 02 26 | 704 | 0.8− | 0.2− | 2006 11 15 | 704 | 0.5+ | 0.6− |
| 2002 08 13 | 699 | 0.1− | 0.8+ | 2004 02 26 | 704 | 0.3− | 0.9− | 2006 11 15 | 704 | 0.3+ | 0.7− |
| 2002 08 13 | 699 | 0.4− | 0.4+ | 2004 03 13 | 644 | 0.5+ | 0.4+ | 2006 11 15 | 704 | 0.8− | 0.5− |
| 2002 08 13 | 699 | 0.6+ | 0.9+ | 2004 03 13 | 644 | 0.3+ | 0.4+ | 2006 11 16 | 704 | (2.4− | 1.6+) |
| 2002 08 16 | 644 | 0.3− | 0.3+ | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 704 | (3.5− | 2.1+) |
| 2002 08 16 | 644 | 0.3− | 0.4+ | 2004 03 15 | 703 | 0.4+ | 0.9+ | 2006 11 16 | 704 | (4.9− | 3.0+) |
| 2002 08 16 | 644 | 0.1− | 0.4+ | 2004 03 15 | 703 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.2+ | 1.0+ |
| 2002 08 26 | 644 | 0.5− | 0.6+ | 2004 03 15 | 703 | 0.1− | 1.0+ | 2006 11 19 | 704 | 0.3− | 1.2+ |
| 2002 08 26 | 644 | 0.6− | 0.4+ | 2004 03 15 | 703 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2002 08 26 | 644 | 0.4− | 0.4+ | 2004 03 16 | 683 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 1.0+ |
| 2002 08 27 | 644 | 0.2− | 0.4+ | 2004 03 16 | 683 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.0 | 1.1+ |
| 2002 08 27 | 644 | 0.1− | 0.5+ | 2004 03 16 | 683 | 0.9− | 0.4− | 2006 11 22 | 704 | (2.5+ | 1.1−) |
| 2002 08 27 | 644 | 0.6− | 0.7+ | 2004 03 18 | 683 | 1.2+ | 0.3− | 2006 11 22 | 704 | 0.4− | 1.2− |
| 2002 08 31 | 644 | 0.6− | 1.2+ | 2004 03 18 | 683 | (0.0 | 1.7−) | 2006 11 22 | 704 | 0.3− | 0.2− |
| 2002 08 31 | 644 | 0.3− | 1.2+ | 2004 03 18 | 683 | (2.5+ | 2.0−) | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2002 08 31 | 644 | 0.6− | 1.2+ | 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.6+ |
| 2002 09 06 | 704 | 0.3+ | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.5+ | 0.4+ | 2004 03 19 | 704 | 0.6+ | 1.0+ | 2006 11 29 | 704 | 0.2− | 0.5+ | | |
| 2002 09 06 | 704 | 1.3− | 1.2+ | 2004 03 19 | 704 | 0.8+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.3− | | |
| 2002 09 06 | 704 | 0.9+ | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.6+ | 2006 11 29 | 704 | 0.4− | 0.4+ | | |
| 2002 09 06 | 704 | 0.5+ | 0.4+ | 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 11 29 | 704 | 0.2− | 0.3+ | | |
| 2004 01 29 | 699 | 0.4− | 1.3+ | 2004 03 19 | 704 | 0.6+ | 0.0 | | | | | | |
| 2004 01 29 | 699 | 0.4+ | 0.4− | 2004 03 19 | 704 | (1.0+ | 1.9+) | | | | | | |

**(137790)∗ 1999 XJ$_{239}$**

Discovered 1999 Dec. 7 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.70501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27403599 | $\omega$ | 3.25481 | | +0.88372268 | −0.46401833 | |
| $a$ | 2.3474570 | $\Omega$ | 24.68157 | | +0.42602493 | +0.74362130 | |
| $e$ | 0.2529031 | $i$ | 8.40016 | | +0.19374465 | +0.48136717 | |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 07 | 691 | 0.1− | 0.0 | 2006 09 16 | 704 | 0.7− | 0.7+ | 2006 10 03 | G96 | 0.0 | 0.3− | | |
| 1997 03 07 | 691 | 0.1+ | 0.2− | 2006 09 17 | 699 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.3− | | |
| 1997 03 07 | 691 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.3− | | |
| 1997 03 12 | 691 | 0.5+ | 0.4− | 2006 09 17 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.1+ | | |
| 1997 03 12 | 691 | 1.0+ | 0.6+ | 2006 09 17 | 699 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.0 | | |
| 1997 03 12 | 691 | 0.4+ | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.2+ | | |
| 1999 11 03 | 704 | 0.6+ | 0.9− | 2006 09 19 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.2− | | |
| 1999 11 03 | 704 | 0.9+ | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 1999 11 03 | 704 | 0.2+ | 0.1− | 2006 09 19 | 704 | 0.3− | 0.7+ | 2006 10 19 | 644 | 0.3+ | 0.3− | | |
| 1999 11 03 | 704 | 0.1+ | 0.4− | 2006 09 19 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 1999 12 07 | 703 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 1999 12 07 | 703 | 0.5+ | 0.3+ | 2006 09 19 | 704 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2− | | |
| 1999 12 07 | 703 | 0.9− | 0.8− | 2006 09 19 | 704 | (2.0− | 0.6+) | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 1999 12 07 | 703 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 1999 12 12 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 1999 12 12 | 704 | 0.4− | 0.6− | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.3− | | |
| 1999 12 12 | 704 | 0.5− | 0.9− | 2006 09 20 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 1999 12 12 | 704 | 0.2− | 1.5− | 2006 09 20 | 704 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.1− | | |
| 1999 12 12 | 704 | 0.0 | 1.3− | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2001 03 24 | 691 | 0.0 | 0.9+ | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.0 | | |
| 2001 03 24 | 691 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.4− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 2001 03 24 | 691 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.4− | 0.4+ | 2006 11 10 | 704 | 0.3+ | 0.5+ | | |
| 2004 01 31 | 704 | 0.0 | 1.2+ | 2006 09 20 | 704 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.4+ | 0.7+ | | |
| 2004 01 31 | 704 | 0.0 | 1.3+ | 2006 09 22 | 704 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.6− | 0.8+ | | |
| 2004 01 31 | 704 | 1.2+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 2004 02 16 | 691 | 0.1+ | 0.4− | 2006 09 22 | 704 | 0.2− | 0.1+ | 2006 11 10 | 704 | 0.5− | 0.7+ | | |
| 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.4+ | 0.6+ | 2006 11 10 | 704 | 0.4+ | 0.0 | | |
| 2004 02 16 | 691 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 703 | 0.6− | 0.4− | | |
| 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 11 18 | 703 | 0.2+ | 0.3− | | |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.0 | 0.3− | 2006 11 18 | 703 | 0.2− | 0.1− | | |
| 2004 04 15 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.2+ | 2006 11 18 | 703 | 0.5− | 0.2+ | | |
| 2004 04 15 | 645 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.1− | | |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.7− | 1.4+ | | |
| 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.7+ | 2006 11 21 | 704 | 1.7− | 0.4+ | | |
| 2006 09 14 | 703 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.2+ | | |
| 2006 09 14 | 703 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.3+ | | |
| 2006 09 14 | 703 | 0.4+ | 0.5− | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.8+ | | |
| 2006 09 14 | 703 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 2006 09 16 | 704 | 1.1− | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.7− | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2006 09 16 | 704 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.4− | 2006 11 21 | 704 | 1.0+ | 1.5+ | | |
| 2006 09 16 | 704 | (0.2+ | 2.2+) | 2006 09 30 | 703 | 0.3− | 0.1+ | | | | | | |
| 2006 09 16 | 704 | 0.3− | 0.5− | 2006 10 03 | G96 | 0.0 | 0.3− | | | | | | |

**(137791)∗ 1999 XR$_{242}$**

Discovered 1999 Dec. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.50134 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23920804 | $\omega$ | 125.34707 | | −0.18125835 | −0.97813982 | |
| $a$ | 2.5701129 | $\Omega$ | 334.51462 | | +0.80784710 | −0.08899163 | |
| $e$ | 0.1280355 | $i$ | 13.70194 | | +0.56082838 | −0.18794409 | |
| $P$ | 4.12 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.2+ | 0.0 | 2003 12 30 | 704 | 0.7+ | 0.0 | | |
| 1999 12 13 | 704 | 0.6+ | 1.7− | 2002 09 06 | 704 | 0.7− | 0.0 | 2004 01 02 | 704 | 0.6− | 0.9− | | |
| 1999 12 13 | 704 | 0.2+ | 1.3− | 2002 09 06 | 704 | 0.2+ | 0.2− | 2004 01 02 | 704 | 0.0 | 0.2− | | |
| 1999 12 13 | 704 | 0.7− | 1.7− | 2002 09 06 | 704 | 0.8+ | 0.2− | 2004 01 02 | 704 | 0.1− | 0.2+ | | |
| 1999 12 13 | 704 | 0.4− | 1.8− | 2002 10 03 | 704 | 0.2− | 0.4+ | 2004 02 11 | 704 | 0.7+ | 0.2+ | | |
| 1999 12 16 | 699 | 0.1− | 0.2+ | 2002 10 03 | 704 | 0.2+ | 0.5+ | 2004 02 11 | 704 | 1.1− | 0.7+ | | |
| 1999 12 16 | 699 | 0.1− | 1.4− | 2002 10 03 | 704 | 0.1− | 1.1− | 2004 02 11 | 704 | 1.0+ | 0.3+ | | |
| 1999 12 16 | 699 | 0.0 | 0.7+ | 2002 10 03 | 704 | 0.9− | 1.3− | 2004 03 20 | 704 | 0.1+ | 0.2+ | | |
| 1999 12 30 | 704 | 0.2− | 0.3+ | 2003 11 21 | 704 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.1+ | | |
| 1999 12 30 | 704 | 0.0 | 1.7+ | 2003 11 21 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.4+ | 0.2− | | |
| 1999 12 30 | 704 | 0.3+ | 0.8+ | 2003 11 21 | 704 | 0.2− | 0.6− | 2004 03 20 | 704 | 0.1− | 0.5+ | | |
| 1999 12 30 | 704 | 0.0 | 0.5+ | 2003 11 21 | 704 | 0.2+ | 0.8+ | 2006 07 21 | 644 | 0.0 | 0.1− | | |
| 1999 12 30 | 704 | 0.6− | 1.0+ | 2003 12 04 | 704 | 0.2− | 0.0 | 2006 07 21 | 644 | 0.0 | 0.6+ | | |
| 2000 01 29 | 704 | 0.2− | 0.2+ | 2003 12 04 | 704 | 0.3− | 0.3+ | 2006 07 21 | 644 | 0.4− | 0.2+ | | |
| 2000 01 29 | 704 | 0.2− | 0.2+ | 2003 12 04 | 704 | 1.3− | 0.3+ | 2006 08 14 | 644 | 0.1+ | 0.2+ | | |
| 2000 01 29 | 704 | 0.3+ | 0.7+ | 2003 12 04 | 704 | (1.8− | 0.0 ) | 2006 08 14 | 644 | 0.0 | 0.1+ | | |
| 2002 08 12 | 699 | 0.2+ | 1.1+ | 2003 12 04 | 704 | 0.1+ | 0.3− | 2006 08 14 | 644 | 0.1− | 0.0 | | |
| 2002 08 12 | 699 | 1.1− | 0.2− | 2003 12 05 | 704 | 0.3+ | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.6− | | |
| 2002 08 12 | 699 | 0.1− | 0.4+ | 2003 12 05 | 704 | 0.6− | 1.2+ | 2006 08 23 | 644 | 0.1+ | 0.1− | | |
| 2002 08 12 | 699 | 0.5+ | 0.0 | 2003 12 05 | 704 | 0.0 | 0.4+ | 2006 08 23 | 644 | 0.2+ | 0.4+ | | |
| 2002 08 17 | 644 | 0.1+ | 0.4+ | 2003 12 05 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.2− | | |
| 2002 08 17 | 644 | 0.1+ | 0.5+ | 2003 12 05 | 704 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.4− | | |
| 2002 08 17 | 644 | 0.0 | 0.2+ | 2003 12 30 | 704 | 0.7+ | 0.5− | 2006 10 23 | G96 | 0.3− | 0.1− | | |
| 2002 08 29 | 644 | 0.4+ | 0.1+ | 2003 12 30 | 704 | 0.8+ | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.5− | | |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2003 12 30 | 704 | 0.6+ | 0.3− | | | | | | |

**(137792)∗ 1999 XP$_{245}$ = 1999 VT$_{225}$**

Discovered 1999 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 8595)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.44646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28219288 | $\omega$ | 241.94033 | | +0.82477836 | −0.56437425 | |
| $a$ | 2.3020002 | $\Omega$ | 152.37544 | | +0.54165936 | +0.77080815 | |
| $e$ | 0.2303193 | $i$ | 4.32435 | | +0.16231390 | +0.29552750 | |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 691 | 0.1− | 0.6− | 2004 02 22 | 691 | 0.2+ | 0.0 | 2006 10 30 | 703 | 0.1+ | 0.3− | | |
| 1997 02 10 | 691 | 0.4− | 0.1− | 2004 02 22 | 691 | 0.1+ | 0.0 | 2006 11 05 | 644 | 0.1+ | 0.2+ | | |
| 1997 02 10 | 691 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2006 11 05 | 644 | 0.2− | 0.1+ | | |
| 1999 10 20 | 704 | 0.7+ | 1.5+ | 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 11 05 | 644 | 0.2− | 0.1+ | | |
| 1999 10 20 | 704 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.9+ | 0.2+ | 2006 11 11 | 683 | 0.6− | 0.0 | | |
| 1999 10 20 | 704 | 1.1+ | 0.6+ | 2004 02 26 | 704 | 0.8+ | 0.9+ | 2006 11 11 | 683 | (2.1− | 1.6+) | | |
| 1999 10 20 | 704 | 0.4+ | 0.4+ | 2004 03 19 | 644 | 0.6+ | 0.1− | 2006 11 11 | 683 | 0.4− | 1.5+ | | |
| 1999 10 20 | 704 | 0.2+ | 0.1+ | 2004 03 19 | 644 | 0.1+ | 0.4+ | 2006 11 13 | 683 | 1.0+ | 0.8+ | | |
| 1999 11 05 | 704 | 0.0 | 0.0 | 2004 03 19 | 644 | 0.2+ | 0.1− | 2006 11 13 | 683 | (0.6+ | 2.2+) | | |
| 1999 11 05 | 704 | 0.2− | 0.3− | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 683 | 0.6+ | 1.0+ | | |
| 1999 11 05 | 704 | 0.8− | 0.6+ | 2005 06 14 | 691 | 0.3+ | 0.1− | 2006 11 14 | 683 | (2.3+ | 0.3−) | | |
| 1999 11 05 | 704 | 0.4− | 0.4− | 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 11 14 | 683 | 0.0 | 0.4+ | | |
| 1999 11 12 | 699 | 0.7− | 0.2− | 2006 08 29 | 703 | 0.8− | 0.2− | 2006 11 14 | 683 | 0.2− | 0.0 | | |
| 1999 11 12 | 699 | 0.3− | 0.4− | 2006 08 29 | 703 | 1.0+ | 0.5+ | 2006 11 15 | 703 | 0.1+ | 0.3− | | |
| 1999 11 12 | 699 | 0.7− | 0.5+ | 2006 08 29 | 703 | (2.9+ | 2.2−) | 2006 11 15 | 703 | 0.3+ | 0.3+ | | |
| 1999 12 04 | 699 | 0.9+ | 1.6− | 2006 08 29 | 703 | (1.1− | 2.9−) | 2006 11 15 | 703 | 0.0 | 0.4− | | |
| 1999 12 04 | 699 | 0.6+ | 1.4+ | 2006 09 16 | 703 | 1.0− | 0.8− | 2006 11 15 | 703 | 0.2+ | 0.1− | | |
| 1999 12 04 | 699 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.3− | | |
| 1999 12 05 | 704 | 0.1+ | 0.8− | 2006 09 16 | 703 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.8− | 0.4+ | 2006 11 19 | 704 | 0.8− | 0.4+ | | |
| 1999 12 05 | 704 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.1− | 2006 11 19 | 704 | 1.3− | 0.6+ | | |
| 1999 12 14 | 704 | 1.5− | 0.2− | 2006 09 19 | 699 | 1.2+ | 0.1+ | 2006 11 19 | 704 | (1.6− | 0.1+) | | |
| 1999 12 14 | 704 | 0.1+ | 0.7− | 2006 09 19 | 699 | 0.5− | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 1999 12 14 | 704 | 0.9+ | 0.3− | 2006 09 19 | 699 | (0.5− | 1.6+) | 2006 11 23 | G96 | 0.5+ | 0.3− | | |
| 1999 12 14 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2000 01 07 | 704 | 0.3− | 1.5− | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2000 01 07 | 704 | 0.2+ | 1.1− | 2006 09 30 | 703 | 0.0 | 0.8− | 2006 11 25 | 704 | 0.3− | 1.2+ | | |
| 2000 01 07 | 704 | 0.8+ | 0.7− | 2006 09 30 | 703 | (0.6+ | 3.3−) | 2006 11 25 | 704 | 0.1− | 0.6+ | | |
| 2002 07 20 | 644 | 0.3− | 0.6+ | 2006 10 03 | 704 | 0.8− | 0.8+ | 2006 11 25 | 704 | 0.4− | 0.5+ | | |
| 2002 07 20 | 644 | 0.4− | 0.5+ | 2006 10 03 | 704 | 1.0+ | 1.0− | 2006 11 25 | 704 | 0.1− | 0.4+ | | |
| 2002 07 20 | 644 | 0.5− | 0.4+ | 2006 10 03 | 704 | 0.8− | 0.5+ | 2006 11 28 | 704 | 0.0 | 0.3− | | |
| 2004 02 14 | 691 | 0.2− | 0.1+ | 2006 10 03 | 704 | 1.4+ | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.4− | | |
| 2004 02 14 | 691 | 0.2− | 0.1+ | 2006 10 30 | 703 | 0.2− | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.6− | | |
| 2004 02 14 | 691 | 0.2− | 0.5+ | 2006 10 30 | 703 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.1− | 0.2+ | | |
| 2004 02 22 | 691 | 0.2+ | 0.1+ | 2006 10 30 | 703 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.1+ | | |

**(137793)∗ 1999 XU$_{250}$ = 2001 HW$_{51}$**

Discovered 1999 Dec. 5 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 13083)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.22968 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27307107 | $\omega$ | 64.61931 | | −0.81022046 | −0.58328174 | |
| $a$ | 2.3529837 | $\Omega$ | 79.64783 | | +0.51449294 | −0.75488095 | |
| $e$ | 0.1045637 | $i$ | 3.36054 | | +0.28078431 | −0.29989526 | |
| $P$ | 3.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.3− | 0.2+ | 2003 12 27 | 691 | 0.4− | 0.1+ | 2004 01 24 | 704 | 0.1− | 0.1− | | |
| 1999 10 06 | 691 | 0.3− | 0.0 | 2003 12 27 | 704 | 0.3+ | 0.1− | 2004 01 24 | 704 | 0.5+ | 1.0+ | | |
| 1999 10 06 | 691 | 0.1− | 0.1− | 2003 12 27 | 691 | 0.1− | 0.3− | 2004 01 24 | 704 | 0.4+ | 0.3+ | | |
| 1999 12 05 | 691 | 0.3+ | 0.3− | 2003 12 27 | 704 | 0.1+ | 0.6− | 2004 01 24 | 704 | 0.8+ | 1.0+ | | |
| 1999 12 05 | 691 | 0.4+ | 0.6− | 2003 12 27 | 704 | 0.6− | 0.4− | 2004 01 24 | 704 | 0.5+ | 0.4+ | | |
| 1999 12 05 | 691 | 0.3+ | 0.1− | 2003 12 27 | 691 | 0.0 | 0.2− | 2004 02 15 | 704 | 0.7+ | 1.1+ | | |
| 1999 12 12 | 691 | 0.2+ | 0.6− | 2003 12 27 | 704 | 0.3+ | 0.4− | 2004 02 15 | 704 | 0.2− | 0.5+ | | |
| 1999 12 12 | 691 | 0.2+ | 0.3− | 2003 12 29 | 699 | 0.8+ | 0.8+ | 2004 02 15 | 704 | 0.2+ | 1.2+ | | |
| 1999 12 12 | 691 | 0.1+ | 0.3− | 2003 12 29 | 699 | 0.2− | 0.2+ | 2004 02 15 | 704 | 0.1+ | 0.2− | | |
| 2001 04 23 | 704 | 0.6+ | 0.3+ | 2003 12 29 | 699 | 0.3+ | 0.9+ | 2004 02 15 | 704 | 0.5+ | 0.8+ | | |
| 2001 04 23 | 704 | 0.2+ | 0.5+ | 2003 12 29 | 699 | 0.1− | 0.7− | 2006 09 17 | 691 | 0.2− | 0.8+ | | |
| 2001 04 23 | 704 | (1.7+ | 0.4+) | 2004 01 13 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.5+ | | |
| 2001 04 23 | 704 | (0.6− | 1.6+) | 2004 01 13 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1− | 0.9+ | | |
| 2001 04 24 | 608 | 0.0 | 0.1− | 2004 01 13 | 691 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.8− | | |
| 2001 04 24 | 608 | 0.0 | 0.2+ | 2004 01 20 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 1.2− | 1.2− | | |
| 2001 04 24 | 608 | 0.2+ | 0.1− | 2004 01 20 | 704 | 0.4− | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.1− | | |
| 2001 05 24 | 691 | 0.2+ | 0.4+ | 2004 01 20 | 704 | 0.7− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.5− | | |
| 2001 05 24 | 691 | 0.5− | 0.8− | 2004 01 21 | 704 | 0.3− | 0.7− | 2006 10 21 | 703 | 0.6+ | 0.6+ | | |
| 2001 05 24 | 691 | 0.0 | 0.4+ | 2004 01 21 | 704 | 0.2+ | 0.5− | 2006 10 21 | 703 | 0.8− | 0.5− | | |
| 2003 12 19 | 704 | 0.3− | 0.5− | 2004 01 21 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.6+ | | |
| 2003 12 19 | 704 | 0.6+ | 0.3+ | 2004 01 21 | 704 | 0.7− | 0.0 | 2006 10 21 | 703 | 0.8− | 0.0 | | |
| 2003 12 19 | 704 | 0.9− | 0.5− | 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.1+ | | |
| 2003 12 19 | 704 | (0.6− | 1.5+) | 2004 01 22 | 704 | (2.4+ | 0.2+) | 2006 10 22 | G96 | 0.6− | 0.0 | | |
| 2003 12 19 | 608 | 0.4− | 0.9+ | 2004 01 22 | 704 | (2.2+ | 0.3+) | 2006 10 22 | G96 | 0.6+ | 0.3+ | | |
| 2003 12 19 | 608 | 0.5− | 1.2+ | 2004 01 22 | 704 | (2.2+ | 0.9+) | 2006 10 22 | G96 | 0.3− | 0.4+ | | |
| 2003 12 19 | 608 | 0.2− | 1.2+ | 2004 01 22 | 704 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.1+ | | |
| 2003 12 22 | 704 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.7− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3+ | | |
| 2003 12 22 | 704 | 0.2− | 0.3− | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1+ | | |
| 2003 12 22 | 704 | 0.4− | 0.4− | 2004 01 22 | 704 | 0.6− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2+ | | |
| 2003 12 22 | 704 | 0.5+ | 0.1+ | 2004 01 22 | 704 | 0.4− | 0.2+ | | | | | | |
| 2003 12 22 | 704 | 0.6− | 1.1− | 2004 01 22 | 704 | (2.1− | 1.6−) | | | | | | |

**(137794)∗ 1999 XK$_{252}$**

Discovered 1999 Dec. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.95493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26797990 | $\omega$ | 273.54265 | | +0.94960393 | −0.30158215 | |
| $a$ | 2.3826919 | $\Omega$ | 104.02401 | | +0.31101236 | +0.87258537 | |
| $e$ | 0.2067493 | $i$ | 5.05250 | | +0.03903452 | +0.38424338 | |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.5+ | 0.3+ | 2002 08 30 | 644 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.0 | | |
| 1999 12 09 | 691 | 0.8− | 0.2− | 2002 08 30 | 644 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.1− | | |
| 1999 12 09 | 691 | 0.1+ | 0.6− | 2002 08 30 | 644 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 1999 12 12 | 691 | 0.3− | 0.6− | 2002 08 30 | 644 | 0.1+ | 0.5− | 2006 11 10 | 644 | 0.1+ | 0.0 | | |
| 1999 12 12 | 691 | 0.4− | 0.5− | 2002 09 09 | 608 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2+ | | |
| 1999 12 12 | 691 | 0.1− | 0.5− | 2002 09 09 | 608 | 0.2+ | 0.6− | 2006 11 10 | 644 | 0.0 | 0.2+ | | |
| 1999 12 27 | 691 | 0.2+ | 0.3+ | 2002 09 09 | 608 | 0.1− | 0.7− | 2006 11 11 | 703 | 0.3− | 0.1− | | |
| 1999 12 27 | 691 | 0.2+ | 0.4+ | 2002 09 15 | 644 | 0.4− | 0.6− | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 1999 12 27 | 691 | 0.3+ | 0.5+ | 2002 09 15 | 644 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.4− | 0.0 | | |
| 2000 01 29 | 691 | 0.4+ | 0.3− | 2002 09 15 | 644 | 0.5− | 0.6− | 2006 11 11 | 703 | 0.4− | 0.2− | | |
| 2000 01 29 | 691 | 0.3+ | 0.1+ | 2004 02 16 | 691 | 0.1− | 0.6+ | 2006 11 14 | 704 | (0.7+ | 2.2+) | | |
| 2000 01 29 | 691 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.3− | 1.1+ | | |
| 2001 05 24 | 645 | 0.1− | 0.1+ | 2004 02 16 | 691 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.9+ | 1.2+ | | |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2005 06 12 | 691 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.3+ | 0.7+ | | |
| 2002 07 23 | 644 | 0.2− | 0.4+ | 2005 06 12 | 691 | 0.5+ | 0.1+ | 2006 11 14 | 704 | 0.8− | 0.7+ | | |
| 2002 07 23 | 644 | 0.0 | 0.6+ | 2005 06 12 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 704 | (0.2+ | 2.9+) | | |
| 2002 07 23 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.4+ | 1.1+ | | |
| 2002 08 11 | 644 | 0.8+ | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | (0.1− | 2.4+) | | |
| 2002 08 11 | 644 | 0.5+ | 1.3+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 704 | (0.4− | 1.9+) | | |
| 2002 08 11 | 644 | 0.5+ | 0.9+ | 2006 10 16 | 703 | 0.6+ | 0.6− | 2006 11 20 | 704 | 0.7+ | 0.2+ | | |
| 2002 08 12 | 699 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.4− | 0.2− | | |
| 2002 08 12 | 699 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.7− | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.0 | | |
| 2002 08 12 | 699 | 0.1+ | 0.8− | 2006 10 16 | 703 | 0.4− | 0.9+ | 2006 11 20 | 704 | 0.6+ | 0.2+ | | |
| 2002 08 12 | 699 | 1.0− | 0.3− | 2006 10 22 | 703 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.4− | 0.0 | | |
| 2002 08 14 | 704 | (1.8+ | 1.3−) | 2006 10 22 | 703 | 0.3+ | 0.8+ | 2006 11 20 | 704 | 0.5+ | 0.6+ | | |
| 2002 08 14 | 704 | 0.3− | 0.7− | 2006 10 22 | 703 | 0.5+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.3+ | | |
| 2002 08 14 | 704 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.3− | 0.8+ | 2006 11 20 | 704 | 0.1+ | 0.0 | | |
| 2002 08 14 | 704 | 0.6+ | 0.9+ | 2006 11 01 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.4− | | |
| 2002 08 14 | 704 | 0.4+ | 0.4− | 2006 11 01 | 703 | 0.8− | 0.1+ | 2006 11 20 | 704 | 1.1− | 0.3− | | |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 0.7− | 0.9+ | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2002 08 19 | 644 | 0.0 | 0.5+ | 2006 11 01 | 703 | 0.2− | 0.4− | 2006 11 23 | G96 | 0.0 | 0.6− | | |
| 2002 08 19 | 644 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.5− | | |
| 2002 08 30 | 644 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.5− | | |
| 2002 08 30 | 644 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1+ | | | | | | |

**(137795)∗ 1999 XM$_{252}$ = 2002 NG$_{23}$**

Discovered 1999 Dec. 12 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 33174)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.99121 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26773113 | $\omega$ | 76.27109 | | +0.42461043 | +0.90433366 | |
| $a$ | 2.3841677 | $\Omega$ | 218.94732 | | −0.85508050 | +0.38479319 | |
| $e$ | 0.2130038 | $i$ | 3.96216 | | −0.29756231 | +0.18470198 | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 30 | 691 | 0.0 | 0.1− | 2002 07 29 | 644 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 1999 11 30 | 691 | 0.3− | 0.2− | 2002 08 05 | 644 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.3− | 0.3+ | | |
| 1999 11 30 | 691 | 0.1− | 0.1− | 2002 08 05 | 644 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 1999 12 12 | 691 | 1.0+ | 0.3− | 2002 08 05 | 644 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.6− | 1.0− | | |
| 1999 12 12 | 691 | 0.3− | 0.2− | 2002 08 14 | 704 | 1.0− | 1.1+ | 2006 09 29 | 704 | 0.5− | 0.1− | | |
| 1999 12 12 | 691 | 0.2− | 0.1− | 2002 08 14 | 704 | (1.2− | 1.7+) | 2006 09 29 | 704 | (2.0− | 1.6+) | | |
| 1999 12 16 | 691 | 0.0 | 0.1+ | 2002 08 14 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 691 | 0.1+ | 0.3+ | | |
| 1999 12 16 | 691 | 0.2+ | 0.0 | 2002 08 14 | 704 | 0.9− | 1.2+ | 2006 09 30 | 691 | 0.1+ | 0.3+ | | |
| 1999 12 16 | 691 | 0.1+ | 0.1− | 2002 08 16 | 644 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.5+ | | |
| 2002 06 13 | 704 | 0.8+ | 0.3+ | 2002 08 16 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.2− | | |
| 2002 06 13 | 704 | 0.3+ | 0.5+ | 2002 08 16 | 644 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.5+ | | |
| 2002 06 13 | 704 | 0.6+ | 0.7− | 2004 01 28 | 691 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.8− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 24 | 644 | 0.2+ | 0.0 | 2004 01 28 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.6+ |
| 2002 06 24 | 644 | 0.1− | 0.2+ | 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2002 06 24 | 644 | 0.1− | 0.2− | 2005 03 04 | 691 | 0.1+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2002 06 24 | 644 | 0.1+ | 0.0 | 2005 03 04 | 691 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 06 24 | 644 | 0.0 | 0.1− | 2005 03 04 | 691 | 0.5+ | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 06 24 | 644 | 0.2− | 0.3+ | 2005 03 09 | G92 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2002 07 03 | 644 | 0.5+ | 0.0 | 2005 03 09 | G92 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.6− | 0.2+ |
| 2002 07 03 | 644 | 0.4+ | 0.0 | 2005 03 09 | G92 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2002 07 03 | 644 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 07 09 | 704 | 1.1− | 0.2+ | 2006 09 14 | 703 | 0.8− | 1.0− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 07 09 | 704 | 0.6− | 0.1− | 2006 09 14 | 703 | (1.5− | 0.2−) | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 07 09 | 704 | 1.2− | 0.0 | 2006 09 14 | 703 | 0.8− | 0.3− | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2002 07 14 | 704 | 0.7+ | 1.1− | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 07 14 | 704 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.5− | 0.3− |
| 2002 07 14 | 704 | 0.9+ | 0.8− | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2002 07 14 | 704 | 0.2− | 0.2+ | 2006 09 18 | 699 | 1.0− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2002 07 14 | 704 | 0.1+ | 0.0 | 2006 09 21 | 224 | 1.0− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 07 21 | 644 | 0.4+ | 0.1− | 2006 09 21 | 224 | 0.3+ | 1.4+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 07 21 | 644 | 0.4− | 0.3− | 2006 09 21 | 224 | 0.8+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2002 07 21 | 644 | 0.1+ | 0.1− | 2006 09 21 | 224 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 07 29 | 644 | 0.2− | 0.1+ | 2006 09 21 | 224 | 0.3− | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2002 07 29 | 644 | 0.2− | 0.1+ | 2006 09 22 | 224 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.5+ | 0.3− |

**(137796)∗ 1999 XB$_{254}$**

Discovered 1999 Dec. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.79952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26873263 | $\omega$ | 294.07217 | | −0.99969853 | +0.02164853 | |
| $a$ | 2.3782405 | $\Omega$ | 247.17000 | | −0.01535043 | −0.91929418 | |
| $e$ | 0.1246992 | $i$ | 0.72013 | | −0.01916264 | −0.39297526 | |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.8− | 0.7− | 2004 03 01 | 683 | (2.3− | 0.2−) | 2004 04 01 | 291 | 0.4+ | 0.2− |
| 1998 09 14 | 691 | 0.9− | 1.3− | 2004 03 01 | 704 | 1.2+ | 0.7+ | 2005 07 04 | G96 | 0.4− | 0.4+ |
| 1998 09 14 | 691 | 1.2− | 0.7− | 2004 03 11 | 644 | 0.3− | 0.0 | 2005 07 04 | G96 | 0.2− | 0.1+ |
| 1998 09 19 | 645 | 0.1+ | 0.3+ | 2004 03 11 | 644 | 0.1− | 0.3+ | 2005 07 04 | G96 | 0.1− | 0.2+ |
| 1998 09 19 | 645 | 0.1+ | 0.3+ | 2004 03 11 | 644 | 0.0 | 0.3+ | 2005 07 04 | G96 | 0.6− | 0.3+ |
| 1998 09 25 | 645 | 0.1+ | 0.2+ | 2004 03 14 | 691 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.6− | 0.0 |
| 1998 09 25 | 645 | 0.0 | 0.3+ | 2004 03 14 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 1.2+ | 0.2− |
| 1999 12 03 | 691 | 0.5+ | 0.7− | 2004 03 14 | 691 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 1999 12 03 | 691 | 0.2+ | 0.3− | 2004 03 16 | 291 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.6+ | 0.2+ |
| 1999 12 03 | 691 | 0.6− | 0.4− | 2004 03 16 | 291 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 1999 12 12 | 691 | 0.3− | 0.1− | 2004 03 16 | 704 | 1.4+ | 0.8+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 1999 12 12 | 691 | 0.2+ | 0.4− | 2004 03 16 | 291 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.5+ | 0.1− |
| 1999 12 12 | 691 | 0.2+ | 0.5− | 2004 03 16 | 704 | 1.2+ | 1.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 1999 12 17 | 691 | 0.3− | 0.2− | 2004 03 16 | 704 | 0.7+ | 1.0+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 1999 12 17 | 691 | 0.5− | 0.3− | 2004 03 18 | 704 | 0.3− | 1.3+ | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 1999 12 17 | 691 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.5− | 1.0+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2004 02 19 | 704 | 0.1− | 0.5− | 2004 03 18 | 704 | 0.1− | 1.4+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2004 02 19 | 704 | 1.1+ | 1.2− | 2004 03 18 | 704 | 0.6− | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2004 02 19 | 704 | 0.1− | 0.9− | 2004 03 18 | 704 | 0.2− | 1.1+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2004 02 19 | 704 | 0.1+ | 0.8− | 2004 03 20 | 699 | 0.6− | 1.2− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2004 02 26 | 704 | 0.8+ | 0.6+ | 2004 03 20 | 699 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.4+ |
| 2004 02 26 | 704 | 0.3+ | 1.0+ | 2004 03 20 | 699 | 0.0 | 1.1+ | 2006 11 19 | 691 | 0.2+ | 0.4+ |
| 2004 02 26 | 704 | 0.4+ | 0.7+ | 2004 03 20 | 699 | 0.9+ | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2004 02 26 | 704 | 0.5+ | 0.6+ | 2004 03 27 | 704 | 0.7− | 0.5− | 2006 11 23 | 691 | 0.1− | 0.5+ |
| 2004 02 26 | 704 | 0.1− | 0.4+ | 2004 03 27 | 704 | (0.1+ | 2.4+) | 2006 11 23 | 691 | 0.0 | 0.5+ |
| 2004 03 01 | 704 | 0.3− | 0.4+ | 2004 03 27 | 704 | (0.1− | 3.6−) | 2006 11 23 | 691 | 0.4+ | 0.4− |
| 2004 03 01 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 704 | 0.5− | 1.4+ | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2004 03 01 | 683 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.5+ | 1.2+ | 2006 11 27 | 691 | 0.3− | 0.5+ |
| 2004 03 01 | 704 | 0.3+ | 0.6+ | 2004 04 01 | 291 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2004 03 01 | 683 | 0.6+ | 0.7− | 2004 04 01 | 291 | 0.3+ | 0.2− | | | | |

**(137797)∗ 1999 XS$_{255}$ = 2002 RF$_{228}$**

Discovered 1999 Dec. 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37233)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.37511 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26540701 | $\omega$ | 323.21738 | | +0.49369504 | −0.85851484 | |
| $a$ | 2.3980659 | $\Omega$ | 96.81450 | | +0.82743279 | +0.41467404 | |
| $e$ | 0.1292773 | $i$ | 8.02547 | | +0.26761948 | +0.30165825 | |
| $P$ | 3.71 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.2+ | 0.2+ | 2004 02 11 | 644 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1999 12 04 | 691 | 0.1+ | 0.1+ | 2004 02 11 | 644 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 1999 12 04 | 691 | 0.2+ | 0.2+ | 2004 02 16 | 704 | (0.2+ | 1.7+) | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 12 12 | 691 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.7+ | 1.4+ | 2006 10 16 | 703 | 0.7− | 0.5− |
| 1999 12 12 | 691 | 0.3− | 0.1− | 2004 02 16 | 704 | (0.3+ | 1.9+) | 2006 10 16 | 703 | 0.7− | 0.8− |
| 1999 12 12 | 691 | 0.2− | 0.2− | 2004 02 16 | 704 | (0.8+ | 1.8+) | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 1999 12 15 | 691 | 0.1+ | 0.4− | 2004 02 16 | 704 | (0.2+ | 1.9+) | 2006 10 16 | 703 | 1.2− | 0.6− |
| 1999 12 15 | 691 | 0.0 | 0.5− | 2004 02 17 | 691 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.8− |
| 1999 12 15 | 691 | 0.0 | 0.5− | 2004 02 17 | 691 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.0 | 1.4+ |
| 2002 08 20 | 644 | 0.1− | 1.2+ | 2004 02 17 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.0 |
| 2002 08 20 | 644 | 0.6− | 1.1+ | 2004 03 14 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.5− |
| 2002 08 20 | 644 | 0.2− | 0.4+ | 2004 03 14 | 704 | 0.8+ | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.2− |
| 2002 09 09 | 644 | 0.0 | 0.2− | 2004 03 14 | 704 | 0.7+ | 0.8+ | 2006 10 28 | 703 | 0.2− | 0.7+ |
| 2002 09 09 | 644 | 0.1+ | 0.1+ | 2004 03 14 | 704 | 1.1+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.4+ |
| 2002 09 09 | 644 | 0.1+ | 0.1− | 2004 03 23 | 704 | 0.7+ | 0.4− | 2006 10 28 | 703 | 0.0 | 0.1− |
| 2002 09 14 | 608 | 1.2− | 0.1− | 2004 03 23 | 704 | 0.8+ | 1.4+ | 2006 11 10 | 704 | 0.9− | 1.3+ |
| 2002 09 14 | 608 | 1.1− | 0.3− | 2004 03 23 | 704 | 0.6+ | 0.6+ | 2006 11 10 | 704 | 0.3+ | 0.1− |
| 2002 09 14 | 608 | 0.4− | 0.3− | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 11 10 | 704 | 0.3+ | 0.1− |
| 2002 09 17 | 644 | 0.6− | 0.1− | 2006 10 01 | 704 | (2.4+ | 0.6+) | 2006 11 10 | 704 | 0.3+ | 0.7+ |
| 2002 09 17 | 644 | 0.4− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.3− | 2006 11 16 | 703 | 0.9+ | 0.3+ |
| 2002 09 17 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 1.1+ | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.0 |
| 2002 12 08 | 291 | 0.2+ | 0.8+ | 2006 10 01 | 704 | 0.8− | 0.1+ | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2002 12 08 | 291 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.4+ | 1.1+ |
| 2002 12 08 | 291 | 0.8+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | | | | |
| 2004 02 11 | 644 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | | | |

**(137798)∗ 1999 XH$_{256}$ = 2003 YU$_{31}$**

Discovered 1999 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.25098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26203444 | $\omega$ | 209.06266 | | −0.62447980 | −0.77931658 | |
| $a$ | 2.4185986 | $\Omega$ | 279.63003 | | +0.72637352 | −0.55507869 | |
| $e$ | 0.1542991 | $i$ | 3.01589 | | +0.28706531 | −0.29078053 | |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 1.1+ | 0.4− | 2003 12 18 | 291 | 0.2− | 0.1+ | 2004 01 24 | 704 | (1.3+ | 1.8+) |
| 1999 12 07 | 704 | 0.5+ | 1.2− | 2003 12 18 | 291 | 0.2+ | 0.1+ | 2004 01 24 | 704 | 0.4− | 0.3− |
| 1999 12 07 | 704 | 0.6+ | 1.2− | 2003 12 19 | 704 | 0.4+ | 0.1− | 2004 01 24 | 704 | 0.1− | 0.4+ |
| 1999 12 13 | 703 | (0.1− | 2.7−) | 2003 12 19 | 704 | 0.1+ | 0.0 | 2004 01 24 | 704 | 1.2− | 0.1+ |
| 1999 12 13 | 703 | 0.3− | 1.4− | 2003 12 19 | 704 | 0.6+ | 0.1+ | 2004 01 30 | 704 | 0.6+ | 0.4+ |
| 1999 12 13 | 703 | 0.3− | 1.2− | 2003 12 19 | 704 | 0.3+ | 0.2− | 2004 01 30 | 704 | 0.3+ | 0.3+ |
| 1999 12 13 | 703 | 0.1+ | 1.0+ | 2003 12 19 | 704 | 0.2+ | 0.6+ | 2004 01 30 | 704 | 0.9+ | 0.1+ |
| 1999 12 15 | 691 | 0.1− | 0.4− | 2003 12 21 | 704 | 0.5− | 0.6+ | 2006 09 20 | 691 | 0.4+ | 0.6+ |
| 1999 12 15 | 691 | 0.1+ | 0.4− | 2003 12 21 | 704 | 0.5+ | 0.5− | 2006 09 20 | 691 | 0.2− | 0.2+ |
| 1999 12 15 | 691 | 0.2− | 0.3− | 2003 12 21 | 704 | (0.4+ | 1.6+) | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 1999 12 28 | 695 | 0.0 | 0.3− | 2003 12 21 | 704 | 0.1− | 1.2+ | 2006 10 17 | 691 | 0.2+ | 0.4− |
| 1999 12 28 | 695 | 0.1+ | 0.2− | 2003 12 30 | 704 | 0.7+ | 0.8+ | 2006 10 17 | 691 | 0.3− | 0.2+ |
| 1999 12 28 | 695 | 0.3+ | 0.0 | 2003 12 30 | 704 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 1999 12 28 | 695 | 0.1+ | 0.1− | 2003 12 30 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.3− | 0.4− | 2003 12 30 | 704 | 1.2+ | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.1− | 0.2− | 2003 12 30 | 704 | 0.5− | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2002 08 17 | 644 | 0.3+ | 0.6+ | 2004 01 21 | 704 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2002 08 28 | 644 | 0.1− | 0.7+ | 2004 01 21 | 704 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.4− | 0.9+ | 2004 01 21 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2004 01 21 | 704 | 0.2− | 0.3+ | | | | |
| 2003 12 18 | 291 | 0.3− | 0.2+ | 2004 01 21 | 704 | 0.1+ | 0.4+ | | | | |

**(137799)∗ 1999 YB**

Discovered 1999 Dec. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.77061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.64901532 | $\omega$ | 192.66926 | | −0.72350441 | +0.68761981 | |
| $a$ | 1.3211925 | $\Omega$ | 31.05200 | | −0.62259261 | −0.61180207 | |
| $e$ | 0.0750358 | $i$ | 6.79107 | | −0.29819425 | −0.39099517 | |
| $P$ | 1.52 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 20 | 260 | (0.2− | 2.4+) | 2000 02 12 | 711 | 0.9+ | 0.5+ | 2005 11 09 | 461 | 0.1− | 0.1− |
| 1991 03 20 | 260 | 0.2+ | 0.6+ | 2002 11 23 | 113 | 0.3− | 0.1+ | 2005 11 22 | 084 | 0.3+ | 0.6+ |
| 1999 12 13 | 704 | 0.5− | 0.2− | 2002 11 23 | 113 | 0.2+ | 0.8+ | 2005 11 25 | 151 | 0.9− | 0.2+ |
| 1999 12 13 | 704 | 0.3− | 0.5− | 2002 11 23 | 113 | 0.8+ | 0.6+ | 2005 11 25 | 151 | 0.7− | 0.1+ |
| 1999 12 13 | 704 | 0.5− | 0.5− | 2002 11 23 | 113 | 0.9+ | 0.2+ | 2005 11 25 | 151 | 0.8− | 0.0 |
| 1999 12 13 | 704 | 0.3− | 0.7− | 2002 12 01 | 113 | 0.4− | 0.3− | 2005 11 25 | 151 | 0.3+ | 0.5− |
| 1999 12 13 | 704 | 0.4− | 0.9− | 2002 12 01 | 113 | 0.0 | 0.2− | 2005 11 25 | 151 | 0.1− | 0.3− |
| 1999 12 16 | 699 | 0.3+ | 0.3− | 2002 12 01 | 113 | 0.2− | 0.1− | 2005 11 25 | 151 | 1.0− | 0.2+ |
| 1999 12 16 | 699 | 0.2− | 0.2+ | 2002 12 01 | 113 | 0.1− | 0.2− | 2005 11 25 | A62 | 0.4+ | 0.4− |
| 1999 12 16 | 699 | 0.8− | 0.0 | 2002 12 01 | 113 | 0.3− | 0.1− | 2005 11 25 | A62 | 0.4+ | 0.0 |
| 1999 12 17 | 046 | 0.1− | 0.9− | 2002 12 04 | 170 | 1.0− | 1.4− | 2005 11 25 | A62 | 0.3+ | 0.1− |
| 1999 12 17 | 046 | 1.0+ | 0.8− | 2002 12 04 | 170 | (1.9+ | 1.9−) | 2005 11 25 | A62 | 0.4+ | 0.0 |
| 1999 12 17 | 046 | 0.2+ | 0.1− | 2002 12 06 | 704 | 0.3+ | 0.6+ | 2005 11 25 | A62 | 0.3+ | 0.2+ |
| 1999 12 17 | 046 | 0.2+ | 0.1− | 2002 12 06 | 704 | 0.2− | 0.4+ | 2005 11 25 | A62 | 0.4+ | 0.0 |
| 1999 12 17 | 118 | 0.5+ | 0.2− | 2002 12 06 | 704 | 0.2− | 0.7+ | 2005 11 25 | A62 | 0.2+ | 0.1+ |
| 1999 12 17 | 118 | 0.1+ | 0.1− | 2002 12 06 | 704 | (1.6− | 0.3−) | 2005 11 25 | A62 | 0.5+ | 0.1+ |
| 1999 12 17 | 118 | 0.0 | 0.1− | 2002 12 06 | 704 | 0.0 | 0.3+ | 2005 11 25 | A62 | 0.3+ | 0.1− |
| 1999 12 17 | 670 | 0.6+ | 1.4+ | 2002 12 15 | 704 | 0.6− | 0.1+ | 2005 11 25 | A62 | 0.3+ | 0.2− |
| 1999 12 17 | 670 | 0.2− | 0.2− | 2002 12 15 | 704 | 1.4+ | 0.2− | 2005 11 25 | A62 | 0.2+ | 0.5− |
| 1999 12 20 | 557 | 0.2+ | 0.4− | 2002 12 15 | 704 | 0.2+ | 0.1− | 2005 11 25 | A62 | 0.2+ | 0.0 |
| 1999 12 20 | 557 | 0.1+ | 0.7− | 2002 12 15 | 704 | 0.7+ | 0.1− | 2005 11 25 | A62 | 0.1+ | 0.0 |
| 1999 12 20 | 557 | 0.1− | 0.1− | 2002 12 26 | H86 | 0.5− | 0.2+ | 2005 11 25 | A62 | 0.1+ | 0.2− |
| 1999 12 20 | 670 | 0.5− | 0.3− | 2005 09 30 | G96 | 0.1− | 0.1+ | 2005 11 25 | A62 | 0.6+ | 0.3− |
| 1999 12 20 | 670 | 0.1− | 0.4+ | 2005 09 30 | G96 | 0.4+ | 0.0 | 2005 11 26 | 240 | 0.2+ | 0.1− |
| 1999 12 22 | 118 | 0.2+ | 0.3+ | 2005 09 30 | G96 | 0.4+ | 1.0+ | 2005 11 26 | 240 | 0.2+ | 0.1− |
| 1999 12 23 | 118 | 0.3− | 0.8+ | 2005 09 30 | G96 | 0.5− | 0.1+ | 2005 11 26 | 240 | 0.1+ | 0.1− |
| 1999 12 29 | 402 | 0.2− | 0.1+ | 2005 10 05 | 703 | 0.0 | 0.8+ | 2005 11 26 | 240 | 0.0 | 0.1+ |
| 1999 12 29 | 402 | 0.3+ | 0.1− | 2005 10 05 | 703 | 0.4+ | 0.5− | 2005 11 26 | 240 | 0.0 | 0.0 |
| 1999 12 29 | 402 | 0.5− | 0.2− | 2005 10 05 | 703 | 0.3− | 0.0 | 2005 11 26 | 240 | 0.2− | 0.2− |
| 1999 12 30 | 704 | 0.3− | 0.9+ | 2005 10 05 | 703 | 0.5− | 0.1+ | 2005 11 26 | 240 | 0.0 | 0.1− |
| 1999 12 30 | 704 | 0.1− | 0.3+ | 2005 10 23 | 703 | 0.4− | 0.4+ | 2005 11 26 | 240 | 0.2+ | 0.0 |
| 1999 12 30 | 704 | 0.4+ | 1.2+ | 2005 10 23 | 703 | 0.9+ | 0.1− | 2005 11 28 | 703 | 0.8− | 0.4− |
| 1999 12 30 | 704 | 0.7+ | 1.0+ | 2005 10 23 | 703 | (1.6+ | 0.1+) | 2005 11 28 | 703 | 0.1− | 0.1− |
| 1999 12 31 | 704 | 0.4− | 0.2− | 2005 10 23 | 703 | 0.1− | 0.8− | 2005 11 28 | 703 | 0.1− | 0.0 |
| 1999 12 31 | 704 | 0.6− | 0.2+ | 2005 10 29 | 704 | 0.4+ | 0.4+ | 2005 12 01 | 644 | 0.0 | 0.1+ |
| 1999 12 31 | 704 | 0.8+ | 0.1− | 2005 10 29 | 704 | 0.2+ | 0.3+ | 2005 12 01 | 644 | 0.0 | 0.1+ |
| 1999 12 31 | 704 | 0.5− | 0.7+ | 2005 10 29 | 704 | 0.4− | 0.4− | 2005 12 01 | 644 | 0.1− | 0.2+ |
| 1999 12 31 | 704 | 0.5− | 0.7+ | 2005 10 29 | 691 | 0.0 | 0.2− | 2005 12 03 | 703 | 0.1− | 0.1− |
| 2000 01 03 | 360 | 0.1− | 0.0 | 2005 10 29 | 691 | (0.7+ | 1.6−) | 2005 12 03 | 703 | 0.2− | 0.3− |
| 2000 01 03 | 360 | 0.1− | 0.1+ | 2005 10 29 | 691 | 0.3− | 0.0 | 2005 12 03 | 703 | 1.2+ | 1.4+ |
| 2000 01 03 | 360 | 0.1+ | 0.1+ | 2005 10 29 | 703 | 0.4− | 0.7+ | 2005 12 03 | 703 | 0.7+ | 0.0 |
| 2000 01 04 | 402 | 0.3+ | 0.0 | 2005 10 29 | 703 | 0.3− | 0.3+ | 2005 12 04 | 071 | 0.2− | 0.3− |
| 2000 01 04 | 402 | 0.1+ | 0.2− | 2005 10 29 | 703 | (1.3+ | 1.6+) | 2005 12 04 | 071 | 0.6− | 0.1− |
| 2000 01 04 | 402 | 0.3+ | 0.4− | 2005 10 29 | 703 | 0.4+ | 0.7− | 2005 12 04 | 071 | 1.0− | 0.1− |
| 2000 01 05 | 587 | 0.0 | 0.4− | 2005 11 02 | 084 | 0.7− | 0.4+ | 2005 12 09 | 703 | 0.8− | 0.4− |
| 2000 01 05 | 118 | 0.0 | 0.4− | 2005 11 02 | 704 | 0.9+ | 0.0 | 2005 12 09 | 703 | 0.3+ | 0.1− |
| 2000 01 05 | 587 | 0.1− | 0.0 | 2005 11 02 | 704 | 0.0 | 0.2+ | 2005 12 09 | 703 | 0.5+ | 0.1− |
| 2000 01 05 | 118 | 0.3− | 0.1+ | 2005 11 02 | 704 | 0.3+ | 0.1+ | 2005 12 09 | 703 | 0.9− | 1.1− |
| 2000 01 05 | 118 | 0.3− | 0.1− | 2005 11 02 | 704 | 0.1+ | 1.2+ | 2005 12 22 | 644 | 0.1− | 0.2− |
| 2000 01 25 | 595 | 0.0 | 1.1− | 2005 11 03 | 071 | 0.5+ | 0.7+ | 2005 12 22 | 644 | 0.1− | 0.1− |
| 2000 01 25 | 595 | 1.0− | 0.6− | 2005 11 03 | 071 | (1.9− | 1.0+) | 2005 12 22 | 644 | 0.0 | 0.0 |
| 2000 01 25 | 595 | 0.2+ | 0.6+ | 2005 11 03 | 071 | (1.9− | 1.2+) | 2005 12 24 | 704 | 0.5− | 0.6+ |
| 2000 01 26 | 402 | 0.1− | 0.5− | 2005 11 06 | 691 | 0.0 | 0.0 | 2005 12 24 | 704 | 0.3− | 0.2+ |
| 2000 01 26 | 402 | 1.2+ | 0.9− | 2005 11 06 | 691 | 0.0 | 0.1− | 2005 12 24 | 704 | 0.6+ | 0.8+ |
| 2000 01 26 | 402 | 0.0 | 0.7− | 2005 11 06 | 691 | 0.1− | 0.0 | 2005 12 24 | 704 | 0.4− | 0.4+ |
| 2000 02 02 | 360 | 0.0 | 0.3+ | 2005 11 09 | 461 | 0.0 | 0.1− | 2005 12 24 | 704 | 0.4+ | 0.5+ |
| 2000 02 02 | 360 | 0.5+ | 0.3+ | 2005 11 09 | 461 | 0.0 | 0.0 | 2006 02 03 | 711 | 0.1+ | 0.1− |
| 2000 02 02 | 360 | 0.1+ | 0.3+ | 2005 11 09 | 461 | 0.0 | 0.0 | 2006 02 03 | 711 | 0.9− | 0.3− |
| 2000 02 12 | 711 | 0.8+ | 0.9+ | 2005 11 09 | 461 | 0.1− | 0.1− | | | | |

**(137800)∗ 1999 YE**

Discovered 1999 Dec. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.97270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28690212 | $\omega$ | 355.09681 | | +0.14577315 | −0.88715773 | |
| $a$ | 2.2767406 | $\Omega$ | 86.01978 | | +0.92195080 | −0.03870005 | |
| $e$ | 0.2204806 | $i$ | 26.03344 | | +0.35882714 | +0.45984070 | |
| $P$ | 3.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2− | 0.5+ | 2001 04 26 | 682 | 0.1− | 0.8+ | 2004 05 11 | 704 | 1.0+ | 0.1+ |
| 1999 10 06 | 704 | 0.3− | 1.0+ | 2001 05 23 | 704 | 0.6− | 0.5+ | 2004 05 11 | 704 | 1.4+ | 0.7+ |
| 1999 10 06 | 704 | 0.4− | 0.9+ | 2001 05 23 | 704 | 0.2+ | 0.2+ | 2004 05 11 | 704 | 0.3− | 0.5− |
| 1999 10 06 | 704 | 0.5− | 0.7+ | 2001 05 23 | 704 | 0.7− | 0.6− | 2004 05 20 | 703 | 0.3+ | 0.5+ |
| 1999 12 16 | 704 | (0.7− | 2.5+) | 2003 12 18 | 704 | 0.4+ | 0.1+ | 2004 05 20 | 703 | 0.3− | 0.2+ |
| 1999 12 16 | 704 | 0.9− | 0.9+ | 2003 12 18 | 704 | 0.5+ | 0.1+ | 2004 05 20 | 703 | (2.6+ | 1.4−) |
| 1999 12 16 | 704 | 0.8− | 1.0+ | 2003 12 18 | 704 | 1.2+ | 0.2− | 2004 05 20 | 703 | (2.4+ | 0.6+) |
| 1999 12 17 | 704 | (2.5− | 2.9+) | 2004 01 31 | 704 | 0.0 | 0.6+ | 2006 08 25 | E12 | 0.1+ | 0.4− |
| 1999 12 17 | 704 | 0.9− | 0.2− | 2004 01 31 | 704 | 0.6+ | 0.5+ | 2006 08 25 | E12 | 0.6− | 0.2− |
| 1999 12 17 | 704 | 1.1− | 0.3+ | 2004 01 31 | 704 | 0.2− | 1.1+ | 2006 08 25 | E12 | 0.2+ | 0.0 |
| 2000 01 08 | 704 | 0.4+ | 0.0 | 2004 02 02 | 704 | 0.7+ | 0.2+ | 2006 08 25 | E12 | 0.6− | 1.0+ |
| 2000 01 08 | 704 | 0.2+ | 0.1− | 2004 02 02 | 704 | 0.6+ | 0.5+ | 2006 10 30 | 703 | 0.2− | 0.1+ |
| 2000 01 08 | 704 | 0.5+ | 0.3− | 2004 02 02 | 704 | 0.7+ | 0.7+ | 2006 10 30 | 703 | 0.4− | 0.0 |
| 2000 01 08 | 704 | 0.3+ | 0.7− | 2004 02 02 | 704 | 1.0+ | 0.5+ | 2006 10 30 | 703 | 0.0 | 0.0 |
| 2000 01 08 | 704 | 0.4− | 1.4− | 2004 02 02 | 704 | 1.4+ | 0.1+ | 2006 10 30 | 703 | 0.3− | 0.3+ |
| 2000 01 10 | 704 | 0.3+ | 0.1+ | 2004 02 11 | 704 | 0.5+ | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.4+ |
| 2000 01 10 | 704 | 0.0 | 0.6+ | 2004 02 11 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.2+ |
| 2000 01 10 | 704 | 0.1− | 0.6+ | 2004 02 11 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 703 | (3.2− | 0.8−) |
| 2000 01 10 | 704 | 0.2+ | 0.0 | 2004 02 11 | 704 | 0.8+ | 0.0 | 2006 11 15 | 703 | 0.4− | 0.1− |
| 2000 01 11 | 704 | 1.4+ | 0.3− | 2004 02 11 | 704 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.6+ | 0.4− |
| 2000 01 11 | 699 | 0.0 | 0.7+ | 2004 02 17 | 645 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.7− |
| 2000 01 11 | 704 | 1.2+ | 0.0 | 2004 02 17 | 645 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.5− |
| 2000 01 11 | 699 | 0.8− | 0.0 | 2004 04 01 | 704 | 1.0+ | 0.8− | 2006 11 20 | 704 | 0.2+ | 0.7− |
| 2000 01 11 | 704 | 0.7− | 0.3− | 2004 04 01 | 704 | 0.2+ | 1.4− | 2006 11 20 | 704 | 0.6+ | 0.8− |
| 2000 01 11 | 699 | 1.2+ | 1.4− | 2004 04 01 | 704 | 0.7+ | 0.5− | 2006 12 01 | 703 | 0.3− | 0.1− |
| 2000 01 11 | 704 | 0.6+ | 0.7− | 2004 04 01 | 704 | 1.1+ | 0.5− | 2006 12 01 | 703 | 0.2− | 0.2− |
| 2001 04 25 | 682 | 0.0 | 1.3− | 2004 04 14 | 185 | 0.9− | 0.8+ | 2006 12 01 | 703 | 0.2+ | 0.0 |
| 2001 04 25 | 682 | 0.0 | 0.6+ | 2004 04 14 | 185 | 1.0− | 1.2− | 2006 12 01 | 703 | 0.0 | 0.5+ |
| 2001 04 26 | 682 | (2.4− | 0.3+) | 2004 04 14 | 185 | 0.5− | 0.2− | | | | |

**(137801)∗ 1999 YR**

Discovered 1999 Dec. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.68614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28189489 | $\omega$ | 178.74951 | | +0.30946158 | −0.86916590 | |
| $a$ | 2.3036221 | $\Omega$ | 253.11692 | | +0.86890807 | +0.42325490 | |
| $e$ | 0.2455993 | $i$ | 23.77208 | | +0.38630597 | −0.25574582 | |
| $P$ | 3.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.3+ | 0.1− | 2002 10 10 | 704 | 0.1− | 1.0+ | 2006 09 24 | 691 | 0.2+ | 0.2+ |
| 1999 10 10 | 704 | 0.3− | 0.7− | 2002 10 10 | 704 | 0.2− | 0.8+ | 2006 09 24 | 691 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.3+ | 0.0 | 2002 10 10 | 704 | 0.5− | 0.8+ | 2006 09 27 | 704 | 0.8+ | 0.4− |
| 1999 10 10 | 704 | 0.2+ | 0.2− | 2002 11 03 | 704 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.0 | 0.9+ |
| 1999 10 10 | 704 | 0.6+ | 0.1+ | 2002 11 03 | 704 | 0.3+ | 0.5− | 2006 09 27 | 704 | 0.2+ | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 704 | 0.2+ | 0.0 | 2002 11 03 | 704 | 0.2+ | 0.8− | 2006 09 27 | 704 | (1.8+ | 0.4+) | | |
| 1999 12 16 | 704 | 0.2− | 0.1+ | 2002 11 11 | 704 | 0.3− | 0.3− | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 1999 12 16 | 704 | 0.2− | 0.3− | 2002 11 11 | 704 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.0 | | |
| 1999 12 16 | 704 | 0.0 | 0.0 | 2002 11 11 | 704 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.3+ | | |
| 1999 12 16 | 704 | 0.3+ | 0.4+ | 2002 11 11 | 704 | 1.2− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.2− | | |
| 1999 12 17 | 704 | 0.7− | 0.2+ | 2002 11 11 | 704 | 0.9− | 0.1− | 2006 10 27 | 704 | 0.1+ | 0.4− | | |
| 1999 12 17 | 704 | 0.3− | 0.4− | 2002 11 14 | 704 | 0.1− | 0.1+ | 2006 10 27 | 704 | 1.2− | 0.7− | | |
| 1999 12 17 | 704 | 0.0 | 0.3+ | 2002 11 14 | 704 | 0.7− | 0.2− | 2006 10 27 | 704 | 0.2− | 0.8− | | |
| 1999 12 17 | 704 | 0.1− | 0.2− | 2002 11 14 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 704 | 0.8+ | 1.0+ | | |
| 2000 01 10 | 704 | 0.4− | 0.8+ | 2002 11 14 | 704 | 0.3− | 0.1+ | 2006 10 31 | 703 | 0.6− | 0.3− | | |
| 2000 01 10 | 704 | 0.4+ | 0.7− | 2002 12 31 | 704 | 0.5− | 1.4+ | 2006 10 31 | 703 | 0.6− | 0.4− | | |
| 2000 01 10 | 704 | 0.2+ | 0.6− | 2002 12 31 | 704 | 0.2− | 0.6− | 2006 10 31 | 703 | 0.8− | 0.1+ | | |
| 2000 01 10 | 704 | 0.2+ | 0.3+ | 2002 12 31 | 704 | 0.0 | 1.0+ | 2006 10 31 | 703 | 0.2− | 0.1+ | | |
| 2000 01 10 | 704 | 0.1− | 0.4− | 2002 12 31 | 704 | 0.5+ | 0.1+ | 2006 11 05 | 644 | 0.0 | 0.1+ | | |
| 2000 04 07 | 704 | 0.1+ | 0.9+ | 2002 12 31 | 704 | 0.7+ | 1.1+ | 2006 11 05 | 644 | 0.1− | 0.0 | | |
| 2000 04 07 | 704 | 0.2− | 0.7+ | 2004 04 15 | E12 | 0.7+ | 1.4+ | 2006 11 05 | 644 | 0.1− | 0.0 | | |
| 2000 04 07 | 704 | 0.4− | 0.3+ | 2004 04 15 | E12 | 0.4+ | 1.1+ | 2006 11 16 | 703 | 0.1+ | 0.4− | | |
| 2002 08 28 | 704 | 1.2+ | 0.7− | 2004 04 15 | E12 | 0.4+ | 1.1+ | 2006 11 16 | 703 | 0.7− | 0.6+ | | |
| 2002 08 28 | 704 | 0.8− | 1.4+ | 2004 04 15 | E12 | 0.7+ | 1.4+ | 2006 11 16 | 703 | 0.2+ | 0.0 | | |
| 2002 08 28 | 704 | 0.5+ | 0.4− | 2006 08 30 | 704 | 1.4+ | 0.1− | 2006 11 16 | 703 | 0.5− | 0.4− | | |
| 2002 08 28 | 704 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.3− | 2006 11 21 | 704 | 1.2− | 0.7− | | |
| 2002 08 28 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.5− | 0.4+ | | |
| 2002 09 12 | 113 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.4+ | | |
| 2002 09 12 | 113 | 0.4− | 0.2− | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.0 | | |
| 2002 09 12 | 113 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.7+ | | |
| 2002 09 12 | 113 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.2+ | | | | | | |

**(137802)∗ 1999 YT**

Discovered 1999 Dec. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.56213 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.41629987 | $\omega$ | 272.60714 | | +0.74120124 | −0.48062508 | |
| $a$ | 1.7763636 | $\Omega$ | 116.51373 | | +0.59400455 | +0.79479103 | |
| $e$ | 0.3520982 | $i$ | 31.58193 | | −0.31269684 | +0.37054925 | |
| $P$ | 2.37 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1954 12 21 | 675 | 1.6− | 0.1+ | 2000 01 08 | 704 | 0.3+ | 0.5− | 2000 01 30 | 610 | 0.6− | 1.1− | | |
| 1954 12 21 | 675 | 0.6+ | 0.5+ | 2000 01 08 | 670 | 0.2+ | 0.5− | 2000 02 02 | 360 | 0.1− | 0.1+ | | |
| 1999 12 16 | 704 | 1.2− | 0.4− | 2000 01 08 | 670 | 0.2+ | 0.5− | 2000 02 02 | 360 | 0.1+ | 0.1+ | | |
| 1999 12 16 | 704 | 1.1− | 0.4− | 2000 01 08 | 422 | 0.2− | 0.2+ | 2000 02 02 | 360 | 0.1− | 0.4+ | | |
| 1999 12 16 | 704 | 1.3− | 0.3− | 2000 01 08 | 422 | 0.1+ | 0.1+ | 2000 02 10 | 118 | 0.0 | 0.0 | | |
| 1999 12 16 | 704 | 1.1− | 0.2− | 2000 01 08 | 422 | 0.0 | 0.1+ | 2000 02 10 | 118 | 0.1+ | 0.2+ | | |
| 1999 12 16 | 704 | 1.2− | 0.6− | 2000 01 08 | 402 | 0.4− | 0.1− | 2000 02 26 | 704 | 1.5− | 0.4+ | | |
| 1999 12 17 | 704 | 1.9− | 0.5− | 2000 01 08 | 402 | 0.4− | 0.4+ | 2000 02 26 | 704 | 0.8+ | 0.5+ | | |
| 1999 12 17 | 704 | 1.3− | 0.1+ | 2000 01 08 | 402 | 0.2− | 0.6+ | 2000 02 26 | 704 | 0.1− | 0.2− | | |
| 1999 12 17 | 704 | 1.4− | 0.3− | 2000 01 08 | 402 | 0.4− | 0.1+ | 2000 02 26 | 704 | 0.2− | 0.4+ | | |
| 1999 12 17 | 704 | 1.4− | 0.5− | 2000 01 09 | 046 | 0.5− | 0.3+ | 2000 02 26 | 704 | 0.7+ | 0.7− | | |
| 1999 12 17 | 704 | 0.9− | 0.7− | 2000 01 09 | 046 | 0.6− | 0.1− | 2001 06 21 | 493 | 0.0 | 0.2+ | | |
| 2000 01 05 | 704 | 0.4+ | 0.2− | 2000 01 09 | 046 | 0.1− | 0.3+ | 2001 06 21 | 493 | 0.1+ | 0.3+ | | |
| 2000 01 05 | 704 | 0.4+ | 0.6− | 2000 01 09 | 704 | 0.2+ | 0.3− | 2001 07 25 | 644 | 0.1− | 0.1− | | |
| 2000 01 05 | 704 | 0.4+ | 0.8− | 2000 01 09 | 704 | 0.5− | 0.3− | 2001 07 25 | 644 | 0.2− | 0.0 | | |
| 2000 01 05 | 704 | 0.5+ | 1.1− | 2000 01 09 | 704 | 0.1+ | 0.0 | 2001 07 25 | 644 | 0.1− | 0.1− | | |
| 2000 01 05 | 704 | 0.5+ | 1.2− | 2000 01 09 | 670 | 0.7+ | 0.2− | 2003 04 25 | 645 | 0.0 | 0.1+ | | |
| 2000 01 06 | 557 | 0.1− | 0.3+ | 2000 01 09 | 704 | 0.1+ | 0.0 | 2003 04 25 | 645 | 0.0 | 0.2+ | | |
| 2000 01 06 | 557 | 0.1− | 0.3+ | 2000 01 09 | 711 | 0.1+ | 0.2+ | 2003 04 29 | 645 | 0.0 | 0.1+ | | |
| 2000 01 06 | 557 | 0.1− | 0.1+ | 2000 01 09 | 711 | 0.1− | 0.7+ | 2003 04 29 | 645 | 0.0 | 0.1+ | | |
| 2000 01 06 | 046 | 0.1+ | 0.3+ | 2000 01 09 | 711 | 0.0 | 0.1+ | 2005 02 16 | H36 | 0.1+ | 0.5− | | |
| 2000 01 06 | 046 | 0.1− | 0.2+ | 2000 01 09 | 670 | 1.0− | 0.6+ | 2005 02 16 | H36 | (0.8+ | 1.9−) | | |
| 2000 01 06 | 046 | 0.1− | 0.4+ | 2000 01 13 | 699 | 0.1+ | 1.4− | 2005 03 22 | 448 | 0.2+ | 0.5− | | |
| 2000 01 06 | 046 | 0.2− | 0.2+ | 2000 01 13 | 699 | 1.0+ | 1.0− | 2005 03 22 | 448 | 0.5− | 0.0 | | |
| 2000 01 06 | 704 | 0.5+ | 0.3− | 2000 01 13 | 699 | 0.7+ | 0.7− | 2005 03 22 | 448 | 0.4− | 0.2+ | | |
| 2000 01 06 | 704 | 0.5+ | 0.3− | 2000 01 13 | 151 | (4.2− | 0.3−) | 2006 05 26 | 703 | 0.4+ | 0.5− | | |
| 2000 01 06 | 704 | 0.3+ | 0.0 | 2000 01 13 | 151 | (3.0+ | 1.2+) | 2006 05 26 | 703 | 0.5− | 0.0 | | |
| 2000 01 06 | 704 | 0.0 | 0.2− | 2000 01 13 | 151 | 1.1+ | 0.3+ | 2006 05 26 | 703 | 0.3− | 0.7+ | | |
| 2000 01 06 | 673 | (0.6+ | 3.1−) | 2000 01 13 | 151 | (0.7+ | 4.3+) | 2006 05 26 | 703 | 0.7− | 1.4+ | | |
| 2000 01 06 | 704 | 0.4+ | 0.2− | 2000 01 13 | 151 | (2.4− | 3.4+) | 2006 06 01 | 703 | 0.2+ | 0.0 | | |
| 2000 01 06 | 673 | (0.8− | 2.5−) | 2000 01 13 | 151 | 0.3− | 0.0 | 2006 06 01 | 703 | 0.9− | 0.0 | | |
| 2000 01 06 | 670 | (3.0− | 0.8−) | 2000 01 18 | 402 | 0.3− | 0.0 | 2006 06 01 | 703 | 0.4− | 0.7− | | |
| 2000 01 06 | 670 | 1.4+ | 1.9− | 2000 01 18 | 402 | 0.0 | 0.0 | 2006 06 01 | 703 | 0.0 | 0.4+ | | |
| 2000 01 06 | 118 | 0.4− | 0.1+ | 2000 01 18 | 402 | 0.1− | 0.2− | 2006 06 23 | A50 | 0.1+ | 0.3+ | | |
| 2000 01 06 | 118 | 0.6− | 0.5+ | 2000 01 25 | 610 | 0.1− | 0.4− | 2006 06 23 | A50 | 0.5+ | 0.1− | | |
| 2000 01 06 | 118 | 0.6− | 0.5+ | 2000 01 25 | 610 | 0.0 | 0.3− | 2006 06 23 | A50 | 1.2+ | 0.1− | | |
| 2000 01 07 | 046 | 0.3+ | 0.8+ | 2000 01 25 | 118 | 0.2− | 0.4+ | 2006 06 23 | A50 | 1.1+ | 0.4+ | | |
| 2000 01 07 | 046 | 0.3+ | 0.5+ | 2000 01 25 | 610 | 0.0 | 0.3− | 2006 06 24 | 699 | 0.1+ | 0.7− | | |
| 2000 01 07 | 046 | 0.4+ | 0.6+ | 2000 01 25 | 118 | 0.3− | 0.3+ | 2006 06 24 | 699 | 0.1+ | 0.0 | | |
| 2000 01 07 | 046 | 0.2+ | 0.5+ | 2000 01 25 | 610 | 0.0 | 0.2− | 2006 06 24 | 699 | 0.7− | 0.7+ | | |
| 2000 01 07 | 106 | 0.1+ | 0.4+ | 2000 01 25 | 118 | 0.3− | 0.3+ | 2006 06 24 | 699 | 0.8+ | 0.5− | | |
| 2000 01 07 | 106 | 0.3+ | 0.2+ | 2000 01 25 | 610 | 0.1+ | 0.1− | 2006 07 28 | E12 | 0.0 | 0.0 | | |
| 2000 01 07 | 106 | 0.4+ | 0.1− | 2000 01 26 | 402 | 0.4− | 0.1+ | 2006 07 28 | E12 | 0.0 | 0.7− | | |
| 2000 01 07 | 104 | 0.5+ | 1.1+ | 2000 01 26 | 402 | 0.1− | 0.0 | 2006 07 28 | E12 | 0.7− | 0.5+ | | |
| 2000 01 07 | 104 | 0.5+ | 0.9+ | 2000 01 26 | 402 | 0.0 | 0.1+ | 2006 07 28 | E12 | 0.1− | 0.2− | | |
| 2000 01 07 | 104 | 0.8+ | 0.7+ | 2000 01 27 | 151 | 1.0+ | 1.1+ | 2006 07 28 | E12 | 0.4− | 0.6+ | | |
| 2000 01 07 | 704 | 0.5+ | 0.7+ | 2000 01 27 | 151 | 0.4− | 1.0+ | 2006 07 28 | E12 | 0.5− | 0.6− | | |
| 2000 01 07 | 704 | 0.5+ | 0.8+ | 2000 01 27 | 151 | (2.0− | 0.8+) | 2006 07 28 | E12 | 0.1− | 0.4− | | |
| 2000 01 07 | 651 | 0.4+ | 0.3+ | 2000 01 27 | 151 | 0.9− | 0.3+ | 2006 07 28 | E12 | 0.4+ | 0.6− | | |
| 2000 01 07 | 651 | 0.6+ | 0.6+ | 2000 01 27 | 106 | 0.5+ | 1.8− | 2006 08 22 | E12 | 0.1+ | 0.2+ | | |
| 2000 01 07 | 651 | 0.4+ | 0.5+ | 2000 01 27 | 151 | 0.9− | 0.9+ | 2006 08 22 | E12 | 0.0 | 0.4+ | | |
| 2000 01 07 | 704 | 0.3+ | 0.5+ | 2000 01 27 | 106 | 0.1+ | 0.4+ | 2006 08 22 | E12 | 0.0 | 0.3+ | | |
| 2000 01 07 | 704 | 0.9+ | 0.9+ | 2000 01 27 | 106 | 0.4− | 0.0 | 2006 08 22 | E12 | 0.2− | 0.3+ | | |
| 2000 01 07 | 704 | 1.0+ | 0.6+ | 2000 01 27 | 610 | 1.1+ | 0.2− | 2006 09 02 | 808 | 1.1− | 0.5+ | | |
| 2000 01 07 | 711 | 0.9+ | 0.5+ | 2000 01 27 | 610 | 0.7+ | 0.0 | 2006 09 02 | 808 | (1.6− | 0.3+) | | |
| 2000 01 07 | 711 | 0.9+ | 0.9+ | 2000 01 27 | 610 | 0.5+ | 0.1+ | 2006 09 02 | 808 | (3.6− | 0.7+) | | |
| 2000 01 07 | 670 | 0.6+ | 0.3+ | 2000 01 27 | 610 | 0.1+ | 0.2+ | 2006 09 02 | E12 | 0.3+ | 0.1− | | |
| 2000 01 07 | 711 | 0.7+ | 0.6+ | 2000 01 27 | 610 | 0.1− | 0.3+ | 2006 09 02 | E12 | 0.3− | 0.2+ | | |
| 2000 01 07 | 670 | 0.4+ | 0.6+ | 2000 01 29 | 704 | 0.6− | 0.1− | 2006 09 02 | E12 | 0.5− | 0.1− | | |
| 2000 01 07 | 348 | 1.0+ | 0.8− | 2000 01 29 | 704 | 0.7+ | 1.5− | 2006 09 02 | E12 | 0.0 | 0.2+ | | |
| 2000 01 07 | 348 | 1.0+ | 0.4+ | 2000 01 29 | 670 | 0.6+ | 1.1− | 2006 10 11 | 423 | 0.3− | 0.1+ | | |
| 2000 01 07 | 900 | 0.2− | 0.3+ | 2000 01 29 | 704 | 0.5− | 0.3− | 2006 10 18 | 423 | 1.2− | 0.7+ | | |
| 2000 01 07 | 900 | 0.4− | 0.5+ | 2000 01 29 | 704 | 0.4− | 0.5− | 2006 10 18 | 423 | 0.0 | 0.7+ | | |
| 2000 01 08 | 678 | 0.1− | 0.6− | 2000 01 29 | 704 | 0.2+ | 0.7− | 2006 11 17 | 423 | 0.2− | 0.3+ | | |
| 2000 01 08 | 678 | 1.5− | 0.1+ | 2000 01 29 | 670 | 0.6+ | 1.2− | 2006 11 17 | 423 | 0.6− | 0.4+ | | |
| 2000 01 08 | 678 | 0.6− | 0.9+ | 2000 01 29 | 670 | (1.4+ | 2.1−) | 2006 11 17 | E12 | 0.2− | 0.1− | | |
| 2000 01 08 | 704 | 0.1− | 0.3+ | 2000 01 30 | 610 | (2.1+ | 0.6+) | 2006 11 17 | E12 | 0.5− | 0.2+ | | |
| 2000 01 08 | 704 | 0.3− | 0.0 | 2000 01 30 | 610 | 1.3+ | 0.1+ | 2006 11 17 | E12 | 0.4− | 0.1− | | |
| 2000 01 08 | 704 | 0.0 | 0.4− | 2000 01 30 | 610 | 0.7+ | 0.3− | 2006 11 28 | 423 | 0.8− | 0.4− | | |
| 2000 01 08 | 670 | 0.2− | 0.2+ | 2000 01 30 | 610 | 0.1+ | 0.7− | 2006 11 28 | 423 | 0.5− | 0.3+ | | |

**(137803)∗ 1999 YR$_1$**

Discovered 1999 Dec. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.41955 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27465675 | $\omega$ | 201.93611 | | +0.44114111 | −0.89701740 | |
| $a$ | 2.3439186 | $\Omega$ | 221.90066 | | +0.82937342 | +0.41918357 | |
| $e$ | 0.1857374 | $i$ | 2.35692 | | +0.34283269 | +0.14016031 | |
| $P$ | 3.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 1.2− | 1.5+ | 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.5− | 0.3+ | | |
| 1999 12 07 | 704 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.2+ | | |
| 1999 12 07 | 704 | (2.6+ | 3.2−) | 2004 03 18 | 704 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ | | |
| 1999 12 08 | 704 | 0.3+ | 0.4− | 2004 03 18 | 704 | 1.4− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 1999 12 08 | 704 | (0.4− | 2.0−) | 2004 03 20 | 704 | (1.9+ | 0.7+) | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 1999 12 08 | 704 | 0.3+ | 0.9− | 2004 03 20 | 704 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 1999 12 08 | 704 | 0.6+ | 1.6− | 2004 03 20 | 704 | 1.3+ | 0.8+ | 2006 11 11 | 703 | 0.7− | 0.4+ | | |
| 1999 12 16 | 704 | 0.7− | 0.4− | 2004 03 20 | 704 | 1.1+ | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.5+ | | |
| 1999 12 16 | 704 | 1.0+ | 0.6− | 2004 03 27 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.7+ | | |
| 1999 12 16 | 704 | 0.5+ | 0.7− | 2004 03 27 | 704 | 0.4+ | 1.2+ | 2006 11 11 | G96 | 0.0 | 0.0 | | |
| 1999 12 16 | 704 | 0.4+ | 0.8− | 2004 03 27 | 704 | 1.3+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.3+ | | |
| 1999 12 16 | 704 | 0.2+ | 0.7− | 2004 03 27 | 704 | 0.2− | 1.2+ | 2006 11 11 | G96 | 0.0 | 0.0 | | |
| 1999 12 17 | 704 | 0.0 | 1.1− | 2004 03 27 | 704 | (1.1+ | 2.7+) | 2006 11 11 | G96 | 0.2+ | 0.0 | | |
| 1999 12 17 | 704 | 0.0 | 0.5− | 2004 03 29 | 691 | 0.4− | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 704 | 0.1− | 1.0− | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 11 12 | 703 | 1.2− | 0.8− |
| 2000 01 05 | 704 | 0.6− | 0.1− | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 11 12 | 703 | 0.7− | 0.1− |
| 2000 01 05 | 704 | 0.7− | 0.6− | 2006 08 29 | 703 | 0.2− | 0.0 | 2006 11 12 | 703 | 0.5− | 0.0 |
| 2000 01 05 | 704 | 0.5− | 0.8− | 2006 08 29 | 703 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2000 01 05 | 704 | 0.2− | 1.0− | 2006 08 29 | 703 | 0.6− | 0.7− | 2006 11 17 | 703 | (0.3− | 1.9−) |
| 2000 01 06 | 704 | 0.3+ | 0.6− | 2006 08 29 | 703 | 0.4− | 0.8− | 2006 11 17 | 703 | 0.2+ | 0.9− |
| 2000 01 06 | 704 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2000 01 06 | 704 | 0.4− | 0.5− | 2006 09 20 | 704 | 0.6+ | 0.0 | 2006 11 18 | 704 | 0.8− | 1.3+ |
| 2001 04 24 | 291 | 0.5+ | 0.1+ | 2006 09 20 | 704 | 1.3+ | 0.9− | 2006 11 18 | 704 | 0.1+ | 1.0− |
| 2001 04 24 | 291 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.9+ | 0.5− |
| 2001 04 24 | 291 | 1.3− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2002 08 27 | 644 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.9+ | 0.6− |
| 2002 08 27 | 644 | 0.3− | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2002 08 27 | 644 | 0.3− | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.9− |
| 2002 09 09 | 608 | 1.0− | 0.4− | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | (1.6+ | 1.6−) |
| 2002 09 09 | 608 | 0.7− | 0.7− | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.3− |
| 2002 09 09 | 608 | 0.3− | 0.3− | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 1.1+ | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.6+ | 1.1− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2002 10 12 | 291 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2002 10 12 | 291 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2002 10 12 | 291 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.9+ |
| 2004 02 19 | 704 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2004 02 19 | 704 | 0.3+ | 0.4+ | 2006 10 28 | 704 | 0.4+ | 0.9+ | 2006 11 21 | 704 | 0.4− | 0.8+ |
| 2004 02 19 | 704 | 0.3+ | 0.6+ | 2006 10 28 | 704 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2004 02 19 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 704 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.7− | 0.0 |
| 2004 03 12 | 644 | 0.2+ | 0.7+ | 2006 10 28 | 704 | 0.7+ | 0.7+ | 2006 11 27 | 703 | 0.2− | 0.2− |
| 2004 03 12 | 644 | 0.0 | 0.7+ | 2006 10 28 | 704 | 0.2− | 0.6+ | 2006 11 27 | 703 | 0.0 | 0.2− |
| 2004 03 12 | 644 | 0.2+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.0 |
| 2004 03 15 | 704 | 0.8+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.6− | 0.2− |
| 2004 03 15 | 704 | 0.9+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.1− |
| 2004 03 15 | 704 | 0.8+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2004 03 15 | 704 | 0.4+ | 1.1+ | 2006 11 01 | 691 | 0.6+ | 0.9+ | 2006 11 29 | 704 | 0.2− | 0.5− |
| 2004 03 18 | 704 | 0.3− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.6− | 0.1+ |

### (137804)∗ 1999 YQ$_2$

Discovered 1999 Dec. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.25853 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27236323 | $\omega$ | 194.00483 | | −0.74667271 | −0.66471485 | |
| $a$ | 2.3570587 | $\Omega$ | 304.30615 | | +0.61319821 | −0.67314595 | |
| $e$ | 0.2084126 | $i$ | 1.74681 | | +0.25781353 | −0.32408131 | |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.2+ | 0.0 | 2000 02 11 | 704 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 1995 10 24 | 691 | 0.3+ | 0.0 | 2000 02 11 | 704 | 0.9− | 0.9+ | 2006 09 28 | G96 | 0.4− | 0.4− |
| 1995 10 24 | 691 | 0.4+ | 0.1+ | 2002 10 10 | 291 | 0.3− | 0.8+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 1995 11 17 | 691 | 0.2− | 0.1+ | 2002 10 10 | 291 | 0.3− | 0.5+ | 2006 10 20 | G96 | 0.6− | 0.5− |
| 1995 11 17 | 691 | 0.1− | 0.2+ | 2002 10 10 | 291 | 0.4− | 0.7+ | 2006 10 20 | G96 | 0.0 | 0.3+ |
| 1995 11 17 | 691 | 0.1+ | 0.3+ | 2004 03 25 | 699 | 0.8− | 0.1+ | 2006 11 01 | G96 | 0.4− | 0.4− |
| 1995 11 23 | 691 | 0.5− | 0.4+ | 2004 03 25 | 699 | (2.4− | 2.2+) | 2006 11 01 | G96 | 0.1− | 0.2− |
| 1995 11 23 | 691 | 0.5− | 0.6+ | 2004 03 25 | 699 | 0.5+ | 0.8− | 2006 11 01 | G96 | 0.2− | 0.4− |
| 1995 11 23 | 691 | 0.4− | 0.4+ | 2004 03 25 | 699 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.4− | 0.3− |
| 1999 12 16 | 691 | 0.4− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 1999 12 16 | 691 | 0.6− | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 1999 12 16 | 691 | 0.5− | 0.1− | 2004 03 27 | 704 | 0.3− | 0.7+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 1999 12 17 | 691 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 0.3+ | 1.1+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1999 12 17 | 691 | 0.4+ | 0.6+ | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 1999 12 17 | 691 | 0.3+ | 0.4+ | 2004 04 12 | 699 | 0.1+ | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 1999 12 31 | 691 | 0.2− | 0.6− | 2004 04 12 | 699 | 0.6− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 1999 12 31 | 691 | 0.2+ | 0.6− | 2004 04 12 | 699 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 1999 12 31 | 691 | 0.0 | 0.4− | 2004 04 12 | 691 | 0.6− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.3− |
| 2000 01 04 | 704 | 0.1− | 1.7− | 2004 04 12 | 699 | 0.7− | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.4− |
| 2000 01 04 | 704 | 0.6+ | 0.8− | 2004 04 12 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 1.2+ |
| 2000 01 04 | 704 | 0.7− | 0.1+ | 2004 04 12 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.6− | 1.2− |
| 2000 01 06 | 691 | 0.4+ | 0.1− | 2004 04 13 | 644 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 0.6− | 0.5− |
| 2000 01 06 | 691 | 0.4+ | 0.1− | 2004 04 13 | 644 | 0.3+ | 0.6+ | 2006 11 22 | 704 | 0.9− | 0.4+ |
| 2000 01 06 | 691 | 0.6+ | 0.0 | 2004 04 13 | 644 | 0.5+ | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.3− |
| 2000 01 13 | 699 | 0.5− | 0.1+ | 2004 04 17 | 704 | 0.4− | 1.2+ | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2000 01 13 | 699 | 0.3− | 0.7+ | 2004 04 17 | 704 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2000 01 13 | 699 | 0.2− | 1.3+ | 2004 04 17 | 704 | 0.7+ | 0.1− | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2000 01 30 | 704 | 0.0 | 0.8+ | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 704 | 0.4+ | 0.4− |
| 2000 01 30 | 704 | 0.8− | 0.9+ | 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 11 27 | 704 | 0.4+ | 0.4+ |
| 2000 01 30 | 704 | 0.3− | 0.7− | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 704 | 0.1− | 0.8+ |
| 2000 01 31 | 704 | 0.4− | 0.0 | 2004 05 19 | 691 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.0 | 0.5+ |
| 2000 01 31 | 704 | 0.1− | 0.3− | 2004 05 19 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 0.0 | 0.5+ |
| 2000 01 31 | 704 | 0.1+ | 0.5+ | 2004 05 19 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.3+ | 1.0− |
| 2000 02 11 | 704 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 12 01 | 704 | 0.8− | 1.2− |
| 2000 02 11 | 704 | 1.0− | 0.4− | 2006 09 28 | G96 | 0.4− | 0.0 | | | | |

### (137805)∗ 1999 YK$_5$

Discovered 1999 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.89091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 1.30480279 | $\omega$ | 292.73782 | | +0.22176332 | +0.97372968 | |
| $a$ | 0.8294167 | $\Omega$ | 349.66299 | | −0.75511901 | +0.13795521 | |
| $e$ | 0.5583116 | $i$ | 16.74122 | | −0.61694109 | +0.18115981 | |
| $P$ | 0.76 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 28 | 704 | 0.2− | 0.0 | 2000 01 09 | 726 | 0.2+ | 0.2+ | 2002 12 29 | 704 | 0.1+ | 0.3− |
| 1999 12 28 | 704 | 0.1+ | 0.7− | 2000 01 09 | 726 | 0.3+ | 0.1− | 2002 12 29 | 704 | 0.3+ | 0.1+ |
| 1999 12 28 | 704 | 0.2+ | 1.2− | 2000 01 09 | 726 | 0.6+ | 0.3+ | 2002 12 29 | 704 | 0.4+ | 0.5− |
| 1999 12 28 | 704 | (0.3− | 2.6−) | 2000 01 10 | 610 | 0.4− | 0.1− | 2002 12 29 | 704 | 0.6+ | 0.4− |
| 1999 12 28 | 704 | (0.4+ | 3.4−) | 2000 01 10 | 610 | 0.3− | 0.2− | 2003 01 09 | 198 | 0.1− | 0.3+ |
| 1999 12 29 | 704 | 0.2+ | 0.1− | 2000 01 10 | 610 | 0.1− | 0.5− | 2003 01 09 | 198 | 0.1− | 0.1+ |
| 1999 12 29 | 704 | 0.3+ | 0.5− | 2000 01 10 | 610 | 0.1− | 0.6− | 2003 01 09 | 198 | 0.0 | 0.1− |
| 1999 12 29 | 704 | 1.2+ | 0.8− | 2000 01 10 | 610 | 0.0 | 0.8− | 2003 01 09 | 198 | 0.1+ | 0.2− |
| 1999 12 29 | 704 | 0.5+ | 0.6− | 2000 01 13 | 151 | 0.5− | 0.8− | 2003 01 09 | 198 | 0.2− | 0.1− |
| 1999 12 29 | 704 | 0.4+ | 0.4− | 2000 01 13 | 151 | 0.4− | 0.5− | 2003 01 12 | 151 | 0.3+ | 0.5+ |
| 1999 12 29 | 402 | 0.4+ | 0.5− | 2000 01 13 | 151 | 0.8− | 1.0− | 2003 01 12 | 151 | 0.2− | 0.1− |
| 1999 12 29 | 402 | 0.4+ | 0.0 | 2000 01 13 | 151 | 0.1+ | 1.4− | 2003 01 12 | 151 | 0.5− | 0.0 |
| 1999 12 29 | 402 | 0.5+ | 0.5− | 2000 01 13 | 151 | (0.4− | 2.0−) | 2003 01 12 | 151 | 0.1− | 0.2+ |
| 1999 12 29 | 402 | 0.2+ | 0.2− | 2000 01 15 | 151 | 0.5+ | 1.1+ | 2003 01 15 | 704 | 0.5+ | 0.4− |
| 1999 12 29 | 461 | 0.0 | 0.5− | 2000 01 15 | 151 | 0.3− | 0.2− | 2003 01 15 | 704 | 0.3+ | 1.0− |
| 1999 12 29 | 461 | 0.0 | 1.5− | 2000 01 15 | 151 | 0.1+ | 0.3+ | 2003 01 15 | 704 | 0.4+ | 0.4− |
| 1999 12 29 | 461 | 0.0 | 0.8+ | 2000 01 15 | 151 | 0.8+ | 0.0 | 2003 01 24 | 170 | 0.2− | 0.3− |
| 1999 12 29 | 461 | 0.3− | 1.5− | 2000 01 15 | 151 | 0.3+ | 0.7+ | 2003 01 24 | 170 | 0.6− | 0.0 |
| 1999 12 29 | 557 | 0.0 | 0.1− | 2000 01 18 | 360 | 0.1− | 0.0 | 2003 01 24 | 170 | 0.6− | 0.7+ |
| 1999 12 29 | 557 | 0.1+ | 0.1− | 2000 01 18 | 360 | 0.4− | 0.0 | 2003 01 24 | 170 | 0.4+ | 0.7− |
| 1999 12 29 | 557 | 0.5− | 1.3− | 2000 01 18 | 360 | 0.2− | 0.3− | 2003 01 25 | 198 | 0.2+ | 0.0 |
| 1999 12 29 | 595 | 0.2− | 0.1+ | 2000 01 21 | 610 | 1.2− | 0.5+ | 2003 01 25 | 198 | 0.3+ | 0.4+ |
| 1999 12 29 | 557 | 0.1− | 0.4− | 2000 01 21 | 610 | 1.1− | 0.4+ | 2003 01 25 | 198 | 0.3+ | 0.4+ |
| 1999 12 29 | 595 | 0.2+ | 0.1+ | 2000 01 21 | 610 | 1.1− | 0.4+ | 2003 01 25 | 198 | 0.4+ | 0.6+ |
| 1999 12 29 | 595 | 0.1+ | 0.1+ | 2000 01 21 | 610 | 1.0− | 0.3+ | 2003 02 12 | 113 | 0.2+ | 0.3+ |
| 1999 12 29 | 595 | 0.3+ | 0.6− | 2000 01 21 | 610 | 0.9− | 0.1+ | 2003 02 12 | 113 | 0.3+ | 0.0 |
| 1999 12 29 | 595 | 0.2+ | 0.1+ | 2000 01 22 | 402 | 0.5+ | 0.4− | 2003 02 12 | 113 | 0.2+ | 0.1− |
| 1999 12 29 | 046 | 0.1+ | 0.2− | 2000 01 22 | 402 | 0.1+ | 0.2− | 2003 02 12 | 113 | 0.7+ | 0.2− |
| 1999 12 29 | 046 | 0.4− | 0.1− | 2000 01 22 | 402 | 0.2− | 0.2− | 2003 02 12 | 113 | 0.7+ | 0.2− |
| 1999 12 29 | 046 | 0.1+ | 0.1− | 2000 01 23 | 610 | 0.4+ | 0.2− | 2003 02 14 | 198 | 0.6+ | 0.3+ |
| 1999 12 29 | 046 | 0.4+ | 0.9− | 2000 01 23 | 610 | 0.0 | 0.1− | 2003 02 14 | 198 | 0.6+ | 0.0 |
| 1999 12 29 | 046 | 0.5+ | 0.5+ | 2000 01 23 | 610 | 0.4− | 0.1+ | 2003 02 14 | 198 | 0.5+ | 0.0 |
| 1999 12 30 | 713 | 1.2+ | 1.7+ | 2000 01 23 | 610 | 0.8− | 0.3+ | 2003 02 14 | 198 | 0.5+ | 0.0 |
| 1999 12 30 | 713 | 1.2+ | 1.3+ | 2000 01 23 | 610 | 1.2− | 0.5+ | 2003 02 14 | 198 | 0.2+ | 0.2+ |
| 1999 12 30 | 704 | 0.3− | 0.7− | 2000 01 24 | 046 | 0.4+ | 0.2− | 2003 03 05 | 240 | 0.6+ | 0.5+ |
| 1999 12 30 | 713 | 0.0 | 0.3− | 2000 01 24 | 046 | 0.0 | 0.1− | 2003 03 05 | 240 | 0.1+ | 0.4+ |
| 1999 12 30 | 713 | 0.4+ | 2.0+ | 2000 01 24 | 046 | 0.0 | 0.1− | 2003 03 05 | 240 | 0.3+ | 0.3+ |
| 1999 12 30 | 713 | 0.9+ | 1.7+ | 2000 01 24 | 046 | 0.2+ | 0.2+ | 2003 03 05 | 240 | 0.5+ | 0.0 |
| 1999 12 30 | 704 | 0.2+ | 0.7− | 2000 01 24 | 046 | 0.3+ | 0.5+ | 2003 03 23 | 240 | 0.7+ | 0.2+ |
| 1999 12 30 | 713 | 0.0 | 0.2− | 2000 01 26 | 704 | 0.9− | 0.1− | 2003 03 23 | 240 | 0.7+ | 0.3+ |
| 1999 12 30 | 704 | 0.3+ | 0.6− | 2000 01 26 | 704 | 0.2− | 0.5− | 2003 03 23 | 240 | 0.3+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 30 | 704 | 0.1− | 0.8− | 2000 01 26 | 704 | 1.1+ | 0.8+ | 2003 03 23 | 240 | 0.6+ | 0.3+ |
| 1999 12 30 | 684 | 0.3− | 0.9− | 2000 01 26 | 402 | 0.0 | 0.3− | 2003 03 23 | 240 | 0.4+ | 0.8+ |
| 1999 12 30 | 684 | 0.3− | 1.0− | 2000 01 26 | 402 | 0.1+ | 0.2− | 2003 03 23 | 240 | 0.3− | 0.8+ |
| 1999 12 30 | 900 | 0.3− | 0.6− | 2000 01 28 | 118 | 0.4− | 0.1+ | 2003 12 09 | 926 | (1.9− | 1.1+) |
| 1999 12 30 | 900 | 0.7− | 0.8− | 2000 01 28 | 118 | 0.1+ | 0.0 | 2003 12 09 | 926 | 0.7+ | 0.9+ |
| 1999 12 30 | 587 | 0.2+ | 0.3− | 2000 02 02 | 360 | 0.2+ | 0.3+ | 2003 12 09 | 926 | 0.2− | 0.5+ |
| 1999 12 30 | 587 | 0.1− | 0.5− | 2000 02 02 | 360 | 0.3+ | 0.2+ | 2003 12 20 | 704 | (3.6+ | 0.7+) |
| 1999 12 30 | 046 | 0.1+ | 0.3− | 2000 02 02 | 360 | 0.4+ | 0.3+ | 2003 12 20 | 704 | (3.7+ | 0.4+) |
| 1999 12 30 | 046 | 0.1− | 0.3− | 2000 02 10 | 402 | 0.3− | 0.6− | 2003 12 20 | 704 | (2.9+ | 0.3+) |
| 1999 12 30 | 046 | 0.0 | 0.2− | 2000 02 10 | 402 | 0.4+ | 0.4− | 2003 12 29 | 704 | 0.1+ | 0.3− |
| 1999 12 30 | 046 | 0.0 | 0.2− | 2000 02 10 | 402 | 0.1+ | 0.7− | 2003 12 29 | 704 | 0.6+ | 0.1− |
| 1999 12 30 | 046 | 0.1− | 0.3− | 2000 02 11 | 360 | 0.1+ | 0.3− | 2003 12 29 | 704 | 0.6+ | 0.0 |
| 1999 12 31 | 104 | 0.2+ | 0.1+ | 2000 02 11 | 360 | 0.2− | 0.1− | 2004 01 10 | 699 | 0.2− | 0.1− |
| 1999 12 31 | 104 | 1.1+ | 0.5− | 2000 02 11 | 360 | 0.1+ | 0.3− | 2004 01 10 | 699 | 0.6+ | 0.1+ |
| 1999 12 31 | 104 | 1.1+ | 0.9− | 2000 02 27 | 118 | 0.2+ | 0.5− | 2004 01 10 | 699 | 0.3+ | 0.1− |
| 1999 12 31 | 557 | 0.1− | 0.3− | 2000 02 27 | 118 | 0.0 | 0.0 | 2004 01 10 | 699 | (0.1− | 1.7−) |
| 1999 12 31 | 557 | 0.1− | 0.3− | 2000 03 01 | 360 | 0.2+ | 0.2+ | 2005 11 22 | 084 | 0.4− | 0.4− |
| 1999 12 31 | 557 | 0.0 | 0.0 | 2000 03 01 | 360 | 0.4+ | 0.2+ | 2005 11 22 | 084 | 0.1+ | 0.5− |
| 1999 12 31 | 557 | 0.1− | 0.3− | 2000 03 01 | 360 | 0.5+ | 0.5+ | 2005 12 13 | 084 | 0.1+ | 0.4+ |
| 1999 12 31 | 704 | 0.1+ | 0.6− | 2000 04 25 | 540 | 0.2− | 0.1− | 2005 12 13 | 084 | 0.1+ | 0.1+ |
| 1999 12 31 | 704 | (0.4− | 2.1−) | 2000 04 25 | 540 | 0.3− | 0.2− | 2005 12 13 | 084 | 0.4+ | 0.1− |
| 1999 12 31 | 651 | 0.4+ | 0.8− | 2000 04 25 | 540 | 0.4− | 0.8− | 2005 12 14 | 084 | 0.1− | 0.1+ |
| 1999 12 31 | 704 | 0.5+ | 0.8− | 2000 04 25 | 540 | 0.3− | 0.3+ | 2005 12 14 | 084 | 0.5− | 0.4+ |
| 1999 12 31 | 651 | 0.4− | 0.7− | 2000 12 01 | 046 | 0.4+ | 0.7+ | 2005 12 14 | 084 | 0.3− | 0.1+ |
| 1999 12 31 | 704 | 0.4− | 0.8− | 2000 12 01 | 046 | 0.6+ | 1.0+ | 2005 12 20 | 704 | 0.5+ | 0.1+ |
| 1999 12 31 | 704 | 0.3+ | 0.4− | 2000 12 01 | 046 | 0.2− | 0.5+ | 2005 12 20 | 704 | 0.4+ | 0.3+ |
| 1999 12 31 | 348 | 0.0 | 0.3− | 2000 12 01 | 046 | 1.1+ | 0.5+ | 2005 12 20 | 704 | 0.5− | 0.2− |
| 1999 12 31 | 348 | 0.2+ | 0.1− | 2000 12 01 | 046 | 0.5+ | 0.3+ | 2005 12 20 | 704 | 0.3− | 0.9+ |
| 2000 01 01 | 726 | 0.0 | 0.3− | 2000 12 01 | 046 | 0.2+ | 0.0 | 2005 12 20 | 704 | 0.0 | 0.0 |
| 2000 01 01 | 726 | 0.1+ | 0.2− | 2000 12 02 | 046 | 0.0 | 0.4+ | 2005 12 20 | 084 | 0.6− | 0.5+ |
| 2000 01 01 | 726 | 0.8+ | 0.1− | 2000 12 02 | 046 | 0.9+ | 0.6+ | 2005 12 22 | 130 | 0.0 | 0.4+ |
| 2000 01 01 | 726 | 0.2+ | 0.4− | 2000 12 02 | 046 | 0.1− | 0.6+ | 2005 12 22 | 130 | 0.3− | 0.3+ |
| 2000 01 03 | 900 | 0.1− | 0.0 | 2000 12 02 | 046 | 1.1+ | 0.3+ | 2005 12 22 | 130 | 0.3− | 0.2+ |
| 2000 01 03 | 355 | 0.4+ | 0.0 | 2000 12 02 | 046 | 0.1+ | 0.1+ | 2005 12 22 | 130 | 0.4− | 0.4− |
| 2000 01 03 | 900 | 0.2+ | 0.4+ | 2000 12 02 | 046 | 0.4+ | 0.2+ | 2005 12 22 | 084 | 0.5− | 0.2+ |
| 2000 01 03 | 355 | 0.6+ | 0.6− | 2000 12 29 | 699 | 1.3+ | 0.0 | 2005 12 27 | 084 | 0.8− | 0.0 |
| 2000 01 03 | 355 | 0.3+ | 0.6− | 2000 12 29 | 699 | 1.3+ | 0.7+ | 2005 12 27 | 084 | 0.2+ | 0.2+ |
| 2000 01 03 | 151 | 0.5+ | 0.3− | 2000 12 29 | 699 | 1.3+ | 0.6+ | 2005 12 28 | 084 | 0.2− | 0.2+ |
| 2000 01 03 | 151 | 0.7+ | 0.7+ | 2000 12 29 | 699 | 0.2+ | 1.0+ | 2006 01 04 | 434 | 0.4+ | 0.7− |
| 2000 01 03 | 151 | 1.7− | 1.4+ | 2002 01 05 | 104 | 0.6− | 0.7+ | 2006 01 04 | 434 | 0.2− | 0.5− |
| 2000 01 03 | 151 | 0.3+ | 0.8+ | 2002 01 05 | 104 | (0.5− | 2.3+) | 2006 01 08 | 084 | 0.2− | 0.3+ |
| 2000 01 03 | 151 | (2.8− | 2.5−) | 2002 01 05 | 104 | (0.9+ | 1.6+) | 2006 01 12 | 084 | 0.6− | 0.1− |
| 2000 01 03 | 151 | 0.5− | 1.1+ | 2002 01 05 | 104 | 0.7− | 1.0+ | 2006 01 15 | A53 | 0.3− | 0.1− |
| 2000 01 03 | 151 | 0.1− | 0.8+ | 2002 11 07 | 649 | 0.7+ | 0.3+ | 2006 01 15 | A53 | 0.0 | 0.2− |
| 2000 01 04 | 360 | 0.3+ | 0.1+ | 2002 11 07 | 649 | 0.0 | 0.8+ | 2006 01 15 | A53 | 0.4− | 0.1− |
| 2000 01 04 | 360 | 0.0 | 0.2+ | 2002 11 07 | 649 | 0.4+ | 0.5+ | 2006 01 15 | A53 | 0.2− | 0.3− |
| 2000 01 04 | 360 | 0.0 | 0.1+ | 2002 11 07 | 649 | 0.3+ | 0.3+ | 2006 01 19 | 084 | 0.4− | 0.3+ |
| 2000 01 05 | 726 | 0.3+ | 0.1+ | 2002 11 11 | 670 | 0.6+ | 0.9− | 2006 01 21 | 704 | 0.3+ | 0.0 |
| 2000 01 05 | 726 | 0.2+ | 0.1− | 2002 11 11 | 670 | 1.1+ | 0.4+ | 2006 01 21 | 704 | 0.4+ | 0.1+ |
| 2000 01 05 | 726 | 0.4+ | 0.9+ | 2002 11 12 | 649 | 0.5+ | 0.5+ | 2006 01 21 | 704 | 0.3+ | 0.5+ |
| 2000 01 05 | 726 | 0.7+ | 0.6+ | 2002 11 12 | 649 | 0.6+ | 0.4+ | 2006 01 21 | 704 | 0.4+ | 0.1+ |
| 2000 01 05 | 726 | 0.3− | 0.7+ | 2002 11 12 | 649 | 0.3+ | 0.3+ | 2006 01 21 | 704 | 0.2− | 0.8+ |
| 2000 01 05 | 726 | 1.2+ | 0.2− | 2002 11 14 | 670 | 0.3+ | 0.5+ | 2006 02 04 | 130 | 0.3+ | 0.3− |
| 2000 01 05 | 118 | 0.5− | 0.0 | 2002 11 14 | 670 | 0.4+ | 0.5+ | 2006 02 04 | 130 | 0.1+ | 0.4− |
| 2000 01 05 | 118 | 0.4− | 0.1− | 2002 11 14 | 670 | 0.8+ | 0.4+ | 2006 02 04 | 130 | 1.0+ | 0.5+ |
| 2000 01 07 | 726 | 0.8+ | 0.5+ | 2002 11 15 | 670 | 0.4+ | 0.5+ | 2006 09 24 | 703 | 0.7+ | 0.0 |
| 2000 01 07 | 726 | 0.4+ | 0.5− | 2002 11 15 | 670 | 0.6+ | 0.0 | 2006 09 24 | 703 | 1.1+ | 0.1+ |
| 2000 01 07 | 726 | 0.4+ | 0.1+ | 2002 11 15 | 670 | 0.1− | 1.1+ | 2006 09 24 | 703 | 0.4− | 0.2− |
| 2000 01 07 | 726 | 0.3+ | 0.1− | 2002 11 21 | 670 | 1.2+ | 0.8+ | 2006 09 24 | 703 | 1.0+ | 0.2+ |
| 2000 01 07 | 726 | 0.3+ | 0.1− | 2002 11 21 | 670 | 0.6+ | 0.0 | 2006 10 28 | 703 | 1.2+ | 0.9+ |
| 2000 01 07 | 726 | 0.0 | 0.1+ | 2002 12 14 | 198 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.6+ | 0.7+ |
| 2000 01 07 | 402 | 0.2+ | 0.2− | 2002 12 14 | 198 | 0.2− | 0.1+ | 2006 10 28 | 703 | (1.0− | 1.8+) |
| 2000 01 07 | 402 | 0.2+ | 0.1− | 2002 12 14 | 198 | 0.2− | 0.1− | 2006 10 28 | 703 | (0.4+ | 1.7+) |
| 2000 01 07 | 402 | 0.2+ | 0.3− | 2002 12 14 | 198 | 0.1− | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.5+ |
| 2000 01 07 | 151 | 0.9− | 0.8+ | 2002 12 14 | 198 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.2+ | 0.5− |
| 2000 01 07 | 151 | 0.0 | 0.4− | 2002 12 27 | H86 | 0.3− | 0.1− | 2006 11 23 | 703 | 0.5+ | 0.0 |
| 2000 01 07 | 151 | 0.0 | 0.3− | 2002 12 27 | 704 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.3− | 0.5− |
| 2000 01 07 | 151 | 0.5+ | 0.2+ | 2002 12 27 | 704 | 0.5+ | 0.2+ | 2006 11 28 | 704 | 0.6+ | 0.0 |
| 2000 01 07 | 151 | 0.1− | 0.7+ | 2002 12 27 | 704 | 0.6+ | 0.6+ | 2006 11 28 | 704 | 0.4+ | 0.6+ |
| 2000 01 07 | 151 | 0.7+ | 0.9− | 2002 12 27 | 704 | 0.9+ | 0.9+ | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2000 01 08 | 726 | 0.2+ | 0.2− | 2002 12 27 | 704 | 1.4+ | 1.3+ | 2006 11 28 | 704 | 0.2+ | 0.8+ |
| 2000 01 08 | 726 | 1.3+ | 0.3+ | 2002 12 28 | 704 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.8+ | 0.5+ |
| 2000 01 08 | 726 | 0.5− | 0.0 | 2002 12 28 | 704 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 0.8+ | 0.2+ |
| 2000 01 08 | 726 | 0.4+ | 0.3+ | 2002 12 28 | 704 | 0.2+ | 0.4+ | 2006 12 01 | 704 | 0.2+ | 0.6+ |
| 2000 01 08 | 726 | 0.3− | 0.4+ | 2002 12 28 | 704 | 0.1+ | 0.6+ | 2006 12 01 | 704 | 0.3+ | 0.5+ |
| 2000 01 08 | 726 | 0.2− | 0.3+ | 2002 12 28 | 704 | 0.3+ | 0.5+ | 2006 12 01 | 704 | 0.4+ | 0.1− |
| 2000 01 09 | 726 | 0.6− | 0.6+ | 2002 12 29 | 704 | 0.1+ | 0.4− | | | | |

## (137806)∗ 1999 YW$_6$

Discovered 1999 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.81342 | | (2000.0) | | | |
| $n$ | 0.28351048 | $\omega$ | 143.43890 | | +0.05749223 | −0.93740887 |
| $a$ | 2.2948623 | $\Omega$ | 300.81157 | | +0.79475462 | +0.25117679 |
| $e$ | 0.2195158 | $i$ | 23.57158 | | +0.60420174 | −0.24119459 |
| $P$ | 3.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 704 | 0.2− | 0.2− | 2000 01 29 | 704 | 0.4− | 0.1+ | 2002 09 19 | 644 | 0.2+ | 0.5− |
| 1999 12 17 | 704 | 0.0 | 0.2+ | 2000 01 29 | 704 | 0.2− | 0.2+ | 2002 09 19 | 644 | 0.0 | 0.3− |
| 1999 12 17 | 704 | 0.1− | 0.7− | 2000 01 29 | 704 | 0.4+ | 0.2− | 2002 09 19 | 644 | 0.4− | 0.5− |
| 1999 12 17 | 704 | 0.3− | 0.1− | 2000 01 29 | 704 | 0.4+ | 0.1− | 2002 10 09 | 704 | 0.2− | 0.2− |
| 1999 12 17 | 704 | 0.0 | 0.9− | 2000 01 29 | 704 | 0.4− | 0.3+ | 2002 10 09 | 704 | 0.3− | 0.2− |
| 1999 12 30 | 704 | 0.1− | 0.1+ | 2000 01 29 | 704 | 0.3+ | 0.7+ | 2002 10 09 | 704 | 0.1− | 0.1+ |
| 1999 12 30 | 704 | 0.1+ | 0.3− | 2000 01 30 | 704 | 0.2+ | 0.0 | 2002 10 09 | 704 | 0.4+ | 0.0 |
| 1999 12 30 | 704 | 0.6+ | 1.0+ | 2000 01 30 | 704 | 0.1− | 0.0 | 2002 10 09 | 185 | 0.3− | 0.9+ |
| 1999 12 30 | 704 | 0.8+ | 0.7+ | 2000 01 30 | 704 | 0.3+ | 0.4+ | 2002 10 09 | 185 | 0.5+ | 0.7+ |
| 1999 12 31 | 704 | 0.1− | 0.4− | 2000 01 30 | 704 | 0.1+ | 0.2− | 2005 07 06 | E12 | 0.1+ | 0.2+ |
| 1999 12 31 | 704 | 0.4− | 0.2− | 2000 01 30 | 704 | 0.3− | 0.1− | 2005 07 06 | E12 | 0.1− | 0.4+ |
| 1999 12 31 | 704 | 0.1+ | 0.4− | 2002 08 14 | 644 | 0.5+ | 0.2− | 2005 07 06 | E12 | 0.1+ | 0.3+ |
| 1999 12 31 | 704 | 0.0 | 0.5− | 2002 08 14 | 644 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.0 |
| 1999 12 31 | 704 | 0.3− | 0.4− | 2002 08 14 | 644 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.2+ | 1.0− |
| 2000 01 25 | 704 | 0.4+ | 0.3+ | 2002 08 30 | 699 | 0.6− | 0.5− | 2006 10 21 | 703 | 0.3+ | 0.9+ |
| 2000 01 25 | 704 | 0.3+ | 0.4+ | 2002 08 30 | 699 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.6− |
| 2000 01 25 | 704 | 0.2− | 0.0 | 2002 08 30 | 699 | 0.1− | 0.3+ | 2006 10 29 | 703 | 0.1− | 0.6− |
| 2000 01 25 | 704 | 0.2− | 0.3+ | 2002 08 30 | 699 | 0.0 | 0.4− | 2006 10 29 | 703 | 0.7+ | 0.5− |
| 2000 01 25 | 704 | 0.2− | 0.3− | 2002 08 30 | 699 | 0.0 | 0.9− | 2006 10 29 | 703 | 1.3− | 0.0 |
| 2000 01 26 | 704 | 0.2− | 0.5− | 2002 08 30 | 699 | 0.0 | 0.3− | 2006 10 29 | 703 | 0.6+ | 0.4+ |
| 2000 01 26 | 704 | 0.3+ | 0.3+ | 2002 08 30 | 699 | 0.1− | 0.7− | 2006 11 13 | 704 | 0.3+ | 0.5+ |
| 2000 01 26 | 704 | 0.3+ | 0.6+ | 2002 08 30 | 699 | 0.7+ | 0.4+ | 2006 11 13 | 704 | 0.3+ | 0.3+ |
| 2000 01 29 | 704 | 0.2− | 0.2− | 2002 09 15 | 699 | 1.0− | 1.0+ | 2006 11 13 | 704 | 0.4+ | 0.2+ |
| 2000 01 29 | 704 | 0.2− | 0.0 | 2002 09 15 | 699 | 0.5− | 0.3− | 2006 11 13 | 704 | 0.2− | 0.7+ |
| 2000 01 29 | 704 | 0.3− | 0.0 | 2002 09 15 | 699 | 0.4+ | 0.5+ | | | | |
| 2000 01 29 | 704 | 0.3− | 0.0 | 2002 09 15 | 699 | 0.5+ | 0.7+ | | | | |

## (137807)∗ 1999 YE$_7$

Discovered 1999 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.83062 | | (2000.0) | | | |
| $n$ | 0.26912076 | $\omega$ | 339.96705 | | +0.85540179 | −0.48184419 |
| $a$ | 2.3759534 | $\Omega$ | 50.31357 | | +0.50249233 | +0.68297322 |
| $e$ | 0.2479900 | $i$ | 14.29680 | | +0.12565519 | +0.54897518 |
| $P$ | 3.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.4− | 0.7− | 2004 02 02 | 704 | 0.6+ | 0.5− | 2006 09 25 | 703 | 0.5− | 0.1− |
| 1999 12 13 | 704 | 0.9− | 1.0− | 2004 02 02 | 704 | (0.1− | 1.7−) | 2006 09 25 | 703 | 0.3− | 0.3− |
| 1999 12 13 | 704 | 0.3− | 1.5− | 2004 02 14 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 608 | 0.3+ | 1.1+ |
| 1999 12 13 | 704 | 0.7− | 1.6− | 2004 02 14 | 704 | 1.2+ | 1.2+ | 2006 09 30 | 608 | 0.2− | 1.2+ |
| 1999 12 13 | 704 | 0.1+ | 1.4− | 2004 02 14 | 704 | 1.1+ | 0.2+ | 2006 09 30 | 608 | 0.1+ | 1.1+ |
| 1999 12 16 | 699 | 0.2+ | 1.5+ | 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 10 04 | 703 | 0.3+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 699 | 0.3− | 0.0 | 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 10 04 | 703 | 0.4− | 0.3− |
| 1999 12 16 | 699 | 0.5+ | 0.1− | 2005 04 07 | G96 | 0.1+ | 0.2+ | 2006 10 04 | 703 | 0.4− | 0.1− |
| 1999 12 30 | 704 | 0.6+ | 0.5− | 2005 04 07 | G96 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.4− | 0.2+ |
| 1999 12 30 | 704 | 0.1+ | 0.9− | 2005 04 07 | G96 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.0 |
| 1999 12 30 | 704 | 1.3− | 1.1− | 2005 04 07 | G96 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 1999 12 30 | 704 | 1.0+ | 0.7+ | 2005 05 04 | G96 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.5− | 0.0 |
| 1999 12 31 | 704 | 0.1+ | 0.5− | 2005 05 04 | G96 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.1+ |
| 1999 12 31 | 704 | 0.4− | 0.4− | 2005 05 04 | G96 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.4− | 0.0 |
| 1999 12 31 | 704 | 0.2+ | 0.4− | 2005 05 04 | G96 | 0.4− | 0.4− | 2006 10 28 | 703 | 0.1− | 0.1+ |
| 1999 12 31 | 704 | 1.4+ | 1.2+ | 2005 05 11 | 691 | 0.3− | 0.5+ | 2006 11 10 | 704 | 0.6− | 0.7+ |
| 1999 12 31 | 704 | 0.6+ | 0.1+ | 2005 05 11 | 691 | 0.2− | 0.7+ | 2006 11 10 | 704 | 0.7− | 0.4+ |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2005 05 11 | 691 | 1.3+ | 1.2− | 2006 11 10 | 704 | 0.4− | 0.5+ |
| 2001 05 24 | 645 | 0.1− | 0.0 | 2006 08 05 | E12 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.2− | 0.5+ |
| 2003 12 30 | 704 | 0.8+ | 0.7− | 2006 08 05 | E12 | 0.5− | 0.0 | 2006 11 10 | 704 | 0.2− | 0.4+ |
| 2003 12 30 | 704 | 0.5+ | 0.1− | 2006 08 05 | E12 | (2.1+ | 1.0+) | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2003 12 30 | 704 | 0.4− | 0.9+ | 2006 08 05 | E12 | 0.7− | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.9− |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 09 12 | 704 | 0.6+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 09 12 | 704 | (0.3− | 2.0−) | 2006 11 17 | 704 | 0.3+ | 0.2− |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2006 09 12 | 704 | 0.7− | 0.3− | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 2004 01 31 | 704 | 0.9+ | 0.8+ | 2006 09 12 | 704 | (0.4− | 2.3−) | 2006 11 20 | 704 | 0.6+ | 0.5+ |
| 2004 01 31 | 704 | 0.2+ | 0.7+ | 2006 09 24 | 699 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.3− |
| 2004 01 31 | 704 | 0.2− | 0.1+ | 2006 09 24 | 699 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.6+ | 0.3+ |
| 2004 01 31 | 704 | 0.5− | 1.1+ | 2006 09 24 | 699 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.2+ |
| 2004 02 02 | 704 | 0.1+ | 0.2+ | 2006 09 24 | 699 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.8+ | 0.5+ |
| 2004 02 02 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 703 | 0.5− | 0.0 | | | | |
| 2004 02 02 | 704 | 0.6+ | 1.0+ | 2006 09 25 | 703 | 0.2− | 0.0 | | | | |

**(137808)∗ 1999 YU$_7$ = 2002 RZ$_{222}$**

Discovered 1999 Dec. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37235)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.76678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29164937 | $\omega$ | 340.98627 | | +0.13452946 | −0.98568901 | |
| $a$ | 2.2519670 | $\Omega$ | 101.18296 | | +0.92203399 | +0.08696703 | |
| $e$ | 0.1240025 | $i$ | 5.94355 | | +0.36298092 | +0.14440883 | |
| $P$ | 3.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.3+ | 0.1+ | 2002 09 15 | 608 | 0.8− | 1.4+ | 2004 04 21 | 691 | 0.1− | 0.2+ |
| 1999 12 14 | 704 | 0.0 | 0.3− | 2002 09 15 | 608 | 0.8− | 1.3+ | 2005 07 02 | 691 | 0.4− | 0.3+ |
| 1999 12 14 | 704 | 1.5+ | 0.3− | 2002 09 15 | 608 | 0.7− | 1.2+ | 2005 07 02 | 691 | 0.2+ | 0.2+ |
| 1999 12 27 | 691 | 0.1+ | 0.0 | 2002 09 16 | 644 | 0.3− | 0.3+ | 2005 07 02 | 691 | 0.0 | 0.2+ |
| 1999 12 27 | 691 | 0.1+ | 0.1+ | 2002 09 16 | 644 | 0.4− | 0.4+ | 2005 07 07 | 691 | 0.1+ | 0.0 |
| 1999 12 27 | 691 | 0.0 | 0.1+ | 2002 09 16 | 644 | 0.3− | 0.8+ | 2005 07 07 | 691 | 0.2− | 0.2+ |
| 1999 12 31 | 704 | 0.2+ | 0.7+ | 2004 03 23 | 704 | 0.1− | 1.0+ | 2005 07 07 | 691 | 0.3+ | 0.1+ |
| 1999 12 31 | 704 | 0.3− | 0.5− | 2004 03 23 | 704 | 0.7+ | 1.5+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 1999 12 31 | 704 | 0.0 | 0.5− | 2004 03 23 | 704 | 0.7+ | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.8− |
| 1999 12 31 | 691 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 1999 12 31 | 704 | 0.9− | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 1999 12 31 | 691 | 0.5− | 0.1− | 2004 03 26 | 704 | 0.1+ | 1.2+ | 2006 11 27 | 703 | 0.4+ | 1.9− |
| 1999 12 31 | 691 | 0.3− | 0.1− | 2004 03 26 | 704 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 1.1− | 1.3− |
| 2000 01 06 | 704 | 0.1− | 0.5+ | 2004 03 26 | 704 | 0.3+ | 1.0+ | 2006 11 27 | 703 | 0.5+ | 0.0 |
| 2000 01 06 | 704 | 0.0 | 0.8− | 2004 03 26 | 704 | 0.5− | 0.3+ | 2006 11 27 | 703 | 1.0− | 0.4+ |
| 2000 01 06 | 704 | 0.6− | 0.9− | 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2000 01 06 | 704 | 0.2+ | 0.3− | 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2000 01 10 | 691 | 0.1+ | 0.8+ | 2004 04 16 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2000 01 10 | 691 | 0.1+ | 1.2+ | 2004 04 21 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2000 01 10 | 691 | 0.1+ | 1.2+ | 2004 04 21 | 691 | 0.1+ | 0.2+ | | | | |

**(137809)∗ 1999 YL$_8$ = 2004 GH$_5$**

Discovered 1999 Dec. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60571)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.87560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29029807 | $\omega$ | 125.94823 | | −0.65275257 | +0.75067805 | |
| $a$ | 2.2589500 | $\Omega$ | 102.97399 | | −0.72439378 | −0.57909168 | |
| $e$ | 0.0567227 | $i$ | 6.00611 | | −0.22173798 | −0.31801776 | |
| $P$ | 3.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 691 | 0.3+ | 0.3− | 2004 04 11 | 644 | 0.2+ | 0.6+ | 2004 05 22 | 704 | 0.1− | 0.2+ |
| 1999 12 17 | 691 | 0.5+ | 0.4− | 2004 04 11 | 644 | 0.0 | 0.6+ | 2004 05 22 | 704 | 0.4− | 0.1+ |
| 1999 12 17 | 691 | 0.2+ | 0.1− | 2004 04 11 | 644 | 0.3+ | 0.3+ | 2005 08 31 | 644 | 0.3− | 0.2+ |
| 1999 12 27 | 691 | 0.0 | 0.3+ | 2004 04 13 | 703 | 0.2+ | 0.4+ | 2005 08 31 | 644 | 0.1+ | 0.6+ |
| 1999 12 27 | 691 | 0.0 | 0.1− | 2004 04 13 | 703 | 1.4− | 0.9− | 2005 08 31 | 644 | 0.0 | 0.1+ |
| 1999 12 27 | 691 | 0.0 | 0.1+ | 2004 04 13 | 703 | 1.0− | 0.9− | 2005 10 04 | 703 | 0.3− | 0.6− |
| 1999 12 31 | 691 | 0.6− | 0.6− | 2004 04 13 | 691 | 0.2− | 0.3+ | 2005 10 04 | 703 | 0.9− | 0.5+ |
| 1999 12 31 | 691 | 0.6− | 0.5− | 2004 04 13 | 703 | 0.1− | 0.7− | 2005 10 04 | 703 | 0.2− | 0.1+ |
| 1999 12 31 | 691 | 0.6− | 0.5− | 2004 04 13 | 691 | 0.1− | 0.6+ | 2005 10 04 | 703 | 0.6− | 0.4− |
| 2000 01 08 | 691 | 0.0 | 0.1+ | 2004 04 13 | 691 | 0.2− | 0.3+ | 2005 11 03 | G96 | 0.2+ | 0.2+ |
| 2000 01 08 | 691 | 0.0 | 0.1+ | 2004 04 17 | 699 | (1.6− | 0.7+) | 2005 11 03 | G96 | 0.1+ | 0.3+ |
| 2000 01 08 | 691 | 0.1+ | 0.1+ | 2004 04 17 | 699 | 0.5− | 0.8− | 2005 11 03 | G96 | 0.4+ | 0.0 |
| 2000 01 13 | 691 | 0.2+ | 0.2+ | 2004 04 17 | 699 | 0.7− | 0.3− | 2005 11 03 | G96 | 0.4+ | 0.3+ |
| 2000 01 13 | 691 | 0.2+ | 0.2+ | 2004 04 17 | 699 | 0.1− | 0.1− | 2005 11 03 | G96 | 0.2+ | 0.0 |
| 2000 01 13 | 691 | 0.3+ | 0.3+ | 2004 04 21 | 703 | 0.4+ | 0.1+ | 2005 11 03 | G96 | 0.2+ | 0.1+ |
| 2002 12 01 | 704 | 0.6− | 0.8+ | 2004 04 21 | 703 | 1.3+ | 0.7− | 2005 11 03 | G96 | 0.1− | 0.1− |
| 2002 12 01 | 704 | 0.7− | 1.1+ | 2004 04 21 | 703 | (1.2+ | 2.7+) | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2002 12 01 | 704 | 0.1+ | 1.5+ | 2004 04 21 | 703 | (2.0+ | 0.1+) | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.3+ | 0.6+ | 2004 04 23 | 704 | 1.3+ | 0.8+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.1− | 1.2+ | 2004 04 23 | 704 | 1.2+ | 0.4+ | 2006 11 24 | G96 | 0.6+ | 0.6+ |
| 2002 12 10 | 644 | 0.3− | 0.7+ | 2004 04 23 | 704 | 1.4+ | 0.7+ | 2006 11 25 | G96 | 0.3− | 0.3+ |
| 2004 03 20 | 704 | (3.1+ | 1.3−) | 2004 04 23 | 704 | 1.0+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.6+ |
| 2004 03 20 | 704 | (2.2+ | 0.1−) | 2004 04 23 | 704 | (1.9+ | 0.7−) | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | (2.2+ | 0.1+) | 2004 05 22 | 704 | 0.6+ | 1.3− | 2006 11 25 | G96 | 0.0 | 0.3+ |

**(137810)∗ 1999 YS$_8$**

Discovered 1999 Dec. 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.02368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28533835 | $\omega$ | 315.91160 | | +0.55418465 | −0.82794140 | |
| $a$ | 2.2850513 | $\Omega$ | 100.25340 | | +0.78584867 | +0.48634169 | |
| $e$ | 0.0972414 | $i$ | 5.01258 | | +0.27444716 | +0.27925758 | |
| $P$ | 3.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 09 | 691 | 0.0 | 0.3− | 2001 05 24 | 807 | 0.2+ | 0.2+ | 2004 03 16 | 704 | 0.8+ | 0.2− |
| 1994 06 09 | 691 | 0.5− | 0.0 | 2001 05 24 | 807 | 0.2+ | 0.3+ | 2004 03 16 | 704 | 0.9+ | 1.0+ |
| 1994 06 09 | 691 | 0.1+ | 0.0 | 2002 10 02 | 608 | (0.3+ | 1.9+) | 2004 03 16 | 704 | 1.2+ | 0.3+ |
| 1999 12 27 | 691 | 0.1+ | 0.0 | 2002 10 02 | 608 | (0.4+ | 2.2+) | 2004 03 18 | 691 | 0.0 | 0.4+ |
| 1999 12 27 | 691 | 0.4+ | 0.2+ | 2002 10 02 | 608 | (0.0 | 2.0+) | 2004 03 18 | 691 | 0.2+ | 0.3+ |
| 1999 12 27 | 691 | 0.4+ | 0.1+ | 2002 10 04 | 704 | 0.4− | 0.2+ | 2004 03 18 | 691 | 0.1− | 0.4+ |
| 1999 12 31 | 691 | 0.8− | 0.9− | 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.3+ |
| 1999 12 31 | 691 | 0.6− | 0.8− | 2002 10 04 | 704 | 0.6− | 1.0+ | 2004 03 20 | 704 | 0.0 | 0.5+ |
| 1999 12 31 | 691 | 0.7− | 0.8− | 2002 10 04 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.2− | 0.7+ |
| 2000 01 04 | 704 | 0.5− | 0.3+ | 2002 10 09 | 699 | 0.6− | 1.1+ | 2004 03 20 | 704 | 0.7− | 0.0 |
| 2000 01 04 | 704 | 0.5− | 0.4− | 2002 10 09 | 699 | 0.2+ | 0.6+ | 2004 03 20 | 704 | 0.3− | 0.9+ |
| 2000 01 04 | 704 | 0.5− | 0.3− | 2002 10 09 | 699 | 0.6− | 0.7+ | 2004 03 23 | 704 | 0.5+ | 1.4+ |
| 2000 01 04 | 704 | 1.0− | 1.0− | 2002 10 09 | 699 | (2.2− | 1.1+) | 2004 03 23 | 704 | (1.8+ | 0.4+) |
| 2000 01 08 | 734 | 0.7− | 0.0 | 2002 10 30 | 683 | 0.5− | 0.3+ | 2004 03 23 | 704 | 0.5+ | 0.1+ |
| 2000 01 08 | 734 | 0.1+ | 0.6− | 2002 10 30 | 683 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.1− |
| 2000 01 08 | 734 | 0.2+ | 0.1+ | 2002 10 30 | 683 | (2.4− | 1.2−) | 2004 03 24 | 699 | 0.9+ | 0.2+ |
| 2000 01 08 | 691 | 0.4+ | 0.4− | 2002 10 31 | 683 | (2.2+ | 1.3+) | 2004 03 24 | 699 | 0.3− | 0.1− |
| 2000 01 08 | 691 | 0.3+ | 0.0 | 2002 10 31 | 683 | (1.7+ | 0.9+) | 2004 03 24 | 699 | 1.1+ | 0.1− |
| 2000 01 08 | 691 | 0.2+ | 0.0 | 2002 10 31 | 704 | 0.3− | 0.2+ | 2004 03 24 | 699 | 0.5+ | 0.0 |
| 2000 01 13 | 691 | 0.5+ | 0.3+ | 2002 10 31 | 683 | 0.4− | 0.6− | 2005 07 18 | 644 | 0.1− | 0.4− |
| 2000 01 13 | 691 | 0.5+ | 0.2+ | 2002 10 31 | 704 | 0.1− | 0.2+ | 2005 07 18 | 644 | 0.1+ | 0.2− |
| 2000 01 13 | 691 | 0.6+ | 0.1+ | 2002 10 31 | 704 | 0.5− | 0.4+ | 2005 07 18 | 644 | 0.2− | 0.0 |
| 2000 01 14 | 691 | 0.1− | 0.2+ | 2002 10 31 | 704 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 14 | 691 | 0.1− | 0.2+ | 2002 10 31 | 704 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.2+ |
| 2000 01 14 | 691 | 0.1+ | 0.1+ | 2002 10 31 | 608 | 0.7+ | 0.8+ | 2006 10 17 | G96 | 0.6− | 0.7− |
| 2000 01 15 | 691 | 0.1+ | 0.1+ | 2002 10 31 | 608 | 0.8+ | 0.8+ | 2006 10 17 | G96 | 0.2+ | 1.3+ |
| 2000 01 15 | 691 | 0.0 | 0.1− | 2002 10 31 | 608 | 0.6+ | 0.8+ | 2006 11 01 | G96 | 0.6− | 0.5+ |
| 2000 01 15 | 691 | 0.1+ | 0.1+ | 2002 11 07 | 704 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.2+ |
| 2000 01 21 | 734 | 0.2+ | 0.1+ | 2002 11 07 | 704 | 0.3+ | 0.6− | 2006 11 01 | G96 | 0.0 | 0.7− |
| 2000 01 21 | 734 | 0.6− | 0.1− | 2002 11 07 | 704 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.4− | 0.1− |
| 2000 01 21 | 734 | 1.4− | 0.2− | 2002 11 07 | 704 | 0.9+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2000 01 31 | 704 | 0.6+ | 0.9+ | 2002 11 11 | 704 | 0.7− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2000 01 31 | 704 | 0.3− | 0.2+ | 2002 11 11 | 704 | 0.2− | 1.1+ | 2006 11 16 | G96 | 0.3− | 0.3+ |
| 2000 01 31 | 704 | 0.2+ | 0.3− | 2002 11 11 | 704 | 1.2− | 0.5+ | 2006 11 16 | G96 | 0.4− | 0.2+ |
| 2000 01 31 | 704 | 0.8− | 0.7+ | 2004 03 16 | 704 | 0.5+ | 0.4+ | | | | |

**(137811)∗ 1999 YD$_{14}$ = 2002 PD$_{134}$**

Discovered 1999 Dec. 31 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33176)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.83585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26681434 | $\omega$ | 264.27969 | | +0.82822879 | −0.55857590 | |
| $a$ | 2.3896260 | $\Omega$ | 129.66859 | | +0.53453075 | +0.76331049 | |
| $e$ | 0.2282502 | $i$ | 3.35562 | | +0.16826749 | +0.32457673 | |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 691 | 0.0 | 0.2+ | 2002 09 06 | 704 | 1.2+ | 0.1− | 2006 10 22 | 683 | (1.9+ | 0.5−) |
| 1999 12 31 | 691 | 0.1− | 0.2+ | 2002 09 06 | 704 | 0.0 | 0.3+ | 2006 10 22 | 683 | 1.2+ | 0.4− |
| 1999 12 31 | 691 | 0.4− | 0.1− | 2002 09 06 | 704 | 0.6+ | 0.6− | 2006 10 22 | 683 | (1.7+ | 0.1−) |
| 2000 01 03 | 691 | 0.4− | 0.1+ | 2002 09 10 | 608 | 0.5− | 0.2+ | 2006 10 26 | 106 | 0.4+ | 0.5− |
| 2000 01 03 | 691 | 0.4− | 0.1+ | 2002 09 10 | 608 | 0.4− | 0.3+ | 2006 10 26 | 106 | 0.2+ | 0.6− |
| 2000 01 03 | 691 | 0.5− | 0.3+ | 2002 09 10 | 608 | 0.6− | 0.8+ | 2006 10 26 | 106 | 0.2+ | 0.5− |
| 2000 01 12 | 691 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.1− | 0.2− | 2006 10 26 | 106 | 0.6+ | 0.7− |
| 2000 01 12 | 691 | 0.1+ | 0.2+ | 2002 09 15 | 644 | 0.1+ | 0.2− | 2006 10 27 | 704 | 0.2+ | 0.1− |
| 2000 01 12 | 691 | 0.2+ | 0.2+ | 2002 09 15 | 644 | 0.0 | 0.1− | 2006 10 27 | 704 | 0.4− | 0.1− |
| 2000 02 03 | 691 | 0.3+ | 0.3+ | 2004 03 11 | 644 | 0.0 | 0.8+ | 2006 10 27 | 704 | 0.1− | 0.4− |
| 2000 02 03 | 691 | 0.2+ | 0.5− | 2004 03 11 | 644 | 0.6+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2000 02 03 | 691 | 0.4+ | 0.1− | 2004 03 11 | 644 | (1.7+ | 0.3−) | 2006 11 09 | 644 | 0.2− | 0.4− |
| 2000 02 12 | 691 | 0.3+ | 0.1− | 2005 06 13 | 691 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.3− |
| 2000 02 12 | 691 | 0.2+ | 0.1− | 2005 06 13 | 691 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2000 02 12 | 691 | 0.2+ | 0.1− | 2005 06 13 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2002 08 08 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.7+ | 1.1− | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2002 08 08 | 644 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.6+ | 0.2− | 2006 11 14 | 704 | (2.0+ | 2.2+) |
| 2002 08 08 | 644 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.2+ |
| 2002 08 08 | 644 | 0.1− | 0.3+ | 2006 09 17 | 699 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.3+ | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.5+ | 2006 09 17 | 699 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.6− |
| 2002 08 14 | 704 | 0.2− | 0.5+ | 2006 09 17 | 699 | 0.7− | 0.4− | 2006 11 14 | 704 | 0.3+ | 0.1− |
| 2002 08 14 | 704 | 0.5− | 0.9+ | 2006 09 17 | 699 | 1.2+ | 1.2+ | 2006 11 17 | 704 | 0.3+ | 0.7+ |
| 2002 08 14 | 704 | 0.3− | 0.6− | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 11 17 | 704 | 0.0 | 0.8+ |
| 2002 08 14 | 704 | 0.6− | 0.5− | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2002 08 14 | 704 | 0.4+ | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.0 |
| 2002 08 17 | 608 | 0.1+ | 1.1− | 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2002 08 17 | 608 | 0.1+ | 0.8− | 2006 09 22 | 704 | 0.1− | 0.7− | 2006 11 18 | G96 | 0.2+ | 1.1− |
| 2002 08 17 | 608 | 0.1+ | 0.7− | 2006 09 22 | 704 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.6− |
| 2002 08 18 | 644 | 0.1+ | 0.9+ | 2006 09 22 | 704 | 0.3+ | 1.1− | 2006 11 18 | G96 | 0.2+ | 1.0− |
| 2002 08 18 | 644 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.3− | 1.1− |
| 2002 08 18 | 644 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.8− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.6+ |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.8− | 2006 11 19 | 704 | (1.7− | 0.8+) |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 1.0+ | 0.9− | 2006 11 19 | 704 | 1.3− | 1.1+ |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 683 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.9− | 1.1+ |
| 2002 08 29 | 246 | 0.0 | 1.2+ | 2006 10 17 | 683 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.8− | 1.0+ |
| 2002 08 29 | 246 | 0.9− | 0.2− | 2006 10 17 | 683 | 0.5+ | 0.8+ | 2006 11 20 | 704 | 0.7− | 0.6+ |
| 2002 08 29 | 246 | 0.2− | 0.5− | 2006 10 19 | 683 | 0.3− | 0.3− | 2006 11 20 | 704 | 1.3− | 1.4+ |
| 2002 08 29 | 246 | 0.2+ | 0.2− | 2006 10 19 | 683 | 0.6+ | 0.9+ | 2006 11 20 | 704 | (1.7− | 0.6+) |
| 2002 08 29 | 246 | 1.0− | 0.3− | 2006 10 19 | 683 | (1.8− | 0.7+) | 2006 11 20 | 704 | 0.7− | 0.9+ |
| 2002 08 29 | 246 | 0.7− | 0.1− | 2006 10 20 | 683 | 1.1+ | 0.4− | 2006 11 20 | 704 | 0.9− | 0.9+ |
| 2002 08 29 | 246 | 0.4− | 0.1+ | 2006 10 20 | 683 | 0.7+ | 0.5+ | 2006 11 28 | 704 | 0.7+ | 1.2+ |
| 2002 09 05 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 683 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.3+ | 1.7+ |
| 2002 09 05 | 704 | 0.2− | 0.0 | 2006 10 22 | 704 | (1.7+ | 3.0−) | 2006 11 28 | 704 | 0.4+ | 1.3+ |
| 2002 09 05 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 704 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 2002 09 05 | 704 | 1.3+ | 0.6+ | 2006 10 22 | 704 | 0.9− | 0.2+ | 2006 11 28 | 704 | 0.7− | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.2− | 2006 10 22 | 704 | 0.5− | 0.2+ | | | | |

**(137812)∗ 1999 YU$_{14}$ = 1999 YB$_{27}$**

Discovered 1999 Dec. 31 by G. Hug and G. Bell at Farpoint Observatory, Eskridge.

Id. A. Doppler (d, *MPO* 11069)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.27043 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26707272 | $\omega$ | 122.16760 | | +0.35515229 | −0.93311803 | |
| $a$ | 2.3880846 | $\Omega$ | 306.92700 | | +0.83226191 | +0.34299391 | |
| $e$ | 0.1249651 | $i$ | 4.03082 | | +0.42568411 | +0.10791627 | |
| $P$ | 3.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 27 | 691 | 0.4+ | 1.0+ | 2002 09 13 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 1998 07 27 | 691 | 0.0 | 0.3+ | 2002 09 13 | 644 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 1998 07 27 | 691 | 0.2+ | 0.3+ | 2002 09 13 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 1999 12 31 | 691 | 0.7− | 1.1− | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.6+ |
| 1999 12 31 | 691 | 0.6− | 1.1− | 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.1− |
| 1999 12 31 | 734 | 0.9+ | 1.4+ | 2002 09 14 | 644 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.1− | 0.2+ |
| 1999 12 31 | 734 | 0.6+ | 0.7+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.4− | 0.3+ |
| 1999 12 31 | 734 | 1.1+ | 0.6+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1999 12 31 | 734 | 0.2+ | 0.8− | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1999 12 31 | 691 | 0.5− | 1.1− | 2002 10 10 | 645 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2000 01 03 | 734 | 0.4− | 0.3+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.2− | 0.4+ |
| 2000 01 03 | 734 | 0.7+ | 0.6+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2000 01 03 | 734 | 0.6− | 1.4+ | 2004 02 19 | 704 | 0.3+ | 1.0+ | 2006 11 10 | 644 | 0.2− | 0.4+ |
| 2000 01 03 | 734 | 1.3− | 0.0 | 2004 02 19 | 704 | 1.2+ | 1.0+ | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2000 01 06 | 691 | 0.2+ | 0.2− | 2004 02 19 | 704 | (0.0 | 2.3+) | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2000 01 06 | 691 | 0.1+ | 0.1− | 2004 02 19 | 704 | (0.3− | 1.9+) | 2006 11 16 | 704 | 0.5+ | 0.9+ |
| 2000 01 06 | 691 | 0.2+ | 0.0 | 2004 02 19 | 704 | (1.1+ | 2.8+) | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2000 01 11 | 704 | 0.5− | 0.3+ | 2004 03 18 | 704 | (0.3− | 1.6+) | 2006 11 16 | 704 | 0.6− | 0.2+ |
| 2000 01 11 | 704 | 0.4+ | 0.7+ | 2004 03 18 | 704 | 0.8− | 0.8+ | 2006 11 17 | 704 | 0.8+ | 0.1− |
| 2000 01 11 | 704 | 1.0− | 0.4+ | 2004 03 18 | 704 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.3+ | 1.2+ |
| 2000 01 11 | 691 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 0.7+ | 0.6− |
| 2000 01 11 | 691 | 0.5+ | 0.3+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.7+ | 1.0− |
| 2000 01 11 | 691 | 0.4+ | 0.0 | 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.6− | 0.2+ |
| 2000 01 16 | 734 | 0.5+ | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2000 01 16 | 734 | 0.5+ | 0.1− | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.9+ |
| 2000 01 16 | 734 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2000 01 16 | 734 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2000 01 16 | 734 | 1.4+ | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.7+ | 0.8+ |
| 2000 02 07 | 734 | 0.8− | 2.0+ | 2006 10 19 | 703 | 0.7+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2000 02 07 | 734 | 0.7− | 0.6− | 2006 10 19 | 703 | 0.9− | 0.2+ | 2006 11 22 | 704 | 1.2+ | 0.5+ |
| 2000 02 07 | 734 | 0.9− | 1.4− | 2006 10 19 | 703 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2000 02 07 | 734 | 1.2− | 0.6+ | 2006 10 19 | 703 | 0.5− | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.8+ |
| 2002 09 04 | 699 | (0.6− | 3.1+) | 2006 10 19 | 703 | 0.6+ | 1.3+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2002 09 04 | 699 | (1.6− | 0.5+) | 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2002 09 04 | 699 | 1.4− | 0.8+ | 2006 10 19 | 703 | 0.0 | 0.9+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2002 09 04 | 699 | (1.5− | 1.0+) | 2006 10 19 | 703 | 0.1− | 0.4− | 2006 11 25 | G96 | 0.3− | 0.1− |

**(137813)∗ 1999 YB$_{16}$ = 1995 UV$_{66}$**

Discovered 1999 Dec. 31 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 15653)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.73792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25803123 | $\omega$ | 153.72536 | | +0.48130202 | +0.87607753 | |
| $a$ | 2.4435498 | $\Omega$ | 145.02399 | | −0.81284669 | +0.45842727 | |
| $e$ | 0.2013230 | $i$ | 2.89211 | | −0.32806801 | +0.14944094 | |
| $P$ | 3.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1− | 0.1+ | 2005 04 11 | G96 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.2− |
| 1995 10 17 | 691 | 0.3+ | 0.2− | 2005 04 11 | G96 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.5− |
| 1995 10 17 | 691 | 0.3+ | 0.1− | 2005 04 11 | G96 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.2− |
| 1995 10 28 | 691 | 0.0 | 0.1− | 2006 08 01 | A50 | 0.5+ | 0.1+ | 2006 08 28 | 699 | 0.6− | 0.3− |
| 1995 10 28 | 691 | 0.3+ | 0.0 | 2006 08 01 | A50 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.2+ |
| 1995 10 28 | 691 | 0.1+ | 0.2− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.5− | 0.4+ |
| 1999 12 31 | 691 | 0.9− | 0.3− | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 08 29 | 704 | 0.9+ | 0.8+ |
| 1999 12 31 | 691 | 0.4+ | 0.3− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.7+ | 0.3+ |
| 1999 12 31 | 691 | 0.3− | 0.3− | 2006 08 17 | 644 | 0.4− | 0.1− | 2006 08 29 | 704 | 0.9+ | 0.8+ |
| 2000 01 05 | 691 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.2− | 0.4+ | 2006 08 29 | 704 | 0.5+ | 0.5+ |
| 2000 01 05 | 691 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.9+ | 0.7+ |
| 2000 01 05 | 691 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 08 31 | 704 | 0.6+ | 0.6+ |
| 2000 01 12 | 691 | 0.3− | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 08 31 | 704 | 0.1− | 0.1− |
| 2000 01 12 | 691 | 0.2− | 0.2− | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.6+ | 0.3− |
| 2000 01 12 | 691 | 0.1− | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.6+ | 0.6− |
| 2002 07 05 | 704 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.2− | 2006 08 31 | 704 | 1.0+ | 1.1+ |
| 2002 07 05 | 704 | 0.3− | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.2− | 0.6− |
| 2002 07 05 | 704 | 0.3+ | 0.3− | 2006 08 19 | 291 | 0.5− | 0.0 | 2006 09 14 | 703 | (0.3− | 1.9+) |
| 2002 07 05 | 704 | 0.6− | 0.2− | 2006 08 19 | 291 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.2+ |
| 2002 07 05 | 704 | 0.2+ | 0.0 | 2006 08 19 | 291 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.2− | 0.0 |
| 2003 12 25 | 691 | 0.1+ | 0.3+ | 2006 08 21 | 704 | 0.6− | 0.2− | 2006 09 20 | 704 | (0.4+ | 1.5−) |
| 2003 12 25 | 691 | 0.4+ | 0.5+ | 2006 08 21 | 704 | 0.3− | 0.0 | 2006 09 20 | 704 | (1.3+ | 1.6−) |
| 2003 12 25 | 691 | 0.0 | 0.1+ | 2006 08 21 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.5− | 0.3+ |
| 2005 03 03 | 691 | 0.3+ | 0.3+ | 2006 08 21 | 704 | 0.3+ | 0.2− | 2006 09 20 | 704 | 0.0 | 1.1− |
| 2005 03 03 | 691 | 0.5+ | 0.1+ | 2006 08 21 | 704 | 0.7− | 0.1+ | 2006 09 20 | 704 | 1.1+ | 0.1− |
| 2005 03 03 | 691 | 0.6+ | 0.0 | 2006 08 25 | 704 | 0.8+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2005 03 04 | G96 | 0.5− | 0.3+ | 2006 08 25 | 704 | 0.3− | 0.5− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2005 03 04 | G96 | 0.3− | 0.0 | 2006 08 25 | 704 | 0.1+ | 0.9+ | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2005 03 04 | G96 | 0.5− | 0.2+ | 2006 08 25 | 704 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2005 03 04 | G96 | 0.5− | 0.2+ | 2006 08 25 | 704 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 03 10 | G96 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.5+ | 0.4− |
| 2005 03 10 | G96 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.4− | | | | |
| 2005 04 11 | G96 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.8− | 0.6− | | | | |

**(137814)∗ 1999 YJ$_{17}$**

Discovered 1999 Dec. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.52855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26193790 | $\omega$ | 158.30865 | | −0.03205681 | −0.99593718 | |
| $a$ | 2.4191928 | $\Omega$ | 293.44644 | | +0.90299732 | +0.00723247 | |
| $e$ | 0.0911470 | $i$ | 5.26286 | | +0.42844860 | −0.08975980 | |
| $P$ | 3.76 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 691 | 0.1− | 0.4− | 2002 10 12 | 704 | 0.0 | 0.9+ | 2006 10 19 | 703 | 0.6+ | 0.6+ |
| 1999 12 31 | 691 | 0.1+ | 0.3− | 2002 10 12 | 704 | 1.0+ | 0.5+ | 2006 10 19 | 703 | 0.7+ | 0.1+ |
| 1999 12 31 | 691 | 0.0 | 0.2− | 2002 10 12 | 704 | (0.4+ | 2.2+) | 2006 10 27 | 703 | 0.5− | 0.4− |
| 2000 01 06 | 691 | 0.3− | 0.1+ | 2004 02 14 | 699 | 1.2+ | 0.5− | 2006 10 27 | 703 | 0.4+ | 0.7+ |
| 2000 01 06 | 691 | 0.1+ | 0.1+ | 2004 02 14 | 699 | 0.8− | 1.0+ | 2006 10 27 | 703 | 0.5− | 0.5− |
| 2000 01 06 | 691 | 0.1− | 0.1− | 2004 02 14 | 699 | 1.3+ | 0.7+ | 2006 10 27 | 703 | 0.6− | 0.2− |
| 2000 01 13 | 691 | 0.1− | 0.1− | 2004 02 14 | 699 | 0.7+ | 0.6+ | 2006 11 14 | 703 | 0.7+ | 0.3+ |
| 2000 01 13 | 691 | 0.0 | 0.1− | 2004 02 24 | 608 | 0.2+ | 0.6− | 2006 11 14 | 703 | 0.6− | 0.3− |
| 2000 01 13 | 691 | 0.2− | 0.2− | 2004 02 24 | 608 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.5− | 0.4+ |
| 2000 02 02 | 704 | 0.7+ | 0.4+ | 2004 02 24 | 608 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.7− | 0.2− |
| 2000 02 02 | 704 | 0.0 | 0.4+ | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.4+ | 0.0 |
| 2000 02 02 | 704 | 0.3+ | 0.8+ | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.5+ |
| 2000 02 02 | 704 | 0.3+ | 0.8+ | 2004 02 26 | 704 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.4− | 0.2− |
| 2000 02 02 | 704 | 0.0 | 0.8+ | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.5+ | 0.6− |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.2+ | 1.1− | 2006 11 16 | 704 | (1.8+ | 0.1+) |
| 2002 09 06 | 704 | 0.6+ | 0.2+ | 2004 03 16 | 691 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.3− | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2004 03 16 | 704 | (0.5− | 1.7+) | 2006 11 16 | 704 | 0.4+ | 0.1+ |
| 2002 09 06 | 704 | 0.2− | 0.6+ | 2004 03 16 | 704 | (0.9+ | 1.7−) | 2006 11 16 | 704 | 0.8− | 0.4− |
| 2002 09 14 | 608 | 0.7− | 0.8+ | 2004 03 16 | 691 | 0.0 | 0.4+ | 2006 11 22 | 703 | 0.1− | 0.4+ |
| 2002 09 14 | 608 | 1.2− | 0.9+ | 2004 03 16 | 704 | 0.7+ | 0.6− | 2006 11 22 | 703 | 1.0+ | 0.2+ |
| 2002 09 14 | 608 | 0.8− | 0.8+ | 2004 03 16 | 704 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.3− | 0.1− | 2004 03 19 | 704 | 0.7− | 0.4+ | 2006 11 22 | 703 | 0.3− | 0.6− |
| 2002 10 04 | 704 | 0.4− | 0.4+ | 2004 03 19 | 704 | 0.1− | 1.3+ | 2006 11 25 | G96 | 0.6+ | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.8− | 0.2+ | 2006 11 25 | G96 | 0.6+ | 0.0 |
| 2002 10 04 | 704 | 0.5− | 0.5+ | 2006 10 19 | 703 | 0.7− | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2002 10 12 | 704 | (1.6+ | 2.1+) | 2006 10 19 | 703 | 1.0− | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.3− |

**(137815)∗ 1999 YS$_{23}$**

Discovered 1999 Dec. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.80923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26678707 | $\omega$ | 221.44286 | | +0.79455635 | −0.60718389 | |
| $a$ | 2.3897889 | $\Omega$ | 175.94026 | | +0.56703779 | +0.74034641 | |
| $e$ | 0.1899976 | $i$ | 2.28037 | | +0.21713674 | +0.28846995 | |
| $P$ | 3.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.4− | 0.2+ | 1999 12 27 | 691 | 0.4− | 0.3− | 2006 08 19 | 691 | 0.1− | 0.4+ |
| 1995 09 17 | 691 | 0.2+ | 0.0 | 1999 12 27 | 691 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.2− | 0.3− |
| 1995 09 17 | 691 | 0.4− | 0.1+ | 2000 01 11 | 691 | 0.2− | 0.5− | 2006 08 19 | 691 | 0.0 | 0.3+ |
| 1995 09 22 | 809 | 1.5+ | 0.0 | 2000 01 11 | 691 | 0.3+ | 0.6− | 2006 08 28 | 699 | 0.2− | 0.0 |
| 1995 09 22 | 691 | 0.3− | 0.1− | 2000 01 11 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.8+ | 0.3+ |
| 1995 09 22 | 691 | 0.5+ | 0.6− | 2003 12 22 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.9+ | 0.3− |
| 1995 09 22 | 691 | 0.2+ | 0.0 | 2003 12 22 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 1.2+ |
| 1999 12 07 | 704 | 0.4− | 0.4+ | 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 1999 12 07 | 704 | 0.2− | 0.5− | 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 1999 12 07 | 704 | 0.3− | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 1999 12 09 | 691 | 0.1+ | 0.4+ | 2004 01 27 | 691 | 1.2− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1999 12 09 | 691 | 0.5+ | 0.3+ | 2004 02 16 | 691 | 0.7+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 1999 12 09 | 691 | 0.2+ | 0.5+ | 2004 02 16 | 691 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 1.0− | 0.4− |
| 1999 12 16 | 691 | 0.2− | 0.2− | 2004 02 16 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 1999 12 16 | 691 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1999 12 16 | 691 | 0.1+ | 0.1− | 2006 08 19 | 691 | 0.5− | 0.3+ | | | | |
| 1999 12 27 | 691 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.2− | 0.4+ | | | | |

**(137816)∗ 1999 YD$_{25}$**

Discovered 1999 Dec. 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.14936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12674897 | $\omega$ | 108.65299 | | +0.99488739 | −0.07257188 | |
| $a$ | 3.9250008 | $\Omega$ | 255.55558 | | +0.04056978 | +0.92404202 | |
| $e$ | 0.2023879 | $i$ | 4.15895 | | +0.09248342 | +0.37533940 | |
| $P$ | 7.78 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 26 | 691 | 0.8+ | 0.2− | 2005 07 12 | 703 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.4− |
| 1992 12 26 | 691 | 0.7+ | 0.4− | 2005 07 30 | E12 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.3− | 0.4− |
| 1992 12 26 | 691 | 0.5+ | 0.2− | 2005 07 30 | E12 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.8− |
| 1998 09 15 | 699 | 0.1− | 0.8+ | 2005 07 30 | E12 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.0 |
| 1998 09 15 | 699 | 0.7− | 0.1+ | 2005 07 30 | E12 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.6− | 0.0 |
| 1998 09 15 | 699 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1998 09 18 | 699 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.9+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 1998 09 18 | 699 | 0.2+ | 0.6+ | 2006 09 20 | 699 | 1.3− | 1.0− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 1998 09 18 | 699 | 0.8+ | 0.9+ | 2006 09 25 | 704 | 1.0+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 1998 10 14 | 699 | 0.5− | 0.4− | 2006 09 25 | 704 | 0.7− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1998 10 14 | 699 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 1998 10 14 | 699 | 0.7+ | 0.2− | 2006 09 25 | 704 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 1.3− | 0.7+ | 2006 09 25 | 704 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.2− |
| 1999 12 08 | 704 | 1.4+ | 1.3− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1999 12 08 | 704 | 0.4− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1999 12 08 | 704 | 0.5+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 1999 12 27 | 691 | 0.5− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 1999 12 27 | 691 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 1999 12 27 | 691 | 0.5− | 0.2− | 2006 09 28 | 691 | (1.9− | 0.6−) | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 2000 01 05 | 691 | 0.9− | 0.7− | 2006 09 29 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.8+ |
| 2000 01 05 | 691 | 1.1− | 0.7− | 2006 09 29 | 704 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.7+ | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.5− | 0.7− | 2006 09 29 | 704 | 0.6− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2001 03 23 | 691 | 0.4+ | 0.6+ | 2006 10 03 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2001 03 23 | 691 | 0.4+ | 0.2+ | 2006 10 03 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.4− | 0.1+ |
| 2005 06 18 | G96 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.6− | 0.0 | 2006 11 16 | 704 | (0.0 | 1.8+) |
| 2005 06 18 | G96 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.6− | 0.2− | 2006 11 16 | 704 | (1.5− | 1.6+) |
| 2005 06 18 | G96 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.5− | 0.2+ | 2006 11 16 | 704 | (1.0− | 1.7+) |
| 2005 06 18 | G96 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3− | 2006 11 16 | 704 | (1.2+ | 1.9+) |
| 2005 06 29 | 691 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2005 06 29 | 691 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.4+ | 0.9+ |
| 2005 06 29 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.8+ | 0.9+ |
| 2005 07 05 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 1.3+ | 0.2+ |
| 2005 07 05 | 691 | 0.2− | 1.2− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 1.3+ | 0.4+ |
| 2005 07 05 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.0+ | 1.1+ |
| 2005 07 11 | G96 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.7− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2005 07 11 | G96 | 0.3+ | 0.7− | 2006 10 17 | 703 | 0.0 | 0.9− | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2005 07 11 | G96 | 0.3+ | 0.6− | 2006 10 17 | 703 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2005 07 11 | G96 | 0.3+ | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.3+ |
| 2005 07 12 | 703 | 1.2− | 1.0+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.8+ |
| 2005 07 12 | 703 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2005 07 12 | 703 | 1.2− | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.2− | 1.0+ |

**(137817)∗ 2000 AE$_1$**

Discovered 2000 Jan. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.63841 | | (2000.0) | | | |
| $n$ | 0.26146500 | $\omega$ | 192.76964 | | +0.56089962 | −0.82785994 |
| $a$ | 2.4221089 | $\Omega$ | 223.11277 | | +0.76037514 | +0.51815088 |
| $e$ | 0.1760559 | $i$ | 0.52713 | | +0.32744658 | +0.21486644 |
| $P$ | 3.77 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 05 | 691 | 0.3− | 0.0 | 2002 09 05 | 704 | 1.3− | 0.0 | 2006 09 29 | 704 | 0.0 | 0.7− |
| 1997 05 05 | 691 | 0.4− | 0.4+ | 2002 09 07 | 704 | 0.8− | 0.1− | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 1997 05 05 | 691 | 0.6− | 0.3− | 2002 09 07 | 704 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 1998 07 16 | 691 | 0.2+ | 0.7+ | 2002 09 07 | 704 | 0.2− | 1.1+ | 2006 09 30 | 691 | (0.3− | 2.1+) |
| 1998 07 16 | 691 | 0.6+ | 0.7+ | 2002 09 07 | 704 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1998 07 16 | 691 | 0.4+ | 0.3− | 2002 09 08 | 608 | 0.2− | 0.3− | 2006 10 15 | 691 | 0.5− | 0.0 |
| 1998 07 27 | 691 | (2.7− | 4.4−) | 2002 09 08 | 608 | 0.3− | 0.7+ | 2006 10 15 | 691 | 0.4− | 0.1− |
| 1998 07 27 | 691 | 0.4+ | 0.1+ | 2002 09 08 | 608 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 1998 07 27 | 691 | 0.4+ | 0.3+ | 2002 09 14 | 644 | 1.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2000 01 02 | 691 | 0.5− | 0.1+ | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2000 01 02 | 691 | 0.3− | 0.3+ | 2002 09 14 | 644 | 0.7− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2000 01 02 | 691 | 0.4− | 0.1+ | 2002 09 16 | 644 | 1.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 01 03 | 691 | 0.2− | 0.0 | 2002 09 16 | 644 | 1.1− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2000 01 03 | 691 | 0.4− | 0.1− | 2002 09 16 | 644 | 0.8− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2000 01 03 | 691 | 0.1− | 0.2− | 2004 03 12 | 644 | 1.0+ | 0.3+ | 2006 10 27 | 691 | 0.5− | 0.0 |
| 2000 01 13 | 691 | 0.2+ | 0.3+ | 2004 03 12 | 644 | 1.1+ | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2000 01 13 | 691 | 0.0 | 0.0 | 2004 03 12 | 644 | 1.0+ | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2000 01 13 | 691 | 0.1− | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2000 02 02 | 704 | 0.4− | 1.0+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2000 02 02 | 704 | 0.5− | 0.8+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2000 02 02 | 704 | 0.7+ | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2000 02 02 | 704 | 0.0 | 0.7+ | 2006 07 22 | G96 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.5− | 0.3− |
| 2000 02 02 | 704 | 0.7+ | 0.8+ | 2006 07 22 | G96 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2000 02 03 | 704 | 0.3− | 0.4+ | 2006 07 22 | G96 | 0.7+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2000 02 03 | 704 | 0.6− | 1.6+ | 2006 07 22 | G96 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2000 02 03 | 704 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2000 02 03 | 704 | 0.1+ | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2000 02 03 | 704 | 0.6+ | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2000 03 04 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.6+ | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2000 03 04 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 1.0− | 0.6− | 2006 11 06 | 644 | 0.4− | 0.1− |
| 2000 03 04 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.8− | 2006 11 06 | 644 | 0.1+ | 0.4+ |
| 2000 03 10 | 691 | 0.7+ | 0.7− | 2006 09 18 | 699 | 0.7+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2000 03 10 | 691 | 0.6+ | 0.4− | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2000 03 10 | 691 | 0.4+ | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2002 08 29 | 291 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2002 08 29 | 291 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2002 08 29 | 291 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2002 09 05 | 699 | 0.6+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2002 09 05 | 699 | 0.8+ | 0.1+ | 2006 09 27 | 704 | 1.3+ | 0.8− | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2002 09 05 | 699 | 0.7− | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2002 09 05 | 699 | 0.3− | 0.9+ | 2006 09 27 | 704 | 0.4+ | 0.8− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 1.2− | 0.5+ | 2006 09 27 | 704 | 0.0 | 0.9− | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.4− | 0.5+ | 2006 09 29 | 704 | (0.8+ | 2.0+) | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2002 09 05 | 704 | 1.0− | 0.2− | 2006 09 29 | 704 | 1.3+ | 0.0 | | | | |

**(137818)∗ 2000 AR$_3$**

Discovered 2000 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.55930 | | (2000.0) | | | |
| $n$ | 0.26272185 | $\omega$ | 110.53504 | | +0.57474080 | −0.79637624 |
| $a$ | 2.4143779 | $\Omega$ | 302.96763 | | +0.64201619 | +0.58149000 |
| $e$ | 0.1635781 | $i$ | 12.97012 | | +0.50743297 | +0.16629570 |
| $P$ | 3.75 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.4+ | 0.0 | 2002 09 06 | 704 | 0.6+ | 1.3+ | 2004 03 11 | 644 | 0.4+ | 0.8+ |
| 1999 11 01 | 704 | 0.2+ | 0.8− | 2002 09 06 | 704 | 1.3− | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.6+ |
| 1999 11 01 | 704 | 1.2− | 0.9− | 2002 09 06 | 704 | 0.7− | 0.4− | 2004 03 15 | 704 | 0.3+ | 0.1− |
| 1999 11 01 | 704 | 1.6− | 0.2− | 2002 09 08 | 608 | 0.6− | 1.1− | 2004 03 15 | 704 | 0.1− | 0.7− |
| 1999 12 12 | 704 | 0.2− | 0.4− | 2002 09 08 | 608 | 0.9− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.6+ |
| 1999 12 12 | 704 | 0.5− | 0.3− | 2002 09 08 | 608 | 0.8− | 0.3− | 2006 08 10 | 644 | 0.3− | 0.1− |
| 1999 12 12 | 704 | 0.5− | 0.3− | 2003 12 21 | 704 | 0.8+ | 0.2+ | 2006 08 10 | 644 | 0.5− | 0.2+ |
| 1999 12 12 | 704 | 0.8− | 0.6− | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 08 10 | 644 | 0.2− | 0.1+ |
| 1999 12 12 | 704 | 0.9− | 0.9− | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.7+ |
| 2000 01 02 | 704 | 0.1+ | 0.7− | 2003 12 21 | 704 | 0.8+ | 0.8+ | 2006 08 25 | 704 | 0.0 | 0.6+ |
| 2000 01 02 | 704 | 0.2+ | 0.2− | 2003 12 21 | 704 | 0.5+ | 0.9+ | 2006 08 25 | 704 | 0.3− | 0.3+ |
| 2000 01 02 | 704 | 0.1− | 0.8− | 2003 12 21 | 704 | 0.7+ | 0.3− | 2006 08 29 | 699 | 0.8+ | 0.2− |
| 2000 01 02 | 704 | 0.4− | 1.1− | 2003 12 21 | 704 | 0.4+ | 0.6+ | 2006 08 29 | 699 | 0.0 | 0.2+ |
| 2000 01 04 | 704 | 0.3+ | 0.0 | 2003 12 25 | 645 | 0.0 | 0.0 | 2006 08 29 | 699 | 0.1− | 0.7+ |
| 2000 01 04 | 704 | 0.3+ | 0.1+ | 2003 12 25 | 645 | 0.0 | 0.0 | 2006 09 01 | 704 | 1.3+ | 0.3− |
| 2000 01 04 | 704 | 0.2+ | 0.2+ | 2004 01 21 | 704 | 0.8+ | 0.3+ | 2006 09 01 | 704 | 0.7+ | 0.4+ |
| 2000 01 04 | 704 | 0.7+ | 0.1+ | 2004 01 21 | 704 | 0.6+ | 0.6+ | 2006 09 01 | 704 | 0.3− | 0.3+ |
| 2000 01 04 | 704 | 0.0 | 0.1− | 2004 01 21 | 704 | 1.2+ | 1.4+ | 2006 09 16 | 703 | 1.3− | 0.3+ |
| 2000 01 25 | 704 | 0.2+ | 0.2− | 2004 01 21 | 704 | 0.8+ | 0.1+ | 2006 09 16 | 703 | 0.9− | 0.4+ |
| 2000 01 25 | 704 | 0.1− | 0.8+ | 2004 01 24 | 704 | 1.3+ | 1.0+ | 2006 09 16 | 703 | 1.1− | 0.1− |
| 2000 01 25 | 704 | 0.3+ | 0.8+ | 2004 01 24 | 704 | 1.4+ | 0.2+ | 2006 09 16 | 703 | (1.7− | 0.3+) |
| 2002 07 22 | 644 | 0.4− | 0.3+ | 2004 01 24 | 704 | 0.9+ | 0.3+ | 2006 09 21 | 699 | 0.2+ | 0.2+ |
| 2002 07 22 | 644 | 0.4− | 0.1+ | 2004 01 24 | 704 | 1.1+ | 0.6+ | 2006 09 21 | 699 | 0.1+ | 0.9+ |
| 2002 07 22 | 644 | 0.3− | 0.4+ | 2004 01 29 | 704 | 0.4− | 0.4+ | 2006 09 21 | 699 | 0.4− | 0.4+ |
| 2002 08 01 | 843 | 0.0 | 0.5+ | 2004 01 29 | 704 | 0.3− | 0.4+ | 2006 09 21 | 699 | 0.5+ | 0.3+ |
| 2002 08 01 | 843 | 0.4− | 0.0 | 2004 01 29 | 704 | 0.4+ | 1.0+ | 2006 09 22 | 704 | (2.3+ | 0.9+) |
| 2002 08 06 | 644 | 0.2− | 1.1+ | 2004 01 29 | 704 | 0.0 | 0.4+ | 2006 09 22 | 704 | 1.4+ | 0.3+ |
| 2002 08 06 | 644 | 0.0 | 1.2+ | 2004 01 29 | 704 | 0.3+ | 0.8+ | 2006 09 22 | 704 | (2.0+ | 0.8+) |
| 2002 08 06 | 644 | (0.7− | 3.3+) | 2004 02 03 | 608 | 0.2+ | 0.9+ | 2006 09 22 | 704 | 0.4+ | 1.2+ |
| 2002 08 07 | 644 | 0.1− | 1.3+ | 2004 02 03 | 608 | 0.2+ | 0.8+ | 2006 09 27 | 703 | 0.4+ | 1.0− |
| 2002 08 07 | 644 | 0.3− | 1.1+ | 2004 02 03 | 608 | 0.7+ | 0.5+ | 2006 09 27 | 703 | 0.7− | 0.5+ |
| 2002 08 07 | 644 | 0.2− | 1.1+ | 2004 02 13 | 333 | 0.2− | 0.5+ | 2006 09 27 | 703 | 0.8− | 0.2+ |
| 2002 08 11 | 704 | 0.3+ | 0.8+ | 2004 02 13 | 333 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.8− | 0.0 |
| 2002 08 11 | 704 | 0.1− | 1.0+ | 2004 02 13 | 333 | 1.0− | 0.8+ | 2006 09 29 | 699 | 0.1− | 0.7− |
| 2002 08 11 | 704 | 0.4− | 0.3+ | 2004 02 18 | 704 | 0.4+ | 1.1+ | 2006 09 29 | 699 | 0.7− | 0.2+ |
| 2002 08 11 | 704 | 0.1− | 0.9+ | 2004 02 18 | 704 | 0.4+ | 0.7− | 2006 09 29 | 699 | 0.6− | 0.5+ |
| 2002 08 11 | 704 | 0.3+ | 0.3+ | 2004 02 18 | 704 | (1.8− | 0.6+) | 2006 11 14 | 703 | 0.2− | 0.6− |
| 2002 08 11 | 704 | 0.3− | 1.1+ | 2004 02 18 | 704 | 0.2− | 0.5+ | 2006 11 14 | 703 | 0.6− | 0.5+ |
| 2002 08 11 | 704 | 0.2+ | 1.0+ | 2004 02 23 | 608 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.5− |
| 2002 08 11 | 704 | 0.2+ | 0.6+ | 2004 02 23 | 608 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.3− | 0.5+ |
| 2002 08 11 | 704 | 0.5− | 0.7+ | 2004 02 23 | 608 | 0.1+ | 0.7+ | 2006 11 25 | 703 | 0.4+ | 0.6+ |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 11 25 | 703 | 0.0 | 0.2− |
| 2002 08 16 | 644 | 0.4− | 0.1+ | 2004 02 26 | 704 | 0.3+ | 0.4+ | 2006 11 25 | 703 | 0.7− | 0.3− |
| 2002 08 16 | 644 | 0.2− | 0.4+ | 2004 02 26 | 704 | 0.6+ | 0.2− | 2006 11 25 | 703 | 0.6− | 0.9− |
| 2002 08 26 | 644 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.1− |
| 2002 08 26 | 644 | 0.4− | 0.4+ | 2004 02 26 | 704 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.7− | 0.5+ | 2004 03 11 | 644 | 0.2+ | 0.8+ | 2006 11 28 | 704 | 0.6+ | 0.7− | | |
| 2002 09 06 | 704 | 0.7− | 0.1+ | 2004 03 11 | 644 | 0.2+ | 0.9+ | 2006 11 28 | 704 | 1.0+ | 0.9− | | |

**(137819)∗ 2000 AD$_4$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 8.68603 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27788708 | $\omega$ | 95.77422 | | +0.86508920 | | −0.49669988 | | |
| $a$ | 2.3257185 | $\Omega$ | 294.02557 | | +0.42450487 | | +0.79934192 | | |
| $e$ | 0.2717235 | $i$ | 4.39990 | | +0.26723827 | | +0.33814453 | | |
| $P$ | 3.55 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.5− | 0.3− | 2000 02 02 | 704 | 0.2− | 0.2− | 2002 10 04 | 704 | 0.2− | 0.2+ | | |
| 1999 12 10 | 704 | 0.5− | 0.2− | 2000 02 02 | 704 | 0.1+ | 0.3+ | 2002 10 04 | 704 | 0.9+ | 0.5− | | |
| 1999 12 10 | 704 | 1.0− | 0.3+ | 2002 07 04 | 644 | 0.2− | 0.4+ | 2004 03 16 | 691 | 0.1− | 0.5+ | | |
| 2000 01 03 | 704 | 0.1+ | 0.6+ | 2002 07 04 | 644 | 0.4− | 0.3+ | 2004 03 16 | 691 | 0.0 | 0.5+ | | |
| 2000 01 03 | 704 | 0.5+ | 0.6− | 2002 07 04 | 644 | 0.2+ | 0.3+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | | |
| 2000 01 03 | 704 | 0.5+ | 0.3+ | 2002 07 14 | 704 | 0.8− | 0.6− | 2004 03 18 | 704 | 0.5+ | 0.2+ | | |
| 2000 01 03 | 704 | 1.5+ | 1.0+ | 2002 07 14 | 704 | 0.3− | 0.2− | 2004 03 18 | 704 | 0.8+ | 0.5+ | | |
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2002 07 14 | 704 | (0.8+ | 1.8+) | 2004 03 18 | 704 | 1.4+ | 0.4+ | | |
| 2000 01 04 | 704 | 0.5− | 0.5− | 2002 07 14 | 704 | 0.5− | 1.0+ | 2006 08 29 | 703 | 0.3+ | 0.1− | | |
| 2000 01 04 | 704 | 0.4+ | 0.3− | 2002 07 14 | 644 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.9− | 0.1+ | | |
| 2000 01 04 | 704 | 0.3+ | 0.5− | 2002 07 14 | 644 | 0.4− | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.4− | | |
| 2000 01 05 | 106 | 0.1− | 0.3+ | 2002 07 14 | 644 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.2+ | 0.3+ | | |
| 2000 01 06 | 106 | 0.7− | 0.4+ | 2002 08 01 | 599 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.1− | 0.7+ | | |
| 2000 01 06 | 106 | 0.1− | 0.2+ | 2002 08 01 | 599 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.6− | | |
| 2000 01 06 | 704 | 0.8+ | 0.9+ | 2002 08 02 | 599 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.1+ | 1.1+ | | |
| 2000 01 06 | 704 | 0.1+ | 0.4− | 2002 08 02 | 599 | 0.2− | 0.3− | 2006 11 15 | 704 | 0.4− | 1.0+ | | |
| 2000 01 06 | 704 | 0.4+ | 0.3+ | 2002 08 02 | 599 | 0.1− | 0.6− | 2006 11 16 | 704 | (2.7+ | 0.1−) | | |
| 2000 01 06 | 704 | 0.2− | 0.3+ | 2002 08 06 | 644 | 0.6− | 0.4+ | 2006 11 16 | 704 | (1.9+ | 0.8+) | | |
| 2000 01 06 | 106 | 0.2− | 0.1+ | 2002 08 06 | 644 | 0.4− | 0.4+ | 2006 11 16 | 704 | 1.5+ | 0.6− | | |
| 2000 01 06 | 106 | 0.0 | 0.2+ | 2002 08 06 | 644 | 0.7− | 0.6+ | 2006 11 16 | 704 | 0.8− | 1.1+ | | |
| 2000 01 08 | 704 | 1.2− | 0.3+ | 2002 08 14 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.6− | 0.4− | | |
| 2000 01 08 | 704 | 0.9− | 0.1+ | 2002 08 14 | 704 | 0.4+ | 0.9+ | 2006 11 19 | 704 | 0.3− | 0.6− | | |
| 2000 01 08 | 704 | (2.2− | 0.3−) | 2002 08 14 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2000 01 08 | 704 | 1.4− | 0.2+ | 2002 08 14 | 704 | 0.7− | 0.8+ | 2006 11 22 | 704 | 0.1− | 0.2− | | |
| 2000 01 09 | 691 | 0.0 | 0.4+ | 2002 08 17 | 644 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.1+ | | |
| 2000 01 09 | 691 | 0.1+ | 0.2+ | 2002 08 17 | 644 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.0 | 0.8− | | |
| 2000 01 09 | 691 | 0.1+ | 0.2+ | 2002 08 17 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | (1.7+ | 1.4+) | | |
| 2000 01 15 | 691 | 0.0 | 0.2− | 2002 08 18 | 608 | (0.5+ | 1.6+) | 2006 11 27 | 704 | 0.3+ | 0.1− | | |
| 2000 01 15 | 691 | 0.0 | 0.1− | 2002 08 18 | 608 | (0.7+ | 1.9+) | 2006 11 27 | 704 | 0.2+ | 0.0 | | |
| 2000 01 15 | 691 | 0.1+ | 0.1− | 2002 08 18 | 608 | 0.6+ | 1.2+ | 2006 11 27 | 704 | 0.3+ | 0.5+ | | |
| 2000 01 27 | 691 | 0.3+ | 0.3+ | 2002 08 27 | 644 | 0.1+ | 1.2+ | 2006 11 27 | 704 | 0.2− | 0.4− | | |
| 2000 01 27 | 691 | 0.0 | 0.7+ | 2002 08 27 | 644 | 0.3− | 1.0+ | 2006 11 29 | 704 | 0.2− | 0.3− | | |
| 2000 01 27 | 691 | 0.0 | 0.2+ | 2002 08 27 | 644 | 0.0 | 0.9+ | 2006 11 29 | 704 | 0.6− | 0.1− | | |
| 2000 01 31 | 691 | 0.2+ | 0.0 | 2002 09 05 | 704 | 0.2− | 0.9+ | 2006 11 29 | 704 | 1.1+ | 0.2+ | | |
| 2000 01 31 | 691 | 0.0 | 0.2− | 2002 09 05 | 704 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 0.7− | 0.6− | | |
| 2000 01 31 | 691 | 0.4+ | 0.3− | 2002 09 05 | 704 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.6+ | 0.3+ | | |
| 2000 02 02 | 704 | 0.6− | 1.0+ | 2002 09 05 | 704 | 0.1+ | 0.3− | | | | | | |
| 2000 02 02 | 704 | 0.4+ | 0.0 | 2002 10 04 | 704 | 0.3− | 0.5− | | | | | | |

**(137820)∗ 2000 AL$_6$ = 2004 DL$_{48}$**

Discovered 2000 Jan. 4 by P. G. Comba at Prescott.

Id. G. V. Williams (*MPO* 60574)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 259.47653 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26601620 | $\omega$ | 111.60308 | | −0.91520848 | | −0.40282297 | | |
| $a$ | 2.3944035 | $\Omega$ | 44.64423 | | +0.36354097 | | −0.83738408 | | |
| $e$ | 0.1536181 | $i$ | 0.91923 | | +0.17387179 | | −0.36948824 | | |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 27 | 691 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2004 04 15 | 699 | 0.7+ | 0.7+ | | |
| 1999 12 27 | 691 | 0.3+ | 0.2− | 2004 03 19 | 704 | 0.3+ | 0.1+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | | |
| 1999 12 27 | 691 | 0.5+ | 0.0 | 2004 03 19 | 704 | 0.3+ | 0.7+ | 2004 04 21 | 691 | 0.0 | 0.2+ | | |
| 2000 01 04 | 704 | 0.6− | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2004 04 21 | 691 | 0.2+ | 0.3+ | | |
| 2000 01 04 | 704 | 0.4− | 1.3+ | 2004 03 19 | 704 | 0.5+ | 0.7+ | 2005 06 30 | 691 | 0.0 | 0.3+ | | |
| 2000 01 04 | 704 | 0.8− | 1.4+ | 2004 03 19 | 704 | 0.7+ | 0.2+ | 2005 06 30 | 691 | 0.3− | 0.6+ | | |
| 2000 01 04 | 684 | 0.9− | 0.5− | 2004 03 19 | 704 | 0.6+ | 0.4− | 2005 06 30 | 691 | 0.3− | 0.7+ | | |
| 2000 01 04 | 704 | 1.8− | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.3+ | | |
| 2000 01 04 | 684 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2005 07 11 | 691 | 0.3− | 0.4+ | | |
| 2000 01 06 | 684 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2005 07 11 | 691 | 0.2− | 0.9+ | | |
| 2000 01 06 | 684 | 0.4− | 0.5+ | 2004 03 20 | 699 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.2− | | |
| 2000 01 06 | 691 | 0.2+ | 0.2− | 2004 03 20 | 699 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.0 | | |
| 2000 01 06 | 691 | 0.2+ | 0.2− | 2004 03 20 | 699 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.3− | 0.1− | | |
| 2000 01 06 | 684 | 0.3− | 0.6+ | 2004 03 20 | 699 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− | | |
| 2000 01 06 | 691 | 0.2+ | 0.2− | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.3+ | | |
| 2000 01 11 | 691 | 0.2− | 0.5− | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.4+ | | |
| 2000 01 11 | 691 | 0.2− | 0.0 | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.4+ | | |
| 2000 01 11 | 691 | 0.2− | 0.4− | 2004 03 27 | 291 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.1+ | | |
| 2000 01 13 | 699 | 0.4+ | 0.0 | 2004 03 27 | 291 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.8− | 0.3+ | | |
| 2000 01 13 | 699 | 0.4+ | 0.5− | 2004 03 27 | 291 | 0.4+ | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.4+ | | |
| 2000 01 13 | 699 | 0.7+ | 0.6+ | 2004 03 27 | 704 | 1.2+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2002 10 02 | 049 | 0.4− | 0.8+ | 2004 03 27 | 704 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.0 | 1.1+ | | |
| 2002 10 02 | 049 | 1.1− | 0.9+ | 2004 03 27 | 704 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.8− | 0.6+ | | |
| 2002 10 02 | 049 | 0.0 | 0.1− | 2004 03 27 | 704 | (1.5+ | 1.8−) | 2006 11 13 | 644 | 0.5− | 0.4− | | |
| 2004 02 19 | 704 | 0.6− | 1.5+ | 2004 03 27 | 704 | 1.0− | 0.5− | 2006 11 14 | 691 | 0.1− | 0.5+ | | |
| 2004 02 19 | 704 | 0.9+ | 1.0+ | 2004 03 28 | 704 | 0.2+ | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.4+ | | |
| 2004 02 19 | 704 | 0.2+ | 1.0+ | 2004 03 28 | 704 | 0.2− | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.5+ | | |
| 2004 02 19 | 704 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.1− | 1.0+ | 2006 11 16 | 703 | (1.9− | 0.2−) | | |
| 2004 02 19 | 704 | 0.4+ | 0.8+ | 2004 03 28 | 704 | 0.4− | 0.9− | 2006 11 16 | 703 | (0.0 | 1.6+) | | |
| 2004 02 26 | 704 | 0.3+ | 0.5+ | 2004 03 28 | 704 | 0.0 | 0.6+ | 2006 11 16 | 703 | 0.5− | 0.4+ | | |
| 2004 02 26 | 704 | 0.6+ | 0.4− | 2004 03 29 | 704 | 0.0 | 0.8− | 2006 11 17 | 703 | 1.1+ | 0.7+ | | |
| 2004 02 26 | 704 | 0.1+ | 0.4− | 2004 03 29 | 704 | 0.6+ | 0.4− | 2006 11 17 | 703 | 0.4− | 0.2+ | | |
| 2004 02 26 | 704 | 0.4− | 0.2− | 2004 03 29 | 704 | 0.5+ | 0.3− | 2006 11 17 | 703 | 0.6+ | 1.0+ | | |
| 2004 02 26 | 695 | 0.3− | 1.4+ | 2004 03 29 | 704 | 0.7+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.4+ | | |
| 2004 02 26 | 695 | 0.1− | 0.1+ | 2004 03 29 | 704 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.4+ | 0.3+ | | |
| 2004 03 12 | 644 | 0.1− | 1.0+ | 2004 03 30 | 704 | 0.4+ | 1.1− | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2004 03 12 | 644 | 0.2− | 0.6+ | 2004 03 30 | 704 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.1+ | | |
| 2004 03 12 | 644 | 0.1− | 0.5+ | 2004 03 30 | 704 | 1.3− | 0.9− | 2006 11 21 | G96 | 0.0 | 0.0 | | |
| 2004 03 15 | 703 | (3.7+ | 6.7−) | 2004 03 30 | 704 | 0.9− | 0.7− | 2006 11 27 | 703 | 1.5− | 0.3+ | | |
| 2004 03 15 | 703 | 0.7− | 0.5+ | 2004 03 30 | 704 | (1.6− | 1.7−) | 2006 11 27 | 703 | 0.2+ | 0.3− | | |
| 2004 03 15 | 703 | 0.8− | 0.4+ | 2004 04 12 | 703 | 0.8− | 0.0 | 2006 11 27 | 703 | 0.7− | 0.2+ | | |
| 2004 03 15 | 703 | 0.3− | 0.3+ | 2004 04 12 | 703 | (0.6− | 1.9+) | 2006 11 27 | 703 | 0.0 | 0.0 | | |
| 2004 03 16 | 683 | 0.1− | 0.4− | 2004 04 12 | 703 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.0 | | |
| 2004 03 16 | 704 | 0.7+ | 0.8+ | 2004 04 12 | 703 | (0.4+ | 1.9+) | 2006 12 01 | G96 | 0.1− | 0.2− | | |
| 2004 03 16 | 683 | (1.6+ | 1.0+) | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.1+ | | |
| 2004 03 16 | 704 | (0.8+ | 2.0+) | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.2− | | |
| 2004 03 16 | 683 | 0.2− | 0.1+ | 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.1+ | | |
| 2004 03 16 | 704 | (0.9+ | 1.8+) | 2004 04 15 | 699 | 1.5− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.1+ | | |
| 2004 03 16 | 704 | 0.7+ | 1.2+ | 2004 04 15 | 699 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.0 | 0.2+ | | |
| 2004 03 16 | 704 | 0.0 | 1.1+ | 2004 04 15 | 699 | 1.0− | 0.2− | 2006 12 01 | G96 | 0.3− | 0.6− | | |

**(137821)∗ 2000 AO$_7$**

Discovered 2000 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 344.19463 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27379547 | $\omega$ | 352.96531 | | +0.69812071 | | −0.71245708 | | |
| $a$ | 2.3488316 | $\Omega$ | 52.72721 | | +0.66116536 | | +0.60348014 | | |
| $e$ | 0.2019237 | $i$ | 5.11451 | | +0.27475053 | | +0.35807350 | | |
| $P$ | 3.60 | $H$ | 16.4 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 1999 11 14 | 704 | 0.8− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.6− | 0.3− | | |
| 1999 11 14 | 704 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.8− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.4− | | |
| 1999 11 16 | 704 | 0.8− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3− | | |
| 1999 11 16 | 704 | 1.2− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.5− | | |
| 1999 11 16 | 704 | 0.8− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.4− | | |
| 1999 12 15 | 704 | 1.1+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 1999 12 15 | 704 | 0.8+ | 0.4− | 2006 10 16 | 703 | 0.7− | 0.7− | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 1999 12 15 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 11 17 | 703 | 0.0 | 0.3− | | |
| 1999 12 15 | 704 | 0.8+ | 1.5− | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 17 | 703 | (1.7− | 0.4−) | | |
| 2000 01 02 | 704 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 1.0− | | |
| 2000 01 02 | 704 | 0.8+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.7− | | |
| 2000 01 02 | 704 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | (1.3− | 1.7−) | | |
| 2000 01 04 | 704 | 0.4− | 0.8− | 2006 10 22 | 704 | (0.3+ | 2.6+) | 2006 11 19 | 704 | 0.5− | 1.1+ | | |
| 2000 01 04 | 704 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.7+ | 1.1− | | |
| 2000 01 04 | 704 | 0.2+ | 0.9+ | 2006 10 22 | 704 | 0.2+ | 1.2+ | 2006 11 19 | 704 | 0.2− | 1.0− | | |
| 2000 01 04 | 704 | 0.1+ | 0.8− | 2006 10 22 | 704 | 1.0+ | 0.2− | 2006 11 19 | 704 | 1.0− | 0.1+ | | |
| 2002 08 13 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2002 08 13 | 704 | 0.1+ | 0.3− | 2006 10 22 | 704 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.1+ | | |
| 2002 08 13 | 704 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 2002 08 13 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 704 | (1.6+ | 0.4−) | 2006 11 21 | 704 | 0.1− | 0.2+ | | |
| 2002 08 13 | 704 | 0.4− | 0.7− | 2006 10 23 | 704 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.2− | 0.8+ | | |
| 2002 08 13 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.5+ | 0.1+ | 2006 11 23 | 683 | 1.0− | 0.5+ | | |
| 2002 08 30 | 644 | 0.3− | 0.1+ | 2006 10 23 | 704 | 0.4+ | 0.3+ | 2006 11 23 | 683 | (2.0− | 1.8+) | | |
| 2002 08 30 | 644 | 0.3+ | 0.3− | 2006 10 23 | 704 | 0.1− | 0.4+ | 2006 11 23 | 683 | (1.7− | 1.7+) | | |
| 2002 08 30 | 644 | 0.1− | 0.0 | 2006 10 23 | 704 | 0.1+ | 0.2+ | 2006 11 25 | 683 | 0.5+ | 0.1+ | | |
| 2004 01 23 | 704 | 1.0− | 0.1− | 2006 10 28 | 224 | 0.1+ | 0.0 | 2006 11 25 | 683 | 0.4+ | 1.0+ | | |
| 2004 01 23 | 704 | 0.3+ | 0.9+ | 2006 10 28 | 224 | 0.1− | 0.1+ | 2006 11 25 | 683 | 0.0 | 1.3+ | | |
| 2004 01 23 | 704 | 0.0 | 1.1+ | 2006 10 28 | 224 | 0.1− | 0.7+ | 2006 11 26 | 704 | 0.1− | 0.8+ | | |
| 2004 02 16 | 704 | 0.5+ | 0.9+ | 2006 10 28 | 704 | 0.2− | 1.3− | 2006 11 26 | 704 | 0.0 | 0.3+ | | |
| 2004 02 16 | 704 | 1.0+ | 0.7+ | 2006 10 28 | 704 | 0.4− | 0.3− | 2006 11 26 | 704 | 0.2+ | 1.1+ | | |
| 2004 02 16 | 704 | 0.7+ | 0.6+ | 2006 10 28 | 704 | 0.2+ | 0.7+ | 2006 11 26 | 704 | 0.3+ | 0.9+ | | |
| 2006 09 14 | 703 | 0.8− | 0.2+ | 2006 10 28 | 704 | 0.5+ | 0.6+ | 2006 11 28 | 683 | 1.1+ | 0.4− | | |
| 2006 09 14 | 703 | 0.8+ | 0.1− | 2006 10 28 | 704 | 0.2+ | 0.5+ | 2006 11 28 | 683 | 2.4+ | 1.9− | | |
| 2006 09 14 | 703 | 0.4+ | 1.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 28 | 683 | 0.0 | 0.4− | | |
| 2006 09 14 | 703 | 0.4+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.5− | | |
| 2006 09 27 | G96 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.3− | 0.6+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.5+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.4+ | | |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2− | 0.1+ | | | | | | |

**(137822)∗ 2000 AB$_{13}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.56249 | | (2000.0) | | +0.20390564 | −0.97826760 |
| $n$ | 0.27937366 | $\omega$ | 19.49869 | | +0.89226331 | +0.16989357 |
| $a$ | 2.3174609 | $\Omega$ | 58.75204 | | +0.40285068 | +0.11886408 |
| $e$ | 0.1901463 | $i$ | 2.52179 | | | |
| $P$ | 3.53 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 22 | 704 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.3+ | | |
| 1999 10 22 | 704 | 0.2− | 0.1+ | 2004 03 15 | 703 | (0.0 | 1.6+) | 2006 11 11 | 691 | 0.1− | 0.3+ | | |
| 1999 10 22 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 1999 12 07 | 704 | 0.8− | 0.4− | 2004 03 15 | 703 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.5+ | | |
| 1999 12 07 | 704 | 0.4− | 0.1− | 2004 03 15 | 704 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.4− | 0.3+ | | |
| 1999 12 07 | 704 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.0 | | |
| 1999 12 07 | 704 | 0.2− | 0.3− | 2004 03 15 | 703 | 0.5+ | 1.2+ | 2006 11 11 | 703 | 0.6− | 0.0 | | |
| 2000 01 03 | 704 | 0.3− | 0.6− | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.1− | | |
| 2000 01 03 | 704 | 0.2− | 1.0− | 2004 03 18 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2000 01 03 | 704 | 0.7+ | 0.6− | 2004 03 18 | 691 | 0.6+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.1− | | |
| 2000 01 03 | 704 | 0.6+ | 1.7− | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2000 01 03 | 704 | 0.4+ | 1.0− | 2004 03 19 | 704 | 0.7− | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.0 | | |
| 2000 01 04 | 704 | 0.1+ | 0.3− | 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.4− | | |
| 2000 01 04 | 704 | 0.4+ | 0.5− | 2004 03 19 | 704 | 0.1+ | 0.5− | 2006 11 15 | 703 | 0.6− | 0.1+ | | |
| 2000 01 04 | 704 | 0.4+ | 0.8− | 2004 03 19 | 704 | 0.6+ | 0.4+ | 2006 11 15 | 703 | (3.6− | 0.3−) | | |
| 2000 01 04 | 704 | 0.6+ | 1.0− | 2004 03 20 | 699 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.2− | | |
| 2000 01 04 | 704 | 0.9+ | 0.5− | 2004 03 20 | 699 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.7+ | 0.4+ | | |
| 2000 01 05 | 106 | 0.1− | 0.9− | 2004 03 20 | 699 | 0.5+ | 1.1+ | 2006 11 17 | 704 | 0.3+ | 0.2− | | |
| 2000 01 05 | 106 | 0.4− | 0.1− | 2004 03 20 | 699 | 0.0 | 0.3+ | 2006 11 17 | 704 | 1.2− | 0.3+ | | |
| 2000 01 05 | 106 | 0.4+ | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.3+ | | |
| 2000 01 06 | 106 | 0.2+ | 0.3− | 2004 03 22 | 704 | 0.8+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.6+ | | |
| 2000 01 06 | 106 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.2− | 1.0+ | 2006 11 18 | 704 | 0.1+ | 0.1+ | | |
| 2000 01 06 | 106 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.2+ | | |
| 2000 01 30 | 704 | 0.6− | 0.2+ | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.3+ | | |
| 2000 01 30 | 704 | 0.4− | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2000 01 30 | 704 | 1.0+ | 0.4− | 2004 03 23 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2002 08 18 | 644 | 0.6− | 1.1+ | 2004 03 26 | 704 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 18 | 644 | 0.7− | 1.1+ | 2004 03 26 | 704 | 0.7− | 0.3+ | 2006 11 21 | 704 | 0.9+ | 0.5+ | | |
| 2002 08 18 | 644 | 0.3− | 1.1+ | 2004 03 26 | 704 | 0.8+ | 0.9+ | 2006 11 21 | 704 | 1.0+ | 0.3+ | | |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2004 03 26 | 704 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.2− | | |
| 2002 08 29 | 644 | 0.6− | 1.1+ | 2004 03 26 | 704 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2004 03 28 | 704 | 0.7+ | 0.6+ | 2006 11 21 | 704 | 0.5+ | 0.2+ | | |
| 2002 09 15 | 644 | 0.5− | 0.7+ | 2004 03 28 | 704 | 0.3+ | 0.5+ | 2006 11 22 | H07 | 0.5− | 0.3+ | | |
| 2002 09 15 | 644 | 0.4− | 0.5+ | 2004 03 28 | 704 | 0.4+ | 0.3+ | 2006 11 22 | H07 | 0.7− | 0.6+ | | |
| 2002 09 15 | 644 | 0.3− | 0.8+ | 2004 03 28 | 704 | 0.4+ | 0.8− | 2006 11 22 | H07 | 0.1− | 0.6+ | | |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2004 03 28 | 704 | 0.1− | 0.2+ | 2006 11 22 | H07 | 0.3+ | 0.7+ | | |
| 2003 12 19 | 691 | 0.2− | 0.1− | 2004 04 21 | 691 | 0.2+ | 0.2+ | 2006 11 23 | H07 | 0.2+ | 0.0 | | |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 11 23 | H07 | 0.0 | 0.1− | | |
| 2003 12 25 | 291 | 0.7− | 0.1+ | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 11 23 | H07 | 0.2+ | 0.0 | | |
| 2003 12 25 | 291 | 0.6− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 23 | H07 | 0.0 | 0.0 | | |
| 2003 12 25 | 291 | 1.2− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 24 | H07 | 0.5+ | 0.2+ | | |
| 2004 02 16 | 703 | 0.1+ | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 24 | H07 | 0.0 | 0.3+ | | |
| 2004 02 16 | 703 | 0.6+ | 0.9+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 24 | H07 | 0.0 | 0.3+ | | |
| 2004 02 16 | 703 | 1.2+ | 0.3− | 2006 10 19 | G96 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.2+ | | |
| 2004 02 16 | 703 | (2.2+ | 1.0+) | 2006 10 19 | G96 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.2− | 0.4+ | | |
| 2004 02 23 | 704 | 0.8+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.9− | | |
| 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 10 19 | G96 | 0.3+ | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.2− | 0.5+ | | |
| 2004 02 23 | 704 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.0 | 0.5+ | | |
| 2004 02 23 | 704 | 0.8− | 0.1+ | 2006 10 28 | G96 | (2.1− | 0.0 ) | 2006 12 01 | 704 | 0.2+ | 0.5+ | | |
| 2004 03 15 | 703 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 1.0− | 0.6− | 2006 12 01 | 704 | 0.1+ | 0.6+ | | |

**(137823)∗ 2000 AN$_{14}$ = 1995 UL$_{78}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 15654), M. E. Sansaturio (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.08879 | | (2000.0) | | +0.06792115 | −0.99718111 |
| $n$ | 0.27352056 | $\omega$ | 165.66564 | | +0.91214099 | +0.07501261 |
| $a$ | 2.3504052 | $\Omega$ | 280.43242 | | +0.40420975 | −0.00171295 |
| $e$ | 0.1407412 | $i$ | 1.85781 | | | |
| $P$ | 3.60 | $H$ | 16.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 691 | 0.2− | 0.4− | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.2+ | | |
| 1995 08 27 | 691 | 0.0 | 0.5− | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.8− | 0.2− | | |
| 1995 08 27 | 691 | 0.3− | 1.2− | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.9+ | | |
| 1995 10 23 | 691 | 0.0 | 0.1− | 2004 02 18 | 704 | 0.6+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.4− | | |
| 1995 10 23 | 691 | 0.1+ | 0.2− | 2004 02 18 | 704 | 0.5+ | 0.1− | 2006 11 14 | 703 | 0.3− | 0.1− | | |
| 1995 10 23 | 691 | 0.2+ | 0.1− | 2004 02 18 | 704 | 1.0+ | 0.2+ | 2006 11 14 | 703 | 0.1− | 0.6− | | |
| 1995 10 28 | 691 | 0.3+ | 0.3− | 2004 02 18 | 608 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.9+ | 0.5+ | | |
| 1995 10 28 | 691 | 0.4+ | 0.0 | 2004 02 18 | 608 | 0.9− | 0.0 | 2006 11 16 | 704 | 0.9− | 0.1+ | | |
| 1995 10 28 | 691 | 0.4+ | 0.2− | 2004 02 18 | 608 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.8− | 0.9+ | | |
| 2000 01 03 | 704 | 0.6+ | 1.1− | 2004 03 15 | 704 | 0.5+ | 1.3+ | 2006 11 16 | 704 | 0.3+ | 0.5− | | |
| 2000 01 03 | 704 | 0.2+ | 1.3− | 2004 03 15 | 704 | 0.4+ | 0.7+ | 2006 11 16 | 704 | 0.1− | 0.4+ | | |
| 2000 01 03 | 704 | 0.4− | 0.6− | 2004 03 15 | 704 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2000 01 03 | 704 | 0.2− | 0.4+ | 2004 03 18 | 704 | 1.0− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2000 01 04 | 704 | 1.0− | 0.1+ | 2004 03 18 | 704 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 2000 01 04 | 704 | 0.3+ | 0.9+ | 2004 03 18 | 704 | 0.5− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.9− | | |
| 2000 01 04 | 704 | 0.8+ | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.6+ | 2006 11 19 | 704 | 1.3− | 0.6+ | | |
| 2000 01 04 | 704 | 0.0 | 0.0 | 2004 03 30 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.5+ | 0.4+ | | |
| 2000 01 04 | 704 | 0.2− | 0.4+ | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.5− | | |
| 2000 01 09 | 691 | 0.3− | 0.6− | 2004 03 30 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 704 | (0.3− | 1.9+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 09 | 691 | 0.2− | 0.5− | 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.5− | | |
| 2000 01 09 | 691 | 0.2− | 0.5− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.1− | | |
| 2000 01 13 | 691 | 0.4+ | 0.2− | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.6+ | | |
| 2000 01 13 | 691 | 0.3+ | 0.3− | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.6+ | | |
| 2000 01 13 | 691 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.6+ | | |
| 2002 09 14 | 644 | 0.3− | 1.1+ | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 27 | 703 | 1.3− | 0.1− | | |
| 2002 09 14 | 644 | 0.5− | 1.1+ | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.6− | | |
| 2002 09 14 | 644 | 0.3− | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.5+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.2− | 1.3+ | 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.8+ | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 0.8− | 0.1+ | | |
| 2002 10 03 | 704 | (1.2+ | 2.0+) | 2006 11 11 | 703 | 0.7− | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.6− | | |
| 2004 02 14 | 608 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.7− | 1.9+ | | |
| 2004 02 14 | 608 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.9+ | 1.3+ | | |
| 2004 02 14 | 608 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.5− | 0.2− | | | | | | |

**(137824)∗ 2000 AT$_{16}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.65418 | | (2000.0) | | | |
| $n$ | 0.27476804 | $\omega$ | 351.51176 | | +0.16779281 | −0.98235707 |
| $a$ | 2.3432857 | $\Omega$ | 88.79941 | | +0.90925503 | +0.12184719 |
| $e$ | 0.2017586 | $i$ | 4.73817 | | +0.38092106 | +0.14187267 |
| $P$ | 3.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3+ | 1.5− | 2004 03 15 | 106 | 0.9− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2− | | |
| 1999 12 07 | 704 | 0.1+ | 0.8+ | 2004 03 15 | 106 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− | | |
| 1999 12 07 | 704 | 0.4+ | 0.2− | 2004 03 15 | 106 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 1999 12 07 | 704 | 0.4+ | 0.3− | 2004 03 16 | 608 | 0.4− | 0.5− | 2006 11 09 | 644 | 0.2+ | 0.1+ | | |
| 1999 12 20 | 704 | 0.0 | 0.1− | 2004 03 16 | 608 | 0.0 | 0.9− | 2006 11 10 | 644 | 0.0 | 0.1− | | |
| 1999 12 20 | 704 | 0.2− | 0.7− | 2004 03 16 | 608 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.0 | | |
| 1999 12 20 | 704 | 0.3+ | 0.3− | 2004 03 20 | 704 | 1.2+ | 1.4+ | 2006 11 10 | 644 | 0.2+ | 0.1− | | |
| 1999 12 20 | 704 | 0.3− | 0.6− | 2004 03 20 | 704 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.4− | | |
| 1999 12 20 | 704 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.9+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.2− | | |
| 2000 01 03 | 704 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 644 | 0.2− | 0.0 | | |
| 2000 01 03 | 704 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 2000 01 03 | 704 | 0.4+ | 0.4− | 2004 03 22 | 704 | 0.6− | 0.6+ | 2006 11 11 | 703 | 0.5− | 0.0 | | |
| 2000 01 03 | 704 | 0.1− | 0.5− | 2004 03 22 | 704 | 0.2− | 0.4+ | 2006 11 11 | 644 | 0.0 | 0.0 | | |
| 2000 01 03 | 704 | 0.1− | 0.5− | 2004 03 22 | 704 | 0.5− | 0.5+ | 2006 11 11 | 644 | 0.7+ | 0.5− | | |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.5− | 2006 11 13 | 104 | 0.2+ | 0.1+ | | |
| 2000 01 04 | 704 | 0.4+ | 1.3− | 2004 03 22 | 704 | 0.3− | 0.1+ | 2006 11 13 | 104 | 0.1+ | 0.1− | | |
| 2000 01 04 | 704 | 0.4− | 0.3− | 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 11 13 | 104 | 0.4+ | 0.1− | | |
| 2000 01 04 | 704 | 0.4− | 0.2+ | 2004 03 26 | 691 | 0.0 | 0.2+ | 2006 11 14 | 704 | (0.1− | 1.5+) | | |
| 2000 02 11 | 704 | 0.7− | 0.7+ | 2004 03 26 | 691 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.1− | 0.2+ | | |
| 2000 02 11 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | (2.2− | 0.2+) | 2006 11 14 | 704 | (0.9− | 1.6+) | | |
| 2000 02 11 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.7+ | 2006 11 14 | 704 | 0.3− | 0.8+ | | |
| 2000 02 11 | 704 | 1.0+ | 0.7+ | 2006 09 14 | 703 | 1.3− | 0.2+ | 2006 11 14 | 704 | 0.7− | 0.9+ | | |
| 2002 08 30 | 644 | 0.6− | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.8+ | 0.8+ | | |
| 2002 08 30 | 644 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.6+ | | |
| 2002 08 30 | 644 | (0.3+ | 1.6+) | 2006 10 16 | 703 | 0.7− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.6+ | | |
| 2002 09 11 | 608 | 0.1− | 1.1+ | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.7+ | | |
| 2002 09 11 | 608 | 0.1− | 1.3+ | 2006 10 16 | 703 | 0.9− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2002 09 11 | 608 | 0.7− | 1.2+ | 2006 10 27 | 224 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.6− | | |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | 224 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.3+ | | |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | 224 | 1.0+ | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.3+ | 1.2+ | 2006 11 17 | G96 | 0.8+ | 0.2− | | |
| 2003 12 19 | 691 | 0.2− | 0.1+ | 2006 10 27 | 704 | 0.3− | 1.4+ | 2006 11 19 | 704 | 0.8− | 0.6− | | |
| 2003 12 19 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.7− | | |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.6+ | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.4− | | |
| 2004 02 18 | 608 | 0.3− | 0.4− | 2006 10 27 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.5− | | |
| 2004 02 18 | 608 | 0.2− | 0.1− | 2006 10 28 | 224 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.7− | 0.2+ | | |
| 2004 02 18 | 608 | 0.0 | 0.6− | 2006 10 28 | 224 | 0.8+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.2+ | | |
| 2004 02 25 | 704 | 0.9+ | 0.0 | 2006 10 28 | 224 | 0.7+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.1− | | |
| 2004 02 25 | 704 | 0.8− | 0.9+ | 2006 11 01 | 703 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.2+ | | |
| 2004 02 25 | 704 | 0.5+ | 0.2+ | 2006 11 01 | 703 | 0.2+ | 0.9− | 2006 11 20 | 704 | 0.1− | 0.5+ | | |
| 2004 02 25 | 704 | (2.1+ | 0.1−) | 2006 11 01 | 703 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.2− | | |
| 2004 02 25 | 704 | (2.2+ | 0.3+) | 2006 11 01 | 703 | 0.7− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.7+ | | |
| 2004 03 15 | 704 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.1+ | | |
| 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.8− | 0.2+ | | |
| 2004 03 15 | 704 | 0.8+ | 0.5− | 2006 11 08 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.2− | 1.0+ | | |
| 2004 03 15 | 704 | 0.7+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.5+ | | |
| 2004 03 15 | 704 | 0.5− | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.0 | | | | | | |

**(137825)∗ 2000 AX$_{17}$ = 2002 TN$_{77}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37240)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.03400 | | (2000.0) | | | |
| $n$ | 0.29336330 | $\omega$ | 59.10628 | | +0.99570440 | +0.08744480 |
| $a$ | 2.2431873 | $\Omega$ | 295.86189 | | −0.09221210 | +0.90692137 |
| $e$ | 0.1930490 | $i$ | 1.93811 | | −0.00834710 | +0.41212502 |
| $P$ | 3.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 30 | 104 | 1.2+ | 1.1+ | 2002 10 31 | 699 | 0.2− | 0.4+ | 2002 12 26 | 734 | 0.2+ | 0.2− | | |
| 1999 12 30 | 104 | 0.9+ | 0.9+ | 2002 10 31 | 644 | 0.1+ | 0.0 | 2002 12 26 | 734 | 0.2+ | 0.2− | | |
| 1999 12 30 | 104 | 0.4+ | 1.4− | 2002 10 31 | 699 | 0.1− | 0.2+ | 2002 12 26 | 734 | 0.8+ | 0.0 | | |
| 2000 01 01 | 104 | 0.7+ | 0.4− | 2002 10 31 | 644 | 0.2+ | 0.1+ | 2003 01 01 | 704 | 0.3+ | 0.0 | | |
| 2000 01 01 | 104 | 0.6− | 0.5− | 2002 10 31 | 699 | 0.0 | 0.7+ | 2003 01 01 | 704 | 0.2− | 0.3+ | | |
| 2000 01 01 | 104 | 0.9− | 0.7− | 2002 10 31 | 644 | 0.2+ | 0.2+ | 2003 01 01 | 704 | 0.1+ | 1.1+ | | |
| 2000 01 02 | 104 | 0.6− | 0.1+ | 2002 10 31 | 699 | 0.5− | 0.3+ | 2004 02 23 | 704 | 0.7+ | 1.2+ | | |
| 2000 01 02 | 104 | 0.5− | 0.1+ | 2002 11 03 | 704 | 0.2+ | 0.7+ | 2004 02 23 | 704 | 0.3− | 0.0 | | |
| 2000 01 03 | 704 | 0.6− | 0.3− | 2002 11 03 | 704 | 0.2− | 0.5+ | 2004 02 23 | 704 | 0.3+ | 0.3+ | | |
| 2000 01 03 | 704 | 0.4− | 0.2+ | 2002 11 03 | 704 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.9− | 0.2+ | | |
| 2000 01 03 | 704 | 0.5+ | 0.9− | 2002 11 03 | 704 | 0.1+ | 0.2− | 2004 02 23 | 704 | 0.3+ | 0.6− | | |
| 2000 01 03 | 704 | 0.9− | 0.2− | 2002 11 03 | 704 | 0.2+ | 0.2− | 2004 03 01 | 683 | (0.3+ | 2.0−) | | |
| 2000 01 04 | 704 | 0.3+ | 0.4− | 2002 11 08 | 704 | 0.0 | 0.3− | 2004 03 01 | 683 | (2.8+ | 1.3+) | | |
| 2000 01 04 | 704 | 0.6− | 0.1− | 2002 11 08 | 704 | 0.1− | 0.3− | 2004 03 01 | 683 | (1.5+ | 0.2+) | | |
| 2000 01 04 | 704 | 0.4+ | 0.0 | 2002 11 08 | 704 | 0.1+ | 0.3− | 2004 03 18 | 691 | 0.1− | 0.2+ | | |
| 2000 01 04 | 704 | 0.2− | 0.5− | 2002 11 08 | 704 | 0.4+ | 0.2− | 2004 03 18 | 691 | 0.0 | 0.3+ | | |
| 2000 01 04 | 704 | 0.7− | 0.2− | 2002 11 08 | 704 | 0.1− | 0.3− | 2004 03 18 | 691 | 0.0 | 0.1+ | | |
| 2002 09 06 | 704 | 1.2− | 0.4− | 2002 11 12 | 704 | 0.2− | 0.2− | 2004 03 20 | 704 | 1.0+ | 0.8+ | | |
| 2002 09 06 | 704 | 0.6− | 0.8+ | 2002 11 12 | 644 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.5+ | | |
| 2002 09 06 | 704 | (0.8− | 3.0+) | 2002 11 12 | 704 | 0.6− | 0.2+ | 2004 03 20 | 704 | 0.9+ | 1.4+ | | |
| 2002 09 21 | 608 | (1.7− | 0.7+) | 2002 11 12 | 644 | 0.9+ | 0.2− | 2004 03 20 | 704 | 0.2+ | 0.4+ | | |
| 2002 09 21 | 608 | 1.4− | 0.7+ | 2002 11 12 | 704 | 0.3+ | 0.6+ | 2004 03 27 | 704 | 1.3+ | 0.1− | | |
| 2002 09 21 | 608 | (1.6− | 0.9+) | 2002 11 12 | 644 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 01 | 699 | 0.1+ | 0.3+ | 2002 11 12 | 704 | 0.1− | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | | |
| 2002 10 01 | 699 | 0.1+ | 0.0 | 2002 11 12 | 704 | 0.4+ | 0.7+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | | |
| 2002 10 01 | 699 | 0.3+ | 0.1+ | 2002 11 22 | 644 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.2+ | | |
| 2002 10 01 | 699 | 0.5+ | 0.7+ | 2002 11 22 | 644 | 0.3+ | 0.1+ | 2005 11 25 | G96 | 0.5− | 0.0 | | |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2002 11 22 | 644 | 0.1− | 0.2+ | 2005 11 25 | G96 | 0.4− | 0.0 | | |
| 2002 10 04 | 704 | 0.5− | 0.6+ | 2002 11 22 | 644 | 0.2+ | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | (0.7− | 2.2+) | 2002 11 22 | 644 | 0.0 | 0.3+ | 2005 11 25 | G96 | 0.5− | 0.2− | | |
| 2002 10 04 | 704 | 0.6− | 0.5+ | 2002 11 22 | 644 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.5− | 0.3− | | |
| 2002 10 04 | 704 | 0.3− | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.2− | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 2002 10 09 | 704 | 0.5+ | 0.0 | 2002 12 06 | 704 | 0.5− | 0.4− | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 2002 10 09 | 704 | 0.1+ | 0.2− | 2002 12 06 | 704 | 0.6− | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.4− | | |
| 2002 10 09 | 704 | 0.5+ | 0.5− | 2002 12 06 | 704 | 0.2+ | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.8+ | 0.3− | 2002 12 06 | 704 | 0.8− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.4+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.7− | 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2002 12 11 | 704 | 0.2− | 0.6− | 2006 11 27 | G96 | 0.0 | 0.5− | | |
| 2002 10 12 | 704 | 0.3− | 0.5+ | 2002 12 11 | 704 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.5− | 0.6− | | |
| 2002 10 12 | 704 | 0.0 | 0.3+ | 2002 12 11 | 704 | 0.4− | 0.8− | 2006 11 27 | G96 | 0.1+ | 0.1− | | |
| 2002 10 12 | 704 | 0.1+ | 0.5+ | 2002 12 11 | 704 | 0.1− | 0.6− | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2002 10 12 | 704 | 0.2− | 0.2+ | 2002 12 26 | 734 | 0.7+ | 0.8− | | | | | | |

**(137826)∗ 2000 AX$_{21}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 356.11443 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26890268 | $\omega$ | 314.39275 | | +0.99742440 | | −0.01028973 | |
| $a$ | 2.3772378 | $\Omega$ | 46.33676 | | +0.04175600 | | +0.88796387 | |
| $e$ | 0.2522852 | $i$ | 5.63114 | | −0.05831818 | | +0.45979809 | |
| $P$ | 3.67 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.5+ | 0.5− | 2006 10 10 | 644 | 0.4− | 0.0 | |
| 1999 11 14 | 704 | 0.1+ | 0.3+ | 2004 01 31 | 704 | 0.1− | 0.5− | 2006 10 10 | 644 | 0.3− | 0.2+ | |
| 1999 11 14 | 704 | 0.3+ | 0.2+ | 2005 03 09 | G96 | 0.0 | 0.3− | 2006 10 10 | 644 | 0.4− | 0.0 | |
| 1999 11 14 | 704 | 0.4+ | 0.4+ | 2005 03 09 | G96 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 1999 11 16 | 704 | 0.2+ | 0.2− | 2005 03 09 | G96 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ | |
| 1999 11 16 | 704 | 0.6+ | 0.4+ | 2005 03 09 | G96 | 0.7− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.3+ | |
| 1999 11 16 | 704 | 0.6+ | 0.1+ | 2005 04 12 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1+ | |
| 1999 11 16 | 704 | 0.6− | 0.2+ | 2005 04 12 | 691 | 0.6+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.2+ | |
| 1999 11 16 | 704 | 0.5+ | 1.0− | 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 1999 12 15 | 704 | 0.6+ | 1.1− | 2005 04 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 1.1− | 0.1+ | |
| 1999 12 15 | 704 | 0.1− | 0.7− | 2005 04 19 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.3+ | |
| 1999 12 15 | 704 | 0.1+ | 1.2− | 2005 04 19 | 691 | 0.7− | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.2+ | |
| 1999 12 15 | 704 | 0.1+ | 1.3− | 2005 05 08 | 691 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.8− | 0.2− | |
| 1999 12 15 | 704 | 0.2− | 1.0− | 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.1+ | |
| 2000 01 03 | 704 | 0.5− | 1.0− | 2005 05 08 | 691 | 0.2+ | 0.6+ | 2006 10 24 | 644 | 0.3− | 0.1+ | |
| 2000 01 03 | 704 | 1.1− | 0.3+ | 2006 05 29 | E12 | 0.8+ | 1.1+ | 2006 10 24 | 644 | 0.3− | 0.0 | |
| 2000 01 03 | 704 | 0.4− | 0.5+ | 2006 05 29 | E12 | 0.4− | 0.0 | 2006 10 27 | 704 | 0.6+ | 1.1+ | |
| 2000 01 04 | 704 | 1.0+ | 1.4+ | 2006 05 29 | E12 | 0.1− | 0.5− | 2006 10 27 | 704 | 1.3− | 1.0− | |
| 2000 01 04 | 704 | 0.0 | 1.0+ | 2006 05 29 | E12 | 0.3+ | 0.3+ | 2006 10 27 | 704 | (2.1− | 0.1−) | |
| 2000 01 04 | 704 | 0.6− | 0.3+ | 2006 09 12 | 704 | 0.9+ | 1.0− | 2006 10 27 | 704 | 0.7+ | 0.4− | |
| 2000 01 04 | 704 | 0.6− | 0.0 | 2006 09 12 | 704 | 0.5− | 0.4+ | 2006 10 27 | 704 | 1.4+ | 1.3+ | |
| 2003 11 21 | 644 | 0.2+ | 0.3+ | 2006 09 12 | 704 | 0.5+ | 0.5− | 2006 11 07 | 644 | 0.5− | 0.2+ | |
| 2003 11 21 | 644 | 0.3+ | 0.1+ | 2006 09 12 | 704 | 0.5+ | 0.8− | 2006 11 07 | 644 | 0.0 | 0.1− | |
| 2003 11 21 | 644 | 0.1− | 0.5+ | 2006 09 12 | 704 | 0.6+ | 0.8− | 2006 11 07 | 644 | 0.3− | 0.5+ | |
| 2003 12 23 | 704 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ | |
| 2003 12 23 | 704 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.3+ | |
| 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 | |
| 2003 12 23 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 11 14 | 704 | 0.3− | 0.4+ | |
| 2003 12 28 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 608 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.6− | 0.5+ | |
| 2003 12 28 | 704 | 0.7− | 0.7+ | 2006 09 19 | 608 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.3+ | |
| 2003 12 28 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 608 | 0.6+ | 0.1− | 2006 11 14 | 704 | 0.3− | 0.5+ | |
| 2003 12 28 | 704 | 0.7+ | 0.6− | 2006 09 21 | 699 | 0.6+ | 0.1+ | 2006 11 14 | 704 | 0.3− | 0.7+ | |
| 2003 12 28 | 704 | 0.2+ | 1.2+ | 2006 09 21 | 699 | 0.4+ | 0.6+ | 2006 11 17 | 704 | 0.0 | 1.0+ | |
| 2004 01 26 | 699 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.1+ | |
| 2004 01 26 | 699 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.4+ | |
| 2004 01 26 | 699 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.0 | 1.1+ | |
| 2004 01 26 | 699 | 1.2− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.9+ | 0.4+ | |
| 2004 01 30 | 703 | (2.5− | 1.4−) | 2006 09 26 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.1+ | 1.0+ | |
| 2004 01 30 | 703 | (3.0− | 1.9−) | 2006 09 26 | 703 | 0.7− | 0.5− | 2006 11 20 | 704 | 0.2− | 0.7+ | |
| 2004 01 30 | 703 | 0.7− | 1.2− | 2006 10 02 | 703 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.9+ | |
| 2004 01 30 | 703 | (4.3− | 0.7−) | 2006 10 02 | 703 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.1− | 1.1+ | |
| 2004 01 31 | 704 | 0.2− | 0.1− | 2006 10 02 | 703 | 0.5− | 0.2− | 2006 11 20 | 704 | 0.7+ | 0.6+ | |
| 2004 01 31 | 704 | 0.3+ | 0.8+ | 2006 10 02 | 703 | 0.3+ | 0.2− | | | | | |

**(137827)∗ 2000 AY$_{21}$ = 2002 RD$_{207}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37241)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 227.72966 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26427177 | $\omega$ | 212.64641 | | −0.95392545 | | −0.29909842 | |
| $a$ | 2.4049287 | $\Omega$ | 309.93145 | | +0.28151551 | | −0.86475856 | |
| $e$ | 0.1251750 | $i$ | 1.77849 | | +0.10380389 | | −0.40340149 | |
| $P$ | 3.73 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2004 01 19 | 691 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.2+ | 1.1+ | |
| 1999 12 07 | 704 | 0.2− | 0.7− | 2004 01 19 | 703 | 0.1+ | 0.8+ | 2004 03 17 | 645 | 0.0 | 0.1− | |
| 1999 12 07 | 704 | 0.1+ | 1.0− | 2004 01 19 | J87 | 0.7− | 0.4+ | 2004 03 17 | 645 | 0.0 | 0.1− | |
| 2000 01 03 | 704 | 0.5− | 1.4− | 2004 01 19 | J87 | 0.5− | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.1− | |
| 2000 01 03 | 704 | 0.0 | 1.2− | 2004 01 21 | 704 | 0.2− | 0.7+ | 2004 03 18 | 645 | 0.0 | 0.1− | |
| 2000 01 03 | 704 | 0.1− | 1.9− | 2004 01 21 | 704 | 0.2− | 0.1+ | 2004 04 12 | 699 | (2.6− | 2.0+) | |
| 2000 01 04 | 704 | 0.1− | 0.8− | 2004 01 21 | 704 | 0.1− | 0.5+ | 2004 04 12 | 699 | (1.6− | 0.1+) | |
| 2000 01 04 | 704 | 0.1+ | 0.7− | 2004 01 21 | 704 | 0.3− | 0.5+ | 2004 04 12 | 699 | 0.2− | 0.7+ | |
| 2000 01 04 | 704 | 0.3+ | 0.8− | 2004 01 21 | 704 | 0.5+ | 1.1+ | 2004 04 12 | 699 | 0.3− | 0.3− | |
| 2000 01 04 | 704 | 0.5+ | 1.4− | 2004 01 24 | 704 | 0.8− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.0 | |
| 2002 09 07 | 704 | 0.3− | 0.2+ | 2004 01 24 | 704 | 0.5+ | 0.4− | 2006 09 25 | 691 | 0.3+ | 0.3− | |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2004 01 24 | 704 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 | |
| 2002 09 07 | 704 | 0.6− | 0.1+ | 2004 01 24 | 704 | 0.5− | 0.2+ | 2006 10 03 | 691 | 0.2+ | 0.0 | |
| 2002 09 07 | 704 | 0.1− | 0.0 | 2004 01 24 | 704 | 0.2+ | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.3− | |
| 2002 09 14 | 644 | 0.4− | 0.6+ | 2004 01 26 | 699 | 1.1+ | 0.5− | 2006 10 03 | 691 | 0.1+ | 0.1+ | |
| 2002 09 14 | 644 | 0.7− | 0.6+ | 2004 01 26 | 699 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.3− | |
| 2002 09 14 | 644 | 0.0 | 1.5+ | 2004 01 26 | 699 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2− | |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2004 01 26 | 699 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2002 09 15 | 644 | 0.5− | 0.6+ | 2004 01 30 | 704 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1− | |
| 2002 09 15 | 644 | 0.6− | 0.6+ | 2004 01 30 | 704 | 1.0+ | 0.4− | 2006 10 16 | 691 | 0.4+ | 0.0 | |
| 2002 09 28 | 608 | (2.1− | 1.0−) | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− | |
| 2002 09 28 | 608 | (2.2− | 1.4−) | 2004 01 30 | 704 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.2+ | |
| 2002 09 28 | 608 | (2.3− | 0.7−) | 2004 01 30 | 704 | 0.0 | 0.5− | 2006 10 17 | 691 | 0.6− | 0.3− | |
| 2002 10 07 | 704 | 0.6− | 1.4+ | 2004 02 09 | 185 | 0.1+ | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.0 | |
| 2002 10 07 | 704 | (1.5− | 0.6+) | 2004 02 09 | 185 | 0.5+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.2+ | |
| 2002 10 07 | 704 | (1.5− | 0.5+) | 2004 02 09 | 185 | 0.4+ | 0.6− | 2006 10 17 | 703 | 0.3− | 0.3− | |
| 2002 10 07 | 704 | (1.3− | 1.7+) | 2004 02 10 | 703 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.5− | |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2004 02 10 | 703 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.2− | 0.2+ | |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2004 02 10 | 703 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1− | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2004 02 10 | 703 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.4− | 0.0 | |
| 2003 10 24 | 691 | 0.2+ | 0.5− | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.2− | |
| 2003 10 24 | 691 | 0.1+ | 0.3− | 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 1.0− | 0.1− | |
| 2003 10 24 | 691 | 0.5+ | 0.2− | 2004 02 11 | 699 | 1.0− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.6+ | |
| 2003 12 18 | 644 | 0.1+ | 0.8+ | 2004 02 11 | 699 | 0.9− | 0.1− | 2006 10 21 | 703 | 1.0− | 0.3+ | |
| 2003 12 18 | 644 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2003 12 18 | 644 | 0.4+ | 0.4+ | 2004 02 11 | 699 | 1.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2004 01 05 | 703 | (0.1− | 1.9+) | 2004 02 16 | 704 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 2004 01 05 | 703 | 0.5+ | 0.6+ | 2004 02 16 | 704 | 0.2+ | 0.4− | 2006 10 31 | 683 | 0.8+ | 1.0+ | |
| 2004 01 05 | 703 | 0.0 | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.1+ | 2006 10 31 | 683 | (0.3− | 1.7+) | |
| 2004 01 05 | 703 | 0.0 | 0.4+ | 2004 02 16 | 704 | 0.9− | 0.1− | 2006 10 31 | 683 | (2.0+ | 0.3−) | |
| 2004 01 12 | 644 | 0.3+ | 0.6+ | 2004 02 16 | 704 | 0.6− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.6+ | |
| 2004 01 12 | 644 | 0.0 | 0.3+ | 2004 02 20 | 333 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2+ | |
| 2004 01 12 | 644 | 0.1+ | 0.0 | 2004 02 20 | 333 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.4− | |
| 2004 01 13 | 699 | 0.3+ | 0.0 | 2004 02 20 | 333 | 0.4− | 1.0+ | 2006 11 11 | 703 | 0.5+ | 0.9+ | |
| 2004 01 13 | 699 | 0.3− | 0.4+ | 2004 02 20 | 333 | 0.6− | 0.5+ | 2006 11 11 | 703 | 1.2− | 1.3+ | |
| 2004 01 13 | 699 | 0.8− | 0.4+ | 2004 02 22 | 704 | 0.2− | 0.7+ | 2006 11 11 | 703 | 1.1+ | 0.5+ | |
| 2004 01 13 | 699 | 0.2+ | 0.3+ | 2004 02 22 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 1.1+ | 1.4+ | |
| 2004 01 19 | 691 | 0.2− | 0.2+ | 2004 02 22 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 703 | 1.0− | 0.7+ | |
| 2004 01 19 | 703 | 0.3− | 0.2+ | 2004 02 26 | 704 | 1.1+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.6+ | |
| 2004 01 19 | 691 | 0.2− | 0.2+ | 2004 02 26 | 704 | 1.2+ | 0.7− | 2006 11 17 | 703 | 0.4− | 0.5+ | |
| 2004 01 19 | 703 | 0.1+ | 0.5+ | 2004 02 26 | 704 | 0.8+ | 0.6+ | 2006 11 17 | 703 | (2.4− | 1.1+) | |
| 2004 01 19 | 703 | 0.2+ | 0.3− | 2004 02 26 | 704 | 0.7+ | 1.2+ | | | | | |

**(137828)∗ 2000 AC$_{22}$ = 2005 NA$_{42}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84527)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 0.10468 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28612053 | $\omega$ | 155.58320 | | +0.33199335 | | −0.93649158 | |
| $a$ | 2.2808849 | $\Omega$ | 274.86557 | | +0.84573096 | | +0.34856054 | |
| $e$ | 0.0726648 | $i$ | 6.51055 | | +0.41775538 | | +0.03858846 | |
| $P$ | 3.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.3+ | 1.0+ | 2002 10 05 | 704 | (1.7+ | 2.0+) | 2005 07 11 | G96 | 0.4− | 0.2− |
| 2000 01 03 | 704 | 0.3+ | 0.8− | 2002 10 09 | 704 | 0.2− | 0.2+ | 2005 07 11 | G96 | 0.1− | 0.1− |
| 2000 01 03 | 704 | 0.1+ | 0.4− | 2002 10 09 | 704 | 0.2− | 0.7+ | 2005 07 11 | G96 | 0.2− | 0.1− |
| 2000 01 04 | 704 | 0.7+ | 0.2− | 2002 10 09 | 704 | 0.0 | 0.5− | 2005 07 11 | G96 | 0.3− | 0.1+ |
| 2000 01 04 | 704 | 0.1+ | 0.2− | 2002 10 09 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2000 01 04 | 704 | 0.1+ | 0.3− | 2002 10 09 | 704 | 0.6− | 1.1+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2000 01 07 | 691 | 0.1− | 0.5+ | 2002 10 09 | 704 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2000 01 07 | 691 | 0.1− | 0.4− | 2002 10 09 | 704 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2000 01 07 | 691 | 0.2− | 0.1+ | 2002 10 09 | 704 | 0.2− | 0.3− | 2006 10 23 | G96 | 0.1− | 0.3+ |
| 2000 01 09 | 691 | 0.1+ | 0.1+ | 2002 10 09 | 704 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.2+ |
| 2000 01 09 | 691 | 0.1+ | 0.3− | 2002 10 09 | 704 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.6− | 0.2− |
| 2000 01 09 | 691 | 0.1+ | 0.2− | 2005 06 18 | G96 | 0.4− | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.4+ |
| 2000 01 13 | 691 | 0.2− | 0.1− | 2005 06 18 | G96 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.3+ | 0.1− |
| 2000 01 13 | 691 | 0.1− | 0.3− | 2005 06 18 | G96 | 0.1+ | 0.2− | 2006 10 29 | G96 | 0.5− | 0.0 |
| 2000 01 13 | 691 | 0.2− | 0.2− | 2005 06 18 | G96 | 0.2− | 0.2− | 2006 10 29 | G96 | 0.2− | 0.5− |
| 2001 05 15 | 644 | 0.1+ | 0.1+ | 2005 06 28 | 691 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.1− |
| 2001 05 15 | 644 | 0.1− | 0.1+ | 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.1+ |
| 2001 05 15 | 644 | 0.1+ | 0.3− | 2005 06 28 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.3+ |
| 2002 09 03 | 644 | 0.3− | 0.2+ | 2005 07 05 | 691 | 0.9+ | 0.3− | 2006 11 14 | G96 | 0.4− | 0.2+ |
| 2002 09 03 | 644 | 0.4− | 0.1+ | 2005 07 05 | 691 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.5+ |
| 2002 09 03 | 644 | 0.3− | 0.3+ | 2005 07 05 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 1.5+ | 1.6+ |
| 2002 10 05 | 704 | 0.3+ | 0.6− | 2005 07 10 | 691 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2002 10 05 | 704 | (0.3+ | 1.6−) | 2005 07 10 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 1.0+ | 0.4− | 2005 07 10 | 691 | 0.1+ | 0.0 | | | | |

**(137829)∗ 2000 AC$_{24}$ = 2002 VW$_{110}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 31.69168 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.29283125 | $\omega$ | 120.33774 | | +0.48734792 | −0.86740527 |
| $a$ | 2.2459035 | $\Omega$ | 300.16340 | | +0.75594226 | +0.47670638 |
| $e$ | 0.1126520 | $i$ | 6.67506 | | +0.43708502 | +0.14268540 |
| $P$ | 3.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.1− | 0.1− | 2002 11 07 | 704 | 0.1− | 0.1+ | 2005 07 04 | G96 | 0.4− | 0.1− |
| 2000 01 03 | 704 | 0.2+ | 1.1− | 2002 11 07 | 704 | 0.8+ | 0.9− | 2005 07 04 | G96 | 0.1− | 0.0 |
| 2000 01 03 | 704 | 0.8+ | 0.3+ | 2002 11 07 | 704 | 0.7− | 1.0− | 2005 07 04 | G96 | 0.0 | 0.3− |
| 2000 01 03 | 704 | 0.2− | 0.7− | 2002 11 07 | 704 | (2.9+ | 2.1+) | 2005 08 06 | 644 | 0.1− | 0.9+ |
| 2000 01 03 | 704 | 0.2− | 0.6+ | 2002 11 13 | 644 | 0.1+ | 0.1+ | 2005 08 06 | 644 | 0.3+ | 0.5+ |
| 2000 01 04 | 704 | 0.0 | 0.4− | 2002 11 13 | 644 | 0.0 | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.1+ |
| 2000 01 04 | 704 | 1.2+ | 1.2+ | 2002 11 13 | 644 | 0.1+ | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.1+ |
| 2000 01 04 | 704 | 0.6− | 0.3+ | 2002 11 14 | 704 | 0.3+ | 0.7+ | 2005 08 06 | 644 | 0.1− | 0.1− |
| 2000 01 04 | 704 | 0.7− | 1.2+ | 2002 11 14 | 704 | 0.5+ | 0.5+ | 2005 08 06 | 644 | 0.1+ | 0.1− |
| 2002 09 21 | 644 | 0.4− | 0.2+ | 2002 11 14 | 704 | 0.4− | 0.7+ | 2005 08 25 | 644 | 0.2+ | 0.3− |
| 2002 09 21 | 644 | 0.4− | 0.3+ | 2002 11 14 | 704 | 0.9+ | 1.4− | 2005 08 25 | 644 | 0.3+ | 0.1+ |
| 2002 09 21 | 644 | 0.5− | 0.3+ | 2002 12 05 | 704 | 0.4+ | 0.3+ | 2005 08 25 | 644 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2002 12 05 | 704 | 0.7+ | 0.2+ | 2006 10 27 | G96 | 0.6− | 0.1+ |
| 2002 10 05 | 704 | 0.1+ | 0.4+ | 2002 12 05 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2002 10 05 | 704 | 0.5− | 0.5− | 2002 12 05 | 704 | 0.2+ | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.7− | 0.3− | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 10 05 | 704 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2002 10 12 | 704 | 0.1+ | 1.1− | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.5− | 0.1+ |
| 2002 10 12 | 704 | 0.2+ | 0.0 | 2005 06 17 | G96 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2005 06 17 | G96 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2002 11 01 | 644 | 0.2+ | 0.0 | 2005 06 17 | G96 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.0 |
| 2002 11 01 | 644 | 0.3− | 0.0 | 2005 06 17 | G96 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.2+ |
| 2002 11 01 | 644 | 0.2+ | 0.2+ | 2005 07 04 | G96 | 0.1+ | 1.0− | 2006 12 01 | G96 | 0.1− | 0.1− |

**(137830)∗ 2000 AP$_{24}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 222.94666 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25895004 | $\omega$ | 79.27984 | | −0.97679252 | −0.21014293 |
| $a$ | 2.4377662 | $\Omega$ | 88.58007 | | +0.17673307 | −0.90003372 |
| $e$ | 0.1281296 | $i$ | 2.37509 | | +0.12100328 | −0.38181049 |
| $P$ | 3.81 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2004 04 19 | 704 | 0.7+ | 0.2− |
| 1999 12 08 | 704 | 0.6− | 1.4− | 2004 01 22 | 704 | 0.1+ | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.9− |
| 1999 12 08 | 704 | 0.5− | 0.5− | 2004 01 22 | 704 | 0.1+ | 0.5− | 2004 04 22 | 704 | 0.7+ | 0.5− |
| 2000 01 03 | 704 | 0.6− | 0.2− | 2004 01 24 | 704 | 0.0 | 0.1+ | 2004 04 22 | 704 | 0.2+ | 0.2+ |
| 2000 01 03 | 704 | 0.2+ | 0.5− | 2004 01 24 | 704 | 0.6− | 0.0 | 2004 04 22 | 704 | 0.8+ | 0.1− |
| 2000 01 03 | 704 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.2− | 0.4+ | 2004 04 22 | 704 | 0.3+ | 0.1− |
| 2000 01 03 | 704 | 0.3− | 0.5− | 2004 01 24 | 704 | 0.1− | 0.6+ | 2005 06 08 | 691 | 0.0 | 0.1+ |
| 2000 01 03 | 704 | 0.0 | 0.3− | 2004 01 27 | 704 | 0.4− | 0.7+ | 2005 06 08 | 691 | 0.3+ | 0.2+ |
| 2000 01 04 | 704 | 0.5− | 0.8− | 2004 01 27 | 704 | 0.7− | 1.0+ | 2005 06 08 | 691 | 0.3− | 0.1+ |
| 2000 01 04 | 704 | 0.3− | 0.4− | 2004 01 27 | 704 | 0.5− | 0.5− | 2006 09 19 | 691 | 0.2− | 0.4+ |
| 2000 01 04 | 704 | 1.1− | 1.3− | 2004 01 27 | 704 | 0.7− | 0.2− | 2006 09 19 | 691 | 0.3− | 0.3+ |
| 2000 01 04 | 704 | 0.2− | 0.7− | 2004 01 27 | 704 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.4− | 0.5+ |
| 2000 01 04 | 704 | 0.7+ | 0.1− | 2004 01 30 | 704 | 0.4+ | 0.7+ | 2006 09 23 | 691 | 0.1− | 0.0 |
| 2000 01 05 | 691 | 0.1+ | 0.6− | 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2000 01 05 | 691 | 0.2+ | 0.6− | 2004 01 30 | 704 | 0.5+ | 0.8+ | 2006 09 23 | 691 | 0.5+ | 0.1+ |
| 2000 01 05 | 691 | 0.1− | 0.5− | 2004 01 30 | 704 | 0.6+ | 0.7+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2000 01 08 | 704 | 0.4− | 0.3− | 2004 01 30 | 704 | 0.0 | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2000 01 08 | 704 | 0.4+ | 0.2− | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2000 01 08 | 704 | 0.6+ | 0.8− | 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.0 | 0.1+ |
| 2000 01 08 | 704 | 0.6+ | 0.0 | 2004 01 30 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 1.1+ | 0.9+ |
| 2000 01 08 | 704 | 0.9+ | 0.8− | 2004 02 10 | 644 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.2+ |
| 2000 01 30 | 704 | 0.1+ | 0.3− | 2004 02 10 | 644 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2000 01 30 | 704 | 0.0 | 0.2− | 2004 02 10 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2000 01 30 | 704 | 0.5− | 1.1− | 2004 02 10 | 106 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.5− | 1.2+ |
| 2000 01 30 | 704 | 0.0 | 0.1− | 2004 02 10 | 106 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2002 09 14 | 608 | 0.6− | 0.6+ | 2004 02 10 | 106 | 1.4− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2002 09 14 | 608 | 1.2− | 0.9+ | 2004 02 11 | 699 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 09 14 | 608 | 1.1− | 0.4+ | 2004 02 11 | 699 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2002 10 01 | 699 | 0.8+ | 1.1+ | 2004 02 11 | 699 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 10 01 | 699 | (1.5+ | 1.3+) | 2004 02 11 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 10 01 | 699 | 1.1+ | 1.4+ | 2004 02 12 | 291 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 10 01 | 699 | (2.0+ | 2.4+) | 2004 02 12 | 291 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 02 12 | 291 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.5+ | 1.1+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2002 10 11 | 704 | 0.1− | 0.3− | 2004 02 16 | 704 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 10 11 | 704 | 0.1+ | 0.4− | 2004 02 16 | 704 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 0.4− | 1.2+ | 2004 02 16 | 704 | 0.0 | 0.8+ | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2002 11 19 | 644 | 0.6− | 0.6− | 2004 02 16 | 704 | 0.1− | 0.7+ | 2006 11 07 | 644 | 0.4+ | 0.1+ |
| 2003 12 27 | 291 | 0.6+ | 0.3+ | 2004 02 17 | 644 | 0.2− | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.4+ |
| 2003 12 27 | 291 | 0.3+ | 0.3+ | 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2003 12 27 | 291 | 0.7+ | 0.7+ | 2004 02 17 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2004 01 05 | 703 | 0.9− | 1.4+ | 2004 02 18 | 608 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2004 01 05 | 703 | (2.4+ | 0.1−) | 2004 02 18 | 608 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2004 01 05 | 703 | 0.2− | 1.0− | 2004 02 18 | 608 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2004 01 05 | 703 | (0.3− | 1.6−) | 2004 02 20 | 704 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2004 01 13 | 699 | 0.4+ | 0.2− | 2004 02 20 | 704 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 01 13 | 699 | 0.7+ | 0.7− | 2004 02 20 | 704 | 0.3− | 0.8+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2004 01 13 | 699 | 0.0 | 0.7+ | 2004 02 23 | 704 | 0.5− | 1.2+ | 2006 11 17 | 703 | 1.6+ | 0.1+ |
| 2004 01 13 | 699 | (0.3+ | 1.6−) | 2004 02 23 | 704 | 0.2− | 1.2+ | 2006 11 17 | 703 | 1.0+ | 0.7− |
| 2004 01 16 | 644 | 0.1+ | 0.3+ | 2004 02 23 | 704 | (0.3− | 1.6+) | 2006 11 17 | 703 | 1.3+ | 0.3− |
| 2004 01 16 | 644 | 0.0 | 0.4+ | 2004 02 23 | 704 | (0.7− | 1.8+) | 2006 11 17 | 703 | 0.8+ | 1.3− |
| 2004 01 16 | 644 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.6− | 1.4+ | 2006 11 21 | 704 | 0.1+ | 1.5− |
| 2004 01 18 | 644 | 0.1+ | 0.5+ | 2004 02 23 | 608 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2004 01 18 | 644 | 0.2+ | 0.3+ | 2004 02 23 | 608 | 0.1+ | 1.0− | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2004 01 18 | 644 | 0.2+ | 0.3+ | 2004 02 23 | 608 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2004 01 22 | 704 | 0.4+ | 0.1− | 2004 04 19 | 704 | 0.8− | 0.5+ | | | | |
| 2004 01 22 | 704 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.4+ | 0.3+ | | | | |

**(137831)∗ 2000 $AM_{25}$ = 2002 $TN_{321}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 49774)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 240.22361 | | (2000.0) | | | |
| $n$ | 0.25844443 | $\omega$ | 146.52758 | | −0.83418475 | −0.55148508 |
| $a$ | 2.4409447 | $\Omega$ | 0.00346 | | +0.49648093 | −0.75098660 |
| $e$ | 0.1317327 | $i$ | 2.36800 | | +0.24008849 | −0.36315744 |
| $P$ | 3.81 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 20 | 691 | 0.8− | 0.5+ | 2004 01 18 | 644 | 0.2+ | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.5− |
| 1998 09 20 | 691 | 0.8− | 0.3+ | 2004 01 18 | 644 | 0.4+ | 0.1+ | 2004 02 16 | 704 | 0.5+ | 0.0 |
| 1998 09 20 | 691 | 0.5− | 0.1− | 2004 01 22 | 704 | 0.8− | 1.0+ | 2004 02 16 | 704 | 0.1− | 0.2− |
| 2000 01 03 | 704 | 0.6− | 1.1− | 2004 01 22 | 704 | 0.4− | 0.8+ | 2004 02 16 | 704 | 0.6+ | 0.1+ |
| 2000 01 03 | 704 | 0.1− | 1.5− | 2004 01 22 | 704 | 0.2+ | 0.7+ | 2004 02 23 | 704 | 1.3− | 0.1− |
| 2000 01 03 | 704 | 0.3− | 1.1− | 2004 01 22 | 704 | 0.3− | 0.4+ | 2004 02 23 | 704 | (1.8− | 0.5+) |
| 2000 01 03 | 704 | 0.4+ | 0.6− | 2004 01 22 | 704 | 0.2− | 0.6+ | 2004 02 23 | 704 | (2.2− | 0.9+) |
| 2000 01 03 | 704 | 0.6− | 0.7− | 2004 01 26 | 699 | 0.6+ | 0.5+ | 2004 02 23 | 704 | 0.6− | 0.5+ |
| 2000 01 04 | 704 | 1.2+ | 0.7+ | 2004 01 26 | 699 | 0.9− | 0.0 | 2004 02 23 | 704 | 1.3− | 0.4+ |
| 2000 01 04 | 704 | 0.2− | 0.2− | 2004 01 26 | 699 | 1.1+ | 0.1+ | 2004 02 29 | 691 | 0.4+ | 0.1+ |
| 2000 01 04 | 704 | 0.6+ | 0.1− | 2004 01 26 | 699 | 0.7+ | 0.2− | 2004 02 29 | 691 | 0.1+ | 0.3+ |
| 2000 01 04 | 704 | 0.2+ | 1.1− | 2004 01 30 | 704 | 0.3− | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.2+ |
| 2000 01 10 | 704 | (1.4− | 2.3−) | 2004 01 30 | 704 | 0.3+ | 0.0 | 2004 03 19 | 644 | 0.5+ | 0.9+ |
| 2000 01 10 | 704 | 0.9− | 0.9− | 2004 01 30 | 704 | 0.4+ | 0.7− | 2004 03 19 | 644 | 0.5+ | 0.7+ |
| 2000 01 10 | 704 | 0.2+ | 0.2− | 2004 01 30 | 704 | 0.6− | 0.4− | 2004 03 19 | 644 | 0.5+ | 0.8+ |
| 2000 01 10 | 704 | 0.8− | 0.5− | 2004 01 30 | 704 | 0.2+ | 0.6− | 2006 09 14 | 691 | 0.0 | 0.2+ |
| 2000 01 10 | 704 | 0.8− | 0.2+ | 2004 01 31 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.1+ |
| 2000 01 12 | 046 | 0.2+ | 0.4− | 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.2+ |
| 2000 01 12 | 046 | 0.1+ | 0.3− | 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 2000 01 12 | 046 | 0.4+ | 0.2− | 2004 02 10 | 703 | 0.5− | 0.2− | 2006 09 18 | 691 | 0.3− | 0.1− |
| 2000 01 12 | 046 | 0.2+ | 0.2− | 2004 02 10 | 703 | 0.0 | 0.9+ | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2000 01 13 | 046 | 0.2− | 0.4+ | 2004 02 10 | 703 | 0.6− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 2000 01 13 | 046 | 0.3+ | 0.2+ | 2004 02 10 | 703 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.4− | 0.1− |
| 2000 01 13 | 046 | 0.2− | 0.2+ | 2004 02 11 | 333 | 0.7− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2000 01 13 | 046 | 0.0 | 0.0 | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 2.5− |
| 2002 09 14 | 644 | 0.4− | 0.9+ | 2004 02 11 | 333 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2002 09 14 | 644 | 0.6− | 0.3+ | 2004 02 11 | 333 | 0.1− | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.5− | 0.5+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.4− | 0.7− |
| 2002 10 05 | 645 | 0.1+ | 0.1+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.8− |
| 2002 10 05 | 645 | 0.2+ | 0.0 | 2004 02 14 | 608 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.4− | 0.9− |
| 2002 10 11 | 645 | 0.1+ | 0.1+ | 2004 02 14 | 608 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2002 10 11 | 645 | 0.1+ | 0.2+ | 2004 02 14 | 608 | 0.1+ | 0.2− | | | | |
| 2004 01 18 | 644 | 0.1+ | 0.3+ | 2004 02 16 | 704 | 0.1+ | 0.3+ | | | | |

**(137832)∗ 2000 $AW_{25}$ = 1997 $JA_2$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (MPC 39339)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 294.01262 | | (2000.0) | | | |
| $n$ | 0.25862934 | $\omega$ | 1.01734 | | +0.23336817 | −0.97052501 |
| $a$ | 2.4397811 | $\Omega$ | 75.48916 | | +0.89170942 | +0.18891695 |
| $e$ | 0.1719208 | $i$ | 3.56342 | | +0.38780614 | +0.14963821 |
| $P$ | 3.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 01 | 910 | 0.2+ | 0.3− | 2002 08 29 | 644 | 0.9− | 0.2+ | 2004 02 16 | 704 | 0.0 | 0.3+ |
| 1997 05 01 | 910 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.9− | 0.2+ | 2004 02 18 | 644 | 0.1+ | 0.5+ |
| 1997 05 01 | 910 | 0.0 | 0.1− | 2002 08 29 | 644 | 0.8− | 0.2+ | 2004 02 18 | 644 | 0.7+ | 0.2+ |
| 1997 05 02 | 910 | 0.6+ | 0.1− | 2002 09 15 | 644 | 0.9− | 0.0 | 2004 02 18 | 644 | 0.4+ | 0.4+ |
| 1997 05 02 | 910 | 0.7+ | 0.0 | 2002 09 15 | 644 | 0.4− | 0.3− | 2004 02 18 | 644 | 0.1+ | 0.2+ |
| 1997 05 03 | 910 | 0.8+ | 0.3− | 2002 09 15 | 644 | 0.4− | 0.3+ | 2004 02 18 | 644 | 0.2+ | 0.6+ |
| 1999 12 07 | 704 | 0.1+ | 0.1+ | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2004 02 18 | 644 | 0.3+ | 0.4+ |
| 1999 12 07 | 704 | 0.8+ | 0.2+ | 2004 01 18 | 644 | 0.0 | 0.3+ | 2004 02 19 | 608 | 1.2+ | 0.2+ |
| 1999 12 07 | 704 | 0.3− | 0.6+ | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 02 19 | 608 | 0.6+ | 0.3+ |
| 1999 12 07 | 704 | 0.5− | 0.3+ | 2004 01 30 | 704 | (2.3+ | 0.5+) | 2004 02 19 | 608 | 0.6+ | 0.4+ |
| 1999 12 07 | 704 | 0.4+ | 1.4+ | 2004 01 30 | 704 | (1.9+ | 1.5+) | 2006 08 30 | 699 | 0.2+ | 1.3+ |
| 2000 01 03 | 704 | 0.2+ | 1.3− | 2004 01 30 | 704 | (0.1+ | 1.8+) | 2006 08 30 | 699 | 0.3+ | 0.6+ |
| 2000 01 03 | 704 | 0.4+ | 0.6− | 2004 01 30 | 704 | 0.3− | 1.3+ | 2006 08 30 | 699 | 0.6+ | 0.4+ |
| 2000 01 03 | 704 | 0.7+ | 0.7− | 2004 02 10 | 333 | 0.6− | 0.7+ | 2006 08 30 | 699 | 0.0 | 0.3+ |
| 2000 01 03 | 704 | (0.1+ | 2.3−) | 2004 02 10 | 333 | 0.7− | 0.5+ | 2006 09 14 | 703 | 0.5+ | 0.0 |
| 2000 01 03 | 704 | 0.6+ | 1.2− | 2004 02 10 | 333 | 1.2− | 0.3+ | 2006 09 14 | 703 | (1.9− | 1.2−) |
| 2000 01 04 | 704 | 0.8− | 0.6− | 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2000 01 04 | 704 | 0.1+ | 0.6− | 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 09 14 | 703 | (2.4+ | 0.8+) |
| 2000 01 04 | 704 | 0.1+ | 0.7− | 2004 02 11 | 333 | 0.7− | 1.5+ | 2006 09 20 | 644 | 0.1+ | 0.3+ |
| 2000 01 04 | 704 | 0.0 | 1.4− | 2004 02 11 | 333 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.7+ |
| 2000 01 04 | 704 | 0.2− | 0.8− | 2004 02 11 | 333 | 0.7+ | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.8+ |
| 2000 01 08 | 704 | 0.1− | 0.1− | 2004 02 11 | 333 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.3+ |
| 2000 01 08 | 704 | 0.0 | 0.5− | 2004 02 11 | 644 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2000 01 08 | 704 | 0.3+ | 0.6− | 2004 02 11 | 333 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 1.3+ |
| 2000 01 08 | 704 | 1.1− | 0.2+ | 2004 02 11 | 333 | 0.8− | 0.7+ | 2006 09 30 | 703 | 0.1− | 1.0+ |
| 2000 01 08 | 704 | 0.2+ | 0.2− | 2004 02 16 | 704 | 0.2− | 0.8+ | 2006 10 09 | 644 | 0.2− | 0.5+ |
| 2002 08 18 | 644 | 0.6− | 0.0 | 2004 02 16 | 704 | 1.3+ | 0.9+ | 2006 10 09 | 644 | 0.0 | 0.7+ |
| 2002 08 18 | 644 | 0.8− | 0.2+ | 2004 02 16 | 704 | 0.5+ | 0.6+ | 2006 10 09 | 644 | 0.3+ | 0.9+ |
| 2002 08 18 | 644 | 0.8− | 0.4+ | 2004 02 16 | 704 | 0.1+ | 0.2+ | | | | |

**(137833)∗ 2000 $AZ_{25}$ = 2004 $BU_{90}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60574)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 299.41273 | | (2000.0) | | | |
| $n$ | 0.26058718 | $\omega$ | 119.53585 | | +0.27915706 | −0.96012321 |
| $a$ | 2.4275454 | $\Omega$ | 314.24574 | | +0.87344042 | +0.26051863 |
| $e$ | 0.1920424 | $i$ | 1.22554 | | +0.39896512 | +0.10145669 |
| $P$ | 3.78 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 809 | 0.3+ | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2000 01 03 | 704 | 0.8− | 1.0− | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.1− |
| 2000 01 03 | 704 | 0.0 | 0.7− | 2004 02 17 | 704 | 0.9+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.4+ |
| 2000 01 03 | 704 | 1.7+ | 0.3− | 2004 02 17 | 704 | 0.7+ | 0.5+ | 2006 09 12 | 703 | 0.4− | 0.3+ |
| 2000 01 03 | 704 | 0.8+ | 0.6+ | 2004 02 17 | 704 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 1.0− | 0.6+ |
| 2000 01 04 | 704 | 0.1+ | 0.7+ | 2004 02 17 | 704 | 0.4+ | 0.5+ | 2006 09 12 | 703 | 0.7− | 0.8+ |
| 2000 01 04 | 704 | 0.2− | 0.3− | 2004 02 26 | 704 | (0.2+ | 2.3+) | 2006 09 17 | 704 | 0.3+ | 0.5+ |
| 2000 01 04 | 704 | 0.1− | 0.2− | 2004 02 26 | 704 | (0.0 | 1.7+) | 2006 09 17 | 704 | 0.7− | 0.7+ |
| 2000 01 04 | 704 | 0.5+ | 0.5+ | 2004 02 26 | 704 | (0.3− | 1.8+) | 2006 09 17 | 704 | 0.6− | 1.4+ |
| 2000 01 15 | 691 | 0.3− | 0.3− | 2004 03 18 | 704 | 1.0− | 0.1− | 2006 09 17 | 704 | 0.2− | 0.2− |
| 2000 01 15 | 691 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.8− | 0.8+ | 2006 09 17 | 704 | (0.8− | 2.4−) |
| 2000 01 15 | 691 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.9− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.5− |
| 2004 01 24 | 704 | 0.4+ | 0.5+ | 2004 03 18 | 704 | 1.2− | 0.2− | 2006 09 19 | 703 | 1.0− | 0.1+ |
| 2004 01 24 | 704 | 0.8− | 0.3− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.7+ |
| 2004 01 24 | 704 | 1.0+ | 0.4− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.4+ | 0.4+ |
| 2004 01 24 | 704 | 0.0 | 0.3− | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.4+ |
| 2004 01 24 | 704 | 0.3+ | 0.1− | 2006 08 27 | 699 | (0.0 | 2.2+) | 2006 09 25 | 699 | 1.1+ | 0.0 |
| 2004 01 29 | 704 | 0.6+ | 0.1+ | 2006 08 27 | 699 | (1.9− | 1.9+) | 2006 09 25 | 699 | 1.0− | 0.9− |
| 2004 01 29 | 704 | 0.4− | 1.3+ | 2006 08 27 | 699 | 0.5+ | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.2+ |
| 2004 01 29 | 704 | 0.5+ | 0.8− | 2006 08 27 | 699 | (2.0− | 0.6+) | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2004 01 29 | 704 | 0.2− | 1.2+ | 2006 08 28 | 703 | 1.4+ | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 1.2− | 0.7− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 703 | (1.6− | 0.4−) | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.2+ | 0.1+ | | | | |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.2+ | 0.2+ | | | | |

**(137834)∗ 2000 $AM_{26}$ = 2004 $BS_{55}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60574)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.19655 | | (2000.0) | | | |
| $n$ | 0.26320007 | $\omega$ | 77.18558 | | +0.25249760 | −0.96759716 |
| $a$ | 2.4114525 | $\Omega$ | 358.18843 | | +0.87723813 | +0.22928060 |
| $e$ | 0.1646015 | $i$ | 1.50739 | | +0.40828694 | +0.10576453 |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 1.0− | 1.0− | 2004 02 17 | 704 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.6+ | |
| 2000 01 03 | 704 | (0.3+ | 2.2−) | 2004 02 17 | 704 | 0.7+ | 0.6+ | 2006 09 21 | A50 | 0.2− | 0.6− | |
| 2000 01 03 | 704 | 0.0 | 1.3− | 2004 02 17 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.5+ | |
| 2000 01 03 | 704 | 0.4− | 1.2− | 2004 02 17 | 704 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.4+ | |
| 2000 01 03 | 704 | 0.5+ | 0.3− | 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.5+ | |
| 2000 01 04 | 704 | 0.7− | 0.6− | 2004 02 22 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.7+ | 0.2+ | |
| 2000 01 04 | 704 | 0.2− | 0.6− | 2004 02 22 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.0 | |
| 2000 01 04 | 704 | 0.3+ | 1.1− | 2004 02 22 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.1− | |
| 2000 01 04 | 704 | 0.5+ | 0.6+ | 2004 02 26 | 704 | 0.1+ | 1.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 | |
| 2000 01 08 | 704 | 0.0 | 1.0− | 2004 02 26 | 704 | 0.9+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1− | |
| 2000 01 08 | 704 | 0.4− | 0.6− | 2004 02 26 | 704 | 0.2− | 1.1+ | 2006 09 26 | G96 | 0.1− | 0.0 | |
| 2000 01 08 | 704 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.1+ | |
| 2002 08 18 | 644 | (0.4− | 1.9+) | 2004 02 26 | 704 | (0.1+ | 1.8+) | 2006 09 27 | G96 | 0.0 | 0.2− | |
| 2002 08 18 | 644 | (0.3− | 2.2+) | 2004 02 29 | 691 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.1− | |
| 2002 08 18 | 644 | (0.3− | 1.8+) | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− | |
| 2002 08 28 | 644 | 1.0− | 0.6+ | 2004 02 29 | 691 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.1− | |
| 2002 08 28 | 644 | 0.6− | 0.4+ | 2004 03 18 | 704 | 0.5− | 0.5+ | 2006 09 29 | 704 | 1.0− | 0.8+ | |
| 2002 08 28 | 644 | 1.0− | 0.4+ | 2004 03 18 | 704 | (0.3− | 2.1+) | 2006 09 29 | 704 | 0.2− | 0.1+ | |
| 2002 10 10 | 291 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.9− | 1.4+ | 2006 09 29 | 704 | 1.3− | 0.0 | |
| 2002 10 10 | 291 | 0.1− | 0.1+ | 2004 03 27 | 691 | 0.0 | 1.0+ | 2006 09 29 | 704 | 0.0 | 0.5+ | |
| 2002 10 10 | 291 | 0.2+ | 0.1+ | 2004 03 27 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.3− | 0.1+ | |
| 2004 01 22 | 704 | 0.2+ | 0.2− | 2004 03 27 | 691 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | |
| 2004 01 22 | 704 | 1.0+ | 0.6− | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1+ | |
| 2004 01 22 | 704 | 0.6+ | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.3− | 0.2+ | |
| 2004 01 22 | 704 | 0.6+ | 0.0 | 2006 07 21 | G96 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.0 | |
| 2004 01 24 | 704 | 0.0 | 0.4− | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2+ | |
| 2004 01 24 | 704 | 0.8+ | 0.6+ | 2006 09 18 | 291 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1− | |
| 2004 01 24 | 704 | 0.5+ | 0.2− | 2006 09 18 | 291 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.3− | |
| 2004 02 12 | 291 | 0.6+ | 0.2+ | 2006 09 18 | 291 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.0− | |
| 2004 02 12 | 291 | 0.6+ | 0.3+ | 2006 09 19 | 703 | (1.2+ | 2.8+) | 2006 10 16 | 703 | 0.6− | 1.1+ | |
| 2004 02 12 | 291 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.6+ | 1.2+ | 2006 10 28 | G96 | 0.1− | 0.0 | |
| 2004 02 15 | 608 | 1.2− | 0.2+ | 2006 09 19 | 703 | 1.0− | 0.2+ | 2006 10 28 | G96 | 0.6+ | 0.6− | |
| 2004 02 15 | 608 | 0.6− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.1− | |
| 2004 02 15 | 608 | 0.1− | 0.7− | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.3− | |

**(137835)∗ 2000 AX$_{27}$ = 2002 OB**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33178)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.56187 | | (2000.0) | | | |
| $n$ | 0.24629605 | $\omega$ | 50.96357 | | +0.99159700 | +0.05731711 |
| $a$ | 2.5205642 | $\Omega$ | 305.45063 | | −0.10558005 | +0.87660528 |
| $e$ | 0.1869337 | $i$ | 8.18486 | | +0.07475455 | +0.47778441 |
| $P$ | 4.00 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.2− | 0.3− | 2002 07 05 | 704 | (1.6− | 0.4−) | 2004 01 27 | 704 | 0.3− | 0.3+ | |
| 2000 01 03 | 704 | 0.4+ | 0.7− | 2002 07 16 | 428 | 0.5− | 0.3+ | 2004 01 27 | 704 | 0.4− | 0.8+ | |
| 2000 01 03 | 704 | 0.5+ | 0.6− | 2002 07 17 | 428 | 0.9− | 0.4+ | 2004 01 27 | 704 | 0.4+ | 1.0+ | |
| 2000 01 03 | 704 | 0.2+ | 1.1− | 2002 07 17 | 428 | 0.1+ | 0.0 | 2006 06 18 | 644 | 0.4+ | 0.1+ | |
| 2000 01 04 | 704 | 0.0 | 0.3− | 2002 07 20 | 428 | 1.3− | 0.7− | 2006 06 18 | 644 | 0.4+ | 0.3+ | |
| 2000 01 04 | 704 | 0.6+ | 0.5− | 2002 07 20 | 428 | (2.4− | 1.0−) | 2006 06 18 | 644 | 0.3+ | 0.5+ | |
| 2000 01 04 | 704 | 0.1+ | 0.6− | 2002 08 13 | 704 | 0.5+ | 0.3− | 2006 06 22 | 644 | 0.1+ | 0.5+ | |
| 2000 01 04 | 704 | 0.0 | 0.0 | 2002 08 13 | 704 | 0.8+ | 0.6+ | 2006 06 22 | 644 | 0.2+ | 0.3+ | |
| 2000 01 04 | 704 | 0.2+ | 0.3+ | 2002 08 13 | 704 | 0.6+ | 0.4− | 2006 06 22 | 644 | 0.3+ | 0.3+ | |
| 2000 01 07 | 704 | 0.9+ | 0.2− | 2002 08 13 | 704 | 0.1− | 0.3− | 2006 07 04 | E12 | 0.0 | 0.3+ | |
| 2000 01 07 | 704 | 1.5+ | 0.3− | 2002 08 13 | 704 | 0.3− | 0.2− | 2006 07 04 | E12 | 0.4+ | 0.6+ | |
| 2000 01 07 | 704 | 0.6+ | 0.0 | 2002 08 31 | 704 | 0.2+ | 0.0 | 2006 07 04 | E12 | 0.6− | 0.7− | |
| 2000 01 07 | 704 | 0.2− | 0.8− | 2002 08 31 | 704 | 0.2− | 0.0 | 2006 07 04 | E12 | (1.8+ | 0.9−) | |
| 2000 01 07 | 704 | 0.4− | 0.5− | 2002 08 31 | 704 | 0.3− | 0.1− | 2006 07 18 | 704 | 0.4+ | 0.9+ | |
| 2000 01 07 | 704 | 0.0 | 0.3− | 2002 08 31 | 704 | 1.1− | 0.2− | 2006 07 18 | 704 | 0.4+ | 0.2− | |
| 2000 01 07 | 704 | 0.1− | 0.3+ | 2003 12 22 | 704 | 0.8− | 0.9+ | 2006 07 18 | 704 | 0.8+ | 0.3+ | |
| 2000 01 07 | 704 | 0.5+ | 1.7− | 2003 12 22 | 704 | 0.9− | 1.1+ | 2006 07 20 | 644 | 0.4+ | 0.1− | |
| 2000 01 07 | 704 | 0.8+ | 1.1− | 2003 12 22 | 704 | 0.9− | 0.5+ | 2006 07 20 | 644 | 0.3+ | 0.0 | |
| 2000 01 08 | 704 | 0.5− | 0.4− | 2003 12 22 | 704 | 1.4− | 1.1+ | 2006 07 20 | 644 | 0.3+ | 0.0 | |
| 2000 01 08 | 704 | 0.4− | 0.7− | 2003 12 27 | 704 | 0.0 | 0.5+ | 2006 07 21 | 704 | 0.9− | 0.6+ | |
| 2000 01 08 | 704 | 0.5+ | 0.5− | 2003 12 27 | 704 | 0.3− | 0.1− | 2006 07 21 | 704 | 0.3+ | 0.5− | |
| 2000 01 08 | 704 | 0.8+ | 0.1− | 2003 12 27 | 704 | 0.5− | 0.9+ | 2006 07 21 | 704 | 0.2+ | 0.1− | |
| 2002 06 17 | 644 | 0.6− | 0.2− | 2003 12 27 | 704 | 0.5+ | 0.4+ | 2006 07 21 | 704 | 0.4+ | 0.2+ | |
| 2002 06 17 | 644 | 0.0 | 0.2− | 2004 01 17 | 644 | 0.1− | 0.9+ | 2006 11 02 | G96 | 0.1+ | 0.5+ | |
| 2002 06 17 | 644 | 0.4− | 0.4− | 2004 01 17 | 644 | 0.1+ | 0.8+ | 2006 11 02 | G96 | 0.0 | 0.2− | |
| 2002 07 05 | 704 | 0.1− | 1.2− | 2004 01 17 | 644 | 0.2+ | 0.8+ | 2006 11 02 | G96 | 0.0 | 0.0 | |
| 2002 07 05 | 704 | 1.0− | 0.4− | 2004 01 22 | 704 | 0.6− | 0.3+ | 2006 11 02 | G96 | 0.6+ | 0.3+ | |
| 2002 07 05 | 704 | 0.9+ | 0.9+ | 2004 01 22 | 704 | 0.2− | 0.5+ | | | | | |
| 2002 07 05 | 704 | 1.2− | 0.5− | 2004 01 22 | 704 | 0.5− | 0.4+ | | | | | |

**(137836)∗ 2000 AZ$_{27}$ = 1993 FQ$_{47}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 2259)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.72740 | | (2000.0) | | | |
| $n$ | 0.26368334 | $\omega$ | 56.82256 | | +0.21330726 | −0.97687945 |
| $a$ | 2.4085052 | $\Omega$ | 20.87544 | | +0.88240294 | +0.18632160 |
| $e$ | 0.1890181 | $i$ | 2.31155 | | +0.41936269 | +0.10483706 |
| $P$ | 3.74 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.2− | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.0 | 2004 03 22 | 704 | 1.3+ | 0.1+ | |
| 1993 03 20 | 809 | (2.5+ | 3.4−) | 2004 01 22 | 704 | 0.6− | 0.6+ | 2004 03 22 | 704 | (2.1+ | 0.4+) | |
| 1993 03 24 | 809 | 0.5+ | 0.2− | 2004 01 22 | 704 | 0.2+ | 1.1+ | 2006 08 22 | 644 | 0.2− | 0.4+ | |
| 1999 12 15 | 704 | 1.9− | 0.8− | 2004 01 22 | 704 | 0.6+ | 1.1+ | 2006 08 22 | 644 | 0.3+ | 0.1− | |
| 1999 12 15 | 704 | 0.5− | 0.3− | 2004 02 11 | 699 | 0.3+ | 0.0 | 2006 08 22 | 644 | 0.3− | 0.2− | |
| 1999 12 15 | 704 | 1.0− | 0.8− | 2004 02 11 | 699 | 1.0− | 0.5+ | 2006 09 12 | 703 | 0.9− | 0.1+ | |
| 1999 12 15 | 704 | 1.6− | 0.0 | 2004 02 11 | 699 | 1.1+ | 0.5+ | 2006 09 12 | 703 | (1.5− | 2.1+) | |
| 1999 12 15 | 704 | 0.4− | 1.7− | 2004 02 11 | 699 | 0.5− | 0.4+ | 2006 09 12 | 703 | (1.4− | 1.6+) | |
| 2000 01 03 | 704 | 0.4+ | 0.2− | 2004 02 16 | 049 | 0.3+ | 0.4+ | 2006 09 12 | 703 | 1.2− | 0.8+ | |
| 2000 01 03 | 704 | 0.1− | 0.3− | 2004 02 16 | 049 | 1.0+ | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.4+ | |
| 2000 01 03 | 704 | 0.4+ | 0.5− | 2004 02 16 | 049 | 1.4+ | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.2+ | |
| 2000 01 03 | 704 | 0.4+ | 0.9− | 2004 02 17 | 704 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.4+ | |
| 2000 01 03 | 704 | 0.5− | 0.8− | 2004 02 17 | 704 | 1.0− | 0.4+ | 2006 09 17 | 704 | 0.2− | 0.7− | |
| 2000 01 04 | 704 | 0.6− | 0.3− | 2004 02 17 | 704 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.4− | |
| 2000 01 04 | 704 | 0.1+ | 0.3− | 2004 02 17 | 704 | 0.1+ | 0.9− | 2006 09 17 | 704 | 0.2+ | 0.4+ | |
| 2000 01 04 | 704 | 0.0 | 0.3+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.3+ | |
| 2000 01 04 | 704 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.3+ | |
| 2000 01 04 | 704 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.3+ | 0.4+ | |
| 2000 01 07 | 704 | 0.6+ | 0.4− | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | (1.9− | 1.6+) | |
| 2000 01 07 | 704 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.8− | 1.0− | |
| 2000 01 07 | 651 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 0.8− | 1.0− | |
| 2000 01 07 | 651 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.0 | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.7− | |
| 2000 01 07 | 704 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.6− | 0.7− | 2006 09 27 | 704 | 0.3+ | 0.4+ | |
| 2000 01 07 | 704 | 0.1− | 0.2+ | 2004 02 26 | 704 | 1.1− | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.8+ | |
| 2000 01 07 | 651 | 0.1− | 1.1+ | 2004 02 26 | 704 | (1.6− | 0.1+) | 2006 09 27 | 704 | 0.7− | 1.2+ | |
| 2000 01 07 | 704 | 0.5+ | 1.0+ | 2004 02 26 | 704 | 0.5− | 0.7+ | 2006 09 27 | 704 | 0.6+ | 0.9+ | |
| 2000 01 07 | 704 | 1.5+ | 0.1+ | 2004 02 29 | 691 | 0.3+ | 0.6+ | 2006 09 28 | 704 | 0.1+ | 0.2− | |
| 2000 01 07 | 704 | 0.4− | 0.2− | 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 704 | 0.2− | 0.3− | |
| 2000 01 07 | 704 | 0.2− | 0.3+ | 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.7+ | |
| 2000 01 07 | 704 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.5− | |
| 2000 01 07 | 704 | 0.3+ | 0.6− | 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 704 | (0.0 | 1.6+) | |
| 2000 01 07 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 703 | 0.7− | 0.4+ | 2006 10 01 | 704 | 0.7− | 0.6+ | |
| 2000 01 07 | 704 | 0.6+ | 0.1− | 2004 03 15 | 704 | 0.6+ | 1.4+ | 2006 10 01 | 704 | 0.2+ | 0.4+ | |
| 2000 01 07 | 704 | 0.2+ | 0.1− | 2004 03 15 | 703 | (0.9− | 1.8+) | 2006 10 01 | 704 | 0.1+ | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.8+ | 0.3− | 2004 03 15 | 703 | (2.8+ | 0.6+) | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2000 01 07 | 704 | 0.4− | 0.0 | 2004 03 15 | 703 | 0.9− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2000 01 07 | 704 | 0.5+ | 1.1− | 2004 03 19 | 644 | 0.3+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2000 01 07 | 704 | 0.1− | 1.2+ | 2004 03 19 | 644 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2000 01 08 | 704 | 0.1+ | 0.1− | 2004 03 19 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.5+ |
| 2000 01 08 | 704 | 0.1+ | 0.3− | 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2000 01 08 | 704 | 0.6− | 0.1− | 2004 03 19 | 704 | 0.6− | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 01 08 | 704 | 0.5+ | 0.4− | 2004 03 19 | 704 | 0.7+ | 1.4+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2000 01 08 | 704 | 0.1− | 1.1− | 2004 03 19 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 08 27 | 644 | 0.3− | 0.6+ | 2004 03 22 | 704 | (1.9+ | 1.2+) | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 08 27 | 644 | 0.6− | 0.3+ | 2004 03 22 | 704 | (1.8+ | 0.6+) | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 08 27 | 644 | 0.6− | 0.6+ | 2004 03 22 | 704 | (3.2+ | 0.3+) | 2006 10 21 | 644 | 0.0 | 0.2+ |

**(137837)∗ 2000 AX$_{28}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 180.06956 | | (2000.0) | | −0.98929342 | +0.12868832 |
| $n$ | 0.24396774 | $\omega$ | 221.98345 | | −0.07942350 | −0.87043223 |
| $a$ | 2.5365755 | $\Omega$ | 325.23132 | | −0.12243548 | −0.47517054 |
| $e$ | 0.1990171 | $i$ | 6.93262 | | | |
| $P$ | 4.04 | $H$ | 15.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 29 | 691 | 0.1− | 0.5− | 2002 10 09 | 704 | 0.8+ | 0.7+ | 2004 01 31 | 704 | 0.0 | 0.1− |
| 1992 01 29 | 691 | 0.1+ | 0.2− | 2002 10 09 | 704 | (2.1+ | 0.3+) | 2004 03 19 | 704 | 0.1− | 0.4+ |
| 1992 01 29 | 691 | 0.4− | 0.0 | 2003 12 04 | 704 | 0.5+ | 0.1+ | 2004 03 19 | 704 | 0.2+ | 1.1+ |
| 1999 12 31 | 699 | 0.5+ | 0.0 | 2003 12 04 | 704 | 0.6+ | 0.7+ | 2004 03 19 | 704 | 0.5− | 0.3+ |
| 1999 12 31 | 699 | 0.3+ | 0.0 | 2003 12 04 | 704 | 0.2+ | 0.4+ | 2005 05 21 | 644 | 0.0 | 0.7+ |
| 1999 12 31 | 699 | 0.6+ | 0.0 | 2003 12 04 | 704 | 0.1+ | 0.3+ | 2005 05 21 | 644 | 0.2− | 0.7+ |
| 2000 01 03 | 704 | 0.1− | 0.2− | 2003 12 04 | 704 | 0.5+ | 0.4+ | 2005 05 21 | 644 | 0.2− | 0.5+ |
| 2000 01 03 | 704 | 0.4− | 0.2− | 2003 12 17 | 704 | 0.5− | 0.3+ | 2006 08 31 | A13 | 0.7+ | 0.2− |
| 2000 01 03 | 704 | 0.3− | 0.6− | 2003 12 17 | 704 | 0.5− | 0.2− | 2006 08 31 | A13 | 0.2− | 0.0 |
| 2000 01 03 | 704 | 0.5− | 0.5− | 2003 12 17 | 704 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.3+ | 0.3+ |
| 2000 01 03 | 704 | 0.2+ | 0.3− | 2003 12 17 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2000 01 04 | 704 | 0.5− | 0.0 | 2003 12 23 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.4− | 0.4− | 2003 12 23 | 704 | 0.5+ | 0.1− | 2006 09 26 | 691 | 0.3− | 0.0 |
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2003 12 23 | 704 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2000 01 04 | 704 | 0.0 | 0.1+ | 2003 12 23 | 704 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2000 01 04 | 704 | 0.4+ | 0.1− | 2003 12 23 | 704 | 0.1− | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.2− |
| 2000 01 08 | 704 | 0.0 | 0.4− | 2003 12 28 | 704 | 0.7+ | 1.0− | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2000 01 08 | 704 | 0.1− | 0.7− | 2003 12 28 | 704 | 0.2− | 1.2− | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2000 01 08 | 704 | 0.1− | 0.6− | 2003 12 28 | 704 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2000 01 08 | 704 | 0.8+ | 0.6+ | 2003 12 28 | 704 | 0.4− | 0.9− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2000 01 08 | 704 | 0.7+ | 0.2− | 2003 12 28 | 704 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2000 01 30 | 704 | 0.3+ | 0.0 | 2003 12 29 | 704 | 0.1+ | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2000 01 30 | 704 | 0.3+ | 0.3− | 2003 12 29 | 704 | 0.1+ | 0.8+ | 2006 10 12 | 644 | 0.6+ | 0.3− |
| 2000 01 30 | 704 | 0.2− | 0.1+ | 2003 12 29 | 704 | 0.0 | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2000 01 30 | 704 | 0.3− | 0.2+ | 2003 12 29 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 1.2− |
| 2000 01 31 | 704 | 0.1+ | 0.2− | 2003 12 29 | 704 | 0.7− | 1.0+ | 2006 10 17 | 703 | (3.1+ | 2.0+) |
| 2000 01 31 | 704 | 0.7+ | 0.2+ | 2003 12 30 | 704 | 0.2− | 0.9+ | 2006 10 17 | 703 | (1.6+ | 2.0−) |
| 2000 01 31 | 704 | 0.5+ | 0.2+ | 2003 12 30 | 704 | 0.1− | 0.4+ | 2006 10 17 | 703 | 1.0− | 1.2+ |
| 2000 01 31 | 704 | 0.3− | 0.2+ | 2003 12 30 | 704 | 0.5− | 1.1+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2000 02 11 | 704 | 0.4− | 0.5+ | 2003 12 30 | 704 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2000 02 11 | 704 | 0.2− | 0.4+ | 2003 12 30 | 704 | (0.3− | 1.5+) | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2000 02 11 | 704 | 0.1+ | 0.0 | 2004 01 31 | 704 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2000 02 11 | 704 | 0.3+ | 0.2− | 2004 01 31 | 704 | 0.3+ | 0.5+ | | | | |
| 2002 10 09 | 704 | 0.6− | 0.3+ | 2004 01 31 | 704 | 0.2− | 1.0+ | | | | |

**(137838)∗ 2000 AD$_{29}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.82102 | | (2000.0) | | −0.13233703 | −0.99045567 |
| $n$ | 0.25217131 | $\omega$ | 51.18763 | | +0.89214524 | −0.13595989 |
| $a$ | 2.4812600 | $\Omega$ | 46.46318 | | +0.43193030 | −0.02263790 |
| $e$ | 0.1534649 | $i$ | 3.04661 | | | |
| $P$ | 3.91 | $H$ | 16.4 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.7− | 1.0− | 2002 08 29 | 644 | 0.3− | 0.8+ | 2004 01 30 | 704 | 0.1+ | 0.0 |
| 1999 12 15 | 704 | 0.1− | 0.1+ | 2002 08 29 | 644 | (1.8− | 0.0 ) | 2004 02 13 | 699 | 0.0 | 0.2+ |
| 1999 12 15 | 704 | 1.1+ | 0.3− | 2003 10 24 | 691 | 0.2+ | 0.3+ | 2004 02 13 | 699 | 0.4− | 0.6+ |
| 1999 12 15 | 704 | 0.7− | 0.2+ | 2003 10 24 | 691 | 0.1− | 0.1− | 2004 02 13 | 699 | 0.5+ | 0.0 |
| 1999 12 15 | 704 | 0.0 | 0.7− | 2003 10 24 | 691 | 0.1+ | 0.4+ | 2004 02 13 | 699 | 0.3− | 0.5+ |
| 2000 01 03 | 704 | 0.5− | 0.9− | 2003 12 27 | 704 | 0.3− | 1.1+ | 2004 02 15 | 704 | 0.5− | 0.1− |
| 2000 01 03 | 704 | 0.8+ | 0.2− | 2003 12 27 | 704 | 0.2− | 0.4+ | 2004 02 15 | 704 | 0.3+ | 0.6+ |
| 2000 01 03 | 704 | 0.8− | 0.5− | 2003 12 27 | 704 | 0.0 | 1.1+ | 2004 02 15 | 704 | 0.4− | 0.4+ |
| 2000 01 03 | 704 | 0.4− | 1.2− | 2003 12 27 | 704 | 0.0 | 0.6+ | 2004 02 15 | 704 | 0.4+ | 0.6− |
| 2000 01 03 | 704 | 0.6+ | 0.6− | 2003 12 27 | 704 | (0.5− | 1.6+) | 2004 02 15 | 704 | 1.2− | 1.1+ |
| 2000 01 04 | 704 | 0.2+ | 0.0 | 2004 01 05 | 703 | (2.1− | 0.6−) | 2004 02 17 | 691 | 0.1+ | 0.2+ |
| 2000 01 04 | 704 | 0.1− | 0.6− | 2004 01 05 | 703 | 0.8+ | 1.2+ | 2004 02 17 | 691 | 0.1+ | 0.2+ |
| 2000 01 04 | 704 | 0.5+ | 0.5− | 2004 01 05 | 703 | 0.4− | 0.2− | 2004 02 17 | 691 | 0.2+ | 0.2+ |
| 2000 01 04 | 704 | 0.2− | 0.6− | 2004 01 05 | 703 | 0.7+ | 0.6+ | 2004 02 17 | 645 | 0.0 | 0.2− |
| 2000 01 04 | 704 | 0.1− | 0.5− | 2004 01 12 | 644 | 0.4+ | 0.3+ | 2004 02 17 | 645 | 0.0 | 0.1− |
| 2000 01 31 | 704 | 0.3− | 0.1− | 2004 01 12 | 644 | 0.4+ | 0.1+ | 2006 08 21 | F84 | 0.9− | 0.2− |
| 2000 01 31 | 704 | 0.1+ | 0.3− | 2004 01 12 | 644 | 0.4+ | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.0 |
| 2000 01 31 | 704 | 0.3+ | 0.2+ | 2004 01 13 | 699 | 0.9− | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.7+ |
| 2000 02 11 | 704 | 1.5− | 0.3+ | 2004 01 13 | 699 | 1.1− | 0.5+ | 2006 08 24 | 644 | 1.1− | 0.5+ |
| 2000 02 11 | 704 | 0.1+ | 0.3+ | 2004 01 13 | 699 | 0.7+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 1.0− |
| 2000 02 11 | 704 | 0.3+ | 1.0− | 2004 01 13 | 699 | (2.0− | 0.6+) | 2006 11 11 | G96 | 0.5+ | 0.6− |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2004 01 30 | 704 | 1.4+ | 0.9+ | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 1.6+ | 1.3+ |
| 2002 08 18 | 644 | 0.3+ | 0.3+ | 2004 01 30 | 704 | 0.3+ | 1.1+ | | | | |
| 2002 08 29 | 644 | 0.3− | 0.1+ | 2004 01 30 | 704 | (0.6+ | 2.0+) | | | | |

**(137839)∗ 2000 AM$_{32}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.40325 | | (2000.0) | | −0.98451573 | −0.16661373 |
| $n$ | 0.26132811 | $\omega$ | 88.58182 | | +0.13081266 | −0.90519876 |
| $a$ | 2.4229547 | $\Omega$ | 81.82503 | | +0.11669118 | −0.39096684 |
| $e$ | 0.1359652 | $i$ | 3.15542 | | | |
| $P$ | 3.77 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.6− | 0.6− | 2003 12 22 | 704 | 0.3+ | 0.5+ | 2005 07 09 | 691 | 0.2− | 0.4+ |
| 2000 01 03 | 704 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.5+ | 0.2− |
| 2000 01 03 | 704 | 0.3− | 0.3− | 2003 12 22 | 704 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2000 01 03 | 704 | 1.8+ | 0.5+ | 2003 12 27 | 704 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.3− |
| 2000 01 03 | 704 | 0.1+ | 0.1− | 2003 12 27 | 704 | 0.4+ | 0.6+ | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2000 01 04 | 704 | 0.4+ | 0.3− | 2003 12 27 | 704 | 1.3− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.7+ |
| 2000 01 04 | 704 | 0.1− | 0.0 | 2004 02 11 | 644 | 0.3− | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2000 01 04 | 704 | 1.0+ | 0.2+ | 2004 02 11 | 644 | 0.1− | 0.3− | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2000 01 08 | 704 | 0.6− | 0.9− | 2004 02 11 | 644 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2000 01 08 | 704 | 0.1− | 0.7− | 2004 02 12 | 644 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2000 01 08 | 704 | 0.0 | 0.9− | 2004 02 12 | 644 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2000 01 08 | 704 | 0.4− | 1.0− | 2004 02 12 | 644 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.3− | 0.2− |
| 2000 01 08 | 704 | 0.5− | 1.2− | 2004 02 17 | 704 | 0.3− | 0.5+ | 2006 11 02 | 703 | 0.0 | 0.8+ |
| 2000 01 08 | 691 | 0.2+ | 0.2− | 2004 02 17 | 704 | 0.2+ | 0.8+ | 2006 11 02 | 703 | 0.2− | 0.3− |
| 2000 01 08 | 691 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.2− | 0.7+ | 2006 11 02 | 703 | 0.5− | 1.1− |
| 2000 01 08 | 691 | 0.3+ | 0.0 | 2004 02 17 | 704 | 0.2+ | 1.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2000 01 30 | 704 | 0.4+ | 0.3− | 2004 02 17 | 704 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2000 01 30 | 704 | 0.2− | 0.4+ | 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2000 01 30 | 704 | 0.4+ | 0.7− | 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.1− | 1.2+ |
| 2000 01 31 | 704 | 0.0 | 0.0 | 2004 02 18 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2000 01 31 | 704 | 0.4− | 0.1+ | 2004 03 15 | 704 | (1.7+ | 0.9+) | 2006 11 11 | 703 | 0.4+ | 1.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 31 | 704 | 0.2− | 0.2− | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2000 01 31 | 704 | 0.3− | 0.7− | 2004 03 15 | 704 | 0.6+ | 1.0+ | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2000 02 07 | 703 | 1.2− | 0.4− | 2004 03 15 | 704 | 0.2+ | 0.7− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2000 02 07 | 703 | 0.7− | 1.2+ | 2004 03 19 | 644 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2000 02 07 | 703 | 0.1− | 0.4+ | 2004 03 19 | 644 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2000 02 07 | 703 | 0.1− | 0.3− | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.9− | 0.7− | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 2000 02 11 | 704 | 0.7+ | 0.8− | 2004 03 20 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.2+ | 0.6+ | 2004 03 20 | 704 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.8+ | 0.3+ |
| 2000 02 11 | 704 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.7− | 0.2− |
| 2000 02 11 | 704 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.7− | 0.7+ | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 2000 02 25 | 734 | 0.7− | 0.9+ | 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.4− |
| 2000 02 25 | 734 | 1.5− | 0.3− | 2004 03 22 | 704 | 0.1− | 0.3+ | 2006 11 21 | 704 | (2.2− | 0.5+) |
| 2003 11 20 | 691 | 0.4+ | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.0 | 2006 11 21 | 704 | (2.9− | 0.5+) |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 11 21 | 704 | (2.8− | 0.9+) |
| 2003 11 20 | 691 | 0.1+ | 0.3− | 2005 07 09 | 691 | 0.1− | 0.2+ | | | | |
| 2003 12 22 | 704 | 0.1+ | 0.9+ | 2005 07 09 | 691 | 0.0 | 0.3+ | | | | |

**(137840)∗ 2000 AX$_{32}$ = 2002 PU$_{74}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33178)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.26503 | | (2000.0) | | | |
| $n$ | 0.27213134 | $\omega$ | 90.72880 | | +0.44210451 | −0.89661915 |
| $a$ | 2.3583975 | $\Omega$ | 332.98949 | | +0.79964847 | +0.40653979 |
| $e$ | 0.1548589 | $i$ | 3.13709 | | +0.40633229 | +0.17549788 |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.2− | 0.6− | 2002 09 07 | 704 | 0.0 | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.1+ |
| 2000 01 03 | 704 | 0.0 | 0.2+ | 2002 09 07 | 704 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.1+ |
| 2000 01 03 | 704 | 0.5+ | 0.5− | 2002 09 07 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.5+ |
| 2000 01 03 | 704 | 0.0 | 0.3− | 2002 09 10 | 608 | 0.7+ | 0.7+ | 2004 03 20 | 699 | 0.3+ | 0.4− |
| 2000 01 03 | 704 | 0.2− | 0.1+ | 2002 09 10 | 608 | 0.2+ | 0.0 | 2004 03 20 | 699 | 0.7+ | 0.4+ |
| 2000 01 03 | 104 | 0.3− | 0.2− | 2002 09 10 | 608 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.7+ |
| 2000 01 03 | 104 | 0.5− | 0.6− | 2002 09 11 | 644 | 0.7− | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.5+ |
| 2000 01 03 | 104 | 0.1+ | 0.4− | 2002 09 11 | 644 | 0.5− | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.9+ |
| 2000 01 03 | 104 | 0.3− | 0.5+ | 2002 09 11 | 644 | 0.4− | 0.5+ | 2004 03 20 | 699 | 0.4− | 0.0 |
| 2000 01 04 | 704 | 0.3− | 0.4− | 2002 09 13 | 644 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.2− | 0.9+ |
| 2000 01 04 | 704 | 0.7− | 0.7− | 2002 09 13 | 644 | 0.3− | 0.2− | 2004 03 20 | 704 | 0.7+ | 0.7+ |
| 2000 01 04 | 704 | 0.3− | 0.7− | 2002 09 13 | 644 | 0.1− | 0.1+ | 2004 03 20 | 699 | 0.1+ | 0.9+ |
| 2000 01 04 | 704 | 1.0− | 0.8− | 2002 09 14 | 644 | 0.4− | 0.4+ | 2004 03 23 | 691 | 0.0 | 0.2+ |
| 2000 01 04 | 704 | 0.5+ | 0.5− | 2002 09 14 | 644 | 0.8− | 0.7+ | 2004 03 23 | 691 | 0.1− | 0.3+ |
| 2000 01 06 | 104 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.4− | 0.4+ | 2004 03 23 | 691 | 0.1− | 0.3+ |
| 2000 01 06 | 104 | 0.2− | 0.3+ | 2002 09 14 | 644 | 0.7− | 0.7+ | 2004 03 26 | 699 | 0.5+ | 0.2− |
| 2000 01 06 | 104 | 0.2− | 0.0 | 2002 09 14 | 644 | 0.3− | 0.5+ | 2004 03 26 | 699 | 0.1+ | 0.0 |
| 2000 01 07 | 104 | 0.6+ | 0.7− | 2002 09 14 | 644 | 0.7− | 0.9+ | 2004 03 26 | 699 | 0.2− | 0.5− |
| 2000 01 07 | 104 | 0.2+ | 0.4− | 2002 09 15 | 699 | 0.2+ | 0.9+ | 2004 03 26 | 699 | 0.4+ | 0.3+ |
| 2000 01 27 | 704 | 0.4+ | 0.1− | 2002 09 15 | 699 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 1.0+ | 0.5+ |
| 2000 01 27 | 704 | 0.0 | 0.3− | 2002 09 15 | 699 | 0.6− | 0.8+ | 2004 03 27 | 704 | 0.7+ | 0.4+ |
| 2000 01 27 | 704 | 0.1+ | 0.3− | 2002 09 15 | 699 | 0.3+ | 0.8+ | 2004 03 27 | 704 | 0.7+ | 0.4+ |
| 2000 01 27 | 704 | 0.2− | 0.1− | 2002 09 17 | 644 | 0.6− | 0.6+ | 2004 03 27 | 704 | 1.1+ | 0.1+ |
| 2000 01 27 | 704 | 0.7− | 0.2+ | 2002 09 17 | 644 | 0.5− | 0.6+ | 2004 04 08 | 413 | 0.1+ | 0.1+ |
| 2000 01 29 | 704 | 0.3− | 0.3+ | 2002 09 17 | 644 | 0.4− | 0.7+ | 2004 04 08 | 413 | 0.2− | 0.0 |
| 2000 01 29 | 704 | 0.2− | 0.4+ | 2002 09 17 | 608 | 0.0 | 0.6+ | 2004 04 13 | 691 | 0.1− | 0.3+ |
| 2000 01 29 | 704 | 0.1+ | 0.6+ | 2002 09 17 | 608 | 0.1− | 1.2+ | 2004 04 13 | 691 | 0.1− | 0.5+ |
| 2000 01 29 | 704 | 0.3+ | 0.4+ | 2002 09 17 | 608 | 0.2− | 0.7+ | 2004 04 13 | 683 | (0.3+ | 2.4−) |
| 2000 01 30 | 704 | 0.2− | 0.0 | 2002 09 18 | 644 | 0.3− | 0.5+ | 2004 04 13 | 683 | (0.5+ | 2.0+) |
| 2000 01 30 | 704 | 0.3+ | 0.7+ | 2002 09 18 | 644 | 0.4− | 0.5+ | 2004 04 13 | 691 | 0.2+ | 0.2+ |
| 2000 01 30 | 704 | 0.1− | 0.0 | 2002 09 18 | 644 | 0.7− | 0.8+ | 2004 04 13 | 683 | (1.7+ | 0.3+) |
| 2000 01 30 | 704 | 0.6− | 0.3+ | 2002 10 03 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 704 | 0.0 | 1.2+ |
| 2000 01 30 | 704 | 0.2− | 0.0 | 2002 10 03 | 704 | 0.1+ | 0.9+ | 2004 04 16 | 704 | 0.0 | 0.8+ |
| 2000 01 30 | 704 | 0.6− | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 04 16 | 704 | (0.7− | 2.0+) |
| 2000 01 30 | 704 | 0.5+ | 0.4+ | 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.3+ |
| 2000 01 31 | 704 | 0.7+ | 0.7+ | 2002 10 03 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 31 | 704 | 0.2− | 0.1+ | 2002 10 07 | 704 | 0.5− | 1.3+ | 2006 09 18 | 703 | 0.3+ | 0.6− |
| 2000 01 31 | 704 | 0.1+ | 0.1+ | 2002 10 07 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 1.0+ | 1.2+ |
| 2000 02 01 | 691 | 0.1+ | 0.5− | 2002 10 07 | 704 | 0.2− | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2000 02 01 | 691 | 0.5+ | 0.5− | 2002 10 07 | 704 | 0.5− | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.4+ |
| 2000 02 01 | 691 | 0.0 | 0.6− | 2002 10 07 | 704 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2000 02 11 | 704 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.1− | 0.4+ | 2002 10 11 | 704 | 0.5+ | 0.5+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2000 02 11 | 704 | 0.5− | 0.2+ | 2002 10 11 | 704 | 0.9+ | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.3− |
| 2000 02 11 | 704 | 0.4− | 1.7+ | 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.3+ |
| 2000 02 11 | 704 | 0.3− | 0.5+ | 2004 02 13 | 644 | 1.2+ | 0.8+ | 2006 11 15 | 704 | 0.0 | 0.6+ |
| 2002 08 12 | 704 | 0.2+ | 0.1+ | 2004 02 13 | 644 | 0.0 | 1.4+ | 2006 11 15 | 704 | 0.6− | 0.1+ |
| 2002 08 12 | 704 | 0.0 | 0.6+ | 2004 02 13 | 644 | 0.4+ | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.4+ |
| 2002 08 12 | 704 | 0.1− | 1.5+ | 2004 02 15 | 703 | 0.5+ | 0.9+ | 2006 11 15 | 704 | 0.0 | 0.0 |
| 2002 08 12 | 704 | 0.8− | 0.2− | 2004 02 15 | 703 | 0.2+ | 0.8+ | 2006 11 15 | 704 | 1.1+ | 0.1+ |
| 2002 08 12 | 704 | (0.1+ | 1.6+) | 2004 02 15 | 703 | (1.6− | 0.6+) | 2006 11 15 | 704 | 0.5− | 0.4+ |
| 2002 08 12 | 704 | 0.4+ | 1.0+ | 2004 02 15 | 703 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.2− |
| 2002 08 12 | 704 | 0.6− | 0.2+ | 2004 02 17 | 608 | 0.2+ | 0.7+ | 2006 11 15 | 704 | 0.1+ | 0.0 |
| 2002 08 12 | 704 | 0.0 | 0.9+ | 2004 02 17 | 608 | 0.4+ | 0.2− | 2006 11 15 | 704 | 0.1+ | 0.4+ |
| 2002 08 12 | 704 | 0.4− | 0.9+ | 2004 02 17 | 608 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.9+ | 0.1+ |
| 2002 08 12 | 704 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 1.0+ | 0.2+ |
| 2002 08 13 | 704 | 0.4− | 0.9− | 2004 02 19 | 704 | 0.1− | 0.3+ | 2006 11 16 | 704 | 1.1+ | 0.4+ |
| 2002 08 13 | 704 | (0.9− | 1.6−) | 2004 02 19 | 704 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.8+ | 0.4+ |
| 2002 08 13 | 704 | 0.4− | 0.9− | 2004 02 19 | 704 | 0.7+ | 0.4+ | 2006 11 16 | 704 | 1.1+ | 0.5+ |
| 2002 08 13 | 704 | 0.5− | 0.7− | 2004 02 25 | 704 | 0.2+ | 1.1+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2002 08 13 | 704 | 0.0 | 0.2+ | 2004 02 25 | 704 | 0.5+ | 1.3+ | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2002 08 31 | 699 | 0.5− | 0.2− | 2004 02 25 | 704 | 1.4+ | 0.1− | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2002 08 31 | 699 | 0.6− | 1.2+ | 2004 02 25 | 704 | 0.8+ | 0.5+ | 2006 11 19 | 704 | 1.0− | 0.7+ |
| 2002 08 31 | 699 | 0.7− | 0.6+ | 2004 02 25 | 704 | (0.3+ | 2.2+) | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 2002 08 31 | 699 | 0.3− | 0.7+ | 2004 03 12 | 644 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 1.0− | 0.2+ |
| 2002 09 04 | 699 | 0.3+ | 0.3+ | 2004 03 12 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 1.0− | 0.7+ |
| 2002 09 04 | 699 | 0.5− | 0.5+ | 2004 03 12 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 1.2− | 0.6+ |
| 2002 09 04 | 699 | 0.4+ | 0.8+ | 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 1.1− | 0.4+ |
| 2002 09 04 | 699 | 1.0− | 0.4+ | 2004 03 15 | 703 | 0.7− | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2002 09 05 | 704 | 0.3− | 0.0 | 2004 03 15 | 703 | 0.1− | 0.6+ | 2006 11 22 | 704 | (1.6+ | 0.7+) |
| 2002 09 05 | 704 | 0.7+ | 0.3− | 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2002 09 05 | 704 | (1.6+ | 2.5−) | 2004 03 15 | 703 | 0.3+ | 0.5+ | 2006 11 25 | 691 | 1.2+ | 0.4+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 03 15 | 703 | 0.1+ | 1.1+ | 2006 11 25 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 11 25 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2004 03 16 | 704 | 0.9+ | 1.0+ | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | 0.1− | 1.2− | 2004 03 16 | 704 | 1.2+ | 1.2+ | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2002 09 05 | 608 | 1.1− | 0.1− | 2004 03 16 | 704 | (1.5+ | 0.8−) | 2006 11 29 | 704 | 0.3+ | 0.6− |
| 2002 09 05 | 608 | 1.1− | 0.4+ | 2004 03 16 | 704 | 1.2+ | 1.5+ | 2006 11 29 | 704 | 0.1− | 0.4+ |
| 2002 09 05 | 608 | 1.0− | 0.2+ | 2004 03 16 | 704 | 0.4+ | 0.6+ | 2006 11 29 | 704 | 0.5− | 0.0 |
| 2002 09 07 | 704 | 0.8+ | 0.8+ | 2004 03 18 | 704 | 0.1+ | 0.8+ | | | | |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.9+ | | | | |

**(137841)∗ 2000 AN$_{35}$ = 2004 BN$_{30}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56051)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.89536 | | (2000.0) | | | |
| $n$ | 0.26182766 | $\omega$ | 20.10766 | | −0.39461557 | −0.91753907 |
| $a$ | 2.4198718 | $\Omega$ | 93.16013 | | +0.83617251 | −0.38070434 |
| $e$ | 0.1036336 | $i$ | 2.81267 | | +0.38091217 | −0.11483146 |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 18 | 809 | 1.5− | 1.0+ | 2004 01 23 | 699 | 0.0 | 0.5− | 2004 02 23 | 704 | 0.5+ | 0.8+ |
| 1993 03 23 | 809 | 0.4+ | 1.0− | 2004 01 23 | 699 | 0.4− | 1.2− | 2004 02 23 | 704 | 0.7+ | 0.7+ |
| 1993 03 23 | 691 | 0.1+ | 0.3− | 2004 01 23 | 699 | 1.0− | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.7+ |
| 1993 03 23 | 691 | 0.1− | 0.2− | 2004 01 26 | 699 | 0.6− | 0.8+ | 2006 09 17 | 691 | 0.1− | 0.0 |
| 1993 03 23 | 691 | 0.0 | 0.3− | 2004 01 26 | 699 | 0.8− | 0.7+ | 2006 09 17 | 691 | 0.2+ | 0.2− |
| 1999 12 08 | 704 | 1.3− | 0.3− | 2004 01 26 | 699 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.6+ | 1.1+ |
| 1999 12 08 | 704 | 0.2− | 0.3+ | 2004 01 26 | 699 | 1.0+ | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.1− |
| 1999 12 08 | 704 | 0.3+ | 0.9− | 2004 01 30 | 704 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.4+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.1− | 0.9− | 2004 01 30 | 704 | 0.6+ | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2000 01 03 | 704 | 0.6+ | 0.0 | 2004 01 30 | 704 | (1.6+ | 0.2+) | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2000 01 03 | 704 | 0.4+ | 1.1− | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.4− |
| 2000 01 03 | 704 | 1.3+ | 0.4− | 2004 02 10 | 644 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2000 01 04 | 704 | 0.3− | 0.2+ | 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 01 04 | 704 | 0.0 | 0.6− | 2004 02 10 | 703 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2000 01 04 | 704 | 0.0 | 0.3− | 2004 02 10 | 703 | 0.9+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2000 01 04 | 704 | 0.2− | 0.2+ | 2004 02 10 | 644 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2000 01 04 | 704 | 0.4− | 0.6− | 2004 02 10 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2000 01 08 | 734 | 0.3+ | 1.0− | 2004 02 10 | 703 | 1.0− | 1.1− | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2000 01 08 | 734 | 0.6− | 1.1− | 2004 02 10 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 09 15 | 644 | 0.0 | 0.3+ | 2004 02 10 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2004 02 10 | 703 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.6− | 0.3+ | 2004 02 11 | 699 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2004 01 18 | 644 | 0.2+ | 0.1− | 2004 02 11 | 699 | 0.5− | 1.2− | 2006 10 22 | 703 | 0.4− | 1.0+ |
| 2004 01 18 | 644 | 0.3+ | 0.1+ | 2004 02 11 | 699 | 1.0− | 1.1− | 2006 10 22 | 703 | 0.4+ | 0.6− |
| 2004 01 18 | 644 | 0.4− | 0.2+ | 2004 02 11 | 699 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2004 01 18 | 644 | 0.1+ | 0.0 | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.6− |
| 2004 01 18 | 644 | 0.1− | 0.2+ | 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2004 01 18 | 644 | 0.1− | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2004 01 22 | 704 | 0.2− | 0.8+ | 2004 02 16 | 704 | (0.4− | 2.0+) | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2004 01 22 | 704 | 0.6+ | 0.4+ | 2004 02 16 | 704 | 0.3+ | 1.4+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2004 01 22 | 704 | 0.3+ | 0.0 | 2004 02 16 | 704 | 0.2− | 1.5+ | 2006 11 23 | G96 | 0.1− | 0.6− |
| 2004 01 22 | 704 | 0.4+ | 1.1− | 2004 02 16 | 704 | 0.1− | 1.2+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2004 01 22 | 704 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 01 23 | 699 | 1.0− | 0.7+ | 2004 02 23 | 704 | 1.0+ | 0.4+ | | | | |

**(137842)∗ 2000 AK$_{37}$ = 2002 TW$_{297}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37246)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.15427 | | (2000.0) | | +0.99215305 | −0.04399308 |
| $n$ | 0.28236107 | $\omega$ | 270.01147 | | +0.08668558 | +0.91658446 |
| $a$ | 2.3010859 | $\Omega$ | 92.51004 | | −0.09009957 | +0.39741355 |
| $e$ | 0.1572120 | $i$ | 6.72743 | | | |
| $P$ | 3.49 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.1− | 0.1+ | 2002 10 04 | 704 | 0.2+ | 0.3+ | 2002 11 21 | 644 | 0.3− | 0.0 |
| 1999 12 07 | 691 | 0.1− | 0.1− | 2002 10 04 | 704 | 0.1− | 0.1+ | 2002 11 21 | 644 | 0.3− | 0.2+ |
| 1999 12 07 | 691 | 0.1+ | 0.2− | 2002 10 04 | 704 | 0.3− | 0.5+ | 2002 11 21 | 644 | 0.1− | 0.1+ |
| 1999 12 14 | 691 | 0.2+ | 0.3− | 2002 10 04 | 704 | 0.5− | 0.7+ | 2004 02 17 | 704 | 1.3+ | 1.3− |
| 1999 12 14 | 691 | 0.3+ | 0.0 | 2002 10 12 | 704 | 0.5− | 0.5+ | 2004 02 17 | 704 | 0.6+ | 0.9+ |
| 1999 12 14 | 691 | 0.2+ | 0.4− | 2002 10 12 | 704 | 0.0 | 0.2+ | 2004 02 17 | 704 | 0.5+ | 1.2+ |
| 2000 01 03 | 704 | 0.3+ | 0.9− | 2002 10 12 | 704 | 0.3+ | 0.5+ | 2004 02 17 | 704 | 0.6− | 0.4+ |
| 2000 01 03 | 704 | 0.4− | 0.7− | 2002 10 12 | 704 | 0.4− | 0.4+ | 2004 03 19 | 644 | 0.7+ | 0.5+ |
| 2000 01 03 | 704 | 0.1− | 0.5− | 2002 10 12 | 704 | 0.0 | 1.3+ | 2004 03 19 | 644 | 0.2+ | 0.9+ |
| 2000 01 03 | 704 | 0.6− | 0.4+ | 2002 10 15 | 644 | 0.4− | 0.1+ | 2004 03 19 | 644 | 0.3+ | 0.9+ |
| 2000 01 04 | 704 | 0.4− | 0.1− | 2002 10 15 | 644 | 0.3− | 0.0 | 2004 03 23 | 704 | 1.0− | 0.5+ |
| 2000 01 04 | 704 | 0.1− | 0.2+ | 2002 10 15 | 644 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.5− | 1.4+ |
| 2000 01 04 | 704 | 0.2− | 0.6− | 2002 10 28 | 644 | 0.1− | 0.1+ | 2004 03 23 | 704 | (0.3− | 1.8+) |
| 2000 01 04 | 704 | 0.6− | 0.3+ | 2002 10 28 | 644 | 0.5− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2002 08 12 | 704 | 0.3+ | 0.8+ | 2002 10 28 | 644 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.5+ |
| 2002 08 12 | 704 | 0.3− | 0.5− | 2002 10 30 | 704 | 0.2− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.6+ |
| 2002 08 12 | 704 | 0.6+ | 0.5+ | 2002 10 30 | 704 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.7+ | 1.2− |
| 2002 08 12 | 704 | 0.7+ | 0.0 | 2002 10 30 | 704 | 1.2− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.8− |
| 2002 08 25 | 644 | 0.3+ | 1.0+ | 2002 10 30 | 704 | 0.2− | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2002 08 25 | 644 | 0.1+ | 0.8+ | 2002 11 06 | 644 | 0.5− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.6− |
| 2002 08 25 | 644 | 0.3+ | 0.7+ | 2002 11 06 | 644 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 09 05 | 645 | 0.1+ | 0.2− | 2002 11 06 | 644 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 645 | 0.1+ | 0.2− | 2002 11 12 | 704 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 09 14 | 608 | 0.3− | 0.4+ | 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2002 09 14 | 608 | 1.0− | 1.0+ | 2002 11 12 | 704 | 0.6+ | 1.0+ | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2002 09 14 | 608 | (1.5− | 1.2+) | 2002 11 12 | 704 | 0.2+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2002 11 12 | 704 | 0.5− | 0.5− | 2006 11 27 | G96 | 0.2+ | 0.1− |

**(137843)∗ 2000 AM$_{37}$ = 2002 TA$_{169}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37246)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 166.31572 | | (2000.0) | | −0.93812697 | +0.29929100 |
| $n$ | 0.24560254 | $\omega$ | 264.57449 | | −0.19200099 | −0.86816913 |
| $a$ | 2.5253068 | $\Omega$ | 292.74631 | | −0.28818989 | −0.39586269 |
| $e$ | 0.1181512 | $i$ | 10.88753 | | | |
| $P$ | 4.01 | $H$ | 14.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 31 | 691 | 0.2+ | 0.1− | 2002 10 06 | 704 | 0.6− | 0.7+ | 2004 01 24 | 704 | 0.2+ | 0.4+ |
| 1991 12 31 | 691 | 0.3− | 0.2+ | 2002 10 06 | 704 | 0.3− | 0.9+ | 2004 01 24 | 704 | 0.5− | 0.5+ |
| 1991 12 31 | 691 | 0.7− | 0.0 | 2002 10 06 | 704 | 0.9− | 0.8+ | 2004 01 24 | 704 | 0.6− | 1.0+ |
| 1999 12 07 | 704 | 1.0− | 0.2+ | 2002 10 07 | 699 | 0.2− | 0.1− | 2004 01 24 | 704 | 0.0 | 0.5+ |
| 1999 12 07 | 704 | 0.2− | 1.0− | 2002 10 07 | 699 | 0.2− | 0.7− | 2004 01 30 | 704 | 0.6− | 0.3− |
| 1999 12 07 | 704 | 0.1+ | 0.1− | 2002 10 07 | 699 | 1.0+ | 0.4− | 2004 01 30 | 704 | 0.5− | 0.3− |
| 1999 12 07 | 704 | 0.3+ | 1.7− | 2002 10 07 | 699 | 0.8+ | 0.1+ | 2004 01 30 | 704 | 0.5− | 0.5+ |
| 2000 01 03 | 704 | 0.1− | 0.0 | 2002 10 09 | 704 | (1.8+ | 1.7−) | 2004 01 30 | 704 | 0.4− | 0.1+ |
| 2000 01 03 | 704 | 0.0 | 0.3+ | 2002 10 09 | 704 | 1.6+ | 0.3− | 2004 01 30 | 704 | 0.1− | 0.0 |
| 2000 01 03 | 704 | 0.1− | 0.9− | 2002 10 09 | 704 | 0.2+ | 0.2− | 2004 02 16 | 704 | 0.4+ | 0.3− |
| 2000 01 03 | 704 | 1.3− | 0.4− | 2002 10 09 | 704 | 0.1+ | 0.1− | 2004 02 16 | 704 | 0.2+ | 0.1+ |
| 2000 01 04 | 704 | 0.2+ | 0.2− | 2003 12 17 | 691 | 0.2+ | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.1− |
| 2000 01 04 | 704 | 0.6+ | 0.6− | 2003 12 17 | 691 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.2+ |
| 2000 01 04 | 704 | 0.5− | 0.4− | 2003 12 17 | 691 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.9− | 0.1+ |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2003 12 18 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.2+ |
| 2000 01 04 | 704 | 0.4+ | 1.3− | 2003 12 18 | 704 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.7− | 0.7+ |
| 2000 01 08 | 704 | 0.3+ | 0.2+ | 2003 12 18 | 704 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.2+ |
| 2000 01 08 | 704 | 0.6+ | 0.6− | 2003 12 18 | 704 | 0.2+ | 0.3+ | 2005 06 11 | 735 | 0.1+ | 0.1+ |
| 2000 01 08 | 704 | 0.1+ | 0.2+ | 2003 12 18 | 704 | 0.4− | 0.1+ | 2006 08 29 | 699 | 0.4+ | 0.8+ |
| 2000 01 08 | 704 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.1+ | 0.8+ | 2006 08 29 | 699 | 0.1+ | 0.8− |
| 2000 01 08 | 704 | 0.1+ | 0.6− | 2003 12 22 | 704 | 1.0+ | 0.3− | 2006 08 29 | 699 | 0.3− | 0.2+ |
| 2000 01 26 | 691 | 0.0 | 0.1− | 2003 12 22 | 704 | 1.1+ | 0.3− | 2006 08 29 | 699 | 0.1+ | 1.0+ |
| 2000 01 26 | 691 | 0.5+ | 0.5− | 2003 12 22 | 704 | 1.4+ | 0.3− | 2006 09 22 | 699 | 0.3+ | 0.6+ |
| 2000 01 26 | 691 | 0.2+ | 0.1− | 2003 12 22 | 704 | 1.0+ | 0.5− | 2006 09 22 | 699 | 1.0+ | 0.5− |
| 2000 01 30 | 691 | 0.2+ | 0.3− | 2003 12 25 | 106 | 0.1+ | 0.3+ | 2006 09 22 | 699 | 0.3− | 0.7− |
| 2000 01 30 | 691 | 0.2+ | 0.2− | 2003 12 25 | 106 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.5+ | 0.7− |
| 2000 01 30 | 691 | 0.2+ | 0.2− | 2003 12 26 | 106 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.3− | 0.3− |
| 2000 01 30 | 704 | 0.5+ | 0.1+ | 2003 12 27 | 704 | 0.7− | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.1− |
| 2000 01 30 | 704 | 0.7− | 0.3+ | 2003 12 27 | 704 | 0.7− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.5+ |
| 2000 01 30 | 704 | 0.4− | 1.0+ | 2003 12 27 | 704 | 0.8− | 0.5+ | 2006 09 28 | 703 | 0.2− | 1.0− |
| 2002 09 03 | 644 | 0.1+ | 0.3+ | 2003 12 27 | 704 | 0.6− | 1.2+ | 2006 09 28 | 703 | 0.5− | 1.6− |
| 2002 09 03 | 644 | 0.1+ | 0.3+ | 2003 12 27 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | (6.4+ | 4.0−) |
| 2002 09 03 | 644 | 0.1+ | 0.2+ | 2004 01 21 | 704 | 0.7− | 0.0 | 2006 10 20 | 703 | 0.3− | 1.0+ |
| 2002 10 03 | 644 | 0.1+ | 0.1− | 2004 01 21 | 704 | 0.7− | 0.2+ | 2006 10 20 | 703 | 0.4− | 1.0− |
| 2002 10 03 | 644 | 0.1+ | 0.3+ | 2004 01 21 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 703 | 0.5+ | 0.3+ |
| 2002 10 03 | 644 | 0.4+ | 0.3− | 2004 01 21 | 704 | 0.0 | 0.5+ | 2006 10 20 | 703 | 2.1− | 0.4− |
| 2002 10 06 | 704 | 0.1− | 1.2+ | 2004 01 21 | 704 | 0.8− | 0.0 | | | | |
| 2002 10 06 | 704 | 0.8− | 0.1+ | 2004 01 24 | 704 | 0.5+ | 0.9+ | | | | |

**(137844)∗ 2000 AS$_{37}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.21109 | | (2000.0) | | −0.99562956 | +0.02088287 |
| $n$ | 0.28706352 | $\omega$ | 237.91998 | | +0.02240789 | −0.89278962 |
| $a$ | 2.2758871 | $\Omega$ | 303.12560 | | −0.09066242 | −0.44998955 |
| $e$ | 0.0608862 | $i$ | 6.23985 | | | |
| $P$ | 3.43 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.6− | 1.7− | 2002 11 06 | 704 | 0.9+ | 0.5− | 2005 08 31 | 699 | 0.4+ | 1.3− |
| 1999 12 10 | 704 | 1.0− | 0.7− | 2002 11 06 | 699 | 1.1− | 1.2+ | 2005 08 31 | 699 | 1.0− | 0.9− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.3+ | 0.0 | 2002 11 06 | 704 | 0.8+ | 0.3− | 2005 09 09 | 704 | 0.7+ | 0.8+ |
| 1999 12 10 | 704 | 0.2− | 0.0 | 2002 11 06 | 699 | 0.9− | 1.4+ | 2005 09 09 | 704 | 0.8− | 0.7+ |
| 1999 12 31 | 699 | 1.0+ | 0.3+ | 2002 11 06 | 704 | 0.3+ | 0.5− | 2005 09 09 | 704 | 1.1+ | 0.8+ |
| 1999 12 31 | 699 | 0.6+ | 0.5+ | 2002 11 06 | 699 | 0.6+ | 0.2− | 2005 09 09 | 704 | 0.4+ | 0.5+ |
| 1999 12 31 | 699 | 0.7+ | 0.2− | 2002 11 14 | 644 | 0.6− | 0.0 | 2005 09 23 | 644 | 0.2+ | 0.0 |
| 2000 01 03 | 704 | 0.0 | 0.6+ | 2002 11 14 | 644 | 0.5− | 0.2+ | 2005 09 23 | 644 | 0.4− | 0.1− |
| 2000 01 03 | 704 | 0.0 | 0.7+ | 2002 11 14 | 644 | 0.3− | 0.0 | 2005 09 23 | 644 | 0.1− | 0.1+ |
| 2000 01 03 | 704 | 0.5− | 1.4+ | 2002 12 11 | 644 | 0.2− | 0.9− | 2005 09 24 | 703 | (1.6− | 0.1+) |
| 2000 01 04 | 704 | 0.1− | 0.0 | 2002 12 11 | 644 | 0.3− | 0.3− | 2005 09 24 | 703 | 0.3− | 1.0− |
| 2000 01 04 | 704 | 0.2+ | 0.2+ | 2002 12 11 | 644 | 0.4− | 0.3− | 2005 09 24 | 703 | 0.6− | 0.4− |
| 2000 01 04 | 704 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.6+ | 0.2− | 2005 09 24 | 703 | (1.6− | 0.5+) |
| 2000 01 04 | 704 | 0.8+ | 0.8+ | 2004 03 17 | 704 | 0.1+ | 1.1− | 2005 09 29 | 644 | 0.0 | 0.0 |
| 2000 01 12 | 732 | 0.9− | 1.0+ | 2004 03 17 | 704 | 0.6+ | 0.8+ | 2005 09 29 | 699 | 1.1+ | 0.5+ |
| 2000 01 12 | 732 | 0.4+ | 0.6+ | 2004 03 17 | 704 | 0.4− | 0.7− | 2005 09 29 | 644 | 0.3+ | 0.4+ |
| 2000 01 12 | 732 | 0.1+ | 0.3− | 2004 04 17 | 704 | 0.1+ | 0.3+ | 2005 09 29 | 699 | 0.2+ | 0.5+ |
| 2000 01 13 | 732 | 1.8− | 0.9+ | 2004 04 17 | 704 | 0.3+ | 0.3+ | 2005 09 29 | 644 | 0.4+ | 0.1− |
| 2000 01 13 | 732 | 1.1− | 0.3+ | 2004 04 17 | 704 | 0.1+ | 0.2+ | 2005 09 29 | 699 | 0.0 | 1.2+ |
| 2000 01 13 | 732 | 1.1+ | 0.8− | 2004 04 17 | 704 | 0.3+ | 0.3+ | 2005 09 29 | 699 | 1.0+ | 1.0+ |
| 2000 01 13 | 732 | 0.1+ | 0.0 | 2004 04 24 | 608 | 0.2− | 0.7+ | 2005 10 01 | 703 | 1.2− | 0.4− |
| 2000 01 13 | 732 | 0.8− | 0.1− | 2004 04 24 | 608 | 0.6+ | 0.8+ | 2005 10 01 | 703 | 1.0− | 0.3+ |
| 2000 01 29 | 691 | 0.5+ | 0.3− | 2004 04 24 | 608 | 0.2− | 1.1+ | 2005 10 01 | 703 | 0.2+ | 0.2− |
| 2000 01 29 | 691 | 0.1+ | 0.3− | 2004 04 25 | 704 | 0.2+ | 0.5+ | 2005 10 01 | 703 | 0.4+ | 0.0 |
| 2000 01 29 | 691 | 0.0 | 0.0 | 2004 04 25 | 704 | 0.5− | 0.2− | 2006 11 15 | 703 | 0.2+ | 1.2− |
| 2000 01 30 | 704 | 0.7+ | 0.8+ | 2004 04 25 | 704 | 0.1− | 0.0 | 2006 11 15 | 703 | (2.2− | 1.3+) |
| 2000 01 30 | 704 | 0.1+ | 0.4− | 2004 04 25 | 704 | 0.7+ | 0.1− | 2006 11 15 | 703 | 0.9− | 0.5+ |
| 2000 01 30 | 704 | 0.6− | 0.1+ | 2004 04 25 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 703 | (1.3+ | 2.8−) |
| 2000 02 03 | 691 | 0.2+ | 0.1− | 2004 05 14 | 699 | 0.3− | 0.3− | 2006 11 15 | 703 | 0.9− | 0.9+ |
| 2000 02 03 | 691 | 0.0 | 0.1+ | 2004 05 14 | 699 | 0.2+ | 0.6+ | 2006 11 15 | 703 | 1.2+ | 0.4+ |
| 2000 02 03 | 691 | 0.0 | 0.2− | 2004 05 14 | 699 | 0.1− | 0.5+ | 2006 11 15 | 703 | (2.6+ | 1.6+) |
| 2002 10 05 | 704 | 0.8− | 0.2+ | 2004 05 14 | 699 | 0.1− | 0.9− | 2006 11 15 | 703 | (1.9− | 0.0 ) |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2004 05 15 | 704 | 0.9− | 0.9+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2002 10 05 | 704 | 0.5− | 0.3+ | 2004 05 15 | 704 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2002 10 05 | 704 | 1.4− | 1.4+ | 2004 05 15 | 704 | 0.2− | 0.5+ | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.9+ | 0.3− | 2004 05 15 | 704 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2002 11 06 | 704 | (1.7+ | 0.2−) | 2005 08 31 | 699 | (0.8− | 1.5+) | | | | |
| 2002 11 06 | 699 | 0.1+ | 0.6+ | 2005 08 31 | 699 | (1.9− | 0.3+) | | | | |

**(137845)∗ 2000 AT$_{37}$ = 2002 PC$_{34}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34853)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.24880 | | (2000.0) | | | |
| $n$ | 0.26993028 | $\omega$ | 78.59454 | | +0.29226043 | −0.95633259 |
| $a$ | 2.3712007 | $\Omega$ | 354.40856 | | +0.86309575 | +0.26531116 |
| $e$ | 0.1944087 | $i$ | 2.02149 | | +0.41188538 | +0.12262935 |
| $P$ | 3.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.8− | 1.6− | 2004 03 16 | 291 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2000 01 03 | 704 | (1.9− | 2.3−) | 2004 03 18 | 704 | 1.3+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2000 01 03 | 704 | (0.2− | 2.2−) | 2004 03 18 | 704 | 0.8+ | 0.7− | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2000 01 03 | 704 | 0.0 | 1.2− | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2000 01 04 | 704 | 0.0 | 1.7− | 2004 03 18 | 704 | 0.8+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2000 01 04 | 704 | 0.1+ | 0.9− | 2004 03 20 | 704 | 1.2+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2000 01 04 | 704 | 0.2+ | 1.0− | 2004 03 20 | 704 | 1.0+ | 0.8− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2000 01 04 | 704 | (0.3+ | 2.4−) | 2004 03 20 | 704 | 0.8+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 01 06 | 046 | 0.3− | 0.0 | 2004 03 20 | 704 | 1.4+ | 0.9− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2000 01 06 | 046 | 0.4− | 0.3− | 2004 03 20 | 704 | 0.7+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2000 01 06 | 046 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2000 01 06 | 046 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.8+ | 0.9+ | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2000 01 06 | 046 | 0.3+ | 0.5− | 2004 03 27 | 704 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2000 01 06 | 046 | 0.6− | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.9− | 0.8+ |
| 2000 01 06 | 046 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2000 01 06 | 046 | 0.5+ | 0.3− | 2004 03 29 | 291 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2002 08 06 | 599 | 0.5+ | 1.1+ | 2004 03 29 | 291 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2002 08 06 | 599 | (1.2− | 1.6+) | 2004 03 29 | 291 | 0.3− | 0.4+ | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2002 08 06 | 599 | 0.6− | 1.2+ | 2004 03 30 | 691 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2002 08 08 | 599 | 0.1+ | 0.9+ | 2004 03 30 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2002 08 08 | 599 | (1.7+ | 0.2+) | 2004 03 30 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 08 08 | 599 | 0.3+ | 0.8+ | 2004 03 31 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2002 08 29 | 644 | 0.0 | 0.2− | 2004 04 12 | 691 | 0.3− | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2002 09 04 | 644 | 0.6− | 0.5+ | 2004 04 12 | 691 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2002 09 04 | 644 | 0.3− | 1.0+ | 2004 04 12 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.1+ |
| 2002 09 04 | 644 | 0.3− | 0.7+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 1.0+ | 1.1+ |
| 2002 09 04 | 644 | 0.4− | 0.9+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2002 09 04 | 644 | 0.8− | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.5+ |
| 2002 09 04 | 644 | 0.5− | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 1.0− | 0.3− |
| 2004 01 30 | 568 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2004 01 30 | 568 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.5− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2004 01 30 | 568 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.6− | 0.9+ |
| 2004 03 11 | 644 | 0.6+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2004 03 11 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2004 03 11 | 644 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2004 03 11 | 644 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2004 03 11 | 644 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 1.0+ | 1.1+ |
| 2004 03 11 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.8+ | 0.8+ |
| 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 10 21 | H07 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.9+ |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 10 21 | H07 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.6+ | 1.3+ |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 10 21 | H07 | 0.9+ | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.2+ |
| 2004 03 16 | 291 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | | | | |
| 2004 03 16 | 291 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | | | |

**(137846)∗ 2000 AT$_{41}$ = 2002 QL$_{41}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34854)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.31400 | | (2000.0) | | | |
| $n$ | 0.26415566 | $\omega$ | 87.93823 | | +0.60521028 | −0.78637763 |
| $a$ | 2.4056333 | $\Omega$ | 323.86620 | | +0.62107497 | +0.56372364 |
| $e$ | 0.2635743 | $i$ | 12.12097 | | +0.49798232 | +0.25263785 |
| $P$ | 3.73 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.5− | 0.6− | 2002 08 10 | 807 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.5+ | 1.2+ |
| 1999 12 10 | 704 | 0.1+ | 0.2+ | 2002 08 14 | 704 | 0.0 | 1.2− | 2006 07 21 | 703 | 0.2+ | 0.2+ |
| 1999 12 10 | 704 | 0.2− | 0.0 | 2002 08 14 | 704 | 0.2− | 0.2− | 2006 07 21 | 703 | 0.7− | 0.1− |
| 1999 12 10 | 704 | 0.5+ | 0.7+ | 2002 08 14 | 704 | 0.7− | 0.3+ | 2006 07 21 | 703 | 0.1− | 0.5+ |
| 1999 12 10 | 704 | 0.6+ | 0.6− | 2002 08 14 | 704 | 0.2− | 0.1− | 2006 07 21 | 703 | 0.5− | 0.4− |
| 2000 01 03 | 704 | 0.2− | 0.1− | 2002 08 14 | 704 | 0.3− | 0.1+ | 2006 08 29 | 699 | 0.3+ | 0.3+ |
| 2000 01 03 | 704 | 0.0 | 0.1+ | 2002 08 18 | 644 | 0.3− | 0.7+ | 2006 08 29 | 699 | 0.1+ | 0.2+ |
| 2000 01 03 | 704 | 0.4+ | 0.2+ | 2002 08 18 | 644 | 0.4− | 1.0+ | 2006 08 29 | 699 | 0.0 | 0.1+ |
| 2000 01 03 | 704 | 0.7+ | 0.2+ | 2002 08 18 | 644 | 0.3− | 1.0+ | 2006 08 29 | 699 | 0.3− | 0.0 |
| 2000 01 03 | 704 | 0.6− | 1.0+ | 2002 08 29 | 644 | 0.1+ | 0.4− | 2006 09 01 | 704 | 0.3− | 0.9+ |
| 2000 01 04 | 704 | 0.0 | 0.1+ | 2002 08 29 | 644 | 0.1+ | 0.4− | 2006 09 01 | 704 | 0.6− | 0.6+ |
| 2000 01 04 | 704 | 0.2− | 0.2− | 2002 08 29 | 644 | 0.0 | 0.3− | 2006 09 01 | 704 | 0.4− | 0.9+ |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2002 08 31 | 704 | 0.0 | 0.6+ | 2006 09 01 | 704 | 0.6+ | 0.6+ |
| 2000 01 04 | 704 | 0.0 | 0.5− | 2002 08 31 | 704 | 0.1+ | 0.5+ | 2006 09 06 | 644 | 0.6− | 0.4+ |
| 2000 01 04 | 704 | 0.6+ | 0.2− | 2002 08 31 | 704 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.4− | 0.3+ |
| 2000 01 06 | 699 | 0.2+ | 0.1− | 2002 09 15 | 608 | 0.4− | 0.6− | 2006 09 06 | 644 | 0.5− | 0.2+ |
| 2000 01 06 | 699 | 0.1+ | 0.3− | 2002 09 15 | 608 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.7− | 0.0 |
| 2000 01 06 | 699 | 1.8+ | 0.5+ | 2002 09 15 | 608 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.1− | 0.6+ |
| 2000 01 30 | 704 | 0.2− | 0.2+ | 2002 10 11 | 704 | 0.6− | 0.9+ | 2006 09 16 | 703 | 0.7− | 0.0 |
| 2000 01 30 | 704 | 0.3+ | 1.1+ | 2002 10 11 | 704 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.7− | 0.4+ |
| 2000 01 30 | 704 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.6− | 0.3− | 2006 09 20 | 106 | 0.1+ | 0.3− |
| 2000 01 30 | 704 | 0.6− | 0.2− | 2002 10 11 | 704 | 0.5− | 0.5+ | 2006 09 20 | 106 | 0.1− | 0.1− |
| 2000 02 05 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 106 | 0.1− | 0.0 |
| 2000 02 05 | 704 | 0.1+ | 0.3+ | 2002 10 29 | 704 | 0.1− | 0.3+ | 2006 09 20 | 106 | 0.0 | 0.1− |
| 2000 02 05 | 704 | 0.2− | 0.3− | 2002 10 29 | 704 | 0.9− | 0.1+ | 2006 09 22 | 704 | 1.1+ | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 704 | 0.5− | 0.4+ | 2002 10 29 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | 1.1+ | 0.3+ |
| 2000 02 05 | 704 | 0.1+ | 0.1+ | 2002 10 29 | 704 | 1.1+ | 0.6+ | 2006 09 22 | 704 | (1.5+ | 0.6+) |
| 2000 02 05 | 704 | 0.4+ | 1.1+ | 2004 01 23 | 699 | 0.5+ | 1.5− | 2006 09 22 | 704 | (2.1+ | 0.8+) |
| 2000 02 05 | 704 | 0.2+ | 0.8+ | 2004 01 23 | 699 | 1.0− | 1.2− | 2006 09 28 | 703 | 0.4− | 0.3− |
| 2000 02 05 | 704 | 0.1− | 0.4+ | 2004 01 23 | 699 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.7− | 0.3− |
| 2000 02 05 | 704 | 0.1+ | 0.2+ | 2004 01 23 | 699 | 0.4− | 0.9+ | 2006 09 28 | 703 | 0.7− | 0.5− |
| 2000 02 05 | 704 | 0.1+ | 0.5+ | 2004 02 19 | 704 | 0.1+ | 1.4− | 2006 09 28 | 703 | 0.1− | 0.3− |
| 2000 02 11 | 704 | 0.1+ | 0.5− | 2004 02 19 | 704 | (0.3− | 1.7−) | 2006 09 29 | 704 | (2.5+ | 0.4+) |
| 2000 02 11 | 704 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.3+ | 0.3− | 2006 09 29 | 704 | (3.4+ | 1.0+) |
| 2000 02 11 | 704 | 0.2+ | 0.3− | 2004 02 19 | 704 | 0.5− | 1.0− | 2006 09 29 | 704 | (3.4+ | 0.6+) |
| 2000 02 11 | 704 | 0.6+ | 0.4+ | 2004 02 19 | 704 | 0.1− | 0.8− | 2006 09 29 | 704 | (3.0+ | 0.4+) |
| 2000 02 11 | 704 | 0.1− | 0.8− | 2004 02 26 | 704 | 0.6+ | 1.0+ | 2006 09 29 | 704 | (3.1+ | 1.0+) |
| 2000 02 26 | 703 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.6+ | 0.0 | 2006 10 04 | J95 | 0.0 | 0.0 |
| 2000 02 26 | 703 | 0.4− | 1.1− | 2004 02 26 | 704 | 0.4− | 1.3+ | 2006 10 04 | J95 | 0.0 | 0.1− |
| 2000 02 26 | 703 | 1.6− | 0.3+ | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 10 04 | J95 | 0.1+ | 0.0 |
| 2000 02 26 | 703 | 0.5− | 1.0+ | 2004 02 26 | 704 | 0.2+ | 0.7+ | 2006 10 04 | J95 | 0.1+ | 0.1− |
| 2000 03 26 | 699 | 0.5+ | 0.0 | 2004 03 13 | 644 | 0.4+ | 0.0 | 2006 10 04 | J95 | 0.0 | 0.2− |
| 2000 03 26 | 699 | 0.0 | 1.0+ | 2004 03 13 | 644 | 0.4+ | 0.3+ | 2006 10 20 | 703 | 0.2+ | 0.2− |
| 2000 03 26 | 699 | (2.1− | 1.5+) | 2004 03 13 | 644 | 0.6+ | 0.2+ | 2006 10 20 | 703 | 0.2− | 0.1− |
| 2000 03 26 | 699 | 1.4+ | 0.4− | 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 10 20 | 703 | 0.0 | 0.2− |
| 2002 07 15 | 644 | 0.3− | 0.9+ | 2004 03 16 | 704 | 0.1− | 1.1+ | 2006 10 20 | 703 | 0.3− | 0.2− |
| 2002 07 15 | 644 | 0.1− | 0.8+ | 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 1.1+ |
| 2002 07 15 | 644 | 0.1− | 0.9+ | 2004 03 16 | 704 | 0.5− | 0.4+ | 2006 11 18 | 704 | (0.6− | 2.5−) |
| 2002 07 23 | 644 | 0.2+ | 0.5+ | 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 07 23 | 644 | 1.0+ | 0.5− | 2004 03 16 | 704 | 0.1− | 1.0+ | 2006 11 18 | 704 | (1.8+ | 1.6−) |
| 2002 07 23 | 644 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.4− | 0.9+ | 2006 11 29 | 704 | 0.7− | 1.0+ |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2004 03 19 | 704 | 0.3+ | 1.0+ | 2006 11 29 | 704 | 1.0+ | 0.8− |
| 2002 08 08 | 644 | 0.2− | 0.6+ | 2004 03 19 | 704 | 1.3+ | 0.7+ | 2006 11 29 | 704 | 0.2+ | 0.3+ |
| 2002 08 08 | 644 | 0.0 | 0.7+ | 2004 03 19 | 704 | 0.7+ | 1.4+ | 2006 11 29 | 704 | 0.8+ | 1.5+ |
| 2002 08 10 | 807 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 1.5+ | | | | |

**(137847)∗ 2000 AT$_{43}$ = 1995 YB$_6$**

Discovered 2000 Jan. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 2264)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.06187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26577553 | $\omega$ | 295.49503 | | +0.76547061 | −0.64150827 | |
| $a$ | 2.3958487 | $\Omega$ | 104.45126 | | +0.60742847 | +0.69463811 | |
| $e$ | 0.1672866 | $i$ | 2.97264 | | +0.21233323 | +0.32549197 | |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.2+ | 0.2− | 2004 01 22 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1995 12 16 | 691 | 0.1− | 0.4− | 2004 01 22 | 704 | 1.2+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1995 12 16 | 691 | 0.2+ | 0.1− | 2004 02 14 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1995 12 22 | 691 | 0.1− | 0.2+ | 2004 02 14 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1995 12 22 | 691 | 0.3+ | 0.4+ | 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1995 12 22 | 691 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1995 12 28 | 691 | 0.1− | 0.2+ | 2004 02 17 | 704 | 0.5+ | 1.0+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 1995 12 28 | 691 | 0.1− | 0.3+ | 2004 02 17 | 704 | 0.2− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 1995 12 28 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.5+ | 2006 10 22 | 704 | 0.6+ | 0.2− |
| 1996 01 12 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 1996 01 12 | 691 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.3− | 2006 10 22 | 704 | 0.9− | 0.4+ |
| 1996 01 12 | 691 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 10 22 | 704 | 0.5+ | 1.5+ |
| 1999 12 17 | 691 | 0.1+ | 0.7− | 2006 09 15 | 644 | 0.7− | 0.2+ | 2006 10 22 | 704 | 0.3+ | 0.4+ |
| 1999 12 17 | 691 | 0.1− | 0.7− | 2006 09 15 | 644 | 0.0 | 0.0 | 2006 10 27 | 704 | 0.6− | 0.2− |
| 1999 12 17 | 691 | 0.1− | 0.6− | 2006 09 15 | 644 | 0.3− | 0.1+ | 2006 10 27 | 704 | 0.3− | 0.0 |
| 2000 01 02 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 10 27 | 704 | 1.1− | 0.9+ |
| 2000 01 02 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 10 27 | 704 | 0.1− | 0.4+ |
| 2000 01 02 | 691 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 10 27 | 704 | 0.9− | 1.0+ |
| 2000 01 04 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2000 01 04 | 704 | 0.7+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2000 01 06 | 691 | 0.6− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2000 01 06 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.1+ | 1.2+ |
| 2000 01 06 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.4− | 1.2+ |
| 2001 04 16 | 691 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.6+ |
| 2001 04 16 | 691 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.2+ |
| 2001 04 16 | 691 | 0.4+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.6− | 0.7+ |
| 2001 05 24 | 807 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.2− | 2006 11 14 | 704 | 0.9− | 0.3+ |
| 2001 05 24 | 807 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.3+ |
| 2002 08 18 | 644 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.4− |
| 2002 08 18 | 644 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 14 | 704 | 1.1− | 1.0+ |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 17 | 704 | 1.2+ | 0.1+ |
| 2002 09 05 | 704 | (0.0 | 2.0−) | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 11 17 | 704 | 0.6+ | 0.9+ |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 17 | 704 | 1.3+ | 1.6+ |
| 2002 09 05 | 704 | 0.7− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.5+ | 2006 11 17 | 704 | 1.3+ | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.8+ | 0.2− |
| 2002 09 11 | 608 | 0.6− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2002 09 11 | 608 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2002 09 11 | 608 | 0.4− | 0.5− | 2006 10 21 | G96 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.7− |
| 2004 01 22 | 704 | 0.7− | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.9+ | 0.3− |

**(137848)∗ 2000 AT$_{45}$ = 2000 AB$_{210}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. S. Nakano (d, MPC 39649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.83924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27241882 | $\omega$ | 165.70594 | | +0.42942866 | −0.90243277 | |
| $a$ | 2.3567380 | $\Omega$ | 258.85312 | | +0.82506362 | +0.40766886 | |
| $e$ | 0.1619691 | $i$ | 2.02852 | | +0.36723434 | +0.13935993 | |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.7− | 0.2− | 2004 02 18 | 704 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.5− | 0.0 |
| 1999 12 07 | 704 | 0.9− | 0.2+ | 2004 02 18 | 704 | 0.3+ | 0.9+ | 2006 10 21 | 691 | 0.5− | 0.1+ |
| 1999 12 07 | 704 | 1.1− | 0.5+ | 2004 02 19 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 691 | 0.5− | 0.1− |
| 1999 12 27 | 691 | 0.7+ | 0.1+ | 2004 02 19 | 704 | 0.2+ | 0.2− | 2006 10 21 | 644 | 1.3− | 0.2+ |
| 1999 12 27 | 691 | 0.2+ | 0.5− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 1999 12 27 | 691 | 0.4− | 0.2− | 2004 02 19 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2000 01 03 | 704 | 0.0 | 0.8− | 2004 02 19 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2000 01 03 | 704 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.9+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2000 01 03 | 704 | 0.5+ | 0.5− | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2000 01 03 | 704 | 0.5− | 1.6− | 2004 02 23 | 704 | 0.3+ | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2000 01 05 | 691 | 0.0 | 0.6− | 2004 02 23 | 704 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2000 01 05 | 704 | 0.1+ | 0.8− | 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2000 01 05 | 704 | 0.9+ | 0.5− | 2004 02 29 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.6− |
| 2000 01 05 | 691 | 0.0 | 0.7− | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 1.0− |
| 2000 01 05 | 704 | 0.5+ | 0.3− | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2000 01 05 | 691 | 0.3+ | 0.3+ | 2004 03 01 | 703 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.6− | 0.1+ |
| 2000 01 05 | 704 | 0.7+ | 0.0 | 2004 03 01 | 703 | 0.6+ | 0.8− | 2006 11 14 | 703 | 0.5+ | 0.7− |
| 2000 01 05 | 704 | 0.5− | 0.8− | 2004 03 01 | 703 | 0.4− | 0.4− | 2006 11 14 | 703 | 0.5+ | 0.8− |
| 2000 01 11 | 691 | 0.4− | 0.3− | 2004 03 01 | 703 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.5+ |
| 2000 01 11 | 691 | 0.4− | 0.4− | 2004 03 11 | 644 | 0.4+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2000 01 11 | 691 | 0.0 | 1.2− | 2004 03 11 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2002 08 17 | 644 | 0.4− | 0.2+ | 2004 03 11 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2002 08 17 | 644 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.9+ | 0.7+ | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2002 08 17 | 644 | 0.4− | 0.5+ | 2004 03 15 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2002 08 18 | 644 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.1− | 1.5+ | 2006 11 17 | 691 | 0.6+ | 0.1+ |
| 2002 08 18 | 644 | 0.5− | 0.7+ | 2004 03 15 | 704 | 0.2+ | 1.0+ | 2006 11 17 | 703 | 0.2+ | 0.5+ |
| 2002 08 18 | 644 | (1.7− | 0.2+) | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 11 17 | 703 | 0.4+ | 0.5+ |
| 2002 08 27 | 644 | 0.3− | 0.4+ | 2004 03 17 | 691 | 0.1+ | 0.6+ | 2006 11 17 | 703 | 0.3+ | 1.0+ |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2004 03 17 | 691 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.3+ | 1.4+ |
| 2002 08 27 | 644 | 0.4− | 0.5+ | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2004 03 26 | 691 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2002 09 05 | 704 | 1.5+ | 0.2+ | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 1.3+ |
| 2002 09 05 | 704 | 0.4+ | 0.3+ | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2002 09 14 | 644 | 0.7− | 0.6+ | 2006 08 29 | 703 | (1.1− | 1.5−) | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.6− | 0.4+ | 2006 08 29 | 703 | 0.2+ | 0.8+ | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2002 09 14 | 644 | 0.7− | 0.1+ | 2006 08 29 | 703 | 1.0+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2002 10 12 | 291 | 0.5+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 291 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.0 | 1.0+ | | |
| 2002 10 12 | 291 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.3− | 0.9+ | | |
| 2004 01 29 | 699 | 0.9+ | 0.8+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.5+ | | |
| 2004 01 29 | 699 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.2+ | | |
| 2004 01 29 | 699 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.4+ | 2006 11 26 | 704 | 0.3− | 0.4+ | | |
| 2004 01 29 | 699 | 1.3− | 1.4+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.6− | 1.2+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.5+ | 2006 11 26 | 704 | 0.1− | 0.6+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 26 | 704 | 0.1+ | 0.8+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2004 02 18 | 704 | (0.3+ | 1.9+) | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2+ | | |
| 2004 02 18 | 704 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2004 02 18 | 704 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | | | | | | |

**(137849)∗ 2000 $AY_{50}$ = 2004 $CU_{85}$**

Discovered 2000 Jan. 6 by P. G. Comba at Prescott.

Id. G. V. Williams (*MPO* 60576)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 229.42927 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.25936058 | $\omega$ | 73.66404 | | | −0.99027928 | | −0.13513358 | |
| $a$ | 2.4351931 | $\Omega$ | 98.56068 | | | +0.11147693 | | −0.91275400 | |
| $e$ | 0.1132880 | $i$ | 1.90965 | | | +0.08318553 | | −0.38551141 | |
| $P$ | 3.80 | $H$ | 16.9 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 684 | 0.0 | 1.2− | 2004 02 19 | 704 | 0.4+ | 1.2+ | 2004 03 26 | 691 | 0.1− | 0.2− | | |
| 2000 01 06 | 684 | 0.3− | 0.8− | 2004 02 19 | 704 | 0.5+ | 0.7+ | 2005 07 09 | 691 | 0.0 | 0.2+ | | |
| 2000 01 06 | 684 | 0.4− | 1.0− | 2004 02 19 | 704 | 0.4+ | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.4+ | | |
| 2000 01 07 | 684 | 0.8− | 1.8− | 2004 02 19 | 704 | 0.1+ | 0.8+ | 2005 07 09 | 691 | 0.2− | 0.3+ | | |
| 2000 01 07 | 684 | 0.4− | 1.2− | 2004 02 19 | 704 | 0.4+ | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.2− | | |
| 2000 01 29 | 691 | 0.1− | 0.3− | 2004 02 19 | 704 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− | | |
| 2000 01 29 | 691 | 0.0 | 0.2− | 2004 02 19 | 621 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.0 | | |
| 2000 01 29 | 691 | 0.1+ | 0.4− | 2004 02 19 | 621 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 02 20 | 621 | 0.6− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ | | |
| 2004 01 22 | 704 | 0.4+ | 0.4+ | 2004 02 20 | 621 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.6+ | | |
| 2004 01 22 | 704 | (1.9+ | 0.2−) | 2004 02 20 | 621 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.5+ | | |
| 2004 02 14 | 691 | 0.1+ | 0.7+ | 2004 02 20 | 621 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1+ | | |
| 2004 02 14 | 691 | 0.1+ | 0.2+ | 2004 02 20 | 621 | 0.2− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.6+ | | |
| 2004 02 14 | 691 | 0.1+ | 0.1+ | 2004 02 21 | 621 | 0.8− | 0.4− | 2006 10 19 | 691 | 0.3+ | 0.1+ | | |
| 2004 02 17 | 704 | 0.4+ | 0.2− | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.2+ | | |
| 2004 02 17 | 704 | 0.7+ | 0.6+ | 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.3+ | | |
| 2004 02 17 | 704 | 0.7+ | 0.3+ | 2004 02 23 | 704 | 0.1− | 1.1+ | 2006 10 23 | 691 | 0.4− | 0.3+ | | |
| 2004 02 17 | 704 | 0.4+ | 0.6+ | 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.4− | | |
| 2004 02 17 | 704 | 0.1+ | 0.5+ | 2004 02 23 | 704 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.5− | | |
| 2004 02 19 | 704 | 0.0 | 0.7+ | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.6− | | |
| 2004 02 19 | 704 | 1.0+ | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.6− | | |

**(137850)∗ 2000 $AL_{52}$ = 2002 $PY_{58}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33180)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 340.75543 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.29286354 | $\omega$ | 101.17495 | | | −0.00930539 | | −0.99983369 | |
| $a$ | 2.2457385 | $\Omega$ | 349.32084 | | | +0.88124506 | | −0.00078715 | |
| $e$ | 0.1365836 | $i$ | 4.85522 | | | +0.47256803 | | −0.01821994 | |
| $P$ | 3.37 | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.7− | 0.5− | 2002 08 30 | 291 | 0.5− | 0.4+ | 2004 03 15 | 703 | 0.1+ | 0.7+ | | |
| 1999 10 12 | 704 | 0.0 | 0.1+ | 2002 08 30 | 291 | 0.5− | 0.6+ | 2004 03 15 | 691 | 0.0 | 0.4+ | | |
| 1999 10 12 | 704 | 1.3− | 0.2+ | 2002 08 30 | 291 | 0.4− | 0.6+ | 2004 03 16 | 704 | 0.4+ | 0.7+ | | |
| 1999 10 12 | 704 | 0.7− | 0.0 | 2002 09 05 | 699 | (0.2− | 1.6+) | 2004 03 16 | 704 | 0.2− | 0.7+ | | |
| 1999 10 12 | 704 | 0.8− | 0.7+ | 2002 09 05 | 699 | 0.1+ | 0.2− | 2004 03 16 | 704 | 0.2− | 0.6+ | | |
| 1999 10 13 | 704 | 0.1− | 0.4+ | 2002 09 05 | 699 | 0.9− | 0.2+ | 2004 03 16 | 704 | 0.7+ | 0.6+ | | |
| 1999 10 13 | 704 | 0.8− | 0.4+ | 2002 09 05 | 699 | 0.3− | 0.5+ | 2004 03 16 | 704 | 0.2− | 0.4+ | | |
| 1999 10 13 | 704 | 1.1− | 0.1− | 2002 09 05 | 704 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.4− | 0.4+ | | |
| 1999 10 13 | 704 | 1.2− | 0.7+ | 2002 09 05 | 704 | 0.0 | 0.8+ | 2004 03 18 | 704 | 0.2− | 0.5+ | | |
| 1999 10 13 | 704 | 0.9− | 0.4+ | 2002 09 05 | 704 | 0.2− | 1.3+ | 2004 03 18 | 704 | 0.4+ | 0.0 | | |
| 1999 10 30 | 699 | 0.2− | 0.2+ | 2002 09 05 | 704 | 0.0 | 1.1+ | 2004 03 18 | 704 | 0.4− | 0.4+ | | |
| 1999 10 30 | 699 | 0.4+ | 0.2− | 2002 09 05 | 704 | (0.5− | 1.6+) | 2004 03 20 | 699 | 0.1+ | 0.6+ | | |
| 1999 10 30 | 699 | 0.1+ | 1.3+ | 2002 09 07 | 704 | 0.1+ | 0.7+ | 2004 03 20 | 699 | 0.1− | 0.1+ | | |
| 1999 11 03 | 704 | 0.1+ | 0.3− | 2002 09 07 | 704 | 0.1+ | 0.8+ | 2004 03 20 | 699 | 0.2+ | 0.0 | | |
| 1999 11 03 | 704 | 0.2− | 0.1+ | 2002 09 07 | 704 | 0.2+ | 1.0+ | 2004 03 20 | 608 | 0.3− | 0.6+ | | |
| 1999 11 03 | 704 | 0.4− | 0.1+ | 2002 09 07 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 608 | 0.0 | 0.7+ | | |
| 1999 11 03 | 704 | 0.3− | 0.2+ | 2002 09 14 | 644 | 0.1− | 0.9+ | 2004 03 20 | 699 | 0.3− | 0.3+ | | |
| 1999 11 03 | 704 | 0.5− | 0.1− | 2002 09 14 | 644 | 0.2− | 0.9+ | 2004 03 20 | 608 | 0.0 | 0.6+ | | |
| 1999 11 09 | 699 | 0.4+ | 0.1+ | 2002 09 14 | 644 | 0.4− | 0.8+ | 2004 03 26 | 699 | 0.3+ | 0.1+ | | |
| 1999 11 09 | 699 | 0.1− | 0.3+ | 2002 09 15 | 644 | 0.8− | 0.9+ | 2004 03 26 | 699 | 0.2+ | 0.3− | | |
| 1999 11 09 | 699 | 0.7+ | 0.1− | 2002 09 15 | 644 | 0.4− | 1.0+ | 2004 03 26 | 699 | 0.2+ | 0.3− | | |
| 1999 11 13 | 703 | 0.1+ | 0.1+ | 2002 09 15 | 644 | 0.8− | 0.8+ | 2004 03 26 | 699 | 0.1− | 0.2+ | | |
| 1999 11 13 | 703 | 0.2− | 0.4+ | 2002 09 17 | 608 | (1.6− | 0.6−) | 2004 03 27 | 704 | 1.0+ | 0.6+ | | |
| 1999 11 13 | 703 | 0.2+ | 0.6− | 2002 09 17 | 608 | (1.7− | 0.0 ) | 2004 03 27 | 704 | 0.7+ | 0.5+ | | |
| 1999 11 13 | 703 | 0.2− | 0.1− | 2002 09 17 | 608 | (1.8− | 0.1−) | 2004 03 27 | 704 | 0.3− | 0.8+ | | |
| 1999 12 05 | 703 | (3.6+ | 0.4+) | 2002 10 01 | 608 | 0.7+ | 0.4+ | 2004 03 27 | 704 | 0.1+ | 0.4+ | | |
| 1999 12 05 | 703 | 1.5− | 1.2+ | 2002 10 01 | 608 | 1.2+ | 1.3+ | 2004 03 27 | 704 | 0.2+ | 0.7+ | | |
| 1999 12 05 | 703 | 0.7+ | 0.5+ | 2002 10 01 | 608 | 0.3+ | 0.3− | 2004 04 10 | 644 | 0.1− | 0.8+ | | |
| 1999 12 05 | 703 | 0.5+ | 0.0 | 2002 10 03 | 704 | 0.5+ | 0.4+ | 2004 04 10 | 644 | 0.3− | 0.5+ | | |
| 1999 12 07 | 699 | 0.1+ | 1.3+ | 2002 10 03 | 704 | 0.1+ | 0.4+ | 2004 04 10 | 644 | 0.0 | 0.5+ | | |
| 1999 12 07 | 699 | 0.6+ | 1.1+ | 2002 10 03 | 704 | 0.3+ | 0.0 | 2004 04 12 | 703 | 0.6− | 0.6+ | | |
| 1999 12 07 | 699 | (0.5+ | 2.2+) | 2002 10 03 | 704 | 0.1+ | 0.8+ | 2004 04 12 | 703 | 0.8− | 0.5+ | | |
| 1999 12 08 | 704 | 0.9+ | 0.1− | 2002 10 03 | 704 | 0.4+ | 0.7+ | 2004 04 12 | 703 | 0.2− | 1.1+ | | |
| 1999 12 08 | 704 | 0.8+ | 0.0 | 2002 10 05 | 704 | 0.5− | 0.6− | 2004 04 12 | 703 | 0.2+ | 0.7+ | | |
| 1999 12 08 | 704 | 0.2− | 0.5− | 2002 10 05 | 704 | 1.5− | 0.9− | 2004 04 13 | 691 | 0.1+ | 0.3+ | | |
| 1999 12 08 | 704 | 0.5+ | 0.3− | 2002 10 05 | 704 | 1.0− | 0.1− | 2004 04 13 | 691 | 0.0 | 0.2+ | | |
| 1999 12 08 | 704 | 0.2+ | 0.2− | 2002 10 05 | 704 | 0.9− | 0.8+ | 2004 04 13 | 691 | 0.0 | 0.4+ | | |
| 2000 01 04 | 704 | 1.1+ | 1.3− | 2002 10 07 | 704 | 0.0 | 0.6+ | 2004 04 15 | 644 | 0.2+ | 0.5+ | | |
| 2000 01 04 | 704 | 0.2− | 0.0 | 2002 10 07 | 704 | 0.5− | 0.2+ | 2004 04 15 | 644 | 0.4+ | 0.5+ | | |
| 2000 01 04 | 704 | 0.7+ | 0.5− | 2002 10 07 | 704 | 0.0 | 0.1+ | 2004 04 15 | 644 | 0.3+ | 0.5+ | | |
| 2000 01 04 | 704 | 0.9+ | 0.5− | 2002 10 07 | 704 | 0.7− | 0.3+ | 2004 04 16 | 704 | 1.2+ | 0.3+ | | |
| 2000 01 04 | 704 | 0.8+ | 0.6− | 2002 10 07 | 704 | 0.4+ | 0.6+ | 2004 04 16 | 704 | 1.5+ | 0.1− | | |
| 2000 01 06 | 704 | 0.4− | 0.0 | 2002 10 09 | 699 | 0.2+ | 0.4+ | 2004 04 16 | 704 | (2.1+ | 0.3−) | | |
| 2000 01 06 | 704 | 0.4+ | 0.7+ | 2002 10 09 | 699 | 0.2+ | 0.3− | 2004 04 16 | 704 | 1.2+ | 0.0 | | |
| 2000 01 06 | 704 | 0.3− | 0.6+ | 2002 10 09 | 699 | 1.1− | 0.8+ | 2004 04 17 | 704 | (1.5+ | 1.8+) | | |
| 2000 01 06 | 704 | 0.4+ | 0.3+ | 2002 10 09 | 699 | 0.4− | 0.6+ | 2004 04 17 | 704 | 1.1+ | 0.8+ | | |
| 2000 01 06 | 704 | 0.3− | 0.0 | 2002 10 10 | 291 | 0.6− | 0.2− | 2004 04 17 | 704 | (1.5+ | 0.4+) | | |
| 2000 01 06 | 704 | 1.0+ | 0.9+ | 2002 10 10 | 291 | 0.2− | 0.3+ | 2004 04 17 | 704 | 0.6+ | 0.1− | | |
| 2000 01 06 | 704 | 1.2− | 0.5+ | 2002 10 10 | 291 | 0.0 | 0.2+ | 2004 04 17 | 704 | 1.3+ | 0.6+ | | |
| 2000 01 06 | 704 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.4+ | 0.3+ | 2004 04 20 | 704 | 1.3+ | 0.4− | | |
| 2000 01 06 | 704 | 0.4− | 0.4− | 2002 10 11 | 704 | 0.0 | 0.7+ | 2004 04 20 | 704 | 0.7+ | 0.3− | | |
| 2000 01 06 | 704 | 0.9+ | 0.6+ | 2002 10 11 | 704 | 0.3− | 0.5+ | 2004 04 20 | 704 | (1.3+ | 1.6+) | | |
| 2000 01 08 | 704 | 0.2− | 0.5+ | 2002 10 11 | 704 | 0.3+ | 1.1+ | 2004 04 21 | 691 | 0.4+ | 0.5+ | | |
| 2000 01 08 | 704 | 0.5− | 1.0+ | 2002 10 11 | 704 | 0.3− | 0.7+ | 2004 04 21 | 691 | 0.1+ | 0.2+ | | |
| 2000 01 08 | 704 | 0.6− | 1.0+ | 2003 11 20 | 691 | 0.5+ | 0.0 | 2004 04 21 | 691 | 0.1+ | 0.2+ | | |
| 2000 01 08 | 704 | 0.8− | 1.0+ | 2003 11 20 | 691 | 0.4+ | 0.2+ | 2004 05 16 | 704 | 1.2+ | 0.1− | | |
| 2000 01 08 | 704 | 0.2− | 0.0 | 2003 11 20 | 691 | 0.3+ | 0.2+ | 2004 05 16 | 704 | 1.0+ | 0.7+ | | |
| 2002 08 10 | 704 | 0.1+ | 0.1+ | 2003 12 19 | 691 | 0.1+ | 0.3+ | 2004 05 16 | 704 | (1.6+ | 0.4−) | | |
| 2002 08 10 | 704 | 0.4+ | 0.3+ | 2003 12 19 | 691 | 0.2+ | 0.4+ | 2004 05 16 | 704 | 1.0+ | 0.5+ | | |
| 2002 08 10 | 704 | 0.4− | 1.0+ | 2003 12 19 | 691 | 0.2+ | 0.2+ | 2005 07 29 | E12 | 0.3+ | 0.2− | | |
| 2002 08 10 | 704 | (0.8− | 1.6+) | 2003 12 27 | 704 | 0.6− | 0.6+ | 2005 07 29 | E12 | 0.1− | 0.3+ | | |
| 2002 08 12 | 704 | 0.7+ | 1.3− | 2003 12 27 | 704 | (0.6+ | 1.9+) | 2005 07 29 | E12 | 1.1− | 0.5+ | | |
| 2002 08 12 | 704 | (1.6+ | 0.4−) | 2003 12 27 | 704 | (0.6− | 1.7+) | 2005 07 29 | E12 | 0.3+ | 0.6+ | | |
| 2002 08 12 | 704 | 1.2+ | 1.3− | 2003 12 27 | 704 | 1.1− | 1.2+ | 2005 08 24 | E12 | 0.6+ | 0.4+ | | |
| 2002 08 12 | 704 | 0.7+ | 1.3− | 2003 12 27 | 704 | 0.2+ | 0.7+ | 2005 08 24 | E12 | 0.3+ | 0.0 | | |
| 2002 08 14 | 621 | 0.2+ | 0.5+ | 2004 01 17 | 608 | 1.1+ | 0.5+ | 2005 08 24 | E12 | 0.3+ | 0.5+ | | |
| 2002 08 14 | 621 | 0.0 | 0.7+ | 2004 01 17 | 608 | 0.8+ | 1.2+ | 2005 08 24 | E12 | 0.2− | 0.1+ | | |
| 2002 08 14 | 621 | 0.2+ | 0.1− | 2004 01 17 | 608 | 1.2+ | 0.6+ | 2006 10 28 | 703 | (0.8− | 1.7−) | | |
| 2002 08 14 | 621 | 0.0 | 0.5+ | 2004 02 15 | 703 | 0.1+ | 0.8+ | 2006 10 28 | 703 | 0.2− | 0.9− | | |
| 2002 08 14 | 621 | 0.2− | 0.5+ | 2004 02 15 | 703 | 0.3− | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.4− | | |
| 2002 08 14 | 291 | 0.5− | 0.4+ | 2004 02 15 | 703 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.5− | 0.2− | | |
| 2002 08 14 | 291 | 0.5− | 0.4+ | 2004 02 15 | 703 | 0.5+ | 0.1− | 2006 11 15 | 704 | 0.8− | 0.4+ | | |
| 2002 08 14 | 291 | 0.5− | 0.4+ | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 704 | 0.5− | 0.3− | | |
| 2002 08 15 | 621 | 0.6− | 0.3+ | 2004 02 19 | 704 | 0.6+ | 0.2+ | 2006 11 15 | 704 | 0.3− | 0.2− | | |
| 2002 08 15 | 621 | 0.3− | 0.3+ | 2004 02 19 | 704 | 0.5+ | 0.6+ | 2006 11 15 | 704 | 0.4− | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 621 | 0.2− | 0.4+ | 2004 02 19 | 704 | 0.4+ | 0.3+ | 2006 11 15 | 704 | 0.7+ | 0.4− |
| 2002 08 15 | 621 | 0.1− | 0.3+ | 2004 02 19 | 704 | 0.2+ | 0.8+ | 2006 11 15 | 704 | 0.3+ | 0.7+ |
| 2002 08 15 | 621 | 0.3− | 0.3+ | 2004 02 22 | 608 | (2.1+ | 0.6+) | 2006 11 15 | 704 | 0.1− | 0.2+ |
| 2002 08 20 | 644 | 0.0 | 0.2+ | 2004 02 22 | 608 | (2.1+ | 0.5+) | 2006 11 15 | 704 | 0.5− | 0.4+ |
| 2002 08 20 | 644 | 0.1− | 0.1+ | 2004 02 22 | 608 | (2.0+ | 0.6+) | 2006 11 15 | 704 | 0.4+ | 0.2+ |
| 2002 08 20 | 644 | (0.2− | 1.9+) | 2004 02 26 | 704 | 0.6+ | 0.8+ | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2002 08 20 | 644 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.8+ | 2006 11 16 | 704 | 0.4− | 0.8+ |
| 2002 08 20 | 644 | (0.2− | 1.8+) | 2004 02 26 | 704 | 0.8+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.5− |
| 2002 08 20 | 644 | (0.0 | 1.9+) | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2006 11 16 | 704 | 0.5− | 0.4− |
| 2002 08 28 | 644 | 0.4− | 0.7+ | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2002 08 28 | 644 | 0.4− | 0.8+ | 2004 03 15 | 691 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2002 08 28 | 644 | 0.3− | 0.8+ | 2004 03 15 | 703 | 0.3− | 0.8+ | 2006 11 22 | 704 | 1.2+ | 0.5− |
| 2002 08 29 | 644 | 0.5− | 1.2+ | 2004 03 15 | 703 | 0.0 | 1.1+ | 2006 11 22 | 704 | 1.1+ | 0.6+ |
| 2002 08 29 | 644 | 0.3− | 0.8+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.5+ | 1.1+ |
| 2002 08 29 | 644 | 0.5− | 0.9+ | 2004 03 15 | 703 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.7+ | 1.1+ |

**(137851)∗ 2000 AR$_{52}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.91890 | | (2000.0) | | | |
| $n$ | 0.28888895 | $\omega$ | 185.82593 | | +0.23777077 | −0.97029255 |
| $a$ | 2.2662897 | $\Omega$ | 250.42541 | | +0.89307416 | +0.23647810 |
| $e$ | 0.2103241 | $i$ | 2.71878 | | +0.38194713 | +0.05109274 |
| $P$ | 3.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.5+ | 0.4+ | 1999 12 04 | 699 | 0.6− | 0.3− | 2004 03 27 | 703 | 0.5+ | 0.8+ |
| 1999 10 13 | 704 | 0.0 | 0.1+ | 2000 01 04 | 704 | 0.8+ | 0.5− | 2004 03 27 | 704 | 1.4+ | 0.2+ |
| 1999 10 13 | 704 | 0.2+ | 0.1− | 2000 01 04 | 704 | 0.8− | 0.8− | 2004 03 27 | 703 | 0.4+ | 0.3+ |
| 1999 10 13 | 704 | 0.1+ | 0.5− | 2000 01 04 | 704 | 1.1+ | 0.9+ | 2004 03 28 | 704 | 0.7+ | 0.2− |
| 1999 10 13 | 704 | 0.2− | 0.5− | 2000 01 04 | 704 | 0.1+ | 0.0 | 2004 03 28 | 704 | 0.6− | 1.0− |
| 1999 10 15 | 704 | 0.4− | 0.4+ | 2000 01 06 | 704 | 0.9− | 1.5− | 2004 03 28 | 704 | 0.4+ | 0.2− |
| 1999 10 15 | 704 | 0.3− | 0.4+ | 2000 01 06 | 704 | 0.6− | 1.6− | 2004 03 28 | 691 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.0 | 0.2+ | 2000 01 06 | 704 | 0.1− | 0.7− | 2004 03 28 | 704 | 0.1+ | 1.2+ |
| 1999 10 15 | 704 | 0.3− | 0.0 | 2000 01 06 | 704 | 0.2+ | 0.8− | 2004 03 28 | 704 | 0.1+ | 0.0 |
| 1999 10 22 | 704 | 0.1− | 0.3+ | 2002 08 07 | 599 | 0.3− | 1.0+ | 2004 03 28 | 691 | 0.1− | 0.2+ |
| 1999 10 22 | 704 | 0.8− | 0.5+ | 2002 08 07 | 599 | 0.6− | 0.7+ | 2004 03 28 | 691 | 0.2− | 0.2+ |
| 1999 10 22 | 704 | 0.9+ | 1.1+ | 2002 08 07 | 599 | 0.1− | 0.9+ | 2004 04 11 | 644 | 0.2− | 0.8+ |
| 1999 10 22 | 704 | 0.0 | 0.5+ | 2002 08 17 | 644 | 0.0 | 0.1+ | 2004 04 11 | 644 | 0.1− | 0.5+ |
| 1999 10 22 | 704 | 0.5− | 0.3+ | 2002 08 17 | 644 | 0.3− | 0.1+ | 2004 04 11 | 644 | 0.1− | 0.4+ |
| 1999 10 29 | 703 | 0.4− | 0.3+ | 2002 08 17 | 644 | 0.1+ | 0.1− | 2004 04 20 | 704 | (2.0+ | 0.4−) |
| 1999 10 29 | 703 | 0.5− | 0.9+ | 2002 08 26 | 644 | 0.4− | 0.8+ | 2004 04 20 | 704 | (1.1+ | 1.7+) |
| 1999 10 29 | 703 | 0.3+ | 1.0+ | 2002 08 26 | 644 | 0.1− | 0.8+ | 2004 04 20 | 704 | 0.5+ | 0.3− |
| 1999 10 29 | 703 | 1.3− | 1.7+ | 2002 08 26 | 644 | 0.4− | 0.8+ | 2004 04 20 | 704 | 1.3+ | 0.2+ |
| 1999 11 04 | 704 | 0.3+ | 0.0 | 2002 08 27 | 644 | (0.4− | 1.7+) | 2004 04 20 | 704 | 0.0 | 0.0 |
| 1999 11 04 | 704 | 0.0 | 0.2− | 2002 08 27 | 644 | 0.2− | 1.4+ | 2004 04 20 | 704 | 0.5+ | 0.1− |
| 1999 11 04 | 704 | 0.8+ | 0.4+ | 2002 08 27 | 644 | 0.2− | 1.4+ | 2004 04 20 | 704 | 0.0 | 0.5+ |
| 1999 11 04 | 704 | 0.0 | 0.2+ | 2004 03 15 | 291 | 0.1− | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.0 |
| 1999 11 04 | 704 | 0.6+ | 0.0 | 2004 03 15 | 291 | 0.1− | 0.2+ | 2004 04 20 | 704 | 1.0+ | 0.1+ |
| 1999 11 12 | 699 | 0.6− | 0.2+ | 2004 03 15 | 291 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.5− | 0.7+ |
| 1999 11 12 | 699 | 1.0− | 0.2+ | 2004 03 15 | 291 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.8− | 0.0 |
| 1999 11 12 | 699 | 0.5− | 0.5+ | 2004 03 15 | 291 | 0.1− | 0.3+ | 2004 04 21 | 691 | 0.1+ | 0.1+ |
| 1999 11 14 | 704 | 0.3+ | 0.0 | 2004 03 15 | 291 | 0.1− | 0.3+ | 2004 04 21 | 691 | 0.2+ | 0.1− |
| 1999 11 14 | 704 | 0.2− | 0.0 | 2004 03 16 | 703 | 0.1+ | 0.4+ | 2004 04 21 | 691 | 0.2+ | 0.1+ |
| 1999 11 14 | 703 | 0.1+ | 0.6+ | 2004 03 16 | 703 | 0.2− | 0.8+ | 2006 09 28 | 291 | 0.3− | 0.1+ |
| 1999 11 14 | 704 | 0.1− | 0.0 | 2004 03 16 | 703 | 0.1+ | 0.1+ | 2006 09 28 | 291 | 0.0 | 0.4+ |
| 1999 11 14 | 704 | 0.0 | 0.1+ | 2004 03 16 | 703 | 0.6− | 0.1+ | 2006 09 28 | 291 | 0.0 | 0.1+ |
| 1999 11 14 | 703 | 0.2− | 0.2− | 2004 03 18 | 704 | 0.7− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− |
| 1999 11 14 | 704 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.5− | 1.4+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 1999 11 14 | 703 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.3− | 0.9+ | 2006 11 18 | 691 | (2.1− | 3.0−) |
| 1999 11 14 | 703 | 0.5− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 1999 11 16 | 704 | 0.4+ | 1.6+ | 2004 03 18 | 704 | 0.4+ | 1.0+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 1999 11 16 | 704 | 0.9+ | 0.9+ | 2004 03 20 | 704 | 0.0 | 0.3− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 1999 11 16 | 704 | 1.2+ | 0.6+ | 2004 03 20 | 704 | 1.0+ | 0.3− | 2006 11 26 | 691 | 0.1− | 0.3− |
| 1999 11 16 | 704 | 0.9+ | 0.3+ | 2004 03 20 | 704 | 0.8+ | 1.1− | 2006 11 26 | 691 | 0.1− | 0.3− |
| 1999 11 16 | 704 | 1.1− | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 11 26 | 691 | 0.0 | 0.1− |
| 1999 12 04 | 703 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.2− | 0.8+ | 2006 12 01 | 704 | 0.8+ | 0.2− |
| 1999 12 04 | 699 | 0.3− | 0.7− | 2004 03 27 | 704 | 0.2− | 0.5+ | 2006 12 01 | 704 | 0.0 | 0.2+ |
| 1999 12 04 | 703 | 0.8− | 1.1+ | 2004 03 27 | 703 | 1.3+ | 0.3+ | 2006 12 01 | 704 | 0.1+ | 0.0 |
| 1999 12 04 | 703 | 0.1− | 1.6+ | 2004 03 27 | 704 | (1.6+ | 0.7+) | 2006 12 01 | 704 | 0.0 | 0.0 |
| 1999 12 04 | 699 | 0.5− | 0.4− | 2004 03 27 | 703 | 0.7+ | 0.8+ | 2006 12 01 | 704 | 0.3− | 0.1− |
| 1999 12 04 | 703 | 0.2− | 0.5+ | 2004 03 27 | 704 | 1.3+ | 0.8+ | | | | |

**(137852)∗ 2000 AW$_{52}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.10717 | | (2000.0) | | | |
| $n$ | 0.28208387 | $\omega$ | 60.02024 | | +0.87111349 | −0.48941222 |
| $a$ | 2.3025932 | $\Omega$ | 329.22912 | | +0.41890512 | +0.78355155 |
| $e$ | 0.1532133 | $i$ | 4.53587 | | +0.25628069 | +0.38278277 |
| $P$ | 3.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 05 | 704 | 0.4− | 0.2+ | 2002 08 13 | 704 | 0.4− | 0.2− | 2006 09 18 | 704 | 0.7+ | 0.5− |
| 1999 10 05 | 704 | 0.4− | 0.0 | 2002 08 13 | 704 | 1.0− | 0.5− | 2006 09 18 | 704 | (2.1+ | 1.1+) |
| 1999 10 05 | 704 | 0.4− | 0.6+ | 2004 01 18 | 644 | 0.2− | 0.2+ | 2006 09 21 | 704 | 0.0 | 0.8+ |
| 1999 10 05 | 704 | 0.4+ | 0.6+ | 2004 01 18 | 644 | 0.1− | 0.3+ | 2006 09 21 | 704 | 0.2+ | 0.9+ |
| 1999 10 05 | 704 | 0.7− | 0.5+ | 2004 01 18 | 644 | 0.1+ | 0.4+ | 2006 09 21 | 704 | 0.6+ | 0.4− |
| 1999 10 12 | 704 | 0.5− | 0.2+ | 2004 01 22 | 704 | 0.1− | 0.4+ | 2006 09 21 | 704 | (1.3+ | 1.7−) |
| 1999 10 12 | 704 | 0.6− | 0.3− | 2004 01 22 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.5− | 0.3+ |
| 1999 10 12 | 704 | 0.2− | 0.4− | 2004 01 22 | 704 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.7+ | 0.5− |
| 1999 10 12 | 704 | 0.2+ | 0.0 | 2004 01 22 | 704 | 0.1− | 0.0 | 2006 09 25 | 704 | 1.0− | 0.3+ |
| 1999 10 12 | 704 | 0.6− | 0.5− | 2004 01 22 | 704 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.9+ |
| 1999 10 13 | 704 | 0.2− | 0.0 | 2004 01 27 | 704 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.7+ | 0.9− |
| 1999 10 13 | 704 | 0.2+ | 0.0 | 2004 01 27 | 704 | 1.2+ | 0.4+ | 2006 10 19 | 703 | 0.5+ | 0.1− |
| 1999 10 13 | 704 | 0.1+ | 0.3+ | 2004 01 27 | 704 | 0.1+ | 1.0− | 2006 10 19 | 703 | 0.6+ | 0.1− |
| 1999 10 13 | 704 | 0.2− | 0.1+ | 2004 01 27 | 704 | (2.5+ | 0.6+) | 2006 10 19 | 703 | 0.4− | 0.1− |
| 1999 10 13 | 704 | 0.2− | 0.5− | 2004 01 27 | 704 | 0.4+ | 0.3+ | 2006 10 20 | A50 | 0.0 | 0.2+ |
| 1999 10 30 | 699 | 0.2+ | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 20 | 704 | 0.1+ | 1.2+ |
| 1999 10 30 | 699 | 0.2+ | 0.0 | 2004 01 30 | 704 | 0.6+ | 0.0 | 2006 10 20 | 704 | 0.3− | 0.1+ |
| 1999 10 30 | 699 | 0.9+ | 0.4+ | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 704 | 0.1+ | 0.1− |
| 1999 11 03 | 704 | 0.3− | 0.0 | 2004 01 30 | 704 | (2.5− | 0.3−) | 2006 10 27 | 703 | 0.1− | 0.2− |
| 1999 11 03 | 704 | 0.4− | 0.1− | 2004 01 30 | 704 | (0.9− | 1.5−) | 2006 10 27 | 703 | 0.4+ | 0.2− |
| 1999 11 03 | 704 | 0.5− | 0.5− | 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.5+ | 0.7− |
| 1999 11 03 | 704 | 0.2− | 0.5− | 2004 01 30 | 691 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.4+ | 0.1− |
| 1999 11 03 | 704 | 0.5− | 0.7− | 2004 02 10 | 644 | 0.7+ | 0.1− | 2006 11 14 | 703 | 0.2− | 0.3− |
| 1999 11 09 | 699 | 0.4+ | 0.2+ | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 1999 11 09 | 699 | 0.7− | 0.6+ | 2004 02 10 | 644 | 0.5+ | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 1999 11 09 | 699 | 0.2− | 0.2− | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | (0.8− | 1.7+) |
| 1999 11 13 | 703 | 0.6+ | 0.1+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.4− | 1.3+ |
| 1999 11 13 | 703 | 0.2− | 0.0 | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.3− |
| 1999 11 13 | 703 | 0.1+ | 0.1+ | 2004 02 11 | 699 | 0.8− | 1.0− | 2006 11 16 | 704 | 0.6− | 0.4+ |
| 1999 11 13 | 703 | 0.5− | 0.5+ | 2004 02 11 | 699 | 0.1− | 0.7− | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 1999 12 05 | 703 | 0.3− | 0.3− | 2004 02 11 | 699 | (1.7− | 0.3+) | 2006 11 16 | 704 | 1.1− | 0.4− |
| 1999 12 05 | 703 | 1.9+ | 2.1− | 2004 02 11 | 699 | 0.0 | 0.8− | 2006 11 22 | 703 | 0.1− | 0.2+ |
| 1999 12 05 | 703 | 0.6+ | 0.7+ | 2004 02 17 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.2+ |
| 1999 12 05 | 703 | (2.4+ | 1.4−) | 2004 02 17 | 644 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.4− | 0.0 |
| 1999 12 08 | 704 | 0.6+ | 0.4+ | 2004 02 17 | 644 | 0.5+ | 0.4+ | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 1999 12 08 | 704 | 0.1− | 1.1− | 2004 02 26 | 704 | 0.9+ | 1.1+ | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 1999 12 08 | 704 | 0.5+ | 0.7− | 2004 02 26 | 704 | 0.6− | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 1999 12 08 | 704 | 0.7+ | 0.7− | 2004 02 26 | 704 | 0.4− | 0.5+ | 2006 11 25 | G96 | 0.5+ | 0.4− |
| 1999 12 08 | 704 | 0.4− | 1.1− | 2004 02 26 | 704 | 0.5+ | 1.0+ | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2000 01 04 | 704 | 0.5+ | 0.5− | 2006 08 24 | 704 | 0.5+ | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2000 01 04 | 704 | 1.0+ | 0.8− | 2006 08 24 | 704 | 0.6+ | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2000 01 04 | 704 | 0.9+ | 0.5− | 2006 08 24 | 704 | 0.1+ | 0.8+ | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2000 01 04 | 704 | 0.8+ | 0.2− | 2006 08 29 | 703 | 0.1+ | 0.8+ | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2000 01 06 | 704 | 0.9+ | 1.3− | 2006 08 29 | 703 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 0.7− | 2.4+ |
| 2000 01 06 | 704 | 1.1+ | 0.9− | 2006 08 29 | 703 | 0.1− | 0.8− | 2006 11 28 | 704 | 1.7− | 0.9+ |
| 2000 01 06 | 704 | 0.8+ | 0.4+ | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 11 28 | 704 | 2.4− | 0.4+ |
| 2002 07 05 | 644 | 0.1+ | 0.5+ | 2006 08 30 | 704 | (1.6+ | 0.8−) | 2006 11 28 | 704 | 0.0 | 0.6+ |
| 2002 07 05 | 644 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.7− | 0.9+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.4+ | 0.4+ | 2006 08 30 | 704 | (1.5− | 2.2+) | 2006 12 01 | 704 | 0.5− | 0.8+ |
| 2002 08 13 | 704 | 0.2+ | 1.1+ | 2006 09 18 | 704 | (2.0+ | 1.4−) | 2006 12 01 | 704 | 0.1+ | 0.9+ |

**(137853)∗ 2000 AB$_{53}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.24467 | | (2000.0) | | | |
| $n$ | 0.28762757 | $\omega$ | 155.92740 | | +0.46184421 | −0.88260782 |
| $a$ | 2.2729107 | $\Omega$ | 266.46450 | | +0.79883745 | +0.45691751 |
| $e$ | 0.1880166 | $i$ | 5.04489 | | +0.38543307 | +0.11058857 |
| $P$ | 3.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.7+ | 0.4+ | 2000 01 09 | 691 | 0.3− | 1.0− | 2002 09 22 | 644 | 0.1+ | 0.5+ |
| 1999 11 03 | 704 | 0.4+ | 0.7− | 2000 01 30 | 704 | 0.6+ | 0.3− | 2002 10 29 | 704 | 0.1+ | 0.9+ |
| 1999 11 03 | 704 | 0.7+ | 0.3− | 2000 01 30 | 704 | 0.0 | 0.0 | 2002 10 29 | 704 | 1.1− | 0.1+ |
| 1999 11 03 | 704 | 1.1+ | 0.5− | 2000 01 30 | 704 | 0.0 | 1.0+ | 2002 10 29 | 704 | 0.1− | 1.1− |
| 1999 11 03 | 704 | 1.1+ | 0.3− | 2000 01 30 | 704 | 1.5− | 0.0 | 2004 02 19 | 704 | 0.0 | 0.1+ |
| 1999 11 04 | 703 | 0.0 | 0.1− | 2000 01 30 | 704 | 0.8− | 0.6+ | 2004 02 19 | 704 | 0.2+ | 0.4+ |
| 1999 11 04 | 703 | 0.4− | 0.3+ | 2000 02 03 | 704 | 0.4− | 0.8+ | 2004 02 19 | 704 | 0.9+ | 0.8+ |
| 1999 11 04 | 703 | 0.1+ | 0.3− | 2000 02 03 | 704 | 0.1− | 0.2− | 2004 02 19 | 704 | 1.0+ | 0.3− |
| 1999 11 04 | 703 | 1.0− | 0.3− | 2000 02 03 | 704 | 0.5− | 0.5+ | 2004 02 19 | 704 | 0.2+ | 0.5− |
| 1999 11 16 | 704 | 0.0 | 0.8− | 2000 02 03 | 704 | 0.4− | 0.6− | 2004 03 01 | 703 | 0.3+ | 0.8+ |
| 1999 11 16 | 704 | 0.1+ | 0.2− | 2002 07 21 | 644 | 0.1+ | 0.2+ | 2004 03 01 | 703 | 0.6+ | 0.9+ |
| 1999 11 16 | 704 | 0.3+ | 0.5− | 2002 07 21 | 644 | 0.0 | 0.2+ | 2004 03 01 | 703 | 0.8− | 0.2− |
| 1999 11 16 | 704 | 0.2+ | 0.2− | 2002 07 21 | 644 | 0.1+ | 0.4+ | 2004 03 01 | 703 | 0.4− | 0.2+ |
| 1999 11 16 | 704 | 0.3+ | 0.0 | 2002 08 08 | 699 | 0.1+ | 1.2+ | 2004 03 16 | 704 | 0.1+ | 0.4+ |
| 1999 11 19 | 699 | 0.2− | 0.0 | 2002 08 08 | 699 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.2+ | 0.3+ |
| 1999 11 19 | 699 | 0.1− | 1.0+ | 2002 08 08 | 699 | 0.1− | 0.1− | 2004 03 16 | 704 | 1.3+ | 0.9− |
| 1999 11 19 | 699 | 0.7− | 1.0+ | 2002 08 08 | 699 | 0.5+ | 1.5+ | 2004 03 16 | 704 | 0.1− | 0.5+ |
| 1999 12 02 | 699 | 0.2+ | 0.7+ | 2002 08 12 | 704 | 0.6+ | 0.8+ | 2004 03 16 | 704 | 0.2− | 0.7+ |
| 1999 12 02 | 699 | 0.1− | 1.0+ | 2002 08 12 | 704 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.2+ | 1.1+ |
| 1999 12 02 | 699 | 0.3− | 0.6+ | 2002 08 12 | 704 | 1.1− | 0.3+ | 2004 03 19 | 704 | 0.2+ | 1.3+ |
| 1999 12 05 | 703 | 0.1− | 0.7+ | 2002 08 12 | 704 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.4+ | 1.3+ |
| 1999 12 05 | 703 | 0.6− | 0.9+ | 2002 08 12 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.6+ | 0.2+ |
| 1999 12 05 | 703 | 1.8− | 1.2− | 2002 08 16 | 608 | 0.4− | 0.7+ | 2004 03 19 | 704 | 0.3+ | 0.5+ |
| 1999 12 05 | 703 | (2.3− | 2.6+) | 2002 08 16 | 608 | 0.3− | 0.3− | 2004 04 12 | 703 | 1.2− | 0.5− |
| 1999 12 08 | 704 | 0.6+ | 0.1− | 2002 08 16 | 608 | 0.4− | 0.1− | 2004 04 12 | 703 | 0.0 | 0.1− |
| 1999 12 08 | 704 | 0.8+ | 0.4− | 2002 08 18 | 941 | (2.3+ | 0.7−) | 2004 04 12 | 703 | 0.6+ | 0.4+ |
| 1999 12 08 | 704 | 0.8+ | 0.2− | 2002 08 18 | 941 | 0.2− | 0.6− | 2004 04 12 | 703 | 0.7− | 0.5− |
| 1999 12 08 | 704 | 0.5+ | 0.4− | 2002 08 18 | 941 | 0.2+ | 0.5− | 2006 10 23 | 704 | 0.9+ | 0.5+ |
| 1999 12 08 | 704 | 0.5+ | 0.6− | 2002 08 26 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.9+ | 0.6− |
| 2000 01 04 | 704 | 0.0 | 0.1− | 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.6+ | 0.2+ |
| 2000 01 04 | 704 | 0.1− | 0.2+ | 2002 08 26 | 644 | 0.0 | 0.4+ | 2006 10 23 | 704 | 0.5+ | 0.2+ |
| 2000 01 04 | 704 | 0.3+ | 0.2− | 2002 09 03 | 608 | 0.5+ | 0.5+ | 2006 10 23 | 704 | 0.7+ | 0.0 |
| 2000 01 04 | 704 | 0.4− | 0.3− | 2002 09 03 | 608 | 0.6+ | 0.7− | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2000 01 04 | 704 | 0.4+ | 0.1− | 2002 09 03 | 608 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.8− | 0.5+ |
| 2000 01 06 | 704 | 0.2+ | 0.1+ | 2002 09 06 | 704 | (1.7− | 0.1+) | 2006 11 28 | 704 | 0.8− | 0.6+ |
| 2000 01 06 | 704 | 0.3− | 0.1+ | 2002 09 06 | 704 | 0.7− | 0.8+ | 2006 11 28 | 704 | 0.6− | 1.3+ |
| 2000 01 06 | 704 | 0.1− | 0.2+ | 2002 09 06 | 704 | 0.7− | 0.5+ | 2006 11 28 | 704 | 1.3− | 0.6+ |
| 2000 01 06 | 704 | 0.0 | 0.6+ | 2002 09 06 | 704 | 1.0− | 0.4+ | 2006 12 01 | 704 | 0.8+ | 1.2− |
| 2000 01 06 | 704 | 0.4− | 0.5+ | 2002 09 06 | 704 | 1.0− | 0.4+ | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2000 01 09 | 691 | 0.1− | 0.1− | 2002 09 22 | 644 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.0 | 0.1+ |
| 2000 01 09 | 691 | 0.1− | 0.9+ | 2002 09 22 | 644 | 0.0 | 0.7+ | 2006 12 01 | 704 | 0.3+ | 0.3+ |

**(137854)∗ 2000 AG$_{54}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.84320 | | (2000.0) | | | |
| $n$ | 0.25806703 | $\omega$ | 140.80573 | | +0.24822257 | −0.95449310 |
| $a$ | 2.4433239 | $\Omega$ | 294.25631 | | +0.83694819 | +0.29724188 |
| $e$ | 0.2393554 | $i$ | 10.44670 | | +0.48775330 | −0.02429368 |
| $P$ | 3.82 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | (0.8− | 2.2−) | 2000 02 03 | 704 | 0.9+ | 0.1+ | 2006 08 17 | 644 | 0.3+ | 0.5+ |
| 1999 12 15 | 704 | 0.0 | 0.2+ | 2002 08 05 | 644 | 0.1+ | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 1999 12 15 | 704 | 0.1+ | 0.0 | 2002 08 05 | 644 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.3+ |
| 1999 12 15 | 704 | 0.0 | 0.2− | 2002 08 05 | 644 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2000 01 04 | 704 | 0.2− | 0.6− | 2002 08 11 | 644 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.5+ | 0.0 |
| 2000 01 04 | 704 | 0.2− | 0.5− | 2002 08 11 | 644 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.0 |
| 2000 01 04 | 704 | 0.1− | 0.9− | 2002 08 11 | 644 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.4+ |
| 2000 01 04 | 704 | 0.0 | 0.9− | 2004 01 23 | 704 | 1.2− | 0.4− | 2006 08 22 | 644 | 0.4− | 0.0 |
| 2000 01 04 | 704 | 0.1− | 1.2− | 2004 01 23 | 704 | 0.9− | 0.4− | 2006 08 22 | 644 | 0.1+ | 0.3+ |
| 2000 01 06 | 704 | 0.6− | 0.8− | 2004 01 23 | 704 | 0.3− | 0.8− | 2006 08 29 | 703 | 0.8− | 1.9+ |
| 2000 01 06 | 704 | 0.9− | 0.6− | 2004 01 29 | 704 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 1.3− | 0.6+ |
| 2000 01 06 | 704 | 1.0− | 1.0− | 2004 01 29 | 704 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.1− |
| 2000 01 13 | 699 | 0.4+ | 0.1+ | 2004 01 29 | 704 | 0.8− | 0.5− | 2006 08 29 | 703 | 0.3− | 0.2+ |
| 2000 01 13 | 699 | 0.5+ | 1.3+ | 2004 02 19 | 704 | 0.8+ | 0.7+ | 2006 08 29 | 703 | 1.3+ | 1.3+ |
| 2000 01 13 | 699 | 0.2+ | 1.4+ | 2004 02 19 | 704 | 0.7+ | 0.7+ | 2006 08 29 | 703 | 0.9− | 0.9− |
| 2000 01 16 | 691 | 0.1+ | 0.4+ | 2004 02 19 | 704 | 0.2+ | 1.3+ | 2006 08 29 | 703 | 1.0− | 0.4+ |
| 2000 01 16 | 691 | 0.0 | 0.6+ | 2004 02 19 | 704 | 1.1+ | 0.5+ | 2006 08 29 | 703 | 0.1+ | 0.0 |
| 2000 01 16 | 691 | 0.1− | 0.5+ | 2004 02 19 | 704 | 0.1+ | 1.0+ | 2006 09 26 | 703 | 1.6− | 0.1+ |
| 2000 02 03 | 704 | 0.4+ | 0.2− | 2004 03 16 | 704 | 1.0+ | 0.1− | 2006 09 26 | 703 | 0.5+ | 0.3+ |
| 2000 02 03 | 704 | 0.4+ | 0.3− | 2004 03 16 | 704 | 0.6+ | 0.9+ | 2006 09 26 | 703 | 0.0 | 0.9− |
| 2000 02 03 | 704 | 0.2+ | 0.0 | 2004 03 16 | 704 | 1.9+ | 1.3+ | 2006 09 26 | 703 | 0.5− | 0.3+ |

**(137855)∗ 2000 AQ$_{56}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.10387 | | (2000.0) | | | |
| $n$ | 0.26049489 | $\omega$ | 0.82326 | | −0.23157651 | −0.96514972 |
| $a$ | 2.4281187 | $\Omega$ | 102.57311 | | +0.89182656 | −0.26067767 |
| $e$ | 0.0664602 | $i$ | 7.17439 | | +0.38860996 | +0.02309067 |
| $P$ | 3.78 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 703 | 0.4+ | 0.1+ | 2003 10 29 | 704 | 0.8+ | 0.1+ | 2004 02 20 | 049 | 0.6− | 0.3+ |
| 1999 12 15 | 703 | 0.2+ | 0.3+ | 2003 10 29 | 704 | 0.6+ | 0.5− | 2004 02 23 | 608 | 1.4+ | 0.1+ |
| 1999 12 15 | 703 | 0.3− | 0.2+ | 2003 10 29 | 704 | 0.5+ | 0.1+ | 2004 02 23 | 608 | 0.7+ | 0.7− |
| 1999 12 15 | 703 | 0.6− | 0.0 | 2003 12 23 | 704 | (1.9+ | 1.3+) | 2004 02 23 | 608 | 1.0+ | 0.4− |
| 2000 01 04 | 704 | 0.0 | 0.9− | 2003 12 23 | 704 | 0.7+ | 0.7+ | 2004 02 27 | 704 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.3− | 0.8− | 2003 12 23 | 704 | 0.1+ | 0.2+ | 2004 02 27 | 704 | 0.1− | 0.1− |
| 2000 01 04 | 704 | 0.1− | 1.1− | 2003 12 23 | 704 | 0.9+ | 0.2+ | 2004 02 27 | 704 | 1.3− | 1.0− |
| 2000 01 04 | 704 | 0.5+ | 0.3− | 2003 12 28 | 704 | 0.3− | 0.1+ | 2004 02 27 | 704 | 0.0 | 0.1+ |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2003 12 28 | 704 | 1.0+ | 0.1− | 2004 03 14 | 704 | 0.3+ | 0.6+ |
| 2000 01 05 | 699 | 0.7+ | 0.1− | 2003 12 28 | 704 | 0.3+ | 0.5+ | 2004 03 14 | 704 | 0.3+ | 0.5+ |
| 2000 01 05 | 699 | 0.2− | 0.3− | 2003 12 28 | 704 | 1.0+ | 0.6+ | 2004 03 14 | 704 | 0.2+ | 0.7+ |
| 2000 01 05 | 699 | 0.4+ | 0.3− | 2003 12 28 | 704 | 0.3+ | 0.1+ | 2004 03 14 | 704 | 0.3+ | 0.6+ |
| 2000 01 06 | 704 | 0.6+ | 0.6− | 2004 01 05 | 699 | (1.7+ | 0.2−) | 2004 03 14 | 704 | 0.3+ | 0.7+ |
| 2000 01 06 | 704 | 0.2− | 0.2− | 2004 01 05 | 699 | 0.5− | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.4+ |
| 2000 01 06 | 704 | 0.3− | 0.2− | 2004 01 05 | 699 | 1.5+ | 0.6− | 2004 03 23 | 704 | 0.1− | 0.5+ |
| 2000 01 06 | 704 | 0.2+ | 0.0 | 2004 01 05 | 699 | 1.3− | 0.4− | 2004 03 23 | 704 | 0.2− | 0.8+ |
| 2000 01 13 | 699 | 0.4+ | 0.5+ | 2004 01 23 | 704 | (2.7− | 0.8−) | 2004 03 23 | 704 | 0.0 | 0.6+ |
| 2000 01 13 | 699 | 0.2+ | 0.1+ | 2004 01 23 | 704 | (3.6− | 1.5−) | 2004 03 23 | 704 | 0.2− | 0.7+ |
| 2000 01 13 | 699 | 0.5− | 0.5− | 2004 01 23 | 704 | (3.0− | 0.8−) | 2004 03 29 | 703 | 0.9+ | 1.1+ |
| 2000 01 30 | 704 | 0.1+ | 0.1− | 2004 01 23 | 699 | 0.3− | 0.1+ | 2004 03 29 | 703 | (1.5+ | 0.2+) |
| 2000 01 30 | 704 | 0.2+ | 0.4− | 2004 01 23 | 704 | (3.0− | 1.0−) | 2004 03 29 | 703 | 0.6+ | 0.2+ |
| 2000 01 30 | 704 | 0.3− | 0.2− | 2004 01 23 | 699 | 0.5− | 0.2+ | 2004 03 29 | 703 | 0.2+ | 0.0 |
| 2000 01 31 | 704 | 0.2− | 0.3− | 2004 01 23 | 704 | (3.4− | 0.4−) | 2004 04 14 | 644 | 0.2+ | 0.4+ |
| 2000 01 31 | 704 | 0.1− | 0.2+ | 2004 01 23 | 699 | 0.4− | 0.5− | 2004 04 14 | 644 | 0.3− | 0.4+ |
| 2000 01 31 | 704 | 0.6− | 0.6− | 2004 01 23 | 699 | 0.3− | 0.2+ | 2004 04 14 | 644 | 0.0 | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.3+ | 0.3− | 2004 01 29 | 703 | 0.7− | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 2000 02 11 | 704 | 0.4− | 0.3− | 2004 01 29 | 703 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 1.5+ | 0.7+ |
| 2000 02 11 | 704 | 0.8− | 0.3− | 2004 01 29 | 703 | 0.7+ | 0.0 | 2006 09 30 | 703 | 1.2+ | 0.4− |
| 2000 02 11 | 704 | 0.1+ | 0.6− | 2004 01 29 | 703 | 0.6+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.8− |
| 2000 02 11 | 704 | 0.5− | 0.6+ | 2004 01 30 | 704 | 0.4+ | 0.3− | 2006 10 01 | 704 | 0.5+ | 0.1+ |
| 2000 04 02 | 704 | 0.6− | 0.2+ | 2004 01 30 | 704 | 0.7+ | 0.4− | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2000 04 02 | 704 | 0.5+ | 0.6+ | 2004 01 30 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 0.5+ |
| 2000 04 02 | 704 | 0.7+ | 0.1+ | 2004 01 30 | 704 | 1.2+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.3+ |
| 2002 09 10 | 608 | 0.5− | 0.1− | 2004 01 30 | 704 | 1.4+ | 1.1− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 09 10 | 608 | 0.5− | 0.4− | 2004 02 11 | 644 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 09 10 | 608 | 0.5− | 0.5− | 2004 02 11 | 644 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 09 28 | 608 | (1.8− | 0.6−) | 2004 02 11 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 1.1− | 0.6+ |
| 2002 09 28 | 608 | (1.8− | 0.6−) | 2004 02 14 | 608 | 0.0 | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.8+ |
| 2002 09 28 | 608 | (1.8− | 0.2−) | 2004 02 14 | 608 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2002 10 01 | 608 | 0.1− | 0.5− | 2004 02 14 | 608 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.3− | 1.0+ |
| 2002 10 01 | 608 | 0.3− | 0.7+ | 2004 02 15 | 049 | 0.6− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.3− |
| 2002 10 01 | 608 | 0.1− | 0.2− | 2004 02 15 | 049 | 0.8− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.5+ | 0.1+ | 2004 02 16 | 049 | 0.8− | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2002 10 04 | 704 | 0.6+ | 0.7+ | 2004 02 16 | 704 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2004 02 16 | 704 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | 0.2− | 1.4+ | 2004 02 16 | 704 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 10 06 | 704 | 0.8+ | 1.4+ | 2004 02 16 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2002 10 06 | 704 | 0.5+ | 1.2+ | 2004 02 17 | 691 | 0.5− | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2002 10 06 | 704 | (0.2− | 1.6+) | 2004 02 17 | 691 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 10 06 | 704 | 0.7− | 0.9+ | 2004 02 17 | 691 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.1+ |
| 2002 10 06 | 704 | 0.6− | 0.4+ | 2004 02 18 | 608 | 1.1+ | 0.4+ | 2006 11 13 | 703 | 0.7− | 0.9− |
| 2002 10 25 | 644 | 0.9− | 0.2− | 2004 02 18 | 608 | 0.8+ | 0.4+ | 2006 11 13 | 703 | 0.5− | 0.2− |
| 2002 10 25 | 644 | 1.0− | 0.4− | 2004 02 18 | 608 | 0.6+ | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2002 10 25 | 644 | 0.7− | 0.2− | 2004 02 20 | 049 | 0.3+ | 0.3− | 2006 11 19 | 703 | 0.7+ | 0.1+ |
| 2002 10 29 | 704 | 0.7+ | 0.4+ | 2004 02 20 | 049 | 0.1+ | 0.3− | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2002 10 29 | 704 | 0.6+ | 0.6+ | 2004 02 20 | 049 | 1.3+ | 0.2− | 2006 11 19 | 703 | 0.6+ | 0.3− |
| 2002 10 29 | 704 | 0.6− | 1.2+ | 2004 02 20 | 049 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.0 | 0.8− |
| 2002 11 02 | 608 | 0.2− | 0.1+ | 2004 02 20 | 049 | 0.7− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2002 11 02 | 608 | 0.1− | 0.0 | 2004 02 20 | 049 | 0.7− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.5− |
| 2002 11 02 | 608 | 0.2− | 0.1+ | 2004 02 20 | 049 | 1.3− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.8− |

**(137856)∗ 2000 AP$_{57}$ = 1994 SF$_4$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 38641)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.28348 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24534524 | $\omega$ | 59.20817 | | −0.89971128 | −0.43647386 |
| $a$ | 2.5270721 | $\Omega$ | 94.91255 | | +0.39936525 | −0.82612498 |
| $e$ | 0.1293777 | $i$ | 0.18351 | | +0.17614487 | −0.35638193 |
| $P$ | 4.02 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 25 | 691 | 0.3+ | 0.4+ | 2000 02 03 | 704 | 0.1− | 0.3+ | 2004 01 24 | 704 | 0.7− | 0.7+ |
| 1990 09 25 | 691 | 0.0 | 0.4+ | 2000 02 03 | 704 | 0.3+ | 0.8+ | 2004 01 24 | 704 | 0.2− | 0.2+ |
| 1990 09 25 | 691 | 0.1− | 0.2− | 2000 02 03 | 704 | 0.5+ | 0.3+ | 2004 01 26 | 699 | 1.5+ | 0.5− |
| 1992 02 05 | 691 | 0.1+ | 0.1− | 2000 02 08 | 691 | 0.1+ | 0.6− | 2004 01 26 | 699 | 0.3+ | 0.0 |
| 1992 02 05 | 691 | 0.2+ | 0.1− | 2000 02 08 | 691 | 0.0 | 0.5− | 2004 01 26 | 699 | 0.5+ | 0.3− |
| 1992 02 05 | 691 | 0.2− | 0.3− | 2000 02 08 | 691 | 0.0 | 0.6− | 2004 01 26 | 699 | 0.7+ | 0.6+ |
| 1994 09 28 | 691 | 0.1+ | 0.3− | 2002 09 14 | 644 | 0.1+ | 0.3+ | 2004 01 27 | 691 | 0.2− | 0.1+ |
| 1994 09 28 | 691 | 0.1− | 0.2+ | 2002 09 14 | 644 | 0.1− | 0.8+ | 2004 01 27 | 691 | 0.3− | 0.0 |
| 1994 09 28 | 691 | 0.3+ | 0.5− | 2002 09 14 | 644 | 0.4+ | 0.3+ | 2004 01 27 | 691 | 0.2− | 0.2+ |
| 1994 10 04 | 691 | 0.4+ | 0.2− | 2002 10 11 | 645 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.0 | 0.4+ |
| 1994 10 04 | 691 | 0.4− | 0.7+ | 2002 10 11 | 645 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.0 | 0.1+ |
| 1994 10 04 | 691 | 0.8− | 0.1+ | 2004 01 12 | 644 | 0.2+ | 0.7+ | 2004 01 30 | 704 | 0.4− | 0.3+ |
| 1996 01 18 | 327 | 0.3− | 0.4− | 2004 01 12 | 644 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.1+ | 0.3+ |
| 1996 01 18 | 327 | 0.4− | 0.2+ | 2004 01 12 | 644 | 0.1− | 0.8+ | 2004 01 30 | 704 | 0.0 | 0.2+ |
| 1996 01 18 | 327 | 0.8− | 1.0+ | 2004 01 13 | 699 | 0.4+ | 0.7+ | 2004 02 16 | 704 | 0.5+ | 0.5− |
| 1996 02 17 | 691 | 0.4− | 0.8− | 2004 01 13 | 699 | 0.4− | 0.5+ | 2004 02 16 | 704 | 0.1+ | 0.8+ |
| 1996 02 17 | 691 | 0.2− | 0.4− | 2004 01 13 | 699 | 1.1− | 0.6+ | 2004 02 16 | 704 | 0.4+ | 0.3− |
| 1996 02 17 | 691 | 0.0 | 0.5− | 2004 01 13 | 699 | 0.9− | 0.0 | 2004 02 26 | 704 | 0.8+ | 0.3− |
| 1998 09 16 | 691 | 0.2+ | 0.0 | 2004 01 16 | 644 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.9+ | 0.0 |
| 1998 09 16 | 691 | 0.0 | 0.4+ | 2004 01 16 | 644 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.4+ | 0.2+ |
| 1998 09 16 | 691 | 0.1− | 0.5+ | 2004 01 16 | 644 | 0.0 | 0.2+ | 2004 02 26 | 704 | 1.1+ | 0.1− |
| 1998 10 16 | 691 | 0.1− | 0.7− | 2004 01 17 | 644 | 0.0 | 0.6+ | 2004 04 14 | 645 | 0.0 | 0.0 |
| 1998 10 16 | 691 | (5.2+ | 5.2−) | 2004 01 17 | 644 | 0.2− | 0.4+ | 2004 04 14 | 645 | 0.1− | 0.0 |
| 1998 10 16 | 691 | 0.5− | 1.2− | 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 08 19 | 691 | 0.6− | 0.1− |
| 2000 01 04 | 704 | 0.1− | 0.8+ | 2004 01 19 | 699 | 0.6− | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 2000 01 04 | 704 | 0.5− | 0.1+ | 2004 01 19 | 699 | 0.5− | 0.7+ | 2006 08 19 | 691 | 0.5+ | 0.1+ |
| 2000 01 04 | 704 | 0.3− | 0.1+ | 2004 01 19 | 699 | 0.1− | 0.6+ | 2006 09 16 | 691 | 0.2+ | 0.4+ |
| 2000 01 04 | 704 | 0.0 | 0.3+ | 2004 01 19 | 699 | 0.6− | 0.9− | 2006 09 16 | 691 | 0.1+ | 0.2+ |
| 2000 01 06 | 704 | 0.8− | 0.7+ | 2004 01 19 | 703 | 0.5+ | 0.5+ | 2006 09 16 | 691 | 0.3+ | 0.2+ |
| 2000 01 06 | 704 | 0.7− | 0.6+ | 2004 01 19 | 703 | 0.8+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2000 01 06 | 704 | 0.6− | 1.3+ | 2004 01 19 | 703 | 1.2+ | 1.5+ | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2000 01 13 | 699 | 0.7− | 0.7− | 2004 01 19 | 703 | (1.9+ | 1.7+) | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2000 01 13 | 699 | 0.6+ | 0.4+ | 2004 01 21 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2000 01 13 | 699 | 0.0 | 0.9− | 2004 01 21 | 704 | 0.6+ | 0.2− | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2000 01 28 | 691 | 0.3+ | 0.4− | 2004 01 21 | 704 | 0.5+ | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2000 01 28 | 691 | 0.3+ | 0.3− | 2004 01 21 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2000 01 28 | 691 | 0.4+ | 0.2− | 2004 01 21 | 704 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2000 01 30 | 704 | 0.1+ | 0.2+ | 2004 01 22 | 644 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2000 01 30 | 704 | 0.3+ | 0.4− | 2004 01 22 | 644 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.1+ |
| 2000 01 30 | 704 | 0.7+ | 0.9+ | 2004 01 22 | 644 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2000 01 30 | 704 | (0.6+ | 2.4+) | 2004 01 24 | 704 | 0.5− | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2000 02 03 | 704 | 0.8− | 0.7+ | 2004 01 24 | 704 | 0.4− | 0.8+ | | | | |
| 2000 02 03 | 704 | 0.4+ | 1.3+ | 2004 01 24 | 704 | 0.3− | 0.1− | | | | |

**(137857)∗ 2000 AT$_{59}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.38180 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25497079 | $\omega$ | 176.17998 | | −0.90229578 | −0.43091540 |
| $a$ | 2.4630644 | $\Omega$ | 338.27943 | | +0.39459135 | −0.81312796 |
| $e$ | 0.1342195 | $i$ | 2.04410 | | +0.17366635 | −0.39132448 |
| $P$ | 3.87 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.5− | 1.2− | 2004 01 24 | 704 | 0.6+ | 0.8+ | 2004 03 17 | 691 | 0.1− | 0.1− |
| 2000 01 04 | 704 | 0.6− | 0.3− | 2004 01 24 | 704 | 0.2− | 1.3+ | 2004 03 18 | 704 | 1.2+ | 1.0+ |
| 2000 01 04 | 704 | 0.2+ | 0.3− | 2004 01 24 | 704 | 0.3− | 1.2+ | 2004 03 18 | 704 | 1.5+ | 1.1+ |
| 2000 01 04 | 704 | 0.4− | 0.4− | 2004 01 29 | 704 | 0.5+ | 0.1− | 2004 03 18 | 704 | 1.2+ | 1.0+ |
| 2000 01 04 | 704 | 0.1− | 0.6− | 2004 01 29 | 704 | 0.3+ | 0.7+ | 2004 03 18 | 704 | 1.4+ | 0.9+ |
| 2000 01 06 | 704 | 1.0− | 0.2+ | 2004 01 29 | 704 | 0.7+ | 0.8+ | 2004 03 18 | 704 | 0.6+ | 1.2+ |
| 2000 01 06 | 704 | 0.9− | 0.3+ | 2004 01 29 | 704 | 0.0 | 0.5+ | 2004 03 26 | 691 | 0.2− | 0.1+ |
| 2000 01 06 | 704 | 0.3− | 0.7− | 2004 01 29 | 704 | 0.7+ | 0.1+ | 2004 03 26 | 691 | 0.3− | 0.1+ |
| 2000 01 06 | 704 | 0.8− | 1.1− | 2004 01 30 | 291 | 0.1− | 0.5− | 2004 03 26 | 691 | 0.2− | 0.1+ |
| 2000 01 30 | 703 | 0.1− | 0.7+ | 2004 01 30 | 291 | 0.3− | 0.5− | 2004 03 27 | 691 | 0.4− | 0.0 |
| 2000 01 30 | 703 | (2.1− | 1.4+) | 2004 01 30 | 291 | 0.7− | 0.5− | 2004 03 27 | 691 | 0.2− | 0.1− |
| 2000 01 30 | 703 | 0.9− | 0.1− | 2004 02 11 | 703 | 0.5+ | 0.4+ | 2004 03 27 | 691 | 0.4− | 0.0 |
| 2000 01 30 | 703 | 0.4− | 0.8− | 2004 02 11 | 703 | 0.7− | 1.2+ | 2004 05 16 | 704 | 0.4+ | 0.3− |
| 2000 02 03 | 704 | 0.1− | 0.4− | 2004 02 11 | 703 | (3.3+ | 0.4+) | 2004 05 16 | 704 | 1.1+ | 0.1+ |
| 2000 02 03 | 704 | 0.3− | 0.4− | 2004 02 11 | 703 | 0.0 | 0.1+ | 2004 05 16 | 704 | 0.8+ | 0.5+ |
| 2000 02 03 | 704 | 0.1− | 0.3− | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 03 | 691 | (1.8− | 0.4+) |
| 2000 02 03 | 704 | 0.1+ | 0.8− | 2004 02 11 | 644 | 0.2+ | 0.1− | 2006 10 03 | 691 | 0.0 | 0.1+ |
| 2000 02 03 | 704 | 0.2+ | 0.4− | 2004 02 11 | 644 | 0.0 | 0.2− | 2006 10 03 | 691 | 0.1− | 0.0 |
| 2000 02 11 | 704 | 0.0 | 0.1− | 2004 02 14 | 691 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2000 02 11 | 704 | 0.2+ | 0.8− | 2004 02 14 | 691 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 0.7+ | 1.4+ | 2004 02 14 | 691 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 2000 02 11 | 704 | 0.4+ | 0.6+ | 2004 02 17 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 104 | 0.7+ | 0.4− |
| 2000 03 04 | 704 | 0.5+ | 0.3− | 2004 02 17 | 704 | 0.0 | 0.1+ | 2006 10 17 | 104 | 0.7+ | 0.7− |
| 2000 03 04 | 704 | 1.1+ | 0.6− | 2004 02 17 | 704 | 0.1− | 0.2+ | 2006 10 17 | 104 | 0.6+ | 0.0 |
| 2000 03 04 | 704 | 0.8+ | 0.1+ | 2004 02 17 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.4− |
| 2000 03 04 | 704 | 0.1+ | 1.1− | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.7+ | 2004 02 17 | 608 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.9+ | 1.3+ | 2004 02 17 | 608 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.5− |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2004 02 17 | 608 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.7− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.5− | 0.2− | 2004 02 21 | 608 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.6− | 1.0+ | | |
| 2002 10 02 | 704 | 0.0 | 0.3+ | 2004 02 21 | 608 | 0.5− | 1.3− | 2006 10 21 | 703 | 1.2+ | 0.7− | | |
| 2002 10 02 | 704 | 0.5− | 1.0+ | 2004 02 21 | 608 | 0.2− | 1.1− | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.4− | 0.2− | 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 2002 10 03 | 704 | 0.1+ | 1.0+ | 2004 02 26 | 704 | 0.7+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | (2.0+ | 0.9+) | 2004 02 26 | 704 | 0.3+ | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.1− | | |
| 2002 10 03 | 704 | 1.5− | 0.5− | 2004 02 26 | 704 | 0.6+ | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | 0.9− | 0.4+ | 2004 02 26 | 704 | 0.9+ | 0.8+ | 2006 11 01 | 691 | 0.3− | 0.2− | | |
| 2002 10 04 | 704 | 0.0 | 1.2+ | 2004 02 26 | 704 | 1.0+ | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.0 | | |
| 2002 10 04 | 704 | 0.3+ | 0.5+ | 2004 02 26 | 704 | 0.7+ | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.2− | | |
| 2002 10 04 | 704 | 0.0 | 0.8+ | 2004 02 26 | 704 | 0.7+ | 0.9+ | 2006 11 10 | 691 | 0.1− | 0.1− | | |
| 2002 10 07 | 699 | 0.4− | 0.5+ | 2004 02 26 | 704 | 0.9+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2002 10 07 | 699 | 0.5− | 0.2− | 2004 02 26 | 704 | 0.6+ | 0.9+ | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2002 10 07 | 699 | 0.5− | 0.2+ | 2004 03 11 | 644 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.2− | | |
| 2002 10 07 | 699 | (3.1− | 1.3+) | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.6+ | 1.4+ | | |
| 2002 10 07 | 704 | 0.6+ | 0.3+ | 2004 03 11 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.9+ | 0.3+ | | |
| 2002 10 07 | 704 | (0.7− | 2.0+) | 2004 03 14 | 703 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.7+ | 1.5+ | | |
| 2002 10 07 | 704 | (0.1− | 4.2+) | 2004 03 14 | 703 | 0.3− | 0.1− | 2006 11 17 | 703 | 1.1− | 0.4− | | |
| 2003 12 22 | 704 | 0.2+ | 0.5+ | 2004 03 14 | 703 | 0.5+ | 0.2− | 2006 11 17 | 703 | 1.0+ | 2.6+ | | |
| 2003 12 22 | 704 | 0.8+ | 0.7− | 2004 03 14 | 703 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.9+ | | |
| 2003 12 22 | 704 | 0.4+ | 0.4− | 2004 03 15 | 704 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.3+ | 1.4+ | | |
| 2004 01 23 | 699 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.9− | | |
| 2004 01 23 | 699 | 0.3− | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.3− | | |
| 2004 01 23 | 699 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2004 01 23 | 699 | 0.3− | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.1− | 0.0 | | |
| 2004 01 24 | 704 | 0.8+ | 1.1+ | 2004 03 17 | 691 | 0.3− | 0.1+ | | | | | | |
| 2004 01 24 | 704 | 1.0+ | 1.5+ | 2004 03 17 | 691 | 0.2− | 0.1− | | | | | | |

**(137858)∗ 2000 AX$_{59}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.83246 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27925788 | $\omega$ | 0.30722 | | +0.08145142 | | −0.99555770 |
| $a$ | 2.3181014 | $\Omega$ | 85.02112 | | +0.91433241 | | +0.05577790 |
| $e$ | 0.1612204 | $i$ | 2.71726 | | +0.39668868 | | +0.07585306 |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.6+ | 0.1− | 2002 10 02 | 704 | 1.1− | 0.2+ | 2004 04 14 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 04 | 704 | 0.5+ | 0.1+ | 2002 10 02 | 704 | (1.6− | 0.7+) | 2004 04 14 | 691 | 0.8− | 0.0 | | |
| 2000 01 04 | 704 | 0.4+ | 0.5− | 2002 10 02 | 704 | 1.3− | 0.5+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | | |
| 2000 01 04 | 704 | 0.7+ | 0.6+ | 2002 10 02 | 704 | 1.2− | 0.4+ | 2004 04 19 | 691 | 0.0 | 0.3+ | | |
| 2000 01 04 | 704 | 0.9+ | 0.2+ | 2002 10 03 | 704 | 0.8− | 0.3− | 2004 04 19 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 06 | 704 | 0.1− | 0.2− | 2002 10 03 | 704 | 0.5− | 0.1− | 2004 04 19 | 704 | 0.4− | 1.4− | | |
| 2000 01 06 | 704 | 0.0 | 0.5− | 2002 10 03 | 704 | 0.4− | 0.0 | 2004 04 19 | 704 | 1.2+ | 0.7− | | |
| 2000 01 06 | 704 | 0.7+ | 0.4− | 2002 10 03 | 704 | 0.5− | 0.3− | 2004 04 19 | 704 | 0.9+ | 0.3+ | | |
| 2000 01 06 | 704 | 1.1+ | 0.8− | 2002 10 03 | 704 | 0.4− | 0.2− | 2004 04 19 | 704 | 0.5+ | 0.3+ | | |
| 2000 01 30 | 704 | 0.4− | 0.7+ | 2002 10 11 | 704 | 0.9− | 0.5+ | 2004 05 24 | 691 | 0.2+ | 0.2+ | | |
| 2000 01 30 | 704 | 0.4+ | 0.9+ | 2002 10 11 | 704 | 0.5− | 0.2− | 2004 05 24 | 691 | 0.1− | 0.2+ | | |
| 2000 01 30 | 704 | 0.2− | 0.5+ | 2002 10 11 | 704 | 0.9− | 0.0 | 2004 05 24 | 691 | 0.0 | 0.3+ | | |
| 2000 02 07 | 703 | 1.2− | 1.0+ | 2002 10 11 | 704 | 0.5− | 0.2− | 2005 06 30 | 691 | 0.3− | 0.3+ | | |
| 2000 02 07 | 703 | 0.5+ | 0.7− | 2002 10 11 | 704 | 0.8− | 1.0− | 2005 06 30 | 691 | 0.2+ | 0.0 | | |
| 2000 02 07 | 703 | 0.0 | 0.1+ | 2002 10 28 | 644 | 0.0 | 0.0 | 2005 06 30 | 691 | 0.1+ | 0.0 | | |
| 2000 02 07 | 703 | 0.7− | 0.4+ | 2002 10 28 | 644 | 0.3+ | 0.1+ | 2005 07 02 | 691 | 0.1− | 0.3+ | | |
| 2000 02 11 | 704 | 0.5− | 1.0+ | 2002 10 28 | 644 | 0.6+ | 0.5+ | 2005 07 02 | 691 | 0.3− | 0.2+ | | |
| 2000 02 11 | 704 | 0.4+ | 0.3+ | 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 07 02 | 691 | 0.2− | 0.2+ | | |
| 2000 02 11 | 704 | 1.2− | 0.2− | 2002 10 30 | 645 | 0.1+ | 0.1+ | 2005 07 07 | 691 | 0.3+ | 0.1− | | |
| 2000 02 11 | 704 | 0.9− | 1.2+ | 2002 10 31 | 645 | 0.1+ | 0.0 | 2005 07 07 | 691 | 0.1− | 0.0 | | |
| 2000 02 11 | 704 | 0.2− | 0.2− | 2002 10 31 | 645 | 0.1+ | 0.0 | 2005 07 07 | 691 | 0.0 | 0.2− | | |
| 2002 09 08 | 608 | 0.3− | 0.0 | 2002 11 02 | 608 | (0.2− | 1.5+) | 2005 07 11 | 691 | 0.0 | 0.2− | | |
| 2002 09 08 | 608 | 0.3+ | 0.2− | 2002 11 02 | 608 | 0.2− | 1.4+ | 2005 07 11 | 691 | 0.1+ | 0.2− | | |
| 2002 09 08 | 608 | 0.3+ | 0.0 | 2002 11 02 | 608 | (0.3− | 1.6+) | 2005 07 11 | 691 | 0.1+ | 0.1− | | |
| 2002 09 15 | 683 | 1.2+ | 0.9+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3− | 0.3− | | |
| 2002 09 15 | 683 | 1.2− | 0.6+ | 2002 11 08 | 645 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.5− | 0.1− | | |
| 2002 09 15 | 608 | 0.1− | 0.6− | 2004 03 14 | 644 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.7− | | |
| 2002 09 15 | 608 | 0.3− | 0.2+ | 2004 03 14 | 644 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.1− | | |
| 2002 09 15 | 608 | 0.2− | 0.5− | 2004 03 14 | 644 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2002 09 27 | 644 | 0.8− | 0.5+ | 2004 03 19 | 704 | 0.9+ | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.1− | | |
| 2002 09 27 | 644 | 0.8− | 0.4+ | 2004 03 19 | 704 | 0.8+ | 0.9+ | 2006 10 28 | G96 | 0.2− | 0.1+ | | |
| 2002 09 27 | 644 | 0.8− | 0.6+ | 2004 03 19 | 704 | (1.7+ | 0.5−) | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2002 09 28 | 644 | 0.5− | 0.5+ | 2004 03 19 | 704 | 1.0+ | 0.9+ | 2006 11 13 | G96 | 0.8− | 0.1− | | |
| 2002 09 28 | 644 | 0.5− | 0.4+ | 2004 03 22 | 704 | 0.4+ | 1.0+ | 2006 11 13 | G96 | 0.3+ | 0.5− | | |
| 2002 09 28 | 644 | 0.7− | 0.7+ | 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2002 09 30 | 704 | 0.1+ | 0.9+ | 2004 03 22 | 704 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.7− | | |
| 2002 09 30 | 704 | 0.5+ | 0.7+ | 2004 03 22 | 704 | 0.7+ | 1.0+ | 2006 11 18 | 704 | 0.1+ | 0.2− | | |
| 2002 09 30 | 704 | 1.1− | 0.6+ | 2004 03 22 | 704 | (1.6+ | 0.1+) | 2006 11 18 | 704 | 0.3+ | 0.6+ | | |
| 2002 09 30 | 704 | 0.1− | 1.3+ | 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.1+ | 1.2+ | | |

**(137859)∗ 2000 AX$_{61}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.72183 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25961074 | $\omega$ | 137.72492 | | −0.09278430 | | −0.99318245 |
| $a$ | 2.4336285 | $\Omega$ | 317.45597 | | +0.88332454 | | −0.04940053 |
| $e$ | 0.0798193 | $i$ | 5.99057 | | +0.45948757 | | −0.10558510 |
| $P$ | 3.80 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.3+ | 0.2− | 2002 09 08 | 113 | 0.8− | 0.9+ | 2004 02 19 | 704 | 0.0 | 1.4+ | | |
| 2000 01 04 | 704 | 0.4+ | 0.6− | 2002 10 04 | 644 | 0.0 | 0.3+ | 2004 02 19 | 704 | 0.9+ | 0.3+ | | |
| 2000 01 04 | 704 | 0.2+ | 1.6− | 2002 10 04 | 644 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.1+ | 0.8+ | | |
| 2000 01 04 | 704 | 0.5+ | 0.4− | 2002 10 04 | 644 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.9+ | | |
| 2000 01 04 | 704 | 0.4+ | 0.3+ | 2002 10 04 | 704 | (1.9− | 1.2+) | 2004 02 23 | 704 | 0.2− | 0.4+ | | |
| 2000 01 06 | 704 | 0.1− | 0.2− | 2002 10 04 | 704 | 1.5− | 0.0 | 2004 02 23 | 704 | 0.2− | 1.4+ | | |
| 2000 01 06 | 704 | 0.2− | 0.4− | 2002 10 04 | 704 | 1.0− | 0.1+ | 2004 03 15 | 704 | 0.7+ | 0.3− | | |
| 2000 01 06 | 704 | 0.6+ | 0.5− | 2002 10 04 | 704 | 1.4− | 0.3− | 2004 03 15 | 704 | 0.4− | 1.2+ | | |
| 2000 01 06 | 704 | 0.3− | 0.8− | 2002 10 09 | 704 | 1.2+ | 0.3+ | 2004 03 15 | 704 | 0.7+ | 0.8+ | | |
| 2000 01 30 | 703 | 0.2− | 0.3+ | 2002 10 09 | 704 | 0.2− | 0.5+ | 2004 03 15 | 704 | 0.7+ | 0.0 | | |
| 2000 01 30 | 703 | 1.2− | 0.4+ | 2002 10 09 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 704 | 0.4− | 0.1+ | | |
| 2000 01 30 | 703 | 0.8− | 0.8+ | 2002 10 09 | 704 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 0.4+ | 0.4+ | | |
| 2000 01 30 | 703 | 0.1+ | 0.6+ | 2002 10 09 | 704 | 0.4+ | 1.0+ | 2004 03 18 | 704 | 0.8+ | 0.1− | | |
| 2000 02 03 | 704 | 0.4− | 0.7+ | 2002 10 12 | 704 | 0.2− | 0.2− | 2004 03 18 | 704 | 0.2− | 0.2+ | | |
| 2000 02 03 | 704 | 0.1+ | 0.3+ | 2002 10 12 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.5+ | 0.7+ | | |
| 2000 02 03 | 704 | 0.2− | 0.0 | 2002 10 12 | 704 | 0.4+ | 0.4− | 2004 03 18 | 704 | 0.2+ | 1.0+ | | |
| 2000 02 03 | 704 | 0.4− | 0.0 | 2002 10 31 | 699 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.1+ | 0.3− | | |
| 2000 02 03 | 704 | 0.8− | 0.1+ | 2002 10 31 | 699 | 0.8+ | 0.8+ | 2004 03 20 | 704 | 0.4+ | 0.2+ | | |
| 2000 02 11 | 704 | 0.4− | 0.1− | 2002 10 31 | 699 | 0.8− | 0.9− | 2004 03 20 | 704 | 0.2+ | 0.5+ | | |
| 2000 02 11 | 704 | 0.2− | 0.7+ | 2002 10 31 | 699 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.7+ | 0.3+ | | |
| 2000 02 11 | 704 | 0.4− | 0.2+ | 2002 11 08 | 704 | 0.2− | 0.8+ | 2004 03 20 | 704 | 0.6+ | 0.4+ | | |
| 2000 02 11 | 704 | 0.7+ | 0.5+ | 2002 11 08 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.4− | | |
| 2000 02 11 | 704 | 0.6− | 1.0+ | 2002 11 08 | 704 | 0.4− | 1.2+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 2000 03 04 | 691 | 0.0 | 0.1− | 2002 11 08 | 704 | 0.7+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 2000 03 04 | 691 | 0.1− | 0.4− | 2002 11 08 | 704 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2000 03 04 | 691 | 0.2+ | 0.7− | 2002 11 08 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.1− | | |
| 2000 03 05 | 704 | 0.0 | 1.4+ | 2002 11 08 | 704 | 1.0− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2000 03 05 | 704 | 0.0 | 0.9+ | 2002 11 08 | 704 | 0.6− | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.0 | | |
| 2000 03 05 | 704 | 0.9+ | 0.3− | 2002 12 01 | 704 | 0.5− | 0.9+ | 2006 10 22 | 644 | 0.4+ | 0.0 | | |
| 2000 03 05 | 704 | 0.2+ | 0.7+ | 2002 12 01 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2000 03 05 | 704 | 0.5− | 0.1+ | 2002 12 01 | 704 | (1.8+ | 1.0+) | 2006 11 13 | 644 | 0.0 | 0.2− | | |
| 2000 03 10 | 691 | 0.0 | 0.4− | 2004 01 29 | 704 | 0.2− | 1.0− | 2006 11 13 | 644 | 0.0 | 0.1− | | |
| 2000 03 10 | 691 | 0.1+ | 0.5− | 2004 01 29 | 704 | 0.1− | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2000 03 10 | 691 | 0.0 | 0.4− | 2004 01 29 | 704 | 1.2− | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.5− | | |
| 2002 09 06 | 704 | 0.6− | 0.2+ | 2004 01 29 | 699 | 0.4+ | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.4− | | |
| 2002 09 06 | 704 | 0.3− | 0.5− | 2004 01 29 | 699 | 0.6− | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.3− | | |
| 2002 09 06 | 704 | (0.2− | 2.5+) | 2004 01 29 | 699 | 0.4+ | 0.7− | 2006 11 15 | 703 | 0.3+ | 0.7− | | |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2004 01 29 | 699 | (0.3+ | 1.7−) | 2006 11 23 | 703 | 0.2+ | 0.0 | | |
| 2002 09 08 | 113 | 0.2+ | 1.3+ | 2004 02 19 | 704 | 0.8+ | 0.5+ | 2006 11 23 | 703 | 0.7− | 0.5− | | |
| 2002 09 08 | 113 | 0.6+ | 0.0 | 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 11 23 | 703 | 0.0 | 0.3− | | |
| 2002 09 08 | 113 | 0.8− | 0.8+ | 2004 02 19 | 704 | 0.4+ | 0.7+ | 2006 11 23 | 703 | 1.0− | 0.7− | | |

**(137860)∗ 2000 AK$_{65}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.88990 | | (2000.0) | | −0.88933696 | −0.40173732 |
| $n$ | 0.24687076 | $\omega$ | 38.91992 | | +0.33467092 | −0.89731058 |
| $a$ | 2.5166507 | $\Omega$ | 116.07462 | | +0.31156884 | −0.18286841 |
| $e$ | 0.1531080 | $i$ | 14.07059 | | | |
| $P$ | 3.99 | $H$ | 15.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 1.2+ | 0.9− | 2003 12 17 | 703 | 0.4+ | 0.8+ | 2004 02 14 | 703 | 0.6+ | 0.2− |
| 1999 12 07 | 704 | 0.1− | 1.1− | 2003 12 17 | 703 | 0.6− | 0.7− | 2004 02 14 | 703 | 1.1− | 0.1− |
| 1999 12 07 | 704 | 0.1− | 0.5− | 2003 12 22 | 704 | 0.6+ | 0.3− | 2004 02 14 | 703 | 0.1− | 0.4− |
| 2000 01 04 | 704 | 0.2− | 0.1− | 2003 12 22 | 704 | 0.4+ | 0.4− | 2004 02 15 | 704 | 0.6+ | 0.3+ |
| 2000 01 04 | 704 | 0.7− | 1.0+ | 2003 12 22 | 704 | 0.4+ | 0.3− | 2004 02 15 | 704 | 0.4+ | 0.4+ |
| 2000 01 04 | 704 | 0.2− | 0.6+ | 2003 12 22 | 704 | 0.7+ | 0.2− | 2004 02 15 | 704 | 0.4+ | 0.4+ |
| 2000 01 06 | 704 | 0.4− | 0.7− | 2003 12 22 | 704 | 0.4+ | 0.1− | 2004 02 15 | 704 | 0.1+ | 0.4+ |
| 2000 01 06 | 704 | 0.4− | 0.4− | 2003 12 27 | 704 | 0.0 | 0.4− | 2004 02 18 | 644 | 0.3+ | 0.1− |
| 2000 01 06 | 704 | 0.2− | 0.1− | 2003 12 27 | 704 | 0.3+ | 0.2− | 2004 02 18 | 644 | 0.2+ | 0.4+ |
| 2000 01 06 | 704 | 0.2− | 0.2+ | 2003 12 27 | 704 | 0.3− | 0.5− | 2004 02 18 | 644 | 0.0 | 0.2+ |
| 2000 01 06 | 699 | 1.0− | 0.4+ | 2003 12 27 | 704 | 0.2− | 0.3− | 2004 02 22 | 703 | 0.0 | 0.7+ |
| 2000 01 06 | 704 | 0.5− | 0.0 | 2003 12 27 | 704 | 0.1− | 0.1+ | 2004 02 22 | 703 | 0.3− | 0.5+ |
| 2000 01 06 | 699 | 0.1+ | 0.2− | 2004 01 13 | 699 | 0.3− | 1.1− | 2004 02 22 | 703 | 0.2+ | 0.2+ |
| 2000 01 06 | 699 | 0.1+ | 0.6+ | 2004 01 13 | 699 | 0.1− | 0.2+ | 2004 02 22 | 703 | 0.7− | 0.5+ |
| 2000 03 11 | 703 | 0.6+ | 0.3− | 2004 01 13 | 699 | 0.3− | 0.1− | 2004 04 12 | 704 | (1.6+ | 0.9+) |
| 2000 03 11 | 703 | 0.1− | 0.2− | 2004 01 13 | 699 | 0.7− | 0.5+ | 2004 04 12 | 704 | 0.8+ | 0.5− |
| 2000 03 11 | 703 | (3.2− | 0.5+) | 2004 01 18 | 644 | 0.0 | 0.3+ | 2004 04 12 | 704 | 0.6+ | 0.7− |
| 2000 03 11 | 703 | 1.0+ | 0.1+ | 2004 01 18 | 644 | 0.0 | 0.4+ | 2004 04 12 | 704 | 0.8+ | 0.2− |
| 2000 03 12 | 699 | 0.1+ | 0.2− | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2004 05 14 | 645 | 0.1− | 0.0 |
| 2000 03 12 | 699 | 0.4+ | 0.0 | 2004 01 28 | 703 | 0.0 | 0.2+ | 2004 05 14 | 645 | 0.1− | 0.0 |
| 2000 03 12 | 699 | 0.6+ | 0.1− | 2004 01 28 | 703 | 0.3− | 0.6+ | 2006 09 25 | 703 | 1.4− | 0.4+ |
| 2000 03 12 | 699 | 0.1+ | 0.3+ | 2004 01 28 | 703 | 0.1− | 0.4+ | 2006 09 25 | 703 | 0.0 | 0.2− |
| 2002 10 08 | 644 | 0.1+ | 0.1+ | 2004 01 28 | 703 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.7− | 1.4− |
| 2002 10 08 | 644 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.0 | 0.4− | 2006 09 25 | 703 | (1.5− | 1.8−) |
| 2002 10 08 | 644 | 0.2− | 0.0 | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.5+ | 0.4+ |
| 2003 12 01 | 704 | 0.4− | 0.5− | 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.5+ | 0.5+ |
| 2003 12 01 | 704 | 0.0 | 0.2+ | 2004 01 30 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2003 12 01 | 704 | 0.6+ | 0.1− | 2004 01 30 | 704 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2003 12 01 | 704 | (2.0− | 0.6+) | 2004 02 10 | 644 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2003 12 01 | 704 | 1.4− | 0.7+ | 2004 02 10 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.4+ |
| 2003 12 17 | 703 | 0.2+ | 0.2− | 2004 02 10 | 644 | 0.1− | 0.1− | | | | |
| 2003 12 17 | 703 | (1.0− | 2.4−) | 2004 02 14 | 703 | 0.1− | 1.1− | | | | |

**(137861)∗ 2000 AA$_{66}$ = 2002 RL$_{136}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34859)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.99709 | | (2000.0) | | +0.04053380 | −0.99109004 |
| $n$ | 0.25320718 | $\omega$ | 346.73198 | | +0.92811753 | −0.00968453 |
| $a$ | 2.4744881 | $\Omega$ | 100.83666 | | +0.37007413 | +0.13284102 |
| $e$ | 0.1369634 | $i$ | 7.42219 | | | |
| $P$ | 3.89 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 12 | 691 | 0.2− | 0.6− | 2002 09 13 | 704 | 0.7− | 1.4+ | 2004 03 18 | 703 | 0.4+ | 0.3+ |
| 1996 01 12 | 691 | 0.2− | 0.7− | 2002 09 17 | 644 | 0.6+ | 0.6+ | 2004 03 18 | 703 | 0.2+ | 0.8+ |
| 1996 01 12 | 691 | 0.3− | 0.6− | 2002 09 17 | 644 | 0.1+ | 0.7+ | 2004 03 18 | 703 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 0.5+ | 1.0+ | 2002 09 17 | 644 | 0.4+ | 0.4+ | 2004 03 18 | 049 | 0.4− | 0.6− |
| 2000 01 04 | 704 | 0.2+ | 0.6− | 2004 01 23 | 704 | 0.9+ | 0.4+ | 2004 03 18 | 049 | 0.5− | 0.5− |
| 2000 01 04 | 704 | 0.9+ | 0.6+ | 2004 01 23 | 704 | 1.0+ | 0.1− | 2004 03 18 | 049 | 0.9− | 0.8+ |
| 2000 01 04 | 704 | 0.5+ | 1.5+ | 2004 01 23 | 704 | 1.1+ | 0.4− | 2004 03 23 | 704 | 0.1− | 0.5+ |
| 2000 01 06 | 704 | 1.1+ | 0.3+ | 2004 01 23 | 704 | 1.2+ | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.6+ |
| 2000 01 06 | 704 | 0.6+ | 0.3− | 2004 01 23 | 704 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.9+ |
| 2000 01 06 | 704 | 0.6+ | 0.8− | 2004 02 15 | 049 | (3.7− | 1.7−) | 2004 03 23 | 704 | 0.1+ | 1.4+ |
| 2000 02 28 | 704 | 0.1− | 0.6− | 2004 02 15 | 049 | (4.3− | 1.5−) | 2004 03 23 | 704 | 0.0 | 0.3− |
| 2000 02 28 | 704 | 0.3+ | 0.5+ | 2004 02 16 | 049 | (3.2− | 2.4−) | 2005 02 13 | 809 | 0.2− | 0.0 |
| 2000 02 28 | 704 | 0.2− | 0.1− | 2004 02 16 | 704 | 0.5− | 0.0 | 2005 02 13 | 809 | 0.8− | 0.3+ |
| 2000 02 28 | 704 | 0.4+ | 0.2− | 2004 02 16 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 0.1+ | 0.8+ |
| 2000 02 28 | 704 | 0.1+ | 0.9+ | 2004 02 16 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 703 | 0.7− | 0.1− |
| 2000 03 06 | 704 | 0.6+ | 0.2− | 2004 02 16 | 704 | 0.2− | 0.4+ | 2006 09 25 | 703 | (0.2− | 1.8+) |
| 2000 03 06 | 704 | 0.1+ | 0.2+ | 2004 02 18 | 608 | 0.3− | 0.5+ | 2006 09 25 | 703 | 0.0 | 0.4+ |
| 2000 03 06 | 704 | 0.4− | 0.3+ | 2004 02 18 | 608 | 0.5− | 0.4+ | 2006 10 21 | 703 | 1.3− | 0.7− |
| 2000 03 06 | 704 | 0.0 | 0.1+ | 2004 02 18 | 608 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2000 03 06 | 704 | 0.0 | 0.3+ | 2004 02 23 | 608 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.4− | 0.7+ |
| 2000 03 09 | 704 | 0.4+ | 0.4+ | 2004 02 23 | 608 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2000 03 09 | 704 | 0.4− | 0.5+ | 2004 02 23 | 608 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2000 03 09 | 704 | 0.1− | 1.8+ | 2004 03 12 | 049 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2000 03 09 | 704 | 0.3− | 0.8+ | 2004 03 12 | 049 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2000 03 09 | 704 | 0.3+ | 1.1+ | 2004 03 12 | 049 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.9− | 0.9+ |
| 2002 09 11 | 608 | 0.4− | 0.3− | 2004 03 14 | 704 | 0.6− | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.5− |
| 2002 09 11 | 608 | 0.4− | 0.0 | 2004 03 14 | 704 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.5+ | 1.1+ |
| 2002 09 11 | 608 | 0.8− | 0.9+ | 2004 03 14 | 704 | 0.0 | 0.8+ | 2006 10 28 | 703 | 1.1+ | 0.2+ |
| 2002 09 13 | 704 | 0.3− | 1.1+ | 2004 03 14 | 704 | 0.2+ | 0.1− | | | | |
| 2002 09 13 | 704 | (1.1− | 1.6+) | 2004 03 18 | 703 | 0.1− | 0.5+ | | | | |

**(137862)∗ 2000 AP$_{66}$ = 2002 US$_{14}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37256)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.19445 | | (2000.0) | | −0.37440193 | −0.92450975 |
| $n$ | 0.28395007 | $\omega$ | 30.85079 | | +0.83532306 | −0.36972714 |
| $a$ | 2.2924932 | $\Omega$ | 81.21854 | | +0.40256499 | −0.09264748 |
| $e$ | 0.1975474 | $i$ | 4.14588 | | | |
| $P$ | 3.47 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.4+ | 0.5− | 2002 10 03 | 704 | 0.7− | 0.4+ | 2004 05 15 | 704 | 0.0 | 0.6+ |
| 1999 12 06 | 704 | 0.1− | 0.3− | 2002 10 03 | 704 | 0.5− | 0.5+ | 2004 05 15 | 599 | 0.3+ | 0.4+ |
| 1999 12 06 | 704 | 0.1− | 0.5− | 2002 10 03 | 704 | 0.3− | 0.3+ | 2004 05 15 | 599 | 0.6+ | 1.4+ |
| 1999 12 06 | 704 | 0.2+ | 0.4− | 2002 10 03 | 704 | 0.1+ | 0.5+ | 2004 05 15 | 599 | 0.2− | 0.8+ |
| 1999 12 06 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.1− | 0.2+ | 2004 05 19 | 704 | 1.0+ | 0.5+ |
| 2000 01 04 | 704 | 0.2+ | 1.1− | 2002 10 11 | 704 | (0.4− | 1.7+) | 2004 05 19 | 704 | 1.0+ | 1.3+ |
| 2000 01 04 | 704 | 0.2+ | 0.5− | 2002 10 11 | 704 | 0.7− | 0.4+ | 2004 05 19 | 704 | 0.5+ | 0.4− |
| 2000 01 04 | 704 | 0.6+ | 0.9+ | 2002 10 11 | 704 | 0.0 | 0.5+ | 2004 05 19 | 704 | 0.5+ | 1.4+ |
| 2000 01 06 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.3+ | 0.5− | 2004 06 17 | 691 | 0.2+ | 0.3+ |
| 2000 01 06 | 704 | 0.5+ | 0.3− | 2002 10 30 | 644 | 0.7− | 0.5+ | 2004 06 17 | 691 | 0.0 | 0.2+ |
| 2000 01 06 | 704 | 0.7+ | 0.6+ | 2002 10 30 | 644 | 0.7− | 0.5+ | 2004 06 17 | 691 | 0.1+ | 0.2+ |
| 2000 01 06 | 704 | 0.6+ | 0.4+ | 2002 10 30 | 644 | 0.8− | 0.7+ | 2005 08 04 | 644 | 0.4− | 0.1+ |
| 2000 01 30 | 703 | 0.2− | 0.3+ | 2002 10 31 | 704 | 0.2− | 0.1+ | 2005 08 04 | 644 | 0.2− | 0.2+ |
| 2000 01 30 | 703 | 0.4− | 0.4+ | 2002 10 31 | 704 | 0.0 | 0.1− | 2005 08 04 | 644 | 0.1− | 0.4+ |
| 2000 01 30 | 703 | 0.3− | 0.3+ | 2002 10 31 | 704 | 0.5− | 0.5+ | 2006 10 22 | 691 | 1.0+ | 0.2− |
| 2000 01 30 | 703 | 0.1− | 1.1+ | 2002 10 31 | 704 | 0.5− | 0.1+ | 2006 10 22 | 691 | 0.7+ | 0.1− |
| 2000 02 03 | 704 | 1.1+ | 0.1+ | 2002 10 31 | 704 | 0.4− | 0.3+ | 2006 10 22 | 691 | 0.6+ | 0.1+ |
| 2000 02 03 | 704 | 0.1− | 0.0 | 2002 11 05 | 699 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2000 02 03 | 704 | 0.2+ | 0.6− | 2002 11 05 | 699 | 0.2− | 0.7+ | 2006 10 28 | 691 | 0.4− | 0.2+ |
| 2000 02 03 | 704 | 0.5+ | 0.1− | 2002 11 05 | 699 | 0.8+ | 1.3+ | 2006 10 28 | 691 | 0.4− | 0.5+ |
| 2000 02 03 | 704 | 0.3+ | 0.3− | 2002 11 05 | 699 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2000 02 11 | 704 | 0.2− | 0.7+ | 2002 11 07 | 704 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.5− | 0.0 |
| 2000 02 11 | 704 | 0.3+ | 0.7+ | 2002 11 07 | 704 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 02 11 | 704 | 0.1− | 0.6+ | 2002 11 07 | 704 | 1.4+ | 1.0+ | 2006 11 25 | G96 | 1.0− | 0.7− |
| 2000 02 11 | 704 | 0.5− | 0.1− | 2002 11 07 | 704 | (0.0 | 1.7+) | 2006 11 25 | G96 | 0.8− | 0.3− |
| 2000 02 11 | 704 | 0.7− | 0.6+ | 2002 11 11 | 704 | 1.0− | 0.5+ | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2000 02 28 | 704 | 0.3− | 0.1− | 2002 11 11 | 704 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.6+ | 1.2− |
| 2000 02 28 | 704 | 0.2− | 0.4+ | 2002 11 11 | 704 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.5− | 0.2− |
| 2000 02 28 | 704 | 0.1− | 0.7+ | 2002 11 11 | 704 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.3− | 0.3+ |
| 2000 02 28 | 704 | 0.1+ | 1.0+ | 2002 11 11 | 704 | 0.4+ | 0.6+ | 2006 11 25 | G96 | 0.4− | 0.1− |
| 2000 02 28 | 704 | 0.1− | 0.7+ | 2002 11 30 | 704 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.6− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.2− | 0.3+ | 2002 11 30 | 704 | 0.7− | 0.2+ | 2006 11 28 | 704 | 0.5− | 1.3− | | |
| 2000 03 04 | 704 | 0.1+ | 0.1− | 2002 11 30 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.1− | | |
| 2000 03 04 | 704 | 0.0 | 0.1− | 2004 05 15 | 704 | (1.3− | 1.6+) | 2006 11 28 | 704 | 0.5+ | 0.5+ | | |
| 2000 03 04 | 704 | 0.4+ | 0.2+ | 2004 05 15 | 704 | 0.9− | 0.9+ | 2006 11 28 | 704 | 0.3+ | 0.3+ | | |
| 2000 03 04 | 704 | 0.5− | 0.2+ | 2004 05 15 | 704 | 0.5− | 0.9+ | 2006 11 28 | 704 | 0.1+ | 0.6− | | |
| 2002 10 03 | 704 | 0.9+ | 0.8+ | 2004 05 15 | 704 | 0.5+ | 1.2+ | | | | | | |

**(137863)∗ 2000 AQ$_{66}$ = 2002 TD$_{203}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37256)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.93321 | | (2000.0) | | −0.49964626 | −0.85971060 |
| $n$ | 0.26714264 | $\omega$ | 22.87334 | | +0.77730233 | −0.49902166 |
| $a$ | 2.3876678 | $\Omega$ | 97.24958 | | +0.38230186 | −0.10897277 |
| $e$ | 0.1797229 | $i$ | 6.13820 | | | |
| $P$ | 3.69 | $H$ | 15.8 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.1− | 0.6− | 2002 09 15 | 608 | 1.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2000 01 04 | 704 | 0.7+ | 1.2− | 2002 10 04 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2000 01 04 | 704 | 0.8+ | 1.0− | 2002 10 04 | 704 | 0.1− | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.1− | | |
| 2000 01 04 | 704 | 0.2+ | 0.4− | 2002 10 04 | 704 | 0.6− | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.1− | | |
| 2000 01 04 | 704 | 0.2+ | 0.4− | 2002 10 04 | 704 | 0.2− | 1.1+ | 2006 10 23 | G96 | 0.2− | 0.1− | | |
| 2000 01 06 | 704 | 0.8+ | 0.4+ | 2002 10 08 | 699 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.1− | | |
| 2000 01 06 | 704 | 0.9+ | 0.9− | 2002 10 08 | 699 | (1.3− | 1.9+) | 2006 11 14 | 704 | 0.2− | 0.2+ | | |
| 2000 01 06 | 704 | 0.7+ | 0.6− | 2002 10 08 | 699 | 0.3+ | 1.1+ | 2006 11 14 | 704 | 0.2+ | 0.4+ | | |
| 2000 01 06 | 704 | 0.6+ | 0.3− | 2002 10 08 | 699 | 0.7− | 0.8+ | 2006 11 14 | 704 | 0.3− | 0.0 | | |
| 2000 02 03 | 704 | 1.0− | 0.2− | 2002 11 06 | 644 | 0.3+ | 0.8+ | 2006 11 14 | 704 | 0.3+ | 0.5+ | | |
| 2000 02 03 | 704 | 1.3− | 0.2+ | 2002 11 06 | 644 | 0.3− | 0.8+ | 2006 11 14 | 704 | 0.2− | 0.3+ | | |
| 2000 02 03 | 704 | 1.3− | 1.0+ | 2002 11 06 | 644 | 0.2− | 1.1+ | 2006 11 15 | 703 | 0.0 | 0.2− | | |
| 2000 02 03 | 704 | 1.1− | 0.6+ | 2004 03 13 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.2+ | | |
| 2000 02 03 | 704 | 0.9− | 1.0+ | 2004 03 13 | 644 | 0.3+ | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.0 | | |
| 2000 02 11 | 704 | 0.1+ | 0.5− | 2004 03 13 | 644 | 0.5+ | 0.1− | 2006 11 15 | 703 | 0.5− | 0.0 | | |
| 2000 02 11 | 704 | 0.2− | 0.4− | 2004 03 22 | 699 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2000 02 11 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 699 | 0.5− | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1− | | |
| 2000 02 11 | 704 | 0.6+ | 0.0 | 2004 03 22 | 699 | 0.1− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2000 02 11 | 704 | 0.5+ | 0.1− | 2004 03 22 | 699 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.5− | 0.2+ | | |
| 2000 02 28 | 704 | 0.4− | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.8− | 0.0 | | |
| 2000 02 28 | 704 | 0.6− | 0.3+ | 2004 03 23 | 704 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.3+ | | |
| 2000 02 28 | 704 | 0.6− | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.2+ | | |
| 2000 02 28 | 704 | 0.6− | 0.6− | 2004 03 23 | 704 | 0.2+ | 0.6− | 2006 11 17 | 704 | 0.2+ | 0.8+ | | |
| 2000 02 29 | 704 | 0.9+ | 0.0 | 2004 03 28 | 699 | 0.2+ | 0.3+ | 2006 11 18 | 704 | (3.1− | 2.5+) | | |
| 2000 02 29 | 704 | 0.4− | 0.0 | 2004 03 28 | 699 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.5+ | | |
| 2000 02 29 | 704 | (2.5+ | 0.2+) | 2004 03 28 | 699 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.0 | | |
| 2000 02 29 | 704 | 0.0 | 0.2+ | 2004 03 28 | 699 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.8− | | |
| 2000 02 29 | 704 | 0.7+ | 0.0 | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.1− | | |
| 2000 02 29 | 704 | 0.2− | 0.3+ | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1− | | |
| 2000 02 29 | 704 | 0.9+ | 0.2− | 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.5+ | 0.0 | | |
| 2000 02 29 | 704 | 0.0 | 0.1+ | 2004 04 15 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.1− | | |
| 2000 02 29 | 704 | 0.2+ | 0.2+ | 2004 04 15 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.1− | | |
| 2000 02 29 | 704 | 0.1− | 0.6+ | 2004 04 15 | 644 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.1+ | | |
| 2000 03 04 | 704 | 0.1− | 0.0 | 2004 04 15 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.1− | | |
| 2000 03 04 | 704 | 0.3+ | 0.0 | 2004 04 15 | 644 | 0.3− | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.2− | | |
| 2000 03 04 | 704 | 0.2− | 0.3+ | 2004 04 15 | 644 | 0.3+ | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.1− | | |
| 2000 03 04 | 704 | 0.0 | 0.5+ | 2004 04 21 | 703 | 0.3+ | 1.0+ | 2006 11 24 | 691 | 0.1− | 0.1− | | |
| 2000 03 04 | 704 | 0.2+ | 0.1+ | 2004 04 21 | 703 | 1.2− | 0.1+ | 2006 11 24 | 691 | 0.3− | 0.0 | | |
| 2000 03 12 | 703 | 0.3− | 0.5+ | 2004 04 21 | 703 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2000 03 12 | 699 | 0.2− | 1.2− | 2004 04 21 | 703 | 0.7+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2000 03 12 | 699 | 1.3+ | 0.0 | 2004 04 22 | 683 | (0.2− | 2.0+) | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2000 03 12 | 703 | 0.3− | 0.2+ | 2004 04 22 | 683 | (0.5+ | 1.6+) | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2000 03 12 | 699 | 0.4+ | 0.2− | 2004 04 22 | 683 | (0.9− | 2.1+) | 2006 11 25 | 704 | 1.3+ | 0.1+ | | |
| 2000 03 12 | 699 | 0.6− | 0.9+ | 2004 04 23 | 704 | 0.1− | 0.1+ | 2006 11 25 | 704 | 1.0+ | 0.0 | | |
| 2000 03 12 | 703 | 0.5+ | 0.5+ | 2004 04 23 | 704 | 0.0 | 0.8+ | 2006 11 25 | 704 | 0.6+ | 0.3+ | | |
| 2000 03 12 | 699 | 0.3− | 0.8+ | 2004 04 23 | 704 | 0.2+ | 1.0+ | 2006 11 25 | 704 | 0.2+ | 0.2+ | | |
| 2000 03 12 | 699 | 0.2+ | 0.5+ | 2004 04 23 | 704 | 0.7− | 0.5− | 2006 11 28 | 704 | 0.3+ | 0.4+ | | |
| 2000 03 12 | 703 | 0.4− | 0.4− | 2004 04 23 | 704 | 0.2− | 1.0+ | 2006 11 28 | 704 | 0.0 | 0.4+ | | |
| 2000 03 12 | 699 | 0.2+ | 0.2− | 2004 04 25 | 683 | 1.0+ | 1.1− | 2006 11 28 | 704 | 0.2+ | 0.2+ | | |
| 2000 03 12 | 699 | 0.1+ | 0.2− | 2004 04 25 | 683 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.1− | 0.5+ | | |
| 2002 09 15 | 608 | 0.8− | 0.2+ | 2004 04 25 | 683 | 0.3− | 1.0− | 2006 11 28 | 704 | 0.1+ | 0.6+ | | |
| 2002 09 15 | 608 | 0.9− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | | | | | |

**(137864)∗ 2000 AU$_{78}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 247.90280 | | (2000.0) | | −0.65305176 | −0.75634667 |
| $n$ | 0.25667375 | $\omega$ | 3.09437 | | +0.69377943 | −0.61775183 |
| $a$ | 2.4521578 | $\Omega$ | 127.68149 | | +0.30363383 | −0.21522638 |
| $e$ | 0.1626161 | $i$ | 2.77028 | | | |
| $P$ | 3.84 | $H$ | 15.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 1.3− | 1.4− | 2004 01 04 | 699 | (1.7− | 0.6+) | 2004 02 20 | 333 | 0.3− | 0.2+ | | |
| 1991 11 08 | 691 | 1.5+ | 0.7+ | 2004 01 13 | 699 | 0.1+ | 0.1+ | 2004 02 20 | 333 | 0.3− | 0.2+ | | |
| 1991 11 08 | 691 | 0.4− | 0.1+ | 2004 01 13 | 699 | 0.8− | 1.0− | 2004 02 23 | 704 | 0.6+ | 0.2+ | | |
| 1999 12 07 | 704 | (0.2− | 2.3−) | 2004 01 13 | 699 | 0.7− | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.2− | | |
| 1999 12 07 | 704 | 0.4+ | 0.7− | 2004 01 13 | 699 | 0.5+ | 0.4+ | 2004 02 23 | 704 | (1.0+ | 3.4−) | | |
| 1999 12 07 | 704 | 0.3+ | 1.0− | 2004 01 16 | 644 | 0.3+ | 0.4+ | 2004 02 23 | 704 | 1.3− | 0.5+ | | |
| 1999 12 07 | 704 | 0.1− | 0.1+ | 2004 01 16 | 644 | 0.3+ | 0.3+ | 2004 02 23 | 049 | 0.5− | 0.5+ | | |
| 2000 01 05 | 704 | 0.6+ | 1.3− | 2004 01 16 | 644 | 0.1+ | 0.2+ | 2004 02 23 | 049 | 0.8− | 0.7+ | | |
| 2000 01 05 | 704 | 0.6+ | 1.6− | 2004 01 17 | 644 | 0.0 | 0.2+ | 2004 02 23 | 049 | 0.5− | 0.8+ | | |
| 2000 01 05 | 704 | 0.6+ | 1.4− | 2004 01 17 | 644 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.0 | | |
| 2000 01 05 | 704 | (1.9+ | 2.1−) | 2004 01 17 | 644 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.1− | | |
| 2000 01 05 | 704 | 0.2− | 1.4− | 2004 01 21 | 704 | 0.2+ | 0.5+ | 2004 02 26 | 704 | 0.2+ | 0.7+ | | |
| 2000 01 06 | 704 | 0.2+ | 1.4− | 2004 01 21 | 704 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.6− | 0.7+ | | |
| 2000 01 06 | 704 | 0.2+ | 1.6− | 2004 01 21 | 704 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.5− | 0.8+ | | |
| 2000 01 06 | 704 | 0.2− | 1.3− | 2004 01 21 | 704 | 0.6+ | 0.5+ | 2004 04 12 | 703 | 0.9− | 1.1+ | | |
| 2000 01 25 | 704 | 0.6+ | 0.7− | 2004 01 24 | 704 | 0.6+ | 0.1− | 2004 04 12 | 703 | 0.3− | 0.3− | | |
| 2000 01 25 | 704 | 0.3− | 0.2− | 2004 01 24 | 704 | 0.8+ | 0.1+ | 2004 04 12 | 703 | 0.9− | 0.9+ | | |
| 2000 01 25 | 704 | 0.3+ | 0.3− | 2004 01 24 | 704 | 0.7+ | 0.0 | 2004 04 12 | 703 | 0.8− | 0.8+ | | |
| 2000 01 25 | 704 | 0.2+ | 0.2− | 2004 01 24 | 704 | 0.8+ | 0.0 | 2004 04 19 | 704 | 0.1− | 1.0+ | | |
| 2000 02 03 | 557 | 0.1+ | 0.2− | 2004 01 24 | 704 | 0.7+ | 0.0 | 2004 04 19 | 704 | 0.1− | 0.4+ | | |
| 2000 02 03 | 557 | 0.4+ | 0.0 | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.1+ | | |
| 2000 02 04 | 557 | 0.3+ | 0.8+ | 2004 01 30 | 704 | 0.9+ | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.6+ | | |
| 2000 02 05 | 557 | 0.8− | 0.1− | 2004 01 30 | 704 | 0.7+ | 0.4+ | 2004 04 22 | 704 | 0.6+ | 0.9+ | | |
| 2000 02 05 | 557 | 0.1− | 0.1− | 2004 01 30 | 704 | 1.0+ | 0.3+ | 2004 04 22 | 704 | 0.3− | 0.5− | | |
| 2002 09 06 | 704 | 0.4+ | 0.2− | 2004 01 30 | 704 | 0.7+ | 0.3+ | 2006 08 17 | 644 | 0.3+ | 0.4+ | | |
| 2002 09 06 | 704 | 0.0 | 1.3+ | 2004 01 31 | 704 | 0.1− | 0.7+ | 2006 08 17 | 644 | 0.3+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.4− | 0.8+ | 2004 01 31 | 704 | 0.2+ | 0.9+ | 2006 08 17 | 644 | 0.5+ | 0.2− | | |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2004 01 31 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.9− | 0.6+ | | |
| 2002 09 12 | 644 | 0.3− | 0.4+ | 2004 01 31 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.2− | 0.2+ | | |
| 2002 09 12 | 644 | 0.2− | 0.5+ | 2004 01 31 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 699 | (1.6+ | 1.0+) | | |
| 2002 09 12 | 644 | 0.3− | 0.7+ | 2004 02 03 | 704 | (2.7+ | 2.4−) | 2006 09 18 | 699 | 0.1+ | 0.3+ | | |
| 2002 09 15 | 644 | 0.1− | 0.5+ | 2004 02 03 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.9− | 0.6+ | | |
| 2002 09 15 | 644 | 0.2− | 0.6+ | 2004 02 03 | 704 | 0.5+ | 0.8+ | 2006 09 26 | 704 | 0.4− | 0.9+ | | |
| 2002 09 15 | 644 | 0.4− | 0.4+ | 2004 02 09 | 185 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.0 | 0.5+ | | |
| 2003 10 26 | 291 | 0.3− | 0.2+ | 2004 02 09 | 185 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.1− | 0.4+ | | |
| 2003 10 26 | 291 | 0.6− | 0.2+ | 2004 02 10 | 703 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.5− | 0.2+ | | |
| 2003 10 26 | 291 | 0.8− | 0.4+ | 2004 02 10 | 703 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.3− | 0.1− | | |
| 2003 11 21 | 704 | 0.3+ | 0.1− | 2004 02 10 | 703 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.7− | 0.1+ | | |
| 2003 11 21 | 704 | (2.0+ | 0.7−) | 2004 02 10 | 703 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.4− | 0.0 | | |
| 2003 11 21 | 704 | 0.3+ | 0.1− | 2004 02 10 | 106 | 0.5+ | 0.4− | 2006 09 28 | 704 | 0.2− | 0.5+ | | |
| 2003 11 21 | 704 | 1.4+ | 0.5− | 2004 02 10 | 106 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.1+ | 0.1+ | | |
| 2003 11 21 | 704 | 1.1+ | 0.7+ | 2004 02 10 | 106 | 0.5− | 0.0 | 2006 10 11 | 104 | 0.1− | 1.5+ | | |
| 2003 11 23 | 704 | 0.4− | 1.3+ | 2004 02 11 | 699 | 0.2− | 0.3− | 2006 10 11 | 104 | 0.7+ | 0.5− | | |
| 2003 11 23 | 704 | 0.6+ | 0.3− | 2004 02 11 | 699 | 0.6− | 0.2+ | 2006 10 11 | 104 | 1.0+ | 0.3+ | | |
| 2003 11 23 | 704 | 1.0+ | 1.2− | 2004 02 11 | 699 | 0.1− | 1.1− | 2006 10 16 | 703 | 0.2+ | 0.2+ | | |
| 2003 12 01 | 704 | 0.4− | 0.9+ | 2004 02 11 | 699 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.2+ | | |
| 2003 12 01 | 704 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.0 | 1.0+ | | |
| 2003 12 01 | 704 | 0.2− | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.1− | | |
| 2003 12 01 | 704 | 0.9+ | 0.2+ | 2004 02 16 | 704 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2003 12 16 | 699 | 0.2− | 0.8+ | 2004 02 16 | 704 | (0.2+ | 1.7+) | 2006 10 23 | 644 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 16 | 699 | (0.3− | 1.9+) | 2004 02 16 | 704 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.7− |
| 2003 12 16 | 699 | 0.1+ | 0.9− | 2004 02 17 | 644 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2003 12 16 | 699 | 0.6+ | 1.2− | 2004 02 17 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 1.0+ | 0.3− |
| 2004 01 04 | 699 | (1.8− | 0.9+) | 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.6+ | 0.3− |
| 2004 01 04 | 699 | 0.1+ | 1.2− | 2004 02 20 | 333 | 0.8− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2004 01 04 | 699 | 0.9− | 0.6+ | 2004 02 20 | 333 | 0.5− | 0.2+ | | | | |

**(137865)∗ 2000 AJ$_{82}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.65603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27448699 | $\omega$ | 294.66727 | | +0.53465334 | −0.84225476 | |
| $a$ | 2.3448850 | $\Omega$ | 122.83760 | | +0.80197361 | +0.47997568 | |
| $e$ | 0.2307294 | $i$ | 4.70646 | | +0.26642849 | +0.24541855 | |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.6+ | 0.2+ | 2002 08 18 | 644 | 0.0 | 0.2− | 2006 11 01 | 703 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.0 | 0.1− | 2002 08 29 | 644 | 0.3+ | 0.1− | 2006 11 01 | 703 | 0.3− | 0.4+ |
| 1999 12 08 | 704 | 0.4+ | 0.7− | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.4+ | 0.6+ |
| 1999 12 08 | 704 | 0.5+ | 0.6− | 2002 08 29 | 644 | 0.1− | 0.2− | 2006 11 01 | 703 | 0.2+ | 0.1+ |
| 2000 01 05 | 704 | 0.1− | 0.6− | 2004 02 25 | 704 | 0.2− | 0.7+ | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2000 01 05 | 704 | 0.4+ | 0.2− | 2004 02 25 | 704 | 0.2− | 1.4+ | 2006 11 13 | 644 | 0.3+ | 0.2+ |
| 2000 01 05 | 704 | 0.3− | 0.5+ | 2004 02 25 | 704 | 1.3+ | 0.5+ | 2006 11 13 | 703 | 0.2− | 0.3+ |
| 2000 01 05 | 704 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.8− | 0.8− | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2000 01 05 | 704 | 0.9− | 0.0 | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2000 01 06 | 704 | 0.2+ | 0.7− | 2006 09 18 | 703 | 0.6− | 0.1− | 2006 11 13 | 644 | 0.4+ | 0.1+ |
| 2000 01 06 | 704 | 0.9− | 0.9− | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.0 | 0.1+ |
| 2000 01 06 | 704 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 11 15 | A44 | 0.2+ | 0.3+ |
| 2000 01 07 | 704 | 0.0 | 0.5− | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 11 15 | A44 | 0.0 | 0.4+ |
| 2000 01 07 | 704 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.7− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.7+ |
| 2000 01 07 | 704 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.5+ | 1.4− | 2006 11 19 | 704 | 0.2+ | 1.0+ |
| 2000 01 07 | 704 | 0.7+ | 0.6+ | 2006 09 21 | 224 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2002 07 29 | 644 | 0.5− | 1.1+ | 2006 09 21 | 224 | 0.8− | 0.6+ | 2006 11 19 | 703 | 0.2− | 0.0 |
| 2002 07 29 | 644 | 0.0 | 0.0 | 2006 09 21 | 224 | 1.2− | 0.4+ | 2006 11 19 | 704 | 0.4− | 1.1+ |
| 2002 07 29 | 644 | 0.0 | 0.3+ | 2006 09 30 | 699 | 0.2+ | 1.4− | 2006 11 19 | 703 | 0.3+ | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.5+ | 2006 09 30 | 699 | 0.7+ | 0.6− | 2006 11 19 | 703 | 0.4− | 0.2− |
| 2002 08 08 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 699 | (0.9+ | 1.9−) | 2006 11 19 | 704 | 1.0− | 1.5+ |
| 2002 08 15 | 644 | 0.0 | 0.2+ | 2006 09 30 | 699 | 0.5− | 0.7− | 2006 11 19 | 703 | 0.2+ | 0.3− |
| 2002 08 15 | 644 | 0.1+ | 0.2− | 2006 09 30 | 699 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2002 08 15 | 644 | 0.4+ | 0.2− | 2006 09 30 | 699 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2002 08 16 | 608 | 0.1+ | 0.0 | 2006 09 30 | 699 | 0.6− | 0.2+ | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2002 08 16 | 608 | 0.7− | 0.4+ | 2006 09 30 | 703 | 0.7+ | 1.3− | 2006 11 23 | G96 | 0.6+ | 0.1− |
| 2002 08 16 | 608 | 0.3+ | 0.8− | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 11 25 | 704 | 0.3+ | 0.2+ |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | (1.7− | 0.2−) | 2006 11 25 | 704 | 0.2− | 0.1+ |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 25 | 704 | 0.2− | 0.1− |

**(137866)∗ 2000 AP$_{82}$ = 2002 PJ$_{92}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33183)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.44045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26535218 | $\omega$ | 282.43024 | | +0.52929091 | −0.84815205 | |
| $a$ | 2.3983963 | $\Omega$ | 135.58914 | | +0.79019148 | +0.48329240 | |
| $e$ | 0.1702790 | $i$ | 1.81126 | | +0.30894750 | +0.21694829 | |
| $P$ | 3.71 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.2− | 0.2− | 2004 01 30 | 291 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.5+ |
| 2000 01 05 | 704 | 0.5+ | 0.2+ | 2004 01 30 | 291 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 2000 01 05 | 704 | 0.6+ | 0.2− | 2004 02 11 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.3+ | 0.3+ |
| 2000 01 05 | 704 | 0.2− | 0.1− | 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 09 25 | 691 | 0.8+ | 0.0 |
| 2000 01 05 | 704 | 0.7− | 0.3+ | 2004 02 11 | 644 | 0.4+ | 0.5+ | 2006 09 27 | 704 | 0.1− | 1.2+ |
| 2000 01 06 | 704 | 0.0 | 0.3− | 2004 02 17 | 704 | 0.3+ | 0.2− | 2006 09 27 | 704 | 0.1+ | 1.0+ |
| 2000 01 06 | 704 | 0.4+ | 0.1− | 2004 02 17 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.3+ |
| 2000 01 06 | 704 | 0.1+ | 0.2− | 2004 02 17 | 704 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.2− | 0.4+ |
| 2000 01 07 | 704 | 0.1− | 0.8− | 2004 03 18 | 691 | 0.5+ | 0.5+ | 2006 10 01 | 704 | 0.6− | 0.3+ |
| 2000 01 07 | 704 | 0.5− | 0.6− | 2004 03 18 | 691 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 1.0− | 0.2+ |
| 2000 01 07 | 704 | 0.3− | 0.8− | 2004 03 18 | 691 | 0.2+ | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.3− |
| 2000 01 07 | 704 | 0.1− | 0.7− | 2004 03 19 | 704 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.2− | 0.2− |
| 2000 01 07 | 704 | 0.1+ | 1.2− | 2004 03 19 | 704 | 0.2+ | 0.5− | 2006 10 02 | 691 | 0.4− | 0.1− |
| 2002 08 14 | 704 | 0.4− | 1.0+ | 2004 03 19 | 704 | 0.8+ | 0.4− | 2006 10 02 | 691 | 0.4− | 0.3− |
| 2002 08 14 | 704 | 0.1+ | 1.2+ | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | (1.3− | 2.1+) | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2002 08 14 | 704 | 1.1+ | 1.2+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 08 15 | 704 | 0.6− | 0.5− | 2006 09 17 | 704 | 1.1+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2002 08 15 | 704 | 0.4− | 0.4− | 2006 09 17 | 704 | 1.2+ | 0.4− | 2006 10 16 | 703 | 0.8− | 1.2− |
| 2002 08 15 | 704 | 0.0 | 1.0+ | 2006 09 17 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2002 08 29 | 644 | 0.6− | 0.6+ | 2006 09 17 | 704 | 0.1− | 1.1− | 2006 10 16 | 703 | 1.3+ | 0.1+ |
| 2002 08 29 | 644 | 0.5− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 08 29 | 644 | 0.6− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 09 15 | 644 | 0.0 | 0.8+ | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 11 30 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2003 11 30 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.3+ | 1.1+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2003 11 30 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2004 01 24 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2004 01 24 | 704 | 1.1+ | 1.4+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.5− | 0.6− |
| 2004 01 24 | 704 | 0.8+ | 1.4+ | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 01 24 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 704 | 0.0 | 0.8+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2004 01 24 | 704 | 0.5− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2004 01 30 | 291 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.1− |

**(137867)∗ 2000 AO$_{83}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.75160 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25842509 | $\omega$ | 206.54035 | | −0.12484289 | −0.99210277 | |
| $a$ | 2.4410665 | $\Omega$ | 250.63334 | | +0.91256804 | −0.11003225 | |
| $e$ | 0.1501382 | $i$ | 0.73470 | | +0.38940187 | −0.06020788 | |
| $P$ | 3.81 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.5− | 0.7+ | 2004 01 29 | 704 | 0.3+ | 1.1+ | 2004 02 17 | 704 | 0.0 | 0.6+ |
| 2000 01 05 | 704 | 0.4− | 0.8+ | 2004 01 29 | 704 | 0.3− | 0.4− | 2004 02 19 | 608 | 0.0 | 0.6− |
| 2000 01 05 | 704 | 0.1+ | 0.4+ | 2004 01 29 | 704 | 1.1+ | 0.2+ | 2004 02 19 | 608 | 0.1+ | 0.5− |
| 2000 01 05 | 704 | 0.7− | 0.3+ | 2004 01 29 | 704 | 0.1+ | 0.7+ | 2004 02 19 | 608 | 0.0 | 0.7− |
| 2000 01 05 | 704 | 0.4+ | 0.0 | 2004 02 10 | 333 | 0.4− | 0.5+ | 2004 03 01 | 691 | 0.3− | 0.3+ |
| 2000 01 06 | 704 | 0.7− | 0.5+ | 2004 02 10 | 333 | 0.5− | 0.3+ | 2004 03 01 | 691 | 0.3+ | 0.1+ |
| 2000 01 06 | 704 | 0.2+ | 0.3+ | 2004 02 10 | 333 | 0.8− | 0.5+ | 2004 03 01 | 691 | 0.1+ | 0.0 |
| 2000 01 06 | 704 | 0.0 | 0.9+ | 2004 02 12 | 333 | 0.2− | 0.2− | 2006 08 28 | 691 | 0.1− | 0.1− |
| 2000 01 06 | 704 | (1.4− | 2.1+) | 2004 02 12 | 333 | 0.4+ | 0.0 | 2006 08 28 | 691 | 0.2− | 0.1− |
| 2000 01 06 | 704 | 0.3− | 0.8+ | 2004 02 12 | 333 | 0.2− | 0.7+ | 2006 08 28 | 691 | 0.2− | 0.2− |
| 2000 01 06 | 704 | 0.7− | 0.1− | 2004 02 12 | 333 | 0.8+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2000 01 30 | 691 | 0.3+ | 0.3− | 2004 02 12 | 333 | 0.1− | 0.5− | 2006 09 28 | 691 | 0.3+ | 0.2+ |
| 2000 01 30 | 691 | 0.0 | 0.4− | 2004 02 12 | 333 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.5+ |
| 2000 01 30 | 691 | 0.0 | 0.4− | 2004 02 13 | 333 | 0.7− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2000 02 04 | 691 | 0.3+ | 0.1− | 2004 02 13 | 333 | 0.5− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2000 02 04 | 691 | 0.1+ | 1.0− | 2004 02 13 | 333 | 0.9− | 0.0 | 2006 09 28 | G96 | 1.4− | 1.4+ |
| 2000 02 04 | 691 | 0.1− | 0.1− | 2004 02 14 | 608 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.1− |
| 2002 09 04 | 644 | 0.1− | 0.4+ | 2004 02 14 | 608 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2002 09 04 | 644 | 0.2− | 0.2+ | 2004 02 14 | 608 | 0.1− | 0.9− | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 2002 09 04 | 644 | 0.0 | 0.4+ | 2004 02 14 | 106 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2004 01 24 | 704 | 0.6+ | 1.1+ | 2004 02 14 | 106 | 0.2+ | 0.0 | 2006 10 16 | 703 | (1.6+ | 1.9+) |
| 2004 01 24 | 704 | 0.5+ | 0.7+ | 2004 02 14 | 106 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2004 01 24 | 704 | 0.4+ | 0.5+ | 2004 02 17 | 704 | 0.7+ | 0.6+ | 2006 10 23 | G96 | 0.4+ | 0.4− |
| 2004 01 24 | 704 | 0.2+ | 0.8+ | 2004 02 17 | 704 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2004 02 17 | 704 | 0.7+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2004 01 29 | 704 | 0.5+ | 1.3− | 2004 02 17 | 704 | 0.6− | 0.7− | | | | |

**(137868)∗ 2000 AA$_{84}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.81204 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25890893 | $\omega$ | 56.75000 | | −0.97463579 | −0.21298223 | |
| $a$ | 2.4380243 | $\Omega$ | 110.87143 | | +0.17295256 | −0.91170974 | |
| $e$ | 0.1165426 | $i$ | 4.21822 | | +0.14202991 | −0.35131739 | |
| $P$ | 3.81 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 684 | 0.3− | 0.8− | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.5− | 0.6+ |
| 1999 12 12 | 684 | 0.4− | 0.8− | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 04 22 | 704 | 0.1− | 0.1− |
| 2000 01 05 | 704 | 0.1− | 0.3− | 2004 01 18 | 644 | 0.7− | 0.2− | 2004 04 22 | 704 | 0.5+ | 0.3− |
| 2000 01 05 | 704 | 0.4+ | 0.5− | 2004 01 22 | 704 | 0.1+ | 0.1− | 2004 04 22 | 704 | 0.5− | 0.5+ |
| 2000 01 05 | 704 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.3+ | 0.1− | 2004 04 22 | 704 | 0.1+ | 0.4− |
| 2000 01 05 | 704 | 0.2+ | 1.0+ | 2004 01 22 | 704 | 0.3+ | 0.3− | 2005 06 03 | 691 | 0.1+ | 0.2− |
| 2000 01 05 | 704 | 1.6+ | 0.3− | 2004 01 22 | 704 | 0.0 | 0.0 | 2005 06 03 | 691 | 0.1+ | 0.1− |
| 2000 01 06 | 704 | 1.2− | 0.4+ | 2004 01 30 | 704 | 0.7+ | 0.3+ | 2005 06 03 | 691 | 0.1− | 0.0 |
| 2000 01 06 | 704 | 0.1+ | 1.0− | 2004 01 30 | 704 | 0.4+ | 0.8− | 2005 06 12 | 691 | 0.2− | 0.0 |
| 2000 01 06 | 704 | 0.8− | 0.0 | 2004 01 30 | 704 | 0.4+ | 0.1− | 2005 06 12 | 691 | 0.2− | 0.1+ |
| 2000 01 06 | 704 | 0.8− | 0.5− | 2004 01 30 | 704 | 0.9+ | 0.7+ | 2005 06 12 | 691 | 0.3− | 0.2+ |
| 2000 01 06 | 704 | 0.9− | 0.6− | 2004 01 30 | 704 | 0.5+ | 0.6+ | 2005 06 13 | G96 | 0.3+ | 0.5+ |
| 2000 01 06 | 704 | 0.6− | 0.4− | 2004 02 10 | 644 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.5+ | 0.8+ |
| 2000 01 06 | 704 | 1.4− | 0.5− | 2004 02 10 | 703 | 0.2+ | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.6+ |
| 2000 01 28 | 691 | 0.3+ | 0.2− | 2004 02 10 | 644 | 0.0 | 0.5+ | 2005 06 13 | G96 | 0.4+ | 0.6+ |
| 2000 01 28 | 691 | 0.3+ | 0.3− | 2004 02 10 | 703 | 1.2− | 0.3− | 2006 10 03 | G96 | 0.2− | 0.3− |
| 2000 01 28 | 691 | 0.4+ | 0.5− | 2004 02 10 | 703 | 0.4+ | 0.6+ | 2006 10 03 | G96 | 0.4+ | 0.1− |
| 2000 01 30 | 704 | 0.1+ | 0.1+ | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2000 01 30 | 704 | 0.0 | 0.9+ | 2004 02 10 | 703 | 0.3− | 0.3− | 2006 10 03 | G96 | 0.4− | 0.0 |
| 2000 01 30 | 704 | (2.7− | 0.8+) | 2004 02 11 | 333 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.4+ |
| 2000 01 30 | 704 | 0.7− | 1.2+ | 2004 02 11 | 333 | 0.8− | 0.2+ | 2006 10 11 | 644 | 0.7− | 0.6+ |
| 2000 02 02 | 691 | 0.1+ | 0.4− | 2004 02 11 | 333 | 0.7+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2000 02 02 | 691 | 0.0 | 0.4− | 2004 02 14 | 608 | (0.3+ | 1.8+) | 2006 10 11 | 644 | 0.6− | 0.1+ |
| 2000 02 02 | 691 | 0.2− | 0.2− | 2004 02 14 | 608 | (0.4+ | 2.2+) | 2006 10 11 | 644 | 0.5− | 0.0 |
| 2000 02 05 | 849 | (3.8+ | 0.0 ) | 2004 02 14 | 608 | 0.6+ | 1.4+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2000 02 05 | 849 | (2.8+ | 1.1+) | 2004 02 16 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2000 02 05 | 849 | 0.5+ | 1.0+ | 2004 02 16 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2004 02 16 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 1.1+ |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2004 02 16 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 703 | (1.8− | 0.1−) |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2004 02 19 | 608 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.6+ | 0.2− | 2004 02 19 | 608 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2003 10 25 | 691 | 0.0 | 0.2+ | 2004 02 19 | 608 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2003 10 25 | 691 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 10 25 | 691 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2004 01 05 | 703 | (1.8+ | 1.2+) | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 1.1− | 0.7+ |
| 2004 01 05 | 703 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 703 | 0.8− | 0.7+ |
| 2004 01 05 | 703 | (0.4− | 1.5+) | 2004 02 23 | 704 | 0.8+ | 0.1+ | 2006 11 13 | 703 | 0.0 | 1.3+ |
| 2004 01 05 | 703 | (7.4− | 9.7+) | 2004 03 01 | 291 | 0.4− | 0.3+ | 2006 11 13 | 703 | 1.4+ | 0.0 |
| 2004 01 13 | 699 | 0.6− | 0.2+ | 2004 03 01 | 291 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2004 01 13 | 699 | 0.3− | 1.3− | 2004 03 01 | 291 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2004 01 13 | 699 | 0.7+ | 0.1+ | 2004 04 19 | 704 | 0.3− | 0.8+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2004 01 13 | 699 | 0.7− | 0.3+ | 2004 04 19 | 704 | 0.5− | 0.5+ | 2006 11 20 | G96 | 0.4− | 0.0 |

**(137869)∗ 2000 AA$_{86}$ = 1998 SO$_{52}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 5688)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.71660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25698374 | $\omega$ | 321.33945 | | −0.96593552 | −0.25851240 | |
| $a$ | 2.4501854 | $\Omega$ | 203.68680 | | +0.24414447 | −0.89518904 | |
| $e$ | 0.1499791 | $i$ | 1.68718 | | +0.08580237 | −0.36305360 | |
| $P$ | 3.84 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 28 | 691 | 0.5+ | 0.1− | 2004 01 29 | 704 | 0.0 | 0.3− | 2004 03 18 | 704 | (1.1+ | 1.7+) |
| 1998 09 28 | 691 | 0.3+ | 0.1− | 2004 01 29 | 704 | 0.4+ | 0.6+ | 2004 03 20 | 691 | 0.1− | 0.2+ |
| 1998 09 28 | 691 | 0.4+ | 0.0 | 2004 02 11 | 644 | 0.1+ | 0.2− | 2004 03 20 | 691 | 0.0 | 0.2+ |
| 1998 09 29 | 691 | 0.7+ | 0.0 | 2004 02 11 | 644 | 0.0 | 0.2− | 2004 03 20 | 691 | 0.0 | 0.2+ |
| 1998 09 29 | 691 | 0.8− | 0.0 | 2004 02 11 | 644 | 0.1+ | 0.0 | 2005 07 04 | 691 | 0.0 | 0.8+ |
| 1998 09 29 | 691 | 0.6− | 0.2− | 2004 02 12 | 691 | 0.2+ | 0.1− | 2005 07 04 | 691 | 0.4+ | 0.4+ |
| 1998 10 01 | 691 | 0.9− | 0.7+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2005 07 04 | 691 | 0.1− | 0.3+ |
| 1998 10 01 | 691 | 0.4− | 0.9+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2005 07 09 | 691 | 0.2+ | 0.4+ |
| 1998 10 01 | 691 | 0.7− | 0.4+ | 2004 02 14 | 703 | 0.4− | 0.7+ | 2005 07 09 | 691 | 1.3− | 1.4+ |
| 2000 01 05 | 704 | 0.1− | 0.0 | 2004 02 14 | 703 | 0.3− | 0.0 | 2005 07 09 | 691 | 0.1− | 0.3+ |
| 2000 01 05 | 704 | 0.8− | 0.1+ | 2004 02 14 | 699 | 0.9+ | 0.8+ | 2006 09 25 | G96 | 0.8− | 0.8− |
| 2000 01 05 | 704 | 0.2− | 0.1− | 2004 02 14 | 703 | 0.5− | 1.4+ | 2006 09 25 | G96 | 0.9− | 0.6− |
| 2000 01 05 | 704 | 1.0− | 1.0+ | 2004 02 14 | 699 | (2.4+ | 2.5+) | 2006 09 25 | G96 | 1.0− | 0.0 |
| 2000 01 06 | 704 | 0.1+ | 0.8+ | 2004 02 14 | 703 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.9− | 1.0− |
| 2000 01 06 | 704 | 0.2− | 0.5− | 2004 02 14 | 699 | (2.0+ | 0.4−) | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2000 01 06 | 704 | 0.5− | 1.7+ | 2004 02 18 | 704 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2000 01 06 | 704 | 0.3+ | 0.6+ | 2004 02 18 | 704 | 0.7+ | 0.2+ | 2006 10 04 | G96 | 0.5− | 0.1+ |
| 2000 01 08 | 704 | 0.0 | 0.4− | 2004 02 18 | 704 | 0.6+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2000 01 08 | 704 | 0.7+ | 0.7− | 2004 02 18 | 704 | 0.0 | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2000 01 08 | 704 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2000 01 08 | 704 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2000 02 03 | 704 | 1.1+ | 0.5− | 2004 02 26 | 704 | 0.2+ | 0.7+ | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2000 02 03 | 704 | 1.0+ | 1.0− | 2004 02 26 | 704 | 0.1− | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.5+ |
| 2000 02 03 | 704 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2002 10 10 | 291 | 0.1+ | 0.3+ | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.0 |
| 2002 10 10 | 291 | 0.2+ | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.5− |
| 2002 10 10 | 291 | 0.7+ | 0.6+ | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.5− |
| 2004 01 23 | 699 | 0.3− | 0.6+ | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2004 01 23 | 699 | 0.2− | 0.2+ | 2004 03 11 | 644 | 0.1+ | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2004 01 23 | 699 | 0.5− | 1.1+ | 2004 03 11 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2004 01 23 | 699 | 0.2− | 0.4+ | 2004 03 11 | 644 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2004 01 24 | 704 | 0.5+ | 0.3+ | 2004 03 11 | 644 | 0.4+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.5+ |
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2004 03 11 | 644 | 0.0 | 0.5+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2004 01 24 | 704 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 1.5+ | 1.5+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2004 01 24 | 704 | 1.5+ | 0.8+ | 2004 03 18 | 704 | 1.3+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2004 01 24 | 704 | 0.1− | 0.4− | 2004 03 18 | 704 | 1.0+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 01 29 | 704 | 0.7− | 0.3− | 2004 03 18 | 704 | 1.0+ | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.2+ |

**(137870)∗ 2000 AE$_{86}$ = 2002 TM$_{330}$ = 2002 TK$_{373}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60576), A. Doppler (d, *MPO* 74708)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.59961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26437083 | $\omega$ | 11.93985 | | −0.73879027 | −0.67271175 | |
| $a$ | 2.4043279 | $\Omega$ | 125.70648 | | +0.61413687 | −0.69681959 | |
| $e$ | 0.1592065 | $i$ | 2.86547 | | +0.27753349 | −0.24879984 | |
| $P$ | 3.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.4− | 0.4− | 2004 02 16 | 703 | 1.0− | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.3+ |
| 2000 01 05 | 704 | 0.2− | 0.7− | 2004 02 23 | 704 | 0.7+ | 0.2− | 2004 03 22 | 704 | 0.0 | 0.4+ |
| 2000 01 05 | 704 | 1.1+ | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.7− | 2004 03 22 | 704 | 0.0 | 0.4+ |
| 2000 01 05 | 704 | 1.0− | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.5− | 2004 03 28 | 704 | 1.1+ | 1.2+ |
| 2000 01 05 | 704 | 0.8− | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2004 03 28 | 703 | 0.7− | 1.2+ |
| 2000 01 06 | 704 | 0.5− | 0.6− | 2004 02 23 | 704 | 0.7+ | 0.3− | 2004 03 28 | 704 | (0.7− | 1.8+) |
| 2000 01 06 | 704 | 0.4+ | 1.0− | 2004 03 15 | 703 | 0.4+ | 0.3+ | 2004 03 28 | 703 | 0.2+ | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.2+ | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.0 | |
| 2000 01 06 | 704 | 1.0− | 0.9− | 2004 03 15 | 703 | 0.3− | 0.3− | 2004 03 28 | 704 | 1.0+ | 0.7+ | |
| 2000 01 26 | 691 | 0.1− | 0.7− | 2004 03 15 | 704 | 0.4+ | 0.7+ | 2004 03 28 | 703 | 0.1− | 0.4+ | |
| 2000 01 26 | 691 | 0.1+ | 0.5− | 2004 03 15 | 703 | 0.1− | 0.3+ | 2004 03 28 | 704 | 0.7+ | 0.0 | |
| 2000 01 26 | 691 | 0.0 | 0.7− | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2004 03 28 | 703 | 0.3+ | 0.3+ | |
| 2000 01 30 | 704 | 0.3+ | 0.7+ | 2004 03 15 | 703 | 0.1− | 0.0 | 2005 07 09 | 691 | 0.3− | 0.1+ | |
| 2000 01 30 | 704 | 0.4+ | 0.6− | 2004 03 15 | 704 | 0.2− | 0.7+ | 2005 07 09 | 691 | 0.1− | 0.3− | |
| 2000 01 30 | 704 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2005 07 09 | 691 | 0.3− | 0.1− | |
| 2000 01 30 | 704 | 0.7− | 0.1+ | 2004 03 16 | 291 | 0.2− | 0.2+ | 2005 07 15 | G96 | 0.4− | 0.2+ | |
| 2000 02 03 | 704 | 0.0 | 0.0 | 2004 03 16 | 291 | 0.3− | 0.2+ | 2005 07 15 | G96 | 0.5− | 0.3+ | |
| 2000 02 03 | 704 | 0.4+ | 0.2− | 2004 03 16 | 291 | 0.3− | 0.2+ | 2005 07 15 | G96 | 0.3− | 0.5+ | |
| 2000 02 03 | 704 | 0.7+ | 1.0+ | 2004 03 17 | 704 | 1.4+ | 0.6− | 2005 07 15 | G96 | 0.4− | 0.6+ | |
| 2000 02 03 | 704 | 0.4+ | 1.1+ | 2004 03 17 | 704 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.0 | |
| 2000 02 03 | 704 | 0.2+ | 0.1− | 2004 03 17 | 704 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1− | |
| 2000 02 11 | 704 | 0.9− | 0.1+ | 2004 03 17 | 704 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.2− | 0.3− | |
| 2000 02 11 | 704 | 1.2− | 1.2+ | 2004 03 17 | 704 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.2− | |
| 2000 02 11 | 704 | 0.2− | 0.5− | 2004 03 17 | 704 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | |
| 2000 02 11 | 704 | 0.2+ | 0.8+ | 2004 03 17 | 704 | 0.7+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.4+ | |
| 2000 02 11 | 704 | 0.9− | 0.5+ | 2004 03 17 | 704 | 0.7+ | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.5+ | |
| 2002 10 01 | 608 | 0.6− | 0.6+ | 2004 03 17 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1+ | |
| 2002 10 01 | 608 | 1.1− | 0.1− | 2004 03 17 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 691 | 0.6− | 0.3+ | |
| 2002 10 01 | 608 | 0.4− | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.2− | 2006 10 22 | 691 | 0.4− | 0.1+ | |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 03 19 | 704 | 1.1+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.4+ | |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.8+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.2+ | |
| 2002 10 10 | 645 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.2− | |
| 2004 02 13 | 644 | 0.1− | 0.2− | 2004 03 20 | 699 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 1.0+ | |
| 2004 02 13 | 644 | 0.5+ | 0.4+ | 2004 03 20 | 699 | 0.6− | 0.9+ | 2006 11 20 | 704 | 0.2− | 0.8+ | |
| 2004 02 13 | 644 | 0.3− | 0.3+ | 2004 03 20 | 699 | 0.5− | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.1− | |
| 2004 02 16 | 703 | 1.0− | 1.4− | 2004 03 20 | 699 | 0.3+ | 1.0+ | 2006 11 20 | 704 | 0.5+ | 1.1+ | |
| 2004 02 16 | 703 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.1+ | | | | | |
| 2004 02 16 | 703 | 0.9− | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.8+ | | | | | |

**(137871)∗ 2000 AO$_{86}$ = 2002 RS$_{205}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37259)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.96407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26064165 | $\omega$ | 310.53749 | | −0.38367271 | −0.92344868 | |
| $a$ | 2.4272071 | $\Omega$ | 162.02099 | | +0.85317258 | −0.35700605 | |
| $e$ | 0.1462058 | $i$ | 1.14105 | | +0.35340034 | −0.14067413 | |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.0 | 0.3− | 2004 02 26 | 333 | 0.6− | 0.0 | 2004 03 30 | 691 | 0.4− | 0.1+ | |
| 2000 01 05 | 704 | 0.3− | 1.0− | 2004 02 26 | 333 | 0.5− | 0.4− | 2004 03 30 | 691 | 0.3− | 0.1+ | |
| 2000 01 05 | 704 | 0.2− | 0.3− | 2004 02 26 | 704 | 0.9+ | 0.8+ | 2006 07 21 | G96 | 0.3+ | 0.0 | |
| 2000 01 05 | 704 | 0.7+ | 0.8− | 2004 02 26 | 704 | 0.8+ | 0.9+ | 2006 07 21 | G96 | 0.4− | 0.4− | |
| 2000 01 05 | 704 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.8+ | 0.8+ | 2006 07 21 | G96 | 0.5+ | 0.2− | |
| 2000 01 06 | 704 | 0.3− | 0.5− | 2004 02 26 | 704 | 1.1+ | 0.5+ | 2006 07 21 | G96 | 0.1+ | 0.3− | |
| 2000 01 06 | 704 | 0.2− | 0.1+ | 2004 02 26 | 704 | 0.7+ | 0.9+ | 2006 09 14 | 691 | 0.1− | 0.1+ | |
| 2000 01 06 | 704 | 0.2− | 0.2− | 2004 02 26 | 333 | 0.7− | 0.3− | 2006 09 14 | 691 | 0.1+ | 0.1− | |
| 2000 01 13 | 699 | 0.6+ | 1.0− | 2004 02 29 | 291 | 0.3+ | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.0 | |
| 2000 01 13 | 699 | 0.1+ | 0.1− | 2004 02 29 | 291 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.4+ | 0.0 | |
| 2000 01 13 | 699 | 0.3+ | 0.1− | 2004 02 29 | 291 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | |
| 2000 02 02 | 704 | 0.0 | 0.4− | 2004 03 11 | 644 | (0.7− | 2.2−) | 2006 09 18 | 699 | 0.3− | 1.4− | |
| 2000 02 02 | 704 | 0.3− | 0.1+ | 2004 03 11 | 644 | 0.8− | 1.4− | 2006 09 18 | 691 | 0.2− | 0.1+ | |
| 2000 02 02 | 704 | 0.5− | 0.4+ | 2004 03 11 | 644 | 1.0− | 0.9− | 2006 09 18 | 699 | 1.0+ | 0.1+ | |
| 2000 02 02 | 704 | 0.7− | 0.2− | 2004 03 14 | 691 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.5− | 0.5+ | |
| 2000 02 02 | 704 | 0.4− | 0.1− | 2004 03 14 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | (2.4+ | 1.6−) | |
| 2000 02 03 | 704 | 0.1+ | 1.4+ | 2004 03 14 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2− | 0.5− | |
| 2000 02 03 | 704 | 0.1+ | 0.3− | 2004 03 15 | 703 | 0.2+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.4+ | |
| 2000 02 03 | 704 | 0.1+ | 0.6− | 2004 03 15 | 704 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.4− | |
| 2000 02 03 | 704 | 0.3+ | 0.1+ | 2004 03 15 | 703 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− | |
| 2000 02 03 | 704 | 0.3+ | 0.3− | 2004 03 15 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2+ | |
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2004 03 15 | 703 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2− | |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.6− | 2006 09 25 | 691 | 0.2− | 0.3+ | |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2004 03 15 | 704 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.0 | |
| 2002 09 15 | 644 | 0.5− | 1.3+ | 2004 03 15 | 703 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.1+ | |
| 2002 09 15 | 644 | 0.3− | 1.3+ | 2004 03 15 | 704 | 0.8− | 0.3+ | 2006 10 10 | 644 | 0.4− | 0.6+ | |
| 2002 09 15 | 644 | 0.1− | 1.0+ | 2004 03 18 | 704 | 0.5+ | 0.6+ | 2006 10 15 | 703 | 0.6− | 0.3− | |
| 2002 10 03 | 704 | 1.1− | 0.5+ | 2004 03 18 | 704 | 0.8+ | 0.7+ | 2006 10 15 | 703 | 0.4− | 0.7+ | |
| 2002 10 03 | 704 | 0.3+ | 1.1+ | 2004 03 18 | 704 | 0.1+ | 0.9+ | 2006 10 15 | 703 | 1.3− | 0.6+ | |
| 2002 10 03 | 704 | 1.2− | 0.2− | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 10 15 | 703 | (0.5+ | 1.9+) | |
| 2002 10 03 | 704 | 1.0+ | 0.4− | 2004 03 18 | 704 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 | |
| 2003 11 21 | 291 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1− | |
| 2003 11 21 | 291 | 0.6− | 0.5+ | 2004 03 19 | 704 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | |
| 2003 11 21 | 291 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2003 12 21 | 704 | 0.7+ | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 2003 12 21 | 704 | 0.8+ | 0.2− | 2004 03 19 | 704 | 0.0 | 0.9− | 2006 10 20 | 644 | 0.9− | 0.4− | |
| 2003 12 21 | 704 | 1.1+ | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.4+ | |
| 2003 12 21 | 704 | 0.5+ | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.0 | |
| 2003 12 21 | 704 | 0.8+ | 0.4− | 2004 03 19 | 704 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ | |
| 2004 02 02 | 608 | 0.8+ | 0.6− | 2004 03 19 | 704 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.3− | |
| 2004 02 02 | 608 | 0.4+ | 1.3− | 2004 03 19 | 704 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | |
| 2004 02 02 | 608 | 0.5+ | 0.6+ | 2004 03 19 | 704 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.0 | |
| 2004 02 16 | 691 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.8+ | 2006 11 13 | 691 | 0.7+ | 0.3+ | |
| 2004 02 16 | 691 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.4− | 0.2− | |
| 2004 02 16 | 691 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.2− | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.0 | |
| 2004 02 18 | 704 | 0.9+ | 0.0 | 2004 03 19 | 704 | 0.2− | 0.4+ | 2006 11 20 | G96 | 0.4+ | 0.3− | |
| 2004 02 18 | 704 | 0.7+ | 0.4− | 2004 03 27 | 704 | (1.8+ | 0.1−) | 2006 11 20 | G96 | 0.1+ | 1.0− | |
| 2004 02 18 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 1.1+ | 1.1+ | 2006 11 20 | G96 | 0.1− | 0.7− | |
| 2004 02 25 | 333 | 0.2− | 0.2− | 2004 03 27 | 704 | 1.1+ | 0.4− | 2006 11 20 | G96 | 0.2− | 0.6− | |
| 2004 02 25 | 333 | 0.1+ | 0.6− | 2004 03 27 | 704 | 0.2+ | 0.4+ | | | | | |
| 2004 02 25 | 333 | 0.5− | 1.0− | 2004 03 30 | 691 | 0.2− | 0.1− | | | | | |

**(137872)∗ 2000 AH$_{87}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.66374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23253502 | $\omega$ | 46.05380 | | −0.93412049 | −0.29793943 | |
| $a$ | 2.6190501 | $\Omega$ | 115.70574 | | +0.23159115 | −0.92495762 | |
| $e$ | 0.1036522 | $i$ | 12.60288 | | +0.27163292 | −0.23597775 | |
| $P$ | 4.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.9+ | 0.4− | 2000 02 11 | 704 | 0.3− | 0.1− | 2005 05 06 | 704 | 0.2− | 0.6+ | |
| 2000 01 05 | 704 | 0.4− | 0.3− | 2000 02 11 | 704 | 0.2− | 0.9+ | 2005 05 06 | 704 | 0.4+ | 1.0− | |
| 2000 01 05 | 704 | 0.1− | 0.3− | 2003 12 01 | 704 | 0.6+ | 1.1− | 2005 05 06 | 704 | 0.2− | 0.6+ | |
| 2000 01 05 | 704 | 0.8+ | 0.3+ | 2003 12 01 | 704 | 0.2+ | 1.4− | 2005 06 06 | 704 | 0.6+ | 0.7− | |
| 2000 01 05 | 704 | 1.0+ | 0.2− | 2003 12 01 | 704 | 0.4+ | 0.9− | 2005 06 06 | 704 | 0.5+ | 0.2− | |
| 2000 01 06 | 704 | 0.6− | 1.3− | 2003 12 01 | 704 | 0.3− | 1.4− | 2005 06 06 | 704 | 0.4+ | 1.0+ | |
| 2000 01 06 | 704 | 0.2+ | 1.1− | 2003 12 01 | 704 | 0.0 | 0.7− | 2006 08 16 | E12 | 0.1+ | 0.3− | |
| 2000 01 06 | 704 | 0.4− | 0.9− | 2005 04 13 | 703 | 0.8− | 0.2− | 2006 08 16 | E12 | 0.6+ | 0.6− | |
| 2000 01 13 | 699 | 0.4− | 0.5− | 2005 04 13 | 703 | 0.1+ | 0.2+ | 2006 08 16 | E12 | 0.2− | 0.1− | |
| 2000 01 13 | 699 | 0.5− | 1.0+ | 2005 04 13 | 703 | 0.0 | 0.6− | 2006 08 16 | E12 | 0.6− | 0.4+ | |
| 2000 01 13 | 699 | 0.3+ | 1.2+ | 2005 04 13 | 703 | 1.6− | 0.1− | 2006 08 20 | 644 | 0.3− | 0.0 | |
| 2000 01 30 | 704 | 0.5− | 0.4+ | 2005 04 27 | 599 | 0.1+ | 0.4− | 2006 08 20 | 644 | 0.2− | 0.3− | |
| 2000 01 30 | 704 | 0.7+ | 1.1+ | 2005 04 27 | 599 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.7− | 0.1+ | |
| 2000 01 30 | 704 | 0.6− | 1.0+ | 2005 04 27 | 599 | 0.7− | 0.9− | 2006 08 24 | 644 | 0.1+ | 0.1+ | |
| 2000 01 30 | 704 | 0.2+ | 1.1+ | 2005 04 27 | 599 | 0.4+ | 0.5− | 2006 08 24 | 644 | 0.6+ | 0.1+ | |
| 2000 01 30 | 704 | 0.2+ | 0.9+ | 2005 05 04 | 703 | 0.5− | 0.2− | 2006 08 24 | 644 | 0.2+ | 0.5+ | |
| 2000 01 30 | 704 | 0.5+ | 0.6+ | 2005 05 04 | 703 | 1.1− | 0.3− | 2006 09 14 | 644 | 0.5+ | 0.3+ | |
| 2000 02 11 | 704 | 0.1− | 0.7+ | 2005 05 04 | 703 | 0.8− | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.6+ | |
| 2000 02 11 | 704 | 0.5− | 0.3+ | 2005 05 04 | 703 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.6+ | |
| 2000 02 11 | 704 | 0.3− | 0.2+ | 2005 05 06 | 704 | 1.7+ | 0.6− | | | | | |

**(137873)∗ 2000 AC$_{91}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.71357 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26545757 | $\omega$ | 288.24429 | | +0.50946651 | −0.85766615 | |
| $a$ | 2.3977614 | $\Omega$ | 130.92369 | | +0.82021618 | +0.45955061 | |
| $e$ | 0.1847560 | $i$ | 5.28990 | | +0.26017167 | +0.23069896 | |
| $P$ | 3.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.4− | 0.0 | 2004 02 15 | 703 | 0.5+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.2− | |
| 2000 01 05 | 704 | 0.8− | 0.1− | 2004 02 15 | 703 | 0.8+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.3− | |
| 2000 01 05 | 704 | 0.5+ | 0.2− | 2004 02 15 | 703 | 0.9+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.0 | |
| 2000 01 06 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.5− | 1.1+ | 2006 10 16 | 703 | 0.5− | 0.2− | |
| 2000 01 06 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.8+ | 0.9+ | 2006 10 22 | 703 | 0.1+ | 0.1− | |
| 2000 01 06 | 704 | 0.3+ | 0.9− | 2004 02 23 | 704 | 0.4− | 0.9+ | 2006 10 22 | 703 | 0.1− | 0.7− | |
| 2000 02 03 | 704 | 0.3+ | 0.3+ | 2004 02 23 | 704 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.8+ | 0.4− | |
| 2000 02 03 | 691 | 0.3+ | 0.3− | 2004 02 23 | 704 | 0.6− | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.2+ | |
| 2000 02 03 | 704 | 0.9+ | 0.2− | 2004 03 18 | 691 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− | |
| 2000 02 03 | 691 | 0.4+ | 0.3− | 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | |
| 2000 02 03 | 704 | 0.8− | 0.2+ | 2004 03 18 | 691 | 0.9− | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2000 02 03 | 704 | 0.1+ | 0.7+ | 2004 03 20 | 704 | 1.1+ | 0.4− | 2006 11 13 | 703 | 0.3+ | 0.3+ | |
| 2000 02 03 | 691 | 0.4+ | 0.3− | 2004 03 20 | 704 | 1.1+ | 1.4− | 2006 11 13 | 703 | 1.0+ | 0.3+ | |
| 2000 02 03 | 704 | 0.3+ | 0.7+ | 2004 03 20 | 704 | 0.7+ | 0.0 | 2006 11 13 | 703 | 0.7+ | 0.7+ | |
| 2000 02 05 | 704 | 0.4+ | 1.3− | 2006 09 15 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.3+ | 1.0+ | |
| 2000 02 05 | 704 | 0.2− | 0.1+ | 2006 09 15 | 644 | 0.1− | 0.1− | 2006 11 14 | 644 | 0.1− | 0.2+ | |
| 2000 02 05 | 704 | 0.8− | 0.4+ | 2006 09 15 | 644 | 0.4− | 0.1+ | 2006 11 14 | 644 | 0.2+ | 0.0 | |
| 2000 02 05 | 704 | 0.1+ | 1.7+ | 2006 09 29 | 699 | 0.1− | 0.0 | 2006 11 14 | 644 | 0.1− | 0.5+ | |
| 2000 02 06 | 691 | 0.5− | 0.3− | 2006 09 29 | 699 | 0.4+ | 0.5+ | 2006 11 14 | 644 | 0.3− | 0.3− | |
| 2000 02 06 | 691 | 0.3− | 0.4− | 2006 09 29 | 699 | 0.0 | 0.8+ | 2006 11 14 | 644 | 0.2− | 0.3− | |
| 2000 02 06 | 691 | 0.4− | 0.3− | 2006 09 29 | 699 | 0.0 | 0.6+ | 2006 11 14 | 644 | 0.3− | 0.0 | |
| 2000 02 11 | 704 | 0.0 | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.6− | 2006 11 19 | 703 | 0.5− | 0.4+ | |
| 2000 02 11 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.9− | 0.4+ | |
| 2000 02 11 | 704 | 0.3+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 19 | 703 | 0.6− | 1.2+ | |
| 2000 02 11 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.4− | 0.4+ | |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.3− | |
| 2002 08 29 | 644 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.1+ | |
| 2002 08 29 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | (1.7− | 0.6+) | |
| 2002 09 06 | 704 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.8− | 0.2− | |
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.3− | |
| 2002 09 06 | 704 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.3− | |
| 2002 09 06 | 704 | 0.5− | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.5− | |
| 2002 09 06 | 704 | 0.7− | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | | | | |
| 2004 02 15 | 703 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.4− | 0.2− | | | | | |

**(137874)∗ 2000 AV$_{93}$**

Discovered 2000 Jan. 7 by J. M. Roe at Oaxaca.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.75928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27770038 | $\omega$ | 60.87038 | | −0.85843144 | −0.51239399 | |
| $a$ | 2.3267608 | $\Omega$ | 88.29730 | | +0.46209171 | −0.79235296 | |
| $e$ | 0.1531463 | $i$ | 1.34179 | | +0.22263581 | −0.33110297 | |
| $P$ | 3.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.0 | 0.9− | 2004 02 19 | 704 | 0.6+ | 0.9+ | 2004 04 12 | 699 | 1.0− | 0.5− | |
| 1999 12 07 | 704 | 0.5+ | 0.3− | 2004 02 19 | 704 | 0.4+ | 0.8+ | 2004 04 12 | 699 | 0.4− | 0.3+ | |
| 1999 12 07 | 704 | 0.8+ | 1.0− | 2004 02 19 | 704 | 0.2− | 1.3+ | 2004 04 12 | 699 | 0.1+ | 0.0 | |
| 1999 12 07 | 704 | 0.7+ | 1.4− | 2004 02 23 | 704 | 0.8+ | 0.9+ | 2004 04 12 | 703 | 1.0+ | 0.9+ | |
| 1999 12 15 | 703 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.9+ | 0.9+ | 2004 04 12 | 703 | 0.6− | 0.2+ | |
| 1999 12 15 | 703 | 0.4+ | 0.2+ | 2004 02 23 | 704 | 1.0+ | 0.3− | 2004 04 12 | 703 | 0.5+ | 0.3+ | |
| 1999 12 15 | 703 | 0.5+ | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2004 04 12 | 703 | 0.1+ | 0.2− | |
| 1999 12 15 | 703 | 0.4+ | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.4− | 2004 04 15 | 704 | 0.5+ | 0.7+ | |
| 2000 01 04 | 704 | 0.5+ | 0.6− | 2004 02 26 | 695 | 0.6− | 0.8+ | 2004 04 15 | 704 | 0.4+ | 0.3− | |
| 2000 01 04 | 704 | 0.8+ | 0.5− | 2004 02 26 | 695 | 0.3− | 0.1− | 2004 04 15 | 704 | 0.3+ | 0.4+ | |
| 2000 01 04 | 704 | 0.3+ | 0.5− | 2004 03 15 | 683 | 0.2+ | 1.4− | 2004 04 15 | 704 | 0.4+ | 0.1+ | |
| 2000 01 04 | 704 | 0.3− | 0.6− | 2004 03 15 | 683 | 0.4− | 0.7− | 2004 04 15 | 704 | 0.5+ | 0.1+ | |
| 2000 01 07 | 732 | 1.1+ | 0.3− | 2004 03 15 | 703 | 0.0 | 0.5+ | 2004 04 19 | 704 | 1.1+ | 0.1− | |
| 2000 01 07 | 732 | 0.2− | 1.1+ | 2004 03 15 | 683 | 0.3− | 1.0− | 2004 04 19 | 704 | 0.4− | 0.6+ | |
| 2000 01 07 | 732 | 1.0− | 0.4+ | 2004 03 15 | 703 | 0.1− | 0.5+ | 2004 04 19 | 704 | (0.0 | 1.7+) | |
| 2000 01 07 | 732 | 0.4− | 0.1+ | 2004 03 15 | 703 | 0.1− | 0.6+ | 2004 04 19 | 704 | 1.0− | 1.3+ | |
| 2000 01 07 | 732 | 0.6+ | 0.5+ | 2004 03 15 | 703 | 0.0 | 0.4+ | 2004 04 25 | 691 | 0.1− | 0.1+ | |
| 2000 01 07 | 732 | 0.3− | 0.5− | 2004 03 15 | 333 | 0.0 | 0.2− | 2004 04 25 | 691 | 0.0 | 0.1+ | |
| 2000 01 08 | 732 | 0.8− | 0.4− | 2004 03 15 | 333 | 0.4+ | 1.4+ | 2004 04 25 | 691 | 0.1+ | 0.1+ | |
| 2000 01 08 | 732 | 0.7− | 0.3− | 2004 03 16 | 333 | 0.2− | 0.3+ | 2004 05 17 | 704 | (0.2− | 1.7+) | |
| 2000 01 08 | 732 | 0.3+ | 0.0 | 2004 03 16 | 683 | 0.4− | 1.1+ | 2004 05 17 | 704 | 0.5+ | 0.1+ | |
| 2000 01 09 | 732 | 1.2− | 0.1+ | 2004 03 16 | 704 | 1.0+ | 0.1+ | 2004 05 17 | 704 | 0.0 | 0.9+ | |
| 2000 01 09 | 732 | 0.4− | 0.1+ | 2004 03 16 | 333 | 0.2− | 0.2+ | 2005 07 18 | 644 | 0.4− | 0.9+ | |
| 2000 01 10 | 732 | 0.2+ | 0.6+ | 2004 03 16 | 704 | 0.7− | 0.6+ | 2005 07 18 | 644 | 0.5− | 0.6+ | |
| 2000 01 10 | 732 | 0.6+ | 0.9− | 2004 03 16 | 683 | 0.2+ | 1.0+ | 2005 07 18 | 644 | 0.4− | 0.8+ | |
| 2000 01 24 | 732 | 0.5+ | 1.1+ | 2004 03 16 | 333 | 0.2− | 1.5+ | 2005 07 27 | 644 | 0.4− | 0.7+ | |
| 2000 01 24 | 732 | 1.6− | 0.6− | 2004 03 16 | 704 | (1.2+ | 1.6+) | 2005 07 27 | 644 | 0.5− | 0.7+ | |
| 2000 01 25 | 732 | (0.3− | 3.7+) | 2004 03 16 | 683 | 0.4+ | 0.7+ | 2005 07 27 | 644 | 0.1− | 0.7+ | |
| 2000 01 25 | 732 | 0.3− | 0.8+ | 2004 03 16 | 704 | 1.3+ | 1.4+ | 2006 09 28 | G96 | 0.1− | 0.3− | |
| 2000 02 07 | 732 | 1.2− | 0.8+ | 2004 03 16 | 704 | 1.0+ | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.1− | |
| 2000 02 07 | 732 | (1.0− | 2.1+) | 2004 03 16 | 333 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.1− | |
| 2000 02 09 | 732 | (2.6− | 0.4−) | 2004 03 16 | 333 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2− | |
| 2000 02 09 | 732 | 0.1− | 0.2− | 2004 03 16 | 608 | 0.2− | 0.3− | 2006 10 29 | G96 | 0.3− | 0.4− | |
| 2000 02 11 | 704 | 0.6+ | 0.4+ | 2004 03 16 | 608 | 0.1− | 0.5− | 2006 10 29 | G96 | 0.0 | 0.4− | |
| 2000 02 11 | 704 | 0.5+ | 0.2− | 2004 03 16 | 608 | 0.1− | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.3− | |
| 2000 02 11 | 704 | 0.4− | 0.0 | 2004 03 17 | 333 | 0.2− | 0.5− | 2006 10 29 | G96 | 0.1− | 0.2− | |
| 2000 02 23 | 732 | 0.3− | 0.8+ | 2004 03 17 | 333 | 0.3− | 0.4− | 2006 11 11 | 691 | 0.0 | 0.2− | |
| 2000 02 23 | 732 | 0.6− | 0.0 | 2004 03 17 | 683 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.1− | |
| 2000 02 24 | 732 | 0.9− | 0.7+ | 2004 03 17 | 333 | 0.1− | 0.7− | 2006 11 11 | 691 | 0.2− | 0.1+ | |
| 2000 02 24 | 732 | (2.3− | 0.7−) | 2004 03 17 | 683 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.1− | 0.7+ | |
| 2000 02 24 | 732 | 0.1− | 0.8+ | 2004 03 17 | 683 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.4− | 0.4− | |
| 2002 10 03 | 704 | (0.0 | 1.6+) | 2004 03 18 | 683 | 1.0+ | 0.8− | 2006 11 15 | 703 | 0.0 | 0.1− | |
| 2002 10 03 | 704 | 0.6− | 1.1+ | 2004 03 18 | 683 | 0.5− | 1.3− | 2006 11 15 | 703 | 0.1− | 0.1− | |
| 2002 10 03 | 704 | 0.4+ | 0.3− | 2004 03 18 | 683 | 0.2− | 0.5− | 2006 11 15 | 691 | 0.0 | 0.2+ | |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.4+ | 0.0 | 2006 11 15 | 691 | 1.1+ | 0.8− | |
| 2002 10 11 | 704 | 0.8− | 1.0+ | 2004 03 19 | 704 | 0.4− | 0.0 | 2006 11 15 | 691 | 0.9− | 0.1− | |
| 2002 10 11 | 704 | 1.4− | 1.2+ | 2004 03 19 | 704 | 0.2− | 0.4− | 2006 11 18 | 704 | (0.1+ | 2.0+) | |
| 2002 10 11 | 704 | 1.1− | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.0+ | 0.4+ | |
| 2002 10 11 | 704 | 0.9− | 0.4− | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5+ | 1.4+ | |
| 2002 10 30 | 645 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.4+ | |
| 2002 10 30 | 645 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.7+ | 1.1+ | |
| 2002 11 08 | 645 | 0.0 | 0.2+ | 2004 03 20 | 333 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.5+ | |
| 2002 11 08 | 645 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.2− | 0.1+ | |
| 2003 12 21 | 704 | 0.3− | 0.7+ | 2004 03 20 | 333 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.9+ | 0.1+ | |
| 2003 12 21 | 704 | 1.1+ | 0.3+ | 2004 03 20 | 333 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.2+ | |
| 2003 12 21 | 704 | 0.4− | 0.2− | 2004 03 20 | 699 | 0.4− | 0.6− | 2006 11 21 | 704 | 1.0+ | 0.6+ | |
| 2003 12 21 | 704 | 0.5+ | 1.0+ | 2004 03 22 | 704 | 0.3+ | 0.9+ | 2006 11 24 | G96 | 0.4− | 0.2− | |
| 2004 01 24 | 704 | 0.3+ | 1.0+ | 2004 03 22 | 704 | 0.4+ | 0.8+ | 2006 11 24 | G96 | 0.0 | 0.3− | |
| 2004 01 24 | 704 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.3− | |
| 2004 01 24 | 704 | 0.5+ | 0.5+ | 2004 03 22 | 704 | 0.8+ | 0.7+ | 2006 11 24 | G96 | 0.3+ | 0.2− | |
| 2004 01 24 | 704 | 0.4+ | 0.2− | 2004 03 22 | 704 | 0.6+ | 1.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ | |
| 2004 01 29 | 704 | 0.5+ | 0.1− | 2004 03 28 | 704 | 0.3+ | 1.0− | 2006 11 27 | 691 | 0.1− | 0.2− | |
| 2004 01 29 | 704 | 0.1− | 0.3− | 2004 03 28 | 704 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1+ | |
| 2004 01 29 | 704 | 0.2− | 0.5− | 2004 03 28 | 704 | 0.1+ | 1.0− | 2006 12 01 | 691 | 0.1− | 0.1− | |
| 2004 01 29 | 704 | 1.0+ | 0.1+ | 2004 03 28 | 704 | (0.4+ | 1.5−) | 2006 12 01 | 691 | 0.3− | 0.1− | |
| 2004 02 13 | 644 | 0.3+ | 0.7+ | 2004 03 28 | 704 | 0.3+ | 1.0− | 2006 12 01 | 704 | 0.6− | 0.4− | |
| 2004 02 13 | 644 | 0.4+ | 0.0 | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.1+ | |
| 2004 02 13 | 644 | 0.2+ | 0.3+ | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.5− | |
| 2004 02 18 | 608 | 0.2+ | 0.6− | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.0 | 1.0− | |
| 2004 02 18 | 608 | 0.3− | 0.8− | 2004 03 31 | 691 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.3− | 0.3+ | |
| 2004 02 18 | 608 | 0.3− | 0.7− | 2004 03 31 | 691 | 0.4− | 0.0 | 2006 12 01 | 704 | 0.0 | 0.9− | |
| 2004 02 19 | 704 | 1.2+ | 1.1+ | 2004 03 31 | 691 | 0.3− | 0.1− | | | | | |
| 2004 02 19 | 704 | 1.1+ | 0.6+ | 2004 04 12 | 699 | 0.4− | 0.1− | | | | | |

**(137875)∗ 2000 AE$_{98}$ = 2002 RM$_{216}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37263)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.63309 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24265901 | $\omega$ | 9.53106 | | −0.11712214 | −0.98792106 | |
| $a$ | 2.5456876 | $\Omega$ | 87.24434 | | +0.90434636 | −0.14831530 | |
| $e$ | 0.2182795 | $i$ | 5.83009 | | +0.41041452 | +0.04488383 | |
| $P$ | 4.06 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.4− | 0.7− | 2002 10 07 | 608 | 0.3− | 0.4− | 2004 01 30 | 704 | 0.1+ | 0.0 | |
| 2000 01 04 | 704 | 1.3− | 0.3+ | 2002 10 07 | 608 | 0.2− | 0.9− | 2004 01 30 | 704 | 1.9+ | 0.1+ | |
| 2000 01 04 | 704 | 0.1+ | 0.1− | 2003 10 29 | 704 | 0.3+ | 0.6+ | 2004 01 30 | 704 | 1.1+ | 0.2+ | |
| 2000 01 04 | 704 | 0.6− | 0.3− | 2003 10 29 | 704 | 0.8+ | 0.3+ | 2004 02 16 | 704 | 0.7− | 0.4+ | |
| 2000 01 04 | 704 | 0.4+ | 0.3− | 2003 10 29 | 704 | 0.7+ | 0.2+ | 2004 02 16 | 704 | 0.9− | 0.0 | |
| 2000 01 07 | 704 | 0.1− | 0.4− | 2003 10 29 | 704 | 0.3+ | 0.3− | 2004 02 16 | 704 | 0.8− | 0.3+ | |
| 2000 01 07 | 704 | 0.4− | 0.2+ | 2003 11 20 | 704 | 1.3+ | 0.3− | 2004 02 16 | 704 | 0.7− | 0.2+ | |
| 2000 01 07 | 704 | 1.3+ | 0.8+ | 2003 11 20 | 704 | 0.9+ | 0.5+ | 2004 02 16 | 704 | 0.7− | 0.1+ | |
| 2000 02 04 | 704 | 0.3+ | 1.1+ | 2003 11 20 | 704 | 0.6+ | 0.9+ | 2004 02 18 | 608 | 0.0 | 0.5+ | |
| 2000 02 04 | 704 | 0.5− | 1.4− | 2003 12 01 | 704 | 0.5− | 0.4− | 2004 02 18 | 608 | 0.1− | 0.5+ | |
| 2000 02 04 | 704 | 0.4+ | 0.4+ | 2003 12 01 | 704 | 0.3+ | 0.1+ | 2004 02 18 | 608 | 0.0 | 0.6+ | |
| 2000 02 04 | 704 | 1.2− | 0.0 | 2003 12 01 | 704 | 0.4+ | 0.4+ | 2004 02 20 | 049 | 0.2+ | 0.2− | |
| 2000 02 29 | 704 | 0.2+ | 0.1+ | 2003 12 01 | 703 | 1.2+ | 0.2− | 2004 02 20 | 049 | 0.2+ | 0.3− | |
| 2000 02 29 | 704 | 0.1− | 0.2+ | 2003 12 01 | 703 | 0.3− | 0.3+ | 2004 02 20 | 049 | 0.1+ | 0.2− | |
| 2000 02 29 | 704 | 0.5+ | 0.2+ | 2003 12 01 | 703 | 1.1− | 0.4+ | 2004 02 27 | 704 | 0.1+ | 0.0 | |
| 2000 02 29 | 704 | 0.3− | 0.0 | 2003 12 01 | 703 | 0.0 | 0.3+ | 2004 02 27 | 704 | 1.9+ | 1.4− | |
| 2000 03 05 | 704 | 0.6+ | 0.5+ | 2003 12 18 | 703 | 0.2− | 0.8+ | 2004 02 27 | 704 | 0.5+ | 0.3− | |
| 2000 03 05 | 704 | 0.5+ | 0.1+ | 2003 12 18 | 703 | 0.7− | 0.0 | 2004 03 14 | 704 | 0.0 | 0.1− | |
| 2000 03 05 | 704 | 0.3+ | 0.2− | 2003 12 18 | 703 | 0.7− | 0.8− | 2004 03 14 | 704 | 0.2+ | 0.3+ | |
| 2000 03 05 | 704 | 1.2+ | 0.4− | 2003 12 18 | 703 | 0.5+ | 0.3− | 2004 03 14 | 704 | 0.4+ | 0.5+ | |
| 2000 03 05 | 704 | 1.0+ | 0.3+ | 2003 12 23 | 704 | 0.8− | 0.1+ | 2004 03 23 | 704 | 0.7+ | 0.8+ | |
| 2000 03 12 | 704 | 0.6− | 0.1+ | 2003 12 23 | 704 | 0.5− | 0.2− | 2004 03 23 | 704 | 0.5+ | 0.3+ | |
| 2000 03 12 | 704 | 0.2− | 0.2+ | 2003 12 23 | 704 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.5+ | 0.5+ | |
| 2000 03 12 | 704 | 0.4− | 0.6+ | 2003 12 23 | 704 | 0.4− | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.2+ | |
| 2000 03 12 | 704 | 0.4− | 0.3+ | 2003 12 23 | 704 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.5− | 0.1+ | |
| 2000 03 12 | 704 | 0.1+ | 0.3+ | 2003 12 28 | 704 | 0.5− | 0.4− | 2004 03 29 | 703 | 0.1+ | 1.0+ | |
| 2000 03 28 | 704 | 0.2− | 0.7− | 2003 12 28 | 704 | 0.7− | 0.3+ | 2004 03 29 | 703 | 0.2− | 0.1− | |
| 2000 03 28 | 704 | 0.1− | 0.4− | 2003 12 28 | 704 | 0.3− | 0.7+ | 2004 03 29 | 703 | 0.5− | 0.1− | |
| 2000 03 28 | 704 | 0.6− | 0.1− | 2003 12 28 | 704 | 0.2+ | 0.3− | 2004 03 29 | 703 | 0.3− | 0.4+ | |
| 2002 08 19 | 644 | 0.0 | 0.9+ | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2004 05 12 | 704 | 0.4+ | 0.8+ | |
| 2002 08 19 | 644 | 0.0 | 1.0+ | 2004 01 05 | 699 | 1.7+ | 0.4− | 2004 05 12 | 704 | 0.5+ | 0.3+ | |
| 2002 08 19 | 644 | 0.0 | 1.0+ | 2004 01 05 | 699 | 0.7− | 0.1− | 2004 05 12 | 704 | 0.6+ | 1.0+ | |
| 2002 08 30 | 644 | 0.2+ | 0.4+ | 2004 01 05 | 699 | 0.4+ | 0.7− | 2004 05 12 | 704 | 0.4+ | 1.1+ | |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2004 01 05 | 699 | 0.4− | 0.5+ | 2006 08 28 | 699 | 0.1− | 0.1+ | |
| 2002 08 30 | 644 | 0.4+ | 0.4+ | 2004 01 23 | 704 | 0.2− | 0.2+ | 2006 08 28 | 699 | 1.2− | 0.8+ | |
| 2002 09 13 | 608 | 0.1+ | 0.5+ | 2004 01 23 | 704 | 0.3+ | 0.5+ | 2006 08 28 | 699 | 0.6− | 0.7+ | |
| 2002 09 13 | 608 | 0.0 | 0.0 | 2004 01 23 | 704 | 0.0 | 0.3+ | 2006 08 28 | 699 | (2.6+ | 1.6+) | |
| 2002 09 13 | 608 | 0.2+ | 0.5+ | 2004 01 23 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.7+ | |
| 2002 09 16 | 644 | 0.2+ | 0.7+ | 2004 01 23 | 704 | 0.5− | 0.8+ | 2006 09 14 | 644 | 0.2+ | 0.8+ | |
| 2002 09 16 | 644 | 0.1− | 0.6+ | 2004 01 29 | 703 | 0.1− | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.7+ | |
| 2002 09 16 | 644 | 0.0 | 0.6+ | 2004 01 29 | 703 | 0.9− | 0.1− | 2006 09 17 | 699 | 0.3+ | 0.0 | |
| 2002 09 17 | 608 | 0.3− | 0.7− | 2004 01 29 | 703 | 0.4− | 0.6− | 2006 09 17 | 699 | 0.5− | 0.5+ | |
| 2002 09 17 | 608 | 0.9− | 0.0 | 2004 01 29 | 703 | 0.4− | 0.2+ | 2006 09 17 | 699 | 0.7− | 0.5+ | |
| 2002 09 17 | 608 | 0.5− | 0.2− | 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 09 17 | 699 | 0.2+ | 1.0+ | |
| 2002 10 07 | 608 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.0 | 0.0 | | | | | |

**(137876)∗ 2000 AR$_{104}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.57848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26922678 | $\omega$ | 334.45427 | | −0.18109554 | −0.98048644 | |
| $a$ | 2.3753296 | $\Omega$ | 125.88840 | | +0.91773355 | −0.19643666 | |
| $e$ | 0.1470258 | $i$ | 5.41757 | | +0.35351029 | +0.00767953 | |
| $P$ | 3.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.2+ | 0.8− | 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 02 10 | 703 | 0.5+ | 0.2− | |
| 1993 01 23 | 691 | 0.7− | 0.3− | 2004 01 17 | 644 | 0.1− | 0.3+ | 2004 02 10 | 703 | 0.2− | 0.6− | |
| 1993 01 23 | 691 | 0.1+ | 0.2− | 2004 01 17 | 644 | 0.0 | 0.2+ | 2004 02 11 | 699 | 0.3− | 0.1+ | |
| 1999 11 05 | 704 | 0.9+ | 0.1− | 2004 01 17 | 644 | 0.0 | 0.1+ | 2004 02 11 | 699 | 0.8− | 0.2− | |
| 1999 11 05 | 704 | 0.1+ | 0.2+ | 2004 01 17 | 644 | 0.2+ | 0.4+ | 2004 02 11 | 699 | 0.9− | 0.0 | |
| 1999 11 05 | 704 | 0.3+ | 0.5− | 2004 01 17 | 644 | 0.1− | 0.0 | 2004 02 11 | 699 | 0.8− | 0.2+ | |
| 1999 11 05 | 704 | 0.8+ | 0.0 | 2004 01 19 | 691 | 0.2− | 0.0 | 2004 02 12 | 291 | 0.4− | 0.1+ | |
| 1999 11 05 | 704 | 0.1− | 0.6+ | 2004 01 19 | 703 | 0.9+ | 0.6− | 2004 02 12 | 291 | 0.3− | 0.1+ | |
| 1999 12 05 | 704 | 0.5− | 0.7− | 2004 01 19 | 691 | 0.3− | 0.1+ | 2004 02 12 | 291 | 0.0 | 0.0 | |
| 1999 12 05 | 704 | 0.2− | 0.3− | 2004 01 19 | 703 | 0.5+ | 0.0 | 2004 02 14 | 691 | 0.1+ | 0.2− | |
| 1999 12 05 | 704 | 0.1+ | 0.2+ | 2004 01 19 | 703 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.1+ | 0.2− | |
| 1999 12 05 | 704 | 0.7+ | 0.0 | 2004 01 19 | 703 | 0.9+ | 0.5− | 2004 02 14 | 691 | 0.0 | 0.3− | |
| 1999 12 14 | 704 | 0.8− | 1.9− | 2004 01 19 | 691 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.6+ | 0.2+ | |
| 1999 12 14 | 704 | 0.6+ | 1.9− | 2004 01 21 | 704 | 0.4+ | 0.4+ | 2004 02 16 | 704 | 0.4+ | 0.0 | |
| 1999 12 14 | 704 | 0.4+ | 1.3− | 2004 01 21 | 704 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.2+ | 0.3+ | |
| 2000 01 05 | 704 | 0.8− | 0.3− | 2004 01 21 | 704 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.1+ | 0.1− | |
| 2000 01 05 | 704 | 0.4− | 1.1− | 2004 01 21 | 704 | 0.1− | 0.2+ | 2004 02 16 | 704 | 0.2+ | 0.8+ | |
| 2000 01 05 | 704 | 0.6+ | 0.2+ | 2004 01 21 | 704 | 0.1− | 0.0 | 2004 02 17 | 608 | 0.3− | 0.4− | |
| 2000 01 05 | 704 | 0.1− | 0.7+ | 2004 01 24 | 704 | 0.1+ | 0.5+ | 2004 02 17 | 608 | 0.5− | 0.2+ | |
| 2000 01 07 | 704 | 0.4+ | 1.3− | 2004 01 24 | 704 | 0.1− | 0.4+ | 2004 02 17 | 608 | 0.4+ | 0.1− | |
| 2000 01 07 | 704 | 0.1− | 0.8− | 2004 01 24 | 704 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.9+ | 0.1− | |
| 2000 01 07 | 704 | 1.5+ | 0.9− | 2004 01 24 | 704 | 0.5+ | 0.5+ | 2004 02 23 | 704 | 1.2+ | 0.2+ | |
| 2000 01 07 | 704 | 0.8+ | 0.4+ | 2004 01 24 | 704 | 0.2− | 0.5+ | 2004 02 23 | 704 | 0.8+ | 0.4+ | |
| 2002 08 29 | 644 | 0.1+ | 0.3+ | 2004 01 26 | 699 | 0.6− | 0.8+ | 2004 02 23 | 704 | (1.6+ | 0.3+) | |
| 2002 08 29 | 644 | 0.2− | 0.4+ | 2004 01 26 | 699 | 0.4+ | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.4+ | |
| 2002 08 29 | 644 | 0.0 | 0.7+ | 2004 01 26 | 699 | 0.5+ | 0.3− | 2006 08 17 | 644 | 0.3− | 0.1− | |
| 2003 11 21 | 704 | 0.2+ | 0.0 | 2004 01 26 | 699 | 0.5+ | 0.5+ | 2006 08 17 | 644 | 0.3+ | 0.1+ | |
| 2003 11 21 | 704 | (1.5− | 0.3+) | 2004 01 27 | 704 | 0.5+ | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.3+ | |
| 2003 11 21 | 704 | (1.7− | 0.6+) | 2004 01 27 | 704 | 0.1+ | 0.3− | 2006 09 12 | 703 | 0.1+ | 0.6− | |
| 2003 11 21 | 704 | 1.0− | 0.1− | 2004 01 27 | 704 | 0.4+ | 0.3− | 2006 09 12 | 703 | 0.8− | 0.8+ | |
| 2003 11 21 | 704 | 1.1− | 0.7− | 2004 01 27 | 704 | 0.6+ | 0.2+ | 2006 09 12 | 703 | 0.1+ | 0.4+ | |
| 2003 12 01 | 704 | 0.8− | 0.0 | 2004 01 27 | 704 | 1.4− | 0.2+ | 2006 09 12 | 703 | 0.9− | 1.0+ | |
| 2003 12 01 | 704 | 0.2− | 1.0+ | 2004 01 28 | 704 | (2.5− | 0.3+) | 2006 09 16 | 704 | 0.8− | 1.3+ | |
| 2003 12 01 | 704 | (1.6− | 1.0−) | 2004 01 28 | 704 | 0.4− | 0.5+ | 2006 09 16 | 704 | (0.9− | 2.6+) | |
| 2003 12 01 | 704 | 0.0 | 1.3− | 2004 01 28 | 704 | 0.8− | 0.5+ | 2006 09 16 | 704 | (0.8− | 1.7+) | |
| 2003 12 30 | 691 | 0.1+ | 0.1− | 2004 01 28 | 704 | 0.2− | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.6+ | |
| 2003 12 30 | 691 | 0.0 | 0.1− | 2004 01 28 | 704 | 0.9− | 0.8+ | 2006 09 18 | 703 | 0.2− | 1.0+ | |
| 2003 12 30 | 691 | 0.1+ | 0.2− | 2004 01 29 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.7+ | 0.4+ | |
| 2004 01 05 | 703 | 0.4+ | 0.0 | 2004 01 29 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.4+ | |
| 2004 01 05 | 703 | 0.1+ | 0.2+ | 2004 01 29 | 704 | 0.1− | 0.6+ | 2006 09 30 | 704 | (0.2+ | 1.9+) | |
| 2004 01 05 | 703 | 0.1− | 1.2+ | 2004 01 29 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 704 | 0.6− | 0.8+ | |
| 2004 01 05 | 703 | 0.7− | 0.1− | 2004 01 29 | 704 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.1− | 1.1+ | |
| 2004 01 12 | 644 | 0.0 | 0.1+ | 2004 01 30 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.3− | |
| 2004 01 12 | 644 | 0.0 | 0.3+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.4+ | |
| 2004 01 12 | 644 | 0.0 | 0.3+ | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.7+ | |
| 2004 01 12 | 644 | 0.0 | 0.4+ | 2004 01 30 | 704 | 1.0+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1+ | |
| 2004 01 12 | 644 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.5+ | |
| 2004 01 12 | 644 | 0.1+ | 0.4+ | 2004 01 30 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.3+ | |
| 2004 01 13 | 699 | 0.3− | 1.0+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.0 | |
| 2004 01 13 | 699 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.7− | 0.2+ | |
| 2004 01 13 | 699 | 0.0 | 0.4+ | 2004 02 01 | 608 | 0.3+ | 0.9+ | 2006 10 22 | 703 | 0.2+ | 0.0 | |
| 2004 01 13 | 699 | 0.1− | 0.0 | 2004 02 01 | 608 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 0.0 | 0.0 | |
| 2004 01 16 | 644 | 0.2+ | 0.1+ | 2004 02 01 | 608 | (0.1+ | 1.7+) | 2006 10 22 | 703 | 1.6− | 1.0− | |
| 2004 01 16 | 644 | 0.1+ | 0.2+ | 2004 02 10 | 703 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.3+ | 0.1+ | |
| 2004 01 16 | 644 | 0.3+ | 0.3+ | 2004 02 10 | 703 | 0.5− | 0.5− | | | | | |

**(137877)∗ 2000 AB$_{105}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.46321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26336727 | $\omega$ | 161.04810 | | +0.92387279 | −0.37542482 | |
| $a$ | 2.4104318 | $\Omega$ | 221.24800 | | +0.33496074 | +0.88711123 | |
| $e$ | 0.1892469 | $i$ | 6.46745 | | +0.18509558 | +0.26849557 | |
| $P$ | 3.74 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 20 | 691 | 0.2+ | 0.2− | 2004 01 13 | 699 | 0.8+ | 1.4+ | 2006 08 30 | 699 | 0.1+ | 0.2− | | |
| 1995 11 20 | 691 | 0.0 | 0.1− | 2004 01 13 | 699 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 0.0 | 0.4+ | | |
| 1995 11 20 | 691 | 0.1+ | 0.1− | 2004 01 13 | 699 | 1.1− | 0.4− | 2006 09 11 | 703 | 0.7− | 0.5+ | | |
| 1999 12 06 | 704 | 0.4+ | 0.5+ | 2004 01 13 | 699 | 0.8+ | 0.2− | 2006 09 11 | 703 | 0.8− | 0.1+ | | |
| 1999 12 06 | 704 | 0.2− | 0.2+ | 2004 01 23 | 540 | 0.1− | 0.6+ | 2006 09 11 | 703 | (2.5− | 0.8−) | | |
| 1999 12 06 | 704 | 0.1− | 0.7+ | 2004 01 23 | 540 | 0.1+ | 0.4+ | 2006 09 11 | 703 | 0.0 | 0.0 | | |
| 1999 12 06 | 704 | 0.4+ | 0.8+ | 2004 01 24 | 246 | 0.4+ | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | | |
| 1999 12 06 | 704 | 0.0 | 0.0 | 2004 01 24 | 246 | 0.2− | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.3+ | | |
| 1999 12 14 | 704 | 0.1− | 0.3+ | 2004 01 24 | 246 | 0.1+ | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.3+ | | |
| 1999 12 14 | 704 | 0.6− | 0.4+ | 2004 01 24 | 246 | (0.6− | 1.6+) | 2006 09 17 | 691 | 0.2+ | 0.2+ | | |
| 1999 12 14 | 704 | 1.3+ | 1.5+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1+ | | |
| 1999 12 14 | 704 | 0.7+ | 0.6− | 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 17 | 691 | 0.2+ | 0.0 | | |
| 2000 01 05 | 704 | 0.1+ | 0.8− | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 05 | 704 | 0.3− | 0.2− | 2006 08 27 | 699 | 0.6+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ | | |
| 2000 01 05 | 704 | 0.3− | 0.3− | 2006 08 27 | 699 | 0.4+ | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.2+ | | |
| 2000 01 05 | 704 | 0.8− | 0.6− | 2006 08 27 | 699 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.5− | | |
| 2000 01 05 | 704 | 0.2− | 0.8− | 2006 08 29 | 703 | 0.7− | 0.3− | 2006 10 16 | 703 | 0.5− | 1.2− | | |
| 2000 01 07 | 704 | 0.8− | 0.8− | 2006 08 29 | 704 | 0.9− | 1.3− | 2006 10 16 | 703 | 0.1− | 0.6− | | |
| 2000 01 07 | 704 | 1.0− | 1.5− | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.3+ | 1.2− | | |
| 2000 01 07 | 704 | 0.1+ | 1.5− | 2006 08 29 | 703 | 0.5− | 0.4− | 2006 11 10 | 704 | 1.4+ | 0.2− | | |
| 2000 01 07 | 704 | 1.2− | 0.4− | 2006 08 29 | 704 | 0.3+ | 0.2+ | 2006 11 10 | 704 | 0.2− | 0.6+ | | |
| 2000 01 07 | 704 | (2.2− | 1.3−) | 2006 08 29 | 703 | 0.2− | 0.1− | 2006 11 10 | 704 | 0.2− | 1.6+ | | |
| 2003 12 26 | 608 | 0.6+ | 0.9+ | 2006 08 29 | 704 | 0.7− | 0.3+ | 2006 11 10 | 704 | 0.0 | 0.9+ | | |
| 2003 12 26 | 608 | 1.0+ | 1.3+ | 2006 08 30 | 699 | 0.0 | 0.1− | | | | | | |
| 2003 12 26 | 608 | 0.5+ | 0.6+ | 2006 08 30 | 699 | 0.4− | 0.1− | | | | | | |

**(137878)∗ 2000 AS$_{106}$ = 2004 CP$_2$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 60578)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.62519 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26221266 | $\omega$ | 309.43975 | | +0.01828717 | −0.99918198 | |
| $a$ | 2.4175026 | $\Omega$ | 139.46808 | | +0.93353530 | +0.00414587 | |
| $e$ | 0.1546291 | $i$ | 3.18162 | | +0.35801874 | +0.04022666 | |
| $P$ | 3.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 25 | 691 | 0.2− | 0.7+ | 2004 01 24 | 704 | 0.9+ | 0.3+ | 2004 02 17 | 704 | (0.7+ | 2.0+) | | |
| 1998 06 25 | 691 | 0.5− | 1.2+ | 2004 01 24 | 704 | 0.9+ | 1.3+ | 2004 02 17 | 704 | 0.4+ | 0.6+ | | |
| 1998 06 25 | 691 | 0.9− | 0.6+ | 2004 01 24 | 704 | 1.3+ | 1.2+ | 2004 02 17 | 704 | 0.1+ | 0.1+ | | |
| 2000 01 05 | 704 | 0.0 | 1.0− | 2004 01 24 | 704 | (0.3+ | 2.3+) | 2004 02 17 | 704 | 0.3+ | 0.4+ | | |
| 2000 01 05 | 704 | 0.4+ | 0.0 | 2004 01 26 | 699 | 0.9− | 0.5− | 2004 02 17 | 704 | 0.6+ | 0.4+ | | |
| 2000 01 05 | 704 | 0.2− | 0.2− | 2004 01 26 | 699 | 0.4+ | 0.4− | 2004 02 19 | 608 | 0.4− | 0.8+ | | |
| 2000 01 05 | 704 | 0.1− | 0.6− | 2004 01 26 | 699 | 0.1− | 0.5+ | 2004 02 19 | 608 | 0.4− | 0.5+ | | |
| 2000 01 05 | 704 | 0.4+ | 0.1− | 2004 01 26 | 699 | 0.7+ | 0.2+ | 2004 02 19 | 608 | 0.3− | 0.5+ | | |
| 2000 01 07 | 704 | 0.9− | 0.1− | 2004 01 29 | 704 | 0.5+ | 0.6+ | 2004 02 26 | 704 | 0.3+ | 0.4+ | | |
| 2000 01 07 | 704 | 0.0 | 0.1− | 2004 01 29 | 704 | (2.3+ | 1.4+) | 2004 02 26 | 704 | 0.1+ | 0.7+ | | |
| 2000 01 07 | 704 | 0.1− | 0.2+ | 2004 01 29 | 704 | 0.8+ | 0.6+ | 2004 02 26 | 704 | 0.3+ | 0.5+ | | |
| 2000 01 07 | 704 | 0.2− | 1.0− | 2004 01 29 | 704 | 0.6+ | 0.5+ | 2004 02 26 | 704 | 0.2+ | 0.3+ | | |
| 2000 01 07 | 704 | 0.3+ | 0.7+ | 2004 02 10 | 703 | 0.0 | 1.2+ | 2004 02 26 | 704 | 0.3+ | 0.7+ | | |
| 2000 01 09 | 704 | 0.0 | 0.1− | 2004 02 10 | 703 | 0.1− | 0.6+ | 2004 03 01 | 691 | 0.1+ | 0.3+ | | |
| 2000 01 09 | 704 | 0.5+ | 0.4+ | 2004 02 10 | 703 | 0.2− | 0.3+ | 2004 03 01 | 691 | 0.3+ | 0.3+ | | |
| 2000 01 09 | 704 | 1.0− | 0.5− | 2004 02 10 | 703 | 0.2− | 0.1+ | 2004 03 01 | 691 | 0.2+ | 0.2+ | | |
| 2000 01 09 | 704 | 0.4+ | 0.4+ | 2004 02 11 | 699 | 0.0 | 0.9− | 2006 09 30 | G96 | 0.0 | 0.1+ | | |
| 2000 01 09 | 704 | 0.4+ | 0.8+ | 2004 02 11 | 699 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.1+ | | |
| 2002 08 08 | 644 | 0.8− | 0.6+ | 2004 02 11 | 699 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.4+ | | |
| 2002 08 08 | 644 | 0.2− | 1.1+ | 2004 02 11 | 699 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.3+ | | |
| 2002 08 08 | 644 | 0.4+ | 1.0+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.3− | | |
| 2002 08 18 | 644 | (0.8+ | 1.5+) | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.1− | 1.0− | | |
| 2002 08 18 | 644 | 0.4+ | 1.5+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.2+ | | |
| 2002 08 18 | 644 | 0.4+ | 1.1+ | 2004 02 12 | 333 | 0.3+ | 0.6+ | 2006 09 30 | 703 | (3.9− | 1.6+) | | |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2004 02 12 | 333 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.2+ | | |
| 2002 08 28 | 644 | 0.3− | 0.7+ | 2004 02 12 | 333 | 0.1− | 0.4+ | 2006 10 16 | 703 | 1.1− | 0.7+ | | |
| 2002 08 28 | 644 | 0.3− | 0.6+ | 2004 02 13 | 333 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.2− | | |
| 2002 09 02 | 291 | 0.1+ | 0.6+ | 2004 02 13 | 333 | 0.2+ | 0.3+ | 2006 10 16 | 703 | (1.4+ | 2.1−) | | |
| 2002 09 02 | 291 | 0.2+ | 0.6+ | 2004 02 13 | 333 | 0.8− | 1.0+ | 2006 11 23 | G96 | 0.4− | 0.2+ | | |
| 2002 09 02 | 291 | 0.1+ | 0.7+ | 2004 02 13 | 333 | 0.7− | 1.3+ | 2006 11 23 | G96 | 0.5− | 0.6+ | | |
| 2004 01 18 | 644 | 0.5+ | 0.5+ | 2004 02 13 | 333 | 1.2− | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.3+ | | |
| 2004 01 18 | 644 | 0.2+ | 0.6+ | 2004 02 14 | 608 | 0.1+ | 0.5− | 2006 11 23 | G96 | 0.1− | 0.4+ | | |
| 2004 01 18 | 644 | 0.5+ | 0.1+ | 2004 02 14 | 608 | 0.4+ | 0.3− | | | | | | |
| 2004 01 24 | 704 | 0.8+ | 0.7+ | 2004 02 14 | 608 | 0.1− | 0.5− | | | | | | |

**(137879)∗ 2000 AJ$_{114}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.05429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.08220793 | $\omega$ | 199.91070 | | −0.30566766 | −0.92771214 | |
| $a$ | 5.2383387 | $\Omega$ | 268.36451 | | +0.90003789 | −0.20810311 | |
| $e$ | 0.0690622 | $i$ | 12.37862 | | +0.31064302 | −0.30990850 | |
| $P$ | 11.99 | $H$ | 12.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 06 | 691 | 0.2+ | 0.2− | 2000 02 02 | 704 | 0.1+ | 0.2+ | 2002 04 18 | 608 | 0.4+ | 0.1− | | |
| 1994 07 06 | 691 | 0.5− | 0.1+ | 2001 02 22 | 704 | 0.3+ | 1.2+ | 2002 04 18 | 608 | 0.9+ | 0.0 | | |
| 1994 07 06 | 691 | 0.3+ | 0.2− | 2001 02 22 | 704 | 0.5+ | 1.0+ | 2002 04 18 | 608 | 0.8+ | 0.7− | | |
| 2000 01 05 | 704 | 0.5− | 0.1+ | 2001 02 22 | 704 | 0.5+ | 0.4+ | 2002 05 16 | 644 | 0.3+ | 0.4+ | | |
| 2000 01 05 | 704 | 0.3− | 0.2− | 2001 03 02 | 608 | 0.8− | 1.5− | 2002 05 16 | 644 | 0.6+ | 0.4+ | | |
| 2000 01 05 | 704 | 0.5+ | 0.9− | 2001 03 02 | 608 | (1.0− | 1.8−) | 2002 05 16 | 644 | 0.8+ | 0.2+ | | |
| 2000 01 05 | 704 | 0.2+ | 0.0 | 2001 03 02 | 608 | 1.1− | 1.3− | 2006 06 22 | 644 | 0.1− | 0.3+ | | |
| 2000 01 05 | 704 | 0.0 | 1.1+ | 2001 03 15 | 699 | 0.6+ | 0.2− | 2006 06 22 | 644 | 0.4− | 0.6+ | | |
| 2000 01 07 | 704 | 0.6+ | 0.4+ | 2001 03 15 | 699 | 0.7+ | 0.3− | 2006 06 22 | 644 | 0.5− | 0.5+ | | |
| 2000 01 07 | 704 | 0.1+ | 0.3− | 2001 03 15 | 699 | 0.4+ | 0.0 | 2006 08 18 | 644 | 0.3− | 0.4+ | | |
| 2000 01 07 | 704 | 0.1− | 0.3+ | 2001 03 15 | 699 | 0.5+ | 0.0 | 2006 08 18 | 644 | 0.1− | 0.4+ | | |
| 2000 01 07 | 704 | 0.6+ | 0.4− | 2001 03 19 | 645 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.0 | 0.3+ | | |
| 2000 01 07 | 704 | 0.5+ | 0.7− | 2001 03 19 | 645 | 0.1− | 0.0 | 2006 11 02 | G96 | 0.0 | 0.2+ | | |
| 2000 02 02 | 704 | 0.4− | 0.8+ | 2002 04 04 | 608 | 0.4− | 0.1− | 2006 11 02 | G96 | 0.1− | 0.3− | | |
| 2000 02 02 | 704 | 0.8+ | 1.2+ | 2002 04 04 | 608 | 0.6− | 0.1− | 2006 11 02 | G96 | 0.3− | 0.0 | | |
| 2000 02 02 | 704 | 0.6+ | 0.5− | 2002 04 04 | 608 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.3+ | 0.3+ | | |

**(137880)∗ 2000 AA$_{115}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.93798 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26763674 | $\omega$ | 265.56720 | | −0.91033338 | −0.40313951 | |
| $a$ | 2.3847283 | $\Omega$ | 250.63565 | | +0.40807595 | −0.83654161 | |
| $e$ | 0.1759943 | $i$ | 5.69732 | | +0.06904453 | −0.37104806 | |
| $P$ | 3.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.4+ | 0.3+ | 2004 03 28 | 608 | 0.1− | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.1− | | |
| 1999 12 14 | 704 | 1.1− | 0.7− | 2004 03 28 | 608 | 0.2− | 0.6+ | 2006 11 09 | D35 | 0.1− | 0.2+ | | |
| 1999 12 14 | 704 | 0.3− | 0.5− | 2004 03 31 | 704 | 0.2+ | 0.2+ | 2006 11 09 | D35 | 0.1+ | 0.8− | | |
| 1999 12 14 | 704 | 0.2− | 0.2− | 2004 03 31 | 704 | 0.2− | 1.0+ | 2006 11 09 | D35 | 0.2+ | 1.4− | | |
| 1999 12 14 | 704 | 0.2− | 1.0− | 2004 03 31 | 704 | 0.3− | 1.4+ | 2006 11 11 | 703 | 0.2− | 0.9+ | | |
| 1999 12 31 | 699 | 0.1− | 0.4+ | 2004 03 31 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.0 | 0.8+ | | |
| 1999 12 31 | 699 | 0.2− | 0.5+ | 2004 03 31 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.5+ | | |
| 1999 12 31 | 699 | 0.7+ | 0.1+ | 2004 04 08 | 608 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.9+ | | |
| 2000 01 05 | 704 | 0.2+ | 0.5− | 2004 04 08 | 608 | 0.5− | 1.0+ | 2006 11 13 | 691 | 0.2− | 0.4+ | | |
| 2000 01 05 | 704 | 1.0+ | 0.7− | 2004 04 08 | 608 | 0.4+ | 0.6+ | 2006 11 13 | 691 | 0.2+ | 0.4+ | | |
| 2000 01 05 | 704 | 0.4+ | 1.2− | 2004 04 12 | 644 | 0.5+ | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 05 | 704 | 0.6+ | 0.9− | 2004 04 12 | 644 | 0.7+ | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.2− | | |
| 2000 01 05 | 704 | 1.4+ | 1.5− | 2004 04 12 | 644 | 0.6+ | 0.3+ | 2006 11 15 | 704 | 0.4− | 0.3− | | |
| 2000 01 07 | 704 | 0.4+ | 1.8+ | 2004 04 17 | 704 | 0.6+ | 0.3− | 2006 11 15 | 704 | 0.2− | 0.1+ | | |
| 2000 01 07 | 704 | 1.0− | 0.7+ | 2004 04 17 | 704 | 0.4+ | 0.7+ | 2006 11 15 | 704 | 0.2− | 0.5+ | | |
| 2000 01 07 | 704 | 0.7− | 0.1+ | 2004 04 17 | 704 | 0.8+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.8+ | | |
| 2000 01 07 | 704 | 0.0 | 0.2+ | 2004 04 26 | 699 | 0.1− | 0.2+ | 2006 11 16 | 704 | (2.4+ | 1.8+) | | |
| 2000 01 07 | 704 | 0.3− | 0.4− | 2004 04 26 | 699 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.3− | 0.5+ | 2004 04 26 | 699 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.6− | 0.2+ |
| 2000 02 02 | 704 | 0.6− | 0.1+ | 2004 04 26 | 699 | 0.1− | 1.0+ | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2000 02 02 | 704 | 0.3− | 0.2− | 2004 05 14 | 608 | 0.4− | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2000 02 02 | 704 | 0.1− | 0.7− | 2004 05 14 | 608 | 0.7− | 0.7+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2000 02 02 | 704 | 0.2+ | 0.8− | 2004 05 14 | 608 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | (0.5+ | 2.0+) | 2004 05 17 | 704 | (1.9+ | 0.5+) | 2006 11 18 | 704 | 0.4− | 0.5− |
| 2002 10 04 | 704 | 0.2+ | 1.0+ | 2004 05 17 | 704 | 1.5+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2002 10 04 | 704 | 0.9− | 1.3+ | 2004 05 17 | 704 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.3− |
| 2002 10 04 | 704 | (0.0 | 2.6+) | 2004 05 17 | 704 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.8+ | 0.1− |
| 2002 10 04 | 644 | 0.4− | 0.7+ | 2005 07 08 | 691 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2002 10 04 | 644 | 0.4− | 0.4+ | 2005 07 08 | 691 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 10 04 | 644 | 0.6− | 0.7+ | 2005 07 08 | 691 | 0.5+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.3− | 0.7− | 2005 07 29 | 644 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.5− | 0.1+ | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.4− | 0.7+ |
| 2002 10 09 | 704 | 0.4+ | 0.8+ | 2005 07 29 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 1.3+ |
| 2002 10 09 | 704 | 1.3− | 0.1− | 2006 10 16 | 703 | 1.3+ | 0.0 | 2006 11 21 | 704 | (1.6− | 0.5+) |
| 2002 10 31 | 644 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 21 | 704 | (1.5− | 0.5+) |
| 2002 10 31 | 644 | 0.7− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.7− | 0.5+ |
| 2002 10 31 | 644 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.5− | 2006 12 01 | G96 | 0.5− | 0.3− |
| 2004 01 17 | 608 | 0.0 | 1.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2004 01 17 | 608 | 0.4+ | 1.0+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2− | 0.2+ |
| 2004 01 17 | 608 | 0.5+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2004 03 17 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.6− | 1.5+ |
| 2004 03 17 | 704 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.1+ | 2006 12 01 | 704 | 0.4+ | 0.1+ |
| 2004 03 17 | 704 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.2− | 0.4+ |
| 2004 03 17 | 704 | (0.0 | 1.8+) | 2006 10 31 | 691 | 0.2+ | 0.1+ | | | | |
| 2004 03 28 | 608 | 0.4− | 0.6+ | 2006 10 31 | 691 | 0.4+ | 0.1− | | | | |

**(137881)∗ 2000 AR$_{119}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.37613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25916363 | $\omega$ | 221.09945 | | −0.48370251 | −0.86518851 | |
| $a$ | 2.4364267 | $\Omega$ | 258.21477 | | +0.83418448 | −0.41000695 | |
| $e$ | 0.2290172 | $i$ | 7.76219 | | +0.26489267 | −0.28869211 | |
| $P$ | 3.80 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 22 | 704 | 0.5+ | 1.1− | 2000 04 03 | 704 | 0.2− | 0.1− | 2004 03 27 | 699 | 0.2− | 0.4− |
| 1999 10 22 | 704 | 0.5− | 0.4− | 2000 04 03 | 704 | 0.5− | 0.1+ | 2004 03 27 | 699 | 0.1− | 0.3+ |
| 1999 10 22 | 704 | 0.5+ | 0.3− | 2000 04 03 | 704 | 0.6− | 0.2+ | 2004 03 27 | 699 | 0.3− | 0.0 |
| 1999 10 22 | 704 | 0.2+ | 1.1− | 2000 04 03 | 704 | 0.3+ | 0.0 | 2004 03 27 | 699 | 0.2+ | 0.1+ |
| 1999 11 17 | 704 | 0.8+ | 0.0 | 2002 08 16 | 704 | 0.0 | 1.0+ | 2004 03 31 | 703 | 0.5+ | 0.7− |
| 1999 11 17 | 704 | 0.3+ | 0.1− | 2002 08 16 | 704 | 0.6− | 0.7+ | 2004 03 31 | 703 | 0.4− | 0.1+ |
| 1999 11 17 | 704 | 0.4+ | 0.1+ | 2002 08 16 | 704 | 0.3− | 0.7+ | 2004 03 31 | 703 | 0.1+ | 0.8− |
| 1999 11 17 | 704 | 0.1− | 0.4− | 2002 08 19 | 049 | 0.1− | 0.0 | 2004 03 31 | 703 | 1.0+ | 0.4− |
| 1999 11 17 | 704 | 1.1+ | 0.9− | 2002 08 19 | 049 | 0.5− | 0.2− | 2004 03 31 | 704 | 0.4+ | 0.6+ |
| 1999 12 06 | 704 | 0.3− | 0.7− | 2002 08 19 | 049 | 0.7− | 0.0 | 2004 03 31 | 704 | 0.8+ | 0.5+ |
| 1999 12 06 | 704 | 0.5− | 0.2− | 2002 09 12 | 644 | 0.6+ | 0.3+ | 2004 03 31 | 704 | 0.6− | 0.2− |
| 1999 12 06 | 704 | 0.5− | 0.0 | 2002 09 12 | 644 | 0.6+ | 0.3+ | 2004 03 31 | 704 | 0.5+ | 0.6+ |
| 1999 12 06 | 704 | 1.2− | 0.1− | 2002 09 12 | 644 | 0.4+ | 0.2+ | 2004 03 31 | 704 | 0.4+ | 0.4+ |
| 1999 12 06 | 704 | 0.4− | 0.5− | 2002 10 05 | 644 | 0.4− | 1.0+ | 2004 04 16 | 704 | 0.0 | 0.0 |
| 1999 12 14 | 704 | 0.3+ | 0.1+ | 2002 10 05 | 644 | 0.1+ | 0.9+ | 2004 04 16 | 704 | (1.6+ | 0.3+) |
| 1999 12 14 | 704 | 0.1+ | 0.2+ | 2002 10 05 | 644 | 0.1− | 0.8+ | 2004 04 16 | 704 | 1.2+ | 0.7+ |
| 1999 12 14 | 704 | 0.0 | 0.4− | 2002 10 06 | 644 | 0.0 | 0.9+ | 2004 04 16 | 704 | 0.7+ | 1.1+ |
| 1999 12 14 | 704 | 0.1− | 0.4− | 2002 10 06 | 644 | 0.2− | 1.0+ | 2004 04 16 | 704 | (2.1+ | 1.4+) |
| 1999 12 14 | 704 | 0.5+ | 0.1− | 2002 10 06 | 644 | 0.2− | 0.9+ | 2006 09 06 | 644 | 0.1+ | 0.3+ |
| 2000 01 04 | 699 | 0.4+ | 0.2+ | 2003 11 29 | 704 | 0.4− | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.1− |
| 2000 01 04 | 699 | 0.2+ | 0.2+ | 2003 11 29 | 704 | (1.5− | 0.7−) | 2006 09 06 | 644 | 0.2− | 0.1+ |
| 2000 01 04 | 699 | 0.2+ | 0.4+ | 2003 11 29 | 704 | (2.5− | 0.1−) | 2006 09 22 | 699 | 0.3− | 0.3− |
| 2000 01 05 | 704 | 0.2− | 0.2− | 2003 11 29 | 704 | (1.9− | 0.4+) | 2006 09 22 | 699 | 1.3− | 0.7+ |
| 2000 01 05 | 704 | 0.0 | 0.5− | 2003 12 21 | 703 | 0.7+ | 0.6+ | 2006 09 22 | 699 | 1.2− | 0.2+ |
| 2000 01 05 | 704 | 0.1− | 0.3+ | 2003 12 21 | 703 | 1.0+ | 0.9+ | 2006 09 22 | 699 | 1.4+ | 0.2− |
| 2000 01 05 | 704 | 0.0 | 0.2+ | 2003 12 21 | 703 | 0.9+ | 0.2+ | 2006 09 25 | 113 | 0.5− | 0.6+ |
| 2000 01 05 | 704 | 0.1− | 0.1− | 2003 12 21 | 703 | (2.3+ | 1.2+) | 2006 09 25 | 113 | 0.6− | 1.4+ |
| 2000 01 07 | 704 | 0.3+ | 0.5− | 2003 12 22 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 113 | 0.0 | 0.7+ |
| 2000 01 07 | 704 | 0.8− | 0.4− | 2003 12 22 | 704 | 0.6− | 0.8+ | 2006 10 03 | 704 | 0.6+ | 0.3+ |
| 2000 01 07 | 704 | 0.3− | 0.3+ | 2003 12 22 | 704 | 0.4+ | 0.5+ | 2006 10 03 | 704 | 0.5− | 0.0 |
| 2000 01 07 | 704 | 0.1− | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 1.3− | 0.4+ |
| 2000 01 07 | 704 | 0.4− | 0.4+ | 2004 01 28 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2000 02 04 | 704 | 0.3+ | 0.1+ | 2004 01 28 | 704 | (0.9+ | 1.7+) | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2000 02 04 | 704 | 0.1+ | 0.1+ | 2004 01 28 | 704 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.6+ |
| 2000 02 04 | 704 | 0.4+ | 0.7+ | 2004 01 28 | 704 | (0.0 | 1.5+) | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2000 02 04 | 704 | 0.6+ | 0.7− | 2004 01 28 | 704 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2000 02 04 | 704 | 0.4− | 0.1+ | 2004 02 18 | 703 | 1.1− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2000 02 28 | 703 | 0.1+ | 0.2+ | 2004 02 18 | 703 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.5+ |
| 2000 02 28 | 703 | 1.2− | 0.4+ | 2004 02 18 | 703 | 0.8− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2000 02 28 | 703 | 0.6− | 0.7+ | 2004 02 18 | 703 | 0.3+ | 0.4+ | 2006 10 23 | 703 | 0.1+ | 0.9− |
| 2000 02 28 | 703 | 0.2+ | 0.3+ | 2004 03 17 | 704 | 0.0 | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2000 03 27 | 699 | 0.4+ | 0.1+ | 2004 03 17 | 704 | 0.3+ | 0.6+ | 2006 10 23 | 703 | 0.5− | 0.8− |
| 2000 03 27 | 699 | 0.2− | 0.9+ | 2004 03 17 | 704 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.5+ | 0.1+ |
| 2000 03 27 | 699 | 0.2+ | 0.1+ | 2004 03 17 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 703 | 0.4+ | 0.7− |
| 2000 03 27 | 699 | 0.6− | 0.0 | 2004 03 17 | 704 | (2.1+ | 0.1+) | 2006 10 23 | 644 | 0.1− | 0.5+ |

**(137882)∗ 2000 AF$_{120}$ = 2002 RT$_{174}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37266)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.64592 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25879509 | $\omega$ | 117.50786 | | +0.67307476 | −0.73458718 | |
| $a$ | 2.4387392 | $\Omega$ | 289.91752 | | +0.64229982 | +0.63807923 | |
| $e$ | 0.1152850 | $i$ | 5.23260 | | +0.36663512 | +0.23073052 | |
| $P$ | 3.81 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.9+ | 0.3+ | 2002 09 14 | 608 | 0.3+ | 0.9+ | 2004 03 15 | 704 | 0.0 | 0.3+ |
| 2000 01 05 | 704 | 1.5− | 0.6− | 2002 09 14 | 608 | 0.5+ | 0.3+ | 2006 08 06 | 699 | (1.9− | 0.2−) |
| 2000 01 05 | 704 | 0.7+ | 0.6− | 2002 09 14 | 608 | 0.2+ | 0.5+ | 2006 08 06 | 699 | 0.2+ | 1.2+ |
| 2000 01 05 | 704 | 0.2+ | 0.1+ | 2002 09 16 | 683 | (2.0− | 0.9+) | 2006 08 06 | 699 | 0.4− | 0.9+ |
| 2000 01 05 | 704 | 0.1+ | 0.8− | 2002 09 16 | 683 | 0.4− | 0.5− | 2006 08 06 | 699 | (1.1+ | 2.2+) |
| 2000 01 06 | 704 | (1.8− | 2.7−) | 2002 09 16 | 683 | (2.4− | 0.1−) | 2006 09 28 | 703 | 0.0 | 0.1− |
| 2000 01 06 | 704 | 0.5+ | 1.2− | 2002 09 30 | 704 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.5− |
| 2000 01 06 | 704 | 0.8+ | 0.0 | 2002 09 30 | 704 | 0.4+ | 1.0+ | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2000 01 07 | 704 | 0.1+ | 0.1− | 2002 09 30 | 704 | 0.6− | 0.7+ | 2006 09 28 | 703 | 0.4+ | 0.7− |
| 2000 01 07 | 704 | 0.0 | 0.0 | 2002 09 30 | 704 | 0.1+ | 0.8+ | 2006 10 04 | 703 | 0.3+ | 0.1− |
| 2000 01 07 | 704 | 0.1+ | 0.2+ | 2002 10 04 | 704 | 0.2+ | 0.4+ | 2006 10 04 | 703 | 0.1+ | 0.1+ |
| 2000 01 07 | 704 | 0.2− | 0.6+ | 2002 10 04 | 704 | 0.4− | 0.1+ | 2006 10 04 | 703 | 0.0 | 0.3+ |
| 2000 01 07 | 704 | 0.2+ | 0.6+ | 2002 10 04 | 704 | 0.6+ | 0.5+ | 2006 10 04 | 703 | 0.5+ | 0.6− |
| 2000 02 02 | 704 | 0.0 | 0.0 | 2002 10 04 | 704 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2000 02 02 | 704 | 0.4− | 1.1+ | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 0.2− | 0.3+ | 2002 11 08 | 645 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 0.6− | 1.1+ | 2004 01 29 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2000 02 03 | 704 | (0.6− | 2.9+) | 2004 01 29 | 704 | 0.0 | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2000 02 03 | 704 | 0.2+ | 0.3+ | 2004 01 29 | 704 | 0.2+ | 1.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2000 02 03 | 704 | 0.8− | 1.0− | 2004 02 14 | 703 | 1.2− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 08 14 | 699 | 0.6− | 0.8+ | 2004 02 14 | 703 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 08 14 | 699 | 0.2− | 1.0+ | 2004 02 14 | 703 | (1.8− | 0.0 ) | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 08 14 | 699 | 0.6− | 0.6+ | 2004 02 14 | 703 | 0.2+ | 0.8− | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2002 08 14 | 699 | 0.7+ | 0.9+ | 2004 02 14 | 608 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2002 08 28 | 644 | 0.3− | 0.7+ | 2004 02 14 | 608 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.9− |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2004 02 14 | 608 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2002 08 28 | 644 | 0.0 | 0.7+ | 2004 02 18 | 704 | 0.8− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2004 02 18 | 704 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.8− | 0.2+ | 2004 02 18 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.9− | 0.5+ | 2004 02 18 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.4− | 0.2+ | 2004 02 26 | 704 | 1.0+ | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.3+ | 1.1+ | 2006 11 14 | 703 | 0.0 | 1.0− |
| 2002 09 13 | 644 | 0.2− | 0.7+ | 2004 02 26 | 704 | 1.0+ | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.6+ | 2004 03 15 | 704 | 0.7− | 0.9+ | 2006 11 14 | 703 | 1.1+ | 0.7+ |
| 2002 09 14 | 683 | 0.8+ | 0.1− | 2004 03 15 | 704 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.2+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 683 | 0.3− | 0.9− | 2004 03 15 | 704 | 0.0 | 0.9+ | |
| 2002 09 14 | 683 | 0.6+ | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.9+ | |

**(137883)∗ 2000 AP$_{127}$ = 2002 TP$_{246}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37269)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.02796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28033395 | $\omega$ | 165.16692 | | −0.07922240 | −0.99529834 | |
| $a$ | 2.3121655 | $\Omega$ | 289.35272 | | +0.90847896 | −0.04907546 | |
| $e$ | 0.1294820 | $i$ | 3.38585 | | +0.41035325 | −0.08350341 | |
| $P$ | 3.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.8+ | 0.1− | 2002 10 04 | 704 | (1.2+ | 2.2+) | 2003 01 27 | 704 | 0.1− | 1.1+ | |
| 1999 12 07 | 704 | 0.8+ | 0.6+ | 2002 10 04 | 704 | (3.8+ | 0.3−) | 2003 01 27 | 704 | 0.8− | 0.2+ | |
| 1999 12 07 | 704 | 0.9+ | 0.5+ | 2002 10 09 | 704 | 0.0 | 0.0 | 2004 04 14 | 699 | 0.0 | 1.0+ | |
| 2000 01 05 | 704 | 0.4+ | 0.1+ | 2002 10 09 | 704 | 0.3− | 0.8+ | 2004 04 14 | 699 | 0.2− | 0.5+ | |
| 2000 01 05 | 704 | 1.7− | 0.4+ | 2002 10 09 | 704 | 0.6− | 0.8+ | 2004 04 14 | 699 | 0.3− | 0.0 | |
| 2000 01 05 | 704 | 0.5− | 0.1− | 2002 10 09 | 704 | 0.8− | 0.5+ | 2004 04 14 | 699 | 0.7+ | 0.3− | |
| 2000 01 05 | 704 | 0.7+ | 0.0 | 2002 10 11 | 644 | 0.1+ | 0.9+ | 2004 04 21 | 704 | 1.3+ | 1.1+ | |
| 2000 01 05 | 704 | 0.3− | 0.3− | 2002 10 11 | 644 | 0.4− | 1.2+ | 2004 04 21 | 704 | 1.2+ | 0.0 | |
| 2000 01 07 | 704 | (0.2− | 2.7−) | 2002 10 11 | 644 | 0.2+ | 1.0+ | 2004 04 21 | 704 | 0.8+ | 0.4− | |
| 2000 01 07 | 704 | 0.2+ | 1.5− | 2002 10 12 | 704 | 0.7+ | 0.3+ | 2004 04 24 | 704 | 0.1− | 0.7+ | |
| 2000 01 07 | 704 | 0.3− | 1.5− | 2002 10 12 | 704 | 0.1− | 0.8− | 2004 04 24 | 704 | 0.2− | 1.0+ | |
| 2000 01 07 | 704 | (0.7+ | 2.3−) | 2002 10 12 | 704 | 0.8− | 0.7+ | 2004 04 24 | 704 | 0.0 | 0.1+ | |
| 2000 01 30 | 703 | (2.8− | 0.5−) | 2002 10 12 | 704 | 0.1+ | 0.4+ | 2004 04 24 | 704 | 0.1− | 0.2+ | |
| 2000 01 30 | 703 | 0.7+ | 1.1− | 2002 10 12 | 704 | 0.5+ | 0.2+ | 2004 04 26 | 704 | 1.4− | 1.1+ | |
| 2000 01 30 | 703 | 0.2− | 0.3+ | 2002 10 30 | 608 | 0.6+ | 1.3− | 2004 04 26 | 704 | 0.1− | 0.3+ | |
| 2000 01 30 | 703 | 0.2− | 0.0 | 2002 10 30 | 608 | 0.4+ | 1.0− | 2004 04 26 | 704 | 0.1− | 1.2+ | |
| 2000 02 02 | 704 | 0.1− | 0.2+ | 2002 10 30 | 608 | 0.6+ | 0.8− | 2004 04 26 | 704 | 0.3+ | 0.9+ | |
| 2000 02 02 | 704 | 0.0 | 0.5+ | 2002 10 31 | 644 | 0.4− | 0.5− | 2004 04 26 | 704 | 0.2+ | 0.3− | |
| 2000 02 02 | 704 | 0.5+ | 0.0 | 2002 10 31 | 644 | 0.6− | 0.7− | 2005 09 05 | 703 | (1.9− | 0.2+) | |
| 2000 02 02 | 704 | 0.5+ | 0.0 | 2002 10 31 | 644 | 0.5− | 0.6− | 2005 09 05 | 703 | (1.9− | 0.9−) | |
| 2000 02 02 | 704 | 0.3+ | 0.2+ | 2002 11 08 | 704 | 1.1− | 0.3+ | 2005 09 05 | 703 | 0.6− | 1.4+ | |
| 2000 02 04 | 704 | 0.8− | 0.3− | 2002 11 08 | 704 | 1.1− | 0.5+ | 2005 09 05 | 703 | 1.4+ | 0.3− | |
| 2000 02 04 | 704 | 0.1− | 0.2+ | 2002 11 08 | 704 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.3− | |
| 2000 02 04 | 704 | 0.1+ | 0.4− | 2002 11 08 | 704 | 0.5− | 1.1+ | 2006 10 23 | G96 | 0.1− | 0.3− | |
| 2000 02 11 | 704 | 0.2− | 1.1+ | 2002 11 12 | 644 | 0.5+ | 0.8+ | 2006 10 23 | G96 | 0.2− | 0.2− | |
| 2000 02 11 | 704 | 0.2+ | 0.7+ | 2002 11 12 | 704 | 0.8+ | 0.3+ | 2006 10 23 | G96 | 0.6− | 0.1− | |
| 2000 02 11 | 704 | 0.1+ | 0.6+ | 2002 11 12 | 644 | 0.1− | 1.3+ | 2006 11 15 | G96 | 0.3− | 0.8− | |
| 2000 02 11 | 704 | 0.2− | 0.8+ | 2002 11 12 | 704 | 0.3+ | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.5− | |
| 2000 02 11 | 704 | 0.3+ | 1.0+ | 2002 11 12 | 644 | 0.5− | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.4− | |
| 2000 03 05 | 704 | 0.4+ | 0.4− | 2002 11 12 | 704 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.6− | |
| 2000 03 05 | 704 | 0.0 | 0.2+ | 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 11 28 | G96 | 0.4− | 0.6− | |
| 2000 03 05 | 704 | 0.0 | 1.1+ | 2003 01 05 | 704 | 0.1− | 0.3− | 2006 11 28 | G96 | 0.2− | 0.4− | |
| 2000 03 05 | 704 | 0.6− | 0.3+ | 2003 01 05 | 704 | 0.5+ | 0.1− | 2006 11 28 | G96 | 0.0 | 0.5− | |
| 2000 03 05 | 704 | 0.7+ | 0.6+ | 2003 01 05 | 704 | 1.0− | 0.9− | 2006 11 28 | G96 | 0.1+ | 0.5− | |
| 2002 10 04 | 704 | (1.0+ | 2.2+) | 2003 01 05 | 704 | 0.0 | 0.7+ | | | | | |
| 2002 10 04 | 704 | (2.0+ | 2.0+) | 2003 01 27 | 704 | 0.1+ | 0.7+ | | | | | |

**(137884)∗ 2000 AG$_{128}$ = 2002 PQ$_{93}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33188)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.77199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24239052 | $\omega$ | 159.75664 | | −0.29214309 | −0.91131346 | |
| $a$ | 2.5475671 | $\Omega$ | 306.11586 | | +0.82059235 | −0.08305846 | |
| $e$ | 0.0792630 | $i$ | 21.04593 | | +0.49120322 | −0.40324816 | |
| $P$ | 4.07 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.1− | 0.1+ | 2003 12 16 | 699 | 0.2− | 0.4− | 2004 02 11 | 699 | 0.2− | 0.4− | |
| 2000 01 05 | 704 | 0.5− | 0.5+ | 2003 12 19 | 704 | 0.1− | 0.1− | 2004 02 11 | 699 | 0.2− | 0.5− | |
| 2000 01 05 | 704 | 0.0 | 0.1− | 2003 12 19 | 704 | 0.5+ | 0.0 | 2004 02 11 | 699 | 0.1− | 0.2− | |
| 2000 01 07 | 704 | 0.9− | 0.1+ | 2003 12 19 | 704 | 0.0 | 0.7+ | 2004 02 11 | 699 | 0.1− | 0.5− | |
| 2000 01 07 | 704 | 0.1+ | 0.9− | 2003 12 19 | 704 | 0.4− | 0.1+ | 2004 02 11 | 703 | 0.9− | 0.5− | |
| 2000 01 07 | 704 | 0.0 | 0.3− | 2003 12 19 | 704 | 0.2− | 0.5+ | 2004 02 11 | 703 | 0.8− | 0.1− | |
| 2000 01 07 | 704 | 0.3− | 1.0− | 2003 12 22 | 704 | 0.2+ | 0.1+ | 2004 02 11 | 703 | 0.5− | 0.3+ | |
| 2000 01 07 | 704 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.3− | 0.1+ | 2004 02 11 | 703 | 1.2− | 0.7− | |
| 2000 02 02 | 704 | 0.3− | 0.7− | 2003 12 22 | 704 | 0.4− | 0.1− | 2004 02 17 | 704 | 0.0 | 0.3+ | |
| 2000 02 02 | 704 | 0.2+ | 0.8+ | 2003 12 22 | 704 | 0.8− | 0.2− | 2004 02 17 | 704 | 0.3+ | 0.9+ | |
| 2000 02 02 | 704 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.2+ | 0.4+ | 2004 02 17 | 704 | 0.0 | 1.5+ | |
| 2000 02 02 | 704 | 0.2+ | 0.7+ | 2003 12 27 | 704 | 0.6− | 0.1− | 2004 02 17 | 704 | 0.6+ | 0.1+ | |
| 2000 02 02 | 704 | 0.1+ | 1.2+ | 2003 12 27 | 704 | 0.5− | 0.1+ | 2004 02 17 | 704 | 0.2− | 0.2+ | |
| 2000 02 04 | 704 | 0.7+ | 0.9+ | 2003 12 27 | 704 | 0.3− | 0.3+ | 2004 02 17 | 608 | 0.2+ | 0.2− | |
| 2000 02 04 | 704 | 0.0 | 0.5+ | 2003 12 27 | 704 | 0.0 | 0.0 | 2004 02 17 | 608 | 0.6+ | 0.3− | |
| 2000 02 04 | 704 | 0.5+ | 1.0− | 2003 12 27 | 704 | 0.2+ | 0.3+ | 2004 02 17 | 608 | 0.2+ | 0.3+ | |
| 2000 02 04 | 704 | 0.9+ | 0.8+ | 2004 01 13 | 699 | 0.7+ | 0.7− | 2004 02 23 | 704 | 0.5+ | 0.2+ | |
| 2000 02 04 | 704 | 0.0 | 0.1+ | 2004 01 13 | 699 | 0.9− | 0.2+ | 2004 02 23 | 704 | 0.8− | 0.4− | |
| 2000 02 12 | 704 | 1.1+ | 0.9+ | 2004 01 13 | 699 | 0.4+ | 0.1+ | 2004 02 23 | 704 | 0.8− | 0.5+ | |
| 2000 02 12 | 704 | 0.3+ | 0.4− | 2004 01 13 | 699 | 0.3+ | 1.0+ | 2004 02 23 | 704 | 0.3+ | 0.2− | |
| 2000 02 12 | 704 | 0.0 | 0.8+ | 2004 01 16 | 644 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.6− | 0.2− | |
| 2000 03 08 | 608 | 0.2+ | 0.2+ | 2004 01 16 | 644 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.4− | 0.5− | |
| 2000 03 08 | 608 | 0.1− | 0.1+ | 2004 01 16 | 644 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.3− | |
| 2000 03 08 | 608 | 0.0 | 0.3+ | 2004 01 19 | 691 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.0 | 1.0− | |
| 2002 08 14 | 644 | 0.0 | 0.2+ | 2004 01 19 | 691 | 0.1+ | 0.1− | 2004 02 23 | 704 | 1.2− | 0.1− | |
| 2002 08 14 | 644 | 0.2− | 0.0 | 2004 01 19 | 691 | 0.0 | 0.1− | 2004 02 23 | 704 | 1.1− | 0.4− | |
| 2002 08 14 | 644 | 0.2− | 0.2+ | 2004 01 20 | 608 | 1.5+ | 1.0− | 2004 02 26 | 704 | 0.4− | 0.5− | |
| 2002 08 15 | 704 | 0.1+ | 1.1− | 2004 01 20 | 608 | 1.7+ | 0.1− | 2004 02 26 | 704 | 0.2− | 0.0 | |
| 2002 08 15 | 704 | 0.3+ | 0.8− | 2004 01 20 | 608 | 1.6+ | 0.4+ | 2004 02 26 | 704 | 1.1− | 0.2+ | |
| 2002 08 15 | 704 | 1.5− | 0.5− | 2004 01 21 | 704 | 0.3+ | 0.0 | 2004 02 26 | 704 | 0.4− | 0.2− | |
| 2002 08 15 | 704 | 0.3− | 0.1− | 2004 01 21 | 704 | 0.2+ | 0.6− | 2004 02 26 | 704 | 0.0 | 0.4− | |
| 2002 08 15 | 704 | 0.4− | 0.4− | 2004 01 21 | 704 | 0.1+ | 0.3− | 2004 03 19 | 704 | 0.9− | 0.6+ | |
| 2002 08 30 | 704 | 0.1+ | 0.3− | 2004 01 21 | 704 | 0.8+ | 0.3+ | 2004 03 19 | 704 | 1.0− | 0.4+ | |
| 2002 08 30 | 704 | 0.3− | 0.7+ | 2004 01 24 | 704 | 1.2+ | 0.3+ | 2004 03 19 | 704 | 0.8+ | 0.4+ | |
| 2002 08 30 | 704 | 0.3+ | 0.1+ | 2004 01 24 | 704 | 0.4+ | 0.3+ | 2004 03 19 | 704 | 1.2− | 0.2− | |
| 2002 09 30 | 644 | 0.0 | 0.2− | 2004 01 24 | 704 | 0.8+ | 0.0 | 2004 03 19 | 704 | 0.2− | 0.4− | |
| 2002 09 30 | 644 | 0.1+ | 0.0 | 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 09 01 | 704 | 0.7− | 0.9+ | |
| 2002 09 30 | 644 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.4+ | 0.4+ | 2006 09 01 | 704 | 0.1− | 0.6+ | |
| 2002 10 07 | 704 | 1.8+ | 1.4− | 2004 01 26 | 699 | 0.4+ | 0.1− | 2006 09 01 | 704 | 0.8− | 0.6+ | |
| 2002 10 07 | 704 | 1.0+ | 0.2+ | 2004 01 26 | 699 | 0.3− | 0.0 | 2006 09 01 | 704 | 0.1− | 0.4+ | |
| 2002 10 07 | 704 | 1.7+ | 0.4+ | 2004 01 26 | 699 | 0.3− | 0.3+ | 2006 09 01 | 704 | 0.7− | 0.4− | |
| 2002 10 09 | 704 | 0.1− | 0.0 | 2004 01 26 | 699 | 0.0 | 0.5− | 2006 09 06 | 644 | 0.2− | 0.2+ | |
| 2002 10 09 | 704 | 0.0 | 0.9+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.1− | 0.2+ | |
| 2002 10 09 | 704 | 0.1− | 0.4+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.2+ | |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.4+ | 0.6− | 2006 09 16 | 703 | 0.8− | 0.2− | |
| 2002 10 09 | 704 | 0.5+ | 0.5+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.3+ | 0.5− | |
| 2003 11 21 | 644 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.1− | 0.5− | 2006 09 16 | 703 | 0.2− | 0.4+ | |
| 2003 11 21 | 644 | 0.2− | 0.7+ | 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 09 16 | 703 | 0.7− | 0.2− | |
| 2003 11 21 | 644 | 0.3− | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.8− | 0.5+ | |
| 2003 12 05 | 703 | 0.2− | 0.9+ | 2004 01 30 | 704 | 0.0 | 0.3− | 2006 09 21 | 699 | 1.3+ | 0.2+ | |
| 2003 12 05 | 703 | 0.1+ | 0.9+ | 2004 02 01 | 608 | 0.4+ | 0.7− | 2006 09 21 | 699 | 0.3+ | 0.0 | |
| 2003 12 05 | 703 | 0.4+ | 0.3− | 2004 02 01 | 608 | 0.1+ | 0.4− | 2006 09 21 | 699 | 0.4+ | 0.1− | |
| 2003 12 05 | 703 | 0.4+ | 0.6+ | 2004 02 01 | 608 | 0.5+ | 0.6− | 2006 09 27 | 703 | 0.1+ | 0.5+ | |
| 2003 12 16 | 699 | 0.6− | 0.0 | 2004 02 10 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.3+ | 0.6− | |
| 2003 12 16 | 699 | 0.3− | 1.3− | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.8− | |
| 2003 12 16 | 699 | 0.2− | 0.3+ | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.5− | 0.2− | |

**(137885)∗ 2000 AG$_{129}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.61192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29136819 | $\omega$ | 304.76512 | | +0.26539227 | −0.95823299 | |
| $a$ | 2.2534156 | $\Omega$ | 129.48341 | | +0.92355756 | +0.22093292 | |
| $e$ | 0.0700998 | $i$ | 7.93642 | | +0.27678218 | +0.18159898 | |
| $P$ | 3.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.0 | 0.2+ | 2002 11 28 | 699 | 0.0 | 0.3+ | 2005 09 27 | 704 | 0.0 | 1.1+ |
| 2000 01 05 | 704 | 0.3− | 0.3− | 2002 11 28 | 699 | 0.5+ | 0.4+ | 2005 09 27 | 704 | 0.5+ | 1.0+ |
| 2000 01 05 | 704 | 0.5− | 0.5+ | 2002 11 28 | 699 | (0.7+ | 1.8+) | 2005 09 27 | 704 | 0.0 | 0.4+ |
| 2000 01 07 | 704 | 0.1− | 0.7− | 2002 11 28 | 699 | 0.6− | 1.0+ | 2005 09 27 | 704 | 0.2− | 0.5+ |
| 2000 01 07 | 704 | 0.6− | 0.4− | 2002 12 01 | 704 | 0.1+ | 1.2+ | 2005 10 03 | 703 | 0.0 | 0.5− |
| 2000 01 07 | 704 | 0.3− | 0.5+ | 2002 12 01 | 704 | 0.3+ | 0.5+ | 2005 10 03 | 703 | 0.4− | 0.6+ |
| 2000 01 07 | 704 | 0.0 | 0.0 | 2002 12 01 | 704 | 0.1− | 0.4+ | 2005 10 03 | 703 | 0.2+ | 0.1+ |
| 2000 01 13 | 691 | 0.1+ | 0.0 | 2002 12 01 | 704 | 0.3− | 1.0+ | 2005 10 03 | 703 | 0.4+ | 0.5− |
| 2000 01 13 | 691 | 0.0 | 0.1+ | 2004 03 21 | 291 | 0.1+ | 0.2+ | 2005 10 04 | 644 | 0.6− | 0.2+ |
| 2000 01 13 | 691 | 0.2+ | 0.1+ | 2004 03 21 | 291 | 0.1+ | 0.2+ | 2005 10 04 | 644 | 0.6− | 0.5+ |
| 2000 01 16 | 691 | 0.0 | 0.1− | 2004 03 21 | 291 | 0.4+ | 0.3+ | 2005 10 04 | 644 | 0.2− | 0.6+ |
| 2000 01 16 | 691 | 0.0 | 0.2− | 2004 03 26 | 291 | 0.1− | 0.5+ | 2005 10 07 | 699 | 0.8+ | 0.7− |
| 2000 01 16 | 691 | 0.2− | 0.0 | 2004 03 26 | 291 | 0.2+ | 0.8+ | 2005 10 07 | 699 | (0.1− | 1.6+) |
| 2000 02 03 | 704 | 0.0 | 0.3− | 2004 03 26 | 291 | 0.1+ | 1.1+ | 2005 10 07 | 699 | 0.9+ | 0.2+ |
| 2000 02 03 | 704 | 0.4+ | 0.1+ | 2005 09 03 | 703 | 0.1+ | 0.5− | 2005 10 07 | 699 | 0.5− | 1.3+ |
| 2000 02 03 | 704 | 0.2+ | 0.3+ | 2005 09 03 | 703 | 0.2− | 0.7+ | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2000 02 03 | 704 | 0.1+ | 0.4+ | 2005 09 03 | 703 | 0.8− | 0.3+ | 2006 10 22 | G96 | 0.7+ | 0.0 |
| 2000 02 03 | 704 | 0.4− | 0.3+ | 2005 09 03 | 703 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.4− |
| 2000 02 05 | 704 | 0.0 | 0.1+ | 2005 09 13 | 703 | 0.6− | 0.4− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2000 02 05 | 704 | 1.2+ | 1.2+ | 2005 09 13 | 703 | 1.4− | 0.4− | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2000 02 05 | 704 | 0.1− | 0.6+ | 2005 09 13 | 703 | 0.5− | 0.4− | 2006 11 17 | 691 | 0.2+ | 0.4+ |
| 2000 02 05 | 704 | 0.1+ | 0.0 | 2005 09 13 | 703 | 0.2− | 0.3− | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2000 02 11 | 704 | 0.6+ | 0.3+ | 2005 09 26 | I10 | (2.0− | 1.6−) | 2006 11 24 | G96 | 0.4+ | 0.3+ |
| 2000 02 11 | 704 | 0.5− | 0.1− | 2005 09 26 | I10 | (2.5− | 1.8−) | 2006 11 24 | G96 | 0.1+ | 0.4+ |
| 2000 02 11 | 704 | 0.9− | 0.9− | 2005 09 26 | I10 | (1.6− | 1.2−) | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 0.8+ | 1.6− | 2005 09 26 | 703 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 11 11 | 699 | 1.3− | 0.2+ | 2005 09 26 | 703 | 1.0+ | 0.7+ | 2006 11 25 | 691 | 0.3+ | 0.0 |
| 2002 11 11 | 699 | 0.7+ | 0.1+ | 2005 09 26 | 703 | 0.2+ | 0.1+ | 2006 11 25 | 691 | 0.3+ | 0.3+ |
| 2002 11 11 | 699 | 0.4+ | 1.1+ | 2005 09 26 | 703 | 0.5− | 0.5+ | 2006 11 25 | 691 | 0.5− | 0.1− |
| 2002 11 11 | 699 | 1.2− | 0.3− | 2005 09 27 | 704 | 0.7− | 1.1+ | | | | |

**(137886)∗ 2000 AP$_{133}$ = 2004 BV$_{94}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.10138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26791844 | $\omega$ | 171.47862 | | +0.00973235 | −0.97047641 | |
| $a$ | 2.3830563 | $\Omega$ | 277.71113 | | +0.90250802 | +0.11230037 | |
| $e$ | 0.1090403 | $i$ | 14.07541 | | +0.43056307 | −0.21345762 | |
| $P$ | 3.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.1+ | 0.3− | 2004 01 17 | 608 | 0.5+ | 0.2− | 2006 09 29 | 106 | 0.8+ | 1.1+ |
| 2000 01 03 | 704 | 0.4− | 0.5− | 2004 01 28 | 704 | 0.8+ | 0.8+ | 2006 09 29 | 106 | 0.3+ | 0.3− |
| 2000 01 03 | 704 | 1.3+ | 1.7+ | 2004 01 28 | 704 | 0.4+ | 0.1+ | 2006 10 03 | 703 | 1.0− | 0.0 |
| 2000 01 04 | 704 | 0.4+ | 0.2− | 2004 01 28 | 704 | 0.5− | 0.1+ | 2006 10 03 | 703 | 1.0− | 1.2− |
| 2000 01 04 | 704 | 0.1− | 0.1+ | 2004 01 28 | 704 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 1.1− | 0.2− |
| 2000 01 04 | 704 | 0.3− | 0.1− | 2004 01 28 | 704 | 1.1+ | 0.2− | 2006 10 03 | 703 | 0.8− | 0.0 |
| 2000 01 04 | 704 | 0.0 | 0.5− | 2004 01 29 | 699 | (1.8− | 0.3+) | 2006 10 31 | 703 | 0.7− | 0.9+ |
| 2000 01 08 | 704 | 0.1− | 0.1+ | 2004 01 29 | 699 | 1.0+ | 1.2+ | 2006 10 31 | 703 | 0.1+ | 0.0 |
| 2000 01 08 | 704 | 0.9− | 1.0− | 2004 01 29 | 699 | 0.1− | 0.3+ | 2006 10 31 | 703 | 0.1− | 0.2+ |
| 2000 01 08 | 704 | 0.7− | 0.2− | 2004 01 29 | 699 | 0.9− | 0.3− | 2006 10 31 | 703 | 1.2− | 0.0 |
| 2000 01 10 | 704 | 0.1− | 1.2− | 2004 02 19 | 704 | 0.1− | 0.3+ | 2006 11 10 | 106 | 0.9+ | 0.4− |
| 2000 01 10 | 704 | 0.2+ | 0.4− | 2004 02 19 | 704 | 0.1+ | 0.9+ | 2006 11 10 | 106 | 1.4+ | 0.2+ |
| 2000 01 10 | 704 | 0.5− | 0.2+ | 2004 02 19 | 704 | 0.7+ | 0.2+ | 2006 11 10 | 106 | 0.1− | 0.4+ |
| 2000 01 10 | 704 | 0.1− | 0.4− | 2004 02 19 | 704 | 0.3− | 0.7+ | 2006 11 10 | 106 | 0.8+ | 0.2+ |
| 2000 01 10 | 704 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.1+ | 0.9+ |
| 2002 09 11 | 644 | 0.0 | 0.9+ | 2004 02 20 | 704 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.9+ | 0.4+ |
| 2002 09 11 | 644 | 0.3− | 0.8+ | 2004 02 20 | 704 | 0.6− | 0.5+ | 2006 11 16 | 703 | 0.3+ | 0.3− |
| 2002 09 11 | 644 | 0.0 | 0.8+ | 2004 02 20 | 704 | 1.4− | 0.2+ | 2006 11 16 | 703 | 0.5− | 0.9+ |
| 2002 10 06 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 703 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.3− | 0.4− |
| 2002 10 06 | 704 | 1.0+ | 0.3+ | 2006 09 25 | 703 | 0.5− | 0.7+ | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2002 10 06 | 704 | 0.0 | 0.2− | 2006 09 25 | 703 | 0.9− | 0.1− | 2006 11 22 | 703 | 0.4+ | 0.5− |
| 2002 10 06 | 704 | 1.1− | 1.2− | 2006 09 25 | 703 | 0.4− | 0.8− | 2006 11 22 | 703 | 0.1− | 0.2+ |
| 2004 01 17 | 608 | 1.1+ | 0.2− | 2006 09 29 | 106 | 0.1+ | 0.0 | | | | |
| 2004 01 17 | 608 | 0.4+ | 0.7− | 2006 09 29 | 106 | 0.7+ | 0.3− | | | | |

**(137887)∗ 2000 AU$_{133}$ = 1999 YM$_{28}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 13878)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.30933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27238706 | $\omega$ | 2.34146 | | −0.03808394 | −0.99614854 | |
| $a$ | 2.3569212 | $\Omega$ | 89.84844 | | +0.91552819 | −0.06645598 | |
| $e$ | 0.1409722 | $i$ | 4.52991 | | +0.40044694 | +0.05719874 | |
| $P$ | 3.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.0 | 0.2− | 2004 02 25 | 704 | 0.2− | 0.3+ | 2004 03 30 | 704 | (1.0+ | 2.7−) |
| 1999 12 07 | 704 | 0.3− | 0.6− | 2004 02 25 | 704 | 0.0 | 0.2+ | 2004 03 30 | 704 | 0.8− | 1.4− |
| 1999 12 07 | 704 | 0.6− | 0.7− | 2004 03 01 | 291 | 0.5− | 0.2− | 2004 04 09 | 644 | 0.3+ | 0.3+ |
| 1999 12 17 | 734 | 1.2− | 0.3− | 2004 03 01 | 291 | 0.3− | 0.2− | 2004 04 09 | 644 | 0.0 | 0.4+ |
| 1999 12 17 | 734 | 1.3+ | 0.1+ | 2004 03 01 | 291 | 0.2− | 0.2− | 2004 04 09 | 644 | 0.0 | 0.1+ |
| 1999 12 17 | 734 | 0.7+ | 0.3− | 2004 03 15 | 704 | (1.7+ | 0.6+) | 2006 10 18 | 691 | 0.3− | 0.2+ |
| 2000 01 03 | 704 | 0.1− | 1.0− | 2004 03 15 | 704 | (1.5+ | 1.8+) | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2000 01 03 | 704 | 0.6+ | 0.2− | 2004 03 15 | 704 | 0.4+ | 0.0 | 2006 10 18 | 691 | 0.4− | 1.2+ |
| 2000 01 03 | 704 | 0.7+ | 1.0+ | 2004 03 15 | 704 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2000 01 04 | 704 | 0.2− | 0.5− | 2004 03 15 | 704 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.6− | 0.1− |
| 2000 01 04 | 704 | 0.1+ | 0.4− | 2004 03 20 | 704 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2000 01 04 | 704 | 0.1− | 0.7− | 2004 03 20 | 704 | 0.5+ | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 2000 01 08 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.2+ | 1.0+ | 2006 11 10 | 644 | 0.4− | 0.1+ |
| 2000 01 08 | 704 | 0.8− | 0.9− | 2004 03 20 | 704 | (1.5+ | 0.5+) | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2000 01 08 | 704 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.5− | 0.5+ | 2006 11 13 | 703 | 0.1+ | 0.8− |
| 2000 01 08 | 704 | 0.2− | 0.4− | 2004 03 20 | 704 | 0.0 | 0.7+ | 2006 11 13 | 703 | 0.1− | 0.0 |
| 2000 01 08 | 704 | 0.2− | 0.6− | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.6+ | 0.2+ |
| 2002 09 16 | 644 | 0.8− | 0.3+ | 2004 03 20 | 704 | 0.5− | 0.0 | 2006 11 13 | 703 | 0.8− | 0.1− |
| 2002 09 16 | 644 | 0.9− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.1− | 0.7+ |
| 2002 09 16 | 644 | 1.3− | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 2002 10 05 | 704 | 1.1+ | 0.8+ | 2004 03 22 | 704 | 0.2− | 0.6+ | 2006 11 14 | 704 | 0.5− | 0.2+ |
| 2002 10 05 | 704 | 0.0 | 0.1+ | 2004 03 22 | 704 | 1.0+ | 0.0 | 2006 11 14 | 704 | 0.1− | 0.6+ |
| 2002 10 05 | 704 | 0.9+ | 0.7+ | 2004 03 22 | 704 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 2002 10 05 | 704 | (1.9− | 1.1+) | 2004 03 22 | 704 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2003 12 22 | 691 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2003 12 22 | 691 | 0.4+ | 0.5− | 2004 03 25 | 704 | 0.1+ | 0.6− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2003 12 22 | 691 | 0.4+ | 0.2− | 2004 03 25 | 704 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 01 18 | 691 | 0.0 | 0.0 | 2004 03 25 | 704 | 0.3+ | 0.8− | 2006 11 17 | 704 | 1.0+ | 0.0 |
| 2004 01 18 | 691 | 0.1− | 0.1− | 2004 03 25 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.7− | 1.4+ |
| 2004 01 18 | 691 | 0.1− | 0.2+ | 2004 03 26 | 704 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 1.0+ |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2004 03 26 | 704 | 0.6− | 1.2+ | 2006 11 17 | 704 | 0.1+ | 0.4− |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2004 03 26 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 704 | (3.6+ | 1.7+) |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2004 03 26 | 704 | (1.7+ | 0.3−) | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2004 01 27 | 691 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.7− |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.2+ |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.6− |
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 0.0 | 0.7− | 2006 11 20 | 704 | 0.4+ | 0.4− |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.4− |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.2− |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | 2004 03 28 | 704 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.4− | 0.6− |
| 2004 01 30 | 691 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.3− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2004 03 29 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 1.0+ | 0.1+ |
| 2004 02 18 | 704 | 0.8+ | 0.1− | 2004 03 29 | 704 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.9+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 704 | 0.7+ | 0.7− | 2004 03 29 | 704 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.3− | | |
| 2004 02 18 | 704 | 0.5+ | 0.1− | 2004 03 29 | 704 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.7+ | | |
| 2004 02 25 | 704 | 0.2+ | 0.7+ | 2004 03 30 | 704 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.7+ | 0.1+ | | |
| 2004 02 25 | 704 | 0.3+ | 0.3+ | 2004 03 30 | 704 | 0.7+ | 0.2− | | | | | | |
| 2004 02 25 | 704 | 0.1+ | 0.6+ | 2004 03 30 | 704 | 0.6+ | 0.8+ | | | | | | |

**(137888)∗ 2000 AG$_{135}$ = 2002 TC$_{97}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37271)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 264.86672 | | (2000.0) | | | |
| $n$ | 0.26623683 | $\omega$ | 112.54831 | | −0.76582604 | −0.64182308 |
| $a$ | 2.3930804 | $\Omega$ | 27.57257 | | +0.55401447 | −0.68985502 |
| $e$ | 0.1134234 | $i$ | 4.91636 | | +0.32646353 | −0.33490773 |
| $P$ | 3.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 1.4+ | 0.6+ | 2002 10 10 | 645 | 0.1− | 0.1+ | 2004 03 26 | 703 | 0.0 | 0.3+ | | |
| 1999 12 10 | 704 | 0.0 | 0.3− | 2002 11 08 | 645 | 0.0 | 0.0 | 2004 04 19 | 704 | (1.6+ | 1.1+) | | |
| 1999 12 10 | 704 | 0.4− | 0.6+ | 2002 11 08 | 645 | 0.1− | 0.2+ | 2004 04 19 | 704 | (1.5+ | 1.5+) | | |
| 2000 01 04 | 704 | 0.7+ | 0.3− | 2003 12 28 | 704 | 1.0− | 0.1− | 2004 04 19 | 704 | (0.9+ | 2.0+) | | |
| 2000 01 04 | 704 | 0.1− | 0.7− | 2003 12 28 | 704 | 0.4+ | 0.4− | 2004 04 19 | 704 | (2.7+ | 0.5+) | | |
| 2000 01 04 | 704 | 0.6+ | 0.4− | 2003 12 28 | 704 | 0.6+ | 1.2+ | 2006 09 27 | G96 | 0.2+ | 0.4− | | |
| 2000 01 04 | 704 | 0.2+ | 0.9− | 2003 12 28 | 704 | 0.2+ | 1.3+ | 2006 09 27 | G96 | 0.2+ | 0.0 | | |
| 2000 01 04 | 704 | 0.2− | 0.7− | 2004 02 12 | 644 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.0 | | |
| 2000 01 08 | 704 | 0.9− | 1.2− | 2004 02 12 | 644 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.1− | | |
| 2000 01 08 | 704 | 0.3− | 0.9− | 2004 02 12 | 644 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.0 | | |
| 2000 01 08 | 704 | 0.3+ | 0.8− | 2004 02 17 | 704 | 0.7+ | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.0 | | |
| 2000 01 08 | 704 | 0.4− | 0.8− | 2004 02 17 | 704 | (0.1− | 1.6+) | 2006 10 03 | G96 | 0.2− | 0.1− | | |
| 2000 01 08 | 704 | 0.5− | 0.7− | 2004 02 17 | 704 | 0.5+ | 0.9+ | 2006 10 03 | G96 | 0.3+ | 0.2− | | |
| 2000 01 29 | 704 | 0.3− | 0.7− | 2004 02 17 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.2+ | | |
| 2000 01 29 | 704 | 0.0 | 0.5− | 2004 02 17 | 704 | 0.6+ | 1.0+ | 2006 10 16 | 691 | 0.0 | 0.2+ | | |
| 2000 01 29 | 704 | 0.5− | 0.5− | 2004 02 19 | 608 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.2+ | | |
| 2000 01 29 | 704 | 0.6+ | 0.2− | 2004 02 19 | 608 | 0.2+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.0 | | |
| 2000 01 29 | 704 | 0.6+ | 0.2+ | 2004 02 19 | 608 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.1+ | | |
| 2000 01 30 | 704 | 1.3− | 1.1− | 2004 03 15 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− | | |
| 2000 01 30 | 704 | 0.2− | 1.2− | 2004 03 15 | 704 | 0.7+ | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2000 01 30 | 704 | (1.7+ | 2.3−) | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.3+ | | |
| 2002 09 30 | 704 | 0.4− | 0.2− | 2004 03 15 | 704 | 0.9+ | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.2+ | | |
| 2002 09 30 | 704 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.4− | | |
| 2002 09 30 | 704 | 0.6+ | 0.1+ | 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.5+ | 0.3− | | |
| 2002 09 30 | 704 | (1.7+ | 1.7+) | 2004 03 20 | 704 | 0.5+ | 0.9+ | 2006 11 11 | 703 | 0.2− | 0.1− | | |
| 2002 10 02 | 704 | 0.5− | 0.8+ | 2004 03 20 | 704 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.4+ | | |
| 2002 10 02 | 704 | 0.8+ | 1.2+ | 2004 03 20 | 704 | 0.1+ | 1.2+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2002 10 02 | 704 | 0.6− | 1.1+ | 2004 03 20 | 704 | 0.5+ | 0.6+ | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2002 10 02 | 704 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2002 10 05 | 644 | 0.2− | 0.5+ | 2004 03 22 | 704 | 0.3+ | 0.7+ | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2002 10 05 | 644 | 0.4− | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.9+ | 2006 11 20 | G96 | 0.0 | 0.4− | | |
| 2002 10 05 | 644 | 0.4− | 0.4+ | 2004 03 22 | 704 | 0.2− | 0.9+ | 2006 11 20 | G96 | 0.1+ | 0.6− | | |
| 2002 10 06 | 644 | 0.2− | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 11 20 | G96 | 0.3+ | 0.1− | | |
| 2002 10 06 | 644 | 0.0 | 0.5+ | 2004 03 26 | 703 | 0.2− | 0.5+ | 2006 11 20 | G96 | 0.1+ | 0.4− | | |
| 2002 10 06 | 644 | 0.3− | 0.4+ | 2004 03 26 | 703 | 0.5− | 0.2+ | | | | | | |
| 2002 10 10 | 645 | 0.1− | 0.1+ | 2004 03 26 | 703 | 0.3+ | 0.0 | | | | | | |

**(137889)∗ 2000 AO$_{136}$ = 2002 TJ$_{199}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37271)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.41521 | | (2000.0) | | | |
| $n$ | 0.24208433 | $\omega$ | 275.81280 | | −0.49481117 | +0.86149040 |
| $a$ | 2.5497148 | $\Omega$ | 323.79870 | | −0.70120011 | −0.47330401 |
| $e$ | 0.1583480 | $i$ | 11.12895 | | −0.51330333 | −0.18389565 |
| $P$ | 4.07 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 27 | 691 | 0.6+ | 0.4+ | 2003 12 18 | 704 | 0.6+ | 1.1+ | 2004 03 19 | 704 | 0.9− | 0.0 | | |
| 1992 01 27 | 691 | 0.4− | 0.4+ | 2003 12 18 | 704 | 0.3− | 1.2− | 2004 03 19 | 704 | 0.9+ | 0.6− | | |
| 1992 01 27 | 691 | 0.4+ | 0.4+ | 2003 12 18 | 704 | 0.4− | 0.7− | 2006 09 17 | 703 | 0.0 | 0.1− | | |
| 2000 01 04 | 704 | 0.1+ | 1.4− | 2003 12 23 | 704 | 0.5+ | 0.7+ | 2006 09 17 | 703 | 0.7+ | 0.2− | | |
| 2000 01 04 | 704 | 0.1− | 0.4− | 2003 12 23 | 704 | 0.4+ | 1.0+ | 2006 09 17 | 703 | 0.1− | 0.1+ | | |
| 2000 01 04 | 704 | 0.2− | 0.1− | 2003 12 23 | 704 | 0.5− | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.7− | | |
| 2000 01 08 | 704 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.8− | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.2− | | |
| 2000 01 08 | 704 | 0.3+ | 1.2− | 2003 12 23 | 704 | 0.2− | 0.5+ | 2006 09 28 | 703 | 1.4− | 0.3+ | | |
| 2000 01 08 | 704 | 0.1+ | 1.3− | 2003 12 28 | 704 | 0.4− | 0.2+ | 2006 09 28 | 703 | 1.1− | 0.2− | | |
| 2000 01 08 | 704 | 0.4+ | 0.7− | 2003 12 28 | 704 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.1− | 0.2+ | | |
| 2000 01 30 | 704 | 0.0 | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2000 01 30 | 704 | 0.0 | 0.3− | 2003 12 28 | 704 | 0.7+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2000 01 30 | 704 | 0.8− | 0.7+ | 2003 12 28 | 704 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.5+ | | |
| 2000 01 31 | 704 | 0.1+ | 0.8+ | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.6+ | 0.1+ | | |
| 2000 01 31 | 704 | 0.3− | 0.1− | 2004 01 18 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.3+ | | |
| 2000 01 31 | 704 | 0.2+ | 0.2+ | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.6+ | 0.1− | | |
| 2002 10 06 | 704 | 0.9− | 0.9+ | 2004 01 26 | 699 | 0.3+ | 0.8− | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 2002 10 06 | 704 | 0.4+ | 0.1− | 2004 01 26 | 699 | 0.3− | 1.3− | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2002 10 06 | 704 | 0.2− | 0.2+ | 2004 01 26 | 699 | 0.7− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 06 | 704 | 0.0 | 0.2+ | 2004 01 26 | 699 | 1.0− | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.6− | | |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2004 01 31 | 704 | 0.5− | 0.5− | 2006 10 19 | 703 | 0.0 | 0.7− | | |
| 2002 10 07 | 704 | 0.4− | 0.0 | 2004 01 31 | 704 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.8+ | 0.2+ | | |
| 2002 10 07 | 704 | 0.0 | 0.4− | 2004 01 31 | 704 | 0.8− | 0.4− | 2006 10 19 | 703 | 0.6+ | 0.7− | | |
| 2002 10 07 | 704 | 0.6− | 0.4− | 2004 01 31 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.5+ | 0.1− | | |
| 2002 11 14 | 644 | 0.3+ | 0.0 | 2004 02 14 | 704 | 0.9+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2002 11 14 | 644 | 0.1+ | 0.1+ | 2004 02 14 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 14 | 644 | 0.5+ | 0.1+ | 2004 02 14 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 1.3− | 1.4+ | | |
| 2002 12 26 | 734 | 0.5+ | 0.8+ | 2004 02 14 | 704 | 0.7+ | 1.2+ | 2006 11 15 | 703 | 0.9− | 0.1− | | |
| 2002 12 26 | 734 | 0.8− | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.5− | 2006 11 15 | 703 | 0.1− | 0.2+ | | |
| 2003 12 18 | 704 | 0.4+ | 0.8− | 2004 03 19 | 704 | 0.2− | 1.1− | 2006 11 15 | 703 | 0.1− | 0.1− | | |

**(137890)∗ 2000 AZ$_{146}$ = 2002 PQ$_{98}$**

Discovered 2000 Jan. 4 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPO* 33189)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.07252 | | (2000.0) | | | |
| $n$ | 0.27689490 | $\omega$ | 18.32128 | | +0.51540228 | −0.85418133 |
| $a$ | 2.3312709 | $\Omega$ | 40.73080 | | +0.77246037 | +0.42832203 |
| $e$ | 0.2435723 | $i$ | 6.05334 | | +0.37103298 | +0.29481265 |
| $P$ | 3.56 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 1.2+ | 0.4− | 2002 10 04 | 704 | 0.2+ | 1.2+ | 2004 03 28 | 704 | 0.4+ | 0.6+ | | |
| 2000 01 03 | 704 | 0.8+ | 1.2− | 2002 10 04 | 704 | 0.2+ | 1.1+ | 2004 04 19 | 704 | 0.8+ | 0.9+ | | |
| 2000 01 03 | 704 | 0.3+ | 0.5− | 2002 10 10 | 699 | (1.6+ | 1.2+) | 2004 04 19 | 704 | (1.6+ | 1.3+) | | |
| 2000 01 03 | 704 | 0.8+ | 0.2− | 2002 10 10 | 699 | 0.1+ | 0.3+ | 2004 04 19 | 704 | 1.1+ | 1.1+ | | |
| 2000 01 03 | 704 | 0.2+ | 0.3− | 2002 10 10 | 699 | 0.7− | 0.9+ | 2004 04 23 | 691 | 0.0 | 0.6+ | | |
| 2000 01 04 | 411 | (4.1− | 3.7+) | 2002 10 10 | 699 | 0.5− | 1.0+ | 2004 04 23 | 691 | 0.2− | 0.3+ | | |
| 2000 01 04 | 411 | (2.4− | 2.7+) | 2002 11 07 | 704 | 0.7− | 0.8+ | 2004 04 23 | 691 | 0.1+ | 0.5+ | | |
| 2000 01 08 | 411 | 0.4+ | 1.2− | 2002 11 07 | 704 | 0.7− | 0.2+ | 2006 10 29 | 704 | 0.4+ | 0.4+ | | |
| 2000 01 08 | 411 | 0.3− | 1.5− | 2002 11 07 | 704 | 0.1− | 0.9+ | 2006 10 29 | 704 | 0.5+ | 1.4+ | | |
| 2000 01 27 | 411 | (2.3− | 0.6+) | 2002 11 07 | 704 | 1.4− | 0.8+ | 2006 10 29 | 704 | 0.4+ | 0.9+ | | |
| 2000 01 27 | 411 | 0.9− | 0.6− | 2002 12 07 | 704 | (0.2− | 1.9+) | 2006 10 29 | 704 | 0.5+ | 0.2+ | | |
| 2000 01 27 | 411 | 1.2− | 0.1− | 2002 12 07 | 704 | 0.4− | 1.3+ | 2006 11 06 | 644 | 0.2− | 0.1+ | | |
| 2000 01 28 | 411 | 1.0− | 1.6+ | 2002 12 07 | 704 | 0.1− | 0.6+ | 2006 11 06 | 644 | 0.1+ | 0.1− | | |
| 2000 01 28 | 411 | 0.8− | 0.4+ | 2002 12 07 | 704 | 0.0 | 1.3+ | 2006 11 06 | 644 | 0.1− | 0.1+ | | |
| 2000 01 28 | 411 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 1.1+ | 1.4+ | 2006 11 15 | 704 | 0.4− | 0.2+ | | |
| 2000 02 02 | 411 | 0.8− | 1.3− | 2004 02 23 | 704 | 1.1+ | 0.3+ | 2006 11 15 | 704 | 0.3+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 411 | 0.2− | 0.5− | 2004 02 23 | 704 | 0.8+ | 1.4+ | 2006 11 15 | 704 | 0.1+ | 0.3+ |
| 2002 08 14 | 704 | 0.5− | 0.3− | 2004 03 12 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.2+ |
| 2002 08 14 | 704 | 1.1+ | 0.2+ | 2004 03 12 | 644 | 0.2− | 0.6+ | 2006 11 15 | 704 | 0.2− | 0.2+ |
| 2002 08 14 | 704 | 0.3+ | 0.2+ | 2004 03 12 | 644 | 0.1− | 0.4+ | 2006 11 15 | 704 | 0.2+ | 0.6− |
| 2002 08 14 | 704 | 1.4+ | 1.1+ | 2004 03 16 | 704 | (2.0+ | 0.2+) | 2006 11 15 | 704 | 0.1+ | 0.9− |
| 2002 08 15 | 699 | 0.2− | 0.8+ | 2004 03 16 | 704 | 0.7+ | 1.3+ | 2006 11 15 | 704 | 1.4− | 0.7+ |
| 2002 08 15 | 699 | 0.8− | 0.7+ | 2004 03 16 | 704 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.4− | 0.8+ |
| 2002 08 15 | 699 | 0.2+ | 0.7+ | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.0 |
| 2002 08 15 | 699 | (2.8+ | 0.1+) | 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.4+ | 0.9+ |
| 2002 09 07 | 599 | 0.2− | 0.5+ | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.1− |
| 2002 09 07 | 599 | 0.5− | 0.5+ | 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2002 09 07 | 599 | 0.6− | 0.4+ | 2004 03 19 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2002 09 07 | 599 | 0.4− | 0.5+ | 2004 03 21 | 691 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 09 09 | 608 | (1.7− | 0.2+) | 2004 03 21 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2002 09 09 | 608 | 1.5− | 0.1− | 2004 03 21 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 2002 09 09 | 608 | 1.0− | 0.0 | 2004 03 22 | 704 | 0.7+ | 0.6+ | 2006 11 19 | 704 | 0.5+ | 0.3− |
| 2002 09 13 | 704 | 0.6− | 0.5+ | 2004 03 22 | 704 | 1.3+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 1.1+ |
| 2002 09 13 | 704 | 0.3− | 0.9+ | 2004 03 22 | 704 | 1.5+ | 0.4+ | 2006 11 22 | 704 | 0.6+ | 0.2+ |
| 2002 09 13 | 704 | 0.5− | 1.4+ | 2004 03 22 | 704 | 0.2+ | 0.5+ | 2006 11 22 | 704 | 0.5+ | 1.1+ |
| 2002 09 13 | 704 | 0.3+ | 0.8+ | 2004 03 22 | 704 | 1.0+ | 0.8+ | 2006 11 22 | 704 | 0.4− | 1.1+ |
| 2002 09 16 | 644 | 0.8− | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2002 09 16 | 644 | 0.8− | 0.5+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.1− |
| 2002 09 16 | 644 | 0.7− | 0.3+ | 2004 03 23 | 704 | 0.9+ | 0.4+ | 2006 11 22 | 703 | 0.2+ | 0.6− |
| 2002 09 17 | 608 | 1.3− | 0.5− | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2002 09 17 | 608 | (1.6− | 0.4−) | 2004 03 23 | 704 | 0.8+ | 0.0 | 2006 11 22 | 703 | 0.5− | 0.3− |
| 2002 09 17 | 608 | (1.7− | 0.4−) | 2004 03 24 | 699 | 0.5− | 0.5+ | 2006 11 22 | 703 | (1.7+ | 0.4+) |
| 2002 10 01 | 608 | 0.3+ | 0.1− | 2004 03 24 | 699 | 0.7− | 0.2+ | 2006 11 27 | 704 | 0.6+ | 0.0 |
| 2002 10 01 | 608 | 0.1+ | 0.3+ | 2004 03 24 | 699 | 1.0− | 1.1+ | 2006 11 27 | 704 | 0.5+ | 0.5+ |
| 2002 10 01 | 608 | 0.1− | 0.3+ | 2004 03 24 | 699 | 0.0 | 0.7+ | 2006 11 27 | 704 | 0.1+ | 1.1+ |
| 2002 10 04 | 704 | 0.6+ | 0.3+ | 2004 03 28 | 704 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.3− | 1.1+ |
| 2002 10 04 | 704 | 0.4− | 0.9+ | 2004 03 28 | 704 | 0.1− | 1.1+ | | | | |
| 2002 10 04 | 704 | 0.4+ | 1.2+ | 2004 03 28 | 704 | 0.2+ | 1.2+ | | | | |

**(137891)∗ 2000 AJ$_{149}$**

Discovered 2000 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.99853 | | (2000.0) | | | |
| $n$ | 0.25816415 | $\omega$ | 104.83162 | | −0.75654762 | +0.61524016 |
| $a$ | 2.4427110 | $\Omega$ | 113.64579 | | −0.65332399 | −0.69641823 |
| $e$ | 0.1671536 | $i$ | 14.00057 | | −0.02834541 | −0.36943361 |
| $P$ | 3.82 | $H$ | 14.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.8− | 0.8− | 2001 05 23 | 704 | 0.0 | 0.3+ | 2003 12 22 | 704 | 0.1− | 0.3+ |
| 1999 12 06 | 704 | 1.3− | 0.6+ | 2001 05 23 | 704 | 0.2+ | 0.6+ | 2003 12 22 | 704 | 0.0 | 0.4+ |
| 1999 12 06 | 704 | 0.3− | 0.5+ | 2001 05 23 | 704 | 0.4+ | 0.2− | 2003 12 22 | 704 | 0.8+ | 0.6+ |
| 1999 12 06 | 704 | 1.1− | 0.6+ | 2001 06 01 | 683 | 0.3− | 0.4+ | 2003 12 22 | 704 | 0.2− | 0.7+ |
| 1999 12 14 | 704 | 0.1+ | 0.3+ | 2001 06 01 | 683 | 0.0 | 0.6+ | 2003 12 22 | 704 | 0.2− | 0.5+ |
| 1999 12 14 | 704 | 0.2+ | 0.3+ | 2001 06 01 | 683 | 0.1+ | 0.1− | 2003 12 22 | 704 | 0.3− | 0.1+ |
| 1999 12 14 | 704 | 0.1− | 0.1− | 2001 06 13 | 699 | 0.3− | 0.2+ | 2003 12 22 | 704 | 0.1− | 0.1− |
| 2000 01 07 | 704 | 0.8− | 0.9− | 2001 06 13 | 699 | 0.1+ | 0.1− | 2003 12 22 | 704 | 0.9− | 1.0+ |
| 2000 01 07 | 704 | 0.2+ | 0.0 | 2001 06 13 | 699 | 0.1+ | 0.3+ | 2004 01 21 | 704 | 0.4+ | 0.2− |
| 2000 01 07 | 704 | 0.2+ | 0.4+ | 2001 06 13 | 699 | 0.0 | 0.4+ | 2004 01 21 | 704 | 0.8+ | 0.2− |
| 2000 01 07 | 704 | 1.0+ | 1.0− | 2001 06 23 | 628 | 1.2+ | 1.1+ | 2004 01 21 | 704 | 1.2+ | 0.9− |
| 2000 01 09 | 704 | 0.7+ | 0.5+ | 2001 06 23 | 628 | (1.0+ | 1.6+) | 2004 01 21 | 704 | 0.8+ | 0.4− |
| 2000 01 09 | 704 | 0.2− | 0.1− | 2001 06 23 | 628 | (2.3+ | 2.4+) | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2000 01 09 | 704 | 0.1− | 0.6− | 2001 06 23 | 628 | (3.2+ | 1.7+) | 2006 09 19 | 703 | 0.0 | 0.5+ |
| 2000 01 11 | 704 | 0.6+ | 0.1− | 2001 06 28 | 608 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 1.3+ |
| 2000 01 11 | 704 | 0.2+ | 0.3− | 2001 06 28 | 608 | 0.5+ | 0.6− | 2006 09 19 | 703 | 0.3+ | 0.3+ |
| 2000 01 11 | 704 | 0.0 | 0.1− | 2001 06 28 | 608 | 0.4+ | 0.7− | 2006 09 26 | 703 | 0.0 | 0.6− |
| 2000 01 11 | 704 | 1.5+ | 1.8− | 2001 07 19 | 699 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2001 03 29 | 704 | 0.2− | 0.1− | 2001 07 19 | 699 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.4− |
| 2001 03 29 | 704 | 0.2+ | 0.4+ | 2001 07 19 | 699 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2001 03 29 | 704 | 1.2+ | 0.6+ | 2001 07 19 | 699 | 0.1− | 0.3− | 2006 10 02 | 703 | 0.0 | 0.1− |
| 2001 03 29 | 704 | 0.1+ | 0.2− | 2002 10 08 | 644 | (0.3+ | 2.2+) | 2006 10 02 | 703 | 0.3− | 0.4+ |
| 2001 04 03 | 682 | 0.9− | 0.2+ | 2002 10 08 | 644 | (0.2+ | 2.2+) | 2006 10 02 | 703 | 0.1− | 0.2+ |
| 2001 04 17 | 682 | 0.5− | 0.3+ | 2002 10 08 | 644 | (0.3+ | 2.3+) | 2006 10 02 | 703 | 0.9+ | 0.3+ |
| 2001 04 17 | 682 | 0.0 | 0.1+ | 2002 11 04 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.2− |
| 2001 04 24 | 699 | 0.5+ | 0.4− | 2002 11 04 | 644 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.7− | 0.5− |
| 2001 04 24 | 699 | 0.3− | 0.0 | 2002 11 04 | 644 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.6+ | 0.2+ |
| 2001 04 24 | 699 | 0.1+ | 0.2+ | 2003 12 01 | 704 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.9+ | 0.6+ |
| 2001 04 24 | 699 | 0.4− | 0.1+ | 2003 12 01 | 704 | 0.0 | 0.6+ | 2006 10 31 | 703 | 1.0+ | 0.4− |
| 2001 04 27 | 704 | 0.3− | 0.3+ | 2003 12 01 | 704 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 0.6− | 1.0+ |
| 2001 04 27 | 704 | 0.0 | 0.2+ | 2003 12 19 | 704 | 0.6− | 1.0+ | 2006 10 31 | 703 | 1.1− | 0.3− |
| 2001 04 27 | 704 | 0.4+ | 0.1+ | 2003 12 19 | 704 | 0.1− | 0.3+ | 2006 10 31 | 703 | 1.5− | 1.4− |
| 2001 04 27 | 704 | 0.5+ | 0.2− | 2003 12 19 | 704 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2001 04 27 | 704 | 0.2− | 0.2− | 2003 12 19 | 704 | 0.5− | 0.4− | 2006 11 17 | 703 | 0.6− | 0.4− |
| 2001 05 01 | 704 | 0.9+ | 0.6− | 2003 12 20 | 704 | 0.5− | 1.2+ | 2006 11 17 | 703 | 0.6+ | 1.0+ |
| 2001 05 01 | 704 | 1.0− | 0.1− | 2003 12 20 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.2+ | 0.2+ |
| 2001 05 01 | 704 | 0.0 | 0.3+ | 2003 12 20 | 704 | 0.6+ | 0.7+ | 2006 11 23 | 703 | 1.1+ | 0.0 |
| 2001 05 01 | 704 | 0.3− | 0.5+ | 2003 12 20 | 704 | 0.4− | 0.2+ | 2006 11 23 | 703 | 0.0 | 0.0 |
| 2001 05 01 | 704 | 0.3− | 0.4+ | 2003 12 20 | 704 | 0.6− | 0.3− | 2006 11 23 | 703 | 0.5− | 0.2+ |
| 2001 05 23 | 704 | 0.1+ | 0.2+ | 2003 12 22 | 704 | 0.3+ | 0.5+ | 2006 11 23 | 703 | 0.0 | 0.3+ |
| 2001 05 23 | 704 | 0.3+ | 0.1+ | 2003 12 22 | 704 | 0.2+ | 0.0 | | | | |

**(137892)∗ 2000 AR$_{154}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.27548 | | (2000.0) | | | |
| $n$ | 0.27978550 | $\omega$ | 82.61590 | | +0.98234094 | −0.12593177 |
| $a$ | 2.3151862 | $\Omega$ | 284.54487 | | +0.05562788 | +0.90271353 |
| $e$ | 0.2307038 | $i$ | 8.21893 | | +0.17863880 | +0.41139940 |
| $P$ | 3.52 | $H$ | 15.6 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 1.5+ | 0.3+ | 2004 01 29 | 704 | 0.8+ | 0.8+ | 2006 09 19 | 704 | 0.1− | 0.3+ |
| 1999 10 14 | 704 | 0.3− | 0.2+ | 2004 01 29 | 704 | 1.5− | 0.1+ | 2006 09 23 | 699 | 1.1− | 0.5+ |
| 1999 10 14 | 704 | 0.8+ | 0.3+ | 2004 01 29 | 704 | 0.0 | 0.9+ | 2006 09 23 | 699 | 0.1+ | 1.3+ |
| 1999 10 14 | 704 | 0.5+ | 0.0 | 2004 01 30 | 704 | 0.0 | 0.4− | 2006 09 23 | 699 | 0.4+ | 0.8+ |
| 1999 10 14 | 704 | 0.8− | 0.9− | 2004 01 30 | 704 | 1.1+ | 0.4− | 2006 09 23 | 699 | 0.6− | 0.2+ |
| 1999 11 08 | 699 | 0.2− | 0.6+ | 2004 01 30 | 704 | 0.5+ | 1.2+ | 2006 10 02 | 703 | 0.1+ | 0.0 |
| 1999 11 08 | 699 | 0.8− | 0.6− | 2004 01 30 | 704 | 0.2+ | 0.5− | 2006 10 02 | 703 | 0.1− | 0.0 |
| 1999 11 08 | 699 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.2− | 0.1− | 2006 10 02 | 703 | 0.1− | 0.3− |
| 1999 12 05 | 699 | 0.0 | 0.7+ | 2004 01 31 | 704 | 0.5− | 0.1− | 2006 10 02 | 703 | 0.3− | 0.2+ |
| 1999 12 05 | 699 | 0.0 | 1.5+ | 2004 01 31 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 1999 12 05 | 699 | 0.4− | 0.6+ | 2004 01 31 | 704 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1999 12 07 | 703 | 0.1+ | 0.3+ | 2004 01 31 | 704 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1999 12 07 | 703 | 0.4− | 0.6+ | 2004 01 31 | 704 | 0.2+ | 0.7− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1999 12 07 | 703 | 0.2− | 0.6+ | 2004 02 02 | 704 | 0.8+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 12 07 | 703 | 0.5− | 0.3+ | 2004 02 02 | 704 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1999 12 10 | 704 | 0.3− | 0.4− | 2004 02 02 | 704 | 0.2+ | 1.2− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 1999 12 10 | 704 | 0.1+ | 0.9− | 2004 02 02 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 1999 12 10 | 704 | 0.6+ | 0.8− | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 1999 12 10 | 704 | 1.4+ | 0.7− | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 10 29 | 703 | (1.1+ | 1.8−) |
| 1999 12 10 | 704 | 0.6+ | 1.3− | 2004 02 11 | 644 | 0.5+ | 0.3+ | 2006 10 29 | 703 | 0.7+ | 0.0 |
| 1999 12 31 | 699 | 0.4− | 0.2+ | 2004 02 11 | 703 | 0.3+ | 0.3− | 2006 10 29 | 703 | 0.3+ | 0.2− |
| 1999 12 31 | 699 | 0.3− | 0.8+ | 2004 02 11 | 703 | 0.1+ | 0.8+ | 2006 10 29 | 703 | 0.1− | 0.1− |
| 1999 12 31 | 699 | 0.3− | 0.0 | 2004 02 11 | 703 | 0.1+ | 0.9+ | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 2000 01 03 | 704 | 0.0 | 0.1+ | 2004 02 11 | 703 | 0.5− | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.8− |
| 2000 01 03 | 704 | 0.5+ | 0.5− | 2004 02 17 | 704 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2000 01 03 | 704 | 1.0− | 0.0 | 2004 02 17 | 704 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.6− | 0.8− |
| 2000 01 03 | 704 | 0.1− | 1.2+ | 2004 02 17 | 704 | 1.2− | 0.4+ | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2000 01 03 | 704 | 0.9− | 1.0− | 2004 02 17 | 704 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.2− |
| 2000 01 04 | 704 | 1.4+ | 0.1+ | 2005 05 16 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.6− |
| 2000 01 04 | 704 | 0.6− | 0.7− | 2005 05 16 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.3− |
| 2000 01 04 | 704 | 0.1+ | 0.9− | 2005 05 16 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.1− | 0.1− |
| 2003 12 18 | 644 | 0.3+ | 0.2+ | 2006 08 23 | 704 | 0.9+ | 0.9+ | 2006 11 22 | 703 | 0.1+ | 0.1− |
| 2003 12 18 | 644 | 0.6+ | 0.3+ | 2006 08 23 | 704 | 0.1+ | 0.9+ | 2006 11 22 | 703 | 0.1+ | 0.1− |
| 2003 12 18 | 644 | 0.3+ | 0.1+ | 2006 08 23 | 704 | 0.2+ | 0.8+ | 2006 11 22 | 703 | 0.3+ | 0.1+ |
| 2004 01 24 | 704 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 11 28 | 704 | 0.1− | 1.1+ |
| 2004 01 24 | 704 | 0.3− | 0.5− | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.1− | 1.0+ |
| 2004 01 24 | 704 | 0.7− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.5+ | 0.5− | 2006 09 19 | 703 | 0.1− | 0.2− | 2006 11 28 | 704 | 1.9+ | 2.6− | | |
| 2004 01 29 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 704 | 0.6− | 1.2+ | 2006 11 28 | 704 | 0.5+ | 0.3− | | |
| 2004 01 29 | 704 | 0.1− | 0.5+ | 2006 09 19 | 704 | 0.2− | 0.1− | | | | | | |

**(137893)∗ 2000 AO$_{157}$ = 2002 RJ$_{203}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37275)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.12851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27447819 | $\omega$ | 204.72416 | | −0.55282218 | −0.83065001 | |
| $a$ | 2.3449351 | $\Omega$ | 278.90093 | | +0.77528275 | −0.48348840 | |
| $e$ | 0.2029885 | $i$ | 3.85339 | | +0.30549026 | −0.27615128 | |
| $P$ | 3.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.9+ | 0.6− | 2004 03 27 | 699 | 0.7− | 0.5+ | 2006 11 14 | 703 | 0.7− | 0.9− | | |
| 1999 12 07 | 704 | 0.1+ | 0.4− | 2004 03 27 | 699 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.4+ | 0.8+ | | |
| 1999 12 07 | 704 | 1.0+ | 1.1+ | 2004 03 31 | 704 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.9+ | | |
| 1999 12 07 | 704 | 0.4+ | 0.2− | 2004 03 31 | 704 | 0.5+ | 0.2− | 2006 11 15 | 704 | 0.4− | 0.9+ | | |
| 2000 01 03 | 691 | 0.0 | 0.1+ | 2004 03 31 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.7− | 0.8+ | | |
| 2000 01 03 | 704 | 0.2+ | 0.3− | 2004 03 31 | 704 | 0.5+ | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.4+ | | |
| 2000 01 03 | 691 | 0.1− | 0.1+ | 2004 03 31 | 704 | 0.7+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 1.2+ | | |
| 2000 01 03 | 704 | 0.1− | 0.2+ | 2004 04 17 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.0 | | |
| 2000 01 03 | 704 | 0.4− | 1.2− | 2004 04 17 | 704 | 0.8+ | 1.0+ | 2006 11 16 | 704 | 0.7− | 0.0 | | |
| 2000 01 03 | 691 | 0.1− | 0.1+ | 2004 04 17 | 704 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.6+ | | |
| 2000 01 03 | 704 | 0.0 | 0.1+ | 2004 04 17 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | (0.4+ | 1.8+) | | |
| 2000 01 03 | 704 | 0.1− | 0.9+ | 2004 04 17 | 699 | 0.3+ | 0.6+ | 2006 11 16 | 704 | (1.6− | 2.5+) | | |
| 2000 01 05 | 704 | 0.4− | 0.3− | 2004 04 17 | 699 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.7+ | | |
| 2000 01 05 | 704 | 0.2− | 0.0 | 2004 04 17 | 699 | 0.0 | 0.3+ | 2006 11 17 | 691 | (1.7− | 1.9−) | | |
| 2000 01 05 | 704 | 0.6− | 0.5− | 2004 04 17 | 699 | 1.0+ | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− | | |
| 2000 01 05 | 704 | 0.6+ | 0.8− | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.1− | | |
| 2000 01 05 | 704 | 0.0 | 1.5− | 2004 04 19 | 704 | 0.0 | 1.3+ | 2006 11 19 | 704 | 1.0+ | 0.1− | | |
| 2000 02 02 | 704 | 1.1− | 0.1+ | 2004 04 19 | 704 | 0.3− | 0.7+ | 2006 11 19 | 704 | 0.2+ | 0.0 | | |
| 2000 02 02 | 704 | 0.1− | 0.9+ | 2004 04 19 | 704 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.4− | | |
| 2000 02 02 | 704 | 0.5− | 0.6+ | 2004 04 19 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.2− | | |
| 2000 02 02 | 704 | 0.5+ | 0.7+ | 2004 04 21 | 704 | 0.3+ | 1.3+ | 2006 11 20 | 704 | 0.6+ | 0.0 | | |
| 2000 02 02 | 704 | 0.5+ | 0.1+ | 2004 04 21 | 704 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 1.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2004 04 21 | 704 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.6+ | 0.4+ | | |
| 2002 09 06 | 704 | (0.3− | 1.5+) | 2004 04 21 | 704 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.3− | 0.5+ | 2004 04 21 | 704 | 0.7+ | 0.5+ | 2006 11 20 | 704 | 0.5+ | 1.3− | | |
| 2002 09 06 | 704 | 0.5+ | 0.6+ | 2005 07 02 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2002 09 13 | 644 | 0.0 | 0.5+ | 2005 07 02 | 691 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2005 07 02 | 691 | 0.2+ | 1.3+ | 2006 11 21 | 691 | (3.5+ | 1.2−) | | |
| 2002 09 13 | 644 | 0.4− | 0.7+ | 2005 07 04 | G96 | 1.0− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2002 09 15 | 644 | 0.2− | 0.4− | 2005 07 04 | G96 | 1.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.0 | | |
| 2002 09 15 | 644 | 0.4− | 0.2− | 2005 07 04 | G96 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2002 09 15 | 644 | 0.5− | 0.2+ | 2005 07 04 | G96 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.1+ | | |
| 2004 03 15 | 644 | 0.3+ | 0.3+ | 2005 07 07 | 691 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.2+ | | |
| 2004 03 15 | 644 | 0.5+ | 0.3+ | 2005 07 07 | 691 | 0.4− | 0.4+ | 2006 11 22 | 704 | 0.4− | 0.5+ | | |
| 2004 03 15 | 644 | 0.4+ | 0.1+ | 2005 07 07 | 691 | 0.5− | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.4+ | | |
| 2004 03 17 | 703 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.0 | | |
| 2004 03 17 | 703 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.2+ | | |
| 2004 03 17 | 703 | 0.2− | 1.2+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.4− | 0.2+ | | |
| 2004 03 17 | 703 | 0.3+ | 1.0+ | 2006 10 20 | G96 | 0.2+ | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.0 | | |
| 2004 03 17 | 704 | 0.0 | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 17 | 704 | 0.2+ | 1.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 25 | 691 | 0.1− | 0.0 | | |
| 2004 03 17 | 704 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.1+ | 1.5+ | | |
| 2004 03 17 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.7+ | | |
| 2004 03 17 | 704 | 0.6− | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.4− | 0.4+ | | |
| 2004 03 19 | 704 | 0.3+ | 0.3− | 2006 11 13 | 691 | 0.0 | 0.2+ | 2006 12 01 | 704 | 0.0 | 0.7+ | | |
| 2004 03 19 | 704 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 12 01 | 704 | 0.5+ | 1.2+ | | |
| 2004 03 19 | 704 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 0.2+ | 0.4+ | | |
| 2004 03 19 | 704 | 0.4− | 0.4− | 2006 11 13 | 644 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.5− | 1.0+ | | |
| 2004 03 19 | 704 | 0.8− | 0.4− | 2006 11 14 | 703 | 1.4− | 0.4− | 2006 12 01 | 704 | 0.2− | 0.6+ | | |
| 2004 03 27 | 699 | 0.6− | 0.3− | 2006 11 14 | 703 | 1.1− | 1.5− | | | | | | |
| 2004 03 27 | 699 | 0.8− | 0.7+ | 2006 11 14 | 703 | 1.0− | 0.2+ | | | | | | |

**(137894)∗ 2000 AZ$_{158}$ = 2002 RW$_{110}$**

Discovered 2000 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34868)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.19751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26729966 | $\omega$ | 155.36680 | | −0.42587853 | −0.90128927 | |
| $a$ | 2.3867327 | $\Omega$ | 319.71038 | | +0.80843172 | −0.33965070 | |
| $e$ | 0.1150936 | $i$ | 7.05337 | | +0.40628271 | −0.26891458 | |
| $P$ | 3.69 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.5− | 1.1− | 2003 11 20 | 691 | 0.2+ | 0.1− | 2004 03 16 | 704 | 1.0+ | 0.7− | | |
| 1999 12 10 | 704 | 1.1− | 0.6− | 2003 11 20 | 691 | 0.5+ | 0.1+ | 2004 03 16 | 704 | 0.4+ | 0.2− | | |
| 1999 12 10 | 704 | 0.4− | 0.3+ | 2003 11 20 | 691 | 0.3− | 0.4+ | 2004 03 16 | 704 | 0.5+ | 0.4− | | |
| 2000 01 03 | 704 | (0.5− | 2.3−) | 2003 11 30 | 691 | 0.4+ | 0.3+ | 2004 03 16 | 704 | 0.2+ | 0.2− | | |
| 2000 01 03 | 704 | 0.1− | 1.1− | 2003 11 30 | 691 | 0.4+ | 0.2+ | 2004 03 19 | 704 | 1.1− | 0.4+ | | |
| 2000 01 03 | 704 | 0.6+ | 0.2− | 2003 11 30 | 691 | 0.3+ | 0.2+ | 2004 03 19 | 704 | 0.6− | 0.3+ | | |
| 2000 01 03 | 704 | 0.1− | 0.1+ | 2004 02 13 | 644 | 0.6+ | 0.1+ | 2004 03 19 | 704 | 0.4− | 0.3− | | |
| 2000 01 03 | 704 | 0.9+ | 0.3− | 2004 02 13 | 644 | 0.7+ | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.4− | | |
| 2000 01 04 | 704 | 2.0− | 1.1− | 2004 02 13 | 644 | 0.2+ | 0.3+ | 2004 03 27 | 691 | 0.2+ | 0.1− | | |
| 2000 01 04 | 704 | 0.6− | 0.2− | 2004 02 19 | 704 | 0.1+ | 0.1+ | 2004 03 27 | 691 | 0.3− | 0.2+ | | |
| 2000 01 04 | 704 | 0.3− | 0.3+ | 2004 02 19 | 704 | 0.0 | 0.5− | 2004 03 27 | 691 | 0.1− | 0.1+ | | |
| 2000 01 04 | 704 | 0.1+ | 0.5+ | 2004 02 19 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.7+ | | |
| 2000 01 04 | 704 | 0.1− | 0.5− | 2004 02 19 | 704 | 0.2+ | 0.5− | 2006 10 19 | 703 | 0.2− | 0.5− | | |
| 2000 01 30 | 704 | 0.3− | 0.9− | 2004 02 19 | 704 | 0.4+ | 1.4− | 2006 10 19 | 703 | 0.2− | 0.7+ | | |
| 2000 01 30 | 704 | 0.3+ | 0.3− | 2004 02 20 | 608 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.7− | 0.4− | | |
| 2000 01 30 | 704 | 0.4− | 0.4− | 2004 02 20 | 608 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.5+ | 0.0 | | |
| 2000 01 30 | 704 | 1.0− | 1.5− | 2004 02 20 | 608 | 0.2+ | 0.7+ | 2006 10 27 | 703 | 0.9− | 0.0 | | |
| 2000 01 30 | 704 | 0.4+ | 0.1− | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.3− | 0.1− | | |
| 2000 01 30 | 704 | 0.5− | 0.9− | 2004 02 26 | 704 | 0.2− | 1.3+ | 2006 10 27 | 703 | 0.3+ | 0.0 | | |
| 2000 01 30 | 704 | 0.7+ | 0.1+ | 2004 02 26 | 704 | 0.8+ | 0.6+ | 2006 11 13 | 644 | 0.2− | 0.1+ | | |
| 2000 03 04 | 704 | (0.7+ | 3.7+) | 2004 02 26 | 704 | 0.8− | 0.8+ | 2006 11 13 | 644 | 0.1− | 0.3+ | | |
| 2000 03 04 | 704 | 0.9+ | 1.3+ | 2004 02 26 | 704 | 0.8− | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.5+ | | |
| 2000 03 04 | 704 | 0.9+ | 0.3+ | 2004 03 01 | 704 | 0.8+ | 0.0 | 2006 11 15 | 703 | 0.8− | 0.0 | | |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2004 03 01 | 704 | 0.8+ | 0.9+ | 2006 11 15 | 703 | 0.3+ | 0.4− | | |
| 2002 09 06 | 704 | 0.3+ | 1.0+ | 2004 03 01 | 704 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.0 | | |
| 2002 09 06 | 704 | 1.2− | 0.2− | 2004 03 01 | 704 | 0.4+ | 0.4+ | 2006 11 15 | 703 | 0.6− | 0.4− | | |
| 2002 09 06 | 704 | 0.0 | 0.3− | 2004 03 01 | 704 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 1.2+ | 0.5+ | | |
| 2002 09 07 | 704 | (0.4+ | 1.7+) | 2004 03 13 | 644 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.2+ | 0.6+ | | |
| 2002 09 07 | 704 | 0.8− | 1.3+ | 2004 03 13 | 644 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.0 | 0.6− | | |
| 2002 09 07 | 704 | (0.6− | 2.4+) | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.6+ | 0.1− | | |
| 2002 10 04 | 704 | 0.4+ | 1.2+ | 2004 03 14 | 703 | 0.6+ | 0.6+ | 2006 11 15 | 704 | 0.4+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.4− | 0.9+ | 2004 03 14 | 703 | 0.7− | 0.8+ | 2006 11 22 | 703 | 0.8− | 0.6+ | | |
| 2002 10 04 | 704 | 0.0 | 1.1+ | 2004 03 14 | 703 | 1.0− | 0.4+ | 2006 11 22 | 703 | 0.7− | 0.5+ | | |
| 2002 10 04 | 704 | 0.3− | 1.0+ | 2004 03 14 | 703 | (1.6− | 1.1−) | 2006 11 22 | 703 | 0.2− | 0.1− | | |
| 2002 10 04 | 704 | 1.2− | 0.9+ | 2004 03 16 | 704 | 0.8+ | 0.1+ | | | | | | |

**(137895)∗ 2000 AS$_{164}$**

Discovered 2000 Jan. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.31915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26381472 | $\omega$ | 282.61412 | | +0.33001231 | −0.94370895 | |
| $a$ | 2.4077055 | $\Omega$ | 148.08803 | | +0.88175101 | +0.29966838 | |
| $e$ | 0.1941539 | $i$ | 2.43716 | | +0.33705641 | +0.14004383 | |
| $P$ | 3.74 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 04 | 691 | 0.1− | 0.5+ | 2000 02 08 | 691 | 0.2+ | 1.3− | 2006 09 20 | 704 | 0.3+ | 0.3− | | |
| 1991 10 04 | 691 | 0.1− | 0.2− | 2002 08 29 | 644 | 0.3+ | 1.1+ | 2006 09 27 | 704 | 0.5+ | 0.1− | | |
| 1991 10 04 | 691 | 0.2− | 0.0 | 2002 08 29 | 644 | (0.6+ | 1.5+) | 2006 09 27 | 704 | 0.3− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.0 | 0.5− | 2002 08 29 | 644 | 0.3+ | 1.2+ | 2006 09 27 | 704 | 0.1− | 0.0 |
| 2000 01 05 | 704 | 1.0− | 0.4+ | 2002 09 04 | 644 | 0.0 | 0.4+ | 2006 09 27 | 704 | (0.8+ | 2.1−) |
| 2000 01 05 | 704 | 0.6− | 0.5− | 2002 09 04 | 644 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2000 01 06 | 704 | 0.3+ | 0.0 | 2002 09 04 | 644 | 0.3− | 0.7+ | 2006 09 27 | 691 | 0.2− | 0.1− |
| 2000 01 06 | 704 | 0.7+ | 1.7+ | 2004 02 18 | 704 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.2− |
| 2000 01 06 | 704 | (0.5− | 2.6+) | 2004 02 18 | 704 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2000 01 08 | 704 | 1.2+ | 0.4+ | 2004 02 18 | 704 | 0.6− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2000 01 08 | 704 | 0.9− | 0.1+ | 2004 02 18 | 704 | (0.1+ | 2.1+) | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2000 01 08 | 704 | 0.6− | 1.3+ | 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.9− | 0.4− |
| 2000 01 08 | 704 | 0.4+ | 0.1+ | 2004 03 14 | 691 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.1+ | 0.4− |
| 2000 01 08 | 704 | 0.8+ | 0.2+ | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.6− | 0.7− |
| 2000 02 02 | 704 | 0.3+ | 1.0+ | 2004 03 15 | 704 | 1.1+ | 0.4+ | 2006 10 15 | 703 | 0.1− | 0.2− |
| 2000 02 02 | 704 | 0.2+ | 0.5+ | 2004 03 15 | 704 | 1.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2000 02 02 | 704 | 0.0 | 1.2+ | 2004 03 15 | 704 | 0.0 | 0.9− | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2000 02 02 | 704 | 0.9+ | 1.3+ | 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2000 02 02 | 704 | 0.2− | 1.3+ | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.8+ | 0.1+ |
| 2000 02 03 | 704 | 0.5− | 0.7+ | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.5− |
| 2000 02 03 | 704 | (0.5− | 2.7+) | 2004 03 19 | 704 | 0.3+ | 0.5− | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2000 02 03 | 704 | 0.5+ | 1.2+ | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 2000 02 03 | 704 | 0.1+ | 1.3+ | 2004 03 19 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2000 02 05 | 704 | 0.7− | 0.4+ | 2004 03 19 | 704 | 1.2− | 0.7− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2000 02 05 | 704 | 0.9− | 1.3+ | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2000 02 05 | 704 | 0.6+ | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2000 02 05 | 704 | 0.1− | 1.0+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2000 02 06 | 704 | 0.8− | 0.5+ | 2006 09 18 | 699 | 1.0+ | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2000 02 06 | 704 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.6− | 1.0+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2000 02 06 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 1.1− | 1.2− | 2006 11 06 | 644 | 0.3− | 0.2+ |
| 2000 02 06 | 704 | 0.0 | 1.3− | 2006 09 20 | 704 | 0.5+ | 0.3+ | 2006 11 06 | 644 | 0.0 | 0.4+ |
| 2000 02 08 | 691 | 0.2+ | 1.3− | 2006 09 20 | 704 | 1.1− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2000 02 08 | 691 | 0.2+ | 1.4− | 2006 09 20 | 704 | 0.5+ | 0.6− | | | | |

**(137896)∗ 2000 AS$_{167}$ = 2002 RS$_{117}$**

Discovered 2000 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34869)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.90148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24011176 | $\omega$ | 311.32078 | | −0.97666812 | | −0.18660183 |
| $a$ | 2.5636600 | $\Omega$ | 218.27828 | | +0.20887633 | | −0.94042019 |
| $e$ | 0.1367564 | $i$ | 9.88033 | | −0.04990044 | | −0.28423515 |
| $P$ | 4.10 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.2− | 0.8+ | 2002 09 14 | 699 | 1.0− | 0.0 | 2005 07 04 | 703 | 1.2− | 1.4− |
| 2000 01 08 | 704 | 1.0− | 0.4− | 2002 09 28 | 608 | (1.7− | 1.3−) | 2005 07 04 | 703 | 0.7+ | 0.4− |
| 2000 01 08 | 704 | 0.8− | 0.8+ | 2002 09 28 | 608 | (1.7− | 1.3−) | 2005 07 04 | 703 | 0.4+ | 0.1+ |
| 2000 01 08 | 704 | 0.5− | 0.6+ | 2002 09 28 | 608 | 1.1− | 1.0− | 2005 07 04 | 703 | 0.4− | 0.7− |
| 2000 01 10 | 704 | 0.4+ | 0.2+ | 2002 10 04 | 704 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 1.4+ | 1.2+ |
| 2000 01 10 | 704 | 0.8+ | 0.4+ | 2002 10 04 | 704 | 1.5+ | 0.1+ | 2006 08 27 | 699 | 0.6+ | 0.8+ |
| 2000 01 10 | 704 | 0.7+ | 0.2− | 2002 10 04 | 704 | 0.8− | 0.2+ | 2006 08 27 | 699 | (1.7+ | 0.5−) |
| 2000 01 10 | 704 | 0.0 | 0.2+ | 2002 10 04 | 704 | 0.6− | 0.3+ | 2006 08 27 | 699 | 0.8+ | 0.3− |
| 2000 01 10 | 704 | 0.8+ | 0.4− | 2002 10 04 | 704 | 0.1+ | 0.6− | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2000 01 11 | 704 | 0.6+ | 0.1− | 2002 10 05 | 644 | (1.6+ | 0.7+) | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2000 01 11 | 704 | 0.1− | 1.1− | 2002 10 05 | 644 | (1.7+ | 0.1−) | 2006 09 14 | 703 | 0.7+ | 0.2− |
| 2000 01 11 | 704 | 0.4− | 0.3− | 2002 10 05 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.6+ | 0.2+ |
| 2000 01 11 | 704 | 0.6+ | 0.3− | 2002 10 07 | 699 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.1+ |
| 2000 02 06 | 704 | 0.7+ | 0.2− | 2002 10 07 | 699 | 0.5+ | 0.1− | 2006 09 16 | 644 | 0.0 | 0.3+ |
| 2000 02 06 | 704 | 1.0− | 0.3+ | 2002 10 07 | 699 | (0.5− | 1.9+) | 2006 09 16 | 644 | 0.3+ | 0.1− |
| 2000 02 06 | 704 | 0.2+ | 0.2− | 2002 10 07 | 699 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.1+ |
| 2000 02 06 | 704 | 0.8+ | 0.8+ | 2002 10 31 | 704 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.6− | 0.3+ |
| 2000 02 06 | 704 | 0.7+ | 0.1− | 2002 10 31 | 704 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.2− | 1.2+ |
| 2002 09 01 | 049 | 0.8− | 0.3+ | 2002 10 31 | 704 | 0.5− | 1.0+ | 2006 09 29 | 699 | 0.2− | 0.1− |
| 2002 09 01 | 049 | 0.2− | 0.2− | 2002 10 31 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 09 01 | 049 | 0.4+ | 0.1− | 2002 10 31 | 704 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 049 | 0.1− | 0.6− | 2003 11 30 | 704 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 09 05 | 049 | 0.7− | 0.7− | 2003 11 30 | 704 | 0.4− | 0.9− | 2006 10 17 | 703 | 0.9+ | 0.3+ |
| 2002 09 05 | 049 | 0.2− | 0.8− | 2003 11 30 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.7− |
| 2002 09 11 | 049 | 0.7+ | 0.2+ | 2003 12 05 | 049 | 0.3− | 0.7− | 2006 10 17 | 703 | 0.9− | 0.9− |
| 2002 09 11 | 049 | 0.6+ | 0.1+ | 2003 12 05 | 049 | 0.1+ | 0.0 | 2006 10 17 | 703 | (0.2− | 1.7−) |
| 2002 09 11 | 049 | 0.7+ | 0.4+ | 2003 12 05 | 049 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.4+ | 0.0 |
| 2002 09 13 | 644 | 0.2+ | 1.0− | 2004 01 16 | 691 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2002 09 13 | 644 | 0.2+ | 1.2− | 2004 01 16 | 691 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 09 13 | 644 | 0.1+ | 1.1− | 2004 01 16 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 09 14 | 699 | 0.4+ | 0.6− | 2004 04 10 | A49 | 0.8− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 09 14 | 699 | 1.0− | 0.0 | 2004 04 10 | A49 | 1.2− | 0.9− | 2006 10 23 | 644 | 0.3− | 0.4+ |
| 2002 09 14 | 699 | 0.9− | 0.0 | 2004 04 10 | A49 | 0.4+ | 0.2+ | | | | |

**(137897)∗ 2000 AM$_{169}$**

Discovered 2000 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.62976 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25772930 | $\omega$ | 148.77069 | | +0.99742518 | | +0.01563174 |
| $a$ | 2.4454579 | $\Omega$ | 210.57074 | | −0.03502950 | | +0.95780254 |
| $e$ | 0.1423030 | $i$ | 7.90977 | | +0.06257753 | | +0.28700163 |
| $P$ | 3.82 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.6− | 0.1− | 2002 06 10 | 704 | 0.9− | 0.1+ | 2005 05 08 | G96 | 0.4− | 0.1− |
| 1999 12 06 | 704 | 0.6− | 0.7− | 2002 06 10 | 704 | 0.8− | 0.5− | 2005 05 08 | G96 | 0.6− | 0.3− |
| 1999 12 06 | 704 | 0.5+ | 0.1− | 2002 06 10 | 704 | 0.5+ | 0.1− | 2005 05 08 | G96 | 0.7− | 0.3− |
| 1999 12 06 | 704 | 0.3+ | 0.4+ | 2002 07 09 | 704 | 1.2+ | 0.5− | 2005 05 08 | G96 | 0.3− | 0.3− |
| 1999 12 06 | 704 | 0.2+ | 0.4+ | 2002 07 09 | 704 | 0.2+ | 0.2+ | 2005 05 13 | 691 | 0.3+ | 0.1− |
| 1999 12 14 | 704 | 0.7− | 0.3− | 2002 07 09 | 704 | 0.1+ | 0.1− | 2005 05 13 | 691 | 0.2+ | 0.3+ |
| 1999 12 14 | 704 | 0.1− | 0.3− | 2003 11 30 | 704 | (0.4+ | 2.0−) | 2005 05 13 | 691 | 0.2+ | 0.3+ |
| 1999 12 14 | 704 | 0.1− | 0.7− | 2003 11 30 | 704 | 0.1− | 0.2− | 2006 09 11 | 703 | 1.0+ | 1.8+ |
| 2000 01 07 | 704 | 1.0− | 1.2+ | 2003 11 30 | 704 | 0.2− | 0.2− | 2006 09 11 | 703 | 0.6− | 0.5+ |
| 2000 01 07 | 704 | 0.6+ | 1.6+ | 2003 11 30 | 704 | 0.4− | 0.8− | 2006 09 11 | 703 | 0.3− | 0.8− |
| 2000 01 07 | 704 | 0.2+ | 1.2+ | 2005 03 09 | 691 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.2+ | 1.9− |
| 2000 01 11 | 704 | 1.1+ | 0.0 | 2005 03 09 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.8+ |
| 2000 01 11 | 704 | 0.2+ | 0.7− | 2005 03 09 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.9+ |
| 2000 01 11 | 704 | 0.3+ | 0.9+ | 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.7+ |
| 2000 01 11 | 704 | 0.2+ | 0.2+ | 2005 03 13 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.5− | 1.3+ |
| 2002 06 10 | 704 | 0.6− | 0.4− | 2005 03 13 | 691 | 0.0 | 0.3+ | | | | |

**(137898)∗ 2000 AK$_{172}$**

Discovered 2000 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.25244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26193774 | $\omega$ | 251.20262 | | −0.28519944 | | −0.95539011 |
| $a$ | 2.4191939 | $\Omega$ | 215.65557 | | +0.92149169 | | −0.25128812 |
| $e$ | 0.2017211 | $i$ | 7.56621 | | +0.26365573 | | −0.15519026 |
| $P$ | 3.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 413 | 0.3− | 0.5+ | 2004 01 14 | 644 | 0.1+ | 0.0 | 2004 03 29 | 703 | 1.1− | 1.4+ |
| 1995 11 15 | 327 | 0.1− | 0.6+ | 2004 01 14 | 644 | 0.2+ | 0.0 | 2004 03 29 | 703 | 0.3− | 0.3+ |
| 1995 11 15 | 327 | 0.5+ | 0.3− | 2004 01 18 | 703 | 0.0 | 0.3+ | 2004 04 19 | 704 | 1.2+ | 0.3+ |
| 1995 11 15 | 327 | 1.3+ | 0.6− | 2004 01 18 | 703 | 0.0 | 0.3+ | 2004 04 19 | 704 | 0.5+ | 0.3+ |
| 1999 12 06 | 704 | 0.2− | 0.2− | 2004 01 18 | 703 | 0.4− | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.2− |
| 1999 12 06 | 704 | 0.4+ | 1.8− | 2004 01 18 | 703 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.5− |
| 1999 12 06 | 704 | 0.6− | 0.7− | 2004 01 27 | 699 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.9− |
| 1999 12 14 | 704 | 1.2− | 1.6− | 2004 01 27 | 699 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.5− | 0.0 |
| 1999 12 14 | 704 | 0.3− | 1.9− | 2004 01 27 | 699 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.2− | 0.4− |
| 1999 12 14 | 704 | 0.9− | 0.0 | 2004 01 27 | 699 | 0.8+ | 0.1− | 2006 09 20 | 699 | 0.5− | 0.2+ |
| 1999 12 14 | 704 | 0.6− | 0.3− | 2004 01 29 | 704 | 1.1+ | 0.5+ | 2006 09 20 | 699 | 0.3− | 0.6+ |
| 2000 01 07 | 704 | 0.8+ | 0.3+ | 2004 01 29 | 704 | 0.2− | 0.4+ | 2006 09 20 | 699 | 0.8− | 0.2− |
| 2000 01 07 | 704 | 1.0− | 0.4− | 2004 01 29 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 699 | 0.4− | 0.3+ |
| 2000 01 07 | 704 | 0.7− | 0.1− | 2004 01 29 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 0.6+ | 1.3+ |
| 2000 01 11 | 704 | 0.6+ | 0.4− | 2004 01 29 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 1.3− | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 704 | 0.0 | 0.4− | 2004 02 03 | 608 | 1.1+ | 1.4+ | 2006 09 29 | 699 | 0.0 | 0.5+ |
| 2000 01 11 | 704 | 0.1+ | 0.2− | 2004 02 03 | 608 | 0.8+ | 1.3+ | 2006 09 29 | 699 | 1.4− | 0.6+ |
| 2000 01 11 | 704 | 0.1− | 0.3− | 2004 02 03 | 608 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2000 03 05 | 704 | 1.0+ | 0.3+ | 2004 02 16 | 683 | (2.1+ | 0.7−) | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2000 03 05 | 704 | 0.3+ | 0.2− | 2004 02 16 | 683 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2000 03 05 | 704 | 0.3+ | 0.5+ | 2004 02 17 | 683 | 0.4− | 1.3+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2000 03 05 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 683 | (0.9− | 2.6+) | 2006 10 16 | 703 | 0.0 | 0.9+ |
| 2002 08 05 | 644 | 0.5− | 0.3+ | 2004 02 17 | 683 | 0.6− | 1.1+ | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 2002 08 05 | 644 | 0.2− | 1.0+ | 2004 02 18 | 683 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2002 08 05 | 644 | 0.8− | 0.5+ | 2004 02 18 | 683 | 0.1+ | 1.2+ | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2004 02 18 | 683 | 1.1− | 1.4+ | 2006 10 18 | 691 | 0.0 | 0.5+ |
| 2002 08 18 | 644 | 0.2+ | 0.6+ | 2004 02 19 | 683 | 0.1+ | 0.9− | 2006 10 18 | 691 | 0.2+ | 0.4+ |
| 2002 08 18 | 644 | 0.2+ | 0.4+ | 2004 02 19 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2002 08 26 | 644 | 0.5+ | 1.3+ | 2004 02 19 | 683 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2002 08 26 | 644 | 0.6+ | 1.3+ | 2004 02 19 | 704 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2002 08 26 | 644 | 0.0 | 1.3+ | 2004 02 19 | 683 | 0.6− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2003 12 29 | 699 | 1.2+ | 1.0+ | 2004 02 19 | 704 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2003 12 29 | 699 | 0.1+ | 0.3− | 2004 02 19 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3+ | 0.0 |
| 2003 12 29 | 699 | 0.3+ | 0.7+ | 2004 02 19 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2003 12 29 | 699 | 0.0 | 0.0 | 2004 03 29 | 703 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2004 01 14 | 644 | 0.4+ | 0.2+ | 2004 03 29 | 703 | 0.8+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.3+ |

**(137899)∗ 2000 AR$_{187}$ = 2001 KH$_{63}$**

Discovered 2000 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 14192)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.72345 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28352651 | $\omega$ | 73.65414 | | −0.92122098 | | −0.00492495 |
| $a$ | 2.2947758 | $\Omega$ | 104.74620 | | −0.10899923 | | −0.95660460 |
| $e$ | 0.2615922 | $i$ | 23.71940 | | +0.37345826 | | −0.29134752 |
| $P$ | 3.48 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 07 | 704 | 1.5− | 0.3+ | 2003 11 23 | 699 | 0.6+ | 0.0 | 2004 04 30 | 704 | 0.1− | 1.1+ |
| 1999 11 07 | 704 | 1.2− | 0.3+ | 2003 11 23 | 699 | 0.9+ | 0.2+ | 2004 04 30 | 704 | 0.5+ | 0.3+ |
| 1999 11 07 | 704 | 0.8− | 0.6+ | 2003 12 10 | 699 | (1.7+ | 1.2+) | 2004 04 30 | 704 | 0.0 | 0.4− |
| 1999 11 07 | 704 | 1.8− | 1.3+ | 2003 12 10 | 699 | 0.2− | 0.4− | 2004 05 11 | 704 | 0.2+ | 0.5+ |
| 1999 11 07 | 704 | 1.6− | 0.6+ | 2003 12 10 | 699 | 0.5+ | 0.7+ | 2004 05 11 | 704 | 0.4+ | 0.5+ |
| 1999 12 05 | 699 | (2.1+ | 1.5+) | 2003 12 10 | 699 | 0.2− | 0.2− | 2004 05 11 | 704 | 0.5+ | 1.0+ |
| 1999 12 05 | 699 | 0.5+ | 1.3+ | 2003 12 19 | 704 | 0.2+ | 0.7+ | 2004 05 11 | 704 | 0.2+ | 0.0 |
| 1999 12 05 | 699 | 0.3+ | 1.7+ | 2003 12 19 | 704 | 0.6+ | 0.5+ | 2004 05 11 | 704 | (2.0+ | 1.3−) |
| 1999 12 16 | 704 | 0.3− | 0.6+ | 2003 12 19 | 704 | (0.8− | 4.0+) | 2004 05 29 | 704 | 0.7+ | 0.2+ |
| 1999 12 16 | 704 | 0.4+ | 0.9− | 2003 12 19 | 704 | (1.2− | 3.7+) | 2004 05 29 | 704 | 0.3+ | 0.4+ |
| 1999 12 16 | 704 | 0.0 | 0.4+ | 2003 12 19 | 704 | (1.2− | 3.8+) | 2004 05 29 | 704 | 1.2+ | 0.5− |
| 1999 12 16 | 704 | 0.3+ | 0.2+ | 2003 12 30 | 704 | 0.5− | 0.3− | 2004 05 29 | 704 | 0.8+ | 0.1+ |
| 1999 12 16 | 704 | 0.0 | 0.1+ | 2003 12 30 | 704 | 1.2− | 0.3− | 2004 05 29 | 704 | 0.1− | 0.1− |
| 2000 01 08 | 704 | 0.2+ | 0.1− | 2003 12 30 | 704 | 0.6− | 0.4− | 2004 06 09 | 704 | 0.1+ | 0.3+ |
| 2000 01 08 | 704 | 0.1+ | 1.2+ | 2003 12 30 | 704 | 0.6− | 0.8− | 2004 06 09 | 704 | 0.4+ | 0.4+ |
| 2000 01 08 | 704 | 1.4+ | 0.6− | 2003 12 30 | 704 | 0.8− | 1.3− | 2004 06 09 | 704 | 0.2+ | 0.0 |
| 2000 01 08 | 704 | 0.4+ | 0.3+ | 2004 01 02 | 704 | 0.5+ | 0.3+ | 2004 06 09 | 704 | 0.0 | 0.6+ |
| 2000 01 11 | 704 | 0.3+ | 0.5+ | 2004 01 02 | 704 | 0.5+ | 0.3+ | 2004 06 19 | 699 | 0.6+ | 1.0− |
| 2000 01 11 | 704 | 0.2+ | 0.3+ | 2004 01 02 | 704 | 0.7+ | 0.3+ | 2004 06 19 | 699 | 0.0 | 0.1− |
| 2000 01 11 | 704 | 0.1− | 0.5+ | 2004 01 02 | 704 | 0.4+ | 0.3+ | 2004 06 19 | 699 | 0.1− | 0.2− |
| 2000 01 11 | 704 | 0.3− | 1.0+ | 2004 01 02 | 704 | 0.8+ | 0.1+ | 2004 06 19 | 699 | 0.2− | 0.2+ |
| 2000 01 11 | 704 | 0.3+ | 0.8+ | 2004 01 31 | 704 | 0.1+ | 1.2+ | 2004 06 22 | 704 | 0.1+ | 0.2− |
| 2001 05 18 | 704 | 0.8− | 0.0 | 2004 01 31 | 704 | 0.5+ | 1.0+ | 2004 06 22 | 704 | 0.1+ | 0.3− |
| 2001 05 18 | 704 | 0.3+ | 0.6+ | 2004 01 31 | 704 | 0.3+ | 0.9+ | 2004 06 22 | 704 | 0.3+ | 0.0 |
| 2001 05 18 | 704 | 0.1− | 0.8+ | 2004 01 31 | 704 | 0.9+ | 0.7+ | 2004 06 22 | 704 | 0.3+ | 0.1− |
| 2001 05 18 | 704 | 0.5+ | 0.9+ | 2004 01 31 | 704 | 0.3+ | 0.9+ | 2004 06 22 | 704 | 0.3+ | 0.0 |
| 2001 05 22 | 644 | 0.2− | 1.3+ | 2004 02 14 | 704 | 0.1− | 0.1− | 2005 07 27 | 644 | 0.2+ | 1.3+ |
| 2001 05 22 | 644 | 0.0 | 0.9+ | 2004 02 14 | 704 | 0.1+ | 0.1+ | 2005 07 27 | 644 | 0.5+ | 0.3+ |
| 2001 05 22 | 644 | 0.1− | 1.4+ | 2004 02 14 | 704 | 0.1− | 0.1− | 2005 07 27 | 644 | 0.5+ | 0.8+ |
| 2001 06 15 | 919 | 0.2+ | 1.1+ | 2004 02 14 | 704 | 0.1− | 0.0 | 2005 09 01 | E12 | 1.5+ | 0.5− |
| 2001 06 15 | 919 | 0.4+ | 0.1+ | 2004 02 14 | 704 | 0.2− | 0.3− | 2005 09 01 | E12 | 0.1− | 0.7+ |
| 2001 06 16 | 919 | 0.2+ | 0.8+ | 2004 04 01 | 704 | 0.4+ | 0.3− | 2005 09 01 | E12 | (0.5+ | 1.6+) |
| 2001 06 16 | 919 | 1.0− | 0.5+ | 2004 04 01 | 704 | 0.0 | 0.1+ | 2005 09 01 | E12 | 0.8− | 1.2+ |
| 2001 07 17 | 644 | 0.3− | 0.4+ | 2004 04 01 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 703 | 0.8− | 0.4+ |
| 2001 07 17 | 644 | 0.0 | 0.3+ | 2004 04 01 | 704 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.4− | 1.0+ |
| 2001 07 17 | 644 | 0.1− | 0.2+ | 2004 04 16 | 703 | 0.3− | 0.3− | 2006 09 20 | 703 | 0.1+ | 0.4+ |
| 2001 07 23 | 644 | 0.4− | 0.1+ | 2004 04 16 | 703 | 0.4− | 0.5− | 2006 09 20 | 703 | 0.1− | 0.1+ |
| 2001 07 23 | 644 | 0.2− | 0.6+ | 2004 04 16 | 703 | 0.5− | 0.1− | 2006 11 16 | 703 | 0.2− | 0.1+ |
| 2001 07 23 | 644 | 0.2− | 0.6+ | 2004 04 16 | 703 | 0.1− | 1.0+ | 2006 11 16 | 703 | 1.1− | 0.5− |
| 2003 10 26 | 699 | (0.9+ | 1.6+) | 2004 04 27 | 703 | 1.0− | 0.1− | 2006 11 16 | 703 | 0.1− | 0.3+ |
| 2003 10 26 | 699 | 0.2− | 0.5− | 2004 04 27 | 703 | 0.6− | 1.0+ | 2006 11 16 | 703 | 0.0 | 0.6+ |
| 2003 10 26 | 699 | (1.5− | 1.1−) | 2004 04 27 | 703 | 0.5− | 0.4+ | 2006 11 22 | 703 | 0.9+ | 0.3+ |
| 2003 10 26 | 699 | 0.0 | 0.7+ | 2004 04 27 | 703 | 0.6− | 0.9+ | 2006 11 22 | 703 | 0.6− | 0.6+ |
| 2003 11 02 | 704 | 0.8− | 0.7− | 2004 04 29 | 703 | 0.2− | 0.3− | 2006 11 22 | 703 | 0.3− | 0.7+ |
| 2003 11 02 | 704 | (1.1+ | 2.0+) | 2004 04 29 | 703 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.1− | 0.5+ |
| 2003 11 02 | 704 | 0.5+ | 0.4− | 2004 04 29 | 703 | 0.4+ | 0.0 | 2006 12 01 | 703 | 1.1− | 1.0− |
| 2003 11 02 | 704 | 1.3+ | 1.1− | 2004 04 29 | 703 | 0.1+ | 0.1+ | 2006 12 01 | 703 | 0.3− | 0.4+ |
| 2003 11 23 | 699 | (1.9+ | 0.9−) | 2004 04 30 | 704 | 0.1− | 0.9+ | 2006 12 01 | 703 | 0.4+ | 0.0 |
| 2003 11 23 | 699 | 0.8+ | 0.4+ | 2004 04 30 | 704 | 0.3+ | 0.2+ | 2006 12 01 | 703 | 0.9− | 1.1− |

**(137900)∗ 2000 AQ$_{192}$ = 2002 RB$_{70}$**

Discovered 2000 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34870)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.33510 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25956063 | $\omega$ | 297.36210 | | −0.40858212 | | −0.91266571 |
| $a$ | 2.4339417 | $\Omega$ | 176.70389 | | +0.88712757 | | −0.39970194 |
| $e$ | 0.1830887 | $i$ | 10.11408 | | +0.21462834 | | −0.08532092 |
| $P$ | 3.80 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.3+ | 0.4− | 2003 12 23 | 704 | 0.5− | 0.2+ | 2004 03 31 | 691 | 0.1+ | 0.0 |
| 2000 01 08 | 704 | 0.4+ | 0.2+ | 2003 12 23 | 704 | 0.3− | 0.0 | 2004 04 07 | 608 | 0.0 | 0.1− |
| 2000 01 08 | 704 | 0.2− | 0.3− | 2004 01 28 | 704 | 0.1+ | 0.1− | 2004 04 07 | 608 | 0.4+ | 0.3− |
| 2000 01 08 | 704 | 0.4+ | 0.3+ | 2004 01 28 | 704 | 0.2+ | 0.3+ | 2004 04 07 | 608 | 0.2+ | 0.7− |
| 2000 01 08 | 704 | 0.4+ | 0.0 | 2004 01 28 | 704 | 0.2+ | 1.0+ | 2004 04 12 | 703 | 1.1− | 0.6+ |
| 2000 01 11 | 704 | 0.4+ | 0.8− | 2004 01 28 | 704 | 0.1+ | 0.6+ | 2004 04 12 | 703 | 0.3− | 0.2− |
| 2000 01 11 | 704 | 0.0 | 1.1− | 2004 01 28 | 704 | 0.3− | 0.8+ | 2004 04 12 | 703 | (0.3+ | 1.6+) |
| 2000 01 11 | 704 | 0.1− | 0.9− | 2004 01 29 | 699 | 0.2+ | 0.3+ | 2004 04 12 | 703 | (2.1+ | 2.3+) |
| 2000 01 11 | 704 | 0.7+ | 0.3+ | 2004 01 29 | 699 | 0.0 | 0.2+ | 2004 04 19 | 701 | 0.4+ | 0.1+ |
| 2000 01 11 | 704 | 0.3− | 0.9− | 2004 01 29 | 699 | 0.3+ | 0.1+ | 2004 04 19 | 701 | 0.6+ | 1.3+ |
| 2000 02 03 | 106 | 1.1− | 0.4− | 2004 01 29 | 699 | 0.6− | 0.2− | 2006 09 06 | 644 | 0.3− | 0.2− |
| 2000 02 03 | 106 | 0.6− | 0.3− | 2004 01 30 | 699 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.1+ |
| 2000 02 03 | 106 | 0.3+ | 0.1− | 2004 01 30 | 699 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.5− | 0.2+ |
| 2000 02 05 | 704 | 0.2− | 0.5− | 2004 01 30 | 699 | 0.3− | 0.3+ | 2006 09 12 | 703 | 0.4− | 1.0+ |
| 2000 02 05 | 704 | 0.1+ | 0.2− | 2004 01 30 | 699 | 0.4− | 0.3+ | 2006 09 12 | 703 | 0.6− | 0.6− |
| 2000 02 05 | 704 | 0.2− | 0.1− | 2004 02 12 | 333 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.2+ | 1.1− |
| 2000 02 05 | 704 | 0.2+ | 0.4+ | 2004 02 12 | 333 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.0 | 0.0 |
| 2000 02 05 | 704 | 0.2− | 0.8− | 2004 02 12 | 333 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.6− | 0.0 |
| 2000 02 05 | 106 | 0.2+ | 0.3+ | 2004 02 12 | 333 | 0.6− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2− |
| 2000 02 05 | 106 | 0.1− | 0.2− | 2004 02 12 | 333 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.0 |
| 2000 02 05 | 106 | 0.2− | 0.4− | 2004 02 12 | 333 | 0.5− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2000 02 06 | 704 | 0.2+ | 0.1+ | 2004 02 12 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 1.0− | 0.4− |
| 2000 02 06 | 704 | 0.9− | 0.5− | 2004 02 12 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1− | 1.0− |
| 2000 02 06 | 704 | 0.0 | 0.1− | 2004 02 12 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.3+ | 0.1− |
| 2000 02 06 | 704 | 0.2− | 0.1+ | 2004 02 15 | 703 | 1.0− | 0.1− | 2006 09 18 | 699 | 1.0+ | 0.1− |
| 2000 02 06 | 704 | 0.3+ | 0.2− | 2004 02 15 | 703 | 0.5− | 0.5+ | 2006 09 18 | 699 | 0.2+ | 0.6− |
| 2000 03 05 | 704 | 1.1− | 0.2− | 2004 02 15 | 703 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.9− |
| 2000 03 05 | 704 | 0.1− | 0.0 | 2004 02 15 | 703 | 0.7− | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.2+ |
| 2000 03 05 | 704 | 0.3− | 0.1− | 2004 02 19 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.6− |
| 2000 03 05 | 704 | 0.4+ | 0.5− | 2004 02 19 | 704 | 0.4+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.6− |
| 2000 03 05 | 704 | 0.1+ | 0.0 | 2004 02 19 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.6− |
| 2002 08 12 | 704 | 0.6− | 1.1+ | 2004 02 19 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.4+ | 0.5− |
| 2002 08 12 | 704 | 0.1+ | 1.5+ | 2004 02 19 | 704 | 0.1− | 0.9+ | 2006 09 20 | 704 | 0.6− | 1.4+ |
| 2002 08 12 | 704 | (0.2+ | 1.8+) | 2004 02 23 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 1.1− | 1.1+ |
| 2002 08 12 | 704 | 0.3− | 0.9+ | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.4+ |
| 2002 08 12 | 704 | 0.2− | 1.4+ | 2004 02 23 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 291 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.4+ | | |
| 2002 08 29 | 291 | 1.0− | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.3+ | | |
| 2002 08 29 | 291 | 0.3− | 0.3+ | 2004 02 23 | 704 | 0.4+ | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 04 | 699 | (2.9+ | 0.5+) | 2004 02 23 | 704 | 0.2+ | 0.3− | 2006 09 20 | 644 | 0.2+ | 0.0 | | |
| 2002 09 04 | 699 | 0.8+ | 1.4+ | 2004 02 23 | 704 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2002 09 04 | 699 | 0.0 | 0.9+ | 2004 02 26 | 704 | 0.7+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2002 09 04 | 699 | 0.1+ | 1.4+ | 2004 02 26 | 704 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | 0.4− | 0.6+ | 2004 02 26 | 704 | 0.5+ | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.3− | | |
| 2002 09 05 | 704 | 0.5− | 0.5+ | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.2+ | | |
| 2002 09 05 | 704 | 1.1− | 0.8+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.7− | 0.6+ | 2004 03 15 | 704 | 0.0 | 1.0+ | 2006 09 27 | G96 | 0.1− | 0.1+ | | |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2004 03 15 | 704 | 0.3− | 0.6+ | 2006 09 28 | 704 | 0.0 | 1.4+ | | |
| 2002 09 07 | 704 | 0.1− | 0.5− | 2004 03 15 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 704 | 0.1+ | 0.6+ | | |
| 2002 09 07 | 704 | 1.0+ | 0.2− | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.7+ | | |
| 2002 09 07 | 704 | 0.3+ | 0.7+ | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.2− | | |
| 2002 09 07 | 704 | 0.4+ | 1.0+ | 2004 03 16 | 704 | 0.8+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2− | | |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2004 03 16 | 704 | 1.1+ | 0.1+ | 2006 09 28 | 704 | 0.6+ | 1.3+ | | |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2004 03 16 | 704 | 0.8+ | 0.1− | 2006 09 28 | G96 | 0.2− | 0.3− | | |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2004 03 16 | 704 | 0.9+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.3− | | |
| 2002 09 15 | 291 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.9+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 2002 09 15 | 291 | 0.2− | 0.2+ | 2004 03 17 | 704 | 0.4− | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2002 09 15 | 291 | 0.1− | 0.2+ | 2004 03 17 | 704 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 15 | 699 | 0.7+ | 0.3+ | 2004 03 17 | 704 | 0.6− | 1.1+ | 2006 10 01 | 704 | 0.2− | 0.6+ | | |
| 2002 09 15 | 699 | 0.5− | 0.1+ | 2004 03 17 | 704 | 1.0− | 0.7+ | 2006 10 01 | 704 | 0.0 | 1.0+ | | |
| 2002 09 15 | 699 | 0.1− | 0.3+ | 2004 03 17 | 704 | 0.8− | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.8+ | | |
| 2002 09 15 | 699 | 0.2− | 0.8+ | 2004 03 20 | 704 | (0.1− | 2.8+) | 2006 10 01 | 704 | 0.2+ | 1.0+ | | |
| 2002 09 17 | 644 | (0.2− | 2.1+) | 2004 03 20 | 704 | (1.7+ | 1.0+) | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 17 | 644 | 0.5− | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2002 09 17 | 644 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2002 09 28 | 291 | 0.4+ | 0.3+ | 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 703 | (2.0− | 0.9+) | | |
| 2002 09 28 | 291 | 0.4+ | 0.3+ | 2004 03 26 | 691 | 0.2− | 0.5+ | 2006 10 21 | 703 | (1.6− | 1.1−) | | |
| 2002 09 28 | 291 | 0.4+ | 0.1+ | 2004 03 26 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | (1.9− | 1.0+) | | |
| 2003 12 21 | 703 | 0.9+ | 0.3+ | 2004 03 26 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | (1.5− | 3.1−) | | |
| 2003 12 21 | 703 | (1.5+ | 0.8+) | 2004 03 27 | 704 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.8− | 0.2+ | | |
| 2003 12 21 | 703 | 1.4+ | 0.7+ | 2004 03 27 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 1.0− | 0.2+ | | |
| 2003 12 21 | 703 | 0.5+ | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.6+ | | |
| 2003 12 22 | 608 | 0.6+ | 0.0 | 2004 03 27 | 704 | 0.2− | 1.4+ | 2006 10 22 | 703 | 0.9− | 0.4− | | |
| 2003 12 22 | 608 | 0.5+ | 0.1+ | 2004 03 28 | A41 | 1.0+ | 0.7+ | 2006 11 25 | G96 | 0.0 | 0.5− | | |
| 2003 12 22 | 608 | 0.5+ | 0.3+ | 2004 03 28 | A41 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.0 | | |
| 2003 12 23 | 704 | 0.5+ | 0.2+ | 2004 03 28 | A41 | 0.3+ | 0.4− | 2006 11 25 | G96 | 0.4+ | 0.2− | | |
| 2003 12 23 | 704 | 0.1+ | 0.3+ | 2004 03 31 | 691 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.5− | | |
| 2003 12 23 | 704 | 0.3− | 0.5+ | 2004 03 31 | 691 | 0.1− | 0.1+ | | | | | | |

**(137901)∗ 2000 AD$_{204}$ = 1993 OZ$_{10}$**

Discovered 2000 Jan. 12 by K. Korlević at Višnjan.

Id. G. V. Williams (MPC 38003)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.57790 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23805944 | $\omega$ | 208.39721 | | −0.89387239 | | −0.43497046 |
| $a$ | 2.5783732 | $\Omega$ | 305.41190 | | +0.43240381 | | −0.77248892 |
| $e$ | 0.1154275 | $i$ | 7.65709 | | +0.11840228 | | −0.46266789 |
| $P$ | 4.14 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 20 | 809 | 1.4− | 1.5+ | 2000 02 05 | 704 | 0.4+ | 0.8− | 2003 12 30 | 704 | 0.5− | 0.2+ | | |
| 1993 07 20 | 809 | 1.7− | 1.5+ | 2000 02 05 | 704 | 0.0 | 0.6− | 2003 12 30 | 704 | 0.8− | 0.1− | | |
| 1993 07 20 | 809 | (2.5− | 2.5+) | 2000 02 05 | 704 | 0.7+ | 0.5− | 2003 12 30 | 704 | 0.3+ | 0.3− | | |
| 1993 07 24 | 809 | 0.2− | 0.3− | 2000 02 06 | 704 | 0.7+ | 0.2+ | 2003 12 30 | 704 | 0.4− | 0.4+ | | |
| 1999 11 16 | 704 | 0.2+ | 1.0+ | 2000 02 06 | 704 | 1.4+ | 0.7− | 2003 12 30 | 704 | 0.5− | 0.3+ | | |
| 1999 11 16 | 704 | 0.0 | 0.3− | 2000 02 06 | 704 | 0.3+ | 0.2+ | 2004 01 20 | 704 | 0.0 | 0.7+ | | |
| 1999 11 16 | 704 | 1.2− | 0.2− | 2000 02 06 | 704 | 0.3+ | 0.1+ | 2004 01 20 | 704 | 0.4− | 0.1+ | | |
| 1999 11 16 | 704 | 0.2− | 0.1− | 2000 02 06 | 704 | 0.6+ | 0.7− | 2004 01 20 | 704 | 0.2− | 0.1− | | |
| 1999 12 07 | 704 | 0.6+ | 1.4+ | 2000 03 05 | 704 | 0.4+ | 0.3+ | 2004 01 22 | 704 | 0.1− | 0.0 | | |
| 1999 12 07 | 704 | 0.2+ | 0.7− | 2000 03 05 | 704 | 0.1+ | 0.2− | 2004 01 22 | 704 | 0.1− | 0.1+ | | |
| 1999 12 07 | 704 | 0.6+ | 1.7− | 2000 03 05 | 704 | 0.1+ | 0.1− | 2004 01 22 | 704 | 0.7− | 0.1+ | | |
| 1999 12 07 | 704 | (1.5+ | 2.8−) | 2000 03 05 | 704 | 0.4+ | 0.1− | 2004 01 22 | 704 | 0.7− | 0.4+ | | |
| 2000 01 04 | 691 | 0.4− | 0.1+ | 2000 03 05 | 704 | 0.2− | 0.4+ | 2004 01 22 | 704 | 0.4− | 0.5+ | | |
| 2000 01 04 | 691 | 0.5− | 0.1+ | 2000 03 26 | 699 | 1.0+ | 1.1+ | 2004 01 30 | 704 | 0.3− | 0.0 | | |
| 2000 01 04 | 691 | 0.4− | 0.0 | 2000 03 26 | 699 | 0.9+ | 0.8+ | 2004 01 30 | 704 | 0.2− | 0.0 | | |
| 2000 01 06 | 704 | 0.4+ | 0.1− | 2000 03 26 | 699 | 0.4+ | 1.4+ | 2004 01 30 | 704 | 0.0 | 0.4+ | | |
| 2000 01 06 | 704 | 0.4+ | 0.5− | 2000 03 26 | 699 | 1.1+ | 0.5+ | 2004 01 30 | 704 | 0.1+ | 0.0 | | |
| 2000 01 06 | 704 | 0.4+ | 0.7− | 2002 10 05 | 704 | 0.6+ | 0.2+ | 2004 01 30 | 704 | 0.7− | 0.4+ | | |
| 2000 01 06 | 704 | 0.3+ | 1.1− | 2002 10 05 | 704 | 0.9− | 0.6+ | 2004 02 15 | 704 | 0.5− | 0.5+ | | |
| 2000 01 07 | 120 | (2.1− | 0.4+) | 2002 10 05 | 704 | 0.5− | 0.8+ | 2004 02 15 | 704 | 0.5− | 0.0 | | |
| 2000 01 07 | 120 | 0.8− | 0.2+ | 2002 10 05 | 704 | 0.4− | 1.0+ | 2004 02 15 | 704 | 0.1− | 0.3− | | |
| 2000 01 12 | 691 | 0.6− | 0.5− | 2002 10 31 | 704 | 0.1− | 0.4+ | 2004 02 15 | 704 | 0.3− | 0.0 | | |
| 2000 01 12 | 691 | 0.6− | 0.4− | 2002 10 31 | 704 | 0.3+ | 0.2+ | 2004 02 15 | 704 | 0.6− | 0.2− | | |
| 2000 01 12 | 691 | 0.6− | 0.3− | 2002 10 31 | 704 | 0.3− | 0.2+ | 2004 02 22 | 704 | 1.3+ | 1.6+ | | |
| 2000 01 12 | 120 | 1.8− | 0.4+ | 2003 11 18 | 699 | 1.2− | 0.9− | 2004 02 22 | 704 | 0.4− | 0.3− | | |
| 2000 01 13 | 120 | 1.3− | 1.1− | 2003 11 18 | 699 | 0.2− | 0.3− | 2004 02 22 | 704 | 0.3+ | 0.7+ | | |
| 2000 01 13 | 699 | 0.3+ | 0.1− | 2003 11 18 | 699 | 1.0− | 0.2+ | 2004 02 22 | 704 | 1.2− | 0.3− | | |
| 2000 01 13 | 699 | 0.6+ | 0.8+ | 2003 11 18 | 699 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 1.4+ | 0.5− | | |
| 2000 01 13 | 699 | 0.2− | 1.5+ | 2003 12 17 | 699 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.0 | | |
| 2000 01 16 | 120 | 0.2− | 0.3− | 2003 12 17 | 699 | 0.6− | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.7− | | |
| 2000 01 16 | 120 | 0.4− | 0.5− | 2003 12 17 | 699 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.3− | 0.5− | | |
| 2000 01 16 | 691 | 0.7+ | 0.3+ | 2003 12 17 | 699 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.3− | | |
| 2000 01 16 | 691 | 0.1+ | 0.1− | 2003 12 18 | 704 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.4+ | 0.5+ | | |
| 2000 01 16 | 691 | 0.1+ | 0.2− | 2003 12 18 | 704 | 0.2+ | 0.1− | 2004 04 20 | 704 | 0.0 | 0.4− | | |
| 2000 01 30 | 703 | 0.2− | 0.3+ | 2003 12 18 | 704 | 0.0 | 0.3+ | 2004 04 20 | 704 | 0.2+ | 0.5+ | | |
| 2000 01 30 | 703 | 0.6+ | 0.2+ | 2003 12 18 | 704 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.6+ | 0.6+ | | |
| 2000 01 30 | 703 | 0.2+ | 0.4+ | 2003 12 18 | 704 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.2+ | | |
| 2000 01 30 | 703 | 0.2+ | 0.4+ | 2003 12 27 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 703 | 0.6− | 0.9+ | | |
| 2000 02 02 | 704 | 0.4+ | 0.1− | 2003 12 27 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.4+ | 0.7+ | | |
| 2000 02 02 | 704 | 0.7+ | 0.1− | 2003 12 27 | 704 | 0.7+ | 0.1+ | 2006 08 29 | 703 | 0.3+ | 0.9+ | | |
| 2000 02 02 | 704 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.2+ | 0.8+ | 2006 08 29 | 691 | 0.0 | 0.0 | | |
| 2000 02 02 | 704 | 0.3+ | 0.4+ | 2003 12 27 | 704 | 0.6+ | 0.1+ | 2006 08 29 | 691 | 0.2+ | 0.0 | | |
| 2000 02 02 | 704 | 0.1+ | 0.3+ | 2003 12 27 | 704 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.5+ | 0.0 | | |
| 2000 02 03 | 704 | 0.2+ | 0.1+ | 2003 12 27 | 704 | 0.5+ | 0.1− | 2006 09 13 | 644 | 0.0 | 0.2+ | | |
| 2000 02 03 | 704 | 0.7+ | 0.7+ | 2003 12 27 | 704 | 0.1+ | 0.8+ | 2006 09 13 | 644 | 0.6− | 0.5− | | |
| 2000 02 03 | 704 | 0.8+ | 0.8+ | 2003 12 27 | 704 | 0.2− | 0.7+ | 2006 09 13 | 644 | 0.4− | 0.0 | | |
| 2000 02 03 | 704 | 0.3+ | 1.1+ | 2003 12 28 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.3− | | |
| 2000 02 03 | 704 | 0.4+ | 0.7+ | 2003 12 28 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.5− | | |
| 2000 02 05 | 704 | 1.1+ | 0.6+ | 2003 12 28 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 1.3+ | 0.9− | | |
| 2000 02 05 | 704 | 0.4− | 0.3− | 2003 12 28 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.8− | | |
| 2000 02 05 | 704 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.4+ | 0.1− | 2006 09 20 | 699 | 0.4− | 0.0 | | |
| 2000 02 05 | 704 | 0.3+ | 0.2− | 2003 12 28 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.6− | 0.6+ | | |
| 2000 02 05 | 704 | 0.1+ | 0.0 | 2003 12 28 | 691 | 0.1+ | 0.2− | 2006 09 20 | 699 | 0.6+ | 0.3− | | |
| 2000 02 05 | 704 | 0.4+ | 0.2+ | 2003 12 28 | 691 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.4− | 0.8+ | | |

**(137902)∗ 2000 AQ$_{213}$ = 1997 LN$_{12}$**

Discovered 2000 Jan. 6 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 17142)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.80992 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24000296 | $\omega$ | 175.05873 | | +0.13585014 | | +0.98879670 |
| $a$ | 2.5644348 | $\Omega$ | 102.73928 | | −0.91113536 | | +0.14921022 |
| $e$ | 0.1159432 | $i$ | 3.63581 | | −0.38907210 | | −0.00417028 |
| $P$ | 4.11 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 04 | 809 | 0.9+ | 1.2+ | 2004 01 27 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.6− | | |
| 1997 05 04 | 809 | (1.3− | 2.6+) | 2005 04 01 | 699 | 0.8− | 0.2+ | 2006 09 14 | 703 | (1.8− | 0.2+) | | |
| 1997 05 04 | 809 | 0.8− | 0.6+ | 2005 04 01 | 699 | 0.3+ | 1.1+ | 2006 09 14 | 703 | (0.9− | 1.9+) | | |
| 1997 06 07 | 809 | 0.7− | 0.8− | 2005 04 01 | 699 | 0.6+ | 0.9+ | 2006 09 14 | 703 | (2.2− | 1.4−) | | |
| 1997 06 07 | 809 | 0.2− | 0.3− | 2005 04 01 | 699 | (2.6+ | 1.8−) | 2006 09 19 | 699 | 0.7+ | 0.2+ | | |
| 1997 06 07 | 809 | 0.5+ | 1.3− | 2005 04 11 | 699 | 1.0− | 0.2− | 2006 09 19 | 699 | 0.1− | 0.7+ | | |
| 1997 06 08 | 809 | (3.3− | 3.6−) | 2005 04 11 | 699 | 0.3− | 0.0 | 2006 09 19 | 699 | 1.2+ | 0.1− | | |
| 1997 06 08 | 809 | (2.2− | 4.4−) | 2005 04 11 | 699 | 1.4+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.3+ | | |
| 1997 06 08 | 809 | (2.0− | 3.4−) | 2005 04 11 | 699 | 0.9+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.4+ | | |
| 1999 12 15 | 691 | 0.2+ | 0.0 | 2005 04 15 | 699 | 1.2+ | 0.2− | 2006 09 20 | 644 | 0.5− | 0.3+ | | |
| 1999 12 15 | 691 | 0.0 | 0.2+ | 2005 04 15 | 699 | 0.3+ | 0.8+ | 2006 09 20 | 644 | 0.1− | 0.2− | | |
| 1999 12 15 | 691 | 0.2+ | 0.2+ | 2005 04 15 | 699 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.3+ | | |
| 2000 01 06 | 691 | 0.0 | 0.1− | 2005 04 15 | 699 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.1− | | |
| 2000 01 06 | 691 | 0.1− | 0.3− | 2005 04 18 | 703 | 0.7− | 0.7+ | 2006 09 26 | 704 | 0.6− | 0.6− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 691 | 0.4− | 0.4− | 2005 04 18 | 703 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.9− | 1.3+ |
| 2000 01 11 | 691 | 0.2− | 0.2+ | 2005 04 18 | 703 | (0.5− | 2.1−) | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2000 01 11 | 691 | 0.3− | 0.2+ | 2005 04 18 | 703 | 0.4+ | 0.8− | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2000 01 11 | 691 | 0.2− | 0.2+ | 2005 05 08 | 703 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2001 04 25 | 699 | 0.4+ | 0.5+ | 2005 05 08 | 703 | 0.3− | 1.0+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2001 04 25 | 699 | 0.2+ | 1.0+ | 2005 05 08 | 703 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 04 25 | 699 | 0.7+ | 0.1− | 2005 05 08 | 703 | 1.2− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 04 25 | 699 | 0.4− | 0.1+ | 2005 05 11 | 699 | 1.0+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 05 15 | 699 | 0.9+ | 0.2− | 2005 05 11 | 699 | 0.7− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2001 05 15 | 699 | 1.1− | 0.2− | 2005 05 11 | 699 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.5− | 0.2+ |
| 2001 05 15 | 699 | 0.3+ | 0.2+ | 2005 05 11 | 699 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.3+ |
| 2001 05 15 | 699 | 0.9+ | 0.4− | 2006 08 29 | 691 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2004 01 27 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.6+ | | | | |
| 2004 01 27 | 691 | 0.3+ | 0.5+ | 2006 08 29 | 691 | 0.1− | 0.4+ | | | | |

**(137903)∗ 2000 AT$_{214}$ = 2002 RD$_{188}$ = 2004 BH$_{28}$**

Discovered 2000 Jan. 7 by Spacewatch at Kitt Peak.

Id. M. Kretlow (*MPO* 60580), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.30901 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26704007 | $\omega$ | 19.93575 | | −0.22625493 | | −0.97363265 |
| $a$ | 2.3882792 | $\Omega$ | 83.14950 | | +0.88966458 | | −0.21873142 |
| $e$ | 0.0524830 | $i$ | 1.68088 | | +0.39661777 | | −0.06477670 |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.1− | 0.7− | 2004 01 22 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | (0.3+ | 1.6+) |
| 1991 10 01 | 691 | 0.0 | 0.7− | 2004 01 22 | 704 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.0− |
| 1991 10 01 | 691 | 0.4− | 0.7− | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 1997 05 02 | 910 | 0.4+ | 1.5− | 2004 01 22 | 704 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 1997 05 02 | 910 | 1.0+ | 1.6− | 2004 01 22 | 704 | 0.9− | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.6+ |
| 1997 05 02 | 910 | 0.4+ | 1.9− | 2004 01 26 | 699 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.2− | 0.3− | 2004 01 26 | 699 | 0.8+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1999 12 07 | 704 | 0.4− | 0.1− | 2004 01 26 | 699 | 0.6− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 1.2+ | 0.0 | 2004 01 26 | 699 | 0.2− | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 0.2− | 0.3+ | 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2000 01 07 | 691 | 0.1− | 0.7− | 2004 01 30 | 704 | 0.6− | 0.7+ | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2000 01 07 | 691 | 0.1− | 0.6− | 2004 01 30 | 704 | 0.0 | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2000 01 07 | 691 | 0.0 | 0.7− | 2004 01 30 | 704 | (0.3+ | 1.5+) | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2000 01 10 | 691 | 0.5+ | 0.2− | 2004 01 30 | 704 | 0.2− | 0.5+ | 2006 11 14 | G96 | 0.4− | 0.1− |
| 2000 01 10 | 691 | 0.6+ | 0.4− | 2004 02 10 | 703 | 0.6− | 0.9+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2000 01 10 | 691 | 0.6+ | 0.3− | 2004 02 10 | 703 | 1.1− | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2000 01 15 | 691 | 0.1+ | 0.1+ | 2004 02 10 | 703 | 0.4− | 0.9+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2000 01 15 | 691 | 0.2+ | 0.0 | 2004 02 10 | 703 | 0.6+ | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2000 01 15 | 691 | 0.2+ | 0.2− | 2004 02 16 | 704 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.6− | 0.6+ | 2004 02 16 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 1.2− | 0.3+ |
| 2002 09 13 | 644 | 0.3− | 0.8+ | 2004 02 16 | 704 | 0.6+ | 0.2− | 2006 11 18 | 704 | (0.3− | 1.7+) |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2004 02 16 | 704 | 0.2+ | 1.3+ | 2006 11 18 | 704 | 0.3+ | 1.5+ |
| 2002 09 15 | 699 | (1.1+ | 2.1+) | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 1.0+ |
| 2002 09 15 | 699 | 0.5+ | 0.2+ | 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.0 | 1.0+ |
| 2002 09 15 | 699 | 0.0 | 0.3+ | 2004 02 23 | 704 | (0.7− | 2.2+) | 2006 11 18 | 704 | (0.5− | 1.7+) |
| 2002 09 15 | 699 | 0.9+ | 0.1− | 2004 02 23 | 704 | 0.1− | 0.2+ | 2006 11 21 | 704 | (0.0 | 2.4+) |
| 2002 09 15 | 644 | 0.4− | 0.8+ | 2006 09 27 | 683 | (0.9+ | 1.8+) | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2002 09 15 | 644 | 0.3− | 0.5+ | 2006 09 27 | 683 | 1.0+ | 0.9+ | 2006 11 21 | 704 | (0.2+ | 1.7+) |
| 2002 09 15 | 644 | 0.7− | 0.9+ | 2006 09 27 | 683 | 0.6+ | 0.7+ | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2002 10 11 | 704 | 0.6+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 1.0+ | 0.8+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.3− | 0.0 |
| 2004 01 18 | 644 | 0.2− | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.3− | 1.3− |
| 2004 01 18 | 644 | 0.2− | 0.8+ | 2006 09 30 | 703 | 1.0− | 0.5− | 2006 11 27 | 703 | 0.6+ | 0.1− |
| 2004 01 18 | 644 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.3+ | 2006 11 27 | 703 | 0.5+ | 0.2+ |

**(137904)∗ 2000 AU$_{217}$ = 2002 QK$_{79}$**

Discovered 2000 Jan. 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 93798)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.62576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26193221 | $\omega$ | 100.23816 | | +0.92066409 | | −0.38913451 |
| $a$ | 2.4192279 | $\Omega$ | 282.66789 | | +0.34462558 | | +0.84738709 |
| $e$ | 0.2084343 | $i$ | 1.81221 | | +0.18333260 | | +0.36126093 |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 691 | 0.2− | 0.1− | 2006 08 22 | 644 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.8− | 0.3+ |
| 2000 01 03 | 691 | 0.2− | 0.4+ | 2006 08 22 | 644 | 0.4+ | 0.1− | 2006 09 19 | 699 | 0.3− | 1.1+ |
| 2000 01 03 | 691 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.5+ |
| 2000 01 08 | 691 | 0.1− | 0.3− | 2006 08 23 | 644 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.1+ |
| 2000 01 08 | 691 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2000 01 08 | 691 | 0.7+ | 0.2− | 2006 08 28 | 703 | 1.2− | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2000 01 13 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.0 | 2006 09 23 | 691 | 0.3− | 0.0 |
| 2000 01 13 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.0 | 2006 09 25 | 704 | 0.4− | 0.4+ |
| 2000 01 13 | 691 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.6− | 0.4+ | 2006 09 25 | 704 | 0.7+ | 0.5− |
| 2002 07 04 | 644 | 0.1− | 0.4+ | 2006 09 12 | 703 | 1.0− | 1.0− | 2006 09 25 | 699 | 0.9+ | 0.7+ |
| 2002 07 04 | 644 | 0.7− | 0.1+ | 2006 09 12 | 703 | 0.5+ | 1.2− | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 2002 07 14 | 644 | 0.3+ | 0.0 | 2006 09 12 | 703 | (1.7− | 1.5−) | 2006 09 25 | 704 | 0.8− | 0.7+ |
| 2002 07 14 | 644 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.7− | 0.6− | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 2002 07 22 | 644 | 0.9− | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.4− | 0.2+ |
| 2002 07 22 | 644 | 1.0− | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.8+ |
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.6+ |
| 2002 07 22 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.6+ | 0.0 | 2006 09 29 | 704 | (1.9+ | 0.4−) |
| 2002 08 07 | 644 | 0.3+ | 0.1− | 2006 09 16 | 699 | 0.1− | 0.4− | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.1+ | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.1+ |
| 2002 08 07 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.1− | 0.7+ |
| 2002 08 15 | 291 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2002 08 15 | 291 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.4− | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2002 08 15 | 291 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2002 08 28 | 644 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.6− |
| 2002 08 28 | 644 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 08 28 | 644 | 1.5+ | 0.1− | 2006 09 18 | 704 | (2.6− | 0.4+) | 2006 10 10 | 644 | 0.4+ | 0.0 |
| 2004 02 11 | 644 | 0.9+ | 0.8+ | 2006 09 18 | 704 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.9− | 0.7+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2004 02 11 | 644 | 0.4+ | 0.8+ | 2006 09 18 | 704 | (1.5+ | 2.0−) | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2004 02 11 | 691 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.2− | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.9− |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.4+ | | | | |
| 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.4− | 0.3+ | | | | |

**(137905)∗ 2000 AT$_{225}$ = 2002 RW$_{217}$**

Discovered 2000 Jan. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37281)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.51168 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24572065 | $\omega$ | 2.25431 | | +0.51052705 | | +0.85833542 |
| $a$ | 2.5244975 | $\Omega$ | 298.44855 | | −0.78981617 | | +0.44456222 |
| $e$ | 0.0566935 | $i$ | 3.33895 | | −0.33993020 | | +0.25617325 |
| $P$ | 4.01 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 04 | 691 | 0.2− | 0.6− | 2002 10 04 | 704 | 0.7+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 1994 09 04 | 691 | 0.3+ | 0.3− | 2002 10 04 | 704 | 0.1+ | 1.0+ | 2006 08 28 | 691 | 0.1− | 0.2− |
| 1994 09 04 | 691 | 0.1− | 0.6− | 2005 04 14 | 703 | 0.3− | 0.5+ | 2006 08 29 | 691 | 0.3− | 0.1+ |
| 1998 09 19 | 645 | 0.2+ | 0.2− | 2005 04 14 | 703 | (3.3− | 2.9+) | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 1998 09 19 | 645 | 0.2+ | 0.2− | 2005 04 14 | 703 | 1.1− | 1.0+ | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 2000 01 05 | 691 | 0.1+ | 0.2+ | 2005 04 14 | 703 | 1.3− | 0.4+ | 2006 09 01 | 704 | 0.4+ | 0.3− |
| 2000 01 05 | 691 | 0.1+ | 0.1+ | 2005 04 16 | 691 | 0.2+ | 0.7+ | 2006 09 01 | 704 | (1.7+ | 0.1+) |
| 2000 01 05 | 691 | 0.0 | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.3− | 0.2+ |
| 2000 01 12 | 691 | 0.3+ | 0.0 | 2005 04 16 | 691 | 1.2+ | 0.3− | 2006 09 01 | 704 | 0.4+ | 0.8+ |
| 2000 01 12 | 691 | 1.0− | 0.9+ | 2005 05 01 | 644 | 0.3− | 0.5+ | 2006 09 16 | 644 | 0.3− | 0.2+ |
| 2000 01 12 | 691 | 0.3− | 0.7− | 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 09 16 | 644 | 0.5− | 0.2+ |
| 2000 01 15 | 691 | 0.1+ | 0.1+ | 2005 05 01 | 644 | 0.2− | 0.4+ | 2006 09 16 | 644 | 0.6− | 0.0 |
| 2000 01 15 | 691 | 0.3+ | 0.0 | 2005 05 06 | 703 | (0.8+ | 1.9+) | 2006 09 17 | 703 | 0.4+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 15 | 691 | 0.4+ | 0.1+ | 2005 05 06 | 703 | (1.6− | 1.2+) | 2006 09 17 | 703 | 0.2− | 0.0 |
| 2002 09 06 | 704 | (0.2− | 1.6+) | 2005 05 06 | 703 | (4.0− | 0.8+) | 2006 09 17 | 703 | 0.7− | 0.5− |
| 2002 09 06 | 704 | 0.4+ | 0.1+ | 2005 05 06 | 703 | 0.6− | 0.5− | 2006 09 17 | 703 | 0.6− | 0.9− |
| 2002 09 06 | 704 | 0.8− | 0.5− | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.0 | 0.8− |
| 2002 09 06 | 704 | 0.5+ | 0.2− | 2006 08 22 | 644 | 0.5− | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.9+ |
| 2002 09 14 | 644 | 0.4− | 1.2+ | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 20 | 699 | 1.4− | 1.2+ |
| 2002 09 14 | 644 | 0.5− | 0.8+ | 2006 08 24 | 704 | 0.6− | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.2− |
| 2002 09 14 | 644 | 0.3− | 1.1+ | 2006 08 24 | 704 | 0.3− | 0.2− | 2006 11 17 | 291 | 0.3+ | 0.5+ |
| 2002 09 16 | 644 | 0.5− | 0.0 | 2006 08 24 | 704 | 1.1− | 0.4+ | 2006 11 17 | 291 | 0.2+ | 0.4+ |
| 2002 09 16 | 644 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.1+ | 1.1+ | 2006 11 17 | 291 | 0.3+ | 0.3+ |
| 2002 09 16 | 644 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.2+ | 0.0 | 2006 11 21 | 291 | 0.0 | 0.2+ |
| 2002 09 17 | 644 | 0.5− | 0.6+ | 2006 08 27 | 699 | 1.0+ | 0.8− | 2006 11 21 | 291 | 0.1− | 0.3+ |
| 2002 09 17 | 644 | 0.5− | 0.3+ | 2006 08 27 | 699 | 0.6− | 0.6+ | 2006 11 21 | 291 | 0.2− | 0.3+ |
| 2002 09 17 | 644 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.8+ | 2006 11 24 | 291 | 0.4+ | 0.8+ |
| 2002 09 18 | 644 | 0.3− | 0.1+ | 2006 08 28 | 703 | (1.6− | 0.6+) | 2006 11 24 | 291 | 0.8+ | 0.6+ |
| 2002 09 18 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 11 24 | 291 | 0.2− | 0.2+ |
| 2002 09 18 | 644 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.9− | 0.1+ | | | | |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.1+ | | | | |

**(137906)∗ 2000 AL$_{227}$ = 1998 RB$_{42}$**

Discovered 2000 Jan. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 39356)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.50346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26360579 | $\omega$ | 78.87957 | | +0.77249676 | −0.63157368 | |
| $a$ | 2.4089775 | $\Omega$ | 320.23802 | | +0.53484148 | +0.70318012 | |
| $e$ | 0.1053170 | $i$ | 5.92795 | | +0.34233514 | +0.32657681 | |
| $P$ | 3.74 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.0 | 1.7+ | 2002 10 04 | 699 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.4− | 0.8− |
| 1998 09 14 | 704 | (2.3− | 1.2+) | 2002 10 04 | 699 | 0.4+ | 0.1+ | 2002 11 14 | 704 | 0.2− | 0.2− |
| 1998 09 14 | 704 | 0.3− | 0.4+ | 2002 10 04 | 699 | 0.8+ | 0.0 | 2002 11 14 | 704 | 0.1− | 0.5− |
| 1998 09 14 | 704 | (2.6− | 0.0 ) | 2002 10 04 | 699 | 0.6− | 0.3+ | 2002 12 02 | 704 | 0.5− | 0.3+ |
| 1998 09 16 | 699 | 0.2+ | 1.0− | 2002 10 05 | 704 | 0.1− | 0.3+ | 2002 12 02 | 704 | 0.4+ | 0.2+ |
| 1998 09 16 | 699 | 0.8+ | 1.4− | 2002 10 05 | 704 | 0.3− | 0.3+ | 2002 12 02 | 704 | 0.2− | 0.8+ |
| 1998 09 16 | 699 | 1.0+ | 0.2− | 2002 10 05 | 704 | 0.3− | 0.5+ | 2002 12 02 | 704 | 0.5− | 0.5+ |
| 1998 09 18 | 704 | 1.2− | 1.9− | 2002 10 05 | 704 | 0.0 | 0.4+ | 2002 12 02 | 704 | 0.1− | 0.8+ |
| 1998 09 18 | 704 | 0.6− | 0.7+ | 2002 10 05 | 704 | 0.7− | 0.0 | 2002 12 05 | 704 | 1.3+ | 0.5+ |
| 1998 09 18 | 704 | 0.3− | 1.1+ | 2002 10 10 | 704 | 0.3+ | 0.4− | 2002 12 05 | 704 | 0.2− | 0.3− |
| 1998 09 18 | 704 | 1.9− | 1.6+ | 2002 10 10 | 704 | 0.0 | 0.6− | 2002 12 05 | 704 | 0.0 | 0.0 |
| 1998 09 18 | 704 | 0.4− | 0.3− | 2002 10 10 | 704 | 0.4+ | 1.1+ | 2002 12 05 | 704 | 1.0+ | 0.5− |
| 1998 09 25 | 699 | 0.6+ | 1.2+ | 2002 10 10 | 704 | 0.2+ | 0.2− | 2002 12 05 | 704 | 0.5+ | 0.7− |
| 1998 09 25 | 699 | 0.7+ | 1.5+ | 2002 10 10 | 704 | 0.1+ | 0.2− | 2002 12 20 | 644 | 0.1+ | 0.1− |
| 1998 09 25 | 699 | (0.7+ | 2.2+) | 2002 10 12 | 704 | (1.6− | 1.0−) | 2002 12 20 | 644 | 0.3− | 0.1− |
| 1998 10 11 | 699 | 0.0 | 0.3− | 2002 10 12 | 704 | 0.8− | 1.1− | 2002 12 20 | 644 | 0.3− | 0.3− |
| 1998 10 11 | 699 | 0.9− | 0.1+ | 2002 10 12 | 704 | (0.5− | 1.7−) | 2002 12 31 | 704 | 0.4+ | 0.0 |
| 1998 10 11 | 699 | 1.2− | 1.0+ | 2002 10 12 | 704 | (5.3− | 0.3−) | 2002 12 31 | 704 | 0.8+ | 0.2+ |
| 2000 01 10 | 691 | 0.1− | 0.3− | 2002 11 01 | 644 | 0.2− | 0.2+ | 2002 12 31 | 704 | 0.3+ | 0.9+ |
| 2000 01 10 | 691 | 0.2− | 0.1− | 2002 11 01 | 644 | 0.2− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.4+ |
| 2000 01 10 | 691 | 0.2− | 0.3− | 2002 11 01 | 644 | 0.3− | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.0 |
| 2000 01 16 | 691 | 0.2− | 0.0 | 2002 11 03 | 704 | 0.5+ | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.1− |
| 2000 01 16 | 691 | 0.4− | 0.2− | 2002 11 03 | 704 | 0.3+ | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.1+ |
| 2000 01 16 | 691 | 0.3− | 0.2− | 2002 11 03 | 704 | 0.0 | 0.3+ | 2004 03 28 | 691 | 0.2+ | 0.3+ |
| 2000 02 29 | 704 | 0.3+ | 0.4+ | 2002 11 03 | 704 | 1.1− | 0.7+ | 2004 03 28 | 691 | 0.4+ | 0.7+ |
| 2000 02 29 | 704 | 0.0 | 0.3+ | 2002 11 06 | 704 | 0.2+ | 0.9+ | 2004 03 28 | 691 | 0.4+ | 0.6+ |
| 2000 02 29 | 704 | 0.1− | 0.3+ | 2002 11 06 | 704 | 0.7+ | 0.1− | 2006 11 19 | 704 | 0.4− | 1.4+ |
| 2000 02 29 | 704 | 0.1− | 1.2+ | 2002 11 06 | 699 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.3− | 1.3+ |
| 2000 02 29 | 704 | 0.7+ | 0.9− | 2002 11 06 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.5− |
| 2000 03 03 | 704 | 0.9+ | 0.2+ | 2002 11 06 | 699 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.2+ | 2002 11 06 | 704 | 0.7+ | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2000 03 03 | 704 | 0.3+ | 0.7+ | 2002 11 06 | 699 | 0.1− | 0.3− | 2006 11 22 | 704 | 1.0− | 0.3+ |
| 2000 03 03 | 704 | 0.2− | 0.5+ | 2002 11 06 | 699 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2000 03 03 | 704 | 0.4− | 0.6+ | 2002 11 13 | 644 | 0.6− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.2− |
| 2000 03 11 | 704 | 0.5+ | 0.1+ | 2002 11 13 | 644 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.0 | 1.1− |
| 2000 03 11 | 704 | 1.0+ | 0.1− | 2002 11 13 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 704 | 0.0 | 0.9− |
| 2000 03 11 | 704 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.4− | 0.4− | 2006 11 27 | 704 | 0.3− | 0.1− |
| 2000 03 11 | 704 | 0.6+ | 0.5− | 2002 11 14 | 704 | 0.4− | 0.7− | | | | |

**(137907)∗ 2000 AT$_{231}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.10660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26717720 | $\omega$ | 345.55702 | | +0.22207047 | −0.97312664 | |
| $a$ | 2.3874619 | $\Omega$ | 91.58509 | | +0.90050914 | +0.18074687 | |
| $e$ | 0.1826896 | $i$ | 3.49302 | | +0.37385557 | +0.14267136 | |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 691 | 0.5− | 0.1+ | 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 1999 12 17 | 691 | 0.5− | 0.1+ | 2004 03 11 | 644 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1999 12 17 | 691 | 0.4− | 0.2+ | 2004 03 11 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 01 04 | 704 | 0.3− | 0.5− | 2004 03 11 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.7+ |
| 2000 01 04 | 704 | 1.7− | 0.0 | 2004 03 20 | 704 | (2.0+ | 0.2+) | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2000 01 04 | 704 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.0 | 0.9+ | 2006 10 21 | 703 | 0.2− | 0.3− |
| 2000 01 04 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | (1.8− | 0.4+) | 2006 10 21 | 703 | 0.7− | 0.6− |
| 2000 01 05 | 691 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.1− | 1.1− | 2006 10 21 | 703 | 0.1− | 0.8− |
| 2000 01 05 | 691 | 0.4+ | 0.2− | 2004 03 20 | 704 | 1.1+ | 0.8− | 2006 10 21 | 703 | 0.5+ | 0.1− |
| 2000 01 05 | 691 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.4− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2000 01 30 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2000 01 30 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2000 01 30 | 704 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 10 22 | 704 | (0.5− | 1.9+) |
| 2000 01 31 | 704 | 0.6+ | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 22 | 704 | 0.8− | 1.0+ |
| 2000 01 31 | 704 | 0.7+ | 0.8+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 22 | 704 | 0.6− | 0.6+ |
| 2000 01 31 | 704 | 0.5+ | 1.5+ | 2006 10 02 | G96 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.6− | 0.8+ |
| 2001 05 23 | 291 | 0.2− | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.8+ | 0.3+ |
| 2001 05 23 | 291 | 0.0 | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.1− |
| 2001 05 23 | 291 | 0.3+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.8+ |
| 2002 09 15 | 644 | 0.2+ | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.8− | 0.6+ |
| 2002 09 15 | 644 | 0.0 | 0.9+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 2002 09 15 | 644 | 0.3+ | 1.0+ | 2006 10 19 | 644 | 0.6+ | 0.2+ | 2006 11 14 | 704 | 0.2+ | 1.3− |
| 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.2− | 1.6+ |
| 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 | | | | |

**(137908)∗ 2000 AT$_{232}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.77983 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26873173 | $\omega$ | 318.98061 | | +0.32295667 | −0.93870326 | |
| $a$ | 2.3782459 | $\Omega$ | 111.86480 | | +0.89870132 | +0.26423962 | |
| $e$ | 0.2460848 | $i$ | 7.46421 | | +0.29670681 | +0.22139019 | |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.6+ | 1.3− | 2004 03 15 | 704 | 0.6+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 1999 12 07 | 704 | 0.3− | 0.3+ | 2004 03 15 | 704 | 0.4− | 1.2+ | 2006 10 17 | 703 | 0.1+ | 1.0+ |
| 1999 12 07 | 704 | (7.8− | 3.4+) | 2004 03 20 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2000 01 04 | 704 | 0.6− | 0.0 | 2004 03 20 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2000 01 04 | 704 | 0.1+ | 0.4− | 2004 03 20 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 704 | (0.3− | 1.8+) |
| 2000 01 04 | 704 | 0.1+ | 0.6− | 2004 03 23 | 704 | 0.7− | 0.1− | 2006 11 10 | 704 | 0.9− | 0.4− |
| 2000 01 04 | 704 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.3+ | 0.1− | 2006 11 10 | 704 | (0.3+ | 1.7+) |
| 2000 01 04 | 704 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.1− | 0.0 | 2006 11 10 | 704 | 0.2+ | 0.7+ |
| 2000 01 05 | 699 | 0.2− | 0.8− | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 11 14 | 644 | 0.4+ | 0.1− |
| 2000 01 05 | 699 | 1.1− | 0.1+ | 2006 09 16 | 699 | 0.5− | 0.6− | 2006 11 14 | 644 | 0.2+ | 0.1+ |
| 2000 01 05 | 699 | 0.3− | 0.5− | 2006 09 16 | 699 | 0.3− | 0.2+ | 2006 11 14 | 644 | 0.1+ | 0.4− |
| 2000 01 30 | 704 | 0.5− | 0.9+ | 2006 09 16 | 699 | 0.3+ | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.2+ |
| 2000 01 30 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.4+ | 0.1+ |
| 2000 01 30 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.6− | 0.4+ |
| 2000 02 11 | 704 | 0.6+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 11 16 | 703 | (0.1+ | 3.0+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.3+ | 0.6− | 2006 10 01 | 704 | 0.2− | 0.5+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2000 02 11 | 704 | 0.3+ | 0.7− | 2006 10 01 | 704 | 1.3+ | 0.5− | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2002 08 30 | 644 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.7− |
| 2002 08 30 | 644 | 0.4− | 0.3+ | 2006 10 01 | 704 | 1.3− | 0.5+ | 2006 11 21 | 704 | 1.4+ | 0.4+ |
| 2002 08 30 | 644 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 1.2+ | 0.9− |
| 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.1− |
| 2004 03 15 | 704 | 1.2+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 1.4+ |

**(137909)∗ 2000 AN$_{235}$ = 2002 TQ$_{104}$**

Discovered 2000 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37283)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 220.92931 | | (2000.0) | | | |
| $n$ | 0.25404787 | $\omega$ | 238.27372 | | −0.97258701 | −0.22347520 |
| $a$ | 2.4690261 | $\Omega$ | 288.74550 | | +0.22963787 | −0.87947703 |
| $e$ | 0.1317110 | $i$ | 3.89295 | | +0.03661915 | −0.42021303 |
| $P$ | 3.88 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.4− | 0.4− | 2004 01 22 | 106 | 1.0− | 0.1+ | 2004 02 17 | 704 | 0.6+ | 0.2+ |
| 2000 01 05 | 704 | 0.9− | 0.1− | 2004 01 22 | 106 | 0.7− | 0.7− | 2004 02 17 | 704 | 0.2+ | 0.4+ |
| 2000 01 05 | 704 | 0.2+ | 0.4− | 2004 01 24 | 704 | 0.7+ | 0.3− | 2004 02 18 | 608 | 0.5+ | 0.6+ |
| 2000 01 07 | 691 | 0.1− | 0.4− | 2004 01 24 | 704 | 0.8+ | 0.0 | 2004 02 18 | 608 | 0.8+ | 0.5+ |
| 2000 01 07 | 691 | 0.1− | 0.5− | 2004 01 24 | 704 | 0.2+ | 0.1− | 2004 02 18 | 608 | 0.5+ | 0.4+ |
| 2000 01 07 | 691 | 0.1− | 0.4− | 2004 01 24 | 704 | 0.6+ | 0.5− | 2004 02 23 | 608 | 0.6+ | 1.0+ |
| 2000 01 13 | 699 | 0.3+ | 0.3− | 2004 01 24 | 704 | 0.5+ | 0.4+ | 2004 02 23 | 608 | 0.2− | 0.8+ |
| 2000 01 13 | 699 | 0.7− | 0.5+ | 2004 01 29 | 704 | 0.4+ | 0.3+ | 2004 02 23 | 608 | 0.4+ | 0.4+ |
| 2000 01 13 | 699 | 0.5+ | 0.0 | 2004 01 29 | 704 | 0.4+ | 0.2+ | 2004 02 29 | 691 | 0.1+ | 0.3+ |
| 2000 02 02 | 704 | 0.3+ | 0.3+ | 2004 01 29 | 704 | 0.6+ | 0.4+ | 2004 02 29 | 691 | 0.0 | 0.3+ |
| 2000 02 02 | 704 | 0.4+ | 0.3+ | 2004 01 29 | 704 | 0.4+ | 0.3+ | 2004 03 10 | 644 | 0.1+ | 0.4+ |
| 2000 02 02 | 704 | 0.4+ | 0.1+ | 2004 01 31 | 691 | 0.1+ | 0.0 | 2004 03 10 | 644 | 0.2+ | 0.4+ |
| 2000 02 02 | 704 | 0.0 | 0.6+ | 2004 01 31 | 691 | 0.2+ | 0.0 | 2004 03 10 | 644 | 0.2+ | 0.4+ |
| 2000 02 02 | 704 | 0.1+ | 0.6+ | 2004 01 31 | 691 | 0.1+ | 0.0 | 2004 04 20 | 704 | (2.2+ | 0.7+) |
| 2000 02 03 | 704 | 0.2+ | 0.2+ | 2004 02 03 | 608 | 1.0+ | 0.5− | 2004 04 20 | 704 | 0.5+ | 0.3− |
| 2000 02 03 | 704 | 0.1− | 0.6+ | 2004 02 03 | 608 | 0.6+ | 0.6− | 2004 04 20 | 704 | 0.1+ | 1.4+ |
| 2000 02 03 | 704 | 0.5− | 1.1+ | 2004 02 03 | 608 | 0.1+ | 0.5− | 2004 04 20 | 704 | (0.1+ | 1.5+) |
| 2000 02 03 | 704 | 0.5+ | 1.0+ | 2004 02 11 | 333 | 0.2− | 0.2+ | 2005 06 03 | 691 | 0.1+ | 0.2+ |
| 2000 02 03 | 704 | 0.3− | 1.8+ | 2004 02 11 | 333 | 0.2− | 0.2− | 2005 06 03 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 1.2− | 0.5− | 2004 02 11 | 333 | 0.3− | 0.3− | 2005 06 03 | 691 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.9+ | 2004 02 11 | 703 | 0.1+ | 0.8+ | 2006 09 22 | 104 | 0.7− | 0.0 |
| 2002 10 04 | 644 | 0.3− | 0.5+ | 2004 02 11 | 703 | 0.0 | 0.3+ | 2006 09 22 | 104 | 0.5+ | 0.2− |
| 2002 10 04 | 704 | 0.1+ | 0.9+ | 2004 02 11 | 644 | 0.0 | 0.1− | 2006 09 22 | 104 | 0.0 | 0.2+ |
| 2002 10 04 | 644 | 0.3− | 0.4+ | 2004 02 11 | 699 | 0.3− | 0.6− | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 644 | 0.5− | 0.5+ | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.9− | 0.6+ | 2004 02 11 | 703 | 0.5− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2002 10 05 | 644 | 0.1− | 0.9+ | 2004 02 11 | 699 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 10 05 | 644 | 0.1− | 1.1+ | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 10 05 | 644 | 0.2− | 1.3+ | 2004 02 11 | 703 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 10 06 | 644 | 0.1− | 1.1+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2− |
| 2002 10 06 | 644 | 0.2− | 1.1+ | 2004 02 11 | 699 | 0.1− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2002 10 06 | 644 | 0.0 | 1.2+ | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2002 10 07 | 699 | 0.3− | 1.1+ | 2004 02 11 | 699 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.9− |
| 2002 10 07 | 699 | 0.1− | 0.5+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.6− | 1.4− |
| 2002 10 07 | 699 | 0.2+ | 0.4− | 2004 02 14 | 333 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 1.2− | 0.5− |
| 2002 10 07 | 699 | 0.5+ | 0.6+ | 2004 02 14 | 333 | 0.1+ | 0.8− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 21 | 645 | 0.2− | 0.2− | 2004 02 14 | 333 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2003 12 21 | 645 | 0.2− | 0.2− | 2004 02 16 | 333 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2004 01 13 | 699 | 0.2+ | 0.7+ | 2004 02 16 | 333 | 0.2− | 0.1+ | 2006 11 14 | 703 | 1.2+ | 1.3− |
| 2004 01 13 | 699 | 0.8− | 0.6+ | 2004 02 16 | 333 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 1.0− |
| 2004 01 13 | 699 | 0.1− | 0.3+ | 2004 02 17 | 333 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.5+ | 1.0+ |
| 2004 01 13 | 699 | 0.7− | 0.2− | 2004 02 17 | 333 | 0.7− | 0.2+ | 2006 11 14 | 703 | 0.7+ | 1.1+ |
| 2004 01 21 | 704 | 0.7+ | 0.2− | 2004 02 17 | 704 | 0.1+ | 0.4+ | | | | |
| 2004 01 21 | 704 | 0.6+ | 0.4+ | 2004 02 17 | 704 | 0.3+ | 0.3+ | | | | |
| 2004 01 21 | 704 | 0.8+ | 0.8+ | 2004 02 17 | 704 | 0.3+ | 0.5+ | | | | |

**(137910)∗ 2000 AP$_{238}$**

Discovered 2000 Jan. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.67722 | | (2000.0) | | | |
| $n$ | 0.27160910 | $\omega$ | 34.68769 | | −0.12230986 | −0.98790816 |
| $a$ | 2.3614197 | $\Omega$ | 62.50637 | | +0.88455040 | −0.15204205 |
| $e$ | 0.1868104 | $i$ | 6.16590 | | +0.45012320 | +0.03034268 |
| $P$ | 3.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.2+ | 1.4− | 2002 10 01 | 608 | 1.1+ | 0.8+ | 2004 04 14 | 691 | 0.0 | 0.4+ |
| 1993 03 18 | 809 | (5.8+ | 5.9−) | 2002 10 01 | 608 | 1.3+ | 0.8+ | 2004 04 20 | 704 | 0.3+ | 0.8+ |
| 2000 01 06 | 704 | (2.1+ | 0.4−) | 2002 10 01 | 608 | 0.7+ | 0.3+ | 2004 04 20 | 704 | 0.0 | 0.4− |
| 2000 01 06 | 704 | 0.5+ | 0.1− | 2002 10 04 | 704 | 0.7− | 0.3+ | 2004 04 20 | 704 | 0.2+ | 1.0+ |
| 2000 01 06 | 704 | 0.0 | 0.6− | 2002 10 04 | 704 | 1.2− | 1.3+ | 2004 04 20 | 704 | 0.5+ | 0.4+ |
| 2000 01 06 | 704 | 0.6+ | 0.6− | 2002 10 04 | 704 | (0.7− | 1.7+) | 2004 04 20 | 704 | 0.1+ | 0.1− |
| 2000 01 06 | 704 | 0.6− | 0.2− | 2002 10 04 | 704 | 1.1− | 0.7+ | 2006 11 16 | 704 | 0.8− | 0.2+ |
| 2000 01 09 | 704 | 0.8+ | 0.2+ | 2002 10 08 | 699 | 0.8− | 1.4+ | 2006 11 16 | 704 | 0.9− | 1.0− |
| 2000 01 09 | 704 | 0.9+ | 0.2− | 2002 10 08 | 699 | 1.3− | 1.1+ | 2006 11 16 | 704 | 0.7− | 0.3+ |
| 2000 01 09 | 704 | 0.8+ | 0.3− | 2002 10 08 | 699 | 0.7− | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2000 03 04 | 704 | 1.1− | 0.8+ | 2002 10 08 | 699 | 0.3− | 0.9+ | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2000 03 04 | 704 | 0.4+ | 0.5+ | 2002 11 06 | 644 | 0.3− | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2000 03 04 | 704 | 0.7− | 1.1+ | 2002 11 06 | 644 | 0.2+ | 0.8+ | 2006 11 16 | 691 | 0.2+ | 0.6+ |
| 2000 03 04 | 704 | 1.5− | 0.6+ | 2002 11 06 | 644 | 0.4− | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2000 03 12 | 703 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 2000 03 12 | 703 | 0.8− | 0.3+ | 2004 03 20 | 704 | (0.1+ | 1.8+) | 2006 11 18 | 704 | 0.0 | 0.7− |
| 2000 03 12 | 703 | 0.4− | 0.5+ | 2004 03 20 | 704 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.5− |
| 2000 03 12 | 703 | 0.6+ | 1.0+ | 2004 03 20 | 704 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.8+ | 1.4− |
| 2002 09 10 | 608 | 1.1− | 0.9− | 2004 03 30 | 704 | 0.3+ | 0.9+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2002 09 10 | 608 | 0.8− | 0.9− | 2004 03 30 | 704 | 0.7+ | 1.0− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2002 09 10 | 608 | 0.6− | 0.2− | 2004 03 30 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2002 10 01 | 699 | 0.2− | 0.0 | 2004 03 30 | 704 | 0.8+ | 1.3+ | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2002 10 01 | 699 | 0.4− | 0.2− | 2004 03 30 | 704 | 0.7+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2002 10 01 | 699 | 0.4+ | 0.9+ | 2004 04 14 | 691 | 0.1+ | 0.5+ | | | | |
| 2002 10 01 | 699 | 0.4+ | 0.6+ | 2004 04 14 | 691 | 0.0 | 0.6+ | | | | |

**(137911)∗ 2000 AB$_{246}$**

Discovered 2000 Jan. 8 by D. J. Tholen and R. Whiteley at Mauna Kea.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.38791 | | (2000.0) | | | |
| $n$ | 0.28148111 | $\omega$ | 311.59599 | | +0.94683606 | +0.32007662 |
| $a$ | 2.3058792 | $\Omega$ | 29.77903 | | −0.27231586 | +0.85105476 |
| $e$ | 0.4918950 | $i$ | 3.74518 | | −0.17130541 | +0.41624122 |
| $P$ | 3.50 | $H$ | 17.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 568 | 0.2+ | 0.7+ | 2000 01 27 | 658 | 0.2+ | 0.2− | 2002 07 09 | 568 | 0.3+ | 0.2+ |
| 2000 01 08 | 568 | 0.5+ | 0.7+ | 2000 01 27 | 658 | 0.3+ | 0.6− | 2003 07 30 | 568 | 0.0 | 0.1− |
| 2000 01 09 | 568 | 0.3+ | 0.3+ | 2000 01 27 | 568 | 0.4− | 0.1− | 2003 07 30 | 568 | 0.0 | 0.2− |
| 2000 01 09 | 568 | 0.2− | 0.0 | 2000 01 27 | 568 | 0.5− | 0.2+ | 2003 10 26 | 568 | 0.0 | 0.3− |
| 2000 01 09 | 568 | 0.1− | 0.6+ | 2000 03 06 | 568 | 0.1− | 0.2+ | 2003 10 26 | 568 | 0.1− | 0.3− |
| 2000 01 09 | 568 | 0.0 | 0.5+ | 2000 03 06 | 568 | 0.0 | 0.1+ | 2006 01 01 | 568 | 0.1− | 0.3+ |
| 2000 01 10 | 568 | 0.4− | 0.3+ | 2000 04 07 | 568 | 0.1− | 0.2− | 2006 01 01 | 568 | 0.1− | 0.2+ |
| 2000 01 10 | 568 | 0.1+ | 0.4+ | 2000 04 07 | 568 | 0.1+ | 0.2− | 2006 05 31 | G96 | 0.7+ | 0.3+ |
| 2000 01 10 | 568 | 0.6− | 0.5+ | 2000 10 02 | 568 | 0.1− | 0.4+ | 2006 05 31 | G96 | 0.4+ | 0.4+ |
| 2000 01 10 | 568 | 0.4+ | 0.2− | 2000 10 02 | 568 | 0.1+ | 0.3+ | 2006 05 31 | G96 | 0.6+ | 0.3+ |
| 2000 01 11 | 568 | 0.4+ | 0.3+ | 2000 10 03 | 568 | 0.3+ | 0.1+ | 2006 05 31 | G96 | 0.4+ | 0.4+ |
| 2000 01 11 | 568 | 0.1− | 0.3+ | 2000 10 03 | 568 | 0.4+ | 0.0 | 2006 06 01 | G96 | 1.0+ | 0.4+ |
| 2000 01 11 | 568 | 0.2− | 0.1− | 2002 02 16 | 568 | 0.3− | 0.4+ | 2006 06 01 | G96 | 0.6+ | 0.2+ |
| 2000 01 12 | 568 | 0.9− | 0.3− | 2002 02 16 | 568 | 0.2− | 0.4+ | 2006 06 01 | G96 | 0.6+ | 0.2+ |
| 2000 01 12 | 568 | 0.3− | 0.0 | 2002 03 21 | 291 | (2.2− | 2.0+) | 2006 06 01 | G96 | 0.3+ | 0.3+ |
| 2000 01 18 | 568 | 0.4− | 0.2+ | 2002 03 21 | 291 | 0.5+ | 0.2+ | 2006 06 02 | G96 | 0.4+ | 0.5+ |
| 2000 01 18 | 568 | 0.5− | 0.5+ | 2002 03 21 | 291 | 0.1+ | 0.8+ | 2006 06 02 | G96 | 0.8+ | 0.2+ |
| 2000 01 27 | 658 | 0.0 | 0.4− | 2002 04 11 | 568 | 0.2+ | 0.0 | 2006 06 02 | G96 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 658 | 0.3+ | 0.6− | 2002 04 11 | 568 | 0.2+ | 0.0 | 2006 06 02 | G96 | 0.2+ | 0.2+ | |
| 2000 01 27 | 658 | 0.0 | 0.6− | 2002 07 09 | 568 | 0.5+ | 0.2+ | | | | | |

**(137912)∗ 2000 AK$_{251}$**

Discovered 2000 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.43982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28271452 | $\omega$ | 222.27803 | | −0.87326347 | −0.48224429 | |
| $a$ | 2.2991676 | $\Omega$ | 288.76567 | | +0.46441482 | −0.78054514 | |
| $e$ | 0.1087352 | $i$ | 4.21861 | | +0.14741025 | −0.39773073 | |
| $P$ | 3.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 23 | 691 | (4.5+ | 2.5+) | 2004 04 14 | 699 | 0.1− | 0.2− | 2004 05 14 | 699 | 0.7− | 0.2− | |
| 1998 08 23 | 691 | 0.2+ | 0.3+ | 2004 04 25 | 704 | 0.1− | 0.7+ | 2004 05 14 | 699 | 0.3− | 0.8+ | |
| 1998 08 23 | 691 | 0.2+ | 0.2+ | 2004 04 25 | 704 | 0.3− | 0.3+ | 2005 08 06 | 644 | 0.5− | 0.5+ | |
| 1999 12 07 | 691 | 0.2+ | 0.0 | 2004 04 25 | 704 | 0.1− | 0.6+ | 2005 08 06 | 644 | 0.3− | 0.3+ | |
| 1999 12 07 | 691 | 0.3+ | 0.0 | 2004 04 25 | 704 | 1.1+ | 0.3+ | 2005 08 06 | 644 | 0.5− | 0.5+ | |
| 1999 12 07 | 691 | 0.2+ | 0.2− | 2004 04 26 | 704 | 0.3+ | 1.2− | 2005 11 01 | G96 | 1.1− | 0.1− | |
| 2000 01 04 | 704 | 0.4+ | 0.2+ | 2004 04 26 | 704 | 1.1+ | 0.0 | 2005 11 01 | G96 | 0.5− | 0.2− | |
| 2000 01 04 | 704 | 0.2− | 0.0 | 2004 04 26 | 704 | 0.1+ | 0.6+ | 2005 11 01 | G96 | 0.3− | 0.4− | |
| 2000 01 04 | 704 | 0.3+ | 0.1− | 2004 04 26 | 704 | 0.4+ | 0.0 | 2005 11 01 | G96 | 0.3− | 0.1+ | |
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2004 04 26 | 704 | 1.0+ | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.1− | |
| 2000 01 13 | 691 | 0.3− | 0.3+ | 2004 04 26 | 704 | 1.1+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.5− | |
| 2000 01 13 | 691 | 0.4− | 0.4+ | 2004 04 26 | 704 | 1.0+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.1− | |
| 2000 01 13 | 691 | 0.4− | 0.4+ | 2004 04 27 | 704 | 1.4+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.1+ | |
| 2004 04 13 | 644 | 0.5− | 0.1− | 2004 04 27 | 704 | 0.7− | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.2− | |
| 2004 04 13 | 644 | 0.6− | 0.3− | 2004 04 27 | 704 | 1.0− | 0.8+ | 2006 11 27 | G96 | 0.2+ | 0.1− | |
| 2004 04 13 | 644 | 0.8− | 0.2− | 2004 04 27 | 704 | 0.2+ | 0.6+ | 2006 11 27 | G96 | 0.3+ | 0.4− | |
| 2004 04 14 | 699 | 1.1− | 0.2− | 2004 04 27 | 704 | 0.4+ | 0.9+ | 2006 11 27 | G96 | 0.7+ | 0.1− | |
| 2004 04 14 | 699 | 0.7− | 0.1+ | 2004 05 14 | 699 | (0.5+ | 1.8−) | | | | | |
| 2004 04 14 | 699 | 0.3− | 0.3− | 2004 05 14 | 699 | 0.4− | 1.2− | | | | | |

**(137913)∗ 2000 BH$_3$**

Discovered 2000 Jan. 27 by T. Kobayashi at Oizumi.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.90437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24344944 | $\omega$ | 72.17177 | | −0.96589908 | −0.11495639 | |
| $a$ | 2.5401744 | $\Omega$ | 100.73623 | | +0.02845842 | −0.93774033 | |
| $e$ | 0.0637911 | $i$ | 13.65845 | | +0.25735014 | −0.32776227 | |
| $P$ | 4.05 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | (0.6− | 2.3−) | 2003 11 20 | 704 | 0.5+ | 0.4+ | 2004 01 30 | 703 | 0.5+ | 0.7− | |
| 1999 12 08 | 704 | 0.1− | 0.9− | 2003 11 20 | 704 | 1.1+ | 0.4− | 2004 01 30 | 703 | 0.2− | 0.7− | |
| 1999 12 08 | 704 | 0.1− | 1.9− | 2003 11 24 | 704 | 0.6− | 0.6+ | 2004 01 30 | 703 | 0.2+ | 0.0 | |
| 1999 12 08 | 704 | 0.4+ | 1.0− | 2003 11 24 | 704 | 0.5− | 0.9+ | 2004 01 31 | 704 | 0.2+ | 0.8+ | |
| 2000 01 03 | 704 | 0.1+ | 0.4− | 2003 11 24 | 704 | 0.3− | 0.5+ | 2004 01 31 | 704 | 0.3− | 0.9+ | |
| 2000 01 03 | 704 | 0.4− | 0.9− | 2003 11 24 | 704 | 0.1+ | 0.3+ | 2004 01 31 | 704 | 0.4− | 0.4+ | |
| 2000 01 03 | 704 | 0.3− | 0.4− | 2003 11 24 | 704 | 0.1− | 0.4+ | 2004 01 31 | 704 | 0.1− | 1.2+ | |
| 2000 01 03 | 704 | 0.4+ | 0.5− | 2003 12 17 | 644 | 0.0 | 0.1+ | 2004 01 31 | 704 | 0.2− | 0.7+ | |
| 2000 01 03 | 704 | 0.9+ | 0.6− | 2003 12 17 | 644 | 0.2− | 0.1− | 2004 02 13 | 699 | 0.0 | 0.1+ | |
| 2000 01 27 | 411 | 1.2+ | 0.8+ | 2003 12 17 | 644 | 0.0 | 0.4− | 2004 02 13 | 699 | 0.2− | 0.2+ | |
| 2000 01 27 | 411 | 0.2+ | 0.3− | 2003 12 19 | 704 | 0.4− | 0.1− | 2004 02 13 | 699 | 0.4− | 0.0 | |
| 2000 01 28 | 411 | 1.5− | 0.9+ | 2003 12 19 | 704 | 0.1− | 0.3+ | 2004 02 13 | 699 | 0.3− | 0.4− | |
| 2000 01 28 | 411 | 0.7− | 0.2− | 2003 12 19 | 704 | 0.5− | 0.0 | 2004 02 13 | 106 | 0.3− | 0.2− | |
| 2000 02 02 | 411 | 0.2− | 0.9− | 2003 12 19 | 704 | 0.1+ | 0.4+ | 2004 02 13 | 106 | 0.2− | 0.3− | |
| 2000 02 02 | 411 | 0.3+ | 0.6− | 2003 12 19 | 704 | 0.2− | 0.4+ | 2004 02 13 | 106 | 0.1− | 0.7− | |
| 2000 02 11 | 411 | 0.6− | 1.4− | 2003 12 21 | 704 | 0.4+ | 0.4+ | 2004 02 14 | 704 | 0.4+ | 0.7+ | |
| 2000 02 11 | 411 | 0.4− | 1.6− | 2003 12 21 | 704 | 0.3− | 0.4+ | 2004 02 14 | 704 | 0.2− | 0.0 | |
| 2000 02 25 | 411 | 0.3− | 0.5− | 2003 12 21 | 704 | 0.0 | 0.1+ | 2004 02 14 | 704 | 0.5+ | 0.6+ | |
| 2000 02 25 | 411 | 0.1− | 0.3+ | 2003 12 21 | 704 | 0.2+ | 0.4+ | 2004 02 14 | 704 | 0.2+ | 0.1− | |
| 2000 03 02 | 411 | 0.1+ | 1.7− | 2003 12 21 | 704 | 0.3+ | 0.2+ | 2004 02 14 | 704 | 0.5− | 0.3− | |
| 2000 03 02 | 411 | 0.2+ | 0.1+ | 2003 12 23 | 704 | 0.1+ | 0.2− | 2004 04 09 | 703 | 0.7+ | 0.6− | |
| 2000 03 12 | 703 | 0.4+ | 0.2− | 2003 12 23 | 704 | 0.5− | 0.0 | 2004 04 09 | 703 | 0.5− | 0.2+ | |
| 2000 03 12 | 703 | 0.3− | 0.7+ | 2003 12 23 | 704 | 0.2− | 0.1+ | 2004 04 09 | 703 | 0.6+ | 0.6− | |
| 2000 03 12 | 703 | 0.2− | 1.1+ | 2003 12 23 | 704 | 0.2+ | 0.1− | 2004 04 09 | 703 | (2.2+ | 1.3+) | |
| 2000 03 12 | 703 | 0.0 | 0.0 | 2003 12 23 | 704 | 0.0 | 0.2− | 2004 04 12 | 704 | 1.2+ | 0.6+ | |
| 2002 08 24 | 644 | 0.5− | 0.7+ | 2003 12 23 | 608 | 0.2+ | 0.2− | 2004 04 12 | 704 | 1.1+ | 0.1− | |
| 2002 08 24 | 644 | 0.4− | 0.6+ | 2003 12 23 | 608 | 0.1− | 0.1+ | 2004 04 12 | 704 | 0.2+ | 0.7+ | |
| 2002 08 24 | 644 | 0.2− | 1.0+ | 2003 12 23 | 608 | 0.0 | 0.4− | 2004 04 14 | 699 | 0.1− | 0.7+ | |
| 2002 09 13 | 704 | 0.6+ | 0.2+ | 2003 12 28 | 704 | 0.2+ | 0.0 | 2004 04 14 | 699 | 0.8− | 0.1+ | |
| 2002 09 13 | 704 | (1.8+ | 0.1+) | 2003 12 28 | 704 | 0.3+ | 0.1+ | 2004 04 14 | 699 | 0.8− | 0.6+ | |
| 2002 09 13 | 704 | 0.3+ | 0.2+ | 2003 12 28 | 704 | 0.0 | 0.2+ | 2004 04 14 | 699 | 0.8− | 1.0+ | |
| 2002 09 13 | 704 | 1.2+ | 0.9+ | 2003 12 28 | 704 | 0.3+ | 0.3+ | 2004 05 23 | 703 | 0.9+ | 1.0+ | |
| 2002 10 02 | 608 | 0.4− | 1.0− | 2003 12 28 | 704 | 0.2+ | 0.2+ | 2004 05 23 | 703 | 0.1+ | 1.1+ | |
| 2002 10 02 | 608 | 0.4− | 0.4− | 2004 01 13 | 699 | 0.4− | 0.5− | 2004 05 23 | 703 | 0.9+ | 0.0 | |
| 2002 10 02 | 608 | 0.0 | 0.6− | 2004 01 13 | 699 | 0.2− | 0.3+ | 2004 05 23 | 703 | (0.3+ | 2.1+) | |
| 2002 10 05 | 704 | 0.5− | 0.6+ | 2004 01 13 | 699 | 0.2+ | 1.2− | 2005 06 10 | 151 | 0.6+ | 0.3− | |
| 2002 10 05 | 704 | 0.4− | 0.2+ | 2004 01 13 | 699 | 0.6− | 0.2+ | 2005 06 10 | 151 | 0.6− | 0.2+ | |
| 2002 10 05 | 704 | (2.1− | 0.7−) | 2004 01 13 | 644 | 0.5− | 0.2+ | 2006 09 22 | 703 | 0.3− | 0.3− | |
| 2002 10 05 | 704 | 0.6− | 1.2+ | 2004 01 13 | 644 | 0.3− | 0.0 | 2006 09 22 | 703 | 0.2+ | 0.1+ | |
| 2003 10 22 | 699 | 0.1+ | 0.4+ | 2004 01 13 | 644 | 0.4− | 0.1+ | 2006 09 22 | 703 | 0.1+ | 0.4− | |
| 2003 10 22 | 699 | 0.1+ | 0.2+ | 2004 01 17 | 644 | 0.2− | 0.1− | 2006 09 22 | 703 | 0.3− | 0.2− | |
| 2003 10 22 | 699 | 0.8− | 0.2− | 2004 01 17 | 644 | 0.3− | 0.1− | 2006 09 27 | 703 | 0.3− | 0.4− | |
| 2003 10 22 | 699 | (0.1− | 1.5+) | 2004 01 17 | 644 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.3+ | 0.7− | |
| 2003 10 24 | 691 | 0.2+ | 0.1− | 2004 01 20 | 704 | 1.4+ | 1.0+ | 2006 09 27 | 703 | 0.0 | 0.7− | |
| 2003 10 24 | 691 | 0.2− | 0.1− | 2004 01 20 | 704 | (2.0+ | 0.8+) | 2006 09 27 | 703 | 0.3+ | 0.6− | |
| 2003 10 24 | 691 | 0.3+ | 0.0 | 2004 01 20 | 704 | 0.2− | 0.7+ | 2006 10 25 | E12 | 0.3+ | 0.1+ | |
| 2003 10 25 | 691 | 0.2+ | 0.0 | 2004 01 20 | 704 | 1.5+ | 0.8+ | 2006 10 25 | E12 | 0.2+ | 0.1− | |
| 2003 10 25 | 691 | 0.1+ | 0.0 | 2004 01 26 | 699 | 0.3+ | 0.2− | 2006 10 25 | E12 | 0.4− | 0.1+ | |
| 2003 10 25 | 691 | 0.0 | 0.2+ | 2004 01 26 | 699 | 0.3− | 0.6− | 2006 10 25 | E12 | 0.1− | 0.4− | |
| 2003 11 20 | 704 | 1.4+ | 1.2+ | 2004 01 26 | 699 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.4− | |
| 2003 11 20 | 704 | 1.2− | 0.2+ | 2004 01 26 | 699 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.3+ | 0.2+ | |
| 2003 11 20 | 704 | 0.4− | 0.6− | 2004 01 30 | 703 | 0.4− | 0.3− | 2006 11 13 | 644 | 0.6+ | 0.3+ | |

**(137914)∗ 2000 BU$_7$**

Discovered 2000 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.00237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25790616 | $\omega$ | 186.90385 | | −0.97729160 | −0.20935507 | |
| $a$ | 2.4443398 | $\Omega$ | 340.91601 | | +0.19888680 | −0.85296643 | |
| $e$ | 0.1547035 | $i$ | 5.74614 | | +0.07311065 | −0.47814090 | |
| $P$ | 3.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 691 | 0.3− | 0.2+ | 2004 01 31 | 599 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.3+ | |
| 1998 09 15 | 691 | 0.4− | 0.6+ | 2004 01 31 | 599 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.8+ | 0.2+ | |
| 1998 09 15 | 691 | (5.0+ | 1.3+) | 2004 01 31 | 704 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.1+ | 0.0 | |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 01 31 | 704 | 1.1+ | 0.0 | 2004 02 23 | 704 | 0.1+ | 1.0+ | |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2004 01 31 | 704 | 0.6+ | 0.1+ | 2004 03 01 | 691 | 0.2+ | 0.1− | |
| 1999 12 15 | 704 | (2.2− | 0.0 ) | 2004 01 31 | 704 | 0.3+ | 0.4− | 2004 03 01 | 691 | 0.1− | 0.1− | |
| 1999 12 15 | 704 | 0.4− | 0.7− | 2004 01 31 | 704 | 0.7+ | 0.0 | 2004 03 01 | 691 | 0.1− | 0.0 | |
| 1999 12 15 | 704 | 0.7− | 1.5− | 2004 02 02 | 704 | 0.5− | 1.0+ | 2004 03 10 | 644 | 0.2− | 0.1+ | |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2004 02 02 | 704 | 0.2− | 0.0 | 2004 03 10 | 644 | 0.1− | 0.1+ | |
| 2000 01 04 | 704 | 0.2+ | 0.0 | 2004 02 02 | 704 | 0.0 | 0.5+ | 2004 03 10 | 644 | 0.1− | 0.1+ | |
| 2000 01 04 | 704 | 0.3− | 0.5− | 2004 02 02 | 704 | 0.5+ | 0.3+ | 2004 03 14 | 704 | 0.8+ | 1.5− | |
| 2000 01 04 | 704 | 0.0 | 0.3− | 2004 02 02 | 704 | 0.8+ | 0.0 | 2004 03 14 | 704 | 0.1+ | 0.1− | |
| 2000 01 04 | 704 | 0.7+ | 0.2− | 2004 02 10 | 703 | 0.1− | 0.5+ | 2004 03 14 | 704 | 0.7− | 0.8+ | |
| 2000 01 29 | 704 | 0.6− | 0.1− | 2004 02 10 | 703 | 0.7+ | 0.5− | 2004 03 14 | 704 | 0.4− | 1.1+ | |
| 2000 01 29 | 704 | 0.8− | 0.3− | 2004 02 10 | 703 | 0.6− | 0.1+ | 2005 07 06 | E12 | 1.3− | 0.5+ | |
| 2000 01 29 | 704 | 0.1+ | 0.2− | 2004 02 10 | 703 | 0.4− | 0.6+ | 2005 07 06 | E12 | 0.3+ | 0.6+ | |
| 2000 01 29 | 704 | 0.0 | 0.3+ | 2004 02 11 | 699 | 0.9− | 0.0 | 2005 07 06 | E12 | 0.6− | 1.2+ | |
| 2000 01 30 | 704 | 0.6+ | 0.4− | 2004 02 11 | 699 | 0.5− | 0.8− | 2005 07 06 | E12 | 0.1− | 0.5+ | |
| 2000 01 30 | 704 | 0.1− | 0.7− | 2004 02 11 | 699 | 0.6− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | |
| 2000 01 30 | 704 | 0.7− | 0.3+ | 2004 02 11 | 699 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.4+ | |
| 2004 01 22 | 704 | 0.2+ | 0.3+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.4+ | |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2004 02 12 | 691 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.4− | |
| 2004 01 22 | 704 | 0.4+ | 0.3+ | 2004 02 12 | 691 | 0.5+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.0 | |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 02 14 | 608 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.0 | 0.8+ | 2004 02 14 | 608 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2004 01 26 | 699 | 0.8− | 0.7+ | 2004 02 14 | 608 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2004 01 26 | 699 | 0.3− | 0.0 | 2004 02 16 | 704 | (2.2+ | 0.9−) | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2004 01 26 | 699 | 0.8− | 0.0 | 2004 02 16 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 01 26 | 699 | (0.5− | 1.6+) | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 01 30 | 704 | 0.9+ | 0.1+ | 2004 02 16 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2004 01 30 | 704 | 0.9+ | 0.6− | 2004 02 19 | 608 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2004 01 30 | 704 | 0.3+ | 0.5− | 2004 02 19 | 608 | 0.3+ | 0.6− | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2004 01 30 | 704 | 0.4+ | 0.0 | 2004 02 19 | 608 | 0.8+ | 0.5− | 2006 11 25 | G96 | 0.2+ | 0.6− |
| 2004 01 31 | 599 | 0.1− | 1.2+ | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.6+ | 0.3− |

**(137915)∗ 2000 BK$_8$ = 1993 FY$_{18}$**

Discovered 2000 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.51452 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26518621 | $\omega$ | 113.52098 | | −0.96273879 | −0.25954511 | |
| $a$ | 2.3993969 | $\Omega$ | 51.52340 | | +0.19891510 | −0.86992468 | |
| $e$ | 0.0883830 | $i$ | 5.56830 | | +0.18321248 | −0.41936546 | |
| $P$ | 3.72 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 05 | 691 | 0.4− | 0.3+ | 2004 02 17 | 704 | (0.0 | 2.0+) | 2006 10 17 | G96 | 0.0 | 0.2− |
| 1991 11 05 | 691 | 0.2− | 0.6+ | 2004 02 17 | 704 | 0.2− | 1.4+ | 2006 10 27 | G96 | 0.2− | 0.5− |
| 1991 11 05 | 691 | 0.4− | 0.7+ | 2004 02 17 | 704 | 0.8+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.5− |
| 1993 03 17 | 809 | 1.0− | 0.5+ | 2004 02 17 | 703 | 0.2+ | 0.5− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 1993 03 18 | 809 | 0.0 | 0.2− | 2004 02 17 | 703 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1993 03 23 | 809 | 1.9+ | 0.9− | 2004 02 17 | 703 | 0.6− | 0.5+ | 2006 11 14 | 691 | 0.2− | 0.4− |
| 2000 01 04 | 704 | 0.2− | 0.0 | 2004 02 17 | 703 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.3− |
| 2000 01 04 | 704 | 0.7− | 1.3− | 2004 02 20 | 608 | 0.3− | 0.7− | 2006 11 14 | 691 | 0.0 | 0.3− |
| 2000 01 04 | 704 | 0.4− | 0.1+ | 2004 02 20 | 608 | 0.3− | 1.0− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 1.1+ | 1.1+ | 2004 02 20 | 608 | 0.2− | 0.7− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2000 01 29 | 704 | 0.9+ | 0.6+ | 2004 03 10 | 644 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2000 01 29 | 704 | 0.1− | 1.2+ | 2004 03 10 | 644 | 0.4+ | 0.1− | 2006 11 20 | 703 | (1.4− | 2.0+) |
| 2000 01 29 | 704 | 0.1− | 0.7− | 2004 03 10 | 644 | 0.3+ | 0.2− | 2006 11 20 | 703 | 0.6+ | 1.1+ |
| 2000 01 29 | 704 | 0.8− | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.1− | 2006 11 20 | 703 | 0.8+ | 0.6− |
| 2000 01 29 | 704 | 0.5+ | 0.5+ | 2004 03 15 | 704 | 1.0+ | 0.4− | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2000 01 30 | 704 | 0.5− | 0.5− | 2004 03 15 | 704 | 0.1+ | 0.3− | 2006 11 20 | 704 | 1.1+ | 0.3+ |
| 2000 01 30 | 704 | 0.2− | 1.4− | 2004 03 15 | 704 | 0.7+ | 0.2− | 2006 11 20 | 703 | 0.5+ | 0.7− |
| 2000 01 30 | 704 | 0.4− | 1.6− | 2004 03 19 | 644 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.1− |
| 2000 02 02 | 704 | 0.2+ | 0.2− | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 1.3+ |
| 2000 02 02 | 704 | 0.1+ | 0.5+ | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 1.0+ | 0.7− |
| 2000 02 02 | 704 | 0.4− | 0.6− | 2004 03 23 | 704 | 0.1− | 0.7+ | 2006 11 20 | 704 | 1.4− | 0.9+ |
| 2000 02 11 | 704 | 0.5+ | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.3− |
| 2000 02 11 | 704 | 0.8− | 0.1− | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.1− |
| 2000 02 11 | 704 | 1.0+ | 0.2+ | 2004 03 23 | 704 | 0.6+ | 1.0+ | 2006 11 21 | 704 | 0.1− | 0.7− |
| 2000 02 11 | 704 | 0.5+ | 0.6+ | 2004 03 23 | 704 | (0.2+ | 1.8+) | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2002 10 10 | 644 | 0.5− | 0.5+ | 2004 03 26 | 703 | 1.1− | 1.1+ | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2002 10 10 | 644 | 0.1+ | 0.9+ | 2004 03 26 | 703 | 0.5− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2002 10 10 | 644 | 0.2− | 0.9+ | 2004 03 26 | 703 | 1.2− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2002 10 31 | 704 | 0.4− | 0.7− | 2004 03 26 | 703 | 0.3− | 0.6+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.4− | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2003 12 25 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2003 12 25 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2003 12 25 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2− | 0.6− |
| 2004 02 17 | 704 | 0.1− | 1.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− | | | | |
| 2004 02 17 | 704 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.5− | | | | |

**(137916)∗ 2000 BM$_{10}$ = 2004 FG$_{64}$**

Discovered 2000 Jan. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60583)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.71655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28520626 | $\omega$ | 137.15906 | | −0.38682344 | +0.92089548 | |
| $a$ | 2.2857567 | $\Omega$ | 110.03176 | | −0.85931915 | −0.34102654 | |
| $e$ | 0.0626372 | $i$ | 2.93818 | | −0.33457169 | −0.18881848 | |
| $P$ | 3.46 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 29 | 568 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 0.9+ | 0.3+ | 2005 09 22 | 644 | 0.1+ | 0.4+ |
| 1999 12 29 | 568 | 0.3+ | 0.0 | 2004 03 28 | 704 | 0.4+ | 0.4− | 2005 09 22 | 644 | 0.1+ | 0.6+ |
| 1999 12 30 | 568 | 0.7+ | 0.2− | 2004 03 28 | 704 | 0.7+ | 0.0 | 2005 09 23 | 691 | 0.6− | 0.0 |
| 2000 01 28 | 691 | 1.5− | 0.5+ | 2004 03 28 | 704 | 0.4+ | 0.8+ | 2005 09 23 | 691 | 0.2− | 0.0 |
| 2000 01 28 | 691 | 0.2+ | 0.2+ | 2004 03 28 | 704 | 0.8− | 0.2− | 2005 09 23 | 691 | 0.6− | 0.3− |
| 2000 01 28 | 691 | 0.3+ | 0.3+ | 2004 03 29 | 704 | 0.2+ | 0.9+ | 2005 09 28 | 644 | 0.4+ | 0.5+ |
| 2000 01 29 | 691 | 0.2+ | 0.1− | 2004 03 29 | 704 | 1.0+ | 0.7+ | 2005 09 28 | 644 | 0.1+ | 0.4+ |
| 2000 01 29 | 691 | 0.1+ | 0.2− | 2004 03 29 | 704 | 0.1− | 0.6+ | 2005 09 28 | 644 | 0.1+ | 0.5+ |
| 2000 01 29 | 691 | 0.0 | 0.0 | 2004 03 29 | 704 | 0.2− | 0.0 | 2005 10 01 | 704 | 0.5+ | 0.9+ |
| 2002 12 05 | 704 | (1.8+ | 0.2−) | 2004 04 09 | E12 | 0.1− | 1.0+ | 2005 10 01 | 704 | 1.1+ | 0.9+ |
| 2002 12 05 | 704 | 0.5+ | 0.9+ | 2004 04 09 | E12 | 0.3− | 0.5+ | 2005 10 01 | 704 | 0.4+ | 1.4+ |
| 2002 12 05 | 704 | 1.4+ | 0.4+ | 2004 04 09 | E12 | (1.9− | 0.5+) | 2005 10 01 | 704 | 0.7+ | 0.0 |
| 2002 12 05 | 704 | 1.1+ | 0.8+ | 2004 04 09 | E12 | 0.3+ | 0.1+ | 2005 10 07 | 703 | 0.5+ | 0.8− |
| 2004 03 19 | 704 | 0.3+ | 0.4+ | 2004 04 16 | 704 | 0.1− | 0.3+ | 2005 10 07 | 703 | 0.8− | 0.0 |
| 2004 03 19 | 704 | 0.5+ | 0.0 | 2004 04 16 | 704 | 0.0 | 0.1+ | 2005 10 07 | 703 | 1.4− | 0.6− |
| 2004 03 19 | 704 | 0.6+ | 0.4+ | 2004 04 16 | 704 | 1.2+ | 0.1+ | 2005 10 07 | 703 | 0.1+ | 0.8+ |
| 2004 03 19 | 704 | 0.2+ | 0.6− | 2004 04 16 | 704 | 0.4+ | 0.2+ | 2005 10 09 | 691 | 0.4− | 0.7+ |
| 2004 03 19 | 704 | 0.3− | 0.3+ | 2004 04 16 | 704 | 0.7+ | 0.3− | 2005 10 09 | 691 | 0.2− | 0.6+ |
| 2004 03 20 | 699 | 0.7− | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.1+ | 2005 10 09 | 691 | 0.1− | 0.5+ |
| 2004 03 20 | 699 | 0.7− | 0.2+ | 2004 04 19 | 704 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.9− | 0.9+ |
| 2004 03 20 | 699 | 0.1+ | 0.3+ | 2004 04 19 | 704 | 0.9+ | 0.8− | 2006 10 17 | G96 | 1.3− | 1.3− |
| 2004 03 20 | 699 | 0.2− | 0.3− | 2004 04 19 | 704 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.9− | 0.2− |
| 2004 03 22 | 704 | 0.2− | 1.1+ | 2004 04 19 | 704 | 0.0 | 0.1+ | 2006 10 17 | G96 | 1.2+ | 0.5− |
| 2004 03 22 | 704 | 0.3+ | 0.4+ | 2004 04 20 | 703 | 1.0− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2004 03 22 | 704 | 0.3+ | 0.9+ | 2004 04 20 | 703 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2004 03 22 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 703 | (0.4− | 2.0−) | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2004 03 22 | 704 | 0.3+ | 1.1+ | 2004 04 20 | 703 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.4+ |
| 2004 03 24 | 699 | 0.2+ | 0.8+ | 2004 04 22 | 704 | 0.6+ | 1.0+ | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2004 03 24 | 699 | 0.5− | 0.9+ | 2004 04 22 | 704 | 0.5+ | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2004 03 24 | 699 | 0.9− | 1.4− | 2004 04 22 | 704 | 0.7+ | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 03 24 | 699 | 0.5− | 0.2− | 2005 09 22 | 644 | 0.1− | 0.8+ | 2006 11 27 | G96 | 0.4+ | 0.3− |

**(137917)∗ 2000 BW$_{12}$**

Discovered 2000 Jan. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.70420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23665295 | $\omega$ | 265.35200 | | −0.52802264 | +0.84865944 | |
| $a$ | 2.5885791 | $\Omega$ | 332.70487 | | −0.74975981 | −0.48307806 | |
| $e$ | 0.1489684 | $i$ | 3.89282 | | −0.39881364 | −0.21543618 | |
| $P$ | 4.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 09 | 691 | 0.0 | 0.2− | 2001 06 15 | 644 | 0.8− | 0.2+ | 2004 01 28 | 691 | 0.2+ | 0.2− |
| 1993 09 09 | 691 | 0.3+ | 0.9+ | 2001 06 15 | 644 | 0.4− | 0.3− | 2004 02 17 | 645 | 0.0 | 0.3− |
| 1993 09 09 | 691 | 0.1− | 0.2+ | 2001 06 15 | 644 | 0.6− | 0.2− | 2004 02 17 | 645 | 0.0 | 0.3− |
| 2000 01 28 | 691 | 0.5+ | 0.1+ | 2001 07 21 | 608 | 0.3+ | 0.7+ | 2005 01 17 | 809 | 0.8+ | 0.3+ |
| 2000 01 28 | 691 | 0.5+ | 0.3+ | 2001 07 21 | 608 | 0.2+ | 0.1+ | 2005 01 17 | 809 | 0.7+ | 0.3+ |
| 2000 01 28 | 691 | 0.7+ | 0.2+ | 2001 07 21 | 608 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2000 01 30 | 691 | 0.2− | 0.4+ | 2003 12 29 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2000 01 30 | 691 | 0.6− | 0.4+ | 2003 12 29 | 691 | 0.4+ | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.5− |
| 2000 01 30 | 691 | 0.3− | 0.3+ | 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2000 02 07 | 691 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.4+ | 1.3+ | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2000 02 07 | 691 | 0.3+ | 0.1+ | 2004 01 22 | 704 | 0.9+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2000 02 07 | 691 | 0.2+ | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.1− |
| 2000 03 01 | 691 | 0.2− | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.4+ |
| 2000 03 01 | 691 | 0.6− | 0.5+ | 2004 01 28 | 691 | 0.1− | 0.2− | 2006 10 03 | 691 | 0.0 | 0.0 |
| 2000 03 01 | 691 | 0.3− | 0.3+ | 2004 01 28 | 691 | 0.1+ | 0.0 | | | | |

**(137918)∗ 2000 BO$_{13}$**

Discovered 2000 Jan. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.89836 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26155411 | $\omega$ | 194.65880 | | −0.88852246 | −0.45653094 | |
| $a$ | 2.4215588 | $\Omega$ | 318.07930 | | +0.42758538 | −0.78756717 | |
| $e$ | 0.2409354 | $i$ | 3.93995 | | +0.16642894 | −0.41390513 | |
| $P$ | 3.77 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.2+ | 0.1− | 2000 02 05 | 704 | 0.1− | 1.3+ | 2004 04 19 | 704 | 0.3− | 0.6+ | |
| 1998 09 25 | 645 | 0.1− | 0.2− | 2000 02 11 | 704 | 0.1− | 0.1+ | 2004 04 19 | 704 | (2.3+ | 1.6+) | |
| 2000 01 04 | 704 | 1.1− | 0.3+ | 2000 02 11 | 704 | 0.0 | 0.3+ | 2004 04 19 | 704 | 0.4+ | 0.0 | |
| 2000 01 04 | 704 | 0.8− | 0.4+ | 2000 02 11 | 704 | 0.5+ | 0.4+ | 2004 04 19 | 704 | 0.5− | 0.9+ | |
| 2000 01 04 | 704 | 0.4+ | 0.6+ | 2000 02 11 | 704 | 0.9+ | 1.0+ | 2004 04 21 | 704 | 0.1− | 0.3+ | |
| 2000 01 29 | 691 | 0.0 | 0.6− | 2000 03 12 | 691 | 0.1− | 0.5− | 2004 04 21 | 704 | 0.2− | 0.0 | |
| 2000 01 29 | 691 | 0.2− | 0.7− | 2000 03 12 | 691 | 0.0 | 0.3− | 2004 04 21 | 704 | 0.6+ | 0.0 | |
| 2000 01 29 | 691 | 0.0 | 0.6− | 2000 03 12 | 691 | 0.0 | 0.4− | 2004 04 26 | 699 | 0.4+ | 1.2− | |
| 2000 01 30 | 691 | 0.0 | 0.3− | 2004 03 17 | 704 | 0.1− | 0.1+ | 2004 04 26 | 699 | 0.0 | 0.3+ | |
| 2000 01 30 | 691 | 0.2− | 0.2− | 2004 03 17 | 704 | 0.7+ | 0.7+ | 2004 04 26 | 699 | 0.5− | 0.1− | |
| 2000 01 30 | 691 | 0.1− | 0.3− | 2004 03 17 | 704 | 0.3+ | 0.9+ | 2004 04 26 | 699 | 0.3+ | 0.6− | |
| 2000 01 30 | 858 | 0.3+ | 0.3+ | 2004 03 17 | 704 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.5+ | 0.4+ | |
| 2000 01 30 | 858 | 0.0 | 0.3+ | 2004 03 17 | 704 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.5+ | |
| 2000 01 30 | 858 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.6− | 0.1− | |
| 2000 01 31 | 691 | 0.0 | 0.1− | 2004 03 19 | 704 | (0.6+ | 1.9+) | 2006 10 04 | G96 | 0.1− | 0.5+ | |
| 2000 01 31 | 691 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.2− | 0.6+ | 2006 10 13 | 691 | 0.0 | 0.3+ | |
| 2000 01 31 | 691 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.0 | 0.6+ | |
| 2000 02 01 | 691 | 0.1+ | 0.0 | 2004 03 31 | 704 | 0.8+ | 0.0 | 2006 10 13 | 691 | 0.0 | 0.5+ | |
| 2000 02 01 | 691 | 0.1− | 0.1− | 2004 03 31 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 691 | 0.5− | 0.4+ | |
| 2000 02 01 | 691 | 0.1+ | 0.1− | 2004 03 31 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.3+ | |
| 2000 02 02 | 858 | 0.1− | 0.5+ | 2004 03 31 | 704 | 1.1+ | 0.7+ | 2006 10 17 | 691 | 0.5− | 0.3+ | |
| 2000 02 02 | 858 | 0.3− | 0.6+ | 2004 03 31 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.1− | |
| 2000 02 03 | 704 | 0.2− | 0.7+ | 2004 04 12 | 644 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.3+ | |
| 2000 02 03 | 704 | 0.4− | 0.3+ | 2004 04 12 | 644 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ | |
| 2000 02 03 | 704 | 0.1− | 0.1− | 2004 04 12 | 644 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.1− | |
| 2000 02 03 | 704 | 0.4− | 0.0 | 2004 04 17 | 704 | 0.3− | 0.9+ | 2006 11 25 | G96 | 0.2+ | 0.2+ | |
| 2000 02 03 | 704 | 0.1+ | 1.4+ | 2004 04 17 | 704 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.5+ | 0.3− | |
| 2000 02 05 | 704 | 0.4+ | 0.3+ | 2004 04 17 | 704 | 0.6− | 0.6+ | 2006 11 25 | G96 | 0.3+ | 0.2− | |
| 2000 02 05 | 704 | 0.0 | 1.0+ | 2004 04 17 | 704 | 0.2+ | 0.3+ | | | | | |
| 2000 02 05 | 704 | 0.3− | 1.0+ | 2004 04 19 | 704 | 0.0 | 0.5+ | | | | | |

**(137919)∗ 2000 BD$_{14}$ = 2002 TP$_{137}$**

Discovered 2000 Jan. 28 by N. Kawasato at Uenohara.

Id. G. V. Williams (*MPO* 37288)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.10861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24490293 | $\omega$ | 297.28150 | | −0.01318707 | +0.99813304 | |
| $a$ | 2.5301139 | $\Omega$ | 331.77068 | | −0.86704973 | −0.04112151 | |
| $e$ | 0.1598306 | $i$ | 7.24320 | | −0.49804705 | +0.04516028 | |
| $P$ | 4.02 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 16 | 010 | (0.7+ | 3.4−) | 2002 10 12 | 704 | 0.3+ | 0.8+ | 2004 02 10 | 644 | 0.2− | 0.2+ | |
| 1996 02 16 | 010 | (0.4− | 3.8−) | 2002 10 12 | 704 | 0.5− | 0.2+ | 2004 02 10 | 644 | 0.4− | 0.0 | |
| 1996 02 16 | 010 | (0.1+ | 4.9−) | 2002 11 06 | 704 | 0.7− | 0.2− | 2004 02 10 | 644 | 0.1− | 0.1− | |
| 2000 01 04 | 704 | 0.9+ | 0.7− | 2002 11 06 | 699 | 0.4+ | 0.1+ | 2004 02 10 | 703 | 0.6− | 0.0 | |
| 2000 01 04 | 704 | 0.5− | 1.5− | 2002 11 06 | 704 | 0.1− | 0.2+ | 2004 02 10 | 703 | 0.6+ | 0.0 | |
| 2000 01 04 | 704 | 0.9− | 0.7− | 2002 11 06 | 699 | 0.7+ | 0.3+ | 2004 02 10 | 703 | 0.3+ | 0.0 | |
| 2000 01 04 | 704 | 0.6− | 0.0 | 2002 11 06 | 704 | 0.2+ | 0.5− | 2004 02 10 | 703 | (2.8− | 4.0−) | |
| 2000 01 04 | 704 | 0.4− | 0.9− | 2002 11 06 | 699 | 0.1− | 0.0 | 2004 02 14 | 608 | (0.9− | 2.3+) | |
| 2000 01 28 | 376 | 0.2− | 0.7− | 2002 11 06 | 704 | 0.6− | 1.0+ | 2004 02 14 | 608 | (0.7− | 1.9+) | |
| 2000 01 28 | 376 | 0.1− | 0.2+ | 2002 11 06 | 699 | (1.6+ | 0.1+) | 2004 02 14 | 608 | 0.1− | 0.8+ | |
| 2000 01 28 | 376 | 0.0 | 0.6+ | 2002 11 11 | 699 | 0.4+ | 0.1+ | 2004 02 16 | 704 | 0.3− | 0.2+ | |
| 2000 01 28 | 376 | 0.8− | 1.0+ | 2002 11 11 | 699 | 0.4+ | 0.6+ | 2004 02 16 | 704 | 0.3− | 0.6− | |
| 2000 01 30 | 703 | 0.6− | 0.4+ | 2002 11 11 | 699 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.4− | 0.3+ | |
| 2000 01 30 | 703 | (0.9− | 2.2+) | 2002 11 11 | 699 | 0.7+ | 0.4+ | 2004 02 16 | 704 | 0.3− | 0.1+ | |
| 2000 01 30 | 703 | 0.1+ | 0.1− | 2002 11 13 | 644 | 0.2− | 0.2− | 2004 02 16 | 704 | 0.2− | 0.2+ | |
| 2000 01 30 | 703 | 0.1+ | 0.7+ | 2002 11 13 | 644 | 0.1− | 0.0 | 2004 02 16 | A16 | (1.1− | 1.6+) | |
| 2000 01 30 | 376 | 0.5+ | 0.7− | 2002 11 13 | 644 | 0.0 | 0.1− | 2004 02 16 | A16 | (3.9− | 1.2−) | |
| 2000 01 30 | 376 | 0.4− | 0.6− | 2002 11 15 | 704 | 0.1− | 1.4− | 2004 02 16 | A16 | (0.3+ | 1.9−) | |
| 2000 02 02 | 376 | 0.6− | 1.0+ | 2002 11 15 | 704 | 0.3− | 0.1− | 2004 02 18 | 644 | 0.1− | 0.2+ | |
| 2000 02 02 | 376 | 1.7− | 0.4− | 2002 11 15 | 704 | 0.4− | 0.9− | 2004 02 18 | 644 | 0.1− | 0.2+ | |
| 2000 02 03 | 704 | 0.6− | 0.1+ | 2002 11 15 | 704 | 0.6− | 0.9− | 2004 02 18 | 644 | 0.1+ | 0.3+ | |
| 2000 02 03 | 704 | 0.4− | 0.1− | 2002 11 15 | 704 | 0.4− | 1.0− | 2004 02 23 | 704 | 0.1+ | 0.6+ | |
| 2000 02 03 | 704 | 0.2− | 0.1− | 2002 11 25 | 644 | 0.4+ | 0.2+ | 2004 02 23 | 704 | 0.4+ | 0.2− | |
| 2000 02 03 | 704 | 0.3− | 0.3− | 2002 11 25 | 644 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.5− | 0.9+ | |
| 2000 02 03 | 704 | 0.5− | 0.5+ | 2002 11 25 | 644 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.0 | |
| 2000 02 04 | 376 | 0.2+ | 0.2− | 2002 12 05 | 699 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.0 | |
| 2000 02 04 | 376 | 0.3− | 0.6− | 2002 12 05 | 699 | 0.5− | 0.8+ | 2004 02 29 | 691 | 0.0 | 0.1+ | |
| 2000 02 09 | 376 | 1.1+ | 0.6− | 2002 12 05 | 699 | 0.0 | 0.7+ | 2004 02 29 | 691 | 0.2+ | 0.0 | |
| 2000 02 09 | 376 | 0.1+ | 0.2+ | 2002 12 05 | 699 | 0.2− | 0.3− | 2004 02 29 | 691 | 0.0 | 0.1+ | |
| 2000 02 09 | 120 | 0.3+ | 0.7− | 2002 12 05 | 704 | 0.2− | 0.8+ | 2004 04 12 | 699 | 0.1− | 1.1+ | |
| 2000 02 09 | 120 | 0.1− | 1.3− | 2002 12 05 | 704 | 1.1− | 0.5+ | 2004 04 12 | 699 | 0.5− | 0.5− | |
| 2000 02 10 | 120 | 0.1+ | 0.7− | 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 04 12 | 699 | 0.1− | 1.3+ | |
| 2000 02 10 | 120 | 0.4+ | 0.9− | 2002 12 05 | 704 | 0.3− | 0.4+ | 2004 04 12 | 699 | 0.1+ | 0.0 | |
| 2000 02 11 | 704 | 0.2− | 0.0 | 2002 12 05 | 704 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.4− | 0.1− | |
| 2000 02 11 | 704 | 0.1+ | 1.4− | 2002 12 09 | 699 | 0.2+ | 0.6− | 2006 08 29 | 703 | 0.3+ | 0.3− | |
| 2000 02 11 | 704 | 0.6+ | 0.2− | 2002 12 09 | 699 | 0.6− | 0.8− | 2006 08 29 | 703 | 0.1+ | 0.3+ | |
| 2000 02 11 | 704 | 0.1+ | 0.5+ | 2002 12 09 | 699 | (2.3+ | 0.1−) | 2006 08 29 | 703 | 0.6− | 1.1+ | |
| 2000 02 11 | 704 | 0.3+ | 0.3+ | 2002 12 09 | 699 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.0 | |
| 2000 02 26 | 703 | 0.4+ | 0.5+ | 2002 12 12 | 644 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.4− | 0.1− | |
| 2000 02 26 | 703 | 0.5+ | 0.4+ | 2002 12 12 | 644 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.1− | 0.5+ | |
| 2000 02 26 | 703 | 0.9+ | 0.3+ | 2002 12 12 | 644 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.4− | |
| 2000 02 26 | 703 | 0.2+ | 0.2+ | 2002 12 14 | 704 | 1.0− | 0.3− | 2006 10 27 | 703 | 0.2− | 0.7− | |
| 2000 03 05 | 704 | 1.2− | 1.1+ | 2002 12 14 | 704 | 0.1− | 1.0+ | 2006 10 27 | 703 | 0.6+ | 1.4− | |
| 2000 03 05 | 704 | 0.2+ | 0.2− | 2002 12 14 | 704 | 1.4+ | 0.6+ | 2006 10 27 | 703 | 0.9+ | 0.3− | |
| 2000 03 05 | 704 | 0.7+ | 0.1− | 2003 01 20 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.7+ | 0.3− | |
| 2000 03 05 | 704 | 0.5+ | 0.4+ | 2003 01 20 | 644 | 0.3+ | 0.1− | 2006 11 02 | 703 | 0.0 | 0.6− | |
| 2000 03 09 | 704 | 0.2− | 0.4+ | 2003 01 20 | 644 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.2+ | 0.2− | |
| 2000 03 09 | 704 | 0.4+ | 0.1− | 2003 02 04 | 704 | 0.2− | 0.1+ | 2006 11 02 | 703 | 0.4− | 0.2− | |
| 2000 03 09 | 704 | 0.1+ | 0.2+ | 2003 02 04 | 704 | 0.6+ | 0.8+ | 2006 11 02 | 703 | 0.0 | 0.7− | |
| 2000 03 09 | 704 | 0.1+ | 0.2− | 2003 02 04 | 704 | 0.4− | 0.4− | 2006 11 13 | 644 | 0.5+ | 0.0 | |
| 2000 03 09 | 704 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 0.9+ | 0.6− | 2006 11 13 | 644 | 0.3+ | 0.0 | |
| 2000 03 26 | 699 | 0.8+ | 0.2− | 2003 12 27 | 704 | (0.5− | 1.6+) | 2006 11 13 | 644 | 0.2+ | 0.1+ | |
| 2000 03 26 | 699 | 1.0+ | 0.1− | 2003 12 27 | 704 | (0.4− | 2.4+) | 2006 11 13 | 644 | 0.4+ | 0.1+ | |
| 2000 03 26 | 699 | 1.1+ | 0.4− | 2003 12 27 | 704 | (0.5+ | 2.3+) | 2006 11 13 | 644 | 0.6+ | 0.2− | |
| 2000 03 26 | 699 | 0.0 | 0.6+ | 2003 12 27 | 704 | 1.2− | 0.5− | 2006 11 13 | 644 | 0.3+ | 0.2− | |
| 2002 09 06 | 704 | 0.2− | 0.5+ | 2004 01 13 | 699 | 1.0+ | 0.8+ | 2006 11 15 | 703 | 1.1+ | 0.6− | |
| 2002 09 06 | 704 | 0.6− | 0.6+ | 2004 01 13 | 699 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.5− | |
| 2002 09 06 | 704 | 0.2+ | 0.2+ | 2004 01 13 | 699 | 0.8+ | 0.2− | 2006 11 15 | 703 | 0.4+ | 0.4− | |
| 2002 10 04 | 699 | 0.8+ | 0.1+ | 2004 01 13 | 699 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.6− | |
| 2002 10 04 | 699 | 1.1+ | 0.2+ | 2004 01 22 | 704 | 0.4− | 0.4− | 2006 11 15 | 704 | (1.2+ | 1.6+) | |
| 2002 10 04 | 699 | 0.6− | 0.0 | 2004 01 22 | 704 | 0.2− | 0.7− | 2006 11 15 | 704 | 1.0+ | 0.3+ | |
| 2002 10 04 | 699 | 0.7− | 0.3+ | 2004 01 22 | 704 | 1.0− | 0.2− | 2006 11 15 | 704 | 0.7− | 0.2− | |
| 2002 10 05 | 704 | 0.8− | 1.2+ | 2004 01 22 | 704 | 0.5− | 0.6+ | 2006 11 15 | 704 | (1.6+ | 0.7−) | |
| 2002 10 05 | 704 | 0.4− | 0.5+ | 2004 01 22 | 704 | 0.4− | 0.1− | 2006 11 15 | 704 | 0.6− | 1.5+ | |
| 2002 10 05 | 704 | 0.7+ | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.2− | 2006 11 22 | 703 | 0.4+ | 0.3− | |
| 2002 10 05 | 704 | 0.5− | 0.1− | 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.1− | |
| 2002 10 05 | 704 | 0.0 | 1.1+ | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 11 22 | 703 | 0.3− | 0.1− | |
| 2002 10 12 | 704 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.0 | 0.1+ | | | | | |
| 2002 10 12 | 704 | 0.6− | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.1− | | | | | |

**(137920)∗ 2000 BW$_{16}$ = 2002 RK$_{89}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34875)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.63988 | | (2000.0) | | | |
| $n$ | 0.26206608 | $\omega$ | 101.04054 | | −0.22149773 | −0.97516050 |
| $a$ | 2.4184039 | $\Omega$ | 1.75719 | | +0.88326995 | −0.20100304 |
| $e$ | 0.1527674 | $i$ | 1.62319 | | +0.41324683 | −0.09305793 |
| $P$ | 3.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 699 | 0.2+ | 0.0 | 2004 02 14 | 608 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.3+ | 0.0 |
| 1999 12 31 | 699 | 0.7+ | 0.2+ | 2004 02 14 | 608 | 0.2− | 0.1+ | 2006 07 21 | G96 | 0.2− | 0.1− |
| 1999 12 31 | 699 | 0.5+ | 0.2− | 2004 02 16 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.5+ |
| 2000 01 30 | 704 | 0.0 | 0.3+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2000 01 30 | 704 | 0.2− | 0.8− | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.6− | 0.1− |
| 2000 01 30 | 704 | 0.2+ | 1.1− | 2004 02 18 | 291 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.1− |
| 2000 01 31 | 704 | 0.3− | 0.2+ | 2004 02 18 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.1+ |
| 2000 01 31 | 704 | 0.3− | 0.1− | 2004 02 18 | 291 | 0.2− | 0.1− | 2006 09 14 | 691 | 0.3− | 0.1+ |
| 2000 01 31 | 704 | 0.9− | 0.0 | 2004 02 18 | 704 | 0.5+ | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.1− |
| 2000 02 11 | 704 | 0.2− | 0.5− | 2004 02 18 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.3− | 0.1− |
| 2000 02 11 | 704 | 0.6− | 0.3+ | 2004 02 18 | 291 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.4− | 0.0 |
| 2000 02 11 | 704 | 0.0 | 0.3+ | 2004 02 18 | 704 | 0.6+ | 1.0+ | 2006 09 18 | 691 | 0.4− | 0.0 |
| 2000 02 11 | 704 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2000 02 11 | 704 | 0.5− | 0.3+ | 2004 02 23 | 608 | 0.6+ | 0.5− | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2000 03 04 | 704 | 0.3+ | 0.0 | 2004 02 23 | 608 | 1.3+ | 0.7− | 2006 09 25 | 691 | 0.2+ | 0.2+ |
| 2000 03 04 | 704 | 0.6− | 0.1− | 2004 02 23 | 608 | (1.8+ | 0.5−) | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2000 03 04 | 704 | 0.6+ | 0.6− | 2004 02 26 | 704 | 0.6+ | 1.3+ | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2000 03 04 | 704 | 0.7+ | 0.2− | 2004 02 26 | 704 | (0.8+ | 1.6+) | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2002 08 20 | 644 | 0.0 | 0.8+ | 2004 02 26 | 704 | (0.4+ | 1.6+) | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 08 20 | 644 | 0.3− | 0.8+ | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 2002 08 20 | 644 | 0.3− | 0.7+ | 2004 02 26 | 704 | 0.3+ | 1.0+ | 2006 09 29 | 704 | 0.9− | 0.4− |
| 2002 09 05 | 704 | 0.4− | 0.5+ | 2004 02 27 | 704 | 0.5− | 1.0+ | 2006 09 29 | 704 | 0.1− | 0.6+ |
| 2002 09 05 | 704 | 0.3− | 1.0+ | 2004 02 27 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.2+ | 0.3− | 2004 02 27 | 704 | 0.5− | 0.7+ | 2006 09 29 | 704 | 0.3+ | 0.6+ |
| 2002 09 07 | 704 | 0.9+ | 0.2+ | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 691 | 0.3+ | 0.2+ |
| 2002 09 07 | 704 | 0.9+ | 0.7+ | 2004 03 11 | 644 | 0.0 | 0.0 | 2006 09 29 | 691 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.1− | 1.1+ | 2004 03 11 | 644 | 0.0 | 0.1+ | 2006 09 29 | 691 | 0.2+ | 0.2+ |
| 2002 09 07 | 704 | 0.5+ | 0.8+ | 2004 03 15 | 704 | 0.7+ | 0.4+ | 2006 10 03 | 691 | 0.3− | 0.1+ |
| 2002 09 13 | 239 | 0.1+ | 0.9+ | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2006 10 03 | 691 | 0.2+ | 0.4− |
| 2002 09 13 | 239 | 0.5− | 0.5+ | 2004 03 15 | 703 | 0.2− | 1.4+ | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 2002 09 13 | 239 | 0.5− | 0.5+ | 2004 03 15 | 704 | 0.1− | 1.3+ | 2006 10 19 | 644 | 0.0 | 0.5+ |
| 2002 09 14 | 608 | (2.0− | 0.4−) | 2004 03 15 | 703 | 0.6− | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2002 09 14 | 608 | (1.6− | 0.7−) | 2004 03 15 | 704 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 09 14 | 608 | 1.4− | 1.0− | 2004 03 15 | 704 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 09 15 | 644 | 0.3− | 0.7− | 2004 03 15 | 703 | 0.0 | 1.2+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2002 09 15 | 644 | 0.5− | 0.4− | 2004 03 15 | 703 | 0.6− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.3− | 0.3− | 2004 03 18 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2004 03 18 | 704 | 0.8+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2004 03 18 | 704 | 0.7− | 0.9− | 2006 10 21 | 644 | 0.3+ | 0.6+ |
| 2002 10 03 | 704 | (3.1− | 0.0 ) | 2004 03 18 | 704 | 0.9+ | 0.7− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2003 11 20 | 691 | 0.1+ | 0.5− | 2004 03 18 | 704 | 1.0− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 2003 11 20 | 691 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.6+ | 0.3− |
| 2003 11 20 | 691 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.9− | 0.7− | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2004 01 22 | 704 | 1.0+ | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2004 01 22 | 704 | 0.1+ | 0.9− | 2004 03 18 | 704 | 1.5− | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2004 01 22 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.9− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.8+ | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 0.1− | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2004 02 11 | 644 | 0.2+ | 0.5+ | 2004 03 27 | 704 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2004 03 27 | 704 | 1.1+ | 0.4− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.1− | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 07 21 | G96 | 0.3− | 0.0 | | | | |
| 2004 02 14 | 608 | (1.6− | 2.2+) | 2006 07 21 | G96 | 0.2+ | 0.4+ | | | | |

**(137921)∗ 2000 BV$_{17}$ = 2002 RR$_{57}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34875)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.47406 | | (2000.0) | | | |
| $n$ | 0.26764178 | $\omega$ | 125.96844 | | +0.14641846 | −0.98762612 |
| $a$ | 2.3846983 | $\Omega$ | 315.50639 | | +0.87983244 | +0.15597676 |
| $e$ | 0.1152925 | $i$ | 4.59795 | | +0.45216869 | +0.01630650 |
| $P$ | 3.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.5− | 1.0− | 2002 11 05 | 291 | 0.4+ | 0.5+ | 2004 03 21 | 704 | 0.1+ | 1.1+ |
| 2000 01 04 | 704 | 1.2+ | 0.8− | 2002 11 05 | 291 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.0 | 0.3+ |
| 2000 01 04 | 704 | 1.2− | 0.5+ | 2002 11 05 | 291 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 0.9+ | 0.7+ |
| 2000 01 04 | 704 | 0.5− | 1.0+ | 2004 02 17 | 703 | (0.6+ | 2.3+) | 2004 03 27 | 704 | 1.2+ | 0.2− |
| 2000 01 13 | 699 | 1.0+ | 1.3+ | 2004 02 17 | 703 | 0.1+ | 0.8+ | 2004 03 27 | 704 | 0.0 | 0.7− |
| 2000 01 13 | 699 | 0.1− | 0.1+ | 2004 02 17 | 703 | 0.4+ | 0.5+ | 2006 10 17 | A50 | 0.2+ | 0.1− |
| 2000 01 13 | 699 | 0.2+ | 0.3+ | 2004 02 17 | 703 | (0.1− | 1.9+) | 2006 10 17 | A50 | 0.2+ | 0.6− |
| 2000 01 30 | 704 | 0.1− | 0.5+ | 2004 02 19 | 704 | 0.5+ | 0.7− | 2006 10 18 | A50 | 0.2− | 0.4− |
| 2000 01 30 | 704 | 0.6+ | 0.7+ | 2004 02 19 | 704 | 0.8+ | 1.0− | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2000 01 30 | 704 | 1.4+ | 0.3− | 2004 02 19 | 704 | 1.1+ | 0.7− | 2006 10 19 | 703 | 0.5− | 0.0 |
| 2000 01 30 | 704 | 0.3− | 0.3+ | 2004 02 19 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2000 01 31 | 704 | 0.3+ | 0.1+ | 2004 02 19 | 704 | 1.1+ | 0.7+ | 2006 10 19 | 703 | 0.7− | 0.5+ |
| 2000 01 31 | 704 | 0.5− | 0.9+ | 2004 02 20 | 608 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2000 01 31 | 704 | 0.0 | 0.3+ | 2004 02 20 | 608 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.1+ |
| 2000 02 07 | 703 | 0.6− | 0.6− | 2004 02 20 | 608 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2000 02 07 | 703 | 0.1+ | 0.2+ | 2004 02 25 | 704 | (0.6− | 2.0−) | 2006 10 27 | 703 | 0.1+ | 0.3− |
| 2000 02 07 | 703 | 0.4+ | 0.1− | 2004 02 25 | 704 | 1.3− | 0.4+ | 2006 11 02 | 703 | 0.6+ | 0.1+ |
| 2000 02 07 | 703 | 1.2− | 1.8− | 2004 02 25 | 704 | 0.4− | 0.3− | 2006 11 02 | 703 | 0.3− | 0.3− |
| 2000 02 11 | 704 | 0.5+ | 0.6− | 2004 02 25 | 704 | 0.7− | 0.1+ | 2006 11 02 | 703 | 0.2− | 0.2+ |
| 2000 02 11 | 704 | 0.4− | 0.4− | 2004 03 13 | 644 | 0.1+ | 0.3+ | 2006 11 02 | 703 | 0.1− | 0.1− |
| 2000 02 11 | 704 | 0.4− | 1.0+ | 2004 03 13 | 644 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 09 05 | 699 | 0.1− | 0.8+ | 2004 03 13 | 644 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 09 05 | 699 | 1.1− | 0.4+ | 2004 03 14 | 703 | 0.2− | 0.9− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 699 | 1.2+ | 0.4+ | 2004 03 14 | 703 | 0.9− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2002 09 05 | 699 | (1.0+ | 2.0+) | 2004 03 14 | 703 | 0.7− | 0.5+ | 2006 11 11 | 703 | 0.9− | 1.3+ |
| 2002 09 06 | 704 | 0.7− | 0.3+ | 2004 03 14 | 703 | 1.0− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2004 03 16 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2002 09 06 | 704 | 0.2− | 0.5+ | 2004 03 16 | 704 | 0.5+ | 1.1+ | 2006 11 14 | 703 | 0.4+ | 0.3− |
| 2002 09 06 | 704 | 1.3− | 0.4+ | 2004 03 16 | 704 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2002 09 06 | 704 | 1.1− | 0.4+ | 2004 03 16 | 704 | 1.2− | 0.4+ | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2002 09 13 | 644 | 0.5− | 0.4+ | 2004 03 16 | 704 | 0.6+ | 0.2+ | 2006 11 14 | 703 | (0.9− | 2.7−) |
| 2002 09 13 | 644 | 0.7− | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.7+ | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2002 09 13 | 644 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2004 03 18 | 704 | 1.0+ | 0.9+ | 2006 11 16 | 704 | 0.8+ | 0.4− |
| 2002 09 14 | 644 | 0.6− | 0.2+ | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 11 16 | 704 | 1.0+ | 0.3− |
| 2002 09 15 | 608 | 0.4− | 1.3+ | 2004 03 20 | 699 | 1.1+ | 0.1− | 2006 11 16 | 704 | 0.3− | 0.4+ |
| 2002 09 15 | 608 | 0.6− | 0.5+ | 2004 03 20 | 699 | 0.3− | 0.5+ | 2006 11 16 | 704 | 1.1+ | 0.2+ |
| 2002 09 15 | 608 | 0.5− | 1.1+ | 2004 03 20 | 704 | 0.8+ | 0.2− | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2002 09 28 | 608 | (2.8− | 0.3+) | 2004 03 20 | 704 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.6+ | 0.8− |
| 2002 09 28 | 608 | (3.1− | 0.2+) | 2004 03 20 | 699 | 0.6− | 0.0 | 2006 11 22 | 703 | 0.1− | 0.3− |
| 2002 09 28 | 608 | (2.3− | 0.2+) | 2004 03 20 | 704 | 0.0 | 0.7+ | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2002 10 04 | 704 | 0.4− | 0.7+ | 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 11 22 | 703 | 0.3+ | 0.6− |
| 2002 10 04 | 704 | 1.0− | 0.4+ | 2004 03 20 | 704 | 0.8− | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2002 10 04 | 704 | 0.8− | 0.4− | 2004 03 20 | 699 | 0.4+ | 1.0+ | 2006 12 01 | G96 | 1.1− | 0.7− |
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2004 03 21 | 704 | 0.9+ | 0.1− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2002 10 04 | 704 | 0.3+ | 0.5+ | 2004 03 21 | 704 | 0.1+ | 0.0 | | | | |

**(137922)∗ 2000 BA$_{18}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.22728 | | (2000.0) | | | |
| $n$ | 0.27081324 | $\omega$ | 107.77701 | | −0.86947008 | −0.49234785 |
| $a$ | 2.3660439 | $\Omega$ | 42.75190 | | +0.42783436 | −0.79121222 |
| $e$ | 0.1706908 | $i$ | 3.39433 | | +0.24694034 | −0.36273519 |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 18 | 809 | 0.1+ | 0.3− | 2004 03 22 | 704 | 0.1− | 0.1− | 2004 04 15 | 699 | 0.2+ | 0.1+ |
| 1993 03 23 | 809 | 0.5− | 0.6− | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2004 04 16 | 704 | 0.2− | 0.5− |
| 2000 01 03 | 704 | 0.4− | 0.5− | 2004 03 25 | 699 | 0.2+ | 0.1+ | 2004 04 16 | 704 | 0.2+ | 0.4+ |
| 2000 01 03 | 704 | 0.1− | 0.6− | 2004 03 25 | 699 | 0.5− | 0.9− | 2004 04 16 | 704 | 1.0− | 1.1+ |
| 2000 01 03 | 704 | 0.1− | 0.4− | 2004 03 25 | 699 | 0.2− | 0.3+ | 2004 04 16 | 704 | 0.3− | 0.5+ |
| 2000 01 03 | 704 | 0.1+ | 0.3− | 2004 03 25 | 699 | 0.9− | 0.6− | 2004 04 16 | 704 | 0.5+ | 0.3+ |
| 2000 01 03 | 704 | 0.6+ | 0.0 | 2004 03 28 | 704 | (1.8+ | 0.4+) | 2004 04 20 | 691 | 0.0 | 0.3+ |
| 2000 01 30 | 704 | 0.1+ | 0.8− | 2004 03 28 | 704 | 0.1+ | 0.9+ | 2004 04 20 | 691 | 0.1− | 0.2+ |
| 2000 01 30 | 704 | 0.3− | 0.4+ | 2004 03 28 | 704 | (1.7+ | 1.0+) | 2004 04 20 | 691 | 0.1+ | 0.2+ |
| 2000 01 30 | 704 | 0.3− | 0.0 | 2004 03 28 | 704 | 0.2+ | 0.2+ | 2004 05 16 | 691 | 0.4+ | 0.2+ |
| 2000 01 31 | 704 | 0.6+ | 0.2+ | 2004 03 28 | 704 | 0.7+ | 0.2− | 2004 05 16 | 691 | 0.1+ | 0.2+ |
| 2000 01 31 | 704 | 0.1− | 0.3+ | 2004 03 28 | 704 | (1.6− | 1.4+) | 2004 05 16 | 691 | 0.2+ | 0.2+ |
| 2000 01 31 | 704 | 0.4− | 0.3− | 2004 03 28 | 704 | 1.1+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2000 02 07 | 703 | 0.8− | 0.5+ | 2004 03 28 | 704 | 1.2+ | 0.3− | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2000 02 07 | 703 | 0.3+ | 0.1+ | 2004 03 28 | 704 | 1.3+ | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.5− |
| 2000 02 07 | 703 | 0.3− | 1.8− | 2004 03 31 | 704 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2000 02 07 | 703 | 0.2+ | 0.0 | 2004 03 31 | 704 | 1.1− | 0.9+ | 2006 11 01 | G96 | 0.3− | 0.1+ |
| 2004 03 15 | 703 | 0.5− | 0.2− | 2004 03 31 | 704 | 0.5− | 0.4− | 2006 11 01 | G96 | 0.3− | 0.1− |
| 2004 03 15 | 703 | 0.5− | 0.5− | 2004 03 31 | 704 | 0.5+ | 0.5− | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 03 15 | 703 | (0.1− | 1.5+) | 2004 04 09 | E12 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.5− | 0.4− |
| 2004 03 15 | 703 | (0.3− | 2.2+) | 2004 04 09 | E12 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.2− | 0.2+ | 2004 04 09 | E12 | 1.2− | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.0 | 0.2− | 2004 04 09 | E12 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2004 03 19 | 704 | 0.1− | 0.1+ | 2004 04 11 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.3− | 0.4+ |
| 2004 03 19 | 704 | 0.4− | 0.6+ | 2004 04 11 | 644 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.3− | 0.9+ | 2004 04 11 | 644 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2004 03 20 | 699 | 0.6+ | 0.1− | 2004 04 13 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2004 03 20 | 699 | 0.3+ | 0.1− | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2004 03 20 | 699 | 0.0 | 0.8− | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2004 03 20 | 699 | 0.3+ | 0.3+ | 2004 04 15 | 699 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2004 03 22 | 704 | 0.3+ | 0.2− | 2004 04 15 | 699 | 0.4+ | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.4+ |
| 2004 03 22 | 704 | 1.1+ | 0.8− | 2004 04 15 | 699 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2+ |

**(137923)∗ 2000 BF$_{18}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.95194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26192595 | $\omega$ | 144.21936 | | −0.99479412 | +0.08818564 | |
| $a$ | 2.4192664 | $\Omega$ | 40.93290 | | −0.10175353 | −0.88691105 | |
| $e$ | 0.1505449 | $i$ | 4.47050 | | +0.00555695 | −0.45344469 | |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2004 02 17 | 704 | 0.2+ | 0.4+ | 2005 11 03 | 695 | 0.2− | 0.2+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 691 | 0.2− | 0.4+ |
| 2000 01 03 | 704 | 0.2− | 0.6− | 2004 02 17 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 691 | 0.4− | 0.1− |
| 2000 01 03 | 704 | 0.4+ | 0.6− | 2004 03 10 | 644 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.3− | 0.2− |
| 2000 01 03 | 704 | 0.5+ | 1.0− | 2004 03 10 | 644 | 0.0 | 0.0 | 2006 10 21 | 691 | 1.0+ | 0.2+ |
| 2000 01 30 | 704 | 0.9− | 0.5+ | 2004 03 10 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2000 01 30 | 704 | 0.6− | 0.2+ | 2004 03 15 | 704 | 0.9− | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2000 01 30 | 704 | (1.1− | 2.1−) | 2004 03 15 | 704 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2000 01 30 | 704 | 0.0 | 1.1− | 2004 03 15 | 704 | 0.8+ | 0.9+ | 2006 10 31 | G96 | 0.5− | 0.3− |
| 2000 01 31 | 704 | 0.1− | 0.4− | 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2000 01 31 | 704 | 0.3− | 0.5− | 2004 03 15 | 704 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2000 01 31 | 704 | 0.5− | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.5− | 0.4+ |
| 2000 02 11 | 704 | 0.9− | 0.3+ | 2004 03 20 | 704 | 0.3+ | 0.1− | 2006 11 09 | 691 | 0.5− | 0.4+ |
| 2000 02 11 | 704 | 0.6+ | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2000 02 11 | 704 | 0.0 | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2000 02 11 | 704 | 0.6+ | 1.1+ | 2004 03 20 | 704 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.9+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2001 07 18 | 644 | 0.3− | 0.4+ | 2004 03 22 | 704 | 0.4+ | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 07 18 | 644 | 0.8− | 0.6+ | 2004 03 22 | 704 | 1.3+ | 0.7+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2001 07 18 | 644 | 0.1+ | 0.7+ | 2004 03 22 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 691 | (2.8+ | 2.9+) |
| 2001 07 18 | 644 | 0.3− | 0.6+ | 2004 03 22 | 704 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 2001 07 18 | 644 | 0.1+ | 0.6+ | 2004 03 26 | 703 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2001 07 18 | 644 | 0.4− | 0.4+ | 2004 03 26 | 703 | 0.4− | 1.0+ | 2006 11 18 | 704 | 1.3+ | 0.3− |
| 2004 02 02 | 699 | 0.0 | 0.5+ | 2004 03 26 | 703 | 0.5− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2004 02 02 | 699 | 0.2− | 0.2+ | 2004 03 26 | 703 | 1.2+ | 0.4− | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2004 02 02 | 699 | 0.1+ | 0.2− | 2004 04 22 | 704 | 0.6− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2004 02 02 | 699 | 0.7− | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 02 16 | 185 | 0.1− | 0.9− | 2004 04 22 | 704 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2004 02 16 | 185 | 0.4− | 0.4− | 2004 04 22 | 704 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.1− | 0.7− |
| 2004 02 17 | 704 | 0.0 | 0.2+ | 2004 04 22 | 704 | 1.3− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.7− |
| 2004 02 17 | 704 | 0.0 | 0.1− | 2005 11 03 | 695 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.5+ | 0.1− |

**(137924)∗ 2000 BD$_{19}$**

Discovered 2000 Jan. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.09312 | | (2000.0) | | **P** | **Q** | |
| $n$ | 1.20108693 | $\omega$ | 324.24240 | | +0.49571058 | +0.84716879 | |
| $a$ | 0.8765024 | $\Omega$ | 333.80756 | | −0.66149210 | +0.22560427 | |
| $e$ | 0.8950374 | $i$ | 25.67653 | | −0.56276036 | +0.48104860 | |
| $P$ | 0.82 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 675(67.7+ | 21.5+) | | 2001 02 24 | 118 | (4.1− | 1.5+) | 2006 01 24 | A74 | 0.1+ | 0.4− |
| 1997 02 10 | 675(69.9+ | 21.8+) | | 2001 02 24 | 118 | (4.6− | 0.6+) | 2006 01 25 | H45 | 0.3− | 0.6+ |
| 2000 01 26 | 704 | 0.7+ | 0.4+ | 2001 02 27 | 118 | (4.4− | 0.6+) | 2006 01 25 | H45 | 0.3− | 0.3− |
| 2000 01 26 | 704 | 0.2+ | 0.2+ | 2001 02 27 | 118 | (4.1− | 0.4+) | 2006 01 25 | H45 | 0.2− | 0.4+ |
| 2000 01 26 | 704 | 0.2+ | 0.6+ | 2001 02 27 | 118 | (4.2− | 0.4+) | 2006 01 25 | H45 | 0.0 | 0.1+ |
| 2000 01 26 | 587 | 0.2− | 0.6− | 2002 01 12 | 608 | (9.1+ | 4.9−) | 2006 01 25 | H45 | 0.1− | 0.1− |
| 2000 01 26 | 587 | 0.6+ | 0.3+ | 2002 01 12 | 608 | (9.0+ | 4.7−) | 2006 01 29 | H45 | 0.2+ | 0.5− |
| 2000 01 26 | 587 | 0.3+ | 0.1− | 2002 01 12 | 608 | (9.0+ | 4.5−) | 2006 01 29 | H45 | 0.4− | 0.2− |
| 2000 01 27 | 012 | 0.1+ | 0.5+ | 2002 01 18 | 704 | (11.1+ | 5.5−) | 2006 01 29 | H45 | 0.0 | 0.2− |
| 2000 01 27 | 012 | 0.4− | 0.4− | 2002 01 18 | 704 | (11.3+ | 5.6−) | 2006 01 29 | H45 | 0.1− | 0.3− |
| 2000 01 27 | 012 | 1.0− | 0.5− | 2002 01 18 | 704 | (11.2+ | 5.5−) | 2006 01 29 | H45 | 0.2− | 0.3− |
| 2000 01 27 | 012 | 0.3− | 0.2− | 2002 01 18 | 704 | (11.0+ | 6.0−) | 2006 01 29 | 127 | 0.7+ | 0.6+ |
| 2000 01 27 | 704 | 0.5+ | 0.1− | 2002 01 18 | 704 | (11.3+ | 6.4−) | 2006 01 29 | 127 | 0.6+ | 0.5+ |
| 2000 01 27 | 012 | 0.7− | 0.5− | 2002 01 21 | 704 | (11.3+ | 6.5−) | 2006 01 29 | 127 | 0.8+ | 0.7+ |
| 2000 01 27 | 704 | 0.1+ | 0.4+ | 2002 01 21 | 704 | (12.1+ | 5.5−) | 2006 01 29 | 127 | 0.7+ | 0.8+ |
| 2000 01 27 | 658 | 0.0 | 0.1+ | 2002 01 21 | 704 | (11.5+ | 5.9−) | 2006 01 30 | 355 | 0.5− | 0.2+ |
| 2000 01 27 | 658 | 0.2− | 0.4+ | 2002 01 21 | 704 | (11.6+ | 5.7−) | 2006 01 30 | 355 | 0.1+ | 0.0 |
| 2000 01 27 | 704 | 0.1+ | 0.9− | 2003 12 03 | 704 | (2.8− | 1.5+) | 2006 01 30 | 355 | 0.1− | 0.2− |
| 2000 01 27 | 658 | 0.1+ | 0.2− | 2003 12 03 | 704 | (2.8− | 1.9+) | 2006 01 30 | 355 | 0.2− | 0.2+ |
| 2000 01 27 | 704 | 0.2− | 0.5+ | 2003 12 03 | 704 | (3.0− | 1.9+) | 2006 01 30 | 355 | 0.1+ | 0.2+ |
| 2000 01 27 | 704 | 0.1+ | 0.2+ | 2003 12 03 | 704 | (3.2− | 2.3+) | 2006 01 30 | 127 | 0.5+ | 0.5+ |
| 2000 01 27 | 046 | 0.1− | 0.3− | 2003 12 24 | 170 | (2.1− | 0.2−) | 2006 01 30 | 127 | 0.2+ | 0.3+ |
| 2000 01 27 | 046 | 0.1+ | 0.9+ | 2003 12 24 | 170 | (1.8− | 0.6−) | 2006 02 02 | 355 | 0.6− | 0.1− |
| 2000 01 27 | 046 | 1.1+ | 0.6− | 2003 12 24 | 170 | (1.7− | 0.6−) | 2006 02 02 | 355 | 0.4− | 0.3− |
| 2000 01 27 | 046 | 0.6− | 0.2+ | 2003 12 28 | 670 | (1.8− | 0.7−) | 2006 02 02 | 355 | 0.3− | 0.1+ |
| 2000 01 27 | 046 | 1.9− | 0.2+ | 2003 12 28 | 670 | (1.6− | 0.1−) | 2006 02 02 | 355 | 0.3− | 0.4− |
| 2000 01 27 | 046 | 1.2− | 1.3− | 2004 01 05 | 704 | 0.8− | 0.8− | 2006 02 02 | 355 | 0.3+ | 0.1+ |
| 2000 01 27 | 046 | 0.1+ | 0.8− | 2004 01 05 | 704 | (1.7− | 0.2+) | 2006 02 03 | 703 | 0.2+ | 0.1+ |
| 2000 01 27 | 118 | 0.2− | 0.4+ | 2004 01 05 | 704 | 0.3+ | 0.1+ | 2006 02 03 | 703 | 0.3+ | 0.1+ |
| 2000 01 27 | 118 | 0.2+ | 0.3+ | 2004 01 05 | 704 | (1.0− | 1.6−) | 2006 02 03 | 703 | 0.1− | 0.2+ |
| 2000 01 27 | 118 | 0.2+ | 0.1+ | 2004 01 05 | 704 | (0.7− | 1.6−) | 2006 02 03 | 703 | 0.1+ | 0.3+ |
| 2000 01 28 | 461 | 0.5− | 0.0 | 2004 01 13 | 704 | 0.5+ | 0.8− | 2006 02 04 | H45 | 0.7− | 0.6− |
| 2000 01 28 | 461 | 0.8− | 0.1− | 2004 01 13 | 704 | 1.0+ | 1.4− | 2006 02 04 | H45 | 0.4− | 0.5+ |
| 2000 01 28 | 461 | 0.5− | 0.1+ | 2004 01 13 | 704 | 0.3+ | 1.4− | 2006 02 04 | H45 | 0.9− | 0.4− |
| 2000 01 28 | 461 | 0.9− | 0.1− | 2004 01 13 | 704 | (0.4+ | 2.3−) | 2006 02 04 | H45 | 0.4− | 0.2− |
| 2000 01 28 | 461 | 0.5− | 0.3− | 2004 01 13 | 704 | 0.1+ | 0.8− | 2006 02 04 | H45 | 0.5− | 0.3+ |
| 2000 01 28 | 402 | 0.4− | 0.1+ | 2004 01 17 | 830 | (2.7− | 0.6−) | 2006 02 04 | H45 | 0.4− | 0.6− |
| 2000 01 28 | 402 | 0.1+ | 0.9− | 2004 01 17 | 830 | (0.0 | 1.7−) | 2006 02 04 | 565 | 0.3+ | 0.1− |
| 2000 01 28 | 402 | 0.4− | 1.0− | 2004 01 17 | 830 | 0.1+ | 0.3− | 2006 02 04 | 565 | 0.4+ | 0.1− |
| 2000 01 28 | 402 | 0.5+ | 0.9− | 2004 01 23 | 084 | 0.7+ | 0.0 | 2006 02 04 | 565 | 0.2+ | 0.2− |
| 2000 01 28 | 118 | 0.2+ | 1.5+ | 2004 02 10 | 704 | 1.2+ | 0.6+ | 2006 02 04 | 565 | 0.1− | 0.1− |
| 2000 01 28 | 118 | 0.2− | 0.3− | 2004 02 10 | 704 | 1.2+ | 0.0 | 2006 02 04 | 565 | 0.4+ | 0.0 |
| 2000 01 28 | 118 | 0.2+ | 0.5− | 2004 02 10 | 704 | 0.8+ | 0.4− | 2006 02 05 | H45 | 0.6− | 0.2− |
| 2000 01 29 | 704 | 0.4+ | 0.3+ | 2004 12 08 | 246 | 0.8+ | 0.8+ | 2006 02 05 | H45 | 0.3− | 0.2+ |
| 2000 01 29 | 704 | 0.2− | 0.2− | 2004 12 08 | 246 | (1.6+ | 1.6+) | 2006 02 05 | H45 | 0.5− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.2− | 0.1− | 2004 12 15 | 703 | 0.8+ | 0.8− | 2006 02 05 | H45 | 0.7− | 0.4+ |
| 2000 01 29 | 704 | 0.1− | 0.2− | 2004 12 15 | 703 | 0.0 | 0.1+ | 2006 02 05 | H45 | 0.3− | 0.3+ |
| 2000 01 30 | 704 | 0.3− | 0.3− | 2004 12 15 | 703 | 0.2+ | 0.8− | 2006 02 06 | A82 | 0.0 | 0.0 |
| 2000 01 30 | 704 | 0.1− | 0.3+ | 2004 12 15 | 703 | 1.0− | 0.4+ | 2006 02 06 | A82 | 0.0 | 0.0 |
| 2000 01 30 | 704 | 0.0 | 0.6− | 2005 01 10 | A13 | 0.4− | 0.1+ | 2006 02 06 | A82 | 0.3+ | 0.0 |
| 2000 01 30 | 858 | 0.1− | 0.2− | 2005 01 10 | A13 | 0.8− | 0.1+ | 2006 02 06 | A82 | 0.3+ | 0.1+ |
| 2000 01 30 | 858 | 0.4− | 0.2− | 2005 01 10 | A13 | 0.4− | 0.1− | 2006 02 07 | H45 | 0.4− | 0.5− |
| 2000 01 30 | 858 | 0.7− | 0.2− | 2005 01 10 | A13 | 0.0 | 0.4+ | 2006 02 07 | H45 | 0.3+ | 0.6− |
| 2000 01 30 | 557 | 0.7− | 0.2− | 2005 01 10 | A13 | 0.3− | 0.4− | 2006 02 07 | H45 | 0.1− | 0.5− |
| 2000 01 30 | 557 | 1.4− | 0.4− | 2005 01 12 | 084 | 0.0 | 1.2+ | 2006 02 07 | H45 | 0.1+ | 0.6− |
| 2000 01 30 | 557 | 0.6− | 0.1+ | 2005 01 15 | 084 | 0.4− | 0.8+ | 2006 02 07 | H45 | 0.4+ | 0.3− |
| 2000 01 31 | 704 | 0.4− | 0.1+ | 2005 01 20 | 704 | 0.9+ | 0.4− | 2006 02 07 | H45 | 0.4+ | 0.3− |
| 2000 01 31 | 704 | 0.1− | 0.3− | 2005 01 20 | 704 | 1.0+ | 0.1+ | 2006 02 09 | J77 | 0.0 | 0.3+ |
| 2000 01 31 | 704 | 0.0 | 0.3− | 2005 01 20 | 704 | 0.9+ | 0.2− | 2006 02 09 | J77 | 0.2+ | 0.3+ |
| 2000 02 01 | 118 | 0.6+ | 0.2+ | 2005 01 20 | 704 | 0.8+ | 0.1− | 2006 02 09 | J77 | 1.1+ | 0.5+ |
| 2000 02 01 | 118 | 0.9+ | 0.1+ | 2005 01 20 | 704 | 0.2+ | 0.7+ | 2006 02 09 | J94 | 0.3− | 0.3+ |
| 2000 02 02 | 704 | 0.6− | 0.0 | 2005 01 30 | A30 | 0.3+ | 0.1+ | 2006 02 09 | J77 | 0.8+ | 0.5+ |
| 2000 02 02 | 704 | 0.2+ | 0.8+ | 2005 01 30 | A30 | 0.5+ | 0.0 | 2006 02 09 | J94 | 0.9+ | 0.2− |
| 2000 02 02 | 704 | 0.1+ | 0.1+ | 2005 01 30 | A30 | 0.5+ | 0.2+ | 2006 02 09 | J94 | 0.6− | 0.4− |
| 2000 02 02 | 704 | 0.8− | 0.4− | 2005 01 30 | A30 | 0.6+ | 0.7+ | 2006 02 09 | J77 | 0.1− | 0.2− |
| 2000 02 02 | 557 | 1.2− | 0.1− | 2005 01 30 | A53 | 0.3+ | 0.1− | 2006 02 09 | J77 | 0.0 | 0.0 |
| 2000 02 02 | 557 | 0.6− | 0.8+ | 2005 01 30 | A53 | 0.7+ | 0.3+ | 2006 02 09 | J77 | 0.0 | 0.3+ |
| 2000 02 02 | 557 | 0.4− | 0.4+ | 2005 01 30 | A53 | 0.7+ | 0.3+ | 2006 02 09 | J77 | 0.2+ | 0.3+ |
| 2000 02 02 | 557 | 0.2− | 0.1+ | 2005 02 05 | 240 | 0.4+ | 0.1− | 2006 02 10 | J77 | 0.1+ | 0.1− |
| 2000 02 03 | 704 | 0.0 | 0.2+ | 2005 02 05 | 240 | 0.3+ | 0.1− | 2006 02 10 | J77 | 0.1− | 0.0 |
| 2000 02 03 | 704 | 0.5− | 0.2− | 2005 02 05 | 240 | 0.1+ | 0.1+ | 2006 02 10 | J77 | 0.2− | 0.1− |
| 2000 02 03 | 704 | 0.5− | 0.6− | 2005 02 05 | 240 | 0.1+ | 0.1+ | 2006 02 10 | J77 | 0.0 | 0.4− |
| 2000 02 03 | 704 | 0.3− | 0.2− | 2005 02 05 | 240 | 0.0 | 0.3+ | 2006 02 10 | J77 | 0.2+ | 0.1− |
| 2000 02 10 | 046 | 0.4− | 0.7+ | 2005 02 05 | 130 | 0.5+ | 0.1− | 2006 02 10 | J77 | 0.1− | 0.2− |
| 2000 02 10 | 118 | 0.3− | 0.7+ | 2005 02 05 | 130 | 0.4− | 0.4+ | 2006 02 10 | J77 | 0.3− | 0.3− |
| 2000 02 10 | 046 | 0.3+ | 0.2+ | 2005 02 05 | 560 | 0.1− | 0.2+ | 2006 02 10 | J77 | 0.3− | 0.1+ |
| 2000 02 10 | 046 | 0.6+ | 0.2+ | 2005 02 05 | 560 | 0.2+ | 0.2− | 2006 02 10 | J77 | 0.2− | 0.2− |
| 2000 02 10 | 118 | 0.6+ | 0.2+ | 2005 02 05 | 560 | 0.4+ | 0.5− | 2006 02 10 | J77 | 0.1− | 0.2− |
| 2000 02 10 | 118 | 0.5− | 0.1− | 2005 02 14 | 704 | 0.6− | 0.3− | 2006 02 10 | J77 | 0.0 | 0.2− |
| 2000 02 11 | 360 | 0.2− | 0.1− | 2005 02 14 | 704 | 0.4− | 0.7− | 2006 02 10 | J77 | 0.3− | 0.3− |
| 2000 02 11 | 360 | 1.2− | 0.4− | 2005 02 14 | 704 | 0.9− | 0.3− | 2006 02 10 | J77 | 0.0 | 0.0 |
| 2000 02 11 | 360 | 0.8− | 0.1− | 2005 02 14 | 704 | 0.2− | 0.1− | 2006 02 10 | J77 | 0.2− | 0.0 |
| 2000 02 11 | 611 | 1.3− | 0.3+ | 2005 03 01 | 704 | 0.8− | 0.4− | 2006 02 10 | J77 | 0.3− | 0.5− |
| 2000 02 11 | 611 | 1.0− | 0.4− | 2005 03 01 | 704 | 0.1+ | 1.0− | 2006 02 10 | J77 | 0.2− | 0.1− |
| 2000 02 11 | 611 | 0.7− | 0.3− | 2005 03 01 | 704 | 1.2+ | 0.6− | 2006 02 11 | 198 | 0.0 | 0.6− |
| 2000 12 26 | 360 | 0.8+ | 0.5+ | 2006 01 04 | 703 | (1.5− | 0.6−) | 2006 02 11 | 198 | 0.2− | 0.6− |
| 2000 12 26 | 360 | 0.6+ | 0.6+ | 2006 01 04 | 703 | 0.7− | 0.9+ | 2006 02 11 | 198 | 0.2− | 0.5− |
| 2000 12 26 | 360 | 0.4+ | 0.4+ | 2006 01 04 | 703 | 0.0 | 0.6+ | 2006 02 11 | 198 | 0.2− | 0.6− |
| 2001 01 17 | 046 | (1.8+ | 0.6+) | 2006 01 04 | 703 | 1.2− | 0.4− | 2006 02 12 | 204 | 1.0− | 0.2+ |
| 2001 01 17 | 046 | (1.9+ | 0.6+) | 2006 01 05 | 704 | 0.5+ | 0.6− | 2006 02 12 | 204 | 0.9− | 0.2+ |
| 2001 01 17 | 046 | (1.6+ | 0.6+) | 2006 01 05 | 704 | 0.5− | 0.0 | 2006 02 12 | 204 | 0.9− | 0.0 |
| 2001 01 17 | 046 | (2.1+ | 0.3+) | 2006 01 05 | 704 | 0.5− | 0.4− | 2006 02 12 | 204 | 0.9− | 0.2+ |
| 2001 01 17 | 704 | (1.9+ | 0.3+) | 2006 01 05 | 704 | 0.0 | 0.0 | 2006 02 12 | 204 | 1.2− | 0.1+ |
| 2001 01 17 | 704 | 0.0 | 0.9+ | 2006 01 13 | 699 | 1.0− | 0.7− | 2006 02 16 | 084 | 0.4− | 0.1+ |
| 2001 01 17 | 704 | 1.2+ | 1.2− | 2006 01 13 | 699 | 0.3− | 0.1+ | 2006 02 16 | 084 | 0.7+ | 0.5+ |
| 2001 01 17 | 704 | 1.1+ | 0.5+ | 2006 01 13 | 699 | 0.1− | 0.7+ | 2006 02 16 | 084 | 0.8+ | 0.2− |
| 2001 01 18 | 704 | 1.4+ | 0.7+ | 2006 01 13 | 699 | 0.0 | 0.7+ | 2006 02 16 | 084 | 0.9+ | 0.5+ |
| 2001 01 18 | 704 | (1.6+ | 0.6+) | 2006 01 22 | 670 | 0.0 | 0.2+ | 2006 02 16 | 084 | 0.1− | 0.4+ |
| 2001 01 18 | 704 | 1.2+ | 0.4+ | 2006 01 22 | 670 | 0.4− | 0.4− | 2006 02 16 | 084 | 0.6+ | 0.0 |
| 2001 01 18 | 704 | 1.0+ | 0.7+ | 2006 01 22 | 670 | 0.0 | 0.1+ | 2006 02 17 | 704 | 0.4+ | 0.3+ |
| 2001 01 18 | 704 | 1.4+ | 0.9+ | 2006 01 23 | 127 | 0.8+ | 0.5− | 2006 02 17 | 704 | 0.0 | 0.2− |
| 2001 01 26 | 071 | (0.4+ | 2.0+) | 2006 01 23 | 127 | 1.1+ | 0.6− | 2006 02 17 | 704 | 0.1+ | 0.2− |
| 2001 01 26 | 071 | 0.6+ | 1.3+ | 2006 01 23 | 127 | 1.1+ | 0.7− | 2006 02 17 | 704 | 0.1+ | 0.4− |
| 2001 01 26 | 071 | 0.9+ | 0.6+ | 2006 01 24 | A74 | 0.3+ | 0.1− | 2006 02 17 | 084 | 0.2+ | 0.6+ |
| 2001 01 26 | 071 | 0.3+ | 1.2+ | 2006 01 24 | A74 | 0.0 | 0.1− | 2006 02 17 | 084 | 0.4+ | 0.3− |
| 2001 01 26 | 071 | (0.4+ | 2.0+) | 2006 01 24 | A74 | 0.1− | 0.2− | 2006 02 17 | 084 | 0.2+ | 0.7+ |
| 2001 01 27 | 151 | 0.9+ | 1.3+ | 2006 01 24 | A74 | 0.6+ | 0.4− | 2006 02 17 | 084 | 0.0 | 0.2+ |
| 2001 01 27 | 151 | 1.1+ | 1.1+ | 2006 01 24 | A74 | 0.2− | 0.1− | 2006 02 24 | 703 | 0.1− | 0.3− |
| 2001 01 27 | 151 | (0.8+ | 1.5+) | 2006 01 24 | A74 | 0.2− | 0.2− | 2006 02 24 | 703 | 0.1− | 0.6− |
| 2001 01 27 | 151 | 0.9+ | 1.3+ | 2006 01 24 | A74 | 0.2− | 0.2− | 2006 02 24 | 703 | 0.6+ | 0.0 |
| 2001 01 27 | 151 | 0.9+ | 1.2+ | 2006 01 24 | A74 | 0.0 | 0.3− | 2006 02 24 | 703 | 0.1− | 0.3+ |
| 2001 01 27 | 151 | 1.1+ | 1.5+ | 2006 01 24 | A74 | 0.1+ | 0.3− | 2006 03 03 | 703 | 0.8− | 0.1− |
| 2001 02 12 | 704 | (1.4− | 2.4+) | 2006 01 24 | A74 | 0.1+ | 0.5− | 2006 03 03 | 703 | 0.6− | 0.1+ |
| 2001 02 12 | 704 | (2.1− | 2.2+) | 2006 01 24 | A74 | 0.1+ | 0.3− | 2006 03 03 | 703 | 0.4− | 0.1− |
| 2001 02 12 | 704 | (1.0− | 3.2+) | 2006 01 24 | A74 | 0.0 | 0.3− | 2006 03 03 | 703 | 1.2− | 0.4+ |
| 2001 02 12 | 704 | (0.5− | 2.7+) | 2006 01 24 | A74 | 0.1+ | 0.5− | | | | |

**(137925)∗ 2000 BJ$_{19}$**

Discovered 2000 Jan. 30 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.00092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.67128674 | $\omega$ | 175.44907 | | +0.60640182 | +0.69395483 | |
| $a$ | 1.2918061 | $\Omega$ | 131.26571 | | −0.74487462 | +0.66661277 | |
| $e$ | 0.7637499 | $i$ | 31.09543 | | −0.27827799 | −0.27212883 | |
| $P$ | 1.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1953 12 07 | 261 | (3.3− | 1.1+) | 2000 02 27 | 360 | 0.3− | 0.4− | 2003 12 24 | 151 | 0.2+ | 0.3− |
| 1953 12 07 | 261 | (3.8− | 1.0+) | 2000 02 28 | 747 | 0.1− | 0.2− | 2003 12 24 | 151 | 0.0 | 0.2− |
| 1997 01 14 | 566 | 0.1+ | 0.3− | 2000 02 28 | 747 | 0.2− | 0.1− | 2003 12 24 | 151 | 0.1− | 0.3− |
| 1997 01 14 | 566 | 0.1− | 0.7− | 2000 02 28 | 747 | 0.3− | 0.0 | 2003 12 24 | 151 | 0.2− | 0.3− |
| 1997 01 15 | 566 | (2.7+ | 0.8−) | 2000 02 28 | 747 | 0.2− | 0.3− | 2003 12 24 | 151 | 0.3− | 0.1− |
| 1997 01 15 | 566 | (3.1− | 0.8−) | 2000 02 28 | 747 | 0.5− | 0.1+ | 2003 12 24 | 151 | 0.0 | 0.2− |
| 1997 01 15 | 566 | 0.4− | 0.9− | 2000 02 28 | 046 | 0.1+ | 0.2+ | 2003 12 25 | 170 | 0.2− | 0.3− |
| 1997 02 14 | 691 | 0.3+ | 0.5− | 2000 02 28 | 046 | 0.6+ | 0.1+ | 2003 12 25 | 170 | 0.1− | 0.3− |
| 1997 02 14 | 691 | 0.3+ | 0.5− | 2000 03 06 | 046 | 0.4− | 0.3+ | 2003 12 25 | 170 | 0.1+ | 0.0 |
| 1997 02 14 | 691 | 0.4+ | 1.4− | 2000 03 06 | 046 | 0.4− | 0.4− | 2004 01 11 | 170 | 0.3− | 0.4+ |
| 1997 03 28 | 675 | 1.0− | 0.4+ | 2000 03 06 | 046 | 0.2− | 0.2+ | 2004 01 11 | 170 | 0.4− | 0.3+ |
| 1997 03 28 | 675 | 0.7+ | 1.0− | 2000 03 06 | 046 | 1.0− | 0.0 | 2004 01 11 | 170 | 0.1− | 0.1− |
| 2000 01 30 | 703 | 0.2+ | 0.5+ | 2000 03 06 | 046 | 0.5+ | 0.2− | 2004 01 17 | 130 | 0.3− | 0.1− |
| 2000 01 30 | 703 | 0.4− | 0.3+ | 2000 11 16 | 860 | 0.1− | 0.5+ | 2004 01 17 | 130 | 0.1− | 0.1− |
| 2000 01 30 | 703 | 0.4+ | 0.6+ | 2000 11 16 | 860 | 1.7+ | 0.7+ | 2004 01 17 | 130 | 0.2+ | 0.1+ |
| 2000 01 30 | 703 | 0.3− | 0.2− | 2000 12 01 | 808 | 0.2− | 1.7+ | 2004 01 17 | 130 | 0.2+ | 0.0 |
| 2000 01 31 | 704 | 0.0 | 1.0− | 2000 12 22 | 704 | 0.6− | 0.1− | 2004 01 23 | 084 | 0.4+ | 0.3− |
| 2000 01 31 | 704 | 0.5− | 0.3− | 2000 12 22 | 704 | 0.1+ | 0.2− | 2004 01 29 | 704 | 0.1+ | 0.7− |
| 2000 01 31 | 704 | 0.1+ | 0.1+ | 2000 12 22 | 704 | 0.3− | 0.3− | 2004 01 29 | 704 | 0.2+ | 0.4+ |
| 2000 02 01 | 046 | 0.6+ | 0.2+ | 2000 12 22 | 704 | 0.2− | 0.3− | 2004 01 29 | 704 | 0.0 | 0.5+ |
| 2000 02 01 | 046 | 0.2+ | 0.1+ | 2000 12 22 | 704 | 0.2− | 0.3− | 2004 01 29 | 704 | 0.0 | 0.1+ |
| 2000 02 01 | 046 | 0.3+ | 0.1− | 2000 12 22 | 360 | 0.1+ | 0.6− | 2004 01 29 | 704 | 0.1− | 0.4+ |
| 2000 02 01 | 046 | 1.2+ | 0.1+ | 2000 12 22 | 360 | 0.1+ | 0.3− | 2004 02 09 | 104 | 0.2− | 0.7− |
| 2000 02 02 | 118 | 0.7+ | 0.0 | 2000 12 22 | 360 | 0.1+ | 0.3− | 2004 02 09 | 104 | 0.4− | 0.4− |
| 2000 02 02 | 118 | 0.6+ | 0.1− | 2001 01 29 | 360 | 0.1− | 0.0 | 2004 02 09 | 104 | (2.5− | 1.0+) |
| 2000 02 02 | 118 | 0.6+ | 0.0 | 2001 01 29 | 360 | 0.1+ | 0.2− | 2005 12 29 | 703 | 0.5− | 0.6− |
| 2000 02 02 | 704 | 0.1− | 0.0 | 2001 01 29 | 360 | 0.2+ | 0.1+ | 2005 12 29 | 703 | 1.3+ | 0.9− |
| 2000 02 02 | 704 | 0.1− | 0.2+ | 2002 12 01 | 711 | (4.1− | 1.0+) | 2005 12 29 | 703 | 0.8+ | 1.4− |
| 2000 02 02 | 704 | 0.7− | 0.0 | 2002 12 01 | 711 | (2.9− | 0.5+) | 2005 12 29 | 703 | 0.4− | 0.7− |
| 2000 02 02 | 704 | 0.3− | 0.2− | 2002 12 01 | 711 | 0.8− | 0.9+ | 2006 01 04 | 683 | (1.5− | 0.9−) |
| 2000 02 02 | 704 | 0.3− | 0.2+ | 2003 01 01 | 704 | 1.1+ | 0.5+ | 2006 01 04 | 683 | (2.4+ | 1.0−) |
| 2000 02 02 | 422 | 0.1+ | 0.4− | 2003 01 01 | 704 | 1.2+ | 0.5+ | 2006 01 12 | 644 | 0.1− | 0.1− |
| 2000 02 02 | 422 | 0.5− | 0.2− | 2003 01 01 | 704 | 0.3+ | 0.9+ | 2006 01 12 | 644 | 0.3− | 0.0 |
| 2000 02 02 | 422 | 0.7− | 0.3− | 2003 01 01 | 704 | 0.1− | 1.0+ | 2006 01 12 | 644 | 0.1− | 0.2− |
| 2000 02 03 | 858 | 0.2− | 0.2− | 2003 01 02 | 704 | 0.6+ | 0.6+ | 2006 01 22 | 699 | 0.5+ | 0.4+ |
| 2000 02 03 | 858 | 0.1− | 0.0 | 2003 01 02 | 704 | 0.0 | 0.4+ | 2006 01 22 | 699 | 0.5− | 0.4+ |
| 2000 02 03 | 858 | 0.1− | 0.1+ | 2003 01 02 | 704 | 0.1− | 0.5− | 2006 01 22 | 699 | 0.6+ | 0.3− |
| 2000 02 03 | 704 | 0.4+ | 0.1− | 2003 01 02 | 704 | 0.6+ | 0.5+ | 2006 01 22 | 699 | 1.1+ | 0.1+ |
| 2000 02 03 | 704 | 0.2− | 0.2− | 2003 01 26 | 699 | 0.3− | 0.0 | 2006 01 26 | 703 | 0.3− | 0.0 |
| 2000 02 03 | 704 | 0.8− | 0.3+ | 2003 01 26 | 699 | 0.9+ | 0.3+ | 2006 01 26 | 703 | 0.4− | 0.4+ |
| 2000 02 03 | 704 | 0.2+ | 0.6+ | 2003 01 26 | 699 | 0.2+ | 0.0 | 2006 01 26 | 703 | 0.5− | 0.7− |
| 2000 02 03 | 704 | 0.2− | 0.6+ | 2003 01 26 | 699 | 0.5+ | 0.1+ | 2006 01 26 | 703 | 0.6− | 0.2+ |
| 2000 02 03 | 704 | 0.1+ | 0.3+ | 2003 01 27 | 704 | 0.7+ | 1.0+ | 2006 01 26 | 703 | 0.1+ | 0.1− |
| 2000 02 03 | 704 | 0.4+ | 0.4+ | 2003 01 27 | 704 | 0.3+ | 1.1+ | 2006 01 26 | 703 | 0.1+ | 0.3− |
| 2000 02 03 | 704 | 0.0 | 0.6+ | 2003 01 27 | 704 | 0.5+ | 0.7+ | 2006 01 26 | 703 | 1.1− | 0.3+ |
| 2000 02 03 | 704 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.2+ | 1.0+ | 2006 01 26 | 703 | 0.6− | 0.0 |
| 2000 02 03 | 670 | 0.2− | 0.4− | 2003 01 27 | 704 | 0.2+ | 0.7+ | 2006 02 03 | 699 | 0.2− | 0.2− |
| 2000 02 03 | 704 | 0.1− | 0.6+ | 2003 02 01 | 704 | 0.6+ | 0.1+ | 2006 02 03 | 699 | 1.4− | 0.3− |
| 2000 02 03 | 670 | 0.4+ | 1.1− | 2003 02 01 | 704 | 0.7+ | 0.6+ | 2006 02 03 | 699 | 0.4+ | 0.4+ |
| 2000 02 03 | 422 | 0.5− | 0.2− | 2003 02 01 | 704 | 0.8+ | 0.5− | 2006 02 03 | 699 | 0.3− | 0.5− |
| 2000 02 03 | 422 | 0.9− | 0.3− | 2003 02 01 | 704 | 0.0 | 0.0 | 2006 02 04 | 704 | 0.9+ | 0.2+ |
| 2000 02 05 | 704 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.7+ | 0.2− | 2006 02 04 | 704 | 0.8+ | 0.5+ |
| 2000 02 05 | 704 | 0.2− | 0.3+ | 2003 02 01 | 113 | 0.6− | 0.7− | 2006 02 04 | 704 | 0.6+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 704 | 0.6− | 0.0 | 2003 02 01 | 113 | 0.5− | 0.3+ | 2006 02 04 | 704 | 0.1+ | 0.3+ |
| 2000 02 05 | 704 | 0.9+ | 0.5+ | 2003 02 01 | 113 | 0.3− | 0.0 | 2006 02 04 | 704 | 0.2+ | 0.3+ |
| 2000 02 05 | 704 | 0.2− | 0.3− | 2003 02 01 | 113 | 0.6− | 0.6− | 2006 02 04 | 565 | 0.9+ | 0.0 |
| 2000 02 05 | 704 | 0.1− | 0.3+ | 2003 02 01 | 113 | 0.4− | 0.9− | 2006 02 04 | 565 | (1.6+ | 0.6+) |
| 2000 02 05 | 704 | 0.1+ | 0.1+ | 2003 02 07 | 704 | (0.6+ | 3.0+) | 2006 02 06 | 084 | 0.3− | 0.6+ |
| 2000 02 05 | 704 | 0.4+ | 0.2+ | 2003 02 07 | 704 | 0.6+ | 1.0+ | 2006 02 18 | 699 | 0.4+ | 0.4− |
| 2000 02 05 | 704 | 0.6− | 0.5− | 2003 02 07 | 704 | 0.6+ | 0.6+ | 2006 02 18 | 699 | 0.2+ | 0.1+ |
| 2000 02 05 | 704 | 0.2+ | 0.3+ | 2003 02 07 | 704 | 0.1+ | 0.4+ | 2006 02 18 | 699 | 0.2+ | 0.3+ |
| 2000 02 05 | 704 | 0.3+ | 0.4+ | 2003 02 07 | 704 | 0.2+ | 0.9+ | 2006 02 18 | 699 | 0.0 | 0.3+ |
| 2000 02 05 | 704 | 0.7− | 0.2+ | 2003 02 23 | 699 | 0.4− | 0.1− | 2006 02 20 | 704 | 0.2− | 1.1+ |
| 2000 02 05 | 704 | 0.2+ | 0.7− | 2003 02 23 | 699 | 0.2− | 0.2+ | 2006 02 20 | 704 | 0.0 | 0.1− |
| 2000 02 05 | 704 | 0.6+ | 0.7+ | 2003 02 23 | 699 | 0.3− | 0.1− | 2006 02 20 | 704 | 1.2− | 0.6− |
| 2000 02 05 | 704 | 0.2− | 0.2− | 2003 02 23 | 699 | 0.3− | 0.1+ | 2006 02 20 | 704 | 0.1+ | 0.7+ |
| 2000 02 05 | 704 | 0.6− | 0.1− | 2003 02 26 | 704 | 0.2− | 0.1+ | 2006 02 20 | 704 | 0.4− | 0.4− |
| 2000 02 05 | 704 | 0.2+ | 0.9+ | 2003 02 26 | 704 | 0.6+ | 0.0 | 2006 02 22 | 699 | 0.0 | 0.6− |
| 2000 02 05 | 704 | 0.2− | 0.1+ | 2003 02 26 | 704 | 0.1+ | 0.6− | 2006 02 22 | 699 | 0.8+ | 0.1− |
| 2000 02 05 | 704 | 0.0 | 0.0 | 2003 02 26 | 704 | 0.1− | 0.6+ | 2006 02 22 | 699 | 0.4+ | 0.2− |
| 2000 02 05 | 704 | 0.3− | 0.0 | 2003 02 26 | 704 | 0.2− | 0.2+ | 2006 02 22 | 699 | 0.2+ | 0.2+ |
| 2000 02 05 | 704 | 0.2− | 0.0 | 2003 02 26 | 246 | 0.2+ | 0.2+ | 2006 02 24 | H55 | 0.3− | 0.1+ |
| 2000 02 05 | 704 | 0.2+ | 0.0 | 2003 02 26 | 246 | 0.2− | 0.2+ | 2006 02 24 | H55 | 0.5− | 0.3− |
| 2000 02 05 | 704 | 0.7+ | 0.9+ | 2003 02 26 | 246 | 0.2− | 0.3+ | 2006 02 24 | H55 | 0.4+ | 0.1+ |
| 2000 02 05 | 704 | 0.1+ | 0.6− | 2003 02 26 | 246 | 0.2− | 0.3+ | 2006 02 27 | 240 | 0.1+ | 0.1− |
| 2000 02 05 | 704 | 0.7− | 0.3+ | 2003 02 26 | 246 | 0.1+ | 0.1− | 2006 02 27 | 240 | 0.0 | 0.2− |
| 2000 02 05 | 704 | 0.9+ | 0.0 | 2003 02 26 | 246 | 0.1− | 0.1− | 2006 02 27 | 240 | 0.0 | 0.3− |
| 2000 02 05 | 704 | 0.5+ | 0.4+ | 2003 02 27 | 240 | 0.2− | 0.6+ | 2006 02 27 | 240 | 0.1+ | 0.3− |
| 2000 02 05 | 704 | 0.2− | 0.3+ | 2003 02 27 | 240 | 0.0 | 0.3+ | 2006 02 27 | 240 | 0.0 | 0.3− |
| 2000 02 05 | 704 | 0.1− | 0.5+ | 2003 02 27 | 240 | 0.0 | 0.1+ | 2006 02 27 | 240 | 0.3− | 0.3− |
| 2000 02 06 | 704 | 0.4− | 0.3+ | 2003 02 27 | 240 | 0.0 | 0.2− | 2006 02 28 | 703 | 0.4+ | 0.5+ |
| 2000 02 06 | 704 | 0.6+ | 0.3− | 2003 02 27 | 240 | 0.2− | 0.3− | 2006 02 28 | 703 | 0.1+ | 0.4+ |
| 2000 02 06 | 704 | 0.1+ | 0.4+ | 2003 03 04 | J87 | 0.3− | 0.9− | 2006 02 28 | 703 | 0.2− | 0.7+ |
| 2000 02 06 | 704 | 0.1− | 0.7+ | 2003 03 04 | J87 | 1.0− | 0.2+ | 2006 02 28 | 703 | 0.5− | 0.7+ |
| 2000 02 06 | 704 | 0.0 | 0.1− | 2003 03 04 | J87 | 0.3− | 0.0 | 2006 03 01 | 565 | 0.0 | 0.5− |
| 2000 02 06 | 704 | 0.0 | 1.0+ | 2003 03 04 | 204 | 0.8+ | 0.6− | 2006 03 01 | 565 | 0.8+ | 0.3− |
| 2000 02 06 | 704 | 0.9+ | 0.3+ | 2003 03 04 | 204 | 0.5− | 0.2− | 2006 03 01 | 565 | (1.5+ | 0.3−) |
| 2000 02 06 | 704 | 0.4− | 0.3+ | 2003 03 04 | 204 | 0.4+ | 0.4− | 2006 03 01 | 565 | 0.5+ | 0.6+ |
| 2000 02 07 | 413 | 0.3− | 0.2− | 2003 03 05 | 704 | (0.0 | 1.8+) | 2006 03 17 | 084 | 0.4− | 0.5− |
| 2000 02 07 | 413 | 0.1− | 0.1− | 2003 03 05 | 704 | 0.8− | 0.8+ | 2006 03 17 | 084 | 0.4+ | 0.4− |
| 2000 02 07 | 413 | 0.1+ | 0.3− | 2003 03 05 | 704 | 0.5− | 0.8+ | 2006 03 18 | 240 | 0.2+ | 0.4− |
| 2000 02 08 | 704 | 0.6+ | 0.5+ | 2003 03 05 | 704 | 0.8− | 0.7+ | 2006 03 18 | 240 | 0.1+ | 0.5− |
| 2000 02 08 | 704 | 0.1− | 0.6− | 2003 03 05 | 704 | (1.0− | 1.6+) | 2006 03 18 | 240 | 0.1− | 0.5− |
| 2000 02 08 | 704 | 0.1− | 0.3− | 2003 03 06 | 704 | 0.1+ | 0.0 | 2006 03 18 | 240 | 0.2− | 0.3− |
| 2000 02 08 | 704 | 0.3+ | 1.0− | 2003 03 06 | 704 | 0.6− | 0.4− | 2006 03 18 | 240 | 0.3− | 0.4− |
| 2000 02 08 | 704 | 0.5+ | 0.2− | 2003 03 06 | 704 | 0.1− | 0.3− | 2006 03 18 | 240 | 0.6− | 0.4− |
| 2000 02 11 | 704 | 0.2+ | 0.3− | 2003 03 06 | 704 | 0.0 | 0.4− | 2006 03 19 | 113 | 0.2+ | 0.2− |
| 2000 02 11 | 704 | 0.2− | 0.3+ | 2003 03 06 | 704 | 0.4+ | 0.4− | 2006 03 19 | 113 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.3+ | 0.3+ | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 03 19 | 113 | 0.5+ | 0.5− |
| 2000 02 11 | 704 | 0.4+ | 1.1+ | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 03 25 | 703 | 0.0 | 0.4+ |
| 2000 02 11 | 704 | 0.3− | 1.5+ | 2003 03 07 | 644 | 0.2+ | 0.0 | 2006 03 25 | 703 | 0.4− | 0.1+ |
| 2000 02 24 | 703 | 0.3+ | 0.7+ | 2003 03 24 | 240 | 0.5− | 0.4+ | 2006 03 25 | 703 | 0.0 | 0.1− |
| 2000 02 24 | 703 | 1.4− | 0.0 | 2003 03 24 | 240 | 0.1+ | 0.4− | 2006 03 25 | 703 | 0.0 | 0.3− |
| 2000 02 24 | 703 | 0.4− | 0.2− | 2003 03 24 | 240 | 0.1− | 0.8− | 2006 03 31 | 704 | 0.3− | 0.2+ |
| 2000 02 24 | 703 | 0.2+ | 0.3+ | 2003 03 25 | 704 | 0.2+ | 0.1+ | 2006 03 31 | 704 | 0.1− | 0.3− |
| 2000 02 24 | 413 | 0.0 | 0.7− | 2003 03 25 | 704 | 0.0 | 0.2+ | 2006 03 31 | 704 | 0.1+ | 0.1− |
| 2000 02 24 | 413 | 0.1− | 0.1− | 2003 03 25 | 704 | 0.2− | 0.6+ | 2006 03 31 | 704 | 0.2+ | 0.4+ |
| 2000 02 24 | 104 | 0.8− | 0.6− | 2003 03 25 | 704 | 0.1+ | 0.6+ | 2006 03 31 | 704 | 0.2− | 0.7+ |
| 2000 02 24 | 104 | 0.6− | 0.7− | 2003 03 25 | 704 | 0.6+ | 0.7− | 2006 05 07 | 703 | 0.7− | 0.2− |
| 2000 02 24 | 104 | 0.9− | 0.3+ | 2003 11 26 | 704 | 0.1+ | 0.6+ | 2006 05 07 | 703 | (1.4− | 1.7−) |
| 2000 02 27 | 360 | 0.5+ | 0.5− | 2003 11 26 | 704 | 0.2+ | 0.1+ | 2006 05 07 | 703 | 0.5− | 0.6− |
| 2000 02 27 | 360 | 0.1− | 0.3− | 2003 11 26 | 704 | 0.7− | 0.5+ | 2006 05 07 | 703 | 0.3+ | 1.2− |

**(137926)∗ 2000 BS$_{22}$**

Discovered 2000 Jan. 27 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 199.64871 | | (2000.0) | | | |
| $n$ | 0.23990803 | $\omega$ | 174.33417 | | −0.97079494 | −0.23968109 |
| $a$ | 2.5651112 | $\Omega$ | 351.77547 | | +0.21713214 | −0.85917384 |
| $e$ | 0.1592700 | $i$ | 4.20763 | | +0.10203343 | −0.45207664 |
| $P$ | 4.11 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.1+ | 0.0 | 2000 02 28 | 704 | 0.5+ | 0.8+ | 2004 01 26 | 699 | 0.2− | 0.3+ |
| 1996 03 12 | 691 | 0.1+ | 0.0 | 2000 03 08 | 608 | 0.6+ | 0.0 | 2004 01 26 | 699 | 0.3− | 0.0 |
| 1996 03 12 | 691 | 0.0 | 0.1− | 2000 03 08 | 608 | 0.1+ | 0.1− | 2004 01 26 | 699 | 0.1− | 0.4+ |
| 1996 03 17 | 691 | 0.1+ | 0.2− | 2000 03 08 | 608 | 0.2+ | 0.5− | 2004 01 31 | 704 | 0.3− | 1.0+ |
| 1996 03 17 | 691 | 0.1− | 0.1− | 2002 10 06 | 644 | 0.4− | 0.4+ | 2004 01 31 | 704 | 0.8+ | 0.7+ |
| 1996 03 17 | 691 | 0.0 | 0.2− | 2002 10 06 | 644 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.4− | 0.4+ |
| 1996 03 26 | 691 | 0.6− | 0.1− | 2002 10 06 | 644 | 0.1− | 0.2+ | 2004 01 31 | 704 | 0.3− | 0.5+ |
| 1996 03 26 | 691 | 0.5− | 0.4− | 2003 12 21 | 645 | 0.2− | 0.2− | 2004 01 31 | 704 | 0.5− | 0.9+ |
| 1996 03 26 | 691 | (2.2− | 0.5+) | 2003 12 21 | 645 | 0.2− | 0.1− | 2004 02 15 | 704 | 0.3+ | 0.0 |
| 2000 01 27 | 120 | 0.3− | 0.0 | 2003 12 23 | 704 | 0.7− | 0.6+ | 2004 02 15 | 704 | 0.7+ | 0.0 |
| 2000 01 27 | 120 | 1.1+ | 0.7− | 2003 12 23 | 704 | 0.5+ | 1.0+ | 2004 02 15 | 704 | 0.8+ | 0.3− |
| 2000 01 30 | 120 | 1.0− | 1.0− | 2003 12 23 | 704 | (0.7− | 1.8+) | 2004 02 15 | 704 | 0.0 | 0.1+ |
| 2000 01 30 | 120 | 0.9+ | 0.1+ | 2003 12 23 | 704 | 1.3+ | 1.0+ | 2004 02 23 | 704 | 0.2− | 0.7+ |
| 2000 02 03 | 704 | 0.4+ | 0.9+ | 2003 12 28 | 704 | 0.8+ | 0.0 | 2004 02 23 | 704 | 0.3− | 0.1+ |
| 2000 02 03 | 704 | (0.9− | 2.1+) | 2003 12 28 | 704 | 0.4+ | 0.4− | 2004 02 23 | 704 | 0.2− | 0.2+ |
| 2000 02 03 | 704 | 0.8+ | 1.0+ | 2003 12 28 | 704 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.2− |
| 2000 02 03 | 704 | (2.0− | 1.3+) | 2003 12 28 | 704 | 0.7+ | 0.3− | 2004 02 23 | 704 | 0.2− | 0.0 |
| 2000 02 09 | 120 | 1.0− | 0.4+ | 2003 12 28 | 704 | 0.2+ | 0.4− | 2006 09 16 | 691 | 0.2+ | 0.3− |
| 2000 02 09 | 120 | 0.5+ | 0.1+ | 2004 01 13 | 699 | 0.6− | 0.3+ | 2006 09 16 | 691 | 0.6− | 0.1− |
| 2000 02 11 | 704 | 0.3− | 0.2− | 2004 01 13 | 699 | 0.0 | 0.4+ | 2006 09 16 | 691 | 0.5+ | 0.2+ |
| 2000 02 11 | 704 | 0.0 | 0.2+ | 2004 01 13 | 699 | 0.5− | 0.3− | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2000 02 11 | 704 | 0.2+ | 0.4+ | 2004 01 13 | 699 | 0.3+ | 0.8− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2000 02 11 | 704 | 0.1+ | 0.2+ | 2004 01 16 | 703 | 1.0+ | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.2− |
| 2000 02 28 | 704 | 0.0 | 1.2+ | 2004 01 16 | 703 | 1.1+ | 0.6− | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2000 02 28 | 704 | 0.1− | 0.0 | 2004 01 16 | 703 | 0.9+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2000 02 28 | 704 | 0.5+ | 1.0+ | 2004 01 16 | 703 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.6− | 0.2− |
| 2000 02 28 | 704 | 0.7+ | 0.2− | 2004 01 26 | 699 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.7− |

**(137927)∗ 2000 BX$_{23}$ = 2004 DW$_{10}$**

Discovered 2000 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60586)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.18211 | | (2000.0) | | | |
| $n$ | 0.26180274 | $\omega$ | 51.77626 | | −0.00510026 | −0.99721873 |
| $a$ | 2.4200254 | $\Omega$ | 38.71562 | | +0.87630984 | −0.04027677 |
| $e$ | 0.1114365 | $i$ | 6.82762 | | +0.48172093 | +0.06271028 |
| $P$ | 3.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.7− | 0.5+ | 2004 03 14 | 704 | 0.8− | 1.2+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 1999 12 07 | 703 | 0.0 | 1.0+ | 2004 03 14 | 704 | 0.3− | 0.5+ | 2006 11 01 | 691 | 0.8− | 0.3− |
| 1999 12 07 | 703 | 1.4− | 0.8− | 2004 03 14 | 704 | 1.2− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 1999 12 07 | 703 | 0.0 | 0.9− | 2004 03 23 | 704 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2000 01 02 | 704 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2000 01 02 | 704 | 0.1− | 0.5− | 2006 09 27 | 704 | 1.5+ | 1.4+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2000 01 02 | 704 | 0.5− | 1.1− | 2006 09 27 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2000 01 02 | 704 | 0.1+ | 1.2− | 2006 09 27 | 704 | 0.5+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2000 01 29 | 704 | 0.5+ | 0.8+ | 2006 09 27 | 704 | 0.0 | 0.7− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2000 01 29 | 704 | 1.0+ | 0.3− | 2006 09 30 | 703 | (0.0 | 1.6−) | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2000 01 29 | 704 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.7− | 0.5− | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2000 01 29 | 704 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.6− | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2000 01 29 | 704 | 0.7− | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.8− | 2006 11 15 | 691 | 0.3+ | 0.3− |
| 2000 02 02 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.2− |
| 2000 02 02 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2000 02 02 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.4− |
| 2000 02 02 | 704 | 0.6+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 1.2+ |
| 2000 02 03 | 704 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.0+ | 0.4+ |
| 2000 02 03 | 704 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.5+ |
| 2000 02 03 | 704 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2000 02 03 | 704 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2000 02 03 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2002 10 02 | 608 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | (0.3+ | 1.7+) |
| 2002 10 02 | 608 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2002 10 02 | 608 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2003 12 25 | 645 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2003 12 25 | 645 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 01 29 | 703 | 0.0 | 0.8− | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 1.0− |
| 2004 01 29 | 703 | 1.0+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2004 01 29 | 703 | 0.1+ | 1.1− | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.5− |
| 2004 01 29 | 703 | 0.0 | 0.6− | 2006 10 23 | 704 | 1.3− | 0.5− | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2004 02 16 | 704 | 1.1+ | 0.1− | 2006 10 23 | 704 | 0.1+ | 0.8− | 2006 11 21 | 704 | 0.5− | 0.4+ |
| 2004 02 16 | 704 | 1.0+ | 0.2− | 2006 10 23 | 704 | 1.5+ | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2004 02 16 | 704 | 1.3+ | 0.3− | 2006 10 23 | 704 | 1.2+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2004 02 16 | 704 | (2.5+ | 1.1−) | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2004 02 16 | 704 | 1.5+ | 0.7− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 26 | 704 | 0.4− | 1.1− |
| 2004 02 18 | 704 | 1.1+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 26 | 704 | 0.2− | 0.2+ |
| 2004 02 18 | 704 | 0.7+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 26 | 704 | 0.5− | 0.4− |
| 2004 02 18 | 704 | 1.2+ | 0.3− | 2006 10 28 | 691 | 0.4− | 0.3+ | 2006 11 26 | 958 | 0.8+ | 0.6− |
| 2004 02 18 | 704 | 0.3− | 0.7+ | 2006 10 28 | 691 | 0.7− | 0.3+ | 2006 11 26 | 958 | 0.5+ | 0.8− |
| 2004 02 19 | 704 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.3− | 0.4+ | 2006 11 26 | 958 | 0.7+ | 0.6+ |
| 2004 02 19 | 704 | 0.4− | 0.2− | 2006 10 28 | 704 | (1.3+ | 1.6+) | 2006 11 27 | 703 | 0.3− | 0.9+ |
| 2004 02 19 | 704 | 0.1− | 0.3+ | 2006 10 28 | 704 | 1.3− | 0.4− | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2004 02 19 | 704 | 0.1− | 0.5+ | 2006 10 28 | 704 | 0.7+ | 1.2− | 2006 11 27 | 703 | 0.6− | 0.8+ |
| 2004 02 19 | 704 | 0.3− | 0.4+ | 2006 10 28 | 704 | 0.1+ | 1.1+ | 2006 11 27 | 703 | 0.6− | 0.3− |
| 2004 03 14 | 704 | 0.4− | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | | | | |

**(137928)∗ 2000 BO$_{24}$ = 2002 RT$_{114}$**

Discovered 2000 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34875)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.24776 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25335630 | $\omega$ | 94.45592 | | −0.49255780 | | −0.86561970 |
| $a$ | 2.4735171 | $\Omega$ | 25.67434 | | +0.69323233 | | −0.45273127 |
| $e$ | 0.1299832 | $i$ | 11.98133 | | +0.52613282 | | −0.21386193 |
| $P$ | 3.89 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.5+ | 0.1+ | 2004 01 31 | 704 | 0.1+ | 0.5− | 2006 09 26 | 704 | 1.1− | 0.4+ |
| 2000 01 29 | 704 | 0.2− | 0.4− | 2004 01 31 | 704 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.3+ | 0.6− |
| 2000 01 29 | 704 | 0.4− | 0.2− | 2004 01 31 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.6− |
| 2000 01 29 | 704 | 0.5− | 0.2+ | 2004 01 31 | 704 | 0.8+ | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2000 01 29 | 704 | 0.8− | 0.6− | 2004 01 31 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.6− |
| 2000 02 02 | 704 | 0.0 | 0.6− | 2004 02 15 | 704 | 0.0 | 0.6− | 2006 10 01 | 704 | 0.2+ | 0.8+ |
| 2000 02 02 | 704 | 0.4− | 0.7+ | 2004 02 15 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.3− | 0.7+ |
| 2000 02 02 | 704 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.4+ | 0.7+ | 2006 10 01 | 704 | 0.7+ | 0.3− |
| 2000 02 02 | 704 | 0.1− | 0.1− | 2004 02 15 | 704 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.3+ | 2004 03 14 | 704 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2000 02 03 | 704 | 0.6+ | 1.1− | 2004 03 14 | 704 | 0.1+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2000 02 03 | 704 | 0.4+ | 0.4− | 2004 03 14 | 704 | 0.0 | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2000 02 03 | 704 | 0.5− | 0.6− | 2004 03 14 | 704 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2000 02 03 | 704 | 0.3− | 0.4− | 2004 03 23 | 704 | 0.0 | 1.4+ | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2000 02 03 | 704 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.3− | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2000 02 11 | 704 | 0.4− | 0.1− | 2004 03 23 | 704 | (0.6− | 1.5+) | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2000 02 11 | 704 | 0.2+ | 0.4− | 2004 03 25 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.7+ | 0.1− |
| 2000 02 11 | 704 | 0.3+ | 0.0 | 2004 03 25 | 704 | 0.1+ | 0.5− | 2006 10 19 | 644 | 0.7+ | 0.1− |
| 2000 02 11 | 704 | 0.6+ | 0.1+ | 2004 03 25 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 09 05 | 599 | 0.2+ | 0.3+ | 2004 03 25 | 704 | 0.2+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.5− |
| 2002 09 06 | 599 | 0.1− | 0.0 | 2004 03 25 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 09 06 | 599 | 0.0 | 0.0 | 2004 04 14 | 704 | 0.9− | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 09 06 | 599 | 0.4− | 0.3+ | 2004 04 14 | 704 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2002 09 08 | 608 | (0.1+ | 1.8+) | 2004 04 14 | 704 | 0.4+ | 1.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 09 08 | 608 | 0.2+ | 1.1+ | 2004 04 14 | 704 | 1.0− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 09 08 | 608 | 0.3− | 1.0+ | 2004 04 14 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 09 16 | 644 | 0.7− | 0.4+ | 2006 09 16 | 704 | 0.4+ | 0.9+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2002 09 16 | 644 | 0.3− | 0.2− | 2006 09 16 | 704 | 0.4− | 1.2+ | 2006 11 14 | G96 | 0.6+ | 0.6− |
| 2002 09 16 | 644 | 0.5− | 0.3+ | 2006 09 16 | 704 | 0.5− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.1+ |
| 2002 09 16 | 644 | 0.7− | 0.5+ | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2002 09 16 | 644 | 1.1− | 0.4+ | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 11 21 | G96 | 0.4+ | 0.5− |
| 2002 09 16 | 644 | 0.7− | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.8− |
| 2004 01 02 | 704 | 0.0 | 1.4+ | 2006 09 18 | 703 | 0.6− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.6− |
| 2004 01 02 | 704 | (1.6+ | 0.1−) | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.7− |
| 2004 01 02 | 704 | 0.8+ | 0.5+ | 2006 09 26 | 704 | 1.4− | 1.5+ | | | | |
| 2004 01 02 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 1.1+ | | | | |

**(137929)∗ 2000 BG$_{26}$ = 2004 DW$_{61}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 60587)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.45028 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26370652 | $\omega$ | 128.74094 | | −0.98749307 | | +0.15144821 |
| $a$ | 2.4083641 | $\Omega$ | 60.01017 | | −0.15574639 | | −0.89383706 |
| $e$ | 0.1357494 | $i$ | 2.90057 | | −0.02450511 | | −0.42204117 |
| $P$ | 3.74 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 704 | 0.1+ | 0.2− | 2004 03 17 | 333 | 0.5− | 0.2+ | 2004 05 17 | 704 | 0.8− | 1.2+ |
| 2000 01 30 | 704 | 0.2− | 0.1− | 2004 03 17 | 333 | 0.1+ | 0.1+ | 2004 05 21 | 704 | 0.9+ | 0.6− |
| 2000 01 30 | 704 | 0.4− | 0.8− | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2004 05 21 | 704 | 0.0 | 0.6+ |
| 2000 02 02 | 704 | 0.7− | 0.4+ | 2004 03 19 | 704 | 0.8+ | 0.2+ | 2004 05 21 | 704 | 1.2+ | 0.2+ |
| 2000 02 02 | 704 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.1+ | 0.4− | 2004 05 21 | 704 | 0.5+ | 0.7+ |
| 2000 02 02 | 704 | 0.9− | 0.2− | 2004 03 19 | 704 | 1.0+ | 0.1+ | 2004 05 21 | 704 | 0.0 | 0.3+ |
| 2000 02 02 | 704 | 0.3+ | 0.1− | 2004 03 19 | 704 | 1.0+ | 0.4+ | 2005 08 04 | 644 | 0.2+ | 1.0+ |
| 2000 02 02 | 704 | 0.6+ | 0.8− | 2004 03 21 | 699 | 0.7− | 0.2+ | 2005 08 04 | 644 | 0.3+ | 0.7+ |
| 2000 02 03 | 704 | 0.8− | 0.4− | 2004 03 21 | 699 | 0.4− | 0.1− | 2005 08 04 | 644 | 0.1+ | 0.6+ |
| 2000 02 03 | 704 | 1.1+ | 0.8− | 2004 03 21 | 699 | 0.4− | 0.7+ | 2005 08 30 | 644 | 0.3− | 0.3+ |
| 2000 02 03 | 704 | 0.5− | 0.1− | 2004 03 21 | 699 | 0.1− | 0.7− | 2005 08 30 | 644 | 0.1− | 0.7+ |
| 2000 02 03 | 704 | 0.2+ | 0.5− | 2004 03 22 | 704 | 0.3+ | 0.3− | 2005 08 30 | 644 | 0.4− | 1.0+ |
| 2000 03 04 | 704 | 0.1+ | 0.8+ | 2004 03 22 | 704 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2000 03 04 | 704 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.7+ | 0.4− | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2000 03 04 | 704 | 0.7+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2000 03 04 | 704 | 0.1+ | 0.5− | 2004 03 22 | 704 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2001 07 20 | 644 | 0.5− | 0.5+ | 2004 03 24 | 699 | 0.5− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2001 07 20 | 644 | 0.2− | 0.7+ | 2004 03 24 | 699 | 0.9− | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2001 07 20 | 644 | 0.5− | 0.4+ | 2004 03 24 | 699 | 0.8− | 1.0− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2003 12 19 | 691 | 0.3+ | 0.4− | 2004 03 24 | 699 | 0.1− | 0.0 | 2006 10 28 | G96 | 1.3− | 0.1+ |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.8− |
| 2003 12 19 | 691 | 0.0 | 0.3− | 2004 03 28 | 704 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.8− |
| 2004 02 23 | 704 | 1.4+ | 1.2+ | 2004 03 30 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2004 02 23 | 704 | 0.4+ | 0.7+ | 2004 03 30 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 02 23 | 704 | 1.1+ | 0.1+ | 2004 03 30 | 691 | 0.3− | 0.2− | 2006 11 18 | 704 | 1.4− | 1.0− |
| 2004 02 23 | 704 | 0.0 | 1.1+ | 2004 04 10 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.9− |
| 2004 02 23 | 704 | 0.5+ | 0.1− | 2004 04 10 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 1.0− | 1.3− |
| 2004 02 26 | 683 | 0.2− | 0.1− | 2004 04 10 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.4− |
| 2004 02 26 | 683 | 0.9+ | 0.0 | 2004 04 12 | 699 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2004 02 26 | 683 | 0.5− | 0.1+ | 2004 04 12 | 699 | 0.5− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2004 02 29 | 683 | (0.3− | 1.6+) | 2004 04 12 | 699 | 0.6− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2004 02 29 | 683 | 0.5+ | 1.5+ | 2004 04 12 | 699 | 0.4+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2004 02 29 | 683 | 0.5− | 0.3+ | 2004 04 15 | 704 | 0.3− | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 03 15 | 333 | 0.4− | 0.0 | 2004 04 15 | 704 | 0.1− | 0.7+ | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2004 03 15 | 333 | 0.2− | 0.1− | 2004 04 15 | 704 | 0.8− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 03 15 | 333 | 0.4− | 0.1+ | 2004 04 19 | 704 | 0.5+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 03 16 | 704 | (2.0+ | 0.8+) | 2004 04 19 | 704 | 0.9+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.9+ | 0.8+ | 2004 04 19 | 704 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 03 16 | 704 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.1− | 0.4+ | 2006 12 01 | 691 | 0.0 | 0.4+ |
| 2004 03 16 | 704 | 0.2+ | 0.3+ | 2004 05 17 | 704 | 0.0 | 0.9+ | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2004 03 17 | 333 | 0.3− | 0.2+ | 2004 05 17 | 704 | 0.7+ | 1.4+ | 2006 12 01 | 691 | 0.1− | 0.5+ |

**(137930)∗ 2000 BN$_{26}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.79561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26161494 | $\omega$ | 108.46227 | | −0.87703170 | −0.47933191 | |
| $a$ | 2.4211834 | $\Omega$ | 42.91200 | | +0.42081594 | −0.79908072 | |
| $e$ | 0.1324140 | $i$ | 2.73602 | | +0.23179591 | −0.36292000 | |
| $P$ | 3.77 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 1.9− | 0.2− | 2004 03 15 | 333 | 0.3− | 0.3− | 2004 04 25 | 691 | 0.1− | 0.0 |
| 1999 12 08 | 704 | 0.5+ | 0.5+ | 2004 03 16 | 333 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 1999 12 08 | 704 | 0.6+ | 0.9− | 2004 03 16 | 704 | 0.5+ | 0.8− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2000 01 04 | 704 | 0.5− | 0.4− | 2004 03 16 | 333 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.2− |
| 2000 01 04 | 704 | 0.3+ | 0.6− | 2004 03 16 | 704 | (1.8+ | 0.1−) | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2000 01 04 | 704 | 0.4+ | 1.0− | 2004 03 16 | 333 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2000 01 04 | 704 | 0.2+ | 0.3+ | 2004 03 16 | 704 | 0.7+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2000 01 04 | 704 | 0.9− | 1.2− | 2004 03 16 | 704 | 1.0+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2000 01 30 | 704 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.6+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 01 30 | 704 | 0.2+ | 0.0 | 2004 03 16 | 333 | 0.2− | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2000 01 30 | 704 | 0.1− | 1.2− | 2004 03 16 | 333 | 0.0 | 0.7− | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2000 01 30 | 704 | 0.3+ | 0.5− | 2004 03 19 | 704 | 0.7+ | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2000 02 03 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2000 02 03 | 704 | 0.6+ | 0.7+ | 2004 03 19 | 704 | 0.5+ | 0.9− | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 2000 02 03 | 704 | 0.7+ | 0.8+ | 2004 03 19 | 704 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.2+ |
| 2000 02 03 | 704 | 0.5+ | 0.7+ | 2004 03 19 | 704 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.0 | 0.4+ |
| 2000 02 03 | 704 | 0.9+ | 0.5+ | 2004 03 21 | 608 | 0.2− | 0.1+ | 2006 11 12 | 703 | 0.1+ | 0.8− |
| 2000 02 11 | 704 | 0.1− | 0.3− | 2004 03 21 | 608 | 0.4− | 0.3+ | 2006 11 12 | 703 | 1.2− | 0.3+ |
| 2000 02 11 | 704 | 0.0 | 0.2− | 2004 03 21 | 608 | 0.1+ | 0.0 | 2006 11 12 | 703 | 0.1+ | 0.5+ |
| 2000 02 11 | 704 | 0.5− | 0.2− | 2004 03 21 | 608 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 0.1+ | 0.1− | 2004 03 21 | 608 | 0.0 | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2000 02 26 | 703 | 0.2+ | 0.4+ | 2004 03 21 | 608 | 0.3+ | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2000 02 26 | 703 | (2.7− | 0.4+) | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2000 02 26 | 703 | 0.9− | 0.8+ | 2004 03 22 | 704 | 0.2− | 0.3− | 2006 11 13 | 644 | 0.4− | 0.1− |
| 2000 02 26 | 703 | 1.3− | 0.5+ | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2000 03 04 | 704 | (1.1+ | 3.5+) | 2004 03 22 | 704 | 0.2− | 0.6− | 2006 11 13 | 644 | 0.7− | 1.4+ |
| 2000 03 04 | 704 | (0.4− | 2.3+) | 2004 03 22 | 704 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2000 03 04 | 704 | (1.7− | 2.5+) | 2004 03 28 | 704 | 0.5− | 1.0+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.4− | 1.3+ | 2004 03 28 | 704 | 0.2− | 0.4+ | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 1.1− | 0.1+ | 2004 03 28 | 704 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2004 03 28 | 704 | 0.6− | 0.0 | 2006 11 17 | 704 | 0.0 | 0.2− |
| 2002 10 30 | 644 | 0.1− | 0.6+ | 2004 03 28 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.7+ | 0.1+ |
| 2002 10 30 | 644 | 0.4− | 0.5+ | 2004 04 12 | 699 | 0.4+ | 0.1− | 2006 11 17 | 704 | 1.3− | 1.4+ |
| 2002 10 30 | 644 | 0.6+ | 0.8+ | 2004 04 12 | 699 | 0.3− | 0.8+ | 2006 11 17 | 703 | 0.8− | 0.7− |
| 2002 11 07 | 695 | 0.2− | 0.2+ | 2004 04 12 | 699 | 1.3− | 0.5+ | 2006 11 17 | 703 | 0.3+ | 0.5+ |
| 2002 11 07 | 695 | 0.0 | 0.0 | 2004 04 12 | 699 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2004 02 13 | 644 | 0.5+ | 0.1+ | 2004 04 15 | 699 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2004 02 13 | 644 | 0.1+ | 0.0 | 2004 04 15 | 699 | 0.7− | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.9− |
| 2004 02 13 | 644 | 0.1− | 0.1− | 2004 04 15 | 704 | 0.8+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.9+ |
| 2004 02 19 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 704 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2004 02 19 | 704 | 0.3− | 0.6− | 2004 04 15 | 699 | 0.7+ | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2004 02 19 | 704 | 0.1+ | 0.0 | 2004 04 15 | 704 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2004 02 19 | 704 | 0.0 | 0.2+ | 2004 04 15 | 699 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2004 02 19 | 704 | 0.5− | 0.5+ | 2004 04 15 | 704 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.6− | 0.7+ |
| 2004 02 23 | 704 | 0.5+ | 0.2+ | 2004 04 15 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2004 02 23 | 704 | 0.8+ | 0.4+ | 2004 04 19 | 704 | 1.0+ | 0.8+ | 2006 11 27 | 703 | 0.0 | 0.4+ |
| 2004 02 23 | 704 | 0.4+ | 0.1+ | 2004 04 19 | 704 | 0.8+ | 0.2− | 2006 11 27 | 703 | 0.5− | 0.8− |
| 2004 02 23 | 704 | 0.1− | 0.2− | 2004 04 19 | 704 | 0.6+ | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.1− |
| 2004 02 23 | 704 | 0.0 | 0.6+ | 2004 04 19 | 704 | 0.5+ | 0.1+ | 2006 11 27 | 703 | 0.7+ | 0.5+ |
| 2004 03 15 | 333 | 0.7− | 0.4− | 2004 04 19 | 704 | 0.6− | 0.6− | 2006 12 01 | G96 | 0.1+ | 0.8− |
| 2004 03 15 | 333 | 0.7− | 0.4− | 2004 04 22 | 704 | (1.7+ | 0.1−) | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 333 | 0.5− | 0.3− | 2004 04 22 | 704 | 0.4+ | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 703 | 1.3− | 0.4+ | 2004 04 22 | 704 | 0.0 | 0.7+ | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2004 03 15 | 703 | 0.3− | 0.3+ | 2004 04 22 | 704 | 0.9+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2004 03 15 | 703 | 0.2− | 0.3− | 2004 04 22 | 704 | 0.1− | 0.8+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2004 03 15 | 703 | 0.4− | 0.6+ | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2004 03 15 | 333 | 0.2+ | 0.3− | 2004 04 25 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.8+ | 0.7− |

**(137931)∗ 2000 BY$_{26}$ = 2002 RP$_{208}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37292)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.51385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26246464 | $\omega$ | 108.24134 | | −0.18092178 | −0.98348086 | |
| $a$ | 2.4159550 | $\Omega$ | 352.17546 | | +0.88572892 | −0.16040627 | |
| $e$ | 0.1556885 | $i$ | 2.40752 | | +0.42749454 | −0.08387624 | |
| $P$ | 3.76 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 704 | 0.4+ | 1.1+ | 2002 09 16 | 291 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.5+ |
| 2000 01 30 | 704 | 1.3+ | 0.5− | 2002 09 16 | 291 | 0.4+ | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.1− |
| 2000 01 30 | 704 | 0.4− | 0.6+ | 2002 09 29 | 608 | 0.8− | 0.6+ | 2004 03 27 | 704 | 0.7+ | 0.2+ |
| 2000 01 30 | 704 | 0.2+ | 0.5− | 2002 09 29 | 608 | 0.7− | 0.7+ | 2004 03 27 | 704 | 0.4+ | 0.0 |
| 2000 01 30 | 703 | 0.3+ | 0.8+ | 2002 09 29 | 608 | 0.3− | 0.2+ | 2004 03 27 | 704 | 1.1+ | 0.1+ |
| 2000 01 30 | 703 | 0.7− | 1.0− | 2002 09 30 | 704 | 0.9− | 1.1+ | 2004 03 28 | 291 | 0.2+ | 0.4+ |
| 2000 01 30 | 703 | 0.3− | 0.8+ | 2002 09 30 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 291 | 0.1+ | 0.4+ |
| 2000 01 30 | 703 | 0.1− | 0.3+ | 2002 09 30 | 704 | (1.2+ | 1.8+) | 2004 03 28 | 291 | 0.1+ | 0.4+ |
| 2000 02 03 | 704 | 0.1− | 0.0 | 2002 10 02 | 704 | 0.3− | 0.8+ | 2004 03 29 | 691 | 0.2+ | 0.5+ |
| 2000 02 03 | 704 | 0.4− | 0.1− | 2002 10 02 | 704 | 0.6+ | 0.8+ | 2004 03 29 | 691 | 0.0 | 0.6+ |
| 2000 02 03 | 704 | 0.3− | 0.1+ | 2002 10 02 | 704 | 0.4− | 1.0+ | 2004 03 29 | 691 | 0.2+ | 0.7+ |
| 2000 02 03 | 704 | 0.1+ | 0.1− | 2002 10 02 | 704 | 0.0 | 1.5+ | 2004 03 31 | 691 | 0.0 | 0.4+ |
| 2000 02 03 | 704 | 0.1+ | 0.2+ | 2002 10 03 | 704 | 0.5− | 0.6+ | 2004 03 31 | 691 | 0.2− | 0.4+ |
| 2000 02 09 | 120 | 0.4− | 0.4− | 2002 10 03 | 704 | 0.3− | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.3+ |
| 2000 02 09 | 120 | 1.3− | 1.0− | 2002 10 03 | 704 | 1.0− | 0.5+ | 2004 04 15 | 644 | 0.2+ | 0.9+ |
| 2000 02 10 | 120 | 0.1− | 0.5− | 2002 10 03 | 704 | (1.6− | 1.6+) | 2004 04 15 | 644 | 0.1+ | 0.4+ |
| 2000 02 10 | 120 | 0.7− | 0.5− | 2002 10 03 | 704 | 0.2− | 0.5+ | 2004 04 15 | 644 | 0.1+ | 0.4+ |
| 2000 02 11 | 704 | 1.1− | 0.0 | 2002 10 04 | 644 | 0.5− | 1.1+ | 2004 04 16 | 704 | (1.7+ | 1.1+) |
| 2000 02 11 | 704 | 0.7− | 0.6− | 2002 10 04 | 644 | 0.3− | 0.8+ | 2004 04 16 | 704 | 0.1+ | 0.7+ |
| 2000 02 11 | 704 | 1.1− | 0.4+ | 2002 10 04 | 644 | 0.2− | 1.3+ | 2004 04 16 | 704 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.8− | 0.0 | 2002 10 06 | 608 | 1.3− | 0.2− | 2004 04 16 | 704 | 0.4+ | 0.6− |
| 2000 02 11 | 704 | 1.0− | 0.3+ | 2002 10 06 | 608 | 1.0− | 0.9− | 2004 04 25 | 691 | 0.2+ | 0.3+ |
| 2000 02 27 | 703 | 0.4+ | 0.1+ | 2002 10 06 | 608 | 1.1− | 0.5− | 2004 04 25 | 691 | 0.1+ | 0.2+ |
| 2000 02 27 | 703 | 0.1+ | 0.2+ | 2002 10 07 | 704 | 1.0− | 1.1+ | 2004 04 25 | 691 | 0.1+ | 0.4+ |
| 2000 02 27 | 703 | 0.2+ | 0.1− | 2002 10 07 | 704 | 0.0 | 1.3+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2000 02 27 | 703 | 0.3+ | 0.5+ | 2002 10 07 | 704 | 0.5+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2000 02 29 | 704 | 0.4− | 0.5− | 2002 10 07 | 704 | 0.1+ | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2000 02 29 | 704 | 0.2− | 0.0 | 2002 10 11 | 704 | (0.2− | 6.1−) | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2000 02 29 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.6+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2000 02 29 | 704 | 0.4− | 0.2+ | 2002 10 11 | 704 | (0.1+ | 6.1−) | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 2000 02 29 | 704 | 0.7+ | 1.8+ | 2002 10 11 | 704 | 0.1− | 1.4+ | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 2000 03 03 | 704 | 0.2− | 0.1− | 2002 10 11 | 704 | (0.4+ | 5.1−) | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2000 03 03 | 704 | 0.2− | 0.2− | 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 10 11 | 691 | 0.2− | 0.0 |
| 2000 03 03 | 704 | 0.7+ | 0.5+ | 2002 10 11 | 704 | (0.4+ | 5.8−) | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.0 |
| 2000 03 03 | 704 | 0.5+ | 0.3− | 2002 10 11 | 704 | (0.1− | 6.3−) | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2000 03 04 | 704 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2000 03 04 | 704 | 0.9+ | 0.1+ | 2002 10 11 | 291 | 0.6− | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2000 03 04 | 704 | 0.7+ | 0.5− | 2002 10 11 | 291 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.6− | 0.0 |
| 2000 03 04 | 704 | 1.5+ | 0.2− | 2002 10 11 | 291 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2000 03 04 | 704 | 1.0+ | 0.1+ | 2002 10 30 | 645 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2000 03 05 | 704 | 0.2+ | 0.0 | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2000 03 05 | 704 | 0.0 | 0.0 | 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2000 03 05 | 704 | 0.6− | 0.6− | 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2000 03 05 | 704 | 0.7+ | 0.6+ | 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.4+ | 0.7+ |
| 2000 03 05 | 704 | 0.5− | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.1− | 2006 10 29 | 704 | 0.3+ | 0.2+ |
| 2000 03 05 | 704 | 1.7+ | 0.5+ | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 10 29 | 704 | 0.4+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.8− | 0.3− | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 10 29 | 704 | (1.6− | 0.2−) |
| 2000 03 05 | 704 | 0.5+ | 0.6+ | 2004 02 26 | 704 | (2.2+ | 0.1+) | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 03 05 | 704 | 0.7− | 0.1+ | 2004 03 15 | 703 | 0.7+ | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2000 03 05 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 703 | 0.1+ | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2000 03 05 | 704 | 0.4− | 0.6+ | 2004 03 15 | 703 | 0.2− | 0.8+ | 2006 11 13 | 644 | 0.3− | 0.4− |
| 2000 03 05 | 704 | 0.3− | 0.5+ | 2004 03 15 | 703 | 0.6+ | 1.1+ | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2000 03 05 | 704 | 1.7− | 0.3+ | 2004 03 16 | 704 | 0.3+ | 0.7− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 03 05 | 704 | 0.1+ | 0.6+ | 2004 03 16 | 704 | 0.1− | 0.8− | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2000 03 06 | 704 | 1.0+ | 1.3+ | 2004 03 16 | 704 | 0.6+ | 0.0 | 2006 11 14 | 703 | 1.4+ | 1.2− |
| 2000 03 06 | 704 | 0.1+ | 0.4− | 2004 03 16 | 704 | 1.0+ | 0.6− | 2006 11 14 | 703 | 0.7+ | 1.3− |
| 2000 03 06 | 704 | 0.5+ | 0.4− | 2004 03 16 | 704 | 0.8+ | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.5− |
| 2000 03 06 | 704 | 0.1− | 0.2− | 2004 03 16 | 608 | 0.1− | 0.6− | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2000 03 06 | 704 | 0.2− | 0.1− | 2004 03 16 | 608 | 0.5− | 0.6− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2000 03 06 | 704 | 0.6+ | 1.6− | 2004 03 16 | 608 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2000 03 06 | 704 | 0.3− | 0.1− | 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2000 03 06 | 704 | 0.3− | 0.6− | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2000 03 26 | 699 | 1.4+ | 0.1− | 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2000 03 26 | 699 | 0.4+ | 0.7+ | 2004 03 18 | 704 | (0.1+ | 2.1−) | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2000 03 26 | 699 | 1.3+ | 0.2+ | 2004 03 18 | 704 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2000 03 26 | 699 | 0.4+ | 0.7+ | 2004 03 18 | 704 | 0.8− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2002 09 13 | 291 | 0.4− | 0.6+ | 2004 03 20 | 699 | 0.3+ | 1.1+ | 2006 11 22 | 704 | 0.2+ | 0.6− |
| 2002 09 13 | 291 | 0.2− | 0.6+ | 2004 03 20 | 699 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2002 09 13 | 291 | 0.1− | 0.7+ | 2004 03 20 | 699 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.5+ | 0.6+ |
| 2002 09 14 | 644 | 0.0 | 1.0+ | 2004 03 20 | 699 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2004 03 21 | 699 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.9+ | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 03 21 | 699 | 0.9+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2002 09 15 | 683 | (0.3− | 2.2+) | 2004 03 21 | 699 | 0.4+ | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2002 09 15 | 683 | 0.0 | 0.6+ | 2004 03 21 | 699 | 0.8− | 0.2− | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2002 09 15 | 683 | (2.3+ | 0.5+) | 2004 03 26 | 699 | 0.2− | 0.8+ | 2006 11 29 | 704 | 0.5− | 0.1− |
| 2002 09 16 | 291 | 0.1− | 0.4+ | 2004 03 26 | 699 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.4+ |

**(137932)∗ 2000 BS$_{28}$ = 1993 FJ$_{14}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.39067 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26942089 | $\omega$ | 87.17058 | | −0.99567846 | −0.07055620 | |
| $a$ | 2.3741886 | $\Omega$ | 88.77831 | | +0.04078551 | −0.91637736 | |
| $e$ | 0.1351171 | $i$ | 3.46264 | | +0.08343227 | −0.39404867 | |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 1.1− | 0.3− | 2004 03 21 | 691 | 0.2+ | 0.0 | 2004 04 20 | 704 | 0.0 | 0.1+ |
| 1993 03 18 | 809 | 0.3+ | 0.6− | 2004 03 21 | 691 | 0.1− | 0.2+ | 2004 04 20 | 704 | 0.3− | 0.5+ |
| 1993 03 23 | 809 | 0.5− | 0.1+ | 2004 03 22 | 704 | 0.7+ | 0.3+ | 2004 04 20 | 704 | 0.8+ | 0.1+ |
| 2000 01 13 | 699 | 0.6− | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 704 | 0.2− | 0.4+ |
| 2000 01 13 | 699 | 0.5+ | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.2+ | 2004 04 22 | 704 | 0.3− | 0.9+ |
| 2000 01 13 | 699 | 0.6+ | 0.7− | 2004 03 22 | 704 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.1+ | 0.1+ |
| 2000 01 30 | 704 | 0.3− | 0.0 | 2004 03 22 | 704 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.3+ | 0.8+ |
| 2000 01 30 | 704 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 0.2+ | 0.1+ | 2004 04 22 | 704 | 0.4− | 0.3+ |
| 2000 01 30 | 704 | 1.1+ | 0.3− | 2004 03 28 | 704 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.8− | 0.4− |
| 2000 02 05 | 704 | 0.3− | 0.2+ | 2004 03 28 | 704 | 0.2− | 0.1+ | 2004 04 25 | 699 | 0.7− | 0.0 |
| 2000 02 05 | 704 | 0.7+ | 0.5+ | 2004 03 28 | 704 | 0.0 | 0.3+ | 2004 04 25 | 699 | 0.2− | 1.0+ |
| 2000 02 05 | 704 | 0.3+ | 0.3− | 2004 03 28 | 704 | 0.3+ | 0.3+ | 2004 04 25 | 699 | 0.2+ | 0.3+ |
| 2000 02 05 | 704 | 0.2− | 0.0 | 2004 03 30 | 703 | 0.2+ | 0.1− | 2004 04 25 | 699 | 0.1− | 0.1+ |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2004 03 30 | 703 | 1.4+ | 0.5+ | 2005 08 04 | 644 | 0.4− | 0.6+ |
| 2004 03 12 | 644 | 0.2− | 0.1+ | 2004 03 30 | 703 | 0.5+ | 0.5+ | 2005 08 04 | 644 | 0.3− | 0.8+ |
| 2004 03 12 | 644 | 0.2− | 0.0 | 2004 03 30 | 703 | 1.3+ | 0.2+ | 2005 08 04 | 644 | 0.3− | 1.0+ |
| 2004 03 14 | 691 | 0.3− | 0.0 | 2004 04 12 | 683 | 0.7− | 1.3− | 2005 08 05 | 644 | 0.1− | 0.7+ |
| 2004 03 14 | 691 | 0.3− | 0.0 | 2004 04 12 | 683 | 0.4− | 0.3− | 2005 08 05 | 644 | 0.0 | 1.0+ |
| 2004 03 14 | 691 | 0.2− | 0.0 | 2004 04 12 | 683 | 0.2− | 0.2− | 2005 08 05 | 644 | 0.0 | 0.8+ |
| 2004 03 16 | 704 | 0.6+ | 0.4+ | 2004 04 13 | 683 | (1.2− | 1.6−) | 2006 11 19 | 691 | 0.3− | 0.1− |
| 2004 03 16 | 704 | 0.4+ | 0.5+ | 2004 04 13 | 683 | 0.3+ | 1.0− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2004 03 16 | 704 | 0.0 | 0.3+ | 2004 04 13 | 683 | 1.1+ | 1.4− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 0.3− | 0.3+ | 2004 04 15 | 683 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2004 03 20 | 704 | 1.2+ | 0.4− | 2004 04 15 | 683 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2004 03 20 | 704 | 0.6+ | 1.0+ | 2004 04 15 | 683 | 0.5+ | 0.4− | 2006 11 23 | 691 | 1.0− | 0.3− |
| 2004 03 20 | 704 | 0.7− | 0.1− | 2004 04 16 | 683 | 0.2+ | 1.2− | 2006 11 27 | 691 | 1.0+ | 0.2− |
| 2004 03 20 | 704 | 0.8+ | 0.1− | 2004 04 16 | 683 | 0.8− | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2004 03 20 | 704 | 0.4− | 0.0 | 2004 04 16 | 683 | (0.6+ | 1.6−) | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2004 03 21 | 691 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.2+ | | | | |

**(137933)∗ 2000 BH$_{32}$ = 2002 RW$_{189}$**

Discovered 2000 Jan. 28 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37293)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.27107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26763221 | $\omega$ | 138.24623 | | +0.05395099 | −0.99801847 | |
| $a$ | 2.3847552 | $\Omega$ | 308.63545 | | +0.90481545 | +0.06257726 | |
| $e$ | 0.1621611 | $i$ | 2.37569 | | +0.42237221 | −0.00657427 | |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 15 | 691 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.4+ | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 1991 09 15 | 691 | 0.1+ | 0.4− | 2004 03 20 | 704 | (0.0 | 1.5+) | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 1991 09 15 | 691 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2000 01 06 | 704 | 0.0 | 0.7− | 2004 03 27 | 704 | 1.0+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2000 01 06 | 704 | 0.1+ | 0.6− | 2004 03 27 | 704 | 1.0+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2000 01 06 | 704 | 0.9− | 0.5− | 2004 03 27 | 704 | (0.2+ | 1.5+) | 2006 11 01 | G96 | 0.5+ | 0.1− |
| 2000 01 28 | 691 | 0.5− | 0.5− | 2004 03 30 | 691 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2000 01 28 | 691 | 0.5− | 0.0 | 2004 03 30 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2000 01 28 | 691 | 0.5− | 0.0 | 2004 03 30 | 691 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2000 02 03 | 704 | 0.1− | 1.1− | 2004 03 31 | 691 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2000 02 03 | 704 | 0.3+ | 0.6+ | 2004 03 31 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 408 | 1.0− | 0.5+ |
| 2000 02 03 | 704 | 0.7+ | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 408 | 0.6− | 0.4+ |
| 2000 02 03 | 704 | 0.1− | 0.5+ | 2004 04 17 | 691 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2000 02 05 | 691 | 0.5+ | 0.4− | 2004 04 17 | 691 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2000 02 05 | 691 | 0.3+ | 0.3− | 2004 04 17 | 691 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2000 02 05 | 691 | 0.7+ | 0.3− | 2004 04 24 | 691 | 0.1− | 0.9+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 04 24 | 691 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 04 24 | 691 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2006 08 19 | 291 | 1.1− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 08 19 | 291 | 0.8− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2006 08 19 | 291 | 0.9− | 0.3+ | 2006 11 17 | 408 | (0.7− | 1.6+) |
| 2002 09 15 | 699 | 0.4− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 408 | (0.6− | 1.6+) |
| 2002 09 15 | 699 | (1.8− | 1.5+) | 2006 10 13 | 691 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.4− |
| 2002 09 15 | 699 | 0.2+ | 0.5+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 1.1− |
| 2002 09 15 | 699 | (1.5− | 1.7+) | 2006 10 21 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2002 10 11 | 704 | 1.1+ | 0.9+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 1.0+ |
| 2002 10 11 | 704 | 0.6+ | 1.3+ | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | (2.3+ | 0.5−) |
| 2002 10 11 | 704 | 0.4+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.9− |
| 2004 03 12 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2004 03 12 | 644 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.6+ | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2004 03 12 | 644 | 0.5+ | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2004 03 15 | 691 | 0.4+ | 0.2+ | 2006 10 27 | 703 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.8+ |
| 2004 03 15 | 691 | 0.6+ | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.6− | 2006 11 29 | 704 | 0.1− | 0.4+ |
| 2004 03 15 | 691 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.4+ | 1.0− |
| 2004 03 20 | 704 | 1.1+ | 0.9+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.9+ | 0.2− |

**(137934)∗ 2000 BO$_{32}$ = 2002 QW$_{57}$**

Discovered 2000 Jan. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 52653)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.24243 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22871919 | $\omega$ | 159.23148 | | −0.14039398 | −0.98943086 | |
| $a$ | 2.6480996 | $\Omega$ | 298.82375 | | +0.90245456 | −0.11280878 | |
| $e$ | 0.0380738 | $i$ | 2.37320 | | +0.40726564 | −0.09110845 | |
| $P$ | 4.31 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.1− | 0.3− | 2002 08 17 | 644 | 0.4− | 0.2+ | 2005 03 17 | G96 | 0.2− | 0.3+ |
| 2000 01 28 | 691 | 0.0 | 0.2− | 2002 08 28 | 644 | 0.2+ | 0.8+ | 2005 03 17 | G96 | 0.0 | 0.0 |
| 2000 01 28 | 691 | 0.0 | 0.3− | 2002 08 28 | 644 | 0.1− | 0.9+ | 2005 04 05 | 699 | 0.1− | 0.3+ |
| 2000 02 03 | 704 | 0.2+ | 0.6+ | 2002 08 28 | 644 | 0.4+ | 0.6+ | 2005 04 05 | 699 | 0.9− | 0.5− |
| 2000 02 03 | 704 | 0.1+ | 0.3+ | 2002 08 28 | 644 | 0.3− | 0.9+ | 2005 04 05 | 699 | 0.9− | 0.9+ |
| 2000 02 03 | 704 | 0.2+ | 1.9+ | 2002 08 28 | 644 | 0.3+ | 0.7+ | 2005 04 05 | 699 | 0.3+ | 0.4+ |
| 2000 02 03 | 704 | 0.1+ | 1.0+ | 2002 09 05 | 704 | 1.3− | 0.4+ | 2005 04 06 | 691 | 0.1+ | 0.2+ |
| 2000 02 11 | 704 | 0.4− | 1.1+ | 2002 09 05 | 704 | 0.2+ | 0.9+ | 2005 04 06 | 691 | 0.4+ | 0.2+ |
| 2000 02 11 | 704 | 0.1− | 1.8+ | 2002 09 05 | 704 | 0.2− | 0.5+ | 2005 04 06 | 691 | 0.3+ | 0.1+ |
| 2000 02 11 | 704 | 1.1+ | 2.0+ | 2002 09 14 | 644 | 0.2− | 0.3+ | 2005 04 09 | 691 | 0.2+ | 0.0 |
| 2000 02 11 | 704 | 0.1− | 0.6+ | 2002 09 14 | 644 | 0.1− | 0.4+ | 2005 04 09 | 691 | 0.0 | 0.3+ |
| 2002 08 09 | 608 | 0.2− | 0.3+ | 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 04 09 | 691 | 0.2+ | 0.2+ |
| 2002 08 09 | 608 | 0.0 | 0.3− | 2003 12 18 | 704 | 0.4+ | 1.4+ | 2006 06 20 | 461 | 1.9− | 0.9+ |
| 2002 08 17 | 644 | 0.1− | 0.5+ | 2003 12 18 | 704 | (0.2+ | 1.9+) | 2006 06 20 | 461 | 0.4− | 0.3− |
| 2002 08 17 | 644 | 0.2+ | 0.6+ | 2003 12 18 | 704 | (1.0+ | 1.9+) | 2006 07 21 | G96 | 0.2+ | 0.2− |
| 2002 08 17 | 644 | 0.3− | 0.6+ | 2003 12 18 | 704 | 0.1− | 1.3+ | 2006 07 21 | G96 | 0.4+ | 0.2− |
| 2002 08 17 | 644 | 0.1− | 0.4+ | 2005 03 17 | G96 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.2− |
| 2002 08 17 | 644 | 0.3− | 0.4+ | 2005 03 17 | G96 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.2+ |

**(137935)∗ 2000 BT$_{32}$**

Discovered 2000 Jan. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 321.73442 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26001741 | $\omega$ | 299.93897 | | +0.53064590 | | −0.84703890 | | |
| $a$ | 2.4310903 | $\Omega$ | 117.98073 | | +0.78912921 | | +0.48051854 | | |
| $e$ | 0.1777363 | $i$ | 1.98962 | | +0.30933803 | | +0.22721584 | | |
| $P$ | 3.79 | $H$ | 16.9 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 03 | 691 | 0.2+ | 0.1+ | 2002 09 05 | 704 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1991 11 03 | 691 | 0.0 | 0.0 | 2002 09 05 | 704 | (1.5− | 0.7+) | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 1991 11 03 | 691 | 0.4+ | 0.2+ | 2004 01 24 | 704 | (0.3+ | 1.8+) | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 1991 11 08 | 691 | 0.6− | 0.6+ | 2004 01 24 | 704 | (0.3− | 1.8+) | 2006 09 20 | 644 | 0.2− | 0.0 |
| 1991 11 08 | 691 | 0.4− | 0.4+ | 2004 01 24 | 704 | 1.2+ | 1.4+ | 2006 09 22 | 704 | 0.3+ | 0.4+ |
| 1991 11 08 | 691 | 0.4− | 0.3+ | 2004 01 24 | 704 | (0.8+ | 2.0+) | 2006 09 22 | 704 | 0.4+ | 0.3+ |
| 1998 06 19 | 691 | 0.9− | 0.8+ | 2004 02 17 | 691 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 1.0+ | 0.8+ |
| 1998 06 19 | 691 | 0.9− | 0.5+ | 2004 02 17 | 691 | 0.0 | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 1998 06 19 | 691 | 0.5− | 0.5+ | 2004 02 17 | 691 | 0.0 | 0.4+ | 2006 09 23 | 691 | 1.3− | 0.4+ |
| 1998 06 23 | 691 | 0.4+ | 0.8+ | 2004 02 17 | 704 | 1.3+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 1998 06 23 | 691 | 0.4− | 0.3+ | 2004 02 17 | 704 | (0.3+ | 1.6+) | 2006 09 27 | 704 | 0.4+ | 0.3+ |
| 1998 06 23 | 691 | 0.1+ | 0.7+ | 2004 02 17 | 704 | (0.6+ | 2.1+) | 2006 09 27 | 704 | 0.0 | 0.6− |
| 1998 06 30 | 691 | 0.0 | 0.3+ | 2004 02 17 | 704 | (0.5− | 1.6+) | 2006 09 27 | 704 | 0.8− | 0.1+ |
| 1998 06 30 | 691 | 0.5− | 0.3+ | 2004 02 17 | 608 | 0.8+ | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.3− |
| 1998 06 30 | 691 | 0.1− | 0.4+ | 2004 02 17 | 608 | 0.5+ | 0.1− | 2006 09 27 | 704 | (2.5− | 0.4−) |
| 1998 07 01 | 691 | 0.4− | 0.5+ | 2004 02 17 | 608 | 0.5+ | 0.1+ | 2006 09 28 | 704 | 0.6− | 0.4+ |
| 1998 07 01 | 691 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.1+ |
| 1998 07 01 | 691 | 0.3− | 0.1− | 2004 02 23 | 704 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.4− |
| 1998 07 01 | 691 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.0 | 0.5− |
| 1998 07 01 | 691 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.2+ | 1.1+ | 2006 09 28 | 704 | 0.2+ | 0.7+ |
| 1998 07 01 | 691 | 0.1− | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 1998 07 03 | 691 | 0.9+ | 0.6+ | 2004 02 29 | 691 | 0.1− | 0.7+ | 2006 09 30 | 703 | 1.2− | 0.9+ |
| 1998 07 03 | 691 | 0.7+ | 0.5+ | 2004 02 29 | 691 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.8− | 0.3+ |
| 1998 07 03 | 691 | 0.7+ | 0.6+ | 2004 02 29 | 691 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2000 01 04 | 704 | 0.6+ | 1.3+ | 2004 03 19 | 644 | 0.6+ | 1.0+ | 2006 09 30 | 704 | 0.3− | 0.5+ |
| 2000 01 04 | 704 | 0.0 | 0.0 | 2004 03 19 | 644 | 0.4+ | 1.1+ | 2006 09 30 | 704 | 0.3− | 0.4+ |
| 2000 01 04 | 704 | 0.1+ | 0.3+ | 2004 03 19 | 644 | 0.3+ | 1.4+ | 2006 09 30 | 704 | 0.1+ | 0.7+ |
| 2000 01 28 | 691 | 0.3+ | 0.1− | 2004 03 26 | 691 | 0.1+ | 0.8+ | 2006 09 30 | 704 | 0.3− | 0.6+ |
| 2000 01 28 | 691 | 0.4+ | 0.3− | 2004 03 26 | 691 | 0.3+ | 0.8+ | 2006 09 30 | 704 | 0.0 | 0.3+ |
| 2000 01 28 | 691 | 0.5+ | 0.2− | 2004 03 26 | 691 | 0.1+ | 0.8+ | 2006 10 03 | G92 | 0.4+ | 0.6+ |
| 2000 02 03 | 704 | 1.1+ | 0.8+ | 2006 08 24 | 644 | 0.2− | 0.5+ | 2006 10 03 | G92 | 0.2+ | 0.4+ |
| 2000 02 03 | 704 | 0.8+ | 1.6+ | 2006 08 24 | 644 | 0.7− | 0.0 | 2006 10 03 | G92 | 0.4− | 0.1+ |
| 2000 02 03 | 704 | 0.6− | 1.7+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2000 02 03 | 704 | 0.9− | 0.7+ | 2006 09 12 | 703 | (2.0− | 0.5+) | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 02 03 | 704 | 0.5− | 1.7+ | 2006 09 12 | 703 | (1.0− | 2.2−) | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2000 02 11 | 704 | 1.1+ | 0.1− | 2006 09 12 | 703 | 1.1− | 0.4− | 2006 10 17 | 703 | 0.5+ | 0.9+ |
| 2000 02 11 | 704 | 1.1− | 0.1+ | 2006 09 12 | 703 | 0.4+ | 0.6− | 2006 10 17 | 703 | (1.7+ | 1.5+) |
| 2000 02 11 | 704 | 0.2+ | 1.2+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.2+ | 1.4+ |
| 2000 02 11 | 704 | 0.4+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | (1.8+ | 0.9+) |
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 17 | 106 | 1.1+ | 0.4− |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.6+ | 0.4+ | 2006 10 17 | 106 | 0.2+ | 0.6− |
| 2002 08 18 | 644 | 0.0 | 0.6+ | 2006 09 18 | 699 | 1.4− | 0.4+ | 2006 10 18 | 106 | 0.0 | 1.1− |
| 2002 08 29 | 644 | 0.2− | 0.7− | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 18 | 106 | 0.4− | 0.6− |
| 2002 08 29 | 644 | 0.2+ | 0.7− | 2006 09 18 | 699 | 0.7+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.7− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 09 05 | 704 | 0.3− | 1.0+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |

**(137936)∗ 2000 BB$_{34}$ = 2000 CA$_{145}$ = 2002 RF$_{84}$**

Discovered 2000 Jan. 30 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 11069), G. V. Williams (*MPO* 34876)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 20.07591 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27245388 | $\omega$ | 63.06129 | | +0.85610594 | | −0.51642658 | | |
| $a$ | 2.3565359 | $\Omega$ | 328.02051 | | +0.46002414 | | +0.77883046 | | |
| $e$ | 0.2336210 | $i$ | 2.12654 | | +0.23550033 | | +0.35598695 | | |
| $P$ | 3.62 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 691 | 0.1− | 0.0 | 2002 09 05 | 699 | 0.1− | 0.2− | 2002 10 08 | 704 | 0.1− | 0.2− |
| 2000 01 30 | 691 | 0.2− | 0.0 | 2002 09 05 | 699 | 0.1+ | 0.0 | 2002 10 08 | 704 | 0.2− | 0.4− |
| 2000 01 30 | 691 | 0.2− | 0.1− | 2002 09 06 | 557 | 0.3+ | 0.2+ | 2002 10 08 | 704 | 0.1+ | 0.3− |
| 2000 02 03 | 704 | 0.4+ | 1.2+ | 2002 09 06 | 557 | 0.0 | 0.1+ | 2002 10 12 | 704 | 1.0+ | 0.3+ |
| 2000 02 03 | 704 | 0.5+ | 0.8+ | 2002 09 07 | 704 | 0.1− | 0.9+ | 2002 10 12 | 704 | 0.5+ | 0.1− |
| 2000 02 03 | 704 | (2.1+ | 0.6−) | 2002 09 07 | 704 | 0.2− | 0.8+ | 2002 10 12 | 704 | 0.5+ | 0.4− |
| 2000 02 04 | 691 | 0.7+ | 0.6+ | 2002 09 07 | 704 | 0.5− | 0.7+ | 2002 10 12 | 704 | 0.3+ | 1.1+ |
| 2000 02 04 | 691 | 1.0+ | 0.5+ | 2002 09 07 | 704 | 0.1− | 1.1+ | 2002 11 30 | 608 | 0.2− | 0.0 |
| 2000 02 04 | 691 | 0.9+ | 0.5+ | 2002 09 07 | 557 | 0.1+ | 0.4+ | 2002 11 30 | 608 | 0.2− | 0.0 |
| 2000 02 05 | 691 | 0.0 | 0.2+ | 2002 09 07 | 557 | 0.0 | 0.5+ | 2002 11 30 | 608 | 0.3+ | 0.1+ |
| 2000 02 05 | 691 | 0.1− | 0.1+ | 2002 09 07 | 557 | 0.3− | 0.2+ | 2002 12 11 | 704 | 0.1+ | 0.3+ |
| 2000 02 05 | 691 | 0.1− | 0.2+ | 2002 09 09 | 557 | 0.0 | 0.3+ | 2002 12 11 | 704 | 0.9− | 0.2− |
| 2000 02 06 | 691 | 0.5− | 0.1− | 2002 09 09 | 557 | 0.2+ | 0.3+ | 2002 12 11 | 704 | (0.2− | 1.6+) |
| 2000 02 06 | 691 | 0.3− | 0.2− | 2002 09 14 | 291 | 0.3− | 0.2+ | 2002 12 11 | 704 | (1.0− | 1.6+) |
| 2000 02 06 | 691 | 0.5− | 0.2− | 2002 09 14 | 291 | 0.2− | 0.1+ | 2004 02 26 | 704 | 1.1+ | 0.0 |
| 2000 02 11 | 704 | 0.5+ | 0.8− | 2002 09 14 | 291 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.6+ |
| 2000 02 11 | 704 | 0.2+ | 0.3− | 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 02 26 | 704 | 1.5+ | 0.8+ |
| 2000 02 11 | 704 | (2.1+ | 0.2+) | 2002 09 14 | 644 | 0.2− | 0.4+ | 2004 02 26 | 704 | 0.9+ | 0.2− |
| 2000 02 11 | 704 | 0.9+ | 0.0 | 2002 09 14 | 644 | 0.4− | 0.4+ | 2004 03 15 | 691 | 0.4+ | 0.5+ |
| 2000 03 02 | 691 | 0.7− | 0.3− | 2002 09 17 | 608 | 1.1− | 0.4+ | 2004 03 15 | 691 | 0.2− | 0.6+ |
| 2000 03 02 | 691 | 0.5− | 0.3− | 2002 09 17 | 608 | 1.3− | 0.1+ | 2004 03 15 | 691 | 0.0 | 0.4+ |
| 2000 03 02 | 691 | 0.4− | 0.7− | 2002 09 17 | 608 | 1.3− | 0.6+ | 2004 03 23 | 691 | 0.1+ | 0.4+ |
| 2000 03 11 | 704 | 1.5+ | 0.8− | 2002 10 02 | 704 | 0.2− | 0.1+ | 2004 03 23 | 691 | 0.2+ | 0.4+ |
| 2000 03 11 | 704 | 0.0 | 0.6+ | 2002 10 02 | 704 | 0.2− | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.4+ |
| 2000 03 11 | 704 | 0.5+ | 1.3+ | 2002 10 02 | 704 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.5− |
| 2002 08 05 | 704 | 0.1+ | 0.2− | 2002 10 02 | 704 | 1.4+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2002 08 05 | 704 | 0.1− | 0.5− | 2002 10 02 | 704 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2002 08 05 | 704 | 0.6+ | 0.1+ | 2002 10 03 | 704 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2002 08 05 | 704 | 0.0 | 0.8− | 2002 10 03 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2002 09 05 | 704 | 0.3+ | 0.4+ | 2002 10 03 | 704 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 09 05 | 704 | 0.4+ | 0.4+ | 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2002 09 05 | 704 | 0.4+ | 0.3+ | 2002 10 03 | 704 | 0.0 | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2002 10 07 | 699 | 0.2− | 0.2+ | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.4+ | 0.1+ | 2002 10 07 | 699 | 0.4− | 0.3+ | 2006 11 17 | 644 | 0.1+ | 0.2− |
| 2002 09 05 | 699 | 0.0 | 0.2+ | 2002 10 07 | 699 | 0.3+ | 0.0 | | | | |
| 2002 09 05 | 699 | 0.3− | 0.6+ | 2002 10 07 | 699 | 0.3− | 0.3− | | | | |

**(137937)∗ 2000 BP$_{34}$**

Discovered 2000 Jan. 30 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.36204 | | (2000.0) | | | |
| $n$ | 0.24634048 | $\omega$ | 58.86556 | | +0.52582591 | −0.85059182 |
| $a$ | 2.5202610 | $\Omega$ | 359.40869 | | +0.75074586 | +0.46455655 |
| $e$ | 0.0136618 | $i$ | 4.57232 | | +0.39985968 | +0.24633468 |
| $P$ | 4.00 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 17 | 691 | 0.2+ | 0.0 | 2002 11 03 | 608 | 0.5− | 0.8− | 2004 04 22 | 704 | 0.0 | 0.1− |
| 1990 10 17 | 691 | 0.0 | 0.0 | 2002 11 03 | 608 | 1.4− | 1.5− | 2004 04 22 | 704 | 0.8− | 0.4+ |
| 1990 10 17 | 691 | 0.4+ | 0.1− | 2002 11 03 | 608 | 0.4− | 0.8− | 2004 04 22 | 704 | 0.6+ | 0.5+ |
| 1992 02 25 | 691 | 0.9− | 0.1− | 2002 11 12 | 704 | 0.2+ | 0.1− | 2005 01 21 | 809 | 0.4+ | 0.3+ |
| 1992 02 25 | 691 | 0.2+ | 0.0 | 2002 11 12 | 704 | 0.1+ | 0.2+ | 2005 01 21 | 809 | 0.4+ | 0.3+ |
| 1992 02 25 | 691 | 1.1− | 0.2− | 2002 11 12 | 704 | 0.6+ | 0.3+ | 2005 01 21 | 809 | 0.2+ | 0.3+ |
| 1998 10 11 | 699 | 1.5+ | 0.8− | 2002 11 12 | 704 | 0.1+ | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.1− |
| 1998 10 11 | 699 | 0.6− | 0.2− | 2002 11 22 | 644 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1+ |
| 1998 10 11 | 699 | 0.3+ | 0.1+ | 2002 11 22 | 644 | 0.5− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.1+ |
| 2000 01 30 | 703 | 0.6− | 0.0 | 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.2− |
| 2000 01 30 | 703 | 0.7+ | 0.0 | 2004 01 19 | 703 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.6− | 0.7− |
| 2000 01 30 | 703 | 0.3+ | 0.7− | 2004 01 19 | 703 | 0.4− | 1.0− | 2006 09 14 | 703 | 0.7− | 0.5− |
| 2000 01 30 | 703 | 1.3+ | 0.6+ | 2004 01 19 | 703 | 1.0+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2000 02 03 | 704 | 0.5+ | 0.1+ | 2004 01 19 | 703 | 1.0+ | 0.8+ | 2006 09 14 | 703 | 0.6− | 0.4− |
| 2000 02 03 | 704 | 0.6− | 0.1− | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.0 |
| 2000 02 03 | 704 | 1.1− | 0.7− | 2004 01 22 | 704 | (1.7+ | 0.2−) | 2006 09 16 | 644 | 0.2− | 0.0 |
| 2000 02 03 | 704 | 0.3− | 0.7− | 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 644 | 0.3− | 0.3− |
| 2000 02 03 | 704 | 0.6− | 1.0− | 2004 01 22 | 704 | 0.4+ | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.2− | 0.3+ | 2004 01 23 | 699 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.1− | 0.3− |
| 2000 02 11 | 704 | 0.3− | 1.3− | 2004 01 23 | 699 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.4− | 0.0 |
| 2000 02 11 | 704 | 0.2+ | 0.3− | 2004 01 23 | 699 | 1.1− | 0.3+ | 2006 09 20 | 704 | 0.7+ | 0.5+ |
| 2000 02 11 | 704 | 0.3− | 1.1− | 2004 01 23 | 699 | 0.3− | 0.9− | 2006 09 20 | 704 | 0.7+ | 0.4+ |
| 2000 02 11 | 704 | 0.0 | 1.2− | 2004 01 27 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 704 | (1.5+ | 0.6−) |
| 2000 02 27 | 703 | 0.2− | 0.1+ | 2004 01 27 | 704 | 1.1+ | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.8+ |
| 2000 02 27 | 703 | 0.6− | 0.2− | 2004 01 27 | 704 | 0.2+ | 0.8+ | 2006 09 21 | 683 | 0.3+ | 0.2+ |
| 2000 02 27 | 703 | 1.2− | 0.5+ | 2004 01 27 | 704 | 1.2+ | 0.4− | 2006 09 21 | 683 | (0.9− | 2.4+) |
| 2000 02 27 | 703 | 0.2− | 0.6− | 2004 01 27 | 704 | 0.9+ | 0.0 | 2006 09 21 | 683 | 0.4− | 0.3+ |
| 2000 03 05 | 704 | 0.8− | 0.4− | 2004 01 30 | 704 | (1.6+ | 1.1+) | 2006 09 22 | 683 | 1.1− | 0.4+ |
| 2000 03 05 | 704 | 0.6+ | 0.3− | 2004 01 30 | 704 | (1.9+ | 0.1+) | 2006 09 22 | 683 | 1.1− | 0.4+ |
| 2000 03 05 | 704 | 0.5− | 1.4+ | 2004 01 30 | 704 | 1.3+ | 0.5− | 2006 09 22 | 683 | 0.8− | 0.7+ |
| 2000 03 05 | 704 | 0.9− | 0.7+ | 2004 01 30 | 704 | 1.0+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2000 03 05 | 704 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 0.4+ | 0.4− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2002 09 07 | 704 | 0.4+ | 1.2+ | 2004 02 10 | 703 | 0.4+ | 0.8− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2002 09 07 | 704 | 1.0+ | 0.1+ | 2004 02 10 | 703 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2002 09 07 | 704 | 0.8+ | 0.5+ | 2004 02 10 | 703 | 0.2− | 1.1+ | 2006 09 29 | 704 | 0.8− | 0.3+ |
| 2002 09 07 | 704 | 0.1+ | 0.4− | 2004 02 10 | 703 | 0.2− | 0.4− | 2006 09 29 | 704 | 1.3− | 0.4+ |
| 2002 10 01 | 699 | 0.6+ | 0.3+ | 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.2− | 0.9+ |
| 2002 10 01 | 699 | 0.2+ | 0.2− | 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 0.1+ | 0.0 | 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 0.3− | 0.6+ | 2004 02 16 | 704 | 0.8+ | 0.5− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.3+ | 0.7+ | 2004 02 16 | 704 | 1.1+ | 0.8+ | 2006 10 03 | 704 | 0.8+ | 0.7− |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 0.3− | 1.2+ | 2006 10 03 | 704 | 0.8+ | 0.0 |
| 2002 10 02 | 704 | 0.7+ | 0.0 | 2004 02 16 | 704 | 0.1− | 0.0 | 2006 10 03 | 704 | 1.2+ | 0.9− |
| 2002 10 02 | 704 | 0.1+ | 0.4+ | 2004 02 16 | 704 | 0.2− | 0.2+ | 2006 10 03 | 704 | (0.4+ | 1.5−) |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2004 02 20 | 608 | 0.0 | 0.4− | 2006 10 03 | 704 | 0.5+ | 0.8− |
| 2002 10 03 | 704 | 1.1+ | 0.4+ | 2004 02 20 | 608 | (0.1+ | 1.7−) | 2006 10 11 | 691 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.7+ | 0.6+ | 2004 02 20 | 608 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.7+ | 0.3+ | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.4− | 0.1− |
| 2002 10 07 | 704 | 0.1+ | 1.2− | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 10 07 | 704 | (1.6+ | 1.1+) | 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2002 10 07 | 704 | 0.6+ | 0.1− | 2004 02 23 | 704 | 0.5− | 1.3+ | 2006 10 21 | 703 | 0.6− | 0.3+ |
| 2002 10 07 | 704 | 0.6+ | 0.3− | 2004 03 10 | 644 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 2002 10 07 | 704 | 0.6+ | 0.0 | 2004 03 10 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2002 10 07 | 704 | 0.9+ | 0.0 | 2004 03 10 | 644 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.8+ | 0.1+ | 2004 03 14 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 10 07 | 704 | 0.8+ | 0.4− | 2004 03 14 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.5+ | 0.1− | 2004 03 14 | 704 | 0.2+ | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 0.3+ | 0.1+ | 2004 03 14 | 704 | 0.5+ | 0.7− | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 2002 10 09 | 704 | 0.1+ | 0.2− | 2004 03 19 | 644 | 0.3+ | 0.5+ | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2002 10 09 | 704 | 0.2+ | 0.3+ | 2004 03 19 | 644 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 0.5+ | 0.3+ | 2004 03 19 | 644 | 0.3+ | 0.4+ | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | (1.2− | 3.4+) | 2004 03 19 | 704 | 0.2− | 1.0+ | 2006 11 06 | 644 | 0.3− | 0.2+ |
| 2002 10 12 | 704 | 0.9− | 0.6+ | 2004 03 19 | 704 | (1.6− | 1.3−) | 2006 11 13 | 703 | 0.3− | 0.0 |
| 2002 10 12 | 704 | 0.4− | 1.0+ | 2004 03 19 | 704 | 1.3− | 0.0 | 2006 11 13 | 703 | 0.9− | 0.0 |
| 2002 10 12 | 704 | 0.3+ | 0.7+ | 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2002 10 12 | 704 | 0.2− | 0.6+ | 2004 04 12 | 699 | (2.3+ | 0.6+) | 2006 11 13 | 703 | 0.2− | 1.1− |
| 2002 11 01 | 704 | 0.1+ | 0.5+ | 2004 04 12 | 699 | 0.4− | 0.6− | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2002 11 01 | 704 | 0.0 | 0.2+ | 2004 04 12 | 699 | 0.5− | 0.8+ | 2006 11 17 | G96 | 0.5− | 0.5− |
| 2002 11 01 | 704 | 0.3+ | 0.9+ | 2004 04 12 | 699 | 0.7+ | 1.4− | 2006 11 17 | G96 | 0.3+ | 0.3− |

**(137938)∗ 2000 BK$_{35}$ = 2002 RM$_{47}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34876)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.24864 | | (2000.0) | | | |
| $n$ | 0.26785256 | $\omega$ | 356.21259 | | +0.55485023 | −0.82961501 |
| $a$ | 2.3834471 | $\Omega$ | 60.07682 | | +0.76517544 | +0.47949343 |
| $e$ | 0.1765794 | $i$ | 4.12150 | | +0.32656970 | +0.28605067 |
| $P$ | 3.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.2− | 0.2− | 2003 12 19 | 691 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2003 12 19 | 691 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2000 01 04 | 704 | 0.8+ | 0.6+ | 2003 12 19 | 691 | 0.4− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2000 01 04 | 704 | 0.6− | 0.2− | 2004 02 18 | 704 | 0.5+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2000 01 04 | 704 | 0.1− | 0.0 | 2004 02 18 | 704 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2000 01 30 | 704 | 0.2− | 0.2+ | 2004 02 18 | 704 | 0.3− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2000 01 30 | 704 | 0.1+ | 1.1+ | 2004 02 18 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2000 01 30 | 704 | 1.0+ | 0.3− | 2004 02 25 | 704 | 1.1+ | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 02 11 | 704 | 0.1− | 0.0 | 2004 02 25 | 704 | (0.8+ | 1.5+) | 2006 10 23 | 704 | 0.3+ | 1.3+ |
| 2000 02 11 | 704 | 0.1+ | 0.3+ | 2004 02 25 | 704 | (2.2+ | 0.6+) | 2006 10 23 | 704 | 0.4+ | 0.1+ |
| 2000 02 11 | 704 | 0.0 | 0.9+ | 2004 02 25 | 704 | 0.6+ | 1.1+ | 2006 10 23 | 704 | 0.9− | 1.1+ |
| 2000 02 11 | 704 | 0.5+ | 0.7+ | 2004 02 25 | 704 | 1.2+ | 0.8+ | 2006 10 23 | 704 | 0.9− | 0.3+ |
| 2000 02 11 | 704 | 0.7+ | 0.2+ | 2004 03 11 | 644 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.9+ | 0.4+ |
| 2002 08 31 | 699 | 0.3− | 0.9+ | 2004 03 11 | 644 | 0.1− | 0.4+ | 2006 10 28 | 704 | 0.6− | 1.0+ |
| 2002 08 31 | 699 | (0.6− | 2.1+) | 2004 03 11 | 644 | 1.1+ | 0.1− | 2006 10 28 | 704 | 0.5− | 1.0+ |
| 2002 08 31 | 699 | 0.9− | 1.0+ | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2006 10 28 | 704 | 0.5+ | 1.1+ |
| 2002 08 31 | 699 | 0.8− | 0.7+ | 2004 03 15 | 704 | 0.0 | 0.8+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2002 09 05 | 699 | 0.7− | 0.4+ | 2004 03 15 | 704 | 0.8+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2002 09 05 | 704 | 0.1+ | 1.0+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2002 09 05 | 699 | 0.9− | 1.2+ | 2004 03 15 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 0.2− | 1.2+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2002 09 05 | 699 | 0.9− | 1.0+ | 2004 03 20 | 699 | 0.2− | 1.3+ | 2006 11 10 | 691 | 0.4+ | 0.2− |
| 2002 09 05 | 699 | 0.9− | 1.0+ | 2004 03 20 | 704 | 0.7+ | 1.4+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.5− | 0.7+ | 2004 03 20 | 699 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 2002 09 05 | 704 | (0.2+ | 1.9+) | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2002 09 06 | 704 | 0.1+ | 1.1+ | 2004 03 20 | 704 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 2002 09 06 | 704 | 0.2+ | 1.3+ | 2004 03 20 | 699 | 0.5− | 0.4− | 2006 11 14 | 691 | 0.3+ | 1.0− |
| 2002 09 06 | 704 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.7+ | 2006 11 14 | 691 | 0.3+ | 0.7− |
| 2002 09 06 | 704 | 0.4+ | 0.3+ | 2004 03 20 | 704 | 0.7+ | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.5− |
| 2002 09 06 | 704 | (0.4− | 1.5+) | 2004 03 20 | 699 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.0 | 1.2+ |
| 2002 09 10 | 608 | 0.6− | 0.2+ | 2004 03 26 | 704 | 0.7+ | 1.5+ | 2006 11 17 | 704 | 0.3+ | 0.7+ |
| 2002 09 10 | 608 | 0.9− | 0.6+ | 2004 03 26 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 704 | 0.1+ | 1.0+ |
| 2002 09 10 | 608 | 0.7− | 0.6+ | 2004 03 26 | 704 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.6+ |
| 2002 09 13 | 704 | 0.1+ | 0.8+ | 2004 03 26 | 704 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 2002 09 13 | 704 | 0.2− | 0.9+ | 2004 04 12 | 291 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2002 09 13 | 704 | 0.0 | 0.5+ | 2004 04 12 | 291 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2002 09 13 | 704 | 0.3+ | 0.2+ | 2004 04 12 | 291 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2002 09 13 | 704 | 0.1+ | 0.6+ | 2004 04 13 | 291 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.9+ |
| 2002 09 16 | 644 | 0.1+ | 0.8+ | 2004 04 13 | 291 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2002 09 16 | 644 | 0.2− | 0.8+ | 2004 04 13 | 291 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2002 09 16 | 644 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.4− | 1.0− | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2002 09 17 | 608 | 1.4− | 0.5− | 2006 08 28 | 703 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 17 | 608 | 1.0− | 0.5− | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.7− | 0.7+ | | |
| 2002 09 17 | 608 | 1.3− | 0.6− | 2006 08 28 | 703 | 1.0− | 0.8− | 2006 11 21 | 704 | 0.6− | 0.1− | | |
| 2002 10 03 | 704 | 0.6− | 1.2+ | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.8− | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2006 09 16 | 703 | 0.6− | 0.2− | 2006 11 21 | 704 | 0.5− | 0.9− | | |
| 2002 10 03 | 704 | 0.7− | 0.7+ | 2006 09 16 | 703 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.9− | | |
| 2002 10 03 | 704 | 0.8− | 0.6+ | 2006 09 16 | 703 | 0.5+ | 0.4− | 2006 11 21 | 704 | 0.6− | 0.7− | | |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.6+ | 2006 11 27 | 703 | 0.4− | 0.2+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.5+ | 0.4− | 2006 11 27 | 703 | 0.1+ | 0.3+ | | |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.8+ | 2006 11 27 | 703 | 0.1+ | 0.0 | | |
| 2002 10 05 | 704 | 0.9+ | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.4− | 0.3− | | |
| 2002 10 05 | 704 | 0.7+ | 0.8+ | 2006 09 27 | 704 | 0.5+ | 0.2− | 2006 11 27 | 704 | 1.3− | 2.8+ | | |
| 2002 10 05 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.6+ | 2006 11 27 | 704 | 0.2− | 0.1+ | | |
| 2002 10 09 | 699 | 0.8− | 0.4+ | 2006 09 27 | 704 | 0.4− | 0.3+ | 2006 11 27 | 704 | 0.8− | 1.1− | | |
| 2002 10 09 | 699 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.3+ | 0.4+ | 2006 11 27 | 704 | 0.2− | 0.2− | | |
| 2002 10 09 | 699 | 0.7− | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.0 | 0.3− | | |
| 2002 10 09 | 699 | 0.9− | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.5+ | 0.4− | | |
| 2002 10 29 | 704 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.3− | 0.9− | | |
| 2002 10 29 | 704 | 0.3+ | 0.8+ | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 29 | 704 | 0.5− | 0.6− | | |
| 2002 10 29 | 704 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.3− | | |
| 2002 10 29 | 704 | 0.2− | 0.8+ | 2006 10 17 | G96 | 0.5+ | 0.2− | | | | | | |
| 2002 10 29 | 704 | 0.7+ | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.2− | | | | | | |

**(137939)∗ 2000 BW$_{35}$**

Discovered 2000 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 242.33369 | | (2000.0) | | | |
| $n$ | 0.26945259 | $\omega$ | 92.67850 | | −0.98763972 | +0.13349077 |
| $a$ | 2.3740024 | $\Omega$ | 95.00203 | | −0.15511366 | −0.90773094 |
| $e$ | 0.1356485 | $i$ | 4.72999 | | +0.02252845 | −0.39774961 |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 910 | 0.3+ | 0.1+ | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2004 04 23 | 704 | 0.7+ | 0.8+ | | |
| 1998 09 21 | 910 | 0.1+ | 0.7+ | 2004 03 15 | 704 | 0.8+ | 0.1+ | 2004 04 23 | 704 | (2.1− | 1.2+) | | |
| 1998 09 21 | 910 | 0.6+ | 0.2+ | 2004 03 18 | 106 | 0.6− | 0.1− | 2004 04 23 | 704 | (2.1− | 0.3+) | | |
| 2000 01 13 | 691 | 0.3− | 0.4− | 2004 03 18 | 106 | 0.5− | 0.4− | 2004 04 25 | 699 | 0.9+ | 0.2− | | |
| 2000 01 13 | 691 | 0.1− | 0.4− | 2004 03 18 | 106 | 1.2− | 0.3− | 2004 04 25 | 699 | 0.7− | 0.2− | | |
| 2000 01 13 | 691 | 0.2− | 0.5− | 2004 03 20 | 704 | 0.3− | 0.3− | 2004 04 25 | 699 | 0.2+ | 1.2− | | |
| 2000 01 31 | 704 | 0.4+ | 0.7− | 2004 03 20 | 704 | 0.1+ | 0.0 | 2004 04 25 | 699 | 0.9− | 0.4− | | |
| 2000 01 31 | 704 | 0.3+ | 0.7+ | 2004 03 20 | 704 | 0.0 | 0.0 | 2004 05 22 | 704 | 0.1− | 0.3+ | | |
| 2000 01 31 | 704 | 0.7− | 0.5− | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2004 05 22 | 704 | 0.4+ | 0.1+ | | |
| 2000 02 11 | 704 | 0.3− | 0.8+ | 2004 03 20 | 704 | 0.2+ | 0.1− | 2004 05 22 | 704 | 0.3+ | 0.9+ | | |
| 2000 02 11 | 704 | 0.3+ | 0.2+ | 2004 03 21 | 699 | 0.2− | 0.9+ | 2004 05 22 | 704 | 1.1+ | 1.1+ | | |
| 2000 02 11 | 704 | 0.1+ | 0.1− | 2004 03 21 | 699 | 0.3+ | 0.4+ | 2005 07 29 | 644 | 0.3− | 0.8+ | | |
| 2000 02 11 | 704 | 0.3+ | 0.1− | 2004 03 21 | 699 | 0.7− | 0.1− | 2005 07 29 | 644 | 0.5− | 0.5+ | | |
| 2001 07 01 | 644 | (3.7− | 2.6−) | 2004 03 21 | 699 | 0.5+ | 1.1+ | 2005 07 29 | 644 | 0.9− | 0.5+ | | |
| 2001 07 01 | 644 | (4.4− | 2.2−) | 2004 03 22 | 704 | 0.3+ | 0.4− | 2005 08 30 | 644 | 0.5− | 0.8+ | | |
| 2001 07 01 | 644 | (4.5− | 2.2−) | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2005 08 30 | 644 | 0.7− | 0.4+ | | |
| 2004 02 18 | 704 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.1− | 2005 08 30 | 644 | 0.3− | 1.0+ | | |
| 2004 02 18 | 704 | 0.5+ | 1.1+ | 2004 03 22 | 704 | 0.4+ | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.3+ | | |
| 2004 02 18 | 704 | 1.0+ | 1.2+ | 2004 03 23 | 704 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 2004 02 18 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 2004 02 18 | 704 | 0.5− | 0.0 | 2004 03 23 | 704 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 25 | 704 | 0.1+ | 0.4− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.4+ | | |
| 2004 02 25 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2004 02 25 | 704 | 0.3− | 0.2+ | 2004 04 15 | 704 | 0.5+ | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2004 02 25 | 704 | 0.7− | 0.9+ | 2004 04 15 | 704 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.2+ | | |
| 2004 02 25 | 704 | 0.3+ | 0.6+ | 2004 04 15 | 704 | 0.3+ | 0.9+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 11 | 644 | 0.2− | 0.2+ | 2004 04 15 | 704 | (0.5+ | 1.9+) | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2004 03 11 | 644 | 0.3− | 0.1+ | 2004 04 21 | 703 | 0.9+ | 0.8− | 2006 11 27 | 691 | 0.3− | 0.0 | | |
| 2004 03 11 | 644 | 0.1+ | 0.2+ | 2004 04 21 | 703 | 0.3+ | 1.1− | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2004 03 15 | 704 | 0.1− | 0.0 | 2004 04 21 | 703 | 0.2+ | 1.2− | 2006 12 01 | 691 | 0.0 | 0.1− | | |
| 2004 03 15 | 704 | 0.3+ | 0.1− | 2004 04 21 | 703 | 1.0− | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.0 | | |
| 2004 03 15 | 704 | 0.2− | 0.3+ | 2004 04 23 | 704 | 0.1− | 0.4+ | 2006 12 01 | 691 | 0.1+ | 0.1− | | |

**(137940)∗ 2000 BQ$_{37}$ = 2002 SE$_{43}$**

Discovered 2000 Jan. 26 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37295)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.25295 | | (2000.0) | | | |
| $n$ | 0.26545177 | $\omega$ | 44.05507 | | +0.99471027 | +0.10158704 |
| $a$ | 2.3977964 | $\Omega$ | 310.10809 | | −0.09888860 | +0.90695362 |
| $e$ | 0.1650784 | $i$ | 1.14003 | | −0.02779447 | +0.40879726 |
| $P$ | 3.71 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 27 | 691 | 0.6+ | 0.2+ | 2002 10 02 | 704 | 0.1+ | 0.8+ | 2002 10 11 | 704 | 0.3+ | 0.5+ | | |
| 1998 07 27 | 691 | 0.5+ | 0.2+ | 2002 10 03 | 704 | 0.2− | 0.0 | 2002 10 30 | 644 | 0.1− | 0.2+ | | |
| 1998 07 27 | 691 | 0.5+ | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.8− | 2002 10 30 | 644 | 0.2− | 0.1− | | |
| 1998 08 20 | 691 | 0.5− | 0.0 | 2002 10 03 | 704 | 0.3− | 0.2− | 2002 10 30 | 644 | 0.2− | 0.3+ | | |
| 1998 08 20 | 691 | 0.3− | 0.2+ | 2002 10 03 | 704 | 0.7− | 0.8+ | 2004 02 12 | 691 | 0.0 | 0.0 | | |
| 1998 08 20 | 691 | 0.3− | 0.0 | 2002 10 03 | 704 | 0.4− | 0.1− | 2004 02 12 | 691 | 0.0 | 0.5+ | | |
| 1998 08 26 | 691 | 0.2− | 0.3− | 2002 10 03 | 704 | 0.6+ | 1.4+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | | |
| 1998 08 26 | 691 | 0.0 | 0.3− | 2002 10 03 | 704 | 0.7− | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.0 | | |
| 1998 08 26 | 691 | 0.1+ | 0.5− | 2002 10 03 | 704 | 0.7− | 0.8+ | 2004 02 29 | 691 | 0.2− | 0.4+ | | |
| 2000 01 26 | 691 | 0.4− | 0.1+ | 2002 10 03 | 704 | 0.3− | 0.6− | 2004 02 29 | 691 | (2.7+ | 2.4−) | | |
| 2000 01 26 | 691 | 0.2− | 0.1− | 2002 10 03 | 704 | 0.5− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.4− | | |
| 2000 01 26 | 691 | 0.2+ | 0.1+ | 2002 10 05 | 704 | 0.4− | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.4− | | |
| 2000 02 02 | 691 | 0.2+ | 0.1− | 2002 10 05 | 704 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.5− | | |
| 2000 02 02 | 691 | 0.2+ | 0.3− | 2002 10 05 | 704 | 0.2− | 1.0+ | 2006 11 01 | G96 | 0.1+ | 0.4− | | |
| 2000 02 02 | 691 | 0.1+ | 0.2− | 2002 10 05 | 704 | 0.1+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.3+ | | |
| 2000 02 13 | 809 | 0.0 | 0.3+ | 2002 10 05 | 704 | 0.1− | 0.4− | 2006 11 20 | 691 | (0.7+ | 2.1+) | | |
| 2000 02 13 | 809 | 0.1− | 0.1+ | 2002 10 07 | 699 | 0.4+ | 0.8− | 2006 11 20 | 691 | 0.0 | 0.4+ | | |
| 2000 02 13 | 809 | 0.1− | 0.1+ | 2002 10 07 | 699 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.1− | | |
| 2001 05 01 | 691 | 0.2+ | 0.6+ | 2002 10 07 | 699 | 0.6− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.5+ | | |
| 2001 05 01 | 691 | 0.4+ | 1.0+ | 2002 10 07 | 699 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2001 05 01 | 691 | 0.1+ | 0.5+ | 2002 10 07 | 704 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.1− | | |
| 2002 09 28 | 608 | (2.1− | 2.0−) | 2002 10 07 | 704 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | | |
| 2002 09 28 | 608 | (1.7− | 1.5−) | 2002 10 07 | 704 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 28 | 608 | (1.5− | 1.0−) | 2002 10 07 | 704 | 0.2− | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.2− | | |
| 2002 10 02 | 704 | 0.1+ | 0.6+ | 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 11 24 | 691 | 0.2+ | 0.2− | | |
| 2002 10 02 | 704 | 0.7− | 0.5+ | 2002 10 11 | 704 | 0.4+ | 0.3− | 2006 12 01 | 704 | 1.5− | 0.0 | | |
| 2002 10 02 | 704 | 0.8− | 0.6+ | 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.6− | 0.1+ | | |
| 2002 10 02 | 704 | 0.4− | 0.2+ | 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 12 01 | 704 | 1.3+ | 1.2+ | | |

**(137941)∗ 2000 BQ$_{42}$ = 1993 HL$_{9}$ = 2004 FT$_{22}$**

Discovered 2000 Jan. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60589)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 180.55013 | | (2000.0) | | | |
| $n$ | 0.26011069 | $\omega$ | 291.56106 | | −0.59917510 | +0.80059109 |
| $a$ | 2.4305091 | $\Omega$ | 301.62641 | | −0.73167090 | −0.55088632 |
| $e$ | 0.1390372 | $i$ | 0.44176 | | −0.32503367 | −0.23575021 |
| $P$ | 3.79 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 26 | 691 | 0.1+ | 0.1+ | 2004 03 11 | 644 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.0 | | |
| 1993 04 26 | 691 | 0.6+ | 0.2− | 2004 03 11 | 644 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.2− | | |
| 1993 04 28 | 691 | 0.1+ | 0.0 | 2004 03 15 | 704 | (2.3+ | 1.7−) | 2006 09 28 | G96 | 0.0 | 0.3− | | |
| 1993 04 28 | 691 | 0.1− | 0.4+ | 2004 03 15 | 704 | 0.7+ | 1.1+ | 2006 10 29 | G96 | 0.1− | 0.3− | | |
| 1993 04 28 | 691 | 0.2− | 0.3+ | 2004 03 15 | 704 | 0.8+ | 1.0+ | 2006 10 29 | G96 | 0.2− | 0.2− | | |
| 1994 10 11 | 691 | 0.4− | 0.5− | 2004 03 15 | 704 | 1.0+ | 0.5+ | 2006 10 29 | G96 | 0.0 | 0.3+ | | |
| 1994 10 11 | 691 | 0.6− | 0.1+ | 2004 03 15 | 704 | 0.7+ | 1.1+ | 2006 10 29 | G96 | 0.1+ | 0.1− | | |
| 1994 10 11 | 691 | 0.3− | 0.0 | 2004 03 17 | 691 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.0 | | |
| 2000 01 27 | 691 | 0.4+ | 0.1− | 2004 03 17 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | | |
| 2000 01 27 | 691 | 0.5+ | 0.1− | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2000 01 27 | 691 | 0.5+ | 0.3− | 2004 03 18 | 704 | 0.2− | 1.0+ | 2006 11 22 | H07 | 0.3+ | 0.3− | | |
| 2000 02 06 | 691 | 0.1+ | 0.7− | 2004 03 18 | 704 | (2.6− | 1.0+) | 2006 11 22 | H07 | 0.6+ | 0.0 | | |
| 2000 02 06 | 691 | 0.1+ | 0.3− | 2004 03 18 | 704 | (3.7− | 0.3+) | 2006 11 23 | 691 | 0.2− | 0.3+ | | |
| 2000 02 06 | 691 | 0.3+ | 0.8− | 2004 03 18 | 704 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 691 | 0.0 | 0.6− | 2004 03 18 | 704 | 1.0− | 0.8+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2000 02 08 | 691 | 0.5− | 0.4− | 2004 03 27 | 691 | 0.2− | 0.1+ | 2006 11 23 | H07 | 0.8− | 0.4− |
| 2000 02 08 | 691 | 0.4− | 0.3− | 2004 03 27 | 691 | 0.2− | 0.3+ | 2006 11 23 | H07 | 0.1− | 0.1− |
| 2004 02 11 | 644 | 0.2− | 0.2+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 11 24 | H07 | 0.1+ | 0.2+ |
| 2004 02 11 | 644 | 0.2− | 0.1+ | 2005 07 11 | G96 | 0.0 | 0.3+ | 2006 11 24 | H07 | 0.5+ | 0.3− |
| 2004 02 11 | 644 | 0.1− | 0.5+ | 2005 07 11 | G96 | 0.2+ | 0.3+ | 2006 11 24 | H07 | 0.5− | 0.0 |
| 2004 02 14 | 691 | 0.4− | 0.1+ | 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.5+ |
| 2004 02 14 | 691 | 0.6− | 0.5+ | 2005 07 11 | G96 | 0.3− | 0.4+ | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2004 02 14 | 691 | 0.2− | 0.0 | 2005 08 27 | 644 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.5+ |
| 2004 02 26 | 704 | 0.6+ | 0.5+ | 2005 08 27 | 644 | 0.6+ | 0.3+ | 2006 12 01 | 691 | 0.2− | 0.2− |
| 2004 02 26 | 704 | 0.5+ | 0.1− | 2005 08 27 | 644 | 0.5+ | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.6+ |
| 2004 02 26 | 704 | 1.0+ | 0.2− | 2005 08 27 | 644 | 0.4+ | 0.5+ | 2006 12 01 | 691 | 0.3− | 0.2− |
| 2004 02 26 | 704 | 0.4+ | 0.2− | 2005 08 27 | 644 | 0.4+ | 0.3+ | 2006 12 01 | 691 | 0.6+ | 0.2+ |
| 2004 02 26 | 704 | 0.2+ | 0.2+ | 2005 08 27 | 644 | 0.2+ | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2004 03 11 | 644 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.0 | 2006 12 01 | 691 | 0.1− | 0.2+ |

**(137942)∗ 2000 BB$_{47}$ = 2002 RU$_{211}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37295)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.70294 | | (2000.0) | | | |
| $n$ | 0.26843384 | $\omega$ | 326.53283 | | +0.21202324 | −0.97429311 |
| $a$ | 2.3800050 | $\Omega$ | 111.12554 | | +0.91357885 | +0.16993389 |
| $e$ | 0.0556375 | $i$ | 4.68274 | | +0.34701561 | +0.14790336 |
| $P$ | 3.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.6− | 1.0− | 2002 11 05 | 699 | 0.1+ | 0.5+ | 2004 03 26 | 703 | 0.5− | 0.0 |
| 2000 01 04 | 704 | 0.4− | 0.1− | 2002 11 11 | 704 | 0.6− | 1.5+ | 2004 03 26 | 703 | 0.4− | 1.4+ |
| 2000 01 04 | 704 | 0.2− | 0.9− | 2002 11 11 | 704 | 0.3− | 0.4+ | 2004 04 09 | 644 | 0.0 | 0.1+ |
| 2000 01 04 | 704 | (0.4− | 2.1−) | 2002 11 11 | 704 | 0.6+ | 0.2+ | 2004 04 09 | 644 | 0.1+ | 0.3+ |
| 2000 01 30 | 704 | 0.3+ | 0.0 | 2002 11 11 | 704 | 1.2− | 1.0+ | 2004 04 09 | 644 | 0.2+ | 0.3+ |
| 2000 01 30 | 704 | 0.5+ | 0.1+ | 2003 11 20 | 691 | 0.0 | 0.0 | 2004 04 13 | 703 | 1.0− | 0.0 |
| 2000 01 30 | 704 | 0.8+ | 1.1+ | 2003 11 20 | 691 | 0.1− | 0.1+ | 2004 04 13 | 703 | 0.4− | 0.1− |
| 2000 02 07 | 703 | 0.0 | 1.0+ | 2003 11 20 | 691 | 0.1− | 0.2− | 2004 04 13 | 703 | 0.1+ | 1.0+ |
| 2000 02 07 | 703 | 0.4+ | 0.3− | 2003 12 27 | 704 | 0.4− | 0.4− | 2004 04 13 | 703 | 0.3+ | 0.1− |
| 2000 02 07 | 703 | 0.2− | 0.7+ | 2003 12 27 | 704 | 1.1− | 0.2+ | 2004 04 15 | 704 | 0.4+ | 1.1+ |
| 2000 02 07 | 703 | 0.3+ | 0.4− | 2003 12 27 | 704 | 0.1+ | 0.1+ | 2004 04 15 | 704 | 0.7+ | 1.1+ |
| 2002 08 05 | 704 | 0.7− | 1.0+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2004 04 15 | 704 | 0.4− | 0.6+ |
| 2002 08 05 | 704 | 0.7+ | 1.1+ | 2004 01 27 | 691 | 0.0 | 0.1− | 2005 06 03 | 691 | 0.1− | 0.3+ |
| 2002 08 05 | 704 | 1.1− | 1.3+ | 2004 01 27 | 691 | 0.1− | 0.1+ | 2005 06 03 | 691 | 0.1+ | 0.1+ |
| 2002 08 05 | 704 | (0.2+ | 2.4+) | 2004 01 27 | 691 | 0.0 | 0.0 | 2005 06 03 | 691 | 0.1− | 0.5+ |
| 2002 09 14 | 683 | 0.4+ | 0.5+ | 2004 01 27 | 691 | 0.1− | 0.2+ | 2005 06 13 | G96 | 0.5+ | 1.0+ |
| 2002 09 14 | 683 | 0.6− | 0.6− | 2004 01 27 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.2+ | 0.9+ |
| 2002 09 14 | 683 | 0.3− | 0.4+ | 2004 01 30 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.9+ |
| 2002 09 14 | 608 | 1.0+ | 0.9− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.1− | 1.0+ |
| 2002 09 14 | 608 | 0.5+ | 1.3− | 2004 01 30 | 691 | 0.0 | 0.0 | 2005 06 16 | 691 | 0.2− | 0.2+ |
| 2002 09 14 | 608 | 0.0 | 0.9− | 2004 01 30 | 691 | 0.2− | 0.2+ | 2005 06 16 | 691 | 0.2− | 0.2+ |
| 2002 09 16 | 683 | (1.5+ | 2.3+) | 2004 01 30 | 691 | 0.0 | 0.1+ | 2005 06 16 | 691 | 0.1− | 0.9+ |
| 2002 09 16 | 683 | 0.8+ | 0.4− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.4+ |
| 2002 09 16 | 683 | 1.2+ | 0.1− | 2004 02 15 | 703 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.2+ |
| 2002 09 29 | 608 | 0.9− | 0.3− | 2004 02 15 | 703 | 0.3+ | 1.1+ | 2006 11 14 | 704 | 0.0 | 0.2− |
| 2002 09 29 | 608 | 0.7− | 0.1− | 2004 02 15 | 703 | 0.8+ | 0.6+ | 2006 11 17 | 704 | 0.5+ | 0.2+ |
| 2002 09 29 | 608 | 1.0− | 0.2− | 2004 02 15 | 703 | 0.0 | 0.9+ | 2006 11 17 | 704 | 0.5− | 0.6+ |
| 2002 10 02 | 704 | (0.3+ | 1.7+) | 2004 02 21 | 608 | 0.1− | 0.8− | 2006 11 17 | 704 | 0.2− | 0.6+ |
| 2002 10 02 | 704 | 0.1− | 1.3+ | 2004 02 21 | 608 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.2+ | 0.2+ |
| 2002 10 02 | 704 | 0.2− | 1.0+ | 2004 02 21 | 608 | 0.3− | 0.5+ | 2006 11 17 | 704 | 0.8+ | 0.2− |
| 2002 10 02 | 704 | 0.9− | 0.8+ | 2004 03 15 | 704 | 0.7+ | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.8− | 1.4+ | 2004 03 15 | 704 | 0.4+ | 0.5− | 2006 11 18 | 691 | 0.3+ | 0.4− |
| 2002 10 03 | 704 | (1.0− | 1.5+) | 2004 03 15 | 704 | 1.2+ | 0.3+ | 2006 11 18 | 691 | 0.4+ | 0.0 |
| 2002 10 03 | 704 | (0.6− | 1.7+) | 2004 03 15 | 704 | 0.9+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2002 10 03 | 704 | 1.3− | 1.4+ | 2004 03 15 | 704 | 0.6+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 1.0+ |
| 2002 10 03 | 704 | (0.3− | 2.2+) | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | (0.4− | 1.8+) |
| 2002 10 06 | 608 | 0.4− | 1.2− | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2002 10 06 | 608 | 0.4− | 0.6− | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.9+ |
| 2002 10 06 | 608 | 0.4− | 0.7− | 2004 03 19 | 704 | 0.2− | 0.8+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.4+ | 1.1+ | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.4− | 1.0+ | 2006 11 20 | 704 | 0.2− | 0.6− |
| 2002 10 15 | 644 | 0.0 | 1.0+ | 2004 03 19 | 704 | 0.1− | 0.8+ | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2002 10 15 | 644 | 0.0 | 1.0+ | 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2002 10 15 | 644 | 0.1− | 1.1+ | 2004 03 20 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2002 10 28 | 644 | (0.3− | 1.5+) | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.3− |
| 2002 10 28 | 644 | (0.2+ | 1.6+) | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 10 28 | 644 | (0.1+ | 1.6+) | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 11 29 | 704 | 0.3+ | 0.6+ |
| 2002 10 30 | 704 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.5+ | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.1− |
| 2002 10 30 | 704 | 0.1− | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.7+ |
| 2002 10 30 | 704 | 0.5− | 0.5+ | 2004 03 22 | 704 | 0.6+ | 0.0 | 2006 11 29 | 704 | 0.5− | 1.1+ |
| 2002 10 30 | 704 | 0.3+ | 0.3− | 2004 03 22 | 704 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.6− | 0.4+ |
| 2002 10 30 | 704 | 0.5− | 0.5+ | 2004 03 22 | 704 | 0.1+ | 0.8+ | 2006 12 03 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 699 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 12 03 | 644 | 0.0 | 0.1− |
| 2002 11 05 | 699 | 0.4− | 0.5− | 2004 03 26 | 703 | 0.1− | 0.1− | 2006 12 03 | 644 | 0.2− | 0.0 |
| 2002 11 05 | 699 | 0.5− | 0.4− | 2004 03 26 | 703 | 0.2− | 0.2− | | | | |

**(137943)∗ 2000 BZ$_{48}$**

Discovered 2000 Jan. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.56940 | | (2000.0) | | | |
| $n$ | 0.27045332 | $\omega$ | 188.63883 | | −0.54448578 | −0.83070351 |
| $a$ | 2.3681425 | $\Omega$ | 294.42693 | | +0.77697127 | −0.44739629 |
| $e$ | 0.1798773 | $i$ | 7.32259 | | +0.31599190 | −0.33131290 |
| $P$ | 3.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.9+ | 1.0+ | 2004 03 04 | E12 | 0.9− | 0.0 | 2005 07 15 | G96 | 0.4− | 0.0 |
| 2000 01 03 | 704 | 0.4− | 0.4− | 2004 03 04 | E12 | (1.6− | 0.4−) | 2005 07 15 | G96 | 0.8− | 0.0 |
| 2000 01 03 | 704 | 0.4+ | 0.7− | 2004 03 04 | E12 | 0.5+ | 0.5− | 2005 07 15 | G96 | 0.4− | 0.4− |
| 2000 01 03 | 704 | 0.1− | 0.5− | 2004 03 17 | 704 | 0.8− | 0.3+ | 2005 07 15 | G96 | 1.3+ | 1.0− |
| 2000 01 04 | 704 | 0.1+ | 1.3− | 2004 03 17 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.7+ |
| 2000 01 04 | 704 | 0.0 | 0.1+ | 2004 03 17 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | (1.8+ | 1.4+) |
| 2000 01 04 | 704 | 0.9− | 1.0+ | 2004 03 17 | 704 | 0.5+ | 0.8− | 2006 10 19 | 703 | 0.2− | 0.4+ |
| 2000 01 04 | 704 | 0.3+ | 1.8+ | 2004 03 21 | 608 | 0.2+ | 0.6− | 2006 10 19 | 703 | (0.2− | 2.0+) |
| 2000 01 26 | 691 | 0.0 | 0.3− | 2004 03 21 | 608 | 0.2− | 0.3− | 2006 11 02 | G96 | 0.1− | 0.0 |
| 2000 01 26 | 691 | 0.2− | 0.1− | 2004 03 21 | 608 | 0.1+ | 0.6− | 2006 11 02 | G96 | 0.7+ | 0.1+ |
| 2000 01 26 | 691 | 0.1− | 0.2− | 2004 03 31 | 704 | 0.8+ | 1.3+ | 2006 11 02 | G96 | 0.4− | 0.2+ |
| 2000 02 03 | 704 | 0.2+ | 0.3+ | 2004 03 31 | 704 | 0.0 | 1.1+ | 2006 11 02 | G96 | 0.0 | 0.1− |
| 2000 02 03 | 704 | 0.5+ | 0.7− | 2004 03 31 | 704 | (0.2− | 1.7+) | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 2000 02 03 | 704 | 0.2+ | 0.8+ | 2005 06 13 | G96 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.5− |
| 2000 02 03 | 704 | 0.2− | 0.0 | 2005 06 13 | G96 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 2000 02 03 | 704 | 0.4+ | 0.6+ | 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2004 03 04 | E12 | 1.0− | 0.3+ | 2005 06 13 | G96 | 0.2+ | 0.4+ | | | | |

**(137944)∗ 2000 BC$_{49}$ = 2004 EE$_{8}$**

Discovered 2000 Jan. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60589)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.29741 | | (2000.0) | | | |
| $n$ | 0.26676052 | $\omega$ | 215.15725 | | −0.98604146 | −0.16522971 |
| $a$ | 2.3899474 | $\Omega$ | 315.31794 | | +0.15866679 | −0.89511248 |
| $e$ | 0.1472543 | $i$ | 1.67287 | | +0.05046868 | −0.41409274 |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 16 | 413 | 0.2+ | 0.4+ | 2004 03 18 | 704 | 0.0 | 0.5− | 2004 04 12 | 703 | 0.3− | 0.5+ |
| 2000 01 27 | 691 | 0.0 | 0.1+ | 2004 03 20 | 699 | (3.0− | 3.2+) | 2004 04 12 | 703 | 0.5− | 0.4− |
| 2000 01 27 | 691 | 0.1+ | 0.0 | 2004 03 20 | 699 | 0.3+ | 0.1+ | 2004 04 15 | 699 | 0.5+ | 0.7+ |
| 2000 01 27 | 691 | 0.2+ | 0.1+ | 2004 03 20 | 699 | 0.3+ | 0.1− | 2004 04 15 | 699 | 0.3− | 0.7− |
| 2000 02 03 | 704 | 0.6− | 0.1+ | 2004 03 20 | 699 | 0.5− | 0.1+ | 2004 04 15 | 699 | 1.0+ | 0.3− |
| 2000 02 03 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.5− | 0.1− | 2004 04 15 | 699 | 0.2− | 0.9+ |
| 2000 02 03 | 704 | 1.1+ | 0.3− | 2004 03 20 | 704 | 0.4− | 0.1− | 2004 04 25 | 691 | 0.1+ | 0.1− |
| 2000 02 05 | 691 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.8− | 0.1− | 2004 04 25 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.5− | 0.0 | 2004 03 20 | 704 | 0.1− | 0.2− | 2004 04 25 | 691 | 0.0 | 0.0 | | |
| 2000 02 05 | 691 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.0 | | |
| 2000 02 12 | 691 | 0.0 | 0.2− | 2004 03 21 | 699 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | | |
| 2000 02 12 | 691 | 0.3+ | 0.0 | 2004 03 21 | 699 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.4+ | 0.1+ | | |
| 2000 02 12 | 691 | 0.1+ | 0.1− | 2004 03 21 | 699 | 0.4− | 0.6+ | 2006 09 28 | G96 | 0.6− | 0.4− | | |
| 2004 02 26 | 704 | 0.7+ | 0.4− | 2004 03 21 | 699 | 1.4− | 0.5− | 2006 10 20 | G96 | 0.2− | 0.3− | | |
| 2004 02 26 | 704 | 0.7− | 0.4+ | 2004 03 26 | 699 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.7− | 0.8− | | |
| 2004 02 26 | 704 | 0.2+ | 0.8+ | 2004 03 26 | 699 | 0.4− | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.6− | | |
| 2004 02 26 | 704 | 0.2− | 0.2+ | 2004 03 26 | 699 | 1.0− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1− | | |
| 2004 03 13 | 644 | 0.4+ | 0.1+ | 2004 03 26 | 699 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.4− | | |
| 2004 03 13 | 644 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.3− | 0.4− | | |
| 2004 03 13 | 644 | 0.3+ | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.1− | 0.5− | | |
| 2004 03 15 | 703 | 1.1+ | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.3− | 0.3− | | |
| 2004 03 15 | 703 | 0.5+ | 1.0+ | 2004 03 27 | 704 | 0.3− | 0.7− | 2006 11 14 | 691 | 0.1− | 0.0 | | |
| 2004 03 15 | 703 | 0.7+ | 0.8+ | 2004 03 27 | 704 | 0.8+ | 0.1+ | 2006 11 14 | 691 | 0.3− | 0.1+ | | |
| 2004 03 15 | 703 | 0.2+ | 0.0 | 2004 03 29 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.3+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.2− | 2004 03 29 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 18 | 704 | 0.5+ | 0.4− | 2004 03 29 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.4+ | 0.0 | | |
| 2004 03 18 | 704 | 0.0 | 0.4− | 2004 04 12 | 703 | 1.1+ | 0.3+ | 2006 11 22 | 691 | 0.3+ | 0.2+ | | |
| 2004 03 18 | 704 | 0.5− | 0.7− | 2004 04 12 | 703 | 0.2+ | 0.4− | | | | | | |

**(137945)∗ 2000 BF$_{49}$ = 2004 FV$_{34}$**

Discovered 2000 Jan. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60589)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.26082 | | (2000.0) | | | |
| $n$ | 0.26733296 | $\omega$ | 10.33686 | | −0.75185105 | −0.65875861 |
| $a$ | 2.3865345 | $\Omega$ | 128.42165 | | +0.60239184 | −0.70328676 |
| $e$ | 0.1257954 | $i$ | 2.01267 | | +0.26803746 | −0.26725423 |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 1.1− | 0.2+ | 2004 03 22 | 704 | 0.1− | 0.7+ | 2005 07 03 | G96 | 0.1− | 0.2+ | | |
| 2000 01 05 | 704 | (2.2− | 0.8−) | 2004 03 22 | 704 | 0.1− | 0.7+ | 2005 07 11 | 691 | 0.1− | 0.3+ | | |
| 2000 01 05 | 704 | 0.4+ | 0.2+ | 2004 03 22 | 704 | 0.2− | 1.0+ | 2005 07 11 | 691 | 0.0 | 0.6+ | | |
| 2000 01 27 | 691 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.4+ | 1.1+ | 2005 07 11 | 691 | 0.4− | 0.8+ | | |
| 2000 01 27 | 691 | 0.2+ | 0.4+ | 2004 03 22 | 704 | 0.2− | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2000 01 27 | 691 | 0.3+ | 0.2+ | 2004 03 24 | 699 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2000 01 27 | 691 | 0.9+ | 0.9− | 2004 03 24 | 699 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1− | | |
| 2000 01 27 | 691 | 0.1− | 0.3− | 2004 03 24 | 699 | 0.4− | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.5− | | |
| 2000 01 27 | 691 | 0.3− | 0.2− | 2004 03 24 | 699 | 0.7+ | 0.9+ | 2006 11 11 | 691 | 0.4− | 0.3+ | | |
| 2000 02 03 | 704 | 0.6− | 0.6+ | 2004 03 28 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.4+ | | |
| 2000 02 03 | 704 | 0.5− | 1.3+ | 2004 03 28 | 704 | 0.5+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.4+ | | |
| 2000 02 03 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 704 | 0.8+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.4− | | |
| 2000 02 03 | 704 | 0.5− | 1.1+ | 2004 03 28 | 704 | 0.2− | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.4− | | |
| 2000 02 03 | 704 | 1.2− | 0.8+ | 2004 03 28 | 704 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.6− | | |
| 2000 02 06 | 691 | 0.1− | 0.6− | 2004 03 29 | 704 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.3− | | |
| 2000 02 06 | 691 | 0.2− | 0.7− | 2004 03 29 | 704 | 0.2− | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.0 | | |
| 2000 02 06 | 691 | 0.3− | 0.8− | 2004 03 29 | 704 | 0.0 | 0.6+ | 2006 11 15 | 691 | 0.1− | 0.3+ | | |
| 2004 03 16 | 704 | 0.8+ | 0.3− | 2004 03 29 | 704 | 0.4− | 0.7+ | 2006 11 15 | 691 | 0.2− | 0.2+ | | |
| 2004 03 16 | 704 | 0.6+ | 0.6+ | 2004 03 29 | 704 | 1.2− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.2+ | | |
| 2004 03 16 | 704 | 0.9− | 0.4− | 2004 03 30 | 704 | 0.5+ | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2004 03 16 | 704 | (0.8+ | 1.7+) | 2004 03 30 | 704 | 0.5− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2004 03 19 | 704 | (0.6− | 1.8+) | 2004 03 30 | 704 | 0.3− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2004 03 19 | 704 | (1.6+ | 0.4+) | 2004 03 30 | 704 | 0.1− | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.2− | | |
| 2004 03 19 | 704 | 0.8+ | 1.0+ | 2004 04 15 | 644 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2004 03 19 | 704 | 1.1+ | 0.2− | 2004 04 15 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.2+ | | |
| 2004 03 19 | 704 | 0.5+ | 0.5+ | 2004 04 15 | 644 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2004 03 19 | 704 | (1.6+ | 0.2+) | 2004 04 19 | 704 | 0.6+ | 0.0 | 2006 11 27 | 691 | 0.3− | 0.3+ | | |
| 2004 03 19 | 704 | 0.8+ | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.7+ | 0.1+ | | |
| 2004 03 19 | 704 | 1.3+ | 0.6+ | 2004 04 19 | 704 | 0.2− | 0.9− | 2006 11 29 | 704 | 0.6+ | 0.9+ | | |
| 2004 03 19 | 704 | 0.4+ | 1.0+ | 2005 06 30 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.7+ | 1.1+ | | |
| 2004 03 20 | 704 | 0.5+ | 0.7+ | 2005 06 30 | 691 | 0.1− | 0.8+ | 2006 11 29 | 704 | 0.2+ | 0.9+ | | |
| 2004 03 20 | 704 | 0.8+ | 1.0+ | 2005 06 30 | 691 | 0.0 | 0.7+ | 2006 12 01 | 691 | 0.6+ | 0.9+ | | |
| 2004 03 20 | 704 | 0.4+ | 1.2+ | 2005 07 03 | G96 | 0.5− | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.6+ | | |
| 2004 03 20 | 704 | 0.0 | 0.8+ | 2005 07 03 | G96 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.5+ | | |
| 2004 03 20 | 704 | 0.7+ | 1.0+ | 2005 07 03 | G96 | 0.4− | 0.2+ | | | | | | |

**(137946)∗ 2000 BF$_{51}$ = 2000 AP$_{28}$**

Discovered 2000 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 38538)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.22166 | | (2000.0) | | | |
| $n$ | 0.26546468 | $\omega$ | 146.64532 | | +0.05286629 | −0.99623470 |
| $a$ | 2.3977186 | $\Omega$ | 300.23791 | | +0.89792534 | +0.07753318 |
| $e$ | 0.1939582 | $i$ | 4.56185 | | +0.43696136 | −0.03879468 |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.4− | 0.3+ | 2002 09 01 | 608 | 1.3− | 0.7+ | 2004 03 19 | 704 | 0.4− | 0.6+ | | |
| 2000 01 03 | 704 | 0.4− | 0.2− | 2002 09 14 | 644 | 0.1+ | 0.8+ | 2004 03 19 | 704 | 0.4+ | 0.5+ | | |
| 2000 01 03 | 704 | 0.8− | 0.6− | 2002 09 14 | 644 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.3− | 0.3− | | |
| 2000 01 03 | 704 | 0.5+ | 0.5− | 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 09 16 | 703 | 0.7+ | 0.4− | | |
| 2000 01 03 | 704 | 0.6+ | 0.3− | 2004 02 19 | 704 | 0.4− | 0.4+ | 2006 09 16 | 703 | 0.4+ | 0.2+ | | |
| 2000 01 04 | 704 | 0.4− | 0.2+ | 2004 02 19 | 704 | 0.6+ | 0.9+ | 2006 09 16 | 703 | 0.3+ | 0.3− | | |
| 2000 01 04 | 704 | 0.3− | 0.1− | 2004 02 19 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 0.4+ | 0.1− | | |
| 2000 01 04 | 704 | 0.6+ | 0.7− | 2004 02 19 | 704 | 0.1− | 0.1+ | 2006 09 18 | 699 | 1.2− | 0.9+ | | |
| 2000 01 04 | 704 | 0.2− | 0.2− | 2004 02 19 | 704 | 0.2− | 1.3+ | 2006 09 18 | 699 | (2.0− | 0.6−) | | |
| 2000 01 04 | 704 | 0.2− | 0.6+ | 2004 02 19 | 608 | 0.3− | 1.2+ | 2006 09 18 | 699 | 0.5− | 0.8+ | | |
| 2000 01 08 | 704 | 0.1+ | 0.2− | 2004 02 19 | 608 | (0.3− | 1.6+) | 2006 09 18 | 699 | 0.6+ | 0.6− | | |
| 2000 01 08 | 704 | 1.5+ | 0.2+ | 2004 02 19 | 608 | 0.3− | 0.8+ | 2006 09 27 | 703 | 0.1− | 0.2− | | |
| 2000 01 08 | 704 | 0.1− | 0.1+ | 2004 02 24 | 608 | 0.1− | 0.4− | 2006 09 27 | 703 | 0.6+ | 0.1− | | |
| 2000 01 08 | 704 | 0.3− | 0.4+ | 2004 02 24 | 608 | 0.4− | 0.7− | 2006 09 27 | 703 | 0.1+ | 0.4− | | |
| 2000 01 08 | 704 | 0.1+ | 0.3+ | 2004 02 24 | 608 | 0.2− | 0.3− | 2006 09 27 | 703 | 0.2− | 0.1+ | | |
| 2000 01 30 | 704 | 0.3− | 0.2− | 2004 02 25 | 704 | 0.9+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2000 01 30 | 704 | 0.8+ | 0.1− | 2004 02 25 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.7+ | | |
| 2000 01 30 | 704 | 0.3− | 0.2+ | 2004 02 25 | 704 | (1.9+ | 0.4+) | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2000 02 02 | 691 | 0.0 | 0.1− | 2004 02 25 | 704 | (2.2+ | 2.2+) | 2006 10 17 | 703 | 0.7− | 0.2− | | |
| 2000 02 02 | 691 | 0.2+ | 0.4− | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.4+ | | |
| 2000 02 02 | 691 | 0.2− | 0.2− | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.4− | | |
| 2000 02 11 | B18 | 1.3− | 1.7+ | 2004 02 26 | 704 | 1.4+ | 1.3+ | 2006 10 17 | 703 | 0.3− | 0.2− | | |
| 2000 02 11 | B18 | 0.6+ | 1.2+ | 2004 02 26 | 704 | 0.6+ | 0.9− | 2006 10 20 | 683 | 2.8− | 1.6+ | | |
| 2000 02 11 | B18 | (0.9+ | 2.4+) | 2004 02 26 | 704 | (1.8+ | 0.9+) | 2006 10 20 | 683 | 0.1− | 0.2− | | |
| 2002 08 17 | 644 | 0.1+ | 1.2+ | 2004 03 16 | 704 | 0.7+ | 0.2+ | 2006 10 20 | 683 | 0.9− | 0.8+ | | |
| 2002 08 17 | 644 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 683 | 1.5+ | 1.2− | | |
| 2002 08 17 | 644 | 0.1+ | 0.9+ | 2004 03 16 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 683 | 0.3+ | 0.3+ | | |
| 2002 08 27 | 644 | 0.2− | 0.7+ | 2004 03 16 | 704 | 0.0 | 0.6+ | 2006 10 22 | 683 | 0.5+ | 0.9− | | |
| 2002 08 27 | 644 | 0.1− | 0.4+ | 2004 03 16 | 704 | 1.3+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2002 08 27 | 644 | 0.1− | 0.7+ | 2004 03 19 | 704 | 0.7− | 1.1+ | 2006 10 23 | 644 | 0.2+ | 0.3+ | | |
| 2002 09 01 | 608 | 1.2− | 0.8+ | 2004 03 19 | 704 | 0.6− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.6+ | | |

**(137947)∗ 2000 CD$_{1}$**

Discovered 2000 Feb. 4 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.14001 | | (2000.0) | | | |
| $n$ | 0.26647526 | $\omega$ | 348.41421 | | −0.73077039 | −0.68211975 |
| $a$ | 2.3916527 | $\Omega$ | 148.52571 | | +0.63023760 | −0.68894646 |
| $e$ | 0.1592049 | $i$ | 2.87811 | | +0.26225026 | −0.24508248 |
| $P$ | 3.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 16 | 691 | 0.5− | 0.5− | 2000 03 10 | 691 | 0.1+ | 0.2+ | 2004 04 16 | 704 | 0.2+ | 0.5− | | |
| 2000 01 16 | 691 | 0.5− | 0.6− | 2000 03 11 | 704 | 0.4+ | 1.3− | 2004 04 16 | 704 | 0.0 | 0.8+ | | |
| 2000 01 16 | 691 | 0.4− | 0.5− | 2000 03 11 | 704 | 0.3+ | 0.5− | 2004 04 17 | 699 | 0.8− | 1.0+ | | |
| 2000 02 02 | 704 | 0.3+ | 0.6+ | 2000 03 11 | 704 | 1.3+ | 0.1− | 2004 04 17 | 699 | 1.3− | 1.0+ | | |
| 2000 02 02 | 704 | 0.4− | 0.5− | 2000 03 11 | 704 | 0.1+ | 0.5− | 2004 04 17 | 699 | 1.1+ | 0.7+ | | |
| 2000 02 02 | 704 | 0.3+ | 0.6− | 2000 03 11 | 704 | 0.5+ | 0.1− | 2004 04 17 | 699 | 0.4− | 0.7− | | |
| 2000 02 04 | 120 | 0.0 | 0.9− | 2000 03 11 | 699 | 0.6+ | 0.2− | 2004 04 19 | 704 | 0.5+ | 0.5+ | | |
| 2000 02 04 | 120 | 0.6− | 0.3− | 2000 03 11 | 699 | 0.1− | 0.0 | 2004 04 19 | 704 | 1.3+ | 0.8− | | |
| 2000 02 04 | 704 | (2.6+ | 0.4−) | 2000 03 11 | 699 | 0.6+ | 0.6− | 2004 04 19 | 704 | 0.3+ | 0.7+ | | |
| 2000 02 04 | 704 | 0.9+ | 1.3+ | 2000 03 11 | 699 | 0.1+ | 0.2− | 2004 04 19 | 704 | 0.3+ | 0.6+ | | |
| 2000 02 04 | 704 | (0.5− | 2.1+) | 2001 06 15 | 691 | 0.2− | 0.1− | 2004 04 19 | 704 | 0.1+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.5+ | 0.1− | 2001 06 15 | 691 | 0.0 | 0.3− | 2004 04 22 | 704 | 0.3+ | 0.1− |
| 2000 02 04 | 704 | 1.1− | 0.7+ | 2001 06 15 | 691 | 0.1− | 0.2− | 2004 04 22 | 704 | 0.7− | 0.5+ |
| 2000 02 04 | 120 | 0.2− | 0.3− | 2002 10 11 | 644 | 0.1− | 0.5+ | 2004 04 22 | 704 | (1.8− | 0.2+) |
| 2000 02 04 | 120 | 1.4− | 0.6+ | 2002 10 11 | 644 | 0.3− | 0.5+ | 2004 04 22 | 704 | (2.9− | 0.8−) |
| 2000 02 06 | 120 | 0.4− | 1.4− | 2002 10 11 | 644 | 0.2− | 1.1+ | 2004 04 22 | 704 | (1.5− | 2.8+) |
| 2000 02 06 | 120 | 0.1+ | 0.2− | 2002 10 30 | 644 | 0.4+ | 1.0+ | 2004 04 25 | 704 | 0.3+ | 0.1+ |
| 2000 02 11 | 704 | 0.2− | 0.7+ | 2002 10 30 | 644 | 0.2− | 1.1+ | 2004 04 25 | 704 | 0.9+ | 0.4− |
| 2000 02 11 | 704 | 0.4− | 0.2+ | 2002 10 30 | 644 | 0.2− | 1.3+ | 2004 04 25 | 704 | 0.4+ | 0.4+ |
| 2000 02 11 | 704 | 0.7− | 0.1− | 2004 03 15 | 703 | (2.5− | 0.4−) | 2004 04 25 | 704 | 0.4+ | 0.3+ |
| 2000 02 11 | 704 | 0.8− | 0.8+ | 2004 03 15 | 703 | 1.0− | 0.5− | 2004 04 25 | 704 | 1.3+ | 0.2− |
| 2000 02 11 | 704 | 0.4− | 0.5+ | 2004 03 15 | 703 | 0.7− | 0.9+ | 2006 10 25 | D35 | 0.1− | 0.4+ |
| 2000 02 25 | 703 | 0.3− | 0.1− | 2004 03 15 | 703 | (1.9− | 1.1+) | 2006 10 25 | D35 | 0.1− | 1.1+ |
| 2000 02 25 | 703 | 0.2− | 0.5+ | 2004 03 19 | 704 | 0.9− | 0.3+ | 2006 10 25 | D35 | 0.2− | 0.2+ |
| 2000 02 25 | 703 | 1.2+ | 0.9+ | 2004 03 19 | 704 | 0.9− | 0.3+ | 2006 11 12 | D35 | 0.2+ | 0.1+ |
| 2000 02 25 | 703 | 0.5− | 0.6+ | 2004 03 19 | 704 | 0.6− | 0.3+ | 2006 11 12 | D35 | 0.3+ | 0.1+ |
| 2000 02 29 | 704 | 0.2+ | 0.1− | 2004 03 19 | 704 | 1.1− | 0.5+ | 2006 11 12 | D35 | 0.5+ | 0.1+ |
| 2000 02 29 | 704 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2000 02 29 | 704 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 1.4+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2000 02 29 | 704 | 0.0 | 0.2+ | 2004 03 22 | 699 | 0.3− | 1.0− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2000 02 29 | 704 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.1+ | 0.4− | 2004 03 22 | 699 | 0.7+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2000 03 03 | 704 | 0.0 | 0.0 | 2004 03 22 | 699 | 0.2− | 0.7− | 2006 11 17 | 704 | 0.3+ | 1.4+ |
| 2000 03 03 | 704 | 0.1− | 0.2+ | 2004 03 22 | 699 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.4− | 1.4+ |
| 2000 03 03 | 704 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.0 | 0.1− | 2006 11 17 | 704 | 1.3+ | 0.5− |
| 2000 03 03 | 704 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.6− | 0.9+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2000 03 05 | 704 | 0.8+ | 0.4+ | 2004 03 28 | 704 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.8− | 0.2− |
| 2000 03 05 | 704 | 0.4+ | 0.2+ | 2004 03 28 | 704 | 0.2− | 1.5+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2000 03 05 | 704 | 0.1− | 0.0 | 2004 03 31 | 704 | 0.3+ | 1.1− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2000 03 05 | 704 | 0.3+ | 0.1− | 2004 03 31 | 704 | 0.0 | 1.0− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2000 03 05 | 704 | 0.8+ | 0.1+ | 2004 03 31 | 704 | 1.4+ | 1.2− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2000 03 06 | 704 | 0.1+ | 0.8− | 2004 03 31 | 704 | 0.6− | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.3+ |
| 2000 03 06 | 704 | 0.3+ | 0.5+ | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.6− | 0.2− |
| 2000 03 06 | 704 | 0.2+ | 0.2− | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.7− |
| 2000 03 06 | 704 | 0.5+ | 0.3+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.6− | 0.0 |
| 2000 03 06 | 704 | 0.0 | 0.8− | 2004 04 16 | 704 | 0.5− | 0.4− | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2000 03 10 | 691 | 0.1+ | 0.2+ | 2004 04 16 | 704 | 0.4+ | 0.4+ | | | | |
| 2000 03 10 | 691 | 0.1+ | 0.4+ | 2004 04 16 | 704 | 0.1+ | 0.5+ | | | | |

**(137948)∗ 2000 $CY_3$ = 2002 $TP_{269}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37298)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.88988 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28627906 | $\omega$ | 147.39358 | | +0.44949568 | −0.89096354 | |
| $a$ | 2.2800428 | $\Omega$ | 275.82312 | | +0.80508770 | +0.43526336 | |
| $e$ | 0.1297552 | $i$ | 3.70721 | | +0.38702381 | +0.12934367 | |
| $P$ | 3.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.4− | 2.0+ | 2002 10 12 | 704 | 0.3− | 0.4− | 2004 04 22 | 704 | 0.2+ | 0.4+ |
| 1999 12 04 | 691 | 0.0 | 0.5+ | 2002 10 28 | 608 | 1.0− | 1.2− | 2004 04 22 | 704 | (1.0+ | 1.6+) |
| 1999 12 04 | 691 | 0.3+ | 0.2+ | 2002 10 28 | 608 | 0.4− | 0.9− | 2004 04 22 | 704 | 0.2+ | 0.6+ |
| 2000 01 05 | 704 | 0.3+ | 0.0 | 2002 10 28 | 608 | 0.8− | 1.1− | 2004 04 22 | 704 | (0.6+ | 1.7+) |
| 2000 01 05 | 704 | 0.3+ | 0.0 | 2002 11 02 | 608 | 1.1+ | 0.5+ | 2004 04 22 | 704 | 0.4− | 0.2− |
| 2000 01 05 | 704 | 0.3+ | 0.8+ | 2002 11 02 | 608 | 1.3+ | 0.2+ | 2004 04 22 | 704 | 0.6+ | 0.4+ |
| 2000 01 05 | 704 | 0.3+ | 0.2+ | 2002 11 02 | 608 | 0.8+ | 0.3− | 2004 04 22 | 704 | (1.3+ | 1.5+) |
| 2000 01 05 | 704 | 0.4− | 0.2− | 2002 11 08 | 704 | 0.6+ | 0.1+ | 2004 04 22 | 704 | 0.5+ | 1.2+ |
| 2000 02 02 | 704 | 0.0 | 0.6+ | 2002 11 08 | 704 | 0.0 | 0.1+ | 2004 04 22 | 704 | 0.9+ | 0.3+ |
| 2000 02 02 | 704 | 0.7+ | 0.0 | 2002 11 08 | 704 | 0.3+ | 0.5+ | 2005 07 02 | 691 | 0.2− | 0.7+ |
| 2000 02 02 | 704 | 0.5+ | 0.4+ | 2002 11 08 | 704 | 0.5− | 0.1− | 2005 07 02 | 691 | 0.0 | 0.4+ |
| 2000 02 02 | 704 | 0.7+ | 0.1+ | 2002 11 12 | 704 | 0.9+ | 0.5+ | 2005 07 02 | 691 | 1.0− | 0.0 |
| 2000 02 03 | 704 | 0.0 | 0.1− | 2002 11 12 | 704 | 0.6+ | 0.1− | 2005 07 04 | G96 | 0.6− | 0.4+ |
| 2000 02 03 | 704 | 0.5− | 0.6− | 2002 11 12 | 704 | 0.2− | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.3+ |
| 2000 02 03 | 704 | 0.3− | 0.4+ | 2002 11 12 | 704 | 0.2− | 0.2− | 2005 07 04 | G96 | 0.6− | 0.2+ |
| 2000 02 03 | 704 | 0.6+ | 0.1− | 2002 11 12 | 704 | 0.8+ | 0.1+ | 2005 07 04 | G96 | 0.1− | 0.3+ |
| 2000 02 03 | 704 | 0.2− | 1.3+ | 2002 11 22 | 644 | 0.2+ | 0.4+ | 2005 07 04 | G96 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.7+ | 0.5− | 2002 11 22 | 644 | 0.0 | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.7+ | 0.6− | 2002 11 22 | 644 | 0.5+ | 0.4+ | 2005 07 04 | 644 | 0.1− | 0.4+ |
| 2002 09 06 | 704 | 0.3+ | 0.4− | 2002 12 01 | 704 | 0.8− | 0.8+ | 2005 07 07 | 691 | 0.1+ | 0.4+ |
| 2002 09 06 | 704 | 0.6+ | 0.3+ | 2002 12 01 | 704 | 0.1− | 0.8+ | 2005 07 07 | 691 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2002 12 01 | 704 | (0.2− | 1.5+) | 2005 07 07 | 691 | 0.2+ | 0.5+ |
| 2002 09 28 | 608 | 1.4− | 0.9+ | 2002 12 11 | 704 | 0.1+ | 0.4+ | 2005 07 15 | G96 | 0.0 | 0.1+ |
| 2002 09 28 | 608 | 1.2− | 1.0+ | 2002 12 11 | 704 | 0.2− | 0.3+ | 2005 07 15 | G96 | 0.4+ | 0.2+ |
| 2002 09 28 | 608 | 1.3− | 0.7+ | 2002 12 11 | 704 | (0.4− | 1.5+) | 2005 07 15 | G96 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 0.2+ | 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2003 01 05 | 704 | (0.6+ | 1.6+) | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.6− |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2004 03 17 | 703 | 0.3− | 1.1+ | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2002 10 04 | 704 | 0.2− | 0.2− | 2004 03 17 | 703 | 0.7+ | 0.9+ | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 2002 10 04 | 644 | 0.2− | 0.4+ | 2004 03 17 | 703 | (0.8+ | 1.8+) | 2006 09 28 | G96 | 0.1− | 0.6− |
| 2002 10 04 | 704 | 0.2+ | 0.7− | 2004 03 17 | 703 | (0.4− | 1.6+) | 2006 09 28 | G96 | 0.3− | 0.9− |
| 2002 10 04 | 644 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.8− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 10 09 | 704 | 0.0 | 1.0+ | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.1− |
| 2002 10 09 | 704 | 0.5− | 0.5+ | 2004 03 19 | 704 | (1.9+ | 1.0+) | 2006 10 17 | G96 | 0.6− | 0.1− |
| 2002 10 09 | 704 | 1.1− | 0.6+ | 2004 04 21 | 704 | 1.0+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.1− |
| 2002 10 09 | 704 | 0.6+ | 0.3+ | 2004 04 21 | 704 | 0.5− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.5− |
| 2002 10 09 | 704 | 0.5+ | 0.6− | 2004 04 21 | 704 | 0.2− | 0.8+ | 2006 11 28 | G96 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.9− | 0.2− | 2004 04 21 | 704 | 0.9+ | 0.1+ | 2006 11 28 | G96 | 0.1− | 0.4− |
| 2002 10 12 | 704 | 0.1+ | 0.2− | 2004 04 22 | 704 | 0.0 | 1.0+ | 2006 11 28 | G96 | 0.2− | 0.2− |
| 2002 10 12 | 704 | 0.3− | 0.1− | 2004 04 22 | 704 | 1.1+ | 0.3− | 2006 11 28 | G96 | 0.4− | 0.4− |
| 2002 10 12 | 704 | 0.4− | 0.3− | 2004 04 22 | 704 | 0.2+ | 0.8+ | | | | |

**(137949)∗ 2000 $CV_6$ = 2002 $SE_{52}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37299)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.58260 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26713655 | $\omega$ | 350.42624 | | +0.26538174 | −0.95461744 | |
| $a$ | 2.3877041 | $\Omega$ | 84.09287 | | +0.89333308 | +0.19071534 | |
| $e$ | 0.0960296 | $i$ | 7.81172 | | +0.36266863 | +0.22876454 | |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.1+ | 1.4− | 2004 02 17 | 704 | 0.3− | 1.1+ | 2006 11 14 | 704 | 0.2+ | 0.3+ |
| 2000 01 04 | 704 | 0.3+ | 0.3− | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 11 14 | 704 | 0.3− | 0.2− |
| 2000 01 04 | 704 | 0.4− | 1.5− | 2004 03 23 | 704 | (0.3− | 1.8+) | 2006 11 14 | 683 | 0.9+ | 0.3− |
| 2000 01 04 | 704 | 0.7+ | 1.0− | 2004 03 23 | 704 | 0.7− | 0.8+ | 2006 11 14 | 704 | 0.2+ | 0.1+ |
| 2000 02 02 | 704 | 0.2− | 0.8− | 2004 03 23 | 704 | 0.5+ | 0.9+ | 2006 11 14 | 683 | (2.2+ | 0.5−) |
| 2000 02 02 | 704 | 0.3− | 0.8+ | 2004 03 23 | 704 | 0.6− | 0.3+ | 2006 11 14 | 704 | 0.1− | 1.2+ |
| 2000 02 02 | 704 | 0.1− | 0.3+ | 2004 03 25 | 704 | 0.3+ | 0.3− | 2006 11 14 | 683 | 0.5− | 0.4+ |
| 2000 02 02 | 704 | 0.4− | 1.5+ | 2004 03 25 | 704 | (0.5− | 1.8+) | 2006 11 15 | 683 | 0.4+ | 0.4− |
| 2000 02 03 | 704 | 0.2+ | 1.0+ | 2004 03 25 | 704 | 0.2− | 0.6+ | 2006 11 15 | 683 | (1.0− | 1.8+) |
| 2000 02 03 | 704 | 0.4+ | 0.0 | 2004 03 25 | 704 | 0.6+ | 0.5+ | 2006 11 15 | 683 | 0.4− | 1.0+ |
| 2000 02 03 | 704 | 0.7+ | 1.0− | 2006 10 19 | 683 | 0.0 | 0.4+ | 2006 11 19 | 704 | 1.0− | 0.5+ |
| 2000 02 03 | 704 | 1.3− | 0.2+ | 2006 10 19 | 683 | 0.6− | 1.3+ | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2000 02 03 | 704 | 1.2+ | 1.2− | 2006 10 19 | 683 | 1.3− | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2000 02 11 | 704 | 0.5− | 0.3+ | 2006 10 30 | 703 | 0.0 | 0.7− | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2000 02 11 | 704 | 0.3− | 0.5− | 2006 10 30 | 703 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.3− |
| 2000 02 11 | 704 | 0.3− | 0.3+ | 2006 10 30 | 703 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 0.0 | 0.3+ | 2006 10 30 | 703 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2002 09 10 | 644 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.7− |
| 2002 09 10 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.8− | 1.0− |
| 2002 09 10 | 644 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.7− |
| 2002 09 17 | 644 | 0.2− | 0.2− | 2006 11 10 | 683 | 1.3+ | 0.3− | 2006 11 22 | 683 | 1.4+ | 0.5− |
| 2002 09 17 | 644 | 0.1− | 0.0 | 2006 11 10 | 683 | 0.3+ | 0.3+ | 2006 11 22 | 683 | 0.1+ | 0.6+ |
| 2002 09 17 | 644 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 22 | 683 | 0.4+ | 0.3+ |
| 2002 09 19 | 644 | 0.5+ | 0.6+ | 2006 11 10 | 644 | 0.4− | 0.0 | 2006 11 25 | 683 | 0.5+ | 0.2− |
| 2002 09 19 | 644 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.5− | 0.1+ | 2006 11 25 | 683 | 0.2+ | 0.2− |
| 2002 09 19 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 25 | 683 | (3.0− | 0.0 ) |
| 2002 09 30 | 608 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.5− | 0.2+ | 2006 11 28 | 683 | 0.4+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 608 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 28 | 683 | 0.2+ | 0.5+ |
| 2002 09 30 | 608 | 0.4− | 0.2− | 2006 11 13 | 683 | 0.0 | 0.1− | 2006 11 28 | 683 | 0.4− | 0.4− |
| 2002 10 05 | 704 | (0.8− | 1.8−) | 2006 11 13 | 683 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 1.1+ | 0.2+ |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2006 11 13 | 683 | 0.9+ | 0.3+ | 2006 11 28 | 704 | 0.5+ | 0.2− |
| 2002 10 05 | 704 | 0.3+ | 0.5− | 2006 11 13 | 703 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 0.4+ | 0.1+ |
| 2002 10 05 | 704 | 0.8− | 0.7+ | 2006 11 13 | 703 | 0.7+ | 0.7− | 2006 11 28 | 704 | 0.0 | 0.1− |
| 2004 02 17 | 704 | 1.1+ | 0.5+ | 2006 11 13 | 703 | 0.8− | 0.1+ | 2006 11 28 | 704 | 0.8+ | 0.8+ |
| 2004 02 17 | 704 | 0.6+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.4− | | | | |

**(137950)∗ 2000 $CB_7$ = 2001 $QB_{165}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 17150)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 221.12443 | | (2000.0) | | | |
| $n$ | 0.27837895 | $\omega$ | 135.91305 | | −0.48290330 | +0.86529393 |
| $a$ | 2.3229781 | $\Omega$ | 104.78339 | | −0.83697513 | −0.41095917 |
| $e$ | 0.1822118 | $i$ | 7.99172 | | −0.25744326 | −0.28701738 |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.0 | 1.0+ | 2004 03 15 | 704 | (2.0− | 0.9−) | 2004 04 25 | 699 | 0.3− | 0.0 |
| 2000 02 02 | 704 | 0.0 | 0.5+ | 2004 03 15 | 704 | 0.6− | 0.1+ | 2004 04 25 | 699 | 0.9− | 0.6− |
| 2000 02 02 | 704 | 0.2− | 0.1+ | 2004 03 15 | 704 | (1.6− | 0.7−) | 2004 04 28 | 704 | 0.5+ | 0.3+ |
| 2000 02 02 | 704 | 0.5− | 1.1+ | 2004 03 15 | 704 | (2.4− | 0.3+) | 2004 04 28 | 704 | 0.2− | 0.4+ |
| 2000 02 02 | 704 | (0.4− | 2.1+) | 2004 03 22 | 699 | 0.1− | 0.1− | 2004 04 28 | 704 | 0.1− | 0.3+ |
| 2000 02 03 | 704 | 0.2+ | 0.3+ | 2004 03 22 | 699 | 0.0 | 0.1+ | 2004 04 28 | 704 | 0.1− | 0.6+ |
| 2000 02 03 | 704 | 0.9+ | 1.1+ | 2004 03 22 | 699 | 0.4+ | 0.4− | 2004 04 28 | 704 | 0.2− | 0.0 |
| 2000 02 03 | 704 | 0.8+ | 1.4+ | 2004 03 22 | 699 | 0.7− | 0.3− | 2004 05 09 | 703 | 0.0 | 0.4+ |
| 2000 02 11 | 704 | 0.9+ | 0.8− | 2004 03 23 | 704 | 0.6+ | 0.1+ | 2004 05 09 | 703 | 0.4− | 0.7+ |
| 2000 02 11 | 704 | 0.3− | 0.3− | 2004 03 23 | 704 | 0.0 | 0.5+ | 2004 05 09 | 703 | 1.0+ | 1.2+ |
| 2000 02 11 | 704 | 0.2− | 1.9+ | 2004 03 23 | 704 | 0.7+ | 0.9+ | 2004 05 09 | 703 | 0.4− | 0.1− |
| 2000 02 11 | 704 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.7+ | 2004 05 13 | 704 | 1.0+ | 0.3+ |
| 2001 07 30 | 704 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2004 05 13 | 704 | 0.6+ | 0.7+ |
| 2001 07 30 | 704 | 0.8+ | 1.1− | 2004 03 29 | 691 | 0.3− | 0.1+ | 2004 05 13 | 704 | 0.3+ | 0.8+ |
| 2001 07 30 | 704 | 0.0 | 1.2+ | 2004 03 29 | 691 | 0.2− | 0.1− | 2004 05 13 | 704 | 0.6+ | 0.5+ |
| 2001 07 30 | 704 | 0.2− | 0.5− | 2004 03 29 | 691 | 0.3− | 0.0 | 2004 05 13 | 704 | 0.2− | 0.1+ |
| 2001 07 30 | 704 | 0.4+ | 0.0 | 2004 04 02 | 608 | 0.1− | 0.8+ | 2004 05 23 | 704 | 1.2+ | 0.8+ |
| 2001 08 10 | 608 | 0.2− | 0.1− | 2004 04 02 | 608 | 0.5− | 0.3+ | 2004 05 23 | 704 | 0.8+ | 0.8+ |
| 2001 08 10 | 608 | 0.1+ | 0.5− | 2004 04 02 | 608 | 0.2− | 0.7+ | 2004 05 23 | 704 | 0.7+ | 0.9+ |
| 2001 08 10 | 608 | 0.1+ | 0.1− | 2004 04 12 | 703 | 0.4− | 0.3+ | 2004 05 23 | 704 | 0.9+ | 0.4+ |
| 2001 08 19 | 704 | 0.3+ | 0.5+ | 2004 04 12 | 703 | 0.6− | 0.2+ | 2004 06 13 | 704 | 0.3+ | 0.2− |
| 2001 08 19 | 704 | 0.2+ | 0.7+ | 2004 04 12 | 703 | 0.1− | 0.6+ | 2004 06 13 | 704 | 1.0+ | 1.3+ |
| 2001 08 19 | 704 | 0.1− | 0.5+ | 2004 04 12 | 703 | 0.1− | 0.2− | 2004 06 13 | 704 | 1.2+ | 0.8− |
| 2001 08 19 | 704 | 0.3+ | 0.9+ | 2004 04 15 | 704 | 0.6+ | 0.0 | 2004 06 13 | 704 | 0.5+ | 0.1− |
| 2001 08 19 | 704 | 0.3− | 1.3+ | 2004 04 15 | 704 | 0.9+ | 0.0 | 2004 06 13 | 704 | 0.6+ | 1.2+ |
| 2001 08 22 | 608 | 0.1− | 1.1− | 2004 04 15 | 704 | 0.9+ | 0.3− | 2005 10 05 | 703 | 1.3− | 0.7+ |
| 2001 08 22 | 608 | 0.2− | 1.2− | 2004 04 15 | 704 | 1.2+ | 0.3− | 2005 10 05 | 703 | 0.2+ | 0.2− |
| 2001 08 22 | 608 | 0.2− | 0.8− | 2004 04 15 | 704 | 1.2+ | 0.2+ | 2005 10 05 | 703 | 0.0 | 1.2+ |
| 2001 08 23 | 699 | (0.9− | 1.7+) | 2004 04 15 | 644 | 0.1+ | 0.2+ | 2005 10 05 | 703 | 0.4+ | 0.2+ |
| 2001 08 23 | 699 | 0.1+ | 0.0 | 2004 04 15 | 644 | 0.0 | 0.1+ | 2005 10 12 | 291 | 0.1− | 1.1+ |
| 2001 08 23 | 699 | 0.7− | 0.1+ | 2004 04 15 | 644 | 0.2+ | 0.2+ | 2005 10 12 | 291 | 0.5− | 0.9+ |
| 2001 08 23 | 699 | 0.3− | 0.7+ | 2004 04 23 | 703 | 1.1− | 0.3− | 2005 10 12 | 291 | 0.5− | 0.9+ |
| 2001 08 27 | 608 | 0.8− | 1.3+ | 2004 04 23 | 703 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.6+ | 0.1− |
| 2001 08 27 | 608 | 0.6− | 0.3− | 2004 04 23 | 703 | 1.1− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 08 27 | 608 | 0.0 | 0.3− | 2004 04 23 | 703 | 1.4− | 0.1− | 2006 10 21 | G96 | 0.8− | 0.0 |
| 2001 09 11 | 704 | 0.1+ | 0.8+ | 2004 04 24 | 704 | 0.9+ | 1.0− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 09 11 | 704 | 0.0 | 0.7+ | 2004 04 24 | 704 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 09 11 | 704 | (0.1+ | 1.7+) | 2004 04 24 | 704 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.2+ |
| 2001 09 11 | 704 | 0.4− | 0.9+ | 2004 04 24 | 704 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 03 13 | 644 | 0.2− | 0.2+ | 2004 04 24 | 704 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2004 03 13 | 644 | 0.0 | 0.3+ | 2004 04 25 | 699 | 0.8− | 0.1− | | | | |
| 2004 03 13 | 644 | 0.1+ | 0.2+ | 2004 04 25 | 699 | 0.3− | 0.0 | | | | |

**(137951)∗ 2000 $CG_{11}$ = 2002 $PE_{49}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33200)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.85491 | | (2000.0) | | | |
| $n$ | 0.26616498 | $\omega$ | 132.12448 | | +0.70441902 | −0.69605043 |
| $a$ | 2.3935111 | $\Omega$ | 272.50856 | | +0.60326604 | +0.69027016 |
| $e$ | 0.1850862 | $i$ | 7.99491 | | +0.37398385 | +0.19758773 |
| $P$ | 3.70 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | (2.1− | 0.4+) | 2002 09 30 | 704 | 0.6− | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2000 01 05 | 704 | 0.3+ | 0.5+ | 2002 09 30 | 704 | 0.8− | 1.1+ | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2000 01 05 | 704 | 0.7+ | 0.0 | 2002 09 30 | 704 | 0.6− | 1.4+ | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2000 01 05 | 704 | 1.1+ | 0.8+ | 2002 10 05 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2000 01 07 | 704 | 0.4+ | 0.4+ | 2002 10 05 | 704 | 1.2+ | 0.8− | 2006 10 19 | 703 | 0.4− | 0.5− |
| 2000 01 07 | 704 | 0.4− | 0.3+ | 2002 10 05 | 704 | 1.0+ | 0.3− | 2006 10 20 | 704 | 0.9+ | 0.2− |
| 2000 01 07 | 704 | 0.5− | 0.3+ | 2002 10 05 | 704 | 0.8+ | 0.8− | 2006 10 20 | 704 | 0.0 | 0.0 |
| 2000 01 07 | 704 | 0.5+ | 0.9− | 2002 10 05 | 704 | (1.0+ | 1.6−) | 2006 10 20 | 704 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 0.4− | 0.1− | 2002 10 07 | 699 | 0.8− | 0.5− | 2006 10 20 | 704 | 0.3+ | 0.3+ |
| 2000 02 02 | 704 | 0.1− | 0.2+ | 2002 10 07 | 699 | 0.1− | 0.9+ | 2006 10 20 | 704 | 0.2+ | 0.1+ |
| 2000 02 02 | 704 | 0.6+ | 1.0+ | 2002 10 07 | 699 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.7− |
| 2000 02 02 | 704 | 0.4+ | 1.2+ | 2002 10 07 | 699 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2000 02 02 | 704 | 0.3− | 0.4+ | 2002 10 08 | 644 | 0.5− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2000 02 04 | 704 | 0.0 | 0.1− | 2002 10 08 | 644 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.6− |
| 2000 02 04 | 704 | 0.7− | 0.1+ | 2002 10 08 | 644 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.5− |
| 2000 02 04 | 704 | 0.4− | 0.8− | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.2− | 0.7− |
| 2002 08 04 | 644 | 0.4− | 0.7+ | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.2− | 0.7− |
| 2002 08 04 | 644 | 0.3− | 0.5+ | 2004 01 28 | 704 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2002 08 04 | 644 | 0.2− | 0.6+ | 2004 01 28 | 704 | (1.7+ | 0.9+) | 2006 11 16 | 704 | 0.5− | 0.2− |
| 2002 08 10 | 704 | 0.7+ | 0.3− | 2004 01 28 | 704 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.9+ |
| 2002 08 10 | 704 | 0.6+ | 0.4− | 2004 01 28 | 704 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.3− | 0.6− |
| 2002 08 10 | 704 | 0.1− | 0.5− | 2004 01 30 | 699 | 1.4+ | 1.0+ | 2006 11 16 | 704 | 0.6− | 0.7+ |
| 2002 08 10 | 704 | 0.7− | 0.8− | 2004 01 30 | 699 | 1.0− | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2002 08 11 | 704 | 0.3+ | 0.7+ | 2004 01 30 | 699 | 0.7+ | 0.5+ | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2002 08 11 | 704 | 0.3+ | 0.5+ | 2004 01 30 | 699 | 0.3+ | 0.9− | 2006 11 22 | 703 | 0.0 | 0.7− |
| 2002 08 11 | 704 | 0.3− | 0.3+ | 2004 02 19 | 704 | (0.0 | 1.8+) | 2006 11 22 | 703 | 1.4+ | 0.3− |
| 2002 08 11 | 704 | 0.1+ | 0.4− | 2004 02 19 | 704 | 0.5− | 1.0+ | 2006 11 22 | 703 | 0.4+ | 0.0 |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2004 02 19 | 704 | (0.1+ | 1.7+) | 2006 11 28 | 704 | 0.5− | 0.5+ |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.3− | 0.3− |
| 2002 08 27 | 644 | 0.1− | 0.1− | 2004 02 19 | 704 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2002 09 04 | 644 | 0.1+ | 0.7+ | 2006 09 19 | 703 | 1.0+ | 0.9+ | 2006 11 28 | 704 | 0.5− | 0.5+ |
| 2002 09 04 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.9+ | 0.1+ | 2006 12 01 | 704 | 0.6+ | 0.4+ |
| 2002 09 04 | 644 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.2+ | 0.9+ | 2006 12 01 | 704 | 0.1− | 0.2+ |
| 2002 09 16 | 683 | 0.8+ | 0.4− | 2006 09 19 | 703 | 0.9− | 0.9+ | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2002 09 16 | 683 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2− | | | | |
| 2002 09 30 | 704 | 0.6− | 1.4+ | 2006 10 12 | 644 | 0.1− | 0.1− | | | | |

**(137952)∗ 2000 $CY_{11}$ = 2004 $FW_{22}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74721)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.33134 | | (2000.0) | | | |
| $n$ | 0.25946881 | $\omega$ | 245.88925 | | +0.43389052 | −0.90096492 |
| $a$ | 2.4345159 | $\Omega$ | 178.39476 | | +0.84033936 | +0.40424932 |
| $e$ | 0.1844277 | $i$ | 2.27078 | | +0.32491349 | +0.15762203 |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 03 | 691 | 0.1+ | 0.1− | 2004 02 26 | 704 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.1+ |
| 1991 11 03 | 691 | 0.2+ | 0.3− | 2004 02 26 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 1.0− | 1.4+ |
| 1991 11 03 | 691 | 0.2+ | 0.3− | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.4− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.9+ | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.8− | 1.3+ | 2002 07 14 | 704 | 1.2+ | 1.4+ | 2002 11 12 | 704 | 0.5+ | 0.4+ | 2004 03 20 | 704 | 0.8+ | 0.9+ |
| 2000 01 06 | 704 | 0.2+ | 0.5+ | 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.6+ | 2002 07 14 | 704 | 0.6− | 0.1+ | 2002 11 12 | 704 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.9+ | 0.8+ |
| 2000 01 06 | 704 | 0.1+ | 0.7+ | 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2002 07 14 | 704 | (1.8− | 1.9+) | 2002 11 22 | 644 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.8+ | 1.2+ |
| 2000 02 02 | 704 | 0.3− | 0.5+ | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2002 07 14 | 704 | 0.3− | 1.1+ | 2002 11 22 | 644 | 0.1+ | 0.0 | 2004 04 16 | 644 | 0.5+ | 0.8+ |
| 2000 02 02 | 704 | 0.0 | 0.3− | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2002 08 04 | 704 | 0.9+ | 0.1+ | 2002 11 22 | 644 | 0.2+ | 0.0 | 2004 04 16 | 644 | 0.2+ | 0.9+ |
| 2000 02 02 | 704 | 1.2− | 1.1− | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.0 | 2002 08 04 | 704 | 1.3+ | 0.8+ | 2002 12 01 | 704 | 0.2− | 0.3+ | 2004 04 16 | 644 | 0.1+ | 0.6+ |
| 2000 02 02 | 704 | 0.9− | 0.4− | 2004 03 18 | 704 | 0.4+ | 0.5− | 2006 09 27 | 704 | 1.0+ | 0.1+ | 2002 08 04 | 704 | 0.5+ | 0.5+ | 2002 12 01 | 704 | 0.2− | 0.2− | 2004 04 16 | 644 | 0.0 | 0.8+ |
| 2000 02 02 | 704 | 0.6− | 0.5+ | 2004 03 18 | 704 | (0.5+ | 1.6+) | 2006 09 27 | 704 | 0.1+ | 1.0+ | 2002 08 04 | 704 | 0.5+ | 0.1− | 2002 12 01 | 704 | 0.5− | 0.3+ | 2004 04 16 | 644 | 0.2+ | 0.8+ |
| 2000 02 03 | 704 | 0.9+ | 0.6− | 2004 03 18 | 704 | 0.5+ | 0.5− | 2006 09 28 | 704 | 0.6− | 0.4− | 2002 08 04 | 704 | 0.7+ | 0.4− | 2002 12 01 | 704 | 0.3+ | 1.0+ | 2004 04 16 | 644 | 0.2+ | 0.5+ |
| 2000 02 03 | 704 | 0.8− | 0.0 | 2004 03 18 | 704 | 1.2+ | 0.7+ | 2006 09 28 | 704 | 0.5− | 1.3+ | 2002 09 21 | 608 | 1.4− | 0.3− | 2002 12 01 | 704 | 0.8+ | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.1− |
| 2000 02 03 | 704 | 0.9− | 0.1− | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.1− | 2002 09 21 | 608 | 1.3− | 0.4− | 2002 12 06 | 704 | 0.6− | 0.2− | 2004 04 20 | 704 | 0.8+ | 0.4− |
| 2000 02 03 | 704 | 0.8− | 0.2+ | 2004 03 26 | 691 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.6+ | 0.9+ | 2002 09 21 | 608 | 1.2− | 0.3− | 2002 12 06 | 704 | 0.7− | 0.7− | 2004 04 20 | 704 | 1.3+ | 0.6− |
| 2000 02 03 | 704 | 0.2+ | 1.3+ | 2004 03 26 | 691 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.1− | 0.2− | 2002 10 03 | 644 | 1.4− | 0.5− | 2002 12 06 | 704 | 0.4− | 0.1+ | 2004 04 22 | 691 | 0.1+ | 0.7+ |
| 2002 08 17 | 644 | 0.2− | 0.3+ | 2006 08 28 | 703 | (1.7− | 0.3+) | 2006 09 29 | 704 | 0.0 | 1.4+ | 2002 10 03 | 644 | 0.0 | 0.4+ | 2002 12 06 | 704 | 0.3− | 0.1+ | 2004 04 22 | 691 | 0.1+ | 0.6+ |
| 2002 08 17 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 703 | (1.4− | 1.7−) | 2006 09 29 | 704 | 0.5− | 0.1− | 2002 10 03 | 644 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.3− | 2004 04 22 | 691 | 0.2+ | 0.8+ |
| 2002 08 17 | 644 | 0.2− | 0.6+ | 2006 08 28 | 703 | (0.5− | 2.0−) | 2006 09 29 | 704 | 0.8+ | 1.0+ | 2002 10 04 | 704 | 0.2+ | 0.5+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2005 06 11 | 704 | 0.2− | 1.1− |
| 2002 08 19 | 644 | (0.0 | 1.6+) | 2006 08 28 | 703 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.7− | 2002 10 04 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 704 | 0.2− | 0.3+ | 2005 06 11 | 704 | 0.5+ | 0.4+ |
| 2002 08 19 | 644 | (0.0 | 1.8+) | 2006 09 12 | 703 | (0.8+ | 1.7+) | 2006 09 29 | 704 | 0.2+ | 0.1− | 2002 10 04 | 704 | 0.2+ | 0.6+ | 2002 12 11 | 704 | 0.4− | 0.1− | 2005 06 11 | 704 | (0.1− | 1.9+) |
| 2002 08 19 | 644 | 0.1− | 1.4+ | 2006 09 12 | 703 | 0.2− | 1.0+ | 2006 09 29 | 704 | 0.2+ | 0.1+ | 2002 10 04 | 699 | 0.3+ | 0.8+ | 2002 12 11 | 704 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2002 09 05 | 704 | 0.2+ | 1.1+ | 2006 09 12 | 703 | 1.0+ | 1.0+ | 2006 09 29 | 704 | 0.7+ | 0.5+ | 2002 10 04 | 704 | 0.5+ | 1.1+ | 2002 12 11 | 704 | 0.4− | 1.3− | 2006 09 25 | G96 | 1.0− | 0.8− |
| 2002 09 05 | 704 | 0.8− | 0.9+ | 2006 09 12 | 703 | 0.5+ | 1.4+ | 2006 10 16 | G96 | 0.0 | 0.5− | 2002 10 04 | 699 | 0.1+ | 0.2+ | 2002 12 19 | 644 | 0.1+ | 0.5+ | 2006 09 25 | G96 | (0.7− | 1.9−) |
| 2002 09 05 | 704 | 1.3− | 0.1+ | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.5− | 2002 10 04 | 704 | 0.7+ | 0.9+ | 2002 12 19 | 644 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 2002 09 05 | 704 | 1.1− | 0.5+ | 2006 09 16 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.4− | 0.5− | 2002 10 04 | 699 | 0.5+ | 0.4+ | 2002 12 19 | 644 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.4− | 0.8− |
| 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 09 16 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.3+ | 2002 10 04 | 699 | 0.3+ | 0.6+ | 2003 01 01 | 704 | 0.2+ | 0.8+ | 2006 10 17 | G96 | 0.4− | 0.3− |
| 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.9− | 2002 10 09 | 704 | 0.1− | 1.1+ | 2003 01 01 | 704 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.7− |
| 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.8− | 0.7− | 2006 10 22 | 703 | 0.2+ | 0.7− | 2002 10 09 | 704 | 0.3− | 0.8+ | 2003 01 01 | 704 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2004 02 26 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.3+ | 2002 10 09 | 704 | 0.2− | 1.1+ | 2003 01 01 | 704 | 0.7− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.7− |
| 2004 02 26 | 704 | 0.5− | 0.1+ | 2006 09 17 | 704 | 0.6− | 0.5+ | | | | | 2002 10 09 | 704 | 0.0 | 1.2+ | 2003 01 01 | 704 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2004 02 26 | 704 | 1.0+ | 0.6+ | 2006 09 17 | 704 | (0.0 | 1.7+) | | | | | 2002 10 09 | 704 | 0.3− | 1.1+ | 2003 01 05 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.3+ | 0.3− | 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.1− | 0.6+ | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| | | | | | | | | | | | | 2002 10 12 | 704 | (1.9+ | 3.4+) | 2003 01 05 | 704 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2002 10 12 | 704 | (1.4− | 1.5+) | 2003 01 05 | 704 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.4− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.0 | 1.0+ | 2003 01 08 | 704 | 0.4+ | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.9− |
| | | | | | | | | | | | | 2002 10 31 | 699 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.3− |
| | | | | | | | | | | | | 2002 10 31 | 644 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.1− |
| | | | | | | | | | | | | 2002 10 31 | 699 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.3+ | 0.5+ | 2006 11 27 | 703 | 0.8− | 0.0 |
| | | | | | | | | | | | | 2002 10 31 | 644 | 0.1+ | 0.0 | 2003 01 08 | 608 | 0.5− | 0.3+ | | | | |
| | | | | | | | | | | | | 2002 10 31 | 699 | 0.4− | 0.3− | 2003 01 08 | 608 | 1.1− | 0.5+ | | | | |

**(137953)∗ 2000 $CG_{12}$ = 2002 $TN_{72}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37301)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.74841 | | (2000.0) | | | |
| $n$ | 0.28242912 | $\omega$ | 120.33523 | | +0.84274766 | −0.53531745 |
| $a$ | 2.3007163 | $\Omega$ | 272.08533 | | +0.47237401 | +0.78589926 |
| $e$ | 0.1789392 | $i$ | 3.25091 | | +0.25814567 | +0.30951185 |
| $P$ | 3.49 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 699 | 0.3+ | 0.6− | 2002 10 31 | 644 | 0.1+ | 0.1+ | 2003 01 08 | 608 | 0.1− | 0.6+ | 2002 07 14 | 704 | 1.2+ | 1.4+ | 2002 11 12 | 704 | 0.5+ | 0.4+ | 2004 03 20 | 704 | 0.8+ | 0.9+ |
| 1999 12 31 | 699 | 0.3+ | 0.8+ | 2002 10 31 | 699 | 0.1+ | 0.1+ | 2003 01 27 | 704 | 0.4+ | 0.3− | 2002 07 14 | 704 | 0.6− | 0.1+ | 2002 11 12 | 704 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.9+ | 0.8+ |
| 1999 12 31 | 699 | 0.5+ | 0.3+ | 2002 10 31 | E14 | 0.3− | 1.4− | 2003 01 27 | 704 | 0.0 | 0.0 | 2002 07 14 | 704 | (1.8− | 1.9+) | 2002 11 22 | 644 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.8+ | 1.2+ |
| 2000 01 06 | 704 | 0.9− | 0.6− | 2002 10 31 | E14 | 1.0− | 0.9− | 2003 01 27 | 704 | 0.4− | 0.0 | 2002 07 14 | 704 | 0.3− | 1.1+ | 2002 11 22 | 644 | 0.1+ | 0.0 | 2004 04 16 | 644 | 0.5+ | 0.8+ |
| 2000 01 06 | 704 | 1.0− | 0.5− | 2002 10 31 | E14 | 0.5− | 1.4− | 2003 01 27 | 704 | 0.1+ | 0.6+ | 2002 08 04 | 704 | 0.9+ | 0.1+ | 2002 11 22 | 644 | 0.2+ | 0.0 | 2004 04 16 | 644 | 0.2+ | 0.9+ |
| 2000 01 06 | 704 | 0.8− | 1.3− | 2002 11 03 | 704 | 0.5− | 0.8+ | 2003 01 27 | 704 | 0.3− | 0.4− | 2002 08 04 | 704 | 1.3+ | 0.8+ | 2002 12 01 | 704 | 0.2− | 0.3+ | 2004 04 16 | 644 | 0.1+ | 0.6+ |
| 2000 01 06 | 704 | 0.3− | 0.2+ | 2002 11 03 | 704 | 0.2+ | 1.1+ | 2004 02 16 | 703 | 1.2− | 0.4+ | 2002 08 04 | 704 | 0.5+ | 0.5+ | 2002 12 01 | 704 | 0.2− | 0.2− | 2004 04 16 | 644 | 0.0 | 0.8+ |
| 2000 01 13 | 699 | 0.5+ | 0.9+ | 2002 11 03 | 704 | 1.0− | 1.1+ | 2004 02 16 | 703 | (0.9+ | 3.5+) | 2002 08 04 | 704 | 0.5+ | 0.1− | 2002 12 01 | 704 | 0.5− | 0.3+ | 2004 04 16 | 644 | 0.2+ | 0.8+ |
| 2000 01 13 | 699 | 0.6+ | 0.8+ | 2002 11 03 | 704 | 0.8− | 1.0+ | 2004 02 16 | 703 | 1.2− | 0.0 | 2002 08 04 | 704 | 0.7+ | 0.4− | 2002 12 01 | 704 | 0.3+ | 1.0+ | 2004 04 16 | 644 | 0.2+ | 0.5+ |
| 2000 01 13 | 699 | 0.8+ | 0.1+ | 2002 11 03 | 704 | 0.9− | 0.8+ | 2004 02 16 | 703 | 0.1− | 0.8+ | 2002 09 21 | 608 | 1.4− | 0.3− | 2002 12 01 | 704 | 0.8+ | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.1− |
| 2000 02 02 | 704 | 0.9+ | 0.6− | 2002 11 03 | 608 | 0.3− | 0.4− | 2004 03 16 | 703 | (2.2− | 0.7+) | 2002 09 21 | 608 | 1.3− | 0.4− | 2002 12 06 | 704 | 0.6− | 0.2− | 2004 04 20 | 704 | 0.8+ | 0.4− |
| 2000 02 02 | 704 | 0.5+ | 0.4+ | 2002 11 03 | 608 | 0.4− | 0.2− | 2004 03 16 | 703 | 0.8+ | 0.2− | 2002 09 21 | 608 | 1.2− | 0.3− | 2002 12 06 | 704 | 0.7− | 0.7− | 2004 04 20 | 704 | 1.3+ | 0.6− |
| 2000 02 02 | 704 | 0.1− | 0.5+ | 2002 11 03 | 608 | 0.4− | 0.3− | 2004 03 16 | 703 | 0.1− | 0.3+ | 2002 10 03 | 644 | 1.4− | 0.5− | 2002 12 06 | 704 | 0.4− | 0.1+ | 2004 04 22 | 691 | 0.1+ | 0.7+ |
| 2000 02 02 | 704 | 0.2+ | 0.2+ | 2002 11 08 | 704 | 0.0 | 0.2+ | 2004 03 16 | 703 | 0.4− | 0.5+ | 2002 10 03 | 644 | 0.0 | 0.4+ | 2002 12 06 | 704 | 0.3− | 0.1+ | 2004 04 22 | 691 | 0.1+ | 0.6+ |
| 2000 02 02 | 704 | 0.9+ | 0.7+ | 2002 11 08 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.1− | 2002 10 03 | 644 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.3− | 2004 04 22 | 691 | 0.2+ | 0.8+ |
| 2000 02 03 | 704 | 0.3− | 0.1+ | 2002 11 08 | 704 | 0.2+ | 0.1+ | 2004 03 19 | 704 | 0.2− | 1.2+ | 2002 10 04 | 704 | 0.2+ | 0.5+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2005 06 11 | 704 | 0.2− | 1.1− |
| 2000 02 03 | 704 | 0.3− | 0.3− | 2002 11 08 | 704 | 0.2+ | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2002 10 04 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 704 | 0.2− | 0.3+ | 2005 06 11 | 704 | 0.5+ | 0.4+ |
| 2000 02 03 | 704 | 0.6− | 0.7− | 2002 11 08 | 704 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.9− | 0.3− | 2002 10 04 | 704 | 0.2+ | 0.6+ | 2002 12 11 | 704 | 0.4− | 0.1− | 2005 06 11 | 704 | (0.1− | 1.9+) |
| 2000 02 03 | 704 | 0.0 | 0.6− | 2002 11 12 | 704 | 0.4+ | 0.3+ | 2004 03 19 | 704 | (1.0+ | 1.8+) | 2002 10 04 | 699 | 0.3+ | 0.8+ | 2002 12 11 | 704 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2000 02 03 | 704 | (0.1− | 2.4−) | 2002 11 12 | 644 | 0.1+ | 0.1+ | 2004 03 19 | 704 | (1.2+ | 1.6+) | 2002 10 04 | 704 | 0.5+ | 1.1+ | 2002 12 11 | 704 | 0.4− | 1.3− | 2006 09 25 | G96 | 1.0− | 0.8− |
| 2000 02 27 | 703 | 0.6− | 0.9+ | 2002 11 12 | 704 | 0.6+ | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2002 10 04 | 699 | 0.1+ | 0.2+ | 2002 12 19 | 644 | 0.1+ | 0.5+ | 2006 09 25 | G96 | (0.7− | 1.9−) |
| 2000 02 27 | 703 | 0.2+ | 0.3− | 2002 11 12 | 644 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.9+ | 1.5+ | 2002 10 04 | 704 | 0.7+ | 0.9+ | 2002 12 19 | 644 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 2000 02 27 | 703 | 0.1− | 0.7− | 2002 11 12 | 704 | 0.7+ | 0.2− | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2002 10 04 | 699 | 0.5+ | 0.4+ | 2002 12 19 | 644 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.4− | 0.8− |
| 2000 02 27 | 703 | 0.7− | 0.7− | 2002 11 12 | 644 | (0.2+ | 1.7−) | 2004 03 20 | 704 | 0.8+ | 0.4+ | 2002 10 04 | 699 | 0.3+ | 0.6+ | 2003 01 01 | 704 | 0.2+ | 0.8+ | 2006 10 17 | G96 | 0.4− | 0.3− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.1− | 1.1+ | 2003 01 01 | 704 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.7− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.3− | 0.8+ | 2003 01 01 | 704 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.2− | 1.1+ | 2003 01 01 | 704 | 0.7− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.7− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.0 | 1.2+ | 2003 01 01 | 704 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.5− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.3− | 1.1+ | 2003 01 05 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.3+ | 0.3− | 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.1− | 0.6+ | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| | | | | | | | | | | | | 2002 10 12 | 704 | (1.9+ | 3.4+) | 2003 01 05 | 704 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2002 10 12 | 704 | (1.4− | 1.5+) | 2003 01 05 | 704 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.4− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.0 | 1.0+ | 2003 01 08 | 704 | 0.4+ | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.9− |
| | | | | | | | | | | | | 2002 10 31 | 699 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.3− |
| | | | | | | | | | | | | 2002 10 31 | 644 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.1− |
| | | | | | | | | | | | | 2002 10 31 | 699 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.3+ | 0.5+ | 2006 11 27 | 703 | 0.8− | 0.0 |
| | | | | | | | | | | | | 2002 10 31 | 644 | 0.1+ | 0.0 | 2003 01 08 | 608 | 0.5− | 0.3+ | | | | |
| | | | | | | | | | | | | 2002 10 31 | 699 | 0.4− | 0.3− | 2003 01 08 | 608 | 1.1− | 0.5+ | | | | |

**(137954)∗ 2000 $CK_{13}$ = 2002 $GZ_{121}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31321)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.49110 | | (2000.0) | | | |
| $n$ | 0.08458355 | $\omega$ | 261.90432 | | +0.69056613 | −0.72092181 |
| $a$ | 5.1397908 | $\Omega$ | 144.19251 | | +0.69659254 | +0.64127492 |
| $e$ | 0.0424596 | $i$ | 5.71149 | | +0.19462082 | +0.26275125 |
| $P$ | 11.65 | $H$ | 12.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.3− | 0.1− | 2002 04 14 | 644 | 0.3− | 0.1+ | 2006 07 25 | 644 | 0.2− | 0.2+ | 2002 07 14 | 704 | 1.2+ | 1.4+ | 2002 11 12 | 704 | 0.5+ | 0.4+ | 2004 03 20 | 704 | 0.8+ | 0.9+ |
| 2000 02 02 | 704 | 0.0 | 0.0 | 2002 04 17 | 704 | 0.4+ | 0.1− | 2006 07 25 | 644 | 0.2+ | 0.1+ | 2002 07 14 | 704 | 0.6− | 0.1+ | 2002 11 12 | 704 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.9+ | 0.8+ |
| 2000 02 02 | 704 | 0.1+ | 1.3+ | 2002 04 17 | 704 | 0.1− | 0.8− | 2006 07 25 | 644 | 0.3− | 0.3− | 2002 07 14 | 704 | (1.8− | 1.9+) | 2002 11 22 | 644 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.8+ | 1.2+ |
| 2000 02 02 | 704 | 1.1+ | 0.4− | 2002 04 17 | 704 | 0.0 | 1.0− | 2006 08 16 | 644 | 0.5+ | 0.2− | 2002 07 14 | 704 | 0.3− | 1.1+ | 2002 11 22 | 644 | 0.1+ | 0.0 | 2004 04 16 | 644 | 0.5+ | 0.8+ |
| 2000 02 03 | 704 | 0.4+ | 0.1+ | 2003 03 31 | 691 | 0.2− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2002 08 04 | 704 | 0.9+ | 0.1+ | 2002 11 22 | 644 | 0.2+ | 0.0 | 2004 04 16 | 644 | 0.2+ | 0.9+ |
| 2000 02 03 | 704 | 0.1− | 0.6+ | 2003 03 31 | 691 | 0.5− | 0.0 | 2006 08 16 | 644 | 0.7+ | 0.1+ | 2002 08 04 | 704 | 1.3+ | 0.8+ | 2002 12 01 | 704 | 0.2− | 0.3+ | 2004 04 16 | 644 | 0.1+ | 0.6+ |
| 2000 02 03 | 704 | 0.1+ | 0.4+ | 2003 03 31 | 691 | 0.4− | 0.1− | 2006 08 20 | 644 | 0.1− | 0.0 | 2002 08 04 | 704 | 0.5+ | 0.5+ | 2002 12 01 | 704 | 0.2− | 0.2− | 2004 04 16 | 644 | 0.0 | 0.8+ |
| 2000 02 03 | 704 | 1.5+ | 1.5+ | 2003 04 02 | 608 | 1.1− | 0.8− | 2006 08 20 | 644 | 0.0 | 0.4+ | 2002 08 04 | 704 | 0.5+ | 0.1− | 2002 12 01 | 704 | 0.5− | 0.3+ | 2004 04 16 | 644 | 0.2+ | 0.8+ |
| 2000 03 10 | 691 | 0.0 | 0.1+ | 2003 04 02 | 608 | 1.0− | 1.3− | 2006 08 20 | 644 | 0.2+ | 0.3+ | 2002 08 04 | 704 | 0.7+ | 0.4− | 2002 12 01 | 704 | 0.3+ | 1.0+ | 2004 04 16 | 644 | 0.2+ | 0.5+ |
| 2000 03 10 | 691 | 0.1− | 0.2+ | 2003 04 02 | 608 | 0.8− | 0.7− | 2006 08 28 | 703 | 0.8− | 0.3− | 2002 09 21 | 608 | 1.4− | 0.3− | 2002 12 01 | 704 | 0.8+ | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.1− |
| 2000 03 10 | 691 | 0.4− | 0.2+ | 2003 04 30 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 1.8− | 0.7+ | 2002 09 21 | 608 | 1.3− | 0.4− | 2002 12 06 | 704 | 0.6− | 0.2− | 2004 04 20 | 704 | 0.8+ | 0.4− |
| 2001 03 20 | 608 | 0.4− | 0.0 | 2003 04 30 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.5+ | 2002 09 21 | 608 | 1.2− | 0.3− | 2002 12 06 | 704 | 0.7− | 0.7− | 2004 04 20 | 704 | 1.3+ | 0.6− |
| 2001 03 20 | 608 | 0.9− | 0.2+ | 2003 04 30 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.6+ | 2002 10 03 | 644 | 1.4− | 0.5− | 2002 12 06 | 704 | 0.4− | 0.1+ | 2004 04 22 | 691 | 0.1+ | 0.7+ |
| 2001 03 20 | 608 | 0.1+ | 0.5+ | 2003 05 26 | 691 | 0.5+ | 1.0+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2002 10 03 | 644 | 0.0 | 0.4+ | 2002 12 06 | 704 | 0.3− | 0.1+ | 2004 04 22 | 691 | 0.1+ | 0.6+ |
| | | | | | | | | | | | | 2002 10 03 | 644 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.3− | 2004 04 22 | 691 | 0.2+ | 0.8+ |
| | | | | | | | | | | | | 2002 10 04 | 704 | 0.2+ | 0.5+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2005 06 11 | 704 | 0.2− | 1.1− |
| | | | | | | | | | | | | 2002 10 04 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 704 | 0.2− | 0.3+ | 2005 06 11 | 704 | 0.5+ | 0.4+ |
| | | | | | | | | | | | | 2002 10 04 | 704 | 0.2+ | 0.6+ | 2002 12 11 | 704 | 0.4− | 0.1− | 2005 06 11 | 704 | (0.1− | 1.9+) |
| | | | | | | | | | | | | 2002 10 04 | 699 | 0.3+ | 0.8+ | 2002 12 11 | 704 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.5− |
| | | | | | | | | | | | | 2002 10 04 | 704 | 0.5+ | 1.1+ | 2002 12 11 | 704 | 0.4− | 1.3− | 2006 09 25 | G96 | 1.0− | 0.8− |
| | | | | | | | | | | | | 2002 10 04 | 699 | 0.1+ | 0.2+ | 2002 12 19 | 644 | 0.1+ | 0.5+ | 2006 09 25 | G96 | (0.7− | 1.9−) |
| | | | | | | | | | | | | 2002 10 04 | 704 | 0.7+ | 0.9+ | 2002 12 19 | 644 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| | | | | | | | | | | | | 2002 10 04 | 699 | 0.5+ | 0.4+ | 2002 12 19 | 644 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.4− | 0.8− |
| | | | | | | | | | | | | 2002 10 04 | 699 | 0.3+ | 0.6+ | 2003 01 01 | 704 | 0.2+ | 0.8+ | 2006 10 17 | G96 | 0.4− | 0.3− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.1− | 1.1+ | 2003 01 01 | 704 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.7− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.3− | 0.8+ | 2003 01 01 | 704 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.2− | 1.1+ | 2003 01 01 | 704 | 0.7− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.7− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.0 | 1.2+ | 2003 01 01 | 704 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.5− |
| | | | | | | | | | | | | 2002 10 09 | 704 | 0.3− | 1.1+ | 2003 01 05 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.3+ | 0.3− | 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.1− | 0.6+ | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| | | | | | | | | | | | | 2002 10 12 | 704 | (1.9+ | 3.4+) | 2003 01 05 | 704 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2002 10 12 | 704 | (1.4− | 1.5+) | 2003 01 05 | 704 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.4− |
| | | | | | | | | | | | | 2002 10 12 | 704 | 0.0 | 1.0+ | 2003 01 08 | 704 | 0.4+ | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.9− |
| | | | | | | | | | | | | 2002 10 31 | 699 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.3− |
| | | | | | | | | | | | | 2002 10 31 | 644 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.1− |
| | | | | | | | | | | | | 2002 10 31 | 699 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.3+ | 0.5+ | 2006 11 27 | 703 | 0.8− | 0.0 |
| | | | | | | | | | | | | 2002 10 31 | 644 | 0.1+ | 0.0 | 2003 01 08 | 608 | 0.5− | 0.3+ | | | | |
| | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 10 | 704 | 0.6+ | 1.5− | 2003 05 26 | 691 | 0.4+ | 1.0+ | 2006 09 13 | 644 | 0.1+ | 0.1+ |
| 2002 04 10 | 704 | 1.4+ | 0.5− | 2003 05 26 | 691 | 0.6+ | 0.4+ | 2006 09 13 | 644 | 0.2+ | 0.4+ |
| 2002 04 10 | 704 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2002 04 10 | 704 | 0.9− | 0.6− | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2002 04 14 | 644 | 0.4− | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2002 04 14 | 644 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.4− | 0.1− |

**(137955)∗ 2000 $CD_{15}$ = 2002 $RW_{11}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34878)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.41080 | | (2000.0) | | | |
| $n$ | 0.27785630 | $\omega$ | 67.17990 | | +0.82088937 | −0.57091884 |
| $a$ | 2.3258902 | $\Omega$ | 327.62956 | | +0.51400750 | +0.74920637 |
| $e$ | 0.2388611 | $i$ | 1.48424 | | +0.24887130 | +0.33577000 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.1+ | 0.3− | 2002 09 13 | 644 | 0.2− | 0.8+ | 2002 11 08 | 645 | 0.1− | 0.1− |
| 2000 01 12 | 691 | 0.1+ | 0.1− | 2002 09 14 | 644 | 0.3− | 0.2+ | 2002 12 05 | 704 | 0.0 | 0.1− |
| 2000 01 12 | 691 | 0.1+ | 0.3− | 2002 09 14 | 644 | 0.3− | 0.3+ | 2002 12 05 | 704 | 0.2− | 0.6+ |
| 2000 02 02 | 704 | 0.2− | 0.5+ | 2002 09 14 | 644 | 0.2− | 0.2+ | 2002 12 05 | 704 | 0.1+ | 0.3+ |
| 2000 02 02 | 704 | 0.2− | 0.1+ | 2002 09 15 | 608 | 0.9− | 0.3− | 2002 12 05 | 704 | 0.4− | 0.8+ |
| 2000 02 02 | 704 | 0.0 | 1.6+ | 2002 09 15 | 608 | 1.1− | 0.2− | 2002 12 05 | 704 | 0.1+ | 0.9+ |
| 2000 02 02 | 704 | (0.1+ | 2.4+) | 2002 09 15 | 608 | 1.2− | 0.1− | 2003 01 04 | 704 | 0.7− | 0.2− |
| 2000 02 03 | 704 | 0.1+ | 1.2+ | 2002 09 30 | 704 | 0.0 | 0.5+ | 2003 01 04 | 704 | 1.0− | 0.2+ |
| 2000 02 03 | 704 | 0.2+ | 0.8+ | 2002 09 30 | 704 | 0.2+ | 0.1− | 2003 01 04 | 704 | 0.2− | 0.8− |
| 2000 02 03 | 704 | 0.2+ | 0.8+ | 2002 09 30 | 704 | 0.3+ | 0.7+ | 2004 03 13 | 644 | 0.2+ | 0.4+ |
| 2000 02 03 | 704 | 0.8+ | 0.5+ | 2002 09 30 | 704 | 0.1− | 0.1+ | 2004 03 13 | 644 | 0.7+ | 0.6+ |
| 2000 02 03 | 704 | 0.5+ | 0.4+ | 2002 09 30 | 704 | 0.6+ | 0.2− | 2004 03 13 | 644 | 0.8+ | 0.0 |
| 2000 02 11 | 704 | 0.2− | 0.6+ | 2002 10 03 | 704 | 0.2− | 0.1+ | 2004 03 21 | 291 | 0.4+ | 0.5+ |
| 2000 02 11 | 704 | 0.1− | 0.7+ | 2002 10 03 | 704 | 0.1− | 0.1+ | 2004 03 21 | 291 | 0.2− | 0.4+ |
| 2000 02 11 | 704 | 0.7+ | 0.7+ | 2002 10 03 | 704 | 0.1− | 0.0 | 2004 03 21 | 291 | 0.1+ | 0.3+ |
| 2000 02 11 | 704 | 0.6− | 1.6+ | 2002 10 03 | 704 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2002 09 04 | 699 | 0.4+ | 0.0 | 2002 10 03 | 704 | 0.5− | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.1− |
| 2002 09 04 | 699 | 0.3− | 0.3+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2002 09 04 | 699 | 0.3− | 0.7+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2002 09 04 | 699 | 0.8− | 0.2− | 2002 10 07 | 704 | 0.0 | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2002 10 07 | 704 | 0.1+ | 0.8+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2002 10 07 | 704 | 0.7+ | 0.9+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2002 10 07 | 704 | 0.7+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.6− |
| 2002 09 05 | 704 | 0.9+ | 0.7+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.8− | 0.6− |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.8− | 0.6− |
| 2002 09 07 | 704 | 0.0 | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2002 09 07 | 704 | 0.2+ | 0.3− | 2002 10 11 | 704 | 0.1+ | 0.8+ | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.2+ | 0.0 | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2002 09 07 | 595 | 0.5− | 0.6− | 2002 10 11 | 704 | 0.2+ | 1.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2002 09 07 | 595 | (1.1− | 2.1+) | 2002 10 11 | 704 | 0.0 | 1.2+ | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2002 09 07 | 595 | (0.6− | 2.3−) | 2002 11 06 | 704 | 1.2+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2002 09 11 | 644 | 0.6− | 0.0 | 2002 11 06 | 704 | 1.2+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2002 09 11 | 644 | 0.7− | 0.0 | 2002 11 06 | 704 | (1.6+ | 0.0 ) | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 09 11 | 644 | 0.4− | 0.2+ | 2002 11 06 | 704 | 0.7+ | 0.5− | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2002 09 13 | 644 | 0.1− | 0.7+ | 2002 11 06 | 704 | 1.0+ | 0.3− | | | | |
| 2002 09 13 | 644 | 0.3− | 1.1+ | 2002 11 08 | 645 | 0.1− | 0.1− | | | | |

**(137956)∗ 2000 $CW_{17}$ = 2002 $RF_{154}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34878)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.91881 | | (2000.0) | | | |
| $n$ | 0.27535236 | $\omega$ | 82.78106 | | +0.96328552 | −0.26576335 |
| $a$ | 2.3399694 | $\Omega$ | 292.62538 | | +0.22715975 | +0.88241238 |
| $e$ | 0.1809457 | $i$ | 2.36502 | | +0.14310642 | +0.38822447 |
| $P$ | 3.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 691 | 0.1− | 0.1− | 2002 10 03 | 644 | 0.2− | 0.4+ | 2002 12 06 | 704 | 0.2+ | 0.6+ |
| 2000 01 06 | 691 | 0.3− | 0.2− | 2002 10 03 | 644 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.6− |
| 2000 01 06 | 691 | 0.3− | 0.2− | 2002 10 04 | 704 | 0.0 | 0.4+ | 2002 12 11 | 704 | 0.1− | 0.0 |
| 2000 01 16 | 691 | 0.5− | 0.5− | 2002 10 04 | 704 | 0.2− | 0.3+ | 2002 12 11 | 704 | 0.4− | 0.6+ |
| 2000 01 16 | 691 | 0.3− | 0.5− | 2002 10 04 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 704 | 0.2− | 0.5+ |
| 2000 01 16 | 691 | 0.5− | 0.8− | 2002 10 04 | 699 | 1.3+ | 0.0 | 2002 12 11 | 704 | 0.5− | 0.7+ |
| 2000 02 02 | 704 | 0.2+ | 0.3+ | 2002 10 04 | 704 | 0.1+ | 0.6+ | 2002 12 11 | 704 | 0.5+ | 0.5+ |
| 2000 02 02 | 704 | 0.2+ | 0.3+ | 2002 10 04 | 699 | 0.3− | 0.2+ | 2004 03 16 | 704 | 0.3− | 0.8+ |
| 2000 02 02 | 704 | 0.2− | 0.4− | 2002 10 04 | 704 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.1− | 0.3+ |
| 2000 02 02 | 704 | 0.0 | 0.2− | 2002 10 04 | 699 | 0.2− | 0.4+ | 2004 03 16 | 704 | (0.0 | 1.7+) |
| 2000 02 02 | 704 | 0.1+ | 0.4+ | 2002 10 04 | 699 | 0.6− | 0.1+ | 2004 03 18 | 704 | 1.1+ | 0.8+ |
| 2000 02 03 | 704 | 0.1+ | 0.0 | 2002 10 09 | 704 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.5+ | 1.0+ |
| 2000 02 03 | 704 | 0.3+ | 0.0 | 2002 10 09 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.3+ | 1.1+ |
| 2000 02 03 | 704 | 0.2− | 1.0+ | 2002 10 09 | 704 | 0.5− | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.8+ |
| 2000 02 03 | 704 | 0.6+ | 0.8+ | 2002 10 09 | 704 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.8+ | 1.4+ |
| 2000 02 03 | 704 | 0.4+ | 0.4+ | 2002 10 09 | 704 | 0.7− | 0.2+ | 2004 03 20 | 704 | 0.9+ | 0.6+ |
| 2000 02 05 | 704 | 0.4+ | 0.2− | 2002 10 12 | 704 | 0.1− | 0.7+ | 2004 03 20 | 704 | 1.4+ | 0.8+ |
| 2000 02 05 | 704 | 0.6− | 0.3+ | 2002 10 12 | 704 | 0.3− | 0.2+ | 2004 03 20 | 704 | (1.7+ | 1.2+) |
| 2000 02 05 | 704 | 1.1+ | 1.3+ | 2002 10 12 | 704 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.1+ |
| 2000 02 05 | 704 | 0.4+ | 0.3− | 2002 10 12 | 704 | 0.3− | 0.5+ | 2004 03 30 | 691 | 0.1+ | 0.6+ |
| 2000 02 05 | 704 | 1.0+ | 0.9− | 2002 10 12 | 704 | 0.1− | 0.4+ | 2004 03 30 | 691 | 0.0 | 0.3+ |
| 2000 02 05 | 704 | 0.3− | 0.4+ | 2002 10 18 | 644 | 0.6− | 0.0 | 2004 03 30 | 691 | 0.0 | 0.3+ |
| 2000 02 05 | 704 | 0.8+ | 0.5+ | 2002 10 18 | 644 | 0.4− | 0.0 | 2004 04 12 | 691 | 0.2+ | 0.7+ |
| 2000 02 05 | 704 | 0.3+ | 0.2− | 2002 10 18 | 644 | 0.4− | 0.1+ | 2004 04 12 | 691 | 0.0 | 0.1− |
| 2000 02 05 | 704 | 0.4− | 0.9− | 2002 11 03 | 704 | 0.0 | 0.1+ | 2004 04 12 | 691 | 0.4+ | 0.2+ |
| 2000 02 05 | 704 | 0.1+ | 0.2− | 2002 11 03 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2000 02 05 | 704 | 0.9+ | 0.3+ | 2002 11 03 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.3− |
| 2002 08 04 | 704 | 1.4− | 0.3− | 2002 11 03 | 704 | 0.0 | 0.6− | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2002 08 04 | 704 | 1.1− | 0.8+ | 2002 11 08 | 704 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 2002 08 04 | 704 | 0.8− | 0.0 | 2002 11 08 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2002 08 04 | 704 | 0.1+ | 1.0+ | 2002 11 08 | 704 | 0.0 | 0.4+ | 2006 09 25 | 691 | 1.1+ | 0.3+ |
| 2002 09 06 | 704 | 0.3+ | 0.5− | 2002 11 08 | 704 | 0.6− | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 1.1+ | 1.1− | 2002 11 08 | 704 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | 0.0 | 0.2+ | 2002 11 12 | 704 | 0.5+ | 0.6− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2002 09 06 | 704 | (0.3− | 1.5+) | 2002 11 12 | 704 | 0.8+ | 0.5+ | 2006 10 29 | G96 | 0.5− | 0.2− |
| 2002 09 14 | 946 | (3.4+ | 0.8−) | 2002 11 12 | 704 | 0.4+ | 0.2− | 2006 10 29 | G96 | 0.4− | 0.4− |
| 2002 09 14 | 946 | (1.7+ | 0.1−) | 2002 11 12 | 644 | 0.4− | 0.3+ | 2006 10 29 | G96 | 0.4− | 0.2− |
| 2002 09 14 | 946 | 1.5+ | 0.9− | 2002 11 12 | 704 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.4− | 0.0 |
| 2002 09 14 | 946 | 1.1+ | 0.1− | 2002 11 12 | 704 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.6− | 0.2− |
| 2002 09 14 | 946 | 0.9+ | 0.1+ | 2002 11 12 | 644 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.7− | 0.3− |
| 2002 09 21 | 644 | 0.3− | 0.5+ | 2002 11 12 | 644 | 0.5+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2002 09 21 | 644 | 0.7− | 0.8+ | 2002 12 06 | 704 | 1.1− | 0.7− | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2002 09 21 | 644 | 0.3− | 0.5+ | 2002 12 06 | 704 | 0.2+ | 0.6+ | | | | |
| 2002 10 03 | 644 | 0.1− | 0.5+ | 2002 12 06 | 704 | 0.1− | 0.7− | | | | |

**(137957)∗ 2000 $CZ_{17}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.90363 | | (2000.0) | | | |
| $n$ | 0.26482778 | $\omega$ | 316.66807 | | −0.24556454 | −0.96884974 |
| $a$ | 2.4015614 | $\Omega$ | 147.50828 | | +0.90488877 | −0.24096586 |
| $e$ | 0.1300678 | $i$ | 3.42223 | | +0.34766992 | −0.05714571 |
| $P$ | 3.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 703 | 1.2− | 0.4+ | 2004 02 23 | 704 | 0.7+ | 1.2+ | 2004 03 28 | 104 | (0.2+ | 3.3−) |
| 2000 01 30 | 703 | 0.3− | 0.7+ | 2004 02 26 | 695 | 0.1− | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 703 | 0.4− | 0.4+ | 2004 02 26 | 695 | 0.1− | 0.2+ | 2004 03 31 | 691 | 0.2− | 0.0 | | |
| 2000 01 30 | 703 | (3.8− | 1.3−) | 2004 03 15 | 703 | 0.3+ | 0.1+ | 2004 03 31 | 691 | 1.1− | 0.4+ | | |
| 2000 02 02 | 704 | 0.3− | 1.3− | 2004 03 15 | 333 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.3− | 1.2+ | | |
| 2000 02 02 | 704 | 0.1− | 0.9− | 2004 03 15 | 703 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.3+ | | |
| 2000 02 02 | 704 | 0.2+ | 0.5− | 2004 03 15 | 333 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.9− | 0.3+ | | |
| 2000 02 02 | 704 | 0.3− | 0.5− | 2004 03 15 | 703 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.4+ | | |
| 2000 02 02 | 704 | 0.9− | 0.7− | 2004 03 15 | 333 | 0.7− | 0.0 | 2006 10 18 | 691 | 0.3− | 0.2+ | | |
| 2000 02 03 | 704 | 0.6− | 0.0 | 2004 03 15 | 703 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.0 | | |
| 2000 02 03 | 704 | 0.1− | 0.2− | 2004 03 19 | 704 | 0.4+ | 1.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | | |
| 2000 02 03 | 704 | 0.5− | 0.6− | 2004 03 19 | 704 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.2+ | 0.0 | | |
| 2000 02 03 | 704 | 0.4+ | 0.2− | 2004 03 19 | 704 | 1.0− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 | | |
| 2000 02 03 | 704 | 0.4+ | 1.1− | 2004 03 22 | 704 | 0.2− | 0.7+ | 2006 10 22 | 691 | 0.3+ | 0.0 | | |
| 2000 02 05 | 704 | 1.2− | 0.1+ | 2004 03 22 | 704 | 0.9+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2000 02 05 | 704 | 0.6+ | 1.0+ | 2004 03 22 | 704 | 0.1− | 0.6+ | 2006 10 22 | 691 | 0.3+ | 0.1+ | | |
| 2000 02 05 | 704 | 0.7− | 0.2− | 2004 03 22 | 704 | 0.5− | 0.7+ | 2006 10 22 | 691 | 0.5− | 0.4− | | |
| 2000 02 05 | 704 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2000 02 05 | 704 | 0.1− | 0.2− | 2004 03 25 | 704 | 1.1+ | 0.8+ | 2006 11 09 | 644 | 0.4+ | 0.4+ | | |
| 2000 02 05 | 704 | 0.0 | 0.1+ | 2004 03 25 | 704 | 0.7+ | 0.6+ | 2006 11 09 | 644 | 0.4+ | 0.1+ | | |
| 2000 02 05 | 704 | 0.2− | 0.1+ | 2004 03 25 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.6+ | 1.0− | | |
| 2000 02 05 | 704 | 0.2+ | 0.6− | 2004 03 26 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.6+ | | |
| 2000 02 05 | 704 | 0.4− | 0.3+ | 2004 03 26 | 704 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 1.2− | | |
| 2000 02 06 | 704 | 0.6+ | 0.7− | 2004 03 26 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.1− | | |
| 2000 02 06 | 704 | 0.2− | 0.5+ | 2004 03 26 | 704 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.2+ | 0.1+ | | |
| 2000 02 06 | 704 | 0.8− | 0.7− | 2004 03 26 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | (1.6+ | 1.4+) | | |
| 2000 02 06 | 704 | 0.0 | 1.1− | 2004 03 26 | 704 | 0.5+ | 0.8+ | 2006 11 17 | 704 | 1.1+ | 0.4+ | | |
| 2000 03 04 | 691 | 0.5+ | 0.0 | 2004 03 26 | 704 | 1.0+ | 0.3− | 2006 11 17 | 704 | 0.7+ | 1.4+ | | |
| 2000 03 04 | 691 | 0.5+ | 0.1− | 2004 03 26 | 704 | 0.4+ | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.2− | | |
| 2000 03 04 | 691 | 0.4+ | 0.1− | 2004 03 26 | 704 | 0.6+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.2− | | |
| 2002 09 26 | 644 | 0.1− | 0.7+ | 2004 03 26 | 704 | 0.0 | 0.1+ | 2006 11 17 | 704 | (1.6+ | 0.8+) | | |
| 2002 09 26 | 644 | 0.1− | 0.4+ | 2004 03 28 | 704 | 0.7+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2002 09 26 | 644 | 0.1+ | 0.7+ | 2004 03 28 | 704 | (1.7+ | 0.2−) | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2002 10 05 | 644 | 0.3− | 0.2+ | 2004 03 28 | 704 | 1.3+ | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.5+ | | |
| 2002 10 05 | 644 | 0.4− | 0.6+ | 2004 03 28 | 704 | 1.1+ | 1.0+ | 2006 11 20 | 704 | 0.8− | 1.2+ | | |
| 2002 10 05 | 644 | 0.5− | 0.5+ | 2004 03 28 | 704 | 0.5+ | 0.6− | 2006 11 20 | 704 | 0.4− | 1.0+ | | |
| 2004 02 23 | 704 | 0.0 | 0.4+ | 2004 03 28 | 104 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.8+ | | |
| 2004 02 23 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 104 | 0.2− | 1.4− | 2006 11 20 | 704 | 0.1+ | 1.0+ | | |
| 2004 02 23 | 704 | 1.1+ | 0.0 | 2004 03 28 | 104 | (1.5− | 2.1−) | | | | | | |

**(137958)∗ 2000 $CX_{18}$ = 2002 $QJ_{33}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34879)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.49688 | | (2000.0) | | | |
| $n$ | 0.26323651 | $\omega$ | 296.88542 | | +0.26332408 | −0.95737556 |
| $a$ | 2.4112300 | $\Omega$ | 137.29185 | | +0.93553200 | +0.22338553 |
| $e$ | 0.2039562 | $i$ | 10.07999 | | +0.23545767 | +0.18311458 |
| $P$ | 3.74 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 703 | 0.0 | 0.7+ | 2004 01 30 | 691 | 0.3+ | 0.2+ | 2004 03 27 | 691 | 0.1− | 0.1+ | | |
| 2000 01 30 | 703 | 0.4− | 0.3+ | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2004 04 09 | 644 | 0.5+ | 0.4+ | | |
| 2000 01 30 | 703 | 0.3− | 0.4+ | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2004 04 09 | 644 | 0.7+ | 0.9+ | | |
| 2000 01 30 | 703 | 0.1+ | 0.3+ | 2004 01 30 | 691 | 0.2+ | 0.0 | 2004 04 09 | 644 | 0.4+ | 0.7+ | | |
| 2000 02 02 | 704 | 0.2− | 0.8− | 2004 02 17 | 703 | 1.2+ | 0.6+ | 2004 04 14 | 291 | 0.2+ | 0.1+ | | |
| 2000 02 02 | 704 | 0.6+ | 0.4+ | 2004 02 17 | 703 | 0.1+ | 0.4+ | 2004 04 14 | 291 | 0.2+ | 0.2+ | | |
| 2000 02 02 | 704 | 0.3+ | 1.6− | 2004 02 17 | 703 | (0.6+ | 1.8−) | 2004 04 14 | 291 | 0.1− | 0.1+ | | |
| 2000 02 02 | 704 | 0.6+ | 0.1+ | 2004 02 17 | 703 | 0.3− | 0.1− | 2005 07 12 | G96 | 0.8− | 0.0 | | |
| 2000 02 02 | 704 | 0.4+ | 1.3− | 2004 02 18 | 704 | 0.6− | 1.5+ | 2005 07 12 | G96 | 0.9− | 0.0 | | |
| 2000 02 03 | 704 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.6+ | 0.1− | 2005 07 12 | G96 | 1.1− | 0.6+ | | |
| 2000 02 03 | 704 | 0.2− | 0.1− | 2004 02 18 | 704 | 0.1+ | 0.5+ | 2005 07 12 | G96 | 1.2− | 0.7+ | | |
| 2000 02 03 | 704 | 0.6− | 0.2+ | 2004 02 18 | 704 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.8+ | 0.5− | | |
| 2000 02 03 | 704 | 0.1− | 0.8+ | 2004 02 18 | 704 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.9− | 0.6− | | |
| 2000 02 03 | 704 | 0.1+ | 0.2+ | 2004 02 18 | 704 | 0.2− | 1.4+ | 2006 09 25 | 699 | 0.8+ | 0.8+ | | |
| 2000 02 11 | 704 | 0.3− | 0.4− | 2004 02 18 | 704 | 0.1− | 0.7− | 2006 09 25 | 699 | 0.2− | 0.3− | | |
| 2000 02 11 | 704 | 0.7− | 0.4− | 2004 02 18 | 704 | 0.3− | 0.7+ | 2006 09 26 | 703 | (3.5+ | 1.5+) | | |
| 2000 02 11 | 704 | 0.4− | 0.0 | 2004 02 18 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.9− | 0.4− | | |
| 2000 02 11 | 704 | 1.0− | 0.4+ | 2004 02 25 | 704 | (0.7+ | 2.8+) | 2006 09 26 | 703 | 0.4− | 0.4+ | | |
| 2000 02 11 | 704 | 0.5− | 0.0 | 2004 02 25 | 704 | (1.0+ | 3.2+) | 2006 09 26 | 703 | 0.1+ | 0.7+ | | |
| 2000 03 04 | 704 | 0.4+ | 0.9+ | 2004 02 25 | 704 | (1.2+ | 3.2+) | 2006 09 29 | 699 | 0.2+ | 0.5+ | | |
| 2000 03 04 | 704 | 0.1+ | 0.7+ | 2004 02 25 | 704 | (1.3+ | 3.7+) | 2006 09 29 | 699 | 0.0 | 0.2+ | | |
| 2000 03 04 | 704 | 0.3+ | 0.8+ | 2004 02 25 | 704 | (0.2+ | 4.5+) | 2006 09 29 | 699 | 0.3+ | 0.5+ | | |
| 2000 03 04 | 704 | 0.3+ | 0.1+ | 2004 03 15 | 704 | 0.8+ | 1.3+ | 2006 09 29 | 699 | 0.3+ | 1.1+ | | |
| 2002 08 15 | 699 | (0.9− | 1.6+) | 2004 03 15 | 704 | 0.9+ | 1.4+ | 2006 09 30 | 704 | 0.4+ | 0.3+ | | |
| 2002 08 15 | 699 | 1.1+ | 0.7+ | 2004 03 15 | 704 | 1.2− | 0.4− | 2006 09 30 | 704 | 0.1− | 0.2+ | | |
| 2002 08 15 | 699 | 0.3+ | 0.6+ | 2004 03 15 | 704 | 0.1− | 0.5+ | 2006 09 30 | 704 | 0.2− | 1.1+ | | |
| 2002 08 15 | 699 | 0.4− | 1.1+ | 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.2+ | | |
| 2002 08 29 | 644 | 0.2+ | 1.0+ | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 10 02 | 703 | 0.2+ | 0.3− | | |
| 2002 08 29 | 644 | 0.1+ | 1.2+ | 2004 03 23 | 704 | 0.4+ | 0.9+ | 2006 10 02 | 703 | 0.1− | 0.2− | | |
| 2002 08 29 | 644 | 0.0 | 1.0+ | 2004 03 23 | 704 | 0.2− | 0.7+ | 2006 10 02 | 703 | 0.6− | 1.0+ | | |
| 2002 08 30 | 644 | 0.6− | 1.4+ | 2004 03 23 | 704 | 0.2− | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 08 30 | 644 | 0.1− | 1.3+ | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 2002 08 30 | 644 | 0.2− | 1.4+ | 2004 03 26 | 703 | 0.0 | 0.7− | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2004 01 21 | 245 | 0.6− | 0.6− | 2004 03 26 | 703 | (2.1+ | 1.6+) | 2006 10 31 | 703 | 0.2+ | 0.4+ | | |
| 2004 01 21 | 245 | 0.9− | 0.7− | 2004 03 26 | 703 | 0.2− | 0.5− | 2006 10 31 | 703 | 0.2− | 0.3+ | | |
| 2004 01 21 | 245 | 1.0− | 0.6− | 2004 03 26 | 703 | 0.2+ | 0.3− | 2006 10 31 | 703 | 0.5− | 0.3− | | |
| 2004 01 30 | 691 | 0.1+ | 0.4+ | 2004 03 27 | 691 | 0.1+ | 0.2− | 2006 10 31 | 703 | 1.4− | 0.1+ | | |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2004 03 27 | 691 | 0.0 | 0.1− | | | | | | |

**(137959)∗ 2000 $CZ_{18}$ = 1998 $SD_{28}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 376)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 167.15452 | | (2000.0) | | | |
| $n$ | 0.24625640 | $\omega$ | 48.49555 | | −0.85948190 | +0.51113477 |
| $a$ | 2.5208347 | $\Omega$ | 162.24157 | | −0.47434676 | −0.79339295 |
| $e$ | 0.0831167 | $i$ | 1.06458 | | −0.19048887 | −0.33055843 |
| $P$ | 4.00 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 29 | 691 | 0.1− | 0.1− | 2003 10 25 | 691 | 0.2+ | 0.1− | 2006 09 18 | 699 | 1.0− | 0.7+ | | |
| 1994 10 29 | 691 | 0.0 | 0.3− | 2003 12 19 | 291 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.3− | | |
| 1994 10 29 | 691 | 0.3− | 0.3− | 2003 12 19 | 291 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.2− | | |
| 1998 09 26 | 684 | 0.9+ | 0.1+ | 2003 12 19 | 291 | 0.7− | 0.3− | 2006 09 18 | 699 | 0.1− | 0.9+ | | |
| 1998 09 26 | 684 | 1.1+ | 0.0 | 2004 01 13 | 699 | 0.7+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | | |
| 1998 09 27 | 684 | 0.0 | 0.5− | 2004 01 13 | 699 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1− | | |
| 1998 09 27 | 684 | 0.3− | 0.6− | 2004 01 13 | 699 | (1.7+ | 0.1+) | 2006 09 19 | 691 | 0.0 | 0.0 | | |
| 1998 11 20 | 621 | 0.1− | 0.3− | 2004 01 13 | 699 | 0.8− | 0.9+ | 2006 09 20 | 704 | 0.2+ | 0.6+ | | |
| 1998 11 20 | 621 | 0.2+ | 0.6− | 2004 01 16 | 644 | 0.0 | 0.4+ | 2006 09 20 | 704 | (0.0 | 1.6+) | | |
| 1998 11 20 | 621 | 0.6+ | 0.1+ | 2004 01 16 | 644 | 0.2− | 0.1+ | 2006 09 20 | 704 | (2.3+ | 0.4+) | | |
| 1998 11 20 | 621 | 0.6+ | 0.2− | 2004 01 16 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.2− | | |
| 2000 01 13 | 691 | 0.4− | 0.4− | 2004 01 21 | 704 | 0.3− | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | | |
| 2000 01 13 | 691 | 0.5− | 0.5− | 2004 01 21 | 704 | 0.4+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.6+ | | |
| 2000 01 13 | 691 | 0.3− | 0.4− | 2004 01 21 | 704 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.0 | 0.3+ | | |
| 2000 01 30 | 703 | 0.8+ | 0.5+ | 2004 01 21 | 704 | 0.4+ | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.3+ | | |
| 2000 01 30 | 703 | 0.6+ | 0.6+ | 2004 01 21 | 704 | 0.1− | 0.2− | 2006 09 24 | 691 | 0.2+ | 0.3+ | | |
| 2000 01 30 | 703 | 0.0 | 0.1+ | 2004 01 21 | 704 | 0.3+ | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 30 | 703 | 0.6− | 0.3+ | 2004 01 21 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.2− | | |
| 2000 02 02 | 704 | 1.1+ | 0.3− | 2004 01 21 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3− | | |
| 2000 02 02 | 704 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.5− | 0.2− | | |
| 2000 02 02 | 704 | 0.5− | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.4− | 0.2− | | |
| 2000 02 02 | 704 | 0.3+ | 0.3+ | 2004 01 22 | 704 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.7− | 0.0 | | |
| 2000 02 02 | 704 | 0.2− | 0.5+ | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.6− | 0.1− | | |
| 2000 02 03 | 704 | 0.3− | 0.2+ | 2004 01 22 | 704 | 0.1+ | 0.5+ | 2006 10 11 | 691 | 0.4− | 0.5+ | | |
| 2000 02 03 | 704 | 0.1+ | 0.3+ | 2004 01 24 | 704 | 0.1+ | 1.0+ | 2006 10 11 | 691 | 0.0 | 0.5+ | | |
| 2000 02 03 | 704 | 0.2− | 0.4+ | 2004 01 24 | 704 | 0.8+ | 0.6+ | 2006 10 11 | 691 | 0.4− | 0.5+ | | |
| 2000 02 03 | 704 | 0.0 | 0.3− | 2004 01 24 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.3+ | | |
| 2000 02 03 | 704 | 0.1+ | 0.4+ | 2004 01 24 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2+ | | |
| 2000 02 11 | 704 | 0.5− | 0.3− | 2004 01 24 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.3+ | | |
| 2000 02 11 | 704 | 0.6− | 0.0 | 2004 01 26 | 699 | 0.5− | 0.0 | 2006 10 20 | H07 | (2.6+ | 0.0 | ) | |
| 2000 02 11 | 704 | 0.4− | 0.2+ | 2004 01 26 | 699 | 0.7− | 0.7− | 2006 10 20 | H07 | (3.9+ | 0.3−) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.6+ | 0.9+ | 2004 01 26 | 699 | 0.4− | 0.0 | 2006 10 20 | H07 | (3.1+ | 0.0 | ) |
| 2000 02 11 | 704 | 0.8− | 0.3+ | 2004 01 26 | 699 | 0.6− | 0.1− | 2006 10 20 | H07 | (3.7+ | 0.6− | ) |
| 2000 03 04 | 691 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.5− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− | |
| 2000 03 04 | 691 | 0.1+ | 0.1+ | 2004 01 30 | 704 | 0.0 | 0.2+ | 2006 10 20 | 703 | 0.1− | 1.1− | |
| 2000 03 04 | 691 | 0.2+ | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.0 | 2006 10 20 | 703 | 0.3+ | 1.2− | |
| 2000 03 12 | 691 | 0.0 | 0.5− | 2004 01 30 | 704 | 0.8+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ | |
| 2000 03 12 | 691 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.6+ | 0.0 | 2006 10 20 | 703 | (0.3− | 1.7−) | |
| 2000 03 12 | 691 | 0.0 | 0.4− | 2004 02 02 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 703 | 0.0 | 1.1− | |
| 2002 10 02 | 704 | 0.9− | 0.2+ | 2004 02 02 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1− | |
| 2002 10 02 | 704 | 0.9− | 0.4+ | 2004 02 02 | 704 | 0.8+ | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.8+ | |
| 2002 10 02 | 704 | 0.2− | 0.1+ | 2004 02 10 | 703 | 0.5− | 0.6− | 2006 10 21 | 703 | 0.1+ | 0.4− | |
| 2002 10 02 | 704 | (1.8+ | 1.0+) | 2004 02 10 | 703 | 1.3+ | 0.7+ | 2006 10 21 | 703 | 0.2+ | 0.7− | |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2004 02 10 | 703 | 0.3+ | 0.8− | 2006 10 21 | 703 | 0.1− | 0.0 | |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 02 10 | 703 | 1.0+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2− | |
| 2002 10 03 | 704 | (0.3+ | 1.6+) | 2004 02 13 | 185 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 2002 10 03 | 704 | 0.4− | 1.4+ | 2004 02 13 | 185 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.1+ | |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2004 02 16 | 704 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1− | |
| 2002 10 07 | 704 | 0.5+ | 0.2+ | 2004 02 16 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− | |
| 2002 10 07 | 704 | 0.8+ | 0.1+ | 2004 02 16 | 704 | 0.6+ | 1.0+ | 2006 10 28 | 691 | 0.0 | 0.2− | |
| 2002 10 07 | 704 | 0.2+ | 0.2− | 2004 02 16 | 704 | 0.4− | 0.4+ | 2006 11 11 | 691 | 0.3+ | 0.0 | |
| 2002 10 07 | 704 | 1.4+ | 1.0− | 2004 02 16 | 704 | 0.0 | 0.8+ | 2006 11 11 | 691 | 0.4+ | 0.0 | |
| 2002 10 07 | 704 | 1.3+ | 0.8+ | 2004 02 17 | 608 | 0.4− | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.1+ | |
| 2002 10 09 | 704 | 0.5− | 0.1+ | 2004 02 17 | 608 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.7− | |
| 2002 10 09 | 704 | 1.1+ | 0.4+ | 2004 02 17 | 608 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.5− | |
| 2002 10 09 | 704 | 0.1+ | 0.2− | 2004 02 26 | 695 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.6− | |
| 2002 10 09 | 704 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.7− | |
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.8− | 2006 11 11 | 703 | 0.8− | 0.1− | |
| 2002 10 10 | 644 | 0.1− | 0.1+ | 2004 02 26 | 695 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.3− | |
| 2002 10 10 | 644 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.6− | 2006 11 11 | 703 | 1.1− | 0.5− | |
| 2002 10 11 | 704 | 0.7+ | 0.9− | 2004 02 26 | 704 | 1.1+ | 0.3− | 2006 11 17 | 703 | 0.6− | 0.1+ | |
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2004 02 26 | 704 | (0.4− | 1.7−) | 2006 11 17 | 703 | 0.9− | 0.1− | |
| 2002 10 11 | 704 | 0.3− | 0.2− | 2004 05 09 | 291 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.4+ | 0.9− | |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2004 05 09 | 291 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 0.2− | |
| 2002 10 11 | 704 | 0.7+ | 0.2+ | 2004 05 09 | 291 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.1+ | |
| 2002 10 30 | 644 | 0.9− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.1− | |
| 2002 10 30 | 644 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1− | |
| 2002 10 30 | 644 | 0.4+ | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 11 20 | G96 | 0.2+ | 0.4− | |
| 2002 11 06 | 704 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.3− | 0.4− | 2006 11 20 | G96 | 0.2− | 0.6− | |
| 2002 11 06 | 704 | 1.0+ | 0.1− | 2006 09 14 | 703 | 0.6− | 1.0+ | 2006 11 20 | G96 | 0.0 | 0.5− | |
| 2002 11 06 | 704 | 0.9+ | 0.4− | 2006 09 14 | 703 | (1.8+ | 0.2−) | 2006 11 20 | G96 | 0.4+ | 0.5− | |
| 2003 10 25 | 691 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.5− | 0.1− | | | | | |
| 2003 10 25 | 691 | 0.2+ | 0.3− | 2006 09 14 | 703 | (1.8− | 0.9−) | | | | | |

**(137960)∗ 2000 $CD_{19}$ = 2000 $AC_{251}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 13878)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.53479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25927309 | $\omega$ | 325.89328 | | −0.37343918 | | −0.92751869 |
| $a$ | 2.4357409 | $\Omega$ | 146.02678 | | +0.85732048 | | −0.35161425 |
| $e$ | 0.1447199 | $i$ | 1.62871 | | +0.35432298 | | −0.12679315 |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 691 | 0.7− | 0.5− | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.5+ | | |
| 2000 01 03 | 691 | 0.4− | 0.5− | 2004 02 26 | 704 | 0.3− | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.0 | | |
| 2000 01 03 | 691 | 0.7− | 0.7− | 2004 02 26 | 704 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | | |
| 2000 01 30 | 703 | 0.7− | 1.1+ | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.2+ | | |
| 2000 01 30 | 703 | 0.4− | 0.8− | 2004 03 15 | 704 | 0.3− | 1.0+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2000 01 30 | 703 | 0.0 | 0.2− | 2004 03 15 | 704 | 0.4+ | 1.2+ | 2006 10 01 | 691 | 0.2− | 0.3+ | | |
| 2000 01 30 | 703 | 1.0+ | 0.1+ | 2004 03 15 | 704 | 0.6+ | 1.0+ | 2006 10 01 | 691 | 0.5− | 0.1+ | | |
| 2000 02 02 | 704 | 1.0− | 0.6+ | 2004 03 15 | 704 | (0.9+ | 1.9+) | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2000 02 02 | 704 | 1.1+ | 1.0+ | 2004 03 18 | 704 | (0.2− | 1.7+) | 2006 10 13 | D35 | 0.2− | 0.4+ | | |
| 2000 02 02 | 704 | 0.5+ | 0.4− | 2004 03 18 | 704 | 0.4− | 0.1− | 2006 10 13 | D35 | 0.2− | 0.6+ | | |
| 2000 02 02 | 704 | 0.3+ | 0.4− | 2004 03 18 | 704 | (1.8+ | 1.4−) | 2006 10 13 | D35 | 0.4+ | 0.6+ | | |
| 2000 02 02 | 704 | 0.4+ | 0.3− | 2004 03 18 | 704 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.4− | | |
| 2000 02 03 | 704 | 0.1+ | 0.3− | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.2− | | |
| 2000 02 03 | 704 | 0.4+ | 0.4+ | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.7− | | |
| 2000 02 03 | 704 | 0.6+ | 0.8+ | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− | | |
| 2000 02 03 | 704 | 1.4+ | 0.2+ | 2004 03 21 | 291 | (2.2− | 0.4−) | 2006 10 21 | 703 | 0.0 | 0.2+ | | |
| 2000 02 03 | 704 | 0.3+ | 0.0 | 2004 03 21 | 291 | 0.4+ | 0.6+ | 2006 10 21 | 703 | 0.6+ | 1.0+ | | |
| 2000 02 05 | 704 | 1.4+ | 0.1+ | 2004 03 21 | 291 | 0.7+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.1+ | | |
| 2000 02 05 | 704 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.0 | 2006 10 21 | 703 | 1.1+ | 0.4+ | | |
| 2000 02 05 | 704 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.8− | 2006 11 16 | G96 | 0.4+ | 0.3− | | |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2004 03 27 | 704 | 0.3+ | 1.1+ | 2006 11 16 | G96 | 0.2+ | 0.4− | | |
| 2002 10 08 | 291 | 0.4− | 0.4+ | 2004 03 28 | 691 | 0.4+ | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2002 10 08 | 291 | 0.2− | 0.4+ | 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.3− | | |
| 2002 10 08 | 291 | 0.4− | 0.3+ | 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.7− | 0.8− | | |
| 2004 02 18 | 704 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.7+ | 0.7− | | |
| 2004 02 18 | 704 | 0.3− | 1.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.9− | | |
| 2004 02 18 | 704 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1− | | | | | | |
| 2004 02 26 | 704 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.4− | 0.4+ | | | | | | |

**(137961)∗ 2000 $CO_{19}$ = 2004 $CD_{97}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60592)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.55408 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26234286 | $\omega$ | 344.78775 | | −0.86809118 | | −0.49579738 |
| $a$ | 2.4167027 | $\Omega$ | 165.41352 | | +0.46501179 | | −0.82950503 |
| $e$ | 0.1007922 | $i$ | 5.59399 | | +0.17372891 | | −0.25711159 |
| $P$ | 3.76 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 03 | 809 | (0.7+ | 2.8+) | 2004 02 16 | 703 | 1.4+ | 0.8− | 2004 05 13 | 704 | 0.7− | 0.0 | | |
| 1994 09 03 | 809 | (1.3+ | 3.2+) | 2004 02 16 | 703 | (0.2+ | 1.7−) | 2004 05 21 | 704 | 1.3− | 0.9− | | |
| 1994 09 03 | 809 | (1.8+ | 4.3+) | 2004 02 16 | 703 | (2.1+ | 0.8−) | 2004 05 21 | 704 | 0.1+ | 0.1+ | | |
| 2000 01 07 | 704 | 1.2− | 0.0 | 2004 02 16 | 703 | 1.2+ | 0.1+ | 2004 05 21 | 704 | 0.0 | 0.9+ | | |
| 2000 01 07 | 704 | 0.1+ | 0.4− | 2004 02 19 | 704 | 1.4+ | 0.3+ | 2005 07 01 | 691 | 0.1− | 0.6+ | | |
| 2000 01 07 | 704 | 1.2+ | 0.1− | 2004 02 19 | 704 | 0.1+ | 0.8+ | 2005 07 01 | 691 | 0.3− | 0.5+ | | |
| 2000 01 07 | 704 | 0.1− | 0.4+ | 2004 02 19 | 704 | 0.6+ | 1.0+ | 2005 07 01 | 691 | 0.0 | 0.4+ | | |
| 2000 02 02 | 704 | 0.3− | 0.0 | 2004 02 19 | 704 | 0.3+ | 0.4+ | 2005 07 05 | 644 | 0.1+ | 0.5+ | | |
| 2000 02 02 | 704 | 0.5− | 0.6+ | 2004 02 19 | 704 | 0.8+ | 0.0 | 2005 07 05 | 644 | 0.1+ | 0.3+ | | |
| 2000 02 02 | 704 | 0.3− | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2005 07 05 | 644 | 0.1+ | 0.6+ | | |
| 2000 02 02 | 704 | 0.3− | 0.5+ | 2004 02 26 | 704 | 0.6+ | 0.4+ | 2005 07 11 | 691 | 0.0 | 0.7+ | | |
| 2000 02 02 | 704 | 0.3+ | 0.9+ | 2004 02 26 | 704 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.0 | 0.5+ | | |
| 2000 02 04 | 704 | 0.8+ | 0.8− | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2005 07 11 | 691 | 0.1− | 0.9+ | | |
| 2000 02 04 | 704 | 0.8+ | 1.3− | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2005 07 15 | 691 | 0.2− | 0.6+ | | |
| 2000 02 04 | 704 | 1.4+ | 0.7+ | 2004 03 15 | 703 | 0.0 | 0.3+ | 2005 07 15 | 691 | 0.0 | 0.4+ | | |
| 2000 02 05 | 704 | 0.3− | 0.3+ | 2004 03 15 | 704 | 0.4− | 0.0 | 2005 07 15 | 691 | 0.2+ | 0.5+ | | |
| 2000 02 05 | 704 | 0.1+ | 0.4+ | 2004 03 15 | 703 | 0.8+ | 0.8+ | 2006 11 14 | 704 | (0.7− | 1.9+) | | |
| 2000 02 05 | 704 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.5− | 0.2+ | 2006 11 14 | 704 | (2.2+ | 3.0+) | | |
| 2000 02 05 | 704 | 0.9+ | 0.7+ | 2004 03 15 | 703 | 0.6− | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.7+ | | |
| 2000 02 05 | 704 | 0.4+ | 0.3+ | 2004 03 15 | 704 | 0.6− | 0.4− | 2006 11 14 | 704 | (0.4− | 2.1+) | | |
| 2000 02 06 | 704 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.5− | 0.3+ | 2006 11 17 | 704 | 0.5− | 1.2+ | | |
| 2000 02 06 | 704 | 0.0 | 0.5+ | 2004 03 15 | 703 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.8− | 0.7+ | | |
| 2000 02 06 | 704 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.6+ | 1.0+ | | |
| 2000 02 06 | 704 | 0.3+ | 0.7+ | 2004 03 17 | 291 | 0.2− | 0.1+ | 2006 11 17 | 704 | 1.6+ | 0.4+ | | |
| 2000 03 05 | 704 | 0.0 | 0.1+ | 2004 03 17 | 291 | 0.3− | 0.2+ | 2006 11 19 | 703 | 1.1− | 0.4+ | | |
| 2000 03 05 | 704 | 0.7+ | 0.2+ | 2004 03 17 | 291 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.9− | 0.5+ | | |
| 2000 03 05 | 704 | 0.7− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 1.0− | 0.4+ | | |
| 2000 03 05 | 704 | 0.2+ | 0.1− | 2004 03 19 | 704 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.8− | 0.1+ | | |
| 2000 03 05 | 704 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 1.8+ | | |
| 2002 10 10 | 644 | 0.7− | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.2− | 2006 11 20 | G96 | 0.2− | 0.0 | | |
| 2002 10 10 | 644 | 0.7− | 0.1− | 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.9+ | 0.1− | | |
| 2002 10 10 | 644 | 0.7− | 0.1+ | 2004 03 28 | 704 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.2+ | | |
| 2002 10 31 | 704 | (2.1− | 0.0 ) | 2004 03 28 | 704 | 0.3− | 0.8+ | 2006 11 20 | 704 | 0.0 | 0.8+ | | |
| 2002 10 31 | 704 | 0.4− | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.5− | 0.3+ | | |
| 2002 10 31 | 704 | 0.1− | 0.7+ | 2004 03 28 | 704 | 0.4− | 1.0+ | 2006 11 20 | G96 | 0.4+ | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.0 | 0.4+ | 2004 03 28 | 704 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.0 | 1.0+ | | |
| 2002 10 31 | 704 | 0.8− | 0.0 | 2004 04 10 | 644 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 1.4+ | | |
| 2003 12 29 | 703 | 0.1+ | 0.6+ | 2004 04 10 | 644 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.2+ | | |
| 2003 12 29 | 703 | 0.4+ | 0.8+ | 2004 04 10 | 644 | 0.3+ | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.1+ | | |
| 2003 12 29 | 703 | 0.3+ | 0.9+ | 2004 04 15 | 704 | (1.2+ | 1.7+) | 2006 11 20 | G96 | 0.2− | 0.0 | | |
| 2003 12 29 | 703 | 1.0+ | 0.1− | 2004 04 15 | 704 | 1.5+ | 1.5+ | 2006 11 20 | G96 | 0.2+ | 0.2+ | | |
| 2004 02 13 | 644 | 0.5− | 0.8+ | 2004 04 15 | 704 | 0.6+ | 0.8− | 2006 11 20 | G96 | 0.1+ | 0.0 | | |
| 2004 02 13 | 644 | 0.1+ | 0.2+ | 2004 04 21 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.1+ | | |
| 2004 02 13 | 644 | 0.3− | 0.4− | 2004 04 21 | 691 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.1− | | |
| 2004 02 13 | 644 | 0.3− | 0.9+ | 2004 04 21 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.0 | | |
| 2004 02 13 | 644 | 0.2− | 0.2− | 2004 05 13 | 704 | 0.4+ | 0.9+ | | | | | | |
| 2004 02 13 | 644 | 0.0 | 0.2− | 2004 05 13 | 704 | 0.1− | 0.2− | | | | | | |

**(137962)∗ 2000 $CA_{22}$ = 1996 $FS_{12}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (MPC 39373)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.18295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23487650 | $\omega$ | 65.82788 | | −0.81364184 | +0.57941882 | |
| $a$ | 2.6016149 | $\Omega$ | 149.51753 | | −0.56160682 | −0.76221290 | |
| $e$ | 0.0626760 | $i$ | 5.37832 | | −0.15028215 | −0.28862662 | |
| $P$ | 4.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 691 | 0.4+ | 0.2− | 2004 01 16 | 703 | 0.5+ | 0.6+ | 2005 06 04 | 691 | 0.4+ | 0.6+ | | |
| 1996 03 17 | 691 | 0.7+ | 0.1+ | 2004 01 16 | 703 | 0.6− | 0.4− | 2005 06 05 | 704 | 1.6+ | 1.3+ | | |
| 1996 03 17 | 691 | 0.2+ | 0.2− | 2004 01 16 | 703 | 0.4+ | 0.0 | 2005 06 05 | 704 | 0.8+ | 1.6+ | | |
| 1996 03 23 | 691 | 0.2− | 0.2− | 2005 04 30 | 691 | 0.2+ | 0.0 | 2005 06 05 | 704 | 0.3+ | 1.0+ | | |
| 1996 03 23 | 691 | 0.4− | 0.2− | 2005 04 30 | 691 | 0.7− | 0.7+ | 2005 06 14 | 691 | 0.2+ | 0.0 | | |
| 1996 03 23 | 691 | 0.5− | 0.2− | 2005 04 30 | 691 | 0.1+ | 0.3− | 2005 06 14 | 691 | 0.3+ | 0.0 | | |
| 2000 02 02 | 704 | 1.0− | 0.0 | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2005 06 14 | 691 | 0.3+ | 0.1− | | |
| 2000 02 02 | 704 | 0.2+ | 0.7+ | 2005 05 10 | 691 | 0.0 | 0.0 | 2005 06 28 | 644 | 0.2− | 0.1+ | | |
| 2000 02 02 | 704 | 0.6− | 0.3+ | 2005 05 10 | 691 | 0.2+ | 0.1+ | 2005 06 28 | 644 | 0.1− | 0.0 | | |
| 2000 02 02 | 704 | 0.1+ | 0.1− | 2005 05 12 | 704 | 0.2− | 0.0 | 2005 06 28 | 644 | 0.1+ | 0.2− | | |
| 2000 02 02 | 704 | 0.2− | 0.0 | 2005 05 12 | 704 | 0.0 | 0.2+ | 2005 06 28 | 644 | 0.2− | 0.1+ | | |
| 2000 02 04 | 704 | 0.3− | 0.3+ | 2005 05 12 | 704 | 0.1− | 0.4+ | 2005 06 28 | 644 | 0.2− | 0.1− | | |
| 2000 02 04 | 704 | 0.2− | 1.4+ | 2005 05 12 | 704 | 0.1+ | 0.3− | 2005 06 28 | 644 | 0.1+ | 0.0 | | |
| 2000 02 04 | 704 | 0.5− | 0.1− | 2005 05 16 | 704 | 0.7− | 0.8− | 2005 07 05 | 644 | 0.0 | 0.0 | | |
| 2000 02 04 | 704 | 0.3− | 0.2+ | 2005 05 16 | 704 | 1.0− | 0.4+ | 2005 07 05 | 644 | 0.2− | 0.1+ | | |
| 2000 02 06 | 704 | 0.4+ | 1.0+ | 2005 05 16 | 704 | 0.1+ | 0.0 | 2005 07 05 | 644 | 0.1− | 0.1+ | | |
| 2000 02 06 | 704 | (0.8− | 2.1+) | 2005 05 17 | G96 | 0.4− | 0.1− | 2006 08 27 | 691 | 0.0 | 0.2+ | | |
| 2000 02 06 | 704 | 0.3+ | 0.0 | 2005 05 17 | G96 | 0.4− | 0.5− | 2006 08 27 | 691 | 0.2− | 0.4+ | | |
| 2000 02 06 | 704 | 0.7− | 0.2+ | 2005 05 17 | G96 | 0.3− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | | |
| 2000 02 06 | 704 | 0.9− | 0.4+ | 2005 05 17 | G96 | 0.6− | 0.2− | 2006 09 14 | 644 | 0.2− | 0.4+ | | |
| 2003 12 23 | 704 | 0.5+ | 0.5+ | 2005 06 02 | 703 | 0.9− | 1.1− | 2006 09 14 | 644 | 0.2− | 0.5+ | | |
| 2003 12 23 | 704 | 0.4− | 0.0 | 2005 06 02 | 703 | 1.3− | 1.3− | 2006 09 14 | 644 | 0.5− | 0.5+ | | |
| 2003 12 23 | 704 | 0.8+ | 0.5+ | 2005 06 02 | 703 | 0.8− | 0.0 | 2006 09 19 | 703 | 1.9+ | 0.8− | | |
| 2003 12 23 | 704 | 0.2+ | 1.6+ | 2005 06 02 | 703 | 0.2− | 1.4− | 2006 09 19 | 703 | 0.8− | 0.1− | | |
| 2003 12 23 | 704 | 0.1− | 0.6+ | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.6+ | | |
| 2004 01 16 | 703 | 1.9+ | 0.5+ | 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.1− | 0.4− | | |

**(137963)∗ 2000 $CB_{23}$ = 2002 $RS_{93}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34880)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.24406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27032380 | $\omega$ | 142.95745 | | +0.67376794 | −0.73444721 | |
| $a$ | 2.3688989 | $\Omega$ | 264.52813 | | +0.65686738 | +0.64573738 | |
| $e$ | 0.1986171 | $i$ | 4.68979 | | +0.33847009 | +0.20883133 | |
| $P$ | 3.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5+ | 0.5− | 2002 09 11 | 608 | 0.9+ | 1.1+ | 2004 03 19 | 704 | 0.6+ | 0.5+ | | |
| 1999 12 07 | 704 | 0.5+ | 0.2− | 2002 09 11 | 608 | 0.6+ | 0.9+ | 2004 03 19 | 704 | 0.2− | 0.8+ | | |
| 1999 12 07 | 704 | 0.3− | 1.1− | 2002 09 13 | 644 | 0.5− | 0.5− | 2004 03 19 | 704 | 0.0 | 0.1− | | |
| 2000 01 07 | 704 | 0.7− | 0.6− | 2002 09 13 | 644 | 0.6− | 0.6− | 2004 03 19 | 704 | 1.1+ | 0.7+ | | |
| 2000 01 07 | 704 | 0.7− | 0.2− | 2002 09 13 | 644 | 0.7− | 0.7− | 2004 03 19 | 704 | 0.2+ | 0.6+ | | |
| 2000 01 07 | 704 | 0.4− | 0.5− | 2002 09 28 | 608 | (2.0− | 1.1−) | 2004 03 19 | 704 | 0.9+ | 0.5+ | | |
| 2000 01 07 | 704 | 0.1− | 1.0− | 2002 09 28 | 608 | (1.9− | 0.9−) | 2004 03 19 | 704 | 0.6+ | 0.3+ | | |
| 2000 02 01 | 703 | (3.9− | 0.0 ) | 2002 09 28 | 608 | (1.8− | 1.0−) | 2004 03 19 | 704 | 0.5+ | 0.5− | | |
| 2000 02 01 | 703 | (2.6− | 0.2+) | 2002 10 05 | 704 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.1− | 0.5+ | | |
| 2000 02 01 | 703 | 0.5+ | 0.6+ | 2002 10 05 | 704 | 0.3− | 0.1− | 2004 03 19 | 704 | 0.6+ | 0.2+ | | |
| 2000 02 01 | 703 | 0.1− | 0.2− | 2002 10 05 | 704 | 0.3− | 0.7+ | 2004 03 19 | 704 | 0.1− | 0.0 | | |
| 2000 02 02 | 704 | 1.0− | 0.3+ | 2002 10 05 | 704 | 0.7− | 0.4+ | 2004 03 19 | 704 | 1.1+ | 0.5+ | | |
| 2000 02 02 | 704 | 0.2− | 0.1+ | 2002 10 05 | 704 | 0.7− | 0.6+ | 2004 03 28 | 691 | 0.0 | 0.4+ | | |
| 2000 02 02 | 704 | 0.1− | 0.0 | 2002 10 12 | 704 | 0.7− | 0.1+ | 2004 03 28 | 691 | 0.1+ | 0.3+ | | |
| 2000 02 02 | 704 | 0.3+ | 0.6+ | 2002 10 12 | 704 | 1.0− | 0.5+ | 2004 03 28 | 691 | 0.1+ | 0.5+ | | |
| 2000 02 02 | 704 | 0.1+ | 0.5+ | 2002 10 12 | 704 | 0.8− | 0.9+ | 2004 04 11 | 644 | 0.4+ | 0.1− | | |
| 2000 02 04 | 704 | 0.9− | 0.5+ | 2002 10 12 | 704 | 0.9− | 0.6+ | 2004 04 11 | 644 | 0.4+ | 0.3+ | | |
| 2000 02 04 | 704 | 0.3+ | 0.3+ | 2002 10 31 | 704 | (0.6− | 2.0+) | 2004 04 11 | 644 | 0.5+ | 0.8+ | | |
| 2000 02 04 | 704 | 0.8− | 0.2+ | 2002 10 31 | 704 | 0.1+ | 1.3+ | 2004 04 16 | 644 | 0.1+ | 0.6+ | | |
| 2000 02 04 | 704 | 0.2− | 0.4− | 2002 10 31 | 704 | 0.5− | 1.2+ | 2004 04 16 | 644 | 0.6+ | 0.8+ | | |
| 2000 02 04 | 704 | 1.2+ | 1.0− | 2002 10 31 | 704 | 0.1+ | 1.4+ | 2004 04 16 | 644 | 0.2+ | 0.5+ | | |
| 2000 02 05 | 704 | 0.6− | 0.5+ | 2002 10 31 | 704 | 0.2+ | 0.9+ | 2004 04 19 | 704 | 0.3+ | 0.5+ | | |
| 2000 02 05 | 704 | 0.6+ | 0.3+ | 2002 11 08 | 704 | 0.7− | 0.1+ | 2004 04 19 | 704 | 0.0 | 0.8+ | | |
| 2000 02 05 | 704 | 1.5+ | 0.6− | 2002 11 08 | 704 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.2+ | 0.4+ | | |
| 2000 02 06 | 704 | (1.0− | 2.1+) | 2002 11 08 | 704 | 0.1− | 0.3+ | 2004 04 19 | 704 | 1.1+ | 0.4+ | | |
| 2000 02 06 | 704 | 0.7+ | 1.1− | 2002 11 08 | 704 | 0.1+ | 0.8+ | 2004 04 20 | 703 | 0.5− | 1.3+ | | |
| 2000 02 06 | 704 | 0.2− | 0.0 | 2002 11 08 | 704 | 0.1− | 0.1+ | 2004 04 20 | 703 | 0.6+ | 0.2+ | | |
| 2000 02 06 | 704 | 1.2− | 1.8− | 2002 11 12 | 291 | 0.2+ | 0.1+ | 2004 04 20 | 703 | 0.7+ | 0.4+ | | |
| 2000 03 06 | 704 | 0.5+ | 0.5+ | 2002 11 12 | 291 | 0.3+ | 0.0 | 2004 04 20 | 703 | 0.1− | 0.5+ | | |
| 2000 03 06 | 704 | 1.1− | 0.7+ | 2002 11 12 | 291 | 1.3+ | 1.1− | 2006 08 29 | 703 | 0.4− | 0.2− | | |
| 2000 03 06 | 704 | 1.5+ | 0.1− | 2002 11 12 | 704 | 0.9− | 0.3− | 2006 08 29 | 703 | 0.9− | 0.2− | | |
| 2000 03 06 | 704 | 0.6− | 1.1+ | 2002 11 12 | 704 | 0.1+ | 0.2− | 2006 08 29 | 703 | (0.5+ | 1.8−) | | |
| 2002 08 11 | 704 | 0.2− | 1.1+ | 2002 11 12 | 704 | 1.0− | 0.8+ | 2006 08 29 | 703 | 0.6− | 0.4+ | | |
| 2002 08 11 | 704 | 0.1− | 1.0+ | 2002 11 12 | 704 | 1.0− | 0.3− | 2006 10 28 | 704 | 0.4− | 0.2+ | | |
| 2002 08 11 | 704 | 0.1− | 0.3+ | 2002 12 06 | 704 | (0.5+ | 1.6+) | 2006 10 28 | 704 | 0.2− | 0.1− | | |
| 2002 08 11 | 704 | (0.4+ | 1.8+) | 2002 12 06 | 704 | 0.4+ | 0.0 | 2006 10 28 | 704 | 0.4− | 0.5− | | |
| 2002 08 11 | 704 | 0.8+ | 1.1+ | 2002 12 06 | 704 | 0.4− | 0.5+ | 2006 10 28 | 704 | 0.1− | 0.2− | | |
| 2002 08 11 | 704 | (0.7− | 2.3+) | 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 11 16 | 704 | (1.6+ | 1.0+) | | |
| 2002 08 11 | 704 | (0.3+ | 1.8+) | 2002 12 06 | 704 | 0.9− | 0.6+ | 2006 11 16 | 704 | 0.1− | 0.3+ | | |
| 2002 08 11 | 704 | 0.5+ | 0.9+ | 2003 01 05 | 704 | (1.5− | 1.5+) | 2006 11 16 | 704 | 0.6− | 0.1+ | | |
| 2002 08 11 | 704 | (0.2+ | 1.5+) | 2003 01 05 | 704 | 0.6+ | 0.9− | 2006 11 18 | 704 | 0.1+ | 0.7+ | | |
| 2002 09 05 | 699 | 0.2− | 0.5+ | 2003 01 05 | 704 | 1.3− | 0.9− | 2006 11 18 | 704 | 0.7+ | 0.3− | | |
| 2002 09 05 | 699 | 0.4− | 0.8+ | 2003 01 05 | 704 | 1.0− | 0.7− | 2006 11 18 | 704 | 0.0 | 0.4− | | |
| 2002 09 05 | 699 | 0.2− | 0.7+ | 2003 01 05 | 704 | 1.3− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.2+ | | |
| 2002 09 05 | 699 | 0.3− | 0.8+ | 2004 02 26 | 704 | 0.6− | 0.7+ | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2002 09 07 | 704 | 0.2− | 0.4+ | 2004 02 26 | 704 | 1.2+ | 1.4+ | 2006 11 21 | 704 | 0.7+ | 0.9+ | | |
| 2002 09 07 | 704 | (1.2− | 1.7+) | 2004 02 26 | 704 | 0.4− | 0.2− | 2006 11 21 | 704 | 1.2+ | 0.1− | | |
| 2002 09 07 | 704 | 0.3− | 0.8+ | 2004 02 26 | 704 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1− | | |
| 2002 09 07 | 704 | (1.4− | 1.9+) | 2004 03 16 | 704 | 0.6− | 1.2+ | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2002 09 07 | 704 | 0.8− | 0.7+ | 2004 03 16 | 704 | 0.4+ | 1.4+ | 2006 11 21 | 691 | 0.1− | 0.2− | | |
| 2002 09 07 | 704 | (1.6− | 2.3+) | 2004 03 16 | 704 | 0.7− | 0.4+ | 2006 12 01 | 704 | 0.3+ | 1.0+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.7+ | 2004 03 16 | 704 | 0.1+ | 0.5+ | 2006 12 01 | 704 | 0.1− | 1.0+ | | |
| 2002 09 07 | 704 | (1.2− | 2.1+) | 2004 03 19 | 704 | 1.4− | 1.0− | 2006 12 01 | 704 | 0.2+ | 0.9+ | | |
| 2002 09 11 | 608 | 1.1+ | 0.7+ | 2004 03 19 | 704 | 0.6+ | 1.0+ | 2006 12 01 | 704 | 0.4+ | 0.7+ | | |

**(137964)∗ 2000 $CZ_{23}$ = 1996 $CD_6$ = 1998 $SH_{144}$ = 1998 $UQ_{37}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 39373)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 174.56571 | | (2000.0) | | | |
| $n$ | 0.24525410 | $\omega$ | 36.42857 | | −0.92168055 | +0.38771196 |
| $a$ | 2.5276980 | $\Omega$ | 166.36406 | | −0.36815671 | −0.86308297 |
| $e$ | 0.0569832 | $i$ | 3.30217 | | −0.12233400 | −0.32367765 |
| $P$ | 4.02 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.2+ | 0.6− | 2002 10 07 | 704 | 0.9− | 0.0 | 2004 03 10 | 644 | 0.0 | 0.0 |
| 1996 02 10 | 691 | 0.1− | 0.5− | 2002 10 07 | 704 | 0.9− | 0.7+ | 2004 03 10 | 644 | 0.0 | 0.2+ |
| 1996 02 10 | 691 | 0.3− | 0.4− | 2002 10 11 | 704 | 0.4− | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.1+ |
| 1996 02 16 | 691 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.3− | 0.8+ | 2006 09 06 | 644 | 0.4− | 0.0 |
| 1996 02 16 | 691 | 0.2+ | 0.6− | 2002 10 11 | 704 | 0.8− | 0.2− | 2006 09 06 | 644 | 0.4+ | 0.6+ |
| 1996 02 16 | 691 | 0.1− | 0.3− | 2002 10 11 | 704 | 0.9− | 0.4+ | 2006 09 14 | 703 | 0.7+ | 0.2− |
| 1998 09 18 | 809 | (3.8− | 5.0+) | 2002 10 11 | 704 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 1998 09 18 | 809 | (4.4− | 4.3+) | 2002 10 31 | 699 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.7− |
| 1998 09 18 | 809 | (4.3− | 3.4+) | 2002 10 31 | 699 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.6+ | 0.4− |
| 1998 09 18 | 699 | 0.5− | 1.1+ | 2002 10 31 | 704 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.6+ | 0.2+ |
| 1998 09 18 | 699 | 0.1+ | 0.5+ | 2002 10 31 | 704 | 0.2− | 0.4− | 2006 09 17 | 704 | 0.3− | 0.3− |
| 1998 09 18 | 699 | 0.8+ | 1.3− | 2002 10 31 | 699 | 0.6+ | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.1− |
| 1998 09 20 | 809 | (2.6− | 1.8+) | 2002 10 31 | 704 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.4+ | 0.0 |
| 1998 09 20 | 809 | (2.1− | 1.9+) | 2002 10 31 | 699 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.5+ | 0.3+ |
| 1998 09 20 | 809 | (2.4− | 2.2+) | 2002 10 31 | 704 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.2+ |
| 1998 10 10 | 699 | 0.5+ | 0.7+ | 2002 10 31 | 704 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.0 | 0.1− |
| 1998 10 10 | 699 | 0.4− | 0.5+ | 2002 11 04 | 608 | 0.2− | 0.8− | 2006 09 20 | 704 | 0.1− | 0.5− |
| 1998 10 10 | 699 | 0.0 | 0.8+ | 2002 11 04 | 608 | 0.3− | 0.8− | 2006 09 20 | 704 | 0.4+ | 0.1+ |
| 1998 10 28 | 704 | 1.8+ | 0.2− | 2002 11 04 | 608 | 0.3− | 0.9− | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 1998 10 28 | 704 | 0.8+ | 0.7+ | 2002 11 06 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.2− |
| 1998 10 28 | 704 | 0.4− | 1.4+ | 2002 11 06 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 1998 10 28 | 704 | 1.5− | 1.1− | 2002 11 06 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.1− |
| 1998 10 29 | 704 | 1.7+ | 1.2+ | 2002 11 11 | 704 | 0.9+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.0 |
| 1998 10 29 | 704 | 0.7− | 1.0− | 2002 11 11 | 704 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 1998 10 29 | 704 | 0.2+ | 1.2+ | 2002 11 11 | 704 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 1998 10 29 | 704 | 0.8− | 1.0− | 2002 11 11 | 704 | 0.8− | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 1998 10 29 | 704 | 0.5+ | 0.8+ | 2002 11 11 | 704 | (1.5− | 0.4+) | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 1998 11 14 | 699 | 0.3+ | 0.2+ | 2002 11 20 | 644 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.3+ | 0.1+ |
| 1998 11 14 | 699 | 0.3− | 0.0 | 2002 11 20 | 644 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.4+ | 0.0 |
| 1998 11 14 | 699 | 0.1+ | 0.2− | 2002 11 20 | 644 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2000 01 30 | 703 | 0.6− | 0.4+ | 2003 01 04 | 704 | 1.2+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2000 01 30 | 703 | 0.6− | 0.6+ | 2003 01 04 | 704 | 1.2− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2000 01 30 | 703 | (1.4− | 2.2+) | 2003 01 04 | 704 | (1.8− | 0.8+) | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2000 01 30 | 703 | 1.6+ | 1.3+ | 2003 11 23 | 704 | 1.0+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2000 02 01 | 703 | 0.3+ | 1.0+ | 2003 11 23 | 704 | 0.9+ | 1.2+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2000 02 01 | 703 | 0.6+ | 0.2− | 2003 11 23 | 704 | (0.1+ | 1.9+) | 2006 10 15 | 703 | 0.1+ | 0.1− |
| 2000 02 01 | 703 | 0.8+ | 0.6+ | 2004 01 04 | 699 | 0.1+ | 1.1− | 2006 10 15 | 703 | 0.7− | 0.6− |
| 2000 02 01 | 703 | 0.6+ | 0.3+ | 2004 01 04 | 699 | 0.4+ | 1.3− | 2006 10 15 | 703 | 0.2+ | 0.4− |
| 2000 02 02 | 704 | 0.5+ | 0.1− | 2004 01 04 | 699 | 1.2− | 0.4+ | 2006 10 15 | 703 | 0.0 | 0.7− |
| 2000 02 02 | 704 | 0.4+ | 0.1− | 2004 01 04 | 699 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.7− |
| 2000 02 02 | 704 | 0.2+ | 0.3− | 2004 01 13 | 699 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.6− |
| 2000 02 02 | 704 | 0.2+ | 0.0 | 2004 01 13 | 699 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2000 02 02 | 704 | 0.1+ | 0.7− | 2004 01 13 | 699 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2000 02 04 | 704 | 0.1+ | 0.2− | 2004 01 13 | 699 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 2000 02 04 | 704 | 0.6+ | 0.0 | 2004 01 21 | 704 | 0.6− | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.3− |
| 2000 02 04 | 704 | 0.2+ | 0.0 | 2004 01 21 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2000 02 04 | 704 | 0.5+ | 0.1+ | 2004 01 21 | 704 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2000 02 04 | 704 | 0.4+ | 0.2+ | 2004 01 21 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2000 02 29 | 704 | 0.1− | 0.0 | 2004 01 26 | 699 | 1.0− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2000 02 29 | 704 | 0.1− | 0.8+ | 2004 01 26 | 699 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.5+ | 1.0− |
| 2000 02 29 | 704 | 0.4+ | 0.1+ | 2004 01 26 | 699 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.9+ | 0.0 |
| 2000 02 29 | 704 | 0.0 | 0.8+ | 2004 01 26 | 699 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2000 02 29 | 704 | 0.2− | 0.7+ | 2004 01 29 | 704 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2000 03 03 | 691 | 0.6− | 0.1− | 2004 01 29 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 704 | (1.5+ | 0.5+) |
| 2000 03 03 | 691 | 0.5− | 0.2− | 2004 01 29 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 704 | (1.8+ | 2.9+) |
| 2000 03 03 | 691 | 0.7− | 0.2− | 2004 01 29 | 704 | 0.2− | 0.8+ | 2006 10 23 | 704 | 0.1+ | 0.5+ |
| 2000 03 05 | 704 | 0.0 | 0.4+ | 2004 01 29 | 704 | 0.0 | 0.8+ | 2006 10 23 | 704 | 0.6− | 0.4− |
| 2000 03 05 | 704 | 0.3− | 0.5+ | 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.3+ | 0.3− |
| 2000 03 05 | 704 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.6− | 0.0 |
| 2000 03 05 | 704 | 0.2− | 0.6+ | 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.8− | 0.2− |
| 2000 03 05 | 704 | 0.5− | 0.1+ | 2004 02 03 | 608 | 0.0 | 0.4+ | 2006 10 28 | 704 | 0.0 | 0.6+ |
| 2000 03 09 | 704 | 0.4+ | 0.7− | 2004 02 03 | 608 | 0.3+ | 0.3+ | 2006 10 28 | 704 | 0.8+ | 0.4+ |
| 2000 03 09 | 704 | 0.5+ | 0.5+ | 2004 02 03 | 608 | 0.0 | 0.2+ | 2006 10 28 | 704 | 0.3+ | 0.2+ |
| 2000 03 09 | 704 | 0.2− | 0.3+ | 2004 02 11 | 691 | 0.7+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2000 03 09 | 704 | 0.2− | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2000 03 09 | 704 | 0.3− | 0.6+ | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 09 14 | 608 | 0.4+ | 1.1+ | 2004 02 14 | 333 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 09 14 | 608 | 0.5+ | 1.2+ | 2004 02 14 | 333 | 0.1− | 0.6− | 2006 11 06 | 644 | 0.2− | 0.2− |
| 2002 09 14 | 608 | 0.3+ | 1.0+ | 2004 02 16 | 333 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2002 09 17 | 608 | 0.5− | 0.2+ | 2004 02 16 | 333 | 0.1+ | 0.1− | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2002 09 17 | 608 | 0.5− | 0.1− | 2004 02 17 | 333 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 09 17 | 608 | 0.5− | 0.1− | 2004 02 17 | 333 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2002 10 01 | 704 | 0.6+ | 0.3+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2002 10 01 | 704 | 0.8− | 0.9− | 2004 02 17 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.8− |
| 2002 10 01 | 704 | 0.0 | 0.9− | 2004 02 17 | 704 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2002 10 01 | 704 | 0.2+ | 0.3+ | 2004 02 17 | 704 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2002 10 02 | 704 | 0.6− | 0.1+ | 2004 02 17 | 704 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2002 10 02 | 704 | 0.9− | 0.4+ | 2004 02 23 | 608 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 10 02 | 704 | 0.7− | 0.0 | 2004 02 23 | 608 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2002 10 02 | 704 | 0.8+ | 0.2+ | 2004 02 23 | 608 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.0 | 1.0− |
| 2002 10 02 | 704 | (1.7− | 0.4+) | 2004 02 26 | 704 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.8− | 1.4− |
| 2002 10 03 | 704 | 0.7− | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2002 10 03 | 704 | 0.4− | 0.6+ | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.6− | 0.2− | 2006 11 20 | 704 | 0.6− | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2004 02 26 | 704 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.6− |
| 2002 10 07 | 704 | 1.0− | 0.8+ | 2004 02 29 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.5− |
| 2002 10 07 | 704 | 0.9− | 1.0+ | 2004 02 29 | 691 | 0.1+ | 0.0 | | | | |
| 2002 10 07 | 704 | 0.8− | 0.1+ | 2004 03 10 | 644 | 0.1+ | 0.2+ | | | | |

**(137965)∗ 2000 $CT_{24}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.28195 | | (2000.0) | | | |
| $n$ | 0.26604728 | $\omega$ | 238.02360 | | −0.78086008 | −0.62419804 |
| $a$ | 2.3942170 | $\Omega$ | 263.34064 | | +0.58137273 | −0.71135027 |
| $e$ | 0.1470392 | $i$ | 1.45302 | | +0.22861164 | −0.32304427 |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.6+ | 0.6+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 1998 09 19 | 645 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.2+ | 1.0+ | 2006 11 15 | 703 | 0.7+ | 0.6+ |
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.4+ | 1.1+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 1998 09 25 | 645 | 0.1− | 0.1+ | 2004 03 31 | 704 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2000 02 02 | 704 | 0.1+ | 0.5+ | 2004 03 31 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.7+ | 0.3− |
| 2000 02 02 | 704 | 0.1+ | 0.1− | 2004 03 31 | 704 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.2− |
| 2000 02 02 | 704 | 0.2+ | 0.1+ | 2004 03 31 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 704 | 0.5+ | 0.0 |
| 2000 02 02 | 704 | 0.3+ | 0.2− | 2004 03 31 | 704 | 0.7− | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.4+ |
| 2000 02 04 | 704 | 0.5+ | 0.1− | 2004 04 09 | E12 | 0.6− | 0.7+ | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2000 02 04 | 704 | 0.6+ | 0.7− | 2004 04 09 | E12 | 1.0− | 1.2+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2000 02 04 | 704 | 0.2+ | 0.7− | 2004 04 09 | E12 | 1.2− | 1.2+ | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2000 02 04 | 704 | 0.5+ | 0.2− | 2004 04 09 | E12 | 0.5− | 1.1+ | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2000 02 04 | 704 | 0.4+ | 0.1+ | 2004 04 15 | 699 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2000 02 29 | 704 | 1.1− | 1.1+ | 2004 04 15 | 699 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.4− |
| 2000 02 29 | 704 | 0.3− | 0.6+ | 2004 04 15 | 699 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 1.1+ |
| 2000 02 29 | 704 | 0.2− | 0.2− | 2004 04 15 | 699 | 0.3− | 0.6− | 2006 11 18 | 704 | 0.1− | 1.2+ |
| 2000 03 05 | 704 | 0.4− | 0.1− | 2004 04 16 | 704 | 0.6+ | 0.4+ | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2000 03 05 | 704 | 0.5− | 0.3+ | 2004 04 16 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.7− | 0.2− |
| 2000 03 05 | 704 | 0.4− | 0.3+ | 2004 04 16 | 704 | 0.3+ | 1.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2000 03 05 | 704 | 0.1+ | 0.3+ | 2004 04 16 | 704 | 0.5+ | 0.3− | 2006 11 19 | 704 | 1.0− | 0.0 |
| 2000 03 05 | 704 | 0.4− | 0.3+ | 2004 04 16 | 644 | 0.9+ | 0.1− | 2006 11 19 | 704 | (1.6− | 1.0+) |
| 2002 10 09 | 704 | (0.6+ | 1.7+) | 2004 04 16 | 704 | 1.0+ | 0.7+ | 2006 11 19 | 704 | (2.8− | 0.5−) |
| 2002 10 09 | 704 | (1.6+ | 1.3+) | 2004 04 16 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.9− | 0.1+ |
| 2002 10 09 | 704 | (1.3+ | 2.8+) | 2004 04 16 | 704 | 0.3− | 0.5+ | 2006 11 20 | 704 | (1.7+ | 1.6+) |
| 2002 10 09 | 704 | 1.5+ | 1.4+ | 2004 04 20 | 704 | 0.6+ | 0.9+ | 2006 11 20 | 704 | 0.3− | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 25 | 644 | 0.4− | 0.3+ | 2004 04 20 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.3+ | | |
| 2002 10 25 | 644 | 0.4− | 0.6+ | 2004 04 20 | 704 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.3+ | | |
| 2002 10 25 | 644 | 0.5− | 1.1+ | 2004 04 20 | 704 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2004 03 16 | 703 | (1.6+ | 1.7+) | 2004 04 20 | 704 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.7+ | | |
| 2004 03 16 | 703 | 0.1+ | 1.1+ | 2004 04 26 | 699 | 0.9+ | 0.6+ | 2006 11 21 | 704 | 0.5− | 0.3− | | |
| 2004 03 16 | 703 | 0.6+ | 1.4+ | 2004 04 26 | 699 | 0.1+ | 1.4+ | 2006 11 21 | 704 | 0.1− | 0.5+ | | |
| 2004 03 16 | 703 | 0.2+ | 0.4− | 2004 04 26 | 699 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.2+ | | |
| 2004 03 17 | 704 | 0.2− | 0.1− | 2004 04 26 | 699 | 0.1+ | 1.5+ | 2006 11 23 | 691 | 0.4+ | 0.1+ | | |
| 2004 03 17 | 704 | 0.5+ | 0.0 | 2005 07 01 | 691 | 0.4− | 0.6+ | 2006 11 23 | 691 | 0.4+ | 0.2+ | | |
| 2004 03 17 | 704 | 0.1+ | 0.6+ | 2005 07 01 | 691 | 0.3− | 0.8+ | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2004 03 17 | 704 | 0.8+ | 1.1+ | 2005 07 01 | 691 | 0.1− | 0.5+ | 2006 11 27 | 703 | 0.1+ | 0.5+ | | |
| 2004 03 17 | 704 | 1.0− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.3− | 0.5+ | | |
| 2004 03 20 | 699 | 0.6+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 20 | 699 | 0.8+ | 0.2− | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.2− | 0.1+ | | |
| 2004 03 20 | 704 | 0.7+ | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2004 03 20 | 699 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.3− | 0.4− | 2006 11 27 | 703 | 0.2− | 0.7+ | | |
| 2004 03 20 | 704 | 0.9+ | 0.1− | 2006 10 29 | G96 | 0.0 | 0.3− | 2006 12 01 | 691 | 0.1− | 0.2+ | | |
| 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.1− | 0.2+ | | |
| 2004 03 20 | 699 | 0.3+ | 0.1+ | 2006 10 29 | G96 | 0.2− | 0.3− | 2006 12 01 | 704 | 1.1− | 0.7+ | | |
| 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.3− | 2006 12 01 | 691 | 0.2− | 0.2+ | | |
| 2004 03 27 | 699 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 12 01 | 704 | 1.2− | 0.7+ | | |
| 2004 03 27 | 699 | 1.2+ | 1.2− | 2006 11 11 | 703 | 1.2− | 0.5+ | 2006 12 01 | 704 | 0.6− | 0.0 | | |
| 2004 03 27 | 699 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.3− | 2006 12 01 | 704 | 0.6− | 0.4+ | | |
| 2004 03 27 | 704 | 0.2− | 0.8+ | 2006 11 15 | 703 | 0.0 | 0.6− | 2006 12 01 | 704 | 0.4+ | 0.1− | | |
| 2004 03 27 | 704 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.4− | | | | | | |
| 2004 03 27 | 699 | 0.3+ | 0.3− | 2006 11 15 | 703 | 1.2+ | 0.9− | | | | | | |

**(137966)∗ 2000 CZ$_{24}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.21737 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27295283 | $\omega$ | 133.29203 | | +0.66166292 | −0.74588892 |
| $a$ | 2.3536632 | $\Omega$ | 275.11731 | | +0.66377770 | +0.63014352 |
| $e$ | 0.2278615 | $i$ | 4.40488 | | +0.34871385 | +0.21579820 |
| $P$ | 3.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.9− | 0.7− | 2002 08 16 | 704 | 0.7+ | 0.1+ | 2003 01 05 | 704 | 0.3− | 0.5− | | |
| 1999 12 07 | 704 | 0.1− | 0.0 | 2002 08 16 | 704 | 0.1− | 0.7− | 2003 01 05 | 704 | 0.3− | 0.5+ | | |
| 1999 12 07 | 704 | 0.4− | 0.6− | 2002 09 05 | 699 | 0.2− | 0.4+ | 2003 02 21 | 699 | (0.2+ | 2.1+) | | |
| 1999 12 07 | 704 | 0.4− | 0.1− | 2002 09 05 | 699 | 0.6− | 0.2+ | 2003 02 21 | 699 | 1.3+ | 0.8+ | | |
| 1999 12 07 | 704 | 0.1− | 0.5+ | 2002 09 05 | 699 | 0.3− | 0.5+ | 2003 02 21 | 699 | 0.6− | 1.3+ | | |
| 2000 01 07 | 704 | 0.5− | 0.1+ | 2002 09 05 | 699 | 0.3− | 0.3+ | 2003 02 21 | 699 | 0.5− | 0.4− | | |
| 2000 01 07 | 704 | 0.5+ | 1.2− | 2002 09 06 | 704 | 0.3− | 0.3+ | 2004 02 23 | 608 | 0.7+ | 0.1− | | |
| 2000 01 07 | 704 | 0.4− | 0.6+ | 2002 09 06 | 704 | 0.3− | 0.2− | 2004 02 23 | 608 | 0.7+ | 0.4− | | |
| 2000 01 07 | 704 | 0.4+ | 0.4− | 2002 09 06 | 704 | 0.3− | 0.7+ | 2004 02 23 | 608 | 0.8+ | 0.4− | | |
| 2000 01 07 | 704 | 0.1+ | 0.0 | 2002 09 06 | 704 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.5+ | 0.2− | | |
| 2000 01 07 | 704 | 0.3+ | 0.5− | 2002 09 06 | 704 | 0.2− | 0.7+ | 2004 02 26 | 704 | 0.3+ | 0.3− | | |
| 2000 01 07 | 704 | 0.6− | 0.2− | 2002 09 10 | 608 | 0.9− | 0.7+ | 2004 02 26 | 704 | 0.9+ | 0.1− | | |
| 2000 01 07 | 704 | 0.7+ | 0.3− | 2002 09 10 | 608 | 1.0− | 0.9+ | 2004 02 26 | 704 | 0.1+ | 0.4+ | | |
| 2000 01 07 | 704 | 0.8− | 0.3− | 2002 09 10 | 608 | 1.0− | 0.7+ | 2004 03 16 | 703 | 0.2− | 1.3+ | | |
| 2000 01 07 | 704 | 0.1+ | 0.6− | 2002 09 13 | 644 | 0.3− | 0.4+ | 2004 03 16 | 703 | 0.1+ | 1.0+ | | |
| 2000 02 02 | 704 | 0.3+ | 0.0 | 2002 09 13 | 644 | 0.6− | 0.3+ | 2004 03 16 | 703 | 0.5− | 0.5+ | | |
| 2000 02 02 | 704 | 0.3+ | 0.3+ | 2002 09 13 | 644 | 0.7− | 0.3+ | 2004 03 16 | 703 | 0.6− | 0.5+ | | |
| 2000 02 02 | 704 | 0.2+ | 0.0 | 2002 09 17 | 608 | (1.7− | 0.6+) | 2004 03 17 | 704 | 0.2+ | 0.4+ | | |
| 2000 02 02 | 704 | 0.2+ | 0.0 | 2002 09 17 | 608 | (1.9− | 0.8+) | 2004 03 17 | 704 | 0.1+ | 0.1+ | | |
| 2000 02 02 | 704 | 0.4+ | 0.1+ | 2002 09 17 | 608 | (2.0− | 0.6+) | 2004 03 17 | 704 | 0.3+ | 0.8+ | | |
| 2000 02 04 | 704 | 0.3+ | 0.3+ | 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 03 17 | 704 | 0.3+ | 0.1− | | |
| 2000 02 04 | 704 | 0.3− | 0.4+ | 2002 10 04 | 704 | 0.3− | 0.5+ | 2004 03 17 | 704 | 1.1− | 0.0 | | |
| 2000 02 04 | 704 | 0.3+ | 0.1+ | 2002 10 04 | 704 | 0.3− | 0.8+ | 2004 03 19 | 704 | 0.6− | 0.1+ | | |
| 2000 02 04 | 704 | 0.1+ | 1.0+ | 2002 10 04 | 704 | 0.2− | 0.7+ | 2004 03 19 | 704 | (1.3+ | 1.5+) | | |
| 2000 02 04 | 704 | 0.3− | 0.8+ | 2002 10 04 | 704 | 0.0 | 0.5+ | 2004 03 19 | 704 | 0.2+ | 1.3+ | | |
| 2000 02 08 | 704 | 0.1− | 0.3+ | 2002 10 05 | 644 | 0.9− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.7+ | | |
| 2000 02 08 | 704 | 0.2+ | 0.2+ | 2002 10 05 | 644 | 0.5− | 0.2+ | 2004 03 31 | 704 | 0.9+ | 1.0+ | | |
| 2000 02 08 | 704 | 0.3+ | 0.0 | 2002 10 05 | 644 | 0.0 | 0.4+ | 2004 03 31 | 704 | 0.7+ | 0.6+ | | |
| 2000 02 08 | 704 | 0.6+ | 0.2+ | 2002 10 06 | 644 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.2+ | 1.0+ | | |
| 2000 02 08 | 704 | 0.8+ | 0.1+ | 2002 10 06 | 644 | 0.5− | 0.4+ | 2004 03 31 | 704 | 0.6+ | 0.0 | | |
| 2000 02 10 | 704 | 0.3− | 0.1+ | 2002 10 06 | 644 | 0.5− | 0.4+ | 2004 03 31 | 704 | 0.5+ | 0.6− | | |
| 2000 02 10 | 704 | 0.3+ | 0.8+ | 2002 10 12 | 704 | 0.1− | 0.5+ | 2004 04 16 | 704 | (1.7+ | 0.3+) | | |
| 2000 02 10 | 704 | 0.6− | 1.9+ | 2002 10 12 | 704 | 0.1+ | 0.3+ | 2004 04 16 | 704 | 0.5+ | 0.5+ | | |
| 2000 02 10 | 704 | 0.4+ | 1.2+ | 2002 10 12 | 704 | 0.3− | 0.6+ | 2004 04 16 | 704 | 0.5+ | 0.5+ | | |
| 2000 02 10 | 704 | 0.6+ | 1.2+ | 2002 10 12 | 704 | 0.2+ | 0.6+ | 2004 04 16 | 704 | 0.1+ | 0.2+ | | |
| 2000 02 27 | 703 | 0.3− | 0.6+ | 2002 10 12 | 704 | 0.0 | 0.8+ | 2004 04 16 | 704 | 0.8− | 1.2+ | | |
| 2000 02 27 | 703 | 0.7− | 0.0 | 2002 10 31 | 704 | (0.6+ | 1.9+) | 2006 08 30 | 704 | 0.8− | 0.4− | | |
| 2000 02 27 | 703 | 1.3+ | 0.5+ | 2002 10 31 | 704 | 0.5+ | 0.3+ | 2006 08 30 | 704 | 0.1+ | 0.5+ | | |
| 2000 02 27 | 703 | 0.0 | 1.4+ | 2002 10 31 | 704 | 0.4− | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.7− | | |
| 2000 03 05 | 704 | 1.1+ | 0.0 | 2002 10 31 | 704 | 0.2+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.8− | | |
| 2000 03 05 | 704 | (2.3+ | 0.1−) | 2002 11 05 | 699 | 0.1− | 0.2+ | 2006 10 19 | 704 | 1.0− | 0.9− | | |
| 2000 03 05 | 704 | 0.5− | 1.6+ | 2002 11 05 | 699 | 0.4− | 0.0 | 2006 10 19 | 704 | 0.3− | 0.7− | | |
| 2000 03 05 | 704 | 0.8+ | 1.0+ | 2002 11 05 | 699 | 0.7− | 0.2+ | 2006 10 19 | 704 | 0.5+ | 0.3− | | |
| 2002 07 14 | 704 | (2.1− | 1.1+) | 2002 11 05 | 699 | 0.3− | 0.2+ | 2006 10 19 | 704 | 1.2+ | 0.3− | | |
| 2002 07 14 | 704 | 0.1+ | 0.3+ | 2002 11 08 | 704 | 0.3+ | 0.3− | 2006 10 20 | 704 | 1.4+ | 0.3+ | | |
| 2002 07 14 | 704 | 0.2− | 0.3− | 2002 11 08 | 704 | 0.6+ | 0.4− | 2006 10 20 | 704 | 0.0 | 0.5+ | | |
| 2002 07 14 | 704 | 0.3+ | 0.1+ | 2002 11 08 | 704 | 0.5+ | 0.4− | 2006 10 20 | 704 | 0.3− | 1.0+ | | |
| 2002 08 11 | 704 | 0.0 | 0.6− | 2002 11 08 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 704 | 1.0+ | 0.8+ | | |
| 2002 08 11 | 704 | 0.5− | 0.1− | 2002 11 08 | 704 | 0.3+ | 0.7− | 2006 10 20 | 704 | 0.1− | 0.6− | | |
| 2002 08 11 | 704 | 0.1− | 0.0 | 2002 11 08 | 704 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.5− | 0.3− | | |
| 2002 08 11 | 704 | 0.4− | 0.3+ | 2002 11 08 | 704 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2002 08 11 | 704 | 0.8− | 1.0+ | 2002 11 08 | 704 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.7− | 0.3− | | |
| 2002 08 15 | 636 | 0.0 | 0.4+ | 2002 11 08 | 704 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.5− | 0.6− | | |
| 2002 08 15 | 636 | 0.3− | 0.6+ | 2002 11 08 | 704 | 0.6+ | 0.4+ | 2006 11 28 | 704 | 0.4− | 0.1− | | |
| 2002 08 16 | 704 | 1.3+ | 0.3+ | 2002 12 06 | 704 | (0.0 | 1.7+) | 2006 11 28 | 704 | 0.2− | 0.2− | | |
| 2002 08 16 | 704 | 1.2+ | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.4− | 0.3− | | |
| 2002 08 16 | 704 | (2.0+ | 1.7+) | 2002 12 06 | 704 | 1.1+ | 1.2− | 2006 11 28 | 704 | 1.2− | 0.7− | | |
| 2002 08 16 | 704 | 0.2− | 0.8+ | 2002 12 11 | 704 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.4− | | |
| 2002 08 16 | 704 | 0.9+ | 0.6− | 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 12 01 | 704 | 0.5+ | 0.1− | | |
| 2002 08 16 | 704 | 0.5+ | 0.8− | 2002 12 11 | 704 | 0.8− | 0.5+ | 2006 12 01 | 704 | 0.1− | 0.4− | | |
| 2002 08 16 | 704 | 1.4+ | 1.3+ | 2002 12 11 | 704 | 0.5− | 0.4− | 2006 12 01 | 704 | 0.3+ | 0.1− | | |
| 2002 08 16 | 704 | 0.4+ | 0.3− | 2002 12 11 | 704 | 1.0− | 0.8+ | 2006 12 01 | 704 | 0.0 | 0.3− | | |
| 2002 08 16 | 704 | 1.0− | 0.3− | 2003 01 05 | 704 | 0.7− | 0.2+ | | | | | | |
| 2002 08 16 | 704 | 0.4+ | 0.7+ | 2003 01 05 | 704 | 0.2+ | 0.1− | | | | | | |

**(137967)∗ 2000 CS$_{26}$ = 1992 DQ$_9$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 39377)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.38401 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24310140 | $\omega$ | 316.21192 | | −0.88312191 | +0.46787327 |
| $a$ | 2.5425982 | $\Omega$ | 251.71376 | | −0.41981049 | −0.82094335 |
| $e$ | 0.0682132 | $i$ | 2.08233 | | −0.20941546 | −0.32733258 |
| $P$ | 4.05 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 29 | 809 | 1.2− | 0.1+ | 2002 11 04 | 608 | 0.2− | 0.7− | 2004 02 18 | 608 | 0.9+ | 0.2− | | |
| 1992 03 03 | 809 | 1.2− | 0.9+ | 2002 11 04 | 608 | 0.7+ | 1.3− | 2004 03 13 | 703 | 0.2+ | 0.0 | | |
| 1992 03 05 | 809 | 0.5− | 0.7+ | 2002 11 04 | 608 | 0.2− | 0.6− | 2004 03 13 | 703 | 0.0 | 0.2+ | | |
| 1992 03 08 | 809 | 1.8− | 0.5− | 2002 11 06 | 704 | 0.1+ | 1.4+ | 2004 03 13 | 703 | 1.2− | 0.0 | | |
| 1993 07 23 | 809 | (0.5+ | 4.6+) | 2002 11 06 | 704 | 0.8− | 0.8+ | 2004 03 13 | 703 | 0.7− | 1.0+ | | |
| 1993 07 23 | 809 | (1.7+ | 3.6+) | 2002 11 06 | 704 | 0.4− | 0.3+ | 2004 03 15 | 704 | 0.8+ | 1.0+ | | |
| 1993 07 23 | 809 | (1.3+ | 3.2+) | 2002 11 22 | 644 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.1+ | | |
| 2000 02 02 | 704 | 0.4+ | 0.2− | 2002 11 22 | 644 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.7+ | 0.3− | | |
| 2000 02 02 | 704 | 0.0 | 0.2− | 2002 11 22 | 644 | (0.1− | 1.9−) | 2004 03 15 | 704 | 1.0− | 0.5+ | | |
| 2000 02 02 | 704 | 0.4+ | 0.1− | 2002 12 06 | 291 | 0.6+ | 0.4− | 2005 01 21 | 809 | 0.5+ | 0.3+ | | |
| 2000 02 02 | 704 | 0.4+ | 0.6+ | 2002 12 06 | 291 | 0.8+ | 0.5− | 2005 01 21 | 809 | 0.7+ | 0.2+ | | |
| 2000 02 02 | 704 | 0.4+ | 0.2+ | 2002 12 06 | 291 | 1.4+ | 0.5− | 2005 01 21 | 809 | 0.5+ | 0.2+ | | |
| 2000 02 04 | 704 | 0.4+ | 0.3+ | 2002 12 07 | 291 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.4+ | 0.1+ | | |
| 2000 02 04 | 704 | 0.6+ | 0.7− | 2002 12 07 | 291 | 0.7− | 0.6− | 2006 09 15 | 691 | 0.3+ | 0.0 | | |
| 2000 02 04 | 704 | 0.3+ | 0.3− | 2002 12 07 | 291 | 1.0− | 0.5− | 2006 09 15 | 691 | 0.2− | 0.2− | | |
| 2000 02 04 | 704 | 0.7+ | 0.7− | 2004 01 13 | 699 | 0.3+ | 0.9− | 2006 09 19 | 691 | 0.1− | 0.0 | | |
| 2000 02 04 | 704 | 1.0+ | 0.4− | 2004 01 13 | 699 | 0.4− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | | |
| 2000 02 12 | 704 | 0.5+ | 0.6+ | 2004 01 13 | 699 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 704 | 0.9+ | 0.1+ | 2004 01 13 | 699 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2000 02 12 | 704 | 0.3+ | 0.4+ | 2004 01 21 | 704 | (3.1+ | 0.8−) | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2000 02 12 | 704 | 0.6+ | 0.3+ | 2004 01 21 | 704 | (1.9+ | 0.0 ) | 2006 09 26 | 691 | 0.1+ | 0.5− |
| 2000 02 27 | 703 | 0.8+ | 1.7− | 2004 01 21 | 704 | (3.7+ | 0.8−) | 2006 09 30 | 691 | 0.5− | 0.0 |
| 2000 02 27 | 703 | 0.2+ | 0.2− | 2004 01 24 | 704 | 0.6− | 0.8+ | 2006 09 30 | 691 | 0.5− | 0.2+ |
| 2000 02 27 | 703 | 0.6+ | 0.3− | 2004 01 24 | 704 | 0.6− | 0.5+ | 2006 09 30 | 691 | 0.5− | 0.2+ |
| 2000 02 27 | 703 | 0.1− | 0.4− | 2004 01 24 | 704 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.4+ | 0.4+ | 2004 01 24 | 704 | 1.0− | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 2000 02 29 | 704 | 0.7+ | 0.2+ | 2004 01 24 | 704 | 0.8+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1− |
| 2000 02 29 | 704 | 0.5+ | 0.5− | 2004 01 26 | 699 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.1− | 0.1− |
| 2000 02 29 | 704 | 0.3+ | 0.1+ | 2004 01 26 | 699 | 0.9− | 0.2− | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 2000 02 29 | 704 | 0.5+ | 0.3− | 2004 01 26 | 699 | 0.2− | 1.2+ | 2006 10 15 | 691 | 0.4− | 0.9+ |
| 2000 03 03 | 704 | 0.3+ | 0.0 | 2004 01 26 | 699 | 0.7− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.3− |
| 2000 03 03 | 704 | 0.7+ | 0.1− | 2004 01 26 | 699 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.2+ | 0.3+ | 2004 01 26 | 699 | 0.9− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2000 03 03 | 704 | 0.2+ | 0.4+ | 2004 01 26 | 699 | 0.8+ | 0.5− | 2006 10 21 | 703 | 0.5+ | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.6+ | 2004 01 26 | 699 | 0.4− | 0.3− | 2006 10 21 | 703 | 0.7+ | 0.3+ |
| 2000 03 05 | 704 | 0.3+ | 0.1+ | 2004 01 29 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 1.0+ | 1.3+ |
| 2000 03 05 | 704 | 0.1− | 0.1+ | 2004 01 29 | 704 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.4− |
| 2000 03 05 | 704 | 0.1− | 0.1− | 2004 01 29 | 704 | 1.5+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2000 03 05 | 704 | 0.0 | 0.5− | 2004 01 29 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 07 | 704 | 1.3+ | 0.4− | 2004 01 29 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | 0.3+ | 0.7+ | 2004 02 02 | 608 | 0.4− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 07 | 704 | 0.3− | 0.1+ | 2004 02 02 | 608 | 0.1− | 1.4− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 10 07 | 704 | 0.2+ | 0.3− | 2004 02 02 | 608 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 10 07 | 704 | 0.4+ | 0.0 | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.3+ | 0.6+ | 2004 02 11 | 703 | 0.0 | 0.6− | 2006 10 27 | 691 | 0.2− | 0.3− |
| 2002 10 09 | 704 | 0.5+ | 0.0 | 2004 02 11 | 699 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.6+ | 1.2+ | 2004 02 11 | 644 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.2+ | 0.3+ | 2004 02 11 | 703 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.4− |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2004 02 11 | 703 | 0.6− | 0.7+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 1.3+ | 2004 02 11 | 699 | 0.7+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2002 10 12 | 704 | 0.3+ | 0.1− | 2004 02 11 | 703 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5− | 1.3− |
| 2002 10 12 | 704 | 0.3+ | 0.4+ | 2004 02 11 | 699 | 0.2− | 0.7− | 2006 11 11 | 703 | 0.1− | 1.2− |
| 2002 10 12 | 704 | 0.6+ | 0.1− | 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2002 10 12 | 704 | 0.9− | 1.3+ | 2004 02 11 | 699 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 10 18 | 644 | 0.1+ | 0.3+ | 2004 02 17 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 10 18 | 644 | 0.8+ | 0.2+ | 2004 02 17 | 644 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 10 18 | 644 | 0.0 | 0.3+ | 2004 02 17 | 644 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2002 10 30 | 644 | 0.1+ | 0.9+ | 2004 02 17 | 704 | 0.6− | 0.9+ | 2006 11 18 | 704 | 0.6+ | 1.2+ |
| 2002 10 30 | 644 | 0.2− | 0.9+ | 2004 02 17 | 704 | 0.8− | 0.8+ | 2006 11 18 | 704 | 0.2+ | 2.1+ |
| 2002 10 30 | 644 | (0.3+ | 1.5+) | 2004 02 17 | 704 | 0.9− | 0.2+ | 2006 11 18 | 704 | 0.5− | 2.1+ |
| 2002 10 31 | 699 | 1.2− | 0.5− | 2004 02 17 | 704 | 0.3− | 0.8+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2002 10 31 | 699 | 0.4− | 0.2− | 2004 02 17 | 704 | 0.3− | 0.6+ | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2002 10 31 | 699 | 0.2− | 0.8+ | 2004 02 18 | 608 | 0.0 | 0.9− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2002 10 31 | 699 | 1.0− | 0.6− | 2004 02 18 | 608 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.1− |

**(137968)∗ 2000 CY$_{31}$ = 1992 EZ$_{16}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 39382)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.92006 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24369164 | $\omega$ | 343.79030 | | −0.89684841 | −0.44211075 |
| $a$ | 2.5384910 | $\Omega$ | 169.93572 | | +0.41431399 | −0.85082500 |
| $e$ | 0.2114042 | $i$ | 4.65371 | | +0.15494145 | −0.28396285 |
| $P$ | 4.04 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.2− | 0.6+ | 2000 03 03 | 704 | 0.1− | 0.1+ | 2004 01 29 | 704 | 0.8− | 0.6− |
| 1992 03 03 | 809 | 1.7− | 0.2+ | 2000 03 03 | 704 | 0.4+ | 0.2+ | 2004 01 29 | 704 | 0.5− | 0.1+ |
| 1992 03 06 | 809 | 0.0 | 0.9− | 2000 03 03 | 704 | 0.3+ | 0.2− | 2004 01 29 | 704 | 0.1− | 0.5+ |
| 1994 10 02 | 691 | 0.4+ | 0.3+ | 2000 03 05 | 704 | 0.6− | 0.2+ | 2004 01 29 | 704 | 0.6− | 0.4+ |
| 1994 10 02 | 691 | 0.2+ | 0.8+ | 2000 03 05 | 704 | 0.1− | 0.4+ | 2004 02 11 | 703 | 0.2− | 0.3+ |
| 1994 10 02 | 691 | 0.4− | 0.7+ | 2000 03 05 | 704 | 0.1+ | 0.5− | 2004 02 11 | 703 | 0.5− | 0.3− |
| 1996 03 26 | 691 | 0.1− | 1.1− | 2000 03 05 | 704 | 0.0 | 0.4+ | 2004 02 11 | 703 | 0.6+ | 0.1− |
| 1996 03 26 | 691 | 0.3− | 1.2− | 2000 03 05 | 704 | 0.1− | 0.5− | 2004 02 11 | 703 | 0.3− | 0.1+ |
| 1996 03 26 | 691 | 0.1− | 1.2− | 2000 03 05 | 704 | 0.8+ | 0.1+ | 2004 02 17 | 704 | 0.0 | 0.7+ |
| 1998 09 24 | 691 | 0.8− | 0.7− | 2000 03 05 | 704 | 0.3+ | 0.8− | 2004 02 17 | 704 | 0.2− | 0.4+ |
| 1998 09 24 | 691 | 0.5− | 0.5− | 2000 03 05 | 704 | 0.2− | 0.6+ | 2004 02 17 | 704 | 0.2− | 0.7+ |
| 1998 09 24 | 691 | 0.2− | 0.9− | 2000 03 05 | 704 | 0.1+ | 0.5− | 2004 02 17 | 704 | 0.5− | 0.5+ |
| 2000 02 02 | 704 | 0.2− | 0.4− | 2000 03 05 | 704 | 0.4− | 0.5+ | 2004 02 17 | 704 | 0.2+ | 0.2+ |
| 2000 02 02 | 704 | 0.0 | 0.4− | 2002 10 05 | 645 | 0.1+ | 0.1− | 2004 02 22 | 704 | 0.7− | 0.4+ |
| 2000 02 02 | 704 | 0.5− | 0.6− | 2002 10 05 | 645 | 0.0 | 0.2− | 2004 02 22 | 704 | 0.2− | 0.4+ |
| 2000 02 02 | 704 | 1.6+ | 0.2+ | 2002 10 10 | 645 | 0.2+ | 0.1− | 2004 02 22 | 704 | 0.0 | 0.3+ |
| 2000 02 04 | 704 | 0.8+ | 0.2− | 2002 10 10 | 645 | 0.1+ | 0.2− | 2004 02 22 | 704 | 0.1+ | 0.1+ |
| 2000 02 04 | 704 | 0.1+ | 0.4+ | 2004 01 21 | 704 | 0.9+ | 0.7+ | 2004 03 10 | 644 | 0.2− | 0.4+ |
| 2000 02 04 | 704 | 1.0− | 1.6+ | 2004 01 21 | 704 | 0.0 | 0.3+ | 2004 03 10 | 644 | 0.6+ | 0.1+ |
| 2000 02 04 | 704 | 0.1− | 0.6− | 2004 01 21 | 704 | 0.5+ | 0.2+ | 2004 03 10 | 644 | 0.0 | 0.1+ |
| 2000 02 27 | 703 | 0.5+ | 0.4− | 2004 01 21 | 704 | 0.8+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2000 02 27 | 703 | 1.2+ | 0.5− | 2004 01 21 | 704 | 0.8+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2000 02 27 | 703 | 0.4− | 0.8− | 2004 01 24 | 704 | 1.1+ | 0.8+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2000 02 27 | 703 | 0.0 | 0.3+ | 2004 01 24 | 704 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2000 02 29 | 704 | 0.1− | 0.1+ | 2004 01 24 | 704 | (1.7+ | 0.5+) | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2000 02 29 | 704 | 0.3− | 0.3+ | 2004 01 24 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2000 02 29 | 704 | 0.2+ | 0.3+ | 2004 01 26 | 699 | 0.6− | 0.3− | 2006 09 30 | 691 | 0.4+ | 0.2+ |
| 2000 02 29 | 704 | 0.4+ | 0.4− | 2004 01 26 | 699 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 0.1+ | 1.0− | 2004 01 26 | 699 | 1.1− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2000 03 03 | 704 | 0.1− | 0.2+ | 2004 01 26 | 699 | 0.4− | 0.5− | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2000 03 03 | 704 | 0.1+ | 0.1+ | 2004 01 29 | 704 | 0.9− | 0.5− | 2006 10 20 | G96 | 0.2+ | 0.2− |

**(137969)∗ 2000 CA$_{32}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.01510 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26162197 | $\omega$ | 245.55015 | | −0.35082053 | −0.93605147 |
| $a$ | 2.4211401 | $\Omega$ | 225.01622 | | +0.87243151 | −0.31620060 |
| $e$ | 0.1527418 | $i$ | 2.19309 | | +0.34027666 | −0.15435295 |
| $P$ | 3.77 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 12 | 691 | 0.2+ | 0.6− | 2002 10 07 | 704 | 0.2− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 1991 11 12 | 691 | (3.4+ | 2.9+) | 2002 10 07 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1991 11 12 | 691 | 0.2− | 0.8− | 2002 10 11 | 704 | 1.0+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2000 02 02 | 704 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.7+ | 0.0 | 2006 10 20 | 695 | 0.1− | 0.2+ |
| 2000 02 02 | 704 | 0.7− | 1.3− | 2002 10 11 | 704 | 0.7+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.1− | 2002 10 11 | 704 | 0.8+ | 0.3− | 2006 10 20 | 695 | 0.2− | 0.1+ |
| 2000 02 02 | 704 | 0.5− | 0.1− | 2004 03 15 | 703 | 0.5− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2000 02 04 | 704 | 0.1− | 0.1+ | 2004 03 15 | 703 | 0.0 | 1.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2000 02 04 | 704 | 0.6+ | 0.1+ | 2004 03 15 | 703 | 0.4+ | 1.3+ | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2000 02 04 | 704 | 0.0 | 0.2+ | 2004 03 15 | 703 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.6+ |
| 2000 02 04 | 704 | 0.4− | 1.2− | 2004 03 18 | 704 | (0.3− | 1.5+) | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2000 02 27 | 703 | 0.9− | 0.1+ | 2004 03 18 | 704 | (0.1+ | 1.8+) | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2000 02 27 | 703 | 0.9− | 0.1+ | 2004 03 18 | 704 | 0.2+ | 1.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2000 02 27 | 703 | 1.4+ | 0.6+ | 2004 03 18 | 704 | 0.0 | 1.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2000 02 27 | 703 | 0.5+ | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.8+ | 2006 11 07 | A13 | 0.0 | 0.6− |
| 2000 03 03 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 704 | 0.6− | 0.6+ | 2006 11 07 | A13 | 0.2− | 0.9− |
| 2000 03 03 | 704 | 0.1+ | 1.0+ | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 11 07 | A13 | 0.5+ | 0.1− |
| 2000 03 03 | 704 | 0.4− | 1.0− | 2004 03 20 | 704 | 0.0 | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2000 03 03 | 704 | 0.0 | 1.6− | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | (1.2− | 2.1−) | 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2000 03 05 | 704 | 0.1+ | 0.7− | 2004 03 26 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.0 |
| 2000 03 05 | 704 | 0.8− | 0.9− | 2004 03 27 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.3+ |
| 2000 03 05 | 704 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2000 03 05 | 704 | 0.2+ | 0.5− | 2004 03 27 | 704 | 1.0+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.2− |
| 2000 03 05 | 704 | 0.1+ | 1.1− | 2004 03 27 | 704 | 0.2− | 1.5+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2002 10 02 | 704 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.1+ | 1.4+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | 0.4+ | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.6− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.3+ | 0.2− | 2004 03 29 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | (0.6+ | 1.7+) |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2004 04 15 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2004 04 15 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2002 10 03 | 704 | 0.1− | 0.1− | 2004 04 15 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3+ | 1.4+ |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | (0.9+ | 2.9+) |
| 2002 10 03 | 704 | (1.6− | 2.1+) | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.9− | 0.6+ |
| 2002 10 06 | 644 | 0.4− | 0.8+ | 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 11 27 | 703 | 1.9− | 0.8+ |
| 2002 10 06 | 644 | 0.4− | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2002 10 06 | 644 | 0.6− | 0.6+ | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 1.4− | 0.6+ |
| 2002 10 07 | 704 | 1.3− | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.1+ | | | | |

**(137970)∗ 2000 CR$_{33}$ = 2002 QC$_{20}$**

Discovered 2000 Feb. 4 by K. Korlević at Višnjan.

Id. G. V. Williams (*MPO* 34881)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.32835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23860574 | $\omega$ | 162.82479 | | −0.59576236 | −0.79011009 | |
| $a$ | 2.5744361 | $\Omega$ | 323.37050 | | +0.70558190 | −0.42910536 | |
| $e$ | 0.1257763 | $i$ | 13.98602 | | +0.38369439 | −0.43771523 | |
| $P$ | 4.13 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 703 | 0.3+ | 0.6− | 2000 03 05 | 704 | 0.8+ | 0.8+ | 2004 01 26 | 699 | 0.3− | 0.2+ |
| 2000 01 30 | 703 | 0.5− | 0.6+ | 2002 08 28 | 644 | 0.1− | 0.9+ | 2004 01 31 | 704 | 0.3− | 0.5+ |
| 2000 01 30 | 703 | 0.8+ | 1.4+ | 2002 08 28 | 644 | 0.3− | 0.6+ | 2004 01 31 | 704 | 0.7− | 0.3+ |
| 2000 01 30 | 703 | 0.5− | 1.5+ | 2002 08 28 | 644 | 0.4− | 0.7+ | 2004 01 31 | 704 | 0.7+ | 0.2− |
| 2000 02 04 | 704 | 0.1− | 0.4− | 2002 08 29 | 644 | 0.2+ | 0.3+ | 2004 01 31 | 704 | 0.2− | 0.0 |
| 2000 02 04 | 704 | 0.6+ | 0.1+ | 2002 08 29 | 644 | 0.0 | 0.6+ | 2004 01 31 | 704 | 0.4+ | 0.6− |
| 2000 02 04 | 704 | 0.3+ | 0.4+ | 2002 08 29 | 644 | 0.5+ | 0.8+ | 2004 02 15 | 704 | 0.3+ | 0.7− |
| 2000 02 04 | 704 | 1.2+ | 0.0 | 2002 09 13 | 644 | 0.2− | 0.2+ | 2004 02 15 | 704 | 0.1+ | 0.4− |
| 2000 02 04 | 704 | 0.6+ | 0.5− | 2002 09 13 | 644 | 0.3− | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.1+ |
| 2000 02 04 | 120 | 0.4− | 1.4− | 2002 09 13 | 644 | 0.1− | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.3− |
| 2000 02 04 | 120 | 0.2+ | 1.2− | 2002 09 14 | 608 | 1.2− | 1.0− | 2004 02 15 | 704 | 0.1+ | 0.2− |
| 2000 02 05 | 691 | 0.1− | 0.1− | 2002 09 14 | 608 | 0.8− | 0.9− | 2004 02 23 | 704 | 0.1+ | 0.6+ |
| 2000 02 05 | 691 | 0.1− | 0.0 | 2002 09 14 | 608 | 0.6− | 1.0− | 2004 02 23 | 704 | 0.3− | 0.7+ |
| 2000 02 05 | 691 | 0.1− | 0.2− | 2002 10 05 | 704 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.0 | 0.6+ |
| 2000 02 05 | 120 | 1.1− | 0.8+ | 2002 10 05 | 704 | 0.4+ | 0.3+ | 2004 02 23 | 704 | 0.3− | 0.4+ |
| 2000 02 06 | 120 | 0.8− | 1.0− | 2002 10 05 | 704 | 0.5− | 0.5+ | 2004 02 23 | 704 | 0.0 | 0.2− |
| 2000 02 06 | 704 | 0.0 | 0.7+ | 2002 10 05 | 704 | 1.3+ | 1.3+ | 2004 03 19 | 704 | 1.1+ | 0.4− |
| 2000 02 06 | 704 | 0.3+ | 0.6+ | 2002 10 05 | 704 | 0.0 | 0.9+ | 2004 03 19 | 704 | 1.6+ | 0.4− |
| 2000 02 06 | 704 | 0.1+ | 0.2+ | 2002 10 06 | 644 | 0.6− | 0.1− | 2004 03 19 | 704 | 1.1+ | 1.5− |
| 2000 02 06 | 704 | 0.7+ | 0.7+ | 2002 10 06 | 644 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.7+ | 0.2+ |
| 2000 02 06 | 704 | 0.1+ | 0.9+ | 2002 10 06 | 644 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.3− |
| 2000 02 06 | 120 | 1.8− | 0.1− | 2003 11 19 | 704 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.6+ |
| 2000 02 06 | 120 | 0.8− | 1.2− | 2003 11 19 | 704 | 0.3− | 0.8+ | 2004 03 27 | 704 | 0.4− | 0.1− |
| 2000 02 06 | 120 | 0.3− | 0.9− | 2003 11 19 | 704 | 0.7− | 0.8+ | 2004 03 27 | 704 | 0.5+ | 0.1+ |
| 2000 02 08 | 691 | 0.1+ | 0.0 | 2003 11 19 | 704 | (0.4− | 2.5+) | 2004 04 13 | 645 | 0.0 | 0.1− |
| 2000 02 08 | 691 | 0.2+ | 0.1+ | 2003 12 21 | 645 | 0.2− | 0.2− | 2004 04 13 | 645 | 0.0 | 0.1− |
| 2000 02 08 | 691 | 0.1+ | 0.1+ | 2003 12 21 | 645 | 0.0 | 0.2− | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2000 02 12 | 120 | 0.4+ | 0.5+ | 2003 12 27 | 704 | 0.0 | 0.4+ | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2000 02 12 | 120 | 0.3− | 0.2+ | 2003 12 27 | 704 | 0.4− | 0.6+ | 2004 04 16 | 645 | 0.1− | 0.0 |
| 2000 02 29 | 704 | 0.4+ | 0.5+ | 2003 12 27 | 704 | 0.4− | 0.5+ | 2004 04 16 | 645 | 0.2− | 0.0 |
| 2000 02 29 | 704 | 0.4+ | 0.5+ | 2003 12 27 | 704 | 0.0 | 0.3+ | 2006 08 27 | 699 | 1.2+ | 1.6− |
| 2000 02 29 | 704 | 1.0+ | 0.1+ | 2003 12 27 | 704 | 0.4− | 0.7+ | 2006 08 27 | 699 | 1.1+ | 1.2− |
| 2000 02 29 | 704 | 0.9+ | 0.8− | 2003 12 29 | 704 | 1.0+ | 1.5+ | 2006 08 27 | 699 | 0.1+ | 1.0+ |
| 2000 03 03 | 704 | 1.0+ | 1.0+ | 2003 12 29 | 704 | 0.8+ | 0.4+ | 2006 08 27 | 699 | 0.1+ | 0.4− |
| 2000 03 03 | 704 | 0.4− | 0.1+ | 2003 12 29 | 704 | 0.1− | 0.8+ | 2006 08 29 | 703 | 0.8+ | 1.6+ |
| 2000 03 03 | 704 | 0.4− | 0.9+ | 2003 12 29 | 704 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.6− |
| 2000 03 03 | 704 | 0.1− | 0.3+ | 2004 01 12 | 644 | 0.2+ | 0.3− | 2006 08 29 | 703 | 0.4− | 0.6+ |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2004 01 12 | 644 | 0.6+ | 0.0 | 2006 08 29 | 703 | 1.4− | 0.3− |
| 2000 03 05 | 704 | 0.9+ | 1.4+ | 2004 01 12 | 644 | 0.4+ | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.4+ |
| 2000 03 05 | 704 | 0.6− | 0.2+ | 2004 01 26 | 699 | 0.2− | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.0 |
| 2000 03 05 | 704 | 1.7+ | 0.4+ | 2004 01 26 | 699 | 0.2− | 0.2− | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2000 03 05 | 704 | 0.1− | 0.0 | 2004 01 26 | 699 | 0.1+ | 0.1+ | | | | |

**(137971)∗ 2000 CQ$_{39}$**

Discovered 2000 Feb. 5 by K. Korlević at Višnjan.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.20506 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27016998 | $\omega$ | 284.80109 | | +0.58348832 | −0.80565699 | |
| $a$ | 2.3697980 | $\Omega$ | 129.04007 | | +0.78653235 | +0.52924376 | |
| $e$ | 0.1946963 | $i$ | 7.56585 | | +0.20225786 | +0.26611625 | |
| $P$ | 3.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1951 09 08 | 261 | 0.5− | 1.1+ | 2000 03 04 | 704 | 0.1− | 0.2− | 2002 10 05 | 704 | 0.9− | 0.0 |
| 1951 09 08 | 261 | 0.5− | 1.1+ | 2000 03 04 | 704 | 0.5+ | 0.4− | 2002 10 05 | 704 | 0.2− | 0.7+ |
| 1991 09 05 | 260 | 0.1+ | 0.9+ | 2000 03 05 | 120 | (0.8+ | 2.9+) | 2002 10 05 | 704 | 0.1− | 0.1+ |
| 1991 09 05 | 260 | 0.0 | 0.9+ | 2000 03 05 | 120 | 1.7+ | 0.2+ | 2002 10 05 | 704 | 0.0 | 1.1+ |
| 2000 01 04 | 704 | 0.1+ | 0.2− | 2000 03 05 | 120 | (0.2− | 2.6−) | 2002 10 05 | 704 | 0.8− | 0.6+ |
| 2000 01 04 | 704 | 0.5− | 1.8− | 2000 03 06 | 120 | (2.4− | 0.3+) | 2002 10 05 | 704 | 0.3+ | 0.3+ |
| 2000 01 04 | 704 | 0.8− | 1.1− | 2000 03 06 | 120 | 1.3+ | 0.4+ | 2002 10 10 | 699 | 0.6+ | 0.8+ |
| 2000 01 04 | 704 | 0.4− | 0.3+ | 2000 03 06 | 120 | 1.3+ | 0.9+ | 2002 10 10 | 699 | 1.3+ | 0.2+ |
| 2000 01 04 | 704 | 0.9− | 0.1− | 2002 08 11 | 608 | 0.3+ | 0.8− | 2002 10 10 | 699 | 0.2+ | 0.3− |
| 2000 01 30 | 703 | 0.4+ | 0.1+ | 2002 08 11 | 608 | 0.5+ | 1.2− | 2002 10 10 | 699 | 1.0+ | 0.5+ |
| 2000 01 30 | 703 | 0.2− | 1.4+ | 2002 08 11 | 608 | 0.3+ | 0.5− | 2003 01 25 | 809 | 0.2+ | 0.1+ |
| 2000 01 30 | 703 | 1.0− | 0.2− | 2002 08 31 | 699 | 0.2− | 0.7+ | 2003 01 25 | 809 | 0.2+ | 0.1− |
| 2000 01 30 | 703 | 1.2+ | 0.2+ | 2002 08 31 | 699 | 0.9− | 0.7+ | 2003 01 25 | 809 | 0.3+ | 0.1+ |
| 2000 02 03 | 704 | 0.6− | 0.6+ | 2002 08 31 | 699 | 1.4− | 0.2− | 2003 01 25 | 809 | 0.3+ | 0.1+ |
| 2000 02 03 | 704 | 0.2− | 0.5+ | 2002 08 31 | 699 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.6+ | 1.4+ |
| 2000 02 03 | 704 | 0.5− | 0.6+ | 2002 09 16 | 644 | 0.1− | 0.5+ | 2004 03 23 | 704 | 0.4− | 0.1+ |
| 2000 02 03 | 704 | 0.2+ | 1.0+ | 2002 09 16 | 644 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.0 | 1.0+ |
| 2000 02 03 | 704 | 0.1− | 1.1+ | 2002 09 16 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.5+ | 1.2+ |
| 2000 02 05 | 120 | 0.5+ | 0.4+ | 2002 09 29 | 608 | 0.6− | 0.7− | 2004 03 23 | 704 | 0.0 | 0.7+ |
| 2000 02 06 | 120 | 0.2− | 1.0+ | 2002 09 29 | 608 | 0.1− | 1.0− | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2000 02 06 | 120 | (2.3+ | 0.6−) | 2002 09 29 | 608 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.4+ | 1.0− |
| 2000 02 06 | 120 | 0.0 | 0.1+ | 2002 10 04 | 704 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.4− |
| 2000 02 09 | 120 | 0.2− | 0.5+ | 2002 10 04 | 704 | 0.9− | 0.2+ | 2006 11 19 | 704 | 1.2+ | 0.1+ |
| 2000 02 09 | 120 | 0.7− | 0.1− | 2002 10 04 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2000 02 10 | 120 | 0.2− | 0.6− | 2002 10 04 | 704 | 0.7− | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.2− |
| 2000 02 10 | 120 | 0.4− | 0.1− | 2002 10 04 | 704 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.2− |
| 2000 02 11 | 704 | 0.8+ | 1.1+ | 2002 10 04 | 704 | 0.4− | 0.5− | 2006 11 28 | 704 | 0.3+ | 1.0+ |
| 2000 02 11 | 704 | (0.3− | 2.3+) | 2002 10 04 | 704 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.2− | 0.2− |
| 2000 02 11 | 704 | 0.7+ | 0.5+ | 2002 10 04 | 704 | 0.6+ | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.4− |
| 2000 02 11 | 704 | 0.1+ | 0.6+ | 2002 10 04 | 704 | 0.4+ | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.8− |
| 2000 03 02 | 120 | 0.4− | 0.9− | 2002 10 05 | 704 | 0.1− | 1.1+ | 2006 11 29 | 704 | 0.5− | 1.0− |
| 2000 03 02 | 120 | 0.3+ | 0.3− | 2002 10 05 | 704 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2000 03 04 | 704 | 0.7− | 0.6+ | 2002 10 05 | 704 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.1− |
| 2000 03 04 | 704 | 0.8+ | 0.1− | 2002 10 05 | 704 | 0.2− | 0.6+ | | | | |

**(137972)∗ 2000 CB$_{40}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.76024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38254314 | $\omega$ | 270.47472 | | +0.40006196 | −0.89849540 | |
| $a$ | 1.8793851 | $\Omega$ | 153.52769 | | +0.91538398 | +0.40141111 | |
| $e$ | 0.0620795 | $i$ | 23.91587 | | −0.04497320 | +0.17769392 | |
| $P$ | 2.58 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.1+ | 0.3+ | 2001 09 11 | 704 | 0.7+ | 0.0 | 2006 08 22 | 644 | 0.1− | 0.0 |
| 2000 02 02 | 704 | 0.4− | 0.3+ | 2001 09 11 | 704 | 0.4+ | 0.4+ | 2006 08 22 | 644 | 0.5+ | 0.0 |
| 2000 02 02 | 704 | 0.7+ | 0.5+ | 2001 09 26 | 699 | 0.1− | 0.1− | 2006 08 23 | A50 | 0.1+ | 0.2+ |
| 2000 02 06 | 704 | 0.2+ | 0.9+ | 2001 09 26 | 699 | 0.6− | 0.2+ | 2006 08 23 | A50 | 0.1+ | 0.4− |
| 2000 02 06 | 704 | 0.4+ | 1.0+ | 2001 09 26 | 699 | 0.1− | 0.8− | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2000 02 06 | 704 | 0.0 | 0.4+ | 2001 09 26 | 699 | 1.0− | 0.5+ | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2000 02 29 | 704 | 0.3+ | 1.1+ | 2001 09 27 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | 1.0− | 0.7+ |
| 2000 02 29 | 704 | 0.2− | 0.4+ | 2001 09 27 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.3+ | 0.2+ |
| 2000 02 29 | 704 | 0.1+ | 0.4+ | 2001 09 27 | 644 | 0.0 | 0.2− | 2006 08 28 | 699 | 0.8− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.1− | 0.4+ | 2001 10 07 | 433 | 1.2− | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.1+ | | |
| 2000 03 05 | 704 | 0.9− | 0.1− | 2001 10 07 | 433 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.2+ | | |
| 2000 03 05 | 704 | 0.1− | 0.1+ | 2001 10 07 | 433 | 0.7+ | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.9+ | | |
| 2000 03 05 | 704 | 0.5− | 0.2+ | 2001 10 07 | 433 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.2+ | 0.2− | | |
| 2000 03 11 | 699 | 0.7+ | 0.6+ | 2001 10 07 | 433 | 1.1+ | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.1− | | |
| 2000 03 11 | 699 | 0.8− | 1.3+ | 2001 10 09 | 433 | 0.4− | 0.0 | 2006 08 28 | 699 | 0.3+ | 0.2− | | |
| 2000 03 11 | 699 | 1.2+ | 0.3+ | 2001 10 09 | 433 | 0.0 | 0.6+ | 2006 08 29 | 704 | 0.3+ | 0.7+ | | |
| 2000 03 11 | 699 | 0.4+ | 0.6+ | 2001 10 09 | 433 | 0.8− | 0.0 | 2006 08 29 | 704 | 0.7+ | 0.3− | | |
| 2000 03 12 | 704 | 0.3+ | 0.4− | 2001 10 09 | 433 | 0.1− | 0.3+ | 2006 08 29 | 704 | 0.8+ | 0.5+ | | |
| 2000 03 12 | 704 | 0.5+ | 0.9+ | 2003 04 29 | 645 | 0.0 | 0.0 | 2006 08 29 | 704 | 1.1+ | 1.0+ | | |
| 2000 03 12 | 704 | 1.8+ | 0.9+ | 2003 04 29 | 645 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 12 | 704 | (2.5+ | 0.3−) | 2003 05 01 | 645 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 03 | 644 | 0.3− | 1.0+ | 2003 05 01 | 645 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.2+ | | |
| 2001 08 03 | 644 | 0.0 | 0.8+ | 2005 03 16 | 704 | 0.5− | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.2− | | |
| 2001 08 03 | 644 | 0.1− | 0.7+ | 2005 03 16 | 704 | 1.2− | 0.9+ | 2006 09 20 | 644 | 0.2− | 0.2− | | |
| 2001 08 14 | 608 | 0.3− | 0.6− | 2005 03 16 | 704 | 0.6− | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.2− | | |
| 2001 08 14 | 608 | 0.3− | 0.8− | 2005 03 16 | 704 | 1.1− | 0.9+ | 2006 09 22 | 704 | 0.0 | 0.9+ | | |
| 2001 08 14 | 608 | 0.4− | 0.6− | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.2+ | 0.7+ | | |
| 2001 09 11 | 704 | 0.4− | 0.6+ | 2006 08 22 | 644 | 0.4+ | 0.2− | 2006 09 22 | 704 | 0.2− | 1.6+ | | |
| 2001 09 11 | 704 | 0.2+ | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.0 | | | | | | |
| 2001 09 11 | 704 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.0 | | | | | | |

**(137973)∗ 2000 $CH_{40}$ = 2001 $QN_{194}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17154)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.52706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37581741 | $\omega$ | 171.32637 | | −0.79946408 | −0.57848406 | |
| $a$ | 1.9017414 | $\Omega$ | 331.34938 | | +0.52890400 | −0.55006100 | |
| $e$ | 0.0600870 | $i$ | 19.73545 | | +0.28481178 | −0.60231976 | |
| $P$ | 2.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.3+ | 0.4+ | 2001 09 22 | 699 | 0.1− | 0.4− | 2004 12 21 | 704 | 0.2+ | 0.6+ | | |
| 2000 02 04 | 704 | 0.2+ | 0.2+ | 2001 09 23 | 699 | 0.6+ | 0.1+ | 2004 12 21 | 704 | 0.5− | 0.4− | | |
| 2000 02 04 | 704 | 1.1+ | 1.0+ | 2001 09 23 | 699 | 0.7+ | 0.2+ | 2004 12 21 | 704 | 0.6− | 0.4+ | | |
| 2000 02 04 | 704 | 0.3+ | 0.5− | 2001 09 23 | 699 | 0.6− | 0.4+ | 2004 12 21 | 704 | 0.3− | 0.9+ | | |
| 2000 02 04 | 704 | 0.2+ | 1.0− | 2001 09 23 | 699 | 0.5− | 0.6+ | 2005 01 19 | 704 | 0.0 | 0.2− | | |
| 2000 02 06 | 704 | 0.2+ | 0.3+ | 2001 09 30 | 644 | 0.2+ | 0.7+ | 2005 01 19 | 704 | 0.2− | 0.0 | | |
| 2000 02 06 | 704 | 0.2+ | 0.2+ | 2001 09 30 | 644 | 0.6+ | 0.5+ | 2005 01 19 | 704 | 0.3− | 0.3+ | | |
| 2000 02 06 | 704 | 0.3+ | 1.0− | 2001 09 30 | 644 | 0.5+ | 0.6+ | 2005 01 19 | 704 | 0.0 | 0.2− | | |
| 2000 02 06 | 704 | 0.7+ | 0.4+ | 2001 10 18 | 704 | 0.2− | 0.3− | 2005 01 19 | 704 | 0.2− | 0.2+ | | |
| 2000 02 11 | 704 | 1.4+ | 0.9+ | 2001 10 18 | 704 | 0.4− | 0.1+ | 2005 01 20 | 704 | 0.0 | 0.2+ | | |
| 2000 02 11 | 704 | 0.7+ | 0.2− | 2001 10 18 | 704 | 0.7+ | 0.5+ | 2005 01 20 | 704 | 0.0 | 0.4+ | | |
| 2000 02 11 | 704 | 0.1− | 0.4+ | 2001 10 18 | 704 | 0.0 | 0.3+ | 2005 01 20 | 704 | 0.4− | 0.4+ | | |
| 2000 02 11 | 704 | 0.7+ | 0.6− | 2001 10 18 | 704 | 0.3+ | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.2+ | | |
| 2000 02 13 | 120 | 0.7− | 0.6− | 2001 11 12 | 704 | 0.5− | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.1+ | | |
| 2000 02 13 | 120 | (2.1− | 0.6−) | 2001 11 12 | 704 | 0.0 | 0.7− | 2006 08 15 | 644 | 0.0 | 0.3+ | | |
| 2000 04 04 | 704 | 0.7+ | 0.1+ | 2001 11 12 | 704 | 0.3+ | 0.5+ | 2006 08 20 | 644 | 0.5− | 0.3+ | | |
| 2000 04 04 | 704 | 0.2+ | 0.4+ | 2001 11 12 | 704 | 0.1− | 0.5− | 2006 08 20 | 644 | 0.4− | 0.4+ | | |
| 2000 04 04 | 704 | 0.1+ | 1.0+ | 2001 11 12 | 704 | 0.3− | 0.2− | 2006 08 20 | 644 | 0.3− | 0.3+ | | |
| 2000 04 04 | 704 | 1.2− | 1.6+ | 2004 11 20 | 704 | 1.0+ | 0.9− | 2006 08 23 | 704 | 0.2− | 0.8+ | | |
| 2000 04 05 | 699 | 0.6+ | 1.0+ | 2004 11 20 | 704 | 1.3+ | 0.3− | 2006 08 23 | 704 | 0.2− | 0.9+ | | |
| 2000 04 05 | 699 | 0.4− | 1.7+ | 2004 11 20 | 704 | 0.3+ | 0.7− | 2006 08 23 | 704 | 0.7+ | 0.2+ | | |
| 2000 04 05 | 699 | 1.1+ | 1.8+ | 2004 12 04 | 699 | 0.5− | 1.1− | 2006 08 23 | 704 | 0.2− | 1.3+ | | |
| 2000 04 05 | 699 | 0.9+ | 0.2+ | 2004 12 04 | 699 | 0.4− | 0.5− | 2006 08 28 | 703 | 0.9− | 0.1− | | |
| 2001 08 22 | 704 | 0.5− | 1.0+ | 2004 12 04 | 699 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.2− | | |
| 2001 08 22 | 704 | 1.3− | 0.3− | 2004 12 04 | 699 | 0.5− | 0.7− | 2006 08 28 | 703 | 0.8− | 0.9− | | |
| 2001 08 22 | 704 | 1.1− | 0.4+ | 2004 12 13 | 703 | 0.8+ | 0.2− | 2006 09 14 | 703 | 0.2− | 0.2− | | |
| 2001 08 22 | 704 | 0.7− | 0.8+ | 2004 12 13 | 703 | 0.6− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.7+ | | |
| 2001 08 22 | 704 | 1.1− | 0.0 | 2004 12 13 | 703 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.8+ | 0.7+ | | |
| 2001 08 26 | 699 | 1.4− | 0.1+ | 2004 12 13 | 703 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.5− | | |
| 2001 08 26 | 699 | 0.2+ | 0.1− | 2004 12 16 | 703 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.5− | 0.2+ | | |
| 2001 08 26 | 699 | 0.3+ | 0.4− | 2004 12 16 | 703 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.5− | 0.1− | | |
| 2001 08 26 | 699 | 0.8− | 0.4+ | 2004 12 16 | 703 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.4− | 0.1+ | | |
| 2001 09 09 | 704 | 0.2− | 0.4− | 2004 12 16 | 703 | 0.5− | 0.2− | 2006 09 17 | 704 | 0.8+ | 1.3+ | | |
| 2001 09 09 | 704 | 0.8+ | 0.7− | 2004 12 19 | 704 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 2001 09 09 | 704 | 0.3+ | 0.4+ | 2004 12 19 | 704 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2− | | |
| 2001 09 09 | 704 | 1.1+ | 0.1+ | 2004 12 19 | 704 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.1− | 0.1− | | |
| 2001 09 22 | 699 | 0.8− | 0.1+ | 2004 12 19 | 704 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.0 | | |
| 2001 09 22 | 699 | 1.1− | 0.0 | 2004 12 19 | 704 | 0.5− | 0.3− | | | | | | |
| 2001 09 22 | 699 | 0.1− | 0.2− | 2004 12 21 | 704 | 1.0+ | 1.3+ | | | | | | |

**(137974)∗ 2000 $CG_{41}$ = 2002 $RE_{169}$**

Discovered 2000 Feb. 7 by P. Kušnirák at Ondřejov.

Id. G. V. Williams (*MPO* 37312)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.27081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25344232 | $\omega$ | 94.69576 | | +0.13441089 | −0.99090000 | |
| $a$ | 2.4729573 | $\Omega$ | 347.57286 | | +0.89550760 | +0.12454768 | |
| $e$ | 0.0609621 | $i$ | 1.89989 | | +0.42426389 | +0.05103983 | |
| $P$ | 3.89 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.2− | 1.3− | 2002 10 11 | 704 | (1.5+ | 0.7+) | 2006 09 15 | 691 | 0.7− | 0.2+ | | |
| 2000 01 04 | 704 | 0.8+ | 0.5− | 2002 10 11 | 704 | 0.8− | 0.4+ | 2006 09 15 | 691 | 0.5− | 0.1+ | | |
| 2000 01 04 | 704 | 0.5− | 0.7− | 2004 01 18 | 644 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.4− | 0.2+ | | |
| 2000 01 04 | 704 | 0.5− | 0.8− | 2004 01 18 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ | | |
| 2000 02 07 | 557 | 0.0 | 0.9+ | 2004 01 18 | 644 | 0.4+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 2000 02 07 | 557 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2000 02 07 | 557 | 0.2− | 0.7− | 2004 01 22 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 699 | 1.2+ | 1.0− | | |
| 2000 02 07 | 557 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 699 | 0.8+ | 0.3− | | |
| 2000 02 07 | 557 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.0 | 0.1− | 2006 09 27 | 699 | 0.0 | 1.0+ | | |
| 2000 02 07 | 557 | 0.0 | 0.1− | 2004 01 24 | 704 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.5− | 0.1+ | | |
| 2000 02 07 | 557 | 0.6− | 0.2+ | 2004 01 24 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.8+ | | |
| 2000 02 10 | 557 | 0.1+ | 0.7− | 2004 01 24 | 704 | 0.5− | 0.1− | 2006 09 27 | 699 | 1.2− | 1.0+ | | |
| 2000 02 10 | 557 | 0.2− | 0.1− | 2004 01 24 | 704 | 0.9− | 0.3+ | 2006 09 27 | 704 | 1.0− | 0.3+ | | |
| 2000 02 10 | 557 | 0.9+ | 0.0 | 2004 01 24 | 704 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2000 02 10 | 557 | 0.3+ | 0.1− | 2004 01 30 | 704 | (0.3− | 1.8+) | 2006 09 30 | 691 | 0.2+ | 0.1− | | |
| 2000 02 26 | 557 | 0.1− | 1.2− | 2004 01 30 | 704 | 0.9− | 0.5− | 2006 09 30 | 691 | 0.1− | 0.1+ | | |
| 2000 02 26 | 557 | 0.0 | 0.8− | 2004 01 30 | 704 | 0.6+ | 0.5+ | 2006 10 13 | 122 | 0.1+ | 0.2+ | | |
| 2000 02 26 | 557 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.8+ | 0.5+ | 2006 10 13 | 122 | 0.4+ | 0.2− | | |
| 2000 02 27 | 557 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.5+ | 0.8+ | 2006 10 13 | 122 | 0.2+ | 0.2+ | | |
| 2000 02 27 | 557 | 0.6− | 1.0− | 2004 01 31 | 691 | 0.1− | 0.3+ | 2006 10 13 | 122 | 0.0 | 0.0 | | |
| 2000 02 27 | 557 | 0.2− | 0.8− | 2004 01 31 | 691 | 0.1− | 0.1+ | 2006 10 13 | 122 | (4.4− | 1.5−) | | |
| 2002 09 07 | 704 | 0.2+ | 0.1− | 2004 01 31 | 691 | 0.0 | 0.4+ | 2006 10 15 | 106 | 0.4+ | 0.2+ | | |
| 2002 09 07 | 704 | 1.2− | 0.4− | 2004 02 10 | 644 | 0.3+ | 0.4+ | 2006 10 15 | 106 | 0.7+ | 0.6− | | |
| 2002 09 07 | 704 | 0.3− | 0.1− | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 10 15 | 106 | 0.6+ | 1.2− | | |
| 2002 09 13 | 644 | 0.0 | 0.7+ | 2004 02 10 | 644 | 0.2+ | 0.6+ | 2006 10 15 | 106 | 0.4− | 0.2− | | |
| 2002 09 13 | 644 | 0.2− | 1.0+ | 2004 02 11 | 699 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.1+ | | |
| 2002 09 13 | 644 | 0.0 | 1.0+ | 2004 02 11 | 699 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.8+ | 0.2− | | |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2004 02 11 | 699 | 0.4− | 0.6+ | 2006 10 17 | 703 | 1.2+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2004 02 11 | 699 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.6− | | |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.9+ | 0.3+ | | |
| 2002 09 15 | 608 | 0.8− | 0.8− | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.7− | | |
| 2002 09 15 | 608 | 0.9− | 0.9− | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.2− | | |
| 2002 09 15 | 608 | 0.9− | 0.3− | 2004 02 14 | 608 | 1.2+ | 1.1+ | 2006 10 17 | 703 | 0.6+ | 1.1+ | | |
| 2002 10 01 | 699 | 1.1+ | 1.1− | 2004 02 14 | 608 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2002 10 01 | 699 | 0.8+ | 0.8+ | 2004 02 14 | 608 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 01 | 699 | 0.3+ | 0.1+ | 2004 02 16 | 704 | 0.5− | 1.0+ | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2002 10 01 | 699 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.9+ | 0.9+ | 2004 02 16 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2002 10 03 | 704 | 1.4+ | 0.2+ | 2004 02 16 | 704 | 0.9+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 1.1+ | 2004 02 19 | 608 | 1.0+ | 0.6− | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2002 10 04 | 291 | 0.2+ | 0.3+ | 2004 02 19 | 608 | 0.6+ | 0.8− | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2002 10 04 | 291 | 0.4− | 0.0 | 2004 02 19 | 608 | 0.2+ | 0.7− | 2006 10 31 | G96 | 0.2− | 0.3− | | |
| 2002 10 04 | 291 | 0.3+ | 0.3+ | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.4− | | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2002 10 07 | 704 | 0.5+ | 0.9+ | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.0 | | |
| 2002 10 07 | 704 | 0.2− | 0.7− | 2004 02 23 | 704 | 0.3+ | 1.2− | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2002 10 07 | 704 | 0.6− | 0.6− | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.4− | 0.4− | 2006 07 22 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 07 22 | G96 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 07 22 | G96 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.6− |

**(137975)∗ 2000 $CQ_{41}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.74430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28097591 | $\omega$ | 180.28151 | | −0.16203211 | −0.98439422 | |
| $a$ | 2.3086423 | $\Omega$ | 279.04404 | | +0.90549380 | −0.12067024 | |
| $e$ | 0.1171416 | $i$ | 3.98642 | | +0.39220732 | −0.12808870 | |
| $P$ | 3.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.2− | 0.2+ | 2002 10 12 | 704 | 0.5+ | 0.5+ | 2005 07 29 | 644 | 0.0 | 0.1+ |
| 1999 12 05 | 691 | 0.1− | 0.2− | 2002 10 12 | 704 | 0.0 | 0.9+ | 2005 08 24 | 644 | 0.2+ | 0.3+ |
| 1999 12 05 | 691 | 0.7− | 0.0 | 2002 10 12 | 704 | 0.9− | 0.3− | 2005 08 24 | 644 | 0.1− | 0.0 |
| 2000 01 07 | 704 | 0.2+ | 0.7− | 2002 10 28 | 644 | 0.2− | 1.0− | 2005 08 24 | 644 | 0.3− | 0.2+ |
| 2000 01 07 | 704 | 0.1+ | 0.6+ | 2002 10 28 | 644 | 0.1+ | 0.7− | 2005 10 30 | G96 | 0.1+ | 0.0 |
| 2000 01 07 | 704 | 0.5− | 0.9− | 2002 10 28 | 644 | 0.1+ | 0.5− | 2005 10 30 | G96 | 0.6+ | 0.0 |
| 2000 01 30 | 703 | 1.0− | 0.2+ | 2002 11 01 | 644 | 0.1+ | 0.2+ | 2005 10 30 | G96 | 0.4− | 0.5− |
| 2000 01 30 | 703 | 0.4+ | 0.1− | 2002 11 01 | 644 | 0.2− | 0.5+ | 2005 10 30 | G96 | 0.4− | 0.7− |
| 2000 01 30 | 703 | 0.4+ | 0.3+ | 2002 11 01 | 644 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2000 01 30 | 703 | 0.6− | 0.9+ | 2002 11 05 | 704 | 0.5− | 0.6− | 2006 09 28 | G96 | 0.4− | 0.1+ |
| 2000 02 02 | 704 | 0.8+ | 0.9+ | 2002 11 05 | 704 | (1.8+ | 0.6+) | 2006 09 28 | G96 | 0.1− | 0.7− |
| 2000 02 02 | 704 | 0.3− | 0.8+ | 2002 11 05 | 704 | 0.6− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2000 02 02 | 704 | 0.4+ | 0.8+ | 2002 11 05 | 704 | 0.7− | 0.6+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2000 02 02 | 704 | 0.3+ | 0.6+ | 2002 11 05 | 704 | 0.4− | 0.7+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2000 02 02 | 704 | 1.0+ | 0.8+ | 2002 11 12 | 704 | 0.8− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.6− |
| 2000 02 06 | 704 | 0.2+ | 0.5+ | 2002 11 12 | 704 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.6− |
| 2000 02 06 | 704 | 0.6+ | 0.0 | 2002 11 12 | 704 | 0.1− | 0.7− | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2000 02 06 | 704 | 0.4+ | 0.0 | 2002 11 12 | 704 | 0.0 | 0.8− | 2006 11 15 | G96 | 0.7+ | 0.1+ |
| 2000 02 06 | 704 | 0.3+ | 0.6+ | 2002 11 12 | 704 | 0.6− | 0.3− | 2006 11 15 | G96 | 0.6− | 0.1− |
| 2000 02 08 | 704 | 0.2− | 0.2− | 2002 11 14 | 704 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2000 02 08 | 704 | 0.4+ | 0.1+ | 2002 11 14 | 704 | 0.5+ | 0.3− | 2006 11 28 | G96 | 0.1− | 0.2− |
| 2000 02 08 | 704 | 0.9+ | 1.6− | 2002 11 14 | 704 | 1.3+ | 0.8− | 2006 11 28 | G96 | 0.1− | 0.3− |
| 2002 10 08 | 699 | 0.2− | 1.5+ | 2002 11 14 | 704 | (2.7− | 2.3−) | 2006 11 28 | G96 | 0.0 | 0.4− |
| 2002 10 08 | 699 | 1.0+ | 1.5+ | 2002 11 14 | 704 | 0.3+ | 0.1+ | 2006 11 28 | G96 | 0.1+ | 0.4− |
| 2002 10 08 | 699 | 1.0+ | 1.1+ | 2005 07 29 | 644 | 0.1+ | 0.1+ | | | | |
| 2002 10 08 | 699 | 0.2+ | 0.3+ | 2005 07 29 | 644 | 0.2− | 0.2+ | | | | |

**(137976)∗ 2000 $CT_{41}$ = 2002 $TT_{129}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37312)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.79787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26223115 | $\omega$ | 143.99998 | | +0.54791361 | −0.83073537 | |
| $a$ | 2.4173890 | $\Omega$ | 272.58050 | | +0.74265348 | +0.53715606 | |
| $e$ | 0.0975268 | $i$ | 5.64895 | | +0.38504090 | +0.14608941 | |
| $P$ | 3.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 11 02 | 703 | 0.4+ | 0.4− |
| 2000 01 07 | 704 | 0.3+ | 1.3− | 2002 11 06 | 704 | 1.0− | 0.4+ | 2006 11 02 | 703 | 0.3+ | 1.1− |
| 2000 01 07 | 704 | 0.3+ | 0.5− | 2002 11 06 | 704 | 1.4− | 0.6− | 2006 11 02 | 703 | 0.7− | 0.8− |
| 2000 01 07 | 704 | 0.8− | 0.3+ | 2002 11 06 | 704 | 1.0+ | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2000 02 02 | 704 | 0.3− | 0.7+ | 2002 11 06 | 704 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.3+ |
| 2000 02 02 | 704 | 0.5− | 0.3− | 2002 12 01 | 704 | 0.3− | 1.1+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2000 02 02 | 704 | 0.2− | 0.0 | 2002 12 01 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.1+ | 1.3− |
| 2000 02 02 | 704 | 0.2+ | 0.9+ | 2002 12 01 | 704 | 0.2− | 1.3+ | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2000 02 06 | 704 | 0.5− | 0.1− | 2002 12 01 | 704 | 1.1− | 0.9+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2000 02 06 | 704 | 0.5− | 1.5+ | 2004 02 14 | 644 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.3− |
| 2000 02 06 | 704 | 0.8+ | 0.0 | 2004 02 14 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.3+ |
| 2000 02 06 | 704 | 0.4+ | 0.5− | 2004 02 14 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.4+ |
| 2000 02 08 | 704 | 1.4+ | 0.1− | 2004 02 17 | 703 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2000 02 08 | 704 | 0.2+ | 0.3− | 2004 02 17 | 703 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.0 | 0.8− |
| 2000 02 08 | 704 | 0.4− | 1.2+ | 2004 02 17 | 703 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2000 02 08 | 704 | 0.1− | 0.7+ | 2004 02 17 | 703 | 0.5+ | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2002 08 04 | 704 | 0.3− | 0.5+ | 2004 02 26 | 704 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2002 08 04 | 704 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2002 08 04 | 704 | 1.0− | 0.7+ | 2004 02 26 | 704 | (1.8− | 0.5−) | 2006 11 15 | 704 | 0.2+ | 0.8+ |
| 2002 09 14 | 608 | 1.1− | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.8+ | 2006 11 15 | 704 | 0.4+ | 0.4+ |
| 2002 09 14 | 608 | 1.2− | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.1+ |
| 2002 09 14 | 608 | 0.7− | 0.4+ | 2006 08 29 | 703 | 0.9− | 0.9+ | 2006 11 15 | 704 | 0.2+ | 0.3+ |
| 2002 10 04 | 644 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.9− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2002 10 04 | 644 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.7+ |
| 2002 10 04 | 644 | 0.2− | 0.2+ | 2006 09 18 | 703 | 1.1− | 0.2− | 2006 11 16 | 704 | 1.1+ | 0.9+ |
| 2002 10 05 | 704 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.8− | 0.9− | 2006 11 16 | 704 | 0.8+ | 0.6+ |
| 2002 10 05 | 704 | 0.4+ | 0.3− | 2006 09 18 | 703 | 1.2− | 0.3− | 2006 11 16 | 704 | 0.6+ | 0.6+ |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | (2.0+ | 0.8−) | 2006 11 16 | 704 | 0.4+ | 0.6+ |
| 2002 10 05 | 704 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.1− |
| 2002 10 09 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.8− | 0.4+ |
| 2002 10 09 | 704 | 0.7+ | 0.9+ | 2006 10 19 | 703 | 0.8+ | 1.1− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.5− | 0.6− |
| 2002 10 09 | 704 | 0.1+ | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 10 09 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2002 10 10 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.5− |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2002 10 10 | 704 | 0.1− | 0.7− | 2006 10 27 | 703 | 0.6− | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.3− |
| 2002 10 10 | 704 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.4− | 0.8− | 2006 11 22 | 704 | 0.5+ | 0.2− |
| 2002 10 10 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.7− | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 1.5+ | 1.8+ |
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.4− | 2006 12 01 | 704 | 0.2+ | 1.6+ |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.3− | 2006 12 01 | 704 | 0.6− | 0.3− |
| 2002 10 11 | 704 | 0.3+ | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.8− | | | | |

**(137977)∗ 2000 $CU_{41}$ = 2002 $PF_{21}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33203)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.59270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18806333 | $\omega$ | 260.25662 | | −0.98932423 | −0.07586595 | |
| $a$ | 3.0171713 | $\Omega$ | 275.31650 | | +0.12046511 | −0.90621978 | |
| $e$ | 0.0564525 | $i$ | 7.17868 | | −0.08201051 | −0.41594480 | |
| $P$ | 5.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.8− | 0.3+ | 2003 10 17 | 691 | 0.2+ | 0.0 | 2005 01 17 | 704 | 0.2− | 0.9+ |
| 2000 02 02 | 704 | 0.3− | 0.0 | 2003 10 17 | 691 | 0.0 | 0.1+ | 2005 01 17 | 704 | 0.3+ | 0.3+ |
| 2000 02 02 | 704 | 0.2− | 0.6− | 2003 11 02 | 691 | 0.3+ | 0.2+ | 2005 01 17 | 704 | 0.2+ | 1.0+ |
| 2000 02 02 | 704 | 0.1+ | 0.3+ | 2003 11 02 | 691 | 0.1+ | 0.3+ | 2005 01 17 | 704 | 1.0+ | 0.4+ |
| 2000 02 02 | 704 | 0.0 | 0.1+ | 2003 11 02 | 691 | 0.0 | 0.4+ | 2006 03 24 | 703 | 1.5− | 0.4+ |
| 2000 02 06 | 704 | 0.4+ | 1.3+ | 2003 11 21 | 699 | 0.4+ | 0.8− | 2006 03 24 | 703 | 0.0 | 0.4− |
| 2000 02 06 | 704 | 0.2+ | 0.0 | 2003 11 21 | 699 | 0.7− | 1.8− | 2006 03 24 | 703 | 0.4− | 0.2+ |
| 2000 02 06 | 704 | 0.0 | 1.1− | 2003 11 21 | 699 | 0.5+ | 0.2+ | 2006 03 24 | 703 | 0.4− | 0.6+ |
| 2000 02 10 | 704 | 0.6+ | 0.1+ | 2003 11 21 | 699 | 0.7− | 1.7+ | 2006 03 24 | E12 | 0.1− | 0.1− |
| 2000 02 10 | 704 | 0.4− | 0.6+ | 2003 11 22 | 691 | 0.4+ | 0.1− | 2006 03 24 | E12 | 0.1+ | 0.0 |
| 2000 02 10 | 704 | (0.0 | 2.7+) | 2003 11 22 | 691 | 0.1+ | 0.1− | 2006 03 24 | E12 | 0.4− | 0.7+ |
| 2002 08 06 | 644 | 0.3+ | 1.3+ | 2003 11 22 | 691 | 0.4+ | 0.2− | 2006 03 24 | E12 | 0.5+ | 0.1− |
| 2002 08 06 | 644 | 0.0 | 1.6+ | 2004 12 13 | 691 | 0.0 | 0.1− | 2006 03 25 | 644 | 0.6+ | 0.2+ |
| 2002 08 06 | 644 | 0.3+ | 1.5+ | 2004 12 13 | 691 | 0.2+ | 0.2− | 2006 03 25 | 644 | 0.3+ | 0.2+ |
| 2002 08 07 | 644 | 0.6− | 0.4+ | 2004 12 13 | 691 | 0.2+ | 0.3− | 2006 03 25 | 644 | 0.4+ | 0.2+ |
| 2002 08 07 | 644 | 0.1− | 0.7+ | 2005 01 16 | 333 | 0.3− | 0.1+ | 2006 04 29 | E12 | 0.4− | 0.4− |
| 2002 08 07 | 644 | 0.1+ | 0.3+ | 2005 01 16 | 691 | 0.1+ | 0.2+ | 2006 04 29 | E12 | 0.1+ | 0.5+ |
| 2003 09 30 | 691 | 0.2− | 0.1+ | 2005 01 16 | 691 | 0.2+ | 0.2+ | 2006 04 29 | E12 | 0.1+ | 0.0 |
| 2003 09 30 | 691 | 1.7− | 1.0− | 2005 01 16 | 333 | 0.6− | 0.0 | 2006 04 29 | E12 | 0.0 | 0.3− |
| 2003 09 30 | 691 | 0.2− | 0.0 | 2005 01 16 | 691 | 0.3+ | 0.3+ | | | | |
| 2003 10 17 | 691 | 0.0 | 0.2+ | 2005 01 16 | 333 | 0.5− | 0.1+ | | | | |

**(137978)*** **2000 $CL_{43}$ = 2002 $RC_{155}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37313)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.81940 | | (2000.0) | | | |
| $n$ | 0.26046632 | $\omega$ | 172.11906 | | +0.10877810 | −0.99381183 |
| $a$ | 2.4282962 | $\Omega$ | 271.63406 | | +0.91080677 | +0.10870169 |
| $e$ | 0.1870493 | $i$ | 1.28867 | | +0.39824408 | +0.02284710 |
| $P$ | 3.78 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.3− | 0.6− | 2004 02 15 | 703 | (0.7+ | 1.9+) | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2000 02 02 | 691 | 0.3− | 0.2− | 2004 02 15 | 703 | 0.6− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2000 02 02 | 691 | 0.2− | 0.4− | 2004 02 15 | 703 | (1.1+ | 1.6+) | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2000 02 02 | 704 | 0.3− | 0.2− | 2004 02 26 | 704 | 0.4− | 1.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2000 02 02 | 704 | 1.1− | 0.4+ | 2004 02 26 | 704 | (0.5− | 2.5+) | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2000 02 02 | 704 | 0.2+ | 0.2− | 2004 02 26 | 704 | (1.1+ | 7.4+) | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2000 02 02 | 704 | 0.5− | 0.4+ | 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 2000 02 02 | 704 | 0.5− | 0.4+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.2− |
| 2000 02 06 | 704 | 1.4+ | 0.9− | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.1+ |
| 2000 02 06 | 704 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.8+ | 2006 10 15 | 691 | 0.5− | 0.0 |
| 2000 02 06 | 704 | 0.1− | 0.4+ | 2004 03 16 | 704 | (1.4+ | 1.7+) | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2000 02 06 | 704 | 0.1+ | 1.0+ | 2004 03 16 | 704 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.4+ |
| 2000 02 08 | 704 | 0.4+ | 0.3− | 2004 03 16 | 704 | (1.1+ | 1.7+) | 2006 10 17 | 703 | 0.2+ | 0.5− |
| 2000 02 08 | 704 | 0.5− | 0.6+ | 2004 03 18 | 704 | 0.8+ | 1.3+ | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2000 02 08 | 704 | 1.0+ | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2000 02 08 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | (0.4− | 1.7+) | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2000 02 11 | 691 | 0.5− | 0.5− | 2004 03 18 | 704 | (0.3+ | 2.1+) | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2000 02 11 | 691 | 0.6− | 0.4− | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2000 02 11 | 691 | 0.3+ | 0.8− | 2004 03 20 | 704 | 1.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 0.7+ | 0.4+ | 2004 03 20 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.7− | 0.5+ |
| 2000 02 29 | 704 | 0.8− | 1.4+ | 2004 03 20 | 704 | 0.5+ | 1.1+ | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2000 02 29 | 704 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.3− |
| 2000 02 29 | 704 | 0.2− | 0.5+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.7− | 0.7+ |
| 2000 02 29 | 704 | 0.6+ | 1.1+ | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 03 03 | 704 | 0.7− | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.9− | 2004 03 27 | 704 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 03 03 | 704 | 0.3+ | 0.5− | 2004 03 27 | 704 | 0.3+ | 1.3+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2000 03 03 | 704 | 0.5+ | 0.7+ | 2004 03 27 | 704 | 1.1+ | 1.1+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.5+ | 0.0 | 2004 03 27 | 704 | 0.6+ | 1.0+ | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2000 03 03 | 704 | 1.4+ | 0.1− | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.2+ | 0.1− | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2000 03 03 | 704 | 1.4+ | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2002 09 11 | 644 | 0.4− | 0.3+ | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2002 09 11 | 644 | 0.5− | 0.5+ | 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2002 09 11 | 644 | 0.5− | 0.6+ | 2004 04 21 | 691 | 0.5+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2002 09 14 | 644 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.4+ | 0.6+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2002 09 17 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 09 17 | 644 | 0.1− | 0.5+ | 2006 09 18 | 699 | (1.6+ | 0.1−) | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2002 09 17 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.8− | 2006 11 20 | G96 | 0.3− | 0.6− |
| 2002 09 18 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | (1.7+ | 1.3−) | 2006 11 20 | G96 | 0.0 | 0.6− |
| 2002 09 18 | 644 | 0.5− | 0.3+ | 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.9− |
| 2002 09 18 | 644 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1+ | | | | |
| 2004 02 15 | 703 | 0.7− | 0.8+ | 2006 09 19 | 691 | 0.4+ | 0.2+ | | | | |

**(137979)*** **2000 $CG_{47}$ = 2002 $TN_{233}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37313)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.65530 | | (2000.0) | | | |
| $n$ | 0.22907957 | $\omega$ | 286.32023 | | −0.65764887 | +0.72978980 |
| $a$ | 2.6453216 | $\Omega$ | 301.03628 | | −0.58072347 | −0.64910465 |
| $e$ | 0.0542510 | $i$ | 12.59412 | | −0.47985228 | −0.21463925 |
| $P$ | 4.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.6+ | 0.7− | 2003 12 22 | 704 | 1.0+ | 0.3− | 2004 02 22 | 704 | 0.3− | 0.3+ |
| 2000 02 02 | 704 | 1.5+ | 0.8+ | 2003 12 22 | 704 | 0.2+ | 0.6+ | 2004 02 26 | 704 | 0.5+ | 0.5+ |
| 2000 02 02 | 704 | (1.2+ | 2.4−) | 2003 12 22 | 704 | 0.4+ | 0.2+ | 2004 02 26 | 704 | 0.3+ | 0.1+ |
| 2000 02 02 | 704 | 1.3+ | 0.9− | 2003 12 22 | 704 | 0.0 | 0.4− | 2004 02 26 | 704 | 0.6+ | 0.4− |
| 2000 02 06 | 704 | 0.2− | 0.7+ | 2003 12 27 | 704 | (1.6− | 1.3−) | 2004 02 26 | 704 | 0.4+ | 0.1− |
| 2000 02 06 | 704 | 0.2+ | 0.9+ | 2003 12 27 | 704 | 0.6− | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.6+ |
| 2000 02 06 | 704 | 0.7+ | 0.0 | 2003 12 27 | 704 | 0.8− | 0.2− | 2005 07 05 | E12 | 0.1+ | 0.5+ |
| 2000 02 06 | 704 | 0.5+ | 1.8+ | 2003 12 27 | 704 | 1.0− | 0.6+ | 2005 07 05 | E12 | 0.2+ | 1.1+ |
| 2000 02 06 | 704 | 0.3+ | 0.0 | 2003 12 27 | 704 | 1.3− | 0.6+ | 2005 07 05 | E12 | 1.0− | 0.5+ |
| 2000 03 08 | 704 | (2.0− | 4.1−) | 2004 01 15 | 691 | 0.0 | 0.1− | 2005 07 05 | E12 | 0.6+ | 0.9+ |
| 2000 03 08 | 704 | 1.1− | 0.4− | 2004 01 15 | 691 | 0.0 | 0.1− | 2005 07 27 | E12 | 0.4+ | 1.2+ |
| 2000 03 08 | 704 | 0.6+ | 0.4+ | 2004 01 15 | 691 | 0.1− | 0.1− | 2005 07 27 | E12 | (1.9+ | 2.2+) |
| 2000 03 27 | 699 | 0.7− | 0.1+ | 2004 01 21 | 704 | 0.3+ | 0.1+ | 2005 07 27 | E12 | (1.6+ | 1.7+) |
| 2000 03 27 | 699 | 0.0 | 0.9+ | 2004 01 21 | 704 | 0.8+ | 0.7− | 2005 07 27 | E12 | (0.4+ | 1.8+) |
| 2000 03 27 | 699 | 1.8− | 0.7+ | 2004 01 21 | 704 | 0.8+ | 0.5− | 2006 08 26 | 704 | 0.2+ | 0.7+ |
| 2000 03 27 | 699 | 0.5− | 1.4+ | 2004 01 21 | 704 | 0.1+ | 0.1− | 2006 08 26 | 704 | 0.5+ | 0.6+ |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2004 01 21 | 704 | 0.1+ | 0.2− | 2006 08 26 | 704 | 0.3+ | 0.5+ |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2004 01 24 | 704 | 1.1− | 0.3+ | 2006 09 15 | 704 | 0.4− | 0.2+ |
| 2002 09 20 | 644 | 0.4− | 0.0 | 2004 01 24 | 704 | 0.3+ | 0.5− | 2006 09 15 | 704 | 0.0 | 0.4+ |
| 2002 09 20 | 644 | 0.3− | 0.1− | 2004 01 24 | 704 | 0.1+ | 0.3− | 2006 09 15 | 704 | 0.0 | 0.7+ |
| 2002 09 20 | 644 | 0.4− | 0.2− | 2004 01 24 | 704 | 0.5+ | 0.5− | 2006 09 15 | 704 | 0.2− | 0.3+ |
| 2002 09 27 | 644 | 0.3− | 0.1+ | 2004 01 24 | 704 | 0.0 | 0.5− | 2006 09 15 | 704 | 0.3+ | 0.5+ |
| 2002 09 27 | 644 | 0.4− | 0.1+ | 2004 01 26 | 699 | 0.5− | 0.7+ | 2006 09 16 | 644 | 0.1+ | 0.0 |
| 2002 09 27 | 644 | 0.5− | 0.1+ | 2004 01 26 | 699 | 0.7− | 0.2+ | 2006 09 16 | 644 | 0.2− | 0.0 |
| 2002 10 06 | 699 | 0.7− | 0.2− | 2004 01 26 | 699 | 0.8− | 0.0 | 2006 09 16 | 644 | 0.1+ | 0.2− |
| 2002 10 06 | 699 | 0.8− | 0.6+ | 2004 01 26 | 699 | 0.5− | 0.3− | 2006 09 20 | 699 | 0.3− | 0.2− |
| 2002 10 06 | 699 | 0.6− | 0.8+ | 2004 01 31 | 704 | 0.2− | 0.9+ | 2006 09 20 | 699 | 0.0 | 0.7+ |
| 2002 10 06 | 699 | 0.2+ | 0.4+ | 2004 01 31 | 704 | 0.5+ | 0.4− | 2006 09 20 | 699 | 0.1− | 0.2+ |
| 2002 10 06 | 704 | 0.2+ | 0.6− | 2004 01 31 | 704 | 0.3− | 0.0 | 2006 09 22 | 703 | 0.4− | 0.8+ |
| 2002 10 06 | 704 | 0.5+ | 0.2+ | 2004 01 31 | 704 | 0.1− | 0.4+ | 2006 09 22 | 703 | 0.8− | 0.9+ |
| 2002 10 06 | 704 | 0.8− | 0.5+ | 2004 01 31 | 704 | 0.5− | 0.3+ | 2006 09 22 | 703 | 0.2− | 0.4− |
| 2002 10 06 | 704 | 0.5+ | 0.5− | 2004 01 31 | 704 | 0.1+ | 0.5+ | 2006 09 22 | 703 | 0.7− | 0.5− |
| 2002 10 06 | 704 | 0.7+ | 0.1− | 2004 01 31 | 704 | 0.1− | 0.8+ | 2006 09 27 | 703 | 0.1− | 0.1− |
| 2002 10 10 | 704 | 0.0 | 0.2+ | 2004 01 31 | 704 | 0.9+ | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.1− |
| 2002 10 10 | 704 | 0.4− | 0.2− | 2004 01 31 | 704 | 0.6− | 1.4+ | 2006 09 27 | 703 | 0.0 | 0.4+ |
| 2002 10 10 | 704 | 0.4+ | 0.9+ | 2004 02 16 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.3+ | 0.5+ |
| 2002 10 10 | 704 | 0.4− | 0.3+ | 2004 02 16 | 704 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 12 19 | 691 | 0.2− | 0.4− | 2004 02 16 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2003 12 19 | 691 | 0.1+ | 0.5− | 2004 02 16 | 704 | 0.2− | 0.5− | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2003 12 19 | 691 | 0.1+ | 0.3− | 2004 02 22 | 704 | 0.0 | 0.9+ | | | | |
| 2003 12 22 | 704 | 0.0 | 0.1+ | 2004 02 22 | 704 | 0.6− | 0.7+ | | | | |

**(137980)*** **2000 $CC_{49}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.35268 | | (2000.0) | | | |
| $n$ | 0.24298630 | $\omega$ | 202.28332 | | −0.65555632 | −0.75393649 |
| $a$ | 2.5434011 | $\Omega$ | 288.70628 | | +0.69945954 | −0.58491545 |
| $e$ | 0.1662695 | $i$ | 2.58554 | | +0.28460895 | −0.29908809 |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 703 | 0.3+ | 0.7+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2004 02 12 | 333 | 0.5− | 0.5− |
| 2000 02 02 | 703 | 1.0+ | 0.2− | 2002 10 30 | 645 | 0.2− | 0.1− | 2004 02 12 | 333 | 0.2− | 0.4− |
| 2000 02 02 | 703 | 0.9− | 0.4+ | 2003 10 25 | 691 | 0.3+ | 0.4+ | 2004 02 12 | 333 | 0.3+ | 0.6− |
| 2000 02 02 | 703 | (3.4+ | 7.3+) | 2003 10 25 | 691 | 0.3+ | 0.1− | 2004 02 13 | 333 | 0.2+ | 0.3− |
| 2000 02 02 | 704 | 0.1+ | 0.3+ | 2003 10 25 | 691 | 0.0 | 0.3+ | 2004 02 13 | 333 | 0.0 | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 1.1+ | 1.4− | 2003 12 21 | 645 | 0.1− | 0.2− | 2004 02 13 | 333 | 0.7− | 0.3− |
| 2000 02 02 | 704 | 0.2+ | 1.1+ | 2003 12 21 | 645 | 0.1− | 0.2− | 2004 02 13 | 333 | 0.4− | 0.1− |
| 2000 02 02 | 704 | 0.9+ | 0.5+ | 2003 12 21 | 704 | 0.2− | 1.2+ | 2004 02 13 | 333 | 0.6− | 0.1+ |
| 2000 02 02 | 704 | 1.0+ | 1.2+ | 2003 12 21 | 704 | (0.9+ | 1.7+) | 2004 02 13 | 333 | 0.2− | 0.1− |
| 2000 02 06 | 704 | 0.4− | 0.8− | 2003 12 21 | 704 | 1.1+ | 0.3− | 2004 02 14 | 608 | 0.4+ | 0.6− |
| 2000 02 06 | 704 | 0.0 | 0.9+ | 2003 12 21 | 704 | 0.1+ | 0.5+ | 2004 02 14 | 608 | 0.5+ | 0.6− |
| 2000 02 06 | 704 | 0.4+ | 1.1− | 2004 01 24 | 704 | 0.4− | 0.2+ | 2004 02 14 | 608 | 0.4+ | 0.2− |
| 2000 02 06 | 704 | 0.3− | 0.4+ | 2004 01 24 | 704 | (5.1+ | 0.5−) | 2004 02 14 | 106 | 0.1− | 0.1− |
| 2000 02 06 | 704 | 0.2− | 1.1+ | 2004 01 24 | 704 | 0.2+ | 0.9+ | 2004 02 14 | 106 | 0.1+ | 0.1− |
| 2000 02 29 | 704 | 0.1+ | 0.4+ | 2004 01 24 | 704 | 0.2− | 1.1+ | 2004 02 14 | 106 | 0.3− | 0.1− |
| 2000 02 29 | 704 | 0.3− | 0.6+ | 2004 01 26 | 699 | 0.4− | 0.3− | 2004 02 17 | 704 | 0.7+ | 1.4− |
| 2000 02 29 | 704 | 0.1+ | 0.2+ | 2004 01 26 | 699 | 0.7− | 0.3+ | 2004 02 17 | 704 | 0.1+ | 1.0− |
| 2000 02 29 | 704 | 0.2− | 0.9+ | 2004 01 26 | 699 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.4+ | 0.6− |
| 2000 02 29 | 704 | 0.1− | 1.2+ | 2004 01 26 | 699 | 0.2+ | 0.6+ | 2004 02 17 | 704 | 0.3+ | 0.1+ |
| 2000 03 03 | 704 | 0.1+ | 0.7+ | 2004 01 29 | 704 | 0.0 | 0.2− | 2004 02 17 | 704 | 0.2+ | 1.0− |
| 2000 03 03 | 704 | 0.1+ | 0.2+ | 2004 01 29 | 704 | 0.7− | 0.2− | 2004 03 01 | 691 | 0.1+ | 0.2+ |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2004 01 29 | 704 | 0.9− | 0.2− | 2004 03 01 | 691 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.9+ | 0.3+ | 2004 01 29 | 704 | 0.5− | 0.3+ | 2004 03 01 | 691 | 0.1+ | 0.2+ |
| 2000 03 03 | 704 | 0.8+ | 0.2+ | 2004 01 29 | 704 | 0.5− | 0.9− | 2004 03 15 | 703 | 0.6− | 0.7− |
| 2000 03 11 | 704 | 0.4+ | 0.3− | 2004 02 04 | 608 | 0.6+ | 0.2− | 2004 03 15 | 703 | 1.2− | 0.3− |
| 2000 03 11 | 704 | 0.6+ | 0.2− | 2004 02 04 | 608 | 0.8+ | 0.1− | 2004 03 15 | 703 | 0.1− | 0.4+ |
| 2000 03 11 | 704 | 0.3+ | 0.2− | 2004 02 04 | 608 | 0.8+ | 0.1+ | 2004 03 15 | 703 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.4− | 0.0 | 2004 02 09 | 333 | 0.1− | 0.7− | 2006 09 19 | 703 | (2.1− | 2.0+) |
| 2000 03 11 | 699 | 0.6+ | 0.4+ | 2004 02 09 | 333 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.7+ | 0.7+ |
| 2000 03 11 | 699 | 0.7+ | 0.6+ | 2004 02 09 | 333 | 0.9− | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.2− |
| 2000 03 11 | 699 | 0.9+ | 0.2+ | 2004 02 10 | 333 | 0.1− | 0.1+ | 2006 09 19 | 703 | 1.3− | 0.0 |
| 2000 03 11 | 699 | 0.7+ | 0.5+ | 2004 02 10 | 333 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2000 03 27 | 699 | 0.8− | 1.5+ | 2004 02 10 | 333 | 0.4− | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2000 03 27 | 699 | 0.7− | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2000 03 27 | 699 | 0.1+ | 0.2− | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.2+ | 0.5+ |
| 2000 03 27 | 699 | 0.1− | 1.7+ | 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.2+ | 0.5+ |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.2− | 0.7+ | 2004 02 12 | 691 | 0.0 | 0.1+ | | | | |
| 2002 09 14 | 644 | 0.1− | 1.0+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | | | | |

**(137981)∗ 2000 CH$_{50}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.69474 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23923513 | $\omega$ | 352.68954 | | −0.99914641 | +0.03993960 | |
| $a$ | 2.5699189 | $\Omega$ | 189.61840 | | −0.03398116 | −0.93985811 | |
| $e$ | 0.2286464 | $i$ | 3.61990 | | −0.02348914 | −0.33922200 | |
| $P$ | 4.12 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 02 | 691 | 0.4− | 0.9+ | 2004 01 24 | 704 | 0.3− | 0.6− | 2004 02 11 | 644 | 0.1+ | 0.2+ |
| 1992 05 02 | 691 | 0.5+ | 1.0+ | 2004 01 26 | 699 | 0.3− | 0.6+ | 2004 02 11 | 699 | 0.7− | 0.4− |
| 1992 05 02 | 691 | 0.0 | 0.4+ | 2004 01 26 | 699 | 0.3+ | 0.3− | 2004 02 11 | 644 | 0.2− | 0.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.2+ | 2004 01 26 | 699 | 0.1− | 0.6− | 2004 02 11 | 644 | 0.0 | 0.3+ |
| 2000 02 02 | 704 | 0.0 | 0.7− | 2004 01 26 | 699 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.4− | 0.1+ |
| 2000 02 02 | 704 | 0.5+ | 0.7− | 2004 01 29 | 704 | 0.7+ | 0.1+ | 2004 02 17 | 704 | 0.2− | 0.7+ |
| 2000 02 02 | 704 | 0.3− | 0.2− | 2004 01 29 | 704 | 0.9− | 0.6+ | 2004 02 17 | 704 | 0.2+ | 0.2− |
| 2000 02 02 | 704 | 0.7+ | 0.2+ | 2004 01 29 | 704 | (2.3+ | 0.4+) | 2004 02 17 | 704 | 0.5+ | 1.0+ |
| 2000 02 06 | 704 | 0.7+ | 1.1− | 2004 01 29 | 704 | 0.9− | 0.0 | 2004 02 17 | 608 | 0.3+ | 0.9+ |
| 2000 02 06 | 704 | 0.2+ | 0.5+ | 2004 01 29 | 704 | 0.1− | 0.5− | 2004 02 17 | 608 | 0.1+ | 0.9+ |
| 2000 02 06 | 704 | 0.4+ | 0.5+ | 2004 01 30 | 704 | 0.6+ | 0.1− | 2004 02 17 | 608 | 0.2+ | 0.6+ |
| 2000 02 06 | 704 | 0.1+ | 0.6+ | 2004 01 30 | 704 | 0.4+ | 0.3+ | 2004 02 22 | 704 | 0.7+ | 0.8+ |
| 2000 02 06 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 704 | 0.4− | 0.1+ | 2004 02 22 | 704 | 1.4+ | 1.1+ |
| 2000 02 29 | 704 | 0.4+ | 0.3+ | 2004 01 30 | 704 | 0.5− | 0.1+ | 2004 02 22 | 704 | 1.1+ | 0.3+ |
| 2000 02 29 | 704 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 0.9− | 0.1+ | 2004 03 10 | 644 | 0.0 | 0.0 |
| 2000 02 29 | 704 | 0.9+ | 0.5+ | 2004 01 31 | 704 | 0.1− | 0.3− | 2004 03 10 | 644 | 0.1− | 0.4+ |
| 2000 02 29 | 704 | 0.1+ | 0.8+ | 2004 01 31 | 704 | 0.2− | 0.1+ | 2004 03 10 | 644 | 0.1+ | 0.1+ |
| 2000 02 29 | 704 | 0.4+ | 0.5+ | 2004 01 31 | 704 | 0.0 | 0.6+ | 2005 07 10 | 691 | 0.0 | 0.6+ |
| 2000 03 11 | 704 | 0.4+ | 0.4+ | 2004 01 31 | 704 | 0.8− | 0.2+ | 2005 07 10 | 691 | 0.0 | 0.5+ |
| 2000 03 11 | 704 | 0.9+ | 0.6+ | 2004 01 31 | 704 | 0.0 | 0.8− | 2005 07 10 | 691 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.8+ | 0.2− | 2004 01 31 | 704 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.2+ | 0.5+ |
| 2000 03 11 | 704 | 0.8+ | 0.0 | 2004 01 31 | 704 | 0.3− | 0.6+ | 2005 07 11 | G96 | 0.5− | 0.5+ |
| 2000 03 11 | 704 | 1.1+ | 0.1− | 2004 01 31 | 704 | 0.3+ | 0.2+ | 2005 07 11 | G96 | 0.1− | 0.2+ |
| 2002 11 07 | 695 | 0.1− | 0.6+ | 2004 01 31 | 704 | 0.3+ | 0.2− | 2005 07 11 | G96 | 0.2− | 0.5+ |
| 2002 11 07 | 695 | 0.1+ | 0.6+ | 2004 01 31 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.4+ |
| 2003 10 24 | 691 | 0.2+ | 0.2− | 2004 01 31 | 704 | 0.3− | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.5+ |
| 2003 10 24 | 691 | 0.3− | 0.1− | 2004 01 31 | 704 | 0.4− | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.5+ |
| 2003 10 24 | 691 | 0.1+ | 0.2+ | 2004 01 31 | 704 | 0.2− | 0.7+ | 2006 09 24 | 688 | 0.2− | 0.6+ |
| 2004 01 13 | 699 | 1.3− | 0.2+ | 2004 01 31 | 704 | 0.0 | 0.2+ | 2006 09 24 | 688 | 0.6− | 0.4+ |
| 2004 01 13 | 699 | 0.6− | 0.5+ | 2004 01 31 | 704 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.6+ |
| 2004 01 13 | 699 | 0.0 | 0.8− | 2004 02 02 | 704 | 0.1− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2004 01 13 | 699 | 0.2+ | 0.4+ | 2004 02 02 | 704 | 0.2+ | 0.3− | 2006 09 26 | 691 | 0.5− | 0.2+ |
| 2004 01 24 | 704 | 0.7− | 0.6− | 2004 02 02 | 704 | 0.5− | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.7+ |
| 2004 01 24 | 704 | 0.5− | 0.3− | 2004 02 11 | 699 | 0.9+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.6+ |
| 2004 01 24 | 704 | 0.6− | 0.7− | 2004 02 11 | 699 | 0.4+ | 1.3− | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2004 01 24 | 704 | 0.7− | 0.5− | 2004 02 11 | 699 | 0.7− | 0.6+ | | | | |

**(137982)∗ 2000 CR$_{53}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.40321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24076925 | $\omega$ | 160.82698 | | −0.60389264 | −0.79617701 | |
| $a$ | 2.5589907 | $\Omega$ | 326.29208 | | +0.72215037 | −0.52654260 | |
| $e$ | 0.1643009 | $i$ | 3.88778 | | +0.33736111 | −0.29808565 | |
| $P$ | 4.09 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 566 | 0.6− | 0.4+ | 2002 09 14 | 644 | 0.6− | 0.7+ | 2004 02 22 | 691 | 0.1− | 0.3− |
| 1996 03 24 | 566 | 0.1− | 0.5+ | 2002 09 14 | 644 | 0.5− | 0.7+ | 2004 02 26 | 704 | 0.9+ | 0.6− |
| 1996 03 24 | 566 | 0.1− | 1.2+ | 2002 10 04 | 704 | 0.2+ | 1.1+ | 2004 02 26 | 704 | 0.0 | 0.1+ |
| 2000 02 02 | 704 | 0.5+ | 0.9− | 2002 10 04 | 704 | 0.3+ | 1.0+ | 2004 02 26 | 704 | 0.1+ | 0.0 |
| 2000 02 02 | 704 | 0.7+ | 0.0 | 2002 10 04 | 704 | 0.9+ | 1.4+ | 2004 02 26 | 704 | 0.2+ | 0.2− |
| 2000 02 02 | 704 | 0.6+ | 0.3− | 2002 10 04 | 704 | 0.8− | 0.4+ | 2004 02 26 | 704 | 0.1− | 0.1− |
| 2000 02 06 | 704 | 0.1+ | 0.4− | 2002 10 04 | 704 | 0.3+ | 0.8+ | 2004 03 09 | 185 | 0.1+ | 0.3− |
| 2000 02 06 | 704 | 0.3− | 0.0 | 2003 11 21 | 699 | 0.7− | 0.9− | 2004 03 09 | 185 | 0.3+ | 0.9− |
| 2000 02 06 | 704 | 0.6+ | 0.3+ | 2003 11 21 | 699 | 0.6+ | 0.2+ | 2004 03 09 | 185 | 0.6− | 0.4+ |
| 2000 02 16 | 703 | 1.0− | 0.1− | 2003 11 21 | 699 | 0.5− | 1.3+ | 2004 03 09 | 185 | 0.1+ | 0.4− |
| 2000 02 16 | 703 | 1.3+ | 0.2− | 2003 11 21 | 699 | 0.0 | 0.5+ | 2004 03 14 | 703 | 0.4+ | 0.6− |
| 2000 02 16 | 703 | 0.3+ | 0.5+ | 2003 12 20 | 704 | 0.9− | 0.7+ | 2004 03 14 | 703 | 0.5− | 0.2− |
| 2000 02 16 | 703 | 0.3− | 0.3− | 2003 12 20 | 704 | 0.9− | 0.5+ | 2004 03 14 | 703 | 0.0 | 0.1− |
| 2000 02 27 | 703 | 0.0 | 0.4− | 2003 12 20 | 704 | 0.6− | 0.8+ | 2004 03 14 | 703 | 0.2− | 0.1− |
| 2000 02 27 | 703 | 0.5− | 1.1+ | 2003 12 20 | 704 | 1.4+ | 0.0 | 2004 03 15 | 704 | 1.0+ | 0.5+ |
| 2000 02 27 | 703 | 0.2− | 0.5+ | 2003 12 20 | 704 | 0.7− | 0.8+ | 2004 03 15 | 704 | 0.6+ | 0.7+ |
| 2000 02 27 | 703 | 0.0 | 0.7+ | 2003 12 22 | 704 | (1.9+ | 4.0−) | 2004 03 15 | 704 | 0.0 | 0.3− |
| 2000 02 28 | 106 | 0.2+ | 0.5+ | 2003 12 22 | 704 | (1.7+ | 4.2−) | 2004 03 15 | 704 | 0.1− | 0.2+ |
| 2000 02 28 | 106 | 0.4+ | 0.2− | 2003 12 22 | 704 | (1.4+ | 4.6−) | 2004 03 15 | 704 | 0.3+ | 0.7+ |
| 2000 02 28 | 106 | 0.4− | 1.1+ | 2003 12 22 | 704 | (1.5+ | 4.4−) | 2004 03 18 | 691 | 0.2+ | 0.0 |
| 2000 02 29 | 704 | 0.1− | 0.6+ | 2003 12 22 | 704 | (1.8+ | 4.2−) | 2004 03 18 | 691 | 0.2− | 0.1+ |
| 2000 02 29 | 704 | 0.5+ | 0.1− | 2004 01 23 | 699 | 0.6− | 0.4− | 2004 03 18 | 691 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.5+ | 0.7+ | 2004 01 23 | 699 | 0.7+ | 0.6− | 2004 03 18 | 704 | 0.4+ | 0.5+ |
| 2000 02 29 | 704 | 0.3+ | 0.8+ | 2004 01 23 | 699 | 0.2− | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.5+ |
| 2000 02 29 | 704 | 0.5− | 0.5+ | 2004 01 23 | 699 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.4+ |
| 2000 03 02 | 106 | 0.2+ | 0.5− | 2004 01 24 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.5− | 0.1+ |
| 2000 03 02 | 106 | 0.7+ | 0.2+ | 2004 01 24 | 704 | 1.0− | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.5+ |
| 2000 03 02 | 106 | 0.3+ | 0.0 | 2004 01 24 | 704 | 0.9+ | 0.3+ | 2004 03 27 | 691 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.1+ | 0.3+ | 2004 01 24 | 704 | 0.8+ | 0.2+ | 2004 03 27 | 691 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.2+ | 0.4+ | 2004 01 29 | 704 | 0.2− | 0.5− | 2004 03 27 | 691 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.2+ | 0.4+ | 2004 01 29 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | 1.2+ | 0.9+ |
| 2000 03 03 | 704 | 0.2− | 0.5+ | 2004 01 29 | 704 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.4− | 0.8+ |
| 2000 03 03 | 704 | 0.5− | 0.6+ | 2004 02 11 | 703 | 0.7− | 0.4− | 2006 09 12 | 703 | 0.8+ | 0.6+ |
| 2000 03 06 | 608 | (0.3+ | 3.6−) | 2004 02 11 | 703 | 0.8− | 0.0 | 2006 09 12 | 703 | 1.3− | 0.5+ |
| 2000 03 06 | 608 | 0.8+ | 0.6− | 2004 02 11 | 703 | 0.4− | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.6+ |
| 2000 03 06 | 608 | 0.7+ | 0.6− | 2004 02 11 | 703 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.2+ | 0.5+ |
| 2000 03 08 | 704 | 0.8+ | 0.0 | 2004 02 11 | 699 | 0.7− | 0.5− | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 2000 03 08 | 704 | 0.9+ | 0.4+ | 2004 02 11 | 699 | (2.1− | 0.2+) | 2006 09 19 | 699 | 0.2− | 0.8− |
| 2000 03 08 | 704 | 0.5+ | 0.9+ | 2004 02 11 | 699 | 0.2− | 1.0− | 2006 09 19 | 699 | 0.1+ | 0.5+ |
| 2000 03 08 | 704 | 1.4+ | 1.5+ | 2004 02 11 | 699 | 1.2− | 0.2+ | 2006 09 19 | 699 | 1.5− | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | 0.5+ | 1.1+ | 2004 02 14 | 106 | 0.3− | 0.4− | 2006 09 19 | 699 | 0.6+ | 1.0+ |
| 2000 03 08 | 704 | 1.6+ | 0.7+ | 2004 02 14 | 106 | 0.3− | 0.8− | 2006 09 20 | 704 | 0.4+ | 1.4+ |
| 2000 03 08 | 704 | 0.9+ | 1.5+ | 2004 02 14 | 106 | 1.1− | 0.3− | 2006 09 20 | 704 | 0.0 | 1.4+ |
| 2000 03 08 | 704 | 0.5+ | 0.7+ | 2004 02 14 | 106 | 0.9− | 0.6− | 2006 09 20 | 704 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 0.2− | 0.3+ | 2004 02 15 | 106 | 0.8− | 0.7− | 2006 10 01 | 703 | (2.6− | 1.0−) |
| 2000 03 11 | 704 | 0.2+ | 0.5+ | 2004 02 15 | 106 | 0.9− | 0.5− | 2006 10 01 | 703 | 1.0− | 0.2− |
| 2000 03 11 | 704 | 0.1− | 0.7+ | 2004 02 15 | 608 | 0.7− | 0.4− | 2006 10 01 | 703 | 1.4− | 0.7+ |
| 2000 03 11 | 704 | 0.4− | 0.7+ | 2004 02 15 | 608 | 0.5− | 0.2− | 2006 10 01 | 703 | 0.4+ | 0.4+ |
| 2000 03 11 | 704 | 0.3− | 0.7+ | 2004 02 15 | 608 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2000 04 05 | 704 | 0.4+ | 1.0+ | 2004 02 17 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 1.3− |
| 2000 04 05 | 704 | 0.8+ | 1.1+ | 2004 02 17 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.3− | 1.0+ |
| 2000 04 05 | 704 | 0.1+ | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2002 09 06 | 704 | 0.9− | 0.0 | 2004 02 17 | 704 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 09 06 | 704 | 1.5− | 1.1+ | 2004 02 17 | 704 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2002 09 06 | 704 | 1.4− | 0.1+ | 2004 02 22 | 691 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.7+ | 2004 02 22 | 691 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.3+ | 0.1− |

**(137983)∗ 2000 $CU_{54}$ = 2002 $TC_{161}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37317)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.22395 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23613861 | $\omega$ | 44.55100 | | −0.89565002 | +0.43299609 | |
| $a$ | 2.5923365 | $\Omega$ | 160.39522 | | −0.44300167 | −0.88880753 | |
| $e$ | 0.1193483 | $i$ | 17.62865 | | +0.03950388 | −0.15011849 | |
| $P$ | 4.17 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 31 | 910 | 0.6+ | 1.5+ | 2000 03 11 | 704 | 0.4+ | 0.2− | 2004 01 27 | 699 | 0.6− | 0.8− |
| 1997 08 31 | 910 | 0.3+ | 1.2+ | 2000 03 11 | 704 | 0.4+ | 0.1− | 2004 01 27 | 699 | 0.2+ | 0.3+ |
| 1997 08 31 | 910 | 0.1+ | 1.7+ | 2000 03 11 | 704 | 0.4+ | 0.0 | 2004 01 27 | 699 | 0.8− | 0.3− |
| 2000 02 02 | 704 | 0.7− | 0.7− | 2000 03 11 | 704 | 0.0 | 0.1+ | 2004 01 29 | 704 | 0.4+ | 0.1+ |
| 2000 02 02 | 704 | 0.2− | 0.1+ | 2000 03 11 | 699 | 0.5+ | 0.1− | 2004 01 29 | 704 | 0.1+ | 0.7+ |
| 2000 02 02 | 704 | 0.4− | 1.1+ | 2000 03 11 | 699 | 0.2+ | 0.2− | 2004 01 29 | 704 | 0.6− | 0.7+ |
| 2000 02 06 | 704 | 0.3+ | 0.1+ | 2000 03 11 | 699 | 0.5− | 0.1− | 2004 01 29 | 704 | 0.1+ | 0.6− |
| 2000 02 06 | 704 | 0.4+ | 0.6− | 2000 03 11 | 699 | 0.5+ | 0.0 | 2004 01 29 | 704 | 0.5+ | 0.1+ |
| 2000 02 06 | 704 | 0.2− | 1.4− | 2000 04 02 | 695 | 0.4− | 0.2+ | 2004 02 12 | 644 | 0.0 | 0.1+ |
| 2000 02 13 | 704 | (0.4− | 3.1+) | 2000 04 02 | 695 | 0.1− | 0.1+ | 2004 02 12 | 644 | 0.5+ | 0.5− |
| 2000 02 13 | 704 | 1.1+ | 1.1+ | 2000 04 03 | 699 | 0.3+ | 0.4− | 2004 02 12 | 644 | 0.2+ | 0.0 |
| 2000 02 13 | 704 | (2.1+ | 1.6+) | 2000 04 03 | 699 | 0.5− | 0.7− | 2004 02 17 | 608 | 0.2− | 0.0 |
| 2000 02 29 | 704 | 0.1+ | 0.0 | 2000 04 03 | 699 | 1.9− | 0.7+ | 2004 02 17 | 608 | 0.1+ | 0.7+ |
| 2000 02 29 | 704 | 0.4− | 0.4− | 2000 04 03 | 699 | 1.2− | 0.2+ | 2004 02 17 | 608 | 0.5− | 0.2+ |
| 2000 02 29 | 704 | 0.4+ | 0.1− | 2000 04 03 | 704 | 0.2+ | 0.2+ | 2004 02 18 | 704 | 0.4+ | 0.2− |
| 2000 02 29 | 704 | 0.1+ | 0.1+ | 2000 04 03 | 704 | 0.3− | 0.9+ | 2004 02 18 | 704 | 0.5+ | 0.2+ |
| 2000 02 29 | 704 | 0.1+ | 0.3− | 2000 04 03 | 704 | 0.3− | 0.6+ | 2004 02 18 | 704 | 0.6+ | 0.4− |
| 2000 03 03 | 704 | 0.0 | 0.3+ | 2002 10 05 | 644 | 0.4− | 0.1+ | 2004 02 18 | 704 | 0.2+ | 0.1+ |
| 2000 03 03 | 704 | 0.2− | 0.2− | 2002 10 05 | 644 | 0.3− | 0.2− | 2004 02 18 | 704 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.0 | 0.1− | 2002 10 05 | 644 | (1.7− | 0.6−) | 2006 10 10 | 644 | 0.5− | 0.4+ |
| 2000 03 03 | 704 | 0.7− | 0.1− | 2002 10 06 | 644 | 1.1+ | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2000 03 03 | 704 | 0.3− | 0.3− | 2002 10 06 | 644 | 0.1+ | 1.4+ | 2006 10 10 | 644 | 0.6− | 0.2+ |
| 2000 03 04 | 704 | 0.1− | 0.4− | 2002 10 06 | 644 | 0.0 | 1.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2000 03 04 | 704 | 0.6+ | 0.2+ | 2002 10 10 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2000 03 04 | 704 | 0.6+ | 1.0+ | 2002 10 10 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.5+ | 0.2− |
| 2000 03 04 | 704 | 0.1+ | 0.4+ | 2002 10 10 | 644 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.5− | 0.2− |
| 2000 03 04 | 704 | 0.0 | 0.9+ | 2002 11 05 | 644 | 0.5− | 0.7− | 2006 10 23 | 644 | 0.3+ | 0.4− |
| 2000 03 05 | 704 | 0.1+ | 0.7+ | 2002 11 05 | 644 | 0.4+ | 0.8− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2000 03 05 | 704 | 0.1− | 0.1+ | 2002 11 05 | 644 | 0.4− | 0.8− | 2006 10 23 | 644 | 0.5− | 0.1+ |
| 2000 03 05 | 704 | 0.3− | 0.7+ | 2004 01 25 | 608 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2000 03 05 | 704 | 0.6− | 0.5+ | 2004 01 25 | 608 | 0.7+ | 0.2+ | 2006 10 23 | 644 | 0.6− | 0.1− |
| 2000 03 05 | 704 | 0.3+ | 1.1+ | 2004 01 25 | 608 | 0.6+ | 0.4+ | | | | |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2004 01 27 | 699 | 0.7− | 0.4− | | | | |

**(137984)∗ 2000 $CV_{55}$ = 2005 $LZ_{27}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74723)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.38992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23069814 | $\omega$ | 77.58509 | | −0.77174761 | +0.62248335 | |
| $a$ | 2.6329341 | $\Omega$ | 140.70043 | | −0.63345597 | −0.73447114 | |
| $e$ | 0.1262972 | $i$ | 11.85126 | | −0.05602829 | −0.27030839 | |
| $P$ | 4.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 703 | 0.2− | 0.3+ | 2004 02 22 | 704 | 0.5+ | 0.0 | 2005 06 17 | 691 | 0.1+ | 0.2+ |
| 2000 01 30 | 703 | 0.6− | 0.1+ | 2004 02 22 | 704 | 1.2− | 0.5− | 2005 06 17 | 691 | 0.1+ | 0.0 |
| 2000 01 30 | 703 | 0.1+ | 1.2+ | 2004 02 22 | 704 | 0.9+ | 0.8− | 2005 07 01 | 691 | 0.1+ | 0.1+ |
| 2000 01 30 | 703 | 0.1− | 0.2+ | 2004 02 22 | 704 | 0.8+ | 0.2+ | 2005 07 01 | 691 | 0.3+ | 0.0 |
| 2000 02 03 | 691 | 0.1− | 0.1− | 2005 05 03 | 703 | 1.0+ | 0.5+ | 2005 07 01 | 691 | 0.2+ | 0.2− |
| 2000 02 03 | 691 | 0.2− | 0.1− | 2005 05 03 | 703 | 0.8− | 0.1+ | 2005 07 04 | 644 | 0.1+ | 0.0 |
| 2000 02 03 | 691 | 0.1− | 0.1− | 2005 05 03 | 703 | 0.5− | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.1+ |
| 2000 02 04 | 704 | 1.2+ | 0.5+ | 2005 05 03 | 703 | 0.3− | 0.5− | 2005 07 04 | 644 | 0.2+ | 0.1− |
| 2000 02 04 | 704 | 0.3− | 0.3+ | 2005 05 14 | 704 | 0.1− | 0.2− | 2005 07 27 | 644 | 0.2− | 0.2+ |
| 2000 02 04 | 704 | 1.7+ | 1.2+ | 2005 05 14 | 704 | 0.2+ | 0.6+ | 2005 07 27 | 644 | 0.3+ | 0.0 |
| 2000 02 04 | 704 | 0.4+ | 0.9+ | 2005 05 14 | 691 | 0.5+ | 0.1+ | 2005 07 27 | 644 | 0.0 | 0.2+ |
| 2000 02 04 | 704 | 1.0+ | 1.2+ | 2005 05 14 | 704 | 0.9− | 0.4+ | 2005 08 05 | 644 | 0.5+ | 0.2+ |
| 2000 02 06 | 704 | 0.4− | 0.6+ | 2005 05 14 | 704 | 0.1− | 0.7+ | 2005 08 05 | 644 | 0.4+ | 0.1+ |
| 2000 02 06 | 704 | 0.9− | 1.3+ | 2005 05 14 | 691 | 0.1+ | 0.3+ | 2005 08 05 | 644 | 0.6+ | 0.1− |
| 2000 02 06 | 704 | 0.7+ | 0.4+ | 2005 05 14 | 691 | 0.2+ | 0.2+ | 2006 08 27 | D35 | 0.2− | 0.4+ |
| 2000 02 06 | 704 | 1.4+ | 0.7+ | 2005 06 02 | 703 | 1.2− | 0.1+ | 2006 08 27 | D35 | 0.0 | 0.4+ |
| 2000 02 11 | 704 | 0.9− | 1.0+ | 2005 06 02 | 703 | 0.6− | 0.1− | 2006 08 27 | D35 | 0.1− | 0.8+ |
| 2000 02 11 | 704 | 0.3− | 0.4+ | 2005 06 02 | 703 | (2.3− | 0.2−) | 2006 08 28 | 699 | (2.5+ | 3.8+) |
| 2000 02 11 | 704 | 0.3+ | 0.5+ | 2005 06 02 | 703 | 0.0 | 0.4+ | 2006 08 28 | 699 | 1.0+ | 1.1+ |
| 2000 02 11 | 704 | 1.2+ | 0.0 | 2005 06 09 | 704 | 1.0− | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.0 |
| 2000 02 27 | 703 | 0.4− | 1.2− | 2005 06 09 | 704 | 0.1+ | 0.1− | 2006 08 28 | 699 | (2.5− | 2.8+) |
| 2000 02 27 | 703 | 0.3− | 0.6− | 2005 06 09 | 704 | 0.4+ | 0.4− | 2006 09 19 | 703 | 0.0 | 0.8+ |
| 2000 02 27 | 703 | 0.5− | 0.3+ | 2005 06 09 | 704 | 1.0− | 0.5− | 2006 09 19 | 703 | 0.4− | 0.1− |
| 2000 02 27 | 703 | 0.2+ | 0.3− | 2005 06 09 | 703 | 0.7− | 0.5+ | 2006 09 19 | 703 | 1.3− | 1.4+ |
| 2000 02 28 | 704 | 0.2− | 0.5+ | 2005 06 09 | 703 | 0.3− | 0.2− | 2006 09 19 | 703 | 1.1− | 0.2− |
| 2000 02 28 | 704 | 0.2− | 0.1− | 2005 06 09 | 703 | 1.1− | 0.2+ | 2006 09 25 | 703 | 0.5+ | 0.4+ |
| 2000 02 28 | 704 | 0.2+ | 0.3+ | 2005 06 09 | 703 | 0.4+ | 0.4− | 2006 09 25 | 703 | 0.9+ | 1.2− |
| 2000 02 28 | 704 | 0.3− | 0.5+ | 2005 06 13 | 691 | 0.2+ | 0.0 | 2006 09 25 | 703 | 1.3− | 0.1+ |
| 2000 02 28 | 704 | 0.1− | 0.6+ | 2005 06 13 | 691 | 0.2+ | 0.0 | 2006 09 25 | 703 | 0.9− | 0.3+ |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2005 06 13 | 691 | 0.2− | 0.6+ | 2006 10 02 | F84 | 0.5+ | 1.1+ |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2005 06 17 | 691 | 0.1− | 0.0 | 2006 10 02 | F84 | 0.2+ | 0.6− |

**(137985)∗ 2000 $CP_{56}$ = 2002 $RB_{189}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37318)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.96709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22919074 | $\omega$ | 144.98773 | | −0.72717193 | −0.68585160 | |
| $a$ | 2.6444661 | $\Omega$ | 351.52633 | | +0.57677703 | −0.58771337 | |
| $e$ | 0.1268835 | $i$ | 11.26475 | | +0.37222203 | −0.42918594 | |
| $P$ | 4.30 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 01 | 703 | 0.7+ | 0.3+ | 2002 09 13 | 644 | 0.0 | 0.9+ | 2003 12 17 | 699 | 0.5+ | 0.1− |
| 2000 02 01 | 703 | 0.4+ | 0.6+ | 2002 09 13 | 644 | 0.1− | 0.9+ | 2003 12 17 | 699 | 0.2− | 0.4− |
| 2000 02 01 | 703 | 0.7− | 0.6+ | 2002 09 15 | 699 | 0.2− | 0.0 | 2003 12 29 | 704 | 0.5− | 0.2− |
| 2000 02 01 | 703 | 0.5− | 0.1+ | 2002 09 15 | 699 | 0.3+ | 0.2− | 2003 12 29 | 704 | 0.3− | 0.0 |
| 2000 02 04 | 704 | 0.0 | 1.9+ | 2002 09 15 | 699 | 0.1− | 0.3− | 2003 12 29 | 704 | 0.3+ | 0.2− |
| 2000 02 04 | 704 | 0.3+ | 1.1+ | 2002 09 15 | 699 | 0.5− | 0.1+ | 2003 12 29 | 704 | 0.2− | 0.2− |
| 2000 02 04 | 704 | 0.7− | 0.1+ | 2002 09 15 | 608 | 0.3− | 0.6+ | 2003 12 30 | 704 | 0.2+ | 0.7+ |
| 2000 02 04 | 704 | 1.1− | 0.1+ | 2002 09 15 | 608 | 0.5− | 0.0 | 2003 12 30 | 704 | 0.2− | 0.2− |
| 2000 02 06 | 704 | 0.3+ | 1.7+ | 2002 09 15 | 608 | 0.6− | 0.4+ | 2003 12 30 | 704 | 0.5− | 0.9− |
| 2000 02 06 | 704 | 0.4+ | 0.6+ | 2002 09 27 | 699 | 0.4+ | 0.9− | 2003 12 30 | 704 | 0.2− | 0.5− |
| 2000 02 06 | 704 | 0.2− | 0.5+ | 2002 09 27 | 699 | (0.9+ | 1.5+) | 2003 12 30 | 704 | 0.6− | 0.1− |
| 2000 02 06 | 704 | 0.1+ | 0.5− | 2002 09 27 | 699 | 0.8+ | 1.1+ | 2004 01 19 | 704 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.6+ | 0.2+ | 2002 09 27 | 699 | 0.1− | 0.4+ | 2004 01 19 | 704 | 0.2+ | 0.5+ |
| 2000 02 11 | 704 | 0.7+ | 0.7+ | 2002 10 03 | 704 | 1.2− | 0.2+ | 2004 01 19 | 704 | 0.3+ | 0.6+ |
| 2000 02 11 | 704 | 0.6+ | 0.2+ | 2002 10 03 | 704 | 1.1− | 0.2+ | 2004 01 19 | 704 | 0.6+ | 0.2+ |
| 2000 02 11 | 704 | 0.2+ | 0.6+ | 2002 10 03 | 704 | 1.0− | 0.9+ | 2004 01 19 | 704 | 0.1− | 0.4+ |
| 2000 02 11 | 704 | 0.1+ | 0.4+ | 2002 10 03 | 704 | 0.4− | 1.4+ | 2004 02 11 | 704 | 0.4− | 0.2− |
| 2000 02 11 | 704 | 0.6+ | 0.1+ | 2002 10 03 | 704 | 1.0− | 0.2− | 2004 02 11 | 704 | 0.3− | 1.0− |
| 2000 02 25 | 703 | 1.2+ | 0.5+ | 2002 10 04 | 291 | 0.1+ | 0.3+ | 2004 02 11 | 704 | 0.5− | 1.3− |
| 2000 02 25 | 703 | 0.6+ | 0.0 | 2002 10 04 | 291 | 0.3+ | 0.3+ | 2004 02 11 | 704 | 0.1+ | 1.0− |
| 2000 02 25 | 703 | 0.2− | 1.3+ | 2002 10 04 | 291 | 0.0 | 0.2+ | 2004 02 11 | 704 | 0.4− | 0.8− |
| 2000 02 25 | 703 | 0.2+ | 0.4− | 2002 10 07 | 704 | (1.8+ | 0.5+) | 2006 08 16 | 644 | 0.4− | 1.2+ |
| 2000 03 05 | 704 | 0.6+ | 1.1+ | 2002 10 07 | 704 | 0.1− | 0.9+ | 2006 08 16 | 644 | 0.6− | 0.5+ |
| 2000 03 05 | 704 | 0.4+ | 0.3+ | 2002 10 07 | 704 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.6− | 0.6+ |
| 2000 03 05 | 704 | 0.4+ | 0.4+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.3− | 0.2+ |
| 2000 03 05 | 704 | 0.4+ | 0.5+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.3− | 0.2+ |
| 2000 03 05 | 704 | 0.8+ | 0.1− | 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.2− | 0.5+ |
| 2000 03 08 | 608 | 0.3+ | 0.3− | 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 08 18 | 644 | 0.3− | 0.4+ |
| 2000 03 08 | 608 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2000 03 08 | 608 | 0.5+ | 0.0 | 2002 10 11 | 704 | 0.7− | 1.1+ | 2006 08 18 | 644 | 0.2− | 0.3+ |
| 2000 03 12 | 704 | 0.3− | 1.3+ | 2002 10 11 | 704 | (1.7+ | 0.3+) | 2006 08 23 | 644 | 0.3− | 0.9+ |
| 2000 03 12 | 704 | 0.6+ | 0.0 | 2002 10 11 | 645 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.7− | 0.3+ |
| 2000 03 12 | 704 | 0.0 | 0.5− | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.1− | 0.6+ |
| 2000 03 12 | 704 | 0.9+ | 0.1− | 2003 12 17 | 704 | 0.7+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2000 03 12 | 704 | 0.1+ | 0.5+ | 2003 12 17 | 704 | 0.5+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2002 08 30 | 291 | 0.2+ | 0.3+ | 2003 12 17 | 704 | 0.1+ | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 08 30 | 291 | 0.1+ | 0.3+ | 2003 12 17 | 704 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 08 30 | 291 | 0.3+ | 0.3+ | 2003 12 17 | 699 | 0.3− | 0.2− | | | | |
| 2002 09 13 | 644 | 0.3− | 0.8+ | 2003 12 17 | 699 | 0.3+ | 0.5− | | | | |

**(137986)∗ 2000 CG$_{60}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.92060 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26774985 | $\omega$ | 73.37746 | | +0.90703772 | −0.41721473 | |
| $a$ | 2.3840566 | $\Omega$ | 311.24281 | | +0.35183575 | +0.82500015 | |
| $e$ | 0.2398784 | $i$ | 4.32429 | | +0.23128810 | +0.38119106 | |
| $P$ | 3.68 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.1+ | 0.6+ | 2002 09 08 | 946 | 0.8+ | 0.7− | 2002 12 06 | 704 | 0.1− | 0.6− |
| 2000 02 02 | 704 | 0.3− | 0.2− | 2002 10 04 | 704 | 0.2− | 0.4+ | 2002 12 06 | 704 | 0.2− | 0.1− |
| 2000 02 02 | 704 | 0.1+ | 0.7− | 2002 10 04 | 704 | 0.1− | 0.5+ | 2002 12 06 | 704 | 1.0− | 0.2+ |
| 2000 02 02 | 704 | 0.6+ | 0.2− | 2002 10 04 | 704 | 0.1− | 0.6+ | 2002 12 06 | 704 | 0.1+ | 0.2+ |
| 2000 02 02 | 704 | 0.2+ | 0.3− | 2002 10 04 | 644 | 0.3− | 0.9+ | 2002 12 11 | 704 | 0.3− | 0.7+ |
| 2000 02 07 | 557 | 0.2− | 0.3− | 2002 10 04 | 704 | 0.1− | 0.7+ | 2002 12 11 | 704 | 0.2− | 0.4+ |
| 2000 02 07 | 557 | 0.1− | 0.1+ | 2002 10 04 | 644 | 0.3− | 0.9+ | 2002 12 11 | 704 | 0.1+ | 0.5+ |
| 2000 02 07 | 557 | 0.8− | 0.5− | 2002 10 04 | 704 | 0.0 | 0.9+ | 2002 12 11 | 704 | 0.4+ | 0.3− |
| 2000 02 07 | 557 | 1.3− | 0.3+ | 2002 10 04 | 644 | 0.3− | 1.0+ | 2002 12 11 | 704 | 1.0+ | 0.2+ |
| 2000 02 08 | 704 | 0.5+ | 0.8+ | 2002 10 07 | 699 | 0.3− | 0.0 | 2003 01 01 | 704 | 0.1− | 0.3− |
| 2000 02 08 | 704 | 0.3− | 0.7+ | 2002 10 07 | 699 | 0.0 | 0.1− | 2003 01 01 | 704 | 0.4− | 1.2− |
| 2000 02 08 | 704 | 1.1+ | 0.4+ | 2002 10 07 | 699 | 0.1+ | 0.2+ | 2003 01 01 | 704 | 0.3+ | 0.0 |
| 2000 02 08 | 704 | 0.7− | 0.3+ | 2002 10 07 | 699 | 0.0 | 0.2− | 2003 01 01 | 704 | 0.3− | 1.2− |
| 2000 02 08 | 704 | 0.4− | 1.3+ | 2002 10 09 | 704 | 0.2− | 0.1− | 2003 01 01 | 704 | 0.2+ | 0.6− |
| 2000 02 10 | 557 | 0.5+ | 1.1− | 2002 10 09 | 704 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.0 | 0.1− |
| 2000 02 10 | 557 | 1.4− | 0.3− | 2002 10 09 | 704 | 0.1− | 0.4− | 2003 01 05 | 704 | 0.2− | 0.1− |
| 2000 02 10 | 557 | 0.1+ | 0.2− | 2002 10 09 | 704 | 0.3− | 0.3− | 2003 01 05 | 704 | 0.4− | 0.2− |
| 2000 02 10 | 557 | 0.9+ | 0.2+ | 2002 10 09 | 704 | 0.2− | 0.5− | 2003 01 05 | 704 | 0.2− | 0.3− |
| 2000 02 10 | 557 | 0.0 | 0.3− | 2002 10 12 | 704 | 0.2+ | 0.2− | 2003 02 01 | 704 | 0.4+ | 0.6− |
| 2000 02 11 | 704 | 1.5+ | 0.3+ | 2002 10 12 | 704 | 0.6+ | 0.0 | 2003 02 01 | 704 | 0.4+ | 0.0 |
| 2000 02 11 | 704 | 0.6+ | 1.3+ | 2002 10 12 | 704 | 0.4− | 0.4− | 2003 02 01 | 704 | 0.8+ | 0.6− |
| 2000 02 11 | 704 | 1.1+ | 0.2− | 2002 10 12 | 704 | 0.3+ | 0.0 | 2003 02 01 | 704 | 0.1+ | 0.5− |
| 2000 02 11 | 704 | 0.0 | 0.3− | 2002 10 12 | 704 | 0.4+ | 0.2+ | 2003 02 01 | 704 | 0.7− | 0.4− |
| 2000 02 12 | 704 | 1.5+ | 0.1− | 2002 10 24 | 608 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.2+ |
| 2000 02 12 | 704 | 0.1+ | 0.4− | 2002 10 24 | 608 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.5+ | 0.4− |
| 2000 02 12 | 704 | 0.2− | 0.2+ | 2002 10 24 | 608 | 0.7+ | 1.1+ | 2004 03 18 | 704 | 0.6− | 0.9+ |
| 2000 02 12 | 704 | 0.5+ | 1.3+ | 2002 10 30 | 644 | (0.2− | 2.3−) | 2004 03 18 | 704 | 1.1+ | 0.1− |
| 2000 02 27 | 703 | (2.3+ | 0.7+) | 2002 10 30 | 644 | 1.0− | 0.9− | 2004 03 18 | 704 | 0.1+ | 0.7+ |
| 2000 02 27 | 703 | 0.1+ | 0.3+ | 2002 10 30 | 644 | 0.4− | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.3− |
| 2000 02 27 | 703 | 0.9− | 0.0 | 2002 10 31 | 644 | 0.5− | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.7+ |
| 2000 02 27 | 703 | 0.8+ | 1.5+ | 2002 10 31 | 644 | 0.5− | 0.0 | 2004 03 20 | 704 | 0.0 | 0.6+ |
| 2000 02 29 | 704 | 0.4− | 0.9+ | 2002 10 31 | 644 | 0.5− | 0.1+ | 2004 03 27 | 704 | 0.8+ | 1.0+ |
| 2000 02 29 | 704 | 0.2− | 0.0 | 2002 11 03 | 704 | 0.3− | 0.9+ | 2004 03 27 | 704 | 1.4+ | 0.9− |
| 2000 02 29 | 704 | 0.2− | 0.5+ | 2002 11 03 | 704 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.9+ | 0.2− |
| 2000 02 29 | 704 | 0.2+ | 0.3+ | 2002 11 03 | 704 | 0.4− | 1.1+ | 2004 03 27 | 704 | 1.4+ | 0.9− |
| 2000 02 29 | 704 | 0.3+ | 0.2+ | 2002 11 03 | 704 | 0.3− | 1.4+ | 2004 04 12 | 691 | 0.0 | 0.5+ |
| 2000 03 03 | 704 | 0.4+ | 0.1− | 2002 11 03 | 704 | 0.4− | 0.1+ | 2004 04 12 | 691 | 0.1+ | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.5− | 2002 11 08 | 704 | 0.8+ | 0.4+ | 2004 04 12 | 691 | 0.5+ | 0.2+ |
| 2000 03 03 | 704 | 0.1− | 0.2− | 2002 11 08 | 704 | 0.9+ | 0.2+ | 2004 04 17 | 691 | 0.1− | 0.5+ |
| 2000 03 05 | 704 | 0.5+ | 0.2− | 2002 11 08 | 704 | 1.0+ | 0.3+ | 2004 04 17 | 691 | 0.7− | 0.1− |
| 2000 03 05 | 704 | 0.3− | 0.1− | 2002 11 08 | 704 | 1.3+ | 0.4− | 2004 04 17 | 691 | 0.1− | 0.5+ |
| 2000 03 05 | 704 | 1.1− | 1.6+ | 2002 11 08 | 704 | 0.5+ | 0.6− | 2005 01 20 | 809 | 0.9− | 0.4+ |
| 2000 03 05 | 704 | 0.5− | 0.5+ | 2002 11 11 | 644 | 0.0 | 0.1− | 2005 01 20 | 809 | 0.4− | 0.7+ |
| 2002 08 11 | 704 | (2.7+ | 5.4+) | 2002 11 11 | 644 | 0.2+ | 0.1− | 2005 01 20 | 809 | 0.5+ | 0.3+ |
| 2002 08 11 | 704 | (1.7+ | 2.9+) | 2002 11 11 | 644 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.5− |
| 2002 08 11 | 704 | (2.4+ | 3.3+) | 2002 11 22 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.6− |
| 2002 08 11 | 704 | (1.4+ | 2.7+) | 2002 11 22 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2002 08 11 | 704 | (1.1+ | 2.3+) | 2002 11 22 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2002 09 06 | 704 | 0.1+ | 0.9+ | 2002 12 01 | 704 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.6− | 0.6− |
| 2002 09 06 | 704 | 0.3− | 0.3+ | 2002 12 01 | 704 | 0.4− | 0.1+ | 2006 11 27 | 704 | 0.0 | 0.7− |
| 2002 09 06 | 704 | 0.1− | 1.0+ | 2002 12 01 | 704 | 0.4− | 0.1+ | 2006 11 27 | 704 | 0.0 | 0.8− |
| 2002 09 06 | 704 | 0.7− | 0.4+ | 2002 12 01 | 704 | 0.4− | 0.2− | 2006 11 27 | 704 | 0.3+ | 0.5− |
| 2002 09 06 | 704 | 0.7− | 0.6+ | 2002 12 01 | 704 | 0.5− | 0.4− | 2006 11 27 | 704 | 1.2+ | 0.7− |
| 2002 09 07 | 946 | (0.2− | 1.8+) | 2002 12 01 | 608 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.8+ |
| 2002 09 07 | 946 | 1.1− | 1.3+ | 2002 12 01 | 608 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2002 09 08 | 946 | 0.8− | 0.9+ | 2002 12 01 | 608 | 0.3− | 0.2− | 2006 11 29 | 704 | 1.3− | 0.2+ |
| 2002 09 08 | 946 | 0.1− | 0.5+ | 2002 12 06 | 704 | (2.3+ | 0.1−) | | | | |

**(137987)∗ 2000 CN$_{61}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.99908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23420762 | $\omega$ | 357.67991 | | −0.98261879 | +0.18324100 | |
| $a$ | 2.6065659 | $\Omega$ | 192.99357 | | −0.16811769 | −0.94630146 | |
| $e$ | 0.1397422 | $i$ | 7.59469 | | −0.07871946 | −0.26633866 | |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 06 | 691 | 0.3+ | 0.7+ | 2002 10 03 | 704 | 0.5− | 0.4+ | 2004 02 17 | 608 | 0.2+ | 0.8− |
| 1992 05 06 | 691 | 0.2+ | 1.1+ | 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 02 17 | 608 | 0.3− | 0.3− |
| 1992 05 06 | 691 | 0.0 | 0.6+ | 2002 10 03 | 704 | 0.2+ | 0.5+ | 2004 02 18 | 704 | 0.5+ | 0.1+ |
| 2000 02 02 | 704 | 0.4+ | 0.3− | 2002 10 03 | 704 | 0.6+ | 0.4+ | 2004 02 18 | 704 | 0.0 | 0.3− |
| 2000 02 02 | 704 | 0.1+ | 0.2+ | 2002 10 11 | 644 | 0.5− | 0.4+ | 2004 02 18 | 704 | 0.1+ | 0.6+ |
| 2000 02 02 | 704 | 0.1− | 0.5− | 2002 10 11 | 704 | 0.2− | 0.3− | 2004 02 18 | 704 | (1.6+ | 0.2−) |
| 2000 02 02 | 704 | 1.0− | 0.9− | 2002 10 11 | 704 | 0.5− | 0.3− | 2004 02 18 | 704 | 0.3− | 0.3+ |
| 2000 02 08 | 704 | 1.6+ | 0.7+ | 2002 10 11 | 704 | 1.3− | 1.1+ | 2004 03 11 | 644 | 0.1+ | 0.2+ |
| 2000 02 08 | 704 | 0.7+ | 0.2+ | 2002 10 11 | 644 | 0.3− | 0.5+ | 2004 03 11 | 644 | 0.1− | 0.5+ |
| 2000 02 08 | 704 | 0.4− | 1.1+ | 2002 10 11 | 704 | 0.3+ | 0.7+ | 2004 03 11 | 644 | 0.0 | 0.2+ |
| 2000 02 08 | 704 | 0.6+ | 1.1− | 2002 10 11 | 644 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.6− |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2002 10 30 | 644 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.6+ | 0.4+ |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2002 10 30 | 644 | 0.2+ | 0.7+ | 2004 03 19 | 704 | 0.3− | 0.1− |
| 2000 03 11 | 699 | 0.6+ | 0.1+ | 2002 10 30 | 644 | 1.0+ | 1.0+ | 2004 03 19 | 704 | 0.8− | 1.5+ |
| 2000 03 11 | 699 | 0.1− | 0.6+ | 2004 01 23 | 699 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.3− | 0.6+ |
| 2000 03 11 | 699 | 1.0− | 0.0 | 2004 01 23 | 699 | 0.6− | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.6+ |
| 2000 03 11 | 699 | 0.2− | 0.5+ | 2004 01 23 | 699 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2000 04 04 | 699 | 1.9+ | 0.4+ | 2004 01 23 | 699 | 0.4− | 0.7− | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2000 04 04 | 699 | 0.4+ | 0.3+ | 2004 01 25 | 608 | (1.7+ | 0.7+) | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2000 04 04 | 699 | 0.2− | 1.2+ | 2004 01 25 | 608 | 1.3+ | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 2000 04 04 | 699 | 0.8+ | 0.2− | 2004 01 25 | 608 | 1.0+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2000 04 24 | 837 | 0.8− | 0.2+ | 2004 01 27 | 699 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2000 04 24 | 837 | 0.2− | 0.8− | 2004 01 27 | 699 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2000 04 24 | 837 | 0.4+ | 0.4− | 2004 01 27 | 699 | 0.3+ | 0.4− | 2006 10 13 | 143 | 0.3− | 1.1− |
| 2000 04 24 | 837 | 1.0+ | 0.5+ | 2004 01 27 | 699 | 0.2− | 0.3+ | 2006 10 13 | 143 | 0.0 | 0.3+ |
| 2000 04 24 | 837 | 1.3− | 0.4− | 2004 01 29 | 704 | 0.3+ | 1.2+ | 2006 10 13 | 143 | 0.3+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 699 | 0.7− | 0.2− | 2004 01 29 | 704 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2000 04 25 | 699 | (1.6+ | 2.3+) | 2004 01 29 | 704 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2000 04 25 | 699 | (2.6+ | 0.2−) | 2004 01 29 | 704 | 1.2+ | 1.0+ | 2006 10 16 | G96 | 0.3− | 0.2− |
| 2000 04 25 | 699 | 0.1+ | 0.9+ | 2004 01 29 | 704 | 0.1+ | 0.6+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2000 05 03 | 704 | 0.2+ | 0.0 | 2004 02 11 | 644 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2000 05 03 | 704 | 0.5− | 0.7− | 2004 02 11 | 644 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.9− |
| 2000 05 03 | 704 | 0.8+ | 0.6+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.6− | 0.2− |
| 2000 05 03 | 704 | 0.1+ | 0.2− | 2004 02 17 | 608 | 0.1+ | 0.6− | 2006 11 14 | G96 | 0.3− | 0.6+ |

**(137988)∗ 2000 $CA_{62}$ = 2002 $TH_{232}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37319)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 246.34918 | | (2000.0) | | | |
| $n$ | 0.24107810 | $\omega$ | 172.82212 | | −0.62346959 | −0.76438271 |
| $a$ | 2.5568046 | $\Omega$ | 315.56894 | | +0.70515897 | −0.45897312 |
| $e$ | 0.1034222 | $i$ | 13.57641 | | +0.33769290 | −0.45283855 |
| $P$ | 4.09 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.2+ | 0.3+ | 2003 11 29 | 703 | 0.3− | 0.4− | 2004 02 23 | 704 | 0.0 | 0.1− |
| 2000 02 02 | 704 | 1.1+ | 0.2+ | 2003 11 29 | 703 | 0.7− | 0.6− | 2004 02 25 | 704 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 1.3+ | 0.6+ | 2003 11 29 | 703 | 0.9− | 0.9− | 2004 02 25 | 704 | 0.3− | 0.0 |
| 2000 02 02 | 704 | 0.6+ | 0.3+ | 2003 11 29 | 703 | 0.6− | 0.3− | 2004 02 25 | 704 | 0.3− | 0.4+ |
| 2000 02 02 | 704 | 0.1− | 0.3+ | 2003 12 01 | 704 | 0.2− | 0.0 | 2004 02 25 | 704 | 0.0 | 0.1+ |
| 2000 02 08 | 704 | 0.0 | 0.1− | 2003 12 01 | 704 | 0.8+ | 1.0+ | 2004 02 25 | 704 | 0.2− | 0.1+ |
| 2000 02 08 | 704 | 0.1− | 0.2− | 2003 12 01 | 704 | 0.6+ | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.0 |
| 2000 02 08 | 704 | 0.1− | 0.3+ | 2003 12 20 | 704 | 0.3+ | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.0 |
| 2000 02 08 | 704 | 0.4+ | 0.1− | 2003 12 20 | 704 | 0.3+ | 0.2+ | 2004 02 26 | 704 | 0.7− | 0.0 |
| 2000 02 08 | 704 | 0.0 | 1.3− | 2003 12 20 | 704 | 0.6+ | 0.2+ | 2004 02 26 | 704 | 0.2− | 0.5− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2003 12 20 | 704 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.2− | 0.0 |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2003 12 20 | 704 | 0.2− | 0.4+ | 2004 03 10 | 608 | 0.1+ | 0.4− |
| 2000 03 08 | 704 | 0.1+ | 0.4+ | 2003 12 21 | 704 | 0.3− | 0.1− | 2004 03 10 | 608 | 0.4+ | 0.8− |
| 2000 03 08 | 704 | 0.2+ | 0.8+ | 2003 12 21 | 704 | 0.3+ | 0.2− | 2004 03 10 | 608 | 0.5+ | 0.7− |
| 2000 03 08 | 704 | 0.7− | 0.6+ | 2003 12 21 | 704 | 0.5+ | 0.4+ | 2004 03 15 | 704 | 0.6+ | 0.0 |
| 2000 03 08 | 704 | 0.4+ | 0.6− | 2003 12 21 | 704 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.3+ |
| 2000 04 04 | 699 | 0.5− | 0.1+ | 2003 12 21 | 704 | 0.0 | 0.5+ | 2004 03 15 | 704 | 0.8+ | 0.3+ |
| 2000 04 04 | 699 | 0.5+ | 0.6− | 2003 12 28 | 699 | 0.5− | 0.6− | 2004 03 15 | 704 | 0.5+ | 0.6+ |
| 2000 04 04 | 699 | 0.7− | 0.6+ | 2003 12 28 | 699 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.3+ | 0.0 |
| 2000 04 04 | 699 | 1.0− | 0.6+ | 2003 12 28 | 699 | 1.0− | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.3+ |
| 2002 09 14 | 699 | 1.0− | 0.5+ | 2003 12 28 | 699 | 1.0− | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.1+ |
| 2002 09 14 | 699 | 0.9+ | 0.5+ | 2004 01 05 | 699 | 0.2+ | 0.8− | 2004 03 19 | 704 | 0.1+ | 0.4+ |
| 2002 09 14 | 699 | 0.7− | 0.3+ | 2004 01 05 | 699 | 1.1− | 0.6− | 2004 03 19 | 704 | 0.4+ | 0.6+ |
| 2002 09 14 | 699 | 0.8+ | 0.6− | 2004 01 05 | 699 | 0.5+ | 0.8+ | 2004 03 19 | 704 | 0.8− | 0.5+ |
| 2002 10 06 | 704 | 0.8− | 0.0 | 2004 01 05 | 699 | 0.0 | 0.2− | 2004 03 27 | 703 | 1.4+ | 0.0 |
| 2002 10 06 | 704 | 0.7− | 0.2− | 2004 01 24 | 704 | 0.7− | 0.0 | 2004 03 27 | 703 | 0.7+ | 0.2+ |
| 2002 10 06 | 704 | 0.1+ | 0.4+ | 2004 01 24 | 704 | 0.0 | 0.0 | 2004 03 27 | 703 | 0.1− | 0.3+ |
| 2002 10 06 | 704 | 0.0 | 0.1+ | 2004 01 24 | 704 | 0.8− | 0.1− | 2004 03 27 | 703 | 0.1+ | 0.2+ |
| 2002 10 06 | 704 | 0.3+ | 0.1+ | 2004 01 24 | 704 | 1.0− | 0.3− | 2006 08 29 | 699 | 1.1+ | 0.1+ |
| 2002 10 10 | 704 | 0.2− | 0.6+ | 2004 01 29 | 704 | 0.6+ | 0.7+ | 2006 08 29 | 699 | 0.4− | 0.2+ |
| 2002 10 10 | 704 | 0.5+ | 0.2− | 2004 01 29 | 704 | 0.6− | 0.6− | 2006 08 29 | 699 | 0.4− | 0.9+ |
| 2002 10 10 | 704 | 0.9− | 0.1− | 2004 01 29 | 704 | 0.2− | 0.2+ | 2006 08 29 | 699 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.6− | 0.5− | 2004 01 29 | 704 | 1.1− | 1.2+ | 2006 09 06 | 644 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.2− | 0.4− | 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.3− | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.3− | 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 09 06 | 644 | 0.4− | 0.3+ |
| 2002 10 11 | 704 | 0.1+ | 0.5− | 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 2002 10 11 | 704 | 0.8+ | 0.5+ | 2004 02 12 | 644 | 0.3+ | 0.4− | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 0.6+ | 0.9− | 2004 02 12 | 644 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.5+ | 1.2+ |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2004 02 12 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 106 | (1.6− | 1.8−) |
| 2002 10 11 | 704 | 1.0+ | 0.4− | 2004 02 14 | 699 | 0.4− | 0.0 | 2006 09 20 | 106 | 0.1+ | 0.9− |
| 2002 10 11 | 704 | 0.0 | 0.5− | 2004 02 14 | 699 | 0.2+ | 0.0 | 2006 09 20 | 106 | 0.5− | 0.3+ |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2004 02 14 | 699 | 0.1+ | 0.0 | 2006 09 20 | 106 | 0.2+ | 0.5− |
| 2002 10 15 | 644 | 0.1− | 0.6+ | 2004 02 14 | 699 | 0.4− | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.3+ |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2004 02 15 | 608 | 0.3+ | 0.7− | 2006 09 21 | 699 | 0.3+ | 0.5+ |
| 2002 10 15 | 644 | 0.2− | 0.5+ | 2004 02 15 | 608 | 0.5+ | 0.5− | 2006 09 21 | 699 | 0.3− | 0.1− |
| 2003 11 20 | 704 | 0.1− | 0.1− | 2004 02 15 | 608 | 0.4+ | 0.7− | 2006 09 21 | 699 | 0.8+ | 0.2+ |
| 2003 11 20 | 704 | 0.3− | 0.6+ | 2004 02 18 | 704 | 0.5− | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.4+ |
| 2003 11 20 | 704 | 1.2+ | 0.4+ | 2004 02 18 | 704 | 0.2− | 0.2+ | 2006 10 20 | 703 | 0.5− | 0.4+ |
| 2003 11 20 | 704 | 0.1+ | 0.9+ | 2004 02 18 | 704 | 0.2− | 0.1− | 2006 10 20 | 703 | 0.5− | 0.4− |
| 2003 11 21 | 699 | 0.1− | 0.5+ | 2004 02 18 | 704 | 0.6− | 0.1− | 2006 10 20 | 703 | 0.5− | 0.4− |
| 2003 11 21 | 699 | (1.0+ | 1.8+) | 2004 02 23 | 704 | 0.2+ | 0.2− | 2006 11 10 | 941 | 0.3− | 1.1− |
| 2003 11 21 | 699 | 1.1− | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.0 | 2006 11 10 | 941 | 0.1− | 0.4− |
| 2003 11 21 | 699 | 0.6+ | 0.8− | 2004 02 23 | 704 | 1.3+ | 0.5− | 2006 11 10 | 941 | 0.3+ | 0.6− |

**(137989)∗ 2000 $CB_{62}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.97348 | | (2000.0) | | | |
| $n$ | 0.28226346 | $\omega$ | 327.10472 | | +0.42320490 | +0.87428027 |
| $a$ | 2.3016164 | $\Omega$ | 326.11686 | | −0.71151226 | +0.15822842 |
| $e$ | 0.1546152 | $i$ | 25.24447 | | −0.56093486 | +0.45890933 |
| $P$ | 3.49 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.5+ | 0.4+ | 2001 08 17 | 704 | 1.3− | 0.4+ | 2001 11 13 | 704 | 0.1− | 0.7+ |
| 2000 02 02 | 704 | 0.6+ | 0.4+ | 2001 08 17 | 704 | 1.0− | 0.9+ | 2001 11 17 | 704 | 1.3+ | 0.0 |
| 2000 02 02 | 704 | 0.1+ | 0.6+ | 2001 08 17 | 704 | 0.4− | 1.1+ | 2001 11 17 | 704 | 1.3+ | 0.4+ |
| 2000 02 02 | 704 | 0.5+ | 0.2+ | 2001 08 17 | 704 | 0.6− | 0.7+ | 2001 11 17 | 704 | 1.0+ | 0.1− |
| 2000 02 02 | 704 | 0.5− | 0.7+ | 2001 08 21 | 704 | 0.0 | 0.1+ | 2002 12 15 | 704 | 0.5− | 0.0 |
| 2000 02 08 | 704 | 0.6+ | 0.0 | 2001 08 21 | 704 | 0.3+ | 0.2+ | 2002 12 15 | 704 | 0.4+ | 0.2+ |
| 2000 02 08 | 704 | 0.2+ | 0.1− | 2001 08 21 | 704 | 0.1− | 0.5+ | 2002 12 15 | 704 | 0.2+ | 1.0+ |
| 2000 02 08 | 704 | 1.0+ | 0.3− | 2001 08 21 | 704 | 0.1+ | 0.8+ | 2002 12 15 | 704 | 0.3+ | 1.1+ |
| 2000 02 08 | 704 | 1.2+ | 0.2+ | 2001 08 21 | 704 | 0.6+ | 0.8+ | 2003 01 10 | 704 | 0.4+ | 0.1− |
| 2000 02 08 | 704 | 0.6+ | 0.3+ | 2001 08 24 | 699 | 0.5− | 0.3+ | 2003 01 10 | 704 | 0.9+ | 0.8+ |
| 2000 03 03 | 703 | 0.9+ | 0.1− | 2001 08 24 | 699 | 0.4− | 0.2+ | 2003 01 10 | 704 | 0.8+ | 0.7+ |
| 2000 03 03 | 703 | 0.3+ | 0.8+ | 2001 08 24 | 699 | 0.1− | 0.5+ | 2003 01 13 | 704 | 0.4− | 0.6+ |
| 2000 03 03 | 703 | 0.7+ | 0.3− | 2001 08 24 | 699 | 0.1− | 0.6+ | 2003 01 13 | 704 | 1.2+ | 0.6+ |
| 2000 03 03 | 703 | 0.4− | 0.0 | 2001 09 09 | 699 | 0.8− | 0.1+ | 2003 01 13 | 704 | 0.3+ | 0.3+ |
| 2000 03 04 | 703 | 1.2+ | 1.5+ | 2001 09 09 | 699 | 0.7− | 0.2+ | 2003 01 13 | 704 | 0.9+ | 0.6− |
| 2000 03 04 | 703 | 1.0+ | 0.2− | 2001 09 09 | 699 | 0.2− | 0.4+ | 2003 03 05 | 704 | 1.0− | 0.0 |
| 2000 03 04 | 703 | 0.1+ | 1.2+ | 2001 09 09 | 699 | 0.4− | 0.2+ | 2003 03 05 | 704 | 1.4− | 0.4+ |
| 2000 03 04 | 703 | 1.5+ | 1.0− | 2001 09 10 | 704 | 0.0 | 0.6+ | 2003 03 05 | 704 | 0.3− | 0.4− |
| 2000 03 09 | 704 | 0.6+ | 0.9+ | 2001 09 10 | 704 | 0.1+ | 0.3+ | 2003 03 05 | 704 | 1.4− | 0.4− |
| 2000 03 09 | 704 | 0.7+ | 0.6+ | 2001 09 10 | 704 | 0.1− | 0.2+ | 2003 03 07 | 644 | 0.1+ | 0.6+ |
| 2000 03 09 | 704 | 0.7+ | 0.6+ | 2001 09 10 | 704 | 0.0 | 0.4+ | 2003 03 07 | 644 | 0.3+ | 0.5+ |
| 2000 03 09 | 704 | 0.4+ | 0.8+ | 2001 09 10 | 704 | 0.1− | 0.1+ | 2003 03 07 | 644 | 0.3+ | 0.6+ |
| 2000 03 09 | 704 | 0.6+ | 1.0+ | 2001 09 18 | 645 | 0.1− | 0.1− | 2005 11 21 | 704 | 0.2+ | 0.4− |
| 2000 04 04 | 699 | 0.2− | 0.0 | 2001 09 18 | 645 | 0.1− | 0.1− | 2005 11 21 | 704 | 0.4+ | 0.1+ |
| 2000 04 04 | 699 | 0.1− | 0.2+ | 2001 09 27 | 644 | 0.3− | 0.3+ | 2005 11 21 | 704 | 0.5+ | 0.1− |
| 2000 04 04 | 699 | 0.9− | 0.4+ | 2001 09 27 | 644 | 0.2− | 0.4+ | 2005 11 21 | 704 | 0.0 | 0.0 |
| 2000 04 04 | 699 | 0.3− | 0.1+ | 2001 09 27 | 644 | 0.0 | 0.2+ | 2005 11 21 | 704 | 0.1+ | 0.6− |
| 2001 07 08 | 644 | 0.5− | 0.6+ | 2001 09 30 | 644 | 0.1− | 0.3+ | 2005 12 21 | 704 | 0.5+ | 0.5− |
| 2001 07 08 | 644 | 0.4− | 0.3+ | 2001 09 30 | 644 | 0.2+ | 0.4+ | 2005 12 21 | 704 | 0.5+ | 0.4− |
| 2001 07 08 | 644 | 0.5− | 0.3+ | 2001 09 30 | 644 | 0.1+ | 0.2+ | 2005 12 21 | 704 | 0.7+ | 0.8− |
| 2001 07 29 | 704 | 0.1− | 0.3+ | 2001 10 17 | 704 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2001 07 29 | 704 | 0.2− | 0.6+ | 2001 10 17 | 704 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.6− |
| 2001 07 29 | 704 | 0.2− | 0.4+ | 2001 10 17 | 704 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2001 07 29 | 704 | 0.1− | 0.3+ | 2001 10 17 | 704 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.4− | 0.1+ |
| 2001 07 29 | 704 | 0.1− | 0.5+ | 2001 10 17 | 704 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.2− | 0.3+ |
| 2001 08 03 | 608 | 0.1− | 0.0 | 2001 11 13 | 704 | 0.9+ | 0.4− | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2001 08 03 | 608 | 0.0 | 0.3− | 2001 11 13 | 704 | 0.2− | 0.4− | 2006 11 21 | 691 | 0.2+ | 0.2− |
| 2001 08 03 | 608 | 0.1− | 0.4− | 2001 11 13 | 704 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.3− | 0.1− |
| 2001 08 17 | 704 | 1.5− | 0.9+ | 2001 11 13 | 704 | 0.4− | 0.6+ | 2006 11 21 | 691 | 0.0 | 0.1− |

**(137990)∗ 2000 $CD_{62}$ = 2002 $RH_{95}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34885)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.85943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26060416 | $\omega$ | 279.20979 | | −0.22562041 | −0.97413882 | |
| $a$ | 2.4274399 | $\Omega$ | 183.89378 | | +0.94945240 | −0.21706142 | |
| $e$ | 0.1801874 | $i$ | 10.35472 | | +0.21825572 | −0.06275263 | |
| $P$ | 3.78 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.6+ | 0.3+ | 2002 10 11 | 704 | 0.0 | 0.5+ | 2004 04 11 | 644 | 0.4− | 0.3+ |
| 2000 02 02 | 704 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2004 04 11 | 644 | 0.2− | 0.2+ |
| 2000 02 02 | 704 | 0.2− | 0.3+ | 2002 10 11 | 704 | 0.3− | 0.5+ | 2004 04 19 | 704 | 0.2+ | 0.4+ |
| 2000 02 02 | 704 | 0.4− | 0.3− | 2002 10 28 | 644 | 0.2+ | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.4+ |
| 2000 02 02 | 704 | 0.1− | 0.0 | 2002 10 28 | 644 | 0.0 | 0.4+ | 2004 04 19 | 704 | 0.1− | 0.6+ |
| 2000 02 08 | 704 | 0.0 | 0.3− | 2002 10 28 | 644 | 0.2− | 0.1− | 2004 04 19 | 704 | 0.6+ | 0.3+ |
| 2000 02 08 | 704 | 0.0 | 0.0 | 2002 10 30 | 704 | 0.2− | 1.0+ | 2004 04 19 | 704 | 0.6+ | 0.1+ |
| 2000 02 08 | 704 | 0.0 | 0.1− | 2002 10 30 | 704 | 0.3+ | 0.6+ | 2004 04 22 | 704 | 0.4+ | 0.9+ |
| 2000 02 08 | 704 | 0.5+ | 0.3+ | 2002 10 30 | 704 | 0.3− | 0.6+ | 2004 04 22 | 704 | (1.1+ | 1.5+) |
| 2000 02 08 | 704 | 0.3+ | 0.7+ | 2002 10 30 | 704 | 0.4− | 0.5+ | 2004 04 22 | 704 | 0.6+ | 0.7+ |
| 2000 03 08 | 704 | 0.3+ | 0.2+ | 2002 10 30 | 704 | 0.3− | 0.0 | 2004 04 22 | 704 | (3.3+ | 1.5+) |
| 2000 03 08 | 704 | 0.2+ | 0.9+ | 2002 11 02 | 608 | 0.3− | 0.2− | 2004 04 26 | 691 | 0.3− | 0.4+ |
| 2000 03 08 | 704 | 0.3− | 0.8− | 2002 11 02 | 608 | 0.1− | 0.3− | 2004 04 26 | 691 | 0.0 | 0.5+ |
| 2000 03 08 | 704 | (2.4− | 0.3+) | 2002 11 02 | 608 | 0.2− | 0.3− | 2004 04 26 | 691 | 0.1+ | 0.6+ |
| 2000 03 11 | 699 | 0.1+ | 0.1+ | 2002 11 06 | 644 | 0.4− | 0.7+ | 2006 09 15 | 683 | 0.3− | 0.3+ |
| 2000 03 11 | 699 | 0.1− | 0.2+ | 2002 11 06 | 644 | 0.4− | 0.9+ | 2006 09 15 | 683 | 0.4− | 1.0+ |
| 2000 03 11 | 699 | 0.3− | 0.0 | 2002 11 06 | 644 | 0.4− | 0.8+ | 2006 09 15 | 683 | 0.3− | 0.8+ |
| 2000 03 11 | 699 | 0.2− | 0.1+ | 2002 11 11 | 704 | (2.3− | 2.5+) | 2006 09 17 | 683 | 0.4+ | 0.1− |
| 2000 04 04 | 699 | 0.2− | 0.1+ | 2002 11 11 | 704 | 0.9− | 0.1+ | 2006 09 17 | 683 | 0.2+ | 1.0+ |
| 2000 04 04 | 699 | 0.3+ | 0.3+ | 2002 11 11 | 704 | 0.3+ | 1.1− | 2006 09 17 | 683 | (1.9+ | 1.3+) |
| 2000 04 04 | 699 | 0.5+ | 0.2− | 2002 11 11 | 704 | 0.7+ | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.0 |
| 2000 04 04 | 699 | 0.7− | 0.3− | 2002 11 11 | 704 | 0.7+ | 0.3− | 2006 09 18 | 703 | 1.5+ | 1.5+ |
| 2000 04 05 | 704 | 0.0 | 0.6− | 2002 11 19 | 644 | 0.3− | 0.6+ | 2006 09 18 | 703 | (1.6+ | 0.2−) |
| 2000 04 05 | 704 | 0.6+ | 0.1+ | 2002 11 19 | 644 | 0.0 | 0.7+ | 2006 09 18 | 703 | 0.3+ | 0.2+ |
| 2000 04 05 | 704 | 0.7+ | 1.3+ | 2002 11 19 | 644 | 0.1− | 0.5+ | 2006 09 18 | 683 | 1.3+ | 0.4+ |
| 2000 04 05 | 704 | 0.1− | 0.3+ | 2003 01 02 | 704 | 0.5− | 0.2− | 2006 09 18 | 683 | 1.3+ | 1.2+ |
| 2000 04 05 | 704 | 0.5+ | 0.7+ | 2003 01 02 | 704 | 0.7− | 0.4+ | 2006 09 18 | 683 | 0.6+ | 0.6+ |
| 2000 04 25 | 699 | 0.1+ | 0.2− | 2003 01 02 | 704 | 1.2+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2000 04 25 | 699 | 0.6− | 0.3+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.8+ |
| 2000 04 25 | 699 | 0.1+ | 0.5+ | 2004 02 26 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 2000 04 25 | 699 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.0 | 1.0+ | 2006 10 16 | 703 | 0.2− | 1.1+ |
| 2002 09 05 | 704 | 0.3− | 1.4+ | 2004 02 26 | 704 | 0.3+ | 1.3+ | 2006 10 22 | 703 | 0.8− | 0.0 |
| 2002 09 05 | 704 | 0.5− | 1.2+ | 2004 02 26 | 704 | 0.4− | 0.8+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2002 09 05 | 704 | 0.0 | 1.1+ | 2004 03 14 | 703 | 0.8− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2002 09 05 | 704 | 0.3+ | 1.3+ | 2004 03 14 | 703 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.0 | 1.4+ | 2004 03 14 | 703 | 0.6− | 0.8+ | 2006 10 31 | 704 | 0.2+ | 0.1− |
| 2002 09 07 | 704 | 0.1− | 0.9+ | 2004 03 14 | 703 | 0.1+ | 0.4+ | 2006 10 31 | 704 | 0.7− | 0.9− |
| 2002 09 07 | 704 | 0.4− | 1.3+ | 2004 03 16 | 704 | 1.3+ | 0.8+ | 2006 10 31 | 704 | 0.1− | 0.4+ |
| 2002 09 07 | 704 | 0.1− | 1.4+ | 2004 03 16 | 704 | 1.4− | 0.6+ | 2006 10 31 | 704 | 0.2− | 0.0 |
| 2002 09 07 | 704 | 0.1+ | 0.7+ | 2004 03 16 | 704 | 0.8+ | 0.5+ | 2006 10 31 | 704 | 0.1+ | 1.2+ |
| 2002 09 07 | 704 | 0.0 | 1.2+ | 2004 03 16 | 704 | 0.0 | 0.6+ | 2006 10 31 | A50 | 0.2+ | 0.3+ |
| 2002 09 28 | 644 | 0.6− | 0.1− | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 10 31 | A50 | 0.1− | 0.1+ |
| 2002 09 28 | 644 | 0.9− | 0.1− | 2004 03 16 | 691 | 0.1− | 0.4+ | 2006 11 01 | 703 | 0.0 | 1.1− |
| 2002 09 28 | 644 | 0.6− | 0.1− | 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.6− |
| 2002 10 01 | 608 | 1.4− | 0.5+ | 2004 03 18 | 704 | 0.8+ | 0.8+ | 2006 11 01 | 703 | 0.5+ | 0.9− |
| 2002 10 01 | 608 | 0.8− | 0.2− | 2004 03 18 | 704 | 0.5+ | 0.6+ | 2006 11 01 | 703 | 0.1+ | 0.5− |
| 2002 10 01 | 608 | 0.9− | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.0 | 0.8+ | 2004 03 20 | 699 | 0.5− | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.5− |
| 2002 10 02 | 704 | 0.1− | 0.7+ | 2004 03 20 | 699 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 699 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2004 03 20 | 699 | 0.1− | 1.1− | 2006 11 13 | 703 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 10 07 | 699 | 0.5+ | 0.2− | 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.2+ | 0.4− |
| 2002 10 07 | 699 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.0 | 0.5+ | 2006 11 19 | 703 | 0.2+ | 0.3− |
| 2002 10 07 | 699 | 0.7+ | 0.5− | 2004 03 24 | 699 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.2− | 0.5− |
| 2002 10 07 | 699 | 0.3+ | 0.1+ | 2004 03 24 | 699 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2002 10 07 | 704 | 1.1+ | 1.0+ | 2004 03 24 | 699 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2002 10 07 | 704 | 0.3+ | 1.0+ | 2004 03 24 | 699 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.7+ | 0.1− |
| 2002 10 07 | 704 | 0.4+ | 1.4+ | 2004 03 28 | 704 | 0.8+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2002 10 07 | 704 | (0.5− | 2.2+) | 2004 03 28 | 704 | (1.7+ | 0.3+) | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.4− | 0.9+ | 2004 03 28 | 704 | 1.4+ | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.6− |
| 2002 10 11 | 704 | 0.3− | 1.0+ | 2004 04 11 | 644 | 0.1− | 0.3+ | | | | |

**(137991)∗ 2000 $CM_{64}$ = 2002 $RX_{76}$**

Discovered 2000 Feb. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34885)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.88589 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24028903 | $\omega$ | 116.54841 | | −0.04808881 | −0.99851458 | |
| $a$ | 2.5623990 | $\Omega$ | 336.16624 | | +0.89238679 | −0.03142955 | |
| $e$ | 0.0665496 | $i$ | 3.63434 | | +0.44870178 | −0.04450632 | |
| $P$ | 4.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.1− | 0.1− | 2002 09 15 | 699 | 0.8+ | 0.7+ | 2004 01 30 | 704 | (2.1− | 0.4−) |
| 2000 02 03 | 704 | 0.1+ | 0.1− | 2002 09 15 | 699 | 0.0 | 0.6+ | 2004 01 30 | 704 | 0.4− | 0.1− |
| 2000 02 03 | 704 | 0.5− | 0.8+ | 2002 09 15 | 699 | 0.4+ | 1.3− | 2004 01 30 | 704 | 0.1+ | 0.7+ |
| 2000 02 03 | 704 | 0.3− | 0.7+ | 2002 09 15 | 699 | 1.1− | 0.6+ | 2004 01 30 | 704 | 0.9− | 1.1+ |
| 2000 02 03 | 704 | 0.7− | 0.7+ | 2003 12 22 | 704 | 0.3+ | 0.1− | 2004 01 30 | 704 | 0.2− | 1.2− |
| 2000 02 08 | 704 | 0.4+ | 0.0 | 2003 12 22 | 704 | 0.1− | 0.3− | 2004 02 15 | 704 | 1.6+ | 0.7− |
| 2000 02 08 | 704 | 0.4+ | 0.4+ | 2003 12 22 | 704 | 0.6− | 0.3− | 2004 02 15 | 704 | 0.8− | 0.6− |
| 2000 02 08 | 704 | 0.4− | 1.0− | 2003 12 22 | 704 | 0.1+ | 0.5− | 2004 02 15 | 704 | 0.5+ | 0.6− |
| 2000 02 11 | 704 | 0.6+ | 0.5+ | 2003 12 22 | 704 | 0.1+ | 0.3− | 2004 02 15 | 704 | 0.4+ | 0.7+ |
| 2000 02 11 | 704 | 0.3− | 1.7+ | 2003 12 27 | 704 | 0.4+ | 0.3− | 2004 02 15 | 704 | 0.4− | 0.4+ |
| 2000 02 11 | 704 | 1.5+ | 1.5+ | 2003 12 27 | 704 | 0.5+ | 1.3− | 2006 08 21 | 704 | 0.1+ | 0.3− |
| 2000 02 11 | 704 | 1.1+ | 0.2− | 2003 12 27 | 704 | 0.7+ | 0.1+ | 2006 08 21 | 704 | 0.1+ | 0.2− |
| 2000 03 04 | 704 | 0.2+ | 1.7+ | 2003 12 27 | 704 | 1.0+ | 0.3+ | 2006 08 21 | 704 | 0.2+ | 0.0 |
| 2000 03 04 | 704 | 0.1− | 0.2− | 2003 12 27 | 704 | 0.1− | 0.0 | 2006 08 25 | 704 | 0.1− | 1.1+ |
| 2000 03 04 | 704 | 0.6+ | 0.7+ | 2004 01 13 | 699 | 1.2+ | 0.5− | 2006 08 25 | 704 | 0.3− | 1.2+ |
| 2000 03 04 | 704 | 0.1− | 0.4− | 2004 01 13 | 699 | 0.1− | 1.4− | 2006 08 25 | 704 | 0.4+ | 1.1− |
| 2002 09 05 | 704 | 0.6− | 0.2− | 2004 01 13 | 699 | 0.8+ | 0.3− | 2006 08 28 | 703 | 0.3+ | 0.9+ |
| 2002 09 05 | 704 | 0.8+ | 0.0 | 2004 01 13 | 699 | 0.6− | 0.1− | 2006 08 28 | 703 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 0.4+ | 0.6− | 2004 01 15 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.7− | 1.1+ |
| 2002 09 07 | 704 | 0.2+ | 0.5+ | 2004 01 15 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.4− | 0.7− |
| 2002 09 07 | 704 | 0.6− | 0.3+ | 2004 01 15 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.7− | 1.0+ | 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.5+ |
| 2002 09 07 | 704 | 0.1+ | 0.7+ | 2004 01 22 | 704 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.5+ | 0.5+ |
| 2002 09 12 | 644 | 0.1− | 0.8− | 2004 01 22 | 704 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.5− | 0.1+ |
| 2002 09 12 | 644 | 0.2− | 0.8− | 2004 01 22 | 704 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2002 09 12 | 644 | 0.3− | 0.7− | 2004 01 22 | 704 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.5− | 0.4− |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2004 01 27 | 691 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.6− |
| 2002 09 14 | 644 | 0.2+ | 0.5+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.5− |
| 2002 09 14 | 644 | 0.1+ | 0.4+ | 2004 01 27 | 691 | 0.1− | 0.1+ | | | | |

**(137992)∗ 2000 $CE_{66}$ = 2002 $TJ_{224}$**

Discovered 2000 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37320)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.12300 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27900546 | $\omega$ | 181.71448 | | +0.35617322 | −0.93360760 | |
| $a$ | 2.3194993 | $\Omega$ | 247.42167 | | +0.85781484 | +0.34322053 | |
| $e$ | 0.1277247 | $i$ | 2.41793 | | +0.37053250 | +0.10284217 | |
| $P$ | 3.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 01 | 703 | 1.0− | 1.0− | 2002 10 28 | 049 | 0.4− | 0.1− | 2005 07 01 | 691 | 0.1+ | 0.1+ |
| 2000 02 01 | 703 | 0.2+ | 0.3+ | 2002 10 28 | 049 | 0.2− | 0.6− | 2005 07 10 | 691 | 0.5− | 0.2+ |
| 2000 02 01 | 703 | 0.1+ | 1.3+ | 2002 10 28 | 049 | 0.2− | 0.4+ | 2005 07 10 | 691 | 0.2− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 01 | 703 | 0.3− | 0.3+ | 2002 10 31 | 699 | 0.1+ | 0.6+ | 2005 07 10 | 691 | 0.3− | 0.1+ | | |
| 2000 02 06 | 704 | 0.2− | 1.1+ | 2002 10 31 | 699 | 1.0− | 1.2− | 2005 07 15 | 691 | 0.1− | 0.1+ | | |
| 2000 02 06 | 704 | 0.9+ | 0.3+ | 2002 10 31 | 699 | 0.2− | 0.2+ | 2005 07 15 | 691 | 0.2+ | 0.1+ | | |
| 2000 02 06 | 704 | 1.5+ | 0.5+ | 2002 10 31 | 699 | 1.1− | 0.3− | 2005 07 15 | 691 | 0.2+ | 0.2+ | | |
| 2000 02 06 | 704 | (2.3+ | 0.6−) | 2002 11 06 | 704 | 0.4− | 0.2+ | 2005 07 18 | 644 | 0.1− | 0.0 | | |
| 2000 02 06 | 704 | 1.0+ | 1.0+ | 2002 11 06 | 704 | 0.5+ | 0.5+ | 2005 07 18 | 644 | 0.1+ | 0.0 | | |
| 2000 02 08 | 704 | 0.6− | 1.2− | 2002 11 06 | 704 | 0.0 | 1.4+ | 2005 07 18 | 644 | 0.1− | 0.0 | | |
| 2000 02 08 | 704 | 0.4+ | 0.1+ | 2002 11 06 | 704 | 1.1+ | 0.5+ | 2005 08 05 | 644 | 0.1− | 0.0 | | |
| 2000 02 08 | 704 | 0.3− | 0.3+ | 2002 11 06 | 704 | 0.2+ | 0.6+ | 2005 08 05 | 644 | 0.0 | 0.2− | | |
| 2000 02 08 | 704 | 0.7− | 1.1+ | 2002 11 09 | 695 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.1+ | 0.3− | | |
| 2002 10 08 | 699 | 0.8− | 0.6+ | 2002 11 09 | 695 | 0.3+ | 0.0 | 2005 10 01 | G96 | 0.5− | 0.6− | | |
| 2002 10 08 | 699 | 0.7+ | 1.0+ | 2002 11 12 | 704 | 0.5− | 0.5− | 2005 10 01 | G96 | 0.0 | 0.5− | | |
| 2002 10 08 | 699 | 0.9− | 0.4− | 2002 11 12 | 704 | 0.5+ | 0.7− | 2005 10 01 | G96 | 0.1+ | 0.1+ | | |
| 2002 10 08 | 699 | 0.6− | 0.3+ | 2002 11 12 | 704 | 0.6− | 0.5− | 2005 10 01 | G96 | 0.0 | 0.3− | | |
| 2002 10 09 | 704 | 0.2− | 0.7+ | 2002 11 12 | 704 | 0.1− | 0.7− | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2002 10 09 | 704 | 0.3+ | 0.7+ | 2002 11 22 | 644 | 0.1+ | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.1− | | |
| 2002 10 09 | 704 | 0.9− | 0.1+ | 2002 11 22 | 644 | 0.2+ | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.5− | | |
| 2002 10 09 | 704 | (2.1− | 1.0+) | 2002 11 22 | 644 | 0.4+ | 0.9+ | 2006 11 01 | G96 | 0.3+ | 0.1− | | |
| 2002 10 12 | 704 | 0.3+ | 0.3+ | 2004 04 20 | 691 | 0.3+ | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2002 10 12 | 704 | 1.4+ | 0.7+ | 2004 04 20 | 691 | 0.4+ | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2002 10 12 | 704 | 0.2− | 1.3+ | 2004 04 20 | 691 | 0.2+ | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.0 | | |
| 2002 10 12 | 704 | 0.3− | 0.7− | 2005 06 27 | 691 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2002 10 12 | 704 | 0.4+ | 0.0 | 2005 06 27 | 691 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.0 | 1.0+ | | |
| 2002 10 28 | 644 | 0.1− | 0.2+ | 2005 06 27 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.2+ | | |
| 2002 10 28 | 644 | 0.0 | 0.3+ | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.2− | | |
| 2002 10 28 | 644 | 0.0 | 0.4+ | 2005 07 01 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.3− | | |

**(137993)∗ 2000 $CH_{66}$ = 2004 $DP_{41}$**

Discovered 2000 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.58455 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26298845 | $\omega$ | 48.68718 | | −0.69017340 | | −0.71855301 |
| $a$ | 2.4127460 | $\Omega$ | 85.17657 | | +0.63558823 | | −0.65853536 |
| $e$ | 0.1039807 | $i$ | 4.93304 | | +0.34595995 | | −0.22363530 |
| $P$ | 3.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.5− | 0.0 | 2004 03 18 | 691 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.5− | 0.3+ | | |
| 2000 02 06 | 704 | 0.5+ | 0.2− | 2004 03 20 | 699 | 0.3+ | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.2+ | | |
| 2000 02 06 | 704 | 0.7− | 0.8+ | 2004 03 20 | 699 | 0.3− | 1.5+ | 2005 07 02 | 691 | 0.6− | 0.1+ | | |
| 2000 02 06 | 704 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.3+ | 0.2+ | 2005 07 02 | 691 | 0.2− | 0.2+ | | |
| 2000 02 06 | 704 | 0.6− | 0.1+ | 2004 03 20 | 699 | 0.0 | 0.1+ | 2005 07 02 | 691 | 0.1− | 0.4+ | | |
| 2000 02 08 | 704 | 0.2+ | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.6+ | | |
| 2000 02 08 | 704 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.1− | 2005 07 11 | 691 | 0.0 | 0.4+ | | |
| 2000 02 08 | 704 | 0.4− | 0.5− | 2004 03 20 | 704 | 0.4+ | 0.1+ | 2005 07 11 | 691 | 0.1− | 0.7+ | | |
| 2000 02 08 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.5− | 2006 10 17 | G96 | 0.0 | 0.1− | | |
| 2000 02 08 | 704 | 0.5− | 0.6+ | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2− | 0.0 | | |
| 2000 02 11 | 704 | 0.3+ | 1.1+ | 2004 03 21 | 608 | (0.8+ | 1.7+) | 2006 10 17 | G96 | 0.1+ | 0.2− | | |
| 2000 02 11 | 704 | 0.1+ | 1.2− | 2004 03 21 | 608 | 0.1− | 1.1+ | 2006 10 17 | G96 | 0.6− | 0.2− | | |
| 2000 02 11 | 704 | 0.2− | 0.0 | 2004 03 21 | 608 | 0.3− | 0.8+ | 2006 10 18 | 691 | 0.2− | 0.2+ | | |
| 2000 02 11 | 704 | 0.2+ | 0.7− | 2004 03 22 | 704 | 0.2+ | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.0 | | |
| 2002 10 06 | 608 | 0.9− | 0.3− | 2004 03 22 | 704 | 0.6+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ | | |
| 2002 10 06 | 608 | 0.8− | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.3+ | | |
| 2002 10 06 | 608 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.9+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.7+ | | |
| 2002 10 31 | 645 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 1.0+ | | |
| 2002 10 31 | 645 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.2+ | 1.3− | 2006 11 02 | 703 | (0.4+ | 2.1−) | | |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.4− | 2006 11 02 | 703 | 0.1+ | 0.7− | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.4− | 2006 11 02 | 703 | (0.8+ | 2.8−) | | |
| 2003 12 19 | 691 | 0.7+ | 0.1− | 2004 03 23 | 704 | 0.5+ | 0.8− | 2006 11 02 | 703 | 1.0+ | 0.2− | | |
| 2003 12 19 | 691 | 0.6− | 0.1+ | 2004 03 23 | 704 | 0.4+ | 1.3− | 2006 11 09 | 644 | 0.4− | 0.2+ | | |
| 2003 12 19 | 691 | 0.5+ | 0.1+ | 2004 03 25 | 704 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.4+ | | |
| 2004 02 18 | 704 | 0.2− | 1.2+ | 2004 03 25 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2004 02 18 | 704 | 0.6− | 1.3+ | 2004 03 25 | 704 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.5− | | |
| 2004 02 18 | 704 | 0.4+ | 0.5+ | 2004 03 25 | 704 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.2− | | |
| 2004 02 18 | 704 | 0.3− | 0.7+ | 2004 03 25 | 704 | 0.6− | 0.9+ | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2004 02 18 | 608 | 0.1+ | 0.2+ | 2004 03 26 | 704 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2004 02 18 | 608 | 0.0 | 0.6− | 2004 03 26 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.9+ | 1.0+ | | |
| 2004 02 18 | 608 | 0.3+ | 0.0 | 2004 03 26 | 704 | 0.1− | 0.9+ | 2006 11 17 | 704 | 0.3+ | 0.4+ | | |
| 2004 02 25 | 704 | 0.3− | 0.9+ | 2004 03 26 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 704 | (1.6− | 0.2−) | | |
| 2004 02 25 | 704 | 0.3+ | 0.2+ | 2004 03 26 | 704 | 1.0− | 0.6+ | 2006 11 17 | 704 | 0.4− | 0.0 | | |
| 2004 02 25 | 704 | (0.1+ | 1.7+) | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | (0.2+ | 1.7+) | | |
| 2004 02 25 | 704 | 0.3+ | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.6− | | |
| 2004 02 25 | 704 | 0.3− | 0.6− | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.2+ | | |
| 2004 03 15 | 704 | 0.2− | 0.6+ | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.2− | | |
| 2004 03 15 | 704 | 1.2+ | 0.6+ | 2004 04 12 | 703 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.5− | | |
| 2004 03 15 | 704 | 1.1+ | 0.1+ | 2004 04 12 | 703 | 0.2+ | 0.9+ | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2004 03 15 | 704 | 0.2− | 0.1+ | 2004 04 12 | 703 | 0.5− | 0.8+ | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2004 04 12 | 703 | 0.3− | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.3− | | |
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2004 04 20 | 704 | 1.0− | 0.1− | 2006 11 23 | G96 | 0.3− | 0.4− | | |

**(137994)∗ 2000 $CQ_{66}$**

Discovered 2000 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.19821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26180916 | $\omega$ | 326.02552 | | −0.66730783 | | −0.74475195 |
| $a$ | 2.4199858 | $\Omega$ | 165.83016 | | +0.68925814 | | −0.62093962 |
| $e$ | 0.1362717 | $i$ | 1.56678 | | +0.28217632 | | −0.24449648 |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 09 | 691 | (2.2+ | 3.3−) | 2002 10 10 | 644 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 1994 09 09 | 691 | (0.1− | 3.1−) | 2004 03 18 | 704 | (1.4+ | 1.7+) | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2000 01 03 | 691 | 0.1− | 0.6− | 2004 03 18 | 704 | 0.6− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2000 01 03 | 691 | 0.1− | 0.7− | 2004 03 18 | 704 | 1.0+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 2000 01 03 | 691 | 0.1− | 0.7− | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2000 02 06 | 704 | 0.5+ | 0.4− | 2004 03 18 | 704 | 1.0− | 0.7− | 2006 11 10 | 691 | 0.0 | 0.2+ | | |
| 2000 02 06 | 704 | 0.8− | 0.6− | 2004 03 27 | 704 | 0.9− | 1.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | | |
| 2000 02 06 | 704 | 1.0+ | 0.5+ | 2004 03 27 | 704 | 0.7+ | 0.4− | 2006 11 14 | 691 | 0.0 | 0.2+ | | |
| 2000 02 08 | 704 | 0.7− | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.3− | | |
| 2000 02 08 | 704 | 0.3+ | 0.1+ | 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 691 | 0.2− | 0.1+ | | |
| 2000 02 08 | 704 | 0.2− | 0.5− | 2004 03 29 | 691 | 0.3− | 0.3− | 2006 11 14 | 691 | 0.3− | 0.1− | | |
| 2000 02 08 | 704 | 0.5+ | 0.2+ | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 2000 02 08 | 704 | 0.7+ | 0.6+ | 2004 03 31 | 291 | 0.2− | 0.6− | 2006 11 14 | 691 | 0.1− | 0.2− | | |
| 2000 02 25 | 703 | 0.3+ | 1.0+ | 2004 03 31 | 291 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.4− | | |
| 2000 02 25 | 703 | 0.0 | 0.5+ | 2004 03 31 | 291 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.4+ | | |
| 2000 02 25 | 703 | 1.1− | 1.1+ | 2004 04 12 | 699 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.3− | | |
| 2000 02 25 | 703 | 1.0− | 0.5− | 2004 04 12 | 699 | 0.5+ | 0.3− | 2006 11 17 | 703 | 0.8− | 0.5− | | |
| 2000 02 29 | 704 | 0.4+ | 0.1+ | 2004 04 12 | 699 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.9− | 0.9− | | |
| 2000 02 29 | 704 | 0.3+ | 0.1− | 2004 04 12 | 699 | 0.4+ | 0.8− | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2000 02 29 | 704 | 0.5+ | 0.1− | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.1− | | |
| 2000 02 29 | 704 | 0.7+ | 0.1− | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2+ | 1.2+ | | |
| 2000 02 29 | 704 | 0.7+ | 0.3+ | 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.4+ | | |
| 2000 03 03 | 704 | 0.3− | 0.6+ | 2004 04 21 | 704 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.2− | | |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2004 04 21 | 704 | 1.0+ | 1.0+ | 2006 11 19 | 704 | 0.1+ | 1.1+ | | |
| 2000 03 03 | 704 | 0.6− | 1.1+ | 2004 04 21 | 704 | 0.9+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.4+ | | |
| 2000 03 03 | 704 | 0.4− | 0.8+ | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2000 03 03 | 704 | 0.2− | 0.3+ | 2004 04 21 | 704 | 0.4− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2000 03 05 | 704 | 0.3+ | 0.3+ | 2005 07 03 | G96 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2000 03 05 | 704 | 0.2− | 0.4+ | 2005 07 03 | G96 | 0.1− | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.0 | | |
| 2000 03 05 | 704 | 0.5+ | 0.3+ | 2005 07 03 | G96 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 1.1+ | 1.2+ | | |
| 2000 03 05 | 704 | 0.1− | 0.3+ | 2005 07 03 | G96 | 0.6− | 0.2+ | 2006 11 21 | 704 | 1.0+ | 1.4+ | | |
| 2000 03 05 | 327 | 0.7− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.2+ | 1.0+ | | |
| 2000 03 05 | 327 | 0.9− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.9+ | | |
| 2000 03 05 | 327 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.6+ | 0.9+ | | |
| 2000 03 11 | 704 | 0.4+ | 0.6− | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.6− | | |
| 2000 03 11 | 704 | 0.9+ | 0.2− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.6− | | |
| 2000 03 11 | 704 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.6− | | |
| 2002 10 10 | 644 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.6− | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.7− | | |
| 2002 10 10 | 644 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.0 | | | | | | |

**(137995)∗ 2000 $CV_{74}$ = 2004 $BZ_{60}$**

Discovered 2000 Feb. 8 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 68643)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.06291 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23783348 | $\omega$ | 129.65017 | | −0.09910082 | | +0.99430397 |
| $a$ | 2.5800060 | $\Omega$ | 134.61448 | | −0.92901206 | | −0.07832551 |
| $e$ | 0.1545975 | $i$ | 3.15881 | | −0.35653278 | | −0.07228226 |
| $P$ | 4.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.2− | 0.3+ | 2005 05 03 | 704 | 0.5− | 1.2+ | 2006 09 30 | 703 | (1.8+ | 0.2−) |
| 2000 02 04 | 691 | 0.3− | 0.0 | 2005 05 03 | 703 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2000 02 04 | 691 | 0.3− | 0.1− | 2005 05 03 | 704 | 1.5+ | 0.8+ | 2006 10 20 | 644 | 0.4+ | 0.4+ |
| 2000 02 05 | 691 | 0.0 | 0.0 | 2005 05 12 | 704 | 0.7+ | 0.9+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2000 02 05 | 691 | 0.1− | 0.1+ | 2005 05 12 | 704 | 0.1+ | 0.2− | 2006 10 21 | 703 | 1.1+ | 0.2+ |
| 2000 02 05 | 691 | 0.1+ | 0.1+ | 2005 05 12 | 704 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 2000 02 06 | 691 | 0.2+ | 0.1− | 2005 05 12 | 704 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 2000 02 06 | 691 | 0.2+ | 0.0 | 2005 05 12 | 704 | 0.0 | 0.3+ | 2006 10 21 | 703 | (4.4− | 1.5−) |
| 2000 02 06 | 691 | 0.4+ | 0.2− | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.3+ |
| 2000 02 08 | 691 | 0.1− | 0.1− | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2000 02 08 | 691 | 0.0 | 0.3− | 2005 06 01 | 691 | 0.9+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2000 02 08 | 691 | 0.0 | 0.2− | 2005 06 01 | 428 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2000 02 10 | 691 | 0.2− | 0.1− | 2005 06 01 | 428 | 0.3+ | 0.8− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2000 02 10 | 691 | 0.1− | 0.1− | 2005 06 03 | 703 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2000 02 10 | 691 | 0.1+ | 0.0 | 2005 06 03 | 703 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2003 12 17 | 291 | 0.8− | 0.4+ | 2005 06 03 | 703 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2003 12 17 | 291 | 1.0− | 0.6+ | 2005 06 05 | 704 | 0.2− | 1.1+ | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2003 12 17 | 291 | (1.7− | 0.3+) | 2005 06 05 | 704 | 0.4+ | 1.2+ | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2003 12 22 | 691 | 0.3+ | 0.5+ | 2005 06 05 | 704 | 0.4+ | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2003 12 22 | 691 | 0.7+ | 0.2+ | 2005 06 06 | 691 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2003 12 22 | 691 | 0.3+ | 0.5+ | 2005 06 06 | 691 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2004 01 21 | 704 | 0.1+ | 0.7+ | 2005 06 06 | 691 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2004 01 21 | 704 | 0.8+ | 0.1+ | 2005 06 23 | 644 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.9− |
| 2004 01 21 | 704 | 0.7+ | 0.5+ | 2005 06 23 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2004 01 27 | 691 | 0.3+ | 0.5+ | 2005 06 23 | 644 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2004 01 27 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2004 01 27 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.8+ |
| 2005 05 03 | 703 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.4− | 0.3+ |
| 2005 05 03 | 703 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.4− | 2006 11 21 | 691 | 0.2− | 0.6+ |
| 2005 05 03 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.5+ | | | | |
| 2005 05 03 | 703 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.1− | 1.2+ | | | | |

**(137996)∗ 2000 $CT_{77}$**

Discovered 2000 Feb. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.14214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25774690 | $\omega$ | 156.38115 | | −0.04302865 | | −0.99874954 |
| $a$ | 2.4453466 | $\Omega$ | 296.07669 | | +0.91205685 | | −0.02886892 |
| $e$ | 0.1616954 | $i$ | 1.62389 | | +0.40779999 | | −0.04081596 |
| $P$ | 3.82 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 691 | 0.2− | 0.8− | 2004 03 19 | 704 | (1.6+ | 0.9+) | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1999 12 31 | 691 | 0.1− | 0.4− | 2004 03 19 | 704 | (1.5+ | 0.9+) | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 1999 12 31 | 691 | 0.4− | 0.7− | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2000 02 07 | 691 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.5− | 0.0 |
| 2000 02 07 | 691 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2000 02 07 | 691 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2000 02 11 | 691 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2000 02 11 | 691 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2000 02 11 | 691 | 0.6− | 0.2− | 2004 03 21 | 291 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.1− | 1.0+ | 2004 03 21 | 291 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2000 02 29 | 704 | 0.4+ | 0.2+ | 2004 03 21 | 291 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2000 02 29 | 704 | 0.6+ | 1.4− | 2004 03 22 | 704 | 0.9+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2000 03 03 | 704 | 0.2− | 0.0 | 2004 03 22 | 704 | 0.5+ | 1.1+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2000 03 03 | 704 | 0.4+ | 0.3+ | 2004 03 22 | 704 | 0.9− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.4+ | 1.1+ | 2006 10 28 | 691 | 0.5− | 0.4+ |
| 2000 03 03 | 704 | 0.1− | 0.4− | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2000 03 11 | 704 | 0.5+ | 0.5+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 0.1− | 0.5+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 1.1− | 0.3+ | 2004 03 26 | 699 | 1.3+ | 1.4+ | 2006 10 29 | 704 | 0.5+ | 0.0 |
| 2000 03 11 | 704 | (0.4+ | 2.0+) | 2004 03 26 | 699 | 0.3+ | 0.5+ | 2006 10 29 | 704 | 0.1+ | 0.7+ |
| 2002 09 05 | 704 | (0.7− | 1.6+) | 2004 03 26 | 699 | 0.4− | 0.2− | 2006 10 29 | 704 | 1.4− | 0.1− |
| 2002 09 05 | 704 | 0.0 | 1.0+ | 2004 03 26 | 699 | 0.4+ | 1.3+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | (0.5+ | 1.6+) | 2004 03 27 | 704 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2004 03 27 | 704 | 1.0+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 03 27 | 704 | 1.5+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.8+ | 0.5− |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.9+ | 0.3+ |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 2004 03 18 | 704 | (0.2+ | 1.8+) | 2006 10 03 | 691 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 10 03 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.3− | 1.0+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.7+ | 0.5− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.5− |
| 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 691 | 1.4+ | 1.1− | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 104 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.5+ | 1.3+ |
| 2004 03 19 | 704 | 0.3+ | 0.5− | 2006 10 16 | 104 | (3.8− | 2.8+) | | | | |

**(137997)∗ 2000 $CX_{77}$**

Discovered 2000 Feb. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.65761 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25672183 | $\omega$ | 211.25039 | | −0.88155856 | | −0.47136530 |
| $a$ | 2.4518516 | $\Omega$ | 300.60505 | | +0.43908626 | | −0.79859751 |
| $e$ | 0.1219226 | $i$ | 1.72241 | | +0.17337175 | | −0.37424159 |
| $P$ | 3.84 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2005 07 03 | G96 | 0.3− | 0.1− |
| 2000 01 05 | 691 | 0.0 | 0.2− | 2004 03 20 | 704 | 1.0− | 0.5+ | 2005 07 03 | G96 | 0.3+ | 0.4+ |
| 2000 01 05 | 691 | 0.1+ | 0.5− | 2004 03 20 | 704 | 0.2+ | 0.9+ | 2005 07 03 | G96 | 0.0 | 0.7+ |
| 2000 02 02 | 691 | 0.0 | 0.4− | 2004 03 20 | 704 | (0.8+ | 1.8+) | 2005 07 03 | G96 | 0.0 | 0.2− |
| 2000 02 02 | 691 | 0.1− | 0.2− | 2004 03 20 | 704 | (0.9− | 1.7+) | 2005 07 12 | G96 | 0.2+ | 0.1− |
| 2000 02 02 | 691 | 0.4− | 0.4− | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2005 07 12 | G96 | 0.1+ | 0.5− |
| 2000 02 07 | 691 | 0.0 | 0.6− | 2004 03 26 | 704 | 0.3+ | 0.5+ | 2005 07 12 | G96 | 0.1+ | 0.3− |
| 2000 02 07 | 691 | 0.0 | 0.7− | 2004 03 26 | 704 | 0.4+ | 1.3+ | 2005 07 12 | G96 | 0.0 | 0.2− |
| 2000 02 07 | 691 | 0.1− | 0.5− | 2004 03 26 | 704 | 0.3+ | 1.1+ | 2005 08 28 | 691 | 0.3+ | 0.1+ |
| 2000 02 11 | 691 | 0.4− | 0.4− | 2004 03 26 | 704 | (1.8+ | 0.1−) | 2005 08 28 | 691 | 0.2− | 0.0 |
| 2000 02 11 | 691 | 0.3− | 0.6− | 2004 03 26 | 704 | 0.6+ | 0.8+ | 2005 08 28 | 691 | 0.1− | 0.1− |
| 2000 02 11 | 691 | 0.6− | 0.4− | 2004 03 26 | 704 | 0.8+ | 1.1+ | 2006 10 13 | 691 | 0.6− | 0.2+ |
| 2000 02 29 | 704 | 0.5− | 0.4+ | 2004 03 26 | 704 | 0.2+ | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.1+ |
| 2000 02 29 | 704 | 0.4+ | 0.2+ | 2004 03 26 | 704 | 0.3+ | 0.8+ | 2006 10 13 | 691 | 0.0 | 0.3+ |
| 2000 02 29 | 704 | 0.3− | 0.5+ | 2004 03 26 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.7+ |
| 2000 02 29 | 704 | 0.5+ | 1.0+ | 2004 03 26 | 704 | (1.9+ | 1.3+) | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2000 02 29 | 704 | 0.5− | 0.6+ | 2004 03 27 | 704 | 0.5− | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.7+ |
| 2000 03 03 | 704 | 0.4− | 0.2− | 2004 03 27 | 704 | 0.2+ | 0.6− | 2006 11 01 | G96 | 0.5− | 0.2− |
| 2000 03 03 | 704 | 0.4− | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.6− | 0.3− |
| 2000 03 03 | 704 | 0.1− | 0.7+ | 2004 03 27 | 704 | 0.5− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2000 03 03 | 704 | 0.3+ | 0.1− | 2004 03 27 | 704 | 0.5− | 0.4+ | 2006 11 01 | G96 | 0.5− | 0.1− |
| 2000 03 03 | 704 | 0.9+ | 0.5+ | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.4+ |
| 2000 03 11 | 699 | 0.3+ | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2000 03 11 | 699 | 0.7+ | 0.7+ | 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.2− | 0.0 |
| 2000 03 11 | 699 | 0.1+ | 0.4− | 2004 04 15 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2000 03 11 | 699 | 0.6− | 0.3+ | 2004 04 15 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.9+ | 0.7+ | 2004 04 15 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | 0.8+ | 0.4+ | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.6+ | 0.6+ | 2004 04 25 | 691 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.4+ |
| 2004 03 18 | 704 | 0.6+ | 1.2+ | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.4+ |

**(137998)∗ 2000 $CK_{80}$ = 2002 $TX_{234}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37324)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.75561 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24508162 | $\omega$ | 180.13189 | | −0.83329381 | | −0.52831996 |
| $a$ | 2.5288839 | $\Omega$ | 326.31253 | | +0.50748031 | | −0.61422298 |
| $e$ | 0.0914368 | $i$ | 17.06686 | | +0.21928328 | | −0.58618098 |
| $P$ | 4.02 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 1.0− | 0.8+ | 2003 12 18 | 703 | 0.3+ | 0.4+ | 2004 02 20 | 608 | 0.3+ | 0.6− |
| 1999 12 08 | 704 | 0.6− | 0.0 | 2003 12 18 | 703 | 0.4+ | 0.5− | 2004 02 20 | 608 | 0.3+ | 0.4− |
| 1999 12 08 | 704 | 0.2− | 0.5− | 2003 12 18 | 703 | 0.3+ | 0.1− | 2004 02 20 | 608 | 0.3+ | 0.3− |
| 2000 02 04 | 704 | 0.0 | 0.1− | 2003 12 28 | 704 | 0.3+ | 1.1+ | 2004 02 21 | 049 | 1.0+ | 0.1+ |
| 2000 02 04 | 704 | 0.9+ | 0.1− | 2003 12 28 | 704 | 0.3− | 0.1− | 2004 02 21 | 049 | 0.4+ | 0.1+ |
| 2000 02 04 | 704 | 0.6+ | 0.6+ | 2003 12 28 | 704 | 0.1− | 0.8+ | 2004 02 21 | 049 | 0.8+ | 0.1+ |
| 2000 02 04 | 704 | 0.1+ | 0.7+ | 2003 12 28 | 704 | 0.0 | 0.7+ | 2004 02 26 | 704 | 0.8+ | 0.8+ |
| 2000 02 04 | 704 | 0.4+ | 0.8+ | 2003 12 28 | 704 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.5+ | 1.1+ |
| 2000 02 06 | 695 | 0.1− | 0.1+ | 2004 01 05 | 699 | 1.3− | 0.2+ | 2004 02 26 | 704 | 1.0+ | 0.9+ |
| 2000 02 06 | 695 | 0.1+ | 0.3+ | 2004 01 05 | 699 | (1.5− | 0.2+) | 2004 02 26 | 704 | 0.2+ | 0.6+ |
| 2000 02 11 | 704 | 0.7+ | 0.1+ | 2004 01 05 | 699 | (1.7− | 1.7−) | 2004 02 26 | 704 | 0.2+ | 0.5+ |
| 2000 02 11 | 704 | 0.5+ | 0.7+ | 2004 01 05 | 699 | 0.3− | 0.5− | 2004 03 10 | 644 | 0.0 | 0.0 |
| 2000 02 11 | 691 | 0.4− | 0.7− | 2004 01 18 | 644 | 0.3+ | 0.1+ | 2004 03 10 | 644 | 0.1+ | 0.1− |
| 2000 02 11 | 704 | 0.2+ | 0.0 | 2004 01 18 | 644 | 0.3+ | 0.1+ | 2004 03 10 | 644 | 1.1+ | 0.5+ |
| 2000 02 11 | 704 | 0.2+ | 0.2+ | 2004 01 18 | 644 | 0.3+ | 0.2+ | 2004 03 15 | 703 | 0.4− | 0.7+ |
| 2000 02 11 | 691 | 0.5− | 0.8− | 2004 01 19 | 703 | 1.3− | 0.1− | 2004 03 15 | 703 | 1.1− | 0.6+ |
| 2000 02 11 | 704 | 0.8+ | 0.1− | 2004 01 19 | 703 | 0.5+ | 0.3− | 2004 03 15 | 703 | (1.5− | 0.8−) |
| 2000 02 11 | 691 | 0.8− | 0.8− | 2004 01 19 | 703 | 0.2+ | 0.1− | 2004 03 15 | 703 | (2.3− | 0.0 ) |
| 2000 02 25 | 739 | 0.3− | 0.6− | 2004 01 19 | 703 | 0.4− | 0.2− | 2004 03 15 | 704 | 0.1+ | 0.1+ |
| 2000 02 25 | 739 | 0.7− | 0.2+ | 2004 01 22 | 704 | 0.8+ | 0.1− | 2004 03 15 | 704 | 0.0 | 0.7+ |
| 2000 02 26 | 739 | 0.5+ | 0.8− | 2004 01 22 | 704 | 0.8+ | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.2+ |
| 2000 02 26 | 739 | 0.5− | 1.2+ | 2004 01 22 | 704 | 0.9+ | 0.4− | 2004 03 15 | 704 | 0.3− | 0.5+ |
| 2000 02 26 | 739 | 0.6+ | 0.5− | 2004 01 22 | 704 | 0.8+ | 0.5− | 2004 03 15 | 704 | 0.1− | 0.4+ |
| 2000 02 27 | 703 | 0.7+ | 0.0 | 2004 01 22 | 704 | 1.0+ | 0.3− | 2004 03 15 | 106 | 0.1− | 0.3− |
| 2000 02 27 | 703 | 0.1+ | 0.7+ | 2004 01 23 | 699 | 0.3− | 0.4− | 2004 03 15 | 106 | 0.2− | 0.1− |
| 2000 02 27 | 703 | 0.5+ | 0.5− | 2004 01 23 | 699 | 0.7− | 0.2− | 2004 03 15 | 106 | 0.0 | 0.6− |
| 2000 02 27 | 703 | 0.1− | 0.1+ | 2004 01 23 | 699 | 0.5− | 0.1− | 2004 03 18 | 704 | 0.9− | 0.2+ |
| 2000 03 03 | 704 | 0.5+ | 0.0 | 2004 01 23 | 699 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 1.4− | 1.0− | 2004 01 27 | 704 | 0.2+ | 0.7+ | 2004 03 18 | 704 | 0.1− | 0.1− |
| 2000 03 03 | 704 | 0.2+ | 0.1+ | 2004 01 27 | 704 | 0.4+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.4+ | 0.2+ | 2004 01 27 | 704 | 0.2+ | 0.6+ | 2004 03 18 | 704 | 0.3− | 0.0 |
| 2000 03 03 | 704 | 0.2− | 0.3+ | 2004 01 27 | 704 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.3− | 0.2− |
| 2000 03 05 | 704 | 0.4+ | 0.2− | 2004 01 27 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.4+ |
| 2000 03 05 | 704 | 0.3+ | 0.2− | 2004 01 30 | 704 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.0 |
| 2000 03 05 | 704 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.1+ |
| 2000 03 05 | 704 | 0.3+ | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.1+ | 0.0 |
| 2000 03 05 | 704 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2004 04 15 | 703 | 0.6+ | 0.3+ |
| 2000 03 11 | 704 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.0 | 0.1− | 2004 04 15 | 703 | 0.1− | 0.4+ |
| 2000 03 11 | 704 | 0.0 | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.1− | 2004 04 15 | 703 | 0.0 | 0.7+ |
| 2000 03 11 | 704 | 0.6− | 0.0 | 2004 01 30 | 691 | 0.3− | 0.1− | 2004 04 15 | 703 | 0.7− | 0.4+ |
| 2000 03 11 | 704 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.2− | 0.1− | 2004 04 19 | 704 | 0.0 | 1.2+ |
| 2000 03 11 | 704 | 0.3− | 0.1− | 2004 02 10 | 333 | 0.1− | 0.1− | 2004 04 19 | 704 | 1.1+ | 0.0 |
| 2002 08 30 | 704 | 0.3− | 0.1+ | 2004 02 10 | 333 | 0.4− | 0.1− | 2004 04 19 | 704 | 0.4+ | 1.1+ |
| 2002 08 30 | 704 | 0.8− | 0.7+ | 2004 02 10 | 333 | 0.3− | 0.3− | 2004 04 19 | 704 | 0.6− | 1.1− |
| 2002 08 30 | 704 | 0.3− | 0.6+ | 2004 02 10 | 644 | 0.2+ | 0.0 | 2004 04 19 | 704 | 0.6+ | 0.1+ |
| 2002 09 03 | 644 | 0.1+ | 0.6+ | 2004 02 10 | 703 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 1.1− | 0.6+ |
| 2002 09 03 | 644 | 0.3+ | 0.5+ | 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.3− | 0.3− |
| 2002 09 03 | 644 | 0.1+ | 0.2+ | 2004 02 10 | 703 | 0.5− | 0.6+ | 2006 09 16 | 703 | (0.6− | 2.8−) |
| 2002 09 14 | 699 | 1.4− | 0.1+ | 2004 02 10 | 703 | (2.7− | 0.1+) | 2006 09 16 | 703 | 0.5+ | 1.3− |
| 2002 09 14 | 699 | 0.6+ | 0.1+ | 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 09 22 | 699 | 0.3+ | 0.3+ |
| 2002 09 14 | 699 | 1.3− | 0.8+ | 2004 02 10 | 703 | 0.0 | 0.3+ | 2006 09 22 | 699 | 0.2+ | 0.3− |
| 2002 09 14 | 699 | 0.3− | 0.3+ | 2004 02 11 | 699 | 0.5− | 0.5− | 2006 09 22 | 699 | 0.8− | 0.4+ |
| 2002 10 06 | 704 | 0.3− | 0.4− | 2004 02 11 | 699 | 0.1+ | 0.4+ | 2006 09 22 | 699 | 0.5+ | 0.0 |
| 2002 10 06 | 704 | 0.2− | 0.8+ | 2004 02 11 | 699 | 0.2+ | 0.4+ | 2006 10 16 | 291 | 0.8+ | 0.1− |
| 2002 10 06 | 704 | 0.5− | 0.4+ | 2004 02 11 | 699 | 0.4− | 0.3− | 2006 10 16 | 291 | 0.4+ | 0.1− |
| 2002 10 06 | 704 | 0.6− | 0.3+ | 2004 02 12 | 333 | 0.8− | 0.3− | 2006 10 16 | 291 | 0.5+ | 0.1− |
| 2002 10 10 | 704 | 0.3− | 0.5+ | 2004 02 12 | 333 | 0.7− | 0.5− | 2006 10 20 | 703 | 0.2− | 1.3− |
| 2002 10 10 | 704 | 0.0 | 0.5+ | 2004 02 12 | 333 | 0.9− | 0.2− | 2006 10 20 | 703 | 0.1− | 0.1− |
| 2002 10 10 | 704 | 0.2− | 0.2− | 2004 02 13 | 333 | 0.1+ | 0.2+ | 2006 10 20 | 703 | 0.4+ | 0.4− |
| 2002 10 10 | 704 | 0.4− | 0.1− | 2004 02 13 | 333 | 0.2− | 0.4− | 2006 10 20 | 703 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.5− | 0.4− | 2004 02 13 | 333 | 0.4− | 0.4− | 2006 10 31 | 703 | 0.7− | 0.1+ |
| 2002 10 12 | 704 | 0.6− | 0.1+ | 2004 02 17 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 703 | 0.6+ | 0.1− |
| 2002 10 12 | 704 | 0.4− | 0.6− | 2004 02 17 | 704 | 0.7+ | 0.0 | 2006 10 31 | 703 | 0.7+ | 0.5− |
| 2002 10 12 | 704 | 0.2− | 0.6+ | 2004 02 17 | 704 | 0.8+ | 0.0 | 2006 10 31 | 703 | 0.4+ | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.3+ | 0.1+ | | | | |
| 2003 12 18 | 703 | 0.1− | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.6+ | | | | |

**(137999)∗ 2000 $CM_{80}$ = 2002 $PJ_{84}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33206)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.40148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26124792 | $\omega$ | 56.50813 | | +0.82110538 | | −0.56352497 |
| $a$ | 2.4234505 | $\Omega$ | 337.37774 | | +0.41340364 | | +0.69671688 |
| $e$ | 0.2724066 | $i$ | 13.63779 | | +0.39355226 | | +0.44387521 |
| $P$ | 3.77 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.4− | 0.5− | 2002 09 04 | 644 | 0.3− | 0.5− | 2003 01 01 | 704 | 0.6− | 0.4+ |
| 2000 01 07 | 704 | 0.4− | 0.1− | 2002 09 04 | 644 | 0.4− | 0.5− | 2003 01 01 | 704 | 0.6+ | 0.5+ |
| 2000 01 07 | 704 | 0.6+ | 2.0− | 2002 09 05 | 699 | 0.2+ | 0.5+ | 2003 01 01 | 704 | 0.1+ | 0.6+ |
| 2000 01 07 | 704 | 0.7− | 1.7− | 2002 09 05 | 704 | 0.1− | 0.3+ | 2003 01 01 | 704 | 0.4+ | 0.3+ |
| 2000 02 04 | 704 | 0.9+ | 0.5+ | 2002 09 05 | 704 | 0.0 | 0.4+ | 2003 01 02 | 704 | 0.2− | 0.7+ |
| 2000 02 04 | 704 | 0.1+ | 0.9+ | 2002 09 05 | 699 | 0.3− | 1.1+ | 2003 01 02 | 704 | 1.0+ | 0.1− |
| 2000 02 04 | 704 | 1.2+ | 0.3+ | 2002 09 05 | 704 | 0.1+ | 0.2− | 2003 01 02 | 704 | 0.1+ | 0.2+ |
| 2000 02 04 | 704 | 0.3+ | 0.1+ | 2002 09 05 | 699 | 0.3+ | 0.2+ | 2003 01 02 | 704 | 1.0− | 0.4− |
| 2000 02 04 | 704 | 0.3+ | 0.2+ | 2002 09 05 | 704 | 0.2− | 0.4+ | 2003 11 20 | 691 | 0.2+ | 0.8+ |
| 2000 02 06 | 703 | 0.0 | 0.9+ | 2002 09 05 | 699 | 0.3− | 0.0 | 2003 11 20 | 691 | 0.5+ | 0.5+ |
| 2000 02 06 | 703 | 0.5+ | 0.9+ | 2002 09 05 | 704 | 0.1− | 0.0 | 2003 11 20 | 691 | 0.4+ | 0.4+ |
| 2000 02 06 | 703 | 0.4+ | 0.5+ | 2002 09 15 | 608 | 1.5− | 0.3+ | 2004 03 14 | 703 | 0.6+ | 0.6+ |
| 2000 02 06 | 703 | 0.2− | 0.1+ | 2002 09 15 | 608 | (1.5− | 0.4+) | 2004 03 14 | 703 | (1.8+ | 1.3−) |
| 2000 02 11 | 704 | 1.1+ | 0.5+ | 2002 09 15 | 608 | (1.6− | 0.4+) | 2004 03 14 | 703 | 0.4+ | 0.8+ |
| 2000 02 11 | 704 | 0.2+ | 0.1+ | 2002 09 26 | 699 | 1.1− | 0.4+ | 2004 03 14 | 703 | 1.4+ | 1.2− |
| 2000 02 11 | 704 | 0.6+ | 0.6+ | 2002 09 26 | 699 | 0.4− | 0.4+ | 2004 03 16 | 704 | 0.2+ | 0.8+ |
| 2000 02 11 | 704 | 0.3+ | 0.9+ | 2002 09 26 | 699 | 0.3− | 0.4+ | 2004 03 16 | 704 | 0.2+ | 0.0 |
| 2000 02 25 | 703 | 0.3− | 0.9− | 2002 09 26 | 699 | 1.2− | 0.3+ | 2004 03 16 | 704 | 0.0 | 0.7+ |
| 2000 02 25 | 703 | 0.1− | 0.6+ | 2002 09 28 | 608 | (1.4− | 1.8+) | 2004 03 16 | 704 | 1.1+ | 1.3+ |
| 2000 02 25 | 703 | 0.6+ | 0.2+ | 2002 09 28 | 608 | (1.2− | 1.8+) | 2004 03 20 | 704 | 0.8+ | 0.3− |
| 2000 02 25 | 703 | 1.0− | 0.7+ | 2002 09 28 | 608 | (1.5− | 1.9+) | 2004 03 20 | 704 | 0.0 | 0.4+ |
| 2000 02 28 | 704 | (2.0+ | 2.7−) | 2002 10 03 | 644 | 0.4− | 0.4+ | 2004 03 20 | 704 | 1.1+ | 1.0+ |
| 2000 02 28 | 704 | 0.7− | 0.3− | 2002 10 03 | 644 | 0.5− | 0.4+ | 2004 03 20 | 704 | (0.3+ | 1.9+) |
| 2000 02 28 | 704 | 0.3+ | 0.4+ | 2002 10 03 | 644 | 0.6− | 0.4+ | 2004 03 23 | 704 | 0.7+ | 0.8+ |
| 2000 02 28 | 704 | 0.0 | 0.3− | 2002 10 04 | 704 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.0 |
| 2000 03 05 | 704 | 0.3+ | 0.6− | 2002 10 04 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.6− |
| 2000 03 05 | 704 | 0.4− | 0.3+ | 2002 10 04 | 704 | 0.0 | 0.8+ | 2004 03 23 | 704 | 0.9+ | 0.1+ |
| 2000 03 05 | 704 | 0.2+ | 0.5− | 2002 10 04 | 704 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.2+ | 0.3+ |
| 2000 03 05 | 704 | 0.0 | 0.7− | 2002 10 04 | 704 | 0.5− | 0.3+ | 2004 03 27 | 704 | 0.6+ | 0.4+ |
| 2000 03 05 | 704 | 0.3− | 0.5− | 2002 10 06 | 704 | 0.0 | 0.9+ | 2004 03 27 | 704 | 0.6− | 0.1− |
| 2000 03 06 | 704 | 0.1+ | 0.2+ | 2002 10 06 | 704 | 0.4+ | 1.2+ | 2004 03 27 | 704 | 0.1+ | 0.6+ |
| 2000 03 06 | 704 | 0.9+ | 0.1− | 2002 10 06 | 704 | 0.1− | 1.2+ | 2004 03 27 | 704 | 0.1− | 0.6+ |
| 2000 03 06 | 704 | 0.9+ | 0.1+ | 2002 10 06 | 704 | 0.4− | 0.6+ | 2004 04 08 | 644 | 0.2+ | 1.0+ |
| 2000 03 06 | 704 | 0.8+ | 1.2− | 2002 10 06 | 704 | 0.1+ | 1.2+ | 2004 04 08 | 644 | 0.3+ | 0.6+ |
| 2000 03 11 | 691 | 0.3− | 0.5+ | 2002 10 07 | 704 | 0.2− | 1.0+ | 2004 04 08 | 644 | 0.5+ | 0.2+ |
| 2000 03 11 | 691 | 0.2− | 0.5+ | 2002 10 07 | 704 | 0.2− | 1.0+ | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2000 03 11 | 691 | 0.5− | 0.6+ | 2002 10 07 | 704 | 0.0 | 0.8+ | 2006 09 19 | 703 | 0.1− | 0.3− |
| 2002 08 10 | 704 | 0.2+ | 0.1+ | 2002 10 07 | 704 | 0.1+ | 1.2+ | 2006 09 19 | 703 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 704 | 0.4− | 0.3− | 2002 10 07 | 704 | 0.2− | 0.8+ | 2006 09 25 | 703 | 0.5− | 0.3− | | |
| 2002 08 10 | 704 | 0.1− | 0.1+ | 2002 10 09 | 699 | 0.3+ | 0.2+ | 2006 09 25 | 703 | 0.6− | 0.4− | | |
| 2002 08 10 | 704 | 0.3− | 0.1− | 2002 10 09 | 699 | 0.5+ | 0.5+ | 2006 09 25 | 703 | 0.3− | 0.9− | | |
| 2002 08 10 | 704 | 0.1+ | 0.3+ | 2002 10 09 | 699 | 0.4− | 0.3+ | 2006 10 03 | 704 | 0.2+ | 0.3+ | | |
| 2002 08 11 | 608 | 0.5− | 0.3− | 2002 10 09 | 699 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.5+ | | |
| 2002 08 11 | 608 | 0.4− | 0.6− | 2002 10 12 | 704 | 0.2− | 0.3− | 2006 10 03 | 704 | 0.4+ | 0.3+ | | |
| 2002 08 11 | 608 | 0.1− | 0.4− | 2002 10 12 | 704 | 0.4+ | 0.2− | 2006 10 16 | 704 | 0.3+ | 0.1− | | |
| 2002 08 14 | 704 | (1.9+ | 0.5+) | 2002 10 12 | 704 | 0.3− | 0.2− | 2006 10 16 | 704 | 0.3+ | 0.3− | | |
| 2002 08 14 | 704 | 0.7+ | 0.5+ | 2002 11 08 | 704 | 0.0 | 1.1+ | 2006 10 16 | 704 | 0.1− | 0.4− | | |
| 2002 08 14 | 704 | 0.7+ | 0.4+ | 2002 11 08 | 704 | 1.0+ | 0.2− | 2006 10 16 | 704 | 0.1+ | 0.1− | | |
| 2002 08 14 | 704 | 0.2− | 1.0+ | 2002 11 08 | 704 | 1.2+ | 0.4+ | 2006 11 13 | 704 | 1.0+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.0 | 0.1+ | 2002 11 08 | 704 | 0.9+ | 0.2+ | 2006 11 13 | 704 | 0.9+ | 0.7+ | | |
| 2002 08 15 | 699 | 0.7− | 0.8+ | 2002 11 08 | 645 | 0.1− | 0.2− | 2006 11 13 | 704 | 1.0+ | 0.2+ | | |
| 2002 08 15 | 699 | 0.4− | 0.4+ | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 11 13 | 704 | 1.0+ | 0.2+ | | |
| 2002 08 15 | 699 | 0.2− | 0.8+ | 2002 11 08 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 704 | 0.8+ | 0.5+ | | |
| 2002 08 15 | 699 | 0.4− | 0.3+ | 2002 12 05 | 704 | 0.9+ | 0.2− | 2006 11 20 | 703 | 0.2− | 0.4− | | |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.5− | 0.7+ | 2006 11 20 | 703 | 0.5− | 0.5− | | |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2002 12 05 | 704 | 0.4− | 0.1+ | 2006 11 20 | 703 | 1.2− | 0.5− | | |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2002 12 05 | 704 | 1.1− | 0.1+ | 2006 11 20 | 703 | 2.3− | 0.1− | | |
| 2002 09 04 | 644 | 0.5− | 0.5− | 2002 12 05 | 704 | 0.1− | 0.4+ | | | | | | |

**(138000)∗ 2000 CK$_{82}$ = 1991 RL$_{42}$ = 2002 RS$_{85}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34887), A. Doppler (*MPO* 88701)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.13791 | | (2000.0) | | +0.07800409 | −0.99692707 |
| $n$ | 0.26790135 | $\omega$ | 74.35617 | | +0.89987939 | +0.06730029 |
| $a$ | 2.3831577 | $\Omega$ | 11.17737 | | +0.42910657 | +0.04008852 |
| $e$ | 0.1868799 | $i$ | 2.12738 | | | |
| $P$ | 3.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 09 | 691 | 0.1+ | 0.2− | 2002 09 30 | 704 | (1.7− | 1.0+) | 2004 04 11 | 644 | 0.4+ | 0.6+ | | |
| 1991 09 09 | 691 | 0.1− | 0.0 | 2002 09 30 | 704 | 1.3− | 1.0+ | 2004 04 16 | 704 | 0.2− | 0.7+ | | |
| 1991 09 09 | 691 | 0.1+ | 0.0 | 2002 09 30 | 704 | 1.5− | 0.6+ | 2004 04 16 | 704 | 0.5+ | 1.0+ | | |
| 2000 01 13 | 699 | 0.5+ | 0.2− | 2002 09 30 | 704 | (1.7− | 1.1+) | 2004 04 16 | 704 | 0.2− | 1.3+ | | |
| 2000 01 13 | 699 | 0.7+ | 0.4+ | 2002 10 02 | 704 | 0.3+ | 0.6+ | 2004 04 16 | 704 | 0.3− | 1.3+ | | |
| 2000 01 13 | 699 | 0.7− | 0.2− | 2002 10 02 | 704 | 0.5− | 0.5+ | 2004 04 20 | 691 | 0.1+ | 0.6+ | | |
| 2000 02 04 | 704 | 0.0 | 0.2− | 2002 10 02 | 704 | 0.6− | 0.3+ | 2004 04 20 | 691 | 0.1+ | 0.8+ | | |
| 2000 02 04 | 704 | 0.4− | 0.5− | 2002 10 02 | 704 | 0.5− | 0.1+ | 2004 04 20 | 691 | 0.3+ | 0.7+ | | |
| 2000 02 04 | 704 | 0.0 | 0.4+ | 2002 10 03 | 704 | 0.4− | 0.7+ | 2004 04 21 | 704 | 0.7+ | 0.1− | | |
| 2000 02 04 | 704 | 0.4− | 0.4+ | 2002 10 03 | 704 | 0.0 | 1.0+ | 2004 04 21 | 704 | 0.2+ | 0.2+ | | |
| 2000 02 04 | 704 | 0.6− | 0.2+ | 2002 10 03 | 704 | 0.3− | 0.6+ | 2004 04 21 | 704 | 0.2− | 0.5+ | | |
| 2000 02 11 | 704 | 0.4− | 0.4+ | 2002 10 03 | 704 | 0.0 | 0.7+ | 2004 04 21 | 704 | 0.4+ | 0.2+ | | |
| 2000 02 11 | 704 | 0.1+ | 0.6− | 2002 10 03 | 704 | 0.4− | 0.4+ | 2004 04 21 | 704 | 0.5+ | 0.1− | | |
| 2000 02 11 | 704 | 0.5+ | 0.7+ | 2002 10 04 | 644 | 0.2+ | 1.1+ | 2004 04 22 | 704 | 0.7+ | 0.0 | | |
| 2000 02 11 | 704 | 0.7+ | 0.3+ | 2002 10 04 | 644 | 0.3− | 1.1+ | 2004 04 22 | 704 | 0.2+ | 0.5+ | | |
| 2000 02 11 | 704 | 0.0 | 1.1+ | 2002 10 04 | 644 | 0.3− | 1.2+ | 2004 04 22 | 704 | 0.7+ | 0.1+ | | |
| 2000 02 25 | 703 | 0.6− | 0.9+ | 2002 10 07 | 704 | 1.1− | 0.4+ | 2004 04 22 | 704 | 0.8+ | 0.8+ | | |
| 2000 02 25 | 703 | 0.8− | 1.0+ | 2002 10 07 | 704 | (2.0− | 1.3+) | 2004 04 24 | E12 | 1.4− | 0.4+ | | |
| 2000 02 25 | 703 | 0.0 | 0.2− | 2002 10 07 | 704 | 0.5+ | 0.4− | 2004 04 24 | E12 | 0.6− | 0.5+ | | |
| 2000 02 25 | 703 | 0.0 | 0.3− | 2002 10 07 | 704 | (2.3− | 0.4−) | 2004 04 24 | E12 | 0.9− | 0.2+ | | |
| 2000 02 28 | 704 | 0.2+ | 0.0 | 2002 10 07 | 704 | 0.1− | 1.2+ | 2004 04 24 | E12 | 0.1− | 0.7+ | | |
| 2000 02 28 | 704 | 0.3+ | 0.2+ | 2002 10 08 | 699 | 0.1+ | 0.1− | 2006 08 29 | 703 | (1.6− | 3.8−) | | |
| 2000 02 28 | 704 | 0.4+ | 0.3+ | 2002 10 08 | 699 | 0.5− | 0.4− | 2006 08 29 | 703 | 0.8− | 0.5+ | | |
| 2000 02 28 | 704 | 0.5+ | 0.3+ | 2002 10 08 | 699 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.6− | 1.2+ | | |
| 2000 02 28 | 704 | 0.4+ | 0.7+ | 2002 10 08 | 699 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.8− | 0.6+ | | |
| 2000 02 29 | 704 | 0.1+ | 0.7− | 2002 10 08 | 704 | (2.6− | 1.3+) | 2006 09 17 | 704 | 0.8− | 0.4+ | | |
| 2000 02 29 | 704 | 0.4+ | 0.3− | 2002 10 08 | 704 | (3.1− | 0.9+) | 2006 09 17 | 704 | 0.2+ | 0.9+ | | |
| 2000 02 29 | 704 | 0.1+ | 1.1− | 2002 10 08 | 704 | (2.4− | 0.1+) | 2006 09 17 | 704 | 0.4− | 0.5+ | | |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.2− | | |
| 2000 03 03 | 704 | 0.1− | 0.7+ | 2002 10 11 | 704 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.0 | 0.6− | | |
| 2000 03 03 | 704 | 0.3+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 703 | 0.3− | 0.5− | | |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.5+ | | |
| 2000 03 03 | 704 | 0.5+ | 0.0 | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.8+ | 0.0 | | |
| 2000 03 04 | 704 | 0.2− | 0.3+ | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.1− | 0.7− | | |
| 2000 03 04 | 704 | 0.0 | 0.9+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.6− | 0.7+ | | |
| 2000 03 04 | 704 | 0.1− | 0.1− | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.3− | | |
| 2000 03 04 | 704 | 0.0 | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.3− | | |
| 2000 03 04 | 704 | 0.4− | 0.2+ | 2002 11 01 | 608 | 0.5+ | 1.1+ | 2006 09 20 | 704 | 0.1+ | 0.1− | | |
| 2000 03 05 | 704 | 0.4+ | 0.0 | 2002 11 01 | 608 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.9+ | 0.7+ | | |
| 2000 03 05 | 704 | 0.6+ | 0.4+ | 2002 11 01 | 608 | 0.8+ | 0.9− | 2006 09 27 | 704 | 0.4+ | 0.6+ | | |
| 2000 03 05 | 704 | 0.1+ | 0.7+ | 2002 11 06 | 704 | 0.6− | 0.5− | 2006 09 27 | 704 | 0.3+ | 0.7+ | | |
| 2000 03 05 | 704 | 0.2− | 0.4+ | 2002 11 06 | 704 | 1.2− | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | | |
| 2000 03 05 | 704 | 0.0 | 0.4+ | 2002 11 06 | 704 | 1.4− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.4− | | |
| 2000 03 11 | 704 | 0.1+ | 0.7+ | 2002 11 06 | 704 | 1.2− | 0.8− | 2006 09 28 | G96 | 0.0 | 0.3− | | |
| 2000 03 11 | 704 | 0.0 | 0.1+ | 2002 11 06 | 704 | 1.0− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.3− | | |
| 2000 03 11 | 699 | 0.3− | 0.0 | 2002 11 19 | 644 | 0.4− | 1.1+ | 2006 09 28 | G96 | 0.2− | 0.3− | | |
| 2000 03 11 | 704 | 0.1+ | 0.1+ | 2002 11 19 | 644 | 0.4− | 1.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2000 03 11 | 704 | 0.8+ | 0.1+ | 2002 11 19 | 644 | 0.1− | 1.1+ | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2000 03 11 | 699 | 0.2− | 0.6+ | 2002 12 05 | 704 | 0.6− | 1.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2002 12 05 | 704 | 0.6+ | 0.5+ | 2006 11 14 | 703 | 0.4− | 0.7− | | |
| 2000 03 11 | 699 | 0.6+ | 0.3− | 2002 12 05 | 704 | 0.7− | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.7− | | |
| 2000 03 11 | 699 | 0.2− | 0.0 | 2002 12 05 | 704 | 0.2− | 1.1+ | 2006 11 14 | 703 | 0.0 | 0.6− | | |
| 2002 09 05 | 704 | (0.8+ | 1.6+) | 2003 01 04 | 704 | 0.2− | 1.2+ | 2006 11 14 | 703 | (1.7− | 3.3−) | | |
| 2002 09 05 | 704 | 0.5+ | 1.4+ | 2003 01 04 | 704 | 0.1− | 1.5+ | 2006 11 14 | 703 | (1.7+ | 2.9−) | | |
| 2002 09 05 | 704 | 0.2+ | 1.2+ | 2003 01 04 | 704 | 1.4− | 0.5− | 2006 11 14 | 703 | 0.0 | 1.1− | | |
| 2002 09 05 | 704 | (1.0+ | 1.8+) | 2003 01 04 | 704 | 1.0− | 0.5− | 2006 11 14 | 703 | 0.6− | 0.8− | | |
| 2002 09 05 | 704 | 1.2+ | 1.4+ | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 11 15 | 704 | 0.1− | 0.2− | | |
| 2002 09 07 | 704 | 0.3+ | 0.7+ | 2004 02 26 | 704 | 0.1+ | 0.3− | 2006 11 15 | 704 | 0.6− | 0.3+ | | |
| 2002 09 07 | 704 | (0.2+ | 1.9+) | 2004 02 26 | 704 | 0.5+ | 0.3− | 2006 11 15 | 704 | (2.0− | 0.7+) | | |
| 2002 09 07 | 704 | 0.1+ | 1.4+ | 2004 03 14 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 704 | (2.1− | 0.4+) | | |
| 2002 09 07 | 704 | (0.6+ | 1.5+) | 2004 03 14 | 644 | 0.2+ | 0.5+ | 2006 11 16 | 704 | (1.6− | 0.2−) | | |
| 2002 09 13 | 683 | (1.7− | 1.2+) | 2004 03 14 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.8+ | 1.0+ | | |
| 2002 09 13 | 683 | 0.4− | 0.1+ | 2004 03 16 | 704 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.3− | | |
| 2002 09 13 | 683 | 1.1− | 0.1+ | 2004 03 16 | 704 | 1.4+ | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.3+ | | |
| 2002 09 14 | 683 | (0.3+ | 2.5+) | 2004 03 16 | 704 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.2+ | | |
| 2002 09 14 | 683 | 1.4+ | 0.8+ | 2004 03 16 | 704 | 0.8+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.3+ | | |
| 2002 09 14 | 683 | 1.5− | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1+ | | |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2004 03 18 | 704 | 0.7+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.5+ | | |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.8+ | | |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2004 03 18 | 704 | (0.3− | 1.6+) | 2006 11 22 | 704 | 0.2− | 0.9+ | | |
| 2002 09 15 | 683 | (0.5+ | 2.2+) | 2004 03 18 | 704 | 0.2+ | 1.2+ | 2006 11 22 | 704 | 0.1− | 0.1+ | | |
| 2002 09 15 | 683 | 0.1− | 0.8+ | 2004 03 27 | 704 | 0.6+ | 0.7+ | 2006 11 22 | 704 | 0.2+ | 0.1+ | | |
| 2002 09 15 | 683 | 0.4+ | 0.6+ | 2004 03 27 | 704 | 0.5+ | 0.8+ | 2006 11 22 | 704 | 0.2+ | 0.0 | | |
| 2002 09 16 | 683 | (1.4+ | 2.0+) | 2004 03 27 | 704 | 0.7+ | 0.8+ | 2006 11 24 | 691 | 0.1+ | 0.4− | | |
| 2002 09 16 | 683 | 0.6+ | 1.4+ | 2004 03 27 | 704 | 0.0 | 0.8+ | 2006 11 24 | 691 | 0.0 | 0.4− | | |
| 2002 09 16 | 683 | (2.8+ | 1.6+) | 2004 03 27 | 704 | 0.6+ | 0.6+ | 2006 11 24 | 691 | 0.1+ | 0.3− | | |
| 2002 09 17 | 608 | 0.6− | 0.8+ | 2004 03 31 | 704 | 0.2+ | 0.1− | 2006 11 27 | 704 | 0.0 | 0.9+ | | |
| 2002 09 17 | 608 | 0.7− | 0.8+ | 2004 03 31 | 704 | 0.1+ | 0.9+ | 2006 11 27 | 704 | 0.1+ | 0.6+ | | |
| 2002 09 17 | 608 | 0.6− | 1.4+ | 2004 03 31 | 704 | 0.1− | 0.4+ | 2006 11 27 | 704 | 0.1− | 0.6+ | | |
| 2002 09 28 | 644 | 0.4− | 0.5+ | 2004 03 31 | 704 | 0.4− | 0.6+ | 2006 11 28 | 704 | 0.0 | 0.2− | | |
| 2002 09 28 | 644 | 0.6− | 0.5+ | 2004 03 31 | 704 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.2− | | |
| 2002 09 28 | 644 | 0.3− | 0.5+ | 2004 04 11 | 644 | 0.4+ | 0.6+ | 2006 11 28 | 704 | 0.5+ | 0.3− | | |
| 2002 09 30 | 704 | 1.4− | 0.6+ | 2004 04 11 | 644 | 1.0+ | 0.1+ | 2006 11 28 | 704 | 0.8+ | 0.3− | | |

**(138001)∗ 2000 CV$_{82}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.71743 | | (2000.0) | | −0.99966518 | +0.00673366 |
| $n$ | 0.27158939 | $\omega$ | 76.53831 | | −0.01599276 | −0.91982753 |
| $a$ | 2.3615339 | $\Omega$ | 103.84322 | | +0.02034128 | −0.39226518 |
| $e$ | 0.1466502 | $i$ | 1.47446 | | | |
| $P$ | 3.63 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.2+ | 0.5− | 2004 04 15 | 699 | (1.9− | 0.1+) | 2004 05 16 | 704 | 0.6+ | 0.3+ | | |
| 2000 02 04 | 704 | 0.4− | 0.9− | 2004 04 15 | 699 | 0.2− | 0.1− | 2004 05 16 | 704 | 0.2+ | 0.2+ | | |
| 2000 02 04 | 704 | 1.7− | 0.2− | 2004 04 15 | 699 | 0.2− | 0.1+ | 2004 05 16 | 704 | 0.4+ | 0.4+ | | |
| 2000 02 04 | 704 | 1.3− | 0.2− | 2004 04 15 | 699 | 0.0 | 0.3− | 2004 05 16 | 704 | 0.7+ | 1.0+ | | |
| 2000 02 11 | 704 | 0.9+ | 1.8+ | 2004 04 15 | 699 | 1.0− | 0.6− | 2004 05 19 | 704 | 1.5+ | 1.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.1+ | 0.6+ | 2004 04 15 | 699 | 0.1+ | 0.7+ | 2004 05 19 | 704 | 0.9+ | 0.2− |
| 2000 02 11 | 704 | 0.5+ | 0.9+ | 2004 04 15 | 699 | 0.5+ | 1.0− | 2004 05 19 | 704 | 0.2+ | 0.2− |
| 2000 02 11 | 704 | 0.8+ | 0.2+ | 2004 04 17 | 704 | 0.8− | 0.8+ | 2004 05 28 | 691 | 0.1− | 0.2− |
| 2000 02 25 | 703 | 0.1− | 0.5+ | 2004 04 17 | 704 | 0.0 | 0.1− | 2004 05 28 | 691 | 0.2− | 0.1− |
| 2000 02 25 | 703 | 0.7+ | 0.6+ | 2004 04 17 | 704 | 0.6− | 0.5− | 2004 05 28 | 691 | 0.1− | 0.1− |
| 2000 02 25 | 703 | 0.5− | 0.7+ | 2004 04 17 | 704 | 0.6+ | 0.2+ | 2004 06 07 | 699 | 0.7+ | 0.2+ |
| 2000 02 25 | 703 | (3.4− | 1.5+) | 2004 04 17 | 704 | 1.3+ | 1.0+ | 2004 06 07 | 699 | 1.1− | 0.7+ |
| 2000 03 05 | 704 | 0.3+ | 0.1+ | 2004 04 22 | 704 | 0.1− | 0.8+ | 2004 06 07 | 699 | 0.5− | 1.1− |
| 2000 03 05 | 704 | 0.9+ | 0.3− | 2004 04 22 | 704 | 0.0 | 0.7+ | 2004 06 07 | 699 | 0.5+ | 0.5+ |
| 2000 03 05 | 704 | 0.4+ | 0.6+ | 2004 04 22 | 704 | 0.3+ | 0.3+ | 2004 06 08 | 691 | 0.0 | 0.1+ |
| 2000 03 05 | 704 | 0.4− | 0.6− | 2004 04 22 | 704 | 0.3+ | 0.0 | 2004 06 08 | 691 | 0.3+ | 0.0 |
| 2000 03 05 | 704 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.3+ | 0.3+ | 2004 06 08 | 691 | 0.1+ | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 0.0 | 2004 04 29 | 704 | 0.2− | 0.5− | 2005 09 12 | 691 | 0.5− | 0.5+ |
| 2000 03 11 | 704 | 0.3− | 0.9+ | 2004 04 29 | 704 | 0.4− | 0.3+ | 2005 09 12 | 691 | 0.3− | 0.7+ |
| 2000 03 11 | 704 | 0.3− | 1.0+ | 2004 04 29 | 704 | 0.1− | 0.2+ | 2005 09 12 | 691 | 0.6− | 0.6+ |
| 2000 03 11 | 704 | 0.1+ | 0.7+ | 2004 04 29 | 704 | 0.6− | 0.5− | 2005 10 06 | G96 | 0.6− | 0.1+ |
| 2000 03 11 | 704 | 0.4+ | 1.2+ | 2004 04 29 | 704 | 0.0 | 0.2+ | 2005 10 06 | G96 | 0.3− | 0.4+ |
| 2002 12 05 | 704 | 1.2− | 0.6+ | 2004 05 11 | 699 | 0.3− | 0.1− | 2005 10 06 | G96 | 0.2− | 0.2+ |
| 2002 12 05 | 704 | 0.1− | 0.6+ | 2004 05 11 | 699 | 0.4+ | 0.4+ | 2005 10 06 | G96 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 0.4− | 0.1− | 2004 05 11 | 699 | 0.1− | 0.6− | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2002 12 10 | 644 | 0.4− | 0.7+ | 2004 05 11 | 699 | 0.9− | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 12 10 | 644 | 0.1− | 0.7+ | 2004 05 15 | 704 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2002 12 10 | 644 | 0.3+ | 0.8+ | 2004 05 15 | 704 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2003 01 02 | 291 | 0.1+ | 0.6+ | 2004 05 15 | 704 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2003 01 02 | 291 | 0.2+ | 0.5+ | 2004 05 15 | 704 | 0.2+ | 0.5− | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2003 01 02 | 291 | 0.7+ | 0.6+ | 2004 05 15 | 704 | 0.4− | 0.7+ | 2006 12 01 | G96 | 0.5− | 0.5− |
| 2004 04 15 | 699 | 0.6+ | 0.9+ | 2004 05 16 | 704 | 0.4+ | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.3− |

**(138002)∗ 2000 $CN_{84}$ = 2002 $TV_{87}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37325)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.53856 | | (2000.0) | | | |
| $n$ | 0.24316867 | $\omega$ | 28.12215 | | −0.84214578 | −0.53864915 |
| $a$ | 2.5421293 | $\Omega$ | 119.26386 | | +0.48912204 | −0.78287932 |
| $e$ | 0.0936443 | $i$ | 1.67157 | | +0.22704649 | −0.31137929 |
| $P$ | 4.05 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.9− | 0.1− | 2002 10 07 | 704 | 0.2− | 1.0− | 2004 02 17 | 704 | (0.5− | 2.6−) |
| 1996 03 26 | 691 | 0.5− | 0.2+ | 2002 10 07 | 704 | 0.6+ | 0.6+ | 2004 02 17 | 704 | (0.1+ | 2.3−) |
| 1996 03 26 | 691 | 0.1− | 0.4− | 2002 10 10 | 704 | 0.5− | 0.2+ | 2004 02 23 | 704 | 0.2− | 0.4+ |
| 2000 02 01 | 703 | 1.7− | 0.2+ | 2002 10 10 | 704 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.7+ | 0.1+ |
| 2000 02 01 | 703 | 0.9+ | 0.4+ | 2002 10 10 | 704 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.5+ | 0.4+ |
| 2000 02 01 | 703 | 0.3+ | 0.2− | 2002 10 11 | 704 | 0.4+ | 0.9+ | 2004 02 23 | 704 | 0.9+ | 0.7+ |
| 2000 02 01 | 703 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.6+ | 2004 02 23 | 704 | 0.6+ | 0.2+ |
| 2000 02 04 | 704 | 1.3+ | 0.2+ | 2002 10 11 | 704 | 0.3− | 0.0 | 2004 02 27 | 608 | 0.2+ | 0.7− |
| 2000 02 04 | 704 | 0.9+ | 1.2− | 2002 10 11 | 704 | 0.5+ | 0.3+ | 2004 02 27 | 608 | 0.4+ | 0.9− |
| 2000 02 04 | 704 | 0.1+ | 0.6− | 2002 10 11 | 704 | 0.3− | 0.4+ | 2004 02 27 | 608 | 0.3+ | 0.9− |
| 2000 02 11 | 704 | 0.1− | 0.7− | 2002 10 12 | 704 | 0.5+ | 0.5+ | 2004 03 14 | 703 | 0.1− | 0.6+ |
| 2000 02 11 | 704 | 0.4− | 0.5− | 2002 10 12 | 704 | 0.9+ | 0.1+ | 2004 03 14 | 703 | 0.7− | 0.7− |
| 2000 02 11 | 704 | 0.4− | 0.5− | 2002 10 12 | 704 | 0.5+ | 0.0 | 2004 03 14 | 703 | 1.0− | 0.3+ |
| 2000 02 11 | 704 | 1.8+ | 1.4− | 2003 10 25 | 691 | 1.0+ | 0.5− | 2004 03 14 | 703 | (1.5− | 0.3+) |
| 2000 02 25 | 703 | 1.1− | 0.2+ | 2003 10 25 | 691 | 0.7− | 0.1− | 2004 03 14 | 704 | 0.6+ | 0.3+ |
| 2000 02 25 | 703 | 0.2− | 0.0 | 2003 10 25 | 691 | 1.2− | 0.2+ | 2004 03 14 | 704 | 0.5+ | 0.0 |
| 2000 02 25 | 703 | 0.1− | 0.6+ | 2004 01 17 | 608 | (1.6+ | 0.4+) | 2004 03 14 | 704 | 0.7+ | 0.3+ |
| 2000 02 25 | 703 | 0.6+ | 0.3− | 2004 01 17 | 608 | (1.6+ | 1.3+) | 2004 03 14 | 704 | 0.7− | 0.6+ |
| 2000 02 29 | 704 | 0.4+ | 0.3− | 2004 01 17 | 608 | 1.3+ | 1.3+ | 2004 03 19 | 704 | 1.1+ | 0.1− |
| 2000 02 29 | 704 | 0.5+ | 0.7− | 2004 01 22 | 704 | 0.3+ | 0.4− | 2004 03 19 | 704 | 0.3+ | 0.5+ |
| 2000 02 29 | 704 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.5+ | 0.3− | 2004 03 19 | 704 | 0.3− | 0.5− |
| 2000 02 29 | 704 | 0.3+ | 0.0 | 2004 01 22 | 704 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.2− | 0.1− |
| 2000 02 29 | 704 | 0.1+ | 0.2− | 2004 01 22 | 704 | 0.7+ | 0.5− | 2004 03 19 | 704 | 0.9− | 0.3+ |
| 2000 03 03 | 704 | 0.2+ | 0.1+ | 2004 01 22 | 704 | 0.8+ | 0.1+ | 2004 04 12 | 699 | 0.7− | 0.2+ |
| 2000 03 03 | 704 | 0.1− | 0.2− | 2004 01 29 | 704 | 0.3+ | 0.4+ | 2004 04 12 | 699 | 0.6− | 0.6+ |
| 2000 03 03 | 704 | 0.1+ | 0.0 | 2004 01 29 | 704 | 0.4+ | 0.1+ | 2004 04 12 | 699 | 0.2+ | 0.4+ |
| 2000 03 03 | 704 | 0.1− | 0.4+ | 2004 01 29 | 704 | 0.3− | 0.5+ | 2004 04 12 | 699 | 0.6+ | 0.1− |
| 2000 03 03 | 704 | 0.1+ | 0.0 | 2004 01 29 | 704 | 0.5− | 0.2+ | 2004 04 22 | 704 | (1.3+ | 1.6+) |
| 2000 03 05 | 704 | 0.6+ | 0.5+ | 2004 01 29 | 704 | 0.1− | 0.2+ | 2004 04 22 | 704 | 0.1+ | 0.4+ |
| 2000 03 05 | 704 | 0.7+ | 0.3− | 2004 02 11 | 644 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.1+ | 1.0+ |
| 2000 03 05 | 704 | 0.4+ | 0.0 | 2004 02 11 | 644 | 0.2+ | 0.0 | 2004 04 22 | 704 | 0.3+ | 0.4+ |
| 2000 03 05 | 704 | 0.3+ | 1.0+ | 2004 02 11 | 644 | 0.1+ | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.3+ |
| 2000 03 05 | 704 | 0.5+ | 1.3+ | 2004 02 11 | 699 | 0.3− | 0.8− | 2006 08 28 | 703 | 0.4− | 0.2+ |
| 2000 03 11 | 704 | 0.1+ | 0.2+ | 2004 02 11 | 699 | 0.4− | 0.2− | 2006 08 28 | 703 | (1.6− | 0.4−) |
| 2000 03 11 | 704 | 0.7+ | 0.1+ | 2004 02 11 | 699 | 0.4− | 0.2+ | 2006 08 28 | 703 | (2.8− | 2.1−) |
| 2000 03 11 | 704 | 0.8+ | 0.2+ | 2004 02 11 | 699 | 0.6− | 0.2− | 2006 08 28 | 703 | (3.9− | 5.7−) |
| 2000 03 11 | 704 | 0.7+ | 0.3+ | 2004 02 12 | 691 | 0.1+ | 0.8+ | 2006 09 14 | 691 | 0.3+ | 0.0 |
| 2000 03 11 | 704 | 0.3+ | 0.5+ | 2004 02 12 | 333 | 0.3− | 0.4− | 2006 09 14 | 691 | 1.2− | 0.2+ |
| 2000 03 11 | 608 | 0.2+ | 0.2+ | 2004 02 12 | 333 | 0.4− | 0.2− | 2006 09 14 | 691 | 0.3+ | 0.1+ |
| 2000 03 11 | 608 | 0.1+ | 0.3− | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2− |
| 2000 03 11 | 608 | 0.4+ | 0.8− | 2004 02 12 | 333 | 0.7− | 0.5− | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.1− | 0.5+ | 2004 02 12 | 333 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 1.1− | 0.1− | 2004 02 12 | 333 | 1.1− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 02 12 | 333 | 1.0− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.6− | 2004 02 13 | 333 | 0.6− | 0.3− | 2006 10 10 | 644 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2004 02 13 | 333 | 1.0− | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 0.5− | 2004 02 13 | 333 | 0.8− | 0.5− | 2006 10 10 | 644 | 0.5+ | 0.4+ |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2004 02 14 | 608 | 0.1+ | 0.7− | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.7− | 0.8+ | 2004 02 14 | 608 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2004 02 14 | 608 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.8+ | 0.3− |
| 2002 10 04 | 704 | 0.2− | 0.5+ | 2004 02 17 | 704 | 0.4− | 1.4+ | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2002 10 04 | 704 | 0.0 | 0.1− | 2004 02 17 | 704 | (0.2+ | 2.3−) | | | | |
| 2002 10 07 | 704 | 1.0+ | 1.3− | 2004 02 17 | 704 | (0.3− | 2.4−) | | | | |

**(138003)∗ 2000 $CK_{85}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.46395 | | (2000.0) | | | |
| $n$ | 0.26162055 | $\omega$ | 48.52182 | | −0.25450640 | −0.96609923 |
| $a$ | 2.4211488 | $\Omega$ | 56.27269 | | +0.87101524 | −0.24847120 |
| $e$ | 0.0837085 | $i$ | 2.98741 | | +0.42018918 | −0.07010232 |
| $P$ | 3.77 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.6+ | 0.4− | 2004 03 17 | 704 | 1.3+ | 0.7+ | 2005 07 07 | 691 | 0.5− | 0.3+ |
| 2000 02 04 | 704 | 0.1+ | 0.5− | 2004 03 17 | 704 | 0.4− | 0.2+ | 2005 07 11 | 691 | 0.5− | 0.5+ |
| 2000 02 04 | 704 | 0.4− | 0.5− | 2004 03 17 | 704 | 0.2− | 0.7− | 2005 07 11 | 691 | 0.3− | 0.5+ |
| 2000 02 04 | 704 | 0.8− | 0.3+ | 2004 03 17 | 704 | 0.4+ | 0.1+ | 2005 07 11 | 691 | 0.2− | 0.6+ |
| 2000 02 11 | 704 | 1.4− | 0.3+ | 2004 03 17 | 704 | 0.9+ | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.5− |
| 2000 02 11 | 704 | 1.0+ | 1.5+ | 2004 03 17 | 704 | 0.6+ | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2000 02 11 | 704 | 0.5− | 0.8+ | 2004 03 17 | 704 | (6.6+ | 4.4+) | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2000 02 11 | 704 | 1.4− | 1.1+ | 2004 03 17 | 704 | 0.6+ | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2000 02 25 | 703 | 1.4− | 0.3− | 2004 03 17 | 704 | 0.9− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2000 02 25 | 703 | 1.2− | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2000 02 25 | 703 | 1.2+ | 0.7− | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2000 02 25 | 703 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2000 03 05 | 704 | 0.7+ | 0.1− | 2004 03 18 | 704 | 0.6+ | 0.8+ | 2006 11 15 | 703 | (1.8+ | 0.7−) |
| 2000 03 05 | 704 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 703 | 0.8+ | 0.2+ |
| 2000 03 05 | 704 | 0.6− | 0.3+ | 2004 03 19 | 704 | 0.1+ | 1.4− | 2006 11 15 | 703 | 0.5+ | 0.3− |
| 2000 03 05 | 704 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.2− | 0.6− | 2006 11 15 | 703 | 1.0+ | 0.8+ |
| 2000 03 08 | 704 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.0 | 1.0− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2000 03 08 | 704 | 0.4+ | 0.2+ | 2004 03 19 | 704 | 0.9+ | 1.1− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2000 03 08 | 704 | 1.6+ | 1.1+ | 2004 03 19 | 704 | 0.2− | 1.4− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2000 03 12 | 704 | 0.4− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 0.8− | 0.1+ |
| 2000 03 12 | 704 | 0.9+ | 0.0 | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | (0.5− | 1.7+) |
| 2000 03 12 | 704 | 0.2+ | 1.0+ | 2004 03 22 | 704 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 1.2+ |
| 2000 03 12 | 704 | 0.4+ | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.3+ | 2006 11 18 | 704 | (0.7− | 1.7+) |
| 2002 10 03 | 704 | (1.1+ | 2.2+) | 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2002 10 03 | 704 | 1.2+ | 0.4+ | 2004 03 28 | 704 | (1.6+ | 0.8+) | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2002 10 03 | 704 | (1.9+ | 0.1+) | 2004 03 28 | 704 | 1.3+ | 1.2+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.1− | 0.5− | 2004 03 28 | 704 | 0.9+ | 0.5− | 2006 11 19 | 691 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3+ | 1.3+ | 2004 03 28 | 704 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 1.1+ | | |
| 2002 10 30 | 644 | 0.2− | 1.2+ | 2004 04 12 | 699 | 0.4− | 0.7+ | 2006 11 21 | 704 | 0.6− | 0.4+ | | |
| 2002 10 30 | 644 | 0.2− | 1.3+ | 2004 04 12 | 699 | 0.9− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.6+ | | |
| 2002 10 30 | 644 | 0.2− | 1.0+ | 2004 04 12 | 699 | 0.6+ | 0.5+ | 2006 11 21 | 704 | 0.4− | 0.7+ | | |
| 2002 11 06 | 704 | 0.6+ | 0.6+ | 2004 04 12 | 699 | 0.6− | 0.5− | 2006 11 21 | 704 | 0.2− | 0.9+ | | |
| 2002 11 06 | 704 | 1.2− | 0.4+ | 2004 04 15 | 699 | (0.2− | 1.9+) | 2006 11 23 | 691 | 0.1− | 0.0 | | |
| 2002 11 06 | 704 | 0.1− | 0.7+ | 2004 04 15 | 699 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2002 11 06 | 704 | 0.2+ | 0.7+ | 2004 04 15 | 699 | 0.5− | 0.9+ | 2006 11 23 | 691 | 0.1− | 0.2− | | |
| 2002 12 01 | 704 | 0.3+ | 1.2+ | 2004 04 15 | 699 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2002 12 01 | 704 | 1.1+ | 0.4+ | 2004 04 19 | 704 | 0.1+ | 0.9+ | 2006 11 27 | 691 | 0.2+ | 0.0 | | |
| 2002 12 01 | 704 | 0.3− | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.1− | | |
| 2004 03 15 | 703 | 0.0 | 0.2+ | 2004 04 19 | 704 | 1.3+ | 0.8+ | 2006 12 01 | 691 | 0.2+ | 0.0 | | |
| 2004 03 15 | 703 | 0.2+ | 0.8− | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 12 01 | 691 | 0.2− | 0.2+ | | |
| 2004 03 15 | 703 | 0.7+ | 1.0+ | 2004 04 19 | 704 | 0.3+ | 0.7+ | 2006 12 01 | 704 | 0.5+ | 0.2− | | |
| 2004 03 15 | 703 | 0.2− | 1.2+ | 2004 04 28 | 691 | 0.0 | 0.3− | 2006 12 01 | 691 | 0.1− | 0.1+ | | |
| 2004 03 16 | 704 | 0.5+ | 0.7+ | 2004 04 28 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.6− | 0.6+ | | |
| 2004 03 16 | 704 | 0.2+ | 0.8+ | 2004 04 28 | 691 | 0.4− | 0.2+ | 2006 12 01 | 704 | 0.7+ | 0.0 | | |
| 2004 03 16 | 704 | 0.3− | 0.1− | 2005 07 07 | 691 | 0.0 | 0.4+ | | | | | | |
| 2004 03 16 | 704 | 1.0+ | 0.7− | 2005 07 07 | 691 | 0.1− | 0.5+ | | | | | | |

**(138004)∗ 2000 CW$_{85}$ = 2000 CV$_{144}$ = 2002 UA$_{29}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11070), G. V. Williams (*MPO* 37326)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | **P** | **Q** |
|---|---|---|---|---|---|
| $M$ | 282.06208 | | (2000.0) | | |
| $n$ | 0.25885473 | $\omega$ | 14.44063 | −0.61743752 | −0.78578704 |
| $a$ | 2.4383646 | $\Omega$ | 113.70162 | +0.71773253 | −0.58159696 |
| $e$ | 0.1286580 | $i$ | 2.26506 | +0.32191757 | −0.21043693 |
| $P$ | 3.81 | $H$ | 16.0 $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 01 | 703 | 0.5+ | 0.3− | 2004 02 23 | 704 | 0.6+ | 0.4+ | 2004 04 21 | 691 | 0.2− | 0.1+ | | |
| 2000 02 01 | 703 | 0.9+ | 0.7+ | 2004 02 23 | 704 | (0.6− | 1.6+) | 2004 04 21 | 691 | 0.3− | 0.0 | | |
| 2000 02 01 | 703 | 0.4− | 0.0 | 2004 03 16 | 704 | 0.3− | 1.3+ | 2004 04 22 | 704 | 0.6+ | 0.5+ | | |
| 2000 02 01 | 703 | 0.3+ | 0.8+ | 2004 03 16 | 704 | 0.1+ | 0.1− | 2004 04 22 | 704 | 0.0 | 0.0 | | |
| 2000 02 04 | 704 | 0.2+ | 0.2− | 2004 03 16 | 704 | 0.2+ | 0.1+ | 2004 04 22 | 704 | 0.8+ | 0.5+ | | |
| 2000 02 04 | 704 | 0.5+ | 0.1+ | 2004 03 16 | 704 | 0.1− | 1.0+ | 2004 04 22 | 704 | 1.1+ | 0.2+ | | |
| 2000 02 04 | 704 | 0.6− | 1.4− | 2004 03 16 | 704 | 0.2+ | 0.3− | 2004 04 22 | 704 | 0.2− | 0.7+ | | |
| 2000 02 04 | 104 | 0.2+ | 1.7− | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2005 07 09 | 691 | 0.4− | 0.6+ | | |
| 2000 02 04 | 104 | 0.2+ | 0.7− | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2005 07 09 | 691 | 0.4− | 0.5+ | | |
| 2000 02 11 | 704 | 0.8− | 1.1− | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2005 07 09 | 691 | 0.1− | 0.6+ | | |
| 2000 02 11 | 704 | 0.7− | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2− | | |
| 2000 02 11 | 704 | 0.1+ | 1.1+ | 2004 03 19 | 704 | (1.4− | 4.3−) | 2006 10 17 | G96 | 0.0 | 0.1− | | |
| 2000 02 11 | 704 | 0.5+ | 0.0 | 2004 03 19 | 704 | (2.0− | 3.1−) | 2006 10 17 | G96 | 0.0 | 0.2− | | |
| 2000 02 25 | 703 | 0.6− | 0.1+ | 2004 03 19 | 704 | (2.3− | 3.9−) | 2006 10 17 | G96 | 0.4+ | 0.1+ | | |
| 2000 02 25 | 703 | 0.4+ | 0.2+ | 2004 03 19 | 704 | (1.8− | 3.8−) | 2006 10 18 | 691 | 0.2− | 0.3− | | |
| 2000 02 25 | 703 | 0.4− | 0.1− | 2004 03 19 | 704 | (2.1− | 3.5−) | 2006 10 18 | 691 | 0.0 | 0.0 | | |
| 2000 02 25 | 703 | 0.5− | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.0 | | |
| 2000 02 29 | 704 | 0.4+ | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.2+ | | |
| 2000 02 29 | 704 | 0.2+ | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.1+ | | |
| 2000 02 29 | 704 | 0.0 | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 1.1− | 0.1− | | |
| 2000 02 29 | 704 | 0.2+ | 0.1− | 2004 03 22 | 704 | 0.2+ | 0.5+ | 2006 11 02 | 703 | (2.4− | 0.4+) | | |
| 2000 02 29 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 11 02 | 703 | 0.6+ | 0.9+ | | |
| 2000 03 05 | 704 | 0.3− | 0.4− | 2004 03 23 | 704 | 0.8+ | 0.3− | 2006 11 02 | 703 | 1.0+ | 0.3+ | | |
| 2000 03 05 | 704 | 0.3− | 0.7+ | 2004 03 23 | 704 | 0.4+ | 0.0 | 2006 11 02 | 703 | 0.6− | 0.3− | | |
| 2000 03 05 | 704 | 0.6− | 0.5+ | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1− | | |
| 2000 03 05 | 704 | 1.5− | 0.2+ | 2004 03 23 | 704 | 0.3+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.2+ | | |
| 2000 03 05 | 704 | 0.7− | 0.8+ | 2004 03 24 | 699 | 0.9− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1+ | | |
| 2000 03 11 | 699 | 0.8+ | 0.7+ | 2004 03 24 | 699 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.1− | | |
| 2000 03 11 | 699 | 0.4+ | 0.2+ | 2004 03 24 | 699 | 0.8− | 0.4+ | 2006 11 11 | 703 | 0.4− | 1.0− | | |
| 2000 03 11 | 699 | 0.1− | 0.3− | 2004 03 24 | 699 | 0.3− | 0.0 | 2006 11 11 | 703 | (2.0+ | 4.8+) | | |
| 2000 03 11 | 699 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.7+ | 1.2+ | 2006 11 11 | 703 | 0.1+ | 0.8+ | | |
| 2000 03 12 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 1.2+ | 0.2+ | 2006 11 11 | 644 | 0.3− | 0.2+ | | |
| 2000 03 12 | 704 | 0.4+ | 0.1− | 2004 03 28 | 704 | 0.3− | 1.4+ | 2006 11 11 | 644 | 0.5+ | 0.5+ | | |
| 2000 03 12 | 704 | 0.9− | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 644 | 0.3− | 0.0 | | |
| 2000 03 12 | 704 | 0.6+ | 0.8+ | 2004 03 28 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 644 | 0.1− | 0.1+ | | |
| 2000 03 12 | 704 | 0.1− | 0.3+ | 2004 04 12 | 699 | 0.7− | 0.3− | 2006 11 11 | 644 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 04 12 | 699 | 0.6− | 0.4− | 2006 11 11 | 644 | 0.3+ | 0.0 | | |
| 2002 10 03 | 704 | (0.7− | 1.8+) | 2004 04 12 | 699 | 0.6− | 0.4+ | 2006 11 12 | G96 | 0.4+ | 0.3− | | |
| 2002 10 03 | 704 | 0.6+ | 0.6+ | 2004 04 12 | 699 | 1.1− | 0.5+ | 2006 11 12 | G96 | 0.3+ | 0.2− | | |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2004 04 13 | 683 | 0.6+ | 0.9− | 2006 11 12 | G96 | 0.2+ | 0.1− | | |
| 2002 10 11 | 704 | 0.1− | 0.5+ | 2004 04 13 | 683 | 1.0+ | 0.4− | 2006 11 18 | 704 | 1.1+ | 0.8− | | |
| 2002 10 11 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 683 | (0.2+ | 1.7−) | 2006 11 18 | 704 | 1.3+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.0 | 0.6− | 2004 04 15 | 683 | (0.8+ | 3.3−) | 2006 11 18 | 704 | 0.6− | 0.3+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.4+ | 2004 04 15 | 699 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 1.1+ | 1.1− | | |
| 2002 10 31 | 704 | 0.8+ | 0.9+ | 2004 04 15 | 683 | (0.8− | 2.3−) | 2006 11 18 | 704 | 0.8+ | 0.6− | | |
| 2002 10 31 | 704 | 0.3+ | 0.6+ | 2004 04 15 | 699 | 0.3+ | 0.5+ | 2006 11 21 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 683 | 0.1− | 0.9− | 2006 11 21 | 704 | 0.0 | 0.9+ | | |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 699 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.1+ | | |
| 2002 11 01 | 704 | 0.6− | 0.1− | 2004 04 15 | 699 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.9− | 0.1+ | | |
| 2002 11 01 | 704 | 0.3− | 0.7+ | 2004 04 19 | 704 | 0.2+ | 1.2− | 2006 11 21 | 704 | 0.7+ | 1.0+ | | |
| 2002 11 01 | 704 | 0.4− | 1.2+ | 2004 04 19 | 704 | 0.1+ | 0.6+ | 2006 11 28 | 704 | 0.2− | 0.3+ | | |
| 2002 11 01 | 704 | 0.4− | 1.3+ | 2004 04 19 | 704 | 0.2+ | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.7+ | | |
| 2004 02 23 | 704 | 0.5+ | 1.2+ | 2004 04 19 | 704 | 1.0+ | 0.5− | 2006 11 28 | 704 | 0.1+ | 1.0+ | | |
| 2004 02 23 | 704 | 0.6+ | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.4− | 1.0+ | | |
| 2004 02 23 | 704 | (0.1+ | 1.6+) | 2004 04 21 | 691 | 0.2− | 0.0 | | | | | | |

**(138005)∗ 2000 CT$_{87}$ = 2002 TG$_{233}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37327)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | **P** | **Q** |
|---|---|---|---|---|---|
| $M$ | 141.09808 | | (2000.0) | | |
| $n$ | 0.22783409 | $\omega$ | 232.80760 | −0.88682252 | +0.44966181 |
| $a$ | 2.6549535 | $\Omega$ | 333.41655 | −0.31118987 | −0.75154225 |
| $e$ | 0.0824643 | $i$ | 13.77268 | −0.34162359 | −0.48268882 |
| $P$ | 4.33 | $H$ | 14.4 $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.3+ | 1.0+ | 2003 12 17 | 703 | (1.5+ | 1.6+) | 2004 03 20 | 704 | 0.3− | 0.6− | | |
| 2000 02 04 | 704 | 0.3− | 0.5+ | 2003 12 17 | 704 | 0.0 | 0.2+ | 2004 04 19 | 704 | 1.1+ | 1.3+ | | |
| 2000 02 04 | 704 | 0.6+ | 0.7+ | 2003 12 17 | 704 | 0.3− | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.1− | | |
| 2000 02 04 | 704 | 0.2+ | 0.6+ | 2003 12 17 | 699 | 0.8− | 0.0 | 2004 04 19 | 704 | 0.7+ | 0.3+ | | |
| 2000 02 06 | 695 | 0.3+ | 0.4+ | 2003 12 17 | 699 | 0.3+ | 0.6− | 2004 04 22 | 704 | 0.2+ | 0.2+ | | |
| 2000 02 06 | 695 | 0.2− | 0.4+ | 2003 12 17 | 699 | 0.6+ | 0.5+ | 2004 04 22 | 704 | 1.1+ | 0.1+ | | |
| 2000 02 10 | 120 | 1.7− | 0.4− | 2003 12 17 | 699 | 1.0− | 0.0 | 2004 04 22 | 704 | 0.7− | 0.3− | | |
| 2000 02 10 | 120 | 1.0− | 0.1+ | 2003 12 28 | 704 | 0.3+ | 0.8− | 2004 04 22 | 704 | 0.8+ | 0.1− | | |
| 2000 02 10 | 120 | 0.1− | 0.2+ | 2003 12 28 | 704 | (0.0 | 2.6+) | 2004 05 19 | 291 | 0.6− | 0.7− | | |
| 2000 02 10 | 120 | 0.3− | 0.4− | 2003 12 28 | 704 | 0.2− | 0.4− | 2004 05 19 | 291 | 0.0 | 0.5− | | |
| 2000 02 11 | 704 | 1.3− | 0.5− | 2003 12 28 | 704 | 0.0 | 0.3− | 2004 05 19 | 291 | 0.2+ | 0.5− | | |
| 2000 02 11 | 704 | 0.9+ | 0.0 | 2003 12 28 | 704 | 0.4− | 0.3+ | 2006 08 24 | 704 | 0.6+ | 0.4+ | | |
| 2000 02 11 | 704 | 1.3− | 0.4− | 2003 12 29 | 703 | 1.0− | 0.5+ | 2006 08 24 | 704 | 1.3+ | 0.4+ | | |
| 2000 02 11 | 704 | 0.4+ | 0.8− | 2003 12 29 | 703 | (2.5− | 3.1−) | 2006 08 24 | 704 | (0.7− | 1.6+) | | |
| 2000 02 11 | 704 | 0.5+ | 0.1− | 2003 12 29 | 703 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.2+ | 1.0+ | | |
| 2000 02 12 | 120 | 0.1− | 0.3+ | 2003 12 29 | 703 | 0.6+ | 0.2− | 2006 08 24 | 704 | 0.2− | 1.2+ | | |
| 2000 02 13 | 120 | 0.0 | 0.5− | 2003 12 29 | 704 | 0.6− | 0.7− | 2006 08 27 | 699 | 0.3− | 0.0 | | |
| 2000 02 27 | 695 | 0.6+ | 0.2+ | 2003 12 29 | 704 | 0.7− | 0.0 | 2006 08 27 | 699 | 0.2− | 0.1+ | | |
| 2000 02 27 | 695 | 0.4+ | 0.3+ | 2003 12 29 | 704 | 0.2− | 0.6− | 2006 08 27 | 699 | 0.2− | 0.3+ | | |
| 2000 02 29 | 704 | 0.1+ | 0.2+ | 2003 12 29 | 704 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 1.0+ | 0.4− | | |
| 2000 02 29 | 704 | 0.3+ | 0.3− | 2003 12 29 | 704 | 0.4− | 0.3+ | 2006 08 28 | 704 | 0.9− | 0.7− | | |
| 2000 02 29 | 704 | 0.1+ | 0.1− | 2003 12 29 | 704 | 0.5+ | 0.0 | 2006 08 28 | 703 | (1.5− | 0.4+) | | |
| 2000 02 29 | 704 | 0.3− | 0.1+ | 2003 12 29 | 704 | 0.1+ | 0.6− | 2006 08 28 | 704 | 0.8+ | 0.2− | | |
| 2000 02 29 | 704 | 0.8+ | 0.1− | 2003 12 29 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.6− | 0.3+ | | |
| 2000 03 03 | 704 | 0.2+ | 0.3+ | 2003 12 29 | 704 | 0.7− | 0.1+ | 2006 08 28 | 704 | 0.3+ | 1.1+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2003 12 29 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.3− | | |
| 2000 03 03 | 704 | 0.1− | 0.4+ | 2003 12 29 | 704 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.8− | 0.0 | | |
| 2000 03 03 | 704 | 0.1+ | 0.5+ | 2003 12 29 | 704 | 0.3+ | 0.4+ | 2006 08 29 | 691 | 0.3− | 0.0 | | |
| 2000 03 03 | 704 | 0.2− | 1.8+ | 2003 12 29 | 704 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.3− | 0.0 | | |
| 2000 03 05 | 704 | 0.0 | 0.1− | 2003 12 29 | 704 | 0.3+ | 0.5− | 2006 08 29 | 691 | 0.3− | 0.1+ | | |
| 2000 03 05 | 704 | 0.0 | 0.7+ | 2003 12 29 | 704 | 0.5+ | 0.6+ | 2006 09 01 | 704 | (0.4+ | 2.7+) | | |
| 2000 03 05 | 704 | 0.0 | 0.3+ | 2003 12 29 | 704 | 0.6− | 0.4+ | 2006 09 01 | 704 | 0.4+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.1− | 0.1− | 2003 12 29 | 704 | 0.3− | 0.5+ | 2006 09 01 | 704 | 0.5− | 1.4+ |
| 2000 03 05 | 704 | 0.1+ | 0.5− | 2003 12 29 | 704 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.8+ | 0.6+ |
| 2000 03 06 | 608 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.3+ | 0.1− |
| 2000 03 06 | 608 | 0.3+ | 0.2+ | 2003 12 29 | 704 | 0.9− | 0.4+ | 2006 09 12 | 703 | 0.8− | 0.7+ |
| 2000 03 06 | 608 | 0.1− | 0.2− | 2003 12 30 | 704 | 0.2+ | 1.0− | 2006 09 12 | 703 | 1.3− | 0.4− |
| 2000 03 08 | 704 | 0.5+ | 1.0+ | 2003 12 30 | 704 | 0.4+ | 0.4− | 2006 09 12 | 703 | 0.7− | 0.1− |
| 2000 03 08 | 704 | 0.7+ | 0.4+ | 2003 12 30 | 704 | 0.5+ | 0.7− | 2006 09 12 | 703 | 0.7− | 0.1+ |
| 2000 03 08 | 704 | 0.8+ | 0.5− | 2003 12 30 | 704 | 0.1− | 1.0− | 2006 09 13 | 644 | 0.3− | 0.0 |
| 2000 03 08 | 704 | 0.3+ | 0.6+ | 2003 12 30 | 704 | 0.2+ | 1.0− | 2006 09 13 | 644 | 0.3− | 0.2+ |
| 2000 03 08 | 704 | 0.4+ | 1.3+ | 2004 01 02 | 704 | 0.7− | 0.2− | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 2000 03 09 | 704 | 0.9+ | 0.1+ | 2004 01 02 | 704 | 0.2− | 0.9+ | 2006 09 16 | 699 | 0.1− | 0.9+ |
| 2000 03 09 | 704 | 1.1+ | 0.3− | 2004 01 02 | 704 | 0.3− | 0.2− | 2006 09 16 | 699 | 0.1− | 0.4+ |
| 2000 03 09 | 704 | 0.3+ | 0.3+ | 2004 01 02 | 704 | 0.3− | 0.4+ | 2006 09 16 | 699 | 0.2+ | 0.1− |
| 2000 03 09 | 704 | 1.1+ | 0.5− | 2004 01 02 | 704 | 0.3+ | 0.9+ | 2006 09 16 | 699 | 0.2+ | 0.2+ |
| 2000 03 09 | 704 | 0.8+ | 0.2− | 2004 01 03 | 704 | (0.6− | 1.8−) | 2006 09 18 | 704 | 1.0+ | 0.2− |
| 2000 03 11 | 704 | 0.6− | 0.1− | 2004 01 03 | 704 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.4− | 0.5− |
| 2000 03 11 | 704 | 1.0− | 0.0 | 2004 01 03 | 704 | 1.1− | 0.8+ | 2006 09 18 | 704 | 0.1− | 0.6− |
| 2000 03 11 | 704 | 1.0− | 0.3+ | 2004 01 03 | 704 | 0.1+ | 0.9− | 2006 09 18 | 704 | 1.0+ | 0.6− |
| 2000 03 11 | 704 | 0.2+ | 0.1− | 2004 01 11 | 699 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.3+ | 1.1− |
| 2000 03 11 | 704 | 0.4− | 0.8− | 2004 01 11 | 699 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 2000 05 03 | 704 | 0.5+ | 1.1+ | 2004 01 11 | 699 | 0.7− | 0.6+ | 2006 09 19 | 699 | 0.3− | 0.3+ |
| 2000 05 03 | 704 | (2.2+ | 0.8+) | 2004 01 11 | 699 | 0.5+ | 0.2− | 2006 09 19 | 703 | 1.2− | 0.1− |
| 2000 05 03 | 704 | 1.0+ | 0.4+ | 2004 01 16 | 644 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.7− | 0.1+ |
| 2000 05 03 | 704 | 0.6+ | 0.4+ | 2004 01 16 | 644 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.5+ |
| 2000 05 03 | 704 | 0.5− | 0.1− | 2004 01 16 | 644 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.4− | 0.0 |
| 2002 10 06 | 699 | 0.5+ | 0.9+ | 2004 01 19 | 704 | (3.4− | 1.0−) | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 2002 10 06 | 699 | 0.2+ | 0.2− | 2004 01 19 | 704 | (4.7− | 0.2+) | 2006 09 25 | 704 | 0.4+ | 0.1− |
| 2002 10 06 | 699 | 0.5− | 0.9+ | 2004 01 19 | 704 | (4.9− | 0.4−) | 2006 09 25 | 704 | 1.5+ | 0.5+ |
| 2002 10 06 | 699 | 0.4+ | 0.0 | 2004 01 27 | 703 | 0.6− | 0.3− | 2006 09 25 | 704 | 0.8+ | 0.9− |
| 2002 10 06 | 704 | 0.5+ | 0.0 | 2004 01 27 | 703 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.2− |
| 2002 10 06 | 704 | 0.2− | 0.3+ | 2004 01 27 | 703 | 0.1− | 0.5+ | 2006 09 25 | 704 | (1.5+ | 0.0 ) |
| 2002 10 06 | 704 | 0.2− | 0.5+ | 2004 01 27 | 703 | 0.4− | 0.2+ | 2006 09 25 | 699 | (1.1+ | 1.7−) |
| 2002 10 06 | 704 | 0.1− | 0.2+ | 2004 01 31 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.1+ | 0.4+ | 2004 01 31 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 699 | 0.3− | 0.5+ |
| 2002 10 10 | 704 | 0.2− | 0.2− | 2004 01 31 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 699 | 0.5− | 0.1− |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2004 01 31 | 704 | 1.4− | 1.4+ | 2006 09 30 | 699 | 0.5+ | 0.9− |
| 2002 10 10 | 704 | 0.1+ | 0.6− | 2004 02 11 | 703 | 0.2+ | 0.4+ | 2006 09 30 | 699 | 0.9− | 0.1− |
| 2002 10 10 | 704 | 0.5+ | 0.2− | 2004 02 11 | 703 | 0.3− | 1.0− | 2006 09 30 | 699 | 0.2+ | 0.1+ |
| 2002 10 10 | 704 | 0.2+ | 0.1− | 2004 02 11 | 703 | (2.5− | 1.5−) | 2006 09 30 | 699 | 0.2+ | 0.2+ |
| 2002 11 01 | 644 | 0.4− | 0.3− | 2004 02 11 | 703 | 0.7+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 2002 11 01 | 644 | 0.3− | 0.1− | 2004 02 14 | 704 | (1.8+ | 0.0 ) | 2006 10 01 | 704 | 1.2+ | 0.0 |
| 2002 11 01 | 644 | 0.3− | 0.4− | 2004 02 14 | 704 | (2.2+ | 1.4−) | 2006 10 01 | 704 | 0.4+ | 0.1+ |
| 2003 12 17 | 703 | 0.0 | 0.2+ | 2004 02 14 | 704 | (2.2+ | 0.9−) | 2006 10 01 | 704 | 0.3+ | 0.5− |
| 2003 12 17 | 703 | 0.8+ | 0.1+ | 2004 02 14 | 704 | 1.0+ | 0.3− | 2006 10 01 | 704 | 0.3− | 0.1− |
| 2003 12 17 | 704 | 0.2+ | 0.1− | 2004 02 14 | 704 | (1.6+ | 0.4−) | 2006 10 23 | 644 | 0.4− | 0.1+ |
| 2003 12 17 | 703 | 0.6+ | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.6− | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2003 12 17 | 704 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.1− |

**(138006)∗ 2000 $CV_{87}$ = 2002 $TO_{278}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37328)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.78777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25260841 | $\omega$ | 132.22204 | | −0.19505596 | −0.97240464 | |
| $a$ | 2.4783968 | $\Omega$ | 328.34125 | | +0.81263821 | −0.08716356 | |
| $e$ | 0.0553017 | $i$ | 14.11466 | | +0.54915601 | −0.21640642 | |
| $P$ | 3.90 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.3− | 1.4+ | 2000 03 11 | 699 | 0.2− | 0.3+ | 2004 03 16 | 704 | 0.5− | 0.1− |
| 2000 02 04 | 704 | 1.3− | 1.6+ | 2002 10 10 | 704 | (0.6− | 2.2+) | 2004 03 16 | 691 | 0.4− | 0.0 |
| 2000 02 04 | 704 | 0.0 | 1.2− | 2002 10 10 | 704 | (0.5− | 2.0+) | 2004 03 16 | 704 | 0.1− | 0.6+ |
| 2000 02 04 | 704 | 0.9− | 0.2− | 2002 10 10 | 704 | (0.5+ | 2.0+) | 2004 03 16 | 704 | 0.1+ | 0.0 |
| 2000 02 06 | 691 | 0.3− | 0.3− | 2002 10 12 | 704 | (2.5− | 3.3+) | 2004 03 17 | 608 | 1.0+ | 0.6+ |
| 2000 02 06 | 691 | 0.1− | 0.3− | 2002 10 12 | 704 | 0.1− | 1.2+ | 2004 03 17 | 608 | 0.4+ | 0.4− |
| 2000 02 06 | 691 | 0.2− | 0.4− | 2002 10 12 | 704 | 0.2+ | 0.6+ | 2004 03 17 | 608 | 0.3+ | 0.1+ |
| 2000 02 11 | 704 | (2.1− | 1.7+) | 2002 10 12 | 704 | (0.4− | 1.8+) | 2004 03 19 | 704 | 0.7+ | 0.1− |
| 2000 02 11 | 704 | 0.1+ | 0.7+ | 2002 10 12 | 704 | 0.3− | 0.2+ | 2004 03 19 | 704 | 0.9+ | 0.6+ |
| 2000 02 11 | 704 | 0.5+ | 0.8+ | 2004 02 19 | 704 | 0.3+ | 0.3− | 2004 03 19 | 704 | 0.7+ | 0.0 |
| 2000 02 11 | 704 | 0.2− | 0.7+ | 2004 02 19 | 704 | 0.6+ | 0.2− | 2004 03 19 | 704 | 1.3+ | 0.7+ |
| 2000 02 25 | 703 | 0.3− | 0.2+ | 2004 02 19 | 704 | 0.3+ | 0.4− | 2006 09 25 | 703 | 0.1+ | 0.8− |
| 2000 02 25 | 703 | (2.3− | 0.2−) | 2004 02 19 | 704 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.3− | 0.5+ |
| 2000 02 25 | 703 | 0.5− | 1.1− | 2004 02 19 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 703 | 0.2− | 1.2− |
| 2000 02 25 | 703 | 0.8− | 0.9+ | 2004 02 19 | 608 | 0.5+ | 0.7− | 2006 09 25 | 703 | 0.6− | 0.4+ |
| 2000 02 29 | 704 | 0.5+ | 0.5+ | 2004 02 19 | 608 | 0.5+ | 1.1− | 2006 10 03 | 703 | 0.2+ | 0.5+ |
| 2000 02 29 | 704 | 0.1− | 0.5− | 2004 02 19 | 608 | 0.5+ | 1.3− | 2006 10 03 | 703 | 0.9+ | 0.5+ |
| 2000 02 29 | 704 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.2− | 0.5+ | 2006 10 03 | 703 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 1.6+ | 1.0+ | 2004 02 26 | 704 | (0.1− | 1.8+) | 2006 10 03 | 703 | 0.2+ | 0.4− |
| 2000 02 29 | 704 | 0.4+ | 0.7+ | 2004 02 26 | 704 | 0.1− | 1.4+ | 2006 10 23 | 703 | 0.1− | 0.8+ |
| 2000 03 03 | 704 | 0.6+ | 0.1− | 2004 02 26 | 704 | 1.2− | 1.2+ | 2006 10 23 | 703 | 0.8− | 1.1+ |
| 2000 03 03 | 704 | 0.3− | 0.8− | 2004 03 13 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 703 | 0.5+ | 0.6− |
| 2000 03 03 | 704 | 0.0 | 0.3− | 2004 03 13 | 644 | 0.1+ | 0.0 | 2006 11 21 | 703 | 1.0− | 0.4+ |
| 2000 03 03 | 704 | 0.2+ | 0.5− | 2004 03 13 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 703 | (0.2− | 1.8−) |
| 2000 03 03 | 704 | 0.1+ | 0.7− | 2004 03 16 | 691 | 0.2− | 0.0 | 2006 11 21 | 703 | 0.1+ | 1.1− |
| 2000 03 11 | 699 | 0.0 | 0.2− | 2004 03 16 | 704 | 0.4− | 0.6+ | 2006 11 21 | 703 | 0.5+ | 0.5− |
| 2000 03 11 | 699 | 0.4+ | 0.3− | 2004 03 16 | 691 | 0.3− | 0.0 | | | | |
| 2000 03 11 | 699 | 0.8+ | 0.3− | 2004 03 16 | 704 | 0.2+ | 0.2+ | | | | |

**(138007)∗ 2000 $CN_{88}$ = 2002 $TT_{105}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37329)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.91602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23951938 | $\omega$ | 162.56467 | | −0.93425952 | −0.35632389 | |
| $a$ | 2.5678852 | $\Omega$ | 356.46813 | | +0.29441965 | −0.74883395 | |
| $e$ | 0.2105388 | $i$ | 13.01377 | | +0.20118703 | −0.55882109 | |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.0 | 0.0 | 2000 04 04 | 699 | 0.0 | 0.0 | 2004 02 16 | 703 | 0.2+ | 0.6+ |
| 2000 02 04 | 704 | 0.5− | 0.4+ | 2000 04 04 | 699 | 0.1+ | 1.0− | 2004 02 16 | 703 | 0.7− | 0.6− |
| 2000 02 04 | 704 | 0.3+ | 0.4+ | 2002 10 04 | 644 | 0.3− | 0.1+ | 2004 03 10 | 703 | 0.0 | 0.2+ |
| 2000 02 04 | 704 | 0.5− | 0.1− | 2002 10 04 | 644 | 0.1− | 0.1+ | 2004 03 10 | 703 | 0.7+ | 0.6+ |
| 2000 02 04 | 704 | 0.3− | 0.0 | 2002 10 04 | 644 | 0.3− | 0.5+ | 2004 03 10 | 703 | 0.2+ | 0.1+ |
| 2000 02 11 | 704 | 0.0 | 0.6− | 2002 10 05 | 644 | 0.3− | 1.3+ | 2004 03 10 | 703 | 0.4− | 0.1+ |
| 2000 02 11 | 704 | 0.4+ | 0.2+ | 2002 10 05 | 644 | 0.3− | 1.3+ | 2004 03 14 | 704 | 0.2+ | 0.3+ |
| 2000 02 11 | 704 | 0.0 | 0.6− | 2002 10 05 | 644 | 0.3− | 1.2+ | 2004 03 14 | 704 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.3+ | 0.2− | 2003 11 20 | 291 | 0.7− | 0.1− | 2004 03 14 | 704 | 1.1+ | 0.2− |
| 2000 02 11 | 704 | 0.5+ | 0.5+ | 2003 11 20 | 291 | 0.6− | 0.1− | 2004 03 14 | 704 | 0.7+ | 0.1− |
| 2000 02 29 | 704 | 0.3− | 0.1− | 2003 11 20 | 291 | 0.7− | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.2− |
| 2000 02 29 | 704 | 0.3− | 0.1+ | 2003 12 04 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.1− | 0.3− |
| 2000 02 29 | 704 | 0.9− | 0.0 | 2003 12 04 | 704 | 0.9− | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.4+ |
| 2000 02 29 | 704 | 0.3− | 0.2− | 2003 12 04 | 704 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.7+ |
| 2000 02 29 | 704 | 0.0 | 0.1+ | 2003 12 04 | 704 | 0.7+ | 0.2− | 2004 03 20 | 704 | 0.2− | 1.3− |
| 2000 03 02 | 703 | 0.3− | 0.2+ | 2003 12 18 | 704 | 1.2+ | 1.0− | 2004 03 26 | 703 | 0.2− | 0.2− |
| 2000 03 02 | 703 | 0.8− | 0.4+ | 2003 12 18 | 704 | 0.5+ | 0.2− | 2004 03 26 | 703 | 0.4− | 0.0 |
| 2000 03 02 | 703 | 0.3+ | 0.2− | 2003 12 18 | 704 | 0.9+ | 0.1− | 2004 03 26 | 703 | 0.1− | 0.1− |
| 2000 03 02 | 703 | (1.9+ | 2.6+) | 2003 12 18 | 704 | 0.8+ | 0.3− | 2004 03 26 | 703 | 1.0− | 0.2− |
| 2000 03 05 | 704 | 0.1− | 0.0 | 2004 01 13 | 699 | 0.6− | 0.9+ | 2004 04 19 | 704 | 0.2− | 0.6+ |
| 2000 03 05 | 704 | 0.2− | 0.1− | 2004 01 13 | 699 | 0.3+ | 0.1+ | 2004 04 19 | 704 | 0.1+ | 0.1− |
| 2000 03 05 | 704 | 0.4+ | 0.1+ | 2004 01 13 | 699 | 0.3− | 0.1− | 2004 04 19 | 704 | (1.7− | 0.3−) |
| 2000 03 05 | 704 | 0.3+ | 0.3+ | 2004 01 13 | 699 | 0.3− | 0.1− | 2004 04 19 | 704 | 0.5+ | 0.4− |
| 2000 03 05 | 704 | 0.3+ | 0.0 | 2004 01 30 | 703 | 0.7+ | 0.3− | 2004 04 19 | 704 | 0.4− | 0.1− |
| 2000 03 12 | 704 | 0.1+ | 0.2+ | 2004 01 30 | 703 | 0.5+ | 0.1+ | 2004 04 22 | 704 | 0.6+ | 1.0+ |
| 2000 03 12 | 704 | 0.5+ | 0.4+ | 2004 01 30 | 703 | 0.0 | 0.4+ | 2004 04 22 | 704 | 0.2− | 0.4+ |
| 2000 03 12 | 704 | 0.6+ | 0.3+ | 2004 01 30 | 703 | 0.6+ | 0.5+ | 2004 04 22 | 704 | 1.0+ | 0.4+ |
| 2000 03 12 | 704 | 0.6+ | 0.6+ | 2004 01 31 | 704 | 0.3− | 0.6− | 2004 04 22 | 704 | 0.6+ | 0.1+ |
| 2000 03 12 | 704 | 0.6+ | 0.6+ | 2004 01 31 | 704 | 0.4+ | 0.2+ | 2004 04 22 | 704 | (1.1+ | 2.0+) |
| 2000 03 29 | 049 | 0.9+ | 0.5+ | 2004 01 31 | 704 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.4− | 0.2+ |
| 2000 03 29 | 049 | 1.3+ | 0.1+ | 2004 01 31 | 704 | 0.4− | 0.3− | 2006 09 17 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 049 | 0.5+ | 0.3− | 2004 01 31 | 704 | 0.1+ | 0.5− | 2006 09 17 | 691 | 0.3− | 0.5+ | | |
| 2000 04 03 | 704 | 0.1− | 0.2+ | 2004 02 14 | 704 | 0.2+ | 0.7− | 2006 10 02 | 691 | 0.4− | 0.2+ | | |
| 2000 04 03 | 704 | 0.0 | 0.7+ | 2004 02 14 | 704 | 0.3+ | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.0 | | |
| 2000 04 03 | 704 | 0.5+ | 0.6+ | 2004 02 14 | 704 | 0.9+ | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.2+ | | |
| 2000 04 03 | 704 | 0.6− | 0.9+ | 2004 02 14 | 704 | (0.3+ | 1.6+) | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2000 04 03 | 704 | 0.3− | 1.0+ | 2004 02 14 | 704 | 0.9− | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.2− | | |
| 2000 04 04 | 699 | 0.1− | 0.3+ | 2004 02 16 | 703 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.6− | | |
| 2000 04 04 | 699 | 0.8+ | 0.2+ | 2004 02 16 | 703 | 0.6− | 0.3− | 2006 10 23 | G96 | 0.3− | 0.2− | | |

**(138008)∗ 2000 $CT_{88}$ = 2002 $UZ_{18}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37329)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.22401 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22338156 | $\omega$ | 205.61084 | | −0.88006248 | | +0.47473870 |
| $a$ | 2.6901170 | $\Omega$ | 2.80036 | | −0.38958167 | | −0.70902611 |
| $e$ | 0.1207178 | $i$ | 12.57861 | | −0.27150719 | | −0.52144525 |
| $P$ | 4.41 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.8+ | 0.2− | 2002 10 30 | 608 | 0.3− | 0.1− | 2004 02 27 | 704 | 0.3+ | 0.3− | | |
| 2000 02 04 | 704 | 0.1+ | 0.4− | 2002 10 30 | 608 | 0.4− | 0.8− | 2004 02 27 | 704 | 0.7+ | 0.2+ | | |
| 2000 02 04 | 704 | 0.6+ | 0.2− | 2002 10 31 | 644 | 0.4+ | 0.5− | 2006 08 16 | 644 | 0.2− | 0.3+ | | |
| 2000 02 04 | 704 | 0.4+ | 1.0+ | 2002 10 31 | 644 | 0.2+ | 0.8− | 2006 08 16 | 644 | 0.4− | 0.5+ | | |
| 2000 02 04 | 704 | 0.9+ | 0.4+ | 2002 10 31 | 644 | 0.3+ | 0.6− | 2006 08 16 | 644 | 0.2− | 0.4+ | | |
| 2000 02 11 | 704 | 0.9+ | 1.0+ | 2003 12 03 | 704 | 0.3+ | 0.1− | 2006 08 20 | 691 | 0.2− | 0.5+ | | |
| 2000 02 11 | 704 | 0.4− | 0.3+ | 2003 12 03 | 704 | 0.9+ | 0.2+ | 2006 08 20 | 691 | 0.2− | 0.5+ | | |
| 2000 02 11 | 704 | 0.3+ | 0.2+ | 2003 12 03 | 704 | 0.6+ | 0.3+ | 2006 08 20 | 691 | 0.2− | 0.7+ | | |
| 2000 02 11 | 704 | 0.5+ | 0.1+ | 2003 12 03 | 704 | 0.5+ | 0.7+ | 2006 08 24 | 644 | 0.3− | 0.1+ | | |
| 2000 02 11 | 704 | 0.6+ | 0.5+ | 2003 12 03 | 704 | 0.5− | 0.7+ | 2006 08 24 | 644 | 0.3− | 0.2+ | | |
| 2000 02 29 | 704 | 0.4+ | 0.0 | 2003 12 17 | 704 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.0 | 0.1+ | | |
| 2000 02 29 | 704 | 0.2+ | 0.3+ | 2003 12 17 | 704 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.3− | 0.2− | | |
| 2000 02 29 | 704 | 0.0 | 0.4+ | 2003 12 17 | 704 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.3+ | 0.1+ | | |
| 2000 02 29 | 704 | 0.0 | 0.4+ | 2003 12 17 | 704 | 0.3− | 0.4− | 2006 08 28 | 699 | 0.1− | 0.7+ | | |
| 2000 02 29 | 704 | 0.4+ | 0.5+ | 2003 12 17 | 699 | 0.6+ | 0.3− | 2006 08 28 | 699 | 1.1− | 0.4− | | |
| 2000 03 02 | 703 | 0.4+ | 0.5+ | 2003 12 17 | 699 | 0.5+ | 0.0 | 2006 09 03 | A79 | 0.2+ | 0.5+ | | |
| 2000 03 02 | 703 | 0.5+ | 1.1+ | 2003 12 17 | 699 | 0.6− | 0.6− | 2006 09 03 | A79 | 0.9− | 0.5+ | | |
| 2000 03 02 | 703 | 0.2+ | 0.2+ | 2003 12 17 | 699 | 0.8+ | 0.6− | 2006 09 03 | A79 | 0.1+ | 0.2− | | |
| 2000 03 02 | 703 | 0.7+ | 0.2− | 2003 12 29 | 703 | 0.3− | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.5+ | | |
| 2000 03 05 | 704 | 0.1− | 0.5+ | 2003 12 29 | 703 | 0.5− | 0.8− | 2006 09 14 | 644 | 0.1− | 0.4+ | | |
| 2000 03 05 | 704 | 0.4− | 1.2+ | 2003 12 29 | 703 | 0.5+ | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.5+ | | |
| 2000 03 05 | 704 | 0.5− | 0.3+ | 2003 12 29 | 703 | (1.7+ | 0.8−) | 2006 09 16 | 699 | 1.2− | 0.9+ | | |
| 2000 03 05 | 704 | 0.7− | 1.0+ | 2003 12 29 | 704 | 0.0 | 0.2− | 2006 09 16 | 699 | (1.7− | 0.6+) | | |
| 2000 03 05 | 704 | 0.2+ | 0.3+ | 2003 12 29 | 704 | 0.3− | 0.1− | 2006 09 16 | 699 | 0.0 | 0.6+ | | |
| 2000 03 12 | 704 | 0.1− | 0.1− | 2003 12 29 | 704 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.8− | 1.3− | | |
| 2000 03 12 | 704 | 1.4− | 0.3− | 2003 12 29 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.1− | | |
| 2000 03 12 | 704 | 0.8− | 0.1− | 2003 12 29 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.5+ | 0.4+ | | |
| 2000 03 12 | 704 | 0.6− | 0.5− | 2004 01 02 | 704 | 1.0− | 0.4− | 2006 09 19 | 699 | 0.4+ | 0.0 | | |
| 2000 03 12 | 704 | 0.6− | 0.5− | 2004 01 02 | 704 | 0.6+ | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.3+ | | |
| 2000 04 03 | 699 | 0.6+ | 0.1+ | 2004 01 02 | 704 | 0.8− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.1+ | | |
| 2000 04 03 | 699 | 1.0+ | 0.2− | 2004 01 02 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.2+ | 0.7+ | | |
| 2000 04 03 | 699 | 0.0 | 0.2+ | 2004 01 19 | 704 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.5− | 0.6+ | | |
| 2000 04 03 | 704 | 0.2+ | 0.4+ | 2004 01 19 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | (1.7− | 1.2+) | | |
| 2000 04 03 | 699 | 0.5+ | 0.2+ | 2004 01 19 | 704 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.2+ | | |
| 2000 04 03 | 704 | 0.2+ | 0.5− | 2004 01 19 | 704 | 0.2− | 0.1− | 2006 09 20 | 704 | (1.5− | 3.1+) | | |
| 2000 04 03 | 704 | 0.3+ | 0.5+ | 2004 01 19 | 704 | 0.0 | 0.6− | 2006 09 20 | 704 | (1.7− | 2.0+) | | |
| 2000 04 03 | 704 | 0.8+ | 0.4+ | 2004 01 28 | 703 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.3+ | | |
| 2000 04 03 | 704 | 0.6+ | 0.2+ | 2004 01 28 | 703 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.1+ | | |
| 2000 05 03 | 704 | 0.6+ | 0.4− | 2004 01 28 | 703 | 0.5+ | 0.7+ | 2006 09 20 | 644 | 0.3− | 0.3+ | | |
| 2000 05 03 | 704 | 0.6+ | 0.9+ | 2004 01 28 | 703 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 | | |
| 2000 05 03 | 704 | 0.5− | 1.4+ | 2004 01 31 | 699 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.2− | | |
| 2000 05 03 | 704 | 0.9+ | 0.8+ | 2004 01 31 | 699 | 0.2− | 1.1− | 2006 10 20 | G96 | 0.3− | 0.1− | | |
| 2000 05 03 | 704 | 0.4+ | 0.5+ | 2004 01 31 | 699 | 0.4+ | 1.0− | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2002 10 04 | 704 | 0.4+ | 1.0+ | 2004 01 31 | 699 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2004 02 09 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.2+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2004 02 09 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2002 10 04 | 704 | 0.7+ | 0.3+ | 2004 02 09 | 644 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 10 12 | 704 | 0.7− | 0.7+ | 2004 02 11 | 704 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.0 | | |
| 2002 10 12 | 704 | 0.2+ | 0.0 | 2004 02 11 | 704 | 0.8+ | 1.0+ | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2002 10 12 | 704 | 1.2+ | 1.5− | 2004 02 11 | 704 | 1.3− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2002 10 12 | 704 | 0.1+ | 0.1− | 2004 02 11 | 704 | 0.6− | 0.4− | | | | | | |
| 2002 10 30 | 608 | 0.3− | 0.5− | 2004 02 27 | 704 | 0.1+ | 0.1+ | | | | | | |

**(138009)∗ 2000 $CX_{99}$ = 2005 $NP_{49}$**

Discovered 2000 Feb. 10 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 84534)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.71680 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23512808 | $\omega$ | 36.43310 | | −0.99311111 | | −0.10473044 |
| $a$ | 2.5997588 | $\Omega$ | 137.46043 | | +0.08045046 | | −0.93550685 |
| $e$ | 0.1153525 | $i$ | 4.45812 | | +0.08519420 | | −0.33742921 |
| $P$ | 4.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 30 | 691 | 0.5− | 0.4− | 2000 02 14 | 691 | 0.0 | 0.1− | 2005 06 03 | 703 | 0.4+ | 0.0 | | |
| 1992 03 30 | 691 | 0.2− | 0.5− | 2000 02 14 | 691 | 0.2− | 0.5− | 2005 06 05 | 704 | (2.1+ | 0.0 | ) | |
| 1992 03 30 | 691 | (0.3+ | 5.1−) | 2000 02 14 | 691 | 0.3− | 0.3− | 2005 06 05 | 704 | 0.9+ | 1.2+ | | |
| 1996 01 26 | 691 | 0.4+ | 0.3+ | 2002 09 05 | 645 | 0.0 | 0.2− | 2005 06 05 | 704 | 0.7− | 0.2+ | | |
| 1996 01 26 | 691 | 0.3+ | 0.1+ | 2002 09 05 | 645 | 0.0 | 0.1− | 2005 07 04 | 703 | 1.3− | 0.7+ | | |
| 1996 01 26 | 691 | 0.1+ | 0.3+ | 2003 12 19 | 704 | 0.3− | 0.1− | 2005 07 04 | 703 | 0.5− | 0.6+ | | |
| 2000 01 30 | 703 | 0.1+ | 0.4+ | 2003 12 19 | 704 | 0.3+ | 1.0− | 2005 07 04 | 703 | 0.4+ | 0.9− | | |
| 2000 01 30 | 703 | 1.2− | 0.8+ | 2003 12 19 | 704 | 1.0+ | 0.2− | 2005 07 04 | 703 | 0.9− | 0.0 | | |
| 2000 01 30 | 703 | 0.9+ | 1.2+ | 2003 12 28 | 691 | 0.2+ | 0.1+ | 2005 07 11 | G96 | 0.3− | 0.2− | | |
| 2000 01 30 | 703 | 0.3+ | 0.7+ | 2003 12 28 | 691 | 0.1+ | 0.3+ | 2005 07 11 | G96 | 0.2+ | 0.3+ | | |
| 2000 02 01 | 691 | 0.2+ | 0.3− | 2003 12 28 | 691 | 0.2+ | 0.1+ | 2005 07 11 | G96 | 0.1− | 0.2− | | |
| 2000 02 01 | 691 | 0.5+ | 0.4− | 2004 01 30 | 704 | 0.6− | 0.2− | 2005 07 11 | G96 | 0.2− | 0.2− | | |
| 2000 02 01 | 691 | 0.3+ | 0.4− | 2004 01 30 | 704 | 0.8− | 1.0+ | 2006 09 19 | 699 | 0.4+ | 0.2+ | | |
| 2000 02 03 | 704 | 0.3+ | 0.5+ | 2004 01 30 | 704 | 0.8− | 0.4+ | 2006 09 19 | 699 | 0.2− | 1.4− | | |
| 2000 02 03 | 704 | 0.2− | 0.7+ | 2004 01 30 | 704 | 0.7− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.5+ | | |
| 2000 02 03 | 704 | 0.5+ | 1.2+ | 2004 03 18 | 704 | 1.1− | 0.3+ | 2006 09 19 | 699 | 1.1− | 1.2+ | | |
| 2000 02 03 | 704 | 0.2+ | 1.0+ | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.5+ | | |
| 2000 02 03 | 704 | 0.5− | 0.9+ | 2004 03 18 | 704 | 0.9− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.0 | | |
| 2000 02 10 | 691 | 0.3− | 0.3− | 2005 06 02 | E12 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.3− | 2.5+ | | |
| 2000 02 10 | 691 | 0.1− | 0.2− | 2005 06 02 | E12 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 1.4+ | 0.4+ | | |
| 2000 02 10 | 691 | 0.1− | 0.4− | 2005 06 02 | E12 | 0.5+ | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.4− | | |
| 2000 02 11 | 704 | 0.7+ | 0.8− | 2005 06 02 | E12 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1− | | |
| 2000 02 11 | 704 | 0.6− | 0.9+ | 2005 06 03 | 703 | 0.9+ | 1.0− | 2006 10 02 | G96 | 0.0 | 0.4− | | |
| 2000 02 11 | 704 | 0.4− | 0.1− | 2005 06 03 | 703 | (0.3− | 2.4+) | 2006 10 02 | G96 | 0.4+ | 0.3− | | |
| 2000 02 11 | 704 | 0.4+ | 0.5+ | 2005 06 03 | 703 | 0.1+ | 0.7+ | | | | | | |

**(138010)∗ 2000 $CG_{100}$ = 2002 $TR_{183}$**

Discovered 2000 Feb. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37332)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.08428 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26249135 | $\omega$ | 144.04445 | | −0.22703554 | | −0.97224537 |
| $a$ | 2.4157911 | $\Omega$ | 318.99394 | | +0.87220133 | | −0.17717154 |
| $e$ | 0.1458443 | $i$ | 4.94105 | | +0.43326633 | | −0.15280441 |
| $P$ | 3.75 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.3− | 0.4− | 2002 10 07 | 699 | 0.9+ | 1.2+ | 2006 09 26 | 461 | 0.0 | 0.3+ | | |
| 2000 01 04 | 704 | 0.0 | 0.3− | 2002 10 07 | 699 | (0.5+ | 1.7+) | 2006 10 19 | 703 | 0.4− | 0.4+ | | |
| 2000 01 04 | 704 | 0.7+ | 0.1+ | 2002 10 29 | 049 | 0.3+ | 0.0 | 2006 10 19 | 703 | (2.6− | 0.1−) | | |
| 2000 01 30 | 691 | 0.1+ | 0.0 | 2002 10 29 | 049 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 2000 01 30 | 691 | 0.2+ | 0.1− | 2002 10 29 | 049 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2000 01 30 | 691 | 0.2+ | 0.1− | 2004 02 15 | 703 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2000 02 03 | 704 | 0.2+ | 0.1+ | 2004 02 15 | 703 | 0.3+ | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2000 02 03 | 704 | 0.6+ | 0.2− | 2004 02 15 | 703 | 0.1− | 0.7− | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2000 02 03 | 704 | 0.2+ | 0.1+ | 2004 02 15 | 703 | 1.1+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 1.2− | 0.1+ | 2004 02 25 | 704 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2000 02 03 | 704 | 0.5+ | 0.9− | 2004 02 25 | 704 | 0.5+ | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.3− | | |
| 2000 02 04 | 691 | 0.0 | 0.0 | 2004 02 25 | 704 | 0.6+ | 1.5+ | 2006 10 27 | 703 | 0.1− | 0.3− | | |
| 2000 02 04 | 691 | 0.0 | 0.0 | 2004 03 16 | 703 | 0.2+ | 0.7+ | 2006 10 27 | 703 | 0.3+ | 0.5− | | |
| 2000 02 04 | 691 | 0.1+ | 0.1− | 2004 03 16 | 703 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.8− | 0.4− | | |
| 2000 02 05 | 695 | 0.0 | 0.1+ | 2004 03 16 | 703 | 0.2+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.0 | | |
| 2000 02 05 | 695 | 0.1+ | 0.2+ | 2004 03 16 | 703 | 0.5+ | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.1− | | |
| 2000 02 10 | 691 | 0.4− | 0.2− | 2004 03 16 | 704 | 1.2+ | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.1+ | | |
| 2000 02 10 | 691 | 0.4− | 0.2− | 2004 03 16 | 704 | (0.9+ | 3.1+) | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2000 02 10 | 691 | 0.4− | 0.2− | 2004 03 16 | 704 | (1.6+ | 1.3+) | 2006 11 11 | G96 | 0.0 | 0.0 | | |
| 2000 02 11 | 704 | 0.0 | 0.3+ | 2004 03 16 | 704 | 1.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.0 | | |
| 2000 02 11 | 704 | 0.6− | 0.3+ | 2004 03 19 | 704 | 0.9− | 0.8+ | 2006 11 11 | G96 | 0.1− | 0.1+ | | |
| 2000 02 11 | 704 | 0.4− | 0.3− | 2004 03 19 | 704 | 0.5− | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.0 | | |
| 2000 02 11 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.6+ | 1.1+ | 2006 11 14 | 703 | 0.3− | 0.8+ | | |
| 2000 02 11 | 704 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.2− | 0.6+ | 2006 11 14 | 703 | 0.7− | 0.0 | | |
| 2000 02 14 | 691 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.6− | 0.5+ | 2006 11 14 | 703 | (0.9− | 2.1+) | | |
| 2000 02 14 | 691 | 0.2+ | 0.1− | 2004 04 16 | 704 | 0.1− | 0.5+ | 2006 11 14 | 703 | (0.3− | 3.4+) | | |
| 2000 02 14 | 691 | 0.1+ | 0.0 | 2004 04 16 | 704 | 1.0+ | 0.9+ | 2006 11 17 | 644 | 0.0 | 0.2+ | | |
| 2002 10 04 | 704 | (1.3− | 2.0−) | 2004 04 16 | 704 | 1.0− | 0.6+ | 2006 11 17 | 644 | 0.2− | 0.2+ | | |
| 2002 10 04 | 704 | 0.9− | 0.8+ | 2004 04 16 | 704 | (0.5+ | 1.9+) | 2006 11 17 | 644 | 0.2− | 0.2+ | | |
| 2002 10 04 | 704 | 1.0− | 0.6+ | 2006 09 26 | 461 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.1− | 0.3+ | | |
| 2002 10 04 | 704 | (2.2− | 0.0 ) | 2006 09 26 | 461 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.2+ | | |
| 2002 10 04 | 704 | 1.3− | 0.7+ | 2006 09 26 | 461 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.4+ | 0.8+ | | |
| 2002 10 07 | 699 | 0.2− | 0.5+ | 2006 09 26 | 461 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.2+ | 0.3− | | |
| 2002 10 07 | 699 | 0.5+ | 0.4+ | 2006 09 26 | 461 | 0.2− | 0.2+ | | | | | | |

**(138011)∗ 2000 $CO_{100}$ = 2002 $TL_{19}$**

Discovered 2000 Feb. 10 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37332)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.13907 | | (2000.0) | | +0.38387063 | −0.92336166 |
| $n$ | 0.25575085 | $\omega$ | 85.69351 | | +0.83832238 | +0.35159668 |
| $a$ | 2.4580535 | $\Omega$ | 341.72825 | | +0.38711617 | +0.15421744 |
| $e$ | 0.0719269 | $i$ | 1.24732 | | | |
| $P$ | 3.85 | $H$ | 16.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 12 | 691 | 0.6− | 0.4+ | 2004 01 24 | 704 | 0.2− | 0.2− | 2006 10 17 | A44 | 0.8− | 0.2− | | |
| 1998 09 12 | 691 | 0.2− | 0.4+ | 2004 01 24 | 704 | 0.1+ | 1.2+ | 2006 10 17 | A44 | 0.6− | 0.3− | | |
| 1998 09 12 | 691 | 0.3− | 0.1+ | 2004 01 24 | 704 | (1.5+ | 1.7+) | 2006 10 18 | A44 | 0.9+ | 0.7− | | |
| 2000 02 03 | 704 | 0.3+ | 0.7− | 2004 01 24 | 704 | 0.9+ | 0.6+ | 2006 10 18 | A44 | 0.8+ | 0.6− | | |
| 2000 02 03 | 704 | 0.0 | 0.3+ | 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 10 18 | A44 | 0.5+ | 0.6− | | |
| 2000 02 03 | 704 | 1.1+ | 0.2− | 2004 02 17 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.4+ | 0.0 | | |
| 2000 02 04 | 691 | 0.0 | 0.2− | 2004 02 17 | 691 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.4+ | 0.4+ | | |
| 2000 02 04 | 691 | 0.0 | 0.2− | 2004 02 18 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | | |
| 2000 02 04 | 691 | 0.0 | 0.1− | 2004 02 18 | 704 | 0.7+ | 0.9+ | 2006 10 20 | 691 | 0.5− | 0.1− | | |
| 2000 02 10 | 691 | 0.1− | 0.1− | 2004 02 18 | 704 | 0.8+ | 0.1− | 2006 10 20 | 691 | 0.7− | 0.1+ | | |
| 2000 02 10 | 691 | 0.3− | 0.0 | 2004 02 18 | 704 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.9− | 0.2+ | | |
| 2000 02 10 | 691 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2000 02 14 | 691 | 0.1− | 0.3− | 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 2000 02 14 | 691 | 0.3− | 0.5− | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2000 02 14 | 691 | 0.2− | 0.0 | 2004 03 18 | 704 | (2.5+ | 0.1−) | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2002 10 02 | 704 | 0.9+ | 1.0+ | 2004 03 18 | 704 | (2.2+ | 0.7−) | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 10 02 | 704 | (0.3− | 2.3+) | 2004 03 18 | 704 | 0.5+ | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2002 10 02 | 704 | (1.5+ | 0.1−) | 2004 03 26 | 691 | 0.2− | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1− | | |
| 2002 10 03 | 704 | 0.6− | 0.3+ | 2006 09 20 | 699 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.6− | | |
| 2002 10 03 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 699 | (0.9+ | 1.7−) | 2006 11 11 | 703 | 0.4− | 0.6− | | |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2006 09 20 | 699 | 0.7+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.5− | | |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 09 20 | 699 | (1.1− | 1.9+) | 2006 11 11 | 703 | 0.6− | 1.0− | | |
| 2002 10 06 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2002 10 06 | 291 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.0 | | |
| 2002 10 06 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2002 10 06 | 291 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.1+ | | |
| 2002 10 06 | 291 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.6− | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.0 | | |
| 2002 10 06 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.0 | | |
| 2002 10 07 | 704 | 0.1+ | 0.7− | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 18 | 704 | 1.4+ | 1.5+ | | |
| 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.5− | 2006 11 18 | 704 | 1.3+ | 0.1− | | |
| 2002 10 07 | 704 | 0.6+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.3− | | |
| 2002 10 07 | 704 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.5− | | |
| 2002 10 07 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1+ | | |
| 2002 10 11 | 704 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.7− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 21 | 691 | 0.2− | 0.2+ | | |
| 2002 10 11 | 704 | 1.0− | 0.0 | 2006 10 16 | 118 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 2002 10 11 | 704 | 0.2− | 0.5+ | 2006 10 16 | 118 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.2− | | |
| 2002 10 11 | 704 | 0.2+ | 1.0+ | 2006 10 17 | A44 | 0.6− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |

**(138012)∗ 2000 $CC_{101}$ = 2001 $LK_2$ = 2004 $BZ_{50}$**

Discovered 2000 Feb. 12 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 68643)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.26131 | | (2000.0) | | −0.16760300 | +0.98483903 |
| $n$ | 0.25110883 | $\omega$ | 144.96993 | | −0.91543043 | −0.13862713 |
| $a$ | 2.4882541 | $\Omega$ | 115.34463 | | −0.36591853 | −0.10428135 |
| $e$ | 0.0824071 | $i$ | 2.83733 | | | |
| $P$ | 3.93 | $H$ | 16.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.0 | 0.3+ | 2004 01 16 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.4− | | |
| 2000 02 04 | 691 | 0.1− | 0.4+ | 2004 01 21 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.8− | | |
| 2000 02 04 | 691 | 0.1+ | 0.4+ | 2004 01 21 | 704 | 0.7+ | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | | |
| 2000 02 11 | 704 | 1.2− | 0.3− | 2004 01 21 | 704 | 0.3+ | 0.6− | 2006 10 18 | 691 | 0.2− | 0.3+ | | |
| 2000 02 11 | 704 | 1.0− | 0.8− | 2004 01 24 | 704 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | | |
| 2000 02 11 | 704 | 0.8+ | 0.1− | 2004 01 24 | 704 | 1.0+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2000 02 11 | 704 | 0.8+ | 0.5+ | 2004 01 24 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.8+ | | |
| 2000 02 12 | 691 | 0.1− | 0.4− | 2004 01 24 | 704 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 2000 02 12 | 691 | 0.1− | 0.4− | 2004 01 24 | 704 | (0.7− | 1.6+) | 2006 10 20 | 644 | 0.3+ | 0.1+ | | |
| 2000 02 12 | 691 | 0.6+ | 1.0− | 2004 01 28 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2000 02 14 | 691 | 0.1− | 0.2+ | 2004 01 28 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2000 02 14 | 691 | 0.2− | 0.8− | 2004 01 28 | 691 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.1− | | |
| 2000 02 14 | 691 | 0.0 | 0.3− | 2004 01 28 | 691 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2001 06 13 | 704 | (0.3+ | 2.1+) | 2004 01 28 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.0 | | |
| 2001 06 13 | 704 | 0.0 | 0.9+ | 2004 01 28 | 691 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.3− | | |
| 2001 06 13 | 704 | (0.4+ | 1.8+) | 2004 01 30 | 704 | 1.2+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2001 06 13 | 704 | 0.9+ | 0.4+ | 2004 01 30 | 704 | (2.0+ | 0.4+) | 2006 11 01 | G96 | 0.2+ | 0.3− | | |
| 2001 06 16 | 704 | 0.4+ | 0.6− | 2004 01 30 | 704 | 0.9+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.3− | | |
| 2001 06 16 | 704 | 0.1+ | 0.7+ | 2004 01 30 | 704 | (2.3+ | 0.9+) | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2001 06 16 | 704 | 0.8− | 1.4+ | 2004 02 26 | 704 | 0.8+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.3+ | | |
| 2001 06 16 | 704 | (0.2− | 1.6+) | 2004 02 26 | 704 | 0.7− | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | |
| 2002 10 11 | 644 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.6+ | | |
| 2002 10 11 | 644 | 0.3− | 0.1+ | 2004 02 26 | 704 | 1.4− | 1.1+ | 2006 11 11 | 703 | 0.9+ | 0.1+ | | |
| 2002 10 11 | 644 | 0.2− | 0.2+ | 2004 04 14 | 645 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.1− | | |
| 2002 10 30 | 644 | 0.2− | 0.4+ | 2004 04 14 | 645 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.0 | | |
| 2002 10 30 | 644 | 0.2− | 0.4+ | 2004 04 15 | 645 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.5− | | |
| 2002 10 30 | 644 | 0.3− | 0.2+ | 2004 04 15 | 645 | 0.1− | 0.2− | 2006 11 17 | 703 | 1.0− | 0.6− | | |
| 2004 01 16 | 644 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.8+ | 1.1− | 2006 11 17 | 703 | 0.7− | 0.5− | | |
| 2004 01 16 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.5+ | | |

**(138013)∗ 2000 $CN_{101}$ = 1988 $XU_4$**

Discovered 2000 Feb. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (MPC 40110)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.38689 | | (2000.0) | | +0.52819796 | +0.84894749 |
| $n$ | 0.48757775 | $\omega$ | 118.44250 | | −0.84295769 | +0.52182352 |
| $a$ | 1.5987239 | $\Omega$ | 183.58416 | | −0.10212370 | +0.08359649 |
| $e$ | 0.6349300 | $i$ | 15.94889 | | | |
| $P$ | 2.02 | $H$ | 14.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 03 07 | 413 | 0.2+ | 0.2− | 2001 12 25 | 608 | 0.1+ | 0.2− | 2004 02 20 | 046 | 0.3− | 0.2− |
| 1984 03 07 | 413 | 1.2+ | 2.2− | 2002 01 10 | 644 | 0.4+ | 0.1− | 2004 03 05 | 113 | 0.4+ | 0.3+ |
| 1984 11 22 | 262 | 1.9+ | 0.1− | 2002 01 10 | 644 | 0.7+ | 0.2− | 2004 03 05 | 113 | 0.3+ | 0.1+ |
| 1984 11 22 | 262 | 0.6+ | 0.1+ | 2002 01 10 | 644 | 0.0 | 0.1− | 2004 03 05 | 113 | 0.9+ | 0.3+ |
| 1988 02 20 | 260 | (2.8− | 1.6+) | 2002 01 12 | 704 | 0.1+ | 0.3− | 2004 03 08 | 644 | 0.1+ | 0.2+ |
| 1988 02 20 | 260 | 2.0− | 1.4+ | 2002 01 12 | 704 | 0.9+ | 0.1+ | 2004 03 08 | 644 | 0.1+ | 0.2+ |
| 1988 12 08 | 675 | 2.3− | 0.9− | 2002 01 12 | 704 | 0.6+ | 0.0 | 2004 03 08 | 644 | 0.2+ | 0.1+ |
| 1988 12 08 | 675 | 1.8− | 1.1− | 2002 01 12 | 704 | 0.9+ | 0.0 | 2004 03 10 | 608 | 0.6+ | 1.0− |
| 1988 12 09 | 262 | 0.9+ | 1.5+ | 2002 01 12 | 704 | 0.8+ | 0.8− | 2004 03 10 | 608 | 0.6+ | 0.4− |
| 1988 12 09 | 262 | 0.4+ | 0.6− | 2002 02 03 | 670 | 0.1+ | 0.2− | 2004 03 10 | 608 | 0.2+ | 1.0− |
| 2000 02 08 | 704 | 0.6+ | 1.0+ | 2002 02 03 | 670 | 0.2− | 0.9+ | 2004 03 12 | 644 | 0.3+ | 0.5+ |
| 2000 02 08 | 704 | 0.3− | 0.5− | 2002 02 08 | 670 | 0.4− | 0.6+ | 2004 03 12 | 644 | 0.3+ | 0.5+ |
| 2000 02 08 | 704 | 0.4+ | 0.3+ | 2002 02 08 | 670 | 0.2+ | 0.9− | 2004 03 12 | 644 | 0.1+ | 0.4+ |
| 2000 02 08 | 704 | 0.5+ | 0.3+ | 2002 02 08 | 670 | 0.4+ | 0.6− | 2004 03 12 | 644 | 0.3+ | 0.4+ |
| 2000 02 08 | 704 | 0.1− | 0.8+ | 2002 02 12 | 670 | 0.8+ | 0.9− | 2004 03 12 | 644 | 0.2+ | 0.3+ |
| 2000 02 10 | 704 | 0.2− | 0.3− | 2002 02 12 | 670 | 0.5− | 0.2+ | 2004 03 12 | 644 | 0.4+ | 0.2+ |
| 2000 02 10 | 704 | 0.0 | 0.3− | 2002 02 15 | 704 | 0.1+ | 0.4− | 2004 03 15 | 704 | 1.0+ | 0.3+ |
| 2000 02 10 | 704 | 1.3− | 0.5+ | 2002 02 15 | 704 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.0 | 0.4− |
| 2000 02 10 | 704 | 0.1− | 0.2− | 2002 02 15 | 704 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.2+ | 0.3+ |
| 2000 02 11 | 118 | 0.2− | 0.3− | 2002 02 15 | 704 | 0.1+ | 0.5− | 2004 03 15 | 704 | 0.0 | 0.7+ |
| 2000 02 11 | 118 | 0.2− | 0.8+ | 2002 02 15 | 704 | 0.1− | 0.4− | 2004 04 15 | 704 | 0.0 | 0.0 |
| 2000 02 11 | 118 | 0.1+ | 1.2+ | 2002 03 05 | 645 | 0.0 | 0.0 | 2004 04 15 | 704 | 0.1− | 0.3+ |
| 2000 02 11 | 704 | 0.5+ | 0.8+ | 2002 03 05 | 645 | 0.0 | 0.1− | 2004 04 15 | 704 | 0.3+ | 1.3+ |
| 2000 02 11 | 704 | 0.3+ | 0.1+ | 2002 03 10 | 198 | 0.2− | 0.0 | 2004 04 15 | 704 | 0.5− | 0.4+ |
| 2000 02 11 | 858 | 0.2+ | 0.1− | 2002 03 10 | 198 | 0.4− | 0.0 | 2004 04 15 | 704 | 0.2+ | 0.0 |
| 2000 02 11 | 858 | 0.2− | 0.3+ | 2002 03 10 | 198 | (1.8− | 0.2−) | 2005 02 04 | 703 | 0.3− | 0.2− |
| 2000 02 11 | 858 | 0.4+ | 0.2− | 2002 03 12 | 704 | 0.3+ | 0.2+ | 2005 02 04 | 703 | 0.4− | 0.2− |
| 2000 02 11 | 658 | 1.6+ | 0.8+ | 2002 03 12 | 704 | 0.0 | 0.0 | 2005 02 04 | 703 | 0.3− | 0.2− |
| 2000 02 11 | 704 | 0.3+ | 0.3+ | 2002 03 12 | 704 | 0.5+ | 0.5+ | 2005 02 04 | 703 | 0.4− | 0.3+ |
| 2000 02 11 | 658 | 0.4− | 0.9+ | 2002 03 12 | 704 | 0.4+ | 1.3+ | 2005 02 05 | 084 | 0.5+ | 0.5− |
| 2000 02 11 | 658 | 0.0 | 0.1− | 2002 03 12 | 704 | 0.7− | 1.2+ | 2005 02 06 | 113 | 0.1+ | 0.4+ |
| 2000 02 11 | 704 | 0.2+ | 0.7+ | 2002 03 13 | 704 | 0.1− | 0.4− | 2005 02 06 | 113 | 0.4+ | 0.8+ |
| 2000 02 11 | 854 | 1.5− | 1.1− | 2002 03 13 | 704 | (1.2− | 2.1−) | 2005 02 06 | 113 | 0.5− | 0.5+ |
| 2000 02 11 | 854 | (2.2+ | 0.4−) | 2002 03 13 | 704 | 0.3− | 0.4− | 2005 02 06 | 113 | 0.2− | 0.5+ |
| 2000 02 11 | 854 | 1.2− | 0.8− | 2002 03 13 | 704 | 0.0 | 1.3− | 2005 02 06 | 113 | 0.2− | 0.2+ |
| 2000 02 11 | 704 | 0.1− | 0.2+ | 2002 03 13 | 704 | 0.5− | 0.6− | 2005 12 02 | 703 | 0.3− | 0.5+ |
| 2000 02 11 | 046 | 0.6− | 0.4− | 2002 12 29 | 413 | 0.1+ | 0.2− | 2005 12 02 | 703 | 1.5− | 0.4− |
| 2000 02 11 | 046 | 0.5− | 0.1+ | 2002 12 29 | 413 | 0.1+ | 0.0 | 2005 12 02 | 703 | (2.2+ | 1.3−) |
| 2000 02 11 | 046 | 0.0 | 0.0 | 2002 12 29 | 413 | 0.1− | 0.1− | 2005 12 02 | 703 | 0.5+ | 0.5− |
| 2000 02 11 | 046 | 1.2+ | 0.3+ | 2003 01 17 | 711 | 0.5+ | 0.6+ | 2005 12 10 | 699 | 0.0 | 0.5− |
| 2000 02 11 | 046 | 0.3− | 0.4+ | 2003 01 17 | 711 | 0.6+ | 0.3+ | 2005 12 10 | 699 | 0.8+ | 0.0 |
| 2000 02 11 | 046 | 0.4+ | 0.5− | 2003 01 17 | 711 | 0.6+ | 0.4+ | 2005 12 10 | 699 | 1.0+ | 0.9+ |
| 2000 02 11 | 046 | 0.3− | 0.2+ | 2003 02 03 | 608 | 0.4− | 0.8− | 2005 12 10 | 699 | 1.0+ | 0.1+ |
| 2000 02 11 | 611 | 0.3+ | 0.9+ | 2003 02 03 | 608 | 0.6− | 0.7− | 2005 12 24 | E17 | 0.3− | 0.1+ |
| 2000 02 11 | 611 | 0.1− | 0.7+ | 2003 02 03 | 608 | 0.4− | 0.6− | 2005 12 24 | E17 | 0.2− | 0.2− |
| 2000 02 12 | 858 | 0.3− | 0.1+ | 2003 02 10 | 608 | 0.1− | 0.4− | 2005 12 24 | E17 | 0.1− | 0.1+ |
| 2000 02 12 | 858 | 0.4+ | 0.3+ | 2003 02 10 | 608 | 0.1+ | 0.3+ | 2005 12 25 | 703 | 0.3− | 0.5+ |
| 2000 02 12 | 858 | 0.0 | 0.4+ | 2003 02 10 | 608 | 0.2+ | 0.0 | 2005 12 25 | 703 | 0.2− | 0.3+ |
| 2000 02 12 | 711 | 0.7− | 1.1− | 2003 02 11 | 608 | 0.1− | 0.7+ | 2005 12 25 | 703 | 0.6− | 0.2+ |
| 2000 02 12 | 711 | 1.5− | 0.3+ | 2003 02 11 | 608 | 0.0 | 0.4+ | 2005 12 25 | 703 | 0.0 | 0.2− |
| 2000 02 12 | 711 | 0.7− | 0.9− | 2003 02 11 | 608 | 0.3− | 0.4+ | 2005 12 28 | 703 | 0.5− | 1.1+ |
| 2000 02 12 | 595 | 1.2− | 0.7− | 2003 11 30 | 711 | 0.3+ | 0.4+ | 2005 12 28 | 703 | 0.2+ | 0.1+ |
| 2000 02 12 | 104 | (2.1− | 0.5−) | 2003 11 30 | 711 | 0.8− | 0.5+ | 2005 12 28 | 703 | 0.8+ | 0.2− |
| 2000 02 12 | 595 | 1.7− | 0.0 | 2003 11 30 | 711 | 1.4+ | 0.4+ | 2005 12 28 | 703 | (2.0− | 0.3+) |
| 2000 02 12 | 104 | 1.8− | 0.7− | 2003 11 30 | 711 | 0.7− | 0.6+ | 2006 01 04 | 703 | 1.0− | 0.0 |
| 2000 02 12 | 104 | 1.3− | 0.5− | 2003 12 29 | 699 | 0.7+ | 0.6+ | 2006 01 04 | 703 | 0.4+ | 0.1− |
| 2000 02 12 | 595 | 0.9− | 0.5− | 2003 12 29 | 699 | 0.8− | 1.1− | 2006 01 04 | 703 | 0.3− | 0.3− |
| 2000 02 13 | 595 | 1.5− | 1.5− | 2003 12 29 | 699 | 1.3+ | 1.3− | 2006 01 04 | 703 | 0.4− | 0.0 |
| 2000 02 13 | 595 | 0.9− | 1.9− | 2003 12 29 | 699 | 0.1− | 0.3+ | 2006 01 10 | 703 | (2.0− | 1.1+) |
| 2000 02 14 | 704 | 0.3+ | 1.1+ | 2004 01 05 | 699 | (2.0+ | 1.1+) | 2006 01 10 | 703 | 1.4+ | 0.0 |
| 2000 02 14 | 704 | 2.0+ | 0.2+ | 2004 01 05 | 699 | (1.8+ | 0.8+) | 2006 01 10 | 703 | 0.5− | 0.2− |
| 2000 02 14 | 704 | 0.3− | 0.6+ | 2004 01 05 | 699 | (0.6+ | 2.0+) | 2006 01 10 | 703 | 0.3+ | 0.0 |
| 2000 02 14 | 704 | 0.3− | 0.1+ | 2004 01 05 | 699 | 0.2+ | 1.1− | 2006 01 26 | 699 | 0.1+ | 0.0 |
| 2000 02 15 | 422 | 0.3+ | 0.3− | 2004 01 06 | 170 | (1.5− | 0.6−) | 2006 01 26 | 699 | 0.4+ | 0.0 |
| 2000 02 16 | 651 | 0.6− | 1.5− | 2004 01 06 | 170 | 1.0− | 0.2− | 2006 01 26 | 699 | 0.8− | 0.6+ |
| 2000 02 16 | 651 | 0.4− | 1.3− | 2004 01 23 | 699 | 0.5+ | 0.4− | 2006 01 28 | 703 | 0.8+ | 1.3+ |
| 2000 02 16 | 651 | 1.9− | 1.2− | 2004 01 23 | 699 | 0.2− | 0.1+ | 2006 01 28 | 703 | (1.6+ | 0.1+) |
| 2000 03 01 | 360 | 0.0 | 0.2− | 2004 01 23 | 699 | 0.1+ | 0.2− | 2006 01 28 | 703 | 0.1− | 0.3+ |
| 2000 03 01 | 360 | 0.1− | 0.4− | 2004 01 23 | 699 | 0.1− | 0.2+ | 2006 01 28 | 703 | 0.1− | 0.8+ |
| 2000 03 01 | 360 | 0.2+ | 0.0 | 2004 01 23 | 699 | 0.3+ | 0.7− | 2006 01 30 | 703 | 1.3− | 1.3− |
| 2000 11 26 | 428 | 0.6− | 0.2− | 2004 01 23 | 699 | 0.2− | 0.3+ | 2006 01 30 | 703 | 0.1+ | 0.0 |
| 2000 11 26 | 428 | 0.9+ | 0.2− | 2004 01 23 | 699 | 0.0 | 0.4+ | 2006 01 30 | 703 | 0.6− | 0.2+ |
| 2000 12 05 | 428 | 0.4+ | 0.3− | 2004 01 23 | 699 | 0.2+ | 0.7+ | 2006 01 30 | 703 | 0.4+ | 0.1+ |
| 2000 12 05 | 428 | 1.2+ | 0.4− | 2004 01 28 | 704 | 0.6+ | 0.3+ | 2006 02 04 | 130 | 0.2+ | 0.2− |
| 2000 12 05 | 428 | 1.0+ | 0.1− | 2004 01 28 | 704 | 0.5+ | 0.5+ | 2006 02 04 | 130 | 0.3− | 0.0 |
| 2000 12 22 | 360 | 0.2− | 0.3− | 2004 01 28 | 704 | 0.3+ | 0.4+ | 2006 02 04 | 130 | 0.3− | 0.2− |
| 2000 12 22 | 360 | 0.3− | 0.4− | 2004 01 28 | 704 | 0.3+ | 0.6+ | 2006 02 04 | 130 | 0.6− | 0.1+ |
| 2000 12 22 | 360 | 0.1− | 0.3− | 2004 02 01 | 859 | 1.1+ | 1.0− | 2006 02 07 | 703 | 0.6− | 0.0 |
| 2001 01 05 | 699 | 0.3− | 0.2+ | 2004 02 01 | 859 | 1.1− | 0.2− | 2006 02 07 | 703 | 0.1+ | 0.1− |
| 2001 01 05 | 699 | 0.1− | 0.2− | 2004 02 10 | 644 | 0.1− | 0.2+ | 2006 02 07 | 703 | 0.2− | 0.0 |
| 2001 01 05 | 699 | 0.1− | 0.8+ | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 02 07 | 703 | 0.1− | 0.2− |
| 2001 01 05 | 699 | 0.6− | 0.4+ | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 02 23 | 703 | 0.6+ | 0.1− |
| 2001 01 13 | 118 | 0.0 | 0.4+ | 2004 02 12 | 644 | 0.0 | 0.3+ | 2006 02 23 | 703 | 0.0 | 0.4− |
| 2001 01 13 | 118 | 0.1+ | 0.2+ | 2004 02 12 | 644 | 0.1+ | 0.3+ | 2006 02 23 | 703 | 0.5− | 0.4+ |
| 2001 02 17 | 739 | 1.0− | 0.2− | 2004 02 12 | 644 | 0.0 | 0.3+ | 2006 02 23 | 703 | 0.1− | 0.1+ |
| 2001 02 17 | 739 | 0.4− | 0.4− | 2004 02 19 | 704 | 1.2+ | 0.0 | 2006 02 24 | H55 | 0.1− | 0.1+ |
| 2001 02 17 | 739 | 0.2− | 0.3− | 2004 02 19 | 704 | 0.5+ | 0.1− | 2006 02 24 | H55 | 0.1− | 0.2+ |
| 2001 02 17 | 739 | 0.3+ | 0.7− | 2004 02 19 | 704 | 0.6+ | 0.5− | 2006 02 24 | H55 | 0.1+ | 0.4+ |
| 2001 11 25 | 711 | 1.4+ | 0.1+ | 2004 02 19 | 704 | 0.7+ | 0.1− | 2006 03 17 | 084 | 0.0 | 0.1− |
| 2001 11 25 | 711 | 1.1+ | 0.3+ | 2004 02 19 | 704 | 0.6+ | 0.2+ | 2006 03 23 | 113 | 0.0 | 0.4− |
| 2001 12 23 | 699 | 0.0 | 0.9+ | 2004 02 20 | 046 | 0.6+ | 0.3+ | 2006 03 23 | 113 | 0.1− | 0.2− |
| 2001 12 23 | 699 | 0.6− | 0.3+ | 2004 02 20 | 046 | 0.8− | 0.5+ | 2006 03 23 | 113 | 0.3− | 0.2+ |
| 2001 12 23 | 699 | (1.6− | 1.5+) | 2004 02 20 | 046 | 0.0 | 0.6+ | 2006 03 24 | 704 | (2.7+ | 2.9+) |
| 2001 12 23 | 699 | 0.1+ | 0.0 | 2004 02 20 | 046 | 0.4− | 0.4− | 2006 03 24 | 704 | (0.1− | 2.9+) |
| 2001 12 25 | 608 | 0.5+ | 0.8− | 2004 02 20 | 046 | 0.1− | 0.1+ | 2006 03 24 | 704 | 1.0+ | 0.4− |
| 2001 12 25 | 608 | 0.1+ | 0.7− | 2004 02 20 | 046 | 0.4+ | 0.7+ | 2006 03 24 | 704 | 0.4+ | 0.0 |

**(138014)∗ 2000 $CN_{103}$ = 2002 $TF_{124}$**

Discovered 2000 Feb. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37332)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.81230 | | (2000.0) | | | |
| $n$ | 0.25985221 | $\omega$ | 225.07598 | | −0.46036781 | −0.87820148 |
| $a$ | 2.4321206 | $\Omega$ | 252.74002 | | +0.84793500 | −0.39175723 |
| $e$ | 0.1900080 | $i$ | 7.80617 | | +0.26280739 | −0.27438736 |
| $P$ | 3.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 704 | 0.0 | 0.4− | 2002 10 09 | 704 | 0.1− | 1.0+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2000 01 11 | 704 | 0.4− | 0.4+ | 2002 10 09 | 704 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2000 01 11 | 704 | 0.4− | 0.8− | 2002 10 09 | 704 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2000 01 11 | 704 | 0.9− | 0.1− | 2004 03 17 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2000 02 08 | 704 | 0.2+ | 0.1+ | 2004 03 17 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2000 02 08 | 704 | 0.5+ | 0.2− | 2004 03 17 | 704 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2000 02 08 | 704 | 0.0 | 0.0 | 2004 03 17 | 704 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2000 02 08 | 704 | 0.5− | 0.6− | 2004 03 17 | 704 | 0.7+ | 0.5+ | 2006 10 27 | 703 | 0.6+ | 0.8− |
| 2000 02 08 | 704 | 0.4− | 1.0− | 2004 03 31 | 704 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2000 02 13 | 704 | 0.0 | 0.1− | 2004 03 31 | 704 | 0.2− | 1.3+ | 2006 10 27 | 703 | 0.5− | 0.1− |
| 2000 02 13 | 704 | 0.1− | 1.0+ | 2004 03 31 | 704 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2000 02 13 | 704 | 0.4+ | 1.4+ | 2004 03 31 | 704 | 0.5− | 1.2− | 2006 11 14 | 703 | 0.7− | 0.2+ |
| 2000 03 04 | 645 | 0.0 | 0.0 | 2004 03 31 | 704 | 0.3− | 1.4+ | 2006 11 14 | 703 | 0.6− | 1.1− |
| 2000 03 04 | 645 | 0.0 | 0.0 | 2004 04 25 | 703 | (2.5− | 0.9−) | 2006 11 14 | 703 | 0.3+ | 0.4+ |
| 2000 03 08 | 704 | 0.7+ | 1.2+ | 2004 04 25 | 703 | 1.1+ | 0.3+ | 2006 11 14 | 703 | 0.8+ | 0.7− |
| 2000 03 08 | 704 | 0.4− | 0.6− | 2004 04 25 | 703 | 0.5+ | 0.1− | 2006 11 14 | 703 | 0.2− | 0.6+ |
| 2000 03 08 | 704 | 0.3+ | 0.1− | 2004 04 25 | 703 | 0.7+ | 1.4+ | 2006 11 14 | 703 | 0.3− | 0.2− |
| 2000 03 08 | 704 | 1.0+ | 0.5+ | 2005 06 04 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.3− |
| 2000 03 12 | 704 | 0.3− | 0.4+ | 2005 06 04 | 691 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.8− | 1.1+ |
| 2000 03 12 | 704 | 0.3− | 0.4+ | 2005 06 04 | 691 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 0.6+ | 0.9+ |
| 2000 03 12 | 704 | 0.2+ | 0.5− | 2006 10 19 | 703 | 0.3− | 0.0 | 2006 11 22 | 704 | 1.2+ | 0.2+ |
| 2000 03 12 | 704 | 0.5− | 0.1+ | 2006 10 19 | 703 | 1.1− | 0.4− | 2006 11 22 | 704 | 1.1+ | 0.5+ |
| 2002 10 04 | 644 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.2− | 2006 11 22 | 704 | 0.2+ | 1.3+ |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.8− | 0.4− | 2006 11 25 | G96 | 0.4− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.5− | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.4− | 2006 11 25 | G96 | 0.4− | 0.2− |
| 2002 10 05 | 704 | 0.1+ | 0.7+ | 2006 10 20 | G96 | 0.3+ | 0.6− | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2002 10 05 | 704 | 1.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 29 | 704 | 1.0+ | 1.6+ |
| 2002 10 05 | 704 | 0.0 | 0.6− | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 2.0+ |
| 2002 10 09 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.4− | 0.2+ | 2006 11 29 | 704 | 1.1+ | 0.8+ |

**(138015)∗ 2000 CT$_{109}$ = 2002 TT$_{103}$**

Discovered 2000 Feb. 5 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 37333)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.56274 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26144958 | $\omega$ | 283.30702 | | −0.81752426 | −0.56802143 | |
| $a$ | 2.4222042 | $\Omega$ | 222.18852 | | +0.56778817 | −0.76744808 | |
| $e$ | 0.2093202 | $i$ | 8.12354 | | +0.09628435 | −0.29727949 | |
| $P$ | 3.77 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 1.3− | 0.6− | 2004 03 19 | 704 | 0.5+ | 0.9+ | 2005 07 15 | 691 | 0.1− | 0.6+ |
| 1999 12 14 | 704 | 0.5− | 1.3− | 2004 03 19 | 704 | 0.1+ | 0.3+ | 2005 07 15 | 691 | 0.1+ | 0.6+ |
| 1999 12 14 | 704 | (2.7+ | 2.3−) | 2004 03 20 | 699 | 0.5− | 0.1+ | 2005 07 15 | 691 | (0.2− | 2.0+) |
| 2000 01 11 | 704 | 0.4− | 0.1+ | 2004 03 20 | 699 | 0.7− | 0.6− | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2000 01 11 | 704 | 0.5− | 0.7− | 2004 03 20 | 699 | 0.0 | 0.8+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2000 01 11 | 704 | 0.0 | 0.8− | 2004 03 20 | 699 | 0.1− | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 2000 01 11 | 704 | (0.1+ | 2.6−) | 2004 03 27 | 699 | 0.4+ | 1.1− | 2006 10 03 | G96 | 0.2− | 0.0 |
| 2000 02 05 | 703 | 0.3− | 0.6+ | 2004 03 27 | 699 | 0.3− | 0.3− | 2006 10 03 | 291 | 0.4− | 0.1+ |
| 2000 02 05 | 703 | 0.2+ | 0.7+ | 2004 03 27 | 699 | 0.9− | 1.0+ | 2006 10 03 | 291 | 0.2− | 0.1− |
| 2000 02 05 | 703 | 0.3− | 0.4+ | 2004 03 27 | 699 | 0.6− | 0.0 | 2006 10 03 | 291 | 0.2− | 0.1+ |
| 2000 02 05 | 703 | 0.1− | 1.3+ | 2004 03 31 | 704 | 0.4+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2000 02 08 | 704 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 0.6+ | 0.7+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2000 02 08 | 704 | 0.5+ | 0.7+ | 2004 03 31 | 704 | 0.5+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2000 02 08 | 704 | 0.9+ | 1.4+ | 2004 03 31 | 704 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2000 02 08 | 704 | 1.6+ | 0.2− | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2000 02 08 | 704 | 0.2+ | 0.7+ | 2004 04 08 | E12 | 1.3− | 1.4+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 2000 03 01 | 703 | 1.0− | 0.1− | 2004 04 08 | E12 | (0.4− | 2.0+) | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2000 03 01 | 703 | 0.7− | 1.8− | 2004 04 08 | E12 | 0.4− | 1.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2000 03 01 | 703 | 0.1− | 0.9− | 2004 04 08 | E12 | (0.0 | 1.7+) | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2000 03 01 | 703 | 1.2− | 0.5− | 2004 04 08 | 608 | (1.7+ | 0.9−) | 2006 10 22 | 644 | 0.5− | 0.3+ |
| 2000 03 08 | 704 | 0.0 | 0.2− | 2004 04 08 | 608 | 1.3+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2000 03 08 | 704 | 0.3− | 0.2+ | 2004 04 08 | 608 | 0.8+ | 0.5+ | 2006 10 22 | 644 | 0.7− | 0.2+ |
| 2000 03 08 | 704 | 1.0+ | 0.3− | 2004 04 09 | E12 | 0.7− | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2000 03 08 | 704 | 0.4− | 0.1+ | 2004 04 09 | E12 | 0.7− | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2000 03 27 | 699 | 0.2− | 0.5+ | 2004 04 09 | E12 | 0.8− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2000 03 27 | 699 | 0.2− | 0.1+ | 2004 04 09 | E12 | 0.6− | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2000 03 27 | 699 | 0.3+ | 0.1+ | 2004 04 15 | 699 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2000 03 27 | 699 | 0.1− | 0.2+ | 2004 04 15 | 699 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.2− | 0.2− | 2004 04 15 | 699 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 1.3+ | 0.0 | 2004 04 15 | 699 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.7+ | 0.5− | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.7+ | 0.6+ | 2004 04 16 | 644 | 0.3− | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2000 05 04 | 704 | 0.4− | 0.2− | 2004 04 16 | 644 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2000 05 04 | 704 | 0.4− | 0.1− | 2004 04 16 | 644 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2000 05 04 | 704 | 1.7+ | 0.3− | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.7+ | 2004 04 16 | 644 | 0.2− | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.4− | 1.0+ | 2004 04 17 | 704 | 0.9+ | 1.0− | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.5+ | 1.0+ | 2004 04 17 | 704 | 0.7+ | 1.3+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.4+ | 1.3+ | 2004 04 17 | 704 | 0.1− | 1.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 644 | 0.0 | 0.5+ | 2004 04 17 | 704 | 0.3+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2004 04 17 | 699 | 0.4− | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.4+ |
| 2002 10 04 | 644 | 0.3− | 0.6+ | 2004 04 17 | 699 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2002 10 05 | 644 | 0.2− | 0.4− | 2004 04 17 | 699 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.4− | 0.2+ |
| 2002 10 05 | 644 | 0.2− | 0.4− | 2004 04 17 | 699 | 0.2+ | 0.3− | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 10 05 | 644 | 0.2+ | 0.2− | 2004 04 19 | 704 | 1.3+ | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 2002 10 06 | 644 | 0.3− | 1.0+ | 2004 04 19 | 704 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2002 10 06 | 644 | 0.2− | 0.7+ | 2004 04 19 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2002 10 06 | 644 | 0.1− | 0.8+ | 2004 04 19 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2002 10 09 | 704 | 0.2− | 0.8− | 2004 04 19 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2002 10 09 | 704 | (0.4− | 1.5−) | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 10 09 | 704 | 0.0 | 0.4− | 2004 04 21 | 704 | 0.5+ | 0.9+ | 2006 11 17 | 703 | 0.8− | 0.4− |
| 2002 10 09 | 704 | 0.1− | 0.1− | 2004 04 21 | 704 | 0.5+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2002 10 12 | 704 | (1.0− | 2.1+) | 2004 04 21 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.6+ |
| 2002 10 12 | 704 | (0.8− | 2.1+) | 2004 04 21 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2002 10 12 | 704 | (0.8− | 1.8+) | 2004 04 30 | 608 | 0.1− | 1.1− | 2006 11 18 | 704 | 0.2− | 0.8+ |
| 2002 10 26 | 049 | 1.2− | 0.0 | 2004 04 30 | 608 | 0.5+ | 0.5− | 2006 11 18 | 704 | 0.5− | 0.8+ |
| 2002 10 26 | 049 | (1.7− | 0.7+) | 2004 04 30 | 608 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2002 10 26 | 049 | (1.6− | 0.5−) | 2004 05 14 | 704 | 0.7+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2002 11 02 | 608 | 0.3− | 0.5− | 2004 05 14 | 704 | 1.0+ | 1.3+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2002 11 02 | 608 | 0.8− | 0.2+ | 2004 05 14 | 704 | (0.4− | 1.8+) | 2006 11 21 | 704 | 0.6+ | 1.0+ |
| 2002 11 02 | 608 | 0.1+ | 0.8− | 2004 05 14 | 704 | 0.9+ | 1.1+ | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2004 02 02 | 703 | 0.2− | 0.6− | 2004 05 14 | 704 | 0.1+ | 1.1+ | 2006 11 21 | 704 | 0.7+ | 1.3+ |
| 2004 02 02 | 703 | 1.1+ | 0.4+ | 2004 06 05 | 699 | 0.5− | 1.4− | 2006 11 27 | 703 | 0.7− | 0.7− |
| 2004 02 02 | 703 | 0.2− | 0.6− | 2004 06 05 | 699 | 0.3− | 0.7+ | 2006 11 27 | 703 | 1.5+ | 0.8+ |
| 2004 02 02 | 703 | 0.8− | 1.2+ | 2004 06 05 | 699 | 0.5− | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.1+ |
| 2004 03 17 | 704 | 0.7+ | 0.3− | 2004 06 05 | 699 | 0.9− | 0.4+ | 2006 11 27 | 703 | 0.5+ | 0.1+ |
| 2004 03 17 | 704 | 0.5+ | 0.6+ | 2004 06 14 | 704 | 0.1− | 0.5+ | 2006 11 28 | 704 | 1.1+ | 1.4+ |
| 2004 03 17 | 704 | 0.2+ | 0.1+ | 2004 06 14 | 704 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2004 03 17 | 704 | 0.0 | 0.2+ | 2004 06 14 | 704 | 0.8− | 0.3+ | 2006 11 28 | 704 | 0.3+ | 1.3+ |
| 2004 03 19 | 704 | 0.7+ | 0.9+ | 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.7− | 0.0 |
| 2004 03 19 | 704 | 0.6+ | 0.6+ | 2005 06 27 | 691 | 0.0 | 0.4+ | | | | |
| 2004 03 19 | 704 | 0.5+ | 0.6+ | 2005 06 27 | 691 | 0.1− | 0.6+ | | | | |

**(138016)∗ 2000 CQ$_{111}$ = 2002 RF$_{188}$**

Discovered 2000 Feb. 6 by M. W. Buie at Kitt Peak.

Id. A. Doppler (*MPO* 37333)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.51863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26239976 | $\omega$ | 80.63675 | | +0.15268340 | −0.98827491 | |
| $a$ | 2.4163533 | $\Omega$ | 0.58211 | | +0.87805510 | +0.13533528 | |
| $e$ | 0.2118129 | $i$ | 3.88510 | | +0.45354936 | +0.07068987 | |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.9+ | 0.2+ | 2004 03 18 | 704 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 02 04 | 704 | 0.7+ | 0.0 | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2000 02 04 | 704 | 0.9+ | 0.4+ | 2004 03 18 | 704 | (0.1− | 1.7+) | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2000 02 06 | 695 | 0.4+ | 0.4− | 2004 03 30 | 291 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2000 02 06 | 695 | 0.2+ | 0.2− | 2004 03 30 | 291 | 0.1− | 0.6+ | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2000 02 11 | 704 | 0.9+ | 1.8+ | 2004 03 30 | 291 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2000 02 11 | 704 | 0.1− | 1.0+ | 2004 04 12 | 691 | 0.4+ | 0.4+ | 2006 11 14 | 703 | 0.7+ | 0.5− |
| 2000 02 11 | 704 | 0.6− | 1.3+ | 2004 04 12 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.6− |
| 2000 03 05 | 704 | 0.7− | 0.2− | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.4− |
| 2000 03 05 | 704 | 0.1− | 0.3− | 2004 04 19 | 691 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2000 03 05 | 704 | 0.7− | 0.4+ | 2004 04 19 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 2000 03 05 | 704 | 0.5+ | 0.4+ | 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.8+ |
| 2000 03 05 | 704 | 0.3+ | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.2+ | 0.4− |
| 2002 09 07 | 704 | 0.1+ | 1.0+ | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 09 07 | 704 | 0.4+ | 1.1+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.6− |
| 2002 09 13 | 644 | 0.7− | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 09 13 | 644 | 0.2− | 1.2+ | 2006 10 15 | 691 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2002 09 13 | 644 | 0.6− | 0.8+ | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.8− | 0.3− |
| 2002 09 15 | 699 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 1.1+ | 0.2+ |
| 2002 09 15 | 699 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2002 09 15 | 699 | 0.4− | 0.7+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2002 09 15 | 699 | 0.6− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.8− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.9− |
| 2002 09 15 | 644 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.2+ |
| 2002 09 17 | 608 | (1.7− | 0.6−) | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2002 09 17 | 608 | (2.1− | 0.1−) | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2002 09 17 | 608 | (1.7− | 0.6−) | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.4− | 0.5− |
| 2002 10 03 | 704 | 0.7− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.3− | 0.5− |
| 2002 10 03 | 704 | 1.3− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2002 10 03 | 704 | 0.0 | 0.7− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 291 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.0 | |
| 2002 10 04 | 291 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.2− | |
| 2002 10 04 | 291 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.6− | |
| 2004 03 18 | 704 | 0.2+ | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | | | | | |
| 2004 03 18 | 704 | 1.2+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | | | | |

**(138017)∗ 2000 CG$_{113}$ = 2000 CN$_{117}$ = 2002 TH$_{100}$**

Discovered 2000 Feb. 8 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 34060; *MPO* 68643)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 339.67949 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.27857355 | $\omega$ | 314.46081 | | −0.07852047 | −0.99656074 | |
| *a* | 2.3218962 | $\Omega$ | 140.02033 | | +0.92595201 | −0.08274799 | |
| *e* | 0.1857345 | *i* | 2.36207 | | +0.36938787 | −0.00441202 | |
| *P* | 3.54 | *H* | 17.8 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 20 | 691 | 0.2− | 0.3− | 2000 02 11 | 704 | 0.7− | 0.2− | 2004 04 19 | 704 | (1.8+ | 0.0 | ) |
| 1998 08 20 | 691 | 0.7− | 0.5+ | 2002 08 12 | 807 | 0.1− | 0.6− | 2004 04 19 | 704 | (2.4+ | 0.2−) | |
| 1998 08 20 | 691 | 0.4− | 0.1+ | 2002 08 12 | 807 | 1.5− | 0.3− | 2004 05 28 | 691 | 0.1+ | 0.2+ | |
| 2000 01 06 | 691 | 0.0 | 0.5− | 2002 10 04 | 704 | (1.8− | 1.3+) | 2004 05 28 | 691 | 0.2− | 0.0 | |
| 2000 01 06 | 691 | 0.2− | 0.1− | 2002 10 04 | 704 | 1.4− | 0.5+ | 2004 05 28 | 691 | 0.5+ | 0.2+ | |
| 2000 01 06 | 691 | 0.2− | 0.1− | 2002 10 04 | 704 | 0.0 | 1.2+ | 2005 07 09 | 691 | 0.3+ | 0.1− | |
| 2000 02 02 | 704 | 0.7+ | 0.3+ | 2002 10 04 | 704 | 0.6− | 0.3− | 2005 07 09 | 691 | 0.1+ | 0.1− | |
| 2000 02 02 | 704 | 0.1− | 0.3+ | 2002 10 05 | 644 | 0.0 | 0.4− | 2005 07 09 | 691 | 0.0 | 0.2− | |
| 2000 02 02 | 704 | 0.6+ | 0.1+ | 2002 10 05 | 644 | 0.5+ | 0.7+ | 2006 11 01 | G96 | 0.6− | 0.1− | |
| 2000 02 02 | 704 | 0.4+ | 0.3− | 2002 10 05 | 644 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.6− | 0.1+ | |
| 2000 02 02 | 704 | 0.7+ | 0.5− | 2002 10 06 | 644 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.4− | 0.2− | |
| 2000 02 08 | 691 | 0.1− | 0.7+ | 2002 10 06 | 644 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.6− | 0.1+ | |
| 2000 02 08 | 691 | (0.1− | 2.7+) | 2002 10 06 | 644 | 0.1− | 0.7+ | 2006 11 18 | G96 | 0.4− | 0.2+ | |
| 2000 02 08 | 691 | (0.1+ | 2.2+) | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.3− | 0.0 | |
| 2000 02 11 | 704 | 0.4+ | 0.9+ | 2002 10 11 | 645 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.1+ | |
| 2000 02 11 | 704 | 0.2+ | 0.0 | 2004 04 19 | 704 | (0.7+ | 1.9+) | | | | | |
| 2000 02 11 | 704 | 0.6+ | 0.5+ | 2004 04 19 | 704 | 1.0+ | 0.8+ | | | | | |

**(138018)∗ 2000 CL$_{113}$ = 2002 TO$_{136}$ = 2002 TR$_{301}$**

Discovered 2000 Feb. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37334), A. Doppler (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 297.57143 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26892435 | $\omega$ | 169.36919 | | −0.59664292 | −0.80082593 | |
| *a* | 2.3771101 | $\Omega$ | 317.23448 | | +0.73056138 | −0.51524445 | |
| *e* | 0.1712477 | *i* | 4.38491 | | +0.33211036 | −0.30528836 | |
| *P* | 3.66 | *H* | 16.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 691 | 0.1+ | 0.0 | 2004 03 17 | 704 | 1.1+ | 0.7+ | 2004 04 24 | 608 | 0.1− | 0.5− | |
| 2000 01 30 | 691 | 0.1− | 0.2+ | 2004 03 17 | 704 | 0.5− | 0.7+ | 2004 04 24 | 608 | 0.3− | 0.2− | |
| 2000 01 30 | 691 | 0.1− | 0.0 | 2004 03 17 | 704 | 0.6+ | 0.0 | 2004 04 24 | 608 | 0.0 | 0.2− | |
| 2000 02 03 | 704 | 0.1− | 0.6+ | 2004 03 19 | 704 | 1.2+ | 1.0+ | 2005 07 12 | G96 | 0.6− | 0.3+ | |
| 2000 02 03 | 704 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.2− | 0.9+ | 2005 07 12 | G96 | 0.6− | 0.6+ | |
| 2000 02 03 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 1.6− | 1.7+ | 2005 07 12 | G96 | 0.8− | 0.4+ | |
| 2000 02 03 | 704 | 1.1+ | 0.4− | 2004 03 19 | 704 | 0.3− | 0.9+ | 2005 07 12 | G96 | 0.9− | 0.5+ | |
| 2000 02 03 | 704 | 0.1+ | 0.3− | 2004 03 20 | 699 | 0.7− | 0.9− | 2006 11 13 | 691 | 0.2− | 0.2+ | |
| 2000 02 04 | 691 | 0.3− | 0.1− | 2004 03 20 | 699 | 0.4− | 2.0− | 2006 11 13 | 691 | 0.5− | 0.1− | |
| 2000 02 04 | 691 | 0.1− | 0.1− | 2004 03 20 | 699 | 1.1− | 0.8− | 2006 11 13 | 691 | 0.4− | 0.0 | |
| 2000 02 04 | 691 | 0.1− | 0.2− | 2004 03 20 | 699 | 1.0− | 0.6+ | 2006 11 15 | 704 | 0.5+ | 0.7+ | |
| 2000 02 10 | 691 | 0.1− | 0.4− | 2004 03 26 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.5+ | 0.3+ | |
| 2000 02 10 | 691 | 0.2− | 0.3− | 2004 03 26 | 704 | 0.1− | 1.0+ | 2006 11 15 | 704 | 1.1− | 0.2+ | |
| 2000 02 10 | 691 | 0.2− | 0.2− | 2004 03 26 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 691 | 0.2− | 0.0 | |
| 2000 02 11 | 704 | 0.0 | 0.1− | 2004 03 26 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.4− | 0.1− | |
| 2000 02 11 | 704 | 0.4+ | 0.3+ | 2004 03 29 | 704 | 0.5+ | 1.8+ | 2006 11 17 | 691 | 0.2− | 0.0 | |
| 2000 02 11 | 704 | 1.0+ | 0.4+ | 2004 03 29 | 704 | 0.4− | 0.6+ | 2006 11 17 | 644 | 0.4+ | 0.2− | |
| 2000 02 11 | 704 | 0.4− | 0.3+ | 2004 03 29 | 704 | 0.7− | 0.9+ | 2006 11 17 | 644 | 0.1− | 0.3− | |
| 2000 02 11 | 704 | 0.1+ | 0.1+ | 2004 03 29 | 704 | 0.1+ | 1.6+ | 2006 11 17 | 644 | 0.1+ | 0.4− | |
| 2002 10 04 | 644 | 0.1− | 0.7+ | 2004 03 29 | 704 | 0.3+ | 1.2+ | 2006 11 19 | 704 | 0.1− | 0.6− | |
| 2002 10 04 | 644 | 0.1− | 0.6+ | 2004 04 09 | E12 | 0.1− | 1.2− | 2006 11 19 | 704 | 0.1+ | 0.2+ | |
| 2002 10 04 | 644 | 0.0 | 0.5+ | 2004 04 09 | E12 | 0.1+ | 1.2− | 2006 11 19 | 704 | 0.6− | 0.5− | |
| 2002 10 05 | 704 | 0.5+ | 0.4+ | 2004 04 09 | E12 | 1.2+ | 0.9− | 2006 11 19 | 704 | 0.0 | 0.3− | |
| 2002 10 05 | 704 | 0.5+ | 0.6+ | 2004 04 09 | E12 | 0.7+ | 0.8− | 2006 11 19 | 704 | 0.3− | 0.1− | |
| 2002 10 05 | 704 | 0.5+ | 0.3+ | 2004 04 14 | 699 | 0.0 | 1.5+ | 2006 11 21 | 691 | 0.3− | 0.0 | |
| 2002 10 05 | 704 | 0.5+ | 0.1+ | 2004 04 14 | 699 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.3− | 0.0 | |
| 2002 10 05 | 704 | 0.8+ | 0.4+ | 2004 04 14 | 699 | 0.4− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.0 | |
| 2002 10 06 | 644 | 0.4− | 0.1+ | 2004 04 14 | 699 | 0.7− | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.0 | |
| 2002 10 06 | 644 | 0.3− | 0.5+ | 2004 04 17 | 704 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 0.4+ | 0.8− | |
| 2002 10 06 | 644 | 0.0 | 0.5+ | 2004 04 17 | 704 | 0.9+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.2+ | |
| 2002 10 12 | 704 | 0.5+ | 1.1+ | 2004 04 17 | 704 | 0.9+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.0 | |
| 2002 10 12 | 704 | 0.8− | 0.6− | 2004 04 19 | 704 | 0.0 | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.2+ | |
| 2002 10 12 | 704 | 0.1+ | 0.8+ | 2004 04 19 | 704 | 0.1+ | 0.6+ | 2006 11 27 | 704 | 0.8− | 1.0+ | |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2004 04 19 | 704 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.5− | 1.5+ | |
| 2002 10 28 | 644 | 0.5− | 0.2+ | 2004 04 19 | 704 | 0.1− | 0.5+ | 2006 11 27 | 704 | 1.8− | 1.7+ | |
| 2002 10 28 | 644 | 0.3− | 0.2− | 2004 04 19 | 704 | 0.7+ | 0.3+ | 2006 11 27 | 704 | 0.9− | 0.4+ | |
| 2002 10 28 | 644 | 0.3− | 0.3− | 2004 04 21 | 704 | 0.2+ | 0.1− | 2006 11 28 | 704 | (4.3+ | 0.7+) | |
| 2002 10 30 | 644 | 0.3− | 0.5+ | 2004 04 21 | 704 | 1.5+ | 0.5+ | 2006 11 28 | 704 | (4.2+ | 2.0+) | |
| 2002 10 30 | 644 | 0.7− | 0.7+ | 2004 04 21 | 704 | 0.7+ | 0.3+ | 2006 11 28 | 704 | (3.5+ | 1.8+) | |
| 2002 10 30 | 644 | 0.3− | 0.7+ | 2004 04 21 | 704 | 1.2+ | 0.7+ | | | | | |
| 2004 03 17 | 704 | 1.3+ | 0.6+ | 2004 04 21 | 704 | 1.0+ | 0.8+ | | | | | |

**(138019)∗ 2000 CG$_{117}$ = 2002 SE$_{9}$**

Discovered 2000 Feb. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37334)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 287.49247 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26724784 | $\omega$ | 69.91424 | | −0.63359334 | −0.77336745 | |
| *a* | 2.3870412 | $\Omega$ | 59.42017 | | +0.70016888 | −0.58500347 | |
| *e* | 0.1499610 | *i* | 1.43103 | | +0.32912462 | −0.24428206 | |
| *P* | 3.69 | *H* | 16.4 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.9+ | 1.0− | 2004 03 19 | 704 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.3− | 0.1+ | |
| 2000 01 04 | 704 | 0.1+ | 0.8− | 2004 03 19 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.3+ | |
| 2000 01 04 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.1− | |
| 2000 01 04 | 704 | 0.3+ | 0.5+ | 2004 03 20 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.4− | 0.3− | |
| 2000 02 03 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.2+ | |
| 2000 02 03 | 704 | 0.2+ | 0.5+ | 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2000 02 03 | 704 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.4+ | |
| 2000 02 03 | 704 | 0.9+ | 0.0 | 2004 03 22 | 704 | 0.8+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | |
| 2000 02 03 | 704 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.6+ | |
| 2000 02 07 | 703 | 0.1− | 0.1+ | 2004 03 22 | 704 | (1.7+ | 0.5−) | 2006 11 10 | 691 | 0.0 | 0.3+ | |
| 2000 02 07 | 703 | 0.5+ | 0.5+ | 2004 03 24 | 699 | 0.5− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | |
| 2000 02 07 | 703 | 0.1− | 0.7− | 2004 03 24 | 699 | 0.1− | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | |
| 2000 02 07 | 703 | 1.9− | 0.7− | 2004 03 24 | 699 | 0.5− | 0.6− | 2006 11 11 | 703 | 0.8− | 1.1+ | |
| 2002 09 27 | 644 | 1.0− | 0.1− | 2004 03 24 | 699 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.8+ | |
| 2002 09 27 | 644 | 1.0− | 0.9+ | 2004 03 27 | 704 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.2+ | |
| 2002 09 27 | 644 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.0 | |
| 2002 09 28 | 644 | 0.6− | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.2+ | |
| 2002 09 28 | 644 | 0.9− | 0.5+ | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.3+ | 0.1− | |
| 2002 09 28 | 644 | 0.7− | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.4+ | |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | |
| 2002 10 03 | 704 | 0.1− | 1.2+ | 2004 04 14 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | |
| 2002 10 03 | 704 | (0.2− | 1.8+) | 2004 04 14 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.4+ | |
| 2002 10 03 | 704 | 0.4+ | 0.7+ | 2004 04 15 | 699 | 0.7− | 0.3+ | 2006 11 17 | 703 | (1.6+ | 1.2+) | |
| 2002 10 31 | 704 | 0.4− | 0.7+ | 2004 04 15 | 699 | 0.5− | 0.0 | 2006 11 17 | 703 | (0.3− | 2.1+) | |
| 2002 10 31 | 704 | 0.3− | 0.6+ | 2004 04 15 | 699 | 1.0− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.9+ | |
| 2002 10 31 | 704 | 0.3− | 0.7+ | 2004 04 15 | 699 | (3.6− | 1.8−) | 2006 11 17 | 703 | 0.2− | 0.5+ | |
| 2002 10 31 | 704 | 0.1− | 0.7+ | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.1+ | |
| 2004 02 26 | 704 | 0.7+ | 0.5+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 1.1+ | 0.7+ | |
| 2004 02 26 | 704 | 0.2+ | 1.5+ | 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.1+ | |
| 2004 02 26 | 704 | 0.3− | 1.5+ | 2004 04 19 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.5+ | |
| 2004 02 26 | 704 | 0.9+ | 0.9+ | 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.6+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.1+ | 1.4+ | 2004 04 19 | 704 | 0.4+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 0.6− | 0.8+ | 2004 04 19 | 704 | 0.3+ | 0.4− | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2004 03 15 | 703 | 0.1+ | 0.7+ | 2004 04 20 | 704 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.3− |
| 2004 03 15 | 703 | 0.4+ | 0.1− | 2004 04 20 | 704 | 0.7+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2004 03 16 | 704 | 0.1− | 0.9+ | 2004 04 20 | 704 | 0.4− | 1.2+ | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2004 03 16 | 704 | 0.1+ | 1.0+ | 2004 04 20 | 704 | 0.1+ | 0.7+ | 2006 11 21 | 704 | 0.7− | 0.1− |
| 2004 03 16 | 704 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2004 03 16 | 704 | 0.4− | 0.4+ | 2005 06 30 | 691 | 0.1− | 0.6+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2004 03 16 | 704 | 1.0− | 0.3+ | 2005 06 30 | 691 | 0.1− | 0.9+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2004 03 17 | 704 | 0.6+ | 0.1+ | 2005 06 30 | 691 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2004 03 17 | 704 | 0.4+ | 0.3− | 2005 07 05 | 691 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.7− | 0.5+ |
| 2004 03 17 | 704 | 0.5+ | 0.1− | 2005 07 05 | 691 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2004 03 17 | 704 | 0.3+ | 0.3+ | 2005 07 05 | 691 | 0.0 | 0.6+ | 2006 11 27 | 703 | 0.4+ | 0.7+ |
| 2004 03 17 | 704 | 0.2+ | 0.3− | 2005 07 09 | 691 | 0.3− | 0.5+ | 2006 11 27 | 703 | 0.5+ | 0.5+ |
| 2004 03 17 | 704 | 0.5+ | 0.0 | 2005 07 09 | 691 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.7+ | 0.3+ |
| 2004 03 17 | 704 | 0.4+ | 0.5+ | 2005 07 09 | 691 | 0.1− | 0.7+ | 2006 11 29 | 704 | 0.1+ | 0.8+ |
| 2004 03 17 | 704 | 0.7− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 2004 03 17 | 704 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.5− | 0.3+ |
| 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.4+ |
| 2004 03 19 | 704 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2004 03 19 | 704 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 | | | | |

**(138020)∗ 2000 CL$_{118}$ = 2002 RX$_{21}$**

Discovered 2000 Feb. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34891)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.01033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26074303 | $\omega$ | 31.19467 | | +0.51226019 | −0.85858987 | |
| $a$ | 2.4265779 | $\Omega$ | 28.00603 | | +0.77877706 | +0.45440629 | |
| $e$ | 0.1750550 | $i$ | 2.48028 | | +0.36207153 | +0.23735701 | |
| $P$ | 3.78 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | (0.6− | 2.7+) | 2004 03 15 | 704 | 0.1− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2000 02 03 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | (2.0+ | 0.4−) | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2000 02 03 | 704 | 0.8− | 0.5+ | 2004 03 18 | 704 | (1.6+ | 0.7+) | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2000 02 03 | 704 | 0.4− | 0.9+ | 2004 03 18 | 704 | 0.9+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2000 02 03 | 704 | 0.7+ | 1.1+ | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2000 02 11 | 704 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2000 02 11 | 704 | 0.2+ | 1.0+ | 2004 03 28 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.5+ | 0.2+ |
| 2000 02 11 | 704 | 0.8+ | 0.1+ | 2004 03 28 | 691 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2000 02 11 | 704 | 0.8− | 1.2+ | 2004 03 28 | 691 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.2+ | 0.4− |
| 2000 02 14 | 049 | 1.1+ | 0.4− | 2006 08 28 | 703 | 1.4− | 0.6+ | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2000 02 14 | 049 | 1.3+ | 0.6− | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2000 02 14 | 049 | 0.4+ | 0.7− | 2006 08 28 | 703 | 0.4− | 0.8− | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2001 06 17 | 691 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.9+ | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 06 17 | 691 | 0.1+ | 0.2− | 2006 08 30 | 699 | 1.3+ | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 06 17 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 1.0+ | 1.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 08 21 | 644 | 0.3+ | 0.4+ | 2006 08 30 | 699 | (0.6+ | 2.1−) | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2002 08 21 | 644 | 0.2+ | 0.5+ | 2006 08 30 | 699 | 0.6+ | 1.2− | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2002 08 21 | 644 | 0.3− | 0.6+ | 2006 09 15 | 644 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 08 30 | 699 | 0.8− | 1.0+ | 2006 09 15 | 644 | 0.3+ | 0.0 | 2006 10 23 | 704 | 1.0− | 0.5+ |
| 2002 08 30 | 699 | 0.4− | 1.0− | 2006 09 15 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.5− | 0.4+ |
| 2002 08 30 | 699 | 0.9− | 0.6+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 23 | 704 | 1.2− | 0.9+ |
| 2002 08 30 | 699 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 23 | 704 | 0.9− | 0.1− |
| 2002 09 04 | 699 | 0.8+ | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 704 | 1.1− | 0.0 |
| 2002 09 04 | 699 | 0.0 | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.4− |
| 2002 09 04 | 699 | 0.1+ | 1.1+ | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 09 04 | 699 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.7+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2002 09 05 | 704 | 0.4− | 0.7+ | 2006 09 25 | 683 | 0.8+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2002 09 06 | 704 | 1.0− | 0.9+ | 2006 09 25 | 683 | 1.3+ | 0.9− | 2006 11 01 | 691 | 0.4+ | 0.3− |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2006 09 25 | 683 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.6+ | 0.2− |
| 2002 09 06 | 704 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.3− |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2002 09 12 | 644 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 11 07 | 644 | 0.4+ | 0.1+ |
| 2002 09 12 | 644 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.3+ | 0.1+ |
| 2002 09 12 | 644 | 0.2− | 0.4+ | 2006 09 27 | 704 | 1.5+ | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.3− |
| 2002 09 14 | 608 | 0.8− | 0.4+ | 2006 09 27 | 704 | 1.2+ | 0.5− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2002 09 14 | 608 | 0.7− | 0.7− | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2002 09 14 | 608 | 0.9− | 0.6− | 2006 09 27 | 704 | 1.5+ | 1.5− | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2002 09 15 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 683 | 0.4+ | 1.1− | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2002 09 15 | 644 | 0.5+ | 0.1− | 2006 09 28 | 683 | (0.4+ | 2.1−) | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2002 09 15 | 644 | 0.1− | 0.6+ | 2006 09 28 | 683 | (0.3+ | 2.5−) | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2002 10 01 | 699 | 1.3− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2002 10 01 | 699 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2002 10 01 | 699 | 0.5− | 0.5+ | 2006 09 28 | 691 | 0.5− | 0.6+ | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2002 10 01 | 699 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2002 10 03 | 704 | 0.5− | 0.5− | 2006 09 29 | 704 | 1.0+ | 0.5− | 2006 11 18 | 704 | 1.0− | 0.1− |
| 2002 10 03 | 704 | (1.5− | 0.9+) | 2006 09 29 | 704 | 1.5+ | 0.5− | 2006 11 18 | 704 | 0.5− | 0.7− |
| 2002 10 03 | 704 | 0.9− | 0.1− | 2006 09 30 | 683 | 0.7− | 0.3− | 2006 11 18 | 704 | 1.0− | 0.1− |
| 2002 10 03 | 704 | 0.4− | 1.3+ | 2006 09 30 | 683 | 0.5− | 1.0− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2002 10 05 | 704 | 0.3+ | 0.5− | 2006 09 30 | 683 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.2− | 1.0+ |
| 2002 10 05 | 704 | 0.6− | 0.7+ | 2006 10 01 | 704 | 0.5+ | 0.5+ | 2006 11 20 | 691 | 0.5− | 0.2+ |
| 2002 10 05 | 704 | 0.4− | 0.3+ | 2006 10 01 | 704 | 0.6+ | 0.3− | 2006 11 20 | 691 | 0.5− | 0.2+ |
| 2002 10 11 | 704 | 0.9+ | 1.0+ | 2006 10 01 | 704 | (0.7+ | 1.6+) | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.3+ | 0.5+ | 2006 10 03 | 704 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.6− | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 10 03 | 704 | 0.0 | 1.5+ | 2006 11 20 | G96 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.9+ | 0.6+ | 2006 10 03 | 704 | 0.8− | 0.1− | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.4− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2004 02 23 | 704 | 0.8+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.2− |
| 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.5− |
| 2004 02 23 | 704 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 1.5− | 0.9+ |
| 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 1.7− | 0.3− |
| 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.6+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 1.1+ |
| 2004 03 15 | 704 | (2.7+ | 1.1+) | 2006 10 15 | 691 | 0.3+ | 0.4+ | | | | |
| 2004 03 15 | 704 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | |

**(138021)∗ 2000 CG$_{121}$ = 2002 RO$_{101}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 34892)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.85892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27378496 | $\omega$ | 125.67749 | | +0.88195481 | −0.47068415 | |
| $a$ | 2.3488917 | $\Omega$ | 262.41292 | | +0.42397507 | +0.81517643 | |
| $e$ | 0.2333144 | $i$ | 1.43026 | | +0.20591469 | +0.33755565 | |
| $P$ | 3.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.3+ | 1.4+ | 2002 10 31 | 644 | 0.1+ | 0.5− | 2002 12 31 | 704 | 0.5+ | 0.7− |
| 2000 02 02 | 704 | 0.2− | 0.7− | 2002 10 31 | 644 | 0.2+ | 0.5− | 2002 12 31 | 704 | 0.7+ | 0.2− |
| 2000 02 02 | 704 | 0.2+ | 0.7− | 2002 10 31 | 291 | 1.4− | 0.3+ | 2002 12 31 | 704 | 0.3− | 0.5− |
| 2000 02 11 | 704 | 0.4− | 1.4+ | 2002 11 01 | 608 | 0.2+ | 0.4− | 2002 12 31 | 704 | 0.0 | 1.1− |
| 2000 02 11 | 704 | 0.7+ | 0.3+ | 2002 11 01 | 608 | 0.2+ | 0.4− | 2002 12 31 | 704 | 0.1+ | 0.8− |
| 2000 02 11 | 704 | 0.2+ | 0.0 | 2002 11 01 | 608 | 0.2+ | 0.3− | 2003 01 04 | 704 | 0.1− | 0.6+ |
| 2000 03 03 | 704 | 0.2+ | 0.7+ | 2002 11 03 | 704 | 0.6+ | 0.6+ | 2003 01 04 | 704 | 0.1+ | 0.4+ |
| 2000 03 03 | 704 | 0.0 | 1.0+ | 2002 11 03 | 704 | 0.5+ | 0.3+ | 2003 01 04 | 704 | 0.2+ | 0.2− |
| 2000 03 03 | 704 | 0.3− | 0.1− | 2002 11 03 | 704 | 0.8+ | 0.1+ | 2003 01 04 | 704 | 0.4+ | 0.1+ |
| 2000 03 03 | 704 | 0.4+ | 0.9+ | 2002 11 03 | 704 | 0.7+ | 0.4+ | 2003 01 27 | 704 | 0.1− | 0.3+ |
| 2000 03 03 | 704 | 0.8+ | 0.2+ | 2002 11 04 | 699 | 0.0 | 0.1− | 2003 01 27 | 704 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | 0.3+ | 0.1+ | 2002 11 04 | 699 | 0.0 | 0.3+ | 2003 01 27 | 704 | 0.6+ | 0.0 |
| 2002 09 05 | 704 | 0.9+ | 0.3+ | 2002 11 04 | 699 | 0.2+ | 0.4+ | 2003 01 27 | 704 | 0.4+ | 0.4+ |
| 2002 09 05 | 704 | 0.5+ | 0.6− | 2002 11 04 | 699 | 0.4− | 0.2+ | 2004 03 26 | 691 | 0.3+ | 0.4+ |
| 2002 09 05 | 704 | 0.9+ | 0.0 | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2004 03 26 | 691 | 0.2+ | 0.4+ |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2004 03 26 | 691 | 0.2+ | 0.7+ |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2002 11 06 | 704 | 0.6+ | 0.0 | 2004 04 12 | 691 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.4+ | 0.1+ | 2002 11 06 | 333 | 0.2+ | 0.1+ | 2004 04 12 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.6+ | 0.5+ | 2002 11 06 | 704 | 0.6+ | 0.7+ | 2004 04 12 | 691 | 0.1− | 0.0 | |
| 2002 09 07 | 704 | 0.4+ | 0.5+ | 2002 11 06 | 333 | 0.6+ | 0.3+ | 2004 04 22 | 691 | 0.2+ | 0.0 | |
| 2002 09 07 | 704 | 0.2+ | 0.3+ | 2002 11 06 | 704 | 0.8+ | 0.3+ | 2004 04 22 | 691 | 0.3+ | 0.4+ | |
| 2002 09 16 | 699 | 0.8+ | 0.2+ | 2002 11 06 | 333 | 0.1+ | 0.3− | 2004 04 22 | 691 | 0.2− | 0.7+ | |
| 2002 09 16 | 699 | 0.3+ | 0.6+ | 2002 11 06 | 333 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.5− | |
| 2002 09 16 | 699 | 0.3+ | 0.8+ | 2002 11 06 | 608 | 0.5− | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.2− | |
| 2002 09 16 | 699 | 0.2+ | 0.3+ | 2002 11 06 | 608 | 0.2− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.2− | |
| 2002 10 02 | 704 | 1.1+ | 1.3+ | 2002 11 06 | 608 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.2− | |
| 2002 10 02 | 704 | 0.4+ | 0.5+ | 2002 11 10 | 704 | 0.4+ | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.3− | |
| 2002 10 02 | 704 | 0.8− | 1.0+ | 2002 11 10 | 704 | 0.4+ | 0.4− | 2006 10 03 | G96 | 0.3− | 0.7− | |
| 2002 10 07 | 704 | 0.7+ | 0.0 | 2002 11 10 | 704 | 0.9+ | 0.2− | 2006 10 03 | G96 | 0.0 | 0.3− | |
| 2002 10 07 | 704 | 0.3+ | 0.6+ | 2002 11 10 | 704 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.0 | 0.5− | |
| 2002 10 07 | 704 | 0.1+ | 0.1+ | 2002 11 23 | 644 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− | |
| 2002 10 07 | 704 | 0.0 | 0.6+ | 2002 11 23 | 644 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.1− | |
| 2002 10 09 | 704 | 0.0 | 0.6+ | 2002 11 23 | 644 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.2+ | |
| 2002 10 09 | 704 | 0.2+ | 0.5+ | 2002 12 01 | 704 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.4− | |
| 2002 10 09 | 704 | 0.3+ | 0.0 | 2002 12 01 | 704 | 1.2− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− | |
| 2002 10 09 | 704 | (2.2+ | 0.4−) | 2002 12 01 | 704 | 0.7− | 0.3− | 2006 11 15 | G96 | 0.4− | 0.2− | |
| 2002 10 11 | 291 | 0.9− | 0.1+ | 2002 12 01 | 704 | 0.2+ | 0.7− | 2006 11 15 | G96 | 0.2− | 0.5− | |
| 2002 10 11 | 291 | 0.4− | 0.1+ | 2002 12 01 | 704 | 1.0− | 0.8− | 2006 11 15 | G96 | 0.3− | 0.8− | |
| 2002 10 11 | 291 | 0.5− | 0.1+ | 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.1+ | 1.9+ | |
| 2002 10 12 | 704 | 0.8+ | 0.3+ | 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 1.4− | 1.3+ | |
| 2002 10 12 | 704 | 0.3+ | 0.2+ | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 11 27 | 703 | (0.7+ | 4.2−) | |
| 2002 10 12 | 704 | 0.6+ | 0.1− | 2002 12 19 | 644 | 0.3− | 0.6+ | 2006 11 27 | 703 | 1.1− | 2.7− | |
| 2002 10 12 | 704 | 0.0 | 0.2− | 2002 12 19 | 644 | 0.6+ | 0.1+ | 2006 11 28 | G96 | 0.0 | 0.2− | |
| 2002 10 12 | 704 | 0.4+ | 0.1+ | 2002 12 19 | 644 | 0.2− | 0.1+ | 2006 11 28 | G96 | 0.1− | 0.2− | |
| 2002 10 31 | 291 | 0.6− | 0.4+ | 2002 12 21 | 608 | 0.5+ | 0.4− | 2006 11 28 | G96 | 0.3− | 0.4− | |
| 2002 10 31 | 644 | 0.0 | 0.4− | 2002 12 21 | 608 | 0.1+ | 0.1+ | 2006 11 28 | G96 | 0.2+ | 0.3− | |
| 2002 10 31 | 291 | 1.1− | 0.4+ | 2002 12 21 | 608 | 0.4+ | 0.3− | | | | | |

**(138022)∗ 2000 CH$_{121}$**

Discovered 2000 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.58745 | | (2000.0) | | | |
| $n$ | 0.27971280 | $\omega$ | 239.38321 | | −0.94287356 | −0.32023708 |
| $a$ | 2.3155873 | $\Omega$ | 281.80642 | | +0.32866747 | −0.84904728 |
| $e$ | 0.0680548 | $i$ | 5.38467 | | +0.05447152 | −0.42019868 |
| $P$ | 3.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.0 | 0.6+ | 2004 06 05 | 644 | 0.3+ | 0.5+ | 2005 10 08 | 704 | 0.2− | 0.8+ | |
| 2000 02 02 | 704 | 0.5+ | 0.3+ | 2004 06 05 | 644 | 0.2+ | 0.8+ | 2006 01 25 | 291 | 0.0 | 0.1− | |
| 2000 02 02 | 704 | 0.7+ | 0.4+ | 2004 06 05 | 644 | 0.2− | 0.6+ | 2006 01 25 | 291 | 0.4− | 0.1+ | |
| 2000 02 02 | 704 | 0.8+ | 0.2+ | 2005 09 06 | A50 | 0.5− | 0.4− | 2006 01 25 | 291 | 0.1+ | 0.0 | |
| 2000 02 11 | 704 | 0.6+ | 1.2+ | 2005 09 06 | A50 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.6− | |
| 2000 02 11 | 704 | 0.2− | 0.8+ | 2005 09 24 | A13 | 0.6− | 0.6+ | 2006 09 28 | G96 | 0.8− | 0.2− | |
| 2000 02 11 | 704 | 0.5+ | 0.3+ | 2005 09 24 | A13 | 0.4+ | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.5− | |
| 2000 02 11 | 704 | 0.7+ | 0.5− | 2005 10 01 | 703 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.2− | |
| 2000 03 27 | 699 | 0.5− | 0.1− | 2005 10 01 | 703 | 0.9+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− | |
| 2000 03 27 | 699 | 0.2+ | 0.3− | 2005 10 01 | 703 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.5− | |
| 2000 03 27 | 699 | 0.1+ | 0.0 | 2005 10 07 | G96 | 0.2− | 0.9+ | 2006 10 27 | G96 | 0.2− | 0.7− | |
| 2000 03 27 | 699 | 1.4− | 0.3+ | 2005 10 07 | G96 | 0.3− | 1.0+ | 2006 10 27 | G96 | 0.4− | 0.7− | |
| 2003 01 05 | 704 | 0.0 | 0.1+ | 2005 10 07 | G96 | 0.4− | 0.8+ | 2006 10 27 | 691 | 0.3+ | 0.2+ | |
| 2003 01 05 | 704 | 0.4+ | 0.8− | 2005 10 07 | G96 | 0.2− | 1.1+ | 2006 10 27 | 691 | 0.1− | 0.0 | |
| 2003 01 05 | 704 | 1.3− | 0.9+ | 2005 10 07 | 703 | 0.4− | 1.1− | 2006 10 27 | 691 | 0.4+ | 0.7+ | |
| 2003 01 05 | 704 | 0.6− | 1.3+ | 2005 10 07 | 703 | 1.5+ | 0.2− | 2006 11 21 | G96 | 0.6− | 0.3− | |
| 2004 05 22 | 704 | 0.1− | 0.6+ | 2005 10 07 | 703 | 1.3− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.6− | |
| 2004 05 22 | 704 | 0.2+ | 0.7+ | 2005 10 07 | 703 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.1− | 0.4− | |
| 2004 05 22 | 704 | (1.2+ | 2.8+) | 2005 10 08 | 704 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.4− | |
| 2004 05 22 | 704 | 0.0 | 0.6+ | 2005 10 08 | 704 | 0.1− | 0.7+ | | | | | |

**(138023)∗ 2000 CL$_{126}$ = 2000 GW$_{184}$ = 2001 OW$_{45}$**

Discovered 2000 Feb. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 19512), A. Doppler (*MPO* 17163)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.30153 | | (2000.0) | | | |
| $n$ | 0.23269344 | $\omega$ | 187.50445 | | −0.79166086 | +0.61043033 |
| $a$ | 2.6178612 | $\Omega$ | 30.16245 | | −0.55788091 | −0.70526921 |
| $e$ | 0.1393745 | $i$ | 2.90378 | | −0.24908224 | −0.36051373 |
| $P$ | 4.24 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 2.0+ | 1.0+ | 2004 01 13 | 699 | 0.5− | 1.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | |
| 2000 02 04 | 704 | (2.4+ | 1.7+) | 2004 01 13 | 699 | 0.7− | 0.6+ | 2006 09 29 | 691 | 0.5+ | 0.0 | |
| 2000 02 04 | 704 | 0.4+ | 0.7− | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 691 | 0.4+ | 0.2− | |
| 2000 02 04 | 704 | 0.2+ | 0.5− | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 09 29 | 691 | 0.0 | 0.3+ | |
| 2000 02 11 | 704 | 0.5− | 0.2− | 2004 01 22 | 704 | 0.3+ | 0.3− | 2006 10 03 | 691 | 0.3− | 0.0 | |
| 2000 02 11 | 704 | 0.0 | 0.4− | 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.0 | |
| 2000 02 11 | 704 | 0.5+ | 1.2− | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.0 | |
| 2000 03 12 | 704 | 0.2+ | 0.5− | 2004 01 26 | 699 | 0.0 | 0.7− | 2006 10 10 | 644 | 0.0 | 0.1+ | |
| 2000 03 12 | 704 | 0.5+ | 0.1+ | 2004 01 26 | 699 | 1.2+ | 0.4− | 2006 10 10 | 644 | 0.2− | 0.1− | |
| 2000 03 12 | 704 | 0.1+ | 0.5+ | 2004 01 26 | 699 | 0.6− | 1.0− | 2006 10 10 | 644 | 0.1+ | 0.2+ | |
| 2000 03 12 | 704 | 0.3+ | 0.8+ | 2004 01 26 | 699 | 0.5− | 0.1+ | 2006 10 13 | A50 | 0.2+ | 0.3− | |
| 2000 03 12 | 704 | 0.4+ | 0.4+ | 2004 01 30 | 704 | 0.7− | 0.2− | 2006 10 15 | 703 | 0.2− | 0.5− | |
| 2000 04 03 | 699 | 1.0+ | 0.9+ | 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.9+ | |
| 2000 04 03 | 699 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.2− | 0.3− | 2006 10 15 | 703 | 0.5− | 0.4+ | |
| 2000 04 03 | 699 | 0.1+ | 0.2+ | 2004 01 30 | 704 | 0.8− | 0.1+ | 2006 10 15 | 703 | 1.3− | 0.7+ | |
| 2000 04 03 | 699 | 0.4+ | 0.8+ | 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 | |
| 2000 04 03 | 704 | 0.8+ | 0.5− | 2004 02 10 | 703 | 0.4+ | 1.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | |
| 2000 04 03 | 704 | 0.2+ | 0.0 | 2004 02 10 | 703 | 0.7+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2+ | |
| 2000 04 03 | 704 | 0.3+ | 0.1+ | 2004 02 10 | 703 | (2.5+ | 3.4+) | 2006 10 16 | G96 | 0.1+ | 0.2− | |
| 2000 04 03 | 704 | 0.2− | 1.0+ | 2004 02 10 | 703 | (1.6+ | 0.6+) | 2006 10 16 | G96 | 0.3+ | 0.5− | |
| 2001 07 16 | 699 | 0.7+ | 0.6+ | 2004 02 13 | 699 | 0.8− | 0.8− | 2006 10 16 | G96 | 0.1− | 0.3− | |
| 2001 07 16 | 699 | 0.0 | 0.8+ | 2004 02 13 | 699 | 0.8− | 0.0 | 2006 10 16 | G96 | 0.4− | 0.4− | |
| 2001 07 16 | 699 | 0.7− | 0.6+ | 2004 02 13 | 699 | 0.2− | 0.4− | 2006 10 19 | 695 | 0.2− | 0.1+ | |
| 2001 07 16 | 699 | 0.6+ | 0.2+ | 2004 02 13 | 699 | 0.2+ | 0.2− | 2006 10 19 | 695 | 0.2− | 0.0 | |
| 2001 07 19 | 608 | 0.4− | 0.8− | 2004 02 15 | 704 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.3− | |
| 2001 07 19 | 608 | 0.4− | 0.4− | 2004 02 15 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.5− | 0.1+ | |
| 2001 07 19 | 608 | 0.2− | 0.7− | 2004 02 15 | 704 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.6− | 0.5− | |
| 2001 07 25 | 608 | 0.2+ | 0.5− | 2004 02 15 | 704 | 0.5+ | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.4− | |
| 2001 07 25 | 608 | 0.1+ | 0.5− | 2004 02 15 | 704 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.6− | |
| 2001 07 25 | 608 | 0.0 | 0.2− | 2004 02 18 | 608 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.0 | |
| 2001 07 25 | 608 | 0.2− | 0.2− | 2004 02 18 | 608 | 0.7− | 0.8+ | 2006 10 27 | G96 | 0.2− | 0.6− | |
| 2001 07 25 | 608 | 0.0 | 0.6− | 2004 02 18 | 608 | 0.5− | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.0 | |
| 2001 07 25 | 608 | 0.2− | 0.4− | 2004 02 23 | 704 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | |
| 2001 07 27 | 699 | 0.3− | 0.1− | 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.1− | |
| 2001 07 27 | 699 | 0.4− | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.4+ | 2006 11 01 | 691 | 0.5+ | 0.3+ | |
| 2001 07 27 | 699 | 0.5− | 0.6− | 2004 02 23 | 704 | 0.7+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− | |
| 2001 07 27 | 699 | 0.9− | 0.8+ | 2004 02 23 | 704 | 0.7− | 1.0+ | 2006 11 01 | 691 | 0.2− | 0.1+ | |
| 2002 10 16 | 644 | 0.5− | 0.8+ | 2004 04 12 | 703 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.3− | |
| 2002 10 16 | 644 | 0.2− | 1.0+ | 2004 04 12 | 703 | 0.4+ | 0.7+ | 2006 11 11 | G96 | 0.2− | 0.7− | |
| 2002 10 16 | 644 | 0.3− | 1.0+ | 2004 04 12 | 703 | (0.1+ | 2.4+) | 2006 11 11 | 703 | 1.2+ | 0.1− | |
| 2002 11 05 | 291 | 0.2− | 0.1+ | 2004 04 15 | 645 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.8− | |
| 2002 11 05 | 291 | 0.3− | 0.0 | 2004 04 15 | 645 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.8− | |
| 2002 11 05 | 291 | 0.6− | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | (2.4− | 1.3−) | |
| 2003 12 27 | 704 | (1.7+ | 0.6−) | 2006 09 14 | 691 | 0.1− | 0.4− | 2006 11 11 | 703 | 1.2− | 1.1− | |
| 2003 12 27 | 704 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.6− | 1.1− | |
| 2003 12 27 | 704 | (1.6+ | 1.3+) | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.4+ | |
| 2003 12 27 | 704 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.5+ | 0.6+ | |
| 2003 12 27 | 704 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.6+ | 0.9+ | 2006 11 13 | 691 | 0.3+ | 0.1+ | |
| 2004 01 04 | 699 | (1.1+ | 1.9−) | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 11 22 | G96 | 0.2+ | 0.6− | |
| 2004 01 04 | 699 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.5− | |
| 2004 01 04 | 699 | 1.3− | 0.8− | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 11 22 | G96 | 0.2+ | 0.5− | |
| 2004 01 04 | 699 | 0.9− | 0.8− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.0 | 0.4− | |
| 2004 01 13 | 699 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | | | | | |
| 2004 01 13 | 699 | 0.7− | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.3− | | | | | |

**(138024)∗ 2000 CW$_{131}$ = 2002 TZ$_{259}$**

Discovered 2000 Feb. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37336)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.91651 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24673500 | $\omega$ | 194.74214 | | +0.99767143 | +0.06670420 | |
| $a$ | 2.5175738 | $\Omega$ | 161.41552 | | −0.05718502 | +0.93174844 | |
| $e$ | 0.1102560 | $i$ | 2.55768 | | −0.03716978 | +0.35692491 | |
| $P$ | 3.99 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.0 | 0.5− | 2002 11 07 | 704 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ | |
| 2000 02 03 | 691 | 0.2+ | 0.6− | 2002 11 07 | 704 | 0.3− | 0.9+ | 2006 10 22 | 691 | 0.6− | 0.1+ | |
| 2000 02 03 | 691 | 0.3+ | 0.2− | 2002 11 22 | 644 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | |
| 2000 02 04 | 691 | 0.5− | 0.2− | 2002 11 22 | 644 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1− | |
| 2000 02 04 | 691 | 0.4− | 0.1+ | 2002 11 22 | 644 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.5− | |
| 2000 02 04 | 691 | 0.2− | 0.2− | 2004 02 14 | 691 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.4− | |
| 2000 04 05 | 691 | 0.2− | 0.5− | 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− | |
| 2000 04 05 | 691 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.3− | |
| 2000 04 05 | 691 | 0.2+ | 0.3− | 2004 03 17 | 691 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.3− | |
| 2002 10 09 | 704 | 0.6− | 0.5+ | 2004 03 17 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.2− | |
| 2002 10 09 | 704 | 0.1− | 0.8+ | 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | (0.2− | 2.6−) | |
| 2002 10 09 | 704 | 0.9− | 0.9+ | 2005 07 05 | G96 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3+ | |
| 2002 10 11 | 704 | 1.4+ | 0.2+ | 2005 07 05 | G96 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.0 | |
| 2002 10 11 | 704 | 0.3+ | 0.1− | 2005 07 05 | G96 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 2002 10 11 | 704 | 1.0+ | 0.7+ | 2005 07 05 | G96 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.7− | |
| 2002 10 11 | 704 | 0.7− | 0.3− | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.8− | 0.4− | |
| 2002 10 30 | 644 | (0.4+ | 1.6+) | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.4− | |
| 2002 10 30 | 644 | 0.7+ | 1.1+ | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.0 | |
| 2002 10 30 | 644 | 0.0 | 0.9+ | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.3− | |
| 2002 10 31 | 699 | 0.6− | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.8− | |
| 2002 10 31 | 699 | 0.7− | 0.8+ | 2006 09 30 | G96 | 0.7− | 0.4− | 2006 11 16 | G96 | 1.1+ | 0.2− | |
| 2002 10 31 | 699 | 0.4+ | 1.1− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− | |
| 2002 10 31 | 699 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 1.1− | |
| 2002 11 01 | 704 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.6+ | 0.6+ | 2006 11 17 | 703 | 0.9+ | 0.1+ | |
| 2002 11 01 | 704 | (0.2− | 2.2+) | 2006 09 30 | 703 | 0.3+ | 1.3+ | 2006 11 17 | 703 | (1.2+ | 2.6−) | |
| 2002 11 01 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.2+ | |
| 2002 11 01 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.2− | 0.2+ | |
| 2002 11 06 | 608 | 0.9− | 0.9− | 2006 10 11 | 644 | 0.4+ | 0.5− | 2006 11 20 | 704 | 0.7+ | 0.1+ | |
| 2002 11 06 | 608 | 0.6− | 0.7− | 2006 10 11 | 644 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.2+ | |
| 2002 11 06 | 608 | 0.8− | 1.2− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.2− | |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.3+ | | | | | |
| 2002 11 07 | 704 | 0.5− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.4+ | | | | | |

**(138025)∗ 2000 $CB_{134}$**

Discovered 2000 Feb. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.65451 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24210657 | $\omega$ | 171.15638 | | +0.74293226 | +0.66598339 | |
| $a$ | 2.5495586 | $\Omega$ | 146.77100 | | −0.62138902 | +0.72352739 | |
| $e$ | 0.0980475 | $i$ | 7.04547 | | −0.24885206 | +0.18158811 | |
| $P$ | 4.07 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.1− | 0.2+ | 2005 04 30 | 691 | 0.5− | 0.8− | 2005 06 17 | 691 | 0.3− | 0.0 | |
| 2000 02 04 | 691 | 0.2+ | 0.0 | 2005 05 09 | 691 | 0.2+ | 0.1+ | 2006 09 03 | 850 | 0.2+ | 0.9− | |
| 2000 02 04 | 691 | 0.0 | 0.1+ | 2005 05 09 | 691 | 0.5+ | 0.6+ | 2006 09 03 | 850 | 1.3+ | 0.3+ | |
| 2000 02 08 | 691 | 0.1+ | 0.2− | 2005 05 09 | 691 | 0.0 | 0.1+ | 2006 09 03 | 850 | 0.3− | 1.0− | |
| 2000 02 08 | 691 | 0.1+ | 0.0 | 2005 05 20 | G96 | 0.2− | 0.4− | 2006 09 26 | 703 | 0.1+ | 1.0− | |
| 2000 02 08 | 691 | 0.2+ | 0.1+ | 2005 05 20 | G96 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.5+ | 0.7+ | |
| 2000 02 27 | 691 | 0.0 | 0.5+ | 2005 05 20 | G96 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.3− | 1.0− | |
| 2000 02 27 | 691 | 0.2− | 0.3+ | 2005 05 20 | G96 | 0.0 | 0.5− | 2006 09 26 | 703 | 0.1+ | 1.2+ | |
| 2000 02 27 | 691 | 0.2+ | 0.3+ | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.3− | |
| 2000 03 11 | 691 | 0.6− | 0.7− | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.4− | |
| 2000 03 11 | 691 | 0.3− | 0.3− | 2005 06 05 | 691 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.3− | |
| 2000 03 11 | 691 | 0.4+ | 0.2− | 2005 06 09 | 691 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1− | 0.2− | |
| 2001 05 17 | 691 | 0.0 | 0.1+ | 2005 06 09 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.3+ | |
| 2001 05 17 | 691 | 0.1− | 0.2+ | 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | (1.0− | 2.0+) | |
| 2001 05 17 | 691 | 0.1+ | 0.2− | 2005 06 13 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.2− | 0.3+ | |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.3+ | |
| 2002 11 07 | 645 | 0.1− | 0.1+ | 2005 06 13 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2005 04 30 | 691 | 0.0 | 0.4+ | 2005 06 17 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.4+ | |
| 2005 04 30 | 691 | 0.1+ | 0.4+ | 2005 06 17 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.4+ | |

**(138026)∗ 2000 DR = 2002 $RT_{222}$**

Discovered 2000 Feb. 24 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPO* 37337)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.58723 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24228968 | $\omega$ | 9.54268 | | −0.46412612 | −0.87576568 | |
| $a$ | 2.5482739 | $\Omega$ | 108.21100 | | +0.80318385 | −0.47928882 | |
| $e$ | 0.1973846 | $i$ | 8.03311 | | +0.37347376 | −0.05759090 | |
| $P$ | 4.07 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.2+ | 1.2− | 2003 10 29 | 699 | 1.1+ | 0.3+ | 2004 02 17 | 608 | 0.2− | 0.9+ | |
| 2000 01 07 | 704 | 0.5− | 1.2− | 2003 10 29 | 699 | 0.4− | 0.8− | 2004 02 17 | 608 | 0.3− | 0.8+ | |
| 2000 01 07 | 704 | 1.2− | 1.4− | 2003 10 29 | 699 | 0.8− | 1.8+ | 2004 02 17 | 608 | 0.5− | 0.6+ | |
| 2000 02 04 | 704 | 0.6+ | 0.3− | 2003 11 21 | 704 | 0.5+ | 0.7− | 2004 03 14 | 704 | 0.2− | 0.1+ | |
| 2000 02 04 | 704 | 0.1+ | 0.2− | 2003 11 21 | 704 | 0.8+ | 0.6− | 2004 03 14 | 704 | 0.2− | 0.3+ | |
| 2000 02 04 | 704 | 0.4+ | 0.2+ | 2003 11 21 | 704 | 0.4− | 0.0 | 2004 03 14 | 704 | 0.4− | 0.1+ | |
| 2000 02 04 | 704 | 0.4+ | 0.2− | 2003 11 21 | 704 | 0.4− | 0.1− | 2004 03 14 | 704 | 0.7− | 0.6+ | |
| 2000 02 04 | 704 | 0.5+ | 0.2− | 2003 12 01 | 704 | 0.1+ | 0.7− | 2004 03 18 | 644 | 0.5− | 0.6+ | |
| 2000 02 24 | 411 | (2.3− | 1.0−) | 2003 12 01 | 704 | 0.3+ | 0.2+ | 2004 03 18 | 644 | 0.5− | 0.5+ | |
| 2000 02 24 | 411 | 1.0− | 0.8− | 2003 12 01 | 704 | 1.0+ | 0.2− | 2004 03 18 | 644 | 0.4− | 0.4+ | |
| 2000 02 25 | 411 | 0.1+ | 1.8− | 2003 12 01 | 704 | 1.1+ | 0.8+ | 2004 04 14 | 644 | 0.1+ | 0.4+ | |
| 2000 02 25 | 411 | 0.3+ | 1.5− | 2003 12 01 | 704 | 0.7+ | 0.6− | 2004 04 14 | 644 | 0.1+ | 0.8+ | |
| 2000 03 05 | 704 | 0.6+ | 0.8+ | 2003 12 22 | 704 | 0.8+ | 0.5+ | 2004 04 14 | 703 | 0.2− | 0.1+ | |
| 2000 03 05 | 704 | 0.1+ | 0.5+ | 2003 12 22 | 704 | 1.1+ | 0.7+ | 2004 04 14 | 703 | 0.1− | 0.2+ | |
| 2000 03 05 | 704 | 0.1− | 0.3+ | 2003 12 22 | 704 | 0.4+ | 0.1+ | 2004 04 14 | 704 | 0.4+ | 0.8+ | |
| 2000 03 05 | 704 | 0.2+ | 0.5+ | 2003 12 22 | 704 | 0.2+ | 0.3+ | 2004 04 14 | 644 | 0.2+ | 0.6+ | |
| 2000 03 05 | 704 | 0.2+ | 0.3+ | 2003 12 22 | 704 | 0.1+ | 0.2+ | 2004 04 14 | 704 | 0.1+ | 0.4+ | |
| 2000 03 08 | 049 | 0.5+ | 0.7− | 2003 12 27 | 704 | 0.6+ | 0.2− | 2004 04 14 | 703 | 0.0 | 0.3+ | |
| 2000 03 08 | 049 | 0.6+ | 0.5− | 2003 12 27 | 704 | 0.5+ | 0.2+ | 2004 04 14 | 704 | 0.1− | 0.5+ | |
| 2000 03 08 | 049 | 0.8+ | 0.6− | 2003 12 27 | 704 | 0.1+ | 0.2+ | 2004 04 14 | 703 | 0.3− | 0.3+ | |
| 2000 03 08 | 411 | 1.0− | 0.0 | 2003 12 27 | 704 | 0.5+ | 0.2− | 2004 04 14 | 704 | 0.5+ | 0.0 | |
| 2000 03 08 | 411 | 0.5− | 0.7+ | 2003 12 27 | 704 | 0.7+ | 0.1+ | 2004 04 14 | 704 | 0.7+ | 0.3+ | |
| 2000 03 09 | 704 | 0.5+ | 0.2+ | 2003 12 28 | 699 | 0.4− | 0.1− | 2004 04 22 | 703 | 0.5+ | 0.3+ | |
| 2000 03 09 | 704 | 0.1− | 0.0 | 2003 12 28 | 699 | 0.6− | 0.3− | 2004 04 22 | 703 | 0.2− | 1.4+ | |
| 2000 03 09 | 704 | 0.0 | 0.2+ | 2003 12 28 | 699 | 0.1+ | 0.3+ | 2004 04 22 | 703 | 0.3+ | 0.3+ | |
| 2000 03 09 | 704 | 0.2− | 0.5+ | 2003 12 28 | 699 | 0.4+ | 0.1+ | 2004 04 22 | 703 | 0.1+ | 1.7+ | |
| 2000 03 09 | 704 | 0.4− | 0.4+ | 2004 01 05 | 699 | 0.7+ | 0.7− | 2004 04 25 | 703 | 1.8− | 0.4+ | |
| 2000 03 12 | 704 | 0.4+ | 0.2+ | 2004 01 05 | 699 | 0.0 | 0.3+ | 2004 04 25 | 703 | 0.2− | 1.0+ | |
| 2000 03 12 | 704 | 0.4− | 0.5+ | 2004 01 05 | 699 | 0.3− | 0.4− | 2004 04 25 | 703 | 0.4+ | 0.3+ | |
| 2000 03 12 | 704 | 0.1+ | 0.4+ | 2004 01 05 | 703 | 1.9+ | 1.4+ | 2004 04 25 | 703 | 0.5− | 0.5− | |
| 2000 03 12 | 704 | 0.1+ | 0.0 | 2004 01 05 | 699 | 0.9+ | 0.1+ | 2004 05 21 | 703 | 0.7− | 0.2+ | |
| 2000 03 12 | 704 | 0.3− | 0.6− | 2004 01 05 | 703 | 0.2− | 0.1+ | 2004 05 21 | 703 | 1.1+ | 0.3− | |
| 2000 03 24 | 411 | 0.7− | 1.2− | 2004 01 05 | 703 | 1.1− | 0.4− | 2004 05 21 | 703 | 0.2− | 0.2+ | |
| 2000 03 24 | 411 | 0.3+ | 1.4+ | 2004 01 05 | 703 | 0.5− | 1.0− | 2004 05 21 | 703 | 1.8+ | 0.0 | |
| 2000 03 26 | 699 | 0.2− | 0.4+ | 2004 01 18 | 644 | 0.2− | 0.0 | 2004 05 23 | 704 | 0.2− | 0.5+ | |
| 2000 03 26 | 699 | 0.3− | 0.1+ | 2004 01 18 | 644 | 0.2− | 0.1− | 2004 05 23 | 704 | 1.0+ | 0.3+ | |
| 2000 03 26 | 699 | 0.5− | 0.2− | 2004 01 18 | 644 | 0.3− | 0.0 | 2004 05 23 | 704 | 0.1+ | 0.0 | |
| 2000 03 26 | 699 | 0.1− | 0.2+ | 2004 01 19 | 703 | 0.3− | 0.0 | 2004 05 23 | 704 | 1.3+ | 0.7+ | |
| 2000 03 28 | 704 | 0.7− | 0.6+ | 2004 01 19 | 703 | 0.5− | 0.4+ | 2006 08 23 | 644 | 0.2− | 0.4+ | |
| 2000 03 28 | 704 | 0.3+ | 0.2− | 2004 01 19 | 703 | 0.2+ | 0.5+ | 2006 08 23 | 644 | 0.2+ | 0.3+ | |
| 2000 03 28 | 704 | 0.0 | 1.0+ | 2004 01 19 | 703 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.2+ | |
| 2000 05 01 | 699 | 0.2− | 0.3− | 2004 01 23 | 704 | 0.8+ | 0.1+ | 2006 08 30 | 699 | 0.2− | 1.1+ | |
| 2000 05 01 | 699 | 0.3− | 0.3− | 2004 01 23 | 704 | 1.2+ | 0.2− | 2006 08 30 | 699 | 0.3+ | 0.8+ | |
| 2000 05 01 | 699 | 0.0 | 0.6+ | 2004 01 23 | 704 | 0.8+ | 0.2− | 2006 08 30 | 699 | 1.9− | 1.8+ | |
| 2000 05 01 | 699 | 0.7− | 0.2+ | 2004 01 23 | 704 | 0.5+ | 0.2+ | 2006 08 30 | 699 | 0.9+ | 1.3+ | |
| 2002 09 05 | 699 | 0.4+ | 0.4+ | 2004 01 23 | 704 | 0.8+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.2+ | |
| 2002 09 05 | 699 | (2.1+ | 0.5+) | 2004 01 30 | 704 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.4− | 1.0+ | |
| 2002 09 05 | 699 | 0.3+ | 1.2+ | 2004 01 30 | 704 | 0.6− | 0.3+ | 2006 09 14 | 703 | 1.1− | 0.1+ | |
| 2002 09 05 | 699 | 0.9− | 0.9+ | 2004 01 30 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.4+ | 1.5+ | |
| 2002 09 15 | 608 | 0.2+ | 1.2− | 2004 01 30 | 704 | 0.3− | 0.4+ | 2006 09 20 | 703 | 0.8− | 0.8+ | |
| 2002 09 15 | 608 | 0.1− | 0.9− | 2004 01 30 | 704 | 0.6− | 0.0 | 2006 09 20 | 703 | (2.1− | 0.2+) | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 608 | 0.1+ | 0.5− | 2004 02 16 | 691 | 0.3− | 0.0 | 2006 09 20 | 703 | 1.6− | 0.1− |
| 2002 09 16 | 644 | 0.1− | 0.7+ | 2004 02 16 | 704 | 0.0 | 0.2− | 2006 09 20 | 703 | 1.2− | 0.4+ |
| 2002 09 16 | 644 | 0.0 | 0.7+ | 2004 02 16 | 704 | 0.4+ | 0.3− | 2006 09 26 | 703 | 2.4+ | 2.3− |
| 2002 09 16 | 644 | 0.4− | 0.7+ | 2004 02 16 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.1+ |
| 2002 09 17 | 644 | 0.2− | 0.7+ | 2004 02 16 | 691 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2002 09 17 | 644 | 0.2− | 0.6+ | 2004 02 16 | 704 | 0.4+ | 0.4− | 2006 09 26 | 703 | 0.8− | 0.7+ |
| 2002 09 17 | 644 | 0.5− | 0.7+ | 2004 02 16 | 704 | 0.2+ | 0.2− | | | | |
| 2003 10 29 | 699 | 0.3− | 0.6− | 2004 02 16 | 691 | 0.3− | 0.1− | | | | |

**(138027)∗ 2000 DD$_1$**

Discovered 2000 Feb. 23 at Osservatorio Polino.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.68543 | | (2000.0) | | | |
| $n$ | 0.26736737 | $\omega$ | 297.91896 | | −0.99875969 | −0.01824052 |
| $a$ | 2.3863297 | $\Omega$ | 241.06880 | | +0.03426404 | −0.92690660 |
| $e$ | 0.2036838 | $i$ | 3.03438 | | −0.03612570 | −0.37484855 |
| $P$ | 3.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 1.1− | 0.3− | 2004 03 27 | 704 | 0.4+ | 0.0 | 2004 04 26 | 704 | 0.4+ | 0.2− |
| 2000 01 07 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.7+ | 0.1+ | 2004 04 30 | 691 | 0.1+ | 0.1+ |
| 2000 01 07 | 704 | 1.5− | 1.1− | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2004 04 30 | 691 | 0.0 | 0.3+ |
| 2000 01 13 | 699 | 0.9+ | 0.1− | 2004 03 27 | 704 | 0.1− | 0.2+ | 2004 04 30 | 691 | 0.1− | 0.2+ |
| 2000 01 13 | 699 | 1.1+ | 0.2+ | 2004 04 04 | 608 | (0.2− | 1.7−) | 2004 05 09 | 703 | 0.2+ | 0.7+ |
| 2000 01 13 | 699 | 1.9+ | 0.3+ | 2004 04 04 | 608 | 0.5+ | 1.3− | 2004 05 09 | 703 | 1.1+ | 0.2− |
| 2000 01 30 | 703 | 0.2+ | 0.4+ | 2004 04 04 | 608 | 0.7+ | 0.9− | 2004 05 09 | 703 | 0.5− | 0.9+ |
| 2000 01 30 | 703 | 0.4+ | 0.4+ | 2004 04 12 | 644 | 0.0 | 0.4+ | 2004 05 09 | 703 | 0.7− | 0.2− |
| 2000 01 30 | 703 | 0.4+ | 1.0− | 2004 04 12 | 644 | 0.1− | 0.3+ | 2004 05 14 | 608 | 0.1+ | 0.1− |
| 2000 01 30 | 703 | 0.3+ | 0.4+ | 2004 04 12 | 644 | 0.2+ | 0.2+ | 2004 05 14 | 608 | 0.3+ | 1.1− |
| 2000 02 02 | 704 | 0.2+ | 0.3− | 2004 04 12 | 699 | 1.0− | 0.3+ | 2004 05 14 | 608 | 0.3+ | 1.4+ |
| 2000 02 02 | 704 | 0.2− | 0.1+ | 2004 04 12 | 699 | 0.4− | 0.2+ | 2004 05 15 | 704 | 0.1+ | 0.0 |
| 2000 02 02 | 704 | 0.1− | 0.4+ | 2004 04 12 | 699 | 0.1− | 0.6+ | 2004 05 15 | 704 | 0.1+ | 0.6− |
| 2000 02 02 | 704 | 0.2− | 0.7+ | 2004 04 12 | 699 | 0.3− | 0.0 | 2004 05 15 | 704 | 0.5+ | 1.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.5+ | 2004 04 15 | 333 | 0.6+ | 0.4− | 2004 05 15 | 704 | 0.7− | 0.2+ |
| 2000 02 23 | 609 | 0.6− | 1.9− | 2004 04 15 | 699 | 0.3− | 0.3+ | 2004 05 23 | 691 | 0.1+ | 0.2+ |
| 2000 02 23 | 609 | 1.0− | 0.6+ | 2004 04 15 | 333 | (1.6+ | 0.7−) | 2004 05 23 | 691 | 0.1− | 0.0 |
| 2000 02 24 | 609 | 1.2− | 0.1+ | 2004 04 15 | 699 | 0.4− | 0.4+ | 2004 05 23 | 691 | 0.0 | 0.2+ |
| 2000 02 24 | 609 | 0.2− | 0.7+ | 2004 04 15 | 333 | 0.7+ | 0.1+ | 2005 08 30 | 691 | 0.2− | 0.2+ |
| 2000 02 27 | 609 | 0.2+ | 0.0 | 2004 04 15 | 699 | (1.9+ | 0.7+) | 2005 08 30 | 691 | 0.1− | 0.2+ |
| 2000 02 27 | 609 | 0.4+ | 0.1+ | 2004 04 15 | 699 | 0.2− | 0.1+ | 2005 08 30 | 691 | 0.1+ | 0.1+ |
| 2002 10 16 | 644 | 0.7− | 1.0+ | 2004 04 16 | 691 | 0.1− | 0.3+ | 2005 09 13 | 691 | 0.2− | 0.3+ |
| 2002 10 16 | 644 | 0.6− | 1.1+ | 2004 04 16 | 691 | 0.1+ | 0.1+ | 2005 09 13 | 691 | 0.2− | 0.6+ |
| 2002 10 16 | 644 | 0.4− | 1.0+ | 2004 04 16 | 691 | 0.1+ | 0.2+ | 2005 09 13 | 691 | 0.0 | 0.2+ |
| 2004 02 16 | 703 | (1.5+ | 0.9+) | 2004 04 17 | 704 | 0.5+ | 0.2+ | 2005 10 07 | 691 | 0.1+ | 0.4+ |
| 2004 02 16 | 703 | 0.3+ | 0.1+ | 2004 04 17 | 704 | 0.0 | 0.1+ | 2005 10 07 | 691 | 0.3− | 0.7+ |
| 2004 02 16 | 703 | 0.4− | 0.7− | 2004 04 17 | 704 | 0.3+ | 0.3+ | 2005 10 07 | 691 | 0.2− | 0.2+ |
| 2004 02 16 | 703 | 0.2+ | 0.7+ | 2004 04 17 | 704 | 0.2− | 0.6+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2004 03 24 | 699 | 0.3− | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2004 03 24 | 699 | 0.6− | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2004 03 24 | 699 | 0.5+ | 0.2+ | 2004 04 20 | 704 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2004 03 24 | 699 | 0.1+ | 0.5+ | 2004 04 20 | 704 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2004 03 25 | 699 | 0.4− | 0.0 | 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2004 03 25 | 699 | 0.7+ | 0.2− | 2004 04 26 | 704 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2004 03 25 | 699 | 0.4+ | 0.0 | 2004 04 26 | 704 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2004 03 25 | 699 | 0.8− | 0.3+ | 2004 04 26 | 704 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2004 03 26 | 704 | 0.5+ | 0.7+ | 2004 04 26 | 704 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.2− | 0.5+ |
| 2004 03 26 | 704 | 0.4+ | 0.6− | 2004 04 26 | 704 | 0.1+ | 0.4+ | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2004 03 26 | 704 | 0.3+ | 0.4+ | 2004 04 26 | 704 | 0.7− | 0.2− | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2004 03 26 | 704 | 0.5+ | 1.2+ | 2004 04 26 | 704 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2004 03 26 | 704 | 0.1+ | 0.7+ | 2004 04 26 | 704 | 0.3− | 0.2− | | | | |
| 2004 03 27 | 704 | 0.5+ | 0.1− | 2004 04 26 | 704 | 0.3− | 0.5+ | | | | |

**(138028)∗ 2000 DY$_1$**

Discovered 2000 Feb. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 159.85529 | | (2000.0) | | | |
| $n$ | 0.24720269 | $\omega$ | 88.04842 | | −0.65969168 | +0.75092683 |
| $a$ | 2.5143974 | $\Omega$ | 140.62017 | | −0.70709449 | −0.60653606 |
| $e$ | 0.0498847 | $i$ | 2.73388 | | −0.25460611 | −0.26119515 |
| $P$ | 3.99 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 29 | 704 | 0.4+ | 1.2+ | 2002 10 15 | 644 | 0.9− | 0.6+ | 2004 03 14 | 703 | 0.2+ | 1.4+ |
| 1997 06 29 | 704 | 0.1+ | 0.2− | 2002 11 07 | 704 | 0.4+ | 0.3+ | 2004 03 14 | 703 | 0.5− | 0.1+ |
| 1997 06 29 | 704 | 0.5+ | 0.4+ | 2002 11 07 | 704 | 0.8+ | 0.8− | 2004 03 14 | 703 | (1.6− | 0.1−) |
| 1997 06 29 | 704 | 1.1− | 1.1+ | 2002 11 07 | 704 | 0.6+ | 0.5− | 2004 03 15 | 704 | 0.2+ | 0.1+ |
| 2000 02 05 | 695 | 0.2− | 0.1+ | 2002 11 22 | 644 | 0.1− | 0.3+ | 2004 03 15 | 704 | 0.0 | 0.3+ |
| 2000 02 05 | 695 | 0.1+ | 0.1+ | 2002 11 22 | 644 | 0.0 | 0.6+ | 2004 03 15 | 704 | 0.1+ | 0.1+ |
| 2000 02 11 | 691 | 0.5− | 0.5− | 2002 11 22 | 644 | 0.0 | 0.6+ | 2004 03 15 | 704 | 0.6+ | 0.5+ |
| 2000 02 11 | 691 | 0.4− | 0.6− | 2003 11 30 | 691 | 0.3+ | 0.0 | 2004 03 18 | 691 | 0.2+ | 0.2+ |
| 2000 02 11 | 691 | 0.4− | 0.5− | 2003 11 30 | 691 | 0.2− | 0.4− | 2004 03 18 | 691 | 0.4− | 0.7+ |
| 2000 02 11 | 704 | 0.8+ | 0.6− | 2003 11 30 | 691 | 0.1− | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.2+ |
| 2000 02 11 | 704 | 0.4+ | 0.3+ | 2004 01 24 | 704 | 0.2+ | 0.4+ | 2004 03 19 | 644 | 0.0 | 0.3+ |
| 2000 02 11 | 704 | 0.7+ | 0.1+ | 2004 01 24 | 704 | 0.5+ | 0.7+ | 2004 03 19 | 644 | 0.1− | 0.1− |
| 2000 02 11 | 704 | 0.1+ | 0.7+ | 2004 01 24 | 704 | 0.4− | 0.7+ | 2004 03 19 | 644 | 0.0 | 0.1+ |
| 2000 02 26 | 691 | 0.3− | 0.0 | 2004 01 24 | 704 | 0.2+ | 0.8+ | 2004 03 19 | 704 | (0.4− | 1.6+) |
| 2000 02 26 | 691 | 0.3+ | 0.4− | 2004 01 24 | 704 | 0.6− | 0.8+ | 2004 03 19 | 704 | 0.9− | 0.2+ |
| 2000 02 26 | 691 | 0.2+ | 0.2− | 2004 01 29 | 704 | 1.2+ | 0.0 | 2004 03 19 | 704 | 0.2− | 0.7+ |
| 2000 02 27 | 691 | 0.6− | 0.3− | 2004 01 29 | 704 | 0.8+ | 0.8+ | 2004 03 20 | 691 | 0.7− | 0.4− |
| 2000 02 27 | 691 | 0.6− | 0.4− | 2004 01 29 | 704 | (0.2+ | 1.6+) | 2004 03 20 | 691 | 0.0 | 0.2+ |
| 2000 02 27 | 691 | 0.6− | 0.8− | 2004 01 29 | 704 | 0.6− | 0.8+ | 2004 03 20 | 691 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.5− | 0.0 | 2004 01 29 | 704 | 0.4+ | 0.8+ | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2000 02 29 | 704 | 0.1+ | 0.0 | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2000 02 29 | 704 | 0.5+ | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2000 02 29 | 704 | 0.4+ | 1.0+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2000 03 08 | 608 | 0.5+ | 0.3− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 1.2− | 1.1− |
| 2000 03 08 | 608 | 0.1+ | 0.8− | 2004 02 12 | 291 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 1.0− |
| 2000 03 08 | 608 | 0.3− | 0.5− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2000 03 09 | 704 | 1.1− | 0.0 | 2004 02 12 | 291 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2000 03 09 | 704 | 0.3− | 0.4+ | 2004 02 12 | 291 | 0.9+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2000 03 09 | 704 | 1.9+ | 0.7+ | 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2000 03 11 | 704 | 0.1− | 0.4+ | 2004 02 15 | 608 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2000 03 11 | 704 | 0.6+ | 0.1− | 2004 02 15 | 608 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2000 03 11 | 704 | 0.7+ | 0.3− | 2004 02 15 | 608 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2000 03 11 | 704 | 0.3+ | 0.3− | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2000 03 11 | 704 | 0.2− | 0.2− | 2004 02 17 | 704 | 0.7+ | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | 1.2+ | 0.6+ | 2004 02 17 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2002 10 02 | 704 | 0.5+ | 0.2+ | 2004 02 17 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (1.6+ | 0.1+) |
| 2002 10 02 | 704 | 0.6+ | 0.9+ | 2004 02 17 | 704 | 0.7+ | 1.5+ | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2002 10 02 | 704 | 0.2− | 0.9+ | 2004 02 26 | 704 | 0.7− | 0.4− | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2004 02 26 | 704 | 0.9− | 0.4− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.9− | 0.3+ | 2004 02 26 | 704 | 0.8− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.9+ | 2004 02 26 | 704 | 0.6− | 0.4− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 10 15 | 644 | 0.7− | 0.3+ | 2004 02 26 | 704 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2002 10 15 | 644 | 0.6− | 0.3+ | 2004 03 14 | 703 | 0.6− | 0.7− | | | | |

**(138029)∗ 2000 DP$_2$**

Discovered 2000 Feb. 27 at Sunflower Observatory, Olathe.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.23156 | | (2000.0) | | | |
| $n$ | 0.26696899 | $\omega$ | 1.34003 | | −0.93529871 | −0.35364248 |
| $a$ | 2.3887031 | $\Omega$ | 157.93720 | | +0.32435203 | −0.87077118 |
| $e$ | 0.0996916 | $i$ | 1.88908 | | +0.14146406 | −0.34160585 |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 31 | 691 | 0.0 | 0.1+ | 2000 03 03 | 704 | 0.2+ | 0.3+ | 2004 04 19 | 704 | 0.1+ | 0.2− |
| 1995 12 31 | 691 | 0.1+ | 0.1+ | 2000 03 03 | 704 | 0.2+ | 0.4− | 2004 04 19 | 704 | 0.2+ | 1.2+ |
| 1995 12 31 | 691 | 0.1− | 0.1+ | 2000 03 03 | 704 | 0.4+ | 0.3− | 2004 04 19 | 704 | 0.6− | 0.5− |
| 2000 02 11 | 691 | 0.0 | 0.5+ | 2000 03 03 | 704 | 0.1+ | 0.5− | 2004 04 19 | 704 | 0.6+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.0 | 0.4+ | 2000 03 04 | 704 | 0.3+ | 1.2+ | 2004 04 19 | 704 | 0.7+ | 0.4+ |
| 2000 02 11 | 691 | 0.1− | 0.3+ | 2000 03 04 | 704 | 0.6+ | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.6− |
| 2000 02 27 | 739 | 1.7− | 0.5+ | 2000 03 04 | 704 | 0.6+ | 0.9+ | 2004 04 20 | 704 | 0.2− | 0.8+ |
| 2000 02 27 | 739 | (2.3− | 0.5−) | 2000 03 04 | 704 | 0.8+ | 0.9+ | 2004 04 20 | 704 | 1.3− | 0.4+ |
| 2000 02 27 | 739 | 1.1+ | 1.1+ | 2000 03 05 | 704 | 1.4+ | 0.5+ | 2004 05 21 | 691 | 0.2+ | 0.1+ |
| 2000 02 27 | 739 | 0.7+ | 1.4− | 2000 03 05 | 704 | 0.9+ | 0.4+ | 2004 05 21 | 691 | 0.0 | 0.1+ |
| 2000 02 28 | 691 | 0.2− | 0.4− | 2000 03 05 | 704 | 0.2+ | 0.2+ | 2004 05 21 | 691 | 0.1+ | 0.2+ |
| 2000 02 28 | 739 | 0.8− | 0.1+ | 2000 03 05 | 739 | 0.7+ | 0.8− | 2004 05 29 | 691 | 0.1− | 0.3− |
| 2000 02 28 | 739 | 0.3+ | 1.2− | 2000 03 05 | 739 | 0.5+ | 0.1− | 2004 05 29 | 691 | 0.2− | 0.3− |
| 2000 02 28 | 739 | 0.2− | 0.5+ | 2000 03 05 | 704 | 0.3+ | 0.1− | 2004 05 29 | 691 | 0.0 | 0.0 |
| 2000 02 28 | 691 | 0.1− | 0.2− | 2000 03 05 | 739 | (2.7− | 0.9+) | 2005 08 28 | 691 | 0.0 | 0.3+ |
| 2000 02 28 | 691 | 0.0 | 0.3− | 2000 03 05 | 739 | 0.4+ | 0.6− | 2005 08 28 | 691 | 0.3− | 0.3+ |
| 2000 02 29 | 704 | 0.9+ | 0.8+ | 2000 03 05 | 704 | 0.8+ | 1.2+ | 2005 08 28 | 691 | 0.7− | 0.0 |
| 2000 02 29 | 704 | 0.3+ | 0.5+ | 2000 03 11 | 704 | 1.4+ | 0.3+ | 2005 09 11 | 691 | 0.2− | 0.4+ |
| 2000 02 29 | 704 | 0.0 | 0.3+ | 2000 03 11 | 704 | 0.4− | 0.4+ | 2005 09 11 | 691 | 0.4− | 0.7+ |
| 2000 02 29 | 704 | 0.3− | 0.4+ | 2000 03 11 | 704 | 1.0− | 0.4+ | 2005 09 11 | 691 | 0.1− | 0.2+ |
| 2000 03 01 | 739 | 0.7+ | 0.2+ | 2000 03 12 | 739 | 1.3− | 1.5+ | 2005 09 25 | 691 | 0.3+ | 0.4+ |
| 2000 03 01 | 739 | 0.2+ | 0.2+ | 2000 03 12 | 739 | (1.0− | 2.4+) | 2005 09 25 | 691 | 0.4+ | 0.0 |
| 2000 03 01 | 739 | 1.2+ | 0.8+ | 2000 03 12 | 739 | 0.8+ | 0.7+ | 2005 09 25 | 691 | 0.0 | 0.6+ |
| 2000 03 02 | 739 | 0.0 | 0.9− | 2004 03 31 | 704 | 0.1− | 0.0 | 2005 09 29 | G96 | 0.1− | 0.2− |
| 2000 03 02 | 739 | 0.1− | 0.1− | 2004 03 31 | 704 | 0.4+ | 0.0 | 2005 09 29 | G96 | 0.0 | 0.5− |
| 2000 03 02 | 691 | (2.3− | 0.1+) | 2004 03 31 | 704 | 0.0 | 0.7+ | 2005 09 29 | G96 | 0.1+ | 0.3− |
| 2000 03 02 | 691 | 0.7− | 0.0 | 2004 04 12 | 644 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.2+ | 0.2+ |
| 2000 03 02 | 691 | 0.7− | 0.3− | 2004 04 12 | 644 | 0.1− | 0.0 | | | | |
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2004 04 12 | 644 | 0.1+ | 0.0 | | | | |

**(138030)**∗ **2000 DP$_4$**

Discovered 2000 Feb. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.31711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26218426 | $\omega$ | 107.90158 | | −0.42472211 | −0.90512473 | |
| $a$ | 2.4176771 | $\Omega$ | 7.31720 | | +0.76394442 | −0.36956844 | |
| $e$ | 0.0705067 | $i$ | 8.57174 | | +0.48579836 | −0.21016278 | |
| $P$ | 3.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.3− | 0.9+ | 2002 11 12 | 704 | 1.3− | 0.4− | 2004 03 22 | 704 | 0.0 | 0.2− |
| 1998 09 25 | 699 | 0.2+ | 0.2− | 2004 02 19 | 704 | 0.9− | 0.3+ | 2004 03 22 | 704 | 0.4+ | 0.3+ |
| 1998 09 25 | 699 | 1.7+ | 1.6− | 2004 02 19 | 704 | 0.8+ | 0.6− | 2004 03 22 | 704 | 0.1− | 0.7− |
| 2000 02 06 | 703 | 0.9− | 0.6+ | 2004 02 19 | 704 | 0.1− | 0.8+ | 2004 03 25 | 704 | 1.0+ | 0.5+ |
| 2000 02 06 | 703 | 0.2+ | 0.4+ | 2004 02 19 | 704 | (1.6− | 0.1−) | 2004 03 25 | 704 | 0.4+ | 1.0+ |
| 2000 02 06 | 703 | 0.0 | 0.0 | 2004 02 19 | 704 | (2.3+ | 0.2+) | 2004 03 25 | 704 | 0.2+ | 0.6+ |
| 2000 02 06 | 703 | 1.7− | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.6− | 2004 03 26 | 699 | 0.6− | 0.7+ |
| 2000 02 28 | 704 | 0.4− | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.5− | 2004 03 26 | 699 | 0.7− | 0.4− |
| 2000 02 28 | 704 | 0.5− | 1.0+ | 2004 02 23 | 704 | 1.0+ | 1.1+ | 2004 03 26 | 699 | 0.4− | 0.1+ |
| 2000 02 28 | 704 | 1.3+ | 1.4− | 2004 02 23 | 704 | 0.1− | 0.1− | 2004 03 26 | 699 | 0.6− | 1.2− |
| 2000 02 29 | 704 | 0.2− | 0.6− | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2004 04 12 | 703 | (1.5+ | 0.8+) |
| 2000 02 29 | 704 | 0.2+ | 0.6− | 2004 03 12 | 644 | 0.0 | 0.1+ | 2004 04 12 | 703 | 0.6− | 0.2+ |
| 2000 02 29 | 704 | 0.7+ | 0.5+ | 2004 03 12 | 644 | 0.2− | 0.2+ | 2004 04 12 | 703 | 1.1+ | 0.9+ |
| 2000 02 29 | 704 | 0.1− | 0.2− | 2004 03 12 | 644 | 0.1+ | 0.1+ | 2004 04 12 | 703 | 0.5+ | 0.3+ |
| 2000 02 29 | 704 | 0.9+ | 0.4− | 2004 03 12 | 644 | 0.0 | 0.2+ | 2004 04 15 | 699 | (0.3− | 2.0+) |
| 2000 03 04 | 704 | 0.1− | 1.4− | 2004 03 12 | 644 | 0.1+ | 0.2− | 2004 04 15 | 699 | 0.4− | 0.5− |
| 2000 03 04 | 704 | 0.3− | 0.0 | 2004 03 12 | 644 | 0.0 | 0.3+ | 2004 04 15 | 699 | (2.2− | 0.1−) |
| 2000 03 04 | 704 | 0.7+ | 0.9− | 2004 03 15 | 333 | 0.2+ | 0.5− | 2004 04 15 | 699 | 1.5− | 0.3+ |
| 2000 03 04 | 704 | 1.4− | 0.7− | 2004 03 15 | 333 | 0.0 | 0.3− | 2004 04 25 | 691 | 0.1− | 0.1− |
| 2000 03 04 | 704 | (0.1− | 2.0−) | 2004 03 16 | 704 | 0.2+ | 0.1− | 2004 04 25 | 691 | 0.0 | 0.0 |
| 2000 03 09 | 704 | 0.7+ | 0.0 | 2004 03 16 | 704 | 0.2+ | 0.1+ | 2004 04 25 | 691 | 0.3− | 0.1+ |
| 2000 03 09 | 704 | 0.2− | 0.2− | 2004 03 16 | 704 | 0.1− | 1.3+ | 2006 10 29 | 703 | 0.8+ | 0.1− |
| 2000 03 09 | 704 | 0.9− | 1.1− | 2004 03 16 | 704 | 1.1+ | 0.1− | 2006 10 29 | 703 | 0.5+ | 0.4+ |
| 2002 10 12 | 704 | 0.5− | 0.2− | 2004 03 16 | 704 | 1.0+ | 0.3+ | 2006 10 29 | 703 | 0.3− | 0.1− |
| 2002 10 12 | 704 | 0.8− | 0.2− | 2004 03 16 | 333 | 0.2− | 0.4− | 2006 10 29 | 703 | 0.2+ | 0.2+ |
| 2002 10 12 | 704 | 0.6− | 0.0 | 2004 03 16 | 333 | 0.1+ | 0.2− | 2006 11 17 | 644 | 0.5+ | 0.3− |
| 2002 10 12 | 704 | 0.9+ | 0.7+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 644 | 0.7+ | 0.4− |
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 11 17 | 644 | 0.5+ | 0.3− |
| 2002 10 30 | 608 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 703 | 1.0+ | 0.0 |
| 2002 10 30 | 608 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.1− | 0.1+ |
| 2002 10 30 | 608 | 0.3+ | 0.4− | 2004 03 18 | 704 | 0.5+ | 0.7+ | 2006 11 22 | 703 | 0.6+ | 0.5− |
| 2002 11 12 | 704 | 0.3− | 0.7+ | 2004 03 22 | 704 | 0.1+ | 0.9− | 2006 11 22 | 703 | (3.8− | 2.5+) |
| 2002 11 12 | 704 | 0.3− | 0.6+ | 2004 03 22 | 704 | 0.3− | 0.2+ | | | | |

**(138031)**∗ **2000 DK$_9$**

Discovered 2000 Feb. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.58254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.08269231 | $\omega$ | 299.96962 | | −0.14096261 | −0.98982770 | |
| $a$ | 5.2178627 | $\Omega$ | 158.10900 | | +0.92518692 | −0.13862858 | |
| $e$ | 0.0349669 | $i$ | 2.95991 | | +0.35236161 | −0.03198801 | |
| $P$ | 11.92 | $H$ | 13.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.3+ | 0.3− | 2000 03 09 | 691 | 0.4− | 0.1+ | 2002 04 20 | 691 | 0.0 | 0.2− |
| 2000 02 02 | 691 | 0.1− | 0.1− | 2001 02 20 | 691 | 0.7+ | 0.4+ | 2002 04 20 | 691 | 0.0 | 0.3− |
| 2000 02 02 | 691 | 0.1− | 0.4− | 2001 02 20 | 691 | 0.4+ | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 2000 02 11 | 691 | 0.1− | 0.3− | 2001 02 20 | 691 | 0.5+ | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.0 |
| 2000 02 11 | 691 | 0.0 | 0.1− | 2001 03 30 | 691 | 0.3+ | 1.2+ | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 2000 02 11 | 691 | 0.3+ | 0.1− | 2001 03 30 | 691 | 0.6− | 0.7+ | 2006 08 21 | 807 | 0.2+ | 0.0 |
| 2000 02 26 | 691 | 0.2− | 0.4+ | 2001 03 30 | 691 | 0.2− | 0.8+ | 2006 08 21 | 807 | 0.0 | 0.1+ |
| 2000 02 26 | 691 | 0.5− | 0.1− | 2002 04 09 | 644 | 0.2+ | 0.0 | 2006 08 27 | 691 | 0.4+ | 0.2+ |
| 2000 02 26 | 691 | 0.3− | 0.2− | 2002 04 09 | 644 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.3+ | 0.1− |
| 2000 03 02 | 691 | 0.7+ | 0.2− | 2002 04 09 | 644 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.4− | 0.1+ |
| 2000 03 02 | 691 | 0.6+ | 0.2− | 2002 04 19 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.7− | 0.1− |
| 2000 03 02 | 691 | 0.2− | 0.4+ | 2002 04 19 | 691 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.5+ | 0.7− |
| 2000 03 09 | 691 | 0.3− | 0.3− | 2002 04 19 | 691 | 0.0 | 0.5− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2000 03 09 | 691 | 0.2− | 0.0 | 2002 04 20 | 691 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.4+ |

**(138032)**∗ **2000 DC$_{11}$**

Discovered 2000 Feb. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.10055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19252827 | $\omega$ | 69.14166 | | −0.71202582 | −0.70211580 | |
| $a$ | 2.9703414 | $\Omega$ | 66.26051 | | +0.64123126 | −0.65442219 | |
| $e$ | 0.0037589 | $i$ | 0.45410 | | +0.28607989 | −0.28065102 | |
| $P$ | 5.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 25 | 691 | 0.2+ | 0.2− | 2002 08 17 | 644 | 0.3− | 0.4+ | 2005 01 16 | 691 | 0.0 | 0.2+ |
| 1998 12 25 | 691 | 0.2− | 0.1− | 2002 08 17 | 644 | 0.2− | 0.3+ | 2005 02 04 | 691 | 0.1− | 0.1+ |
| 1998 12 25 | 691 | 0.0 | 0.4− | 2002 08 17 | 644 | 0.1+ | 0.6+ | 2005 02 04 | 691 | 0.1− | 0.5+ |
| 2000 02 11 | 691 | 0.4− | 0.4− | 2002 08 18 | 644 | 0.3− | 0.5+ | 2005 02 04 | 691 | 0.7+ | 0.5+ |
| 2000 02 11 | 691 | 0.4− | 0.2− | 2002 08 18 | 644 | 0.1− | 0.0 | 2005 03 16 | 691 | 0.3− | 0.4+ |
| 2000 02 11 | 691 | 0.4− | 0.2− | 2002 08 18 | 644 | 0.0 | 0.4+ | 2005 03 16 | 691 | 0.0 | 0.4+ |
| 2000 02 26 | 691 | 0.4− | 0.0 | 2002 08 27 | 644 | 0.1+ | 0.7+ | 2005 03 16 | 691 | 0.0 | 0.6+ |
| 2000 02 26 | 691 | 0.2− | 0.2− | 2002 08 27 | 644 | 0.2− | 0.5+ | 2006 04 02 | 691 | 0.3− | 0.1− |
| 2000 02 26 | 691 | 0.2− | 0.1− | 2002 08 27 | 644 | 0.0 | 0.7+ | 2006 04 02 | 691 | 0.1+ | 0.0 |
| 2000 03 02 | 691 | 0.1+ | 0.2− | 2002 08 29 | 644 | 0.4− | 0.9+ | 2006 04 02 | 691 | 0.3− | 0.1− |
| 2000 03 02 | 691 | 0.2+ | 0.2− | 2002 08 29 | 644 | 0.6− | 0.5+ | 2006 04 26 | 691 | 0.2+ | 0.2+ |
| 2000 03 02 | 691 | 0.1+ | 0.6− | 2002 08 30 | 291 | 0.2− | 0.2+ | 2006 04 26 | 691 | 0.3+ | 0.2+ |
| 2000 03 04 | 691 | 0.1+ | 0.5+ | 2002 08 30 | 291 | 0.1+ | 0.6+ | 2006 04 26 | 691 | 0.2+ | 0.0 |
| 2000 03 04 | 691 | 0.4+ | 0.3+ | 2002 08 30 | 291 | 0.1+ | 0.3+ | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 2000 03 04 | 691 | 0.3+ | 0.4+ | 2002 09 01 | 644 | 1.0− | 0.2+ | 2006 04 30 | 691 | 0.0 | 0.1+ |
| 2000 03 12 | 691 | 0.1+ | 0.1+ | 2002 09 01 | 644 | 0.2− | 0.3+ | 2006 04 30 | 691 | 0.2− | 0.2+ |
| 2000 03 12 | 691 | 0.4+ | 0.4+ | 2003 10 23 | 691 | 0.3+ | 0.6+ | 2006 05 04 | 691 | 0.0 | 0.1+ |
| 2000 03 12 | 691 | 0.3+ | 0.4+ | 2003 10 23 | 691 | 0.1− | 0.2+ | 2006 05 04 | 691 | 0.1+ | 0.2+ |
| 2002 07 29 | 644 | 0.5− | 0.4− | 2003 10 23 | 691 | 0.0 | 0.1+ | 2006 05 04 | 691 | 0.0 | 0.2+ |
| 2002 07 29 | 644 | 0.0 | 0.4+ | 2003 11 30 | 691 | 0.1− | 0.3+ | 2006 05 06 | 691 | 0.2+ | 0.0 |
| 2002 07 29 | 644 | 0.2− | 0.2+ | 2003 11 30 | 691 | 0.1− | 0.4+ | 2006 05 06 | 691 | 0.1+ | 0.2− |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2003 11 30 | 691 | 0.1+ | 0.3+ | 2006 05 06 | 691 | 0.2+ | 0.1+ |
| 2002 08 08 | 644 | 0.3− | 0.2+ | 2005 01 16 | 691 | 0.0 | 0.2+ | | | | |
| 2002 08 08 | 644 | 0.6− | 0.0 | 2005 01 16 | 691 | 0.0 | 0.3+ | | | | |

**(138033)∗ 2000 $DQ_{11}$ = 2001 $QZ_{143}$**

Discovered 2000 Feb. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 15687)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 123.53542 | | $\omega$ | (2000.0) | −0.20292677 | +0.97914914 |
| $n$ | 0.22645529 | | $\Omega$ | 87.07009 | −0.92096718 | −0.18760282 |
| $a$ | 2.6657192 | | $i$ | 171.20498 | −0.33262618 | −0.07792393 |
| $e$ | 0.1992121 | | | 3.51106 | | |
| $P$ | 4.35 | | $H$ | 16.5 $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.1+ | 0.0 | 2000 04 26 | 691 | 0.8− | 0.2+ | 2001 09 25 | 691 | 0.2+ | 0.0 | |
| 2000 02 27 | 691 | 0.4+ | 0.0 | 2001 08 19 | 807 | 0.4− | 0.1− | 2005 06 28 | 691 | 0.1+ | 1.2+ | |
| 2000 02 27 | 691 | 0.4+ | 0.2− | 2001 08 19 | 807 | 0.5− | 0.1− | 2005 06 28 | 691 | 0.1− | 0.1− | |
| 2000 03 02 | 691 | 0.4+ | 0.2+ | 2001 08 21 | 691 | 0.0 | 0.3− | 2005 06 28 | 691 | 0.1+ | 0.1− | |
| 2000 03 02 | 691 | 0.1− | 0.3− | 2001 08 21 | 691 | 0.1− | 0.0 | 2005 06 29 | 703 | (1.9− | 0.6+) | |
| 2000 03 02 | 691 | 0.1+ | 0.5− | 2001 08 21 | 691 | 0.3− | 0.0 | 2005 06 29 | 703 | 0.7− | 0.1− | |
| 2000 03 03 | 645 | 0.0 | 0.2+ | 2001 08 27 | 691 | 0.2− | 0.1+ | 2005 06 29 | 703 | (1.7− | 0.0 ) | |
| 2000 03 03 | 645 | 0.0 | 0.2+ | 2001 08 27 | 691 | 0.5− | 0.1− | 2005 06 29 | 703 | 0.1− | 1.0− | |
| 2000 03 03 | 691 | 0.4+ | 0.4− | 2001 08 27 | 691 | 0.3− | 0.0 | 2005 07 08 | 691 | 0.3+ | 0.2+ | |
| 2000 03 03 | 691 | 0.4+ | 0.3− | 2001 09 12 | 704 | 1.1+ | 1.2+ | 2005 07 08 | 691 | 0.0 | 0.0 | |
| 2000 03 03 | 691 | 0.3+ | 0.4− | 2001 09 12 | 704 | 1.0+ | 0.6+ | 2005 07 08 | 691 | 0.2− | 0.1− | |
| 2000 03 10 | 704 | 0.4+ | 0.6+ | 2001 09 12 | 704 | 0.8− | 0.0 | 2005 07 11 | G96 | 0.1+ | 0.0 | |
| 2000 03 10 | 704 | 0.2+ | 0.0 | 2001 09 12 | 704 | 0.2+ | 0.3− | 2005 07 11 | G96 | 0.2− | 0.0 | |
| 2000 03 10 | 704 | 0.9+ | 0.4+ | 2001 09 19 | 704 | 0.2+ | 1.5+ | 2005 07 11 | G96 | 0.0 | 0.4− | |
| 2000 03 10 | 704 | 0.2+ | 0.3+ | 2001 09 19 | 704 | 0.1− | 0.6+ | 2005 07 11 | G96 | 0.2− | 0.2− | |
| 2000 03 10 | 704 | (2.3+ | 0.9−) | 2001 09 19 | 704 | 0.2− | 1.4+ | 2006 09 30 | G96 | 0.4− | 0.1− | |
| 2000 04 07 | 699 | 0.4− | 0.4− | 2001 09 19 | 704 | 0.2+ | 1.4+ | 2006 09 30 | G96 | 0.3+ | 0.1− | |
| 2000 04 07 | 699 | 0.0 | 0.4+ | 2001 09 19 | 704 | (0.1− | 1.6+) | 2006 09 30 | G96 | 0.1− | 0.1+ | |
| 2000 04 07 | 699 | 0.8+ | 1.4+ | 2001 09 21 | 704 | (0.7− | 2.3+) | 2006 09 30 | G96 | 0.4− | 0.3− | |
| 2000 04 07 | 699 | 0.4− | 0.1+ | 2001 09 21 | 704 | 0.7− | 1.0+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | |
| 2000 04 25 | 691 | 0.3+ | 0.7+ | 2001 09 21 | 704 | 0.3− | 0.6+ | 2006 10 18 | 691 | 0.3+ | 0.6+ | |
| 2000 04 25 | 691 | 0.1+ | 0.4+ | 2001 09 21 | 704 | 0.8− | 1.1+ | 2006 10 18 | 691 | 0.3+ | 0.5+ | |
| 2000 04 25 | 691 | 0.4+ | 0.8+ | 2001 09 21 | 704 | (0.4− | 1.7+) | 2006 10 22 | 691 | 0.9− | 0.5− | |
| 2000 04 26 | 691 | 0.8− | 0.1+ | 2001 09 25 | 691 | 0.1+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.8+ | |
| 2000 04 26 | 691 | 0.6− | 0.5+ | 2001 09 25 | 691 | 0.6+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.8+ | |

**(138034)∗ 2000 $DQ_{16}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 264.32925 | | $\omega$ | (2000.0) | −0.14946641 | −0.97403874 |
| $n$ | 0.23882760 | | $\Omega$ | 123.93448 | +0.73708014 | +0.00485788 |
| $a$ | 2.5728415 | | $i$ | 333.07194 | +0.65906954 | −0.22632926 |
| $e$ | 0.0802938 | | | 22.05129 | | |
| $P$ | 4.13 | | $H$ | 15.2 $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 01 | 703 | 0.3+ | 0.8− | 2002 10 09 | 704 | 0.4− | 1.3− | 2004 03 19 | 644 | 0.4+ | 0.2+ | |
| 2000 02 01 | 703 | 1.2− | 0.1+ | 2002 10 09 | 704 | 0.2− | 0.8− | 2004 03 19 | 704 | 1.2+ | 0.0 | |
| 2000 02 01 | 703 | 0.4+ | 0.7− | 2002 10 09 | 704 | 0.6− | 0.4− | 2004 03 19 | 704 | 0.1+ | 1.0+ | |
| 2000 02 01 | 703 | 0.2− | 0.4− | 2002 10 09 | 704 | 0.2+ | 0.5− | 2004 03 19 | 704 | (2.0− | 0.8+) | |
| 2000 02 11 | 704 | 0.3− | 1.0+ | 2003 11 21 | 644 | 0.3+ | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.0 | |
| 2000 02 11 | 704 | 0.0 | 0.4+ | 2003 11 21 | 644 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.5+ | 0.4− | |
| 2000 02 11 | 704 | 0.4+ | 0.7+ | 2003 11 21 | 644 | 0.0 | 0.2− | 2004 04 15 | 699 | 0.1− | 1.0− | |
| 2000 02 11 | 704 | 0.2+ | 0.2+ | 2003 12 28 | 704 | 0.8+ | 0.8+ | 2004 04 15 | 699 | 0.4+ | 1.2+ | |
| 2000 02 29 | 704 | 0.3+ | 0.3+ | 2003 12 28 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 699 | 0.4+ | 0.3+ | |
| 2000 02 29 | 704 | 0.0 | 0.5− | 2003 12 28 | 704 | 0.8+ | 0.2+ | 2004 04 15 | 699 | 0.1− | 0.9+ | |
| 2000 02 29 | 704 | 0.8+ | 0.3+ | 2003 12 28 | 704 | 0.0 | 0.4+ | 2006 08 15 | 644 | 0.2− | 0.1+ | |
| 2000 02 29 | 704 | 0.4+ | 0.6+ | 2003 12 28 | 704 | 0.0 | 0.7+ | 2006 08 15 | 644 | 0.1+ | 0.1+ | |
| 2000 02 29 | 704 | 0.3+ | 0.1+ | 2004 01 13 | 699 | 0.4− | 0.1+ | 2006 08 15 | 644 | 0.3− | 0.1+ | |
| 2000 03 03 | 704 | 0.1− | 0.3− | 2004 01 13 | 699 | 0.2+ | 0.8− | 2006 08 24 | 704 | 0.4+ | 0.6+ | |
| 2000 03 03 | 704 | 0.2+ | 0.3− | 2004 01 13 | 699 | 0.2− | 0.4+ | 2006 08 24 | 704 | 0.7− | 0.3+ | |
| 2000 03 03 | 704 | 0.1+ | 0.2− | 2004 01 13 | 699 | 0.2− | 0.1− | 2006 08 24 | 704 | 0.6− | 0.4+ | |
| 2000 03 03 | 704 | 0.3− | 0.1− | 2004 01 28 | 703 | 0.5− | 0.2− | 2006 08 24 | 704 | 0.1− | 0.3+ | |
| 2000 03 03 | 704 | 0.4+ | 0.6− | 2004 01 28 | 703 | 0.3+ | 0.4+ | 2006 08 24 | 704 | 0.9− | 0.2+ | |
| 2000 03 11 | 704 | 0.1+ | 0.2+ | 2004 01 28 | 703 | 0.4− | 0.4− | 2006 08 26 | 704 | 0.6− | 0.4+ | |
| 2000 03 11 | 704 | 0.0 | 0.3+ | 2004 01 28 | 703 | 0.2− | 0.2+ | 2006 08 26 | 704 | 0.3+ | 0.8+ | |
| 2000 03 11 | 704 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.6− | 0.0 | 2006 08 26 | 704 | 0.6+ | 0.2+ | |
| 2000 03 11 | 704 | 0.7− | 0.7+ | 2004 01 30 | 704 | 0.3− | 0.4− | 2006 08 27 | 699 | 0.6− | 0.1− | |
| 2000 03 11 | 704 | 0.3− | 0.7+ | 2004 01 30 | 704 | 0.6− | 0.3− | 2006 08 27 | 699 | 1.2+ | 0.1+ | |
| 2000 03 11 | 699 | 0.5+ | 0.1− | 2004 01 30 | 704 | 0.3− | 0.4− | 2006 08 27 | 699 | 0.2+ | 1.1+ | |
| 2000 03 11 | 699 | 1.1+ | 0.2+ | 2004 01 30 | 704 | 0.3− | 0.4− | 2006 08 27 | 699 | (1.6− | 0.5−) | |
| 2000 03 11 | 699 | 0.0 | 0.1+ | 2004 02 11 | 644 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.7− | 0.4− | |
| 2000 03 11 | 699 | 0.3+ | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.8− | 0.1+ | |
| 2000 04 04 | 699 | 0.1− | 0.1− | 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.2+ | |
| 2000 04 04 | 699 | 0.0 | 0.3− | 2004 02 14 | 703 | 0.6− | 0.3+ | 2006 08 29 | 703 | 0.8− | 0.5+ | |
| 2000 04 04 | 699 | 0.4− | 0.4+ | 2004 02 14 | 703 | 0.9− | 0.6− | 2006 09 12 | 703 | 0.5+ | 0.4− | |
| 2000 04 04 | 699 | 0.6− | 0.6− | 2004 02 14 | 703 | 0.0 | 0.8− | 2006 09 12 | 703 | 0.2+ | 0.1− | |
| 2002 09 07 | 113 | 0.2+ | 0.1− | 2004 02 14 | 703 | 0.2− | 0.7− | 2006 09 12 | 703 | 0.4+ | 1.2+ | |
| 2002 09 07 | 113 | 0.1+ | 0.3− | 2004 02 15 | 704 | 0.8+ | 0.3− | 2006 09 12 | 703 | 0.2+ | 0.1+ | |
| 2002 09 07 | 113 | 0.4+ | 0.3− | 2004 02 15 | 704 | 0.1− | 0.1− | 2006 09 15 | 704 | 0.1− | 0.9− | |
| 2002 09 07 | 113 | 0.0 | 0.3+ | 2004 02 15 | 704 | 0.9+ | 0.3− | 2006 09 15 | 704 | 0.0 | 0.0 | |
| 2002 09 11 | 644 | 0.3− | 0.0 | 2004 02 15 | 704 | 1.3+ | 0.1− | 2006 09 15 | 704 | 0.1+ | 0.8− | |
| 2002 09 11 | 644 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.3− | 0.1− | 2006 09 15 | 704 | 0.5+ | 0.5− | |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2004 02 16 | 691 | 0.2− | 0.1− | 2006 09 15 | 704 | 0.0 | 1.0− | |
| 2002 09 12 | 113 | 0.4− | 0.4− | 2004 02 16 | 691 | 0.3− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.3+ | |
| 2002 09 12 | 113 | 0.5− | 0.3+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.2+ | |
| 2002 10 03 | 644 | 0.5− | 0.2− | 2004 02 18 | 644 | 0.1− | 0.1− | 2006 09 16 | 644 | 0.4+ | 0.2+ | |
| 2002 10 03 | 644 | 0.4− | 0.1− | 2004 02 18 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.6+ | |
| 2002 10 03 | 644 | 0.1− | 0.2− | 2004 02 18 | 644 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.1+ | |
| 2002 10 06 | 704 | 0.1+ | 0.1− | 2004 02 19 | 608 | 0.8+ | 0.8+ | 2006 09 18 | 703 | 0.9− | 0.4− | |
| 2002 10 06 | 704 | 0.1− | 0.4+ | 2004 02 19 | 608 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.1− | |
| 2002 10 06 | 704 | 0.3+ | 0.7+ | 2004 02 19 | 608 | 0.6+ | 0.6+ | 2006 10 01 | 703 | (1.6+ | 0.4−) | |
| 2002 10 06 | 704 | 0.6+ | 0.4+ | 2004 03 14 | 704 | (1.8− | 0.5−) | 2006 10 01 | 703 | (0.9− | 1.7+) | |
| 2002 10 06 | 704 | 0.3+ | 0.6+ | 2004 03 14 | 704 | 0.2− | 0.3− | 2006 10 01 | 703 | 1.5− | 0.5− | |
| 2002 10 07 | 699 | 0.8+ | 0.7+ | 2004 03 14 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 703 | 0.7+ | 1.3+ | |
| 2002 10 07 | 699 | 0.7+ | 0.2− | 2004 03 14 | 704 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− | |
| 2002 10 07 | 699 | 0.4+ | 1.2− | 2004 03 14 | 704 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ | |
| 2002 10 07 | 699 | 0.2− | 1.1+ | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | |
| 2002 10 09 | 704 | 0.6+ | 0.1− | 2004 03 19 | 644 | 0.3+ | 0.2+ | | | | | |

**(138035)∗ 2000 $DE_{17}$ = 2001 $QY_{116}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 17166)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 311.33437 | | $\omega$ | (2000.0) | +0.85626741 | −0.50308699 |
| $n$ | 0.37944405 | | $\Omega$ | 52.05228 | +0.32386268 | +0.69948861 |
| $a$ | 1.8896044 | | $i$ | 337.40971 | +0.40239171 | +0.50756199 |
| $e$ | 0.1092893 | | | 17.74653 | | |
| $P$ | 2.60 | | $H$ | 16.9 $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | (0.2+ | 2.7+) | 2001 09 10 | 699 | 0.1+ | 0.1− | 2005 01 01 | 703 | 0.2− | 1.1+ | |
| 2000 02 29 | 704 | 0.7+ | 0.1+ | 2001 09 10 | 699 | 0.1+ | 0.3− | 2005 01 01 | 703 | 0.5+ | 0.0 | |
| 2000 02 29 | 704 | 0.7+ | 0.3+ | 2001 09 17 | 644 | 0.7+ | 0.7+ | 2005 01 01 | 703 | 0.4− | 0.5+ | |
| 2000 03 03 | 704 | 0.2+ | 0.9+ | 2001 09 17 | 704 | 0.3+ | 0.1+ | 2005 01 01 | 703 | 1.1− | 0.4+ | |
| 2000 03 03 | 704 | 0.3+ | 1.1+ | 2001 09 17 | 644 | 0.3+ | 0.8+ | 2005 01 15 | 703 | 0.4− | 0.4− | |
| 2000 03 03 | 704 | (0.5+ | 2.3+) | 2001 09 17 | 704 | 0.0 | 0.1− | 2005 01 15 | 703 | 0.7− | 0.3− | |
| 2000 03 03 | 704 | 1.1+ | 0.8+ | 2001 09 17 | 644 | 0.3+ | 0.9+ | 2005 01 15 | 703 | 0.2+ | 0.1+ | |
| 2000 03 03 | 704 | 0.1+ | 1.9+ | 2001 09 17 | 704 | 0.2+ | 0.3− | 2005 01 15 | 703 | 0.1+ | 0.2+ | |
| 2001 07 27 | 644 | 0.5− | 1.3+ | 2001 09 21 | 699 | 0.1− | 0.4− | 2005 01 15 | 704 | 0.6+ | 0.6+ | |
| 2001 07 27 | 644 | 0.7− | 1.1+ | 2001 09 21 | 699 | (1.5− | 1.7+) | 2005 01 15 | 704 | 0.8+ | 0.2− | |
| 2001 07 27 | 644 | 0.3+ | 1.0+ | 2001 09 21 | 699 | 0.6+ | 0.1+ | 2005 01 15 | 704 | 0.9+ | 0.0 | |
| 2001 08 05 | 644 | (1.9− | 1.3+) | 2001 09 21 | 699 | 0.1− | 0.6− | 2005 01 15 | 704 | 1.1+ | 0.1− | |
| 2001 08 05 | 644 | (1.7− | 1.2+) | 2001 09 25 | 644 | 0.3− | 0.3− | 2005 01 31 | 704 | 0.1− | 0.3− | |
| 2001 08 05 | 644 | (1.7− | 1.3+) | 2001 09 25 | 644 | 0.3+ | 0.2− | 2005 01 31 | 704 | 0.1+ | 0.3+ | |
| 2001 08 17 | 704 | 0.3+ | 0.4− | 2001 09 25 | 644 | 0.2− | 0.1− | 2005 01 31 | 704 | (1.8− | 1.3−) | |
| 2001 08 17 | 704 | 0.1− | 0.2+ | 2001 09 29 | 644 | 0.3− | 0.3− | 2005 04 09 | 703 | (1.9+ | 0.9+) | |
| 2001 08 17 | 704 | 0.3− | 0.1+ | 2001 09 29 | 644 | 0.4− | 0.2− | 2005 04 09 | 703 | (1.9+ | 0.3+) | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 704 | 0.2− | 0.3− | 2001 09 29 | 644 | 0.3− | 0.2− | 2005 04 09 | 703 | 0.9+ | 0.3+ |
| 2001 08 17 | 704 | 0.1− | 0.1− | 2001 09 30 | 644 | 1.5− | 0.9+ | 2005 04 09 | 703 | 1.2+ | 0.8+ |
| 2001 08 25 | 704 | 0.3− | 0.5+ | 2001 09 30 | 644 | 1.3− | 0.7+ | 2006 07 26 | E12 | 0.9− | 0.3+ |
| 2001 08 25 | 704 | 0.3+ | 0.1− | 2001 09 30 | 644 | 1.4− | 1.0+ | 2006 07 26 | E12 | 0.2− | 0.1− |
| 2001 08 25 | 704 | 1.3− | 1.1− | 2001 10 18 | 704 | 0.2+ | 0.7− | 2006 07 26 | E12 | 0.5− | 0.2− |
| 2001 08 25 | 704 | 0.2− | 0.4+ | 2001 10 18 | 704 | 0.7+ | 0.5− | 2006 07 26 | E12 | 0.2+ | 0.6+ |
| 2001 08 27 | 699 | 0.1− | 0.8+ | 2001 10 18 | 704 | 0.6+ | 0.1+ | 2006 08 13 | E12 | 0.4− | 0.2− |
| 2001 08 27 | 699 | 0.2− | 0.3+ | 2001 10 18 | 704 | 1.0+ | 0.6− | 2006 08 13 | E12 | 0.1− | 0.1− |
| 2001 08 27 | 699 | 0.2− | 1.0+ | 2001 10 18 | 704 | 0.6+ | 0.3− | 2006 08 13 | E12 | 0.7− | 0.7+ |
| 2001 08 27 | 699 | 0.6− | 0.4+ | 2001 10 23 | 699 | (0.2+ | 1.6+) | 2006 08 13 | E12 | 0.7+ | 0.5+ |
| 2001 09 10 | 704 | 0.0 | 0.1+ | 2001 10 23 | 699 | 0.8+ | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2001 09 10 | 704 | 0.1+ | 0.1+ | 2001 10 23 | 699 | 0.7− | 0.7+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2001 09 10 | 699 | 0.2+ | 0.5+ | 2001 10 23 | 699 | 0.7+ | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2001 09 10 | 704 | 0.2− | 0.0 | 2001 12 10 | 704 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 09 10 | 704 | 0.2+ | 0.4+ | 2001 12 10 | 704 | 0.2− | 0.0 | | | | |
| 2001 09 10 | 699 | 0.4− | 0.0 | 2001 12 10 | 704 | 0.6− | 1.1− | | | | |

**(138036)∗ 2000 DM$_{17}$ = 2002 SU$_{32}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37342)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.87109 | | (2000.0) | | +0.45131434 | −0.89183581 |
| $n$ | 0.27215623 | $\omega$ | 142.79774 | | +0.81103260 | +0.42430032 |
| $a$ | 2.3582537 | $\Omega$ | 280.35558 | | +0.37221162 | +0.15683793 |
| $e$ | 0.2411426 | $i$ | 1.79008 | | | |
| $P$ | 3.62 | $H$ | 16.7 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.1+ | 0.3+ | 2002 10 05 | 644 | 0.0 | 0.3+ | 2002 11 21 | 644 | 0.4+ | 0.3− |
| 2000 02 29 | 704 | 0.3− | 0.1− | 2002 10 05 | 644 | 0.0 | 0.3+ | 2002 12 01 | 704 | 0.5+ | 0.7+ |
| 2000 02 29 | 704 | 0.1+ | 1.2+ | 2002 10 06 | 644 | 0.0 | 0.2+ | 2002 12 01 | 704 | 0.2− | 0.5+ |
| 2000 02 29 | 704 | 0.6+ | 0.5+ | 2002 10 06 | 644 | 0.2+ | 0.2+ | 2002 12 01 | 704 | 0.5+ | 0.7+ |
| 2000 03 03 | 704 | 0.2+ | 0.7+ | 2002 10 06 | 644 | 0.2+ | 0.1+ | 2002 12 01 | 704 | 0.1+ | 1.0+ |
| 2000 03 03 | 704 | 0.7+ | 0.4+ | 2002 10 09 | 704 | 0.4− | 0.3+ | 2002 12 01 | 704 | 0.5+ | 0.9+ |
| 2000 03 03 | 704 | 0.4+ | 0.8+ | 2002 10 09 | 704 | 0.6− | 0.1− | 2004 04 25 | 691 | 0.4+ | 0.4+ |
| 2000 03 03 | 704 | (1.9− | 2.2+) | 2002 10 09 | 704 | 0.2− | 0.1− | 2004 04 25 | 691 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.9+ | 2002 10 09 | 704 | 1.2− | 0.3− | 2004 04 25 | 691 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 0.3+ | 2002 10 09 | 704 | 0.6− | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.0 |
| 2000 03 11 | 704 | 0.3− | 0.1+ | 2002 10 12 | 704 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.5+ | 0.1− |
| 2000 03 11 | 704 | 0.6+ | 0.8+ | 2002 10 12 | 704 | 0.5− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2002 09 15 | 608 | 0.1− | 0.5− | 2002 10 12 | 704 | 0.4+ | 0.4− | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2002 09 15 | 608 | 0.4− | 1.1− | 2002 10 12 | 704 | 0.9− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 09 15 | 608 | 1.0− | 0.7− | 2002 10 12 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.6− | 0.2− |
| 2002 09 28 | 608 | 1.0− | 0.4+ | 2002 10 31 | 699 | 0.3− | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2002 09 28 | 608 | 1.0− | 0.3+ | 2002 10 31 | 699 | (1.7− | 0.2+) | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2002 09 28 | 608 | 0.4− | 0.6− | 2002 10 31 | 699 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4+ |
| 2002 10 01 | 699 | 0.7− | 0.4+ | 2002 10 31 | 699 | 0.4− | 0.6+ | 2006 10 31 | G96 | 0.6− | 0.4− |
| 2002 10 01 | 699 | 0.1+ | 0.6+ | 2002 11 01 | 704 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.7− | 0.3+ |
| 2002 10 01 | 699 | 0.3− | 0.0 | 2002 11 01 | 704 | 0.9+ | 0.5− | 2006 11 15 | G96 | 0.6− | 0.5− |
| 2002 10 01 | 699 | 0.6− | 0.5+ | 2002 11 01 | 704 | 0.8+ | 0.9+ | 2006 11 15 | G96 | 0.6− | 0.7− |
| 2002 10 04 | 704 | 0.3+ | 0.3+ | 2002 11 01 | 704 | 0.7+ | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2002 11 02 | 608 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.6− | 0.4− |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2002 11 02 | 608 | 0.2+ | 0.4− | 2006 11 18 | 704 | (1.9− | 0.6+) |
| 2002 10 04 | 704 | 0.5+ | 0.6+ | 2002 11 02 | 608 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 1.3+ |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2002 11 08 | 704 | 0.6+ | 0.3− | 2006 11 18 | 704 | (1.0+ | 1.8+) |
| 2002 10 04 | 644 | 0.0 | 0.5+ | 2002 11 08 | 704 | 0.5− | 0.2+ | 2006 11 28 | G96 | 0.0 | 0.3− |
| 2002 10 04 | 644 | 0.0 | 0.5+ | 2002 11 08 | 704 | 0.3− | 0.5+ | 2006 11 28 | G96 | 0.0 | 0.5− |
| 2002 10 04 | 644 | 0.3+ | 0.5+ | 2002 11 21 | 644 | 0.2+ | 0.5− | 2006 11 28 | G96 | 0.0 | 0.4− |
| 2002 10 05 | 644 | 0.0 | 0.2+ | 2002 11 21 | 644 | 0.3+ | 0.6− | 2006 11 28 | G96 | 0.1+ | 0.4− |

**(138037)∗ 2000 DG$_{18}$ = 2002 RQ$_{76}$**

Discovered 2000 Feb. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. B. G. Marsden (*MPO* 34895)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.88532 | | (2000.0) | | +0.57273349 | −0.81971082 |
| $n$ | 0.24638466 | $\omega$ | 43.00793 | | +0.74256468 | +0.51511966 |
| $a$ | 2.5199598 | $\Omega$ | 12.05677 | | +0.34723773 | +0.25045139 |
| $e$ | 0.1466547 | $i$ | 1.94992 | | | |
| $P$ | 4.00 | $H$ | 15.6 | $G$ 0.15 | | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 1.9+ | 0.6− | 2002 10 07 | 704 | 0.5+ | 0.2− | 2005 05 12 | 644 | (6.7− | 4.1+) |
| 2000 02 11 | 704 | 0.2− | 0.2+ | 2002 10 07 | 704 | 0.8+ | 0.9− | 2006 08 18 | 691 | 0.1− | 0.1+ |
| 2000 02 11 | 704 | 0.1+ | 1.0+ | 2002 10 07 | 704 | 0.4+ | 1.3− | 2006 08 18 | 691 | 0.7− | 0.7− |
| 2000 02 11 | 704 | 0.3− | 0.5+ | 2002 10 09 | 699 | 0.1− | 1.3+ | 2006 08 18 | 691 | 0.0 | 0.5+ |
| 2000 02 11 | 704 | 0.3+ | 1.3+ | 2002 10 09 | 699 | 0.6− | 0.0 | 2006 08 22 | 644 | 0.3− | 0.1+ |
| 2000 02 25 | 703 | 1.2− | 0.8+ | 2002 10 09 | 699 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2000 02 25 | 703 | 0.3− | 0.1− | 2002 10 09 | 699 | 0.1+ | 0.2− | 2006 08 22 | 644 | 0.2− | 0.1+ |
| 2000 02 25 | 703 | 0.7+ | 1.7− | 2002 10 11 | 704 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2000 02 25 | 703 | 1.1− | 0.5+ | 2002 10 11 | 704 | 0.4+ | 0.0 | 2006 08 27 | 699 | 0.1− | 0.6+ |
| 2000 02 28 | 704 | 0.1− | 0.3+ | 2002 10 11 | 704 | 0.4− | 0.4− | 2006 08 27 | 691 | 0.2− | 0.0 |
| 2000 02 28 | 704 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.5+ | 0.1+ | 2006 08 27 | 699 | 0.6− | 0.1+ |
| 2000 02 28 | 704 | 0.4− | 0.3− | 2002 10 11 | 704 | 0.4− | 0.4− | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2000 02 28 | 704 | 0.9− | 0.2+ | 2004 01 19 | 703 | 0.6− | 0.6− | 2006 08 27 | 699 | 0.2− | 0.1+ |
| 2000 02 28 | 704 | 0.4− | 0.3+ | 2004 01 19 | 703 | 1.4− | 0.4+ | 2006 08 27 | 699 | 0.5− | 0.1+ |
| 2000 03 03 | 704 | 1.7+ | 0.3+ | 2004 01 19 | 703 | 1.2− | 0.5− | 2006 08 28 | 703 | 0.3− | 0.3− |
| 2000 03 03 | 704 | 0.5− | 1.0+ | 2004 01 19 | 703 | 0.8− | 0.3− | 2006 08 28 | 703 | 0.3+ | 0.6− |
| 2000 03 03 | 704 | 0.0 | 0.4− | 2004 01 22 | 704 | (0.2+ | 1.6+) | 2006 08 28 | 703 | 0.1− | 0.8− |
| 2000 03 03 | 704 | 0.4+ | 0.2− | 2004 01 22 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 0.2+ | 1.1− |
| 2000 03 05 | 704 | 0.5− | 0.3+ | 2004 01 22 | 704 | 0.5+ | 0.8+ | 2006 08 29 | 704 | 0.0 | 0.4+ |
| 2000 03 05 | 704 | 0.4− | 0.2− | 2004 01 22 | 704 | 1.0+ | 0.5+ | 2006 08 29 | 704 | 0.1− | 0.6+ |
| 2000 03 05 | 704 | 0.2− | 0.1+ | 2004 01 22 | 704 | 1.3+ | 1.3− | 2006 08 29 | 704 | 0.3+ | 0.4+ |
| 2000 03 05 | 704 | 1.0− | 0.3− | 2004 01 23 | 699 | 0.1+ | 1.3− | 2006 08 30 | 704 | (2.0+ | 1.0+) |
| 2000 03 11 | 704 | 1.7+ | 0.5− | 2004 01 23 | 699 | 0.1− | 1.0− | 2006 08 30 | 704 | (0.6− | 1.8+) |
| 2000 03 11 | 704 | 0.7− | 0.2+ | 2004 01 23 | 699 | (1.0+ | 1.5−) | 2006 08 30 | 704 | 0.2− | 0.1− |
| 2000 03 11 | 704 | 1.1+ | 0.8− | 2004 01 23 | 699 | (1.6− | 0.2−) | 2006 08 30 | 704 | 0.4+ | 0.4− |
| 2000 03 11 | 704 | 0.4− | 1.7− | 2004 01 23 | 699 | 0.8− | 0.5− | 2006 09 14 | 703 | 0.0 | 0.4− |
| 2002 08 12 | 704 | 0.9+ | 0.4+ | 2004 01 23 | 699 | 1.2− | 1.3− | 2006 09 14 | 703 | 0.6+ | 0.1+ |
| 2002 08 12 | 704 | 0.6+ | 0.5+ | 2004 01 23 | 699 | 0.5+ | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.8− |
| 2002 08 12 | 704 | 0.3+ | 0.0 | 2004 01 23 | 699 | 0.3− | 1.1− | 2006 09 14 | 703 | 0.1+ | 0.2+ |
| 2002 08 12 | 704 | 0.3− | 0.2+ | 2004 01 29 | 704 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.2+ |
| 2002 08 20 | 644 | 0.1+ | 0.2+ | 2004 01 29 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.1+ |
| 2002 08 20 | 644 | 0.2+ | 0.2+ | 2004 01 29 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.0 |
| 2002 08 20 | 644 | 0.2+ | 0.3+ | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.8+ |
| 2002 09 05 | 704 | 0.2+ | 0.2− | 2004 02 11 | 699 | 0.8− | 1.0+ | 2006 09 17 | 704 | 0.7− | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 1.2+ | 2004 02 11 | 699 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.1+ | 0.5− |
| 2002 09 05 | 704 | 0.5− | 1.5+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 0.3+ | 1.1+ | 2004 02 11 | 699 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.7− | 0.0 |
| 2002 09 05 | 704 | (0.7+ | 1.7+) | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.5− | 0.5+ | 2004 02 11 | 699 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.4+ | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.9+ | 0.1− |
| 2002 09 07 | 704 | 0.1+ | 0.2− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.8+ | 1.1+ |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.5+ | 0.8+ |
| 2002 09 07 | 704 | 0.1− | 0.2− | 2004 02 14 | 703 | 0.4− | 0.7− | 2006 09 20 | 704 | 1.3+ | 0.1− |
| 2002 09 07 | 246 | 0.2+ | 0.2+ | 2004 02 14 | 703 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.5+ | 0.2− |
| 2002 09 07 | 246 | 0.2+ | 0.1+ | 2004 02 14 | 703 | 1.0+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.7+ |
| 2002 09 07 | 246 | 0.1+ | 0.3+ | 2004 02 14 | 703 | 1.3+ | 0.4+ | 2006 09 20 | 704 | 0.6− | 0.0 |
| 2002 09 07 | 246 | 0.1+ | 0.4+ | 2004 02 15 | 608 | 0.6+ | 0.6+ | 2006 09 20 | 644 | 0.2+ | 0.3− |
| 2002 09 07 | 246 | 0.1+ | 0.1+ | 2004 02 15 | 608 | 0.9+ | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.2− |
| 2002 09 07 | 246 | 0.4+ | 0.1+ | 2004 02 15 | 608 | 0.5+ | 0.8+ | 2006 09 25 | 699 | 1.1− | 1.1+ |
| 2002 09 08 | 246 | 0.3− | 0.0 | 2004 02 17 | 704 | 0.5+ | 1.2+ | 2006 09 25 | 699 | 0.0 | 1.4+ |
| 2002 09 08 | 246 | 0.8− | 0.1+ | 2004 02 17 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.7+ | 0.4+ |
| 2002 09 08 | 246 | 0.8− | 0.1+ | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.3− |
| 2002 09 08 | 246 | 0.9− | 0.1+ | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 704 | (0.7+ | 1.6+) |
| 2002 09 08 | 246 | 0.0 | 0.3+ | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.1+ |
| 2002 09 08 | 246 | 1.0− | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.1− |
| 2002 09 08 | 246 | 0.2− | 0.4− | 2004 02 23 | 704 | 0.4+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.9+ |
| 2002 09 08 | 246 | 0.4− | 0.4− | 2004 02 23 | 704 | 0.1+ | 0.0 | 2006 09 27 | 704 | 1.0+ | 0.4− |
| 2002 09 09 | 608 | 0.5− | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 09 28 | 704 | 0.7+ | 0.2− |
| 2002 09 09 | 608 | (1.8− | 0.2+) | 2004 02 23 | 704 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 608 | 0.2− | 0.9+ | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 09 28 | 704 | 1.2+ | 1.0− |
| 2002 09 14 | 608 | 0.4− | 0.8+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.7+ | 0.7− |
| 2002 09 14 | 608 | 0.5− | 0.8+ | 2004 02 29 | 691 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.6− |
| 2002 09 14 | 608 | 0.4− | 0.9+ | 2004 03 01 | 291 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.7− |
| 2002 09 15 | 699 | 0.1− | 0.3+ | 2004 03 01 | 291 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.6− |
| 2002 09 15 | 699 | 0.7− | 0.7− | 2004 03 01 | 291 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.6− |
| 2002 09 15 | 699 | 0.1+ | 0.5+ | 2004 03 14 | 703 | 0.3− | 0.9+ | 2006 10 09 | 644 | 0.3+ | 0.3− |
| 2002 09 15 | 699 | 0.3− | 0.1− | 2004 03 14 | 703 | 0.8− | 0.9+ | 2006 10 09 | 644 | 0.2+ | 0.4− |
| 2002 09 15 | 644 | 0.4− | 0.2− | 2004 03 14 | 703 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.3− |
| 2002 09 15 | 644 | 0.3− | 0.3− | 2004 03 14 | 703 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2002 09 15 | 644 | 0.8− | 0.4− | 2004 03 19 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2004 03 19 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 1.1+ | 0.3− | 2004 03 19 | 644 | 0.4+ | 0.4+ | 2006 11 11 | G96 | 1.0− | 0.5+ |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2004 03 20 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.5− | 0.7+ |
| 2002 10 03 | 704 | 0.1− | 0.3− | 2004 03 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 1.1+ | 0.5− |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2004 03 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.7+ | 0.7− |
| 2002 10 07 | 704 | 0.2+ | 1.0− | 2005 05 12 | 644 | (6.5− | 3.9+) | | | | |
| 2002 10 07 | 704 | 0.9+ | 0.1+ | 2005 05 12 | 644 | (7.0− | 4.0+) | | | | |

**(138038)∗ 2000 $DV_{18}$ = 2000 $CD_{145}$ = 2002 $TM_{179}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11070), G. V. Williams (*MPO* 37344)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.76644 | | (2000.0) | | | |
| $n$ | 0.24466634 | $\omega$ | 348.63516 | | +0.64994690 | +0.74858792 |
| $a$ | 2.5317446 | $\Omega$ | 321.69446 | | −0.67964114 | +0.49533805 |
| $e$ | 0.1647173 | $i$ | 12.20959 | | −0.34008373 | +0.44074521 |
| $P$ | 4.03 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.8+ | 0.1+ | 2002 10 15 | 704 | 0.2+ | 0.4+ | 2004 01 22 | 704 | 0.5+ | 0.6+ |
| 2000 02 02 | 691 | 0.4+ | 0.2− | 2002 10 15 | 704 | 0.2− | 0.2− | 2004 01 22 | 704 | 0.0 | 1.0+ |
| 2000 02 02 | 691 | 0.7+ | 0.3− | 2002 10 20 | 644 | 0.6+ | 0.4− | 2004 01 22 | 704 | 0.2− | 0.3+ |
| 2000 02 03 | 704 | 0.5− | 0.5+ | 2002 10 20 | 644 | 0.5+ | 0.8− | 2004 01 26 | 699 | 0.0 | 0.2+ |
| 2000 02 03 | 704 | 0.4+ | 0.6+ | 2002 10 20 | 644 | 0.5+ | 0.8− | 2004 01 26 | 699 | 0.2− | 0.1+ |
| 2000 02 03 | 704 | 0.2+ | 1.0+ | 2002 10 31 | 704 | 0.6+ | 0.2− | 2004 01 26 | 699 | 0.3+ | 1.3− |
| 2000 02 04 | 691 | 0.3+ | 0.2− | 2002 10 31 | 704 | 0.0 | 0.0 | 2004 01 26 | 699 | 0.9− | 0.3− |
| 2000 02 04 | 691 | 0.4+ | 0.1− | 2002 10 31 | 704 | 0.5+ | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.8+ |
| 2000 02 04 | 691 | 0.4+ | 0.0 | 2002 10 31 | 704 | 0.1− | 0.9− | 2004 01 30 | 704 | 0.0 | 0.1+ |
| 2000 02 05 | 691 | 0.6+ | 0.3− | 2002 11 01 | 704 | 0.1− | 0.4+ | 2004 01 30 | 704 | 0.5− | 1.1+ |
| 2000 02 05 | 691 | 0.7+ | 0.4− | 2002 11 01 | 704 | 0.6− | 0.4− | 2004 01 30 | 704 | 0.8+ | 1.1+ |
| 2000 02 05 | 691 | 0.7+ | 0.3− | 2002 11 01 | 704 | 1.3− | 0.0 | 2004 01 31 | 691 | 0.2− | 0.0 |
| 2000 02 28 | 691 | 0.6− | 0.4− | 2002 11 01 | 704 | 0.1+ | 0.2+ | 2004 01 31 | 691 | 0.1− | 0.2+ |
| 2000 02 28 | 691 | 0.8− | 0.4− | 2002 11 08 | 704 | 0.5− | 0.2+ | 2004 01 31 | 691 | 0.1− | 0.0 |
| 2000 02 28 | 691 | 0.7− | 0.3− | 2002 11 08 | 704 | 0.7+ | 0.3+ | 2004 02 11 | 291 | 0.3+ | 0.2+ |
| 2000 02 29 | 704 | 0.6− | 0.3+ | 2002 11 08 | 704 | (1.6− | 0.1−) | 2004 02 11 | 291 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.7+ | 1.0+ | 2002 11 08 | 704 | 1.2− | 0.5− | 2004 02 11 | 291 | 0.0 | 0.1− |
| 2000 02 29 | 704 | 1.3− | 1.2+ | 2002 11 15 | 644 | 0.3+ | 0.1− | 2004 02 14 | 608 | (0.6+ | 1.7+) |
| 2000 02 29 | 704 | 1.1− | 1.5+ | 2002 11 15 | 644 | 0.6+ | 0.0 | 2004 02 14 | 608 | 0.4+ | 0.7+ |
| 2000 02 29 | 704 | 0.5− | 1.0+ | 2002 11 15 | 644 | 0.3+ | 0.3− | 2004 02 14 | 608 | 0.5+ | 0.4+ |
| 2000 03 03 | 704 | 0.2+ | 0.3+ | 2002 11 15 | 704 | 0.6+ | 0.7− | 2004 02 16 | 704 | 0.3− | 0.2− |
| 2000 03 03 | 704 | 0.9+ | 1.2+ | 2002 11 15 | 704 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.4+ | 0.4+ |
| 2000 03 03 | 704 | (1.0− | 2.2+) | 2002 11 15 | 704 | (2.1+ | 1.6+) | 2004 02 16 | 704 | 0.5− | 0.1+ |
| 2000 03 03 | 704 | 0.5− | 1.2+ | 2002 11 15 | 704 | 0.3+ | 0.2− | 2004 02 16 | 704 | 0.1+ | 0.3+ |
| 2000 03 03 | 704 | 0.6− | 1.1+ | 2002 11 25 | 644 | 0.4− | 0.1− | 2004 02 29 | 691 | 0.0 | 0.1+ |
| 2000 03 09 | 691 | 0.5− | 0.1− | 2002 11 25 | 644 | 0.2− | 1.2− | 2004 02 29 | 691 | 0.2+ | 0.0 |
| 2000 03 09 | 691 | 0.6− | 0.3− | 2002 11 25 | 644 | 0.2− | 0.1+ | 2004 02 29 | 691 | 0.2− | 0.2+ |
| 2000 03 09 | 691 | 0.3− | 0.0 | 2002 12 03 | 644 | 0.0 | 0.3+ | 2005 06 09 | E12 | 0.4− | 0.2+ |
| 2000 03 14 | 691 | 0.5− | 0.8− | 2002 12 03 | 644 | 0.0 | 0.3+ | 2005 06 09 | E12 | 0.1+ | 0.8+ |
| 2000 03 14 | 691 | 0.6− | 0.6− | 2002 12 03 | 644 | 0.0 | 0.4+ | 2005 06 09 | E12 | 0.5+ | 0.5+ |
| 2000 03 14 | 691 | 0.3− | 0.5− | 2002 12 07 | 704 | 0.2− | 0.5− | 2005 06 09 | E12 | 0.2+ | 0.4+ |
| 2002 10 06 | 704 | 0.1+ | 0.2− | 2002 12 07 | 704 | 0.6− | 0.7+ | 2006 10 23 | 703 | 0.0 | 0.3+ |
| 2002 10 06 | 704 | 0.0 | 0.8+ | 2002 12 07 | 704 | (2.2− | 0.1+) | 2006 10 23 | 703 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.3− | 0.4− | 2002 12 12 | 644 | 0.0 | 0.3+ | 2006 10 23 | 703 | 0.1− | 0.4− |
| 2002 10 06 | 704 | 0.3− | 0.2+ | 2002 12 12 | 644 | 0.1+ | 0.1− | 2006 10 23 | 703 | 0.1+ | 0.0 |
| 2002 10 06 | 704 | 0.1− | 0.2− | 2002 12 12 | 644 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.9+ | 1.3+ |
| 2002 10 13 | 644 | 0.1− | 0.3+ | 2004 01 18 | 644 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.0 | 0.4+ |
| 2002 10 13 | 644 | 0.2− | 0.6+ | 2004 01 18 | 644 | 0.2− | 0.2+ | 2006 11 14 | 704 | 1.4+ | 0.2+ |
| 2002 10 13 | 644 | 0.1− | 0.6+ | 2004 01 18 | 644 | 0.2− | 0.2+ | | | | |
| 2002 10 15 | 704 | 1.3− | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.4+ | | | | |

**(138039)∗ 2000 $DN_{19}$ = 2002 $TF_{170}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37344)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 194.08169 | | (2000.0) | | | |
| $n$ | 0.23990743 | $\omega$ | 204.72689 | | −0.97782465 | −0.15441739 |
| $a$ | 2.5651155 | $\Omega$ | 325.44459 | | +0.20810374 | −0.79220809 |
| $e$ | 0.0562034 | $i$ | 14.44318 | | −0.02349009 | −0.59039107 |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.1− | 0.5+ | 2002 10 03 | 644 | 0.3+ | 1.0+ | 2004 02 10 | 703 | 0.6− | 0.0 |
| 2000 02 03 | 704 | 0.4− | 0.3− | 2002 10 03 | 644 | 0.6− | 1.2+ | 2004 02 15 | 704 | 0.1+ | 0.0 |
| 2000 02 03 | 704 | 0.6+ | 0.8+ | 2002 10 03 | 644 | 0.6+ | 1.1+ | 2004 02 15 | 704 | 0.6+ | 0.1+ |
| 2000 02 03 | 704 | 0.4+ | 0.7+ | 2002 10 06 | 704 | 0.6+ | 0.1+ | 2004 02 15 | 704 | 0.4+ | 0.4+ |
| 2000 02 27 | 691 | 0.5− | 0.0 | 2002 10 06 | 704 | 0.8+ | 0.4− | 2004 02 15 | 704 | 0.5+ | 0.3+ |
| 2000 02 27 | 691 | 0.6− | 0.2+ | 2002 10 06 | 704 | 0.3+ | 0.7− | 2004 02 15 | 704 | 0.1− | 0.2+ |
| 2000 02 27 | 691 | 0.5− | 0.0 | 2002 10 10 | 704 | (1.7+ | 0.9−) | 2004 02 23 | 704 | 1.2+ | 0.2+ |
| 2000 02 29 | 704 | 1.6+ | 0.8+ | 2002 10 10 | 704 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 1.1+ | 0.4+ |
| 2000 02 29 | 704 | 0.4+ | 1.0+ | 2002 10 10 | 704 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.7+ | 0.3− |
| 2000 02 29 | 704 | 1.2+ | 0.0 | 2002 10 10 | 704 | 0.1− | 1.1− | 2004 02 23 | 704 | 0.8+ | 0.0 |
| 2000 02 29 | 704 | 0.3− | 0.1+ | 2002 10 15 | 644 | 0.1− | 0.3− | 2004 02 23 | 704 | 1.1+ | 0.7+ |
| 2000 02 29 | 704 | 0.9+ | 0.7− | 2002 10 15 | 644 | 0.1− | 0.3− | 2004 04 13 | 645 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 0.2+ | 0.1+ | 2002 10 15 | 644 | 0.0 | 0.3− | 2004 04 13 | 645 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.5− | 0.8− | 2004 01 17 | 644 | 0.1− | 0.1− | 2006 08 29 | 703 | (2.1+ | 4.7+) |
| 2000 03 03 | 704 | 0.0 | 0.7+ | 2004 01 17 | 644 | 0.3− | 0.2− | 2006 08 29 | 703 | 0.7− | 0.0 |
| 2000 03 03 | 704 | 0.5− | 0.3− | 2004 01 17 | 644 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.4− | 0.2+ |
| 2000 03 03 | 704 | 0.2− | 0.1− | 2004 01 20 | 704 | 0.1+ | 1.0+ | 2006 08 29 | 703 | 1.2− | 0.1− |
| 2000 03 04 | 704 | 0.4− | 0.8− | 2004 01 20 | 704 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.4+ | 0.1+ |
| 2000 03 04 | 704 | 0.0 | 0.4+ | 2004 01 20 | 704 | 0.3− | 0.1+ | 2006 09 27 | 703 | 0.8− | 0.2+ |
| 2000 03 04 | 704 | 0.2+ | 0.1− | 2004 01 20 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 703 | 0.6− | 0.5+ |
| 2000 03 04 | 704 | 0.4− | 0.0 | 2004 01 30 | 704 | 0.8− | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.4+ |
| 2000 03 04 | 704 | 0.6+ | 0.5− | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 10 23 | 703 | 1.6+ | 0.0 |
| 2000 03 06 | 704 | 0.6+ | 0.6+ | 2004 01 30 | 704 | 0.5− | 0.2+ | 2006 10 23 | 703 | 0.5+ | 0.5− |
| 2000 03 06 | 704 | 1.2+ | 0.6− | 2004 01 30 | 704 | 1.1− | 0.7+ | 2006 10 23 | 703 | 0.3− | 1.4− |
| 2000 03 06 | 704 | 0.5+ | 0.6− | 2004 02 10 | 703 | 1.1− | 0.8+ | 2006 10 23 | 703 | 0.2− | 0.0 |
| 2000 03 06 | 704 | 0.4+ | 0.6+ | 2004 02 10 | 703 | 1.0− | 0.7− | | | | |
| 2000 03 06 | 704 | 0.1+ | 0.6− | 2004 02 10 | 703 | 0.1− | 0.3− | | | | |

**(138040)∗ 2000 $DJ_{21}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.24984 | | (2000.0) | | | |
| $n$ | 0.27056952 | $\omega$ | 292.75387 | | +0.02265941 | −0.99960051 |
| $a$ | 2.3674645 | $\Omega$ | 155.92923 | | +0.93176962 | +0.01499167 |
| $e$ | 0.1936123 | $i$ | 2.37372 | | +0.36234228 | +0.02395960 |
| $P$ | 3.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.1− | 0.1− | 2002 09 30 | 704 | 0.3− | 0.2− | 2005 06 14 | 691 | 0.4+ | 0.2+ |
| 2000 02 02 | 691 | 0.0 | 0.0 | 2002 10 01 | 699 | 0.1− | 0.6+ | 2005 06 15 | G96 | 0.1+ | 0.3+ |
| 2000 02 02 | 691 | 0.0 | 0.2− | 2002 10 01 | 699 | 0.0 | 0.4+ | 2005 06 15 | G96 | 0.4− | 0.8+ |
| 2000 02 02 | 704 | 0.4+ | 0.3+ | 2002 10 01 | 699 | 0.1− | 1.2+ | 2005 06 15 | G96 | 0.3− | 0.4+ |
| 2000 02 02 | 704 | 0.1− | 0.4+ | 2002 10 01 | 699 | (1.6+ | 1.3+) | 2005 06 15 | G96 | 0.3− | 0.0 |
| 2000 02 02 | 704 | 0.5+ | 0.4+ | 2002 10 02 | 704 | 0.3− | 0.8+ | 2006 11 14 | 704 | 0.1+ | 0.3+ |
| 2000 02 02 | 704 | 0.0 | 0.2− | 2002 10 02 | 704 | 0.2+ | 0.9+ | 2006 11 14 | 704 | 0.2+ | 0.5+ |
| 2000 02 02 | 704 | 0.6+ | 0.9+ | 2002 10 02 | 704 | 0.9− | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.1+ | 0.2− | 2002 10 03 | 704 | 0.2− | 1.5+ | 2006 11 14 | 704 | 0.2+ | 0.1+ | | |
| 2000 02 11 | 691 | 0.2+ | 0.3− | 2002 10 03 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 704 | 0.4+ | 0.7− | | |
| 2000 02 11 | 691 | 0.3+ | 0.4− | 2002 10 03 | 704 | 0.2+ | 1.4+ | 2006 11 17 | 704 | 0.0 | 0.8− | | |
| 2000 02 27 | 691 | 0.4− | 0.3− | 2002 10 03 | 704 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.7− | | |
| 2000 02 27 | 691 | 0.4− | 0.2− | 2002 10 03 | 704 | 0.9− | 0.8+ | 2006 11 17 | 704 | 0.4+ | 0.7− | | |
| 2000 02 27 | 691 | 0.9− | 0.3− | 2002 10 04 | 644 | 0.2− | 0.4+ | 2006 11 17 | 704 | 0.8+ | 0.8− | | |
| 2000 02 29 | 704 | 0.0 | 0.0 | 2002 10 04 | 644 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2000 02 29 | 704 | 0.9+ | 0.9+ | 2002 10 04 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.0 | | |
| 2000 02 29 | 704 | 1.0+ | 0.8+ | 2002 10 06 | 608 | 0.7− | 1.0+ | 2006 11 17 | G96 | 0.3− | 0.2− | | |
| 2000 02 29 | 704 | 0.3+ | 0.6+ | 2002 10 06 | 608 | (0.3+ | 1.7+) | 2006 11 17 | G96 | 0.7− | 0.3− | | |
| 2000 02 29 | 704 | 1.0+ | 0.7+ | 2002 10 06 | 608 | 0.9− | 0.9+ | 2006 11 18 | 691 | 0.1+ | 0.0 | | |
| 2000 03 03 | 704 | 0.5+ | 0.9+ | 2002 10 11 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.0 | | |
| 2000 03 03 | 704 | 0.9+ | 1.0+ | 2002 10 11 | 704 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.1− | | |
| 2000 03 03 | 704 | 0.3+ | 1.3+ | 2002 10 11 | 704 | 0.5− | 0.1− | 2006 11 18 | 691 | 0.3+ | 0.1+ | | |
| 2000 03 03 | 704 | 0.4+ | 1.6+ | 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2000 03 03 | 704 | 1.1+ | 1.8+ | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 11 18 | 691 | 0.0 | 0.0 | | |
| 2000 03 05 | 704 | 1.1+ | 0.8+ | 2004 03 16 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.8+ | | |
| 2000 03 05 | 704 | 0.7+ | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 1.2− | 0.6+ | | |
| 2000 03 05 | 704 | 0.5− | 0.2+ | 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.1− | | |
| 2000 03 05 | 704 | 0.1− | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.5− | | |
| 2000 03 05 | 704 | 0.5+ | 0.8+ | 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.3− | | |
| 2000 03 09 | 691 | 0.1− | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.0 | | |
| 2000 03 09 | 691 | 0.1− | 0.2+ | 2004 04 11 | 644 | 0.0 | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.5+ | | |
| 2000 03 09 | 691 | 0.3− | 0.1− | 2004 04 11 | 644 | 0.4− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 29 | 608 | 0.7− | 0.5− | 2004 04 11 | 644 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.7− | 0.7+ | | |
| 2002 09 29 | 608 | 0.5− | 0.3− | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.6− | 0.6+ | | |
| 2002 09 29 | 608 | 0.7− | 0.2− | 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 11 29 | 704 | 1.1− | 0.5+ | | |
| 2002 09 30 | 704 | 0.7− | 0.7+ | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.2− | | |
| 2002 09 30 | 704 | 0.3− | 0.8+ | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.8− | 0.5+ | | |
| 2002 09 30 | 704 | 0.1+ | 0.9+ | 2005 06 14 | 691 | 0.2− | 0.4+ | | | | | | |

**(138041)∗ 2000 $DN_{21}$ = 2002 $TP_{186}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37346)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.05169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25936963 | $\omega$ | 105.02893 | | +0.45327529 | −0.88868447 | |
| $a$ | 2.4351365 | $\Omega$ | 317.79532 | | +0.77317096 | +0.43058692 | |
| $e$ | 0.1204179 | $i$ | 5.90804 | | +0.44356305 | +0.15759070 | |
| $P$ | 3.80 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | (2.2− | 1.5−) | 2002 11 01 | 704 | 1.4− | 0.1+ | 2004 03 16 | 704 | 0.4+ | 0.9+ | | |
| 1998 08 17 | 704 | 0.4+ | 0.5+ | 2002 11 01 | 704 | (1.8− | 0.7+) | 2004 03 19 | 704 | 1.1+ | 1.1+ | | |
| 1998 08 17 | 704 | 1.6− | 0.4+ | 2002 11 01 | 704 | 1.4− | 0.3− | 2004 03 19 | 704 | 0.5+ | 0.1− | | |
| 1998 08 17 | 704 | 0.6+ | 0.0 | 2002 11 06 | 704 | 0.6− | 0.3+ | 2004 03 19 | 704 | 0.6+ | 0.2+ | | |
| 2000 02 02 | 691 | 0.5− | 0.8− | 2002 11 06 | 704 | 0.5+ | 0.4+ | 2004 03 19 | 704 | 0.1+ | 1.5− | | |
| 2000 02 02 | 691 | 0.4− | 0.7− | 2002 11 06 | 704 | 0.8+ | 0.7− | 2004 03 19 | 704 | 1.1+ | 0.1− | | |
| 2000 02 02 | 691 | 0.3− | 1.3+ | 2002 11 06 | 704 | 0.2+ | 0.1− | 2004 03 20 | 699 | 0.1− | 0.1− | | |
| 2000 02 04 | 704 | 0.3− | 0.8+ | 2002 11 06 | 704 | 0.2+ | 0.2− | 2004 03 20 | 699 | 0.4− | 0.6+ | | |
| 2000 02 04 | 704 | 0.0 | 0.6+ | 2002 11 06 | 704 | 0.5− | 0.2− | 2004 03 20 | 699 | 0.9− | 0.3+ | | |
| 2000 02 04 | 704 | 0.1+ | 0.9+ | 2002 11 06 | 704 | 0.7+ | 0.1+ | 2004 03 20 | 699 | 0.6− | 0.3+ | | |
| 2000 02 04 | 704 | 0.1+ | 0.0 | 2002 11 06 | 704 | 0.2+ | 0.4− | 2004 03 23 | 704 | 0.4+ | 0.4+ | | |
| 2000 02 04 | 704 | 0.9+ | 0.4− | 2002 11 06 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.5− | | |
| 2000 02 11 | 691 | 0.4− | 0.5− | 2002 11 08 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.0 | 0.7− | | |
| 2000 02 11 | 691 | 0.4− | 0.4− | 2002 11 08 | 704 | 0.6+ | 0.7+ | 2004 03 23 | 704 | 1.0+ | 0.3− | | |
| 2000 02 11 | 691 | 0.3− | 0.4− | 2002 11 08 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.6+ | 0.3+ | | |
| 2000 02 27 | 703 | 0.4− | 0.3− | 2002 11 08 | 704 | 0.9+ | 0.4+ | 2004 03 27 | 704 | 0.1+ | 0.8+ | | |
| 2000 02 27 | 703 | 0.5− | 0.9− | 2002 11 08 | 704 | 0.1− | 0.5+ | 2004 03 27 | 704 | 0.1+ | 0.6+ | | |
| 2000 02 27 | 703 | 0.6+ | 0.5+ | 2002 11 08 | 704 | 0.7+ | 0.3+ | 2004 03 27 | 704 | 0.3− | 0.1+ | | |
| 2000 02 27 | 703 | 0.2− | 0.6− | 2002 11 08 | 704 | 0.8+ | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.3+ | | |
| 2000 02 29 | 704 | 0.5+ | 0.2− | 2002 11 08 | 704 | 0.3− | 1.1+ | 2004 03 27 | 704 | 0.3− | 1.4+ | | |
| 2000 02 29 | 704 | 0.4+ | 0.5− | 2002 11 08 | 704 | 0.7+ | 0.3+ | 2004 04 09 | 703 | 1.2+ | 0.4− | | |
| 2000 02 29 | 704 | 0.2+ | 0.3+ | 2002 11 08 | 704 | 0.3+ | 0.8+ | 2004 04 09 | 703 | 1.0− | 0.8+ | | |
| 2000 02 29 | 704 | 0.4− | 0.1+ | 2002 12 01 | 704 | 0.6− | 0.4+ | 2004 04 09 | 703 | 1.0+ | 0.3− | | |
| 2000 02 29 | 704 | 0.1− | 0.3− | 2002 12 01 | 704 | 0.9+ | 0.2− | 2004 04 09 | 703 | 0.3+ | 1.4− | | |
| 2000 03 03 | 704 | 0.9+ | 0.6− | 2002 12 01 | 704 | (1.8+ | 0.7−) | 2006 08 30 | 704 | 0.4− | 0.5+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.0 | 2002 12 01 | 704 | 0.5− | 0.6− | 2006 08 30 | 704 | 0.1+ | 0.2+ | | |
| 2000 03 03 | 704 | 0.7+ | 0.0 | 2002 12 06 | 704 | (0.6+ | 1.6+) | 2006 08 30 | 704 | 0.2− | 0.9− | | |
| 2000 03 03 | 704 | 0.2− | 0.2+ | 2002 12 06 | 704 | 1.0− | 0.6+ | 2006 10 03 | 291 | 0.0 | 0.3− | | |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2002 12 06 | 704 | 0.6+ | 1.0+ | 2006 10 03 | 291 | 0.0 | 0.2− | | |
| 2000 03 05 | 704 | 0.9+ | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.4+ | 2006 10 03 | 291 | 0.2− | 0.1− | | |
| 2000 03 05 | 704 | 0.6+ | 0.7+ | 2002 12 06 | 704 | (0.9+ | 1.6+) | 2006 10 15 | 104 | (0.3+ | 2.1+) | | |
| 2000 03 05 | 704 | 0.3+ | 0.1− | 2003 01 01 | 704 | 0.8− | 0.6− | 2006 10 15 | 104 | 0.6+ | 0.5+ | | |
| 2000 03 05 | 704 | 0.1+ | 0.4− | 2003 01 01 | 704 | 0.6− | 0.5+ | 2006 10 15 | 104 | 0.8+ | 1.0+ | | |
| 2000 03 05 | 704 | 1.0+ | 0.1− | 2003 01 01 | 704 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.1− | | |
| 2002 09 06 | 704 | 0.4− | 0.0 | 2003 01 01 | 704 | 1.4+ | 0.5− | 2006 10 19 | 703 | 0.2− | 0.1+ | | |
| 2002 09 06 | 704 | 0.2− | 0.2− | 2003 01 01 | 704 | (1.9+ | 0.3+) | 2006 10 19 | 703 | 0.3+ | 0.1− | | |
| 2002 09 06 | 704 | 0.6− | 0.1− | 2004 02 13 | 644 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.5+ | | |
| 2002 09 06 | 704 | 0.7− | 0.6− | 2004 02 13 | 644 | 0.2+ | 0.8+ | 2006 10 20 | 704 | 0.8− | 0.3− | | |
| 2002 09 06 | 704 | 0.1− | 0.3− | 2004 02 13 | 644 | 0.2− | 0.1+ | 2006 10 20 | 704 | 0.4+ | 0.5+ | | |
| 2002 09 14 | 608 | (1.6− | 0.3−) | 2004 02 17 | 703 | 1.2+ | 0.2+ | 2006 10 20 | 704 | 0.3− | 0.3+ | | |
| 2002 09 14 | 608 | 1.3− | 0.3− | 2004 02 17 | 703 | 0.8+ | 1.5− | 2006 10 20 | 704 | 0.7− | 0.0 | | |
| 2002 09 14 | 608 | 1.2− | 0.5− | 2004 02 17 | 703 | 0.3+ | 0.3+ | 2006 10 20 | 704 | 0.0 | 0.4+ | | |
| 2002 10 04 | 644 | 0.1− | 0.5+ | 2004 02 17 | 703 | 0.6+ | 0.8+ | 2006 10 27 | 703 | 0.1+ | 0.2− | | |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2004 02 19 | 704 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.0 | | |
| 2002 10 04 | 704 | 0.9− | 0.8− | 2004 02 19 | 704 | 0.2+ | 1.4+ | 2006 10 27 | 703 | 0.1+ | 0.9− | | |
| 2002 10 04 | 644 | 0.1− | 0.5+ | 2004 02 19 | 704 | (0.1− | 1.6+) | 2006 10 27 | 703 | 0.1+ | 0.2− | | |
| 2002 10 04 | 704 | 0.5− | 0.3− | 2004 02 19 | 704 | 0.5− | 0.4+ | 2006 11 14 | 703 | 0.0 | 1.2− | | |
| 2002 10 04 | 704 | 0.7− | 0.8− | 2004 02 20 | 608 | 0.5− | 0.5+ | 2006 11 14 | 703 | 0.1+ | 0.5− | | |
| 2002 10 04 | 704 | 0.6− | 0.0 | 2004 02 20 | 608 | 0.2+ | 1.2+ | 2006 11 14 | 703 | 0.5− | 0.4− | | |
| 2002 10 04 | 704 | 0.4− | 0.1− | 2004 02 20 | 608 | 0.4+ | 1.4+ | 2006 11 14 | 703 | 0.0 | 0.5− | | |
| 2002 10 07 | 699 | 0.7− | 0.6+ | 2004 02 25 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.2− | 0.8− | | |
| 2002 10 07 | 699 | 0.5− | 0.2+ | 2004 02 25 | 704 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 07 | 699 | 0.7− | 0.8+ | 2004 02 25 | 704 | 0.5− | 0.7− | 2006 11 16 | 704 | 0.3+ | 0.3− | | |
| 2002 10 07 | 699 | 0.0 | 0.3+ | 2004 02 25 | 704 | 0.2+ | 1.1+ | 2006 11 16 | 704 | 0.1− | 0.3− | | |
| 2002 10 09 | 704 | 0.2− | 0.2+ | 2004 02 25 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.4+ | | |
| 2002 10 09 | 704 | 0.1− | 0.5+ | 2004 02 25 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.0 | | |
| 2002 10 09 | 704 | 0.5+ | 0.4+ | 2004 02 25 | 704 | 0.4− | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.1− | | |
| 2002 10 09 | 704 | 0.2+ | 0.5+ | 2004 02 25 | 704 | (1.8+ | 1.1−) | 2006 11 17 | 644 | 0.1+ | 0.1− | | |
| 2002 10 09 | 704 | 0.4+ | 0.4+ | 2004 02 25 | 704 | 0.2− | 0.1+ | 2006 11 22 | 703 | (0.5+ | 2.0+) | | |
| 2002 10 10 | 704 | 0.1+ | 0.7+ | 2004 02 25 | 704 | 0.0 | 1.0+ | 2006 11 22 | 703 | 0.4+ | 0.4− | | |
| 2002 10 10 | 704 | 0.2− | 0.6+ | 2004 03 14 | 703 | 1.0+ | 0.1− | 2006 11 22 | 703 | 0.8− | 0.2+ | | |
| 2002 10 10 | 704 | 0.1− | 0.8+ | 2004 03 14 | 703 | 0.2+ | 0.6− | 2006 11 22 | 703 | 0.9+ | 1.1+ | | |
| 2002 10 10 | 704 | 0.4+ | 0.9+ | 2004 03 14 | 703 | 0.4− | 1.1+ | 2006 11 28 | 704 | 0.1+ | 0.0 | | |
| 2002 10 10 | 704 | 0.8+ | 0.1+ | 2004 03 14 | 703 | 0.2− | 1.0− | 2006 11 28 | 704 | 0.3− | 0.3+ | | |
| 2002 10 12 | 704 | 0.6+ | 0.9+ | 2004 03 16 | 704 | 0.1+ | 0.7+ | 2006 11 28 | 704 | 1.1+ | 0.1− | | |
| 2002 10 12 | 704 | (1.8+ | 0.5+) | 2004 03 16 | 704 | 0.5+ | 0.7+ | 2006 11 28 | 704 | 0.2+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.9+ | 0.3+ | 2004 03 16 | 704 | 0.1− | 0.9+ | 2006 11 28 | 704 | 0.0 | 0.7+ | | |
| 2002 10 12 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 704 | 0.4+ | 0.8+ | | | | | | |

**(138042)∗ 2000 $DW_{21}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.20589 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23070461 | $\omega$ | 185.01661 | | −0.78759754 | −0.60807839 | |
| $a$ | 2.6328848 | $\Omega$ | 317.00451 | | +0.57030466 | −0.65811257 | |
| $e$ | 0.0579838 | $i$ | 8.40283 | | +0.23332960 | −0.44399157 | |
| $P$ | 4.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.2+ | 1.0− | 2002 09 13 | 644 | 0.4− | 0.3+ | 2004 01 22 | 704 | 0.3− | 0.7+ | | |
| 2000 02 08 | 691 | 0.6− | 0.3− | 2002 09 13 | 644 | 0.2− | 0.3+ | 2004 01 22 | 704 | 0.2+ | 0.4− | | |
| 2000 02 08 | 704 | 0.9+ | 1.2+ | 2002 09 13 | 644 | 0.2− | 0.0 | 2004 02 15 | 704 | 0.6− | 0.8+ | | |
| 2000 02 08 | 691 | 0.4− | 0.4− | 2003 12 17 | 699 | 0.8− | 0.5− | 2004 02 15 | 704 | 1.0− | 0.5− | | |
| 2000 02 08 | 704 | 1.4+ | 1.2+ | 2003 12 17 | 699 | 1.0− | 1.6− | 2004 02 15 | 704 | 1.8− | 0.3+ | | |
| 2000 02 08 | 704 | 1.7+ | 0.9+ | 2003 12 17 | 699 | 0.1+ | 0.3− | 2004 02 15 | 704 | 0.9− | 0.7+ | | |
| 2000 02 08 | 691 | 0.8− | 0.3− | 2003 12 17 | 699 | 0.1+ | 0.0 | 2006 06 20 | G96 | 0.2− | 0.3+ | | |
| 2000 02 29 | 704 | 1.1+ | 1.3+ | 2003 12 23 | 704 | 0.2+ | 0.2+ | 2006 06 20 | G96 | 0.3− | 0.2− | | |
| 2000 02 29 | 704 | 0.0 | 0.3+ | 2003 12 23 | 704 | 0.4− | 0.5− | 2006 06 20 | G96 | 0.1+ | 0.0 | | |
| 2000 02 29 | 704 | 0.9+ | 0.2+ | 2003 12 23 | 704 | 0.4+ | 0.1− | 2006 06 20 | G96 | 0.6− | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.2− | 0.1− | 2003 12 23 | 704 | 0.2+ | 0.1− | 2006 08 28 | 699 | 1.7− | 1.4+ |
| 2000 02 29 | 704 | 1.1+ | 0.4+ | 2003 12 23 | 704 | 0.0 | 0.4− | 2006 08 28 | 699 | 0.3+ | 0.0 |
| 2000 03 03 | 704 | 0.7− | 1.3+ | 2003 12 28 | 704 | 0.8+ | 0.0 | 2006 08 28 | 699 | 0.0 | 0.6+ |
| 2000 03 03 | 704 | 0.6+ | 0.6+ | 2003 12 28 | 704 | 0.7+ | 0.6− | 2006 08 28 | 699 | 1.0+ | 1.6+ |
| 2000 03 03 | 704 | 0.1+ | 0.2+ | 2003 12 28 | 704 | 0.7+ | 0.3− | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2000 03 03 | 704 | 1.3+ | 0.1− | 2003 12 28 | 704 | 1.1+ | 0.6− | 2006 09 28 | G96 | 0.6+ | 0.1− |
| 2000 03 03 | 704 | 0.6+ | 0.8− | 2003 12 28 | 704 | 0.1+ | 0.8+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2000 03 05 | 704 | 0.5+ | 0.1− | 2004 01 22 | 704 | 0.4+ | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2000 03 05 | 704 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.4+ | 0.6+ | | | | |
| 2000 03 05 | 704 | 0.3− | 0.6+ | 2004 01 22 | 704 | 0.4+ | 0.8+ | | | | |

**(138043)∗ 2000 DT$_{23}$ = 2000 CR$_{131}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 4025)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.89631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26027737 | $\omega$ | 333.00820 | | −0.33564626 | −0.94169597 | |
| $a$ | 2.4294713 | $\Omega$ | 136.59258 | | +0.87030323 | −0.31953624 | |
| $e$ | 0.1366060 | $i$ | 1.95628 | | +0.36043566 | −0.10538165 | |
| $P$ | 3.79 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.4+ | 0.7− | 2002 10 30 | 645 | 0.1+ | 0.1+ | 2004 04 15 | 644 | 0.2+ | 0.1− |
| 2000 02 03 | 691 | 0.5+ | 0.4+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2004 04 15 | 644 | 0.7+ | 0.1− |
| 2000 02 03 | 691 | 1.0− | 0.0 | 2002 10 31 | 645 | 0.0 | 0.0 | 2004 04 25 | 691 | 0.1− | 0.3+ |
| 2000 02 04 | 691 | 0.6− | 0.4− | 2002 10 31 | 645 | 0.0 | 0.0 | 2004 04 25 | 691 | 0.1− | 0.1+ |
| 2000 02 04 | 691 | 0.5− | 0.5− | 2002 11 08 | 645 | 0.0 | 0.1− | 2004 04 25 | 691 | 0.2+ | 0.0 |
| 2000 02 04 | 691 | 0.5− | 1.1− | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2000 02 14 | 691 | 1.7+ | 0.4+ | 2004 03 17 | 691 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.6− |
| 2000 02 14 | 691 | 0.2− | 0.3− | 2004 03 17 | 691 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2000 02 14 | 691 | 0.2− | 0.3− | 2004 03 17 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2000 02 27 | 691 | 0.1− | 0.0 | 2004 03 18 | 683 | (0.7− | 1.7+) | 2006 10 11 | 691 | 0.1− | 0.7+ |
| 2000 02 27 | 691 | 0.1− | 0.1− | 2004 03 18 | 683 | (1.0+ | 2.2+) | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2000 02 27 | 691 | 0.2− | 0.0 | 2004 03 18 | 683 | 0.6+ | 1.1− | 2006 10 11 | 691 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 0.4+ | 0.4+ | 2004 03 19 | 704 | 0.3+ | 1.1+ | 2006 10 15 | 691 | 0.1− | 0.3+ |
| 2000 02 29 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 10 15 | 691 | 0.4+ | 0.4+ |
| 2000 02 29 | 704 | 0.5− | 0.3+ | 2004 03 19 | 704 | 0.6+ | 0.6+ | 2006 10 15 | 691 | 0.3+ | 0.1+ |
| 2000 02 29 | 704 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2000 03 03 | 704 | 0.2+ | 0.4+ | 2004 03 19 | 704 | 0.7+ | 1.0+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2000 03 03 | 704 | 0.2− | 0.5+ | 2004 03 22 | 704 | 0.4+ | 1.5+ | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2000 03 03 | 704 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2000 03 04 | 704 | 0.0 | 0.1+ | 2004 03 22 | 704 | (0.8+ | 2.4+) | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2000 03 04 | 704 | 1.0− | 0.5− | 2004 03 22 | 704 | 0.2− | 0.9+ | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2000 03 04 | 704 | 1.0+ | 1.7+ | 2004 03 22 | 704 | 0.2+ | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2000 03 04 | 704 | 1.6+ | 0.3+ | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2002 09 28 | 644 | 0.5− | 0.1− | 2004 03 29 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 09 28 | 644 | 0.6− | 0.5+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 09 28 | 644 | 1.2− | 0.4+ | 2004 04 15 | 644 | 0.2− | 0.3+ | | | | |

**(138044)∗ 2000 DW$_{24}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.22297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23847792 | $\omega$ | 206.44080 | | −0.99384009 | +0.10154333 | |
| $a$ | 2.5753560 | $\Omega$ | 339.24331 | | −0.06567506 | −0.86230471 | |
| $e$ | 0.1082768 | $i$ | 7.19607 | | −0.08926735 | −0.49610436 | |
| $P$ | 4.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.1− | 1.6− | 2002 10 03 | 644 | 0.2− | 0.5+ | 2004 02 15 | 704 | 0.8+ | 0.1+ |
| 2000 02 11 | 704 | 0.2+ | 0.5+ | 2002 10 12 | 704 | 0.1+ | 1.2− | 2004 02 17 | 691 | 0.2+ | 0.1− |
| 2000 02 11 | 704 | 0.1− | 1.4+ | 2002 10 12 | 704 | 1.1+ | 1.5− | 2004 02 17 | 691 | 0.2+ | 0.1+ |
| 2000 02 25 | 703 | 0.3− | 0.7+ | 2002 10 12 | 704 | 0.4+ | 0.9− | 2004 02 17 | 691 | 0.2+ | 0.2+ |
| 2000 02 25 | 703 | 0.8− | 0.5+ | 2003 12 28 | 704 | (2.2+ | 0.6+) | 2004 02 17 | 645 | 0.1− | 0.2− |
| 2000 02 25 | 703 | 1.4− | 0.5+ | 2003 12 28 | 704 | (2.2+ | 0.1+) | 2004 02 17 | 645 | 0.1− | 0.2− |
| 2000 02 25 | 703 | 0.0 | 0.5+ | 2003 12 28 | 704 | 0.2+ | 0.0 | 2004 02 23 | 704 | 1.1− | 0.4+ |
| 2000 02 29 | 704 | 0.7+ | 0.0 | 2003 12 28 | 704 | 0.7+ | 0.5+ | 2004 02 23 | 704 | 0.0 | 0.0 |
| 2000 02 29 | 704 | 0.1+ | 0.5+ | 2003 12 28 | 704 | 1.2+ | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.2− |
| 2000 02 29 | 704 | 0.6+ | 0.3+ | 2004 01 13 | 699 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.7+ |
| 2000 02 29 | 704 | 1.0+ | 0.8+ | 2004 01 13 | 699 | 0.0 | 0.8+ | 2004 04 14 | 645 | 0.0 | 0.0 |
| 2000 02 29 | 704 | 0.2− | 0.3− | 2004 01 13 | 699 | 1.2− | 0.3+ | 2004 04 14 | 645 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.2+ | 0.7− | 2004 01 13 | 699 | 1.1+ | 0.5− | 2004 04 15 | 645 | 0.1− | 0.0 |
| 2000 03 03 | 704 | 0.6+ | 0.8+ | 2004 01 16 | 644 | 0.2+ | 0.1− | 2004 04 15 | 645 | 0.1− | 0.0 |
| 2000 03 03 | 704 | 0.7+ | 0.3+ | 2004 01 16 | 644 | 0.3+ | 0.3+ | 2004 04 16 | 645 | 0.1− | 0.0 |
| 2000 03 03 | 704 | 0.5+ | 0.1+ | 2004 01 16 | 644 | 0.2+ | 0.0 | 2004 04 16 | 645 | 0.1− | 0.1− |
| 2000 03 03 | 704 | 0.3+ | 0.1− | 2004 01 17 | 644 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.3− | 0.3− |
| 2000 03 05 | 704 | 0.2− | 0.2+ | 2004 01 17 | 644 | 0.5− | 0.1− | 2006 09 17 | 703 | 1.1− | 0.8+ |
| 2000 03 05 | 704 | 1.1− | 0.2+ | 2004 01 17 | 644 | 1.0− | 1.4+ | 2006 09 17 | 703 | 0.0 | 0.3+ |
| 2000 03 05 | 704 | 0.1+ | 0.1+ | 2004 01 26 | 699 | 0.2+ | 0.4− | 2006 09 17 | 703 | 0.1+ | 0.8− |
| 2000 03 05 | 704 | 0.5+ | 0.5+ | 2004 01 26 | 699 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.7+ | 0.4+ |
| 2000 03 08 | 608 | 0.7+ | 0.0 | 2004 01 26 | 699 | 0.4− | 0.6+ | 2006 09 17 | 703 | 0.3− | 0.6− |
| 2000 03 08 | 608 | 0.9+ | 0.2− | 2004 01 26 | 699 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.7− | 0.3− |
| 2000 03 08 | 608 | 0.5+ | 0.1− | 2004 01 30 | 704 | 0.7+ | 0.0 | 2006 09 17 | 703 | (1.2− | 2.1−) |
| 2000 03 09 | 704 | 0.3− | 0.4+ | 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2000 03 09 | 704 | 0.0 | 0.2− | 2004 01 30 | 704 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2− |
| 2000 03 09 | 704 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2− |
| 2000 03 09 | 704 | 0.1+ | 0.5− | 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.1− | 0.5+ | 2004 02 10 | 703 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.2+ | 1.0+ |
| 2000 03 11 | 704 | 0.1+ | 0.1− | 2004 02 10 | 703 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2000 03 11 | 704 | 0.2+ | 0.6+ | 2004 02 10 | 703 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2000 03 11 | 704 | 0.7+ | 0.2+ | 2004 02 10 | 703 | 0.2− | 0.5− | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2000 03 11 | 704 | 0.1+ | 0.6+ | 2004 02 15 | 704 | 1.0+ | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 2002 10 03 | 644 | 0.2− | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 644 | 0.9− | 0.3+ | 2004 02 15 | 704 | 0.4+ | 0.7+ | | | | |

**(138045)∗ 2000 DD$_{27}$ = 2002 TQ$_{210}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37347)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.87472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27972608 | $\omega$ | 247.05333 | | −0.17245079 | −0.98487949 | |
| $a$ | 2.3155140 | $\Omega$ | 212.89049 | | +0.91451835 | −0.15385246 | |
| $e$ | 0.1747755 | $i$ | 1.74397 | | +0.36594659 | −0.07963552 | |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.0 | 2.1+ | 2000 04 10 | 691 | 0.1− | 0.2− | 2002 10 30 | 644 | 0.2− | 1.3+ |
| 2000 02 04 | 704 | 1.4+ | 0.2− | 2000 04 11 | 691 | 0.3− | 0.3− | 2002 10 30 | 644 | 0.1+ | 1.2+ |
| 2000 02 04 | 704 | 0.1− | 0.1+ | 2000 04 11 | 691 | 0.3− | 0.5− | 2002 11 06 | 704 | 0.2− | 0.6+ |
| 2000 02 04 | 704 | 0.2+ | 0.1+ | 2000 04 11 | 691 | 0.6− | 0.2− | 2002 11 06 | 704 | 0.2+ | 0.5− |
| 2000 02 29 | 704 | 0.1− | 0.1+ | 2000 04 12 | 691 | 0.1− | 0.8− | 2002 11 06 | 704 | 0.1− | 0.5+ |
| 2000 02 29 | 704 | 0.9+ | 0.2+ | 2000 04 12 | 691 | 0.2− | 0.1− | 2004 04 28 | 291 | 0.3+ | 0.5+ |
| 2000 02 29 | 704 | 0.8+ | 0.5+ | 2000 04 12 | 691 | 0.1+ | 0.4− | 2004 04 28 | 291 | 0.3+ | 0.5+ |
| 2000 02 29 | 704 | 0.4+ | 0.1+ | 2002 10 03 | 704 | 0.3− | 1.3− | 2004 04 28 | 291 | 0.3+ | 0.7+ |
| 2000 02 29 | 704 | 0.5+ | 0.2+ | 2002 10 03 | 704 | 0.2− | 0.5− | 2004 05 16 | 704 | 0.6− | 0.3+ |
| 2000 03 03 | 704 | 0.4+ | 0.6+ | 2002 10 03 | 704 | 0.3+ | 0.5− | 2004 05 16 | 704 | 0.0 | 0.6+ |
| 2000 03 03 | 704 | 0.8+ | 0.5+ | 2002 10 03 | 704 | 0.5− | 0.6− | 2004 05 16 | 704 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.6+ | 0.4+ | 2002 10 03 | 704 | 1.2+ | 0.2+ | 2005 10 26 | G96 | 0.7− | 0.6+ |
| 2000 03 03 | 704 | 0.7+ | 0.7+ | 2002 10 07 | 704 | 0.5− | 0.1+ | 2005 10 26 | G96 | 0.2+ | 0.0 |
| 2000 03 03 | 704 | 0.1+ | 0.8+ | 2002 10 07 | 704 | 0.5− | 0.1+ | 2005 10 26 | G96 | (1.0− | 1.8+) |
| 2000 03 11 | 704 | 0.2− | 0.9+ | 2002 10 07 | 704 | 0.4− | 0.6+ | 2005 10 26 | G96 | 0.1− | 0.5+ |
| 2000 03 11 | 704 | 0.4+ | 0.1+ | 2002 10 07 | 704 | 1.5+ | 0.6− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2000 03 11 | 704 | 0.3+ | 1.7+ | 2002 10 08 | 699 | 1.1− | 0.9+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2000 03 11 | 704 | 1.0+ | 0.4+ | 2002 10 08 | 699 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2000 03 11 | 704 | 0.2+ | 1.3+ | 2002 10 08 | 699 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2000 04 08 | 691 | 0.2− | 0.3− | 2002 10 08 | 699 | 0.9− | 0.4− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2000 04 08 | 691 | 0.1+ | 0.2+ | 2002 10 11 | 704 | 0.7+ | 0.3− | 2006 11 22 | G96 | 0.4− | 0.1− |
| 2000 04 08 | 691 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.7+ | 0.1+ | 2006 11 22 | G96 | 0.4+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 691 | 1.0− | 0.2− | 2002 10 11 | 704 | 0.6− | 1.4+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2000 04 10 | 691 | 0.3− | 0.0 | 2002 10 30 | 644 | 0.1+ | 1.2+ | | | | |

**(138046)∗ 2000 $DQ_{27}$ = 1995 $YC_{11}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 40115)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.57647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25745892 | $\omega$ | 306.06214 | | −0.87991879 | | −0.47480542 |
| $a$ | 2.4471697 | $\Omega$ | 205.60460 | | +0.44784026 | | −0.81660224 |
| $e$ | 0.1417694 | $i$ | 2.30746 | | +0.15868846 | | −0.32820816 |
| $P$ | 3.83 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.1− | 0.4+ | 2002 10 30 | 291 | 0.0 | 0.1+ | 2004 04 15 | 699 | 0.9+ | 0.8− |
| 1995 12 18 | 691 | 0.2− | 0.4− | 2002 10 30 | 291 | 0.1− | 0.1+ | 2004 04 15 | 699 | (1.9− | 0.0 ) |
| 1995 12 18 | 691 | 0.4− | 0.4− | 2002 11 04 | 291 | 0.0 | 0.4+ | 2004 04 15 | 699 | (0.2+ | 1.7+) |
| 1995 12 25 | 691 | 0.6− | 0.5− | 2002 11 04 | 291 | 0.2+ | 0.5+ | 2005 12 01 | 695 | 0.5− | 0.1− |
| 1995 12 25 | 691 | 0.4+ | 0.5+ | 2002 11 04 | 291 | 0.2+ | 0.2+ | 2005 12 01 | 695 | 0.3− | 0.0 |
| 1995 12 25 | 691 | 0.9− | 0.3− | 2004 03 15 | 703 | 0.6+ | 1.2+ | 2006 10 16 | 691 | 0.3+ | 0.5+ |
| 1995 12 30 | 691 | 1.2+ | 1.2− | 2004 03 15 | 703 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.4+ | 0.3+ |
| 1995 12 30 | 691 | 0.0 | 0.1− | 2004 03 15 | 703 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.6− | 0.2− |
| 1995 12 30 | 691 | 0.4− | 0.1− | 2004 03 15 | 703 | 0.4− | 0.9− | 2006 10 28 | 691 | 0.4− | 0.4+ |
| 2000 02 29 | 704 | 0.5+ | 0.1+ | 2004 03 17 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.6+ |
| 2000 02 29 | 704 | 0.2+ | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.6+ |
| 2000 02 29 | 704 | 0.1− | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2000 02 29 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2000 02 29 | 704 | 0.6+ | 0.6+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.8+ | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 11 08 | 644 | 0.3− | 0.5+ |
| 2000 03 03 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.3+ | 1.3+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2000 03 03 | 704 | 0.7+ | 1.1+ | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2000 03 03 | 704 | 1.8+ | 0.3− | 2004 03 27 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 2000 03 05 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.8+ | 0.1− | 2006 11 10 | 644 | 0.4− | 0.0 |
| 2000 03 05 | 704 | 0.5+ | 1.2+ | 2004 03 27 | 704 | 1.1+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2000 03 05 | 704 | 0.7+ | 1.5+ | 2004 03 27 | 704 | 0.8+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2000 03 29 | 691 | 0.3− | 0.2− | 2004 03 29 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2000 03 29 | 691 | 0.4− | 0.6− | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.5− |
| 2000 03 29 | 691 | 0.5− | 0.4− | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2000 04 06 | 691 | 0.2− | 0.4− | 2004 04 15 | 691 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2000 04 06 | 691 | 0.0 | 0.3− | 2004 04 15 | 691 | 0.4− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2000 04 06 | 691 | 0.2− | 0.6− | 2004 04 15 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2002 10 30 | 291 | 0.2− | 0.1− | 2004 04 15 | 699 | 0.6+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.0 |

**(138047)∗ 2000 $DS_{30}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.38751 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21418941 | $\omega$ | 269.32712 | | −0.73247238 | | +0.67690505 |
| $a$ | 2.7665427 | $\Omega$ | 313.27182 | | −0.57815885 | | −0.67486412 |
| $e$ | 0.1127260 | $i$ | 5.72956 | | −0.35946704 | | −0.29386726 |
| $P$ | 4.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.1− | 0.4− | 2005 03 12 | 699 | (2.0− | 0.1−) | 2005 05 23 | 644 | 0.3+ | 0.2+ |
| 2000 01 12 | 691 | 0.1− | 0.5− | 2005 04 18 | E12 | 1.2− | 0.2− | 2005 05 23 | 644 | 0.1− | 0.0 |
| 2000 01 12 | 691 | 0.0 | 0.3− | 2005 04 18 | E12 | 0.7− | 0.2− | 2005 05 23 | 644 | 0.2+ | 0.0 |
| 2000 02 29 | 704 | 0.1− | 0.7+ | 2005 04 18 | E12 | 0.3+ | 0.4− | 2006 08 13 | 644 | 0.2− | 0.2+ |
| 2000 02 29 | 704 | 0.1+ | 1.1+ | 2005 04 18 | E12 | 0.3+ | 0.4+ | 2006 08 13 | 644 | 0.2− | 0.0 |
| 2000 02 29 | 704 | 0.3− | 1.4+ | 2005 04 18 | E12 | 0.6+ | 0.3− | 2006 08 13 | 644 | 0.1+ | 0.5+ |
| 2000 02 29 | 704 | 0.2− | 0.7+ | 2005 04 18 | E12 | 0.8− | 0.6− | 2006 08 15 | 644 | 0.1− | 0.2+ |
| 2000 02 29 | 704 | 0.7+ | 0.9+ | 2005 04 18 | E12 | 0.3− | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.4+ |
| 2000 03 03 | 704 | 0.4+ | 0.8+ | 2005 04 18 | E12 | 1.0− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.5+ |
| 2000 03 03 | 704 | 0.1+ | 0.9+ | 2005 05 04 | E12 | 0.1− | 0.6− | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.5+ | 1.1+ | 2005 05 04 | E12 | 0.3− | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.3+ |
| 2000 03 03 | 704 | 1.5+ | 0.6+ | 2005 05 04 | E12 | 0.5+ | 0.7− | 2006 08 16 | 644 | 0.9+ | 1.0− |
| 2000 03 03 | 704 | 0.6+ | 0.5+ | 2005 05 04 | E12 | 0.1+ | 0.6+ | 2006 08 18 | 644 | 0.4− | 0.2+ |
| 2000 03 11 | 704 | 0.5− | 0.4+ | 2005 05 08 | 699 | 0.8+ | 0.0 | 2006 08 18 | 644 | 0.3− | 0.2+ |
| 2000 03 11 | 704 | 0.6+ | 0.3+ | 2005 05 08 | 699 | 0.1− | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.4+ |
| 2000 03 11 | 704 | 0.6+ | 0.6+ | 2005 05 08 | 699 | 0.7+ | 0.5+ | 2006 08 28 | 703 | 1.1− | 1.6+ |
| 2000 03 11 | 704 | 0.3− | 0.5+ | 2005 05 08 | 699 | 0.4+ | 1.6+ | 2006 08 28 | 703 | 0.2+ | 1.3+ |
| 2000 03 11 | 704 | 0.7+ | 1.0+ | 2005 05 14 | 644 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.5− | 1.6+ |
| 2002 10 04 | 644 | 0.6− | 0.6+ | 2005 05 14 | 703 | 0.5− | 1.5− | 2006 08 28 | 703 | 0.2− | 0.6+ |
| 2002 10 04 | 644 | 0.5− | 0.4+ | 2005 05 14 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2002 10 04 | 644 | 0.6− | 0.5+ | 2005 05 14 | 703 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2005 03 12 | 699 | 0.3− | 0.9+ | 2005 05 14 | 703 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.2− | 0.4− |
| 2005 03 12 | 699 | 0.3+ | 0.0 | 2005 05 14 | 644 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2005 03 12 | 699 | 0.8+ | 0.5+ | 2005 05 14 | 703 | 0.1+ | 1.3− | | | | |

**(138048)∗ 2000 $DG_{32}$ = 2002 $TN_{124}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37349)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.72353 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23280135 | $\omega$ | 68.26788 | | +0.67564239 | | −0.73193059 |
| $a$ | 2.6170522 | $\Omega$ | 338.44686 | | +0.55593106 | | +0.58443163 |
| $e$ | 0.0360939 | $i$ | 13.89700 | | +0.48419832 | | +0.35031026 |
| $P$ | 4.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.3+ | 1.1+ | 2003 12 28 | 704 | 0.0 | 0.9+ | 2006 08 16 | 644 | 0.0 | 0.4+ |
| 2000 02 29 | 704 | 0.5− | 0.3+ | 2003 12 28 | 704 | 0.0 | 0.5+ | 2006 08 16 | 644 | 0.4− | 0.6+ |
| 2000 02 29 | 704 | 0.2− | 0.1− | 2003 12 30 | 704 | 0.5− | 0.1+ | 2006 08 21 | 291 | 0.8− | 0.3+ |
| 2000 02 29 | 704 | 0.6+ | 0.3+ | 2003 12 30 | 704 | 0.2− | 0.0 | 2006 08 21 | 704 | 0.1+ | 0.3+ |
| 2000 02 29 | 704 | 1.4+ | 0.9+ | 2003 12 30 | 704 | 0.4− | 0.2+ | 2006 08 21 | 291 | 0.7− | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2003 12 30 | 704 | 0.9− | 0.1+ | 2006 08 21 | 291 | 0.6− | 0.3+ |
| 2000 03 03 | 704 | 0.6+ | 0.1+ | 2003 12 30 | 704 | 0.1− | 0.5+ | 2006 08 21 | 704 | 0.7− | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.9+ | 2004 01 30 | 699 | 0.8+ | 0.8− | 2006 08 21 | 704 | 0.4− | 0.3+ |
| 2000 03 03 | 704 | 0.5+ | 0.6+ | 2004 01 30 | 699 | 0.3− | 0.9− | 2006 08 21 | 704 | 0.1+ | 0.2− |
| 2000 03 05 | 704 | 0.5− | 0.9+ | 2004 01 30 | 699 | 0.3− | 0.0 | 2006 08 21 | 691 | 0.0 | 0.3+ |
| 2000 03 05 | 704 | 0.4+ | 0.1− | 2004 01 30 | 699 | 0.7− | 0.3− | 2006 08 21 | 691 | 0.2+ | 0.3+ |
| 2000 03 05 | 704 | 0.1− | 1.2+ | 2004 01 30 | 703 | 0.1+ | 0.5+ | 2006 08 21 | 691 | 0.0 | 0.4+ |
| 2000 03 05 | 704 | 1.0+ | 0.1− | 2004 01 30 | 703 | 0.5+ | 1.0+ | 2006 08 25 | 704 | (0.5− | 2.3−) |
| 2000 04 03 | 691 | 0.1− | 0.3− | 2004 01 30 | 703 | 0.7+ | 0.0 | 2006 08 25 | 704 | 1.0− | 0.1+ |
| 2000 04 03 | 691 | 0.1− | 0.1− | 2004 01 30 | 703 | 1.0− | 0.2+ | 2006 08 25 | 704 | 0.0 | 1.1+ |
| 2000 04 03 | 691 | 0.2+ | 0.4+ | 2004 01 31 | 704 | 0.3− | 0.1+ | 2006 08 25 | 704 | 0.4− | 1.9+ |
| 2002 09 17 | 608 | 1.2− | 0.6− | 2004 01 31 | 704 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.5+ | 0.1− |
| 2002 09 17 | 608 | 0.9− | 0.2− | 2004 01 31 | 704 | 0.1− | 1.4− | 2006 08 28 | 703 | 0.4− | 0.1+ |
| 2002 09 17 | 608 | 0.7− | 1.1− | 2004 01 31 | 704 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.5− | 0.3− |
| 2002 10 04 | 644 | 0.2+ | 0.0 | 2004 01 31 | 704 | 0.5− | 0.4− | 2006 08 28 | 699 | 0.1− | 0.3+ |
| 2002 10 04 | 644 | 0.5+ | 0.1+ | 2004 02 13 | 699 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.0 |
| 2002 10 04 | 644 | 0.0 | 0.0 | 2004 02 13 | 699 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3− | 0.2− |
| 2002 10 05 | 704 | 0.1− | 0.1+ | 2004 02 13 | 699 | (0.3+ | 2.0+) | 2006 08 28 | 699 | 1.0+ | 0.4+ |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2004 02 13 | 699 | 1.2+ | 0.3+ | 2006 08 28 | 699 | 0.5+ | 0.4+ |
| 2002 10 05 | 704 | 0.2+ | 0.3− | 2004 02 14 | 704 | 0.2− | 0.0 | 2006 09 14 | 703 | 1.1− | 0.4− |
| 2002 10 05 | 704 | 1.0+ | 0.8+ | 2004 02 14 | 704 | 0.3+ | 0.6− | 2006 09 14 | 703 | (0.3− | 2.3−) |
| 2002 10 05 | 704 | 1.1+ | 0.1− | 2004 02 14 | 704 | 0.9− | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.7− |
| 2002 10 07 | 699 | (4.1+ | 0.1−) | 2004 02 14 | 704 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.2− |
| 2002 10 07 | 699 | 0.5+ | 0.1− | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 1.2+ | 0.2+ |
| 2002 10 07 | 699 | 1.0+ | 0.5+ | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 1.5+ | 0.5+ |
| 2002 10 07 | 699 | 0.1− | 0.7+ | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.7+ | 0.1− |
| 2002 10 09 | 704 | 0.3+ | 0.4− | 2004 02 17 | 691 | 0.2− | 0.2+ | 2006 09 17 | 941 | 0.2− | 0.5− |
| 2002 10 09 | 704 | 0.2+ | 0.5− | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 17 | 941 | 0.5− | 0.5− |
| 2002 10 09 | 704 | 0.1+ | 0.4− | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 09 17 | 941 | 0.6− | 0.3− |
| 2002 10 09 | 704 | 0.4− | 0.6− | 2004 03 18 | 291 | 0.7+ | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2002 10 09 | 704 | 0.4+ | 0.0 | 2004 03 18 | 291 | 0.6+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2003 12 28 | 704 | 0.6+ | 0.6− | 2004 03 18 | 291 | 0.6+ | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.0 |
| 2003 12 28 | 704 | 0.4− | 0.4+ | 2006 08 16 | 644 | 0.8− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.2− |

**(138049)∗ 2000 $DO_{33}$ = 2002 $TK_{207}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37350)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.53094 | | (2000.0) | | | |
| $n$ | 0.26533523 | $\omega$ | 122.02526 | | +0.38502802 | −0.92181070 |
| $a$ | 2.3984985 | $\Omega$ | 305.26413 | | +0.82710984 | +0.36625076 |
| $e$ | 0.1005955 | $i$ | 3.15424 | | +0.40944197 | +0.12698587 |
| $P$ | 3.71 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.1+ | 0.2+ | 2002 10 28 | 644 | 0.2+ | 1.4+ | 2004 03 17 | 704 | 0.0 | 0.8+ |
| 2000 02 29 | 704 | 1.1+ | 0.4+ | 2002 11 01 | 644 | 0.1+ | 0.6+ | 2004 03 17 | 704 | 0.7+ | 0.3+ |
| 2000 02 29 | 704 | 0.1+ | 0.2+ | 2002 11 01 | 644 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.2− | 0.6− |
| 2000 02 29 | 704 | 0.5+ | 0.9+ | 2002 11 01 | 644 | 0.1− | 0.5+ | 2004 03 18 | 704 | 0.8− | 0.6+ |
| 2000 02 29 | 704 | 0.1+ | 0.1+ | 2002 11 05 | 704 | 0.3− | 0.8+ | 2004 03 18 | 704 | 0.9+ | 0.5+ |
| 2000 03 03 | 704 | 0.3+ | 0.7+ | 2002 11 05 | 704 | 0.1+ | 0.4+ | 2004 03 18 | 704 | 1.2+ | 0.1+ |
| 2000 03 03 | 704 | 0.5− | 0.1+ | 2002 11 05 | 704 | 0.5− | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.9− |
| 2000 03 03 | 704 | 0.3+ | 0.3+ | 2002 11 05 | 704 | 0.4+ | 0.6+ | 2004 03 20 | 704 | 0.2+ | 1.2+ |
| 2000 03 03 | 704 | 0.3+ | 0.1+ | 2002 11 08 | 704 | 0.6+ | 0.0 | 2004 03 20 | 704 | 0.6− | 0.4+ |
| 2000 03 03 | 704 | 0.7+ | 0.2+ | 2002 11 08 | 704 | (1.0− | 1.7+) | 2004 03 20 | 704 | 1.2+ | 0.4+ |
| 2000 03 11 | 704 | 0.4− | 0.4− | 2002 11 08 | 704 | 0.3+ | 1.0+ | 2004 03 20 | 704 | 1.0+ | 0.5+ |
| 2000 03 11 | 704 | 0.2− | 0.5− | 2002 11 08 | 704 | 0.6− | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.4+ |
| 2000 03 11 | 704 | 1.6− | 0.9+ | 2002 11 08 | 704 | (1.6− | 2.7+) | 2004 03 27 | 704 | 0.2+ | 0.1+ |
| 2000 03 11 | 704 | 0.0 | 0.4+ | 2002 11 12 | 704 | 0.8+ | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.9+ |
| 2000 03 11 | 704 | 0.4− | 0.4+ | 2002 11 12 | 704 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 0.2− | 0.4− |
| 2000 03 11 | 699 | 0.2− | 0.7+ | 2002 11 12 | 704 | 0.2− | 0.9+ | 2004 03 27 | 704 | 0.1+ | 1.3+ |
| 2000 03 11 | 699 | 0.1− | 0.3+ | 2002 11 12 | 704 | 0.2+ | 1.2− | 2004 04 28 | 691 | 0.4+ | 0.5+ |
| 2000 03 11 | 699 | 1.0+ | 0.1+ | 2002 11 12 | 704 | 0.3+ | 0.5+ | 2004 04 28 | 691 | 0.0 | 0.6+ |
| 2000 03 11 | 699 | 1.0− | 0.2+ | 2002 11 13 | 704 | 0.5− | 1.2+ | 2004 04 28 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.7− | 0.8+ | 2002 11 13 | 704 | 1.0− | 0.6+ | 2005 06 26 | G96 | 0.7− | 0.9+ |
| 2002 10 04 | 704 | 0.7− | 1.1− | 2002 11 13 | 704 | 1.1− | 0.1− | 2005 06 26 | G96 | 0.2− | 1.1+ |
| 2002 10 04 | 704 | (0.2+ | 1.7+) | 2002 11 13 | 704 | 0.1− | 0.0 | 2005 06 26 | G96 | 0.6− | 0.5+ |
| 2002 10 04 | 704 | 0.2+ | 0.7+ | 2002 11 13 | 644 | 0.1− | 0.3+ | 2005 06 26 | G96 | 0.2− | 0.9+ |
| 2002 10 04 | 704 | 0.3− | 0.8+ | 2002 11 13 | 644 | 0.2− | 0.2+ | 2005 07 07 | 691 | 0.1+ | 0.4+ |
| 2002 10 08 | 699 | 0.3− | 0.0 | 2002 11 13 | 644 | 0.3− | 0.3− | 2005 07 07 | 691 | 0.2− | 0.4+ |
| 2002 10 08 | 699 | 0.5− | 0.6+ | 2002 11 14 | 704 | 0.8− | 0.7+ | 2005 07 07 | 691 | 0.3− | 0.4+ |
| 2002 10 08 | 699 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.4− |
| 2002 10 08 | 699 | (0.9− | 1.5+) | 2002 11 14 | 704 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.7− | 0.5− |
| 2002 10 09 | 704 | 0.7+ | 0.2+ | 2002 11 14 | 704 | 0.6− | 0.5− | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2002 10 09 | 704 | 0.4+ | 0.4− | 2002 11 23 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 1.3− | 0.3+ |
| 2002 10 09 | 704 | (2.7+ | 0.2+) | 2002 11 23 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 2.3+ | 0.2+ |
| 2002 10 09 | 704 | 0.4− | 0.2− | 2002 11 23 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2002 10 12 | 704 | 0.1− | 0.6+ | 2003 01 05 | 704 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2003 01 05 | 704 | 0.7+ | 0.9+ | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2002 10 12 | 704 | 0.9− | 0.5+ | 2003 01 05 | 704 | 0.3+ | 1.3+ | 2006 11 22 | 691 | 1.0− | 0.3− |
| 2002 10 12 | 704 | 0.7+ | 0.4+ | 2003 01 05 | 704 | 0.9+ | 1.1+ | 2006 11 22 | 691 | 0.9+ | 0.3− |
| 2002 10 28 | 644 | 0.0 | 1.2+ | 2004 03 17 | 704 | 0.3− | 0.5+ | 2006 11 22 | 691 | 0.3− | 0.2− |
| 2002 10 28 | 644 | 0.0 | 1.4+ | 2004 03 17 | 704 | 1.3+ | 1.3+ | | | | |

**(138050)∗ 2000 $DJ_{34}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.51824 | | (2000.0) | | | |
| $n$ | 0.26056072 | $\omega$ | 229.27101 | | +0.24262849 | −0.97008663 |
| $a$ | 2.4277097 | $\Omega$ | 206.69042 | | +0.89532287 | +0.22707307 |
| $e$ | 0.1542490 | $i$ | 1.01526 | | +0.37353496 | +0.08584724 |
| $P$ | 3.78 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.2+ | 0.3− | 2002 10 07 | 704 | 1.0− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 1998 09 14 | 691 | 0.2+ | 0.3− | 2002 10 07 | 704 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.4− |
| 1998 09 14 | 691 | 0.5+ | 0.1− | 2002 10 07 | 704 | 0.6− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1998 09 20 | 691 | 0.6+ | 0.6− | 2002 10 12 | 704 | 0.3+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1998 09 20 | 691 | 0.5+ | 0.5− | 2002 10 12 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 1998 09 20 | 691 | 0.3+ | 0.5+ | 2002 10 12 | 704 | (0.3+ | 2.0+) | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 1998 09 21 | 691 | 0.0 | 0.4− | 2004 03 21 | 291 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.1+ |
| 1998 09 21 | 691 | 0.3− | 0.1− | 2004 03 21 | 291 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 1998 09 21 | 691 | 0.5− | 0.6− | 2004 03 21 | 291 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2000 02 07 | 691 | 0.5− | 0.5− | 2004 03 29 | 691 | 0.5+ | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2000 02 07 | 691 | 0.0 | 0.6− | 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2000 02 07 | 691 | 0.4− | 0.4− | 2004 03 29 | 691 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2000 02 29 | 704 | 0.5+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 1.0+ | 1.2+ |
| 2000 02 29 | 704 | 1.0+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.6+ |
| 2000 02 29 | 704 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.3+ | 0.5+ |
| 2000 03 03 | 704 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.3− | 1.1+ |
| 2000 03 03 | 704 | 1.9+ | 0.4+ | 2006 10 12 | 691 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2000 03 03 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 691 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2000 03 29 | 691 | 0.4− | 0.3− | 2006 10 12 | 691 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2000 03 29 | 691 | 0.3− | 0.0 | 2006 10 12 | 691 | 0.6− | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.0+ |
| 2000 03 29 | 691 | 0.6− | 0.4− | 2006 10 12 | 691 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2002 09 26 | 644 | 0.8− | 1.0+ | 2006 10 16 | 691 | 0.6+ | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2002 09 26 | 644 | 0.8− | 1.0+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 09 26 | 644 | 0.9− | 1.0+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2002 10 01 | 608 | 0.5− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.9+ | 1.1− |
| 2002 10 01 | 608 | 1.0− | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.9+ | 2006 11 21 | 704 | 0.1+ | 0.5− |
| 2002 10 01 | 608 | 0.3− | 1.4+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 1.5+ | 0.5− |
| 2002 10 02 | 704 | 0.3+ | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2002 10 02 | 704 | 0.2+ | 0.9+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.6− | 0.5+ |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.1+ | 0.5+ |
| 2002 10 02 | 704 | 1.1− | 0.7+ | 2006 10 27 | G96 | 0.4+ | 0.6− | 2006 11 27 | 703 | 2.3− | 2.3+ |
| 2002 10 03 | 704 | 0.9− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.9− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.7+ | 0.5− |
| 2002 10 03 | 704 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 1.4− |
| 2002 10 03 | 704 | 1.2− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.6+ | 1.3− |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.5− |

**(138051)∗ 2000 $DM_{34}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 286.66799 | | (2000.0) | | | |
| $n$ | 0.25364284 | $\omega$ | 325.69101 | | −0.36101489 | −0.93202501 |
| $a$ | 2.4716538 | $\Omega$ | 145.44105 | | +0.86760666 | −0.34809634 |
| $e$ | 0.0640219 | $i$ | 3.19194 | | +0.34194580 | −0.10078848 |
| $P$ | 3.89 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 29 | 691 | 0.1+ | 1.1− | 2003 12 21 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.5− |
| 1995 11 29 | 691 | 0.2− | 0.9− | 2003 12 21 | 704 | 1.4+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.6− |
| 1995 11 29 | 691 | 0.4− | 0.5− | 2003 12 21 | 704 | 0.8+ | 0.8− | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2000 02 04 | 704 | 0.6− | 0.1+ | 2003 12 21 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 1.5− | 0.1− |
| 2000 02 04 | 704 | 0.0 | 0.1+ | 2004 01 18 | 703 | 0.8− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2000 02 04 | 704 | 0.4− | 0.4+ | 2004 01 18 | 703 | 0.5− | 0.9− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2000 02 04 | 704 | 0.4− | 0.8+ | 2004 01 18 | 703 | 0.4+ | 0.4− | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2000 02 11 | 704 | (1.2− | 2.1+) | 2004 01 18 | 703 | 0.8+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.5+ | 0.1− | 2004 01 31 | 599 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2000 02 11 | 704 | 1.2− | 1.3+ | 2004 01 31 | 599 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2000 02 11 | 704 | 0.8+ | 0.4− | 2004 02 02 | 333 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2000 02 11 | 704 | 0.6+ | 0.3+ | 2004 02 02 | 333 | 0.8− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2000 02 25 | 703 | 0.3+ | 0.4+ | 2004 02 02 | 333 | 0.7− | 0.5− | 2006 10 15 | A44 | 0.4− | 0.3− |
| 2000 02 25 | 703 | 0.3− | 0.1− | 2004 02 14 | 333 | 0.0 | 0.4+ | 2006 10 15 | A44 | 0.1− | 0.1+ |
| 2000 02 25 | 703 | 0.0 | 0.0 | 2004 02 14 | 333 | 0.6− | 0.3+ | 2006 10 16 | 683 | 0.0 | 0.4− |
| 2000 02 25 | 703 | 0.4− | 0.4− | 2004 02 14 | 333 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2000 02 29 | 704 | 0.4+ | 0.2+ | 2004 02 14 | 703 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.9− | 0.6− |
| 2000 02 29 | 704 | 0.6+ | 0.5+ | 2004 02 14 | 703 | 0.1− | 0.7− | 2006 10 16 | 683 | 0.7+ | 1.4+ |
| 2000 02 29 | 704 | 0.4+ | 0.3+ | 2004 02 14 | 703 | 0.4+ | 0.1− | 2006 10 16 | 703 | 1.2− | 0.1+ |
| 2000 02 29 | 704 | 0.6+ | 0.0 | 2004 02 14 | 703 | 0.6− | 0.5− | 2006 10 16 | 703 | 0.3− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.7+ | 0.5+ | 2004 02 18 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 683 | (0.2+ | 1.9+) |
| 2000 03 03 | 704 | 0.1+ | 0.1+ | 2004 02 18 | 704 | 0.5+ | 0.2− | 2006 10 16 | A44 | 0.3− | 0.2− |
| 2000 03 03 | 704 | 0.2− | 0.1− | 2004 02 18 | 704 | 0.0 | 1.1− | 2006 10 17 | A44 | 0.0 | 0.1+ |
| 2000 03 03 | 704 | 0.3− | 0.1+ | 2004 02 18 | 704 | 0.1− | 1.2− | 2006 10 17 | A44 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.2− | 0.1− | 2004 02 18 | 704 | 1.1+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.6− |
| 2000 03 03 | 704 | 0.8− | 0.4− | 2004 02 20 | 608 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.3− | 0.4− |
| 2000 03 05 | 704 | 0.3+ | 0.7+ | 2004 02 20 | 608 | 0.7+ | 0.5− | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2000 03 05 | 704 | 0.9+ | 0.3+ | 2004 02 20 | 608 | 1.1+ | 0.5− | 2006 10 17 | G96 | 0.3− | 0.5− |
| 2000 03 05 | 704 | 1.8+ | 0.2+ | 2004 03 14 | 703 | 0.8+ | 0.0 | 2006 10 18 | A44 | 0.3− | 0.1+ |
| 2000 03 05 | 704 | 0.0 | 1.1+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 10 18 | A44 | 0.2− | 0.0 |
| 2000 03 06 | 608 | 0.2− | 0.2− | 2004 03 14 | 703 | 0.0 | 0.1+ | 2006 10 18 | A44 | 0.5− | 0.1+ |
| 2000 03 06 | 608 | 0.2− | 0.6− | 2004 03 14 | 703 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 2000 03 06 | 608 | 0.3− | 1.1− | 2004 03 14 | 703 | 0.8+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.2− | 0.6+ | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 0.0 | 0.6+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.6− | 0.9+ | 2004 03 15 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.1− | 0.7+ | 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.2+ | 0.5+ | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2000 03 11 | 699 | 0.1− | 0.6− | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2000 03 11 | 699 | 0.3− | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.5− |
| 2000 03 11 | 699 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.1− | 2006 10 27 | 704 | 1.0+ | 1.4+ |
| 2000 03 11 | 699 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.0 | 2006 10 27 | 704 | (1.9+ | 1.9+) |
| 2000 03 25 | 706 | (5.9− | 0.3+) | 2004 03 19 | 704 | 1.2+ | 0.2+ | 2006 10 27 | 704 | (1.7+ | 0.6+) |
| 2000 03 25 | 706 | 0.1− | 0.8+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 704 | 0.9− | 0.5+ |
| 2002 10 01 | 704 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 704 | 0.2+ | 1.4+ |
| 2002 10 01 | 704 | 0.1− | 0.6+ | 2004 03 20 | 699 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.3− |
| 2002 10 01 | 704 | 0.1− | 0.2+ | 2004 03 20 | 699 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2002 10 01 | 704 | (1.7− | 0.1−) | 2004 03 20 | 699 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3− |
| 2002 10 02 | 704 | 0.1+ | 0.9+ | 2004 03 20 | 699 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.5+ | 0.5+ | 2004 03 22 | 704 | (1.9+ | 0.0 ) | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.7− | 0.8+ | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 0.0 | 1.2+ | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.5− | 1.0+ | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.3− | 1.0+ | 2004 03 22 | 704 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.6+ | 0.9+ | 2004 03 28 | 691 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.7− |
| 2002 10 03 | 704 | 0.1+ | 1.1+ | 2004 03 28 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 2002 10 03 | 704 | 0.4+ | 0.9+ | 2004 03 28 | 691 | 0.5− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 10 11 | 644 | 0.4− | 0.2+ | 2004 03 28 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2002 10 11 | 704 | 0.7− | 1.0+ | 2004 03 28 | 704 | (0.3− | 1.8−) | 2006 11 13 | 703 | 0.7− | 0.4− |
| 2002 10 11 | 644 | 0.5− | 0.2+ | 2004 03 28 | 704 | 0.6+ | 1.3− | 2006 11 13 | 703 | 0.5− | 0.3− |
| 2002 10 11 | 704 | 0.6− | 0.3+ | 2004 03 28 | 704 | 0.7+ | 0.7+ | 2006 11 13 | 703 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.7− | 1.0+ | 2004 03 28 | 704 | 0.5− | 0.7+ | 2006 11 13 | 703 | 0.8+ | 0.3− |
| 2002 10 11 | 704 | 0.6− | 0.9+ | 2004 04 12 | 703 | 0.3− | 0.6− | 2006 11 13 | 644 | 0.3+ | 0.2− |
| 2002 10 11 | 704 | (0.3+ | 1.7+) | 2004 04 12 | 703 | 0.1− | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 10 11 | 644 | 0.6− | 0.2+ | 2004 04 12 | 703 | 1.2− | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.2− |
| 2002 10 31 | 704 | 0.2+ | 0.1− | 2004 04 12 | 703 | 0.5− | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2002 10 31 | 704 | 0.4− | 0.3− | 2004 04 14 | 699 | 0.7− | 1.0+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2002 10 31 | 704 | 0.5+ | 0.0 | 2004 04 14 | 699 | 1.0− | 1.1− | 2006 11 16 | G96 | 0.4+ | 0.7− |
| 2002 10 31 | 704 | 0.6− | 0.3+ | 2004 04 14 | 699 | 0.1− | 0.7− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2002 10 31 | 704 | 0.0 | 0.4+ | 2004 04 14 | 699 | 0.9− | 0.5+ | 2006 11 17 | 704 | 0.4+ | 0.4− |
| 2002 11 04 | 608 | 0.3− | 0.5− | 2004 05 13 | 704 | 0.5− | 0.4+ | 2006 11 17 | 704 | 0.4+ | 0.1+ |
| 2002 11 04 | 608 | 0.5− | 0.3− | 2004 05 13 | 704 | 0.0 | 1.0+ | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2002 11 04 | 608 | 0.5− | 0.3+ | 2004 05 13 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2004 05 13 | 704 | 0.0 | 0.6+ | 2006 11 17 | 704 | 0.5+ | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.6+ | 2004 05 21 | 704 | 0.0 | 1.1+ | 2006 11 20 | 704 | 0.3+ | 0.6+ |
| 2002 11 07 | 704 | 0.0 | 0.9+ | 2004 05 21 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.2− |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2004 05 21 | 704 | 1.0+ | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2002 11 11 | 704 | 0.3− | 0.2+ | 2004 05 21 | 704 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.5+ | 0.3+ | 2006 09 22 | 224 | (0.5+ | 1.6+) | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2002 11 11 | 704 | (0.3+ | 1.9+) | 2006 09 22 | 224 | (0.9+ | 1.8+) | | | | |
| 2002 11 11 | 704 | (1.5− | 1.7+) | 2006 09 22 | 224 | (2.2+ | 1.3+) | | | | |

**(138052)∗ 2000 DB$_{36}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.84360 | | (2000.0) | | | |
| $n$ | 0.28911506 | $\omega$ | 106.61958 | | +0.10378580 | −0.99362903 |
| $a$ | 2.2651080 | $\Omega$ | 337.28480 | | +0.86366724 | +0.11194021 |
| $e$ | 0.0581566 | $i$ | 6.53237 | | +0.49326200 | +0.01306708 |
| $P$ | 3.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 25 | 703 | 1.0− | 0.5+ | 2003 01 04 | 704 | 0.9+ | 0.0 | 2005 10 22 | 683 | 0.1+ | 0.5+ |
| 2000 02 25 | 703 | 0.1+ | 0.1+ | 2005 08 30 | 644 | 0.3− | 0.2+ | 2005 10 24 | 683 | 0.6− | 0.5− |
| 2000 02 25 | 703 | 0.3+ | 0.8− | 2005 08 30 | 644 | 0.2− | 0.0 | 2005 10 24 | 683 | 0.0 | 0.6+ |
| 2000 02 25 | 703 | 0.3+ | 1.6+ | 2005 08 30 | 644 | 0.2− | 0.1+ | 2005 10 24 | 683 | 1.2− | 1.0+ |
| 2000 02 29 | 704 | 0.2+ | 0.8+ | 2005 09 23 | 691 | 0.6+ | 0.4+ | 2005 10 25 | 683 | 0.9− | 0.4− |
| 2000 02 29 | 704 | 0.2+ | 0.2+ | 2005 09 23 | 691 | 0.2+ | 0.2+ | 2005 10 25 | 683 | (0.9− | 1.7+) |
| 2000 02 29 | 704 | 0.6+ | 0.1− | 2005 09 23 | 691 | 0.1+ | 0.2+ | 2005 10 25 | 683 | 0.7− | 0.9+ |
| 2000 02 29 | 704 | 0.7+ | 0.7+ | 2005 09 23 | 703 | 1.1− | 0.3+ | 2005 10 27 | 703 | 0.1− | 1.2− |
| 2000 02 29 | 704 | 0.4+ | 0.2− | 2005 09 23 | 703 | 0.0 | 0.5+ | 2005 10 27 | 703 | 0.3− | 0.4− |
| 2000 03 03 | 704 | 0.7+ | 0.2+ | 2005 09 23 | 703 | 0.5− | 0.2+ | 2005 10 27 | 703 | 0.4− | 0.3− |
| 2000 03 03 | 704 | 1.1+ | 0.6+ | 2005 09 23 | 703 | 0.5− | 0.0 | 2005 10 27 | 703 | 0.4+ | 0.5− |
| 2000 03 03 | 704 | 0.6+ | 0.6+ | 2005 09 24 | 291 | 0.8+ | 0.0 | 2005 10 30 | 704 | 0.2− | 0.3+ |
| 2000 03 03 | 704 | 0.6+ | 0.6+ | 2005 09 24 | 291 | 0.8+ | 0.0 | 2005 10 30 | 704 | 0.4+ | 0.0 |
| 2000 03 03 | 704 | 0.1+ | 0.3+ | 2005 09 24 | 291 | 0.5+ | 0.3− | 2005 10 30 | 704 | 0.6− | 0.6+ |
| 2000 03 11 | 704 | 0.8+ | 0.7+ | 2005 09 30 | 699 | 0.1+ | 0.2− | 2005 10 30 | 704 | 0.1+ | 0.6+ |
| 2000 03 11 | 704 | 1.7+ | 0.3+ | 2005 09 30 | 699 | 0.5+ | 0.6+ | 2005 11 02 | 704 | 0.7+ | 1.1− |
| 2000 03 11 | 704 | 0.9+ | 0.6+ | 2005 09 30 | 699 | 0.5− | 0.2− | 2005 11 02 | 704 | 1.0+ | 0.2− |
| 2000 03 11 | 704 | 1.2+ | 0.5+ | 2005 10 03 | 691 | 0.2− | 0.1+ | 2005 11 02 | 704 | (2.5− | 0.1+) |
| 2000 03 11 | 699 | 0.5+ | 0.2+ | 2005 10 03 | 691 | 0.1− | 0.1+ | 2005 11 02 | 704 | 0.3− | 1.0− |
| 2000 03 11 | 699 | 0.7+ | 0.5− | 2005 10 03 | 691 | 0.1− | 0.2+ | 2005 11 02 | 704 | 0.2+ | 0.8+ |
| 2000 03 11 | 699 | 0.6+ | 1.0+ | 2005 10 03 | 704 | 1.0+ | 1.3+ | 2005 11 03 | 703 | (0.5+ | 1.8−) |
| 2000 03 11 | 699 | 0.4+ | 0.5+ | 2005 10 03 | 704 | 0.3+ | 0.3+ | 2005 11 03 | G96 | 0.6+ | 0.8− |
| 2000 03 25 | 691 | 0.1− | 0.1− | 2005 10 03 | 704 | 0.4+ | 0.6+ | 2005 11 03 | G96 | 0.9+ | 0.5− |
| 2000 03 25 | 691 | 0.2− | 0.0 | 2005 10 03 | 704 | 0.2+ | 0.5+ | 2005 11 03 | 703 | 0.7+ | 1.2− |
| 2000 03 25 | 691 | 0.2− | 0.3+ | 2005 10 08 | 704 | 0.5− | 0.2+ | 2005 11 03 | G96 | 1.0+ | 0.6− |
| 2000 03 29 | 691 | 0.4− | 0.1− | 2005 10 08 | 703 | 0.5− | 0.3+ | 2005 11 03 | G96 | 0.3− | 0.4− |
| 2000 03 29 | 691 | 1.0− | 0.5− | 2005 10 08 | 703 | 0.5− | 0.1− | 2005 11 03 | G96 | 0.2− | 0.4− |
| 2000 03 29 | 691 | 0.6− | 0.3− | 2005 10 08 | 704 | 0.3− | 0.3− | 2005 11 03 | G96 | 0.1+ | 0.3− |
| 2001 07 23 | 644 | 0.1− | 0.5+ | 2005 10 08 | 703 | 0.3− | 0.3− | 2005 11 03 | 703 | 1.2+ | 0.1− |
| 2001 07 23 | 644 | 0.2− | 0.7+ | 2005 10 08 | 703 | 0.7− | 0.3− | 2005 11 03 | G96 | 0.3+ | 0.3− |
| 2001 07 23 | 644 | 0.2− | 0.5+ | 2005 10 08 | 704 | 0.2− | 0.5− | 2005 11 03 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.7− | 0.3+ | 2005 10 08 | 704 | 1.3− | 0.2+ | 2005 11 03 | 703 | 0.3− | 0.4− |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2005 10 08 | 704 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.5− | 0.1+ | 2005 10 09 | 691 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.7− | 0.3− | 2005 10 09 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2002 12 15 | 704 | 0.2− | 0.2+ | 2005 10 09 | 691 | 0.4− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2002 12 15 | 704 | 0.5− | 0.1+ | 2005 10 13 | 691 | 0.5− | 0.2+ | 2006 11 24 | G96 | 0.9− | 0.1− |
| 2002 12 15 | 704 | 0.1+ | 0.4− | 2005 10 13 | 691 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.7− |
| 2002 12 15 | 704 | 0.1+ | 0.4− | 2005 10 13 | 691 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.5− | 0.1− |
| 2003 01 04 | 704 | 0.7+ | 0.2− | 2005 10 22 | 683 | 0.0 | 0.9− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2003 01 04 | 704 | 0.8+ | 0.3− | 2005 10 22 | 683 | (1.5+ | 0.5−) | | | | |

**(138053)∗ 2000 DL$_{37}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 142.49316 | | (2000.0) | | | |
| $n$ | 0.24085083 | $\omega$ | 139.05523 | | −0.55598231 | +0.83043359 |
| $a$ | 2.5584128 | $\Omega$ | 97.13759 | | −0.77164050 | −0.49977775 |
| $e$ | 0.0472239 | $i$ | 2.05314 | | −0.30895729 | −0.24617526 |
| $P$ | 4.09 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 09 | 691 | 0.0 | 0.6− | 2002 11 06 | 704 | 0.3− | 0.4− | 2004 02 23 | 704 | 0.1− | 0.4+ |
| 1992 04 09 | 691 | 1.0− | 0.1− | 2002 11 06 | 704 | 0.4− | 0.1− | 2004 02 23 | 704 | 0.3− | 0.7+ |
| 1992 04 09 | 691 | 0.0 | 0.1− | 2002 11 06 | 704 | 0.5− | 0.2+ | 2004 03 19 | 704 | 0.7+ | 0.5− |
| 1996 01 26 | 691 | 0.1+ | 0.0 | 2002 11 06 | 608 | 0.1− | 0.6− | 2004 03 19 | 704 | 1.0+ | 0.7+ |
| 1996 01 26 | 691 | 0.1+ | 0.4− | 2002 11 06 | 608 | 0.2− | 0.5− | 2004 03 19 | 704 | 0.5+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 26 | 691 | 0.3+ | 0.1− | 2002 11 06 | 608 | 0.2− | 1.0− | 2004 03 19 | 704 | 0.8+ | 0.2+ | | |
| 1998 10 12 | 691 | 0.1+ | 0.1− | 2002 11 10 | 704 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.5+ | 1.1+ | | |
| 1998 10 12 | 691 | 0.6− | 0.5− | 2002 11 10 | 704 | 0.2+ | 1.0+ | 2006 09 19 | 691 | 0.1− | 0.3+ | | |
| 2000 02 11 | 704 | 0.1− | 1.2+ | 2002 11 10 | 704 | 0.6− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.2+ | | |
| 2000 02 11 | 704 | 1.8+ | 0.4+ | 2002 11 22 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | | |
| 2000 02 11 | 704 | 0.1+ | 0.5+ | 2002 11 22 | 644 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.2+ | | |
| 2000 02 11 | 704 | (1.0+ | 2.0+) | 2002 11 22 | 644 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.3− | 0.3+ | | |
| 2000 02 25 | 703 | 0.3− | 0.6+ | 2002 12 01 | 704 | 0.4+ | 0.6+ | 2006 09 23 | 691 | 0.1− | 0.2+ | | |
| 2000 02 25 | 703 | 0.7+ | 0.1− | 2002 12 01 | 704 | 0.8+ | 1.2+ | 2006 09 27 | 704 | 0.2+ | 0.0 | | |
| 2000 02 25 | 703 | 0.4+ | 0.8+ | 2002 12 01 | 704 | 0.3+ | 0.6− | 2006 09 27 | 704 | 0.1− | 0.6+ | | |
| 2000 02 25 | 703 | 0.1− | 0.3+ | 2002 12 01 | 704 | 0.8+ | 0.2− | 2006 09 27 | 704 | (0.7+ | 1.6+) | | |
| 2000 02 29 | 704 | 0.7+ | 0.4− | 2003 12 21 | 645 | 0.1− | 0.3− | 2006 09 27 | 691 | 0.2+ | 0.2− | | |
| 2000 02 29 | 704 | 1.2+ | 0.4+ | 2003 12 21 | 645 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.2− | | |
| 2000 02 29 | 704 | 0.1− | 0.2+ | 2004 01 22 | 704 | 0.5− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1− | | |
| 2000 02 29 | 704 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 2000 02 29 | 704 | 0.4+ | 0.8− | 2004 01 22 | 704 | 0.1+ | 0.5− | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2000 03 03 | 704 | 0.5+ | 0.7+ | 2004 01 22 | 704 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.1− | | |
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2004 01 23 | 699 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2000 03 03 | 704 | 0.2+ | 0.6+ | 2004 01 23 | 699 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.6+ | 2004 01 23 | 699 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2000 03 04 | 704 | 0.3− | 0.5− | 2004 01 23 | 699 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2000 03 04 | 704 | 0.5+ | 0.4+ | 2004 01 30 | 704 | 1.1+ | 0.6− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2000 03 04 | 704 | 0.7+ | 0.7+ | 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.7+ | 1.0+ | | |
| 2000 03 04 | 704 | 0.3+ | 0.5+ | 2004 01 30 | 704 | (2.1+ | 0.0 ) | 2006 10 21 | 703 | 0.4+ | 0.6+ | | |
| 2000 03 05 | 704 | 0.2+ | 0.0 | 2004 01 30 | 704 | 0.4+ | 0.6− | 2006 10 21 | 703 | 0.2+ | 1.2+ | | |
| 2000 03 05 | 704 | 0.2− | 0.6− | 2004 01 30 | 704 | 0.0 | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.4− | | |
| 2000 03 05 | 704 | 0.6− | 0.6+ | 2004 01 30 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.2− | | |
| 2000 03 05 | 704 | 0.0 | 0.4+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.9+ | 0.1− | | |
| 2000 03 05 | 704 | 0.1− | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2000 03 06 | 704 | 0.1+ | 0.1− | 2004 02 10 | 333 | 0.7− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2000 03 06 | 704 | 0.5− | 0.2+ | 2004 02 10 | 333 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 2000 03 06 | 704 | 0.2+ | 0.7− | 2004 02 10 | 333 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.5+ | 0.0 | | |
| 2000 03 12 | 704 | 0.4− | 1.0+ | 2004 02 10 | 703 | 0.5− | 0.9− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2000 03 12 | 704 | 0.2+ | 0.5− | 2004 02 10 | 703 | 0.7+ | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.1− | | |
| 2000 03 12 | 704 | 0.4− | 0.3− | 2004 02 10 | 703 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.0 | | |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2004 02 10 | 703 | 1.4+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.0 | | |
| 2002 10 03 | 704 | 0.5− | 0.4+ | 2004 02 12 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4− | | |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2004 02 12 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2002 10 03 | 704 | 1.0+ | 1.5+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− | | |
| 2002 10 11 | 704 | (1.6− | 1.0+) | 2004 02 12 | 333 | 0.8− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2002 10 11 | 704 | 0.8− | 0.9+ | 2004 02 12 | 333 | 0.9− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.0 | | |
| 2002 10 11 | 704 | 1.5− | 0.7− | 2004 02 12 | 333 | 0.7− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.4− | | |
| 2002 10 26 | 608 | 0.8+ | 0.4+ | 2004 02 12 | 333 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.2− | | |
| 2002 10 26 | 608 | 1.0+ | 0.1− | 2004 02 12 | 333 | 1.1− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.2− | | |
| 2002 10 26 | 608 | 1.0+ | 0.5+ | 2004 02 12 | 333 | 0.9− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2002 11 01 | 704 | 0.1+ | 1.0+ | 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2002 11 01 | 704 | 0.1+ | 0.6− | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2002 11 01 | 704 | 1.1+ | 0.2− | 2004 02 13 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2002 11 01 | 704 | 0.8+ | 0.2+ | 2004 02 16 | 704 | 0.9+ | 1.0+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 01 | 608 | 0.8− | 0.6+ | 2004 02 16 | 704 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.2− | | |
| 2002 11 01 | 608 | 0.9− | 0.9+ | 2004 02 16 | 704 | 0.6+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.0 | | |
| 2002 11 01 | 608 | 0.1− | 0.3− | 2004 02 16 | 704 | 0.9+ | 0.3+ | 2006 11 27 | 703 | 0.5+ | 0.2− | | |
| 2002 11 05 | 704 | (2.4− | 0.7−) | 2004 02 16 | 704 | 0.6+ | 0.0 | 2006 11 27 | 703 | 0.5+ | 0.8− | | |
| 2002 11 05 | 704 | 0.1+ | 0.6− | 2004 02 21 | 049 | 0.1+ | 0.7− | 2006 11 27 | 703 | 0.0 | 1.2− | | |
| 2002 11 05 | 704 | 0.6+ | 0.2− | 2004 02 21 | 049 | 0.4+ | 0.7− | 2006 11 27 | 703 | 0.4− | 1.4− | | |
| 2002 11 06 | 704 | 1.1− | 1.0+ | 2004 02 21 | 049 | 0.1+ | 0.5− | | | | | | |
| 2002 11 06 | 704 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.3− | 0.5+ | | | | | | |

**(138054)∗ 2000 DC$_{38}$ = 2005 EU$_{116}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74734)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.56298 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21599860 | $\omega$ | 43.09658 | | −0.93740967 | +0.33366149 | |
| $a$ | 2.7510728 | $\Omega$ | 155.84853 | | −0.34684403 | −0.92012123 | |
| $e$ | 0.1247807 | $i$ | 14.09854 | | +0.03102140 | −0.20505347 | |
| $P$ | 4.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 14 | 691 | 0.1− | 0.4− | 2005 03 31 | 683 | 0.1+ | 1.3− | 2005 06 13 | 699 | 0.5+ | 0.6− | | |
| 2000 02 14 | 691 | 0.2− | 0.3− | 2005 03 31 | 683 | 0.7− | 1.0− | 2005 06 13 | 699 | 0.9+ | 0.5− | | |
| 2000 02 14 | 691 | 0.1− | 0.4− | 2005 03 31 | 683 | 0.5− | 0.9− | 2005 06 13 | 699 | 0.3− | 0.2− | | |
| 2000 02 29 | 704 | 0.5+ | 1.0+ | 2005 04 01 | 683 | 0.4+ | 0.7− | 2005 06 13 | 699 | 0.8+ | 0.1+ | | |
| 2000 02 29 | 704 | 0.2+ | 0.7+ | 2005 04 01 | 683 | (1.6+ | 1.6−) | 2005 07 28 | A50 | 0.9+ | 0.4− | | |
| 2000 02 29 | 704 | 0.2+ | 0.1− | 2005 04 01 | 683 | (2.6− | 0.4−) | 2005 07 28 | A50 | 0.9+ | 0.4− | | |
| 2000 02 29 | 704 | 0.4+ | 0.1+ | 2005 04 04 | 703 | 0.2− | 0.6− | 2006 08 13 | 644 | 0.2− | 0.2− | | |
| 2000 02 29 | 704 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.3− | 2006 08 13 | 644 | 0.1− | 0.2− | | |
| 2000 03 03 | 704 | 0.4+ | 0.5+ | 2005 04 04 | 703 | 0.0 | 0.4− | 2006 08 13 | 644 | 0.2− | 0.1+ | | |
| 2000 03 03 | 704 | 0.1+ | 0.5+ | 2005 04 04 | 703 | 0.0 | 0.3+ | 2006 08 16 | A50 | 0.3− | 0.1+ | | |
| 2000 03 03 | 704 | 0.6− | 0.7+ | 2005 04 13 | 703 | 0.3− | 0.3+ | 2006 08 16 | A50 | 0.0 | 0.3+ | | |
| 2000 03 03 | 704 | (0.5− | 2.9+) | 2005 04 13 | 703 | 0.1+ | 0.2− | 2006 08 18 | 644 | 0.3− | 0.4+ | | |
| 2000 03 03 | 704 | 1.0+ | 0.1+ | 2005 04 13 | 703 | 0.5− | 0.0 | 2006 08 18 | 644 | 0.1− | 0.3+ | | |
| 2000 03 04 | 704 | 0.4− | 1.0+ | 2005 04 13 | 703 | 0.5− | 0.2+ | 2006 08 18 | 644 | 0.3− | 0.0 | | |
| 2000 03 04 | 704 | 0.2+ | 0.1+ | 2005 04 20 | 699 | 1.1+ | 1.1+ | 2006 08 19 | 691 | 0.3+ | 0.4+ | | |
| 2000 03 04 | 704 | (0.4+ | 2.1+) | 2005 04 20 | 699 | 0.9− | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.2+ | | |
| 2000 03 04 | 704 | 0.0 | 1.1+ | 2005 04 20 | 699 | 0.5+ | 0.3+ | 2006 08 19 | 699 | 0.6− | 0.8+ | | |
| 2000 03 05 | 704 | 0.1+ | 0.6+ | 2005 04 20 | 699 | 0.9+ | 0.0 | 2006 08 19 | 691 | 0.2+ | 0.2+ | | |
| 2000 03 05 | 704 | 0.9− | 0.2− | 2005 05 03 | 703 | 0.3− | 0.1− | 2006 08 19 | 699 | 0.4+ | 0.7+ | | |
| 2000 03 05 | 704 | 0.3+ | 0.0 | 2005 05 03 | 703 | 0.5− | 0.4− | 2006 08 19 | 644 | 0.2− | 0.0 | | |
| 2000 03 05 | 704 | 0.6− | 0.5− | 2005 05 03 | 703 | 0.4− | 0.6+ | 2006 08 19 | 699 | 0.5− | 0.4− | | |
| 2000 03 05 | 704 | 0.1+ | 0.0 | 2005 05 03 | 703 | 1.3− | 0.2− | 2006 08 19 | 644 | 0.3− | 0.1+ | | |
| 2000 03 11 | 704 | 0.4− | 0.4+ | 2005 05 03 | 608 | 0.1− | 0.7+ | 2006 08 19 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 11 | 704 | 0.0 | 0.6+ | 2005 05 03 | 608 | 0.2− | 0.8+ | 2006 08 19 | 699 | 0.2− | 0.6− | | |
| 2000 03 11 | 704 | 0.2− | 0.8+ | 2005 05 03 | 608 | 0.1− | 0.6+ | 2006 08 22 | 644 | 0.2− | 0.2+ | | |
| 2000 03 11 | 699 | 0.9+ | 0.3+ | 2005 05 09 | 703 | 0.4+ | 0.2− | 2006 08 22 | 644 | 0.4− | 0.0 | | |
| 2000 03 11 | 704 | 0.6+ | 0.7+ | 2005 05 09 | 703 | 0.1− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.0 | | |
| 2000 03 11 | 704 | 0.4+ | 1.5+ | 2005 05 09 | 703 | 0.1− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.2+ | | |
| 2000 03 11 | 699 | 0.2− | 0.6+ | 2005 05 09 | 703 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.2+ | | |
| 2000 03 11 | 699 | 0.2+ | 0.8+ | 2005 05 13 | 704 | 0.4+ | 0.4− | 2006 08 28 | 691 | 0.0 | 0.2+ | | |
| 2000 03 11 | 699 | 0.1+ | 0.4+ | 2005 05 13 | 704 | 0.0 | 0.9+ | 2006 08 28 | 703 | 0.0 | 1.0− | | |
| 2004 02 18 | 704 | 0.4+ | 1.1+ | 2005 05 13 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.5+ | | |
| 2004 02 18 | 704 | 0.3+ | 0.2+ | 2005 05 13 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 703 | 1.5+ | 1.2− | | |
| 2004 02 18 | 704 | 0.1+ | 0.4− | 2005 05 13 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | (2.7− | 2.6−) | | |
| 2005 03 04 | 703 | 1.5− | 0.2+ | 2005 05 19 | 703 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 2005 03 04 | 703 | 0.7− | 1.1− | 2005 05 19 | 703 | (1.7− | 0.3−) | 2006 09 25 | G96 | 0.3+ | 0.2− | | |
| 2005 03 04 | 703 | 0.2+ | 0.3+ | 2005 05 19 | 703 | 0.3− | 0.7− | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 2005 03 04 | 703 | 0.4− | 0.7− | 2005 05 19 | 703 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2005 03 10 | 703 | 0.0 | 0.3− | 2005 06 01 | 704 | 1.1+ | 0.3+ | 2006 09 30 | G96 | 0.6− | 1.1+ | | |
| 2005 03 10 | 703 | 0.1− | 0.4− | 2005 06 01 | 704 | 1.1+ | 0.3+ | 2006 09 30 | G96 | 0.5− | 0.0 | | |
| 2005 03 10 | 703 | 0.6− | 0.1+ | 2005 06 01 | 704 | 0.6+ | 0.3+ | 2006 09 30 | G96 | 0.6− | 0.2+ | | |
| 2005 03 10 | 703 | 0.1− | 0.0 | 2005 06 01 | 704 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.5− | 0.0 | | |

**(138055)∗ 2000 DM$_{38}$ = 2004 CY$_{68}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60609)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.71748 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23758765 | $\omega$ | 259.45839 | | −0.70430603 | +0.70932267 | |
| $a$ | 2.5817854 | $\Omega$ | 325.71069 | | −0.62990378 | −0.64297621 | |
| $e$ | 0.0943731 | $i$ | 2.90351 | | −0.32737478 | −0.28886493 | |
| $P$ | 4.15 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.1− | 0.6+ | 2002 10 15 | 644 | 0.3− | 0.3+ | 2004 02 29 | 691 | 0.1− | 0.1− | | |
| 2000 02 11 | 704 | 0.4− | 1.2+ | 2002 10 15 | 644 | 0.3− | 0.2+ | 2004 02 29 | 691 | 0.1− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | (2.8− | 1.6+) | 2002 10 15 | 644 | 0.2− | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.2+ | | |
| 2000 02 11 | 691 | 0.0 | 0.2− | 2004 01 24 | 704 | 0.7+ | 1.4+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 2000 02 11 | 691 | 0.0 | 0.3− | 2004 01 24 | 704 | 0.3+ | 1.3+ | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2000 02 11 | 691 | 0.1+ | 0.0 | 2004 01 24 | 704 | 1.3+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.3− | | |
| 2000 02 29 | 704 | 1.4+ | 0.7+ | 2004 01 24 | 704 | 1.2+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | | |
| 2000 02 29 | 704 | 0.3+ | 0.6+ | 2004 01 24 | 704 | 0.2+ | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.3+ | | |
| 2000 02 29 | 704 | 0.7− | 0.5+ | 2004 01 31 | 691 | 0.1− | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.0 | | |
| 2000 02 29 | 704 | 0.5+ | 1.0+ | 2004 01 31 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.2+ | | |
| 2000 02 29 | 704 | 0.0 | 0.6+ | 2004 01 31 | 691 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.3+ | 0.1+ | | |
| 2000 03 03 | 704 | 0.7− | 0.0 | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.1+ | | |
| 2000 03 03 | 704 | 0.2+ | 0.1− | 2004 02 11 | 691 | 0.3− | 0.1− | 2006 10 17 | 703 | 1.2− | 0.2+ | | |
| 2000 03 03 | 704 | 0.1− | 0.8+ | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 10 17 | 703 | (3.2− | 1.4+) | | |
| 2000 03 03 | 704 | 0.2+ | 0.4− | 2004 02 11 | 291 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.9− | 0.6+ | | |
| 2000 03 05 | 704 | (1.2− | 2.6+) | 2004 02 11 | 291 | 0.2− | 0.2− | 2006 10 17 | 703 | (1.8− | 1.0+) | | |
| 2000 03 05 | 704 | 0.7− | 1.2+ | 2004 02 11 | 291 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.7− | 0.3− | | |
| 2000 03 05 | 704 | 0.9+ | 1.4+ | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2000 03 05 | 704 | 0.1− | 0.9+ | 2004 02 16 | 704 | (0.1+ | 2.1+) | 2006 11 10 | 691 | 0.1− | 0.1− | | |
| 2000 03 11 | 704 | 0.3+ | 0.9− | 2004 02 16 | 704 | (1.3− | 1.9+) | 2006 11 13 | 691 | 0.8− | 0.4+ | | |
| 2000 03 11 | 704 | 0.7+ | 1.0− | 2004 02 22 | 704 | 0.2− | 0.7− | 2006 11 13 | 691 | 0.1− | 0.1+ | | |
| 2000 03 11 | 704 | 0.6+ | 0.6− | 2004 02 22 | 704 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.5+ | 0.1− | | |
| 2001 06 30 | 644 | 0.2− | 1.0+ | 2004 02 22 | 704 | 0.5+ | 1.3− | 2006 11 16 | 691 | 0.1− | 0.1− | | |
| 2001 06 30 | 644 | 0.4− | 1.1+ | 2004 02 22 | 695 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2001 06 30 | 644 | 0.3− | 0.5+ | 2004 02 22 | 695 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.4− | | |

**(138056)∗ 2000 DN$_{38}$ = 2002 RC$_{78}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34898)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.31514 | | (2000.0) | | | |
| $n$ | 0.25201958 | $\omega$ | 238.15393 | | +0.68728066 | −0.72627518 |
| $a$ | 2.4822558 | $\Omega$ | 168.40252 | | +0.68642857 | +0.64349894 |
| $e$ | 0.1991603 | $i$ | 3.71484 | | +0.23761548 | +0.24173016 |
| $P$ | 3.91 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 14 | 691 | 0.3− | 0.2− | 2002 10 06 | 704 | 0.7+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.1− | | |
| 2000 02 14 | 691 | 0.1− | 0.1− | 2002 10 06 | 704 | 0.8+ | 0.2− | 2006 09 27 | 704 | (1.9+ | 0.1−) | | |
| 2000 02 14 | 691 | 0.3− | 0.1− | 2002 10 06 | 704 | 0.9+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.3+ | | |
| 2000 02 29 | 704 | 1.0+ | 1.2+ | 2002 10 07 | 704 | (2.5− | 0.5+) | 2006 09 27 | 704 | 0.1+ | 0.7− | | |
| 2000 02 29 | 704 | 0.3+ | 0.4+ | 2002 10 07 | 704 | (1.6− | 0.5+) | 2006 09 27 | 704 | 0.5+ | 0.1− | | |
| 2000 02 29 | 704 | 1.0+ | 1.3+ | 2002 10 07 | 704 | (2.6− | 0.1−) | 2006 09 27 | 691 | 0.1+ | 0.1− | | |
| 2000 03 03 | 704 | 0.1− | 1.5+ | 2004 02 26 | 704 | 0.1+ | 1.2+ | 2006 09 27 | 704 | 0.6+ | 0.5− | | |
| 2000 03 03 | 704 | 0.5+ | 0.8+ | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 1.2+ | 0.8− | | |
| 2000 03 03 | 704 | 0.9+ | 1.9+ | 2004 02 26 | 704 | 0.4+ | 1.1+ | 2006 09 28 | 704 | 0.4+ | 1.1+ | | |
| 2000 03 03 | 704 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 09 28 | 704 | 1.2− | 1.3+ | | |
| 2000 03 25 | 691 | 0.2− | 0.3+ | 2004 03 18 | 704 | (1.0+ | 2.3+) | 2006 09 28 | 704 | 0.8+ | 0.0 | | |
| 2000 03 25 | 691 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.9+ | 1.1+ | 2006 09 28 | 704 | 0.4+ | 0.0 | | |
| 2000 03 25 | 691 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.0 | 1.1+ | 2006 09 30 | 291 | 0.1− | 0.1− | | |
| 2000 03 29 | 691 | 0.2+ | 0.4− | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 30 | 291 | 0.1− | 0.2− | | |
| 2000 03 29 | 691 | 0.1− | 0.3− | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 30 | 291 | 0.1− | 0.1− | | |
| 2000 03 29 | 691 | 0.2+ | 0.1− | 2006 07 21 | G96 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.1− | 0.1+ | | |
| 2000 04 08 | 691 | 0.1+ | 0.4− | 2006 07 21 | G96 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.2− | 0.0 | | |
| 2000 04 08 | 691 | 0.1+ | 0.6− | 2006 09 12 | 703 | 0.8+ | 0.1− | 2006 10 01 | 704 | 0.7− | 0.6+ | | |
| 2000 04 08 | 691 | 0.0 | 0.2− | 2006 09 12 | 703 | 0.0 | 1.4− | 2006 10 01 | 704 | 0.1− | 0.3+ | | |
| 2002 09 05 | 704 | 0.1+ | 1.0+ | 2006 09 12 | 703 | 0.0 | 0.9− | 2006 10 01 | 704 | 0.0 | 0.8+ | | |
| 2002 09 05 | 704 | 0.7− | 0.0 | 2006 09 12 | 703 | 0.4− | 0.3− | 2006 10 03 | G92 | 0.2− | 0.5− | | |
| 2002 09 05 | 704 | 0.3− | 0.6+ | 2006 09 17 | 704 | 0.8+ | 0.9+ | 2006 10 03 | G92 | 0.5− | 0.6− | | |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.8+ | 0.3+ | 2006 10 03 | G92 | 0.5+ | 0.4− | | |
| 2002 09 05 | 704 | 0.3− | 0.3+ | 2006 09 17 | 704 | 1.0+ | 0.0 | 2006 10 12 | 644 | 0.4− | 0.1− | | |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2006 09 17 | 704 | 0.0 | 1.0− | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2002 09 07 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 699 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 09 07 | 704 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.4+ | 1.4+ | | |
| 2002 09 07 | 704 | 0.5+ | 1.1+ | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 17 | 703 | (0.5+ | 2.1+) | | |
| 2002 09 07 | 704 | 0.4− | 1.0+ | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 17 | 703 | (0.2− | 2.6+) | | |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.5+ | | |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.4− | 0.1+ | | |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2002 09 15 | 644 | 0.5− | 0.9+ | 2006 09 20 | 704 | 1.0− | 0.8+ | 2006 10 19 | 644 | 0.6− | 0.2− | | |
| 2002 09 15 | 644 | 0.4− | 0.9+ | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2002 09 15 | 644 | 0.4− | 0.8+ | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2002 10 01 | 699 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.5− | | |
| 2002 10 01 | 699 | 1.0− | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 10 01 | 699 | 0.2− | 0.6+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2002 10 01 | 699 | 0.7− | 0.9+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 10 03 | 704 | 1.5− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2002 10 03 | 704 | 0.0 | 1.0+ | 2006 09 26 | G96 | 0.2− | 0.6− | 2006 11 17 | G96 | 0.3− | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.6− | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 2002 10 03 | 704 | 0.8+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.4− | | | | | | |
| 2002 10 06 | 704 | 0.0 | 0.1− | 2006 09 27 | 704 | 1.2+ | 0.3+ | | | | | | |

**(138057)∗ 2000 DQ$_{38}$ = 2002 RY$_{225}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 214.95825 | | (2000.0) | | | |
| $n$ | 0.22424230 | $\omega$ | 140.86655 | | −0.43882003 | −0.89279080 |
| $a$ | 2.6832287 | $\Omega$ | 334.66871 | | +0.75310662 | −0.30361821 |
| $e$ | 0.0466859 | $i$ | 13.76345 | | +0.49017079 | −0.33277707 |
| $P$ | 4.40 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 09 | 691 | 0.1+ | 0.2+ | 2002 09 06 | 704 | 0.6− | 0.5− | 2003 12 29 | 704 | 0.2+ | 0.8− | | |
| 1993 09 09 | 691 | 0.1+ | 0.2− | 2002 09 06 | 704 | 0.1+ | 0.5+ | 2003 12 30 | 704 | 0.2− | 0.3+ | | |
| 1993 09 09 | 691 | 0.0 | 0.1− | 2002 09 06 | 704 | 0.1+ | 0.5+ | 2003 12 30 | 704 | 1.0+ | 0.4+ | | |
| 2000 02 11 | 704 | 0.4− | 0.8− | 2002 09 13 | 644 | 0.5− | 0.4+ | 2003 12 30 | 704 | (2.2+ | 0.9−) | | |
| 2000 02 11 | 704 | 0.0 | 0.1− | 2002 09 13 | 644 | 0.8− | 0.4+ | 2003 12 30 | 704 | 0.6− | 1.1+ | | |
| 2000 02 11 | 704 | 0.1+ | 0.2− | 2002 09 13 | 644 | 0.6− | 0.3+ | 2003 12 30 | 704 | (2.1+ | 0.7−) | | |
| 2000 02 25 | 703 | 0.3+ | 0.1+ | 2002 09 17 | 608 | (1.8− | 0.2+) | 2003 12 30 | 704 | 0.0 | 0.3− | | |
| 2000 02 25 | 703 | 0.2− | 0.9+ | 2002 09 17 | 608 | (2.0− | 0.1+) | 2003 12 30 | 704 | 0.2− | 0.1+ | | |
| 2000 02 25 | 703 | 1.2+ | 1.2− | 2002 09 17 | 608 | (2.0− | 0.3−) | 2003 12 30 | 704 | 0.1− | 0.3− | | |
| 2000 02 25 | 703 | 0.4+ | 0.4− | 2002 10 05 | 704 | 0.3+ | 1.1+ | 2003 12 30 | 704 | 0.1− | 0.2+ | | |
| 2000 02 29 | 704 | 1.2− | 1.3+ | 2002 10 05 | 704 | (1.7− | 1.0+) | 2003 12 30 | 704 | 0.9+ | 0.7− | | |
| 2000 02 29 | 704 | 0.1− | 0.5+ | 2002 10 05 | 704 | 0.5+ | 1.1+ | 2004 01 19 | 704 | 0.1− | 0.2+ | | |
| 2000 02 29 | 704 | 0.1− | 0.2+ | 2002 10 05 | 704 | 1.2− | 0.7− | 2004 01 19 | 704 | 0.6− | 0.2+ | | |
| 2000 02 29 | 704 | 0.7+ | 0.4+ | 2002 10 05 | 704 | 0.5− | 0.3+ | 2004 01 19 | 704 | 0.5+ | 0.2− | | |
| 2000 02 29 | 704 | 0.4− | 0.2+ | 2003 12 17 | 704 | 0.1− | 0.4+ | 2004 01 19 | 704 | 0.3− | 0.3+ | | |
| 2000 03 03 | 704 | 0.5+ | 0.7+ | 2003 12 17 | 704 | 0.4− | 0.7+ | 2004 01 19 | 704 | 0.3− | 0.4+ | | |
| 2000 03 03 | 704 | 0.3+ | 0.7+ | 2003 12 17 | 704 | 0.3− | 0.7− | 2006 08 12 | 644 | 0.0 | 0.5+ | | |
| 2000 03 03 | 704 | 0.6− | 0.3− | 2003 12 17 | 704 | 0.1+ | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.3+ | | |
| 2000 03 04 | 704 | 1.6+ | 0.0 | 2003 12 28 | 704 | 0.7+ | 0.2− | 2006 08 12 | 644 | 0.2− | 0.5+ | | |
| 2000 03 04 | 704 | 0.2+ | 1.0+ | 2003 12 28 | 704 | 0.0 | 0.5− | 2006 08 21 | 807 | 0.2− | 0.3+ | | |
| 2000 03 04 | 704 | 0.6+ | 0.2+ | 2003 12 28 | 704 | 1.1+ | 0.2+ | 2006 08 21 | 807 | 0.1+ | 0.4+ | | |
| 2000 03 04 | 704 | 1.1+ | 0.4+ | 2003 12 28 | 704 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.7− | 0.3+ | | |
| 2000 03 05 | 704 | 0.2− | 0.0 | 2003 12 28 | 704 | 0.1− | 0.9− | 2006 10 20 | G96 | 0.1− | 0.3+ | | |
| 2000 03 05 | 704 | 0.3− | 0.6+ | 2003 12 29 | 704 | 0.2+ | 0.8− | 2006 10 20 | G96 | 0.7− | 1.1+ | | |
| 2000 03 05 | 704 | 0.4− | 0.4+ | 2003 12 29 | 704 | (0.2− | 2.6−) | 2006 10 20 | G96 | 0.0 | 0.4+ | | |
| 2000 03 05 | 704 | 0.8+ | 1.8+ | 2003 12 29 | 704 | (2.9+ | 0.5+) | | | | | | |
| 2002 09 06 | 704 | 0.3− | 0.6− | 2003 12 29 | 704 | 1.1− | 0.9− | | | | | | |

**(138058)∗ 2000 DX$_{38}$ = 2002 TD$_{289}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.74776 | | (2000.0) | | +0.88343677 | −0.46625425 |
| $n$ | 0.27466425 | $\omega$ | 74.59328 | | +0.40183697 | +0.80479014 |
| $a$ | 2.3438760 | $\Omega$ | 313.17280 | | +0.24096997 | +0.36731431 |
| $e$ | 0.2491573 | $i$ | 3.64228 | | | |
| $P$ | 3.59 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 29 | 691 | 0.3+ | 0.6+ | 2002 10 12 | 704 | 0.3− | 0.8+ | 2002 12 28 | 699 | 0.8+ | 0.1+ |
| 1998 06 29 | 691 | 0.5+ | 0.9+ | 2002 11 03 | 704 | 0.3− | 0.1+ | 2002 12 28 | 699 | 0.8− | 0.2− |
| 1998 06 29 | 691 | 0.4+ | 0.6+ | 2002 11 03 | 704 | 0.8− | 0.4+ | 2002 12 28 | 699 | 0.5− | 0.0 |
| 1998 06 30 | 691 | (0.4− | 2.3+) | 2002 11 03 | 704 | 0.9− | 0.1+ | 2002 12 31 | 699 | 0.3− | 0.7+ |
| 1998 06 30 | 691 | 0.8− | 0.6+ | 2002 11 08 | 704 | 0.4+ | 0.1+ | 2002 12 31 | 704 | 0.4− | 0.3+ |
| 1998 06 30 | 691 | 1.1− | 0.7+ | 2002 11 08 | 704 | 0.5+ | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.0 |
| 1998 07 02 | 691 | 0.1+ | 0.4+ | 2002 11 08 | 704 | 0.3+ | 0.3+ | 2002 12 31 | 699 | 0.2+ | 0.3+ |
| 1998 07 02 | 691 | 0.3+ | 0.4+ | 2002 11 08 | 704 | 0.4+ | 0.1+ | 2002 12 31 | 704 | 0.8+ | 0.1− |
| 1998 07 02 | 691 | 0.7− | 1.0− | 2002 11 12 | 704 | (3.3− | 0.3+) | 2002 12 31 | 704 | 0.2+ | 0.2+ |
| 2000 02 29 | 704 | 1.0+ | 0.2+ | 2002 11 12 | 704 | 0.4− | 0.0 | 2002 12 31 | 699 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | (2.5+ | 1.2+) | 2002 11 12 | 704 | 1.1− | 1.3+ | 2002 12 31 | 704 | 0.1+ | 1.0− |
| 2000 02 29 | 704 | 1.0+ | 1.1+ | 2002 11 12 | 704 | 0.8− | 0.6− | 2002 12 31 | 699 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.1+ | 0.3+ | 2002 11 14 | 704 | 0.9− | 0.1− | 2003 01 05 | 704 | 0.4− | 0.0 |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2002 11 14 | 704 | 1.1− | 0.0 | 2003 01 05 | 704 | 0.2+ | 0.4− |
| 2000 03 03 | 704 | 0.2+ | 0.6+ | 2002 11 14 | 704 | 1.1− | 0.1+ | 2003 01 05 | 704 | 0.3+ | 0.0 |
| 2000 03 03 | 704 | 0.6− | 1.0+ | 2002 11 14 | 704 | 1.0− | 0.1− | 2003 01 05 | 704 | 0.5+ | 0.5+ |
| 2000 03 03 | 704 | 0.3− | 0.4+ | 2002 11 14 | 704 | 0.6− | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.3− |
| 2000 03 03 | 688 | 0.0 | 0.6+ | 2002 11 15 | 644 | 0.8+ | 0.2+ | 2003 01 20 | 644 | 0.5+ | 0.8+ |
| 2000 03 03 | 688 | 0.4+ | 0.4+ | 2002 11 15 | 644 | 0.0 | 0.2− | 2003 01 20 | 644 | 0.7+ | 0.6+ |
| 2000 03 11 | 704 | 0.0 | 0.5+ | 2002 11 15 | 644 | 0.3+ | 0.3− | 2003 01 20 | 644 | 0.7+ | 0.8+ |
| 2000 03 11 | 704 | 0.4+ | 0.3+ | 2002 11 27 | 699 | 0.3− | 0.1+ | 2003 01 28 | 644 | 0.3− | 0.6+ |
| 2000 03 11 | 704 | 0.4+ | 0.5+ | 2002 11 27 | 699 | 0.1− | 0.5+ | 2003 01 28 | 644 | 0.3− | 0.6+ |
| 2000 03 11 | 704 | 0.5+ | 0.0 | 2002 11 27 | 699 | 0.3− | 0.1+ | 2003 01 28 | 644 | 0.2− | 0.8+ |
| 2000 04 04 | 688 | 0.1− | 0.8+ | 2002 11 27 | 699 | 0.1− | 0.3+ | 2003 02 01 | 704 | (0.0 | 1.7+) |
| 2000 04 04 | 688 | 0.5+ | 0.7+ | 2002 12 02 | 704 | 0.4− | 0.3+ | 2003 02 01 | 704 | 1.1− | 0.6+ |
| 2002 09 06 | 704 | 0.6+ | 1.1− | 2002 12 02 | 704 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.1− | 0.5+ |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2002 12 02 | 704 | 0.2+ | 0.0 | 2003 02 01 | 704 | 0.3− | 0.4+ |
| 2002 09 06 | 704 | 1.2+ | 0.1− | 2002 12 02 | 704 | 0.3+ | 0.2+ | 2003 02 04 | 704 | 0.8+ | 1.3+ |
| 2002 10 04 | 704 | 0.4− | 0.6− | 2002 12 02 | 704 | 0.2+ | 0.2+ | 2003 02 04 | 704 | (0.9− | 1.7+) |
| 2002 10 04 | 704 | 0.9+ | 0.2+ | 2002 12 06 | 704 | 0.2+ | 0.1− | 2003 02 04 | 704 | 0.7+ | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2002 12 06 | 704 | 0.1+ | 0.1− | 2003 02 04 | 704 | 0.3+ | 0.3+ |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2002 12 06 | 704 | 0.2+ | 0.2− | 2004 04 16 | 644 | 0.0 | 1.2+ |
| 2002 10 04 | 704 | 0.3− | 0.7+ | 2002 12 06 | 704 | 0.0 | 0.5− | 2004 04 16 | 644 | 0.4+ | 1.0+ |
| 2002 10 04 | 699 | 0.3+ | 0.0 | 2002 12 06 | 704 | 0.0 | 0.2− | 2004 04 16 | 644 | 0.3− | 0.9+ |
| 2002 10 04 | 699 | 0.2− | 0.8+ | 2002 12 11 | 644 | 0.1+ | 0.9− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2002 10 04 | 699 | 0.0 | 0.3+ | 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2002 10 04 | 699 | 0.0 | 0.2+ | 2002 12 11 | 644 | 0.1− | 0.9− | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2002 10 10 | 704 | 0.6− | 0.2− | 2002 12 11 | 704 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2002 10 10 | 704 | 0.0 | 0.3+ | 2002 12 11 | 644 | 0.1− | 0.8− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2002 10 10 | 704 | (0.2+ | 1.5+) | 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2002 10 10 | 704 | 0.6+ | 0.5+ | 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2002 10 10 | 704 | (0.1+ | 1.8+) | 2002 12 11 | 704 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.4− | 2002 12 27 | 644 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 1.4+ | 0.9+ | 2002 12 27 | 644 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.2− |
| 2002 10 12 | 704 | 0.2− | 0.1+ | 2002 12 27 | 644 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2002 10 12 | 704 | 1.2+ | 0.7+ | 2002 12 28 | 699 | 1.0− | 0.1− | | | | |

**(138059)∗ 2000 DA$_{39}$ = 1998 RN$_{36}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 39451)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.02810 | | (2000.0) | | +0.54183963 | −0.83764301 |
| $n$ | 0.25825354 | $\omega$ | 91.91861 | | +0.71537041 | +0.50273375 |
| $a$ | 2.4421474 | $\Omega$ | 324.98809 | | +0.44119722 | +0.21357190 |
| $e$ | 0.1302333 | $i$ | 6.90941 | | | |
| $P$ | 3.82 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.7+ | 1.1+ | 2002 10 05 | 704 | 0.1− | 0.3+ | 2004 03 27 | 703 | 1.2− | 1.2+ |
| 1998 09 14 | 704 | 1.4− | 1.5+ | 2002 10 05 | 704 | 0.4+ | 0.1− | 2004 03 27 | 703 | 0.9+ | 0.6− |
| 1998 09 14 | 704 | 0.9+ | 0.6− | 2002 10 05 | 704 | 0.3+ | 0.1− | 2004 03 27 | 703 | (0.7+ | 1.8+) |
| 1998 09 14 | 704 | 1.2− | 0.2− | 2002 10 07 | 704 | 0.7− | 0.0 | 2004 03 27 | 703 | 0.6+ | 0.4+ |
| 1998 09 16 | 699 | 0.7+ | 0.8+ | 2002 10 07 | 704 | 0.1− | 0.2+ | 2006 10 02 | 704 | 0.4+ | 0.1− |
| 1998 09 16 | 699 | 1.4+ | 0.1+ | 2002 10 07 | 704 | 0.4− | 0.3− | 2006 10 02 | 704 | 0.9+ | 0.3+ |
| 1998 09 16 | 699 | 1.0+ | 1.0+ | 2002 10 07 | 704 | 0.2− | 0.5− | 2006 10 02 | 704 | 0.5+ | 0.4+ |
| 1998 09 18 | 704 | 0.6− | 0.1− | 2002 10 07 | 704 | 0.9− | 0.4+ | 2006 10 02 | 704 | 0.1− | 0.5+ |
| 1998 09 18 | 704 | (0.1+ | 2.4−) | 2002 10 09 | 704 | 0.6− | 0.2− | 2006 10 02 | 704 | 0.7− | 0.9+ |
| 1998 09 18 | 704 | 0.7− | 1.6− | 2002 10 09 | 704 | 1.1− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.2− |
| 1998 09 18 | 704 | 0.0 | 1.8− | 2002 10 09 | 704 | 0.6− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.3− |
| 2000 02 29 | 704 | 0.3− | 1.2− | 2002 10 09 | 704 | 1.0− | 0.2+ | 2006 10 19 | 703 | 0.9− | 0.3− |
| 2000 02 29 | 704 | 0.1− | 0.9− | 2002 10 09 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | (0.2+ | 1.5−) |
| 2000 02 29 | 704 | 0.9+ | 0.4− | 2002 10 12 | 704 | 0.6+ | 1.4+ | 2006 10 23 | 703 | 1.3− | 0.2− |
| 2000 02 29 | 704 | 0.6− | 1.0− | 2002 10 12 | 704 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.2+ | 0.3+ |
| 2000 02 29 | 704 | 0.5− | 0.3− | 2002 10 12 | 704 | 0.8− | 0.1+ | 2006 10 23 | 703 | 0.4+ | 0.3− |
| 2000 03 03 | 704 | 0.1− | 0.0 | 2002 10 12 | 704 | 0.2+ | 0.8+ | 2006 10 23 | 703 | 0.1+ | 0.9+ |
| 2000 03 03 | 704 | 0.3− | 0.2+ | 2002 10 12 | 704 | 0.4+ | 0.5+ | 2006 10 29 | 703 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.0 | 0.3+ | 2002 10 31 | 644 | 0.4− | 1.1+ | 2006 10 29 | 703 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 0.2+ | 0.4+ | 2002 10 31 | 644 | 0.5− | 1.1+ | 2006 10 29 | 703 | 0.1− | 1.3− |
| 2000 03 03 | 704 | 0.4− | 0.1− | 2002 10 31 | 644 | 0.2− | 1.0+ | 2006 10 29 | 703 | 0.1+ | 0.1− |
| 2000 03 09 | 704 | 0.9+ | 0.9+ | 2002 11 06 | 704 | 0.7+ | 0.7+ | 2006 11 02 | G96 | 0.2+ | 0.5− |
| 2000 03 09 | 704 | 0.3+ | 0.5− | 2002 11 06 | 704 | 0.4− | 1.2+ | 2006 11 02 | G96 | 0.7− | 0.3− |
| 2000 03 09 | 704 | 0.5+ | 0.5− | 2002 11 06 | 704 | 0.1− | 1.2+ | 2006 11 02 | G96 | 0.4+ | 0.4− |
| 2000 03 09 | 704 | 0.9+ | 0.5+ | 2002 11 06 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 644 | 0.2− | 0.1+ |
| 2000 03 11 | 704 | 0.4+ | 0.4+ | 2002 11 12 | 644 | 0.2+ | 1.3− | 2006 11 11 | 644 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.5+ | 0.5+ | 2002 11 12 | 644 | 0.0 | 1.1− | 2006 11 11 | 644 | 0.3− | 0.2− |
| 2000 03 11 | 704 | 0.7+ | 0.9+ | 2002 11 12 | 644 | 0.0 | 0.7− | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2000 03 11 | 704 | 0.2+ | 0.5+ | 2002 12 05 | 704 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2000 03 11 | 699 | 0.2− | 0.1+ | 2002 12 05 | 704 | 0.8− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2000 03 11 | 704 | 0.3+ | 0.8+ | 2002 12 05 | 704 | 0.2− | 0.9+ | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2000 03 11 | 699 | 0.7− | 0.8+ | 2002 12 05 | 704 | 0.3+ | 0.8+ | 2006 11 15 | 704 | 0.5+ | 0.5− |
| 2000 03 11 | 699 | 1.2− | 0.9+ | 2004 03 16 | 703 | 0.4+ | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.2+ |
| 2000 03 11 | 699 | 0.4− | 0.7+ | 2004 03 16 | 703 | 0.1− | 1.4+ | 2006 11 15 | 704 | 0.3− | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2004 03 16 | 703 | 0.2+ | 0.8+ | 2006 11 15 | 704 | 0.6− | 1.0+ |
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2004 03 16 | 703 | 0.1+ | 0.4− | 2006 11 21 | 703 | 0.1+ | 0.2− |
| 2002 09 06 | 704 | 0.8− | 0.8− | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2006 11 21 | 703 | 0.2− | 0.5− |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2004 03 19 | 704 | (1.0+ | 1.8+) | 2006 11 21 | 703 | 0.1− | 0.6− |
| 2002 09 06 | 704 | 0.5+ | 0.7+ | 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.5− | 0.3+ |
| 2002 10 03 | 644 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.6− | 2006 11 29 | 704 | 1.0+ | 0.8− |
| 2002 10 03 | 644 | 0.5− | 0.5+ | 2004 03 26 | 699 | 0.3+ | 1.0+ | 2006 11 29 | 704 | 0.5+ | 1.0− |
| 2002 10 03 | 644 | 0.0 | 0.2+ | 2004 03 26 | 699 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.9+ | 0.6− |
| 2002 10 05 | 704 | 0.5− | 0.2+ | 2004 03 26 | 699 | 0.7+ | 0.1+ | 2006 11 29 | 704 | 1.6+ | 0.7− |
| 2002 10 05 | 704 | 0.4− | 0.3+ | 2004 03 26 | 699 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.3− |

**(138060)∗ 2000 DC$_{39}$ = 2004 BK$_{55}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56103)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.69757 | | (2000.0) | | −0.36819688 | +0.92847629 |
| $n$ | 0.23394850 | $\omega$ | 296.36250 | | −0.82804079 | −0.35124694 |
| $a$ | 2.6084902 | $\Omega$ | 311.94522 | | −0.42282325 | −0.12065392 |
| $e$ | 0.0969937 | $i$ | 3.74716 | | | |
| $P$ | 4.21 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.6+ | 0.3− | 2002 10 16 | 644 | 0.5− | 0.1− | 2004 02 16 | 704 | 0.8− | 0.4+ |
| 2000 02 29 | 704 | 0.5− | 0.4− | 2002 10 16 | 644 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.7+ | 0.1− |
| 2000 02 29 | 704 | 0.7− | 0.3+ | 2002 11 06 | 608 | 0.9+ | 0.5+ | 2004 02 16 | 704 | 0.3+ | 0.9+ |
| 2000 02 29 | 704 | 0.2− | 0.3+ | 2002 11 06 | 608 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.6+ | 0.7+ |
| 2000 02 29 | 704 | 0.0 | 1.3− | 2002 11 06 | 608 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.3− |
| 2000 02 29 | 704 | 0.5− | 1.5+ | 2003 12 22 | 291 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.8+ | 0.5− |
| 2000 02 29 | 704 | 0.6+ | 0.3+ | 2003 12 22 | 291 | 0.3− | 0.2+ | 2005 01 17 | 809 | 0.3+ | 0.3+ |
| 2000 02 29 | 704 | 0.5+ | 0.2+ | 2003 12 22 | 291 | 1.0− | 0.3+ | 2005 01 17 | 809 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.2− | 0.7− | 2004 01 22 | 704 | 0.1+ | 0.3+ | 2005 01 17 | 809 | 0.5+ | 0.1+ |
| 2000 02 29 | 704 | 0.5+ | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.2− |
| 2000 03 03 | 704 | 0.1− | 0.5− | 2004 01 22 | 704 | 1.2− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.1− | 0.2− | 2004 01 22 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.3+ |
| 2000 03 03 | 704 | 0.4+ | 0.7− | 2004 01 24 | 704 | (0.6+ | 2.5+) | 2006 09 30 | 703 | 1.3− | 0.3− |
| 2000 03 03 | 704 | 0.3− | 0.8− | 2004 01 24 | 704 | 0.5− | 1.1+ | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2000 03 03 | 704 | 0.4+ | 0.6− | 2004 01 24 | 704 | (1.2− | 3.0+) | 2006 10 03 | G96 | 0.4+ | 0.2− |
| 2000 03 11 | 704 | 0.3− | 1.3+ | 2004 01 24 | 704 | 0.3+ | 1.3+ | 2006 10 03 | G96 | 0.4+ | 0.1− |
| 2000 03 11 | 704 | 0.4+ | 0.5− | 2004 01 26 | 699 | 1.3+ | 1.3− | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 2000 03 11 | 704 | 1.1+ | 1.5+ | 2004 01 26 | 699 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2000 03 11 | 704 | 0.4+ | 0.2+ | 2004 01 26 | 699 | 0.8+ | 0.7− | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2000 03 11 | 704 | 0.4− | 0.1− | 2004 01 26 | 699 | (2.3+ | 0.9−) | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2001 07 10 | 644 | 0.2− | 0.5+ | 2004 02 11 | 691 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.2+ |
| 2001 07 10 | 644 | 0.5− | 0.7+ | 2004 02 11 | 691 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 07 10 | 644 | 0.7− | 0.6+ | 2004 02 11 | 691 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2002 10 16 | 644 | 0.6− | 0.4− | 2004 02 16 | 704 | (2.0+ | 0.6−) | 2006 11 17 | G96 | 0.2+ | 0.1− |

**(138061)∗ 2000 DE$_{39}$ = 2002 RM$_{78}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34898)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.00772 | | (2000.0) | | | |
| $n$ | 0.25910384 | $\omega$ | 260.34211 | | +0.32133333 | −0.94669497 |
| $a$ | 2.4368015 | $\Omega$ | 170.81782 | | +0.91496544 | +0.30421718 |
| $e$ | 0.2074838 | $i$ | 8.16422 | | +0.24409656 | +0.10592710 |
| $P$ | 3.80 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.1− | 0.5+ | 2002 10 03 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.4− |
| 2000 02 29 | 704 | 0.8+ | 0.0 | 2002 10 03 | 704 | (0.0 | 2.5+) | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 2000 02 29 | 704 | 1.3+ | 0.4− | 2002 10 11 | 704 | 0.3+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.5− |
| 2000 02 29 | 704 | 0.7+ | 0.4+ | 2002 10 11 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 2000 02 29 | 704 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.7− |
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2000 03 03 | 704 | (1.3+ | 2.1+) | 2004 02 26 | 704 | 1.2+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.1− |
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2004 02 26 | 704 | 0.8+ | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.3+ | 0.6+ | 2004 02 26 | 704 | 0.5+ | 1.1+ | 2006 10 01 | 704 | 0.1− | 0.9− |
| 2000 03 11 | 699 | (2.5+ | 1.5−) | 2004 02 26 | 704 | (1.1+ | 2.2+) | 2006 10 01 | 704 | 0.6+ | 0.8− |
| 2000 03 11 | 699 | 1.8+ | 1.2+ | 2004 03 15 | 703 | 0.8− | 1.1+ | 2006 10 01 | 704 | 0.8− | 1.2+ |
| 2000 03 11 | 699 | (2.2+ | 1.6+) | 2004 03 15 | 703 | 0.3+ | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2000 03 11 | 699 | 0.5− | 0.8+ | 2004 03 15 | 703 | (1.6+ | 0.5+) | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2000 04 06 | 691 | 0.5− | 0.1− | 2004 03 15 | 703 | 0.6− | 1.4+ | 2006 10 03 | G96 | 0.5+ | 0.3− |
| 2000 04 06 | 691 | 0.6− | 0.0 | 2004 03 22 | 704 | 0.8+ | 1.1+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2000 04 06 | 691 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.3− | 1.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 08 29 | 291 | 0.2− | 0.3+ | 2004 03 22 | 704 | (0.7+ | 2.0+) | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 08 29 | 291 | 0.2+ | 0.3+ | 2004 03 22 | 704 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2002 08 29 | 291 | 0.0 | 0.2+ | 2004 03 22 | 704 | (0.6− | 1.8+) | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2002 09 05 | 704 | 0.5− | 0.6− | 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.6− | 0.3− | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 1.2− | 0.1− | 2004 03 29 | 691 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.4− | 2004 04 25 | 691 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 1.2− | 0.6− | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.4− |
| 2002 09 07 | 704 | 0.9+ | 1.4+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.4+ | 0.6+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 1.2+ | 1.5+ | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.2+ |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.7+ | 0.3− |
| 2002 09 12 | 644 | 1.0− | 0.7+ | 2006 07 21 | G96 | 0.8− | 0.7− | 2006 10 22 | 703 | 0.2+ | 0.3− |
| 2002 09 12 | 644 | 0.6− | 0.7+ | 2006 09 06 | 644 | 0.3− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.1+ |
| 2002 09 12 | 644 | 0.5− | 0.8+ | 2006 09 06 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.8+ | 1.1+ | 2006 11 07 | 644 | 0.3− | 0.2− |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.6+ | 0.9+ | 2006 11 07 | 644 | 0.2− | 0.3− |
| 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.9+ | 2006 11 10 | 704 | 0.1− | 1.2+ |
| 2002 09 15 | 644 | 0.6− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.4+ | 2006 11 10 | 704 | 0.6− | 0.1+ |
| 2002 09 15 | 644 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 11 10 | 704 | 0.9− | 1.1+ |
| 2002 10 01 | 699 | 0.7− | 0.9+ | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 11 10 | 704 | 0.4− | 1.2+ |
| 2002 10 01 | 699 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.4− | 0.2+ | 2006 11 10 | 704 | 1.0− | 0.4+ |
| 2002 10 01 | 699 | 0.3+ | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.4+ | 0.6− |
| 2002 10 01 | 699 | 0.7+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.3+ | 2006 11 16 | 703 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.5+ | 2006 11 16 | 703 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.8+ | 1.3+ | 2006 09 30 | 703 | 0.5+ | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.6− |

**(138062)∗ 2000 DB$_{42}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.54011 | | (2000.0) | | | |
| $n$ | 0.27323458 | $\omega$ | 94.77674 | | +0.06737807 | −0.99771332 |
| $a$ | 2.3520449 | $\Omega$ | 351.35446 | | +0.90079059 | +0.06312441 |
| $e$ | 0.1812210 | $i$ | 2.02893 | | +0.42899476 | +0.02415441 |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 13 | 691 | 0.4− | 1.4+ | 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 04 22 | 691 | 0.3+ | 0.4+ |
| 1991 09 13 | 691 | 0.6− | 0.5+ | 2002 10 03 | 704 | 0.1+ | 0.6+ | 2005 07 07 | 691 | 0.1+ | 0.2+ |
| 1991 09 13 | 691 | 0.9− | 0.1+ | 2002 10 03 | 704 | 0.0 | 0.4+ | 2005 07 07 | 691 | 0.4− | 0.1− |
| 2000 02 06 | 691 | 0.0 | 0.4+ | 2002 10 11 | 704 | 0.6− | 0.1+ | 2005 07 07 | 691 | 0.5− | 0.1+ |
| 2000 02 06 | 691 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.4− | 0.6− | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2000 02 06 | 691 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.6− | 0.0 |
| 2000 02 29 | 704 | 0.6+ | 0.2− | 2002 10 11 | 704 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2000 02 29 | 704 | 0.5+ | 0.2+ | 2002 10 30 | 644 | 0.3− | 0.1− | 2006 10 23 | G96 | 0.5− | 0.4+ |
| 2000 02 29 | 704 | 0.5+ | 0.6+ | 2002 10 30 | 644 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.6− | 0.2− |
| 2000 02 29 | 704 | 0.2+ | 0.7+ | 2002 10 30 | 644 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2000 02 29 | 704 | 0.3− | 0.9+ | 2002 10 31 | 699 | 0.0 | 0.8− | 2006 10 23 | G96 | 0.7− | 0.8− |
| 2000 03 03 | 704 | 0.2+ | 1.2+ | 2002 10 31 | 699 | 0.2− | 0.6− | 2006 10 23 | G96 | 0.2− | 0.9− |
| 2000 03 03 | 704 | 1.1+ | 0.4+ | 2002 10 31 | 699 | 0.5− | 0.2+ | 2006 11 02 | G96 | 0.9− | 0.7− |
| 2000 03 03 | 704 | 0.3+ | 0.9+ | 2002 10 31 | 699 | 0.2− | 0.4+ | 2006 11 02 | G96 | 0.2+ | 0.0 |
| 2000 03 03 | 704 | 0.0 | 0.3+ | 2002 11 01 | 704 | 0.1− | 0.0 | 2006 11 02 | G96 | 0.3− | 0.2+ |
| 2000 03 03 | 704 | 0.1+ | 0.9− | 2002 11 01 | 704 | 0.5+ | 0.8+ | 2006 11 02 | G96 | 0.7− | 0.2− |
| 2000 03 11 | 704 | 1.4+ | 1.0+ | 2002 11 01 | 704 | 1.1+ | 0.3− | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.8+ | 0.8+ | 2002 11 22 | 644 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2000 03 11 | 704 | 0.4− | 0.1− | 2002 11 22 | 644 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.7− | 0.5− |
| 2002 10 02 | 704 | 0.8+ | 0.8− | 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2002 10 02 | 704 | 0.3+ | 1.1+ | 2002 12 07 | 291 | 0.3+ | 1.0+ | 2006 11 22 | G96 | 0.6− | 0.1− |
| 2002 10 02 | 704 | 0.2− | 0.2− | 2002 12 07 | 291 | 0.2+ | 0.6+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.9− | 2002 12 07 | 291 | 1.3+ | 0.8+ | 2006 11 22 | G96 | 0.5− | 0.1+ |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2004 04 22 | 691 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2004 04 22 | 691 | 0.9+ | 0.3+ | | | | |

**(138063)∗ 2000 DQ$_{43}$ = 2004 BF$_{37}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56104)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.69427 | | (2000.0) | | | |
| $n$ | 0.22971378 | $\omega$ | 275.66149 | | +0.23539042 | +0.97189023 |
| $a$ | 2.6404504 | $\Omega$ | 7.95755 | | −0.87817544 | +0.21469561 |
| $e$ | 0.0545213 | $i$ | 1.88498 | | −0.41641235 | +0.09661873 |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.2− | 0.4+ | 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2000 02 05 | 695 | 0.4− | 0.5+ | 2004 01 22 | 704 | 0.6− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2000 02 29 | 704 | 0.9+ | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.0 | 2006 09 13 | 644 | 0.7+ | 0.7+ |
| 2000 02 29 | 704 | 0.6+ | 1.2+ | 2004 01 22 | 704 | 0.4+ | 0.3− | 2006 09 13 | 644 | 0.1+ | 0.5+ |
| 2000 02 29 | 704 | 1.4+ | 0.9+ | 2004 01 22 | 704 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2000 02 29 | 704 | 0.1− | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.8− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2000 02 29 | 704 | 1.0+ | 0.3+ | 2004 01 30 | 704 | 0.4− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2000 03 03 | 704 | 0.0 | 1.0+ | 2004 01 30 | 704 | 0.1+ | 1.2+ | 2006 10 16 | G96 | 0.1− | 0.6− |
| 2000 03 03 | 704 | 0.1+ | 0.8+ | 2004 01 30 | 704 | 0.8+ | 0.8+ | 2006 10 16 | G96 | 0.6− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.7− | 0.8+ | 2004 01 30 | 704 | (0.6+ | 1.8+) | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2000 03 03 | 704 | 0.4+ | 0.2+ | 2004 04 14 | 645 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.5− | | |
| 2002 10 30 | 291 | 0.3− | 0.0 | 2004 04 14 | 645 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2002 10 30 | 291 | 0.2− | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2002 10 30 | 291 | 0.3− | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.3− | 0.3+ | | |
| 2002 11 04 | 291 | 0.2+ | 0.1+ | 2005 01 17 | 809 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 1.0+ | | |
| 2002 11 04 | 291 | 0.2+ | 0.1+ | 2005 01 17 | 809 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1+ | | |
| 2002 11 04 | 291 | 0.3+ | 0.1− | 2005 01 17 | 809 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.3− | | |
| 2004 01 16 | 644 | 0.5+ | 0.3+ | 2005 05 11 | 644 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.3− | | |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2005 05 11 | 644 | 0.1+ | 0.7+ | 2006 11 21 | G96 | 0.2− | 0.4− | | |
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.4− | | |

**(138064)∗ 2000 DD$_{45}$ = 2001 QF$_{43}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 15690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 100.38334 | | (2000.0) | | +0.19109200 | | +0.98115835 |
| $n$ | 0.23710080 | $\omega$ | 9.03366 | | −0.90234643 | | +0.16416721 |
| $a$ | 2.5853184 | $\Omega$ | 271.98658 | | −0.38633505 | | +0.10186965 |
| $e$ | 0.1437470 | $i$ | 1.63403 | | | | |
| $P$ | 4.16 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 07 | 691 | 0.8− | 0.0 | 2001 08 16 | 704 | 0.7− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 1992 04 07 | 691 | 0.6− | 0.6− | 2001 08 16 | 704 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 1992 04 07 | 691 | 0.5− | 1.0− | 2001 08 16 | 704 | 1.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 1993 09 14 | 691 | 0.4− | 0.2+ | 2001 08 19 | 704 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.3− | | |
| 1993 09 14 | 691 | 0.1− | 0.2+ | 2001 08 19 | 704 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.3− | 0.2− | | |
| 1993 09 14 | 691 | 0.2+ | 0.1+ | 2001 08 19 | 704 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.3− | | |
| 1997 07 30 | 910 | 1.1+ | 0.7+ | 2001 08 19 | 704 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.2+ | | |
| 1997 07 31 | 910 | 1.0+ | 0.6+ | 2001 08 19 | 704 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.1− | | |
| 1997 07 31 | 910 | 1.2+ | 1.2+ | 2002 12 10 | 704 | 0.6− | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.0 | | |
| 2000 02 29 | 704 | 0.4− | 0.5+ | 2002 12 10 | 704 | 0.1+ | 0.9+ | 2006 11 10 | 644 | 0.2− | 0.0 | | |
| 2000 02 29 | 704 | 0.6+ | 0.4+ | 2002 12 10 | 704 | 0.4+ | 1.4+ | 2006 11 10 | 644 | 0.2+ | 0.0 | | |
| 2000 02 29 | 704 | 1.6+ | 0.8+ | 2002 12 10 | 704 | 0.7+ | 0.0 | 2006 11 11 | 703 | 1.3+ | 0.3+ | | |
| 2000 02 29 | 704 | 0.3− | 1.1+ | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.4+ | | |
| 2000 02 29 | 704 | 0.6+ | 0.1− | 2004 01 30 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.3− | | |
| 2000 03 03 | 704 | 0.8+ | 1.1− | 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.4+ | | |
| 2000 03 03 | 704 | 0.8+ | 0.3− | 2004 02 11 | 644 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.5− | 0.8− | | |
| 2000 03 03 | 704 | 0.7+ | 0.9+ | 2004 02 11 | 644 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.0 | | |
| 2000 03 03 | 704 | 0.2+ | 0.6+ | 2004 02 11 | 644 | 1.0+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.6− | | |
| 2000 03 03 | 704 | 0.2− | 1.3+ | 2004 02 13 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2000 03 11 | 699 | 0.9+ | 0.3− | 2004 02 13 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.7− | | |
| 2000 03 11 | 699 | 0.7+ | 1.4− | 2004 02 13 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.3− | | |
| 2000 03 11 | 699 | (1.3+ | 2.9+) | 2005 01 22 | 809 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.5− | | |
| 2000 03 11 | 699 | 0.2− | 0.1+ | 2005 01 22 | 809 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.6+ | 0.5− | | |
| 2001 06 29 | 608 | 0.5− | 0.6− | 2005 01 22 | 809 | 0.6+ | 0.2− | 2006 11 17 | 703 | 1.5+ | 0.8− | | |
| 2001 06 29 | 608 | 0.4− | 0.5− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.0 | 1.1− | | |
| 2001 06 29 | 608 | 0.2− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 1.0− | 1.0− | | |
| 2001 07 21 | 608 | 0.5+ | 1.3− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 1.1− | 0.5+ | | |
| 2001 07 21 | 608 | 0.3+ | 0.9− | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.9− | 0.7+ | | |
| 2001 07 21 | 608 | 0.3+ | 0.7− | 2006 10 13 | 691 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.2+ | | |
| 2001 08 15 | 608 | 0.3− | 0.2+ | 2006 10 13 | 691 | 1.2− | 1.4− | 2006 11 21 | 704 | 0.4− | 0.2− | | |
| 2001 08 15 | 608 | 0.3− | 0.1− | 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.9− | | |
| 2001 08 15 | 608 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1+ | | | | | | |

**(138065)∗ 2000 DB$_{46}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 249.86797 | | (2000.0) | | −0.99914397 | | −0.02890687 |
| $n$ | 0.26039970 | $\omega$ | 279.33914 | | +0.03820888 | | −0.91903357 |
| $a$ | 2.4287104 | $\Omega$ | 259.00853 | | −0.01585560 | | −0.39311790 |
| $e$ | 0.1438518 | $i$ | 1.72747 | | | | |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.1− | 0.9+ | 2004 03 23 | 691 | 0.2+ | 0.0 | 2004 05 09 | 691 | 0.1+ | 0.1+ | | |
| 2000 02 02 | 704 | 0.2− | 1.1+ | 2004 03 23 | 691 | 0.0 | 0.0 | 2004 05 11 | 699 | (0.2− | 2.3−) | | |
| 2000 02 02 | 704 | 0.1− | 0.2− | 2004 03 25 | 699 | 0.4− | 0.0 | 2004 05 11 | 699 | 0.5− | 0.2+ | | |
| 2000 02 29 | 704 | 0.1− | 0.0 | 2004 03 25 | 699 | 0.3− | 0.1− | 2004 05 11 | 699 | (0.4+ | 1.7−) | | |
| 2000 02 29 | 704 | 0.5− | 0.2− | 2004 03 25 | 699 | (1.5− | 0.1+) | 2004 05 11 | 699 | 0.5− | 0.8+ | | |
| 2000 02 29 | 704 | 0.1+ | 0.4+ | 2004 03 25 | 699 | 0.9− | 0.6− | 2005 07 30 | 644 | 0.1− | 0.6+ | | |
| 2000 02 29 | 704 | 0.3+ | 0.1− | 2004 03 27 | 704 | 0.3+ | 0.6+ | 2005 07 30 | 644 | 0.2− | 0.5+ | | |
| 2000 02 29 | 704 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.6+ | 0.1− | 2005 07 30 | 644 | 0.7− | 0.3+ | | |
| 2000 03 03 | 704 | 0.1+ | 0.3− | 2004 03 27 | 704 | (1.7+ | 0.3+) | 2005 08 06 | 644 | 0.1+ | 0.6+ | | |
| 2000 03 03 | 704 | 0.0 | 0.9− | 2004 03 27 | 704 | 0.2+ | 0.2− | 2005 08 06 | 644 | 0.1+ | 0.5+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2005 08 06 | 644 | 0.4− | 0.6+ | | |
| 2000 03 03 | 704 | 0.0 | 0.4− | 2004 03 31 | 704 | 0.6+ | 0.7+ | 2005 08 24 | 644 | 0.2− | 0.5+ | | |
| 2000 03 03 | 704 | 0.2− | 0.9− | 2004 03 31 | 704 | 0.2+ | 0.7+ | 2005 08 24 | 644 | 0.4− | 0.5+ | | |
| 2000 03 11 | 704 | 0.4− | 1.0− | 2004 03 31 | 704 | (1.7− | 0.5+) | 2005 08 24 | 644 | 0.0 | 0.3+ | | |
| 2000 03 11 | 704 | 0.1+ | 0.3− | 2004 03 31 | 704 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.5+ | 0.4− | | |
| 2000 03 11 | 704 | 0.2+ | 0.2+ | 2004 03 31 | 704 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.6− | | |
| 2000 03 11 | 704 | 0.2+ | 0.3+ | 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.2− | | |
| 2000 03 11 | 704 | 0.3+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.3− | 2006 09 27 | G96 | 0.0 | 0.3− | | |
| 2000 03 27 | 699 | 0.8− | 0.8− | 2004 04 13 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2000 03 27 | 699 | 0.5− | 0.6− | 2004 04 17 | 704 | 0.6− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2000 03 27 | 699 | 0.1+ | 0.1− | 2004 04 17 | 704 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2000 03 27 | 699 | 0.5+ | 0.2+ | 2004 04 17 | 704 | 0.3− | 0.6+ | 2006 10 28 | G96 | 0.6− | 0.1+ | | |
| 2004 03 16 | 691 | 0.0 | 0.1− | 2004 04 17 | 704 | 0.2− | 0.6+ | 2006 11 11 | 691 | 0.3+ | 0.0 | | |
| 2004 03 16 | 691 | 0.2− | 0.1+ | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.0 | | |
| 2004 03 16 | 691 | 0.1− | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | (2.1+ | 0.7−) | | |
| 2004 03 18 | 704 | 0.8+ | 1.5+ | 2004 04 20 | 703 | 0.6− | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.2− | 0.1+ | 2004 04 20 | 703 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2004 03 18 | 704 | (0.4+ | 1.8−) | 2004 04 20 | 703 | (1.8+ | 1.4−) | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 20 | 699 | 1.3− | 0.5− | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2004 03 20 | 699 | 0.0 | 0.7+ | 2004 04 20 | 703 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 20 | 704 | 0.4+ | 0.8+ | 2004 04 20 | 704 | 0.4+ | 1.0− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2004 03 20 | 699 | 0.8− | 0.2− | 2004 04 20 | 704 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2004 03 20 | 704 | 0.1− | 0.2+ | 2004 04 20 | 704 | 0.8+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2004 03 20 | 699 | 0.8− | 0.3− | 2004 04 20 | 704 | 0.2+ | 1.0− | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2004 03 20 | 704 | 0.6− | 0.8+ | 2004 04 20 | 704 | 0.3+ | 0.3− | 2006 12 01 | 691 | 0.4− | 0.4+ | | |
| 2004 03 20 | 704 | 0.1− | 1.1+ | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.4+ | | |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2004 05 09 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.5− | 0.2+ | | |

**(138066)∗ 2000 DO$_{47}$ = 2005 JS$_{176}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 84539)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 39.58646 | | (2000.0) | | +0.60001731 | | +0.79606552 |
| $n$ | 0.22702045 | $\omega$ | 146.09044 | | −0.77632065 | | +0.60328896 |
| $a$ | 2.6612932 | $\Omega$ | 160.40347 | | −0.19314625 | | +0.04818839 |
| $e$ | 0.0411120 | $i$ | 13.64359 | | | | |
| $P$ | 4.34 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.2− | 0.1− | 2002 10 15 | 644 | 0.2− | 0.2+ | 2006 08 22 | 644 | 0.5+ | 0.3+ | | |
| 2000 02 02 | 691 | 0.1+ | 0.2− | 2002 10 15 | 644 | 0.2− | 0.2+ | 2006 08 22 | 644 | 0.6+ | 0.3+ | | |
| 2000 02 02 | 691 | 0.3− | 0.2− | 2002 10 15 | 644 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.7− | 0.8+ | | |
| 2000 02 29 | 704 | 0.3− | 0.1+ | 2002 11 11 | 291 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.3+ | 0.3+ | | |
| 2000 02 29 | 704 | 0.6− | 0.9+ | 2002 11 11 | 291 | 0.3+ | 0.0 | 2006 08 27 | 699 | 0.3− | 0.1− | | |
| 2000 02 29 | 704 | 1.4+ | 0.2+ | 2002 11 11 | 291 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | | |
| 2000 02 29 | 704 | 0.9+ | 0.4+ | 2002 11 11 | 291 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.9+ | 0.4+ | 2002 11 11 | 291 | 0.1− | 0.2− | 2006 08 27 | 699 | 0.9+ | 1.2+ |
| 2000 03 03 | 704 | 0.6− | 0.2− | 2002 11 11 | 291 | 0.2− | 0.2+ | 2006 08 27 | 699 | 1.6+ | 0.2+ |
| 2000 03 03 | 704 | 0.5+ | 1.5+ | 2005 05 11 | 703 | (2.4+ | 1.3−) | 2006 08 28 | 703 | 0.5− | 1.3+ |
| 2000 03 03 | 704 | 0.0 | 1.9+ | 2005 05 11 | 703 | 0.3− | 0.4− | 2006 08 28 | 703 | (3.5+ | 5.0+) |
| 2000 03 03 | 704 | (0.5+ | 2.0+) | 2005 05 11 | 703 | 0.8− | 1.9− | 2006 08 28 | 703 | 1.6− | 0.2− |
| 2002 10 07 | 608 | 0.3− | 0.4+ | 2005 05 11 | 703 | 0.8− | 0.5+ | 2006 08 28 | 703 | 1.9− | 0.0 |
| 2002 10 07 | 608 | 0.9− | 0.0 | 2005 05 13 | 699 | (0.7+ | 2.9+) | 2006 09 14 | 703 | 0.4− | 1.4− |
| 2002 10 07 | 608 | 0.4− | 0.2− | 2005 05 13 | 699 | 0.8+ | 1.4+ | 2006 09 14 | 703 | 0.7+ | 1.2− |
| 2002 10 15 | 644 | 0.4+ | 0.1− | 2005 05 13 | 699 | 1.1+ | 1.1+ | 2006 09 14 | 703 | 0.3− | 0.5− |
| 2002 10 15 | 644 | 0.3− | 0.5+ | 2005 05 13 | 699 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.8− | 1.0− |
| 2002 10 15 | 644 | 0.3− | 0.5− | 2006 08 22 | 644 | 0.2+ | 0.0 | | | | |

**(138067)∗ 2000 DX$_{47}$ = 2004 EE$_{27}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.62407 | | (2000.0) | | | |
| $n$ | 0.25986380 | $\omega$ | 186.83826 | | −0.96714312 | +0.25421755 |
| $a$ | 2.4320483 | $\Omega$ | 7.89059 | | −0.23229145 | −0.87921256 |
| $e$ | 0.1355432 | $i$ | 1.15174 | | −0.10331921 | −0.40293759 |
| $P$ | 3.79 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 25 | 703 | 0.7+ | 0.4+ | 2004 03 17 | 704 | (1.6+ | 0.2−) | 2004 04 16 | 704 | 0.9+ | 0.9+ |
| 2000 02 25 | 703 | 0.3− | 0.8+ | 2004 03 17 | 704 | 0.7+ | 1.0+ | 2004 04 16 | 644 | 0.2+ | 0.4+ |
| 2000 02 25 | 703 | (0.3− | 2.8+) | 2004 03 18 | 704 | 0.8+ | 0.5+ | 2004 04 16 | 704 | 0.3+ | 0.4+ |
| 2000 02 25 | 703 | 0.4− | 0.5− | 2004 03 18 | 704 | 1.0+ | 0.2+ | 2004 04 21 | 704 | 0.8+ | 0.3+ |
| 2000 02 29 | 704 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2004 04 21 | 704 | 0.7+ | 0.6+ |
| 2000 02 29 | 704 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2004 04 21 | 704 | 0.5+ | 0.4+ |
| 2000 02 29 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.3− | 2004 04 21 | 704 | 0.6+ | 0.5+ |
| 2000 02 29 | 704 | 0.0 | 0.1+ | 2004 03 20 | 699 | 0.2+ | 0.0 | 2004 04 21 | 704 | 0.1− | 0.9+ |
| 2000 02 29 | 704 | 0.7+ | 0.9+ | 2004 03 20 | 699 | 0.3− | 0.3− | 2004 04 26 | 699 | 0.5+ | 0.9+ |
| 2000 03 03 | 704 | 0.2+ | 0.0 | 2004 03 20 | 699 | 0.1− | 0.1+ | 2004 04 26 | 699 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.4− | 0.2− | 2004 03 20 | 699 | 0.1− | 0.6− | 2004 04 26 | 699 | 0.3− | 0.2− |
| 2000 03 03 | 704 | 0.1− | 0.3+ | 2004 03 24 | 699 | 0.1+ | 0.4+ | 2004 04 26 | 699 | 0.4− | 0.6+ |
| 2000 03 03 | 704 | 0.1+ | 0.2+ | 2004 03 24 | 699 | 0.8− | 0.0 | 2005 08 28 | 691 | 0.1− | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.0 | 2004 03 24 | 699 | 0.6− | 0.6− | 2005 08 28 | 691 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.4− | 0.3− | 2004 03 24 | 699 | 0.0 | 0.4− | 2005 08 28 | 691 | 0.3− | 0.8+ |
| 2000 03 11 | 704 | 0.5+ | 0.5+ | 2004 03 25 | 699 | 0.8− | 0.3− | 2005 09 01 | 691 | 0.4− | 0.5+ |
| 2000 03 11 | 704 | 0.3+ | 0.4+ | 2004 03 25 | 699 | 0.3− | 0.6+ | 2005 09 01 | 691 | 0.1− | 0.6+ |
| 2000 03 11 | 699 | 0.1+ | 0.6− | 2004 03 25 | 699 | 0.3− | 0.0 | 2005 09 01 | 691 | 0.2− | 0.6+ |
| 2000 03 11 | 704 | 0.4+ | 0.2− | 2004 03 25 | 699 | 0.5− | 0.2− | 2005 10 01 | G96 | 0.3− | 0.3+ |
| 2000 03 11 | 704 | 0.6+ | 0.2+ | 2004 03 27 | 704 | 0.0 | 1.0− | 2005 10 01 | G96 | 0.2− | 1.0+ |
| 2000 03 11 | 699 | 0.3− | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.6− | 2005 10 01 | G96 | 0.0 | 0.3+ |
| 2000 03 11 | 699 | 0.6− | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.6− | 2005 10 01 | G96 | 0.0 | 0.4+ |
| 2000 03 11 | 699 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.3− | 2005 11 25 | G96 | 1.1− | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 03 27 | 704 | 0.1− | 0.0 | 2005 11 25 | G96 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.7+ | 2004 03 31 | 704 | 0.2+ | 0.1− | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 0.4− | 1.2+ | 2004 03 31 | 704 | 1.1+ | 0.2+ | 2005 11 25 | G96 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | (0.3+ | 2.1+) | 2004 03 31 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.5+ |
| 2004 03 14 | 644 | 0.1− | 0.1− | 2004 03 31 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.5− | 0.0 |
| 2004 03 14 | 644 | 0.0 | 0.0 | 2004 04 08 | 608 | 0.1− | 1.3+ | 2006 11 10 | 691 | 0.3− | 0.3+ |
| 2004 03 14 | 644 | 0.1− | 0.2+ | 2004 04 08 | 608 | 0.2− | 1.1+ | 2006 11 16 | 691 | 0.3+ | 0.3+ |
| 2004 03 16 | 703 | 0.3− | 0.0 | 2004 04 08 | 608 | 0.1− | 1.1+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2004 03 16 | 703 | 0.6+ | 0.9+ | 2004 04 15 | 699 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2004 03 16 | 691 | 0.3− | 0.1− | 2004 04 15 | 699 | 0.5+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2004 03 16 | 703 | 0.3+ | 0.5+ | 2004 04 15 | 699 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2004 03 16 | 703 | 0.6− | 1.4+ | 2004 04 15 | 699 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2004 03 16 | 691 | 0.2− | 0.1− | 2004 04 16 | 704 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.3− | 0.1− | 2004 04 16 | 644 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.0 |
| 2004 03 17 | 704 | 0.6+ | 0.8+ | 2004 04 16 | 704 | 0.8+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 704 | 0.0 | 0.3+ | 2004 04 16 | 704 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.2+ |
| 2004 03 17 | 704 | 1.0+ | 0.7− | 2004 04 16 | 644 | 0.0 | 0.2+ | | | | |

**(138068)∗ 2000 DE$_{51}$ = 2004 BG$_{73}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56105)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.78619 | | (2000.0) | | | |
| $n$ | 0.23472102 | $\omega$ | 14.70838 | | −0.94541983 | −0.32083636 |
| $a$ | 2.6027636 | $\Omega$ | 146.40597 | | +0.28760384 | −0.90377531 |
| $e$ | 0.0768285 | $i$ | 5.90965 | | +0.15318416 | −0.28329177 |
| $P$ | 4.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.4+ | 1.7− | 2002 10 11 | 704 | 0.3− | 0.8+ | 2004 02 26 | 704 | 0.5+ | 0.2− |
| 1996 04 13 | 691 | 0.2− | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.9+ | 2004 02 26 | 704 | 0.5+ | 0.2− |
| 1996 04 13 | 691 | 0.3+ | 0.1+ | 2004 01 24 | 704 | 0.8+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.2− |
| 2000 02 25 | 703 | 1.9− | 1.5+ | 2004 01 24 | 704 | 0.7+ | 0.6+ | 2004 02 26 | 704 | 0.3+ | 0.2+ |
| 2000 02 25 | 703 | 0.2− | 0.8+ | 2004 01 24 | 704 | 1.2+ | 0.2+ | 2004 02 26 | 704 | 0.9− | 0.3+ |
| 2000 02 25 | 703 | 1.2+ | 0.2− | 2004 01 24 | 704 | 1.2+ | 0.0 | 2005 07 12 | G96 | 0.4− | 1.4+ |
| 2000 02 25 | 703 | 0.5− | 0.5− | 2004 01 26 | 699 | 0.3− | 0.2− | 2005 07 12 | G96 | 0.3+ | 0.5+ |
| 2000 02 29 | 704 | 0.8− | 0.7+ | 2004 01 26 | 699 | 0.8− | 0.7+ | 2005 07 12 | G96 | 0.3+ | 0.4+ |
| 2000 02 29 | 704 | 0.4− | 0.6+ | 2004 01 26 | 699 | 1.2− | 0.1− | 2005 07 12 | G96 | 0.3+ | 1.5+ |
| 2000 02 29 | 704 | 0.3− | 0.6+ | 2004 01 26 | 699 | 1.1+ | 0.4+ | 2006 08 18 | 691 | 0.2− | 0.1+ |
| 2000 02 29 | 704 | 0.6− | 1.9+ | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.0 | 0.4+ |
| 2000 03 03 | 704 | 0.5− | 1.1+ | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 08 18 | 691 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.5+ | 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.7+ | 0.3− | 2004 01 30 | 704 | 0.9− | 1.4− | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2000 03 03 | 704 | 0.4+ | 0.5+ | 2004 01 30 | 704 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.4− | 0.3+ |
| 2000 03 03 | 704 | 1.4+ | 0.1− | 2004 01 30 | 704 | 0.7+ | 0.7− | 2006 09 18 | 703 | 0.3− | 0.4+ |
| 2000 03 05 | 704 | 0.6+ | 1.0+ | 2004 01 30 | 704 | 0.3− | 0.9− | 2006 09 18 | 703 | 0.3− | 0.0 |
| 2000 03 05 | 704 | 1.0− | 0.8+ | 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.6− |
| 2000 03 05 | 704 | 0.6− | 0.6+ | 2004 02 11 | 703 | 0.6− | 0.3− | 2006 09 18 | 703 | 0.0 | 0.3− |
| 2000 03 05 | 704 | 0.8− | 1.1+ | 2004 02 11 | 703 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.7− |
| 2000 03 09 | 704 | 1.0− | 0.6+ | 2004 02 11 | 699 | 0.8− | 1.3− | 2006 09 19 | 703 | 0.8+ | 0.6− |
| 2000 03 09 | 704 | 0.3− | 1.0+ | 2004 02 11 | 703 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2000 03 09 | 704 | 0.3− | 0.3+ | 2004 02 11 | 699 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.1− |
| 2000 03 09 | 704 | 0.4+ | 0.5+ | 2004 02 11 | 703 | 0.5− | 0.2− | 2006 10 16 | 703 | (3.2+ | 0.2−) |
| 2000 03 09 | 704 | 0.3+ | 0.1− | 2004 02 11 | 699 | (1.9− | 0.4+) | 2006 10 16 | 703 | (0.4+ | 1.8−) |
| 2000 03 11 | 704 | 1.7+ | 0.5+ | 2004 02 11 | 699 | 0.9+ | 0.4− | 2006 10 16 | 703 | 1.2− | 1.4− |
| 2000 03 11 | 704 | 0.5− | 0.4− | 2004 02 16 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.9+ |
| 2000 03 11 | 704 | 0.4− | 0.8+ | 2004 02 16 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2000 03 11 | 704 | 0.2− | 0.1− | 2004 02 16 | 704 | 0.0 | 0.6− | 2006 10 21 | 644 | 0.5+ | 0.6+ |
| 2000 03 11 | 704 | 0.7− | 0.8+ | 2004 02 16 | 704 | 1.4+ | 0.5− | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 0.9+ | 2004 02 16 | 704 | 0.2+ | 1.1+ | | | | |

**(138069)∗ 2000 DY$_{51}$ = 2006 HF$_{5}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 99939)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.34103 | | (2000.0) | | | |
| $n$ | 0.17905884 | $\omega$ | 116.97868 | | +0.02253693 | +0.99573584 |
| $a$ | 3.1174934 | $\Omega$ | 153.84429 | | −0.97405412 | +0.04202435 |
| $e$ | 0.1904159 | $i$ | 11.70850 | | −0.22519026 | −0.08212238 |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.4+ | 0.4+ | 2002 09 05 | 645 | 0.1− | 0.0 | 2006 04 07 | 703 | 0.4− | 0.6− |
| 2000 02 29 | 704 | 0.1+ | 0.3+ | 2002 10 05 | 704 | 0.2− | 0.8+ | 2006 04 19 | 703 | 0.3+ | 0.1− |
| 2000 02 29 | 704 | 1.6+ | 0.4+ | 2002 10 05 | 704 | 0.4− | 0.1+ | 2006 04 19 | 703 | 0.7+ | 0.4+ |
| 2000 02 29 | 704 | 0.1+ | 0.7+ | 2002 10 05 | 704 | 0.1− | 0.2− | 2006 04 19 | 703 | 0.6− | 0.6+ |
| 2000 03 03 | 704 | 0.8− | 1.2+ | 2002 10 05 | 704 | 0.4+ | 0.1− | 2006 04 19 | 703 | 0.3+ | 0.7+ |
| 2000 03 03 | 704 | 0.3+ | 0.6+ | 2002 10 05 | 704 | 0.2− | 0.5+ | 2006 04 20 | 699 | 1.4+ | 0.1− |
| 2000 03 03 | 704 | 0.7− | 0.8− | 2002 10 16 | 644 | 0.2+ | 0.7+ | 2006 04 20 | 699 | 0.1− | 0.1+ |
| 2000 03 03 | 704 | 1.2− | 0.2+ | 2002 10 16 | 644 | 0.0 | 0.5+ | 2006 04 20 | 699 | 0.3+ | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.5+ | 0.3+ | 2002 10 16 | 644 | 0.0 | 0.8+ | 2006 04 20 | 699 | 0.3− | 1.1+ |
| 2000 03 11 | 699 | 0.3+ | 0.2− | 2002 12 07 | 291 | 0.0 | 0.8+ | 2006 04 20 | 699 | 1.3+ | 0.2− |
| 2000 03 11 | 704 | 0.2− | 0.1+ | 2002 12 07 | 291 | 0.2+ | 0.4+ | 2006 04 20 | 699 | 0.1+ | 0.7+ |
| 2000 03 11 | 704 | 0.1− | 0.6+ | 2002 12 07 | 291 | 0.0 | 0.2+ | 2006 04 20 | 699 | 0.6+ | 0.8+ |
| 2000 03 11 | 699 | 0.1− | 0.6+ | 2002 12 07 | 291 | 0.1− | 0.4+ | 2006 04 20 | 699 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.2+ | 0.4+ | 2002 12 07 | 291 | 0.1+ | 0.6+ | 2006 04 23 | 699 | 0.3+ | 0.4+ |
| 2000 03 11 | 704 | 0.7+ | 0.8+ | 2002 12 07 | 291 | 0.3+ | 0.7+ | 2006 04 23 | 699 | 0.3+ | 0.2+ |
| 2000 03 11 | 699 | 1.2+ | 1.0+ | 2005 01 07 | 599 | 0.1+ | 0.0 | 2006 04 23 | 699 | 0.7+ | 0.0 |
| 2000 03 11 | 704 | 0.5+ | 0.9+ | 2005 01 07 | 599 | 0.0 | 0.1− | 2006 04 23 | 699 | 0.1+ | 0.7+ |
| 2001 05 25 | 704 | 0.7+ | 1.2+ | 2005 01 07 | 599 | 0.1+ | 0.8+ | 2006 04 26 | 699 | 0.8+ | 0.4+ |
| 2001 05 25 | 704 | 0.0 | 0.5+ | 2005 01 07 | 599 | 0.2+ | 0.1+ | 2006 04 26 | 699 | 0.2+ | 0.7+ |
| 2001 05 25 | 704 | 0.2+ | 0.6− | 2005 02 02 | 703 | 1.3− | 0.6− | 2006 04 26 | 699 | 0.6+ | 0.1+ |
| 2001 06 21 | 704 | 0.3− | 0.3− | 2005 02 02 | 703 | 1.0− | 0.3− | 2006 04 26 | 699 | 0.2− | 1.0+ |
| 2001 06 21 | 704 | 0.6− | 0.1+ | 2005 02 02 | 703 | 0.9− | 0.2+ | 2006 05 02 | 703 | 0.6− | 0.1− |
| 2001 06 21 | 704 | 0.1+ | 0.4+ | 2005 02 02 | 703 | 1.4+ | 1.8− | 2006 05 02 | 703 | 0.6− | 0.0 |
| 2001 06 21 | 704 | 1.0− | 0.8+ | 2006 04 07 | 703 | 0.3+ | 0.2− | 2006 05 02 | 703 | 1.0− | 0.5− |
| 2001 06 21 | 704 | 0.2+ | 1.1+ | 2006 04 07 | 703 | 0.6− | 0.1+ | 2006 05 02 | 703 | 1.5− | 0.2+ |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2006 04 07 | 703 | 0.6− | 0.3− | | | | |

**(138070)∗ 2000 DA$_{53}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 237.62767 | | (2000.0) | | | |
| $n$ | 0.25763074 | $\omega$ | 307.88608 | | −0.99280360 | +0.11713429 |
| $a$ | 2.4460815 | $\Omega$ | 238.85351 | | −0.09869377 | −0.91812865 |
| $e$ | 0.1420837 | $i$ | 1.66795 | | −0.06782735 | −0.37857542 |
| $P$ | 3.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.5+ | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.6+ |
| 1998 10 13 | 691 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2004 04 20 | 704 | 1.1+ | 0.2+ |
| 1998 10 13 | 691 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.3− | 0.7+ | 2004 04 20 | 704 | 0.9+ | 0.2− |
| 2000 02 06 | 704 | 0.2− | 0.4− | 2004 03 20 | 704 | 1.1− | 0.4+ | 2004 04 24 | E12 | 0.2− | 0.1+ |
| 2000 02 06 | 704 | 0.7+ | 0.6+ | 2004 03 20 | 704 | 0.3− | 0.0 | 2004 04 24 | E12 | 0.2− | 0.5+ |
| 2000 02 06 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.0 | 2004 04 24 | E12 | 0.2− | 0.2+ |
| 2000 02 29 | 704 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.9− | 0.6+ | 2004 04 24 | E12 | 0.1+ | 0.2− |
| 2000 02 29 | 704 | 0.6− | 0.6+ | 2004 03 20 | 704 | 0.8+ | 0.7+ | 2005 07 28 | A50 | (2.4+ | 1.3−) |
| 2000 02 29 | 704 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.5− | 0.1+ | 2005 07 28 | A50 | (1.8+ | 0.9−) |
| 2000 02 29 | 704 | 0.2+ | 0.8+ | 2004 03 20 | 704 | 0.3− | 0.5+ | 2005 08 06 | 644 | 0.3− | 0.4+ |
| 2000 02 29 | 704 | (0.0 | 2.1+) | 2004 03 20 | 704 | 0.7− | 0.1+ | 2005 08 06 | 644 | 0.3− | 0.8+ |
| 2000 03 03 | 704 | 0.3− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.7− | 2005 08 06 | 644 | 0.6− | 1.0+ |
| 2000 03 03 | 704 | 0.7− | 0.7− | 2004 03 20 | 704 | 0.6− | 1.4− | 2005 10 25 | G96 | 0.1+ | 0.7+ |
| 2000 03 03 | 704 | 0.5− | 0.9− | 2004 03 20 | 704 | 0.3− | 0.8− | 2005 10 25 | G96 | 0.1− | 0.8+ |
| 2000 03 03 | 704 | 0.1+ | 0.8− | 2004 03 27 | 704 | 1.0+ | 0.1+ | 2005 10 25 | G96 | 0.3− | 0.6+ |
| 2000 03 11 | 704 | 0.9+ | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.4− | 2005 10 25 | G96 | 0.6− | 0.9+ |
| 2000 03 11 | 704 | 0.6− | 0.5− | 2004 03 27 | 704 | 0.6+ | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2000 03 11 | 704 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.2− | 0.3+ |
| 2000 03 11 | 704 | 0.7+ | 0.1− | 2004 03 27 | 704 | 0.3+ | 0.5− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2000 03 11 | 704 | 0.6+ | 0.1− | 2004 03 31 | 704 | 1.3+ | 0.3− | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2002 11 25 | 291 | 0.4− | 0.3+ | 2004 03 31 | 704 | 0.9+ | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2002 11 25 | 291 | 0.2− | 0.2+ | 2004 03 31 | 704 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2002 11 25 | 291 | 0.1− | 0.2+ | 2004 03 31 | 704 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2004 03 16 | 703 | 1.3− | 0.5+ | 2004 03 31 | 704 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2004 03 16 | 703 | 0.3− | 0.1+ | 2004 04 11 | 703 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.3− | 0.3+ |
| 2004 03 16 | 703 | 0.2− | 0.0 | 2004 04 11 | 703 | (2.0− | 1.5−) | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2004 03 16 | 703 | 0.1+ | 0.1− | 2004 04 11 | 703 | 0.0 | 0.3+ | 2006 11 15 | 691 | 0.5− | 0.2+ |
| 2004 03 17 | 704 | 0.0 | 0.0 | 2004 04 11 | 703 | 1.2− | 0.5− | 2006 11 22 | H07 | 0.3− | 0.1+ |
| 2004 03 17 | 704 | 0.5− | 0.3+ | 2004 04 16 | 704 | 0.2+ | 0.7− | 2006 11 22 | H07 | 0.2+ | 0.8− |
| 2004 03 17 | 704 | 0.4+ | 0.6+ | 2004 04 16 | 704 | 1.2+ | 0.7− | 2006 11 22 | H07 | 1.9+ | 0.8− |
| 2004 03 18 | 704 | 0.0 | 0.3+ | 2004 04 16 | 704 | 0.7+ | 0.7+ | 2006 11 22 | H07 | 1.3+ | 0.6+ |
| 2004 03 18 | 704 | 0.1+ | 0.6− | 2004 04 20 | 691 | 0.1+ | 0.0 | 2006 11 23 | H07 | 1.7+ | 0.6+ |
| 2004 03 18 | 704 | 0.7− | 0.6+ | 2004 04 20 | 691 | 0.7− | 1.0+ | 2006 11 23 | H07 | 0.6− | 0.0 |
| 2004 03 18 | 704 | 0.8+ | 0.8− | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 11 23 | H07 | 0.2+ | 0.7+ |
| 2004 03 18 | 704 | 1.4+ | 0.2− | 2004 04 20 | 704 | 0.2− | 0.5+ | | | | |

**(138071)∗ 2000 DH$_{54}$ = 2005 GJ$_{11}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74737)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.94593 | | (2000.0) | | | |
| $n$ | 0.21229506 | $\omega$ | 116.04708 | | +0.23465362 | +0.97068485 |
| $a$ | 2.7829760 | $\Omega$ | 167.19614 | | −0.95453039 | +0.24021419 |
| $e$ | 0.2214911 | $i$ | 13.58231 | | −0.18387338 | −0.00825043 |
| $P$ | 4.64 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.2− | 0.0 | 2005 04 05 | 699 | 1.4+ | 0.9+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 1992 10 01 | 691 | 0.2− | 0.0 | 2005 04 05 | 699 | 0.2+ | 1.0+ | 2006 09 22 | 704 | 0.2− | 0.4− |
| 1992 10 01 | 691 | 0.0 | 0.1− | 2005 04 05 | 699 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.1− |
| 2000 02 29 | 704 | 1.6+ | 0.9+ | 2005 04 08 | 704 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.1− | 0.2− |
| 2000 02 29 | 704 | 1.1+ | 0.4− | 2005 04 08 | 704 | 0.1− | 1.0+ | 2006 09 22 | 704 | 0.1+ | 0.2+ |
| 2000 02 29 | 704 | 0.1− | 0.7− | 2005 04 08 | 704 | 0.4+ | 0.3− | 2006 09 22 | 704 | 0.5− | 0.2+ |
| 2000 02 29 | 704 | 0.5− | 0.5− | 2005 04 08 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 104 | 0.2− | 0.5+ |
| 2000 03 03 | 704 | 0.7+ | 0.4+ | 2005 04 08 | 704 | 0.2+ | 0.5+ | 2006 09 22 | 104 | 0.1− | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.6+ | 2005 04 09 | 699 | 0.5− | 0.0 | 2006 09 22 | 104 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.1+ | 0.8+ | 2005 04 09 | 699 | 0.9+ | 0.4− | 2006 09 25 | 699 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.6+ | 0.8+ | 2005 04 09 | 699 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.7− | 0.4+ |
| 2000 03 03 | 704 | 0.7+ | 1.1+ | 2005 04 09 | 699 | 0.5− | 0.5− | 2006 09 25 | 699 | 0.4+ | 0.4+ |
| 2000 03 04 | 704 | 0.8+ | 0.8+ | 2005 05 03 | 703 | 0.6− | 0.5+ | 2006 09 25 | 699 | 0.2− | 0.8+ |
| 2000 03 04 | 704 | 0.5− | 0.1+ | 2005 05 03 | 703 | 0.1− | 1.0+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2000 03 04 | 704 | 0.4+ | 0.3− | 2005 05 03 | 703 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2000 03 04 | 704 | 0.5+ | 0.1+ | 2005 05 03 | 703 | 0.7+ | 1.4+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2000 03 05 | 704 | 0.6+ | 0.3+ | 2006 08 18 | 699 | 1.3+ | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.6− |
| 2000 03 05 | 704 | 1.2+ | 0.2+ | 2006 08 18 | 699 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.0 |
| 2000 03 05 | 704 | (2.6+ | 1.2+) | 2006 08 18 | 699 | (1.4+ | 1.6+) | 2006 09 26 | 704 | 0.7− | 0.1− |
| 2000 03 11 | 699 | 0.1− | 1.6+ | 2006 08 18 | 699 | 1.4+ | 0.8+ | 2006 09 26 | 704 | 1.4− | 0.6+ |
| 2000 03 11 | 704 | 0.2− | 0.6+ | 2006 08 18 | 699 | (1.6− | 0.2+) | 2006 09 26 | 704 | (0.6− | 1.7−) |
| 2000 03 11 | 699 | (1.2+ | 2.2+) | 2006 08 18 | 699 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.3− | 0.6+ | 2006 08 18 | 699 | 1.0+ | 0.0 | 2006 09 28 | 704 | 1.0+ | 0.6+ |
| 2000 03 11 | 699 | 0.1− | 1.1+ | 2006 08 18 | 699 | 0.5+ | 0.6+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.1− | 0.6+ | 2006 08 21 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.5+ |
| 2000 03 11 | 704 | 0.0 | 1.2+ | 2006 08 21 | 704 | 0.5− | 0.0 | 2006 09 30 | 703 | (3.6+ | 2.0+) |
| 2000 03 11 | 699 | 0.1+ | 0.7+ | 2006 08 21 | 704 | 0.9+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 1.2+ | 2006 08 21 | 704 | 0.6− | 0.7+ | 2006 10 03 | G96 | 0.4− | 0.1− |
| 2001 06 25 | 608 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2001 06 25 | 608 | 0.0 | 0.6− | 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2001 06 25 | 608 | 0.5+ | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.0 |
| 2001 08 25 | 704 | 0.1+ | 0.9+ | 2006 09 12 | 703 | 0.1+ | 1.0+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 0.7+ | 1.0+ | 2006 09 12 | 703 | 0.7+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 0.6+ | 1.0+ | 2006 09 12 | 703 | 0.7+ | 1.1+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | (1.6− | 0.0 ) | 2006 09 16 | 704 | 0.4+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.7− | 1.3− | 2006 09 16 | 704 | 0.1− | 0.8+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 0.3− | 2006 09 16 | 704 | 0.3− | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.1+ | 1.0+ |
| 2004 04 15 | 645 | 0.1− | 0.2+ | 2006 09 16 | 704 | 0.8− | 1.0+ | 2006 10 19 | 703 | 1.5+ | 0.7+ |
| 2005 03 18 | 703 | 1.2− | 0.0 | 2006 09 16 | 699 | 0.1+ | 0.9+ | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2005 03 18 | 703 | 0.1+ | 0.5− | 2006 09 16 | 699 | 0.6− | 0.6+ | 2006 10 19 | 703 | 0.4− | 0.1+ |
| 2005 03 18 | 703 | 0.6− | 0.1− | 2006 09 16 | 699 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2005 03 18 | 703 | 0.9− | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2005 04 01 | 699 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2005 04 01 | 699 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.1+ | 1.2+ | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2005 04 01 | 699 | 0.2− | 1.1+ | 2006 09 19 | 703 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2005 04 01 | 699 | 0.2+ | 1.0+ | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2005 04 04 | 703 | 0.4− | 0.4+ | 2006 09 19 | 699 | (1.6− | 0.7+) | 2006 10 24 | 644 | 0.2− | 0.3+ |
| 2005 04 04 | 703 | 1.4− | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2005 04 04 | 703 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2005 04 04 | 703 | 0.3− | 0.3− | 2006 09 20 | 644 | 0.4− | 0.3+ | | | | |
| 2005 04 05 | 699 | 0.3+ | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.4+ | | | | |

**(138072)*** **2000 DY$_{54}$ = 1998 TJ$_{21}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 13167)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 221.00395 | | (2000.0) | | | |
| $n$ | 0.24498936 | $\omega$ | 172.50757 | | −0.97970913 | −0.20042131 |
| $a$ | 2.5295188 | $\Omega$ | 355.93030 | | +0.18303809 | −0.89237645 |
| $e$ | 0.0977766 | $i$ | 0.92542 | | +0.08165215 | −0.40434585 |
| $P$ | 4.02 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.3− | 0.0 | 2004 01 24 | 704 | (0.2− | 1.8+) | 2004 03 18 | 704 | (1.5+ | 2.2+) |
| 1996 02 15 | 691 | 0.4− | 0.2− | 2004 01 24 | 704 | 0.8+ | 0.8+ | 2004 03 18 | 704 | (1.4+ | 2.4+) |
| 1996 02 15 | 691 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.2− | 0.9+ | 2004 03 30 | 691 | 0.2− | 0.1+ |
| 1998 10 13 | 691 | 0.4− | 0.3− | 2004 02 16 | 691 | 0.2− | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.2+ |
| 1998 10 13 | 691 | 0.4− | 0.3− | 2004 02 16 | 691 | 0.4− | 0.1+ | 2004 03 30 | 691 | 0.1− | 0.0 |
| 1998 10 13 | 691 | 0.4+ | 0.6− | 2004 02 16 | 691 | 0.3− | 0.2+ | 2005 06 08 | 691 | 0.1− | 0.0 |
| 1998 10 19 | 691 | 0.1+ | 0.6− | 2004 02 17 | 691 | 0.3− | 0.2+ | 2005 06 08 | 691 | 0.0 | 0.2+ |
| 1998 10 19 | 691 | 0.1− | 0.3− | 2004 02 17 | 691 | 0.5− | 0.2+ | 2005 06 08 | 691 | 0.2− | 0.6+ |
| 1998 10 19 | 691 | 0.1+ | 0.4− | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.4+ |
| 2000 02 29 | 704 | 1.0+ | 1.8+ | 2004 02 18 | 704 | 0.7+ | 0.5+ | 2006 09 24 | 691 | 0.3+ | 0.4+ |
| 2000 02 29 | 704 | 0.6+ | 0.1− | 2004 02 18 | 704 | (1.0+ | 1.7+) | 2006 09 24 | 691 | 0.1+ | 0.5+ |
| 2000 02 29 | 704 | 0.2+ | 1.1+ | 2004 02 18 | 704 | 0.3+ | 0.4+ | 2006 09 28 | 691 | 0.4+ | 0.2+ |
| 2000 03 02 | 691 | 0.2+ | 0.8− | 2004 02 18 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2000 03 02 | 691 | 0.3+ | 0.6− | 2004 02 18 | 704 | 0.0 | 0.8+ | 2006 09 28 | 691 | 0.0 | 0.8+ |
| 2000 03 02 | 691 | 0.4+ | 0.6− | 2004 02 18 | 608 | 0.4+ | 1.1+ | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 2000 03 03 | 704 | 0.6− | 0.4− | 2004 02 18 | 608 | 0.6+ | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.6− | 0.2− | 2004 02 18 | 608 | 0.3+ | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.7+ | 0.3− | 2004 02 26 | 704 | 1.4+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 1.0+ | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.9+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.7+ | 1.1− | 2004 02 26 | 704 | 0.6+ | 0.4− | 2006 11 18 | 691 | 0.4− | 0.1− |
| 2000 03 11 | 704 | 0.5− | 0.3+ | 2004 02 26 | 704 | 0.8− | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2000 03 11 | 704 | 0.4+ | 0.4+ | 2004 03 18 | 704 | (1.8+ | 2.4+) | 2006 11 20 | 691 | 0.0 | 0.5+ |
| 2000 03 11 | 704 | 0.0 | 0.8− | 2004 03 18 | 704 | (4.1+ | 1.0+) | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2000 03 11 | 704 | 0.1+ | 0.6+ | 2004 03 18 | 704 | (2.3+ | 3.3+) | | | | |

**(138073)*** **2000 DJ$_{56}$ = 2001 QE$_{88}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17171)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.62339 | | (2000.0) | | | |
| $n$ | 0.20024059 | $\omega$ | 75.16944 | | −0.57877613 | +0.81519825 |
| $a$ | 2.8935743 | $\Omega$ | 159.42058 | | −0.76990789 | −0.53747125 |
| $e$ | 0.2709073 | $i$ | 3.53602 | | −0.26881226 | −0.21581580 |
| $P$ | 4.92 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.2− | 0.1+ | 2001 09 12 | 695 | 0.0 | 0.2+ | 2005 03 30 | 703 | (2.5− | 0.6−) |
| 2000 01 28 | 691 | 0.1+ | 0.1− | 2001 09 12 | 695 | 0.2− | 0.2+ | 2005 03 30 | 703 | (0.2+ | 2.3−) |
| 2000 01 28 | 691 | 0.2− | 0.0 | 2005 03 01 | 691 | 0.0 | 0.2− | 2005 03 30 | 703 | 0.6− | 0.6− |
| 2000 02 11 | 691 | 0.1+ | 0.1+ | 2005 03 01 | 691 | 0.0 | 0.0 | 2005 04 09 | 699 | 1.2− | 0.8+ |
| 2000 02 11 | 691 | 0.0 | 0.2+ | 2005 03 01 | 691 | 0.0 | 0.0 | 2005 04 09 | 699 | 0.1+ | 1.1+ |
| 2000 02 11 | 691 | 0.0 | 0.6− | 2005 03 03 | 703 | 0.2− | 0.9− | 2005 04 09 | 699 | 0.1− | 0.1− |
| 2000 02 29 | 704 | 0.7+ | 0.5+ | 2005 03 03 | 703 | 0.1− | 0.3+ | 2005 04 09 | G96 | 0.2− | 0.4− |
| 2000 02 29 | 704 | 0.0 | 0.4+ | 2005 03 03 | 703 | 1.0− | 0.8− | 2005 04 09 | 699 | 0.5+ | 0.1− |
| 2000 02 29 | 704 | 0.4+ | 0.4+ | 2005 03 03 | 703 | 0.1+ | 0.1+ | 2005 04 09 | G96 | 0.5− | 0.7− |
| 2000 02 29 | 704 | 0.9+ | 0.9+ | 2005 03 04 | G96 | 0.6− | 0.5− | 2005 04 09 | G96 | 0.4− | 0.7− |
| 2000 03 03 | 704 | 0.6+ | 0.2− | 2005 03 04 | G96 | 0.4− | 0.4− | 2005 04 09 | G96 | 0.5− | 0.6− |
| 2000 03 03 | 704 | 0.9+ | 0.8+ | 2005 03 04 | G96 | 0.6− | 0.6− | 2005 04 16 | 691 | 0.5− | 1.0+ |
| 2000 03 03 | 704 | 0.3+ | 0.5+ | 2005 03 04 | G96 | 0.4− | 0.4− | 2005 04 16 | 691 | 0.6+ | 0.3− |
| 2000 03 03 | 704 | 0.0 | 1.1+ | 2005 03 08 | 699 | 1.1+ | 0.2+ | 2005 04 16 | 691 | 0.1+ | 0.2+ |
| 2000 03 03 | 704 | 0.2+ | 1.0+ | 2005 03 08 | 699 | 1.3+ | 0.2− | 2005 05 10 | G96 | 0.6− | 0.8− |
| 2000 03 11 | 704 | 0.1+ | 0.2− | 2005 03 08 | 699 | 1.8+ | 0.3+ | 2005 05 10 | G96 | 0.6− | 0.8− |
| 2000 03 11 | 704 | 0.1− | 0.9+ | 2005 03 08 | 699 | 0.3+ | 0.4+ | 2005 05 10 | G96 | 0.3− | 0.7− |
| 2000 03 11 | 704 | 0.1− | 0.7+ | 2005 03 08 | 704 | 0.6+ | 0.1− | 2005 05 10 | G96 | 0.5− | 0.8− |
| 2000 03 11 | 704 | 0.2+ | 0.4+ | 2005 03 08 | 704 | 0.2+ | 0.1− | 2006 07 18 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 699 | 0.3+ | 0.6+ | 2005 03 08 | 704 | 1.3+ | 0.3− | 2006 07 18 | G96 | 0.6− | 0.3− |
| 2000 03 11 | 699 | 0.5− | 0.8+ | 2005 03 14 | 704 | 0.2− | 0.9− | 2006 07 18 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 699 | 0.8− | 1.0+ | 2005 03 14 | 704 | 0.5+ | 0.5− | 2006 07 18 | G96 | 0.2− | 0.3− |
| 2000 03 11 | 699 | 0.2+ | 1.1+ | 2005 03 14 | 704 | 0.3+ | 0.0 | 2006 08 27 | 691 | 0.2+ | 0.1+ |
| 2001 08 21 | 691 | 0.2− | 0.2+ | 2005 03 14 | 704 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 2001 08 21 | 691 | 0.0 | 0.3+ | 2005 03 17 | 704 | 1.2− | 1.2+ | 2006 08 27 | 691 | 0.2+ | 0.1− |
| 2001 08 21 | 691 | 0.1− | 0.3+ | 2005 03 17 | 704 | 0.2− | 0.6− | 2006 09 26 | G96 | 0.7− | 0.4− |
| 2001 08 23 | 691 | 0.3+ | 0.1+ | 2005 03 17 | 704 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.4− | 0.4− |
| 2001 08 23 | 691 | 0.5− | 0.1+ | 2005 03 17 | 704 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 08 23 | 691 | 0.2+ | 0.3+ | 2005 03 30 | 703 | 0.9− | 0.6− | 2006 09 26 | G96 | 0.1− | 0.0 |

**(138074)*** **2000 DD$_{57}$ = 2001 OB$_{50}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14828)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 121.27938 | | (2000.0) | | | |
| $n$ | 0.23455142 | $\omega$ | 82.62462 | | −0.25497510 | +0.96688004 |
| $a$ | 2.6040181 | $\Omega$ | 172.57351 | | −0.91838878 | −0.23845433 |
| $e$ | 0.1046729 | $i$ | 5.07396 | | −0.30257188 | −0.09100831 |
| $P$ | 4.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 25 | 691 | 0.1− | 0.2− | 2001 08 11 | 608 | 0.1+ | 0.1− | 2004 02 19 | 608 | 0.1+ | 0.8+ |
| 2000 02 25 | 691 | 0.5− | 0.4− | 2001 08 11 | 608 | 0.5+ | 0.3− | 2004 03 01 | 691 | 0.1+ | 0.1− |
| 2000 02 25 | 691 | 0.3− | 0.4− | 2001 08 24 | 608 | 0.1− | 0.1− | 2004 03 01 | 691 | 0.0 | 0.1− |
| 2000 02 29 | 704 | 0.3+ | 0.2− | 2001 08 24 | 608 | 0.0 | 0.1− | 2004 03 01 | 691 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.6+ | 0.6− | 2001 08 24 | 608 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.2− | 0.8− |
| 2000 02 29 | 704 | 0.7+ | 0.7+ | 2002 11 14 | 644 | 0.4− | 0.1− | 2004 03 16 | 704 | 0.2− | 0.3+ |
| 2000 02 29 | 704 | 0.2+ | 0.9+ | 2002 11 14 | 644 | 0.1+ | 0.2− | 2004 03 16 | 704 | 0.2+ | 0.9+ |
| 2000 03 03 | 704 | 0.1− | 0.1− | 2002 11 14 | 644 | 0.2+ | 0.2+ | 2004 03 16 | 704 | 0.4+ | 0.3+ |
| 2000 03 03 | 704 | 0.3+ | 0.5+ | 2004 01 29 | 704 | 0.5+ | 1.3+ | 2004 03 16 | 704 | 0.0 | 1.4− |
| 2000 03 03 | 704 | 0.4+ | 0.6+ | 2004 01 29 | 704 | (2.3+ | 0.4−) | 2004 03 16 | 704 | 0.2− | 0.6− |
| 2000 03 03 | 704 | 0.5+ | 0.4+ | 2004 01 29 | 704 | 0.7+ | 0.3+ | 2004 03 16 | 704 | 0.4− | 0.1+ |
| 2000 03 03 | 704 | 0.3+ | 0.7+ | 2004 01 29 | 704 | 0.8+ | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.1+ |
| 2000 03 11 | 704 | 0.9+ | 0.2− | 2004 02 11 | 699 | 1.0+ | 0.1+ | 2004 03 18 | 704 | 0.3− | 0.4− |
| 2000 03 11 | 704 | 0.3+ | 0.1− | 2004 02 11 | 699 | 0.2− | 0.4− | 2004 03 18 | 704 | 0.6− | 0.1+ |
| 2000 03 11 | 704 | 0.8+ | 0.0 | 2004 02 11 | 699 | 1.0− | 0.6+ | 2004 03 18 | 704 | 0.7− | 0.1+ |
| 2000 03 11 | 704 | 1.8+ | 0.1− | 2004 02 11 | 699 | 0.6− | 0.6− | 2004 03 18 | 049 | (1.4− | 2.0−) |
| 2000 03 11 | 699 | 0.5− | 1.2+ | 2004 02 13 | 333 | 0.6− | 0.6+ | 2004 03 18 | 049 | (0.7− | 2.0−) |
| 2000 03 11 | 699 | 0.5− | 0.4+ | 2004 02 13 | 333 | 0.3+ | 0.4+ | 2004 03 18 | 049 | (0.5− | 1.6−) |
| 2000 03 11 | 699 | 0.4− | 0.7+ | 2004 02 13 | 333 | 0.4− | 0.6+ | 2004 03 20 | 704 | (1.7+ | 1.2+) |
| 2000 03 11 | 699 | 1.5− | 0.5+ | 2004 02 14 | 608 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.3− | 0.2+ |
| 2001 06 21 | 704 | 0.7+ | 0.5+ | 2004 02 14 | 608 | 0.1− | 0.1− | 2004 03 20 | 704 | (0.4− | 1.7+) |
| 2001 06 21 | 704 | 0.1− | 1.4+ | 2004 02 14 | 608 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.6+ |
| 2001 06 21 | 704 | 0.8+ | 0.0 | 2004 02 14 | 106 | 0.3− | 0.2− | 2004 03 20 | 704 | 0.3− | 1.4+ |
| 2001 06 21 | 704 | 0.4+ | 0.7− | 2004 02 14 | 106 | 0.4− | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2001 06 21 | 704 | 0.2− | 0.3− | 2004 02 14 | 106 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 06 30 | 608 | 0.2− | 0.3− | 2004 02 17 | 704 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 06 30 | 608 | 0.0 | 0.2− | 2004 02 17 | 704 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.6− |
| 2001 06 30 | 608 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.7+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.7+ |
| 2001 07 17 | 608 | (0.1− | 2.2+) | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.8+ |
| 2001 07 17 | 608 | (0.2− | 1.7+) | 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 1.2+ |
| 2001 07 17 | 608 | 0.2+ | 1.5+ | 2004 02 17 | 704 | 0.4+ | 0.6− | 2006 10 21 | G96 | 0.2− | 0.2+ |
| 2001 07 19 | 691 | 0.2− | 0.3+ | 2004 02 17 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.4+ |
| 2001 07 19 | 691 | 0.3− | 0.4+ | 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.4+ |
| 2001 07 19 | 691 | 0.2− | 0.3+ | 2004 02 19 | 608 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2001 08 11 | 608 | 0.3+ | 0.3+ | 2004 02 19 | 608 | 0.1− | 0.8+ | | | | |

**(138075)*** **2000 DE$_{57}$ = 1998 RJ$_{41}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 1247)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.36870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26494978 | $\omega$ | 78.49249 | | +0.87977854 | −0.47495845 | |
| $a$ | 2.4008241 | $\Omega$ | 309.86073 | | +0.42531112 | +0.80529912 | |
| $e$ | 0.1893781 | $i$ | 1.50082 | | +0.21236800 | +0.35483490 | |
| $P$ | 3.72 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 699 | 0.6− | 0.6+ | 2002 10 30 | 608 | 0.0 | 0.1+ | 2002 12 05 | 704 | 0.3− | 0.1+ | |
| 1998 08 26 | 699 | 0.9− | 1.1+ | 2002 10 30 | 608 | 0.1− | 0.1− | 2002 12 05 | 704 | 0.4− | 0.2+ | |
| 1998 08 26 | 699 | 1.2+ | 0.6− | 2002 11 05 | 704 | 0.4+ | 0.3− | 2002 12 05 | 704 | 0.1+ | 0.4+ | |
| 1998 08 27 | 691 | 0.2+ | 0.7+ | 2002 11 05 | 704 | 0.3+ | 0.9− | 2002 12 11 | 644 | 0.1− | 0.1+ | |
| 1998 08 27 | 691 | 0.2− | 0.8+ | 2002 11 05 | 704 | 0.1+ | 0.5− | 2002 12 11 | 704 | 0.2+ | 0.5+ | |
| 1998 08 27 | 691 | 0.1− | 0.7+ | 2002 11 05 | 704 | 0.1− | 0.6− | 2002 12 11 | 644 | 0.5− | 0.2+ | |
| 1998 09 14 | 704 | 0.2+ | 0.4− | 2002 11 05 | 704 | 0.5− | 1.1− | 2002 12 11 | 704 | 0.1− | 0.4+ | |
| 1998 09 14 | 704 | 0.9+ | 1.1− | 2002 11 08 | 704 | 0.1+ | 0.0 | 2002 12 11 | 704 | 0.1− | 0.1+ | |
| 1998 09 14 | 704 | 0.8− | 1.2− | 2002 11 08 | 704 | 0.1− | 0.2+ | 2002 12 11 | 644 | 0.0 | 0.3+ | |
| 1998 09 14 | 704 | 0.4+ | 0.0 | 2002 11 08 | 704 | 0.7− | 0.5+ | 2002 12 11 | 704 | 0.0 | 0.5+ | |
| 1998 09 18 | 704 | 0.6+ | 0.6+ | 2002 11 08 | 704 | 0.9− | 0.2+ | 2002 12 11 | 704 | 0.2− | 0.4+ | |
| 1998 09 18 | 704 | 1.2− | 0.7+ | 2002 11 10 | 704 | 0.1+ | 0.2− | 2002 12 27 | 644 | 0.2+ | 0.2+ | |
| 1998 09 18 | 704 | 0.6− | 0.1+ | 2002 11 10 | 704 | 0.7+ | 0.2+ | 2002 12 27 | 644 | 0.1+ | 0.2+ | |
| 1998 09 18 | 704 | 1.2− | 0.5− | 2002 11 10 | 704 | 0.6+ | 0.3− | 2002 12 27 | 644 | 0.2+ | 0.1+ | |
| 1998 09 18 | 704 | 0.9− | 0.5+ | 2002 11 13 | 644 | 0.1− | 1.0+ | 2003 01 04 | 704 | 0.4− | 0.9+ | |
| 2000 02 25 | 691 | 0.3+ | 0.2− | 2002 11 13 | 644 | 0.1+ | 1.0+ | 2003 01 04 | 704 | 0.1− | 0.4+ | |
| 2000 02 25 | 691 | 0.1− | 0.0 | 2002 11 13 | 644 | 0.1− | 0.9+ | 2003 01 04 | 704 | 0.2+ | 1.3+ | |
| 2000 02 25 | 691 | 0.2+ | 0.2− | 2002 11 14 | 704 | 0.4+ | 0.7+ | 2003 01 04 | 704 | 0.1− | 0.2+ | |
| 2000 02 27 | 691 | 0.1− | 0.2+ | 2002 11 14 | 704 | 0.9− | 0.3− | 2003 01 08 | 704 | 0.3+ | 1.0+ | |
| 2000 02 27 | 691 | 0.3− | 0.0 | 2002 11 14 | 704 | 0.7− | 0.1− | 2003 01 08 | 704 | 0.1− | 0.3− | |
| 2000 02 27 | 691 | 0.1− | 0.4+ | 2002 11 14 | 704 | 1.3+ | 0.2− | 2003 01 08 | 704 | 0.1+ | 0.6− | |
| 2000 02 29 | 704 | 0.5− | 1.4− | 2002 11 14 | 704 | 0.2− | 0.4− | 2004 03 27 | 704 | 0.9+ | 0.5− | |
| 2000 02 29 | 704 | 0.7+ | 0.1− | 2002 11 23 | 644 | 0.8− | 0.1+ | 2004 03 27 | 704 | 0.1− | 0.9+ | |
| 2000 02 29 | 704 | 0.0 | 0.2+ | 2002 11 23 | 644 | 0.3− | 0.0 | 2004 03 27 | 704 | (1.7+ | 0.6−) | |
| 2000 02 29 | 704 | 0.4+ | 0.5+ | 2002 11 23 | 644 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.6+ | 0.8+ | |
| 2000 03 03 | 704 | 0.1+ | 0.4+ | 2002 11 27 | 699 | 0.4− | 0.0 | 2004 03 27 | 704 | 1.0+ | 0.1+ | |
| 2000 03 03 | 704 | 0.4+ | 0.7+ | 2002 11 27 | 699 | 0.1+ | 0.4− | 2004 04 12 | 691 | 0.0 | 0.4+ | |
| 2000 03 03 | 704 | 0.3+ | 0.7+ | 2002 11 27 | 699 | 0.2− | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.4+ | |
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2002 11 27 | 699 | 0.6− | 0.4+ | 2004 04 12 | 691 | 0.3+ | 1.2+ | |
| 2000 03 03 | 704 | 0.6+ | 0.8+ | 2002 11 28 | 699 | 0.6− | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.3− | |
| 2002 09 05 | 704 | 0.7+ | 1.3+ | 2002 11 28 | 699 | 0.4− | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.6− | |
| 2002 09 05 | 704 | 0.5− | 0.8+ | 2002 11 28 | 699 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.4− | |
| 2002 09 05 | 704 | 0.8+ | 0.1− | 2002 11 28 | 699 | 0.2− | 0.2+ | 2006 10 23 | G96 | 1.1+ | 0.3− | |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2002 12 02 | 704 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.6− | |
| 2002 10 02 | 704 | 0.9+ | 0.4− | 2002 12 02 | 704 | 0.3− | 1.0+ | 2006 11 14 | G96 | 0.3− | 0.4− | |
| 2002 10 02 | 704 | 0.5+ | 0.9− | 2002 12 02 | 704 | 0.4− | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.1− | |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2002 12 02 | 704 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2− | |
| 2002 10 03 | 704 | 0.1+ | 0.3− | 2002 12 02 | 608 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.5− | |
| 2002 10 03 | 704 | 0.1+ | 0.0 | 2002 12 02 | 608 | 0.1+ | 1.2− | 2006 12 01 | G96 | 0.4− | 0.3− | |
| 2002 10 03 | 704 | 0.3+ | 0.8− | 2002 12 02 | 608 | 0.4+ | 1.0− | 2006 12 01 | G96 | 0.1− | 0.3− | |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2− | |
| 2002 10 30 | 608 | 0.2− | 0.2− | 2002 12 05 | 704 | 0.0 | 0.1+ | | | | | |

**(138076)∗ 2000 DQ$_{57}$ = 2001 QK$_{17}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 15691)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.63566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22235517 | $\omega$ | 318.29589 | | −0.33065101 | +0.94302887 | |
| $a$ | 2.6983890 | $\Omega$ | 292.36596 | | −0.85495454 | −0.31589679 | |
| $e$ | 0.2637756 | $i$ | 2.29088 | | −0.39965315 | −0.10443068 | |
| $P$ | 4.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 31 | 691 | 0.2− | 0.2− | 2000 03 11 | 704 | 0.2− | 0.3− | 2001 09 22 | 704 | 0.1+ | 1.0+ | |
| 1994 12 31 | 691 | 0.7+ | 0.3− | 2000 03 11 | 699 | 0.4+ | 0.3+ | 2001 09 22 | 704 | 0.1+ | 0.8+ | |
| 1994 12 31 | 691 | 0.8− | 0.4− | 2000 03 11 | 704 | 0.6+ | 0.2+ | 2001 09 23 | 704 | (0.2− | 1.6+) | |
| 1995 01 07 | 691 | 0.5− | 0.0 | 2000 03 11 | 704 | 0.6+ | 0.2− | 2001 09 23 | 704 | (0.5+ | 2.3+) | |
| 1995 01 07 | 691 | 0.2+ | 0.8− | 2000 03 11 | 699 | 1.0+ | 0.6+ | 2001 09 23 | 704 | (0.2− | 2.2+) | |
| 1995 01 07 | 691 | 0.4− | 0.1− | 2000 03 11 | 699 | 0.0 | 0.1+ | 2001 09 23 | 704 | (0.5+ | 1.9+) | |
| 1995 01 08 | 691 | 0.1+ | 0.5+ | 2000 03 11 | 699 | 0.6+ | 0.6+ | 2001 10 11 | 644 | 0.6+ | 0.9− | |
| 1995 01 08 | 691 | 0.4− | 0.4+ | 2000 04 04 | 699 | 0.2+ | 0.8− | 2001 10 11 | 644 | 0.1+ | 0.9− | |
| 1995 01 08 | 691 | 0.0 | 0.4+ | 2000 04 04 | 699 | 1.3+ | 0.7+ | 2001 10 11 | 644 | 0.0 | 1.2− | |
| 1995 01 09 | 691 | 0.0 | 0.1+ | 2000 04 04 | 699 | 0.1− | 0.3− | 2001 11 09 | 621 | 1.0− | 0.6+ | |
| 1995 01 09 | 691 | 0.1+ | 0.2− | 2000 04 04 | 699 | 0.2+ | 0.7+ | 2001 11 09 | 621 | 0.3+ | 1.1+ | |
| 1995 01 09 | 691 | 0.5+ | 0.1+ | 2001 08 16 | 704 | 0.9− | 0.4− | 2001 11 09 | 621 | 0.4− | 0.6+ | |
| 1996 06 13 | 566 | 0.6− | 0.2− | 2001 08 16 | 704 | 0.4+ | 0.2− | 2004 01 16 | 691 | 0.1+ | 0.2+ | |
| 1996 06 13 | 566 | 0.6− | 0.5− | 2001 08 16 | 704 | 0.2− | 0.0 | 2004 01 16 | 691 | 0.2+ | 0.2+ | |
| 1996 06 13 | 566 | 0.3− | 0.3− | 2001 08 16 | 704 | 0.5− | 0.2+ | 2004 01 16 | 691 | 0.0 | 0.3+ | |
| 1997 10 04 | 691 | 0.2+ | 0.4− | 2001 08 18 | 704 | 0.4− | 0.7+ | 2004 01 21 | 704 | 0.0 | 0.2− | |
| 1997 10 04 | 691 | 0.3+ | 0.2− | 2001 08 18 | 704 | 0.8− | 0.5− | 2004 01 21 | 704 | 0.3− | 0.7− | |
| 1997 10 04 | 691 | 0.7+ | 0.5− | 2001 08 18 | 704 | 0.2− | 0.7+ | 2004 01 21 | 704 | 0.9− | 0.7+ | |
| 2000 02 25 | 691 | 0.8− | 0.0 | 2001 08 23 | 699 | 0.5+ | 0.7+ | 2004 01 21 | 704 | 0.5+ | 0.1− | |
| 2000 02 25 | 691 | 0.6− | 0.4− | 2001 08 23 | 699 | 0.1+ | 0.0 | 2004 01 24 | 704 | 0.3+ | 1.2+ | |
| 2000 02 25 | 691 | 0.5− | 0.2− | 2001 08 23 | 699 | 0.2− | 0.3+ | 2004 01 24 | 704 | 1.1+ | 1.1− | |
| 2000 02 29 | 704 | 0.2− | 0.6+ | 2001 08 23 | 699 | 0.2− | 0.4+ | 2004 01 24 | 704 | 0.3+ | 0.4− | |
| 2000 02 29 | 704 | 0.1− | 1.0+ | 2001 08 31 | 644 | 0.3+ | 0.1− | 2004 01 24 | 704 | 0.3+ | 0.4+ | |
| 2000 02 29 | 704 | 0.8+ | 0.8+ | 2001 08 31 | 644 | 0.2− | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.0 | |
| 2000 02 29 | 704 | 0.7+ | 0.8+ | 2001 08 31 | 644 | 0.5− | 0.7+ | 2004 01 27 | 691 | 0.2+ | 0.1+ | |
| 2000 03 03 | 704 | 0.6+ | 0.1+ | 2001 09 11 | 699 | 0.4− | 1.0+ | 2004 01 27 | 691 | 0.0 | 0.2+ | |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2001 09 11 | 699 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.4− | 0.2− | |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2001 09 11 | 699 | 0.5− | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.1− | |
| 2000 03 03 | 704 | 0.7+ | 0.8+ | 2001 09 11 | 699 | 0.5− | 0.0 | 2006 09 28 | G96 | 0.3− | 0.2− | |
| 2000 03 03 | 704 | 0.0 | 0.9+ | 2001 09 12 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.3− | |
| 2000 03 04 | 704 | 0.0 | 0.4+ | 2001 09 12 | 704 | 0.6− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.0 | |
| 2000 03 04 | 704 | 0.3+ | 0.0 | 2001 09 12 | 704 | 0.6− | 0.1− | 2006 10 17 | 691 | 0.2− | 0.4− | |
| 2000 03 04 | 704 | 0.4+ | 0.6+ | 2001 09 12 | 704 | 0.4− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.2− | |
| 2000 03 04 | 704 | 1.0+ | 0.7+ | 2001 09 12 | 704 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2− | |
| 2000 03 04 | 704 | 0.5+ | 0.5+ | 2001 09 20 | 704 | 0.7+ | 1.3+ | 2006 10 21 | 691 | 0.4− | 0.2− | |
| 2000 03 05 | 704 | 0.2+ | 0.4+ | 2001 09 20 | 704 | 0.4+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.1− | |
| 2000 03 05 | 704 | 0.7+ | 0.2− | 2001 09 20 | 704 | 0.5+ | 0.9+ | 2006 10 31 | 691 | 0.0 | 0.3+ | |
| 2000 03 05 | 704 | 0.9+ | 0.1+ | 2001 09 20 | 704 | 0.5+ | 0.9+ | 2006 10 31 | 691 | 0.1− | 0.3+ | |
| 2000 03 05 | 704 | 0.4+ | 0.2− | 2001 09 20 | 704 | 0.5+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2+ | |
| 2000 03 05 | 704 | 0.7− | 0.5+ | 2001 09 22 | 704 | 0.3+ | 1.1+ | | | | | |
| 2000 03 11 | 704 | 0.5+ | 0.4− | 2001 09 22 | 704 | 0.3+ | 1.2+ | | | | | |

**(138077)∗ 2000 DV$_{57}$ = 2002 TU$_{94}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 37358)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.98984 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25736021 | $\omega$ | 221.05176 | | −0.09503154 | −0.99528930 | |
| $a$ | 2.4477954 | $\Omega$ | 234.40993 | | +0.91938352 | −0.08035986 | |
| $e$ | 0.1768602 | $i$ | 1.35214 | | +0.38171055 | −0.05423570 | |
| $P$ | 3.83 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 25 | 691 | 0.7− | 0.7− | 2004 03 13 | 644 | 0.4+ | 0.2+ | 2006 10 23 | 704 | 1.0− | 0.3+ | |
| 2000 02 25 | 691 | 0.4− | 0.4− | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 10 23 | 704 | 0.7− | 1.3+ | |
| 2000 02 25 | 691 | 0.6− | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 1.1− | 0.7− | |
| 2000 02 26 | 703 | 0.1+ | 0.8+ | 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 2000 02 26 | 703 | 0.7+ | 0.5− | 2004 03 18 | 704 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | |
| 2000 02 26 | 703 | 0.9− | 0.1− | 2004 03 18 | 704 | 1.0+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− | |
| 2000 02 26 | 703 | 1.4+ | 0.0 | 2004 03 18 | 704 | 0.9+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 2000 02 29 | 704 | 0.0 | 0.6− | 2004 03 20 | 704 | (0.5+ | 1.5+) | 2006 10 28 | 704 | 0.5− | 1.2− | |
| 2000 02 29 | 704 | 0.2+ | 0.5− | 2004 03 20 | 704 | 0.4+ | 1.2+ | 2006 10 28 | 704 | 1.3− | 1.4+ | |
| 2000 02 29 | 704 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.5+ | 1.2+ | 2006 10 28 | 704 | 0.5+ | 0.6+ | |
| 2000 03 03 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.7+ | 2006 10 28 | 704 | 0.5− | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 1.1+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.1+ | | |
| 2000 03 03 | 704 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 683 | 0.0 | 0.7− | | |
| 2000 03 03 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1+ | | |
| 2000 03 03 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 683 | (0.7+ | 2.3−) | | |
| 2000 03 04 | 704 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.1+ | 1.1+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 04 | 704 | 0.3+ | 0.0 | 2004 03 30 | 704 | 0.1− | 0.4+ | 2006 11 10 | 683 | 0.6− | 1.1+ | | |
| 2000 03 04 | 704 | 0.3+ | 0.3− | 2004 03 30 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.6− | 0.6− | | |
| 2000 03 04 | 704 | 0.6+ | 0.6− | 2004 03 30 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.5− | | |
| 2000 03 04 | 704 | 0.1− | 0.6− | 2004 03 30 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.5− | | |
| 2000 03 11 | 704 | 0.1+ | 0.1− | 2004 03 30 | 704 | 0.9+ | 1.0+ | 2006 11 11 | 703 | 0.1+ | 0.4− | | |
| 2000 03 11 | 704 | 0.4+ | 0.4+ | 2004 04 12 | 691 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.7− | | |
| 2000 03 11 | 704 | 0.6+ | 0.1+ | 2004 04 12 | 691 | 0.2− | 0.7+ | 2006 11 13 | G96 | 0.0 | 0.7− | | |
| 2000 03 11 | 704 | 0.7+ | 0.3+ | 2004 04 12 | 691 | 0.1− | 0.5+ | 2006 11 13 | G96 | 0.1+ | 1.1− | | |
| 2000 03 11 | 704 | 0.2+ | 0.6+ | 2004 04 21 | 704 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.1+ | 0.6− | | |
| 2000 03 11 | 699 | 0.1+ | 0.0 | 2004 04 21 | 704 | 0.7+ | 0.5− | 2006 11 14 | 683 | 1.0+ | 0.8+ | | |
| 2000 03 11 | 699 | 0.7− | 0.0 | 2004 04 21 | 704 | 0.0 | 1.2+ | 2006 11 14 | 683 | 0.5+ | 1.2+ | | |
| 2000 03 11 | 699 | 0.4+ | 0.5+ | 2004 04 21 | 704 | 0.3+ | 1.3+ | 2006 11 14 | 683 | 0.4+ | 1.5+ | | |
| 2000 03 11 | 699 | 0.7− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.7− | 0.4− | | |
| 2002 09 17 | 608 | (1.6− | 0.9−) | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.0 | | |
| 2002 09 17 | 608 | (1.8− | 0.8−) | 2006 09 26 | G96 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.8− | | |
| 2002 09 17 | 608 | (1.9− | 1.0−) | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.6− | 0.7− | | |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2006 10 04 | 703 | 0.5− | 0.7+ | 2006 11 18 | 704 | 1.0+ | 1.1+ | | |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2006 10 04 | 703 | 0.3+ | 0.9− | 2006 11 18 | 704 | 0.1+ | 1.0+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.6+ | 2006 10 04 | 703 | 0.1+ | 1.1+ | 2006 11 18 | 704 | 0.2+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.8− | 0.5+ | 2006 10 04 | 703 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.6− | | |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.4− | | |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.8+ | | |
| 2002 10 04 | 644 | (0.3− | 1.7+) | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 1.1+ | | |
| 2002 10 04 | 644 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.9+ | | |
| 2002 10 07 | 704 | (0.1+ | 3.0+) | 2006 10 16 | 691 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1+ | | |
| 2002 10 07 | 704 | 0.8− | 1.1+ | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 25 | 703 | 0.3− | 0.3− | | |
| 2002 10 07 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.4− | 0.2+ | 2006 11 25 | 703 | 0.7− | 0.1− | | |
| 2002 10 07 | 704 | 0.9+ | 0.7+ | 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 25 | 703 | 0.7− | 0.2+ | | |
| 2002 10 11 | 704 | (0.1− | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.2− | 0.7− | | |
| 2002 10 11 | 704 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 27 | 691 | 1.4+ | 1.0+ | | |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.4+ | 0.0 | | |
| 2002 10 11 | 704 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.2− | | |
| 2002 10 11 | 704 | 1.2− | 0.8+ | 2006 10 23 | 704 | 0.6+ | 0.2+ | | | | | | |
| 2004 03 13 | 644 | 0.5+ | 0.4+ | 2006 10 23 | 704 | 0.5− | 1.2+ | | | | | | |

**(138078)∗ 2000 DQ$_{58}$ = 1997 RD$_{11}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (MPC 40118)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.65423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22009320 | $\omega$ | 74.85159 | | −0.32445492 | +0.94588767 | |
| $a$ | 2.7168456 | $\Omega$ | 176.20457 | | −0.89451681 | −0.30508861 | |
| $e$ | 0.0658049 | $i$ | 4.37743 | | −0.30752022 | −0.11053262 | |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 09 | 691 | 0.4− | 0.8+ | 2000 03 11 | 704 | 0.3+ | 0.6− | 2006 08 22 | 644 | 0.3− | 0.1+ | | |
| 1996 05 09 | 691 | 0.2− | 1.0+ | 2000 03 11 | 704 | 0.7− | 0.7− | 2006 08 22 | 644 | 0.5− | 0.4+ | | |
| 1996 05 09 | 691 | 0.5− | 0.4+ | 2004 01 18 | 691 | 0.2+ | 0.5+ | 2006 08 24 | 644 | 0.6− | 0.5+ | | |
| 1996 05 15 | 691 | 1.0− | 1.4− | 2004 01 18 | 691 | 0.1+ | 0.5+ | 2006 08 24 | 644 | 0.6− | 0.3+ | | |
| 1996 05 15 | 691 | 0.1− | 1.2− | 2004 01 18 | 691 | 0.0 | 0.5+ | 2006 08 24 | 644 | 0.4− | 0.2+ | | |
| 1996 05 15 | 691 | 0.3− | 1.2− | 2005 04 30 | 691 | 0.6+ | 0.5+ | 2006 08 27 | 691 | 0.6− | 0.2+ | | |
| 1997 09 03 | 910 | 1.1+ | 0.7+ | 2005 04 30 | 691 | 0.5+ | 0.6+ | 2006 08 27 | 691 | 0.4− | 0.4+ | | |
| 1997 09 03 | 910 | 0.9+ | 0.2+ | 2005 04 30 | 691 | (1.6+ | 2.3+) | 2006 08 27 | 691 | 0.5− | 0.4+ | | |
| 1997 09 03 | 910 | 1.0+ | 0.7+ | 2005 05 03 | 704 | 0.1− | 0.2− | 2006 09 01 | 704 | 1.2+ | 0.2+ | | |
| 1997 09 05 | 910 | 1.8+ | 0.6+ | 2005 05 03 | 704 | 0.8+ | 0.5+ | 2006 09 01 | 704 | 0.1+ | 0.5− | | |
| 1997 09 05 | 910 | 1.8+ | 0.5+ | 2005 05 03 | 704 | 1.0+ | 0.0 | 2006 09 01 | 704 | 0.6− | 1.3+ | | |
| 1997 09 05 | 910 | 1.5+ | 0.7+ | 2005 05 03 | 704 | 0.4− | 0.0 | 2006 09 14 | 703 | (0.1− | 1.9−) | | |
| 2000 02 25 | 691 | 0.1− | 0.1− | 2005 05 11 | 691 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 1.5+ | 0.7− | | |
| 2000 02 25 | 691 | 0.1− | 0.4− | 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.4+ | | |
| 2000 02 25 | 691 | 0.2+ | 0.0 | 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.4− | | |
| 2000 02 29 | 704 | 0.7+ | 1.0+ | 2005 05 11 | 699 | 0.1− | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.1− | | |
| 2000 02 29 | 704 | 0.0 | 0.7+ | 2005 05 11 | 699 | 1.3+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.3− | | |
| 2000 02 29 | 704 | 0.2− | 1.2+ | 2005 05 11 | 699 | 1.0− | 1.0+ | 2006 09 25 | G96 | 0.4− | 0.4− | | |
| 2000 02 29 | 704 | 0.2+ | 0.6+ | 2005 05 11 | 699 | 0.3+ | 0.9+ | 2006 09 25 | G96 | 0.6− | 0.3− | | |
| 2000 03 03 | 704 | 0.2+ | 0.2+ | 2005 06 04 | 703 | 0.4+ | 0.9− | 2006 09 27 | G96 | 0.5− | 0.3− | | |
| 2000 03 03 | 704 | 0.2+ | 0.4+ | 2005 06 04 | 703 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.6− | 0.9− | | |
| 2000 03 03 | 704 | 0.4+ | 0.0 | 2005 06 04 | 703 | (2.0− | 1.1+) | 2006 09 27 | G96 | 0.3− | 0.4− | | |
| 2000 03 03 | 704 | 0.0 | 0.1+ | 2005 06 04 | 703 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.3− | 0.2− | | |
| 2000 03 03 | 704 | 0.7+ | 0.3+ | 2006 08 19 | 691 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 2000 03 11 | 704 | 0.7+ | 2.0+ | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2000 03 11 | 704 | 0.2− | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.2+ | | |
| 2000 03 11 | 704 | 0.0 | 0.6+ | 2006 08 22 | 644 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.4− | 0.1+ | | |

**(138079)∗ 2000 DT$_{58}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.73019 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23628657 | $\omega$ | 207.51776 | | −0.99335618 | −0.10975630 | |
| $a$ | 2.5912542 | $\Omega$ | 326.12601 | | +0.11366104 | −0.88864079 | |
| $e$ | 0.1788913 | $i$ | 3.55891 | | +0.01801860 | −0.44527643 | |
| $P$ | 4.17 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 16 | 691 | 0.3− | 0.2+ | 2000 04 25 | 699 | 0.1+ | 0.3+ | 2004 02 11 | 699 | 0.1+ | 0.3+ | | |
| 1990 11 16 | 691 | 0.0 | 0.1− | 2000 04 25 | 699 | 0.4− | 1.3+ | 2004 02 11 | 699 | 1.1− | 1.0− | | |
| 1990 11 16 | 691 | 0.0 | 0.2+ | 2002 10 12 | 704 | (0.2+ | 1.6+) | 2004 02 11 | 699 | 0.5− | 0.8− | | |
| 2000 01 27 | 691 | 0.1+ | 0.3− | 2002 10 12 | 704 | 0.4+ | 0.9+ | 2004 02 16 | 704 | 0.1− | 0.7+ | | |
| 2000 01 27 | 691 | 0.0 | 0.6− | 2002 10 12 | 704 | 0.9+ | 1.1+ | 2004 02 16 | 704 | 0.0 | 0.0 | | |
| 2000 01 27 | 691 | 0.0 | 0.5− | 2003 11 20 | 704 | 0.1+ | 0.2− | 2004 02 16 | 704 | 0.7+ | 0.7+ | | |
| 2000 02 02 | 691 | 0.1+ | 0.6− | 2003 11 20 | 704 | 0.4− | 0.1− | 2004 02 16 | 704 | 0.6+ | 0.2+ | | |
| 2000 02 02 | 691 | 0.0 | 0.5− | 2003 11 20 | 704 | 0.1− | 0.3− | 2004 02 16 | 704 | 0.3+ | 0.8+ | | |
| 2000 02 02 | 691 | 0.0 | 0.6− | 2003 11 20 | 704 | 0.3+ | 0.1− | 2004 02 17 | 644 | 0.0 | 0.3+ | | |
| 2000 02 06 | 704 | 0.9+ | 1.0+ | 2004 01 05 | 703 | 0.2+ | 0.1− | 2004 02 17 | 644 | 0.1+ | 0.4+ | | |
| 2000 02 06 | 704 | 1.1+ | 1.1+ | 2004 01 05 | 703 | 0.5− | 0.5+ | 2004 02 17 | 644 | 0.4− | 0.1− | | |
| 2000 02 06 | 704 | 0.8+ | 0.8− | 2004 01 05 | 703 | 0.9− | 0.3− | 2004 02 17 | 644 | 0.3− | 0.3− | | |
| 2000 02 25 | 691 | 0.5− | 0.0 | 2004 01 05 | 703 | 0.9− | 0.2+ | 2004 02 17 | 644 | 0.0 | 0.2+ | | |
| 2000 02 25 | 691 | 0.2− | 0.1+ | 2004 01 13 | 699 | 1.1− | 0.1+ | 2004 02 17 | 644 | 0.1+ | 0.3+ | | |
| 2000 02 25 | 691 | 0.3− | 0.0 | 2004 01 13 | 699 | 0.3− | 0.3− | 2004 02 18 | 608 | 1.2+ | 0.1+ | | |
| 2000 02 26 | 703 | 0.3− | 0.6− | 2004 01 13 | 699 | 0.7− | 0.1− | 2004 02 18 | 608 | 1.2+ | 0.1− | | |
| 2000 02 26 | 703 | 0.1+ | 0.1+ | 2004 01 13 | 699 | 0.1+ | 0.6+ | 2004 02 18 | 608 | 0.9+ | 0.4+ | | |
| 2000 02 26 | 703 | 0.3− | 0.4− | 2004 01 22 | 704 | 0.2+ | 0.3− | 2004 02 20 | 333 | 0.5− | 0.1+ | | |
| 2000 02 26 | 703 | 0.5− | 0.4+ | 2004 01 22 | 704 | 0.0 | 0.1− | 2004 02 20 | 333 | 0.2+ | 0.4− | | |
| 2000 02 29 | 704 | 1.3− | 0.4+ | 2004 01 22 | 704 | 0.1− | 0.5− | 2004 02 20 | 333 | 0.4− | 0.0 | | |
| 2000 02 29 | 704 | 0.4+ | 0.7+ | 2004 01 22 | 704 | 0.2+ | 0.4− | 2004 02 20 | 333 | 0.3− | 0.0 | | |
| 2000 02 29 | 704 | 0.3+ | 0.5+ | 2004 01 22 | 704 | 0.1+ | 0.4− | 2004 02 20 | 333 | 0.7− | 0.3+ | | |
| 2000 02 29 | 704 | 0.4+ | 0.7+ | 2004 01 24 | 704 | 0.8+ | 0.3− | 2004 02 20 | 333 | 0.3− | 0.2− | | |
| 2000 03 03 | 704 | 0.6+ | 0.3+ | 2004 01 24 | 704 | 0.3+ | 0.6− | 2004 02 20 | 333 | 0.5− | 0.4+ | | |
| 2000 03 03 | 704 | 0.3+ | 0.2+ | 2004 01 24 | 704 | 0.2− | 0.9− | 2004 02 20 | 333 | 0.5− | 0.0 | | |
| 2000 03 03 | 704 | 0.5+ | 0.0 | 2004 01 24 | 704 | 0.3+ | 0.3− | 2004 02 23 | 608 | 0.2− | 0.8+ | | |
| 2000 03 03 | 704 | 0.5+ | 0.4− | 2004 01 24 | 704 | 0.8+ | 0.2− | 2004 02 23 | 608 | 0.2+ | 0.6+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.1+ | 2004 01 27 | 704 | 0.2− | 0.1+ | 2004 02 23 | 608 | 0.2− | 0.9+ | | |
| 2000 03 11 | 704 | 0.4+ | 0.4+ | 2004 01 27 | 704 | 0.6+ | 0.2+ | 2004 02 26 | 704 | 0.2− | 0.4+ | | |
| 2000 03 11 | 704 | 0.3+ | 0.4+ | 2004 01 27 | 704 | 1.4+ | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.1− | | |
| 2000 03 11 | 704 | 0.1+ | 0.3+ | 2004 01 27 | 704 | (0.5+ | 1.6−) | 2004 02 26 | 704 | 0.0 | 0.2− | | |
| 2000 03 11 | 704 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.3− | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.2+ | | |
| 2000 03 11 | 704 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.2− | 0.3− | 2004 02 26 | 704 | 0.1+ | 0.1+ | | |
| 2000 03 11 | 699 | 0.3− | 0.6+ | 2004 01 30 | 704 | 0.0 | 0.2− | 2004 03 10 | 701 | 0.1− | 0.2+ | | |
| 2000 03 11 | 699 | 0.7− | 0.4− | 2004 01 30 | 704 | 0.1+ | 0.1+ | 2004 03 10 | 701 | 1.0+ | 0.2+ | | |
| 2000 03 11 | 699 | 0.9+ | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.2− | 2004 03 10 | 701 | 0.4− | 0.4+ | | |
| 2000 03 11 | 699 | 0.2+ | 1.2+ | 2004 01 31 | 704 | 0.3− | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.4+ | | |
| 2000 04 04 | 699 | 0.1− | 0.0 | 2004 01 31 | 704 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 2000 04 04 | 699 | 0.3+ | 0.4+ | 2004 01 31 | 704 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2000 04 04 | 699 | 0.1− | 0.0 | 2004 01 31 | 704 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 2000 04 04 | 699 | 0.1+ | 0.1+ | 2004 01 31 | 704 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2000 04 05 | 704 | 0.0 | 0.4+ | 2004 02 10 | 106 | 0.4− | 0.4− | 2006 09 30 | 691 | 0.2− | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.0 | 0.2+ | 2004 02 10 | 106 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.7− |
| 2000 04 05 | 704 | 0.3− | 0.2+ | 2004 02 10 | 106 | 0.1− | 0.7− | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 2000 04 05 | 704 | 0.4− | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.8− |
| 2000 04 05 | 704 | 0.5− | 1.1+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2000 04 25 | 699 | 0.7+ | 0.7+ | 2004 02 11 | 691 | 0.2− | 0.2+ | | | | |
| 2000 04 25 | 699 | 0.2+ | 0.2+ | 2004 02 11 | 699 | 0.1− | 0.8− | | | | |

**(138080)∗ 2000 $DA_{59}$ = 2004 $FS_{32}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60615)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.65825 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25552188 | $\omega$ | 21.57713 | | +0.99849658 | +0.00780911 | |
| $a$ | 2.4595217 | $\Omega$ | 337.76710 | | −0.03470380 | +0.85622052 | |
| $e$ | 0.0825709 | $i$ | 8.24406 | | +0.04242895 | +0.51655148 | |
| $P$ | 3.86 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.0 | 0.0 | 2002 12 06 | 704 | 0.4+ | 0.4+ | 2004 03 26 | 699 | (2.5+ | 1.8−) |
| 1992 01 31 | 691 | 0.7− | 0.1− | 2002 12 06 | 704 | 0.2− | 0.3+ | 2004 03 26 | 699 | 0.7+ | 0.3− |
| 1992 01 31 | 691 | 0.4− | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.0 | 2004 03 26 | 699 | 0.1− | 0.4+ |
| 2000 02 25 | 691 | 0.6− | 0.2− | 2002 12 06 | 704 | 0.7+ | 0.4+ | 2004 03 27 | 704 | 0.0 | 0.4+ |
| 2000 02 25 | 691 | 0.4− | 0.5− | 2002 12 06 | 704 | 0.9+ | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.2+ |
| 2000 02 25 | 691 | 0.2+ | 0.2− | 2002 12 06 | 704 | 0.4+ | 0.0 | 2004 03 27 | 703 | (0.0 | 2.9+) |
| 2000 02 29 | 704 | 0.7+ | 0.6− | 2002 12 06 | 704 | 0.7+ | 0.5+ | 2004 03 27 | 703 | 0.3− | 0.5+ |
| 2000 02 29 | 704 | 0.5− | 1.1− | 2002 12 06 | 704 | (1.6+ | 1.9−) | 2004 03 27 | 704 | 0.7+ | 0.0 |
| 2000 02 29 | 704 | 1.0+ | 0.3+ | 2002 12 06 | 704 | 0.4+ | 0.5+ | 2004 03 27 | 703 | 0.9− | 1.1+ |
| 2000 02 29 | 704 | 1.6+ | 0.0 | 2002 12 06 | 704 | 0.7− | 0.1+ | 2004 03 27 | 704 | 0.3− | 0.3+ |
| 2000 03 03 | 704 | 0.1+ | 0.4+ | 2002 12 12 | 644 | 0.4+ | 0.5+ | 2004 03 27 | 703 | 0.1+ | 0.6+ |
| 2000 03 03 | 704 | 0.0 | 0.3+ | 2002 12 12 | 644 | 0.4+ | 0.5+ | 2005 07 29 | E12 | 0.7− | 0.3+ |
| 2000 03 03 | 704 | 0.8+ | 0.8+ | 2002 12 12 | 644 | 0.4+ | 0.5+ | 2005 07 29 | E12 | 0.3− | 0.1+ |
| 2000 03 03 | 704 | 1.0+ | 1.2+ | 2004 03 16 | 703 | 0.5− | 0.1− | 2005 07 29 | E12 | 0.4− | 1.0+ |
| 2000 03 03 | 704 | 0.1+ | 0.6+ | 2004 03 16 | 703 | 0.6− | 1.1+ | 2005 07 29 | E12 | 0.5− | 0.9+ |
| 2000 03 03 | 691 | 0.2+ | 0.2− | 2004 03 16 | 703 | 0.1+ | 0.5+ | 2005 08 04 | 644 | 0.1− | 0.1+ |
| 2000 03 03 | 691 | 0.1+ | 0.2− | 2004 03 16 | 703 | 1.4− | 0.0 | 2005 08 04 | 644 | 0.2− | 0.6+ |
| 2000 03 03 | 691 | 0.1+ | 0.3− | 2004 03 19 | 704 | 0.9+ | 0.5+ | 2005 08 04 | 644 | 0.1− | 0.3+ |
| 2000 03 11 | 699 | 1.2+ | 0.7− | 2004 03 19 | 704 | 1.0− | 0.3− | 2005 08 27 | 644 | 0.2+ | 0.2+ |
| 2000 03 11 | 699 | 0.2+ | 0.4+ | 2004 03 19 | 704 | 0.2− | 0.5− | 2005 08 27 | 644 | 0.4+ | 0.0 |
| 2000 03 11 | 699 | 0.3− | 0.8− | 2004 03 19 | 704 | (0.4+ | 1.5+) | 2005 08 27 | 644 | 0.3+ | 0.0 |
| 2000 03 11 | 699 | 0.7+ | 0.8− | 2004 03 20 | 704 | 0.8+ | 0.8+ | 2006 10 15 | 291 | 0.0 | 0.2+ |
| 2002 10 31 | 704 | 1.0− | 0.6− | 2004 03 20 | 704 | (2.4+ | 0.1+) | 2006 10 15 | 291 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.6+ | 2006 10 15 | 291 | 0.0 | 0.3+ |
| 2002 10 31 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | 1.3+ | 1.0+ | 2006 10 16 | 291 | (2.2− | 1.4+) |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2004 03 20 | 704 | (2.6+ | 1.6+) | 2006 10 16 | 291 | 1.1− | 0.7+ |
| 2002 12 06 | 704 | 0.3+ | 0.1− | 2004 03 20 | 704 | (1.6+ | 0.6+) | 2006 10 16 | 291 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 0.4+ | 0.2+ | 2004 03 20 | 704 | 0.9+ | 1.0+ | | | | |
| 2002 12 06 | 704 | 1.2+ | 0.7− | 2004 03 26 | 699 | 0.1+ | 0.4+ | | | | |

**(138081)∗ 2000 $DM_{60}$ = 2004 $BY_{25}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 56106)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.71725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24003735 | $\omega$ | 92.10435 | | +0.13369904 | −0.99097657 | |
| $a$ | 2.5641898 | $\Omega$ | 350.19697 | | +0.88565910 | +0.12377444 | |
| $e$ | 0.2192645 | $i$ | 3.19421 | | +0.44467126 | +0.05143273 | |
| $P$ | 4.11 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.4− | 0.7− | 2004 01 19 | 703 | 0.3+ | 0.3− | 2004 02 23 | 704 | 0.6+ | 0.2+ |
| 2000 02 11 | 691 | 0.3− | 0.6− | 2004 01 21 | 620 | 0.2− | 0.9− | 2004 02 23 | 704 | 0.3+ | 0.1+ |
| 2000 02 11 | 691 | 0.3− | 0.5− | 2004 01 21 | 620 | 0.7− | 0.7− | 2004 02 23 | 704 | 0.1+ | 0.4+ |
| 2000 02 29 | 704 | 0.1+ | 0.4+ | 2004 01 21 | 620 | 0.6− | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.2+ |
| 2000 02 29 | 704 | 0.5− | 0.5− | 2004 01 22 | 620 | 0.1− | 0.8− | 2004 02 23 | 704 | 0.4+ | 0.0 |
| 2000 02 29 | 704 | 0.2− | 1.1− | 2004 01 22 | 620 | 0.9− | 0.3− | 2004 03 01 | 291 | 1.1− | 0.1− |
| 2000 02 29 | 704 | 0.5− | 0.3+ | 2004 01 22 | 620 | 0.3− | 0.4− | 2004 03 01 | 291 | 0.3− | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.1+ | 2004 01 22 | 620 | 0.0 | 0.3− | 2004 03 01 | 291 | 0.3+ | 0.2− |
| 2000 03 03 | 704 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.5− | 0.7+ | 2004 03 14 | 703 | 0.5− | 1.1+ |
| 2000 03 03 | 704 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.0 | 0.3+ | 2004 03 14 | 703 | 1.0− | 0.6− |
| 2000 03 03 | 704 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.1− | 0.2+ | 2004 03 14 | 703 | 0.0 | 0.5+ |
| 2000 03 03 | 704 | 0.2+ | 0.0 | 2004 01 22 | 704 | 0.1− | 0.3− | 2004 03 14 | 703 | 0.0 | 1.1− |
| 2000 03 11 | 704 | 0.3+ | 0.1− | 2004 01 22 | 704 | 0.3− | 0.3+ | 2004 03 18 | 704 | 1.2+ | 0.6+ |
| 2000 03 11 | 704 | 0.4+ | 0.2− | 2004 01 29 | 704 | 0.7+ | 0.4+ | 2004 03 18 | 704 | 0.9+ | 0.3+ |
| 2000 03 11 | 704 | 0.5+ | 0.0 | 2004 01 29 | 704 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.3+ |
| 2000 03 11 | 704 | 0.6+ | 0.9+ | 2004 01 29 | 704 | 0.8+ | 0.3+ | 2004 03 18 | 704 | 0.1− | 1.3+ |
| 2000 03 11 | 704 | 0.5+ | 0.3+ | 2004 01 29 | 704 | 0.9+ | 0.1+ | 2004 03 18 | 704 | 0.8− | 0.0 |
| 2000 03 11 | 699 | 0.6+ | 0.1− | 2004 01 29 | 704 | 0.8+ | 0.0 | 2004 04 12 | 699 | 0.5+ | 0.3+ |
| 2000 03 11 | 699 | 1.4− | 0.0 | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2004 04 12 | 699 | 0.1+ | 0.7+ |
| 2000 03 11 | 699 | 0.5− | 0.3+ | 2004 02 11 | 699 | 0.1− | 0.2+ | 2004 04 12 | 699 | 0.9+ | 0.7+ |
| 2000 03 11 | 699 | 0.2+ | 0.1+ | 2004 02 11 | 699 | 0.2− | 0.7+ | 2004 04 12 | 699 | (2.1+ | 0.2−) |
| 2002 08 18 | 644 | (0.4− | 1.5+) | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 08 19 | 699 | 0.3− | 0.7+ |
| 2002 08 18 | 644 | (0.8− | 1.6+) | 2004 02 11 | 699 | 0.5− | 0.1+ | 2006 08 19 | 699 | 0.6+ | 0.3− |
| 2002 08 18 | 644 | 0.6− | 1.1+ | 2004 02 11 | 644 | 0.6+ | 0.2− | 2006 08 19 | 699 | 0.0 | 1.3− |
| 2003 12 25 | 645 | 0.0 | 0.2− | 2004 02 11 | 699 | 1.4− | 0.3− | 2006 08 19 | 699 | 0.3− | 1.2+ |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 08 21 | 807 | 0.2− | 0.8+ |
| 2003 12 27 | 704 | 0.2− | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 08 21 | 807 | 0.0 | 0.7+ |
| 2003 12 27 | 704 | 0.5− | 1.0+ | 2004 02 12 | 691 | 1.1+ | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.9+ |
| 2003 12 27 | 704 | 0.6+ | 1.3+ | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.5− | 0.5+ |
| 2003 12 27 | 704 | 0.7+ | 0.5+ | 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2004 01 19 | 703 | 0.5− | 0.8+ | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 01 19 | 703 | 0.8+ | 0.7+ | 2004 02 17 | 704 | 0.1+ | 0.4+ | | | | |
| 2004 01 19 | 703 | 0.4+ | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.1− | | | | |

**(138082)∗ 2000 $DO_{61}$ = 2002 $RG_{167}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37360)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.68625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24000589 | $\omega$ | 102.43063 | | −0.11710750 | −0.99309867 | |
| $a$ | 2.5644139 | $\Omega$ | 354.28300 | | +0.88442270 | −0.10135969 | |
| $e$ | 0.1502436 | $i$ | 3.67967 | | +0.45175471 | −0.05900213 | |
| $P$ | 4.11 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 1.7+ | 0.0 | 2003 12 25 | 645 | 0.0 | 0.4− | 2004 03 18 | 691 | 0.0 | 0.4+ |
| 2000 02 29 | 704 | 0.9+ | 0.5+ | 2004 01 22 | 704 | 0.0 | 0.9+ | 2004 03 18 | 691 | 0.0 | 0.1+ |
| 2000 02 29 | 704 | 0.6+ | 0.1+ | 2004 01 22 | 704 | 0.4+ | 0.6+ | 2004 03 19 | 704 | 0.4− | 0.2− |
| 2000 03 03 | 704 | 1.0+ | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.7+ | 2004 03 19 | 704 | 0.0 | 0.3+ |
| 2000 03 03 | 704 | 0.2− | 0.1+ | 2004 01 22 | 704 | 0.1− | 0.7+ | 2004 03 19 | 704 | 1.2− | 0.3+ |
| 2000 03 03 | 704 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.9+ | 2004 03 22 | 704 | 0.4− | 1.1+ |
| 2000 03 03 | 704 | 0.0 | 0.3+ | 2004 02 11 | 699 | (0.2− | 2.1−) | 2004 03 22 | 704 | 0.1− | 0.9− |
| 2000 03 03 | 704 | 0.2− | 0.6+ | 2004 02 11 | 644 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.0 | 0.1− |
| 2000 03 11 | 704 | 0.1− | 0.3− | 2004 02 11 | 699 | 1.2− | 0.2− | 2004 03 22 | 704 | 0.7− | 0.2+ |
| 2000 03 11 | 704 | 0.2− | 0.4+ | 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 08 21 | 691 | 0.1+ | 0.5+ |
| 2000 03 11 | 704 | 0.2− | 0.4− | 2004 02 11 | 699 | 0.5− | 0.1− | 2006 08 21 | 691 | 0.0 | 0.6+ |
| 2000 03 11 | 704 | 0.3− | 1.0+ | 2004 02 11 | 644 | 0.2+ | 0.6+ | 2006 08 21 | 691 | 0.3− | 0.6+ |
| 2000 03 11 | 704 | 0.7− | 0.2+ | 2004 02 11 | 699 | 0.2− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.3− | 1.2+ | 2006 08 28 | 691 | 0.4− | 0.4+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2004 02 17 | 704 | 0.5+ | 0.5+ | 2006 08 28 | 691 | 0.3− | 0.5+ |
| 2002 09 13 | 644 | 0.2− | 1.3+ | 2004 02 17 | 704 | 0.5+ | 1.1+ | 2006 09 14 | 703 | 0.4− | 0.5+ |
| 2002 09 13 | 644 | 0.2+ | 1.2+ | 2004 02 17 | 704 | 0.8+ | 0.9+ | 2006 09 14 | 703 | (2.1− | 0.3+) |
| 2002 09 13 | 644 | 0.2− | 1.3+ | 2004 02 17 | 704 | 0.4+ | 1.2+ | 2006 09 14 | 703 | 0.5− | 0.6+ |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2004 02 19 | 704 | 0.6+ | 0.8+ | 2006 09 14 | 703 | (0.5− | 2.4−) |
| 2002 09 14 | 644 | 0.6− | 0.5+ | 2004 02 19 | 704 | 0.4+ | 1.3+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.6− | 0.2+ | 2004 02 19 | 704 | 0.7+ | 0.8+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2002 09 15 | 644 | 0.3− | 0.0 | 2004 02 19 | 704 | 0.7+ | 1.2+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2004 02 19 | 704 | 0.9+ | 1.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.5− | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.4− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2002 09 15 | 644 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2002 09 15 | 644 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2002 09 16 | 644 | 0.3− | 0.5+ | 2004 02 23 | 704 | 0.3− | 0.4− | 2006 10 19 | 695 | 0.0 | 0.4+ |
| 2002 09 16 | 644 | 0.6− | 0.5+ | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 19 | 695 | 0.0 | 0.3+ |
| 2002 09 16 | 644 | 0.3− | 0.3+ | 2004 02 29 | 691 | 0.4− | 0.1− | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 2003 12 22 | 704 | 0.7+ | 0.3+ | 2004 02 29 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2003 12 22 | 704 | 0.7+ | 0.4− | 2004 03 01 | 291 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.4− | 0.1+ |
| 2003 12 22 | 704 | 1.3+ | 0.6+ | 2004 03 01 | 291 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2003 12 22 | 704 | 1.0+ | 0.7+ | 2004 03 01 | 291 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2003 12 25 | 645 | 0.1− | 0.4− | 2004 03 18 | 691 | 0.1+ | 0.2+ | | | | |

**(138083)∗ 2000 DL$_{62}$ = 2005 GX$_{13}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74738)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 83.32484 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21476352 | $\omega$ | 84.31614 | | −0.34519309 | +0.93670020 | |
| *a* | 2.7616102 | $\Omega$ | 165.07920 | | −0.92572802 | −0.32954042 | |
| *e* | 0.1188091 | *i* | 13.15606 | | −0.15449712 | −0.11830406 | |
| *P* | 4.59 | *H* | 15.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 25 | 691 | 0.3− | 0.1− | 2005 04 12 | 699 | 0.1+ | 0.1− | 2005 06 01 | 704 | 0.2+ | 0.2+ |
| 2000 02 25 | 691 | 0.7− | 0.2− | 2005 04 12 | 699 | 0.2+ | 0.0 | 2005 06 03 | 699 | 0.0 | 0.5+ |
| 2000 02 25 | 691 | 0.4− | 0.1− | 2005 04 13 | 703 | 0.9+ | 0.1+ | 2005 06 03 | 699 | 0.4− | 0.6− |
| 2000 02 29 | 704 | 0.7+ | 0.6+ | 2005 04 13 | 703 | 0.2− | 0.3− | 2005 06 03 | 699 | 0.3+ | 0.3+ |
| 2000 02 29 | 704 | 0.3+ | 0.2− | 2005 04 13 | 703 | 0.2− | 0.1+ | 2005 06 03 | 699 | 0.3− | 0.2− |
| 2000 02 29 | 704 | 0.4+ | 0.3+ | 2005 04 13 | 703 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.1− | 0.1+ |
| 2000 02 29 | 704 | 1.8+ | 0.3+ | 2005 04 17 | 683 | (1.7− | 1.6+) | 2006 08 19 | 691 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.3+ | 0.5+ | 2005 04 17 | 683 | (1.0− | 1.8+) | 2006 08 19 | 691 | 0.1− | 0.1+ |
| 2000 03 03 | 704 | 0.3+ | 0.3+ | 2005 04 17 | 683 | (1.4− | 1.7+) | 2006 08 21 | 704 | 0.3− | 1.0+ |
| 2000 03 03 | 704 | 0.6+ | 0.7+ | 2005 04 18 | 683 | (2.1+ | 1.1−) | 2006 08 21 | 704 | 0.3− | 0.1− |
| 2000 03 03 | 704 | 0.7+ | 0.5+ | 2005 04 18 | 683 | 1.0+ | 0.4+ | 2006 08 21 | 704 | 0.3+ | 0.1+ |
| 2000 03 03 | 704 | 0.7+ | 0.6+ | 2005 04 18 | 683 | 0.3− | 1.3+ | 2006 08 21 | 704 | 0.5+ | 0.8+ |
| 2000 03 05 | 608 | 0.3− | 0.2− | 2005 04 19 | 683 | 0.3− | 1.4− | 2006 08 21 | 704 | 0.8+ | 0.4+ |
| 2000 03 05 | 608 | 0.2+ | 1.3+ | 2005 04 19 | 683 | 1.0− | 1.3− | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2000 03 05 | 608 | 0.4+ | 0.5+ | 2005 04 19 | 683 | 0.6− | 0.3− | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2000 03 11 | 704 | 0.9+ | 1.1+ | 2005 04 20 | 683 | 0.1+ | 0.6− | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.4− | 0.7+ | 2005 04 20 | 683 | 0.8− | 0.0 | 2006 08 27 | 699 | 0.7− | 0.1− |
| 2000 03 11 | 704 | 0.1+ | 0.6+ | 2005 04 20 | 683 | (1.2− | 1.9−) | 2006 08 27 | 699 | 1.1+ | 1.0+ |
| 2000 03 11 | 704 | 0.2+ | 0.6+ | 2005 05 04 | 703 | 0.4− | 0.1− | 2006 08 27 | 699 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.4+ | 0.7+ | 2005 05 04 | 703 | 0.4− | 0.7+ | 2006 08 27 | 699 | 0.3− | 0.0 |
| 2000 03 11 | 699 | 0.0 | 0.3+ | 2005 05 04 | 703 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.5+ | 0.7+ |
| 2000 03 11 | 699 | 0.2+ | 0.2− | 2005 05 04 | 703 | 0.1− | 0.4+ | 2006 09 14 | 703 | (1.7− | 0.7−) |
| 2000 03 11 | 699 | 1.3− | 0.5+ | 2005 05 06 | 704 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.3− | 0.4+ |
| 2000 03 11 | 699 | 0.1− | 1.3+ | 2005 05 06 | 704 | 0.2+ | 0.4− | 2006 09 14 | 703 | 0.6+ | 0.6− |
| 2002 10 29 | 645 | 0.0 | 0.1+ | 2005 05 06 | 704 | 0.6+ | 0.6− | 2006 09 20 | 704 | 0.1− | 0.3+ |
| 2002 10 29 | 645 | 0.0 | 0.1+ | 2005 05 11 | 703 | 0.3− | 0.6+ | 2006 09 20 | 704 | 1.0+ | 0.6+ |
| 2005 04 01 | 699 | 1.1− | 0.3+ | 2005 05 11 | 703 | (1.7− | 2.2+) | 2006 09 20 | 704 | 0.1− | 0.1− |
| 2005 04 01 | 699 | 0.3+ | 1.2+ | 2005 05 11 | 703 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.9− | 0.9− |
| 2005 04 01 | 699 | 1.4+ | 1.3+ | 2005 05 11 | 703 | 0.6− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2005 04 01 | 699 | 0.7− | 0.0 | 2005 05 13 | 704 | (1.8+ | 0.8+) | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2005 04 04 | 703 | 0.6− | 0.1+ | 2005 05 13 | 704 | 0.7+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2005 04 04 | 703 | 0.2− | 0.3− | 2005 05 13 | 704 | 0.5+ | 0.8+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2005 04 04 | 703 | 0.7+ | 0.6− | 2005 05 13 | 704 | 0.4+ | 0.2− | 2006 11 23 | G96 | 1.2− | 0.2− |
| 2005 04 04 | 703 | 0.6− | 0.1− | 2005 06 01 | 704 | 1.5+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.4+ |
| 2005 04 12 | 699 | 0.2+ | 0.3− | 2005 06 01 | 704 | 1.1+ | 0.0 | 2006 11 23 | G96 | 0.7− | 0.0 |
| 2005 04 12 | 699 | 0.1+ | 1.4+ | 2005 06 01 | 704 | 1.1+ | 1.1+ | 2006 11 23 | G96 | 0.3− | 0.2− |

**(138084)∗ 2000 DY$_{62}$ = 2002 TV$_{207}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37361)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 4.64666 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24214661 | $\omega$ | 61.94938 | | +0.95971210 | −0.27951042 | |
| *a* | 2.5492776 | $\Omega$ | 314.26541 | | +0.24164681 | +0.87323334 | |
| *e* | 0.0586685 | *i* | 2.30096 | | +0.14338588 | +0.39917095 | |
| *P* | 4.07 | *H* | 15.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 0.0 | 0.2− | 2002 11 08 | 704 | (2.1− | 1.0+) | 2006 09 25 | 691 | 0.2− | 0.2− |
| 1998 11 11 | 704 | 1.8− | 0.9+ | 2002 11 08 | 704 | 0.2− | 0.7+ | 2006 09 25 | 691 | 0.2− | 0.0 |
| 1998 11 11 | 704 | (0.8− | 2.4−) | 2002 11 08 | 704 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.4+ | 0.2+ |
| 1998 11 11 | 704 | 1.0+ | 0.5− | 2002 11 08 | 704 | (2.4− | 1.4−) | 2006 09 29 | 704 | 0.7+ | 0.2+ |
| 2000 02 29 | 704 | 0.3− | 0.6+ | 2002 11 12 | 704 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.5− | 0.4− |
| 2000 02 29 | 704 | 0.6+ | 1.1+ | 2002 11 12 | 704 | 0.4+ | 0.3− | 2006 09 29 | 704 | (0.0 | 1.7+) |
| 2000 02 29 | 704 | 0.6− | 0.1+ | 2002 11 12 | 704 | 0.1+ | 0.4− | 2006 10 03 | 691 | 0.2+ | 0.0 |
| 2000 02 29 | 704 | 1.0− | 0.2+ | 2002 11 12 | 644 | 0.9+ | 0.5+ | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2002 11 12 | 704 | 0.3+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.1− |
| 2000 03 03 | 691 | 0.1− | 0.6− | 2002 11 12 | 644 | 0.1+ | 0.8+ | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 2000 03 03 | 704 | 0.3− | 0.8+ | 2002 11 12 | 704 | 0.4+ | 0.6− | 2006 10 12 | 691 | 0.4+ | 0.4+ |
| 2000 03 03 | 704 | 0.7− | 0.2+ | 2002 11 12 | 644 | 0.5+ | 0.5+ | 2006 10 12 | 691 | 0.5+ | 0.3+ |
| 2000 03 03 | 691 | 0.0 | 0.5− | 2002 11 13 | 644 | 0.0 | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.2− |
| 2000 03 03 | 691 | 0.1+ | 0.5− | 2002 11 13 | 644 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.0 | 1.3+ | 2002 11 13 | 644 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2000 03 04 | 704 | 0.4− | 0.1+ | 2002 11 14 | 704 | 0.6+ | 0.8− | 2006 10 16 | 691 | 0.0 | 0.2− |
| 2000 03 04 | 704 | 0.1− | 0.3− | 2002 11 14 | 704 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2000 03 04 | 704 | 0.4− | 0.4+ | 2002 11 14 | 704 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.3− | 0.1− |
| 2000 03 04 | 704 | 0.2+ | 1.2+ | 2002 11 14 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 704 | 0.2− | 0.6+ |
| 2000 03 05 | 704 | 0.3+ | 0.3+ | 2002 11 14 | 704 | 0.9+ | 0.0 | 2006 10 19 | 704 | 0.4− | 0.2− |
| 2000 03 05 | 704 | 0.0 | 0.4− | 2002 11 23 | 644 | 0.2+ | 0.2− | 2006 10 19 | 704 | 0.7− | 1.1+ |
| 2000 03 05 | 704 | 0.5+ | 0.4− | 2002 11 23 | 644 | 0.1− | 0.1+ | 2006 10 19 | 704 | 0.3− | 0.4− |
| 2000 03 05 | 704 | 0.2− | 0.6+ | 2002 11 23 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2000 03 05 | 704 | 0.4+ | 1.2+ | 2002 12 06 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2000 03 10 | 691 | 0.1− | 0.3+ | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2000 03 10 | 691 | 0.0 | 0.4+ | 2002 12 06 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 691 | 0.5− | 0.3+ |
| 2000 03 10 | 691 | 0.0 | 0.4+ | 2002 12 06 | 704 | 1.0+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.4− |
| 2000 03 11 | 704 | 0.7+ | 0.4− | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.5− |
| 2000 03 11 | 704 | 1.6+ | 0.4− | 2002 12 31 | 704 | 1.0+ | 0.6− | 2006 10 20 | 691 | 0.1− | 0.3− |
| 2000 03 11 | 704 | 1.0+ | 1.2− | 2002 12 31 | 704 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.3− |
| 2000 03 11 | 704 | 1.0+ | 0.7− | 2002 12 31 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.3− |
| 2000 03 11 | 704 | 0.3+ | 0.9− | 2002 12 31 | 704 | 1.1+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2000 03 11 | 699 | 0.4− | 0.2+ | 2002 12 31 | 704 | (2.0+ | 1.3+) | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2000 03 11 | 699 | 1.2− | 0.1+ | 2004 02 17 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 03 11 | 699 | 0.7− | 0.5− | 2004 02 17 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2000 03 11 | 699 | 1.7− | 0.3+ | 2004 02 17 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2004 02 18 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2002 10 04 | 704 | 0.2− | 0.3− | 2004 02 18 | 704 | 0.7+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.5+ | 0.8+ | 2004 02 18 | 704 | 0.6− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.9+ | 1.3− | 2004 02 18 | 704 | 0.3+ | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.8− | 0.6− | 2004 02 18 | 608 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2002 10 08 | 699 | 0.7− | 0.5+ | 2004 02 18 | 608 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 1.0− | 0.6+ | 2004 02 18 | 608 | 0.1− | 0.3− | 2006 10 29 | 704 | 1.0− | 0.9+ |
| 2002 10 08 | 699 | 0.9− | 0.2+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2002 10 08 | 699 | 1.0− | 0.3+ | 2004 02 26 | 704 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 1.0+ | 2004 02 26 | 704 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.4− | 0.8+ |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.2− | 0.1+ | 2006 10 29 | 704 | 0.6+ | 0.0 |
| 2002 10 09 | 704 | 0.6+ | 0.2+ | 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.2− | 1.1+ |
| 2002 10 09 | 704 | 0.9+ | 0.2− | 2004 03 11 | 644 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.4+ | 0.3+ |
| 2002 10 09 | 704 | 0.0 | 0.7+ | 2004 03 11 | 644 | 0.2+ | 0.2+ | 2006 10 29 | 704 | (1.7− | 0.6−) |
| 2002 10 12 | 704 | 0.3− | 0.1+ | 2004 03 11 | 644 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.7− | 1.1+ |
| 2002 10 12 | 704 | (0.0 | 2.0+) | 2004 03 15 | 704 | 0.4+ | 1.3+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | 0.2− | 0.1+ | 2004 03 15 | 704 | 1.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 0.6− | 0.3+ | 2004 03 15 | 704 | 0.7+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 10 15 | 644 | (0.4− | 2.1+) | 2004 03 15 | 704 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.3− | 0.1− |
| 2002 10 15 | 644 | 0.3− | 0.2+ | 2004 03 18 | 704 | (1.8+ | 0.5+) | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 10 15 | 644 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.4+ | 1.0+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 10 26 | 608 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.8+ | 1.3+ | 2006 11 11 | 703 | 0.7+ | 0.8+ |
| 2002 10 26 | 608 | 0.5− | 0.8− | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.3+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 26 | 608 | 0.4− | 0.2− | 2004 03 18 | 704 | 0.9+ | 1.1+ | 2006 11 11 | 703 | 0.5+ | 0.6− |
| 2002 10 31 | 644 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.7− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2002 10 31 | 644 | 0.5− | 0.1+ | 2004 03 27 | 704 | 0.1− | 1.4− | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2002 10 31 | 644 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2002 11 01 | 608 | 0.2− | 1.0− | 2004 03 27 | 704 | (1.1− | 2.0−) | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2002 11 01 | 608 | 0.1− | 1.1− | 2004 03 27 | 704 | 1.0− | 0.8− | 2006 11 16 | 704 | 0.4− | 0.0 |
| 2002 11 01 | 608 | 0.1− | 1.2− | 2004 03 30 | 691 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2002 11 04 | 699 | 0.0 | 0.1− | 2004 03 30 | 691 | 0.2+ | 0.5− | 2006 11 19 | 704 | 1.0− | 0.7+ |
| 2002 11 04 | 699 | 0.1+ | 0.4− | 2004 03 30 | 691 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 11 04 | 699 | 0.0 | 0.2+ | 2005 01 19 | 809 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 11 04 | 699 | 0.5− | 0.2+ | 2005 01 19 | 809 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.7+ |
| 2002 11 05 | 704 | 0.4− | 0.3− | 2005 01 19 | 809 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 1.2− | 0.1− |
| 2002 11 05 | 704 | 0.4+ | 0.2− | 2006 08 12 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2002 11 05 | 704 | 0.6+ | 0.4+ | 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2002 11 05 | 704 | 0.5− | 0.4− | 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2002 11 05 | 704 | 0.5− | 0.8− | 2006 09 20 | 699 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.5+ | 0.6+ |
| 2002 11 06 | 608 | 0.5+ | 0.4− | 2006 09 20 | 699 | 0.7− | 0.5+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 11 06 | 608 | 0.0 | 0.7− | 2006 09 20 | 699 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 11 06 | 608 | 0.3+ | 0.5− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.8+ |

**(138085)∗ 2000 DZ$_{62}$ = 2002 TF$_{23}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37361)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.82460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26451603 | $\omega$ | 242.03789 | | +0.42738251 | −0.90406886 | |
| $a$ | 2.4034479 | $\Omega$ | 182.66277 | | +0.84333033 | +0.39943397 | |
| $e$ | 0.2009822 | $i$ | 2.37179 | | +0.32578849 | +0.15202633 | |
| $P$ | 3.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 30 | 691 | 0.3+ | 0.1− | 2000 03 11 | 704 | 1.2+ | 0.7+ | 2002 12 05 | 704 | 0.4− | 0.8+ |
| 1995 12 30 | 691 | 0.9+ | 0.2− | 2000 03 11 | 699 | 1.0− | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.6+ |
| 1995 12 30 | 691 | 0.2+ | 0.2− | 2000 03 11 | 699 | 0.7− | 0.0 | 2003 01 04 | 704 | 0.4− | 0.2− |
| 1996 01 13 | 691 | 0.6+ | 0.0 | 2000 03 11 | 699 | 0.7+ | 1.6+ | 2003 01 04 | 704 | 0.6+ | 0.3− |
| 1996 01 13 | 691 | 0.2+ | 0.1− | 2000 03 11 | 699 | 0.6− | 0.6+ | 2003 01 04 | 704 | 0.7− | 0.3+ |
| 1996 01 13 | 691 | 0.1+ | 0.2+ | 2002 10 02 | 704 | 0.9+ | 0.1+ | 2004 03 27 | 704 | 1.0+ | 0.1− |
| 1996 01 20 | 691 | 0.6− | 0.4+ | 2002 10 02 | 704 | 0.7+ | 0.3+ | 2004 03 27 | 704 | 0.0 | 0.4− |
| 1996 01 20 | 691 | 0.5− | 0.3+ | 2002 10 02 | 704 | 1.1+ | 0.6+ | 2004 03 27 | 704 | 0.5+ | 0.0 |
| 1996 01 20 | 691 | 0.5− | 0.1+ | 2002 10 02 | 704 | (2.9+ | 1.2+) | 2006 11 17 | 704 | 0.2+ | 1.3− |
| 1996 01 20 | 691 | 0.1+ | 0.1+ | 2002 10 02 | 608 | 1.2− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.5+ |
| 1996 01 20 | 691 | 0.2− | 0.1+ | 2002 10 02 | 608 | 1.2− | 0.4+ | 2006 11 17 | 704 | 0.4+ | 0.4+ |
| 1996 01 20 | 691 | 0.0 | 0.1+ | 2002 10 02 | 608 | 1.4− | 0.1− | 2006 11 17 | 704 | 0.5− | 0.6+ |
| 1998 10 19 | 691 | 0.2+ | 0.1− | 2002 10 03 | 704 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 1998 10 19 | 691 | 0.2+ | 0.2− | 2002 10 03 | 704 | 0.7− | 0.1+ | 2006 11 17 | 703 | 1.0+ | 0.9− |
| 1998 10 19 | 691 | 0.3+ | 0.3+ | 2002 10 03 | 704 | 0.5− | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.6− |
| 2000 02 25 | 691 | 0.2− | 0.0 | 2002 10 03 | 704 | 0.8+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.6− |
| 2000 02 25 | 691 | 0.2+ | 0.8+ | 2002 10 07 | 704 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2000 02 25 | 691 | 0.1− | 0.2− | 2002 10 07 | 704 | 1.1− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2000 02 29 | 704 | 0.4+ | 0.5+ | 2002 10 07 | 704 | 0.4− | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2000 02 29 | 704 | 0.5+ | 0.1− | 2002 10 07 | 704 | 0.3− | 0.7+ | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 2000 02 29 | 704 | 0.6+ | 0.0 | 2002 10 11 | 704 | 0.7+ | 1.0+ | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2000 02 29 | 704 | 0.3+ | 0.6+ | 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 11 20 | 704 | 0.2− | 1.1− |
| 2000 03 03 | 704 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.9+ | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.1− |
| 2000 03 03 | 704 | 1.4+ | 0.2+ | 2002 10 11 | 704 | 0.6+ | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.8− |
| 2000 03 03 | 704 | 0.6+ | 0.7+ | 2002 10 11 | 704 | 0.7+ | 0.3− | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2000 03 03 | 704 | 1.4− | 0.0 | 2002 10 31 | 704 | 0.7− | 0.4+ | 2006 11 29 | 704 | 0.2− | 0.3− |
| 2000 03 03 | 704 | 0.0 | 0.6+ | 2002 10 31 | 704 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.4− |
| 2000 03 03 | 691 | 0.4− | 0.2− | 2002 10 31 | 704 | 0.9− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 2.5− |
| 2000 03 03 | 691 | 0.4− | 0.2− | 2002 10 31 | 704 | 0.8− | 0.6+ | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2000 03 03 | 691 | 0.6− | 0.1− | 2002 10 31 | 704 | 0.9− | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2000 03 11 | 704 | 0.5+ | 0.0 | 2002 12 05 | 704 | 1.1− | 0.5− | 2006 12 01 | 691 | 0.2+ | 0.5− |
| 2000 03 11 | 704 | 0.8+ | 0.2+ | 2002 12 05 | 704 | 0.1− | 0.3+ | | | | |
| 2000 03 11 | 704 | 0.7+ | 0.5− | 2002 12 05 | 704 | 0.3− | 0.2− | | | | |

**(138086)∗ 2000 DD$_{64}$ = 1992 GQ$_{1}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 3519)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.82482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24102920 | $\omega$ | 341.03071 | | −0.97426220 | −0.22525304 | |
| $a$ | 2.5571504 | $\Omega$ | 185.97140 | | +0.21604479 | −0.92216333 | |
| $e$ | 0.1448065 | $i$ | 4.75039 | | +0.06432576 | −0.31444534 | |
| $P$ | 4.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 04 | 691 | 0.9+ | 0.7− | 2004 02 15 | 608 | 0.7+ | 0.2+ | 2005 05 15 | G96 | 0.0 | 0.3+ |
| 1992 04 04 | 691 | 0.0 | 0.5− | 2004 02 18 | 704 | 0.4+ | 0.1− | 2005 05 15 | G96 | 0.1+ | 0.5+ |
| 1992 04 04 | 691 | 1.7− | 0.2+ | 2004 02 18 | 704 | 0.4+ | 0.1− | 2005 06 13 | 691 | 0.1− | 0.5+ |
| 1992 04 07 | 691 | 0.5− | 1.1− | 2004 02 18 | 333 | 0.0 | 0.3− | 2005 06 13 | 691 | 0.2+ | 0.6+ |
| 1992 04 07 | 691 | 0.1− | 0.7− | 2004 02 18 | 704 | 1.1− | 0.7+ | 2005 06 13 | 691 | 0.0 | 0.6+ |
| 1992 04 07 | 691 | 0.0 | 0.5− | 2004 02 18 | 704 | 0.2+ | 0.8+ | 2005 06 17 | 691 | 0.1− | 0.6+ |
| 2000 02 29 | 704 | 0.5+ | 0.0 | 2004 02 18 | 333 | 0.1− | 0.1+ | 2005 06 17 | 691 | 0.2− | 0.7+ |
| 2000 02 29 | 704 | 1.3+ | 1.3+ | 2004 02 18 | 333 | 0.4− | 0.1− | 2005 06 17 | 691 | 0.2− | 0.6+ |
| 2000 02 29 | 704 | 0.9+ | 0.7+ | 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.6− | 0.1+ |
| 2000 02 29 | 704 | 0.0 | 1.1+ | 2004 02 22 | 691 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.2− |
| 2000 03 03 | 704 | 0.7+ | 0.6+ | 2004 02 22 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.4+ | 0.0 |
| 2000 03 03 | 704 | 0.3− | 0.3+ | 2004 03 10 | 608 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.4+ |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2004 03 10 | 608 | 0.1+ | 0.8+ | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 2000 03 03 | 704 | 0.6+ | 0.5+ | 2004 03 10 | 608 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.7+ | 0.1+ | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2000 03 11 | 704 | (2.7+ | 0.5+) | 2004 03 15 | 704 | 0.5− | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 2000 03 11 | 704 | 0.5+ | 0.7+ | 2004 03 15 | 704 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2000 03 11 | 704 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2000 03 11 | 699 | 0.2+ | 0.8− | 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2000 03 11 | 699 | 0.4+ | 0.1− | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 699 | 0.8+ | 0.2+ | 2004 03 18 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.5− | 0.1− |
| 2000 03 11 | 699 | 1.7− | 0.9+ | 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2004 01 24 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2004 01 24 | 704 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 01 24 | 704 | 0.8− | 0.7+ | 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 0.4− | 1.0+ | 2004 03 18 | 704 | 0.8− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2004 01 29 | 704 | 0.5− | 0.2+ | 2004 03 20 | 704 | 1.1+ | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2004 01 29 | 704 | 0.8− | 0.6+ | 2004 03 20 | 704 | 0.8+ | 0.9+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2004 01 29 | 704 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2004 02 14 | 703 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2004 02 14 | 703 | 0.2− | 0.3+ | 2004 03 27 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3− | 0.6− |
| 2004 02 14 | 703 | 0.4− | 0.6+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2004 02 14 | 703 | (1.2+ | 2.6−) | 2004 03 27 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2004 02 15 | 608 | 0.3+ | 1.1+ | 2005 05 15 | G96 | 0.3− | 0.4+ | | | | |
| 2004 02 15 | 608 | 0.8+ | 0.5+ | 2005 05 15 | G96 | 0.3− | 0.1+ | | | | |

**(138087)∗ 2000 DQ$_{64}$ = 2004 CF$_{75}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60616)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.87033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23181861 | $\omega$ | 56.57136 | | −0.32860852 | +0.94442659 | |
| $a$ | 2.6244432 | $\Omega$ | 194.25200 | | −0.87777997 | −0.30877475 | |
| $e$ | 0.0973601 | $i$ | 2.01406 | | −0.34859543 | −0.11276778 | |
| $P$ | 4.25 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 691 | 0.3+ | 0.9+ | 2000 03 12 | 691 | 0.4− | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 1996 03 17 | 691 | 0.5+ | 0.6+ | 2000 03 12 | 691 | 0.6− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 1996 03 17 | 691 | 0.1+ | 0.2+ | 2000 03 14 | 691 | 0.1− | 0.2− | 2006 10 20 | 703 | (1.0+ | 1.6−) |
| 2000 02 29 | 704 | 1.4+ | 0.3+ | 2000 03 14 | 691 | 0.2− | 0.3− | 2006 10 20 | 703 | 0.5+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.5− | 0.2+ | 2000 03 14 | 691 | 0.0 | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.1− |
| 2000 02 29 | 704 | 0.8+ | 0.6+ | 2001 06 28 | 691 | 0.1− | 0.3+ | 2006 10 20 | 703 | 0.2+ | 0.6− |
| 2000 03 03 | 704 | 0.6+ | 0.3− | 2001 06 28 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2000 03 03 | 691 | 0.2− | 0.0 | 2001 06 28 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.6− |
| 2000 03 03 | 704 | 1.2+ | 1.3− | 2001 07 23 | 608 | 0.2+ | 0.7− | 2006 10 21 | 703 | 0.6− | 0.9− |
| 2000 03 03 | 704 | 0.2− | 0.8− | 2001 07 23 | 608 | 1.3+ | 0.3− | 2006 10 21 | 703 | 1.1− | 1.0− |
| 2000 03 03 | 691 | 0.0 | 0.0 | 2001 07 23 | 608 | (1.7+ | 0.3−) | 2006 10 21 | 644 | 0.5+ | 0.7+ |
| 2000 03 03 | 704 | 0.6+ | 0.3− | 2004 01 31 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2000 03 03 | 704 | 0.2+ | 0.7− | 2004 01 31 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2000 03 03 | 691 | 0.4− | 0.0 | 2004 01 31 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2000 03 04 | 704 | 0.0 | 0.5+ | 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2000 03 04 | 704 | 1.4+ | 0.1+ | 2004 02 11 | 644 | 0.4+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2000 03 04 | 704 | 0.8+ | 0.2+ | 2004 02 11 | 644 | 0.2+ | 0.7+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2000 03 04 | 704 | 0.3− | 0.8+ | 2004 02 17 | 704 | 0.5− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2000 03 05 | 704 | 0.8+ | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 03 05 | 704 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2000 03 05 | 704 | 0.4− | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2000 03 05 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.8+ | 0.2+ |
| 2000 03 10 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.9− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2000 03 10 | 691 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.6+ | 0.3− | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2000 03 10 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 1.1− | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.9+ |
| 2000 03 11 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2000 03 11 | 704 | 0.5+ | 1.6+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2000 03 11 | 699 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2000 03 11 | 699 | 0.0 | 0.5− | 2006 10 15 | 691 | 0.2+ | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2000 03 11 | 699 | 0.8− | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.5+ | 0.6+ |
| 2000 03 11 | 699 | 1.1− | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.5− | | | | |
| 2000 03 12 | 691 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.2− | | | | |

**(138088)∗ 2000 DE$_{66}$ = 2002 VP$_{105}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40055)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.06250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23868533 | $\omega$ | 353.90304 | | +0.85314266 | +0.52047750 | |
| $a$ | 2.5738638 | $\Omega$ | 334.63505 | | −0.47507435 | +0.74713248 | |
| $e$ | 0.1573605 | $i$ | 4.73562 | | −0.21552720 | +0.41339597 | |
| $P$ | 4.13 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2000 02 11 | 691 | 0.4+ | 0.3− | 2002 12 11 | 704 | 0.5− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2000 02 11 | 691 | 0.2− | 0.3− | 2002 12 11 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 1.1+ | 1.4+ | 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.6+ |
| 2000 02 29 | 704 | 1.0− | 1.6+ | 2002 12 11 | 704 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2000 02 29 | 704 | 0.2+ | 0.6+ | 2002 12 11 | 704 | 0.1− | 1.3+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2000 03 03 | 704 | 0.6+ | 0.6+ | 2002 12 11 | 644 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.3+ |
| 2000 03 03 | 704 | 0.2+ | 0.2+ | 2002 12 11 | 644 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.1+ |
| 2000 03 03 | 704 | 1.1+ | 1.3− | 2002 12 11 | 644 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2000 03 03 | 704 | (2.3+ | 0.2+) | 2004 03 10 | 644 | 0.6− | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2000 03 11 | 704 | 1.2− | 0.6− | 2004 03 10 | 644 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.9− | 0.8− | 2004 03 10 | 644 | 0.3+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2000 03 11 | 704 | 0.1− | 0.3− | 2005 01 24 | 809 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 0.5+ | 0.0 | 2005 01 24 | 809 | 0.1+ | 0.5+ | 2006 11 10 | 235 | 0.5+ | 0.0 |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2005 01 24 | 809 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2002 11 12 | 704 | 1.0+ | 0.2− | 2005 05 13 | E12 | 0.7+ | 1.3− | 2006 11 16 | 704 | 0.8− | 0.8+ |
| 2002 11 12 | 704 | 0.6+ | 0.8− | 2005 05 13 | E12 | 0.6− | 1.0+ | 2006 11 16 | 704 | 1.2− | 0.7+ |
| 2002 11 12 | 704 | 1.4+ | 0.5+ | 2005 05 13 | E12 | 0.2− | 0.8+ | 2006 11 16 | 704 | (1.6− | 0.6−) |
| 2002 11 14 | 704 | (0.9− | 2.0−) | 2005 05 13 | E12 | 0.6+ | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | 1.1− | 1.4− | 2005 05 30 | E12 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.4− |
| 2002 11 14 | 704 | 1.1− | 1.1− | 2005 05 30 | E12 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2002 12 02 | 704 | 0.1+ | 0.7+ | 2005 05 30 | E12 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2002 12 02 | 704 | 0.1− | 0.0 | 2005 05 30 | E12 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2002 12 02 | 704 | 0.7+ | 0.2+ | 2006 10 04 | G96 | 0.5+ | 0.3− | 2006 11 22 | 704 | (1.0− | 1.9+) |
| 2002 12 02 | 704 | 0.3− | 0.4− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | (1.7− | 1.1+) |
| 2002 12 05 | 699 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 22 | 704 | (2.0− | 0.4+) |
| 2002 12 05 | 699 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.8− | 0.4+ |
| 2002 12 05 | 699 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2002 12 05 | 699 | 0.7− | 0.9− | 2006 10 19 | 703 | 0.4+ | 0.3− | 2006 11 22 | 703 | 0.3+ | 0.5+ |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.9− |
| 2002 12 06 | 704 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.4− | 2006 11 22 | 703 | (1.6+ | 0.3−) |
| 2002 12 06 | 704 | 0.5− | 0.6+ | 2006 10 20 | A50 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.6+ | 0.4− |

**(138089)∗ 2000 DQ$_{67}$ = 2004 AX$_{25}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64712)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.55514 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22609754 | $\omega$ | 290.57735 | | −0.07083593 | −0.99463080 | |
| $a$ | 2.6685304 | $\Omega$ | 162.95381 | | +0.98391922 | −0.08210499 | |
| $e$ | 0.0538079 | $i$ | 14.91370 | | +0.16396721 | +0.06299475 | |
| $P$ | 4.36 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.1− | 0.0 | 2004 01 17 | 608 | 0.1− | 0.2− | 2006 08 19 | 699 | 0.7− | 0.2+ |
| 2000 02 27 | 691 | 0.1− | 0.0 | 2004 01 17 | 608 | 0.3− | 0.2− | 2006 08 19 | 699 | 0.7− | 0.6+ |
| 2000 02 27 | 691 | 0.1− | 0.1− | 2004 01 17 | 608 | 0.1− | 0.4− | 2006 08 21 | 644 | 0.1− | 0.3+ |
| 2000 02 29 | 704 | 0.9− | 0.7+ | 2004 01 29 | 704 | 0.8+ | 0.4+ | 2006 08 21 | 644 | 0.4− | 0.0 |
| 2000 02 29 | 704 | 0.4+ | 0.6+ | 2004 01 29 | 704 | 0.8− | 0.7+ | 2006 08 21 | 644 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 1.2+ | 0.4− | 2004 01 29 | 704 | 0.9+ | 0.2+ | 2006 08 24 | 704 | 0.3− | 0.3+ |
| 2000 03 03 | 704 | 0.1+ | 1.0+ | 2004 01 29 | 704 | 0.2+ | 0.2+ | 2006 08 24 | 704 | 0.3− | 1.3+ |
| 2000 03 03 | 704 | 0.4+ | 0.8+ | 2004 01 29 | 704 | 0.0 | 0.5+ | 2006 08 24 | 704 | 0.3+ | 1.2+ |
| 2000 03 03 | 704 | 0.2− | 0.9+ | 2004 01 29 | 704 | 0.5− | 0.2+ | 2006 08 24 | 704 | 0.7+ | 1.1+ |
| 2000 03 03 | 704 | 0.3+ | 1.1+ | 2004 01 29 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 703 | 0.1+ | 1.1+ |
| 2000 03 03 | 704 | 0.5+ | 1.3+ | 2004 01 29 | 704 | 0.7− | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.4− |
| 2000 03 11 | 704 | 1.1− | 0.4− | 2004 02 11 | 644 | 0.5+ | 0.6+ | 2006 08 29 | 703 | 0.3− | 0.4+ |
| 2000 03 11 | 704 | 0.3+ | 0.5− | 2004 02 11 | 644 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.1− |
| 2000 03 11 | 704 | 0.2− | 0.5− | 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.3+ |
| 2000 03 11 | 699 | 0.5− | 0.0 | 2004 02 18 | 704 | 0.5+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.0 |
| 2000 03 11 | 699 | 0.4− | 0.1− | 2004 02 18 | 704 | (2.2− | 1.8+) | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2000 03 11 | 699 | 0.1+ | 0.5− | 2004 02 18 | 704 | 1.4+ | 1.2+ | 2006 09 27 | G96 | 0.0 | 0.6+ |
| 2000 03 11 | 699 | 0.6− | 0.0 | 2004 02 18 | 704 | 1.1+ | 0.1− | 2006 10 28 | G96 | 0.8+ | 0.4+ |
| 2000 03 23 | 049 | 0.2+ | 1.2− | 2004 02 18 | 704 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2000 03 23 | 049 | 0.9+ | 0.4− | 2005 07 01 | 644 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.6+ | 0.5− |
| 2000 03 23 | 049 | 0.8+ | 0.8− | 2005 07 01 | 644 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.5+ | 0.4− |
| 2003 12 26 | 608 | 0.1− | 0.0 | 2005 07 01 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 1.4− |
| 2003 12 26 | 608 | 0.3− | 0.1+ | 2006 08 05 | D35 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.7− | 0.4− |
| 2003 12 26 | 608 | 0.6− | 0.1− | 2006 08 05 | D35 | 0.2+ | 0.8+ | 2006 11 11 | G96 | 0.6− | 0.9− |
| 2004 01 12 | 644 | 0.7− | 0.2+ | 2006 08 05 | D35 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2004 01 12 | 644 | 0.9− | 0.2+ | 2006 08 19 | 699 | 0.0 | 0.3+ | | | | |
| 2004 01 12 | 644 | 0.7− | 0.2+ | 2006 08 19 | 699 | 0.3+ | 0.0 | | | | |

**(138090)∗ 2000 DS$_{68}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.57087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27047354 | $\omega$ | 240.22374 | | +0.08042542 | −0.99670359 | |
| $a$ | 2.3680245 | $\Omega$ | 205.16991 | | +0.92294844 | +0.07850559 | |
| $e$ | 0.1892613 | $i$ | 1.43668 | | +0.37642787 | +0.02046524 | |
| $P$ | 3.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.3+ | 0.6+ | 2002 10 06 | 599 | 0.2− | 0.4+ | 2004 03 31 | 704 | 0.7+ | 1.0− |
| 2000 02 02 | 704 | 0.7− | 0.7+ | 2002 10 07 | 704 | 0.2+ | 0.7+ | 2004 03 31 | 704 | 0.7+ | 1.1− |
| 2000 02 02 | 704 | 0.2+ | 0.3− | 2002 10 07 | 704 | 0.3+ | 0.2+ | 2004 04 12 | 644 | 0.7+ | 0.8+ |
| 2000 02 16 | 703 | 1.9+ | 0.1− | 2002 10 07 | 704 | 0.8+ | 0.8+ | 2004 04 12 | 644 | 0.7+ | 0.7+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 16 | 703 | 1.8− | 1.6+ | 2002 10 07 | 704 | 0.1+ | 1.4+ | 2004 04 12 | 644 | 0.6+ | 0.7+ |
| 2000 02 16 | 703 | 0.4+ | 0.1− | 2002 10 09 | 704 | 0.1+ | 0.5+ | 2004 04 21 | 291 | 0.2+ | 0.8+ |
| 2000 02 16 | 703 | 1.1− | 1.0+ | 2002 10 09 | 704 | 0.1− | 0.6+ | 2004 04 21 | 291 | 0.2+ | 0.9+ |
| 2000 02 27 | 703 | 0.1+ | 0.0 | 2002 10 09 | 704 | 0.1− | 0.1+ | 2004 04 21 | 291 | 0.2+ | 0.8+ |
| 2000 02 27 | 703 | (2.5− | 0.5−) | 2002 10 09 | 704 | 0.2− | 0.4+ | 2004 04 21 | 704 | (0.2+ | 1.7+) |
| 2000 02 27 | 703 | 0.7− | 0.4+ | 2002 10 09 | 704 | 0.2+ | 0.5+ | 2004 04 21 | 704 | 0.0 | 0.5+ |
| 2000 02 27 | 703 | 0.9+ | 0.8+ | 2002 10 11 | 644 | 0.5− | 0.2+ | 2004 04 21 | 704 | 0.5+ | 1.0+ |
| 2000 02 29 | 704 | 0.3+ | 0.6+ | 2002 10 11 | 704 | 0.0 | 0.9+ | 2004 04 21 | 704 | 0.2+ | 0.7+ |
| 2000 02 29 | 704 | 0.3+ | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.6+ | 2004 04 25 | 703 | 0.9− | 1.1+ |
| 2000 02 29 | 704 | 0.2+ | 0.5+ | 2002 10 11 | 704 | 0.1− | 0.7+ | 2004 04 25 | 703 | 0.8+ | 1.2+ |
| 2000 02 29 | 704 | 0.9+ | 0.3+ | 2002 10 11 | 644 | 0.6− | 0.2+ | 2004 04 25 | 703 | 0.2+ | 1.1+ |
| 2000 02 29 | 704 | 1.2+ | 1.0+ | 2002 10 11 | 704 | 0.2+ | 0.9+ | 2004 04 25 | 703 | 1.0+ | 1.1+ |
| 2000 03 03 | 704 | 0.7+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 1.2+ | 2004 05 21 | 691 | (1.6+ | 0.4−) |
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2002 10 11 | 644 | 0.5− | 0.4+ | 2004 05 21 | 691 | 0.1+ | 0.5+ |
| 2000 03 03 | 704 | 0.3+ | 0.7+ | 2002 10 11 | 291 | 0.2− | 0.2+ | 2004 05 21 | 691 | 0.0 | 0.3+ |
| 2000 03 03 | 704 | 0.6+ | 1.1+ | 2002 10 11 | 291 | 0.3− | 0.2+ | 2004 05 29 | 691 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.5+ | 1.5+ | 2002 10 11 | 291 | 0.3− | 0.2+ | 2004 05 29 | 691 | 0.2− | 0.6+ |
| 2000 03 10 | 691 | 0.3− | 0.2− | 2002 10 30 | 644 | 0.6− | 0.1+ | 2004 05 29 | 691 | 0.2+ | 0.1+ |
| 2000 03 10 | 691 | 0.2− | 0.1− | 2002 10 30 | 644 | 0.5− | 0.1− | 2005 06 27 | 691 | 0.3− | 0.4+ |
| 2000 03 10 | 691 | 0.2− | 0.1− | 2002 10 30 | 644 | 0.6− | 0.0 | 2005 06 27 | 691 | 0.0 | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 0.5− | 2002 10 31 | 699 | 0.3+ | 0.3+ | 2005 06 27 | 691 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.5+ | 0.4− | 2002 10 31 | 699 | 0.0 | 0.6+ | 2005 07 05 | 691 | 0.3− | 0.6+ |
| 2000 03 11 | 704 | 0.4+ | 0.5− | 2002 10 31 | 699 | 0.4+ | 0.8+ | 2005 07 05 | 691 | 0.4− | 0.5+ |
| 2000 03 11 | 704 | 0.9+ | 0.4+ | 2002 10 31 | 699 | 0.7+ | 0.7+ | 2005 07 05 | 691 | 0.1− | 0.6+ |
| 2000 03 11 | 704 | 0.2+ | 0.6− | 2002 11 06 | 704 | 1.2− | 0.0 | 2005 07 15 | G96 | 0.0 | 0.6+ |
| 2000 03 11 | 699 | 0.3+ | 0.8+ | 2002 11 06 | 704 | 0.6− | 1.2+ | 2005 07 15 | G96 | 0.1+ | 0.5+ |
| 2000 03 11 | 699 | 0.3− | 0.6+ | 2002 11 06 | 704 | 0.5− | 0.6+ | 2005 07 15 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 699 | 0.4− | 0.3+ | 2002 11 06 | 704 | 0.8− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2000 03 11 | 699 | 0.3+ | 1.2+ | 2002 11 10 | 704 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.5+ | 0.4+ | 2002 11 10 | 704 | 0.5− | 0.0 | 2006 09 28 | 691 | 0.3+ | 0.3− |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2002 11 10 | 704 | 0.6− | 0.7+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.2+ | 0.6+ | 2002 11 10 | 704 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.6+ | 0.1+ | 2002 11 11 | 644 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2002 11 11 | 644 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2002 11 11 | 644 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2002 11 22 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.9− | 1.6+ |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2002 11 22 | 644 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.0 | 1.9+ |
| 2002 10 03 | 704 | 0.4− | 0.8+ | 2002 11 22 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 1.0+ |
| 2002 10 04 | 599 | 0.2+ | 0.4+ | 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 2002 10 04 | 599 | 0.0 | 0.4+ | 2003 01 04 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2002 10 04 | 599 | 0.1− | 0.4+ | 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3+ | 1.4+ |
| 2002 10 06 | 599 | 0.1− | 0.4+ | 2004 03 31 | 704 | 1.0+ | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2002 10 06 | 599 | 0.1+ | 0.4+ | 2004 03 31 | 704 | 0.6− | 0.5− | 2006 11 21 | 704 | 0.4− | 0.8+ |

**(138091)∗ 2000 DC$_{69}$ = 2002 TG$_{86}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37364)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 173.34480 | | (2000.0) | | −0.99177095 | −0.12283519 |
| $n$ | 0.22436817 | $\omega$ | 217.50881 | | +0.12634401 | −0.89355299 |
| $a$ | 2.6822251 | $\Omega$ | 315.39295 | | +0.02067795 | −0.43182701 |
| $e$ | 0.1533366 | $i$ | 2.94522 | | | |
| $P$ | 4.39 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 703 | 0.1+ | 0.8+ | 2000 04 08 | 704 | 0.1− | 0.9+ | 2003 12 27 | 704 | 0.4− | 0.5+ |
| 2000 02 27 | 703 | 0.1+ | 0.1− | 2000 04 08 | 704 | 0.3+ | 0.9− | 2004 01 20 | 704 | 0.0 | 0.2+ |
| 2000 02 27 | 703 | 0.1− | 0.4+ | 2000 05 04 | 704 | 0.7− | 0.3− | 2004 01 20 | 704 | 0.4− | 0.2− |
| 2000 02 27 | 703 | 0.4+ | 0.2+ | 2000 05 04 | 704 | 0.5+ | 0.6+ | 2004 01 20 | 704 | 0.1+ | 0.4− |
| 2000 02 29 | 704 | 0.3+ | 0.6+ | 2000 05 04 | 704 | 0.0 | 0.2− | 2004 01 20 | 704 | 0.0 | 0.3− |
| 2000 02 29 | 704 | 0.2+ | 0.1+ | 2000 05 04 | 704 | 1.0+ | 1.1+ | 2004 01 21 | 704 | 0.1+ | 0.1+ |
| 2000 02 29 | 704 | 0.1+ | 0.3+ | 2002 10 02 | 599 | 0.5− | 0.4+ | 2004 01 21 | 704 | 0.7+ | 0.2− |
| 2000 02 29 | 704 | 0.2+ | 0.1+ | 2002 10 02 | 599 | (2.1+ | 0.5−) | 2004 01 21 | 704 | 0.3+ | 0.1+ |
| 2000 02 29 | 704 | 1.5+ | 0.2− | 2002 10 02 | 599 | (2.1− | 0.4+) | 2004 01 21 | 704 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.2+ | 2002 10 02 | 599 | 0.6+ | 0.7+ | 2004 01 21 | 704 | 0.1− | 0.5− |
| 2000 03 03 | 704 | 0.3+ | 0.1+ | 2002 10 04 | 704 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.5+ | 0.4+ | 2002 10 04 | 704 | 0.0 | 0.7+ | 2004 01 22 | 704 | 0.2+ | 0.0 |
| 2000 03 03 | 704 | 0.4+ | 0.3+ | 2002 10 04 | 704 | 0.5+ | 0.8+ | 2004 01 22 | 704 | 0.4− | 1.1+ |
| 2000 03 03 | 704 | 0.7+ | 0.3+ | 2002 10 05 | 644 | (0.3− | 2.4+) | 2004 01 22 | 704 | 0.4+ | 0.1+ |
| 2000 03 08 | 704 | 0.2− | 0.6+ | 2002 10 05 | 644 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.1− | 0.2− |
| 2000 03 08 | 704 | 1.2+ | 1.5+ | 2002 10 05 | 704 | 0.3− | 1.0+ | 2004 01 24 | 704 | 0.7+ | 0.1− |
| 2000 03 08 | 704 | 0.2− | 0.6− | 2002 10 05 | 704 | 0.3+ | 0.7+ | 2004 01 24 | 704 | 0.2+ | 0.5− |
| 2000 03 08 | 704 | (2.8+ | 1.0−) | 2002 10 05 | 704 | 1.3− | 0.9− | 2004 01 24 | 704 | 1.1+ | 0.8− |
| 2000 03 08 | 704 | 0.1+ | 0.0 | 2002 10 05 | 704 | 0.3− | 0.9+ | 2004 01 24 | 704 | 0.4+ | 0.3− |
| 2000 03 08 | 704 | 0.2− | 0.0 | 2002 10 05 | 644 | 0.5− | 0.6+ | 2004 01 24 | 704 | 0.0 | 0.1− |
| 2000 03 08 | 704 | 0.6+ | 0.8− | 2002 10 06 | 644 | 0.6− | 0.8+ | 2004 01 30 | 704 | 0.2+ | 0.2− |
| 2000 03 08 | 704 | 0.7− | 0.9+ | 2002 10 06 | 644 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.7+ | 0.2− |
| 2000 03 08 | 704 | 1.0+ | 0.7− | 2002 10 06 | 644 | 0.6− | 0.4+ | 2004 01 30 | 704 | 0.7+ | 0.7− |
| 2000 03 11 | 704 | 0.2− | 0.2+ | 2003 12 18 | 704 | 0.1− | 0.1− | 2004 01 30 | 704 | (1.6+ | 0.2+) |
| 2000 03 11 | 704 | 0.1− | 0.2+ | 2003 12 18 | 704 | 0.3− | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 0.3− | 0.4+ | 2003 12 18 | 704 | 0.0 | 0.6+ | 2004 02 15 | 704 | 0.4− | 0.0 |
| 2000 03 11 | 704 | 0.2− | 0.7+ | 2003 12 18 | 704 | 1.0− | 0.1− | 2004 02 15 | 704 | 0.2− | 0.0 |
| 2000 03 11 | 704 | 0.4− | 0.5+ | 2003 12 18 | 704 | 0.3− | 0.2− | 2004 02 15 | 704 | 0.4− | 0.0 |
| 2000 03 30 | 703 | 1.1− | 0.5− | 2003 12 19 | 608 | (0.3+ | 3.1+) | 2004 02 15 | 704 | 0.4− | 0.3− |
| 2000 03 30 | 703 | 1.7− | 0.4− | 2003 12 19 | 608 | (0.4+ | 2.3+) | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2000 03 30 | 703 | 0.8− | 0.1+ | 2003 12 19 | 608 | (0.4+ | 2.4+) | 2006 08 28 | 691 | 0.1− | 0.5+ |
| 2000 03 30 | 703 | 0.4− | 0.4+ | 2003 12 20 | 704 | 1.0− | 1.1+ | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 2000 04 02 | 699 | 0.2− | 0.2+ | 2003 12 20 | 704 | 1.3− | 0.1− | 2006 09 13 | 644 | 0.0 | 1.0+ |
| 2000 04 02 | 699 | 0.0 | 0.7+ | 2003 12 20 | 704 | 0.0 | 0.6− | 2006 09 13 | 644 | 0.4− | 0.4+ |
| 2000 04 02 | 699 | 0.0 | 1.6+ | 2003 12 22 | 704 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.4− | 0.6+ |
| 2000 04 02 | 699 | 0.1+ | 1.0+ | 2003 12 22 | 704 | 0.0 | 0.2− | 2006 09 17 | 703 | (0.5− | 1.8+) |
| 2000 04 04 | 704 | 0.2+ | 0.9+ | 2003 12 22 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 703 | (1.6− | 0.7+) |
| 2000 04 04 | 704 | 0.3− | 0.7+ | 2003 12 22 | 704 | 0.3− | 0.9+ | 2006 09 17 | 703 | 0.5− | 1.1+ |
| 2000 04 04 | 704 | 1.0+ | 0.0 | 2003 12 22 | 704 | 0.8+ | 0.9+ | 2006 09 17 | 703 | 0.1− | 0.9+ |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2003 12 25 | 608 | 0.6+ | 0.2− | 2006 09 27 | G96 | 0.2− | 0.5+ |
| 2000 04 05 | 704 | 0.0 | 0.7+ | 2003 12 25 | 608 | 0.3+ | 0.6− | 2006 09 27 | G96 | 0.1+ | 0.3+ |
| 2000 04 05 | 704 | 0.0 | 0.7+ | 2003 12 25 | 608 | 0.1+ | 1.0− | 2006 09 27 | G96 | 0.1− | 0.2+ |
| 2000 04 05 | 704 | 0.2+ | 0.7+ | 2003 12 27 | 704 | 0.4− | 0.2− | 2006 09 27 | G96 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.7+ | 2003 12 27 | 704 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.5+ |
| 2000 04 07 | 704 | 0.4+ | 0.9+ | 2003 12 27 | 704 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2000 04 07 | 704 | 0.7+ | 0.9− | 2003 12 27 | 704 | 0.2+ | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.2+ |
| 2000 04 07 | 704 | 0.5+ | 0.2+ | 2003 12 27 | 704 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.2+ |
| 2000 04 07 | 704 | 0.5− | 0.6+ | 2003 12 27 | 704 | 0.4− | 0.4+ | 2006 11 16 | G96 | 0.5− | 0.1+ |
| 2000 04 07 | 704 | 0.6+ | 1.0+ | 2003 12 27 | 704 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.4+ |
| 2000 04 08 | 704 | 0.9+ | 0.7− | 2003 12 27 | 704 | 0.8− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2000 04 08 | 704 | 1.2+ | 0.3+ | 2003 12 27 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.3− |

**(138092)∗ 2000 DY$_{69}$ = 2003 YX$_{178}$ = 2004 BQ$_{31}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56107), A. Doppler (d, *MPO* 84540)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.66881 | | (2000.0) | | −0.95748518 | +0.28837326 |
| $n$ | 0.22471361 | $\omega$ | 186.55774 | | −0.26260253 | −0.85986936 |
| $a$ | 2.6794756 | $\Omega$ | 10.21342 | | −0.11942380 | −0.42126659 |
| $e$ | 0.1415851 | $i$ | 2.56547 | | | |
| $P$ | 4.39 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 26 | 703 | 0.0 | 0.0 | 2000 03 11 | 699 | 0.2+ | 0.7+ | 2004 01 30 | 704 | 0.0 | 0.2− |
| 2000 02 26 | 703 | (2.2− | 5.2+) | 2002 10 10 | 644 | 0.4− | 0.7+ | 2004 01 30 | 704 | 0.2− | 0.8− |
| 2000 02 26 | 703 | 0.6+ | 0.7− | 2002 10 10 | 644 | 0.5− | 0.4+ | 2004 01 30 | 704 | 0.3− | 0.2− |
| 2000 02 26 | 703 | 0.1− | 0.8+ | 2002 10 10 | 644 | 0.2− | 0.3+ | 2004 02 15 | 704 | (2.2+ | 1.2+) |
| 2000 02 29 | 704 | 0.1+ | 0.1+ | 2002 10 30 | 644 | 0.4− | 0.8+ | 2004 02 15 | 704 | (2.4+ | 0.5−) |
| 2000 02 29 | 704 | 0.3+ | 0.5+ | 2002 10 30 | 644 | 0.0 | 1.2+ | 2004 02 15 | 704 | (2.3+ | 0.3+) |
| 2000 02 29 | 704 | 1.3+ | 0.0 | 2002 10 30 | 644 | 0.4− | 1.0+ | 2006 08 18 | 691 | 0.3+ | 0.5+ |
| 2000 03 03 | 704 | 0.8− | 0.6+ | 2003 12 27 | 704 | 0.4− | 0.2− | 2006 08 18 | 691 | 0.2− | 0.3+ |
| 2000 03 03 | 704 | 0.3− | 0.7+ | 2003 12 27 | 704 | 0.1+ | 0.9− | 2006 08 18 | 691 | 0.2+ | 0.2+ |
| 2000 03 03 | 704 | 0.1− | 0.1+ | 2003 12 27 | 704 | 0.4+ | 0.5− | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.6− | 0.5+ | 2004 01 19 | 699 | 0.8− | 0.1− | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2000 03 03 | 704 | 0.3− | 0.3+ | 2004 01 19 | 699 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.5+ | 0.6+ | 2004 01 19 | 699 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.7− | 0.2+ |
| 2000 03 11 | 704 | 0.3+ | 0.3+ | 2004 01 19 | 699 | 0.4− | 0.4− | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2000 03 11 | 704 | 0.1+ | 0.5+ | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 704 | 0.7+ | 0.4+ | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2000 03 11 | 704 | 0.5+ | 1.4+ | 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.6− |
| 2000 03 11 | 699 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.6+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2000 03 11 | 699 | 1.6+ | 0.4+ | 2004 01 22 | 704 | 0.3+ | 1.1− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2000 03 11 | 699 | 0.5− | 0.6+ | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.4− | 0.1− |

**(138093)∗ 2000 DF$_{72}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.58712 | | (2000.0) | | −0.07373197 | −0.99586063 |
| $n$ | 0.24396592 | $\omega$ | 298.00878 | | +0.95479027 | −0.08588153 |
| $a$ | 2.5365880 | $\Omega$ | 156.04239 | | +0.28799157 | +0.02976505 |
| $e$ | 0.1623028 | $i$ | 7.52149 | | | |
| $P$ | 4.04 | $H$ | 15.9 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 16 | 703 | 0.3− | 0.2+ | 2000 03 11 | 699 | (1.8− | 2.4+) | 2006 09 16 | 704 | 0.6− | 0.6− |
| 2000 02 16 | 703 | (2.9+ | 1.9+) | 2002 09 29 | 608 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.0 | 0.5− |
| 2000 02 16 | 703 | 0.5− | 0.7− | 2002 09 29 | 608 | 0.3− | 0.5+ | 2006 09 16 | 699 | 0.7+ | 1.4+ |
| 2000 02 16 | 703 | (3.1+ | 2.0+) | 2002 09 29 | 608 | 0.3− | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.0 |
| 2000 02 29 | 704 | 0.6+ | 0.4+ | 2002 10 03 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 699 | (0.2− | 2.4+) |
| 2000 02 29 | 704 | 0.4+ | 0.2+ | 2002 10 03 | 704 | 0.3+ | 0.5− | 2006 09 16 | 699 | 0.9− | 0.4− |
| 2000 02 29 | 704 | 0.6+ | 0.8+ | 2002 10 03 | 704 | 0.8+ | 0.2− | 2006 09 16 | 699 | 0.9− | 1.3+ |
| 2000 02 29 | 704 | 0.3+ | 0.2+ | 2002 10 03 | 704 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.7+ | 1.0+ |
| 2000 03 03 | 704 | 0.1− | 0.4+ | 2002 10 03 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2000 03 03 | 704 | 0.2+ | 0.1− | 2004 02 14 | 703 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.7− | 0.6+ |
| 2000 03 03 | 704 | 0.8− | 0.3+ | 2004 02 14 | 703 | 0.3+ | 0.8− | 2006 09 19 | 699 | 0.7− | 0.0 |
| 2000 03 03 | 704 | 0.4+ | 0.7+ | 2004 02 14 | 703 | 0.2− | 0.1− | 2006 09 25 | 699 | 1.2+ | 0.3− |
| 2000 03 03 | 704 | 0.1+ | 0.7+ | 2004 02 14 | 703 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.1− | 0.3+ |
| 2000 03 11 | 699 | 1.3+ | 0.5+ | 2004 02 18 | 704 | 0.1− | 0.1− | 2006 09 25 | 699 | 1.0− | 0.2− |
| 2000 03 11 | 704 | 0.0 | 0.1− | 2004 02 18 | 704 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.3+ | 0.4+ |
| 2000 03 11 | 699 | 0.2− | 1.5+ | 2004 02 18 | 704 | 0.2− | 0.7− | 2006 10 10 | 644 | 0.5− | 0.8− |
| 2000 03 11 | 704 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.5− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2000 03 11 | 699 | 1.1+ | 0.7+ | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2000 03 11 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2000 03 11 | 699 | 0.2− | 0.9+ | 2004 03 19 | 704 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 0.5+ | 0.1− | 2004 03 19 | 704 | 0.3+ | 0.7− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2000 03 11 | 699 | 0.0 | 0.9+ | 2004 03 28 | 704 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.0 |
| 2000 03 11 | 699 | 0.5− | 0.5+ | 2004 03 28 | 704 | 0.4+ | 0.7− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2000 03 11 | 704 | 0.4+ | 0.3− | 2004 03 28 | 704 | 0.5− | 0.7− | 2006 10 20 | 644 | 0.5+ | 0.2− |
| 2000 03 11 | 699 | 1.5− | 0.5+ | 2006 09 16 | 704 | 0.4− | 0.6+ | | | | |

**(138094)∗ 2000 DR$_{72}$ = 2005 KA$_2$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74739)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 106.01500 | | (2000.0) | | −0.47566255 | +0.87883735 |
| $n$ | 0.21939210 | $\omega$ | 92.64184 | | −0.83298653 | −0.43641762 |
| $a$ | 2.7226307 | $\Omega$ | 148.86804 | | −0.28262799 | −0.19283304 |
| $e$ | 0.1231095 | $i$ | 4.13539 | | | |
| $P$ | 4.49 | $H$ | 15.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 28 | 691 | 0.1− | 0.0 | 2005 05 03 | 704 | 0.0 | 0.1− | 2005 07 05 | 644 | 0.2+ | 0.2− |
| 1994 12 28 | 691 | 0.5− | 0.7− | 2005 05 08 | 704 | 0.7+ | 0.6+ | 2006 08 18 | 691 | 0.2+ | 0.2+ |
| 1994 12 28 | 691 | 0.2+ | 0.2− | 2005 05 08 | 704 | 0.1+ | 0.9+ | 2006 08 18 | 691 | 0.0 | 0.1+ |
| 2000 02 29 | 704 | 0.2− | 1.5+ | 2005 05 08 | 704 | 0.2+ | 0.2+ | 2006 08 18 | 691 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.3− | 0.9+ | 2005 05 08 | 704 | 0.2+ | 0.5− | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 2000 02 29 | 704 | 0.5+ | 1.0+ | 2005 05 08 | 704 | 1.1+ | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.1− |
| 2000 03 03 | 704 | 0.4+ | 1.3+ | 2005 05 12 | 704 | (2.3+ | 1.1+) | 2006 09 15 | 691 | 0.2− | 0.5+ |
| 2000 03 03 | 704 | 0.3+ | 0.5+ | 2005 05 12 | 704 | 1.0+ | 1.5+ | 2006 09 15 | 291 | 0.4− | 0.3+ |
| 2000 03 03 | 704 | 1.0+ | 0.2− | 2005 05 12 | 704 | 0.3+ | 1.2+ | 2006 09 15 | 291 | 0.2− | 0.4+ |
| 2000 03 03 | 704 | 0.9+ | 0.1+ | 2005 05 16 | G96 | 0.7− | 0.1− | 2006 09 15 | 291 | 0.3− | 0.5+ |
| 2000 03 03 | 704 | 1.3− | 0.8− | 2005 05 16 | G96 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.3+ | 0.5− | 2005 05 16 | G96 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.3+ |
| 2000 03 11 | 704 | 0.4− | 1.9− | 2005 05 16 | G96 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 0.8+ | 0.5+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 09 30 | 703 | 1.2− | 0.8− |
| 2000 03 11 | 704 | 0.0 | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2000 03 11 | 704 | 0.4+ | 0.4− | 2005 05 19 | G96 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.9− | 1.2+ |
| 2001 08 13 | 644 | 0.1− | 0.1+ | 2005 05 19 | G96 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 2001 08 13 | 644 | 0.1− | 0.6+ | 2005 06 04 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2001 08 13 | 644 | 0.1− | 0.1+ | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2003 12 22 | 691 | 0.1+ | 0.5+ | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2003 12 22 | 691 | 0.1− | 0.6+ | 2005 06 09 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.0 |
| 2003 12 22 | 691 | 0.3+ | 0.5+ | 2005 06 09 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.9+ |
| 2003 12 22 | 691 | 0.3+ | 0.3+ | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.3+ | 1.0+ |
| 2003 12 22 | 691 | 0.2− | 0.6+ | 2005 06 23 | 644 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2005 06 23 | 644 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.2− |
| 2004 01 27 | 691 | 0.1+ | 0.4+ | 2005 06 23 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2004 01 27 | 691 | 0.0 | 0.5+ | 2005 06 27 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.7+ | 0.4− |
| 2004 01 27 | 691 | 0.1+ | 0.6+ | 2005 06 27 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2005 05 03 | 704 | 0.5− | 0.0 | 2005 06 27 | 644 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2005 05 03 | 704 | 0.2− | 0.9+ | 2005 07 05 | 644 | 0.2− | 0.2+ | | | | |
| 2005 05 03 | 704 | (1.4+ | 2.0+) | 2005 07 05 | 644 | 0.0 | 0.1+ | | | | |

**(138095)∗ 2000 DK$_{79}$**

Discovered 2000 Feb. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.91636 | | (2000.0) | | +0.71034748 | −0.36766630 |
| $n$ | 0.41631516 | $\omega$ | 2.45825 | | +0.62998034 | −0.04817305 |
| $a$ | 1.7763201 | $\Omega$ | 43.49258 | | +0.31389684 | +0.92870924 |
| $e$ | 0.4143755 | $i$ | 60.69642 | | | |
| $P$ | 2.37 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1986 04 09 | 675 | (7.1− | 1.2+) | 2002 01 10 | 599 | 0.3+ | 0.6+ | 2005 05 28 | 941 | 0.1− | 1.2− |
| 1986 04 09 | 675 | (4.2− | 1.7+) | 2003 04 04 | 711 | 0.1+ | 1.1− | 2005 05 28 | 941 | 0.1+ | 1.2− |
| 2000 02 26 | 704 | 0.1+ | 0.2− | 2003 04 04 | 711 | (0.0 | 2.0−) | 2005 05 28 | 941 | 0.2+ | 1.0− |
| 2000 02 26 | 704 | 0.4− | 0.6− | 2003 04 04 | 711 | 0.5+ | 1.0+ | 2006 08 20 | E12 | 0.4− | 0.4+ |
| 2000 02 26 | 704 | 0.1− | 0.0 | 2003 05 07 | 474 | 0.5+ | 0.5− | 2006 08 20 | E12 | 0.6+ | 0.0 |
| 2000 03 04 | 704 | 0.1+ | 0.3+ | 2003 05 07 | 474 | (2.2+ | 1.0+) | 2006 08 20 | E12 | 0.5+ | 0.4+ |
| 2000 03 04 | 704 | 0.1− | 0.1+ | 2003 05 07 | 474 | 0.3+ | 0.1+ | 2006 09 22 | B14 | 0.1− | 0.5− |
| 2000 03 04 | 704 | 0.3− | 0.5− | 2005 01 19 | 291 | 0.0 | 0.5+ | 2006 09 22 | B14 | 0.3− | 0.0 |
| 2000 03 04 | 704 | 0.2− | 0.3+ | 2005 01 19 | 291 | 0.3+ | 0.5+ | 2006 09 23 | B14 | 0.6− | 0.4+ |
| 2000 03 07 | 557 | 0.1− | 0.3− | 2005 01 19 | 291 | 0.1+ | 0.3+ | 2006 09 23 | B14 | 0.4− | 0.3+ |
| 2000 03 07 | 557 | 0.2+ | 0.2+ | 2005 04 03 | 461 | 0.3− | 0.3+ | 2006 09 25 | 448 | 0.0 | 0.3− |
| 2000 03 07 | 557 | 0.1− | 0.6− | 2005 04 03 | 461 | 0.3− | 0.1+ | 2006 09 25 | 448 | 0.5+ | 0.2− |
| 2000 03 09 | 704 | 0.1− | 0.3+ | 2005 04 03 | 461 | 0.5+ | 0.0 | 2006 09 25 | 448 | 0.4− | 0.1− |
| 2000 03 09 | 704 | 0.6+ | 0.6− | 2005 04 06 | 703 | 0.9+ | 0.5+ | 2006 09 25 | 448 | 0.3+ | 0.0 |
| 2000 03 09 | 704 | 0.4+ | 0.7+ | 2005 04 06 | 703 | 0.7+ | 0.6− | 2006 10 03 | 704 | 0.4+ | 0.4+ |
| 2000 03 09 | 345 | 1.8+ | 1.5− | 2005 04 06 | 703 | 1.2+ | 0.7− | 2006 10 03 | 704 | 0.1+ | 0.3+ |
| 2000 03 09 | 345 | 0.7− | 0.3+ | 2005 04 06 | 703 | 0.1+ | 0.6− | 2006 10 03 | 704 | 0.3+ | 0.3+ |
| 2000 04 06 | 611 | 1.7− | 0.7− | 2005 04 22 | 649 | 0.4− | 0.4+ | 2006 10 03 | 704 | 0.2+ | 0.0 |
| 2000 04 06 | 611 | 0.9− | 0.7− | 2005 04 22 | 649 | 0.2− | 1.2+ | 2006 10 03 | 704 | 0.2+ | 0.1+ |
| 2000 04 12 | 699 | 0.1− | 0.6+ | 2005 04 22 | 649 | 0.3+ | 0.6+ | 2006 10 06 | 204 | 0.0 | 0.3− |
| 2000 04 12 | 699 | 0.3+ | 0.3+ | 2005 04 30 | 170 | 0.5− | 0.1+ | 2006 10 06 | 204 | 0.1+ | 0.4− |
| 2000 04 12 | 699 | 0.2+ | 1.1+ | 2005 04 30 | 170 | 0.2− | 0.4− | 2006 10 08 | 699 | 0.1+ | 0.6+ |
| 2000 04 12 | 699 | 0.3+ | 0.9+ | 2005 05 01 | 151 | 1.0+ | 0.9+ | 2006 10 08 | 699 | 0.4+ | 0.1+ |
| 2000 05 04 | 071 | 0.9+ | 1.4+ | 2005 05 01 | 151 | 0.7+ | 0.3− | 2006 10 08 | 699 | 0.2− | 0.1+ |
| 2000 05 04 | 071 | 1.2− | 0.7− | 2005 05 01 | 151 | 0.4+ | 0.7− | 2006 10 08 | 699 | 0.7+ | 1.2+ |
| 2000 05 04 | 071 | (1.7+ | 2.4−) | 2005 05 03 | 703 | 0.3− | 0.3+ | 2006 10 08 | 379 | 0.4− | 0.2− |
| 2000 05 05 | 071 | 1.0+ | 0.0 | 2005 05 03 | 703 | 0.9− | 0.2− | 2006 10 08 | 379 | 0.1− | 0.3− |
| 2000 05 05 | 071 | 0.3+ | 0.7− | 2005 05 03 | 703 | 0.4− | 0.2− | 2006 10 08 | 379 | 0.2+ | 0.1− |
| 2001 04 10 | 413 | 0.4− | 0.0 | 2005 05 03 | 703 | 0.6− | 0.1− | 2006 10 08 | 379 | 0.0 | 0.7− |
| 2001 04 10 | 413 | (2.6− | 0.3−) | 2005 05 09 | 703 | 0.3− | 0.5− | 2006 10 08 | 379 | 0.1− | 0.6− |
| 2001 04 10 | 413 | 0.1− | 0.4+ | 2005 05 09 | 703 | (1.7− | 0.5−) | 2006 10 08 | 379 | 0.2− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 474 | 0.1− | 0.6− | 2005 05 09 | 703 | 1.1− | 0.4+ | 2006 10 09 | 379 | 0.3+ | 0.1− |
| 2001 07 14 | 474 | 0.1− | 0.1− | 2005 05 09 | 703 | 0.6− | 0.0 | 2006 10 09 | 379 | 0.6+ | 0.2− |
| 2001 07 14 | 474 | 0.1− | 0.0 | 2005 05 13 | 704 | 0.3+ | 0.8+ | 2006 10 09 | 379 | 0.3+ | 0.7− |
| 2001 10 11 | 474 | 0.2− | 0.2+ | 2005 05 13 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 704 | 0.2+ | 0.5+ |
| 2001 10 11 | 474 | 0.2+ | 0.6+ | 2005 05 13 | 704 | 0.5− | 0.6+ | 2006 10 16 | 704 | 0.1− | 0.3+ |
| 2001 10 11 | 474 | 0.3+ | 0.3+ | 2005 05 13 | 704 | 0.4+ | 0.8+ | 2006 10 16 | 704 | 0.3+ | 0.5+ |
| 2001 11 15 | 474 | 0.8− | 0.3+ | 2005 05 14 | 170 | 0.6− | 0.4− | 2006 10 16 | 704 | (0.4+ | 2.1+) |
| 2001 11 15 | 474 | 0.6− | 0.2+ | 2005 05 14 | 170 | 0.4− | 0.6− | 2006 10 18 | 379 | 0.6− | 0.2− |
| 2001 11 15 | 474 | 0.6− | 0.4+ | 2005 05 14 | 170 | 0.5− | 0.5− | 2006 10 18 | 379 | 0.7− | 0.1− |
| 2002 01 10 | 599 | 0.3− | 0.1− | 2005 05 28 | 941 | 0.7− | 1.5− | 2006 10 18 | 379 | 1.0− | 0.3+ |
| 2002 01 10 | 599 | 0.1− | 0.3+ | 2005 05 28 | 941 | 0.2− | 1.2− | | | | |

**(138096)∗ 2000 DL$_{80}$ = 2005 EU$_{176}$**

Discovered 2000 Feb. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74740)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.48279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21598777 | $\omega$ | 103.58545 | | −0.57392652 | +0.78402507 | |
| $a$ | 2.7511648 | $\Omega$ | 128.84943 | | −0.81823839 | −0.53736717 | |
| $e$ | 0.1471911 | $i$ | 17.67524 | | −0.03308007 | −0.31071083 | |
| $P$ | 4.56 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.2+ | 0.9+ | 2005 03 13 | 703 | 0.2− | 0.1− | 2005 05 02 | 703 | 0.4− | 0.3+ |
| 2000 02 03 | 704 | 0.8− | 0.4+ | 2005 03 13 | 703 | 0.3− | 0.6− | 2005 05 02 | 703 | 1.4− | 1.0+ |
| 2000 02 03 | 704 | 0.0 | 1.2+ | 2005 03 13 | 703 | 0.2− | 0.7− | 2005 05 05 | 644 | 0.2+ | 0.1+ |
| 2000 02 03 | 704 | 0.6+ | 1.8+ | 2005 03 13 | 703 | 1.0− | 0.0 | 2005 05 05 | 644 | 0.2− | 0.3− |
| 2000 02 03 | 704 | 0.0 | 0.4+ | 2005 04 02 | 703 | 0.1− | 0.4+ | 2005 05 05 | 644 | 0.1+ | 0.1− |
| 2000 02 28 | 704 | 0.1+ | 0.6+ | 2005 04 02 | 703 | 1.2− | 0.4− | 2006 08 20 | 644 | 0.2− | 0.6+ |
| 2000 02 28 | 704 | 0.9− | 0.3+ | 2005 04 02 | 703 | 0.9− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.7+ |
| 2000 02 28 | 704 | 0.1+ | 0.3+ | 2005 04 02 | 703 | (1.5− | 2.2+) | 2006 08 20 | 644 | 0.1+ | 0.5+ |
| 2000 02 28 | 704 | 0.6+ | 0.8+ | 2005 04 09 | 703 | 1.1− | 0.0 | 2006 08 23 | 644 | 0.0 | 0.6+ |
| 2000 02 28 | 704 | 0.2− | 0.7+ | 2005 04 09 | 703 | 0.2− | 0.2− | 2006 08 23 | 644 | 0.0 | 0.3+ |
| 2000 03 04 | 704 | 0.2+ | 0.3+ | 2005 04 09 | 703 | 0.8+ | 1.5+ | 2006 08 23 | 644 | 0.2+ | 0.3+ |
| 2000 03 04 | 704 | 0.3− | 0.2− | 2005 04 12 | 704 | 0.8+ | 1.0+ | 2006 08 23 | 644 | 0.3− | 0.2+ |
| 2000 03 04 | 704 | 0.5+ | 0.5− | 2005 04 12 | 704 | 0.6+ | 0.8+ | 2006 08 23 | 644 | 0.1+ | 0.4+ |
| 2000 03 04 | 704 | 0.5− | 0.7− | 2005 04 12 | 704 | 1.2+ | 0.4+ | 2006 08 23 | 644 | 0.2− | 0.3+ |
| 2000 03 04 | 704 | 0.4+ | 0.0 | 2005 04 12 | 704 | 1.1+ | 1.1+ | 2006 08 24 | 644 | 0.4− | 0.2+ |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2005 04 17 | 703 | 0.2+ | 0.8− | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 2004 01 16 | 691 | 0.1+ | 0.3+ | 2005 04 17 | 703 | 0.1− | 0.3− | 2006 08 24 | 644 | 0.4− | 0.4+ |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2005 04 17 | 703 | 0.3+ | 0.6− | 2006 09 14 | 644 | 0.0 | 0.7+ |
| 2005 03 08 | 704 | 0.2+ | 0.1− | 2005 04 17 | 703 | 0.5− | 0.6− | 2006 09 14 | 644 | 0.3+ | 0.9+ |
| 2005 03 08 | 704 | 1.0+ | 0.5+ | 2005 05 02 | 703 | 0.1+ | 0.3− | 2006 09 14 | 644 | 0.4+ | 1.1+ |
| 2005 03 08 | 704 | 1.9+ | 0.2− | 2005 05 02 | 703 | 0.3− | 0.2− | | | | |

**(138097)∗ 2000 DZ$_{80}$**

Discovered 2000 Feb. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.89366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27513234 | $\omega$ | 41.92665 | | −0.16497504 | −0.98488539 | |
| $a$ | 2.3412168 | $\Omega$ | 57.63317 | | +0.88749640 | −0.17157412 | |
| $e$ | 0.1282435 | $i$ | 3.58154 | | +0.43027129 | −0.02372945 | |
| $P$ | 3.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 703 | 0.6− | 0.6+ | 2002 10 11 | 704 | 0.4− | 1.4+ | 2004 04 20 | 703 | (1.9− | 0.1−) |
| 2000 01 30 | 703 | 0.4− | 0.8+ | 2002 10 11 | 704 | 1.0− | 1.0+ | 2004 04 20 | 703 | 1.0− | 0.6+ |
| 2000 01 30 | 703 | 1.2− | 0.5− | 2002 10 31 | 608 | 0.2− | 0.3+ | 2004 04 20 | 703 | 0.1− | 0.6+ |
| 2000 01 30 | 703 | 0.7− | 0.1− | 2002 10 31 | 608 | 0.2− | 0.3+ | 2004 04 20 | 703 | 0.7+ | 0.7+ |
| 2000 02 11 | 704 | 1.4+ | 0.7+ | 2002 10 31 | 608 | 0.4− | 0.2+ | 2004 04 21 | 704 | (1.0+ | 1.9+) |
| 2000 02 11 | 704 | 1.1+ | 0.1− | 2002 11 06 | 704 | 0.9− | 0.3+ | 2004 04 21 | 704 | 1.3+ | 0.2− |
| 2000 02 11 | 704 | 0.2+ | 0.1+ | 2002 11 06 | 704 | 0.3+ | 0.6+ | 2004 04 21 | 704 | 0.5+ | 0.5+ |
| 2000 02 11 | 704 | 0.5+ | 0.4− | 2002 11 06 | 704 | 0.3+ | 0.1+ | 2004 04 21 | 704 | 1.4+ | 0.2+ |
| 2000 02 11 | 704 | 1.2+ | 0.0 | 2002 11 06 | 704 | 0.8+ | 1.2− | 2004 04 30 | 691 | 0.3− | 0.2− |
| 2000 02 28 | 704 | 0.3+ | 0.2− | 2002 11 06 | 704 | 0.2+ | 1.3− | 2004 04 30 | 691 | 0.1− | 0.2+ |
| 2000 02 28 | 704 | 0.2+ | 0.2− | 2002 11 22 | 644 | 0.5− | 0.5+ | 2004 04 30 | 691 | 0.1− | 0.1+ |
| 2000 02 28 | 704 | 1.0+ | 1.1− | 2002 11 22 | 644 | 0.0 | 0.7+ | 2004 05 15 | 691 | 0.1− | 0.0 |
| 2000 02 28 | 704 | (1.6+ | 2.6−) | 2002 11 22 | 644 | 0.2− | 0.6+ | 2004 05 15 | 691 | 0.2− | 0.1− |
| 2000 03 04 | 704 | 0.3− | 0.4+ | 2004 03 14 | 644 | 0.1− | 0.3+ | 2004 05 15 | 691 | 0.1+ | 0.2− |
| 2000 03 04 | 704 | 0.6− | 0.8+ | 2004 03 14 | 644 | 0.4+ | 0.5+ | 2004 05 19 | 691 | 0.2+ | 0.1− |
| 2000 03 04 | 704 | 0.4− | 0.6+ | 2004 03 14 | 644 | 0.2+ | 0.5+ | 2004 05 19 | 691 | 0.1− | 0.0 |
| 2000 03 04 | 704 | 0.1− | 0.7+ | 2004 03 19 | 704 | (3.6+ | 1.4−) | 2004 05 19 | 691 | 0.3+ | 0.1+ |
| 2002 10 02 | 704 | 0.2− | 0.8+ | 2004 03 19 | 704 | (2.0+ | 0.1+) | 2005 07 26 | 644 | 0.1− | 0.7+ |
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2004 03 19 | 704 | (1.5+ | 0.5−) | 2005 07 26 | 644 | 0.2− | 0.2+ |
| 2002 10 02 | 704 | 0.7− | 1.0+ | 2004 03 19 | 704 | (2.0+ | 0.4+) | 2005 07 26 | 644 | 0.3− | 0.2+ |
| 2002 10 02 | 704 | 0.1− | 0.7+ | 2004 03 19 | 704 | (3.4+ | 0.7−) | 2005 09 08 | E12 | 0.6− | 0.2+ |
| 2002 10 02 | 608 | 0.3− | 0.3− | 2004 04 15 | 699 | 0.5+ | 0.1+ | 2005 09 08 | E12 | 0.2+ | 0.5+ |
| 2002 10 02 | 608 | 0.5+ | 0.6+ | 2004 04 15 | 699 | 0.6+ | 0.6+ | 2005 09 08 | E12 | 1.0+ | 0.1− |
| 2002 10 02 | 608 | 0.2− | 0.1+ | 2004 04 15 | 699 | 0.3+ | 0.2+ | 2005 09 08 | E12 | 0.5+ | 0.8− |
| 2002 10 03 | 704 | 0.5− | 0.4+ | 2004 04 15 | 699 | 0.4+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2004 04 16 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 1.0+ | 2004 04 16 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2004 04 16 | 691 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2004 04 16 | 704 | 0.1− | 0.5+ | 2006 10 29 | G96 | 0.6+ | 0.3− |
| 2002 10 07 | 704 | (0.7+ | 2.3+) | 2004 04 16 | 704 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.7+ | 0.1− |
| 2002 10 07 | 704 | (1.6− | 0.0 ) | 2004 04 16 | 704 | 0.6− | 0.3− | 2006 10 29 | G96 | (4.8− | 1.8+) |
| 2002 10 07 | 704 | 0.7− | 0.7+ | 2004 04 16 | 644 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 10 07 | 704 | (1.7− | 1.7+) | 2004 04 16 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2004 04 16 | 644 | 1.4+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 10 09 | 704 | (0.9− | 1.5+) | 2004 04 16 | 644 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.8+ | 0.3− |
| 2002 10 09 | 704 | (0.8− | 1.7+) | 2004 04 19 | 704 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2002 10 09 | 704 | (1.1+ | 2.1+) | 2004 04 19 | 704 | 0.2− | 0.9+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2002 10 11 | 704 | 0.9− | 0.8+ | 2004 04 19 | 704 | 0.6− | 0.6+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 1.0− | 1.2+ | 2004 04 19 | 704 | 0.1− | 0.2+ | 2006 11 22 | G96 | 2.1− | 0.7+ |
| 2002 10 11 | 704 | (0.3− | 1.6+) | 2004 04 19 | 704 | 0.1− | 0.2+ | | | | |

**(138098)∗ 2000 DK$_{81}$**

Discovered 2000 Feb. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.88602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25919279 | $\omega$ | 306.74486 | | +0.57796514 | −0.80541461 | |
| $a$ | 2.4362440 | $\Omega$ | 107.43452 | | +0.78574080 | +0.50575017 | |
| $e$ | 0.0989353 | $i$ | 7.91581 | | +0.22038081 | +0.30906969 | |
| $P$ | 3.80 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.1+ | 0.1+ | 2002 10 08 | 699 | 1.0− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.7− |
| 2000 02 03 | 704 | 0.0 | 0.5+ | 2002 10 08 | 699 | 0.2+ | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.5− |
| 2000 02 03 | 704 | 0.7− | 0.9+ | 2002 10 25 | 644 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2000 02 03 | 704 | 1.1− | 0.6+ | 2002 10 25 | 644 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2000 02 11 | 704 | 0.1+ | 0.5+ | 2002 10 25 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | (1.9− | 4.2−) |
| 2000 02 11 | 704 | 0.1− | 0.2− | 2002 11 05 | 644 | 0.2− | 0.8+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2000 02 11 | 704 | 0.1+ | 0.4+ | 2002 11 05 | 644 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2000 02 11 | 704 | 0.7+ | 0.8− | 2002 11 05 | 644 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2000 02 28 | 704 | 0.1− | 0.5− | 2004 02 17 | 704 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2000 02 28 | 704 | 0.2+ | 0.7− | 2004 02 17 | 704 | 0.5− | 1.3+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2000 02 28 | 704 | 0.2+ | 0.5− | 2004 02 17 | 704 | 0.3− | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2000 02 28 | 704 | 1.1+ | 0.5− | 2004 02 17 | 704 | 1.5− | 1.4+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2000 03 04 | 704 | 0.0 | 0.3+ | 2004 02 17 | 704 | (1.8− | 0.8+) | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2000 03 04 | 704 | 0.1+ | 0.2− | 2004 03 23 | 704 | 1.1+ | 0.8+ | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2000 03 04 | 704 | 0.4+ | 0.8+ | 2004 03 23 | 704 | 0.5+ | 0.5− | 2006 11 08 | 644 | 0.5+ | 0.0 |
| 2000 03 04 | 704 | 0.4− | 0.0 | 2004 03 23 | 704 | 0.9+ | 0.5− | 2006 11 19 | 703 | 0.8+ | 0.3+ |
| 2002 09 19 | 644 | 0.3− | 1.3+ | 2004 03 23 | 704 | 0.3+ | 0.3− | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2002 09 19 | 644 | 0.0 | 1.0+ | 2004 03 23 | 704 | 0.4+ | 0.5− | 2006 11 19 | 703 | 0.8+ | 0.1+ |
| 2002 09 19 | 644 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.2+ | 0.8− | 2006 11 19 | 703 | 0.2+ | 0.4− |
| 2002 10 08 | 699 | 0.4− | 0.4− | 2006 09 30 | 703 | 1.1− | 0.3+ | | | | |
| 2002 10 08 | 699 | 0.5− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.3+ | | | | |

**(138099)∗ 2000 DT$_{83}$**

Discovered 2000 Feb. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.95270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23811116 | $\omega$ | 227.60723 | | −0.58094732 | +0.81376386 | |
| $a$ | 2.5779998 | $\Omega$ | 6.93796 | | −0.69935713 | −0.48837711 | |
| $e$ | 0.1150179 | $i$ | 8.08448 | | −0.41641304 | −0.31508123 | |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 703 | 1.3− | 0.6+ | 2002 10 31 | 699 | 0.6+ | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2000 02 06 | 703 | 0.6− | 0.2+ | 2002 10 31 | 699 | 0.9+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2000 02 06 | 703 | 0.7+ | 0.2+ | 2002 11 14 | 704 | 0.4− | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2000 02 06 | 703 | 0.1+ | 1.5− | 2002 11 14 | 704 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 0.4+ | 0.8+ | 2002 11 14 | 704 | 1.1− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 1.2+ | 0.6+ | 2003 12 29 | 704 | 1.1+ | 0.2− | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2000 02 11 | 704 | 0.3+ | 0.2+ | 2003 12 29 | 704 | 0.4+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2000 02 11 | 704 | 0.2+ | 1.5+ | 2003 12 29 | 704 | 1.0+ | 0.4− | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2000 02 28 | 704 | 0.4+ | 0.2+ | 2003 12 29 | 704 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2000 02 28 | 704 | 0.8+ | 0.7+ | 2004 01 31 | 704 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.4+ | 0.1− |
| 2000 02 28 | 704 | 0.2+ | 1.1+ | 2004 01 31 | 704 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2000 02 28 | 704 | 0.7+ | 1.0+ | 2004 01 31 | 704 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2000 03 04 | 704 | 0.3− | 1.2+ | 2004 01 31 | 704 | 1.0+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 1.2− |
| 2000 03 04 | 704 | 0.3+ | 0.9+ | 2004 02 14 | 704 | 1.3+ | 1.2− | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 2000 03 04 | 704 | 0.3− | 0.6+ | 2004 02 14 | 704 | 0.3+ | 0.5− | 2006 10 17 | 703 | 1.4− | 0.9+ |
| 2000 03 04 | 704 | 0.1+ | 1.3+ | 2004 02 14 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | (4.3− | 3.8+) |
| 2000 03 04 | 704 | 0.6+ | 1.3+ | 2004 02 17 | 645 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 07 01 | 644 | 0.2− | 1.3+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 07 01 | 644 | 0.0 | 0.9+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 07 01 | 644 | 0.4− | 1.0+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 11 14 | 703 | 0.8− | 1.4− |
| 2002 10 15 | 644 | 0.1− | 0.9+ | 2006 07 21 | G96 | 0.7+ | 0.0 | 2006 11 14 | 703 | 0.7− | 0.4− |
| 2002 10 15 | 644 | 0.1− | 1.1+ | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.7− |
| 2002 10 15 | 644 | 0.1− | 1.0+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 1.6− | 1.8− |
| 2002 10 31 | 699 | 0.1− | 0.6+ | 2006 09 28 | 691 | 0.2+ | 0.3+ | | | | |
| 2002 10 31 | 699 | 0.9− | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.3+ | | | | |

**(138100)∗ 2000 DU$_{84}$ = 2002 RV$_{69}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34907)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.14975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26145204 | $\omega$ | 287.75416 | | +0.45469871 | −0.89003060 | |
| $a$ | 2.4221890 | $\Omega$ | 135.15271 | | +0.83389494 | +0.41238430 | |
| $e$ | 0.1949167 | $i$ | 2.68899 | | +0.31283911 | +0.19438291 | |
| $P$ | 3.77 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 04 | 691 | 0.1− | 0.2+ | 2002 09 15 | 644 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 1991 11 04 | 691 | 0.1+ | 0.2+ | 2002 10 03 | 704 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 1991 11 04 | 691 | 0.2− | 0.3+ | 2002 10 03 | 704 | 1.1− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1998 08 23 | 691 | 0.7+ | 0.1− | 2002 10 03 | 704 | 1.1− | 1.0+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 1998 08 23 | 691 | 0.8+ | 0.1+ | 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1998 08 23 | 691 | 0.5+ | 0.3+ | 2004 03 15 | 691 | 0.4− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1998 08 26 | 691 | 0.7− | 0.0 | 2004 03 15 | 691 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.5− |
| 1998 08 26 | 691 | 0.6− | 0.2+ | 2004 03 18 | 704 | 0.8+ | 1.5+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 1998 08 26 | 691 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2000 02 03 | 691 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.7+ | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2000 02 03 | 691 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2000 02 03 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.9− | 0.6− |
| 2000 02 29 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 27 | 704 | 0.1− | 0.1− |
| 2000 02 29 | 704 | 1.1+ | 0.7− | 2006 09 19 | 691 | 0.4− | 0.0 | 2006 10 27 | 704 | 0.6− | 0.3− |
| 2000 02 29 | 704 | 1.8+ | 1.1− | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2000 03 04 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2000 03 04 | 704 | 0.5+ | 1.1− | 2006 09 30 | 703 | 0.4− | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2000 03 04 | 704 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.9− | 0.2− | 2006 10 31 | G96 | 0.7+ | 0.2+ |
| 2000 03 11 | 691 | 0.2+ | 0.3− | 2006 10 02 | G96 | 0.5+ | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.1+ |
| 2000 03 11 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2000 03 11 | 691 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2002 09 04 | 699 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2002 09 04 | 699 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2002 09 04 | 699 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2002 09 04 | 699 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.8− |
| 2002 09 07 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.5+ | 1.2+ | 2006 11 11 | 703 | 0.8+ | 0.6− |
| 2002 09 07 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.6− | 1.0+ |
| 2002 09 07 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.9− | 0.5+ |
| 2002 09 07 | 704 | 0.7+ | 0.6− | 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 11 14 | 704 | 0.5− | 0.6+ |
| 2002 09 12 | 644 | 0.8− | 0.4+ | 2006 10 19 | 644 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.5− | 0.9+ |
| 2002 09 12 | 644 | 0.6− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 2002 09 12 | 644 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.4− |
| 2002 09 15 | 644 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.1− |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.3+ | | | | |

**(138101)∗ 2000 DM$_{86}$ = 2004 BB$_{150}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64713)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.41753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23547308 | $\omega$ | 209.16766 | | −0.60335789 | +0.79575956 | |
| $a$ | 2.5972188 | $\Omega$ | 23.84006 | | −0.70433889 | −0.50104857 | |
| $e$ | 0.0749550 | $i$ | 7.42198 | | −0.37398661 | −0.34017210 | |
| $P$ | 4.19 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 24 | 675 | (3.7+ | 4.6−) | 2003 12 29 | 704 | 0.5− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 1971 03 26 | 675 | 1.7− | 1.9− | 2004 01 17 | 644 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 1971 03 26 | 675 | 0.6− | 0.8− | 2004 01 17 | 644 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2000 02 29 | 704 | 0.2+ | 0.3− | 2004 01 17 | 644 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2000 02 29 | 704 | 0.3+ | 0.3+ | 2004 01 22 | 704 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2000 02 29 | 704 | 0.5+ | 0.6+ | 2004 01 22 | 704 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 2000 02 29 | 704 | 0.9− | 0.3+ | 2004 01 22 | 704 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.5− | 0.0 |
| 2000 03 04 | 704 | 0.3+ | 0.2− | 2004 01 22 | 704 | 0.5+ | 0.8+ | 2006 10 01 | 704 | 0.4− | 0.5+ |
| 2000 03 04 | 704 | 0.5+ | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.3− | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2000 03 04 | 704 | 1.1+ | 1.2− | 2004 01 31 | 704 | (1.6− | 0.7−) | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2000 03 04 | 704 | 0.2+ | 0.5+ | 2004 01 31 | 704 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.9+ | 0.1− |
| 2000 03 04 | 704 | 0.8+ | 0.3+ | 2004 01 31 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2000 03 12 | 704 | 0.4− | 0.0 | 2004 01 31 | 704 | (2.0+ | 0.3−) | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2000 03 12 | 704 | 0.0 | 1.0+ | 2004 01 31 | 704 | 0.5− | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2000 03 12 | 704 | 0.4+ | 0.8+ | 2004 02 14 | 704 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 10 08 | 699 | 1.2− | 1.3+ | 2004 02 14 | 704 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 10 08 | 699 | (1.6+ | 0.4+) | 2004 02 14 | 704 | 0.8− | 0.3− | 2006 10 21 | G96 | 1.3− | 1.0− |
| 2002 10 08 | 699 | 0.6+ | 0.8− | 2004 02 14 | 704 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 10 08 | 699 | 1.4+ | 1.0− | 2005 01 18 | 809 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 644 | 0.3+ | 0.1+ | 2005 01 18 | 809 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2002 10 31 | 644 | 0.9+ | 0.5+ | 2005 01 18 | 809 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2002 10 31 | 644 | 0.5+ | 0.3+ | 2005 02 15 | 809 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2002 11 04 | 049 | 0.4+ | 0.0 | 2005 02 15 | 809 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 11 04 | 049 | 1.0+ | 0.2+ | 2005 02 15 | 809 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2002 11 04 | 049 | 0.1− | 0.8− | 2006 09 06 | 644 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2002 11 22 | 644 | 0.5+ | 0.9+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2002 11 22 | 644 | 0.8+ | 1.1+ | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.5− | 0.7− |
| 2002 11 22 | 644 | 0.0 | 1.0+ | 2006 09 14 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2003 12 29 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2003 12 29 | 704 | 0.1+ | 0.5− | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2003 12 29 | 704 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.1− |

**(138102)∗ 2000 DE$_{90}$ = 1998 MH$_{18}$**

Discovered 2000 Feb. 27 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 17176)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.27404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26622498 | $\omega$ | 76.90848 | | +0.84530694 | −0.53208563 | |
| $a$ | 2.3931515 | $\Omega$ | 315.21250 | | +0.45972586 | +0.77050411 | |
| $e$ | 0.2005896 | $i$ | 3.93825 | | +0.27222843 | +0.35101040 | |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 26 | 691 | 0.5+ | 0.4+ | 2002 09 13 | 644 | 0.2− | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.3+ |
| 1998 06 26 | 691 | 0.2− | 0.0 | 2002 09 30 | 143 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.8− | 1.2+ |
| 1998 06 26 | 691 | 0.2− | 0.4+ | 2002 09 30 | 143 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.5− | 0.6+ |
| 1998 06 29 | 691 | 0.5− | 0.1+ | 2002 09 30 | 143 | (0.6+ | 1.6+) | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 1998 06 29 | 691 | 0.2+ | 0.3+ | 2002 10 04 | 704 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.6− | 0.7+ |
| 1998 06 29 | 691 | 0.2− | 0.3+ | 2002 10 04 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.2− | 0.2+ |
| 2000 01 28 | 691 | 0.6+ | 0.1+ | 2002 10 04 | 704 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.3− | 0.2+ |
| 2000 01 28 | 691 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.2− | 0.3+ |
| 2000 01 28 | 691 | 0.3+ | 0.1− | 2002 10 04 | 704 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2000 02 05 | 691 | 0.1− | 0.2+ | 2002 10 08 | 704 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2000 02 05 | 691 | 0.4− | 0.4+ | 2002 10 08 | 704 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2000 02 05 | 691 | 0.2− | 0.3+ | 2002 10 08 | 704 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2000 02 27 | 691 | 0.1− | 0.1+ | 2002 10 12 | 704 | 0.7− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2000 02 27 | 691 | 0.1− | 0.0 | 2002 10 12 | 704 | 0.8− | 1.1+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2000 02 27 | 691 | 0.3− | 0.1+ | 2002 10 12 | 704 | 0.4+ | 0.3− | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2000 03 03 | 691 | 0.6+ | 0.1+ | 2002 10 29 | 049 | 0.3− | 0.0 | 2006 11 21 | 691 | 1.4+ | 0.4− |
| 2000 03 03 | 691 | 0.1+ | 0.1+ | 2002 10 29 | 049 | 1.0+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2000 03 03 | 691 | 0.0 | 0.1− | 2002 10 29 | 049 | 0.6+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2000 03 14 | 691 | 0.1+ | 0.2− | 2004 03 21 | 691 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2000 03 14 | 691 | 0.1− | 0.4− | 2004 03 21 | 691 | 0.2+ | 0.6+ | 2006 11 25 | 691 | 1.7+ | 0.5− |
| 2000 03 14 | 691 | 0.5− | 0.2− | 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 11 25 | 691 | 0.5− | 0.1+ |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2006 11 13 | 691 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.7− | 0.3+ | 2006 11 29 | 704 | 0.4− | 1.6− |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.6− | 2.4− |
| 2002 09 06 | 704 | 0.6+ | 0.4+ | 2006 11 15 | 704 | 0.2− | 0.8+ | 2006 11 29 | 704 | 0.4+ | 1.4− |
| 2002 09 13 | 644 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.1+ | 2006 11 29 | 704 | 1.2+ | 0.0 |
| 2002 09 13 | 644 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.0 | 0.3+ | | | | |

**(138103)∗ 2000 DK$_{90}$**

Discovered 2000 Feb. 27 by Spacewatch at Kitt Peak.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.01209 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26203102 | $\omega$ | 234.71679 | | +0.56148229 | −0.82748870 | |
| $a$ | 2.4186196 | $\Omega$ | 181.12497 | | +0.76403804 | +0.51856652 | |
| $e$ | 0.1582375 | $i$ | 0.86759 | | +0.31777903 | +0.21529332 | |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.9+ | 1.1− | 2002 10 03 | 704 | 0.6− | 1.2+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2000 02 02 | 704 | 1.0+ | 0.3− | 2002 10 11 | 704 | 1.3+ | 0.8− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2000 02 02 | 704 | 0.1+ | 0.5+ | 2002 10 11 | 704 | 0.9+ | 1.1− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2000 02 02 | 704 | 0.8+ | 0.4+ | 2002 10 11 | 704 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2000 02 03 | 691 | 0.2− | 0.1− | 2002 10 11 | 704 | 1.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2000 02 03 | 691 | 0.0 | 0.1− | 2002 10 11 | 704 | 1.3+ | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2000 02 03 | 691 | 0.1− | 0.2− | 2004 01 30 | 691 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2000 02 27 | 691 | 0.2− | 0.1− | 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2000 02 27 | 691 | 0.0 | 0.2+ | 2004 01 30 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2000 02 27 | 691 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2000 03 03 | 691 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.6+ | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2000 03 03 | 691 | 0.3− | 0.3− | 2004 02 26 | 704 | 1.0+ | 1.1+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2000 03 03 | 691 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2000 03 09 | 691 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2000 03 09 | 691 | 0.3− | 0.1+ | 2004 03 15 | 704 | (1.6+ | 0.5+) | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2000 03 09 | 691 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 1.4− | 0.2− |
| 2000 03 14 | 691 | 0.3+ | 0.2− | 2004 03 15 | 704 | 0.5− | 1.4− | 2006 11 17 | 703 | 1.1− | 0.4− |
| 2000 03 14 | 691 | 0.0 | 0.3− | 2004 03 17 | 291 | 0.3+ | 0.5+ | 2006 11 17 | 703 | (0.7− | 1.8−) |
| 2000 03 14 | 691 | 0.1− | 0.4− | 2004 03 17 | 291 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.3+ | 2004 03 17 | 291 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.2+ | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2002 09 05 | 704 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.8+ | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 10 23 | 704 | 0.1+ | 1.4+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2002 09 14 | 644 | 0.6− | 0.4+ | 2006 10 23 | 704 | 0.6− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2002 09 30 | 704 | 0.2+ | 0.6− | 2006 10 23 | 704 | 0.3− | 1.0+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2002 09 30 | 704 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 2002 09 30 | 704 | 0.1− | 1.2+ | 2006 10 23 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 09 30 | 704 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.2+ |
| 2002 09 30 | 704 | 0.3− | 0.8+ | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 28 | 704 | 0.7+ | 1.0+ |
| 2002 10 03 | 704 | 1.0− | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.9+ |
| 2002 10 03 | 704 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 1.2− | 0.7− | 2006 10 28 | G96 | 0.9− | 0.7− | 2006 11 28 | 704 | 0.7− | 1.1+ |

**(138104)∗ 2000 DQ$_{92}$**

Discovered 2000 Feb. 27 by Spacewatch at Kitt Peak.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.71497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22646246 | $\omega$ | 254.72382 | | +0.42846959 | +0.90305620 | |
| $a$ | 2.6656630 | $\Omega$ | 40.68907 | | −0.81030235 | +0.39875293 | |
| $e$ | 0.1859933 | $i$ | 2.64227 | | −0.39977983 | +0.15964210 | |
| $P$ | 4.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.5− | 0.3− | 2001 09 11 | 699 | 0.4− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2000 02 27 | 691 | 0.3− | 0.4− | 2001 09 11 | 699 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.2+ |
| 2000 02 27 | 691 | 0.3− | 0.7− | 2001 09 12 | 704 | 0.5+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.3− |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2001 09 12 | 704 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2001 09 12 | 704 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2000 03 03 | 691 | 0.9− | 0.1− | 2001 09 12 | 704 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3− | 0.6− |
| 2000 03 03 | 691 | 0.2− | 0.3− | 2001 09 12 | 704 | (4.3− | 1.8+) | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2000 03 03 | 691 | 0.3− | 1.0+ | 2001 09 19 | 704 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2000 03 27 | 684 | 1.1+ | 0.4− | 2001 09 19 | 704 | 0.4+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.3+ |
| 2000 03 27 | 684 | 0.5+ | 0.7− | 2001 09 19 | 704 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2000 03 30 | 684 | 1.0+ | 0.6− | 2001 09 19 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2000 03 30 | 684 | 0.6+ | 0.7− | 2001 09 19 | 704 | 0.6− | 0.6+ | 2006 11 19 | 704 | (1.5+ | 1.6+) |
| 2000 04 07 | 704 | 1.1− | 0.8+ | 2001 09 24 | 644 | 0.1+ | 0.7+ | 2006 11 19 | 704 | 0.6+ | 1.1+ |
| 2000 04 07 | 704 | 0.8+ | 0.5+ | 2001 09 24 | 644 | 0.0 | 0.6+ | 2006 11 19 | 704 | (1.5+ | 2.1+) |
| 2000 04 07 | 704 | 0.6+ | 1.2+ | 2001 09 24 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2004 02 17 | 704 | 0.4− | 0.1+ | 2006 11 19 | 704 | 1.1+ | 1.3+ |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2004 02 17 | 704 | 0.3+ | 0.3− | 2006 11 20 | 703 | 0.1+ | 0.7− |
| 2001 08 25 | 644 | 0.3− | 1.0− | 2004 02 17 | 704 | 0.5− | 0.1+ | 2006 11 20 | 703 | 1.1− | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 1.0+ | 2004 02 23 | 704 | 0.1+ | 1.2+ | 2006 11 20 | 703 | 1.0− | 0.2+ |
| 2001 08 25 | 644 | 0.1+ | 0.9− | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 11 20 | 703 | (0.4− | 3.3+) |
| 2001 08 25 | 644 | 0.2+ | 0.8− | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2001 08 25 | 704 | 0.9+ | 0.4+ | 2004 02 26 | 704 | (1.8− | 1.2−) | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2001 08 25 | 704 | 0.3− | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.5− | 2006 11 20 | G96 | 0.3− | 0.2− |
| 2001 08 25 | 699 | 0.8− | 0.2+ | 2004 02 26 | 704 | 0.2+ | 0.8− | 2006 11 20 | G96 | 0.5+ | 0.1− |
| 2001 08 25 | 699 | 1.3− | 0.6+ | 2004 03 19 | 704 | 0.2+ | 1.5+ | 2006 11 20 | 704 | 0.7+ | 0.9+ |
| 2001 08 25 | 699 | 0.4− | 0.1+ | 2004 03 19 | 704 | (0.0 | 2.5+) | 2006 11 20 | 704 | 0.7− | 0.3− |
| 2001 08 25 | 699 | 1.2− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 1.3+ | 2006 11 20 | G96 | 0.1− | 0.5− |
| 2001 09 07 | 644 | (2.0− | 0.7+) | 2006 10 16 | 703 | (0.9+ | 2.3−) | 2006 11 20 | 704 | (0.2+ | 1.8+) |
| 2001 09 07 | 644 | (1.8− | 0.7+) | 2006 10 16 | 703 | (0.3+ | 1.7−) | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2001 09 07 | 644 | (1.9− | 1.2+) | 2006 10 16 | 703 | 1.1+ | 0.9− | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2001 09 11 | 699 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.4+ |
| 2001 09 11 | 699 | 1.2+ | 0.8+ | 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.2− |

**(138105)∗ 2000 DS$_{93}$**

Discovered 2000 Feb. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 193.88047 | | (2000.0) | | | |
| $n$ | 0.23568118 | $\omega$ | 143.38183 | | −0.97333011 | −0.22863114 |
| $a$ | 2.5956898 | $\Omega$ | 23.42286 | | +0.19760189 | −0.87733588 |
| $e$ | 0.1863341 | $i$ | 2.72168 | | +0.11654177 | −0.42191178 |
| $P$ | 4.18 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 566 | 0.7− | 1.6− | 2002 10 06 | 644 | 0.4− | 0.4+ | 2004 01 16 | 691 | 0.1− | 0.0 |
| 1996 03 24 | 566 | 1.3− | 1.2− | 2002 10 30 | 645 | 0.1+ | 0.1− | 2004 01 17 | 691 | 0.0 | 0.2− |
| 1996 03 24 | 566 | 1.3− | 1.5− | 2002 10 30 | 645 | 0.1+ | 0.2− | 2004 01 17 | 691 | 0.1− | 0.2− |
| 2000 02 03 | 704 | 0.1+ | 0.0 | 2003 12 16 | 703 | 0.6− | 0.5+ | 2004 01 17 | 691 | 0.0 | 0.1− |
| 2000 02 03 | 704 | 0.2+ | 0.1+ | 2003 12 16 | 703 | (1.5− | 1.2−) | 2004 01 18 | 691 | 0.1− | 0.3− |
| 2000 02 03 | 704 | 0.5+ | 0.0 | 2003 12 16 | 703 | 0.5+ | 0.4− | 2004 01 18 | 691 | 0.0 | 0.4− |
| 2000 02 03 | 704 | 0.1− | 0.3− | 2003 12 16 | 703 | 0.2− | 0.5+ | 2004 01 18 | 691 | 0.0 | 0.2− |
| 2000 02 03 | 704 | 0.2+ | 0.2+ | 2003 12 17 | 699 | 0.9+ | 0.8+ | 2004 01 20 | 704 | 0.1− | 0.2− |
| 2000 02 06 | 703 | 0.3− | 0.5+ | 2003 12 17 | 699 | 0.1+ | 0.3+ | 2004 01 20 | 704 | 0.3− | 0.7− |
| 2000 02 06 | 703 | 0.0 | 0.4+ | 2003 12 17 | 699 | 0.1+ | 0.5− | 2004 01 20 | 704 | 0.1− | 0.3− |
| 2000 02 06 | 703 | 0.1− | 0.6+ | 2003 12 17 | 699 | 0.3+ | 0.7+ | 2004 01 20 | 704 | 0.2− | 0.3− |
| 2000 02 06 | 703 | 1.1− | 0.5+ | 2003 12 17 | 691 | 0.2− | 0.0 | 2004 01 22 | 704 | (2.1+ | 1.0+) |
| 2000 02 11 | 704 | 0.3+ | 0.1− | 2003 12 17 | 691 | 0.2− | 0.1− | 2004 01 22 | 704 | (1.7− | 1.0+) |
| 2000 02 11 | 704 | 1.4+ | 0.5+ | 2003 12 17 | 691 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.5− | 0.4− |
| 2000 02 11 | 704 | 0.5+ | 0.4− | 2003 12 18 | 704 | 0.7+ | 0.2+ | 2004 01 22 | 704 | 0.6− | 0.4− |
| 2000 02 11 | 704 | 0.7+ | 0.7+ | 2003 12 18 | 704 | 0.1− | 0.3+ | 2004 01 22 | 704 | 0.7− | 0.2− |
| 2000 02 11 | 704 | 0.4+ | 0.6− | 2003 12 18 | 704 | 0.2+ | 1.1+ | 2004 01 24 | 704 | 0.1− | 0.6+ |
| 2000 02 25 | 703 | 0.1+ | 0.5+ | 2003 12 18 | 704 | 0.3+ | 0.5+ | 2004 01 24 | 704 | 0.6+ | 0.5+ |
| 2000 02 25 | 703 | 0.3− | 0.3+ | 2003 12 18 | 704 | 0.4+ | 0.0 | 2004 01 24 | 704 | 0.3+ | 0.6+ |
| 2000 02 25 | 703 | 0.2− | 1.0+ | 2003 12 19 | 691 | 0.2− | 0.0 | 2004 01 24 | 704 | 0.6+ | 0.1− |
| 2000 02 25 | 703 | 0.3− | 0.6+ | 2003 12 19 | 691 | 0.1− | 0.0 | 2004 01 24 | 704 | 0.0 | 0.3− |
| 2000 02 28 | 704 | 0.7+ | 0.2+ | 2003 12 19 | 691 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.1+ | 0.4− |
| 2000 02 28 | 704 | 0.1− | 0.4+ | 2003 12 22 | 704 | 0.2+ | 0.3+ | 2004 01 31 | 704 | 0.1− | 0.6− |
| 2000 02 28 | 704 | 0.5+ | 0.3+ | 2003 12 22 | 704 | 0.3+ | 1.1+ | 2004 01 31 | 704 | 0.4− | 0.2− |
| 2000 02 28 | 704 | 0.5+ | 0.3− | 2003 12 22 | 704 | 1.5+ | 0.3− | 2004 01 31 | 704 | 0.2− | 0.1− |
| 2000 02 28 | 704 | 0.3− | 0.3+ | 2003 12 22 | 704 | (0.4+ | 1.6+) | 2004 01 31 | 704 | 0.3− | 0.4− |
| 2000 03 05 | 704 | 0.4− | 1.1+ | 2003 12 22 | 704 | 0.1+ | 0.4− | 2004 02 15 | 704 | 0.9+ | 0.5− |
| 2000 03 05 | 704 | 0.6+ | 0.2+ | 2003 12 26 | 106 | 0.8− | 0.5− | 2004 02 15 | 704 | 0.4+ | 0.2− |
| 2000 03 05 | 704 | 0.1− | 0.2+ | 2003 12 26 | 106 | 0.2− | 0.6− | 2004 02 15 | 704 | 0.8+ | 0.2+ |
| 2000 03 05 | 704 | 0.3+ | 0.2+ | 2003 12 26 | 106 | 0.1− | 0.7− | 2004 02 15 | 704 | 0.6+ | 0.3− |
| 2000 03 09 | 704 | 0.7+ | 1.2+ | 2003 12 27 | 704 | 0.2+ | 0.5+ | 2004 02 15 | 704 | 0.8+ | 0.7− |
| 2000 03 09 | 704 | 0.0 | 0.0 | 2003 12 27 | 704 | 0.6− | 0.1− | 2006 08 27 | 691 | 0.1− | 0.5+ |
| 2000 03 09 | 704 | 0.8+ | 0.7+ | 2003 12 27 | 704 | 0.1− | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2000 03 09 | 704 | 0.2+ | 0.5− | 2003 12 27 | 704 | 0.1− | 0.5+ | 2006 08 27 | 691 | 0.3− | 0.2+ |
| 2002 09 15 | 291 | 0.2+ | 0.2+ | 2003 12 27 | 704 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2002 09 15 | 291 | 0.1+ | 0.1− | 2003 12 28 | 704 | 0.4− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2002 09 15 | 291 | 0.1+ | 0.3+ | 2003 12 28 | 704 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.6− | 0.1− |
| 2002 09 26 | 644 | 0.7− | 0.2− | 2003 12 28 | 704 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2002 09 26 | 644 | 0.9− | 0.3+ | 2003 12 28 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 09 26 | 644 | 0.9− | 0.6+ | 2003 12 28 | 704 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2002 10 06 | 644 | 0.3− | 0.6+ | 2004 01 16 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 10 06 | 644 | 0.2− | 0.4+ | 2004 01 16 | 691 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.0 |

**(138106)∗ 2000 DB$_{96}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.31077 | | (2000.0) | | | |
| $n$ | 0.21868583 | $\omega$ | 301.73904 | | −0.24079435 | +0.96557475 |
| $a$ | 2.7284895 | $\Omega$ | 313.98784 | | −0.83780009 | −0.25796946 |
| $e$ | 0.2225389 | $i$ | 7.86102 | | −0.49000927 | −0.03342407 |
| $P$ | 4.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.3+ | 0.8+ | 2005 04 06 | 699 | 0.4+ | 0.0 | 2006 08 29 | 703 | 1.1− | 0.0 |
| 2000 01 28 | 691 | 0.5+ | 0.6+ | 2005 04 06 | 699 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.5− |
| 2000 01 28 | 691 | 0.6+ | 0.5+ | 2005 04 06 | 699 | 0.8+ | 0.9+ | 2006 08 30 | 704 | 0.7+ | 1.0+ |
| 2000 02 03 | 704 | 0.4− | 0.5+ | 2005 04 06 | 704 | 1.3+ | 0.4+ | 2006 08 30 | 704 | (1.9− | 2.6+) |
| 2000 02 03 | 704 | 0.7− | 0.8+ | 2005 04 06 | 704 | 0.4+ | 0.7− | 2006 08 30 | 704 | (1.1− | 2.0+) |
| 2000 02 03 | 704 | 0.3+ | 0.6+ | 2005 04 06 | 704 | 0.0 | 1.2− | 2006 08 30 | 704 | 0.4− | 0.9+ |
| 2000 02 03 | 704 | 0.6− | 0.8+ | 2005 04 06 | 704 | 1.0+ | 0.4+ | 2006 08 30 | 704 | 0.6− | 0.9+ |
| 2000 02 27 | 691 | 0.0 | 0.3− | 2005 04 06 | 704 | 0.7+ | 0.1− | 2006 09 15 | 704 | 0.1+ | 0.7+ |
| 2000 02 27 | 691 | 0.1− | 0.2− | 2005 04 18 | E12 | 0.3− | 0.5+ | 2006 09 15 | 704 | 0.1+ | 0.1+ |
| 2000 02 27 | 691 | 0.0 | 0.3− | 2005 04 18 | E12 | 0.4− | 0.8+ | 2006 09 15 | 704 | 0.3− | 1.3+ |
| 2000 02 29 | 704 | 0.1− | 0.5+ | 2005 04 18 | E12 | 0.1− | 0.8+ | 2006 09 15 | 704 | 0.1+ | 0.9+ |
| 2000 02 29 | 704 | 0.0 | 2.0+ | 2005 04 18 | E12 | 0.3− | 1.0+ | 2006 09 15 | 704 | 0.3− | 0.2+ |
| 2000 02 29 | 704 | 0.3+ | 0.4+ | 2005 04 19 | 703 | 0.6− | 1.7+ | 2006 09 16 | 644 | 0.2− | 0.1+ |
| 2000 02 29 | 704 | 0.3+ | 0.4+ | 2005 04 19 | 703 | 0.4+ | 0.9+ | 2006 09 16 | 644 | 0.1− | 0.1− |
| 2000 02 29 | 704 | 0.2+ | 0.6+ | 2005 04 19 | 703 | 0.7− | 0.3+ | 2006 09 16 | 644 | 0.7− | 0.2+ |
| 2000 03 05 | 704 | 0.0 | 0.2− | 2005 04 19 | 703 | 0.5− | 0.7+ | 2006 09 17 | 703 | 0.4− | 0.3+ |
| 2000 03 05 | 704 | 0.8+ | 0.0 | 2005 05 04 | E12 | 0.7− | 0.3− | 2006 09 17 | 703 | 0.5− | 0.1+ |
| 2000 03 05 | 704 | 1.1+ | 0.4− | 2005 05 04 | E12 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.0 | 0.2+ |
| 2000 03 05 | 704 | 0.4+ | 1.3+ | 2005 05 04 | E12 | 0.4− | 0.6− | 2006 09 18 | 704 | 0.3+ | 0.2− |
| 2000 03 05 | 704 | 0.7+ | 0.7+ | 2005 05 04 | E12 | 0.5− | 0.2+ | 2006 09 18 | 704 | 0.1+ | 0.6+ |
| 2002 11 01 | 644 | 0.0 | 0.1− | 2005 05 08 | 699 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.5+ | 1.1+ |
| 2002 11 01 | 644 | 0.2− | 0.2− | 2005 05 08 | 699 | 0.7+ | 0.1− | 2006 09 18 | 704 | 1.0− | 0.6+ |
| 2002 11 01 | 644 | 0.2− | 0.3− | 2005 05 08 | 699 | 0.5+ | 1.0+ | 2006 09 18 | 704 | 0.8+ | 0.1+ |
| 2002 11 04 | 049 | (2.6− | 1.3−) | 2005 05 08 | 699 | 0.8− | 1.3+ | 2006 09 20 | 699 | 0.5− | 0.4+ |
| 2002 11 04 | 049 | (2.7− | 1.4−) | 2005 06 01 | E12 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.6− | 0.7+ |
| 2002 11 04 | 049 | (3.2− | 1.7−) | 2005 06 01 | E12 | 0.8+ | 0.4+ | 2006 09 20 | 699 | 0.4− | 0.3+ |
| 2003 12 18 | 704 | 0.1+ | 0.3− | 2005 06 01 | E12 | 0.3+ | 0.9+ | 2006 09 20 | 699 | 0.1− | 0.6+ |
| 2003 12 18 | 704 | 0.2− | 0.9− | 2005 06 01 | E12 | 0.7− | 1.0− | 2006 09 24 | 106 | 0.2− | 1.0+ |
| 2003 12 18 | 704 | 0.9− | 1.2+ | 2005 06 08 | 699 | 0.2+ | 0.9+ | 2006 09 24 | 106 | 0.3+ | 0.1− |
| 2003 12 18 | 691 | 0.3− | 0.1− | 2005 06 08 | 699 | 0.4+ | 0.9+ | 2006 09 24 | 106 | 0.2− | 0.2+ |
| 2003 12 18 | 691 | 0.2− | 0.2+ | 2005 06 08 | 699 | 0.0 | 0.6+ | 2006 09 24 | 106 | 0.2+ | 0.4− |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2005 06 08 | 699 | 0.3− | 1.1+ | 2006 09 25 | 704 | 0.6− | 0.8+ |
| 2005 03 10 | E12 | 0.0 | 0.5− | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.3+ | 1.4+ |
| 2005 03 10 | E12 | 0.5+ | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.7+ |
| 2005 03 10 | E12 | 0.1+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 1.1− | 1.0+ |
| 2005 03 10 | E12 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.9− | 0.3− | 2006 09 25 | 704 | 0.4− | 1.1+ |
| 2005 03 13 | 699 | 1.2+ | 0.0 | 2006 08 24 | 704 | 0.4− | 0.2− | 2006 09 29 | 699 | 0.2+ | 0.7+ |
| 2005 03 13 | 699 | 0.5+ | 1.5+ | 2006 08 24 | 704 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.6− | 0.2+ |
| 2005 03 13 | 699 | 0.7+ | 0.5+ | 2006 08 24 | 704 | 0.5+ | 0.8+ | 2006 09 29 | 699 | 0.5− | 0.7+ |
| 2005 03 13 | 699 | 0.6+ | 0.4+ | 2006 08 27 | 699 | 1.4− | 0.6+ | 2006 10 01 | 703 | 0.0 | 1.1+ |
| 2005 03 17 | 704 | 1.4+ | 1.3+ | 2006 08 27 | 699 | 0.2− | 0.6+ | 2006 10 01 | 703 | 0.4− | 0.5+ |
| 2005 03 17 | 704 | 0.9+ | 0.7+ | 2006 08 27 | 699 | 0.3− | 0.6+ | 2006 10 01 | 703 | 0.5− | 0.8− |
| 2005 03 17 | 704 | 0.2+ | 1.1+ | 2006 08 27 | 699 | 0.2− | 0.4− | 2006 10 01 | 703 | 0.3− | 0.8+ |
| 2005 03 17 | 704 | 0.1− | 1.6+ | 2006 08 28 | 704 | 0.4− | 1.2+ | 2006 10 01 | 704 | 0.6− | 0.8+ |
| 2005 03 17 | 704 | 0.9+ | 0.4+ | 2006 08 28 | 704 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.7− | 1.3+ |
| 2005 04 03 | 704 | 0.6+ | 0.5+ | 2006 08 28 | 704 | 0.1+ | 0.7+ | 2006 10 01 | 704 | 2.4− | 2.4+ |
| 2005 04 03 | 704 | 0.7+ | 0.4+ | 2006 08 28 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 1.0− | 1.6+ |
| 2005 04 03 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 704 | 0.0 | 0.0 | | | | |
| 2005 04 03 | 704 | 0.5+ | 0.6+ | 2006 08 29 | 703 | 0.5− | 0.7+ | | | | |

**(138107)∗ 2000 DL$_{96}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.42905 | | (2000.0) | | | |
| $n$ | 0.25373336 | $\omega$ | 116.81267 | | +0.32844986 | −0.94047884 |
| $a$ | 2.4710659 | $\Omega$ | 313.72587 | | +0.81803402 | +0.32944880 |
| $e$ | 0.1961181 | $i$ | 6.93805 | | +0.47216632 | +0.08344479 |
| $P$ | 3.88 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 691 | 0.2+ | 0.1+ | 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.7− | 0.0 |
| 2000 01 27 | 691 | 0.1+ | 0.1− | 2004 02 17 | 691 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.3− | 0.5− |
| 2000 01 27 | 691 | 0.2+ | 0.4− | 2004 02 17 | 608 | 0.4+ | 0.2− | 2006 08 30 | 704 | 0.4− | 0.5− |
| 2000 02 04 | 704 | 0.1+ | 0.4+ | 2004 02 17 | 608 | 0.4+ | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.2− |
| 2000 02 04 | 704 | 0.2− | 0.2− | 2004 02 17 | 608 | 0.1− | 0.2− | 2006 09 01 | 704 | 0.3+ | 1.2+ |
| 2000 02 04 | 704 | 1.1+ | 0.4+ | 2004 02 18 | 704 | 0.6+ | 0.2+ | 2006 09 01 | 704 | 1.2+ | 1.3+ |
| 2000 02 04 | 704 | 0.2− | 1.5+ | 2004 02 18 | 704 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.4+ | 1.2+ |
| 2000 02 04 | 704 | 0.2+ | 1.0+ | 2004 02 18 | 704 | 0.4− | 0.5+ | 2006 09 01 | 704 | 0.6+ | 1.4+ |
| 2000 02 05 | 691 | 0.2− | 0.6− | 2004 03 15 | 704 | 0.5− | 1.0+ | 2006 09 01 | 704 | 0.3+ | 0.7+ |
| 2000 02 05 | 691 | 0.5− | 0.4− | 2004 03 15 | 704 | 0.7+ | 0.7+ | 2006 09 12 | 703 | 0.0 | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.6− | 0.4− | 2004 03 15 | 704 | 0.5+ | 0.8+ | 2006 09 12 | 703 | 0.4− | 0.2− |
| 2000 02 29 | 704 | 0.3− | 0.6+ | 2004 03 15 | 704 | 0.4+ | 1.0+ | 2006 09 12 | 703 | 0.8+ | 0.7− |
| 2000 02 29 | 704 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 0.8+ | 1.2+ | 2006 09 12 | 703 | 0.6− | 0.0 |
| 2000 02 29 | 704 | 0.3− | 1.1+ | 2004 03 19 | 704 | (0.2+ | 2.0+) | 2006 09 18 | 703 | 0.1+ | 0.5− |
| 2000 02 29 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | (0.9+ | 1.7+) | 2006 09 18 | 703 | 0.4− | 0.6− |
| 2000 03 05 | 704 | 0.6+ | 0.0 | 2004 03 19 | 704 | 0.9+ | 1.2+ | 2006 09 18 | 703 | 0.3− | 0.9− |
| 2000 03 05 | 704 | 0.2+ | 0.1+ | 2004 03 19 | 704 | (0.4+ | 2.7+) | 2006 09 18 | 703 | 0.2− | 1.4− |
| 2000 03 05 | 704 | 0.4+ | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.1+ | 0.2+ |
| 2002 08 17 | 644 | 0.4− | 0.6+ | 2006 08 22 | 644 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.1− | 0.2− |
| 2002 08 17 | 644 | 0.1− | 1.1+ | 2006 08 22 | 644 | 0.1+ | 0.4− | 2006 09 18 | 704 | 0.1− | 0.7− |
| 2002 08 17 | 644 | 0.5− | 0.7+ | 2006 08 23 | 644 | 0.2− | 0.3− | 2006 09 18 | 704 | 0.3+ | 0.7+ |
| 2002 08 28 | 644 | 0.4− | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.3− | 2006 09 18 | 704 | 0.5+ | 1.2+ |
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.5+ | 0.7− |
| 2002 08 28 | 644 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.3+ | 0.8− | 2006 09 25 | 704 | 0.7− | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 1.3+ | 2006 08 27 | 699 | 0.2+ | 0.5− | 2006 09 25 | 704 | 0.6+ | 0.1− |
| 2002 09 14 | 644 | 0.1− | 1.1+ | 2006 08 27 | 699 | 0.3− | 0.4+ | 2006 09 25 | 704 | 1.4− | 0.4+ |
| 2002 09 14 | 644 | 0.1− | 1.0+ | 2006 08 27 | 699 | 1.0+ | 0.0 | 2006 09 25 | 704 | 0.5+ | 1.0+ |
| 2003 12 21 | 704 | 1.4+ | 0.6+ | 2006 08 29 | 703 | 0.8− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.4− |
| 2003 12 21 | 704 | (1.9+ | 0.4+) | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.3− |
| 2003 12 21 | 704 | (1.6+ | 0.3+) | 2006 08 29 | 703 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2003 12 21 | 704 | 0.8+ | 1.4+ | 2006 08 29 | 703 | 0.8− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2004 02 13 | 644 | 0.6+ | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.4− |
| 2004 02 13 | 644 | 0.3+ | 0.2+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2004 02 13 | 644 | 0.8+ | 0.3+ | 2006 08 29 | 691 | 1.5− | 1.5+ | | | | |
| 2004 02 17 | 691 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.5− | 0.6+ | | | | |

**(138108)∗ 2000 DC$_{102}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 106.97686 | | (2000.0) | | | |
| $n$ | 0.20971628 | $\omega$ | 55.33252 | | −0.90114679 | +0.40125393 |
| $a$ | 2.8057434 | $\Omega$ | 147.41591 | | −0.42423025 | −0.89414590 |
| $e$ | 0.0767577 | $i$ | 17.74131 | | +0.08923652 | −0.19874203 |
| $P$ | 4.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 012 | 0.5− | 0.4+ | 2005 03 09 | 704 | 1.1+ | 0.8− | 2005 04 16 | 703 | 0.6− | 0.7+ |
| 2000 02 03 | 012 | 0.6− | 1.4− | 2005 03 18 | 703 | 0.6− | 0.1+ | 2005 04 16 | 703 | 0.2+ | 0.4− |
| 2000 02 03 | 012 | 0.5+ | 0.1− | 2005 03 18 | 703 | 0.4− | 0.6− | 2005 04 16 | 703 | 1.2− | 0.0 |
| 2000 02 11 | 704 | 0.5+ | 0.4− | 2005 03 18 | 703 | 0.0 | 0.4− | 2005 04 16 | 703 | 0.3− | 0.6− |
| 2000 02 11 | 704 | 0.5+ | 0.5+ | 2005 03 18 | 703 | 0.8− | 0.7+ | 2005 04 16 | 703 | 0.7+ | 0.1− |
| 2000 02 11 | 704 | 1.3+ | 0.8+ | 2005 03 30 | 703 | 0.7+ | 0.3− | 2005 04 26 | 644 | 0.4+ | 0.2+ |
| 2000 02 11 | 704 | 0.2− | 0.5+ | 2005 03 30 | 703 | 0.3+ | 0.1− | 2005 04 26 | 644 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 0.4− | 0.6+ | 2005 03 30 | 703 | 0.0 | 1.1− | 2005 04 26 | 644 | 0.5+ | 0.2+ |
| 2000 02 29 | 704 | 0.2− | 0.4+ | 2005 03 30 | 703 | 0.0 | 0.7+ | 2005 05 02 | 703 | 0.8− | 0.2+ |
| 2000 02 29 | 704 | 0.2− | 0.2+ | 2005 04 05 | 644 | 0.8+ | 0.2+ | 2005 05 02 | 703 | 0.8− | 0.4− |
| 2000 02 29 | 704 | 0.1− | 0.1− | 2005 04 05 | 644 | 0.6+ | 0.0 | 2005 05 02 | 703 | 0.3− | 0.1− |
| 2000 02 29 | 704 | 0.0 | 0.3+ | 2005 04 05 | 644 | 0.7+ | 0.2+ | 2005 05 02 | 703 | 0.8− | 0.0 |
| 2000 03 05 | 704 | 0.5− | 0.2+ | 2005 04 06 | 703 | 0.2+ | 0.5+ | 2006 06 21 | 644 | 0.2− | 0.2+ |
| 2000 03 05 | 704 | 0.6− | 0.7− | 2005 04 06 | 703 | 0.2+ | 1.2+ | 2006 06 21 | 644 | 0.1− | 0.4+ |
| 2000 03 05 | 704 | 0.4− | 0.1− | 2005 04 06 | 703 | 0.2+ | 0.1+ | 2006 06 21 | 644 | 0.2− | 0.5+ |
| 2000 03 05 | 704 | 0.3− | 0.4+ | 2005 04 06 | 703 | 0.3+ | 1.2+ | 2006 07 21 | 703 | (3.5+ | 0.3+) |
| 2000 03 05 | 704 | 0.5+ | 0.7+ | 2005 04 09 | 703 | 0.7− | 0.5− | 2006 07 21 | 703 | 0.6− | 0.7+ |
| 2000 03 12 | 704 | 0.7+ | 0.1− | 2005 04 09 | 703 | 0.1+ | 1.1− | 2006 07 21 | 703 | 0.0 | 0.1− |
| 2000 03 12 | 704 | 0.1− | 0.9+ | 2005 04 09 | 703 | 0.4− | 0.9− | 2006 07 21 | 703 | 0.4− | 0.3− |
| 2000 03 12 | 704 | 0.3− | 0.8+ | 2005 04 09 | 703 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.2+ | 0.3+ |
| 2000 03 12 | 704 | 0.6+ | 0.9+ | 2005 04 11 | 704 | 0.1− | 1.2+ | 2006 08 18 | 644 | 0.0 | 0.5+ |
| 2000 03 12 | 704 | 0.2+ | 1.0+ | 2005 04 11 | 704 | 0.5− | 0.8+ | 2006 08 18 | 644 | 0.1− | 0.7+ |
| 2002 09 19 | 644 | 0.2+ | 0.7+ | 2005 04 11 | 704 | (0.2+ | 1.7+) | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2002 09 19 | 644 | 0.1− | 0.7+ | 2005 04 12 | 699 | 0.9+ | 0.6− | 2006 09 26 | G96 | 0.5+ | 0.1− |
| 2002 09 19 | 644 | 0.1+ | 0.5+ | 2005 04 12 | 699 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2002 10 01 | 608 | 0.6− | 1.5+ | 2005 04 12 | 699 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 10 01 | 608 | (0.3− | 1.6+) | 2005 04 12 | 699 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.6+ | 0.1− |
| 2002 10 01 | 608 | 0.3− | 1.5+ | 2005 04 16 | 703 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2005 03 09 | 704 | 0.9+ | 0.2− | 2005 04 16 | 703 | 0.8− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2005 03 09 | 704 | 0.8+ | 0.1+ | 2005 04 16 | 703 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.6+ | 0.2− |

**(138109)∗ 2000 DD$_{102}$ = 2002 TG$_{174}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.47344 | | (2000.0) | | | |
| $n$ | 0.26034145 | $\omega$ | 304.51378 | | +0.16963725 | −0.97972858 |
| $a$ | 2.4290727 | $\Omega$ | 135.33014 | | +0.94657492 | +0.13188929 |
| $e$ | 0.1712734 | $i$ | 8.71821 | | +0.27426106 | +0.15078834 |
| $P$ | 3.79 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.4+ | 0.8+ | 2002 10 06 | 704 | 0.1+ | 1.0+ | 2006 09 19 | 699 | 0.8− | 0.6− |
| 2000 02 04 | 704 | 0.1− | 0.2+ | 2002 10 16 | 644 | 0.0 | 0.8+ | 2006 09 19 | 699 | 0.2− | 0.5+ |
| 2000 02 04 | 704 | 1.2− | 1.2− | 2002 10 16 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.9+ |
| 2000 02 11 | 704 | 0.6− | 0.3− | 2002 10 16 | 644 | 0.1− | 0.5+ | 2006 09 19 | 699 | 1.0+ | 0.3+ |
| 2000 02 11 | 704 | 1.3+ | 0.4+ | 2002 11 02 | 608 | 0.6− | 0.5− | 2006 09 30 | 699 | 0.5+ | 0.2+ |
| 2000 02 11 | 704 | 0.7+ | 0.2+ | 2002 11 02 | 608 | 0.6− | 0.2− | 2006 09 30 | 699 | 0.2+ | 0.5− |
| 2000 02 11 | 704 | 0.9− | 0.1− | 2002 11 02 | 608 | 0.7− | 0.4− | 2006 09 30 | 699 | 0.5+ | 0.2− |
| 2000 02 29 | 704 | 0.8− | 0.1− | 2002 11 05 | 644 | 0.5+ | 0.6+ | 2006 09 30 | 699 | 0.1− | 0.1+ |
| 2000 02 29 | 704 | 0.3− | 0.5+ | 2002 11 05 | 644 | 0.6+ | 0.9+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2000 02 29 | 704 | 0.7− | 0.3− | 2002 11 05 | 644 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 2000 02 29 | 704 | 0.1+ | 0.3+ | 2002 11 07 | 699 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2000 02 29 | 704 | 1.3− | 0.2− | 2002 11 07 | 699 | 1.3+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2000 03 05 | 704 | 0.2+ | 0.0 | 2002 11 07 | 699 | (1.9+ | 2.2+) | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2000 03 05 | 704 | 0.2+ | 0.3+ | 2002 11 07 | 699 | (0.2+ | 1.9+) | 2006 10 17 | 703 | 0.2− | 0.7− |
| 2000 03 05 | 704 | 0.5− | 0.1+ | 2004 03 12 | 644 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.5+ |
| 2000 03 05 | 704 | 0.1− | 0.4+ | 2004 03 12 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 2000 03 05 | 704 | 0.6+ | 0.5+ | 2004 03 12 | 644 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.1− |
| 2000 03 12 | 704 | 0.4+ | 0.3− | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.6+ | 0.1− |
| 2000 03 12 | 704 | 0.5+ | 0.2− | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2000 03 12 | 704 | 0.7− | 0.1+ | 2004 03 15 | 704 | 0.1+ | 0.9+ | 2006 10 28 | 703 | 0.8+ | 0.2+ |
| 2000 03 12 | 704 | 0.6+ | 0.5− | 2004 03 15 | 704 | 0.3+ | 1.1+ | 2006 10 30 | 703 | 0.4+ | 0.2− |
| 2000 03 12 | 704 | 0.2− | 0.2− | 2004 03 15 | 704 | 0.3+ | 0.8+ | 2006 10 30 | 703 | 0.2+ | 0.1+ |
| 2000 04 03 | 699 | 1.1+ | 0.5+ | 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.5+ | 0.1− |
| 2000 04 03 | 699 | 1.5+ | 0.3+ | 2004 03 21 | 691 | 0.3− | 0.1+ | 2006 10 30 | 703 | 0.0 | 0.3− |
| 2000 04 03 | 699 | 1.2+ | 1.1+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 10 31 | 704 | 0.2− | 0.0 |
| 2000 04 03 | 699 | 0.9+ | 0.7+ | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 10 31 | 704 | 0.3− | 0.2− |
| 2002 09 08 | 608 | 0.3− | 1.0+ | 2004 03 23 | 704 | 0.5+ | 0.7+ | 2006 10 31 | 704 | 0.4− | 0.4+ |
| 2002 09 08 | 608 | 0.2− | 1.0+ | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 10 31 | 704 | 0.4+ | 0.4− |
| 2002 09 08 | 608 | 0.3− | 1.2+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.0 |
| 2002 09 28 | 608 | (1.6− | 0.4−) | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.2+ |
| 2002 09 28 | 608 | 1.5− | 0.3− | 2004 04 15 | 644 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.3− |
| 2002 09 28 | 608 | 1.1− | 0.7− | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.6− | 0.7+ | 2004 04 15 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.5+ | 0.1+ |
| 2002 10 04 | 704 | 1.2− | 0.3+ | 2004 04 15 | 704 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.4+ | 0.3+ |
| 2002 10 04 | 704 | 0.2− | 0.7+ | 2004 04 15 | 644 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.6− | 0.4− |
| 2002 10 04 | 704 | 0.2+ | 1.0+ | 2004 04 15 | 704 | 0.8+ | 0.6+ | 2006 11 19 | 703 | 0.9+ | 0.7− |
| 2002 10 04 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 11 21 | 704 | 1.0− | 0.1− |
| 2002 10 06 | 704 | 0.4− | 1.0+ | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.8− | 0.2+ |
| 2002 10 06 | 704 | 0.4− | 1.1+ | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2002 10 06 | 704 | 0.7− | 1.3+ | 2006 09 18 | 703 | 0.1+ | 0.8− | 2006 11 21 | 704 | 0.5− | 0.3− |

**(138110)∗ 2000 DW$_{102}$ = 2004 GF$_{26}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60621)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.48835 | | (2000.0) | | | |
| $n$ | 0.26264128 | $\omega$ | 54.65832 | | −0.70200746 | −0.70982460 |
| $a$ | 2.4148716 | $\Omega$ | 80.04126 | | +0.63290427 | −0.65899536 |
| $e$ | 0.1744265 | $i$ | 3.36113 | | +0.32652368 | −0.24874516 |
| $P$ | 3.75 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 26 | 691 | 0.6+ | 1.1− | 2004 03 28 | 704 | 1.3+ | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 1996 01 26 | 691 | 0.1− | 1.2− | 2004 03 28 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.3− |
| 1996 01 26 | 691 | 0.7− | 1.1+ | 2004 03 28 | 704 | 0.0 | 0.9− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2000 02 11 | 704 | 0.5− | 0.3− | 2004 03 28 | 704 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2000 02 11 | 704 | 0.2+ | 0.5+ | 2004 04 14 | 691 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2000 02 11 | 704 | 0.2+ | 1.2+ | 2004 04 14 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2000 02 29 | 704 | 0.8− | 0.2− | 2004 04 14 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.8− | 0.8− | 2004 04 16 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2000 02 29 | 704 | 0.9− | 0.3− | 2004 04 16 | 704 | 0.8+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.7+ |
| 2000 02 29 | 704 | 0.1+ | 0.0 | 2004 04 16 | 704 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2000 02 29 | 704 | 0.7− | 0.0 | 2004 04 19 | 704 | 0.3+ | 1.1+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2000 03 02 | 703 | 1.0+ | 0.3− | 2004 04 19 | 704 | 0.0 | 0.7+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2000 03 02 | 703 | 0.6− | 0.4− | 2004 04 19 | 704 | 0.4− | 1.5+ | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2000 03 02 | 703 | 0.7+ | 0.1− | 2004 04 19 | 704 | 1.3+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2000 03 02 | 703 | 1.0− | 0.4− | 2004 04 23 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2000 03 05 | 704 | 0.4− | 0.4− | 2004 04 23 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.4− |
| 2000 03 05 | 704 | 0.6− | 0.2− | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2000 03 05 | 704 | 0.4− | 0.0 | 2004 04 25 | 704 | (2.0+ | 3.1+) | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2000 03 05 | 704 | 0.2− | 0.9− | 2004 04 25 | 704 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2000 03 05 | 704 | 0.1+ | 1.2− | 2004 04 25 | 704 | 0.1− | 0.9+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2000 03 09 | 704 | 0.7+ | 0.3− | 2004 04 25 | 704 | (1.2+ | 1.6+) | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2000 03 09 | 704 | 0.7+ | 0.1− | 2004 04 25 | 704 | 0.5+ | 1.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2000 03 09 | 704 | 0.5− | 0.3− | 2004 04 25 | 704 | 0.8+ | 1.0+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2000 03 09 | 704 | 0.4− | 0.5− | 2004 04 25 | 704 | 0.5+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.5− |
| 2000 03 09 | 704 | 0.3− | 0.1− | 2004 04 25 | 704 | 0.2− | 0.5− | 2006 11 27 | 703 | 0.4+ | 0.1+ |
| 2000 03 12 | 704 | 0.4− | 0.6+ | 2004 05 15 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.0 | 1.1− |
| 2000 03 12 | 704 | 0.2+ | 0.1+ | 2004 05 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 1.8− | 0.3+ |
| 2000 03 12 | 704 | 0.0 | 0.6+ | 2004 05 15 | 691 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.8− | 0.6+ |
| 2000 03 12 | 704 | 0.4+ | 0.7+ | 2004 05 23 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 1.2+ | 0.2+ |
| 2000 03 12 | 704 | 0.4+ | 0.9+ | 2004 05 23 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2000 04 03 | 699 | 1.0+ | 0.5− | 2004 05 23 | 691 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.6− | 0.0 |
| 2000 04 03 | 699 | 0.6+ | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.1− | 0.7+ |
| 2000 04 03 | 699 | 0.7+ | 1.0− | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 12 01 | 691 | 0.4+ | 0.0 |
| 2000 04 03 | 699 | 1.6+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.0 | 0.2− |

**(138111)∗ 2000 DO$_{106}$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.14480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23585313 | $\omega$ | 139.21161 | | −0.99761657 | +0.02453619 | |
| $a$ | 2.5944280 | $\Omega$ | 42.32868 | | −0.05158551 | −0.88594626 | |
| $e$ | 0.1562763 | $i$ | 5.49579 | | +0.04582708 | −0.46313842 | |
| $P$ | 4.18 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 691 | 0.2+ | 0.3− | 2000 04 08 | 704 | 0.4− | 0.3+ | 2004 02 15 | 704 | 0.3+ | 0.2− |
| 1998 10 14 | 691 | 0.4+ | 0.0 | 2000 04 08 | 704 | 1.0− | 0.7+ | 2004 02 15 | 704 | 0.3+ | 0.6− |
| 1998 10 14 | 691 | 0.5− | 0.1+ | 2000 04 08 | 704 | 0.5+ | 0.1− | 2004 02 15 | 704 | 0.2+ | 0.3− |
| 2000 02 11 | 704 | 0.3+ | 1.3− | 2000 04 08 | 704 | 0.3+ | 0.5+ | 2004 02 15 | 704 | 0.2+ | 0.2− |
| 2000 02 11 | 704 | 0.1+ | 0.8− | 2000 04 25 | 699 | 0.4− | 1.1+ | 2004 02 16 | 691 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.4+ | 0.5− | 2000 04 25 | 699 | 1.3− | 1.4+ | 2004 02 16 | 691 | 0.1− | 0.1− |
| 2000 02 11 | 704 | 1.9+ | 0.1− | 2000 04 25 | 699 | 1.1− | 1.3+ | 2004 02 16 | 691 | 0.4− | 0.1− |
| 2000 02 29 | 704 | 0.8− | 0.1− | 2000 04 25 | 699 | 0.2+ | 0.5+ | 2004 03 10 | 703 | (1.6− | 1.1+) |
| 2000 02 29 | 704 | 0.1+ | 0.2+ | 2003 12 18 | 644 | 0.2− | 0.2+ | 2004 03 10 | 703 | (2.7− | 2.4+) |
| 2000 02 29 | 704 | 0.3+ | 0.7+ | 2003 12 18 | 644 | 0.2+ | 0.1− | 2004 03 10 | 703 | 0.7+ | 0.7+ |
| 2000 02 29 | 704 | 0.9− | 0.5+ | 2003 12 18 | 644 | 0.2− | 0.1− | 2004 03 10 | 703 | (0.6− | 2.4+) |
| 2000 03 02 | 703 | 0.6− | 0.4+ | 2004 01 18 | 644 | 0.0 | 0.4− | 2004 03 14 | 704 | 0.0 | 0.3− |
| 2000 03 02 | 703 | 0.4+ | 0.7− | 2004 01 18 | 644 | 0.1+ | 0.3− | 2004 03 14 | 704 | 0.8− | 0.4− |
| 2000 03 02 | 703 | 1.4− | 1.1+ | 2004 01 18 | 644 | 0.1+ | 0.1− | 2004 03 14 | 704 | 0.2− | 1.0+ |
| 2000 03 02 | 703 | 1.2− | 1.7+ | 2004 01 28 | 703 | 0.6− | 1.1− | 2004 03 18 | 644 | 0.2+ | 0.0 |
| 2000 03 05 | 704 | 1.0− | 0.7+ | 2004 01 28 | 703 | 0.0 | 0.7− | 2004 03 18 | 644 | 0.0 | 0.0 |
| 2000 03 05 | 704 | 0.0 | 0.2− | 2004 01 28 | 703 | 0.3− | 0.7− | 2004 03 18 | 644 | 0.3+ | 0.0 |
| 2000 03 05 | 704 | 0.3− | 0.2− | 2004 01 28 | 703 | 0.8− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2000 03 05 | 704 | 0.4− | 0.5− | 2004 01 30 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.7+ |
| 2000 03 12 | 704 | 0.3+ | 0.6+ | 2004 01 30 | 704 | 0.4+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2000 03 12 | 704 | 0.4+ | 1.4+ | 2004 01 30 | 704 | 0.8+ | 0.3− | 2006 10 02 | 691 | 0.2− | 0.4+ |
| 2000 03 12 | 704 | 0.7+ | 1.1+ | 2004 01 30 | 704 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.7− | 0.8+ |
| 2000 03 12 | 704 | 0.6+ | 0.9+ | 2004 02 10 | 644 | 0.1+ | 0.4− | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2000 03 12 | 704 | 0.4+ | 1.2+ | 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2000 03 29 | 049 | 0.3+ | 0.6− | 2004 02 10 | 644 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2000 03 29 | 049 | 1.1+ | 0.6− | 2004 02 11 | 644 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2000 03 29 | 049 | 1.0+ | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2000 04 05 | 049 | 0.7+ | 0.2− | 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2000 04 06 | 049 | 1.4+ | 0.1− | 2004 02 14 | 703 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.5− |
| 2000 04 06 | 049 | 1.2+ | 0.5+ | 2004 02 14 | 703 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2000 04 07 | 049 | 1.4+ | 0.2− | 2004 02 14 | 703 | 0.5− | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2000 04 07 | 049 | 0.2+ | 0.1− | 2004 02 14 | 703 | 0.4+ | 1.5+ | | | | |
| 2000 04 07 | 049 | 0.9+ | 1.5− | 2004 02 15 | 704 | 0.4+ | 0.2+ | | | | |

**(138112)∗ 2000 DB$_{107}$ = 1996 GN$_9$**

Discovered 2000 Feb. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 39480)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.39079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22913477 | $\omega$ | 74.06503 | | −0.23572833 | −0.96821133 | |
| $a$ | 2.6448967 | $\Omega$ | 29.96984 | | +0.81524288 | −0.24387200 | |
| $e$ | 0.0187546 | $i$ | 9.64090 | | +0.52897183 | −0.05561720 | |
| $P$ | 4.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.1− | 0.6+ | 2002 10 31 | 699 | 0.5− | 1.1+ | 2004 03 09 | 644 | 0.1+ | 0.1+ |
| 1996 04 13 | 691 | 0.3− | 0.3+ | 2002 10 31 | 699 | (1.8+ | 1.2+) | 2004 03 09 | 644 | 0.3+ | 0.3− |
| 1996 04 13 | 691 | 0.6− | 0.5+ | 2002 10 31 | 699 | 0.5+ | 0.3− | 2004 03 18 | 644 | 0.1− | 0.1− |
| 1996 04 19 | 691 | 0.9+ | 0.0 | 2002 10 31 | 699 | 0.5− | 0.5+ | 2004 03 18 | 644 | 0.2− | 0.0 |
| 1996 04 19 | 691 | 0.9+ | 0.5+ | 2002 11 06 | 704 | 0.3+ | 0.3− | 2004 03 18 | 644 | 0.0 | 0.1− |
| 1996 04 19 | 691 | 0.7+ | 0.3+ | 2002 11 06 | 704 | 0.6− | 0.5+ | 2004 03 20 | 703 | 0.4+ | 0.2− |
| 2000 02 29 | 704 | 0.5+ | 0.6+ | 2002 11 06 | 704 | 0.6− | 0.9+ | 2004 03 20 | 703 | 1.4+ | 1.1+ |
| 2000 02 29 | 704 | 0.4+ | 1.0+ | 2002 11 22 | 644 | 0.1− | 0.5+ | 2004 03 20 | 703 | 0.0 | 0.1− |
| 2000 02 29 | 704 | 0.5+ | 0.9+ | 2002 11 22 | 644 | 0.6− | 0.2+ | 2004 03 20 | 703 | 0.5− | 0.3+ |
| 2000 03 05 | 704 | 0.0 | 1.1+ | 2002 11 22 | 644 | 0.3− | 0.7+ | 2004 03 23 | 704 | 0.2− | 0.2+ |
| 2000 03 05 | 704 | 0.1− | 0.7+ | 2002 11 25 | 291 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.2− | 0.1+ |
| 2000 03 05 | 704 | 0.0 | 0.7+ | 2002 11 25 | 291 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.2− | 1.2+ |
| 2000 03 05 | 704 | 1.1+ | 1.1+ | 2002 11 25 | 291 | 0.0 | 0.3+ | 2004 03 23 | 704 | 1.0− | 0.1− |
| 2000 03 12 | 704 | 0.5+ | 0.3+ | 2003 12 28 | 704 | 0.5− | 1.2+ | 2006 09 14 | 644 | 0.5− | 0.4+ |
| 2000 03 12 | 704 | 0.1+ | 0.6+ | 2003 12 28 | 704 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.6− | 0.6+ |
| 2000 03 12 | 704 | 0.5+ | 0.8+ | 2003 12 28 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.6+ |
| 2000 03 12 | 704 | 0.7+ | 0.8+ | 2003 12 28 | 704 | 0.2+ | 0.9+ | 2006 09 15 | 703 | 1.1− | 0.0 |
| 2000 03 12 | 704 | 0.3+ | 0.8+ | 2004 01 17 | 644 | 0.0 | 0.1− | 2006 09 15 | 703 | 0.6− | 1.0+ |
| 2000 03 28 | 704 | 0.7+ | 0.9+ | 2004 01 17 | 644 | 0.0 | 0.2− | 2006 09 15 | 703 | 0.1− | 0.3+ |
| 2000 03 28 | 704 | 0.4− | 1.2+ | 2004 01 17 | 644 | 0.1+ | 0.1− | 2006 09 15 | 703 | 0.9− | 0.8+ |
| 2000 03 28 | 704 | 0.3+ | 1.7+ | 2004 01 30 | 703 | 1.0+ | 0.0 | 2006 09 21 | 699 | (0.9− | 2.0+) |
| 2000 04 03 | 704 | 0.6+ | 0.0 | 2004 01 30 | 703 | (1.6+ | 0.1−) | 2006 09 21 | 699 | 0.2− | 0.9+ |
| 2000 04 03 | 704 | 0.1+ | 0.4+ | 2004 01 30 | 703 | 1.2+ | 0.6+ | 2006 09 21 | 699 | (0.0 | 1.5+) |
| 2000 04 03 | 704 | 0.0 | 0.2− | 2004 01 30 | 703 | 0.3+ | 1.3− | 2006 09 21 | 699 | 0.6+ | 0.6+ |
| 2000 04 03 | 704 | 0.2+ | 1.4− | 2004 01 31 | 704 | 0.4+ | 1.1− | 2006 09 22 | 704 | 0.1− | 0.3+ |
| 2002 09 17 | 608 | 0.5− | 0.4− | 2004 01 31 | 704 | 0.0 | 0.6− | 2006 09 22 | 704 | 1.2− | 1.1+ |
| 2002 09 17 | 608 | 0.1− | 1.1− | 2004 01 31 | 704 | 0.3− | 0.3− | 2006 09 22 | 704 | 0.9− | 1.1+ |
| 2002 09 17 | 608 | 0.0 | 0.7− | 2004 01 31 | 704 | 0.7+ | 0.2− | 2006 09 22 | 704 | 0.2+ | 1.0+ |
| 2002 10 02 | 704 | 1.5+ | 0.2+ | 2004 01 31 | 704 | 0.5+ | 1.1− | 2006 09 22 | 704 | 0.3− | 0.9+ |
| 2002 10 02 | 704 | 0.1+ | 0.5+ | 2004 02 11 | 644 | 0.3− | 0.0 | 2006 10 02 | 703 | (0.2− | 1.8+) |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 10 02 | 703 | 1.5− | 0.9− |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2004 02 11 | 644 | 0.1+ | 0.2− | 2006 10 02 | 703 | 1.2− | 0.3+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2004 02 14 | 704 | 0.1+ | 0.5+ | 2006 10 02 | 703 | 1.3− | 1.4+ |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2004 02 14 | 704 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2002 10 03 | 704 | 0.8− | 0.4− | 2004 02 14 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.9+ |
| 2002 10 03 | 704 | 1.4− | 0.0 | 2004 02 14 | 704 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.8+ |
| 2002 10 07 | 704 | 0.3+ | 0.5+ | 2004 02 14 | 704 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.7+ |
| 2002 10 07 | 704 | 0.2+ | 0.2+ | 2004 02 18 | 201 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.8+ |
| 2002 10 07 | 704 | 0.2+ | 0.6− | 2004 02 18 | 201 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.0 | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.7− | 0.3+ | 2004 02 18 | 201 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.5+ |
| 2002 10 07 | 704 | 0.2− | 0.3− | 2004 02 22 | 703 | 0.6− | 0.5− | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 1.2− | 2004 02 22 | 703 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.4− | 1.2+ |
| 2002 10 11 | 704 | 0.8+ | 0.8+ | 2004 02 22 | 703 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.8+ |
| 2002 10 11 | 704 | 0.6+ | 0.5− | 2004 02 22 | 703 | 0.1− | 0.4− | | | | |
| 2002 10 11 | 704 | 1.2+ | 0.1+ | 2004 03 09 | 644 | 0.4− | 0.4+ | | | | |

**(138113)∗ 2000 DR$_{110}$**

Discovered 2000 Feb. 27 by J. V. McClusky at Fair Oaks Ranch.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.29873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23150407 | $\omega$ | 55.73841 | | +0.46901069 | −0.88209370 | |
| $a$ | 2.6268199 | $\Omega$ | 6.74968 | | +0.63567005 | +0.30252689 | |
| $e$ | 0.0571872 | $i$ | 22.00714 | | +0.61314970 | +0.36109304 | |
| $P$ | 4.26 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 725 | 0.2− | 0.1+ | 2002 11 07 | 704 | (1.9− | 0.0 ) | 2006 09 14 | 703 | 0.5− | 0.7+ |
| 2000 02 27 | 725 | 0.0 | 0.0 | 2002 11 07 | 704 | (1.7+ | 0.1−) | 2006 09 14 | 703 | 0.3− | 0.8+ |
| 2000 02 27 | 725 | 0.4− | 0.5+ | 2002 11 07 | 704 | 1.2+ | 0.2+ | 2006 09 15 | 703 | (0.2+ | 2.1+) |
| 2000 03 09 | 725 | 1.4− | 0.2+ | 2002 11 13 | 644 | 0.4+ | 0.2+ | 2006 09 15 | 703 | (0.3− | 1.9+) |
| 2000 03 12 | 725 | 0.2+ | 0.6+ | 2002 11 13 | 644 | 0.4+ | 0.1− | 2006 09 15 | 703 | (0.3− | 2.1+) |
| 2000 03 12 | 725 | 0.2+ | 0.6+ | 2002 11 13 | 644 | 0.2+ | 0.2+ | 2006 09 15 | 703 | 1.2+ | 0.9+ |
| 2000 03 12 | 704 | 0.5+ | 1.0− | 2002 11 14 | 704 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.6− | 1.5+ |
| 2000 03 12 | 704 | 0.2− | 1.0− | 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 09 22 | 704 | (1.0− | 2.0+) |
| 2000 03 12 | 704 | 0.2+ | 0.1− | 2002 11 14 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 704 | (0.9− | 1.6+) |
| 2000 03 12 | 704 | 1.1− | 0.4+ | 2002 11 14 | 704 | 0.5− | 0.5− | 2006 09 26 | 704 | 0.4+ | 0.2− |
| 2000 03 12 | 704 | 0.3− | 0.9− | 2004 01 20 | 446 | 0.6− | 0.6− | 2006 09 26 | 704 | 0.3+ | 0.2− |
| 2000 04 04 | 725 | 0.2+ | 0.2+ | 2004 01 20 | 446 | 0.4− | 0.5− | 2006 09 26 | 704 | 0.0 | 0.1+ |
| 2000 04 04 | 725 | 0.8+ | 0.6+ | 2004 01 20 | 446 | 0.9− | 0.4− | 2006 09 27 | 703 | 1.4− | 0.5+ |
| 2000 04 04 | 725 | 1.6+ | 1.4− | 2004 01 20 | 446 | 0.7− | 0.2− | 2006 09 27 | 703 | 0.6− | 0.0 |
| 2000 04 09 | 725 | 0.9− | 0.6+ | 2004 01 30 | 703 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.7− | 0.2− |
| 2000 04 09 | 725 | 0.5− | 0.3− | 2004 01 30 | 703 | 0.0 | 1.2− | 2006 09 27 | 703 | 1.4− | 0.8− |
| 2000 04 09 | 725 | 0.1− | 0.4− | 2004 01 30 | 703 | 0.3− | 0.1− | 2006 09 28 | 704 | 1.3+ | 0.7+ |
| 2000 04 09 | 725 | 0.9+ | 0.6− | 2004 01 30 | 703 | (0.7+ | 1.8−) | 2006 09 28 | 704 | 0.5+ | 0.8+ |
| 2000 05 23 | 725 | 0.1+ | 0.2+ | 2004 01 31 | 704 | (0.1+ | 2.0+) | 2006 09 28 | 704 | 0.7+ | 0.2+ |
| 2000 05 23 | 725 | 0.3− | 0.1+ | 2004 01 31 | 704 | (0.7− | 2.2+) | 2006 09 28 | 704 | 0.1+ | 1.0+ |
| 2000 05 23 | 725 | 0.2− | 0.4− | 2004 01 31 | 704 | 1.2− | 1.1+ | 2006 09 30 | 703 | 0.5− | 0.4− |
| 2000 05 30 | 725 | (0.5+ | 2.4−) | 2004 01 31 | 704 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.4− |
| 2000 05 30 | 725 | 1.9− | 1.0+ | 2004 02 02 | 704 | 1.0+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2000 05 30 | 725 | 0.6− | 0.3− | 2004 02 02 | 704 | 1.2+ | 1.0+ | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 2002 10 02 | 599 | 0.2+ | 1.1− | 2004 02 02 | 704 | 0.5+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 10 02 | 599 | 0.5+ | 0.1− | 2004 02 02 | 704 | 1.2+ | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2002 10 02 | 599 | 0.3+ | 0.4− | 2004 02 02 | 704 | 0.4+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 10 02 | 599 | 0.1− | 0.6+ | 2004 02 14 | 704 | 1.0+ | 0.9+ | 2006 10 11 | 941 | 0.0 | 0.2+ |
| 2002 10 03 | 644 | 0.1+ | 0.2+ | 2004 02 14 | 704 | 0.4+ | 1.1+ | 2006 10 11 | 941 | 0.1− | 0.2+ |
| 2002 10 03 | 644 | 0.1− | 0.2+ | 2004 02 14 | 704 | 0.8+ | 0.4+ | 2006 10 11 | 941 | 0.0 | 0.1+ |
| 2002 10 03 | 644 | 0.2+ | 0.1+ | 2004 02 14 | 704 | 0.8+ | 0.6+ | 2006 10 11 | 941 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2004 02 14 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.6− | 1.0− |
| 2002 10 05 | 704 | 0.0 | 0.5− | 2004 03 17 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 703 | (1.8− | 0.5−) |
| 2002 10 05 | 704 | 0.0 | 0.7− | 2004 03 17 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.8− | 1.2+ |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2004 03 17 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2002 10 05 | 704 | 0.2+ | 0.3− | 2004 03 25 | 704 | 0.0 | 0.7− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 10 09 | 704 | 0.4− | 0.6− | 2004 03 25 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | 0.6+ | 0.1− | 2004 03 25 | 704 | (2.2− | 1.8−) | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.5+ | 0.5− | 2004 03 25 | 704 | 0.7+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 10 09 | 704 | 0.9+ | 0.4− | 2004 04 14 | 644 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 0.1− | 0.4− | 2004 04 14 | 644 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.4− | 1.3− | 2004 04 14 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 703 | 0.0 | 0.7− |
| 2002 10 12 | 704 | 0.2− | 1.0− | 2004 04 14 | 704 | 0.8+ | 0.1− | 2006 11 18 | 703 | 0.3− | 0.1− |
| 2002 10 12 | 704 | 0.5+ | 1.2− | 2004 04 14 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 703 | 0.1− | 0.5− |
| 2002 10 12 | 704 | 0.1− | 0.8+ | 2004 04 14 | 704 | 0.2− | 0.1− | 2006 11 18 | 703 | 1.0− | 0.1− |
| 2002 10 12 | 704 | 0.4+ | 0.5− | 2006 08 30 | 699 | 0.3− | 0.7+ | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2002 10 31 | 644 | 0.1+ | 0.6+ | 2006 08 30 | 699 | 0.7− | 0.9+ | 2006 11 21 | G96 | 0.5+ | 0.1− |
| 2002 10 31 | 644 | 0.2+ | 0.6+ | 2006 08 30 | 699 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 11 07 | 704 | 0.1− | 0.8+ | 2006 09 14 | 703 | 1.1− | 0.2− | | | | |

**(138114)∗ 2000 DK$_{115}$**

Discovered 2000 Feb. 27 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.86640 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24258909 | $\omega$ | 284.28129 | | −0.43936657 | −0.89806812 | |
| $a$ | 2.5461767 | $\Omega$ | 191.84720 | | +0.85823196 | −0.41283002 | |
| $e$ | 0.2206644 | $i$ | 5.80149 | | +0.26532042 | −0.15180585 | |
| $P$ | 4.06 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 13 | 691 | 0.3− | 0.2+ | 2004 02 12 | 644 | 0.4− | 0.0 | 2004 03 16 | 704 | 0.2− | 0.2− |
| 1994 09 13 | 691 | 0.4− | 0.5− | 2004 02 12 | 644 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.5− | 0.6+ |
| 1994 09 13 | 691 | 0.5− | 0.2− | 2004 02 12 | 644 | 0.2− | 0.1+ | 2004 03 16 | 704 | 0.2− | 0.1− |
| 1994 09 28 | 691 | 0.4+ | 1.1+ | 2004 02 18 | 683 | 0.2− | 0.3− | 2004 03 17 | 704 | 0.5− | 0.2− |
| 1994 09 28 | 691 | 0.4+ | 0.7+ | 2004 02 18 | 683 | 0.8− | 0.2+ | 2004 03 17 | 704 | 0.6+ | 0.5− |
| 1994 09 28 | 691 | 0.3+ | 0.6− | 2004 02 18 | 683 | 0.4+ | 0.0 | 2004 03 17 | 704 | 0.3+ | 0.6+ |
| 1996 03 20 | 691 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.5+ | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.5+ |
| 1996 03 20 | 691 | 0.4− | 0.4− | 2004 02 19 | 704 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.1− | 0.2− |
| 1996 03 20 | 691 | 0.4− | 0.4− | 2004 02 19 | 704 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.2− | 0.1+ |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.1− |
| 1998 09 19 | 645 | 0.0 | 0.2− | 2004 02 19 | 704 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.1− | 0.0 |
| 2000 02 08 | 704 | 0.4+ | 0.7− | 2004 02 23 | 704 | 1.4+ | 0.6− | 2004 03 18 | 704 | 0.2− | 0.2+ |
| 2000 02 08 | 704 | 0.5+ | 1.1− | 2004 02 23 | 704 | 1.2+ | 0.1− | 2004 03 20 | 704 | (1.9− | 0.4+) |
| 2000 02 08 | 704 | 0.8+ | 1.7− | 2004 02 23 | 704 | (1.7+ | 0.7−) | 2004 03 20 | 704 | (2.4− | 0.3+) |
| 2000 02 27 | 703 | 0.4+ | 0.7+ | 2004 02 23 | 704 | 1.2+ | 0.8− | 2004 03 20 | 704 | 0.9− | 0.5+ |
| 2000 02 27 | 703 | 0.8+ | 0.4− | 2004 02 23 | 704 | 1.2+ | 0.9− | 2004 03 20 | 704 | 0.9− | 0.7+ |
| 2000 02 27 | 703 | 0.5+ | 0.5+ | 2004 02 26 | 704 | 0.7− | 0.1− | 2004 03 20 | 704 | 1.0− | 0.9+ |
| 2000 02 27 | 703 | 0.6+ | 0.5+ | 2004 02 26 | 704 | 0.7− | 0.4+ | 2006 09 28 | G96 | 0.8− | 0.6+ |
| 2000 03 09 | 704 | 0.5+ | 0.4+ | 2004 02 26 | 704 | 0.8− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.1+ |
| 2000 03 09 | 704 | 0.4+ | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2000 03 09 | 704 | 0.6+ | 0.1+ | 2004 03 15 | 704 | 0.7+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.3+ |
| 2000 03 09 | 704 | 0.3+ | 1.3+ | 2004 03 15 | 704 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2000 03 09 | 704 | 0.4+ | 0.7+ | 2004 03 15 | 704 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2004 01 29 | 699 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.3+ |
| 2004 01 29 | 699 | 0.5− | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.2+ |
| 2004 01 29 | 699 | 1.0− | 0.9− | 2004 03 16 | 704 | 0.0 | 0.4+ | | | | |
| 2004 01 29 | 699 | 0.3− | 0.1− | 2004 03 16 | 704 | 0.2− | 0.1− | | | | |

**(138115)∗ 2000 DV$_{116}$**

Discovered 2000 Feb. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.53722 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23804533 | $\omega$ | 340.42041 | | +0.57419860 | +0.80811491 | |
| $a$ | 2.5784751 | $\Omega$ | 324.27304 | | −0.71798807 | +0.41995206 | |
| $e$ | 0.1414816 | $i$ | 12.99707 | | −0.39343247 | +0.41302610 | |
| $P$ | 4.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.2+ | 0.0 | 2002 10 13 | 644 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.4− |
| 2000 02 04 | 691 | 0.2+ | 0.3− | 2002 11 15 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 703 | (1.8− | 0.9−) |
| 2000 02 04 | 691 | 0.2+ | 0.1− | 2002 11 15 | 704 | 1.3− | 0.8− | 2006 10 19 | 703 | 0.7+ | 1.0+ |
| 2000 02 08 | 691 | 0.1− | 0.1+ | 2002 11 15 | 704 | (0.8− | 2.6−) | 2006 10 19 | 703 | (1.1+ | 1.7−) |
| 2000 02 08 | 691 | 0.2− | 0.1− | 2004 02 12 | 291 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.3− |
| 2000 02 08 | 691 | 0.5− | 0.3− | 2004 02 12 | 291 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2000 02 26 | 691 | 0.5+ | 0.3− | 2004 02 12 | 291 | 0.6+ | 0.4+ | 2006 10 23 | 644 | 0.5+ | 0.0 |
| 2000 02 26 | 691 | 0.4+ | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.1− |
| 2000 02 26 | 691 | 0.4+ | 0.1− | 2004 02 23 | 704 | 0.5− | 0.1+ | 2006 10 23 | 644 | 0.8+ | 0.1− |
| 2000 03 04 | 691 | 1.1− | 0.1− | 2004 02 23 | 704 | 0.1− | 1.0+ | 2006 10 27 | 703 | 0.3− | 0.6+ |
| 2000 03 04 | 691 | 0.7− | 0.4− | 2004 02 23 | 704 | 0.2− | 0.8+ | 2006 10 27 | 703 | 0.8− | 0.3+ |
| 2000 03 04 | 691 | 0.8− | 0.3− | 2005 07 04 | E12 | 0.9+ | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.2− |
| 2002 10 06 | 704 | 0.8+ | 0.4− | 2005 07 04 | E12 | 0.2+ | 0.5+ | 2006 10 27 | 703 | (1.8+ | 3.7−) |
| 2002 10 06 | 704 | 0.9+ | 1.2+ | 2005 07 04 | E12 | 0.7− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.2+ |
| 2002 10 06 | 704 | 0.5+ | 0.7+ | 2005 07 04 | E12 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 2002 10 13 | 644 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.6− | 0.3− | 2006 11 15 | 703 | 0.5− | 1.4− |
| 2002 10 13 | 644 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.5− | 1.1+ | 2006 11 15 | 703 | 0.3− | 2.0− |

**(138116)∗ 2000 EZ = 2002 PA$_{58}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33220)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.20061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26567094 | $\omega$ | 50.61554 | | +0.90363670 | −0.42583284 | |
| $a$ | 2.3964774 | $\Omega$ | 334.48931 | | +0.35285177 | +0.80091584 | |
| $e$ | 0.2547296 | $i$ | 6.11841 | | +0.24276811 | +0.42095155 | |
| $P$ | 3.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.7+ | 0.9+ | 2002 09 14 | 644 | 0.5− | 0.3+ | 2004 03 16 | 599 | 0.5+ | 0.6+ |
| 2000 02 03 | 704 | 0.7+ | 0.9+ | 2002 10 03 | 644 | 0.2+ | 0.1− | 2004 03 16 | 599 | 0.2+ | 0.4+ |
| 2000 02 03 | 704 | 0.4− | 0.4+ | 2002 10 03 | 644 | 0.2+ | 0.1+ | 2004 03 16 | 599 | 0.1+ | 0.5+ |
| 2000 02 03 | 704 | 0.2+ | 0.3+ | 2002 10 03 | 644 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.1+ |
| 2000 02 11 | 704 | 1.4− | 0.6+ | 2002 10 04 | 704 | 0.5+ | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.5− |
| 2000 02 11 | 704 | 0.6− | 0.0 | 2002 10 04 | 704 | 0.2+ | 0.2− | 2004 03 18 | 704 | 0.7− | 0.3+ |
| 2000 02 11 | 704 | 0.0 | 0.0 | 2002 10 04 | 704 | 0.7+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 0.3+ | 0.5+ | 2002 10 04 | 704 | 0.6+ | 0.5− | 2004 03 18 | 704 | 0.3+ | 0.3− |
| 2000 03 03 | 704 | 0.6+ | 0.1+ | 2002 10 04 | 704 | 0.6+ | 0.7− | 2004 03 18 | 691 | 0.1+ | 0.4+ |
| 2000 03 03 | 704 | 0.0 | 0.9− | 2002 10 12 | 704 | 0.3− | 0.4− | 2004 03 18 | 691 | 0.1+ | 0.4+ |
| 2000 03 03 | 704 | 0.2+ | 0.2+ | 2002 10 12 | 704 | 0.5− | 0.1+ | 2004 03 18 | 691 | 0.2+ | 0.4+ |
| 2000 03 03 | 704 | 0.9+ | 0.4+ | 2002 10 12 | 704 | 0.5+ | 0.4− | 2006 08 30 | 704 | 0.3− | 0.3+ |
| 2000 03 04 | 704 | 0.0 | 0.0 | 2002 10 12 | 704 | 0.4− | 1.2+ | 2006 08 30 | 704 | 0.8− | 0.5− |
| 2000 03 04 | 704 | 1.0+ | 0.3+ | 2002 10 30 | 704 | (0.6+ | 1.5−) | 2006 08 30 | 704 | 0.0 | 0.5+ |
| 2000 03 04 | 704 | 0.0 | 0.7− | 2002 10 30 | 704 | 0.6+ | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.2− |
| 2000 03 04 | 704 | 0.6− | 0.9+ | 2002 10 30 | 704 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.4+ | 0.2− |
| 2000 03 04 | 704 | 0.9+ | 0.2− | 2002 10 30 | 704 | 0.5− | 0.5+ | 2006 09 21 | 704 | 0.6+ | 0.2+ |
| 2002 08 09 | 704 | 0.4+ | 0.3+ | 2002 10 30 | 704 | 0.4+ | 0.8+ | 2006 09 21 | 704 | 0.2+ | 0.1+ |
| 2002 08 09 | 704 | 0.2+ | 0.5+ | 2002 11 03 | 608 | 0.8− | 1.1− | 2006 09 21 | 704 | (2.1− | 1.2−) |
| 2002 08 09 | 704 | 0.6− | 0.8+ | 2002 11 03 | 608 | 0.3− | 0.7− | 2006 10 02 | 704 | 0.0 | 0.6+ |
| 2002 08 12 | 704 | 0.3+ | 0.5− | 2002 11 03 | 608 | (0.4− | 1.6−) | 2006 10 02 | 704 | 0.4+ | 0.6+ |
| 2002 08 12 | 704 | 0.1− | 0.2+ | 2002 11 08 | 704 | 0.4+ | 0.1− | 2006 10 02 | 704 | 0.3+ | 0.4+ |
| 2002 08 12 | 704 | 0.3− | 0.1+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 10 02 | 704 | 0.2− | 0.2+ |
| 2002 08 12 | 704 | 0.3− | 0.3− | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.9− | 0.9− |
| 2002 08 30 | 699 | 0.0 | 0.7+ | 2002 11 08 | 704 | 0.0 | 1.0+ | 2006 11 14 | 704 | 0.1− | 0.4− |
| 2002 08 30 | 699 | 0.4− | 0.5+ | 2002 11 08 | 704 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.3− |
| 2002 08 30 | 699 | 0.5− | 0.8+ | 2002 11 08 | 704 | 1.4+ | 0.8− | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 2002 08 30 | 699 | 0.6− | 0.8+ | 2002 11 08 | 704 | 0.2− | 1.2− | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.1− | 0.4+ | 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.3− |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.5+ | 2006 11 22 | 703 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2003 01 05 | 704 | 0.5− | 0.7+ | 2006 11 22 | 703 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.1+ | 1.2+ | 2006 11 22 | 703 | 0.6+ | 0.1+ |
| 2002 09 07 | 704 | 0.2− | 0.7+ | 2003 01 05 | 704 | 0.6− | 0.1− | 2006 11 22 | 703 | 0.3+ | 0.5+ |
| 2002 09 07 | 704 | 0.3− | 0.7+ | 2003 01 05 | 704 | (1.1+ | 1.5+) | 2006 12 01 | 704 | 0.0 | 0.2− |
| 2002 09 07 | 704 | 0.2− | 0.9+ | 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 12 01 | 704 | 0.0 | 0.1− |
| 2002 09 07 | 704 | 0.2− | 0.8+ | 2004 02 19 | 704 | (0.3+ | 2.2+) | 2006 12 01 | 704 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.2− | 1.1+ | 2004 02 19 | 704 | 0.1− | 0.8+ | 2006 12 01 | 704 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.6− | 0.3+ | 2004 02 19 | 704 | (0.9− | 1.6+) | 2006 12 01 | 704 | 0.0 | 0.4− |
| 2002 09 14 | 644 | 0.7− | 0.3+ | 2004 03 16 | 599 | 0.3+ | 0.7+ | | | | |

**(138117)∗ 2000 EJ$_2$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.13018 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23184658 | $\omega$ | 233.77497 | | −0.57226181 | −0.82003350 | |
| $a$ | 2.6242322 | $\Omega$ | 251.13496 | | +0.75503439 | −0.52312216 | |
| $e$ | 0.0443269 | $i$ | 0.47477 | | +0.32006171 | −0.23213847 | |
| $P$ | 4.25 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 16 | 691 | 0.2+ | 0.4− | 1998 11 26 | 691 | (4.8+ | 1.1−) | 2000 03 04 | 704 | 1.0+ | 1.0+ |
| 1996 03 16 | 691 | 0.1− | 0.2− | 1998 11 26 | 691 | 0.0 | 0.7− | 2000 03 04 | 704 | 0.5+ | 0.3− |
| 1996 03 16 | 691 | 0.5− | 0.5− | 1998 12 14 | 691 | 0.2− | 0.4− | 2000 03 11 | 704 | 1.0+ | 0.0 |
| 1998 10 14 | 691 | 0.2+ | 0.2− | 1998 12 14 | 691 | 0.6− | 0.1+ | 2000 03 11 | 704 | 0.3+ | 1.2+ |
| 1998 10 14 | 691 | 0.5− | 0.1+ | 1998 12 14 | 691 | 0.2− | 0.1+ | 2000 03 11 | 704 | 1.6+ | 0.8+ |
| 1998 10 14 | 691 | 0.6− | 0.2+ | 2000 01 28 | 691 | 0.4− | 0.0 | 2000 03 11 | 704 | (1.2− | 4.0+) |
| 1998 10 18 | 691 | 0.7+ | 0.0 | 2000 01 28 | 691 | 0.6− | 0.1+ | 2002 10 09 | 291 | 0.1− | 0.2+ |
| 1998 10 18 | 691 | 0.8+ | 0.0 | 2000 01 28 | 691 | 0.2− | 0.1+ | 2002 10 09 | 291 | 0.0 | 0.1+ |
| 1998 10 29 | 691 | 0.1− | 0.3+ | 2000 02 05 | 691 | 0.3+ | 0.2+ | 2002 10 09 | 291 | 0.0 | 0.9+ |
| 1998 10 29 | 691 | 0.4− | 0.1+ | 2000 02 05 | 691 | 0.3+ | 0.2− | 2004 02 17 | 644 | 0.5+ | 0.5+ |
| 1998 10 29 | 691 | 0.1− | 0.1+ | 2000 02 05 | 691 | 0.1+ | 0.2+ | 2004 02 17 | 644 | 0.2+ | 0.7+ |
| 1998 11 17 | 691 | 0.6+ | 0.2− | 2000 02 08 | 691 | 0.4− | 1.4− | 2004 02 17 | 644 | 0.2+ | 1.1+ |
| 1998 11 17 | 691 | 0.9+ | 0.2+ | 2000 02 08 | 691 | 0.6− | 0.1+ | 2004 02 26 | 695 | 0.1− | 0.3+ |
| 1998 11 17 | 691 | 0.6+ | 0.1+ | 2000 02 08 | 691 | 0.1+ | 0.5+ | 2004 02 26 | 695 | 0.0 | 0.3+ |
| 1998 11 18 | 691 | 0.2− | 0.6− | 2000 03 03 | 704 | 0.6+ | 0.8+ | 2006 08 28 | 691 | 0.4− | 0.2+ |
| 1998 11 18 | 691 | 0.3+ | 0.2− | 2000 03 03 | 704 | 0.8+ | 0.9+ | 2006 08 28 | 691 | 0.3− | 0.3+ |
| 1998 11 18 | 691 | 0.6+ | 0.4− | 2000 03 03 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 1998 11 23 | 691 | 0.3− | 0.1− | 2000 03 03 | 704 | 0.8+ | 0.9+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 1998 11 23 | 691 | 0.7− | 0.1+ | 2000 03 03 | 704 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 1998 11 23 | 691 | 0.7− | 0.2+ | 2000 03 04 | 704 | 1.3+ | 1.2+ | 2006 10 16 | G96 | 0.3+ | 0.7+ |
| 1998 11 26 | 691 | 0.1+ | 0.4− | 2000 03 04 | 704 | 0.3− | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.4+ |

**(138118)∗ 2000 EA$_4$**

Discovered 2000 Mar. 1 by F. B. Zoltowski at Tebbutt Observatory, Edgewood.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.74211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25960764 | $\omega$ | 71.51922 | | −0.62386221 | −0.77987558 | |
| $a$ | 2.4336479 | $\Omega$ | 57.18682 | | +0.69226020 | −0.58164891 | |
| $e$ | 0.1285521 | $i$ | 3.47162 | | +0.36272821 | −0.23125446 | |
| $P$ | 3.80 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.4+ | 0.0 | 2004 01 29 | 704 | 0.1− | 0.7+ | 2005 07 29 | E12 | (0.2+ | 1.7+) |
| 2000 02 03 | 704 | 0.1+ | 0.3+ | 2004 02 19 | 704 | 1.1+ | 0.3− | 2005 07 29 | E12 | 0.3+ | 0.6+ |
| 2000 02 03 | 704 | 0.3− | 0.1+ | 2004 02 19 | 704 | 0.3− | 0.7− | 2006 08 28 | 703 | 0.0 | 0.9+ |
| 2000 02 03 | 704 | 0.5+ | 0.4+ | 2004 02 19 | 704 | 0.7+ | 0.3+ | 2006 08 28 | 703 | (1.0+ | 1.9+) |
| 2000 02 03 | 704 | 0.5+ | 0.0 | 2004 02 19 | 704 | 0.7− | 1.2+ | 2006 08 28 | 703 | 1.0+ | 0.9+ |
| 2000 02 11 | 704 | 0.9+ | 0.6− | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.5+ | 0.5+ |
| 2000 02 11 | 704 | 0.3− | 0.6− | 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 2000 02 11 | 704 | 0.3+ | 0.9− | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2000 02 11 | 704 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.6− | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2000 02 11 | 704 | 0.3− | 0.6− | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.1+ |
| 2000 03 01 | 858 | 0.3− | 0.0 | 2004 03 15 | 703 | 0.6− | 0.6+ | 2006 10 20 | 691 | (0.9− | 1.6−) |
| 2000 03 01 | 858 | 0.1− | 0.1− | 2004 03 15 | 703 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.6+ | 0.1+ |
| 2000 03 01 | 858 | 0.3− | 0.1− | 2004 03 15 | 703 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2000 03 05 | 858 | 0.3− | 0.2− | 2004 03 15 | 703 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2000 03 05 | 858 | 0.3− | 0.6− | 2004 03 16 | 704 | 0.4− | 1.1+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2000 03 05 | 858 | 0.2− | 0.3− | 2004 03 16 | 704 | 0.5− | 1.2+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2000 03 05 | 704 | 0.9+ | 0.0 | 2004 03 16 | 704 | 0.6+ | 1.3+ | 2006 10 28 | 704 | (0.2− | 2.3−) |
| 2000 03 05 | 704 | 0.8− | 0.2+ | 2004 03 16 | 704 | 0.8− | 1.0+ | 2006 10 28 | 704 | 0.6+ | 0.7+ |
| 2000 03 05 | 704 | 0.5+ | 0.1+ | 2004 03 16 | 704 | 0.6− | 1.4+ | 2006 10 28 | 704 | 0.4− | 0.1− |
| 2000 03 05 | 704 | 0.5− | 0.5+ | 2004 03 19 | 704 | 0.7+ | 0.1+ | 2006 10 28 | 704 | (0.5− | 1.8+) |
| 2000 03 05 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | (1.0+ | 2.2−) | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2000 03 11 | 699 | 0.3+ | 0.9+ | 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2000 03 11 | 699 | 0.9+ | 0.2+ | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2000 03 11 | 699 | 0.9+ | 1.2+ | 2004 03 22 | 704 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2000 03 11 | 858 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 11 01 | 691 | 1.1+ | 0.7− |
| 2000 03 11 | 858 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 03 11 | 858 | 0.1− | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2000 03 11 | 699 | 0.8+ | 0.2− | 2004 03 22 | 704 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2000 03 12 | 858 | 0.3+ | 0.2+ | 2004 03 23 | 683 | 0.4+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2000 03 12 | 858 | 0.3− | 0.2+ | 2004 03 23 | 683 | 0.5+ | 0.8+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2000 03 12 | 858 | 0.1+ | 0.2− | 2004 03 23 | 683 | (0.4+ | 2.9+) | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2000 03 12 | 704 | 0.1− | 0.5+ | 2004 03 24 | 699 | 0.5− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.0 | 0.2+ | 2004 03 24 | 699 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2000 03 12 | 704 | 0.2− | 0.0 | 2004 03 24 | 699 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.3+ |
| 2000 03 12 | 704 | 0.5− | 0.1+ | 2004 03 24 | 699 | 0.1− | 0.1− | 2006 11 11 | 703 | (2.6− | 0.3−) |
| 2000 03 12 | 704 | 0.2− | 0.5+ | 2004 03 27 | 683 | (0.5+ | 1.8−) | 2006 11 11 | G96 | (1.9+ | 0.3+) |
| 2000 04 26 | 858 | 0.1− | 0.1− | 2004 03 27 | 683 | 0.5+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2000 04 26 | 858 | 0.5− | 0.0 | 2004 03 27 | 683 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2000 04 26 | 858 | 0.2− | 0.1+ | 2004 03 28 | 683 | (2.0+ | 0.1−) | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2000 05 27 | 858 | 0.4+ | 0.2− | 2004 03 28 | 683 | 0.1− | 0.5− | 2006 11 12 | 703 | 0.2− | 0.5− |
| 2000 05 27 | 858 | 0.6+ | 0.0 | 2004 03 28 | 683 | 0.6− | 1.4+ | 2006 11 12 | 703 | 0.1− | 0.2− |
| 2000 05 29 | 858 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.2+ | 2006 11 12 | 703 | 0.1+ | 0.1+ |
| 2000 05 29 | 858 | 0.3− | 0.4+ | 2004 03 28 | 704 | 0.2+ | 0.0 | 2006 11 12 | 703 | 0.2− | 0.3− |
| 2002 09 17 | 608 | 1.4− | 1.2+ | 2004 03 28 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 09 17 | 608 | 1.4− | 1.3+ | 2004 03 28 | 704 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 09 17 | 608 | 1.4− | 1.2+ | 2004 03 28 | 704 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.4+ | 0.5+ | 2004 03 29 | 683 | 0.6+ | 0.3+ | 2006 11 17 | 703 | 0.9+ | 0.5+ |
| 2002 10 03 | 704 | 0.6+ | 0.9+ | 2004 03 29 | 683 | 0.4+ | 0.7− | 2006 11 17 | 703 | 0.3+ | 0.7+ |
| 2002 10 03 | 704 | 0.7+ | 0.3− | 2004 03 29 | 683 | 0.5+ | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 1.4+ | 0.4− | 2004 03 30 | 683 | 0.1− | 0.8− | 2006 11 17 | 703 | 0.0 | 0.6+ |
| 2002 10 03 | 704 | (1.7+ | 0.7−) | 2004 03 30 | 683 | 1.0+ | 1.4− | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2002 10 07 | 704 | 0.8− | 0.1+ | 2004 03 30 | 683 | 0.4− | 0.7− | 2006 11 18 | 704 | 0.1− | 0.8+ |
| 2002 10 07 | 704 | 0.6− | 0.5+ | 2004 04 02 | 608 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2002 10 07 | 704 | 0.1− | 0.2+ | 2004 04 02 | 608 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.9+ |
| 2002 10 07 | 704 | 0.3− | 1.1+ | 2004 04 02 | 608 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2004 04 12 | 699 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.0 |
| 2002 10 11 | 704 | 0.3+ | 0.3− | 2004 04 12 | 699 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2002 10 11 | 704 | 0.7+ | 0.8− | 2004 04 12 | 699 | 0.1+ | 1.3+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2002 10 11 | 704 | 0.2+ | 0.7− | 2004 04 12 | 699 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 10 11 | 704 | 0.5+ | 0.2− | 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2002 10 31 | 704 | 0.8− | 0.1+ | 2004 04 16 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 10 31 | 704 | 0.6− | 0.0 | 2004 04 16 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2002 10 31 | 704 | 1.1− | 0.4+ | 2004 04 19 | 704 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2002 10 31 | 704 | 0.6− | 0.1+ | 2004 04 19 | 704 | 0.4+ | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 10 31 | 704 | 1.0− | 0.5− | 2004 04 19 | 704 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2004 04 19 | 704 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.4− | 0.9− |
| 2002 11 06 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2002 11 06 | 704 | 0.3− | 0.3− | 2004 04 21 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.5− |
| 2003 01 04 | 704 | 0.8− | 1.3+ | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.7+ |
| 2003 01 04 | 704 | 0.5− | 0.0 | 2004 04 22 | 704 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.0 | 0.4+ |
| 2003 01 04 | 704 | 0.1− | 0.5+ | 2004 04 22 | 704 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.3− | 2.7− |
| 2003 01 04 | 704 | 0.4− | 0.6+ | 2004 04 22 | 704 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.6− |
| 2003 01 04 | 704 | (1.1+ | 2.2+) | 2004 04 22 | 704 | 1.0+ | 1.3+ | 2006 11 27 | 703 | 0.3+ | 0.6+ |
| 2003 12 22 | 704 | 0.4+ | 0.3+ | 2004 04 22 | 704 | 0.4− | 1.1+ | 2006 11 27 | 703 | 0.2+ | 0.1− |
| 2003 12 22 | 704 | 0.3+ | 0.1+ | 2004 04 23 | 703 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 0.2− | 0.3+ |
| 2003 12 22 | 704 | 0.8+ | 0.2+ | 2004 04 23 | 703 | 0.6+ | 0.1+ | 2006 11 27 | 703 | 0.2− | 0.8+ |
| 2003 12 27 | 704 | 0.3+ | 0.2− | 2004 04 23 | 703 | 0.8− | 1.3− | 2006 11 29 | 704 | 1.1− | 0.6+ |
| 2003 12 27 | 704 | 0.3+ | 0.2+ | 2004 04 23 | 703 | 0.4− | 0.0 | 2006 11 29 | 704 | 1.5− | 0.9+ |
| 2003 12 27 | 704 | 1.2− | 0.5+ | 2005 07 07 | 691 | 0.3− | 1.0+ | 2006 11 29 | 704 | 0.3− | 0.4+ |
| 2004 01 29 | 704 | 0.3− | 0.8+ | 2005 07 07 | 691 | 0.2− | 0.9+ | 2006 11 29 | 704 | 0.8− | 0.1− |
| 2004 01 29 | 704 | 0.4+ | 0.3+ | 2005 07 07 | 691 | 0.3− | 0.7+ | 2006 11 29 | 704 | 1.0− | 0.3+ |
| 2004 01 29 | 704 | 0.3+ | 0.2− | 2005 07 29 | E12 | 0.3+ | 1.0+ | | | | |
| 2004 01 29 | 704 | 0.2− | 0.5+ | 2005 07 29 | E12 | 0.7+ | 0.9+ | | | | |

**(138119)∗ 2000 EO$_4$ = 2002 TA$_{150}$**

Discovered 2000 Mar. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37380)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.75276 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23183882 | $\omega$ | 336.01392 | | +0.51185471 | +0.85833301 | |
| $a$ | 2.6242907 | $\Omega$ | 324.74370 | | −0.77786702 | +0.44547217 | |
| $e$ | 0.0108405 | $i$ | 3.53843 | | −0.36459245 | +0.25459572 | |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.0 | 0.1− | 2002 10 05 | 644 | 0.0 | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.2+ |
| 2000 02 11 | 691 | 0.1+ | 0.3− | 2002 10 06 | 644 | 0.1− | 0.4+ | 2006 07 25 | G96 | 0.1+ | 0.2− |
| 2000 02 11 | 691 | 0.1− | 0.1− | 2002 10 06 | 644 | 0.0 | 0.4+ | 2006 07 25 | G96 | 0.1− | 0.7− |
| 2000 03 02 | 691 | 0.0 | 0.2− | 2002 10 06 | 644 | 0.2− | 0.0 | 2006 07 25 | G96 | 0.1− | 0.1− |
| 2000 03 02 | 691 | 0.4− | 0.3− | 2003 12 19 | 691 | 0.1+ | 0.3− | 2006 07 25 | G96 | 0.2− | 0.4− |
| 2000 03 02 | 691 | 0.4− | 0.2+ | 2003 12 19 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2000 03 04 | 691 | 0.1+ | 0.1− | 2003 12 19 | 691 | 0.6− | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.1+ |
| 2000 03 04 | 691 | 0.1− | 0.0 | 2004 01 19 | 699 | 1.0− | 0.4+ | 2006 08 27 | 691 | 0.6+ | 0.4+ |
| 2000 03 04 | 691 | 0.1+ | 0.2+ | 2004 01 19 | 699 | 0.6− | 0.8+ | 2006 09 14 | 703 | 1.1− | 1.0− |
| 2000 03 04 | 691 | 0.1− | 0.2+ | 2004 01 19 | 699 | 0.3− | 0.0 | 2006 09 14 | 703 | 1.2+ | 0.8− |
| 2000 03 04 | 691 | 0.0 | 0.0 | 2004 01 19 | 699 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.2− |
| 2000 03 04 | 691 | 0.4− | 0.2− | 2004 01 22 | 704 | 0.1− | 0.7− | 2006 09 14 | 703 | 0.6− | 0.5+ |
| 2000 03 09 | 691 | 0.2+ | 0.1+ | 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.7− |
| 2000 03 09 | 691 | 0.7+ | 0.0 | 2004 01 22 | 704 | 0.0 | 0.5− | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2000 03 09 | 691 | 0.2+ | 0.1+ | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.2− | 0.6− |
| 2002 10 05 | 644 | 0.1+ | 0.2+ | 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.7− |
| 2002 10 05 | 644 | 0.2− | 0.1− | 2004 01 27 | 691 | 0.2+ | 0.0 | | | | |

**(138120)∗ 2000 ED$_5$ = 2004 AC$_9$**

Discovered 2000 Mar. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 56112)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.22507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23592650 | $\omega$ | 358.97406 | | −0.94461299 | −0.31837660 | |
| $a$ | 2.5938900 | $\Omega$ | 161.83490 | | +0.30289530 | −0.93917454 | |
| $e$ | 0.0346330 | $i$ | 14.80074 | | +0.12633581 | −0.12879255 | |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 14 | 691 | 0.1+ | 0.7− | 2004 01 14 | 644 | 0.4+ | 0.5+ | 2004 03 18 | 704 | 1.3+ | 0.4+ |
| 1996 02 14 | 691 | 0.2+ | 0.8− | 2004 01 14 | 644 | 0.3+ | 0.5+ | 2004 03 18 | 704 | (1.7+ | 0.3+) |
| 1996 02 14 | 691 | 0.2+ | 0.7− | 2004 01 14 | 644 | 0.2+ | 0.8+ | 2004 03 20 | 704 | (2.0+ | 1.6+) |
| 2000 02 06 | 704 | 0.6− | 0.4+ | 2004 01 18 | 703 | (0.1+ | 2.1+) | 2004 03 20 | 704 | 0.7+ | 0.5+ |
| 2000 02 06 | 704 | 0.0 | 0.4+ | 2004 01 18 | 703 | 0.5− | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.2+ |
| 2000 02 06 | 704 | 0.1− | 0.7+ | 2004 01 18 | 703 | 0.7+ | 0.5+ | 2004 03 20 | 704 | 0.1+ | 0.2+ |
| 2000 03 02 | 691 | 0.7− | 0.1− | 2004 01 18 | 703 | 0.5− | 0.1− | 2004 03 20 | 704 | 0.4+ | 0.4+ |
| 2000 03 02 | 691 | 1.0− | 0.1− | 2004 01 29 | 704 | 0.7+ | 1.0+ | 2005 06 30 | 644 | 0.2− | 0.7+ |
| 2000 03 02 | 691 | 0.9− | 0.3− | 2004 01 29 | 704 | 0.5+ | 0.9+ | 2005 06 30 | 644 | 0.2− | 0.5+ |
| 2000 03 03 | 704 | 0.2− | 0.2+ | 2004 01 29 | 704 | 1.2+ | 0.7+ | 2005 06 30 | 644 | 0.1− | 0.8+ |
| 2000 03 03 | 704 | 0.1− | 0.3− | 2004 01 29 | 704 | 0.5+ | 0.1− | 2006 08 22 | 644 | 0.2− | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.2+ | 2004 01 29 | 704 | 0.4+ | 1.1+ | 2006 08 22 | 644 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.4+ | 0.3+ | 2004 02 03 | 608 | 0.3− | 0.1− | 2006 08 22 | 644 | 0.4− | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2004 02 03 | 608 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.2+ |
| 2000 03 04 | 691 | 0.2+ | 1.1− | 2004 02 03 | 608 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 1.2+ | 0.5+ |
| 2000 03 04 | 691 | 0.4+ | 0.3− | 2004 02 13 | 699 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.6− | 0.6− |
| 2000 03 04 | 691 | 0.3+ | 0.3− | 2004 02 13 | 699 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.4− |
| 2000 03 11 | 704 | 0.1− | 0.9+ | 2004 02 13 | 333 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.8+ | 0.5+ |
| 2000 03 11 | 704 | 0.1+ | 0.5+ | 2004 02 13 | 699 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.8+ | 0.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.7− | 2004 02 13 | 333 | 0.1− | 0.6+ | 2006 09 26 | 703 | (5.7− | 0.7+) |
| 2000 03 11 | 699 | (1.2+ | 2.4−) | 2004 02 13 | 699 | 0.6+ | 0.7− | 2006 09 26 | 703 | (1.4− | 3.0+) |
| 2000 03 11 | 704 | 0.2+ | 0.7+ | 2004 02 13 | 333 | 0.2− | 0.1− | 2006 10 02 | 703 | 0.5+ | 0.5− |
| 2000 03 11 | 704 | 0.7+ | 0.8+ | 2004 02 18 | 608 | 0.2− | 0.4− | 2006 10 02 | 703 | 0.0 | 0.2+ |
| 2000 03 11 | 699 | 0.0 | 0.9+ | 2004 02 18 | 608 | 0.2+ | 0.6− | 2006 10 02 | 703 | 0.4− | 0.2− |
| 2000 03 11 | 699 | 0.7+ | 0.5+ | 2004 02 18 | 608 | 0.2+ | 0.4− | 2006 10 02 | 703 | 0.2+ | 0.5+ |
| 2000 03 11 | 699 | 1.2+ | 1.0+ | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2002 08 25 | 644 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 08 25 | 644 | 0.5− | 0.1− | 2004 02 26 | 704 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2002 08 25 | 644 | 0.1+ | 0.2+ | 2004 02 26 | 704 | 0.9− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.6− | 0.3− |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2004 03 15 | 703 | 1.3− | 0.5− | 2006 10 21 | 703 | 1.1− | 0.6+ |
| 2002 09 30 | 608 | 0.4− | 0.4+ | 2004 03 15 | 703 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.5− | 1.4+ |
| 2002 09 30 | 608 | 0.1+ | 0.2− | 2004 03 15 | 703 | 0.8− | 0.2− | 2006 10 28 | 703 | 1.8+ | 2.0− |
| 2002 10 16 | 644 | 0.4+ | 0.1− | 2004 03 15 | 703 | (2.0− | 0.3−) | 2006 10 28 | 703 | 0.3+ | 1.0− |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2004 03 18 | 704 | 1.2− | 0.5+ | 2006 10 28 | 703 | 0.5+ | 1.2− |
| 2002 10 16 | 644 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 1.3+ | 0.7− |

**(138121)∗ 2000 EK$_8$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.41854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27255278 | $\omega$ | 159.52440 | | −0.92910335 | −0.36981991 | |
| $a$ | 2.3559657 | $\Omega$ | 358.77083 | | +0.33641147 | −0.84467986 | |
| $e$ | 0.1186269 | $i$ | 1.16503 | | +0.15360430 | −0.38697436 | |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 809 | 1.2+ | 1.0+ | 2000 03 06 | 704 | 0.9+ | 0.4+ | 2004 04 26 | 704 | 0.0 | 1.1+ |
| 1993 04 17 | 691 | 0.9− | 0.7− | 2000 03 06 | 704 | 0.2+ | 0.1− | 2004 04 26 | 704 | 0.5− | 1.1+ |
| 1993 04 17 | 691 | 0.3− | 1.3− | 2000 03 06 | 704 | 0.2+ | 0.4+ | 2005 08 08 | 807 | 0.0 | 0.1+ |
| 1993 04 17 | 691 | 0.4− | 0.5− | 2000 03 11 | 691 | 0.2− | 0.1+ | 2005 08 08 | 807 | 0.1+ | 0.2+ |
| 1998 10 20 | 691 | 0.0 | 0.4− | 2000 03 11 | 691 | 0.6− | 0.1− | 2005 08 09 | 807 | 0.4+ | 0.3+ |
| 1998 10 20 | 691 | 0.5− | 0.3+ | 2000 03 11 | 691 | 0.2− | 0.1− | 2005 08 28 | 691 | 0.0 | 0.5+ |
| 1998 10 20 | 691 | 0.1+ | 0.5− | 2004 04 24 | 691 | 0.0 | 0.2+ | 2005 08 28 | 691 | 0.2− | 0.5+ |
| 2000 02 05 | 695 | 0.2+ | 0.8+ | 2004 04 24 | 704 | 0.2+ | 0.3+ | 2005 08 28 | 691 | 0.2+ | 0.6+ |
| 2000 02 05 | 691 | 0.0 | 0.3− | 2004 04 24 | 704 | 0.1+ | 1.0+ | 2006 11 15 | G96 | 0.3+ | 1.2+ |
| 2000 02 05 | 691 | 0.2+ | 0.1+ | 2004 04 24 | 704 | 0.4+ | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.4+ |
| 2000 02 05 | 691 | 0.2+ | 0.1+ | 2004 04 24 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4+ |
| 2000 02 05 | 695 | 0.5+ | 0.6+ | 2004 04 24 | 704 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.5− | 0.1− |
| 2000 02 06 | 704 | 0.7+ | 0.1+ | 2004 04 24 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.4+ |
| 2000 02 06 | 704 | 0.5+ | 0.4− | 2004 04 25 | 704 | 0.1− | 1.3+ | 2006 12 01 | G96 | 0.2+ | 0.4+ |
| 2000 02 06 | 704 | 0.4+ | 1.1+ | 2004 04 25 | 704 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2000 02 06 | 695 | 0.5+ | 0.4+ | 2004 04 25 | 704 | (0.4− | 1.7+) | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2000 02 06 | 695 | 0.3− | 0.5+ | 2004 04 25 | 704 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2000 03 03 | 704 | 0.6+ | 0.9+ | 2004 04 25 | 291 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.9+ | 0.9+ | 2004 04 25 | 291 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.3+ | 0.6+ | 2004 04 25 | 291 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 1.2− | 0.7− |
| 2000 03 03 | 704 | 1.3+ | 0.9− | 2004 04 26 | 704 | 0.0 | 1.3+ | | | | |
| 2000 03 06 | 704 | 0.6+ | 0.0 | 2004 04 26 | 704 | (0.5− | 1.7+) | | | | |

**(138122)∗ 2000 ER$_{10}$ = 2000 CP$_{110}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 1670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.09641 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18989362 | $\omega$ | 355.33460 | | −0.81894274 | −0.57387029 | |
| $a$ | 2.9977527 | $\Omega$ | 149.64445 | | +0.52667262 | −0.75322489 | |
| $e$ | 0.1770979 | $i$ | 0.27008 | | +0.22792265 | −0.32144230 | |
| $P$ | 5.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.9− | 0.4− | 2000 03 04 | 704 | 1.9+ | 0.1+ | 2005 01 06 | 704 | 0.2+ | 0.2+ |
| 1998 10 13 | 691 | 0.0 | 0.1+ | 2000 03 04 | 704 | 0.3− | 0.1− | 2005 01 11 | 704 | 0.5+ | 0.6− |
| 1998 10 13 | 691 | 0.5− | 0.2− | 2000 03 04 | 704 | 0.6+ | 0.2+ | 2005 01 11 | 704 | 1.3+ | 0.8− |
| 1998 10 19 | 691 | 0.4+ | 0.3− | 2000 03 05 | 704 | 0.1+ | 0.6+ | 2005 01 11 | 704 | 1.7+ | 0.1+ |
| 1998 10 19 | 691 | 0.0 | 0.1− | 2000 03 05 | 704 | 0.2− | 0.8+ | 2005 01 11 | 704 | 0.9+ | 0.5− |
| 1998 10 19 | 691 | 0.3+ | 0.1− | 2000 03 05 | 704 | 0.4− | 0.8+ | 2005 01 13 | 185 | 0.3+ | 0.3+ |
| 1998 10 27 | 691 | 0.4+ | 0.0 | 2000 03 09 | 691 | 0.3− | 0.3− | 2005 01 14 | 185 | 0.0 | 0.2+ |
| 1998 10 27 | 691 | 0.1− | 0.4+ | 2000 03 09 | 691 | 0.2+ | 1.0− | 2005 01 14 | 185 | 0.1+ | 0.2− |
| 1998 10 27 | 691 | 0.4+ | 0.6− | 2000 03 09 | 691 | 0.3− | 0.3− | 2005 01 14 | 185 | 0.9− | 0.1+ |
| 2000 02 06 | 704 | 0.3− | 0.2− | 2000 03 10 | 691 | 0.0 | 0.2− | 2005 01 17 | 704 | 1.4− | 0.3− |
| 2000 02 06 | 704 | 0.3− | 0.6+ | 2000 03 10 | 691 | 0.1+ | 0.2− | 2005 01 17 | 704 | 0.6− | 0.3− |
| 2000 02 06 | 704 | 0.9+ | 0.1+ | 2000 03 10 | 691 | 0.1− | 0.3− | 2005 01 17 | 704 | 0.7− | 0.1− |
| 2000 02 06 | 704 | 1.0+ | 0.2− | 2000 03 11 | 691 | 0.2+ | 0.0 | 2005 01 17 | 704 | 0.8− | 0.5− |
| 2000 02 06 | 704 | 0.3+ | 0.8− | 2000 03 11 | 691 | 0.1− | 0.2+ | 2005 01 17 | 704 | 0.9− | 1.0− |
| 2000 02 11 | 691 | 0.5− | 0.2+ | 2000 03 11 | 691 | 0.2− | 0.0 | 2005 02 02 | 704 | 0.3+ | 0.5+ |
| 2000 02 11 | 691 | 0.4− | 0.1+ | 2003 10 16 | 691 | 0.2+ | 0.4+ | 2005 02 02 | 704 | 0.8+ | 0.3− |
| 2000 02 11 | 691 | 0.4− | 0.0 | 2003 10 16 | 691 | 0.1− | 0.3+ | 2005 02 02 | 704 | 0.5+ | 0.2+ |
| 2000 02 25 | 703 | 0.6+ | 0.7+ | 2003 10 16 | 691 | 0.1− | 0.2+ | 2005 02 02 | 704 | 0.5+ | 0.8+ |
| 2000 02 25 | 703 | (2.8− | 0.9+) | 2004 12 19 | G96 | 0.2− | 0.3− | 2006 04 25 | G96 | 0.5− | 0.6− |
| 2000 02 25 | 703 | 1.1− | 0.4− | 2004 12 19 | G96 | 0.2− | 0.9+ | 2006 04 25 | G96 | 0.2− | 0.2− |
| 2000 02 25 | 703 | 1.9+ | 0.6+ | 2004 12 19 | G96 | 0.6− | 0.1− | 2006 04 25 | G96 | 0.3− | 0.6− |
| 2000 03 03 | 704 | (2.2+ | 0.8−) | 2004 12 19 | G96 | 0.2− | 0.3− | 2006 04 25 | G96 | 1.1+ | 0.2− |
| 2000 03 03 | 704 | 0.6+ | 0.3+ | 2004 12 20 | G96 | 0.2− | 0.2− | 2006 05 20 | G96 | 0.3− | 0.3+ |
| 2000 03 03 | 704 | 1.1+ | 0.7+ | 2004 12 20 | G96 | 0.6− | 0.0 | 2006 05 20 | G96 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.1− | 0.3+ | 2004 12 20 | G96 | 0.6− | 0.1− | 2006 05 20 | G96 | 0.4− | 0.0 |
| 2000 03 03 | 704 | 0.6− | 1.6+ | 2004 12 20 | G96 | 0.2+ | 1.5+ | 2006 05 20 | G96 | 0.1+ | 0.2+ |
| 2000 03 04 | 704 | 1.1+ | 0.3+ | 2005 01 06 | 704 | 0.0 | 0.8+ | | | | |
| 2000 03 04 | 704 | 1.1+ | 0.2+ | 2005 01 06 | 704 | 0.1− | 0.4+ | | | | |

**(138123)∗ 2000 ES$_{10}$ = 2004 BJ$_{74}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56113)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.82473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24046510 | $\omega$ | 122.10215 | | −0.22954062 | +0.96286082 | |
| $a$ | 2.5611480 | $\Omega$ | 133.92025 | | −0.94621479 | −0.18654254 | |
| $e$ | 0.0934708 | $i$ | 11.38285 | | −0.22801024 | −0.19519459 | |
| $P$ | 4.10 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.6− | 0.2− | 2003 12 25 | 645 | 0.0 | 0.2− | 2004 02 19 | 608 | 0.2− | 0.0 |
| 2000 02 11 | 704 | 0.7+ | 0.8− | 2003 12 25 | 645 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.7+ | 0.1+ |
| 2000 02 11 | 704 | 0.1+ | 0.0 | 2004 01 24 | 704 | 0.2+ | 0.9+ | 2004 02 23 | 704 | 0.2+ | 0.3− |
| 2000 02 11 | 704 | 0.3+ | 0.3− | 2004 01 24 | 704 | 0.8− | 1.3+ | 2004 02 23 | 704 | 0.3+ | 0.3+ |
| 2000 02 25 | 703 | 0.9− | 1.0+ | 2004 01 24 | 704 | 0.2− | 1.1+ | 2004 02 23 | 704 | 0.6+ | 0.0 |
| 2000 02 25 | 703 | 1.4− | 1.5+ | 2004 01 24 | 704 | 0.0 | 1.0+ | 2004 02 23 | 704 | 1.4+ | 0.3+ |
| 2000 02 25 | 703 | 0.9− | 0.4+ | 2004 01 26 | 699 | 1.0+ | 0.6+ | 2004 02 29 | 691 | 0.1+ | 0.2+ |
| 2000 02 25 | 703 | 0.6− | 0.5+ | 2004 01 26 | 699 | 0.8− | 0.5+ | 2004 02 29 | 691 | (0.6− | 1.7−) |
| 2000 02 28 | 704 | 0.7− | 0.3+ | 2004 01 26 | 699 | 0.4− | 0.2− | 2004 02 29 | 691 | 0.1+ | 0.2+ |
| 2000 02 28 | 704 | 0.8− | 0.8+ | 2004 01 26 | 699 | 0.5− | 0.5+ | 2005 07 05 | 704 | 0.8+ | 1.1+ |
| 2000 02 28 | 704 | 0.8+ | 0.8+ | 2004 01 30 | 704 | (1.7+ | 0.9+) | 2005 07 05 | 704 | 0.5+ | 0.6+ |
| 2000 03 04 | 704 | 0.8− | 0.1+ | 2004 01 30 | 704 | 0.7+ | 0.1+ | 2005 07 05 | 704 | 0.5− | 0.3− |
| 2000 03 04 | 704 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.1+ | 0.7+ | 2005 07 05 | 704 | 0.0 | 1.1+ |
| 2000 03 04 | 704 | 0.7− | 0.3− | 2004 01 30 | 704 | 0.2− | 0.2− | 2005 07 05 | 704 | 0.4− | 1.1+ |
| 2000 03 04 | 704 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.5− | 0.7+ | 2006 09 26 | 703 | 0.2− | 1.1+ |
| 2000 03 04 | 704 | 0.2− | 1.3− | 2004 02 10 | 703 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.6+ | 0.1+ |
| 2000 03 05 | 704 | 0.3− | 0.1+ | 2004 02 10 | 703 | (0.0 | 1.9+) | 2006 09 26 | 703 | 0.2− | 0.6+ |
| 2000 03 05 | 704 | 0.7+ | 0.0 | 2004 02 10 | 703 | (2.3− | 1.6+) | 2006 09 26 | 703 | 0.5− | 0.7+ |
| 2000 03 05 | 704 | 0.3− | 0.3− | 2004 02 10 | 703 | 1.0− | 0.1+ | 2006 09 29 | 699 | 1.0+ | 0.2− |
| 2000 03 05 | 704 | 0.5− | 0.8− | 2004 02 11 | 699 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.1− | 0.5− |
| 2000 03 05 | 704 | 0.1− | 0.8− | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 09 29 | 699 | 1.2− | 0.8+ |
| 2000 03 05 | 704 | 0.3+ | 1.8+ | 2004 02 11 | 699 | 0.1− | 0.7− | 2006 09 29 | 699 | 0.1− | 1.2+ |
| 2000 03 05 | 704 | 0.5+ | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 10 28 | 703 | 1.0− | 1.1+ |
| 2000 03 05 | 704 | 0.0 | 1.3+ | 2004 02 11 | 699 | 0.4− | 0.8+ | 2006 10 28 | 703 | 0.9− | 0.7+ |
| 2000 03 08 | 608 | 0.9+ | 1.0− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.7− |
| 2000 03 08 | 608 | 0.6+ | 1.0− | 2004 02 11 | 699 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.7− | 0.1− |
| 2000 03 08 | 608 | 0.6+ | 1.5− | 2004 02 14 | 608 | 0.3+ | 0.3− | 2006 10 31 | 568 | 0.0 | 0.3+ |
| 2000 03 11 | 699 | 0.9+ | 1.7+ | 2004 02 14 | 608 | 0.2+ | 1.3− | 2006 10 31 | 568 | 0.1− | 0.3+ |
| 2000 03 11 | 699 | 0.0 | 0.9+ | 2004 02 14 | 608 | 0.6+ | 0.1+ | 2006 10 31 | 568 | 0.0 | 0.1+ |
| 2000 03 11 | 699 | 0.7+ | 0.1− | 2004 02 16 | 704 | 1.3− | 1.2− | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2000 03 11 | 699 | 0.7+ | 0.5+ | 2004 02 16 | 704 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 10 30 | 704 | 0.4+ | 0.7+ | 2004 02 16 | 704 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 10 30 | 704 | 0.2+ | 1.2+ | 2004 02 16 | 704 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.8+ | 1.0− |
| 2002 10 30 | 704 | (0.1− | 1.6+) | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.7+ |
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2004 02 19 | 608 | 0.3+ | 0.5− | 2006 11 16 | 703 | 0.8− | 0.3+ |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2004 02 19 | 608 | 0.5+ | 0.1+ | 2006 11 16 | 703 | 1.1+ | 0.4+ |

**(138124)∗ 2000 EG$_{11}$ = 2002 TH$_{150}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37382)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.95563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24016590 | $\omega$ | 298.12634 | | −0.82708926 | −0.56151845 | |
| $a$ | 2.5632747 | $\Omega$ | 207.73456 | | +0.53264360 | −0.76886683 | |
| $e$ | 0.1271061 | $i$ | 3.06801 | | +0.17948302 | −0.30584444 | |
| $P$ | 4.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.0 | 0.5+ | 2002 10 06 | 644 | 0.3− | 0.4− | 2004 03 10 | 644 | 0.1+ | 0.2+ |
| 2000 02 06 | 704 | 0.3+ | 0.4+ | 2004 01 26 | 699 | 0.7− | 0.0 | 2004 03 10 | 644 | 0.0 | 0.5+ |
| 2000 02 06 | 704 | 0.1+ | 0.5+ | 2004 01 26 | 699 | 0.3− | 1.3− | 2004 03 10 | 644 | 0.1− | 0.1+ |
| 2000 03 04 | 704 | 1.5+ | 1.1+ | 2004 01 26 | 699 | 0.6− | 0.0 | 2006 08 21 | 691 | 0.0 | 0.2+ |
| 2000 03 04 | 704 | 0.1+ | 1.6+ | 2004 01 26 | 699 | 0.8− | 0.8− | 2006 08 21 | 691 | 0.2+ | 0.1+ |
| 2000 03 04 | 704 | 0.0 | 0.9+ | 2004 01 29 | 704 | (1.4+ | 1.8−) | 2006 08 21 | 691 | 0.1− | 0.3− |
| 2000 03 05 | 704 | 0.3+ | 0.4+ | 2004 01 29 | 704 | 1.3+ | 0.5− | 2006 09 16 | 691 | 0.2− | 0.1− |
| 2000 03 05 | 704 | 0.2− | 0.5− | 2004 01 29 | 704 | 0.1− | 0.5− | 2006 09 16 | 691 | 0.5− | 0.5+ |
| 2000 03 05 | 704 | 0.3+ | 1.2+ | 2004 02 11 | 644 | 0.1− | 0.3− | 2006 09 16 | 691 | 0.1+ | 0.1+ |
| 2000 03 05 | 704 | 0.0 | 0.7+ | 2004 02 11 | 644 | 0.2+ | 0.2− | 2006 09 16 | 291 | 0.0 | 0.4+ |
| 2000 03 05 | 704 | 0.0 | 0.1− | 2004 02 11 | 644 | 0.2+ | 0.2− | 2006 09 16 | 291 | 0.2+ | 0.2+ |
| 2002 10 05 | 644 | 0.0 | 0.1− | 2004 02 17 | 704 | 0.1− | 0.2− | 2006 09 16 | 291 | 0.4− | 0.7+ |
| 2002 10 05 | 644 | 0.4+ | 0.0 | 2004 02 17 | 704 | 0.5− | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2002 10 05 | 644 | 0.4+ | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2002 10 06 | 644 | 0.2− | 0.2− | 2004 02 17 | 704 | 0.6− | 0.5− | 2006 10 20 | G96 | 0.0 | 0.6− |
| 2002 10 06 | 644 | 0.2− | 0.1− | 2004 02 17 | 704 | 0.3+ | 0.9+ | 2006 10 20 | G96 | 0.5+ | 0.4− |

**(138125)**∗ **2000 EE$_{12}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.59188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25820162 | $\omega$ | 342.39272 | | +0.55630192 | −0.82216529 | |
| $a$ | 2.4424747 | $\Omega$ | 73.64769 | | +0.77674698 | +0.46285860 | |
| $e$ | 0.1107859 | $i$ | 7.22726 | | +0.29528343 | +0.33137011 | |
| $P$ | 3.82 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 1.1− | 0.2+ | 2002 12 02 | 608 | 0.1− | 0.3− | 2006 10 22 | 683 | 0.7+ | 0.1+ |
| 2000 02 03 | 704 | 0.4+ | 0.3− | 2003 01 02 | 704 | 0.6− | 0.4+ | 2006 10 23 | 683 | (0.6− | 1.7−) |
| 2000 02 03 | 704 | 0.1+ | 0.5− | 2003 01 02 | 704 | 0.3+ | 0.9+ | 2006 10 23 | 683 | (0.0 | 2.1−) |
| 2000 02 03 | 704 | 0.3+ | 0.2+ | 2003 01 02 | 704 | 0.4− | 0.4+ | 2006 10 23 | 683 | (1.1− | 1.6−) |
| 2000 02 03 | 704 | 0.1+ | 0.0 | 2004 02 02 | 699 | 0.6− | 0.4+ | 2006 10 27 | 704 | 1.0− | 0.1− |
| 2000 03 04 | 704 | 0.4− | 0.2+ | 2004 02 02 | 699 | 0.8+ | 0.3+ | 2006 10 27 | 704 | 0.4+ | 0.2+ |
| 2000 03 04 | 704 | 0.6− | 0.8− | 2004 02 02 | 699 | 0.5+ | 1.0− | 2006 10 27 | 704 | (0.9− | 1.7−) |
| 2000 03 04 | 704 | 0.2+ | 0.9− | 2004 02 02 | 699 | 0.0 | 1.0− | 2006 10 27 | 704 | (2.7− | 0.7+) |
| 2000 03 04 | 704 | 0.1+ | 0.6− | 2004 02 17 | 704 | 0.4− | 0.1+ | 2006 10 28 | 683 | 0.3+ | 0.5− |
| 2000 03 04 | 704 | 0.6+ | 1.1− | 2004 02 17 | 704 | 0.0 | 0.1− | 2006 10 28 | 683 | 0.9+ | 0.7− |
| 2000 03 06 | 704 | 1.6+ | 0.4+ | 2004 02 17 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 683 | 0.6+ | 0.1+ |
| 2000 03 06 | 704 | 0.6− | 0.4+ | 2004 02 17 | 704 | 0.0 | 0.0 | 2006 10 31 | 683 | 0.9− | 0.9− |
| 2000 03 06 | 704 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.1− | 0.3+ | 2006 10 31 | 683 | (1.3− | 2.6−) |
| 2000 03 09 | 704 | 0.3+ | 0.0 | 2004 03 15 | 704 | 0.6+ | 0.9+ | 2006 10 31 | 683 | 0.3− | 0.9− |
| 2000 03 09 | 704 | 0.3+ | 0.4− | 2004 03 15 | 704 | (0.6+ | 2.4+) | 2006 11 02 | 703 | 0.4− | 0.7− |
| 2000 03 09 | 704 | 0.1− | 0.7+ | 2004 03 15 | 704 | 1.4+ | 0.6+ | 2006 11 02 | 703 | 0.3− | 0.2+ |
| 2000 03 09 | 704 | 0.6− | 0.2− | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.5− |
| 2000 03 09 | 704 | 0.7− | 0.7+ | 2004 03 15 | 704 | 0.6+ | 0.6+ | 2006 11 02 | 703 | 0.1− | 1.0− |
| 2000 03 11 | 699 | 1.0− | 0.0 | 2004 03 19 | 644 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 03 11 | 699 | 0.8+ | 1.0+ | 2004 03 19 | 644 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2000 03 11 | 699 | 0.1+ | 1.3+ | 2004 03 19 | 644 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 03 11 | 699 | 0.6− | 0.1+ | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 683 | 0.7+ | 0.4− |
| 2000 03 12 | 703 | 1.7+ | 0.2− | 2004 03 23 | 704 | 0.1− | 1.3+ | 2006 11 11 | 683 | 0.6+ | 0.0 |
| 2000 03 12 | 703 | 0.5− | 0.6+ | 2004 03 23 | 704 | 0.2− | 0.3− | 2006 11 11 | 683 | 0.4+ | 0.0 |
| 2000 03 12 | 704 | 0.4− | 1.1− | 2004 03 23 | 704 | 0.5− | 0.9+ | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2000 03 12 | 703 | 0.6+ | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2000 03 12 | 703 | 0.5+ | 0.7− | 2004 03 25 | 704 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2000 03 12 | 704 | 0.8+ | 1.2− | 2004 03 25 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | (1.6− | 0.3−) |
| 2000 03 12 | 704 | 1.1− | 0.0 | 2004 03 25 | 704 | 0.3− | 0.1+ | 2006 11 13 | 683 | 0.1+ | 1.0− |
| 2000 03 12 | 704 | 0.4− | 1.4+ | 2004 03 25 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 683 | 0.3− | 1.2− |
| 2002 09 09 | 608 | 0.7+ | 0.3+ | 2004 03 25 | 704 | 1.1+ | 0.8+ | 2006 11 13 | 683 | 0.8− | 0.5− |
| 2002 09 09 | 608 | 0.1− | 0.4− | 2004 03 26 | 704 | 0.5+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.4+ |
| 2002 09 09 | 608 | 0.2+ | 0.2− | 2004 03 26 | 704 | 0.6+ | 0.7+ | 2006 11 14 | 683 | 0.6+ | 0.3− |
| 2002 09 16 | 608 | 0.3− | 0.3+ | 2004 03 26 | 704 | 0.1− | 1.1+ | 2006 11 14 | 704 | 0.1+ | 0.0 |
| 2002 09 16 | 608 | 0.0 | 0.8+ | 2004 03 26 | 704 | 0.1− | 0.1− | 2006 11 14 | 683 | 0.9+ | 0.3+ |
| 2002 09 16 | 608 | 0.4− | 0.2+ | 2004 03 27 | 691 | 0.4− | 0.1− | 2006 11 14 | 704 | 0.2− | 0.9+ |
| 2002 09 21 | 608 | (2.2− | 0.3−) | 2004 03 27 | 691 | 0.2− | 0.2− | 2006 11 14 | 683 | (2.8− | 1.2−) |
| 2002 09 21 | 608 | (1.7− | 0.0 ) | 2004 03 27 | 691 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2002 09 21 | 608 | 1.4− | 0.7− | 2004 04 14 | 291 | 0.3+ | 0.0 | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 2002 09 29 | 608 | 1.1− | 0.1− | 2004 04 14 | 291 | 0.2+ | 0.0 | 2006 11 15 | 683 | 0.1+ | 0.1+ |
| 2002 09 29 | 608 | 0.8− | 0.1− | 2004 04 14 | 291 | 0.2+ | 0.1+ | 2006 11 15 | 683 | 0.2+ | 0.7− |
| 2002 09 29 | 608 | 0.9− | 0.0 | 2006 09 16 | 683 | 0.1+ | 0.7+ | 2006 11 15 | 683 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 683 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 1.3+ |
| 2002 10 04 | 704 | 0.1− | 0.4+ | 2006 09 16 | 683 | (0.2− | 1.9+) | 2006 11 17 | 704 | 0.2+ | 1.4+ |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2006 09 17 | 683 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 683 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.8− | 0.6+ |
| 2002 10 04 | 704 | 0.2− | 0.5+ | 2006 09 17 | 683 | (1.6+ | 1.2+) | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 10 15 | 644 | 0.3− | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 10 15 | 644 | 0.2− | 0.8+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.8+ |
| 2002 10 15 | 644 | 0.1− | 0.8+ | 2006 09 18 | 703 | 1.0+ | 0.8− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 10 30 | 704 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.6+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2002 10 30 | 704 | 0.5+ | 1.2+ | 2006 10 16 | 683 | 1.1− | 0.9− | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2002 10 30 | 704 | 0.1− | 0.7+ | 2006 10 16 | 683 | 0.6− | 0.7− | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2002 10 30 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 683 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2002 10 30 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.6− |
| 2002 11 03 | 608 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2002 11 03 | 608 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.7+ | 0.2− |
| 2002 11 03 | 608 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.8+ | 0.7+ |
| 2002 11 06 | 644 | 0.5− | 0.9+ | 2006 10 19 | 683 | 1.3+ | 0.7− | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2002 11 06 | 644 | 0.2− | 0.9+ | 2006 10 19 | 683 | 1.1+ | 0.5− | 2006 11 20 | 704 | 0.7+ | 0.5+ |
| 2002 11 06 | 644 | 0.2− | 0.9+ | 2006 10 20 | 683 | 1.1+ | 0.9+ | 2006 11 20 | 704 | 0.3+ | 0.9+ |
| 2002 11 07 | 704 | (1.6+ | 0.2−) | 2006 10 20 | 683 | 0.9+ | 0.7− | 2006 11 22 | 683 | 0.3− | 0.9− |
| 2002 11 07 | 704 | 0.3− | 0.3− | 2006 10 20 | 683 | 0.7+ | 0.1+ | 2006 11 22 | 683 | 0.4− | 0.7− |
| 2002 11 07 | 704 | 0.5− | 0.0 | 2006 10 21 | 683 | 0.8+ | 0.5− | 2006 11 22 | 683 | 0.7− | 0.5− |
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 23 | 683 | (2.0+ | 1.0−) |
| 2002 11 07 | 704 | 1.1+ | 0.5− | 2006 10 21 | 683 | 0.5+ | 0.6− | 2006 11 23 | 683 | (1.7+ | 1.1−) |
| 2002 11 11 | 704 | 0.7− | 0.4− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 23 | 683 | 1.2+ | 0.5− |
| 2002 11 11 | 704 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 28 | 683 | 0.7− | 1.0− |
| 2002 11 11 | 704 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1− | 2006 11 28 | 683 | 0.6− | 0.0 |
| 2002 11 11 | 704 | 0.9− | 1.0+ | 2006 10 21 | 683 | 0.5+ | 0.5+ | 2006 11 28 | 683 | 1.4− | 0.2− |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2006 10 22 | 704 | 0.7− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.2+ |
| 2002 11 20 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 704 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.6+ |
| 2002 11 20 | 644 | 0.0 | 0.6+ | 2006 10 22 | 704 | 0.9− | 0.7+ | 2006 11 28 | 704 | 0.0 | 0.0 |
| 2002 11 20 | 644 | 0.1− | 0.9+ | 2006 10 22 | 704 | (1.8− | 0.0 ) | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2002 12 02 | 608 | 0.0 | 0.5− | 2006 10 22 | 704 | 0.7− | 0.0 | 2006 11 28 | 704 | 0.4− | 0.1− |
| 2002 12 02 | 608 | 0.1+ | 0.4− | 2006 10 22 | 683 | 0.6+ | 1.3− | | | | |

**(138126)**∗ **2000 EC$_{13}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.00275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23993232 | $\omega$ | 66.38712 | | −0.96452272 | +0.13275690 | |
| $a$ | 2.5649380 | $\Omega$ | 120.52976 | | −0.19178940 | −0.94634432 | |
| $e$ | 0.0623225 | $i$ | 15.36213 | | +0.18141871 | −0.29463205 | |
| $P$ | 4.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.2− | 0.3− | 2000 05 04 | 699 | 0.3− | 0.2+ | 2004 01 24 | 704 | 0.4+ | 0.2+ |
| 2000 01 07 | 704 | 0.9− | 0.1− | 2002 09 15 | 699 | 1.2− | 0.5− | 2004 01 24 | 704 | 0.7+ | 0.0 |
| 2000 01 07 | 704 | 0.5+ | 0.1+ | 2002 09 15 | 699 | 0.1+ | 0.4+ | 2004 01 28 | 703 | (0.5− | 1.8+) |
| 2000 01 07 | 704 | 0.1− | 0.2+ | 2002 09 15 | 699 | 0.6+ | 0.6− | 2004 01 28 | 703 | 0.9+ | 0.6+ |
| 2000 02 03 | 704 | 0.9+ | 0.3− | 2002 09 15 | 699 | 0.2+ | 0.1− | 2004 01 28 | 703 | (2.5+ | 0.5−) |
| 2000 02 03 | 704 | 1.0+ | 0.6− | 2002 11 05 | 644 | 0.3− | 0.1− | 2004 01 28 | 703 | 0.6− | 0.1− |
| 2000 02 03 | 704 | 0.7+ | 0.3− | 2002 11 05 | 644 | 0.4− | 0.1+ | 2004 01 30 | 704 | 0.1− | 0.4+ |
| 2000 02 03 | 704 | 0.5+ | 1.3− | 2002 11 05 | 644 | 0.5− | 0.1+ | 2004 01 30 | 704 | 0.4+ | 0.3− |
| 2000 02 06 | 703 | 1.3− | 1.3+ | 2003 12 22 | 704 | 0.7+ | 0.4− | 2004 01 30 | 704 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 703 | 0.1− | 0.1+ | 2003 12 22 | 704 | 1.4+ | 0.4− | 2004 01 30 | 704 | 0.2− | 0.2+ | | |
| 2000 02 06 | 703 | 1.0− | 0.5+ | 2003 12 22 | 704 | 1.2+ | 0.1+ | 2004 01 30 | 704 | 0.4+ | 0.6+ | | |
| 2000 02 06 | 703 | 1.5− | 1.2+ | 2003 12 22 | 704 | 0.7+ | 0.2− | 2004 02 11 | 644 | 0.3− | 0.1− | | |
| 2000 03 04 | 704 | 0.9− | 0.7+ | 2003 12 22 | 704 | 0.8+ | 0.3− | 2004 02 11 | 644 | 0.2− | 0.0 | | |
| 2000 03 04 | 704 | 0.4+ | 1.0+ | 2003 12 27 | 704 | 0.2+ | 0.6− | 2004 02 11 | 644 | 0.2− | 0.1− | | |
| 2000 03 04 | 704 | 0.5+ | 1.2+ | 2003 12 27 | 704 | 1.1+ | 0.5− | 2004 02 13 | 691 | 0.4− | 0.1− | | |
| 2000 03 04 | 704 | 0.4+ | 1.2+ | 2003 12 27 | 704 | 0.6+ | 0.1− | 2004 02 13 | 691 | 0.5− | 0.2− | | |
| 2000 03 04 | 704 | 0.2− | 0.1+ | 2003 12 27 | 704 | 0.6+ | 0.3− | 2004 02 13 | 691 | 0.3− | 0.1− | | |
| 2000 03 06 | 704 | 0.1+ | 0.8+ | 2003 12 27 | 704 | 0.6+ | 0.0 | 2004 02 15 | 704 | (1.9− | 0.1+) | | |
| 2000 03 06 | 704 | 0.2+ | 0.2− | 2004 01 05 | 703 | 0.1+ | 0.8− | 2004 02 15 | 704 | 1.3− | 0.2+ | | |
| 2000 03 06 | 704 | 0.1− | 0.2− | 2004 01 05 | 703 | 0.4+ | 0.1− | 2004 02 15 | 704 | (1.8− | 0.0 ) | | |
| 2000 03 06 | 704 | 0.7+ | 0.1− | 2004 01 05 | 703 | 0.5+ | 0.3+ | 2004 02 15 | 704 | 0.4+ | 0.1− | | |
| 2000 03 09 | 704 | 1.0+ | 0.2− | 2004 01 05 | 703 | 0.9+ | 0.7− | 2004 02 15 | 704 | 0.4+ | 0.1− | | |
| 2000 03 09 | 704 | 0.3+ | 0.4+ | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2004 03 14 | 704 | 0.7+ | 1.0− | | |
| 2000 03 09 | 704 | 0.5+ | 0.7− | 2004 01 18 | 644 | 0.2+ | 0.2+ | 2004 03 14 | 704 | 0.3− | 1.5− | | |
| 2000 03 09 | 704 | 0.4+ | 0.8− | 2004 01 18 | 644 | 0.2+ | 0.3+ | 2004 03 14 | 704 | 0.1+ | 1.4− | | |
| 2000 03 09 | 704 | 0.2− | 0.9− | 2004 01 19 | 703 | 0.3− | 0.0 | 2004 03 14 | 704 | 0.1+ | 0.7− | | |
| 2000 03 12 | 704 | 0.9+ | 0.7+ | 2004 01 19 | 703 | 0.6− | 0.5− | 2004 04 16 | 645 | 0.2− | 0.1− | | |
| 2000 03 12 | 704 | 0.2+ | 0.2− | 2004 01 19 | 703 | 0.4− | 0.2− | 2004 04 16 | 645 | 0.2− | 0.1− | | |
| 2000 03 12 | 704 | 0.5+ | 0.1+ | 2004 01 19 | 703 | 0.8− | 0.4− | 2006 09 24 | 699 | 0.4+ | 0.5+ | | |
| 2000 03 12 | 704 | 0.1+ | 0.5− | 2004 01 23 | 704 | 0.1+ | 0.9+ | 2006 09 24 | 699 | 0.4− | 0.2− | | |
| 2000 03 12 | 704 | 0.4− | 0.2− | 2004 01 23 | 704 | 0.0 | 0.5+ | 2006 09 24 | 699 | 1.3− | 0.4− | | |
| 2000 03 28 | 704 | 0.7+ | 0.1+ | 2004 01 23 | 704 | 0.0 | 0.7+ | 2006 09 24 | 699 | 0.7− | 1.3+ | | |
| 2000 03 28 | 704 | 0.0 | 1.0+ | 2004 01 23 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 0.6− | 1.0+ | | |
| 2000 03 28 | 704 | 0.8− | 1.0+ | 2004 01 23 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 703 | 0.4+ | 1.1− | | |
| 2000 04 02 | 704 | 0.3+ | 0.7+ | 2004 01 24 | 704 | 0.4+ | 0.4− | 2006 09 25 | 703 | 0.2+ | 1.3+ | | |
| 2000 04 02 | 704 | 0.0 | 1.3+ | 2004 01 24 | 704 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.0 | 0.5+ | | |
| 2000 04 02 | 704 | 0.2+ | 1.6+ | 2004 01 24 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.9+ | 1.0+ | | |
| 2000 04 02 | 704 | 0.1+ | 1.4+ | 2004 01 24 | 704 | 0.8+ | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.0 | | |
| 2000 05 04 | 699 | 0.2+ | 0.6+ | 2004 01 24 | 704 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.2− | | |
| 2000 05 04 | 699 | 0.7− | 1.0+ | 2004 01 24 | 704 | 0.8+ | 0.3− | 2006 10 21 | 703 | 0.0 | 0.5+ | | |
| 2000 05 04 | 699 | 0.5− | 0.9+ | 2004 01 24 | 704 | 0.2+ | 0.2+ | | | | | | |

**(138127)∗ 2000 EE$_{14}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 234.65172 | | (2000.0) | | | |
| $n$ | 1.83048644 | $\omega$ | 197.79902 | | +0.98063897 | +0.07051120 |
| $a$ | 0.6618482 | $\Omega$ | 155.80369 | | −0.07484821 | +0.99705094 |
| $e$ | 0.5329145 | $i$ | 26.47013 | | −0.18095568 | −0.03029165 |
| $P$ | 0.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 1.2− | 0.1− | 2000 03 07 | 557 | 0.5+ | 0.2− | 2001 02 26 | 046 | 0.9+ | 0.4+ | | |
| 2000 03 04 | 704 | 1.6− | 0.1+ | 2000 03 08 | 151 | 0.2+ | 0.3− | 2001 02 26 | 046 | (1.7− | 1.0−) | | |
| 2000 03 04 | 704 | 1.7− | 0.1+ | 2000 03 08 | 151 | 0.4− | 0.4− | 2001 02 26 | 046 | 0.3− | 1.1− | | |
| 2000 03 04 | 704 | 2.0− | 0.5+ | 2000 03 08 | 151 | 0.1+ | 0.2+ | 2001 02 26 | 046 | 0.1+ | 0.0 | | |
| 2000 03 04 | 704 | (2.4− | 1.0+) | 2000 03 08 | 151 | 0.1+ | 0.4+ | 2001 02 26 | 587 | 0.2− | 0.2+ | | |
| 2000 03 05 | 946 | 0.2+ | 0.9− | 2000 03 08 | 151 | 0.2− | 0.1− | 2001 02 26 | 587 | 0.9− | 1.1− | | |
| 2000 03 05 | 946 | 0.2+ | 1.1− | 2000 03 08 | 151 | 0.7+ | 0.6+ | 2001 02 26 | 587 | 1.1− | 0.7− | | |
| 2000 03 05 | 946 | 0.2− | 1.3− | 2000 03 08 | 355 | 0.2+ | 0.2− | 2001 02 26 | 587 | (1.6− | 0.6−) | | |
| 2000 03 05 | 946 | 0.3− | 1.3− | 2000 03 08 | 355 | 0.2+ | 0.1+ | 2001 02 26 | 859 | 0.6− | 0.5+ | | |
| 2000 03 05 | 557 | 0.2+ | 0.2+ | 2000 03 08 | 355 | 0.1+ | 0.4− | 2001 02 26 | 859 | 0.1− | 0.6− | | |
| 2000 03 05 | 557 | 0.3+ | 0.2+ | 2000 03 11 | 670 | 0.2− | 0.2− | 2001 02 26 | 859 | (2.1− | 3.1−) | | |
| 2000 03 05 | 557 | 0.6− | 0.3− | 2000 03 11 | 670 | 0.3− | 0.1− | 2001 03 06 | 118 | 0.2− | 0.5+ | | |
| 2000 03 05 | 557 | 0.9+ | 1.3+ | 2000 03 12 | 670 | 1.2+ | 0.2+ | 2001 03 06 | 118 | 0.0 | 0.6+ | | |
| 2000 03 05 | 649 | 0.3− | 0.0 | 2000 03 12 | 670 | 0.3+ | 0.5+ | 2001 03 06 | 118 | 0.3+ | 0.1− | | |
| 2000 03 05 | 649 | 0.0 | 0.4+ | 2000 03 12 | 151 | 0.0 | 0.4− | 2001 03 06 | 113 | 0.4+ | 0.8+ | | |
| 2000 03 05 | 649 | 0.6+ | 0.5− | 2000 03 12 | 151 | 0.5− | 0.5+ | 2001 03 06 | 113 | 0.5+ | 0.3+ | | |
| 2000 03 05 | 649 | 0.0 | 1.3+ | 2000 03 12 | 151 | 0.1+ | 0.7− | 2001 03 06 | 113 | 0.0 | 0.5+ | | |
| 2000 03 05 | 739 | 0.1+ | 0.8+ | 2000 03 12 | 151 | 0.3+ | 0.1− | 2001 03 06 | 113 | 0.2− | 0.2+ | | |
| 2000 03 05 | 739 | 0.1− | 0.1− | 2000 03 12 | 151 | 0.1− | 0.5+ | 2001 03 06 | 113 | 0.1− | 0.4+ | | |
| 2000 03 05 | 649 | 0.3+ | 0.1− | 2000 03 12 | 151 | 0.2− | 0.3+ | 2001 03 10 | 118 | 0.6− | 0.3+ | | |
| 2000 03 05 | 739 | 0.1+ | 0.3− | 2000 03 13 | 104 | 0.4+ | 0.4− | 2001 03 10 | 118 | 0.4− | 0.0 | | |
| 2000 03 05 | 704 | 0.3+ | 0.2− | 2000 03 13 | 104 | 0.3+ | 0.4− | 2001 03 10 | 118 | 0.5+ | 1.4+ | | |
| 2000 03 05 | 704 | 0.2− | 0.0 | 2000 03 13 | 104 | 0.5+ | 0.1− | 2001 03 14 | 205 | 0.8− | 0.2− | | |
| 2000 03 05 | 649 | 0.0 | 1.1+ | 2000 03 13 | 104 | 0.3+ | 0.1− | 2001 03 14 | 205 | 0.6+ | 0.2+ | | |
| 2000 03 05 | 704 | 0.1+ | 0.1− | 2000 03 13 | 587 | 0.3+ | 0.1+ | 2001 03 14 | 205 | (1.7+ | 0.7−) | | |
| 2000 03 05 | 704 | 0.1+ | 0.0 | 2000 03 13 | 587 | 0.2− | 0.4+ | 2001 03 14 | 205 | 0.9− | 0.8+ | | |
| 2000 03 05 | 704 | 0.2+ | 0.1− | 2000 03 18 | 540 | 0.7+ | 0.6+ | 2001 03 15 | 704 | 0.6+ | 0.4− | | |
| 2000 03 05 | 704 | (2.2− | 0.5−) | 2000 03 18 | 540 | 0.5+ | 0.0 | 2001 03 15 | 704 | 0.4+ | 0.5+ | | |
| 2000 03 05 | 704 | 0.1− | 0.1+ | 2000 03 18 | 540 | 0.2+ | 0.0 | 2001 03 15 | 704 | 0.4+ | 0.0 | | |
| 2000 03 05 | 704 | 0.3+ | 0.0 | 2000 03 18 | 540 | 0.1+ | 0.0 | 2001 03 15 | 704 | 0.3+ | 0.3+ | | |
| 2000 03 06 | 143 | 0.5− | 0.7+ | 2000 03 21 | 151 | 0.7+ | 0.5+ | 2001 03 15 | 704 | 0.7+ | 0.1+ | | |
| 2000 03 06 | 143 | 0.3− | 0.6+ | 2000 03 21 | 151 | 0.0 | 0.1+ | 2001 03 16 | 118 | 0.5+ | 0.1+ | | |
| 2000 03 06 | 143 | 0.1− | 0.2+ | 2000 03 21 | 151 | 0.0 | 0.9+ | 2001 03 16 | 118 | 0.3+ | 0.1− | | |
| 2000 03 06 | 143 | 0.4− | 0.3+ | 2000 03 21 | 151 | 0.4+ | 0.4− | 2001 03 16 | 118 | 0.4+ | 0.0 | | |
| 2000 03 06 | 587 | 0.7+ | 1.2+ | 2000 03 21 | 151 | 0.4− | 0.5+ | 2001 03 18 | 360 | 0.0 | 0.5− | | |
| 2000 03 06 | 587 | 1.3+ | 0.1+ | 2000 03 21 | 151 | 0.3+ | 0.3− | 2001 03 18 | 360 | 0.1+ | 0.5− | | |
| 2000 03 06 | 587 | 1.1+ | 0.5+ | 2000 03 22 | 151 | 0.6− | 0.3+ | 2001 03 18 | 360 | 0.1− | 0.8− | | |
| 2000 03 07 | 611 | 0.2+ | 0.0 | 2000 03 22 | 151 | 0.9+ | 0.8+ | 2001 03 22 | 205 | 0.9− | 0.8− | | |
| 2000 03 07 | 046 | 0.6− | 0.4+ | 2000 03 22 | 151 | 0.6− | 0.0 | 2001 03 22 | 205 | (1.2+ | 2.1−) | | |
| 2000 03 07 | 611 | 0.2+ | 0.1+ | 2000 03 22 | 151 | 0.2− | 0.5+ | 2001 03 22 | 205 | 0.1− | 0.8+ | | |
| 2000 03 07 | 046 | 0.4− | 0.4− | 2000 03 22 | 151 | 0.6− | 0.9+ | 2001 03 22 | 205 | 1.1+ | 0.5− | | |
| 2000 03 07 | 046 | 0.2+ | 0.1− | 2000 03 24 | 704 | 0.3+ | 0.2+ | 2001 04 04 | 118 | 0.4+ | 0.0 | | |
| 2000 03 07 | 611 | 0.3+ | 0.0 | 2000 03 24 | 704 | 0.5− | 0.1− | 2001 04 04 | 118 | 0.3− | 0.4+ | | |
| 2000 03 07 | 046 | 0.2+ | 0.2− | 2000 03 24 | 704 | 0.5− | 0.0 | 2001 05 02 | 658 | 0.8+ | 0.8+ | | |
| 2000 03 07 | 611 | 0.2+ | 0.0 | 2000 03 24 | 704 | 0.4− | 0.5+ | 2001 05 02 | 658 | 0.5+ | 0.5+ | | |
| 2000 03 07 | 046 | 0.1+ | 0.4− | 2000 03 24 | 704 | 0.2− | 0.8+ | 2001 05 02 | 658 | 0.6+ | 0.1+ | | |
| 2000 03 07 | 611 | 0.3+ | 0.1+ | 2000 03 25 | 704 | 0.7+ | 0.1+ | 2002 03 29 | 185 | 0.1+ | 0.4+ | | |
| 2000 03 07 | 541 | 0.4− | 1.1− | 2000 03 25 | 704 | 0.4+ | 0.2− | 2002 03 29 | 185 | 0.7− | 0.7+ | | |
| 2000 03 07 | 541 | 0.2− | 0.9− | 2000 03 25 | 704 | 0.5+ | 0.2+ | 2002 03 29 | 185 | 0.9− | 0.3− | | |
| 2000 03 07 | 541 | 0.1+ | 1.0− | 2000 03 25 | 704 | 0.3+ | 0.1− | 2002 03 29 | 185 | 1.0− | 0.9− | | |
| 2000 03 07 | 541 | 0.1− | 0.6− | 2000 03 25 | 704 | 0.9+ | 0.0 | 2002 03 29 | 185 | 1.2− | 0.2− | | |
| 2000 03 07 | 541 | 0.1− | 0.7− | 2000 04 09 | 046 | 0.2+ | 0.1− | 2003 04 28 | 926 | (2.5+ | 0.8+) | | |
| 2000 03 07 | 541 | 0.1− | 0.6− | 2000 04 09 | 046 | 0.3− | 0.4− | 2003 04 28 | 926 | 0.8− | 0.2+ | | |
| 2000 03 07 | 541 | 0.1− | 0.6− | 2000 04 09 | 046 | 0.4+ | 0.0 | 2005 01 15 | 703 | 0.1− | 0.2+ | | |
| 2000 03 07 | 541 | 0.2− | 0.6− | 2000 04 09 | 046 | 0.1− | 0.3− | 2005 01 15 | 703 | 1.0− | 0.5+ | | |
| 2000 03 07 | 541 | 0.1+ | 0.4− | 2000 04 09 | 046 | 0.1+ | 0.5− | 2005 01 15 | 703 | 0.1− | 0.3+ | | |
| 2000 03 07 | 541 | 0.0 | 0.6− | 2001 02 25 | 046 | 1.3+ | 0.1+ | 2005 01 15 | 703 | 0.1− | 0.0 | | |
| 2000 03 07 | 541 | 0.1− | 0.6− | 2001 02 25 | 046 | 0.6− | 0.2− | 2006 02 10 | 704 | 0.0 | 0.7+ | | |
| 2000 03 07 | 557 | 0.2+ | 0.2+ | 2001 02 25 | 046 | 1.1+ | 1.1+ | 2006 02 10 | 704 | 0.6− | 0.8+ | | |
| 2000 03 07 | 557 | 0.4+ | 0.1− | 2001 02 25 | 046 | 0.6− | 0.3− | 2006 02 10 | 704 | 0.0 | 0.2+ | | |
| 2000 03 07 | 557 | 0.5+ | 0.3+ | 2001 02 25 | 046 | (0.3− | 1.8−) | | | | | | |
| 2000 03 07 | 557 | 0.6+ | 0.1− | 2001 02 25 | 046 | 1.1− | 0.3− | | | | | | |

**(138128)∗ 2000 ES$_{14}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 151.04844 | | (2000.0) | | | |
| $n$ | 0.23017242 | $\omega$ | 174.56885 | | −0.79777028 | +0.58465922 |
| $a$ | 2.6369417 | $\Omega$ | 42.36637 | | −0.56111713 | −0.63037176 |
| $e$ | 0.2202394 | $i$ | 12.63764 | | −0.22070374 | −0.51069074 |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 31 | 704 | 0.7− | 1.0− | 2000 04 02 | 704 | 0.3+ | 0.8+ | 2005 05 13 | E12 | 0.0 | 0.7− | | |
| 2000 01 31 | 704 | 0.5− | 0.9− | 2003 12 29 | 703 | 0.9+ | 0.2+ | 2005 05 13 | E12 | 0.1+ | 0.1− | | |
| 2000 01 31 | 704 | 0.2− | 0.6+ | 2003 12 29 | 703 | 0.0 | 0.3− | 2005 05 13 | E12 | 0.3− | 0.3+ | | |
| 2000 03 03 | 704 | 0.3− | 0.2− | 2003 12 29 | 703 | 0.4+ | 0.5+ | 2005 08 05 | E12 | (3.2+ | 0.6+) | | |
| 2000 03 03 | 704 | 0.8− | 0.3+ | 2003 12 29 | 703 | 0.5+ | 0.3− | 2005 08 05 | E12 | 0.0 | 0.0 | | |
| 2000 03 03 | 704 | 0.5− | 0.7− | 2003 12 29 | 704 | 0.7− | 0.2+ | 2005 08 05 | E12 | 0.5+ | 0.5+ | | |
| 2000 03 03 | 704 | 0.3− | 0.7− | 2003 12 29 | 704 | 0.7− | 0.0 | 2005 08 05 | E12 | 0.4− | 0.4+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.1− | 2003 12 29 | 704 | 0.8− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.1+ | | |
| 2000 03 04 | 704 | 1.6− | 0.1− | 2003 12 29 | 704 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.5+ | 0.1+ | | |
| 2000 03 04 | 704 | 0.4− | 0.6+ | 2003 12 30 | 704 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.0 | | |
| 2000 03 04 | 704 | 0.2+ | 0.0 | 2003 12 30 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.4− | 0.2+ | | |
| 2000 03 04 | 704 | 0.5+ | 0.0 | 2003 12 30 | 704 | 0.1+ | 0.7+ | 2006 10 22 | G96 | 0.7− | 0.0 | | |
| 2000 03 11 | 699 | 1.6+ | 0.0 | 2003 12 30 | 704 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.3+ | | |
| 2000 03 11 | 699 | 0.4+ | 0.5+ | 2004 01 19 | 704 | 0.8+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.1+ | | |
| 2000 03 11 | 699 | 0.1− | 0.7+ | 2004 01 19 | 704 | 0.6+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.2+ | | |
| 2000 03 11 | 699 | 0.7+ | 0.4− | 2004 01 19 | 704 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 704 | 0.5+ | 0.4− | 2004 01 19 | 704 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.2+ | | |
| 2000 04 02 | 704 | 0.6+ | 0.4+ | 2004 01 19 | 704 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2000 04 02 | 704 | 0.4+ | 1.3+ | 2005 05 13 | E12 | 0.0 | 0.8+ | 2006 11 23 | G96 | 0.2+ | 0.0 | | |

**(138129)∗ 2000 EH$_{17}$ = 1998 SF$_{8}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 39485)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.91775 | | (2000.0) | | | |
| $n$ | 0.25359126 | $\omega$ | 287.71912 | | −0.50895594 | −0.86062979 |
| $a$ | 2.4719890 | $\Omega$ | 192.91500 | | +0.81542288 | −0.47580923 |
| $e$ | 0.1480190 | $i$ | 4.29520 | | +0.27577052 | −0.18144403 |
| $P$ | 3.89 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 20 | 691 | 0.4+ | 0.1− | 2004 03 24 | 699 | 0.7− | 1.0+ | 2004 04 23 | 691 | 0.0 | 0.1− |
| 1998 09 20 | 691 | 0.2− | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2005 07 11 | G96 | 0.6+ | 0.7+ |
| 1998 09 20 | 691 | 0.1+ | 1.2+ | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2005 07 11 | G96 | 0.3+ | 0.7+ |
| 1998 09 21 | 691 | 0.5+ | 0.0 | 2004 03 27 | 704 | 0.4+ | 1.1+ | 2005 07 11 | G96 | 0.4+ | 0.6+ |
| 1998 09 21 | 691 | 0.1− | 0.5+ | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2005 07 11 | G96 | 0.0 | 0.7+ |
| 1998 09 21 | 691 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.7+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.1+ |
| 1998 09 27 | 691 | 1.1− | 0.8+ | 2004 03 28 | 704 | 0.6+ | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.0 |
| 1998 09 27 | 691 | 1.2− | 0.7+ | 2004 03 28 | 704 | 0.2− | 1.0+ | 2006 07 21 | G96 | 0.1− | 0.7+ |
| 1998 09 27 | 691 | 0.9− | 0.5+ | 2004 03 28 | 704 | 0.6+ | 0.9+ | 2006 07 21 | G96 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.0 |
| 2000 03 03 | 704 | 0.4+ | 0.3+ | 2004 03 28 | 704 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2000 03 03 | 704 | 0.3− | 0.7+ | 2004 03 29 | 704 | 0.6− | 0.5+ | 2006 09 30 | G96 | 0.4− | 0.0 |
| 2000 03 05 | 608 | 0.6− | 1.1− | 2004 03 29 | 704 | 0.9− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2000 03 05 | 608 | 0.3− | 0.7− | 2004 03 29 | 704 | 0.6− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1+ |
| 2000 03 05 | 608 | 0.0 | 0.9− | 2004 03 29 | 704 | 1.2− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.3+ |
| 2000 03 08 | 704 | 1.9+ | 0.9+ | 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.1+ |
| 2000 03 08 | 704 | 1.0+ | 0.5− | 2004 03 29 | 704 | 1.1− | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.7+ |
| 2000 03 08 | 704 | 0.1− | 0.4− | 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2000 03 11 | 704 | 0.2− | 0.1+ | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.6− |
| 2000 03 11 | 704 | 0.2− | 0.6+ | 2004 03 30 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2000 03 11 | 704 | 0.4− | 0.3+ | 2004 03 30 | 704 | 0.8+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.2+ | 0.6+ | 2004 03 30 | 704 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2000 03 11 | 704 | 0.0 | 0.4+ | 2004 03 30 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.4+ |
| 2000 04 05 | 704 | 1.6+ | 0.6− | 2004 03 30 | 704 | 0.1− | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.9− |
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2000 04 05 | 704 | 0.1− | 0.2+ | 2004 03 31 | 704 | (1.9− | 0.3+) | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2000 04 05 | 704 | 0.1− | 0.2+ | 2004 03 31 | 704 | 0.4− | 0.4+ | 2006 10 23 | 683 | 0.1− | 0.2− |
| 2000 04 05 | 704 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 0.4− | 0.1+ | 2006 10 23 | 683 | 0.9− | 1.4− |
| 2000 04 06 | 704 | 0.2− | 0.8− | 2004 04 11 | 703 | 0.5+ | 0.2+ | 2006 10 23 | 683 | (0.7+ | 2.0−) |
| 2000 04 06 | 704 | 0.1+ | 0.5− | 2004 04 11 | 703 | 0.8+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2000 04 06 | 704 | 0.4− | 1.3+ | 2004 04 11 | 703 | 0.5+ | 0.1− | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.7+ | 0.2+ | 2004 04 11 | 703 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.9+ | 1.7+ | 2004 04 12 | 699 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2000 04 10 | 695 | 0.0 | 0.3+ | 2004 04 12 | 699 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.7+ | 0.1− |
| 2000 04 10 | 695 | 0.1− | 0.2+ | 2004 04 12 | 699 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.8+ | 0.7+ | 2004 04 12 | 699 | 0.7− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 10 02 | 704 | 1.1+ | 0.9+ | 2004 04 21 | 704 | 0.6+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | 0.4+ | 0.9+ | 2004 04 21 | 704 | 0.5+ | 0.5+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 10 02 | 704 | 1.0+ | 0.5+ | 2004 04 21 | 704 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2004 03 18 | 704 | 1.1+ | 0.3+ | 2004 04 21 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.6+ | 1.1+ | 2004 04 22 | 704 | 0.6+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2004 03 18 | 704 | 0.8+ | 1.0+ | 2004 04 22 | 704 | 0.3+ | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 03 18 | 704 | 0.9+ | 0.7+ | 2004 04 22 | 704 | 0.4+ | 0.8+ | 2006 11 17 | 703 | 1.5− | 0.1+ |
| 2004 03 18 | 704 | 0.1− | 0.8+ | 2004 04 22 | 704 | 0.1− | 0.9+ | 2006 11 17 | 703 | 1.5− | 0.9+ |
| 2004 03 24 | 699 | 0.1− | 1.0− | 2004 04 22 | 704 | 0.6+ | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.8+ |
| 2004 03 24 | 699 | 0.3− | 0.2+ | 2004 04 23 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2004 03 24 | 699 | 0.3− | 1.0+ | 2004 04 23 | 691 | 0.2+ | 0.0 | | | | |

**(138130)∗ 2000 EO$_{18}$ = 1992 DW$_{11}$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 39486)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 197.99127 | | (2000.0) | | | |
| $n$ | 0.24349854 | $\omega$ | 114.39066 | | −0.99834257 | +0.03910019 |
| $a$ | 2.5398329 | $\Omega$ | 67.87299 | | −0.05308068 | −0.90912952 |
| $e$ | 0.0397351 | $i$ | 2.61282 | | +0.02223872 | −0.41467421 |
| $P$ | 4.05 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 18 | 691 | 0.1− | 0.2− | 2004 01 19 | 703 | 0.6+ | 1.2+ | 2004 04 22 | 704 | 0.4+ | 1.0+ |
| 1990 11 18 | 691 | 0.2+ | 0.2− | 2004 01 19 | 703 | 0.8+ | 0.0 | 2004 04 22 | 704 | 1.0+ | 0.5+ |
| 1990 11 18 | 691 | 0.1− | 0.3− | 2004 01 22 | 704 | 0.4+ | 0.1+ | 2004 04 22 | 704 | 0.4+ | 0.3+ |
| 1992 02 29 | 809 | 0.1− | 1.2− | 2004 01 22 | 704 | 0.3+ | 0.0 | 2004 04 22 | 704 | 0.7+ | 1.2− |
| 1992 03 03 | 809 | 1.0− | 0.7+ | 2004 01 22 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.7− |
| 2000 02 02 | 703 | 0.7− | 0.2− | 2004 01 22 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 1.1+ |
| 2000 02 02 | 703 | 1.1+ | 0.3+ | 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.7+ |
| 2000 02 02 | 703 | 1.0+ | 0.1+ | 2004 01 23 | 699 | 0.3+ | 1.1− | 2006 09 18 | 699 | 1.5− | 1.1+ |
| 2000 02 02 | 703 | 0.0 | 0.2− | 2004 01 23 | 699 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.2− | 0.9− | 2004 01 23 | 699 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.6+ | 0.3− | 2004 01 23 | 699 | 0.2+ | 0.9− | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2000 02 11 | 704 | 0.3+ | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.1+ |
| 2000 02 11 | 704 | 0.1+ | 0.5+ | 2004 01 30 | 704 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.6+ | 1.0− |
| 2000 02 11 | 704 | 1.4− | 0.8− | 2004 01 30 | 704 | 1.2+ | 1.0− | 2006 09 20 | 704 | 0.6+ | 0.6+ |
| 2000 02 25 | 703 | 0.8− | 0.9+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.3− | 0.1− |
| 2000 02 25 | 703 | 0.2+ | 0.4+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.2− |
| 2000 02 25 | 703 | 0.3+ | 0.8+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.3− | 0.4+ |
| 2000 02 25 | 703 | 0.0 | 0.8+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2000 03 05 | 704 | 0.6+ | 0.2− | 2004 02 13 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2000 03 05 | 704 | 0.9+ | 0.2− | 2004 02 13 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2000 03 05 | 704 | 0.8− | 0.6− | 2004 02 15 | 608 | 0.7+ | 1.1− | 2006 09 30 | 703 | 0.3− | 0.8+ |
| 2000 03 05 | 704 | 0.6+ | 0.2+ | 2004 02 15 | 608 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.8+ | 1.0+ |
| 2000 03 05 | 704 | 1.7− | 0.1+ | 2004 02 15 | 608 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2000 03 08 | 704 | 0.3+ | 0.5+ | 2004 02 15 | 049 | 0.3+ | 0.2+ | 2006 09 30 | 703 | (0.4+ | 1.8+) |
| 2000 03 08 | 704 | 0.5+ | 0.4− | 2004 02 15 | 049 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.5− | 1.1+ |
| 2000 03 08 | 704 | 0.8− | 0.0 | 2004 02 15 | 049 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.5− | 0.9+ |
| 2000 03 08 | 704 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2000 03 08 | 704 | 0.1− | 0.2− | 2004 02 16 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.8+ |
| 2000 03 09 | 704 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.5+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2000 03 09 | 704 | 0.4+ | 0.3− | 2004 02 16 | 704 | 0.4+ | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2000 03 09 | 704 | 0.5+ | 0.8− | 2004 02 16 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.2− |
| 2000 03 09 | 704 | 0.3+ | 0.3− | 2004 02 18 | 704 | (0.6+ | 1.5+) | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2000 03 09 | 704 | 0.9+ | 0.5− | 2004 02 18 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2000 03 12 | 704 | 0.5− | 0.2+ | 2004 02 18 | 704 | 1.0+ | 1.1+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2000 03 12 | 704 | 0.5− | 0.5+ | 2004 02 18 | 704 | 0.3+ | 0.7+ | 2006 10 19 | 644 | 0.4+ | 0.5+ |
| 2000 03 12 | 704 | 0.3− | 0.5− | 2004 02 18 | 704 | 0.0 | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2000 03 12 | 704 | 0.4+ | 0.5− | 2004 02 19 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2004 02 19 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2004 02 19 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2004 02 19 | 704 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2004 02 19 | 704 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2004 02 20 | 608 | 0.8− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 07 | 704 | 0.0 | 0.4− | 2004 02 20 | 608 | 0.3− | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 10 07 | 704 | 1.3+ | 0.3− | 2004 02 20 | 608 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 07 | 704 | 0.4+ | 0.9+ | 2004 02 23 | 704 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2002 10 07 | 704 | 0.5+ | 0.3− | 2004 02 23 | 704 | 0.4− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.1+ | 0.8+ | 2004 02 23 | 704 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 10 29 | G96 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.5− | 0.0 | 2004 02 23 | 704 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.3− | 0.3− |
| 2002 10 11 | 704 | 0.1+ | 0.2+ | 2004 02 27 | 608 | 0.2+ | 0.6+ | 2006 10 29 | G96 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 1.5− | 0.3− | 2004 02 27 | 608 | 0.0 | 0.5+ | 2006 10 29 | G96 | 0.2− | 0.3− |
| 2002 10 30 | 644 | 0.0 | 0.4+ | 2004 02 27 | 608 | 0.3− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 10 30 | 644 | 0.1− | 0.0 | 2004 03 10 | 644 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2002 10 30 | 644 | 0.1− | 0.2+ | 2004 03 10 | 644 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 1.1+ | 0.1+ | 2004 03 10 | 644 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.5− | 0.4− |
| 2002 11 06 | 704 | 1.4+ | 0.9+ | 2004 03 14 | 703 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2002 11 06 | 704 | 0.5+ | 0.2+ | 2004 03 14 | 703 | 0.9− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 11 06 | 704 | 0.4+ | 0.4− | 2004 03 14 | 703 | (6.4− | 0.2+) | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 11 22 | 644 | 0.6+ | 0.3+ | 2004 03 14 | 703 | (2.8− | 0.6−) | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 11 22 | 644 | 0.5+ | 0.8+ | 2004 03 19 | 704 | (0.3+ | 1.8+) | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2002 11 22 | 644 | 0.6+ | 0.6+ | 2004 03 19 | 704 | (0.0 | 1.9+) | 2006 11 11 | 703 | 0.5+ | 0.5+ |
| 2003 12 21 | 645 | 0.2− | 0.3− | 2004 03 19 | 704 | 0.2− | 1.2+ | 2006 11 11 | 703 | 1.2+ | 0.1+ |
| 2003 12 21 | 645 | 0.2− | 0.2− | 2004 03 19 | 704 | (0.1+ | 2.2+) | 2006 11 11 | 703 | 1.0+ | 0.5+ |
| 2003 12 22 | 704 | 0.2− | 0.8− | 2004 03 19 | 704 | (0.3− | 2.2+) | 2006 11 11 | 703 | 0.7+ | 0.8+ |
| 2003 12 22 | 704 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.1− | 1.0− |
| 2003 12 22 | 704 | 0.3+ | 0.8+ | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.4+ |
| 2003 12 22 | 704 | 0.2+ | 0.0 | 2004 04 19 | 704 | 0.4− | 0.5− | 2006 11 17 | 703 | 1.3− | 0.1+ |
| 2004 01 19 | 703 | 0.5− | 0.4− | 2004 04 19 | 704 | 0.6− | 0.0 | 2006 11 17 | 703 | (0.6− | 1.6+) |
| 2004 01 19 | 703 | 0.1− | 0.0 | 2004 04 19 | 704 | 0.0 | 0.0 | | | | |

**(138131)∗ 2000 ES$_{20}$ = 1996 BC$_3$**

Discovered 2000 Mar. 3 by the Catalina Sky Survey.

Id. M. E. Sansaturio (*MPO* 2395)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 306.33679 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25672835 | $\omega$ | 248.85065 | | | +0.39189743 | | −0.91990127 | |
| $a$ | 2.4518101 | $\Omega$ | 177.91236 | | | +0.91998838 | | +0.39174063 | |
| $e$ | 0.3397914 | $i$ | 22.72653 | | | +0.00614656 | | +0.01791463 | |
| $P$ | 3.84 | $H$ | 16.4 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 26 | 413 | (1.5− | 3.7+) | 2004 02 16 | 703 | 0.0 | 1.3+ | 2004 03 28 | 704 | 0.5+ | 1.1− |
| 1996 01 26 | 413 | 1.1− | 0.7+ | 2004 02 16 | 703 | 0.9− | 1.5+ | 2004 03 28 | 704 | 0.2+ | 0.5− |
| 1996 01 27 | 413 | 0.3+ | 0.6+ | 2004 03 15 | 691 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.6− | 0.8+ |
| 1996 01 27 | 413 | 0.3+ | 0.6+ | 2004 03 15 | 703 | 0.4+ | 0.9− | 2004 04 13 | 691 | 0.1− | 0.1+ |
| 1996 01 27 | 413 | 0.4+ | 0.8+ | 2004 03 15 | 703 | 1.2+ | 1.2+ | 2004 04 13 | 691 | 0.0 | 0.2+ |
| 1996 01 28 | 413 | 0.1− | 0.7+ | 2004 03 15 | 691 | 0.1− | 0.1+ | 2004 04 13 | 691 | 0.1− | 0.3+ |
| 2000 03 03 | 703 | 0.2− | 0.4+ | 2004 03 15 | 703 | 0.5+ | 0.4− | 2004 04 19 | 704 | 0.1+ | 0.1+ |
| 2000 03 03 | 703 | 0.3− | 0.3+ | 2004 03 15 | 703 | 0.5+ | 0.4− | 2004 04 19 | 704 | 0.4− | 0.7+ |
| 2000 03 03 | 703 | 0.3− | 0.6+ | 2004 03 15 | 691 | 0.2− | 0.1+ | 2004 04 19 | 704 | 0.1+ | 1.0− |
| 2000 03 03 | 703 | 0.3+ | 0.4+ | 2004 03 16 | 704 | 0.4+ | 0.2+ | 2004 04 19 | 704 | 0.7+ | 0.3− |
| 2000 03 04 | 703 | 0.9− | 0.2+ | 2004 03 16 | 704 | 0.4− | 0.8− | 2006 08 27 | 691 | 0.0 | 0.1− |
| 2000 03 04 | 703 | 0.1− | 0.7+ | 2004 03 16 | 704 | 0.2+ | 1.1+ | 2006 08 27 | 691 | 0.1+ | 0.1− |
| 2000 03 04 | 703 | 1.0− | 1.3+ | 2004 03 16 | 704 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.2− |
| 2000 03 04 | 703 | 1.1+ | 0.6− | 2004 03 18 | 704 | 0.9+ | 0.6+ | 2006 08 30 | 699 | 0.6− | 1.2+ |
| 2000 03 04 | 645 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 08 30 | 699 | 0.4− | 0.2− |
| 2000 03 04 | 645 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 699 | 0.5− | 0.3− |
| 2000 03 08 | 704 | 0.5+ | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.3− | 0.0 |
| 2000 03 08 | 704 | 0.5+ | 0.8− | 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 09 11 | 703 | 0.3− | 0.5+ |
| 2000 03 08 | 704 | 0.3+ | 1.4− | 2004 03 27 | 291 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.3− | 0.1+ |
| 2000 03 08 | 704 | 0.4+ | 0.3− | 2004 03 27 | 291 | 0.1− | 0.0 | 2006 09 11 | 703 | 0.0 | 0.1− |
| 2000 03 27 | 699 | 0.8+ | 0.6+ | 2004 03 27 | 291 | 0.1− | 0.0 | 2006 09 11 | 703 | 0.8+ | 0.4+ |
| 2000 03 27 | 699 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2000 03 27 | 699 | 1.2+ | 0.3+ | 2004 03 27 | 704 | 0.6− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2000 03 27 | 699 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2004 02 16 | 703 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2004 02 16 | 703 | 0.1− | 0.6+ | 2004 03 27 | 704 | 0.9− | 0.1− | | | | |

**(138132)∗ 2000 EZ$_{20}$ = 2001 OG$_{69}$**

Discovered 2000 Mar. 3 by the Catalina Sky Survey.

Id. M. E. Sansaturio (*MPO* 15702)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 143.11562 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23151838 | $\omega$ | 279.38286 | | | −0.68493034 | | +0.70760962 | |
| $a$ | 2.6267117 | $\Omega$ | 305.90746 | | | −0.55554459 | | −0.66140676 | |
| $e$ | 0.1257229 | $i$ | 12.38084 | | | −0.47142405 | | −0.24865585 | |
| $P$ | 4.26 | $H$ | 15.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 1.0+ | 0.4+ | 2001 08 19 | 704 | 0.3+ | 0.4− | 2004 01 30 | 704 | 0.0 | 0.1+ |
| 2000 02 08 | 704 | 0.6− | 0.5+ | 2001 08 19 | 704 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.2− | 0.1+ |
| 2000 02 08 | 704 | 0.0 | 1.6− | 2001 08 19 | 704 | 1.2+ | 0.5+ | 2004 01 30 | 704 | 0.0 | 0.4− |
| 2000 02 08 | 704 | 0.3− | 0.8− | 2001 08 24 | 704 | 0.3+ | 0.1− | 2004 01 30 | 704 | 0.2− | 0.0 |
| 2000 03 03 | 703 | 0.2− | 1.2+ | 2001 08 24 | 704 | 0.8+ | 0.1− | 2004 01 30 | 704 | 0.4− | 0.7+ |
| 2000 03 03 | 703 | 0.0 | 0.1− | 2001 08 24 | 704 | 0.8+ | 0.1− | 2004 02 16 | 704 | 0.1− | 1.3− |
| 2000 03 03 | 703 | 0.2+ | 0.5+ | 2001 08 24 | 704 | 0.1+ | 0.3− | 2004 02 16 | 704 | 0.0 | 0.5+ |
| 2000 03 03 | 703 | 0.7+ | 0.3+ | 2002 10 06 | 704 | 0.7+ | 0.2+ | 2004 02 16 | 704 | 0.3+ | 0.0 |
| 2000 03 04 | 703 | 0.6+ | 0.2− | 2002 10 06 | 704 | 1.0+ | 0.5+ | 2004 02 16 | 704 | 0.0 | 0.2− |
| 2000 03 04 | 703 | 0.8+ | 0.7+ | 2002 10 06 | 704 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 0.2− | 0.9− |
| 2000 03 04 | 703 | 0.3− | 0.8+ | 2002 10 06 | 704 | 0.0 | 0.4− | 2004 02 22 | 704 | 0.6+ | 0.2+ |
| 2000 03 04 | 703 | 1.3+ | 0.2+ | 2002 10 06 | 704 | 0.2− | 1.0+ | 2004 02 22 | 704 | 0.7+ | 0.1− |
| 2000 03 08 | 704 | 1.3+ | 0.9+ | 2002 10 31 | 704 | 0.9− | 0.2− | 2004 02 22 | 704 | 0.1+ | 0.3+ |
| 2000 03 08 | 704 | 0.1− | 0.6− | 2002 10 31 | 704 | 0.8− | 0.3− | 2004 03 01 | 703 | 0.7− | 0.6+ |
| 2000 03 08 | 704 | 0.8− | 1.5+ | 2002 10 31 | 704 | (0.4− | 1.7−) | 2004 03 01 | 703 | 0.9− | 0.2− |
| 2000 03 08 | 704 | 0.7− | 0.3− | 2002 10 31 | 704 | 0.4+ | 1.2− | 2004 03 01 | 703 | 0.0 | 0.2+ |
| 2000 04 04 | 699 | 0.6− | 0.3+ | 2003 11 20 | 704 | (0.6+ | 2.0+) | 2004 03 01 | 703 | 0.1+ | 0.7+ |
| 2000 04 04 | 699 | 0.0 | 0.0 | 2003 11 20 | 704 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.5+ | 0.3+ |
| 2000 04 04 | 699 | 0.1− | 0.1+ | 2003 11 20 | 704 | 0.5− | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.0 |
| 2000 04 04 | 699 | 0.4− | 0.8+ | 2003 12 21 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 703 | 0.3− | 0.1+ |
| 2001 07 16 | 699 | (3.0− | 2.8+) | 2003 12 21 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 0.4+ |
| 2001 07 16 | 699 | 1.1− | 1.5+ | 2003 12 21 | 704 | 0.1+ | 0.5− | 2006 09 22 | 699 | 0.6+ | 0.6+ |
| 2001 07 16 | 699 | 0.3− | 0.6+ | 2003 12 21 | 704 | 0.4− | 1.0+ | 2006 09 22 | 699 | 0.4+ | 0.5− |
| 2001 07 16 | 699 | (1.9− | 0.4+) | 2004 01 16 | 644 | 0.1+ | 0.0 | 2006 09 22 | 699 | 0.7− | 1.0+ |
| 2001 07 18 | 608 | 0.4+ | 0.6+ | 2004 01 16 | 644 | 0.3+ | 0.1+ | 2006 09 22 | 699 | 0.7+ | 0.1− |
| 2001 07 18 | 608 | 0.1+ | 1.1+ | 2004 01 16 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 07 18 | 608 | 0.8+ | 0.9+ | 2004 01 20 | 608 | 1.2+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.9+ |
| 2001 07 22 | 704 | 1.0− | 0.0 | 2004 01 20 | 608 | 1.3+ | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 07 22 | 704 | (2.0− | 0.1+) | 2004 01 20 | 608 | 0.9+ | 0.4+ | 2006 10 15 | 104 | 0.1− | 0.8+ |
| 2001 07 22 | 704 | (2.1− | 0.1+) | 2004 01 21 | 704 | 0.1+ | 0.3+ | 2006 10 15 | 104 | 0.1− | 0.4− |
| 2001 07 28 | 608 | (0.5− | 1.5+) | 2004 01 21 | 704 | 0.4+ | 0.1− | 2006 10 15 | 104 | 0.4+ | 0.8− |
| 2001 07 28 | 608 | 0.5− | 0.7+ | 2004 01 21 | 704 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.5+ |
| 2001 07 28 | 608 | 0.8− | 0.2− | 2004 01 21 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 1.1− | 0.1+ |
| 2001 07 30 | 704 | 0.0 | 0.9+ | 2004 01 24 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.2− |
| 2001 07 30 | 704 | 0.0 | 0.5+ | 2004 01 24 | 704 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.7− | 0.4− |
| 2001 07 30 | 704 | 0.2− | 1.0+ | 2004 01 24 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.6+ | 0.1+ |
| 2001 08 07 | 608 | 1.5− | 0.2+ | 2004 01 24 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2001 08 07 | 608 | 0.3− | 0.3− | 2004 01 24 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2001 08 07 | 608 | 0.0 | 0.4− | 2004 01 26 | 699 | 0.4− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2001 08 16 | 704 | (1.8− | 0.4+) | 2004 01 26 | 699 | 0.3+ | 0.3− | 2006 10 22 | 644 | 1.3− | 0.2+ |
| 2001 08 16 | 704 | (1.8− | 0.5+) | 2004 01 26 | 699 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 08 16 | 704 | 1.3− | 0.6− | 2004 01 26 | 699 | 0.4− | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.7− |
| 2001 08 16 | 704 | 0.9− | 1.1+ | 2004 01 28 | 691 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2001 08 16 | 704 | (2.7− | 0.3+) | 2004 01 28 | 691 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2001 08 19 | 704 | 0.7+ | 0.4− | 2004 01 28 | 691 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.0 | 0.2− |

**(138133)∗ 2000 EY$_{21}$ = 1998 QM$_{110}$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 3527)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 17.47210 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.37052265 | $\omega$ | 168.98481 | | | +0.83458099 | | +0.52914439 | |
| $a$ | 1.9198157 | $\Omega$ | 156.97120 | | | −0.53051208 | | +0.84694439 | |
| $e$ | 0.0715258 | $i$ | 23.06092 | | | −0.14843010 | | −0.05187881 | |
| $P$ | 2.66 | $H$ | 16.9 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 02 | 699 | 0.4− | 1.1+ | 2003 06 23 | 645 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.6+ | 0.1+ |
| 1998 08 02 | 699 | 0.2− | 1.2+ | 2003 06 23 | 645 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.2− | 0.3− |
| 1998 08 02 | 699 | 1.1+ | 1.2+ | 2003 06 26 | 645 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.8+ | 0.6+ |
| 1998 08 04 | 699 | 0.6+ | 0.6+ | 2003 06 26 | 645 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.5+ | 0.9+ |
| 1998 08 04 | 699 | 0.6+ | 1.9+ | 2003 07 05 | 608 | 0.5+ | 0.0 | 2006 09 12 | 704 | 0.1+ | 0.4− |
| 1998 08 04 | 699 | 0.4+ | 1.1+ | 2003 07 05 | 608 | 0.3− | 0.2+ | 2006 09 12 | 704 | 0.2− | 0.3− |
| 1998 08 17 | 704 | 0.4− | 1.2+ | 2003 07 05 | 608 | 0.0 | 0.3− | 2006 09 12 | 704 | 0.4+ | 0.7− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.5− | 0.5+ | 2003 07 21 | 644 | 0.4+ | 0.3+ | 2006 09 12 | 704 | 0.5− | 0.1− |
| 1998 08 17 | 704 | 1.9− | 0.4− | 2003 07 21 | 644 | 0.4+ | 0.5+ | 2006 09 12 | 704 | 0.8+ | 0.6− |
| 1998 08 17 | 704 | 0.5+ | 1.4− | 2003 07 21 | 644 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.7+ | 0.5+ |
| 1998 08 17 | 704 | (3.2− | 2.2+) | 2006 08 18 | 699 | 0.3+ | 0.6− | 2006 09 14 | 703 | 0.4− | 0.0 |
| 1998 08 25 | 910 | 0.6+ | 2.0+ | 2006 08 18 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.1− | 0.1− |
| 1998 08 25 | 910 | 0.6+ | 2.0+ | 2006 08 18 | 704 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.2− | 0.3− |
| 1998 08 26 | 910 | 0.6+ | 2.0+ | 2006 08 18 | 699 | 0.2− | 0.1− | 2006 09 16 | 704 | 0.1− | 0.3+ |
| 1998 08 26 | 699 | 0.6+ | 0.6+ | 2006 08 18 | 704 | 0.4+ | 0.4− | 2006 09 16 | 704 | 0.0 | 0.3− |
| 1998 08 26 | 699 | 1.3+ | 0.4− | 2006 08 18 | 699 | 0.2− | 0.4− | 2006 09 16 | 704 | 0.2+ | 0.2+ |
| 1998 08 26 | 699 | 0.3+ | 0.6+ | 2006 08 18 | 704 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.3− | 0.1− |
| 1998 09 01 | 327 | 0.4− | 0.0 | 2006 08 18 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.2+ | 0.1+ |
| 1998 09 01 | 327 | 0.5− | 0.2+ | 2006 08 18 | 699 | 0.7− | 1.1− | 2006 09 18 | 699 | 0.3− | 0.1− |
| 1998 09 01 | 327 | 0.2− | 0.3− | 2006 08 25 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.1+ |
| 1998 09 14 | 327 | 0.0 | 0.1− | 2006 08 25 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.4− |
| 1998 09 14 | 327 | 0.1− | 0.1+ | 2006 08 25 | 704 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.4− |
| 1998 09 14 | 327 | 0.4− | 0.0 | 2006 08 25 | 704 | 0.5− | 0.0 | 2006 09 19 | 704 | 0.0 | 0.1+ |
| 2000 03 05 | 704 | 0.5+ | 0.6+ | 2006 08 25 | 704 | 0.1− | 0.4+ | 2006 09 19 | 704 | 0.9+ | 0.5− |
| 2000 03 05 | 704 | 1.3+ | 1.4+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 19 | 704 | 0.5+ | 0.3− |
| 2000 03 05 | 704 | 0.0 | 0.9+ | 2006 08 27 | 691 | 0.1− | 0.1− | 2006 09 20 | 608 | 0.1− | 0.5+ |
| 2000 03 05 | 704 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 20 | 608 | (2.2− | 1.1+) |
| 2000 03 05 | 704 | 1.0+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.1− | 2006 09 20 | 608 | 0.9− | 1.0+ |
| 2000 03 09 | 704 | 0.9− | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.7− | 2006 09 22 | 704 | 0.2− | 0.5− |
| 2000 03 09 | 704 | 0.6− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 22 | 704 | 0.1+ | 0.1+ |
| 2000 03 09 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.7− | 0.5− |
| 2000 03 12 | 704 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.4+ | 1.2+ |
| 2000 03 12 | 704 | 0.4− | 0.7+ | 2006 08 28 | 699 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.4+ | 0.5− |
| 2000 03 12 | 704 | 0.5− | 1.3+ | 2006 08 28 | 699 | 0.4+ | 0.2− | 2006 09 26 | 704 | 0.7+ | 0.4− |
| 2000 03 12 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.0 | 0.2+ | 2006 09 26 | 704 | (0.1− | 1.7+) |
| 2000 04 08 | 704 | 0.4− | 0.9+ | 2006 08 29 | 704 | 0.6+ | 0.7− | 2006 09 26 | 704 | 1.4− | 0.4+ |
| 2000 04 08 | 704 | 0.6− | 1.0+ | 2006 08 29 | 704 | 1.1+ | 0.8− | 2006 09 26 | 704 | 0.7+ | 1.0− |
| 2000 04 08 | 704 | 0.3+ | 0.9+ | 2006 08 29 | 704 | 0.8+ | 0.3− | 2006 09 26 | 703 | 0.0 | 0.7+ |
| 2000 04 08 | 704 | 0.1+ | 0.9+ | 2006 08 29 | 704 | 0.7+ | 0.2− | 2006 09 26 | 703 | 0.3− | 0.1+ |
| 2003 05 28 | 704 | (1.6+ | 0.3+) | 2006 08 30 | 704 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.8− | 0.8+ |
| 2003 05 28 | 704 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.7− | 0.4+ |
| 2003 05 28 | 645 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.6+ | 2006 10 11 | E12 | 1.6− | 0.4+ |
| 2003 05 28 | 645 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.3− | 0.5+ | 2006 10 11 | E12 | 0.6− | 0.2+ |
| 2003 05 28 | 704 | 0.3+ | 0.8+ | 2006 08 30 | 704 | 0.3− | 0.1− | 2006 10 11 | E12 | 0.6− | 0.7+ |
| 2003 05 28 | 704 | 0.5+ | 0.9+ | 2006 08 31 | 704 | 0.4+ | 0.6− | 2006 10 11 | E12 | 0.1− | 0.3+ |

**(138134)∗ 2000 ET$_{22}$ = 2000 EV$_{204}$ = 2002 RS$_{91}$**

Discovered 2000 Mar. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 15125), G. V. Williams (*MPO* 34913)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.38710 | | (2000.0) | | +0.94044398 | −0.33944367 |
| $n$ | 0.26544727 | $\omega$ | 225.66497 | | +0.32273946 | +0.87439217 |
| $a$ | 2.3978235 | $\Omega$ | 154.16125 | | +0.10679124 | +0.34672227 |
| $e$ | 0.2348832 | $i$ | 2.43585 | | | |
| $P$ | 3.71 | $H$ | 16.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 04 | 691 | 0.4+ | 0.6− | 2002 09 27 | 644 | 0.8− | 0.2− | 2002 10 11 | 645 | 0.1+ | 0.1− |
| 1991 11 04 | 691 | 0.2+ | 0.2+ | 2002 09 30 | 704 | 0.7− | 0.3+ | 2002 10 11 | 645 | 0.1+ | 0.1− |
| 1991 11 04 | 691 | 0.1− | 0.4− | 2002 09 30 | 704 | 1.0− | 0.3+ | 2002 10 28 | 644 | 0.3− | 0.3− |
| 2000 02 03 | 691 | 0.2+ | 0.4− | 2002 09 30 | 704 | 0.9− | 0.2+ | 2002 10 28 | 644 | 0.3− | 0.1− |
| 2000 02 03 | 691 | 0.1+ | 0.2− | 2002 09 30 | 704 | 1.1− | 0.2+ | 2002 10 28 | 644 | 0.2− | 0.4− |
| 2000 02 03 | 691 | 0.1+ | 0.2− | 2002 09 30 | 704 | 1.0− | 0.7+ | 2002 10 30 | 704 | 1.5− | 0.1+ |
| 2000 02 04 | 691 | 0.3− | 0.1− | 2002 10 01 | 699 | 1.1+ | 0.4+ | 2002 10 30 | 704 | 0.6− | 0.5− |
| 2000 02 04 | 691 | 0.4− | 0.1− | 2002 10 01 | 699 | 0.6+ | 0.4+ | 2002 10 30 | 704 | 0.7− | 0.8− |
| 2000 02 04 | 691 | 0.3− | 0.1− | 2002 10 01 | 699 | 0.2+ | 0.7+ | 2002 10 30 | 645 | 0.1+ | 0.0 |
| 2000 02 14 | 691 | 0.2− | 0.3− | 2002 10 01 | 699 | 0.5+ | 0.5+ | 2002 10 30 | 645 | 0.1+ | 0.1− |
| 2000 02 14 | 691 | 0.2+ | 0.1− | 2002 10 01 | 608 | 0.0 | 0.1+ | 2002 10 30 | 704 | (1.7− | 1.4−) |
| 2000 02 14 | 691 | 0.1+ | 0.1− | 2002 10 01 | 608 | 0.2− | 0.2− | 2002 10 31 | 644 | 0.2− | 0.6+ |
| 2000 03 03 | 691 | 0.3− | 0.5+ | 2002 10 01 | 608 | 0.2− | 0.1+ | 2002 10 31 | 644 | 0.2− | 0.1− |
| 2000 03 03 | 691 | 0.1− | 0.4+ | 2002 10 02 | 704 | 0.2+ | 0.6+ | 2002 10 31 | 644 | 0.2− | 0.6+ |
| 2000 03 03 | 691 | 0.0 | 0.2+ | 2002 10 02 | 704 | 0.2− | 0.6+ | 2002 11 19 | 644 | 0.5− | 0.4− |
| 2000 03 09 | 691 | 0.6− | 0.3− | 2002 10 02 | 704 | 0.3+ | 0.8+ | 2002 11 19 | 644 | 0.2− | 0.4− |
| 2000 03 09 | 691 | 0.1+ | 0.1− | 2002 10 02 | 704 | 0.1+ | 0.4+ | 2002 11 19 | 644 | 0.7− | 0.4− |
| 2000 03 09 | 691 | 0.0 | 0.1− | 2002 10 03 | 704 | 0.6+ | 1.0+ | 2002 11 19 | 644 | 0.0 | 0.5+ |
| 2000 03 14 | 691 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.4+ | 0.9+ | 2002 11 19 | 644 | 0.1− | 0.4+ |
| 2000 03 14 | 691 | 0.1+ | 0.4+ | 2002 10 03 | 704 | 0.7+ | 1.1+ | 2002 11 19 | 644 | 0.0 | 0.5+ |
| 2000 03 14 | 691 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.6+ | 0.9+ | 2004 03 18 | 704 | 1.4+ | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.3− | 2002 10 03 | 704 | 0.3+ | 1.1+ | 2004 03 18 | 704 | 0.2+ | 0.9+ |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2002 10 04 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 1.2+ | 0.9+ |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2002 10 04 | 704 | 0.6+ | 0.1+ | 2004 03 21 | 291 | 0.9+ | 1.0+ |
| 2002 09 05 | 704 | 0.4− | 0.4− | 2002 10 04 | 704 | 0.3+ | 0.2− | 2004 03 21 | 291 | 0.2+ | 0.7+ |
| 2002 09 07 | 704 | 0.2+ | 0.2+ | 2002 10 04 | 704 | 0.0 | 0.1− | 2004 03 21 | 291 | 0.0 | 0.8+ |
| 2002 09 07 | 704 | 0.1+ | 0.0 | 2002 10 04 | 704 | 0.1− | 0.2+ | 2005 06 27 | 691 | 0.0 | 0.9+ |
| 2002 09 07 | 704 | 0.2+ | 0.2+ | 2002 10 04 | 704 | 0.8− | 0.6− | 2005 06 27 | 691 | 0.2+ | 0.4+ |
| 2002 09 12 | 683 | 0.4+ | 1.1+ | 2002 10 04 | 704 | 0.1+ | 0.0 | 2005 06 27 | 691 | 0.2+ | 0.3+ |
| 2002 09 12 | 683 | 0.6− | 0.4+ | 2002 10 04 | 704 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2002 09 12 | 683 | 0.4+ | 0.4+ | 2002 10 04 | 704 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.5− | 0.6− |
| 2002 09 14 | 608 | 0.0 | 0.0 | 2002 10 07 | 704 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.0 |
| 2002 09 14 | 608 | 0.3+ | 0.0 | 2002 10 07 | 704 | 0.5− | 1.0+ | 2006 11 20 | 704 | 0.9+ | 1.1+ |
| 2002 09 14 | 608 | 0.1+ | 0.0 | 2002 10 07 | 704 | 0.5− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2002 09 15 | 683 | (0.0 | 1.5+) | 2002 10 07 | 704 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.1+ | 1.4+ |
| 2002 09 15 | 683 | 0.1+ | 0.0 | 2002 10 07 | 704 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2002 09 15 | 683 | 1.4− | 0.2+ | 2002 10 08 | 699 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.0 | 0.0 | 2002 10 08 | 699 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 1.3+ | 0.7+ |
| 2002 09 15 | 644 | 0.1+ | 0.1+ | 2002 10 08 | 699 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.0 |
| 2002 09 15 | 644 | 0.1+ | 0.1+ | 2002 10 08 | 699 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.5− |
| 2002 09 26 | 644 | 0.7− | 0.1− | 2002 10 11 | 704 | 0.2− | 0.5+ | 2006 11 29 | 704 | 0.7− | 0.0 |
| 2002 09 26 | 644 | 0.6− | 0.0 | 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2002 09 26 | 644 | 0.6− | 0.0 | 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 12 01 | 691 | 0.2− | 0.4+ |
| 2002 09 27 | 644 | 0.6− | 0.3− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2002 09 27 | 644 | 0.6− | 0.3− | 2002 10 11 | 704 | 0.3− | 0.6+ | | | | |

**(138135)∗ 2000 EV$_{24}$ = 2002 VN$_{77}$**

Discovered 2000 Mar. 8 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 40062), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.16813 | | (2000.0) | | +0.94320267 | −0.33217883 |
| $n$ | 0.23507243 | $\omega$ | 195.02658 | | +0.31126381 | +0.88896755 |
| $a$ | 2.6001690 | $\Omega$ | 184.38446 | | +0.11611877 | +0.31526801 |
| $e$ | 0.1183001 | $i$ | 3.82084 | | | |
| $P$ | 4.19 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 01 | 691 | 0.9− | 0.9− | 2002 12 01 | 704 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 1992 05 01 | 691 | 0.5+ | 0.1+ | 2002 12 01 | 704 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 1992 05 01 | 691 | 0.0 | 1.1+ | 2002 12 03 | 644 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 1992 05 07 | 691 | 0.6+ | 0.6+ | 2002 12 03 | 644 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.2− | 0.0 |
| 1992 05 07 | 691 | 0.2+ | 0.4+ | 2002 12 03 | 644 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 1992 05 07 | 691 | 0.8+ | 0.1+ | 2002 12 07 | 644 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 1996 04 12 | 691 | 0.1− | 0.1+ | 2002 12 07 | 644 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 1996 04 12 | 691 | 0.1− | 0.1+ | 2002 12 07 | 644 | 0.5− | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.2− |
| 1996 04 12 | 691 | 0.1− | 0.3+ | 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2000 03 08 | 691 | 0.6− | 0.1+ | 2002 12 27 | 644 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2000 03 08 | 691 | 0.6− | 0.2− | 2002 12 27 | 644 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2000 03 08 | 691 | 0.4− | 0.2− | 2004 02 26 | 333 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2000 03 09 | 691 | 0.6− | 0.1− | 2004 02 26 | 333 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2000 03 09 | 691 | 0.6− | 0.6− | 2004 02 26 | 333 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2000 03 09 | 691 | 0.5− | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2000 04 05 | 704 | 1.1+ | 1.1+ | 2004 02 26 | 704 | 0.4+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 04 05 | 704 | 0.9+ | 0.1− | 2004 02 26 | 704 | 0.5− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.9+ | 0.6+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 04 05 | 704 | 0.3+ | 0.4+ | 2004 03 11 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 0.8+ | 0.9+ | 2004 03 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2004 03 11 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2000 05 05 | 645 | 0.1+ | 0.1+ | 2004 03 14 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2002 10 30 | 608 | 0.7− | 0.8+ | 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 10 30 | 608 | 0.7− | 0.7+ | 2004 03 14 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 10 30 | 608 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 1.3+ | 2006 10 28 | 704 | 0.2+ | 0.8+ |
| 2002 11 07 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 1.3+ | 1.3− | 2006 10 28 | 704 | 0.7+ | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.8+ | 2004 03 18 | 704 | 0.1− | 0.5+ | 2006 10 28 | 704 | 0.8− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 10 28 | 704 | (2.6+ | 1.6−) |
| 2002 11 07 | 704 | 0.5+ | 0.2+ | 2004 03 28 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.3+ | 0.6− | 2004 03 28 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 11 11 | 704 | 0.2− | 0.0 | 2004 03 28 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 11 11 | 704 | 0.1+ | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 2002 11 11 | 704 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2002 11 11 | 704 | 0.3− | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.4− | 0.0 |
| 2002 11 12 | 704 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2002 11 12 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.3+ |
| 2002 11 12 | 704 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 1.0− |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2002 11 14 | 704 | 0.5+ | 0.8− | 2006 09 20 | 699 | 1.1− | 0.5− | 2006 11 17 | 704 | 0.5− | 0.5+ |
| 2002 11 14 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 699 | 0.3− | 0.8+ | 2006 11 17 | 704 | 0.7− | 0.8+ |
| 2002 11 14 | 704 | 0.4+ | 1.2+ | 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.1− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.7− |
| 2002 11 15 | 704 | 0.5− | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.0+ | 0.8− |
| 2002 11 15 | 704 | 0.0 | 0.5− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.8− |
| 2002 11 15 | 704 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.9− | 0.6− |
| 2002 11 15 | 704 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.9− | 0.7− |
| 2002 11 15 | 704 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.7+ | 0.4− |
| 2002 11 23 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.5+ | 2006 11 18 | G96 | 0.5+ | 0.0 |
| 2002 11 23 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.4− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 11 24 | 644 | 0.2− | 0.8− | 2006 09 27 | 704 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.2+ |
| 2002 11 24 | 644 | 0.1− | 0.8− | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 1.7+ | 1.9− |
| 2002 11 24 | 644 | 0.2− | 0.8− | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.5− | 1.8+ |
| 2002 12 01 | 704 | 0.6+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 1.0− | 0.2+ |
| 2002 12 01 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.4+ |

**(138136)∗ 2000 EE$_{29}$ = 2002 SE$_{53}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37388)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 285.71059 | | (2000.0) | | | |
| $n$ | 0.24175963 | $\omega$ | 339.03086 | | +0.00449475 | −0.97576304 |
| $a$ | 2.5519972 | $\Omega$ | 110.18146 | | +0.94745627 | −0.06582473 |
| $e$ | 0.1334535 | $i$ | 13.47933 | | +0.31985374 | +0.20869496 |
| $P$ | 4.08 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.3+ | 0.5+ | 2002 12 05 | 644 | 0.6+ | 0.7+ | 2004 03 17 | A35 | 0.0 | 0.1+ |
| 2000 03 04 | 704 | 0.2− | 0.1+ | 2002 12 05 | 644 | 0.5+ | 0.5+ | 2004 03 17 | A35 | 0.1+ | 0.3− |
| 2000 03 04 | 704 | 0.2− | 0.3+ | 2003 01 03 | 699 | 1.1− | 0.3− | 2004 03 17 | A35 | 0.1− | 0.2− |
| 2000 03 04 | 704 | 0.0 | 0.3+ | 2003 01 03 | 699 | 0.7+ | 0.8+ | 2004 03 18 | 703 | 0.4+ | 0.9+ |
| 2000 03 04 | 704 | 0.5− | 0.2− | 2003 01 03 | 699 | (2.2− | 0.0 ) | 2004 03 18 | 644 | 0.4+ | 0.1− |
| 2000 03 09 | 704 | 0.2+ | 0.6+ | 2003 01 03 | 699 | 0.1− | 0.1− | 2004 03 18 | 703 | 0.1+ | 0.2+ |
| 2000 03 09 | 704 | 0.6− | 0.1+ | 2003 01 24 | 809 | 0.0 | 0.0 | 2004 03 18 | 703 | 0.4− | 0.8+ |
| 2000 03 09 | 704 | 0.7+ | 0.4− | 2003 01 24 | 809 | 0.2+ | 0.1− | 2004 03 18 | 644 | 0.4+ | 0.2− |
| 2000 03 09 | 704 | 0.3+ | 0.4+ | 2003 01 24 | 809 | 0.2− | 0.0 | 2004 03 18 | 703 | 0.2− | 0.1− |
| 2000 03 09 | 704 | 0.1− | 0.5− | 2003 12 18 | 703 | 1.1− | 0.6+ | 2004 03 18 | 644 | 0.3+ | 0.3− |
| 2000 03 15 | 704 | 0.0 | 0.3+ | 2003 12 18 | 703 | 0.5+ | 0.3+ | 2004 03 23 | 704 | 1.1− | 0.2+ |
| 2000 03 15 | 704 | 0.1+ | 0.3+ | 2003 12 18 | 703 | (0.8+ | 2.4+) | 2004 03 23 | 704 | 0.4+ | 0.6+ |
| 2000 03 15 | 704 | 0.3+ | 0.6+ | 2003 12 18 | 703 | 1.5− | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.5+ |
| 2000 03 15 | 704 | 0.4− | 1.2+ | 2003 12 23 | 704 | 0.1+ | 0.3− | 2004 04 14 | 703 | 0.1− | 0.5+ |
| 2000 03 15 | 704 | 0.3− | 1.3+ | 2003 12 23 | 704 | 0.2+ | 0.1+ | 2004 04 14 | 703 | 0.6− | 0.5+ |
| 2000 04 02 | 704 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.0 | 0.5+ | 2004 04 14 | 703 | 0.3− | 1.5+ |
| 2000 04 02 | 704 | 0.2− | 0.3+ | 2003 12 23 | 704 | 0.2+ | 0.3− | 2004 04 14 | 703 | 1.0− | 0.3− |
| 2000 04 02 | 704 | 0.3+ | 0.3+ | 2003 12 23 | 704 | 1.0+ | 0.3+ | 2004 05 24 | 704 | (0.8+ | 2.0+) |
| 2000 04 02 | 704 | 0.1+ | 0.6+ | 2003 12 27 | 704 | 0.9− | 0.9− | 2004 05 24 | 704 | (0.8+ | 1.7+) |
| 2000 04 02 | 704 | 1.0+ | 1.4+ | 2003 12 27 | 704 | 0.4+ | 1.0− | 2004 05 24 | 704 | 0.9+ | 0.5+ |
| 2000 04 08 | 704 | 0.1− | 0.5+ | 2003 12 27 | 704 | 0.2+ | 0.2− | 2004 05 24 | 704 | 0.4− | 0.2− |
| 2000 04 08 | 704 | 0.9− | 0.3+ | 2003 12 27 | 704 | 0.0 | 0.8− | 2006 07 31 | E12 | 0.6− | 0.3− |
| 2000 04 08 | 704 | 1.1− | 0.9+ | 2003 12 27 | 704 | 0.4+ | 0.8− | 2006 07 31 | E12 | 0.6− | 0.3− |
| 2000 04 08 | 704 | 1.0− | 0.2+ | 2003 12 29 | 704 | 0.1− | 0.4− | 2006 07 31 | E12 | 0.4+ | 0.0 |
| 2000 04 08 | 704 | 0.4− | 0.5+ | 2003 12 29 | 704 | 0.0 | 0.3− | 2006 07 31 | E12 | 0.3+ | 0.4+ |
| 2000 04 28 | 699 | 1.0+ | 0.5+ | 2003 12 29 | 704 | (0.4− | 1.7−) | 2006 09 14 | 644 | 0.2− | 0.1+ |
| 2000 04 28 | 699 | (2.1+ | 0.5+) | 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1− |
| 2000 04 28 | 699 | 0.6+ | 0.9+ | 2004 01 05 | 699 | 0.7− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 2000 04 28 | 699 | 0.6+ | 0.4+ | 2004 01 05 | 699 | 0.3+ | 1.2− | 2006 09 20 | 703 | 0.4+ | 0.2− |
| 2002 08 16 | 608 | (1.3+ | 1.5+) | 2004 01 05 | 699 | 0.3+ | 0.0 | 2006 09 20 | 703 | 0.3+ | 0.4+ |
| 2002 08 16 | 608 | 0.9+ | 0.6+ | 2004 01 05 | 699 | 0.0 | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.2− |
| 2002 08 16 | 608 | 0.9+ | 0.5+ | 2004 01 30 | 704 | 0.9+ | 0.8− | 2006 09 20 | 703 | 0.1− | 0.4− |
| 2002 08 23 | 644 | 0.0 | 0.5− | 2004 01 30 | 704 | 0.7+ | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.2+ |
| 2002 08 23 | 644 | 0.3− | 0.2− | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.4− | 1.2+ |
| 2002 08 23 | 644 | 0.0 | 0.3− | 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2002 09 18 | 644 | 0.4− | 0.6+ | 2004 01 30 | 704 | 0.3+ | 0.2− | 2006 09 26 | 703 | (0.1+ | 1.7+) |
| 2002 09 18 | 644 | 0.6− | 0.3+ | 2004 02 02 | 699 | 0.6− | 1.0+ | 2006 10 03 | E12 | 0.9− | 1.4+ |
| 2002 09 18 | 644 | 0.1− | 0.8+ | 2004 02 02 | 699 | 0.2− | 0.1− | 2006 10 03 | E12 | 0.6− | 0.1+ |
| 2002 09 19 | 644 | 0.3− | 0.5+ | 2004 02 02 | 699 | 0.0 | 0.3+ | 2006 10 03 | E12 | 0.3+ | 0.4+ |
| 2002 09 19 | 644 | 0.3− | 0.3+ | 2004 02 02 | 699 | 0.1+ | 0.2− | 2006 10 03 | E12 | 0.7− | 0.3+ |
| 2002 09 19 | 644 | 0.1− | 0.3+ | 2004 02 15 | 608 | 0.5− | 0.6− | 2006 10 12 | E12 | 0.1+ | 0.4+ |
| 2002 10 08 | 644 | 0.0 | 0.7+ | 2004 02 15 | 608 | 0.3− | 1.3− | 2006 10 12 | E12 | 0.4− | 0.4− |
| 2002 10 08 | 644 | 0.1+ | 0.7+ | 2004 02 15 | 608 | 0.0 | 0.1+ | 2006 10 12 | E12 | 0.3− | 0.5+ |
| 2002 10 08 | 644 | 0.1+ | 0.7+ | 2004 02 16 | 704 | 1.2+ | 1.2− | 2006 10 12 | E12 | 0.4− | 0.4− |
| 2002 11 04 | 644 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 644 | 0.2+ | 0.1− |
| 2002 11 04 | 644 | 0.2+ | 0.1+ | 2004 02 16 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.2− |
| 2002 11 04 | 644 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.0 | 0.7− | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2002 11 28 | 699 | 0.9+ | 1.1+ | 2004 02 16 | 704 | 0.9+ | 1.0− | 2006 11 27 | 703 | 0.3− | 1.1− |
| 2002 11 28 | 699 | 0.8+ | 0.4+ | 2004 03 14 | 704 | (2.2− | 0.1+) | 2006 11 27 | 703 | 0.4− | 0.6− |
| 2002 11 28 | 699 | 0.1− | 0.3+ | 2004 03 14 | 704 | 0.5+ | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.3+ |
| 2002 11 28 | 699 | 0.1− | 0.1− | 2004 03 14 | 704 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.2− | 1.0− |
| 2002 12 05 | 644 | 0.4+ | 0.8+ | 2004 03 14 | 704 | 0.5+ | 0.1− | | | | |

**(138137)∗ 2000 EW$_{31}$ = 2004 BB$_{20}$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56117)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 246.83993 | | (2000.0) | | | |
| $n$ | 0.24079961 | $\omega$ | 116.66289 | | −0.40465459 | −0.91444916 |
| $a$ | 2.5587756 | $\Omega$ | 357.18519 | | +0.78850818 | −0.34552180 |
| $e$ | 0.1629588 | $i$ | 7.15330 | | +0.46315172 | −0.21070695 |
| $P$ | 4.09 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 691 | 0.4− | 0.2+ | 2002 09 15 | 644 | 0.5− | 0.8+ | 2004 02 15 | 704 | 0.2+ | 1.2+ |
| 1998 09 15 | 691 | 0.1− | 0.4+ | 2002 09 15 | 644 | 0.9− | 0.6+ | 2004 02 15 | 704 | 0.5+ | 0.4+ |
| 1998 09 15 | 691 | 0.3− | 0.0 | 2004 01 18 | 644 | 0.3+ | 0.1− | 2004 02 15 | 704 | 0.2− | 0.3+ |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2004 01 18 | 644 | 0.4+ | 0.1− | 2004 03 19 | 704 | 0.7+ | 0.7+ |
| 1998 09 25 | 645 | 0.2+ | 0.2− | 2004 01 18 | 644 | 0.5+ | 0.4− | 2004 03 19 | 704 | 0.5+ | 0.6+ |
| 2000 03 05 | 704 | 0.0 | 0.7+ | 2004 01 20 | 704 | 0.6+ | 0.1− | 2004 03 19 | 704 | 0.8+ | 1.4+ |
| 2000 03 05 | 704 | 0.2+ | 1.0+ | 2004 01 20 | 704 | 1.0− | 0.0 | 2004 03 19 | 704 | 0.3+ | 0.2+ |
| 2000 03 05 | 704 | 0.0 | 0.7+ | 2004 01 20 | 704 | 0.5+ | 0.3− | 2006 08 21 | 691 | 0.5− | 0.3+ |
| 2000 03 05 | 704 | 0.4− | 0.0 | 2004 01 20 | 704 | 0.5+ | 0.3− | 2006 08 21 | 691 | 0.0 | 0.2− |
| 2000 03 09 | 704 | 0.6− | 0.6− | 2004 01 28 | 703 | 1.1− | 0.3+ | 2006 08 21 | 691 | 0.0 | 0.0 |
| 2000 03 09 | 704 | 0.2− | 0.1− | 2004 01 28 | 703 | 0.7− | 0.3− | 2006 08 28 | 691 | 0.1− | 0.6+ |
| 2000 03 09 | 704 | 0.2− | 0.4− | 2004 01 28 | 703 | 0.6− | 1.2+ | 2006 08 28 | 691 | 0.2− | 0.6+ |
| 2000 03 09 | 704 | 0.2+ | 0.1+ | 2004 01 28 | 703 | 0.5− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 2000 03 09 | 704 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.4− | 0.3− |
| 2000 03 11 | 699 | (0.5− | 2.1+) | 2004 01 30 | 704 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2000 03 11 | 699 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.5− | 0.4− |
| 2000 03 11 | 699 | 1.4+ | 0.2− | 2004 01 30 | 704 | 0.1− | 0.5− | 2006 09 30 | G96 | 0.4− | 0.1+ |
| 2000 03 11 | 699 | 0.1− | 0.5− | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.6+ | 0.2+ |
| 2002 09 12 | 644 | 0.8− | 0.5+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.1+ |
| 2002 09 12 | 644 | 0.6− | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2002 09 12 | 644 | 0.5− | 0.5+ | 2004 02 15 | 704 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.5+ |
| 2002 09 15 | 644 | 0.8− | 0.3+ | 2004 02 15 | 704 | 0.6+ | 0.7− | | | | |

**(138138)∗ 2000 EQ$_{32}$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 199.38788 | | (2000.0) | | | |
| $n$ | 0.23811861 | $\omega$ | 173.61062 | | −0.99680181 | −0.07967984 |
| $a$ | 2.5779460 | $\Omega$ | 1.85245 | | +0.06237657 | −0.82353981 |
| $e$ | 0.1465737 | $i$ | 10.88728 | | +0.04995317 | −0.56163449 |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 21 | 566 | 0.1− | 0.1− | 2000 04 03 | 704 | 0.7+ | 0.2− | 2004 02 22 | 703 | 0.3− | 0.2+ |
| 1996 03 21 | 566 | 0.3− | 0.6− | 2002 10 09 | 704 | 0.6+ | 0.6+ | 2004 02 22 | 703 | 0.6− | 0.3+ |
| 1996 03 21 | 566 | 0.3− | 0.8+ | 2002 10 09 | 704 | (1.3− | 1.9+) | 2004 03 14 | 704 | 1.1− | 0.1+ |
| 2000 02 11 | 704 | 0.0 | 0.5+ | 2002 10 09 | 704 | 0.2− | 0.1− | 2004 03 14 | 704 | 0.2− | 1.3− |
| 2000 02 11 | 704 | 0.5+ | 0.3+ | 2002 10 09 | 704 | 0.1+ | 0.8+ | 2004 03 14 | 704 | 0.1+ | 1.5− |
| 2000 02 11 | 704 | 0.8+ | 0.9+ | 2003 12 17 | 644 | 0.3+ | 0.2− | 2004 03 17 | 645 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 0.8+ | 0.2− | 2003 12 17 | 644 | 0.0 | 0.3+ | 2004 03 17 | 645 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 0.6+ | 1.5+ | 2003 12 17 | 644 | 0.1+ | 0.1− | 2004 03 18 | 644 | 0.0 | 0.2− |
| 2000 03 02 | 703 | 0.6− | 0.1− | 2004 01 13 | 699 | 1.4+ | 0.2+ | 2004 03 18 | 644 | 0.1+ | 0.1− |
| 2000 03 02 | 703 | 0.9+ | 0.7+ | 2004 01 13 | 699 | 0.6+ | 0.8− | 2004 03 18 | 644 | 0.1+ | 0.2− |
| 2000 03 02 | 703 | 0.2− | 0.0 | 2004 01 13 | 699 | 1.1− | 0.8+ | 2004 03 18 | 645 | 0.1− | 0.2− |
| 2000 03 02 | 703 | 0.5+ | 1.0+ | 2004 01 13 | 699 | 0.3− | 0.2− | 2004 03 18 | 645 | 0.1− | 0.2− |
| 2000 03 05 | 704 | 0.4+ | 0.7+ | 2004 01 17 | 644 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.4+ | 0.2+ |
| 2000 03 05 | 704 | 0.2+ | 0.4− | 2004 01 17 | 644 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.5+ |
| 2000 03 05 | 704 | 0.6+ | 0.2+ | 2004 01 17 | 644 | 0.1+ | 0.1− | 2004 03 23 | 704 | 0.6+ | 0.5+ |
| 2000 03 05 | 704 | 0.5+ | 0.2+ | 2004 01 17 | 644 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.4− |
| 2000 03 05 | 704 | 0.5+ | 0.1+ | 2004 01 17 | 644 | 0.0 | 0.3− | 2004 04 14 | 704 | 0.2+ | 0.9+ |
| 2000 03 09 | 704 | 0.5− | 0.2− | 2004 01 17 | 644 | 0.0 | 0.1− | 2004 04 14 | 704 | 0.0 | 0.2− |
| 2000 03 09 | 704 | 0.3+ | 0.6+ | 2004 01 28 | 703 | 0.3+ | 0.3− | 2004 04 14 | 704 | 0.7− | 0.1− |
| 2000 03 09 | 704 | 0.2+ | 0.3+ | 2004 01 28 | 703 | 0.2− | 0.5+ | 2004 04 14 | 704 | 0.1+ | 0.1+ |
| 2000 03 09 | 704 | 0.1+ | 0.8+ | 2004 01 28 | 703 | 0.0 | 0.5+ | 2004 04 22 | 704 | 0.3− | 0.5+ |
| 2000 03 09 | 704 | 0.5+ | 0.4+ | 2004 01 28 | 703 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.3− | 0.7+ |
| 2000 03 12 | 704 | 0.0 | 1.0+ | 2004 01 31 | 704 | 0.3+ | 0.1+ | 2004 04 22 | 704 | (1.1+ | 1.6+) |
| 2000 03 12 | 704 | 0.0 | 0.4+ | 2004 01 31 | 704 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.3+ |
| 2000 03 12 | 704 | 0.1− | 0.2+ | 2004 01 31 | 704 | 0.4+ | 0.0 | 2006 07 21 | G96 | 0.6+ | 0.3+ |
| 2000 03 12 | 704 | 0.5+ | 0.7+ | 2004 01 31 | 704 | 0.6− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.3+ |
| 2000 03 12 | 704 | 0.0 | 0.5+ | 2004 01 31 | 704 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.1− |
| 2000 03 28 | 704 | 0.4+ | 0.3− | 2004 02 14 | 704 | 0.7+ | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 2000 03 28 | 704 | 0.6− | 0.6+ | 2004 02 14 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2000 03 28 | 704 | 0.2− | 0.4+ | 2004 02 14 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2000 04 03 | 699 | 0.2+ | 0.1+ | 2004 02 14 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 2000 04 03 | 699 | 0.8+ | 0.1+ | 2004 02 14 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2000 04 03 | 704 | 1.2+ | 0.4+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.4− | 0.2+ |
| 2000 04 03 | 699 | 0.4+ | 0.7+ | 2004 02 16 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.6+ | 1.4− |
| 2000 04 03 | 704 | 0.1+ | 0.1+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.3− | 0.1− |
| 2000 04 03 | 699 | 0.5− | 0.5+ | 2004 02 22 | 703 | 0.5− | 0.5+ | 2006 11 20 | G96 | 0.4+ | 0.3+ |
| 2000 04 03 | 704 | 0.1+ | 0.7+ | 2004 02 22 | 703 | 0.3− | 1.2+ | 2006 11 20 | G96 | 0.6− | 1.0− |

**(138139)∗ 2000 EV$_{43}$ = 2002 TC$_{199}$**

Discovered 2000 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 198.46219 | | (2000.0) | | | |
| $n$ | 0.22819813 | $\omega$ | 147.84908 | | −0.96857794 | −0.24771132 |
| $a$ | 2.6521291 | $\Omega$ | 17.84935 | | +0.21003502 | −0.86262752 |
| $e$ | 0.1550412 | $i$ | 4.16622 | | +0.13319935 | −0.44103613 |
| $P$ | 4.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 01 | 703 | 0.4+ | 0.4+ | 2002 10 05 | 704 | 0.9+ | 1.1+ | 2004 04 19 | 704 | 0.4+ | 0.4+ |
| 2000 03 01 | 703 | 0.2+ | 1.2+ | 2002 10 05 | 704 | 0.3+ | 0.4+ | 2004 04 19 | 704 | 0.2− | 0.9+ |
| 2000 03 01 | 703 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.7+ | 0.3+ | 2004 04 19 | 704 | 0.3+ | 0.3+ |
| 2000 03 01 | 703 | 0.0 | 0.8− | 2002 10 07 | 704 | 0.7+ | 0.1− | 2004 04 19 | 704 | 0.8+ | 1.0+ |
| 2000 03 08 | 704 | 0.7+ | 1.3+ | 2002 10 07 | 704 | 0.1− | 0.5+ | 2004 04 22 | 703 | 0.2+ | 0.0 |
| 2000 03 08 | 704 | 1.0− | 0.8+ | 2002 10 07 | 704 | 0.2+ | 0.8+ | 2004 04 22 | 703 | (0.7+ | 1.6+) |
| 2000 03 08 | 704 | 0.7+ | 1.4+ | 2002 10 11 | 704 | 0.4− | 0.1− | 2004 04 22 | 703 | 1.1− | 0.4− |
| 2000 03 08 | 704 | 0.9+ | 1.6+ | 2002 10 11 | 704 | 0.3+ | 0.5− | 2004 04 22 | 703 | (2.0+ | 2.7+) |
| 2000 03 10 | 704 | 0.7+ | 0.4+ | 2002 10 11 | 704 | 0.2− | 1.0− | 2004 05 21 | 704 | 0.3+ | 0.1− |
| 2000 03 10 | 704 | 0.5+ | 0.8+ | 2002 10 30 | 291 | 0.5− | 0.2+ | 2004 05 21 | 704 | (0.2− | 2.1+) |
| 2000 03 10 | 704 | 1.0+ | 0.9+ | 2002 10 30 | 291 | 0.7− | 0.2+ | 2004 05 21 | 704 | 0.4+ | 0.3+ |
| 2000 03 10 | 704 | 1.1+ | 1.4+ | 2002 10 30 | 291 | 0.7− | 0.2+ | 2004 05 21 | 704 | 0.5− | 0.7+ |
| 2000 03 10 | 704 | (0.8+ | 2.2+) | 2002 11 22 | 644 | 0.9− | 0.1− | 2006 08 27 | 691 | 0.4− | 0.3+ |
| 2000 03 11 | 704 | 0.2− | 0.1+ | 2002 11 22 | 644 | 0.0 | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2000 03 11 | 704 | 0.1− | 0.1+ | 2002 11 22 | 644 | 0.1+ | 0.6+ | 2006 08 27 | 691 | 0.8− | 0.4+ |
| 2000 03 11 | 704 | 0.9− | 1.0+ | 2004 01 18 | 644 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.2− | 0.3− | 2004 01 18 | 644 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 2000 03 27 | 699 | 0.5+ | 0.8+ | 2004 01 18 | 644 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.3+ |
| 2000 03 27 | 699 | 0.2+ | 0.6+ | 2004 01 28 | 703 | 0.1+ | 0.1− | 2006 09 19 | 291 | 0.3− | 0.6+ |
| 2000 03 27 | 699 | 0.0 | 0.5+ | 2004 01 28 | 703 | 0.8− | 0.1+ | 2006 09 19 | 291 | 0.3− | 0.6+ |
| 2000 03 27 | 699 | 0.3+ | 0.4+ | 2004 01 28 | 703 | 0.6+ | 0.0 | 2006 09 19 | 291 | 0.3− | 0.7+ |
| 2000 04 02 | 699 | 0.1+ | 0.6+ | 2004 01 28 | 703 | 0.3+ | 1.0+ | 2006 09 25 | 699 | 0.3− | 0.2+ |
| 2000 04 02 | 699 | 0.1+ | 1.0+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.7+ |
| 2000 04 02 | 699 | 0.6− | 0.4+ | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 699 | (2.4+ | 1.2+) |
| 2000 04 02 | 699 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 699 | (2.3+ | 0.2+) |
| 2000 04 04 | 704 | 0.6+ | 0.1− | 2004 01 30 | 704 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2000 04 04 | 704 | 0.9+ | 0.2+ | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2000 04 04 | 704 | 0.3− | 0.5+ | 2004 02 14 | 608 | 0.1+ | 0.8− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.2+ | 0.6+ | 2004 02 14 | 608 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.6+ | 0.9+ | 2004 02 14 | 608 | 0.1+ | 0.4− | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2004 02 16 | 704 | 0.4− | 0.3+ | 2006 09 30 | 703 | 1.1− | 0.2− |
| 2000 04 05 | 704 | 0.1− | 0.4+ | 2004 02 16 | 704 | 0.5− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2000 04 05 | 704 | 0.5− | 0.4− | 2004 02 16 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.1+ | 1.0+ |
| 2000 04 06 | 704 | 0.4+ | 0.2+ | 2004 02 16 | 704 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2000 04 06 | 704 | 0.5− | 0.1+ | 2004 02 16 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.2+ | 0.3+ | 2004 02 18 | 644 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 2000 04 06 | 704 | 0.8− | 0.0 | 2004 02 18 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 1.2+ | 0.3+ |
| 2000 04 06 | 704 | 0.2+ | 0.1+ | 2004 02 18 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 1.2− | 0.0 |
| 2000 04 10 | 704 | 0.6+ | 0.1+ | 2004 02 19 | 608 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.8+ | 2.4+ |
| 2000 04 10 | 704 | 0.2+ | 0.4+ | 2004 02 19 | 608 | 0.2+ | 0.7− | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 2000 04 10 | 704 | 0.7+ | 0.5+ | 2004 02 19 | 608 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2000 04 10 | 704 | 0.6+ | 0.8+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2000 04 10 | 704 | 0.6+ | 1.0+ | 2004 02 26 | 704 | 0.0 | 0.5− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2000 04 25 | 699 | 0.7+ | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2000 04 25 | 699 | 1.2+ | 0.6+ | 2004 02 26 | 704 | 1.2− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.4+ |
| 2000 04 25 | 699 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.5− | 0.1+ |
| 2000 04 25 | 699 | 0.5+ | 0.2+ | 2004 03 18 | 644 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.3+ |
| 2002 09 29 | 291 | (0.5+ | 1.6+) | 2004 03 18 | 644 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2+ |
| 2002 09 29 | 291 | 0.4+ | 0.4+ | 2004 03 18 | 644 | 0.1+ | 0.2+ | | | | |
| 2002 09 29 | 291 | 0.2+ | 0.2+ | 2004 04 19 | 704 | 0.4− | 0.4+ | | | | |

**(138140)∗ 2000 EZ$_{43}$ = 2004 DM$_{48}$**

Discovered 2000 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60628)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 242.23928 | | (2000.0) | | | |
| $n$ | 0.24450396 | $\omega$ | 335.17566 | | −0.88722731 | −0.46132315 |
| $a$ | 2.5328654 | $\Omega$ | 177.34634 | | +0.43316748 | −0.83523780 |
| $e$ | 0.1732813 | $i$ | 3.64306 | | +0.15872503 | −0.29926371 |
| $P$ | 4.03 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 25 | 691 | 0.5− | 0.2− | 2004 02 19 | 704 | 0.6+ | 0.7+ | 2004 03 28 | 683 | (1.4+ | 2.0+) |
| 2000 02 25 | 691 | 0.0 | 0.6− | 2004 02 19 | 704 | (0.1+ | 2.2+) | 2004 03 31 | 291 | 0.2+ | 0.6+ |
| 2000 02 25 | 691 | 1.0− | 0.2− | 2004 02 19 | 704 | 0.9+ | 0.7+ | 2004 03 31 | 291 | 0.1− | 0.6+ |
| 2000 03 03 | 645 | 0.0 | 0.2− | 2004 02 19 | 704 | 0.4− | 1.5+ | 2004 03 31 | 291 | 0.1+ | 0.5+ |
| 2000 03 03 | 645 | 0.1+ | 0.2− | 2004 02 26 | 704 | 0.1+ | 0.8+ | 2004 03 31 | 691 | 0.1+ | 0.2− |
| 2000 03 08 | 704 | 1.5− | 1.9− | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2004 03 31 | 691 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | 1.0− | 1.5− | 2004 02 26 | 704 | 1.0+ | 0.7+ | 2004 03 31 | 691 | 0.1+ | 0.3+ | | |
| 2000 03 08 | 704 | 1.1+ | 1.1− | 2004 02 26 | 704 | 0.6+ | 0.6+ | 2004 04 12 | 699 | 0.0 | 0.6+ | | |
| 2000 03 10 | 704 | 1.6+ | 0.0 | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2004 04 12 | 699 | 0.7− | 0.7+ | | |
| 2000 03 10 | 704 | 0.2+ | 0.5− | 2004 03 15 | 703 | 0.0 | 0.3+ | 2004 04 12 | 699 | (1.7− | 0.8+) | | |
| 2000 03 10 | 704 | 0.7+ | 0.0 | 2004 03 15 | 703 | 0.5− | 0.3− | 2004 04 12 | 699 | 0.2− | 1.0+ | | |
| 2000 03 10 | 704 | 0.1− | 1.4+ | 2004 03 15 | 703 | 0.1− | 0.4+ | 2004 04 12 | 703 | 0.8+ | 0.8+ | | |
| 2000 03 11 | 704 | 0.6− | 0.8− | 2004 03 15 | 703 | 0.6− | 0.1+ | 2004 04 12 | 703 | (0.1+ | 1.7−) | | |
| 2000 03 11 | 704 | 0.1+ | 0.4− | 2004 03 16 | 704 | 0.2+ | 0.5+ | 2004 04 12 | 703 | 0.2− | 0.4− | | |
| 2000 03 11 | 704 | 0.2− | 0.1− | 2004 03 16 | 704 | 0.1+ | 0.1+ | 2004 04 12 | 703 | 0.0 | 0.1− | | |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2004 03 16 | 704 | 0.5− | 0.0 | 2004 04 15 | 644 | 0.5+ | 0.1+ | | |
| 2000 03 11 | 704 | 0.5+ | 0.5− | 2004 03 16 | 704 | 0.0 | 0.3+ | 2004 04 15 | 644 | 0.5+ | 0.5+ | | |
| 2000 03 26 | 699 | 0.3+ | 0.0 | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2004 04 15 | 644 | 0.6+ | 0.2+ | | |
| 2000 03 26 | 699 | 0.8− | 0.5− | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2005 07 10 | 691 | 0.0 | 0.7+ | | |
| 2000 03 26 | 699 | 0.4− | 0.6+ | 2004 03 18 | 704 | 0.5− | 0.5+ | 2005 07 10 | 691 | 0.2+ | 0.1+ | | |
| 2000 03 26 | 699 | 0.8+ | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2005 07 10 | 691 | 0.1− | 0.2+ | | |
| 2000 04 05 | 704 | 0.0 | 1.3+ | 2004 03 18 | 704 | 0.1− | 0.4+ | 2005 07 11 | G96 | 0.3− | 0.1− | | |
| 2000 04 05 | 704 | 0.3+ | 0.5− | 2004 03 18 | 704 | 0.1+ | 0.8+ | 2005 07 11 | G96 | 0.5− | 0.2+ | | |
| 2000 04 05 | 704 | 0.9− | 0.2+ | 2004 03 20 | 699 | 0.5− | 0.8+ | 2005 07 11 | G96 | 0.7− | 0.3+ | | |
| 2000 04 05 | 704 | 0.2+ | 1.8+ | 2004 03 20 | 699 | 0.4− | 0.5+ | 2005 07 11 | G96 | 0.4− | 0.4+ | | |
| 2000 04 05 | 704 | 0.6− | 0.1+ | 2004 03 20 | 699 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.6+ | | |
| 2000 04 06 | 704 | (2.1− | 1.0−) | 2004 03 20 | 699 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.3+ | | |
| 2000 04 06 | 704 | (2.7− | 3.1−) | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.4+ | | |
| 2000 04 06 | 704 | (5.7− | 8.9−) | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2000 04 06 | 704 | (8.6− | 12.8−) | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.4+ | | |
| 2000 04 07 | 699 | 0.1− | 1.2− | 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 691 | 0.3− | 0.4+ | | |
| 2000 04 07 | 699 | 1.8− | 0.0 | 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.0 | | |
| 2000 04 07 | 699 | (0.4+ | 2.1+) | 2004 03 27 | 704 | 0.1+ | 1.0+ | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2000 04 07 | 699 | 0.0 | 1.0− | 2004 03 27 | 704 | 0.8+ | 0.8+ | 2006 11 18 | G96 | 0.2− | 0.2+ | | |
| 2002 10 10 | 644 | 0.4− | 0.4+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.0 | | |
| 2002 10 10 | 644 | 0.9− | 0.5+ | 2004 03 28 | 683 | 0.6− | 0.4+ | | | | | | |
| 2002 10 10 | 644 | 0.4− | 0.9+ | 2004 03 28 | 683 | 1.4+ | 0.1− | | | | | | |

**(138141)∗ 2000 EV$_{45}$**

Discovered 2000 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.01690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24257396 | $\omega$ | 189.97201 | | −0.99611041 | +0.08804818 | |
| $a$ | 2.5462826 | $\Omega$ | 355.07550 | | −0.07786827 | −0.89769508 | |
| $e$ | 0.1749331 | $i$ | 2.27070 | | −0.04123812 | −0.43173031 | |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.0 | 0.2+ | 2004 01 24 | 704 | 0.8+ | 0.4− | 2004 03 27 | 704 | 0.3− | 0.3+ | | |
| 2000 03 09 | 704 | 0.5+ | 0.6+ | 2004 01 24 | 704 | 0.7+ | 0.4− | 2004 03 28 | 683 | 0.2− | 1.0+ | | |
| 2000 03 09 | 704 | 0.1− | 0.2+ | 2004 01 24 | 704 | 0.0 | 0.7− | 2004 03 28 | 683 | (0.8− | 1.9+) | | |
| 2000 03 09 | 704 | 0.2− | 1.1+ | 2004 01 24 | 704 | 0.1+ | 1.1− | 2004 03 28 | 683 | 1.0+ | 0.8+ | | |
| 2000 03 09 | 704 | 0.2− | 0.0 | 2004 02 13 | 644 | 0.1− | 0.3+ | 2004 03 29 | 683 | 0.0 | 0.3− | | |
| 2000 03 10 | 704 | 0.1+ | 0.1+ | 2004 02 13 | 644 | 0.1+ | 0.1− | 2004 03 29 | 683 | 0.3− | 0.7− | | |
| 2000 03 10 | 704 | 0.1+ | 0.2+ | 2004 02 13 | 644 | 0.1− | 0.3− | 2004 03 29 | 683 | 0.3+ | 0.2+ | | |
| 2000 03 10 | 704 | 0.5+ | 0.1+ | 2004 02 17 | 608 | 0.5+ | 0.2− | 2004 03 30 | 683 | 0.5+ | 0.7− | | |
| 2000 03 10 | 704 | 0.4+ | 0.6+ | 2004 02 17 | 608 | 0.1+ | 0.0 | 2004 03 30 | 683 | 1.2+ | 1.4− | | |
| 2000 03 10 | 704 | 0.1− | 0.1+ | 2004 02 17 | 608 | 0.1− | 0.4− | 2004 03 30 | 683 | 0.3+ | 0.1− | | |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.3+ | 0.6+ | 2004 03 31 | 291 | 0.1− | 0.3+ | | |
| 2000 03 11 | 704 | 0.2+ | 0.2+ | 2004 02 19 | 704 | 0.4+ | 0.4+ | 2004 03 31 | 291 | 0.5− | 0.3+ | | |
| 2000 03 11 | 704 | 0.8+ | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.3− | 2004 03 31 | 291 | 0.7− | 0.1+ | | |
| 2000 03 11 | 704 | 0.8+ | 0.1+ | 2004 02 19 | 704 | 0.2− | 0.5− | 2004 04 16 | 704 | 0.8+ | 0.1− | | |
| 2000 03 11 | 704 | 0.7+ | 0.6+ | 2004 02 19 | 704 | 0.1+ | 0.0 | 2004 04 16 | 704 | 0.4+ | 0.0 | | |
| 2000 03 27 | 699 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2004 04 16 | 704 | 0.3+ | 0.1+ | | |
| 2000 03 27 | 699 | 0.2+ | 0.8+ | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2004 04 16 | 704 | 0.9+ | 0.3+ | | |
| 2000 03 27 | 699 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2004 04 16 | 704 | 0.2− | 1.0+ | | |
| 2000 03 27 | 699 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2004 04 21 | 691 | 0.1+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.3+ | 0.5+ | 2004 04 21 | 691 | 0.0 | 0.0 | | |
| 2000 04 05 | 704 | 0.4+ | 0.1− | 2004 03 15 | 691 | 0.0 | 0.2+ | 2004 04 21 | 691 | 0.2+ | 0.1− | | |
| 2000 04 05 | 704 | 0.2+ | 0.6+ | 2004 03 15 | 703 | 0.1− | 0.2+ | 2004 05 07 | 703 | 0.6− | 0.3+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.9+ | 2004 03 15 | 703 | 0.1− | 0.3− | 2004 05 07 | 703 | 0.8+ | 0.0 | | |
| 2000 04 05 | 704 | 0.2+ | 1.0+ | 2004 03 15 | 691 | 0.0 | 0.2+ | 2004 05 07 | 703 | 0.1+ | 1.0+ | | |
| 2000 04 06 | 704 | 0.4+ | 0.5+ | 2004 03 15 | 703 | 0.4+ | 0.3+ | 2004 05 07 | 703 | 0.3− | 0.8+ | | |
| 2000 04 06 | 704 | 0.3− | 1.0+ | 2004 03 15 | 703 | 0.1+ | 0.3+ | 2004 05 16 | 704 | 0.5− | 0.2− | | |
| 2000 04 06 | 704 | 0.9+ | 1.2+ | 2004 03 15 | 691 | 0.1+ | 0.0 | 2004 05 16 | 704 | 0.0 | 0.6+ | | |
| 2000 04 06 | 704 | 0.7+ | 1.2+ | 2004 03 16 | 704 | 0.3+ | 0.5+ | 2004 05 16 | 704 | 0.9+ | 0.5+ | | |
| 2000 04 06 | 704 | 0.3− | 1.1+ | 2004 03 16 | 704 | 0.3+ | 0.3+ | 2004 05 16 | 704 | 0.5+ | 0.2+ | | |
| 2000 04 07 | 699 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.2− | 0.5+ | 2004 05 16 | 704 | 0.9+ | 0.4+ | | |
| 2000 04 07 | 699 | 0.1+ | 0.5− | 2004 03 16 | 704 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.2+ | | |
| 2000 04 07 | 699 | 0.3− | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 1.3+ | 0.1+ | | |
| 2000 04 07 | 699 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.3− | 2006 09 28 | G96 | 0.6+ | 0.2+ | | |
| 2000 04 10 | 704 | 0.9+ | 0.3− | 2004 03 18 | 704 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.5+ | 0.0 | | |
| 2000 04 10 | 704 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.4− | 2006 10 11 | 691 | 0.2− | 0.3+ | | |
| 2000 04 10 | 704 | 0.6− | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.5− | 2006 10 11 | 691 | 0.2− | 0.6+ | | |
| 2000 04 25 | 699 | 0.2− | 1.0− | 2004 03 18 | 704 | 0.1+ | 0.5− | 2006 10 11 | 691 | 0.4− | 0.2− | | |
| 2000 04 25 | 699 | 0.3− | 0.0 | 2004 03 20 | 699 | 0.9− | 1.0+ | 2006 10 15 | 691 | 0.0 | 0.2+ | | |
| 2000 04 25 | 699 | 0.1+ | 0.2− | 2004 03 20 | 699 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.5+ | | |
| 2000 04 25 | 699 | 0.2+ | 0.3+ | 2004 03 20 | 699 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.2− | 1.2+ | | |
| 2001 08 26 | 691 | 0.1− | 0.9+ | 2004 03 20 | 699 | 1.5− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.4+ | | |
| 2001 08 26 | 691 | 0.5− | 1.1+ | 2004 03 23 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | | |
| 2001 08 26 | 691 | 0.4− | 1.0+ | 2004 03 23 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.5+ | | |
| 2003 12 21 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.4+ | | |
| 2003 12 21 | 704 | 0.6− | 0.9− | 2004 03 27 | 683 | (0.9− | 2.4−) | 2006 10 23 | 691 | 0.7− | 0.2+ | | |
| 2003 12 21 | 704 | 0.0 | 0.3− | 2004 03 27 | 683 | 0.5− | 0.9− | 2006 10 23 | 691 | 0.6− | 0.2+ | | |
| 2004 01 23 | 699 | 0.3+ | 0.1+ | 2004 03 27 | 683 | (1.6− | 1.1−) | 2006 11 15 | G96 | 0.4+ | 0.1− | | |
| 2004 01 23 | 699 | 0.8+ | 1.3− | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.2− | | |
| 2004 01 23 | 699 | 0.3+ | 0.4− | 2004 03 27 | 704 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2004 01 23 | 699 | 0.2− | 1.1+ | 2004 03 27 | 704 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.0 | | |
| 2004 01 24 | 704 | 0.1+ | 0.4− | 2004 03 27 | 704 | 0.1+ | 0.0 | | | | | | |

**(138142)∗ 2000 EE$_{50}$ = 2002 TC$_{87}$**

Discovered 2000 Mar. 9 by F. B. Zoltowski at Tebbutt Observatory, Edgewood.

Id. G. V. Williams (*MPO* 37396)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.35215 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23640258 | $\omega$ | 165.41661 | | −0.98740196 | −0.15654461 | |
| $a$ | 2.5904064 | $\Omega$ | 5.72839 | | +0.11189464 | −0.79378490 | |
| $e$ | 0.0984343 | $i$ | 13.35007 | | +0.11187922 | −0.58770683 | |
| $P$ | 4.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 858 | 0.1− | 0.3+ | 2002 10 31 | 704 | 0.9+ | 1.0− | 2004 02 11 | 704 | 1.0+ | 0.2− | | |
| 2000 03 09 | 858 | 0.1+ | 0.3+ | 2002 10 31 | 704 | 0.4+ | 0.3+ | 2004 02 11 | 704 | 0.0 | 0.4− | | |
| 2000 03 09 | 858 | 0.0 | 0.4+ | 2002 10 31 | 704 | 0.0 | 0.4− | 2006 08 27 | 691 | 0.0 | 0.4+ | | |
| 2000 03 11 | 858 | 0.0 | 0.7+ | 2003 12 17 | 704 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.1+ | | |
| 2000 03 11 | 858 | 0.1− | 0.4+ | 2003 12 17 | 704 | 0.5+ | 0.5+ | 2006 08 27 | 691 | 0.4− | 0.3− | | |
| 2000 03 11 | 858 | 0.1+ | 0.6+ | 2003 12 17 | 704 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.7+ | | |
| 2000 03 12 | 703 | 1.0− | 1.8+ | 2003 12 17 | 704 | 0.1− | 0.2+ | 2006 08 28 | 699 | (2.3+ | 1.3−) | | |
| 2000 03 12 | 703 | 0.3+ | 1.0+ | 2003 12 29 | 703 | (0.4− | 1.6−) | 2006 08 28 | 699 | (1.4− | 1.8+) | | |
| 2000 03 12 | 703 | 0.3− | 0.2− | 2003 12 29 | 703 | 1.0− | 0.9− | 2006 08 28 | 699 | 0.4− | 0.2− | | |
| 2000 03 12 | 703 | 1.6+ | 0.4− | 2003 12 29 | 703 | 0.5− | 0.7− | 2006 09 12 | 703 | 0.4− | 0.7+ | | |
| 2000 03 15 | 858 | 0.3− | 0.1− | 2003 12 29 | 703 | 0.7− | 0.3− | 2006 09 12 | 703 | 0.2+ | 0.3− | | |
| 2000 03 15 | 858 | 0.4+ | 0.3+ | 2003 12 30 | 704 | 0.8+ | 0.9− | 2006 09 12 | 703 | 1.0− | 0.0 | | |
| 2000 03 15 | 858 | 0.8+ | 0.2+ | 2003 12 30 | 704 | 1.0+ | 0.0 | 2006 09 12 | 703 | 0.3− | 0.5− | | |
| 2000 03 26 | 858 | 0.9+ | 0.1+ | 2003 12 30 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.3+ | | |
| 2000 03 26 | 858 | 0.7+ | 0.6+ | 2003 12 30 | 704 | 1.0+ | 0.8+ | 2006 09 16 | 699 | 0.6− | 0.3+ | | |
| 2000 03 26 | 858 | 0.5+ | 0.1− | 2003 12 30 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.5+ | | |
| 2000 04 28 | 858 | 0.1− | 0.9+ | 2004 01 02 | 704 | 0.3+ | 0.2− | 2006 09 16 | 699 | 0.7− | 0.5+ | | |
| 2000 04 28 | 858 | 0.2+ | 0.8+ | 2004 01 02 | 704 | 0.5− | 0.9− | 2006 09 19 | 699 | 0.4+ | 0.8+ | | |
| 2000 04 28 | 858 | 0.7+ | 0.8+ | 2004 01 02 | 704 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2004 01 02 | 704 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.4+ | 1.1+ | | |
| 2002 10 03 | 704 | 1.2− | 0.5+ | 2004 01 02 | 704 | 0.2− | 0.8− | 2006 09 19 | 703 | 0.9− | 0.0 | | |
| 2002 10 03 | 704 | 0.8− | 0.4+ | 2004 01 19 | 704 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2004 01 19 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.6+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2004 01 19 | 704 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7− | 1.2+ | | |
| 2002 10 04 | 704 | 0.2+ | 0.5+ | 2004 01 19 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.2− | | |
| 2002 10 04 | 704 | 0.0 | 0.1− | 2004 01 22 | 644 | 0.1+ | 1.0− | 2006 09 20 | 644 | 0.7+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2004 01 22 | 644 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.7+ | 2004 01 22 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.3− |
| 2002 10 04 | 704 | 0.5+ | 0.9+ | 2004 01 28 | 703 | 0.2− | 0.5− | 2006 09 26 | 691 | 0.5+ | 0.0 |
| 2002 10 07 | 699 | (1.6+ | 1.8+) | 2004 01 28 | 703 | 0.4− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 10 07 | 699 | 0.4− | 0.5− | 2004 01 28 | 703 | 0.3− | 1.4− | 2006 09 26 | 691 | 0.3+ | 0.2+ |
| 2002 10 07 | 699 | 0.0 | 0.5− | 2004 01 28 | 703 | 0.5− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2002 10 07 | 699 | 0.5− | 0.4+ | 2004 01 30 | 699 | 0.3− | 0.6− | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 10 07 | 704 | 0.5+ | 0.2− | 2004 01 30 | 699 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.7− |
| 2002 10 07 | 704 | 0.3+ | 1.4− | 2004 01 30 | 699 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2002 10 07 | 704 | 0.3− | 0.8− | 2004 01 30 | 699 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2002 10 07 | 704 | 1.0− | 0.3+ | 2004 02 02 | 704 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.5− | 1.1− |
| 2002 10 11 | 704 | 0.2+ | 0.3− | 2004 02 02 | 704 | (1.7+ | 0.9−) | 2006 10 22 | 703 | 1.1− | 0.2+ |
| 2002 10 11 | 704 | 0.1+ | 0.9+ | 2004 02 02 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.2− |
| 2002 10 11 | 704 | 0.4− | 0.6− | 2004 02 02 | 704 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.8− |
| 2002 10 11 | 704 | 0.4− | 0.7− | 2004 02 11 | 704 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2002 10 31 | 704 | 0.4+ | 0.5+ | 2004 02 11 | 704 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2002 10 31 | 704 | 1.5+ | 0.0 | 2004 02 11 | 704 | 0.6− | 1.1+ | 2006 11 11 | G96 | 0.2+ | 0.3− |

**(138143)∗ 2000 EL$_{54}$**

Discovered 2000 Mar. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.45939 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36962914 | $\omega$ | 297.36034 | | −0.45405434 | | −0.89097040 |
| $a$ | 1.9229083 | $\Omega$ | 179.61551 | | +0.89071790 | | −0.45399005 |
| $e$ | 0.0805026 | $i$ | 22.13981 | | +0.02136076 | | −0.00804807 |
| $P$ | 2.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 691 | 0.5− | 0.0 | 2001 10 11 | 704 | 0.1+ | 1.0+ | 2005 03 11 | 704 | 0.3+ | 0.2− |
| 2000 03 09 | 691 | 0.3− | 0.0 | 2001 10 11 | 704 | 0.5+ | 0.9+ | 2005 03 11 | 704 | 0.4+ | 0.4− |
| 2000 03 09 | 691 | 0.5− | 0.2− | 2001 10 11 | 704 | 0.2+ | 0.4+ | 2005 03 11 | 704 | 0.1− | 1.0+ |
| 2000 03 11 | 691 | 0.1− | 0.2+ | 2001 10 11 | 704 | 0.8+ | 0.2+ | 2005 03 11 | 704 | 0.1+ | 0.4+ |
| 2000 03 11 | 691 | 0.1− | 0.5− | 2001 10 23 | 699 | (3.4− | 0.2+) | 2006 08 27 | 699 | 1.5− | 0.1− |
| 2000 03 11 | 691 | 0.1− | 0.2− | 2001 10 23 | 699 | 0.3− | 0.4+ | 2006 08 27 | 699 | 0.6− | 1.3+ |
| 2000 04 07 | 699 | 1.4+ | 0.4+ | 2001 10 23 | 699 | 0.2− | 0.2− | 2006 08 27 | 699 | 0.1+ | 0.2+ |
| 2000 04 07 | 699 | 0.2+ | 1.1+ | 2001 10 23 | 699 | 0.9− | 0.2+ | 2006 08 27 | 699 | 1.1− | 0.6+ |
| 2000 04 07 | 699 | 0.9+ | 0.8+ | 2003 06 28 | 938 | 1.1− | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.8− |
| 2000 04 07 | 699 | 0.8− | 1.8+ | 2003 06 28 | 938 | 1.0− | 0.2+ | 2006 09 19 | 703 | 0.7+ | 0.8+ |
| 2000 04 28 | 699 | 1.4+ | 0.3+ | 2003 06 28 | 938 | 0.7− | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.7− |
| 2000 04 28 | 699 | 0.3+ | 0.0 | 2003 07 27 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.7+ | 0.0 |
| 2000 04 28 | 699 | 0.7+ | 0.1− | 2003 07 27 | 644 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.4− | 0.6+ |
| 2000 04 28 | 699 | 1.2+ | 0.7+ | 2003 07 27 | 644 | 0.3+ | 0.6+ | 2006 09 20 | 703 | 0.1+ | 0.1+ |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2003 08 22 | 645 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.1+ | 0.7− |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2003 08 22 | 645 | 0.2+ | 0.1− | 2006 09 20 | 703 | 0.5+ | 0.6+ |

**(138144)∗ 2000 EH$_{56}$**

Discovered 2000 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.95014 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24313091 | $\omega$ | 133.54116 | | −0.49532958 | | −0.86825634 |
| $a$ | 2.5423925 | $\Omega$ | 346.07267 | | +0.75983118 | | −0.41744772 |
| $e$ | 0.1600304 | $i$ | 6.66134 | | +0.42107623 | | −0.26808270 |
| $P$ | 4.05 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.8+ | 0.0 | 2003 12 22 | 704 | 1.3− | 0.7− | 2004 03 18 | 704 | 0.4+ | 0.8+ |
| 2000 03 03 | 704 | 0.4− | 0.4− | 2003 12 22 | 704 | 0.4− | 0.8− | 2004 03 18 | 704 | 0.3+ | 0.0 |
| 2000 03 03 | 704 | 0.1+ | 0.5− | 2003 12 22 | 704 | 0.3− | 0.6− | 2004 03 18 | 704 | 0.4+ | 0.8+ |
| 2000 03 03 | 704 | 0.2− | 0.6− | 2003 12 22 | 704 | 0.3− | 1.0− | 2004 03 27 | 704 | 1.0+ | 0.1+ |
| 2000 03 03 | 704 | 0.3+ | 0.6− | 2003 12 27 | 704 | 1.3− | 0.4+ | 2004 03 27 | 704 | 1.0+ | 0.4+ |
| 2000 03 08 | 704 | 0.1− | 0.2− | 2003 12 27 | 704 | 0.4+ | 0.4+ | 2004 03 27 | 704 | 1.1+ | 0.2+ |
| 2000 03 08 | 704 | 0.5+ | 0.0 | 2003 12 27 | 704 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.1− |
| 2000 03 08 | 704 | 1.3+ | 0.7+ | 2003 12 27 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.5+ | 0.5+ |
| 2000 03 11 | 704 | 0.3− | 0.2+ | 2004 01 29 | 704 | 0.2− | 0.6− | 2004 04 12 | 703 | 0.6− | 0.2− |
| 2000 03 11 | 704 | 0.3− | 0.2+ | 2004 01 29 | 704 | 0.2− | 0.7+ | 2004 04 12 | 703 | (1.1− | 1.8−) |
| 2000 03 11 | 704 | 0.6− | 0.2− | 2004 01 29 | 704 | 1.1− | 0.0 | 2004 04 12 | 703 | 0.5− | 1.2− |
| 2000 03 11 | 704 | 0.4− | 0.1+ | 2004 02 12 | 644 | 0.4− | 0.1+ | 2004 04 12 | 703 | 0.3+ | 0.9− |
| 2000 03 11 | 704 | 0.2− | 0.2− | 2004 02 12 | 644 | 0.4− | 0.1− | 2006 07 21 | G96 | 0.3− | 1.1+ |
| 2000 04 02 | 699 | (2.4+ | 0.6+) | 2004 02 12 | 644 | 0.3− | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.8+ |
| 2000 04 02 | 699 | 1.3+ | 0.1+ | 2004 02 14 | 703 | 0.3+ | 0.2+ | 2006 07 21 | G96 | 0.4+ | 0.9+ |
| 2000 04 02 | 699 | 1.7+ | 0.3+ | 2004 02 14 | 703 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.3− | 0.5+ |
| 2000 04 02 | 699 | 1.2+ | 1.1+ | 2004 02 14 | 703 | 0.2+ | 0.7+ | 2006 09 24 | 106 | 0.1+ | 0.1− |
| 2000 04 05 | 704 | 0.0 | 0.1+ | 2004 02 14 | 703 | 0.5+ | 0.1+ | 2006 09 24 | 106 | 0.1+ | 1.2− |
| 2000 04 05 | 704 | 0.2+ | 0.0 | 2004 02 17 | 333 | (0.8− | 1.9+) | 2006 09 24 | 106 | 0.5+ | 0.1− |
| 2000 04 05 | 704 | 0.2+ | 0.6+ | 2004 02 17 | 333 | 0.8− | 0.6− | 2006 09 24 | 106 | 0.6− | 0.1+ |
| 2000 04 05 | 704 | 0.8+ | 1.0+ | 2004 02 17 | 333 | 0.4− | 0.5− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2000 04 06 | 704 | 0.7− | 0.5+ | 2004 02 18 | 704 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2000 04 06 | 704 | 0.2− | 0.7+ | 2004 02 18 | 704 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2000 04 06 | 704 | 0.4− | 0.5+ | 2004 02 18 | 704 | 0.8− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2004 02 18 | 704 | 0.4− | 0.0 | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2000 05 05 | 645 | 0.1− | 0.0 | 2004 02 20 | 608 | (1.2+ | 1.6+) | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 0.5− | 0.8+ | 2004 02 20 | 608 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 09 07 | 704 | 0.5− | 0.1+ | 2004 02 20 | 608 | 1.1+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 644 | 0.5− | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 2002 10 04 | 704 | 0.1+ | 0.4− | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | 0.2− | 1.0+ | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.6− | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | 0.8+ | 1.3− | 2004 03 15 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.5− | 0.2+ | 2004 03 15 | 704 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.0 | 0.9+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 1.2− | 0.8− | 2004 03 15 | 704 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2002 10 31 | 704 | 0.5+ | 0.0 | 2004 03 18 | 704 | 1.1+ | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.5+ | 0.5+ | 2004 03 18 | 704 | 0.1+ | 1.0+ | | | | |

**(138145)∗ 2000 EO$_{59}$ = 2004 GS$_{22}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.72865 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26843673 | $\omega$ | 116.70693 | | +0.00008495 | | +0.99996052 |
| $a$ | 2.3799879 | $\Omega$ | 153.29344 | | −0.92436419 | | +0.00346834 |
| $e$ | 0.0590202 | $i$ | 1.13283 | | −0.38151125 | | −0.00818079 |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 13 | 691 | 0.2− | 0.3+ | 2004 04 15 | 699 | 0.2− | 0.5− | 2005 09 25 | A50 | 0.1+ | 0.2− |
| 1998 12 13 | 691 | 0.4− | 0.1+ | 2004 04 15 | 699 | 0.4+ | 0.4+ | 2005 09 25 | A50 | 0.3+ | 0.2− |
| 1998 12 13 | 691 | 0.3− | 0.2+ | 2004 04 16 | 691 | 0.0 | 0.3+ | 2005 09 29 | 699 | 0.2+ | 1.2− |
| 2000 02 05 | 691 | 0.2+ | 0.1− | 2004 04 16 | 691 | 0.3− | 0.3+ | 2005 09 29 | 699 | 0.5+ | 1.3+ |
| 2000 02 05 | 691 | 0.1+ | 0.2− | 2004 04 16 | 691 | 0.1+ | 0.4+ | 2005 09 29 | 699 | 0.4− | 0.6+ |
| 2000 02 05 | 691 | 0.2+ | 0.1− | 2004 04 21 | 704 | 0.1+ | 0.6+ | 2005 09 29 | 699 | 1.3− | 0.3+ |
| 2000 03 03 | 704 | 0.1− | 0.5+ | 2004 04 21 | 704 | 0.1− | 1.0+ | 2005 10 01 | G96 | 0.4+ | 0.2+ |
| 2000 03 03 | 704 | 0.8+ | 0.8+ | 2004 04 21 | 704 | 0.5− | 0.5+ | 2005 10 01 | G96 | 0.2+ | 0.3+ |
| 2000 03 03 | 704 | 0.3+ | 0.8+ | 2004 04 21 | 704 | 0.6+ | 0.3+ | 2005 10 01 | G96 | 0.2+ | 0.1+ |
| 2000 03 03 | 704 | 1.1+ | 1.1+ | 2004 04 30 | 691 | 0.4+ | 0.2+ | 2005 10 01 | G96 | 0.1+ | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.7+ | 2004 04 30 | 691 | 0.2+ | 0.2− | 2005 10 07 | G96 | 0.4− | 0.7+ |
| 2000 03 10 | 704 | 0.7− | 0.2+ | 2004 04 30 | 691 | 0.2− | 0.2+ | 2005 10 07 | G96 | 0.1+ | 0.6+ |
| 2000 03 10 | 704 | 0.4+ | 1.3+ | 2004 05 15 | 691 | 0.2+ | 0.1− | 2005 10 07 | G96 | 0.0 | 0.6+ |
| 2000 03 10 | 704 | 0.6+ | 0.3+ | 2004 05 15 | 691 | 0.4− | 0.0 | 2005 10 07 | G96 | 0.1+ | 0.5+ |
| 2000 03 11 | 704 | 0.5+ | 0.7+ | 2004 05 15 | 691 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 0.5+ | 0.6+ | 2005 09 13 | 691 | 0.2− | 0.5+ | 2005 10 28 | G96 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.6− | 1.0+ | 2005 09 13 | 691 | 0.3− | 0.5+ | 2005 10 28 | G96 | 0.4+ | 0.1+ |
| 2001 08 19 | 704 | 0.3+ | 0.8+ | 2005 09 13 | 691 | 0.4− | 0.5+ | 2005 10 28 | G96 | 0.2+ | 0.0 |
| 2001 08 19 | 704 | 0.1+ | 0.1+ | 2005 09 23 | 703 | 0.6+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 08 19 | 704 | (0.5− | 1.7+) | 2005 09 23 | 703 | 0.9− | 0.0 | 2006 11 15 | G96 | 0.7− | 0.2− |
| 2004 04 12 | 699 | 0.1+ | 0.3− | 2005 09 23 | 703 | 0.4− | 0.6− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2004 04 12 | 699 | 0.5− | 0.5+ | 2005 09 23 | 703 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 699 | 0.9+ | 0.2+ | 2005 09 25 | 703 | 1.1+ | 1.2+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2004 04 12 | 699 | 0.3− | 0.7− | 2005 09 25 | 703 | (0.7+ | 1.6+) | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2004 04 15 | 699 | 0.1− | 0.5− | 2005 09 25 | 703 | (0.3+ | 2.6+) | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2004 04 15 | 699 | 0.8− | 0.4+ | 2005 09 25 | 703 | (1.2+ | 2.2+) | 2006 11 27 | G96 | 0.3+ | 0.2− |

**(138146)∗ 2000 EW$_{60}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.57731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24626437 | $\omega$ | 173.90740 | | −0.96491840 | −0.26193683 | |
| $a$ | 2.5207803 | $\Omega$ | 350.84770 | | +0.23587481 | −0.83486135 | |
| $e$ | 0.1709992 | $i$ | 6.47338 | | +0.11530635 | −0.48414422 | |
| $P$ | 4.00 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.2+ | 0.2+ | 2004 03 15 | 703 | 0.7− | 0.0 | 2004 03 26 | 704 | 0.2+ | 0.1+ |
| 1996 03 20 | 691 | 0.1+ | 0.3+ | 2004 03 15 | 703 | 0.1− | 0.3− | 2004 03 26 | 704 | 1.4+ | 0.9+ |
| 1996 03 20 | 691 | 0.3+ | 0.1+ | 2004 03 15 | 703 | 1.0− | 0.2+ | 2004 03 26 | 699 | 0.7− | 0.6− |
| 2000 02 12 | 645 | 0.2− | 0.3− | 2004 03 15 | 703 | 0.2+ | 0.4+ | 2004 03 26 | 704 | 0.1+ | 0.2+ |
| 2000 02 12 | 645 | 0.2− | 0.3− | 2004 03 16 | 704 | 0.7+ | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.1− |
| 2000 03 10 | 704 | 0.6+ | 0.2− | 2004 03 16 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.7− | 0.2− |
| 2000 03 10 | 704 | 0.5+ | 0.3+ | 2004 03 16 | 704 | 0.8− | 0.0 | 2004 03 27 | 704 | 0.5− | 0.3− |
| 2000 03 10 | 704 | 0.4+ | 0.4+ | 2004 03 16 | 704 | 0.5+ | 0.1− | 2004 03 27 | 704 | 0.2− | 0.3+ |
| 2000 03 10 | 704 | 0.9+ | 0.1+ | 2004 03 16 | 704 | 0.0 | 0.4− | 2004 03 27 | 704 | 0.0 | 0.3+ |
| 2000 03 10 | 704 | 0.3+ | 0.6+ | 2004 03 17 | 691 | 0.3+ | 0.2− | 2004 03 28 | 704 | 0.2− | 0.6− |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2004 03 17 | 691 | 0.2+ | 0.2− | 2004 03 28 | 704 | 0.5+ | 0.9− |
| 2000 03 11 | 704 | 0.4− | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.8− | 0.2− |
| 2000 03 11 | 704 | 0.6+ | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.1− | 2004 03 28 | 704 | 0.3− | 0.3− |
| 2000 03 11 | 704 | 1.4+ | 1.0+ | 2004 03 18 | 704 | 0.8− | 0.1− | 2004 03 28 | 704 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 1.2+ | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.7− | 2004 03 31 | 691 | 0.1+ | 0.1+ |
| 2000 03 14 | 703 | 0.6− | 0.3− | 2004 03 18 | 704 | 0.5+ | 0.1− | 2004 03 31 | 691 | 0.0 | 0.2+ |
| 2000 03 14 | 703 | 0.7+ | 0.7− | 2004 03 19 | 704 | 0.5+ | 0.4+ | 2004 03 31 | 691 | 0.2+ | 0.0 |
| 2000 03 14 | 703 | 0.2+ | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.3− | 2004 04 12 | 703 | 1.0− | 0.7− |
| 2000 03 14 | 703 | (2.0+ | 0.1−) | 2004 03 19 | 704 | 0.3+ | 0.6− | 2004 04 12 | 703 | 0.3− | 0.3+ |
| 2000 03 26 | 699 | 0.6− | 1.0+ | 2004 03 19 | 704 | 0.8− | 0.4− | 2004 04 12 | 703 | 0.0 | 0.5− |
| 2000 03 26 | 699 | 0.0 | 1.0+ | 2004 03 19 | 704 | 0.5+ | 0.1− | 2004 04 12 | 703 | 0.7+ | 1.4+ |
| 2000 03 26 | 699 | (0.1− | 2.3+) | 2004 03 20 | 704 | 0.3− | 0.1− | 2004 04 16 | 704 | 0.2− | 0.5− |
| 2000 03 26 | 699 | 0.5− | 1.0+ | 2004 03 20 | 704 | 0.1+ | 0.5− | 2004 04 16 | 704 | 0.6+ | 0.3+ |
| 2000 04 07 | 699 | 0.2− | 0.8− | 2004 03 20 | 704 | 0.9− | 0.2− | 2004 04 16 | 704 | 0.6+ | 0.2− |
| 2000 04 07 | 699 | 0.9− | 0.1− | 2004 03 20 | 704 | 0.2− | 0.3− | 2004 04 16 | 704 | 0.5+ | 0.4+ |
| 2000 04 07 | 699 | 0.4+ | 1.0+ | 2004 03 20 | 704 | 0.8− | 0.7− | 2006 10 17 | 691 | 0.0 | 0.5+ |
| 2000 04 07 | 699 | 0.2− | 1.6+ | 2004 03 21 | 608 | 0.3+ | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2003 11 20 | 691 | 0.3− | 0.2+ | 2004 03 21 | 608 | 0.1− | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2003 11 20 | 691 | 0.3− | 0.2− | 2004 03 21 | 608 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2003 11 20 | 691 | 0.2+ | 0.0 | 2004 03 21 | 699 | 0.3+ | 0.7+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2004 02 26 | 704 | 1.0− | 0.5+ | 2004 03 21 | 699 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2004 02 26 | 704 | 0.3+ | 0.7+ | 2004 03 21 | 699 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 704 | 0.1− | 0.4+ | 2004 03 21 | 699 | 0.3− | 0.7− | 2006 10 21 | 691 | 0.1− | 0.5+ |
| 2004 02 26 | 704 | 1.0+ | 0.2− | 2004 03 25 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 691 | 0.1− | 0.6+ |
| 2004 02 26 | 704 | 0.0 | 0.6+ | 2004 03 25 | 704 | 0.4− | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2004 03 13 | 644 | 0.4+ | 0.0 | 2004 03 25 | 704 | 0.5− | 1.0+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 03 13 | 644 | 0.3+ | 0.1− | 2004 03 26 | 699 | 0.3+ | 0.5− | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2004 03 13 | 644 | 0.5+ | 0.2+ | 2004 03 26 | 699 | 0.7− | 0.5+ | 2006 11 25 | G96 | 0.4− | 0.7− |
| 2004 03 13 | 644 | 0.3+ | 0.1+ | 2004 03 26 | 704 | 1.1+ | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2004 03 13 | 644 | 0.4+ | 0.3+ | 2004 03 26 | 704 | 0.1+ | 0.9+ | | | | |
| 2004 03 13 | 644 | 0.2+ | 0.0 | 2004 03 26 | 699 | 0.4+ | 0.1+ | | | | |

**(138147)∗ 2000 ER$_{61}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.15181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24308447 | $\omega$ | 159.56769 | | −0.88371873 | −0.46793377 | |
| $a$ | 2.5427163 | $\Omega$ | 352.51357 | | +0.41935705 | −0.78325091 | |
| $e$ | 0.1798405 | $i$ | 3.91612 | | +0.20780005 | −0.40933605 | |
| $P$ | 4.05 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 06 | 691 | 0.7− | 0.4+ | 2004 02 19 | 704 | 0.3+ | 0.6+ | 2004 03 21 | 691 | 0.1− | 0.1+ |
| 1994 11 06 | 691 | 0.6− | 0.1+ | 2004 02 19 | 704 | 0.6+ | 0.2+ | 2004 03 21 | 691 | 0.2− | 0.0 |
| 1994 11 06 | 691 | 0.4− | 0.3− | 2004 02 26 | 704 | 1.0+ | 0.3+ | 2004 03 23 | 704 | 0.5+ | 0.8+ |
| 1994 11 10 | 691 | 0.2− | 0.3− | 2004 02 26 | 704 | 1.1+ | 0.3+ | 2004 03 23 | 704 | 0.2− | 0.7+ |
| 1994 11 10 | 691 | 1.0+ | 0.2− | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2004 03 23 | 704 | (2.8+ | 0.1−) |
| 1998 10 01 | 691 | 0.6+ | 0.2− | 2004 02 26 | 704 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.5+ | 0.2− |
| 1998 10 01 | 691 | 0.7+ | 0.3+ | 2004 02 26 | 704 | 0.2+ | 1.0− | 2004 03 23 | 704 | (1.9+ | 0.5+) |
| 1998 10 01 | 691 | 0.6+ | 0.1+ | 2004 03 16 | 291 | 0.1− | 0.1+ | 2004 03 25 | 704 | 0.3+ | 0.3+ |
| 2000 02 27 | 691 | 0.4− | 0.6− | 2004 03 16 | 291 | 0.2− | 0.1+ | 2004 03 25 | 704 | 0.7+ | 0.5− |
| 2000 02 27 | 691 | 0.6− | 0.8− | 2004 03 16 | 704 | 0.7+ | 0.6− | 2004 03 25 | 704 | 0.2− | 1.4+ |
| 2000 02 27 | 691 | 0.6− | 0.7− | 2004 03 16 | 704 | 0.2+ | 0.1+ | 2004 03 25 | 704 | 0.1+ | 0.1+ |
| 2000 03 03 | 645 | 0.0 | 0.2− | 2004 03 16 | 704 | 0.1+ | 0.7− | 2004 03 25 | 704 | 0.2− | 0.9+ |
| 2000 03 03 | 645 | 0.1− | 0.2− | 2004 03 16 | 704 | 0.7+ | 0.8+ | 2004 03 27 | 704 | 0.9+ | 0.5+ |
| 2000 03 10 | 704 | 0.1− | 0.9+ | 2004 03 16 | 291 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.8+ |
| 2000 03 10 | 704 | 0.2+ | 0.7+ | 2004 03 16 | 704 | 0.4− | 0.1− | 2004 03 27 | 704 | 0.4− | 1.1+ |
| 2000 03 10 | 704 | 0.1− | 0.4+ | 2004 03 16 | 704 | 0.3+ | 0.8− | 2004 03 27 | 704 | 0.5+ | 0.9+ |
| 2000 03 10 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 704 | 0.7+ | 0.9− | 2004 03 30 | 691 | 0.0 | 0.1+ |
| 2000 03 10 | 704 | 0.0 | 1.2+ | 2004 03 16 | 704 | 0.4+ | 0.5− | 2004 03 30 | 691 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.4+ | 2004 03 16 | 704 | 0.8+ | 0.4− | 2004 03 30 | 691 | 0.2− | 0.1− |
| 2000 03 11 | 704 | 0.8− | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.0 | 2004 03 31 | 691 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.2− | 0.7+ | 2004 03 17 | 704 | 0.6+ | 0.1+ | 2004 03 31 | 691 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.1+ | 1.0+ | 2004 03 17 | 704 | 0.6+ | 1.0− | 2004 03 31 | 691 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 0.2− | 1.0+ | 2004 03 17 | 704 | 0.2+ | 0.2− | 2004 04 12 | 691 | 0.7− | 0.0 |
| 2000 03 14 | 703 | 0.9+ | 1.6− | 2004 03 17 | 704 | 0.4+ | 0.5+ | 2004 04 12 | 691 | 0.1− | 0.1− |
| 2000 03 14 | 703 | 0.6− | 1.5+ | 2004 03 17 | 704 | 0.2− | 0.3+ | 2004 04 12 | 691 | 0.3− | 0.1+ |
| 2000 03 14 | 703 | 0.5+ | 0.1+ | 2004 03 17 | 704 | 1.1+ | 0.7+ | 2004 04 14 | 699 | 0.1+ | 0.5+ |
| 2000 03 14 | 703 | (1.2− | 2.3−) | 2004 03 17 | 704 | 0.3+ | 0.5+ | 2004 04 14 | 699 | 0.4+ | 0.4− |
| 2000 04 05 | 704 | 0.4+ | 1.3− | 2004 03 17 | 704 | 0.1− | 0.5+ | 2004 04 14 | 699 | 0.1+ | 0.2− |
| 2000 04 05 | 704 | (0.5+ | 2.4−) | 2004 03 17 | 704 | 0.2+ | 0.5− | 2004 04 14 | 699 | 0.4− | 0.9− |
| 2000 04 05 | 704 | 0.4− | 1.5− | 2004 03 18 | 704 | 0.8+ | 0.3+ | 2004 04 24 | 691 | 0.3− | 0.5+ |
| 2002 10 10 | 239 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.4+ | 2004 04 24 | 691 | 0.4− | 0.2+ |
| 2002 10 10 | 239 | 0.5+ | 0.2+ | 2004 03 18 | 704 | 1.0+ | 0.2+ | 2004 04 24 | 691 | 0.3− | 0.2+ |
| 2002 10 10 | 239 | 0.6− | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2005 08 08 | 807 | 0.5+ | 1.4+ |
| 2004 01 18 | 703 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.3− | 2005 08 08 | 807 | 0.0 | 1.3+ |
| 2004 01 18 | 703 | 0.2− | 1.3+ | 2004 03 18 | 704 | 0.9+ | 0.5− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2004 01 18 | 703 | 0.4− | 0.3− | 2004 03 18 | 704 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.7− | 0.1− |
| 2004 01 18 | 703 | 0.7− | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2004 01 18 | 703 | 0.5− | 0.2− | 2004 03 18 | 704 | 0.9+ | 0.7− | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 2004 01 18 | 703 | 1.0+ | 1.3+ | 2004 03 19 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2004 01 18 | 703 | 0.7+ | 1.1+ | 2004 03 19 | 704 | 1.5+ | 0.4− | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2004 01 18 | 703 | 1.3+ | 0.3− | 2004 03 19 | 704 | 0.9+ | 0.5− | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2004 02 16 | 703 | 0.9− | 0.3− | 2004 03 19 | 704 | 0.8+ | 0.2+ | 2006 09 26 | 691 | 0.3+ | 0.1+ |
| 2004 02 16 | 703 | 0.2− | 0.4− | 2004 03 19 | 704 | 1.0+ | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2004 02 16 | 703 | 0.4− | 0.5− | 2004 03 20 | 699 | 1.0− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.7− |
| 2004 02 16 | 703 | 0.6− | 0.0 | 2004 03 20 | 699 | 0.3− | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2004 02 19 | 704 | 0.4+ | 0.7+ | 2004 03 20 | 699 | 0.9− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2004 02 19 | 704 | 0.3+ | 0.2− | 2004 03 20 | 699 | 0.4+ | 1.1+ | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2004 02 19 | 704 | 0.4+ | 0.4+ | 2004 03 21 | 691 | 0.1− | 0.0 | | | | |

**(138148)∗ 2000 EJ$_{63}$ = 2001 SW$_{19}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17195)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 253.66736 | | (2000.0) | | | |
| $n$ | 0.27392674 | $\omega$ | 211.32438 | | −0.61094559 | +0.79153144 |
| $a$ | 2.3480811 | $\Omega$ | 21.02943 | | −0.71745889 | −0.54559293 |
| $e$ | 0.1715293 | $i$ | 2.38749 | | −0.33466137 | −0.27532949 |
| $P$ | 3.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 703 | (3.0+ | 0.4+) | 2000 04 07 | 699 | 0.5+ | 0.5+ | 2001 09 26 | 704 | (0.2− | 1.8+) |
| 2000 02 27 | 703 | (2.6− | 0.5−) | 2000 04 10 | 704 | 1.1− | 0.3− | 2001 09 26 | 704 | 0.3− | 1.1+ |
| 2000 02 27 | 703 | 0.6− | 0.2− | 2000 04 10 | 704 | 1.0− | 0.1+ | 2001 09 26 | 704 | (0.3− | 2.0+) |
| 2000 02 27 | 703 | 0.1− | 0.1− | 2000 04 10 | 704 | 0.3− | 0.5− | 2001 10 17 | 644 | (0.3+ | 1.8+) |
| 2000 03 10 | 704 | 0.5+ | 0.2+ | 2000 04 10 | 704 | 0.6− | 0.2− | 2001 10 17 | 644 | (0.2+ | 1.7+) |
| 2000 03 10 | 704 | 0.5+ | 0.0 | 2000 04 10 | 704 | 0.0 | 0.6+ | 2001 10 17 | 644 | 0.1− | 1.5+ |
| 2000 03 10 | 704 | 0.4+ | 0.2+ | 2000 04 10 | 704 | 1.1+ | 0.9+ | 2005 09 30 | G96 | 0.1− | 0.1+ |
| 2000 03 10 | 704 | 0.2− | 0.7+ | 2000 04 24 | 691 | 0.1− | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.1+ |
| 2000 03 10 | 704 | 0.2+ | 0.3+ | 2000 04 24 | 691 | 0.1− | 0.2− | 2005 09 30 | G96 | 0.0 | 0.0 |
| 2000 03 11 | 704 | 0.1+ | 0.3+ | 2000 04 24 | 691 | 0.1− | 0.1− | 2005 09 30 | G96 | 0.3− | 0.1+ |
| 2000 03 11 | 704 | 0.3− | 0.3+ | 2000 04 26 | 699 | 1.0+ | 1.1+ | 2005 10 03 | G96 | 0.1− | 0.2− |
| 2000 03 11 | 704 | 0.1− | 0.4+ | 2000 04 26 | 699 | 0.7− | 0.8+ | 2005 10 03 | G96 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.1− | 0.0 | 2000 04 26 | 699 | 1.6+ | 0.6− | 2005 10 03 | G96 | 0.1+ | 0.1− |
| 2000 03 11 | 704 | 0.3+ | 0.9+ | 2000 04 26 | 699 | 0.6− | 0.5+ | 2005 10 03 | G96 | 0.3+ | 0.2− |
| 2000 03 14 | 703 | 0.2+ | 0.1+ | 2000 04 27 | 699 | 0.5+ | 0.9+ | 2005 10 24 | 691 | 0.1− | 0.3+ |
| 2000 03 14 | 703 | 0.4+ | 0.1− | 2000 04 27 | 699 | 0.8+ | 0.6+ | 2005 10 24 | 691 | 0.1− | 0.4− |
| 2000 03 14 | 703 | 0.5+ | 0.9+ | 2000 04 27 | 699 | 0.2+ | 0.4+ | 2005 10 24 | 691 | 0.0 | 0.5+ |
| 2000 03 14 | 703 | 0.6− | 0.4+ | 2000 04 27 | 699 | 0.6+ | 0.4+ | 2005 10 27 | G96 | 0.2+ | 0.3− |
| 2000 03 26 | 699 | 0.1− | 0.4+ | 2000 04 30 | 691 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.3+ | 0.4− |
| 2000 03 26 | 699 | 0.1− | 0.7+ | 2000 04 30 | 691 | 0.1− | 0.1+ | 2005 10 27 | G96 | 0.2+ | 0.4− |
| 2000 03 26 | 699 | 0.1+ | 0.2− | 2000 04 30 | 691 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.3+ | 0.4− |
| 2000 03 26 | 699 | 0.5− | 1.0+ | 2001 09 16 | 704 | 0.2− | 1.1+ | 2005 10 30 | 691 | 0.0 | 0.6+ |
| 2000 03 30 | 703 | 0.4+ | 0.5+ | 2001 09 16 | 704 | 0.4− | 0.1− | 2005 10 30 | 691 | 0.0 | 0.3+ |
| 2000 03 30 | 703 | 0.4− | 0.7+ | 2001 09 16 | 704 | 1.0− | 0.7− | 2005 10 30 | 691 | 0.1− | 0.3+ |
| 2000 03 30 | 703 | 1.1+ | 0.2+ | 2001 09 19 | 704 | 0.8+ | 0.3+ | 2005 11 05 | 691 | 0.3− | 0.2+ |
| 2000 03 30 | 703 | 0.8+ | 0.5+ | 2001 09 19 | 704 | 0.6− | 0.3+ | 2005 11 05 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.1+ | 2001 09 19 | 704 | 0.5− | 0.3+ | 2005 11 05 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.5+ | 0.5+ | 2001 09 20 | 704 | 0.4− | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2000 04 05 | 704 | 0.4+ | 0.1+ | 2001 09 20 | 704 | 0.3− | 1.1+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2000 04 05 | 704 | 0.6+ | 0.5+ | 2001 09 20 | 704 | 0.8− | 1.2+ | 2006 11 01 | 691 | 0.1− | 0.3− |
| 2000 04 05 | 704 | 0.2+ | 0.1− | 2001 09 20 | 704 | 0.2− | 1.1+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2000 04 06 | 704 | 0.4+ | 0.2+ | 2001 09 21 | 704 | 0.9− | 0.2+ | 2006 11 25 | G96 | 0.7− | 0.4− |
| 2000 04 06 | 704 | 0.7+ | 0.3+ | 2001 09 21 | 704 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.4− | 0.3− |
| 2000 04 06 | 704 | 0.4+ | 0.6+ | 2001 09 21 | 704 | 0.3− | 0.5+ | 2006 11 25 | G96 | 0.4− | 0.1+ |
| 2000 04 06 | 704 | 0.2+ | 0.2− | 2001 09 25 | 644 | 0.1− | 1.4+ | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2000 04 07 | 699 | 1.1+ | 0.1− | 2001 09 25 | 644 | (0.0 | 1.6+) | 2006 11 27 | G96 | 0.3− | 0.6− |
| 2000 04 07 | 699 | 0.9+ | 0.2− | 2001 09 25 | 644 | 0.0 | 1.4+ | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2000 04 07 | 699 | 0.1− | 0.8+ | 2001 09 26 | 704 | (0.7+ | 1.6+) | 2006 11 27 | G96 | 0.3− | 0.3− |

**(138149)∗ 2000 EG$_{64}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 186.42905 | | (2000.0) | | | |
| $n$ | 0.24103778 | $\omega$ | 53.04185 | | −0.74974881 | +0.66148881 |
| $a$ | 2.5570897 | $\Omega$ | 168.33647 | | −0.63140969 | −0.70719924 |
| $e$ | 0.1930456 | $i$ | 4.99047 | | −0.19798617 | −0.24960327 |
| $P$ | 4.09 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 691 | 0.1− | 0.4+ |
| 1997 09 28 | 691 | 0.0 | 0.4+ | 2004 02 26 | 704 | 0.6+ | 0.4+ | 2004 03 20 | 699 | 0.1+ | 0.0 |
| 1997 09 28 | 691 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.7+ | 0.2+ | 2004 03 20 | 699 | 0.9− | 0.2− |
| 1997 10 06 | 691 | 0.5− | 0.8+ | 2004 02 26 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 699 | 0.6+ | 0.0 |
| 1997 10 06 | 691 | 0.2+ | 0.6+ | 2004 02 26 | 695 | 0.5− | 0.2+ | 2004 03 20 | 699 | 1.3− | 0.1+ |
| 1997 10 06 | 691 | 1.2− | 1.1+ | 2004 02 26 | 695 | 0.6− | 0.3+ | 2004 03 27 | 704 | 0.6+ | 0.4+ |
| 2000 03 10 | 704 | 0.2+ | 0.2+ | 2004 02 27 | 695 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.3+ |
| 2000 03 10 | 704 | 0.2− | 0.2− | 2004 02 27 | 695 | 0.8− | 0.4+ | 2004 03 27 | 704 | 0.8+ | 1.0+ |
| 2000 03 10 | 704 | 0.0 | 0.2− | 2004 03 01 | 704 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.7+ | 0.1− |
| 2000 03 10 | 704 | 0.7+ | 0.5− | 2004 03 01 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 704 | (1.5+ | 1.7+) |
| 2000 03 10 | 704 | 0.1+ | 0.0 | 2004 03 01 | 704 | 0.4+ | 0.7+ | 2004 03 28 | 691 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.4+ | 0.1+ | 2004 03 01 | 704 | 0.2+ | 0.6+ | 2004 03 28 | 691 | 0.0 | 0.3+ |
| 2000 03 11 | 704 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.8+ | 0.2+ | 2004 03 28 | 691 | 0.1− | 0.4+ |
| 2000 03 11 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2005 09 23 | 691 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.4− | 0.5+ | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2005 09 23 | 691 | 0.2+ | 0.4+ |
| 2000 03 11 | 704 | 0.7− | 0.1+ | 2004 03 15 | 704 | 1.0+ | 0.4+ | 2005 09 23 | 691 | 0.1− | 0.5+ |
| 2000 03 14 | 703 | 0.6− | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2005 09 30 | G96 | 0.1− | 0.1+ |
| 2000 03 14 | 703 | 0.9− | 0.6+ | 2004 03 15 | 599 | 0.0 | 0.6+ | 2005 09 30 | G96 | 0.2− | 0.3− |
| 2000 03 14 | 703 | 0.4− | 0.9+ | 2004 03 15 | 599 | 0.3− | 0.5+ | 2005 09 30 | G96 | 0.8− | 0.1− |
| 2000 03 14 | 703 | 0.3+ | 0.3− | 2004 03 15 | 599 | 0.5− | 0.4+ | 2005 09 30 | G96 | 0.2+ | 0.1− |
| 2000 04 07 | 699 | 1.3+ | 0.8+ | 2004 03 15 | 599 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.8+ | 0.5− |
| 2000 04 07 | 699 | 0.9+ | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.6+ |
| 2000 04 07 | 699 | 1.4+ | 0.9− | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.6− | 1.1− |
| 2000 04 07 | 699 | 0.4+ | 0.7+ | 2004 03 18 | 704 | (2.9+ | 1.2+) | 2006 10 17 | G96 | 0.6+ | 1.1− |
| 2001 09 16 | 691 | 0.2− | 0.7+ | 2004 03 18 | 704 | (1.7− | 0.8+) | 2006 10 18 | 291 | 0.3+ | 0.2+ |
| 2001 09 16 | 691 | 0.4− | 0.6+ | 2004 03 18 | 704 | 1.0+ | 0.2+ | 2006 10 18 | 291 | 0.1− | 0.4+ |
| 2001 09 16 | 691 | 0.2+ | 0.4+ | 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 10 18 | 291 | 0.0 | 0.3+ |
| 2004 02 26 | 704 | 1.3+ | 0.1− | 2004 03 18 | 691 | 0.3− | 0.4+ | | | | |

**(138150)∗ 2000 EY$_{64}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 273.20321 | | (2000.0) | | | |
| $n$ | 0.23948434 | $\omega$ | 98.89123 | | −0.12813843 | −0.99175317 |
| $a$ | 2.5681357 | $\Omega$ | 358.46418 | | +0.86949522 | −0.11113368 |
| $e$ | 0.1873909 | $i$ | 5.33154 | | +0.47703104 | −0.06383544 |
| $P$ | 4.12 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2004 02 14 | 703 | 0.7− | 0.5+ | 2004 03 27 | 704 | 0.6+ | 1.0− |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2004 02 14 | 703 | 0.9− | 1.4+ | 2004 03 27 | 704 | 0.9+ | 0.8+ |
| 2000 02 26 | 691 | 0.3− | 0.4− | 2004 02 14 | 703 | (1.6− | 1.4+) | 2004 03 28 | 691 | 0.1+ | 0.5+ |
| 2000 02 26 | 691 | 0.0 | 0.4− | 2004 02 18 | 704 | 0.4+ | 0.4+ | 2004 03 28 | 691 | 0.2+ | 0.3+ |
| 2000 02 26 | 691 | 0.1− | 0.2− | 2004 02 18 | 704 | 0.2− | 0.1− | 2004 03 28 | 691 | 0.2+ | 0.5+ |
| 2000 03 10 | 704 | 1.2+ | 0.7− | 2004 02 18 | 704 | 0.3− | 0.0 | 2004 07 15 | 807 | 0.4− | 0.3+ |
| 2000 03 10 | 704 | 0.8+ | 0.9+ | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2004 07 16 | 807 | 0.0 | 0.2+ |
| 2000 03 10 | 704 | 1.0+ | 0.2− | 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 08 18 | 691 | 0.2− | 0.5+ |
| 2000 03 10 | 704 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 08 18 | 691 | 0.2− | 0.4+ |
| 2000 03 10 | 704 | 0.8− | 0.9+ | 2004 02 23 | 704 | 0.2− | 0.1− | 2006 08 18 | 691 | 0.2− | 0.4+ |
| 2000 03 11 | 704 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.4+ |
| 2000 03 11 | 704 | 0.0 | 0.7+ | 2004 03 14 | 703 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.6+ |
| 2000 03 11 | 704 | 0.5− | 0.3− | 2004 03 14 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.7+ |
| 2000 04 05 | 704 | 0.7+ | 1.3+ | 2004 03 14 | 703 | 0.4− | 0.5+ | 2006 09 14 | 703 | 1.0− | 1.1+ |
| 2000 04 05 | 704 | 1.3+ | 0.5+ | 2004 03 14 | 703 | 0.8+ | 1.4+ | 2006 09 14 | 703 | 0.2+ | 0.9− |
| 2000 04 05 | 704 | (2.1+ | 0.2+) | 2004 03 14 | 703 | 0.9− | 1.2+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2000 04 05 | 704 | 0.4+ | 1.8− | 2004 03 14 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 1.0+ |
| 2002 09 05 | 645 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.6+ | 0.4− | 2006 09 30 | G96 | 0.4+ | 0.2+ |
| 2002 09 13 | 239 | 0.0 | 1.5− | 2004 03 15 | 704 | 1.2+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2002 09 13 | 239 | 1.0− | 1.3+ | 2004 03 15 | 704 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2002 09 13 | 239 | (0.7+ | 1.7−) | 2004 03 15 | 704 | 1.1+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1+ |
| 2002 09 13 | 239 | 1.4− | 0.5− | 2004 03 15 | 704 | 0.7+ | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2002 09 13 | 239 | 1.0− | 0.2+ | 2004 03 16 | 704 | 0.6+ | 0.7+ | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2002 09 14 | 239 | 0.8− | 0.9+ | 2004 03 16 | 704 | 0.7− | 0.6+ | 2006 10 16 | G96 | 0.2+ | 0.3+ |
| 2002 09 14 | 239 | 0.6+ | 0.3+ | 2004 03 16 | 704 | 0.2− | 0.8+ | 2006 10 16 | G96 | 0.3− | 0.2+ |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.2− | 0.9− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2002 09 14 | 644 | 0.1+ | 0.7+ | 2004 03 18 | 704 | 1.2+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.3+ |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2004 03 18 | 704 | (1.6+ | 1.0+) | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2− | 0.3+ |
| 2002 09 15 | 644 | 0.1+ | 0.4+ | 2004 03 18 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 1.5− | 1.2− |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.7− |
| 2002 10 04 | 291 | 0.1− | 0.5+ | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 1.4+ | 0.5− |
| 2002 10 04 | 291 | 0.3+ | 0.8+ | 2004 03 20 | 699 | 0.8− | 0.8− | 2006 11 11 | G96 | (2.8+ | 0.9+) |
| 2002 10 04 | 291 | 0.1+ | 0.7+ | 2004 03 20 | 699 | 1.1+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 03 20 | 699 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 03 20 | 699 | (2.0− | 2.0+) | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2002 11 07 | 695 | 0.7+ | 0.4− | 2004 03 27 | 704 | 0.9+ | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2002 11 07 | 695 | (1.7+ | 0.3−) | 2004 03 27 | 704 | 0.2− | 0.4− | | | | |
| 2004 02 14 | 703 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.8+ | 0.7+ | | | | |

**(138151)∗ 2000 EE$_{66}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.40347 | | (2000.0) | | | |
| $n$ | 0.22895348 | $\omega$ | 151.97287 | | −0.94061013 | −0.33779458 |
| $a$ | 2.6462928 | $\Omega$ | 8.49590 | | +0.25251998 | −0.76284598 |
| $e$ | 0.1382019 | $i$ | 13.25456 | | +0.22690578 | −0.55132643 |
| $P$ | 4.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 703 | 1.0− | 0.1+ | 2000 04 06 | 704 | 0.8+ | 1.2+ | 2004 01 17 | 644 | 0.0 | 0.4− |
| 2000 02 27 | 703 | 0.6+ | 0.2+ | 2000 04 07 | 704 | 0.0 | 0.0 | 2004 01 17 | 644 | 0.1− | 0.4− |
| 2000 02 27 | 703 | 1.4+ | 0.5− | 2000 04 07 | 704 | 1.0+ | 0.2+ | 2004 01 17 | 644 | 0.1+ | 0.3− |
| 2000 02 27 | 703 | 1.5+ | 0.5− | 2000 04 07 | 704 | 0.6− | 0.2+ | 2004 01 31 | 699 | 0.5+ | 0.8− |
| 2000 03 05 | 608 | 0.0 | 0.8− | 2000 04 07 | 699 | 0.3+ | 0.6+ | 2004 01 31 | 699 | 0.9− | 0.4− |
| 2000 03 05 | 608 | 0.1+ | 1.0− | 2000 04 07 | 704 | 0.1+ | 0.5+ | 2004 01 31 | 699 | 0.6− | 0.0 |
| 2000 03 05 | 608 | 0.0 | 1.1− | 2000 04 07 | 699 | 0.1− | 0.9− | 2004 01 31 | 699 | 0.6+ | 0.9− |
| 2000 03 08 | 704 | 0.5+ | 1.0+ | 2000 04 07 | 704 | 0.2− | 0.2+ | 2004 01 31 | 704 | 0.0 | 1.0+ |
| 2000 03 08 | 704 | 0.4+ | 0.2+ | 2000 04 07 | 699 | 0.3+ | 0.1− | 2004 01 31 | 704 | 1.1− | 0.7+ |
| 2000 03 08 | 704 | (2.5− | 1.6+) | 2000 04 07 | 699 | 0.1+ | 0.0 | 2004 01 31 | 704 | 0.3+ | 0.4+ |
| 2000 03 10 | 704 | 0.3+ | 0.2− | 2000 04 08 | 704 | 0.0 | 0.5+ | 2004 02 02 | 704 | 0.3− | 0.7− |
| 2000 03 10 | 704 | 0.0 | 0.4+ | 2000 04 08 | 704 | 0.4+ | 0.1− | 2004 02 02 | 704 | 0.2− | 0.2− |
| 2000 03 10 | 704 | 0.2+ | 0.0 | 2000 04 08 | 704 | 0.1− | 0.2+ | 2004 02 02 | 704 | 0.5− | 0.6− |
| 2000 03 10 | 704 | 0.5− | 0.8+ | 2000 04 08 | 704 | 0.5+ | 0.4− | 2004 02 02 | 704 | 0.9− | 0.1+ |
| 2000 03 10 | 704 | 0.3+ | 0.0 | 2000 04 08 | 704 | 0.1+ | 0.0 | 2004 02 09 | 644 | 0.2+ | 0.2− |
| 2000 03 11 | 704 | 0.6+ | 0.2− | 2000 04 10 | 704 | 0.4+ | 0.1− | 2004 02 09 | 644 | 0.0 | 0.1− |
| 2000 03 11 | 704 | 0.3+ | 0.2+ | 2000 04 10 | 704 | 0.0 | 0.3+ | 2004 02 09 | 644 | 0.2+ | 0.1− |
| 2000 03 11 | 704 | 0.2+ | 0.2− | 2000 04 10 | 704 | 0.0 | 0.1+ | 2004 02 11 | 644 | 0.2− | 0.1− |
| 2000 03 11 | 704 | 0.1− | 0.6+ | 2000 04 10 | 704 | 0.1− | 0.3+ | 2004 02 11 | 644 | 0.2− | 0.2− |
| 2000 03 14 | 703 | 0.0 | 0.3− | 2000 04 10 | 704 | 0.5+ | 0.5− | 2004 02 11 | 644 | 0.0 | 0.1− |
| 2000 03 14 | 703 | 0.3+ | 0.4− | 2002 10 03 | 599 | 0.4− | 0.2+ | 2004 02 14 | 704 | 0.0 | 0.2− |
| 2000 03 14 | 703 | 1.0− | 0.0 | 2002 10 03 | 599 | 0.1− | 0.5+ | 2004 02 14 | 704 | 0.2+ | 0.5+ |
| 2000 03 14 | 703 | 0.5+ | 0.4+ | 2002 10 03 | 599 | 0.4− | 0.7+ | 2004 02 14 | 704 | 0.0 | 0.3+ |
| 2000 03 26 | 699 | 0.0 | 0.0 | 2002 10 04 | 644 | 1.0− | 0.6+ | 2004 02 14 | 704 | 0.1− | 0.5+ |
| 2000 03 26 | 699 | 0.0 | 0.1− | 2002 10 04 | 644 | 0.4− | 0.7+ | 2004 02 14 | 704 | 0.2− | 0.5+ |
| 2000 03 26 | 699 | 0.9+ | 0.8+ | 2002 10 04 | 644 | 0.4− | 0.7+ | 2004 02 16 | 703 | 0.3+ | 0.3+ |
| 2000 03 26 | 699 | 0.9− | 0.1+ | 2002 10 09 | 704 | 0.2− | 1.1+ | 2004 02 16 | 703 | 0.0 | 0.1+ |
| 2000 03 30 | 703 | 0.0 | 0.7+ | 2002 10 09 | 704 | 0.8− | 1.3+ | 2004 02 16 | 703 | 0.1+ | 0.3+ |
| 2000 03 30 | 703 | 0.1− | 0.1− | 2002 10 09 | 704 | (0.2− | 2.4+) | 2004 02 16 | 703 | 0.5− | 0.5+ |
| 2000 03 30 | 703 | 0.5− | 0.4+ | 2002 10 09 | 704 | (0.4+ | 2.6+) | 2004 03 23 | 704 | 0.0 | 0.2− |
| 2000 03 30 | 703 | 0.5− | 0.8+ | 2002 10 09 | 704 | (0.7− | 2.1+) | 2004 03 23 | 704 | 0.2+ | 0.2− |
| 2000 04 04 | 704 | 1.2+ | 0.0 | 2002 10 12 | 704 | 1.2− | 1.0+ | 2004 03 23 | 704 | 0.1− | 0.2− |
| 2000 04 04 | 704 | 0.6− | 0.7+ | 2002 10 12 | 704 | (0.0 | 1.9+) | 2004 03 23 | 704 | 0.4+ | 0.2+ |
| 2000 04 04 | 704 | 0.3+ | 1.3+ | 2002 10 12 | 704 | 0.1+ | 1.4+ | 2006 08 29 | 691 | 0.0 | 0.6+ |
| 2000 04 04 | 704 | 0.4− | 0.9+ | 2002 10 12 | 704 | 0.2− | 0.7+ | 2006 08 29 | 691 | 0.3− | 0.8+ |
| 2000 04 04 | 704 | 0.5+ | 1.4+ | 2002 10 12 | 704 | (0.9+ | 2.4+) | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2000 04 05 | 704 | 0.3+ | 0.4+ | 2002 11 02 | 608 | 0.1+ | 1.4− | 2006 09 19 | 703 | 0.4− | 0.2+ |
| 2000 04 05 | 704 | 0.6+ | 0.5+ | 2002 11 02 | 608 | 0.1− | 0.3− | 2006 09 19 | 703 | 1.2− | 0.5+ |
| 2000 04 05 | 704 | 0.4+ | 0.6+ | 2002 11 02 | 608 | 0.0 | 0.5− | 2006 09 19 | 703 | 1.0− | 0.8− |
| 2000 04 05 | 704 | 0.5+ | 0.5+ | 2003 12 04 | 704 | (2.0+ | 2.4+) | 2006 09 19 | 703 | 0.8− | 0.6+ |
| 2000 04 05 | 704 | 0.2+ | 0.9+ | 2003 12 04 | 704 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 1.0− | 0.5+ |
| 2000 04 06 | 704 | 0.2+ | 0.3+ | 2003 12 04 | 704 | 1.1+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2000 04 06 | 704 | 0.3+ | 0.5+ | 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2000 04 06 | 704 | 0.2+ | 0.8+ | 2003 12 29 | 704 | 0.7+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.2− | 0.7+ | 2003 12 29 | 704 | 1.0+ | 0.3+ | | | | |

**(138152)∗ 2000 EO$_{68}$ = 1998 TG$_{15}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17198)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 255.07701 | | (2000.0) | | | |
| $n$ | 0.24444853 | $\omega$ | 284.09946 | | −0.79898572 | −0.60051966 |
| $a$ | 2.5332483 | $\Omega$ | 219.00726 | | +0.56928017 | −0.73840549 |
| $e$ | 0.1057379 | $i$ | 2.87687 | | +0.19375732 | −0.30681178 |
| $P$ | 4.03 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 691 | 0.3+ | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1996 03 17 | 691 | 0.3+ | 0.1− | 2004 03 20 | 699 | 0.5+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 1996 03 17 | 691 | 0.2+ | 0.0 | 2004 03 20 | 699 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.3+ | 0.2+ |
| 1998 10 14 | 691 | 0.6− | 0.2+ | 2004 03 20 | 699 | 0.2− | 1.2− | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 1998 10 14 | 691 | 1.0− | 0.0 | 2004 03 20 | 699 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 1998 10 14 | 691 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 1998 10 15 | 691 | 0.5− | 0.6+ | 2004 03 20 | 704 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1998 10 15 | 691 | 0.4− | 0.5+ | 2004 03 20 | 704 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 1998 10 15 | 691 | 0.5− | 1.0+ | 2004 03 20 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1998 10 16 | 691 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.7− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 1998 10 16 | 691 | 0.2+ | 0.2− | 2004 03 26 | 699 | 1.4− | 1.1+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1998 10 16 | 691 | 0.3+ | 0.0 | 2004 03 26 | 704 | 0.5+ | 0.8+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1998 10 18 | 691 | 0.4+ | 0.2+ | 2004 03 26 | 699 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 1998 10 18 | 691 | 0.5+ | 0.0 | 2004 03 26 | 704 | 0.5+ | 0.9+ | 2006 11 10 | 691 | 0.5− | 0.6+ |
| 1998 10 28 | 691 | 0.4− | 0.7+ | 2004 03 26 | 704 | 0.7+ | 0.9+ | 2006 11 10 | 691 | 0.3− | 0.3+ |
| 1998 10 28 | 691 | 0.6− | 0.4+ | 2004 03 26 | 704 | 0.5+ | 0.6+ | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 1998 10 28 | 691 | 0.5− | 0.1+ | 2004 03 26 | 699 | 0.5− | 1.1+ | 2006 11 11 | 703 | 1.1+ | 1.2+ |
| 1998 11 16 | 691 | 0.3+ | 0.4− | 2004 03 26 | 704 | 0.4+ | 0.9+ | 2006 11 11 | 703 | (2.2+ | 2.1−) |
| 1998 11 16 | 691 | 0.2+ | 0.2− | 2004 03 26 | 699 | 1.3− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 1998 11 16 | 691 | 0.5+ | 0.3− | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.8+ |
| 2000 03 10 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2000 03 10 | 704 | 0.2− | 0.2− | 2004 03 27 | 704 | 0.8+ | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2000 03 10 | 704 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.4+ | 1.0+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2000 03 10 | 704 | 0.6− | 1.8+ | 2004 03 27 | 704 | 0.3+ | 1.0+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 0.3− | 0.2− | 2004 03 29 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 1.1+ | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 0.7+ | 0.4+ | 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.4+ | 0.2+ |
| 2000 03 11 | 704 | 0.7+ | 0.3− | 2004 04 11 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2000 04 07 | 699 | 0.6+ | 1.1+ | 2004 04 11 | 644 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2000 04 07 | 699 | 0.5+ | 0.2+ | 2004 04 11 | 644 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2000 04 07 | 699 | 0.1+ | 0.5+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.9− | 0.7+ |
| 2000 04 07 | 699 | 0.4− | 0.1+ | 2004 04 25 | 691 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 03 13 | 644 | 0.4+ | 0.3+ | 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 03 13 | 644 | 0.5+ | 0.3+ | 2005 07 08 | 691 | 0.2− | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 03 13 | 644 | 0.5+ | 0.3+ | 2005 07 08 | 691 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2004 03 15 | 703 | 0.9+ | 0.9+ | 2005 07 08 | 691 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 703 | 0.2+ | 0.3+ | 2005 07 08 | 691 | 0.4− | 0.7+ | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2004 03 15 | 703 | 0.9− | 0.3+ | 2005 07 08 | 691 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2004 03 15 | 703 | 0.7− | 0.5+ | 2005 07 08 | 691 | 0.3− | 0.8+ | 2006 11 25 | 703 | 0.1+ | 1.1+ |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 11 25 | 703 | 1.3− | 0.6+ |
| 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 25 | 703 | 0.6− | 0.8+ |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 25 | 703 | 0.6+ | 3.0− |
| 2004 03 18 | 704 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 03 18 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 1.0− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.0 | | | | |

**(138153)∗ 2000 EW$_{68}$ = 1996 HW$_{6}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. B. G. Marsden (MPC 40165)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 184.70181 | | (2000.0) | | | |
| $n$ | 0.24334879 | $\omega$ | 54.60167 | | −0.70097938 | +0.71302687 |
| $a$ | 2.5408748 | $\Omega$ | 170.84717 | | −0.68086948 | −0.66287756 |
| $e$ | 0.0902891 | $i$ | 5.35754 | | −0.21223724 | −0.22844262 |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.1− | 0.5− | 2000 04 05 | 704 | 0.9+ | 0.9+ | 2004 04 12 | 703 | (3.2+ | 1.4+) |
| 1996 04 18 | 691 | 0.2− | 0.1− | 2000 04 06 | 704 | 0.4+ | 0.2+ | 2004 04 12 | 703 | (3.2+ | 2.8+) |
| 1996 04 18 | 691 | 0.1+ | 0.3− | 2000 04 06 | 704 | 0.1+ | 0.6+ | 2004 04 12 | 703 | 0.4+ | 0.0 |
| 1996 04 23 | 691 | 0.1+ | 1.2− | 2000 04 06 | 704 | 0.6− | 0.2+ | 2004 04 19 | 704 | 0.8+ | 0.0 |
| 1996 04 23 | 691 | 0.2+ | 1.1− | 2000 04 06 | 704 | 0.2+ | 1.5+ | 2004 04 19 | 704 | 1.1+ | 0.2+ |
| 1996 04 23 | 691 | 0.3+ | 1.2− | 2000 05 04 | 645 | 0.2− | 0.1+ | 2004 04 19 | 704 | 1.1+ | 0.1− |
| 2000 03 10 | 704 | 0.8+ | 0.6+ | 2000 05 04 | 645 | 0.3− | 0.1+ | 2004 04 19 | 704 | 0.1− | 0.6+ |
| 2000 03 10 | 704 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.3− | 0.1− | 2004 04 25 | 691 | 0.2+ | 0.1+ |
| 2000 03 10 | 704 | 0.4− | 0.7+ | 2004 02 26 | 704 | 1.2+ | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.3+ |
| 2000 03 11 | 704 | 1.0− | 0.2+ | 2004 02 26 | 704 | 0.9+ | 0.5− | 2004 04 25 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.0 | 0.8+ | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2005 08 25 | 644 | 0.0 | 0.8+ |
| 2000 03 11 | 704 | 0.3− | 1.3+ | 2004 03 17 | 691 | 0.0 | 0.3+ | 2005 08 25 | 644 | 0.1− | 0.3+ |
| 2000 03 11 | 704 | 0.2− | 0.5+ | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2005 08 25 | 644 | 0.1− | 0.8+ |
| 2000 03 26 | 684 | 0.1+ | 0.5− | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2000 03 26 | 684 | 0.4+ | 1.2− | 2004 03 18 | 704 | (1.8+ | 0.3+) | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2000 03 27 | 684 | 0.4+ | 0.7− | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2000 03 27 | 684 | 0.3− | 0.9− | 2004 03 18 | 704 | 0.4+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2000 03 27 | 699 | 0.3+ | 0.3− | 2004 03 18 | 704 | 1.4+ | 1.0− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2000 03 27 | 699 | 0.0 | 0.8+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2000 03 27 | 699 | 0.9− | 0.8+ | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.1− |
| 2000 03 27 | 699 | 0.7− | 1.3+ | 2004 03 22 | 704 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2000 04 05 | 704 | 0.0 | 1.0+ | 2004 03 22 | 704 | 0.2− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 0.7+ | 0.4+ | 2004 03 22 | 704 | 0.2− | 0.3− | | | | |
| 2000 04 05 | 704 | 0.3− | 0.4+ | 2004 04 12 | 703 | (2.8+ | 0.4+) | | | | |

**(138154)∗ 2000 EO$_{69}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 161.43742 | | (2000.0) | | | |
| $n$ | 0.22031948 | $\omega$ | 194.46903 | | −0.98480795 | +0.17361739 |
| $a$ | 2.7149851 | $\Omega$ | 355.52546 | | −0.15495091 | −0.88696728 |
| $e$ | 0.1164177 | $i$ | 2.35729 | | −0.07838056 | −0.42795565 |
| $P$ | 4.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 691 | 0.5− | 0.4+ | 2000 04 07 | 699 | 1.1+ | 0.9+ | 2004 02 11 | 699 | 0.5− | 0.0 |
| 1997 09 30 | 691 | 0.3− | 0.6+ | 2000 04 07 | 704 | 0.8− | 0.4+ | 2004 02 11 | 699 | 0.5− | 0.1− |
| 1997 09 30 | 691 | 0.4− | 0.4+ | 2000 04 07 | 699 | 1.3+ | 0.5+ | 2004 02 12 | 691 | 0.7+ | 0.1− |
| 2000 03 10 | 704 | 1.2+ | 0.1+ | 2000 04 07 | 704 | 0.4+ | 0.6+ | 2004 02 12 | 691 | 0.2+ | 0.1− |
| 2000 03 10 | 704 | 0.7+ | 0.5+ | 2000 04 07 | 704 | 0.2+ | 0.2+ | 2004 02 12 | 691 | 0.3+ | 0.1+ |
| 2000 03 10 | 704 | 0.2− | 0.7+ | 2000 04 25 | 699 | 0.0 | 0.8+ | 2004 02 23 | 704 | (0.0 | 3.1+) |
| 2000 03 10 | 704 | 1.2+ | 1.0+ | 2000 04 25 | 699 | 0.8− | 0.9+ | 2004 02 23 | 704 | 0.3− | 1.0+ |
| 2000 03 10 | 704 | 1.0+ | 0.8+ | 2000 04 25 | 699 | 0.8+ | 0.9+ | 2004 02 23 | 704 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 1.2+ | 0.4+ | 2000 04 25 | 699 | 0.6− | 1.6+ | 2004 02 23 | 704 | 0.1+ | 0.7+ |
| 2000 03 11 | 704 | 1.0+ | 0.8+ | 2002 10 31 | 644 | (0.2+ | 1.8+) | 2004 02 23 | 704 | 0.3− | 0.3+ |
| 2000 03 11 | 704 | 0.7+ | 1.0+ | 2002 10 31 | 644 | 0.3+ | 1.2+ | 2004 04 16 | 645 | 0.1− | 0.1− |
| 2000 03 11 | 704 | 0.8+ | 1.6+ | 2002 10 31 | 644 | 0.3+ | 1.2+ | 2004 04 16 | 645 | 0.1− | 0.1− |
| 2000 03 27 | 699 | 0.6+ | 0.6+ | 2002 10 31 | 608 | 0.6+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.4+ |
| 2000 03 27 | 699 | 0.1+ | 0.5+ | 2002 10 31 | 608 | 0.3+ | 0.4+ | 2006 09 15 | 734 | 0.4+ | 0.2+ |
| 2000 03 27 | 699 | 0.1+ | 0.5+ | 2002 10 31 | 608 | 0.2+ | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 2000 03 27 | 699 | 0.1+ | 0.6+ | 2004 01 19 | 691 | 0.0 | 0.1− | 2006 09 15 | 734 | 0.5− | 0.7+ |
| 2000 03 30 | 691 | 0.4− | 0.5− | 2004 01 19 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.4+ |
| 2000 03 30 | 691 | 0.6− | 0.6− | 2004 01 19 | 703 | 0.4− | 1.0+ | 2006 09 15 | 734 | 1.3+ | 0.4+ |
| 2000 03 30 | 691 | 0.5− | 0.5− | 2004 01 19 | 703 | 1.0− | 0.5− | 2006 09 15 | 734 | 0.1− | 0.3+ |
| 2000 04 05 | 704 | 0.5+ | 0.0 | 2004 01 19 | 703 | (0.3+ | 2.1+) | 2006 09 25 | G96 | 0.1− | 0.2+ |
| 2000 04 05 | 699 | 0.1− | 0.2− | 2004 01 19 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2004 01 19 | 703 | 0.9− | 0.2− | 2006 09 25 | G96 | 0.5− | 0.3+ |
| 2000 04 05 | 699 | 0.2− | 0.2− | 2004 01 22 | 704 | 0.6+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2000 04 05 | 699 | 0.2+ | 0.4+ | 2004 01 22 | 704 | 0.4+ | 0.6+ | 2006 10 01 | 701 | 0.4− | 0.8+ |
| 2000 04 05 | 704 | 0.1+ | 0.8+ | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 10 01 | 701 | 0.2+ | 0.3+ |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2006 10 01 | 701 | 0.1− | 0.3+ |
| 2000 04 05 | 699 | 0.2− | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.8+ | 2006 10 01 | 701 | 1.0− | 0.0 |
| 2000 04 05 | 704 | 0.3+ | 0.4+ | 2004 01 25 | 830 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.5− | 0.3+ |
| 2000 04 06 | 704 | 0.6+ | 0.7− | 2004 01 25 | 830 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.7+ | 0.1+ | 2004 01 30 | 704 | 1.0− | 0.1− | 2006 10 16 | G96 | 0.6− | 0.1+ |
| 2000 04 06 | 704 | 0.6+ | 0.7+ | 2004 01 30 | 704 | 0.9− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.5+ | 1.3+ | 2004 01 30 | 704 | 0.5− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2000 04 06 | 704 | 0.2+ | 1.0+ | 2004 01 30 | 704 | 0.6− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2000 04 07 | 699 | 1.0+ | 0.5+ | 2004 02 11 | 699 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2000 04 07 | 699 | 0.1+ | 0.5+ | 2004 02 11 | 699 | 0.4− | 0.6+ | 2006 11 21 | G96 | 1.6− | 0.4+ |

**(138155)∗ 2000 ES$_{70}$**

Discovered 2000 Mar. 6 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 288.05592 | | (2000.0) | | | |
| $n$ | 0.40526140 | $\omega$ | 281.36376 | | −0.16398344 | −0.98633379 |
| $a$ | 1.8084752 | $\Omega$ | 177.86920 | | +0.98595838 | −0.16336020 |
| $e$ | 0.3196794 | $i$ | 25.43969 | | −0.03155157 | +0.02142663 |
| $P$ | 2.43 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 28 | 260 | 1.0− | 1.7+ | 2000 03 14 | 608 | 0.0 | 1.6− | 2005 04 16 | 703 | 0.4− | 0.4− |
| 1989 10 28 | 260 | (0.9− | 3.4+) | 2000 03 14 | 608 | 0.1+ | 0.6− | 2005 04 16 | 703 | 0.0 | 0.0 |
| 1994 12 30 | 260 | 0.8+ | 0.3− | 2000 03 14 | 900 | 0.8− | 0.0 | 2005 04 16 | 703 | 0.3− | 0.3− |
| 1994 12 30 | 260 | 0.3− | 1.1− | 2000 03 14 | 900 | 0.4− | 0.0 | 2005 04 16 | 703 | 0.2− | 1.3− |
| 2000 03 06 | 608 | 0.4+ | 0.2+ | 2000 03 17 | 049 | (0.6+ | 4.9−) | 2005 04 26 | 644 | 0.3− | 0.3− |
| 2000 03 06 | 608 | 0.2+ | 0.3+ | 2000 03 17 | 049 | (0.5+ | 5.0−) | 2005 04 26 | 644 | 0.3+ | 0.1+ |
| 2000 03 06 | 608 | 0.2+ | 0.1+ | 2000 03 17 | 049 | (0.5+ | 4.8−) | 2005 04 26 | 644 | 0.1+ | 0.1+ |
| 2000 03 07 | 608 | 0.8+ | 0.1+ | 2000 03 17 | 118 | 0.1− | 0.3− | 2005 04 27 | 170 | 0.3− | 0.3+ |
| 2000 03 07 | 608 | 0.2− | 0.5+ | 2000 03 17 | 118 | 0.7+ | 0.5+ | 2005 04 27 | 170 | 0.1+ | 0.1+ |
| 2000 03 07 | 608 | 0.2+ | 0.6+ | 2000 03 17 | 118 | 0.5− | 0.6− | 2005 04 28 | 170 | 0.0 | 0.8− |
| 2000 03 09 | 704 | 0.5+ | 0.3+ | 2000 03 18 | 670 | 0.4+ | 0.0 | 2005 05 02 | 703 | 0.2− | 0.2+ |
| 2000 03 09 | 704 | 0.6+ | 0.0 | 2000 03 18 | 670 | 0.7− | 0.5− | 2005 05 02 | 703 | 0.5− | 0.2+ |
| 2000 03 09 | 704 | (2.4− | 1.3+) | 2000 03 18 | 670 | 1.3− | 0.7+ | 2005 05 02 | 703 | 0.4− | 0.1− |
| 2000 03 09 | 704 | 0.5+ | 0.1+ | 2000 03 22 | 540 | 0.2− | 0.1+ | 2005 05 02 | 703 | 0.2− | 0.1+ |
| 2000 03 10 | 608 | 0.8+ | 1.4− | 2000 03 22 | 540 | 0.0 | 0.2+ | 2005 05 10 | 703 | 0.0 | 1.0− |
| 2000 03 10 | 608 | 0.5+ | 0.6− | 2000 03 22 | 540 | 0.1− | 0.1+ | 2005 05 10 | 703 | 0.2− | 0.7− |
| 2000 03 10 | 608 | 0.2+ | 1.0− | 2000 03 22 | 540 | 0.2+ | 0.1+ | 2005 05 10 | 703 | 0.1+ | 0.2− |
| 2000 03 11 | 151 | (3.1− | 1.3+) | 2000 03 22 | 540 | 0.2+ | 0.2+ | 2005 05 10 | 703 | 0.1+ | 1.0− |
| 2000 03 11 | 151 | 1.0+ | 0.4− | 2000 03 22 | 118 | 0.1+ | 0.1− | 2006 08 31 | 704 | 0.0 | 0.8+ |
| 2000 03 11 | 151 | 1.0− | 0.9− | 2000 03 22 | 118 | 0.3+ | 0.0 | 2006 08 31 | 704 | 1.1+ | 0.2+ |
| 2000 03 11 | 151 | 0.2− | 0.2− | 2000 03 22 | 046 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.1− | 0.3+ |
| 2000 03 11 | 151 | 0.9− | 0.0 | 2000 03 22 | 046 | 0.1− | 0.3+ | 2006 08 31 | 704 | 0.3− | 0.8+ |
| 2000 03 11 | 620 | 0.4+ | 0.7+ | 2000 03 22 | 046 | 0.3− | 0.4+ | 2006 08 31 | 151 | 0.1− | 0.0 |
| 2000 03 11 | 620 | 0.2+ | 0.3+ | 2000 03 23 | 670 | 0.1− | 0.4− | 2006 08 31 | 151 | 0.2− | 0.0 |
| 2000 03 11 | 620 | 0.6+ | 0.1+ | 2000 03 23 | 670 | 0.3+ | 0.1− | 2006 08 31 | 151 | 0.3− | 0.1− |
| 2000 03 11 | 858 | 0.4+ | 0.4+ | 2000 03 23 | 931 | (0.3− | 2.6−) | 2006 08 31 | 151 | 0.5− | 0.1− |
| 2000 03 11 | 858 | 0.1+ | 0.5+ | 2000 03 23 | 931 | (0.5+ | 2.7−) | 2006 08 31 | 151 | 0.4− | 0.1+ |
| 2000 03 11 | 858 | 0.5+ | 0.4+ | 2000 03 23 | 931 | (0.2+ | 2.7−) | 2006 08 31 | 151 | 0.2− | 0.5+ |
| 2000 03 11 | 858 | 0.6+ | 0.4+ | 2000 03 25 | 684 | 0.3− | 0.3+ | 2006 09 04 | A13 | 0.3− | 0.7− |
| 2000 03 11 | 670 | 0.7− | 0.0 | 2000 03 25 | 684 | 0.2− | 0.0 | 2006 09 04 | A13 | 0.3+ | 0.8− |
| 2000 03 11 | 670 | 0.6− | 0.3− | 2000 03 25 | 684 | 0.1− | 0.2+ | 2006 09 05 | 198 | 0.6+ | 0.4− |
| 2000 03 11 | 670 | 0.8− | 0.2− | 2000 03 25 | 684 | 0.3− | 0.2+ | 2006 09 05 | 198 | 1.1+ | 0.5− |
| 2000 03 11 | 046 | 0.0 | 0.4+ | 2000 03 25 | 684 | 0.2− | 0.4+ | 2006 09 12 | 113 | 0.5− | 0.9− |
| 2000 03 11 | 046 | 0.0 | 0.5+ | 2000 03 28 | 704 | 0.2− | 0.8+ | 2006 09 12 | 113 | 0.1− | 0.7− |
| 2000 03 11 | 046 | 0.0 | 0.7+ | 2000 03 28 | 704 | 0.6+ | 0.2+ | 2006 09 12 | 113 | 0.3− | 0.4− |
| 2000 03 11 | 046 | 0.1− | 1.1+ | 2000 03 28 | 704 | 1.1+ | 0.3− | 2006 09 13 | 644 | 0.3+ | 0.0 |
| 2000 03 11 | 046 | 0.1+ | 0.8+ | 2000 03 31 | 670 | 1.9+ | 0.1− | 2006 09 13 | 644 | 0.3+ | 0.0 |
| 2000 03 11 | 046 | 0.0 | 0.5+ | 2000 04 03 | 670 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 2000 03 12 | 858 | 0.2+ | 0.5+ | 2000 04 03 | 670 | 0.1+ | 0.1− | 2006 09 14 | 113 | 0.7+ | 0.1+ |
| 2000 03 12 | 858 | 0.0 | 0.5+ | 2000 04 08 | 704 | 0.2− | 0.4+ | 2006 09 14 | 113 | 0.6+ | 0.0 |
| 2000 03 12 | 858 | 0.2+ | 0.3+ | 2000 04 08 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 113 | 0.7+ | 0.5− |
| 2000 03 12 | 858 | 0.3+ | 0.8+ | 2000 04 08 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.1− | 0.1− |
| 2000 03 12 | 670 | 0.7− | 0.6− | 2000 04 08 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 670 | 0.8− | 0.5− | 2000 04 11 | 360 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.2− |
| 2000 03 12 | 900 | 0.2+ | 0.1− | 2000 04 11 | 360 | 0.7+ | 0.1− | 2006 09 18 | 704 | 0.0 | 0.4− |
| 2000 03 12 | 900 | 0.6− | 0.6+ | 2000 04 11 | 360 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.1+ |
| 2000 03 12 | 104 | 0.7− | 0.1− | 2000 04 11 | 402 | 0.2− | 0.9− | 2006 09 18 | 704 | 0.0 | 0.3− |
| 2000 03 12 | 104 | 0.9− | 0.1− | 2000 04 11 | 402 | 0.0 | 1.1+ | 2006 09 18 | 704 | 0.3− | 0.6+ |
| 2000 03 12 | 104 | 0.7− | 0.1+ | 2000 04 11 | 402 | 0.4+ | 0.3− | 2006 09 20 | A13 | 0.0 | 0.9− |
| 2000 03 12 | 151 | 1.3− | 0.9+ | 2000 04 20 | 611 | 0.2− | 0.4+ | 2006 09 20 | A13 | 0.3− | 0.8− |
| 2000 03 12 | 151 | 0.9− | 0.1− | 2000 04 20 | 611 | 0.8− | 0.5+ | 2006 09 20 | A13 | 0.3− | 0.8− |
| 2000 03 12 | 151 | 0.5− | 1.0− | 2000 04 20 | 611 | 0.7− | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.6+ |
| 2000 03 12 | 151 | 2.0− | 0.5− | 2000 04 28 | 699 | 1.9+ | 0.9+ | 2006 09 25 | 704 | 0.1− | 0.2− |
| 2000 03 12 | 151 | 0.1+ | 0.5− | 2000 04 28 | 699 | 1.6+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.2+ |
| 2000 03 12 | 151 | 0.5− | 0.4+ | 2000 04 28 | 699 | 0.7+ | 0.7+ | 2006 09 25 | 704 | 0.9− | 0.9+ |
| 2000 03 13 | 713 | 1.2+ | 0.1+ | 2000 04 28 | 699 | 0.9+ | 0.3− | 2006 09 25 | 704 | 0.5− | 0.5− |
| 2000 03 13 | 713 | 0.0 | 0.1− | 2000 05 02 | 704 | 0.1− | 1.0+ | 2006 09 26 | 704 | 0.0 | 0.4+ |
| 2000 03 13 | 713 | 0.5− | 0.8+ | 2000 05 02 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.5− | 1.1+ |
| 2000 03 13 | 703 | 0.1+ | 0.5+ | 2000 05 02 | 704 | 1.4+ | 1.7+ | 2006 09 26 | 704 | 0.7+ | 1.2− |
| 2000 03 13 | 713 | 0.6− | 0.2+ | 2000 05 02 | 704 | (0.1+ | 2.7+) | 2006 09 26 | 704 | 0.7− | 0.2− |
| 2000 03 13 | 703 | 1.3− | 0.2− | 2000 05 09 | 704 | 0.6+ | 0.1− | 2006 09 27 | G92 | 0.1− | 0.0 |
| 2000 03 13 | 703 | 0.0 | 0.3+ | 2000 05 09 | 704 | 0.7+ | 0.2− | 2006 09 27 | G92 | 0.2− | 0.1− |
| 2000 03 13 | 703 | 0.5+ | 0.4+ | 2000 05 09 | 704 | 0.5+ | 1.0+ | 2006 09 27 | G92 | 0.2− | 0.5− |
| 2000 03 13 | 850 | 0.3− | 0.0 | 2000 05 09 | 704 | 0.1− | 1.6+ | 2006 09 29 | 704 | 0.4+ | 0.1+ |
| 2000 03 13 | 850 | (0.2− | 2.4−) | 2000 05 09 | 704 | 0.3− | 0.8+ | 2006 09 29 | 704 | (0.3− | 1.6+) |
| 2000 03 13 | 850 | 0.7− | 0.1− | 2001 07 24 | 711 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.7− |
| 2000 03 13 | 704 | 0.3+ | 0.0 | 2001 07 24 | 711 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.3+ |
| 2000 03 13 | 704 | 0.3− | 0.8− | 2001 07 24 | 711 | 0.3− | 0.4+ | 2006 09 29 | 704 | (1.7+ | 0.1−) |
| 2000 03 13 | 704 | 0.1+ | 0.8− | 2001 09 22 | 644 | 0.3− | 0.5− | 2006 09 29 | A41 | 0.3− | 0.5+ |
| 2000 03 13 | 704 | 0.3− | 1.1− | 2003 05 28 | 696 | (1.6+ | 1.0−) | 2006 09 29 | A41 | 0.2+ | 0.6+ |
| 2000 03 13 | 704 | 0.4− | 0.8− | 2003 05 28 | 696 | 0.9+ | 0.3− | 2006 09 29 | A41 | 0.0 | 0.1− |
| 2000 03 13 | 428 | 0.1+ | 1.0− | 2004 10 07 | 696 | 0.2+ | 0.7− | 2006 09 30 | 699 | 0.6+ | 0.2− |
| 2000 03 13 | 428 | 0.3+ | 1.1− | 2004 10 07 | 696 | 1.2+ | 0.7− | 2006 09 30 | 704 | (0.7+ | 1.6−) |
| 2000 03 13 | 428 | 0.7+ | 1.3− | 2005 03 20 | 448 | 0.3− | 0.4− | 2006 09 30 | 704 | 0.4+ | 0.1− |
| 2000 03 13 | 413 | 0.1+ | 0.3+ | 2005 03 20 | 448 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.5− | 0.4− |
| 2000 03 13 | 413 | 0.0 | 0.3+ | 2005 03 20 | 448 | 0.1+ | 0.5− | 2006 09 30 | 699 | 0.6− | 0.7+ |
| 2000 03 13 | 046 | 0.5+ | 0.7− | 2005 04 01 | 699 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.6+ | 0.4− |
| 2000 03 13 | 046 | 0.5+ | 0.6+ | 2005 04 01 | 699 | 0.2+ | 0.3− | 2006 09 30 | 699 | 0.4+ | 0.2+ |
| 2000 03 13 | 046 | 0.5+ | 0.4+ | 2005 04 01 | 699 | 0.2− | 0.0 | 2006 11 17 | 644 | 0.3+ | 0.3+ |
| 2000 03 13 | 046 | 0.8+ | 0.1− | 2005 04 06 | 703 | 0.2+ | 0.5+ | 2006 11 17 | 644 | 0.2+ | 0.0 |
| 2000 03 13 | 046 | 0.3+ | 0.4+ | 2005 04 06 | 703 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.2+ |
| 2000 03 13 | 587 | 0.0 | 0.8− | 2005 04 06 | 703 | 1.2− | 0.8− | 2006 11 18 | 711 | 0.7− | 0.1+ |
| 2000 03 13 | 587 | (0.7− | 2.5−) | 2005 04 06 | 703 | 0.7− | 0.1+ | 2006 11 18 | 711 | 0.2+ | 0.4+ |
| 2000 03 14 | 670 | 0.4+ | 1.4− | 2005 04 11 | 704 | 1.2+ | 0.9− | 2006 11 18 | 711 | 0.2− | 0.8− |
| 2000 03 14 | 670 | 1.3− | 1.9− | 2005 04 11 | 704 | 0.0 | 0.6− | | | | |
| 2000 03 14 | 608 | 0.1+ | 0.4− | 2005 04 11 | 704 | 0.1− | 0.0 | | | | |

**(138156)∗ 2000 EE$_{73}$ = 2004 BX$_{28}$**

Discovered 2000 Mar. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 56121)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.44464 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24108094 | $\omega$ | 120.70879 | | −0.19562899 | −0.98044838 | |
| $a$ | 2.5567845 | $\Omega$ | 340.53871 | | +0.87656895 | −0.16511803 | |
| $e$ | 0.1176449 | $i$ | 3.65162 | | +0.43972285 | −0.10703740 | |
| $P$ | 4.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 1.6− | 1.4+ | 2004 01 22 | 704 | 0.7+ | 0.3− | 2004 02 23 | 704 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.6− | 0.9+ | 2004 01 30 | 704 | 0.8+ | 0.3− | 2004 02 29 | 691 | 0.1− | 0.2+ |
| 2000 02 11 | 704 | 1.9+ | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.1+ | 2004 02 29 | 691 | 0.1+ | 0.1− |
| 2000 03 10 | 691 | 0.1+ | 0.6+ | 2004 01 30 | 704 | 0.6+ | 0.2− | 2004 02 29 | 691 | 0.4− | 0.1+ |
| 2000 03 10 | 691 | 0.1+ | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.9− | 2006 07 25 | G96 | 0.0 | 0.0 |
| 2000 03 10 | 691 | 0.2+ | 0.5+ | 2004 01 31 | 691 | 0.2− | 0.1− | 2006 07 25 | G96 | 0.1− | 0.1− |
| 2000 03 12 | 691 | 0.3+ | 0.0 | 2004 01 31 | 691 | 0.1− | 0.0 | 2006 07 25 | G96 | 0.5+ | 0.1− |
| 2000 03 12 | 691 | 0.0 | 0.2− | 2004 01 31 | 691 | 0.0 | 0.2− | 2006 07 25 | G96 | 0.2− | 0.1− |
| 2000 03 12 | 691 | 0.2+ | 0.1+ | 2004 02 11 | 691 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.4− | 0.4+ |
| 2002 09 15 | 699 | 0.7+ | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.1− | 0.4+ |
| 2002 09 15 | 699 | 0.6− | 0.6+ | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.4+ |
| 2002 09 15 | 699 | 0.3− | 0.7− | 2004 02 16 | 704 | 0.5+ | 0.4− | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2002 09 15 | 699 | (1.3− | 1.8+) | 2004 02 16 | 704 | 0.5− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2004 01 18 | 644 | 0.1+ | 0.1− | 2004 02 16 | 704 | (0.8+ | 1.8−) | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2004 01 18 | 644 | 0.1+ | 0.3− | 2004 02 16 | 704 | 0.6− | 0.7+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2004 01 18 | 644 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.6+ | 0.8+ | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2004 01 22 | 704 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2004 01 22 | 704 | 0.3− | 0.1− | 2004 02 23 | 704 | 0.9+ | 0.2− | 2006 10 16 | G96 | 0.6+ | 0.3− |
| 2004 01 22 | 704 | 0.5− | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.3+ | | | | |

**(138157)∗ 2000 EJ$_{77}$ = 2002 UR$_{6}$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37403)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.96723 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25763868 | $\omega$ | 327.87778 | | +0.43133789 | −0.89290424 | |
| $a$ | 2.4460313 | $\Omega$ | 96.28503 | | +0.85278770 | +0.35681517 | |
| $e$ | 0.1153850 | $i$ | 7.46333 | | +0.29444994 | +0.27459962 | |
| $P$ | 3.83 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.3+ | 0.5+ | 2003 01 02 | 704 | 0.3+ | 0.0 | 2006 10 22 | 683 | (2.5+ | 0.3+) |
| 2000 02 03 | 704 | 0.4+ | 0.1− | 2003 01 02 | 704 | 0.2− | 0.4− | 2006 10 22 | 683 | 0.8+ | 0.5+ |
| 2000 02 03 | 704 | 0.6+ | 0.8+ | 2003 01 02 | 704 | 0.3+ | 0.0 | 2006 10 30 | 703 | 0.4− | 0.3− |
| 2000 02 03 | 704 | 0.3+ | 0.1+ | 2004 02 27 | 704 | 0.3+ | 1.0+ | 2006 10 30 | 703 | 0.7− | 0.4− |
| 2000 02 03 | 704 | 0.1− | 0.3+ | 2004 02 27 | 704 | 0.2+ | 0.2− | 2006 10 30 | 703 | 0.9− | 1.3− |
| 2000 03 05 | 704 | 0.4+ | 0.9+ | 2004 02 27 | 704 | 0.8− | 0.3− | 2006 10 30 | 703 | 0.8− | 0.5− |
| 2000 03 05 | 704 | 1.0− | 0.6+ | 2004 03 11 | 644 | 0.3− | 0.1+ | 2006 11 05 | 644 | 0.1+ | 0.6− |
| 2000 03 05 | 704 | 0.4+ | 0.4+ | 2004 03 11 | 644 | 0.7+ | 0.1− | 2006 11 05 | 644 | 0.1+ | 0.4− |
| 2000 03 12 | 704 | 0.0 | 0.8− | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 11 05 | 644 | 0.1− | 0.4− |
| 2000 03 12 | 704 | 1.1+ | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.4− |
| 2000 03 12 | 704 | 0.9− | 0.3− | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2000 03 12 | 704 | 0.3− | 1.8− | 2004 03 15 | 704 | 0.0 | 1.0− | 2006 11 10 | 644 | 0.2+ | 0.5− |
| 2000 03 12 | 704 | 0.6− | 1.0− | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.9− | 1.3− |
| 2000 04 03 | 699 | 0.7+ | 0.4− | 2004 03 15 | 704 | (2.2+ | 0.7−) | 2006 11 13 | 703 | 0.1− | 1.3− |
| 2000 04 03 | 699 | 0.5+ | 0.0 | 2004 03 15 | 106 | 0.4− | 0.1− | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2000 04 03 | 699 | 0.2+ | 0.4− | 2004 03 15 | 106 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.3+ | 1.4− |
| 2000 04 03 | 699 | 1.6− | 0.2− | 2004 03 16 | 106 | 1.0− | 0.2− | 2006 11 14 | 704 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.3+ | 0.5+ | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 704 | 0.6+ | 0.8+ |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2004 03 23 | 704 | 0.1+ | 0.7+ | 2006 11 14 | 704 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.3+ | 0.7+ | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.6+ |
| 2002 10 04 | 704 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.7+ | 0.3+ | 2006 11 14 | 704 | 0.2− | 0.1− |
| 2002 10 04 | 704 | 0.6+ | 1.0+ | 2004 03 23 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.8− | 0.1+ |
| 2002 10 04 | 645 | 0.1− | 0.0 | 2006 09 15 | 683 | 0.2+ | 1.2− | 2006 11 17 | 704 | 0.5− | 0.4− |
| 2002 10 04 | 645 | 0.1− | 0.0 | 2006 09 15 | 683 | 1.1+ | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.2− |
| 2002 10 08 | 608 | 0.2− | 0.4− | 2006 09 15 | 683 | (2.8− | 0.4+) | 2006 11 17 | 704 | 0.7− | 0.1− |
| 2002 10 08 | 608 | 0.0 | 0.3− | 2006 09 17 | 683 | 0.8+ | 0.1− | 2006 11 17 | 704 | 0.8− | 0.1+ |
| 2002 10 08 | 608 | 0.5− | 0.3− | 2006 09 17 | 683 | 0.2+ | 0.8+ | 2006 11 19 | 704 | 0.7− | 1.0+ |
| 2002 10 15 | 644 | 0.3− | 0.2+ | 2006 09 17 | 683 | 0.6− | 0.9+ | 2006 11 19 | 704 | 1.2− | 0.1− |
| 2002 10 15 | 644 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2002 10 28 | 644 | 0.0 | 0.1− | 2006 09 19 | 683 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.1+ |
| 2002 10 28 | 644 | 0.0 | 0.2− | 2006 09 19 | 683 | 0.9+ | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2002 10 28 | 644 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.5+ | 0.6+ | 2006 11 20 | 704 | 0.9− | 0.2+ |
| 2002 10 29 | 645 | 0.0 | 0.1− | 2006 09 19 | 683 | (0.5− | 1.8−) | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2002 10 29 | 645 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.7+ | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.5− |
| 2002 10 30 | 704 | (1.8+ | 0.9+) | 2006 09 25 | 683 | 0.6+ | 0.3− | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2002 10 30 | 704 | (0.5− | 1.6+) | 2006 09 25 | 683 | 0.8+ | 1.5+ | 2006 11 23 | G96 | 0.4+ | 0.6− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 25 | 683 | 0.4− | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2002 10 30 | 704 | (0.4− | 1.8+) | 2006 09 26 | 704 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.6− |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.5+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2002 10 30 | 704 | (0.4+ | 1.8+) | 2006 09 26 | 704 | 0.2− | 0.0 | 2006 11 25 | 704 | 1.0+ | 0.2+ |
| 2002 10 30 | 704 | (0.1+ | 2.4+) | 2006 09 26 | 704 | 0.3+ | 1.0− | 2006 11 25 | 704 | 0.4− | 0.2+ |
| 2002 10 31 | E14 | (3.4− | 0.1−) | 2006 09 26 | 683 | 0.2− | 1.0− | 2006 11 25 | 704 | 1.0+ | 0.5+ |
| 2002 10 31 | E14 | (4.2− | 1.3−) | 2006 09 26 | 683 | 0.0 | 0.7+ | 2006 11 25 | 704 | 1.8+ | 0.7+ |
| 2002 10 31 | E14 | (3.5− | 0.7−) | 2006 09 26 | 683 | (0.4+ | 5.4+) | 2006 11 25 | 704 | 0.3+ | 0.8+ |
| 2002 11 12 | 704 | (1.1− | 2.1+) | 2006 10 20 | 683 | 0.9+ | 0.3− | 2006 11 25 | 704 | 1.3+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.4− | 0.7+ | 2006 10 20 | 683 | (1.1+ | 1.6+) | 2006 11 25 | 704 | 1.2+ | 0.4+ | | |
| 2002 11 12 | 704 | 0.4+ | 1.2+ | 2006 10 20 | 683 | (0.4+ | 1.8+) | 2006 11 25 | 704 | 1.2+ | 0.7+ | | |
| 2002 11 12 | 704 | 0.2− | 1.0+ | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.3− | | |
| 2002 11 12 | 704 | (1.6+ | 1.6+) | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1− | 0.3− | | |
| 2002 11 21 | 644 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.4− | | |
| 2002 11 21 | 644 | 0.0 | 1.0+ | 2006 10 21 | 683 | (2.0+ | 0.4−) | 2006 11 28 | 704 | 0.0 | 0.0 | | |
| 2002 11 21 | 644 | 0.1+ | 0.7+ | 2006 10 21 | 683 | 0.7+ | 1.0+ | 2006 11 28 | 704 | 0.1− | 0.3− | | |
| 2003 01 02 | 704 | 1.0− | 0.5+ | 2006 10 21 | 683 | 0.5− | 0.9+ | | | | | | |
| 2003 01 02 | 704 | 0.6− | 0.9+ | 2006 10 22 | 683 | (1.6+ | 0.4−) | | | | | | |

**(138158)∗ 2000 ED$_{82}$ = 2002 SH$_5$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37405)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 225.27472 | | (2000.0) | | | |
| $n$ | 0.22672167 | $\omega$ | 98.01870 | | −0.48901413 | −0.87064848 |
| $a$ | 2.6636308 | $\Omega$ | 21.51033 | | +0.73213175 | −0.44287206 |
| $e$ | 0.0472459 | $i$ | 8.35164 | | +0.47418170 | −0.21409242 |
| $P$ | 4.35 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.2− | 0.9+ | 2002 10 07 | 699 | 0.6+ | 0.8+ | 2004 01 31 | 704 | 0.7− | 0.8+ | | |
| 2000 03 05 | 704 | 0.1+ | 1.5+ | 2002 10 11 | 704 | 0.3+ | 0.0 | 2004 02 13 | 699 | 0.4− | 0.0 | | |
| 2000 03 05 | 704 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.6+ | 0.1− | 2004 02 13 | 699 | 1.0+ | 0.0 | | |
| 2000 03 05 | 704 | 0.2+ | 0.6+ | 2002 10 11 | 704 | 0.8+ | 0.1+ | 2004 02 13 | 699 | (0.5+ | 2.1+) | | |
| 2000 03 12 | 704 | 0.8+ | 0.2+ | 2002 10 11 | 704 | 0.7+ | 0.1+ | 2004 02 13 | 699 | 0.3+ | 0.4+ | | |
| 2000 03 12 | 704 | 0.4+ | 0.7+ | 2002 10 11 | 704 | 0.4+ | 0.1+ | 2004 02 14 | 704 | 0.3− | 0.4− | | |
| 2000 03 12 | 704 | 0.0 | 1.2+ | 2002 11 06 | 608 | 0.0 | 0.2+ | 2004 02 14 | 704 | 0.0 | 0.1+ | | |
| 2000 04 03 | 704 | 0.3+ | 0.3− | 2002 11 06 | 608 | 0.0 | 0.0 | 2004 02 14 | 704 | 0.7+ | 0.8− | | |
| 2000 04 03 | 704 | 0.2+ | 0.2+ | 2002 11 06 | 608 | 0.2+ | 0.2− | 2004 02 14 | 704 | 0.8+ | 0.0 | | |
| 2000 04 03 | 704 | 0.8+ | 0.9+ | 2003 12 17 | 644 | 0.3+ | 0.6− | 2004 02 14 | 704 | 0.3+ | 0.4+ | | |
| 2000 04 03 | 704 | 0.2+ | 0.5+ | 2003 12 17 | 644 | 0.8+ | 0.0 | 2004 02 17 | 691 | 0.0 | 0.0 | | |
| 2002 09 27 | 644 | 1.1− | 0.1− | 2003 12 17 | 644 | 0.7+ | 0.3+ | 2004 02 17 | 691 | 0.0 | 0.1+ | | |
| 2002 09 27 | 644 | 0.8− | 0.0 | 2003 12 28 | 704 | 0.0 | 0.3+ | 2004 02 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 27 | 644 | 1.0− | 0.1− | 2003 12 28 | 704 | 0.3+ | 0.3− | 2004 03 23 | 704 | 1.0+ | 0.5− | | |
| 2002 09 28 | 644 | 0.6− | 0.1+ | 2003 12 28 | 704 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 1.2− | 0.7+ | | |
| 2002 09 28 | 644 | 0.6− | 0.1+ | 2003 12 28 | 704 | 0.3+ | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.9+ | | |
| 2002 09 28 | 644 | 0.6− | 0.2+ | 2003 12 28 | 704 | 1.6+ | 1.2+ | 2004 03 23 | 704 | 0.9+ | 0.0 | | |
| 2002 10 01 | 608 | 0.4− | 0.8+ | 2004 01 17 | 644 | 0.2+ | 0.1+ | 2005 05 11 | 644 | 0.7+ | 0.6+ | | |
| 2002 10 01 | 608 | 0.4+ | 1.1+ | 2004 01 17 | 644 | 0.2+ | 0.0 | 2005 05 11 | 644 | 0.5+ | 0.9+ | | |
| 2002 10 01 | 608 | 0.3− | 0.8+ | 2004 01 17 | 644 | 0.2+ | 0.1− | 2005 05 11 | 644 | 0.4+ | 0.7+ | | |
| 2002 10 02 | 704 | 0.2− | 0.0 | 2004 01 18 | 703 | 0.8− | 0.5− | 2006 08 28 | 699 | 1.7+ | 0.9+ | | |
| 2002 10 02 | 704 | 0.0 | 0.2+ | 2004 01 18 | 703 | 0.5− | 0.8+ | 2006 08 28 | 699 | 0.7− | 0.0 | | |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2004 01 18 | 703 | 1.3+ | 0.8− | 2006 08 28 | 699 | 0.9− | 0.3− | | |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2004 01 18 | 703 | 1.8− | 1.6− | 2006 08 28 | 699 | 1.2− | 0.6− | | |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2004 01 19 | 704 | 0.4− | 1.1− | 2006 09 20 | 703 | 0.3− | 0.2+ | | |
| 2002 10 03 | 704 | 0.5− | 0.9+ | 2004 01 19 | 704 | 1.9− | 0.8− | 2006 09 20 | 703 | 0.2+ | 1.3− | | |
| 2002 10 03 | 704 | 0.3+ | 0.4− | 2004 01 19 | 704 | 0.7− | 0.5− | 2006 09 20 | 703 | 0.1+ | 0.5+ | | |
| 2002 10 03 | 704 | 0.6− | 0.1+ | 2004 01 28 | 691 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.6− | | |
| 2002 10 03 | 704 | 0.5− | 0.2− | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.3+ | 0.9− | | |
| 2002 10 07 | 699 | 0.3+ | 0.5+ | 2004 01 28 | 691 | 0.3− | 0.3− | 2006 09 30 | 703 | 1.4− | 0.2+ | | |
| 2002 10 07 | 699 | 0.3+ | 1.4+ | 2004 01 31 | 704 | 1.2− | 1.6+ | 2006 09 30 | 703 | 0.6− | 0.2− | | |
| 2002 10 07 | 699 | 0.5− | 0.7+ | 2004 01 31 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.8+ | 1.0+ | | |

**(138159)∗ 2000 EC$_{85}$**

Discovered 2000 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 260.09929 | | (2000.0) | | | |
| $n$ | 0.26512690 | $\omega$ | 282.71775 | | −0.99255649 | −0.01979886 |
| $a$ | 2.3997547 | $\Omega$ | 256.24192 | | +0.06302633 | −0.92779548 |
| $e$ | 0.1773309 | $i$ | 7.10652 | | −0.10420790 | −0.37256348 |
| $P$ | 3.72 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 703 | 0.6+ | 0.2+ | 2002 11 12 | 704 | 0.0 | 0.5− | 2004 05 13 | 703 | 0.2+ | 0.6+ | | |
| 2000 02 07 | 703 | 0.5+ | 0.1− | 2002 11 14 | 704 | (0.9− | 1.7+) | 2004 05 13 | 703 | 0.3+ | 0.5+ | | |
| 2000 02 07 | 703 | 0.3+ | 0.2− | 2002 11 14 | 704 | 0.7− | 0.2+ | 2004 05 15 | 704 | 0.5+ | 0.0 | | |
| 2000 02 07 | 703 | 0.1− | 0.4− | 2002 11 14 | 704 | 0.7+ | 1.4+ | 2004 05 15 | 704 | 0.3+ | 0.9+ | | |
| 2000 02 08 | 704 | 0.5− | 1.3− | 2002 11 24 | 644 | 0.4− | 0.6+ | 2004 05 15 | 704 | 0.4+ | 0.5+ | | |
| 2000 02 08 | 704 | 0.1− | 0.5+ | 2002 11 24 | 644 | 0.4− | 0.6+ | 2004 05 15 | 704 | 0.1− | 0.1− | | |
| 2000 02 08 | 704 | 0.2+ | 1.0− | 2002 11 24 | 644 | 0.1+ | 0.2+ | 2004 05 15 | 704 | 0.0 | 0.6+ | | |
| 2000 02 08 | 704 | 0.0 | 1.1+ | 2002 12 06 | 704 | 0.5− | 0.0 | 2004 05 17 | 608 | 0.4+ | 0.4+ | | |
| 2000 03 01 | 703 | 0.3− | 0.6+ | 2002 12 06 | 704 | 0.4+ | 0.0 | 2004 05 17 | 608 | 0.4+ | 0.1+ | | |
| 2000 03 01 | 703 | 0.1− | 0.2+ | 2002 12 06 | 704 | 0.8+ | 0.5+ | 2004 05 17 | 608 | 0.2+ | 0.5+ | | |
| 2000 03 01 | 703 | 0.7+ | 0.6+ | 2002 12 06 | 704 | 1.2− | 1.1+ | 2004 05 19 | 704 | 0.1+ | 0.7+ | | |
| 2000 03 01 | 703 | 0.5+ | 0.5+ | 2004 04 15 | E12 | (1.9− | 0.5−) | 2004 05 19 | 704 | 0.3+ | 1.0+ | | |
| 2000 03 08 | 704 | 0.5− | 0.5+ | 2004 04 15 | E12 | 0.2− | 0.9− | 2004 05 19 | 704 | 0.3− | 0.4+ | | |
| 2000 03 08 | 704 | 0.1− | 0.6− | 2004 04 15 | E12 | (0.8+ | 1.9−) | 2004 05 19 | 704 | 0.4− | 0.2+ | | |
| 2000 03 08 | 704 | 0.9− | 0.3+ | 2004 04 15 | E12 | 0.1+ | 0.1+ | 2004 06 06 | 644 | 0.4+ | 0.6+ | | |
| 2000 03 08 | 704 | (2.1+ | 0.8+) | 2004 04 16 | E12 | 0.2+ | 0.6− | 2004 06 06 | 644 | 0.5+ | 0.6+ | | |
| 2000 03 08 | 704 | 0.6+ | 0.9+ | 2004 04 16 | E12 | 0.1− | 0.0 | 2004 06 06 | 644 | 0.4+ | 0.5+ | | |
| 2000 03 11 | 608 | 0.9− | 1.7− | 2004 04 16 | E12 | 0.5− | 0.1− | 2004 06 10 | 699 | 1.1+ | 0.3+ | | |
| 2000 03 11 | 608 | (0.8− | 2.2−) | 2004 04 16 | E12 | 0.4− | 0.1− | 2004 06 10 | 699 | 1.0+ | 0.2− | | |
| 2000 03 11 | 608 | 0.7− | 1.8− | 2004 04 17 | 644 | 0.2− | 0.3+ | 2004 06 10 | 699 | 0.8+ | 0.9− | | |
| 2000 03 13 | 704 | 0.3− | 0.4+ | 2004 04 17 | 644 | 0.3− | 0.3+ | 2004 06 10 | 699 | 0.0 | 1.5+ | | |
| 2000 03 13 | 704 | 0.2+ | 1.1− | 2004 04 17 | 644 | 0.4− | 0.4+ | 2005 08 03 | 644 | 0.2+ | 0.6+ | | |
| 2000 03 13 | 704 | 0.4+ | 0.1+ | 2004 04 25 | 704 | 0.2− | 0.1+ | 2005 08 03 | 644 | 0.1+ | 0.5+ | | |
| 2000 03 14 | 703 | 0.4− | 0.0 | 2004 04 25 | 704 | 0.4− | 0.6+ | 2005 08 03 | 644 | 0.3+ | 0.4+ | | |
| 2000 03 14 | 703 | 1.1+ | 0.1+ | 2004 04 25 | 704 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.6− | 0.0 | | |
| 2000 03 14 | 703 | 0.3+ | 0.6+ | 2004 04 25 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.1+ | | |
| 2000 03 14 | 703 | 0.1− | 0.5+ | 2004 04 25 | 704 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.4− | 0.1+ | | |
| 2002 10 31 | 699 | 0.4+ | 0.2+ | 2004 04 29 | 608 | 0.3− | 0.8− | 2006 11 18 | 704 | (0.3− | 2.0+) | | |
| 2002 10 31 | 699 | 0.0 | 0.1− | 2004 04 29 | 608 | 0.2+ | 1.0− | 2006 11 18 | 704 | 0.7+ | 0.8+ | | |
| 2002 10 31 | 699 | 0.4+ | 0.1− | 2004 04 29 | 608 | 0.2− | 0.5− | 2006 11 18 | 704 | 1.4+ | 1.0− | | |
| 2002 10 31 | 699 | 0.7− | 1.0− | 2004 05 08 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.4− | | |
| 2002 11 11 | 699 | 0.7− | 0.6+ | 2004 05 08 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.5− | | |
| 2002 11 11 | 699 | 0.6− | 0.3+ | 2004 05 08 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.4− | | |
| 2002 11 11 | 699 | 0.2+ | 0.8+ | 2004 05 13 | 699 | 0.5− | 0.5+ | 2006 11 21 | 704 | 0.6+ | 0.3+ | | |
| 2002 11 11 | 699 | 0.5+ | 0.0 | 2004 05 13 | 699 | 0.6− | 0.7+ | 2006 11 24 | 691 | 1.1+ | 1.2+ | | |
| 2002 11 12 | 704 | 0.6− | 0.2+ | 2004 05 13 | 699 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.4− | 0.0 | | |
| 2002 11 12 | 704 | 0.4− | 0.7+ | 2004 05 13 | 699 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.5− | 0.2− | | |
| 2002 11 12 | 704 | 0.1− | 1.0+ | 2004 05 13 | 703 | 0.1+ | 0.5+ | | | | | | |
| 2002 11 12 | 704 | (1.8− | 0.1−) | 2004 05 13 | 703 | 0.0 | 0.9+ | | | | | | |

**(138160)∗ 2000 ET$_{87}$ = 2002 RW$_{94}$**

Discovered 2000 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 230.21408 | | (2000.0) | | | |
| $n$ | 0.23081024 | $\omega$ | 116.80515 | | −0.63253889 | −0.77290298 |
| $a$ | 2.6320815 | $\Omega$ | 12.81296 | | +0.60576391 | −0.53402669 |
| $e$ | 0.1235509 | $i$ | 13.07107 | | +0.48264339 | −0.34269007 |
| $P$ | 4.27 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 703 | 1.1− | 0.1+ | 2002 09 28 | 644 | 0.9− | 1.4+ | 2004 01 31 | 704 | (3.1− | 0.1−) | | |
| 2000 02 27 | 703 | 0.4− | 0.0 | 2002 09 28 | 644 | 0.7− | 1.0+ | 2004 01 31 | 704 | (3.1− | 0.3+) | | |
| 2000 02 27 | 703 | 0.2− | 0.0 | 2002 09 28 | 644 | 0.4− | 1.3+ | 2004 02 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 02 27 | 703 | 0.1− | 0.2+ | 2002 10 01 | 608 | 0.2− | 1.3− | 2004 02 10 | 644 | 0.3− | 0.3+ | | |
| 2000 03 08 | 704 | 0.8− | 0.4+ | 2002 10 01 | 608 | 0.2− | 0.9− | 2004 02 10 | 644 | 0.3− | 0.1+ | | |
| 2000 03 08 | 704 | 0.2+ | 1.0− | 2002 10 01 | 608 | 0.8− | 0.8− | 2004 02 13 | 644 | 0.7− | 0.1− | | |
| 2000 03 08 | 704 | 0.8− | 0.3− | 2002 10 02 | 704 | 0.7+ | 1.1+ | 2004 02 13 | 644 | 0.0 | 0.0 | | |
| 2000 03 12 | 704 | 0.1− | 0.4+ | 2002 10 02 | 704 | 0.1+ | 0.0 | 2004 02 13 | 644 | 0.1− | 0.0 | | |
| 2000 03 12 | 704 | 0.4+ | 0.7+ | 2002 10 02 | 704 | 0.5− | 0.5+ | 2004 02 14 | 704 | 0.0 | 0.0 | | |
| 2000 03 12 | 704 | 0.7+ | 0.6+ | 2002 10 02 | 704 | 0.4+ | 1.2+ | 2004 02 14 | 704 | 0.1− | 0.0 | | |
| 2000 03 12 | 704 | 0.7+ | 0.6+ | 2002 10 02 | 704 | (0.5+ | 1.9+) | 2004 02 14 | 704 | 0.2+ | 0.0 | | |
| 2000 03 14 | 703 | 0.8+ | 0.3+ | 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 02 14 | 704 | 0.1− | 0.4− | | |
| 2000 03 14 | 703 | 0.5− | 0.6+ | 2002 10 03 | 704 | 0.3− | 0.5+ | 2004 02 14 | 704 | 0.1+ | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 14 | 703 | 0.7− | 0.4+ | 2002 10 03 | 704 | 0.6− | 0.1− | 2004 03 18 | 644 | 0.1− | 0.1− |
| 2000 03 14 | 703 | 0.3− | 0.8+ | 2002 10 03 | 704 | 0.0 | 0.0 | 2004 03 18 | 644 | 0.2− | 0.2− |
| 2000 03 26 | 699 | 0.2+ | 0.5+ | 2002 10 03 | 704 | 0.4− | 0.2− | 2004 03 18 | 644 | 0.2− | 0.1− |
| 2000 03 26 | 699 | 0.4+ | 0.3+ | 2002 10 04 | 291 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.5− | 0.0 |
| 2000 03 26 | 699 | 0.5+ | 0.9+ | 2002 10 04 | 291 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.2− | 0.2− |
| 2000 03 26 | 699 | 0.6+ | 0.1+ | 2002 10 04 | 291 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.2− | 0.2+ |
| 2000 03 28 | 049 | 0.6+ | 0.1− | 2002 10 07 | 699 | 0.4− | 0.7+ | 2004 03 23 | 704 | 0.0 | 0.5+ |
| 2000 03 28 | 049 | 1.0+ | 0.1− | 2002 10 07 | 699 | 0.7+ | 0.3− | 2004 03 25 | 704 | 0.2+ | 0.2− |
| 2000 03 28 | 049 | 0.8+ | 0.0 | 2002 10 07 | 699 | 0.2− | 0.7− | 2004 03 25 | 704 | 0.1+ | 0.0 |
| 2000 03 30 | 703 | 0.7+ | 0.9+ | 2002 10 07 | 699 | 0.0 | 0.8+ | 2004 03 25 | 704 | 0.1− | 0.1− |
| 2000 03 30 | 703 | 0.1+ | 0.1− | 2002 10 07 | 704 | (2.1− | 1.1+) | 2004 03 25 | 704 | 0.0 | 0.2− |
| 2000 03 30 | 703 | 0.1− | 0.5+ | 2002 10 07 | 704 | 1.0− | 0.5+ | 2004 03 25 | 704 | 0.2+ | 0.1− |
| 2000 03 30 | 703 | 1.9+ | 0.7+ | 2002 10 07 | 704 | 0.1− | 0.4+ | 2004 04 14 | 704 | 0.1− | 0.9+ |
| 2000 04 04 | 704 | (1.8+ | 4.0+) | 2002 10 07 | 704 | 0.3+ | 0.7+ | 2004 04 14 | 704 | 1.0+ | 0.9+ |
| 2000 04 04 | 704 | (1.3+ | 3.7+) | 2002 10 07 | 704 | 0.8− | 0.8+ | 2004 04 14 | 704 | 0.4− | 0.0 |
| 2000 04 04 | 704 | (2.8+ | 0.0 ) | 2002 10 11 | 704 | 0.1− | 0.2+ | 2004 04 14 | 704 | 0.4− | 0.3+ |
| 2000 04 04 | 704 | 1.1+ | 1.3− | 2002 10 11 | 704 | 0.3− | 0.3+ | 2004 04 14 | 704 | 0.2+ | 0.3+ |
| 2000 04 05 | 704 | 0.6+ | 0.6+ | 2002 10 11 | 704 | 0.1+ | 0.7+ | 2004 04 20 | 704 | (1.8+ | 0.4+) |
| 2000 04 05 | 704 | 0.6+ | 0.6+ | 2002 10 11 | 704 | 0.0 | 0.3− | 2004 04 20 | 704 | (1.9+ | 1.1+) |
| 2000 04 05 | 704 | 0.5+ | 0.6+ | 2002 10 11 | 704 | 1.0− | 0.8+ | 2004 04 20 | 704 | 0.6+ | 1.3+ |
| 2000 04 05 | 704 | 0.6+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.1− | 2004 04 20 | 704 | 0.4+ | 1.2+ |
| 2000 04 06 | 704 | 0.3+ | 0.6+ | 2002 10 11 | 704 | 0.1+ | 0.0 | 2004 04 20 | 704 | 1.1+ | 1.0+ |
| 2000 04 06 | 704 | 0.5+ | 0.4+ | 2002 10 11 | 704 | 0.1+ | 0.6− | 2004 04 22 | 704 | 0.7+ | 0.0 |
| 2000 04 06 | 704 | 0.2+ | 1.1+ | 2002 10 11 | 704 | 0.6+ | 0.3+ | 2004 04 22 | 704 | 0.1+ | 0.6+ |
| 2000 04 06 | 704 | 0.4+ | 0.4+ | 2002 10 11 | 704 | 0.4− | 0.5+ | 2004 04 22 | 704 | 1.5+ | 0.9+ |
| 2000 04 06 | 704 | 0.5+ | 1.3+ | 2002 10 11 | 704 | 0.7− | 0.5+ | 2004 04 22 | 704 | 1.4+ | 0.0 |
| 2000 04 07 | 699 | 0.3+ | 0.0 | 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 08 24 | F84 | 0.5+ | 0.8+ |
| 2000 04 07 | 699 | 0.3+ | 0.5+ | 2002 10 11 | 704 | 0.4+ | 0.2+ | 2006 08 24 | F84 | 0.6+ | 0.3+ |
| 2000 04 07 | 699 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.9− | 0.2+ | 2006 08 25 | F84 | 1.0− | 0.1− |
| 2000 04 07 | 699 | 0.2+ | 0.0 | 2002 10 11 | 704 | 0.0 | 0.0 | 2006 08 25 | F84 | 1.0− | 0.0 |
| 2000 04 10 | 704 | 0.3+ | 0.5+ | 2002 10 31 | 704 | 0.7+ | 0.2− | 2006 08 25 | F84 | 0.4+ | 0.9+ |
| 2000 04 10 | 704 | 0.9+ | 0.8+ | 2002 10 31 | 704 | 0.1+ | 0.4+ | 2006 08 28 | D35 | 0.9+ | 0.4+ |
| 2000 04 10 | 704 | 0.4+ | 1.2+ | 2002 10 31 | 704 | 0.4+ | 0.4+ | 2006 08 28 | D35 | 0.4+ | 0.7+ |
| 2000 04 10 | 704 | 1.0+ | 0.5+ | 2003 12 04 | 704 | 0.4+ | 0.8+ | 2006 08 28 | D35 | 0.4+ | 0.8+ |
| 2000 04 10 | 704 | 0.5− | 1.6− | 2003 12 04 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 1.3− | 0.2+ |
| 2000 04 27 | 699 | 0.3+ | 0.4+ | 2003 12 04 | 704 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.3− |
| 2000 04 27 | 699 | 0.1+ | 0.9+ | 2003 12 04 | 704 | 0.3− | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2000 04 27 | 699 | 0.8+ | 0.0 | 2003 12 18 | 704 | 0.6− | 0.4− | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 2000 04 27 | 699 | 0.1− | 0.1+ | 2003 12 18 | 704 | 0.5− | 0.2− | 2006 09 26 | 703 | 0.5− | 1.3+ |
| 2000 05 02 | 699 | 0.6+ | 1.7+ | 2003 12 18 | 704 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.9− |
| 2000 05 02 | 699 | 0.1+ | 0.3+ | 2003 12 18 | 704 | 0.1− | 0.9− | 2006 09 26 | 703 | 0.8− | 1.4+ |
| 2000 05 02 | 699 | 0.2− | 1.9+ | 2003 12 18 | 704 | 0.3− | 0.0 | 2006 09 26 | 703 | 1.5− | 0.6+ |
| 2000 05 02 | 699 | 0.2− | 1.3+ | 2003 12 29 | 704 | 0.4+ | 0.8− | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2002 09 05 | 704 | 1.1− | 0.0 | 2003 12 29 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.3+ |
| 2002 09 05 | 704 | 0.2− | 1.3+ | 2003 12 29 | 704 | 1.2+ | 1.0− | 2006 09 30 | 703 | (1.7+ | 0.0 ) |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2003 12 29 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 1.1− | 0.4+ | 2003 12 29 | 704 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.7+ |
| 2002 09 07 | 704 | 0.3− | 0.2+ | 2004 01 17 | 644 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.9− | 0.6+ | 2004 01 17 | 644 | 0.5− | 0.0 | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2002 09 07 | 704 | 0.0 | 0.8+ | 2004 01 17 | 644 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2002 09 27 | 644 | 1.4− | 0.8+ | 2004 01 31 | 704 | (2.5− | 0.6+) | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2002 09 27 | 644 | 1.0− | 1.0+ | 2004 01 31 | 704 | (3.1− | 0.2+) | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2002 09 27 | 644 | 1.1− | 1.0+ | 2004 01 31 | 704 | (2.6− | 0.7+) | 2006 11 27 | G96 | 1.0− | 0.0 |

**(138161)∗ 2000 EB$_{88}$ = 2001 OX$_{17}$**

Discovered 2000 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14844)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 203.71204 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24341006 | $\omega$ | 240.94473 | | −0.96618354 | | +0.09956059 | |
| $a$ | 2.5404483 | $\Omega$ | 303.79762 | | +0.04233999 | | −0.84867657 | |
| $e$ | 0.1148848 | $i$ | 16.63239 | | −0.25435543 | | −0.51945719 | |
| $P$ | 4.05 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.3− | 0.7− | 2001 07 23 | 608 | 0.4+ | 1.2+ | 2004 02 19 | 704 | (1.9− | 0.1+) |
| 2000 02 08 | 704 | 1.6− | 1.6+ | 2001 07 23 | 608 | 0.1+ | 1.5+ | 2004 02 19 | 704 | 0.0 | 0.6− |
| 2000 02 08 | 704 | 0.9+ | 1.6+ | 2001 08 06 | 608 | 0.3− | 1.0+ | 2004 03 16 | 704 | 0.3− | 0.4+ |
| 2000 02 08 | 704 | 1.3+ | 1.0+ | 2001 08 06 | 608 | 0.2+ | 0.8+ | 2004 03 16 | 704 | 0.5− | 0.4+ |
| 2000 03 03 | 703 | 0.5+ | 0.3− | 2001 08 06 | 608 | 0.5− | 0.8+ | 2004 03 16 | 704 | 0.3− | 0.5+ |
| 2000 03 03 | 703 | 0.2− | 0.2+ | 2001 08 23 | 691 | 0.8+ | 0.7− | 2004 03 16 | 704 | 0.1+ | 0.9+ |
| 2000 03 03 | 703 | 0.1− | 0.0 | 2001 08 23 | 691 | 0.5+ | 0.5− | 2004 03 16 | 704 | 0.1− | 0.9+ |
| 2000 03 03 | 703 | 0.0 | 0.1− | 2001 08 23 | 691 | 0.4+ | 0.9− | 2004 03 17 | 704 | 0.2− | 0.2− |
| 2000 03 09 | 704 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.5− | 0.9− | 2004 03 17 | 704 | 0.3− | 0.0 |
| 2000 03 09 | 704 | 0.1− | 0.3− | 2003 12 23 | 704 | 0.9+ | 0.2− | 2004 03 17 | 704 | 0.2− | 0.1− |
| 2000 03 09 | 704 | 0.2− | 0.2− | 2003 12 23 | 704 | 0.9+ | 0.6− | 2004 03 17 | 704 | 1.2− | 0.1− |
| 2000 03 09 | 704 | 0.1+ | 0.1− | 2003 12 23 | 704 | (1.8− | 0.0 ) | 2004 03 17 | 704 | 0.8− | 0.4+ |
| 2000 03 09 | 704 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 1.2− | 0.3− | 2004 03 28 | 703 | (1.5+ | 0.2−) |
| 2000 03 13 | 704 | 1.0− | 0.9+ | 2004 01 14 | 644 | 0.0 | 0.5− | 2004 03 28 | 703 | 0.8+ | 0.6+ |
| 2000 03 13 | 704 | 0.4− | 0.5− | 2004 01 14 | 644 | 0.1+ | 0.5− | 2004 03 28 | 703 | 0.2− | 0.9− |
| 2000 03 13 | 704 | 0.3+ | 0.3+ | 2004 01 14 | 644 | 0.2+ | 0.2− | 2004 03 28 | 703 | 0.1+ | 0.8+ |
| 2000 03 13 | 704 | 0.8+ | 0.8− | 2004 01 23 | 704 | 0.2− | 0.3+ | 2004 04 24 | 703 | 0.1+ | 0.0 |
| 2000 05 05 | 699 | 0.2− | 0.6+ | 2004 01 23 | 704 | 0.2− | 0.0 | 2004 04 24 | 703 | 0.8+ | 1.2− |
| 2000 05 05 | 699 | 0.8+ | 0.1− | 2004 01 23 | 704 | 0.0 | 0.1− | 2004 04 24 | 703 | 0.8+ | 0.7− |
| 2000 05 05 | 699 | 0.8+ | 0.2+ | 2004 01 23 | 704 | 0.3− | 0.1− | 2004 04 24 | 703 | 0.6− | 1.1− |
| 2000 05 05 | 699 | 0.5+ | 1.2− | 2004 01 23 | 704 | 0.2− | 0.1+ | 2006 09 25 | 703 | 0.8− | 1.4− |
| 2001 06 17 | 644 | 0.3− | 0.6+ | 2004 01 29 | 704 | 0.2− | 0.3− | 2006 09 25 | 703 | 0.2− | 0.0 |
| 2001 06 17 | 644 | 0.3+ | 0.4+ | 2004 01 29 | 704 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.0 | 0.7+ |
| 2001 06 17 | 644 | 0.2− | 0.2+ | 2004 01 29 | 704 | 0.1− | 0.3− | 2006 09 25 | 703 | 0.3+ | 0.1+ |
| 2001 06 30 | 608 | 0.6− | 1.0+ | 2004 01 29 | 704 | 0.2− | 0.2− | 2006 10 23 | 703 | 0.4+ | 0.1+ |
| 2001 06 30 | 608 | 0.9− | 0.2+ | 2004 02 12 | 644 | 0.0 | 0.2− | 2006 10 23 | 703 | 0.1− | 0.1+ |
| 2001 06 30 | 608 | 1.3− | 0.8+ | 2004 02 12 | 644 | 0.1+ | 0.2− | 2006 10 23 | 703 | 0.1+ | 0.1+ |
| 2001 07 17 | 608 | 0.5− | 0.6− | 2004 02 12 | 644 | 0.2+ | 0.1− | 2006 10 23 | 703 | 0.3+ | 0.9+ |
| 2001 07 17 | 608 | 0.4− | 0.8− | 2004 02 14 | 644 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.5+ | 0.2+ |
| 2001 07 17 | 608 | 0.6− | 1.2− | 2004 02 14 | 644 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.1+ | 0.4+ |
| 2001 07 17 | 608 | 0.2− | 1.0− | 2004 02 14 | 644 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.5− | 0.3− |
| 2001 07 17 | 608 | 0.7− | 0.2− | 2004 02 19 | 704 | (2.1− | 1.0+) | 2006 11 16 | 703 | 0.0 | 0.1− |
| 2001 07 17 | 608 | 0.8− | 1.3− | 2004 02 19 | 704 | 0.1− | 0.2− | | | | |
| 2001 07 23 | 608 | 0.8+ | 1.5+ | 2004 02 19 | 704 | (1.8− | 0.4+) | | | | |

**(138162)∗ 2000 EH$_{88}$ = 2001 MP$_{22}$**

Discovered 2000 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 14220)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 122.39777 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22510733 | $\omega$ | 283.96937 | | −0.64453815 | | +0.73812005 | |
| $a$ | 2.6763503 | $\Omega$ | 304.10399 | | −0.57497535 | | −0.63981651 | |
| $e$ | 0.0910286 | $i$ | 13.93268 | | −0.50395825 | | −0.21404117 | |
| $P$ | 4.38 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.1− | 0.3+ | 2002 11 14 | 644 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 1.2− | 0.4+ |
| 2000 02 08 | 704 | 0.4− | 0.0 | 2002 11 14 | 644 | 0.9− | 0.1− | 2004 02 11 | 699 | 0.5− | 0.0 |
| 2000 02 08 | 704 | 1.5+ | 0.3− | 2003 12 19 | 704 | 0.0 | 0.5+ | 2004 02 11 | 699 | 0.3− | 0.6− |
| 2000 02 08 | 704 | 1.1+ | 0.5− | 2003 12 19 | 704 | 0.6− | 0.0 | 2004 02 13 | 691 | 0.1+ | 0.3+ |
| 2000 02 08 | 704 | 0.4+ | 0.1+ | 2003 12 19 | 704 | 0.0 | 0.4− | 2004 02 13 | 691 | 0.1+ | 0.0 |
| 2000 03 04 | 703 | 0.5+ | 0.9+ | 2003 12 19 | 704 | 0.5+ | 0.7+ | 2004 02 13 | 691 | 0.1+ | 0.3+ |
| 2000 03 04 | 703 | 0.5+ | 0.7+ | 2003 12 21 | 691 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.4+ | 0.1− |
| 2000 03 04 | 703 | 0.5+ | 0.6+ | 2003 12 21 | 691 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.3+ | 0.1− |
| 2000 03 04 | 703 | 1.2+ | 0.9+ | 2003 12 21 | 691 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.7− | 0.3+ |
| 2000 03 09 | 704 | 0.6+ | 0.2− | 2003 12 22 | 704 | 0.3− | 0.8+ | 2004 02 16 | 704 | 1.0+ | 1.2+ |
| 2000 03 09 | 704 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.0 | 0.5+ | 2004 02 22 | 704 | 1.4− | 0.4+ |
| 2000 03 09 | 704 | 0.4+ | 0.4+ | 2003 12 22 | 704 | 0.4+ | 0.8+ | 2004 02 22 | 704 | 0.3+ | 0.0 |
| 2000 03 09 | 704 | 0.7+ | 0.1− | 2003 12 22 | 704 | 0.3− | 0.6− | 2004 02 22 | 704 | 0.9− | 1.3+ |
| 2000 03 09 | 704 | 0.7+ | 0.2− | 2003 12 22 | 704 | 0.4+ | 0.4+ | 2004 02 26 | 704 | 0.6+ | 0.5+ |
| 2000 03 12 | 704 | 0.3− | 0.5+ | 2003 12 27 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.0 |
| 2000 03 12 | 704 | 0.3+ | 0.3− | 2003 12 27 | 704 | 0.4− | 0.5− | 2004 02 26 | 704 | 0.2+ | 0.0 |
| 2000 03 12 | 704 | 0.5− | 1.0+ | 2003 12 27 | 704 | 0.2+ | 0.6− | 2004 02 26 | 704 | 1.2+ | 1.3+ |
| 2000 03 12 | 704 | 0.1− | 0.9+ | 2003 12 27 | 704 | 0.7− | 0.3− | 2004 02 26 | 704 | (1.0+ | 1.7+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.7− | 0.9− | 2003 12 27 | 704 | 0.6+ | 0.2− | 2004 03 18 | 704 | (1.5+ | 1.8+) |
| 2000 04 04 | 699 | 0.2+ | 0.2− | 2003 12 29 | 699 | 1.2+ | 0.5− | 2004 03 18 | 704 | 0.8+ | 0.4+ |
| 2000 04 04 | 699 | 0.1+ | 0.4+ | 2003 12 29 | 699 | 0.6+ | 0.5− | 2004 03 18 | 704 | 0.0 | 0.2− |
| 2000 04 04 | 699 | 0.6− | 0.1+ | 2003 12 29 | 699 | 0.5− | 0.3− | 2004 04 15 | 645 | 0.1− | 0.2− |
| 2000 04 04 | 699 | 0.9− | 0.2+ | 2003 12 29 | 699 | 0.0 | 0.6− | 2004 04 15 | 645 | 0.1− | 0.1− |
| 2001 06 25 | 644 | 0.9− | 0.5+ | 2004 01 19 | 703 | 0.3− | 0.0 | 2004 04 16 | 645 | 0.1− | 0.2− |
| 2001 06 25 | 644 | 0.8− | 0.7+ | 2004 01 19 | 703 | 0.1+ | 0.1− | 2004 04 16 | 645 | 0.2− | 0.2− |
| 2001 06 25 | 644 | 0.7− | 0.7+ | 2004 01 19 | 703 | 0.2+ | 0.4+ | 2006 08 29 | 699 | 0.7− | 0.7+ |
| 2001 07 01 | 644 | 0.1+ | 0.2− | 2004 01 19 | 703 | 0.2− | 0.3+ | 2006 08 29 | 699 | 0.7+ | 0.8+ |
| 2001 07 01 | 644 | 0.1− | 0.3− | 2004 01 22 | 704 | 0.7+ | 0.7+ | 2006 08 29 | 699 | 0.2+ | 0.6+ |
| 2001 07 01 | 644 | 0.0 | 0.1− | 2004 01 22 | 704 | 1.1+ | 0.1+ | 2006 08 29 | 699 | 0.1− | 0.1− |
| 2001 07 10 | 644 | 0.4− | 0.6+ | 2004 01 22 | 704 | 0.9+ | 0.6+ | 2006 09 16 | 703 | 0.8− | 0.2+ |
| 2001 07 10 | 644 | 0.0 | 0.7+ | 2004 01 22 | 704 | 0.8+ | 0.8+ | 2006 09 16 | 703 | 0.2− | 0.1+ |
| 2001 07 10 | 644 | 0.4− | 0.4+ | 2004 01 22 | 704 | 1.5+ | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.3+ |
| 2001 07 29 | 644 | 0.1− | 1.1+ | 2004 01 24 | 704 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.2− |
| 2001 07 29 | 644 | 0.0 | 0.7+ | 2004 01 24 | 704 | 0.7− | 0.2+ | 2006 09 27 | 703 | 0.5− | 0.5− |
| 2001 07 29 | 644 | 0.1− | 0.6+ | 2004 01 24 | 704 | 0.2− | 0.5+ | 2006 09 27 | 703 | 0.8+ | 0.1+ |
| 2001 08 19 | 704 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 703 | 0.4− | 0.3+ |
| 2001 08 19 | 704 | 0.1+ | 0.4+ | 2004 01 24 | 704 | 0.0 | 0.5+ | 2006 10 03 | 704 | 0.8+ | 0.0 |
| 2001 08 19 | 704 | 0.2− | 0.6− | 2004 01 26 | 699 | 0.3− | 1.0− | 2006 10 03 | 704 | (1.6+ | 2.0+) |
| 2001 08 19 | 704 | 0.2− | 0.6+ | 2004 01 26 | 699 | 0.2+ | 0.4− | 2006 10 03 | 704 | 0.8+ | 0.3+ |
| 2002 10 06 | 704 | 1.2− | 0.7+ | 2004 01 26 | 699 | 1.0+ | 0.8− | 2006 10 03 | 704 | 0.9+ | 0.3+ |
| 2002 10 06 | 704 | 0.3+ | 0.5+ | 2004 01 26 | 699 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2002 10 06 | 704 | 0.1+ | 0.2− | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 0.5− | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2002 10 06 | 704 | 0.2− | 0.5− | 2004 01 27 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | (1.1+ | 1.6−) |
| 2002 10 06 | 704 | 0.4+ | 0.7+ | 2004 01 30 | 704 | 1.0+ | 0.4− | 2006 10 26 | 703 | 0.2− | 0.3− |
| 2002 10 06 | 704 | 0.1− | 0.7− | 2004 01 30 | 704 | 0.3+ | 0.8+ | 2006 10 26 | 703 | 0.2− | 0.8− |
| 2002 10 06 | 704 | 0.8+ | 0.6+ | 2004 01 30 | 704 | 0.2− | 0.7+ | 2006 10 26 | 703 | 0.1+ | 0.4+ |
| 2002 10 06 | 704 | 1.0− | 0.1− | 2004 01 30 | 704 | 1.2+ | 0.1+ | 2006 10 26 | 703 | 0.5+ | 0.5− |
| 2002 10 06 | 704 | 0.9+ | 0.9+ | 2004 01 30 | 704 | 0.8+ | 0.6+ | | | | |
| 2002 11 14 | 644 | 0.2− | 0.1− | 2004 02 11 | 699 | 0.7− | 0.0 | | | | |

**(138163)∗ 2000 EK$_{93}$ = 1998 SV$_{145}$**

Discovered 2000 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (MPC 40176)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.12614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24475045 | $\omega$ | 300.09577 | | −0.77518666 | −0.62525289 | |
| $a$ | 2.5311646 | $\Omega$ | 201.61556 | | +0.63031750 | −0.75596249 | |
| $e$ | 0.1201227 | $i$ | 14.18091 | | +0.04225498 | −0.19385441 | |
| $P$ | 4.03 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 11 | 691 | 0.1− | 0.4− | 2002 11 07 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 704 | 1.1+ | 0.4− |
| 1990 11 11 | 691 | 0.3+ | 0.2− | 2002 11 07 | 704 | 0.1+ | 1.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 1990 11 11 | 691 | 0.2+ | 0.4− | 2002 11 10 | 704 | 1.0− | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 1998 09 20 | 809 | (0.6+ | 4.2+) | 2002 11 10 | 704 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 1998 09 20 | 809 | (0.7+ | 2.7+) | 2002 11 10 | 704 | (0.2− | 2.0−) | 2006 09 20 | 704 | 1.1+ | 0.3+ |
| 1998 09 20 | 809 | 0.8− | 2.0+ | 2004 02 18 | 703 | 0.9+ | 0.0 | 2006 09 20 | 704 | 1.1+ | 0.7− |
| 1998 09 21 | 809 | 0.5− | 1.7+ | 2004 02 18 | 703 | 0.6+ | 0.3+ | 2006 09 20 | 704 | (2.1+ | 1.1−) |
| 1998 09 21 | 809 | 0.1− | 1.6+ | 2004 02 18 | 703 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 1.1+ | 0.1− |
| 1998 09 21 | 809 | 0.1− | 0.3+ | 2004 02 18 | 703 | 0.0 | 0.3+ | 2006 09 21 | 683 | (1.8+ | 0.7−) |
| 2000 03 06 | 608 | 0.2− | 0.4− | 2004 02 21 | 608 | 0.4+ | 0.2+ | 2006 09 21 | 683 | 1.1+ | 1.5− |
| 2000 03 06 | 608 | 0.2− | 0.7− | 2004 02 21 | 608 | 0.1+ | 0.0 | 2006 09 21 | 683 | (0.6+ | 1.8−) |
| 2000 03 06 | 608 | 0.0 | 0.4− | 2004 02 21 | 608 | 0.3+ | 0.0 | 2006 09 22 | 683 | 1.5+ | 0.4− |
| 2000 03 09 | 704 | 0.2− | 0.2+ | 2004 03 01 | 703 | 0.2+ | 0.4− | 2006 09 22 | 683 | (1.5+ | 0.2−) |
| 2000 03 09 | 704 | 0.2− | 0.2− | 2004 03 01 | 703 | 0.5− | 0.3+ | 2006 09 22 | 683 | 1.5− | 0.4+ |
| 2000 03 09 | 704 | 0.5− | 0.0 | 2004 03 01 | 703 | 0.9+ | 0.5+ | 2006 09 26 | 683 | 1.1− | 0.1− |
| 2000 03 09 | 704 | 0.5− | 0.4− | 2004 03 01 | 703 | 0.2− | 0.7− | 2006 09 26 | 683 | (2.9− | 1.3+) |
| 2000 03 09 | 704 | 0.1− | 0.4− | 2004 03 16 | 704 | 0.3− | 0.4+ | 2006 09 26 | 683 | (2.9− | 1.8+) |
| 2000 03 13 | 704 | 0.1− | 0.6+ | 2004 03 16 | 704 | 0.3− | 0.5+ | 2006 09 27 | 704 | (0.2− | 1.5+) |
| 2000 03 13 | 704 | 0.1+ | 0.2+ | 2004 03 16 | 704 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.8+ |
| 2000 03 13 | 704 | 0.7+ | 0.1+ | 2004 03 16 | 704 | 0.8− | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2000 03 13 | 704 | 0.9+ | 0.9− | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 13 | 704 | 0.4+ | 0.2− | 2004 03 17 | 704 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.0 | 0.4− |
| 2000 04 07 | 704 | 1.1+ | 0.3− | 2004 03 17 | 704 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.5− | 0.8+ |
| 2000 04 07 | 704 | 0.5+ | 0.8− | 2004 03 17 | 704 | 1.3+ | 0.9− | 2006 09 29 | 704 | 0.6+ | 0.2+ |
| 2000 04 07 | 704 | 0.3+ | 0.9+ | 2004 03 17 | 704 | (1.1− | 1.5+) | 2006 09 29 | 704 | 0.3+ | 0.3+ |
| 2000 04 08 | 704 | 0.0 | 0.7+ | 2004 03 17 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.4− |
| 2000 04 08 | 704 | 1.1− | 0.8+ | 2004 03 17 | 704 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2000 04 08 | 704 | 1.4− | 1.9+ | 2004 03 17 | 704 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 2000 04 08 | 704 | 0.0 | 1.8+ | 2004 03 17 | 704 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2000 04 26 | 699 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 10 18 | H07 | 0.0 | 0.1− |
| 2000 04 26 | 699 | 0.2+ | 0.2− | 2004 03 18 | 704 | 0.2− | 0.5− | 2006 10 18 | H07 | 0.5− | 0.3+ |
| 2000 04 26 | 699 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.3− | 0.3− | 2006 10 18 | H07 | 0.5+ | 0.1+ |
| 2000 04 26 | 699 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.3− | 0.0 | 2006 10 18 | H07 | 0.4− | 0.2+ |
| 2002 09 05 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 1.2+ | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 09 07 | 704 | 0.5− | 0.4− | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 1.4+ | 0.9− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.4− | 0.6+ | 2004 03 29 | 703 | 0.6− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 2002 09 07 | 704 | 0.2− | 0.4+ | 2004 03 29 | 703 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.8+ |
| 2002 09 07 | 704 | 0.3− | 0.5+ | 2004 03 29 | 703 | 0.1− | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.4+ |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2004 03 29 | 703 | 0.8− | 0.2− | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2002 10 02 | 704 | 0.6+ | 0.5+ | 2004 04 12 | 703 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 10 02 | 704 | 0.2+ | 0.8+ | 2004 04 12 | 703 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.4+ | 2004 04 12 | 703 | (0.5− | 1.7+) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 0.3− | 2004 04 12 | 703 | 0.2− | 0.3+ | 2006 10 23 | 704 | 0.3+ | 0.9+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 04 16 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 704 | 0.6− | 0.7+ |
| 2002 10 03 | 704 | 0.6− | 0.7+ | 2004 04 16 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 704 | 0.4− | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2004 04 16 | 704 | 0.1+ | 0.5− | 2006 10 23 | 704 | 0.4− | 1.2+ |
| 2002 10 03 | 704 | 0.6− | 0.9+ | 2004 04 16 | 704 | 0.9+ | 0.5+ | 2006 10 23 | 704 | 0.9− | 1.0+ |
| 2002 10 07 | 704 | 1.2− | 1.0+ | 2004 04 16 | 704 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.3+ | 0.2− |
| 2002 10 07 | 704 | 0.7− | 0.4+ | 2004 04 16 | 704 | 0.4+ | 0.6+ | 2006 10 29 | G96 | 0.2− | 0.3− |
| 2002 10 07 | 704 | 1.0− | 0.6+ | 2004 04 16 | 704 | 0.8+ | 0.9− | 2006 10 29 | G96 | 0.1− | 0.3− |
| 2002 10 07 | 704 | 0.1− | 1.1+ | 2004 04 16 | 704 | 0.2+ | 0.8+ | 2006 10 29 | G96 | 0.0 | 0.3− |
| 2002 10 07 | 704 | 0.7+ | 0.6+ | 2004 04 16 | 704 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.9− | 0.5+ | 2004 04 19 | 704 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 1.1− | 0.1+ | 2004 04 19 | 704 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2002 10 09 | 704 | 0.5− | 0.9+ | 2004 04 19 | 704 | 0.2− | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.5− | 1.0+ | 2004 04 19 | 704 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.7− | 0.5+ | 2004 04 19 | 704 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 10 10 | 644 | 0.4− | 0.2+ | 2004 04 21 | 704 | 0.3+ | 1.0+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2002 10 10 | 644 | 0.4− | 0.1+ | 2004 04 21 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2002 10 10 | 644 | 0.4− | 0.3+ | 2004 04 21 | 704 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2002 10 10 | 291 | 0.3− | 0.3− | 2004 04 23 | 608 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2002 10 10 | 291 | 0.2− | 0.2− | 2004 04 23 | 608 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.1− |
| 2002 10 10 | 291 | 0.1+ | 0.3− | 2004 04 23 | 608 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2002 10 11 | 704 | 0.3+ | 0.8− | 2004 05 14 | 704 | 0.7− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 1.2+ | 0.4− | 2004 05 14 | 704 | 0.7− | 0.6+ | 2006 11 17 | 703 | 0.8− | 0.6− |
| 2002 10 11 | 704 | 1.3+ | 0.8+ | 2004 05 14 | 704 | 0.3− | 0.8+ | 2006 11 17 | 703 | 1.1− | 0.6− |
| 2002 10 11 | 704 | (1.1+ | 2.0+) | 2004 05 14 | 704 | 0.3− | 1.2+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2004 05 14 | 704 | 0.2− | 0.8+ | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2002 10 30 | 644 | 0.2− | 0.3+ | 2005 06 09 | 704 | 0.7− | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 10 30 | 644 | 0.0 | 0.3+ | 2005 06 09 | 704 | 1.0− | 1.1+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 10 30 | 644 | 0.1+ | 0.3+ | 2005 06 09 | 704 | 1.0+ | 0.7+ | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2002 10 31 | 699 | 0.7+ | 0.4− | 2005 06 09 | 704 | 0.8+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 10 31 | 699 | 0.2+ | 0.6− | 2006 08 12 | 644 | 0.2− | 0.6+ | 2006 11 20 | 704 | 1.3+ | 0.2+ |
| 2002 10 31 | 699 | (0.8− | 1.5+) | 2006 08 12 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.7+ | 1.5− |
| 2002 10 31 | 699 | 1.4+ | 0.2+ | 2006 08 12 | 644 | 0.5− | 0.3+ | 2006 11 20 | 704 | 1.1− | 0.4− |
| 2002 11 01 | 704 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.6+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.0 |
| 2002 11 01 | 704 | 0.3+ | 0.4− | 2006 09 14 | 703 | 1.0+ | 0.5+ | 2006 11 20 | 704 | 0.4− | 0.5− |
| 2002 11 01 | 704 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.7− | 0.2− |
| 2002 11 07 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.3+ | 0.8+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.3+ | 0.3− | 2006 09 17 | 704 | 0.3+ | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.5+ | 0.6− | 2006 11 21 | 704 | 0.2− | 0.7− |

**(138164)∗ 2000 EG$_{96}$**

Discovered 2000 Mar. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.33089 | | (2000.0) | | −0.05675551 | +0.99825667 |
| $n$ | 0.22501910 | $\omega$ | 270.86041 | | −0.80582962 | −0.05538241 |
| $a$ | 2.6770499 | $\Omega$ | 355.78233 | | −0.58942127 | −0.02040609 |
| $e$ | 0.1276631 | $i$ | 12.72475 | | | |
| $P$ | 4.38 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 04 | 910 | 0.7+ | 0.8− | 2000 04 05 | 704 | 0.4− | 0.0 | 2004 02 14 | 704 | 0.6− | 0.1− |
| 1997 09 04 | 910 | 0.8+ | 1.1− | 2000 04 06 | 704 | 0.1+ | 0.4+ | 2004 02 14 | 704 | (1.5+ | 0.6+) |
| 1997 09 05 | 910 | 0.7+ | 1.1− | 2000 04 06 | 704 | 0.1− | 0.7− | 2004 04 15 | 645 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.1+ | 0.4+ | 2000 04 06 | 704 | 0.5+ | 1.4+ | 2004 04 15 | 645 | 0.2− | 0.1− |
| 2000 03 03 | 704 | 0.2− | 0.3+ | 2000 04 06 | 704 | 0.4+ | 1.0+ | 2004 04 16 | 645 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 0.6− | 1.2+ | 2001 08 09 | 644 | 0.1+ | 0.1− | 2004 04 16 | 645 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.2+ | 0.1+ | 2001 08 09 | 644 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.9− | 0.8+ |
| 2000 03 03 | 704 | 1.2+ | 0.4+ | 2001 08 09 | 644 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.0 |
| 2000 03 11 | 704 | 0.7+ | 1.0− | 2001 08 20 | 644 | 0.9− | 0.1+ | 2006 09 30 | 703 | 1.0+ | 0.1+ |
| 2000 03 11 | 704 | 0.5− | 0.6− | 2001 08 20 | 644 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.8− | 1.1+ |
| 2000 03 11 | 704 | 0.3+ | 0.1− | 2001 08 20 | 644 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2000 03 11 | 704 | 0.6− | 0.3− | 2004 01 28 | 703 | 0.4+ | 1.4+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2000 03 11 | 704 | 0.3+ | 1.4− | 2004 01 28 | 703 | 1.3− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2000 03 12 | 704 | 1.3+ | 0.3+ | 2004 01 28 | 703 | 0.8− | 0.6− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2000 03 12 | 704 | 1.0+ | 0.6− | 2004 01 28 | 703 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2000 03 12 | 704 | 0.2+ | 1.1+ | 2004 01 31 | 704 | 1.0+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2000 03 12 | 704 | 1.4+ | 0.5+ | 2004 01 31 | 704 | 0.7− | 0.7+ | 2006 10 17 | 703 | 1.2+ | 1.0− |
| 2000 04 05 | 704 | 0.1+ | 0.8+ | 2004 01 31 | 704 | 0.1+ | 1.4+ | 2006 10 17 | 703 | 0.0 | 1.1+ |
| 2000 04 05 | 704 | 0.2− | 0.1− | 2004 02 14 | 704 | 0.6+ | 0.9+ | 2006 10 17 | 703 | 0.7− | 0.6+ |
| 2000 04 05 | 704 | 0.2+ | 0.2+ | 2004 02 14 | 704 | 0.0 | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2000 04 05 | 704 | 0.0 | 0.5+ | 2004 02 14 | 704 | 0.4+ | 1.3+ | | | | |

**(138165)∗ 2000 EM$_{96}$**

Discovered 2000 Mar. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.26894 | | (2000.0) | | −0.68254966 | −0.72707681 |
| $n$ | 0.23919187 | $\omega$ | 115.64576 | | +0.55490035 | −0.58151760 |
| $a$ | 2.5702287 | $\Omega$ | 18.03605 | | +0.47561703 | −0.36496109 |
| $e$ | 0.1268906 | $i$ | 13.83983 | | | |
| $P$ | 4.12 | $H$ | 15.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.5+ | 0.3− | 2002 10 08 | 699 | 0.8− | 1.5+ | 2004 03 17 | 645 | 0.1− | 0.3− |
| 2000 02 03 | 704 | 0.8+ | 0.3+ | 2002 10 08 | 699 | 1.3− | 1.1+ | 2004 03 18 | 645 | 0.1− | 0.2− |
| 2000 02 03 | 704 | 0.2+ | 0.7− | 2002 10 08 | 699 | 1.4− | 1.4+ | 2004 03 18 | 645 | 0.2− | 0.1− |
| 2000 02 03 | 704 | 0.4− | 1.0+ | 2002 10 10 | 645 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.0 | 0.5+ |
| 2000 02 03 | 704 | 0.6+ | 2.0+ | 2002 10 10 | 645 | 0.1+ | 0.2− | 2004 03 23 | 704 | (2.0+ | 0.3+) |
| 2000 03 05 | 704 | 0.3+ | 0.3+ | 2002 10 11 | 704 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.6+ | 0.2− |
| 2000 03 05 | 704 | 0.6+ | 0.7+ | 2002 10 11 | 704 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.9+ | 0.1− |
| 2000 03 05 | 704 | 0.3+ | 0.9+ | 2002 10 11 | 704 | 0.1+ | 0.6+ | 2004 03 23 | 704 | 0.7+ | 0.3− |
| 2000 03 05 | 704 | 0.2+ | 0.7+ | 2002 10 11 | 704 | 0.6+ | 1.1+ | 2004 03 25 | 704 | 0.2+ | 0.2+ |
| 2000 03 05 | 704 | 0.1− | 0.5− | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2004 03 25 | 704 | 0.0 | 0.4+ |
| 2000 03 12 | 704 | 0.5+ | 0.0 | 2002 10 31 | 704 | 0.4− | 0.4− | 2004 03 25 | 704 | 0.2+ | 0.1− |
| 2000 03 12 | 704 | 0.3− | 0.6+ | 2002 10 31 | 704 | 0.4− | 0.4+ | 2004 03 25 | 704 | 0.4− | 0.1− |
| 2000 03 12 | 704 | 0.4+ | 0.7+ | 2002 10 31 | 704 | 0.1− | 0.6+ | 2004 03 25 | 704 | 0.9+ | 0.4+ |
| 2000 03 12 | 704 | 0.6+ | 0.9+ | 2002 10 31 | 645 | 0.1+ | 0.2− | 2004 04 14 | 704 | 1.3+ | 0.9+ |
| 2000 03 13 | 704 | 0.2+ | 1.6+ | 2002 10 31 | 645 | 0.1+ | 0.2− | 2004 04 14 | 704 | 1.1+ | 0.6+ |
| 2000 03 13 | 704 | 0.4+ | 0.6+ | 2002 10 31 | 704 | 0.6− | 0.5+ | 2004 04 14 | 704 | 0.8+ | 1.0− |
| 2000 03 13 | 704 | 0.0 | 0.4− | 2002 10 31 | 704 | 0.0 | 0.6+ | 2004 04 14 | 704 | 0.5+ | 0.0 |
| 2000 04 04 | 704 | 0.3− | 0.1− | 2002 11 08 | 645 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.4− | 0.5+ |
| 2000 04 04 | 704 | 0.2+ | 0.7+ | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 08 28 | 699 | 0.1− | 0.3+ |
| 2000 04 04 | 704 | 0.4− | 0.4− | 2003 09 30 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 1.1− | 0.6+ |
| 2000 04 04 | 704 | 0.8− | 0.6+ | 2003 09 30 | 704 | 0.6− | 0.7− | 2006 08 28 | 699 | 0.6− | 0.6+ |
| 2000 04 04 | 704 | 0.4+ | 0.4+ | 2003 09 30 | 704 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2002 09 16 | 644 | 0.7− | 0.1+ | 2003 12 04 | 704 | 0.5+ | 1.2+ | 2006 09 14 | 703 | 0.3− | 0.4− |
| 2002 09 16 | 644 | 0.3− | 1.3+ | 2003 12 04 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.1− |
| 2002 09 16 | 644 | 0.6− | 0.3+ | 2003 12 04 | 704 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.9− | 0.3+ |
| 2002 09 16 | 644 | 0.3− | 1.3+ | 2003 12 04 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.0 | 1.5− |
| 2002 09 16 | 644 | 0.5− | 0.4+ | 2003 12 18 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.0 |
| 2002 09 16 | 644 | 0.3− | 1.4+ | 2003 12 18 | 704 | 0.0 | 0.7− | 2006 09 18 | 703 | 0.0 | 0.4− |
| 2002 09 26 | 644 | 0.1− | 0.4+ | 2003 12 18 | 704 | 1.0+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 2002 09 26 | 644 | 0.4− | 0.5+ | 2004 01 02 | 704 | 0.0 | 0.3− | 2006 09 26 | 704 | 0.2+ | 0.7− |
| 2002 09 26 | 644 | 0.1− | 0.5+ | 2004 01 02 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.4− |
| 2002 09 30 | 704 | 0.3− | 0.6+ | 2004 01 02 | 704 | 1.0+ | 0.9− | 2006 09 26 | 704 | 0.5− | 0.4+ |
| 2002 09 30 | 704 | 0.6− | 0.5+ | 2004 01 02 | 704 | (1.5+ | 0.4+) | 2006 09 26 | 704 | 0.9− | 1.1− |
| 2002 09 30 | 704 | 0.3− | 0.8+ | 2004 01 02 | 704 | 0.9+ | 0.1+ | 2006 09 26 | 704 | 0.4− | 0.2+ |
| 2002 10 01 | 699 | 0.7− | 0.1− | 2004 01 17 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 704 | 0.8− | 0.9+ |
| 2002 10 01 | 699 | 0.4+ | 0.4+ | 2004 01 17 | 691 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 0.5+ | 0.4+ |
| 2002 10 01 | 699 | 0.1− | 1.3+ | 2004 01 17 | 691 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 0.3+ | 0.6+ |
| 2002 10 01 | 699 | 0.1+ | 0.2+ | 2004 01 30 | 703 | (2.0− | 0.4+) | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2002 10 02 | 704 | (0.6− | 2.1+) | 2004 01 30 | 703 | 0.3+ | 0.8− | 2006 09 30 | 703 | 0.3+ | 0.5− |
| 2002 10 02 | 704 | 0.2+ | 1.2+ | 2004 01 30 | 703 | 1.2− | 1.3− | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2004 01 30 | 703 | 0.8− | 1.3− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2002 10 02 | 704 | 0.3− | 0.9+ | 2004 01 31 | 704 | 0.5− | 0.7+ | 2006 10 03 | G96 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 1.2+ | 2004 01 31 | 704 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | (0.4+ | 1.8+) | 2004 01 31 | 704 | 0.5− | 1.1+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 1.0+ | 1.5+ | 2004 01 31 | 704 | 0.2− | 0.7+ | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 1.1+ | 2004 01 31 | 704 | 0.3− | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | (0.6+ | 1.8+) | 2004 02 02 | 699 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.6− | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2004 02 02 | 699 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.5+ | 2004 02 02 | 699 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.8− | 1.0+ |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2004 02 02 | 699 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.2+ | 0.2− | 2004 02 02 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.8+ |
| 2002 10 04 | 704 | 0.6+ | 0.0 | 2004 02 02 | 704 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2002 10 05 | 704 | (0.0 | 3.8−) | 2004 02 02 | 704 | 0.3+ | 0.6+ | 2006 10 18 | 106 | 0.3+ | 0.8+ |
| 2002 10 05 | 704 | (0.5+ | 3.8−) | 2004 02 02 | 704 | 0.8+ | 0.9+ | 2006 10 18 | 106 | 0.0 | 0.7− |
| 2002 10 05 | 704 | (0.3− | 4.3−) | 2004 02 02 | 704 | 0.3+ | 0.1− | 2006 10 18 | 106 | 0.7+ | 0.5− |
| 2002 10 05 | 704 | (0.0 | 4.0−) | 2004 02 14 | 704 | 0.5+ | 0.2+ | 2006 10 18 | 106 | 0.3+ | 1.3− |
| 2002 10 05 | 704 | (0.2− | 4.6−) | 2004 02 14 | 704 | 0.6+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2004 02 14 | 704 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2004 02 14 | 704 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 10 07 | 704 | 0.3− | 0.6+ | 2004 02 14 | 704 | 0.4+ | 0.4− | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2002 10 07 | 704 | 0.1− | 0.4+ | 2004 03 08 | 644 | 0.3− | 0.2+ | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2004 03 08 | 644 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2002 10 07 | 704 | 0.5− | 0.6+ | 2004 03 08 | 644 | 0.1− | 0.4+ | | | | |
| 2002 10 08 | 699 | 0.1+ | 0.5+ | 2004 03 17 | 645 | 0.1− | 0.2− | | | | |

**(138166)∗ 2000 ER$_{97}$ = 2002 TP$_{291}$**

Discovered 2000 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37409)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.64408 | | (2000.0) | | −0.87388207 | −0.42772896 |
| $n$ | 0.27060677 | $\omega$ | 120.72362 | | +0.18088000 | −0.72721154 |
| $a$ | 2.3672472 | $\Omega$ | 35.49583 | | +0.45123447 | −0.53685315 |
| $e$ | 0.2860768 | $i$ | 23.44683 | | | |
| $P$ | 3.64 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1− | 0.0 | 2002 09 05 | 704 | 0.9− | 0.1+ | 2002 12 06 | 699 | 0.3+ | 0.3+ |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2002 09 05 | 704 | 0.9− | 0.1+ | 2002 12 06 | 699 | 0.4− | 0.6− |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2002 09 05 | 704 | 0.6− | 0.0 | 2002 12 06 | 699 | 0.0 | 0.0 |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2002 10 04 | 704 | 1.0− | 0.1+ | 2002 12 06 | 699 | 1.1+ | 0.1+ |
| 2000 03 10 | 704 | 1.3+ | 0.1+ | 2002 10 04 | 704 | 0.9− | 0.2− | 2002 12 07 | 704 | 0.6− | 0.2+ |
| 2000 03 10 | 704 | 1.6+ | 1.3+ | 2002 10 04 | 704 | 0.4+ | 0.3+ | 2002 12 07 | 704 | 0.6+ | 0.0 |
| 2000 03 10 | 704 | 0.3− | 0.3+ | 2002 10 04 | 704 | 0.5− | 1.2+ | 2002 12 07 | 704 | 0.1+ | 0.2+ |
| 2000 03 10 | 704 | 1.6+ | 0.4− | 2002 10 04 | 704 | 1.1− | 0.1+ | 2002 12 07 | 704 | 0.5+ | 0.2+ |
| 2000 03 14 | 704 | 0.2+ | 0.9+ | 2002 10 10 | 704 | (2.9− | 1.0−) | 2002 12 07 | 704 | 0.6− | 0.5+ |
| 2000 03 14 | 704 | 1.1+ | 0.5− | 2002 10 10 | 704 | (2.8− | 2.3−) | 2002 12 12 | 644 | 0.1− | 0.9+ |
| 2000 03 14 | 704 | 0.6+ | 0.2+ | 2002 10 10 | 704 | (3.1− | 1.0−) | 2002 12 12 | 644 | 0.1− | 1.1+ |
| 2000 03 14 | 704 | 0.9+ | 0.7+ | 2002 10 10 | 704 | (4.4− | 0.2−) | 2002 12 12 | 644 | 0.1+ | 0.9+ |
| 2000 03 14 | 704 | 0.0 | 0.1+ | 2002 10 12 | 704 | 0.2− | 0.6+ | 2002 12 15 | 704 | 0.2+ | 0.4− |
| 2000 04 06 | 704 | 0.2− | 0.1− | 2002 10 12 | 704 | 0.4− | 0.5+ | 2002 12 15 | 704 | 0.2+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.9+ | 0.1+ | 2002 10 12 | 704 | 0.5+ | 0.4+ | 2002 12 15 | 704 | 0.3− | 0.3− | | |
| 2000 04 06 | 704 | 0.5− | 0.1− | 2002 10 12 | 704 | 0.6+ | 0.7− | 2002 12 15 | 704 | 0.4− | 0.5+ | | |
| 2000 04 06 | 704 | 0.0 | 0.2− | 2002 10 12 | 704 | 0.0 | 0.3− | 2002 12 29 | 704 | 0.2+ | 0.3− | | |
| 2000 04 08 | 704 | 0.5+ | 1.0+ | 2002 11 06 | 704 | 0.1− | 0.4+ | 2002 12 29 | 704 | 0.4+ | 0.2+ | | |
| 2000 04 08 | 704 | 0.2− | 0.3+ | 2002 11 06 | 704 | 1.2+ | 0.0 | 2002 12 29 | 704 | 0.6+ | 0.2− | | |
| 2000 04 08 | 704 | 0.6+ | 0.2− | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2002 12 29 | 704 | 0.3+ | 0.7− | | |
| 2000 04 08 | 704 | 0.6− | 0.1+ | 2002 11 06 | 704 | 0.4+ | 0.3− | 2002 12 29 | 704 | 0.7− | 0.4+ | | |
| 2000 04 28 | 704 | 0.5− | 0.1+ | 2002 11 06 | 704 | 0.8+ | 0.2+ | 2003 01 31 | 644 | 0.6+ | 0.7− | | |
| 2000 04 28 | 704 | (0.6− | 2.0+) | 2002 11 07 | 704 | 1.2− | 1.0+ | 2003 01 31 | 644 | 0.0 | 0.2− | | |
| 2000 04 28 | 704 | 0.1+ | 0.6+ | 2002 11 07 | 704 | 1.0− | 0.9+ | 2003 01 31 | 644 | 0.1+ | 0.2+ | | |
| 2000 04 28 | 704 | 0.3+ | 0.5+ | 2002 11 07 | 704 | 0.8− | 1.4+ | 2005 10 03 | E12 | 0.0 | 0.0 | | |
| 2000 04 28 | 704 | 0.1+ | 0.4− | 2002 11 13 | 644 | 0.3− | 0.2− | 2005 10 03 | E12 | 0.6− | 0.6+ | | |
| 2000 05 09 | 704 | 0.2+ | 0.5+ | 2002 11 13 | 644 | 0.3− | 0.2− | 2005 10 03 | E12 | 0.1+ | 0.2− | | |
| 2000 05 09 | 704 | 0.2− | 1.0+ | 2002 11 13 | 644 | 0.3− | 0.2− | 2005 10 03 | E12 | 1.1− | 0.9+ | | |
| 2000 05 09 | 704 | 0.1+ | 0.6+ | 2002 11 15 | 704 | 0.6− | 0.1− | 2006 11 13 | 704 | 0.7+ | 0.1+ | | |
| 2000 05 09 | 704 | 0.2− | 0.4− | 2002 11 15 | 704 | 0.1+ | 0.6− | 2006 11 13 | 704 | 0.5− | 0.0 | | |
| 2000 05 10 | 704 | 0.0 | 0.1+ | 2002 11 15 | 704 | 0.0 | 0.0 | 2006 11 13 | 704 | 0.1− | 0.4− | | |
| 2000 05 10 | 704 | 0.0 | 0.1− | 2002 11 15 | 704 | 0.4+ | 0.1+ | 2006 11 20 | 703 | 0.2+ | 0.4− | | |
| 2000 05 10 | 704 | 0.7− | 0.1+ | 2002 11 15 | 704 | 0.5+ | 0.1+ | 2006 11 20 | 703 | 0.9− | 0.2− | | |
| 2000 05 10 | 704 | 0.0 | 0.0 | 2002 12 03 | 644 | 0.5− | 0.2− | 2006 11 20 | 703 | 0.3− | 0.6− | | |
| 2000 05 10 | 704 | 0.2− | 0.1− | 2002 12 03 | 644 | 0.1− | 0.2− | 2006 11 20 | 703 | 0.1− | 0.3+ | | |
| 2002 09 05 | 704 | 0.9+ | 0.0 | 2002 12 03 | 644 | 0.6− | 0.6− | | | | | | |

**(138167)∗ 2000 EP$_{99}$ = 2002 TX$_{252}$**

Discovered 2000 Mar. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37409)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.15233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23396850 | $\omega$ | 0.02852 | | +0.98807948 | +0.15384535 | |
| $a$ | 2.6083415 | $\Omega$ | 351.11591 | | −0.14124852 | +0.89172703 | |
| $e$ | 0.0686408 | $i$ | 2.05119 | | −0.06121931 | +0.42562250 | |
| $P$ | 4.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.9+ | 0.0 | 2002 11 12 | 704 | 0.9− | 0.3+ | 2006 09 27 | 699 | 0.2+ | 0.1+ | | |
| 2000 03 03 | 691 | 0.5− | 0.1+ | 2002 11 12 | 704 | 0.3+ | 0.3− | 2006 09 27 | 699 | 0.0 | 0.0 | | |
| 2000 03 03 | 704 | 0.2− | 0.6+ | 2002 11 14 | 704 | 0.5− | 0.8− | 2006 09 30 | 691 | 0.3+ | 0.4− | | |
| 2000 03 03 | 704 | 0.3− | 0.0 | 2002 11 14 | 704 | 0.1− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.3+ | | |
| 2000 03 03 | 691 | 0.6− | 0.2− | 2002 11 14 | 704 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2000 03 03 | 704 | 0.7+ | 1.3+ | 2002 11 14 | 704 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2000 03 03 | 691 | 0.5− | 0.2− | 2004 01 22 | 704 | 0.8+ | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 03 | 704 | 0.9+ | 1.8+ | 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 2000 03 11 | 704 | 0.8+ | 1.6+ | 2004 01 22 | 704 | 0.9− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2000 03 11 | 704 | 1.2+ | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 11 | 704 | (2.1+ | 0.5+) | 2004 01 22 | 704 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2000 03 11 | 704 | 1.1+ | 0.8+ | 2004 02 11 | 291 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 12 | 691 | 0.0 | 0.0 | 2004 02 11 | 291 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2000 03 12 | 691 | 0.1− | 0.1+ | 2004 02 11 | 291 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2000 03 12 | 691 | 0.1− | 0.0 | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 106 | (1.5+ | 1.5−) | | |
| 2000 03 14 | 691 | 0.1+ | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 106 | 0.9+ | 0.4− | | |
| 2000 03 14 | 691 | 0.9+ | 1.4− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 15 | 106 | 0.4− | 0.7− | | |
| 2000 03 14 | 691 | 0.1+ | 0.0 | 2004 03 20 | 691 | 0.4− | 0.5− | 2006 10 15 | 106 | 0.1− | 0.3+ | | |
| 2002 10 08 | 699 | 0.7− | 0.5+ | 2004 03 20 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.5− | | |
| 2002 10 08 | 699 | 0.3+ | 1.4+ | 2004 03 20 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.6− | | |
| 2002 10 08 | 699 | 0.8− | 0.7+ | 2005 05 12 | 644 | 0.0 | 1.1+ | 2006 10 17 | 703 | 0.4+ | 1.2− | | |
| 2002 10 08 | 699 | 0.3+ | 0.7+ | 2005 05 12 | 644 | 0.2− | 1.2+ | 2006 10 17 | 703 | 0.4+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.8+ | 0.7− | 2005 05 12 | 644 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2002 10 11 | 704 | 0.9+ | 0.0 | 2006 07 22 | G96 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2002 10 11 | 704 | 0.3− | 0.2− | 2006 07 22 | G96 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.5− | | |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 07 22 | G96 | 0.8− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.4− | | |
| 2002 10 31 | 699 | 0.5+ | 0.9− | 2006 07 22 | G96 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 31 | 699 | 0.6+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.5+ | 0.0 | | |
| 2002 10 31 | 699 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2002 10 31 | 644 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2002 10 31 | 699 | 0.4+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2002 10 31 | 644 | 0.4− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 31 | 644 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2002 11 06 | 608 | 0.6− | 0.2+ | 2006 09 21 | 138 | (4.1− | 0.5−) | 2006 10 31 | G96 | 0.4+ | 0.2− | | |
| 2002 11 06 | 608 | 0.1− | 0.2− | 2006 09 22 | 138 | 1.0− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2002 11 06 | 608 | 0.4− | 0.1− | 2006 09 22 | 138 | 0.0 | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2002 11 08 | 704 | 0.2+ | 0.3− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2002 11 08 | 704 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 11 08 | 704 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2002 11 08 | 704 | 0.0 | 0.3− | 2006 09 27 | 699 | 0.7+ | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 11 12 | 704 | 0.3− | 0.0 | 2006 09 27 | 699 | 0.7− | 0.3− | | | | | | |

**(138168)∗ 2000 EK$_{100}$ = 2004 EG$_{88}$**

Discovered 2000 Mar. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60633)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.06286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24419174 | $\omega$ | 332.41354 | | −0.94686347 | −0.32145077 | |
| $a$ | 2.5350240 | $\Omega$ | 188.85652 | | +0.30660602 | −0.89185270 | |
| $e$ | 0.0703575 | $i$ | 4.06256 | | +0.09717159 | −0.31822659 | |
| $P$ | 4.04 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2004 03 25 | 704 | (1.6+ | 0.6+) | 2006 09 30 | G96 | 0.4+ | 0.4+ | | |
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2004 03 25 | 704 | 1.3+ | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.1− | | |
| 2000 03 12 | 691 | 0.3− | 0.6− | 2004 03 25 | 704 | (0.6− | 1.7+) | 2006 10 18 | 691 | 0.3− | 0.3+ | | |
| 2000 03 12 | 691 | 0.3− | 0.5− | 2004 03 25 | 704 | 1.1+ | 0.9+ | 2006 10 18 | 691 | 0.3− | 0.0 | | |
| 2000 03 12 | 691 | 0.1− | 1.1− | 2004 03 28 | 691 | 0.2− | 0.6+ | 2006 10 18 | 691 | 0.4+ | 0.1+ | | |
| 2000 03 14 | 691 | 0.4− | 0.3− | 2004 03 28 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.7− | 0.2+ | | |
| 2000 03 14 | 691 | 0.1− | 0.1+ | 2004 03 28 | 691 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.4+ | 0.1+ | | |
| 2000 03 14 | 691 | 0.4− | 0.1− | 2005 07 11 | G96 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.4− | | |
| 2000 04 02 | 691 | 0.3− | 0.9− | 2005 07 11 | G96 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2000 04 02 | 691 | 0.4+ | 0.6− | 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.3− | | |
| 2000 04 02 | 691 | 0.1+ | 0.4− | 2005 07 11 | G96 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2004 03 14 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.6− | | |
| 2004 03 14 | 691 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.1+ | | |
| 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.4− | | |
| 2004 03 21 | 691 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2004 03 21 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.5− | | | | | | |

**(138169)∗ 2000 EN$_{100}$ = 2002 TF$_{208}$**

Discovered 2000 Mar. 12 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37410)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.09082 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25704619 | $\omega$ | 95.86776 | | +0.56997292 | −0.82142815 | |
| $a$ | 2.4497886 | $\Omega$ | 319.36331 | | +0.74141013 | +0.52447125 | |
| $e$ | 0.1660568 | $i$ | 1.73025 | | +0.35417777 | +0.22402168 | |
| $P$ | 3.83 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 699 | 1.4+ | 0.1− | 2002 11 05 | 704 | 0.2− | 0.1− | 2004 03 29 | 691 | 0.3+ | 0.5+ | | |
| 1998 10 14 | 699 | 0.0 | 1.5+ | 2002 11 05 | 704 | 0.9− | 0.1+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | | |
| 1998 10 14 | 699 | 0.2+ | 0.3+ | 2002 11 05 | 704 | 0.4+ | 0.9+ | 2004 04 23 | 691 | 0.2− | 0.9+ | | |
| 2000 02 12 | 645 | 0.1+ | 0.0 | 2002 11 06 | 608 | 0.9− | 0.8− | 2004 04 23 | 691 | 0.6+ | 0.6+ | | |
| 2000 02 12 | 645 | 0.2+ | 0.1+ | 2002 11 06 | 608 | 1.3− | 0.7− | 2004 04 23 | 691 | 0.3+ | 0.8+ | | |
| 2000 03 12 | 691 | 0.2− | 0.5− | 2002 11 06 | 608 | 1.0− | 0.7− | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2000 03 12 | 691 | 0.1+ | 0.4− | 2002 11 08 | 704 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2000 03 12 | 691 | 0.0 | 0.7− | 2002 11 08 | 704 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1− | | |
| 2000 03 14 | 691 | 0.1− | 0.5− | 2002 11 08 | 704 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 1.0+ | | |
| 2000 03 14 | 691 | 0.1− | 0.4− | 2002 11 08 | 704 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2000 03 14 | 691 | 0.1− | 0.2− | 2002 11 12 | 704 | 0.4− | 0.4+ | 2006 11 19 | 704 | 1.3+ | 0.2− | | |
| 2000 03 15 | 691 | 0.4− | 0.2+ | 2002 11 12 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.3+ | | |
| 2000 03 15 | 691 | 0.4− | 0.1− | 2002 11 12 | 704 | 0.1+ | 0.4− | 2006 11 19 | 704 | 1.0+ | 0.5+ | | |
| 2000 03 15 | 691 | 0.3− | 0.1+ | 2002 11 12 | 704 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.1− | | |
| 2000 04 02 | 691 | 0.3− | 0.3− | 2002 11 12 | 704 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2000 04 02 | 691 | 0.3− | 0.3+ | 2002 11 14 | 704 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 691 | 0.2− | 0.3− | 2002 11 14 | 704 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.7+ | 0.4− |
| 2002 10 04 | 704 | 0.7− | 0.1− | 2002 11 14 | 704 | 1.0+ | 0.4+ | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2002 10 04 | 704 | 0.2− | 1.1+ | 2002 11 14 | 704 | 1.1− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2002 12 05 | 695 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.7− | 0.2+ |
| 2002 10 08 | 699 | 0.4− | 0.6− | 2002 12 05 | 695 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6− | 0.5+ |
| 2002 10 08 | 699 | 0.5− | 0.3+ | 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 11 27 | 704 | 0.0 | 0.3− |
| 2002 10 08 | 699 | 0.4+ | 0.5+ | 2002 12 06 | 704 | 0.3+ | 0.7− | 2006 11 27 | 704 | 0.4− | 0.2+ |
| 2002 10 08 | 699 | 1.3+ | 0.3− | 2002 12 06 | 704 | 0.3+ | 0.7+ | 2006 11 27 | 704 | 0.3− | 0.2− |
| 2002 10 31 | 644 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 1.1+ | 0.5− |
| 2002 10 31 | 644 | 0.0 | 0.1− | 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 11 28 | 704 | 0.3+ | 0.5+ |
| 2002 10 31 | 644 | 0.0 | 0.0 | 2002 12 10 | 644 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.6− | 0.3− |
| 2002 11 05 | 704 | 0.7− | 0.4− | 2002 12 10 | 644 | 0.3− | 0.6+ | 2006 11 28 | 704 | 0.9− | 0.3+ |
| 2002 11 05 | 704 | 0.0 | 0.4+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | | | | |

**(138170)∗ 2000 EP$_{100}$ = 2004 DX$_{23}$**

Discovered 2000 Mar. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60633)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 150.95075 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23525474 | $\omega$ | 317.16371 | | | −0.59392826 | | +0.80434975 | |
| $a$ | 2.5988255 | $\Omega$ | 276.39343 | | | −0.73358106 | | −0.54984291 | |
| $e$ | 0.0889545 | $i$ | 0.94862 | | | −0.33031508 | | −0.22515383 | |
| $P$ | 4.19 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.5+ | 0.5− | 2004 02 19 | 704 | 1.4+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.7− |
| 2000 03 11 | 704 | 0.1− | 0.5+ | 2004 02 19 | 704 | 1.5+ | 0.4+ | 2006 09 27 | G96 | 0.5− | 0.1+ |
| 2000 03 11 | 704 | 1.0+ | 1.0− | 2004 02 22 | 691 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.7− | 0.5− |
| 2000 03 11 | 704 | 0.6− | 0.2− | 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2000 03 12 | 691 | 0.0 | 0.9− | 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2000 03 12 | 691 | 0.1+ | 0.6− | 2004 02 26 | 704 | (4.4+ | 2.2−) | 2006 10 12 | 691 | 0.3− | 0.2− |
| 2000 03 12 | 691 | 0.0 | 0.5− | 2004 02 26 | 704 | (1.7+ | 0.7+) | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2000 03 14 | 691 | 0.1− | 0.2− | 2004 02 26 | 704 | (3.7+ | 1.7−) | 2006 10 16 | 691 | 0.4+ | 0.0 |
| 2000 03 14 | 691 | 0.1− | 0.0 | 2004 02 26 | 704 | (2.2+ | 2.9+) | 2006 10 16 | 691 | 0.1− | 0.5+ |
| 2000 03 14 | 691 | 0.3− | 0.1− | 2004 03 18 | 691 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2000 03 15 | 691 | 0.3− | 0.1+ | 2004 03 18 | 691 | 0.1− | 0.6+ | 2006 10 29 | 691 | 0.2+ | 0.4− |
| 2000 03 15 | 691 | 0.3− | 0.0 | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.5− |
| 2000 03 15 | 691 | 0.3− | 0.3+ | 2005 06 03 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2000 04 02 | 691 | 0.0 | 0.0 | 2005 06 03 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2000 04 02 | 691 | 0.1− | 0.1− | 2005 06 03 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2000 04 02 | 691 | 0.0 | 0.3− | 2005 06 12 | 691 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.3+ | 0.1+ |
| 2004 02 19 | 704 | 1.5+ | 0.3+ | 2005 06 12 | 691 | 0.1+ | 0.2− | | | | |
| 2004 02 19 | 704 | (1.7+ | 0.2+) | 2005 06 12 | 691 | 0.4− | 0.2− | | | | |

**(138171)∗ 2000 EK$_{102}$**

Discovered 2000 Mar. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 31.44992 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24662866 | $\omega$ | 181.43224 | | | +0.99354192 | | −0.11315284 | |
| $a$ | 2.5182974 | $\Omega$ | 185.08795 | | | +0.10502379 | | +0.94517280 | |
| $e$ | 0.1745944 | $i$ | 5.44760 | | | +0.04294710 | | +0.30634102 | |
| $P$ | 4.00 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 1.3− | 0.3+ | 2002 11 19 | 644 | 0.0 | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.0 |
| 1998 12 15 | 704 | (2.2+ | 1.7+) | 2002 11 24 | 644 | 0.4− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.1− |
| 1998 12 15 | 704 | 1.0− | 1.3− | 2002 11 24 | 644 | 0.2− | 0.3− | 2004 03 27 | 704 | 0.2+ | 0.4+ |
| 1998 12 15 | 704 | 0.2+ | 0.1− | 2002 11 24 | 644 | 0.5− | 0.2− | 2004 03 27 | 704 | 0.1+ | 1.2+ |
| 1998 12 15 | 704 | 0.7− | 0.8+ | 2002 12 01 | 704 | 1.3+ | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.7+ |
| 1998 12 16 | 699 | 0.1+ | 0.0 | 2002 12 01 | 704 | 1.0+ | 0.1− | 2004 03 27 | 704 | 0.1− | 1.1+ |
| 1998 12 16 | 699 | 0.6+ | 0.2− | 2002 12 01 | 704 | 1.4+ | 0.0 | 2004 03 27 | 704 | 1.2+ | 1.0+ |
| 1998 12 16 | 699 | 0.3− | 0.5+ | 2002 12 01 | 704 | 1.3+ | 0.1+ | 2004 03 31 | 291 | 0.0 | 0.3+ |
| 2000 02 12 | 645 | 0.1− | 0.2− | 2002 12 05 | 704 | 0.6− | 0.0 | 2004 03 31 | 291 | 0.1− | 0.1+ |
| 2000 02 12 | 645 | 0.1− | 0.2− | 2002 12 05 | 704 | 0.4− | 0.2+ | 2004 03 31 | 291 | 0.4− | 0.2+ |
| 2000 02 27 | 703 | 0.2+ | 0.2− | 2002 12 05 | 704 | 0.5− | 0.5+ | 2004 04 12 | 699 | 0.0 | 1.5+ |
| 2000 02 27 | 703 | 0.8+ | 0.2− | 2002 12 05 | 704 | 0.3− | 0.1+ | 2004 04 12 | 699 | (1.8+ | 2.3+) |
| 2000 02 27 | 703 | 0.2+ | 1.4+ | 2002 12 05 | 704 | 0.5− | 0.6+ | 2004 04 12 | 699 | 1.2− | 0.9− |
| 2000 02 27 | 703 | (2.4− | 0.6−) | 2002 12 10 | 644 | 0.2− | 0.1+ | 2004 04 12 | 699 | 0.2+ | 0.4+ |
| 2000 03 11 | 704 | 0.5+ | 0.3− | 2002 12 10 | 644 | 0.3− | 0.0 | 2004 04 13 | 691 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 0.4− | 2002 12 10 | 644 | 0.2− | 0.1− | 2004 04 13 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.1− | 0.5− | 2002 12 16 | 608 | 1.0+ | 1.1+ | 2004 04 13 | 691 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 0.1− | 0.4+ | 2002 12 16 | 608 | 1.0+ | 0.9+ | 2004 04 24 | 691 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.0 | 0.6+ | 2002 12 16 | 608 | 0.8+ | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.1+ |
| 2000 03 14 | 691 | 0.2− | 0.4− | 2002 12 28 | 699 | 0.4− | 0.4− | 2004 04 24 | 691 | 0.2+ | 0.2+ |
| 2000 03 14 | 691 | 0.1− | 0.5− | 2002 12 28 | 699 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.1+ | 0.4+ |
| 2000 03 14 | 691 | 0.1− | 0.5− | 2002 12 28 | 699 | 0.4− | 0.6− | 2005 07 12 | G96 | 0.0 | 0.4+ |
| 2000 03 15 | 691 | 0.2− | 0.5− | 2002 12 28 | 699 | 0.7+ | 0.1+ | 2005 07 12 | G96 | 0.0 | 0.4+ |
| 2000 03 15 | 691 | 0.1− | 0.3− | 2003 01 01 | 704 | 0.0 | 0.6+ | 2005 07 12 | G96 | 0.2− | 0.5+ |
| 2000 03 15 | 691 | 0.4− | 0.4− | 2003 01 01 | 704 | 0.8− | 0.4− | 2006 09 22 | 704 | 0.5− | 1.4+ |
| 2000 04 05 | 704 | 0.0 | 0.7− | 2003 01 01 | 704 | 0.4− | 0.7+ | 2006 09 22 | 704 | 0.2+ | 1.5+ |
| 2000 04 05 | 704 | 1.1+ | 0.1− | 2003 01 27 | 704 | 1.2− | 0.7+ | 2006 09 22 | 704 | 0.4+ | 0.2+ |
| 2000 04 05 | 704 | 0.8+ | 0.8+ | 2003 01 27 | 704 | 0.5+ | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.3− |
| 2000 04 05 | 704 | 0.4+ | 0.6+ | 2003 01 27 | 704 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.4+ | 0.4− |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2003 01 27 | 704 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.0 | 0.5− |
| 2002 10 03 | 704 | 0.8− | 0.5+ | 2003 02 02 | 704 | 0.4− | 0.7− | 2006 11 14 | 704 | 0.6− | 0.9− |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2003 02 02 | 704 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.5− | 1.0+ |
| 2002 10 03 | 704 | 0.8+ | 0.0 | 2003 02 02 | 704 | 0.5− | 0.8+ | 2006 11 17 | 704 | 0.2+ | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.4− | 2004 03 15 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2004 03 15 | 703 | 0.2− | 0.6− | 2006 11 17 | 704 | 0.4+ | 0.2− |
| 2002 10 09 | 704 | (1.8+ | 1.0+) | 2004 03 15 | 703 | 0.4+ | 0.7− | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 2002 10 09 | 704 | 1.0+ | 0.4+ | 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | 0.5+ | 0.6− | 2004 03 15 | 703 | 0.5− | 0.6− | 2006 11 18 | 704 | 0.9+ | 0.8− |
| 2002 10 09 | 704 | 1.0+ | 0.9+ | 2004 03 15 | 703 | 0.6+ | 1.1− | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2002 10 11 | 704 | (2.0+ | 1.4+) | 2004 03 15 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.9− |
| 2002 10 11 | 704 | (1.8+ | 0.1+) | 2004 03 16 | 704 | 0.6+ | 0.9+ | 2006 11 20 | 704 | 0.2+ | 0.6− |
| 2002 10 11 | 704 | (2.7+ | 0.6−) | 2004 03 16 | 704 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.2− | 1.0− |
| 2002 10 11 | 704 | 1.2+ | 0.6+ | 2004 03 16 | 704 | 0.4+ | 0.9+ | 2006 11 20 | 704 | 0.2− | 0.8− |
| 2002 10 11 | 704 | 1.2+ | 0.1+ | 2004 03 16 | 704 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 0.2− | 0.5− |
| 2002 11 07 | 704 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.8+ | 1.2+ | 2006 11 20 | 704 | 0.0 | 1.4− |
| 2002 11 07 | 704 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.9+ | 0.6+ | 2006 11 25 | 704 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.3− | 0.3− | 2004 03 18 | 704 | 0.1+ | 0.9+ | 2006 11 25 | 704 | 0.0 | 0.9+ |
| 2002 11 07 | 704 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.9+ | 2006 11 25 | 704 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 11 25 | 704 | 0.6− | 1.0+ |
| 2002 11 11 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.0 | 0.7+ | 2006 11 25 | 704 | 0.1− | 0.7+ |
| 2002 11 11 | 704 | 0.8− | 1.1− | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2002 11 11 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.9− | 2006 11 28 | 704 | 0.1+ | 0.4− |
| 2002 11 11 | 704 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 11 28 | 704 | 0.8− | 0.5+ |
| 2002 11 19 | 644 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2002 11 19 | 644 | 0.0 | 0.1+ | 2004 03 23 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.9− | 0.6+ |

**(138172)∗ 2000 EU$_{102}$ = 1995 BW$_{8}$**

Discovered 2000 Mar. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 13179)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 42.82375 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21821527 | $\omega$ | 317.78145 | | | +0.53884626 | | +0.84217166 | |
| $a$ | 2.7324105 | $\Omega$ | 344.78954 | | | −0.75133005 | | +0.46983382 | |
| $e$ | 0.1012846 | $i$ | 4.32567 | | | −0.38098276 | | +0.26458094 | |
| $P$ | 4.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.2− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.7− |
| 1995 01 29 | 691 | 0.0 | 0.6− | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 09 20 | 704 | 1.1− | 0.9+ |
| 1995 01 29 | 691 | 0.2− | 0.0 | 2006 08 21 | 704 | 0.6+ | 1.5+ | 2006 09 20 | 704 | 1.3+ | 0.2− |
| 1995 02 04 | 691 | 0.3− | 0.5+ | 2006 08 21 | 704 | 0.5− | 1.0+ | 2006 09 20 | 704 | 0.3− | 1.0+ |
| 1995 02 04 | 691 | 0.9+ | 0.3+ | 2006 08 21 | 704 | 0.1+ | 0.8− | 2006 09 20 | 704 | 0.3+ | 0.7+ |
| 1995 02 04 | 691 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 09 20 | 704 | 1.3− | 0.2+ |
| 2000 03 14 | 691 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.8− | 0.2+ |
| 2000 03 14 | 691 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.5− | 0.2− |
| 2000 03 14 | 691 | 0.0 | 0.0 | 2006 08 27 | 699 | 1.3+ | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.3+ |
| 2000 03 15 | 691 | 0.4− | 0.1+ | 2006 08 27 | 699 | 1.1+ | 1.0+ | 2006 09 25 | 699 | 0.3+ | 0.2− |
| 2000 03 15 | 691 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.2+ | 0.8− | 2006 09 28 | G96 | 0.2+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 15 | 691 | 0.3− | 0.3+ | 2006 08 27 | 699 | 0.9+ | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2000 04 07 | 691 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2000 04 07 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.6− |
| 2000 04 07 | 691 | 0.5+ | 0.2− | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 29 | 704 | 1.5− | 0.6− |
| 2001 07 17 | 644 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.7+ | 0.0 | 2006 09 29 | 704 | 0.9+ | 1.1− |
| 2001 07 17 | 644 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.2+ |
| 2001 07 17 | 644 | 0.3− | 0.6− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.8− | 0.5+ |
| 2002 11 07 | 246 | 0.4− | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 2002 11 07 | 246 | 0.1+ | 0.1− | 2006 09 16 | 699 | 1.0− | 1.2− | 2006 10 19 | G96 | 0.2− | 0.6− |
| 2002 11 07 | 246 | 1.0− | 0.3− | 2006 09 16 | 699 | 0.3− | 0.5+ | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2002 11 07 | 246 | 0.7− | 0.4− | 2006 09 16 | 699 | 0.9+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.7− |
| 2002 11 07 | 246 | 0.6+ | 0.3− | 2006 09 16 | 699 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2002 11 12 | 704 | (0.2− | 1.7+) | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 11 12 | 704 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | (1.0− | 2.1−) | 2006 09 17 | 704 | 0.9+ | 0.7− | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2005 01 20 | 809 | 0.9− | 1.0+ | 2006 09 17 | 704 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.6− | 0.2− |
| 2005 01 20 | 809 | 0.2− | 0.3− | 2006 09 17 | 704 | 1.3− | 1.2− | 2006 11 13 | G96 | 0.1− | 0.1+ |
| 2005 01 20 | 809 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.9− | 1.0+ | 2006 11 13 | G96 | 0.8− | 0.1− |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 1.1+ | | | | |

**(138173)∗ 2000 ET$_{103}$**

Discovered 2000 Mar. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.79602 | | (2000.0) | | | |
| $n$ | 0.24042548 | $\omega$ | 325.84324 | | +0.18206996 | −0.95971219 |
| $a$ | 2.5614294 | $\Omega$ | 112.84102 | | +0.94604477 | +0.11164103 |
| $e$ | 0.1294173 | $i$ | 13.42818 | | +0.26804818 | +0.25785421 |
| $P$ | 4.10 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 1.2− | 0.7+ | 2003 12 23 | 704 | 0.3− | 0.0 | 2004 03 21 | 704 | 0.7− | 0.4+ |
| 2000 03 05 | 704 | 0.3− | 0.7+ | 2003 12 23 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.3− | 0.1− |
| 2000 03 05 | 704 | 1.0+ | 0.5− | 2003 12 23 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.4− | 0.1+ |
| 2000 03 05 | 704 | 0.3+ | 1.3+ | 2003 12 23 | 704 | 0.8+ | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.6− |
| 2000 03 12 | 704 | 0.4+ | 0.6+ | 2003 12 27 | 704 | (0.0 | 1.6−) | 2004 03 28 | 704 | 0.3− | 0.3+ |
| 2000 03 12 | 704 | 0.2+ | 0.1− | 2003 12 27 | 704 | 0.1− | 0.9− | 2004 03 28 | 704 | 0.5+ | 0.6+ |
| 2000 03 12 | 704 | 0.4+ | 0.3+ | 2003 12 27 | 704 | 0.5+ | 0.6− | 2004 03 28 | 704 | (0.5− | 1.5+) |
| 2000 03 12 | 704 | 0.4− | 0.8+ | 2003 12 27 | 704 | 0.6+ | 0.3− | 2004 03 28 | 704 | 0.5− | 1.4+ |
| 2000 03 15 | 704 | 0.6+ | 0.3+ | 2003 12 27 | 704 | 0.9+ | 1.1− | 2004 03 28 | 704 | 0.3− | 0.7+ |
| 2000 03 15 | 704 | 0.8+ | 0.1+ | 2003 12 29 | 704 | 1.0+ | 0.4+ | 2004 03 30 | 703 | 0.1− | 0.2+ |
| 2000 03 15 | 704 | 0.1− | 0.2+ | 2003 12 29 | 704 | 0.4+ | 0.8− | 2004 03 30 | 703 | 0.0 | 0.3− |
| 2000 03 15 | 704 | 0.2+ | 0.7+ | 2003 12 29 | 704 | 0.2+ | 0.0 | 2004 03 30 | 703 | 0.3− | 0.4+ |
| 2000 03 29 | 704 | 0.2+ | 0.3+ | 2003 12 29 | 704 | 0.6+ | 0.2− | 2004 03 30 | 703 | 0.5− | 0.5+ |
| 2000 03 29 | 704 | 1.0+ | 0.1+ | 2003 12 29 | 704 | 0.3+ | 0.2+ | 2004 04 14 | 703 | 0.6+ | 0.1+ |
| 2000 03 29 | 704 | 0.3− | 0.7+ | 2004 01 30 | 704 | 0.4+ | 0.0 | 2004 04 14 | 703 | 0.2+ | 0.2+ |
| 2000 03 29 | 704 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.7+ | 0.2− | 2004 04 14 | 703 | 0.2− | 0.4+ |
| 2000 03 29 | 704 | 0.4− | 0.6+ | 2004 01 30 | 704 | 0.6+ | 0.3− | 2004 04 14 | 703 | 0.3− | 0.3+ |
| 2000 04 02 | 704 | 0.2− | 0.1+ | 2004 02 02 | 699 | 0.0 | 1.2− | 2005 07 12 | G96 | 0.3− | 0.8+ |
| 2000 04 02 | 704 | 0.5+ | 0.8+ | 2004 02 02 | 699 | 0.1− | 0.6− | 2005 07 12 | G96 | 0.0 | 0.9+ |
| 2000 04 02 | 704 | 1.2− | 0.4+ | 2004 02 02 | 699 | 0.6− | 0.2− | 2005 07 12 | G96 | 0.4− | 0.9+ |
| 2000 04 08 | 704 | 0.2+ | 1.1+ | 2004 02 02 | 699 | 0.0 | 0.7− | 2005 07 12 | G96 | 0.2− | 0.9+ |
| 2000 04 08 | 704 | 0.7+ | 0.9− | 2004 02 16 | 704 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2000 04 08 | 704 | 1.2+ | 0.5− | 2004 02 16 | 704 | 0.3+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.6+ |
| 2000 04 08 | 704 | 0.0 | 0.5+ | 2004 02 16 | 704 | 0.0 | 0.6+ | 2006 09 14 | 644 | 0.2+ | 0.4+ |
| 2002 08 24 | 644 | 0.3− | 0.7+ | 2004 02 16 | 704 | 0.0 | 0.6+ | 2006 09 20 | 703 | 0.6− | 0.6+ |
| 2002 08 24 | 644 | 0.0 | 0.5+ | 2004 02 16 | 704 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.4+ | 0.3+ |
| 2002 08 24 | 644 | 0.0 | 0.7+ | 2004 03 14 | 704 | 0.0 | 0.6+ | 2006 09 20 | 703 | 0.1− | 0.2+ |
| 2002 09 13 | 704 | 0.7− | 1.3+ | 2004 03 14 | 704 | 0.2− | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.4+ |
| 2002 09 13 | 704 | 0.4− | 1.1+ | 2004 03 14 | 704 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.7+ |
| 2002 09 13 | 704 | 0.2− | 1.1+ | 2004 03 14 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.6+ |
| 2002 09 13 | 704 | 0.5+ | 0.7+ | 2004 03 14 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.8− | 0.7+ |
| 2002 10 02 | 608 | 0.1+ | 0.2− | 2004 03 17 | A35 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.3− | 0.7+ |
| 2002 10 02 | 608 | 0.1− | 0.0 | 2004 03 17 | A35 | 0.1+ | 0.2− | 2006 10 03 | E12 | 0.5− | 0.1+ |
| 2002 10 02 | 608 | 0.5− | 0.6− | 2004 03 17 | A35 | 0.2+ | 0.4+ | 2006 10 03 | E12 | 0.8− | 0.5+ |
| 2002 10 08 | 644 | 0.5− | 0.3− | 2004 03 18 | 703 | 0.3+ | 0.8+ | 2006 10 03 | E12 | 0.2− | 0.6+ |
| 2002 10 08 | 644 | 0.3− | 0.3− | 2004 03 18 | 703 | 0.0 | 0.5+ | 2006 10 03 | E12 | 0.3+ | 1.0− |
| 2002 10 08 | 644 | 0.2− | 0.2− | 2004 03 18 | 703 | 0.4− | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2002 10 28 | 704 | 0.6+ | 1.2+ | 2004 03 18 | 703 | 1.4+ | 1.0+ | 2006 11 27 | 703 | 0.6+ | 0.8+ |
| 2002 10 28 | 704 | 0.2+ | 0.7+ | 2004 03 21 | 704 | 1.0− | 0.2+ | 2006 11 27 | 703 | 1.7+ | 0.1+ |
| 2002 10 28 | 704 | 1.2− | 1.1+ | 2004 03 21 | 704 | 1.3− | 0.6+ | 2006 11 27 | 703 | 0.7− | 1.6+ |
| 2002 10 28 | 704 | (0.2+ | 1.6+) | 2004 03 21 | 704 | 1.4− | 0.5+ | | | | |

**(138174)∗ 2000 EV$_{103}$ = 2004 DW$_{47}$**

Discovered 2000 Mar. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60633)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.67877 | | (2000.0) | | | |
| $n$ | 0.24348085 | $\omega$ | 333.21471 | | −0.87320943 | +0.48337341 |
| $a$ | 2.5399559 | $\Omega$ | 235.82767 | | −0.43259926 | −0.82747104 |
| $e$ | 0.1718769 | $i$ | 4.30405 | | −0.22441741 | −0.28573034 |
| $P$ | 4.05 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.4− | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2004 04 12 | 703 | (0.5+ | 1.7−) |
| 1998 12 14 | 691 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.3− | 2004 04 12 | 703 | 1.5− | 0.0 |
| 1998 12 14 | 691 | 0.5− | 0.0 | 2004 02 26 | 704 | 0.7− | 1.3+ | 2004 04 16 | 704 | 0.5+ | 0.6− |
| 2000 03 03 | 703 | 0.2− | 0.3+ | 2004 03 13 | 644 | 0.0 | 0.0 | 2004 04 16 | 704 | 0.4+ | 0.9+ |
| 2000 03 03 | 703 | 0.0 | 0.3+ | 2004 03 13 | 644 | 0.0 | 0.0 | 2004 04 16 | 704 | 1.2− | 0.4+ |
| 2000 03 03 | 703 | 0.2+ | 0.2+ | 2004 03 13 | 644 | 0.1− | 0.1+ | 2004 04 16 | 704 | 0.3− | 0.5+ |
| 2000 03 03 | 703 | 0.9+ | 0.2− | 2004 03 16 | 703 | 0.3+ | 0.6+ | 2004 04 16 | 704 | 0.0 | 0.4+ |
| 2000 03 12 | 699 | 1.2− | 0.7− | 2004 03 16 | 703 | 0.1+ | 0.6+ | 2004 04 20 | 703 | 0.5+ | 0.3+ |
| 2000 03 12 | 699 | 0.5− | 0.3− | 2004 03 16 | 703 | 0.3+ | 0.2+ | 2004 04 20 | 703 | 0.3− | 0.1− |
| 2000 03 12 | 699 | 0.8− | 0.1− | 2004 03 16 | 703 | 0.3+ | 0.2+ | 2004 04 20 | 703 | 0.5− | 0.1+ |
| 2000 03 12 | 699 | 0.1− | 0.3− | 2004 03 16 | 704 | 0.1+ | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.2− |
| 2000 03 13 | 704 | 1.0+ | 0.2+ | 2004 03 16 | 704 | 0.8+ | 0.2+ | 2004 04 20 | 703 | (2.1+ | 0.2+) |
| 2000 03 13 | 704 | 1.2+ | 0.3+ | 2004 03 16 | 704 | 0.9+ | 0.1+ | 2004 04 20 | 704 | 0.7− | 0.8− |
| 2000 03 13 | 704 | 0.1− | 0.2+ | 2004 03 16 | 704 | 0.8+ | 0.7+ | 2004 04 20 | 704 | 0.1+ | 0.4− |
| 2000 03 13 | 704 | 0.6+ | 0.3+ | 2004 03 16 | 691 | 0.1− | 0.2− | 2004 04 20 | 704 | 0.2− | 0.3− |
| 2000 03 15 | 704 | 1.2− | 0.9− | 2004 03 16 | 704 | 0.5− | 0.1+ | 2004 04 20 | 704 | 0.1− | 0.7+ |
| 2000 03 15 | 704 | 1.3+ | 0.4+ | 2004 03 16 | 691 | 0.3− | 0.2− | 2004 04 26 | 699 | 0.4− | 0.8− |
| 2000 03 15 | 704 | 0.7+ | 1.0− | 2004 03 16 | 691 | 0.2− | 0.2− | 2004 04 26 | 699 | 0.0 | 0.4+ |
| 2000 03 15 | 704 | 0.3+ | 0.8+ | 2004 03 17 | 704 | 0.3− | 0.2+ | 2004 04 26 | 699 | 0.8− | 0.4− |
| 2000 04 07 | 699 | 0.1− | 0.2+ | 2004 03 17 | 704 | 0.2+ | 0.6+ | 2004 04 26 | 699 | 0.4− | 0.7− |
| 2000 04 07 | 699 | 0.5− | 0.0 | 2004 03 17 | 704 | 0.5+ | 0.7+ | 2005 08 06 | 644 | 0.5− | 1.0+ |
| 2000 04 07 | 699 | 0.0 | 0.1− | 2004 03 17 | 704 | 0.4+ | 0.7+ | 2005 08 06 | 644 | 0.5− | 1.1+ |
| 2000 04 07 | 704 | 0.0 | 0.2+ | 2004 03 17 | 704 | 0.5− | 0.4+ | 2005 08 06 | 644 | 0.0 | 1.0+ |
| 2000 04 07 | 699 | 1.1− | 0.4− | 2004 03 17 | 704 | 0.2+ | 0.2+ | 2005 08 24 | 644 | 0.7− | 0.6+ |
| 2000 04 07 | 704 | 0.2+ | 1.4− | 2004 03 17 | 704 | 0.5+ | 0.5+ | 2005 08 24 | 644 | 0.4− | 1.0+ |
| 2000 04 07 | 704 | 0.0 | 0.1+ | 2004 03 17 | 704 | 0.1+ | 0.7+ | 2005 08 24 | 644 | 0.4− | 0.7+ |
| 2000 04 08 | 704 | 0.5+ | 0.1+ | 2004 03 17 | 704 | 0.5+ | 0.4+ | 2006 10 17 | G96 | 0.7+ | 0.3+ |
| 2000 04 08 | 704 | 0.4− | 1.0+ | 2004 03 17 | 704 | 0.0 | 1.1+ | 2006 10 17 | G96 | 0.2+ | 0.1+ |
| 2000 04 08 | 704 | 1.8+ | 0.8− | 2004 03 19 | 704 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.4− | 0.0 |
| 2000 04 08 | 704 | 0.3+ | 0.8− | 2004 03 19 | 704 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 2000 04 25 | 699 | 0.4+ | 0.4+ | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.8+ | 0.3+ |
| 2000 04 25 | 699 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.3+ |
| 2000 04 25 | 699 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.3+ |
| 2000 04 25 | 699 | 0.3− | 0.2− | 2004 03 27 | 703 | 0.8+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.4+ |
| 2004 02 19 | 704 | 0.2− | 0.4+ | 2004 03 27 | 703 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2004 02 19 | 704 | 0.7− | 0.7− | 2004 03 27 | 703 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 02 19 | 704 | 0.1+ | 0.1+ | 2004 03 27 | 703 | 0.7+ | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.0 |
| 2004 02 26 | 704 | 0.1+ | 0.0 | 2004 04 12 | 703 | 0.6− | 1.0− | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2004 02 26 | 704 | 0.5+ | 0.5+ | 2004 04 12 | 703 | 0.7+ | 0.6− | | | | |

**(138175)∗ 2000 EE$_{104}$**

Discovered 2000 Mar. 11 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.77284 | | (2000.0) | | | |
| $n$ | 0.97870253 | $\omega$ | 280.93861 | | +0.59882942 | +0.79987637 |
| $a$ | 1.0046981 | $\Omega$ | 25.97626 | | −0.69448781 | +0.54351502 |
| $e$ | 0.2934078 | $i$ | 5.24163 | | −0.39886088 | +0.25453724 |
| $P$ | 1.01 | $H$ | 20.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc (radar residuals in s.d.)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 704 | (2.1+ | 2.7−) | 2001 02 15 | 046 | 0.8+ | 0.9+ | 2003 03 20 | 151 | 0.1+ | 0.1+ | 2000 03 15 | 422 | 0.2− | 0.2− | 2001 04 01 | 205 | 1.1+ | 0.8− | 2004 02 16 | 704 | 0.1− | 1.6+ |
| 1999 04 09 | 704 | (2.7+ | 3.0−) | 2001 02 15 | 046 | 0.7− | 0.4+ | 2003 03 20 | 151 | 0.1− | 0.3+ | 2000 03 18 | 670 | 1.2− | 0.3− | 2001 04 01 | 611 | 0.2+ | 0.3− | 2004 02 16 | 704 | 0.4+ | 0.9+ |
| 1999 04 09 | 704 | (1.6+ | 4.0−) | 2001 02 15 | 046 | 0.9+ | 0.8+ | 2003 03 21 | 084 | 2.2− | 0.0+ | 2000 03 18 | 670 | 1.5− | 0.6− | 2001 04 01 | 611 | 0.5+ | 0.1+ | 2004 02 18 | 704 | 0.9+ | 0.2+ |
| 1999 04 09 | 704 | (1.7+ | 4.7−) | 2001 02 15 | 046 | 0.3− | 0.2+ | 2003 03 22 | A28 | 0.7+ | 0.7− | 2000 03 18 | 670 | 1.9− | 0.0+ | 2001 04 01 | 611 | 0.2+ | 0.1+ | 2004 02 18 | 704 | 0.8+ | 0.1+ |
| 1999 04 09 | 704 | (1.6+ | 4.1−) | 2001 02 15 | 046 | 0.4+ | 0.2+ | 2003 03 22 | A28 | 0.4− | 0.5− | 2000 03 22 | 046 | 0.5+ | 0.3− | 2001 04 12 | 118 | 0.0− | 0.8− | 2004 02 18 | 704 | 0.8+ | 0.8+ |
| 2000 03 11 | 703 | 1.0+ | 0.1+ | 2001 02 15 | 046 | 0.6+ | 0.7+ | 2003 03 22 | A28 | 0.3− | 0.3+ | 2000 03 22 | 046 | 1.0+ | 0.0+ | 2001 04 12 | 118 | 0.1+ | 0.3− | 2004 03 08 | 170 | 0.6− | 0.4− |
| 2000 03 11 | 703 | 0.1+ | 0.4+ | 2001 02 15 | 046 | 0.2+ | 0.0− | 2003 03 22 | A28 | 0.3− | 0.3+ | 2000 03 22 | 046 | 0.5+ | 0.3+ | 2001 04 16 | 704 | 0.1+ | 0.1+ | 2004 03 08 | 170 | 0.2− | 0.5− |
| 2000 03 11 | 703 | 0.2+ | 0.3+ | 2001 02 15 | 046 | 0.6− | 0.0− | 2003 03 23 | 552 | 0.1− | 0.4− | 2000 03 22 | 046 | 0.9+ | 0.1+ | 2001 04 16 | 704 | 0.1− | 0.8+ | 2004 03 08 | 170 | 0.4− | 0.5− |
| 2000 03 11 | 703 | 0.6+ | 0.2+ | 2001 03 01 | 711 | 0.5− | 0.1+ | 2003 03 23 | 552 | 1.7+ | 0.2+ | 2000 03 23 | 670 | 0.3− | 0.2− | 2001 04 16 | 704 | 0.3+ | 0.5− | 2004 03 09 | 185 | 0.3+ | 0.3− |
| 2000 03 11 | 046 | 0.5+ | 0.1+ | 2001 03 01 | 711 | 0.5− | 0.2+ | 2003 03 23 | 552 | 0.7+ | 0.4− | 2000 03 23 | 670 | 0.1− | 0.6− | 2001 04 16 | 704 | 0.2+ | 0.4+ | 2004 03 09 | 185 | 0.9− | 0.6− |
| 2000 03 11 | 046 | 0.2+ | 0.4+ | 2001 03 01 | 711 | 0.4− | 0.1+ | 2003 03 23 | 552 | 0.3− | 0.3− | 2000 03 25 | 046 | 0.2− | 0.3+ | 2002 02 10 | 704 | 0.5+ | 0.1− | 2004 03 09 | 185 | 0.3+ | 0.3− |
| 2000 03 11 | 046 | 0.6+ | 0.1+ | 2001 03 04 | 704 | 1.4+ | 0.6− | 2003 03 23 | 552 | 0.6+ | 0.3+ | 2000 03 25 | 046 | 0.0+ | 0.5+ | 2002 02 10 | 704 | 0.0− | 0.4− | 2004 03 09 | 185 | 0.5+ | 0.1− |
| 2000 03 11 | 046 | 0.7+ | 0.1+ | 2001 03 04 | 704 | 1.2+ | 0.2− | 2003 03 23 | 552 | 0.2+ | 0.3− | 2000 03 25 | 046 | 0.3− | 0.5+ | 2002 02 10 | 704 | 1.0+ | 0.9− | 2004 03 17 | 644 | 0.0+ | 0.1− |
| 2000 03 11 | 046 | 0.3+ | 0.0− | 2001 03 04 | 704 | 0.7+ | 0.8+ | 2003 03 23 | 552 | 0.1− | 0.6+ | 2000 03 25 | 046 | 0.4+ | 0.1+ | 2002 02 10 | 704 | 0.8+ | 1.3− | 2004 03 17 | 644 | 0.6− | 0.5− |
| 2000 03 11 | 046 | 0.3+ | 0.3− | 2001 03 05 | 704 | 0.6+ | 0.1− | 2003 03 23 | 552 | 0.5+ | 0.2+ | 2000 03 25 | 046 | 0.1− | 0.4+ | 2002 02 19 | 291 | 0.3− | 0.1− | 2004 03 17 | 644 | 0.1+ | 0.0− |
| 2000 03 12 | 858 | 0.2− | 0.2− | 2001 03 05 | 704 | 1.2− | 1.0+ | 2003 03 23 | 151 | 0.2+ | 0.6− | 2000 03 29 | 704 | 0.2+ | 0.2+ | 2002 02 19 | 291 | 0.1− | 0.6− | 2004 03 17 | 240 | 0.5− | 0.7− |
| 2000 03 12 | 858 | 0.3− | 0.7+ | 2001 03 05 | 704 | 0.8+ | 0.6+ | 2003 03 23 | 151 | 0.4+ | 0.6+ | 2000 03 29 | 704 | 0.2+ | 0.4+ | 2002 02 19 | 291 | 0.1− | 0.3− | 2004 03 17 | 240 | 0.2+ | 0.6− |
| 2000 03 12 | 858 | 0.3+ | 0.0− | 2001 03 05 | 704 | 0.0− | 0.2− | 2003 03 23 | 552 | 0.2+ | 0.5+ | 2000 03 29 | 704 | 0.2+ | 0.3+ | 2002 03 06 | 704 | 0.2− | 0.6+ | 2004 03 17 | 240 | 0.3+ | 0.4− |
| 2000 03 12 | 670 | 0.2+ | 0.3+ | 2001 03 14 | 610 | 0.3− | 0.2+ | 2003 03 23 | 151 | 0.0+ | 0.2+ | 2000 03 29 | 704 | 0.4+ | 0.1+ | 2002 03 06 | 704 | 0.9− | 0.1− | 2004 03 17 | 240 | 0.2+ | 0.3− |
| 2000 03 12 | 670 | 0.2+ | 0.2+ | 2001 03 14 | 610 | 0.4− | 0.3+ | 2003 03 23 | 151 | 0.5+ | 0.2+ | 2000 03 30 | 360 | 0.2− | 0.1− | 2002 03 06 | 704 | 0.2− | 0.9+ | 2004 03 17 | 240 | 0.2− | 0.0− |
| 2000 03 12 | 163 | 0.3− | 0.0+ | 2001 03 14 | 610 | 0.5− | 0.3+ | 2003 03 23 | 151 | 0.1− | 0.4− | 2000 03 30 | 360 | 0.2− | 0.2− | 2002 03 06 | 704 | 0.2− | 0.4+ | 2004 03 23 | 704 | 0.4− | 1.0+ |
| 2000 03 12 | 163 | 0.9+ | 0.3− | 2001 03 14 | 610 | 0.7− | 0.5+ | 2003 03 23 | 151 | 0.1− | 0.0− | 2000 03 30 | 360 | 0.4− | 0.0+ | 2002 03 06 | 704 | 0.4− | 1.4+ | 2004 03 23 | 704 | 0.1− | 0.3+ |
| 2000 03 12 | 163 | 0.3− | 0.8+ | 2001 03 14 | 610 | 0.7− | 0.5+ | 2003 03 23 | 151 | 0.3+ | 0.2+ | 2000 03 31 | 670 | 0.1+ | 0.3− | 2002 03 11 | 198 | 0.5− | 0.1+ | 2004 03 23 | 704 | 0.0− | 0.4+ |
| 2000 03 12 | 163 | 0.1− | 0.2+ | 2001 03 15 | 704 | 0.2− | 0.4− | 2003 03 23 | 151 | 0.1+ | 0.3− | 2000 03 31 | 670 | 1.0− | 0.5− | 2002 03 11 | 198 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.2− | 0.4+ |
| 2000 03 13 | 345 | 1.2− | 1.4+ | 2001 03 15 | 704 | 0.4+ | 0.3+ | 2003 03 23 | 151 | 0.4+ | 0.4− | 2000 03 31 | 540 | 0.6+ | 0.0+ | 2002 03 11 | 198 | 0.3− | 0.0+ | 2004 03 23 | 704 | 0.9− | 0.1+ |
| 2000 03 13 | 345 | 1.2− | 1.2+ | 2001 03 15 | 704 | 0.6+ | 0.1+ | 2003 03 23 | 151 | 0.4+ | 0.3+ | 2000 03 31 | 540 | 0.4+ | 0.2− | 2002 03 11 | 198 | 0.2+ | 0.0+ | 2004 03 24 | 703 | 0.6+ | 0.8+ |
| 2000 03 13 | 413 | 0.1− | 0.1+ | 2001 03 15 | 704 | 0.2+ | 0.2+ | 2003 03 23 | 170 | 0.5+ | 0.4+ | 2000 03 31 | 540 | 0.0− | 0.1+ | 2002 03 11 | 151 | 0.7− | 1.2− | 2004 03 24 | 703 | 0.2+ | 0.1+ |
| 2000 03 13 | 046 | 0.1+ | 1.2− | 2001 03 15 | 704 | 0.3+ | 0.2+ | 2003 03 23 | 170 | 0.8− | 0.4+ | 2000 03 31 | 540 | 0.3+ | 0.1− | 2002 03 11 | 151 | 0.3− | 0.7− | 2004 03 24 | 703 | 0.6+ | 0.8+ |
| 2000 03 13 | 046 | 0.3+ | 0.7+ | 2001 03 16 | 704 | 0.2+ | 0.0+ | 2003 03 23 | 170 | 2.2+ | 0.1− | 2000 03 31 | 046 | 0.2+ | 0.0+ | 2002 03 11 | 151 | 0.1− | 0.0− | 2004 03 24 | 703 | 0.6− | 0.8+ |
| 2000 03 13 | 046 | 0.1+ | 0.0− | 2001 03 16 | 704 | 0.0− | 0.3+ | 2003 03 23 | 170 | 0.3+ | 0.0+ | 2000 03 31 | 046 | 0.0− | 0.1+ | 2002 03 11 | 151 | 0.9− | 1.5− | 2004 03 25 | 704 | 0.0− | 1.5− |
| 2000 03 13 | 046 | 0.9+ | 0.5+ | 2001 03 16 | 704 | 0.4+ | 1.0+ | 2003 03 24 | 204 | 0.6− | 0.1− | 2000 03 31 | 046 | 0.1− | 0.1+ | 2002 03 11 | 151 | 0.4− | 0.2− | 2004 03 25 | 704 | 0.2+ | 1.4− |
| 2000 03 13 | 046 | 0.5+ | 0.4+ | 2001 03 16 | 704 | 0.1+ | 0.7+ | 2003 03 24 | 204 | 0.2− | 0.1− | 2000 03 31 | 046 | 0.0− | 0.1+ | 2002 03 11 | 151 | 0.1+ | 1.0− | 2004 03 25 | 704 | 0.3+ | 1.3− |
| 2000 03 13 | 046 | 0.1− | 0.2+ | 2001 03 18 | 360 | 0.1− | 0.3+ | 2003 03 24 | 204 | 0.5− | 0.4− | 2000 03 31 | 046 | 0.2+ | 0.1+ | 2002 03 16 | 113 | 0.4+ | 0.6+ | 2004 03 25 | 704 | 0.6+ | 1.5− |
| 2000 03 13 | 046 | 0.4+ | 0.4+ | 2001 03 18 | 360 | 0.1− | 0.3+ | 2003 03 24 | 204 | 0.2− | 0.0+ | 2000 03 31 | 046 | 0.4+ | 0.0+ | 2002 03 16 | 113 | 0.6+ | 0.3+ | 2004 03 25 | 704 | 0.5+ | 0.3+ |
| 2000 03 13 | 046 | 0.3+ | 0.7+ | 2001 03 18 | 360 | 0.2+ | 0.0+ | 2003 03 24 | 204 | 0.2− | 0.2− | 2000 04 01 | 670 | 0.5− | 0.6− | 2002 03 16 | 113 | 0.1− | 0.6+ | 2004 04 14 | 704 | 0.2− | 0.5− |
| 2000 03 13 | 461 | 0.0+ | 0.2− | 2001 03 20 | 699 | 0.5+ | 0.0+ | 2003 03 25 | 704 | 0.2+ | 0.2− | 2000 04 01 | 670 | 0.4− | 0.5− | 2002 03 16 | 113 | 0.3+ | 0.7+ | 2004 04 14 | 704 | 0.5− | 0.2+ |
| 2000 03 13 | 461 | 0.3− | 0.0+ | 2001 03 20 | 699 | 0.0+ | 0.0− | 2003 03 25 | 704 | 0.2− | 0.2+ | 2000 04 01 | 670 | 0.3+ | 0.5− | 2002 03 16 | 113 | 0.3+ | 0.4+ | 2004 04 14 | 704 | 0.3− | 0.3+ |
| 2000 03 13 | 461 | 0.0− | 0.3+ | 2001 03 20 | 699 | 0.5+ | 0.2+ | 2003 03 25 | 704 | 0.2+ | 0.3+ | 2000 04 01 | 151 | 0.6− | 0.7− | 2002 03 20 | 704 | 0.2+ | 1.6− | 2004 04 15 | 704 | 0.9+ | 0.6+ |
| 2000 03 13 | 461 | 0.3− | 0.1+ | 2001 03 20 | 699 | 0.3+ | 0.0− | 2003 03 25 | 704 | 0.2+ | 0.4+ | 2000 04 01 | 151 | 0.2− | 0.5+ | 2002 03 20 | 704 | 0.3+ | 1.6− | 2004 04 15 | 704 | 1.1+ | 0.5+ |
| 2000 03 13 | 587 | 1.0− | 1.1− | 2001 03 22 | 610 | 0.4+ | 0.1+ | 2003 03 27 | 084 | 1.4− | 0.7− | 2000 04 01 | 151 | 0.5− | 0.3+ | 2002 03 20 | 704 | 0.1− | 1.8− | 2004 04 15 | 704 | 0.2+ | 0.1+ |
| 2000 03 13 | 587 | 0.3− | 0.9− | 2001 03 22 | 610 | 0.3+ | 0.0+ | 2003 03 29 | 552 | 0.1+ | 0.6+ | 2000 04 01 | 151 | 0.4− | 0.7+ | 2002 03 20 | 704 | 0.1+ | 1.8− | 2004 04 15 | 704 | 0.1− | 0.4− |
| 2000 03 13 | 587 | 0.2+ | 0.0+ | 2001 03 22 | 610 | 0.3+ | 0.0− | 2003 03 29 | 552 | 0.9+ | 0.0+ | 2000 04 01 | 151 | 0.3+ | 0.4+ | 2002 03 20 | 704 | 0.0− | 1.7− | 2004 04 19 | 704 | 0.6− | 0.7+ |
| 2000 03 14 | 850 | 0.1− | 0.3− | 2001 03 22 | 610 | 0.2+ | 0.1− | 2003 03 29 | 552 | 0.3− | 0.5+ | 2000 04 01 | 151 | 0.7− | 0.6+ | 2002 03 20 | 644 | 0.1− | 0.9+ | 2004 04 19 | 704 | 0.0+ | 0.3+ |
| 2000 03 14 | 850 | 0.3− | 0.7+ | 2001 03 22 | 610 | 0.4+ | 0.3− | 2003 03 29 | 552 | 0.8− | 0.5− | 2000 04 01 | 610 | 0.4+ | 0.2+ | 2002 03 20 | 644 | 0.1− | 0.8+ | 2004 04 19 | 704 | 0.2+ | 0.8− |
| 2000 03 14 | 850 | 0.1− | 0.5− | 2001 03 24 | 699 | 0.2+ | 0.1− | 2003 04 03 | 704 | 0.1+ | 1.0+ | 2000 04 01 | 610 | 0.2+ | 0.3+ | 2002 03 20 | 644 | 0.1+ | 0.8+ | 2004 04 19 | 704 | 0.4+ | 0.4+ |
| 2000 03 14 | 850 | 0.6+ | 0.1+ | 2001 03 24 | 699 | 0.6+ | 0.0− | 2003 04 03 | 704 | 0.7− | 0.2+ | 2000 04 01 | 610 | 0.1+ | 0.2+ | 2002 03 23 | 644 | 0.2+ | 0.8+ | 2004 04 19 | 704 | 0.7+ | 0.3+ |
| 2000 03 14 | 402 | 0.3− | 0.0− | 2001 03 24 | 699 | 0.4+ | 0.2− | 2003 04 03 | 704 | 0.4− | 0.1+ | 2000 04 01 | 610 | 0.1− | 0.3+ | 2002 03 23 | 644 | 0.3+ | 0.8+ | 2004 04 22 | 704 | 0.1− | 1.4+ |
| 2000 03 14 | 402 | 0.2− | 0.2+ | 2001 03 24 | 699 | 0.4+ | 0.2+ | 2003 04 03 | 704 | 0.8+ | 0.6+ | 2000 04 02 | 704 | 0.2+ | 0.1− | 2002 03 23 | 644 | 0.3+ | 1.0+ | 2004 04 22 | 704 | 0.8− | 0.3+ |
| 2000 03 14 | 402 | 0.0+ | 0.2+ | 2001 03 26 | 726 | 0.8− | 0.2+ | 2003 04 03 | 704 | 0.3+ | 0.7+ | 2000 04 02 | 704 | 0.4+ | 0.3− | 2002 03 29 | 185 | 0.6− | 0.6+ | 2004 04 22 | 704 | 0.1− | 0.4+ |
| 2000 03 14 | 402 | 0.2− | 0.1+ | 2001 03 26 | 726 | 0.7+ | 0.0− | 2003 04 03 | 704 | 0.7+ | 0.5− | 2000 04 02 | 704 | 0.6+ | 0.1− | 2002 03 29 | 185 | 0.4+ | 0.2− | 2004 04 22 | 704 | 0.2− | 0.2+ |
| 2000 03 15 | 858 | 0.0+ | 0.1− | 2001 03 26 | 726 | 0.2+ | 0.4− | 2003 04 03 | 704 | 0.0− | 0.7+ | 2000 04 02 | 704 | 0.6+ | 0.1− | 2002 03 29 | 185 | 0.6− | 1.2+ | 2004 04 22 | 704 | 0.3− | 0.2− |
| 2000 03 15 | 858 | 0.3+ | 0.4+ | 2001 03 31 | 151 | 0.3− | 0.0+ | 2003 04 03 | 704 | 0.2+ | 0.0− | 2000 04 02 | 704 | 0.6+ | 0.1− | 2002 03 29 | 185 | 0.5− | 0.4+ | 2005 02 11 | 734 | 0.4− | 1.5− |
| 2000 03 15 | 858 | 0.3+ | 0.1+ | 2001 03 31 | 151 | 0.1+ | 0.2+ | 2004 02 10 | 649 | 0.2+ | 0.8− | 2000 04 02 | 151 | 0.8+ | 0.1+ | 2002 03 29 | 185 | 0.5+ | 0.1− | 2005 02 11 | 734 | 1.2− | 0.7− |
| 2000 03 15 | 651 | 2.0− | 0.3+ | 2001 03 31 | 151 | 0.0+ | 0.1− | 2004 02 10 | 649 | 1.9+ | 0.4− | 2000 04 02 | 151 | 0.0+ | 0.9+ | 2002 03 30 | 046 | 0.0+ | 0.6− | 2005 02 11 | 734 | 0.8+ | 0.8− |
| 2000 03 15 | 651 | 2.2− | 0.1+ | 2001 03 31 | 151 | 0.3+ | 0.1+ | 2004 02 10 | 649 | 1.2− | 0.3+ | 2000 04 02 | 151 | 0.0+ | 0.4+ | 2002 03 30 | 046 | 0.5− | 0.7− | 2005 02 11 | 734 | 0.3− | 0.9− |
| 2000 03 15 | 413 | 0.0+ | 0.0− | 2001 03 31 | 151 | 0.0− | 0.6− | 2004 02 10 | 649 | 0.6− | 0.0+ | 2000 04 02 | 151 | 0.4+ | 0.4+ | 2002 03 30 | 046 | 0.2− | 0.4− | 2005 02 28 | 240 | 0.3+ | 0.2− |
| 2000 03 15 | 413 | 0.1+ | 0.1+ | 2001 04 01 | 205 | 1.5+ | 1.5− | 2004 02 16 | 704 | 0.3+ | 0.7+ | 2000 04 02 | 151 | 0.4+ | 0.5+ | 2002 03 30 | 046 | 0.2− | 0.2− | 2005 02 28 | 240 | 0.3+ | 0.1+ |
| 2000 03 15 | 422 | 0.2+ | 0.3− | 2001 04 01 | 205 | 1.8+ | 0.1− | 2004 02 16 | 704 | 0.0+ | 0.6+ | 2000 04 02 | 151 | 0.4+ | 0.5+ | 2002 03 30 | 046 | 0.0− | 0.2− | 2005 02 28 | 240 | 0.5+ | 0.1+ |
| 2000 03 15 | 422 | 0.1− | 0.3− | 2001 04 01 | 205 | 1.2− | 0.4+ | 2004 02 16 | 704 | 0.8+ | 1.0+ | 2000 04 03 | 670 | 0.7− | 0.0+ | 2002 03 30 | 046 | 0.1+ | 0.4− | 2005 02 28 | 240 | 0.3− | 0.2− |
| | | | | | | | | | | | | 2000 04 03 | 670 | 0.8− | 0.0+ | 2002 03 31 | 644 | 0.1+ | 0.1+ | 2005 02 28 | 240 | 0.2− | 0.3− |
| | | | | | | | | | | | | 2000 04 05 | 860 | 0.2+ | 0.4+ | 2002 03 31 | 644 | 0.1+ | 0.0− | 2005 03 01 | 703 | 0.2+ | 0.0− |
| | | | | | | | | | | | | 2000 04 05 | 860 | 1.9− | 0.7+ | 2002 03 31 | 644 | 0.1+ | 0.2+ | 2005 03 01 | 703 | 0.3− | 0.7+ |
| | | | | | | | | | | | | 2000 04 05 | 860 | 1.7− | 0.1− | 2002 04 01 | 644 | 0.1+ | 0.4+ | 2005 03 01 | 703 | 0.0− | 0.4− |
| | | | | | | | | | | | | 2000 04 06 | 900 | 0.4− | 0.2+ | 2002 04 01 | 644 | 0.0− | 0.4+ | 2005 03 01 | 703 | 0.1+ | 0.4− |
| | | | | | | | | | | | | 2000 04 06 | 900 | 0.5− | 0.3+ | 2002 04 01 | 644 | 0.1+ | 0.3+ | 2005 03 02 | 240 | 0.8− | 0.1− |
| | | | | | | | | | | | | 2000 04 06 | 071 | 0.7− | 0.6− | 2002 04 01 | 151 | 0.0+ | 0.4− | 2005 03 02 | 240 | 0.2− | 0.3− |
| | | | | | | | | | | | | 2000 04 06 | 071 | 0.2+ | 0.3− | 2002 04 01 | 151 | 0.7− | 0.3+ | 2005 03 02 | 240 | 0.2+ | 0.2− |
| | | | | | | | | | | | | 2000 04 06 | 071 | 0.4+ | 0.1+ | 2002 04 01 | 151 | 0.1− | 0.2− | 2005 03 02 | 240 | 0.2+ | 0.0− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 071 | 0.1+ | 0.3− | 2002 04 01 | 151 | 0.4− | 0.0− | 2005 03 02 | 240 | 0.1+ | 0.1− | | |
| 2000 04 06 | 071 | 0.2+ | 0.2− | 2002 04 04 | 704 | 0.2+ | 0.1+ | 2005 03 02 | 240 | 0.2+ | 0.2− | | |
| 2000 04 06 | 071 | 0.2+ | 0.4− | 2002 04 04 | 704 | 0.6− | 2.3− | 2005 03 02 | 240 | 0.2+ | 0.3− | | |
| 2000 04 06 | 071 | 0.3+ | 0.4− | 2002 04 04 | 704 | 0.4+ | 0.4+ | 2005 03 02 | 240 | 0.2+ | 0.3− | | |
| 2000 04 06 | 071 | 0.0− | 0.4− | 2002 04 04 | 704 | 0.3+ | 0.6+ | 2005 03 02 | A41 | 1.1+ | 0.8+ | | |
| 2000 04 06 | 071 | 0.4+ | 0.4− | 2002 04 04 | 704 | 0.1+ | 0.2+ | 2005 03 02 | A41 | 1.0+ | 0.9+ | | |
| 2000 04 07 | 860 | 0.8− | 0.9+ | 2002 04 06 | 215 | 0.4− | 0.8+ | 2005 03 02 | A41 | 0.0− | 0.2− | | |
| 2000 04 07 | 151 | 0.1− | 0.5− | 2002 04 06 | 215 | 0.2+ | 0.3+ | 2005 03 08 | 703 | 0.4− | 0.5− | | |
| 2000 04 07 | 860 | 1.0− | 0.9+ | 2002 04 06 | 215 | 0.2+ | 1.1+ | 2005 03 08 | 703 | 0.3+ | 1.2− | | |
| 2000 04 07 | 860 | 1.2+ | 0.4+ | 2002 04 17 | 704 | 0.1+ | 0.8+ | 2005 03 08 | 703 | 0.2− | 0.2+ | | |
| 2000 04 07 | 151 | 0.6− | 0.5− | 2002 04 17 | 704 | 0.4+ | 0.5+ | 2005 03 08 | 703 | 0.1− | 0.7− | | |
| 2000 04 07 | 151 | 0.2+ | 1.2− | 2002 04 17 | 704 | 0.4+ | 1.4+ | 2005 03 09 | 104 | 0.1+ | 0.0+ | | |
| 2000 04 07 | 151 | 0.3− | 0.1− | 2002 04 17 | 704 | 0.0− | 2.0+ | 2005 03 09 | 104 | 0.0− | 0.1− | | |
| 2000 04 07 | 151 | 0.6+ | 0.7− | 2002 04 17 | 704 | 0.6+ | 1.2+ | 2005 03 09 | 104 | 0.3+ | 0.2− | | |
| 2000 04 07 | 151 | 1.3− | 1.2− | 2003 02 01 | 734 | 0.3− | 0.4+ | 2005 03 10 | A53 | 0.8− | 0.8− | | |
| 2000 04 07 | 587 | 0.4+ | 0.3− | 2003 02 01 | 734 | 0.5+ | 0.0+ | 2005 03 10 | A53 | 1.4− | 0.8− | | |
| 2000 04 07 | 587 | 0.1+ | 0.3− | 2003 02 24 | 240 | 1.1+ | 0.9+ | 2005 03 10 | A53 | 1.2− | 1.2− | | |
| 2000 04 07 | 587 | 0.6+ | 0.2− | 2003 02 24 | 240 | 0.4+ | 0.1+ | 2005 03 13 | A30 | 0.5− | 0.5− | | |
| 2000 04 07 | 610 | 1.1+ | 0.0+ | 2003 02 25 | 240 | 0.7− | 0.2+ | 2005 03 13 | A30 | 0.5− | 0.5− | | |
| 2000 04 07 | 151 | 2.4+ | 0.6− | 2003 02 25 | 240 | 0.6+ | 0.0− | 2005 03 13 | A30 | 0.4− | 0.6− | | |
| 2000 04 07 | 610 | 1.0+ | 0.0− | 2003 02 25 | 246 | 0.8+ | 0.1− | 2005 03 13 | A30 | 0.4− | 0.7− | | |
| 2000 04 07 | 151 | 2.0+ | 0.1− | 2003 02 25 | 246 | 0.6+ | 0.1− | 2005 03 13 | A30 | 0.4− | 0.7− | | |
| 2000 04 07 | 610 | 0.8+ | 0.2− | 2003 02 25 | 246 | 0.9+ | 0.5− | 2005 03 14 | 703 | 0.7− | 0.1− | | |
| 2000 04 07 | 151 | 0.9+ | 0.2+ | 2003 02 25 | 246 | 0.7+ | 1.0− | 2005 03 14 | 703 | 0.3− | 0.4− | | |
| 2000 04 07 | 610 | 0.8+ | 0.2− | 2003 02 25 | 246 | 0.8+ | 0.5− | 2005 03 14 | 703 | 0.6− | 0.2− | | |
| 2000 04 07 | 151 | 0.9+ | 0.4+ | 2003 02 25 | 246 | 0.8+ | 0.3− | 2005 03 14 | 703 | 0.4− | 0.1− | | |
| 2000 04 07 | 151 | 0.7+ | 0.3− | 2003 02 25 | 608 | 0.0+ | 0.9+ | 2005 04 03 | 246 | 0.6+ | 0.0+ | | |
| 2000 04 07 | 151 | 1.5+ | 0.0+ | 2003 02 25 | 608 | 0.5+ | 1.0+ | 2005 04 03 | 246 | 0.9+ | 0.2− | | |
| 2000 04 08 | 610 | 0.6− | 0.1+ | 2003 02 25 | 608 | 0.7− | 0.0− | 2005 04 03 | 246 | 0.7+ | 0.2+ | | |
| 2000 04 08 | 610 | 0.7− | 0.0− | 2003 02 25 | 113 | 0.4+ | 0.7+ | 2005 04 03 | 246 | 0.7+ | 0.2+ | | |
| 2000 04 08 | 610 | 0.8− | 0.0− | 2003 02 25 | 113 | 0.3− | 0.2− | 2005 04 03 | 246 | 0.7+ | 0.3− | | |
| 2000 04 08 | 610 | 0.8− | 0.0− | 2003 02 25 | 113 | 0.3+ | 0.4+ | 2005 04 10 | 703 | 1.1− | 0.1+ | | |
| 2000 04 08 | 610 | 0.8− | 0.0+ | 2003 02 25 | 113 | 0.6+ | 0.4+ | 2005 04 10 | 703 | 0.6− | 0.4− | | |
| 2000 04 09 | 251/ | 251 | 0.899+ D | 2003 02 25 | 113 | 0.4− | 0.1− | 2005 04 10 | 703 | 0.6− | 0.5+ | | |
| 2000 04 09 | 046 | 0.2+ | 0.3− | 2003 03 03 | 084 | 1.9− | 0.0+ | 2005 04 10 | 703 | 2.1− | 0.5+ | | |
| 2000 04 09 | 046 | 0.2− | 0.7+ | 2003 03 08 | 704 | 0.3+ | 0.5+ | 2006 01 28 | A74 | 0.2− | 0.9− | | |
| 2000 04 09 | 046 | 0.0+ | 0.2− | 2003 03 08 | 704 | 0.2+ | 0.3+ | 2006 01 28 | A74 | 0.7− | 0.9− | | |
| 2000 04 09 | 046 | 0.2+ | 0.2+ | 2003 03 08 | 704 | 0.1− | 0.0+ | 2006 01 28 | A74 | 1.5− | 0.7− | | |
| 2000 04 09 | 046 | 0.4+ | 0.1+ | 2003 03 08 | 704 | 0.0+ | 0.2+ | 2006 02 10 | A13 | 0.7− | 0.0− | | |
| 2000 04 09 | 046 | 0.4+ | 0.0− | 2003 03 08 | 704 | 0.2+ | 0.1+ | 2006 02 10 | A13 | 0.9− | 0.4+ | | |
| 2000 04 10 | 251/ | 251 | 0.751+ D | 2003 03 08 | 151 | 1.0− | 0.8+ | 2006 02 10 | A13 | 0.3− | 0.1+ | | |
| 2000 04 10 | 670 | 1.1− | 0.5− | 2003 03 08 | 151 | 0.7− | 0.0− | 2006 03 02 | A74 | 0.2− | 0.8− | | |
| 2000 04 10 | 670 | 0.4− | 0.2− | 2003 03 08 | 151 | 0.1− | 0.1+ | 2006 03 02 | A74 | 0.1− | 0.2− | | |
| 2000 04 10 | 670 | 0.3− | 0.3− | 2003 03 08 | 151 | 0.1− | 0.1− | 2006 03 02 | A74 | 0.1− | 0.1− | | |
| 2000 04 10 | 251/ | 251 | 0.785+ D | 2003 03 08 | 151 | 0.1+ | 0.1+ | 2006 03 02 | A74 | 0.0− | 0.1− | | |
| 2000 04 11 | 670 | 1.6− | 0.0− | 2003 03 08 | 151 | 1.8− | 0.8+ | 2006 03 23 | 113 | 0.7+ | 0.5− | | |
| 2000 04 11 | 670 | 2.0− | 0.3− | 2003 03 08 | 151 | 0.8− | 0.2+ | 2006 03 23 | 113 | 0.1+ | 0.7− | | |
| 2000 04 11 | 670 | 0.0+ | 1.0− | 2003 03 08 | 151 | 0.4− | 1.3+ | 2006 03 23 | 113 | 0.1− | 0.8− | | |
| 2000 04 13 | 118 | 0.7+ | 0.7− | 2003 03 08 | 941 | 0.7− | 0.3− | 2006 03 24 | 703 | 0.5− | 1.3− | | |
| 2000 04 13 | 118 | 0.3+ | 0.3+ | 2003 03 08 | 941 | 0.1+ | 0.0+ | 2006 03 24 | 703 | 0.3+ | 1.5− | | |
| 2000 04 14 | 118 | 2.0− | 0.2− | 2003 03 08 | 941 | 0.7+ | 0.6− | 2006 03 24 | 703 | 0.8− | 1.3− | | |
| 2000 04 14 | 118 | 2.4+ | 0.0+ | 2003 03 09 | 941 | 0.9+ | 0.2+ | 2006 03 24 | 703 | 1.0− | 0.9− | | |
| 2001 02 14 | 046 | 0.4+ | 0.3+ | 2003 03 09 | 941 | 1.9+ | 0.2− | 2006 03 25 | 941 | 0.6− | 0.5+ | | |
| 2001 02 15 | 046 | 0.4+ | 0.3+ | 2003 03 09 | 084 | 2.1− | 0.8− | 2006 03 25 | 941 | 0.0− | 0.3+ | | |
| 2001 02 15 | 046 | 0.7+ | 1.0+ | 2003 03 20 | 151 | 0.3− | 0.2+ | 2006 03 25 | 941 | 0.4+ | 0.0+ | | |
| 2001 02 15 | 046 | 0.4+ | 1.1+ | 2003 03 20 | 151 | 0.2+ | 0.2+ | 2006 03 25 | 941 | 0.5+ | 0.3− | | |
| 2001 02 15 | 046 | 0.1+ | 1.1+ | 2003 03 20 | 151 | 0.2− | 0.2+ | | | | | | |

**(138176)∗ 2000 EM$_{105}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 219.10615 | | (2000.0) | | | | |
| $n$ | 0.22759750 | $\omega$ | 64.59219 | | −0.80613312 | | −0.56928065 |
| $a$ | 2.6567930 | $\Omega$ | 80.30869 | | +0.46680882 | | −0.77949581 |
| $e$ | 0.0665348 | $i$ | 9.42732 | | +0.36364670 | | −0.26135383 |
| $P$ | 4.33 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.9− | 0.6+ | 2002 11 05 | 704 | (1.7+ | 1.5+) | 2004 03 23 | 704 | 1.0+ | 0.3+ | |
| 2000 03 11 | 699 | 0.6− | 0.3+ | 2002 11 05 | 704 | (1.1+ | 1.9+) | 2004 03 23 | 704 | 0.8+ | 0.5− | |
| 2000 03 11 | 699 | 0.4− | 0.2− | 2002 11 05 | 704 | 1.2+ | 0.4− | 2004 03 23 | 704 | 0.5+ | 0.6− | |
| 2000 03 11 | 699 | 0.3− | 0.2− | 2002 11 05 | 704 | 1.2− | 0.7+ | 2004 03 23 | 704 | 0.8+ | 0.7− | |
| 2000 03 12 | 703 | 0.1+ | 0.9+ | 2003 12 19 | 704 | 0.5− | 0.3+ | 2004 03 23 | 704 | 0.1− | 0.4− | |
| 2000 03 12 | 703 | 0.6+ | 0.9+ | 2003 12 19 | 704 | 0.5− | 0.5+ | 2004 03 25 | 704 | 0.4+ | 0.0 | |
| 2000 03 12 | 703 | 0.7− | 0.8+ | 2003 12 19 | 704 | 0.3− | 0.2+ | 2004 03 25 | 704 | 0.0 | 0.9+ | |
| 2000 03 12 | 703 | 0.2+ | 0.0 | 2003 12 27 | 704 | 0.1+ | 0.0 | 2004 03 25 | 704 | 0.3+ | 0.8− | |
| 2000 03 15 | 699 | 0.4− | 0.4+ | 2003 12 27 | 704 | 0.2+ | 0.6− | 2004 03 25 | 704 | 0.8− | 0.1+ | |
| 2000 03 15 | 699 | 0.3− | 0.9+ | 2003 12 27 | 704 | 0.3+ | 0.4− | 2004 03 25 | 704 | 0.4− | 0.3− | |
| 2000 03 15 | 699 | 0.3− | 0.2+ | 2003 12 27 | 704 | 0.2− | 0.3− | 2006 08 21 | 644 | 0.9− | 0.3+ | |
| 2000 03 15 | 699 | 0.3+ | 0.3− | 2003 12 27 | 704 | 0.2+ | 0.2+ | 2006 08 21 | 644 | 0.4− | 0.1− | |
| 2000 03 29 | 704 | 0.3+ | 0.0 | 2003 12 29 | 704 | 0.7+ | 0.2+ | 2006 08 21 | 644 | 0.6− | 0.5+ | |
| 2000 03 29 | 704 | 0.5+ | 0.8+ | 2003 12 29 | 704 | 0.1− | 0.8+ | 2006 09 17 | 699 | 1.2− | 0.3+ | |
| 2000 03 29 | 704 | 0.4+ | 0.5− | 2003 12 29 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 699 | 0.4+ | 0.8+ | |
| 2000 03 29 | 704 | 0.4+ | 0.4+ | 2003 12 29 | 704 | 0.2− | 0.4+ | 2006 09 17 | 699 | 0.7− | 0.7+ | |
| 2000 03 29 | 704 | 0.1+ | 0.3+ | 2003 12 29 | 704 | 0.7+ | 0.8+ | 2006 09 17 | 699 | 0.4− | 0.2+ | |
| 2000 04 03 | 704 | 0.1− | 0.6+ | 2004 01 28 | 703 | 0.8− | 0.6− | 2006 09 19 | 703 | 0.7+ | 0.1− | |
| 2000 04 03 | 704 | 0.4− | 0.6+ | 2004 01 28 | 703 | 0.7− | 0.5+ | 2006 09 19 | 703 | 0.9− | 1.2+ | |
| 2000 04 03 | 704 | 0.0 | 0.7+ | 2004 01 28 | 703 | 0.3− | 0.5− | 2006 09 19 | 703 | 0.2− | 0.3+ | |
| 2000 04 03 | 704 | 0.7+ | 1.7+ | 2004 01 28 | 703 | (2.2− | 0.8+) | 2006 09 19 | 703 | 1.2− | 0.0 | |
| 2000 04 03 | 704 | 0.1+ | 0.9+ | 2004 01 30 | 704 | 0.4− | 0.1− | 2006 09 25 | 703 | 0.3− | 0.5+ | |
| 2000 04 08 | 704 | 0.6+ | 0.7+ | 2004 01 30 | 704 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.5+ | |
| 2000 04 08 | 704 | 1.0+ | 0.8− | 2004 01 30 | 704 | 0.4− | 0.8− | 2006 09 25 | 703 | 0.1− | 0.1− | |
| 2000 04 08 | 704 | 0.4+ | 0.8+ | 2004 01 30 | 704 | 1.1− | 0.7+ | 2006 09 25 | 703 | (1.7− | 0.7−) | |
| 2000 04 08 | 704 | 0.5+ | 0.4+ | 2004 01 30 | 704 | 0.6− | 0.2− | 2006 10 22 | 644 | 0.3− | 0.3+ | |
| 2000 04 08 | 704 | 0.4− | 0.1− | 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | |
| 2000 05 03 | 704 | 0.7+ | 0.4+ | 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.6+ | |
| 2000 05 03 | 704 | 0.4+ | 0.7+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.4+ | |
| 2000 05 03 | 704 | 0.8+ | 0.5+ | 2004 02 15 | 704 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.1+ | |
| 2000 05 03 | 704 | 1.1+ | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.1+ | |
| 2000 05 03 | 704 | 0.4+ | 0.9− | 2004 02 15 | 704 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.5+ | |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.9+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.7+ | |
| 2002 10 31 | 704 | 0.0 | 0.8− | 2004 02 27 | 704 | 0.7+ | 1.0+ | 2006 10 23 | 644 | 0.4− | 0.5+ | |
| 2002 10 31 | 704 | 1.0+ | 0.2+ | 2004 02 27 | 704 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.1− | 1.2+ | |
| 2002 10 31 | 704 | 0.1+ | 0.1− | 2004 02 27 | 704 | 1.4+ | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.0 | |
| 2002 10 31 | 704 | 0.4− | 0.1− | 2004 03 14 | 704 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.3− | 0.9+ | |
| 2002 10 31 | 608 | 0.1+ | 0.6+ | 2004 03 14 | 704 | 0.4+ | 0.5− | 2006 10 28 | 703 | 0.5− | 1.8+ | |
| 2002 10 31 | 608 | 0.1− | 0.9+ | 2004 03 14 | 704 | 0.2+ | 0.0 | | | | | |
| 2002 10 31 | 608 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.1− | 0.5− | | | | | |

**(138177)∗ 2000 EP$_{105}$ = 1996 FQ$_{21}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (MPC 40184)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 188.82159 | | (2000.0) | | | | |
| $n$ | 0.23664189 | $\omega$ | 169.40185 | | −0.91744945 | | +0.36970335 |
| $a$ | 2.5886597 | $\Omega$ | 33.50857 | | −0.38172584 | | −0.71385883 |
| $e$ | 0.0549543 | $i$ | 15.44158 | | −0.11212445 | | −0.59474785 |
| $P$ | 4.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 809 | 0.2− | 0.5− | 2002 11 14 | 704 | 1.2− | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.1− | |
| 1996 03 24 | 809 | 1.8− | 0.4− | 2002 11 14 | 704 | (1.3− | 1.8−) | 2006 09 30 | 703 | 0.3− | 0.5+ | |
| 1996 03 24 | 809 | 0.7− | 0.4− | 2002 11 14 | 704 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.9+ | |
| 1996 03 26 | 809 | 1.7+ | 1.6+ | 2002 11 14 | 704 | 0.5+ | 1.3− | 2006 09 30 | 703 | 1.0− | 0.7− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 809 | 0.1− | 1.2+ | 2002 11 25 | 644 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.1− | 0.6+ | | |
| 1996 03 26 | 809 | 0.1+ | 1.8+ | 2002 11 25 | 644 | 0.5+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.1+ | | |
| 2000 03 11 | 699 | 0.2− | 0.0 | 2002 11 25 | 644 | 0.3+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.2+ | | |
| 2000 03 11 | 699 | 0.6− | 0.2+ | 2002 12 12 | 644 | 0.3+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ | | |
| 2000 03 11 | 699 | 0.0 | 0.3− | 2002 12 12 | 644 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.0 | | |
| 2000 03 11 | 699 | 1.0− | 0.0 | 2002 12 12 | 644 | 0.3+ | 0.5− | 2006 10 15 | 691 | 0.1+ | 0.1+ | | |
| 2000 03 15 | 699 | 0.0 | 0.4− | 2004 02 16 | 704 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1+ | | |
| 2000 03 15 | 699 | 0.0 | 0.3− | 2004 02 16 | 704 | 1.1− | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1− | | |
| 2000 03 15 | 699 | 0.1− | 0.5− | 2004 02 16 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.6− | 0.4+ | | |
| 2000 03 15 | 699 | 1.0+ | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.3− | | |
| 2000 03 29 | 704 | 1.2+ | 0.3− | 2004 03 14 | 704 | 0.6+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.3+ | | |
| 2000 03 29 | 704 | 0.4+ | 0.2+ | 2004 03 14 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 1.0+ | | |
| 2000 03 29 | 704 | 1.3+ | 0.3+ | 2004 03 14 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− | | |
| 2000 03 29 | 704 | 1.2+ | 0.6+ | 2004 03 14 | 704 | 1.2− | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2000 03 29 | 704 | (2.1+ | 0.8+) | 2004 03 18 | 703 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2000 04 05 | 704 | 0.3+ | 0.1− | 2004 03 18 | 703 | 1.4− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2000 04 05 | 704 | 0.4− | 0.5+ | 2004 03 18 | 703 | 0.8− | 0.9+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.1− | 2004 03 18 | 703 | 0.0 | 1.2− | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2000 04 08 | 704 | 1.2+ | 0.0 | 2004 03 25 | 704 | 1.2+ | 0.6− | 2006 11 16 | 704 | 0.6+ | 0.4+ | | |
| 2000 04 08 | 704 | 0.1+ | 0.2− | 2004 03 25 | 704 | 0.1− | 0.9− | 2006 11 16 | 704 | 0.0 | 1.2+ | | |
| 2000 04 08 | 704 | 1.2+ | 0.8+ | 2004 03 25 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | (1.5+ | 0.5−) | | |
| 2000 04 08 | 704 | 0.7+ | 0.8− | 2004 03 25 | 704 | 0.3+ | 1.0+ | 2006 11 16 | 704 | 0.2+ | 0.2− | | |
| 2000 04 08 | 704 | 1.5− | 0.7+ | 2004 04 08 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.1− | | |
| 2000 04 25 | 699 | 0.6− | 0.6+ | 2004 04 08 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.4+ | | |
| 2000 04 25 | 699 | 0.4+ | 0.4+ | 2004 04 08 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.8+ | | |
| 2000 04 25 | 699 | 1.0− | 0.1+ | 2004 04 14 | 703 | 0.7− | 0.2+ | 2006 11 19 | 704 | 1.0+ | 0.8+ | | |
| 2000 04 25 | 699 | 1.0+ | 0.5+ | 2004 04 14 | 703 | (1.2− | 2.3+) | 2006 11 22 | 704 | 0.2+ | 0.7+ | | |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 04 14 | 703 | 0.2− | 0.5+ | 2006 11 22 | 704 | 0.4+ | 0.6− | | |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 04 14 | 703 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.9− | 0.1+ | | |
| 2002 11 08 | 704 | 0.3+ | 0.4− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.1− | | |
| 2002 11 08 | 704 | 0.1+ | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.4− | 0.9+ | | |
| 2002 11 08 | 704 | 0.4+ | 1.1− | 2006 09 25 | G96 | 0.2− | 0.4− | | | | | | |
| 2002 11 08 | 704 | 1.2+ | 1.0− | 2006 09 25 | G96 | 0.0 | 0.3− | | | | | | |

**(138178)∗ 2000 EK$_{106}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.65142 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22684595 | $\omega$ | 117.24004 | | +0.06348715 | +0.99227232 | |
| $a$ | 2.6626578 | $\Omega$ | 155.68359 | | −0.98250478 | +0.08088537 | |
| $e$ | 0.0791401 | $i$ | 15.00455 | | −0.17508208 | −0.09409145 | |
| $P$ | 4.34 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.2− | 0.0 | 2001 09 17 | 699 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.2− | 0.9+ | | |
| 2000 03 11 | 699 | 0.2− | 0.4+ | 2001 09 17 | 699 | 0.5+ | 1.2− | 2004 03 18 | 704 | 0.2− | 0.7+ | | |
| 2000 03 11 | 699 | 1.0− | 0.1− | 2001 09 17 | 699 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.6− | 0.2+ | | |
| 2000 03 11 | 699 | 0.6− | 0.8− | 2001 09 17 | 699 | 0.6− | 1.0− | 2004 03 22 | 704 | 0.7+ | 0.0 | | |
| 2000 03 15 | 699 | 0.7− | 0.8+ | 2001 09 20 | 704 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.4− | | |
| 2000 03 15 | 699 | 1.1+ | 0.8+ | 2001 09 20 | 704 | 0.5− | 0.8+ | 2004 03 22 | 704 | 0.1+ | 0.3+ | | |
| 2000 03 15 | 699 | 0.1+ | 0.5+ | 2001 09 20 | 704 | 0.2− | 0.4+ | 2004 03 22 | 704 | 0.5+ | 0.1− | | |
| 2000 03 15 | 699 | 0.2+ | 0.7− | 2001 09 20 | 704 | 0.6− | 0.5+ | 2004 03 26 | 703 | (1.7+ | 0.8−) | | |
| 2000 03 29 | 704 | 0.4− | 0.1+ | 2001 09 20 | 704 | 0.7− | 0.5− | 2004 03 26 | 703 | (1.8+ | 1.0−) | | |
| 2000 03 29 | 704 | 0.3− | 0.2− | 2001 09 22 | 691 | 0.4+ | 0.3+ | 2004 03 26 | 703 | 1.3+ | 0.4− | | |
| 2000 03 29 | 704 | 0.2− | 0.8+ | 2001 09 22 | 691 | 0.4+ | 0.6+ | 2004 03 26 | 703 | 0.7+ | 0.1+ | | |
| 2000 03 29 | 704 | 0.5− | 0.6− | 2001 09 22 | 691 | 0.6− | 0.6+ | 2004 03 28 | 704 | 0.2+ | 0.6+ | | |
| 2000 03 29 | 704 | 0.1+ | 0.7+ | 2001 09 23 | 704 | 0.1− | 0.4+ | 2004 03 28 | 704 | 0.7+ | 0.4− | | |
| 2000 04 03 | 704 | 0.3− | 0.3+ | 2001 09 23 | 704 | 0.2− | 0.8+ | 2004 03 28 | 704 | 0.0 | 0.3+ | | |
| 2000 04 03 | 704 | 1.5− | 0.5+ | 2001 09 23 | 704 | 0.4+ | 0.1+ | 2004 03 28 | 704 | 0.0 | 0.2+ | | |
| 2000 04 03 | 704 | 0.6− | 0.3− | 2001 09 23 | 704 | 0.5+ | 0.8+ | 2005 06 09 | 704 | 0.5− | 0.1+ | | |
| 2000 04 03 | 704 | 0.1+ | 0.9+ | 2004 01 23 | 699 | 1.3− | 1.4+ | 2005 06 09 | 704 | 0.2+ | 0.1− | | |
| 2000 04 03 | 704 | 0.3− | 1.5+ | 2004 01 23 | 699 | (2.9− | 0.2+) | 2005 06 09 | 704 | 0.5+ | 0.0 | | |
| 2000 04 08 | 704 | 1.0− | 1.0+ | 2004 01 23 | 699 | 0.3− | 0.2+ | 2005 06 09 | 704 | 0.3− | 0.3+ | | |
| 2000 04 08 | 704 | 0.4− | 0.7+ | 2004 01 23 | 699 | 0.1+ | 0.6+ | 2005 06 09 | 704 | 1.2− | 0.6− | | |
| 2000 04 08 | 704 | 1.7+ | 0.1+ | 2004 02 11 | 703 | (0.7− | 1.7+) | 2005 08 07 | E12 | 0.4+ | 0.8− | | |
| 2000 04 27 | 699 | 1.1− | 0.8+ | 2004 02 11 | 703 | 0.1− | 0.9+ | 2005 08 07 | E12 | 0.0 | 0.2− | | |
| 2000 04 27 | 699 | 0.4+ | 0.1+ | 2004 02 11 | 703 | 1.0− | 0.2+ | 2005 08 07 | E12 | 0.6+ | 0.8+ | | |
| 2000 04 27 | 699 | 0.8+ | 0.9+ | 2004 02 11 | 703 | 0.7+ | 1.2− | 2005 08 07 | E12 | 1.0− | 0.3+ | | |
| 2000 04 27 | 699 | 1.2+ | 0.4− | 2004 02 11 | 644 | 0.3− | 0.2+ | 2006 09 16 | 699 | 1.4− | 0.0 | | |
| 2001 06 17 | 699 | (1.6+ | 0.2−) | 2004 02 11 | 644 | 0.2− | 0.3+ | 2006 09 16 | 699 | 0.3− | 1.4+ | | |
| 2001 06 17 | 699 | 0.6+ | 0.2+ | 2004 02 11 | 644 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.4+ | 0.9+ | | |
| 2001 06 17 | 699 | 1.0+ | 0.7− | 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.1+ | | |
| 2001 06 17 | 699 | (0.8+ | 1.6+) | 2004 02 14 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.2− | | |
| 2001 06 29 | 699 | 0.7+ | 0.2− | 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.0 | | |
| 2001 06 29 | 699 | (0.6− | 2.7+) | 2004 02 17 | 608 | 0.2+ | 0.1− | 2006 09 18 | 703 | (0.7− | 2.2+) | | |
| 2001 06 29 | 699 | 0.1+ | 0.8+ | 2004 02 17 | 608 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.2+ | 0.6+ | | |
| 2001 06 29 | 699 | 0.0 | 0.2+ | 2004 02 17 | 608 | 0.5+ | 0.4− | 2006 09 26 | 703 | 1.2− | 0.6+ | | |
| 2001 07 12 | 608 | 0.5+ | 0.9+ | 2004 02 18 | 704 | 1.1+ | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.1− | | |
| 2001 07 12 | 608 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.3+ | | |
| 2001 07 12 | 608 | 0.1− | 0.3+ | 2004 02 18 | 704 | 1.2+ | 0.6− | 2006 09 26 | 703 | 0.4+ | 0.1+ | | |
| 2001 07 20 | 699 | 0.5− | 0.5+ | 2004 02 19 | 704 | 1.4− | 1.0+ | 2006 09 29 | 699 | 0.4+ | 0.6+ | | |
| 2001 07 20 | 699 | 0.8− | 0.8+ | 2004 02 19 | 704 | 0.8− | 1.0+ | 2006 09 29 | 699 | 1.1− | 1.1− | | |
| 2001 07 20 | 699 | 0.2− | 0.5+ | 2004 02 19 | 704 | 0.5− | 0.5+ | 2006 09 29 | 699 | (0.7− | 2.1+) | | |
| 2001 07 20 | 699 | 0.2− | 0.6+ | 2004 02 19 | 704 | (2.4+ | 0.9+) | 2006 09 29 | 699 | 0.1− | 1.2+ | | |
| 2001 08 08 | 608 | (0.3+ | 2.3+) | 2004 02 19 | 704 | (1.4− | 2.4+) | 2006 10 10 | 644 | 0.2− | 0.7+ | | |
| 2001 08 08 | 608 | 0.3+ | 1.2+ | 2004 02 26 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.5+ | | |
| 2001 08 08 | 608 | 0.8+ | 0.9+ | 2004 02 26 | 704 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.4+ | | |
| 2001 08 10 | 644 | 0.0 | 0.8+ | 2004 02 26 | 704 | 0.5+ | 0.1− | 2006 10 20 | 703 | 0.9+ | 1.3+ | | |
| 2001 08 10 | 644 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.2+ | 0.1− | 2006 10 20 | 703 | 0.2− | 0.8+ | | |
| 2001 08 10 | 644 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.2+ | 0.1− | 2006 10 20 | 703 | 0.2− | 1.1+ | | |
| 2001 08 13 | 608 | 0.2+ | 0.5+ | 2004 03 01 | 291 | 0.7+ | 0.5+ | 2006 10 20 | 703 | 0.8− | 1.2+ | | |
| 2001 08 13 | 608 | 0.7+ | 0.1+ | 2004 03 01 | 291 | 0.6+ | 0.6+ | 2006 10 28 | 703 | 0.6+ | 1.2+ | | |
| 2001 08 13 | 608 | 0.6+ | 0.3− | 2004 03 01 | 291 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.3− | | |
| 2001 08 17 | 644 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.6− | 1.3+ | 2006 10 28 | 703 | 0.5− | 0.5− | | |
| 2001 08 17 | 644 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.8+ | 2006 10 28 | 703 | 0.8− | 0.8+ | | |
| 2001 08 17 | 644 | 0.1+ | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.2+ | | |
| 2001 08 24 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.1+ | 1.1+ | 2006 11 23 | 703 | 0.6− | 0.1+ | | |
| 2001 08 24 | 704 | 0.7− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.7+ | 2006 11 23 | 703 | 0.2− | 1.2− | | |
| 2001 08 24 | 704 | (0.1− | 2.5+) | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 11 23 | 703 | 0.2+ | 1.3− | | |

**(138179)∗ 2000 EY$_{107}$ = 2005 EX$_{126}$**

Discovered 2000 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74750)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.35726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22513194 | $\omega$ | 92.86686 | | −0.01524826 | +0.99932798 | |
| $a$ | 2.6761552 | $\Omega$ | 175.80012 | | −0.99790903 | −0.01730380 | |
| $e$ | 0.2352817 | $i$ | 27.07406 | | +0.06280975 | −0.03231351 | |
| $P$ | 4.38 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 703 | 0.2+ | 0.9+ | 2005 04 06 | 703 | 0.1− | 0.2+ | 2005 06 18 | 704 | 0.2− | 0.4− | | |
| 2000 03 03 | 703 | 0.6+ | 0.7+ | 2005 04 06 | 703 | 0.1− | 0.4+ | 2005 06 30 | 703 | (1.6− | 0.3−) | | |
| 2000 03 03 | 703 | 0.6− | 1.1+ | 2005 04 11 | 704 | 0.2+ | 0.4+ | 2005 06 30 | 703 | 0.7− | 0.7− | | |
| 2000 03 03 | 703 | 1.8+ | 1.3− | 2005 04 11 | 704 | 0.2+ | 0.8+ | 2005 06 30 | 703 | 1.0− | 0.9− | | |
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2005 04 11 | 704 | 0.0 | 0.3+ | 2005 06 30 | 703 | 0.9− | 1.0− | | |
| 2000 03 04 | 645 | 0.0 | 0.0 | 2005 04 11 | 704 | 0.2− | 0.1+ | 2005 07 01 | 704 | 0.5+ | 0.4+ | | |
| 2000 03 08 | 704 | 0.1+ | 0.1− | 2005 04 11 | 704 | 0.4+ | 0.3+ | 2005 07 01 | 704 | 1.4+ | 0.0 | | |
| 2000 03 08 | 704 | 0.3− | 0.6+ | 2005 04 16 | 703 | 0.3− | 0.1+ | 2005 07 01 | 704 | 0.6− | 1.0− | | |
| 2000 03 08 | 704 | 1.3− | 0.2+ | 2005 04 16 | 703 | 0.2− | 0.2+ | 2005 07 01 | 704 | 0.1+ | 0.2− | | |
| 2000 03 08 | 704 | 0.5− | 0.5+ | 2005 04 16 | 703 | 0.2− | 0.1− | 2005 07 01 | 704 | 0.0 | 0.7− | | |
| 2000 03 11 | 608 | 1.7− | 1.0− | 2005 04 16 | 703 | 0.2− | 0.5− | 2005 07 06 | 703 | 0.7− | 0.1+ | | |
| 2000 03 11 | 608 | (2.3− | 0.1+) | 2005 04 21 | 608 | 0.3+ | 0.1− | 2005 07 06 | 703 | 0.9− | 0.0 | | |
| 2000 03 11 | 608 | (2.3− | 0.1−) | 2005 04 21 | 608 | 0.4+ | 0.2− | 2005 07 06 | 703 | 0.6− | 0.2− | | |
| 2001 05 30 | 704 | 1.1+ | 0.5+ | 2005 04 21 | 608 | 0.2− | 0.0 | 2005 07 06 | 703 | (1.8− | 0.6−) | | |
| 2001 05 30 | 704 | 0.6+ | 0.6+ | 2005 05 03 | 608 | 0.1+ | 0.3− | 2005 07 08 | 699 | 0.4+ | 0.1+ | | |
| 2001 05 30 | 704 | 0.3− | 0.6+ | 2005 05 03 | 608 | 0.1+ | 0.2− | 2005 07 08 | 699 | 0.5+ | 0.4+ | | |
| 2001 05 30 | 704 | 0.7− | 0.8+ | 2005 05 03 | 608 | 0.2+ | 0.1− | 2005 07 08 | 699 | 0.8− | 0.1+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.2+ | 2005 05 07 | 703 | 0.4− | 0.1− | 2005 07 09 | 699 | 1.0+ | 0.3− | | |
| 2001 09 16 | 704 | 0.1− | 0.3− | 2005 05 07 | 703 | 0.2− | 0.1+ | 2005 07 09 | 699 | 0.3+ | 0.5+ | | |
| 2001 09 16 | 704 | 1.0− | 0.1− | 2005 05 07 | 703 | 0.6− | 0.0 | 2005 07 09 | 699 | 1.0+ | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.2− | 0.2+ | 2005 05 07 | 703 | 0.8− | 0.2− | 2005 07 18 | 644 | 0.0 | 0.1− | | |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2005 05 10 | 704 | 0.2+ | 0.2+ | 2005 07 18 | 644 | 0.4− | 0.0 | | |
| 2001 09 25 | 704 | 0.9− | 0.3− | 2005 05 10 | 704 | 0.0 | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.2− | | |
| 2001 10 11 | 704 | 0.5− | 0.7+ | 2005 05 10 | 704 | 0.1+ | 0.0 | 2005 07 29 | 699 | 0.3− | 0.2+ | | |
| 2001 10 11 | 704 | 1.1+ | 0.2− | 2005 05 10 | 704 | 0.3− | 0.5+ | 2005 07 29 | 699 | 0.0 | 0.1+ | | |
| 2001 10 11 | 704 | 0.1− | 0.2+ | 2005 05 10 | 703 | 0.2+ | 0.0 | 2005 07 29 | 699 | 0.7− | 0.7+ | | |
| 2001 10 11 | 704 | 0.4+ | 0.1− | 2005 05 10 | 703 | 0.1− | 0.0 | 2005 07 29 | 699 | 0.5− | 0.5+ | | |
| 2001 11 10 | 704 | (2.4+ | 1.1−) | 2005 05 10 | 703 | 0.2− | 0.2+ | 2005 09 09 | 704 | 0.8+ | 0.6+ | | |
| 2001 11 10 | 704 | 0.3− | 0.0 | 2005 05 10 | 703 | 0.4− | 0.1+ | 2005 09 09 | 704 | 0.6+ | 0.1− | | |
| 2001 11 10 | 704 | 0.0 | 0.1+ | 2005 05 16 | 703 | 0.4− | 0.7+ | 2005 09 09 | 704 | 0.6+ | 0.8− | | |
| 2005 03 08 | 683 | 0.4+ | 1.2− | 2005 05 16 | 703 | 0.6− | 0.1+ | 2005 09 09 | 704 | 0.5+ | 0.3− | | |
| 2005 03 08 | 683 | 0.2− | 0.6− | 2005 05 16 | 703 | 0.2− | 0.3+ | 2006 09 19 | 703 | (0.8− | 4.1+) | | |
| 2005 03 08 | 704 | 0.6− | 0.3+ | 2005 05 16 | 703 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3+ | 1.1+ | | |
| 2005 03 08 | 683 | 0.3− | 0.9− | 2005 05 21 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 1.1− | 0.2− | | |
| 2005 03 08 | 704 | 0.2− | 0.1+ | 2005 05 21 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.3+ | | |
| 2005 03 08 | 704 | 0.1− | 0.5+ | 2005 05 21 | 704 | 0.7− | 0.8− | 2006 09 26 | 703 | 0.5+ | 0.4− | | |
| 2005 03 08 | 704 | 0.2− | 0.1+ | 2005 05 21 | 704 | 1.1+ | 0.3− | 2006 09 26 | 703 | 0.3− | 1.1+ | | |
| 2005 03 10 | 683 | (0.8− | 2.6+) | 2005 05 21 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 1.4− | | |
| 2005 03 10 | 683 | 0.2− | 0.2− | 2005 05 25 | 628 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.2− | | |
| 2005 03 11 | 703 | 0.5− | 0.1+ | 2005 05 25 | 628 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.8− | 0.9+ | | |
| 2005 03 11 | 703 | 0.7+ | 0.7+ | 2005 05 31 | 628 | 0.5− | 0.0 | 2006 10 02 | 703 | 0.2− | 1.1− | | |
| 2005 03 11 | 703 | 0.8− | 1.0− | 2005 05 31 | 628 | 0.4− | 0.1+ | 2006 10 02 | 703 | 0.8− | 0.1+ | | |
| 2005 03 11 | 703 | 0.6− | 0.4− | 2005 05 31 | 628 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.4+ | 0.5+ | | |
| 2005 03 13 | 703 | 0.2− | 0.6− | 2005 06 07 | 704 | 0.9+ | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.3+ | | |
| 2005 03 13 | 703 | 0.4− | 0.6+ | 2005 06 07 | 704 | 0.9+ | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ | | |
| 2005 03 13 | 703 | 0.4− | 0.4− | 2005 06 07 | 704 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.5+ | | |
| 2005 03 13 | 703 | 0.3− | 0.1− | 2005 06 07 | 704 | 0.4+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2005 03 18 | 704 | 0.1+ | 0.5+ | 2005 06 07 | 704 | 0.1− | 0.9− | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 2005 03 18 | 704 | 0.5+ | 0.1− | 2005 06 08 | 699 | (1.5+ | 0.4−) | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2005 03 18 | 704 | 0.4− | 0.3+ | 2005 06 08 | 699 | 0.1+ | 0.3− | 2006 10 31 | 703 | 1.4+ | 0.6− | | |
| 2005 04 04 | 106 | 0.2+ | 0.2− | 2005 06 08 | 699 | 0.7+ | 0.2− | 2006 10 31 | 703 | 0.3+ | 0.8− | | |
| 2005 04 04 | 106 | 0.2+ | 0.2− | 2005 06 14 | 699 | 0.4+ | 0.1+ | 2006 10 31 | 703 | 0.3+ | 0.2− | | |
| 2005 04 04 | 106 | 0.3− | 0.2− | 2005 06 14 | 699 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.4+ | 0.6+ | | |
| 2005 04 06 | 699 | 0.2− | 0.4+ | 2005 06 14 | 699 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.1− | | |
| 2005 04 06 | 699 | 0.5+ | 0.4+ | 2005 06 18 | 704 | 0.9+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.3+ | | |
| 2005 04 06 | 703 | 0.3− | 0.8+ | 2005 06 18 | 704 | 0.8+ | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.2+ | | |
| 2005 04 06 | 699 | 0.2+ | 0.2− | 2005 06 18 | 704 | 1.1+ | 0.2− | | | | | | |
| 2005 04 06 | 703 | 0.3+ | 0.5+ | 2005 06 18 | 704 | 0.1+ | 0.2+ | | | | | | |

**(138180)∗ 2000 EN$_{110}$**

Discovered 2000 Mar. 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.48053 | | (2000.0) | | | |
| $n$ | 0.25918022 | $\omega$ | 85.62063 | | −0.48700611 | −0.86808215 |
| $a$ | 2.4363227 | $\Omega$ | 34.06938 | | +0.71764740 | −0.46051514 |
| $e$ | 0.2031548 | $i$ | 9.89031 | | +0.49780243 | −0.18536232 |
| $P$ | 3.80 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 1.0− | 0.4− | 2004 03 16 | 691 | 0.1− | 0.4+ | 2004 05 12 | 699 | 0.2+ | 0.0 | | |
| 2000 03 05 | 704 | 0.4− | 0.3− | 2004 03 16 | 691 | 0.2+ | 0.3+ | 2004 05 12 | 699 | 0.3+ | 0.3+ | | |
| 2000 03 05 | 704 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.1− | 0.0 | 2004 05 12 | 699 | 0.1− | 0.1− | | |
| 2000 03 05 | 704 | 0.4− | 0.1− | 2004 03 19 | 704 | 0.3+ | 0.2− | 2004 05 16 | 704 | (1.4+ | 1.6−) | | |
| 2000 03 05 | 704 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.5+ | 1.0− | 2004 05 16 | 704 | 0.6+ | 0.1− | | |
| 2000 03 08 | 608 | 0.1− | 0.5− | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2004 05 16 | 704 | 0.2− | 1.1+ | | |
| 2000 03 08 | 608 | 0.6− | 0.6− | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2004 05 16 | 704 | 0.2+ | 0.3− | | |
| 2000 03 08 | 608 | 0.6− | 0.6− | 2004 03 22 | 704 | 0.0 | 0.4+ | 2004 05 16 | 704 | 0.6− | 0.5+ | | |
| 2000 03 12 | 704 | 0.4− | 0.0 | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2004 06 11 | 699 | 0.1− | 0.5− | | |
| 2000 03 12 | 704 | 0.4+ | 0.5+ | 2004 03 22 | 704 | 0.2+ | 0.0 | 2004 06 11 | 699 | 0.1− | 0.5+ | | |
| 2000 03 12 | 704 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 0.8+ | 0.1− | 2004 06 11 | 699 | 0.4+ | 0.1+ | | |
| 2000 03 12 | 704 | 0.2+ | 0.1− | 2004 03 22 | 699 | 0.7− | 0.5− | 2004 06 11 | 699 | 0.3− | 0.1+ | | |
| 2000 03 12 | 704 | 0.1− | 0.4+ | 2004 03 22 | 699 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− | | |
| 2000 03 28 | 704 | 0.5+ | 0.7− | 2004 03 27 | 699 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.5+ | 0.1− | | |
| 2000 03 28 | 704 | 0.6+ | 0.2+ | 2004 03 27 | 699 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.0 | | |
| 2000 03 28 | 704 | 1.2+ | 0.5+ | 2004 03 27 | 699 | 0.5− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.2− | | |
| 2000 04 03 | 704 | 0.2− | 1.6+ | 2004 03 27 | 699 | 0.4− | 0.3− | 2006 10 12 | 691 | 0.3− | 0.2+ | | |
| 2000 04 03 | 704 | 0.2− | 0.1+ | 2004 03 28 | 704 | 0.6+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1+ | | |
| 2000 04 03 | 704 | 0.1+ | 0.4− | 2004 03 28 | 704 | 0.5− | 0.3− | 2006 10 12 | 691 | 0.2− | 0.2+ | | |
| 2000 04 03 | 704 | 0.7+ | 1.2− | 2004 03 28 | 704 | 0.3− | 1.3+ | 2006 10 16 | 691 | 0.2− | 0.0 | | |
| 2000 04 03 | 704 | 0.7+ | 1.7− | 2004 03 28 | 704 | (0.5+ | 1.5+) | 2006 10 16 | 691 | 0.0 | 0.1+ | | |
| 2000 04 08 | 704 | 0.4+ | 0.2− | 2004 03 28 | 704 | (0.7− | 2.4+) | 2006 10 16 | 691 | 0.2− | 0.1+ | | |
| 2000 04 08 | 704 | 0.3+ | 0.4+ | 2004 03 31 | 704 | 0.6+ | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.1+ | | |
| 2000 04 08 | 704 | 1.2− | 0.8+ | 2004 03 31 | 704 | 0.9+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.2+ | | |
| 2000 04 08 | 704 | 0.6− | 0.1+ | 2004 03 31 | 704 | 0.4+ | 0.9− | 2006 10 20 | 691 | 0.1− | 0.0 | | |
| 2000 04 27 | 699 | 0.8+ | 0.3− | 2004 03 31 | 704 | 0.6+ | 0.6− | 2006 10 29 | 704 | 0.1− | 0.3+ | | |
| 2000 04 27 | 699 | 0.2+ | 0.2+ | 2004 03 31 | 704 | 0.5+ | 1.4+ | 2006 10 29 | 704 | 0.1− | 0.5+ | | |
| 2000 04 27 | 699 | 0.2− | 0.1− | 2004 04 12 | 644 | 0.7+ | 0.3+ | 2006 10 29 | 704 | (2.0− | 0.7+) | | |
| 2000 04 27 | 699 | 0.3+ | 0.2− | 2004 04 12 | 644 | 0.2+ | 0.4+ | 2006 10 29 | 704 | (1.7− | 0.9+) | | |
| 2000 05 03 | 704 | 0.1+ | 0.4+ | 2004 04 12 | 644 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ | | |
| 2000 05 03 | 704 | 0.2+ | 0.7+ | 2004 04 12 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.1− | | |
| 2000 05 03 | 704 | 0.2+ | 0.4+ | 2004 04 12 | 644 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.6− | | |
| 2000 05 03 | 704 | 0.6+ | 0.5+ | 2004 04 12 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.3− | | |
| 2000 05 03 | 704 | 0.0 | 1.3+ | 2004 04 12 | 699 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.2+ | | |
| 2002 09 30 | 704 | 1.3− | 1.1+ | 2004 04 12 | 699 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.2+ | | |
| 2002 09 30 | 704 | 0.6− | 0.7+ | 2004 04 12 | 699 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.9+ | | |
| 2002 09 30 | 704 | 0.4− | 0.9+ | 2004 04 12 | 699 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.7+ | | |
| 2002 10 02 | 704 | (0.3− | 1.8+) | 2004 04 15 | 699 | 0.5− | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.1+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.0 | 2004 04 15 | 699 | 0.1+ | 0.7+ | 2006 11 17 | 704 | 1.0− | 1.3+ | | |
| 2002 10 02 | 704 | 0.6− | 0.7+ | 2004 04 15 | 699 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.5− | | |
| 2002 10 02 | 704 | (0.1− | 2.5+) | 2004 04 15 | 699 | 0.3+ | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2002 10 03 | 704 | (0.1+ | 2.3+) | 2004 04 16 | 704 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.4+ | 0.4− | | |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2004 04 16 | 704 | 1.0+ | 0.3− | 2006 11 17 | G96 | 0.5+ | 0.4− | | |
| 2002 10 03 | 704 | 0.3− | 0.5− | 2004 04 16 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.4− | 0.5+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.8+ | 2004 04 16 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.7+ | | |
| 2002 10 11 | 704 | 1.0− | 0.9+ | 2004 04 16 | 644 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.3+ | 0.1− | | |
| 2002 10 11 | 704 | 0.2− | 0.8+ | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.2− | | |
| 2002 10 11 | 704 | 0.1− | 1.2+ | 2004 04 16 | 644 | 0.4+ | 0.6+ | 2006 11 18 | G96 | 0.3+ | 0.1− | | |
| 2002 10 11 | 704 | 0.4+ | 0.0 | 2004 04 16 | 644 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2002 10 11 | 704 | 0.8− | 0.9+ | 2004 04 16 | 644 | 0.5+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2002 10 31 | 704 | 0.5− | 0.9+ | 2004 04 20 | 703 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 31 | 704 | 0.4− | 0.4+ | 2004 04 20 | 703 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.5+ | 0.3+ | | |
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2004 04 20 | 703 | 1.0− | 0.5− | 2006 11 19 | 704 | 0.7+ | 0.2+ | | |
| 2002 10 31 | 704 | 0.9− | 0.0 | 2004 04 20 | 703 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 31 | 704 | 1.1− | 0.2+ | 2004 04 21 | 704 | 0.5+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.2+ | | |
| 2002 11 02 | 608 | 0.7− | 0.8+ | 2004 04 21 | 704 | 0.3+ | 0.5+ | 2006 11 22 | 704 | 0.0 | 0.0 | | |
| 2002 11 02 | 608 | 0.9− | 1.1+ | 2004 04 21 | 704 | 0.3+ | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.0 | | |
| 2002 11 02 | 608 | 0.8− | 1.0+ | 2004 04 21 | 704 | 0.7+ | 0.6+ | 2006 11 22 | 704 | 0.4+ | 0.2+ | | |
| 2002 11 06 | 704 | 0.3− | 0.9+ | 2004 04 21 | 704 | 0.6+ | 1.2+ | 2006 11 22 | 704 | 0.3+ | 0.2+ | | |
| 2002 11 06 | 704 | (1.8− | 0.6+) | 2004 05 10 | 691 | 0.4+ | 0.2+ | 2006 11 25 | 951 | 1.8− | 1.1− | | |
| 2002 11 06 | 704 | 0.1− | 1.0+ | 2004 05 10 | 691 | 0.4+ | 0.2+ | 2006 11 25 | 951 | 1.0− | 0.0 | | |
| 2002 11 06 | 704 | 0.1− | 0.3+ | 2004 05 10 | 691 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.9+ | 0.5+ | | |
| 2004 01 28 | 704 | 0.2+ | 0.1+ | 2004 05 11 | 699 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.5+ | | |
| 2004 01 28 | 704 | 0.6+ | 0.3+ | 2004 05 11 | 699 | 0.9− | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.1− | | |
| 2004 01 28 | 704 | 0.1− | 0.1− | 2004 05 11 | 699 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.1− | | |
| 2004 01 28 | 704 | 0.9− | 0.4+ | 2004 05 11 | 699 | 0.1+ | 0.9+ | 2006 11 29 | 704 | 0.6− | 0.1− | | |
| 2004 03 16 | 691 | 0.0 | 0.0 | 2004 05 12 | 699 | 0.4− | 0.4+ | | | | | | |

**(138181)∗ 2000 ET$_{110}$**

Discovered 2000 Mar. 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 261.44596 | | (2000.0) | | | |
| $n$ | 0.23863956 | $\omega$ | 94.73902 | | −0.49753916 | −0.86451857 |
| $a$ | 2.5741929 | $\Omega$ | 25.48894 | | +0.71582946 | −0.45552344 |
| $e$ | 0.0575640 | $i$ | 9.51684 | | +0.48994181 | −0.21238185 |
| $P$ | 4.13 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 24 | 691 | 0.7+ | 0.5+ | 2003 12 27 | 704 | 0.5+ | 1.1− | 2006 09 29 | 691 | 0.0 | 0.2+ | | |
| 1992 04 24 | 691 | 0.4+ | 1.0+ | 2003 12 27 | 704 | 1.0+ | 1.0− | 2006 10 03 | 691 | 0.1− | 0.3+ | | |
| 1992 04 24 | 691 | 1.0+ | 1.6+ | 2003 12 27 | 704 | 1.3+ | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.1+ | | |
| 2000 03 08 | 608 | 0.8+ | 0.9− | 2004 01 28 | 645 | 0.2− | 0.3− | 2006 10 03 | 691 | 0.2− | 0.1+ | | |
| 2000 03 08 | 608 | 0.6+ | 0.6− | 2004 01 28 | 645 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.0 | 0.4+ | | |
| 2000 03 08 | 608 | 0.3+ | 1.0− | 2004 02 17 | 704 | 0.5+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 703 | 0.1+ | 1.1+ | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.3+ | | |
| 2000 03 12 | 703 | 0.2+ | 0.7+ | 2004 02 17 | 704 | 0.2− | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2000 03 12 | 703 | 0.4+ | 0.9+ | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2000 03 12 | 703 | 0.2+ | 0.7+ | 2004 02 17 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2000 03 12 | 704 | 0.4+ | 0.8+ | 2004 02 20 | 608 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2000 03 12 | 704 | 0.2− | 0.3+ | 2004 02 20 | 608 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2000 03 12 | 704 | 1.4− | 0.3− | 2004 02 20 | 608 | 0.0 | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2000 03 12 | 704 | 0.0 | 0.3− | 2004 02 27 | 704 | 0.8+ | 0.6− | 2006 10 15 | 703 | 0.3+ | 0.1− | | |
| 2000 03 26 | 699 | 0.5− | 1.2+ | 2004 02 27 | 704 | 0.7+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.2+ | | |
| 2000 03 26 | 699 | 0.0 | 1.0+ | 2004 02 27 | 704 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.8− | 0.4− | | |
| 2000 03 26 | 699 | 0.2− | 1.1+ | 2004 03 10 | 644 | 0.3− | 0.1+ | 2006 10 15 | 703 | 0.3+ | 0.2+ | | |
| 2000 03 26 | 699 | 0.6− | 1.0+ | 2004 03 10 | 644 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.1− | | |
| 2000 04 27 | 699 | 0.5− | 0.7− | 2004 03 10 | 644 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.1+ | | |
| 2000 04 27 | 699 | 0.3− | 0.0 | 2004 03 14 | 704 | 0.4+ | 0.9+ | 2006 10 16 | G96 | 0.1− | 0.1− | | |
| 2000 04 27 | 699 | 0.8+ | 0.0 | 2004 03 14 | 704 | 0.3+ | 0.8+ | 2006 10 16 | G96 | 0.3+ | 0.1− | | |
| 2000 04 27 | 699 | (0.1+ | 2.3+) | 2004 03 14 | 704 | 0.0 | 0.5+ | 2006 10 19 | 644 | 1.2− | 1.0+ | | |
| 2002 10 02 | 704 | 1.3− | 0.5+ | 2004 03 14 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 1.3+ | | |
| 2002 10 02 | 704 | 0.7− | 0.2+ | 2004 03 14 | 704 | 0.3+ | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.5+ | | |
| 2002 10 02 | 704 | 0.3− | 0.7+ | 2004 03 19 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.4+ | | |
| 2002 10 02 | 704 | 0.7− | 0.4+ | 2004 03 19 | 644 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.3+ | | |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2004 03 19 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.1+ | | |
| 2002 10 03 | 704 | 0.4− | 1.2+ | 2004 03 19 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.6+ | | |
| 2002 10 03 | 704 | 0.9− | 0.6− | 2004 03 19 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2004 03 19 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2002 10 03 | 704 | (2.3− | 0.4+) | 2004 03 23 | 704 | 0.4+ | 0.0 | 2006 10 23 | 704 | 0.6+ | 0.9− | | |
| 2002 10 07 | 704 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 704 | 0.3− | 1.0+ | | |
| 2002 10 07 | 704 | 0.6− | 0.6− | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 704 | 0.5− | 0.4+ | | |
| 2002 10 07 | 704 | 1.4− | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 10 23 | 704 | (1.7− | 0.9+) | | |
| 2002 10 07 | 704 | 1.3− | 0.5+ | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 10 11 | 704 | 0.5+ | 0.0 | 2004 03 26 | 703 | 1.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2004 03 26 | 703 | 0.0 | 1.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 10 11 | 704 | 0.9− | 0.5+ | 2004 03 26 | 703 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 2002 10 11 | 704 | 0.2− | 0.1+ | 2004 03 26 | 703 | 0.2+ | 0.4+ | 2006 10 28 | 704 | 0.2− | 0.5+ | | |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2004 04 13 | 703 | 0.6+ | 0.6− | 2006 10 28 | 704 | 0.8− | 1.0+ | | |
| 2002 10 26 | 608 | 0.3− | 0.2+ | 2004 04 13 | 703 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 1.0− | 0.0 | | |
| 2002 10 26 | 608 | 0.3− | 0.2+ | 2004 04 13 | 703 | 0.3+ | 0.6+ | 2006 10 28 | 704 | (1.7− | 0.7+) | | |
| 2002 10 26 | 608 | 0.5− | 0.3− | 2004 04 13 | 703 | 0.6+ | 1.0+ | 2006 10 28 | 704 | (2.1− | 0.0 ) | | |
| 2002 10 28 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 1.1− | 2006 11 06 | 644 | 0.0 | 0.3+ | | |
| 2002 10 28 | 644 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 11 06 | 644 | 0.4+ | 0.4+ | | |
| 2002 10 28 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.3− | 1.5− | 2006 11 06 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 31 | 644 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 0.4+ | 1.3− | 2006 11 11 | 703 | 0.5− | 0.4+ | | |
| 2002 10 31 | 644 | 0.4− | 0.5+ | 2006 09 17 | 704 | 0.5+ | 0.4− | 2006 11 11 | 703 | (0.1− | 2.9+) | | |
| 2002 10 31 | 644 | 0.5+ | 0.5+ | 2006 09 17 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.1− | | |
| 2002 11 12 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.5− | | |
| 2002 11 12 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 691 | 0.2+ | 0.5+ | 2006 11 13 | G96 | 0.3− | 0.3− | | |
| 2002 11 12 | 704 | 1.4+ | 1.4+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.3− | | |
| 2002 11 12 | 704 | 0.9+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 2002 12 01 | 704 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.2− | | |
| 2002 12 01 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.2− | 1.0+ | 2006 11 27 | G96 | 0.3− | 0.4− | | |
| 2002 12 01 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.9− | 2006 11 27 | G96 | 0.4+ | 0.2− | | |
| 2002 12 01 | 704 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.5− | 1.3− | 2006 11 27 | G96 | 0.0 | 0.3− | | |
| 2002 12 01 | 704 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.9− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.4− | | |
| 2003 12 27 | 704 | 0.0 | 0.1− | 2006 09 29 | 691 | 0.1− | 0.2+ | | | | | | |
| 2003 12 27 | 704 | 0.2+ | 0.4− | 2006 09 29 | 691 | 0.2− | 0.0 | | | | | | |

**(138182)∗ 2000 EC$_{111}$**

Discovered 2000 Mar. 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.67055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21088135 | $\omega$ | 238.20065 | | −0.34869767 | +0.93286661 | |
| $a$ | 2.7953998 | $\Omega$ | 12.42274 | | −0.65298948 | −0.17263104 | |
| $e$ | 0.1679372 | $i$ | 24.84500 | | −0.67232036 | −0.31616202 | |
| $P$ | 4.67 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 608 | 0.2− | 0.5− | 2002 10 20 | 644 | 0.4− | 0.2+ | 2006 09 19 | 703 | 1.2− | 0.1− | | |
| 2000 03 08 | 608 | 0.3− | 0.4− | 2002 10 20 | 644 | 0.6− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.5+ | | |
| 2000 03 08 | 608 | 0.2+ | 0.5− | 2002 10 20 | 644 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.8+ | | |
| 2000 03 12 | 704 | 0.5− | 0.8+ | 2002 12 03 | 644 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.5− | 0.9+ | | |
| 2000 03 12 | 704 | 0.3+ | 0.5+ | 2002 12 03 | 644 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.5+ | | |
| 2000 03 12 | 704 | 0.3+ | 0.2+ | 2002 12 03 | 644 | 0.2− | 0.1+ | 2006 09 25 | 703 | 0.5− | 0.3+ | | |
| 2000 03 12 | 704 | 0.8+ | 0.8+ | 2005 03 21 | E12 | 0.1+ | 0.0 | 2006 09 25 | 703 | 0.6− | 0.1+ | | |
| 2000 03 26 | 699 | 0.1+ | 0.1+ | 2005 03 21 | E12 | 0.1− | 0.4+ | 2006 09 25 | 703 | 0.9− | 0.7+ | | |
| 2000 03 26 | 699 | 0.6+ | 0.7+ | 2005 03 21 | E12 | 0.2+ | 0.4− | 2006 09 25 | 703 | 0.6− | 0.1− | | |
| 2000 03 26 | 699 | 0.4+ | 0.2+ | 2005 03 21 | E12 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.7+ | | |
| 2000 03 26 | 699 | 0.0 | 0.6+ | 2005 03 31 | E12 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.1− | 0.4+ | | |
| 2000 03 28 | 704 | 0.5+ | 0.2+ | 2005 03 31 | E12 | 0.6− | 0.1− | 2006 09 26 | 704 | (0.6− | 2.2+) | | |
| 2000 03 28 | 704 | 0.4− | 0.1+ | 2005 03 31 | E12 | 0.8− | 0.4− | 2006 09 26 | 704 | 0.1− | 0.7+ | | |
| 2000 03 28 | 704 | 0.5+ | 0.0 | 2005 03 31 | E12 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.8− | 0.8+ | | |
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2005 04 20 | E12 | 0.5− | 0.1− | 2006 10 02 | 703 | 0.0 | 1.0+ | | |
| 2000 04 05 | 704 | 0.3+ | 0.4− | 2005 04 20 | E12 | 0.1+ | 0.3− | 2006 10 02 | 703 | 0.2− | 0.7+ | | |
| 2000 04 05 | 704 | 0.6+ | 0.4+ | 2005 04 20 | E12 | 0.0 | 0.4− | 2006 10 02 | 703 | 0.6+ | 0.6+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2005 04 20 | E12 | 0.6− | 0.5− | 2006 10 02 | 703 | 0.2+ | 0.3+ | | |
| 2000 04 05 | 704 | 0.7+ | 0.0 | 2005 05 05 | E12 | (2.2+ | 0.3−) | 2006 10 02 | 703 | 0.8− | 0.7+ | | |
| 2000 04 08 | 704 | 0.5+ | 0.7+ | 2005 05 05 | E12 | 0.3+ | 0.0 | 2006 10 02 | 703 | 1.0− | 0.6+ | | |
| 2000 04 08 | 704 | 0.0 | 0.6+ | 2005 05 05 | E12 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 1.1− | 0.5+ | | |
| 2000 04 08 | 704 | 0.4+ | 0.7+ | 2005 05 05 | E12 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.8− | 0.1− | | |
| 2000 04 08 | 704 | 0.0 | 0.6+ | 2005 05 16 | E12 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.2− | | |
| 2000 04 08 | 704 | 0.1+ | 0.1+ | 2005 05 16 | E12 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.4− | | |
| 2000 04 10 | 704 | 0.2− | 0.7+ | 2005 05 16 | E12 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.2− | | |
| 2000 04 10 | 704 | 1.8+ | 1.5+ | 2005 05 16 | E12 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2000 04 10 | 704 | 0.1− | 0.9+ | 2005 05 31 | E12 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2000 04 10 | 704 | 0.4+ | 0.9+ | 2005 05 31 | E12 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2000 04 26 | 699 | 0.7+ | 0.0 | 2005 05 31 | E12 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2000 04 26 | 699 | 0.4+ | 0.3+ | 2005 05 31 | E12 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.6− | | |
| 2000 04 26 | 699 | 0.7+ | 0.6+ | 2005 07 04 | E12 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2000 04 26 | 699 | 0.7+ | 0.1+ | 2005 07 04 | E12 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 2000 04 27 | 699 | 0.5+ | 0.2− | 2005 07 04 | E12 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.3− | | |
| 2000 04 27 | 699 | 0.2+ | 0.0 | 2005 07 04 | E12 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2000 04 27 | 699 | 0.2− | 0.4+ | 2006 09 17 | 699 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.1+ | | |
| 2000 04 27 | 699 | 0.4+ | 0.1+ | 2006 09 17 | 699 | 0.3− | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.1− | | |
| 2000 05 04 | 704 | 1.5+ | 0.2+ | 2006 09 17 | 699 | 1.2− | 0.4+ | 2006 10 24 | 644 | 0.3− | 0.3+ | | |
| 2000 05 04 | 704 | 0.6+ | 0.8+ | 2006 09 17 | 699 | 0.8− | 0.5+ | 2006 11 17 | G96 | 0.3− | 0.2− | | |
| 2000 05 04 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.2− | | |
| 2000 05 04 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2000 05 04 | 704 | 0.8+ | 0.6− | 2006 09 19 | 703 | 0.5− | 0.2+ | | | | | | |

**(138183)∗ 2000 EF$_{112}$**

Discovered 2000 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.96321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24537091 | $\omega$ | 71.03846 | | +0.96875721 | −0.14568695 | |
| $a$ | 2.5268958 | $\Omega$ | 296.90825 | | +0.03209428 | +0.87611784 | |
| $e$ | 0.1263227 | $i$ | 13.00755 | | +0.24592566 | +0.45955722 | |
| $P$ | 4.02 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 0.6− | 0.6+ | 2002 10 30 | 704 | 0.1+ | 0.2+ | 2004 02 14 | 644 | 0.1+ | 0.2+ | | |
| 1998 11 14 | 704 | 0.6− | 1.5− | 2002 11 08 | 704 | 0.8− | 0.4− | 2004 02 14 | 644 | 0.1− | 0.2+ | | |
| 1998 11 14 | 704 | 0.9+ | 0.8− | 2002 11 08 | 704 | 0.8− | 0.6− | 2004 02 17 | 703 | 0.5+ | 0.4− | | |
| 1998 11 14 | 704 | 0.1− | 0.2− | 2002 11 08 | 704 | 0.5− | 0.6− | 2004 02 17 | 703 | 0.5+ | 0.3+ | | |
| 1998 11 14 | 704 | (3.9− | 0.6+) | 2002 11 08 | 704 | 0.5− | 0.2− | 2004 02 17 | 703 | 0.3+ | 0.2+ | | |
| 1998 11 16 | 704 | 0.0 | 0.8− | 2002 11 08 | 704 | 0.9− | 0.3− | 2004 02 17 | 703 | 0.0 | 0.7+ | | |
| 1998 11 16 | 704 | 1.6+ | 1.3+ | 2002 11 09 | 636 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.3+ | 0.2− | | |
| 1998 11 16 | 704 | 1.5+ | 0.8− | 2002 11 09 | 636 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.1− | 0.4− | | |
| 1998 11 16 | 704 | 1.3+ | 0.5− | 2002 11 09 | 636 | 0.2+ | 0.3− | 2004 02 19 | 704 | 0.3+ | 0.3− | | |
| 1998 11 26 | 699 | 0.1− | 1.0− | 2002 11 15 | 704 | 0.1− | 0.0 | 2004 03 13 | 644 | 0.0 | 0.1− | | |
| 1998 11 26 | 699 | 0.0 | 0.2+ | 2002 11 15 | 704 | 0.0 | 0.0 | 2004 03 13 | 644 | 0.2+ | 0.3− | | |
| 1998 11 26 | 699 | 0.4+ | 1.3+ | 2002 11 15 | 704 | 0.2− | 0.1− | 2004 03 13 | 644 | 0.0 | 0.1− | | |
| 1998 12 24 | 699 | 0.8− | 0.1+ | 2002 11 15 | 704 | 0.2+ | 0.2+ | 2004 03 16 | 704 | 0.5− | 0.1+ | | |
| 1998 12 24 | 699 | 0.4+ | 0.3+ | 2002 11 15 | 704 | 0.5+ | 0.3+ | 2004 03 16 | 704 | 0.3+ | 0.1− | | |
| 1998 12 24 | 699 | 0.3− | 1.0+ | 2002 11 25 | 644 | 0.4− | 0.1+ | 2004 03 16 | 704 | 0.3+ | 0.3− | | |
| 1999 01 09 | 699 | 1.4− | 0.8+ | 2002 11 25 | 644 | 0.4− | 0.0 | 2004 03 16 | 704 | 0.2− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 09 | 699 | 0.3− | 0.4+ | 2002 11 25 | 644 | 0.5− | 0.1− | 2004 03 16 | 704 | 0.1− | 0.1− | | |
| 1999 01 09 | 699 | 0.6− | 0.9+ | 2002 12 03 | 644 | 0.0 | 0.0 | 2004 03 27 | 703 | 0.0 | 0.1− | | |
| 2000 02 07 | 703 | 0.2+ | 0.5+ | 2002 12 03 | 644 | 0.2− | 0.4− | 2004 03 27 | 703 | 0.6+ | 0.5+ | | |
| 2000 02 07 | 703 | 0.4− | 0.5+ | 2002 12 03 | 644 | 0.1− | 0.2− | 2004 03 27 | 703 | 0.9+ | 0.1+ | | |
| 2000 02 07 | 703 | 0.4+ | 0.5− | 2002 12 07 | 704 | 0.0 | 0.3− | 2004 03 27 | 703 | (1.7+ | 1.6−) | | |
| 2000 02 07 | 703 | 0.7− | 0.1+ | 2002 12 07 | 704 | 0.3− | 0.2− | 2005 08 04 | 644 | 0.2− | 0.9+ | | |
| 2000 03 03 | 703 | 0.6− | 0.5− | 2002 12 07 | 704 | 0.0 | 0.1− | 2005 08 04 | 644 | 0.2+ | 0.6+ | | |
| 2000 03 03 | 703 | 0.1+ | 1.1− | 2002 12 07 | 704 | 0.7− | 0.3+ | 2005 08 04 | 644 | 0.2− | 0.7+ | | |
| 2000 03 03 | 703 | 1.0− | 0.3− | 2002 12 07 | 704 | 0.1− | 1.5− | 2006 10 03 | 704 | 0.6+ | 0.5+ | | |
| 2000 03 03 | 703 | 0.9+ | 0.5− | 2002 12 12 | 644 | 0.3− | 0.1− | 2006 10 03 | 704 | 0.7+ | 0.7+ | | |
| 2000 03 09 | 704 | 0.5+ | 0.2+ | 2002 12 12 | 644 | 0.2− | 0.0 | 2006 10 03 | 704 | 0.6+ | 0.6+ | | |
| 2000 03 09 | 704 | 0.1− | 0.1+ | 2002 12 12 | 644 | 0.2− | 0.0 | 2006 10 16 | 704 | 0.2+ | 0.3+ | | |
| 2000 03 09 | 704 | 0.6− | 0.8+ | 2003 01 07 | 704 | 0.3− | 0.4− | 2006 10 16 | 704 | 0.0 | 0.0 | | |
| 2000 03 09 | 704 | 0.3+ | 0.1+ | 2003 01 07 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 704 | 0.1+ | 0.2− | | |
| 2000 03 09 | 704 | 0.1− | 0.1+ | 2003 01 07 | 704 | 0.8+ | 0.1− | 2006 10 16 | 704 | 0.1+ | 0.4+ | | |
| 2000 03 14 | 703 | 0.2+ | 0.4− | 2003 01 07 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 704 | 0.2+ | 0.2+ | | |
| 2000 03 14 | 703 | 0.2− | 1.4+ | 2003 01 31 | 704 | 0.6− | 1.0+ | 2006 10 23 | 703 | (1.8+ | 0.4−) | | |
| 2000 03 14 | 703 | 0.5− | 0.5− | 2003 01 31 | 704 | (1.6+ | 0.1−) | 2006 10 23 | 703 | 0.1− | 0.1− | | |
| 2000 03 14 | 703 | 0.6− | 0.5− | 2003 01 31 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 703 | 0.2− | 0.2− | | |
| 2002 08 01 | 704 | 0.9− | 0.7+ | 2003 01 31 | 704 | 0.1+ | 1.1+ | 2006 10 23 | 703 | 0.2− | 0.3− | | |
| 2002 08 01 | 704 | 0.8− | 0.7+ | 2003 01 31 | 704 | 0.2− | 0.7+ | 2006 11 14 | 704 | 0.4+ | 0.1− | | |
| 2002 08 01 | 704 | 0.4+ | 0.0 | 2004 01 28 | 704 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.4− | | |
| 2002 10 15 | 704 | 0.2+ | 0.8+ | 2004 01 28 | 704 | 0.6− | 0.7+ | 2006 11 14 | 704 | 0.0 | 0.3− | | |
| 2002 10 15 | 704 | 0.0 | 0.4+ | 2004 01 28 | 704 | 0.8+ | 0.7+ | 2006 11 14 | 704 | 0.3+ | 0.3− | | |
| 2002 10 15 | 704 | 0.2+ | 0.1+ | 2004 01 28 | 704 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.3+ | 0.8− | | |
| 2002 10 15 | 704 | 0.2+ | 0.0 | 2004 01 29 | 699 | 0.4+ | 0.8− | 2006 11 21 | 703 | 0.5+ | 0.5− | | |
| 2002 10 15 | 704 | 0.5+ | 0.1+ | 2004 01 29 | 699 | 1.0+ | 0.5− | 2006 11 21 | 703 | 0.3+ | 0.2− | | |
| 2002 10 20 | 644 | 0.3+ | 0.6+ | 2004 01 29 | 699 | 0.4− | 0.2+ | 2006 11 21 | 703 | 0.2− | 0.5− | | |
| 2002 10 20 | 644 | 0.4+ | 1.0+ | 2004 01 29 | 699 | 0.1− | 0.9− | 2006 11 21 | 703 | 0.3− | 0.4− | | |
| 2002 10 20 | 644 | 0.3+ | 0.9+ | 2004 01 30 | 699 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.2+ | | |
| 2002 10 30 | 704 | 0.4− | 0.1− | 2004 01 30 | 699 | 1.0− | 0.7+ | 2006 11 29 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 30 | 704 | 0.2− | 0.2+ | 2004 01 30 | 699 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 1.1− | 0.8− | | |
| 2002 10 30 | 704 | 0.2+ | 0.0 | 2004 01 30 | 699 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.4− | 0.0 | | |
| 2002 10 30 | 704 | (0.1+ | 1.9−) | 2004 02 14 | 644 | 0.2− | 0.3+ | | | | | | |

**(138184)∗ 2000 EQ$_{112}$ = 2002 VR$_{87}$**

Discovered 2000 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37414)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.12805 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27236911 | $\omega$ | 246.79654 | | −0.88091470 | | −0.46831261 |
| $a$ | 2.3570248 | $\Omega$ | 265.21865 | | +0.45542981 | | −0.79952330 |
| $e$ | 0.1603925 | $i$ | 3.93330 | | +0.12873609 | | −0.37609279 |
| $P$ | 3.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.3− | 0.1− | 2002 11 12 | 704 | 1.1− | 0.1+ | 2004 06 14 | 704 | 0.2− | 0.3+ | | |
| 1991 11 08 | 691 | 0.1+ | 0.2− | 2002 11 12 | 704 | 0.2+ | 0.0 | 2004 06 14 | 704 | 0.9− | 0.6+ | | |
| 1991 11 08 | 691 | 0.0 | 0.3− | 2002 11 12 | 704 | 0.4− | 0.2− | 2004 06 16 | 704 | 0.5+ | 0.5+ | | |
| 2000 03 01 | 703 | 0.2+ | 0.8+ | 2002 11 12 | 704 | 0.6− | 1.0− | 2004 06 16 | 704 | 0.7+ | 1.3− | | |
| 2000 03 01 | 703 | 0.8+ | 0.5+ | 2002 11 13 | 644 | 0.3− | 0.9+ | 2004 06 16 | 704 | 0.3− | 0.5− | | |
| 2000 03 01 | 703 | 0.6+ | 0.8+ | 2002 11 13 | 644 | 0.3− | 0.9+ | 2005 08 29 | 691 | 0.1− | 0.4+ | | |
| 2000 03 01 | 703 | 0.5+ | 0.5+ | 2002 11 13 | 644 | 0.4− | 0.9+ | 2005 08 29 | 691 | 0.1+ | 0.3+ | | |
| 2000 03 09 | 704 | 0.1+ | 0.4− | 2002 11 28 | 699 | 0.8− | 0.6+ | 2005 08 29 | 691 | 0.0 | 0.4+ | | |
| 2000 03 09 | 704 | 0.2+ | 0.8+ | 2002 11 28 | 699 | 0.7− | 0.1− | 2005 08 29 | 699 | (1.7− | 1.2+) | | |
| 2000 03 09 | 704 | 0.3+ | 0.3+ | 2002 11 28 | 699 | 0.5− | 0.9+ | 2005 08 29 | 699 | 1.1− | 1.3− | | |
| 2000 03 09 | 704 | 0.1− | 0.6+ | 2002 11 28 | 699 | 0.1+ | 0.9+ | 2005 08 29 | 699 | 0.4− | 0.3+ | | |
| 2000 03 10 | 608 | 0.8− | 0.1− | 2002 12 02 | 704 | 0.6+ | 0.4+ | 2005 08 29 | 699 | (1.0+ | 2.9+) | | |
| 2000 03 10 | 608 | 0.7− | 0.7− | 2002 12 02 | 704 | 0.9+ | 0.6+ | 2006 09 24 | 691 | 0.5− | 0.0 | | |
| 2000 03 10 | 608 | 0.3− | 0.6− | 2002 12 02 | 704 | 0.8+ | 0.7− | 2006 09 24 | 691 | 0.1− | 0.1+ | | |
| 2000 04 07 | 704 | 0.2− | 1.7+ | 2002 12 02 | 704 | 0.5+ | 0.0 | 2006 09 24 | 691 | 0.2− | 0.1+ | | |
| 2000 04 07 | 704 | (0.2− | 2.1+) | 2002 12 02 | 704 | (1.5+ | 0.2−) | 2006 10 17 | G96 | 0.3− | 0.5− | | |
| 2000 04 07 | 704 | 0.2+ | 1.5+ | 2002 12 06 | 704 | (0.3+ | 1.8+) | 2006 10 17 | G96 | 0.5+ | 0.1+ | | |
| 2000 04 07 | 704 | (0.5− | 3.3+) | 2002 12 06 | 704 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.6− | | |
| 2000 04 07 | 704 | (0.2− | 2.2+) | 2002 12 06 | 704 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.6− | | |
| 2000 04 08 | 704 | 0.7+ | 0.5+ | 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2000 04 08 | 704 | 0.8+ | 0.6+ | 2002 12 06 | 704 | 1.0+ | 0.5+ | 2006 10 31 | G96 | 0.8− | 0.1+ | | |
| 2000 04 08 | 704 | 0.8+ | 0.4− | 2002 12 11 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2000 04 08 | 704 | 0.2− | 1.3+ | 2002 12 11 | 704 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− | | |
| 2000 04 10 | 608 | 0.2+ | 1.6− | 2002 12 11 | 644 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2000 04 10 | 608 | 0.3− | 1.0− | 2002 12 11 | 704 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2000 04 10 | 608 | 0.1+ | 1.2− | 2002 12 11 | 644 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2002 11 05 | 704 | (2.7+ | 0.0 ) | 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.0 | | |
| 2002 11 05 | 704 | 1.3+ | 0.0 | 2002 12 11 | 704 | (0.1− | 1.6+) | 2006 11 27 | G96 | 0.1− | 0.1− | | |
| 2002 11 05 | 704 | (0.4− | 1.7−) | 2003 01 27 | 704 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.6− | 0.8− | | |
| 2002 11 08 | 704 | 0.5+ | 0.2+ | 2003 01 27 | 704 | 0.2− | 1.3− | 2006 11 27 | G96 | 0.1+ | 0.3− | | |
| 2002 11 08 | 704 | 0.8+ | 0.2+ | 2003 01 27 | 704 | (0.2− | 2.1−) | 2006 11 27 | G96 | 0.4− | 0.1− | | |
| 2002 11 08 | 704 | 0.2− | 0.2− | 2004 06 14 | 704 | 0.0 | 0.4− | | | | | | |

**(138185)∗ 2000 EK$_{113}$**

Discovered 2000 Mar. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.32334 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24121511 | $\omega$ | 247.31591 | | +0.25058454 | | −0.96802730 |
| $a$ | 2.5558363 | $\Omega$ | 188.19702 | | +0.91502492 | | +0.24068510 |
| $e$ | 0.1966054 | $i$ | 4.59622 | | +0.31612779 | | +0.07066701 |
| $P$ | 4.09 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.2+ | 0.4+ | 2002 09 14 | 644 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.7+ | 0.1− | | |
| 1994 10 09 | 691 | 0.3+ | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.4+ | | |
| 1994 10 09 | 691 | 0.5+ | 0.1− | 2002 09 17 | 644 | 0.8− | 0.1+ | 2006 08 28 | 703 | 0.6+ | 0.2+ | | |
| 1998 10 16 | 691 | 0.9− | 0.6− | 2002 09 17 | 644 | 0.4− | 0.3+ | 2006 08 28 | 703 | (1.7+ | 0.3−) | | |
| 1998 10 16 | 691 | 0.4− | 0.7− | 2002 09 17 | 644 | 0.3− | 0.5+ | 2006 09 27 | G96 | 0.4− | 0.2− | | |
| 1998 10 16 | 691 | 0.5− | 0.7− | 2002 09 17 | 608 | 0.6− | 1.4− | 2006 09 27 | G96 | 0.0 | 0.1− | | |
| 2000 03 09 | 691 | 0.4− | 0.4− | 2002 09 17 | 608 | 0.5− | 1.1− | 2006 09 27 | G96 | 0.3− | 0.2− | | |
| 2000 03 09 | 691 | 0.4− | 0.3− | 2002 09 17 | 608 | 0.1− | 1.2− | 2006 09 27 | G96 | 0.0 | 0.1− | | |
| 2000 03 09 | 691 | 0.7− | 0.4− | 2002 10 03 | 704 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.5− | 0.1− | | |
| 2000 03 11 | 704 | 0.8+ | 0.7− | 2002 10 03 | 704 | (0.1+ | 2.1+) | 2006 10 28 | G96 | 0.6+ | 0.3− | | |
| 2000 03 11 | 704 | 0.4+ | 0.1+ | 2002 10 03 | 704 | 0.9− | 1.2+ | 2006 10 28 | G96 | 0.3+ | 0.3+ | | |
| 2000 03 11 | 704 | 1.9+ | 0.7+ | 2002 10 03 | 704 | 0.4+ | 0.7+ | 2006 10 28 | G96 | 0.0 | 0.1+ | | |
| 2000 03 11 | 704 | 0.8+ | 0.9+ | 2004 03 12 | 644 | 0.0 | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.2+ | | |
| 2000 04 02 | 691 | 0.4− | 0.1− | 2004 03 12 | 644 | 0.1+ | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.5− | | |
| 2000 04 02 | 691 | 0.4− | 0.2− | 2004 03 12 | 644 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.4− | 0.0 | | |
| 2000 04 02 | 691 | 0.7− | 0.5− | 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 11 16 | G96 | 0.8− | 0.1− | | |
| 2000 04 11 | 691 | 0.5+ | 0.0 | 2004 03 18 | 704 | 1.0+ | 0.2− | 2006 11 21 | G96 | 0.4− | 0.2− | | |
| 2000 04 11 | 691 | 0.5+ | 0.5− | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2000 04 11 | 691 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 11 21 | G96 | 0.4+ | 0.1+ | | |
| 2002 09 05 | 645 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1+ | | |
| 2002 09 05 | 645 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.3+ | 0.6+ | | | | | | |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.0 | | | | | | |

**(138186)∗ 2000 EB$_{115}$ = 2005 JG$_3$**

Discovered 2000 Mar. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74751)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.05398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21944366 | $\omega$ | 64.54381 | | −0.45920065 | | +0.88832777 |
| $a$ | 2.7222041 | $\Omega$ | 178.11309 | | −0.84357784 | | −0.43503266 |
| $e$ | 0.1079094 | $i$ | 5.09092 | | −0.27840833 | | −0.14703863 |
| $P$ | 4.49 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 1.1+ | 0.8+ | 2005 05 08 | 691 | 0.4+ | 0.2+ | 2005 06 23 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.1− | 2005 05 08 | 704 | 1.0− | 0.7− | 2005 06 23 | 644 | 0.0 | 0.3− | | |
| 2000 03 03 | 704 | 1.1+ | 0.3+ | 2005 05 08 | 704 | 0.3+ | 0.6+ | 2005 06 28 | 644 | 0.0 | 0.2− | | |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2005 05 08 | 704 | 0.4+ | 0.2+ | 2005 06 28 | 644 | 0.1− | 0.1+ | | |
| 2000 03 10 | 691 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.2− | 0.1− | 2005 06 28 | 644 | 0.0 | 0.2− | | |
| 2000 03 10 | 691 | 0.1− | 0.1+ | 2005 05 14 | 644 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2+ | | |
| 2000 03 10 | 691 | 0.2− | 0.2+ | 2005 05 14 | 644 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.3− | 0.3+ | 2005 05 16 | 704 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.1+ | | |
| 2000 03 11 | 704 | 0.3+ | 0.4+ | 2005 05 16 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.6− | 0.3− | | |
| 2000 03 11 | 704 | 0.8+ | 0.3− | 2005 05 16 | 704 | 0.8+ | 0.4− | 2006 09 19 | 699 | (1.8− | 1.2+) | | |
| 2000 03 11 | 704 | 1.8− | 1.1− | 2005 05 17 | G96 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.7+ | 0.1+ | | |
| 2000 03 11 | 704 | 0.1− | 0.4− | 2005 05 17 | G96 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.5− | 0.3+ | | |
| 2004 01 18 | 691 | 0.3+ | 0.5+ | 2005 05 17 | G96 | 0.5− | 0.2− | 2006 09 20 | 704 | 0.9− | 0.7+ | | |
| 2004 01 18 | 691 | 0.2+ | 0.3+ | 2005 05 17 | G96 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.4− | 0.4− | | |
| 2004 01 18 | 691 | 0.1+ | 0.3+ | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 09 20 | 704 | 0.0 | 0.2+ | | |
| 2004 01 24 | 704 | 0.9− | 0.3− | 2005 05 19 | G96 | 0.4− | 0.2− | 2006 09 20 | 704 | 0.9− | 0.5− | | |
| 2004 01 24 | 704 | 0.3+ | 0.1− | 2005 05 19 | G96 | 0.5− | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.4+ | | |
| 2004 01 24 | 704 | 0.6− | 0.4+ | 2005 05 19 | G96 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.3− | 0.2+ | | |
| 2005 03 13 | G96 | 0.3− | 0.3− | 2005 06 03 | 691 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.4− | 0.5+ | | |
| 2005 03 13 | G96 | 0.4− | 0.1+ | 2005 06 03 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 2005 03 13 | G96 | 0.2− | 0.0 | 2005 06 03 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− | | |
| 2005 03 13 | G96 | 0.3− | 0.0 | 2005 06 04 | 703 | 0.6− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.0 | | |
| 2005 05 03 | 704 | 0.7+ | 0.4− | 2005 06 04 | 703 | 0.3− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 2005 05 03 | 704 | 0.0 | 0.4− | 2005 06 04 | 703 | (1.5− | 0.4−) | 2006 10 27 | G96 | 0.5− | 0.3+ | | |
| 2005 05 03 | 704 | 0.2+ | 0.3+ | 2005 06 04 | 703 | 1.1− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2005 05 05 | 608 | 1.0+ | 1.4+ | 2005 06 08 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.3+ | | |
| 2005 05 05 | 608 | (0.8+ | 2.1+) | 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2005 05 05 | 608 | 0.5+ | 1.0+ | 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2+ | | |
| 2005 05 08 | 691 | 0.1− | 0.0 | 2005 06 16 | 691 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2005 06 16 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.4− | 0.4− | | |
| 2005 05 08 | 704 | 0.0 | 0.3− | 2005 06 16 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.6− | | |
| 2005 05 08 | 704 | 0.5+ | 0.6− | 2005 06 23 | 644 | 0.0 | 0.1− | | | | | | |

**(138187)∗ 2000 EJ$_{115}$ = 2002 TF$_{220}$**

Discovered 2000 Mar. 10 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37415)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.11433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23130466 | $\omega$ | 21.20172 | | +0.98921891 | −0.13469181 | |
| $a$ | 2.6283294 | $\Omega$ | 346.16137 | | +0.07356849 | +0.79645429 | |
| $e$ | 0.0688828 | $i$ | 13.90527 | | +0.12662399 | +0.58950715 | |
| $P$ | 4.26 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.7+ | 0.5− | 2002 10 10 | 704 | 0.1+ | 0.7− | 2006 09 12 | 703 | 0.5+ | 0.8+ | | |
| 2000 03 03 | 704 | (3.0+ | 0.0 ) | 2002 10 10 | 704 | (0.4+ | 1.6+) | 2006 09 13 | 644 | 0.4− | 0.1+ | | |
| 2000 03 03 | 704 | 1.4+ | 0.5− | 2002 10 10 | 704 | 0.9+ | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.1− | | |
| 2000 03 03 | 704 | 0.5+ | 0.6− | 2002 11 14 | 644 | 0.4− | 0.2− | 2006 09 13 | 644 | 0.2− | 0.1+ | | |
| 2000 03 10 | 691 | 0.3− | 0.3+ | 2002 11 14 | 644 | 0.0 | 0.0 | 2006 09 18 | 704 | 1.3+ | 1.1+ | | |
| 2000 03 10 | 691 | 0.1− | 0.5+ | 2002 11 14 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.3+ | | |
| 2000 03 10 | 691 | 0.4− | 0.2− | 2004 02 10 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.7+ | | |
| 2000 03 11 | 704 | 0.3+ | 0.7+ | 2004 02 10 | 644 | 0.1− | 0.1+ | 2006 09 18 | 704 | (0.8− | 2.5+) | | |
| 2000 03 11 | 704 | 0.5+ | 0.4+ | 2004 02 10 | 644 | 0.3+ | 0.3− | 2006 09 18 | 704 | 0.4+ | 0.8+ | | |
| 2000 03 11 | 704 | 0.2+ | 0.2+ | 2004 02 13 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.1− | | |
| 2000 03 11 | 704 | 0.9+ | 0.2+ | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.3− | | |
| 2000 03 11 | 704 | 0.6− | 0.1− | 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.0 | | |
| 2000 03 11 | 699 | 0.0 | 0.5− | 2004 02 16 | 704 | 1.5− | 0.4− | 2006 09 20 | 691 | 0.2− | 0.1+ | | |
| 2000 03 11 | 699 | 0.9+ | 1.3− | 2004 02 16 | 704 | (2.0− | 0.1+) | 2006 09 20 | 691 | 0.1− | 0.2+ | | |
| 2000 03 11 | 699 | 0.6+ | 0.4+ | 2004 02 16 | 704 | 0.6− | 0.2+ | 2006 09 20 | 691 | 0.2+ | 0.7+ | | |
| 2000 03 11 | 699 | 0.3− | 1.5+ | 2004 03 10 | 644 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.0 | | |
| 2002 09 21 | 644 | 0.3− | 0.2− | 2004 03 10 | 644 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 0.8− | 0.8− | | |
| 2002 09 21 | 644 | 0.3− | 0.2+ | 2004 03 10 | 644 | 0.5+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.2− | | |
| 2002 09 21 | 644 | 0.5− | 0.0 | 2006 08 18 | 699 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.8+ | 1.4− | | |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2006 08 18 | 699 | (1.9− | 2.1+) | 2006 09 29 | 704 | 0.7+ | 1.3− | | |
| 2002 10 05 | 704 | 0.1− | 0.4+ | 2006 08 18 | 699 | 0.3+ | 0.6− | 2006 09 29 | 704 | 0.1− | 0.0 | | |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2006 08 18 | 699 | (2.2+ | 1.6−) | 2006 09 29 | 704 | 0.7− | 0.3+ | | |
| 2002 10 05 | 704 | 0.4+ | 0.2+ | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 10 01 | 703 | 0.4− | 0.6+ | | |
| 2002 10 05 | 704 | 1.0+ | 0.1− | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 10 01 | 703 | 1.4− | 0.3+ | | |
| 2002 10 09 | 704 | 0.2− | 0.7− | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 10 01 | 703 | 1.5− | 0.2− | | |
| 2002 10 09 | 704 | 0.2+ | 0.8− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.8− | 0.7+ | | |
| 2002 10 09 | 704 | 1.1− | 0.9− | 2006 08 24 | 644 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1+ | | |
| 2002 10 09 | 704 | 0.5+ | 0.1+ | 2006 08 24 | 644 | 0.5− | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.0 | | |
| 2002 10 09 | 704 | 0.6+ | 0.2+ | 2006 09 12 | 703 | 0.3− | 1.1+ | 2006 10 18 | 691 | 0.2+ | 0.0 | | |
| 2002 10 10 | 704 | (2.2+ | 0.8−) | 2006 09 12 | 703 | 0.4+ | 0.4− | | | | | | |
| 2002 10 10 | 704 | 0.3+ | 0.5− | 2006 09 12 | 703 | 0.1− | 0.9− | | | | | | |

**(138188)∗ 2000 EV$_{115}$ = 2005 JF$_{107}$**

Discovered 2000 Mar. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74751)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.33242 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21815688 | $\omega$ | 42.28478 | | −0.82913656 | +0.55902202 | |
| $a$ | 2.7328981 | $\Omega$ | 171.69864 | | −0.52205692 | −0.77092197 | |
| $e$ | 0.0176996 | $i$ | 2.06049 | | −0.19997284 | −0.30524366 | |
| $P$ | 4.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 28 | 691 | 0.1− | 0.1− | 2003 12 27 | 691 | 0.2+ | 0.0 | 2005 05 13 | G96 | 0.3− | 0.1− | | |
| 1994 12 28 | 691 | 0.1− | 0.1− | 2004 01 15 | 691 | 0.2− | 0.0 | 2005 05 19 | G96 | 0.3− | 0.0 | | |
| 1994 12 28 | 691 | 0.3− | 0.0 | 2004 01 15 | 691 | 0.2− | 0.1+ | 2005 05 19 | G96 | 0.4− | 0.2− | | |
| 2000 03 03 | 704 | 0.1− | 0.3+ | 2004 01 15 | 691 | 0.3− | 0.1+ | 2005 05 19 | G96 | 0.5− | 0.2− | | |
| 2000 03 03 | 704 | 0.1+ | 1.1+ | 2004 01 21 | 704 | 0.9+ | 0.3+ | 2005 05 19 | G96 | 0.5− | 0.0 | | |
| 2000 03 03 | 704 | 0.7+ | 1.4+ | 2004 01 21 | 704 | 0.0 | 0.5− | 2006 08 16 | 644 | 0.3+ | 0.1+ | | |
| 2000 03 10 | 691 | 0.2+ | 0.2− | 2004 01 21 | 704 | 0.9+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.4+ | | |
| 2000 03 10 | 691 | 0.4+ | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.1− | | |
| 2000 03 10 | 691 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.2+ | 0.5+ | | |
| 2000 03 11 | 704 | 0.8+ | 1.0+ | 2005 04 16 | 691 | 0.0 | 0.2− | 2006 08 28 | 691 | 0.3− | 0.7+ | | |
| 2000 03 11 | 704 | 0.8+ | 0.8+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.5+ | | |
| 2000 03 11 | 704 | (0.1− | 2.3+) | 2005 05 12 | G96 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.0 | | |
| 2000 04 05 | 704 | 0.0 | 1.0+ | 2005 05 12 | G96 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2000 04 05 | 704 | 0.5+ | 0.4+ | 2005 05 12 | G96 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.4+ | | |
| 2000 04 05 | 704 | 0.9+ | 1.2+ | 2005 05 13 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.0 | | |
| 2003 12 27 | 691 | 0.2+ | 0.3+ | 2005 05 13 | G96 | 0.6− | 0.2− | | | | | | |
| 2003 12 27 | 691 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.1− | 0.3− | | | | | | |

**(138189)∗ 2000 EZ$_{115}$ = 2001 LO$_{13}$**

Discovered 2000 Mar. 10 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 14848)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.56752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23857477 | $\omega$ | 154.29703 | | +0.88116152 | +0.47279564 | |
| $a$ | 2.5746589 | $\Omega$ | 177.47462 | | −0.44895365 | +0.83952214 | |
| $e$ | 0.2409431 | $i$ | 5.62550 | | −0.14830710 | +0.26770666 | |
| $P$ | 4.13 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 17 | 691 | 0.4− | 0.3+ | 2005 05 03 | 703 | (2.1− | 0.9−) | 2005 06 23 | 644 | 0.1− | 0.3+ | | |
| 1993 08 17 | 691 | (2.8− | 0.5−) | 2005 05 03 | 703 | 0.1+ | 0.7− | 2005 06 28 | 644 | 0.3− | 0.0 | | |
| 1993 08 17 | 691 | 0.3+ | 0.5+ | 2005 05 03 | 704 | 0.2+ | 1.2+ | 2005 06 28 | 644 | 0.1+ | 0.1+ | | |
| 1993 08 17 | 691 | 0.2− | 0.0 | 2005 05 03 | 703 | 0.8− | 1.0+ | 2005 06 28 | 644 | 0.1+ | 0.3+ | | |
| 1993 08 17 | 691 | 0.0 | 0.1+ | 2005 05 03 | 704 | 0.3− | 0.8− | 2006 11 02 | 703 | 1.1+ | 0.5+ | | |
| 1993 08 17 | 691 | 0.1− | 0.3+ | 2005 05 03 | 704 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 0.9− | 0.1− | | |
| 2000 03 03 | 704 | 0.7+ | 0.4− | 2005 05 12 | 704 | 0.1+ | 0.3+ | 2006 11 02 | 703 | 0.2+ | 0.1+ | | |
| 2000 03 03 | 704 | 0.2+ | 0.1− | 2005 05 12 | 704 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.2− | 1.3− | | |
| 2000 03 03 | 704 | 0.2+ | 1.2+ | 2005 05 12 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 704 | 0.4− | 0.7+ | | |
| 2000 03 10 | 691 | 0.2− | 0.1+ | 2005 05 12 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 704 | 0.1− | 1.3+ | | |
| 2000 03 10 | 691 | 0.3− | 0.2− | 2005 05 16 | G96 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.6− | 0.2+ | | |
| 2000 03 10 | 691 | 0.3− | 0.2+ | 2005 05 16 | G96 | 0.2− | 0.1+ | 2006 11 14 | 704 | 1.0− | 0.9+ | | |
| 2000 03 11 | 704 | 0.5+ | 0.2+ | 2005 05 16 | G96 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.4+ | | |
| 2000 03 11 | 704 | 0.4+ | 0.2− | 2005 05 16 | G96 | 0.4− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.7+ | | |
| 2000 03 11 | 704 | 0.5− | 0.3+ | 2005 05 28 | 599 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.2+ | 1.1+ | | |
| 2000 04 10 | 695 | 0.4+ | 0.1+ | 2005 05 28 | 599 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 1.1+ | 0.0 | | |
| 2000 04 10 | 695 | 0.4+ | 0.3+ | 2005 05 29 | 599 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.4+ | 1.2+ | | |
| 2001 06 15 | 704 | 0.4+ | 1.1+ | 2005 05 29 | 599 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.5+ | | |
| 2001 06 15 | 704 | 0.1+ | 0.7+ | 2005 06 02 | 703 | 0.5− | 0.4+ | 2006 11 20 | 704 | 0.8+ | 0.3+ | | |
| 2001 06 15 | 704 | (0.4+ | 2.0+) | 2005 06 02 | 703 | (2.3− | 0.3+) | 2006 11 20 | 704 | 0.2+ | 0.1+ | | |
| 2001 06 22 | 704 | 0.3+ | 0.1+ | 2005 06 02 | 703 | 0.9− | 0.3+ | 2006 11 20 | 704 | 0.6+ | 0.7+ | | |
| 2001 06 22 | 704 | 0.2− | 0.3− | 2005 06 02 | 703 | (1.7− | 0.5−) | 2006 11 20 | 704 | 0.1− | 0.9+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 22 | 704 | 0.6+ | 0.0 | 2005 06 02 | E12 | 0.3− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2001 06 22 | 704 | 0.2+ | 0.5+ | 2005 06 02 | E12 | 0.6+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2001 06 22 | 704 | 0.1− | 0.1+ | 2005 06 02 | E12 | 0.1− | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2004 02 16 | 691 | 0.3+ | 0.3+ | 2005 06 02 | E12 | 0.6− | 0.8− | 2006 11 22 | G96 | 0.4− | 0.0 |
| 2004 02 16 | 691 | 0.5+ | 0.2+ | 2005 06 05 | 704 | 0.4− | 0.2− | 2006 11 25 | 703 | 0.7− | 0.7+ |
| 2004 02 16 | 691 | 0.3+ | 0.2+ | 2005 06 05 | 704 | 0.6− | 0.6+ | 2006 11 25 | 703 | 0.8− | 0.7− |
| 2004 02 17 | 691 | 0.2− | 0.2+ | 2005 06 05 | 704 | (0.8+ | 1.6+) | 2006 11 25 | 703 | 0.6+ | 0.4− |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2005 06 05 | 704 | 0.4+ | 0.7+ | 2006 11 28 | 704 | 0.7− | 0.4+ |
| 2004 02 17 | 691 | 0.2+ | 0.2+ | 2005 06 05 | 704 | 0.5− | 0.3− | 2006 11 28 | 704 | 1.5− | 1.3+ |
| 2004 03 30 | 691 | 0.1+ | 0.1− | 2005 06 09 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.9+ |
| 2004 03 30 | 691 | 0.1− | 0.2+ | 2005 06 09 | 691 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 1.3+ |
| 2004 03 30 | 691 | 0.2+ | 0.0 | 2005 06 09 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2005 05 03 | 703 | 0.2− | 0.7− | 2005 06 23 | 644 | 0.0 | 0.3+ | | | | |
| 2005 05 03 | 704 | 0.9+ | 0.5− | 2005 06 23 | 644 | 0.1− | 0.1+ | | | | |

**(138190)∗ 2000 EK$_{118}$ = 2002 RX$_{103}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 34924)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.25401 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24179947 | $\omega$ | 170.22688 | | −0.99421080 | | +0.08324303 |
| $a$ | 2.5517169 | $\Omega$ | 15.06045 | | −0.10743207 | | −0.78071294 |
| $e$ | 0.0413584 | $i$ | 15.15672 | | +0.00179630 | | −0.61932052 |
| $P$ | 4.08 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 31 | 704 | 0.4+ | 1.0− | 2002 11 12 | 704 | 1.0+ | 0.3+ | 2006 09 17 | 704 | 0.3+ | 1.0− |
| 2000 01 31 | 704 | 0.1− | 0.8+ | 2002 11 12 | 704 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.7− | 1.4− |
| 2000 01 31 | 704 | 0.4− | 0.3+ | 2002 11 22 | 644 | 0.8+ | 1.2+ | 2006 09 20 | 704 | 0.2− | 0.5− |
| 2000 03 04 | 704 | 1.1− | 0.4+ | 2002 11 22 | 644 | 0.4+ | 1.2+ | 2006 09 20 | 704 | 1.0+ | 0.4+ |
| 2000 03 04 | 704 | 0.4− | 0.5+ | 2002 11 22 | 644 | 0.2+ | 1.2+ | 2006 09 20 | 704 | 0.9+ | 0.7+ |
| 2000 03 04 | 704 | 0.4− | 0.3+ | 2003 01 05 | 704 | (1.0− | 1.6−) | 2006 09 20 | 704 | 0.6+ | 0.4− |
| 2000 03 11 | 699 | 0.2− | 0.3− | 2003 01 05 | 704 | 1.0− | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.7+ |
| 2000 03 11 | 699 | 0.4+ | 0.6+ | 2003 01 05 | 704 | 0.6− | 0.0 | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 2000 03 11 | 699 | 0.6+ | 0.2− | 2003 01 05 | 704 | 1.0− | 0.2− | 2006 09 20 | 644 | 0.2+ | 0.3− |
| 2000 03 11 | 699 | 0.3+ | 0.0 | 2003 12 18 | 704 | 0.3− | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2000 03 12 | 703 | 0.3− | 0.2+ | 2003 12 18 | 704 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.4+ |
| 2000 03 12 | 703 | 0.4+ | 0.1− | 2003 12 18 | 704 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2000 03 12 | 704 | 0.3+ | 0.8− | 2003 12 18 | 704 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2000 03 12 | 704 | 1.2+ | 0.3− | 2004 01 02 | 704 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.5− |
| 2000 03 12 | 703 | 0.3− | 0.3+ | 2004 01 02 | 704 | 0.5− | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2000 03 12 | 704 | 0.3+ | 1.0+ | 2004 01 02 | 704 | 0.8− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.6− |
| 2000 03 12 | 703 | 0.8+ | 0.9+ | 2004 01 14 | 644 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.6− |
| 2000 03 12 | 704 | 0.8+ | 1.0+ | 2004 01 14 | 644 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.9+ | 0.0 |
| 2000 03 12 | 704 | 0.2+ | 0.9+ | 2004 01 14 | 644 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.8+ |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2004 01 30 | 703 | 0.3− | 0.6+ | 2006 09 27 | 704 | 0.6+ | 0.3+ |
| 2002 09 05 | 704 | 0.8− | 0.3+ | 2004 01 30 | 703 | 0.2+ | 0.8+ | 2006 09 29 | 704 | 0.3+ | 0.7+ |
| 2002 09 05 | 704 | 0.6− | 0.8+ | 2004 01 30 | 703 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 1.0+ |
| 2002 09 07 | 704 | 0.6− | 0.0 | 2004 01 30 | 703 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.5+ |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2004 01 31 | 704 | 0.2+ | 0.4− | 2006 09 29 | 704 | 0.4− | 0.2− |
| 2002 09 07 | 704 | 0.5− | 0.6+ | 2004 01 31 | 704 | 1.4+ | 0.5− | 2006 09 29 | 704 | 0.2+ | 0.9+ |
| 2002 09 07 | 704 | 0.4+ | 0.2+ | 2004 01 31 | 704 | 1.2+ | 0.8− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 09 17 | 608 | 1.0− | 0.0 | 2004 01 31 | 704 | (1.6+ | 0.6−) | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 09 17 | 608 | 0.4− | 0.3− | 2004 02 02 | 704 | (0.8+ | 1.9−) | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 09 17 | 608 | 0.9− | 0.2− | 2004 02 02 | 704 | (1.1+ | 1.7−) | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2002 10 01 | 699 | 1.0+ | 0.6− | 2004 02 02 | 704 | 1.2+ | 1.5− | 2006 10 17 | G96 | 0.1+ | 1.1− |
| 2002 10 01 | 699 | 0.5+ | 0.1+ | 2004 02 02 | 704 | (2.1− | 0.4−) | 2006 10 17 | G96 | 0.3+ | 0.5− |
| 2002 10 01 | 699 | 0.8+ | 0.3− | 2004 02 02 | 704 | 0.6− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2002 10 01 | 699 | 0.6+ | 0.2+ | 2004 02 11 | 704 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2002 10 04 | 704 | 0.4+ | 0.2+ | 2004 02 11 | 704 | 0.0 | 1.1− | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2002 10 04 | 704 | 0.8− | 0.5− | 2004 02 11 | 704 | 0.3− | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.3− |
| 2002 10 04 | 704 | 0.6− | 0.1− | 2004 02 11 | 704 | 0.9− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2002 10 04 | 704 | 0.4− | 1.1+ | 2004 02 11 | 704 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.4− | 1.2− |
| 2002 10 09 | 704 | 0.1+ | 0.4+ | 2004 02 18 | 703 | 0.6− | 1.1− | 2006 10 17 | 703 | 0.7+ | 0.5− |
| 2002 10 09 | 704 | 0.6+ | 0.2− | 2004 02 18 | 703 | 0.8− | 0.9− | 2006 10 17 | 703 | 0.3− | 1.0− |
| 2002 10 09 | 704 | 0.8+ | 0.5+ | 2004 02 18 | 703 | 1.1− | 0.9− | 2006 10 17 | 703 | 0.2+ | 0.7− |
| 2002 10 09 | 704 | 0.2− | 0.6+ | 2004 02 18 | 703 | 1.0− | 0.6− | 2006 10 19 | G96 | 0.3− | 0.4− |
| 2002 10 09 | 704 | 0.6+ | 1.1+ | 2004 03 20 | 703 | 0.4+ | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2002 10 12 | 704 | (1.1+ | 2.0+) | 2004 03 20 | 703 | (2.2− | 1.2−) | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 10 12 | 704 | (0.5− | 3.3+) | 2004 03 20 | 703 | 0.5− | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2002 10 12 | 704 | (2.0+ | 1.9+) | 2004 03 20 | 703 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | (2.3+ | 0.9+) | 2004 03 25 | 704 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 10 31 | 699 | 0.9− | 0.4+ | 2004 03 25 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 699 | 1.3− | 0.3+ | 2004 03 25 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2002 10 31 | 699 | 0.8− | 0.4− | 2004 03 25 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 31 | 699 | 1.1− | 0.3+ | 2004 03 25 | 704 | 0.4− | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 11 03 | 608 | 0.2− | 0.9− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 11 03 | 608 | 0.5− | 0.9− | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 03 | 608 | 0.5− | 0.6− | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 11 08 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2002 11 08 | 704 | (1.6+ | 1.8−) | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2002 11 08 | 704 | (0.8+ | 1.9−) | 2006 09 14 | 703 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.6+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2002 11 12 | 704 | 0.5+ | 0.4− | 2006 09 17 | 704 | 0.2− | 0.7− | | | | |

**(138191)∗ 2000 EH$_{119}$ = 2002 RY$_{95}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 34925)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.96535 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23422378 | $\omega$ | 149.63134 | | −0.88624246 | | −0.46280525 |
| $a$ | 2.6064460 | $\Omega$ | 3.01245 | | +0.31291021 | | −0.62938355 |
| $e$ | 0.0310110 | $i$ | 21.94103 | | +0.34155746 | | −0.62424967 |
| $P$ | 4.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 1.8+ | 0.3− | 2002 10 05 | 704 | 0.0 | 0.2− | 2004 03 25 | 704 | 0.5+ | 0.4− |
| 2000 03 04 | 704 | 0.7− | 0.5+ | 2002 10 07 | 699 | 0.1+ | 0.8+ | 2004 03 25 | 704 | 0.7+ | 0.1− |
| 2000 03 04 | 704 | 0.3− | 0.9+ | 2002 10 07 | 699 | 0.0 | 0.4+ | 2004 03 25 | 704 | 0.6+ | 1.0+ |
| 2000 03 04 | 704 | 0.9− | 0.3+ | 2002 10 07 | 699 | 0.1+ | 0.6− | 2006 09 14 | 703 | 0.8− | 0.5− |
| 2000 03 11 | 699 | 0.8+ | 0.8− | 2002 10 07 | 699 | 1.1+ | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.5− |
| 2000 03 11 | 699 | 0.3− | 0.0 | 2002 10 09 | 704 | 0.7− | 0.6− | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2000 03 11 | 699 | 0.6+ | 0.2+ | 2002 10 09 | 704 | 1.3+ | 1.1− | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2000 03 11 | 699 | 0.1+ | 0.5+ | 2002 10 09 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 699 | 1.2+ | 1.5+ |
| 2000 03 12 | 704 | 0.1+ | 0.4+ | 2002 10 09 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | (1.7+ | 1.9+) |
| 2000 03 12 | 704 | 0.1+ | 0.1− | 2002 10 12 | 704 | 0.3− | 0.8− | 2006 09 19 | 699 | 0.6− | 0.0 |
| 2000 03 12 | 704 | 0.4− | 0.6+ | 2002 10 12 | 704 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.4+ | 0.6+ |
| 2000 03 12 | 704 | 0.3− | 0.1+ | 2002 10 12 | 704 | 0.8+ | 0.6+ | 2006 09 25 | 699 | 0.5+ | 0.5+ |
| 2000 03 12 | 704 | 0.9+ | 0.1− | 2002 10 12 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2004 01 30 | 703 | 0.3− | 0.1− | 2006 09 25 | 699 | 1.1+ | 0.3+ |
| 2002 09 05 | 704 | 0.0 | 0.3− | 2004 01 30 | 703 | 1.1+ | 0.2− | 2006 09 25 | 699 | 1.2+ | 0.8− |
| 2002 09 05 | 704 | 0.0 | 1.0+ | 2004 01 30 | 703 | 0.1− | 0.3+ | 2006 09 26 | 704 | (1.8− | 0.3+) |
| 2002 09 05 | 704 | 0.6− | 0.2− | 2004 01 30 | 703 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.1− | 0.1− | 2004 02 02 | 703 | 0.7− | 0.3+ | 2006 09 26 | 704 | 1.3− | 0.7+ |
| 2002 09 07 | 704 | 0.9− | 0.5− | 2004 02 02 | 703 | 0.3− | 0.3− | 2006 09 26 | 704 | 0.5− | 0.4− |
| 2002 09 07 | 704 | 1.1− | 0.1− | 2004 02 02 | 703 | 0.9− | 0.7− | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 2002 09 07 | 704 | 0.5− | 0.1+ | 2004 02 02 | 703 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2002 09 07 | 704 | 0.5− | 0.8+ | 2004 02 03 | 704 | (1.8+ | 0.1+) | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2002 09 07 | 704 | 0.4+ | 0.7+ | 2004 02 03 | 704 | (2.0+ | 0.2−) | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 2002 09 28 | 608 | (3.4− | 0.1+) | 2004 02 03 | 704 | 1.3+ | 0.2− | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2002 09 28 | 608 | (3.0− | 0.1+) | 2004 02 03 | 704 | 1.2+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2002 09 28 | 608 | (2.8− | 0.1−) | 2004 02 09 | 699 | 0.4+ | 0.8− | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.7+ | 2004 02 09 | 699 | 1.3− | 1.0− | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2002 10 04 | 704 | 0.3+ | 0.4+ | 2004 02 09 | 699 | 0.3+ | 0.9− | 2006 10 20 | G96 | 0.5+ | 0.4− |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2004 02 09 | 699 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2004 02 10 | 704 | 1.1− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.4− | 0.4+ | 2004 02 10 | 704 | 1.0− | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.3+ | 0.1− | 2004 02 10 | 704 | (2.1− | 1.0+) | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2002 10 05 | 704 | 0.5− | 0.1+ | 2004 02 10 | 704 | 0.9− | 0.6+ | 2006 11 11 | G96 | 0.5+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.3− | 0.1+ | 2004 03 25 | 704 | 0.6+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2002 10 05 | 704 | 0.3− | 0.2− | 2004 03 25 | 704 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− |

**(138192)∗ 2000 EA$_{120}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.34211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25621979 | $\omega$ | 99.79365 | | −0.81508865 | −0.57264822 | |
| $a$ | 2.4550534 | $\Omega$ | 45.33586 | | +0.47131259 | −0.74355598 | |
| $e$ | 0.0797194 | $i$ | 7.08905 | | +0.33689009 | −0.34525139 | |
| $P$ | 3.85 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.5− | 0.2+ | 2004 02 18 | 704 | 0.3− | 0.5− | 2004 04 25 | 699 | 0.1+ | 0.2− |
| 2000 02 03 | 704 | 0.2+ | 0.2− | 2004 02 18 | 608 | 0.3− | 0.1+ | 2004 05 21 | 704 | 0.0 | 0.1+ |
| 2000 02 03 | 704 | 0.5+ | 1.0+ | 2004 02 18 | 608 | 0.4− | 0.0 | 2004 05 21 | 704 | 0.9+ | 0.6+ |
| 2000 02 03 | 704 | 0.2− | 0.4+ | 2004 02 18 | 608 | 0.1− | 0.1+ | 2004 05 21 | 704 | (0.1− | 2.0+) |
| 2000 02 03 | 704 | 0.0 | 1.2+ | 2004 02 23 | 608 | 0.3− | 0.8− | 2005 07 10 | E12 | 0.6− | 0.8+ |
| 2000 03 04 | 704 | 0.1− | 0.1− | 2004 02 23 | 608 | 0.1− | 0.0 | 2005 07 10 | E12 | 0.4+ | 0.6+ |
| 2000 03 04 | 704 | 0.5− | 0.3+ | 2004 02 23 | 608 | 0.2+ | 0.7− | 2005 07 10 | E12 | 0.4− | 1.0+ |
| 2000 03 04 | 704 | 0.4− | 0.1+ | 2004 02 27 | 704 | 0.6− | 0.8+ | 2005 07 10 | E12 | 0.6− | 0.3+ |
| 2000 03 04 | 704 | 0.1− | 0.2+ | 2004 02 27 | 704 | 0.1− | 0.3+ | 2005 07 29 | E12 | 0.4− | 1.0+ |
| 2000 03 04 | 704 | 0.4− | 0.6− | 2004 02 27 | 704 | 0.2− | 0.5− | 2005 07 29 | E12 | 0.4+ | 0.5+ |
| 2000 03 11 | 699 | 0.3− | 0.5− | 2004 02 27 | 704 | 0.6+ | 0.4− | 2005 07 29 | E12 | 0.2− | 0.1− |
| 2000 03 11 | 699 | 0.9+ | 0.1− | 2004 03 15 | 704 | 0.0 | 0.2+ | 2005 07 29 | E12 | 0.3− | 1.0+ |
| 2000 03 11 | 699 | 0.4− | 0.1+ | 2004 03 15 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | (3.4− | 3.8+) |
| 2000 03 11 | 699 | 0.2+ | 0.0 | 2004 03 15 | 704 | 0.3− | 0.0 | 2006 08 28 | 703 | 1.0− | 0.6+ |
| 2000 03 12 | 704 | 0.3+ | 0.4− | 2004 03 15 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.5+ |
| 2000 03 12 | 704 | 0.2+ | 0.1− | 2004 03 15 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.4− |
| 2000 03 12 | 704 | 0.1+ | 0.7− | 2004 03 20 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.6− |
| 2000 03 12 | 704 | 0.6+ | 1.1+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.5− |
| 2000 03 12 | 704 | 0.2+ | 0.0 | 2004 03 20 | 704 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.4− | 1.4− |
| 2000 04 03 | 699 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.2+ | 1.3+ | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2000 04 03 | 699 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2000 04 03 | 699 | 0.0 | 0.2− | 2004 03 21 | 608 | 0.4+ | 0.9+ | 2006 10 17 | G96 | 0.3− | 0.1− |
| 2000 04 03 | 699 | 0.0 | 0.1− | 2004 03 21 | 608 | 1.0+ | 0.7+ | 2006 10 17 | G96 | 0.3− | 0.3− |
| 2002 10 02 | 704 | (3.3+ | 0.9+) | 2004 03 21 | 608 | 1.0+ | 0.2+ | 2006 10 17 | G96 | (0.9− | 1.8+) |
| 2002 10 02 | 704 | (2.7+ | 1.4+) | 2004 03 21 | 699 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 10 02 | 704 | (2.5+ | 1.8+) | 2004 03 21 | 699 | 0.9− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 10 02 | 704 | (2.7+ | 2.1+) | 2004 03 21 | 699 | 0.8− | 1.0+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2004 03 21 | 699 | 0.6+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.9+ | 0.8− | 2004 03 21 | 608 | 1.0+ | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.8+ | 0.1+ | 2004 03 21 | 608 | 0.9+ | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2002 10 09 | 704 | 0.4− | 0.1+ | 2004 03 21 | 608 | 0.9+ | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 10 09 | 704 | 0.5+ | 0.5+ | 2004 03 23 | 704 | 0.6− | 0.3− | 2006 11 09 | 691 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.2− | 0.1+ |
| 2002 10 09 | 704 | 0.1+ | 0.8+ | 2004 03 23 | 704 | 0.1− | 0.5− | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.9− | 0.2− | 2004 03 23 | 704 | 0.6− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.5− | 0.4+ | 2004 03 23 | 704 | 1.0− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 1.3+ | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 10 11 | 704 | 0.5+ | 0.5− | 2004 03 23 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2002 10 11 | 704 | 0.7+ | 0.7− | 2004 03 23 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2002 10 31 | 608 | 0.6− | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 10 31 | 608 | 0.7− | 0.0 | 2004 03 23 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2002 10 31 | 608 | 0.5− | 0.0 | 2004 03 25 | 704 | 0.3+ | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.4+ |
| 2002 11 06 | 704 | 0.7− | 0.5+ | 2004 03 25 | 704 | 0.3+ | 0.8− | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 2002 11 06 | 704 | 0.4− | 1.1− | 2004 03 25 | 704 | 0.5− | 0.6− | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 2002 11 06 | 704 | 0.6− | 0.5+ | 2004 03 25 | 704 | 0.2+ | 1.0− | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2002 11 06 | 704 | 0.4− | 0.6+ | 2004 03 25 | 704 | 0.1− | 0.5− | 2006 11 13 | 644 | 0.4− | 0.1− |
| 2002 11 06 | 704 | 0.4− | 1.0+ | 2004 03 26 | 704 | 0.0 | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2002 11 10 | 704 | 0.3+ | 0.7+ | 2004 03 26 | 704 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2002 11 10 | 704 | 0.5+ | 0.3− | 2004 03 26 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2002 11 10 | 704 | 0.5+ | 0.1− | 2004 03 26 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 11 22 | 644 | 0.1− | 0.5+ | 2004 03 26 | 704 | 0.7+ | 1.1− | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2002 11 22 | 644 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2002 11 22 | 644 | 0.4− | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.0 | 0.2− |
| 2002 12 01 | 704 | 0.2− | 0.4− | 2004 03 27 | 704 | 0.6+ | 0.0 | 2006 11 17 | 704 | 1.3+ | 1.1− |
| 2002 12 01 | 704 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2002 12 01 | 704 | 0.1− | 0.6+ | 2004 04 09 | 644 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2002 12 01 | 704 | 0.6+ | 0.7+ | 2004 04 09 | 644 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2003 12 23 | 704 | 0.7+ | 0.4+ | 2004 04 09 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2003 12 23 | 704 | 0.1− | 0.2− | 2004 04 15 | 704 | 0.8− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2003 12 23 | 704 | 1.2+ | 0.5+ | 2004 04 15 | 704 | 0.7− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2003 12 28 | 704 | 0.6− | 0.9− | 2004 04 15 | 704 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2003 12 28 | 704 | 0.4+ | 0.2− | 2004 04 15 | 704 | 1.0− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2003 12 28 | 704 | 0.1− | 0.0 | 2004 04 15 | 704 | (1.6− | 0.2+) | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2003 12 28 | 704 | 0.2+ | 0.7− | 2004 04 20 | 704 | 0.1− | 1.2+ | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2004 01 23 | 704 | 0.3+ | 0.9+ | 2004 04 20 | 704 | 0.6+ | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2004 01 23 | 704 | 0.9+ | 0.5− | 2004 04 20 | 704 | (1.7+ | 0.0 ) | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2004 01 23 | 704 | 0.3− | 0.7+ | 2004 04 20 | 704 | 0.4+ | 0.9− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2004 01 23 | 704 | 0.6+ | 0.4− | 2004 04 20 | 704 | 0.2+ | 0.9+ | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2004 01 27 | 703 | 1.3− | 0.3− | 2004 04 22 | 704 | 1.4+ | 0.5+ | 2006 11 26 | 704 | 0.5− | 0.8− |
| 2004 01 27 | 703 | 1.0− | 1.0− | 2004 04 22 | 704 | 0.1− | 0.0 | 2006 11 26 | 704 | 0.6+ | 0.1− |
| 2004 01 27 | 703 | 0.3+ | 0.6− | 2004 04 22 | 704 | 0.4+ | 1.3+ | 2006 11 26 | 704 | 0.1− | 0.7+ |
| 2004 01 27 | 703 | 0.3+ | 0.4+ | 2004 04 22 | 704 | (1.6+ | 0.9+) | 2006 11 26 | 704 | 0.7+ | 0.8+ |
| 2004 02 18 | 704 | 0.7− | 0.1− | 2004 04 22 | 704 | 1.0+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2004 02 18 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 699 | 0.2− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2004 02 18 | 704 | 0.2+ | 0.4− | 2004 04 25 | 699 | 0.2+ | 0.6− | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2004 02 18 | 704 | 0.1+ | 0.0 | 2004 04 25 | 699 | 0.6− | 0.1+ | | | | |

**(138193)∗ 2000 ER$_{124}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.22565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24089393 | $\omega$ | 140.00683 | | −0.86610151 | −0.49959412 | |
| $a$ | 2.5581076 | $\Omega$ | 10.05982 | | +0.43098314 | −0.76310963 | |
| $e$ | 0.2210848 | $i$ | 5.43662 | | +0.25322266 | −0.40996269 | |
| $P$ | 4.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 0.2+ | 0.1− | 2003 12 28 | 699 | 0.7− | 0.2− | 2004 03 16 | 704 | 0.5+ | 0.4+ |
| 1998 10 20 | 691 | 0.1+ | 0.1+ | 2003 12 28 | 699 | 0.6− | 0.7− | 2004 03 19 | 644 | 0.2+ | 0.3+ |
| 1998 10 20 | 691 | 0.2+ | 0.0 | 2004 01 19 | 703 | 0.6− | 0.6+ | 2004 03 19 | 644 | 0.2+ | 0.2+ |
| 2000 02 11 | 704 | 0.2+ | 0.8+ | 2004 01 19 | 703 | 0.3− | 0.3− | 2004 03 19 | 644 | 0.2+ | 0.4+ |
| 2000 02 11 | 704 | 0.4+ | 0.1+ | 2004 01 19 | 703 | 1.3− | 0.7− | 2004 03 20 | 703 | 0.2− | 0.3− |
| 2000 02 11 | 704 | 0.3+ | 0.0 | 2004 01 19 | 703 | 0.6− | 1.0− | 2004 03 20 | 703 | 0.8+ | 0.1− |
| 2000 02 11 | 704 | 0.2− | 0.2− | 2004 01 23 | 699 | 0.0 | 0.5− | 2004 03 20 | 704 | 1.3+ | 0.7+ |
| 2000 02 16 | 703 | 1.3+ | 0.7− | 2004 01 23 | 699 | 0.9− | 0.1+ | 2004 03 20 | 703 | 0.2− | 0.1+ |
| 2000 02 16 | 703 | 0.0 | 1.1+ | 2004 01 23 | 699 | 0.8− | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.3+ |
| 2000 02 16 | 703 | 0.8− | 0.0 | 2004 01 23 | 704 | 0.3+ | 0.2− | 2004 03 20 | 703 | 0.3− | 0.1− |
| 2000 02 16 | 703 | 0.1− | 0.1+ | 2004 01 23 | 699 | 0.6− | 0.6− | 2004 03 20 | 704 | 1.2+ | 0.1+ |
| 2000 03 02 | 703 | 0.3− | 0.2+ | 2004 01 23 | 704 | 0.5+ | 0.6− | 2004 03 20 | 704 | 0.6+ | 0.2− |
| 2000 03 02 | 703 | 0.1+ | 0.1+ | 2004 01 23 | 704 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.4− |
| 2000 03 02 | 703 | 0.7− | 0.5+ | 2004 01 23 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.8+ |
| 2000 03 02 | 703 | 0.4− | 0.7+ | 2004 01 23 | 704 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.2+ | 0.3− |
| 2000 03 11 | 699 | 0.8+ | 0.7− | 2004 01 30 | 704 | 0.4− | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.9− |
| 2000 03 11 | 699 | 0.1+ | 1.0− | 2004 01 30 | 704 | 0.6− | 0.1+ | 2004 03 22 | 704 | 0.3− | 0.1+ |
| 2000 03 11 | 699 | 0.2− | 0.5− | 2004 01 30 | 704 | 0.6− | 0.2+ | 2004 03 22 | 704 | 0.3− | 0.6− |
| 2000 03 11 | 699 | 0.0 | 0.2− | 2004 01 30 | 704 | (1.6− | 0.6+) | 2004 03 27 | 691 | 0.2− | 0.0 |
| 2000 03 12 | 704 | 0.1− | 0.7+ | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 691 | 0.0 | 0.2− |
| 2000 03 12 | 704 | 0.2− | 0.0 | 2004 02 10 | 644 | 0.3− | 0.2+ | 2004 03 27 | 691 | 0.2− | 0.1− |
| 2000 03 12 | 704 | 0.1− | 0.4+ | 2004 02 10 | 644 | 0.3− | 0.2+ | 2004 04 14 | 704 | 0.3+ | 0.0 |
| 2000 03 12 | 704 | 0.0 | 0.4+ | 2004 02 15 | 608 | 0.3− | 0.4− | 2004 04 14 | 704 | 1.2+ | 0.2− |
| 2000 03 12 | 704 | 0.1− | 0.4− | 2004 02 15 | 608 | 0.3− | 0.1− | 2004 04 14 | 704 | 1.2+ | 1.4− |
| 2000 04 05 | 704 | 0.8+ | 0.3− | 2004 02 15 | 608 | 0.3− | 0.1− | 2004 04 14 | 704 | 0.2− | 1.1− |
| 2000 04 05 | 704 | 0.5+ | 0.1− | 2004 02 16 | 704 | 0.6+ | 0.4+ | 2004 04 19 | 704 | 1.1+ | 0.4− |
| 2000 04 05 | 704 | 1.5− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2004 04 19 | 704 | 1.3+ | 0.6+ |
| 2000 04 25 | 699 | 0.9+ | 0.8+ | 2004 02 16 | 704 | 0.0 | 0.4+ | 2004 04 19 | 704 | 0.3+ | 0.7+ |
| 2000 04 25 | 699 | 0.4− | 1.2+ | 2004 02 16 | 704 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.5+ | 0.3+ |
| 2000 04 25 | 699 | 0.1+ | 0.7+ | 2004 02 16 | 691 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.1− | 0.2+ |
| 2000 04 25 | 699 | 0.5+ | 0.8+ | 2004 02 16 | 704 | 0.9+ | 0.1+ | 2004 04 22 | 704 | 0.6+ | 0.7+ |
| 2003 12 19 | 704 | 0.1− | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.0 | 2004 04 22 | 704 | 1.2+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.3+ | 1.2+ | 2004 02 16 | 691 | 0.1− | 0.2+ | 2004 04 22 | 704 | 0.7+ | 0.7+ |
| 2003 12 19 | 704 | 0.1+ | 0.0 | 2004 03 14 | 703 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.6− | 0.2+ |
| 2003 12 23 | 704 | 1.1+ | 1.3− | 2004 03 14 | 703 | 0.6− | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.1+ |
| 2003 12 23 | 704 | 0.3− | 1.1− | 2004 03 14 | 703 | 0.4− | 0.3− | 2006 09 15 | 691 | 0.5− | 0.2+ |
| 2003 12 23 | 704 | 0.1+ | 0.2+ | 2004 03 14 | 704 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.0 |
| 2003 12 23 | 704 | 0.1+ | 0.2+ | 2004 03 14 | 703 | 0.7− | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2003 12 28 | 704 | 0.3− | 0.2+ | 2004 03 14 | 704 | 0.5+ | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2003 12 28 | 699 | (0.9+ | 2.1−) | 2004 03 14 | 704 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2+ |
| 2003 12 28 | 704 | 0.1+ | 0.4− | 2004 03 14 | 704 | 0.1− | 0.3− | 2006 10 11 | 291 | 0.1− | 0.8+ |
| 2003 12 28 | 704 | 0.1+ | 1.3+ | 2004 03 14 | 704 | 0.2+ | 0.2− | 2006 10 11 | 291 | 0.1− | 0.7+ |
| 2003 12 28 | 699 | (1.8+ | 0.3−) | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 11 | 291 | 0.2− | 0.7+ |
| 2003 12 28 | 704 | 0.0 | 0.0 | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2003 12 28 | 699 | 0.3− | 1.4− | 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.6− |
| 2003 12 28 | 704 | 0.3+ | 0.9+ | 2004 03 16 | 704 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2003 12 28 | 699 | (1.6+ | 0.4−) | 2004 03 16 | 704 | 1.0+ | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2003 12 28 | 699 | 0.7− | 0.1− | 2004 03 16 | 704 | 0.0 | 0.4+ | | | | |
| 2003 12 28 | 699 | 0.6− | 0.7+ | 2004 03 16 | 704 | 0.3+ | 0.8+ | | | | |

**(138194)∗ 2000 EA$_{127}$ = 2002 TN$_{149}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37418)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 235.56886 | | (2000.0) | | | |
| *n* | 0.23804110 | *ω* | 113.55299 | | −0.69851433 | −0.71412569 |
| *a* | 2.5785057 | Ω | 20.97179 | | +0.60093316 | −0.62017139 |
| *e* | 0.1689428 | *i* | 7.36016 | | +0.38853195 | −0.32467206 |
| *P* | 4.14 | *H* | 16.4 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 06 | 691 | 0.1+ | 0.3− | 2002 10 31 | 645 | 0.0 | 0.0 | 2004 02 17 | 608 | 0.4+ | 0.4− |
| 1994 11 06 | 691 | 0.0 | 0.2− | 2003 12 28 | 699 | 0.7− | 0.2− | 2004 03 14 | 704 | 1.0+ | 0.9− |
| 1994 11 06 | 691 | 0.1− | 0.1− | 2003 12 28 | 699 | 0.6− | 0.5− | 2004 03 14 | 704 | 0.2+ | 1.0− |
| 2000 02 29 | 704 | 0.0 | 0.2+ | 2003 12 28 | 699 | 0.0 | 0.6− | 2004 03 14 | 704 | 0.3+ | 1.2− |
| 2000 02 29 | 704 | 0.1− | 0.4− | 2003 12 28 | 699 | 0.2− | 0.1+ | 2004 03 14 | 704 | 0.2+ | 0.7− |
| 2000 02 29 | 704 | 0.9+ | 0.4− | 2003 12 29 | 704 | 0.3+ | 0.6+ | 2004 03 14 | 704 | 0.1+ | 0.4− |
| 2000 02 29 | 704 | 0.4+ | 0.3+ | 2003 12 29 | 704 | 0.9+ | 1.1+ | 2004 03 18 | 644 | 0.0 | 0.6+ |
| 2000 03 11 | 699 | 0.2+ | 0.3+ | 2003 12 29 | 704 | 1.3+ | 1.0+ | 2004 03 18 | 644 | 0.1− | 0.4+ |
| 2000 03 11 | 699 | 0.0 | 0.4+ | 2003 12 29 | 704 | (1.7+ | 0.5−) | 2004 03 18 | 644 | 0.1− | 0.4+ |
| 2000 03 11 | 699 | 0.2+ | 0.2+ | 2004 01 28 | 703 | 0.2− | 0.3+ | 2004 03 20 | 703 | 0.1− | 0.4+ |
| 2000 03 11 | 699 | 0.4+ | 0.3+ | 2004 01 28 | 703 | 0.2+ | 0.6+ | 2004 03 20 | 703 | 1.0− | 0.3− |
| 2000 03 12 | 704 | 0.1− | 0.3+ | 2004 01 28 | 703 | 0.6+ | 0.2− | 2004 03 20 | 704 | 0.1− | 0.1+ |
| 2000 03 12 | 704 | 0.2− | 0.4+ | 2004 01 28 | 703 | 0.6− | 0.3− | 2004 03 20 | 703 | 0.4− | 0.4+ |
| 2000 03 12 | 704 | 0.1+ | 0.4+ | 2004 01 30 | 699 | 0.2− | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.2− |
| 2000 03 12 | 704 | 0.5− | 0.2− | 2004 01 30 | 699 | 0.1− | 0.7− | 2004 03 20 | 703 | 0.3− | 0.4+ |
| 2000 03 12 | 704 | 0.0 | 0.5+ | 2004 01 30 | 699 | 0.2+ | 0.6+ | 2004 03 20 | 704 | 0.3− | 0.4+ |
| 2002 09 26 | 644 | 0.7− | 0.7+ | 2004 01 30 | 699 | 0.7− | 0.0 | 2004 03 20 | 704 | 0.2− | 0.5− |
| 2002 09 26 | 644 | 0.3− | 0.9+ | 2004 01 30 | 704 | 0.5+ | 0.6+ | 2004 03 20 | 704 | 1.0− | 0.0 |
| 2002 09 26 | 644 | 0.2+ | 0.5+ | 2004 01 30 | 704 | 0.4+ | 1.0+ | 2004 04 20 | 704 | 0.4− | 0.9+ |
| 2002 10 05 | 644 | 0.1+ | 0.8+ | 2004 01 30 | 704 | 0.5+ | 0.7+ | 2004 04 20 | 704 | 0.1− | 0.8+ |
| 2002 10 05 | 644 | 0.4− | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.7+ | 2004 04 20 | 704 | 0.2+ | 0.4+ |
| 2002 10 05 | 644 | 0.3− | 0.5+ | 2004 02 10 | 644 | 0.1− | 0.2− | 2004 04 20 | 704 | 0.0 | 0.3− |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2004 02 10 | 644 | 0.2− | 0.1− | 2006 08 29 | 691 | 0.3− | 0.2+ |
| 2002 10 05 | 645 | 0.2+ | 0.0 | 2004 02 10 | 644 | 0.2+ | 0.1− | 2006 08 29 | 691 | 0.4− | 0.3+ |
| 2002 10 06 | 644 | 0.1+ | 0.5+ | 2004 02 16 | 704 | 0.2+ | 0.0 | 2006 08 29 | 691 | 0.3− | 0.4+ |
| 2002 10 06 | 644 | 0.3− | 0.5+ | 2004 02 16 | 704 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.4− | 0.6− |
| 2002 10 06 | 644 | 0.1− | 0.5+ | 2004 02 16 | 704 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.3− | 0.6− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.5+ | 0.2− | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2002 10 10 | 645 | 0.2− | 0.0 | 2004 02 17 | 608 | 0.1+ | 0.7− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2004 02 17 | 608 | 0.4+ | 0.5− | | | | |

**(138195)∗ 2000 EG$_{128}$ = 2001 VS$_{1}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 19550)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 342.05243 | | (2000.0) | | | |
| *n* | 0.37525451 | *ω* | 199.02315 | | +0.98877654 | −0.11823543 |
| *a* | 1.9036427 | Ω | 166.73402 | | +0.11959103 | +0.99277782 |
| *e* | 0.0937424 | *i* | 23.45350 | | −0.08954850 | +0.02031198 |
| *P* | 2.63 | *H* | 16.8 | *G* | 0.15 | *U* 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 0.4− | 1.2− | 2001 11 12 | 704 | 0.1− | 1.0− | 2006 09 11 | 703 | 0.3− | 0.0 |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2001 11 12 | 704 | 0.5− | 0.6− | 2006 09 12 | 699 | 0.1− | 0.1+ |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2001 11 12 | 704 | 0.4+ | 0.7− | 2006 09 12 | 699 | 0.3− | 0.5+ |
| 2000 02 27 | 703 | 0.3+ | 0.7+ | 2001 11 12 | 704 | 0.2+ | 0.1− | 2006 09 12 | 699 | 0.2− | 0.3+ |
| 2000 02 27 | 703 | 0.4+ | 1.0+ | 2001 12 04 | 704 | 0.8+ | 0.4− | 2006 09 12 | 699 | 0.6− | 0.2− |
| 2000 02 27 | 703 | 0.3+ | 0.3+ | 2001 12 04 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.0 |
| 2000 02 27 | 703 | 0.2− | 0.8+ | 2001 12 04 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.4− |
| 2000 03 11 | 699 | 0.0 | 0.6+ | 2001 12 04 | 704 | 0.1+ | 1.0+ | 2006 09 14 | 703 | 0.0 | 0.1− |
| 2000 03 11 | 699 | 0.0 | 1.4+ | 2001 12 04 | 704 | 1.1+ | 1.4+ | 2006 09 14 | 703 | 0.1+ | 0.3− |
| 2000 03 11 | 699 | 0.2+ | 0.8+ | 2006 08 19 | 106 | 0.1+ | 0.6+ | 2006 09 15 | 691 | 0.3− | 0.4+ |
| 2000 03 11 | 699 | 0.5+ | 0.6+ | 2006 08 19 | 106 | 0.7− | 0.1+ | 2006 09 15 | 691 | 0.4− | 0.6+ |
| 2000 03 12 | 703 | 0.5− | 1.6+ | 2006 08 19 | 106 | 0.0 | 0.5− | 2006 09 15 | 691 | 0.4− | 0.4+ |
| 2000 03 12 | 703 | 0.2− | 1.2+ | 2006 08 19 | 106 | 0.2− | 0.5− | 2006 09 18 | 699 | 1.1+ | 0.4− |
| 2000 03 12 | 703 | 0.6+ | 0.1− | 2006 08 27 | 699 | 0.8− | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.1− |
| 2000 03 12 | 703 | 0.1− | 0.9+ | 2006 08 27 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 1.0+ | 0.7+ |
| 2000 03 12 | 704 | (0.9+ | 2.0+) | 2006 08 27 | 699 | 0.7+ | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.2+ |
| 2000 03 12 | 704 | 0.9+ | 1.2+ | 2006 08 27 | 699 | 0.1− | 0.1− | 2006 09 20 | 704 | (2.1+ | 0.2−) |
| 2000 03 12 | 704 | 0.3− | 0.3+ | 2006 08 27 | 699 | 0.6+ | 0.3+ | 2006 09 20 | 704 | (1.6+ | 1.4+) |
| 2000 03 12 | 704 | 0.6+ | 0.6− | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.6+ | 1.2+ |
| 2000 03 12 | 704 | 0.1+ | 0.6+ | 2006 08 27 | 699 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2000 05 02 | 704 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2000 05 02 | 704 | 1.5+ | 1.3+ | 2006 08 27 | 699 | 0.6+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2000 05 02 | 704 | 0.2− | 0.6+ | 2006 08 27 | 699 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.8+ |
| 2001 08 26 | 644 | 0.3+ | 1.3+ | 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.0 | 1.2− |
| 2001 08 26 | 644 | 0.3+ | 1.2+ | 2006 08 27 | 699 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.6− |
| 2001 08 26 | 644 | 0.1+ | 1.2+ | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.7+ |
| 2001 10 15 | 704 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 0.6+ | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.4+ |
| 2001 10 15 | 704 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.9+ | 0.1− |
| 2001 10 15 | 704 | 0.5− | 0.2+ | 2006 08 29 | 703 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.3− |
| 2001 10 15 | 704 | 0.3+ | 0.9+ | 2006 08 29 | 703 | 0.3− | 0.2− | 2006 09 28 | 704 | 0.3+ | 0.1− |
| 2001 10 15 | 704 | 0.6− | 0.5+ | 2006 08 29 | 703 | 0.0 | 0.3− | 2006 09 28 | 704 | 0.4+ | 0.8− |
| 2001 11 07 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.2+ | 1.0− | 2006 09 28 | 704 | 0.6+ | 0.2+ |
| 2001 11 07 | 704 | 0.8− | 0.6+ | 2006 08 29 | 704 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2001 11 07 | 704 | 0.2− | 0.2− | 2006 08 29 | 704 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2001 11 07 | 704 | 0.2− | 0.7− | 2006 08 29 | 704 | 0.6+ | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2001 11 07 | 704 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.8− | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2001 11 10 | 704 | 0.4− | 0.2− | 2006 08 30 | 699 | 0.5− | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.3+ |
| 2001 11 10 | 704 | 0.5− | 0.0 | 2006 08 30 | 699 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.7+ |
| 2001 11 10 | 704 | 0.2− | 0.5+ | 2006 08 30 | 699 | 1.4− | 1.2− | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 2001 11 10 | 704 | 0.4+ | 0.4+ | 2006 09 11 | 703 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.3− | 0.6− |
| 2001 11 10 | 704 | 0.5+ | 0.2+ | 2006 09 11 | 703 | 0.3− | 0.1− | | | | |
| 2001 11 12 | 704 | 0.4− | 1.1− | 2006 09 11 | 703 | 0.2+ | 0.4− | | | | |

**(138196)∗ 2000 ES$_{129}$ = 2002 XU$_{87}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 40070)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 22.76109 | | (2000.0) | | | |
| *n* | 0.23539189 | *ω* | 343.85909 | | +0.99042594 | +0.13376903 |
| *a* | 2.5978160 | Ω | 8.67032 | | −0.08774710 | +0.80070851 |
| *e* | 0.1582506 | *i* | 13.07078 | | −0.10656875 | +0.58392784 |
| *P* | 4.19 | *H* | 14.7 | *G* | 0.15 | *U* 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.1− | 0.2− | 2004 02 19 | 608 | 1.0+ | 1.0+ | 2006 09 21 | 704 | 0.4− | 0.6+ |
| 2000 03 11 | 699 | 0.3+ | 0.2+ | 2004 02 19 | 608 | 1.1+ | 0.7+ | 2006 09 21 | 704 | (0.7+ | 1.6+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.3+ | 0.5+ | 2004 02 19 | 608 | 0.7+ | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.4− |
| 2000 03 11 | 699 | 0.5− | 0.5+ | 2004 03 13 | 691 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.2− | 0.5+ |
| 2000 03 12 | 704 | 0.5− | 0.2+ | 2004 03 13 | 691 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.3− | 0.3+ |
| 2000 03 12 | 704 | 0.5− | 0.6+ | 2004 03 13 | 691 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.3+ |
| 2000 03 12 | 704 | 0.0 | 0.2+ | 2004 03 14 | 704 | 0.1− | 0.7+ | 2006 09 30 | 704 | 0.8− | 0.1+ |
| 2000 03 12 | 704 | 0.4+ | 0.4+ | 2004 03 14 | 704 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.8− | 0.3+ |
| 2000 03 12 | 704 | 0.1− | 0.5+ | 2004 03 14 | 704 | 0.7+ | 0.1− | 2006 09 30 | 704 | 0.9− | 0.1+ |
| 2000 04 25 | 699 | 0.1+ | 0.4+ | 2004 03 14 | 704 | 0.1+ | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.5− |
| 2000 04 25 | 699 | 0.9+ | 0.1+ | 2004 03 19 | 644 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.6− |
| 2000 04 25 | 699 | 1.4+ | 0.2+ | 2004 03 19 | 644 | 1.1+ | 0.0 | 2006 10 04 | G96 | 0.2− | 0.6− |
| 2000 04 25 | 699 | 1.1− | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.5− |
| 2002 10 12 | 704 | 0.3+ | 1.0− | 2004 03 22 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.4− | 2004 03 22 | 704 | 0.4+ | 0.3− | 2006 10 19 | 703 | 0.4− | 0.2+ |
| 2002 10 12 | 704 | 1.4+ | 0.8− | 2004 03 22 | 704 | 1.4+ | 0.7− | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2002 10 12 | 704 | 0.7+ | 0.1− | 2004 03 22 | 704 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.4− |
| 2002 10 31 | 704 | 1.2− | 0.4− | 2006 08 21 | 704 | (1.6+ | 0.5+) | 2006 10 19 | A50 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | 0.9− | 0.6− | 2006 08 21 | 704 | 0.2− | 0.1+ | 2006 10 19 | A50 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 1.4− | 0.5− | 2006 08 21 | 704 | 1.5− | 1.3+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.9− | 0.5− | 2006 08 25 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2002 10 31 | 704 | 1.2− | 0.2− | 2006 08 25 | 704 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 11 07 | 704 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 704 | 0.9+ | 0.5− |
| 2002 11 07 | 704 | 0.4− | 0.1− | 2006 08 25 | 704 | 0.2− | 0.5+ | 2006 10 21 | 704 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.7− | 0.2+ | 2006 08 25 | 704 | 0.2− | 0.4+ | 2006 10 21 | 704 | 0.2− | 0.3− |
| 2002 11 07 | 704 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.1+ | 0.1+ | 2006 10 21 | 704 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.1− | 2006 08 29 | 703 | 0.8− | 0.6+ | 2006 10 21 | 704 | 0.1+ | 0.2− |
| 2002 11 15 | 704 | (1.8− | 0.3−) | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 11 15 | 704 | (1.5− | 0.4−) | 2006 08 29 | 703 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 11 15 | 704 | 0.8− | 1.1− | 2006 08 30 | 704 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2002 11 15 | 704 | (1.5− | 1.6+) | 2006 08 30 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 1.1− | 0.1− |
| 2002 12 06 | 704 | 0.6+ | 0.5+ | 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.8− |
| 2002 12 06 | 704 | 0.6+ | 0.5+ | 2006 08 30 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.3+ |
| 2002 12 06 | 704 | 0.1+ | 0.8+ | 2006 08 30 | 704 | 0.4+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2002 12 06 | 704 | 0.6+ | 0.4+ | 2006 08 30 | 699 | 0.6− | 0.2+ | 2006 11 14 | 703 | (1.9+ | 3.4−) |
| 2002 12 06 | 704 | 0.5+ | 1.1+ | 2006 08 30 | 699 | 0.3− | 0.6+ | 2006 11 14 | 703 | 0.1+ | 0.1+ |
| 2002 12 12 | 644 | 0.5+ | 0.5− | 2006 08 30 | 699 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2002 12 12 | 644 | 0.5+ | 0.5− | 2006 08 30 | 699 | 0.5+ | 0.5+ | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2002 12 12 | 644 | 0.4+ | 0.5− | 2006 09 18 | 704 | 1.0+ | 0.2+ | 2006 11 17 | 704 | 0.9+ | 0.3+ |
| 2002 12 15 | 704 | 0.7+ | 0.6− | 2006 09 18 | 704 | 0.5+ | 0.0 | 2006 11 17 | 704 | 1.0− | 0.2+ |
| 2002 12 15 | 704 | 0.7+ | 0.5− | 2006 09 18 | 704 | 0.3− | 0.7+ | 2006 11 17 | 704 | (0.7+ | 2.1+) |
| 2002 12 15 | 704 | 0.1+ | 0.0 | 2006 09 18 | 704 | 1.3− | 1.5+ | 2006 11 17 | 704 | 1.1− | 0.6+ |
| 2002 12 15 | 704 | 1.1+ | 0.1+ | 2006 09 20 | 699 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.9− | 0.6+ |
| 2003 01 22 | 644 | 1.3+ | 0.7− | 2006 09 20 | 699 | 0.5+ | 0.5− | 2006 11 23 | 703 | 0.5− | 0.4+ |
| 2003 01 22 | 644 | 0.7+ | 0.2− | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.7− |
| 2003 01 22 | 644 | 0.7+ | 0.3− | 2006 09 20 | 699 | 0.1− | 1.4+ | 2006 11 23 | 703 | 0.1− | 0.6− |
| 2004 01 29 | 703 | (0.1− | 1.6−) | 2006 09 21 | 704 | 0.4+ | 0.1+ | 2006 11 23 | 703 | (1.5− | 1.7−) |
| 2004 01 29 | 703 | (1.4+ | 2.1−) | 2006 09 21 | 704 | 0.5− | 0.5+ | 2006 12 01 | 704 | 1.1+ | 1.8+ |
| 2004 01 29 | 703 | (0.8− | 1.8−) | 2006 09 21 | 704 | 0.7+ | 0.5+ | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2004 01 29 | 703 | 0.8+ | 0.7− | 2006 09 21 | 704 | 1.1+ | 1.2+ | 2006 12 01 | 704 | 0.9+ | 0.0 |
| 2004 02 18 | 704 | (0.5+ | 1.6+) | 2006 09 21 | 704 | 0.3+ | 0.8+ | 2006 12 01 | 704 | 0.4− | 0.9− |
| 2004 02 18 | 704 | 0.4+ | 0.5+ | 2006 09 21 | 704 | 0.3+ | 1.1+ | | | | |
| 2004 02 18 | 704 | 0.0 | 0.1+ | 2006 09 21 | 704 | 0.6− | 0.5+ | | | | |

**(138197)**∗ **2000 EG$_{131}$ = 2003 MG$_1$**

Discovered 2000 Mar. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 60636)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.57378 | | (2000.0) | | | |
| $n$ | 0.36899136 | $\omega$ | 74.44978 | | −0.31193678 | +0.94990992 |
| $a$ | 1.9251234 | $\Omega$ | 177.15122 | | −0.95007413 | −0.31170727 |
| $e$ | 0.0584220 | $i$ | 22.65861 | | −0.00738940 | −0.02257694 |
| $P$ | 2.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1− | 2001 09 19 | 645 | 0.0 | 0.2+ | 2006 08 30 | 699 | (0.9− | 2.5+) |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2001 09 19 | 645 | 0.0 | 0.2+ | 2006 08 30 | 699 | 1.3+ | 0.4− |
| 1998 09 27 | 704 | 0.3− | 0.5+ | 2003 06 22 | 704 | 1.0− | 0.0 | 2006 09 11 | 703 | 0.4− | 0.8+ |
| 1998 09 27 | 704 | 1.1+ | 1.8+ | 2003 06 22 | 704 | 0.2− | 0.9+ | 2006 09 11 | 703 | 0.1+ | 0.1− |
| 1998 09 27 | 704 | (2.8− | 0.1−) | 2003 06 22 | 704 | 0.7− | 1.0+ | 2006 09 11 | 703 | 1.1− | 0.4− |
| 1998 09 27 | 704 | 1.7− | 1.9− | 2003 06 25 | 704 | 0.3+ | 0.3− | 2006 09 11 | 703 | 0.1− | 0.4+ |
| 2000 03 11 | 704 | 0.4− | 0.4+ | 2003 06 25 | 704 | 0.2− | 0.2− | 2006 09 18 | 704 | 0.9+ | 1.1+ |
| 2000 03 11 | 704 | 0.3− | 0.5+ | 2003 06 25 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.0 | 0.2+ | 2003 06 25 | 704 | 1.1+ | 0.1+ | 2006 09 18 | 704 | 1.3− | 0.7+ |
| 2000 03 11 | 704 | 0.3− | 0.1+ | 2003 06 25 | 704 | 0.7+ | 1.1+ | 2006 09 20 | 699 | 0.6+ | 0.2− |
| 2000 03 11 | 704 | 0.0 | 0.4+ | 2003 07 28 | 644 | 0.2+ | 0.4− | 2006 09 20 | 699 | 1.1− | 0.4+ |
| 2000 03 14 | 703 | 1.4− | 0.4− | 2003 07 28 | 644 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.1− |
| 2000 03 14 | 703 | 0.9− | 1.7+ | 2003 07 28 | 644 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.8− | 0.4+ |
| 2000 03 14 | 703 | 0.2− | 0.5+ | 2006 08 27 | 699 | 0.8− | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2000 03 14 | 703 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 1.1− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2000 04 08 | 704 | 0.6+ | 0.1− | 2006 08 27 | 699 | 0.6+ | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2000 04 08 | 704 | 0.9+ | 0.1− | 2006 08 27 | 699 | 1.2+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2000 04 08 | 704 | 1.6+ | 0.4+ | 2006 08 30 | 699 | 0.2+ | 0.7− | | | | |
| 2000 04 08 | 704 | 0.6+ | 1.4+ | 2006 08 30 | 699 | 0.4+ | 0.3+ | | | | |

**(138198)**∗ **2000 EV$_{131}$ = 2002 TN$_{178}$**

Discovered 2000 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37420)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.53259 | | (2000.0) | | | |
| $n$ | 0.23754653 | $\omega$ | 41.54809 | | +0.69751336 | −0.71630752 |
| $a$ | 2.5820833 | $\Omega$ | 4.35829 | | +0.57115327 | +0.53935815 |
| $e$ | 0.0932178 | $i$ | 14.83667 | | +0.43273440 | +0.44271472 |
| $P$ | 4.15 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.2+ | 0.2− | 2002 11 07 | 704 | 0.3− | 0.2− | 2006 09 16 | 644 | 0.2+ | 0.2+ |
| 2000 03 11 | 699 | 0.1+ | 0.1− | 2002 11 07 | 704 | 0.1− | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.1− |
| 2000 03 11 | 699 | 0.5+ | 0.7+ | 2002 11 07 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.0 | 1.5+ |
| 2000 03 11 | 699 | 1.0+ | 0.2+ | 2002 11 07 | 704 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.1+ | 1.1+ |
| 2000 03 12 | 704 | 0.8+ | 0.7+ | 2002 11 07 | 704 | 0.1− | 1.2− | 2006 09 17 | 704 | 0.2− | 0.2+ |
| 2000 03 12 | 704 | 0.5+ | 0.0 | 2002 11 07 | 704 | 0.5− | 1.2− | 2006 09 17 | 704 | 0.1+ | 0.3+ |
| 2000 03 12 | 704 | 0.4− | 0.7+ | 2002 11 07 | 704 | 0.1+ | 0.6− | 2006 09 17 | 704 | 0.4− | 0.4+ |
| 2000 03 25 | 734 | 0.7− | 0.1− | 2002 11 07 | 704 | 0.1+ | 1.1− | 2006 09 19 | 691 | 0.3− | 0.0 |
| 2000 03 25 | 734 | 0.4+ | 0.2− | 2002 11 11 | 699 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2000 03 25 | 734 | 1.7− | 0.6− | 2002 11 11 | 699 | 0.6− | 0.5− | 2006 09 19 | 691 | 0.3− | 0.0 |
| 2000 03 25 | 734 | 0.2− | 0.2+ | 2002 11 11 | 699 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.4− |
| 2000 03 26 | 734 | 0.4− | 0.1+ | 2002 11 11 | 699 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.3+ |
| 2000 03 26 | 734 | 0.0 | 0.2+ | 2002 11 14 | 704 | 0.2+ | 0.6− | 2006 09 19 | 699 | 0.1− | 0.0 |
| 2000 03 26 | 734 | 1.9− | 0.4− | 2002 11 14 | 704 | 0.7+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.1− |
| 2000 03 26 | 734 | 0.3− | 1.3− | 2002 11 14 | 704 | 1.1+ | 0.4− | 2006 09 20 | 704 | 0.2− | 0.2+ |
| 2000 04 05 | 704 | 0.9+ | 0.2− | 2002 11 14 | 704 | 0.8+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.4+ |
| 2000 04 05 | 704 | 1.0+ | 0.7− | 2002 11 14 | 704 | (1.2+ | 1.6+) | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2000 04 05 | 704 | 0.1+ | 0.4− | 2002 12 31 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.2+ |
| 2000 04 06 | 704 | 0.5+ | 0.6+ | 2002 12 31 | 704 | 0.8+ | 0.6+ | 2006 09 20 | 704 | 0.4− | 0.2+ |
| 2000 04 06 | 704 | 0.0 | 0.6+ | 2002 12 31 | 704 | 0.7+ | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2000 04 06 | 691 | 0.5+ | 0.7+ | 2002 12 31 | 704 | 1.2+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2000 04 06 | 704 | 0.1− | 0.7+ | 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2000 04 06 | 691 | 0.1+ | 0.2+ | 2003 12 29 | 704 | 0.2− | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.2+ |
| 2000 04 06 | 691 | 0.0 | 0.2+ | 2003 12 29 | 704 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.2+ |
| 2000 04 10 | 704 | 1.2+ | 0.0 | 2003 12 29 | 704 | 0.3+ | 1.2+ | 2006 09 24 | 691 | 0.1− | 0.1+ |
| 2000 04 10 | 704 | 0.1+ | 0.6+ | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.4+ | 0.3+ |
| 2000 04 10 | 704 | 1.4+ | 0.6+ | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.0 | 0.0 |
| 2000 04 10 | 704 | 0.3+ | 1.3+ | 2004 01 29 | 703 | (0.3− | 1.8−) | 2006 09 27 | 704 | 0.4+ | 0.1− |
| 2000 04 26 | 699 | 1.6+ | 1.8+ | 2004 01 29 | 703 | 0.2− | 1.2− | 2006 09 27 | 704 | 0.0 | 0.3− |
| 2000 04 26 | 699 | 0.1+ | 1.0− | 2004 01 29 | 703 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.0 |
| 2000 04 26 | 699 | 1.3− | 0.5+ | 2004 01 29 | 703 | 0.1+ | 0.6− | 2006 09 27 | 699 | 0.0 | 0.0 |
| 2000 04 26 | 699 | 0.4+ | 1.0+ | 2004 02 02 | 699 | 0.4+ | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.5+ |
| 2002 09 06 | 704 | 0.0 | 0.3− | 2004 02 02 | 699 | 0.6+ | 0.9+ | 2006 09 27 | 704 | 0.1+ | 0.3+ |
| 2002 09 06 | 704 | 0.6− | 0.3+ | 2004 02 02 | 699 | 1.3− | 0.9− | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.3+ | 0.6+ | 2004 02 02 | 699 | 0.4− | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | 0.0 | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 17 | 699 | 0.0 | 0.1− | 2004 02 17 | 704 | 0.3+ | 0.5− | 2006 09 29 | 704 | 0.0 | 0.7+ |
| 2002 09 17 | 699 | 0.2− | 1.1+ | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.6− | 0.7+ |
| 2002 09 17 | 699 | 1.0− | 0.9− | 2004 02 17 | 704 | 1.3+ | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.8+ |
| 2002 09 17 | 699 | 0.4− | 1.2+ | 2004 02 17 | 704 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | 0.4− | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.5+ | 0.3− |
| 2002 10 05 | 704 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 704 | 0.8− | 0.5+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.2− |
| 2002 10 05 | 704 | 0.4− | 0.8+ | 2004 03 15 | 704 | 0.0 | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 1.0− | 0.5+ | 2004 03 15 | 704 | 0.8+ | 0.9+ | 2006 10 17 | 703 | 0.2+ | 0.8− |
| 2002 10 10 | 704 | 0.1− | 0.2− | 2004 03 19 | 644 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2002 10 10 | 704 | 0.2+ | 0.1− | 2004 03 19 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.2+ | 0.1+ | 2004 03 19 | 644 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2002 10 10 | 704 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2002 10 10 | 704 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.7− | 0.5+ | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 10 11 | 704 | 0.5+ | 0.3+ | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.6+ | 0.0 | 2004 03 22 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 10 12 | 704 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.3+ | 1.1+ | 2006 10 23 | G96 | 0.6+ | 0.4− |
| 2002 10 12 | 704 | 0.3+ | 0.5+ | 2004 04 21 | 704 | 0.1+ | 0.9+ | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2002 10 12 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 1.1+ | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2002 10 12 | 704 | 0.1− | 0.2− | 2006 07 21 | 704 | 0.4+ | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2002 10 12 | 704 | 0.5+ | 0.3− | 2006 07 21 | 704 | 0.2+ | 0.2+ | 2006 10 29 | 704 | 0.7− | 0.9+ |
| 2002 10 12 | 704 | 0.3+ | 0.3− | 2006 07 21 | 704 | 0.3− | 0.7+ | 2006 10 29 | 704 | 1.4− | 1.3+ |
| 2002 10 12 | 704 | 0.5+ | 0.4− | 2006 07 21 | 704 | 0.1− | 0.1− | 2006 10 29 | 704 | 1.0− | 1.0+ |
| 2002 10 12 | 704 | 1.5+ | 0.2− | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 10 29 | 704 | 1.0− | 0.9+ |
| 2002 10 15 | 704 | 0.3− | 0.3+ | 2006 08 18 | 644 | 0.5− | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 10 15 | 704 | 0.2+ | 0.6+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.2− |
| 2002 10 15 | 704 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.2+ |
| 2002 10 15 | 704 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2002 10 30 | 608 | (2.1+ | 2.6+) | 2006 08 28 | 703 | 0.0 | 1.1+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 10 30 | 608 | (1.9+ | 2.0+) | 2006 08 28 | 703 | 0.4− | 1.0+ | 2006 11 08 | 644 | 0.0 | 0.3− |
| 2002 10 30 | 608 | (2.1+ | 2.0+) | 2006 09 14 | A50 | 0.1+ | 0.1+ | 2006 11 15 | 704 | (1.4+ | 1.6+) |
| 2002 11 01 | 644 | 0.0 | 0.2− | 2006 09 15 | A50 | 0.0 | 0.6− | 2006 11 15 | 704 | 0.3− | 0.7− |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2006 09 15 | 704 | 0.6− | 0.5+ | 2006 11 15 | 704 | 0.2− | 1.0+ |
| 2002 11 01 | 644 | 0.1− | 0.0 | 2006 09 15 | 704 | 0.8+ | 0.2− | 2006 11 15 | 704 | 0.9− | 0.9+ |
| 2002 11 05 | 704 | 0.1+ | 0.4− | 2006 09 15 | 704 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.7− |
| 2002 11 05 | 704 | 0.3− | 0.6− | 2006 09 15 | 704 | 0.4+ | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.5− |
| 2002 11 05 | 704 | 0.4+ | 0.4− | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.7− |
| 2002 11 05 | 704 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4− | 0.8+ |
| 2002 11 05 | 704 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.0 | | | | |
| 2002 11 07 | 704 | 0.3− | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.2+ | | | | |

**(138199)∗ 2000 EJ$_{132}$ = 2002 TZ$_{63}$**

Discovered 2000 Mar. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37420)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.06697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23877420 | $\omega$ | 143.08819 | | −0.67889071 | | −0.73383291 |
| $a$ | 2.5732252 | $\Omega$ | 349.59114 | | +0.63722036 | | −0.57233155 |
| $e$ | 0.1406200 | $i$ | 7.77016 | | +0.36477063 | | −0.36595882 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.2+ | 0.4+ | 2002 10 06 | 644 | 0.4− | 0.2− | 2004 03 11 | 644 | 0.1− | 0.3+ |
| 2000 03 11 | 704 | 0.4− | 0.6+ | 2004 02 01 | 599 | 1.3− | 1.5+ | 2004 03 11 | 644 | 0.2− | 0.3+ |
| 2000 03 11 | 704 | 0.6+ | 0.3− | 2004 02 01 | 599 | 0.4+ | 0.4− | 2004 03 15 | 704 | 0.0 | 1.1+ |
| 2000 03 11 | 704 | 0.1− | 0.3− | 2004 02 01 | 599 | 1.2− | 0.3+ | 2004 03 15 | 704 | 0.1− | 0.6− |
| 2000 03 11 | 704 | 0.0 | 0.6− | 2004 02 11 | 699 | 0.5− | 0.5+ | 2004 03 15 | 704 | 0.0 | 0.3+ |
| 2000 03 14 | 703 | 0.7+ | 0.4− | 2004 02 11 | 699 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.2− | 0.0 |
| 2000 03 14 | 703 | 0.4+ | 0.4− | 2004 02 11 | 699 | 0.2+ | 0.5+ | 2004 03 19 | 704 | 0.6− | 0.7+ |
| 2000 03 14 | 703 | 0.6+ | 0.2− | 2004 02 11 | 699 | 0.2+ | 0.2− | 2004 03 19 | 704 | 0.2− | 0.7− |
| 2000 03 14 | 703 | 0.8− | 1.3+ | 2004 02 16 | 691 | 0.0 | 0.2− | 2004 03 19 | 704 | 1.3− | 0.3− |
| 2000 04 05 | 704 | 0.8+ | 0.3+ | 2004 02 16 | 691 | 0.1− | 0.1− | 2004 03 19 | 704 | (0.6− | 2.3−) |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2004 02 16 | 691 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.8+ |
| 2000 04 05 | 704 | 0.5+ | 0.4+ | 2004 02 17 | 704 | 0.9+ | 0.5− | 2004 03 27 | 704 | 0.5− | 0.5+ |
| 2000 04 05 | 704 | 0.4+ | 0.8+ | 2004 02 17 | 704 | 1.2+ | 0.8− | 2004 03 27 | 704 | 0.5+ | 0.1− |
| 2000 04 05 | 704 | 0.4+ | 1.0+ | 2004 02 17 | 704 | 0.4+ | 0.7− | 2004 03 27 | 704 | 0.6+ | 1.3− |
| 2000 04 06 | 704 | 0.2− | 0.3+ | 2004 02 17 | 704 | 0.4+ | 0.3− | 2004 03 27 | 704 | 0.0 | 0.7+ |
| 2000 04 06 | 704 | 0.1+ | 0.9+ | 2004 02 17 | 704 | 0.3+ | 0.4+ | 2004 03 30 | 691 | 0.3− | 0.1− |
| 2000 04 06 | 704 | 0.0 | 0.9+ | 2004 02 18 | 608 | 0.7− | 1.1− | 2004 03 30 | 691 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 1.1− | 1.3+ | 2004 02 18 | 608 | 0.2− | 1.1− | 2004 03 30 | 691 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 0.1+ | 0.3− | 2004 02 18 | 608 | 0.3− | 0.5− | 2006 07 21 | G96 | 0.4− | 0.4− |
| 2002 10 04 | 704 | 0.3− | 1.4+ | 2004 02 23 | 704 | 0.8+ | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | 0.7+ | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.2− |
| 2002 10 04 | 704 | 0.2− | 1.4+ | 2004 02 23 | 704 | 0.6+ | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.0 |
| 2002 10 05 | 644 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 10 01 | 691 | 0.5+ | 0.4− |
| 2002 10 05 | 644 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2002 10 05 | 644 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.5− | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 10 05 | 599 | 0.8− | 0.5+ | 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2002 10 05 | 599 | 0.4+ | 0.6− | 2004 02 23 | 704 | 0.1− | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2002 10 05 | 599 | 0.1− | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2002 10 06 | 644 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2002 10 06 | 644 | 0.4− | 0.2− | 2004 03 11 | 644 | 0.2+ | 0.0 | | | | |

**(138200)∗ 2000 EW$_{137}$ = 2002 TB$_{220}$**

Discovered 2000 Mar. 10 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Id. G. V. Williams (*MPO* 37423)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.62243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23946396 | $\omega$ | 325.00186 | | −0.30879657 | | −0.93844470 |
| $a$ | 2.5682814 | $\Omega$ | 142.29797 | | +0.92016898 | | −0.33595106 |
| $e$ | 0.1445552 | $i$ | 14.66352 | | +0.24069425 | | +0.08036434 |
| $P$ | 4.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 049 | 0.9+ | 1.4− | 2004 01 18 | 703 | (1.6− | 0.5+) | 2004 03 18 | 049 | 0.7− | 0.1− |
| 2000 03 10 | 049 | (1.6+ | 2.2−) | 2004 01 18 | 691 | 0.2+ | 0.0 | 2004 03 18 | 049 | 0.8− | 0.2+ |
| 2000 03 10 | 049 | 1.5+ | 1.1− | 2004 01 18 | 691 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.2− | 0.4+ |
| 2000 03 15 | 699 | 0.5+ | 0.6+ | 2004 01 23 | 704 | 0.5+ | 0.8− | 2004 03 23 | 704 | 0.1+ | 0.4+ |
| 2000 03 15 | 699 | 0.8− | 1.2+ | 2004 01 23 | 704 | 0.5+ | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.4− |
| 2000 03 15 | 699 | 0.2+ | 0.5+ | 2004 01 23 | 704 | 0.7+ | 0.1− | 2004 03 23 | 704 | 0.8− | 0.2+ |
| 2000 03 15 | 699 | 0.1+ | 1.1+ | 2004 01 23 | 704 | 0.8+ | 0.2− | 2004 03 25 | 704 | 0.2+ | 0.3+ |
| 2000 03 29 | 704 | (0.2− | 2.2+) | 2004 01 23 | 704 | 0.3+ | 0.9+ | 2004 03 25 | 704 | 0.1+ | 0.2+ |
| 2000 03 29 | 704 | 0.9− | 1.1+ | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2004 03 25 | 704 | 0.5+ | 0.0 |
| 2000 03 29 | 704 | 1.0+ | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2004 03 26 | 703 | 0.9+ | 0.3− |
| 2000 03 29 | 704 | 1.2+ | 0.6− | 2004 01 27 | 691 | 0.0 | 0.1+ | 2004 03 26 | 703 | 1.0− | 0.4− |
| 2000 04 03 | 704 | 0.3− | 0.1− | 2004 01 30 | 699 | 0.1− | 0.3+ | 2004 03 26 | 703 | 1.0− | 0.3+ |
| 2000 04 03 | 704 | 0.1+ | 1.4+ | 2004 01 30 | 699 | 0.2− | 0.1− | 2004 03 26 | 703 | 0.2+ | 1.3− |
| 2000 04 03 | 704 | 0.0 | 0.7− | 2004 01 30 | 699 | 0.1− | 0.6− | 2004 04 13 | 049 | (2.0− | 0.9−) |
| 2000 04 03 | 704 | 1.2− | 0.2+ | 2004 01 30 | 699 | 0.0 | 0.6+ | 2004 04 13 | 049 | (2.0− | 0.9−) |
| 2000 04 10 | 608 | 0.6+ | 1.1− | 2004 02 16 | 049 | 0.4+ | 0.4− | 2004 04 13 | 049 | (2.2− | 0.1+) |
| 2000 04 10 | 608 | 0.4+ | 0.1− | 2004 02 16 | 049 | 0.4− | 0.0 | 2004 04 14 | 644 | 0.0 | 0.3+ |
| 2000 04 10 | 608 | 0.1+ | 0.4− | 2004 02 16 | 049 | 0.3+ | 0.2− | 2004 04 14 | 644 | 0.0 | 0.1+ |
| 2000 04 30 | 699 | 0.4+ | 0.6− | 2004 02 17 | 703 | 0.2− | 0.3− | 2004 04 14 | 644 | 0.9− | 0.1− |
| 2000 04 30 | 699 | 0.2− | 0.6+ | 2004 02 17 | 703 | 0.4− | 0.1− | 2006 08 28 | D35 | 0.2− | 0.5+ |
| 2000 04 30 | 699 | 1.5− | 0.5+ | 2004 02 17 | 703 | 0.4+ | 0.1+ | 2006 08 28 | D35 | 0.4− | 0.4+ |
| 2000 04 30 | 699 | 0.8− | 0.3− | 2004 02 17 | 703 | 0.8− | 0.2− | 2006 08 28 | D35 | 0.4− | 0.2+ |
| 2002 10 05 | 704 | 0.1+ | 0.7− | 2004 02 17 | 608 | 0.3− | 0.3− | 2006 08 29 | D35 | 0.1− | 0.4− |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2004 02 17 | 608 | 0.0 | 0.1− | 2006 08 29 | D35 | 0.3− | 0.4+ |
| 2002 10 05 | 704 | 1.1+ | 1.0− | 2004 02 17 | 608 | 0.1+ | 0.3− | 2006 08 29 | D35 | 0.4− | 0.3+ |
| 2002 10 05 | 704 | 0.4+ | 0.5− | 2004 02 27 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 1.0+ |
| 2002 10 09 | 704 | 0.5− | 0.3− | 2004 02 27 | 704 | 0.6+ | 0.2− | 2006 09 19 | 703 | 1.4+ | 1.5+ |
| 2002 10 09 | 704 | 1.1− | 1.3− | 2004 02 27 | 704 | (1.6− | 0.1+) | 2006 09 19 | 703 | 1.0+ | 1.5+ |
| 2002 10 09 | 704 | 1.1− | 1.3− | 2004 03 15 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.7+ | 1.0+ |
| 2002 10 10 | 699 | 1.0+ | 0.3+ | 2004 03 15 | 704 | 0.3− | 0.3+ | 2006 09 25 | 703 | 0.2+ | 0.6− |
| 2002 10 10 | 699 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 703 | 0.5+ | 0.0 |
| 2002 10 10 | 699 | 0.1− | 1.3+ | 2004 03 15 | 704 | 0.4− | 0.2+ | 2006 09 25 | 703 | 0.5+ | 0.3+ |
| 2002 10 10 | 699 | 0.0 | 0.5+ | 2004 03 15 | 704 | 0.2− | 0.0 | 2006 09 25 | 703 | 1.2− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 703 | (1.5− | 0.9+) | 2004 03 17 | 704 | 0.4− | 0.6− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2004 01 18 | 703 | 0.0 | 0.2+ | 2004 03 17 | 704 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.1− |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2004 03 17 | 704 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2004 01 18 | 691 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2004 01 18 | 703 | 0.7+ | 0.1+ | 2004 03 17 | 704 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2004 01 18 | 703 | 0.3+ | 0.2+ | 2004 03 17 | 704 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2004 01 18 | 691 | 0.4+ | 0.2− | 2004 03 17 | 704 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.8− |
| 2004 01 18 | 691 | 0.1+ | 0.1− | 2004 03 17 | 704 | 0.5− | 0.2+ | 2006 10 28 | 703 | 0.1− | 1.1− |
| 2004 01 18 | 703 | (0.9+ | 2.0+) | 2004 03 17 | 704 | 0.1+ | 0.1− | 2006 10 28 | 703 | 1.0− | 1.0− |
| 2004 01 18 | 703 | 0.2+ | 0.4+ | 2004 03 17 | 704 | 0.8− | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.3− |
| 2004 01 18 | 703 | 0.1− | 0.2− | 2004 03 18 | 049 | 1.0− | 0.1+ | | | | |

**(138201)∗ 2000 EZ$_{137}$ = 2002 VM$_{105}$**

Discovered 2000 Mar. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40071)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.56344 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27069238 | $\omega$ | 54.33857 | | +0.85853662 | −0.51250652 | |
| $a$ | 2.3667480 | $\Omega$ | 336.48008 | | +0.45665136 | +0.77831554 | |
| $e$ | 0.1957267 | $i$ | 2.27949 | | +0.23320463 | +0.36271475 | |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 01 | 691 | 0.5− | 0.3+ | 2002 09 05 | 704 | 0.2+ | 1.0+ | 2002 12 06 | 704 | 0.4− | 0.2− |
| 1998 09 01 | 691 | 0.5− | 0.2+ | 2002 09 05 | 704 | 0.5+ | 0.4+ | 2002 12 06 | 704 | 0.3− | 0.4− |
| 1998 09 01 | 691 | 0.9− | 0.3+ | 2002 10 04 | 704 | (1.7+ | 0.2+) | 2002 12 11 | 704 | 0.2− | 1.4+ |
| 1998 09 12 | 691 | 0.4+ | 0.5− | 2002 10 04 | 704 | 1.1+ | 0.0 | 2002 12 11 | 704 | 0.2− | 1.1+ |
| 1998 09 12 | 691 | 1.1+ | 0.1− | 2002 10 04 | 704 | 0.5+ | 0.5− | 2002 12 11 | 704 | 0.1− | 1.5+ |
| 1998 09 12 | 691 | 0.3+ | 0.3− | 2002 10 04 | 704 | 1.1+ | 0.4− | 2003 02 01 | 644 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.9+ | 0.5− | 2002 10 04 | 704 | 1.3+ | 0.1− | 2003 02 01 | 644 | 0.1+ | 0.1+ |
| 2000 03 03 | 704 | 1.4+ | 0.2+ | 2002 11 12 | 704 | 0.3+ | 0.3− | 2003 02 01 | 644 | 0.6+ | 0.1+ |
| 2000 03 03 | 704 | 0.9+ | 0.0 | 2002 11 12 | 704 | 0.3+ | 0.1+ | 2004 03 29 | 691 | 0.4+ | 0.6+ |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2002 11 12 | 704 | 0.5+ | 0.2− | 2004 03 29 | 691 | 0.2+ | 0.6+ |
| 2000 03 03 | 704 | 0.5+ | 0.6+ | 2002 11 12 | 704 | 0.2+ | 0.1− | 2004 03 29 | 691 | 0.2+ | 0.4+ |
| 2000 03 04 | 691 | 0.5− | 0.4− | 2002 11 12 | 704 | 0.0 | 0.1+ | 2004 04 23 | 691 | 0.4− | 0.1+ |
| 2000 03 04 | 691 | 0.5− | 0.2− | 2002 11 14 | 704 | 0.8− | 0.7+ | 2004 04 23 | 691 | 0.5+ | 0.6+ |
| 2000 03 04 | 691 | 0.6− | 0.4− | 2002 11 14 | 704 | 1.0− | 1.1+ | 2004 04 23 | 691 | 0.8+ | 0.3+ |
| 2000 03 11 | 704 | 0.1− | 0.5+ | 2002 11 14 | 704 | 0.6− | 1.0+ | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2000 03 11 | 704 | 0.5− | 0.2− | 2002 11 14 | 704 | 1.4− | 0.7+ | 2006 11 22 | G96 | 0.6− | 0.3− |
| 2000 03 11 | 704 | 0.5+ | 0.0 | 2002 11 14 | 704 | 1.2− | 1.4+ | 2006 11 22 | G96 | 0.4− | 0.5− |
| 2000 03 15 | 691 | 0.1+ | 0.5− | 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2000 03 15 | 691 | 0.2− | 0.3− | 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.7− | 0.0 |
| 2000 03 15 | 691 | 0.0 | 0.1− | 2002 11 24 | 644 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2002 09 05 | 704 | 0.5− | 0.5+ | 2002 12 06 | 704 | 0.5+ | 0.5− | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2002 09 05 | 704 | 1.0+ | 1.2+ | 2002 12 06 | 704 | 0.7− | 0.3− | 2006 11 27 | G96 | 0.9− | 0.3− |

**(138202)∗ 2000 EG$_{139}$ = 1993 RK$_{14}$**

Discovered 2000 Mar. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 1257)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.01119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23077872 | $\omega$ | 345.34550 | | +0.75543362 | +0.65453602 | |
| $a$ | 2.6323211 | $\Omega$ | 333.69522 | | −0.59412865 | +0.66493828 | |
| $e$ | 0.1090165 | $i$ | 3.88749 | | −0.27628101 | +0.35977728 | |
| $P$ | 4.27 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | 0.2− | 0.8+ | 2001 07 17 | 644 | 0.1+ | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1993 09 15 | 809 | 0.5− | 0.5+ | 2004 02 17 | 704 | (1.6+ | 0.6−) | 2006 10 17 | 691 | 0.1− | 0.1− |
| 1993 09 15 | 809 | 0.9− | 1.2+ | 2004 02 17 | 704 | (2.5+ | 0.6+) | 2006 10 19 | 644 | 0.5− | 0.5− |
| 1993 09 17 | 809 | 0.5+ | 1.2+ | 2004 02 17 | 704 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.5− |
| 1993 09 17 | 809 | 0.2+ | 1.0+ | 2004 02 17 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 644 | 0.6− | 0.2+ |
| 1993 09 17 | 809 | 1.2− | 0.6+ | 2004 02 22 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1993 09 18 | 809 | 0.6− | 1.4+ | 2004 02 22 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1993 09 18 | 809 | (1.8− | 2.7+) | 2004 02 22 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 1993 09 18 | 809 | (1.0− | 2.6+) | 2004 02 26 | 704 | (1.1+ | 3.1+) | 2006 10 21 | 691 | 0.2− | 0.3− |
| 2000 02 12 | 645 | 0.2− | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2000 02 12 | 645 | 0.2− | 0.1+ | 2004 02 26 | 704 | (1.5+ | 0.6+) | 2006 10 21 | 691 | 0.4− | 0.2− |
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2000 03 03 | 704 | 0.6+ | 0.1+ | 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.4+ | 0.1+ | 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2000 03 03 | 704 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.2+ | 0.4− | 2006 10 29 | 691 | 0.2− | 0.3− |
| 2000 03 03 | 704 | 1.3+ | 0.6+ | 2004 03 18 | 691 | 0.1+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2004 03 27 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2000 03 11 | 704 | 0.8+ | 0.1+ | 2004 03 27 | 691 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.4− | 0.2+ |
| 2000 03 11 | 704 | 1.3+ | 0.2− | 2004 03 27 | 691 | 0.1+ | 0.5+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 0.8+ | 0.1− | 2006 09 30 | 291 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.2+ | 0.4− |
| 2000 03 11 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3+ | 1.0+ |
| 2000 03 15 | 691 | 0.2− | 0.0 | 2006 09 30 | 291 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2000 03 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 291 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 1.3+ | 0.0 |
| 2000 03 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.4+ | 2006 11 19 | 704 | 1.4+ | 0.5− |
| 2001 07 17 | 644 | 0.2+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | | | | |
| 2001 07 17 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.1− | | | | |

**(138203)∗ 2000 EJ$_{142}$ = 2002 SN$_{58}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37424)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.16458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26263858 | $\omega$ | 262.90148 | | +0.55813406 | −0.82802991 | |
| $a$ | 2.4148883 | $\Omega$ | 152.95567 | | +0.80010052 | +0.52001938 | |
| $e$ | 0.1078677 | $i$ | 6.74619 | | +0.21983068 | +0.20963375 | |
| $P$ | 3.75 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 15 | 691 | 0.4− | 0.5− | 2002 10 05 | 683 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.7+ |
| 1993 04 15 | 691 | 0.6− | 0.1+ | 2002 10 05 | 683 | 0.2+ | 0.5− | 2004 03 22 | 704 | 0.1− | 0.3− |
| 2000 02 02 | 704 | 0.3− | 0.2− | 2002 10 29 | 645 | 0.2+ | 0.0 | 2004 03 30 | 691 | 0.1+ | 0.3+ |
| 2000 02 02 | 704 | 0.8+ | 0.4+ | 2002 10 29 | 645 | 0.2+ | 0.0 | 2004 03 30 | 691 | 0.1+ | 0.4+ |
| 2000 02 02 | 704 | 1.0+ | 0.1+ | 2002 11 05 | 699 | 0.9− | 0.1+ | 2004 03 30 | 691 | 0.1+ | 0.3+ |
| 2000 03 03 | 704 | 0.5+ | 0.4+ | 2002 11 05 | 699 | 0.0 | 0.7+ | 2006 11 05 | 644 | 0.4− | 0.0 |
| 2000 03 03 | 704 | 0.2− | 0.6+ | 2002 11 05 | 699 | 0.1− | 0.0 | 2006 11 05 | 644 | 0.4− | 0.0 |
| 2000 03 03 | 704 | 0.8+ | 0.9− | 2002 11 05 | 699 | 0.4− | 0.5− | 2006 11 05 | 644 | 0.4− | 0.2− |
| 2000 03 03 | 704 | 0.9+ | 0.1− | 2004 02 23 | 704 | 1.0+ | 1.2− | 2006 11 15 | 703 | 1.1− | 0.5+ |
| 2000 03 09 | 691 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.9+ |
| 2000 03 09 | 691 | 0.1− | 0.6− | 2004 02 23 | 704 | (1.6+ | 0.4−) | 2006 11 15 | 703 | 0.0 | 0.9+ |
| 2000 03 09 | 691 | 0.3− | 0.5− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 1.3− | 0.1− |
| 2002 09 30 | 608 | 0.9− | 0.8+ | 2004 03 15 | 704 | 0.8+ | 0.9− | 2006 11 25 | 703 | 0.3+ | 0.2+ |
| 2002 09 30 | 608 | 0.3− | 0.8+ | 2004 03 15 | 704 | 0.4− | 0.1− | 2006 11 25 | 703 | 0.1− | 0.6− |
| 2002 09 30 | 608 | 0.6− | 0.6+ | 2004 03 15 | 704 | 1.3− | 0.2+ | 2006 11 25 | 703 | 0.4− | 0.4− |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2004 03 15 | 333 | 0.3− | 0.2+ | 2006 11 25 | 703 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.4− | 2004 03 15 | 333 | 0.7+ | 0.8+ | 2006 11 28 | 704 | 0.4+ | 0.3− |
| 2002 10 04 | 704 | (1.8− | 0.7−) | 2004 03 15 | 333 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.2− | 0.8+ |
| 2002 10 04 | 704 | (0.3+ | 1.8+) | 2004 03 22 | 704 | 0.1− | 1.3+ | 2006 11 28 | 704 | 1.2+ | 1.6− |
| 2002 10 04 | 704 | (1.3− | 1.9+) | 2004 03 22 | 704 | 1.2+ | 0.7+ | 2006 11 28 | 704 | 0.7− | 0.4− |
| 2002 10 05 | 683 | 1.3− | 1.4+ | 2004 03 22 | 704 | 0.6+ | 0.6+ | | | | |

**(138204)∗ 2000 EY$_{146}$ = 2002 TB$_{299}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37425)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 259.19992 | | (2000.0) | | −0.80791974 | −0.56566031 |
| $n$ | 0.25285051 | $\omega$ | 49.23789 | | +0.47819009 | −0.79314515 |
| $a$ | 2.4768146 | $\Omega$ | 95.68507 | | +0.34438342 | −0.22571928 |
| $e$ | 0.1813714 | $i$ | 9.55684 | | | |
| $P$ | 3.90 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.5+ | 1.1− | 2002 09 05 | 645 | 0.1− | 0.0 | 2004 04 16 | 185 | 0.5+ | 0.3− |
| 2000 01 07 | 704 | 1.6+ | 0.2− | 2002 10 13 | 843 | 0.7− | 0.1− | 2004 04 16 | 185 | 0.4− | 0.2− |
| 2000 01 07 | 704 | 0.1+ | 1.0+ | 2002 10 13 | 843 | 0.2+ | 1.0+ | 2004 04 16 | 185 | 0.0 | 0.8− |
| 2000 02 03 | 704 | 0.4+ | 0.2− | 2002 10 13 | 843 | 0.3− | 0.2− | 2004 04 24 | 703 | 0.8− | 0.1− |
| 2000 02 03 | 704 | 0.2+ | 0.2− | 2002 10 15 | 644 | 0.1− | 0.5+ | 2004 04 24 | 703 | (2.7− | 1.4−) |
| 2000 02 03 | 704 | 0.1− | 0.2− | 2002 10 15 | 644 | 0.0 | 0.6+ | 2004 04 24 | 704 | 0.9+ | 0.6+ |
| 2000 02 03 | 704 | 0.3+ | 0.2− | 2002 10 15 | 644 | 0.1+ | 0.3+ | 2004 04 24 | 703 | 0.8− | 0.8− |
| 2000 03 04 | 704 | 0.4− | 0.4+ | 2002 10 28 | 644 | 0.1+ | 0.6+ | 2004 04 24 | 704 | 0.0 | 0.5+ |
| 2000 03 04 | 704 | 0.6− | 0.2+ | 2002 10 28 | 644 | 0.3− | 0.7+ | 2004 04 24 | 703 | 1.1+ | 0.1− |
| 2000 03 04 | 704 | 0.5− | 0.2+ | 2002 10 28 | 644 | 0.6− | 0.5+ | 2004 04 24 | 704 | 0.3+ | 1.0+ |
| 2000 03 04 | 704 | 0.5− | 0.7+ | 2002 11 23 | 843 | 1.4− | 0.5− | 2004 04 24 | 704 | 0.8− | 0.1− |
| 2000 03 04 | 704 | 0.3− | 0.7+ | 2002 11 23 | 843 | 0.7+ | 0.0 | 2004 04 24 | 704 | 0.5− | 0.1− |
| 2000 03 05 | 608 | 0.1+ | 1.0− | 2002 11 23 | 843 | 0.3+ | 0.4− | 2004 04 25 | 699 | 0.4− | 0.1− |
| 2000 03 05 | 608 | 0.2+ | 1.4− | 2004 01 27 | 703 | 1.0− | 0.2− | 2004 04 25 | 699 | 0.1+ | 0.7+ |
| 2000 03 05 | 608 | 0.0 | 0.9− | 2004 01 27 | 703 | 1.3− | 0.4− | 2004 04 25 | 699 | 1.1− | 0.1+ |
| 2000 03 12 | 704 | 0.2− | 0.1− | 2004 01 27 | 703 | 0.6− | 0.2− | 2004 04 25 | 699 | 0.0 | 0.2− |
| 2000 03 12 | 704 | 0.4− | 0.0 | 2004 01 27 | 703 | (1.7− | 0.1−) | 2004 05 13 | 704 | 0.2− | 0.3+ |
| 2000 03 12 | 704 | 0.2− | 0.5+ | 2004 01 29 | 704 | 0.1+ | 0.1+ | 2004 05 13 | 704 | 0.7+ | 0.1+ |
| 2000 03 12 | 704 | 0.3− | 0.1− | 2004 01 29 | 704 | 0.3− | 0.6− | 2004 05 13 | 704 | 0.9+ | 0.2+ |
| 2000 03 12 | 704 | 0.2+ | 0.7+ | 2004 01 29 | 704 | 1.1− | 0.6− | 2004 05 13 | 704 | 0.3− | 1.1+ |
| 2000 03 28 | 704 | 0.5− | 0.0 | 2004 01 29 | 704 | 0.5− | 0.5+ | 2004 05 13 | 704 | 0.3+ | 0.2+ |
| 2000 03 28 | 704 | 0.9− | 0.3+ | 2004 02 18 | 704 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2000 03 28 | 704 | 0.2− | 0.4+ | 2004 02 18 | 704 | 0.9+ | 1.0+ | 2006 10 11 | 644 | 0.3+ | 0.5+ |
| 2000 04 07 | 608 | 0.3− | 0.4− | 2004 02 18 | 704 | 1.5+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.9+ |
| 2000 04 07 | 608 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.9− |
| 2000 04 07 | 608 | 0.0 | 0.7− | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 1.0− |
| 2000 04 08 | 704 | 0.7+ | 0.4+ | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2000 04 08 | 704 | 0.0 | 1.0+ | 2004 03 15 | 704 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2000 04 08 | 704 | 0.9+ | 0.5− | 2004 03 15 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2000 04 08 | 704 | 0.1− | 0.4+ | 2004 03 24 | 703 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2000 04 08 | 704 | 0.9− | 0.6− | 2004 03 24 | 703 | (2.6− | 2.0+) | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2000 04 11 | 608 | 0.7+ | 1.9− | 2004 03 24 | 703 | (1.3− | 1.5+) | 2006 10 28 | 703 | 1.2− | 0.7+ |
| 2000 04 11 | 608 | 1.1+ | 1.5− | 2004 03 24 | 703 | 1.4+ | 0.1+ | 2006 10 28 | 703 | (0.1− | 1.7+) |
| 2000 04 11 | 608 | 0.2+ | 1.3− | 2004 04 15 | 704 | 0.1+ | 0.8+ | 2006 10 28 | 703 | (1.2+ | 2.0+) |
| 2000 04 28 | 699 | 0.2− | 1.3+ | 2004 04 15 | 704 | 0.8− | 0.5+ | 2006 10 28 | 703 | 0.6+ | 0.3− |
| 2000 04 28 | 699 | 0.4+ | 1.4+ | 2004 04 15 | 704 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.4+ |
| 2000 04 28 | 699 | 0.5+ | 1.8+ | 2004 04 15 | 704 | 1.3+ | 0.4+ | 2006 11 16 | 703 | (1.6+ | 1.6+) |
| 2000 04 28 | 699 | 0.5+ | 0.9+ | 2004 04 15 | 704 | 0.3− | 0.5+ | 2006 11 16 | 703 | 0.3+ | 0.1+ |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2004 04 16 | 185 | 0.4+ | 0.4+ | 2006 11 16 | 703 | 0.6+ | 0.7+ |

**(138205)∗ 2000 EZ$_{148}$**

Discovered 2000 Mar. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.11284 | | (2000.0) | | +0.63105682 | +0.77553877 |
| $n$ | 0.23882755 | $\omega$ | 303.98373 | | −0.63347825 | +0.52823389 |
| $a$ | 2.5728419 | $\Omega$ | 5.24819 | | −0.44774166 | +0.34570013 |
| $e$ | 0.6185550 | $i$ | 11.04179 | | | |
| $P$ | 4.13 | $H$ | 15.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 04 13 | 260 | (6.5− | 1.9+) | 2000 04 25 | 610 | 0.1− | 0.5+ | 2002 02 03 | 644 | 0.5+ | 0.1− |
| 1983 04 13 | 260 | (7.2− | 2.5+) | 2000 04 25 | 610 | 0.2− | 0.4+ | 2002 02 03 | 644 | 0.3− | 0.8− |
| 2000 03 04 | 703 | 0.3− | 0.5+ | 2000 04 25 | 113 | 0.8− | 0.2− | 2002 02 03 | 644 | 0.3− | 0.7+ |
| 2000 03 04 | 703 | 0.0 | 0.2+ | 2000 04 26 | 739 | 0.1+ | 0.5− | 2004 02 18 | 703 | 0.2− | 1.3− |
| 2000 03 04 | 703 | 0.7+ | 0.3+ | 2000 04 26 | 739 | 0.1+ | 0.7+ | 2004 02 18 | 703 | 0.0 | 0.2− |
| 2000 03 04 | 703 | 0.5+ | 0.5+ | 2000 04 26 | 739 | 1.0+ | 0.0 | 2004 02 18 | 703 | 0.2+ | 0.5+ |
| 2000 03 09 | 704 | 0.1+ | 0.4+ | 2000 04 27 | 808 | 0.1− | 1.7− | 2004 02 18 | 703 | 0.8− | 0.9− |
| 2000 03 09 | 704 | 0.3− | 1.3+ | 2000 04 27 | 808 | 1.2− | 0.7− | 2004 02 19 | 704 | (0.5+ | 1.7+) |
| 2000 03 09 | 704 | 0.1+ | 0.3− | 2000 04 28 | 860 | 0.5+ | 0.6− | 2004 02 19 | 704 | 1.1+ | 0.1− |
| 2000 03 30 | 704 | 0.7+ | 0.1− | 2000 04 28 | 860 | 0.5+ | 0.5− | 2004 02 19 | 704 | 0.4− | 0.5+ |
| 2000 03 30 | 704 | 0.2+ | 0.1+ | 2000 04 28 | 860 | 0.7+ | 0.8− | 2004 02 19 | 704 | 0.0 | 0.9+ |
| 2000 03 30 | 704 | 0.6+ | 0.1+ | 2000 04 28 | 704 | 0.2+ | 0.2+ | 2004 02 19 | 704 | 0.5− | 1.3+ |
| 2000 04 02 | 704 | 1.3+ | 0.8+ | 2000 04 28 | 704 | 0.4+ | 0.5+ | 2004 02 19 | 704 | 0.6− | 1.4+ |
| 2000 04 02 | 704 | 0.2+ | 0.0 | 2000 04 28 | 704 | 0.2+ | 0.3+ | 2004 02 19 | 704 | 0.2+ | 0.1− |
| 2000 04 02 | 704 | 0.0 | 0.2+ | 2000 04 28 | 704 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.4− | 1.2+ |
| 2000 04 02 | 704 | 0.4+ | 0.3+ | 2000 04 28 | 704 | 0.1+ | 0.6+ | 2004 02 19 | 704 | 0.3− | 1.2+ |
| 2000 04 02 | 699 | 0.0 | 0.1+ | 2000 04 29 | 670 | 0.8+ | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.4− |
| 2000 04 02 | 699 | 0.3+ | 0.1− | 2000 04 29 | 670 | 0.6+ | 0.4− | 2004 02 23 | 704 | 0.1− | 0.3− |
| 2000 04 02 | 699 | 0.4+ | 0.0 | 2000 04 30 | 610 | 0.4+ | 0.0 | 2004 02 23 | 704 | 0.4− | 0.6− |
| 2000 04 02 | 699 | 0.0 | 0.1+ | 2000 04 30 | 610 | 0.1− | 1.1+ | 2004 02 23 | 704 | 0.2− | 0.0 |
| 2000 04 02 | 046 | 0.4− | 0.1+ | 2000 04 30 | 610 | 0.5− | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.2− |
| 2000 04 02 | 046 | 0.7+ | 0.7− | 2000 04 30 | 610 | 0.9− | 0.2+ | 2004 03 12 | 644 | 0.8− | 0.0 |
| 2000 04 02 | 046 | 0.0 | 0.7− | 2000 05 02 | 860 | 0.7− | 0.4− | 2004 03 12 | 644 | 0.1− | 0.2+ |
| 2000 04 02 | 046 | 0.7+ | 0.0 | 2000 05 02 | 860 | 0.0 | 0.0 | 2004 03 12 | 644 | 0.1− | 0.1+ |
| 2000 04 02 | 046 | 0.7− | 0.2− | 2000 05 02 | 860 | 0.3− | 0.2+ | 2004 03 15 | 703 | 0.0 | 0.3− |
| 2000 04 02 | 046 | 0.2+ | 0.1− | 2000 05 02 | 151 | 0.6− | 0.7+ | 2004 03 15 | 703 | 0.6− | 0.0 |
| 2000 04 02 | 611 | 0.6− | 1.6− | 2000 05 02 | 151 | 0.3− | 0.5+ | 2004 03 15 | 703 | 0.3− | 0.2+ |
| 2000 04 02 | 611 | 0.3+ | 0.9− | 2000 05 02 | 151 | 0.5+ | 0.3+ | 2004 03 15 | 703 | 0.9+ | 0.1+ |
| 2000 04 03 | 557 | 0.9− | 0.5+ | 2000 05 02 | 151 | 0.0 | 0.2+ | 2004 03 16 | 704 | 0.2+ | 0.4+ |
| 2000 04 03 | 557 | 0.2− | 0.5+ | 2000 05 02 | 151 | 0.7− | 1.0+ | 2004 03 16 | 704 | 0.3+ | 0.8+ |
| 2000 04 03 | 670 | 0.6− | 0.3+ | 2000 05 02 | 151 | 0.8− | 0.6+ | 2004 03 16 | 704 | 0.8+ | 0.4+ |
| 2000 04 03 | 670 | 0.6− | 0.4+ | 2000 05 03 | 808 | 0.0 | 1.5+ | 2004 03 16 | 704 | 0.5− | 0.4+ |
| 2000 04 03 | 651 | 0.7− | 0.4+ | 2000 05 03 | 808 | (2.4+ | 0.6−) | 2004 03 16 | 704 | 0.7+ | 0.3+ |
| 2000 04 03 | 651 | 0.8− | 0.2+ | 2000 05 03 | 704 | 0.2+ | 0.3+ | 2004 03 17 | 691 | 0.0 | 0.2+ |
| 2000 04 03 | 651 | 0.9− | 0.2+ | 2000 05 03 | 704 | 0.3+ | 0.8+ | 2004 03 17 | 691 | 0.1− | 0.3+ |
| 2000 04 03 | 345 | 0.9− | 1.8+ | 2000 05 03 | 704 | 0.0 | 0.3+ | 2004 03 17 | 691 | 0.0 | 0.1+ |
| 2000 04 03 | 345 | 1.3− | 0.7+ | 2000 05 03 | 704 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.3+ |
| 2000 04 03 | 345 | 0.9− | 1.2+ | 2000 05 03 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.5+ | 0.5+ |
| 2000 04 03 | 345 | 1.0− | 0.5+ | 2000 05 04 | 739 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.2− |
| 2000 04 03 | 345 | 0.8− | 0.2+ | 2000 05 04 | 739 | (2.5− | 0.5+) | 2004 03 18 | 704 | 0.3+ | 0.4+ |
| 2000 04 03 | 345 | 1.0− | 0.4+ | 2000 05 05 | 704 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.2+ |
| 2000 04 04 | 557 | 0.1+ | 0.3+ | 2000 05 05 | 704 | 0.5+ | 0.4+ | 2004 03 18 | 704 | 0.8+ | 0.1− |
| 2000 04 04 | 557 | 0.5− | 0.6+ | 2000 05 05 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | (2.3+ | 0.5−) |
| 2000 04 05 | 860 | 1.4+ | 0.4− | 2000 05 05 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 704 | (0.6+ | 2.4+) |
| 2000 04 05 | 860 | 0.7+ | 1.2− | 2000 05 05 | 704 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.6+ | 0.2− |
| 2000 04 05 | 860 | 1.0+ | 0.5− | 2000 05 07 | 118 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.1+ |
| 2000 04 05 | 860 | 0.6− | 1.1− | 2000 05 07 | 118 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.2+ | 0.2+ |
| 2000 04 05 | 670 | 0.7− | 0.1+ | 2000 05 10 | 151 | (2.3− | 0.2+) | 2004 03 19 | 704 | 0.1+ | 0.4− |
| 2000 04 05 | 670 | 1.6− | 0.1− | 2000 05 10 | 151 | 1.0− | 1.7+ | 2004 03 19 | 704 | 0.1− | 0.4+ |
| 2000 04 05 | 345 | 0.3+ | 0.7+ | 2000 05 10 | 151 | 0.9+ | 0.4+ | 2004 03 19 | 704 | 0.0 | 0.3+ |
| 2000 04 05 | 345 | 0.3− | 0.2+ | 2000 05 10 | 151 | 0.7− | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.1− |
| 2000 04 05 | 345 | 0.2+ | 0.4+ | 2000 05 10 | 151 | 1.9+ | 1.4+ | 2004 03 20 | 704 | 0.5+ | 0.1+ |
| 2000 04 05 | 345 | 0.1+ | 0.9+ | 2000 05 12 | 670 | 0.8+ | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.3+ |
| 2000 04 05 | 345 | 0.0 | 0.3+ | 2000 05 12 | 670 | 0.2− | 0.2+ | 2004 03 20 | 704 | 1.2+ | 0.3+ |
| 2000 04 06 | 673 | (2.3− | 1.7+) | 2000 05 12 | 610 | (2.7− | 0.4−) | 2004 03 20 | 704 | 1.1+ | 0.4+ |
| 2000 04 06 | 673 | (2.6− | 1.8+) | 2000 05 12 | 610 | (7.7− | 0.0 ) | 2004 03 20 | 704 | 1.2+ | 0.3+ |
| 2000 04 06 | 673 | (3.0− | 1.7+) | 2000 05 19 | 670 | 0.2+ | 0.2+ | 2004 03 21 | 608 | 0.3+ | 0.9− |
| 2000 04 06 | 900 | 0.1− | 0.2+ | 2000 05 19 | 670 | 0.6+ | 0.1− | 2004 03 21 | 608 | 0.6+ | 0.8− |
| 2000 04 06 | 900 | 0.7− | 0.1+ | 2000 05 28 | 739 | 1.1+ | 0.2− | 2004 03 21 | 608 | 0.6+ | 0.4− |
| 2000 04 07 | 704 | 0.4+ | 0.4+ | 2000 05 28 | 739 | 0.4+ | 0.5− | 2004 03 21 | 608 | 0.5+ | 0.2− |
| 2000 04 07 | 704 | 0.5+ | 0.0 | 2000 05 28 | 739 | 0.5+ | 0.5− | 2004 03 21 | 608 | 0.3+ | 0.5− |
| 2000 04 07 | 704 | 0.2+ | 0.2+ | 2000 05 28 | 739 | 0.5+ | 0.3− | 2004 03 21 | 608 | 0.2+ | 0.5− |
| 2000 04 07 | 704 | 0.1+ | 0.4+ | 2000 05 30 | 837 | 0.9+ | 0.0 | 2004 03 25 | 704 | 0.5+ | 0.5− |
| 2000 04 07 | 704 | 0.3+ | 0.5+ | 2000 06 25 | 860 | 1.5+ | 0.7− | 2004 03 25 | 704 | 0.3+ | 0.3− |
| 2000 04 07 | 151 | 0.0 | 0.4+ | 2000 06 25 | 860 | 0.2− | 2.0− | 2004 03 25 | 704 | 0.5+ | 0.4− |
| 2000 04 07 | 151 | 0.3+ | 0.1− | 2000 06 25 | 360 | 0.3+ | 0.4− | 2004 03 25 | 704 | 0.0 | 0.4+ |
| 2000 04 07 | 151 | 0.3− | 0.3− | 2000 06 25 | 360 | 0.6+ | 0.4− | 2004 03 25 | 704 | 0.1− | 0.1− |
| 2000 04 07 | 151 | 0.7− | 0.3− | 2000 06 25 | 360 | 0.3+ | 0.5− | 2004 03 25 | 704 | 0.6+ | 0.3− |
| 2000 04 07 | 151 | 0.6− | 0.0 | 2000 07 23 | 413 | 0.2+ | 0.1+ | 2004 03 25 | 704 | 0.1+ | 0.3+ |
| 2000 04 07 | 151 | 0.9− | 0.2− | 2000 07 23 | 413 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 0.5+ | 1.0− |
| 2000 04 08 | 704 | 0.5+ | 0.3+ | 2000 07 23 | 413 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 0.3+ | 0.2− |
| 2000 04 08 | 704 | 0.7+ | 0.6− | 2000 07 26 | 322 | 0.8+ | 1.8+ | 2004 03 25 | 704 | 0.2− | 0.0 |
| 2000 04 08 | 704 | 0.9+ | 0.1− | 2000 07 26 | 322 | 0.6− | 0.7+ | 2004 03 26 | 699 | 0.1− | 0.6− |
| 2000 04 08 | 704 | 0.2+ | 0.3− | 2000 07 29 | 474 | 0.3+ | 0.2− | 2004 03 26 | 699 | 0.1+ | 0.1− |
| 2000 04 08 | 739 | 0.3− | 0.4− | 2000 07 29 | 474 | 0.2+ | 0.2− | 2004 03 26 | 699 | 0.2+ | 0.0 |
| 2000 04 08 | 739 | 0.2− | 0.4− | 2000 07 29 | 474 | 0.3+ | 0.2− | 2004 03 26 | 699 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.6+ | 0.1− | 2000 07 29 | 474 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.1− |
| 2000 04 08 | 739 | 0.0 | 0.2− | 2000 07 29 | 474 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.2+ | 0.3− |
| 2000 04 08 | 704 | 0.7+ | 0.5− | 2000 08 14 | 860 | 1.1+ | 1.4− | 2004 03 27 | 704 | 0.4+ | 0.1+ |
| 2000 04 08 | 704 | 0.6+ | 0.3− | 2000 08 14 | 860 | 0.5− | 0.6− | 2004 03 27 | 704 | 0.5+ | 0.1+ |
| 2000 04 08 | 704 | 0.2+ | 0.9− | 2000 08 14 | 860 | 0.6+ | 1.5− | 2004 03 27 | 704 | 0.4+ | 0.1− |
| 2000 04 08 | 704 | 0.9+ | 0.2− | 2000 08 20 | 428 | 0.5+ | 0.5+ | 2004 03 28 | 704 | 0.4+ | 0.0 |
| 2000 04 08 | 704 | 0.7+ | 0.2+ | 2000 08 20 | 428 | 0.4+ | 0.5+ | 2004 03 28 | 704 | 0.5+ | 0.5+ |
| 2000 04 08 | 704 | 1.1+ | 0.1− | 2000 08 20 | 428 | 0.6+ | 0.1+ | 2004 03 28 | 704 | 0.2− | 0.1+ |
| 2000 04 08 | 704 | 0.0 | 0.0 | 2000 09 20 | 322 | 0.4− | 0.1− | 2004 03 28 | 704 | 0.2+ | 0.3+ |
| 2000 04 08 | 704 | 0.4+ | 0.4− | 2000 09 20 | 322 | 0.4+ | 0.4− | 2004 03 28 | 704 | 0.5+ | 0.1+ |
| 2000 04 08 | 704 | 0.1− | 0.3− | 2000 10 12 | 739 | 0.1+ | 0.6+ | 2004 03 29 | 691 | 0.1− | 0.0 |
| 2000 04 08 | 704 | 0.0 | 1.1− | 2000 10 12 | 739 | 0.5+ | 0.5+ | 2004 03 29 | 691 | 0.1− | 0.2+ |
| 2000 04 08 | 402 | 0.1+ | 0.1− | 2000 10 12 | 739 | 1.0− | 0.9+ | 2004 03 29 | 691 | 0.0 | 0.0 |
| 2000 04 08 | 402 | 0.1+ | 0.4− | 2000 10 12 | 739 | 0.4+ | 1.0+ | 2004 04 12 | 683 | 0.4− | 0.5− |
| 2000 04 08 | 402 | 0.6+ | 0.7− | 2000 10 18 | 704 | 0.1+ | 0.2+ | 2004 04 12 | 683 | 1.1− | 0.2− |
| 2000 04 09 | 151 | 0.4− | 0.3− | 2000 10 18 | 704 | 0.3+ | 0.5+ | 2004 04 12 | 699 | 0.1+ | 0.1− |
| 2000 04 09 | 151 | 0.1+ | 0.4+ | 2000 10 18 | 704 | 0.0 | 0.0 | 2004 04 12 | 683 | 0.2− | 0.9+ |
| 2000 04 09 | 151 | 0.0 | 0.1− | 2000 10 18 | 704 | 0.5− | 0.8+ | 2004 04 12 | 699 | 0.1+ | 0.4− |
| 2000 04 09 | 151 | 0.2− | 0.1− | 2000 10 18 | 704 | 0.1+ | 0.3+ | 2004 04 12 | 699 | 0.0 | 0.1+ |
| 2000 04 09 | 151 | 0.7− | 0.3+ | 2000 10 23 | 046 | 0.5− | 0.1+ | 2004 04 12 | 699 | 0.1− | 0.8− |
| 2000 04 09 | 151 | 0.7− | 0.3− | 2000 10 23 | 046 | 0.5− | 0.2+ | 2004 04 12 | 703 | 0.2− | 0.2− |
| 2000 04 10 | 704 | 0.1+ | 0.1+ | 2000 10 23 | 046 | 0.3− | 0.1+ | 2004 04 12 | 703 | 0.1+ | 0.0 |
| 2000 04 10 | 704 | 0.3+ | 0.5+ | 2000 10 23 | 046 | 0.5− | 0.0 | 2004 04 12 | 703 | 0.1+ | 0.0 |
| 2000 04 10 | 704 | 0.3+ | 0.1+ | 2000 10 24 | 071 | (2.8+ | 1.9+) | 2004 04 12 | 703 | 0.5− | 0.2− |
| 2000 04 10 | 704 | 0.6+ | 0.6+ | 2000 10 24 | 071 | 1.7+ | 1.2+ | 2004 04 14 | 683 | 0.2+ | 0.4+ |
| 2000 04 10 | 704 | 0.3+ | 0.0 | 2000 10 24 | 071 | 1.4+ | 1.6+ | 2004 04 14 | 683 | 0.2− | 0.4+ |
| 2000 04 10 | 704 | 0.5+ | 0.3+ | 2000 10 25 | 322 | 0.0 | 0.2+ | 2004 04 14 | 683 | 0.4+ | 1.2+ |
| 2000 04 10 | 704 | 0.4+ | 0.2− | 2000 10 25 | 322 | 0.4− | 0.2+ | 2004 04 14 | 608 | 0.1+ | 1.4+ |
| 2000 04 10 | 670 | 0.8− | 0.1+ | 2000 10 26 | 704 | 0.5− | 0.2+ | 2004 04 14 | 608 | 0.5− | 1.4+ |
| 2000 04 10 | 704 | 0.2+ | 0.1− | 2000 10 26 | 704 | 0.6− | 0.4+ | 2004 04 14 | 608 | 0.2− | 1.1+ |
| 2000 04 10 | 704 | 0.2+ | 0.7+ | 2000 10 26 | 704 | 0.7− | 0.2− | 2004 04 15 | 683 | 0.6+ | 0.4− |
| 2000 04 10 | 704 | 0.5+ | 0.6+ | 2000 10 26 | 704 | 0.1− | 0.6+ | 2004 04 15 | 683 | 1.4− | 0.5− |
| 2000 04 11 | 428 | 0.3− | 0.8− | 2000 10 26 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 683 | 0.2+ | 0.4+ |
| 2000 04 11 | 428 | 0.1+ | 0.4− | 2000 10 26 | 071 | 0.6− | 0.9+ | 2004 04 15 | 699 | 0.5− | 0.1+ |
| 2000 04 12 | 704 | 0.2− | 0.1+ | 2000 10 26 | 071 | 0.1+ | 0.9+ | 2004 04 15 | 699 | 0.8− | 0.6+ |
| 2000 04 12 | 704 | 0.0 | 0.1+ | 2000 10 26 | 071 | (2.5− | 0.7−) | 2004 04 15 | 699 | 0.4+ | 0.4+ |
| 2000 04 12 | 704 | 0.0 | 0.1+ | 2000 10 31 | 322 | 0.5− | 0.9+ | 2004 04 15 | H41 | 0.4− | 0.7− |
| 2000 04 12 | 704 | 0.1− | 0.4− | 2000 10 31 | 322 | 0.4− | 0.7+ | 2004 04 15 | 699 | 0.6− | 0.3+ |
| 2000 04 12 | 704 | 0.0 | 0.4− | 2000 11 02 | 704 | 0.5− | 0.5+ | 2004 04 15 | H41 | 0.2− | 0.2− |
| 2000 04 13 | 704 | 0.9+ | 0.3+ | 2000 11 02 | 704 | 0.6− | 0.4+ | 2004 04 15 | H41 | 0.0 | 0.1− |
| 2000 04 13 | 704 | 0.1− | 0.1− | 2000 11 02 | 704 | (2.4+ | 0.6+) | 2004 04 15 | H41 | 0.2− | 0.7+ |
| 2000 04 13 | 704 | 0.1− | 0.1− | 2000 11 02 | 704 | 0.7− | 1.1+ | 2004 04 16 | 704 | 0.1+ | 0.0 |
| 2000 04 13 | 704 | 0.1− | 0.2+ | 2000 11 02 | 704 | 0.2− | 0.9+ | 2004 04 16 | 704 | 1.0+ | 0.4− |
| 2000 04 13 | 704 | 0.4+ | 0.1− | 2000 11 09 | 903 | 0.2+ | 0.5+ | 2004 04 16 | 704 | 0.1+ | 0.7+ |
| 2000 04 13 | 704 | 0.2− | 0.1− | 2000 11 09 | 903 | 0.6+ | 0.1− | 2004 04 16 | 704 | 0.3+ | 0.3+ |
| 2000 04 13 | 704 | 0.4+ | 0.0 | 2000 11 10 | 322 | 0.2− | 0.4+ | 2004 04 16 | 704 | 0.4+ | 0.4+ |
| 2000 04 13 | 704 | 0.0 | 0.2− | 2000 11 10 | 322 | 0.8− | 0.3+ | 2004 04 18 | H41 | (1.4+ | 2.5−) |
| 2000 04 13 | 704 | 0.1+ | 0.1− | 2000 11 10 | 322 | 0.3− | 0.2− | 2004 04 18 | H41 | 0.1+ | 0.2+ |
| 2000 04 13 | 704 | 0.3+ | 0.1− | 2000 11 14 | 322 | 0.7− | 0.6+ | 2004 04 18 | H41 | 1.2− | 0.9− |
| 2000 04 13 | 118 | 0.4+ | 0.6− | 2000 11 14 | 322 | 0.1− | 0.4+ | 2004 04 18 | H41 | 0.5+ | 0.2− |
| 2000 04 13 | 118 | 0.8+ | 0.7− | 2000 11 14 | 322 | 0.9− | 0.1+ | 2004 04 19 | 170 | 0.0 | 0.2+ |
| 2000 04 14 | 118 | 0.2− | 0.2+ | 2000 11 20 | 704 | 0.4− | 0.2+ | 2004 04 19 | 170 | 0.2− | 0.1− |
| 2000 04 14 | 118 | 0.1+ | 0.1− | 2000 11 20 | 704 | 0.1− | 0.2+ | 2004 04 19 | 170 | 0.2− | 0.3− |
| 2000 04 15 | 739 | 0.6− | 1.1− | 2000 11 20 | 704 | 0.5− | 0.7+ | 2004 04 21 | 704 | 0.4+ | 0.9+ |
| 2000 04 15 | 739 | 1.5− | 0.1+ | 2000 11 20 | 704 | 0.2− | 0.5+ | 2004 04 21 | 704 | 0.4+ | 0.5+ |
| 2000 04 15 | 739 | 0.4+ | 0.5− | 2000 11 20 | 704 | 0.5− | 0.9+ | 2004 04 21 | 704 | 0.4+ | 1.5+ |
| 2000 04 16 | 900 | (2.5− | 1.8+) | 2000 11 23 | 071 | (2.9− | 0.8−) | 2004 04 21 | 704 | 0.3+ | 0.7+ |
| 2000 04 16 | 900 | (2.2− | 1.1+) | 2000 11 23 | 071 | (3.6− | 1.3−) | 2004 04 21 | 704 | 0.6+ | 0.6+ |
| 2000 04 21 | 046 | 0.8+ | 0.1+ | 2000 11 23 | 071 | 1.2− | 0.4− | 2004 05 07 | 703 | 0.2+ | 0.5− |
| 2000 04 21 | 046 | 0.2+ | 0.4+ | 2000 11 29 | 360 | 0.2− | 0.0 | 2004 05 07 | 703 | 0.4− | 1.1− |
| 2000 04 21 | 046 | 0.4+ | 0.1+ | 2000 11 29 | 360 | 0.5− | 0.1+ | 2004 05 07 | 703 | 0.2− | 0.8+ |
| 2000 04 21 | 046 | 0.4+ | 0.3+ | 2000 11 29 | 360 | 0.3− | 0.1+ | 2004 05 07 | 703 | 1.3− | 0.5+ |
| 2000 04 21 | 118 | 0.1− | 0.5+ | 2000 11 29 | 322 | 0.6− | 0.6− | 2004 05 14 | 704 | 0.9+ | 0.4+ |
| 2000 04 21 | 118 | 0.2+ | 0.1− | 2000 11 29 | 322 | 0.2+ | 0.1+ | 2004 05 14 | 704 | 0.2− | 0.6− |
| 2000 04 22 | 649 | 0.2− | 0.1− | 2000 11 29 | 322 | 0.8+ | 0.8+ | 2004 05 14 | 704 | (0.8+ | 1.6−) |
| 2000 04 22 | 649 | 0.1+ | 0.1− | 2000 12 01 | 711 | 0.1− | 0.1− | 2004 05 14 | 704 | 1.0− | 0.7− |
| 2000 04 22 | 649 | (2.0+ | 2.0+) | 2000 12 01 | 711 | 0.2+ | 0.0 | 2004 06 20 | 703 | 0.3− | 0.0 |
| 2000 04 22 | 610 | 0.4− | 0.7+ | 2000 12 22 | 699 | 0.5− | 0.7+ | 2004 06 20 | 703 | 0.7+ | 0.4+ |
| 2000 04 22 | 610 | 0.3− | 0.7+ | 2000 12 22 | 699 | 0.8− | 1.0+ | 2004 06 20 | 703 | 0.7+ | 1.2+ |
| 2000 04 22 | 610 | 0.0 | 0.6+ | 2000 12 22 | 699 | 0.6− | 0.6+ | 2004 06 20 | 703 | 1.0+ | 1.0+ |
| 2000 04 22 | 610 | 0.1+ | 0.4+ | 2000 12 22 | 699 | 0.3− | 0.4+ | 2004 06 27 | E12 | (1.5− | 1.1+) |
| 2000 04 23 | 046 | 0.0 | 0.1+ | 2000 12 28 | 704 | 0.7− | 1.4+ | 2004 06 27 | E12 | 1.0+ | 0.3+ |
| 2000 04 23 | 046 | 0.3+ | 0.0 | 2000 12 28 | 704 | 0.6− | 0.1− | 2004 06 27 | E12 | 0.0 | 0.1+ |
| 2000 04 23 | 046 | 0.2+ | 0.2+ | 2000 12 28 | 704 | 0.8− | 0.8− | 2004 06 27 | E12 | 0.4− | 0.8− |
| 2000 04 23 | 046 | 0.1− | 0.2+ | 2000 12 28 | 704 | 0.8− | 0.6+ | 2004 07 09 | E12 | 0.0 | 0.1− |
| 2000 04 23 | 118 | 0.3− | 0.3+ | 2000 12 28 | 704 | 0.8− | 0.7+ | 2004 07 09 | E12 | (2.2− | 0.6−) |
| 2000 04 23 | 118 | 0.0 | 0.3+ | 2000 12 30 | 711 | 0.2− | 0.1+ | 2004 07 09 | E12 | 0.7+ | 0.5+ |
| 2000 04 24 | 903 | 0.7− | 0.1− | 2000 12 30 | 711 | 0.3+ | 0.3+ | 2004 07 09 | E12 | 0.9− | 0.3− |
| 2000 04 24 | 903 | 1.3− | 0.4+ | 2000 12 30 | 711 | 0.7+ | 0.9− | 2004 09 02 | E12 | 0.1− | 0.1+ |
| 2000 04 24 | 903 | 0.7− | 0.3+ | 2000 12 30 | 704 | 0.1− | 0.2+ | 2004 09 02 | E12 | 0.0 | 0.5+ |
| 2000 04 24 | 402 | 0.2− | 0.6− | 2000 12 30 | 704 | 0.3− | 1.8+ | 2004 09 02 | E12 | 0.3− | 0.0 |
| 2000 04 24 | 402 | 0.2− | 1.2− | 2000 12 30 | 704 | 0.0 | 0.7+ | 2004 09 02 | E12 | 0.6+ | 0.1+ |
| 2000 04 24 | 402 | 0.0 | 1.2− | 2001 01 19 | 704 | 0.1+ | 0.1+ | 2004 12 21 | 703 | 0.9− | 0.8+ |
| 2000 04 25 | 739 | 1.8− | 0.6− | 2001 01 19 | 704 | 0.4− | 0.1− | 2004 12 21 | 703 | 0.2− | 0.1+ |
| 2000 04 25 | 739 | 0.6+ | 1.0+ | 2001 01 19 | 704 | 0.3+ | 0.6+ | 2004 12 21 | 703 | 0.5− | 0.3+ |
| 2000 04 25 | 739 | 0.9− | 0.3+ | 2001 01 19 | 704 | 0.1− | 0.2− | 2004 12 21 | 703 | 0.2+ | 0.2+ |
| 2000 04 25 | 670 | 0.5− | 0.1+ | 2001 01 19 | 704 | 0.0 | 0.5+ | 2005 11 26 | 711 | 0.7− | 0.1+ |
| 2000 04 25 | 670 | 0.3− | 0.4+ | 2001 12 19 | 644 | 0.2− | 0.2+ | 2005 11 26 | 711 | 0.9+ | 0.2+ |
| 2000 04 25 | 113 | 0.3− | 0.1+ | 2002 01 05 | 644 | 0.9− | 0.5+ | 2005 11 26 | 711 | 0.3− | 0.2− |
| 2000 04 25 | 610 | 0.1+ | 0.5+ | 2002 01 05 | 644 | 0.2+ | 0.0 | | | | |
| 2000 04 25 | 610 | 0.0 | 0.5+ | 2002 01 05 | 644 | 0.4− | 0.5+ | | | | |

**(138206)∗ 2000 EJ$_{149}$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.70882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26116670 | $\omega$ | 72.77951 | | −0.38810141 | −0.92104330 | |
| $a$ | 2.4239529 | $\Omega$ | 40.10564 | | +0.82523883 | −0.36300172 | |
| $e$ | 0.1675104 | $i$ | 2.89221 | | +0.41031471 | −0.14109920 | |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.7− | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 2000 02 11 | 704 | 0.9− | 0.8− | 2004 03 18 | 704 | 1.4+ | 1.5+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2000 02 11 | 704 | 0.8+ | 0.7+ | 2004 03 19 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2000 02 25 | 703 | 1.2+ | 1.4+ | 2004 03 19 | 704 | 1.0+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2000 02 25 | 703 | (2.6− | 1.3+) | 2004 03 19 | 704 | 0.4− | 1.0+ | 2006 11 11 | 703 | 1.1+ | 0.6− |
| 2000 02 25 | 703 | 1.1+ | 0.6− | 2004 03 19 | 704 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2000 02 25 | 703 | 0.3+ | 0.3− | 2004 03 19 | 704 | (0.9+ | 1.7+) | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 2000 03 05 | 704 | 0.7− | 0.2− | 2004 04 20 | 691 | 0.2− | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.6− |
| 2000 03 05 | 704 | 0.6− | 0.1− | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.6− |
| 2000 03 05 | 704 | 0.2− | 0.7− | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.5− |
| 2000 03 05 | 704 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.6− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2000 03 05 | 704 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2000 03 11 | 699 | 0.1+ | 1.2+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2000 03 11 | 699 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2000 03 11 | 699 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.8+ |
| 2000 03 11 | 699 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 1.1+ | 0.4+ |
| 2002 09 28 | 644 | 0.9− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2002 09 28 | 644 | 0.7− | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.5− |
| 2002 09 28 | 644 | 1.1− | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2002 10 07 | 291 | 0.3− | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.7+ |
| 2002 10 07 | 291 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 1.0+ | 1.0+ |
| 2002 10 07 | 291 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.9+ |
| 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2004 03 18 | 704 | 0.1+ | 0.7− | 2006 11 10 | 644 | 0.1− | 0.1+ | | | | |
| 2004 03 18 | 704 | 0.5− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.2+ | | | | |

**(138207)∗ 2000 EN$_{149}$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.21460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27284417 | $\omega$ | 91.89808 | | −0.99866585 | +0.01126484 | |
| $a$ | 2.3542881 | $\Omega$ | 88.74978 | | −0.03043894 | −0.91675846 | |
| $e$ | 0.1372833 | $i$ | 2.88931 | | +0.04171310 | −0.39928314 | |
| $P$ | 3.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.2− | 0.4− | 2000 03 12 | 704 | (2.9+ | 0.7−) | 2004 05 17 | 704 | 0.3− | 1.4+ |
| 2000 02 11 | 704 | 1.0+ | 0.4+ | 2002 11 24 | 644 | 0.5− | 0.3+ | 2004 05 17 | 704 | (0.3+ | 2.0+) |
| 2000 02 11 | 704 | 1.3+ | 0.3+ | 2002 11 24 | 644 | 0.3− | 0.6+ | 2004 05 17 | 704 | (0.2− | 1.9+) |
| 2000 02 11 | 704 | 0.1+ | 0.2− | 2002 11 24 | 644 | 0.5− | 0.4+ | 2004 05 17 | 704 | (0.1− | 1.9+) |
| 2000 02 11 | 704 | 0.4+ | 1.0+ | 2002 12 10 | 644 | 0.0 | 1.1+ | 2004 05 17 | 704 | (0.1− | 2.3+) |
| 2000 02 25 | 703 | 0.1+ | 1.1+ | 2002 12 10 | 644 | 0.0 | 1.0+ | 2004 05 21 | 704 | 0.5+ | 0.9+ |
| 2000 02 25 | 703 | 0.4− | 1.0+ | 2002 12 10 | 644 | 0.4+ | 1.1+ | 2004 05 21 | 704 | 0.1+ | 0.6+ |
| 2000 02 25 | 703 | 0.8+ | 0.4+ | 2004 04 19 | 704 | 0.6+ | 0.3− | 2004 05 21 | 704 | 0.6− | 0.8+ |
| 2000 02 25 | 703 | 1.4− | 0.9+ | 2004 04 19 | 704 | 0.8+ | 0.2+ | 2004 05 21 | 704 | 1.4+ | 1.0− |
| 2000 03 05 | 704 | 0.2+ | 0.4+ | 2004 04 19 | 704 | 0.0 | 0.1− | 2004 05 21 | 704 | 0.4− | 0.6+ |
| 2000 03 05 | 704 | 0.7+ | 0.0 | 2004 04 19 | 704 | 0.7− | 0.0 | 2005 09 13 | 691 | 0.2− | 0.5+ |
| 2000 03 05 | 704 | 0.3+ | 1.3+ | 2004 04 29 | 704 | (1.6− | 0.1−) | 2005 09 13 | 691 | 0.4− | 0.7+ |
| 2000 03 05 | 704 | 0.3+ | 0.1+ | 2004 04 29 | 704 | 0.2− | 0.0 | 2005 09 13 | 691 | 0.3− | 0.7+ |
| 2000 03 05 | 704 | 0.4− | 1.1+ | 2004 04 29 | 704 | 0.2− | 0.9− | 2005 10 01 | 703 | 0.3− | 1.1+ |
| 2000 03 11 | 699 | 0.6− | 0.3+ | 2004 04 29 | 704 | 0.0 | 0.0 | 2005 10 01 | 703 | 0.9− | 1.1+ |
| 2000 03 11 | 699 | 0.8+ | 0.1− | 2004 05 12 | 699 | 0.4− | 0.9+ | 2005 10 01 | 703 | 0.2+ | 1.1+ |
| 2000 03 11 | 699 | 0.1− | 0.1+ | 2004 05 12 | 699 | 0.1+ | 0.5− | 2005 10 01 | 703 | 0.4− | 0.2+ |
| 2000 03 11 | 699 | 0.1+ | 0.7+ | 2004 05 12 | 699 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.6− | 0.2− |
| 2000 03 11 | 699 | 0.7+ | 0.6− | 2004 05 12 | 699 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2000 03 11 | 699 | 0.6− | 0.1+ | 2004 05 15 | 704 | (0.7+ | 1.6+) | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2000 03 11 | 699 | 0.5− | 0.6+ | 2004 05 15 | 704 | (0.5+ | 2.9+) | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2000 03 11 | 699 | 0.4+ | 0.1+ | 2004 05 15 | 704 | (0.5+ | 1.8+) | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2000 03 12 | 704 | 0.4− | 0.1+ | 2004 05 15 | 704 | 1.0+ | 0.5+ | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2000 03 12 | 704 | 0.5+ | 0.2+ | 2004 05 15 | 599 | 0.3+ | 0.7+ | 2006 11 27 | G96 | 0.3− | 0.8− |
| 2000 03 12 | 704 | 0.3+ | 0.1+ | 2004 05 15 | 599 | 0.4− | 0.7+ | 2006 11 27 | G96 | 0.2+ | 0.5− |

**(138208)∗ 2000 EN$_{162}$ = 2001 OX$_{71}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17218)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.74838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23113669 | $\omega$ | 327.73281 | | +0.39808125 | +0.91726501 | |
| $a$ | 2.6296026 | $\Omega$ | 325.72085 | | −0.83686935 | +0.35754226 | |
| $e$ | 0.1247734 | $i$ | 1.27163 | | −0.37574062 | +0.17546636 | |
| $P$ | 4.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.5+ | 0.5+ | 2002 12 10 | 704 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.6+ | 0.8+ | 2002 12 10 | 704 | 0.8− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.1+ | 0.3+ | 2002 12 10 | 704 | 1.2− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2000 03 03 | 704 | 0.2+ | 0.1− | 2002 12 10 | 704 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2000 03 03 | 704 | 0.1− | 0.6+ | 2004 02 12 | 691 | 0.4− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2000 03 11 | 704 | 0.4+ | 0.2− | 2004 02 12 | 691 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2000 03 11 | 699 | 1.2+ | 0.8+ | 2004 02 12 | 691 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.8+ | 2004 02 17 | 704 | 0.6+ | 1.3+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2000 03 11 | 704 | 0.4+ | 0.4− | 2004 02 17 | 704 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.2− | 0.1+ |
| 2000 03 11 | 699 | 0.0 | 0.5+ | 2004 02 17 | 704 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.5+ | 0.2− | 2004 02 17 | 704 | 0.1− | 1.3+ | 2006 10 29 | 704 | 0.5+ | 0.7+ |
| 2000 03 11 | 699 | 0.4+ | 0.3+ | 2004 02 17 | 704 | 0.5− | 0.3+ | 2006 10 29 | 704 | 0.2+ | 1.3+ |
| 2000 03 11 | 704 | 0.8+ | 0.3+ | 2005 01 23 | 809 | 0.0 | 0.3+ | 2006 10 29 | 704 | 0.3+ | 0.5− |
| 2000 03 11 | 699 | 0.3− | 0.7+ | 2005 01 23 | 809 | 0.6− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.6+ | 0.2+ | 2005 01 23 | 809 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.3+ | 0.9+ | 2006 07 22 | G96 | (1.5− | 0.3+) | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.3− | 0.6+ | 2006 07 22 | G96 | 0.3− | 1.2+ | 2006 11 09 | 644 | 0.3+ | 0.3− |
| 2000 04 05 | 704 | 0.1+ | 0.4+ | 2006 07 22 | G96 | 0.4− | 0.1+ | 2006 11 09 | 691 | 0.3+ | 0.2− |
| 2000 04 05 | 704 | 0.1+ | 0.1+ | 2006 07 22 | G96 | 0.3+ | 0.3− | 2006 11 09 | 691 | 0.1− | 0.2− |
| 2001 07 21 | 608 | (1.8− | 2.4+) | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 07 21 | 608 | (1.9− | 3.0+) | 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2001 07 21 | 608 | (1.8− | 2.6+) | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2001 07 22 | 704 | 0.1+ | 0.6+ | 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 07 22 | 704 | 0.3− | 0.8+ | 2006 09 28 | A44 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 07 22 | 704 | 0.3− | 0.8+ | 2006 09 28 | A44 | 0.3− | 0.4− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 08 11 | 644 | 0.4− | 0.2+ | 2006 09 28 | A44 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2001 08 11 | 644 | 0.2− | 0.5+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2001 08 11 | 644 | 0.1− | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 11 05 | 704 | 0.6− | 0.6− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2002 11 05 | 704 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.9+ | 0.4− | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2002 11 13 | 644 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2002 11 13 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2002 11 13 | 644 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.4− |
| 2002 11 28 | 699 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2002 11 28 | 699 | (0.2+ | 1.8−) | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2002 11 28 | 699 | 0.2+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.4− | 0.1+ |
| 2002 11 28 | 699 | 0.1+ | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 12 10 | 704 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.1+ |

**(138209)∗ 2000 EK$_{163}$ = 2006 DX$_{59}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 99944)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.00828 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16884418 | $\omega$ | 307.81745 | | −0.47984670 | −0.87734808 | |
| $a$ | 3.2419923 | $\Omega$ | 170.85672 | | +0.81026912 | −0.44435104 | |
| $e$ | 0.1263481 | $i$ | 0.98664 | | +0.33646856 | −0.18114221 | |
| $P$ | 5.84 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.0 | 0.3+ | 2003 10 01 | 699 | 0.1+ | 1.4+ | 2006 02 25 | 691 | 0.2+ | 0.6+ |
| 2000 03 03 | 704 | 0.2+ | 0.7− | 2003 10 18 | 291 | 0.1+ | 0.3+ | 2006 03 04 | 691 | 0.6+ | 0.0 |
| 2000 03 03 | 704 | 0.8+ | 0.4− | 2003 10 18 | 291 | 0.1+ | 0.4+ | 2006 03 04 | 691 | 0.4+ | 0.3+ |
| 2000 03 03 | 704 | 0.3− | 0.5− | 2003 10 18 | 291 | 0.3+ | 0.4+ | 2006 03 04 | 691 | 0.5+ | 0.2+ |
| 2000 03 03 | 704 | 0.4− | 0.5+ | 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 23 | G96 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.8+ | 1.3+ | 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 23 | G96 | 0.3− | 0.0 |
| 2000 03 11 | 699 | 0.1− | 0.4+ | 2003 10 22 | 645 | 0.1− | 0.1+ | 2006 03 23 | G96 | 0.5− | 0.0 |
| 2000 03 11 | 704 | 0.5− | 0.8+ | 2003 10 22 | 645 | 0.2− | 0.1+ | 2006 03 23 | G96 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.2+ | 0.5+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 26 | G96 | 0.1− | 0.3+ |
| 2000 03 11 | 699 | 1.0+ | 1.2+ | 2003 10 23 | 645 | 0.1− | 0.1+ | 2006 03 26 | G96 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.1+ | 0.9+ | 2003 10 24 | 691 | 0.2− | 0.0 | 2006 03 26 | G96 | 0.2− | 0.3+ |
| 2000 03 11 | 699 | 0.1− | 0.7+ | 2003 10 24 | 691 | 0.3− | 0.3+ | 2006 03 26 | G96 | 0.1− | 0.2+ |
| 2000 03 11 | 704 | 1.2+ | 1.1+ | 2003 10 24 | 691 | 0.2− | 0.3+ | 2006 04 07 | G96 | 0.0 | 0.2+ |
| 2000 03 11 | 699 | (2.7+ | 0.3+) | 2004 12 14 | 704 | 1.4+ | 0.8− | 2006 04 07 | G96 | 0.0 | 0.2− |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2004 12 14 | 704 | 0.2− | 0.7− | 2006 04 07 | G96 | 0.2+ | 0.2+ |
| 2000 04 05 | 704 | 0.8− | 0.3− | 2004 12 14 | 704 | 1.3− | 1.4− | 2006 04 07 | G96 | 0.2+ | 0.3+ |
| 2000 04 05 | 704 | 0.7+ | 1.3+ | 2004 12 14 | 704 | 0.1+ | 0.1− | 2006 04 19 | G96 | 0.4+ | 0.1− |
| 2003 09 29 | 691 | 0.2− | 0.6+ | 2006 02 24 | G96 | 0.1+ | 0.4+ | 2006 04 19 | G96 | 0.6− | 0.5− |
| 2003 09 29 | 691 | 0.3− | 0.6+ | 2006 02 24 | G96 | 0.3+ | 1.0+ | 2006 04 19 | G96 | 0.4− | 0.2+ |
| 2003 09 29 | 691 | 0.1− | 0.6+ | 2006 02 24 | G96 | 0.4− | 0.2+ | 2006 04 19 | G96 | 0.3− | 0.2+ |
| 2003 10 01 | 699 | (2.4− | 0.5+) | 2006 02 24 | G96 | 0.1+ | 0.2− | 2006 04 26 | 691 | 0.1− | 0.2+ |
| 2003 10 01 | 699 | 1.3+ | 1.1− | 2006 02 25 | 691 | 0.4+ | 0.4+ | 2006 04 26 | 691 | 0.0 | 0.6+ |
| 2003 10 01 | 699 | 0.6+ | 1.0+ | 2006 02 25 | 691 | 0.1+ | 0.0 | 2006 04 26 | 691 | 0.1− | 0.6+ |

**(138210)∗ 2000 EA$_{166}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.47495 | | (2000.0) | | | |
| $n$ | 0.24104655 | $\omega$ | 66.01927 | | +0.28435626 | −0.95869648 |
| $a$ | 2.5570277 | $\Omega$ | 7.46930 | | +0.86035884 | +0.25217414 |
| $e$ | 0.1211545 | $i$ | 2.87694 | | +0.42299431 | +0.13156464 |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.5+ | 0.3+ | 2002 10 07 | 699 | (0.7+ | 2.4−) | 2004 03 15 | 703 | 0.1− | 1.0+ |
| 2000 03 03 | 704 | 0.2− | 1.0− | 2002 10 07 | 699 | 0.6+ | 0.0 | 2004 03 15 | 703 | 0.9+ | 0.0 |
| 2000 03 03 | 704 | 1.5+ | 0.1+ | 2002 10 07 | 704 | 0.6+ | 0.1− | 2004 03 22 | 704 | 0.4− | 0.0 |
| 2000 03 03 | 704 | 0.9+ | 0.6− | 2002 10 07 | 704 | 0.2+ | 1.0+ | 2004 03 22 | 704 | 0.4− | 0.0 |
| 2000 03 11 | 704 | 0.2− | 0.2+ | 2002 10 07 | 704 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.1− | 0.4+ | 2002 10 07 | 704 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.1+ | 0.6+ |
| 2000 03 11 | 704 | 0.7− | 0.7+ | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.7+ |
| 2000 03 11 | 704 | 0.2− | 0.0 | 2002 10 11 | 704 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.4− | 0.8+ |
| 2000 03 11 | 704 | 0.3− | 0.2+ | 2002 10 11 | 704 | 0.7+ | 0.5+ | 2006 08 17 | 644 | 0.2− | 0.6+ |
| 2000 04 05 | 704 | (0.0 | 2.5+) | 2002 10 11 | 704 | 0.5+ | 0.5− | 2006 08 22 | 644 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 0.3− | 1.1+ | 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 08 22 | 644 | 0.3+ | 0.3+ |
| 2000 04 05 | 704 | 0.3+ | 1.3+ | 2002 10 11 | 704 | 0.5+ | 0.1− | 2006 08 22 | 644 | 0.2+ | 0.3+ |
| 2002 09 03 | 460 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 704 | 0.9− | 0.0 |
| 2002 09 03 | 460 | 0.9− | 0.8− | 2002 10 11 | 704 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.7− | 0.6− |
| 2002 09 04 | 460 | 0.3+ | 0.5− | 2002 10 11 | 704 | 1.1+ | 0.7+ | 2006 09 17 | 704 | 1.0− | 0.0 |
| 2002 09 04 | 460 | 1.3− | 1.1+ | 2002 10 11 | 704 | 0.5+ | 0.3− | 2006 09 18 | 699 | 0.0 | 0.0 |
| 2002 09 05 | 460 | (1.6− | 0.3−) | 2002 10 11 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.6+ |
| 2002 09 05 | 460 | 1.0+ | 0.2− | 2002 10 11 | 704 | 0.6+ | 0.4− | 2006 09 18 | 699 | 0.0 | 0.2− |
| 2002 09 05 | 460 | 0.1− | 1.4− | 2002 10 11 | 704 | 0.5+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2002 09 05 | 460 | 0.9− | 0.2+ | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.4+ | 0.6+ |
| 2002 09 27 | 644 | 0.2− | 0.7− | 2002 10 31 | 644 | 0.2+ | 1.1+ | 2006 09 30 | 691 | 0.2+ | 0.5+ |
| 2002 09 27 | 644 | 0.3− | 0.2− | 2002 10 31 | 644 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2002 09 27 | 644 | 0.6− | 0.1− | 2002 10 31 | 644 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2002 09 28 | 644 | 0.5− | 0.3− | 2002 10 31 | 704 | (2.4+ | 2.4+) | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2002 09 28 | 644 | 0.9− | 0.3− | 2002 10 31 | 704 | 1.5+ | 1.0+ | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 2002 09 28 | 644 | 0.6− | 0.2− | 2002 10 31 | 704 | 0.2− | 0.8+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 1.3− | 0.2− | 2002 11 06 | 704 | 0.9+ | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 1.3− | 0.7− | 2002 11 06 | 704 | 0.5+ | 0.7− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 1.3− | 1.1− | 2002 11 06 | 704 | 1.1+ | 0.9− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2002 10 02 | 704 | 1.5− | 1.0− | 2002 11 06 | 704 | 0.8+ | 1.0− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2004 02 19 | 608 | 0.0 | 0.6− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2004 02 19 | 608 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.6− | 2004 02 19 | 608 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.6− | 1.1+ | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 06 | 291 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2002 10 06 | 291 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.5− | 0.7+ | 2006 10 27 | G96 | 0.6− | 0.7− |
| 2002 10 06 | 291 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2002 10 07 | 699 | 0.9+ | 0.3+ | 2004 03 15 | 703 | 0.6+ | 0.8+ | 2006 10 27 | G96 | 0.5− | 1.1− |
| 2002 10 07 | 699 | 0.1− | 0.5+ | 2004 03 15 | 703 | 0.5+ | 1.3+ | | | | |

**(138211)∗ 2000 EF$_{167}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.96199 | | (2000.0) | | | |
| $n$ | 0.22499604 | $\omega$ | 160.89076 | | −0.96851613 | −0.24800806 |
| $a$ | 2.6772328 | $\Omega$ | 4.90515 | | +0.18241797 | −0.76615597 |
| $e$ | 0.1010429 | $i$ | 14.66333 | | +0.16941131 | −0.59287184 |
| $P$ | 4.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.4− | 0.6+ | 2002 10 04 | 644 | 0.2− | 0.6+ | 2003 12 15 | 704 | 0.5− | 0.5+ |
| 2000 02 03 | 704 | 1.2+ | 1.1+ | 2002 10 06 | 608 | 0.4− | 0.2− | 2003 12 15 | 704 | 0.7+ | 0.9+ |
| 2000 02 03 | 704 | 1.8+ | 0.2+ | 2002 10 06 | 608 | 0.7− | 0.1− | 2003 12 30 | 704 | 0.2+ | 0.1− |
| 2000 02 03 | 704 | 1.9+ | 0.1+ | 2002 10 06 | 608 | 0.6− | 0.1− | 2003 12 30 | 704 | 0.1− | 0.4− |
| 2000 03 04 | 704 | 0.7+ | 0.4+ | 2002 10 11 | 704 | 0.5− | 1.4+ | 2003 12 30 | 704 | 0.0 | 0.5− |
| 2000 03 04 | 704 | 0.7− | 0.2+ | 2002 10 11 | 704 | 1.0− | 0.7+ | 2003 12 30 | 704 | 0.3+ | 0.4− |
| 2000 03 04 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.3+ | 0.9+ | 2003 12 30 | 704 | 0.5+ | 0.2− |
| 2000 03 04 | 704 | 0.4− | 0.0 | 2002 10 11 | 704 | 0.5+ | 0.3+ | 2004 01 02 | 704 | 0.1− | 0.4+ |
| 2000 03 04 | 704 | 0.1− | 0.6+ | 2002 10 11 | 704 | 1.2+ | 1.0+ | 2004 01 02 | 704 | 0.3+ | 0.2+ |
| 2000 03 12 | 704 | 0.0 | 1.0+ | 2002 10 11 | 291 | 0.4− | 0.3+ | 2004 01 02 | 704 | 0.1− | 0.7+ |
| 2000 03 12 | 704 | 0.7+ | 0.8+ | 2002 10 11 | 291 | 0.2− | 0.3+ | 2004 01 16 | 644 | 0.1+ | 0.1− |
| 2000 03 12 | 704 | 0.3+ | 0.9+ | 2002 10 11 | 291 | 0.0 | 0.2+ | 2004 01 16 | 644 | 0.4+ | 0.3− |
| 2000 03 12 | 704 | 1.1+ | 1.4+ | 2002 10 31 | 645 | 0.1− | 0.0 | 2004 01 16 | 644 | 0.2+ | 1.0+ |
| 2000 03 12 | 704 | 1.0+ | 1.6+ | 2002 10 31 | 645 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 2000 04 05 | 688 | 0.1− | 0.5+ | 2003 10 23 | 645 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.3+ | 0.2+ |
| 2000 04 05 | 688 | 0.2− | 0.8+ | 2003 10 23 | 645 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.2− | 0.2+ |
| 2002 09 07 | 704 | 0.2− | 1.9− | 2003 10 24 | 645 | 0.0 | 0.2− | 2006 08 20 | 644 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.2− | 0.4+ |
| 2002 09 07 | 704 | 0.2+ | 0.9+ | 2003 12 03 | 699 | 0.8+ | 0.8+ | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2002 09 29 | 608 | 0.3− | 0.1− | 2003 12 03 | 699 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.6− | 0.4+ |
| 2002 09 29 | 608 | 0.2+ | 0.3+ | 2003 12 03 | 699 | 0.3− | 0.8+ | 2006 09 14 | 644 | 0.4− | 0.3+ |
| 2002 09 29 | 608 | 0.0 | 0.3+ | 2003 12 03 | 699 | 0.2− | 0.6− | 2006 09 14 | 644 | 0.2− | 0.1+ |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2003 12 15 | 704 | 0.6− | 0.0 | | | | |
| 2002 10 04 | 644 | 0.3− | 0.4+ | 2003 12 15 | 704 | 0.3+ | 1.0+ | | | | |

**(138212)∗ 2000 EY$_{172}$**

Discovered 2000 Mar. 1 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 196.40542 | | (2000.0) | | | |
| $n$ | 0.23456064 | $\omega$ | 307.35989 | | −0.99904282 | −0.00217442 |
| $a$ | 2.6039499 | $\Omega$ | 232.55735 | | +0.01805119 | −0.93025050 |
| $e$ | 0.1706284 | $i$ | 3.15438 | | −0.03984478 | −0.36691863 |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.0 | 0.4+ | 2001 07 18 | 691 | 0.1− | 0.1+ | 2005 06 15 | G96 | 0.0 | 0.2− |
| 1998 11 15 | 691 | 0.2+ | 0.2+ | 2001 07 18 | 691 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 1998 11 15 | 691 | 0.3+ | 0.3+ | 2004 01 29 | 704 | 1.2+ | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.3+ |
| 2000 03 01 | 703 | 0.3+ | 0.9+ | 2004 01 29 | 704 | 1.0+ | 0.1− | 2006 09 15 | 691 | 0.5− | 0.1+ |
| 2000 03 01 | 703 | 0.5+ | 0.9+ | 2004 01 29 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2000 03 01 | 703 | 0.2+ | 0.9+ | 2004 01 29 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.4+ |
| 2000 03 01 | 703 | 1.6− | 0.9+ | 2004 02 13 | 699 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2000 03 06 | 608 | 0.2+ | 0.6− | 2004 02 13 | 699 | 0.2− | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2000 03 06 | 608 | 0.2+ | 0.4− | 2004 02 13 | 699 | 0.1+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2000 03 06 | 608 | 0.2− | 0.2− | 2004 02 13 | 699 | 0.3− | 0.4+ | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2000 03 08 | 704 | 1.4+ | 1.5+ | 2004 02 18 | 704 | 0.5− | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2000 03 08 | 704 | 0.5− | 0.5+ | 2004 02 18 | 704 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2000 03 08 | 704 | 1.7− | 0.8+ | 2004 02 18 | 704 | 0.1+ | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2000 03 08 | 704 | 1.4− | 0.2+ | 2004 02 18 | 704 | (1.4− | 1.9+) | 2006 10 19 | G96 | (1.5+ | 1.0+) |
| 2000 03 13 | 704 | 0.4+ | 0.3+ | 2004 02 18 | 704 | 0.1+ | 1.3+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2000 03 13 | 704 | 0.9− | 1.1+ | 2005 06 05 | 691 | 0.5+ | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.7− |
| 2000 03 13 | 704 | 0.4+ | 0.8+ | 2005 06 05 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2000 03 13 | 704 | 0.4− | 0.8+ | 2005 06 05 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.8+ | 0.3− |
| 2000 04 04 | 704 | 0.3+ | 0.5− | 2005 06 10 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3+ |
| 2000 04 04 | 704 | 1.8+ | 0.8− | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2000 04 04 | 704 | 1.1+ | 0.5− | 2005 06 10 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.8+ | 0.4− |
| 2000 04 04 | 704 | 1.0+ | 0.6+ | 2005 06 14 | 691 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2000 04 26 | 699 | 0.1+ | 1.4− | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2000 04 26 | 699 | 0.5− | 0.8− | 2005 06 14 | 691 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2000 04 26 | 699 | 0.9+ | 0.5+ | 2005 06 15 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.7− | 0.9− |
| 2000 04 26 | 699 | 0.2− | 0.4+ | 2005 06 15 | G96 | 0.1+ | 0.2− | | | | |
| 2001 07 18 | 691 | 0.6− | 0.1+ | 2005 06 15 | G96 | 0.0 | 0.1− | | | | |

**(138213)∗ 2000 EL$_{174}$**

Discovered 2000 Mar. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.31014 | | (2000.0) | | | |
| $n$ | 0.17610463 | $\omega$ | 177.07744 | | −0.07400147 | −0.99712863 |
| $a$ | 3.1522612 | $\Omega$ | 277.16603 | | +0.91463763 | −0.06143936 |
| $e$ | 0.0391867 | $i$ | 0.92808 | | +0.39744406 | −0.04426845 |
| $P$ | 5.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 691 | 0.1− | 0.2− | 2003 09 16 | 291 | 0.8− | 0.1+ | 2006 02 24 | 691 | 0.7+ | 0.4+ |
| 2000 01 27 | 691 | 0.2− | 1.1− | 2003 09 16 | 291 | 0.9− | 0.0 | 2006 03 02 | 691 | 0.2+ | 0.5+ |
| 2000 01 27 | 691 | 0.1− | 0.1− | 2003 09 18 | 691 | 0.1− | 0.2− | 2006 03 02 | 691 | 0.0 | 0.6+ |
| 2000 02 03 | 691 | 0.5+ | 0.2+ | 2003 09 18 | 691 | 0.2− | 0.1+ | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 2000 02 03 | 691 | 0.6+ | 0.0 | 2003 09 18 | 691 | 0.2+ | 0.1+ | 2006 03 25 | G96 | 0.2+ | 0.1− |
| 2000 02 03 | 691 | 0.6+ | 0.1− | 2003 10 02 | 291 | 0.4+ | 0.3+ | 2006 03 25 | G96 | 0.1− | 0.0 |
| 2000 02 05 | 691 | 0.1+ | 0.4− | 2003 10 02 | 291 | 0.6+ | 0.4+ | 2006 03 25 | G96 | 0.1+ | 0.1+ |
| 2000 02 05 | 691 | 0.1+ | 0.4− | 2003 10 02 | 291 | 0.5+ | 0.4+ | 2006 03 25 | G96 | 0.4+ | 0.3+ |
| 2000 02 05 | 691 | 0.0 | 0.4− | 2003 10 24 | 691 | 0.2− | 0.1+ | 2006 04 24 | G96 | 0.1− | 0.3− |
| 2000 03 03 | 691 | 0.1− | 0.3− | 2003 10 24 | 691 | 0.0 | 0.2− | 2006 04 24 | G96 | 0.1+ | 0.2− |
| 2000 03 03 | 691 | 0.2− | 0.1+ | 2003 10 24 | 691 | 0.1+ | 0.0 | 2006 04 24 | G96 | 0.2− | 0.2+ |
| 2000 03 03 | 691 | 0.2− | 0.5+ | 2004 12 20 | 691 | 0.0 | 0.4+ | 2006 04 24 | G96 | 0.0 | 0.0 |
| 2000 03 14 | 691 | 0.8− | 0.2+ | 2004 12 20 | 691 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.3− | 0.1+ |
| 2000 03 14 | 691 | 0.2− | 0.1− | 2004 12 20 | 691 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.2+ | 0.2+ |
| 2000 03 14 | 691 | 0.9− | 0.1− | 2006 02 24 | 691 | 0.5+ | 0.2+ | 2006 05 26 | G96 | 0.2+ | 0.6− |
| 2003 09 16 | 291 | 0.2− | 0.1− | 2006 02 24 | 691 | 0.5− | 0.6+ | 2006 05 26 | G96 | 0.8− | 0.6+ |

**(138214)∗ 2000 EU$_{178}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.10406 | | (2000.0) | | | |
| $n$ | 0.23170102 | $\omega$ | 78.39470 | | −0.90301763 | +0.36457087 |
| $a$ | 2.6253311 | $\Omega$ | 122.60040 | | −0.41588298 | −0.87447128 |
| $e$ | 0.1086422 | $i$ | 15.65008 | | +0.10770563 | −0.31998135 |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.0 | 2003 12 18 | 644 | 0.2+ | 0.7+ | 2004 01 30 | 704 | 0.0 | 0.6− |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2003 12 18 | 644 | 0.3+ | 0.7+ | 2004 01 30 | 704 | 0.6+ | 0.3− |
| 2000 01 04 | 704 | 0.7− | 0.5− | 2003 12 22 | 691 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.4− | 0.1+ |
| 2000 01 04 | 704 | 0.0 | 0.4+ | 2003 12 22 | 691 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.4+ | 0.9− |
| 2000 01 04 | 704 | 0.4+ | 0.2− | 2003 12 22 | 691 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.6+ | 1.3+ |
| 2000 02 03 | 704 | 0.2+ | 0.4+ | 2003 12 23 | 704 | 0.4− | 0.4+ | 2004 02 15 | 704 | 0.0 | 0.0 |
| 2000 02 03 | 704 | 0.5+ | 0.4+ | 2003 12 23 | 704 | 0.0 | 0.4+ | 2004 02 15 | 704 | 0.3− | 1.3+ |
| 2000 02 03 | 704 | (2.4+ | 0.4+) | 2003 12 23 | 704 | 0.2+ | 0.5+ | 2004 02 15 | 704 | 0.2+ | 0.9+ |
| 2000 02 03 | 704 | 0.2− | 0.2+ | 2003 12 23 | 704 | 0.2− | 0.7+ | 2004 02 15 | 704 | (0.2+ | 2.1+) |
| 2000 02 03 | 704 | 0.4− | 0.2− | 2003 12 23 | 704 | 0.3− | 0.8+ | 2004 02 23 | 704 | 0.3+ | 0.1+ |
| 2000 02 06 | 703 | 0.5− | 0.9+ | 2004 01 19 | 699 | 0.5+ | 0.2− | 2004 02 23 | 704 | 0.2− | 0.5− |
| 2000 02 06 | 703 | 0.5+ | 0.3− | 2004 01 19 | 699 | 0.3− | 0.8− | 2004 02 23 | 704 | 0.3+ | 0.2+ |
| 2000 02 06 | 703 | 0.1− | 0.8+ | 2004 01 19 | 699 | 0.1− | 0.4− | 2004 02 23 | 704 | 0.1− | 0.0 |
| 2000 02 06 | 703 | 0.0 | 1.7+ | 2004 01 19 | 699 | 0.5+ | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.4− |
| 2000 03 04 | 704 | 0.1+ | 0.5+ | 2004 01 21 | 704 | 0.3− | 0.1+ | 2005 06 09 | 703 | 0.3− | 0.2+ |
| 2000 03 04 | 704 | 0.3+ | 0.4+ | 2004 01 21 | 704 | 0.3− | 0.2+ | 2005 06 09 | 703 | 0.1+ | 0.2+ |
| 2000 03 04 | 704 | 0.9+ | 0.0 | 2004 01 21 | 704 | 0.5− | 0.1− | 2005 06 09 | 703 | 0.1− | 0.5+ |
| 2000 03 04 | 704 | 0.4+ | 0.4+ | 2004 01 21 | 704 | 0.5− | 0.3− | 2005 06 09 | 703 | 0.3+ | 0.1− |
| 2000 03 12 | 703 | 0.4− | 0.1+ | 2004 01 21 | 704 | 0.2− | 0.1+ | 2006 09 17 | 699 | 0.0 | 0.9+ |
| 2000 03 12 | 703 | 0.6− | 0.2+ | 2004 01 24 | 704 | 0.3− | 0.0 | 2006 09 17 | 699 | 1.2− | 1.1+ |
| 2000 03 12 | 704 | 0.2− | 0.2+ | 2004 01 24 | 704 | 0.2− | 0.2− | 2006 09 17 | 699 | 0.0 | 0.2+ |
| 2000 03 12 | 703 | (1.0− | 2.3−) | 2004 01 24 | 704 | 0.7− | 0.5− | 2006 09 17 | 699 | 0.7− | 0.2− |
| 2000 03 12 | 704 | 0.0 | 0.1− | 2004 01 24 | 704 | 0.7− | 0.0 | 2006 09 27 | 703 | 0.5− | 0.7+ |
| 2000 03 12 | 703 | 0.1+ | 0.6− | 2004 01 24 | 704 | 0.6− | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.4+ |
| 2000 03 12 | 704 | 0.2+ | 0.3+ | 2004 01 26 | 699 | 0.2+ | 0.3− | 2006 09 27 | 703 | 0.1+ | 0.8+ |
| 2000 03 12 | 704 | 0.1− | 0.0 | 2004 01 26 | 699 | 0.4− | 0.5− | 2006 09 27 | 703 | 0.0 | 0.8+ |
| 2000 03 12 | 704 | 0.3+ | 0.3+ | 2004 01 26 | 699 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.6+ | 0.3+ |
| 2002 10 05 | 704 | 0.8+ | 0.0 | 2004 01 26 | 699 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.5+ |
| 2002 10 05 | 704 | 0.4− | 0.4− | 2004 01 27 | 691 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 0.1+ | 1.5− | 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | 0.7− | 0.5− | 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2003 12 18 | 644 | 0.3+ | 0.5+ | 2004 01 30 | 704 | 0.6+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.6+ |

**(138215)∗ 2000 EJ$_{181}$ = 1998 VM$_{23}$**

Discovered 2000 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17224)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.25291 | | (2000.0) | | | |
| $n$ | 0.24237056 | $\omega$ | 315.47010 | | +0.99007189 | −0.06043620 |
| $a$ | 2.5477070 | $\Omega$ | 48.43845 | | +0.11603568 | +0.86096674 |
| $e$ | 0.0870871 | $i$ | 9.76486 | | −0.07933082 | +0.50505816 |
| $P$ | 4.07 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 699 | (2.2+ | 0.0 ) | 2002 12 01 | 704 | 0.1− | 0.7− | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 1998 10 18 | 699 | 0.2+ | 0.4− | 2002 12 05 | 704 | 0.2− | 1.1+ | 2006 09 26 | 704 | 1.5− | 0.0 |
| 1998 10 18 | 699 | 1.0+ | 0.6− | 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 1998 11 10 | 704 | 0.1− | 1.0− | 2002 12 05 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.0 |
| 1998 11 10 | 704 | 0.6+ | 1.3− | 2002 12 05 | 704 | 0.2− | 1.0− | 2006 09 26 | 704 | 0.3+ | 1.2− |
| 1998 11 10 | 704 | 1.0+ | 1.5− | 2002 12 11 | 704 | 0.3− | 0.8+ | 2006 09 29 | 699 | 0.0 | 1.0+ |
| 1998 11 10 | 704 | 1.2+ | 0.3+ | 2002 12 11 | 704 | 0.4+ | 0.9+ | 2006 09 29 | 699 | 0.1+ | 0.1− |
| 1998 11 11 | 704 | 0.4+ | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.5+ | 2006 09 29 | 699 | (2.3+ | 1.0−) |
| 1998 11 11 | 704 | 0.4+ | 0.0 | 2002 12 11 | 704 | 0.1− | 1.2+ | 2006 09 29 | 699 | 0.6+ | 0.5− |
| 1998 11 11 | 704 | 0.6− | 0.4+ | 2002 12 11 | 704 | 0.7+ | 1.2+ | 2006 09 30 | 703 | 0.4+ | 0.4− |
| 1998 11 11 | 704 | 0.5− | 1.2− | 2002 12 11 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | (0.3+ | 3.8−) |
| 1998 11 11 | 699 | 0.4+ | 1.6− | 2002 12 11 | 704 | 0.4+ | 1.3+ | 2006 09 30 | 703 | 0.2+ | 0.3− |
| 1998 11 11 | 699 | 0.5+ | 1.1− | 2002 12 11 | 704 | 0.7+ | 1.2+ | 2006 09 30 | 703 | 0.0 | 0.2− |
| 1998 11 11 | 699 | 1.1+ | 0.9− | 2002 12 11 | 704 | 0.1− | 1.2+ | 2006 10 01 | 704 | 1.1− | 0.3+ |
| 1998 11 24 | 699 | 0.4+ | 1.0− | 2003 01 04 | 704 | 0.9+ | 1.3− | 2006 10 01 | 704 | 0.5− | 0.1+ |
| 1998 11 24 | 699 | 0.3− | 0.4+ | 2003 01 04 | 704 | 0.4+ | 0.0 | 2006 10 01 | 704 | 1.1− | 0.2+ |
| 1998 11 24 | 699 | 0.9− | 0.2+ | 2003 01 04 | 704 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.8− | 0.5+ |
| 2000 02 03 | 704 | 0.2+ | 0.7+ | 2003 12 19 | 704 | 0.2+ | 1.1+ | 2006 10 01 | 704 | 1.0− | 0.6+ |
| 2000 02 03 | 704 | 0.2− | 0.6− | 2003 12 19 | 704 | 0.5+ | 0.2− | 2006 10 03 | G96 | 0.4+ | 0.1− |
| 2000 02 03 | 704 | 0.3− | 0.6− | 2003 12 19 | 704 | 0.7+ | 1.2+ | 2006 10 03 | G96 | 0.4+ | 0.1− |
| 2000 02 03 | 704 | 1.7− | 1.2− | 2004 01 28 | 703 | 0.5+ | 1.1+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2000 02 03 | 704 | 0.9+ | 1.8− | 2004 01 28 | 703 | 0.5+ | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2000 03 04 | 704 | 0.6− | 0.5− | 2004 01 28 | 703 | 1.1+ | 1.2− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 03 04 | 704 | 0.2+ | 1.1+ | 2004 01 28 | 703 | 1.3+ | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 03 04 | 704 | 0.3+ | 0.6+ | 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2000 03 04 | 704 | 0.4+ | 0.7− | 2004 01 30 | 704 | 0.0 | 0.5− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2000 03 04 | 704 | 0.2− | 0.4+ | 2004 01 30 | 704 | 0.9+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 03 12 | 704 | 0.4− | 0.2− | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2000 03 12 | 704 | 0.6− | 0.4+ | 2004 01 30 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2000 03 12 | 704 | 0.1+ | 0.3+ | 2004 02 11 | 644 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2000 03 12 | 704 | 0.5+ | 0.2+ | 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.2+ |
| 2000 03 12 | 704 | 0.1− | 0.2− | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.2− | 0.2− |
| 2002 08 16 | 608 | 0.8− | 0.4− | 2004 02 14 | 608 | 0.2− | 0.8− | 2006 10 15 | 703 | 0.5− | 0.2+ |
| 2002 08 16 | 608 | 0.4− | 0.2+ | 2004 02 14 | 608 | 0.1− | 0.9− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 08 16 | 608 | 0.5− | 0.7+ | 2004 02 14 | 608 | 0.5− | 0.9− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 09 03 | 599 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 09 04 | 599 | 0.2− | 0.0 | 2004 02 15 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 09 04 | 599 | 0.2− | 0.2+ | 2004 02 15 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 09 04 | 599 | 0.2+ | 0.1+ | 2004 03 14 | 704 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | 0.3+ | 0.7− | 2004 03 14 | 704 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.4+ | 1.2− | 2004 03 14 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 1.1− | 0.7+ |
| 2002 10 02 | 704 | 0.4+ | 1.0− | 2004 03 14 | 704 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.0 |
| 2002 10 02 | 704 | 1.2− | 0.8− | 2004 03 20 | 291 | 0.6− | 0.1− | 2006 10 21 | 703 | 0.4− | 0.7− |
| 2002 10 03 | 704 | (1.1+ | 1.6−) | 2004 03 20 | 291 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.9+ | 0.1+ |
| 2002 10 03 | 704 | 1.0− | 1.0− | 2004 03 20 | 291 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.5− | 1.3− | 2004 03 23 | 704 | 0.3− | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | (0.7− | 1.6−) | 2004 03 23 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 704 | 0.7− | 0.6+ |
| 2002 10 03 | 704 | 0.9+ | 1.3− | 2004 03 23 | 704 | 0.3− | 0.1− | 2006 10 22 | 704 | 1.2− | 0.5+ |
| 2002 10 09 | 699 | 0.1− | 0.9+ | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 704 | 1.1− | 0.0 |
| 2002 10 09 | 699 | 0.6+ | 0.6+ | 2004 03 23 | 704 | 0.7− | 1.0+ | 2006 10 22 | 704 | 0.7+ | 0.2− |
| 2002 10 09 | 699 | 0.5− | 0.6+ | 2004 03 25 | 704 | 0.1− | 0.4+ | 2006 10 22 | 704 | 0.9− | 0.0 |
| 2002 10 09 | 704 | 0.4− | 1.2+ | 2004 03 25 | 704 | 0.5+ | 1.0+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2002 10 09 | 699 | 0.2+ | 0.1+ | 2004 03 25 | 704 | 0.4+ | 0.5− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 0.7− | 1.0+ | 2004 03 25 | 704 | 0.8+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.1− | 1.2+ | 2004 04 14 | 644 | 0.5+ | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 10 09 | 704 | (0.8+ | 1.5+) | 2004 04 14 | 644 | 0.7+ | 0.8+ | 2006 10 27 | 704 | 0.3− | 0.9+ |
| 2002 10 11 | 704 | 0.4− | 1.3− | 2004 04 14 | 644 | 0.4+ | 0.4+ | 2006 10 27 | 704 | 0.3+ | 0.3+ |
| 2002 10 11 | 704 | (2.6+ | 0.7−) | 2005 07 03 | E12 | 0.3+ | 0.8+ | 2006 10 27 | 704 | 0.1+ | 0.4+ |
| 2002 10 11 | 704 | 0.7+ | 0.4− | 2005 07 03 | E12 | 0.5+ | 0.8+ | 2006 10 27 | 704 | 0.2− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.9− | 0.7+ | 2005 07 03 | E12 | 0.0 | 0.4+ | 2006 10 27 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.5+ | 0.7− | 2005 07 03 | E12 | 0.3+ | 0.2+ | 2006 10 31 | 704 | 0.2− | 0.6− | | |
| 2002 10 11 | 704 | 1.0+ | 0.9+ | 2006 09 15 | A50 | 0.1− | 0.0 | 2006 10 31 | 704 | 0.6− | 0.0 | | |
| 2002 10 11 | 704 | 0.2+ | 0.5− | 2006 09 15 | 644 | 0.2− | 0.5+ | 2006 10 31 | 704 | 0.5+ | 0.6− | | |
| 2002 10 11 | 704 | (0.6+ | 1.9+) | 2006 09 15 | 644 | 0.1+ | 0.4+ | 2006 10 31 | 704 | 0.7− | 0.2+ | | |
| 2002 10 15 | 644 | 0.3− | 0.0 | 2006 09 15 | 644 | 0.2− | 0.3+ | 2006 10 31 | 704 | 0.2− | 0.3− | | |
| 2002 10 15 | 644 | 0.2− | 0.3− | 2006 09 16 | 704 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 2002 10 15 | 644 | 0.5− | 0.2+ | 2006 09 16 | 704 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 15 | 644 | 0.2− | 0.1− | 2006 09 16 | 704 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 15 | 644 | 0.3− | 0.1+ | 2006 09 16 | 699 | 0.2+ | 1.5+ | 2006 11 13 | 703 | 0.3− | 0.2+ | | |
| 2002 10 15 | 644 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 11 13 | 703 | 0.3− | 0.2− | | |
| 2002 10 26 | 608 | 0.8− | 0.9− | 2006 09 16 | 699 | 0.7+ | 0.3+ | 2006 11 13 | 703 | 1.2− | 0.2+ | | |
| 2002 10 26 | 608 | 0.7− | 1.2− | 2006 09 16 | 699 | 0.6+ | 0.6− | 2006 11 13 | 703 | 1.2− | 0.0 | | |
| 2002 10 26 | 608 | 1.0− | 0.7− | 2006 09 18 | 703 | 0.5− | 0.3− | 2006 11 14 | 704 | 1.1+ | 0.1− | | |
| 2002 10 30 | 644 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.7− | 0.3+ | 2006 11 14 | 704 | 0.4− | 0.4− | | |
| 2002 10 30 | 644 | 0.5− | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.4+ | 0.4+ | | |
| 2002 10 30 | 644 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.8+ | | |
| 2002 10 31 | 608 | 0.2+ | 0.5+ | 2006 09 19 | 704 | 0.4− | 1.4− | 2006 11 14 | 704 | 0.5− | 0.8+ | | |
| 2002 10 31 | 608 | 0.4+ | 0.4− | 2006 09 19 | 704 | 0.7+ | 1.2− | 2006 11 17 | 704 | 0.6+ | 0.2+ | | |
| 2002 10 31 | 608 | 0.7+ | 0.4− | 2006 09 19 | 704 | 0.7− | 0.9+ | 2006 11 17 | 704 | 0.1− | 0.8+ | | |
| 2002 11 06 | 704 | 0.1− | 0.9+ | 2006 09 19 | 704 | 0.4− | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.4− | | |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.9+ | | |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.3+ | 1.3+ | | |
| 2002 11 06 | 704 | 0.0 | 0.7− | 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2002 11 06 | 704 | 0.2+ | 0.9− | 2006 09 21 | 699 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2002 11 10 | 704 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1− | | |
| 2002 11 10 | 704 | 0.0 | 0.1− | 2006 09 21 | 699 | 1.1− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2002 11 10 | 704 | 0.7+ | 0.1+ | 2006 09 21 | 699 | 0.5+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1− | | |
| 2002 11 10 | 704 | 0.5+ | 0.6+ | 2006 09 22 | 704 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2002 11 22 | 644 | 0.2− | 0.5+ | 2006 09 22 | 704 | 0.5− | 0.8− | 2006 11 19 | 691 | 0.3+ | 0.1− | | |
| 2002 11 22 | 644 | 0.0 | 0.5+ | 2006 09 22 | 704 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.6+ | 1.1− | | |
| 2002 11 22 | 644 | 0.1+ | 0.6+ | 2006 09 22 | 704 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.2+ | | |
| 2002 12 01 | 704 | 1.2+ | 0.0 | 2006 09 25 | 699 | 0.7+ | 0.9− | 2006 11 20 | 704 | 0.8+ | 1.2− | | |
| 2002 12 01 | 704 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.4+ | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2002 12 01 | 704 | 1.3− | 1.1− | 2006 09 25 | 699 | 0.6+ | 0.8+ | 2006 11 20 | 704 | 0.8− | 0.8+ | | |

**(138216)∗ 2000 EG$_{183}$ = 1996 FX$_{10}$**

Discovered 2000 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 3541)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 136.29254 | | (2000.0) | | −0.57106658 | +0.81641012 |
| $n$ | 0.23463328 | $\omega$ | 216.45276 | | −0.67794950 | −0.41011859 |
| $a$ | 2.6034124 | $\Omega$ | 19.19348 | | −0.46289032 | −0.40654305 |
| $e$ | 0.0533385 | $i$ | 15.12392 | | | |
| $P$ | 4.20 | $H$ | 15.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.2− | 0.4− | 2002 11 14 | 704 | 0.9+ | 0.1− | 2006 09 14 | 691 | 0.1− | 0.3+ | | |
| 1996 03 20 | 691 | 0.3− | 0.3− | 2002 11 24 | 644 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.2+ | | |
| 1996 03 20 | 691 | 0.4− | 0.3− | 2002 11 24 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | (1.8− | 0.7+) | | |
| 1996 03 26 | 691 | 0.6− | 0.3− | 2002 11 24 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.4+ | | |
| 1996 03 26 | 691 | 0.7− | 0.3− | 2002 12 02 | 704 | 0.4+ | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.9− | | |
| 1996 03 26 | 691 | 0.5− | 0.4− | 2002 12 02 | 704 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.7+ | 0.6− | | |
| 2000 03 05 | 704 | 0.1+ | 0.0 | 2002 12 02 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.5+ | 0.0 | | |
| 2000 03 05 | 704 | 0.4+ | 0.3+ | 2002 12 02 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 691 | 0.5− | 0.6+ | | |
| 2000 03 05 | 704 | 0.3+ | 0.0 | 2002 12 02 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | | |
| 2000 03 05 | 704 | 0.5+ | 0.2+ | 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.1+ | | |
| 2000 03 05 | 704 | 0.6+ | 0.4+ | 2002 12 05 | 704 | 0.1− | 1.3+ | 2006 09 20 | 704 | 1.1+ | 1.5− | | |
| 2000 03 12 | 704 | 0.7+ | 0.4+ | 2002 12 05 | 704 | 0.7+ | 1.3− | 2006 09 20 | 704 | 1.3+ | 0.5+ | | |
| 2000 03 12 | 704 | 1.2+ | 0.5+ | 2002 12 05 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 0.7+ | 0.0 | | |
| 2000 03 12 | 704 | 0.9+ | 0.6+ | 2002 12 05 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 0.5+ | 0.0 | | |
| 2000 03 12 | 704 | 1.0+ | 0.9+ | 2003 12 04 | 704 | (1.6− | 0.2+) | 2006 09 20 | 704 | 0.2− | 0.2− | | |
| 2000 03 12 | 704 | 1.4+ | 0.9+ | 2003 12 04 | 704 | (2.6− | 0.5+) | 2006 09 25 | 691 | 0.2+ | 0.1+ | | |
| 2000 03 26 | 699 | 0.7+ | 0.7+ | 2003 12 04 | 704 | 1.4− | 1.0+ | 2006 09 25 | G96 | 0.2+ | 0.1− | | |
| 2000 03 26 | 699 | 1.0+ | 0.1− | 2003 12 04 | 704 | (1.6− | 1.0−) | 2006 09 25 | G96 | 0.4+ | 0.3− | | |
| 2000 03 26 | 699 | 0.6+ | 0.3+ | 2004 01 14 | 644 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | | |
| 2000 03 26 | 699 | 0.2+ | 0.8+ | 2004 01 14 | 644 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | | |
| 2000 04 07 | 608 | 1.2+ | 0.7− | 2004 01 14 | 644 | 0.5+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.3− | | |
| 2000 04 07 | 608 | 1.4+ | 0.6− | 2004 01 31 | 704 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2− | | |
| 2000 04 07 | 608 | 0.9+ | 0.9− | 2004 01 31 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.1− | 0.6+ | | |
| 2000 05 01 | 699 | 0.4+ | 1.9+ | 2004 01 31 | 704 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.4− | 0.6+ | | |
| 2000 05 01 | 699 | 0.2+ | 0.5+ | 2004 01 31 | 704 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.5+ | | |
| 2000 05 01 | 699 | 0.2− | 0.2+ | 2004 01 31 | 704 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.8− | 0.2+ | | |
| 2000 05 01 | 699 | 0.6+ | 0.6+ | 2004 02 02 | 704 | 0.6+ | 0.5− | 2006 09 29 | 691 | 0.1+ | 0.1− | | |
| 2002 09 06 | 704 | (2.0− | 0.5+) | 2004 02 02 | 704 | 0.9+ | 0.0 | 2006 09 29 | 691 | 0.2− | 0.0 | | |
| 2002 09 06 | 704 | 1.0− | 1.5+ | 2004 02 02 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 691 | 0.0 | 0.2− | | |
| 2002 09 06 | 704 | 0.7− | 0.4+ | 2004 02 02 | 704 | 0.0 | 0.5+ | 2006 10 13 | A50 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | 1.3− | 0.3− | 2004 02 10 | 644 | 0.6− | 0.6+ | 2006 10 13 | A50 | 0.0 | 0.2− | | |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2004 02 10 | 644 | 0.5− | 0.2+ | 2006 10 13 | A50 | 0.0 | 0.6+ | | |
| 2002 10 04 | 704 | 0.5− | 0.0 | 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.6− | | |
| 2002 10 04 | 704 | 0.5− | 0.6+ | 2004 02 14 | 704 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.7− | | |
| 2002 10 04 | 704 | 0.2− | 0.1− | 2004 02 14 | 704 | 0.0 | 0.7− | 2006 10 21 | 703 | 0.8− | 1.3− | | |
| 2002 10 10 | 704 | 0.6+ | 0.0 | 2004 02 14 | 704 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.2− | 1.2− | | |
| 2002 10 10 | 704 | 0.3− | 0.1− | 2004 02 14 | 704 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 10 | 704 | 1.3+ | 0.3+ | 2004 02 14 | 704 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 10 10 | 704 | 0.3+ | 0.2− | 2004 02 16 | 703 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 10 10 | 704 | 0.5+ | 0.9− | 2004 02 16 | 703 | 0.1− | 0.7+ | 2006 10 23 | 704 | 1.1+ | 0.4− | | |
| 2002 10 12 | 704 | 0.5− | 0.7− | 2004 02 16 | 703 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.1− | 0.8− | | |
| 2002 10 12 | 704 | 0.1+ | 0.1+ | 2004 02 16 | 703 | 0.0 | 0.2+ | 2006 10 23 | 704 | (1.8+ | 0.1−) | | |
| 2002 10 12 | 704 | 0.7− | 0.3+ | 2004 02 20 | 097 | 0.1− | 0.1+ | 2006 10 23 | 704 | 0.4+ | 0.5− | | |
| 2002 10 12 | 704 | 0.0 | 0.6− | 2004 02 20 | 097 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 | | |
| 2002 10 14 | 704 | 1.1+ | 0.6− | 2004 03 08 | 644 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.0 | | |
| 2002 10 14 | 704 | 0.6− | 0.3− | 2004 03 08 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1− | | |
| 2002 10 14 | 704 | 0.3− | 0.2+ | 2004 03 08 | 644 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.6+ | 0.4+ | | |
| 2002 10 14 | 704 | 0.6− | 0.9− | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.7+ | 0.3+ | | |
| 2002 10 16 | 644 | 0.4− | 0.0 | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.6− | 0.0 | | |
| 2002 10 16 | 644 | 0.1− | 0.0 | 2004 03 25 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 1.4− | 0.8+ | | |
| 2002 10 16 | 644 | 0.1− | 0.1− | 2004 03 25 | 704 | 0.3− | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.2− | | |
| 2002 11 05 | 704 | 0.6+ | 0.6+ | 2004 03 25 | 704 | 0.4− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2002 11 05 | 704 | 0.1− | 0.2− | 2004 03 25 | 704 | 0.7− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.6+ | | |
| 2002 11 05 | 704 | 0.5− | 0.1− | 2004 03 25 | 704 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.5− | | |
| 2002 11 05 | 704 | 0.2+ | 0.8− | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.4− | 0.5− | | |
| 2002 11 05 | 704 | 0.2+ | 0.5− | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.3− | 0.2− | | |
| 2002 11 11 | 704 | (1.3− | 1.6−) | 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.7− | 0.9− | | |
| 2002 11 11 | 704 | 0.8− | 1.0− | 2006 08 24 | 644 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.5− | | |
| 2002 11 11 | 704 | (0.2− | 1.7−) | 2006 08 24 | 644 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.4+ | 0.4− | | |
| 2002 11 11 | 699 | 0.9+ | 0.5− | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.6− | | |
| 2002 11 11 | 699 | 0.6+ | 0.4+ | 2006 09 06 | 644 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2002 11 11 | 699 | 0.0 | 0.2+ | 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.3+ | | |
| 2002 11 11 | 699 | 1.2+ | 0.7− | 2006 09 14 | 703 | 0.0 | 1.0− | 2006 11 22 | 704 | 0.2− | 1.4+ | | |
| 2002 11 14 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.4− | 1.0− | 2006 11 22 | 704 | 0.5− | 0.2+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.5− | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.2+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.5− | | | | | | |
| 2002 11 14 | 704 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.2− | 0.3+ | | | | | | |

**(138217)∗ 2000 EJ$_{192}$ = 1996 KU$_3$ = 2005 NV$_{63}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 99945)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 145.44399 | | (2000.0) | | −0.63507780 | +0.77224939 |
| $n$ | 0.22882508 | $\omega$ | 38.14130 | | −0.72715649 | −0.60534053 |
| $a$ | 2.6472826 | $\Omega$ | 192.46557 | | −0.26061394 | −0.19285674 |
| $e$ | 0.2020442 | $i$ | 4.65645 | | | |
| $P$ | 4.31 | $H$ | 16.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 22 | 809 | 1.4+ | 1.8+ | 2000 03 11 | 704 | 0.7+ | 0.5+ | 2006 09 30 | G96 | 0.8− | 0.6+ | | |
| 1996 05 22 | 809 | (1.9+ | 4.4+) | 2000 03 11 | 704 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.7+ | 0.1+ | | |
| 1996 05 22 | 809 | 2.2+ | 1.9+ | 2000 03 11 | 704 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2+ | | |
| 1996 05 24 | 809 | 2.0+ | 0.3+ | 2000 03 11 | 704 | 0.5+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 24 | 809 | 1.0+ | 0.9+ | 2000 03 11 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.5+ |
| 1996 05 24 | 809 | 2.2+ | 1.0+ | 2001 08 20 | 807 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.3+ | 0.2+ |
| 1997 10 05 | 691 | 0.7− | 0.4+ | 2001 08 20 | 807 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.0 |
| 1997 10 05 | 691 | 0.4− | 0.2− | 2001 09 19 | 645 | 0.0 | 0.1− | 2006 10 27 | G96 | 1.0+ | 0.9+ |
| 1997 10 05 | 691 | 0.7− | 0.3+ | 2001 09 19 | 645 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.3+ |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2005 07 01 | 644 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.5+ |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2005 07 01 | 644 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.8+ | 0.1+ |
| 2000 03 03 | 704 | 0.3− | 0.9+ | 2005 07 01 | 644 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.7+ | 0.9+ |
| 2000 03 03 | 704 | 0.7− | 1.2+ | 2005 07 12 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2000 03 03 | 704 | 0.1− | 0.1+ | 2005 07 12 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.5+ | 0.8+ |
| 2000 03 03 | 704 | 0.5− | 0.8+ | 2005 07 12 | G96 | 0.4− | 0.4− | | | | |
| 2000 03 03 | 704 | 0.0 | 0.6+ | 2005 07 12 | G96 | 0.4− | 0.3− | | | | |

**(138218)∗ 2000 EW$_{193}$ = 1998 XT$_9$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74755)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.66398 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22639744 | $\omega$ | 87.63387 | | +0.42742051 | −0.90326129 | |
| $a$ | 2.6661733 | $\Omega$ | 336.94616 | | +0.78632306 | +0.39207997 | |
| $e$ | 0.0187991 | $i$ | 5.54298 | | +0.44610286 | +0.17433396 | |
| $P$ | 4.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 20 | 691 | 0.1+ | 0.6+ | 2004 01 22 | 704 | (0.8+ | 1.9−) | 2006 08 28 | 703 | 0.8− | 0.1+ |
| 1991 02 20 | 691 | 0.0 | 0.6+ | 2004 01 22 | 704 | 0.5+ | 0.4− | 2006 08 28 | 703 | 0.9+ | 1.0+ |
| 1991 02 20 | 691 | 0.6+ | 0.8+ | 2004 02 10 | 644 | 0.5+ | 0.0 | 2006 08 28 | 703 | 0.8+ | 0.1− |
| 1998 12 11 | 561 | 0.1− | 1.3− | 2004 02 10 | 644 | 0.2+ | 0.1+ | 2006 09 12 | 703 | (2.4+ | 2.1−) |
| 1998 12 11 | 561 | 0.2+ | 0.6− | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.6− | 0.4− |
| 1998 12 11 | 561 | 0.1− | 1.7+ | 2004 02 10 | 703 | 0.8− | 1.1− | 2006 09 12 | 703 | (1.5− | 0.4+) |
| 2000 03 03 | 704 | 0.7+ | 0.1+ | 2004 02 10 | 703 | 0.2− | 0.5+ | 2006 09 12 | 703 | 1.3− | 0.3+ |
| 2000 03 03 | 704 | 0.1+ | 1.0+ | 2004 02 10 | 703 | 0.9− | 1.2+ | 2006 09 17 | 703 | (1.2− | 1.7+) |
| 2000 03 03 | 704 | 0.0 | 0.8+ | 2004 02 10 | 703 | 0.4− | 1.4+ | 2006 09 17 | 703 | 0.6− | 0.5− |
| 2000 03 03 | 704 | 0.1+ | 0.6+ | 2004 02 16 | 704 | 0.6+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2004 02 16 | 704 | 0.3− | 0.3− | 2006 09 17 | 703 | 0.3− | 0.3− |
| 2000 03 11 | 704 | 1.5− | 1.5+ | 2004 02 16 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.6+ | 1.0+ |
| 2000 03 11 | 704 | (0.2− | 2.9+) | 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 699 | (0.9+ | 1.6+) |
| 2000 03 11 | 704 | 0.3+ | 0.8+ | 2004 02 23 | 704 | (1.1+ | 1.9+) | 2006 09 20 | 699 | 0.6− | 0.8− |
| 2000 03 11 | 704 | 0.1− | 0.7+ | 2004 02 23 | 704 | 0.5− | 1.0− | 2006 09 20 | 699 | 0.8− | 0.4− |
| 2000 03 11 | 704 | 0.4− | 1.5+ | 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2000 03 25 | 691 | 0.4+ | 0.9− | 2004 02 29 | 691 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.5+ | 0.1− |
| 2000 03 25 | 691 | 0.3+ | 0.4− | 2004 02 29 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2000 03 25 | 691 | 0.0 | 0.7− | 2005 05 11 | 644 | 0.1+ | 0.8+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2002 10 04 | 699 | 0.8− | 0.6− | 2005 05 11 | 644 | 0.3− | 1.0+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2002 10 04 | 699 | 0.1− | 0.1− | 2005 05 11 | 644 | 0.0 | 1.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2002 10 04 | 699 | 0.2+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2002 10 04 | 699 | 0.4+ | 0.2+ | 2006 08 27 | 699 | (0.2− | 1.7+) | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.3+ | 1.2+ | 2006 08 27 | 691 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 10 12 | 704 | 0.2− | 0.7+ | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.1+ | 0.3− | 2006 08 27 | 691 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.4+ | 0.5− |
| 2002 10 12 | 704 | 0.0 | 0.3+ | 2006 08 27 | 699 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2004 01 22 | 704 | 0.7+ | 0.7− | 2006 08 27 | 699 | 0.3+ | 0.7+ | | | | |
| 2004 01 22 | 704 | 1.2− | 0.4− | 2006 08 28 | 703 | 0.2− | 0.2+ | | | | |

**(138219)∗ 2000 EF$_{196}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.78609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24758819 | $\omega$ | 281.55437 | | −0.38193216 | −0.92417688 | |
| $a$ | 2.5117868 | $\Omega$ | 190.90305 | | +0.85788092 | −0.35251489 | |
| $e$ | 0.1022999 | $i$ | 1.51223 | | +0.34375596 | −0.14707258 | |
| $P$ | 3.98 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 1.0− | 0.1+ | 2004 03 12 | 644 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 1994 10 08 | 691 | 0.2− | 0.8+ | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 1994 10 08 | 691 | 0.5− | 0.3− | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.3+ |
| 1994 10 08 | 691 | 0.4− | 1.0+ | 2004 03 15 | 691 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 1996 03 11 | 691 | 0.1+ | 0.2− | 2004 03 15 | 691 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.6− | 0.6+ |
| 1996 03 11 | 691 | 0.0 | 0.2− | 2004 03 17 | 683 | 1.0− | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.3− |
| 1996 03 11 | 691 | 0.1+ | 0.2+ | 2004 03 17 | 683 | (0.4+ | 1.7+) | 2006 10 15 | 691 | 0.6− | 0.4+ |
| 1996 03 18 | 691 | 0.5− | 0.9− | 2004 03 17 | 683 | (1.0− | 1.9+) | 2006 10 15 | 691 | 0.6− | 0.1+ |
| 1996 03 18 | 691 | 0.4+ | 0.7− | 2004 03 18 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 1996 03 18 | 691 | 0.4− | 0.8− | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2000 03 03 | 704 | 1.2− | 1.1− | 2004 03 18 | 704 | 0.7+ | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 2000 03 03 | 704 | 0.6+ | 1.2− | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.8+ |
| 2000 03 03 | 704 | 0.9+ | 0.2+ | 2004 03 18 | 704 | (0.7− | 1.6+) | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2000 03 11 | 704 | 0.0 | 0.1+ | 2004 03 27 | 291 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2000 03 11 | 699 | 0.4− | 0.6+ | 2004 03 27 | 291 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 0.4− | 0.5+ | 2004 03 27 | 291 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2000 03 11 | 704 | 0.4− | 0.1+ | 2004 03 27 | 704 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.2− |
| 2000 03 11 | 699 | 0.6− | 0.3+ | 2004 03 27 | 704 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.5− |
| 2000 03 11 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 1.0+ | 0.5+ | 2006 10 25 | 850 | 0.1+ | 0.5− |
| 2000 03 11 | 699 | 0.2− | 0.2− | 2004 03 27 | 704 | 1.1+ | 0.4+ | 2006 10 25 | 850 | 0.2+ | 0.6− |
| 2000 03 11 | 704 | 0.1− | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.1− | 2006 10 25 | 850 | 0.4− | 0.1− |
| 2000 03 11 | 699 | 0.2+ | 0.5+ | 2004 03 30 | 691 | 0.2+ | 0.1+ | 2006 10 25 | 850 | 0.0 | 0.2− |
| 2000 04 05 | 704 | 0.5− | 0.1− | 2004 03 30 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2000 04 05 | 704 | 0.1− | 0.6+ | 2004 03 31 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2000 04 05 | 704 | 0.7− | 0.3+ | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2000 04 05 | 704 | 0.2+ | 0.3− | 2004 03 31 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.8− |
| 2002 09 29 | 291 | 0.4+ | 0.2+ | 2004 04 24 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2002 09 29 | 291 | 0.5+ | 0.5+ | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2002 09 29 | 291 | 0.5+ | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.4− |
| 2002 10 10 | 291 | 0.1− | 0.6+ | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.4− |
| 2002 10 10 | 291 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2002 10 10 | 291 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.4+ | 0.6− |
| 2004 02 26 | 704 | 1.0+ | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.8− |
| 2004 02 26 | 704 | 0.7+ | 0.8+ | 2006 09 25 | G96 | 0.6− | 0.1− | 2006 11 20 | G96 | 0.5+ | 1.2− |
| 2004 02 26 | 704 | 0.3+ | 1.0+ | 2006 09 25 | G96 | 0.1+ | 0.4+ | 2006 11 20 | G96 | 1.0+ | 0.8− |
| 2004 02 26 | 704 | 0.6+ | 1.0+ | 2006 09 25 | G96 | 0.2+ | 0.2− | | | | |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | | | | |

**(138220)∗ 2000 ET$_{196}$ = 2002 XJ$_{49}$**

Discovered 2000 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40075)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.12858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23802010 | $\omega$ | 343.52165 | | +0.88896667 | +0.45521068 | |
| $a$ | 2.5786573 | $\Omega$ | 348.98464 | | −0.38492499 | +0.68326360 | |
| $e$ | 0.1117633 | $i$ | 15.23650 | | −0.24813506 | +0.57090637 | |
| $P$ | 4.14 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 12 11 | 704 | 0.0 | 1.3+ | 2006 10 03 | 703 | 0.9− | 0.8− |
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2002 12 11 | 704 | 0.2+ | 1.2+ | 2006 10 03 | 703 | 0.6− | 0.6− |
| 2000 03 03 | 704 | 0.4− | 1.3+ | 2002 12 11 | 704 | 0.8+ | 0.7+ | 2006 10 16 | 704 | 0.1− | 0.6+ |
| 2000 03 03 | 704 | 0.3+ | 0.3− | 2002 12 11 | 704 | 1.1+ | 0.7+ | 2006 10 16 | 704 | 0.8+ | 0.5− |
| 2000 03 03 | 704 | 0.7− | 0.1+ | 2002 12 11 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 704 | 0.1+ | 1.0+ |
| 2000 03 11 | 704 | 0.4+ | 0.5+ | 2002 12 28 | 704 | 0.7+ | 1.0+ | 2006 10 16 | 704 | 0.3+ | 0.4+ |
| 2000 03 11 | 704 | 0.5− | 0.0 | 2002 12 28 | 704 | 0.2+ | 0.0 | 2006 10 16 | 704 | 0.5− | 1.1+ |
| 2000 03 11 | 704 | 0.4− | 0.0 | 2002 12 28 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 106 | 0.0 | 0.1− |
| 2000 03 11 | 704 | 0.3+ | 0.5− | 2003 01 28 | 645 | 0.1− | 0.2− | 2006 10 27 | 106 | 0.2+ | 0.2− |
| 2000 03 11 | 704 | 0.4− | 0.0 | 2003 01 28 | 645 | 0.1− | 0.2− | 2006 10 27 | 106 | 0.3+ | 0.6− |
| 2000 04 02 | 699 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.6+ | 0.6− | 2006 10 27 | 106 | 0.2+ | 0.0 |
| 2000 04 02 | 699 | 0.6+ | 0.3+ | 2004 02 18 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 704 | 0.4− | 0.1− |
| 2000 04 02 | 699 | 0.5− | 0.6− | 2004 02 18 | 704 | 0.2− | 0.3+ | 2006 11 13 | 704 | 0.1− | 0.1− |
| 2000 04 02 | 699 | 1.5+ | 1.3− | 2004 02 18 | 704 | 0.5+ | 0.2+ | 2006 11 13 | 704 | 0.8− | 0.5+ |
| 2002 10 29 | 704 | 1.4+ | 0.0 | 2004 02 18 | 704 | 0.7+ | 0.4+ | 2006 11 13 | 704 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 29 | 704 | 0.4+ | 1.0+ | 2005 05 30 | E12 | 1.5+ | 0.2− | 2006 11 20 | 703 | 0.1− | 0.0 | | |
| 2002 10 29 | 704 | 0.6+ | 0.6+ | 2005 05 30 | E12 | 0.7− | 0.5+ | 2006 11 20 | 703 | 0.2− | 0.1− | | |
| 2002 12 10 | 704 | 0.3+ | 0.4+ | 2005 05 30 | E12 | 0.3− | 0.8+ | 2006 11 20 | 703 | 0.2+ | 0.1+ | | |
| 2002 12 10 | 704 | 0.0 | 0.0 | 2005 05 30 | E12 | 0.3− | 0.2+ | 2006 11 20 | 703 | 0.1− | 0.4− | | |
| 2002 12 10 | 704 | 0.1− | 0.2− | 2006 10 03 | 703 | 0.2+ | 0.2+ | | | | | | |
| 2002 12 10 | 704 | 1.3− | 0.3− | 2006 10 03 | 703 | 0.1+ | 0.3+ | | | | | | |

**(138221)∗ 2000 EC$_{207}$ = 2004 CG$_{91}$**

Discovered 2000 Mar. 3 by the Sloan Digital Sky Survey at Apache Point.

Id. A. Doppler (*MPO* 74755)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.05965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23034835 | $\omega$ | 87.89553 | | +0.04680735 | +0.99888119 | |
| $a$ | 2.6355989 | $\Omega$ | 184.80289 | | −0.94550257 | +0.04212708 | |
| $e$ | 0.1296979 | $i$ | 4.61793 | | −0.32223277 | +0.02148671 | |
| $P$ | 4.28 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2001 08 14 | 608 | 0.5− | 0.5− | 2006 10 19 | 691 | 0.4− | 0.2− | | |
| 2000 02 12 | 645 | 0.1+ | 0.0 | 2001 08 14 | 608 | 0.2− | 0.6− | 2006 10 19 | 691 | 0.5− | 0.5+ | | |
| 2000 03 03 | 645 | 0.3+ | 0.0 | 2001 08 14 | 608 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.4+ | | |
| 2000 03 03 | 645 | 0.2+ | 0.0 | 2004 02 12 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2000 03 09 | 691 | 1.2− | 0.4− | 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.3+ | | |
| 2000 03 09 | 691 | 0.9− | 0.3− | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2000 03 09 | 691 | 0.5− | 0.0 | 2004 02 18 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2000 04 27 | 691 | 0.1− | 0.1+ | 2004 02 18 | 691 | 0.3+ | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.0 | | |
| 2000 04 27 | 691 | 0.5− | 0.2− | 2004 02 18 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.7+ | 0.2− | | |
| 2000 04 27 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.5− | | |
| 2001 07 21 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.6+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.8− | | |
| 2001 07 21 | 691 | 0.1+ | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2− | 0.5− | | |
| 2001 07 21 | 691 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 11 16 | G96 | 0.4− | 0.7− | | |

**(138222)∗ 2000 FU$_3$ = 2002 UT$_{26}$**

Discovered 2000 Mar. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37433)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.10539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26362385 | $\omega$ | 47.55037 | | −0.57202534 | −0.80405630 | |
| $a$ | 2.4088675 | $\Omega$ | 78.04133 | | +0.69550644 | −0.58024222 | |
| $e$ | 0.1628787 | $i$ | 9.53842 | | +0.43480778 | −0.12966278 | |
| $P$ | 3.74 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | (3.6+ | 0.7+) | 2002 11 07 | 704 | 0.8+ | 0.6+ | 2004 05 18 | 704 | 0.3+ | 0.4+ | | |
| 2000 03 05 | 704 | (4.0+ | 0.9+) | 2002 11 11 | 704 | 0.2+ | 0.3+ | 2004 05 18 | 704 | 0.3− | 0.1− | | |
| 2000 03 05 | 704 | (3.1+ | 0.1+) | 2002 11 11 | 704 | 1.1− | 0.4+ | 2004 05 18 | 704 | 0.5+ | 0.4+ | | |
| 2000 03 12 | 704 | 0.2− | 0.2+ | 2002 11 11 | 704 | 0.1− | 0.9+ | 2004 05 18 | 704 | 0.6− | 0.3+ | | |
| 2000 03 12 | 704 | 0.4− | 0.1− | 2002 11 11 | 704 | 0.3− | 0.7+ | 2004 05 22 | 704 | 0.1− | 0.5+ | | |
| 2000 03 12 | 704 | 0.2+ | 0.1− | 2002 11 11 | 704 | 0.4− | 0.9+ | 2004 05 22 | 704 | 0.4+ | 0.5− | | |
| 2000 03 12 | 704 | 0.4− | 0.0 | 2002 12 08 | 644 | 0.6− | 0.8+ | 2004 05 22 | 704 | 0.1+ | 0.5+ | | |
| 2000 03 28 | 704 | 0.1+ | 0.1− | 2002 12 08 | 644 | 0.7− | 0.7+ | 2004 05 22 | 704 | 0.9+ | 0.9+ | | |
| 2000 03 28 | 704 | 0.7+ | 0.4− | 2002 12 08 | 644 | 0.6− | 0.5+ | 2004 05 22 | 704 | 0.7+ | 0.2+ | | |
| 2000 03 28 | 704 | 0.6+ | 0.2+ | 2004 03 29 | 113 | 0.7+ | 1.2− | 2005 07 03 | 644 | 0.2+ | 1.2+ | | |
| 2000 03 29 | 704 | 0.5+ | 0.6− | 2004 03 29 | 113 | 0.4+ | 0.8− | 2005 07 03 | 644 | 0.4− | 0.8+ | | |
| 2000 03 29 | 704 | 0.2− | 0.2+ | 2004 03 29 | 113 | 0.4+ | 0.2− | 2005 07 03 | 644 | 0.3− | 1.2+ | | |
| 2000 03 29 | 704 | 0.2− | 0.4+ | 2004 03 31 | 704 | 0.1+ | 0.7+ | 2005 08 04 | 644 | 0.2+ | 0.9+ | | |
| 2000 03 29 | 704 | 0.1− | 0.7+ | 2004 03 31 | 704 | 0.4+ | 1.0+ | 2005 08 04 | 644 | 0.1+ | 1.0+ | | |
| 2000 03 29 | 704 | 0.3+ | 0.5+ | 2004 03 31 | 704 | 0.3− | 0.8+ | 2005 08 04 | 644 | 0.0 | 0.9+ | | |
| 2000 04 04 | 704 | 0.1+ | 0.4− | 2004 03 31 | 704 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2000 04 04 | 704 | 0.1+ | 1.0+ | 2004 03 31 | 704 | 0.4− | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1− | | |
| 2000 04 04 | 704 | 1.0+ | 0.6− | 2004 04 13 | 703 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2000 04 04 | 704 | 0.9+ | 0.9+ | 2004 04 13 | 703 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.4+ | 0.1− | | |
| 2000 04 04 | 704 | 0.4+ | 0.1+ | 2004 04 13 | 703 | 0.2+ | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.2− | | |
| 2000 04 08 | 704 | 0.5− | 0.4− | 2004 04 13 | 703 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1− | | |
| 2000 04 08 | 704 | 0.7+ | 1.2+ | 2004 04 16 | 704 | 0.2− | 1.4+ | 2006 11 17 | 691 | 0.3+ | 0.1+ | | |
| 2000 04 08 | 704 | 0.1− | 0.2+ | 2004 04 16 | 704 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− | | |
| 2000 04 08 | 704 | 0.7− | 0.1− | 2004 04 16 | 704 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.7− | 0.5+ | | |
| 2000 04 08 | 704 | 0.1+ | 1.0+ | 2004 04 16 | 704 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.4− | 0.9+ | | |
| 2000 04 11 | 608 | 0.3+ | 0.3− | 2004 04 16 | 704 | 0.8+ | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | | |
| 2000 04 11 | 608 | 0.3+ | 0.4− | 2004 04 23 | 704 | 0.6+ | 0.6+ | 2006 11 18 | 704 | 0.6− | 0.3+ | | |
| 2000 04 11 | 608 | 0.2+ | 0.2− | 2004 04 23 | 704 | 0.6+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.3+ | | |
| 2002 10 01 | 704 | (0.6− | 1.6+) | 2004 04 23 | 704 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2002 10 01 | 704 | 0.9− | 1.5+ | 2004 04 23 | 704 | 0.7+ | 0.5+ | 2006 11 21 | 704 | 0.6− | 0.6+ | | |
| 2002 10 01 | 704 | (1.8− | 1.4+) | 2004 04 23 | 704 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.6+ | | |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2004 05 08 | 941 | 0.9− | 0.6+ | 2006 11 21 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 31 | 704 | 0.9− | 0.4+ | 2004 05 08 | 941 | 0.6− | 0.6+ | 2006 11 21 | 704 | 0.1+ | 0.6+ | | |
| 2002 10 31 | 704 | 1.1− | 0.4+ | 2004 05 08 | 941 | 0.4− | 0.7+ | 2006 11 21 | 704 | 0.0 | 0.4+ | | |
| 2002 10 31 | 704 | 0.7− | 0.9+ | 2004 05 13 | 699 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 31 | 704 | 0.7− | 0.6+ | 2004 05 13 | 699 | 0.1+ | 0.8− | 2006 11 21 | 691 | 0.1+ | 0.3− | | |
| 2002 11 01 | 608 | 1.3− | 0.6+ | 2004 05 13 | 699 | 1.2− | 1.5+ | 2006 11 21 | 691 | 0.2+ | 0.1+ | | |
| 2002 11 01 | 608 | 1.0− | 0.4+ | 2004 05 13 | 699 | 0.8− | 0.8+ | 2006 12 01 | 704 | 0.7− | 0.3− | | |
| 2002 11 01 | 608 | 0.9− | 0.2+ | 2004 05 14 | 704 | 0.1+ | 1.0+ | 2006 12 01 | 704 | 0.6− | 0.3+ | | |
| 2002 11 07 | 704 | 0.8+ | 0.0 | 2004 05 14 | 704 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.3− | 0.9− | | |
| 2002 11 07 | 704 | 0.2+ | 0.5+ | 2004 05 14 | 704 | 1.2+ | 0.7− | 2006 12 01 | 704 | 1.1− | 0.2+ | | |
| 2002 11 07 | 704 | 0.3− | 0.5+ | 2004 05 14 | 704 | 0.1+ | 0.5+ | 2006 12 01 | 704 | 0.4− | 0.3+ | | |
| 2002 11 07 | 704 | 0.7+ | 0.0 | 2004 05 18 | 704 | 0.8+ | 1.5+ | | | | | | |

**(138223)∗ 2000 FK$_6$ = 1996 HT$_8$**

Discovered 2000 Mar. 25 by Spacewatch at Kitt Peak.

Id. G. V. Williams (MPC 40220)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.83092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23924061 | $\omega$ | 138.71128 | | −0.94183439 | −0.33526265 | |
| $a$ | 2.5698796 | $\Omega$ | 21.73399 | | +0.28938829 | −0.84440873 | |
| $e$ | 0.1514626 | $i$ | 3.62099 | | +0.17088706 | −0.41781916 | |
| $P$ | 4.12 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 809 | (2.2+ | 1.8+) | 2000 04 13 | 691 | 0.8− | 0.0 | 2004 03 22 | 704 | 0.0 | 0.2− | | |
| 1996 04 17 | 809 | 0.6− | 0.5+ | 2000 04 29 | 704 | 1.3+ | 0.3+ | 2004 03 22 | 704 | 0.2+ | 0.2+ | | |
| 1996 04 17 | 809 | 0.3+ | 1.2+ | 2000 04 29 | 704 | 0.3+ | 0.5− | 2004 03 28 | 704 | 0.4− | 0.7− | | |
| 1996 04 18 | 809 | (1.2+ | 3.1+) | 2000 04 29 | 704 | (1.0+ | 2.2+) | 2004 03 28 | 704 | 0.3− | 0.6− | | |
| 1996 04 18 | 809 | (2.7+ | 2.6+) | 2000 04 29 | 704 | 1.3+ | 0.0 | 2004 03 28 | 704 | 0.9+ | 0.9− | | |
| 1996 04 18 | 809 | (2.2+ | 2.8+) | 2000 04 29 | 704 | 0.0 | 0.7+ | 2004 03 28 | 704 | 0.3+ | 1.0− | | |
| 2000 03 25 | 691 | 0.4− | 0.2+ | 2003 12 19 | 691 | 0.6− | 0.1− | 2004 03 28 | 704 | 0.0 | 0.7− | | |
| 2000 03 25 | 691 | 0.4− | 0.4+ | 2003 12 19 | 691 | 0.1− | 0.6− | 2004 03 31 | 691 | 0.2− | 0.4− | | |
| 2000 03 25 | 691 | 0.2− | 0.3+ | 2003 12 19 | 691 | 0.2+ | 0.1− | 2004 03 31 | 691 | 0.3− | 0.2− | | |
| 2000 03 30 | 691 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.3− | 0.1+ | 2004 03 31 | 691 | 0.3− | 0.1− | | |
| 2000 03 30 | 691 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2004 04 12 | 699 | 0.3− | 0.7+ | | |
| 2000 03 30 | 691 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.4− | 2004 04 12 | 699 | 0.1+ | 0.6+ | | |
| 2000 04 05 | 704 | 1.0+ | 0.1+ | 2004 02 23 | 704 | 0.7+ | 0.7− | 2004 04 12 | 699 | 0.4− | 0.1+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.5+ | 2004 02 23 | 704 | 0.5+ | 0.2− | 2004 04 12 | 699 | (1.1− | 1.5+) | | |
| 2000 04 05 | 704 | 1.3+ | 0.5+ | 2004 03 12 | 644 | 0.1− | 0.0 | 2004 04 19 | 704 | 1.2+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2004 03 12 | 644 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.3+ | 1.1+ | | |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2004 03 12 | 644 | 0.1− | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.4+ | | |
| 2000 04 06 | 704 | 0.6− | 0.4− | 2004 03 15 | 333 | 0.0 | 0.4− | 2004 04 19 | 704 | (1.0+ | 2.0+) | | |
| 2000 04 06 | 699 | 0.8+ | 1.0+ | 2004 03 15 | 333 | 0.2− | 0.1− | 2004 04 25 | 691 | 0.2− | 0.3+ | | |
| 2000 04 06 | 704 | 0.9+ | 0.2− | 2004 03 15 | 333 | 0.1− | 0.2− | 2004 04 25 | 691 | 0.2+ | 0.2+ | | |
| 2000 04 06 | 704 | 0.1− | 0.3− | 2004 03 15 | 703 | 0.1− | 1.3+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | | |
| 2000 04 06 | 704 | 0.5+ | 0.8− | 2004 03 15 | 703 | 0.5+ | 0.2+ | 2006 09 18 | 691 | 0.7− | 0.4+ | | |
| 2000 04 06 | 699 | 1.2+ | 0.0 | 2004 03 15 | 703 | 0.8− | 0.0 | 2006 09 18 | 691 | 0.4− | 0.4+ | | |
| 2000 04 06 | 704 | 0.6+ | 0.1− | 2004 03 15 | 703 | 0.6− | 1.2+ | 2006 09 18 | 691 | 0.3− | 0.6+ | | |
| 2000 04 06 | 704 | 0.8+ | 0.1− | 2004 03 16 | 333 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.5+ | 0.4+ | | |
| 2000 04 06 | 704 | 0.2− | 0.5− | 2004 03 16 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.4+ | | |
| 2000 04 06 | 704 | 0.0 | 0.5− | 2004 03 16 | 333 | 0.3− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1+ | | |
| 2000 04 06 | 704 | 0.7+ | 1.0− | 2004 03 16 | 704 | 0.8− | 0.7+ | 2006 10 19 | 691 | 0.4− | 0.1+ | | |
| 2000 04 06 | 704 | 0.2+ | 0.7− | 2004 03 16 | 333 | (1.8− | 1.4−) | 2006 10 19 | 691 | 0.1− | 0.1− | | |
| 2000 04 06 | 699 | 1.2+ | 0.7+ | 2004 03 16 | 704 | 0.7+ | 0.2− | 2006 10 19 | 691 | 0.3− | 0.1+ | | |
| 2000 04 06 | 704 | 0.5+ | 0.3− | 2004 03 16 | 704 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.7− | 1.2+ | | |
| 2000 04 06 | 704 | 0.1+ | 0.9− | 2004 03 16 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.8+ | | |
| 2000 04 06 | 704 | 0.7+ | 0.3+ | 2004 03 16 | 599 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.3− | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 699 | 0.3+ | 0.8+ | 2004 03 16 | 599 | 0.1− | 0.0 | 2006 10 21 | 703 | (1.9− | 0.4+) | | |
| 2000 04 06 | 704 | 0.1+ | 0.4+ | 2004 03 16 | 599 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.4+ | 0.5+ | | |
| 2000 04 07 | 704 | 0.1+ | 0.6− | 2004 03 16 | 599 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.4− | 0.3+ | | |
| 2000 04 07 | 704 | 0.6+ | 0.2− | 2004 03 19 | 704 | 0.5+ | 1.2+ | 2006 10 27 | 691 | 0.1+ | 0.1− | | |
| 2000 04 07 | 704 | 0.6+ | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.6+ | 2006 10 28 | G96 | 0.5+ | 0.2+ | | |
| 2000 04 07 | 704 | 0.2− | 0.9+ | 2004 03 19 | 704 | 0.6+ | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.3+ | | |
| 2000 04 08 | 704 | 1.1+ | 1.7+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.0 | | |
| 2000 04 08 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.3− | 0.9+ | 2006 10 28 | G96 | 0.4+ | 0.1− | | |
| 2000 04 08 | 704 | 0.1− | 0.2− | 2004 03 20 | 699 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.7− | 0.2+ | | |
| 2000 04 08 | 704 | 0.3+ | 0.9+ | 2004 03 20 | 699 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.6− | 0.9+ | | |
| 2000 04 08 | 704 | 0.9− | 1.2+ | 2004 03 20 | 699 | 0.5− | 0.5− | 2006 10 31 | 691 | 0.4− | 0.1+ | | |
| 2000 04 10 | 704 | 1.6+ | 0.1+ | 2004 03 20 | 699 | 0.5− | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.0 | | |
| 2000 04 10 | 704 | 0.2+ | 0.4+ | 2004 03 21 | 699 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.8+ | 1.3− | | |
| 2000 04 10 | 704 | 0.8+ | 0.1− | 2004 03 21 | 699 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.0 | | |
| 2000 04 10 | 704 | 0.9+ | 0.8+ | 2004 03 21 | 699 | 0.7+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.0 | | |
| 2000 04 10 | 704 | (2.2+ | 0.2+) | 2004 03 21 | 699 | 1.0+ | 0.6− | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2000 04 13 | 691 | 0.8− | 0.0 | 2004 03 22 | 704 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.1+ | | |
| 2000 04 13 | 691 | 0.8− | 0.1+ | 2004 03 22 | 704 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.4+ | 0.3− | | |

**(138224)∗ 2000 FB$_7$ = 2004 FQ$_{27}$**

Discovered 2000 Mar. 29 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60641)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 23.20894 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24213912 | $\omega$ | 180.60345 | | +0.94762862 | | −0.31856462 | |
| $a$ | 2.5493301 | $\Omega$ | 198.02322 | | +0.29332717 | | +0.89628600 | |
| $e$ | 0.0848430 | $i$ | 4.21272 | | +0.12632963 | | +0.30852549 | |
| $P$ | 4.07 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 20 | 675 | 0.2− | 1.6− | 2004 03 18 | 704 | 0.8+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.5− | | |
| 1973 09 24 | 675 | 0.7+ | 0.5+ | 2004 03 18 | 704 | 0.8+ | 0.1− | 2006 11 02 | 703 | 0.5− | 0.6− | | |
| 1973 09 24 | 675 | 0.6+ | 1.7− | 2004 03 18 | 704 | 0.6− | 0.8+ | 2006 11 02 | 703 | 0.1+ | 1.2− | | |
| 2000 03 29 | 691 | 0.1+ | 0.2− | 2004 03 18 | 704 | (1.5+ | 0.1+) | 2006 11 02 | 703 | 1.0− | 1.5− | | |
| 2000 03 29 | 691 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.8+ | 1.4+ | 2006 11 02 | 703 | 0.3− | 0.0 | | |
| 2000 03 29 | 691 | 0.2+ | 0.3− | 2004 03 27 | 704 | 0.0 | 0.5− | 2006 11 12 | G96 | 0.1− | 0.4− | | |
| 2000 03 30 | 691 | 0.5− | 0.6− | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 11 12 | G96 | 0.4+ | 0.0 | | |
| 2000 03 30 | 691 | 0.8− | 0.3− | 2004 03 27 | 704 | 0.8+ | 0.9+ | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2000 03 30 | 691 | 0.6− | 0.5− | 2004 03 27 | 704 | 0.8+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.4− | | |
| 2000 04 05 | 699 | 1.7− | 0.8+ | 2004 03 29 | 691 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.4+ | | |
| 2000 04 05 | 699 | 0.9+ | 1.2− | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.6+ | 0.1+ | | |
| 2000 04 05 | 699 | 0.3+ | 0.3− | 2004 03 29 | 691 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.5− | 0.2+ | | |
| 2000 04 05 | 699 | 0.6+ | 1.0− | 2004 04 22 | 691 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.8− | | |
| 2002 11 28 | 599 | 0.3− | 0.3− | 2004 04 22 | 691 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.7+ | | |
| 2002 11 28 | 599 | 0.2− | 0.6− | 2004 04 22 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 1.1+ | | |
| 2002 11 28 | 599 | 0.0 | 0.7− | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 20 | 704 | 0.7+ | 0.0 | | |
| 2002 12 11 | 704 | 0.7+ | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.0 | 0.3+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 1.1+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.8+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.6− | 0.2+ | | |
| 2004 03 17 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.2− | 0.0 | | |
| 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.3− | 2006 11 29 | 704 | 0.6− | 0.9+ | | |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.2− | | | | | | |

**(138225)∗ 2000 FR$_8$ = 2001 SN$_{103}$**

Discovered 2000 Mar. 29 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 19562)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 124.91733 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22884200 | $\omega$ | 82.07936 | | +0.03166545 | | +0.99927482 | |
| $a$ | 2.6471521 | $\Omega$ | 189.81003 | | −0.95895643 | | +0.02440983 | |
| $e$ | 0.2022516 | $i$ | 7.12919 | | −0.28177982 | | +0.02922324 | |
| $P$ | 4.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.3− | 0.1− | 2001 09 20 | 704 | 0.8− | 0.3− | 2005 07 30 | 644 | 0.1− | 0.0 | | |
| 2000 03 29 | 691 | 0.1+ | 0.1− | 2001 09 20 | 704 | (1.6− | 0.1+) | 2005 07 30 | 644 | 0.1− | 0.2+ | | |
| 2000 03 29 | 691 | 0.1− | 0.1− | 2001 09 20 | 704 | 1.1− | 0.9+ | 2005 07 30 | 644 | 0.1− | 0.0 | | |
| 2000 04 01 | 691 | 0.0 | 0.1− | 2001 09 20 | 704 | 1.2− | 0.5+ | 2005 08 11 | A50 | (2.1+ | 1.3+) | | |
| 2000 04 01 | 691 | 0.2− | 0.4− | 2001 09 20 | 704 | 0.8− | 0.5+ | 2005 08 11 | A50 | (1.8− | 0.1−) | | |
| 2000 04 01 | 691 | 0.3+ | 0.6− | 2001 09 22 | 704 | 0.5− | 0.1+ | 2005 08 11 | A50 | 0.6+ | 1.1+ | | |
| 2000 04 02 | 691 | 0.4− | 0.1− | 2001 09 22 | 704 | 0.3− | 0.2+ | 2005 08 24 | 644 | 0.0 | 0.2− | | |
| 2000 04 02 | 691 | 0.2+ | 0.2+ | 2001 09 22 | 704 | 0.4+ | 0.4+ | 2005 08 24 | 644 | 0.0 | 0.0 | | |
| 2000 04 02 | 691 | 0.2+ | 0.4+ | 2001 09 22 | 704 | 0.4− | 1.0+ | 2005 08 24 | 644 | 0.2− | 0.1− | | |
| 2000 04 05 | 704 | 1.3+ | 0.4+ | 2001 09 24 | 704 | 0.7+ | 0.3+ | 2005 09 03 | 644 | 0.1+ | 0.3+ | | |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2001 09 24 | 704 | 0.3+ | 0.0 | 2005 09 03 | 644 | 0.1− | 0.2+ | | |
| 2000 04 05 | 704 | 0.0 | 0.1− | 2001 09 24 | 704 | 0.9+ | 0.1− | 2005 09 03 | 644 | 0.2− | 0.2+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2001 09 24 | 704 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.6− | | |
| 2000 04 05 | 704 | 0.2+ | 0.1+ | 2001 10 11 | 644 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.5+ | | |
| 2000 04 06 | 691 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.1− | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.5− | | |
| 2000 04 06 | 704 | 0.4+ | 1.1+ | 2001 10 11 | 644 | 0.4+ | 0.9+ | 2006 10 23 | G96 | 0.1+ | 0.4− | | |
| 2000 04 06 | 691 | 0.1− | 0.0 | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.8+ | 0.5+ | | |
| 2000 04 06 | 704 | 0.1− | 0.5+ | 2004 03 30 | 691 | 0.0 | 0.6+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | | |
| 2000 04 06 | 704 | 0.2+ | 0.1+ | 2004 03 30 | 691 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 2000 04 06 | 691 | 0.2+ | 0.7+ | 2005 07 08 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.3− | 0.0 | | |
| 2000 04 06 | 704 | 0.0 | 0.5+ | 2005 07 08 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.4− | | |
| 2000 04 06 | 704 | 0.1+ | 1.1+ | 2005 07 08 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.4− | 0.2+ | | |

**(138226)∗ 2000 FV$_{12}$ = 2002 TF$_{255}$**

Discovered 2000 Mar. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37437)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 147.65093 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22383865 | $\omega$ | 154.69581 | | −0.89094610 | | +0.41206794 | |
| $a$ | 2.6864535 | $\Omega$ | 50.99906 | | −0.44710497 | | −0.72247257 | |
| $e$ | 0.1208186 | $i$ | 14.21446 | | −0.07944926 | | −0.55518771 | |
| $P$ | 4.40 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.2+ | 0.5− | 2002 10 30 | 644 | 0.1− | 0.1+ | 2004 01 30 | 699 | 0.2+ | 0.0 | | |
| 2000 02 03 | 704 | 0.0 | 0.6− | 2002 10 30 | 644 | 0.0 | 0.0 | 2004 01 30 | 699 | 0.1+ | 0.0 | | |
| 2000 02 03 | 704 | 1.1+ | 0.2+ | 2002 10 31 | 704 | 0.5+ | 0.3− | 2004 02 09 | 644 | 0.1− | 0.5− | | |
| 2000 02 03 | 704 | 0.1+ | 0.4− | 2002 10 31 | 704 | 0.8+ | 0.6− | 2004 02 09 | 644 | 0.1+ | 0.3− | | |
| 2000 02 03 | 704 | 0.4+ | 1.0+ | 2002 10 31 | 704 | 0.3+ | 0.5− | 2004 02 09 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 04 | 704 | 0.1+ | 0.6− | 2002 10 31 | 704 | 0.7+ | 0.9− | 2004 02 10 | 704 | 0.0 | 0.2− | | |
| 2000 03 04 | 704 | 0.1+ | 0.6− | 2002 10 31 | 704 | 0.8+ | 0.8− | 2004 02 10 | 704 | 0.1+ | 0.3− | | |
| 2000 03 04 | 704 | 0.0 | 0.6− | 2002 10 31 | 608 | 0.7+ | 0.3+ | 2004 02 10 | 704 | 0.5− | 0.6− | | |
| 2000 03 04 | 704 | 0.2+ | 0.8− | 2002 10 31 | 608 | 1.3+ | 0.3+ | 2004 02 10 | 704 | 0.0 | 0.5− | | |
| 2000 03 04 | 704 | 0.1− | 0.6− | 2002 10 31 | 608 | 0.4+ | 0.5+ | 2004 02 10 | 704 | 0.0 | 0.0 | | |
| 2000 03 15 | 704 | 0.1− | 0.2− | 2002 11 07 | 704 | 0.9− | 0.5+ | 2004 02 14 | 703 | 0.4− | 0.4+ | | |
| 2000 03 15 | 704 | 0.2+ | 0.4+ | 2002 11 07 | 704 | 0.4− | 1.2− | 2004 02 14 | 703 | 0.9+ | 0.1+ | | |
| 2000 03 15 | 704 | 0.3+ | 0.4+ | 2002 11 07 | 704 | 0.3− | 0.8+ | 2004 02 14 | 703 | 0.7+ | 0.2+ | | |
| 2000 03 15 | 704 | 0.7− | 0.7+ | 2002 11 07 | 704 | 0.1− | 0.9− | 2004 02 14 | 703 | 0.2+ | 0.2+ | | |
| 2000 03 15 | 704 | 0.6+ | 0.1+ | 2002 11 07 | 704 | 0.1+ | 0.3− | 2004 02 15 | 703 | 1.3− | 0.1− | | |
| 2000 03 28 | 704 | 0.5+ | 0.5+ | 2002 11 11 | 704 | 1.1− | 0.4+ | 2004 02 15 | 703 | 0.0 | 0.2+ | | |
| 2000 03 28 | 704 | 0.1+ | 0.6+ | 2002 11 11 | 704 | 0.1+ | 0.1− | 2004 02 15 | 703 | 0.0 | 0.4+ | | |
| 2000 03 28 | 704 | 0.7+ | 0.3+ | 2002 11 11 | 704 | 0.3+ | 0.4+ | 2004 02 15 | 703 | 0.8− | 0.4− | | |
| 2000 03 28 | 704 | 0.7+ | 0.0 | 2002 11 11 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 201 | 0.0 | 0.1− | | |
| 2000 04 02 | 704 | 0.4− | 0.4+ | 2002 11 11 | 704 | 0.1+ | 0.2+ | 2004 02 16 | 201 | 0.2+ | 0.8+ | | |
| 2000 04 02 | 704 | 0.3+ | 0.4+ | 2002 12 01 | 704 | 1.2− | 0.3+ | 2004 02 16 | 201 | 0.1− | 0.0 | | |
| 2000 04 02 | 704 | 0.7+ | 0.4+ | 2002 12 01 | 704 | 0.7− | 0.7+ | 2004 02 26 | 703 | 0.1− | 0.4− | | |
| 2000 04 02 | 704 | 0.4+ | 0.8+ | 2002 12 01 | 704 | 0.7− | 0.3+ | 2004 02 26 | 703 | 0.6− | 0.1− | | |
| 2000 04 08 | 704 | 0.2+ | 0.1+ | 2002 12 01 | 704 | 0.4− | 1.4+ | 2004 02 26 | 703 | 0.8− | 0.0 | | |
| 2000 04 08 | 704 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.4− | 0.4− | 2004 02 26 | 703 | 0.3− | 0.2− | | |
| 2000 04 08 | 704 | 0.3+ | 0.8+ | 2002 12 05 | 704 | 0.3− | 0.1− | 2004 03 23 | 703 | 0.5− | 0.4+ | | |
| 2000 04 08 | 704 | 0.6− | 0.7+ | 2002 12 05 | 704 | 0.2− | 0.0 | 2004 03 23 | 703 | (0.1− | 3.2−) | | |
| 2000 04 08 | 704 | 0.5− | 1.1+ | 2002 12 05 | 704 | 0.3+ | 0.1+ | 2004 03 23 | 703 | 0.7− | 1.0− | | |
| 2000 04 13 | 704 | 0.2− | 0.8+ | 2002 12 10 | 704 | 0.2+ | 0.0 | 2004 03 23 | 703 | (2.7− | 1.2+) | | |
| 2000 04 13 | 704 | 0.5− | 0.5+ | 2002 12 10 | 704 | 0.1+ | 0.4+ | 2004 03 25 | 704 | 0.3+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 704 | 0.2− | 0.2+ | 2002 12 10 | 704 | 1.2+ | 1.0+ | 2004 03 25 | 704 | 0.3+ | 0.2+ |
| 2000 04 13 | 704 | 0.3+ | 1.0+ | 2003 12 03 | 704 | 0.7+ | 0.4+ | 2004 03 25 | 704 | 0.1+ | 0.5+ |
| 2000 04 13 | 704 | 0.3+ | 0.5+ | 2003 12 03 | 704 | 0.5+ | 0.3− | 2004 03 25 | 704 | 1.1+ | 0.2− |
| 2000 04 28 | 699 | 0.2+ | 0.8+ | 2003 12 03 | 704 | 0.8+ | 0.2+ | 2004 03 25 | 704 | 0.4+ | 0.6− |
| 2000 04 28 | 699 | 0.5+ | 0.7+ | 2003 12 03 | 704 | 0.2+ | 0.5− | 2004 04 12 | 704 | 0.6− | 0.9− |
| 2000 04 28 | 699 | 0.2+ | 0.7+ | 2003 12 03 | 704 | 0.8+ | 0.3− | 2004 04 12 | 704 | 0.0 | 0.2− |
| 2000 04 28 | 699 | 0.1+ | 0.4+ | 2003 12 17 | 704 | 0.2+ | 1.1+ | 2004 04 12 | 704 | 1.3+ | 0.4− |
| 2000 05 03 | 704 | 0.4+ | 0.3+ | 2003 12 17 | 704 | 0.1− | 1.2+ | 2004 04 12 | 704 | 0.6− | 0.1− |
| 2000 05 03 | 704 | 0.2+ | 0.5+ | 2003 12 17 | 704 | (0.4+ | 1.7+) | 2004 04 12 | 704 | 0.5− | 0.9− |
| 2000 05 03 | 704 | 0.4+ | 0.8+ | 2003 12 17 | 704 | 0.3+ | 0.8+ | 2006 09 17 | 699 | 0.0 | 0.4+ |
| 2000 05 03 | 704 | 0.2+ | 0.5+ | 2003 12 17 | 699 | 0.1− | 0.5− | 2006 09 17 | 699 | 0.9− | 0.6+ |
| 2000 05 03 | 704 | 0.2+ | 0.5+ | 2003 12 17 | 699 | 0.4− | 0.3− | 2006 09 17 | 699 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2003 12 17 | 699 | 0.3− | 0.3− | 2006 09 17 | 699 | 1.1− | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.9− | 2003 12 17 | 699 | 0.0 | 0.3+ | 2006 09 20 | 703 | 0.3− | 0.6+ |
| 2002 10 03 | 704 | 0.6− | 0.6+ | 2003 12 30 | 704 | 0.1+ | 0.2− | 2006 09 20 | 703 | 0.9− | 0.6+ |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2003 12 30 | 704 | 0.2− | 0.4− | 2006 09 20 | 703 | 0.4− | 1.3+ |
| 2002 10 03 | 704 | 0.5− | 0.3− | 2003 12 30 | 704 | 0.3− | 0.5− | 2006 09 20 | 703 | 0.3− | 0.2+ |
| 2002 10 09 | 699 | 0.0 | 0.7− | 2003 12 30 | 704 | 0.5− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.8+ |
| 2002 10 09 | 699 | 0.0 | 0.8+ | 2003 12 30 | 704 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.1− | 1.3+ |
| 2002 10 09 | 699 | 0.7− | 0.7+ | 2004 01 02 | 704 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.7− | 1.1+ |
| 2002 10 09 | 699 | 0.3+ | 0.6+ | 2004 01 02 | 704 | 0.6+ | 0.0 | 2006 09 26 | 703 | 1.2− | 0.4+ |
| 2002 10 11 | 704 | 0.7− | 0.2+ | 2004 01 02 | 704 | 0.7+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 10 11 | 704 | 0.1− | 0.5− | 2004 01 02 | 704 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.5+ | 0.2− | 2004 01 02 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2002 10 11 | 704 | 0.7− | 0.7+ | 2004 01 30 | 699 | 0.2− | 0.6− | | | | |
| 2002 10 30 | 644 | 0.0 | 0.2+ | 2004 01 30 | 699 | 0.4− | 0.7+ | | | | |

**(138227)∗ 2000 FK$_{16}$**

Discovered 2000 Mar. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.12756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23949812 | $\omega$ | 52.87320 | | −0.71012009 | −0.70031157 | |
| $a$ | 2.5680372 | $\Omega$ | 82.54516 | | +0.62047701 | −0.67128776 | |
| $e$ | 0.1676681 | $i$ | 4.20782 | | +0.33277281 | −0.24276831 | |
| $P$ | 4.12 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 07 | 691 | 0.7+ | 0.5+ | 2002 10 01 | 699 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.4+ |
| 1992 04 07 | 691 | 1.1+ | 0.9+ | 2002 10 01 | 699 | 0.2+ | 1.1+ | 2004 02 18 | 691 | 0.3− | 0.0 |
| 1992 04 07 | 691 | 0.7+ | 1.0+ | 2002 10 01 | 699 | 0.8− | 0.5+ | 2004 02 18 | 608 | 0.3+ | 0.2+ |
| 1996 04 11 | 691 | 0.7− | 0.5− | 2002 10 01 | 699 | 0.9+ | 0.5+ | 2004 02 18 | 691 | 0.4− | 0.1+ |
| 1996 04 11 | 691 | 0.6− | 0.5− | 2002 10 03 | 704 | 0.2− | 1.2+ | 2004 02 18 | 608 | 0.1+ | 0.2− |
| 1996 04 11 | 691 | 0.4− | 0.3− | 2002 10 03 | 704 | 0.3+ | 0.2− | 2004 02 18 | 608 | 0.1+ | 0.1− |
| 1996 04 23 | 691 | 0.8− | 0.4− | 2002 10 03 | 704 | (0.4+ | 1.8−) | 2004 02 18 | 691 | 0.2− | 0.0 |
| 1996 04 23 | 691 | 0.7− | 0.2− | 2002 10 05 | 645 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.3+ | 0.5+ |
| 1996 04 23 | 691 | 1.4− | 1.4− | 2002 10 05 | 645 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.4+ | 0.4+ |
| 2000 03 12 | 703 | 0.3− | 0.7+ | 2002 10 11 | 704 | 0.2− | 0.3+ | 2004 03 14 | 704 | 0.1+ | 0.4+ |
| 2000 03 12 | 703 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.5− | 1.3+ | 2004 03 14 | 704 | 0.3+ | 0.6+ |
| 2000 03 12 | 703 | 0.3− | 0.7+ | 2002 10 11 | 704 | 0.4+ | 0.8+ | 2004 03 14 | 704 | 0.2− | 0.2− |
| 2000 03 12 | 703 | 0.3− | 0.2+ | 2003 12 20 | 704 | 0.3− | 0.2− | 2004 03 19 | 644 | 0.2− | 0.1+ |
| 2000 03 12 | 704 | 0.1+ | 0.3+ | 2003 12 20 | 704 | 0.0 | 0.0 | 2004 03 19 | 644 | 0.1− | 0.3+ |
| 2000 03 12 | 704 | 0.5− | 0.5− | 2003 12 20 | 704 | 0.4− | 0.1− | 2004 03 19 | 644 | 0.6+ | 0.1− |
| 2000 03 12 | 704 | 1.3+ | 0.7+ | 2003 12 20 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 704 | 0.6− | 0.5+ |
| 2000 03 12 | 704 | 0.7+ | 0.7+ | 2003 12 22 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.6+ | 1.0− |
| 2000 03 12 | 704 | 0.3+ | 1.5+ | 2003 12 22 | 704 | 0.1+ | 0.7+ | 2004 03 20 | 704 | 0.2+ | 0.5+ |
| 2000 03 26 | 699 | 0.0 | 0.8+ | 2003 12 22 | 704 | 0.8+ | 1.0+ | 2004 03 20 | 704 | 0.2− | 0.6− |
| 2000 03 26 | 699 | 0.2− | 0.9+ | 2003 12 22 | 704 | 0.1+ | 0.5− | 2004 03 20 | 704 | 0.7− | 0.6− |
| 2000 03 26 | 699 | 0.8+ | 1.1+ | 2003 12 27 | 704 | 0.1− | 0.9− | 2004 03 22 | 704 | 0.4+ | 0.9+ |
| 2000 03 26 | 699 | 1.3+ | 0.3− | 2003 12 27 | 704 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.5+ |
| 2000 03 28 | 704 | 0.5+ | 0.2+ | 2003 12 27 | 704 | 0.4− | 0.5+ | 2004 03 22 | 704 | 1.2− | 0.8+ |
| 2000 03 28 | 704 | 0.7+ | 0.7+ | 2003 12 27 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.4− | 0.7+ |
| 2000 03 28 | 704 | 0.0 | 1.2+ | 2003 12 27 | 704 | 0.5− | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.8+ |
| 2000 04 03 | 704 | 0.7+ | 0.0 | 2004 01 27 | 704 | 0.3+ | 0.9− | 2004 04 20 | 704 | (0.7+ | 1.5+) |
| 2000 04 03 | 704 | 1.1+ | 0.6− | 2004 01 27 | 704 | 0.1− | 0.7− | 2004 04 20 | 704 | 0.1+ | 1.2+ |
| 2000 04 03 | 704 | 0.7+ | 1.2− | 2004 01 27 | 704 | 0.5+ | 0.2− | 2004 04 20 | 704 | (1.6+ | 0.7+) |
| 2000 04 03 | 704 | 0.2− | 1.2− | 2004 01 27 | 704 | 0.5− | 0.1− | 2004 04 22 | 704 | 0.5+ | 0.5+ |
| 2000 04 07 | 699 | 0.8− | 1.1+ | 2004 01 28 | 704 | 0.5+ | 0.2− | 2004 04 22 | 704 | 1.1+ | 0.3+ |
| 2000 04 07 | 699 | 0.5− | 0.6+ | 2004 01 28 | 704 | 0.4+ | 0.0 | 2004 04 22 | 704 | 1.1+ | 1.1+ |
| 2000 04 07 | 699 | 0.7+ | 0.5+ | 2004 01 28 | 704 | 0.2− | 0.4− | 2006 08 18 | 691 | 0.6− | 1.0+ |
| 2000 04 07 | 699 | 0.0 | 0.5+ | 2004 01 28 | 704 | 0.5− | 0.4− | 2006 08 18 | 691 | 0.4− | 0.4+ |
| 2000 04 08 | 704 | 0.1+ | 0.0 | 2004 01 28 | 704 | 0.2− | 0.2− | 2006 08 18 | 691 | 0.3− | 0.8+ |
| 2000 04 08 | 704 | 0.2+ | 0.9+ | 2004 01 29 | 704 | 0.3+ | 0.9− | 2006 09 18 | 703 | 1.0− | 0.2− |
| 2000 04 08 | 704 | 1.0+ | 1.5+ | 2004 01 29 | 704 | 0.2− | 0.7− | 2006 09 18 | 703 | 0.2+ | 0.7− |
| 2000 04 08 | 704 | 0.2+ | 0.5+ | 2004 01 29 | 704 | 0.4+ | 0.7− | 2006 09 18 | 703 | 0.4+ | 0.3+ |
| 2000 04 08 | 704 | 0.2+ | 0.0 | 2004 01 29 | 704 | 0.4+ | 0.8− | 2006 09 18 | 703 | (2.2+ | 1.5−) |
| 2000 04 10 | 608 | 0.6+ | 1.2− | 2004 02 10 | 333 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.9+ |
| 2000 04 10 | 608 | 0.3+ | 1.2− | 2004 02 10 | 333 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.4+ | 1.2+ |
| 2000 04 10 | 608 | 0.5+ | 1.3− | 2004 02 10 | 333 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.3+ | 1.2+ |
| 2000 04 27 | 699 | 1.3+ | 0.0 | 2004 02 11 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2000 04 27 | 699 | 0.6+ | 0.6+ | 2004 02 11 | 644 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2000 04 27 | 699 | 0.2− | 0.5+ | 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2000 04 27 | 699 | 0.6+ | 0.3− | 2004 02 17 | 704 | 0.8+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 09 28 | 608 | (2.5− | 0.6−) | 2004 02 17 | 704 | 1.0+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2002 09 28 | 608 | (2.2− | 1.0−) | 2004 02 17 | 704 | 0.6+ | 0.4+ | | | | |
| 2002 09 28 | 608 | (2.3− | 1.4−) | 2004 02 17 | 704 | 0.6+ | 0.2+ | | | | |

**(138228)∗ 2000 FG$_{17}$**

Discovered 2000 Mar. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.05989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26958668 | $\omega$ | 19.75022 | | +0.05903491 | −0.99434455 | |
| $a$ | 2.3732151 | $\Omega$ | 66.94769 | | +0.90250225 | +0.01536834 | |
| $e$ | 0.2222393 | $i$ | 5.50564 | | +0.42661993 | +0.10508436 | |
| $P$ | 3.66 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.1− | 0.5+ | 2002 11 06 | 699 | 0.7− | 0.5+ | 2004 04 22 | 704 | 0.3+ | 1.3+ |
| 2000 02 29 | 704 | 0.1+ | 0.5+ | 2002 11 06 | 699 | 0.5− | 0.4+ | 2004 04 22 | 704 | 0.8− | 1.0+ |
| 2000 02 29 | 704 | 1.6+ | 0.5+ | 2002 11 06 | 699 | 0.2+ | 0.5+ | 2004 04 22 | 704 | 1.1+ | 0.9− |
| 2000 03 12 | 703 | 0.1− | 0.5+ | 2002 11 06 | 699 | 0.4− | 0.1+ | 2004 04 22 | 599 | 0.0 | 0.4+ |
| 2000 03 12 | 703 | 0.1+ | 0.8+ | 2002 11 07 | 704 | 0.3− | 0.2+ | 2004 04 22 | 599 | 0.2+ | 0.7+ |
| 2000 03 12 | 703 | 0.1+ | 0.5+ | 2002 11 07 | 704 | 0.5+ | 1.2+ | 2004 04 23 | 599 | 0.3+ | 0.6+ |
| 2000 03 12 | 703 | 0.4+ | 0.1+ | 2002 11 07 | 704 | 0.3− | 0.7+ | 2004 04 23 | 599 | 0.0 | 0.5+ |
| 2000 03 12 | 704 | 0.1− | 0.7+ | 2002 11 07 | 704 | 0.5− | 0.5+ | 2004 05 10 | 703 | 0.8+ | 0.9+ |
| 2000 03 12 | 704 | 0.3− | 0.2+ | 2002 11 07 | 704 | 0.2+ | 0.9+ | 2004 05 10 | 703 | 1.2+ | 1.2+ |
| 2000 03 12 | 704 | 0.5+ | 0.3+ | 2002 11 11 | 704 | 0.4− | 0.4+ | 2004 05 10 | 703 | (0.9+ | 1.9+) |
| 2000 03 12 | 704 | 0.2− | 1.0+ | 2002 11 11 | 704 | 0.3− | 0.2+ | 2004 05 10 | 703 | 1.4− | 0.4+ |
| 2000 03 28 | 704 | 0.7+ | 0.2+ | 2002 11 11 | 704 | 0.5− | 0.3+ | 2004 05 17 | 704 | 0.3− | 0.6+ |
| 2000 03 28 | 704 | 0.0 | 0.5+ | 2002 11 11 | 704 | 0.6− | 0.1+ | 2004 05 17 | 704 | 0.9+ | 0.6+ |
| 2000 03 28 | 704 | 0.3+ | 0.4+ | 2002 11 11 | 704 | 0.5− | 0.4+ | 2004 05 17 | 704 | 0.9+ | 0.6+ |
| 2000 04 03 | 704 | 0.4− | 0.1+ | 2002 11 11 | 704 | 0.2− | 0.2+ | 2004 05 21 | 704 | 0.4+ | 1.3+ |
| 2000 04 03 | 704 | 0.2− | 0.5+ | 2002 11 11 | 704 | 0.1− | 0.3+ | 2004 05 21 | 704 | 1.4+ | 0.8+ |
| 2000 04 03 | 704 | 1.0− | 0.0 | 2002 11 11 | 704 | 0.6− | 0.2+ | 2004 05 21 | 704 | 0.2− | 1.1+ |
| 2000 04 03 | 704 | 0.8+ | 0.5+ | 2002 11 11 | 704 | 0.1+ | 0.2+ | 2005 08 12 | E12 | 0.8+ | 0.4− |
| 2000 04 07 | 699 | 0.6+ | 0.7− | 2002 11 11 | 704 | 0.1− | 0.4+ | 2005 08 12 | E12 | 0.8− | 0.7+ |
| 2000 04 07 | 699 | 0.9− | 0.3+ | 2002 12 01 | 704 | 0.3+ | 0.4+ | 2005 08 12 | E12 | 0.5− | 0.8+ |
| 2000 04 07 | 699 | 0.5− | 0.4+ | 2002 12 01 | 704 | 0.3+ | 0.0 | 2005 08 12 | E12 | 0.9+ | 1.0+ |
| 2000 04 07 | 699 | 0.2− | 0.0 | 2002 12 01 | 704 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2000 04 08 | 704 | 0.5+ | 0.1+ | 2002 12 01 | 704 | 0.3− | 1.0+ | 2006 10 23 | G96 | 0.2− | 0.8− |
| 2000 04 08 | 704 | 0.2− | 0.8+ | 2002 12 01 | 704 | 0.4− | 0.5+ | 2006 10 23 | G96 | 0.5− | 0.4− |
| 2000 04 08 | 704 | 0.3− | 0.3− | 2002 12 05 | 704 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2000 04 08 | 704 | 0.1+ | 0.3+ | 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 10 28 | 703 | (1.2− | 1.7−) |
| 2000 04 08 | 704 | 0.1+ | 0.9− | 2002 12 05 | 704 | (1.9+ | 0.1+) | 2006 10 28 | 703 | 0.9− | 0.4− |
| 2000 04 27 | 699 | 1.5+ | 0.0 | 2002 12 10 | 704 | 0.1+ | 0.5− | 2006 10 28 | 703 | (0.5− | 1.6−) |
| 2000 04 27 | 699 | 0.2− | 0.4− | 2002 12 10 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 1.3− | 0.1+ |
| 2000 04 27 | 699 | (1.7− | 2.9−) | 2002 12 10 | 704 | 0.7− | 0.5− | 2006 11 02 | G96 | 0.3− | 0.7− |
| 2000 04 27 | 699 | 1.2+ | 0.4− | 2002 12 10 | 704 | 0.3+ | 0.2− | 2006 11 02 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.8− | 1.4+ | 2002 12 10 | 704 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.3− | 1.1− |
| 2002 09 05 | 704 | 0.4− | 1.4+ | 2003 01 04 | 704 | 0.5− | 1.3+ | 2006 11 02 | G96 | 0.1− | 0.6− |
| 2002 09 05 | 704 | (0.5− | 2.4+) | 2003 01 04 | 704 | (0.6− | 1.5+) | 2006 11 15 | 704 | 0.9+ | 0.3− |
| 2002 09 06 | 599 | 0.2− | 0.6+ | 2003 01 04 | 704 | 0.8− | 1.1+ | 2006 11 15 | 704 | 1.0+ | 1.2+ |
| 2002 09 06 | 599 | 0.1− | 0.6+ | 2003 01 04 | 704 | 0.5− | 0.9+ | 2006 11 15 | 703 | 0.9− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 599 | 0.3− | 0.5+ | 2003 01 27 | 704 | 0.2− | 0.5+ | 2006 11 15 | 704 | 0.4+ | 0.1+ |
| 2002 09 06 | 599 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.7+ | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.4− |
| 2002 10 01 | 704 | 1.4− | 0.3+ | 2003 01 27 | 704 | 1.1+ | 0.9+ | 2006 11 15 | 703 | 1.0− | 0.7− |
| 2002 10 01 | 704 | 1.3− | 0.5+ | 2003 01 27 | 704 | 0.6+ | 0.5+ | 2006 11 15 | 703 | 0.9− | 0.7− |
| 2002 10 01 | 704 | 1.4− | 0.3− | 2003 01 27 | 704 | 0.6− | 0.7+ | 2006 11 16 | 704 | (1.6+ | 0.8+) |
| 2002 10 01 | 704 | (1.6− | 0.4+) | 2003 01 28 | 704 | 0.5+ | 0.4− | 2006 11 16 | 704 | 1.0+ | 0.7+ |
| 2002 10 02 | 704 | (3.4+ | 1.0−) | 2003 01 28 | 704 | 0.4+ | 1.1− | 2006 11 16 | 704 | 0.6+ | 0.3+ |
| 2002 10 02 | 704 | (2.7+ | 0.7−) | 2003 01 28 | 704 | 0.3− | 0.7+ | 2006 11 16 | 704 | 0.4+ | 0.8+ |
| 2002 10 02 | 704 | (3.1+ | 1.6−) | 2003 01 28 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 704 | (1.8+ | 1.0−) |
| 2002 10 02 | 704 | (3.0+ | 1.6−) | 2003 01 31 | 699 | 1.2+ | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2002 10 02 | 704 | (3.4+ | 1.8−) | 2003 01 31 | 704 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.8+ |
| 2002 10 03 | 704 | (1.5+ | 0.9−) | 2003 01 31 | 699 | 1.4+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | (1.8+ | 0.7−) | 2003 01 31 | 704 | 0.0 | 0.9+ | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 1.5+ | 0.8− | 2003 01 31 | 699 | 1.0− | 1.2− | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 1.3+ | 0.7− | 2003 01 31 | 704 | 1.5+ | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 1.3+ | 1.2− | 2003 01 31 | 699 | 0.2− | 1.1− | 2006 11 22 | 704 | 0.8+ | 0.3+ |
| 2002 10 09 | 699 | 0.6− | 0.9+ | 2003 01 31 | 704 | 0.5+ | 0.9+ | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2002 10 09 | 699 | 0.1− | 0.5+ | 2004 03 31 | 704 | 0.7+ | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2002 10 09 | 699 | 0.1+ | 0.2+ | 2004 03 31 | 704 | 0.2+ | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2002 10 09 | 699 | 0.1+ | 0.4+ | 2004 03 31 | 704 | 0.1− | 0.9+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2002 10 11 | 704 | 0.5− | 0.8+ | 2004 03 31 | 704 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.7+ |
| 2002 10 11 | 704 | 0.5− | 0.4+ | 2004 04 15 | 699 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.6− |
| 2002 10 11 | 704 | 0.1− | 0.3+ | 2004 04 15 | 699 | 0.6+ | 0.1+ | 2006 11 25 | G96 | 0.4− | 0.7− |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2004 04 15 | 699 | 0.8− | 0.0 | 2006 11 25 | G96 | 0.2− | 0.8− |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2004 04 15 | 699 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.7− |
| 2002 10 30 | 644 | 0.5− | 0.3+ | 2004 04 19 | 704 | 0.3+ | 0.4− | 2006 11 27 | 704 | 1.3− | 0.2− |
| 2002 10 30 | 644 | 0.6− | 0.2+ | 2004 04 19 | 704 | 0.7− | 0.9+ | 2006 11 27 | 704 | 0.7− | 1.1+ |
| 2002 10 30 | 644 | 0.3− | 0.3+ | 2004 04 19 | 704 | 0.5+ | 1.0+ | 2006 11 27 | 704 | 0.5− | 0.4+ |
| 2002 11 01 | 704 | 0.4− | 0.4− | 2004 04 19 | 704 | (1.6− | 0.4−) | 2006 12 01 | 704 | 0.0 | 0.3− |
| 2002 11 01 | 704 | 0.4− | 0.8+ | 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 12 01 | 704 | 0.0 | 0.5+ |
| 2002 11 01 | 704 | 0.3− | 0.7+ | 2004 04 22 | 691 | 0.5+ | 0.5+ | 2006 12 01 | 704 | 1.0+ | 0.3− |
| 2002 11 01 | 704 | 0.0 | 1.0+ | 2004 04 22 | 691 | 0.2− | 0.3+ | 2006 12 01 | 704 | 0.5+ | 0.1+ |
| 2002 11 01 | 704 | 0.6− | 0.7+ | 2004 04 22 | 704 | (1.5+ | 0.5+) | 2006 12 01 | 704 | 0.0 | 0.1+ |

**(138229)∗ 2000 FV$_{18}$ = 2002 TB$_{159}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37439)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.76309 | | (2000.0) | | +0.01145149 | −0.98692637 |
| $n$ | 0.25473581 | $\omega$ | 329.12169 | | +0.95107993 | −0.03888942 |
| $a$ | 2.4645789 | $\Omega$ | 119.78049 | | +0.30873261 | +0.15640956 |
| $e$ | 0.1862538 | $i$ | 10.67433 | | | |
| $P$ | 3.87 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.0 | 0.0 | 2003 01 28 | 704 | 1.2+ | 1.0+ | 2006 10 01 | 704 | 0.2+ | 0.3+ |
| 2000 03 29 | 704 | 0.9+ | 1.0+ | 2004 03 15 | 704 | 0.0 | 0.9+ | 2006 10 01 | 704 | 0.1+ | 0.1+ |
| 2000 03 29 | 704 | 0.2+ | 0.3− | 2004 03 15 | 704 | 1.2+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2000 03 29 | 704 | 1.0+ | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2000 03 29 | 704 | 0.5+ | 0.3− | 2004 03 15 | 704 | 1.1+ | 0.4+ | 2006 10 17 | 703 | 0.6+ | 0.2+ |
| 2000 04 03 | 704 | 0.2+ | 0.3− | 2004 03 15 | 704 | 0.1− | 1.5+ | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2000 04 03 | 704 | 0.2+ | 0.1+ | 2004 04 12 | 703 | 0.5+ | 0.3+ | 2006 10 28 | 703 | (1.9+ | 0.5−) |
| 2000 04 03 | 704 | 0.1+ | 0.3− | 2004 04 12 | 703 | 0.1+ | 1.4+ | 2006 10 28 | 703 | 1.3+ | 0.4− |
| 2000 04 03 | 704 | 0.4− | 0.6− | 2004 04 12 | 703 | 0.0 | 1.4+ | 2006 10 28 | 703 | 0.1+ | 0.4− |
| 2000 04 03 | 704 | 0.3+ | 0.4− | 2004 04 12 | 703 | (0.9+ | 1.9+) | 2006 10 28 | 703 | 0.6+ | 0.3− |
| 2000 04 08 | 704 | 0.2− | 1.1+ | 2004 04 15 | 704 | 0.8− | 0.6− | 2006 10 29 | G96 | 0.1+ | 0.4− |
| 2000 04 08 | 704 | 0.5− | 0.7+ | 2004 04 15 | 704 | 0.4− | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.4− |
| 2000 04 08 | 704 | 0.2+ | 0.0 | 2004 04 15 | 704 | 1.2+ | 1.5+ | 2006 10 29 | G96 | 0.4+ | 0.5− |
| 2000 04 08 | 704 | 0.4+ | 0.4+ | 2004 04 15 | 644 | 0.2− | 0.7+ | 2006 10 29 | G96 | 0.0 | 0.2− |
| 2002 10 05 | 644 | 0.8− | 0.3+ | 2004 04 15 | 644 | 0.2− | 0.8+ | 2006 10 29 | G96 | 0.4+ | 0.3− |
| 2002 10 05 | 644 | 0.6− | 0.1+ | 2004 04 15 | 644 | 0.0 | 0.9+ | 2006 10 29 | G96 | 0.0 | 0.4− |
| 2002 10 05 | 644 | 0.5− | 0.3+ | 2004 04 23 | 703 | 0.3− | 0.4+ | 2006 10 29 | G96 | 0.2+ | 0.2− |
| 2002 10 06 | 704 | 0.2− | 1.1+ | 2004 04 23 | 703 | 0.7+ | 0.6+ | 2006 10 29 | G96 | 0.0 | 0.2− |
| 2002 10 06 | 704 | (1.4− | 1.8+) | 2004 04 23 | 703 | 0.8+ | 0.1+ | 2006 10 30 | G96 | 0.4+ | 0.6− |
| 2002 10 06 | 644 | 0.6− | 0.1+ | 2004 04 23 | 703 | 0.4− | 0.6− | 2006 10 30 | G96 | 0.5+ | 0.5− |
| 2002 10 06 | 704 | 0.2− | 0.7+ | 2004 04 25 | 699 | 1.0− | 0.4+ | 2006 10 30 | G96 | 0.4+ | 0.5− |
| 2002 10 06 | 704 | 0.7− | 1.4+ | 2004 04 25 | 699 | (1.7− | 0.0 ) | 2006 10 30 | G96 | 0.3+ | 0.5− |
| 2002 10 06 | 644 | 0.5− | 0.1+ | 2004 04 25 | 699 | 0.0 | 0.9+ | 2006 11 10 | 704 | 0.4− | 0.2+ |
| 2002 10 06 | 704 | 0.0 | 0.8+ | 2004 04 25 | 699 | 0.4− | 0.5+ | 2006 11 10 | 704 | 0.6− | 0.0 |
| 2002 10 06 | 644 | 0.5− | 0.2+ | 2004 04 28 | 704 | 0.3− | 0.5+ | 2006 11 10 | 704 | 0.1− | 0.4+ |
| 2002 10 07 | 608 | 0.1− | 1.0− | 2004 04 28 | 704 | 0.0 | 1.2+ | 2006 11 10 | 704 | 0.5− | 0.1+ |
| 2002 10 07 | 608 | 0.2− | 0.8− | 2004 04 28 | 704 | 1.1+ | 0.3+ | 2006 11 10 | 704 | 0.8− | 0.5+ |
| 2002 10 07 | 608 | 0.2− | 0.7− | 2006 09 24 | 291 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2002 10 16 | 644 | 0.1− | 0.3+ | 2006 09 24 | 291 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.2− |
| 2002 10 16 | 644 | 0.2− | 0.1+ | 2006 09 24 | 291 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.1+ |
| 2002 10 16 | 644 | 0.1− | 0.2+ | 2006 09 27 | 291 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.2+ | 0.1− |
| 2002 10 29 | 704 | 0.3− | 0.5+ | 2006 09 27 | 291 | 0.0 | 0.6+ | 2006 11 16 | 703 | 0.2+ | 0.2− |
| 2002 10 29 | 704 | 0.4− | 0.8+ | 2006 09 27 | 291 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.3+ | 0.4− |
| 2002 10 29 | 704 | 0.3− | 0.6+ | 2006 09 28 | 291 | 0.2− | 0.6+ | 2006 11 16 | 703 | 0.5+ | 0.2− |
| 2002 10 29 | 704 | 0.2+ | 0.7+ | 2006 09 28 | 291 | 0.3− | 0.6+ | 2006 11 16 | 703 | 0.5+ | 0.1+ |
| 2002 11 05 | 644 | 0.2+ | 1.4+ | 2006 09 28 | 291 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.4− | 0.3− |
| 2002 11 05 | 644 | 0.0 | 1.4+ | 2006 09 30 | 699 | 0.5− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2002 11 05 | 644 | 0.1− | 1.2+ | 2006 09 30 | 699 | 0.8+ | 0.5+ | 2006 11 21 | 704 | 0.7− | 0.5− |
| 2002 11 27 | 699 | 0.2− | 0.1− | 2006 09 30 | 699 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.3− | 0.9− |
| 2002 11 27 | 699 | 0.9+ | 0.7+ | 2006 09 30 | 699 | 0.3− | 0.6− | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2002 11 27 | 699 | (1.6+ | 0.1−) | 2006 09 30 | 703 | 0.3+ | 0.5− | 2006 12 01 | G96 | 0.3+ | 0.7− |
| 2002 11 27 | 699 | 0.8− | 0.4+ | 2006 09 30 | 703 | 1.0− | 0.4− | 2006 12 01 | G96 | 0.2+ | 1.1− |
| 2003 01 28 | 704 | 0.4− | 1.1+ | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.5+ | 0.6− |
| 2003 01 28 | 704 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2003 01 28 | 704 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.0 | 0.3− | | | | |

**(138230)∗ 2000 FE$_{19}$ = 2002 UK$_{22}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37440)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.08169 | | (2000.0) | | +0.78774437 | +0.58567673 |
| $n$ | 0.22788886 | $\omega$ | 273.05680 | | −0.42136091 | +0.73836653 |
| $a$ | 2.6545281 | $\Omega$ | 51.18185 | | −0.44934817 | +0.33436155 |
| $e$ | 0.0507213 | $i$ | 14.18241 | | | |
| $P$ | 4.32 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 1.0− | 0.5+ | 2002 11 13 | 644 | 0.2+ | 0.0 | 2003 12 19 | 704 | 0.6+ | 0.1− |
| 2000 03 29 | 704 | 0.4+ | 0.7+ | 2002 11 13 | 644 | 0.2+ | 0.1− | 2004 01 17 | 644 | 0.1− | 0.2− |
| 2000 03 29 | 704 | 0.4+ | 1.6+ | 2002 11 14 | 704 | 0.1− | 0.1− | 2004 01 17 | 644 | 0.1− | 0.2− |
| 2000 03 29 | 704 | 0.3− | 0.3− | 2002 11 14 | 704 | 0.2+ | 0.5− | 2004 01 17 | 644 | 0.3+ | 0.1− |
| 2000 03 29 | 704 | 0.4+ | 0.9+ | 2002 11 14 | 704 | 0.6− | 0.4+ | 2004 01 28 | 703 | 0.5− | 0.0 |
| 2000 04 03 | 704 | 0.4+ | 0.8+ | 2002 11 24 | 644 | 0.1− | 0.2− | 2004 01 28 | 703 | 0.4− | 0.5− |
| 2000 04 03 | 704 | 0.3+ | 0.5+ | 2002 11 24 | 644 | 0.1− | 0.0 | 2004 01 28 | 703 | 0.8− | 0.7+ |
| 2000 04 03 | 704 | 0.9+ | 0.7+ | 2002 11 24 | 644 | 0.2− | 0.2− | 2004 01 28 | 703 | 1.3− | 0.4− |
| 2000 04 03 | 704 | 1.2+ | 0.6+ | 2002 11 27 | 699 | 0.4− | 0.3− | 2004 02 14 | 704 | 0.8+ | 0.1− |
| 2000 04 10 | 608 | 0.5+ | 0.2− | 2002 11 27 | 699 | 0.3− | 0.9+ | 2004 02 14 | 704 | 0.1+ | 0.4+ |
| 2000 04 10 | 608 | 0.0 | 0.1− | 2002 11 27 | 699 | 0.1+ | 0.4+ | 2004 02 14 | 704 | 0.3+ | 0.8− |
| 2000 04 10 | 608 | 0.1+ | 0.1− | 2002 11 27 | 699 | (1.9+ | 0.2+) | 2004 02 14 | 704 | 0.6+ | 0.0 |
| 2002 10 02 | 704 | 0.6+ | 0.7+ | 2002 11 28 | 699 | 0.2− | 0.4+ | 2004 02 14 | 704 | 0.0 | 0.4− |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2002 11 28 | 699 | 0.5− | 0.6+ | 2006 09 25 | 699 | 0.3− | 0.1+ |
| 2002 10 02 | 704 | 0.7− | 0.2+ | 2002 11 28 | 699 | (1.4− | 1.9+) | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2002 11 28 | 699 | (2.0+ | 0.3−) | 2006 09 25 | 699 | 0.3+ | 0.7+ |
| 2002 10 11 | 704 | 1.0+ | 0.3− | 2002 12 02 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 699 | (0.2− | 1.6+) |
| 2002 10 11 | 704 | 0.9+ | 0.2− | 2002 12 02 | 704 | 0.8− | 0.3+ | 2006 09 26 | 703 | 0.5+ | 0.7+ |
| 2002 10 11 | 704 | 0.2− | 0.2− | 2002 12 02 | 704 | 0.6− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2002 10 30 | 608 | 1.0+ | 0.4+ | 2002 12 02 | 704 | 1.2+ | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.1+ |
| 2002 10 30 | 608 | 0.9+ | 0.5+ | 2002 12 06 | 704 | 0.6+ | 0.2− | 2006 09 26 | 703 | 0.5+ | 1.0− |
| 2002 10 30 | 608 | 0.7+ | 0.5+ | 2002 12 06 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 704 | 0.1− | 1.4+ |
| 2002 10 31 | 699 | 0.3− | 1.1− | 2002 12 06 | 704 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.4− | 0.3− |
| 2002 10 31 | 699 | 0.3− | 1.2− | 2002 12 06 | 704 | (1.9+ | 0.6+) | 2006 09 30 | 704 | 0.7− | 0.7+ |
| 2002 10 31 | 699 | 0.3− | 0.1− | 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 704 | (1.4− | 2.3+) |
| 2002 10 31 | 699 | 0.2− | 0.1− | 2002 12 10 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.3− |
| 2002 11 05 | 704 | 0.3− | 0.8− | 2002 12 10 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.7+ |
| 2002 11 05 | 704 | 0.8− | 0.7− | 2002 12 10 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.9+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.5− | 0.8− | 2002 12 10 | 704 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2002 11 05 | 704 | 0.2− | 0.7− | 2002 12 10 | 704 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.3− | 0.7− | 2002 12 11 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.4+ | 0.5− | 2002 12 11 | 704 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 11 06 | 704 | 0.0 | 0.2− | 2002 12 11 | 704 | 1.4+ | 0.3− | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 0.0 | 0.8+ | 2006 10 22 | 703 | 0.0 | 0.5+ |
| 2002 11 06 | 704 | 0.3− | 0.5+ | 2002 12 11 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.6+ | 0.4+ |
| 2002 11 06 | 704 | 0.0 | 0.6− | 2002 12 11 | 644 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.1− |
| 2002 11 06 | 704 | 0.7− | 0.3− | 2002 12 11 | 704 | 0.1− | 0.7+ | 2006 10 28 | 703 | 1.0− | 0.7− |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2002 12 11 | 644 | 0.3+ | 0.1− | 2006 10 28 | 703 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.1+ | 2002 12 11 | 704 | 0.8− | 0.5− | 2006 10 28 | 703 | 1.1− | 0.5− |
| 2002 11 07 | 704 | 0.9+ | 0.0 | 2002 12 11 | 644 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.2− | 0.4− |
| 2002 11 07 | 704 | 0.0 | 0.4− | 2002 12 11 | 704 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.9− | 1.2+ |
| 2002 11 07 | 704 | 0.4− | 0.2− | 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.4− | 0.5− | 2003 12 19 | 704 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.3− | 0.9+ |
| 2002 11 13 | 644 | 0.0 | 0.2− | 2003 12 19 | 704 | 0.5+ | 0.2+ | | | | |

**(138231)∗ 2000 FK$_{20}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.00233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21681668 | $\omega$ | 0.96281 | | −0.91984474 | −0.37928383 | |
| $a$ | 2.7441483 | $\Omega$ | 155.97130 | | +0.35824840 | −0.91621545 | |
| $e$ | 0.1558308 | $i$ | 14.23764 | | +0.15982410 | −0.12920146 | |
| $P$ | 4.55 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.3+ | 0.1− | 2000 04 08 | 704 | 0.1+ | 0.5+ | 2005 05 20 | 644 | 0.3+ | 0.1− |
| 2000 02 11 | 704 | 1.4+ | 0.2− | 2000 04 08 | 704 | 0.0 | 0.2+ | 2005 06 06 | 704 | 0.9+ | 0.1+ |
| 2000 02 11 | 704 | 0.2+ | 0.1+ | 2000 04 28 | 699 | 0.1− | 1.0+ | 2005 06 06 | 704 | 1.1+ | 1.1− |
| 2000 02 11 | 704 | 0.6+ | 1.3− | 2000 04 28 | 699 | 1.5− | 0.1+ | 2005 06 06 | 704 | 1.3+ | 1.0+ |
| 2000 03 12 | 703 | 0.4− | 0.3+ | 2000 04 28 | 699 | 0.9− | 1.8+ | 2005 06 06 | 704 | 0.4+ | 0.5+ |
| 2000 03 12 | 703 | 0.1− | 0.4+ | 2000 04 28 | 699 | 1.1− | 0.4− | 2005 06 25 | 644 | 0.0 | 0.1− |
| 2000 03 12 | 703 | 0.0 | 0.4+ | 2004 02 17 | 704 | 0.8+ | 0.8+ | 2005 06 25 | 644 | 0.0 | 0.1+ |
| 2000 03 12 | 703 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.6+ | 0.5− | 2005 06 25 | 644 | 0.1− | 0.1− |
| 2000 03 12 | 704 | 0.2− | 0.7+ | 2004 02 17 | 704 | 0.1− | 0.3− | 2005 06 30 | 644 | 0.3+ | 0.3− |
| 2000 03 12 | 704 | 0.0 | 0.5+ | 2004 02 17 | 704 | 1.3− | 0.7− | 2005 06 30 | 644 | 0.3+ | 0.1− |
| 2000 03 12 | 704 | 1.0− | 0.2+ | 2005 05 04 | 703 | 1.3− | 0.1− | 2005 06 30 | 644 | 0.1+ | 0.0 |
| 2000 03 12 | 704 | 0.6− | 0.6− | 2005 05 04 | 703 | 0.1+ | 1.0− | 2006 08 19 | 699 | 0.5− | 0.8+ |
| 2000 03 26 | 699 | 0.4− | 0.2− | 2005 05 04 | 703 | 0.5− | 0.1+ | 2006 08 19 | 699 | 0.1− | 0.6+ |
| 2000 03 26 | 699 | 0.1+ | 0.2+ | 2005 05 04 | 703 | 0.5+ | 0.9+ | 2006 08 19 | 699 | 0.4+ | 0.0 |
| 2000 03 26 | 699 | 0.5− | 0.2+ | 2005 05 06 | 704 | 0.6− | 1.4− | 2006 08 19 | 699 | 0.4− | 0.2+ |
| 2000 03 26 | 699 | 0.4− | 0.9+ | 2005 05 06 | 704 | 1.0− | 1.3− | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 2000 03 29 | 704 | 1.0+ | 0.9+ | 2005 05 06 | 704 | 0.0 | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2000 03 29 | 704 | 0.9+ | 0.0 | 2005 05 06 | 704 | 0.6+ | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 2000 03 29 | 704 | 0.2+ | 0.6− | 2005 05 13 | 703 | 0.5− | 0.6+ | 2006 08 28 | 703 | 0.0 | 1.5+ |
| 2000 03 29 | 704 | 0.3+ | 0.0 | 2005 05 13 | 703 | 0.9− | 0.9− | 2006 08 28 | 703 | 0.8+ | 0.1− |
| 2000 04 03 | 704 | 0.9+ | 0.8+ | 2005 05 13 | 703 | 0.3+ | 0.2− | 2006 08 28 | 703 | 1.2− | 0.2− |
| 2000 04 03 | 704 | 0.2+ | 0.5− | 2005 05 13 | 703 | 1.1− | 0.3− | 2006 08 28 | 703 | 1.1− | 0.6− |
| 2000 04 03 | 704 | 0.1+ | 0.2+ | 2005 05 19 | 703 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2000 04 03 | 704 | 0.2+ | 0.7− | 2005 05 19 | 703 | 0.8− | 0.2− | 2006 09 26 | G96 | 0.7+ | 0.0 |
| 2000 04 03 | 704 | 0.3+ | 0.2− | 2005 05 19 | 703 | 0.4+ | 0.9− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2000 04 08 | 704 | 0.8+ | 1.0+ | 2005 05 19 | 703 | 0.7− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2000 04 08 | 704 | 0.2+ | 0.8+ | 2005 05 20 | 644 | 0.2+ | 0.1− | | | | |
| 2000 04 08 | 704 | 1.3+ | 0.7+ | 2005 05 20 | 644 | 0.1− | 0.1+ | | | | |

**(138232)∗ 2000 FV$_{22}$**

Discovered 2000 Mar. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.25238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22910921 | $\omega$ | 16.97627 | | −0.75885781 | +0.64015628 | |
| $a$ | 2.6450935 | $\Omega$ | 204.11865 | | −0.62636777 | −0.76775501 | |
| $e$ | 0.2198449 | $i$ | 17.03764 | | −0.17832061 | −0.02742590 | |
| $P$ | 4.30 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 14 | 704 | 0.6+ | 0.2+ | 2000 04 26 | 699 | 0.1− | 0.1− | 2004 03 14 | 644 | 0.5− | 0.3+ |
| 2000 03 14 | 704 | 0.1− | 1.5+ | 2000 04 27 | 699 | 0.7+ | 0.1+ | 2004 03 14 | 644 | 0.3− | 0.3+ |
| 2000 03 14 | 704 | 0.1+ | 0.1+ | 2000 04 27 | 699 | 0.1− | 0.3+ | 2004 03 16 | 704 | 1.2− | 0.3+ |
| 2000 03 14 | 704 | 1.1+ | 0.5+ | 2000 04 27 | 699 | 0.1+ | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.1+ |
| 2000 03 30 | 704 | 0.4+ | 0.5− | 2000 04 27 | 699 | 0.5− | 0.1+ | 2004 03 16 | 704 | 0.1+ | 0.2− |
| 2000 03 30 | 704 | 1.1− | 0.5− | 2000 04 29 | 704 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.4− | 0.3+ |
| 2000 03 30 | 704 | 0.0 | 0.2− | 2000 04 29 | 704 | 0.4+ | 0.3− | 2004 03 16 | 704 | 0.4− | 0.6− |
| 2000 03 30 | 704 | 0.3− | 1.1+ | 2000 04 29 | 704 | 0.4+ | 0.3− | 2004 03 20 | 704 | 0.2− | 0.3− |
| 2000 04 02 | 699 | 0.5− | 0.7+ | 2000 04 29 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 1.0+ | 1.0− |
| 2000 04 02 | 699 | 1.0+ | 0.1+ | 2000 04 29 | 704 | 0.4+ | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.3− |
| 2000 04 02 | 699 | 0.2+ | 0.1+ | 2000 05 06 | 704 | (0.1+ | 2.2+) | 2004 03 20 | 704 | 0.7+ | 0.2+ |
| 2000 04 02 | 699 | 0.2+ | 0.6+ | 2000 05 06 | 704 | (0.0 | 2.1+) | 2005 07 28 | 704 | (0.9+ | 2.4+) |
| 2000 04 05 | 704 | 0.4− | 0.1+ | 2000 05 06 | 704 | 0.2+ | 0.2+ | 2005 07 28 | 704 | 0.6+ | 1.2+ |
| 2000 04 05 | 704 | 0.1− | 0.2− | 2000 05 06 | 704 | 0.5− | 0.2− | 2005 07 28 | 704 | 0.6− | 1.1+ |
| 2000 04 05 | 704 | 0.0 | 0.2+ | 2000 05 11 | 699 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2000 04 05 | 704 | 0.6− | 0.1− | 2000 05 11 | 699 | 1.0− | 0.7− | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2000 04 05 | 704 | 0.5− | 0.1+ | 2000 05 11 | 699 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2000 04 06 | 704 | 0.2+ | 0.5+ | 2000 05 11 | 699 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.5+ | 0.2+ |
| 2000 04 06 | 704 | 0.2+ | 0.2− | 2000 05 24 | 699 | 0.0 | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.6+ |
| 2000 04 06 | 704 | 0.2− | 0.2− | 2000 05 24 | 699 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.4+ |
| 2000 04 06 | 704 | 0.1+ | 0.2+ | 2000 05 24 | 699 | 0.7+ | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.6+ |
| 2000 04 06 | 704 | 0.2− | 0.3+ | 2000 05 24 | 699 | 0.4− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2000 04 07 | 704 | 0.1− | 0.0 | 2000 05 25 | 699 | 0.5+ | 0.2− | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2000 04 07 | 704 | 0.1+ | 0.4+ | 2000 05 25 | 699 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.7− | 0.1+ |
| 2000 04 07 | 704 | 0.3− | 0.5+ | 2000 05 25 | 699 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2000 04 07 | 704 | 0.0 | 0.4+ | 2000 05 25 | 699 | 0.4− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2000 04 07 | 704 | 0.0 | 1.0+ | 2004 02 20 | 608 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2000 04 26 | 699 | 0.4+ | 0.2− | 2004 02 20 | 608 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2000 04 26 | 699 | 0.0 | 0.1+ | 2004 02 20 | 608 | 0.1+ | 0.1− | | | | |
| 2000 04 26 | 699 | 0.1− | 0.5+ | 2004 03 14 | 644 | 0.4− | 0.2+ | | | | |

**(138233)∗ 2000 FM$_{23}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.54854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23372247 | $\omega$ | 90.86494 | | −0.97381540 | +0.06830948 | |
| $a$ | 2.6101717 | $\Omega$ | 93.07261 | | −0.14819571 | −0.91403016 | |
| $e$ | 0.1376352 | $i$ | 12.54152 | | +0.17239953 | −0.39985333 | |
| $P$ | 4.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 15 | 704 | 0.5+ | 0.8+ | 2000 04 30 | 699 | 0.3− | 0.9+ | 2004 03 28 | 704 | 0.6− | 0.1+ |
| 2000 03 15 | 704 | 0.1+ | 0.3+ | 2000 04 30 | 699 | 0.9− | 0.6+ | 2004 03 28 | 704 | 0.4− | 0.7+ |
| 2000 03 15 | 704 | 0.8+ | 1.1+ | 2000 04 30 | 699 | 0.1− | 0.6+ | 2004 03 28 | 704 | 0.4+ | 0.1+ |
| 2000 03 15 | 704 | 0.8+ | 0.9+ | 2000 04 30 | 699 | 0.5− | 1.1+ | 2004 03 28 | 704 | 0.2− | 0.1− |
| 2000 03 15 | 704 | 0.5− | 0.2+ | 2000 04 30 | 699 | 0.4− | 0.5+ | 2004 03 28 | 704 | 0.4− | 0.5− |
| 2000 03 29 | 704 | 0.2− | 0.3+ | 2000 05 03 | 704 | 0.5+ | 0.4− | 2005 07 29 | E12 | 0.2− | 0.3− |
| 2000 03 29 | 704 | 0.5+ | 0.1+ | 2000 05 03 | 704 | 1.0+ | 0.1− | 2005 07 29 | E12 | 0.7− | 0.1+ |
| 2000 03 29 | 704 | 0.1− | 0.2+ | 2000 05 03 | 704 | 0.4+ | 0.0 | 2005 07 29 | E12 | 0.1+ | 0.0 |
| 2000 03 29 | 704 | 0.5+ | 0.2+ | 2000 05 03 | 704 | 0.2− | 0.6− | 2005 07 29 | E12 | 0.4+ | 0.5+ |
| 2000 03 29 | 704 | 0.4+ | 0.2− | 2000 05 03 | 704 | 0.2− | 1.1− | 2006 09 19 | 703 | 0.5+ | 0.1+ |
| 2000 04 03 | 704 | 0.3+ | 0.4+ | 2001 07 26 | 644 | 0.4− | 0.9+ | 2006 09 19 | 703 | 1.0− | 1.2+ |
| 2000 04 03 | 704 | 0.5+ | 0.2+ | 2001 07 26 | 644 | 0.2− | 0.2+ | 2006 09 19 | 703 | (3.5− | 0.2+) |
| 2000 04 03 | 704 | 0.4− | 0.4+ | 2001 07 26 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | (2.3− | 1.7−) |
| 2000 04 03 | 704 | 0.7+ | 0.5+ | 2003 12 27 | 704 | 0.5− | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.1+ |
| 2000 04 03 | 704 | 0.9+ | 0.2+ | 2003 12 27 | 704 | 1.0+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.5+ |
| 2000 04 08 | 704 | 0.7− | 0.7− | 2003 12 27 | 704 | 0.5+ | 0.0 | 2006 09 26 | 703 | 0.1− | 1.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.2+ | 1.5− | 2004 02 15 | 704 | 0.5+ | 0.0 | 2006 09 26 | 703 | (1.9− | 0.9+) |
| 2000 04 08 | 704 | 0.5− | 0.2− | 2004 02 15 | 704 | 0.5+ | 0.6+ | 2006 10 02 | 703 | 0.1+ | 0.8+ |
| 2000 04 08 | 704 | 0.5− | 0.2− | 2004 02 15 | 704 | 0.0 | 0.4+ | 2006 10 02 | 703 | (0.0 | 2.8+) |
| 2000 04 08 | 704 | 0.2+ | 0.2− | 2004 02 15 | 704 | 0.1− | 0.7+ | 2006 10 02 | 703 | 0.2− | 0.3+ |
| 2000 04 14 | 704 | 0.1+ | 0.7+ | 2004 03 15 | 106 | 0.0 | 0.8− | 2006 10 02 | 703 | 0.4+ | 0.0 |
| 2000 04 14 | 704 | 0.1− | 0.5+ | 2004 03 15 | 106 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.2− | 0.6+ |
| 2000 04 14 | 704 | 0.0 | 0.6+ | 2004 03 15 | 106 | 0.5− | 1.1− | 2006 10 17 | 703 | 0.3+ | 0.1+ |
| 2000 04 30 | 699 | 0.3− | 0.6+ | 2004 03 17 | 106 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2000 04 30 | 699 | 0.1− | 0.6+ | 2004 03 17 | 106 | 0.2− | 0.6− | 2006 10 17 | 703 | 1.3− | 0.6+ |
| 2000 04 30 | 699 | 0.7+ | 0.8− | 2004 03 17 | 106 | 0.0 | 0.0 | | | | |

**(138234)∗ 2000 FN$_{23}$ = 2002 VS$_{77}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 40077)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.51034 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22220288 | $\omega$ | 226.44665 | | +0.49662059 | | +0.82900679 |
| $a$ | 2.6996218 | $\Omega$ | 75.01167 | | −0.69968971 | | +0.55766870 |
| $e$ | 0.0484043 | $i$ | 15.43743 | | −0.51361688 | | +0.04187321 |
| $P$ | 4.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.1+ | 0.5− | 2002 12 01 | 704 | 0.4+ | 0.7+ | 2004 03 23 | 703 | 0.8− | 1.2+ |
| 2000 03 29 | 704 | 1.4− | 0.6+ | 2002 12 10 | 644 | 0.3− | 0.0 | 2004 03 23 | 703 | 0.5− | 1.1+ |
| 2000 03 29 | 704 | 0.4− | 0.5+ | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2005 06 04 | 704 | 0.0 | 0.5+ |
| 2000 03 29 | 704 | 0.5− | 0.6− | 2002 12 10 | 644 | 0.0 | 0.0 | 2005 06 04 | 704 | 0.2− | 1.1− |
| 2000 04 03 | 704 | 1.4+ | 0.7+ | 2002 12 27 | 644 | 0.2+ | 0.3+ | 2005 06 04 | 704 | 0.8+ | 0.0 |
| 2000 04 03 | 704 | 0.2+ | 1.1+ | 2002 12 27 | 644 | 0.1+ | 0.2+ | 2005 06 04 | 704 | 0.0 | 0.3− |
| 2000 04 03 | 704 | 0.0 | 0.5+ | 2002 12 27 | 644 | 0.1− | 0.1+ | 2005 06 04 | 704 | 0.5+ | 0.5+ |
| 2000 04 03 | 704 | 0.6+ | 0.9+ | 2004 01 17 | 644 | 0.2− | 0.0 | 2005 06 11 | 703 | 0.3+ | 0.2+ |
| 2002 10 31 | 644 | 0.3+ | 0.1+ | 2004 01 17 | 644 | 0.1− | 0.0 | 2005 06 11 | 703 | 0.3+ | 1.2+ |
| 2002 10 31 | 644 | 0.5− | 0.1− | 2004 01 17 | 644 | 0.3− | 0.1+ | 2005 06 11 | 703 | 0.0 | 0.4+ |
| 2002 10 31 | 644 | 0.3− | 0.2+ | 2004 02 10 | 644 | 0.6− | 0.3+ | 2005 06 11 | 703 | 0.9− | 0.9− |
| 2002 11 07 | 704 | 0.6+ | 0.1− | 2004 02 10 | 644 | 0.6− | 0.1− | 2005 06 14 | G96 | 0.5+ | 0.7+ |
| 2002 11 07 | 704 | 0.3− | 0.5+ | 2004 02 10 | 644 | 0.3− | 0.1+ | 2005 06 14 | G96 | 0.3+ | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 1.4+ | 2004 02 14 | 704 | 1.1+ | 0.1− | 2005 06 14 | G96 | 0.6+ | 1.1+ |
| 2002 11 11 | 704 | 0.3− | 0.7+ | 2004 02 14 | 704 | 1.5+ | 0.7− | 2005 06 14 | G96 | 0.4+ | 0.4+ |
| 2002 11 11 | 704 | 0.0 | 0.6− | 2004 02 14 | 704 | 1.7+ | 0.3− | 2006 09 22 | 703 | 0.0 | 0.4+ |
| 2002 11 11 | 704 | 0.3+ | 0.6− | 2004 02 14 | 704 | 1.7+ | 0.1+ | 2006 09 22 | 703 | 0.4− | 1.3+ |
| 2002 11 11 | 704 | 0.8− | 0.5+ | 2004 02 14 | 704 | (2.3+ | 1.0+) | 2006 09 22 | 703 | 1.0− | 0.1− |
| 2002 11 11 | 704 | 0.2− | 0.5+ | 2004 03 17 | 644 | 0.2− | 0.3− | 2006 09 22 | 703 | 1.0− | 0.1− |
| 2002 12 01 | 704 | 0.6− | 0.3− | 2004 03 17 | 644 | 0.4− | 0.3− | 2006 09 24 | 699 | 1.0− | 0.3+ |
| 2002 12 01 | 704 | 0.1− | 0.0 | 2004 03 17 | 644 | 0.3− | 0.4− | 2006 09 24 | 699 | 0.4+ | 0.2− |
| 2002 12 01 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 703 | 0.5− | 0.4− | 2006 09 24 | 699 | 0.6− | 1.2+ |
| 2002 12 01 | 704 | 0.9+ | 0.4+ | 2004 03 23 | 703 | 0.6− | 1.7+ | 2006 09 24 | 699 | 0.2+ | 0.8− |

**(138235)∗ 2000 FV$_{24}$ = 2001 OX$_{11}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 15730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.19950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22088529 | $\omega$ | 157.57365 | | −0.16292083 | | +0.97071878 |
| $a$ | 2.7103467 | $\Omega$ | 102.69291 | | −0.93046443 | | −0.09165590 |
| $e$ | 0.0614032 | $i$ | 10.42506 | | −0.32816572 | | −0.22204560 |
| $P$ | 4.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.4− | 0.8− | 2001 07 19 | 644 | 0.5− | 0.5+ | 2004 02 15 | 704 | 0.4+ | 0.1− |
| 2000 03 11 | 699 | 0.2+ | 0.6+ | 2001 07 21 | 644 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.3+ | 0.7+ |
| 2000 03 11 | 699 | 0.6− | 0.5+ | 2001 07 21 | 644 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.2+ | 1.2+ |
| 2000 03 11 | 699 | 0.6− | 0.1− | 2001 07 21 | 644 | 0.0 | 0.3+ | 2006 09 20 | 703 | 0.6− | 0.4+ |
| 2000 03 29 | 704 | 0.0 | 0.2+ | 2001 07 24 | 644 | 0.4− | 0.5+ | 2006 09 20 | 703 | 0.8+ | 0.1+ |
| 2000 03 29 | 704 | 0.2− | 1.0− | 2001 07 24 | 644 | 0.3− | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.7+ |
| 2000 03 29 | 704 | 0.0 | 0.4− | 2001 07 24 | 644 | 0.4− | 0.7+ | 2006 09 25 | 703 | 0.1+ | 0.5− |
| 2000 03 29 | 704 | 0.1+ | 0.5− | 2001 08 14 | 644 | 1.2+ | 0.7− | 2006 09 25 | 703 | 0.1− | 0.4− |
| 2000 04 03 | 704 | 0.4+ | 0.2− | 2001 08 14 | 644 | 0.8+ | 0.3− | 2006 09 25 | 703 | 0.2− | 0.6− |
| 2000 04 03 | 704 | 0.4− | 0.1+ | 2001 08 14 | 644 | 0.7+ | 0.5− | 2006 09 25 | 703 | 0.3− | 0.7− |
| 2000 04 03 | 704 | 0.4− | 0.2+ | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.2− |
| 2000 04 03 | 704 | 0.0 | 0.4+ | 2004 02 11 | 644 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.4− | 0.1− |
| 2000 04 03 | 704 | 0.4+ | 0.4+ | 2004 02 11 | 644 | 0.0 | 0.6+ | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2001 07 19 | 644 | 0.3− | 0.7+ | 2004 02 15 | 704 | 0.0 | 0.8+ | | | | |
| 2001 07 19 | 644 | 0.3− | 0.7+ | 2004 02 15 | 704 | 0.2+ | 0.6+ | | | | |

**(138236)∗ 2000 FA$_{25}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.63791 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24169666 | $\omega$ | 19.99281 | | +0.12362892 | | −0.96689819 |
| $a$ | 2.5524404 | $\Omega$ | 63.46381 | | +0.87314177 | | −0.00089232 |
| $e$ | 0.0997914 | $i$ | 14.44770 | | +0.47152873 | | +0.25516091 |
| $P$ | 4.08 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 704 | 0.3− | 1.9− | 2002 11 11 | 704 | 0.3− | 1.2+ | 2006 10 01 | 704 | 0.6− | 0.2− |
| 1998 11 18 | 704 | 1.6+ | 0.5− | 2002 11 11 | 704 | 0.2− | 0.9+ | 2006 10 01 | 704 | 0.3− | 0.1− |
| 1998 11 18 | 704 | (2.9+ | 1.8+) | 2002 11 22 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 1.1− | 0.3+ |
| 1998 11 18 | 704 | 1.0+ | 0.3+ | 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 1998 11 20 | 699 | 1.3+ | 0.3− | 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 1998 11 20 | 699 | 1.6+ | 0.7+ | 2002 12 01 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.9− |
| 1998 11 20 | 699 | 0.0 | 0.2+ | 2002 12 01 | 704 | 0.0 | 0.3− | 2006 10 16 | 703 | 1.1− | 0.7− |
| 1998 11 21 | 704 | 1.7+ | 1.3− | 2002 12 01 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.8− | 0.6− |
| 1998 11 21 | 704 | 1.6+ | 1.1− | 2002 12 01 | 704 | 1.3− | 0.2− | 2006 10 16 | 703 | (1.6− | 0.4−) |
| 1998 11 21 | 704 | 0.2+ | 0.8− | 2002 12 01 | 704 | (0.1+ | 1.8+) | 2006 11 09 | 644 | 0.4− | 0.2− |
| 1998 11 21 | 704 | (2.3+ | 0.2−) | 2002 12 05 | 704 | 0.5− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 1998 11 21 | 704 | 1.7− | 1.9− | 2002 12 05 | 704 | 0.5− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1998 11 24 | 704 | 1.3+ | 0.1+ | 2002 12 05 | 704 | 0.9− | 0.6+ | 2006 11 13 | 703 | 0.5− | 0.9− |
| 1998 11 24 | 704 | (0.7+ | 2.4−) | 2002 12 05 | 704 | 0.8− | 1.0+ | 2006 11 13 | 703 | 0.4− | 0.2+ |
| 1998 11 24 | 704 | (0.2− | 2.5−) | 2002 12 05 | 704 | 0.2− | 1.2+ | 2006 11 13 | 703 | 0.1− | 0.4− |
| 1998 11 24 | 704 | 0.5− | 1.8− | 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.4− | 0.4− |
| 1998 11 24 | 704 | (5.6− | 2.3−) | 2002 12 06 | 704 | 0.4− | 0.4+ | 2006 11 14 | 704 | 0.7+ | 0.9+ |
| 1998 12 11 | 691 | 0.0 | 0.4− | 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 1998 12 11 | 691 | 0.2− | 0.6− | 2002 12 06 | 704 | 0.7+ | 1.1+ | 2006 11 14 | 704 | 0.1− | 0.2− |
| 1998 12 11 | 691 | 0.3− | 0.2− | 2002 12 06 | 704 | 1.4− | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.5− |
| 2000 03 29 | 704 | 0.4+ | 0.0 | 2002 12 10 | 704 | 1.2+ | 1.1+ | 2006 11 14 | 704 | 0.6+ | 0.9+ |
| 2000 03 29 | 704 | 0.1+ | 0.5+ | 2002 12 10 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 2000 03 29 | 704 | 0.4+ | 0.7+ | 2002 12 10 | 704 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.8− | 0.1+ |
| 2000 04 03 | 704 | 1.0+ | 0.9+ | 2002 12 10 | 704 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.4− | 1.1+ |
| 2000 04 03 | 704 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.2− | 0.4− | 2006 11 17 | 704 | 0.2− | 0.9+ |
| 2000 04 03 | 704 | 0.2− | 1.1+ | 2002 12 31 | 704 | 0.8+ | 1.3− | 2006 11 17 | 704 | 0.2− | 0.7+ |
| 2000 04 04 | 699 | 0.9+ | 0.2+ | 2002 12 31 | 704 | 0.4− | 0.5+ | 2006 11 19 | 703 | 0.1− | 0.0 |
| 2000 04 04 | 699 | 0.8− | 0.3+ | 2002 12 31 | 704 | 0.7− | 0.7+ | 2006 11 19 | 703 | (0.9− | 1.6−) |
| 2000 04 04 | 699 | 0.5+ | 0.1+ | 2002 12 31 | 704 | 0.3− | 0.5− | 2006 11 19 | 703 | 0.4+ | 0.2− |
| 2000 04 04 | 699 | 0.5− | 1.2+ | 2003 01 19 | 644 | 0.1− | 0.7+ | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2000 05 03 | 704 | 1.5+ | 0.3+ | 2003 01 19 | 644 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.6+ | 0.8+ |
| 2000 05 03 | 704 | 0.8+ | 0.5− | 2003 01 19 | 644 | 0.3+ | 0.7+ | 2006 11 20 | 704 | 0.2− | 1.1+ |
| 2000 05 03 | 704 | 0.9− | 0.9+ | 2004 03 28 | 704 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.7+ | 0.1+ |
| 2000 05 03 | 704 | (0.4+ | 2.4+) | 2004 03 28 | 704 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2002 11 05 | 644 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.4+ | 0.9+ |
| 2002 11 05 | 644 | 0.1− | 0.2+ | 2004 03 28 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.4+ | 1.3+ |
| 2002 11 05 | 644 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 0.7+ | 0.4− | 2006 11 20 | 704 | 0.1− | 1.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.2− | 0.8− | 2006 11 20 | 704 | 0.8+ | 1.1+ |
| 2002 11 07 | 704 | 0.0 | 0.3+ | 2006 09 30 | 703 | 1.4− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.8− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2002 11 11 | 704 | 0.5− | 0.8+ | 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2002 11 11 | 704 | 0.3− | 0.8+ | 2006 10 01 | 704 | 0.8+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2002 11 11 | 704 | 0.4− | 0.9+ | 2006 10 01 | 704 | 1.2− | 0.8+ | | | | |

**(138237)∗ 2000 FQ$_{28}$ = 2002 TZ$_{145}$**

Discovered 2000 Mar. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37443)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 245.36669 | | (2000.0) | | | |
| $n$ | 0.22634010 | $\omega$ | 108.49312 | | −0.31489435 | −0.94912656 |
| $a$ | 2.6666236 | $\Omega$ | 359.85753 | | +0.76133642 | −0.25223242 |
| $e$ | 0.1324643 | $i$ | 13.23623 | | +0.56675251 | −0.18851415 |
| $P$ | 4.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 0.5+ | 0.6+ | 2003 12 28 | 704 | 0.1+ | 0.7+ | 2004 03 18 | 644 | 0.2+ | 0.3+ |
| 2000 03 27 | 699 | 0.4+ | 0.4+ | 2003 12 28 | 704 | 0.8+ | 0.1− | 2004 03 18 | 644 | 0.0 | 0.2+ |
| 2000 03 27 | 699 | 0.3− | 0.0 | 2004 01 28 | 703 | 0.5− | 0.1− | 2004 03 18 | 644 | 0.0 | 0.2+ |
| 2000 03 27 | 699 | 0.8− | 0.7− | 2004 01 28 | 703 | 1.0− | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.7+ |
| 2000 04 02 | 699 | 0.5+ | 1.4+ | 2004 01 28 | 703 | (0.8− | 1.7−) | 2004 03 20 | 704 | 0.2+ | 0.5+ |
| 2000 04 02 | 699 | 0.2− | 1.1+ | 2004 01 28 | 703 | 1.0− | 0.7− | 2004 03 20 | 704 | 0.2+ | 0.8+ |
| 2000 04 02 | 699 | 0.0 | 1.5+ | 2004 01 30 | 699 | 0.5− | 0.3+ | 2004 03 20 | 704 | 0.1+ | 0.3+ |
| 2000 04 02 | 699 | (1.3+ | 2.8+) | 2004 01 30 | 699 | 0.7− | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.3− |
| 2000 04 03 | 699 | 0.5+ | 0.3+ | 2004 01 30 | 699 | 0.5− | 0.4− | 2004 03 22 | 704 | 0.0 | 1.1+ |
| 2000 04 03 | 699 | 0.1+ | 0.4+ | 2004 01 30 | 699 | 0.4− | 0.1− | 2004 03 22 | 704 | 0.2− | 0.5− |
| 2000 04 03 | 699 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2004 03 22 | 704 | 0.5− | 0.8− |
| 2000 04 03 | 699 | 0.1+ | 0.5+ | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2004 03 28 | 703 | 1.0− | 0.6− |
| 2000 04 05 | 699 | 0.1− | 0.6− | 2004 01 30 | 704 | 1.1+ | 0.4− | 2004 03 28 | 703 | 0.2− | 0.4+ |
| 2000 04 05 | 699 | 1.5+ | 0.1− | 2004 01 30 | 704 | 0.6+ | 0.0 | 2004 03 28 | 703 | 0.3+ | 0.2+ |
| 2000 04 05 | 699 | 1.6+ | 0.8+ | 2004 01 30 | 704 | 0.3+ | 1.2+ | 2004 03 28 | 703 | 0.5− | 0.5+ |
| 2000 04 05 | 699 | 0.4− | 0.4+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2004 04 19 | 704 | 0.2+ | 0.6+ |
| 2000 04 06 | 699 | 0.2− | 0.8+ | 2004 02 11 | 644 | 0.1− | 0.4+ | 2004 04 19 | 704 | 0.6− | 0.1− |
| 2000 04 06 | 699 | 0.6+ | 0.4+ | 2004 02 11 | 644 | 0.1+ | 0.0 | 2004 04 19 | 704 | 0.9+ | 0.5+ |
| 2000 04 06 | 699 | 1.2+ | 1.1+ | 2004 02 13 | 644 | 0.0 | 0.3− | 2004 04 19 | 704 | 0.7+ | 0.1− |
| 2000 04 06 | 699 | 0.7+ | 0.5+ | 2004 02 13 | 644 | 0.1+ | 0.0 | 2004 04 22 | 704 | 0.8+ | 0.3− |
| 2002 09 15 | 644 | 0.4− | 0.7+ | 2004 02 13 | 644 | 0.3+ | 0.0 | 2004 04 22 | 704 | 0.5+ | 0.8+ |
| 2002 09 15 | 644 | 0.0 | 0.8+ | 2004 02 15 | 704 | 1.2+ | 0.2+ | 2004 04 22 | 704 | 0.8+ | 0.2− |
| 2002 09 15 | 644 | 0.2+ | 0.4+ | 2004 02 15 | 704 | 0.8+ | 0.3+ | 2004 04 22 | 704 | 0.5+ | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.5+ | 2004 02 15 | 704 | 1.4+ | 0.5+ | 2004 04 22 | 704 | 0.3− | 0.4+ |
| 2002 10 04 | 704 | 0.8− | 0.8+ | 2004 02 15 | 704 | 0.9+ | 0.5+ | 2006 08 15 | 644 | 0.7− | 0.6+ |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2004 02 15 | 704 | 1.3+ | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.7+ |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2004 02 16 | 691 | 0.3− | 0.1− | 2006 08 15 | 644 | 0.2− | 0.8+ |
| 2002 10 04 | 704 | 1.4− | 0.1+ | 2004 02 16 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2002 10 06 | 644 | 0.5− | 1.0+ | 2004 02 16 | 691 | 0.3− | 0.0 | 2006 09 14 | 703 | (2.5− | 1.7+) |
| 2002 10 06 | 644 | 0.5− | 0.8+ | 2004 02 17 | 608 | 0.7+ | 1.2− | 2006 09 14 | 703 | (0.4− | 2.4+) |
| 2002 10 06 | 644 | 0.5− | 0.8+ | 2004 02 17 | 608 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.1+ | 0.9+ | 2004 02 17 | 608 | 0.3+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | (0.6− | 1.6+) | 2004 03 14 | 704 | 0.6− | 0.6− | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.2− | 0.9+ | 2004 03 14 | 704 | 0.0 | 0.6− | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2002 10 12 | 704 | 1.4− | 0.7+ | 2004 03 14 | 704 | 0.5− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2002 10 12 | 704 | 1.0− | 0.8+ | 2004 03 14 | 704 | 0.8− | 0.7+ | | | | |
| 2003 12 28 | 704 | 1.3− | 0.0 | 2004 03 14 | 704 | 0.2+ | 0.1− | | | | |

**(138238)∗ 2000 FQ$_{30}$**

Discovered 2000 Mar. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 184.52023 | | (2000.0) | | | |
| $n$ | 0.22621612 | $\omega$ | 154.10056 | | −0.99406802 | −0.00316987 |
| $a$ | 2.6675978 | $\Omega$ | 26.41305 | | −0.06156945 | −0.80758270 |
| $e$ | 0.1342028 | $i$ | 14.14574 | | +0.08965471 | −0.58974583 |
| $P$ | 4.36 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | 0.1− | 0.4− | 2000 04 10 | 704 | 0.6− | 0.1+ | 2004 02 02 | 704 | 0.0 | 0.8+ |
| 2000 03 08 | 704 | 0.5+ | 0.2+ | 2000 04 10 | 704 | 0.3− | 0.3+ | 2004 02 02 | 704 | 0.2+ | 0.6− |
| 2000 03 08 | 704 | 0.1+ | 0.1− | 2000 04 10 | 704 | 0.3+ | 0.1− | 2004 02 02 | 704 | 0.3− | 0.8− |
| 2000 03 08 | 704 | 0.6+ | 0.2+ | 2000 04 10 | 704 | 0.4+ | 0.2+ | 2004 02 11 | 704 | 0.0 | 0.2+ |
| 2000 03 08 | 704 | 0.3+ | 0.8+ | 2000 04 10 | 704 | 0.2+ | 0.7+ | 2004 02 11 | 704 | 0.7+ | 0.1− |
| 2000 03 27 | 699 | 0.6− | 0.1− | 2000 04 29 | 704 | 0.1− | 0.2− | 2004 02 11 | 704 | 0.6+ | 0.3− |
| 2000 03 27 | 699 | 0.5− | 0.1− | 2000 04 29 | 704 | 0.1− | 0.4+ | 2004 02 11 | 704 | 0.2+ | 0.2+ |
| 2000 03 27 | 699 | 0.5− | 0.1− | 2000 04 29 | 704 | 0.1+ | 0.1+ | 2004 02 11 | 704 | 0.1− | 0.2+ |
| 2000 03 27 | 699 | 0.4+ | 0.1− | 2000 04 29 | 704 | 0.2+ | 0.1+ | 2004 02 18 | 703 | 0.4+ | 0.1+ |
| 2000 03 29 | 704 | 0.0 | 0.1− | 2000 04 29 | 704 | 0.1− | 0.2− | 2004 02 18 | 703 | 0.5− | 0.4+ |
| 2000 03 29 | 704 | 0.3+ | 0.2+ | 2002 10 11 | 704 | 0.8− | 0.7+ | 2004 02 18 | 703 | 0.1− | 0.2+ |
| 2000 03 29 | 704 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.8+ | 0.9+ | 2004 02 18 | 703 | 0.0 | 1.0− |
| 2000 03 29 | 704 | 0.5+ | 0.4+ | 2002 10 11 | 704 | 0.5− | 0.3+ | 2004 03 25 | 704 | 0.1+ | 1.1+ |
| 2000 03 29 | 704 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.7− | 0.3+ | 2004 03 25 | 704 | (0.5+ | 2.3−) |
| 2000 04 02 | 699 | 0.8− | 0.2+ | 2003 12 04 | 704 | 0.5+ | 0.3+ | 2004 03 25 | 704 | 0.2− | 0.0 |
| 2000 04 02 | 699 | 0.2+ | 0.1+ | 2003 12 04 | 704 | 0.1− | 1.0+ | 2004 03 25 | 704 | 0.0 | 0.4+ |
| 2000 04 02 | 699 | 0.1− | 0.8+ | 2003 12 04 | 704 | 0.4+ | 0.2− | 2004 03 25 | 704 | 0.6+ | 0.7− |
| 2000 04 02 | 699 | 0.3− | 0.1− | 2003 12 04 | 704 | 0.7+ | 0.9− | 2006 09 18 | 703 | 0.1− | 1.0+ |
| 2000 04 03 | 699 | 0.4+ | 0.4+ | 2003 12 30 | 704 | 0.5− | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.2− |
| 2000 04 03 | 699 | 0.1+ | 0.3− | 2003 12 30 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.7+ | 0.2+ |
| 2000 04 03 | 699 | 0.0 | 0.1− | 2003 12 30 | 704 | 0.7− | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.6+ |
| 2000 04 03 | 699 | 0.1+ | 0.2+ | 2003 12 30 | 704 | 1.1− | 0.8+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2000 04 04 | 704 | 0.7+ | 0.2− | 2003 12 30 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.1− | 1.1+ |
| 2000 04 04 | 704 | 0.5+ | 0.5+ | 2004 01 14 | 644 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.6− | 0.3− |
| 2000 04 04 | 704 | 0.4+ | 0.6+ | 2004 01 14 | 644 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2000 04 04 | 704 | 0.6+ | 0.2+ | 2004 01 14 | 644 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.8+ |
| 2000 04 04 | 704 | 0.4+ | 0.8+ | 2004 01 31 | 704 | 0.5− | 0.5− | 2006 10 12 | 644 | 0.2+ | 1.1+ |
| 2000 04 06 | 699 | 0.4+ | 0.4+ | 2004 01 31 | 704 | 0.9− | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.9+ |
| 2000 04 06 | 699 | 0.2+ | 0.3+ | 2004 01 31 | 704 | 0.8+ | 0.5− | 2006 10 16 | 703 | 1.1− | 0.6+ |
| 2000 04 06 | 699 | 0.2+ | 0.0 | 2004 01 31 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 1.3− |
| 2000 04 06 | 699 | 0.8+ | 0.2+ | 2004 01 31 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2000 04 08 | 704 | 0.1− | 0.2− | 2004 02 02 | 699 | 0.5− | 0.2+ | 2006 10 16 | 703 | 1.1− | 1.0+ |
| 2000 04 08 | 704 | 0.5− | 0.1+ | 2004 02 02 | 699 | 0.6− | 0.2− | 2006 10 22 | 703 | 0.6− | 0.8+ |
| 2000 04 08 | 704 | 0.8+ | 0.5+ | 2004 02 02 | 699 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.8− |
| 2000 04 08 | 704 | 0.7− | 0.2− | 2004 02 02 | 699 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.4− |
| 2000 04 08 | 704 | 0.1− | 0.1− | 2004 02 02 | 704 | 0.7+ | 0.0 | 2006 10 22 | 703 | 1.6− | 0.2+ |

**(138239)∗ 2000 FU$_{32}$ = 2002 VF$_{50}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37446)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.78472 | | (2000.0) | | | |
| $n$ | 0.26150477 | $\omega$ | 358.46950 | | −0.46893511 | −0.88136694 |
| $a$ | 2.4218634 | $\Omega$ | 119.49241 | | +0.81104882 | −0.45542288 |
| $e$ | 0.1372741 | $i$ | 3.77963 | | +0.34971371 | −0.12562765 |
| $P$ | 3.77 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.4+ | 1.0+ | 2002 11 11 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 699 | 1.0− | 0.8− |
| 2000 03 29 | 704 | 0.4− | 0.2+ | 2002 11 11 | 704 | 0.1− | 0.4+ | 2004 04 15 | 699 | (0.3+ | 1.5+) |
| 2000 03 29 | 704 | 1.0− | 0.4− | 2002 11 22 | 644 | 0.0 | 0.1+ | 2004 04 15 | 699 | 0.3+ | 1.3− |
| 2000 03 29 | 704 | 0.8+ | 0.4+ | 2002 11 22 | 644 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.3+ | 1.2+ |
| 2000 03 29 | 704 | 0.1+ | 0.3− | 2002 11 22 | 644 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.0 | 0.8+ |
| 2000 04 04 | 704 | 0.5− | 0.7− | 2002 12 01 | 704 | 0.8− | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.4+ |
| 2000 04 04 | 704 | 0.1− | 0.6+ | 2002 12 01 | 704 | 0.1+ | 0.4+ | 2004 04 19 | 704 | 0.1− | 1.3+ |
| 2000 04 04 | 704 | 0.3− | 0.7+ | 2002 12 01 | 704 | 0.1+ | 1.1− | 2004 04 19 | 704 | 0.6+ | 0.5+ |
| 2000 04 10 | 704 | 0.4+ | 0.3+ | 2002 12 01 | 608 | 0.3− | 0.1+ | 2004 04 22 | 704 | (1.7+ | 0.9−) |
| 2000 04 10 | 704 | 0.6+ | 0.4+ | 2002 12 01 | 608 | 0.0 | 0.3− | 2004 04 22 | 704 | 0.5+ | 0.2− |
| 2000 04 10 | 704 | 0.8+ | 0.1+ | 2002 12 01 | 608 | 0.1+ | 0.1− | 2004 04 22 | 704 | 0.3− | 0.0 |
| 2002 09 09 | 599 | 0.3+ | 0.4+ | 2002 12 07 | 704 | 0.2− | 0.1+ | 2004 04 22 | 704 | (1.6+ | 0.7+) |
| 2002 09 09 | 599 | 0.1+ | 0.2+ | 2002 12 07 | 704 | 0.3− | 0.3+ | 2004 05 13 | 699 | 1.5+ | 0.7− |
| 2002 09 09 | 599 | 0.3+ | 0.5+ | 2002 12 07 | 704 | 0.6+ | 0.3+ | 2004 05 13 | 699 | 0.7− | 0.8− |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2002 12 07 | 704 | 0.4− | 0.2+ | 2004 05 13 | 699 | 1.0− | 0.8+ |
| 2002 10 31 | 644 | 0.0 | 0.3+ | 2002 12 07 | 704 | 0.1+ | 0.7+ | 2004 05 13 | 699 | 1.2− | 0.2+ |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2002 12 12 | 608 | 0.0 | 0.6− | 2005 07 12 | G96 | 0.7− | 0.7+ |
| 2002 11 03 | 608 | 0.4− | 0.6+ | 2002 12 12 | 608 | 0.1+ | 0.6− | 2005 07 12 | G96 | 0.2− | 0.6+ |
| 2002 11 03 | 608 | 0.5− | 0.1+ | 2002 12 12 | 608 | 0.2+ | 0.3− | 2005 07 12 | G96 | 0.3+ | 0.8+ |
| 2002 11 03 | 608 | 0.2+ | 0.1+ | 2003 01 18 | 644 | 0.4− | 0.2− | 2005 07 12 | G96 | 0.5− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 699 | (2.0− | 0.5−) | 2003 01 18 | 644 | 0.4− | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2002 11 05 | 699 | 0.2− | 0.2+ | 2003 01 18 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.3− |
| 2002 11 05 | 699 | 0.1+ | 0.7− | 2003 01 27 | 704 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2002 11 05 | 699 | 0.1− | 1.3+ | 2003 01 27 | 704 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.4− |
| 2002 11 07 | 704 | 0.3− | 1.3+ | 2003 01 27 | 704 | 0.6+ | 0.5+ | 2006 11 29 | 704 | 0.4+ | 0.9+ |
| 2002 11 07 | 704 | 0.3− | 0.4+ | 2004 03 31 | 704 | 1.2+ | 1.1+ | 2006 11 29 | 704 | 1.4+ | 0.4+ |
| 2002 11 07 | 704 | 0.2− | 0.2+ | 2004 03 31 | 704 | 0.9+ | 1.0+ | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2002 11 07 | 704 | 0.4− | 0.2+ | 2004 03 31 | 704 | 0.5+ | 0.5+ | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2002 11 11 | 704 | 0.5+ | 0.7− | 2004 03 31 | 704 | 0.0 | 0.1+ | | | | |
| 2002 11 11 | 704 | 0.4− | 0.2+ | 2004 04 15 | 699 | (1.5− | 1.9+) | | | | |

## (138240)∗ 2000 $FP_{33}$ = 2002 $VC_{70}$

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37446)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.32452 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26593505 | $\omega$ | 56.09587 | | −0.57267857 | −0.80229286 | |
| $a$ | 2.3948905 | $\Omega$ | 69.73042 | | +0.68033001 | −0.57974683 | |
| $e$ | 0.1923850 | $i$ | 10.34289 | | +0.45737329 | −0.14219624 | |
| $P$ | 3.71 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | (4.2− | 0.3+) | 2002 10 31 | 704 | 0.2− | 0.1+ | 2004 05 12 | 699 | 0.1− | 0.3+ |
| 2000 03 05 | 704 | (3.5− | 0.2+) | 2002 10 31 | 704 | 0.2+ | 0.3+ | 2004 05 15 | 704 | 0.1+ | 0.3+ |
| 2000 03 05 | 704 | (5.8− | 1.0+) | 2002 10 31 | 704 | 0.5+ | 0.3− | 2004 05 15 | 704 | 0.4+ | 0.5+ |
| 2000 03 12 | 704 | 0.5+ | 0.0 | 2002 10 31 | 608 | 0.6− | 0.5+ | 2004 05 15 | 704 | 0.4+ | 0.1− |
| 2000 03 12 | 704 | 0.5+ | 0.3+ | 2002 10 31 | 608 | 0.6− | 0.2+ | 2004 05 15 | 704 | 0.5− | 0.4− |
| 2000 03 12 | 704 | 0.4+ | 0.1+ | 2002 10 31 | 608 | 1.3− | 0.1+ | 2004 05 15 | 704 | 0.1− | 0.1− |
| 2000 03 12 | 704 | 0.3+ | 0.4+ | 2002 11 07 | 704 | 0.2− | 0.4+ | 2004 05 21 | 704 | 0.2− | 0.3+ |
| 2000 03 29 | 704 | 0.4+ | 0.0 | 2002 11 07 | 704 | 0.3+ | 1.4+ | 2004 05 21 | 704 | 1.1+ | 0.8+ |
| 2000 03 29 | 704 | 0.1+ | 0.2+ | 2002 11 07 | 704 | 0.2− | 1.2+ | 2004 05 21 | 704 | 0.6+ | 0.8+ |
| 2000 03 29 | 704 | 0.3+ | 0.3+ | 2002 11 07 | 704 | 0.8− | 0.5+ | 2004 05 21 | 704 | 0.1+ | 0.7+ |
| 2000 03 29 | 704 | 0.1+ | 0.7+ | 2002 11 07 | 704 | 1.0− | 0.9+ | 2004 05 22 | 704 | 1.3+ | 0.4+ |
| 2000 04 04 | 704 | 0.3− | 0.3+ | 2002 11 11 | 704 | 0.2− | 0.2+ | 2004 05 22 | 704 | 0.0 | 0.9+ |
| 2000 04 04 | 704 | 0.8− | 1.0+ | 2002 11 11 | 704 | 0.5+ | 0.6+ | 2004 05 22 | 704 | 0.8+ | 0.5+ |
| 2000 04 04 | 704 | 0.2+ | 0.4+ | 2002 11 11 | 704 | 0.1+ | 0.8+ | 2004 05 22 | 704 | 0.1+ | 1.3+ |
| 2000 04 04 | 704 | 0.2− | 0.9+ | 2002 11 11 | 704 | 0.1− | 0.6+ | 2004 05 22 | 704 | 1.3+ | 0.3− |
| 2000 04 04 | 704 | 0.5− | 0.7+ | 2004 03 31 | 704 | 0.7+ | 0.4+ | 2004 05 29 | 703 | 0.9+ | 0.5+ |
| 2000 04 09 | 608 | 0.3− | 0.0 | 2004 03 31 | 704 | 0.4+ | 0.3+ | 2004 05 29 | 703 | 0.5− | 0.7− |
| 2000 04 09 | 608 | 0.2+ | 0.4− | 2004 03 31 | 704 | 1.1+ | 0.3+ | 2004 05 29 | 703 | 0.2− | 0.3− |
| 2000 04 09 | 608 | 0.3+ | 0.6− | 2004 03 31 | 704 | 0.4+ | 0.2− | 2004 05 29 | 703 | 0.6+ | 0.5− |
| 2000 04 28 | 699 | 1.2+ | 0.5+ | 2004 03 31 | 704 | 0.1+ | 0.4+ | 2005 08 04 | 644 | 0.2− | 0.6+ |
| 2000 04 28 | 699 | 0.3+ | 0.9+ | 2004 04 15 | 699 | 0.7+ | 0.4− | 2005 08 04 | 644 | 0.4− | 0.7+ |
| 2000 04 28 | 699 | 0.0 | 0.5+ | 2004 04 15 | 699 | 0.0 | 1.2+ | 2005 08 04 | 644 | 0.4− | 0.7+ |
| 2000 04 28 | 699 | 0.9+ | 0.3− | 2004 04 15 | 699 | 1.1− | 0.5+ | 2005 08 04 | 644 | 0.3− | 1.0+ |
| 2001 07 19 | 644 | 0.1+ | 0.1+ | 2004 04 15 | 699 | 0.2− | 0.7+ | 2005 08 04 | 644 | 0.2− | 0.6+ |
| 2001 07 19 | 644 | 0.4− | 0.2− | 2004 04 20 | 704 | 0.1+ | 0.5+ | 2005 08 04 | 644 | 0.5− | 0.7+ |
| 2001 07 19 | 644 | 0.6− | 0.1+ | 2004 04 20 | 704 | 0.1− | 1.3+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2002 10 09 | 699 | 1.3− | 0.9+ | 2004 04 20 | 704 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2002 10 09 | 699 | (1.8− | 1.6+) | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.7+ |
| 2002 10 09 | 699 | 1.4− | 1.2+ | 2004 04 20 | 704 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.4+ |
| 2002 10 09 | 699 | 1.3− | 0.2− | 2004 04 22 | 704 | 0.4+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 10 26 | 608 | 0.5− | 1.3+ | 2004 04 22 | 704 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2002 10 26 | 608 | 0.4− | 1.2+ | 2004 04 22 | 704 | 0.8+ | 1.0+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2002 10 26 | 608 | 0.4− | 1.2+ | 2004 04 22 | 704 | 0.3+ | 0.9+ | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2002 10 30 | 683 | (1.6− | 1.4+) | 2004 04 22 | 704 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.9+ | 0.1+ |
| 2002 10 30 | 683 | 1.3+ | 1.0+ | 2004 05 11 | 699 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.3− | 0.2− |
| 2002 10 30 | 683 | (1.8+ | 0.9+) | 2004 05 11 | 699 | 0.1+ | 0.6+ | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 2002 10 31 | 683 | (1.5+ | 3.0+) | 2004 05 11 | 699 | 0.0 | 0.5+ | 2006 11 28 | 704 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.2− | 0.5+ | 2004 05 11 | 699 | 0.5− | 0.9+ | 2006 11 28 | 704 | 0.3− | 0.0 |
| 2002 10 31 | 683 | 0.3+ | 0.5+ | 2004 05 12 | 699 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.9+ |
| 2002 10 31 | 704 | 0.2− | 0.1+ | 2004 05 12 | 699 | (0.6− | 1.9+) | | | | |
| 2002 10 31 | 683 | (2.1+ | 0.7+) | 2004 05 12 | 699 | 0.6− | 1.1+ | | | | |

## (138241)∗ 2000 $FS_{33}$

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.34701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22288353 | $\omega$ | 270.61136 | | +0.26733520 | +0.96225079 | |
| $a$ | 2.6941229 | $\Omega$ | 15.19301 | | −0.78837574 | +0.24887195 | |
| $e$ | 0.1513669 | $i$ | 11.23095 | | −0.55407182 | +0.11016423 | |
| $P$ | 4.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 26 | 699 | 0.4+ | 0.5− | 2004 01 28 | 703 | (1.8− | 0.8−) | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2000 03 26 | 699 | 1.0+ | 0.5+ | 2004 01 28 | 703 | 0.1+ | 1.0+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2000 03 26 | 699 | 0.2− | 0.3− | 2004 01 28 | 703 | 0.2+ | 0.7+ | 2006 10 21 | 691 | 1.1− | 0.2+ |
| 2000 03 26 | 699 | 0.6+ | 0.4+ | 2004 03 14 | 704 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 03 29 | 704 | 0.9+ | 1.3+ | 2004 03 14 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 03 29 | 704 | 0.4+ | 0.5+ | 2004 03 14 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2000 03 29 | 704 | 0.5+ | 0.4+ | 2004 03 16 | 691 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2000 03 29 | 704 | 0.2− | 0.3+ | 2004 03 16 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2000 04 04 | 704 | 1.0+ | 0.1+ | 2004 03 16 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2000 04 04 | 704 | 0.5− | 0.5− | 2004 03 23 | 704 | 0.6+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2000 04 04 | 704 | 1.1+ | 0.2− | 2004 03 23 | 704 | 0.0 | 0.5+ | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2000 04 04 | 704 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.6− | 2006 11 07 | 644 | 0.3+ | 0.2+ |
| 2000 04 07 | 699 | 0.1+ | 0.5+ | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 11 14 | 703 | 0.9+ | 0.4− |
| 2000 04 07 | 699 | 0.1− | 0.1+ | 2006 07 22 | G96 | 1.1− | 0.9+ | 2006 11 14 | 703 | 0.7− | 0.2− |
| 2000 04 07 | 699 | 0.5+ | 1.0+ | 2006 07 22 | G96 | 0.6− | 0.1− | 2006 11 14 | 703 | 0.7− | 0.7+ |
| 2000 04 07 | 699 | 0.9+ | 0.4+ | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.5+ |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.6− | 0.3− |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.3− | 1.1− |
| 2001 07 22 | 644 | 0.8− | 0.0 | 2006 08 30 | 699 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2001 07 22 | 644 | 0.9− | 0.4+ | 2006 08 30 | 699 | 0.3− | 0.6+ | 2006 11 16 | 704 | 1.0− | 0.4+ |
| 2001 07 22 | 644 | 0.7− | 0.8+ | 2006 08 30 | 699 | 0.9− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2001 08 14 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2001 08 14 | 644 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.5− |
| 2001 08 14 | 644 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2001 09 11 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2001 09 11 | 704 | 0.3+ | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 704 | 0.3− | 0.8+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2001 09 11 | 704 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2001 09 11 | 704 | 0.1+ | 1.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 01 28 | 703 | 0.8− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ | | | | |

## (138242)∗ 2000 $FW_{33}$

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.83196 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22648877 | $\omega$ | 43.10210 | | −0.98932368 | −0.14039871 | |
| $a$ | 2.6654565 | $\Omega$ | 128.78558 | | +0.11633847 | −0.92233252 | |
| $e$ | 0.0250111 | $i$ | 2.87337 | | +0.08777255 | −0.35998741 | |
| $P$ | 4.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.1+ | 0.1+ | 2004 01 29 | 704 | 0.7− | 0.0 | 2004 03 19 | 704 | 0.4− | 0.3+ |
| 1996 04 14 | 691 | 0.5− | 0.2+ | 2004 01 29 | 704 | 0.7+ | 0.1+ | 2004 03 20 | 691 | 0.0 | 0.2− |
| 1996 04 14 | 691 | 0.4− | 0.1+ | 2004 01 29 | 704 | 0.2+ | 0.1− | 2004 03 20 | 691 | 0.1+ | 0.1+ |
| 2000 03 12 | 704 | 0.5+ | 0.1− | 2004 02 11 | 644 | 0.5+ | 0.2− | 2004 03 20 | 691 | 0.3+ | 0.0 |
| 2000 03 12 | 704 | 0.2+ | 1.1+ | 2004 02 11 | 644 | 0.3+ | 0.0 | 2004 04 12 | 644 | 0.3+ | 0.2+ |
| 2000 03 12 | 704 | (2.1+ | 1.2+) | 2004 02 11 | 644 | 0.3+ | 0.1+ | 2004 04 12 | 644 | 0.3+ | 0.4+ |
| 2000 03 12 | 704 | 0.2+ | 0.6+ | 2004 02 12 | 333 | 0.6− | 0.7− | 2004 04 12 | 644 | 0.2+ | 0.2+ |
| 2000 03 26 | 699 | 0.3+ | 0.2− | 2004 02 12 | 333 | 0.4− | 0.2− | 2004 04 19 | 704 | 0.5+ | 0.2− |
| 2000 03 26 | 699 | 1.1+ | 0.3− | 2004 02 12 | 333 | 0.4− | 0.0 | 2004 04 19 | 704 | 0.9+ | 0.4+ |
| 2000 03 26 | 699 | 0.1− | 0.4− | 2004 02 13 | 333 | 1.3− | 0.4+ | 2004 04 19 | 704 | 0.8+ | 0.6+ |
| 2000 03 26 | 699 | 0.2+ | 0.2+ | 2004 02 13 | 333 | 1.2− | 0.3− | 2006 08 19 | 291 | 0.4− | 0.5+ |
| 2000 03 29 | 704 | 0.3+ | 0.3+ | 2004 02 13 | 333 | 0.6− | 0.0 | 2006 08 19 | 291 | (1.7− | 1.6+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.2+ | 0.5+ | 2004 02 17 | 704 | 0.2− | 0.4+ | 2006 08 19 | 291 | 0.4− | 0.3+ | | |
| 2000 03 29 | 704 | 0.2+ | 1.4+ | 2004 02 17 | 704 | 0.4− | 0.8+ | 2006 09 16 | 704 | 1.0− | 0.0 | | |
| 2000 03 29 | 704 | 0.6+ | 0.4+ | 2004 02 17 | 704 | 0.2− | 1.2+ | 2006 09 16 | 704 | 0.5+ | 0.6− | | |
| 2000 04 04 | 704 | 0.4− | 1.9+ | 2004 02 17 | 704 | 0.0 | 1.2+ | 2006 09 16 | 704 | 0.7− | 1.0+ | | |
| 2000 04 04 | 704 | 1.0+ | 0.3+ | 2004 02 17 | 704 | 0.9− | 0.5+ | 2006 09 16 | 704 | 0.3+ | 0.5− | | |
| 2000 04 04 | 704 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.6− | 0.9+ | | |
| 2000 04 04 | 704 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.3− | 0.1− | 2006 09 22 | 704 | 0.1− | 1.2+ | | |
| 2000 04 04 | 704 | 0.7− | 1.0+ | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 704 | (1.8− | 1.0+) | | |
| 2000 04 07 | 699 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.0 | 0.3+ | 2006 09 22 | 704 | 1.2− | 0.0 | | |
| 2000 04 07 | 699 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.5− | 1.0+ | 2006 09 26 | 704 | (2.2− | 1.5+) | | |
| 2000 04 07 | 699 | 0.8+ | 0.7+ | 2004 02 26 | 704 | 1.2− | 0.5+ | 2006 09 26 | 704 | (0.5− | 2.3+) | | |
| 2000 04 07 | 699 | 0.7+ | 0.7+ | 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 09 26 | 704 | 0.4− | 0.6− | | |
| 2001 08 08 | 644 | 0.8+ | 0.9+ | 2004 02 26 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 1.2+ | | |
| 2001 08 08 | 644 | 1.4+ | 0.7+ | 2004 02 27 | 608 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.0 | 1.5+ | | |
| 2001 08 08 | 644 | 1.3+ | 1.2+ | 2004 02 27 | 608 | 0.1+ | 0.7− | 2006 09 30 | 703 | 0.1− | 1.2+ | | |
| 2002 11 06 | 608 | 0.3− | 0.2− | 2004 02 27 | 608 | 0.3+ | 0.6− | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 2002 11 06 | 608 | 0.4+ | 0.1− | 2004 03 10 | 644 | 0.3− | 0.2− | 2006 09 30 | 703 | 1.3+ | 0.5− | | |
| 2002 11 06 | 608 | 0.1+ | 1.1+ | 2004 03 10 | 644 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.3− | | |
| 2002 11 11 | 704 | 1.4+ | 1.0+ | 2004 03 10 | 644 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.2− | 0.1− | | |
| 2002 11 11 | 704 | 0.7− | 0.3− | 2004 03 14 | 704 | 0.5+ | 0.2− | 2006 09 30 | G96 | 0.1− | 0.2− | | |
| 2002 11 11 | 704 | 0.5− | 0.1+ | 2004 03 14 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.4− | 0.3+ | | |
| 2002 11 11 | 704 | 0.4− | 0.9− | 2004 03 14 | 704 | 1.0+ | 0.4+ | 2006 09 30 | 703 | (1.7− | 1.4+) | | |
| 2002 11 22 | 644 | 0.1+ | 1.1+ | 2004 03 14 | 704 | 0.8+ | 0.6− | 2006 09 30 | 703 | 0.1− | 0.1+ | | |
| 2002 11 22 | 644 | 0.2+ | 0.5+ | 2004 03 14 | 704 | 0.6− | 0.9+ | 2006 09 30 | 703 | 0.2+ | 0.4− | | |
| 2002 11 22 | 644 | 0.9+ | 0.8+ | 2004 03 19 | 691 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2004 01 22 | 704 | 0.5+ | 0.4+ | 2004 03 19 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3− | 0.3+ | | |
| 2004 01 22 | 704 | 0.9+ | 0.4− | 2004 03 19 | 691 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.3− | 0.4+ | | |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.4− | 0.4+ | | |
| 2004 01 22 | 704 | 0.6+ | 1.0− | 2004 03 19 | 704 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.3+ | | |
| 2004 01 22 | 704 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 1.0+ | 2006 10 23 | 644 | 0.3− | 0.8+ | | |
| 2004 01 29 | 704 | 0.6+ | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.6+ | | | | | | |

**(138243)∗ 2000 FQ$_{35}$ = 2004 CB$_{58}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60644)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.32897 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22412568 | $\omega$ | 211.83432 | | −0.47430182 | +0.87168402 | |
| $a$ | 2.6841594 | $\Omega$ | 30.37453 | | −0.74788388 | −0.32506386 | |
| $e$ | 0.0928809 | $i$ | 14.11443 | | −0.46444319 | −0.36674303 | |
| $P$ | 4.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.4+ | 0.0 | 2002 12 12 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.5+ | | |
| 2000 03 11 | 699 | 0.2− | 1.2+ | 2002 12 12 | 644 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.8− | 0.2+ | | |
| 2000 03 11 | 699 | 1.0+ | 0.4+ | 2002 12 12 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.0 | | |
| 2000 03 11 | 699 | 0.9+ | 0.1− | 2004 01 17 | 691 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.2− | 0.3− | | |
| 2000 03 29 | 704 | 0.6+ | 0.3+ | 2004 01 17 | 691 | 0.2− | 0.5− | 2006 10 15 | 703 | 0.8− | 0.0 | | |
| 2000 03 29 | 704 | 0.6+ | 1.2+ | 2004 01 17 | 691 | 0.3+ | 0.5− | 2006 10 15 | 703 | 0.3+ | 0.6+ | | |
| 2000 03 29 | 704 | 0.7+ | 0.3+ | 2004 02 14 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 703 | 0.9− | 0.3− | | |
| 2000 03 29 | 704 | 0.1− | 1.4+ | 2004 02 14 | 704 | 0.5− | 0.1+ | 2006 10 17 | G96 | (0.5+ | 1.7−) | | |
| 2000 03 29 | 704 | 0.2+ | 0.5+ | 2004 02 14 | 704 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.8+ | 1.0− | | |
| 2000 04 04 | 704 | 0.4+ | 0.9+ | 2004 02 14 | 704 | (0.9− | 2.0+) | 2006 10 17 | G96 | 1.0+ | 0.9− | | |
| 2000 04 04 | 704 | 0.6+ | 0.1− | 2004 02 15 | 644 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.3− | 0.3− | | |
| 2000 04 04 | 704 | 0.8+ | 1.0+ | 2004 02 15 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.3− | | |
| 2000 04 04 | 704 | 1.1+ | 1.4+ | 2004 02 15 | 644 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.2+ | | |
| 2000 04 08 | 704 | 0.3− | 0.5+ | 2004 02 15 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | (1.9+ | 1.2+) | | |
| 2000 04 08 | 704 | 1.1− | 0.6+ | 2004 02 15 | 644 | 0.3− | 0.1+ | 2006 10 21 | 703 | (1.6+ | 1.2−) | | |
| 2000 04 08 | 704 | 1.8+ | 0.2+ | 2004 02 15 | 644 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2000 04 08 | 704 | 0.5+ | 0.4+ | 2004 03 17 | 644 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1− | | |
| 2000 04 10 | 704 | 0.3+ | 0.2− | 2004 03 17 | 644 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2000 04 10 | 704 | 1.9− | 1.7+ | 2004 03 17 | 644 | 0.1− | 0.2− | 2006 10 29 | 291 | 0.0 | 0.2+ | | |
| 2000 04 10 | 704 | 1.4+ | 1.0+ | 2006 09 27 | 691 | 0.4− | 0.7+ | 2006 10 29 | 291 | 0.0 | 0.2+ | | |
| 2000 04 10 | 704 | 0.6+ | 1.6+ | 2006 09 27 | 691 | 0.3− | 0.0 | 2006 10 29 | 291 | 0.2+ | 0.4+ | | |
| 2000 04 10 | 704 | 1.2+ | 1.8+ | 2006 09 27 | 691 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2000 04 25 | 699 | 0.4+ | 0.2− | 2006 09 30 | 703 | (2.1− | 0.2−) | 2006 11 01 | 691 | 0.3+ | 0.1+ | | |
| 2000 04 25 | 699 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.5+ | | |
| 2000 04 25 | 699 | 0.2+ | 0.2+ | 2006 09 30 | 703 | (2.3− | 0.7−) | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2000 04 25 | 699 | 1.0+ | 0.2− | 2006 09 30 | 703 | (1.7− | 0.5−) | 2006 11 11 | G96 | 0.1+ | 0.6− | | |
| 2000 04 27 | 699 | 0.4+ | 1.4+ | 2006 10 01 | 691 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.4− | | |
| 2000 04 27 | 699 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.5− | | |
| 2000 04 27 | 699 | 0.0 | 0.4− | 2006 10 01 | 691 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.1− | | |
| 2000 04 27 | 699 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.6+ | 2006 11 22 | G96 | 0.5− | 0.2− | | |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.1− | | |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.6− | | |

**(138244)∗ 2000 FJ$_{38}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.55818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24032608 | $\omega$ | 41.02169 | | −0.85846584 | +0.51257041 | |
| $a$ | 2.5621356 | $\Omega$ | 169.76976 | | −0.49257001 | −0.81447082 | |
| $e$ | 0.0956607 | $i$ | 5.67074 | | −0.14286776 | −0.27186183 | |
| $P$ | 4.10 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 17 | 691 | 0.6− | 0.1+ | 2004 03 16 | 704 | 1.4+ | 0.3− | 2004 03 30 | 683 | (0.4+ | 2.5+) | | |
| 1996 05 17 | 691 | 0.3+ | 0.1+ | 2004 03 16 | 704 | 0.4+ | 0.3+ | 2004 03 30 | 683 | 0.7+ | 1.5− | | |
| 1996 05 17 | 691 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.1+ | 0.4+ | 2004 03 30 | 683 | 0.8− | 0.0 | | |
| 2000 03 27 | 699 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.4− | 0.4− | 2004 04 11 | 644 | 0.0 | 0.3+ | | |
| 2000 03 27 | 699 | 1.3− | 0.5− | 2004 03 16 | 704 | 0.3− | 0.1+ | 2004 04 11 | 644 | 0.1+ | 0.0 | | |
| 2000 03 27 | 699 | 0.8− | 0.1− | 2004 03 17 | 704 | 0.6+ | 0.0 | 2004 04 11 | 644 | 0.1+ | 0.3+ | | |
| 2000 03 27 | 699 | 0.6+ | 0.7− | 2004 03 17 | 704 | 1.2+ | 0.1+ | 2004 04 15 | 691 | 0.3− | 0.2− | | |
| 2000 03 29 | 704 | 0.1+ | 0.5− | 2004 03 17 | 704 | 0.0 | 0.4+ | 2004 04 15 | 691 | 0.6− | 0.0 | | |
| 2000 03 29 | 704 | 0.5+ | 1.3+ | 2004 03 17 | 704 | 0.5+ | 0.1− | 2004 04 15 | 691 | 0.5− | 0.1− | | |
| 2000 03 29 | 704 | 0.8+ | 1.4+ | 2004 03 17 | 691 | 0.3− | 0.1− | 2004 04 15 | 699 | 0.3− | 0.5+ | | |
| 2000 03 29 | 704 | 0.3− | 0.4− | 2004 03 17 | 691 | 0.1− | 0.0 | 2004 04 15 | 699 | 1.2− | 0.2+ | | |
| 2000 03 29 | 704 | 0.1− | 0.6+ | 2004 03 17 | 691 | 0.1− | 0.0 | 2004 04 15 | 699 | 0.2+ | 0.6+ | | |
| 2000 04 03 | 699 | 0.2− | 0.6− | 2004 03 18 | 704 | 0.1+ | 0.1− | 2004 04 15 | 699 | 1.4+ | 0.0 | | |
| 2000 04 03 | 699 | 0.1+ | 0.5− | 2004 03 18 | 704 | 0.1+ | 0.7− | 2004 04 19 | 704 | 0.0 | 0.3+ | | |
| 2000 04 03 | 699 | 0.6+ | 1.3+ | 2004 03 18 | 704 | 0.2+ | 0.2− | 2004 04 19 | 704 | 0.0 | 0.3+ | | |
| 2000 04 03 | 699 | 0.5+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.3− | 2004 04 19 | 704 | 0.3− | 0.2+ | | |
| 2000 04 04 | 704 | 0.7+ | 0.6+ | 2004 03 18 | 704 | 0.4+ | 0.3− | 2004 04 19 | 704 | 0.1+ | 0.8+ | | |
| 2000 04 04 | 704 | 0.6+ | 0.6− | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2005 07 29 | 644 | 0.2− | 1.2+ | | |
| 2000 04 04 | 704 | 1.0+ | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2005 07 29 | 644 | 0.0 | 0.9+ | | |
| 2000 04 06 | 699 | 0.1+ | 0.2− | 2004 03 18 | 704 | (2.8+ | 1.0−) | 2005 07 29 | 644 | 0.0 | 1.0+ | | |
| 2000 04 06 | 699 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2005 08 25 | 644 | 0.3+ | 0.6+ | | |
| 2000 04 06 | 699 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.0 | 2005 08 25 | 644 | 0.5− | 0.8+ | | |
| 2000 04 06 | 699 | 0.3− | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.4− | 2005 08 25 | 644 | 0.7− | 1.0+ | | |
| 2000 04 08 | 704 | 1.9+ | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.8− | 2005 10 26 | G96 | 0.5+ | 0.9+ | | |
| 2000 04 08 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.6− | 2005 10 26 | G96 | 0.9− | 0.3+ | | |
| 2000 04 08 | 704 | 0.1+ | 0.4+ | 2004 03 19 | 704 | 0.5+ | 0.6− | 2005 10 26 | G96 | 0.3− | 0.1− | | |
| 2000 04 08 | 704 | 0.5− | 0.7+ | 2004 03 19 | 704 | 0.1+ | 0.7− | 2005 10 26 | G96 | (0.8− | 1.8+) | | |
| 2000 04 08 | 704 | 0.0 | 1.2+ | 2004 03 20 | 704 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.6− | | |
| 2000 04 10 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.2− | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.5+ | | |
| 2000 04 10 | 704 | 0.7+ | 0.8+ | 2004 03 20 | 704 | 0.5+ | 0.3− | 2006 10 17 | G96 | 1.0+ | 0.4+ | | |
| 2000 04 10 | 704 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.9+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.8+ | | |
| 2000 04 10 | 704 | 0.1+ | 0.4− | 2004 03 20 | 704 | 1.2+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.4+ | | |
| 2000 04 10 | 704 | 0.1− | 0.6− | 2004 03 22 | 704 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.1+ | | |
| 2000 05 03 | 704 | 0.3− | 0.4+ | 2004 03 22 | 704 | 0.2− | 0.2+ | 2006 10 17 | G96 | 1.0+ | 0.3+ | | |
| 2000 05 03 | 704 | 0.5+ | 0.4+ | 2004 03 22 | 704 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.5+ | 0.2− | | |
| 2000 05 03 | 704 | 1.1+ | 0.8+ | 2004 03 22 | 704 | 0.5− | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.2+ | | |
| 2000 05 03 | 704 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 0.6− | 0.9+ | 2006 10 18 | 691 | 0.5− | 0.2+ | | |
| 2004 02 26 | 704 | 0.4+ | 1.4+ | 2004 03 28 | 683 | (0.1+ | 3.2−) | 2006 10 18 | 691 | 0.3− | 0.4+ | | |
| 2004 02 26 | 704 | 0.6+ | 0.8− | 2004 03 28 | 683 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2+ | | |
| 2004 02 26 | 704 | 0.3+ | 0.1+ | 2004 03 28 | 683 | (1.9− | 1.4−) | 2006 10 22 | 691 | 0.4− | 0.0 | | |
| 2004 02 26 | 704 | 0.7+ | 0.2+ | 2004 03 28 | 704 | 0.9− | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.5+ | | |
| 2004 03 15 | 703 | 0.7+ | 0.4− | 2004 03 28 | 704 | 0.2− | 0.1+ | 2006 11 19 | 703 | 1.1+ | 0.3+ | | |
| 2004 03 15 | 703 | 0.7− | 0.7− | 2004 03 28 | 704 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.6+ | | |
| 2004 03 15 | 703 | 0.6− | 0.7+ | 2004 03 28 | 704 | 0.6− | 1.5+ | 2006 11 19 | 703 | 0.4+ | 1.2+ | | |
| 2004 03 15 | 703 | 0.9− | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.1− | 0.2+ | | |

**(138245)∗ 2000 FG$_{40}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 151.94660 | | $\omega$ | (2000.0) | −0.98529454 | +0.16224309 |
| $n$ | 0.21451254 | | $\Omega$ | 30.65846 | −0.17071319 | −0.94794595 |
| $a$ | 2.7637638 | | $i$ | 158.48212 | +0.00718852 | −0.27399938 |
| $e$ | 0.2045687 | | $H$ | 8.40120 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.59 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | 0.3+ | 0.2+ | 2000 04 09 | 739 | 0.5− | 0.5− | 2002 10 30 | 645 | 0.0 | 0.2+ |
| 2000 03 08 | 704 | 0.1+ | 0.5− | 2000 04 09 | 739 | 0.5+ | 0.2− | 2002 10 30 | 645 | 0.0 | 0.3+ |
| 2000 03 08 | 704 | 0.6+ | 0.3+ | 2000 04 11 | 608 | 0.0 | 0.8− | 2004 01 18 | 644 | 0.5− | 0.7+ |
| 2000 03 08 | 704 | 0.2− | 0.0 | 2000 04 11 | 608 | 0.2+ | 0.8− | 2004 01 18 | 644 | 0.5− | 0.7+ |
| 2000 03 08 | 704 | 0.0 | 0.0 | 2000 04 11 | 608 | 0.0 | 1.0− | 2004 01 18 | 644 | 0.2− | 0.7+ |
| 2000 03 29 | 704 | 0.4+ | 0.4+ | 2000 04 27 | 699 | 0.4− | 0.1− | 2005 05 12 | 621 | 0.4+ | 0.1+ |
| 2000 03 29 | 704 | 0.1+ | 0.3+ | 2000 04 27 | 704 | 0.6− | 0.2− | 2005 05 12 | 621 | 0.2− | 0.3− |
| 2000 03 29 | 704 | 0.3− | 0.2+ | 2000 04 27 | 699 | 0.7− | 0.4+ | 2005 05 12 | 621 | 0.5+ | 0.1+ |
| 2000 03 29 | 704 | 0.4+ | 0.1+ | 2000 04 27 | 704 | 0.0 | 0.7+ | 2005 06 03 | E12 | 0.1+ | 0.3+ |
| 2000 03 29 | 704 | 0.3+ | 0.3+ | 2000 04 27 | 699 | 0.8− | 0.4+ | 2005 06 03 | E12 | 0.1+ | 0.3− |
| 2000 04 02 | 699 | 0.1+ | 0.6+ | 2000 04 27 | 704 | 1.3− | 0.3− | 2005 06 03 | E12 | 0.2− | 0.0 |
| 2000 04 02 | 699 | 0.1− | 0.5+ | 2000 04 27 | 699 | 0.3− | 0.7+ | 2006 08 18 | 691 | 0.2− | 0.4+ |
| 2000 04 02 | 699 | 0.1− | 0.7+ | 2000 04 27 | 704 | 0.4− | 0.9+ | 2006 08 18 | 691 | 0.2− | 0.3+ |
| 2000 04 02 | 699 | 0.0 | 0.5+ | 2000 04 27 | 704 | 0.8− | 0.4+ | 2006 08 18 | 691 | 0.2− | 0.5+ |
| 2000 04 03 | 699 | 0.4+ | 0.1+ | 2000 05 04 | 704 | (2.1+ | 0.4−) | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2000 04 03 | 699 | 0.2+ | 0.2+ | 2000 05 04 | 704 | 1.4+ | 1.3+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2000 04 03 | 699 | 0.8+ | 0.7+ | 2000 05 04 | 704 | 0.5+ | 0.8− | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2000 04 03 | 699 | 0.2+ | 0.5+ | 2000 05 04 | 704 | 1.2+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.1+ |
| 2000 04 04 | 704 | 0.6+ | 0.5+ | 2000 06 03 | 699 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2000 04 04 | 704 | 0.4+ | 0.1+ | 2000 06 03 | 699 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2000 04 04 | 704 | 0.7+ | 0.6+ | 2000 06 03 | 699 | 0.7− | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.1+ |
| 2000 04 04 | 704 | 1.0+ | 1.0+ | 2000 06 03 | 699 | 0.9− | 0.8+ | 2006 11 27 | G96 | 0.3+ | 0.3+ |
| 2000 04 04 | 704 | 0.4+ | 0.9+ | 2001 08 16 | 704 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2000 04 08 | 704 | 0.8+ | 1.0+ | 2001 08 16 | 704 | 0.1+ | 0.9− | 2006 11 27 | G96 | 0.2− | 0.2+ |
| 2000 04 08 | 704 | 0.4− | 0.2+ | 2001 08 16 | 704 | 0.8− | 1.0− | 2006 11 27 | G96 | 0.5− | 0.3− |
| 2000 04 08 | 704 | 0.3+ | 0.3+ | 2001 08 16 | 704 | 0.4− | 0.3+ | | | | |
| 2000 04 08 | 704 | 0.2− | 0.5− | 2001 08 16 | 704 | 0.8− | 0.3− | | | | |

**(138246)∗ 2000 FZ$_{46}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 113.96379 | | $\omega$ | (2000.0) | −0.32459195 | +0.93008661 |
| $n$ | 0.21817597 | | $\Omega$ | 182.36371 | −0.86474848 | −0.21814340 |
| $a$ | 2.7327387 | | $i$ | 68.73542 | −0.38321030 | −0.29555430 |
| $e$ | 0.1710188 | | $H$ | 10.63492 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.52 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.6+ | 0.3+ | 2000 05 11 | 699 | 0.5+ | 0.4− | 2001 09 11 | 704 | 0.3− | 1.2+ |
| 2000 03 11 | 699 | 0.4+ | 0.3− | 2000 05 11 | 699 | 0.9− | 0.3+ | 2001 09 11 | 704 | 0.1+ | 0.4− |
| 2000 03 11 | 699 | 0.4+ | 0.1− | 2000 05 24 | 699 | 0.5+ | 0.4+ | 2001 09 11 | 704 | 1.2− | 0.6+ |
| 2000 03 11 | 699 | 0.0 | 0.2+ | 2000 05 24 | 699 | 1.0− | 0.6+ | 2001 09 17 | 699 | 0.9− | 1.1+ |
| 2000 03 29 | 704 | 0.2− | 0.1− | 2000 05 24 | 699 | 0.1+ | 0.3− | 2001 09 17 | 699 | (0.5− | 1.5+) |
| 2000 03 29 | 704 | 0.3+ | 0.3− | 2000 05 24 | 699 | 0.1+ | 0.2+ | 2001 09 17 | 699 | 0.8+ | 1.1− |
| 2000 03 29 | 704 | 0.1+ | 0.0 | 2000 06 03 | 699 | 0.5+ | 0.1− | 2001 09 17 | 699 | 0.3− | 0.2+ |
| 2000 03 29 | 704 | 0.6− | 0.0 | 2000 06 03 | 699 | 1.2− | 0.1+ | 2004 01 17 | 644 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.0 | 0.0 | 2000 06 03 | 699 | 0.7− | 0.3+ | 2004 01 17 | 644 | 0.4− | 0.3+ |
| 2000 04 05 | 704 | 0.2+ | 0.2+ | 2000 06 03 | 699 | 0.8+ | 0.1+ | 2004 01 17 | 644 | 0.3− | 0.3+ |
| 2000 04 05 | 704 | 0.2− | 0.5− | 2001 07 21 | 644 | 0.1+ | 0.9+ | 2004 02 14 | 704 | 0.1+ | 0.5+ |
| 2000 04 05 | 704 | 1.2− | 0.6+ | 2001 07 21 | 644 | 0.8− | 0.8+ | 2004 02 14 | 704 | 0.0 | 1.4+ |
| 2000 04 05 | 704 | 0.1+ | 0.7+ | 2001 07 21 | 644 | 0.2− | 0.9+ | 2004 02 14 | 704 | 0.7+ | 0.4+ |
| 2000 04 08 | 704 | 0.6+ | 0.2− | 2001 08 19 | 704 | 0.8+ | 0.0 | 2004 02 18 | 201 | 0.8+ | 0.4− |
| 2000 04 08 | 704 | 0.1− | 0.1− | 2001 08 19 | 704 | 0.2− | 0.7− | 2004 02 18 | 201 | 0.5+ | 0.3− |
| 2000 04 08 | 704 | 1.1− | 0.3+ | 2001 08 19 | 704 | 0.3− | 0.5+ | 2004 02 18 | 201 | 0.4+ | 0.2− |
| 2000 04 08 | 704 | 1.4− | 0.2+ | 2001 08 19 | 704 | 0.5+ | 0.5+ | 2006 10 03 | G96 | 0.2− | 0.1− |
| 2000 04 08 | 704 | 0.6− | 0.6− | 2001 08 23 | 608 | (0.6+ | 1.8−) | 2006 10 03 | G96 | 0.5− | 0.1− |
| 2000 04 13 | 704 | 1.4+ | 1.1− | 2001 08 23 | 608 | (0.2− | 1.7−) | 2006 10 03 | G96 | 0.2− | 0.2+ |
| 2000 04 13 | 704 | 0.2+ | 0.6− | 2001 08 23 | 608 | (0.7− | 1.9−) | 2006 10 03 | G96 | 0.6− | 0.1− |
| 2000 04 13 | 704 | 0.7+ | 0.1+ | 2001 08 25 | 699 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 2000 04 13 | 704 | 0.2+ | 0.3+ | 2001 08 25 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2000 04 13 | 704 | 0.8− | 1.3+ | 2001 08 25 | 699 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2000 05 03 | 704 | 0.1− | 0.5+ | 2001 08 25 | 699 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.4− |
| 2000 05 03 | 704 | 1.7+ | 0.7+ | 2001 09 09 | 608 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2000 05 03 | 704 | 0.4+ | 0.9+ | 2001 09 09 | 608 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2000 05 03 | 704 | 0.1+ | 0.3+ | 2001 09 09 | 608 | 0.1+ | 0.6− | 2006 10 23 | 644 | 0.0 | 0.8+ |
| 2000 05 11 | 699 | 0.8+ | 0.4+ | 2001 09 11 | 704 | 0.0 | 0.0 | | | | |
| 2000 05 11 | 699 | 0.1+ | 1.4− | 2001 09 11 | 704 | 0.0 | 0.0 | | | | |

**(138247)∗ 2000 FN$_{50}$ = 2004 FF$_{43}$**

Discovered 2000 Mar. 29 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 93811)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.05802 | | $\omega$ | (2000.0) | +0.98352557 | −0.18039123 |
| $n$ | 0.22919867 | | $\Omega$ | 31.23785 | +0.15834698 | +0.89090336 |
| $a$ | 2.6444051 | | $i$ | 339.14515 | +0.08719914 | +0.41683354 |
| $e$ | 0.1175676 | | $H$ | 1.88041 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.30 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.3+ | 0.4− | 2006 07 22 | G96 | 1.0− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2000 03 29 | 691 | 0.3− | 0.6− | 2006 07 22 | G96 | 1.2− | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2000 03 29 | 691 | 0.1− | 0.2− | 2006 07 22 | G96 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2000 04 05 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | (0.5+ | 2.0+) | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 04 05 | 691 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.7+ |
| 2000 04 05 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.3+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 1.4+ | 0.8+ | 2006 09 14 | 703 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 1.3+ | 0.8+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | (0.8+ | 1.7−) | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.4− | 0.3+ |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2002 12 03 | 608 | 0.5− | 1.2− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 12 03 | 608 | 0.1− | 0.4− | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 12 03 | 608 | 0.6− | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 1.2− | 1.0− |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.6− | 0.9+ | 2006 11 11 | 703 | 1.5+ | 1.0− |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.5+ | 0.0 |
| 2002 12 11 | 704 | 0.9− | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 1.3+ |
| 2002 12 11 | 704 | 0.7− | 0.3− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 12 27 | 644 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 12 27 | 644 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 12 27 | 644 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 291 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2004 03 20 | 291 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 18 | 291 | 0.3+ | 0.1+ |
| 2004 03 20 | 291 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 18 | 291 | 0.1− | 0.1+ |
| 2006 07 22 | G96 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 18 | 291 | 0.0 | 0.0 |

**(138248)∗ 2000 FP$_{53}$ = 2001 SC$_{194}$**

Discovered 2000 Mar. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 17244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.43528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22687909 | $\omega$ | 76.16845 | | +0.10449259 | +0.99449161 | |
| $a$ | 2.6623985 | $\Omega$ | 199.83507 | | −0.92157191 | +0.09371316 | |
| $e$ | 0.1693220 | $i$ | 1.38985 | | −0.37388036 | +0.04694976 | |
| $P$ | 4.34 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.4+ | 0.1+ | 2001 09 23 | 691 | 0.0 | 0.2+ | 2005 07 15 | G96 | 0.6− | 0.3− |
| 2000 03 30 | 691 | 0.4+ | 0.2+ | 2001 10 11 | 644 | 0.2+ | 0.8+ | 2005 07 15 | G96 | 0.1− | 0.3− |
| 2000 03 30 | 691 | 0.5+ | 0.1+ | 2001 10 11 | 644 | 0.3+ | 0.6+ | 2005 07 30 | E12 | 0.5+ | 0.4− |
| 2000 04 05 | 691 | 1.2− | 0.2+ | 2001 10 11 | 644 | 0.1− | 0.6+ | 2005 07 30 | E12 | 0.6− | 0.3+ |
| 2000 04 05 | 691 | 0.6− | 0.3+ | 2004 02 16 | 691 | 0.3+ | 0.3+ | 2005 07 30 | E12 | (1.8+ | 0.4+) |
| 2000 04 05 | 691 | 0.8− | 0.1+ | 2004 02 16 | 691 | 0.8+ | 0.2+ | 2005 07 30 | E12 | 0.0 | 0.2− |
| 2000 04 06 | 699 | 0.5+ | 1.3+ | 2004 02 16 | 691 | 0.4+ | 0.1+ | 2005 08 06 | 704 | 0.0 | 0.4− |
| 2000 04 06 | 704 | 0.8+ | 0.7+ | 2005 05 19 | G96 | 0.2− | 0.4− | 2005 08 06 | 704 | (0.3+ | 1.7−) |
| 2000 04 06 | 699 | 0.5+ | 1.1+ | 2005 05 19 | G96 | 0.0 | 0.3− | 2005 08 06 | 704 | 0.3+ | 0.9− |
| 2000 04 06 | 704 | 1.1+ | 0.3+ | 2005 05 19 | G96 | 0.2− | 0.4− | 2005 08 06 | 704 | 0.1+ | 0.9− |
| 2000 04 06 | 699 | 0.5+ | 0.1+ | 2005 05 19 | G96 | 0.1+ | 0.2− | 2005 08 06 | 704 | 0.0 | 0.5− |
| 2000 04 06 | 704 | 0.5+ | 0.9+ | 2005 06 29 | 691 | 0.2− | 0.1+ | 2005 09 30 | G96 | 0.2− | 0.4+ |
| 2000 04 06 | 699 | 1.2+ | 0.4+ | 2005 06 29 | 691 | 0.1− | 0.0 | 2005 09 30 | G96 | 0.2− | 0.5+ |
| 2000 04 06 | 704 | 0.3+ | 1.4+ | 2005 06 29 | 691 | 0.2− | 0.0 | 2005 09 30 | G96 | 0.6− | 0.4+ |
| 2001 08 25 | 691 | 0.2− | 0.1+ | 2005 07 04 | G96 | 0.0 | 0.0 | 2005 09 30 | G96 | 0.1+ | 0.5+ |
| 2001 08 25 | 691 | 0.2− | 0.2− | 2005 07 04 | G96 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 08 25 | 691 | 0.1− | 0.3+ | 2005 07 04 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2005 07 04 | G96 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2005 07 05 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.7− | 0.4− |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2005 07 05 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.4+ | 0.6+ | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.5− | 2005 07 10 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2005 07 10 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.5+ | 0.5+ | 2005 07 10 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2005 07 10 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2005 07 10 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2005 07 10 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2001 09 23 | 691 | 0.2− | 0.2+ | 2005 07 15 | G96 | 0.5− | 0.1− | 2006 11 21 | 691 | 0.4− | 0.2+ |
| 2001 09 23 | 691 | 0.0 | 0.3+ | 2005 07 15 | G96 | 0.2+ | 0.0 | | | | |

**(138249)∗ 2000 FL$_{56}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.34269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22736930 | $\omega$ | 68.41100 | | −0.25938140 | −0.96013465 | |
| $a$ | 2.6585704 | $\Omega$ | 37.12316 | | +0.80987397 | −0.27503258 | |
| $e$ | 0.0799563 | $i$ | 9.94433 | | +0.52614203 | −0.04998526 | |
| $P$ | 4.33 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.1− | 0.8+ | 2002 10 31 | 699 | 0.2+ | 1.0+ | 2004 02 15 | 704 | 1.2+ | 0.0 |
| 2000 03 29 | 704 | 0.8+ | 0.1+ | 2002 10 31 | 699 | 0.3− | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.3− |
| 2000 03 29 | 704 | 0.6+ | 0.2+ | 2002 10 31 | 704 | 0.4− | 0.1+ | 2004 03 14 | 704 | 1.3− | 0.5+ |
| 2000 04 02 | 699 | 0.9+ | 0.9+ | 2002 10 31 | 704 | 0.3− | 0.3+ | 2004 03 14 | 704 | 0.2+ | 0.9+ |
| 2000 04 02 | 699 | 1.0+ | 0.4+ | 2002 10 31 | 699 | 0.5− | 1.3+ | 2004 03 14 | 704 | 0.0 | 0.2− |
| 2000 04 02 | 699 | 0.3+ | 0.6+ | 2002 10 31 | 704 | 0.2+ | 0.8− | 2004 03 14 | 704 | 0.0 | 1.4+ |
| 2000 04 02 | 699 | 0.3+ | 0.6+ | 2002 10 31 | 699 | 0.2− | 0.8+ | 2004 03 23 | 704 | 0.1+ | 1.2+ |
| 2000 04 08 | 704 | 0.9+ | 0.5− | 2002 10 31 | 704 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.2− |
| 2000 04 08 | 704 | 1.6+ | 1.2+ | 2002 11 06 | 704 | 0.4+ | 0.8+ | 2004 03 23 | 704 | (0.7− | 1.8+) |
| 2000 04 08 | 704 | 0.3− | 0.5− | 2002 11 06 | 704 | (0.4− | 1.8+) | 2004 03 23 | 704 | 0.1+ | 0.9+ |
| 2000 04 08 | 704 | 0.7− | 0.5− | 2002 11 06 | 704 | 0.4+ | 0.4− | 2004 03 23 | 704 | 0.1− | 1.2+ |
| 2000 04 08 | 704 | 0.1− | 0.7+ | 2002 11 06 | 704 | 0.7+ | 0.2+ | 2004 03 25 | 704 | 0.7+ | 1.4− |
| 2000 05 04 | 645 | 0.0 | 0.2+ | 2003 12 19 | 704 | 0.2+ | 1.2+ | 2004 03 25 | 704 | 0.7+ | 1.3− |
| 2000 05 04 | 645 | 0.0 | 0.2+ | 2003 12 19 | 704 | 0.2− | 0.5+ | 2004 03 25 | 704 | 0.5+ | 0.1− |
| 2002 09 14 | 608 | 0.6− | 1.1+ | 2003 12 19 | 704 | (0.5− | 1.8+) | 2004 03 25 | 704 | 0.7+ | 0.2+ |
| 2002 09 14 | 608 | 0.7− | 0.1+ | 2003 12 28 | 704 | 0.4− | 0.1− | 2006 08 30 | 699 | 0.7+ | 0.3+ |
| 2002 09 14 | 608 | 0.4− | 1.2+ | 2003 12 28 | 704 | 0.0 | 0.4− | 2006 08 30 | 699 | 0.6+ | 1.0+ |
| 2002 09 17 | 608 | 0.5− | 0.0 | 2003 12 28 | 704 | 0.6+ | 0.4− | 2006 08 30 | 699 | (0.1+ | 2.0+) |
| 2002 09 17 | 608 | 0.7− | 0.4+ | 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 08 30 | 699 | 1.3− | 0.8+ |
| 2002 09 17 | 608 | 1.3− | 0.7+ | 2004 01 28 | 703 | 0.8− | 0.8− | 2006 09 14 | 703 | 0.3− | 0.9+ |
| 2002 09 29 | 608 | 0.1− | 0.2+ | 2004 01 28 | 703 | 0.9− | 0.4+ | 2006 09 14 | 703 | 0.3+ | 0.0 |
| 2002 09 29 | 608 | 0.4+ | 0.8+ | 2004 01 28 | 703 | 0.7− | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.5+ |
| 2002 09 29 | 608 | 0.1− | 0.2+ | 2004 01 28 | 703 | (1.8+ | 0.1+) | 2006 09 14 | 703 | (0.7− | 1.9−) |
| 2002 10 01 | 704 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.4− | 0.5+ | 2006 09 20 | 703 | 0.5− | 1.5+ |
| 2002 10 01 | 704 | 0.7+ | 0.8− | 2004 01 30 | 704 | 0.5− | 0.3− | 2006 09 20 | 703 | 0.9− | 0.5+ |
| 2002 10 01 | 704 | 0.5+ | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.0 | 2006 09 20 | 703 | 0.1+ | 0.8+ |
| 2002 10 01 | 704 | 0.7− | 0.8+ | 2004 01 30 | 704 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.4− | 0.7+ |
| 2002 10 10 | 644 | 0.3+ | 0.5+ | 2004 01 30 | 704 | 0.6− | 0.4+ | 2006 10 02 | 703 | 0.6− | 0.6− |
| 2002 10 10 | 644 | 0.4+ | 0.3+ | 2004 02 13 | 644 | 0.2− | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.3+ |
| 2002 10 10 | 644 | 0.4+ | 0.6+ | 2004 02 13 | 644 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.6− | 0.8− |
| 2002 10 11 | 704 | 1.3− | 0.5− | 2004 02 13 | 644 | 0.1+ | 0.4+ | 2006 10 02 | 703 | (1.0− | 1.7+) |
| 2002 10 11 | 704 | 0.6+ | 1.0− | 2004 02 15 | 704 | 1.0+ | 0.4− | 2006 10 12 | 644 | 0.7− | 0.1+ |
| 2002 10 11 | 704 | 0.8− | 0.7− | 2004 02 15 | 704 | 1.4+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2002 10 11 | 704 | 0.8− | 0.2− | 2004 02 15 | 704 | 0.7+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.3+ |

**(138250)∗ 2000 FS$_{56}$ = 1998 YX$_{13}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 2453)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.15655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23841696 | $\omega$ | 111.28288 | | −0.99576178 | −0.01482122 | |
| $a$ | 2.5757949 | $\Omega$ | 67.96055 | | −0.02572237 | −0.90266306 | |
| $e$ | 0.0955585 | $i$ | 5.61961 | | +0.08829967 | −0.43009269 | |
| $P$ | 4.13 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 18 | 691 | 0.7+ | 0.1− | 2000 04 08 | 704 | 0.9+ | 0.4+ | 2004 03 23 | 704 | 0.7+ | 0.7− |
| 1996 03 18 | 691 | (1.3+ | 4.7−) | 2000 04 08 | 704 | 1.0− | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.4− |
| 1996 03 24 | 691 | 0.1− | 0.6− | 2000 04 08 | 704 | 0.3− | 0.3− | 2004 03 26 | 703 | (0.4+ | 1.8+) |
| 1996 03 24 | 691 | 0.2+ | 0.5− | 2000 05 05 | 645 | 0.3− | 0.0 | 2004 03 26 | 703 | 0.1+ | 0.9+ |
| 1996 03 24 | 691 | 0.2+ | 0.2− | 2000 05 05 | 645 | 0.3− | 0.0 | 2004 03 26 | 703 | 0.0 | 0.7+ |
| 1998 12 19 | 691 | 0.0 | 0.0 | 2004 02 17 | 703 | 1.2+ | 0.2− | 2004 03 26 | 703 | 1.0− | 0.4+ |
| 1998 12 19 | 691 | 0.5+ | 0.0 | 2004 02 17 | 703 | (0.7− | 1.5−) | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 1998 12 19 | 691 | 0.1+ | 0.0 | 2004 02 17 | 703 | 0.8+ | 0.3− | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 1998 12 23 | 691 | 0.3+ | 0.2− | 2004 02 17 | 703 | (1.8− | 1.0+) | 2006 09 27 | G96 | 0.0 | 0.2− |
| 1998 12 23 | 691 | 0.1+ | 0.1− | 2004 02 25 | 704 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 1998 12 23 | 691 | 0.6− | 0.6− | 2004 02 25 | 704 | 0.4+ | 0.4− | 2006 10 16 | 703 | 1.1+ | 1.3+ |
| 2000 03 29 | 704 | 0.5− | 0.7− | 2004 02 25 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.5+ |
| 2000 03 29 | 704 | 0.6+ | 0.2+ | 2004 02 25 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2000 03 29 | 704 | 0.1− | 0.4+ | 2004 02 25 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2000 03 29 | 704 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2000 03 29 | 704 | 0.4+ | 0.6+ | 2004 03 15 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2000 04 02 | 699 | 0.2+ | 0.2− | 2004 03 15 | 704 | 0.9+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2000 04 02 | 699 | 0.7+ | 1.0+ | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2000 04 02 | 699 | 1.6+ | 1.0+ | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.1+ |
| 2000 04 02 | 699 | (2.1+ | 0.3+) | 2004 03 23 | 704 | 0.2+ | 0.6− | 2006 11 01 | G96 | 0.4+ | 0.1+ |
| 2000 04 08 | 704 | 0.2− | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.6− | 2006 11 01 | G96 | 0.2+ | 0.2+ |

**(138251)∗ 2000 FH$_{57}$ = 2004 BR$_{97}$**

Discovered 2000 Mar. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 56135)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.43634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22129007 | $\omega$ | 92.78371 | | −0.51771807 | +0.85390407 | |
| $a$ | 2.7070406 | $\Omega$ | 145.86861 | | −0.81772856 | −0.47563999 | |
| $e$ | 0.0890448 | $i$ | 5.42677 | | −0.25157106 | −0.21122130 | |
| $P$ | 4.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.4− | 0.1+ | 2004 02 14 | 691 | 0.1+ | 0.3+ | 2005 06 23 | 644 | 0.3− | 0.1− |
| 2000 03 12 | 704 | 0.6− | 0.8− | 2004 02 14 | 691 | 0.1+ | 0.2+ | 2005 06 23 | 644 | 0.5− | 0.1− |
| 2000 03 12 | 704 | 0.1− | 1.1+ | 2004 02 14 | 691 | 0.2+ | 0.3+ | 2005 06 23 | 644 | 0.6− | 0.0 |
| 2000 03 26 | 699 | 0.7− | 0.3− | 2004 02 17 | 644 | 0.1+ | 0.6+ | 2005 06 28 | 691 | 0.1+ | 0.1+ |
| 2000 03 26 | 699 | 0.3+ | 0.9+ | 2004 02 17 | 644 | 0.1+ | 0.7+ | 2005 06 28 | 691 | 0.2− | 0.2+ |
| 2000 03 26 | 699 | 1.1− | 1.1+ | 2004 02 17 | 644 | 0.2− | 0.7+ | 2005 06 28 | 691 | 0.1+ | 0.1+ |
| 2000 03 26 | 699 | 0.2+ | 0.3+ | 2004 02 17 | 644 | 0.0 | 0.2+ | 2005 07 01 | 691 | 0.1+ | 0.2+ |
| 2000 03 31 | 049 | 0.4+ | 1.0− | 2004 02 17 | 644 | 0.2+ | 0.6+ | 2005 07 01 | 691 | 0.1+ | 0.2+ |
| 2000 03 31 | 049 | 0.7+ | 0.8− | 2004 02 17 | 644 | 0.1− | 0.5+ | 2005 07 01 | 691 | 0.0 | 0.1+ |
| 2000 03 31 | 049 | 0.9+ | 1.2− | 2004 04 13 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2004 01 26 | 699 | 0.0 | 1.0− | 2004 04 13 | 645 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.8+ |
| 2004 01 26 | 699 | 0.6+ | 0.6+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.7− | 0.8+ |
| 2004 01 26 | 699 | 0.1− | 1.0+ | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.8+ |
| 2004 01 26 | 699 | 0.6− | 1.4− | 2005 06 05 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2004 01 30 | 691 | 0.1− | 0.3+ | 2005 06 05 | 704 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.5+ |
| 2004 01 30 | 691 | 0.1− | 0.2+ | 2005 06 05 | 704 | 0.6+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.6+ |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2005 06 05 | 704 | 0.5− | 0.8+ | 2006 11 25 | G96 | 1.2− | 1.0+ |
| 2004 02 12 | 691 | 0.5+ | 0.4+ | 2005 06 15 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.6+ |
| 2004 02 12 | 691 | 0.3+ | 0.1+ | 2005 06 15 | 691 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.5+ |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2005 06 15 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.5+ | 0.3+ |

**(138252)∗ 2000 FM$_{58}$ = 2002 TV$_{28}$**

Discovered 2000 Mar. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37451)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.05633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22965454 | $\omega$ | 20.68861 | | +0.31421094 | −0.94806846 | |
| $a$ | 2.6409045 | $\Omega$ | 51.03166 | | +0.86184723 | +0.26305376 | |
| $e$ | 0.0984906 | $i$ | 3.64089 | | +0.39810907 | +0.17879855 | |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2002 11 01 | 704 | 0.7+ | 0.9+ | 2004 03 28 | 704 | 0.1+ | 0.0 |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2002 11 01 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 0.7− | 0.4− |
| 2000 03 27 | 699 | 0.4+ | 0.6+ | 2002 11 05 | 699 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.4− | 0.6+ |
| 2000 03 27 | 699 | 0.4+ | 1.0+ | 2002 11 05 | 699 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.3− |
| 2000 03 27 | 699 | 0.1− | 0.7+ | 2002 11 05 | 699 | 0.4− | 0.8− | 2006 09 14 | 703 | 0.1− | 0.4− |
| 2000 03 27 | 699 | 0.1+ | 0.0 | 2002 11 05 | 699 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.7− | 0.2+ |
| 2000 03 29 | 704 | 0.2− | 0.6+ | 2002 11 06 | 704 | 0.1− | 0.6− | 2006 09 16 | 704 | (1.5− | 1.9+) |
| 2000 03 29 | 704 | 0.5+ | 0.7+ | 2002 11 06 | 704 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.2+ | 0.9+ |
| 2000 03 29 | 704 | 0.3− | 0.1+ | 2002 11 06 | 704 | 0.2− | 0.9+ | 2006 09 16 | 704 | 0.6− | 0.7+ |
| 2000 03 29 | 704 | 0.6− | 0.3+ | 2002 11 06 | 704 | 0.4− | 0.0 | 2006 09 16 | 704 | 0.7− | 0.6+ |
| 2000 04 06 | 699 | (3.3+ | 0.6+) | 2002 11 06 | 704 | 0.5− | 0.1− | 2006 09 20 | 644 | 1.0− | 0.0 |
| 2000 04 06 | 699 | (2.8+ | 0.3−) | 2003 01 04 | 704 | 0.1− | 0.7− | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2000 04 06 | 699 | 1.4+ | 1.1+ | 2003 01 04 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 644 | 0.8− | 0.2+ |
| 2000 04 06 | 699 | (1.2+ | 2.5+) | 2003 01 04 | 704 | 0.6− | 0.3+ | 2006 09 22 | 704 | 0.4− | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2003 01 04 | 704 | 0.6+ | 0.2− | 2006 09 22 | 704 | (1.9− | 0.9+) |
| 2002 10 02 | 704 | 0.0 | 0.5+ | 2004 01 23 | 704 | (1.9+ | 0.2+) | 2006 09 22 | 704 | 1.1− | 0.4+ |
| 2002 10 02 | 704 | 0.6+ | 0.1− | 2004 01 23 | 704 | 0.5+ | 0.4+ | 2006 09 22 | 704 | 0.5− | 0.4+ |
| 2002 10 02 | 704 | 0.7+ | 1.0+ | 2004 01 23 | 704 | 1.2+ | 0.4− | 2006 09 22 | 704 | 0.3+ | 0.4+ |
| 2002 10 03 | 704 | 0.3− | 0.3− | 2004 01 23 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 699 | (0.1− | 1.8+) |
| 2002 10 03 | 704 | 0.7− | 0.5+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.5+ |
| 2002 10 03 | 704 | 0.3− | 1.1− | 2004 02 17 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 699 | (1.6− | 0.4+) |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2004 02 17 | 704 | 0.3− | 0.4+ | 2006 09 25 | 699 | 1.3− | 0.6+ |
| 2002 10 07 | 704 | 0.4− | 0.1+ | 2004 02 17 | 704 | 0.0 | 1.1− | 2006 09 26 | 704 | 1.0+ | 0.1− |
| 2002 10 07 | 704 | 0.8− | 0.5+ | 2004 03 15 | 703 | 0.3− | 0.5+ | 2006 09 26 | 704 | 1.1+ | 1.0+ |
| 2002 10 07 | 704 | 0.0 | 0.7+ | 2004 03 15 | 703 | (1.6− | 0.4+) | 2006 09 26 | 704 | 0.5+ | 0.3+ |
| 2002 10 07 | 704 | 0.4− | 0.0 | 2004 03 15 | 703 | 1.2− | 0.4+ | 2006 09 26 | 704 | 0.2− | 1.1+ |
| 2002 10 11 | 644 | 0.4− | 0.0 | 2004 03 15 | 703 | 0.6− | 0.1+ | 2006 09 26 | 704 | 0.8+ | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.4+ |
| 2002 10 11 | 644 | 0.5− | 0.1− | 2004 03 20 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.3+ | 0.5+ |
| 2002 10 11 | 704 | 1.5+ | 1.2− | 2004 03 20 | 704 | 0.4+ | 1.2+ | 2006 09 28 | 704 | 0.9− | 0.2+ |
| 2002 10 11 | 704 | 0.6+ | 0.7− | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.0 |
| 2002 10 11 | 704 | 0.7− | 0.4− | 2004 03 20 | 704 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2002 10 11 | 644 | 0.1− | 0.4− | 2004 03 28 | 704 | 0.5+ | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 11 01 | 704 | 0.2− | 1.3+ | 2004 03 28 | 704 | 1.1+ | 0.5+ | | | | |

**(138253)∗ 2000 FB$_{60}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.66157 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25877180 | $\omega$ | 25.20811 | | −0.79351199 | −0.60624776 | |
| $a$ | 2.4388856 | $\Omega$ | 117.37019 | | +0.54775284 | −0.74942504 | |
| $e$ | 0.1410424 | $i$ | 3.41746 | | +0.26515193 | −0.26613110 | |
| $P$ | 3.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 09 | 691 | 0.4− | 0.9+ | 2000 03 08 | 704 | 0.3+ | 0.1− | 2004 04 19 | 704 | 0.9+ | 0.8+ |
| 1992 01 09 | 691 | 0.9− | 0.0 | 2000 03 08 | 704 | 0.6+ | 0.8+ | 2004 04 19 | 704 | 0.5+ | 0.9+ |
| 1992 01 09 | 691 | 0.9− | 0.2+ | 2000 03 08 | 704 | 1.2+ | 1.4− | 2004 04 19 | 704 | (0.2+ | 1.8+) |
| 1992 01 10 | 691 | 0.2+ | 0.6+ | 2000 03 29 | 704 | 1.4+ | 1.4+ | 2004 04 22 | 599 | 0.0 | 0.8+ |
| 1992 01 10 | 691 | 1.1+ | 0.4+ | 2000 03 29 | 704 | 0.2− | 0.3− | 2004 04 22 | 599 | 0.2− | 0.7+ |
| 1992 01 10 | 691 | 0.1− | 0.3+ | 2000 03 29 | 704 | 0.9+ | 1.4+ | 2004 04 23 | 599 | 0.1− | 0.9+ |
| 1994 09 05 | 691 | 0.1− | 1.1+ | 2000 03 29 | 704 | 0.2+ | 1.1+ | 2004 04 23 | 599 | 0.3+ | 1.0+ |
| 1994 09 05 | 691 | 0.7− | 1.0+ | 2000 04 08 | 704 | 0.2+ | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 1994 09 05 | 691 | 0.2− | 1.1+ | 2000 04 08 | 704 | 0.1− | 1.1+ | 2006 11 17 | G96 | 0.2− | 0.7− |
| 1996 02 14 | 691 | 0.5+ | 0.1− | 2000 04 08 | 704 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 1.1− |
| 1996 02 14 | 691 | 0.5+ | 0.4− | 2000 04 08 | 704 | 1.2+ | 0.3− | 2006 11 17 | G96 | 0.2− | 0.7− |
| 1996 02 14 | 691 | 0.6+ | 0.6− | 2000 05 04 | 645 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 1996 03 22 | 691 | 0.0 | 0.3− | 2000 05 04 | 645 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 1996 03 22 | 691 | 0.1+ | 0.1− | 2002 11 05 | 644 | 0.5− | 0.4+ | 2006 11 18 | 691 | 0.6+ | 0.1+ |
| 1996 03 22 | 691 | 0.6+ | 0.0 | 2002 11 05 | 644 | 0.0 | 1.1+ | 2006 11 20 | H07 | 1.4− | 1.0+ |
| 2000 02 12 | 645 | 0.2− | 0.1− | 2002 11 05 | 644 | 0.1+ | 0.7+ | 2006 11 20 | H07 | 0.2+ | 1.4+ |
| 2000 02 12 | 645 | 0.2− | 0.1− | 2004 04 19 | 704 | 0.6+ | 0.7+ | 2006 11 20 | H07 | 0.6− | 0.1+ |
| 2000 03 08 | 704 | 1.1+ | 0.2+ | 2004 04 19 | 704 | 1.1+ | 0.7+ | | | | |

**(138254)∗ 2000 FD$_{61}$ = 2001 OB$_{89}$**

Discovered 2000 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 15735)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.95432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23385027 | $\omega$ | 202.57297 | | +0.78443151 | +0.57739026 | |
| $a$ | 2.6092206 | $\Omega$ | 120.17882 | | −0.52150561 | +0.81168542 | |
| $e$ | 0.1130447 | $i$ | 15.18734 | | −0.33570687 | +0.08824546 | |
| $P$ | 4.21 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 699 | 0.2− | 0.2+ | 2001 08 14 | 608 | 0.5+ | 0.6− | 2003 01 27 | 704 | 0.9+ | 0.2− |
| 2000 03 12 | 699 | 1.0− | 0.5− | 2001 08 14 | 608 | 0.7+ | 0.8− | 2004 03 19 | 644 | 0.2− | 0.1+ |
| 2000 03 12 | 699 | 0.6+ | 1.5+ | 2001 08 14 | 608 | 0.1+ | 0.6− | 2004 03 19 | 644 | 0.3− | 0.5− |
| 2000 03 12 | 699 | 0.4− | 1.9+ | 2001 08 19 | 704 | 0.2− | 1.2+ | 2004 03 19 | 644 | 0.1− | 0.4+ |
| 2000 03 29 | 704 | 0.1+ | 0.0 | 2001 08 19 | 704 | 0.7− | 0.8− | 2004 03 25 | 704 | 0.2+ | 0.9− |
| 2000 03 29 | 704 | 0.9+ | 0.5− | 2001 08 19 | 704 | 0.4+ | 0.4+ | 2004 03 25 | 704 | 0.7+ | 0.3+ |
| 2000 03 29 | 704 | 0.6− | 0.6+ | 2001 08 19 | 704 | 0.5− | 0.1+ | 2004 03 25 | 704 | 0.0 | 0.9+ |
| 2000 03 29 | 704 | 0.6+ | 0.4+ | 2001 08 19 | 704 | (2.4− | 1.4+) | 2004 03 25 | 704 | 0.0 | 0.9+ |
| 2000 03 29 | 704 | 2.0+ | 0.3− | 2001 09 11 | 704 | 0.3+ | 0.1− | 2005 07 04 | 704 | 0.4+ | 1.1+ |
| 2000 04 08 | 704 | 0.7− | 0.6− | 2001 09 11 | 704 | 0.1− | 0.6+ | 2005 07 04 | 704 | 0.4− | 0.4+ |
| 2000 04 08 | 704 | 0.8− | 1.7− | 2001 09 11 | 704 | 0.2+ | 0.9+ | 2005 07 04 | 704 | 0.7− | 0.0 |
| 2000 04 08 | 704 | 0.4+ | 0.9+ | 2001 09 11 | 704 | 0.1+ | 1.1+ | 2005 07 04 | 704 | 0.8+ | 0.4+ |
| 2000 04 08 | 704 | 0.1− | 0.4− | 2002 12 14 | 704 | 1.0− | 0.1− | 2006 11 13 | 703 | 0.3− | 0.4+ |
| 2001 06 28 | 699 | 0.2− | 1.2+ | 2002 12 14 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.6− | 0.7+ |
| 2001 06 28 | 699 | 1.4+ | 0.4− | 2002 12 14 | 704 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.2+ | 0.4+ |
| 2001 06 28 | 699 | 0.6+ | 0.6+ | 2003 01 05 | 704 | 0.4− | 1.0− | 2006 11 13 | 703 | 0.6− | 0.2+ |
| 2001 06 28 | 699 | 0.4− | 0.2+ | 2003 01 05 | 704 | 0.0 | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2001 07 21 | 608 | 0.4− | 0.2− | 2003 01 05 | 704 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2001 07 21 | 608 | 0.2− | 0.6− | 2003 01 05 | 704 | 0.5+ | 0.1− | 2006 11 21 | 704 | 1.5+ | 0.3− |
| 2001 07 21 | 608 | 0.3− | 0.7− | 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.0 | 0.6+ | 2003 01 11 | 644 | 0.0 | 1.4+ | 2006 11 29 | 704 | 0.0 | 0.2+ | | |
| 2001 07 27 | 699 | 0.4− | 0.2− | 2003 01 11 | 644 | 0.4+ | 1.3+ | 2006 11 29 | 704 | 0.6− | 0.3+ | | |
| 2001 07 27 | 699 | 0.2− | 0.3− | 2003 01 11 | 644 | 0.1+ | 1.0+ | 2006 11 29 | 704 | 0.1− | 0.1− | | |
| 2001 07 27 | 699 | 0.7− | 0.3+ | 2003 01 27 | 704 | (0.5+ | 1.6−) | 2006 11 29 | 704 | 0.4+ | 0.3− | | |
| 2001 07 30 | 704 | 0.2− | 0.2− | 2003 01 27 | 704 | 0.4+ | 0.4− | 2006 11 29 | 704 | 0.2− | 0.1− | | |
| 2001 07 30 | 704 | 1.0+ | 0.4+ | 2003 01 27 | 704 | 0.2+ | 0.1− | | | | | | |
| 2001 07 30 | 704 | 0.6− | 0.2+ | 2003 01 27 | 704 | 1.0− | 0.7− | | | | | | |

**(138255)∗ 2000 FJ$_{69}$ = 2004 ES$_{70}$**

Discovered 2000 Mar. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60646)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.97219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24200781 | $\omega$ | 13.34729 | | −0.94504290 | +0.32676115 | |
| $a$ | 2.5502522 | $\Omega$ | 185.76070 | | −0.30913342 | −0.90400464 | |
| $e$ | 0.0831146 | $i$ | 6.29320 | | −0.10644454 | −0.27568597 | |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 0.2+ | 0.7+ | 2004 03 18 | 704 | 1.2− | 0.4+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | | |
| 2000 03 10 | 704 | 0.5− | 1.0+ | 2004 03 20 | 699 | (0.2+ | 2.1+) | 2004 04 21 | 691 | 0.4+ | 0.1+ | | |
| 2000 03 10 | 704 | 0.8+ | 0.7+ | 2004 03 20 | 699 | 0.2− | 0.3+ | 2005 07 08 | 691 | 0.2− | 0.6+ | | |
| 2000 03 10 | 704 | 0.4+ | 0.9+ | 2004 03 20 | 699 | 0.7− | 0.9+ | 2005 07 08 | 691 | 0.2− | 0.6+ | | |
| 2000 03 27 | 699 | 0.1+ | 0.4+ | 2004 03 20 | 699 | 0.0 | 0.1+ | 2005 07 08 | 691 | 0.1− | 0.5+ | | |
| 2000 03 27 | 699 | 0.5− | 0.2+ | 2004 03 20 | 704 | 0.7+ | 0.1− | 2005 08 29 | 691 | 0.1− | 0.4+ | | |
| 2000 03 27 | 699 | 1.7− | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.3− | 2005 08 29 | 691 | 0.0 | 0.4+ | | |
| 2000 03 27 | 699 | 0.7− | 0.3− | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2005 08 29 | 691 | 0.0 | 0.3+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.5− | 2004 03 20 | 704 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.5+ | | |
| 2000 04 05 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.0 | | |
| 2000 04 05 | 704 | 1.0+ | 0.0 | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.0 | | |
| 2000 04 05 | 704 | 0.1+ | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.4− | 1.1− | | |
| 2000 04 05 | 704 | 0.3+ | 0.3− | 2004 03 26 | 699 | 0.5+ | 0.7+ | 2006 10 18 | 691 | 0.3− | 0.3+ | | |
| 2000 04 05 | 688 | 0.1+ | 0.1+ | 2004 03 26 | 699 | 0.1− | 0.5− | 2006 10 18 | 691 | 0.5+ | 0.5+ | | |
| 2000 04 05 | 688 | 0.1+ | 0.0 | 2004 03 26 | 699 | 0.9+ | 0.6+ | 2006 10 18 | 691 | 0.3− | 0.3+ | | |
| 2002 11 24 | 644 | 0.0 | 0.4+ | 2004 03 26 | 699 | 0.1− | 1.1+ | 2006 10 22 | 691 | 0.4− | 0.4+ | | |
| 2002 11 24 | 644 | 0.1+ | 0.6+ | 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.7+ | | |
| 2002 11 24 | 644 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.3− | 0.3+ | | |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | 1.0+ | 0.7− | 2006 11 18 | G96 | 0.5+ | 0.1+ | | |
| 2004 03 15 | 703 | 0.4+ | 0.9+ | 2004 03 27 | 704 | 0.7+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.0 | | |
| 2004 03 15 | 703 | 0.4+ | 1.2+ | 2004 04 12 | 699 | 1.0+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.0 | | |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2004 04 12 | 699 | 1.1+ | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.1+ | | |
| 2004 03 15 | 703 | (1.3− | 2.0−) | 2004 04 12 | 699 | 0.1+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.1+ | | |
| 2004 03 15 | 703 | 0.7− | 0.3+ | 2004 04 12 | 699 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.2+ | | |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 04 13 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.1− | | |
| 2004 03 18 | 704 | 1.3− | 0.3− | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.2+ | | |
| 2004 03 18 | 704 | 1.2− | 0.1+ | 2004 04 13 | 691 | 0.2− | 0.0 | | | | | | |
| 2004 03 18 | 704 | 0.5− | 0.7− | 2004 04 21 | 691 | 0.1+ | 0.1+ | | | | | | |

**(138256)∗ 2000 FR$_{69}$ = 2002 UZ$_{45}$**

Discovered 2000 Mar. 27 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 60647)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.44090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23200302 | $\omega$ | 238.66113 | | +0.32934979 | −0.94262949 | |
| $a$ | 2.6230523 | $\Omega$ | 192.47242 | | +0.92921015 | +0.33383743 | |
| $e$ | 0.0610852 | $i$ | 14.63703 | | +0.16762226 | +0.00148964 | |
| $P$ | 4.25 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 19 | 704 | 0.8+ | 1.2− | 2004 03 16 | 704 | 0.8− | 0.2+ | 2006 10 10 | 644 | 0.5− | 0.0 | | |
| 1998 12 19 | 704 | 1.6− | 1.1+ | 2004 03 16 | 704 | 0.0 | 0.7− | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 1998 12 19 | 704 | 0.8− | 1.9− | 2004 03 16 | 704 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 1998 12 19 | 704 | (5.1− | 0.9−) | 2004 03 16 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 2000 03 27 | 691 | 0.2− | 0.1+ | 2004 03 27 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.7− | | |
| 2000 03 27 | 691 | 0.7− | 0.1− | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | (1.1− | 2.3−) | | |
| 2000 03 27 | 691 | 0.6− | 0.1− | 2004 03 27 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 703 | (3.0− | 1.6−) | | |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2006 09 14 | 703 | 0.3− | 1.2− | 2006 10 17 | 703 | (2.8− | 0.1−) | | |
| 2000 04 05 | 704 | 1.0+ | 1.1+ | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2000 04 05 | 704 | (0.7+ | 2.1+) | 2006 09 14 | 703 | 0.6+ | 0.6− | 2006 10 19 | 644 | 0.0 | 0.2+ | | |
| 2000 04 05 | 691 | 0.3+ | 0.2− | 2006 09 14 | 703 | (1.8− | 0.9−) | 2006 10 19 | 644 | 0.3− | 0.0 | | |
| 2000 04 05 | 704 | 0.4+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2000 04 05 | 691 | 0.6+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2000 04 05 | 691 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.5− | 0.1+ | | |
| 2002 09 09 | 599 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2002 09 09 | 599 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.6+ | | |
| 2002 09 09 | 599 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.1− | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2002 10 31 | 704 | 0.5+ | 0.4− | 2006 09 18 | 699 | 0.9+ | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.4− | | |
| 2002 10 31 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.3− | | |
| 2002 11 05 | 704 | 1.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.2− | | |
| 2002 11 05 | 704 | 0.6+ | 1.0+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2002 11 05 | 704 | 0.3− | 0.9+ | 2006 09 25 | G96 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.6+ | 0.3+ | | |
| 2004 02 14 | 644 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.4+ | | |
| 2004 02 14 | 644 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.1+ | | |
| 2004 02 14 | 644 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.4+ | | | | | | |
| 2004 03 16 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.3− | 0.1+ | | | | | | |

**(138257)∗ 2000 FR$_{70}$ = 2002 TX$_{210}$**

Discovered 2000 Mar. 29 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 40082)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.22393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24151570 | $\omega$ | 230.76516 | | +0.41888181 | −0.90726542 | |
| $a$ | 2.5537153 | $\Omega$ | 194.60789 | | +0.87220897 | +0.41350071 | |
| $e$ | 0.1605750 | $i$ | 8.55481 | | +0.25256592 | +0.07672434 | |
| $P$ | 4.08 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.0 | 0.3− | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 03 | 691 | 0.3− | 0.0 | | |
| 2000 03 29 | 691 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.2+ | | |
| 2000 03 29 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.1+ | 0.2− | | |
| 2000 04 05 | 691 | 0.4− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.0 | 0.4+ | | |
| 2000 04 05 | 691 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.3− | 0.5+ | 2006 10 15 | 703 | 0.8− | 0.9− | | |
| 2000 04 05 | 691 | 0.0 | 0.5− | 2006 09 20 | 012 | 0.4+ | 0.3− | 2006 10 15 | 703 | 0.5− | 1.1+ | | |
| 2002 10 07 | 704 | 0.3− | 0.5− | 2006 09 20 | 012 | 0.3+ | 1.1+ | 2006 10 17 | G96 | 0.1− | 0.2− | | |
| 2002 10 07 | 704 | 0.5+ | 0.2− | 2006 09 20 | 012 | 0.5− | 0.7− | 2006 10 17 | G96 | 0.3+ | 0.7− | | |
| 2002 10 07 | 704 | 0.1+ | 0.9− | 2006 09 20 | 012 | 1.0+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.5− | | |
| 2002 10 08 | 699 | 0.8− | 0.9− | 2006 09 20 | 012 | 0.8+ | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.2− | | |
| 2002 10 08 | 699 | 0.5− | 0.3+ | 2006 09 21 | 012 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.2+ | | |
| 2002 10 08 | 699 | 0.5− | 0.0 | 2006 09 21 | 012 | 1.1+ | 0.6− | 2006 10 21 | G96 | 0.2+ | 0.3− | | |
| 2002 10 08 | 699 | (2.2− | 0.8+) | 2006 09 21 | 012 | 1.0+ | 0.7− | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2002 10 09 | 704 | 1.4+ | 0.7+ | 2006 09 21 | 012 | 0.7− | 0.3− | 2006 10 21 | 703 | 0.4+ | 0.3− | | |
| 2002 10 09 | 704 | 0.7+ | 0.2+ | 2006 09 21 | 012 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2002 10 09 | 704 | 0.8+ | 0.6+ | 2006 09 22 | 012 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.0 | 0.0 | | |
| 2002 10 30 | 644 | 0.4− | 0.1+ | 2006 09 22 | 012 | 0.5+ | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.8− | | |
| 2002 10 30 | 644 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.7− | | |
| 2002 10 30 | 644 | 0.5− | 0.0 | 2006 09 25 | 691 | 0.4− | 0.2− | 2006 10 30 | A44 | 0.0 | 0.6+ | | |
| 2002 11 11 | 704 | 0.1− | 0.7− | 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 30 | A44 | 0.0 | 0.1+ | | |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 30 | A44 | 0.2+ | 0.3+ | | |
| 2002 11 11 | 704 | (1.6− | 0.5+) | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2004 03 29 | 691 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 704 | (1.6+ | 0.4−) | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 09 27 | 704 | 1.0+ | 0.3− | 2006 11 11 | 703 | 0.9+ | 1.0+ | | |
| 2004 04 22 | 691 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.6+ | 1.2+ | | |
| 2004 04 22 | 691 | 0.4− | 0.2+ | 2006 09 29 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.7+ | 0.2+ | | |
| 2004 07 15 | 807 | 0.1− | 0.4+ | 2006 09 29 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 2.7− | 0.1+ | | |
| 2004 07 16 | 807 | 0.7+ | 0.1+ | 2006 09 29 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1− | 0.2+ | | | | | | |

**(138258)∗ 2000 GD$_2$**

Discovered 2000 Apr. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.61630 | | (2000.0) | | | |
| $n$ | 1.49394345 | $\omega$ | 16.94311 | | +0.96403363 | −0.26522922 |
| $a$ | 0.7578442 | $\Omega$ | 358.15750 | | +0.13638070 | +0.54889477 |
| $e$ | 0.4765712 | $i$ | 32.14343 | | +0.22812160 | +0.79269666 |
| $P$ | 0.66 | $H$ | 19.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc (radar residuals in s.d.)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 566 | 0.5− | 0.1− | 2002 03 11 | 428 | 1.1− | 0.2+ | 2002 03 17 | 112 | 1.6− | 0.0− |
| 1998 03 29 | 566 | 0.2+ | 1.1+ | 2002 03 11 | 428 | 0.1− | 0.2− | 2002 03 17 | 112 | 0.7− | 0.2+ |
| 1998 03 29 | 566 | 0.7− | 1.5+ | 2002 03 11 | 428 | 1.1− | 0.2− | 2002 03 17 | 112 | 1.9− | 0.3+ |
| 2000 03 15 | 704 | 0.8+ | 0.1+ | 2002 03 11 | 379 | 1.6− | 0.2− | 2002 03 17 | 112 | 0.4− | 0.1− |
| 2000 03 15 | 704 | 1.1+ | 0.6− | 2002 03 11 | 379 | 1.4− | 1.4+ | 2002 03 18 | 379 | 0.1+ | 0.1+ |
| 2000 03 15 | 704 | 0.8+ | 0.1+ | 2002 03 11 | 151 | 0.2− | 0.9− | 2002 03 18 | 379 | 0.3+ | 0.8− |
| 2000 04 03 | 704 | 0.2+ | 0.4− | 2002 03 11 | 151 | 0.3+ | 1.0− | 2002 03 18 | 379 | 0.2+ | 0.1− |
| 2000 04 03 | 704 | 0.6+ | 0.3+ | 2002 03 11 | 151 | 0.4− | 1.2− | 2002 03 18 | 300 | 1.2+ | 0.7− |
| 2000 04 03 | 704 | 0.1+ | 0.3− | 2002 03 11 | 151 | 0.1+ | 0.8− | 2002 03 18 | 300 | 0.4+ | 0.9− |
| 2000 04 04 | 704 | 0.6+ | 0.1− | 2002 03 11 | 151 | 0.0− | 1.0− | 2002 03 18 | 300 | 0.7+ | 0.7− |
| 2000 04 04 | 704 | 0.4+ | 0.4+ | 2002 03 11 | 151 | 0.2+ | 1.1− | 2002 03 19 | 379 | 0.3+ | 0.1− |
| 2000 04 04 | 704 | 0.9+ | 0.8− | 2002 03 12 | 118 | 0.6+ | 0.2+ | 2002 03 19 | 379 | 0.4+ | 0.1+ |
| 2000 04 04 | 704 | 0.1+ | 0.1+ | 2002 03 12 | 118 | 0.5+ | 0.0+ | 2002 03 19 | 379 | 0.2− | 0.5− |
| 2000 04 04 | 704 | 0.1− | 0.3+ | 2002 03 12 | 118 | 0.5+ | 0.3+ | 2002 03 19 | 379 | 0.4+ | 0.2− |
| 2000 04 04 | 704 | 1.4+ | 0.6+ | 2002 03 12 | 118 | 0.5+ | 0.5+ | 2002 03 19 | 084 | 1.1+ | 0.0− |
| 2000 04 04 | 673 | 0.9− | 2.5+ | 2002 03 12 | 253/ | 253 | 0.346+ D | 2002 03 22 | 157 | 0.1+ | 0.0+ |
| 2000 04 04 | 673 | 0.6− | 0.6+ | 2002 03 13 | 198 | 0.9+ | 0.7+ | 2002 03 22 | 157 | 0.0− | 0.4− |
| 2000 04 04 | 704 | 0.0− | 0.5+ | 2002 03 13 | 198 | 1.2+ | 0.6+ | 2002 03 22 | 157 | 0.0+ | 0.2− |
| 2000 04 04 | 704 | 0.0+ | 0.1+ | 2002 03 13 | 198 | 2.1+ | 1.2+ | 2002 03 22 | 157 | 0.1+ | 0.4− |
| 2000 04 05 | 704 | 0.1− | 0.2+ | 2002 03 13 | 198 | 1.9+ | 1.1+ | 2002 03 22 | 157 | 0.1+ | 0.1+ |
| 2000 04 05 | 850 | 0.2− | 0.6− | 2002 03 13 | 198 | 2.1+ | 1.3+ | 2002 03 24 | 084 | 0.3+ | 0.8+ |
| 2000 04 05 | 704 | 0.7+ | 0.3+ | 2002 03 13 | 379 | 0.7+ | 0.4− | 2002 03 25 | 670 | 0.6+ | 0.2+ |
| 2000 04 05 | 850 | 0.2− | 0.3− | 2002 03 13 | 379 | 1.3+ | 0.1− | 2002 03 25 | 670 | 0.3+ | 0.0+ |
| 2000 04 05 | 704 | 0.1+ | 0.6− | 2002 03 13 | 379 | 1.2+ | 0.1− | 2002 03 25 | 670 | 0.3+ | 0.1− |
| 2000 04 05 | 704 | 0.1− | 0.9+ | 2002 03 13 | 379 | 1.4+ | 0.1− | 2002 03 25 | 560 | 1.5+ | 0.6+ |
| 2000 04 05 | 854 | 0.1+ | 0.0+ | 2002 03 13 | 379 | 0.6+ | 0.1− | 2002 03 25 | 560 | 0.9− | 0.5+ |
| 2000 04 05 | 850 | 1.1+ | 0.6− | 2002 03 14 | 084 | 0.5− | 0.1+ | 2002 03 25 | 560 | 0.1+ | 0.0− |
| 2000 04 05 | 854 | 1.4− | 0.6− | 2002 03 15 | 118 | 0.2+ | 0.1− | 2002 03 25 | 560 | 0.6+ | 0.2− |
| 2000 04 05 | 854 | 1.6− | 1.9− | 2002 03 15 | 118 | 0.2− | 0.0− | 2002 03 25 | 560 | 0.0+ | 0.4+ |
| 2000 04 05 | 704 | 0.2+ | 0.1+ | 2002 03 15 | 118 | 0.5+ | 0.1+ | 2002 03 25 | 560 | 0.5− | 1.0+ |
| 2000 04 05 | 704 | 0.1− | 0.1+ | 2002 03 15 | 670 | 0.4− | 0.4− | 2002 03 25 | 560 | 0.3+ | 0.1+ |
| 2000 04 05 | 850 | 0.1+ | 0.6− | 2002 03 15 | 670 | 0.8− | 0.2− | 2002 03 25 | 560 | 0.5+ | 0.4+ |
| 2000 04 05 | 704 | 0.7+ | 0.1+ | 2002 03 15 | 428 | 0.4− | 0.8− | 2002 03 27 | 670 | 0.2+ | 0.5+ |
| 2000 04 05 | 704 | 0.2+ | 1.3+ | 2002 03 15 | 428 | 0.1− | 0.4− | 2002 03 27 | 670 | 0.5+ | 0.1+ |
| 2000 04 06 | 673 | (3.1− | 0.8+) | 2002 03 15 | 428 | 0.1+ | 0.8− | 2002 03 28 | 641 | (0.7− | 3.0−) |
| 2000 04 06 | 673 | 2.8− | 0.1− | 2002 03 15 | 428 | 0.2− | 0.6− | 2002 03 28 | 641 | (2.9− | 2.6−) |
| 2000 04 06 | 673 | 2.7− | 0.3+ | 2002 03 15 | 379 | 0.0− | 1.0+ | 2002 03 29 | 636 | 0.5− | 0.8− |
| 2000 04 06 | 046 | 0.1− | 0.7+ | 2002 03 15 | 379 | 0.1+ | 0.4− | 2002 03 29 | 636 | 0.1− | 0.1+ |
| 2000 04 06 | 046 | 0.1− | 0.1+ | 2002 03 15 | 349 | 0.9− | 0.3+ | 2002 03 29 | 636 | 0.4+ | 0.1+ |
| 2000 04 06 | 046 | 0.0+ | 0.6+ | 2002 03 15 | 349 | 0.2− | 0.2+ | 2002 03 29 | 151 | (0.7− | 3.1−) |
| 2000 04 06 | 046 | 0.6+ | 0.5− | 2002 03 15 | 349 | 0.5− | 0.3+ | 2002 03 29 | 151 | 0.1− | 2.1− |
| 2000 04 28 | 413 | 0.3− | 0.0− | 2002 03 15 | 349 | 0.4− | 0.2+ | 2002 03 29 | 151 | 2.8− | 0.0+ |
| 2000 04 29 | 413 | 0.3− | 0.2+ | 2002 03 16 | 084 | 0.2− | 0.2− | 2002 03 29 | 151 | 1.2+ | 2.4− |
| 2000 04 29 | 413 | 0.2− | 0.1+ | 2002 03 16 | 253/ | 253 | 0.198+ D | 2002 03 29 | 151 | 1.2+ | 1.1− |
| 2000 04 30 | 413 | 0.0+ | 0.2− | 2002 03 16 | 699 | 0.1+ | 0.4+ | 2002 03 29 | 151 | 0.3+ | 2.4− |
| 2000 04 30 | 413 | 0.3− | 0.4+ | 2002 03 16 | 699 | 0.3+ | 0.3+ | 2002 04 09 | 704 | 0.1+ | 0.3− |
| 2002 03 03 | 670 | 1.0+ | 0.1− | 2002 03 16 | 699 | 0.4+ | 0.2+ | 2002 04 09 | 704 | 0.2+ | 0.1+ |
| 2002 03 03 | 670 | 0.5+ | 0.4+ | 2002 03 16 | 699 | 0.2+ | 0.2− | 2002 04 09 | 704 | 1.6− | 0.1− |
| 2002 03 04 | 349 | 1.1− | 1.0+ | 2002 03 16 | 113 | 0.0− | 0.3+ | 2002 04 09 | 704 | 0.3+ | 0.3− |
| 2002 03 04 | 349 | 0.4+ | 0.1+ | 2002 03 16 | 113 | 0.2− | 0.4+ | 2002 04 09 | 704 | 0.6+ | 0.7− |
| 2002 03 04 | 349 | 0.1− | 0.5+ | 2002 03 16 | 113 | 0.1+ | 0.5+ | 2002 04 10 | 704 | 0.2+ | 0.0− |
| 2002 03 06 | 704 | 0.6− | 0.0− | 2002 03 16 | 113 | 0.3+ | 0.5+ | 2002 04 10 | 704 | 0.2+ | 0.2− |
| 2002 03 06 | 704 | 0.6+ | 0.8+ | 2002 03 16 | 113 | 0.5+ | 0.6+ | 2002 04 10 | 704 | 0.3+ | 0.1+ |
| 2002 03 06 | 704 | 0.2− | 0.6+ | 2002 03 16 | 157 | 0.1− | 0.5− | 2002 04 10 | 704 | 0.1− | 0.3− |
| 2002 03 06 | 704 | 0.6+ | 0.1+ | 2002 03 16 | 157 | 0.6+ | 0.2− | 2002 04 10 | 704 | 0.3− | 0.9+ |
| 2002 03 06 | 704 | 0.8− | 0.0+ | 2002 03 16 | 157 | 0.2+ | 0.7− | 2004 03 08 | 649 | 0.5− | 0.5− |
| 2002 03 09 | 118 | 0.3− | 0.2+ | 2002 03 16 | 157 | 0.7+ | 0.4− | 2004 03 08 | 649 | 0.4− | 0.6+ |
| 2002 03 09 | 118 | 0.2− | 0.1+ | 2002 03 17 | 084 | 0.5+ | 0.9+ | 2004 03 08 | 649 | 0.4+ | 0.7+ |
| 2002 03 09 | 118 | 0.3− | 0.1+ | 2002 03 17 | 428 | 0.2− | 0.6− | 2004 03 14 | D85 | 0.1− | 0.6+ |
| 2002 03 09 | 670 | 0.0+ | 0.2− | 2002 03 17 | 428 | 0.3− | 0.5− | 2004 03 14 | D85 | 0.2+ | 0.2+ |
| 2002 03 09 | 670 | 0.3− | 0.2+ | 2002 03 17 | 428 | 0.1+ | 0.2+ | 2004 03 14 | D85 | 0.9+ | 0.1+ |
| 2002 03 09 | 379 | 0.7− | 0.4+ | 2002 03 17 | 428 | 0.2− | 0.1− | 2004 04 12 | 428 | 0.8− | 0.2+ |
| 2002 03 09 | 379 | 0.1− | 0.1− | 2002 03 17 | 112 | 0.2− | 0.7+ | 2004 04 12 | 428 | 0.1+ | 0.1+ |
| 2002 03 09 | 379 | 1.4− | 0.0− | 2002 03 17 | 112 | 0.6− | 0.6+ | 2006 03 08 | 704 | 0.1+ | 0.2+ |
| 2002 03 09 | 379 | 0.4− | 0.7− | 2002 03 17 | 112 | 0.2− | 0.1+ | 2006 03 08 | 704 | 0.4− | 0.2+ |
| 2002 03 10 | 112 | 0.2+ | 0.3+ | 2002 03 17 | 112 | 1.5− | 0.6+ | 2006 03 08 | 704 | 0.7− | 0.9− |
| 2002 03 10 | 112 | 0.8+ | 0.5− | 2002 03 17 | 112 | 1.0− | 0.8+ | 2006 03 08 | 704 | 0.7− | 0.2− |
| 2002 03 10 | 112 | 1.1+ | 1.1− | 2002 03 17 | 112 | 1.0− | 0.3+ | 2006 03 08 | 704 | 0.1+ | 0.3− |
| 2002 03 10 | 112 | 1.1+ | 0.0+ | 2002 03 17 | 112 | 1.6− | 0.4+ | 2006 03 12 | 808 | 0.1− | 0.7− |
| 2002 03 10 | 112 | 0.5+ | 0.3+ | 2002 03 17 | 112 | 0.7− | 0.0+ | 2006 03 12 | 808 | (2.1− | 3.6−) |
| 2002 03 11 | 428 | 1.1− | 0.0− | 2002 03 17 | 112 | 0.4+ | 0.2+ | 2006 03 12 | 808 | 0.3+ | 1.7+ |

**(138259)∗ 2000 GQ$_3$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.84992 | | (2000.0) | | | |
| $n$ | 0.37407302 | $\omega$ | 266.52801 | | +0.40100745 | +0.89691331 |
| $a$ | 1.9076490 | $\Omega$ | 29.42707 | | −0.61469402 | +0.41430718 |
| $e$ | 0.0690185 | $i$ | 22.29406 | | −0.67922330 | +0.15458358 |
| $P$ | 2.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 26 | 691 | 0.7+ | 0.1− | 2000 05 06 | 704 | 0.5− | 0.5+ | 2006 10 04 | 703 | 0.4− | 0.4− |
| 1992 04 26 | 691 | 0.4+ | 0.5+ | 2000 05 06 | 704 | 0.1− | 1.6+ | 2006 10 13 | 691 | 0.2− | 0.3+ |
| 1992 04 26 | 691 | 0.4+ | 0.5+ | 2005 02 28 | 703 | 0.3+ | 1.2+ | 2006 10 13 | 691 | 0.0 | 0.4+ |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2005 02 28 | 703 | 0.7− | 0.5+ | 2006 10 13 | 691 | 0.0 | 0.4+ |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2005 02 28 | 703 | 0.1− | 0.7− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 1998 09 25 | 645 | 0.2− | 0.0 | 2005 02 28 | 703 | 0.7+ | 0.7− | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 1998 09 25 | 645 | 0.2− | 0.1+ | 2005 03 08 | 703 | 0.6− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.0 |
| 1998 10 11 | 699 | 1.4+ | 0.9+ | 2005 03 08 | 703 | 0.4− | 0.0 | 2006 10 21 | 704 | 0.1+ | 0.7+ |
| 1998 10 11 | 699 | 0.8+ | 0.4+ | 2005 03 08 | 703 | 0.3− | 0.2− | 2006 10 21 | 704 | 0.4+ | 0.6+ |
| 1998 10 11 | 699 | 0.8+ | 1.3+ | 2005 03 08 | 703 | 0.6− | 0.8− | 2006 10 21 | 704 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.3+ | 0.6− | 2005 03 12 | 704 | 0.9+ | 0.2− | 2006 10 21 | 704 | 0.5− | 0.8− |
| 2000 04 05 | 704 | 0.6+ | 0.4+ | 2005 03 12 | 704 | 1.0+ | 0.8+ | 2006 10 21 | 704 | 0.1− | 0.8− |
| 2000 04 05 | 704 | 0.2− | 0.5− | 2005 03 12 | 704 | 0.9+ | 0.3− | 2006 10 21 | 691 | 0.3− | 0.5+ |
| 2000 04 05 | 704 | 0.7− | 0.3− | 2005 03 12 | 704 | 0.8− | 0.9+ | 2006 10 21 | 691 | 0.4− | 0.4+ |
| 2000 04 06 | 704 | 0.6+ | 0.5+ | 2005 03 12 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.5+ |
| 2000 04 06 | 704 | 1.4+ | 1.4+ | 2005 03 31 | 703 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.4− | 0.7+ | 2005 03 31 | 703 | 1.3− | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.2+ |
| 2000 04 06 | 704 | 0.3+ | 0.1+ | 2005 03 31 | 703 | (2.0− | 0.9+) | 2006 10 27 | 703 | 0.5− | 0.0 |
| 2000 04 06 | 704 | 0.2− | 0.2− | 2005 03 31 | 703 | 0.5− | 0.3− | 2006 10 27 | 703 | 0.3+ | 0.1− |
| 2000 04 07 | 704 | 0.4+ | 1.4+ | 2006 09 16 | 703 | 1.1+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2000 04 07 | 704 | 0.9+ | 0.9+ | 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2000 04 07 | 704 | 1.1+ | 0.8− | 2006 09 16 | 703 | (1.3− | 1.6+) | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2000 04 07 | 704 | 0.5− | 0.5+ | 2006 09 16 | 703 | 0.8− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2000 04 30 | 699 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.5+ | 0.6− | 2006 11 13 | 644 | 0.2+ | 0.4− |
| 2000 04 30 | 699 | 1.5+ | 0.6+ | 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2000 04 30 | 699 | 0.4+ | 1.0+ | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2000 04 30 | 699 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 22 | 703 | 1.0− | 1.3+ |
| 2000 05 06 | 704 | 0.2+ | 0.5− | 2006 10 04 | 703 | (2.6− | 0.5+) | 2006 11 22 | 703 | 0.2+ | 0.0 |
| 2000 05 06 | 704 | 0.5+ | 0.4− | 2006 10 04 | 703 | (2.0+ | 1.1+) | 2006 11 22 | 703 | 0.0 | 0.7+ |
| 2000 05 06 | 704 | 0.5+ | 0.5+ | 2006 10 04 | 703 | 0.3− | 0.2− | 2006 11 22 | 703 | 0.6− | 0.1− |

**(138260)∗ 2000 GS$_3$ = 1998 TH$_{30}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 1266)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.85593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37443580 | $\omega$ | 128.31331 | | +0.89347755 | +0.41396825 | |
| $a$ | 1.9064166 | $\Omega$ | 208.50993 | | −0.43135919 | +0.89895646 | |
| $e$ | 0.1414951 | $i$ | 21.39873 | | +0.12500850 | +0.14320462 | |
| $P$ | 2.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 10 | 699 | 0.3+ | 0.3+ | 2000 04 06 | 704 | 0.4+ | 0.0 | 2006 10 01 | 703 | 0.5− | 0.8+ | |
| 1998 10 10 | 699 | 0.4− | 0.4− | 2000 04 13 | 691 | 0.2+ | 0.2− | 2006 10 01 | 703 | 0.2− | 0.8+ | |
| 1998 10 10 | 699 | 0.7− | 0.1− | 2000 04 13 | 691 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.7+ | 1.1+ | |
| 1998 10 14 | 699 | 0.7+ | 0.7+ | 2000 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | |
| 1998 10 14 | 699 | 1.0+ | 0.9+ | 2000 04 26 | 699 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.1− | 1.2− | |
| 1998 10 14 | 699 | 0.6+ | 0.4+ | 2000 04 26 | 699 | 0.4− | 0.9+ | 2006 10 16 | 703 | 0.7+ | 0.6− | |
| 1998 10 29 | 704 | 0.4+ | 0.9− | 2000 04 26 | 699 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.7+ | |
| 1998 10 29 | 704 | 0.1+ | 0.1− | 2000 04 26 | 699 | 0.3− | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.2− | |
| 1998 10 29 | 704 | 0.3− | 1.0− | 2000 05 26 | 699 | 0.5− | 1.2− | 2006 11 16 | 703 | 0.1− | 0.2+ | |
| 1998 10 29 | 704 | 0.2+ | 0.8− | 2000 05 26 | 699 | 0.8− | 0.9+ | 2006 11 16 | 703 | 0.3+ | 0.1− | |
| 1998 10 29 | 704 | 0.4− | 0.5− | 2000 05 26 | 699 | 0.3− | 0.3− | 2006 11 16 | 703 | 0.0 | 0.2− | |
| 1998 11 13 | 704 | 1.7− | 1.1+ | 2000 05 26 | 699 | 0.3− | 0.4+ | 2006 11 16 | 703 | 0.2+ | 0.4− | |
| 1998 11 13 | 704 | 0.3+ | 0.8+ | 2000 05 29 | 699 | 1.6+ | 1.1+ | 2006 11 22 | 704 | 0.4− | 0.0 | |
| 1998 11 13 | 704 | 0.0 | 0.5+ | 2000 05 29 | 699 | 1.2− | 0.5+ | 2006 11 22 | 704 | 0.9+ | 0.3+ | |
| 1998 11 13 | 704 | (2.6− | 1.4−) | 2000 05 29 | 699 | 0.8− | 1.0+ | 2006 11 22 | 704 | 0.9− | 0.3+ | |
| 1998 11 13 | 704 | (5.1− | 1.0−) | 2000 05 29 | 699 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.4+ | |
| 2000 04 05 | 704 | 0.8− | 0.3+ | 2005 03 11 | 703 | 1.3+ | 1.3− | 2006 11 22 | 704 | 0.0 | 1.2+ | |
| 2000 04 05 | 704 | 0.5+ | 0.6+ | 2005 03 11 | 703 | 0.2− | 0.4− | 2006 11 22 | 703 | 0.5+ | 0.4− | |
| 2000 04 05 | 704 | 0.8− | 0.0 | 2005 03 11 | 703 | 0.8− | 0.8− | 2006 11 22 | 703 | 0.4+ | 0.3− | |
| 2000 04 05 | 704 | 0.8+ | 0.5+ | 2005 03 11 | 703 | 0.0 | 0.3− | 2006 11 22 | 703 | 0.5− | 0.0 | |
| 2000 04 05 | 704 | 0.1− | 0.3+ | 2006 08 29 | 703 | 1.0− | 0.0 | 2006 11 22 | 703 | 0.2− | 0.0 | |
| 2000 04 06 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.5+ | 2006 11 23 | 703 | 0.3− | 0.4+ | |
| 2000 04 06 | 704 | 0.5+ | 0.7+ | 2006 08 29 | 703 | 0.3+ | 0.2+ | 2006 11 23 | 703 | 0.3+ | 0.4+ | |
| 2000 04 06 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.5+ | 0.2+ | 2006 11 23 | 703 | 0.4+ | 0.4+ | |
| 2000 04 06 | 704 | 0.1− | 0.7+ | 2006 10 01 | 703 | 0.2+ | 0.6+ | 2006 11 23 | 703 | 0.2− | 0.6+ | |

**(138261)∗ 2000 GR$_4$ = 2002 RP$_{103}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34941)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.46841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24354166 | $\omega$ | 137.60334 | | −0.84467604 | −0.52744488 | |
| $a$ | 2.5395331 | $\Omega$ | 11.64320 | | +0.28244865 | −0.58397375 | |
| $e$ | 0.1991310 | $i$ | 26.87734 | | +0.45469236 | −0.61707095 | |
| $P$ | 4.05 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 703 | 1.2− | 0.3+ | 2002 10 09 | 704 | 0.8+ | 1.2− | 2004 04 22 | 704 | 0.1+ | 0.7+ | |
| 2000 03 12 | 703 | 0.1− | 0.3− | 2002 10 09 | 704 | 0.3+ | 0.6+ | 2004 04 22 | 704 | 0.4+ | 0.5+ | |
| 2000 03 12 | 703 | 0.5− | 0.1+ | 2002 10 12 | 704 | 0.4+ | 0.0 | 2004 04 22 | 704 | 0.6+ | 0.2+ | |
| 2000 03 12 | 703 | 0.1− | 0.1+ | 2002 10 12 | 704 | 0.3+ | 0.5− | 2004 04 25 | 699 | 0.7+ | 0.2− | |
| 2000 03 12 | 704 | 0.2− | 0.2− | 2002 10 12 | 704 | 0.0 | 1.3− | 2004 04 25 | 699 | 0.4− | 0.5− | |
| 2000 03 12 | 704 | 0.2+ | 0.0 | 2002 10 12 | 704 | 0.0 | 0.8− | 2004 04 25 | 699 | 0.2+ | 0.2− | |
| 2000 03 12 | 704 | 0.0 | 0.2+ | 2002 10 12 | 704 | 0.0 | 0.8− | 2004 04 25 | 699 | 0.7− | 0.1+ | |
| 2000 03 12 | 704 | 0.1+ | 0.3+ | 2002 10 28 | 644 | 0.1+ | 0.1+ | 2004 05 13 | 704 | 0.6+ | 0.1− | |
| 2000 03 26 | 699 | 0.3+ | 0.2+ | 2002 10 28 | 644 | 0.1− | 0.2+ | 2004 05 13 | 704 | 0.9+ | 0.1− | |
| 2000 03 26 | 699 | 0.3+ | 0.3+ | 2002 10 28 | 644 | 0.3+ | 0.3+ | 2004 05 13 | 704 | 0.6+ | 0.1− | |
| 2000 03 26 | 699 | 0.1+ | 0.1+ | 2002 10 30 | 644 | 0.3+ | 1.0− | 2004 05 13 | 704 | 0.4+ | 0.4− | |
| 2000 03 26 | 699 | 0.1+ | 0.1+ | 2002 10 30 | 644 | 0.2+ | 0.1− | 2004 05 13 | 704 | 0.2+ | 0.0 | |
| 2000 04 05 | 704 | 0.4+ | 0.5+ | 2002 10 30 | 644 | 0.1+ | 0.5− | 2004 05 16 | 704 | 0.5+ | 0.1+ | |
| 2000 04 05 | 704 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.3− | 0.0 | 2004 05 16 | 704 | (1.8+ | 0.4−) | |
| 2000 04 05 | 704 | 0.3− | 0.2− | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2004 05 16 | 704 | 0.4+ | 0.2− | |
| 2000 04 05 | 704 | 0.1+ | 0.0 | 2004 02 16 | 704 | 0.2− | 0.2+ | 2004 05 16 | 704 | 0.6+ | 0.3+ | |
| 2000 04 05 | 704 | 0.0 | 0.2− | 2004 02 16 | 704 | 0.4− | 0.1+ | 2004 05 16 | 704 | 0.5+ | 0.2− | |
| 2000 04 07 | 699 | 0.4+ | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 691 | 0.2− | 0.2+ | |
| 2000 04 07 | 699 | 0.3+ | 0.2− | 2004 02 24 | A16 | 1.2− | 1.1− | 2006 09 14 | 691 | 0.2− | 0.4+ | |
| 2000 04 07 | 699 | 0.2+ | 0.6+ | 2004 02 24 | A16 | (2.9− | 0.8−) | 2006 09 14 | 703 | 0.0 | 0.7+ | |
| 2000 04 07 | 699 | 0.1+ | 0.2+ | 2004 02 24 | A16 | (2.9− | 0.3−) | 2006 09 14 | 703 | 1.1− | 0.5+ | |
| 2000 04 08 | 704 | 0.8+ | 0.0 | 2004 02 29 | 704 | 0.3+ | 0.6− | 2006 09 14 | 691 | 0.2+ | 0.1+ | |
| 2000 04 08 | 704 | 0.2+ | 0.7+ | 2004 02 29 | 704 | 0.4+ | 0.5− | 2006 09 14 | 703 | 0.6− | 0.1− | |
| 2000 04 08 | 704 | 0.3+ | 0.1+ | 2004 02 29 | 704 | 0.0 | 1.5− | 2006 09 14 | 703 | 0.5− | 0.8− | |
| 2000 04 08 | 704 | 0.0 | 0.2+ | 2004 02 29 | 704 | (0.8− | 1.7−) | 2006 09 14 | 703 | 0.9− | 0.5− | |
| 2000 04 08 | 704 | 0.6+ | 0.8+ | 2004 03 11 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.1− | |
| 2000 04 10 | 704 | 0.4+ | 0.8+ | 2004 03 11 | 644 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.5− | |
| 2000 04 10 | 704 | 0.1− | 0.1+ | 2004 03 11 | 644 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.3+ | |
| 2000 04 10 | 704 | 0.1+ | 0.5+ | 2004 03 11 | 185 | 0.4+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.5+ | |
| 2000 04 10 | 704 | 0.6+ | 0.2− | 2004 03 11 | 185 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.5+ | |
| 2000 04 10 | 704 | 0.1− | 1.0− | 2004 03 11 | 185 | 0.3− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.4+ | |
| 2000 04 26 | 699 | 0.8+ | 0.2+ | 2004 03 14 | 704 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.3− | |
| 2000 04 26 | 699 | 0.1− | 0.5+ | 2004 03 14 | 704 | 0.6− | 0.5+ | 2006 09 18 | 699 | (1.0− | 1.8+) | |
| 2000 04 26 | 699 | 0.8+ | 0.3+ | 2004 03 14 | 704 | 0.2− | 0.1+ | 2006 09 18 | 699 | (0.5+ | 1.5+) | |
| 2000 04 26 | 699 | 0.7+ | 0.3+ | 2004 03 14 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.6− | |
| 2000 05 01 | 608 | 0.4+ | 0.9− | 2004 03 23 | 704 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.5+ | |
| 2000 05 01 | 608 | 0.8+ | 1.4− | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.3+ | |
| 2000 05 01 | 608 | 0.3+ | 1.1− | 2004 03 23 | 704 | 0.4− | 0.1+ | 2006 09 20 | 644 | 0.5+ | 0.2+ | |
| 2000 05 05 | 704 | 0.4+ | 0.3− | 2004 03 23 | 704 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.0 | |
| 2000 05 05 | 704 | 0.7+ | 1.3+ | 2004 03 23 | 704 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.0 | |
| 2000 05 05 | 704 | 0.1+ | 0.7+ | 2004 03 25 | 704 | 0.5− | 0.6+ | 2006 09 25 | G96 | 0.3+ | 0.0 | |
| 2000 05 05 | 704 | 0.1+ | 1.0+ | 2004 03 25 | 704 | 0.4− | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.3+ | |
| 2002 09 05 | 704 | 0.4+ | 0.3+ | 2004 03 25 | 704 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.3+ | |
| 2002 09 05 | 704 | 1.0− | 0.3+ | 2004 03 26 | 703 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.2+ | |
| 2002 09 05 | 704 | 0.7− | 0.5− | 2004 03 26 | 703 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.9− | |
| 2002 09 07 | 704 | 0.2− | 0.6+ | 2004 03 26 | 703 | 0.6− | 0.7+ | 2006 09 29 | 704 | 0.9− | 0.5+ | |
| 2002 09 07 | 704 | 0.0 | 0.7+ | 2004 03 26 | 703 | 0.2− | 0.6+ | 2006 09 29 | 704 | 0.5− | 0.1− | |
| 2002 09 07 | 704 | 0.4+ | 0.2− | 2004 04 13 | 703 | 0.7+ | 1.1+ | 2006 09 29 | 704 | 0.9− | 0.2+ | |
| 2002 09 07 | 704 | 0.9− | 0.8+ | 2004 04 13 | 703 | 0.4+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ | |
| 2002 10 01 | 699 | 0.3+ | 0.7+ | 2004 04 13 | 703 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ | |
| 2002 10 01 | 699 | 0.4− | 0.2+ | 2004 04 13 | 703 | 1.0+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ | |
| 2002 10 01 | 699 | 0.9− | 0.1− | 2004 04 15 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 2002 10 01 | 699 | 0.6− | 0.3+ | 2004 04 15 | 704 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2002 10 04 | 704 | (0.4− | 2.5−) | 2004 04 15 | 704 | 1.2+ | 0.6− | 2006 10 11 | 644 | 0.1− | 0.1+ | |
| 2002 10 04 | 704 | 0.6− | 0.8+ | 2004 04 15 | 704 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.2+ | |
| 2002 10 04 | 704 | 0.6− | 0.6+ | 2004 04 15 | 704 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.3+ | 0.1− | |
| 2002 10 04 | 704 | 0.7− | 0.9+ | 2004 04 20 | 703 | 0.1+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.2− | |
| 2002 10 04 | 704 | 0.6− | 0.8+ | 2004 04 20 | 703 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | |
| 2002 10 05 | 644 | 0.5− | 0.4+ | 2004 04 20 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 2002 10 05 | 644 | 0.6− | 0.2+ | 2004 04 20 | 703 | 0.7+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 2002 10 05 | 644 | 0.6− | 0.3+ | 2004 04 20 | 703 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2002 10 05 | 049 | 0.2+ | 0.5− | 2004 04 20 | 704 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.2− | |
| 2002 10 05 | 049 | (1.9− | 0.9−) | 2004 04 20 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2002 10 05 | 049 | (1.9− | 0.7−) | 2004 04 20 | 704 | 0.4+ | 0.2− | 2006 11 13 | 703 | 0.6− | 1.0− | |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2004 04 20 | 704 | 0.6+ | 0.2− | 2006 11 13 | 703 | 0.7+ | 1.2+ | |
| 2002 10 09 | 704 | 0.1+ | 0.4− | 2004 04 22 | 704 | 0.8+ | 0.7+ | 2006 11 13 | 703 | 0.6− | 1.0− | |
| 2002 10 09 | 704 | 0.3− | 0.5+ | 2004 04 22 | 704 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.7+ | 0.9+ | |

**(138262)∗ 2000 GM$_9$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.63210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22786553 | $\omega$ | 107.12397 | | −0.04835353 | −0.99868064 | |
| $a$ | 2.6547092 | $\Omega$ | 345.61454 | | +0.88792136 | −0.03505062 | |
| $e$ | 0.0661940 | $i$ | 3.99040 | | +0.45744683 | −0.03752905 | |
| $P$ | 4.33 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.5+ | 1.2+ | 2004 01 13 | 699 | 0.5− | 0.7+ | 2005 05 11 | 644 | 0.3+ | 0.8+ | |
| 2000 03 03 | 704 | 0.0 | 0.8+ | 2004 01 13 | 699 | 0.4− | 1.9+ | 2005 05 11 | 644 | 0.7+ | 1.4+ | |
| 2000 03 03 | 704 | 1.2+ | 0.3+ | 2004 01 13 | 699 | 1.0+ | 0.3+ | 2005 05 11 | 644 | 0.6+ | 1.2+ | |
| 2000 03 11 | 704 | 0.1+ | 0.2− | 2004 01 13 | 699 | 0.3+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.6+ | |
| 2000 03 11 | 704 | 0.5+ | 0.6+ | 2004 01 22 | 704 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.6+ | |
| 2000 03 11 | 704 | 0.4+ | 1.1+ | 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.6+ | |
| 2000 03 11 | 704 | 0.2+ | 0.7+ | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.6+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.2+ | 0.4+ | 2004 01 22 | 704 | 0.1− | 0.5+ | 2006 08 17 | 644 | 0.1− | 0.5+ | | |
| 2000 04 02 | 699 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.4− | 0.4− | 2006 08 17 | 644 | 0.2+ | 0.4+ | | |
| 2000 04 02 | 699 | 0.6+ | 0.4− | 2004 01 26 | 699 | 1.0+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.4+ | | |
| 2000 04 02 | 699 | 1.1+ | 0.9+ | 2004 01 26 | 699 | 0.3+ | 0.4− | 2006 08 18 | 644 | 0.2− | 0.5+ | | |
| 2000 04 02 | 699 | 0.6+ | 0.4+ | 2004 01 26 | 699 | 0.8− | 0.2− | 2006 08 18 | 644 | 0.0 | 0.4+ | | |
| 2000 04 02 | 691 | 0.1− | 0.1− | 2004 01 26 | 699 | 0.1− | 0.8− | 2006 08 21 | 704 | 0.4− | 0.6+ | | |
| 2000 04 02 | 691 | 0.5− | 0.1− | 2004 01 30 | 704 | 1.5+ | 0.2− | 2006 08 21 | 704 | 0.3+ | 0.1− | | |
| 2000 04 02 | 691 | 0.1− | 0.2− | 2004 01 30 | 704 | 0.4− | 0.8− | 2006 08 21 | 704 | 0.7+ | 1.1+ | | |
| 2000 04 05 | 704 | 0.3− | 0.2− | 2004 01 30 | 704 | 1.3+ | 0.1− | 2006 08 21 | 704 | 1.2+ | 0.4+ | | |
| 2000 04 05 | 704 | 0.2− | 1.1+ | 2004 01 30 | 704 | 0.9+ | 0.0 | 2006 08 21 | 704 | 0.3+ | 0.5− | | |
| 2000 04 05 | 704 | 0.4+ | 1.5+ | 2004 01 30 | 704 | 0.7+ | 0.3− | 2006 08 22 | 644 | 0.2− | 0.5+ | | |
| 2000 04 05 | 704 | 0.2+ | 1.0+ | 2004 02 10 | 703 | 1.0+ | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.5+ | | |
| 2000 04 06 | 704 | 0.0 | 0.1+ | 2004 02 10 | 703 | 0.2+ | 0.1− | 2006 08 22 | 644 | 0.1− | 0.6+ | | |
| 2000 04 06 | 704 | 1.5+ | 1.4+ | 2004 02 10 | 703 | 1.0− | 0.2− | 2006 08 25 | 704 | 0.3− | 0.9− | | |
| 2000 04 06 | 704 | 0.4+ | 1.1+ | 2004 02 10 | 703 | 0.7+ | 0.4+ | 2006 08 25 | 704 | 1.5− | 1.1+ | | |
| 2000 04 06 | 704 | 0.5+ | 1.3+ | 2004 02 11 | 333 | 0.5− | 1.2+ | 2006 08 25 | 704 | 1.7− | 0.3− | | |
| 2002 10 07 | 699 | 0.8− | 0.0 | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 08 25 | 704 | 1.3− | 1.0+ | | |
| 2002 10 07 | 699 | 1.1− | 0.2− | 2004 02 11 | 699 | 0.3+ | 0.1− | 2006 08 25 | 704 | 1.5− | 0.2+ | | |
| 2002 10 07 | 699 | 0.1− | 1.4+ | 2004 02 11 | 333 | 1.1− | 0.7+ | 2006 08 28 | 699 | 0.7− | 0.7+ | | |
| 2002 10 07 | 699 | 1.2− | 0.6− | 2004 02 11 | 333 | 1.3− | 0.8+ | 2006 08 28 | 703 | 0.6− | 0.9+ | | |
| 2002 10 07 | 704 | 0.3+ | 1.0+ | 2004 02 11 | 699 | 0.7− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.2+ | | |
| 2002 10 07 | 704 | 0.7+ | 0.6+ | 2004 02 11 | 699 | 1.0− | 0.5− | 2006 08 28 | 699 | 1.4− | 1.2+ | | |
| 2002 10 07 | 704 | 1.0+ | 1.1+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.4− | 1.4+ | | |
| 2002 10 07 | 704 | 0.3− | 0.5− | 2004 02 11 | 699 | 0.3− | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.4+ | | |
| 2002 10 07 | 704 | 0.5− | 0.3+ | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 1.3− | 0.3+ | | |
| 2002 10 12 | 704 | 0.3− | 0.5− | 2004 02 14 | 608 | 0.1+ | 0.4− | 2006 08 28 | 699 | 0.1− | 0.7− | | |
| 2002 10 12 | 704 | 0.1+ | 0.5− | 2004 02 14 | 608 | 0.7+ | 0.0 | 2006 08 31 | 704 | 2.0+ | 0.3− | | |
| 2002 10 12 | 704 | 0.5− | 0.3− | 2004 02 14 | 608 | 0.5+ | 0.2+ | 2006 08 31 | 704 | 1.0+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.9− | 0.7− | 2004 02 16 | 704 | 0.3− | 1.0+ | 2006 08 31 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.7− | 0.3− | 2004 02 16 | 704 | 0.2+ | 1.0+ | 2006 09 14 | 703 | 0.8− | 0.2+ | | |
| 2002 10 31 | 699 | 0.3− | 0.9+ | 2004 02 16 | 704 | 0.4− | 0.9+ | 2006 09 14 | 703 | 1.3− | 0.2+ | | |
| 2002 10 31 | 699 | 0.8− | 0.9+ | 2004 02 19 | 608 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.3+ | 0.2− | | |
| 2002 10 31 | 699 | 0.2− | 1.6+ | 2004 02 19 | 608 | 0.7+ | 0.1− | 2006 09 14 | 703 | 0.6− | 0.1+ | | |
| 2002 10 31 | 699 | 0.5+ | 0.6+ | 2004 02 19 | 608 | 0.9+ | 0.5− | 2006 09 17 | 704 | 0.8+ | 0.1− | | |
| 2002 11 01 | 704 | 1.6+ | 0.2− | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.4+ | | |
| 2002 11 01 | 704 | 0.2+ | 1.3− | 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 09 17 | 704 | 0.2+ | 0.2+ | | |
| 2002 11 01 | 704 | 0.4+ | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.7+ | 0.6− | | |
| 2002 11 01 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.0 | | |
| 2002 11 08 | 704 | 0.4+ | 1.4+ | 2004 02 23 | 704 | 1.1− | 0.2+ | 2006 09 25 | G96 | 0.5− | 0.2− | | |
| 2002 11 08 | 704 | 0.7+ | 0.7+ | 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.1− | | |
| 2002 11 08 | 704 | 0.1+ | 0.5+ | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1+ | | |
| 2002 11 08 | 704 | 0.2− | 0.5+ | 2004 02 29 | 691 | 0.1+ | 0.0 | | | | | | |

**(138263)∗ 2000 GW$_9$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.61622 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24619816 | $\omega$ | 105.18814 | | −0.18214091 | −0.98324427 |
| $a$ | 2.5212322 | $\Omega$ | 355.28735 | | +0.86378528 | −0.15638605 |
| $e$ | 0.0537611 | $i$ | 5.19762 | | +0.46978685 | −0.09367022 |
| $P$ | 4.00 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.2− | 2002 11 24 | 644 | 0.2− | 0.1− | 2004 03 26 | 699 | 0.7+ | 0.2+ | | |
| 2000 03 03 | 645 | 0.0 | 0.2− | 2002 11 24 | 644 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.1− | | |
| 2000 03 10 | 704 | 0.6− | 0.1− | 2002 11 28 | 699 | 1.2− | 1.0+ | 2004 03 27 | 704 | 1.0+ | 0.5+ | | |
| 2000 03 10 | 704 | 0.9+ | 0.1+ | 2002 11 28 | 699 | 0.9− | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.1+ | | |
| 2000 03 10 | 704 | 0.6+ | 0.4+ | 2002 11 28 | 699 | 0.2− | 0.8+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | | |
| 2000 03 10 | 704 | 1.2+ | 0.7+ | 2002 11 28 | 699 | 0.2− | 0.4− | 2004 03 31 | 691 | 0.1− | 0.4+ | | |
| 2000 03 10 | 704 | 0.5+ | 1.2+ | 2002 12 02 | 704 | 0.9− | 1.2− | 2004 03 31 | 691 | 0.0 | 0.3+ | | |
| 2000 03 11 | 704 | 1.8− | 1.3+ | 2002 12 02 | 704 | 1.2+ | 1.0− | 2004 03 31 | 691 | 0.2+ | 0.3+ | | |
| 2000 03 11 | 704 | 1.1− | 0.6− | 2002 12 02 | 704 | 0.1− | 0.4− | 2004 04 12 | 703 | 0.6+ | 0.3+ | | |
| 2000 03 11 | 704 | 0.9− | 0.6− | 2002 12 02 | 704 | 0.3+ | 0.4+ | 2004 04 12 | 703 | (2.1+ | 1.0+) | | |
| 2000 03 11 | 704 | 1.0− | 0.8− | 2002 12 11 | 644 | 0.4− | 0.4− | 2004 04 12 | 703 | 1.0+ | 0.9+ | | |
| 2000 03 11 | 704 | 1.3− | 1.6− | 2002 12 11 | 644 | 0.2− | 0.2+ | 2004 04 12 | 703 | 0.4+ | 0.0 | | |
| 2000 03 26 | 699 | 1.3− | 0.2+ | 2002 12 11 | 644 | 0.2+ | 0.1− | 2004 04 16 | 704 | (1.6+ | 0.8−) | | |
| 2000 03 26 | 699 | 0.4− | 0.0 | 2002 12 11 | 704 | 0.1− | 0.4− | 2004 04 16 | 704 | 1.4+ | 0.5− | | |
| 2000 03 26 | 699 | 0.7+ | 0.1− | 2002 12 11 | 704 | 0.5+ | 0.1+ | 2004 04 16 | 704 | 1.0+ | 0.5− | | |
| 2000 03 26 | 699 | 0.9− | 0.8− | 2002 12 11 | 704 | 0.6+ | 0.2+ | 2004 04 16 | 704 | (2.2+ | 1.0−) | | |
| 2000 04 05 | 704 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.4+ | 0.2+ | 2004 04 20 | 704 | 0.4+ | 0.6+ | | |
| 2000 04 05 | 704 | 0.6+ | 0.3+ | 2002 12 11 | 704 | (2.9+ | 0.9−) | 2004 04 20 | 704 | 0.6+ | 0.9+ | | |
| 2000 04 05 | 704 | 0.1+ | 0.2− | 2002 12 27 | 644 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.0 | | |
| 2000 04 05 | 704 | 0.1+ | 0.3+ | 2002 12 27 | 644 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.6+ | 0.3− | | |
| 2000 04 07 | 704 | 0.5+ | 0.0 | 2002 12 27 | 644 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.3− | | |
| 2000 04 07 | 704 | 0.2+ | 0.2− | 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.4− | | |
| 2000 04 07 | 704 | 0.1+ | 1.0+ | 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.3− | | |
| 2000 04 10 | 691 | 0.3− | 0.3− | 2003 12 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.4+ | | |
| 2000 04 10 | 691 | 0.0 | 0.0 | 2004 02 18 | 608 | 0.2+ | 0.5− | 2006 10 19 | 703 | 0.5− | 0.0 | | |
| 2000 04 10 | 691 | 0.2+ | 0.2+ | 2004 02 18 | 608 | 0.2− | 0.8− | 2006 10 19 | 703 | 0.6+ | 0.3− | | |
| 2002 09 12 | 049 | (1.5− | 0.4+) | 2004 02 18 | 608 | 0.0 | 1.1− | 2006 10 19 | 703 | 0.0 | 0.8− | | |
| 2002 09 12 | 049 | 1.3− | 0.5+ | 2004 02 19 | 704 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2002 09 12 | 049 | 1.2− | 0.4+ | 2004 02 19 | 704 | 0.7− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2002 10 12 | 704 | 0.9+ | 0.5+ | 2004 02 19 | 704 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2− | | |
| 2002 10 12 | 704 | 1.1+ | 0.7+ | 2004 02 19 | 704 | 0.1+ | 0.8− | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.1− | 2004 02 19 | 704 | 0.6− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2002 10 12 | 704 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.7− | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.4+ | | |
| 2002 10 31 | 699 | 0.2− | 0.5+ | 2004 02 26 | 704 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.0 | | |
| 2002 10 31 | 699 | 0.5− | 1.1+ | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 10 27 | 703 | 0.8− | 0.2− | | |
| 2002 10 31 | 699 | 0.3− | 0.5− | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1+ | | |
| 2002 10 31 | 699 | 0.9− | 0.4+ | 2004 02 26 | 704 | 0.8+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 2002 11 01 | 644 | 0.0 | 0.4+ | 2004 03 12 | 644 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 2002 11 01 | 644 | 0.2+ | 0.3+ | 2004 03 12 | 644 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.5+ | 0.6+ | | |
| 2002 11 01 | 644 | 0.0 | 0.3+ | 2004 03 12 | 644 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.2+ | 1.2− | 2004 03 16 | 704 | 0.6− | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.9+ | | |
| 2002 11 05 | 704 | (1.6+ | 1.6+) | 2004 03 16 | 704 | 0.1+ | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.8+ | | |
| 2002 11 05 | 704 | (0.6+ | 1.6+) | 2004 03 16 | 704 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.3+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.4− | | |
| 2002 11 08 | 704 | 0.2− | 0.5− | 2004 03 16 | 704 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.5− | | |
| 2002 11 08 | 704 | 0.9− | 0.3− | 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.5− | | |
| 2002 11 08 | 704 | 0.6− | 0.4− | 2004 03 18 | 704 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.4− | | |
| 2002 11 12 | 704 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.2+ | | |
| 2002 11 12 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.3− | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.7+ | | |
| 2002 11 12 | 704 | 1.2+ | 0.7− | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.4+ | | |
| 2002 11 14 | 704 | 0.1− | 0.0 | 2004 03 23 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.8+ | | |
| 2002 11 14 | 704 | 0.1− | 0.9+ | 2004 03 23 | 691 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.1+ | 1.1− | | |
| 2002 11 14 | 704 | 0.0 | 0.9+ | 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.9− | | |
| 2002 11 14 | 704 | 0.3+ | 0.1+ | 2004 03 26 | 699 | 0.8+ | 0.1− | 2006 11 22 | 704 | 0.7+ | 0.6− | | |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2004 03 26 | 699 | 0.8− | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.3− | | |
| 2002 11 24 | 644 | 0.2+ | 0.4+ | 2004 03 26 | 699 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.2− | 1.2− | | |

**(138264)∗ 2000 GQ$_{11}$ = 2002 TH$_{256}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37458)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.78574 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24663713 | $\omega$ | 279.00911 | | +0.29448395 | −0.95562586 |
| $a$ | 2.5182398 | $\Omega$ | 153.86037 | | +0.88347203 | +0.26918268 |
| $e$ | 0.1333782 | $i$ | 0.99399 | | +0.36435749 | +0.11966577 |
| $P$ | 4.00 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 23 | 327 | 1.7+ | 0.2− | 2004 03 15 | 703 | 1.3− | 1.3+ | 2006 10 15 | 691 | 0.3+ | 0.3+ | | |
| 1998 12 23 | 327 | 0.5+ | 1.2− | 2004 03 15 | 703 | 1.5− | 0.3− | 2006 10 15 | 691 | 0.0 | 0.1+ | | |
| 1998 12 23 | 327 | 0.1− | 0.2− | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | | |
| 2000 02 12 | 645 | 0.3− | 0.1− | 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2000 02 12 | 645 | 0.3− | 0.1− | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2000 03 02 | 691 | 0.6+ | 0.8− | 2004 03 18 | 704 | 1.1+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2000 03 02 | 691 | 0.6+ | 0.5− | 2004 03 18 | 704 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.6− | 0.2+ | | |
| 2000 03 02 | 691 | 0.8+ | 0.5− | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.6− | | |
| 2000 04 05 | 704 | 0.8+ | 0.0 | 2004 03 26 | 699 | 1.4+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2000 04 05 | 704 | 0.7+ | 0.7+ | 2004 03 26 | 699 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.3+ | 0.5+ | 2004 03 26 | 699 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.1+ | |
| 2000 04 05 | 704 | 0.2− | 1.1+ | 2004 03 26 | 699 | 0.6+ | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 2000 04 05 | 704 | 0.8+ | 1.1+ | 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.1− | |
| 2000 04 06 | 704 | 0.7+ | 0.7+ | 2004 03 27 | 704 | 1.0+ | 0.7+ | 2006 10 21 | 703 | 0.8+ | 0.2+ | |
| 2000 04 06 | 704 | 0.0 | 0.5+ | 2004 03 27 | 704 | 1.2+ | 0.7− | 2006 10 21 | 703 | 0.1− | 0.1− | |
| 2000 04 06 | 704 | 0.5+ | 1.2+ | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.3− | 1.2+ | |
| 2000 04 24 | 691 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 2000 04 24 | 691 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2− | |
| 2000 04 24 | 691 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2002 10 03 | 704 | 0.5− | 1.4+ | 2004 03 28 | 704 | 0.5+ | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.2− | |
| 2002 10 03 | 704 | 0.3+ | 0.6+ | 2004 03 29 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2− | |
| 2002 10 03 | 704 | 1.1+ | 1.4+ | 2004 03 29 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1− | |
| 2002 10 03 | 704 | 0.8+ | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.5+ | 0.0 | |
| 2002 10 09 | 704 | 0.1+ | 0.7+ | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.1+ | |
| 2002 10 09 | 704 | 0.8− | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.1+ | |
| 2002 10 09 | 704 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.2− | 2006 10 28 | 704 | 0.4− | 1.3+ | |
| 2002 10 09 | 704 | 0.1+ | 0.3− | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 28 | 704 | 1.3+ | 0.1− | |
| 2002 10 11 | 704 | 0.4+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.6+ | 2006 10 28 | 704 | 0.1− | 0.9+ | |
| 2002 10 11 | 704 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.6+ | 0.5+ | |
| 2002 10 11 | 704 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 28 | 704 | 0.6− | 0.9+ | |
| 2002 10 11 | 704 | 0.5− | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− | |
| 2002 10 11 | 704 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2− | |
| 2002 10 31 | 699 | 1.2− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2− | |
| 2002 10 31 | 699 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 07 | 644 | 0.3+ | 0.1− | |
| 2002 10 31 | 699 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.7− | 0.1− | 2006 11 07 | 644 | 0.2+ | 0.1− | |
| 2002 10 31 | 699 | 1.4− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.2+ | 0.1− | |
| 2002 10 31 | 608 | 0.0 | 1.1+ | 2006 09 30 | 703 | 0.5+ | 0.7− | 2006 11 11 | 703 | 0.0 | 0.4− | |
| 2002 10 31 | 608 | (0.9− | 1.5+) | 2006 09 30 | 703 | 0.6− | 0.4− | 2006 11 11 | 703 | 0.4− | 0.4+ | |
| 2002 10 31 | 608 | 0.3− | 1.0+ | 2006 10 04 | 683 | (0.4+ | 1.5+) | 2006 11 11 | 703 | 1.2− | 0.0 | |
| 2002 11 05 | 699 | (0.1− | 1.9+) | 2006 10 04 | 683 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.5+ | 0.3− | |
| 2002 11 05 | 699 | 0.6− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.5− | |
| 2002 11 05 | 699 | 0.9− | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.4− | |
| 2002 11 05 | 699 | 1.1− | 0.7+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− | |
| 2002 11 06 | 704 | (0.3− | 2.2−) | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− | |
| 2002 11 06 | 704 | (0.3− | 1.9−) | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.9+ | 1.4− | |
| 2002 11 06 | 704 | (0.1+ | 1.9−) | 2006 10 11 | 644 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.5− | 0.9− | |
| 2002 11 06 | 704 | 0.6− | 1.2− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.8− | |
| 2004 02 26 | 704 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.0 | 1.0− | |
| 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1− | 0.1+ | |
| 2004 02 26 | 704 | 1.0+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.2+ | |
| 2004 03 15 | 703 | 0.8− | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.3− | 0.0 | |
| 2004 03 15 | 703 | (0.1+ | 1.9+) | 2006 10 12 | 644 | 0.2+ | 0.1+ | | | | | |

**(138265)∗ 2000 GY$_{13}$ = 2002 TD$_{262}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37459)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 262.18597 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22907473 | $\omega$ | 80.63436 | −0.16601897 | −0.98576667 | |
| $a$ | 2.6453589 | $\Omega$ | 18.98402 | +0.86978049 | −0.15903783 | |
| $e$ | 0.0710614 | $i$ | 4.67102 | +0.46467149 | −0.05450725 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.1+ | 0.6− | 2006 09 14 | 703 | 0.5+ | 0.2+ | |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.2− | 0.1+ | |
| 2000 03 11 | 704 | 0.9+ | 0.3+ | 2002 10 11 | 704 | 0.2− | 0.9− | 2006 09 14 | 703 | 0.8− | 0.7+ | |
| 2000 03 11 | 704 | 0.3+ | 0.4− | 2002 10 11 | 704 | 0.2− | 1.5− | 2006 09 14 | 703 | 0.7− | 1.1+ | |
| 2000 03 11 | 704 | 0.4+ | 0.7− | 2002 10 11 | 704 | 0.5+ | 0.1− | 2006 09 16 | 699 | 0.6− | 1.0+ | |
| 2000 04 05 | 704 | 0.3− | 0.1+ | 2002 12 07 | 291 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.6+ | 0.3− | |
| 2000 04 05 | 704 | 0.2+ | 0.2+ | 2002 12 07 | 291 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 1.3+ | |
| 2000 04 05 | 704 | 0.1+ | 0.3+ | 2002 12 07 | 291 | 0.5+ | 0.1+ | 2006 09 16 | 699 | 0.5+ | 0.5+ | |
| 2000 04 05 | 704 | 0.3+ | 0.9+ | 2004 01 23 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.9+ | |
| 2000 04 05 | 704 | 0.5− | 0.4+ | 2004 01 23 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.4− | |
| 2000 04 06 | 704 | 1.2+ | 1.0+ | 2004 01 23 | 704 | 1.2+ | 0.3− | 2006 09 19 | 699 | 0.7+ | 0.6+ | |
| 2000 04 06 | 704 | 0.2− | 0.1− | 2004 02 16 | 691 | 0.2− | 0.2+ | 2006 09 19 | 699 | (2.0− | 3.1+) | |
| 2000 04 06 | 704 | 0.1+ | 1.8+ | 2004 02 16 | 691 | 0.0 | 0.4− | 2006 10 02 | G96 | 0.0 | 0.3+ | |
| 2000 04 06 | 704 | 0.3− | 0.6+ | 2004 02 16 | 691 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.0 | |
| 2002 10 03 | 704 | (1.9− | 0.0 ) | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.5− | 0.2− | |
| 2002 10 03 | 704 | 1.0− | 0.1+ | 2004 02 17 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.8− | 0.4− | |
| 2002 10 03 | 704 | 1.3− | 0.0 | 2004 02 17 | 704 | 0.2− | 0.8+ | 2006 10 21 | G96 | 0.3− | 0.1− | |
| 2002 10 03 | 291 | (2.2− | 0.5−) | 2004 02 17 | 704 | 0.7− | 0.8+ | 2006 10 21 | G96 | 0.3− | 0.1− | |
| 2002 10 03 | 704 | 1.3− | 0.4+ | 2004 02 18 | 704 | 0.0 | 0.7+ | 2006 10 21 | G96 | 0.7− | 0.4− | |
| 2002 10 03 | 291 | 0.3− | 0.2+ | 2004 02 18 | 704 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.7− | 0.4+ | |
| 2002 10 03 | 291 | 0.6+ | 0.1+ | 2004 02 18 | 704 | 0.7− | 0.8+ | 2006 11 17 | G96 | 0.3+ | 0.2+ | |
| 2002 10 10 | 644 | 0.6− | 0.5+ | 2004 03 20 | 704 | 0.8+ | 0.2− | 2006 11 17 | G96 | 0.5+ | 0.0 | |
| 2002 10 10 | 644 | 0.3− | 0.7+ | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.1− | |
| 2002 10 10 | 644 | 0.4− | 0.5+ | 2004 03 20 | 704 | 1.0+ | 1.1− | 2006 11 17 | G96 | 0.2+ | 0.3− | |

**(138266)∗ 2000 GC$_{14}$ = 2004 CP$_{66}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 194.15177 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22513991 | $\omega$ | 144.98292 | −0.95619729 | −0.28897827 | |
| $a$ | 2.6760921 | $\Omega$ | 18.39035 | +0.22326028 | −0.82308257 | |
| $e$ | 0.0735003 | $i$ | 8.50733 | +0.18931873 | −0.48890351 | |
| $P$ | 4.38 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | 1.0+ | 1.0− | 2000 04 10 | 704 | 0.5+ | 0.2− | 2004 02 22 | 703 | 0.6+ | 0.1+ | |
| 2000 03 08 | 704 | 0.5+ | 0.4− | 2002 10 03 | 704 | 0.2− | 0.4− | 2004 02 22 | 703 | 0.0 | 1.3+ | |
| 2000 03 08 | 704 | 0.3+ | 0.1+ | 2002 10 03 | 704 | 0.8− | 0.6+ | 2004 02 22 | 703 | 0.5− | 1.1+ | |
| 2000 03 08 | 704 | 0.2+ | 0.1+ | 2002 10 03 | 704 | 0.0 | 0.8+ | 2004 02 22 | 703 | 0.2− | 0.6+ | |
| 2000 03 27 | 699 | 0.2+ | 0.6+ | 2002 10 18 | 644 | 0.3− | 0.7+ | 2004 03 17 | 645 | 0.1− | 0.2− | |
| 2000 03 27 | 699 | 0.3− | 0.5+ | 2002 10 18 | 644 | 0.1− | 0.5+ | 2004 03 17 | 645 | 0.1− | 0.2− | |
| 2000 03 27 | 699 | 0.6− | 0.4+ | 2002 10 18 | 644 | 0.3+ | 0.5+ | 2004 03 23 | 704 | 0.6− | 0.6− | |
| 2000 03 27 | 699 | 0.4− | 1.0+ | 2003 12 18 | 644 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 1.1− | 1.0+ | |
| 2000 04 05 | 704 | 0.0 | 0.0 | 2003 12 18 | 644 | 0.6+ | 0.2+ | 2004 03 23 | 704 | 0.4− | 0.1− | |
| 2000 04 05 | 704 | 1.5+ | 1.1+ | 2003 12 18 | 644 | 0.6+ | 0.2+ | 2004 03 23 | 704 | 1.3− | 0.8− | |
| 2000 04 05 | 704 | 0.5− | 0.1− | 2004 01 17 | 644 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.2− | 0.5+ | |
| 2000 04 05 | 704 | 1.8+ | 0.4− | 2004 01 17 | 644 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.3− | 0.6+ | |
| 2000 04 06 | 704 | 0.5+ | 0.9+ | 2004 01 17 | 644 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.2− | 0.6+ | |
| 2000 04 06 | 704 | 0.3+ | 0.3+ | 2004 01 31 | 704 | (0.4− | 1.6+) | 2006 09 14 | 703 | 0.7− | 0.9+ | |
| 2000 04 06 | 704 | 0.8+ | 1.1+ | 2004 01 31 | 704 | 0.7+ | 1.3+ | 2006 09 14 | 703 | 0.1+ | 0.6+ | |
| 2000 04 06 | 704 | 0.3− | 0.5+ | 2004 01 31 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 703 | 0.6− | 0.7+ | |
| 2000 04 06 | 704 | 0.3− | 0.3− | 2004 01 31 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | (1.7− | 0.6+) | |
| 2000 04 07 | 699 | 0.1+ | 0.3− | 2004 01 31 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 1.1+ | |
| 2000 04 07 | 699 | 0.1− | 0.1+ | 2004 02 11 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 1.3− | 0.5− | |
| 2000 04 07 | 704 | 0.0 | 0.3+ | 2004 02 11 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 1.1− | 0.1+ | |
| 2000 04 07 | 699 | 0.1− | 1.5+ | 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.5+ | |
| 2000 04 07 | 704 | 0.6+ | 1.7+ | 2004 02 14 | 703 | 1.4+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2000 04 07 | 699 | 1.0− | 1.2+ | 2004 02 14 | 703 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.5− | 0.7+ | |
| 2000 04 07 | 704 | 1.1+ | 0.8+ | 2004 02 14 | 703 | (1.1+ | 1.6+) | 2006 10 11 | 644 | 0.4− | 0.6+ | |
| 2000 04 07 | 704 | 0.6− | 0.1− | 2004 02 14 | 703 | 0.9− | 0.2− | 2006 10 12 | 644 | 0.3− | 0.8+ | |
| 2000 04 07 | 704 | 0.3+ | 0.6+ | 2004 02 15 | 704 | 0.5+ | 1.0+ | 2006 10 12 | 644 | 0.6− | 0.4+ | |
| 2000 04 08 | 704 | 0.7− | 0.5+ | 2004 02 15 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.2+ | |
| 2000 04 08 | 704 | 0.0 | 1.7+ | 2004 02 15 | 704 | 0.0 | 1.3− | 2006 11 17 | G96 | 0.1− | 0.0 | |
| 2000 04 08 | 704 | 0.5+ | 0.6+ | 2004 02 15 | 704 | 0.2+ | 0.5− | 2006 11 17 | G96 | 0.1− | 0.1+ | |
| 2000 04 08 | 704 | 0.0 | 0.3− | 2004 02 15 | 704 | 0.8+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.1− | |
| 2000 04 10 | 704 | 0.8+ | 0.5+ | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.0 | |
| 2000 04 10 | 704 | 0.9+ | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.2+ | | | | | |
| 2000 04 10 | 704 | 1.0+ | 0.3+ | 2004 02 16 | 691 | 0.9+ | 0.4+ | | | | | |

**(138267)∗ 2000 GQ$_{15}$ = 2002 TU$_{254}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37460)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.53567 | | (2000.0) | | | |
| $n$ | 0.23898691 | $\omega$ | 249.19377 | | +0.08557402 | −0.99384163 |
| $a$ | 2.5716980 | $\Omega$ | 196.37706 | | +0.98152071 | +0.09622913 |
| $e$ | 0.0878031 | $i$ | 14.45838 | | +0.17115542 | −0.05494335 |
| $P$ | 4.12 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 699 | 0.3+ | 0.2+ | 2002 11 07 | 704 | 1.2− | 0.7+ | 2006 10 03 | 691 | 0.2+ | 0.1− |
| 1998 11 19 | 699 | 1.0+ | 0.0 | 2002 11 12 | 704 | 0.8− | 0.4+ | 2006 10 03 | 691 | 0.3+ | 0.2+ |
| 1998 11 19 | 699 | 0.9+ | 1.2− | 2002 11 12 | 704 | 0.8− | 0.9− | 2006 10 03 | 691 | 0.3+ | 0.1+ |
| 2000 03 27 | 699 | 0.2+ | 0.3+ | 2002 11 12 | 704 | 1.2+ | 0.6− | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2000 03 27 | 699 | 0.7+ | 0.4− | 2004 03 19 | 704 | 0.7− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 03 27 | 699 | 0.1− | 0.2− | 2004 03 19 | 704 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 03 27 | 699 | 0.8+ | 0.0 | 2004 03 19 | 704 | 0.6− | 0.1+ | 2006 10 15 | 703 | 0.3− | 0.3− |
| 2000 04 05 | 704 | 0.4+ | 0.6+ | 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.6+ | 0.0 |
| 2000 04 05 | 704 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.2− | 0.5+ |
| 2000 04 05 | 704 | 0.3− | 0.7+ | 2004 04 16 | 704 | 0.5+ | 0.0 | 2006 10 15 | 703 | 0.5− | 0.9− |
| 2000 04 05 | 704 | 0.0 | 0.8+ | 2004 04 16 | 704 | 1.3+ | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2000 04 05 | 704 | 0.3− | 0.3+ | 2004 04 16 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2000 04 06 | 704 | 0.2− | 1.0+ | 2004 04 24 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.3+ | 0.6+ | 2004 04 24 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.5− | 0.1+ |
| 2000 04 06 | 704 | 0.1+ | 1.2+ | 2004 04 24 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.8− | 1.0+ | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.9− |
| 2002 10 03 | 704 | 1.2− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.7− | 2006 10 21 | 703 | 1.0− | 0.6+ |
| 2002 10 03 | 704 | 0.4+ | 1.0+ | 2006 09 14 | 703 | (0.6+ | 1.7−) | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 10 09 | 699 | (0.5+ | 1.8−) | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2002 10 09 | 699 | 0.2+ | 1.0+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2002 10 09 | 699 | 0.4+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 10 09 | 699 | 0.7+ | 0.5− | 2006 09 18 | 699 | 0.6− | 0.5+ | 2006 10 21 | 703 | 0.6− | 0.9+ |
| 2002 10 11 | 704 | 0.7− | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2002 10 11 | 704 | 0.1− | 0.2− | 2006 09 18 | 699 | (2.5+ | 1.1−) | 2006 10 21 | 703 | 0.4− | 0.2− |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 11 13 | 703 | 1.1+ | 1.2+ |
| 2002 10 11 | 704 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.6+ | 0.6− |
| 2002 10 15 | 644 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2002 10 15 | 644 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.5− |
| 2002 10 15 | 644 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.4+ | 0.0 | 2006 11 20 | 704 | 1.1− | 1.3+ |
| 2002 10 31 | 704 | (1.3+ | 1.5−) | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | (1.9+ | 0.8+) |
| 2002 10 31 | 704 | 1.4+ | 1.4− | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2002 10 31 | 704 | (1.4+ | 1.7−) | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 1.4+ | 0.1− |
| 2002 10 31 | 704 | (1.4+ | 1.8−) | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.9− |
| 2002 10 31 | 704 | (1.2+ | 1.6−) | 2006 09 25 | G96 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 11 07 | 704 | 0.7− | 0.0 | 2006 09 25 | 691 | 0.4+ | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2002 11 07 | 704 | 0.8− | 0.0 | 2006 09 29 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.6− |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2006 09 29 | 691 | 0.0 | 0.2+ | | | | |
| 2002 11 07 | 704 | 1.1− | 0.3+ | 2006 09 29 | 691 | 0.0 | 0.3+ | | | | |

**(138268)∗ 2000 GR$_{15}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.67396 | | (2000.0) | | | |
| $n$ | 0.26536653 | $\omega$ | 281.90844 | | −0.66810395 | −0.74302818 |
| $a$ | 2.3983098 | $\Omega$ | 210.12879 | | +0.70952770 | −0.62028516 |
| $e$ | 0.2288894 | $i$ | 4.49312 | | +0.22407040 | −0.25130746 |
| $P$ | 3.71 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 703 | 0.6− | 0.4+ | 2002 10 03 | 704 | 0.4+ | 0.2+ | 2004 05 15 | 704 | 0.9+ | 0.6+ |
| 2000 03 03 | 703 | 0.5− | 0.2+ | 2002 10 03 | 704 | 0.3+ | 0.8+ | 2004 05 15 | 704 | 0.8+ | 0.3+ |
| 2000 03 03 | 703 | 0.0 | 0.4+ | 2002 10 07 | 704 | 0.5− | 0.1+ | 2004 05 15 | 704 | 0.4+ | 0.4+ |
| 2000 03 03 | 703 | 0.2+ | 0.2− | 2002 10 07 | 704 | 0.7− | 1.4+ | 2004 05 15 | 704 | 0.5+ | 0.0 |
| 2000 03 27 | 699 | 0.5+ | 0.5+ | 2002 10 07 | 704 | (0.9+ | 1.7+) | 2004 05 17 | 704 | 0.2+ | 0.5+ |
| 2000 03 27 | 699 | 0.5− | 1.9+ | 2002 10 07 | 704 | (1.6− | 1.6+) | 2004 05 17 | 704 | 0.2− | 0.1− |
| 2000 03 27 | 699 | 0.3+ | 0.6+ | 2002 10 08 | 699 | (1.2− | 2.2+) | 2004 05 17 | 704 | 0.1− | 1.2− |
| 2000 03 27 | 699 | 0.1− | 0.5+ | 2002 10 08 | 699 | 1.0+ | 1.4+ | 2004 05 17 | 704 | 1.4− | 0.4+ |
| 2000 04 05 | 704 | 0.2+ | 0.2+ | 2002 10 08 | 699 | 0.4− | 0.5+ | 2004 05 17 | 704 | 0.5− | 0.1− |
| 2000 04 05 | 704 | 0.3+ | 0.2+ | 2002 10 08 | 699 | 0.6− | 1.0+ | 2004 05 21 | 704 | 0.4+ | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.2+ | 2002 10 09 | 704 | 0.6+ | 0.4+ | 2004 05 21 | 704 | 0.8+ | 0.4− |
| 2000 04 05 | 704 | 0.2+ | 0.2+ | 2002 10 09 | 704 | 0.0 | 0.4− | 2004 05 21 | 704 | 0.3+ | 0.5+ |
| 2000 04 05 | 704 | 0.0 | 0.0 | 2002 10 09 | 704 | 0.8− | 0.3− | 2004 05 21 | 704 | 0.3+ | 0.2− |
| 2000 04 06 | 704 | 0.3+ | 0.3+ | 2002 10 11 | 704 | 0.4+ | 0.2− | 2004 05 21 | 704 | 0.3+ | 0.1− |
| 2000 04 06 | 704 | 0.1+ | 0.6+ | 2002 10 11 | 704 | 0.0 | 0.2+ | 2004 06 12 | 644 | 0.0 | 0.2+ |
| 2000 04 06 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.4+ | 0.1− | 2004 06 12 | 644 | 0.1+ | 0.3+ |
| 2000 04 06 | 704 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.2+ | 0.4− | 2004 06 12 | 644 | 0.2+ | 0.3+ |
| 2000 04 06 | 704 | 0.2− | 0.4+ | 2002 10 30 | 644 | 0.4− | 0.4+ | 2004 06 17 | 691 | 0.1+ | 0.1+ |
| 2000 04 07 | 699 | 0.3+ | 0.1− | 2002 10 30 | 644 | 0.6− | 0.5+ | 2004 06 17 | 691 | 0.1+ | 0.3+ |
| 2000 04 07 | 699 | 0.0 | 0.3+ | 2002 10 30 | 644 | 0.6− | 0.5+ | 2004 06 17 | 691 | 0.2+ | 0.2+ |
| 2000 04 07 | 699 | 0.2+ | 0.1+ | 2002 10 31 | 608 | 0.2− | 0.1+ | 2005 10 30 | G96 | 0.5− | 0.2+ |
| 2000 04 07 | 704 | 0.2− | 0.5+ | 2002 10 31 | 608 | 0.2− | 0.0 | 2005 10 30 | G96 | 0.2− | 0.3+ |
| 2000 04 07 | 699 | 0.2− | 0.5+ | 2002 10 31 | 608 | 0.3− | 0.5+ | 2005 10 30 | G96 | 0.1+ | 0.3+ |
| 2000 04 07 | 704 | 0.0 | 0.0 | 2002 11 01 | 704 | 0.5+ | 1.1+ | 2005 10 30 | G96 | 0.2− | 0.4+ |
| 2000 04 07 | 704 | 0.3− | 0.5+ | 2002 11 01 | 704 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.0 |
| 2000 04 07 | 704 | 0.1+ | 0.6+ | 2002 11 01 | 704 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2000 04 07 | 704 | 0.2− | 0.6+ | 2002 11 06 | 704 | 0.6− | 1.0+ | 2006 11 17 | 704 | 0.3+ | 0.6+ |
| 2000 04 08 | 704 | 0.2+ | 0.8+ | 2002 11 06 | 704 | 0.5+ | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2000 04 08 | 704 | 0.1+ | 0.5+ | 2002 11 06 | 704 | 0.0 | 0.9+ | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2000 04 08 | 704 | 0.1+ | 0.4+ | 2002 11 06 | 704 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2000 04 08 | 704 | 0.8+ | 0.0 | 2002 11 06 | 704 | 0.8+ | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2000 04 10 | 704 | 0.9+ | 0.7− | 2002 11 22 | 644 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2000 04 10 | 704 | 0.5+ | 0.6+ | 2002 11 22 | 644 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.3− |
| 2000 04 10 | 704 | 0.1− | 0.2− | 2002 11 22 | 644 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.4− |
| 2000 04 10 | 704 | 0.1− | 0.1+ | 2004 04 17 | 704 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2000 04 10 | 704 | 0.0 | 1.3+ | 2004 04 17 | 704 | 0.8− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.5− |
| 2000 04 25 | 699 | 0.6+ | 0.5+ | 2004 04 17 | 704 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.9− | 0.5− |
| 2000 04 25 | 699 | 0.3+ | 0.7+ | 2004 04 17 | 704 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2000 04 25 | 699 | 0.3+ | 0.9+ | 2004 04 22 | 704 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.8+ | 0.4+ |
| 2000 04 25 | 699 | 0.6+ | 0.1+ | 2004 04 22 | 704 | 0.4+ | 0.3− | 2006 11 25 | 704 | 1.3+ | 1.1+ |
| 2001 07 19 | 691 | 0.4− | 0.5+ | 2004 04 22 | 704 | 0.2− | 0.4+ | 2006 11 25 | 704 | 0.6− | 0.2+ |
| 2001 07 19 | 691 | 0.4− | 0.5+ | 2004 04 25 | 704 | 0.6+ | 0.5− | 2006 11 25 | 704 | 0.1− | 0.2+ |
| 2001 07 19 | 691 | 0.4− | 0.5+ | 2004 04 25 | 704 | 0.4+ | 0.1+ | 2006 11 25 | 704 | 0.3− | 0.7+ |
| 2002 10 02 | 704 | 0.9− | 1.5+ | 2004 04 25 | 704 | 0.2+ | 0.4− | 2006 11 25 | 704 | 0.4− | 0.3+ |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 704 | (1.7− | 1.8−) | 2006 11 29 | 704 | 0.4− | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.6+ | 2004 05 12 | 699 | 0.8+ | 0.9+ | 2006 11 29 | 704 | 0.4− | 0.1+ |
| 2002 10 02 | 704 | 0.7− | 0.8+ | 2004 05 12 | 699 | 0.6− | 0.7− | 2006 11 29 | 704 | 0.7− | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 1.1+ | 2004 05 12 | 699 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2004 05 12 | 699 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.4+ |
| 2002 10 03 | 704 | (0.5+ | 1.8+) | 2004 05 15 | 704 | 0.1+ | 0.2+ | | | | |

**(138269)∗ 2000 GY$_{15}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 259.43647 | | (2000.0) | | | |
| $n$ | 0.23518072 | $\omega$ | 275.77832 | | −0.40474594 | −0.91384313 |
| $a$ | 2.5993708 | $\Omega$ | 198.20413 | | +0.87496960 | −0.37663002 |
| $e$ | 0.1245630 | $i$ | 6.01443 | | +0.26572341 | −0.15179119 |
| $P$ | 4.19 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 1.0+ | 0.8+ | 2002 10 07 | 644 | 0.1+ | 1.0+ | 2004 03 18 | 683 | 1.2− | 1.1− |
| 2000 03 27 | 699 | (2.2+ | 0.2−) | 2002 10 07 | 704 | 0.8− | 0.5+ | 2004 03 18 | 683 | 0.4− | 0.6− |
| 2000 03 27 | 699 | 1.5+ | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 03 18 | 683 | (1.7− | 1.6−) |
| 2000 03 27 | 699 | 0.6+ | 0.6+ | 2002 10 11 | 704 | 0.8+ | 0.7+ | 2004 03 18 | 704 | 0.2+ | 0.1+ |
| 2000 03 29 | 691 | 0.1+ | 0.1− | 2002 10 11 | 704 | 0.4− | 0.2− | 2004 03 18 | 704 | 0.5− | 0.4+ |
| 2000 03 29 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.2− | 0.7+ |
| 2000 03 29 | 691 | 0.1+ | 0.0 | 2002 10 11 | 704 | 0.1− | 0.5− | 2004 03 18 | 704 | 0.2+ | 0.4+ |
| 2000 04 05 | 699 | 0.3− | 1.4+ | 2002 10 12 | 704 | 0.8+ | 0.3− | 2004 03 18 | 704 | 0.0 | 0.8+ |
| 2000 04 05 | 704 | 0.4− | 1.0+ | 2002 10 12 | 704 | 0.0 | 0.6− | 2004 03 20 | 704 | 1.3+ | 0.3− |
| 2000 04 05 | 699 | 0.5+ | 0.7+ | 2002 10 12 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | 1.2+ | 0.3+ |
| 2000 04 05 | 704 | 0.0 | 0.9+ | 2002 10 12 | 704 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.6+ | 0.9+ |
| 2000 04 05 | 699 | 0.0 | 0.4+ | 2002 10 31 | 699 | (1.2+ | 1.6−) | 2004 03 20 | 704 | 0.8+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2002 10 31 | 699 | 0.7+ | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | | |
| 2000 04 05 | 699 | (0.3+ | 2.2+) | 2002 10 31 | 699 | 0.5+ | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.1− | | |
| 2000 04 05 | 704 | 0.0 | 0.6+ | 2002 10 31 | 699 | 0.6+ | 0.7+ | 2004 03 27 | 704 | 0.1− | 0.0 | | |
| 2000 04 05 | 704 | 0.1+ | 0.3− | 2004 01 29 | 699 | 0.6+ | 0.5+ | 2004 03 27 | 704 | 1.0− | 0.2− | | |
| 2000 04 06 | 704 | 0.5+ | 0.9+ | 2004 01 29 | 699 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.9− | | |
| 2000 04 06 | 704 | 0.6+ | 0.9+ | 2004 01 29 | 699 | (0.8+ | 1.8+) | 2006 08 28 | 703 | 0.1+ | 0.4+ | | |
| 2000 04 06 | 699 | 0.4− | 1.2+ | 2004 01 29 | 699 | (0.1− | 2.0+) | 2006 08 28 | 703 | 1.4− | 1.2+ | | |
| 2000 04 06 | 704 | 0.1+ | 0.9+ | 2004 02 13 | 644 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.3− | | |
| 2000 04 06 | 699 | (0.7+ | 2.5+) | 2004 02 13 | 644 | 0.8− | 0.9+ | 2006 08 28 | 703 | (1.6− | 2.3−) | | |
| 2000 04 06 | 699 | 0.5− | 1.2+ | 2004 02 13 | 644 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 1.1− | 0.8+ | | |
| 2000 04 06 | 699 | (0.1− | 2.2+) | 2004 02 19 | 704 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.7+ | 1.2+ | | |
| 2002 09 07 | 704 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.6− | 0.2− | 2006 09 12 | 703 | 0.8+ | 1.3+ | | |
| 2002 09 07 | 704 | 1.1− | 0.4+ | 2004 02 19 | 704 | 0.5− | 0.1− | 2006 09 12 | 703 | 0.1− | 1.0+ | | |
| 2002 09 07 | 704 | 0.7− | 1.2+ | 2004 02 19 | 704 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.4− | 0.4+ | | |
| 2002 10 02 | 704 | (0.5− | 1.9+) | 2004 02 24 | 608 | 0.6+ | 0.2− | 2006 09 17 | 703 | 0.1− | 1.0+ | | |
| 2002 10 02 | 704 | 0.9− | 0.3− | 2004 02 24 | 608 | 1.1+ | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.0 | | |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2004 02 24 | 608 | 0.2+ | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.7− | 0.6− | 2004 02 26 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 699 | 0.3+ | 0.0 | | |
| 2002 10 02 | 704 | 0.6− | 1.2+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 1.3− | 1.4+ | | |
| 2002 10 02 | 608 | 0.4− | 0.2− | 2004 02 26 | 704 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.7+ | | |
| 2002 10 02 | 608 | 0.7− | 0.2− | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 699 | (1.7− | 0.3−) | | |
| 2002 10 02 | 608 | 0.3− | 0.8− | 2004 02 26 | 704 | 0.6+ | 0.8− | 2006 09 25 | 699 | (0.4+ | 1.6+) | | |
| 2002 10 03 | 704 | 0.7+ | 0.2− | 2004 02 26 | 704 | 1.1+ | 0.3− | 2006 09 25 | 699 | 0.1+ | 1.1+ | | |
| 2002 10 03 | 704 | 0.7− | 0.0 | 2004 02 26 | 704 | 0.7− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.8+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.3+ | 2004 02 26 | 704 | 0.5− | 0.9+ | 2006 09 25 | 699 | 0.6+ | 0.0 | | |
| 2002 10 03 | 704 | 0.5− | 0.6− | 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 09 28 | 691 | 0.3+ | 0.1+ | | |
| 2002 10 05 | 291 | 0.4− | 0.0 | 2004 03 15 | 683 | 0.6− | 0.5+ | 2006 09 28 | 691 | 0.2− | 0.3+ | | |
| 2002 10 05 | 291 | 0.2+ | 0.0 | 2004 03 15 | 683 | (0.4− | 1.7+) | 2006 09 28 | 691 | 0.2− | 0.2+ | | |
| 2002 10 05 | 291 | 0.4+ | 0.1+ | 2004 03 15 | 683 | (1.9− | 1.4+) | 2006 10 20 | G96 | 0.2− | 0.1− | | |
| 2002 10 07 | 644 | 0.3− | 1.0+ | 2004 03 16 | 704 | 0.9− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2002 10 07 | 644 | 0.1+ | 1.0+ | 2004 03 16 | 704 | 0.6+ | 0.4− | 2006 10 20 | G96 | 0.2− | 0.0 | | |
| 2002 10 07 | 704 | 0.6+ | 0.1− | 2004 03 16 | 704 | 0.3− | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2002 10 07 | 704 | 0.2− | 0.2− | 2004 03 16 | 704 | 0.9− | 0.1+ | | | | | | |

**(138270)∗ 2000 GZ$_{15}$ = 2002 UL**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37460)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.82525 | | (2000.0) | | +0.79768455 | −0.60182411 |
| $n$ | 0.23356517 | $\omega$ | 28.47765 | | +0.49423290 | +0.61547534 |
| $a$ | 2.6113435 | $\Omega$ | 8.83805 | | +0.34559110 | +0.50891831 |
| $e$ | 0.1108548 | $i$ | 14.63581 | | | |
| $P$ | 4.22 | $H$ | 15.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.7+ | 0.5+ | 2002 12 12 | 644 | 0.3+ | 0.0 | 2006 09 03 | 850 | 0.1+ | 0.8+ | | |
| 2000 03 11 | 704 | 0.4+ | 0.6+ | 2002 12 12 | 644 | 0.1− | 0.3− | 2006 09 03 | 850 | 0.1+ | 0.2+ | | |
| 2000 03 11 | 704 | 1.0+ | 1.3+ | 2004 02 17 | 703 | 0.2− | 0.2− | 2006 09 03 | 850 | 0.2+ | 0.2+ | | |
| 2000 03 30 | 691 | 0.3− | 0.2− | 2004 02 17 | 703 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.1− | | |
| 2000 03 30 | 691 | 0.5− | 0.1− | 2004 02 17 | 703 | 0.9+ | 0.9+ | 2006 09 14 | 703 | 0.3− | 0.2− | | |
| 2000 03 30 | 691 | 0.4− | 0.1− | 2004 02 17 | 703 | 0.6− | 0.5+ | 2006 09 14 | 703 | 1.3− | 0.3− | | |
| 2000 04 03 | 699 | 0.5− | 0.8+ | 2004 02 18 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.8− | | |
| 2000 04 03 | 699 | 0.3+ | 1.8+ | 2004 02 18 | 704 | 0.4− | 0.4− | 2006 09 15 | 691 | 0.2− | 0.1+ | | |
| 2000 04 03 | 699 | 0.1− | 0.3− | 2004 02 18 | 704 | 0.6− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.2+ | | |
| 2000 04 03 | 699 | 0.6− | 0.2+ | 2004 02 18 | 704 | 0.6− | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.2+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.7+ | 2004 02 25 | 704 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 0.0 | 0.1− | | |
| 2000 04 05 | 704 | 0.3+ | 0.7+ | 2004 02 25 | 704 | 0.9+ | 0.0 | 2006 09 17 | 704 | 0.0 | 0.2− | | |
| 2000 04 05 | 704 | 0.6+ | 0.0 | 2004 02 25 | 704 | 0.9+ | 0.7+ | 2006 09 17 | 704 | 0.3− | 0.1+ | | |
| 2000 04 05 | 704 | 0.7+ | 0.1− | 2004 02 25 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.7+ | | |
| 2000 04 05 | 704 | 0.6+ | 0.0 | 2004 02 25 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.0 | 0.2+ | | |
| 2000 04 06 | 704 | 0.5+ | 0.0 | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.4+ | | |
| 2000 04 06 | 704 | 0.8+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.5− | 0.4+ | | |
| 2000 04 06 | 704 | 0.8+ | 0.5+ | 2004 02 26 | 704 | (3.5+ | 0.7+) | 2006 09 18 | 699 | 0.8− | 0.8+ | | |
| 2002 09 06 | 704 | (0.8+ | 1.6−) | 2004 02 26 | 704 | 0.9+ | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.6+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.5+ | | |
| 2002 09 06 | 704 | 0.4− | 0.2− | 2004 03 01 | 291 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.4+ | | |
| 2002 09 06 | 704 | 0.7− | 0.2+ | 2004 03 01 | 291 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.4+ | | |
| 2002 10 05 | 704 | 0.4− | 0.0 | 2004 03 01 | 291 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 05 | 704 | 0.3− | 0.4+ | 2004 03 11 | 644 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.7− | 0.2− | | |
| 2002 10 05 | 704 | 0.6− | 0.2− | 2004 03 11 | 644 | 0.5+ | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.1− | | |
| 2002 10 05 | 704 | 0.4− | 0.2− | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.5− | 0.1+ | | |
| 2002 10 05 | 704 | 1.2− | 0.2− | 2004 03 15 | 704 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.1+ | | |
| 2002 10 10 | 704 | 0.9− | 0.2− | 2004 03 15 | 704 | 0.5− | 1.2+ | 2006 09 25 | 704 | 0.1− | 0.6− | | |
| 2002 10 10 | 704 | 0.4− | 0.2+ | 2004 03 15 | 704 | 0.9+ | 1.2+ | 2006 09 25 | 704 | 0.1− | 0.2− | | |
| 2002 10 10 | 704 | 0.4+ | 0.4+ | 2004 03 17 | 704 | 0.9+ | 0.7− | 2006 09 25 | 704 | 0.4− | 0.0 | | |
| 2002 10 10 | 704 | 1.5+ | 0.6− | 2004 03 17 | 704 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.6− | 0.0 | | |
| 2002 10 20 | 644 | 0.2+ | 0.1+ | 2004 03 17 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 704 | 0.7− | 0.1+ | | |
| 2002 10 20 | 644 | 0.1+ | 0.1− | 2004 03 17 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.0 | | |
| 2002 10 20 | 644 | 0.1+ | 0.1− | 2004 03 17 | 704 | 1.0+ | 0.7+ | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 2002 10 23 | 644 | 0.5+ | 0.6− | 2004 03 17 | 291 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1− | | |
| 2002 10 23 | 644 | 0.5+ | 0.0 | 2004 03 17 | 291 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.0 | | |
| 2002 10 23 | 644 | 0.2− | 0.1− | 2004 03 17 | 291 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 31 | 704 | 0.4+ | 0.2− | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.3− | | |
| 2002 10 31 | 704 | (0.3− | 2.2−) | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.3− | | |
| 2002 10 31 | 704 | 0.5− | 0.7− | 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.0 | 0.3+ | | |
| 2002 10 31 | 704 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 608 | (0.6− | 2.0+) | | |
| 2002 10 31 | 704 | 0.7+ | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 09 29 | 608 | 1.3+ | 1.4+ | | |
| 2002 11 06 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | (2.0+ | 0.9+) | 2006 09 29 | 608 | 1.2+ | 1.1+ | | |
| 2002 11 06 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.3+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2002 11 06 | 704 | 0.3− | 0.2+ | 2004 03 20 | 704 | 1.4+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2002 11 07 | 704 | 0.3− | 0.9− | 2004 03 20 | 704 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 11 07 | 704 | 0.2− | 0.8− | 2004 03 28 | 703 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 11 07 | 704 | 0.1− | 0.9− | 2004 03 28 | 703 | 1.0+ | 0.8− | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.2− | 0.5− | 2004 03 28 | 703 | (1.7+ | 0.0 ) | 2006 10 17 | 703 | 0.5− | 0.5− | | |
| 2002 11 12 | 699 | 0.3+ | 0.3+ | 2004 03 28 | 703 | (3.4− | 2.1+) | 2006 10 17 | 703 | 0.2− | 0.2+ | | |
| 2002 11 12 | 699 | 0.4+ | 0.6− | 2004 04 19 | 704 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.3+ | | |
| 2002 11 12 | 699 | 0.3+ | 0.5− | 2004 04 19 | 704 | 1.3+ | 0.7− | 2006 10 17 | 703 | 0.6− | 0.3+ | | |
| 2002 11 12 | 699 | 1.2− | 0.0 | 2004 04 19 | 704 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.3+ | | |
| 2002 11 13 | 644 | 0.7+ | 0.7+ | 2004 04 19 | 704 | 0.6+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2002 11 13 | 644 | 0.5+ | 0.7+ | 2006 08 18 | 644 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2002 11 13 | 644 | 0.5+ | 0.6+ | 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 15 | 704 | 0.8+ | 0.5+ | 2006 08 18 | 644 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 15 | 704 | 1.3+ | 0.4− | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 11 15 | 704 | 0.9+ | 0.7− | 2006 08 18 | 644 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 11 15 | 704 | 0.2+ | 0.2− | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 11 15 | 704 | 1.0+ | 0.2+ | 2006 08 19 | 699 | 0.9− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 11 25 | 644 | 0.0 | 0.4− | 2006 08 19 | 699 | (1.6− | 0.1+) | 2006 10 29 | 704 | 0.1− | 0.6+ | | |
| 2002 11 25 | 644 | 0.1+ | 0.3− | 2006 08 19 | 699 | (2.2− | 0.0 ) | 2006 10 29 | 704 | 0.1− | 0.2+ | | |
| 2002 11 25 | 644 | 0.0 | 0.2− | 2006 08 19 | 699 | (3.6− | 0.7+) | 2006 10 29 | 704 | 0.5− | 0.4+ | | |
| 2002 12 03 | 644 | 0.3+ | 0.3− | 2006 08 25 | 704 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 03 | 644 | 0.6+ | 0.5− | 2006 08 25 | 704 | 1.3+ | 0.4− | 2006 10 29 | 704 | 0.2+ | 0.4+ | | |
| 2002 12 03 | 644 | 0.5+ | 0.5− | 2006 08 25 | 704 | 0.2− | 0.2− | 2006 11 06 | 644 | 0.0 | 0.3+ | | |
| 2002 12 07 | 704 | 0.3− | 0.5− | 2006 08 25 | 704 | 0.1+ | 0.6+ | 2006 11 06 | 644 | 0.1+ | 0.0 | | |
| 2002 12 07 | 704 | 0.6− | 0.2− | 2006 08 25 | 704 | 0.0 | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.1+ | | |
| 2002 12 07 | 704 | 0.5+ | 0.9− | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 11 13 | 703 | (2.2+ | 0.7+) | | |
| 2002 12 07 | 704 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 11 13 | 703 | 0.1− | 0.0 | | |
| 2002 12 07 | 704 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.7− | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.9+ | | |
| 2002 12 12 | 644 | 0.5+ | 0.0 | 2006 08 28 | 703 | 1.0− | 1.0+ | 2006 11 13 | 703 | 0.4− | 0.1− | | |

**(138271)∗ 2000 GS$_{16}$ = 2004 CR$_{16}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.94786 | | (2000.0) | | +0.97346410 | +0.22883935 |
| $n$ | 0.21928677 | $\omega$ | 347.49695 | | −0.20675279 | +0.87865631 |
| $a$ | 2.7235024 | $\Omega$ | 359.27384 | | −0.09808638 | +0.41904134 |
| $e$ | 0.0771606 | $i$ | 2.05178 | | | |
| $P$ | 4.49 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.1+ | 0.4− | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 09 22 | D35 | 0.1− | 0.7+ |
| 2000 03 29 | 691 | 0.1+ | 0.5− | 2004 03 18 | 691 | 0.0 | 0.3− | 2006 09 22 | D35 | 0.3− | 0.5+ |
| 2000 03 29 | 691 | 0.1+ | 0.1− | 2004 03 18 | 691 | 0.1− | 0.1− | 2006 09 22 | D35 | 0.2− | 0.6+ |
| 2000 04 05 | 704 | 0.3− | 0.1+ | 2006 08 27 | 699 | (0.3+ | 2.2+) | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.7+ | 0.9+ | 2006 08 27 | 699 | 0.1− | 0.8− | 2006 09 25 | G96 | 0.1− | 0.3+ |
| 2000 04 05 | 704 | 0.3− | 0.4+ | 2006 08 27 | 699 | 1.0− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.3+ |
| 2000 04 05 | 691 | 0.3− | 0.1+ | 2006 08 27 | 699 | (0.2− | 1.8+) | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 0.2− | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.3+ |
| 2000 04 05 | 704 | 0.8+ | 1.2+ | 2006 09 12 | 703 | 0.7− | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2000 04 05 | 691 | 0.2− | 0.1+ | 2006 09 12 | 703 | 1.0− | 1.2− | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2000 04 05 | 691 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.7− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2000 04 06 | 704 | 1.2+ | 1.5+ | 2006 09 14 | 644 | 0.1− | 0.5+ | 2006 10 11 | 540 | 0.6+ | 0.7+ |
| 2000 04 06 | 704 | 0.5+ | 1.5+ | 2006 09 14 | 644 | 0.1− | 0.5+ | 2006 10 11 | 540 | 0.1+ | 0.6+ |
| 2000 04 06 | 704 | 1.5+ | 1.6+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 10 16 | 701 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2006 09 16 | 699 | 1.0+ | 0.6+ | 2006 10 16 | 701 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.7+ | 0.0 | 2006 10 16 | G96 | 0.4− | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.9− | 1.1+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2002 12 02 | 704 | 0.3+ | 0.1− | 2006 09 16 | 699 | 0.2− | 0.5+ | 2006 10 16 | G96 | 0.3− | 0.2− |
| 2002 12 02 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1− | 0.8+ | 2006 10 16 | 701 | (1.8− | 0.6+) |
| 2002 12 02 | 704 | 0.0 | 0.4− | 2006 09 19 | 703 | 0.1+ | 0.9+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2002 12 02 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.2− | 1.0+ | 2006 10 16 | 701 | 0.0 | 0.2+ |
| 2004 02 11 | 291 | 0.1− | 0.3+ | 2006 09 19 | 703 | (1.5− | 4.1+) | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2004 02 11 | 291 | 0.3− | 0.3+ | 2006 09 20 | 704 | (1.6+ | 0.8+) | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2004 02 11 | 291 | 0.4− | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2004 02 12 | 691 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.9+ | 0.3+ | 2006 10 27 | G96 | 0.5− | 0.1+ |
| 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.2+ |
| 2004 02 23 | 704 | (1.8+ | 0.7+) | 2006 09 20 | 704 | 1.0+ | 0.5+ | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 09 20 | 704 | (1.7+ | 0.8−) | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2004 02 23 | 704 | 0.6+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.2+ | | | | |

**(138272)∗ 2000 GX$_{17}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.41157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23757779 | $\omega$ | 106.97506 | | −0.67738832 | | −0.73486210 |
| $a$ | 2.5818568 | $\Omega$ | 25.76127 | | +0.64219325 | | −0.61295536 |
| $e$ | 0.2007391 | $i$ | 4.42166 | | +0.35879366 | | −0.29028164 |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | (2.2+ | 0.1−) | 2002 10 06 | 644 | 0.4− | 0.6+ | 2004 03 15 | 704 | 0.1+ | 0.3+ |
| 2000 03 08 | 704 | 0.9+ | 0.0 | 2002 10 06 | 644 | 0.4− | 0.6+ | 2004 03 15 | 703 | 0.7+ | 0.3− |
| 2000 03 08 | 704 | 1.4+ | 1.2− | 2002 10 06 | 644 | 0.5− | 1.0+ | 2004 03 15 | 704 | 0.7− | 0.6+ |
| 2000 04 05 | 704 | 0.3+ | 0.2+ | 2002 10 30 | 645 | 0.1+ | 0.1− | 2004 03 15 | 703 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 0.2− | 0.9+ | 2002 10 30 | 645 | 0.2+ | 0.1− | 2004 03 19 | 704 | 1.1+ | 1.3− |
| 2000 04 05 | 704 | 0.5+ | 0.7+ | 2004 02 15 | 703 | 1.1+ | 0.0 | 2004 03 19 | 704 | 0.9− | 0.3+ |
| 2000 04 05 | 704 | 0.4− | 0.6+ | 2004 02 15 | 703 | 0.5+ | 0.2+ | 2004 03 19 | 704 | 0.3− | 0.3+ |
| 2000 04 05 | 704 | 0.2− | 0.5+ | 2004 02 15 | 703 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.4− | 0.8+ |
| 2000 04 06 | 704 | 1.7+ | 0.0 | 2004 02 15 | 703 | 1.4+ | 1.1+ | 2004 03 19 | 704 | 0.7− | 0.4+ |
| 2000 04 06 | 704 | 1.1+ | 0.7+ | 2004 02 17 | 704 | 0.3+ | 0.8+ | 2004 03 22 | 704 | 0.3− | 1.0+ |
| 2000 04 06 | 704 | 1.0+ | 0.9+ | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.5+ |
| 2000 04 06 | 704 | 1.2+ | 0.5+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2004 03 22 | 704 | 0.5+ | 0.5+ |
| 2000 04 07 | 704 | 0.5+ | 0.0 | 2004 02 17 | 704 | 0.9+ | 0.6− | 2004 03 22 | 704 | 0.1+ | 0.3+ |
| 2000 04 07 | 704 | 0.7+ | 0.9+ | 2004 02 17 | 704 | 0.9− | 0.7+ | 2004 03 28 | 704 | 0.4+ | 0.2+ |
| 2000 04 07 | 704 | 0.4− | 0.8+ | 2004 03 11 | 644 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.2+ | 0.9− |
| 2000 04 07 | 704 | 0.3+ | 0.8+ | 2004 03 11 | 644 | 0.2+ | 0.0 | 2004 03 28 | 704 | 0.3+ | 0.4+ |
| 2000 04 07 | 704 | 0.3+ | 0.1− | 2004 03 11 | 644 | 0.3+ | 0.2+ | 2006 08 18 | 691 | 0.2− | 0.5+ |
| 2000 04 12 | 691 | 0.8− | 0.5− | 2004 03 14 | 703 | 0.2+ | 0.9+ | 2006 08 18 | 691 | 0.7− | 0.7+ |
| 2000 04 12 | 691 | 0.7− | 0.1− | 2004 03 14 | 703 | 1.4− | 1.4+ | 2006 08 18 | 691 | 0.6− | 0.5+ |
| 2000 04 12 | 691 | 0.1− | 0.3+ | 2004 03 14 | 703 | 0.2− | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2002 09 16 | 291 | 0.3− | 0.7+ | 2004 03 14 | 703 | 0.3− | 0.6− | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2002 09 16 | 291 | 0.0 | 0.3+ | 2004 03 15 | 704 | 1.2+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2002 09 16 | 291 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.4− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.6+ |
| 2002 09 26 | 644 | 0.9− | 0.1− | 2004 03 15 | 703 | 0.8+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 09 26 | 644 | 0.8− | 0.2+ | 2004 03 15 | 704 | 0.1+ | 0.9+ | 2006 09 26 | 691 | 0.4− | 0.4+ |
| 2002 09 26 | 644 | 0.8− | 0.2+ | 2004 03 15 | 703 | 0.7+ | 0.4− | | | | |

**(138273)∗ 2000 GL$_{19}$ = 2004 GA$_{80}$ = 2004 HR$_{71}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64722), A. Doppler (d, *MPO* 74762)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.54515 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25549674 | $\omega$ | 150.98338 | | −0.64251794 | | −0.76618312 |
| $a$ | 2.4596830 | $\Omega$ | 338.98967 | | +0.69666013 | | −0.57778862 |
| $e$ | 0.1163121 | $i$ | 1.85105 | | +0.31911653 | | −0.28128941 |
| $P$ | 3.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.1− | 0.5− | 2000 04 06 | 699 | 0.0 | 0.5− | 2004 04 20 | 704 | 0.1− | 0.2− |
| 1996 03 20 | 691 | 0.1+ | 0.1− | 2000 04 06 | 699 | 1.4+ | 0.6− | 2004 04 25 | 703 | (1.8− | 0.2+) |
| 1996 03 20 | 691 | 0.3− | 0.3− | 2000 04 06 | 704 | 0.3− | 0.6+ | 2004 04 25 | 703 | 0.8+ | 0.3− |
| 1998 10 15 | 691 | 0.3+ | 0.2+ | 2000 04 07 | 704 | 0.8− | 0.5− | 2004 04 25 | 703 | 0.0 | 0.9− |
| 1998 10 15 | 691 | 0.3− | 0.2− | 2000 04 07 | 704 | 0.9+ | 0.6+ | 2004 04 25 | 703 | 0.4+ | 0.0 |
| 1998 10 15 | 691 | 0.1+ | 0.3+ | 2000 04 07 | 704 | 0.7+ | 0.1− | 2004 05 13 | 691 | 0.3+ | 0.3+ |
| 2000 04 05 | 699 | 1.0− | 0.1− | 2000 04 07 | 704 | 1.2+ | 0.9− | 2004 05 13 | 691 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 0.3+ | 0.6− | 2000 04 25 | 699 | 0.3+ | 0.0 | 2004 05 13 | 691 | 0.1+ | 0.0 |
| 2000 04 05 | 699 | (2.6− | 0.1−) | 2000 04 25 | 699 | 1.4+ | 0.3+ | 2004 05 21 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 0.1− | 0.5+ | 2000 04 25 | 699 | 1.0− | 0.3+ | 2004 05 21 | 691 | 0.1+ | 0.0 |
| 2000 04 05 | 699 | 0.3− | 1.0+ | 2000 04 25 | 699 | 0.4− | 0.4− | 2004 05 21 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.1+ | 0.1+ | 2002 11 05 | 644 | 0.4− | 0.2+ | 2004 05 29 | 691 | 0.3+ | 0.3+ |
| 2000 04 05 | 699 | 0.9− | 0.3+ | 2002 11 05 | 644 | 0.1− | 0.0 | 2004 05 29 | 691 | 0.0 | 0.8+ |
| 2000 04 05 | 704 | 0.1+ | 0.1+ | 2002 11 05 | 644 | 0.7− | 1.1+ | 2004 05 29 | 691 | 0.6− | 0.7+ |
| 2000 04 05 | 704 | 0.3+ | 0.3+ | 2002 11 14 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2000 04 06 | 699 | 0.6+ | 0.2− | 2002 11 14 | 704 | 0.4− | 0.8+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2000 04 06 | 699 | 0.9− | 0.2+ | 2002 11 14 | 704 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.5+ |
| 2000 04 06 | 704 | 0.8+ | 0.5+ | 2002 12 27 | 644 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.4− |
| 2000 04 06 | 699 | 0.2− | 0.1+ | 2002 12 27 | 644 | 0.8− | 1.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.3− | 0.4+ | 2002 12 27 | 644 | 0.8− | 0.4+ | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 2000 04 06 | 699 | 1.3− | 0.8+ | 2004 04 12 | 644 | 0.5+ | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.1+ | 0.1+ | 2004 04 12 | 644 | 0.4+ | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2000 04 06 | 699 | 0.6+ | 0.1− | 2004 04 12 | 644 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.3− | 0.2+ |
| 2000 04 06 | 699 | 1.3− | 0.4− | 2004 04 20 | 704 | 0.4− | 0.2− | | | | |
| 2000 04 06 | 704 | 0.1− | 0.0 | 2004 04 20 | 704 | 0.6+ | 0.9+ | | | | |

**(138274)∗ 2000 GY$_{19}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.16796 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24127694 | $\omega$ | 186.16524 | | −0.95066815 | | +0.31008690 |
| $a$ | 2.5553997 | $\Omega$ | 11.91029 | | −0.28277461 | | −0.85467840 |
| $e$ | 0.0713624 | $i$ | 2.42392 | | −0.12754839 | | −0.41637837 |
| $P$ | 4.08 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.1+ | 0.2− | 2004 02 26 | 704 | (2.1+ | 1.0−) | 2004 03 29 | 704 | 0.2− | 1.1+ |
| 2000 03 29 | 691 | 0.0 | 0.1− | 2004 02 26 | 704 | (0.6+ | 1.6+) | 2004 03 29 | 704 | 0.4+ | 1.0+ |
| 2000 03 29 | 691 | 0.1+ | 0.2− | 2004 02 26 | 704 | 0.9+ | 0.7+ | 2004 03 29 | 704 | 0.3− | 0.0 |
| 2000 04 02 | 699 | 0.2− | 0.8+ | 2004 02 26 | 704 | 1.4+ | 1.2+ | 2004 03 29 | 704 | 0.2+ | 0.6+ |
| 2000 04 02 | 699 | 0.1+ | 1.2+ | 2004 03 15 | 703 | 0.2+ | 0.7+ | 2004 04 15 | 691 | 0.1− | 0.3+ |
| 2000 04 02 | 699 | 1.4+ | 0.6+ | 2004 03 15 | 703 | 0.6+ | 1.3− | 2004 04 15 | 691 | 0.1+ | 0.2+ |
| 2000 04 02 | 699 | 0.6+ | 0.0 | 2004 03 15 | 703 | 0.4− | 0.2+ | 2004 04 15 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 691 | 0.1− | 0.3− | 2004 03 15 | 703 | 0.6− | 0.4+ | 2005 06 29 | 644 | 0.6− | 1.1+ |
| 2000 04 05 | 699 | 0.1+ | 0.5− | 2004 03 17 | 691 | 0.1− | 0.1+ | 2005 06 29 | 644 | 0.2− | 0.9+ |
| 2000 04 05 | 704 | 0.5+ | 1.0+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2005 06 29 | 644 | 0.4− | 0.9+ |
| 2000 04 05 | 691 | 0.1+ | 0.3− | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2005 10 30 | G96 | 0.3+ | 0.1+ |
| 2000 04 05 | 699 | 1.2− | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2005 10 30 | G96 | 0.1+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.6+ | 0.3− | 2005 10 30 | G96 | 0.5+ | 0.7− |
| 2000 04 05 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.6+ | 2005 10 30 | G96 | 0.3− | 0.6− |
| 2000 04 05 | 699 | 0.4+ | 0.7− | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2000 04 05 | 704 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2000 04 05 | 699 | 0.7+ | 0.4+ | 2004 03 21 | 608 | 0.6+ | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2000 04 05 | 704 | 0.6+ | 1.2+ | 2004 03 21 | 608 | 0.4+ | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2000 04 05 | 704 | 0.0 | 0.8+ | 2004 03 21 | 608 | 0.3+ | 0.4− | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2000 04 06 | 704 | 0.4+ | 0.4+ | 2004 03 26 | 699 | 0.4− | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.4+ |
| 2000 04 06 | 704 | 0.4− | 0.5+ | 2004 03 26 | 699 | 1.3− | 0.8− | 2006 11 09 | 691 | 0.2+ | 0.2+ |
| 2000 04 06 | 704 | 0.9+ | 0.1+ | 2004 03 26 | 699 | 0.6− | 0.9− | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2000 04 06 | 704 | 0.8+ | 0.1− | 2004 03 26 | 699 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.4+ | 0.3+ |
| 2000 04 11 | 691 | 0.3− | 0.2− | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2000 04 11 | 691 | 0.4− | 0.5− | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.5+ |
| 2000 04 11 | 691 | 0.2− | 0.6− | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.5+ |
| 2000 04 29 | 704 | 0.6− | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2000 04 29 | 704 | 0.3+ | 0.6+ | 2004 03 27 | 704 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2000 04 29 | 704 | 0.2− | 0.3+ | 2004 03 28 | 704 | (1.6+ | 1.0+) | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2000 04 29 | 704 | 0.6+ | 1.2+ | 2004 03 28 | 704 | (1.7+ | 0.2+) | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2000 04 29 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 704 | 0.0 | 0.8+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2001 09 21 | 291 | 0.4− | 0.7+ | 2004 03 28 | 704 | 0.5+ | 1.1+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2001 09 21 | 291 | 0.2− | 0.5+ | 2004 03 28 | 704 | (0.4+ | 1.6+) | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 291 | 0.2− | 0.9+ | 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2002 12 09 | 291 | (2.3− | 1.4+) | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.5− | 0.3− |
| 2002 12 09 | 291 | 0.7− | 0.2− | 2004 03 29 | 691 | 0.0 | 0.2+ | | | | |
| 2002 12 09 | 291 | 0.1+ | 0.1− | 2004 03 29 | 704 | 0.1− | 0.5+ | | | | |

**(138275)∗ 2000 GG$_{20}$ = 2001 ME$_{30}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14864)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.10137 | | (2000.0) | | | |
| $n$ | 0.23008047 | $\omega$ | 125.91166 | | +0.74608985 | +0.66433370 |
| $a$ | 2.6376442 | $\Omega$ | 192.66515 | | −0.65758462 | +0.72458584 |
| $e$ | 0.1928096 | $i$ | 11.80116 | | −0.10455814 | +0.18340148 |
| $P$ | 4.28 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 1.9− | 0.7+ | 2001 08 21 | 704 | 0.1− | 0.2+ | 2001 10 14 | 704 | 0.0 | 0.7+ |
| 1997 10 30 | 704 | 0.0 | 0.7+ | 2001 08 21 | 704 | 0.3+ | 0.0 | 2001 10 14 | 704 | 0.2+ | 0.1− |
| 1997 10 30 | 704 | 1.7+ | 1.6+ | 2001 08 21 | 704 | 0.4+ | 0.3− | 2001 10 14 | 704 | 0.4− | 0.1− |
| 1997 10 30 | 704 | 0.8− | 0.8− | 2001 08 21 | 704 | 0.1− | 0.0 | 2001 10 18 | 699 | 0.4+ | 1.2+ |
| 1997 10 30 | 704 | 1.1+ | 0.1− | 2001 08 21 | 704 | 0.3− | 0.6+ | 2001 10 18 | 699 | 0.3− | 0.4+ |
| 2000 03 29 | 691 | 0.5− | 0.1− | 2001 08 25 | 704 | 0.0 | 0.5+ | 2001 10 18 | 699 | 0.4− | 0.1+ |
| 2000 03 29 | 691 | 0.4− | 0.1+ | 2001 08 25 | 704 | 0.6− | 0.4+ | 2001 10 18 | 699 | 0.1+ | 1.0+ |
| 2000 03 29 | 691 | 0.4− | 0.0 | 2001 08 25 | 704 | 0.1+ | 0.5+ | 2001 10 19 | 644 | 0.3− | 0.4+ |
| 2000 04 05 | 699 | 0.5+ | 1.4+ | 2001 08 25 | 704 | 0.1− | 0.8+ | 2001 10 19 | 644 | 0.3− | 0.3+ |
| 2000 04 05 | 704 | 0.7+ | 0.8+ | 2001 08 25 | 704 | 0.1− | 1.2+ | 2001 10 19 | 644 | 0.2− | 0.3+ |
| 2000 04 05 | 699 | 0.7+ | 0.2+ | 2001 08 30 | 644 | 0.3− | 0.2+ | 2001 10 21 | 704 | (0.5+ | 1.7+) |
| 2000 04 05 | 704 | 0.6+ | 0.6+ | 2001 08 30 | 644 | 0.2− | 0.2+ | 2001 10 21 | 704 | (0.2+ | 1.5+) |
| 2000 04 05 | 699 | 0.2− | 0.5+ | 2001 08 30 | 644 | 0.2− | 0.6+ | 2001 10 21 | 704 | 0.5+ | 0.5+ |
| 2000 04 05 | 704 | 0.3+ | 0.6+ | 2001 09 09 | 699 | 0.6− | 0.2+ | 2001 10 21 | 704 | 1.1+ | 1.0+ |
| 2000 04 05 | 699 | 0.0 | 0.9+ | 2001 09 09 | 699 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.6+ | 0.7+ |
| 2000 04 05 | 704 | 0.8+ | 0.9+ | 2001 09 09 | 699 | 0.2− | 0.1+ | 2004 03 19 | 704 | 0.7+ | 0.8+ |
| 2000 04 05 | 704 | 0.6+ | 0.8+ | 2001 09 09 | 699 | 0.2− | 0.1+ | 2004 03 19 | 704 | 1.0+ | 1.4+ |
| 2000 04 06 | 691 | 0.4− | 0.2− | 2001 09 18 | 699 | 0.2+ | 0.1+ | 2004 03 19 | 704 | 0.9+ | 0.3− |
| 2000 04 06 | 704 | 1.0+ | 0.9+ | 2001 09 18 | 699 | 0.1− | 0.0 | 2005 06 28 | 704 | 1.0+ | 0.5+ |
| 2000 04 06 | 691 | 0.6− | 0.5− | 2001 09 18 | 699 | 0.1− | 0.1+ | 2005 06 28 | 704 | 0.8+ | 0.2− |
| 2000 04 06 | 704 | 0.4− | 1.4+ | 2001 09 18 | 699 | 0.1+ | 0.0 | 2005 06 28 | 704 | 0.3+ | 0.3+ |
| 2000 04 06 | 691 | 0.4− | 0.4− | 2001 09 20 | 704 | 0.0 | 0.3+ | 2005 07 11 | 291 | 0.2− | 0.4− |
| 2000 04 06 | 704 | 1.1+ | 1.4+ | 2001 09 20 | 644 | 0.2+ | 1.3+ | 2005 07 11 | 291 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 1.2+ | 1.4+ | 2001 09 20 | 704 | 0.6− | 0.1+ | 2005 07 11 | 291 | 0.1− | 0.4− |
| 2000 04 06 | 704 | 0.3+ | 1.6+ | 2001 09 20 | 644 | 0.3+ | 1.3+ | 2005 08 07 | E12 | (3.6+ | 1.0−) |
| 2000 04 07 | 704 | 1.3+ | 1.2+ | 2001 09 20 | 704 | 0.6− | 0.3+ | 2005 08 07 | E12 | 0.0 | 0.4− |
| 2000 04 07 | 704 | 1.4+ | 0.3+ | 2001 09 20 | 644 | 0.5+ | 1.3+ | 2005 08 07 | E12 | 0.0 | 0.3− |
| 2000 04 07 | 704 | 1.0+ | 0.9− | 2001 09 20 | 704 | 0.1− | 0.4+ | 2005 08 07 | E12 | 0.7+ | 0.4+ |
| 2001 06 30 | 699 | 0.4− | 0.9+ | 2001 09 20 | 645 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.8+ | 0.2− |
| 2001 06 30 | 699 | 0.3− | 0.0 | 2001 09 20 | 645 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.7− | 1.1− |
| 2001 06 30 | 699 | 0.1+ | 0.6+ | 2001 09 20 | 645 | 0.0 | 0.1− | 2006 10 22 | 703 | 1.1− | 0.5− |
| 2001 06 30 | 699 | 1.1− | 0.2− | 2001 09 20 | 645 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.1+ |
| 2001 07 03 | 608 | 0.2− | 0.3− | 2001 09 23 | 704 | (2.3+ | 0.6+) | 2006 11 13 | 703 | 0.2− | 1.0+ |
| 2001 07 03 | 608 | 0.3− | 0.2− | 2001 09 23 | 704 | (2.3+ | 0.7+) | 2006 11 13 | 703 | 0.7− | 0.0 |
| 2001 07 03 | 608 | 0.3− | 0.1− | 2001 09 23 | 704 | (2.2+ | 0.9+) | 2006 11 13 | 703 | 1.0+ | 0.9+ |
| 2001 07 17 | 699 | 0.0 | 0.5+ | 2001 10 11 | 704 | 0.8+ | 0.5+ | 2006 11 13 | 703 | 1.1+ | 0.1− |
| 2001 07 17 | 699 | 0.0 | 0.6+ | 2001 10 11 | 704 | 0.2+ | 0.4− | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2001 07 17 | 699 | 0.2− | 0.5+ | 2001 10 11 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.5− |
| 2001 07 17 | 699 | 0.9+ | 0.1+ | 2001 10 11 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2001 07 29 | 704 | 1.2+ | 0.3+ | 2001 10 11 | 704 | 0.4+ | 0.5− | 2006 11 19 | 703 | 0.6− | 0.5+ |
| 2001 07 29 | 704 | 0.7+ | 0.6− | 2001 10 14 | 704 | 0.3− | 0.5+ | | | | |
| 2001 07 29 | 704 | 0.2− | 0.4+ | 2001 10 14 | 704 | 0.5− | 0.2+ | | | | |

**(138276)∗ 2000 GL$_{21}$ = 1998 RF$_4$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 2458)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.64339 | | (2000.0) | | | |
| $n$ | 0.36734815 | $\omega$ | 127.99809 | | +0.49241614 | +0.86834060 |
| $a$ | 1.9308601 | $\Omega$ | 170.90524 | | −0.86864349 | +0.49457828 |
| $e$ | 0.0546710 | $i$ | 22.01564 | | −0.05463362 | −0.03710688 |
| $P$ | 2.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 1.2+ | 0.3− | 2003 06 21 | 704 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.7− | 0.3+ |
| 1998 09 14 | 704 | 1.2− | 0.3+ | 2003 06 21 | 704 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.2+ |
| 1998 09 14 | 704 | 0.3+ | 0.9− | 2003 06 22 | 704 | 0.1+ | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.0 |
| 1998 09 18 | 704 | 0.3+ | 0.5+ | 2003 06 22 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 644 | 0.0 | 0.2+ |
| 1998 09 18 | 704 | (0.8+ | 2.1−) | 2003 06 22 | 704 | 0.1− | 1.1− | 2006 09 17 | 704 | 0.3+ | 1.1+ |
| 1998 09 18 | 704 | 1.4+ | 0.2+ | 2003 06 22 | 704 | 0.5− | 0.7− | 2006 09 17 | 704 | 0.1+ | 0.5+ |
| 1998 09 18 | 704 | 2.0+ | 0.5− | 2003 07 06 | 704 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.4− | 0.1+ |
| 1998 09 18 | 704 | 1.1− | 0.0 | 2003 07 06 | 704 | 0.1− | 1.2− | 2006 09 17 | 703 | 0.5− | 0.4− |
| 1998 09 27 | 704 | 0.6+ | 1.0+ | 2003 07 06 | 704 | 1.0− | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.2+ |
| 1998 09 27 | 704 | 0.6− | 1.2− | 2003 07 06 | 704 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.4− |
| 1998 09 27 | 704 | 1.7− | 0.1+ | 2006 08 19 | 644 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.7− | 1.2+ |
| 1998 09 27 | 704 | (2.8− | 0.2−) | 2006 08 19 | 644 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.9+ | 0.4+ |
| 1998 09 27 | 704 | 1.0− | 0.6− | 2006 08 19 | 644 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.5− | 1.1− |
| 1998 10 01 | 327 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.2+ |
| 1998 10 01 | 327 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.2− |
| 1998 10 01 | 327 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.6− | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2000 03 01 | 703 | 0.2+ | 0.2− | 2006 08 28 | 704 | 0.1+ | 0.8+ | 2006 09 20 | 704 | 0.3+ | 0.4+ |
| 2000 03 01 | 703 | 0.0 | 1.2+ | 2006 08 28 | 704 | 0.8− | 0.3+ | 2006 09 20 | 699 | 0.5+ | 0.5+ |
| 2000 03 01 | 703 | 0.7+ | 1.0+ | 2006 08 28 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.4+ |
| 2000 03 01 | 703 | 0.1− | 0.2− | 2006 08 28 | 704 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2000 03 12 | 703 | 0.1− | 0.8− | 2006 08 29 | 703 | 0.4− | 0.5− | 2006 09 20 | 699 | 0.6− | 0.0 |
| 2000 03 12 | 703 | 0.2+ | 0.7+ | 2006 08 29 | 703 | 0.8− | 0.6− | 2006 09 20 | 644 | 0.3− | 0.0 |
| 2000 03 12 | 703 | 0.8+ | 0.5+ | 2006 08 29 | 703 | 0.6− | 0.4− | 2006 09 20 | 699 | 0.2− | 0.4+ |
| 2000 03 12 | 703 | 0.0 | 1.9+ | 2006 08 29 | 703 | (1.6− | 1.6−) | 2006 09 20 | 699 | 0.2− | 0.7+ |
| 2000 04 08 | 704 | 0.9+ | 1.0+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.9+ | 0.2+ |
| 2000 04 08 | 704 | 1.1− | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.5+ |
| 2000 04 08 | 704 | 0.3− | 0.3− | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 2000 04 08 | 704 | 0.4− | 0.5+ | 2006 08 30 | 704 | 1.1+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2000 04 08 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2000 04 10 | 704 | 0.4− | 0.5− | 2006 08 30 | 704 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 2000 04 10 | 704 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 1.0+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2000 04 10 | 704 | 0.4− | 0.5+ | 2006 08 30 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.3− |
| 2000 04 10 | 704 | 0.3+ | 0.5+ | 2006 09 01 | 704 | 0.6+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2000 04 30 | 699 | 0.4+ | 0.6− | 2006 09 01 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2000 04 30 | 699 | 0.5+ | 0.2+ | 2006 09 01 | 704 | 0.2+ | 0.6− | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2000 04 30 | 699 | 0.2+ | 0.5+ | 2006 09 01 | 704 | 1.1+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2000 04 30 | 699 | 1.5− | 1.2+ | 2006 09 01 | 704 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2003 06 21 | 704 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.5− | 0.5− | 2006 10 09 | 644 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 21 | 704 | 0.4+ | 0.2− | 2006 09 12 | 703 | 0.1− | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2003 06 21 | 704 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.6− | | | | |

**(138277)∗ 2000 $GT_{23}$ = 2002 $TM_{196}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37463)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.43262 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21566178 | $\omega$ | 111.73019 | | −0.42906527 | | −0.90326881 |
| $a$ | 2.7539365 | $\Omega$ | 3.68194 | | +0.81110917 | | −0.38670062 |
| $e$ | 0.0360684 | $i$ | 2.59491 | | +0.39749831 | | −0.18592496 |
| $P$ | 4.57 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1+ | 0.6+ | 2002 10 09 | 704 | 0.2− | 0.4+ | 2004 01 26 | 699 | 0.2− | 0.7+ |
| 2000 04 05 | 704 | 0.2+ | 1.3+ | 2002 10 09 | 704 | 0.4+ | 0.8− | 2004 01 26 | 699 | 0.4− | 0.6− |
| 2000 04 05 | 704 | 0.2+ | 0.8+ | 2002 10 09 | 704 | 0.2− | 1.0− | 2004 01 26 | 699 | 0.7− | 0.4− |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2002 10 09 | 704 | 0.5+ | 0.2+ | 2004 01 26 | 699 | 0.4+ | 0.4− |
| 2000 04 05 | 704 | 0.2+ | 1.9+ | 2002 10 10 | 644 | 0.2− | 0.4+ | 2004 01 30 | 704 | 0.8− | 0.1− |
| 2000 04 06 | 699 | 1.3− | 0.6− | 2002 10 10 | 644 | 0.1+ | 0.4+ | 2004 01 30 | 691 | 0.1+ | 0.1− |
| 2000 04 06 | 704 | 1.0+ | 0.1+ | 2002 10 10 | 644 | 0.1− | 0.4+ | 2004 01 30 | 704 | 0.4− | 0.3− |
| 2000 04 06 | 699 | 0.7+ | 0.4+ | 2002 10 10 | 644 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.9+ | 0.1+ |
| 2000 04 06 | 704 | 1.1+ | 0.4+ | 2002 10 10 | 644 | 0.1− | 0.6+ | 2004 01 30 | 691 | 0.3+ | 0.1− |
| 2000 04 06 | 704 | 0.8+ | 0.7+ | 2002 10 10 | 644 | 2.0+ | 0.8+ | 2004 01 30 | 704 | 0.2− | 0.0 |
| 2000 04 06 | 699 | 1.6+ | 0.1+ | 2002 10 11 | 291 | 0.2− | 0.1+ | 2004 01 30 | 691 | 0.1+ | 0.0 |
| 2000 04 06 | 704 | 1.3+ | 0.9+ | 2002 10 11 | 291 | 0.7− | 0.0 | 2004 02 10 | 644 | 0.1− | 0.3+ |
| 2000 04 06 | 699 | 0.5+ | 0.2− | 2002 10 11 | 291 | 0.9− | 0.1− | 2004 02 10 | 644 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.8+ | 0.6+ | 2002 10 30 | 644 | 0.1+ | 1.4+ | 2004 02 10 | 644 | 0.5− | 0.2+ |
| 2000 04 10 | 691 | 0.2− | 0.8+ | 2002 10 30 | 644 | 0.0 | 1.5+ | 2004 02 16 | 704 | 0.1+ | 1.5+ |
| 2000 04 10 | 691 | 0.0 | 0.5+ | 2002 10 30 | 644 | 1.2+ | 1.3+ | 2004 02 16 | 704 | 0.3− | 0.6+ |
| 2000 04 10 | 691 | 0.1+ | 0.6+ | 2002 11 06 | 704 | 0.0 | 0.6+ | 2004 02 16 | 704 | 0.4+ | 0.8+ |
| 2002 10 03 | 704 | 0.4− | 1.1+ | 2002 11 06 | 704 | 1.2+ | 0.8+ | 2004 02 23 | 704 | 0.3+ | 0.4+ |
| 2002 10 03 | 704 | 0.5− | 0.9+ | 2002 11 06 | 704 | 0.5+ | 0.9+ | 2004 02 23 | 704 | 0.5+ | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2002 11 22 | 644 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.5+ |
| 2002 10 03 | 704 | 0.3+ | 0.5+ | 2002 11 22 | 644 | 0.3− | 0.2+ | 2006 08 13 | 644 | 0.1− | 0.7+ |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2002 11 22 | 644 | 0.4− | 0.0 | 2006 08 13 | 644 | 0.3− | 0.8+ |
| 2002 10 04 | 599 | 0.0 | 0.1+ | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 08 13 | 644 | 0.2+ | 0.5+ |
| 2002 10 04 | 599 | 0.5+ | 0.0 | 2004 01 18 | 644 | 0.6+ | 0.4+ | 2006 08 24 | 644 | 0.6− | 1.2+ |
| 2002 10 04 | 599 | 0.6+ | 0.3− | 2004 01 18 | 644 | 0.3+ | 0.5+ | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 2002 10 07 | 704 | 0.0 | 0.4+ | 2004 01 22 | 704 | 0.1+ | 0.8+ | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 2002 10 07 | 704 | 1.8− | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.0 | 2006 09 24 | 699 | 2.2− | 0.7+ |
| 2002 10 07 | 704 | 0.1+ | 0.3− | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 09 24 | 699 | 1.4− | 0.8+ |
| 2002 10 07 | 704 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.6− | 0.4+ | 2006 09 24 | 699 | (0.9+ | 3.8+) |
| 2002 10 09 | 704 | 1.0− | 0.0 | 2004 01 22 | 704 | 0.2− | 0.1− | 2006 09 24 | 699 | 0.5− | 1.6+ |

**(138278)∗ 2000 $GY_{23}$ = 2005 $JW_{92}$ = 2006 $QW_{48}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 84549), G. V. Williams (*MPO* 103172)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.82706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21756765 | $\omega$ | 355.26149 | | +0.96418365 | | +0.26517485 |
| $a$ | 2.7378302 | $\Omega$ | 349.35601 | | −0.24232840 | | +0.87201429 |
| $e$ | 0.2464772 | $i$ | 1.76017 | | −0.10782782 | | +0.41142846 |
| $P$ | 4.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.1− | 0.3− | 2006 08 21 | 704 | 1.2− | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 1995 02 24 | 691 | 0.4+ | 0.3+ | 2006 08 21 | 704 | 0.5− | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 1995 02 24 | 691 | 0.2− | 0.3+ | 2006 08 21 | 704 | 0.5− | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.4+ |
| 1997 10 30 | 704 | (0.3+ | 2.5−) | 2006 08 21 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 1997 10 30 | 704 | 1.2+ | 1.4− | 2006 08 25 | 704 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 1997 10 30 | 704 | 0.4− | 1.0− | 2006 08 25 | 704 | 0.0 | 1.6+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1997 10 30 | 704 | 1.8+ | 1.7− | 2006 08 25 | 704 | 0.6− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1997 10 31 | 704 | 0.2+ | 0.5− | 2006 08 25 | 704 | 0.1− | 0.8+ | 2006 10 28 | 704 | 0.3+ | 0.1+ |
| 1997 10 31 | 704 | 0.8− | 0.8− | 2006 08 30 | 699 | 0.6− | 1.8− | 2006 10 28 | 704 | 0.2− | 0.0 |
| 1997 10 31 | 704 | 0.5− | 1.0+ | 2006 08 30 | 699 | 1.1− | 1.5− | 2006 10 28 | 704 | 0.5+ | 0.1− |
| 1997 10 31 | 704 | 0.1− | 0.7+ | 2006 08 30 | 699 | 0.6− | 1.3− | 2006 10 28 | 704 | 0.3− | 0.3+ |
| 1997 10 31 | 704 | 1.8− | 0.0 | 2006 09 22 | 224 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1999 01 18 | 691 | 0.1+ | 0.3− | 2006 09 22 | 224 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1999 01 18 | 691 | 0.7+ | 0.2− | 2006 09 22 | 224 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1999 01 18 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2000 03 25 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.4− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2000 03 25 | 691 | 0.6− | 0.2− | 2006 09 25 | 691 | 1.2− | 0.0 | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2000 03 25 | 691 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.4+ | 0.2− | 2006 11 10 | 683 | 0.6− | 0.4− |
| 2000 04 05 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.4− | 0.5− | 2006 11 10 | 683 | 0.4+ | 0.0 |
| 2000 04 05 | 704 | 0.2+ | 0.9+ | 2006 09 27 | 704 | 0.2− | 0.3− | 2006 11 10 | 683 | 0.1− | 0.5+ |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2006 09 27 | 704 | 0.0 | 0.1− | 2006 11 11 | 683 | 0.1− | 0.4− |
| 2000 04 05 | 704 | 0.0 | 1.3+ | 2006 09 29 | 704 | 0.5+ | 0.0 | 2006 11 11 | 683 | 0.4− | 0.9+ |
| 2000 04 06 | 704 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.1+ | 0.8− | 2006 11 11 | 683 | 1.0− | 1.2+ |
| 2000 04 06 | 704 | 0.7+ | 1.0+ | 2006 09 29 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.8− |
| 2000 04 06 | 704 | 0.2− | 0.5+ | 2006 09 29 | 704 | 1.1− | 1.0− | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2000 04 06 | 704 | 0.1+ | 0.8+ | 2006 09 29 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2001 06 19 | 644 | 0.2− | 0.2− | 2006 09 29 | 691 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2001 06 19 | 644 | 0.0 | 0.1− | 2006 09 29 | 691 | 0.6− | 0.3+ | 2006 11 13 | 683 | 0.7+ | 0.5+ |
| 2001 06 19 | 644 | 0.3+ | 0.1+ | 2006 09 29 | 691 | 0.1− | 0.4+ | 2006 11 13 | 683 | 0.3+ | 0.9+ |
| 2001 06 30 | 644 | 0.3− | 0.0 | 2006 10 03 | 704 | 0.0 | 0.1− | 2006 11 13 | 683 | 0.1+ | 0.8+ |
| 2001 06 30 | 644 | 0.6− | 0.0 | 2006 10 03 | 704 | 0.7+ | 0.7− | 2006 11 14 | 683 | 1.3+ | 0.0 |
| 2001 06 30 | 644 | 0.4− | 0.1− | 2006 10 03 | 704 | 0.5+ | 0.3+ | 2006 11 14 | 683 | 0.0 | 0.5+ |
| 2001 07 11 | 644 | (2.1+ | 0.2+) | 2006 10 03 | 704 | 0.1+ | 0.5− | 2006 11 15 | 683 | (2.4+ | 0.7−) |
| 2001 07 11 | 644 | 1.6+ | 0.2+ | 2006 10 03 | 704 | 0.1+ | 0.2− | 2006 11 15 | 683 | 1.3+ | 0.1+ |
| 2001 07 11 | 644 | 1.7+ | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 683 | (2.8+ | 0.6−) |
| 2001 08 16 | 704 | 0.3+ | 0.8− | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.4− | 2006 10 03 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 08 16 | 704 | 0.8− | 0.3− | 2006 10 16 | 104 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2001 09 11 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 104 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2001 09 11 | 704 | 0.3− | 0.6+ | 2006 10 16 | 104 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2001 09 11 | 704 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2001 09 11 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2005 01 21 | 809 | 0.8− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2005 01 21 | 809 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2005 01 21 | 809 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.1+ |
| 2005 05 11 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2005 05 11 | 691 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.2+ | 1.0+ |
| 2005 05 11 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2005 05 11 | 644 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2005 05 11 | 644 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2005 05 12 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2005 05 12 | 644 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2005 05 12 | 644 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.0 |
| 2006 07 21 | G96 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.3− | 1.9+ |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 1.1− | 0.0 |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.1− | | | | |
| 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2− | | | | |

**(138279)∗ 2000 $GB_{24}$ = 2002 $YB_{35}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46400)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.29100 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23525892 | $\omega$ | 165.67452 | | +0.97992603 | | −0.19790010 |
| $a$ | 2.5987948 | $\Omega$ | 205.77751 | | +0.17702456 | | +0.91934006 |
| $e$ | 0.1564647 | $i$ | 3.17608 | | +0.09169128 | | +0.34007264 |
| $P$ | 4.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 1.2+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 1993 09 14 | 691 | 0.4− | 0.6+ | 2004 03 20 | 704 | 0.4− | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 691 | 0.4− | 1.1+ | 2004 03 21 | 291 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.8+ | 0.5+ |
| 2000 03 25 | 691 | 0.9− | 0.6− | 2004 03 21 | 291 | 0.1− | 0.2+ | 2006 11 17 | 704 | (1.6+ | 0.7+) |
| 2000 03 25 | 691 | 0.2− | 0.4− | 2004 03 21 | 291 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.5+ | 0.0 |
| 2000 03 25 | 691 | 0.6− | 0.3− | 2004 03 27 | 704 | (0.2+ | 2.3+) | 2006 11 17 | 704 | 1.0+ | 0.0 |
| 2000 04 05 | 704 | 0.6+ | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 704 | 0.3+ | 0.5+ |
| 2000 04 05 | 704 | 0.3+ | 0.7+ | 2004 03 27 | 704 | 1.0+ | 1.3+ | 2006 11 18 | 704 | 0.7− | 0.1+ |
| 2000 04 05 | 704 | 1.1+ | 0.3+ | 2004 03 27 | 704 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2000 04 05 | 704 | 0.4+ | 0.6+ | 2004 03 31 | 691 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2000 04 05 | 704 | 0.8+ | 0.9+ | 2004 03 31 | 691 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.9− | 1.0+ |
| 2000 04 06 | 704 | 0.2+ | 1.5+ | 2004 03 31 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2000 04 06 | 704 | 0.8+ | 1.1+ | 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2000 04 06 | 704 | 0.4+ | 0.5− | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2000 04 06 | 704 | 0.8+ | 0.6− | 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 12 11 | 704 | 0.4− | 0.7− | 2006 08 29 | 703 | 0.8− | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2002 12 11 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 703 | 1.4+ | 1.2+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 08 29 | 703 | 0.9+ | 0.7+ | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | (0.6− | 1.6+) | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.9− |
| 2003 01 07 | 704 | 0.4− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.4− | 1.1− |
| 2003 01 07 | 704 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.9− | 1.0− | 2006 11 21 | 704 | 0.3− | 1.1− |
| 2003 01 07 | 704 | 0.5− | 0.3− | 2006 10 19 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2003 01 07 | 704 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.2− | 1.0− |
| 2004 03 15 | 703 | (0.0 | 1.6+) | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.4− | 0.6− |
| 2004 03 15 | 703 | (0.7− | 1.7+) | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.6− | 0.7− |
| 2004 03 15 | 703 | 0.1− | 0.6− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.9− |
| 2004 03 15 | 703 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.4− | 1.2− |
| 2004 03 18 | 704 | 0.3− | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2004 03 18 | 704 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.6− | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2004 03 18 | 704 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2004 03 20 | 704 | (2.5+ | 0.3−) | 2006 11 11 | 703 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.7+ |
| 2004 03 20 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2004 03 20 | 704 | (1.5− | 0.9+) | 2006 11 14 | 691 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.7+ |

**(138280)∗ 2000 GC$_{24}$ = 2002 TC$_{290}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37463)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.71359 | | (2000.0) | | +0.91326273 | −0.40568108 |
| $n$ | 0.22853219 | $\omega$ | 10.69107 | | +0.36098612 | +0.76374875 |
| $a$ | 2.6495440 | $\Omega$ | 13.42631 | | +0.18878616 | +0.50210628 |
| $e$ | 0.2077184 | $i$ | 9.18616 | | | |
| $P$ | 4.31 | $H$ | 15.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 691 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | (1.7− | 0.3+) |
| 2000 03 27 | 691 | 0.2− | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.1+ |
| 2000 03 27 | 691 | 0.1− | 0.3+ | 2002 12 06 | 704 | 0.2+ | 0.3− | 2006 09 19 | 704 | 0.1− | 0.8+ |
| 2000 03 27 | 691 | 0.5− | 0.0 | 2002 12 06 | 704 | 0.1− | 0.3− | 2006 09 19 | 704 | 0.5− | 1.3+ |
| 2000 03 27 | 691 | 0.5− | 0.1+ | 2002 12 06 | 704 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.5− | 0.9+ |
| 2000 03 27 | 691 | 0.5− | 0.1− | 2002 12 06 | 704 | 0.4+ | 0.6− | 2006 09 19 | 704 | 0.8− | 1.1+ |
| 2000 04 05 | 704 | 0.1+ | 0.6+ | 2002 12 12 | 644 | 0.2+ | 0.1− | 2006 09 19 | 704 | 0.8− | 1.0+ |
| 2000 04 05 | 704 | 0.6+ | 1.0+ | 2002 12 12 | 644 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.0 |
| 2000 04 05 | 704 | 1.4+ | 0.5+ | 2002 12 12 | 644 | 0.2+ | 0.1− | 2006 09 26 | 704 | (1.7− | 0.6+) |
| 2000 04 05 | 704 | (2.2+ | 0.7+) | 2002 12 15 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | (2.7− | 0.5+) |
| 2000 04 05 | 704 | 0.8+ | 0.3+ | 2002 12 15 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.1+ |
| 2000 04 06 | 704 | 1.0+ | 0.4− | 2002 12 15 | 704 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.4− | 0.0 |
| 2000 04 06 | 704 | 1.2+ | 0.5− | 2002 12 15 | 704 | 0.6− | 0.3− | 2006 09 27 | 704 | 0.6− | 0.2+ |
| 2000 04 06 | 704 | 0.7+ | 1.2+ | 2003 01 31 | 704 | (3.3+ | 0.9−) | 2006 09 27 | 704 | 0.6− | 0.1+ |
| 2000 04 06 | 704 | 1.0+ | 0.6+ | 2003 01 31 | 704 | (2.6+ | 1.2−) | 2006 09 27 | 704 | 0.3− | 0.2+ |
| 2000 04 06 | 704 | 1.2+ | 0.2+ | 2003 01 31 | 704 | (2.0+ | 0.0 ) | 2006 09 28 | 704 | 0.8+ | 0.1− |
| 2002 09 06 | 704 | 0.0 | 0.9+ | 2003 01 31 | 704 | (2.1+ | 0.5+) | 2006 09 28 | 704 | 1.0+ | 0.1+ |
| 2002 09 06 | 704 | 0.1+ | 0.8+ | 2003 02 19 | 644 | 0.5+ | 0.5− | 2006 09 28 | 704 | 0.8+ | 0.8− |
| 2002 09 06 | 704 | 0.6+ | 0.8+ | 2003 02 19 | 644 | 0.1− | 0.1− | 2006 09 28 | 704 | 1.0+ | 0.3− |
| 2002 10 04 | 704 | 0.5+ | 0.6+ | 2003 02 19 | 644 | 0.9+ | 0.1− | 2006 09 28 | 704 | 0.9+ | 0.2− |
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2004 02 23 | 704 | (1.7+ | 0.3+) | 2006 09 30 | 704 | 0.3− | 0.7+ |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.2+ | 1.1− | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2004 02 23 | 704 | 1.4+ | 0.1− | 2006 09 30 | 704 | 0.0 | 0.5+ |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2004 02 23 | 704 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.5+ |
| 2002 10 10 | 704 | 0.3+ | 1.1− | 2004 03 11 | 644 | 0.6+ | 0.5+ | 2006 09 30 | 704 | 0.0 | 1.0+ |
| 2002 10 10 | 704 | 0.0 | 0.6− | 2004 03 11 | 644 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 10 10 | 704 | 0.6+ | 0.6− | 2004 03 11 | 644 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.2+ | 0.6− | 2004 03 15 | 704 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 10 10 | 704 | 0.4+ | 0.4+ | 2004 03 15 | 704 | 0.2− | 0.7+ | 2006 10 23 | 704 | 0.1− | 0.9+ |
| 2002 10 12 | 704 | (0.3− | 1.8+) | 2004 03 15 | 704 | 0.9+ | 0.0 | 2006 10 23 | 704 | 0.6+ | 1.1+ |
| 2002 10 12 | 704 | 1.3− | 0.5+ | 2004 03 15 | 704 | 0.6− | 0.1− | 2006 10 23 | 704 | 0.3− | 1.1+ |
| 2002 10 12 | 704 | 0.2+ | 1.4+ | 2004 03 15 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 704 | 0.3− | 1.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.1+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.3− | 0.1+ |
| 2002 10 12 | 704 | (0.0 | 2.2+) | 2004 03 15 | 691 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2002 11 01 | 704 | (1.5+ | 1.9−) | 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 11 01 | 704 | (1.9+ | 1.8−) | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 11 01 | 704 | (1.4+ | 2.2−) | 2004 03 19 | 704 | 1.1+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2002 11 06 | 704 | 0.1− | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.7+ | 2006 10 29 | 106 | 0.5+ | 0.4+ |
| 2002 11 06 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | (2.0+ | 0.1−) | 2006 10 29 | 106 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2004 03 22 | 704 | (2.1+ | 0.5−) | 2006 10 29 | 106 | 0.1+ | 0.4+ |
| 2002 11 06 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.2− | 0.3− | 2006 10 29 | 106 | 0.1+ | 0.8− |
| 2002 11 06 | 704 | 0.0 | 0.4+ | 2004 03 22 | 704 | 1.5+ | 0.7− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2002 11 15 | 704 | 0.8− | 0.3− | 2004 03 22 | 704 | (3.8+ | 0.5+) | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2002 11 15 | 704 | 0.6− | 0.6− | 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2002 11 15 | 704 | 0.6− | 0.9− | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2002 11 15 | 704 | 0.7− | 1.1− | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.4− |
| 2002 11 15 | 704 | 0.2− | 1.0− | 2004 03 23 | 704 | 1.1+ | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2002 11 25 | 644 | 0.4− | 0.1+ | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.1− |
| 2002 11 25 | 644 | 0.5− | 0.1+ | 2004 03 23 | 704 | 0.3+ | 1.3+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 11 25 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 12 03 | 644 | 0.1+ | 0.7− | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 12 03 | 644 | 0.1+ | 0.7− | 2006 08 10 | 644 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2002 12 03 | 644 | 0.1− | 0.9− | 2006 08 10 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 08 10 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 2002 12 05 | 704 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 08 22 | 644 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.5+ |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.4− | 1.1+ |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.7− | 0.2+ |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2002 12 06 | 704 | 0.4+ | 0.3− | 2006 09 16 | 704 | 0.0 | 1.0+ | 2006 11 21 | 704 | 0.9− | 0.4+ |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.8+ | 0.4− | 2006 11 21 | 704 | 0.5− | 0.6+ |
| 2002 12 06 | 704 | 0.5+ | 0.2− | 2006 09 16 | 704 | 0.5+ | 0.5+ | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2002 12 06 | 704 | 0.1+ | 0.3− | 2006 09 16 | 704 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.9− | 0.4− |
| 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.2+ |

**(138281)∗ 2000 GM$_{25}$ = 2004 EN$_{12}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60650)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.33973 | | (2000.0) | | −0.91795213 | −0.39665958 |
| $n$ | 0.23611257 | $\omega$ | 149.60115 | | +0.35523288 | −0.82756903 |
| $a$ | 2.5925271 | $\Omega$ | 7.03484 | | +0.17656016 | −0.39722875 |
| $e$ | 0.1107802 | $i$ | 2.34305 | | | |
| $P$ | 4.17 | $H$ | 16.2 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.2− | 0.1− | 2004 03 11 | 644 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.2+ |
| 2000 03 25 | 691 | 0.3− | 0.2− | 2004 03 11 | 644 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.5− | 0.3+ |
| 2000 03 25 | 691 | 0.3− | 0.3− | 2004 03 11 | 644 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.6+ |
| 2000 04 02 | 699 | 0.7+ | 0.1− | 2004 03 11 | 644 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2000 04 02 | 699 | 1.2− | 0.8− | 2004 03 11 | 644 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2− | 0.5+ |
| 2000 04 02 | 699 | 0.5+ | 0.8+ | 2004 03 11 | 644 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 699 | 0.5− | 1.3+ | 2004 03 14 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 2000 04 05 | 699 | 0.5+ | 0.3+ | 2004 03 14 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.4− | 0.0 |
| 2000 04 05 | 704 | 0.2+ | 0.2+ | 2004 03 14 | 691 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.2− |
| 2000 04 05 | 699 | 0.2− | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 0.7+ | 0.2+ | 2004 03 15 | 704 | 0.3+ | 1.0+ | 2006 10 15 | 691 | 0.2− | 0.1+ |
| 2000 04 05 | 699 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.6+ |
| 2000 04 05 | 704 | 0.3+ | 0.6+ | 2004 03 15 | 704 | 0.1− | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2000 04 05 | 699 | 0.8+ | 0.7+ | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2000 04 05 | 704 | 0.3+ | 0.7+ | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2000 04 05 | 704 | 0.8+ | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.3− | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2000 04 06 | 699 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.2− | 1.2+ | 2006 10 21 | 703 | (0.1+ | 1.5−) |
| 2000 04 06 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.7− | 0.6+ | 2006 10 21 | 703 | (1.5+ | 1.4−) |
| 2000 04 06 | 699 | 0.3− | 0.6+ | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 2000 04 06 | 704 | 0.6+ | 0.4+ | 2004 03 20 | 699 | 0.1− | 1.0− | 2006 10 21 | 703 | (0.3− | 1.7−) |
| 2000 04 06 | 704 | 1.1+ | 0.5+ | 2004 03 20 | 699 | 0.1+ | 0.1+ | 2006 10 26 | 143 | 0.7+ | 0.0 |
| 2000 04 06 | 699 | 0.1+ | 0.4+ | 2004 03 20 | 699 | 0.2+ | 0.1− | 2006 10 26 | 143 | 0.4− | 0.3+ |
| 2000 04 06 | 704 | 1.6+ | 0.7+ | 2004 03 20 | 699 | (0.9− | 1.6−) | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2000 04 06 | 699 | 0.5+ | 0.1− | 2004 03 20 | 599 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2000 04 06 | 704 | 0.7+ | 0.7+ | 2004 03 20 | 599 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2000 04 08 | 704 | 0.8− | 0.2+ | 2004 03 20 | 599 | (0.4+ | 2.2+) | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2000 04 08 | 704 | 0.1+ | 1.5+ | 2004 03 20 | 599 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2000 04 08 | 704 | 0.1− | 0.7+ | 2004 03 21 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2000 04 08 | 704 | 0.8+ | 1.0+ | 2004 03 21 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 1.3+ | 1.1+ |
| 2002 10 31 | 699 | 1.1− | 0.7+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2− | 1.0+ |
| 2002 10 31 | 699 | 0.5+ | 0.7+ | 2004 03 27 | 704 | 0.9+ | 0.1− | 2006 11 13 | G96 | 0.6− | 1.1− |
| 2002 10 31 | 699 | 0.3− | 0.9+ | 2004 03 27 | 704 | 0.5+ | 0.5− | 2006 11 13 | G96 | 0.6+ | 0.1+ |
| 2002 10 31 | 699 | (0.3− | 2.1+) | 2004 03 27 | 704 | 0.8+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2004 01 18 | 703 | 1.2− | 0.4− | 2004 03 27 | 704 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 01 18 | 703 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.3− | 2006 11 15 | G96 | 0.4− | 0.0 |
| 2004 01 18 | 703 | 0.4+ | 0.9− | 2004 04 12 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2004 01 18 | 703 | (1.9+ | 0.7+) | 2004 04 12 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2004 02 23 | 704 | 0.1+ | 0.1+ | 2004 04 12 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 02 23 | 704 | 0.4− | 0.5− | 2006 09 19 | 691 | 0.6− | 0.4+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2004 02 23 | 704 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2004 02 23 | 704 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.5+ | | | | |
| 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.5− | 0.2+ | | | | |

**(138282)∗ 2000 GA$_{30}$ = 2001 OH$_5$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14865)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.05604 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22083943 | $\omega$ | 50.86914 | | −0.35077835 | +0.93426752 | |
| $a$ | 2.7107220 | $\Omega$ | 198.89891 | | −0.90857878 | −0.35609643 | |
| $e$ | 0.1368136 | $i$ | 11.40008 | | −0.22680201 | −0.01842642 | |
| $P$ | 4.46 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 14 | 703 | 1.3+ | 1.5+ | 2000 05 25 | 699 | 0.4− | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.0 |
| 2000 03 14 | 703 | 0.2+ | 0.3− | 2000 05 25 | 699 | 0.1+ | 0.1− | 2004 02 19 | 704 | 0.0 | 0.5+ |
| 2000 03 14 | 703 | 0.4− | 0.8+ | 2000 05 25 | 699 | 0.0 | 0.4+ | 2004 02 19 | 704 | 0.8+ | 0.8− |
| 2000 03 14 | 703 | 0.0 | 0.7− | 2000 05 25 | 699 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.0 | 0.2− |
| 2000 04 02 | 699 | 0.2+ | 0.1− | 2001 07 17 | 699 | 0.7+ | 0.7+ | 2004 03 16 | 704 | 0.1+ | 0.7+ |
| 2000 04 02 | 699 | 0.6+ | 0.5+ | 2001 07 17 | 699 | 0.6+ | 0.5+ | 2004 03 16 | 704 | 0.6+ | 0.2+ |
| 2000 04 02 | 699 | 0.4+ | 0.4+ | 2001 07 17 | 699 | 0.4− | 0.4+ | 2004 03 16 | 704 | 0.3− | 1.1+ |
| 2000 04 02 | 699 | 0.5+ | 0.2+ | 2001 07 17 | 699 | (0.4− | 2.4+) | 2004 03 16 | 704 | 0.2+ | 0.1− |
| 2000 04 03 | 699 | 1.1+ | 0.3+ | 2001 07 20 | 699 | 0.6+ | 0.5+ | 2004 03 27 | 703 | 0.4+ | 0.4+ |
| 2000 04 03 | 699 | 0.2+ | 0.3+ | 2001 07 20 | 699 | 0.3− | 1.4+ | 2004 03 27 | 703 | 0.4− | 1.3+ |
| 2000 04 03 | 699 | 0.0 | 0.4+ | 2001 07 20 | 699 | 0.2− | 0.7+ | 2004 03 27 | 703 | 0.6+ | 0.4− |
| 2000 04 03 | 699 | 0.5+ | 0.3+ | 2001 07 20 | 699 | 0.7+ | 0.9+ | 2004 03 27 | 703 | 1.0+ | 0.8+ |
| 2000 04 05 | 699 | 0.1+ | 0.5+ | 2001 08 19 | 049 | 0.1+ | 0.6+ | 2004 04 19 | 704 | 0.9+ | 0.1− |
| 2000 04 05 | 704 | 0.2+ | 0.4+ | 2001 08 19 | 049 | 0.2+ | 0.4+ | 2004 04 19 | 704 | 1.0+ | 0.9+ |
| 2000 04 05 | 699 | 0.1− | 0.0 | 2001 08 19 | 049 | 0.0 | 0.6− | 2004 04 19 | 704 | 0.7+ | 0.7+ |
| 2000 04 05 | 704 | 0.2+ | 0.1+ | 2001 08 24 | 699 | 0.3− | 0.4+ | 2006 09 18 | 691 | 0.3+ | 0.4+ |
| 2000 04 05 | 699 | 0.4+ | 0.4+ | 2001 08 24 | 699 | 0.2+ | 0.3− | 2006 09 18 | 691 | 0.3+ | 0.4+ |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2001 08 24 | 699 | 0.6− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.3+ |
| 2000 04 05 | 699 | 0.0 | 0.2+ | 2001 08 24 | 699 | 0.7− | 0.5+ | 2006 09 24 | 691 | 0.2+ | 0.4+ |
| 2000 04 05 | 704 | 0.2+ | 0.4+ | 2001 08 25 | 704 | 0.1− | 0.2− | 2006 09 24 | 691 | 0.4+ | 0.3+ |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2001 08 25 | 704 | 0.1+ | 0.1− | 2006 09 24 | 691 | 0.1− | 0.4+ |
| 2000 04 06 | 699 | 0.0 | 0.3+ | 2001 08 25 | 704 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.3+ | 0.1+ | 2001 08 25 | 704 | 0.7− | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.1− |
| 2000 04 06 | 704 | 0.4+ | 0.0 | 2001 08 25 | 704 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2000 04 06 | 699 | 0.1+ | 0.3+ | 2001 08 28 | 683 | (1.5− | 2.0+) | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.6+ | 0.4+ | 2001 08 28 | 683 | (1.5− | 0.4+) | 2006 10 11 | 691 | 0.1− | 0.5+ |
| 2000 04 06 | 699 | 0.1+ | 0.1+ | 2001 08 28 | 683 | 0.9+ | 0.5− | 2006 10 11 | 691 | 0.5− | 0.3+ |
| 2000 04 06 | 704 | 0.8+ | 0.2+ | 2001 08 30 | 644 | (0.1− | 1.8−) | 2006 10 11 | 691 | 0.3− | 0.5+ |
| 2000 04 06 | 699 | 0.5+ | 0.4+ | 2001 08 30 | 644 | (0.3− | 1.8−) | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2000 04 06 | 704 | 0.4+ | 0.1+ | 2001 08 30 | 644 | (0.6− | 1.5−) | 2006 10 17 | G96 | 0.3+ | 0.0 |
| 2000 04 07 | 704 | 0.3+ | 0.3+ | 2001 09 09 | 699 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2000 04 07 | 704 | 0.2− | 0.2+ | 2001 09 09 | 699 | 0.5− | 0.6+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 2000 04 07 | 704 | 0.3+ | 0.3+ | 2001 09 09 | 699 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.5+ |
| 2000 04 07 | 704 | 0.1+ | 0.2+ | 2001 09 09 | 699 | 1.1− | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2000 04 07 | 704 | 0.3+ | 0.4+ | 2001 09 09 | 699 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.4+ | 0.3+ |
| 2000 04 08 | 704 | 0.0 | 0.2+ | 2001 09 09 | 699 | 0.8− | 1.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2000 04 08 | 704 | 0.3+ | 0.6+ | 2001 09 09 | 699 | 0.7− | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.3− |
| 2000 04 08 | 704 | 0.2− | 0.9+ | 2001 09 09 | 699 | 0.7+ | 1.3+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2000 04 08 | 704 | 0.4+ | 1.3+ | 2001 09 14 | 644 | 0.5− | 0.8+ | 2006 10 21 | 703 | 0.0 | 1.1+ |
| 2000 04 08 | 704 | 0.2+ | 1.0+ | 2001 09 14 | 644 | 0.5− | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.9+ |
| 2000 04 10 | 704 | 0.3+ | 0.3+ | 2001 09 14 | 644 | 0.4− | 0.5+ | 2006 10 21 | 703 | 0.2− | 1.3+ |
| 2000 04 10 | 704 | 0.2− | 1.2+ | 2001 09 16 | 704 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2000 04 10 | 704 | 0.5+ | 1.4+ | 2001 09 16 | 704 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2000 04 10 | 704 | 0.2+ | 0.5+ | 2001 09 16 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.4+ | 1.2+ |
| 2000 04 10 | 704 | 0.5+ | 0.7+ | 2001 09 16 | 704 | 1.4+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2000 04 11 | 608 | 0.4− | 0.4− | 2001 09 16 | 704 | (0.8+ | 3.0−) | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2000 04 11 | 608 | 0.4− | 0.1− | 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2000 04 11 | 608 | 0.3− | 0.2− | 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2000 04 13 | 691 | 1.0− | 0.0 | 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2000 04 13 | 691 | 1.1− | 0.0 | 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2000 04 13 | 691 | 0.9− | 0.1+ | 2001 10 14 | 704 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2000 04 27 | 704 | 0.0 | 0.9+ | 2001 10 14 | 704 | 0.0 | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2000 04 27 | 704 | 0.3− | 0.2− | 2001 10 14 | 704 | 0.6− | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2000 04 27 | 704 | 0.2+ | 0.6+ | 2001 10 14 | 704 | 0.3− | 1.4+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2000 04 27 | 704 | 0.3+ | 1.1+ | 2004 01 28 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2000 04 27 | 704 | 0.4+ | 1.3+ | 2004 01 28 | 704 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2000 04 29 | 704 | 0.8+ | 0.6+ | 2004 01 28 | 704 | 0.9− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2000 04 29 | 704 | 0.2+ | 0.2+ | 2004 01 28 | 704 | 1.0− | 0.6− | 2006 11 11 | 703 | 0.3− | 1.2− |
| 2000 04 29 | 704 | 1.1+ | 0.4+ | 2004 01 28 | 704 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2000 04 29 | 704 | 0.9+ | 1.0+ | 2004 02 13 | 699 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2000 04 29 | 704 | 0.9+ | 0.6+ | 2004 02 13 | 699 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2000 05 01 | 704 | 0.0 | 0.6+ | 2004 02 13 | 699 | 0.3− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2000 05 01 | 704 | 0.3+ | 0.4+ | 2004 02 13 | 699 | 0.6− | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2000 05 01 | 704 | 0.8+ | 0.4− | 2004 02 14 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2000 05 01 | 704 | 0.4+ | 0.8− | 2004 02 14 | 644 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2000 05 01 | 608 | (0.1+ | 2.3−) | 2004 02 14 | 644 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2000 05 01 | 608 | (0.5− | 2.6−) | 2004 02 17 | 703 | 0.5+ | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2+ |
| 2000 05 01 | 608 | (0.0 | 2.1−) | 2004 02 17 | 703 | 0.5− | 0.7+ | 2006 11 21 | 691 | 0.6− | 0.4+ |
| 2000 05 06 | 704 | 0.1+ | 1.2+ | 2004 02 17 | 703 | 0.1− | 0.7+ | 2006 11 21 | 691 | 0.5− | 0.4+ |
| 2000 05 06 | 704 | 0.4+ | 0.7+ | 2004 02 17 | 703 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.3− | 0.5+ |
| 2000 05 06 | 704 | 1.3+ | 0.9+ | 2004 02 19 | 704 | 0.3+ | 0.1+ | | | | |
| 2000 05 06 | 704 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.1− | 0.3+ | | | | |

**(138283)∗ 2000 GP$_{30}$ = 2002 TD$_{43}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37466)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.43096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22370425 | $\omega$ | 52.31268 | | +0.29186430 | −0.95637631 | |
| $a$ | 2.6875294 | $\Omega$ | 20.72841 | | +0.86591686 | +0.25860280 | |
| $e$ | 0.0679301 | $i$ | 2.04540 | | +0.40620589 | +0.13590050 | |
| $P$ | 4.41 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.2+ | 0.5+ | 2002 10 09 | 704 | 0.0 | 0.3− | 2004 02 29 | 691 | 0.0 | 0.4+ |
| 1995 01 29 | 691 | 0.4+ | 0.5+ | 2002 10 09 | 704 | 1.1− | 0.3− | 2005 06 13 | 701 | (0.9+ | 1.8+) |
| 1995 01 29 | 691 | 0.0 | 0.0 | 2002 10 09 | 704 | 0.2+ | 0.1+ | 2005 06 13 | 701 | 0.5+ | 0.6+ |
| 1995 02 05 | 691 | 1.1− | 1.0− | 2002 10 28 | 644 | 0.2− | 0.2+ | 2005 06 13 | 701 | 0.4+ | 0.9+ |
| 1995 02 05 | 691 | 0.5+ | 0.7− | 2002 10 28 | 644 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.6+ |
| 1995 02 05 | 691 | 0.4+ | 0.6− | 2002 10 28 | 644 | 0.2− | 0.3+ | 2006 08 27 | 699 | 0.5− | 1.2+ |
| 2000 03 25 | 691 | 0.6+ | 0.4+ | 2002 10 31 | 699 | 0.9− | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.5+ |
| 2000 03 25 | 691 | 0.2+ | 0.5+ | 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 08 27 | 699 | (1.7− | 0.5−) |
| 2000 03 25 | 691 | 0.3+ | 0.4+ | 2002 10 31 | 699 | 0.7− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2000 04 05 | 704 | 0.3+ | 0.5+ | 2002 10 31 | 644 | 0.4− | 0.5+ | 2006 08 27 | 699 | 0.4− | 1.5+ |
| 2000 04 05 | 704 | 1.2+ | 0.2+ | 2002 10 31 | 699 | 0.7− | 0.5+ | 2006 08 27 | 699 | 0.2− | 0.0 |
| 2000 04 05 | 704 | 0.4+ | 1.0+ | 2002 10 31 | 644 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2000 04 05 | 704 | 0.2− | 0.8+ | 2002 10 31 | 699 | 0.6− | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.5− |
| 2000 04 05 | 704 | 0.8+ | 0.9+ | 2002 11 06 | 704 | 1.2− | 1.3+ | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 2000 04 06 | 704 | 0.8+ | 0.2+ | 2002 11 06 | 704 | 0.4− | 0.5+ | 2006 09 14 | 703 | 1.0+ | 0.5− |
| 2000 04 06 | 704 | 0.2+ | 0.7+ | 2002 11 06 | 704 | 0.3− | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2000 04 06 | 704 | 0.7− | 0.2+ | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2000 04 06 | 704 | 0.5+ | 1.4+ | 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2000 04 13 | 691 | 0.3− | 0.2+ | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2000 04 13 | 691 | 0.6− | 0.3+ | 2004 02 17 | 704 | (0.7− | 2.7+) | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2000 04 13 | 691 | 0.8− | 0.3+ | 2004 02 17 | 704 | (0.1+ | 2.5+) | 2006 10 20 | G96 | 0.4+ | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 0.3− | 2004 02 17 | 704 | 0.2+ | 1.4+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 10 02 | 704 | 0.2+ | 1.3+ | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.3+ | 1.1− |
| 2002 10 02 | 704 | 0.8− | 0.4+ | 2004 02 23 | 704 | 1.0− | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2002 10 03 | 704 | 0.7− | 0.3+ | 2004 02 23 | 704 | 1.0+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2002 10 03 | 704 | 0.2− | 1.0+ | 2004 02 23 | 704 | 0.8+ | 0.6− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 1.0− | 0.5+ | 2004 02 29 | 691 | 0.0 | 0.3+ | | | | |
| 2002 10 03 | 704 | 0.2+ | 0.9+ | 2004 02 29 | 691 | 0.1+ | 0.2+ | | | | |

## (138284)∗ 2000 GS$_{30}$ = 2002 UL$_{18}$

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 40084)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.29842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23470736 | $\omega$ | 311.99466 | | −0.75436434 | −0.65642819 | |
| $a$ | 2.6028646 | $\Omega$ | 186.98493 | | +0.61601715 | −0.70468473 | |
| $e$ | 0.1060236 | $i$ | 2.84697 | | +0.22684206 | −0.26929810 | |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.6− | 0.1− | 2002 10 31 | 608 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.4+ |
| 2000 03 25 | 691 | 0.5− | 0.2− | 2002 10 31 | 608 | 0.7− | 0.7− | 2004 03 27 | 704 | 0.2+ | 0.2+ |
| 2000 03 25 | 691 | 0.7− | 0.1+ | 2002 10 31 | 608 | 0.6− | 0.4+ | 2004 03 28 | 691 | 0.1− | 0.3+ |
| 2000 04 02 | 699 | 0.1+ | 0.3− | 2004 02 19 | 704 | 1.2+ | 0.3+ | 2004 03 28 | 691 | 0.1+ | 0.2+ |
| 2000 04 02 | 699 | 0.1− | 0.7+ | 2004 02 19 | 704 | 0.6+ | 0.7+ | 2004 03 28 | 691 | 0.1− | 0.1+ |
| 2000 04 02 | 699 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 07 22 | G96 | 0.0 | 0.3+ |
| 2000 04 02 | 699 | 0.6+ | 1.1+ | 2004 02 19 | 704 | 0.1+ | 0.5+ | 2006 07 22 | G96 | 0.3− | 0.4+ |
| 2000 04 05 | 699 | 0.5+ | 0.4− | 2004 02 19 | 704 | 1.1+ | 0.2+ | 2006 07 22 | G96 | 0.9− | 0.1+ |
| 2000 04 05 | 704 | 0.3+ | 0.2+ | 2004 02 20 | 608 | (1.7+ | 0.3+) | 2006 07 22 | G96 | 0.5− | 0.2+ |
| 2000 04 05 | 699 | 0.3+ | 0.8+ | 2004 02 20 | 608 | (1.6+ | 0.4−) | 2006 09 18 | 691 | 0.0 | 0.6+ |
| 2000 04 05 | 704 | 0.1+ | 0.1− | 2004 02 20 | 608 | (1.8+ | 0.1+) | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2000 04 05 | 699 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 1.2+ | 1.2+ | 2006 09 18 | 691 | 0.1− | 0.7+ |
| 2000 04 05 | 704 | 0.2+ | 0.5+ | 2004 02 26 | 704 | 0.8+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.4+ |
| 2000 04 05 | 699 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.9+ | 1.0+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.0 | 0.5+ | 2004 02 26 | 704 | 0.7+ | 1.1+ | 2006 09 25 | 691 | 0.4+ | 0.3+ |
| 2000 04 05 | 704 | 0.8+ | 0.1− | 2004 02 26 | 704 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.5+ |
| 2000 04 06 | 704 | 1.6+ | 0.8+ | 2004 02 26 | 695 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.8+ | 1.2+ | 2004 02 26 | 695 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.5+ |
| 2000 04 06 | 704 | 0.8+ | 0.3+ | 2004 03 01 | 704 | 0.3+ | 0.9+ | 2006 09 25 | G96 | 0.1− | 0.5+ |
| 2000 04 06 | 704 | 0.5− | 0.7+ | 2004 03 01 | 704 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 2000 04 06 | 704 | 0.4+ | 0.1+ | 2004 03 01 | 704 | 1.1+ | 0.8− | 2006 09 25 | G96 | 0.3+ | 0.6+ |
| 2000 04 06 | 704 | 0.5+ | 0.3+ | 2004 03 01 | 704 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 2000 04 06 | 704 | 0.1− | 0.3− | 2004 03 01 | 704 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.6+ |
| 2000 04 06 | 704 | 0.1+ | 1.4+ | 2004 03 11 | 644 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.7+ |
| 2000 04 06 | 704 | 0.4+ | 1.1− | 2004 03 11 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.4− | 0.6+ |
| 2000 04 06 | 704 | 0.2+ | 0.3− | 2004 03 11 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.8+ |
| 2000 04 06 | 691 | 1.0+ | 0.3+ | 2004 03 14 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 1.3− | 0.9− |
| 2000 04 06 | 691 | 0.3− | 0.1+ | 2004 03 14 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2000 04 06 | 691 | 0.6− | 0.0 | 2004 03 14 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2000 04 07 | 704 | 0.6+ | 0.6+ | 2004 03 16 | 291 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2000 04 07 | 704 | 0.4− | 0.2− | 2004 03 16 | 291 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2000 04 07 | 704 | 0.6+ | 0.6− | 2004 03 16 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2000 04 07 | 704 | 0.0 | 0.2+ | 2004 03 16 | 291 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.2+ |
| 2000 04 07 | 704 | 0.3+ | 0.4− | 2004 03 16 | 704 | 0.1− | 0.9− | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2000 04 25 | 699 | 0.3+ | 1.0+ | 2004 03 16 | 704 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.4+ |
| 2000 04 25 | 699 | 1.1+ | 0.2− | 2004 03 16 | 704 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2000 04 25 | 699 | 1.5+ | 0.2+ | 2004 03 16 | 704 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2000 04 25 | 699 | 0.8+ | 1.4− | 2004 03 18 | 704 | 0.6− | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.2+ |
| 2000 04 29 | 704 | 0.2+ | 0.6+ | 2004 03 18 | 704 | 0.8− | 0.9+ | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2000 04 29 | 704 | 1.0− | 0.1+ | 2004 03 18 | 704 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2000 04 29 | 704 | 0.5− | 0.4+ | 2004 03 18 | 704 | 0.6− | 0.4+ | 2006 11 11 | G96 | 1.2+ | 0.5− |
| 2000 04 29 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 06 28 | 691 | 0.1− | 0.3+ | 2004 03 21 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2001 06 28 | 691 | 0.3− | 0.2+ | 2004 03 21 | 691 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 06 28 | 691 | 0.1− | 0.6+ | 2004 03 21 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.4− | 0.2+ |
| 2002 10 30 | 644 | 0.0 | 0.9+ | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.1− |
| 2002 10 30 | 644 | 0.1− | 0.7+ | 2004 03 27 | 704 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.9− | 0.3+ |
| 2002 10 30 | 644 | 0.3+ | 0.9+ | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.3− | 0.4− |

## (138285)∗ 2000 GF$_{31}$

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.19419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23257419 | $\omega$ | 26.69414 | | −0.81836672 | +0.57457608 | |
| $a$ | 2.6187560 | $\Omega$ | 188.40543 | | −0.54060280 | −0.77659794 | |
| $e$ | 0.2273639 | $i$ | 4.61331 | | −0.19499878 | −0.25837562 | |
| $P$ | 4.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 19 | 691 | 0.1− | 0.5+ | 2000 04 10 | 704 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.2− | 0.6− |
| 1993 09 19 | 691 | 0.1+ | 0.2+ | 2000 04 10 | 704 | 0.2+ | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.1− |
| 1993 09 19 | 691 | 0.1− | 0.5+ | 2000 04 10 | 704 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.0 |
| 2000 03 04 | 703 | 0.3+ | 0.1− | 2000 04 10 | 704 | 0.6+ | 0.5+ | 2004 03 18 | 704 | 0.3+ | 0.2+ |
| 2000 03 04 | 703 | 0.6+ | 0.6− | 2000 04 10 | 704 | 0.3+ | 0.2+ | 2004 03 21 | 691 | 0.1− | 0.2+ |
| 2000 03 04 | 703 | 0.4+ | 0.6+ | 2000 04 27 | 704 | 0.3− | 0.2+ | 2004 03 21 | 691 | 0.2− | 0.2+ |
| 2000 03 04 | 703 | 0.9− | 0.2+ | 2000 04 27 | 704 | 0.4+ | 0.9+ | 2004 03 21 | 691 | 0.2− | 0.3+ |
| 2000 03 25 | 691 | 0.3− | 0.1− | 2000 04 27 | 704 | 1.2+ | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.4+ |
| 2000 03 25 | 691 | 0.2− | 0.0 | 2000 04 27 | 704 | 0.1+ | 0.8+ | 2005 07 29 | 644 | 0.2+ | 0.5+ |
| 2000 03 25 | 691 | 0.2− | 0.0 | 2000 04 29 | 704 | 0.7+ | 0.2− | 2005 07 29 | 644 | 0.1− | 0.1+ |
| 2000 03 27 | 699 | 0.0 | 0.6+ | 2000 04 29 | 704 | 0.7+ | 0.6+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2000 03 27 | 699 | 0.1− | 0.0 | 2000 04 29 | 704 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.2+ | 0.1+ |
| 2000 03 27 | 699 | 0.4+ | 0.2+ | 2000 04 29 | 704 | 0.1+ | 0.8+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2000 03 27 | 699 | 0.3− | 0.2+ | 2000 04 29 | 704 | 0.3+ | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2000 04 02 | 699 | 0.5+ | 0.0 | 2000 05 01 | 608 | 0.5+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.2+ |
| 2000 04 02 | 699 | 0.4+ | 0.1− | 2000 05 01 | 608 | 0.6+ | 0.5− | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2000 04 02 | 699 | 0.6+ | 0.1− | 2000 05 01 | 608 | 0.5+ | 0.5− | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2000 04 02 | 699 | 0.2− | 0.4+ | 2000 05 25 | 699 | 1.7+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2000 04 05 | 699 | 0.3− | 0.5+ | 2000 05 25 | 699 | 0.8+ | 1.4+ | 2006 10 11 | 691 | 0.3+ | 0.3+ |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2000 05 25 | 699 | 1.3+ | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 2000 04 05 | 699 | 0.0 | 0.5+ | 2000 05 25 | 699 | (2.3+ | 0.4+) | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.4+ | 2001 09 18 | 691 | 0.2− | 0.6+ | 2006 10 15 | 691 | 0.2− | 0.2+ |
| 2000 04 05 | 699 | 0.3+ | 0.9+ | 2001 09 18 | 691 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 0.1+ | 0.6+ | 2001 09 18 | 691 | 0.2+ | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 2000 04 05 | 699 | 0.2− | 0.6+ | 2001 09 20 | 704 | 1.1− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.7+ | 2001 09 20 | 704 | 1.4− | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.2+ |
| 2000 04 05 | 704 | 0.2+ | 0.8+ | 2001 09 20 | 704 | 1.2− | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.3+ |
| 2000 04 06 | 699 | 0.1− | 0.3+ | 2004 02 13 | 644 | 0.4− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2000 04 06 | 704 | 0.2+ | 0.2+ | 2004 02 13 | 644 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 2000 04 06 | 699 | 0.1− | 0.3+ | 2004 02 13 | 644 | 0.5− | 0.3− | 2006 10 23 | 691 | 0.7− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.1− | 0.8+ | 2004 02 18 | 333 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.7+ | | |
| 2000 04 06 | 704 | 0.0 | 0.9+ | 2004 02 18 | 333 | 0.4− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.7+ | | |
| 2000 04 06 | 699 | 0.3− | 0.5+ | 2004 02 18 | 704 | 0.6+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.2+ | | |
| 2000 04 06 | 704 | 0.0 | 0.8+ | 2004 02 18 | 333 | (0.9− | 1.9+) | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2000 04 06 | 699 | 0.4− | 0.1+ | 2004 02 18 | 704 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2000 04 06 | 704 | 0.1− | 1.0+ | 2004 02 18 | 704 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.0 | | |
| 2000 04 07 | 704 | 0.1+ | 0.7+ | 2004 02 18 | 704 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2000 04 07 | 704 | 0.5+ | 0.5+ | 2004 03 15 | 704 | 0.1+ | 1.2− | 2006 11 16 | G96 | 0.5+ | 0.2+ | | |
| 2000 04 07 | 704 | 0.1− | 0.5+ | 2004 03 15 | 704 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2000 04 07 | 704 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 1.0+ | 0.4− | 2006 11 16 | G96 | 0.6+ | 0.4+ | | |
| 2000 04 07 | 704 | 0.0 | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.2+ | | |
| 2000 04 08 | 120 | 0.8− | 0.3− | 2004 03 15 | 704 | 0.4+ | 0.0 | | | | | | |
| 2000 04 08 | 120 | 1.1− | 0.1− | 2004 03 18 | 704 | 0.5+ | 0.3+ | | | | | | |

**(138286)∗ 2000 $GO_{32}$ = 2002 $XB_4$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40085)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.25678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27110010 | $\omega$ | 32.38298 | | −0.12758304 | −0.99177332 | |
| $a$ | 2.3643745 | $\Omega$ | 64.94881 | | +0.90752002 | −0.12096419 | |
| $e$ | 0.1935678 | $i$ | 0.65806 | | +0.40016245 | −0.04187306 | |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 07 | 691 | 0.2− | 0.2− | 2002 12 04 | 333 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.6+ | 0.8− | | |
| 1991 11 07 | 691 | 0.2+ | 0.0 | 2002 12 07 | 333 | 0.7− | 0.1+ | 2003 01 31 | 704 | 0.7+ | 0.6− | | |
| 1991 11 07 | 691 | 0.2− | 0.1− | 2002 12 07 | 333 | 0.3− | 0.2− | 2003 01 31 | 704 | 1.0+ | 0.1+ | | |
| 1998 09 28 | 691 | 0.0 | 0.1− | 2002 12 07 | 333 | 0.0 | 0.2− | 2003 01 31 | 704 | 0.6+ | 0.1− | | |
| 1998 09 28 | 691 | 0.1+ | 0.1+ | 2002 12 08 | 333 | 1.2− | 0.4− | 2005 07 11 | G96 | 0.2− | 0.1+ | | |
| 1998 09 28 | 691 | 0.0 | 0.2− | 2002 12 08 | 333 | 1.3− | 0.2− | 2005 07 11 | G96 | 0.0 | 0.0 | | |
| 2000 03 25 | 691 | 0.1+ | 0.5+ | 2002 12 08 | 333 | 1.4− | 0.4− | 2005 07 11 | G96 | 0.4− | 0.2+ | | |
| 2000 03 25 | 691 | 0.1− | 0.6+ | 2002 12 09 | 291 | 0.4− | 0.2− | 2005 07 11 | G96 | 0.2− | 0.3+ | | |
| 2000 03 25 | 691 | 0.0 | 0.4+ | 2002 12 09 | 291 | 0.0 | 0.1− | 2005 07 28 | 644 | 0.3− | 0.6+ | | |
| 2000 04 02 | 699 | 0.2− | 0.4− | 2002 12 09 | 291 | 1.0+ | 0.2+ | 2005 07 28 | 644 | 0.4− | 1.1+ | | |
| 2000 04 02 | 699 | 0.1+ | 0.0 | 2002 12 10 | 704 | 0.3+ | 0.4+ | 2005 07 28 | 644 | 0.1+ | 0.6+ | | |
| 2000 04 02 | 699 | 0.1+ | 0.5− | 2002 12 10 | 704 | 0.1+ | 0.4+ | 2005 08 04 | 644 | 0.1− | 0.6+ | | |
| 2000 04 02 | 699 | (2.0− | 0.2+) | 2002 12 10 | 704 | 0.3+ | 0.3+ | 2005 08 04 | 644 | 0.2− | 0.6+ | | |
| 2000 04 05 | 704 | 0.7+ | 0.8− | 2002 12 10 | 704 | 0.1+ | 0.4+ | 2005 08 04 | 644 | 0.1− | 0.6+ | | |
| 2000 04 05 | 704 | 0.7+ | 0.4+ | 2002 12 10 | 704 | 0.3+ | 0.4+ | 2005 08 05 | 644 | 0.4− | 0.7+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2002 12 27 | 644 | 0.0 | 0.1+ | 2005 08 05 | 644 | 0.1− | 0.5+ | | |
| 2000 04 05 | 704 | 0.6+ | 0.0 | 2002 12 27 | 644 | 0.1− | 0.4+ | 2005 08 05 | 644 | 0.9− | 0.8+ | | |
| 2000 04 05 | 704 | 0.7+ | 0.3− | 2002 12 27 | 644 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.8− | | |
| 2000 04 06 | 699 | 1.1+ | 0.1+ | 2002 12 31 | 699 | 0.9+ | 0.2+ | 2006 09 28 | G96 | 0.6− | 0.2− | | |
| 2000 04 06 | 704 | 0.7+ | 0.5+ | 2002 12 31 | 699 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.1+ | | |
| 2000 04 06 | 699 | 0.8+ | 0.2− | 2002 12 31 | 699 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.4− | 0.3− | | |
| 2000 04 06 | 704 | 0.6+ | 0.1− | 2002 12 31 | 699 | 0.3+ | 0.4+ | 2006 10 19 | 695 | 0.0 | 0.0 | | |
| 2000 04 06 | 704 | 0.6+ | 0.8+ | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 695 | 0.2+ | 0.1− | | |
| 2000 04 06 | 699 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.2+ | | |
| 2000 04 06 | 704 | 0.5+ | 0.1+ | 2002 12 31 | 704 | 0.6− | 0.5+ | 2006 10 27 | G96 | 0.9− | 0.0 | | |
| 2000 04 06 | 699 | 0.3+ | 0.3+ | 2002 12 31 | 704 | 0.5− | 1.0+ | 2006 10 27 | G96 | 0.2− | 0.2− | | |
| 2000 04 06 | 704 | 0.5+ | 0.3+ | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.0 | | |
| 2000 04 13 | 691 | 0.2− | 0.1− | 2003 01 04 | 704 | 0.5+ | 0.8+ | 2006 10 27 | 691 | 0.5− | 0.5− | | |
| 2000 04 13 | 691 | 0.5− | 0.0 | 2003 01 04 | 704 | 0.3+ | 1.1+ | 2006 10 27 | 691 | 0.1− | 0.2+ | | |
| 2000 04 13 | 691 | 0.2− | 0.1− | 2003 01 04 | 704 | 0.0 | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 2002 12 02 | 704 | 0.1+ | 1.1+ | 2003 01 04 | 704 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2002 12 02 | 704 | 0.4− | 0.3+ | 2003 01 04 | 704 | 0.6− | 1.2+ | 2006 11 15 | G96 | 0.5− | 1.0− | | |
| 2002 12 02 | 704 | 0.0 | 0.3+ | 2003 01 19 | 644 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.4− | 0.4− | | |
| 2002 12 04 | 333 | 0.6+ | 0.0 | 2003 01 19 | 644 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.9− | 0.2− | | |
| 2002 12 04 | 333 | 0.0 | 0.5− | 2003 01 19 | 644 | 0.2− | 0.5+ | | | | | | |

**(138287)∗ 2000 $GB_{33}$ = 2002 $TA_{255}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37467)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.36447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22284147 | $\omega$ | 269.07700 | | −0.49180367 | −0.86904956 | |
| $a$ | 2.6944618 | $\Omega$ | 210.56932 | | +0.83494939 | −0.45322229 | |
| $e$ | 0.1005734 | $i$ | 6.05927 | | +0.24695884 | −0.19834923 | |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.8− | 0.2+ | 2004 01 23 | 704 | 1.0+ | 1.9+ | 2004 03 15 | 704 | 0.5− | 0.2+ | | |
| 2000 04 05 | 704 | 0.3+ | 0.3+ | 2004 01 23 | 704 | 0.3− | 0.5+ | 2004 03 15 | 704 | 0.0 | 0.1− | | |
| 2000 04 05 | 704 | 0.2− | 0.3+ | 2004 01 29 | 704 | (2.1+ | 1.6+) | 2004 03 15 | 704 | 1.0+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.7+ | 0.4− | 2004 01 29 | 704 | 0.0 | 0.7+ | 2005 06 27 | G96 | 0.2− | 0.4+ | | |
| 2000 04 05 | 704 | 0.3+ | 0.3+ | 2004 01 29 | 704 | 0.6+ | 0.8+ | 2005 06 27 | G96 | 0.2+ | 0.1+ | | |
| 2000 04 06 | 704 | 0.2+ | 0.4− | 2004 01 29 | 704 | 0.1− | 1.0+ | 2005 06 27 | G96 | 0.1+ | 0.5+ | | |
| 2000 04 06 | 704 | 0.8+ | 0.1− | 2004 01 29 | 704 | 0.3+ | 0.4+ | 2005 06 27 | G96 | 0.2− | 0.2+ | | |
| 2000 04 06 | 704 | 0.7− | 0.4− | 2004 01 30 | 608 | 0.9+ | 1.0− | 2006 08 21 | 807 | 0.0 | 0.1+ | | |
| 2000 04 06 | 704 | 0.6− | 0.3+ | 2004 01 30 | 608 | 0.4+ | 0.6− | 2006 08 21 | 807 | 0.1+ | 0.2+ | | |
| 2000 04 29 | 704 | 0.9+ | 0.2+ | 2004 01 30 | 608 | 0.4+ | 0.7− | 2006 08 29 | 703 | 0.9− | 0.7+ | | |
| 2000 04 29 | 704 | 0.4− | 1.0+ | 2004 02 12 | 644 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.4− | 0.5+ | | |
| 2000 04 29 | 704 | 0.5+ | 1.0+ | 2004 02 12 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 1.2+ | 0.1− | | |
| 2000 04 29 | 704 | (1.3+ | 2.2+) | 2004 02 12 | 644 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 1.0− | 0.1+ | | |
| 2002 10 09 | 704 | 0.2− | 0.1− | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.0 | 0.6+ | | |
| 2002 10 09 | 704 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 08 29 | 703 | 0.2− | 0.6+ | | |
| 2002 10 09 | 704 | 0.5+ | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.1+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.7+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.1+ | 1.1+ | | |
| 2002 10 11 | 704 | 1.0− | 0.4+ | 2004 02 26 | 704 | 0.9− | 0.1− | 2006 09 13 | 644 | 0.3− | 1.1+ | | |
| 2004 01 23 | 704 | 1.3− | 0.3+ | 2004 02 26 | 704 | 0.3− | 0.4− | 2006 09 13 | 644 | 0.1− | 0.8+ | | |
| 2004 01 23 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.3+ | 0.1− | | | | | | |

**(138288)∗ 2000 $GH_{33}$ = 1996 $HB_{11}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 2460)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.14418 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24019683 | $\omega$ | 12.80629 | | −0.70754706 | +0.70542152 | |
| $a$ | 2.5630547 | $\Omega$ | 212.18771 | | −0.65509516 | −0.67700440 | |
| $e$ | 0.1929644 | $i$ | 4.51398 | | −0.26500471 | −0.20987028 | |
| $P$ | 4.10 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 809 | 0.4− | 0.9− | 2004 03 18 | 704 | 0.3− | 0.0 | 2004 03 28 | 704 | 0.2+ | 0.5+ | | |
| 1996 04 17 | 809 | 1.1− | 1.6− | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2004 03 28 | 704 | 0.1− | 1.4+ | | |
| 1996 04 17 | 809 | (0.0 | 2.9−) | 2004 03 19 | 704 | 0.3+ | 0.7− | 2004 03 28 | 704 | 0.3+ | 0.1+ | | |
| 1996 04 18 | 809 | 0.8+ | 1.6+ | 2004 03 19 | 704 | 0.1− | 0.1− | 2004 03 28 | 691 | 0.3+ | 0.1+ | | |
| 1996 04 18 | 809 | 0.0 | 2.0+ | 2004 03 19 | 704 | 0.4− | 0.5− | 2004 03 28 | 704 | 0.0 | 0.6+ | | |
| 1996 04 18 | 809 | 0.8+ | 1.2+ | 2004 03 19 | 704 | 0.5− | 0.2+ | 2004 03 28 | 691 | 0.2+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.6+ | 1.0+ | 2004 03 28 | 691 | 0.2+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.4+ | 2004 04 11 | 644 | 0.0 | 0.8+ | | |
| 2000 04 05 | 704 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2004 04 11 | 644 | 0.3+ | 0.4+ | | |
| 2000 04 05 | 704 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.3− | 2004 04 11 | 644 | 0.1− | 0.5+ | | |
| 2000 04 05 | 704 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.2+ | 0.8+ | 2004 04 11 | 621 | 0.0 | 0.2− | | |
| 2000 04 06 | 699 | 0.1− | 0.9− | 2004 03 22 | 704 | 0.1− | 0.9+ | 2004 04 11 | 621 | 0.6− | 0.2− | | |
| 2000 04 06 | 704 | 0.6− | 0.1+ | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2004 04 11 | 621 | 0.5− | 0.3− | | |
| 2000 04 06 | 699 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.8− | 1.3+ | 2004 04 12 | 703 | (0.6+ | 1.8+) | | |
| 2000 04 06 | 704 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.1− | 0.1− | 2004 04 12 | 703 | 1.3− | 0.8− | | |
| 2000 04 06 | 704 | 0.0 | 1.1− | 2004 03 22 | 704 | 0.0 | 0.5+ | 2004 04 12 | 703 | 0.8− | 0.0 | | |
| 2000 04 06 | 699 | 0.3+ | 0.3− | 2004 03 23 | 704 | 0.1− | 0.7+ | 2004 04 12 | 703 | 0.3+ | 0.5+ | | |
| 2000 04 06 | 704 | 0.4− | 0.8− | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2004 04 13 | 621 | 0.3− | 0.4− | | |
| 2000 04 06 | 699 | 0.6+ | 0.9− | 2004 03 23 | 704 | 0.0 | 0.5+ | 2004 04 13 | 621 | 0.2− | 0.0 | | |
| 2000 04 06 | 704 | 0.4− | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.2+ | 2004 04 13 | 621 | 0.3− | 0.2− | | |
| 2000 04 08 | 704 | 0.5+ | 1.0+ | 2004 03 23 | 704 | 0.0 | 0.0 | 2004 04 13 | 621 | 0.3− | 0.1− | | |
| 2000 04 08 | 704 | 0.4+ | 0.6+ | 2004 03 25 | 704 | 0.4+ | 0.2+ | 2004 04 13 | 621 | 0.6− | 0.1− | | |
| 2000 04 08 | 704 | 0.5− | 0.8− | 2004 03 25 | 704 | 0.1+ | 0.5+ | 2004 04 13 | 621 | 0.4− | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.4− | 0.0 | 2004 03 25 | 704 | (0.6+ | 1.7−) | 2004 04 15 | 699 | 0.1+ | 0.1− |
| 2000 04 10 | 704 | 0.9+ | 1.2+ | 2004 03 26 | 699 | 0.2− | 0.1+ | 2004 04 15 | 699 | 0.2+ | 0.2− |
| 2000 04 10 | 704 | 0.6− | 0.7+ | 2004 03 26 | 699 | 1.0− | 1.0+ | 2004 04 15 | 699 | 0.8− | 0.5+ |
| 2000 04 10 | 704 | 0.7+ | 0.6− | 2004 03 26 | 704 | 0.7+ | 0.6+ | 2004 04 15 | 699 | 0.1+ | 0.2− |
| 2000 04 10 | 704 | 0.8+ | 0.2+ | 2004 03 26 | 704 | 0.4+ | 0.7+ | 2005 08 27 | 644 | 0.0 | 0.5+ |
| 2000 04 29 | 704 | 0.3+ | 0.5+ | 2004 03 26 | 699 | 0.3+ | 0.3+ | 2005 08 27 | 644 | 0.5− | 0.6+ |
| 2000 04 29 | 704 | 0.6+ | 0.7+ | 2004 03 26 | 704 | 0.8+ | 0.1− | 2005 08 27 | 644 | 0.2− | 0.8+ |
| 2000 04 29 | 704 | 0.3+ | 0.5+ | 2004 03 26 | 704 | 0.7+ | 0.7− | 2005 09 12 | 691 | 0.2− | 0.1+ |
| 2000 04 29 | 704 | 0.3− | 0.4− | 2004 03 26 | 699 | 0.9− | 0.5− | 2005 09 12 | 691 | 0.3− | 0.5+ |
| 2000 04 29 | 704 | 0.3− | 0.5+ | 2004 03 26 | 704 | (1.6+ | 1.0+) | 2005 09 12 | 691 | 0.1− | 0.6+ |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2004 03 27 | 704 | 0.7− | 0.6+ | 2005 09 26 | 691 | 0.2− | 0.7+ |
| 2001 09 20 | 704 | 0.3+ | 1.5+ | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2005 09 26 | 691 | 0.3− | 0.7+ |
| 2001 09 20 | 704 | 0.1− | 0.7+ | 2004 03 27 | 703 | 0.8+ | 0.3+ | 2005 09 26 | 691 | 0.0 | 0.6+ |
| 2004 03 16 | 703 | 1.0+ | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2004 03 16 | 703 | 0.2+ | 0.5− | 2004 03 27 | 703 | 0.6+ | 0.2+ | 2006 11 11 | 691 | 0.7− | 0.5+ |
| 2004 03 16 | 703 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2004 03 16 | 703 | 0.1− | 0.8− | 2004 03 27 | 703 | 0.9+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2004 03 18 | 704 | 1.2+ | 0.2− | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.2− | 0.5+ | 2004 03 27 | 703 | 0.5+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2004 03 18 | 704 | 0.1− | 0.6+ | 2004 03 28 | 704 | 0.5+ | 0.4− | | | | |

**(138289)∗ 2000 GS$_{33}$ = 1997 TD$_{15}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 1270)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.10504 | | (2000.0) | | | |
| $n$ | 0.22748405 | $\omega$ | 32.34168 | | +0.44348399 | +0.89603752 |
| $a$ | 2.6576763 | $\Omega$ | 263.99225 | | −0.82673974 | +0.39993679 |
| $e$ | 0.0670453 | $i$ | 1.20681 | | −0.34615511 | +0.19278829 |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.2− | 0.3+ | 2001 08 24 | 704 | 0.0 | 1.4+ | 2004 03 27 | 704 | 0.2+ | 0.7+ |
| 1997 10 04 | 691 | 0.0 | 0.0 | 2001 08 24 | 704 | 0.0 | 0.8+ | 2004 03 27 | 704 | 0.1− | 0.1+ |
| 1997 10 04 | 691 | 0.1− | 0.1− | 2001 08 24 | 704 | 0.6− | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.6− |
| 1997 10 09 | 691 | 0.0 | 0.3− | 2002 12 06 | 695 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.2− |
| 1997 10 09 | 691 | 0.2+ | 0.1+ | 2002 12 06 | 695 | 0.6+ | 0.1− | 2006 09 27 | G96 | 0.5− | 0.5− |
| 1997 10 09 | 691 | 0.0 | 0.4− | 2004 02 26 | 704 | 0.3− | 0.9+ | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2000 04 05 | 704 | 0.5+ | 0.7− | 2004 02 26 | 704 | 0.2− | 0.9+ | 2006 10 12 | 691 | 0.3+ | 0.5+ |
| 2000 04 05 | 704 | 0.4+ | 0.2− | 2004 02 26 | 704 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.3+ | 0.2− | 2004 02 26 | 704 | 0.9− | 0.5+ | 2006 10 12 | 691 | 0.4+ | 0.2+ |
| 2000 04 05 | 704 | 0.5+ | 0.7− | 2004 03 18 | 704 | 0.3− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.8+ | 2.0− | 2004 03 18 | 704 | 0.3− | 0.7− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2000 04 06 | 704 | 0.5+ | 0.6+ | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2000 04 06 | 704 | 0.2− | 0.6− | 2004 03 18 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2000 04 06 | 704 | 0.0 | 1.0+ | 2004 03 18 | 704 | 0.9+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2000 04 06 | 704 | 0.2− | 0.0 | 2004 03 18 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 08 14 | 608 | 0.5− | 0.4− | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 08 14 | 608 | 0.3− | 0.4− | 2004 03 18 | 691 | 0.1− | 0.2+ | | | | |
| 2001 08 14 | 608 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.4+ | 1.2+ | | | | |

**(138290)∗ 2000 GW$_{33}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 264.17326 | | (2000.0) | | | |
| $n$ | 0.24263524 | $\omega$ | 176.69961 | | −0.74654801 | −0.66518631 |
| $a$ | 2.5458538 | $\Omega$ | 321.59186 | | +0.60991621 | −0.67587073 |
| $e$ | 0.0940457 | $i$ | 1.28214 | | +0.26583508 | −0.31737347 |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 699 | 0.9− | 1.5+ | 2002 12 02 | 704 | 0.4− | 1.4− | 2005 07 04 | 691 | 0.1− | 0.2− |
| 2000 04 02 | 699 | 0.4− | 0.6− | 2002 12 02 | 704 | 0.2− | 1.1− | 2005 07 09 | 691 | 0.1+ | 0.4+ |
| 2000 04 02 | 699 | 0.1+ | 0.4+ | 2002 12 10 | 644 | 0.2− | 0.3− | 2005 07 09 | 691 | 0.3− | 0.3+ |
| 2000 04 02 | 699 | 0.2− | 0.3+ | 2002 12 10 | 644 | 0.1− | 0.4− | 2005 07 09 | 691 | 0.1− | 0.3+ |
| 2000 04 05 | 704 | 0.7− | 0.1− | 2002 12 10 | 644 | 0.3+ | 0.7− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.4− | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2000 04 05 | 704 | 0.1− | 1.0− | 2004 02 26 | 704 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.2− | 0.6+ |
| 2000 04 05 | 704 | 1.1+ | 0.8− | 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2000 04 05 | 704 | 0.2+ | 1.3− | 2004 02 26 | 704 | 0.1+ | 0.9− | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2000 04 06 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | (2.2+ | 0.5+) | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2000 04 06 | 699 | 1.1+ | 0.7− | 2004 03 18 | 704 | (1.8+ | 0.2+) | 2006 11 08 | 644 | 0.4− | 0.6+ |
| 2000 04 06 | 704 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 1.4+ | 0.4− | 2006 11 08 | 644 | 0.3− | 0.5+ |
| 2000 04 06 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | (2.2+ | 0.6−) | 2006 11 08 | 644 | 0.4− | 0.6+ |
| 2000 04 06 | 699 | 0.6+ | 0.3− | 2004 03 18 | 704 | (3.5+ | 0.9+) | 2006 11 11 | 703 | (1.7− | 1.7−) |
| 2000 04 06 | 704 | 0.5− | 0.9− | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | (1.7− | 0.2+) |
| 2000 04 06 | 704 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 0.7− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2000 04 06 | 704 | 0.1− | 0.9− | 2004 03 27 | 704 | 0.5− | 0.1− | 2006 11 11 | 703 | (2.1− | 1.5+) |
| 2000 04 06 | 704 | 0.5− | 0.7+ | 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.3+ |
| 2000 04 06 | 699 | 0.3− | 0.5+ | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.9+ |
| 2000 04 06 | 704 | 0.0 | 0.3− | 2004 03 29 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.2+ | 0.5+ |
| 2000 04 06 | 704 | 0.4+ | 1.2+ | 2004 03 29 | 691 | 0.5+ | 0.6+ | 2006 11 14 | 703 | 1.3+ | 1.5+ |
| 2000 04 06 | 699 | 0.8+ | 0.2− | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2000 04 06 | 704 | 0.2− | 0.5− | 2004 04 14 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2000 04 29 | 704 | (0.0 | 2.9+) | 2004 04 14 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2000 04 29 | 704 | 0.2+ | 1.0+ | 2004 04 16 | 644 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2000 04 29 | 704 | 0.2+ | 1.3+ | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.7+ |
| 2000 04 29 | 704 | 0.7+ | 1.3+ | 2004 04 16 | 644 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 1.4+ | 0.1− |
| 2002 11 01 | 644 | 0.3− | 0.5+ | 2004 04 21 | 704 | 0.1− | 0.8+ | 2006 11 17 | 703 | (0.3− | 1.8+) |
| 2002 11 01 | 644 | 0.1− | 0.5+ | 2004 04 21 | 704 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.4− | 1.3+ |
| 2002 11 01 | 644 | 0.1− | 0.5+ | 2004 04 21 | 704 | 0.1− | 0.1− | 2006 11 22 | 104 | (0.7+ | 1.6+) |
| 2002 11 04 | 644 | 0.7− | 1.0+ | 2004 04 21 | 704 | 0.5− | 0.0 | 2006 11 22 | 104 | 0.1+ | 0.0 |
| 2002 11 04 | 644 | 0.2− | 0.6+ | 2004 04 23 | 691 | 0.1− | 0.3+ | 2006 11 22 | 104 | 0.4+ | 0.6+ |
| 2002 11 04 | 644 | 0.2− | 0.1+ | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2002 11 23 | 644 | 0.1+ | 0.7+ | 2004 04 23 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2002 11 23 | 644 | 0.4+ | 0.2+ | 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2002 12 02 | 704 | 0.2− | 0.1+ | 2005 07 04 | 691 | 0.2− | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.2− |

**(138291)∗ 2000 GF$_{34}$ = 2002 SL$_{42}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37467)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.48383 | | (2000.0) | | | |
| $n$ | 0.23531971 | $\omega$ | 250.88717 | | +0.05074279 | −0.99838759 |
| $a$ | 2.5983472 | $\Omega$ | 196.26700 | | +0.94705003 | +0.05619010 |
| $e$ | 0.2214944 | $i$ | 5.21155 | | +0.31705112 | −0.00805505 |
| $P$ | 4.19 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.2+ | 0.4− | 2002 10 07 | 704 | 0.5− | 0.5− | 2004 03 26 | 699 | 0.0 | 0.3+ |
| 2000 04 05 | 704 | 0.9+ | 0.3+ | 2002 10 07 | 704 | 0.9− | 0.5+ | 2004 03 26 | 699 | 0.1− | 0.2− |
| 2000 04 05 | 704 | 0.2+ | 0.8+ | 2002 10 07 | 704 | (0.4+ | 3.5+) | 2004 03 27 | 704 | 0.2+ | 0.4+ |
| 2000 04 05 | 704 | 0.0 | 0.1− | 2002 10 10 | 645 | 0.0 | 0.2+ | 2004 03 27 | 704 | 1.0+ | 0.5+ |
| 2000 04 06 | 704 | 0.5+ | 0.2+ | 2002 10 10 | 645 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.0 | 0.2+ |
| 2000 04 06 | 704 | 0.9+ | 0.4+ | 2002 10 11 | 704 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.3+ |
| 2000 04 06 | 704 | 0.3− | 0.5+ | 2002 10 11 | 704 | 0.4+ | 1.0+ | 2004 03 27 | 704 | 0.1+ | 0.9+ |
| 2000 04 06 | 704 | 0.2+ | 0.0 | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2004 04 12 | 703 | 0.3− | 1.8+ |
| 2000 04 13 | 691 | 0.4− | 0.1− | 2002 10 11 | 704 | 0.3− | 0.8+ | 2004 04 12 | 703 | 0.4+ | 0.6− |
| 2000 04 13 | 691 | 0.3− | 0.2− | 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 04 12 | 703 | 0.2− | 1.2+ |
| 2000 04 13 | 691 | 0.2− | 0.1− | 2002 10 11 | 645 | 0.0 | 0.2+ | 2004 04 12 | 703 | 0.2− | 0.7+ |
| 2000 04 29 | 704 | 0.2+ | 0.5− | 2004 03 16 | 704 | 0.3+ | 0.4+ | 2004 04 13 | 691 | 0.0 | 0.2+ |
| 2000 04 29 | 704 | 1.5+ | 1.0+ | 2004 03 16 | 704 | 0.9+ | 1.1− | 2004 04 13 | 691 | 0.2− | 0.4+ |
| 2000 04 29 | 704 | 0.0 | 0.0 | 2004 03 16 | 704 | 1.1+ | 0.2+ | 2004 04 13 | 691 | 0.1− | 0.3+ |
| 2000 04 29 | 704 | 0.2+ | 0.7+ | 2004 03 16 | 704 | 0.9+ | 0.9+ | 2006 08 22 | 644 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2004 03 16 | 704 | 0.9+ | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.3− | 0.4+ | 2006 08 22 | 644 | 0.5− | 0.0 |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.1+ | 1.5+ |
| 2002 09 28 | 608 | 0.9− | 0.1− | 2004 03 18 | 704 | 0.8− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | 0.8− | 1.0− | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 08 28 | 699 | 0.5+ | 0.3+ |
| 2002 09 28 | 608 | 1.4− | 0.5− | 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 0.9− | 0.0 | 2004 03 20 | 608 | 0.6+ | 0.7− | 2006 08 28 | 703 | 0.4− | 1.0+ |
| 2002 10 02 | 704 | 0.1− | 0.4+ | 2004 03 20 | 608 | 0.7+ | 0.5− | 2006 08 28 | 699 | 0.8− | 1.0+ |
| 2002 10 02 | 704 | 0.8− | 0.7+ | 2004 03 20 | 608 | 0.6+ | 0.5+ | 2006 08 28 | 699 | 0.7+ | 1.0− |
| 2002 10 02 | 608 | 0.4+ | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.9+ |
| 2002 10 02 | 608 | 0.4+ | 0.7+ | 2004 03 20 | 704 | 0.2+ | 1.2+ | 2006 08 29 | 691 | 0.1+ | 0.1− |
| 2002 10 02 | 608 | 0.3− | 0.5+ | 2004 03 20 | 704 | 0.0 | 1.0+ | 2006 08 29 | 691 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2004 03 20 | 704 | 0.3+ | 1.4+ | 2006 08 29 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 1.0− | 0.8+ | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.5− | 1.5− |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2004 03 23 | 691 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.6− | 0.7+ |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.4+ | 0.9− |
| 2002 10 03 | 704 | 0.4− | 0.8+ | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.6+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 03 26 | 699 | 0.7− | 0.1+ | | | | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2004 03 26 | 699 | 0.5+ | 0.0 | | | | |

**(138292)∗ 2000 GE$_{37}$ = 2002 VQ$_{22}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40085)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.85426 | | (2000.0) | | | |
| $n$ | 0.24210178 | $\omega$ | 72.89816 | | +0.08497015 | −0.99635422 |
| $a$ | 2.5495922 | $\Omega$ | 12.23510 | | +0.89991585 | +0.07345090 |
| $e$ | 0.1047791 | $i$ | 2.06534 | | +0.42770496 | +0.04339613 |
| $P$ | 4.07 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 699 | 1.0+ | 0.4− | 2002 12 02 | 704 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1998 11 25 | 699 | 1.2+ | 0.3+ | 2002 12 02 | 704 | 0.6− | 1.2− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 1998 11 25 | 699 | 0.4+ | 1.9+ | 2002 12 02 | 704 | 1.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 04 05 | 704 | 0.7− | 0.8− | 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2000 04 05 | 704 | 0.1− | 0.8− | 2003 01 05 | 704 | 0.6− | 0.7− | 2006 10 28 | 691 | 0.3− | 0.0 |
| 2000 04 05 | 704 | 0.7+ | 1.4− | 2003 01 05 | 704 | 0.5− | 0.3− | 2006 10 28 | 691 | 0.6− | 0.1+ |
| 2000 04 06 | 704 | 1.0+ | 0.2− | 2004 03 18 | 704 | 1.0+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2000 04 06 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.7− | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2000 04 06 | 704 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2000 04 06 | 704 | 0.0 | 0.7+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2000 04 13 | 691 | 0.6− | 0.5− | 2004 03 27 | 704 | 1.2− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.7− |
| 2000 04 13 | 691 | 0.5− | 0.2− | 2004 03 27 | 704 | 0.0 | 1.2− | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 2000 04 13 | 691 | 0.3− | 0.4− | 2004 03 27 | 704 | (0.2− | 2.0−) | 2006 11 11 | 703 | (0.4− | 1.9−) |
| 2002 11 05 | 704 | (1.9− | 1.0+) | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | (1.7− | 1.7+) | 2004 03 27 | 704 | 0.4+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 704 | (2.2− | 1.5+) | 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | (1.8− | 1.7+) | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.6+ | 0.4− |
| 2002 11 05 | 704 | (1.4− | 2.3+) | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2002 11 06 | 704 | 0.1− | 0.4− | 2004 03 31 | 291 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 11 06 | 704 | 1.2− | 0.9+ | 2004 03 31 | 291 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2002 11 06 | 704 | 1.1− | 0.3− | 2004 03 31 | 291 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 1.0− |
| 2002 11 10 | 704 | 0.4− | 0.4− | 2004 04 14 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.6− |
| 2002 11 10 | 704 | 0.3+ | 0.4− | 2004 04 14 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2002 11 10 | 704 | 0.0 | 0.4+ | 2004 04 14 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.6− | 0.2− |
| 2002 11 14 | 704 | 0.4− | 0.4− | 2004 04 23 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2002 11 14 | 704 | 0.4+ | 0.0 | 2004 04 23 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2002 11 14 | 704 | 0.4− | 0.4− | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | 0.5+ | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.9+ | 0.6− |
| 2002 11 28 | 699 | 0.4+ | 0.4− | 2006 07 21 | G96 | 0.4+ | 0.8+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2002 11 28 | 699 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2002 11 28 | 699 | 0.3− | 1.2+ | 2006 07 21 | G96 | 0.6+ | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.1+ |
| 2002 11 28 | 699 | 0.7+ | 0.6− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2002 12 01 | 608 | 0.3− | 0.8− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2002 12 01 | 608 | 0.0 | 0.8− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 22 | 104 | 0.5− | 1.2− |
| 2002 12 01 | 608 | 0.3− | 0.8− | 2006 10 15 | 691 | (1.7− | 1.5−) | 2006 11 22 | 104 | 1.0+ | 0.6− |
| 2002 12 02 | 704 | 0.8− | 0.4− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 22 | 104 | 0.6+ | 0.1+ |
| 2002 12 02 | 704 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.2+ | | | | |

**(138293)∗ 2000 GF$_{37}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.91229 | | (2000.0) | | | |
| $n$ | 0.21415856 | $\omega$ | 310.69853 | | +0.88556924 | +0.46375718 |
| $a$ | 2.7668085 | $\Omega$ | 21.71139 | | −0.40176550 | +0.79323013 |
| $e$ | 0.0733856 | $i$ | 4.09072 | | −0.23313430 | +0.39460770 |
| $P$ | 4.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.1+ | 0.2+ | 2002 11 24 | 644 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.5− | 0.4+ |
| 2000 03 25 | 691 | 0.0 | 0.3+ | 2002 11 24 | 644 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.4+ |
| 2000 03 25 | 691 | 0.0 | 0.3+ | 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.5− | 0.4− |
| 2000 04 05 | 704 | 1.1+ | 0.6− | 2002 11 27 | 699 | 0.6− | 0.3− | 2006 09 25 | 699 | 0.7− | 0.3+ |
| 2000 04 05 | 704 | 0.6+ | 1.0+ | 2002 11 27 | 699 | 0.2− | 0.7+ | 2006 09 25 | 699 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.5+ | 0.4− | 2002 11 27 | 699 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.0 | 0.4− |
| 2000 04 05 | 704 | 0.6− | 0.3+ | 2002 11 27 | 699 | 0.2+ | 1.0− | 2006 09 30 | 703 | 1.3+ | 0.3− |
| 2000 04 06 | 704 | 0.0 | 0.6+ | 2002 12 02 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | (4.6+ | 1.0−) |
| 2000 04 06 | 704 | 0.9+ | 0.2− | 2002 12 02 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.9− |
| 2000 04 06 | 704 | 0.1+ | 0.1− | 2002 12 02 | 704 | 1.4+ | 1.2+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2000 04 06 | 704 | 1.1+ | 0.8− | 2002 12 05 | 695 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2000 04 13 | 691 | 0.6− | 0.1+ | 2002 12 05 | 695 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.5− | 0.0 |
| 2000 04 13 | 691 | 0.6− | 0.1− | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.4+ |
| 2000 04 13 | 691 | 0.3− | 0.0 | 2004 02 16 | 704 | (0.6− | 1.6+) | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2000 04 29 | 704 | 1.0+ | 1.0+ | 2004 02 16 | 704 | 0.1+ | 0.9+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2000 04 29 | 704 | 0.7+ | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2000 04 29 | 704 | 0.5+ | 0.6+ | 2004 02 16 | 704 | 1.3+ | 1.2+ | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2000 04 29 | 704 | 0.1+ | 0.7+ | 2004 02 16 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.8+ | 0.0 |
| 2000 04 29 | 704 | 0.2− | 0.1− | 2004 02 16 | 691 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2001 06 30 | 644 | 0.5+ | 0.8+ | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.9− | 0.3− |
| 2001 06 30 | 644 | 0.7+ | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 10 19 | 695 | 0.1− | 0.1+ |
| 2001 06 30 | 644 | 0.4+ | 0.9+ | 2006 08 24 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 1.2− | 0.2+ |
| 2001 07 12 | 644 | 0.5− | 0.5− | 2006 09 14 | 703 | 0.1− | 0.2+ | 2006 10 20 | 695 | 0.2− | 0.1+ |
| 2001 07 12 | 644 | 0.9− | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2001 07 12 | 644 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.5− | 0.6+ | 2006 10 20 | 695 | 0.2− | 0.2+ |
| 2001 07 20 | 644 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.0 | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 2001 07 20 | 644 | 0.2+ | 0.4+ | 2006 09 16 | 704 | 0.5− | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 07 20 | 644 | 0.6+ | 0.6+ | 2006 09 16 | 704 | 0.6+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.7− | 1.4+ | 2006 09 16 | 704 | (0.2− | 1.9+) | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2002 11 12 | 704 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.9+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.4− | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.1+ | | | | |

**(138294)∗ 2000 GC$_{38}$ = 2002 TD$_{297}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37469)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.07714 | | (2000.0) | | | |
| $n$ | 0.22525774 | $\omega$ | 76.25070 | | −0.61378113 | −0.78873016 |
| $a$ | 2.6751588 | $\Omega$ | 51.66566 | | +0.70637807 | −0.56806759 |
| $e$ | 0.0553337 | $i$ | 2.50723 | | +0.35256595 | −0.23495518 |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 691 | 0.3− | 0.0 | 2002 10 31 | 644 | 0.3+ | 0.3+ | 2006 08 18 | 691 | 0.3− | 0.4+ |
| 2000 03 27 | 691 | 0.3− | 0.0 | 2002 10 31 | 644 | 0.3+ | 0.4+ | 2006 08 19 | 291 | 0.6− | 0.3+ |
| 2000 03 27 | 691 | 0.1− | 0.0 | 2002 11 01 | 608 | 0.7− | 0.2− | 2006 08 19 | 291 | 0.6− | 0.5+ |
| 2000 04 05 | 704 | 0.7+ | 0.2+ | 2002 11 01 | 608 | 0.2− | 0.7− | 2006 08 19 | 291 | 0.4− | 0.4+ |
| 2000 04 05 | 704 | 0.4+ | 0.0 | 2002 11 01 | 608 | (0.3− | 1.6−) | 2006 08 27 | 691 | 0.3− | 0.5+ |
| 2000 04 05 | 704 | 0.3+ | 0.0 | 2002 11 06 | 704 | 0.9− | 0.0 | 2006 08 27 | 691 | 0.3− | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.5+ | 2002 11 06 | 704 | 0.2+ | 0.7+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 0.5+ | 1.3+ | 2002 11 06 | 704 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.7+ |
| 2000 04 06 | 704 | 0.2+ | 0.4+ | 2004 01 22 | 704 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.6+ | 0.6+ | 2004 01 22 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.3+ | 0.1+ |
| 2000 04 06 | 704 | 0.3− | 0.5+ | 2004 01 22 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 703 | 0.7+ | 0.1− |
| 2000 04 06 | 704 | 0.4− | 1.1+ | 2004 02 17 | 691 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.6+ | 1.1+ |
| 2000 04 10 | 704 | 0.8+ | 1.3+ | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.7+ |
| 2000 04 10 | 704 | 0.1+ | 1.1+ | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | (0.1+ | 1.6+) |
| 2000 04 10 | 704 | 0.6+ | 0.4+ | 2004 02 17 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.0 |
| 2000 04 10 | 704 | 0.7+ | 0.7+ | 2004 02 17 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.4− | 0.3+ |
| 2000 04 29 | 704 | 0.6+ | 1.4+ | 2004 02 17 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.9− | 0.5− |
| 2000 04 29 | 704 | 0.9+ | 0.3+ | 2004 02 17 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.7− | 0.6+ |
| 2000 04 29 | 704 | 0.9+ | 1.1+ | 2004 02 23 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 699 | 1.3+ | 0.9− |
| 2000 04 29 | 704 | (2.5+ | 1.8+) | 2004 02 23 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.1− |
| 2000 04 29 | 704 | 1.3+ | 1.6+ | 2004 02 23 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.1− | 0.7− |
| 2001 07 19 | 644 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 1.2− | 0.9− |
| 2001 07 19 | 644 | 0.1− | 1.0+ | 2004 02 23 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 2001 07 19 | 644 | 0.2− | 1.0+ | 2004 02 29 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.3− | 1.1+ |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.5+ |
| 2002 10 11 | 704 | 0.2+ | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.3− |
| 2002 10 11 | 704 | 1.2− | 0.0 | 2004 03 22 | 704 | 1.5+ | 1.4+ | 2006 09 28 | 204 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 1.3+ | 0.4− | 2004 03 22 | 704 | 0.5+ | 0.3− | 2006 09 28 | 204 | 0.0 | 0.2+ |
| 2002 10 15 | 644 | 0.2− | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 691 | 0.3− | 0.6+ |
| 2002 10 15 | 644 | 0.0 | 0.5+ | 2004 03 22 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.7+ |
| 2002 10 15 | 644 | 0.0 | 0.5+ | 2004 03 26 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2002 10 26 | 608 | 0.5− | 0.2+ | 2004 03 26 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 10 26 | 608 | 0.3+ | 0.2− | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.6+ | 0.3+ |
| 2002 10 26 | 608 | 0.4+ | 0.4+ | 2006 08 18 | 691 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.1+ |
| 2002 10 31 | 644 | 0.1+ | 0.8+ | 2006 08 18 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1+ |

**(138295)∗ 2000 GZ$_{39}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 108.77936 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.16868000 | $\omega$ | 287.06113 | | −0.59455250 | | −0.80179800 | | |
| $a$ | 3.2440957 | $\Omega$ | 199.78837 | | +0.78866675 | | −0.56694916 | | |
| $e$ | 0.0317989 | $i$ | 10.24737 | | +0.15656337 | | −0.18891431 | | |
| $P$ | 5.84 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.3+ | 0.5+ | 2002 09 08 | 608 | 0.6− | 0.8+ | 2006 03 25 | 691 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 0.8+ | 0.3− | 2002 09 13 | 644 | 0.5− | 0.4+ | 2006 04 02 | 691 | 0.1− | 0.1+ |
| 2000 04 05 | 704 | 0.7+ | 0.1− | 2002 09 13 | 644 | 0.0 | 0.5+ | 2006 04 02 | 691 | 0.2+ | 0.3+ |
| 2000 04 05 | 704 | 0.6+ | 0.7− | 2002 09 13 | 644 | 0.5− | 0.8+ | 2006 04 02 | 691 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 0.4+ | 0.3− | 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 04 07 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.5+ | 0.7− | 2002 10 05 | 645 | 0.1− | 0.0 | 2006 04 07 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.5+ | 0.1− | 2003 11 18 | 691 | 0.2+ | 0.4+ | 2006 04 07 | 691 | 0.0 | 0.0 |
| 2000 04 06 | 704 | (2.2+ | 0.3−) | 2003 11 18 | 691 | 0.2+ | 0.4+ | 2006 04 27 | 704 | 0.2+ | 0.3− |
| 2000 04 06 | 704 | 0.7+ | 0.5+ | 2003 11 18 | 691 | 0.0 | 0.3+ | 2006 04 27 | 704 | 0.6+ | 0.4− |
| 2000 04 06 | 704 | 0.1− | 0.2− | 2003 12 22 | 704 | 0.5+ | 1.1+ | 2006 04 27 | 704 | 0.2+ | 0.4+ |
| 2000 04 06 | 704 | 0.7− | 0.1+ | 2003 12 22 | 704 | 1.2+ | 0.9+ | 2006 04 27 | 704 | 0.4− | 0.7+ |
| 2000 04 06 | 704 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.5+ | 0.3+ | 2006 04 27 | 704 | 0.1+ | 0.1+ |
| 2000 04 06 | 704 | 0.7+ | 1.2+ | 2003 12 22 | 691 | 0.2− | 0.2+ | 2006 04 30 | 704 | 0.8+ | 0.1− |
| 2000 04 12 | 691 | 0.3− | 0.1− | 2003 12 22 | 691 | 0.0 | 0.2+ | 2006 04 30 | 704 | 0.4+ | 0.8+ |
| 2000 04 12 | 691 | 0.3− | 0.1+ | 2003 12 22 | 691 | 0.2− | 0.1+ | 2006 04 30 | 704 | 0.4+ | 0.1+ |
| 2000 04 12 | 691 | 0.1− | 0.0 | 2005 02 14 | 703 | 0.7− | 0.1+ | 2006 04 30 | 704 | 0.6− | 0.4+ |
| 2000 04 27 | 699 | 0.4− | 0.9− | 2005 02 14 | 703 | 0.5− | 1.2+ | 2006 05 06 | 691 | 0.1+ | 0.2+ |
| 2000 04 27 | 699 | 0.4− | 0.9+ | 2005 02 14 | 703 | 0.8− | 0.2+ | 2006 05 06 | 691 | 0.1− | 0.6+ |
| 2000 04 27 | 699 | (3.0+ | 0.5+) | 2005 02 14 | 703 | 0.1− | 1.0+ | 2006 05 06 | 691 | 0.1− | 0.0 |
| 2000 04 27 | 699 | 0.4− | 0.2+ | 2006 03 24 | G96 | 0.0 | 0.1+ | 2006 05 28 | G96 | 0.1− | 0.0 |
| 2002 08 28 | 644 | 0.5+ | 1.1+ | 2006 03 24 | G96 | 0.4− | 0.1+ | 2006 05 28 | G96 | 0.4− | 0.2− |
| 2002 08 28 | 644 | 0.0 | 0.9+ | 2006 03 24 | G96 | 0.8− | 0.1− | 2006 05 28 | G96 | 0.6− | 0.5− |
| 2002 08 28 | 644 | 0.0 | 1.0+ | 2006 03 24 | G96 | 0.6− | 0.1+ | 2006 05 28 | G96 | 0.3− | 0.2− |
| 2002 09 08 | 608 | 0.1− | 0.3+ | 2006 03 25 | 691 | 1.0+ | 0.3+ | | | | |
| 2002 09 08 | 608 | 0.6− | 0.7+ | 2006 03 25 | 691 | 0.2+ | 0.2+ | | | | |

**(138296)∗ 2000 GE$_{40}$ = 1998 SN$_{49}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 425)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 336.82657 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25968687 | $\omega$ | 75.87600 | | −0.12214221 | | −0.99191784 | | |
| $a$ | 2.4331528 | $\Omega$ | 21.23120 | | +0.87009580 | | −0.12366636 | | |
| $e$ | 0.1639655 | $i$ | 5.44380 | | +0.47750872 | | −0.02838368 | | |
| $P$ | 3.80 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 22 | 621 | 1.5− | 0.1+ | 2002 11 14 | 704 | 0.3+ | 0.4+ | 2002 12 11 | 704 | 0.6− | 1.2− |
| 1998 09 22 | 621 | 0.1− | 0.5+ | 2002 11 14 | 704 | 1.3+ | 0.5+ | 2002 12 11 | 704 | 0.5− | 1.1− |
| 1998 09 23 | 621 | 0.4− | 0.3+ | 2002 11 14 | 704 | 1.3+ | 0.4− | 2002 12 11 | 704 | 0.4+ | 0.8− |
| 1998 09 23 | 621 | 0.5− | 0.3− | 2002 11 24 | 644 | 0.4− | 0.7+ | 2002 12 11 | 704 | 0.4+ | 1.0− |
| 1998 09 23 | 621 | 0.1− | 0.1+ | 2002 11 24 | 644 | 0.5− | 0.7+ | 2002 12 11 | 704 | 0.3− | 0.3− |
| 1998 09 23 | 621 | 0.3+ | 0.3− | 2002 11 24 | 644 | 0.4− | 0.7+ | 2002 12 11 | 704 | 0.2− | 0.5+ |
| 1998 09 23 | 621 | 0.1− | 0.2− | 2002 11 27 | 699 | 0.4− | 0.0 | 2002 12 11 | 704 | 0.4+ | 0.7+ |
| 1998 09 24 | 621 | 0.1− | 0.1− | 2002 11 27 | 699 | 0.0 | 0.0 | 2002 12 14 | 704 | 0.8− | 0.8− |
| 1998 09 24 | 621 | 0.5− | 0.1+ | 2002 11 27 | 699 | 0.4− | 0.1+ | 2002 12 14 | 704 | 0.9− | 0.5− |
| 1998 09 24 | 621 | 0.2− | 0.3+ | 2002 11 27 | 699 | 0.6+ | 0.0 | 2002 12 14 | 704 | 1.3− | 1.3− |
| 1998 10 17 | 699 | (0.6+ | 2.1+) | 2002 12 02 | 704 | 0.0 | 0.0 | 2002 12 14 | 704 | (0.8− | 2.1−) |
| 1998 10 17 | 699 | 0.8+ | 0.1− | 2002 12 02 | 704 | 0.3+ | 0.6+ | 2003 01 28 | 644 | 0.1− | 0.3+ |
| 1998 10 17 | 699 | 1.5+ | 0.5+ | 2002 12 02 | 704 | 0.0 | 0.2+ | 2003 01 28 | 644 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 0.1− | 0.2− | 2002 12 02 | 704 | 0.2+ | 0.6+ | 2003 01 28 | 644 | 0.4− | 0.3+ |
| 2000 04 05 | 704 | 1.7+ | 0.4− | 2002 12 02 | 704 | 0.1− | 0.2+ | 2004 05 09 | 691 | 0.2− | 0.1+ |
| 2000 04 05 | 704 | 1.9+ | 0.8− | 2002 12 05 | 699 | 0.9+ | 0.1+ | 2004 05 09 | 691 | 0.1+ | 0.1+ |
| 2000 04 06 | 704 | 0.8+ | 0.4− | 2002 12 05 | 699 | (1.6+ | 0.4−) | 2004 05 09 | 691 | 0.1+ | 0.1+ |
| 2000 04 06 | 704 | 0.2+ | 0.2− | 2002 12 05 | 699 | (2.9+ | 1.6+) | 2005 08 04 | 644 | 0.0 | 0.4+ |
| 2000 04 06 | 704 | 0.3− | 0.3+ | 2002 12 05 | 699 | 0.9+ | 0.7+ | 2005 08 04 | 644 | 0.3− | 0.6+ |
| 2000 04 12 | 691 | 0.1− | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.2− | 2005 08 04 | 644 | 0.0 | 0.5+ |
| 2000 04 12 | 691 | 0.2− | 0.4+ | 2002 12 06 | 704 | 0.4− | 0.6− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2000 04 12 | 691 | 0.1− | 0.0 | 2002 12 06 | 704 | 0.4+ | 0.0 | 2006 10 20 | G96 | 0.4− | 0.4− |
| 2000 04 26 | 691 | 0.2− | 0.2− | 2002 12 06 | 704 | 0.4− | 0.3− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2000 04 26 | 691 | 0.1− | 0.2+ | 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2000 04 26 | 691 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.3+ | 0.3+ |
| 2002 11 12 | 704 | 0.8+ | 0.3− | 2002 12 10 | 704 | 0.3− | 1.2+ | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.6+ | 0.5− | 2002 12 10 | 704 | 0.5− | 0.8+ | 2006 11 17 | 644 | 0.0 | 0.5+ |
| 2002 11 12 | 704 | 0.2+ | 0.1+ | 2002 12 10 | 704 | 0.8− | 0.6+ | | | | |
| 2002 11 12 | 704 | 0.3+ | 0.0 | 2002 12 10 | 704 | 0.2− | 0.7+ | | | | |

**(138297)∗ 2000 GQ$_{41}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 106.03726 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21436663 | $\omega$ | 232.19371 | | −0.35761698 | | +0.93269351 | | |
| $a$ | 2.7650178 | $\Omega$ | 17.03486 | | −0.79869855 | | −0.27948497 | | |
| $e$ | 0.1042283 | $i$ | 9.19818 | | −0.48393257 | | −0.22797143 | | |
| $P$ | 4.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.7+ | 0.4+ | 2001 08 27 | 644 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 1.0− | 0.1+ |
| 2000 04 05 | 704 | 1.2+ | 0.4+ | 2004 02 11 | 644 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.6+ | 0.7+ |
| 2000 04 05 | 704 | 0.7+ | 0.7+ | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.7+ |
| 2000 04 05 | 704 | 0.1− | 0.8+ | 2004 02 11 | 644 | 0.7+ | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.6+ |
| 2000 04 05 | 704 | 0.6+ | 1.2+ | 2004 02 15 | 704 | (2.3− | 0.8−) | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2000 04 06 | 704 | 0.2+ | 0.4+ | 2004 02 15 | 704 | (2.5− | 0.7−) | 2006 10 01 | 704 | 0.5− | 0.6+ |
| 2000 04 06 | 704 | 0.7+ | 0.6+ | 2004 02 15 | 704 | (2.6− | 1.2−) | 2006 10 01 | 704 | 0.2+ | 0.4+ |
| 2000 04 06 | 704 | 0.4+ | 0.8+ | 2004 02 15 | 704 | (2.6− | 0.8−) | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 2000 04 06 | 704 | 0.7+ | 1.0+ | 2004 02 15 | 704 | (2.9− | 0.3−) | 2006 10 01 | 704 | 1.1− | 0.6+ |
| 2000 04 07 | 704 | 1.1− | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.6+ | 0.3+ |
| 2000 04 07 | 704 | 0.1− | 0.0 | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.2− | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.2+ | | |
| 2000 04 29 | 704 | 0.5+ | 0.6+ | 2004 02 22 | 703 | 0.1− | 0.7+ | 2006 10 16 | 703 | 1.4− | 0.2− | | |
| 2000 04 29 | 704 | 0.3+ | 0.5+ | 2004 02 22 | 703 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.6− | | |
| 2000 04 29 | 704 | 0.1− | 0.5+ | 2004 02 22 | 703 | 0.0 | 0.5+ | 2006 10 16 | 703 | 1.0− | 0.7− | | |
| 2000 04 29 | 704 | 0.4+ | 0.7+ | 2004 02 22 | 703 | 0.6− | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.5− | | |
| 2000 04 29 | 704 | 0.3+ | 0.0 | 2004 03 17 | 645 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2000 05 04 | 699 | 0.4+ | 0.3− | 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.0 | | |
| 2000 05 04 | 699 | 0.1− | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1+ | | |
| 2000 05 04 | 699 | 0.5− | 0.2+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.2+ | | |
| 2000 05 04 | 699 | 0.5+ | 1.2+ | 2006 09 19 | 703 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2001 07 25 | 608 | 0.1− | 0.6+ | 2006 09 19 | 703 | 0.5+ | 0.7− | 2006 10 21 | G96 | 0.5− | 0.2+ | | |
| 2001 07 25 | 608 | 0.6− | 0.6+ | 2006 09 19 | 703 | 0.9− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.0 | | |
| 2001 07 25 | 608 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 11 21 | G96 | 0.3− | 0.1− | | |
| 2001 08 16 | 644 | 0.2− | 0.2− | 2006 09 24 | 291 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1+ | | |
| 2001 08 16 | 644 | 0.0 | 0.0 | 2006 09 24 | 291 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.0 | | |
| 2001 08 16 | 644 | 0.0 | 0.1− | 2006 09 24 | 291 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2001 08 27 | 644 | 0.1+ | 1.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | | | | | | |
| 2001 08 27 | 644 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.1− | | | | | | |

**(138298)∗ 2000 GG$_{46}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.29663 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24425743 | $\omega$ | 98.87781 | | −0.64784772 | −0.76033244 | |
| $a$ | 2.5345694 | $\Omega$ | 31.65710 | | +0.65919843 | −0.59033115 | |
| $e$ | 0.1154296 | $i$ | 5.11320 | | +0.38177320 | −0.27093119 | |
| $P$ | 4.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.9+ | 0.7+ | 2002 12 06 | 704 | 0.4− | 0.0 | 2004 04 15 | 699 | 0.4+ | 0.5+ | | |
| 2000 04 04 | 699 | 1.5+ | 0.7+ | 2002 12 06 | 704 | 0.7+ | 0.3+ | 2004 04 15 | 699 | 0.8− | 0.4− | | |
| 2000 04 04 | 699 | 1.2+ | 0.3+ | 2004 03 14 | 644 | 0.2− | 0.1− | 2004 04 15 | 699 | 0.8− | 1.0+ | | |
| 2000 04 04 | 699 | 0.5+ | 1.0− | 2004 03 14 | 644 | 0.1− | 0.1− | 2004 04 15 | 699 | 1.2+ | 0.6+ | | |
| 2000 04 05 | 704 | 0.6+ | 0.1− | 2004 03 14 | 644 | 0.0 | 0.1− | 2004 04 20 | 691 | 0.3+ | 0.2+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.0 | 2004 03 16 | 691 | 0.0 | 0.0 | 2004 04 20 | 691 | 0.3+ | 0.2+ | | |
| 2000 04 05 | 704 | 1.0+ | 0.7− | 2004 03 16 | 691 | 0.2+ | 0.1− | 2004 04 20 | 691 | 0.2+ | 0.3+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.5− | 2004 03 16 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 2000 04 05 | 704 | 0.7+ | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.8− | 2006 09 25 | G96 | 0.0 | 0.1− | | |
| 2000 04 06 | 704 | 0.1+ | 0.5− | 2004 03 19 | 704 | (0.6− | 1.5−) | 2006 09 25 | G96 | 0.1+ | 0.1− | | |
| 2000 04 06 | 704 | 0.5+ | 0.4− | 2004 03 19 | 704 | 0.9+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.2+ | | |
| 2000 04 06 | 704 | 1.1+ | 0.2− | 2004 03 19 | 704 | 0.3+ | 0.6− | 2006 10 20 | 691 | 0.0 | 0.0 | | |
| 2000 04 06 | 704 | 0.3− | 0.9− | 2004 03 19 | 704 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.5− | 0.2+ | | |
| 2000 04 06 | 704 | 0.4+ | 0.4+ | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2000 04 26 | 691 | 0.0 | 0.1− | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.4+ | | |
| 2000 04 26 | 691 | 0.1+ | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2000 04 26 | 691 | 0.1+ | 0.1− | 2004 03 24 | 699 | (0.4+ | 1.8−) | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2000 05 02 | 691 | 0.1− | 0.1+ | 2004 03 24 | 699 | 1.0− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.3+ | | |
| 2000 05 02 | 691 | 0.5+ | 0.0 | 2004 03 24 | 699 | 0.1− | 0.9− | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2000 05 02 | 691 | 0.4+ | 0.2+ | 2004 03 24 | 699 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5− | 1.2− | | |
| 2000 05 02 | 691 | 0.8− | 0.0 | 2004 03 27 | 704 | 0.5+ | 1.2+ | 2006 11 11 | 703 | 0.7+ | 0.8− | | |
| 2000 05 02 | 691 | 1.1− | 0.1− | 2004 03 27 | 704 | (1.4+ | 1.6+) | 2006 11 11 | 703 | 0.5− | 0.3− | | |
| 2000 05 02 | 691 | 0.6− | 0.0 | 2004 03 27 | 704 | 0.8+ | 1.1+ | 2006 11 11 | 703 | 0.2− | 1.1− | | |
| 2000 05 11 | 691 | 0.4− | 0.2− | 2004 03 27 | 704 | 0.5+ | 0.2− | 2006 11 15 | G96 | 0.8+ | 0.1− | | |
| 2000 05 11 | 691 | 0.5− | 0.2− | 2004 03 27 | 704 | (1.7+ | 0.7−) | 2006 11 15 | G96 | 0.0 | 0.2− | | |
| 2000 05 11 | 691 | 0.6− | 0.2− | 2004 03 28 | 704 | 0.7− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2002 10 31 | 735 | 0.5− | 0.3− | 2004 03 28 | 704 | 1.0− | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.2− | | |
| 2002 10 31 | 735 | 1.1+ | 0.1+ | 2004 03 28 | 704 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.4+ | 0.5− | | |
| 2002 10 31 | 735 | 0.4− | 0.0 | 2004 03 28 | 704 | 0.7− | 0.3− | 2006 11 20 | G96 | 0.3+ | 0.5− | | |
| 2002 11 06 | 735 | 0.2+ | 0.1− | 2004 03 28 | 704 | 0.2− | 0.7− | 2006 11 20 | G96 | 0.6+ | 0.5− | | |
| 2002 11 06 | 735 | 0.5+ | 0.3− | 2004 04 09 | E12 | 0.6− | 0.3+ | 2006 11 20 | G96 | 0.6+ | 0.3− | | |
| 2002 11 06 | 735 | 0.2− | 1.0− | 2004 04 09 | E12 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.4+ | 0.6− | | |
| 2002 11 14 | 704 | 1.2− | 0.8+ | 2004 04 09 | E12 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.4− | | |
| 2002 11 14 | 704 | 1.0− | 0.9+ | 2004 04 09 | E12 | 1.2− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.6− | | |
| 2002 11 14 | 704 | (1.7− | 1.7+) | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.3− | | |
| 2002 12 06 | 704 | 0.3+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2002 12 06 | 704 | 0.5+ | 0.1− | 2004 04 13 | 691 | 0.1+ | 0.2+ | | | | | | |

**(138299)∗ 2000 GH$_{46}$ = 2001 QE$_{231}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17261)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.18174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22888639 | $\omega$ | 28.97239 | | −0.71091092 | +0.70108241 | |
| $a$ | 2.6468098 | $\Omega$ | 195.94233 | | −0.67794006 | −0.70417438 | |
| $e$ | 0.1244553 | $i$ | 11.67451 | | −0.18709073 | −0.11234720 | |
| $P$ | 4.31 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 703 | 0.0 | 0.3+ | 2001 09 09 | 699 | 0.8− | 1.4+ | 2004 04 14 | 699 | 0.4− | 0.4+ | | |
| 2000 03 04 | 703 | 1.3− | 0.7+ | 2001 09 16 | 704 | 0.4+ | 0.2− | 2004 04 14 | 699 | 0.1+ | 0.0 | | |
| 2000 03 04 | 703 | 0.5− | 0.0 | 2001 09 16 | 704 | 0.6− | 0.6− | 2004 04 14 | 699 | 0.2− | 0.3+ | | |
| 2000 03 04 | 703 | 1.3+ | 0.2+ | 2001 09 16 | 704 | 0.3− | 0.3+ | 2004 04 14 | 699 | 0.6− | 0.2+ | | |
| 2000 04 04 | 699 | 0.0 | 0.0 | 2001 09 16 | 704 | 0.8− | 0.6− | 2004 04 15 | 704 | 0.4− | 1.4+ | | |
| 2000 04 04 | 699 | 0.3+ | 0.4+ | 2001 09 16 | 704 | 0.9− | 0.6− | 2004 04 15 | 704 | 1.0+ | 1.2+ | | |
| 2000 04 04 | 699 | 0.4− | 0.5+ | 2001 09 20 | 704 | 0.9− | 1.1+ | 2004 04 15 | 704 | 0.4− | 0.2+ | | |
| 2000 04 04 | 699 | 0.3+ | 0.3+ | 2001 09 20 | 704 | 0.2− | 0.8+ | 2004 04 15 | 704 | 0.1+ | 0.9+ | | |
| 2000 04 05 | 704 | 0.3− | 0.5+ | 2001 09 20 | 704 | 1.3− | 1.3+ | 2004 04 15 | 704 | 0.7+ | 0.5− | | |
| 2000 04 05 | 704 | 0.2− | 0.0 | 2001 09 20 | 645 | 0.1+ | 0.0 | 2004 04 19 | 704 | 0.2+ | 0.6− | | |
| 2000 04 05 | 704 | 0.0 | 0.3− | 2001 09 20 | 645 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.9+ | 0.3+ | | |
| 2000 04 05 | 704 | 0.3− | 0.1− | 2001 09 20 | 645 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.6− | 0.4+ | | |
| 2000 04 05 | 704 | 0.3− | 0.4− | 2001 09 20 | 645 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.3− | 1.0+ | | |
| 2000 04 06 | 704 | 0.2− | 0.5+ | 2001 10 14 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 1.0+ | 0.8+ | | |
| 2000 04 06 | 704 | 0.1− | 0.2+ | 2001 10 14 | 704 | 0.3+ | 0.7+ | 2005 05 23 | 644 | 0.2− | 0.0 | | |
| 2000 04 06 | 704 | 0.2+ | 0.1− | 2001 10 14 | 704 | 0.8− | 1.2+ | 2005 05 23 | 644 | 0.1− | 0.2− | | |
| 2000 04 06 | 704 | 0.1+ | 0.0 | 2004 01 28 | 704 | 0.6+ | 0.2− | 2005 05 23 | 644 | 0.1+ | 0.0 | | |
| 2000 04 06 | 704 | 0.1− | 0.2+ | 2004 01 28 | 704 | 0.2− | 0.1− | 2005 05 23 | 644 | 0.2+ | 0.1− | | |
| 2000 04 07 | 704 | 0.3− | 0.8+ | 2004 01 28 | 704 | 0.3+ | 0.1− | 2005 05 23 | 644 | 0.0 | 0.2− | | |
| 2000 04 07 | 704 | 0.4+ | 0.1+ | 2004 01 28 | 704 | 0.5+ | 0.0 | 2005 05 23 | 644 | 0.0 | 0.2− | | |
| 2000 04 07 | 704 | 0.2+ | 0.1− | 2004 01 28 | 704 | 0.5− | 0.3+ | 2005 06 29 | 644 | 0.1+ | 0.0 | | |
| 2000 04 07 | 704 | 0.1− | 0.9+ | 2004 01 30 | 699 | 0.7− | 0.3+ | 2005 06 29 | 644 | 0.1+ | 0.1+ | | |
| 2000 04 07 | 704 | 0.4− | 0.7+ | 2004 01 30 | 699 | 0.4− | 0.3+ | 2005 06 29 | 644 | 0.2+ | 0.1− | | |
| 2000 04 27 | 699 | 0.1+ | 0.1− | 2004 01 30 | 699 | 0.8− | 0.4− | 2006 09 27 | G96 | 0.3+ | 0.3+ | | |
| 2000 04 27 | 699 | 0.4+ | 0.3− | 2004 01 30 | 699 | 0.9− | 0.6− | 2006 09 27 | G96 | 0.3+ | 0.4+ | | |
| 2000 04 27 | 704 | 0.5+ | 0.4− | 2004 02 02 | 608 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.4+ | | |
| 2000 04 27 | 699 | 0.0 | 0.5− | 2004 02 02 | 608 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.4+ | | |
| 2000 04 27 | 699 | 0.4− | 0.5+ | 2004 02 02 | 608 | 0.2+ | 0.1+ | 2006 09 30 | 703 | (2.6− | 0.4+) | | |
| 2000 04 27 | 704 | 1.2+ | 0.8+ | 2004 02 17 | 703 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.8+ | | |
| 2000 04 27 | 704 | 0.4+ | 1.4+ | 2004 02 17 | 703 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.4+ | 0.4− | | |
| 2000 04 27 | 704 | 1.7+ | 0.6+ | 2004 02 17 | 703 | 0.7− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.1+ | | |
| 2000 05 06 | 704 | 0.2− | 0.2+ | 2004 02 17 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | 1.0+ | 0.2+ | | |
| 2000 05 06 | 704 | 0.0 | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.6− | 2006 10 16 | 703 | (2.3− | 0.6−) | | |
| 2000 05 06 | 704 | 0.5− | 0.5+ | 2004 02 19 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.5+ | | |
| 2000 05 06 | 704 | 0.4+ | 0.6+ | 2004 02 19 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 1.1+ | | |
| 2000 05 11 | 699 | 0.2− | 0.4− | 2004 02 19 | 704 | 0.5+ | 0.4− | 2006 10 21 | G96 | 0.2− | 0.2+ | | |
| 2000 05 11 | 699 | 0.1− | 0.8+ | 2004 03 13 | 644 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.2+ | | |
| 2000 05 11 | 699 | 0.5+ | 0.3− | 2004 03 13 | 644 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.2+ | | |
| 2000 05 11 | 699 | 0.2− | 0.4− | 2004 03 13 | 644 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2000 05 24 | 699 | 0.6+ | 0.2− | 2004 03 15 | 703 | 0.4− | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.6+ | | |
| 2000 05 24 | 699 | 0.5− | 0.2− | 2004 03 15 | 703 | 0.7− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.6+ | | |
| 2000 05 24 | 699 | 0.3− | 0.8− | 2004 03 15 | 703 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.5+ | | |
| 2000 05 24 | 699 | 0.3− | 0.4− | 2004 03 15 | 703 | (0.2+ | 1.6+) | 2006 11 09 | 644 | 0.3− | 0.5+ | | |
| 2000 05 25 | 699 | 0.4+ | 0.5+ | 2004 03 16 | 704 | 0.1− | 1.1+ | 2006 11 09 | 644 | 0.3− | 0.8+ | | |
| 2000 05 25 | 699 | 0.4+ | 0.7− | 2004 03 16 | 704 | 0.0 | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.7+ | | |
| 2000 05 25 | 699 | 0.2+ | 0.3− | 2004 03 16 | 704 | 1.0+ | 1.0+ | 2006 11 13 | 703 | 0.5− | 1.4− | | |
| 2000 05 25 | 699 | 0.1+ | 0.3+ | 2004 03 16 | 704 | 0.2− | 0.9+ | 2006 11 13 | 703 | 0.1− | 0.6− | | |
| 2001 08 24 | 699 | 0.4− | 0.0 | 2004 03 16 | 704 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.2+ | 0.9− | | |
| 2001 08 24 | 699 | 1.1− | 0.7+ | 2004 03 16 | 240 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.6− | 0.6+ | | |
| 2001 08 24 | 699 | 0.0 | 1.1+ | 2004 03 16 | 240 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 1.0+ | | |
| 2001 08 24 | 699 | 0.4− | 0.7+ | 2004 03 16 | 240 | 0.9+ | 0.5− | 2006 11 20 | 704 | 1.0+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.1− | 0.6+ | 2004 03 27 | 703 | 0.7+ | 0.1− | 2006 11 20 | 704 | 0.1− | 1.1+ | | |
| 2001 08 25 | 704 | 0.1+ | 1.1+ | 2004 03 27 | 703 | 0.6+ | 0.6+ | 2006 11 20 | 704 | (0.2+ | 1.8+) | | |
| 2001 08 25 | 704 | 0.0 | 0.4+ | 2004 03 27 | 703 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.2− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.4+ | 0.5+ | 2004 03 27 | 703 | 0.4− | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.4+ |
| 2001 08 25 | 704 | 0.4+ | 1.1+ | 2004 04 12 | 703 | 1.2+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.3+ |
| 2001 09 09 | 699 | 0.4+ | 1.1+ | 2004 04 12 | 703 | 1.1− | 1.0+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2001 09 09 | 699 | (0.9− | 2.1+) | 2004 04 12 | 703 | 0.5− | 0.3+ | | | | |
| 2001 09 09 | 699 | 1.0− | 0.6+ | 2004 04 12 | 703 | 0.5− | 0.3− | | | | |

**(138300)∗ 2000 GX$_{48}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.84950 | | (2000.0) | | | |
| $n$ | 0.20487893 | $\omega$ | 238.47112 | | −0.24371151 | +0.96916759 |
| $a$ | 2.8497353 | $\Omega$ | 17.53377 | | −0.84393869 | −0.19347246 |
| $e$ | 0.2431697 | $i$ | 6.92354 | | −0.47788302 | −0.15258630 |
| $P$ | 4.81 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.2+ | 0.2+ | 2000 05 05 | 704 | 0.5+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.5+ |
| 2000 04 05 | 704 | 0.7+ | 1.0+ | 2000 05 05 | 704 | 0.1− | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2000 04 05 | 704 | 0.2+ | 0.2− | 2001 09 21 | 704 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2000 04 05 | 704 | 0.0 | 0.3+ | 2001 09 21 | 704 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.6+ | 0.2+ |
| 2000 04 05 | 704 | 1.2+ | 0.5+ | 2001 09 21 | 704 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 0.1− | 0.5+ | 2001 09 21 | 704 | 0.4+ | 0.5+ | 2006 10 15 | 291 | 0.4− | 0.3+ |
| 2000 04 06 | 704 | 1.2+ | 0.9+ | 2005 05 13 | E12 | 0.3+ | 0.2− | 2006 10 15 | 291 | 0.5− | 0.3+ |
| 2000 04 06 | 704 | 0.7+ | 0.7+ | 2005 05 13 | E12 | 0.2− | 0.0 | 2006 10 15 | 291 | 0.6− | 0.3+ |
| 2000 04 06 | 704 | 0.7+ | 1.1+ | 2005 05 13 | E12 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.8− |
| 2000 04 06 | 704 | 0.5+ | 0.5+ | 2005 05 13 | E12 | 0.5− | 0.3− | 2006 10 16 | G96 | 0.3− | 0.1+ |
| 2000 04 26 | 699 | 1.1− | 1.2+ | 2005 05 30 | E12 | 0.0 | 0.5− | 2006 10 16 | G96 | 0.8− | 0.4− |
| 2000 04 26 | 699 | 0.1− | 1.1+ | 2005 05 30 | E12 | 0.6+ | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.2+ |
| 2000 04 26 | 699 | 1.0− | 0.3− | 2005 05 30 | E12 | 0.0 | 0.3− | 2006 11 23 | 291 | 0.3+ | 0.4+ |
| 2000 04 26 | 699 | 0.9+ | 0.3− | 2005 05 30 | E12 | 1.0− | 0.3− | 2006 11 23 | 291 | 0.6+ | 0.1+ |
| 2000 05 05 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 23 | 291 | 0.2+ | 0.2+ |
| 2000 05 05 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.2+ | | | | |

**(138301)∗ 2000 GO$_{49}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.97772 | | (2000.0) | | | |
| $n$ | 0.20402129 | $\omega$ | 85.03394 | | +0.25307792 | +0.96542861 |
| $a$ | 2.8577160 | $\Omega$ | 199.96578 | | −0.94420279 | +0.23241944 |
| $e$ | 0.1088413 | $i$ | 10.53710 | | −0.21079054 | +0.11802038 |
| $P$ | 4.83 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1− | 0.9+ | 2001 10 14 | 704 | 0.2− | 0.5− | 2006 08 19 | 644 | 0.1+ | 0.2− |
| 2000 04 05 | 704 | 0.0 | 0.7+ | 2005 01 17 | 809 | 0.3− | 0.1+ | 2006 08 19 | 644 | 0.3+ | 0.0 |
| 2000 04 05 | 704 | (1.3+ | 2.2+) | 2005 01 17 | 809 | 0.2− | 0.3− | 2006 08 29 | 703 | 0.4+ | 0.8− |
| 2000 04 05 | 704 | 0.5+ | 1.1+ | 2005 01 17 | 809 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.2− | 0.5− |
| 2000 04 06 | 704 | 0.1+ | 0.2− | 2005 01 21 | 809 | 0.6+ | 0.3− | 2006 08 29 | 703 | 0.4+ | 0.5+ |
| 2000 04 06 | 704 | 1.1+ | 1.0− | 2005 01 21 | 809 | 0.4− | 0.1− | 2006 08 29 | 703 | 1.2− | 0.4− |
| 2000 04 06 | 704 | 0.2+ | 1.3+ | 2005 01 21 | 809 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 1.2+ | 1.5+ | 2005 05 11 | 691 | 0.0 | 0.3− | 2006 09 13 | 644 | 0.4− | 0.2+ |
| 2000 04 29 | 691 | 0.4− | 0.1+ | 2005 05 11 | 691 | 0.0 | 0.2− | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2000 04 29 | 691 | 0.1− | 0.2+ | 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.1− |
| 2000 04 29 | 691 | 0.0 | 0.1− | 2005 06 01 | 699 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.6− | 0.0 |
| 2001 08 25 | 704 | 0.8+ | 0.1− | 2005 06 01 | 699 | 1.1+ | 1.2− | 2006 09 18 | 703 | 1.0− | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 0.7− | 2005 06 01 | 699 | 0.7− | 0.3− | 2006 09 18 | 703 | 0.0 | 0.4+ |
| 2001 08 25 | 704 | 0.4− | 0.1− | 2005 06 01 | 699 | 0.8− | 0.3+ | 2006 09 20 | 699 | 0.4− | 0.5+ |
| 2001 08 25 | 704 | 0.3− | 0.0 | 2006 08 18 | 644 | 0.3− | 0.1− | 2006 09 20 | 699 | 0.4− | 0.6+ |
| 2001 08 25 | 704 | 0.5− | 0.0 | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 20 | 699 | 2.5+ | 0.6+ |
| 2001 10 14 | 704 | 0.8+ | 1.4+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.7+ |
| 2001 10 14 | 704 | 0.3− | 0.8+ | 2006 08 19 | 644 | 0.2− | 0.2+ | | | | |

**(138302)∗ 2000 GH$_{53}$ = 2004 CV$_{104}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60653)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.78981 | | (2000.0) | | | |
| $n$ | 0.23563284 | $\omega$ | 301.76422 | | −0.88037821 | −0.47336013 |
| $a$ | 2.5960448 | $\Omega$ | 210.01276 | | +0.45259280 | −0.81999101 |
| $e$ | 0.2212771 | $i$ | 3.36972 | | +0.14175319 | −0.32178398 |
| $P$ | 4.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 27 | 691 | 0.2+ | 0.3− | 2000 04 30 | 704 | 1.1+ | 0.3− | 2004 03 20 | 704 | 0.2− | 0.2− |
| 1998 10 27 | 691 | 0.1− | 0.0 | 2000 04 30 | 704 | 0.2− | 0.1− | 2004 03 20 | 699 | 0.1+ | 0.6− |
| 1998 10 27 | 691 | 0.1− | 0.2− | 2000 04 30 | 699 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.2+ |
| 2000 03 29 | 691 | (1.0− | 2.7+) | 2000 04 30 | 704 | 0.9− | 0.9− | 2004 03 20 | 704 | 0.2− | 0.2+ |
| 2000 03 29 | 691 | 0.4+ | 0.3− | 2000 04 30 | 704 | 0.5+ | 0.6+ | 2004 03 20 | 699 | 0.6− | 0.1+ |
| 2000 03 29 | 691 | 0.4+ | 0.2− | 2000 04 30 | 704 | 0.8+ | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.3+ |
| 2000 04 01 | 691 | 0.0 | 0.0 | 2000 04 30 | 704 | 0.4+ | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.3+ |
| 2000 04 01 | 691 | 0.1+ | 0.4− | 2000 04 30 | 699 | 0.7− | 0.7+ | 2004 03 27 | 683 | 0.5+ | 0.8+ |
| 2000 04 01 | 691 | 0.0 | 0.4− | 2000 04 30 | 704 | 0.3+ | 1.1+ | 2004 03 27 | 683 | (0.5+ | 1.9+) |
| 2000 04 05 | 699 | 1.2− | 0.0 | 2000 04 30 | 699 | 1.1− | 0.2+ | 2004 03 27 | 683 | 0.1− | 0.8+ |
| 2000 04 05 | 704 | 0.6+ | 0.4+ | 2000 04 30 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 0.2− | 0.7+ |
| 2000 04 05 | 699 | 0.3+ | 0.6+ | 2004 02 13 | 644 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.2− | 1.0+ |
| 2000 04 05 | 704 | 0.5+ | 0.7+ | 2004 02 13 | 644 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 0.1+ | 0.9+ |
| 2000 04 05 | 699 | 0.2− | 0.4+ | 2004 02 13 | 644 | 0.6+ | 0.5+ | 2004 03 27 | 704 | 0.3− | 0.4+ |
| 2000 04 05 | 704 | 0.2+ | 0.8+ | 2004 02 17 | 703 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.5− | 0.7+ |
| 2000 04 05 | 699 | 0.4− | 0.2+ | 2004 02 17 | 703 | 0.6+ | 0.1+ | 2004 03 29 | 683 | 0.3− | 1.1− |
| 2000 04 05 | 704 | 0.8+ | 0.5+ | 2004 02 17 | 703 | 0.2− | 0.2+ | 2004 03 29 | 683 | 1.2+ | 0.9+ |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2004 02 17 | 703 | 1.4+ | 0.3+ | 2004 03 29 | 683 | 0.9− | 0.2+ |
| 2000 04 06 | 704 | 0.1+ | 0.3+ | 2004 02 19 | 704 | 0.6− | 0.9+ | 2004 04 12 | 691 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.2− | 0.5− | 2004 02 19 | 704 | 0.2− | 0.2+ | 2004 04 12 | 691 | 0.2− | 0.1+ |
| 2000 04 06 | 704 | 0.3+ | 0.7+ | 2004 02 19 | 704 | 0.4− | 0.4+ | 2004 04 12 | 691 | 0.0 | 0.3+ |
| 2000 04 06 | 704 | 0.4− | 1.0+ | 2004 02 19 | 704 | 0.9− | 0.4+ | 2004 04 14 | 699 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.4+ | 1.2+ | 2004 02 19 | 704 | 0.3− | 0.2+ | 2004 04 14 | 699 | 0.9+ | 0.1+ |
| 2000 04 07 | 699 | 0.5− | 0.0 | 2004 02 25 | 704 | 0.3+ | 0.5− | 2004 04 14 | 699 | 1.0+ | 0.0 |
| 2000 04 07 | 699 | 0.5− | 0.4+ | 2004 02 25 | 704 | 0.0 | 0.2− | 2004 04 14 | 699 | 0.5+ | 0.2− |
| 2000 04 07 | 699 | 0.2− | 0.0 | 2004 02 25 | 704 | 0.3+ | 0.4− | 2004 04 24 | 691 | 0.2− | 0.3+ |
| 2000 04 07 | 699 | 1.2− | 0.6+ | 2004 02 25 | 704 | 0.1+ | 0.3+ | 2004 04 24 | 691 | 0.1− | 0.4+ |
| 2000 04 08 | 704 | 0.0 | 1.6+ | 2004 02 25 | 704 | 0.4− | 0.2+ | 2004 04 24 | 691 | 0.0 | 0.5+ |
| 2000 04 08 | 704 | 0.3+ | 0.1− | 2004 03 13 | 644 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 2000 04 08 | 704 | 0.2+ | 0.8− | 2004 03 13 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.4+ |
| 2000 04 26 | 699 | 0.1− | 0.6− | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 691 | 0.4− | 0.4+ |
| 2000 04 26 | 699 | 0.5− | 0.6− | 2004 03 16 | 704 | (1.9+ | 0.6+) | 2006 09 25 | 691 | 1.0− | 0.9+ |
| 2000 04 26 | 699 | 0.5− | 0.2+ | 2004 03 16 | 704 | 1.1+ | 0.5− | 2006 09 25 | 691 | 0.6− | 0.9+ |
| 2000 04 26 | 699 | 0.6− | 0.4+ | 2004 03 16 | 704 | (1.6+ | 0.0 ) | 2006 09 25 | 691 | 1.2− | 0.5+ |
| 2000 04 29 | 704 | 0.1+ | 0.2− | 2004 03 16 | 704 | 1.0+ | 0.4+ | 2006 10 02 | 691 | 0.4+ | 0.3+ |
| 2000 04 29 | 704 | 0.0 | 0.2− | 2004 03 16 | 704 | 1.1+ | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.8+ |
| 2000 04 29 | 704 | 0.7+ | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.6− | 2006 10 02 | 691 | 0.5+ | 0.9+ |
| 2000 04 29 | 704 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.5− | 2006 10 22 | G96 | 0.5− | 0.1− |
| 2000 04 29 | 704 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.3− | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 2000 04 30 | 704 | 2.0+ | 0.5− | 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2000 04 30 | 704 | 1.3− | 1.2− | 2004 03 18 | 704 | 0.5+ | 0.6− | 2006 10 22 | G96 | 0.7+ | 0.9+ |
| 2000 04 30 | 704 | 0.1− | 0.1− | 2004 03 20 | 699 | 0.0 | 0.1+ | | | | |
| 2000 04 30 | 699 | 1.9− | 0.3+ | 2004 03 20 | 699 | 0.3− | 0.0 | | | | |

**(138303)∗ 2000 GB$_{54}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 267.07152 | | (2000.0) | | | |
| $n$ | 0.24351222 | $\omega$ | 302.28956 | | −0.68919308 | −0.72448471 |
| $a$ | 2.5397378 | $\Omega$ | 191.29973 | | +0.68312175 | −0.64433591 |
| $e$ | 0.1742051 | $i$ | 3.39701 | | +0.24157313 | −0.24485332 |
| $P$ | 4.05 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.0 | 1.0+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 691 | 0.5− | 0.5+ | |
| 2000 04 05 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 1.4+ | 1.2+ | 2006 09 18 | 691 | 0.2− | 0.4+ | |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2004 03 27 | 704 | 0.2+ | 1.4+ | 2006 09 18 | 691 | 0.0 | 0.5+ | |
| 2000 04 05 | 704 | 0.6+ | 0.2+ | 2004 03 27 | 704 | 1.2+ | 0.8− | 2006 09 24 | 691 | 0.1+ | 0.3+ | |
| 2000 04 05 | 704 | 0.4+ | 1.0+ | 2004 03 31 | 704 | 1.0− | 1.3+ | 2006 09 24 | 691 | 0.0 | 0.2+ | |
| 2000 04 06 | 704 | 0.6+ | 0.9+ | 2004 03 31 | 704 | 0.3− | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.2+ | |
| 2000 04 06 | 704 | 0.3+ | 0.1− | 2004 03 31 | 704 | 1.1+ | 1.0+ | 2006 10 02 | 691 | 0.5+ | 0.0 | |
| 2000 04 06 | 704 | 0.4− | 1.0+ | 2004 03 31 | 704 | 1.3+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | |
| 2000 04 06 | 704 | 0.1− | 0.3+ | 2004 03 31 | 704 | 0.0 | 0.8+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | |
| 2000 04 06 | 704 | 0.3+ | 0.2+ | 2004 04 09 | E12 | (1.1− | 1.8+) | 2006 10 11 | 691 | 0.3− | 0.5+ | |
| 2000 04 07 | 699 | 0.0 | 0.5+ | 2004 04 09 | E12 | 1.2− | 1.4+ | 2006 10 11 | 691 | 0.4− | 0.5+ | |
| 2000 04 07 | 699 | 0.6+ | 0.0 | 2004 04 09 | E12 | 0.3− | 1.0+ | 2006 10 11 | 691 | 0.7− | 0.4+ | |
| 2000 04 07 | 699 | 0.8− | 1.0+ | 2004 04 09 | E12 | 1.2− | 0.9+ | 2006 10 15 | 691 | 0.3− | 0.3+ | |
| 2000 04 07 | 699 | 0.9+ | 0.3+ | 2004 04 11 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.5+ | |
| 2000 04 24 | 691 | 0.1− | 0.2− | 2004 04 11 | 644 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | |
| 2000 04 24 | 691 | 0.2+ | 0.6− | 2004 04 11 | 644 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ | |
| 2000 04 24 | 691 | 0.0 | 0.5− | 2004 04 12 | 699 | 0.4− | 0.7+ | 2006 10 19 | 691 | 0.4− | 0.2+ | |
| 2000 04 29 | 704 | 0.1+ | 0.1+ | 2004 04 12 | 699 | (0.5+ | 1.9+) | 2006 10 19 | 691 | 0.4− | 0.3+ | |
| 2000 04 29 | 704 | 0.3− | 1.7+ | 2004 04 12 | 699 | 0.1− | 0.5+ | 2006 10 21 | 703 | (2.3− | 0.3+) | |
| 2000 04 29 | 704 | 0.5+ | 0.4+ | 2004 04 12 | 699 | 0.5+ | 1.2+ | 2006 10 21 | 703 | (1.0− | 2.1+) | |
| 2000 04 29 | 704 | 0.0 | 0.6+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.1+ | |
| 2000 05 11 | 691 | 0.2+ | 0.5+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.5+ | 1.2+ | |
| 2000 05 11 | 691 | 0.5− | 0.5+ | 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2+ | |
| 2000 05 11 | 691 | 0.1+ | 0.6+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.3+ | |
| 2001 06 29 | 691 | 0.3+ | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.3+ | |
| 2001 06 29 | 691 | 0.1− | 0.1+ | 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.5+ | |
| 2001 06 29 | 691 | 0.2+ | 0.3− | 2004 04 21 | 704 | 0.6+ | 0.6+ | 2006 10 27 | 691 | 0.2− | 0.6+ | |
| 2004 03 23 | 704 | 0.6+ | 0.8+ | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.6+ | |
| 2004 03 23 | 704 | 0.4+ | 0.6+ | 2004 04 21 | 704 | 0.6+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.3+ | |
| 2004 03 23 | 704 | 0.6+ | 0.2+ | 2004 04 21 | 704 | 0.8− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.4+ | |
| 2004 03 23 | 704 | 1.0+ | 0.7+ | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ | |
| 2004 03 23 | 704 | 0.8+ | 0.0 | 2005 06 29 | 691 | 0.2− | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.1− | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2005 06 29 | 691 | 0.3− | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.5+ | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3+ | |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2005 07 10 | 691 | 0.1− | 0.1+ | | | | | |
| 2004 03 27 | 704 | 0.6+ | 0.1+ | 2005 07 10 | 691 | 0.1+ | 0.2− | | | | | |

**(138304)∗ 2000 GE$_{55}$ = 1991 GT$_{13}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 88715)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.10468 | | (2000.0) | | | |
| $n$ | 0.22028051 | $\omega$ | 9.17804 | | −0.83132952 | +0.55500313 |
| $a$ | 2.7153053 | $\Omega$ | 204.60346 | | −0.51428965 | −0.78823005 |
| $e$ | 0.1989623 | $i$ | 4.04558 | | −0.21070684 | −0.26582872 |
| $P$ | 4.47 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 10 | 809 | 1.0− | 0.2+ | 2000 04 26 | 699 | 0.3− | 0.0 | 2004 02 11 | 644 | 0.1+ | 0.8+ | |
| 1991 04 10 | 809 | 0.6− | 0.2− | 2000 04 26 | 699 | 0.5+ | 0.3+ | 2004 02 11 | 699 | 0.1+ | 0.1+ | |
| 1991 04 10 | 809 | 0.1+ | 0.5+ | 2000 04 27 | 704 | 0.7+ | 0.3+ | 2004 02 23 | 704 | 0.6− | 0.3+ | |
| 2000 03 29 | 691 | 0.1+ | 0.4− | 2000 04 27 | 704 | 1.2+ | 0.2+ | 2004 02 23 | 704 | 0.5− | 0.9− | |
| 2000 03 29 | 691 | 0.2+ | 0.5− | 2000 04 27 | 704 | 0.3+ | 0.5+ | 2004 02 23 | 704 | 0.4− | 0.5+ | |
| 2000 03 29 | 691 | 0.1+ | 0.6− | 2000 04 27 | 704 | 1.1+ | 0.5+ | 2004 02 23 | 704 | 0.5− | 0.1− | |
| 2000 04 05 | 699 | 0.1+ | 0.8+ | 2000 04 27 | 704 | 0.7+ | 0.4+ | 2005 06 04 | 691 | 0.2− | 0.1− | |
| 2000 04 05 | 704 | 0.2+ | 0.3− | 2000 04 30 | 699 | 0.1+ | 0.3+ | 2005 06 04 | 691 | 0.1− | 0.3+ | |
| 2000 04 05 | 704 | 0.5− | 0.5+ | 2000 04 30 | 699 | 0.2+ | 0.4+ | 2005 06 04 | 691 | 0.2+ | 0.1+ | |
| 2000 04 05 | 699 | 0.5− | 0.5+ | 2000 04 30 | 699 | 0.2+ | 0.4+ | 2005 06 04 | 691 | 0.2+ | 0.1+ | |
| 2000 04 05 | 704 | 0.2+ | 0.5+ | 2000 04 30 | 699 | 0.2− | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.3+ | |
| 2000 04 05 | 699 | 1.1− | 0.8− | 2000 04 30 | 699 | 0.2− | 0.6+ | 2005 06 13 | 691 | 0.1− | 0.1+ | |
| 2000 04 05 | 704 | 0.1+ | 0.1− | 2000 05 03 | 704 | 0.6− | 0.0 | 2005 06 13 | 691 | 0.3− | 0.2+ | |
| 2000 04 05 | 699 | 1.2− | 0.3+ | 2000 05 03 | 704 | 0.8+ | 1.1+ | 2005 07 11 | G96 | 0.4− | 0.6− | |
| 2000 04 05 | 704 | 0.2+ | 0.1+ | 2000 05 03 | 704 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.2− | 0.2− | |
| 2000 04 05 | 704 | 0.1+ | 0.1+ | 2000 05 03 | 704 | 0.2− | 0.1+ | 2005 07 11 | G96 | 0.4− | 0.5− | |
| 2000 04 06 | 704 | 0.3+ | 0.6+ | 2000 05 03 | 704 | 0.0 | 1.0+ | 2005 07 11 | G96 | 0.8− | 0.6− | |
| 2000 04 06 | 704 | 0.0 | 0.1+ | 2004 01 28 | 645 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.3− | 0.3+ | |
| 2000 04 06 | 704 | 0.2+ | 0.1+ | 2004 01 28 | 645 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.4+ | |
| 2000 04 06 | 704 | 0.3− | 0.4+ | 2004 01 29 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.4+ | |
| 2000 04 06 | 704 | 0.3− | 0.3+ | 2004 01 29 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 691 | 0.3+ | 0.4+ | |
| 2000 04 07 | 699 | 0.2− | 0.1+ | 2004 01 29 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.5+ | |
| 2000 04 07 | 699 | 0.8+ | 0.3+ | 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.5− | 0.6+ | |
| 2000 04 07 | 699 | 0.7+ | 0.8+ | 2004 02 11 | 699 | 0.1+ | 0.6− | 2006 09 26 | G96 | 1.5+ | 0.3+ | |
| 2000 04 07 | 699 | 1.8+ | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.2+ | |
| 2000 04 26 | 699 | 0.1+ | 0.0 | 2004 02 11 | 699 | 0.9+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2+ | |
| 2000 04 26 | 699 | 0.2− | 0.4+ | 2004 02 11 | 699 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.1− | |

**(138305)∗ 2000 GV$_{57}$ = 2004 CC$_{93}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60654)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 167.76025 | | (2000.0) | | | |
| $n$ | 0.21373675 | $\omega$ | 166.82168 | | −0.99931363 | −0.03305068 |
| $a$ | 2.7704474 | $\Omega$ | 11.32417 | | +0.02121261 | −0.88081582 |
| $e$ | 0.0898120 | $i$ | 4.88787 | | +0.03036939 | −0.47230409 |
| $P$ | 4.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1− | 0.2+ | 2004 01 18 | 644 | 0.4+ | 0.5+ | 2004 03 18 | 645 | 0.0 | 0.0 | |
| 2000 04 05 | 704 | 0.0 | 0.7+ | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2005 02 15 | 809 | 0.1+ | 0.3− | |
| 2000 04 05 | 704 | 0.3− | 0.1− | 2004 01 18 | 644 | 0.3+ | 0.4+ | 2005 02 15 | 809 | 0.3+ | 0.4− | |
| 2000 04 05 | 704 | 0.4+ | 0.6+ | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2005 02 15 | 809 | 0.2+ | 0.3− | |
| 2000 04 05 | 704 | 0.4− | 0.5+ | 2004 01 30 | 704 | 1.0+ | 0.8+ | 2006 08 23 | 807 | 0.1− | 0.6+ | |
| 2000 04 06 | 704 | 0.2+ | 0.0 | 2004 01 30 | 704 | 0.9+ | 0.2− | 2006 08 23 | 807 | 0.1− | 0.6+ | |
| 2000 04 06 | 704 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.0 | |
| 2000 04 06 | 704 | 0.8+ | 0.7+ | 2004 01 30 | 704 | 0.9+ | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.6+ | |
| 2000 04 06 | 704 | 0.8+ | 0.2+ | 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 1.4− | 0.8+ | |
| 2000 04 06 | 704 | 0.7− | 0.9+ | 2004 02 13 | 699 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.3+ | |
| 2000 04 30 | 699 | 0.3+ | 0.4− | 2004 02 13 | 699 | 0.4− | 1.2+ | 2006 09 14 | 703 | 0.2− | 0.7− | |
| 2000 04 30 | 699 | 0.5− | 0.2+ | 2004 02 13 | 699 | 0.5− | 0.5+ | 2006 09 14 | 703 | 0.6+ | 0.8+ | |
| 2000 04 30 | 699 | 0.5− | 0.3+ | 2004 02 13 | 699 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.3− | |
| 2000 04 30 | 699 | 0.7− | 0.4+ | 2004 02 15 | 704 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.9− | 0.2+ | |
| 2000 05 23 | 699 | 1.6+ | 1.2+ | 2004 02 15 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.7− | |
| 2000 05 23 | 699 | 0.0 | 1.9+ | 2004 02 15 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 703 | 1.1− | 1.1+ | |
| 2000 05 23 | 699 | 1.7+ | 0.1+ | 2004 02 15 | 704 | 1.2+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.0 | |
| 2000 05 23 | 699 | 1.2+ | 0.1+ | 2004 02 15 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.7+ | 1.4+ | |
| 2001 08 14 | 644 | 0.2+ | 0.6+ | 2004 02 18 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.0 | |
| 2001 08 14 | 644 | 0.3+ | 0.2+ | 2004 02 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1+ | |
| 2001 08 14 | 644 | 0.3− | 0.5+ | 2004 02 18 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.0 | |
| 2002 10 28 | 644 | 0.2− | 0.9+ | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1− | 0.0 | |
| 2002 10 28 | 644 | 1.0− | 0.7+ | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.4− | 0.1+ | |
| 2002 10 28 | 644 | 0.4+ | 1.3+ | 2004 03 18 | 645 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.4− | 0.5+ | |
| 2004 01 18 | 644 | 0.3+ | 0.6+ | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.1+ | |
| 2004 01 18 | 644 | 0.5+ | 0.4+ | 2004 03 18 | 645 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.3− | 0.2+ | |

**(138306)∗ 2000 GK$_{59}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 61.22852 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19271562 | $\omega$ | 136.58696 | | −0.25961628 | | +0.96531937 | |
| $a$ | 2.9684161 | $\Omega$ | 118.34818 | | −0.89435525 | | −0.22958087 | |
| $e$ | 0.1949191 | $i$ | 1.79259 | | −0.36431864 | | −0.12430264 | |
| $P$ | 5.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.1+ | 0.5+ | 2001 09 19 | 291 | 0.5+ | 0.5+ | 2005 05 04 | 691 | 0.2+ | 0.1− |
| 1995 05 29 | 691 | 1.3+ | 0.7+ | 2001 09 19 | 291 | 0.3− | 0.6+ | 2005 05 04 | 691 | 0.2+ | 0.1− |
| 1995 05 29 | 691 | 1.6+ | 0.5+ | 2001 09 21 | 704 | 1.3− | 0.2+ | 2005 05 13 | 691 | 0.5+ | 0.3− |
| 2000 04 05 | 704 | 1.7− | 0.3− | 2001 09 21 | 704 | 0.3− | 0.7+ | 2005 05 13 | 691 | 0.3+ | 0.2− |
| 2000 04 05 | 704 | 0.5− | 0.4− | 2001 09 21 | 704 | (0.4+ | 1.9+) | 2005 05 13 | 691 | 0.3+ | 0.2− |
| 2000 04 05 | 704 | 0.2− | 0.1+ | 2003 12 17 | 291 | 0.0 | 0.7+ | 2006 08 28 | 699 | 0.5− | 1.1+ |
| 2000 04 05 | 704 | 0.1− | 0.2+ | 2003 12 17 | 291 | 0.0 | 0.4+ | 2006 08 28 | 699 | (1.8− | 0.8+) |
| 2000 04 05 | 704 | 0.8− | 0.5+ | 2003 12 17 | 291 | 0.1− | 0.7+ | 2006 08 28 | 699 | 0.9− | 0.4− |
| 2000 04 06 | 704 | 0.0 | 0.4+ | 2005 03 12 | 691 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.6− | 0.8− |
| 2000 04 06 | 704 | 0.6− | 1.0+ | 2005 03 12 | 691 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.2− | 0.5− |
| 2000 04 06 | 704 | 0.6− | 1.0+ | 2005 03 12 | 691 | 0.2+ | 0.2− | 2006 08 28 | 699 | 0.0 | 0.2+ |
| 2000 04 06 | 704 | 0.4+ | 0.3− | 2005 04 01 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.7+ | 0.6− |
| 2000 04 24 | 691 | 0.9− | 0.2+ | 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.3− |
| 2000 04 24 | 691 | 0.9− | 0.1+ | 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.6− |
| 2000 04 24 | 691 | 0.8− | 0.2+ | 2005 04 02 | 644 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.9− | 1.0− |
| 2000 05 06 | 691 | 0.7− | 0.2− | 2005 04 02 | 644 | 0.7+ | 0.1+ | 2006 08 28 | 703 | 0.8+ | 0.4+ |
| 2000 05 06 | 691 | 0.5− | 0.3− | 2005 04 02 | 644 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.1+ |
| 2000 05 06 | 691 | 1.4− | 0.3− | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2000 05 07 | 704 | 1.4+ | 0.7− | 2005 04 11 | G96 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2000 05 07 | 704 | 0.8+ | 0.1− | 2005 04 11 | G96 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.6+ |
| 2000 05 07 | 704 | 0.6− | 0.9+ | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 09 19 | 291 | 0.5+ | 0.6+ | 2005 05 04 | 691 | 0.5+ | 0.1+ | | | | |

**(138307)∗ 2000 GT$_{59}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 182.92493 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23173171 | $\omega$ | 28.76752 | | −0.85714312 | | +0.51507328 | |
| $a$ | 2.6250993 | $\Omega$ | 182.23873 | | −0.48304105 | | −0.80535807 | |
| $e$ | 0.1202086 | $i$ | 3.34465 | | −0.17882118 | | −0.29342445 | |
| $P$ | 4.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.7− | 0.1− | 2004 02 26 | 704 | 0.2− | 0.8+ | 2004 03 25 | 704 | 0.2− | 0.5− |
| 2000 04 05 | 704 | 0.0 | 0.7+ | 2004 02 26 | 704 | 0.1+ | 1.1+ | 2004 03 25 | 704 | 0.1− | 0.4− |
| 2000 04 05 | 704 | 0.1+ | 1.0+ | 2004 02 26 | 704 | 0.9+ | 1.2+ | 2004 03 25 | 704 | 0.3− | 0.4− |
| 2000 04 05 | 704 | 0.0 | 0.4+ | 2004 03 12 | 644 | 0.2− | 0.3+ | 2004 03 27 | 704 | 1.1+ | 1.0+ |
| 2000 04 05 | 704 | 0.5+ | 0.0 | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.5+ |
| 2000 04 06 | 704 | 0.5− | 0.6− | 2004 03 12 | 644 | 0.2− | 0.2+ | 2004 03 27 | 704 | 1.2+ | 0.9+ |
| 2000 04 06 | 704 | 0.8+ | 1.0+ | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.1+ | 0.7+ |
| 2000 04 06 | 704 | 0.0 | 1.3+ | 2004 03 16 | 704 | (1.6+ | 0.2−) | 2004 03 27 | 704 | 0.5+ | 0.7+ |
| 2000 04 06 | 704 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.6+ | 0.8− | 2004 03 30 | 691 | 0.5− | 0.2+ |
| 2000 04 06 | 704 | 0.7+ | 0.1+ | 2004 03 16 | 704 | 1.0+ | 0.7+ | 2004 03 30 | 691 | 0.5− | 0.1+ |
| 2000 04 26 | 699 | 0.3− | 1.2− | 2004 03 18 | 704 | 0.2+ | 0.1− | 2004 03 30 | 691 | 0.4− | 0.0 |
| 2000 04 26 | 699 | 0.5+ | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.2− | 2005 07 18 | 644 | 0.4− | 0.6+ |
| 2000 04 26 | 699 | 0.6− | 1.2+ | 2004 03 18 | 704 | 0.1− | 0.2− | 2005 07 18 | 644 | 0.1− | 0.5+ |
| 2000 04 26 | 699 | 0.6+ | 0.7+ | 2004 03 18 | 704 | 0.1+ | 0.0 | 2005 07 18 | 644 | 0.7− | 0.4+ |
| 2000 04 29 | 691 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.0 | 2005 07 28 | 644 | 0.3− | 0.5+ |
| 2000 04 29 | 704 | 2.0+ | 1.2+ | 2004 03 18 | 704 | 1.5+ | 0.5+ | 2005 07 28 | 644 | 0.4− | 0.2+ |
| 2000 04 29 | 691 | 0.1− | 0.2+ | 2004 03 18 | 704 | 1.1+ | 1.2+ | 2005 07 28 | 644 | 0.1− | 0.5+ |
| 2000 04 29 | 704 | 1.0+ | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.5+ | 0.0 |
| 2000 04 29 | 691 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2000 04 29 | 704 | 1.1+ | 0.3+ | 2004 03 20 | 704 | 1.2+ | 1.0− | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2000 04 29 | 704 | 1.0+ | 1.4+ | 2004 03 20 | 704 | (0.4+ | 2.3+) | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2000 05 06 | 691 | 0.0 | 0.5+ | 2004 03 20 | 704 | 1.3+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2000 05 06 | 691 | 0.0 | 0.1+ | 2004 03 20 | 704 | (1.6+ | 0.2+) | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2000 05 06 | 691 | 0.1+ | 0.2+ | 2004 03 21 | 691 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.4− | 0.8+ |
| 2000 05 13 | 691 | 0.3− | 0.9− | 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2000 05 13 | 691 | 0.6− | 0.5− | 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.4+ |
| 2000 05 13 | 691 | 0.4− | 0.4− | 2004 03 23 | 704 | 0.7+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2001 05 23 | 807 | 0.3+ | 0.5+ | 2004 03 23 | 704 | 0.4+ | 0.6+ | 2006 11 15 | G96 | 0.5− | 0.2+ |
| 2001 05 23 | 807 | 0.3+ | 0.4+ | 2004 03 23 | 704 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2001 09 19 | 645 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2001 09 19 | 645 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.6− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2004 02 26 | 704 | 1.0+ | 0.7+ | 2004 03 25 | 704 | 0.9− | 0.8− | | | | |

**(138308)∗ 2000 GN$_{60}$ = 2000 HL$_{11}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 1670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 103.95497 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21244205 | $\omega$ | 242.82568 | | −0.04875465 | | +0.99693644 | |
| $a$ | 2.7816921 | $\Omega$ | 24.61020 | | −0.85654493 | | −0.01023436 | |
| $e$ | 0.2525689 | $i$ | 8.44538 | | −0.51376431 | | −0.07754353 | |
| $P$ | 4.64 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.3+ | 0.4+ | 2000 04 29 | 704 | 0.2− | 0.8+ | 2001 10 20 | 704 | 0.1+ | 0.9+ |
| 2000 04 05 | 699 | 1.1+ | 0.9+ | 2000 04 29 | 704 | 0.7+ | 1.9+ | 2001 10 20 | 704 | 0.6− | 1.0+ |
| 2000 04 05 | 704 | 0.1+ | 0.1− | 2000 05 06 | 704 | 0.0 | 0.2− | 2004 02 11 | 644 | 0.0 | 0.4+ |
| 2000 04 05 | 699 | 0.0 | 0.0 | 2000 05 06 | 704 | 0.2− | 0.9+ | 2004 02 11 | 644 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2000 05 06 | 704 | 0.3− | 1.1+ | 2004 02 11 | 644 | 0.3+ | 0.7+ |
| 2000 04 05 | 704 | 0.1+ | 0.0 | 2000 05 09 | 704 | 0.7+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2000 04 05 | 699 | 0.0 | 0.7+ | 2000 05 09 | 704 | 0.3− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2000 04 05 | 704 | 0.3− | 0.1+ | 2000 05 09 | 704 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.3− |
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2000 06 06 | 699 | 1.9+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2000 04 06 | 704 | 0.6+ | 0.6+ | 2000 06 06 | 699 | 0.5+ | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.2+ | 0.3+ | 2000 06 06 | 699 | 0.6+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.1+ |
| 2000 04 06 | 704 | 0.5+ | 0.5+ | 2000 06 06 | 699 | 1.1+ | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2000 04 06 | 704 | 0.3+ | 0.6+ | 2001 09 11 | 691 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.8+ | 0.8+ | 2001 09 11 | 691 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2000 04 08 | 704 | 0.8+ | 0.8+ | 2001 09 11 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2000 04 08 | 704 | 0.5+ | 1.5+ | 2001 09 16 | 704 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2000 04 08 | 704 | 0.4+ | 0.3+ | 2001 09 16 | 704 | 0.3− | 0.9+ | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2000 04 08 | 704 | 0.4+ | 1.1+ | 2001 09 16 | 704 | 0.6− | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.6+ |
| 2000 04 08 | 704 | 0.7+ | 0.2− | 2001 10 11 | 644 | 0.7− | 0.6+ | 2006 10 13 | 691 | 0.0 | 0.6+ |
| 2000 04 26 | 699 | 0.2− | 0.1+ | 2001 10 11 | 644 | 0.8− | 0.6+ | 2006 10 13 | 691 | 0.2− | 1.1+ |
| 2000 04 26 | 699 | 0.4− | 0.2+ | 2001 10 11 | 644 | 1.0− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.7+ |
| 2000 04 26 | 699 | 0.6− | 0.7+ | 2001 10 13 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 691 | 0.6− | 0.6+ |
| 2000 04 26 | 699 | 0.4− | 0.3+ | 2001 10 13 | 704 | 0.8+ | 0.4− | 2006 10 21 | 691 | 0.4− | 0.4+ |
| 2000 04 28 | 704 | 0.8+ | 0.3− | 2001 10 13 | 704 | 1.0+ | 0.6+ | 2006 11 01 | G96 | 0.3− | 0.0 |
| 2000 04 28 | 704 | 0.3+ | 1.1+ | 2001 10 13 | 704 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.0 |
| 2000 04 28 | 704 | 0.3+ | 0.0 | 2001 10 17 | 644 | 0.8− | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.2+ |
| 2000 04 28 | 704 | 0.1+ | 1.9+ | 2001 10 17 | 644 | 0.8− | 0.6+ | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2000 04 28 | 704 | 0.3− | 0.6+ | 2001 10 17 | 644 | 1.1− | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2000 04 29 | 704 | 0.5+ | 0.4+ | 2001 10 20 | 704 | 0.8− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2000 04 29 | 704 | 0.9+ | 0.7+ | 2001 10 20 | 704 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2000 04 29 | 704 | 0.3+ | 0.5+ | 2001 10 20 | 704 | 0.9− | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.0 |

**(138309)∗ 2000 GY$_{60}$ = 2000 JT$_{81}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 4025)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 255.72516 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25534965 | $\omega$ | 180.01159 | | −0.99852929 | | +0.05417362 | |
| $a$ | 2.4606275 | $\Omega$ | 3.09623 | | −0.04973802 | | −0.89985956 | |
| $e$ | 0.1501361 | $i$ | 2.24341 | | −0.02157270 | | −0.43280249 | |
| $P$ | 3.86 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 1.8− | 0.0 | 2004 04 25 | 704 | 0.6+ | 0.9− | 2004 06 06 | 644 | 0.1− | 0.5+ | |
| 2000 04 05 | 704 | 0.2+ | 0.3− | 2004 04 25 | 704 | 0.5+ | 1.5− | 2004 06 08 | 691 | 0.3− | 0.1+ | |
| 2000 04 05 | 704 | 0.3− | 0.2− | 2004 04 25 | 704 | 0.1+ | 0.3− | 2004 06 08 | 691 | 0.1− | 0.1− | |
| 2000 04 05 | 704 | 0.0 | 0.3− | 2004 04 25 | 704 | 0.3+ | 0.4− | 2004 06 08 | 691 | 0.2− | 0.1+ | |
| 2000 04 06 | 704 | 0.1+ | 0.3+ | 2004 05 12 | E12 | (1.5+ | 0.9+) | 2004 06 15 | 691 | 0.1− | 0.1+ | |
| 2000 04 06 | 704 | 0.1− | 0.6+ | 2004 05 12 | E12 | (1.6+ | 0.7+) | 2004 06 15 | 691 | 0.2− | 0.1+ | |
| 2000 04 06 | 704 | 0.2− | 0.2+ | 2004 05 12 | E12 | 1.2+ | 0.7+ | 2004 06 15 | 691 | 0.2− | 0.1− | |
| 2000 04 06 | 704 | 0.1− | 0.5+ | 2004 05 12 | E12 | (1.8+ | 1.4+) | 2004 07 05 | E12 | 0.3− | 0.9+ | |
| 2000 04 07 | 704 | 0.2+ | 0.0 | 2004 05 13 | 699 | 1.1− | 1.0− | 2004 07 05 | E12 | 0.2+ | 1.1+ | |
| 2000 04 07 | 704 | 0.2+ | 0.4+ | 2004 05 13 | 699 | 0.9− | 0.4− | 2004 07 05 | E12 | 0.1+ | 0.4+ | |
| 2000 04 07 | 704 | 0.2+ | 0.5+ | 2004 05 13 | 699 | 0.1− | 0.1+ | 2004 07 05 | E12 | (1.8− | 2.1+) | |
| 2000 04 07 | 704 | 0.2+ | 0.6+ | 2004 05 13 | 699 | 0.1+ | 0.1+ | 2005 07 31 | 644 | 0.0 | 0.3+ | |
| 2000 04 29 | 704 | 0.6+ | 0.3+ | 2004 05 13 | 644 | 0.1+ | 0.1+ | 2005 07 31 | 644 | 0.2+ | 0.2− | |
| 2000 04 29 | 704 | 0.1− | 0.2+ | 2004 05 13 | 644 | 0.2+ | 0.1+ | 2005 07 31 | 644 | 0.0 | 0.1+ | |
| 2000 04 29 | 704 | 0.3+ | 0.1− | 2004 05 13 | 644 | 0.1+ | 0.1− | 2005 09 01 | 691 | 0.2− | 0.2+ | |
| 2000 04 29 | 704 | 0.3+ | 0.3+ | 2004 05 14 | 608 | 1.0+ | 0.3+ | 2005 09 01 | 691 | 0.1− | 0.3+ | |
| 2000 04 29 | 704 | 0.5− | 0.7+ | 2004 05 14 | 608 | 1.0+ | 0.4− | 2005 09 01 | 691 | 0.2− | 0.3+ | |
| 2000 05 07 | 704 | 0.1+ | 0.2+ | 2004 05 14 | 608 | 0.6+ | 0.6− | 2005 09 11 | 691 | 0.1− | 0.1+ | |
| 2000 05 07 | 704 | 0.3− | 0.8+ | 2004 05 15 | 704 | 0.7+ | 0.1− | 2005 09 11 | 691 | 0.2− | 0.1+ | |
| 2000 05 07 | 704 | 1.0+ | 0.6+ | 2004 05 15 | 704 | 0.3+ | 0.6+ | 2005 09 11 | 691 | 0.3− | 0.1+ | |
| 2000 05 07 | 704 | 0.0 | 1.9+ | 2004 05 15 | 704 | 0.2− | 0.3− | 2005 09 30 | 691 | 0.4− | 0.7+ | |
| 2000 05 11 | 699 | 1.6+ | 0.9+ | 2004 05 15 | 704 | 0.6+ | 0.3− | 2005 09 30 | 691 | 0.2+ | 0.5+ | |
| 2000 05 11 | 699 | 0.1− | 1.2+ | 2004 05 16 | 704 | 0.1+ | 0.0 | 2005 09 30 | 691 | 0.0 | 0.3− | |
| 2000 05 11 | 699 | 1.5+ | 0.2+ | 2004 05 16 | 704 | 0.2+ | 0.1+ | 2005 11 25 | G96 | 0.1+ | 0.6− | |
| 2000 05 11 | 699 | 1.4+ | 0.9+ | 2004 05 16 | 704 | 0.2+ | 0.3+ | 2005 11 25 | G96 | 0.2+ | 0.3+ | |
| 2001 09 19 | 704 | 0.9+ | 0.0 | 2004 05 16 | 704 | 0.8− | 0.3− | 2005 11 25 | G96 | 0.3− | 0.1− | |
| 2001 09 19 | 704 | 1.0+ | 0.9− | 2004 05 16 | 704 | 0.5+ | 0.1+ | 2005 11 25 | G96 | 0.3+ | 0.3− | |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2004 05 18 | 704 | 0.5− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.3+ | |
| 2001 09 19 | 704 | (1.9+ | 0.8−) | 2004 05 18 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.2+ | |
| 2004 04 17 | 704 | 0.4+ | 0.7− | 2004 05 18 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.4+ | |
| 2004 04 17 | 704 | 0.2+ | 0.4− | 2004 05 28 | 691 | 0.0 | 0.0 | 2006 11 26 | 691 | 0.0 | 0.2+ | |
| 2004 04 17 | 704 | 0.0 | 1.0− | 2004 05 28 | 691 | 0.1− | 0.1+ | 2006 11 26 | 691 | 0.0 | 0.4+ | |
| 2004 04 17 | 704 | 0.4− | 1.0− | 2004 05 28 | 691 | 0.0 | 0.0 | 2006 11 26 | 691 | 0.0 | 0.5+ | |
| 2004 04 17 | 704 | 0.5− | 0.1− | 2004 06 06 | 644 | 0.1− | 0.3+ | | | | | |
| 2004 04 25 | 704 | 0.8− | 0.0 | 2004 06 06 | 644 | 0.1− | 0.3+ | | | | | |

**(138310)∗ 2000 GH$_{61}$ = 2004 DG$_6$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60654)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 209.53263 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22707232 | $\omega$ | 157.34692 | −0.95538134 | −0.29534983 | |
| $a$ | 2.6608880 | $\Omega$ | 5.47891 | +0.26441304 | −0.86100153 | |
| $e$ | 0.0728750 | $i$ | 2.32294 | +0.13165197 | −0.41405899 | |
| $P$ | 4.34 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1− | 1.1+ | 2004 02 18 | 291 | 0.1− | 0.2− | 2004 03 19 | 704 | 0.3+ | 0.7+ | |
| 2000 04 05 | 704 | 1.3+ | 1.9+ | 2004 02 18 | 704 | 0.6+ | 0.0 | 2004 03 22 | 704 | 0.1− | 0.3+ | |
| 2000 04 05 | 704 | 0.4+ | 1.8+ | 2004 02 18 | 704 | 0.4+ | 0.3− | 2004 03 22 | 704 | 0.0 | 1.2+ | |
| 2000 04 05 | 704 | (0.8+ | 2.2+) | 2004 02 18 | 291 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.7− | 1.2+ | |
| 2000 04 06 | 704 | 0.2+ | 1.5+ | 2004 02 18 | 704 | 0.4+ | 0.3− | 2004 03 27 | 704 | 0.3− | 1.1+ | |
| 2000 04 06 | 704 | 0.1− | 0.1− | 2004 02 18 | 291 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.5− | 0.1− | |
| 2000 04 06 | 704 | 0.2− | 0.7+ | 2004 02 18 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 0.7− | 1.1+ | |
| 2000 04 06 | 704 | 0.2+ | 0.2+ | 2004 02 18 | 608 | 0.1+ | 1.0− | 2004 03 30 | 691 | 0.2− | 0.0 | |
| 2000 04 29 | 704 | 1.4+ | 1.1− | 2004 02 18 | 608 | 0.4+ | 0.3− | 2004 03 30 | 691 | 0.1− | 0.0 | |
| 2000 04 29 | 704 | 0.2− | 0.0 | 2004 02 18 | 608 | 0.0 | 0.6− | 2004 03 30 | 691 | 0.2+ | 0.1+ | |
| 2000 04 29 | 704 | 0.4+ | 0.5+ | 2004 02 23 | 704 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.4+ | |
| 2000 04 29 | 704 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.4+ | |
| 2000 04 29 | 704 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.3+ | |
| 2002 10 31 | 644 | 0.2− | 0.2− | 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.4− | 0.3+ | |
| 2002 10 31 | 644 | 0.5− | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.5+ | |
| 2002 10 31 | 644 | 0.1+ | 0.2− | 2004 03 11 | 644 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.4+ | |
| 2002 11 11 | 704 | 0.1− | 0.3− | 2004 03 11 | 644 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.3− | 0.5+ | |
| 2002 11 11 | 704 | (2.6+ | 1.3+) | 2004 03 11 | 644 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.3− | 0.7+ | |
| 2002 11 11 | 704 | 0.4− | 0.6+ | 2004 03 14 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.2+ | |
| 2002 11 11 | 704 | (0.7− | 2.0+) | 2004 03 14 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.5+ | |
| 2002 11 11 | 704 | 0.0 | 1.4+ | 2004 03 14 | 691 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.6− | 0.9− | |
| 2002 12 06 | 704 | 0.6− | 0.6+ | 2004 03 15 | 704 | 0.8− | 0.4− | 2006 10 17 | G96 | 0.4− | 1.0− | |
| 2002 12 06 | 704 | 0.4+ | 0.3− | 2004 03 15 | 704 | 0.4+ | 1.3+ | 2006 10 17 | G96 | 0.1− | 0.5− | |
| 2002 12 06 | 704 | 0.6+ | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.9− | 0.0 | |
| 2004 02 01 | 599 | (1.6− | 0.6−) | 2004 03 15 | 704 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2004 02 01 | 599 | (0.4− | 2.0−) | 2004 03 15 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | |
| 2004 02 01 | 599 | 0.3− | 0.7− | 2004 03 19 | 704 | 0.5− | 0.7+ | 2006 10 27 | G96 | 0.4− | 0.1− | |
| 2004 02 16 | 691 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | |
| 2004 02 16 | 691 | 0.3+ | 0.1− | 2004 03 19 | 704 | 0.5+ | 0.7+ | | | | | |
| 2004 02 16 | 691 | 0.4+ | 0.4− | 2004 03 19 | 704 | 0.4+ | 0.5+ | | | | | |

**(138311)∗ 2000 GG$_{63}$ = 2001 ON$_{37}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14868)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 128.15086 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.20649404 | $\omega$ | 184.94568 | −0.90199434 | +0.42616648 | |
| $a$ | 2.8348562 | $\Omega$ | 20.71096 | −0.38910853 | −0.73295501 | |
| $e$ | 0.0771253 | $i$ | 11.28360 | −0.18708489 | −0.53024436 | |
| $P$ | 4.77 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.4+ | 0.5+ | 2000 05 09 | 704 | 0.4− | 0.3+ | 2003 12 29 | 704 | 0.3+ | 0.5+ | |
| 2000 04 05 | 704 | 1.4+ | 0.1− | 2000 05 09 | 704 | 0.1− | 0.3+ | 2003 12 29 | 703 | 0.2+ | 0.3+ | |
| 2000 04 05 | 704 | 0.0 | 0.6+ | 2000 05 09 | 704 | 0.5− | 1.2+ | 2003 12 29 | 704 | 0.4− | 1.5+ | |
| 2000 04 05 | 704 | 0.2− | 0.7− | 2001 07 20 | 644 | 0.3+ | 0.4− | 2003 12 29 | 704 | (0.8+ | 2.2+) | |
| 2000 04 06 | 704 | 0.5+ | 0.2+ | 2001 07 20 | 644 | 0.3− | 0.9− | 2003 12 29 | 704 | 0.2+ | 1.7+ | |
| 2000 04 06 | 704 | 0.6− | 0.1− | 2001 07 20 | 644 | 0.2+ | 0.6− | 2004 01 18 | 703 | 0.4+ | 0.4+ | |
| 2000 04 06 | 704 | 0.6+ | 1.1+ | 2001 07 26 | 644 | 0.2+ | 0.6+ | 2004 01 18 | 703 | 0.1+ | 1.2− | |
| 2000 04 06 | 704 | 0.1+ | 0.4+ | 2001 07 26 | 644 | 0.3− | 0.4+ | 2004 01 18 | 703 | 0.6− | 0.4+ | |
| 2000 04 06 | 704 | 0.5+ | 0.8+ | 2001 07 26 | 644 | 0.0 | 0.4+ | 2004 01 18 | 703 | 0.4+ | 0.5+ | |
| 2000 04 12 | 608 | 0.1+ | 0.8− | 2001 08 10 | 644 | 0.1+ | 0.4− | 2004 01 19 | 704 | 0.2+ | 0.5+ | |
| 2000 04 12 | 608 | 0.3+ | 0.7− | 2001 08 10 | 644 | 0.2+ | 0.2+ | 2004 01 19 | 704 | 0.2+ | 0.3− | |
| 2000 04 12 | 608 | 0.4+ | 0.5− | 2001 08 10 | 644 | 0.0 | 0.0 | 2004 01 19 | 704 | 0.1− | 0.2− | |
| 2000 04 26 | 699 | 1.7+ | 0.0 | 2001 08 16 | 644 | 0.6− | 0.6+ | 2004 01 19 | 704 | 0.1− | 0.6− | |
| 2000 04 26 | 699 | 0.1− | 0.9− | 2001 08 16 | 644 | 0.5− | 0.7+ | 2005 05 18 | E12 | 0.3+ | 0.2+ | |
| 2000 04 26 | 699 | 0.7+ | 0.6− | 2001 08 16 | 644 | 0.0 | 0.6+ | 2005 05 18 | E12 | 0.7+ | 0.4− | |
| 2000 04 26 | 699 | 0.8+ | 0.2+ | 2002 10 16 | 644 | 0.4− | 0.8+ | 2005 05 18 | E12 | 0.2+ | 0.0 | |
| 2000 04 30 | 699 | 1.3− | 1.1+ | 2002 10 16 | 644 | 0.6− | 0.7+ | 2005 05 18 | E12 | 0.1− | 0.2− | |
| 2000 04 30 | 699 | 1.3− | 0.5− | 2002 10 16 | 644 | 0.4− | 1.1+ | 2006 08 24 | 644 | 0.3+ | 0.5+ | |
| 2000 04 30 | 699 | 0.3− | 1.4+ | 2002 10 31 | 644 | 0.0 | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.7+ | |
| 2000 04 30 | 699 | 1.1− | 1.5+ | 2002 10 31 | 644 | 0.7+ | 0.6+ | 2006 08 24 | 644 | 0.3+ | 1.0+ | |
| 2000 05 06 | 704 | 0.7+ | 1.6+ | 2002 10 31 | 644 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 1.8− | 1.2+ | |
| 2000 05 06 | 704 | 0.5− | 0.4+ | 2003 12 29 | 703 | 0.6+ | 0.6− | 2006 09 26 | 703 | 1.2− | 0.1+ | |
| 2000 05 06 | 704 | 0.4+ | 0.5+ | 2003 12 29 | 703 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.7− | 1.2− | |
| 2000 05 09 | 704 | 1.1+ | 0.6− | 2003 12 29 | 703 | 0.6− | 1.1+ | 2006 09 26 | 703 | 0.5− | 0.9+ | |

**(138312)∗ 2000 GY$_{63}$ = 2001 RA$_{53}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17268)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 97.84631 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.21708703 | $\omega$ | 244.34772 | +0.06658430 | +0.99674064 | |
| $a$ | 2.7418696 | $\Omega$ | 29.57912 | −0.87917312 | +0.08019475 | |
| $e$ | 0.1175751 | $i$ | 5.29438 | −0.47182747 | −0.00876971 | |
| $P$ | 4.54 | $H$ | 16.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 01 | 691 | 1.0− | 0.2+ | 2000 05 02 | 688 | 0.2+ | 0.6+ | 2006 10 04 | G96 | 0.5− | 0.1+ | |
| 1997 11 01 | 691 | 0.7− | 0.5+ | 2000 05 02 | 688 | 0.0 | 0.9+ | 2006 10 04 | G96 | 0.6− | 1.0+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 01 | 691 | 0.5− | 0.3+ | 2000 05 02 | 688 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 1997 11 22 | 691 | 0.7+ | 0.2− | 2001 09 12 | 704 | (0.2− | 2.1+) | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 1997 11 22 | 691 | 0.8+ | 0.2− | 2001 09 12 | 704 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 1997 11 22 | 691 | 1.0+ | 0.4− | 2001 09 12 | 704 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 1997 11 28 | 691 | 0.3+ | 0.5− | 2001 09 16 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 1997 11 28 | 691 | 0.1+ | 0.1− | 2001 09 16 | 704 | 1.1− | 0.8+ | 2006 10 11 | 644 | 0.6− | 0.6+ |
| 1997 11 28 | 691 | 0.1− | 0.6− | 2001 09 16 | 704 | 1.2− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 03 29 | 691 | 0.3+ | 0.2+ | 2001 09 16 | 704 | 0.5− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2000 03 29 | 691 | 0.3+ | 0.2+ | 2001 09 19 | 704 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.5+ |
| 2000 03 29 | 691 | 0.5+ | 0.2+ | 2001 09 19 | 704 | (1.0− | 2.0+) | 2006 10 20 | 691 | 0.4− | 0.6+ |
| 2000 04 05 | 704 | 0.6+ | 0.0 | 2001 09 19 | 704 | (0.4− | 2.1+) | 2006 10 21 | 703 | 0.2+ | 1.4+ |
| 2000 04 05 | 704 | 0.8− | 0.9+ | 2001 09 19 | 704 | (0.4− | 1.5+) | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2000 04 05 | 704 | 0.1− | 0.7+ | 2001 09 21 | 704 | 0.1− | 0.6+ | 2006 10 21 | 703 | 1.4− | 1.3+ |
| 2000 04 06 | 704 | 0.2+ | 1.1+ | 2001 09 21 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 2000 04 06 | 704 | 0.4+ | 0.6+ | 2001 09 21 | 704 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2000 04 06 | 704 | 0.5+ | 0.1− | 2004 02 17 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2000 04 06 | 704 | 0.9+ | 0.5− | 2004 02 17 | 691 | 0.9− | 1.0− | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.2− | 1.6+ | 2004 02 17 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2000 04 07 | 691 | 0.0 | 0.1+ | 2004 03 14 | 704 | 0.5+ | 1.1+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2000 04 07 | 691 | 0.2− | 0.0 | 2004 03 14 | 704 | (1.5+ | 1.1+) | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2000 04 07 | 691 | 0.1− | 0.2+ | 2004 03 14 | 704 | 1.3+ | 1.0+ | 2006 10 29 | 691 | 0.2− | 0.0 |
| 2000 04 13 | 691 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2000 04 13 | 691 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.9+ | 1.4+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2000 04 13 | 691 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.6+ | 1.0+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 0.1+ | 1.0+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.0 | 0.8+ |
| 2000 04 29 | 704 | 0.9+ | 1.2+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.4+ |
| 2000 04 29 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2000 04 29 | 704 | 0.6+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.1− | | | | |
| 2000 04 29 | 704 | 0.1− | 0.7+ | 2006 10 04 | G96 | 0.5+ | 0.0 | | | | |

**(138313)∗ 2000 GH$_{69}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 219.49345 | | (2000.0) | | | |
| $n$ | 0.22807512 | $\omega$ | 326.20970 | | −0.92597357 | −0.37740446 |
| $a$ | 2.6530826 | $\Omega$ | 191.63501 | | +0.35806990 | −0.86777755 |
| $e$ | 0.1250535 | $i$ | 3.34922 | | +0.11982861 | −0.32330789 |
| $P$ | 4.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 1.1+ | 1.1+ | 2000 05 10 | 704 | 0.2− | 0.4+ | 2004 03 27 | 704 | 0.4+ | 0.0 |
| 2000 04 05 | 699 | 0.5− | 0.4− | 2000 05 10 | 704 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.5+ | 0.3− |
| 2000 04 05 | 699 | 0.6− | 1.0− | 2000 05 10 | 704 | 0.1− | 1.0+ | 2004 03 27 | 704 | 0.9− | 0.0 |
| 2000 04 05 | 699 | 0.0 | 0.4+ | 2000 05 10 | 704 | 0.1− | 1.1+ | 2004 03 27 | 704 | 0.5+ | 0.1− |
| 2000 04 05 | 704 | 0.0 | 0.2+ | 2002 10 16 | 644 | 0.4− | 0.6+ | 2004 03 27 | 704 | 0.7+ | 0.2+ |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2002 10 16 | 644 | 0.5− | 0.6+ | 2004 03 28 | 691 | 0.1− | 0.0 |
| 2000 04 05 | 704 | 0.4− | 0.4+ | 2002 10 16 | 644 | 0.1− | 0.5+ | 2004 03 28 | 691 | 0.1+ | 0.0 |
| 2000 04 05 | 704 | 0.4+ | 0.2− | 2002 10 31 | 644 | 0.1− | 0.8+ | 2004 03 28 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 0.1+ | 0.2− | 2002 10 31 | 644 | 0.0 | 0.8+ | 2004 04 12 | 703 | (0.4− | 2.8−) |
| 2000 04 06 | 704 | 0.1+ | 0.5+ | 2002 10 31 | 644 | 0.1+ | 0.6+ | 2004 04 12 | 703 | (0.3− | 2.0−) |
| 2000 04 06 | 704 | 0.1+ | 0.3+ | 2002 11 06 | 704 | 0.0 | 0.3+ | 2004 04 12 | 703 | (0.8+ | 2.3−) |
| 2000 04 06 | 704 | 0.3+ | 0.1− | 2002 11 06 | 704 | 0.8+ | 0.2+ | 2004 04 12 | 703 | (2.2+ | 3.7−) |
| 2000 04 06 | 704 | 0.6− | 0.4+ | 2002 11 06 | 704 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.4− | 0.6+ |
| 2000 04 06 | 704 | 0.6− | 0.0 | 2002 11 06 | 608 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.2+ |
| 2000 04 07 | 704 | 0.1+ | 0.2− | 2002 11 06 | 608 | 0.5− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.6+ |
| 2000 04 07 | 704 | 0.5− | 0.1+ | 2002 11 06 | 608 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.5+ |
| 2000 04 07 | 704 | 1.2+ | 0.1+ | 2002 11 22 | 644 | 0.3− | 1.1+ | 2006 09 19 | 691 | 0.3− | 0.6+ |
| 2000 04 24 | 699 | 0.5− | 0.3+ | 2002 11 22 | 644 | 0.5− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.4+ |
| 2000 04 24 | 699 | 0.2+ | 0.4+ | 2002 11 22 | 644 | 0.3− | 0.6+ | 2006 09 19 | 699 | 1.0+ | 1.4+ |
| 2000 04 24 | 699 | 0.2− | 1.2+ | 2004 02 13 | 644 | 1.1+ | 0.3− | 2006 09 19 | 699 | 1.2+ | 0.6− |
| 2000 04 24 | 699 | 0.2+ | 0.2− | 2004 02 13 | 644 | 0.8+ | 0.3+ | 2006 09 19 | 699 | 0.5− | 1.0+ |
| 2000 04 25 | 699 | 0.6+ | 0.2+ | 2004 02 13 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.6+ | 0.7+ |
| 2000 04 25 | 699 | 0.1− | 0.6+ | 2004 02 19 | 704 | 0.6+ | 1.3+ | 2006 09 24 | 691 | 0.1− | 0.3+ |
| 2000 04 25 | 699 | 0.9− | 0.5+ | 2004 02 19 | 704 | 0.9+ | 0.8+ | 2006 09 24 | 691 | 0.3+ | 0.4+ |
| 2000 04 25 | 699 | 0.2+ | 0.4+ | 2004 02 19 | 704 | 0.3+ | 0.6+ | 2006 09 24 | 691 | 0.1− | 0.3+ |
| 2000 04 27 | 704 | 0.3− | 0.7+ | 2004 02 19 | 704 | 0.6+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 2000 04 27 | 704 | 0.2+ | 1.4+ | 2004 02 19 | 704 | 0.6+ | 0.4+ | 2006 09 28 | 691 | 0.3− | 0.2+ |
| 2000 04 27 | 704 | 0.0 | 0.8+ | 2004 02 20 | 608 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.4− | 0.4+ |
| 2000 04 27 | 704 | 0.2+ | 1.5+ | 2004 02 20 | 608 | 0.1− | 0.7− | 2006 10 02 | 691 | 0.5− | 0.1+ |
| 2000 04 27 | 704 | 0.5+ | 0.6+ | 2004 02 20 | 608 | 0.1− | 1.0− | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2000 04 29 | 704 | 0.2+ | 0.8+ | 2004 03 01 | 683 | 0.3+ | 0.7− | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2000 04 29 | 704 | 0.6+ | 0.1+ | 2004 03 01 | 683 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2000 04 29 | 704 | 0.6+ | 0.1+ | 2004 03 01 | 683 | 0.8+ | 0.4− | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 0.1− | 0.4+ | 2004 03 16 | 704 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2000 04 29 | 704 | 0.0 | 0.5+ | 2004 03 16 | 704 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2000 05 01 | 699 | 0.4+ | 0.2+ | 2004 03 16 | 704 | (1.6+ | 0.3−) | 2006 10 21 | G96 | 0.4+ | 0.2+ |
| 2000 05 01 | 699 | 0.8+ | 0.8+ | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2000 05 01 | 699 | 1.3+ | 1.2+ | 2004 03 18 | 704 | 0.4+ | 0.9+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2000 05 01 | 699 | 0.9+ | 1.4+ | 2004 03 18 | 704 | 0.8+ | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2000 05 05 | 704 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 1.2− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2000 05 05 | 704 | 1.0+ | 0.1− | 2004 03 18 | 704 | 0.6− | 1.1+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2000 05 05 | 704 | 1.4+ | 0.5+ | 2004 03 18 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2000 05 05 | 704 | 0.6− | 0.5+ | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2000 05 07 | 704 | 0.1− | 0.0 | 2004 03 18 | 691 | 0.4− | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2000 05 07 | 704 | 1.1− | 0.3− | 2004 03 23 | 704 | 0.0 | 1.5+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2000 05 07 | 704 | 0.3− | 0.5− | 2004 03 23 | 704 | 0.4+ | 1.4+ | 2006 11 11 | G96 | 0.3− | 0.3+ |
| 2000 05 07 | 704 | 0.0 | 0.4− | 2004 03 23 | 704 | 0.5+ | 1.2+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2000 05 07 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | (0.0 | 1.7+) | | | | |
| 2000 05 10 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 704 | (0.2+ | 1.7+) | | | | |

**(138314)∗ 2000 GG$_{70}$ = 2001 QV$_{23}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 15747)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.66869 | | (2000.0) | | | |
| $n$ | 0.21476148 | $\omega$ | 294.60178 | | +0.66855133 | +0.74301573 |
| $a$ | 2.7616277 | $\Omega$ | 17.46679 | | −0.63934116 | +0.59561665 |
| $e$ | 0.1288741 | $i$ | 5.94587 | | −0.37984471 | +0.30523504 |
| $P$ | 4.59 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.7+ | 0.6+ | 2001 09 21 | 704 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.6+ | 0.8− |
| 2000 04 05 | 704 | 0.7+ | 0.2− | 2001 09 21 | 704 | 0.2− | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2000 04 05 | 704 | 0.1− | 0.3+ | 2001 09 21 | 704 | 0.5− | 0.8+ | 2006 09 27 | G96 | 0.3− | 0.3− |
| 2000 04 05 | 704 | 0.5− | 0.2+ | 2001 09 21 | 704 | (1.8− | 0.3+) | 2006 10 11 | 691 | 0.3− | 0.3+ |
| 2000 04 06 | 704 | 0.2+ | 0.1+ | 2001 09 21 | 704 | 0.2− | 1.2+ | 2006 10 11 | 691 | 0.5− | 0.2+ |
| 2000 04 06 | 704 | 0.5+ | 0.0 | 2001 10 11 | 704 | 1.0+ | 0.6+ | 2006 10 11 | 691 | 0.3− | 0.3+ |
| 2000 04 06 | 704 | 0.6+ | 0.5− | 2001 10 11 | 704 | 0.7+ | 1.3+ | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2000 04 06 | 704 | 0.7+ | 0.7+ | 2001 10 11 | 704 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 2000 04 06 | 704 | 0.3+ | 0.2+ | 2001 10 11 | 704 | (1.8+ | 1.3+) | 2006 10 15 | 691 | 0.2− | 0.1+ |
| 2000 04 24 | 699 | 0.5+ | 0.9+ | 2001 10 11 | 704 | 0.3+ | 1.2+ | 2006 10 17 | 691 | 0.4− | 0.1+ |
| 2000 04 24 | 699 | 0.2+ | 1.2+ | 2001 10 17 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.4− |
| 2000 04 24 | 699 | 0.6+ | 0.9+ | 2001 10 17 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.0 |
| 2000 04 24 | 699 | 0.5+ | 0.7+ | 2001 10 17 | 644 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2000 04 25 | 699 | 0.6+ | 1.3+ | 2001 10 24 | 704 | 0.8− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2000 04 25 | 699 | 0.1+ | 1.0+ | 2001 10 24 | 704 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2000 04 25 | 699 | 0.2+ | 1.0+ | 2001 10 24 | 704 | 0.0 | 1.0+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2000 04 25 | 699 | 0.6+ | 1.5+ | 2001 10 24 | 704 | (1.6− | 1.6+) | 2006 10 21 | 691 | 0.4− | 0.3+ |
| 2000 05 09 | 704 | 0.0 | 1.1+ | 2001 11 10 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.7− | 0.2− |
| 2000 05 09 | 704 | 1.7− | 0.4+ | 2001 11 10 | 644 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2000 05 09 | 704 | 0.4+ | 0.5+ | 2001 11 10 | 644 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2000 05 09 | 704 | (0.1− | 2.3+) | 2004 02 15 | 703 | 1.4+ | 1.0− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 05 09 | 704 | 0.9+ | 1.5+ | 2004 02 15 | 703 | 0.9− | 1.1− | 2006 10 23 | 691 | 0.8− | 0.1+ |
| 2000 06 06 | 699 | 0.1+ | 1.2+ | 2004 02 15 | 703 | (2.0+ | 1.6+) | 2006 10 23 | 691 | 0.9− | 0.6+ |
| 2000 06 06 | 699 | 0.5+ | 0.9+ | 2004 02 15 | 703 | 0.0 | 1.4− | 2006 10 23 | 691 | 0.7− | 0.1+ |
| 2000 06 06 | 699 | 1.0+ | 0.6+ | 2004 02 18 | 704 | 0.9+ | 1.1+ | 2006 10 27 | 224 | 0.4+ | 0.3− |
| 2000 06 06 | 699 | 0.8+ | 0.2− | 2004 02 18 | 704 | 0.5+ | 0.1− | 2006 10 27 | 224 | 0.8− | 0.4− |
| 2001 05 28 | 608 | 0.0 | 0.7− | 2004 02 18 | 704 | 0.9+ | 0.5+ | 2006 10 27 | 224 | 0.4− | 0.5− |
| 2001 05 28 | 608 | 0.2+ | 0.9− | 2004 02 20 | 608 | 1.0+ | 0.8− | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2001 05 28 | 608 | 0.2+ | 0.8− | 2004 02 20 | 608 | 0.9+ | 0.8− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2001 08 11 | 608 | 1.5− | 0.2+ | 2004 02 20 | 608 | 0.8+ | 1.0− | 2006 10 28 | 691 | 0.4+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.9− | 0.9+ | 2004 02 23 | 704 | 0.5− | 0.9+ | 2006 10 29 | 704 | 0.1+ | 0.1+ | | |
| 2001 08 11 | 608 | 0.4− | 0.9+ | 2004 02 23 | 704 | 1.0+ | 1.0+ | 2006 10 29 | 704 | 0.4− | 0.0 | | |
| 2001 08 16 | 704 | 0.7+ | 1.0− | 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 10 29 | 704 | 0.1+ | 0.1− | | |
| 2001 08 16 | 704 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.7+ | 0.4+ | 2006 10 29 | 704 | 0.1+ | 0.3− | | |
| 2001 08 16 | 704 | 1.0+ | 0.4+ | 2004 02 23 | 704 | 0.9+ | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.2− | | |
| 2001 08 16 | 704 | 0.4+ | 0.5+ | 2004 03 11 | 644 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 2001 08 16 | 704 | 0.3+ | 0.6+ | 2004 03 11 | 644 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2001 08 18 | 704 | 0.3+ | 0.1− | 2004 03 11 | 644 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2001 08 18 | 704 | 0.5− | 0.8+ | 2004 03 11 | 644 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.1− | | |
| 2001 08 18 | 704 | 0.2+ | 0.3+ | 2004 03 11 | 644 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2001 08 25 | 704 | 0.9+ | 0.9− | 2004 03 11 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.4− | 0.4− | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.4− | 0.3− | 2004 03 15 | 704 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.6− | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.6− | | |
| 2001 08 25 | 704 | 0.4+ | 0.5− | 2004 03 17 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.2− | 0.5− | | |
| 2001 08 25 | 699 | 0.0 | 0.1− | 2004 03 17 | 704 | 0.4− | 0.8+ | 2006 11 11 | 703 | 0.6− | 0.5− | | |
| 2001 08 25 | 699 | 0.0 | 0.1− | 2004 03 17 | 704 | (1.9− | 1.0+) | 2006 11 11 | 703 | 0.1− | 0.3− | | |
| 2001 08 25 | 699 | 0.6+ | 0.4+ | 2004 03 17 | 704 | 1.2− | 0.5+ | 2006 11 16 | 704 | (0.4+ | 1.9+) | | |
| 2001 08 25 | 699 | 0.1+ | 0.0 | 2004 03 17 | 704 | 1.3− | 1.2+ | 2006 11 16 | 704 | 0.7+ | 1.2+ | | |
| 2001 09 07 | 644 | (0.7+ | 1.8−) | 2004 03 17 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 07 | 644 | (0.3+ | 1.7−) | 2004 03 17 | 704 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.8+ | 1.3+ | | |
| 2001 09 07 | 644 | 0.5+ | 1.5− | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | (0.9+ | 2.0+) | | |
| 2001 09 11 | 699 | 0.5− | 0.5+ | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.1+ | | |
| 2001 09 11 | 699 | 0.2+ | 0.4− | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.4+ | | |
| 2001 09 11 | 699 | 0.5+ | 0.6+ | 2004 03 19 | 704 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.8+ | | |
| 2001 09 11 | 699 | 0.2− | 0.1+ | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.7+ | 0.8+ | | |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.9+ | | |
| 2001 09 12 | 704 | 0.8− | 0.3+ | 2004 03 19 | 704 | 0.5− | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.1− | | |
| 2001 09 12 | 704 | 0.3− | 1.3+ | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.2− | | |
| 2001 09 12 | 704 | 0.2+ | 1.2+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 11 21 | 691 | 0.2+ | 0.2− | | |
| 2001 09 12 | 704 | 0.6+ | 1.3+ | 2004 03 22 | 704 | 0.7− | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.8+ | | |
| 2001 09 19 | 699 | 0.9− | 1.2+ | 2004 03 22 | 704 | 0.5− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.8+ | | |
| 2001 09 19 | 699 | 0.4+ | 0.5+ | 2004 03 22 | 704 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.5+ | 1.7+ | | |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 1.5+ | | |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2006 08 25 | 704 | 0.9+ | 0.5− | 2006 11 23 | 691 | 0.3+ | 0.0 | | |
| 2001 09 19 | 699 | 1.1− | 0.1− | 2006 08 25 | 704 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2006 08 25 | 704 | 0.7+ | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.2− | | |
| 2001 09 19 | 699 | (1.5− | 0.0 ) | 2006 09 25 | 704 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.4+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 1.0− | 0.5+ | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.5− | 0.9+ | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 645 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.3− | 0.1+ | | | | | | |
| 2001 09 19 | 645 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.4− | | | | | | |

**(138315)∗ 2000 GQ$_{71}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.06085 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22564097 | $\omega$ | 64.10814 | | −0.17598095 | −0.97436523 | |
| $a$ | 2.6721289 | $\Omega$ | 36.89739 | | +0.79883515 | −0.22455138 | |
| $e$ | 0.0529049 | $i$ | 13.49971 | | +0.57523308 | +0.01375064 | |
| $P$ | 4.37 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | (1.0+ | 2.5−) | 2002 11 14 | 704 | 0.3+ | 0.8+ | 2004 04 09 | 644 | 0.2+ | 0.1− | | |
| 1998 12 17 | 704 | (1.2− | 2.7−) | 2002 11 14 | 704 | 0.2+ | 0.0 | 2004 04 13 | 703 | 0.2+ | 0.3+ | | |
| 1998 12 17 | 704 | (0.8+ | 3.0−) | 2002 11 14 | 704 | 1.2− | 0.9+ | 2004 04 13 | 703 | 1.2+ | 0.3+ | | |
| 1998 12 17 | 704 | (1.0+ | 3.2−) | 2002 11 14 | 704 | 0.9− | 0.6− | 2004 04 13 | 703 | 0.4+ | 0.1− | | |
| 2000 04 05 | 704 | 0.1+ | 0.9+ | 2002 11 14 | 704 | 0.0 | 0.6− | 2004 04 13 | 703 | 1.4+ | 0.4− | | |
| 2000 04 05 | 704 | 0.6+ | 0.2+ | 2002 11 24 | 644 | 0.2+ | 0.7+ | 2004 04 15 | 704 | 0.4− | 1.0+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.5+ | 2002 11 24 | 644 | 0.3+ | 0.6+ | 2004 04 15 | 704 | 0.1− | 0.2+ | | |
| 2000 04 05 | 704 | 0.5− | 0.4+ | 2002 11 24 | 644 | 0.2+ | 0.5+ | 2004 04 15 | 704 | 0.6+ | 1.3+ | | |
| 2000 04 06 | 704 | 0.7+ | 0.4+ | 2002 12 02 | 704 | 0.6− | 1.2− | 2004 04 25 | 699 | 0.2− | 0.7+ | | |
| 2000 04 06 | 704 | 0.7+ | 0.6+ | 2002 12 02 | 704 | (1.1− | 1.8−) | 2004 04 25 | 699 | 0.0 | 0.3− | | |
| 2000 04 06 | 704 | 0.4+ | 0.4+ | 2002 12 02 | 704 | 0.3− | 0.2− | 2004 04 25 | 699 | 0.7+ | 0.5+ | | |
| 2000 04 06 | 704 | 0.1− | 0.5− | 2002 12 02 | 704 | 0.4− | 0.9− | 2004 04 25 | 699 | 0.7+ | 0.0 | | |
| 2000 04 06 | 704 | 0.1− | 0.7+ | 2002 12 05 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.7− | | |
| 2000 04 25 | 699 | 0.1+ | 0.9− | 2002 12 05 | 704 | 1.0− | 0.5+ | 2006 09 18 | 703 | (2.2− | 1.8+) | | |
| 2000 04 25 | 699 | 0.6− | 0.8− | 2002 12 05 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.6− | 1.3+ | | |
| 2000 04 25 | 699 | 0.4+ | 0.9− | 2002 12 05 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.6− | | |
| 2000 04 25 | 699 | 0.8− | 0.6− | 2002 12 05 | 704 | 0.9− | 1.0+ | 2006 09 22 | 704 | (0.3− | 2.1+) | | |
| 2000 04 28 | 704 | 0.8− | 0.9+ | 2002 12 09 | 699 | 0.6+ | 0.5− | 2006 09 22 | 704 | (0.1+ | 1.7+) | | |
| 2000 04 28 | 704 | 0.1− | 0.6+ | 2002 12 09 | 699 | 1.1− | 0.4− | 2006 09 22 | 704 | 1.5− | 0.9+ | | |
| 2000 04 28 | 704 | 1.9+ | 1.3+ | 2002 12 09 | 699 | 0.5− | 0.2+ | 2006 09 22 | 704 | 1.3− | 1.0+ | | |
| 2000 04 28 | 704 | 1.0+ | 1.4+ | 2002 12 09 | 699 | 0.4− | 0.6− | 2006 09 26 | 704 | 0.4− | 1.1+ | | |
| 2000 04 28 | 704 | 0.0 | 0.8+ | 2002 12 11 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | (0.0 | 1.6+) | | |
| 2000 04 29 | 704 | 0.7− | 0.2− | 2002 12 11 | 644 | 0.3+ | 0.6− | 2006 09 26 | 704 | 0.6− | 0.7+ | | |
| 2000 04 29 | 704 | 0.8+ | 0.4+ | 2002 12 11 | 644 | 0.4− | 0.2− | 2006 09 26 | 704 | 1.4+ | 0.1+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.3+ | 2003 01 28 | 644 | 0.7+ | 0.8+ | 2006 09 26 | 704 | 0.6− | 0.1− | | |
| 2000 04 29 | 704 | 0.7+ | 1.0+ | 2003 01 28 | 644 | 0.8+ | 1.2+ | 2006 09 26 | 703 | 0.8− | 1.2+ | | |
| 2000 04 29 | 704 | 1.2+ | 1.7+ | 2003 01 28 | 644 | 0.7+ | 0.9+ | 2006 09 26 | 703 | 0.8− | 0.7+ | | |
| 2000 05 01 | 699 | 0.1+ | 1.5+ | 2004 02 17 | 704 | 0.3− | 0.2− | 2006 09 26 | 703 | 0.7− | 1.3+ | | |
| 2000 05 01 | 699 | 0.8+ | 0.4+ | 2004 02 17 | 704 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.4+ | 1.3+ | | |
| 2000 05 01 | 699 | 0.4+ | 0.6− | 2004 02 17 | 704 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.8+ | | |
| 2000 05 01 | 699 | 0.1+ | 1.0+ | 2004 02 17 | 704 | 0.3+ | 0.8− | 2006 09 29 | 699 | (0.5− | 1.6+) | | |
| 2002 10 02 | 704 | 0.2+ | 0.3+ | 2004 02 27 | 704 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.8− | 1.0+ | | |
| 2002 10 02 | 704 | 0.5+ | 1.0+ | 2004 02 27 | 704 | (1.6+ | 0.4−) | 2006 10 16 | 703 | (0.2− | 1.6+) | | |
| 2002 10 02 | 704 | 0.2− | 0.4+ | 2004 02 27 | 704 | 0.0 | 0.7− | 2006 10 16 | 703 | (1.4− | 2.1−) | | |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2004 02 27 | 704 | 0.3− | 1.0− | 2006 10 16 | 703 | (0.6+ | 2.1−) | | |
| 2002 10 03 | 704 | 0.1+ | 1.0+ | 2004 03 11 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.5+ | 2004 03 11 | 644 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.1− | | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2004 03 11 | 644 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.0 | | |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.5+ | | |
| 2002 10 10 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.4− | 0.0 | | |
| 2002 10 10 | 704 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 10 10 | 704 | 1.2+ | 0.7− | 2004 03 15 | 704 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.6+ | | |
| 2002 10 10 | 704 | 1.1+ | 0.2− | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2002 10 10 | 704 | 1.2+ | 0.7+ | 2004 03 23 | 704 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2002 11 08 | 704 | 0.3+ | 0.5− | 2004 03 23 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 644 | (1.7− | 1.2+) | | |
| 2002 11 08 | 704 | 0.0 | 0.5+ | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.5+ | | |
| 2002 11 08 | 704 | 0.0 | 0.7− | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.9+ | | |
| 2002 11 08 | 704 | 0.2− | 1.5− | 2004 03 23 | 704 | 0.7− | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.4+ | | |
| 2002 11 12 | 704 | 0.3− | 0.3+ | 2004 03 25 | 704 | 0.5− | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.4+ | | |
| 2002 11 12 | 704 | 0.3− | 0.0 | 2004 03 25 | 704 | 0.4+ | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2002 11 12 | 704 | 0.8+ | 0.6− | 2004 03 25 | 704 | 1.0+ | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2002 11 12 | 704 | 0.6− | 0.8+ | 2004 04 09 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.1+ | | |
| 2002 11 12 | 704 | 1.0+ | 0.8− | 2004 04 09 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.0 | | |

**(138316)∗ 2000 GG$_{73}$ = 2000 HD$_{105}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11070)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.61344 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23781947 | $\omega$ | 331.80146 | | −0.92307506 | +0.38348150 | |
| $a$ | 2.5801073 | $\Omega$ | 230.77892 | | −0.34531939 | −0.86015771 | |
| $e$ | 0.1571421 | $i$ | 2.18744 | | −0.16937225 | −0.33625981 | |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.5− | 0.4+ | 2000 05 10 | 704 | 0.3+ | 0.7+ | 2004 04 14 | 691 | 0.3− | 0.1+ | | |
| 2000 04 05 | 704 | 0.1− | 0.0 | 2000 05 10 | 704 | 0.5− | 0.9+ | 2004 04 14 | 691 | 0.1+ | 0.2− | | |
| 2000 04 05 | 704 | 0.6+ | 1.2+ | 2000 05 10 | 704 | 0.6+ | 1.5+ | 2004 04 16 | 704 | 0.3+ | 0.2+ | | |
| 2000 04 05 | 704 | 1.8+ | 1.7+ | 2002 11 07 | 291 | 0.3+ | 0.5+ | 2004 04 16 | 704 | 1.0+ | 1.0− | | |
| 2000 04 06 | 704 | 0.7+ | 0.5− | 2002 11 07 | 291 | 0.1− | 0.4+ | 2004 04 16 | 704 | 0.8+ | 0.4+ | | |
| 2000 04 06 | 704 | 0.1+ | 1.5− | 2002 11 07 | 291 | 0.3− | 0.5+ | 2004 04 16 | 704 | 0.6+ | 0.5− | | |
| 2000 04 06 | 704 | 0.3− | 0.3+ | 2004 03 16 | 703 | 1.0− | 0.5+ | 2004 04 20 | 704 | 0.2− | 0.3− | | |
| 2000 04 06 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 703 | 0.6− | 0.1+ | 2004 04 20 | 704 | 0.0 | 0.3+ | | |
| 2000 04 24 | 699 | 0.2− | 0.1+ | 2004 03 16 | 703 | 0.3+ | 0.1+ | 2004 04 20 | 704 | 0.1+ | 0.0 | | |
| 2000 04 24 | 699 | 0.7− | 0.1+ | 2004 03 16 | 703 | 0.1+ | 0.4+ | 2004 04 23 | 691 | 0.1− | 0.0 | | |
| 2000 04 24 | 699 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2004 04 23 | 691 | 0.0 | 0.2− | | |
| 2000 04 24 | 699 | 0.8− | 0.2− | 2004 03 18 | 704 | 0.6+ | 0.2+ | 2004 04 23 | 691 | 0.1− | 0.1− | | |
| 2000 04 25 | 699 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2005 07 28 | A50 | 0.1+ | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 699 | 0.5− | 0.3− | 2004 03 18 | 704 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.2− | 0.5+ | | |
| 2000 04 25 | 699 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.7− | 1.4+ | 2005 07 29 | 644 | 0.3− | 0.7+ | | |
| 2000 04 25 | 699 | 0.4+ | 0.3− | 2004 03 20 | 704 | 0.4− | 0.5− | 2005 07 29 | 644 | 0.8− | 0.6+ | | |
| 2000 04 29 | 704 | 0.2− | 0.3− | 2004 03 20 | 704 | 0.1− | 0.5− | 2005 08 06 | 644 | 0.4− | 0.4+ | | |
| 2000 04 29 | 704 | 0.7+ | 0.0 | 2004 03 20 | 704 | 0.2− | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.7+ | | |
| 2000 04 29 | 704 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.5+ | 2005 08 06 | 644 | 0.1+ | 0.9+ | | |
| 2000 04 29 | 704 | 0.6− | 1.7− | 2004 03 20 | 704 | 0.1− | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2000 04 29 | 704 | 0.2+ | 0.2+ | 2004 03 27 | 704 | 1.2+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2000 05 07 | 704 | 0.6− | 0.6− | 2004 03 27 | 704 | 0.7+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2000 05 07 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4+ | | |
| 2000 05 07 | 704 | 0.0 | 1.7+ | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2006 11 12 | 703 | 0.6− | 0.2+ | | |
| 2000 05 07 | 704 | 0.7+ | 1.6+ | 2004 03 27 | 704 | 0.7+ | 0.3− | 2006 11 12 | 703 | 0.1+ | 0.7− | | |
| 2000 05 09 | 704 | 0.5− | 0.3+ | 2004 03 31 | 704 | 0.4− | 0.3− | 2006 11 12 | 703 | 0.2+ | 0.4− | | |
| 2000 05 09 | 704 | 0.7+ | 0.5+ | 2004 03 31 | 704 | 0.9− | 0.1+ | 2006 11 12 | 703 | 1.4+ | 1.1+ | | |
| 2000 05 09 | 704 | 0.3+ | 0.5+ | 2004 03 31 | 704 | 0.2− | 0.1+ | 2006 11 21 | G96 | 1.7− | 1.8+ | | |
| 2000 05 09 | 704 | 0.7+ | 0.0 | 2004 03 31 | 704 | 0.4− | 0.6− | 2006 11 21 | G96 | 0.0 | 0.1+ | | |
| 2000 05 09 | 704 | 0.1− | 0.6+ | 2004 03 31 | 704 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.0 | | |
| 2000 05 10 | 704 | 0.0 | 0.6+ | 2004 04 14 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 1.4− | 2.2+ | | |

**(138317)∗ 2000 GN$_{74}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.72192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21812322 | $\omega$ | 106.03042 | | +0.70451962 | +0.70915906 | |
| $a$ | 2.7331792 | $\Omega$ | 208.82041 | | −0.67085851 | +0.65293184 | |
| $e$ | 0.1747719 | $i$ | 3.24699 | | −0.23151882 | +0.26603277 | |
| $P$ | 4.52 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.0 | 0.5+ | 2000 06 01 | 608 | 0.1− | 0.2+ | 2004 02 26 | 704 | (1.5+ | 0.1−) | | |
| 2000 04 05 | 699 | 0.9+ | 0.1− | 2000 06 01 | 608 | 0.2+ | 0.3+ | 2004 03 12 | 644 | 0.0 | 0.5+ | | |
| 2000 04 05 | 699 | 1.0− | 0.7+ | 2001 07 22 | 704 | 0.8+ | 1.1+ | 2004 03 12 | 644 | 0.1+ | 0.5+ | | |
| 2000 04 05 | 699 | 0.3− | 0.1+ | 2001 07 22 | 704 | 0.0 | 1.0+ | 2004 03 12 | 644 | 0.2+ | 0.3+ | | |
| 2000 04 05 | 691 | 0.7− | 0.6+ | 2001 07 22 | 704 | 1.2+ | 1.3+ | 2004 03 15 | 691 | 0.1− | 0.3+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.8+ | 2001 07 22 | 704 | 0.7+ | 1.4+ | 2004 03 15 | 691 | 0.0 | 0.3+ | | |
| 2000 04 05 | 691 | 0.7− | 0.5+ | 2001 08 24 | 704 | 1.0− | 1.0+ | 2004 03 15 | 691 | 0.1− | 0.3+ | | |
| 2000 04 05 | 704 | 0.8− | 0.5+ | 2001 08 24 | 704 | 0.1+ | 0.9+ | 2004 03 16 | 704 | 0.8+ | 0.3− | | |
| 2000 04 05 | 691 | 0.6− | 0.6+ | 2001 08 24 | 704 | 0.5− | 0.8+ | 2004 03 16 | 704 | (0.6− | 2.9+) | | |
| 2000 04 05 | 704 | 1.0+ | 0.5− | 2001 09 16 | 704 | 0.7− | 0.4+ | 2004 03 16 | 704 | 1.3+ | 0.3+ | | |
| 2000 04 05 | 704 | 0.5+ | 0.4− | 2001 09 16 | 704 | 0.6− | 0.5+ | 2004 03 16 | 704 | 0.5+ | 0.3+ | | |
| 2000 04 06 | 704 | 0.8+ | 0.2+ | 2001 09 16 | 704 | 0.6− | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.7+ | | |
| 2000 04 06 | 704 | 0.5+ | 1.1− | 2001 09 16 | 704 | 0.9− | 0.5+ | 2004 03 18 | 704 | 0.0 | 1.2+ | | |
| 2000 04 06 | 704 | 0.4+ | 0.2− | 2001 09 18 | 699 | 0.5+ | 0.6+ | 2004 03 18 | 704 | 0.5+ | 0.5+ | | |
| 2000 04 06 | 704 | 0.3+ | 0.2− | 2001 09 18 | 699 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.7+ | | |
| 2000 04 06 | 704 | 0.0 | 0.3− | 2001 09 18 | 699 | 0.5+ | 0.7+ | 2004 03 20 | 704 | 0.2+ | 0.4+ | | |
| 2000 04 24 | 699 | 0.4− | 0.2+ | 2001 09 18 | 699 | 0.4+ | 0.6+ | 2004 03 20 | 704 | 0.1− | 0.2− | | |
| 2000 04 24 | 699 | 0.1+ | 0.5+ | 2001 09 19 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.6+ | 0.6+ | | |
| 2000 04 24 | 699 | 0.4+ | 0.3+ | 2001 09 19 | 704 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.9+ | | |
| 2000 04 24 | 699 | 0.4+ | 0.5+ | 2001 09 19 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 704 | 1.0+ | 1.1+ | | |
| 2000 04 29 | 704 | 0.7+ | 0.9+ | 2001 09 19 | 704 | 0.1− | 0.4+ | 2004 03 26 | 699 | 0.9− | 0.3− | | |
| 2000 04 29 | 704 | 0.7+ | 0.4+ | 2001 09 19 | 704 | 0.3− | 0.3+ | 2004 03 26 | 699 | (1.6− | 0.7+) | | |
| 2000 04 29 | 704 | 0.5+ | 0.6+ | 2001 09 19 | 342 | 0.4+ | 0.2− | 2004 03 26 | 699 | 0.1− | 1.0+ | | |
| 2000 04 29 | 704 | 0.0 | 0.5+ | 2001 09 19 | 342 | 0.4+ | 0.4− | 2004 03 26 | 699 | 0.3+ | 0.4+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.3+ | 2001 09 20 | 704 | 1.2+ | 0.4+ | 2004 03 27 | 704 | 0.0 | 1.4+ | | |
| 2000 04 29 | 704 | 0.2− | 0.4+ | 2001 09 20 | 704 | 0.6+ | 0.6+ | 2004 03 27 | 704 | 1.1+ | 0.6+ | | |
| 2000 04 29 | 704 | 1.0− | 1.4+ | 2001 09 20 | 704 | 0.8+ | 0.2+ | 2004 03 27 | 704 | 0.7+ | 1.4+ | | |
| 2000 04 29 | 704 | 0.4+ | 0.1+ | 2001 09 20 | 704 | 1.3+ | 0.0 | 2004 03 27 | 704 | 0.2+ | 1.2+ | | |
| 2000 04 29 | 704 | 1.3+ | 0.3+ | 2001 09 20 | 704 | 1.3+ | 0.2+ | 2004 03 27 | 704 | 0.6− | 0.1+ | | |
| 2000 04 29 | 704 | 0.8+ | 0.5+ | 2001 09 24 | 704 | 0.2− | 0.8+ | 2004 03 31 | 691 | 0.3+ | 0.3+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.1+ | 2001 09 24 | 704 | 0.0 | 0.8+ | 2004 03 31 | 691 | 0.1− | 0.4+ | | |
| 2000 04 29 | 704 | 0.5+ | 0.8+ | 2001 09 24 | 704 | 0.4− | 0.8+ | 2004 03 31 | 691 | 0.0 | 0.4+ | | |
| 2000 04 29 | 704 | 0.4+ | 0.6+ | 2001 09 24 | 704 | 0.5− | 0.5+ | 2005 01 25 | 809 | 0.5− | 0.5− | | |
| 2000 04 29 | 557 | 0.2− | 0.1− | 2001 09 24 | 704 | (0.2+ | 2.1+) | 2005 01 25 | 809 | 0.2− | 0.1− | | |
| 2000 04 29 | 557 | 0.2− | 0.6+ | 2001 09 25 | 699 | 0.2− | 0.4+ | 2005 01 25 | 809 | 0.2+ | 0.0 | | |
| 2000 04 29 | 557 | 0.4− | 0.2+ | 2001 09 25 | 333 | 1.0+ | 0.0 | 2005 06 11 | 704 | 0.0 | 0.5− | | |
| 2000 04 30 | 557 | 0.2+ | 0.4+ | 2001 09 25 | 699 | 0.1− | 0.9+ | 2005 06 11 | 704 | 0.2− | 0.2+ | | |
| 2000 04 30 | 704 | 0.5− | 0.3+ | 2001 09 25 | 333 | 0.3+ | 0.3+ | 2005 06 11 | 704 | 0.5+ | 0.3+ | | |
| 2000 04 30 | 704 | 0.5+ | 0.7+ | 2001 09 25 | 699 | 0.2− | 0.4+ | 2005 06 11 | 704 | 0.1− | 0.3− | | |
| 2000 04 30 | 704 | 1.0− | 0.5+ | 2001 09 25 | 333 | 0.5+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.1− | | |
| 2000 04 30 | 704 | 0.5+ | 0.5+ | 2001 09 25 | 699 | 0.3− | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.0 | | |
| 2000 04 30 | 704 | 0.3− | 0.2+ | 2001 10 11 | 644 | 1.1− | 1.1+ | 2006 09 28 | G96 | 0.1− | 0.2− | | |
| 2000 04 30 | 704 | 1.2+ | 0.6+ | 2001 10 11 | 644 | 1.3− | 1.2+ | 2006 09 28 | G96 | 0.0 | 0.3− | | |
| 2000 04 30 | 704 | 0.5+ | 0.4+ | 2001 10 11 | 644 | 1.3− | 1.3+ | 2006 10 20 | 644 | 0.3− | 0.2+ | | |
| 2000 04 30 | 704 | 0.8+ | 0.9+ | 2001 10 13 | 704 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.7+ | | |
| 2000 04 30 | 704 | 1.1+ | 1.0+ | 2001 10 13 | 704 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.4+ | | |
| 2000 04 30 | 704 | 0.1+ | 0.1− | 2001 10 13 | 704 | 0.7− | 0.3+ | 2006 10 23 | 704 | 1.0− | 0.4+ | | |
| 2000 04 30 | 557 | 0.3− | 0.4+ | 2001 10 13 | 683 | 0.5− | 0.2+ | 2006 10 23 | 704 | 0.8− | 0.4− | | |
| 2000 04 30 | 557 | 0.5− | 0.9+ | 2001 10 13 | 699 | 0.7− | 0.6+ | 2006 10 23 | 704 | 0.2− | 0.5+ | | |
| 2000 04 30 | 557 | 0.3− | 1.1+ | 2001 10 13 | 704 | 0.4− | 0.3+ | 2006 10 23 | 704 | 0.1+ | 0.1+ | | |
| 2000 04 30 | 557 | 0.6− | 0.7+ | 2001 10 13 | 683 | 0.7− | 0.3+ | 2006 11 02 | 703 | (1.8+ | 3.2+) | | |
| 2000 05 01 | 704 | 0.4+ | 0.9+ | 2001 10 13 | 699 | 0.7− | 0.4+ | 2006 11 02 | 703 | 0.3+ | 0.8+ | | |
| 2000 05 01 | 704 | 0.2+ | 0.2+ | 2001 10 13 | 683 | (0.6+ | 1.8+) | 2006 11 02 | 703 | 0.4+ | 1.1+ | | |
| 2000 05 01 | 699 | 0.6+ | 0.1+ | 2001 10 13 | 704 | 1.0− | 0.7+ | 2006 11 02 | 703 | 0.6+ | 0.5− | | |
| 2000 05 01 | 704 | 0.9+ | 0.7+ | 2001 10 13 | 699 | 0.5− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.0 | | |
| 2000 05 01 | 699 | 0.1+ | 1.1+ | 2001 10 13 | 699 | 0.1+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 2000 05 01 | 704 | 0.1+ | 0.5+ | 2001 10 14 | 683 | (1.8+ | 2.0+) | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 2000 05 01 | 704 | 0.3− | 0.1− | 2001 10 14 | 683 | 0.5− | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.4+ | | |
| 2000 05 01 | 699 | 0.9− | 1.3+ | 2001 10 14 | 683 | (1.5− | 0.3−) | 2006 11 11 | 703 | 0.5+ | 0.1− | | |
| 2000 05 01 | 699 | 0.8− | 0.5+ | 2001 10 16 | 704 | 0.9− | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.3− | | |
| 2000 05 02 | 704 | (0.2+ | 2.5+) | 2001 10 16 | 704 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.7+ | | |
| 2000 05 02 | 704 | 0.3+ | 0.3+ | 2001 10 16 | 704 | 0.1− | 0.7− | 2006 11 15 | 691 | 0.2− | 0.1+ | | |
| 2000 05 02 | 704 | 1.7+ | 1.8+ | 2001 10 16 | 704 | 0.1+ | 0.6− | 2006 11 15 | 691 | 0.1− | 0.2+ | | |
| 2000 05 02 | 704 | 0.1− | 0.4+ | 2001 10 16 | 704 | 1.4− | 0.6− | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2000 05 02 | 704 | 0.4− | 0.8+ | 2001 10 18 | 644 | (1.4− | 1.9+) | 2006 11 17 | 644 | 0.1− | 0.1− | | |
| 2000 05 02 | 704 | 0.3+ | 0.3+ | 2001 10 18 | 644 | (1.4− | 1.9+) | 2006 11 17 | 644 | 0.1− | 0.1+ | | |
| 2000 05 02 | 704 | 0.1+ | 0.2− | 2001 10 18 | 644 | (1.2− | 2.0+) | 2006 11 17 | 644 | 0.1− | 0.2+ | | |
| 2000 05 02 | 704 | 0.8− | 0.1+ | 2001 10 21 | 704 | 0.5+ | 1.3+ | 2006 11 18 | 704 | (0.6+ | 1.9−) | | |
| 2000 05 03 | 704 | 1.2+ | 1.2+ | 2001 10 21 | 704 | (0.1− | 1.5+) | 2006 11 18 | 704 | 0.9+ | 0.4− | | |
| 2000 05 03 | 704 | 0.2− | 1.0− | 2001 10 21 | 704 | 0.2+ | 1.2+ | 2006 11 18 | 704 | 1.4+ | 1.1+ | | |
| 2000 05 03 | 704 | 0.3+ | 1.6− | 2001 10 21 | 704 | 0.1− | 1.2+ | 2006 11 18 | 704 | (1.0+ | 2.2−) | | |
| 2000 05 03 | 704 | 0.5− | 1.0+ | 2001 10 21 | 704 | 0.1− | 1.2+ | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2000 05 03 | 704 | 0.4− | 0.4− | 2001 11 17 | 291 | 1.1− | 0.9+ | 2006 11 19 | 691 | 0.0 | 0.3+ | | |
| 2000 05 06 | 704 | 0.5+ | 0.5+ | 2001 11 17 | 291 | 1.1− | 0.7+ | 2006 11 19 | 691 | 0.3+ | 0.3− | | |
| 2000 05 06 | 704 | 0.1− | 0.9+ | 2001 11 17 | 291 | 0.8− | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.3+ | | |
| 2000 05 06 | 704 | 0.3+ | 1.4+ | 2001 11 18 | 291 | 0.3+ | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2000 05 07 | 704 | 0.7+ | 0.2+ | 2001 11 18 | 291 | 0.3+ | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2000 05 07 | 704 | 0.3+ | 0.5+ | 2001 11 18 | 291 | 0.5+ | 0.5+ | 2006 11 27 | 703 | 1.8− | 1.3+ | | |
| 2000 05 07 | 704 | 0.0 | 0.8+ | 2004 02 19 | 704 | (1.7+ | 0.4+) | 2006 11 27 | 703 | 1.0+ | 2.2+ | | |
| 2000 05 07 | 704 | 0.2+ | 0.4+ | 2004 02 19 | 704 | 0.8+ | 0.8− | 2006 11 27 | 703 | 0.2+ | 0.3+ | | |
| 2000 05 07 | 704 | 0.3+ | 0.5+ | 2004 02 19 | 704 | (2.9+ | 0.3−) | 2006 11 27 | 703 | 2.6− | 0.1− | | |
| 2000 05 08 | 704 | 0.7+ | 1.0+ | 2004 02 19 | 704 | 1.2+ | 0.2− | 2006 11 29 | 704 | 0.8+ | 0.5+ | | |
| 2000 05 08 | 704 | 0.4− | 0.7+ | 2004 02 19 | 704 | 0.9+ | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.6+ | | |
| 2000 05 08 | 704 | (0.8+ | 2.4+) | 2004 02 25 | 704 | (1.9+ | 0.0 ) | 2006 11 29 | 704 | 0.4+ | 0.6+ | | |
| 2000 05 08 | 704 | 0.4+ | 1.1+ | 2004 02 25 | 704 | 0.9+ | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.5+ | | |
| 2000 05 22 | 699 | 1.1+ | 1.5+ | 2004 02 25 | 704 | 0.5+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.1+ | | |
| 2000 05 22 | 699 | 1.8+ | 0.8+ | 2004 02 26 | 704 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.6− | 0.4+ | | |
| 2000 05 22 | 699 | 0.9+ | 0.2+ | 2004 02 26 | 704 | 0.2− | 0.4+ | 2006 12 01 | 691 | 0.0 | 0.4+ | | |
| 2000 05 22 | 699 | 1.2+ | 1.6+ | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 12 01 | 691 | 0.3− | 0.2+ | | |
| 2000 06 01 | 608 | 0.5− | 0.4+ | 2004 02 26 | 704 | 0.7+ | 0.2+ | | | | | | |

**(138318)∗ 2000 GZ$_{74}$ = 2004 CW$_{95}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60655)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.97159 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22893993 | $\omega$ | 95.42806 | | −0.81828385 | −0.57177099 | |
| $a$ | 2.6463971 | $\Omega$ | 49.71326 | | +0.49195203 | −0.74977058 | |
| $e$ | 0.1131352 | $i$ | 4.44137 | | +0.29731252 | −0.33304956 | |
| $P$ | 4.31 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.5+ | 0.2− | 2004 02 18 | 704 | 1.3+ | 0.3+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | |
| 2000 04 05 | 704 | 0.1− | 1.0− | 2004 02 18 | 704 | 0.1+ | 0.2− | 2004 03 26 | 691 | 0.4− | 0.1− | |
| 2000 04 05 | 704 | 0.2− | 0.2+ | 2004 02 18 | 704 | 0.9+ | 0.2− | 2004 03 26 | 691 | 0.3− | 0.1− | |
| 2000 04 05 | 704 | 1.2− | 0.3− | 2004 02 18 | 704 | (1.6+ | 0.4+) | 2004 03 26 | 691 | 0.2− | 0.1− | |
| 2000 04 06 | 704 | 1.4+ | 1.1+ | 2004 02 18 | 608 | 0.3+ | 0.2− | 2004 03 28 | 703 | 0.4+ | 0.6+ | |
| 2000 04 06 | 704 | 0.2− | 0.2+ | 2004 02 18 | 608 | 0.3− | 0.6− | 2004 03 28 | 703 | 0.2− | 0.7+ | |
| 2000 04 06 | 704 | 0.2+ | 0.4+ | 2004 02 18 | 608 | 0.2+ | 0.7− | 2004 03 28 | 703 | 0.3+ | 0.6+ | |
| 2000 04 06 | 704 | 0.1− | 1.1+ | 2004 02 25 | 704 | 0.6+ | 0.6+ | 2004 03 28 | 703 | 0.3− | 1.2− | |
| 2000 04 24 | 699 | 0.2+ | 0.1− | 2004 02 25 | 704 | 0.2− | 0.9+ | 2004 04 12 | 703 | (1.6+ | 1.0+) | |
| 2000 04 24 | 699 | 0.5+ | 1.1+ | 2004 02 25 | 704 | (1.6− | 1.4+) | 2004 04 12 | 703 | 0.6− | 1.1+ | |
| 2000 04 24 | 699 | 0.1+ | 0.5+ | 2004 02 25 | 704 | 1.3− | 0.3+ | 2004 04 12 | 703 | 1.1+ | 0.1− | |
| 2000 04 24 | 699 | 0.1+ | 0.3− | 2004 02 25 | 704 | 1.3+ | 0.1− | 2004 04 12 | 703 | 0.2− | 0.4+ | |
| 2000 04 27 | 704 | 1.0+ | 0.9− | 2004 03 11 | 644 | 0.7+ | 0.4+ | 2004 04 15 | 704 | 0.7− | 1.0+ | |
| 2000 04 27 | 704 | 1.3+ | 1.0+ | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2004 04 15 | 704 | 0.2+ | 0.4+ | |
| 2000 04 27 | 704 | 1.7+ | 0.6+ | 2004 03 11 | 644 | 0.3+ | 0.3+ | 2004 04 15 | 704 | 0.4+ | 0.4+ | |
| 2000 04 27 | 704 | 0.6+ | 0.1− | 2004 03 15 | 703 | 0.1− | 0.4+ | 2004 04 15 | 704 | 0.3− | 0.6− | |
| 2000 04 29 | 704 | 0.5− | 0.5+ | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2004 04 15 | 704 | 0.4− | 0.1− | |
| 2000 04 29 | 704 | 0.2+ | 0.0 | 2004 03 15 | 703 | 0.1+ | 0.0 | 2004 04 20 | 704 | 0.7+ | 0.5+ | |
| 2000 04 29 | 704 | 0.2+ | 0.5− | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2004 04 20 | 704 | 0.8+ | 0.1− | |
| 2000 05 05 | 704 | 1.0− | 0.0 | 2004 03 15 | 703 | 0.1− | 0.1− | 2004 04 20 | 704 | 0.4− | 1.1+ | |
| 2000 05 05 | 704 | 1.1− | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.7+ | |
| 2000 05 05 | 704 | 0.3− | 0.1+ | 2004 03 15 | 703 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.8+ | |
| 2000 05 10 | 704 | 0.3− | 0.2+ | 2004 03 15 | 704 | 0.4+ | 1.4+ | 2006 09 28 | 691 | 0.4+ | 0.8+ | |
| 2000 05 10 | 704 | 1.2+ | 1.0+ | 2004 03 15 | 704 | 0.4+ | 0.0 | 2006 10 02 | 691 | 0.3− | 0.5+ | |
| 2000 05 10 | 704 | 0.3− | 0.7+ | 2004 03 16 | 333 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.6− | 0.5+ | |
| 2000 05 10 | 704 | 0.3− | 0.4+ | 2004 03 16 | 333 | 1.1− | 0.2− | 2006 10 02 | 691 | 0.5− | 0.4+ | |
| 2000 05 10 | 704 | 0.3− | 1.1+ | 2004 03 16 | 333 | 0.0 | 0.3− | 2006 10 10 | 644 | 0.2− | 0.6+ | |
| 2000 05 22 | 699 | 0.7+ | 1.2+ | 2004 03 16 | 608 | 0.2− | 0.7− | 2006 10 10 | 644 | 0.3+ | 0.2+ | |
| 2000 05 22 | 699 | 0.5+ | 0.1+ | 2004 03 16 | 608 | 0.5− | 0.6− | 2006 10 10 | 644 | 0.1− | 0.5+ | |
| 2000 05 22 | 699 | 0.6− | 1.3+ | 2004 03 16 | 608 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.5+ | |
| 2000 05 22 | 699 | 0.0 | 0.5+ | 2004 03 17 | 704 | 0.9+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.6+ | |
| 2002 11 06 | 704 | (0.9+ | 1.8−) | 2004 03 17 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.8+ | |
| 2002 11 06 | 704 | 0.3− | 1.5− | 2004 03 17 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 1.5+ | |
| 2002 11 06 | 704 | 0.2− | 0.9− | 2004 03 17 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.0 | |
| 2002 11 06 | 704 | (0.0 | 1.8−) | 2004 03 17 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 1.3+ | |
| 2002 11 06 | 704 | 0.0 | 1.1− | 2004 03 17 | 704 | 0.7+ | 1.0+ | 2006 10 16 | 703 | 0.9− | 0.3− | |
| 2002 12 11 | 291 | 0.7− | 0.1− | 2004 03 17 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.8− | 0.9− | |
| 2002 12 11 | 291 | 0.1+ | 0.8+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.0 | |
| 2002 12 11 | 291 | 0.9+ | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 703 | (0.8− | 1.6+) | |
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.7+ | 0.1− | 2006 10 22 | 703 | 1.3− | 0.1+ | |
| 2003 12 19 | 691 | 0.1+ | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1+ | |
| 2003 12 19 | 691 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.1+ | |
| 2004 02 13 | 644 | 0.3+ | 1.2− | 2004 03 20 | 704 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.1− | |
| 2004 02 13 | 644 | 0.3− | 0.1− | 2004 03 20 | 704 | 0.8− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2+ | |
| 2004 02 13 | 644 | 0.1+ | 0.4− | 2004 03 20 | 704 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1+ | |
| 2004 02 16 | 703 | (2.0+ | 0.2−) | 2004 03 22 | 704 | 0.7− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.1+ | |
| 2004 02 16 | 703 | 0.4+ | 1.4+ | 2004 03 22 | 704 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.5+ | |
| 2004 02 16 | 703 | 0.4+ | 0.5− | 2004 03 22 | 704 | 0.1+ | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.0 | |
| 2004 02 16 | 703 | 0.3+ | 1.1+ | 2004 03 22 | 704 | 0.0 | 0.1+ | | | | | |

## (138319)∗ 2000 GL$_{77}$ = 2004 FS$_{61}$

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60656)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 205.59157 | | (2000.0) | | | |
| $n$ | 0.23625533 | $\omega$ | 161.52339 | | −0.95824542 | +0.28424047 |
| $a$ | 2.5914827 | $\Omega$ | 35.03814 | | −0.26872464 | −0.85786845 |
| $e$ | 0.1150201 | $i$ | 3.11463 | | −0.09773837 | −0.42809938 |
| $P$ | 4.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.4− | 0.5+ | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2004 04 12 | 699 | 0.1+ | 0.7− | |
| 1993 09 15 | 691 | 0.2− | 0.5+ | 2004 02 23 | 704 | 0.3− | 0.9+ | 2006 09 25 | G96 | 0.1+ | 0.0 | |
| 1993 09 15 | 691 | 0.7− | 1.0+ | 2004 02 23 | 704 | 1.3+ | 0.9+ | 2006 09 25 | G96 | 0.4+ | 0.1− | |
| 2000 04 05 | 704 | 0.9+ | 0.4− | 2004 03 12 | 644 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.4− | |
| 2000 04 05 | 704 | 0.9+ | 0.5+ | 2004 03 12 | 644 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.4− | |
| 2000 04 05 | 704 | 0.0 | 1.6+ | 2004 03 12 | 644 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.2− | |
| 2000 04 06 | 704 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.9− | 2006 09 27 | G96 | 0.4+ | 0.4− | |
| 2000 04 06 | 704 | 1.3− | 0.7+ | 2004 03 19 | 704 | 0.7− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2− | |
| 2000 04 06 | 704 | 0.1+ | 1.0+ | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.4− | 0.2− | |
| 2000 04 06 | 704 | 0.2+ | 0.8+ | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.4− | 0.3+ | |
| 2000 04 06 | 704 | 0.2+ | 1.1+ | 2004 03 22 | 704 | 0.5+ | 0.6− | 2006 10 12 | 691 | 0.0 | 0.3+ | |
| 2000 04 07 | 691 | 0.5+ | 0.0 | 2004 03 22 | 704 | 0.5+ | 0.4− | 2006 10 12 | 691 | 0.2− | 0.4+ | |
| 2000 04 07 | 691 | 0.3+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.2− | 0.0 | |
| 2000 04 07 | 691 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.3− | |
| 2000 04 26 | 699 | 0.4− | 0.5+ | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.4+ | 0.0 | |
| 2000 04 26 | 699 | 0.7− | 0.5+ | 2004 03 26 | 691 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.2− | |
| 2000 04 26 | 699 | 0.2+ | 1.2+ | 2004 03 26 | 691 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.4− | 0.2+ | |
| 2000 04 26 | 699 | 0.6+ | 0.9+ | 2004 03 28 | 704 | (0.2− | 2.0+) | 2006 10 16 | 691 | 0.1− | 0.2+ | |
| 2002 10 31 | 291 | 0.7− | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.4+ | |
| 2002 10 31 | 291 | 0.4− | 0.4− | 2004 03 28 | 704 | 0.7+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.1+ | |
| 2002 10 31 | 291 | 0.9− | 0.3+ | 2004 03 28 | 704 | 0.8+ | 1.3+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | |
| 2002 12 09 | 291 | 0.7+ | 0.1+ | 2004 03 28 | 704 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.2+ | |
| 2002 12 09 | 291 | 0.5+ | 0.2+ | 2004 04 12 | 699 | 1.0− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 2002 12 09 | 291 | 0.9+ | 0.2+ | 2004 04 12 | 699 | 0.4− | 0.6− | 2006 11 01 | 691 | 0.2− | 0.2+ | |
| 2004 02 23 | 704 | 0.2− | 0.2− | 2004 04 12 | 699 | 0.0 | 0.3+ | | | | | |

## (138320)∗ 2000 GR$_{79}$

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 233.31304 | | (2000.0) | | | |
| $n$ | 0.22586886 | $\omega$ | 109.05012 | | −0.76222858 | −0.64346016 |
| $a$ | 2.6703313 | $\Omega$ | 31.01775 | | +0.53050807 | −0.68336242 |
| $e$ | 0.1374003 | $i$ | 7.86055 | | +0.37090266 | −0.34492727 |
| $P$ | 4.36 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.0 | 0.1+ | 2002 11 22 | 644 | 0.2+ | 1.5+ | 2004 03 20 | 704 | 0.6+ | 0.2− | |
| 2000 04 05 | 704 | 0.4− | 0.4− | 2002 11 22 | 644 | (0.3+ | 1.5+) | 2004 03 20 | 704 | 0.7+ | 0.3− | |
| 2000 04 05 | 704 | 1.4− | 0.5− | 2004 02 17 | 703 | 0.5− | 0.7− | 2004 03 22 | 704 | 0.2+ | 0.7+ | |
| 2000 04 06 | 704 | 0.3+ | 1.6− | 2004 02 17 | 703 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.0 | 0.6+ | |
| 2000 04 06 | 704 | 0.3+ | 0.8+ | 2004 02 17 | 703 | 0.9− | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.7+ | |
| 2000 04 06 | 704 | 0.0 | 0.1+ | 2004 02 17 | 703 | 0.2− | 0.4+ | 2004 03 22 | 704 | 0.1− | 1.1+ | |
| 2000 04 24 | 699 | 1.0+ | 0.6+ | 2004 02 17 | 608 | 1.0+ | 1.1− | 2004 03 22 | 704 | 0.2− | 0.4+ | |
| 2000 04 24 | 699 | 0.1+ | 0.5+ | 2004 02 17 | 608 | 0.9+ | 0.9− | 2004 03 27 | 691 | 0.4− | 0.1+ | |
| 2000 04 24 | 699 | 0.2− | 0.9+ | 2004 02 17 | 608 | 0.9+ | 0.9− | 2004 03 27 | 691 | 0.3− | 0.1+ | |
| 2000 04 24 | 699 | 0.0 | 0.4− | 2004 02 18 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 691 | 0.2− | 0.2+ | |
| 2000 04 25 | 699 | 0.3+ | 0.9+ | 2004 02 18 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 703 | 0.7+ | 1.2− | |
| 2000 04 25 | 699 | 0.0 | 1.1+ | 2004 02 18 | 704 | 0.3+ | 0.1+ | 2004 03 28 | 703 | 0.4+ | 0.5+ | |
| 2000 04 25 | 699 | 0.7+ | 0.6+ | 2004 02 18 | 704 | 0.1+ | 0.9+ | 2004 03 28 | 703 | 0.9+ | 0.1+ | |
| 2000 04 25 | 699 | 0.8+ | 0.5+ | 2004 02 18 | 704 | 0.2+ | 0.1+ | 2004 03 28 | 703 | 0.1− | 0.8+ | |
| 2000 05 03 | 704 | (3.5+ | 0.6−) | 2004 02 25 | 704 | (0.3+ | 1.6+) | 2004 04 25 | 699 | (1.0− | 1.5+) | |
| 2000 05 03 | 704 | 0.9+ | 0.2+ | 2004 02 25 | 704 | 0.9+ | 0.8+ | 2004 04 25 | 699 | 0.4− | 0.4− | |
| 2000 05 03 | 704 | 0.2− | 0.4+ | 2004 02 25 | 704 | 1.1+ | 0.1+ | 2004 04 25 | 699 | 1.1+ | 0.1− | |
| 2000 05 03 | 704 | 0.2+ | 1.3+ | 2004 02 25 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 699 | (0.3+ | 1.9−) | |
| 2002 10 02 | 704 | 0.1+ | 1.0+ | 2004 02 27 | 704 | 0.0 | 0.0 | 2004 05 21 | 704 | 0.2− | 0.6+ | |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2004 02 27 | 704 | 0.2+ | 0.1+ | 2004 05 21 | 704 | 0.3− | 0.2+ | |
| 2002 10 02 | 704 | 0.1− | 0.9− | 2004 02 27 | 704 | 1.2+ | 0.6− | 2004 05 21 | 704 | 0.8− | 0.6+ | |
| 2002 10 03 | 704 | 1.0− | 1.2+ | 2004 02 27 | 704 | 0.1+ | 0.3+ | 2004 05 21 | 704 | 0.2+ | 1.3+ | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 03 15 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.4+ | |
| 2002 10 03 | 704 | (0.4− | 1.6−) | 2004 03 15 | 704 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.6− | 1.1+ | |
| 2002 10 31 | 699 | 0.9− | 0.4− | 2004 03 15 | 704 | 0.2− | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.0 | |
| 2002 10 31 | 699 | 0.4− | 0.9− | 2004 03 15 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1− | 1.0+ | |
| 2002 10 31 | 699 | 0.0 | 0.3+ | 2004 03 15 | 691 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.3+ | |
| 2002 10 31 | 699 | 0.9− | 0.3+ | 2004 03 15 | 691 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.4+ | |
| 2002 11 02 | 049 | 0.1− | 0.2+ | 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.4− | 0.5+ | |
| 2002 11 02 | 049 | 0.1+ | 0.1− | 2004 03 15 | 106 | 0.4− | 0.6− | 2006 10 02 | G96 | 0.5+ | 0.2+ | |
| 2002 11 02 | 049 | 0.0 | 0.1− | 2004 03 15 | 106 | 0.7− | 0.3− | 2006 10 23 | 644 | 0.6− | 0.4+ | |
| 2002 11 06 | 704 | 0.0 | 0.4+ | 2004 03 15 | 106 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.5− | 0.7+ | |
| 2002 11 06 | 704 | 0.1+ | 0.7+ | 2004 03 20 | 704 | 0.8+ | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.7+ | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.1+ |
| 2002 11 22 | 644 | 0.5+ | 1.4+ | 2004 03 20 | 704 | 0.1+ | 0.6− |

**(138321)∗ 2000 GJ$_{80}$ = 2005 SQ$_{48}$**

Discovered 2000 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 88716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.88250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27485887 | $\omega$ | 202.19779 | | −0.99589047 | +0.08986612 | |
| $a$ | 2.3427694 | $\Omega$ | 342.94665 | | −0.07626622 | −0.89907867 | |
| $e$ | 0.1473721 | $i$ | 2.19583 | | −0.04884299 | −0.42846426 | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 691 | 0.3+ | 0.1− | 2000 04 08 | 704 | 1.2− | 2.0+ | 2003 01 05 | 704 | 0.5− | 0.6+ |
| 1994 09 12 | 691 | 0.3+ | 0.1+ | 2000 04 08 | 704 | 0.4+ | 0.5+ | 2003 01 05 | 704 | 0.9+ | 1.1+ |
| 1994 09 12 | 691 | 0.5− | 0.3− | 2000 04 08 | 704 | 1.5− | 0.9− | 2005 09 24 | 691 | 0.2+ | 0.3− |
| 1994 09 30 | 691 | 0.4− | 0.6− | 2000 04 08 | 704 | 0.3+ | 0.8+ | 2005 09 24 | 691 | 0.1+ | 0.4+ |
| 1994 09 30 | 691 | 0.2− | 0.1+ | 2000 04 08 | 704 | 1.3− | 0.2− | 2005 09 24 | 691 | 0.2+ | 0.3+ |
| 1994 09 30 | 691 | 0.5+ | 0.2+ | 2000 04 08 | 704 | 0.2+ | 0.2− | 2005 09 29 | 691 | 0.2+ | 0.1+ |
| 2000 04 06 | 704 | 0.3+ | 0.8+ | 2000 04 08 | 704 | 0.1− | 0.9+ | 2005 09 29 | 691 | 0.1+ | 0.1+ |
| 2000 04 06 | 704 | 0.5+ | 0.1+ | 2000 04 08 | 704 | 0.7+ | 0.4+ | 2005 09 29 | 691 | 0.2+ | 0.3+ |
| 2000 04 06 | 704 | 0.6+ | 0.1+ | 2000 04 08 | 704 | 0.3+ | 1.2− | 2005 10 09 | 691 | 0.2− | 0.2+ |
| 2000 04 06 | 704 | 0.5+ | 0.2+ | 2000 05 04 | 699 | 0.8+ | 0.7+ | 2005 10 09 | 691 | 0.5− | 0.4+ |
| 2000 04 06 | 704 | 0.5+ | 0.2+ | 2000 05 04 | 699 | 0.1− | 1.5+ | 2005 10 09 | 691 | 1.2− | 0.7+ |
| 2000 04 07 | 704 | 0.2+ | 1.0− | 2000 05 04 | 699 | 0.9− | 1.4+ | 2005 10 13 | 691 | 0.2− | 0.1− |
| 2000 04 07 | 704 | 0.6+ | 0.8+ | 2000 05 04 | 699 | 0.4− | 2.3+ | 2005 10 13 | 691 | 0.1+ | 0.1− |
| 2000 04 07 | 704 | 0.9+ | 0.4− | 2001 09 12 | 691 | 0.1+ | 0.6+ | 2005 10 13 | 691 | 0.3+ | 0.1− |
| 2000 04 07 | 704 | 0.6+ | 0.5+ | 2001 09 12 | 691 | 0.1+ | 0.6+ | 2005 10 22 | 644 | 0.2− | 0.0 |
| 2000 04 07 | 704 | 0.1+ | 0.4+ | 2001 09 12 | 691 | 0.0 | 0.7+ | 2005 10 22 | 644 | 0.8− | 0.3+ |
| 2000 04 07 | 704 | 0.5+ | 0.0 | 2001 09 21 | 704 | 1.2− | 0.4− | 2005 10 22 | 644 | 0.4− | 0.4+ |
| 2000 04 07 | 704 | 0.5+ | 1.0+ | 2001 09 21 | 704 | 0.1+ | 0.0 | 2005 10 28 | 599 | 0.3− | 0.4+ |
| 2000 04 07 | 704 | 0.7+ | 0.2+ | 2001 09 21 | 704 | 0.2+ | 0.4− | 2005 10 28 | 599 | 0.3− | 0.2− |
| 2000 04 08 | 704 | 0.6− | 0.1+ | 2001 09 21 | 704 | 0.3− | 0.4− | 2005 10 28 | 599 | 0.8− | 0.2+ |
| 2000 04 08 | 704 | 0.2+ | 1.1− | 2001 09 21 | 704 | 0.3+ | 0.4− | 2005 10 28 | 599 | 0.0 | 0.2− |
| 2000 04 08 | 704 | 0.4+ | 0.4+ | 2003 01 05 | 704 | 0.4+ | 0.2+ | | | | |
| 2000 04 08 | 704 | 0.1+ | 0.1− | 2003 01 05 | 704 | 0.1− | 0.7+ | | | | |

**(138322)∗ 2000 GP$_{81}$**

Discovered 2000 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.98493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23517865 | $\omega$ | 322.88412 | | −0.96181264 | −0.26251075 | |
| $a$ | 2.5993861 | $\Omega$ | 202.27548 | | +0.27324151 | −0.93742282 | |
| $e$ | 0.1308783 | $i$ | 11.79580 | | −0.01598544 | −0.22874999 | |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 09 | 691 | 0.4− | 0.4+ | 2002 11 22 | 644 | 0.3+ | 0.3+ | 2004 04 23 | 691 | 0.1− | 0.2+ |
| 1996 06 09 | 691 | 0.4+ | 0.4+ | 2002 12 01 | 704 | 0.1− | 0.8− | 2004 04 23 | 691 | 0.6+ | 0.8+ |
| 1996 06 09 | 691 | 0.3− | 0.4+ | 2002 12 01 | 704 | 0.4+ | 0.1+ | 2004 04 23 | 691 | 0.3− | 0.4+ |
| 2000 04 05 | 699 | 0.1− | 0.4− | 2002 12 01 | 704 | 1.2+ | 0.6+ | 2005 06 29 | 644 | 0.1− | 0.5+ |
| 2000 04 05 | 699 | 0.2+ | 0.5− | 2002 12 01 | 704 | (0.8+ | 2.2+) | 2005 06 29 | 644 | 0.0 | 0.6+ |
| 2000 04 05 | 699 | 0.4− | 0.3+ | 2004 01 23 | 704 | 0.7+ | 0.2+ | 2005 06 29 | 644 | 0.2+ | 0.5+ |
| 2000 04 05 | 699 | 1.0− | 0.1− | 2004 01 23 | 704 | 0.8+ | 0.5− | 2006 09 26 | G96 | 0.1− | 0.3+ |
| 2000 04 05 | 704 | 0.1− | 0.2− | 2004 01 23 | 704 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2000 04 05 | 704 | (0.2+ | 3.1−) | 2004 01 23 | 704 | 0.2+ | 1.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 0.6− | 0.3+ | 2004 03 16 | 703 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 0.1− | 0.1− | 2004 03 16 | 703 | 1.2− | 0.6− | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2000 04 06 | 704 | 0.3− | 0.2− | 2004 03 16 | 703 | 0.9− | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2000 04 06 | 704 | 0.2+ | 1.4+ | 2004 03 16 | 703 | (1.6− | 0.7+) | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 0.1− | 0.5+ | 2004 03 17 | 704 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2000 04 06 | 704 | 0.2− | 1.5+ | 2004 03 17 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2000 04 07 | 704 | 0.6+ | 0.0 | 2004 03 17 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2000 04 07 | 704 | 0.0 | 0.4+ | 2004 03 17 | 704 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.5+ |
| 2000 04 07 | 704 | 0.7+ | 1.2+ | 2004 03 17 | 704 | 0.8+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.4+ |
| 2000 04 07 | 704 | 1.5+ | 1.1+ | 2004 03 19 | 704 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.9+ |
| 2000 04 24 | 699 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.4− | 0.2+ |
| 2000 04 24 | 699 | 0.3+ | 0.9+ | 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2000 04 24 | 699 | 1.1+ | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.5+ |
| 2000 04 24 | 699 | 0.3− | 1.1+ | 2004 03 27 | 699 | 0.4− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.4+ |
| 2000 05 01 | 699 | 1.6− | 0.1− | 2004 03 27 | 699 | 0.8− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2000 05 01 | 699 | 0.1− | 0.8+ | 2004 03 27 | 699 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 05 01 | 699 | 0.9− | 0.5+ | 2004 03 27 | 699 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2000 05 01 | 699 | 0.5− | 0.4+ | 2004 03 31 | 704 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2000 05 05 | 704 | 0.1+ | 0.1− | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.5+ | 0.3+ |
| 2000 05 05 | 704 | 0.0 | 0.5+ | 2004 03 31 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.6− | 0.6+ |
| 2000 05 05 | 704 | 0.4+ | 0.2+ | 2004 03 31 | 704 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2000 05 05 | 704 | 0.1+ | 0.2− | 2004 03 31 | 704 | 0.6+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.5+ |
| 2000 05 05 | 704 | 0.1+ | 0.0 | 2004 04 08 | 413 | 0.5− | 0.2− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2000 06 06 | 699 | 1.3+ | 1.8+ | 2004 04 08 | 413 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2000 06 06 | 699 | 1.7+ | 0.8− | 2004 04 08 | 413 | 0.3− | 0.6− | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2000 06 06 | 699 | 0.5− | 0.2+ | 2004 04 14 | 691 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2000 06 06 | 699 | 1.4+ | 0.6− | 2004 04 14 | 691 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2002 11 03 | 608 | 0.2− | 0.0 | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2002 11 03 | 608 | 0.3− | 0.4+ | 2004 04 16 | 704 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2002 11 03 | 608 | 0.1− | 0.4− | 2004 04 16 | 704 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 11 11 | 704 | (2.1+ | 1.3+) | 2004 04 16 | 704 | 0.4− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.5+ |
| 2002 11 11 | 704 | (2.2+ | 0.8+) | 2004 04 16 | 704 | 0.1− | 0.7− | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2002 11 11 | 704 | (1.6+ | 0.0 ) | 2004 04 16 | 704 | 1.1+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2002 11 14 | 644 | 0.1− | 0.1+ | 2004 04 20 | 704 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3+ |
| 2002 11 14 | 644 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.7+ | 0.8+ | 2006 11 16 | G96 | 0.2+ | 0.3+ |
| 2002 11 14 | 644 | 0.1− | 0.4+ | 2004 04 20 | 704 | 0.1+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2002 11 22 | 644 | 0.6+ | 0.5+ | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.3+ |
| 2002 11 22 | 644 | 0.1+ | 0.3+ | 2004 04 20 | 704 | 0.6+ | 1.0+ | | | | |

**(138323)∗ 2000 GT$_{81}$**

Discovered 2000 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.72771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37348225 | $\omega$ | 198.75813 | | −0.68690543 | +0.70163702 | |
| $a$ | 1.9096601 | $\Omega$ | 28.83072 | | −0.60639597 | −0.40972093 | |
| $e$ | 0.0518002 | $i$ | 23.12457 | | −0.40055569 | −0.58295304 | |
| $P$ | 2.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 704 | 0.6− | 1.2+ | 2001 10 25 | 704 | 0.3− | 1.0− | 2006 09 26 | 703 | 0.5− | 0.9+ |
| 1998 10 16 | 704 | 2.0+ | 0.2− | 2001 12 23 | 704 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.2− | 0.1+ |
| 1998 10 16 | 704 | 0.7− | 1.0− | 2001 12 23 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.3+ |
| 1998 10 16 | 704 | 0.5− | 0.1+ | 2001 12 23 | 704 | 0.6− | 0.3+ | 2006 09 29 | 699 | 0.2− | 0.6+ |
| 1998 10 16 | 704 | 0.0 | 1.2+ | 2001 12 23 | 704 | 0.3+ | 0.8+ | 2006 09 29 | 699 | 0.8− | 0.3+ |
| 2000 04 05 | 699 | 0.1+ | 0.4+ | 2001 12 23 | 704 | 0.3+ | 1.0+ | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2000 04 05 | 699 | 0.0 | 0.5+ | 2004 12 19 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2000 04 05 | 699 | 0.1+ | 0.1− | 2004 12 19 | 704 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2000 04 05 | 699 | 0.4+ | 0.8+ | 2004 12 19 | 704 | 0.3+ | 1.2+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2000 04 06 | 704 | 0.6+ | 0.6+ | 2004 12 19 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2000 04 06 | 704 | 0.1+ | 0.8+ | 2005 03 12 | 704 | 0.2+ | 0.6− | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2000 04 06 | 704 | 0.7+ | 0.7+ | 2005 03 12 | 704 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2000 04 06 | 704 | 1.3+ | 0.2− | 2005 03 12 | 704 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2000 04 07 | 704 | 0.5+ | 0.6+ | 2005 03 12 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2000 04 07 | 704 | 1.0+ | 0.8+ | 2005 03 12 | 704 | 0.9+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2000 04 07 | 704 | 0.0 | 0.4+ | 2005 03 16 | 704 | 0.5+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2000 04 13 | 608 | (0.1+ | 2.2−) | 2005 03 16 | 704 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2000 04 13 | 608 | 0.6+ | 1.9− | 2005 03 16 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2000 04 13 | 608 | (0.4+ | 2.5−) | 2005 03 16 | 704 | 0.8+ | 0.8+ | 2006 10 22 | 703 | 1.1− | 0.7− |
| 2000 04 26 | 699 | 1.3+ | 0.6+ | 2005 03 16 | 704 | 0.2− | 1.2+ | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2000 04 26 | 699 | 0.3+ | 0.2+ | 2005 03 17 | 704 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.6+ |
| 2000 04 26 | 699 | 0.0 | 0.2+ | 2005 03 17 | 704 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.9− | 0.5+ |
| 2000 04 26 | 699 | 0.3+ | 0.0 | 2005 03 17 | 704 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.5− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 704 | 0.6+ | 0.5+ | 2005 03 17 | 704 | 0.0 | 0.4+ | 2006 11 06 | 644 | 1.1− | 0.6+ |
| 2000 04 28 | 704 | 0.1+ | 0.4+ | 2005 03 17 | 704 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2000 04 28 | 704 | 0.8− | 0.9+ | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2000 04 28 | 704 | 0.4− | 0.9+ | 2006 09 18 | 703 | 0.5− | 0.6+ | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 2000 04 28 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.2+ | 1.0+ |
| 2000 04 30 | 704 | 1.6+ | 1.3+ | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 11 11 | 703 | 0.5− | 1.4+ |
| 2000 04 30 | 704 | 0.3+ | 0.4+ | 2006 09 21 | 699 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2000 04 30 | 704 | 0.7+ | 1.2− | 2006 09 21 | 699 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2000 04 30 | 704 | 0.5− | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.1+ |
| 2000 05 03 | 704 | 0.2+ | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2000 05 03 | 704 | 0.9+ | 0.7+ | 2006 09 25 | 699 | 0.5− | 0.9+ | 2006 11 14 | 703 | 1.0+ | 1.0+ |
| 2000 05 03 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 699 | 0.4− | 0.8+ | 2006 11 14 | 703 | 1.1− | 0.6+ |
| 2000 05 03 | 704 | 0.4+ | 1.0+ | 2006 09 25 | 699 | 0.0 | 1.2+ | 2006 11 14 | 703 | 0.1− | 1.0+ |
| 2000 05 03 | 704 | 0.8+ | 1.9+ | 2006 09 25 | 699 | 0.8− | 0.9+ | 2006 11 14 | 703 | 0.1− | 0.3+ |
| 2001 10 25 | 704 | 0.4+ | 1.5− | 2006 09 26 | 703 | 0.8− | 0.5− | 2006 11 15 | G96 | 0.6− | 0.0 |
| 2001 10 25 | 704 | 0.5+ | 1.0− | 2006 09 26 | 703 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2001 10 25 | 704 | 0.6− | 1.3− | 2006 09 26 | 703 | 1.0− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.2− |

**(138324)∗ 2000 GC$_{82}$ = 2001 TX$_{67}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. Tichý (*MPO* 19611), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.46315 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36844515 | $\omega$ | 286.52203 | | −0.68697990 | | −0.70620788 |
| $a$ | 1.9270256 | $\Omega$ | 209.25950 | | +0.72482185 | | −0.68275223 |
| $e$ | 0.0745691 | $i$ | 20.51099 | | −0.05188350 | | −0.18740285 |
| $P$ | 2.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.3+ | 0.6+ | 2001 10 13 | 704 | 0.4+ | 0.9+ | 2001 11 18 | 608 | 0.6− | 1.2+ |
| 2000 04 07 | 704 | 0.4+ | 0.1+ | 2001 10 13 | 704 | 0.8+ | 0.8+ | 2001 11 18 | 608 | 0.4− | 1.2+ |
| 2000 04 07 | 704 | 1.8− | 1.6+ | 2001 10 13 | 704 | 0.4+ | 0.9+ | 2001 11 18 | 608 | 0.4− | 1.1+ |
| 2000 04 07 | 704 | 0.7+ | 0.4+ | 2001 10 14 | 699 | 0.0 | 0.2+ | 2001 11 20 | 699 | 0.6− | 0.6+ |
| 2000 04 08 | 704 | 0.6+ | 1.2+ | 2001 10 14 | 699 | 1.2− | 0.1− | 2001 11 20 | 699 | 0.1− | 0.5+ |
| 2000 04 08 | 704 | 0.1− | 1.0+ | 2001 10 14 | 699 | 0.4+ | 0.2− | 2001 11 20 | 699 | 0.3+ | 1.1+ |
| 2000 04 08 | 704 | 0.3− | 1.0+ | 2001 10 14 | 699 | 0.0 | 0.1− | 2001 11 20 | 699 | 0.0 | 0.1− |
| 2000 04 08 | 704 | 0.7+ | 0.5+ | 2001 10 16 | 046 | 0.3+ | 0.3+ | 2001 12 07 | 704 | 1.1− | 0.9+ |
| 2000 04 08 | 704 | 0.2+ | 1.4+ | 2001 10 16 | 046 | 0.3+ | 0.3+ | 2001 12 07 | 704 | 1.4− | 0.5+ |
| 2000 04 26 | 699 | 0.1+ | 0.3+ | 2001 10 16 | 046 | 0.5+ | 0.4+ | 2001 12 07 | 704 | 1.0− | 0.6+ |
| 2000 04 26 | 699 | 0.1− | 0.9+ | 2001 10 16 | 046 | 0.3+ | 0.6+ | 2001 12 07 | 704 | 1.3− | 0.2+ |
| 2000 04 26 | 699 | 0.1+ | 0.5+ | 2001 10 16 | 046 | 0.3+ | 0.3+ | 2001 12 07 | 704 | 0.9− | 0.6+ |
| 2000 04 26 | 699 | 0.0 | 0.7+ | 2001 10 16 | 046 | 0.0 | 0.3+ | 2003 06 30 | 704 | 1.0− | 1.2+ |
| 2000 04 27 | 704 | 0.7+ | 0.3+ | 2001 10 16 | 046 | 0.3+ | 0.4+ | 2003 06 30 | 704 | 0.2− | 0.4+ |
| 2000 04 27 | 704 | 0.3+ | 0.4+ | 2001 10 17 | 704 | 0.2+ | 0.4+ | 2003 06 30 | 704 | 0.1+ | 0.0 |
| 2000 04 27 | 704 | 0.1− | 0.2+ | 2001 10 17 | 704 | 0.3+ | 0.1− | 2003 06 30 | 704 | 0.5− | 0.3+ |
| 2000 04 27 | 704 | 0.1− | 0.1+ | 2001 10 17 | 704 | 0.1+ | 0.4+ | 2003 06 30 | 704 | 0.2− | 0.7+ |
| 2000 05 26 | 699 | 0.2− | 0.8+ | 2001 10 17 | 704 | 0.1− | 0.4+ | 2003 07 06 | 608 | 0.2− | 0.5− |
| 2000 05 26 | 699 | 0.1+ | 0.3+ | 2001 10 17 | 704 | 0.2− | 0.2+ | 2003 07 06 | 608 | 0.1+ | 0.6− |
| 2000 05 26 | 699 | 0.4− | 1.0+ | 2001 10 19 | 046 | 0.1− | 0.2+ | 2003 07 06 | 608 | 0.6− | 0.5− |
| 2000 05 26 | 699 | 0.2− | 1.9+ | 2001 10 19 | 046 | 0.0 | 0.0 | 2003 07 29 | 704 | (0.9− | 2.3−) |
| 2000 05 29 | 699 | 0.4+ | 0.8+ | 2001 10 19 | 046 | 0.2− | 0.2+ | 2003 07 29 | 704 | (0.2− | 2.1−) |
| 2000 05 29 | 699 | 0.0 | 1.6+ | 2001 10 19 | 046 | 0.3− | 0.4+ | 2003 07 29 | 704 | (0.1− | 2.2−) |
| 2000 05 29 | 699 | 1.2− | 1.8+ | 2001 10 20 | 704 | 0.7+ | 0.5+ | 2003 07 29 | 704 | 0.1− | 1.4− |
| 2000 05 29 | 699 | 0.6− | 1.9+ | 2001 10 20 | 704 | 0.7+ | 0.4+ | 2003 07 29 | 704 | 1.1− | 0.8− |
| 2000 05 30 | 704 | 0.5+ | 1.0+ | 2001 10 20 | 704 | 0.8+ | 0.4+ | 2005 04 09 | 704 | 0.4+ | 0.4− |
| 2000 05 30 | 704 | 0.6+ | 0.8+ | 2001 10 20 | 704 | 1.0+ | 0.6+ | 2005 04 09 | 704 | 0.4− | 0.9− |
| 2000 05 30 | 704 | 0.3− | 0.6+ | 2001 10 22 | 704 | 0.5− | 0.6+ | 2005 04 09 | 704 | 0.9+ | 0.2− |
| 2000 05 30 | 704 | 0.3+ | 1.6+ | 2001 10 22 | 704 | 0.1+ | 0.5+ | 2005 04 09 | 704 | 0.9− | 0.1− |
| 2000 05 30 | 704 | 0.3+ | 1.4+ | 2001 10 22 | 704 | 0.1+ | 0.8+ | 2006 09 11 | 703 | 0.3− | 0.1− |
| 2001 08 22 | 704 | 0.6− | 1.3+ | 2001 10 22 | 704 | 0.1+ | 0.4+ | 2006 09 11 | 703 | 0.1+ | 0.1+ |
| 2001 08 22 | 704 | 0.0 | 0.4+ | 2001 10 24 | 704 | 0.0 | 1.0+ | 2006 09 11 | 703 | 0.0 | 0.4− |
| 2001 08 22 | 704 | 0.8− | 0.5+ | 2001 10 24 | 704 | 0.1+ | 0.9+ | 2006 09 11 | 703 | 0.4+ | 0.6+ |
| 2001 09 19 | 699 | 0.6− | 0.1+ | 2001 10 24 | 704 | 0.1− | 0.4+ | 2006 09 20 | 703 | 0.3+ | 0.6− |
| 2001 09 19 | 699 | 0.8− | 0.4− | 2001 10 24 | 704 | 0.2+ | 0.2− | 2006 09 20 | 703 | 0.3+ | 0.7− |
| 2001 09 19 | 699 | 0.3− | 0.2− | 2001 10 24 | 704 | (1.6− | 0.7+) | 2006 09 20 | 703 | 1.4+ | 0.3+ |
| 2001 09 19 | 699 | 0.3+ | 0.7+ | 2001 10 24 | 644 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 10 24 | 644 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2001 10 24 | 644 | 0.3− | 0.1− | 2006 09 27 | 703 | 0.6− | 1.4− |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 25 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2001 10 25 | 644 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.5− | 0.8+ |
| 2001 09 24 | 704 | 0.4+ | 1.4− | 2001 10 25 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.2− | 0.8+ |
| 2001 09 24 | 704 | 0.4+ | 0.6− | 2001 10 27 | 704 | 0.9+ | 0.1− | 2006 09 27 | 703 | 0.6+ | 0.3− |
| 2001 09 24 | 704 | 0.3− | 0.5− | 2001 10 27 | 704 | 0.6+ | 0.4− | 2006 09 27 | 703 | 0.1− | 0.3+ |
| 2001 09 24 | 704 | 1.1+ | 0.7− | 2001 10 27 | 704 | 0.4+ | 0.6− | 2006 09 27 | 703 | 0.2− | 1.0+ |
| 2001 09 24 | 691 | 0.4− | 0.0 | 2001 10 27 | 704 | 0.9+ | 0.5− | 2006 10 17 | 703 | 0.8+ | 0.3+ |
| 2001 09 24 | 704 | 0.3+ | 1.2− | 2001 10 27 | 704 | 0.3+ | 1.1− | 2006 10 17 | 703 | 0.1+ | 0.5+ |
| 2001 09 24 | 691 | 0.2− | 0.2+ | 2001 11 15 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2001 09 24 | 691 | 0.5− | 0.1+ | 2001 11 15 | 644 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2001 10 10 | 691 | 0.4+ | 0.3+ | 2001 11 15 | 644 | 0.2− | 0.3+ | 2006 10 29 | 703 | 1.3+ | 0.7− |
| 2001 10 10 | 691 | 0.6+ | 0.2+ | 2001 11 18 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 703 | 0.6+ | 0.3+ |
| 2001 10 10 | 691 | 0.6+ | 0.1+ | 2001 11 18 | 704 | 0.2− | 0.1− | 2006 10 29 | 703 | 0.8− | 1.4+ |
| 2001 10 11 | 333 | 0.6− | 0.6+ | 2001 11 18 | 704 | 0.2− | 0.6+ | 2006 10 29 | 703 | 1.3− | 0.7− |
| 2001 10 11 | 333 | 0.7− | 0.5+ | 2001 11 18 | 704 | 0.1− | 0.0 | | | | |
| 2001 10 13 | 704 | 0.1− | 0.0 | 2001 11 18 | 704 | 0.2− | 0.3+ | | | | |

**(138325)∗ 2000 GO$_{82}$**

Discovered 2000 Apr. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.84658 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30941409 | $\omega$ | 164.24485 | | +0.92844344 | | +0.36823677 |
| $a$ | 2.1649240 | $\Omega$ | 173.48834 | | −0.37002917 | | +0.92837979 |
| $e$ | 0.8037674 | $i$ | 25.56209 | | −0.03272902 | | −0.05012633 |
| $P$ | 3.19 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 704 | 0.2+ | 0.4+ | 2000 04 21 | 540 | 0.4− | 0.4+ | 2000 05 19 | 118 | 0.1+ | 0.1+ |
| 2000 04 03 | 704 | 0.9+ | 0.5+ | 2000 04 21 | 046 | 0.7− | 0.3+ | 2000 05 19 | 118 | 0.2− | 0.2+ |
| 2000 04 03 | 704 | 0.3+ | 0.1− | 2000 04 21 | 046 | 0.5− | 0.4+ | 2000 05 23 | 360 | 0.1− | 0.1+ |
| 2000 04 03 | 704 | 0.3+ | 0.2− | 2000 04 21 | 046 | 0.5− | 0.7+ | 2000 05 23 | 360 | 0.0 | 0.5− |
| 2000 04 04 | 704 | 0.6− | 0.6− | 2000 04 21 | 046 | 0.2+ | 0.3+ | 2000 05 23 | 360 | 0.2− | 0.1+ |
| 2000 04 04 | 704 | 0.4− | 0.1+ | 2000 04 21 | 046 | 0.3− | 0.8+ | 2000 05 27 | 106 | 0.0 | 1.1+ |
| 2000 04 04 | 854 | (2.7− | 1.6−) | 2000 04 23 | 046 | 0.4− | 0.4− | 2000 05 27 | 106 | 0.7− | 0.0 |
| 2000 04 04 | 854 | 0.4+ | 1.2− | 2000 04 23 | 046 | 0.1− | 0.3− | 2000 06 03 | 611 | 0.3+ | 0.9+ |
| 2000 04 04 | 854 | 0.9+ | 0.1− | 2000 04 23 | 046 | 0.1− | 0.0 | 2000 06 07 | 611 | 0.1+ | 1.0− |
| 2000 04 04 | 704 | 0.1− | 0.5+ | 2000 04 23 | 046 | 0.5− | 0.1+ | 2000 06 07 | 611 | 0.6+ | 0.7− |
| 2000 04 04 | 704 | 0.4+ | 0.1+ | 2000 04 23 | 046 | 0.2− | 0.3− | 2000 06 20 | 587 | 0.9+ | 1.2+ |
| 2000 04 04 | 704 | 0.5− | 0.4− | 2000 04 24 | 658 | 0.4− | 0.0 | 2000 06 20 | 587 | 0.6+ | 0.9+ |
| 2000 04 04 | 704 | 0.3+ | 0.8− | 2000 04 24 | 658 | 0.1− | 0.3+ | 2000 06 20 | 587 | 1.1+ | 0.9+ |
| 2000 04 04 | 704 | 0.6+ | 0.7+ | 2000 04 24 | 658 | 0.1− | 0.2+ | 2000 06 22 | 118 | 0.5+ | 0.5− |
| 2000 04 04 | 704 | 0.0 | 0.2+ | 2000 04 24 | 402 | 1.1+ | 1.1− | 2000 06 22 | 118 | 0.4− | 0.5+ |
| 2000 04 05 | 557 | 0.1− | 1.2− | 2000 04 24 | 402 | 0.1+ | 0.7− | 2000 11 20 | 696 | 0.5+ | 0.1− |
| 2000 04 05 | 557 | 0.8− | 0.2− | 2000 04 24 | 402 | 0.4− | 0.5+ | 2000 11 20 | 696 | 0.2+ | 0.1+ |
| 2000 04 05 | 557 | 0.2+ | 1.1− | 2000 04 24 | 360 | 0.2− | 0.7− | 2000 11 22 | 696 | 0.4+ | 0.3+ |
| 2000 04 05 | 704 | 0.1− | 0.1+ | 2000 04 24 | 360 | 0.0 | 0.6− | 2000 11 22 | 696 | 0.3+ | 0.4+ |
| 2000 04 05 | 704 | 0.2+ | 0.0 | 2000 04 24 | 360 | 0.2− | 1.0− | 2000 12 23 | 696 | 0.8+ | 0.2+ |
| 2000 04 05 | 704 | 0.0 | 0.2+ | 2000 04 25 | 670 | 0.7− | 0.6− | 2000 12 23 | 696 | 0.4+ | 0.4+ |
| 2000 04 05 | 704 | 0.6+ | 0.1+ | 2000 04 25 | 670 | 0.2+ | 0.4− | 2000 12 31 | 711 | 0.1− | 0.6− |
| 2000 04 05 | 704 | 0.1− | 1.0− | 2000 04 25 | 670 | 1.0− | 0.7− | 2000 12 31 | 711 | 0.2− | 0.2− |
| 2000 04 06 | 704 | 0.4− | 1.3− | 2000 04 26 | 670 | 0.1− | 0.4− | 2003 03 23 | 246 | 0.7+ | 0.7+ |
| 2000 04 06 | 704 | 0.7+ | 0.4− | 2000 04 26 | 670 | 0.6− | 1.2+ | 2003 03 23 | 246 | 0.5+ | 0.0 |
| 2000 04 06 | 704 | 0.9+ | 0.0 | 2000 04 29 | 670 | 0.0 | 0.6− | 2003 03 23 | 246 | 0.7+ | 0.6− |
| 2000 04 06 | 704 | 0.7− | 0.6− | 2000 04 29 | 670 | 0.2− | 0.2+ | 2003 03 26 | 644 | 0.2+ | 0.1− |
| 2000 04 07 | 704 | 0.2+ | 0.1− | 2000 04 29 | 670 | 0.3− | 0.7− | 2003 03 26 | 644 | 0.1+ | 0.0 |
| 2000 04 07 | 704 | 0.0 | 0.1+ | 2000 05 01 | 670 | 0.5− | 0.7− | 2003 03 26 | 644 | 0.0 | 0.1− |
| 2000 04 07 | 704 | 0.5− | 0.1+ | 2000 05 01 | 670 | 0.3+ | 1.0− | 2003 03 26 | 691 | 0.1+ | 0.0 |
| 2000 04 07 | 704 | 0.6+ | 0.0 | 2000 05 01 | 670 | 1.8− | 0.5+ | 2003 03 26 | 691 | 0.2+ | 0.0 |
| 2000 04 07 | 704 | 0.9+ | 0.5− | 2000 05 04 | 699 | 0.4− | 0.1+ | 2003 03 26 | 691 | 0.6+ | 1.0+ |
| 2000 04 07 | 587 | 0.3− | 0.2− | 2000 05 04 | 699 | 0.4+ | 0.2− | 2003 03 28 | 291 | 0.0 | 0.1+ |
| 2000 04 07 | 587 | 0.2− | 0.4+ | 2000 05 04 | 699 | 0.5+ | 0.0 | 2003 03 28 | 291 | 0.1− | 0.1+ |
| 2000 04 08 | 704 | 0.7+ | 0.8+ | 2000 05 04 | 699 | 0.2+ | 0.7+ | 2003 03 28 | 291 | 0.1− | 0.1+ |
| 2000 04 08 | 704 | 0.1− | 0.4− | 2000 05 04 | 557 | 0.4− | 0.4− | 2003 03 30 | 291 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.6+ | 0.1− | 2000 05 04 | 557 | 0.1+ | 0.1+ | 2003 03 30 | 291 | 0.1+ | 0.0 |
| 2000 04 08 | 704 | 0.5− | 0.6+ | 2000 05 04 | 557 | 1.0− | 0.2− | 2003 03 30 | 291 | 0.0 | 0.1+ |
| 2000 04 08 | 704 | 0.9+ | 0.0 | 2000 05 04 | 557 | 0.6− | 0.1+ | 2003 04 10 | 691 | 0.3− | 0.1− |
| 2000 04 08 | 402 | 0.1− | 0.4+ | 2000 05 07 | 118 | 0.2+ | 0.1+ | 2003 04 10 | 691 | 0.3− | 0.3− |
| 2000 04 08 | 402 | 0.1− | 1.1+ | 2000 05 07 | 118 | 0.4+ | 0.3+ | 2003 04 10 | 691 | 0.2− | 0.2− |
| 2000 04 08 | 402 | (0.4+ | 2.9−) | 2000 05 08 | 402 | 0.7+ | 0.3+ | 2003 12 27 | 474 | 0.4− | 1.0+ |
| 2000 04 08 | 402 | 0.7+ | 1.0− | 2000 05 08 | 402 | 0.5+ | 0.1− | 2003 12 27 | 474 | 0.2− | 0.0 |
| 2000 04 08 | 557 | 0.3+ | 0.1− | 2000 05 08 | 402 | 0.8+ | 0.1+ | 2003 12 27 | 474 | 0.3+ | 0.0 |
| 2000 04 08 | 557 | 0.7− | 0.0 | 2000 05 12 | 670 | 0.1− | 0.7+ | 2006 02 27 | 691 | 0.1+ | 0.7− |
| 2000 04 08 | 557 | 0.0 | 0.1− | 2000 05 12 | 670 | 1.3+ | 1.1+ | 2006 02 27 | 691 | 0.0 | 0.3− |
| 2000 04 08 | 557 | 0.4− | 0.3− | 2000 05 13 | 658 | 0.3+ | 0.7+ | 2006 02 27 | 691 | 1.0− | 1.2+ |
| 2000 04 09 | 046 | 0.0 | 0.2− | 2000 05 13 | 658 | 0.8+ | 0.0 | 2006 03 03 | 691 | 0.6+ | 0.1+ |
| 2000 04 09 | 046 | 0.5− | 0.3+ | 2000 05 13 | 658 | 0.2+ | 0.0 | 2006 03 03 | 691 | 0.2− | 0.0 |
| 2000 04 09 | 046 | 0.3− | 0.1− | 2000 05 13 | 118 | 0.6+ | 0.4+ | 2006 03 03 | 691 | 0.1+ | 0.1− |
| 2000 04 09 | 046 | 0.0 | 0.3− | 2000 05 13 | 118 | 0.2+ | 0.6+ | 2006 03 04 | G96 | 0.2− | 0.7− |
| 2000 04 09 | 046 | 0.2− | 0.1+ | 2000 05 13 | 118 | 0.2+ | 0.2+ | 2006 03 04 | G96 | 0.0 | 0.2− |
| 2000 04 09 | 046 | 0.1+ | 0.6− | 2000 05 14 | 118 | 0.2+ | 0.3+ | 2006 03 04 | G96 | 0.5− | 0.2− |
| 2000 04 10 | 621 | 0.1− | 0.0 | 2000 05 14 | 118 | 0.1+ | 0.8+ | 2006 03 04 | G96 | 0.5− | 0.0 |
| 2000 04 10 | 621 | 0.2+ | 0.1+ | 2000 05 14 | 118 | 0.1− | 0.9+ | 2006 03 26 | G96 | 0.0 | 0.1− |
| 2000 04 10 | 621 | 0.0 | 0.1− | 2000 05 15 | 046 | 0.1− | 0.1+ | 2006 03 26 | G96 | 0.4− | 0.1+ |
| 2000 04 10 | 621 | 0.1− | 0.0 | 2000 05 15 | 046 | 0.0 | 0.2+ | 2006 03 26 | G96 | 0.3+ | 0.1− |
| 2000 04 21 | 540 | 0.1− | 0.2+ | 2000 05 15 | 046 | 0.6− | 0.2− | 2006 03 26 | G96 | 0.0 | 0.1− |
| 2000 04 21 | 540 | 0.5− | 0.0 | 2000 05 15 | 046 | 0.3− | 0.5+ | | | | |
| 2000 04 21 | 540 | 0.4− | 0.4+ | 2000 05 15 | 046 | 0.4− | 0.1− | | | | |

**(138326)∗ 2000 GX$_{86}$**

Discovered 2000 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.85431 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23926740 | $\omega$ | 54.75968 | | −0.99167359 | −0.10342756 | |
| $a$ | 2.5696878 | $\Omega$ | 119.19146 | | +0.06954366 | −0.93154588 | |
| $e$ | 0.1647279 | $i$ | 5.04186 | | +0.10838440 | −0.34860439 | |
| $P$ | 4.12 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.2− | 0.4+ | 2004 02 18 | 704 | 0.1− | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.1− |
| 1994 12 01 | 691 | 0.1− | 0.1+ | 2004 02 21 | 608 | (0.0 | 2.0−) | 2004 03 20 | 704 | (1.2+ | 1.9+) |
| 1994 12 01 | 691 | 0.0 | 0.7+ | 2004 02 21 | 608 | 0.5+ | 0.5− | 2004 03 22 | 704 | 0.2+ | 0.1− |
| 2000 02 12 | 645 | 0.2− | 0.3− | 2004 02 21 | 608 | 0.8+ | 0.1− | 2004 03 22 | 704 | 0.2− | 0.6− |
| 2000 02 12 | 645 | 0.2− | 0.3− | 2004 02 25 | 704 | 0.3+ | 1.0+ | 2004 03 22 | 704 | 0.1− | 0.6+ |
| 2000 04 02 | 699 | 0.6+ | 0.3− | 2004 02 25 | 704 | 0.3− | 0.6+ | 2004 03 22 | 704 | 0.4− | 1.1+ |
| 2000 04 02 | 699 | 0.2+ | 0.2+ | 2004 02 25 | 704 | 0.3+ | 0.6+ | 2004 03 26 | 703 | 0.2+ | 0.7− |
| 2000 04 02 | 699 | 0.3+ | 0.9− | 2004 02 25 | 704 | 0.0 | 0.8+ | 2004 03 26 | 703 | 0.7− | 0.8− |
| 2000 04 02 | 699 | 0.8+ | 0.1− | 2004 02 25 | 704 | 0.1+ | 0.5+ | 2004 03 26 | 703 | 0.8+ | 0.2− |
| 2000 04 04 | 704 | 0.3+ | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.6+ | 2004 03 26 | 703 | 0.9+ | 0.6+ |
| 2000 04 04 | 704 | 0.1+ | 1.0− | 2004 03 15 | 704 | 0.3+ | 0.0 | 2004 03 27 | 691 | 0.1− | 0.1+ |
| 2000 04 04 | 704 | 0.0 | 0.6− | 2004 03 15 | 704 | 0.1− | 0.3+ | 2004 03 27 | 691 | 0.1− | 0.1+ |
| 2000 04 04 | 704 | 0.3− | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2004 03 27 | 691 | 0.3− | 0.0 |
| 2000 04 04 | 704 | 0.1+ | 0.1+ | 2004 03 17 | 704 | 0.0 | 0.6+ | 2005 07 05 | 691 | 0.1+ | 0.1+ |
| 2000 04 08 | 704 | 0.5+ | 0.2− | 2004 03 17 | 704 | 0.2+ | 0.4+ | 2005 07 05 | 691 | 0.0 | 0.6+ |
| 2000 04 08 | 704 | 0.2+ | 0.0 | 2004 03 17 | 704 | 0.2+ | 0.9+ | 2005 07 05 | 691 | 0.0 | 0.2+ |
| 2000 04 08 | 704 | 1.4− | 0.1+ | 2004 03 17 | 704 | 0.2+ | 0.4+ | 2005 07 09 | 691 | 0.1+ | 0.3+ |
| 2000 04 08 | 704 | 0.2+ | 0.4− | 2004 03 17 | 704 | 0.3+ | 0.5+ | 2005 07 09 | 691 | 0.3− | 0.1+ |
| 2000 04 25 | 699 | 0.9+ | 1.0− | 2004 03 17 | 704 | 0.1+ | 0.6+ | 2005 07 09 | 691 | 0.5+ | 0.2+ |
| 2000 04 25 | 699 | 0.7+ | 0.1+ | 2004 03 17 | 704 | 0.3+ | 0.4+ | 2005 07 12 | G96 | (0.9+ | 3.6+) |
| 2000 04 25 | 699 | 1.5− | 0.6− | 2004 03 17 | 704 | 0.4− | 1.2+ | 2005 07 12 | G96 | 1.0− | 0.5+ |
| 2000 04 25 | 699 | 0.5− | 0.4+ | 2004 03 17 | 704 | 0.5+ | 0.7+ | 2005 07 12 | G96 | 0.1− | 0.2+ |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2005 07 12 | G96 | 0.5− | 0.2+ |
| 2004 01 30 | 691 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2005 07 16 | 691 | 0.0 | 0.4+ |
| 2004 01 30 | 691 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2005 07 16 | 691 | 0.3− | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.0 | 0.5+ | 2005 07 16 | 691 | 0.3− | 0.2+ |
| 2004 01 30 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 10 03 | G96 | 0.1− | 0.2+ |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.2+ |
| 2004 02 17 | 703 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2004 02 17 | 703 | 0.6+ | 0.4+ | 2004 03 20 | 704 | 0.7+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.1+ |
| 2004 02 17 | 703 | 0.5+ | 0.3− | 2004 03 20 | 704 | 0.8+ | 1.4+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 02 17 | 703 | 1.2− | 0.2+ | 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2004 02 18 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | (0.8+ | 1.9+) | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 02 18 | 704 | (1.0+ | 1.6+) | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2004 02 18 | 704 | 0.7− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 1.2+ | | | | |

**(138327)∗ 2000 GY$_{89}$ = 2002 VL$_{126}$**

Discovered 2000 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40090)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.54712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22785793 | $\omega$ | 233.74478 | | +0.21198702 | +0.96359612 | |
| $a$ | 2.6547683 | $\Omega$ | 49.33241 | | −0.81353587 | +0.26637410 | |
| $e$ | 0.0237426 | $i$ | 12.40355 | | −0.54149875 | −0.02296407 | |
| $P$ | 4.33 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 809 | 1.5− | 0.9+ | 2002 12 11 | 704 | (0.5+ | 3.5−) | 2006 10 03 | G96 | 0.5+ | 0.9+ |
| 1993 10 11 | 809 | 1.2− | 1.3+ | 2002 12 11 | 704 | 0.0 | 0.8− | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 1993 10 11 | 809 | (2.4− | 1.4+) | 2002 12 11 | 704 | 0.4− | 1.0+ | 2006 10 10 | 644 | 0.5− | 0.1+ |
| 2000 04 04 | 699 | 0.6+ | 1.4+ | 2002 12 11 | 704 | 0.6+ | 0.1− | 2006 10 10 | 644 | 0.3− | 0.3− |
| 2000 04 04 | 699 | 1.3+ | 0.7+ | 2003 01 05 | 704 | 0.8+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2000 04 04 | 704 | 0.2+ | 0.0 | 2003 01 05 | 704 | 0.3+ | 0.8− | 2006 10 16 | 703 | (1.7− | 2.4+) |
| 2000 04 04 | 699 | 1.0+ | 0.9+ | 2003 01 05 | 704 | 1.3+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.0+ |
| 2000 04 04 | 704 | 0.7− | 0.6+ | 2004 03 18 | 644 | 0.4− | 0.5+ | 2006 10 16 | 703 | 1.2− | 0.7+ |
| 2000 04 04 | 699 | 1.8+ | 0.4+ | 2004 03 18 | 644 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2000 04 04 | 704 | 0.1+ | 1.0+ | 2004 03 18 | 644 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 04 04 | 704 | 0.2+ | 1.6+ | 2006 09 20 | 699 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 04 08 | 704 | 0.1+ | 0.8− | 2006 09 20 | 699 | 1.5− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2000 04 08 | 704 | 0.2+ | 0.1− | 2006 09 20 | 699 | 1.0+ | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2000 04 08 | 704 | 0.0 | 0.9+ | 2006 09 20 | 699 | 0.5− | 0.9+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2000 04 27 | 699 | 0.6+ | 0.1+ | 2006 09 26 | 704 | 0.7+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.6− |
| 2000 04 27 | 699 | 0.5+ | 1.3+ | 2006 09 26 | 704 | 0.1− | 0.7− | 2006 11 13 | 703 | 0.1− | 0.4+ |
| 2000 04 27 | 699 | 1.3+ | 0.6+ | 2006 09 26 | 704 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.3+ |
| 2000 04 27 | 699 | 0.7+ | 1.9+ | 2006 09 26 | 704 | 1.2− | 0.4− | 2006 11 13 | 703 | 0.1− | 1.0+ |
| 2002 11 12 | 704 | 0.0 | 0.4− | 2006 09 30 | 703 | 1.1− | 0.0 | 2006 11 13 | 703 | 0.9+ | 0.3+ |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.8+ | 2006 11 14 | 704 | 1.1− | 0.2+ |
| 2002 11 12 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.8+ | 2006 11 14 | 704 | 0.6+ | 0.9+ |
| 2002 11 16 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.1− | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.5+ |
| 2002 11 16 | 644 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.6− | 0.2− | 2006 11 14 | 704 | 0.3− | 0.3+ |
| 2002 11 16 | 644 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.8− | 0.7+ | 2006 11 14 | 704 | 0.5+ | 0.0 |

**(138328)∗ 2000 GC$_{90}$ = 2004 CY$_{100}$**

Discovered 2000 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60658)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.36185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23336088 | $\omega$ | 345.89683 | | −0.91811353 | −0.39480807 | |
| $a$ | 2.6128673 | $\Omega$ | 170.62475 | | +0.38106925 | −0.90338057 | |
| $e$ | 0.0986103 | $i$ | 12.24729 | | +0.10887500 | −0.16742204 | |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 704 | 0.3− | 0.4+ | 2004 02 17 | 608 | 0.2+ | 1.2− | 2004 03 20 | 699 | 0.5− | 0.2+ |
| 2000 04 04 | 704 | 0.8− | 0.7− | 2004 02 17 | 608 | 0.6+ | 1.1− | 2004 03 20 | 699 | 0.3− | 0.4− |
| 2000 04 04 | 704 | 0.6+ | 0.7+ | 2004 02 17 | 608 | 0.0 | 1.1− | 2004 03 20 | 699 | 0.1− | 0.3− |
| 2000 04 04 | 704 | 0.4+ | 1.1+ | 2004 02 19 | 704 | 0.9+ | 0.2− | 2004 03 20 | 699 | 0.2+ | 0.0 |
| 2000 04 07 | 699 | 0.7+ | 0.9+ | 2004 02 19 | 704 | 1.1+ | 0.9+ | 2004 03 22 | 704 | 0.5+ | 0.0 |
| 2000 04 07 | 699 | 0.7− | 0.3+ | 2004 02 19 | 704 | 0.3+ | 1.1− | 2004 03 22 | 704 | 0.2+ | 0.1+ |
| 2000 04 07 | 699 | 0.8+ | 0.3+ | 2004 02 19 | 704 | 0.8+ | 1.3− | 2004 03 22 | 704 | 0.3+ | 0.7+ |
| 2000 04 07 | 699 | 1.0+ | 0.1− | 2004 02 19 | 704 | 1.3+ | 0.4− | 2004 03 22 | 704 | 0.3+ | 0.6+ |
| 2000 04 08 | 704 | 0.1− | 1.3+ | 2004 02 26 | 704 | 0.1− | 0.6+ | 2004 03 22 | 704 | 0.2+ | 0.5+ |
| 2000 04 08 | 704 | 0.9+ | 0.4+ | 2004 02 26 | 704 | 0.1− | 0.6+ | 2004 03 28 | 704 | 0.0 | 0.2+ |
| 2000 04 08 | 704 | 0.7− | 0.7− | 2004 02 26 | 704 | 0.3− | 0.3+ | 2004 03 28 | 703 | (0.8− | 2.2−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 1.2− | 0.9− | 2004 02 26 | 704 | 1.2+ | 0.1+ | 2004 03 28 | 704 | 0.6− | 0.9+ | | |
| 2000 04 09 | 699 | 1.2+ | 0.6− | 2004 02 26 | 704 | 0.9+ | 0.5− | 2004 03 28 | 703 | 0.5+ | 0.3+ | | |
| 2000 04 09 | 699 | 1.1+ | 0.1− | 2004 03 15 | 691 | 0.4− | 0.1− | 2004 03 28 | 704 | 0.1− | 0.3+ | | |
| 2000 04 09 | 699 | 1.4+ | 1.0− | 2004 03 15 | 703 | 0.1+ | 0.7+ | 2004 03 28 | 704 | 1.0− | 0.1− | | |
| 2000 04 09 | 699 | 0.0 | 0.4+ | 2004 03 15 | 691 | 0.4− | 0.2− | 2004 03 28 | 703 | 0.1+ | 0.2+ | | |
| 2000 04 10 | 608 | 0.0 | 1.3− | 2004 03 15 | 703 | 0.3− | 1.2+ | 2004 03 28 | 704 | 0.1− | 0.0 | | |
| 2000 04 10 | 608 | 0.2− | 0.7− | 2004 03 15 | 703 | 0.2+ | 0.2− | 2004 03 28 | 703 | 0.6+ | 0.3− | | |
| 2000 04 10 | 608 | 0.1+ | 0.6− | 2004 03 15 | 691 | 0.2− | 0.2− | 2004 04 20 | 704 | 0.9+ | 0.1− | | |
| 2000 04 27 | 699 | 0.1− | 0.4− | 2004 03 15 | 703 | 0.2− | 0.9+ | 2004 04 20 | 704 | 0.4+ | 0.2− | | |
| 2000 04 27 | 699 | 0.3− | 0.7+ | 2004 03 16 | 704 | 0.1− | 0.2+ | 2004 04 20 | 704 | 0.1− | 0.1− | | |
| 2000 04 27 | 699 | 0.4+ | 0.4+ | 2004 03 16 | 704 | 0.1− | 0.6− | 2004 04 20 | 704 | 0.0 | 0.7+ | | |
| 2000 04 27 | 699 | 1.5− | 0.4+ | 2004 03 16 | 704 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.5+ | | |
| 2000 05 04 | 704 | 0.9− | 1.0+ | 2004 03 16 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 1.5− | 0.4− | | |
| 2000 05 04 | 704 | 1.4− | 0.3+ | 2004 03 16 | 704 | 0.8− | 0.8− | 2006 09 26 | 703 | 1.0− | 0.8+ | | |
| 2000 05 04 | 704 | 0.3− | 0.4+ | 2004 03 17 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.9+ | | |
| 2000 05 04 | 704 | 0.1− | 0.3+ | 2004 03 17 | 704 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 2002 12 01 | 704 | 0.5− | 0.3− | 2004 03 17 | 704 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.5+ | 0.1− | | |
| 2002 12 01 | 704 | 0.9+ | 0.0 | 2004 03 17 | 704 | 0.3− | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.1+ | | |
| 2002 12 01 | 704 | 0.1+ | 1.0+ | 2004 03 19 | 704 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.4+ | 0.2+ | | |
| 2004 02 15 | 703 | 0.4− | 0.6− | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 11 16 | 703 | 1.1+ | 0.3− | | |
| 2004 02 15 | 703 | 0.9− | 0.1− | 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.7+ | 0.9− | | |
| 2004 02 15 | 703 | (1.8− | 1.1−) | 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.2− | 2.5+ | | |
| 2004 02 15 | 703 | (3.1− | 0.6+) | 2004 03 19 | 704 | 0.2− | 0.8+ | 2006 11 16 | 703 | 0.1− | 0.5+ | | |

**(138329)∗ 2000 GG$_{90}$**

Discovered 2000 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.34723 | | (2000.0) | | −0.23162951 | −0.90455199 |
| $n$ | 0.22757485 | $\omega$ | 38.18073 | | +0.77016673 | −0.39530886 |
| $a$ | 2.6569693 | $\Omega$ | 67.84784 | | +0.59429873 | +0.15973919 |
| $e$ | 0.0213760 | $i$ | 22.73599 | | | |
| $P$ | 4.33 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 0.5+ | 0.7+ | 2002 11 12 | 704 | 0.3+ | 1.1+ | 2004 02 11 | 704 | 0.5+ | 0.2− | | |
| 2000 03 27 | 699 | 0.0 | 0.6+ | 2002 11 12 | 704 | 0.6− | 0.3− | 2004 02 11 | 704 | 0.2+ | 0.1− | | |
| 2000 03 27 | 699 | 0.5− | 0.1− | 2002 11 12 | 704 | (0.0 | 1.6+) | 2004 02 11 | 704 | 0.6− | 0.1− | | |
| 2000 03 27 | 699 | 0.5− | 0.3+ | 2002 11 15 | 644 | 0.1+ | 0.3+ | 2004 02 11 | 704 | 0.1+ | 0.2− | | |
| 2000 04 04 | 704 | 0.5+ | 1.4+ | 2002 11 15 | 644 | 0.1− | 0.3+ | 2004 03 17 | 644 | 0.0 | 0.1+ | | |
| 2000 04 04 | 704 | 1.2+ | 0.7+ | 2002 11 15 | 644 | 0.1+ | 0.3+ | 2004 03 17 | 644 | 0.0 | 0.3+ | | |
| 2000 04 04 | 704 | 0.1+ | 0.3+ | 2002 11 22 | 644 | 0.4+ | 0.3+ | 2004 03 17 | 644 | 0.1− | 0.1+ | | |
| 2000 04 04 | 704 | 1.4+ | 0.4+ | 2002 11 22 | 644 | 0.4+ | 0.2+ | 2004 04 12 | 704 | 1.0− | 0.6− | | |
| 2000 04 08 | 704 | 0.1+ | 0.9+ | 2002 11 22 | 644 | 0.0 | 0.2+ | 2004 04 12 | 704 | 0.2− | 0.1+ | | |
| 2000 04 08 | 704 | 0.7+ | 0.1+ | 2002 12 01 | 704 | 0.5− | 0.2− | 2004 04 12 | 704 | 0.3− | 0.1+ | | |
| 2000 04 08 | 704 | 0.8+ | 0.3+ | 2002 12 01 | 704 | 0.8+ | 0.2− | 2004 04 12 | 704 | 0.2− | 0.2+ | | |
| 2000 04 08 | 704 | 1.0+ | 0.3+ | 2002 12 01 | 704 | 0.5− | 0.5+ | 2004 04 12 | 704 | 0.3+ | 0.0 | | |
| 2000 04 28 | 699 | 0.5+ | 1.3+ | 2002 12 01 | 704 | (0.7+ | 2.0+) | 2004 05 14 | 645 | 0.2− | 0.2− | | |
| 2000 04 28 | 699 | 0.3+ | 0.2+ | 2002 12 07 | 704 | 0.1+ | 0.3+ | 2004 05 14 | 645 | 0.2− | 0.2− | | |
| 2000 04 28 | 699 | 0.9+ | 0.1+ | 2002 12 07 | 704 | 0.1+ | 1.0+ | 2004 05 22 | 703 | 0.4− | 0.3+ | | |
| 2000 04 28 | 699 | 0.7+ | 0.4+ | 2002 12 07 | 704 | 0.4+ | 0.7+ | 2004 05 22 | 703 | 1.0− | 0.0 | | |
| 2000 04 29 | 704 | 0.2− | 0.1+ | 2002 12 07 | 704 | 0.2− | 0.3+ | 2004 05 22 | 703 | 0.0 | 0.4+ | | |
| 2000 04 29 | 704 | 0.7+ | 0.5+ | 2002 12 07 | 704 | 0.0 | 0.2+ | 2004 05 22 | 703 | 0.5+ | 0.6+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.1− | 2003 01 04 | 704 | 0.3+ | 0.0 | 2006 09 27 | 703 | 0.4− | 0.3+ | | |
| 2000 05 03 | 704 | 0.5− | 1.3+ | 2003 01 04 | 704 | 1.0− | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.8− | | |
| 2000 05 03 | 704 | 0.7+ | 0.2+ | 2003 01 04 | 704 | 0.2− | 0.5+ | 2006 09 27 | 703 | (1.1+ | 1.8−) | | |
| 2000 05 03 | 704 | 0.5− | 1.0+ | 2004 01 30 | 703 | 1.1− | 0.5− | 2006 09 27 | 703 | 0.5+ | 0.1+ | | |
| 2000 05 03 | 704 | 0.4− | 1.1− | 2004 01 30 | 703 | 0.5− | 1.1− | 2006 10 25 | E12 | 0.1− | 0.7+ | | |
| 2000 05 30 | 699 | 0.7+ | 1.0+ | 2004 01 30 | 703 | (1.9− | 0.9−) | 2006 10 25 | E12 | 0.3− | 0.4+ | | |
| 2000 05 30 | 699 | 0.6+ | 0.8+ | 2004 01 30 | 703 | (1.6− | 1.9−) | 2006 10 25 | E12 | 0.1+ | 1.1+ | | |
| 2000 05 30 | 699 | 0.2− | 1.2+ | 2004 01 31 | 704 | (1.7+ | 0.1+) | 2006 10 25 | E12 | 0.2+ | 0.7+ | | |
| 2000 05 30 | 699 | 1.0+ | 0.4− | 2004 01 31 | 704 | 0.5+ | 0.4+ | 2006 10 31 | 703 | 0.1+ | 0.7− | | |
| 2000 06 03 | 699 | 0.2+ | 0.6+ | 2004 01 31 | 704 | 0.5+ | 0.3+ | 2006 10 31 | 703 | 1.3− | 0.5+ | | |
| 2000 06 03 | 699 | 0.2+ | 0.3+ | 2004 01 31 | 704 | 0.6+ | 0.3− | 2006 10 31 | 703 | 0.2+ | 0.3+ | | |
| 2000 06 03 | 699 | 0.3+ | 0.1− | 2004 02 02 | 704 | 1.0+ | 0.6− | 2006 10 31 | 703 | 0.2+ | 1.4− | | |
| 2000 06 03 | 699 | 0.1+ | 0.5+ | 2004 02 02 | 704 | 0.3− | 0.6+ | 2006 11 01 | 703 | 0.8− | 0.1+ | | |
| 2002 11 03 | 608 | 1.4− | 1.0+ | 2004 02 02 | 704 | 0.5+ | 0.4− | 2006 11 01 | 703 | 0.7− | 1.4+ | | |
| 2002 11 03 | 608 | (2.3− | 0.1+) | 2004 02 02 | 704 | 0.5+ | 0.4− | 2006 11 01 | 703 | 0.2− | 1.2− | | |
| 2002 11 03 | 608 | 1.2− | 0.7− | 2004 02 02 | 704 | (1.3+ | 1.8+) | 2006 11 01 | 703 | (0.9+ | 1.7−) | | |
| 2002 11 05 | 704 | 0.2− | 0.9+ | 2004 02 02 | 704 | 0.2− | 0.6− | 2006 11 19 | 703 | 0.3− | 0.2− | | |
| 2002 11 05 | 704 | 0.3+ | 0.1+ | 2004 02 02 | 704 | 0.8+ | 0.0 | 2006 11 19 | 703 | 0.7− | 0.6+ | | |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2004 02 02 | 704 | 1.2+ | 0.5− | 2006 11 19 | 703 | 0.5+ | 1.0− | | |
| 2002 11 05 | 704 | 0.6+ | 0.1+ | 2004 02 02 | 704 | 0.5+ | 0.6+ | 2006 11 19 | 703 | 1.5+ | 0.4− | | |
| 2002 11 05 | 704 | 0.1− | 0.1− | 2004 02 02 | 704 | 1.2+ | 0.3+ | 2006 11 25 | 703 | 0.1− | 0.4+ | | |
| 2002 11 06 | 291 | 0.9− | 0.8− | 2004 02 10 | 644 | 0.5− | 0.4− | 2006 11 25 | 703 | 1.0+ | 0.6+ | | |
| 2002 11 06 | 291 | 0.0 | 0.0 | 2004 02 10 | 644 | 0.3− | 0.3− | 2006 11 25 | 703 | 0.1− | 0.8− | | |
| 2002 11 06 | 291 | 0.0 | 0.4+ | 2004 02 10 | 644 | 0.2− | 0.3− | 2006 11 25 | 703 | 0.2− | 0.1− | | |
| 2002 11 12 | 704 | 1.1+ | 1.0+ | 2004 02 11 | 704 | 0.8+ | 0.4− | | | | | | |

**(138330)∗ 2000 GE$_{91}$**

Discovered 2000 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 151.30592 | | (2000.0) | | −0.90536420 | +0.33846917 |
| $n$ | 0.21539203 | $\omega$ | 151.42138 | | −0.42448530 | −0.70531053 |
| $a$ | 2.7562353 | $\Omega$ | 50.71750 | | −0.01130869 | −0.62287693 |
| $e$ | 0.0686664 | $i$ | 19.34681 | | | |
| $P$ | 4.58 | $H$ | 14.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.3− | 0.6− | 2002 10 11 | 704 | 0.5− | 0.6+ | 2004 01 14 | 644 | 0.1− | 0.1− | | |
| 2000 03 25 | 691 | 0.3− | 0.5− | 2002 10 11 | 704 | 0.6+ | 0.1+ | 2004 01 19 | 704 | 0.3+ | 0.2− | | |
| 2000 03 25 | 691 | 0.4− | 0.5− | 2002 11 01 | 950 | 0.1− | 0.1− | 2004 01 19 | 704 | 0.7+ | 0.4− | | |
| 2000 04 04 | 704 | 1.1+ | 0.8+ | 2002 11 01 | 950 | 0.0 | 0.0 | 2004 01 19 | 704 | 0.7+ | 0.1− | | |
| 2000 04 04 | 704 | 0.6+ | 0.4+ | 2002 11 01 | 950 | 0.0 | 0.1− | 2004 01 19 | 704 | 0.9+ | 0.3− | | |
| 2000 04 04 | 704 | 1.1+ | 0.0 | 2002 11 04 | 644 | 0.2− | 0.1+ | 2004 01 19 | 704 | 0.9+ | 0.7− | | |
| 2000 04 04 | 704 | 0.5− | 0.7− | 2002 11 04 | 644 | 0.0 | 0.1+ | 2004 02 03 | 704 | 1.3+ | 0.1+ | | |
| 2000 04 04 | 704 | 0.5− | 0.4− | 2002 11 04 | 644 | 0.1+ | 0.6+ | 2004 02 03 | 704 | 0.2+ | 0.5+ | | |
| 2000 04 07 | 699 | 0.1+ | 0.8+ | 2002 11 05 | 699 | 0.6+ | 0.8− | 2004 02 03 | 704 | 0.4− | 0.3+ | | |
| 2000 04 07 | 699 | 0.2+ | 1.1+ | 2002 11 05 | 699 | 0.6− | 0.3− | 2004 02 09 | 699 | 0.4− | 0.5− | | |
| 2000 04 07 | 699 | 0.1− | 0.6+ | 2002 11 05 | 699 | 0.5− | 1.3− | 2004 02 09 | 699 | 0.1+ | 0.2+ | | |
| 2000 04 07 | 699 | 0.3− | 0.5+ | 2002 11 05 | 699 | 0.1− | 0.3+ | 2004 02 09 | 699 | 0.2+ | 0.2− | | |
| 2000 04 08 | 704 | 1.3+ | 0.0 | 2002 11 06 | 704 | 0.1+ | 0.2+ | 2004 02 09 | 699 | 0.5− | 0.6− | | |
| 2000 04 08 | 704 | 0.9+ | 0.5+ | 2002 11 06 | 704 | (1.5− | 0.7+) | 2004 02 10 | 704 | 0.4− | 0.7+ | | |
| 2000 04 08 | 704 | 0.4+ | 0.9+ | 2002 11 06 | 704 | 0.2+ | 0.2+ | 2004 02 10 | 704 | 0.3+ | 0.3+ | | |
| 2000 04 13 | 704 | 1.0+ | 1.7+ | 2002 11 06 | 704 | (0.3− | 1.8+) | 2004 02 10 | 704 | 0.8− | 0.7+ | | |
| 2000 04 13 | 704 | 1.3+ | 1.0+ | 2002 11 06 | 704 | 0.2+ | 0.4+ | 2004 02 10 | 704 | 1.0− | 0.4+ | | |
| 2000 04 13 | 704 | (2.1+ | 1.2+) | 2002 11 07 | 704 | 0.2− | 1.0+ | 2004 02 10 | 704 | 0.9− | 0.2− | | |
| 2000 04 13 | 704 | 0.3+ | 0.9+ | 2002 11 07 | 704 | 0.5+ | 1.4+ | 2004 02 15 | 201 | 0.2− | 0.2− | | |
| 2000 04 27 | 699 | 0.7+ | 0.6+ | 2002 11 07 | 704 | 0.1+ | 0.1+ | 2004 02 15 | 201 | 0.3+ | 0.3+ | | |
| 2000 04 27 | 699 | 0.3+ | 0.6+ | 2002 11 07 | 704 | 0.5− | 0.6+ | 2004 03 01 | 704 | (1.0− | 1.9+) | | |
| 2000 04 27 | 704 | 0.5+ | 0.9− | 2002 11 07 | 704 | 0.9− | 0.5+ | 2004 03 01 | 704 | 0.3− | 0.6+ | | |
| 2000 04 27 | 699 | 0.3+ | 0.6+ | 2002 11 11 | 291 | 0.1− | 0.2− | 2004 03 01 | 704 | 0.7− | 0.4+ | | |
| 2000 04 27 | 704 | 0.2− | 0.5+ | 2002 11 11 | 291 | 0.0 | 0.0 | 2004 03 23 | 703 | 0.2− | 0.0 | | |
| 2000 04 27 | 699 | 0.3+ | 0.6+ | 2002 11 11 | 291 | 0.1+ | 0.1− | 2004 03 23 | 703 | 0.3+ | 0.3+ | | |
| 2000 04 27 | 704 | 0.0 | 0.3+ | 2002 11 12 | 644 | 0.4− | 0.4+ | 2004 03 23 | 703 | 1.1− | 0.1+ | | |
| 2000 04 27 | 704 | (1.3− | 2.1+) | 2002 11 12 | 644 | 0.1− | 0.4+ | 2004 03 23 | 703 | 0.1+ | 0.2− | | |
| 2000 05 05 | 704 | 0.4− | 0.5+ | 2002 11 12 | 644 | 0.3− | 0.3+ | 2004 04 12 | 704 | 0.7− | 0.4− | | |
| 2000 05 05 | 704 | 0.9− | 0.9+ | 2002 12 01 | 704 | 1.1− | 0.3+ | 2004 04 12 | 704 | 0.2+ | 0.6+ | | |
| 2000 05 05 | 704 | 0.2− | 0.9+ | 2002 12 01 | 704 | 0.7− | 0.5+ | 2004 04 12 | 704 | 0.9+ | 0.8+ | | |
| 2000 05 05 | 704 | 0.1− | 0.1+ | 2002 12 01 | 704 | 0.8− | 1.2+ | 2004 04 12 | 704 | 0.1− | 0.1− | | |
| 2000 05 05 | 704 | 0.1− | 0.5+ | 2002 12 01 | 704 | 0.5− | 0.2+ | 2004 04 12 | 704 | 0.1− | 0.5+ | | |
| 2000 05 23 | 699 | 1.1+ | 1.3+ | 2002 12 10 | 644 | 0.2− | 0.2− | 2004 05 24 | 704 | 0.5− | 0.6+ | | |
| 2000 05 23 | 699 | 0.7+ | 0.6− | 2002 12 10 | 644 | 0.3− | 0.0 | 2004 05 24 | 704 | 0.1+ | 0.1+ | | |
| 2000 05 23 | 699 | 1.6+ | 0.1− | 2002 12 10 | 644 | 0.2− | 0.2+ | 2004 05 24 | 704 | 0.6+ | 0.1− | | |
| 2000 05 23 | 699 | 0.9+ | 0.0 | 2002 12 10 | 704 | 1.1− | 0.0 | 2006 07 30 | E12 | 1.2− | 0.3− | | |
| 2000 06 06 | 699 | (0.6+ | 2.2+) | 2002 12 10 | 704 | 0.4+ | 1.2− | 2006 07 30 | E12 | (1.9− | 0.3+) | | |
| 2000 06 06 | 699 | (0.4+ | 2.9+) | 2002 12 10 | 704 | 0.3− | 0.4+ | 2006 07 30 | E12 | 0.5− | 1.2+ | | |
| 2000 06 06 | 699 | 0.0 | 1.5+ | 2002 12 10 | 704 | 0.2+ | 0.6− | 2006 07 30 | E12 | 0.2+ | 1.0+ | | |
| 2000 06 06 | 699 | 0.2− | 0.8+ | 2003 12 03 | 704 | 0.1+ | 0.6− | 2006 09 26 | 703 | 0.3− | 0.5+ | | |
| 2002 10 03 | 704 | 0.9− | 0.6+ | 2003 12 03 | 704 | 0.1− | 0.9− | 2006 09 26 | 703 | 0.0 | 0.2− | | |
| 2002 10 03 | 704 | (0.7+ | 3.1+) | 2003 12 03 | 704 | 0.0 | 0.6− | 2006 09 26 | 703 | 0.8− | 0.4+ | | |
| 2002 10 03 | 704 | 1.1− | 0.3+ | 2003 12 03 | 704 | 0.3+ | 0.5− | 2006 09 26 | 703 | 0.5− | 0.1+ | | |
| 2002 10 03 | 704 | 0.8+ | 0.4+ | 2004 01 11 | 644 | 0.2+ | 0.1− | 2006 10 12 | E12 | 0.4+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.0 | 1.2+ | 2004 01 11 | 644 | 0.4+ | 0.0 | 2006 10 12 | E12 | 0.3− | 1.2+ | | |
| 2002 10 09 | 704 | 1.0+ | 1.3+ | 2004 01 11 | 644 | 0.3+ | 0.3+ | 2006 10 12 | E12 | 0.2− | 0.2− | | |
| 2002 10 09 | 704 | 0.2+ | 1.0+ | 2004 01 14 | 644 | 0.2− | 0.3− | 2006 10 12 | E12 | 0.6− | 0.2+ | | |
| 2002 10 11 | 704 | (2.2− | 1.0+) | 2004 01 14 | 644 | 0.0 | 0.1+ | | | | | | |

**(138331)∗ 2000 GU$_{93}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 149.78993 | | (2000.0) | | −0.87873375 | +0.43176822 |
| $n$ | 0.21799444 | $\omega$ | 138.38272 | | −0.47495683 | −0.74866560 |
| $a$ | 2.7342556 | $\Omega$ | 68.27329 | | −0.04736045 | −0.50306662 |
| $e$ | 0.1516088 | $i$ | 12.65255 | | | |
| $P$ | 4.52 | $H$ | 14.9 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 699 | 0.3+ | 0.4− | 2000 05 26 | 699 | 0.1+ | 1.2+ | 2004 01 19 | 704 | 0.4+ | 0.3− | | |
| 2000 03 12 | 699 | 0.3− | 0.3− | 2000 05 26 | 699 | 0.3− | 0.8+ | 2004 01 19 | 704 | 1.3+ | 0.3+ | | |
| 2000 03 12 | 699 | 0.1+ | 0.2− | 2000 06 03 | 699 | 0.2+ | 0.1− | 2004 01 19 | 704 | 0.2− | 0.8− | | |
| 2000 03 12 | 699 | 0.1+ | 0.3− | 2000 06 03 | 699 | 0.9− | 1.3+ | 2004 01 30 | 699 | 0.6− | 0.0 | | |
| 2000 04 04 | 699 | 0.3− | 0.0 | 2000 06 03 | 699 | 1.2+ | 0.1+ | 2004 01 30 | 699 | 0.4− | 0.3+ | | |
| 2000 04 04 | 699 | 0.1+ | 0.5− | 2000 06 03 | 699 | (2.1+ | 0.9+) | 2004 01 30 | 699 | 0.4+ | 0.0 | | |
| 2000 04 04 | 699 | 0.2+ | 0.0 | 2000 06 07 | 699 | 1.0+ | 0.7+ | 2004 01 30 | 699 | 0.7− | 0.4− | | |
| 2000 04 04 | 699 | 0.0 | 0.1− | 2000 06 07 | 699 | 1.4− | 1.1+ | 2004 01 31 | 704 | 0.3− | 0.7− | | |
| 2000 04 05 | 704 | 0.5− | 1.5+ | 2000 06 07 | 699 | 0.2− | 1.0+ | 2004 01 31 | 704 | 0.1+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.1− | 1.0+ | 2000 06 07 | 699 | 0.2− | 1.3+ | 2004 01 31 | 704 | 0.1+ | 0.7− | | |
| 2000 04 05 | 704 | 0.5− | 1.0+ | 2001 08 16 | 644 | 0.5− | 0.3+ | 2004 01 31 | 704 | 1.1− | 0.4− | | |
| 2000 04 05 | 704 | 0.9− | 0.5+ | 2001 08 16 | 644 | 0.5− | 0.1+ | 2004 01 31 | 704 | 0.2− | 0.1+ | | |
| 2000 04 07 | 699 | 0.2− | 0.1+ | 2001 08 16 | 644 | 0.2− | 0.2+ | 2004 02 02 | 704 | 0.7+ | 0.6+ | | |
| 2000 04 07 | 699 | 0.3− | 0.1+ | 2002 11 07 | 704 | 0.4− | 0.7+ | 2004 02 02 | 704 | 0.4+ | 1.5+ | | |
| 2000 04 07 | 699 | 0.3− | 0.1− | 2002 11 07 | 704 | 0.3+ | 0.4+ | 2004 02 02 | 704 | (0.3+ | 1.6+) | | |
| 2000 04 07 | 699 | 0.3− | 0.2+ | 2002 11 07 | 704 | 0.0 | 0.8+ | 2004 02 02 | 704 | 0.7+ | 1.4+ | | |
| 2000 04 08 | 704 | 0.4+ | 1.0+ | 2002 11 07 | 704 | 0.4− | 1.1+ | 2004 02 11 | 704 | 0.4+ | 0.2− | | |
| 2000 04 08 | 704 | 0.5+ | 0.4− | 2003 10 29 | 291 | 0.5− | 0.2+ | 2004 02 11 | 704 | 0.2+ | 0.2− | | |
| 2000 04 08 | 704 | 0.4+ | 0.6− | 2003 10 29 | 291 | 0.5− | 0.5+ | 2004 02 11 | 704 | 0.6− | 0.6− | | |
| 2000 04 08 | 704 | 0.6+ | 0.7− | 2003 10 29 | 291 | 0.5− | 0.5+ | 2004 02 11 | 704 | 0.2− | 0.5− | | |
| 2000 04 08 | 704 | 0.4− | 0.6− | 2003 12 17 | 644 | 0.0 | 0.4− | 2004 02 11 | 704 | 0.4+ | 0.7+ | | |
| 2000 04 13 | 704 | 0.3− | 0.0 | 2003 12 17 | 644 | 0.1+ | 0.3+ | 2004 02 18 | 704 | 0.1− | 0.9− | | |
| 2000 04 13 | 704 | 0.3− | 0.9− | 2003 12 17 | 644 | 0.0 | 0.2+ | 2004 02 18 | 704 | 0.1+ | 0.9− | | |
| 2000 04 13 | 704 | 0.8− | 0.9− | 2003 12 18 | 704 | 0.7− | 0.9− | 2004 02 18 | 704 | 0.8+ | 0.3− | | |
| 2000 04 13 | 704 | 0.4− | 0.3+ | 2003 12 18 | 704 | 0.1− | 0.5+ | 2004 02 18 | 704 | 0.2+ | 0.3− | | |
| 2000 04 13 | 608 | 0.5+ | 0.7− | 2003 12 18 | 704 | 0.4+ | 0.6+ | 2004 02 18 | 704 | 0.4− | 1.0− | | |
| 2000 04 13 | 608 | 0.6+ | 0.5− | 2003 12 18 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 703 | 0.4− | 1.3+ | | |
| 2000 04 13 | 608 | 0.6+ | 0.6− | 2003 12 28 | 704 | 0.0 | 0.5+ | 2006 09 19 | 703 | (1.8+ | 0.8+) | | |
| 2000 04 27 | 699 | 0.3+ | 0.2− | 2003 12 28 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 1.1+ | | |
| 2000 04 27 | 699 | 0.2+ | 0.4− | 2003 12 28 | 704 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.9+ | | |
| 2000 04 27 | 699 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.2+ | 1.0− | 2006 09 25 | 703 | 0.1+ | 1.1+ | | |
| 2000 04 27 | 699 | 0.2− | 0.2− | 2003 12 28 | 704 | 0.3− | 0.8− | 2006 09 25 | 703 | (2.4− | 1.8+) | | |
| 2000 04 29 | 049 | 1.5+ | 0.4+ | 2003 12 30 | 704 | 0.7− | 1.2+ | 2006 09 25 | 703 | (0.4− | 2.5+) | | |
| 2000 04 29 | 049 | 1.7+ | 0.3+ | 2003 12 30 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 703 | (1.8− | 0.5−) | | |
| 2000 04 29 | 049 | 1.5+ | 0.5+ | 2003 12 30 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.6− | 0.9+ | | |
| 2000 05 04 | 704 | 0.2+ | 0.1+ | 2003 12 30 | 704 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.7+ | | |
| 2000 05 04 | 704 | 0.1+ | 0.1− | 2003 12 30 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.5+ | | |
| 2000 05 04 | 704 | 0.1+ | 0.1+ | 2004 01 18 | 644 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.1+ | 0.9− | | |
| 2000 05 04 | 704 | 0.2+ | 0.5+ | 2004 01 18 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3− | 0.1+ | | |
| 2000 05 04 | 704 | 0.1− | 0.1− | 2004 01 18 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | (0.3− | 3.6−) | | |
| 2000 05 26 | 699 | 0.1+ | 0.1− | 2004 01 19 | 704 | 1.2+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 1.0+ | | |
| 2000 05 26 | 699 | 0.3− | 0.4+ | 2004 01 19 | 704 | 0.7+ | 0.2− | | | | | | |

**(138332)∗ 2000 GJ$_{94}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.99141 | | (2000.0) | | +0.37168934 | −0.92399060 |
| $n$ | 0.23609936 | $\omega$ | 268.28729 | | +0.92013377 | +0.35379837 |
| $a$ | 2.5926238 | $\Omega$ | 159.17762 | | +0.12329183 | +0.14514850 |
| $e$ | 0.1048378 | $i$ | 14.65530 | | | |
| $P$ | 4.17 | $H$ | 14.6 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | (2.7+ | 0.4−) | 2002 11 16 | 644 | 0.0 | 0.6− | 2004 03 23 | 704 | 0.1− | 0.5+ | | |
| 2000 03 08 | 704 | 0.3− | 0.4+ | 2002 11 30 | 704 | 0.4− | 1.1+ | 2004 03 28 | 703 | 0.2+ | 0.5− | | |
| 2000 03 08 | 704 | 0.4− | 1.2+ | 2002 11 30 | 704 | 0.6− | 0.6+ | 2004 03 28 | 703 | 1.2− | 0.1− | | |
| 2000 03 08 | 704 | 0.4− | 0.7+ | 2002 11 30 | 704 | 0.2− | 0.8+ | 2004 03 28 | 703 | 0.7− | 0.3− | | |
| 2000 04 05 | 704 | (0.0 | 2.2−) | 2002 11 30 | 704 | 0.0 | 1.4+ | 2004 03 28 | 703 | (2.1− | 0.9−) | | |
| 2000 04 05 | 704 | 0.4− | 0.0 | 2003 01 02 | 704 | 0.6+ | 0.0 | 2004 04 15 | 704 | 0.1− | 0.7+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.4+ | 2003 01 02 | 704 | 1.0+ | 0.5+ | 2004 04 15 | 704 | 0.7+ | 0.2+ | | |
| 2000 04 05 | 704 | 0.1+ | 0.3+ | 2003 01 02 | 704 | 0.4+ | 0.3− | 2004 04 15 | 704 | 0.5+ | 0.3− | | |
| 2000 04 07 | 699 | 0.1− | 0.0 | 2003 01 02 | 704 | 0.7+ | 0.8+ | 2004 04 15 | 704 | (2.0+ | 0.8+) | | |
| 2000 04 07 | 699 | 0.3− | 0.1+ | 2003 01 28 | 704 | 0.7+ | 0.1+ | 2004 04 15 | 704 | 0.0 | 0.1+ | | |
| 2000 04 07 | 699 | 0.1+ | 0.1+ | 2003 01 28 | 704 | 0.3+ | 0.5+ | 2004 04 25 | 699 | 0.6− | 0.4− | | |
| 2000 04 07 | 699 | 0.2+ | 0.3+ | 2003 01 28 | 704 | 0.1− | 0.2+ | 2004 04 25 | 699 | 0.4+ | 0.1− | | |
| 2000 04 08 | 704 | 0.3+ | 0.1+ | 2003 01 28 | 704 | 0.3− | 0.1+ | 2004 04 25 | 699 | 0.1− | 0.2− | | |
| 2000 04 08 | 704 | 0.3− | 1.2+ | 2003 01 28 | 704 | 0.4+ | 0.2− | 2004 04 25 | 699 | 0.1− | 0.4− | | |
| 2000 04 08 | 704 | 1.3+ | 0.9+ | 2003 02 04 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.1+ | | |
| 2000 04 13 | 704 | 0.0 | 0.3+ | 2003 02 04 | 644 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.3− | 0.1− | | |
| 2000 04 13 | 704 | 0.4− | 1.2+ | 2003 02 04 | 644 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.1− | | |
| 2000 04 13 | 704 | 0.7− | 1.1− | 2003 12 27 | 704 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.0 | 0.3+ | | |
| 2000 04 13 | 704 | 0.5− | 0.5+ | 2003 12 27 | 704 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.1− | 0.8+ | | |
| 2000 04 27 | 699 | 1.6− | 0.1+ | 2003 12 27 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.3+ | | |
| 2000 04 27 | 699 | 0.2+ | 1.8+ | 2003 12 27 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.3− | | |
| 2000 04 27 | 699 | 0.3− | 0.3− | 2004 01 28 | 704 | (1.5− | 0.6−) | 2006 09 26 | 703 | 0.3− | 0.3− | | |
| 2000 04 27 | 699 | 0.8− | 0.6+ | 2004 01 28 | 704 | 0.3− | 0.5− | 2006 09 29 | 699 | (3.3+ | 0.5+) | | |
| 2000 05 03 | 704 | 0.7+ | 0.6+ | 2004 01 28 | 704 | 0.2− | 0.3− | 2006 09 29 | 699 | 1.0− | 0.0 | | |
| 2000 05 03 | 704 | 0.2− | 0.6+ | 2004 01 28 | 704 | 0.6+ | 0.5− | 2006 09 29 | 699 | 1.0− | 0.0 | | |
| 2000 05 03 | 704 | 0.4+ | 0.3− | 2004 01 28 | 704 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.7+ | 1.0+ | | |
| 2000 05 03 | 704 | 0.0 | 0.3+ | 2004 02 18 | 703 | 0.5− | 0.7− | 2006 09 30 | 704 | 0.6− | 0.8+ | | |
| 2000 05 03 | 704 | 0.5− | 1.1+ | 2004 02 18 | 703 | 1.2− | 0.4+ | 2006 09 30 | 704 | (1.6− | 1.9+) | | |
| 2000 05 05 | 704 | 0.6+ | 1.0+ | 2004 02 18 | 703 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.8+ | 0.8+ | | |
| 2000 05 05 | 704 | 0.9+ | 0.4− | 2004 02 18 | 703 | 0.3+ | 0.3− | 2006 09 30 | 704 | (1.8− | 1.1+) | | |
| 2000 05 05 | 704 | 0.2− | 0.7+ | 2004 02 19 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.5+ | | |
| 2000 05 05 | 704 | 0.9+ | 0.7+ | 2004 02 19 | 704 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.5+ | | |
| 2000 05 05 | 704 | 2.0+ | 1.7+ | 2004 02 19 | 704 | 0.5+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2000 05 26 | 699 | 0.0 | 0.9+ | 2004 02 19 | 704 | 1.0+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.2+ | | |
| 2000 05 26 | 699 | 0.2− | 0.1+ | 2004 02 19 | 704 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.1+ | | |
| 2000 05 26 | 699 | 0.4+ | 0.2− | 2004 02 25 | 704 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.1+ | | |
| 2000 05 26 | 699 | 0.9+ | 1.1+ | 2004 02 25 | 704 | 1.0+ | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.5+ | | |
| 2002 09 25 | 608 | (2.5+ | 0.6+) | 2004 02 25 | 704 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.2+ | | |
| 2002 09 25 | 608 | (1.9+ | 0.0 ) | 2004 02 25 | 704 | 1.0+ | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.1+ | | |
| 2002 09 25 | 608 | (1.8+ | 0.1−) | 2004 02 25 | 704 | 0.7+ | 0.1− | 2006 10 20 | 703 | 0.2− | 0.4+ | | |
| 2002 09 30 | 683 | 0.8− | 0.7+ | 2004 03 01 | 683 | 0.8+ | 0.6− | 2006 10 20 | 703 | 0.1+ | 0.2− | | |
| 2002 09 30 | 683 | 0.1− | 0.5+ | 2004 03 01 | 683 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.3+ | | |
| 2002 09 30 | 683 | (1.7− | 1.3+) | 2004 03 01 | 683 | 0.2− | 0.6− | 2006 10 28 | 703 | 0.1− | 0.4+ | | |
| 2002 10 06 | 608 | 0.5− | 0.6− | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.3+ | | |
| 2002 10 06 | 608 | 0.3− | 0.3− | 2004 03 15 | 704 | 0.3+ | 0.4− | 2006 10 28 | 703 | 0.1− | 0.1− | | |
| 2002 10 06 | 608 | 0.5− | 0.8− | 2004 03 15 | 704 | 0.5+ | 0.3− | 2006 10 28 | 703 | 0.6− | 0.1− | | |
| 2002 10 23 | 608 | 0.8− | 0.7− | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.1− | | |
| 2002 10 23 | 608 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.4− | 2006 10 28 | 703 | 0.0 | 0.2− | | |
| 2002 10 23 | 608 | 0.1− | 0.6− | 2004 03 21 | 699 | 0.4− | 0.4− | 2006 10 28 | 703 | 0.1+ | 0.2+ | | |
| 2002 10 30 | 704 | 0.7+ | 0.5− | 2004 03 21 | 691 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.1+ | | |
| 2002 10 30 | 704 | 0.5+ | 0.4+ | 2004 03 21 | 699 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.3− | | |
| 2002 10 30 | 704 | 0.3+ | 0.3− | 2004 03 21 | 699 | 0.6− | 0.7− | 2006 11 17 | 703 | 0.1+ | 0.0 | | |
| 2002 10 30 | 704 | 0.1+ | 0.5− | 2004 03 21 | 691 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.1+ | | |
| 2002 10 30 | 704 | 0.1− | 0.5− | 2004 03 21 | 699 | (2.0− | 0.8−) | 2006 11 23 | 703 | 0.5+ | 0.3+ | | |
| 2002 11 06 | 644 | 0.1− | 0.5+ | 2004 03 21 | 691 | 0.5− | 0.3− | 2006 11 23 | 703 | 0.6+ | 0.2+ | | |
| 2002 11 06 | 644 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.4− | 0.2+ | 2006 11 23 | 703 | 0.4− | 0.2+ | | |
| 2002 11 06 | 644 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.3− | 0.2+ | | |
| 2002 11 16 | 644 | 0.0 | 0.7− | 2004 03 23 | 704 | 0.0 | 0.2+ | | | | | | |
| 2002 11 16 | 644 | 0.0 | 0.4− | 2004 03 23 | 704 | 0.2− | 0.3+ | | | | | | |

**(138333)∗ 2000 GK$_{97}$ = 1996 KZ$_{7}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 1277)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 174.73881 | | (2000.0) | | | |
| $n$ | 0.23203810 | $\omega$ | 125.73750 | | −0.90162644 | +0.42859925 |
| $a$ | 2.6227880 | $\Omega$ | 79.70475 | | −0.41344048 | −0.81462370 |
| $e$ | 0.1282525 | $i$ | 3.38373 | | −0.12703043 | −0.39075685 |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.5+ | 0.4+ | 2000 04 08 | 704 | 0.1− | 0.6− | 2004 03 14 | 704 | 0.8+ | 0.2+ | 2004 04 21 | 704 | 0.3+ | 0.0 | |
| 1996 04 14 | 691 | 0.1+ | 0.1+ | 2000 04 08 | 704 | 0.3+ | 0.1− | 2004 03 14 | 704 | 1.0+ | 0.7− | 2004 04 22 | 704 | 0.6+ | 0.4+ | |
| 1996 04 14 | 691 | 0.3+ | 0.2+ | 2000 04 08 | 704 | 0.6+ | 0.4+ | 2004 03 14 | 704 | (2.0+ | 0.0 ) | 2004 04 22 | 704 | 0.5+ | 0.0 | |
| 1996 05 22 | 809 | (1.1+ | 2.3+) | 2000 04 08 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.4+ | 0.3− | 2004 04 22 | 704 | 0.1+ | 0.4+ | |
| 1996 05 22 | 809 | (0.4+ | 3.2+) | 2000 04 08 | 704 | 0.5+ | 0.9+ | 2004 03 20 | 704 | 0.1+ | 0.2+ | 2004 04 22 | 704 | 0.7+ | 0.4+ | |
| 1996 05 22 | 809 | (1.4− | 2.1+) | 2001 08 20 | 807 | 0.6− | 0.3+ | 2004 03 20 | 704 | 0.3− | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.9+ | |
| 1996 05 23 | 809 | (1.0+ | 2.3+) | 2001 08 20 | 807 | 0.6− | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.4− | 2004 04 22 | 704 | 0.3+ | 1.3+ | |
| 1996 05 23 | 809 | (0.1+ | 2.2+) | 2003 12 21 | 645 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.1− | 0.6+ | 2004 04 22 | 704 | 0.5+ | 1.0+ | |
| 1996 05 23 | 809 | 0.2+ | 2.0+ | 2003 12 21 | 645 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2004 04 22 | 704 | 0.3− | 0.7+ | |
| 2000 03 12 | 704 | 0.4+ | 0.2− | 2004 01 22 | 704 | 0.1− | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.5+ | 2004 04 22 | 704 | 0.5+ | 1.1+ | |
| 2000 03 12 | 704 | 0.4+ | 0.5+ | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2004 04 22 | 704 | 0.2− | 1.0+ | |
| 2000 03 12 | 704 | 0.1− | 0.9− | 2004 01 22 | 704 | 0.4− | 1.0+ | 2006 09 23 | 691 | 0.0 | 0.5+ | 2004 04 22 | 704 | 0.0 | 0.4+ | |
| 2000 03 12 | 704 | 0.0 | 0.6− | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.3+ | 2004 04 26 | 699 | 0.0 | 0.2+ | |
| 2000 03 26 | 699 | 0.7+ | 0.7+ | 2004 01 22 | 704 | 0.2− | 0.9+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2004 04 26 | 699 | 0.4− | 0.1− | |
| 2000 03 26 | 699 | 0.1+ | 0.2+ | 2004 01 23 | 699 | (2.0− | 0.7−) | 2006 10 01 | 691 | 0.0 | 0.5+ | 2004 04 26 | 699 | 0.3+ | 0.5− | |
| 2000 03 26 | 699 | 1.0+ | 0.1+ | 2004 01 23 | 699 | 0.4+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.5+ | 2004 04 26 | 699 | 0.3+ | 0.4− | |
| 2000 03 26 | 699 | 0.1+ | 0.6+ | 2004 01 23 | 699 | 1.3− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.4+ | 2005 06 30 | 691 | 0.1− | 0.1+ | |
| 2000 03 29 | 704 | 0.2− | 1.4+ | 2004 01 23 | 699 | 1.0+ | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2005 06 30 | 691 | 0.2+ | 0.6+ | |
| 2000 03 29 | 704 | 0.3+ | 2.0+ | 2004 02 16 | 704 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2005 06 30 | 691 | 0.3− | 0.5+ | |
| 2000 03 29 | 704 | 0.4− | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.3− | 0.2+ | |
| 2000 03 29 | 704 | 0.4− | 0.0 | 2004 02 16 | 704 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.4− | 0.3+ | |
| 2000 04 07 | 699 | 0.7+ | 0.3− | 2004 02 16 | 704 | 0.5+ | 0.9+ | 2006 10 22 | 691 | 0.6− | 0.2+ | 2006 09 28 | 691 | 0.6− | 0.5+ | |
| 2000 04 07 | 699 | 0.5+ | 1.1+ | 2004 02 16 | 704 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.4+ | |
| 2000 04 07 | 699 | 0.6− | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.5− | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.4+ | |
| 2000 04 07 | 704 | 0.1− | 0.1+ | 2004 02 16 | 704 | 0.6+ | 0.3+ | 2006 10 31 | G96 | 0.9− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.5+ | |
| 2000 04 07 | 704 | 0.1− | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.8+ | |
| 2000 04 07 | 699 | 0.3+ | 0.4+ | 2004 02 18 | 333 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.6+ | |
| 2000 04 07 | 704 | 0.9− | 0.1− | 2004 02 18 | 333 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.5+ | |
| 2000 04 07 | 704 | 0.2+ | 0.2+ | 2004 02 18 | 333 | 0.5− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.3+ | |
| 2000 04 07 | 704 | 0.2+ | 0.5+ | 2004 03 14 | 703 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.3− | 0.4+ | |
| 2000 04 08 | 704 | 1.3− | 0.9− | 2004 03 14 | 703 | 0.7+ | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.6+ | |
| 2000 04 08 | 704 | 0.6− | 0.1+ | 2004 03 14 | 703 | 1.0+ | 1.0+ | 2006 11 18 | G96 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.5+ | |
| 2000 04 08 | 704 | 0.6− | 1.0+ | 2004 03 14 | 703 | 0.3− | 0.0 | | | | | 2006 10 17 | 691 | 0.0 | 0.3+ | |
| 2000 04 08 | 704 | 0.5− | 1.3+ | 2004 03 14 | 704 | 0.2+ | 0.5+ | | | | | 2006 10 17 | 691 | 0.3− | 0.4+ | |
| 2000 03 30 | 704 | 0.0 | 0.7+ | 2002 10 12 | 704 | 0.5− | 1.5+ | 2004 04 21 | 704 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.3− | 1.4+ | |
| 2000 03 30 | 704 | 0.5− | 0.2+ | 2004 01 29 | 699 | 0.6+ | 0.9− | 2004 04 22 | 704 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.7− | 1.2− | |
| 2000 04 05 | 699 | 0.2− | 0.1− | 2004 01 29 | 699 | 0.6+ | 1.1+ | 2004 04 22 | 704 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.1− | |
| 2000 04 05 | 699 | 0.1+ | 0.3+ | 2004 01 29 | 699 | 1.2− | 0.6+ | 2004 04 22 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.5− | |
| 2000 04 05 | 699 | 0.1− | 0.5− | 2004 01 29 | 699 | 0.7− | 0.1+ | 2004 04 22 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.5+ | |
| 2000 04 05 | 699 | 0.1+ | 0.1− | 2004 02 17 | 703 | 0.7− | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.4+ | |
| 2000 04 06 | 699 | 0.9+ | 0.4− | 2004 02 17 | 703 | 0.5− | 0.3− | 2004 04 22 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.6+ | |
| 2000 04 06 | 699 | 0.2+ | 0.1+ | 2004 02 17 | 703 | 0.3− | 0.2+ | 2004 04 22 | 704 | 0.5+ | 0.4+ | | | | | |
| 2000 04 06 | 699 | 0.1− | 0.0 | 2004 02 17 | 703 | 0.4− | 0.2+ | 2004 04 22 | 704 | 0.1− | 0.6+ | | | | | |
| 2000 04 06 | 699 | 0.1+ | 0.3+ | 2004 03 14 | 644 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.4+ | 0.6+ | | | | | |
| 2000 04 07 | 704 | 0.8+ | 0.9− | 2004 03 14 | 644 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.3+ | 1.3+ | | | | | |
| 2000 04 07 | 704 | 0.1+ | 0.9− | 2004 03 14 | 644 | 0.1− | 0.3+ | 2004 04 22 | 704 | 0.5+ | 1.0+ | | | | | |
| 2000 04 07 | 704 | 0.1− | 0.3− | 2004 03 17 | 704 | 0.5+ | 0.6+ | 2004 04 22 | 704 | 0.3− | 0.7+ | | | | | |
| 2000 04 07 | 704 | 0.1+ | 0.3− | 2004 03 17 | 704 | 0.6+ | 0.6+ | 2004 04 22 | 704 | 0.5+ | 1.1+ | | | | | |
| 2000 04 07 | 704 | 0.2− | 0.1+ | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2004 04 22 | 704 | 0.2− | 1.0+ | | | | | |
| 2000 04 08 | 704 | 0.0 | 0.2+ | 2004 03 17 | 704 | 0.0 | 0.6+ | 2004 04 22 | 704 | 0.0 | 0.4+ | | | | | |
| 2000 04 08 | 704 | 1.1+ | 0.2− | 2004 03 17 | 704 | 0.3+ | 0.1+ | 2004 04 26 | 699 | 0.0 | 0.2+ | | | | | |
| 2000 04 08 | 704 | 0.4− | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.9+ | 2004 04 26 | 699 | 0.4− | 0.1− | | | | | |
| 2000 04 08 | 704 | 2.0+ | 0.1− | 2004 03 19 | 704 | 0.3+ | 1.0+ | 2004 04 26 | 699 | 0.3+ | 0.5− | | | | | |
| 2000 04 08 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 1.1+ | 2004 04 26 | 699 | 0.3+ | 0.4− | | | | | |
| 2000 04 08 | 704 | 1.0− | 0.3− | 2004 03 19 | 704 | 0.3+ | 0.7+ | 2005 06 30 | 691 | 0.1− | 0.1+ | | | | | |
| 2000 04 08 | 704 | 0.3− | 0.4+ | 2004 03 19 | 704 | 0.2− | 0.7+ | 2005 06 30 | 691 | 0.2+ | 0.6+ | | | | | |
| 2000 04 08 | 704 | 0.9+ | 0.8+ | 2004 03 21 | 704 | 0.7+ | 0.6+ | 2005 06 30 | 691 | 0.3− | 0.5+ | | | | | |
| 2000 04 08 | 704 | 0.4+ | 0.4− | 2004 03 21 | 704 | 0.5+ | 1.5+ | 2006 09 28 | 691 | 0.3− | 0.2+ | | | | | |
| 2000 04 08 | 704 | 0.7− | 0.3− | 2004 03 21 | 704 | 0.5+ | 0.9+ | 2006 09 28 | 691 | 0.4− | 0.3+ | | | | | |
| 2000 04 08 | 704 | 0.5+ | 1.2+ | 2004 03 21 | 704 | (2.0− | 0.6+) | 2006 09 28 | 691 | 0.6− | 0.5+ | | | | | |
| 2000 04 08 | 704 | 1.1+ | 0.8+ | 2004 03 27 | 699 | (1.8− | 1.2−) | 2006 10 02 | 691 | 0.2− | 0.4+ | | | | | |
| 2000 04 08 | 704 | 0.7− | 0.4− | 2004 03 27 | 699 | 0.5+ | 0.8− | 2006 10 02 | 691 | 0.1+ | 0.7+ | | | | | |
| 2000 04 08 | 704 | 1.8+ | 1.4+ | 2004 03 27 | 699 | 0.5− | 0.4− | 2006 10 02 | 691 | 0.3− | 0.4+ | | | | | |
| 2000 04 10 | 704 | 0.6− | 0.5− | 2004 03 27 | 699 | 0.4+ | 0.3− | 2006 10 02 | 691 | 0.0 | 0.5+ | | | | | |
| 2000 04 10 | 704 | 0.1+ | 0.3− | 2004 03 31 | 704 | 0.4− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.8+ | | | | | |
| 2000 04 10 | 704 | 0.0 | 0.5− | 2004 03 31 | 704 | 0.2− | 0.6− | 2006 10 02 | 691 | 0.2− | 0.6+ | | | | | |
| 2000 04 10 | 704 | 0.1+ | 0.4+ | 2004 03 31 | 704 | 0.2− | 0.5− | 2006 10 17 | 691 | 0.1− | 0.5+ | | | | | |
| 2000 05 04 | 699 | 0.4− | 0.2+ | 2004 03 31 | 704 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.3+ | | | | | |
| 2000 05 04 | 699 | 0.5+ | 0.0 | 2004 03 31 | 704 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.3− | 0.4+ | | | | | |
| 2000 05 04 | 699 | 0.4+ | 0.2+ | 2004 04 17 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.3− | 1.4+ | | | | | |
| 2000 05 04 | 699 | 0.3− | 0.1+ | 2004 04 17 | 704 | 0.4− | 0.9+ | 2006 10 17 | 703 | 0.7− | 1.2− | | | | | |
| 2000 05 05 | 704 | 0.4− | 0.1+ | 2004 04 17 | 704 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.5+ | 0.1− | | | | | |
| 2000 05 05 | 704 | 0.1− | 0.3+ | 2004 04 17 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.5− | | | | | |
| 2000 05 05 | 704 | 0.1+ | 0.3+ | 2004 04 19 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.5+ | | | | | |
| 2000 05 05 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | | | | |
| 2000 05 05 | 704 | 0.3− | 0.3+ | 2004 04 19 | 704 | 0.7− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.6+ | | | | | |
| 2002 10 10 | 644 | 0.4− | 0.4− | 2004 04 19 | 704 | 0.3+ | 0.0 | | | | | | | | | |

**(138334)∗ 2000 GW$_{98}$ = 2002 TF$_{277}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37483)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 247.51262 | | (2000.0) | | | |
| $n$ | 0.24398691 | $\omega$ | 177.59713 | | −0.87724260 | −0.47880034 |
| $a$ | 2.5364425 | $\Omega$ | 333.70762 | | +0.43912270 | −0.77126983 |
| $e$ | 0.2047670 | $i$ | 4.47726 | | +0.19395022 | −0.41939609 |
| $P$ | 4.04 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 0.2− | 0.2+ | 2002 10 10 | 644 | 0.5− | 0.3− | 2004 04 19 | 704 | 0.2+ | 0.3+ | | | | | |
| 2000 03 27 | 699 | 0.7− | 0.2+ | 2002 10 10 | 644 | 0.4− | 0.2− | 2004 04 21 | 704 | 1.0+ | 0.5− | | | | | |
| 2000 03 27 | 699 | 1.0− | 0.4+ | 2002 10 12 | 704 | 1.0− | 0.9+ | 2004 04 21 | 704 | 1.2+ | 0.2− | | | | | |
| 2000 03 27 | 699 | 0.4− | 1.0+ | 2002 10 12 | 704 | 0.1+ | 1.3+ | 2004 04 21 | 704 | 1.0+ | 0.1+ | | | | | |
| 2000 03 30 | 704 | 0.2+ | 0.1− | 2002 10 12 | 704 | 0.1− | 1.2+ | 2004 04 21 | 704 | 0.5+ | 0.1− | | | | | |

**(138335)∗ 2000 GW$_{100}$ = 2004 CR$_{86}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60660)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 170.22344 | | (2000.0) | | | |
| $n$ | 0.22288701 | $\omega$ | 45.14896 | | −0.99021461 | +0.13296096 |
| $a$ | 2.6940948 | $\Omega$ | 142.43164 | | −0.13939113 | −0.92772455 |
| $e$ | 0.0418017 | $i$ | 3.98615 | | −0.00671857 | −0.34878151 |
| $P$ | 4.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.8+ | 0.5+ | 2004 01 24 | 704 | 0.2+ | 1.0+ | 2006 08 18 | 691 | 0.4− | 0.6+ | | | | | |
| 2000 03 29 | 704 | 0.4− | 1.8+ | 2004 01 24 | 704 | 0.3+ | 0.5+ | 2006 08 18 | 691 | 0.1+ | 0.4+ | | | | | |
| 2000 03 29 | 704 | 0.7+ | 0.8+ | 2004 01 31 | 333 | 0.0 | 0.4+ | 2006 08 19 | 291 | 0.5− | 0.3+ | | | | | |
| 2000 03 29 | 704 | 0.9− | 0.3− | 2004 01 31 | 333 | 0.0 | 0.5− | 2006 08 19 | 291 | 0.2− | 0.4+ | | | | | |
| 2000 03 29 | 704 | 0.5+ | 0.2+ | 2004 02 14 | 106 | 0.1+ | 0.1− | 2006 08 19 | 291 | 0.0 | 0.4+ | | | | | |
| 2000 04 07 | 704 | 0.3+ | 1.6+ | 2004 02 14 | 106 | 0.3− | 0.1− | 2006 08 27 | 691 | 0.4− | 0.5+ | | | | | |
| 2000 04 07 | 704 | 0.4+ | 0.2+ | 2004 02 14 | 106 | 1.3+ | 0.5− | 2006 08 27 | 691 | 0.7− | 0.6+ | | | | | |
| 2000 04 07 | 704 | 1.2+ | 0.6+ | 2004 02 17 | 704 | 0.7− | 0.5+ | 2006 08 27 | 691 | 0.3− | 0.5+ | | | | | |
| 2000 04 07 | 704 | 1.1+ | 0.8+ | 2004 02 17 | 704 | 0.7+ | 0.1+ | 2006 09 12 | 703 | (2.0+ | 0.8+) | | | | | |
| 2000 04 08 | 704 | 1.1− | 0.4− | 2004 02 17 | 704 | 0.8+ | 0.1+ | 2006 09 12 | 703 | (1.6− | 0.1+) | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.4+ | 0.2− | 2004 02 17 | 704 | 0.9+ | 0.2+ | 2006 09 12 | 703 | (0.8+ | 1.6+) |
| 2000 04 08 | 704 | 1.3+ | 0.2+ | 2004 02 17 | 704 | 0.7+ | 0.6+ | 2006 09 12 | 703 | (0.1− | 2.3+) |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2004 02 26 | 704 | 1.6+ | 0.2− | 2006 09 14 | 644 | 0.2− | 0.5+ |
| 2001 07 17 | 644 | (2.0− | 2.1−) | 2004 02 26 | 704 | 0.0 | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1− |
| 2001 07 17 | 644 | (1.9− | 1.7−) | 2004 02 26 | 704 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2001 07 17 | 644 | (1.1− | 2.1−) | 2004 02 26 | 704 | 1.0+ | 0.2+ | 2006 09 19 | 703 | 0.5+ | 0.4+ |
| 2001 08 23 | 691 | 0.2+ | 0.4− | 2004 03 10 | 644 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.3+ |
| 2001 08 23 | 691 | 0.7+ | 0.3− | 2004 03 10 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | (1.6− | 0.5−) |
| 2001 08 23 | 691 | 0.2+ | 0.7− | 2004 03 10 | 644 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2002 10 15 | 644 | 0.4+ | 0.1− | 2005 06 13 | 599 | 0.6+ | 0.8+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2002 10 15 | 644 | 0.2+ | 0.3− | 2005 06 13 | 599 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.3− | 0.1+ |
| 2002 10 15 | 644 | 0.2+ | 0.0 | 2005 06 13 | 599 | 0.8+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2004 01 24 | 704 | 0.2− | 0.6+ | 2005 06 14 | 599 | 0.6− | 1.0+ | | | | |
| 2004 01 24 | 704 | 1.0− | 1.1+ | 2006 08 18 | 691 | 0.0 | 0.4+ | | | | |

**(138336)∗ 2000 GJ$_{102}$ = 2001 QL$_{129}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 15754)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.46539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22975448 | $\omega$ | 47.57597 | | −0.29269937 | +0.95357464 | |
| $a$ | 2.6401386 | $\Omega$ | 205.66245 | | −0.91832251 | −0.30098513 | |
| $e$ | 0.1033094 | $i$ | 9.41854 | | −0.26647862 | −0.01016695 | |
| $P$ | 4.29 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 699 | 0.4+ | 0.2+ | 2001 08 23 | 699 | 0.1− | 0.5+ | 2004 03 17 | 704 | 0.2− | 0.4− |
| 2000 04 02 | 699 | 0.4+ | 0.9+ | 2001 08 23 | 699 | 0.6− | 1.2+ | 2004 03 27 | 703 | 0.4− | 1.3+ |
| 2000 04 02 | 699 | 0.2− | 0.6+ | 2001 08 25 | 704 | 0.1− | 0.6+ | 2004 03 27 | 703 | 1.4+ | 0.3+ |
| 2000 04 02 | 699 | 0.4+ | 0.4− | 2001 08 25 | 704 | 0.3− | 0.6+ | 2004 03 27 | 703 | 0.9− | 0.1− |
| 2000 04 05 | 699 | 0.4− | 0.4+ | 2001 08 25 | 704 | 0.1+ | 0.8+ | 2004 03 27 | 703 | 1.2− | 0.3− |
| 2000 04 05 | 699 | 0.3+ | 0.7+ | 2001 08 25 | 704 | 0.4− | 0.1+ | 2004 04 19 | 704 | 0.7+ | 0.8+ |
| 2000 04 05 | 699 | 0.5+ | 1.0+ | 2001 08 25 | 704 | 0.6+ | 1.0+ | 2004 04 19 | 704 | 0.9+ | 0.3+ |
| 2000 04 05 | 699 | 0.0 | 0.1+ | 2001 08 25 | 704 | 0.2− | 0.8+ | 2004 04 19 | 704 | 1.1+ | 0.4+ |
| 2000 04 07 | 704 | 0.0 | 0.5+ | 2001 08 25 | 704 | 0.1+ | 0.8+ | 2004 04 19 | 704 | 0.3− | 1.3+ |
| 2000 04 07 | 704 | 0.2− | 0.3+ | 2001 08 25 | 704 | 0.2+ | 0.6+ | 2005 10 22 | 291 | 0.3− | 0.7+ |
| 2000 04 07 | 704 | 0.6+ | 0.4+ | 2004 02 14 | 644 | 0.5+ | 0.1+ | 2005 10 22 | 291 | 0.2+ | 0.5+ |
| 2000 04 07 | 704 | 0.7+ | 0.4+ | 2004 02 14 | 644 | 0.2− | 0.6+ | 2005 10 22 | 291 | 0.0 | 0.3+ |
| 2000 04 08 | 704 | 0.1− | 1.2+ | 2004 02 14 | 644 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.3+ |
| 2000 04 08 | 704 | 0.3+ | 0.8+ | 2004 02 14 | 644 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2000 04 08 | 704 | 0.1+ | 0.7+ | 2004 02 14 | 644 | 0.9+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.7+ |
| 2000 04 10 | 704 | 0.1− | 0.6+ | 2004 02 14 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | (1.8− | 0.2+) |
| 2000 04 10 | 704 | 0.5+ | 0.5+ | 2004 02 19 | 704 | 0.5+ | 0.5− | 2006 10 16 | 703 | 0.0 | 1.0+ |
| 2000 04 10 | 704 | 0.3+ | 0.4+ | 2004 02 19 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2000 04 10 | 704 | 0.8− | 0.7+ | 2004 02 19 | 704 | 0.3+ | 0.5− | 2006 10 16 | 703 | 1.3− | 1.2− |
| 2000 04 25 | 699 | 0.4− | 0.6+ | 2004 02 19 | 704 | 0.7+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.5+ |
| 2000 04 25 | 699 | 0.1− | 0.3+ | 2004 02 19 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2000 04 25 | 699 | 0.4− | 0.8+ | 2004 03 01 | 703 | 0.3− | 0.8+ | 2006 10 19 | 691 | 0.3+ | 0.5+ |
| 2000 04 25 | 699 | 0.5+ | 0.1− | 2004 03 01 | 703 | 0.8− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2000 04 28 | 704 | 0.6+ | 0.6+ | 2004 03 01 | 703 | 0.2− | 1.3− | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2000 04 28 | 704 | 0.4− | 1.4+ | 2004 03 01 | 703 | 0.8− | 1.3+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2000 04 28 | 704 | 0.5+ | 1.7+ | 2004 03 15 | 703 | 0.6+ | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 04 29 | 704 | 0.4+ | 0.8+ | 2004 03 15 | 703 | 0.7− | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2000 04 29 | 704 | 0.1+ | 0.1+ | 2004 03 15 | 703 | 0.6− | 0.6+ | 2006 10 27 | 691 | 0.3+ | 0.6+ |
| 2000 04 29 | 704 | 1.4+ | 0.8+ | 2004 03 15 | 703 | 0.3− | 1.5+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2000 04 29 | 704 | 0.1+ | 1.0+ | 2004 03 16 | 704 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 08 17 | 049 | 0.1− | 0.8− | 2004 03 16 | 704 | 0.4+ | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2001 08 17 | 049 | 1.2− | 0.0 | 2004 03 16 | 704 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 08 17 | 049 | 0.4− | 0.3− | 2004 03 16 | 704 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2001 08 20 | 704 | 0.8− | 0.6+ | 2004 03 16 | 704 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2001 08 20 | 704 | 0.2− | 0.2+ | 2004 03 17 | 704 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2001 08 20 | 704 | 0.7+ | 1.2+ | 2004 03 17 | 704 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2001 08 23 | 699 | 0.1− | 1.4+ | 2004 03 17 | 704 | 0.4+ | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 08 23 | 699 | 0.5− | 0.7+ | 2004 03 17 | 704 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.5− |

**(138337)∗ 2000 GS$_{104}$ = 2004 CB$_{56}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60661)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.40872 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23719508 | $\omega$ | 358.22652 | | −0.86000253 | −0.50854932 | |
| $a$ | 2.5846332 | $\Omega$ | 151.08397 | | +0.46924728 | −0.82056023 | |
| $e$ | 0.1330874 | $i$ | 4.99615 | | +0.20050595 | −0.26088025 | |
| $P$ | 4.16 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.0 | 0.5− | 2004 02 23 | 704 | 0.6+ | 0.6+ | 2004 03 24 | 699 | 0.2− | 0.1+ |
| 2000 04 04 | 699 | 0.3− | 0.1+ | 2004 02 23 | 704 | 0.9+ | 0.6+ | 2004 03 30 | 703 | 0.5+ | 0.4+ |
| 2000 04 04 | 699 | 0.4+ | 0.3+ | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2004 03 30 | 703 | 0.3− | 0.1− |
| 2000 04 04 | 699 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 703 | 0.6− | 0.6+ |
| 2000 04 07 | 704 | 0.5− | 0.1+ | 2004 03 12 | 644 | 0.2+ | 0.2− | 2004 03 30 | 703 | 0.0 | 0.3+ |
| 2000 04 07 | 704 | 0.4+ | 0.1+ | 2004 03 12 | 644 | 0.2+ | 0.1− | 2004 04 15 | 704 | 0.8+ | 0.7+ |
| 2000 04 07 | 704 | 0.1+ | 0.2+ | 2004 03 12 | 644 | 0.1+ | 0.2− | 2004 04 15 | 704 | 0.3+ | 0.6+ |
| 2000 04 08 | 704 | 0.3− | 0.7+ | 2004 03 15 | 703 | 1.0− | 0.3+ | 2004 04 15 | 704 | 0.0 | 0.5+ |
| 2000 04 08 | 704 | 0.3− | 0.9− | 2004 03 15 | 703 | 0.1− | 0.3− | 2004 04 19 | 704 | 0.3− | 0.4+ |
| 2000 04 08 | 704 | 0.1+ | 1.3− | 2004 03 15 | 703 | 0.2− | 0.1+ | 2004 04 19 | 704 | 0.4+ | 0.4+ |
| 2000 04 08 | 704 | 0.1+ | 0.0 | 2004 03 15 | 703 | 0.6+ | 0.2− | 2004 04 19 | 704 | 1.4+ | 0.2+ |
| 2000 04 08 | 704 | 1.0+ | 0.1+ | 2004 03 15 | 333 | 0.5+ | 0.8− | 2004 04 19 | 704 | 0.0 | 0.0 |
| 2000 04 27 | 699 | 0.6+ | 1.1+ | 2004 03 15 | 333 | 0.4+ | 0.4− | 2004 04 19 | 704 | 0.7+ | 0.3− |
| 2000 04 27 | 699 | 0.2− | 0.7+ | 2004 03 16 | 704 | 0.5− | 0.0 | 2004 04 21 | 703 | 0.8− | 1.4− |
| 2000 04 27 | 699 | 0.6+ | 1.3+ | 2004 03 16 | 333 | 0.6− | 1.1+ | 2004 04 21 | 703 | 1.4+ | 1.3− |
| 2000 04 27 | 704 | 1.3− | 1.1− | 2004 03 16 | 683 | 0.4+ | 1.3− | 2004 04 21 | 703 | 0.3+ | 0.7− |
| 2000 04 27 | 699 | 0.6+ | 0.7+ | 2004 03 16 | 704 | 0.8− | 0.8+ | 2004 04 21 | 703 | 1.5− | 0.8− |
| 2000 04 27 | 704 | 0.9− | 0.5+ | 2004 03 16 | 333 | 0.5− | 0.7+ | 2004 04 22 | 704 | (1.1+ | 1.7+) |
| 2000 04 27 | 704 | (0.1+ | 2.6+) | 2004 03 16 | 704 | 0.9− | 0.6+ | 2004 04 22 | 704 | 0.5+ | 0.8− |
| 2000 05 26 | 699 | 0.2+ | 0.2+ | 2004 03 16 | 683 | 0.8+ | 0.5− | 2004 04 22 | 704 | 0.3+ | 0.7+ |
| 2000 05 26 | 699 | 0.6− | 1.0+ | 2004 03 16 | 333 | 0.3+ | 0.2+ | 2004 04 22 | 704 | 0.2− | 1.2+ |
| 2000 05 26 | 699 | 0.9+ | 0.5− | 2004 03 16 | 704 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.5− | 0.5− |
| 2000 05 26 | 699 | 0.4− | 0.1− | 2004 03 16 | 683 | 0.2− | 0.1+ | 2004 04 25 | 699 | 0.8− | 0.9− |
| 2002 11 07 | 704 | (0.5+ | 2.0+) | 2004 03 16 | 704 | 0.3− | 0.2− | 2004 04 25 | 699 | 0.3+ | 0.7− |
| 2002 11 07 | 704 | 0.0 | 0.6+ | 2004 03 16 | 333 | (0.1+ | 1.7+) | 2004 04 25 | 699 | 0.4+ | 0.8− |
| 2002 11 07 | 704 | (0.6− | 1.6+) | 2004 03 16 | 333 | 0.1− | 0.3+ | 2004 04 25 | 699 | 0.5+ | 1.1− |
| 2002 11 07 | 704 | 0.9+ | 1.5+ | 2004 03 17 | 683 | (0.3+ | 2.3−) | 2005 06 18 | G96 | 0.3− | 0.0 |
| 2002 11 21 | 644 | 0.4− | 0.7+ | 2004 03 17 | 683 | (0.7+ | 2.1−) | 2005 06 18 | G96 | 0.1− | 0.1+ |
| 2002 11 21 | 644 | 0.6− | 0.8+ | 2004 03 17 | 683 | 0.3− | 0.1+ | 2005 06 18 | G96 | 0.1+ | 0.2+ |
| 2002 11 21 | 644 | 0.6− | 1.0+ | 2004 03 19 | 704 | 0.2− | 0.4+ | 2005 06 18 | G96 | 0.8− | 0.3+ |
| 2004 01 28 | 704 | 0.9− | 0.6+ | 2004 03 19 | 704 | 0.1− | 0.4+ | 2005 06 28 | 691 | 0.0 | 0.5+ |
| 2004 01 28 | 704 | 0.4+ | 0.3− | 2004 03 19 | 704 | 0.2− | 0.0 | 2005 06 28 | 691 | 0.0 | 0.3+ |
| 2004 01 28 | 704 | 0.2− | 0.5− | 2004 03 19 | 704 | 0.4+ | 0.2− | 2005 06 28 | 691 | 0.1+ | 0.3+ |
| 2004 01 28 | 704 | 0.2− | 0.3+ | 2004 03 19 | 704 | 1.4− | 1.1+ | 2006 10 02 | G96 | 0.3− | 0.2+ |
| 2004 02 13 | 644 | 0.5+ | 0.3− | 2004 03 20 | 691 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.5+ |
| 2004 02 13 | 644 | 0.2− | 0.6+ | 2004 03 20 | 691 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2004 02 13 | 644 | 0.0 | 0.0 | 2004 03 20 | 691 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.6− | 0.4+ |
| 2004 02 17 | 291 | 0.2+ | 0.2+ | 2004 03 22 | 704 | 1.1+ | 0.3+ | 2006 10 21 | 703 | (0.9+ | 2.2+) |
| 2004 02 17 | 291 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.8+ |
| 2004 02 17 | 291 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.8− |
| 2004 02 18 | 703 | 0.0 | 0.5− | 2004 03 22 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 703 | 1.2+ | 0.1− |
| 2004 02 18 | 703 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.7+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2004 02 18 | 703 | 0.8− | 0.2− | 2004 03 23 | 704 | 0.9+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2004 02 18 | 703 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.3+ |
| 2004 02 19 | 704 | 1.2+ | 0.3+ | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.2+ |
| 2004 02 19 | 704 | (1.5+ | 1.2−) | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3+ |
| 2004 02 19 | 704 | 1.3+ | 0.1− | 2004 03 23 | 704 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.2+ |
| 2004 02 19 | 704 | 0.1+ | 0.4+ | 2004 03 24 | 699 | 0.2− | 0.6− | 2006 11 23 | G96 | 0.4− | 0.1+ |
| 2004 02 19 | 704 | 0.7+ | 0.8+ | 2004 03 24 | 699 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.2+ |
| 2004 02 23 | 704 | 0.3+ | 0.0 | 2004 03 24 | 699 | 0.6− | 0.3+ | | | | |

**(138338)∗ 2000 GC$_{105}$ = 1996 HN$_{20}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 1280)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.05730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23957765 | $\omega$ | 82.04756 | | −0.77466689 | −0.62661255 | |
| $a$ | 2.5674688 | $\Omega$ | 59.10873 | | +0.53405853 | −0.72037096 | |
| $e$ | 0.1835151 | $i$ | 5.69357 | | +0.33863357 | −0.29735903 | |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 809 | 1.1+ | 0.8+ | 2004 03 16 | 704 | 0.2− | 0.4− | 2004 04 21 | 704 | 0.3+ | 0.4+ |
| 1996 04 18 | 809 | 0.0 | 1.7+ | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.1− | 0.3+ |
| 1996 04 18 | 809 | 1.4+ | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.2− | 2004 04 21 | 704 | 0.2+ | 0.3+ |
| 1996 04 20 | 809 | (2.9+ | 0.8+) | 2004 03 16 | 704 | 0.4− | 0.0 | 2004 04 21 | 704 | 0.4+ | 0.5− |
| 1996 04 20 | 809 | (3.0+ | 1.7+) | 2004 03 20 | 704 | 0.5+ | 0.9− | 2004 04 21 | 704 | 0.3+ | 0.3− |
| 1996 04 20 | 809 | 2.0+ | 0.5− | 2004 03 20 | 704 | 0.0 | 0.5− | 2004 04 21 | 704 | 0.2+ | 0.7+ |
| 1996 05 23 | 809 | 1.2− | 0.4+ | 2004 03 20 | 704 | 0.7+ | 0.3− | 2004 04 21 | 704 | 0.4+ | 0.4+ |
| 1996 05 23 | 809 | 1.7− | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.2− | 2004 04 21 | 704 | 0.8+ | 0.9+ |
| 1996 05 23 | 809 | 1.6− | 0.4− | 2004 03 20 | 704 | 0.3+ | 0.4− | 2004 04 21 | 704 | 0.2+ | 0.3+ |
| 2000 04 07 | 704 | 0.6− | 0.7− | 2004 03 22 | 704 | 0.5− | 0.1− | 2004 04 21 | 704 | 0.4+ | 0.1+ |
| 2000 04 07 | 704 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.4+ | 0.0 | 2004 04 21 | 704 | 0.1− | 0.2+ |
| 2000 04 07 | 699 | 0.1+ | 0.7+ | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2004 04 21 | 704 | 0.2+ | 0.2− |
| 2000 04 07 | 699 | 0.5+ | 0.1+ | 2004 03 22 | 704 | 0.1− | 0.2− | 2004 04 21 | 704 | 0.3+ | 0.5+ |
| 2000 04 07 | 704 | 0.2− | 0.9+ | 2004 03 22 | 704 | 0.2− | 0.5+ | 2004 04 21 | 704 | 0.3+ | 0.5− |
| 2000 04 07 | 699 | 0.6+ | 0.8+ | 2004 03 24 | 699 | 0.4− | 0.1+ | 2004 04 22 | 704 | 0.5+ | 0.0 |
| 2000 04 07 | 704 | 0.4+ | 0.3+ | 2004 03 24 | 699 | 0.9− | 0.0 | 2004 04 22 | 704 | 0.3+ | 0.6− |
| 2000 04 07 | 699 | 0.1− | 0.2− | 2004 03 24 | 699 | 0.4− | 0.1+ | 2004 04 22 | 704 | 0.4− | 0.5− |
| 2000 04 08 | 704 | 1.8+ | 0.5− | 2004 03 24 | 699 | 1.2− | 0.2+ | 2004 04 22 | 704 | 0.3+ | 1.1− |
| 2000 04 08 | 704 | 0.3+ | 1.7+ | 2004 03 30 | 703 | 0.4− | 0.6− | 2004 05 21 | 704 | 0.5+ | 0.9+ |
| 2000 04 08 | 704 | 0.6+ | 0.2+ | 2004 03 30 | 703 | 0.3− | 0.1− | 2004 05 21 | 704 | 0.1− | 0.6+ |
| 2000 04 27 | 699 | 0.7+ | 0.1− | 2004 03 30 | 703 | 0.6− | 0.1+ | 2004 05 21 | 704 | 0.1+ | 0.2+ |
| 2000 04 27 | 699 | 1.1− | 0.4+ | 2004 03 30 | 703 | 0.9− | 0.0 | 2004 05 21 | 704 | 0.6+ | 1.2− |
| 2000 04 27 | 699 | 0.4+ | 0.1+ | 2004 04 02 | 608 | 0.7+ | 0.7− | 2006 09 18 | 291 | 0.1− | 0.2+ |
| 2000 04 27 | 699 | 0.4− | 0.7+ | 2004 04 02 | 608 | 0.5+ | 0.7− | 2006 09 18 | 291 | 0.0 | 0.2+ |
| 2002 10 11 | 644 | 0.3+ | 0.5+ | 2004 04 02 | 608 | 0.1+ | 1.0− | 2006 09 18 | 291 | 0.0 | 0.3+ |
| 2002 10 11 | 644 | 0.1− | 0.9+ | 2004 04 15 | 644 | 0.4− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.6+ |
| 2002 10 11 | 644 | 0.2− | 1.2+ | 2004 04 15 | 644 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2003 12 23 | 704 | 0.4− | 0.8+ | 2004 04 15 | 704 | 1.1− | 1.2− | 2006 10 10 | 644 | 0.2− | 0.5+ |
| 2003 12 23 | 704 | 0.1+ | 1.2+ | 2004 04 15 | 704 | 0.1+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2003 12 23 | 704 | 1.0+ | 0.6+ | 2004 04 15 | 644 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2004 01 23 | 704 | 0.1+ | 0.1+ | 2004 04 15 | 704 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2004 01 23 | 704 | 0.3− | 0.7− | 2004 04 20 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.8+ |
| 2004 01 23 | 704 | 0.3+ | 1.1+ | 2004 04 20 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2004 01 23 | 704 | 0.4+ | 0.4+ | 2004 04 20 | 704 | 0.2− | 0.3− | 2006 10 16 | 703 | (0.8+ | 1.9−) |
| 2004 01 23 | 704 | 1.0+ | 0.3− | 2004 04 20 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.0− | 0.4− |
| 2004 03 12 | 644 | 0.0 | 0.6+ | 2004 04 20 | 704 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2004 03 12 | 644 | 0.2− | 0.3+ | 2004 04 21 | 704 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.5− | 0.3− |
| 2004 03 12 | 644 | 0.2− | 0.4+ | 2004 04 21 | 704 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 03 16 | 704 | 1.1− | 0.5+ | 2004 04 21 | 704 | 0.5+ | 0.4− | 2006 11 23 | G96 | 0.4− | 0.2+ |

**(138339)∗ 2000 GT$_{105}$ = 2004 CH$_{107}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 60661)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.07115 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23560652 | $\omega$ | 159.00936 | | −0.87809426 | −0.47839637 | |
| $a$ | 2.5962381 | $\Omega$ | 352.38980 | | +0.42833280 | −0.77719540 | |
| $e$ | 0.2196540 | $i$ | 4.04761 | | +0.21326387 | −0.40878383 | |
| $P$ | 4.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.2− | 0.6+ | 2004 02 14 | 703 | 0.2+ | 0.9+ | 2004 03 25 | 704 | 0.5+ | 0.3+ |
| 2000 04 07 | 704 | 1.0+ | 0.2− | 2004 02 19 | 704 | 0.3+ | 0.3− | 2004 03 27 | 704 | 0.8+ | 0.1− |
| 2000 04 07 | 704 | 0.2+ | 0.8+ | 2004 02 19 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.9+ | 0.1− |
| 2000 04 07 | 704 | 0.8− | 0.5+ | 2004 02 19 | 704 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.8+ | 0.5− |
| 2000 04 08 | 704 | 0.3+ | 0.4+ | 2004 02 19 | 704 | 0.8− | 0.5− | 2004 03 27 | 704 | 0.4+ | 0.1− |
| 2000 04 08 | 704 | 0.1− | 0.3+ | 2004 02 19 | 704 | 0.8− | 1.5− | 2004 03 27 | 704 | 0.6+ | 0.2− |
| 2000 04 08 | 704 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.1− | 0.3+ | 2004 03 30 | 691 | 0.2− | 1.0− |
| 2000 04 08 | 704 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.3+ | 0.5− | 2004 03 30 | 691 | 0.1− | 0.1− |
| 2000 04 08 | 704 | 0.8− | 0.4+ | 2004 02 26 | 704 | 0.3− | 0.1+ | 2004 03 30 | 691 | 0.2− | 0.0 |
| 2000 04 26 | 699 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.1− | 2004 04 09 | 703 | (0.2+ | 1.6+) |
| 2000 04 26 | 699 | 1.2+ | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.5− | 2004 04 09 | 703 | 1.4− | 0.5+ |
| 2000 04 26 | 699 | 0.6+ | 0.7+ | 2004 03 14 | 691 | 0.2− | 0.0 | 2004 04 09 | 703 | 0.4+ | 0.9+ |
| 2000 04 26 | 699 | 0.9+ | 0.5+ | 2004 03 14 | 691 | 0.1− | 0.0 | 2004 04 09 | 703 | 0.5− | 1.0+ |
| 2000 04 28 | 704 | 0.7+ | 0.3+ | 2004 03 14 | 691 | 0.3− | 0.0 | 2004 05 07 | 703 | 0.0 | 0.4− |
| 2000 04 28 | 704 | 1.0− | 0.9− | 2004 03 15 | 704 | 0.8+ | 0.2+ | 2004 05 07 | 703 | 0.4− | 0.4+ |
| 2000 04 28 | 704 | 1.5− | 0.7+ | 2004 03 15 | 704 | 0.7+ | 0.1− | 2004 05 07 | 703 | 1.0+ | 0.2+ |
| 2000 04 28 | 704 | 0.1− | 0.9− | 2004 03 15 | 704 | 0.8+ | 0.3+ | 2004 05 07 | 703 | 0.4+ | 0.3+ |
| 2000 04 30 | 699 | 1.1+ | 0.1+ | 2004 03 15 | 704 | 0.6+ | 0.6+ | 2004 05 14 | 704 | 0.3− | 0.7+ |
| 2000 04 30 | 699 | 1.5+ | 1.0+ | 2004 03 15 | 704 | 0.8+ | 0.1+ | 2004 05 14 | 704 | 0.1− | 0.7+ |
| 2000 04 30 | 699 | 0.3+ | 1.0+ | 2004 03 17 | 291 | 0.1− | 0.0 | 2004 05 14 | 704 | 0.2− | 0.5+ |
| 2000 04 30 | 699 | 1.2+ | 0.2− | 2004 03 17 | 291 | 0.1+ | 0.0 | 2004 05 14 | 704 | 1.1− | 0.7+ |
| 2000 05 09 | 704 | 0.3− | 0.7+ | 2004 03 17 | 291 | 0.1+ | 0.0 | 2004 05 14 | 704 | 0.5+ | 0.0 |
| 2000 05 09 | 704 | 0.1− | 0.8+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.5− | 0.7+ |
| 2000 05 09 | 704 | (0.1− | 2.6+) | 2004 03 18 | 704 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.2− | 0.6+ |
| 2002 10 12 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.3− | 0.5+ |
| 2002 10 12 | 704 | 1.2− | 1.0+ | 2004 03 18 | 704 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 2002 10 12 | 704 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.7+ |
| 2002 10 12 | 704 | 0.1− | 0.0 | 2004 03 20 | 699 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.6+ |
| 2003 12 27 | 704 | 0.0 | 0.6+ | 2004 03 20 | 699 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2003 12 27 | 704 | 0.1− | 1.2+ | 2004 03 20 | 699 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2003 12 27 | 704 | 0.9+ | 0.7+ | 2004 03 20 | 699 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 0.0 | 1.1+ | 2004 03 21 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.5+ |
| 2003 12 27 | 704 | 0.6+ | 0.8+ | 2004 03 21 | 704 | 0.8+ | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2004 01 22 | 704 | 0.1− | 0.6+ | 2004 03 21 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 1.1+ | 2004 03 21 | 704 | 1.1+ | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2004 03 21 | 704 | 0.1− | 0.8+ | 2006 10 22 | G96 | 0.7− | 0.3− |
| 2004 01 22 | 704 | 0.2− | 0.4− | 2004 03 21 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.3− | 0.0 | 2004 03 25 | 704 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.4− | 0.4+ |
| 2004 02 14 | 703 | 0.4+ | 1.0+ | 2004 03 25 | 704 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2004 02 14 | 703 | 0.0 | 0.8+ | 2004 03 25 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.2+ |
| 2004 02 14 | 703 | 0.5+ | 0.7+ | 2004 03 25 | 704 | 0.5+ | 0.1+ | | | | |

**(138340)∗ 2000 GB$_{110}$ = 2002 XB$_{60}$**

Discovered 2000 Apr. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.
Id. G. V. Williams (*MPO* 40091)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.84834 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26485478 | $\omega$ | 63.30773 | | −0.92507028 | −0.37803619 | |
| $a$ | 2.4013981 | $\Omega$ | 94.46157 | | +0.33414223 | −0.85580734 | |
| $e$ | 0.1146948 | $i$ | 2.09920 | | +0.18053793 | −0.35310401 | |
| $P$ | 3.72 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.4+ | 0.0 | 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 05 21 | 599 | 0.0 | 0.3+ |
| 1994 09 29 | 691 | 0.3− | 0.7+ | 2002 12 05 | 704 | 0.0 | 0.6− | 2004 06 09 | E12 | 0.0 | 0.9− |
| 1994 09 29 | 691 | 0.4− | 0.7+ | 2002 12 05 | 704 | 0.1− | 0.0 | 2004 06 09 | E12 | 0.4− | 0.3− |
| 1998 10 17 | 691 | 0.6− | 0.2+ | 2002 12 10 | 704 | 1.0− | 0.2+ | 2004 06 09 | E12 | 0.3+ | 0.7− |
| 1998 10 17 | 691 | 0.1+ | 0.0 | 2002 12 10 | 704 | 0.6+ | 0.2− | 2004 06 09 | E12 | 0.4+ | 0.3+ |
| 1998 10 17 | 691 | 0.1+ | 0.1+ | 2002 12 10 | 704 | 0.3− | 0.7+ | 2004 06 14 | 704 | 0.7+ | 0.2− |
| 2000 03 29 | 704 | 0.6+ | 1.5+ | 2002 12 10 | 704 | 0.6− | 0.4+ | 2004 06 14 | 704 | 0.7+ | 0.7+ |
| 2000 03 29 | 704 | 0.1− | 1.0+ | 2002 12 10 | 704 | 0.1− | 0.4− | 2004 06 14 | 704 | 0.4− | 1.0+ |
| 2000 03 29 | 704 | (1.4+ | 2.1+) | 2002 12 10 | 704 | 0.4− | 0.2+ | 2004 06 14 | 704 | 0.8+ | 0.4− |
| 2000 03 29 | 704 | 0.3+ | 1.3+ | 2002 12 10 | 704 | 0.2− | 0.0 | 2005 08 25 | 644 | 0.1− | 0.0 |
| 2000 04 02 | 699 | 0.6− | 0.3− | 2002 12 13 | 704 | (2.1− | 0.1−) | 2005 08 25 | 644 | 0.3− | 0.5+ |
| 2000 04 02 | 699 | 0.4− | 0.3+ | 2002 12 13 | 704 | (0.6− | 1.6−) | 2005 08 25 | 644 | 0.1+ | 0.6+ |
| 2000 04 02 | 699 | 0.5+ | 0.3+ | 2002 12 13 | 704 | 0.8− | 0.8− | 2006 10 17 | G96 | 0.3− | 1.0+ |
| 2000 04 02 | 699 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.7− | 1.1+ | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 2000 04 05 | 699 | 0.0 | 0.8+ | 2002 12 31 | 704 | 0.7+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 1.4− |
| 2000 04 05 | 699 | 0.2+ | 0.5+ | 2002 12 31 | 704 | 0.4+ | 0.8+ | 2006 10 17 | G96 | 0.2− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.3+ | 0.1+ | 2002 12 31 | 704 | 0.4+ | 0.3− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2000 04 05 | 699 | 0.4+ | 0.6+ | 2003 01 04 | 704 | 0.6+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2000 04 06 | 699 | 0.4+ | 0.3− | 2003 01 04 | 704 | 0.8+ | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2000 04 06 | 699 | 0.5+ | 0.5+ | 2003 01 04 | 704 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2000 04 06 | 699 | 0.0 | 0.5+ | 2003 01 06 | 291 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2000 04 06 | 699 | 0.8+ | 0.2+ | 2003 01 06 | 291 | 0.1− | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2000 04 08 | 704 | 0.9− | 0.8− | 2003 01 06 | 291 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2000 04 08 | 704 | 0.2+ | 0.4+ | 2004 05 15 | 704 | (0.5+ | 1.8+) | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2000 04 08 | 704 | 1.1+ | 0.5− | 2004 05 15 | 704 | 0.1− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2000 04 08 | 704 | 0.3+ | 0.3− | 2004 05 15 | 704 | 0.3+ | 0.9+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2000 04 08 | 704 | 0.3+ | 0.5+ | 2004 05 15 | 704 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2000 04 10 | 704 | 1.1− | 0.1+ | 2004 05 19 | 704 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2000 04 10 | 704 | 0.6+ | 0.5+ | 2004 05 19 | 704 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2000 04 10 | 704 | 0.5+ | 0.9+ | 2004 05 19 | 704 | 0.6− | 0.2− | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2000 04 10 | 704 | 0.3− | 1.0− | 2004 05 19 | 704 | 0.1− | 0.9+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2000 04 10 | 704 | 0.4− | 0.7− | 2004 05 19 | 704 | 0.8− | 0.7+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2004 05 20 | 599 | 0.2− | 0.2+ | | | | |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2004 05 20 | 599 | 0.1+ | 0.2+ | | | | |

**(138341)∗ 2000 GD$_{110}$**

Discovered 2000 Apr. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.46807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25106349 | $\omega$ | 70.17190 | | −0.56286686 | −0.82427389 | |
| $a$ | 2.4885537 | $\Omega$ | 54.23357 | | +0.72728367 | −0.52912620 | |
| $e$ | 0.1320033 | $i$ | 4.33025 | | +0.39273320 | −0.20148949 | |
| $P$ | 3.93 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.6− | 0.7− | 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.1− | 0.2− |
| 1996 03 12 | 691 | 0.5− | 0.9− | 2002 12 05 | 704 | 0.5+ | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 1996 03 12 | 691 | 0.6− | 1.1− | 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2000 03 29 | 704 | 0.4+ | 0.2+ | 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2000 03 29 | 704 | 0.5− | 0.4− | 2002 12 10 | 644 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2000 03 29 | 704 | 1.6+ | 0.5+ | 2002 12 10 | 644 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2000 03 29 | 704 | 0.7+ | 0.0 | 2004 03 16 | 691 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.3− | 0.0 |
| 2000 04 02 | 699 | 0.7− | 0.2− | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2000 04 02 | 699 | 0.1− | 0.9+ | 2004 03 16 | 691 | 0.6− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2000 04 02 | 699 | 0.8− | 0.3+ | 2004 03 19 | 704 | 0.8+ | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.8+ |
| 2000 04 02 | 699 | 0.7− | 1.3+ | 2004 03 19 | 704 | 1.1+ | 0.5− | 2006 11 17 | 704 | 0.9− | 0.5− |
| 2000 04 05 | 699 | 0.4+ | 0.9+ | 2004 03 19 | 704 | 0.1− | 0.9− | 2006 11 17 | 704 | 0.3+ | 0.3+ |
| 2000 04 05 | 699 | 0.3+ | 0.0 | 2004 03 19 | 704 | 0.1− | 0.7+ | 2006 11 17 | 704 | 0.0 | 0.6+ |
| 2000 04 05 | 699 | 0.6+ | 0.3+ | 2004 03 22 | 704 | 1.2+ | 0.9− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2000 04 05 | 699 | 0.9+ | 1.1+ | 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2000 04 06 | 699 | 1.3+ | 0.8+ | 2004 03 22 | 704 | 0.5+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2000 04 06 | 699 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2000 04 06 | 699 | 0.9+ | 1.1+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2000 04 06 | 699 | 1.2+ | 0.5+ | 2004 03 28 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2000 04 10 | 704 | 1.3− | 1.4− | 2004 03 28 | 704 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2000 04 10 | 704 | 0.3+ | 0.0 | 2004 03 28 | 704 | 0.5+ | 1.0+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2000 04 10 | 704 | 0.5− | 0.3+ | 2004 03 28 | 704 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2000 04 10 | 704 | 1.0+ | 0.6+ | 2004 03 28 | 704 | 0.7+ | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2000 04 10 | 704 | 1.0+ | 1.2− | 2004 04 16 | 704 | 1.1+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2002 10 04 | 599 | 0.4+ | 0.2+ | 2004 04 16 | 704 | 0.3+ | 1.1+ | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2002 10 04 | 599 | 0.3+ | 0.2+ | 2004 04 16 | 704 | 0.9+ | 1.2+ | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2002 10 04 | 599 | 0.5+ | 0.1− | 2004 04 16 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.8+ | 0.2+ |
| 2002 10 11 | 704 | (1.6+ | 0.9+) | 2004 04 16 | 704 | 0.5− | 1.4+ | 2006 11 19 | 704 | 0.7+ | 1.0+ |
| 2002 10 11 | 704 | 0.3− | 0.2− | 2004 04 19 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.1− | 0.5+ | 2004 04 19 | 704 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 2002 10 11 | 704 | 0.0 | 0.7− | 2004 04 19 | 704 | 0.0 | 1.0+ | 2006 11 19 | 704 | 0.6+ | 1.3+ |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2004 04 19 | 704 | 0.1− | 0.4+ | 2006 11 19 | 704 | 1.1− | 0.2− |
| 2002 11 04 | 644 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2002 11 04 | 644 | 0.3− | 0.5+ | 2004 04 20 | 703 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.6+ |
| 2002 11 04 | 644 | 0.3− | 0.5+ | 2004 04 20 | 703 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2002 11 05 | 673 | 0.1− | 0.1+ | 2004 04 20 | 703 | 0.5+ | 1.0+ | 2006 11 19 | 704 | 1.1+ | 0.7+ |
| 2002 11 05 | 673 | 0.3− | 0.2+ | 2004 04 20 | 703 | 0.2− | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.6− |
| 2002 11 05 | 673 | 0.1+ | 0.4+ | 2004 04 22 | 704 | 0.2− | 1.0+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.6− | 1.0+ | 2004 04 22 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 1.4− |
| 2002 11 06 | 673 | 0.5− | 0.3+ | 2004 04 22 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2002 11 06 | 673 | 0.1− | 0.3+ | 2004 04 22 | 704 | 0.7− | 0.7+ | 2006 11 20 | 691 | 0.4− | 0.0 |
| 2002 11 06 | 704 | 0.2− | 1.2+ | 2004 05 28 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2002 11 06 | 673 | 0.4+ | 0.4+ | 2004 05 28 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.3+ | 1.0+ | 2004 05 28 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.4− |
| 2002 11 06 | 704 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 20 | 704 | 1.1− | 0.2+ |
| 2002 11 06 | 704 | 0.3+ | 1.0+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2002 11 12 | 673 | (1.5− | 0.2+) | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2002 11 12 | 673 | (3.0+ | 0.1+) | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.9− | 0.3− |
| 2002 11 12 | 673 | 1.4− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.5− | 1.4+ |
| 2002 11 12 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.8+ | 1.2+ |
| 2002 11 12 | 644 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.5− |
| 2002 11 12 | 644 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 11 30 | 608 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2002 11 30 | 608 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2002 11 30 | 608 | 0.6− | 0.1+ | 2006 10 27 | G96 | 0.8− | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2002 12 01 | 704 | 1.0− | 0.2− | 2006 10 27 | G96 | 0.9+ | 0.4+ | 2006 12 01 | G96 | 0.2+ | 0.7− |
| 2002 12 01 | 704 | 0.2+ | 0.9− | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2002 12 01 | 704 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2002 12 05 | 704 | 0.5+ | 0.7− | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.6− |

**(138342)∗ 2000 GF$_{110}$ = 1996 FF$_{21}$**

Discovered 2000 Apr. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (MPC 40270)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.39180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24109365 | $\omega$ | 160.25008 | | −0.97962124 | +0.17487304 | |
| $a$ | 2.5566947 | $\Omega$ | 30.35576 | | −0.20030496 | −0.81423739 | |
| $e$ | 0.1207522 | $i$ | 11.27413 | | −0.01483750 | −0.55356742 | |
| $P$ | 4.09 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 809 | 2.0+ | 1.2+ | 2004 01 27 | 703 | 0.3− | 0.6+ | 2004 04 21 | 691 | 0.0 | 0.2+ |
| 1996 03 24 | 809 | 0.7+ | 0.8+ | 2004 01 27 | 703 | 0.1+ | 0.3+ | 2004 04 21 | 703 | (0.6+ | 1.9−) |
| 1996 03 24 | 809 | (2.9+ | 1.0+) | 2004 01 27 | 703 | 0.4+ | 0.3− | 2004 04 21 | 703 | (2.2+ | 2.9−) |
| 1996 03 26 | 809 | (2.7+ | 0.4+) | 2004 01 27 | 703 | 0.7− | 0.5− | 2004 04 21 | 703 | (0.8+ | 2.0−) |
| 1996 03 26 | 809 | 0.7+ | 0.0 | 2004 03 15 | 704 | 0.0 | 0.0 | 2004 04 21 | 691 | 0.2+ | 0.1+ |
| 1996 03 26 | 809 | 1.3+ | 0.8− | 2004 03 15 | 704 | 0.9+ | 0.4+ | 2004 04 21 | 703 | (2.1+ | 0.8−) |
| 2000 02 12 | 645 | 0.3− | 0.1− | 2004 03 15 | 704 | 0.8+ | 0.3− | 2004 04 21 | 691 | 1.2− | 0.3− |
| 2000 02 12 | 645 | 0.4− | 0.1− | 2004 03 15 | 704 | 1.0+ | 0.1− | 2004 04 25 | 699 | 0.7+ | 0.3+ |
| 2000 03 08 | 704 | 1.1+ | 1.7+ | 2004 03 15 | 704 | 0.6+ | 0.4− | 2004 04 25 | 699 | 0.7+ | 0.3+ |
| 2000 03 08 | 704 | 0.4+ | 0.5+ | 2004 03 18 | 106 | 0.1− | 0.1− | 2004 04 25 | 699 | 0.6− | 0.4− |
| 2000 03 08 | 704 | 0.8+ | 1.0+ | 2004 03 18 | 106 | 1.0− | 0.4− | 2004 04 25 | 699 | 0.2+ | 1.0+ |
| 2000 03 08 | 704 | 0.6+ | 0.2+ | 2004 03 18 | 106 | 0.1− | 0.5− | 2004 05 21 | 704 | 0.2+ | 0.5+ |
| 2000 03 29 | 704 | 0.1+ | 0.4− | 2004 03 21 | 699 | 0.9− | 0.4− | 2004 05 21 | 704 | 0.4+ | 1.0+ |
| 2000 03 29 | 704 | 0.3− | 0.8− | 2004 03 21 | 699 | 0.4− | 0.5+ | 2004 05 21 | 704 | 0.9+ | 0.4+ |
| 2000 03 29 | 704 | 0.3− | 1.9− | 2004 03 21 | 699 | 0.1+ | 0.5− | 2004 05 21 | 704 | 0.3− | 0.2+ |
| 2000 03 29 | 704 | 0.4− | 0.9− | 2004 03 21 | 699 | 0.1− | 0.9− | 2004 05 21 | 704 | 0.9+ | 0.4+ |
| 2000 04 02 | 699 | 0.3− | 0.0 | 2004 03 28 | 703 | 0.8+ | 0.3+ | 2004 05 23 | 699 | 1.3+ | 1.3+ |
| 2000 04 02 | 699 | 0.7− | 0.2+ | 2004 03 28 | 703 | (1.6+ | 0.6+) | 2004 05 23 | 699 | 1.3− | 0.1− |
| 2000 04 02 | 699 | 0.1+ | 0.6+ | 2004 03 28 | 703 | 0.8+ | 0.2− | 2004 05 23 | 699 | 1.0+ | 0.1− |
| 2000 04 02 | 699 | 1.2− | 0.1+ | 2004 03 28 | 703 | 0.7+ | 0.8+ | 2004 05 23 | 699 | 0.0 | 1.1+ |
| 2000 04 06 | 699 | 0.3+ | 0.2− | 2004 04 10 | 644 | 0.4+ | 0.2+ | 2005 08 05 | 644 | 0.1− | 0.8+ |
| 2000 04 06 | 699 | 0.6+ | 0.3+ | 2004 04 10 | 644 | 0.1+ | 0.2+ | 2005 08 05 | 644 | 0.1− | 0.7+ |
| 2000 04 06 | 699 | 0.2− | 0.2+ | 2004 04 10 | 644 | 0.3+ | 0.2+ | 2005 08 05 | 644 | 0.0 | 0.3+ |
| 2000 04 06 | 699 | 0.4− | 0.7+ | 2004 04 15 | 644 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.2+ |
| 2000 04 08 | 704 | 0.2+ | 0.2− | 2004 04 15 | 644 | 0.5+ | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.4+ |
| 2000 04 08 | 704 | 1.4+ | 1.5+ | 2004 04 15 | 644 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1+ |
| 2000 04 08 | 704 | 0.5− | 0.1+ | 2004 04 15 | 704 | 1.5+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.3+ |
| 2000 04 08 | 704 | 0.3+ | 1.4+ | 2004 04 15 | 704 | 1.2+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.6+ |
| 2000 04 10 | 704 | 0.6− | 0.7− | 2004 04 15 | 704 | 1.5+ | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.5+ |
| 2000 04 10 | 704 | 0.2− | 0.6− | 2004 04 15 | 704 | 0.0 | 0.8+ | 2006 10 21 | 691 | 0.7− | 0.8+ |
| 2000 04 10 | 704 | 0.1− | 0.5− | 2004 04 15 | 704 | 1.1+ | 0.8+ | 2006 11 14 | G96 | 0.3+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 704 | 0.4+ | 0.9− | 2004 04 20 | 704 | 0.2+ | 1.4+ | 2006 11 14 | G96 | 0.3− | 0.3+ |
| 2000 04 10 | 704 | 0.4− | 0.4− | 2004 04 20 | 704 | (0.3− | 1.6+) | 2006 11 14 | G96 | 0.1− | 0.3+ |
| 2001 08 27 | 644 | 0.6− | 0.5+ | 2004 04 20 | 704 | 0.1+ | 1.3+ | 2006 11 14 | G96 | 0.0 | 0.5+ |
| 2001 08 27 | 644 | 0.5− | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.6+ | | | | |
| 2001 08 27 | 644 | 0.5− | 0.2+ | 2004 04 20 | 704 | 0.0 | 1.0+ | | | | |

**(138343)∗ 2000 GF$_{112}$ = 2001 QV$_{65}$**

Discovered 2000 Apr. 3 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 17294)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 76.86639 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21116581 | $\omega$ | 101.38383 | | +0.14835582 | +0.98886915 | |
| *a* | 2.7928888 | $\Omega$ | 177.07548 | | −0.97166567 | +0.14788727 | |
| *e* | 0.1915742 | *i* | 12.82990 | | −0.18400104 | +0.01634510 | |
| *P* | 4.67 | *H* | 15.4 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 699 | 1.1+ | 0.5+ | 2001 09 22 | 704 | 0.4+ | 0.1− | 2005 06 04 | A50 | 0.3+ | 0.1+ |
| 2000 04 03 | 699 | 1.2− | 0.3− | 2001 09 22 | 704 | 0.0 | 0.1− | 2005 06 04 | A50 | (1.5+ | 0.4−) |
| 2000 04 03 | 699 | 0.3+ | 0.5+ | 2001 09 22 | 704 | 0.2+ | 0.3+ | 2005 06 06 | 704 | 0.9+ | 0.5+ |
| 2000 04 03 | 699 | 0.2− | 0.7+ | 2001 09 22 | 704 | 0.8+ | 0.3− | 2005 06 06 | 704 | 0.5− | 0.2+ |
| 2000 04 04 | 704 | (2.7+ | 0.8+) | 2001 09 23 | 704 | 0.2+ | 0.4+ | 2005 06 06 | 704 | 0.2− | 0.2− |
| 2000 04 04 | 704 | 1.0+ | 0.3+ | 2001 09 23 | 704 | 0.1+ | 0.1− | 2005 06 06 | 704 | 0.1− | 0.2+ |
| 2000 04 04 | 704 | 0.7− | 0.8+ | 2001 09 23 | 704 | 0.2+ | 0.3+ | 2005 06 06 | 704 | 0.2+ | 0.2+ |
| 2000 04 04 | 704 | 0.7− | 0.5− | 2001 10 11 | 644 | 0.0 | 0.3+ | 2005 06 25 | 644 | 0.1+ | 0.2+ |
| 2000 04 06 | 699 | 0.4+ | 0.6+ | 2001 10 11 | 644 | 0.0 | 0.4+ | 2005 06 25 | 644 | 0.3+ | 0.1− |
| 2000 04 06 | 699 | 0.6+ | 1.0+ | 2001 10 11 | 644 | 0.0 | 0.3+ | 2005 06 25 | 644 | 0.1+ | 0.1+ |
| 2000 04 06 | 699 | 0.5+ | 0.4+ | 2001 10 23 | 704 | 0.5− | 0.5+ | 2005 06 27 | 699 | 0.3+ | 0.4− |
| 2000 04 06 | 699 | 0.3+ | 0.9+ | 2001 10 23 | 704 | 0.7− | 0.5+ | 2005 06 27 | 699 | 0.9+ | 0.7+ |
| 2001 08 14 | 608 | 0.3− | 0.9+ | 2001 10 23 | 704 | 0.6− | 0.2+ | 2005 06 27 | 699 | 0.3+ | 0.6− |
| 2001 08 14 | 608 | 0.9− | 1.2+ | 2001 10 23 | 704 | 0.1− | 0.4+ | 2005 06 27 | 699 | 0.2+ | 0.6− |
| 2001 08 14 | 608 | 0.5− | 0.7+ | 2001 10 23 | 704 | (1.6− | 0.2−) | 2005 07 10 | 699 | 0.6− | 0.2+ |
| 2001 08 17 | 704 | 0.1− | 0.3− | 2005 04 15 | 703 | 0.5− | 0.6− | 2005 07 10 | 699 | 0.6− | 0.8+ |
| 2001 08 17 | 704 | 0.8− | 1.0− | 2005 04 15 | 703 | 0.8− | 1.2− | 2005 07 10 | 699 | 0.6− | 0.2+ |
| 2001 08 17 | 704 | 1.0− | 0.6+ | 2005 04 15 | 703 | 0.7− | 1.2− | 2005 07 10 | 699 | (2.0+ | 1.7−) |
| 2001 08 17 | 704 | 0.1− | 1.4− | 2005 04 15 | 703 | 0.8− | 0.4− | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2001 08 17 | 704 | 0.3− | 0.7− | 2005 04 30 | 941 | 0.6− | 0.7− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 08 20 | 704 | 0.0 | 1.0− | 2005 04 30 | 941 | 0.5− | 0.7− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2001 08 20 | 704 | 0.0 | 0.2+ | 2005 04 30 | 941 | 0.5− | 0.7− | 2006 09 21 | 699 | (2.6+ | 0.2−) |
| 2001 08 20 | 704 | 0.7+ | 0.7+ | 2005 04 30 | 941 | 0.4− | 0.7− | 2006 09 21 | 699 | 0.5+ | 0.8+ |
| 2001 08 20 | 704 | 0.3+ | 0.0 | 2005 05 04 | 703 | 0.7− | 0.5− | 2006 09 21 | 699 | (0.1+ | 2.1+) |
| 2001 08 23 | 699 | 0.2− | 0.3+ | 2005 05 04 | 703 | 0.2+ | 0.5− | 2006 09 21 | 699 | 1.1+ | 0.4− |
| 2001 08 23 | 699 | 0.4+ | 0.1− | 2005 05 04 | 703 | 0.2+ | 0.7− | 2006 09 29 | 699 | 0.2+ | 0.4+ |
| 2001 08 23 | 699 | 0.5− | 0.3− | 2005 05 04 | 703 | 0.7+ | 0.2− | 2006 09 29 | 699 | 1.0+ | 0.3+ |
| 2001 08 23 | 699 | 0.2+ | 0.1− | 2005 05 06 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.7+ |
| 2001 08 27 | 704 | 0.4+ | 0.3− | 2005 05 06 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.8+ | 0.2+ |
| 2001 08 27 | 704 | 0.3− | 0.0 | 2005 05 06 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | (1.7− | 0.3−) |
| 2001 08 27 | 704 | 0.7+ | 0.2− | 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 2001 08 27 | 704 | 0.3+ | 0.2− | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.9− |
| 2001 08 27 | 704 | 0.8+ | 0.6− | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.6− |
| 2001 09 06 | 644 | 0.8− | 0.4− | 2005 05 13 | 703 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 09 06 | 644 | 0.7− | 0.4− | 2005 05 13 | 703 | (2.0− | 0.6+) | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2001 09 06 | 644 | 0.7− | 1.0− | 2005 05 13 | 703 | 0.7− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2001 09 11 | 699 | 0.7+ | 0.1+ | 2005 05 13 | 703 | 1.1− | 0.3− | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2001 09 11 | 699 | 0.7− | 0.4− | 2005 05 20 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2001 09 11 | 699 | 0.4+ | 0.0 | 2005 05 20 | 644 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2001 09 11 | 699 | 1.2− | 0.5+ | 2005 05 20 | 644 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.5+ | 0.3− |
| 2001 09 20 | 704 | 0.6+ | 0.4+ | 2005 05 31 | 699 | 0.8+ | 1.4+ | 2006 10 22 | 703 | 0.3− | 1.6+ |
| 2001 09 20 | 704 | 1.0+ | 0.2− | 2005 05 31 | 699 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 1.9+ |
| 2001 09 20 | 704 | 0.8+ | 0.2− | 2005 05 31 | 699 | (1.7+ | 0.3+) | 2006 10 22 | 703 | 0.9− | 1.1+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2005 05 31 | 699 | 1.0+ | 0.7− | 2006 10 22 | 703 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.8+ | 0.0 | 2005 06 04 | A50 | 0.3+ | 0.8+ | | | | |
| 2001 09 22 | 704 | 0.2+ | 0.1− | 2005 06 04 | A50 | 0.4+ | 0.4+ | | | | |

**(138344)∗ 2000 GN$_{112}$ = 2002 RB$_{101}$**

Discovered 2000 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 34947)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 307.82593 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.22774619 | $\omega$ | 34.16983 | | +0.60711009 | −0.79027511 | |
| *a* | 2.6556365 | $\Omega$ | 18.88594 | | +0.65972382 | +0.44309728 | |
| *e* | 0.0789623 | *i* | 14.85080 | | +0.44292417 | +0.42323759 | |
| *P* | 4.33 | *H* | 15.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 0.7+ | 1.3+ | 2002 10 12 | 704 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.0 | 1.4+ |
| 2000 03 27 | 699 | 1.1+ | 0.4− | 2002 10 30 | 608 | 1.0− | 0.5+ | 2004 03 23 | 704 | 0.3+ | 1.4+ |
| 2000 03 27 | 699 | 0.8− | 1.9+ | 2002 10 30 | 608 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.8− | 1.1+ |
| 2000 03 27 | 699 | 0.0 | 0.5+ | 2002 10 30 | 608 | 0.4− | 0.3+ | 2004 03 23 | 704 | 0.0 | 0.9+ |
| 2000 04 04 | 704 | 0.0 | 0.1+ | 2002 10 31 | 644 | 0.3− | 0.4− | 2004 03 25 | 704 | (2.2+ | 1.3+) |
| 2000 04 04 | 704 | 1.0+ | 0.4+ | 2002 10 31 | 644 | 0.3− | 0.3− | 2004 03 25 | 704 | (2.1+ | 0.4+) |
| 2000 04 04 | 704 | 0.2− | 1.7+ | 2002 10 31 | 644 | 0.2− | 0.3− | 2004 03 25 | 704 | (2.7+ | 0.3−) |
| 2000 04 04 | 704 | 0.9+ | 1.2+ | 2002 11 04 | 608 | 0.5− | 0.0 | 2004 03 25 | 704 | 1.5+ | 0.1− |
| 2000 04 10 | 704 | 0.5+ | 0.0 | 2002 11 04 | 608 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.2− | 0.5+ |
| 2000 04 10 | 704 | 1.3+ | 1.3+ | 2002 11 04 | 608 | 0.3− | 0.1− | 2006 08 16 | 644 | 0.2− | 0.6+ |
| 2000 04 10 | 704 | 0.3+ | 0.1+ | 2002 11 05 | 704 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.7+ |
| 2000 04 10 | 704 | 0.6+ | 1.2+ | 2002 11 05 | 704 | 0.3− | 0.3+ | 2006 08 30 | 699 | 0.9+ | 0.4+ |
| 2000 04 25 | 699 | 1.6+ | 0.9+ | 2002 11 05 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 699 | 0.5− | 0.2+ |
| 2000 04 25 | 699 | 0.6+ | 1.0+ | 2002 11 05 | 704 | 0.4− | 0.6+ | 2006 08 30 | 699 | 0.1+ | 0.7+ |
| 2000 04 25 | 699 | 0.9+ | 0.5+ | 2002 11 05 | 704 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.3+ |
| 2000 04 25 | 699 | 1.2+ | 1.1+ | 2002 11 08 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.4− | 0.5+ | 2002 11 08 | 704 | 1.2+ | 1.3− | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 2002 09 05 | 704 | 0.2− | 0.7+ | 2002 11 08 | 704 | 0.4+ | 0.9− | 2006 09 14 | 703 | 0.6− | 0.4+ |
| 2002 09 05 | 704 | 0.5− | 0.5− | 2002 11 12 | 704 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.9− | 0.4− |
| 2002 09 07 | 704 | 1.0− | 0.4− | 2002 11 12 | 704 | 0.7− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.3− |
| 2002 09 07 | 704 | 0.0 | 0.2+ | 2002 11 12 | 704 | 0.7− | 0.2− | 2006 09 14 | 703 | 0.4− | 0.4+ |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2002 11 12 | 704 | 1.2− | 0.8+ | 2006 09 15 | 703 | 0.0 | 0.4− |
| 2002 09 07 | 704 | 0.5+ | 0.2+ | 2002 11 13 | 704 | 1.1+ | 0.3− | 2006 09 15 | 703 | 0.7− | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.1− | 2002 11 13 | 704 | 0.4− | 0.6+ | 2006 09 15 | 703 | 0.3+ | 0.6+ |
| 2002 10 04 | 704 | 1.3− | 0.0 | 2002 11 13 | 644 | 0.1+ | 0.2− | 2006 09 15 | 703 | 0.5− | 0.2− |
| 2002 10 04 | 704 | 0.1+ | 0.1+ | 2002 11 13 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2002 10 04 | 704 | 0.9− | 0.1+ | 2002 11 13 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2002 10 04 | 704 | 0.6− | 0.4− | 2002 11 13 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.2+ |
| 2002 10 08 | 699 | 0.9− | 0.1+ | 2002 11 13 | 704 | 0.5+ | 0.2− | 2006 09 26 | 703 | 1.4− | 0.1− |
| 2002 10 08 | 699 | 0.5+ | 0.6+ | 2002 11 13 | 644 | 0.0 | 0.6+ | 2006 10 02 | 703 | 1.1− | 1.4+ |
| 2002 10 08 | 699 | 0.6+ | 0.7+ | 2002 12 02 | 704 | 0.2− | 0.6− | 2006 10 02 | 703 | (1.0+ | 1.8+) |
| 2002 10 08 | 699 | 0.1− | 1.0− | 2002 12 02 | 704 | 0.0 | 0.5− | 2006 10 02 | 703 | 0.3+ | 0.2+ |
| 2002 10 09 | 704 | 0.0 | 0.5− | 2002 12 02 | 704 | 0.3+ | 0.1− | 2006 10 02 | 703 | 0.7− | 1.4+ |
| 2002 10 09 | 704 | 0.4+ | 0.5− | 2002 12 31 | 704 | 0.3− | 0.4− | 2006 10 09 | 644 | 0.3− | 0.5+ |
| 2002 10 09 | 704 | 0.3+ | 0.7− | 2002 12 31 | 704 | 0.3+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2002 10 09 | 704 | 1.3+ | 0.3− | 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 0.2+ | 0.8− | 2002 12 31 | 704 | 0.7− | 0.7+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 10 10 | 704 | 0.8+ | 0.1+ | 2002 12 31 | 704 | 0.4− | 1.0+ | 2006 10 10 | 644 | 0.3− | 0.6+ |
| 2002 10 10 | 704 | 0.0 | 1.3+ | 2003 12 19 | 704 | 0.3− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2002 10 10 | 704 | 0.6+ | 0.1+ | 2003 12 19 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 10 10 | 704 | 0.0 | 0.0 | 2003 12 19 | 704 | 0.5+ | 0.5− | 2006 10 11 | 644 | 0.3− | 0.5+ |
| 2002 10 10 | 704 | 0.2+ | 0.2+ | 2003 12 19 | 704 | 1.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 10 11 | 704 | 0.6+ | 0.0 | 2004 01 28 | 703 | 0.5+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 0.4− | 2004 01 28 | 703 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2002 10 11 | 704 | 0.2+ | 0.3+ | 2004 01 28 | 703 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.5+ |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2004 01 28 | 703 | 0.5+ | 1.3+ | 2006 10 19 | 703 | 1.0− | 1.3+ |
| 2002 10 11 | 704 | 0.2− | 0.1+ | 2004 01 30 | 704 | 0.7− | 0.9− | 2006 10 19 | 703 | 0.9− | 0.6− |
| 2002 10 12 | 704 | 0.0 | 0.1− | 2004 01 30 | 704 | (2.2− | 1.3−) | 2006 10 19 | 703 | 0.4+ | 0.8+ |
| 2002 10 12 | 704 | 0.0 | 0.0 | 2004 01 30 | 704 | (2.9− | 2.7−) | 2006 10 19 | 703 | 0.2− | 0.4+ |
| 2002 10 12 | 704 | 0.0 | 0.0 | 2004 01 30 | 704 | (3.0− | 2.5−) | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2002 10 12 | 704 | 0.2+ | 0.6+ | 2004 02 15 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2002 10 12 | 704 | 0.5+ | 0.1+ | 2004 02 15 | 704 | 0.8+ | 0.3+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2002 10 12 | 704 | 0.3− | 0.6− | 2004 02 15 | 704 | 0.8+ | 0.0 | 2006 10 23 | 644 | 0.5− | 0.6+ |
| 2002 10 12 | 704 | 0.5+ | 0.4− | 2004 02 15 | 704 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.6− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.4− | 0.7− | 2004 03 14 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 644 | 0.3− | 0.7+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.1− | 2004 03 14 | 704 | 0.4+ | 0.3+ | 2006 11 25 | G96 | 0.3− | 0.3− | | |
| 2002 10 12 | 704 | 0.1− | 0.3− | 2004 03 14 | 704 | 1.1+ | 0.4+ | 2006 11 25 | G96 | 0.2+ | 0.2− | | |
| 2002 10 12 | 704 | 0.7+ | 0.2− | 2004 03 14 | 704 | (0.6− | 1.7+) | 2006 11 25 | G96 | 0.2+ | 0.4− | | |
| 2002 10 12 | 704 | 0.3− | 0.6+ | 2004 03 14 | 151 | 0.4+ | 0.6+ | 2006 11 25 | G96 | 0.3− | 0.0 | | |
| 2002 10 12 | 704 | 0.2+ | 0.2− | 2004 03 14 | 151 | 0.3− | 0.2− | | | | | | |
| 2002 10 12 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.2− | 0.6+ | | | | | | |

**(138345)∗ 2000 GW$_{112}$ = 2004 CL$_{106}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60662)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 239.27897 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.22669206 | $\omega$ | 298.58131 | | −0.61002017 | −0.79144008 | |
| *a* | 2.6638627 | $\Omega$ | 189.30860 | | +0.78455468 | −0.59642016 | |
| *e* | 0.0353087 | *i* | 13.84400 | | +0.11112764 | −0.13381175 | |
| *P* | 4.35 | *H* | 15.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 22 | 691 | 0.2− | 0.1− | 2004 02 14 | 644 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.1− | 1.4+ | | |
| 1996 04 22 | 691 | 0.8− | 0.1+ | 2004 02 14 | 644 | 0.1+ | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.5− | | |
| 1996 04 22 | 691 | 0.8− | 0.1− | 2004 02 15 | 703 | 1.1− | 0.5+ | 2006 09 19 | 699 | 1.2− | 0.2+ | | |
| 2000 04 02 | 699 | 1.1+ | 0.2− | 2004 02 15 | 703 | 0.0 | 0.8+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | | |
| 2000 04 02 | 699 | 0.2+ | 0.6+ | 2004 02 15 | 703 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | | |
| 2000 04 02 | 699 | 0.0 | 1.1+ | 2004 02 15 | 703 | (2.2+ | 1.0+) | 2006 09 25 | 691 | 0.1+ | 0.4+ | | |
| 2000 04 02 | 699 | 0.2− | 0.1+ | 2004 02 19 | 704 | 0.7− | 0.6− | 2006 09 26 | 291 | 0.2+ | 0.3+ | | |
| 2000 04 05 | 699 | 1.8+ | 0.5+ | 2004 02 19 | 704 | 0.4+ | 0.0 | 2006 09 26 | 291 | 0.3+ | 0.2+ | | |
| 2000 04 05 | 704 | 0.0 | 0.6+ | 2004 02 19 | 704 | 0.9− | 1.0− | 2006 09 26 | 291 | 0.2+ | 0.3+ | | |
| 2000 04 05 | 699 | 0.2+ | 0.5− | 2004 02 19 | 704 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.2− | | |
| 2000 04 05 | 704 | 0.3+ | 1.0+ | 2004 02 19 | 704 | 0.5− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.2− | | |
| 2000 04 05 | 699 | 0.7+ | 0.7+ | 2004 03 01 | 703 | 1.1− | 0.6− | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2000 04 05 | 704 | 0.4+ | 0.8+ | 2004 03 01 | 703 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2000 04 05 | 699 | 1.0+ | 1.1+ | 2004 03 01 | 703 | (2.3− | 0.3−) | 2006 09 29 | 704 | 0.0 | 0.4− | | |
| 2000 04 05 | 704 | 0.5+ | 1.4+ | 2004 03 01 | 703 | (2.5− | 1.4+) | 2006 09 29 | 704 | 0.7− | 0.1− | | |
| 2000 04 05 | 704 | (0.3+ | 2.0+) | 2004 03 13 | 644 | 0.6− | 0.8+ | 2006 09 29 | 704 | 0.4− | 0.5− | | |
| 2000 04 06 | 699 | 0.6+ | 0.0 | 2004 03 13 | 644 | 0.2− | 0.8+ | 2006 10 01 | 704 | (2.0− | 0.5+) | | |
| 2000 04 06 | 699 | 0.9+ | 0.0 | 2004 03 13 | 644 | 0.2− | 0.5+ | 2006 10 01 | 704 | (1.8− | 0.6−) | | |
| 2000 04 06 | 699 | 0.7+ | 0.2− | 2004 03 16 | 704 | 0.0 | 0.9+ | 2006 10 01 | 704 | 1.3− | 0.4− | | |
| 2000 04 10 | 704 | 0.5+ | 0.9+ | 2004 03 16 | 704 | 0.4− | 0.4+ | 2006 10 01 | 704 | 1.2− | 0.5+ | | |
| 2000 04 10 | 704 | 0.9+ | 0.0 | 2004 03 16 | 704 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 1.3− | 0.3− | | |
| 2000 04 10 | 704 | 0.7+ | 0.1− | 2004 03 16 | 704 | 1.0− | 0.6+ | 2006 10 09 | 644 | 0.1− | 0.3+ | | |
| 2000 04 10 | 704 | 1.9+ | 0.2+ | 2005 06 29 | 644 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.2+ | | |
| 2000 04 25 | 699 | 0.2− | 0.5+ | 2005 06 29 | 644 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.5+ | | |
| 2000 04 25 | 699 | 0.2− | 0.7+ | 2005 06 29 | 644 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2000 04 25 | 699 | 1.4+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.9− | 2006 10 16 | G96 | 0.1+ | 0.3− | | |
| 2000 04 25 | 699 | 0.4+ | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.2− | | |
| 2002 10 18 | 644 | 0.5+ | 1.0+ | 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.0 | | |
| 2002 10 18 | 644 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.4− | 1.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2002 10 18 | 644 | 0.2+ | 1.0+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2004 01 28 | 704 | 0.6+ | 0.2− | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2004 01 28 | 704 | 0.2− | 0.3− | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2004 01 28 | 704 | 0.4− | 0.5− | 2006 09 18 | 704 | 0.1− | 1.5+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2004 01 28 | 704 | 0.8+ | 0.2− | 2006 09 18 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2004 01 28 | 704 | 0.5− | 0.9− | 2006 09 18 | 704 | 0.5+ | 0.3+ | | | | | | |
| 2004 02 14 | 644 | 0.2− | 0.8+ | 2006 09 19 | 699 | (1.8− | 0.5−) | | | | | | |

**(138346)∗ 2000 GL$_{113}$**

Discovered 2000 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 221.90560 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.23214189 | $\omega$ | 272.54160 | | −0.82540610 | −0.54402654 | |
| *a* | 2.6220062 | $\Omega$ | 234.54286 | | +0.56293876 | −0.77305856 | |
| *e* | 0.2128054 | *i* | 10.66871 | | +0.04248191 | −0.32621402 | |
| *P* | 4.25 | *H* | 15.5 | *G* | 0.15 | *U* | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 14 | 704 | 1.1+ | 0.0 | 2004 01 16 | 644 | 0.1− | 0.2+ | 2004 03 13 | 644 | 0.3− | 0.0 | | |
| 2000 03 14 | 704 | 1.4+ | 0.5− | 2004 01 17 | 608 | 0.1+ | 0.1− | 2004 03 16 | 704 | 0.2+ | 0.2− | | |
| 2000 03 14 | 704 | 0.3− | 0.2− | 2004 01 17 | 608 | 0.4− | 0.0 | 2004 03 16 | 704 | 0.1− | 0.1+ | | |
| 2000 03 14 | 704 | (0.2− | 2.1+) | 2004 01 17 | 608 | 0.1+ | 0.1− | 2004 03 16 | 704 | 0.3− | 0.1− | | |
| 2000 04 06 | 704 | 0.0 | 0.6− | 2004 01 28 | 704 | 0.5+ | 0.6+ | 2004 03 16 | 704 | 0.1− | 0.1+ | | |
| 2000 04 06 | 704 | 0.0 | 0.6− | 2004 01 28 | 704 | 0.5+ | 1.1+ | 2004 03 16 | 704 | 0.2+ | 0.2− | | |
| 2000 04 06 | 704 | 0.0 | 0.2+ | 2004 01 28 | 704 | 0.6+ | 1.5+ | 2004 03 19 | 704 | 0.9+ | 0.1− | | |
| 2000 04 06 | 704 | 0.7− | 0.1+ | 2004 01 28 | 704 | (0.6+ | 1.6+) | 2004 03 19 | 704 | 0.2+ | 0.2+ | | |
| 2000 04 10 | 704 | 0.4+ | 0.6− | 2004 01 28 | 704 | 0.2+ | 1.1+ | 2004 03 19 | 704 | 0.9+ | 0.5− | | |
| 2000 04 10 | 704 | 0.6− | 0.1− | 2004 01 29 | 699 | 0.7− | 0.0 | 2004 03 19 | 704 | 1.3+ | 0.2+ | | |
| 2000 04 10 | 704 | 0.5+ | 0.5− | 2004 01 29 | 699 | 0.6− | 0.2− | 2004 03 19 | 704 | 0.8+ | 0.8+ | | |
| 2000 04 10 | 704 | 0.2− | 0.1− | 2004 01 29 | 699 | 1.0− | 0.5+ | 2004 03 28 | 703 | 1.0− | 0.7+ | | |
| 2000 04 10 | 704 | 0.2+ | 0.4− | 2004 01 29 | 699 | 0.4− | 0.3− | 2004 03 28 | 703 | (0.2− | 1.8+) | | |
| 2000 04 28 | 704 | 0.6− | 0.5+ | 2004 02 04 | 608 | 0.6− | 0.8− | 2004 03 28 | 703 | 0.0 | 0.8+ | | |
| 2000 04 28 | 704 | 0.1+ | 0.2+ | 2004 02 04 | 608 | 0.6− | 0.5− | 2004 03 28 | 703 | 0.0 | 0.3− | | |
| 2000 04 28 | 704 | 1.0− | 0.8+ | 2004 02 04 | 608 | 0.7− | 0.8− | 2004 04 16 | 704 | 0.6− | 0.1+ | | |
| 2000 04 28 | 704 | 0.6+ | 0.5+ | 2004 02 14 | 644 | 0.1− | 0.3+ | 2004 04 16 | 704 | 0.4+ | 0.4+ | | |
| 2000 05 04 | 699 | 0.5− | 0.2+ | 2004 02 14 | 644 | 0.1− | 0.3+ | 2004 04 16 | 704 | 1.3+ | 0.4− | | |
| 2000 05 04 | 699 | 0.4+ | 0.1− | 2004 02 14 | 644 | 0.0 | 0.2+ | 2004 04 16 | 704 | 0.6+ | 1.2+ | | |
| 2000 05 04 | 699 | 0.2− | 0.2+ | 2004 02 14 | 699 | 0.1− | 0.2− | 2004 04 16 | 704 | 0.5− | 1.3+ | | |
| 2000 05 04 | 699 | 0.3+ | 0.4+ | 2004 02 14 | 699 | 0.2+ | 0.4+ | 2006 09 14 | 703 | (0.8− | 2.6+) | | |
| 2000 05 06 | 704 | 0.7+ | 1.1+ | 2004 02 14 | 699 | 0.1− | 0.2− | 2006 09 14 | 703 | (1.2+ | 1.7+) | | |
| 2000 05 06 | 704 | 1.2− | 0.8+ | 2004 02 14 | 699 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.5+ | 0.4+ | | |
| 2000 05 06 | 704 | 1.0+ | 1.4+ | 2004 02 19 | 704 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.4+ | 1.3+ | | |
| 2000 05 06 | 704 | 0.2− | 0.5+ | 2004 02 19 | 704 | 0.3+ | 0.6+ | 2006 10 03 | G96 | 0.3− | 0.1+ | | |
| 2002 10 04 | 644 | 0.5− | 1.2+ | 2004 02 19 | 704 | 0.3− | 0.1− | 2006 10 03 | G96 | 0.5− | 0.1+ | | |
| 2002 10 04 | 644 | 0.1− | 0.9+ | 2004 02 19 | 704 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.1− | | |
| 2002 10 04 | 644 | 0.6− | 0.9+ | 2004 02 19 | 703 | 0.6+ | 0.1− | 2006 10 03 | G96 | 0.6+ | 0.2− | | |
| 2003 12 25 | 703 | 0.5+ | 0.4+ | 2004 02 19 | 704 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.1+ | | |
| 2003 12 25 | 703 | (1.5− | 0.7−) | 2004 02 19 | 703 | 0.5+ | 0.8− | 2006 10 20 | 691 | 0.3− | 0.1− | | |
| 2003 12 25 | 703 | 0.1+ | 0.4− | 2004 02 19 | 703 | 0.3− | 0.6− | 2006 10 20 | 691 | 0.0 | 0.5+ | | |
| 2003 12 25 | 703 | 0.3+ | 0.1+ | 2004 02 19 | 703 | 0.4+ | 0.5− | 2006 10 22 | 691 | 0.4− | 0.2+ | | |
| 2004 01 16 | 644 | 0.2− | 0.1+ | 2004 03 13 | 644 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.2+ | 0.0 | | |
| 2004 01 16 | 644 | 0.1− | 0.2+ | 2004 03 13 | 644 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ | | |

**(138347)∗ 2000 GB$_{114}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 227.75210 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24093532 | $\omega$ | 182.54909 | | −0.99621266 | −0.08586831 | |
| *a* | 2.5578147 | $\Omega$ | 352.48378 | | +0.08151047 | −0.86751788 | |
| *e* | 0.1408637 | *i* | 6.00032 | | +0.03027178 | −0.48993812 | |
| *P* | 4.09 | *H* | 15.2 | *G* | 0.15 | *U* | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 704 | 0.4− | 0.1+ | 2004 01 28 | 704 | 0.7− | 0.0 | 2004 04 12 | 691 | 0.1− | 0.1− | | |
| 2000 03 30 | 704 | 0.9+ | 1.0+ | 2004 01 28 | 704 | 0.4+ | 0.0 | 2004 04 12 | 691 | 0.2− | 0.0 | | |
| 2000 03 30 | 704 | 0.9+ | 0.3− | 2004 01 30 | 699 | (0.3− | 1.9+) | 2004 04 12 | 691 | 0.0 | 0.1+ | | |
| 2000 03 30 | 704 | 0.3+ | 0.9+ | 2004 01 30 | 699 | (1.9− | 0.2+) | 2004 04 16 | 644 | 0.3+ | 0.1+ | | |
| 2000 04 07 | 704 | 0.1− | 0.5+ | 2004 01 30 | 699 | 0.2− | 0.3− | 2004 04 16 | 644 | 0.1+ | 0.0 | | |
| 2000 04 07 | 704 | 0.2+ | 0.2− | 2004 01 30 | 699 | 1.1− | 0.5− | 2004 04 16 | 644 | 0.1+ | 0.0 | | |
| 2000 04 07 | 704 | 0.2+ | 0.2− | 2004 02 19 | 704 | (0.0 | 1.7+) | 2004 04 16 | 704 | 1.0− | 0.1− | | |
| 2000 04 07 | 704 | 0.2+ | 0.1− | 2004 02 19 | 704 | 0.9+ | 0.5+ | 2004 04 16 | 704 | 0.3− | 0.1− | | |
| 2000 04 07 | 704 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 704 | 0.3− | 0.5+ | | |
| 2000 04 08 | 704 | 0.7− | 1.3− | 2004 02 19 | 704 | 0.7− | 0.3− | 2004 04 16 | 704 | 0.5− | 0.1− | | |
| 2000 04 08 | 704 | 0.4− | 0.6− | 2004 02 26 | 704 | 0.2− | 0.7+ | 2004 04 16 | 704 | 0.4− | 0.2+ | | |
| 2000 04 08 | 704 | 0.0 | 1.0− | 2004 02 26 | 704 | 0.4− | 0.1+ | 2004 04 20 | 704 | 0.1+ | 0.1+ | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.3− | 1.6+ | 2004 02 26 | 704 | 0.1− | 0.2+ | 2004 04 20 | 704 | 0.6− | 0.2− | 2000 04 05 | 699 | 0.5+ | 0.7+ |
| 2000 04 10 | 704 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.0 | 0.2+ | 2004 04 20 | 704 | 0.2− | 0.6− | 2000 04 05 | 699 | 0.1+ | 0.3+ |
| 2000 04 10 | 704 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.8− | 0.1− | 2004 04 20 | 704 | 0.3+ | 0.4− | 2000 04 05 | 699 | 0.2+ | 0.4+ |
| 2000 04 10 | 704 | 0.0 | 1.1+ | 2004 03 15 | 703 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.0 | 0.1+ | 2000 04 05 | 699 | 0.4+ | 0.6+ |
| 2000 04 10 | 704 | 0.6− | 0.3− | 2004 03 15 | 703 | 0.3− | 0.0 | 2004 04 22 | 691 | 0.1− | 0.1− | 2000 04 06 | 699 | 0.1+ | 0.1+ |
| 2000 04 28 | 704 | 0.3+ | 0.0 | 2004 03 15 | 703 | 0.0 | 0.5− | 2004 04 22 | 691 | 0.0 | 0.1− | 2000 04 06 | 699 | 0.2+ | 0.1− |
| 2000 04 28 | 704 | 0.8+ | 0.5− | 2004 03 15 | 703 | 0.0 | 0.2− | 2004 04 22 | 691 | 0.0 | 0.1− | 2000 04 06 | 699 | 0.3− | 0.4+ |
| 2000 04 28 | 704 | 0.5− | 0.3+ | 2004 03 16 | 704 | 0.3− | 1.1+ | 2004 04 22 | 703 | 1.1+ | 0.1+ | 2000 04 06 | 699 | 0.4− | 0.3− |
| 2000 04 28 | 704 | 0.5− | 0.5+ | 2004 03 16 | 704 | 1.0+ | 1.1+ | 2004 04 22 | 703 | 0.5+ | 0.2+ | 2000 04 07 | 704 | 0.2− | 0.9+ |
| 2000 04 28 | 704 | 0.6+ | 0.5+ | 2004 03 16 | 704 | 0.6− | 0.1+ | 2004 04 22 | 703 | 0.7+ | 0.0 | 2000 04 07 | 704 | 0.3+ | 1.9+ |
| 2000 05 04 | 699 | 0.5+ | 0.5+ | 2004 03 16 | 704 | 0.2− | 0.6+ | 2004 04 22 | 703 | 0.2+ | 0.2− | 2000 04 07 | 704 | 0.1+ | 0.6+ |
| 2000 05 04 | 699 | 0.2− | 0.2− | 2004 03 18 | 704 | 0.2− | 0.3− | 2004 05 23 | 699 | 0.1− | 0.8+ | 2000 04 07 | 704 | 1.6+ | 1.3+ |
| 2000 05 04 | 699 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.0 | 0.0 | 2004 05 23 | 699 | 0.8+ | 0.7− | 2000 04 07 | 704 | 0.5+ | 0.4+ |
| 2000 05 04 | 699 | 0.3+ | 0.4+ | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2004 05 23 | 699 | 0.7+ | 0.3+ | 2000 04 10 | 704 | 0.1− | 0.7+ |
| 2000 05 06 | 704 | 1.0+ | 0.1− | 2004 03 18 | 704 | 0.0 | 0.0 | 2004 05 23 | 699 | 0.9− | 0.5+ | 2000 04 10 | 704 | 0.3+ | 0.6− |
| 2000 05 06 | 704 | 1.6− | 0.1+ | 2004 03 18 | 704 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2000 04 10 | 704 | 0.1− | 0.6+ |
| 2000 05 06 | 704 | 0.6+ | 0.9+ | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1+ | 2000 04 10 | 704 | 0.4− | 0.3+ |
| 2000 05 06 | 704 | 1.1+ | 1.0+ | 2004 03 20 | 704 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.2+ | 2000 04 10 | 704 | 0.5− | 0.6+ |
| 2000 05 06 | 704 | 0.1− | 0.7− | 2004 03 20 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2000 04 13 | 691 | 0.3+ | 0.0 |
| 2002 11 01 | 644 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2000 04 13 | 691 | 0.2+ | 0.1− |
| 2002 11 01 | 644 | 0.3+ | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.5+ | 2000 04 13 | 691 | 0.1+ | 0.1− |
| 2002 11 01 | 644 | 0.9+ | 0.5+ | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.7− | 2000 05 04 | 699 | 1.1+ | 0.4+ |
| 2002 11 12 | 704 | 1.1+ | 0.4− | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.3+ | 0.2+ | 2000 05 04 | 699 | 1.6+ | 0.4+ |
| 2002 11 12 | 704 | 0.4+ | 0.5+ | 2004 03 27 | 704 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.5− | 0.1+ | 2000 05 04 | 699 | (2.1+ | 0.6+) |
| 2002 11 12 | 704 | 0.9+ | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2000 05 04 | 699 | 0.0 | 1.5+ |
| 2002 11 12 | 704 | 0.8+ | 1.5− | 2004 03 27 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.5+ | 2002 10 15 | 644 | 0.2− | 0.4+ |
| 2002 11 14 | 644 | 0.9− | 0.1− | 2004 03 31 | 704 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.4+ | 2002 10 15 | 644 | 0.2− | 0.6+ |
| 2002 11 14 | 644 | 0.5− | 0.1− | 2004 03 31 | 704 | 0.8+ | 0.5− | 2006 10 22 | 644 | 0.3+ | 0.4+ | 2002 10 15 | 644 | 0.3− | 0.4+ |
| 2002 11 14 | 644 | 0.5− | 0.3+ | 2004 03 31 | 704 | 0.7+ | 0.7+ | 2006 10 27 | 703 | 0.5− | 0.5− | 2002 10 28 | 926 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.8− | 0.1− | 2004 03 31 | 704 | 0.7+ | 0.8− | 2006 10 27 | 703 | 0.4− | 0.6− | 2002 10 28 | 926 | 0.2+ | 0.5+ |
| 2002 11 24 | 644 | 0.5− | 0.1− | 2004 03 31 | 704 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.8− | 0.7− | 2002 10 29 | 926 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.6− | 0.2+ | 2004 03 31 | 704 | 0.8+ | 0.4− | 2006 10 27 | 703 | (1.4− | 1.6+) | 2002 10 29 | 926 | 0.2− | 0.6+ |
| 2002 12 02 | 704 | 0.4− | 0.5− | 2004 03 31 | 704 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.2− | 0.2− | 2002 10 31 | 644 | 0.0 | 0.9+ |
| 2002 12 02 | 704 | 0.5− | 0.2+ | 2004 03 31 | 704 | 0.7+ | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2002 10 31 | 644 | 0.2− | 0.5+ |
| 2002 12 02 | 704 | 0.9− | 0.3+ | 2004 03 31 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2002 10 31 | 644 | 0.0 | 0.6+ |
| 2002 12 02 | 704 | 0.6− | 0.4− | 2004 03 31 | 704 | 0.3+ | 0.7− | 2006 11 19 | 704 | 0.9+ | 0.1+ | 2002 11 05 | 704 | 0.1− | 0.0 |
| 2002 12 02 | 704 | 0.0 | 0.3− | 2004 04 02 | 608 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.5+ | 1.0+ | 2002 11 05 | 704 | 0.4+ | 1.1+ |
| 2002 12 11 | 644 | 0.1− | 0.8+ | 2004 04 02 | 608 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.3+ | 2002 11 05 | 704 | 0.3+ | 0.8+ |
| 2002 12 11 | 644 | 0.3+ | 0.9+ | 2004 04 02 | 608 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.4− | 0.5+ | 2002 11 05 | 704 | 0.5− | 0.2+ |
| 2002 12 11 | 644 | 0.7+ | 0.3+ | 2004 04 11 | 644 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.2− | 2002 11 05 | 704 | 0.5− | 0.2+ |
| 2003 12 27 | 704 | 0.5+ | 0.1+ | 2004 04 11 | 644 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.3− | 2002 11 08 | 704 | 0.3− | 0.2− |
| 2003 12 27 | 704 | 0.3− | 0.3− | 2004 04 11 | 644 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.2− | 2002 11 08 | 704 | 0.1+ | 0.3− |
| 2003 12 27 | 704 | 0.2+ | 0.7− | 2004 04 11 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− | 2002 11 08 | 704 | 1.1− | 0.7− |
| 2003 12 27 | 704 | 0.7− | 0.1+ | 2004 04 11 | 644 | 0.2− | 0.2− | | | | | 2003 12 21 | 704 | 0.6+ | 0.9+ |
| 2004 01 28 | 704 | 0.3+ | 0.6− | 2004 04 11 | 644 | 0.0 | 0.2+ | | | | | 2003 12 21 | 704 | 0.4+ | 0.1− |
| | | | | | | | | | | | | 2003 12 21 | 704 | 0.0 | 1.1+ |

**(138348)∗ 2000 GN$_{114}$ = 2002 UU$_1$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37486)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 218.99506 | | (2000.0) | | | |
| $n$ | 0.23661263 | $\omega$ | 235.43326 | | −0.98120860 | −0.18868996 |
| $a$ | 2.5888731 | $\Omega$ | 293.66100 | | +0.18829535 | −0.89077458 |
| $e$ | 0.1232217 | $i$ | 2.52307 | | +0.04212535 | −0.41342079 |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 703 | 0.2− | 0.1− | 2004 02 13 | 644 | 0.1− | 0.3− | 2004 04 08 | 644 | 0.2+ | 0.4+ | 1996 03 19 | 691 | 0.2− | 0.5− |
| 2000 03 04 | 703 | 0.2− | 0.7− | 2004 02 13 | 644 | 0.1+ | 0.3− | 2004 04 08 | 644 | 0.1+ | 0.2+ | 1996 03 19 | 691 | 0.3− | 0.5− |
| 2000 03 04 | 703 | (0.7+ | 2.3+) | 2004 02 13 | 644 | 0.1+ | 0.3+ | 2004 04 08 | 644 | 0.1+ | 0.4+ | 1996 03 19 | 691 | 0.1− | 0.5− |
| 2000 03 04 | 703 | 0.5− | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.6+ | 2004 05 16 | 704 | 0.7+ | 0.7− | 1996 03 23 | 691 | 0.4− | 0.7+ |
| 2000 03 27 | 699 | 0.9− | 0.5+ | 2004 02 19 | 704 | 0.3+ | 0.3+ | 2004 05 16 | 704 | 0.5+ | 0.1− | 1996 03 23 | 691 | 0.1− | 0.4− |
| 2000 03 27 | 699 | 0.5+ | 0.6+ | 2004 02 19 | 704 | 0.3− | 0.9+ | 2004 05 16 | 704 | 0.6+ | 1.1+ | 1996 03 23 | 691 | 0.0 | 0.7− |
| 2000 03 27 | 699 | 0.2− | 0.7+ | 2004 02 19 | 704 | 0.1+ | 0.7+ | 2004 05 16 | 704 | 0.4+ | 0.2− | 2000 03 07 | 327 | 0.8+ | 1.0− |
| 2000 03 27 | 699 | 0.5− | 0.2+ | 2004 02 19 | 704 | 0.2+ | 0.6+ | 2004 05 16 | 704 | (0.8+ | 1.7+) | 2000 03 07 | 327 | 0.0 | 0.6− |
| | | | | | | | | | | | | 2000 03 07 | 327 | 0.2− | 1.4− |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.5+ | 0.7+ | 2004 02 20 | 608 | 0.8+ | 0.3− | 2005 06 28 | G96 | (0.4− | 1.9+) | | | | |
| 2000 04 05 | 699 | 0.1+ | 0.3+ | 2004 02 20 | 608 | 1.0+ | 0.3− | 2005 06 28 | G96 | 0.7− | 1.5+ | | | | |
| 2000 04 05 | 699 | 0.2+ | 0.4+ | 2004 02 20 | 608 | 1.2+ | 0.1− | 2005 06 28 | G96 | 0.8− | 0.5+ | | | | |
| 2000 04 05 | 699 | 0.4+ | 0.6+ | 2004 02 25 | 704 | 0.6+ | 0.1+ | 2005 06 28 | G96 | 0.9− | 0.9+ | | | | |
| 2000 04 06 | 699 | 0.1+ | 0.1+ | 2004 02 25 | 704 | 0.5− | 0.1+ | 2005 07 07 | 568 | 0.5− | 1.0+ | | | | |
| 2000 04 06 | 699 | 0.2+ | 0.1− | 2004 02 25 | 704 | 0.5+ | 0.2− | 2005 07 07 | 568 | 0.5− | 1.1+ | | | | |
| 2000 04 06 | 699 | 0.3− | 0.4+ | 2004 02 25 | 704 | 0.3− | 0.8+ | 2005 07 07 | 568 | 0.5− | 1.1+ | | | | |
| 2000 04 06 | 699 | 0.4− | 0.3− | 2004 02 25 | 704 | 0.3+ | 0.0 | 2005 07 10 | 691 | 0.1− | 0.3+ | | | | |
| 2000 04 07 | 704 | 0.2− | 0.9+ | 2004 03 13 | 644 | 0.4− | 0.3+ | 2005 07 10 | 691 | 0.1+ | 0.5+ | | | | |
| 2000 04 07 | 704 | 0.3+ | 1.9+ | 2004 03 13 | 644 | 0.5− | 0.4+ | 2005 07 10 | 691 | 0.1+ | 0.5+ | | | | |
| 2000 04 07 | 704 | 0.1+ | 0.6+ | 2004 03 13 | 644 | 0.4− | 0.5+ | 2006 09 16 | 703 | 1.0+ | 0.1− | | | | |
| 2000 04 07 | 704 | 1.6+ | 1.3+ | 2004 03 15 | 333 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.9− | | | | |
| 2000 04 07 | 704 | 0.5+ | 0.4+ | 2004 03 15 | 333 | 0.1− | 0.1+ | 2006 09 16 | 703 | 1.0− | 0.4+ | | | | |
| 2000 04 10 | 704 | 0.1− | 0.7+ | 2004 03 16 | 333 | 0.1− | 0.8+ | 2006 09 16 | 703 | 0.9− | 0.1− | | | | |
| 2000 04 10 | 704 | 0.3+ | 0.6− | 2004 03 16 | 333 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.3+ | | | | |
| 2000 04 10 | 704 | 0.1− | 0.6+ | 2004 03 16 | 683 | 0.4+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.4+ | | | | |
| 2000 04 10 | 704 | 0.4− | 0.3+ | 2004 03 16 | 683 | 0.2− | 0.6+ | 2006 09 28 | 691 | 0.4− | 0.4+ | | | | |
| 2000 04 10 | 704 | 0.5− | 0.6+ | 2004 03 16 | 683 | 0.9− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.6+ | | | | |
| 2000 04 13 | 691 | 0.3+ | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.6+ | | | | |
| 2000 04 13 | 691 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.6+ | 0.5+ | 2006 10 02 | 691 | 0.2− | 0.3+ | | | | |
| 2000 04 13 | 691 | 0.1+ | 0.1− | 2004 03 16 | 704 | 0.4+ | 0.7+ | 2006 10 10 | 644 | 0.2+ | 0.6+ | | | | |
| 2000 05 04 | 699 | 1.1+ | 0.4+ | 2004 03 16 | 704 | 1.1+ | 0.6+ | 2006 10 10 | 644 | 0.3− | 0.6+ | | | | |
| 2000 05 04 | 699 | 1.6+ | 0.4+ | 2004 03 16 | 704 | 0.6− | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.5+ | | | | |
| 2000 05 04 | 699 | (2.1+ | 0.6+) | 2004 03 17 | 683 | 0.1+ | 1.4+ | 2006 10 17 | 691 | 0.1− | 0.5+ | | | | |
| 2000 05 04 | 699 | 0.0 | 1.5+ | 2004 03 17 | 683 | (1.2− | 1.8+) | 2006 10 17 | 691 | 0.3− | 0.4+ | | | | |
| 2002 10 15 | 644 | 0.2− | 0.4+ | 2004 03 17 | 683 | 0.6− | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.4+ | | | | |
| 2002 10 15 | 644 | 0.2− | 0.6+ | 2004 03 18 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | | | |
| 2002 10 15 | 644 | 0.3− | 0.4+ | 2004 03 18 | 704 | 1.0− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | | | |
| 2002 10 28 | 926 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | | | |
| 2002 10 28 | 926 | 0.2+ | 0.5+ | 2004 03 20 | 699 | 0.5− | 0.6− | 2006 10 30 | 408 | (0.8+ | 1.6−) | | | | |
| 2002 10 29 | 926 | 0.1+ | 0.1+ | 2004 03 20 | 699 | 0.5− | 0.1+ | 2006 10 30 | 408 | (0.8+ | 2.0−) | | | | |
| 2002 10 29 | 926 | 0.2− | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.3− | 2006 10 31 | 408 | 0.6+ | 0.1+ | | | | |
| 2002 10 31 | 644 | 0.0 | 0.9+ | 2004 03 20 | 704 | 0.0 | 0.1− | 2006 10 31 | 408 | 0.8+ | 1.0− | | | | |
| 2002 10 31 | 644 | 0.2− | 0.5+ | 2004 03 20 | 699 | 0.7− | 0.5− | 2006 11 10 | 691 | 0.1− | 0.0 | | | | |
| 2002 10 31 | 644 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1− | | | | |
| 2002 11 05 | 704 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.3+ | | | | |
| 2002 11 05 | 704 | 0.4+ | 1.1+ | 2004 03 20 | 704 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.4− | 0.1+ | | | | |
| 2002 11 05 | 704 | 0.3+ | 0.8+ | 2004 03 20 | 699 | 0.6− | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.2− | | | | |
| 2002 11 05 | 704 | 0.5− | 0.2+ | 2004 03 23 | 683 | (0.7+ | 1.7−) | 2006 11 13 | 691 | 0.2+ | 0.2+ | | | | |
| 2002 11 05 | 704 | 0.5− | 0.2+ | 2004 03 23 | 683 | 0.7− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 | | | | |
| 2002 11 08 | 704 | 0.3− | 0.2− | 2004 03 23 | 683 | 1.5+ | 1.1− | 2006 11 16 | 691 | 0.1− | 0.3+ | | | | |
| 2002 11 08 | 704 | 0.1+ | 0.3− | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2+ | | | | |
| 2002 11 08 | 704 | 1.1− | 0.7− | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 11 27 | G96 | 0.2− | 0.3− | | | | |
| 2003 12 21 | 704 | 0.6+ | 0.9+ | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.2− | | | | |
| 2003 12 21 | 704 | 0.4+ | 0.1− | 2004 03 27 | 704 | 0.7+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.2− | | | | |
| 2003 12 21 | 704 | 0.0 | 1.1+ | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.2− | | | | |

**(138349)∗ 2000 GK$_{115}$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.25217 | | (2000.0) | | | |
| $n$ | 0.24363641 | $\omega$ | 10.94961 | | −0.49102996 | −0.86915295 |
| $a$ | 2.5388746 | $\Omega$ | 108.48152 | | +0.79449678 | −0.47451020 |
| $e$ | 0.1611704 | $i$ | 3.55719 | | +0.35730161 | −0.13933132 |
| $P$ | 4.05 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 19 | 691 | 0.2− | 0.5− | 2002 10 11 | 645 | 0.1+ | 0.1− | 2004 03 17 | 704 | 0.1− | 0.0 |
| 1996 03 19 | 691 | 0.3− | 0.5− | 2002 10 28 | 644 | 0.0 | 0.6− | 2004 03 20 | 699 | 0.3− | 0.0 |
| 1996 03 19 | 691 | 0.1− | 0.5− | 2002 10 28 | 644 | 0.3− | 0.3− | 2004 03 20 | 699 | 0.0 | 0.5− |
| 1996 03 23 | 691 | 0.4− | 0.7+ | 2002 10 28 | 644 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.6+ | 0.4− |
| 1996 03 23 | 691 | 0.1− | 0.4− | 2004 02 16 | 703 | 1.0− | 0.4− | 2004 03 20 | 704 | 0.0 | 0.4− |
| 1996 03 23 | 691 | 0.0 | 0.7− | 2004 02 16 | 703 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.2+ |
| 2000 03 07 | 327 | 0.8+ | 1.0− | 2004 02 16 | 703 | 0.7+ | 0.1+ | 2004 03 20 | 699 | 0.2+ | 0.0 |
| 2000 03 07 | 327 | 0.0 | 0.6− | 2004 02 16 | 703 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.2− |
| 2000 03 07 | 327 | 0.2− | 1.4− | 2004 02 18 | 704 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.1+ | 0.4+ | 2004 02 18 | 704 | 0.4+ | 0.3+ | 2004 03 20 | 699 | 0.1− | 0.3+ | | |
| 2000 03 12 | 704 | 0.4+ | 0.4+ | 2004 02 18 | 704 | 1.0+ | 0.1+ | 2004 03 28 | 703 | 0.5− | 0.8+ | | |
| 2000 03 12 | 704 | 0.3− | 0.0 | 2004 02 18 | 608 | 0.7+ | 0.2+ | 2004 03 28 | 703 | 0.7+ | 0.7+ | | |
| 2000 03 12 | 704 | 1.1+ | 0.6+ | 2004 02 18 | 608 | 0.5+ | 0.1− | 2004 03 28 | 703 | 0.2− | 1.0+ | | |
| 2000 03 29 | 704 | 0.2− | 0.4− | 2004 02 18 | 608 | 0.1+ | 0.6− | 2004 03 28 | 703 | 0.5− | 0.6− | | |
| 2000 03 29 | 704 | 0.3+ | 0.4+ | 2004 02 23 | 704 | 0.1− | 0.4+ | 2004 04 09 | 644 | 0.2+ | 0.3+ | | |
| 2000 03 29 | 704 | 0.6+ | 0.3− | 2004 02 23 | 704 | 0.7+ | 0.1+ | 2004 04 09 | 644 | 0.1+ | 0.6+ | | |
| 2000 03 29 | 704 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.0 | 2004 04 09 | 644 | 0.3+ | 0.6+ | | |
| 2000 04 07 | 699 | 0.5+ | 0.1− | 2004 02 23 | 704 | 0.8+ | 0.4− | 2004 04 12 | 703 | 0.5− | 0.0 | | |
| 2000 04 07 | 699 | 0.4− | 0.4+ | 2004 03 11 | 644 | 0.0 | 0.3+ | 2004 04 12 | 703 | 0.5+ | 1.1+ | | |
| 2000 04 07 | 699 | 0.7− | 0.1− | 2004 03 11 | 644 | 0.1− | 0.4+ | 2004 04 12 | 703 | 0.1+ | 0.1+ | | |
| 2000 04 07 | 699 | 0.6− | 0.1+ | 2004 03 11 | 644 | 0.2− | 0.5+ | 2004 04 12 | 703 | 0.0 | 0.3+ | | |
| 2000 04 08 | 704 | 0.9+ | 0.7+ | 2004 03 11 | 644 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.5+ | | |
| 2000 04 08 | 704 | 0.7+ | 0.3+ | 2004 03 11 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 1.4− | 0.2− | | |
| 2000 04 08 | 704 | 0.1+ | 0.1− | 2004 03 11 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.1− | | |
| 2000 04 10 | 704 | 0.9− | 1.3+ | 2004 03 15 | 703 | 0.4− | 0.4+ | 2006 09 18 | 703 | (2.0− | 0.4+) | | |
| 2000 04 10 | 704 | 0.1+ | 1.1+ | 2004 03 15 | 704 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.4− | 0.2+ | | |
| 2000 04 10 | 704 | 0.5+ | 0.5+ | 2004 03 15 | 703 | 0.0 | 0.9− | 2006 09 27 | 691 | 0.5− | 0.2+ | | |
| 2000 04 10 | 704 | 0.7+ | 1.0+ | 2004 03 15 | 704 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.7− | 0.1+ | | |
| 2002 09 28 | 608 | (2.1− | 1.0−) | 2004 03 15 | 703 | 1.0− | 0.2+ | 2006 10 16 | 703 | (1.7− | 1.4+) | | |
| 2002 09 28 | 608 | (1.8− | 1.7−) | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | (1.4− | 1.8−) | | |
| 2002 09 28 | 608 | (1.7− | 1.5−) | 2004 03 15 | 703 | 0.6− | 0.2− | 2006 10 16 | 703 | (1.5− | 2.2+) | | |
| 2002 10 11 | 704 | 0.1+ | 0.1+ | 2004 03 15 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 1.6− | 0.5+ | | |
| 2002 10 11 | 704 | (1.3+ | 1.6−) | 2004 03 15 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 1.7+ | | |
| 2002 10 11 | 704 | 0.3− | 1.0− | 2004 03 17 | 704 | 0.8− | 0.3− | 2006 10 21 | 703 | (3.9+ | 2.1+) | | |
| 2002 10 11 | 704 | 0.4+ | 1.0− | 2004 03 17 | 704 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.0 | 2.7+ | | |
| 2002 10 11 | 704 | 0.0 | 0.0 | 2004 03 17 | 704 | 0.0 | 0.2− | 2006 10 21 | 703 | (3.1+ | 1.1+) | | |
| 2002 10 11 | 645 | 0.1+ | 0.2− | 2004 03 17 | 704 | 0.2+ | 0.2+ | | | | | | |

**(138350)∗ 2000 GT$_{115}$ = 2001 QE$_{292}$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17296)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 148.28968 | | (2000.0) | | | |
| $n$ | 0.22637360 | $\omega$ | 203.44897 | | −0.67116342 | +0.73617165 |
| $a$ | 2.6663605 | $\Omega$ | 24.67620 | | −0.64282367 | −0.51942690 |
| $e$ | 0.1255019 | $i$ | 12.04563 | | −0.36921186 | −0.43387441 |
| $P$ | 4.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.1− | 2001 08 19 | 704 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.5− | | |
| 2000 03 03 | 645 | 0.1− | 0.1− | 2001 08 19 | 704 | 0.8− | 0.8+ | 2006 09 25 | G96 | 0.3+ | 0.2− | | |
| 2000 03 29 | 704 | 1.0+ | 0.6+ | 2001 08 19 | 704 | 0.8− | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.3− | | |
| 2000 03 29 | 704 | 1.3+ | 0.3+ | 2001 08 27 | 644 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.2+ | | |
| 2000 03 29 | 704 | 1.4+ | 1.0+ | 2001 08 27 | 644 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.2+ | | |
| 2000 03 29 | 704 | 0.8+ | 0.1+ | 2001 08 27 | 644 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.7− | 0.5+ | | |
| 2000 03 29 | 704 | 0.5+ | 0.9− | 2004 01 31 | 704 | 0.2− | 0.7− | 2006 10 02 | 691 | 0.1− | 0.3+ | | |
| 2000 04 05 | 699 | 0.3− | 1.0+ | 2004 01 31 | 704 | 1.1− | 0.1− | 2006 10 02 | 691 | 0.3− | 0.1+ | | |
| 2000 04 05 | 699 | 0.5+ | 0.9+ | 2004 01 31 | 704 | 0.5− | 0.4− | 2006 10 02 | 691 | 0.1− | 0.1− | | |
| 2000 04 05 | 699 | 0.7+ | 0.7+ | 2004 02 15 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1+ | | |
| 2000 04 05 | 699 | 0.1+ | 0.4+ | 2004 02 15 | 704 | (1.5+ | 1.6+) | 2006 10 11 | 691 | 0.1+ | 0.2+ | | |
| 2000 04 06 | 699 | 0.3+ | 1.0+ | 2004 02 15 | 704 | 0.8+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.1+ | | |
| 2000 04 06 | 699 | 0.1+ | 1.1+ | 2004 02 15 | 704 | 1.0+ | 1.3+ | 2006 10 15 | 691 | 0.8+ | 0.1− | | |
| 2000 04 06 | 699 | 0.1+ | 0.1+ | 2004 03 14 | 704 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | | |
| 2000 04 06 | 699 | 0.5− | 0.9+ | 2004 03 14 | 704 | 0.3+ | 0.6− | 2006 10 15 | 691 | 0.2− | 0.5+ | | |
| 2000 04 08 | 704 | 0.1− | 0.1− | 2004 03 14 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ | | |
| 2000 04 08 | 704 | 1.0+ | 1.1+ | 2004 03 18 | 644 | 0.4− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.2+ | | |
| 2000 04 08 | 704 | 0.8+ | 1.4+ | 2004 03 18 | 644 | 0.5− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2000 04 10 | 704 | 0.2+ | 0.2+ | 2004 03 18 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.7− | 1.3− | | |
| 2000 04 10 | 704 | 1.0+ | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.9− | | |
| 2000 04 10 | 704 | 1.0− | 0.4+ | 2004 03 23 | 704 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.6+ | | |
| 2000 04 10 | 704 | 0.8+ | 0.4+ | 2004 03 23 | 704 | 0.0 | 0.5− | 2006 10 21 | 703 | 1.1− | 0.4− | | |
| 2000 04 25 | 699 | 1.4+ | 0.5+ | 2004 03 23 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.4+ | | |
| 2000 04 25 | 699 | 0.4+ | 0.9+ | 2004 03 25 | 704 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2000 04 25 | 699 | 1.0+ | 0.4+ | 2004 03 25 | 704 | (0.1− | 2.2+) | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2000 04 25 | 699 | 0.9+ | 0.7+ | 2004 03 25 | 704 | (1.5− | 1.7+) | 2006 10 23 | 691 | 0.4− | 0.4+ | | |
| 2000 04 29 | 704 | 0.0 | 0.5+ | 2004 03 25 | 704 | 0.3− | 0.5− | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2000 04 29 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.2+ | | |
| 2000 04 29 | 704 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2000 04 29 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2000 04 29 | 704 | 0.3− | 1.3+ | 2006 09 24 | J75 | 1.2+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2001 08 16 | 644 | 0.5− | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2001 08 16 | 644 | 0.4− | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.7− | 0.2+ | | |
| 2001 08 16 | 644 | 0.5− | 0.3− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2− | | |
| 2001 08 19 | 704 | 0.8+ | 1.2+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ | | |

**(138351)∗ 2000 GF$_{116}$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.69571 | | (2000.0) | | | |
| $n$ | 0.23651090 | $\omega$ | 351.45394 | | −0.94065827 | −0.33829295 |
| $a$ | 2.5896154 | $\Omega$ | 168.66236 | | +0.31886344 | −0.90814839 |
| $e$ | 0.1137376 | $i$ | 7.84428 | | +0.11613839 | −0.24662599 |
| $P$ | 4.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 1.0+ | 0.0 | 2003 12 29 | 703 | 1.0+ | 0.9+ | 2004 03 23 | 704 | 0.5+ | 0.1− | | |
| 2000 03 09 | 704 | 0.7+ | 0.7− | 2003 12 29 | 703 | 0.6− | 1.3− | 2004 03 23 | 691 | 0.0 | 0.1− | | |
| 2000 03 09 | 704 | 0.8− | 0.4+ | 2004 02 15 | 703 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.2+ | | |
| 2000 03 09 | 704 | 0.0 | 0.7+ | 2004 02 15 | 703 | 0.6− | 0.9+ | 2004 03 23 | 704 | 0.0 | 0.2+ | | |
| 2000 03 29 | 704 | 0.2+ | 0.7− | 2004 02 15 | 703 | 0.4− | 0.3− | 2004 03 23 | 691 | 0.1− | 0.0 | | |
| 2000 03 29 | 704 | 0.1+ | 0.2+ | 2004 02 15 | 703 | 0.3+ | 0.9− | 2004 03 23 | 704 | 0.1− | 0.1+ | | |
| 2000 03 29 | 704 | 0.6+ | 1.7− | 2004 02 19 | 704 | 0.4− | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.5+ | | |
| 2000 03 30 | 703 | 0.8+ | 0.7+ | 2004 02 19 | 704 | 0.7− | 0.3− | 2004 03 25 | 704 | 0.4+ | 0.7+ | | |
| 2000 03 30 | 703 | 1.7+ | 0.7+ | 2004 02 19 | 704 | 0.2− | 0.6+ | 2004 03 25 | 704 | 0.4+ | 0.1+ | | |
| 2000 03 30 | 703 | 1.2− | 0.7+ | 2004 02 19 | 704 | 0.9+ | 0.1− | 2004 03 25 | 704 | 0.6+ | 0.3+ | | |
| 2000 03 30 | 703 | 0.6+ | 0.4− | 2004 02 26 | 704 | 0.4− | 0.1+ | 2004 03 25 | 704 | 1.2+ | 0.3+ | | |
| 2000 04 02 | 699 | 0.4+ | 0.4+ | 2004 02 26 | 704 | 0.0 | 0.3+ | 2004 03 28 | 704 | 0.4+ | 0.2− | | |
| 2000 04 02 | 699 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.4− | 0.4+ | 2004 03 28 | 703 | 0.3+ | 0.3+ | | |
| 2000 04 02 | 699 | 1.4+ | 1.8+ | 2004 02 26 | 704 | 0.4− | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.2+ | | |
| 2000 04 02 | 699 | 0.5− | 0.5+ | 2004 02 26 | 704 | 0.1− | 0.1+ | 2004 03 28 | 703 | 0.8+ | 0.4+ | | |
| 2000 04 04 | 704 | 1.8+ | 1.9+ | 2004 03 15 | 691 | 0.4− | 0.2− | 2004 03 28 | 704 | 0.1− | 0.3+ | | |
| 2000 04 04 | 704 | 1.1+ | 0.7+ | 2004 03 15 | 691 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.2+ | 0.3− | | |
| 2000 04 04 | 704 | 0.1+ | 1.5− | 2004 03 15 | 691 | 0.3− | 0.1+ | 2004 03 28 | 703 | 0.4− | 0.4+ | | |
| 2000 04 08 | 704 | 0.0 | 0.1+ | 2004 03 15 | 333 | 0.2− | 0.3− | 2004 03 28 | 704 | 0.0 | 0.4+ | | |
| 2000 04 08 | 704 | 0.0 | 0.6+ | 2004 03 15 | 333 | 0.3− | 0.3− | 2004 03 28 | 703 | 0.8+ | 0.3− | | |
| 2000 04 08 | 704 | 0.4+ | 1.8+ | 2004 03 15 | 704 | 0.6+ | 0.0 | 2005 06 11 | 691 | 0.3− | 0.5+ | | |
| 2000 04 08 | 704 | (0.7+ | 2.1+) | 2004 03 15 | 704 | 0.9− | 0.1+ | 2005 06 11 | 691 | 0.2+ | 0.2+ | | |
| 2000 04 10 | 704 | 0.3+ | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2005 06 11 | 691 | 0.1− | 0.5+ | | |
| 2000 04 10 | 704 | 0.7+ | 0.4+ | 2004 03 15 | 704 | 0.7+ | 0.8− | 2006 09 30 | 703 | (0.5− | 1.7+) | | |
| 2000 04 10 | 704 | 1.3+ | 0.6− | 2004 03 16 | 333 | 0.3− | 0.2+ | 2006 09 30 | 703 | (0.8− | 1.7+) | | |
| 2000 04 10 | 704 | 1.2+ | 0.5− | 2004 03 16 | 333 | 0.4− | 0.2+ | 2006 09 30 | 703 | (0.2+ | 1.6+) | | |
| 2000 04 10 | 704 | 0.6− | 0.0 | 2004 03 17 | 291 | 0.1− | 0.1+ | 2006 09 30 | 703 | (0.5+ | 2.0+) | | |
| 2000 05 04 | 704 | 0.2+ | 0.5+ | 2004 03 17 | 291 | 0.7+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 2000 05 04 | 704 | 0.4− | 0.8+ | 2004 03 17 | 291 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.2+ | | |
| 2000 05 04 | 704 | 0.5+ | 0.1+ | 2004 03 19 | 704 | 1.1− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1+ | | |
| 2000 05 04 | 704 | 0.6+ | 0.9+ | 2004 03 19 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.2+ | | |
| 2000 05 04 | 704 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | | |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2004 03 19 | 704 | 1.3+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.5+ | | |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2000 05 05 | 645 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2000 05 05 | 645 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.6− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.7+ | | |
| 2000 05 11 | 699 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.8+ | | |
| 2000 05 11 | 699 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.1+ | | |
| 2000 05 11 | 699 | 0.7− | 0.1+ | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | (2.2+ | 0.7+) | | |
| 2000 05 11 | 699 | 0.4+ | 0.1+ | 2004 03 22 | 704 | 0.3− | 0.2− | 2006 10 22 | 703 | (0.8+ | 1.8+) | | |
| 2002 10 30 | 644 | 0.5+ | 0.7+ | 2004 03 22 | 704 | 0.2− | 0.5− | 2006 10 22 | 703 | 0.5− | 0.9+ | | |
| 2002 10 30 | 644 | 0.1− | 0.3+ | 2004 03 22 | 704 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.0 | 0.0 | | |
| 2002 10 30 | 644 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.5+ | 0.0 | | |
| 2002 11 07 | 704 | 0.9− | 0.6+ | 2004 03 22 | 704 | 0.1+ | 0.6− | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2002 11 07 | 704 | 0.2− | 0.4− | 2004 03 22 | 704 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2− | 0.4− | 2004 03 22 | 704 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.9− | 0.7− |
| 2002 11 07 | 704 | 0.5− | 0.7+ | 2004 03 22 | 704 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.3+ | 1.4+ |
| 2003 12 29 | 703 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.3− | 2.1− |
| 2003 12 29 | 703 | 0.0 | 0.2− | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.8+ | 0.5− |

**(138352)∗ 2000 GS$_{116}$**

Discovered 2000 Apr. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.50214 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23316473 | $\omega$ | 352.33438 | | +0.97365927 | +0.22658327 | |
| $a$ | 2.6143324 | $\Omega$ | 354.37362 | | −0.19299398 | +0.75955624 | |
| $e$ | 0.2027414 | $i$ | 15.04482 | | −0.12141232 | +0.60970021 | |
| $P$ | 4.23 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 704 | 1.6+ | 0.5− | 2002 11 25 | 704 | 0.8− | 0.5+ | 2006 10 02 | 704 | 1.3− | 0.3+ |
| 1999 01 14 | 704 | 1.3− | 0.0 | 2002 11 25 | 704 | 0.1− | 0.6+ | 2006 10 02 | 704 | 1.0− | 1.0+ |
| 1999 01 14 | 704 | 0.4− | 0.2+ | 2002 12 10 | 704 | 0.2− | 0.2− | 2006 10 02 | 704 | 0.5− | 0.7+ |
| 1999 01 14 | 704 | 0.6+ | 0.6+ | 2002 12 10 | 704 | 0.1− | 0.7− | 2006 10 02 | 704 | 0.6− | 0.9+ |
| 2000 03 11 | 704 | 0.8+ | 0.4+ | 2002 12 10 | 704 | 0.2− | 0.3− | 2006 10 02 | 704 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.4+ | 0.0 | 2002 12 10 | 704 | 0.3− | 0.0 | 2006 10 02 | 703 | 0.2− | 0.1+ |
| 2000 03 11 | 704 | 0.4+ | 0.5+ | 2002 12 28 | 704 | 0.6+ | 0.3− | 2006 10 02 | 703 | 0.5− | 0.2− |
| 2000 03 11 | 704 | 0.2+ | 0.7+ | 2002 12 28 | 704 | 0.2+ | 0.9− | 2006 10 02 | 703 | 0.5+ | 0.0 |
| 2000 04 02 | 691 | 0.4+ | 0.2− | 2002 12 28 | 704 | 0.4− | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.0 |
| 2000 04 02 | 691 | 0.2+ | 0.2+ | 2002 12 28 | 704 | 0.3− | 0.0 | 2006 10 23 | 703 | 0.2+ | 0.1− |
| 2000 04 02 | 691 | 0.3+ | 0.3− | 2002 12 28 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.1+ | 0.3− |
| 2000 04 07 | 691 | 0.2− | 0.2− | 2004 02 23 | 704 | 0.0 | 0.9+ | 2006 10 23 | 703 | 0.0 | 0.1− |
| 2000 04 07 | 691 | 0.5− | 0.4− | 2004 02 23 | 704 | (0.6+ | 1.8+) | 2006 10 23 | 703 | 0.3+ | 0.1− |
| 2000 04 07 | 691 | 0.5− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.8+ | 2006 10 29 | 703 | 0.5+ | 0.1− |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.3− | 0.3+ | 2006 10 29 | 703 | 0.2+ | 0.4− |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2005 06 09 | E12 | 0.0 | 0.4+ | 2006 10 29 | 703 | 0.5+ | 0.2+ |
| 2002 10 14 | 704 | 0.1+ | 0.7− | 2005 06 09 | E12 | 0.1− | 0.2+ | 2006 10 29 | 703 | 0.6+ | 0.2− |
| 2002 10 14 | 704 | 0.6+ | 0.8− | 2005 06 09 | E12 | 0.7− | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.5+ |
| 2002 10 14 | 704 | (1.1+ | 1.5−) | 2005 06 09 | E12 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 1.0+ | 0.0 |
| 2002 11 08 | 704 | (1.6+ | 0.9+) | 2006 09 25 | 703 | 0.6+ | 0.1+ | 2006 11 14 | 704 | 0.5− | 0.3+ |
| 2002 11 08 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 703 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.2+ | 0.5+ |
| 2002 11 08 | 704 | 0.3− | 0.1+ | 2006 09 25 | 703 | 0.2+ | 0.1− | | | | |
| 2002 11 25 | 704 | 1.0− | 0.5− | 2006 09 25 | 703 | 0.2+ | 0.2− | | | | |

**(138353)∗ 2000 GX$_{117}$ = 2002 RT$_{154}$**

Discovered 2000 Apr. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37487)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.93843 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26675846 | $\omega$ | 75.05294 | | +0.37465377 | −0.92700583 | |
| $a$ | 2.3899597 | $\Omega$ | 352.87287 | | +0.78858873 | +0.32834071 | |
| $e$ | 0.2326700 | $i$ | 7.95363 | | +0.48760883 | +0.18125275 | |
| $P$ | 3.69 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.1+ | 0.2− | 2002 10 04 | 704 | 0.0 | 0.0 | 2002 11 14 | 704 | 0.3+ | 0.6− |
| 1998 08 17 | 704 | 0.9− | 1.0− | 2002 10 04 | 704 | 0.2+ | 0.1− | 2002 11 14 | 704 | 0.0 | 0.6− |
| 1998 08 17 | 704 | 1.0+ | 0.4− | 2002 10 04 | 704 | 0.1− | 0.2− | 2002 12 05 | 704 | 0.4− | 0.6− |
| 1998 08 17 | 704 | 1.0− | 0.6+ | 2002 10 09 | 704 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.6− | 0.5− |
| 2000 03 05 | 327 | 0.2− | 0.9+ | 2002 10 09 | 704 | 0.4− | 0.1+ | 2002 12 05 | 704 | 0.7+ | 0.6− |
| 2000 03 05 | 327 | 0.2+ | 0.3− | 2002 10 09 | 704 | 0.2+ | 0.2+ | 2002 12 05 | 704 | 0.8+ | 0.7+ |
| 2000 03 05 | 327 | 0.3+ | 0.1+ | 2002 10 09 | 704 | 0.0 | 0.1+ | 2002 12 05 | 704 | 1.0+ | 0.3− |
| 2000 03 11 | 704 | 0.9+ | 0.3+ | 2002 10 09 | 704 | 0.1+ | 0.8+ | 2002 12 20 | 644 | 0.2− | 0.0 |
| 2000 03 11 | 704 | 0.5+ | 0.3+ | 2002 10 12 | 704 | 0.0 | 0.4− | 2002 12 20 | 644 | 0.5− | 0.1+ |
| 2000 03 11 | 704 | 0.6− | 0.2+ | 2002 10 12 | 704 | 0.4− | 0.2− | 2002 12 20 | 644 | 0.3+ | 0.4+ |
| 2000 03 11 | 704 | 0.8+ | 0.6+ | 2002 10 12 | 704 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.3− | 0.2− |
| 2000 03 11 | 704 | 0.3+ | 0.7+ | 2002 10 12 | 704 | 0.4− | 0.6− | 2002 12 31 | 704 | 1.3− | 0.1− |
| 2000 04 02 | 691 | 0.0 | 0.0 | 2002 10 12 | 704 | 0.3− | 0.5− | 2002 12 31 | 704 | 0.4− | 0.2+ |
| 2000 04 02 | 691 | 0.2− | 0.0 | 2002 10 30 | 608 | 1.0+ | 0.2− | 2002 12 31 | 704 | 0.8− | 0.4− |
| 2000 04 02 | 691 | 0.2− | 0.1− | 2002 10 30 | 608 | 0.7+ | 0.3+ | 2002 12 31 | 704 | 0.1− | 0.7+ |
| 2000 04 07 | 691 | 0.1− | 0.1− | 2002 10 30 | 608 | 0.8+ | 0.2+ | 2003 01 04 | 704 | 1.0− | 1.0+ |
| 2000 04 07 | 691 | 0.0 | 0.2− | 2002 11 01 | 644 | 0.3− | 0.2− | 2003 01 04 | 704 | 0.8− | 0.6+ |
| 2000 04 07 | 691 | 0.1+ | 0.6− | 2002 11 01 | 644 | 0.2− | 0.2− | 2003 01 04 | 704 | 0.6− | 0.8+ |
| 2002 09 06 | 704 | 0.3− | 0.2− | 2002 11 01 | 644 | 0.3− | 0.1− | 2003 01 04 | 704 | 0.2− | 1.3+ |
| 2002 09 06 | 704 | 0.6− | 0.1− | 2002 11 03 | 704 | 0.5+ | 0.8+ | 2003 02 01 | 704 | 1.0− | 0.1− |
| 2002 09 06 | 704 | 0.3− | 0.6+ | 2002 11 03 | 704 | 0.7+ | 0.7− | 2003 02 01 | 704 | 0.8− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2002 11 03 | 704 | 1.1+ | 0.5+ | 2003 02 01 | 704 | 1.3+ | 0.4− |
| 2002 09 10 | 608 | 0.2− | 0.2− | 2002 11 03 | 704 | 1.3+ | 0.4+ | 2006 10 27 | 703 | 0.9− | 0.5− |
| 2002 09 10 | 608 | 0.1+ | 0.1− | 2002 11 06 | 704 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.2+ |
| 2002 09 10 | 608 | 0.2− | 0.2− | 2002 11 06 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 703 | 1.3+ | 0.7+ |
| 2002 09 14 | 608 | 0.0 | 0.8+ | 2002 11 06 | 704 | 0.2− | 0.1− | 2006 10 27 | 703 | (1.5+ | 2.2+) |
| 2002 09 14 | 608 | 0.0 | 0.6+ | 2002 11 06 | 704 | 0.4+ | 0.1− | 2006 11 02 | 703 | 0.1+ | 0.3− |
| 2002 09 14 | 608 | 0.1− | 0.6+ | 2002 11 06 | 704 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.3+ | 0.5− |
| 2002 09 21 | 644 | 0.6− | 0.3+ | 2002 11 13 | 644 | 0.1+ | 0.1− | 2006 11 02 | 703 | 0.1− | 0.6− |
| 2002 09 21 | 644 | 0.6− | 0.1− | 2002 11 13 | 644 | 0.1− | 0.3− | 2006 11 02 | 703 | 0.1+ | 0.2− |
| 2002 09 21 | 644 | 0.4− | 0.0 | 2002 11 13 | 644 | 0.1− | 0.3− | 2006 11 21 | 703 | 0.0 | 0.1− |
| 2002 10 03 | 644 | 0.2− | 0.2+ | 2002 11 14 | 704 | 0.2− | 0.4− | 2006 11 21 | 703 | 0.8− | 0.2+ |
| 2002 10 03 | 644 | 0.1− | 0.1+ | 2002 11 14 | 704 | 0.8+ | 0.0 | 2006 11 21 | 703 | 0.2− | 0.3− |
| 2002 10 03 | 644 | 0.2− | 0.0 | 2002 11 14 | 704 | 0.4+ | 0.3− | 2006 11 21 | 703 | 0.4− | 0.3+ |

**(138354)∗ 2000 GF$_{118}$ = 2004 CN$_{22}$**

Discovered 2000 Apr. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60662)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.05239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23656620 | $\omega$ | 135.44080 | | −0.71562287 | −0.69848588 | |
| $a$ | 2.5892119 | $\Omega$ | 0.26230 | | +0.54755994 | −0.56203675 | |
| $e$ | 0.0378778 | $i$ | 14.87071 | | +0.43366118 | −0.44298100 | |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.3+ | 0.8+ | 2002 10 05 | 704 | 0.1− | 0.6− | 2004 03 14 | 704 | 0.6− | 0.3+ |
| 2000 03 11 | 704 | 0.7+ | 0.7+ | 2004 01 29 | 703 | 0.1+ | 0.8+ | 2004 03 14 | 704 | 0.8+ | 0.3− |
| 2000 03 11 | 704 | 1.2+ | 0.0 | 2004 01 29 | 703 | (1.5+ | 0.5−) | 2004 03 20 | 704 | (0.2− | 2.5+) |
| 2000 03 11 | 704 | 0.3+ | 1.3+ | 2004 01 29 | 703 | 1.1+ | 0.2+ | 2004 03 20 | 704 | (3.2+ | 0.2+) |
| 2000 04 02 | 691 | 0.1− | 0.8+ | 2004 01 29 | 703 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.1+ | 0.4+ |
| 2000 04 02 | 691 | 0.2+ | 0.3− | 2004 02 11 | 644 | 0.4− | 0.2− | 2004 03 20 | 704 | (2.5+ | 0.2+) |
| 2000 04 02 | 691 | 0.0 | 0.4− | 2004 02 11 | 644 | 0.4− | 0.1+ | 2006 07 21 | G96 | 0.8− | 0.1+ |
| 2000 04 05 | 704 | 0.2− | 0.1+ | 2004 02 11 | 644 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.5− | 0.3− |
| 2000 04 05 | 704 | 0.1− | 0.1− | 2004 02 13 | 644 | 0.3− | 0.0 | 2006 07 21 | G96 | 0.5+ | 0.3+ |
| 2000 04 05 | 704 | 0.2− | 1.1+ | 2004 02 13 | 644 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.0 |
| 2000 04 05 | 704 | 0.4− | 1.1+ | 2004 02 13 | 644 | 0.3+ | 0.5− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2000 04 05 | 704 | 0.2− | 1.3+ | 2004 02 16 | 704 | (1.3− | 1.8−) | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2000 04 07 | 691 | 0.0 | 1.0− | 2004 02 16 | 704 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2000 04 07 | 691 | 0.1− | 0.3− | 2004 02 16 | 704 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2000 04 07 | 691 | 0.2− | 0.4− | 2004 02 16 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2000 04 10 | 695 | 0.1− | 0.6+ | 2004 02 16 | 704 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2000 04 10 | 695 | 0.1+ | 0.6+ | 2004 03 14 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 10 05 | 704 | 0.8+ | 0.5− | 2004 03 14 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2002 10 05 | 704 | 0.6+ | 0.8− | 2004 03 14 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ |

**(138355)∗ 2000 GH$_{118}$ = 2002 SE$_{33}$**

Discovered 2000 Apr. 2 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 37487)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.93965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22743534 | $\omega$ | 80.05481 | | +0.13905759 | −0.99025087 | |
| $a$ | 2.6580557 | $\Omega$ | 2.00649 | | +0.79291875 | +0.10641736 | |
| $e$ | 0.0648696 | $i$ | 13.43730 | | +0.59324771 | +0.08988079 | |
| $P$ | 4.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.0 | 0.2+ | 2002 10 05 | 599 | 0.1− | 0.2− | 2004 02 15 | 704 | 0.1− | 0.8+ |
| 2000 03 11 | 699 | 0.1+ | 0.7+ | 2002 10 05 | 599 | 0.1− | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.3+ |
| 2000 03 11 | 699 | 0.4+ | 0.8+ | 2002 10 05 | 599 | 0.3+ | 0.0 | 2004 02 15 | 704 | 0.1− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.5+ | 0.5+ | 2002 10 09 | 704 | 0.0 | 0.3− | 2004 02 16 | 735 | 1.0− | 1.0+ |
| 2000 03 11 | 699 | 0.1− | 0.1+ | 2002 10 09 | 704 | 0.2− | 0.8− | 2004 02 16 | 735 | 0.3− | 0.4− |
| 2000 03 11 | 704 | 0.6+ | 0.2+ | 2002 10 09 | 704 | 0.0 | 0.3− | 2004 02 16 | 735 | 0.7− | 0.1+ |
| 2000 03 11 | 704 | 0.0 | 0.0 | 2002 10 09 | 704 | 0.5− | 0.3− | 2004 02 17 | 735 | 0.1+ | 0.1− |
| 2000 03 11 | 704 | 0.4+ | 0.3+ | 2002 10 09 | 704 | 0.3− | 0.4− | 2004 02 17 | 735 | 0.3− | 0.1− |
| 2000 03 11 | 704 | 0.4+ | 0.3+ | 2002 10 12 | 704 | 1.0+ | 0.6− | 2004 02 17 | 735 | 0.3− | 0.2− |
| 2000 03 26 | 699 | 0.3+ | 0.3+ | 2002 10 12 | 704 | 1.2+ | 0.3+ | 2004 03 14 | 704 | 1.4+ | 0.7− |
| 2000 03 26 | 699 | 0.1− | 0.4+ | 2002 10 12 | 704 | (1.1+ | 1.9−) | 2004 03 14 | 704 | 0.0 | 0.3− |
| 2000 03 26 | 699 | 0.4+ | 0.3+ | 2002 10 12 | 704 | 0.5+ | 0.6− | 2004 03 14 | 704 | 0.0 | 0.9+ |
| 2000 03 26 | 699 | 0.7+ | 0.2− | 2002 10 12 | 704 | 0.5+ | 0.3− | 2004 03 23 | 704 | 0.5+ | 0.1+ |
| 2000 04 02 | 691 | 0.1+ | 0.1− | 2002 10 28 | 644 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.7+ | 0.1− |
| 2000 04 02 | 691 | 0.1+ | 0.2− | 2002 10 28 | 644 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.4− | 0.2+ |
| 2000 04 02 | 691 | 0.1+ | 0.2− | 2002 10 28 | 644 | 0.2+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 1.7+ | 0.4+ | 2002 10 30 | 644 | 0.2− | 0.6− | 2006 08 16 | 644 | 0.5− | 0.3+ |
| 2000 04 05 | 704 | 0.8+ | 0.1+ | 2002 10 30 | 644 | 0.2− | 0.7− | 2006 08 16 | 644 | 0.3− | 0.4+ |
| 2000 04 05 | 704 | 0.3+ | 1.0− | 2002 10 30 | 644 | 0.2− | 0.4− | 2006 08 16 | 644 | 0.5− | 0.5+ |
| 2000 04 06 | 704 | 0.5− | 0.4+ | 2002 11 08 | 704 | (1.7+ | 0.1−) | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2000 04 06 | 704 | (2.3+ | 0.8+) | 2002 11 08 | 704 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.5− | 0.6+ |
| 2000 04 06 | 704 | 0.6+ | 0.8+ | 2002 11 08 | 704 | 0.8+ | 1.0− | 2006 08 16 | 644 | 0.5− | 0.6+ |
| 2000 04 06 | 704 | 1.6+ | 1.1+ | 2002 11 08 | 704 | 0.9+ | 0.6+ | 2006 08 16 | 644 | 0.7− | 0.7+ |
| 2000 04 07 | 691 | 0.1− | 0.1+ | 2002 11 08 | 704 | 0.6− | 0.3+ | 2006 08 16 | 644 | 0.5− | 0.5+ |
| 2000 04 07 | 691 | 0.1+ | 0.5+ | 2002 11 22 | 644 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.4+ |
| 2000 04 07 | 691 | 0.1− | 0.0 | 2002 11 22 | 644 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.6− | 0.4+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2002 11 22 | 644 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.4− | 0.4+ |
| 2000 05 05 | 645 | 0.2− | 0.0 | 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.4− | 0.6+ |
| 2002 09 15 | 608 | 0.3+ | 0.7+ | 2004 01 17 | 644 | 0.4− | 0.1+ | 2006 08 30 | 699 | (1.7+ | 0.9+) |
| 2002 09 15 | 608 | 0.1+ | 0.5+ | 2004 01 17 | 644 | 0.3− | 0.0 | 2006 08 30 | 699 | 0.5− | 0.2+ |
| 2002 09 15 | 608 | 0.3− | 1.1+ | 2004 01 20 | 704 | 0.0 | 0.8+ | 2006 08 30 | 699 | 0.9− | 1.2+ |
| 2002 09 28 | 608 | (2.4− | 0.2−) | 2004 01 20 | 704 | 0.0 | 0.8+ | 2006 08 30 | 699 | 0.3− | 0.5+ |
| 2002 09 28 | 608 | (2.7− | 0.3−) | 2004 01 20 | 704 | 0.5− | 0.3+ | 2006 09 14 | 703 | (2.0− | 1.9+) |
| 2002 09 28 | 608 | (2.4− | 0.1−) | 2004 01 20 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | (0.7+ | 1.8+) |
| 2002 10 01 | 699 | 0.2− | 0.2− | 2004 01 31 | 704 | (2.0+ | 0.4−) | 2006 09 14 | 703 | 1.5− | 0.3+ |
| 2002 10 01 | 699 | 0.9+ | 0.4+ | 2004 01 31 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 703 | 0.4− | 1.2+ |
| 2002 10 01 | 699 | 0.3− | 0.8+ | 2004 01 31 | 704 | 1.4+ | 0.8+ | 2006 09 18 | 699 | 0.0 | 1.1+ |
| 2002 10 01 | 699 | 0.1− | 0.4− | 2004 01 31 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 699 | 1.0− | 0.1+ |
| 2002 10 03 | 599 | 0.0 | 0.2+ | 2004 02 10 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.4+ |
| 2002 10 03 | 599 | 0.1+ | 0.3+ | 2004 02 10 | 644 | 0.2− | 0.5− | 2006 09 18 | 699 | (1.7− | 1.0+) |
| 2002 10 03 | 599 | 0.0 | 0.2+ | 2004 02 10 | 644 | 0.6+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 1.1+ |
| 2002 10 04 | 704 | 0.2− | 0.4− | 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2004 02 10 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.6+ | 1.4+ |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2004 02 10 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.9+ |
| 2002 10 04 | 704 | 0.1− | 0.8− | 2004 02 12 | 644 | 0.2− | 0.5+ | 2006 10 19 | 703 | (0.1− | 2.4−) |
| 2002 10 04 | 704 | 0.7− | 0.2− | 2004 02 12 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.4− |
| 2002 10 04 | 644 | 0.4− | 0.1+ | 2004 02 12 | 644 | 0.7+ | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.9− |
| 2002 10 04 | 644 | 0.5− | 0.3+ | 2004 02 14 | 703 | 0.3+ | 0.6+ | 2006 10 19 | 703 | (2.3− | 0.0 ) |
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2004 02 14 | 703 | 0.8+ | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2002 10 05 | 644 | (1.0− | 1.6+) | 2004 02 14 | 703 | 0.7+ | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 10 05 | 644 | 0.4− | 1.1+ | 2004 02 14 | 703 | 1.1+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 10 05 | 644 | 0.4− | 1.0+ | 2004 02 15 | 704 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.1+ |

**(138356)∗ 2000 GW$_{121}$ = 1998 BY$_{29}$**

Discovered 2000 Apr. 6 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 7027)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.36363 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21530542 | $\omega$ | 270.63205 | | +0.96441566 | −0.20961448 | |
| $a$ | 2.7569744 | $\Omega$ | 101.47633 | | +0.25536737 | +0.89637637 | |
| $e$ | 0.1638496 | $i$ | 9.46363 | | −0.06848320 | +0.39060360 | |
| $P$ | 4.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 29 | 691 | 0.8− | 0.2− | 2001 09 11 | 704 | 0.5+ | 0.8+ | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 1998 01 29 | 691 | 0.5− | 0.5− | 2002 12 06 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.3− | 0.1− |
| 1998 01 30 | 691 | 0.6+ | 0.3+ | 2002 12 06 | 645 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.1− | 0.1− |
| 1998 01 30 | 691 | 0.1+ | 0.1+ | 2002 12 31 | 704 | 0.5− | 0.2+ | 2006 10 28 | 703 | 1.1− | 0.3− |
| 2000 04 06 | 691 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.2− | 0.2− |
| 2000 04 06 | 691 | 0.0 | 0.0 | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.4+ | 1.1− |
| 2000 04 06 | 691 | 0.2− | 0.1+ | 2002 12 31 | 704 | 0.7− | 1.4+ | 2006 11 10 | 704 | 0.1− | 0.3− |
| 2000 04 07 | 691 | 0.2− | 0.2+ | 2003 01 04 | 704 | 0.3+ | 0.7+ | 2006 11 10 | 704 | 0.2− | 0.1− |
| 2000 04 07 | 691 | 0.3− | 0.1+ | 2003 01 04 | 704 | 0.1+ | 0.8+ | 2006 11 10 | 704 | 0.3+ | 1.0− |
| 2000 04 07 | 691 | 0.3− | 0.1+ | 2003 01 04 | 704 | 0.4+ | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.1− |
| 2000 04 10 | 691 | 0.3+ | 0.2+ | 2003 01 08 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 704 | 0.4− | 0.2+ |
| 2000 04 10 | 691 | 0.4+ | 0.1− | 2003 01 08 | 704 | 0.9+ | 0.1− | 2006 11 16 | 703 | 0.6− | 0.2+ |
| 2000 04 10 | 691 | 0.0 | 0.5− | 2003 01 08 | 704 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.4− | 0.4− |
| 2001 08 24 | 608 | 1.2+ | 0.3− | 2003 01 08 | 704 | 0.0 | 0.5− | 2006 11 16 | 703 | 0.2− | 0.6− |
| 2001 08 24 | 608 | 1.0+ | 0.4− | 2006 10 01 | 704 | 0.0 | 0.9+ | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2001 08 24 | 608 | 1.2+ | 0.7− | 2006 10 01 | 704 | (1.6− | 1.9+) | 2006 11 17 | 644 | 0.2− | 0.3+ |
| 2001 08 27 | 644 | 1.0− | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 644 | 0.0 | 0.4+ |
| 2001 08 27 | 644 | 0.9− | 0.3− | 2006 10 01 | 704 | (1.6− | 0.7+) | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2001 08 27 | 644 | 0.8− | 0.3− | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2001 09 11 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2001 09 11 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | (1.9− | 0.5+) |
| 2001 09 11 | 704 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 1.0+ | 0.1+ |
| 2001 09 11 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.3− | | | | |

**(138357)∗ 2000 GB$_{123}$ = 2001 UB$_{36}$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19626)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.71586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37806267 | $\omega$ | 22.70923 | | +0.22363271 | −0.91981197 | |
| $a$ | 1.8942044 | $\Omega$ | 55.84778 | | +0.82371165 | +0.00153550 | |
| $e$ | 0.0884288 | $i$ | 22.92777 | | +0.52104465 | +0.39235645 | |
| $P$ | 2.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 049 | 1.3+ | 1.1− | 2001 11 18 | 704 | 0.2+ | 0.2+ | 2002 01 08 | 704 | 0.1− | 0.5− |
| 2000 03 12 | 049 | 1.4+ | 0.3− | 2001 11 18 | 704 | 0.1+ | 0.3+ | 2002 01 08 | 704 | 0.7− | 0.6+ |
| 2000 03 12 | 049 | 0.9+ | 0.3− | 2001 11 18 | 704 | 0.4− | 0.1+ | 2002 01 08 | 704 | 0.7+ | 1.0+ |
| 2000 04 08 | 704 | 0.4+ | 0.9+ | 2001 11 18 | 704 | 0.0 | 0.3+ | 2002 02 10 | 704 | 0.3+ | 0.2+ |
| 2000 04 08 | 704 | 0.4+ | 0.2+ | 2001 11 18 | 704 | 0.4− | 0.1− | 2002 02 10 | 704 | 0.2+ | 0.3− |
| 2000 04 08 | 704 | 0.9+ | 1.6+ | 2001 11 18 | 704 | 0.0 | 0.2+ | 2002 02 10 | 704 | 0.4+ | 0.4− |
| 2000 04 12 | 704 | 0.5− | 0.6+ | 2001 11 18 | 704 | 0.5− | 0.2+ | 2002 02 10 | 704 | 0.4− | 0.3− |
| 2000 04 12 | 704 | 0.4− | 0.2+ | 2001 11 18 | 704 | 0.1+ | 0.2+ | 2004 12 19 | 704 | 0.4+ | 0.6− |
| 2000 04 12 | 704 | 0.6+ | 0.1+ | 2001 11 18 | 704 | 0.4+ | 0.1+ | 2004 12 19 | 704 | 0.0 | 0.3− |
| 2000 04 12 | 704 | 0.2+ | 0.3+ | 2001 11 18 | 704 | 0.1− | 0.2+ | 2004 12 19 | 704 | 0.8+ | 0.5− |
| 2000 05 03 | 704 | 0.1+ | 0.6+ | 2001 11 19 | 699 | 0.7+ | 0.1− | 2004 12 19 | 704 | 1.2+ | 0.1+ |
| 2000 05 03 | 704 | 0.5+ | 0.5+ | 2001 11 19 | 699 | 0.5+ | 0.2+ | 2004 12 19 | 704 | 0.4+ | 0.2− |
| 2000 05 03 | 704 | 0.2− | 1.4+ | 2001 11 19 | 699 | 0.2− | 0.1+ | 2005 03 22 | 704 | 1.1− | 0.9+ |
| 2000 05 03 | 704 | 1.3+ | 1.8+ | 2001 11 19 | 699 | 1.2+ | 1.5+ | 2005 03 22 | 704 | 0.3− | 1.0+ |
| 2000 05 03 | 704 | 0.5+ | 0.8+ | 2001 11 19 | 608 | 0.1− | 0.8− | 2005 03 22 | 704 | 1.0− | 0.8+ |
| 2000 05 05 | 704 | 1.5− | 0.6+ | 2001 11 19 | 608 | 0.1− | 0.9− | 2005 03 22 | 704 | 0.4+ | 0.5+ |
| 2000 05 05 | 704 | 0.8+ | 0.8+ | 2001 11 19 | 608 | 0.1− | 0.8− | 2005 03 27 | 699 | 0.4− | 0.1+ |
| 2000 05 05 | 704 | 0.2+ | 0.6+ | 2001 11 20 | 704 | 0.0 | 0.5− | 2005 03 27 | 699 | 0.1+ | 0.7− |
| 2000 05 05 | 704 | 1.5+ | 0.4+ | 2001 11 20 | 704 | 0.2− | 0.7− | 2005 03 27 | 699 | 0.4− | 0.7+ |
| 2000 05 05 | 704 | 0.0 | 0.9+ | 2001 11 20 | 704 | 0.1− | 0.7− | 2005 03 27 | 699 | 0.8+ | 0.1+ |
| 2001 08 22 | 644 | 0.3− | 0.3+ | 2001 11 20 | 704 | 0.7− | 0.3− | 2005 04 12 | 703 | 0.7− | 0.2+ |
| 2001 08 22 | 644 | 0.2− | 0.2− | 2001 11 20 | 704 | 0.4− | 0.8− | 2005 04 12 | 703 | 1.1+ | 0.1− |
| 2001 08 22 | 644 | 0.3− | 0.4+ | 2001 11 21 | 704 | 0.7− | 0.3− | 2005 04 12 | 703 | 0.1− | 0.7− |
| 2001 10 04 | 644 | 0.7− | 0.4+ | 2001 11 21 | 704 | 0.6− | 0.1− | 2005 04 12 | 703 | 0.0 | 0.7− |
| 2001 10 04 | 644 | 0.7− | 0.3− | 2001 11 21 | 704 | 0.4− | 0.1− | 2005 04 12 | 703 | 0.3+ | 1.0+ |
| 2001 10 04 | 644 | 0.7− | 0.2− | 2001 11 21 | 704 | 0.2− | 0.0 | 2005 04 12 | 703 | 0.8− | 0.0 |
| 2001 10 13 | 699 | 0.6− | 0.1− | 2001 11 21 | 704 | 0.3− | 0.0 | 2005 04 12 | 703 | 0.2+ | 0.4+ |
| 2001 10 13 | 699 | 0.7− | 0.0 | 2001 11 24 | 644 | 0.1+ | 0.1− | 2005 04 12 | 703 | 1.4+ | 1.0− |
| 2001 10 13 | 699 | 0.5− | 1.0+ | 2001 11 24 | 644 | 0.3+ | 0.1+ | 2006 09 05 | E12 | 0.4− | 0.2+ |
| 2001 10 13 | 699 | 0.2− | 0.0 | 2001 11 24 | 644 | 0.3+ | 0.0 | 2006 09 05 | E12 | 1.2− | 0.0 |
| 2001 10 16 | 704 | (1.7+ | 1.5+) | 2001 12 10 | 704 | 0.2+ | 0.5+ | 2006 09 05 | E12 | 0.3− | 0.7+ |
| 2001 10 16 | 704 | (2.2+ | 1.9+) | 2001 12 10 | 704 | 0.2+ | 0.3+ | 2006 09 05 | E12 | 0.3+ | 1.2+ |
| 2001 10 16 | 704 | (1.7+ | 2.2+) | 2001 12 10 | 704 | 0.6+ | 0.3+ | 2006 09 19 | E12 | 0.3− | 0.2− |
| 2001 10 16 | 704 | (2.1+ | 2.3+) | 2001 12 10 | 704 | 0.8+ | 0.7+ | 2006 09 19 | E12 | 0.1− | 0.9+ |
| 2001 10 16 | 704 | (2.1+ | 2.3+) | 2001 12 10 | 704 | 0.7+ | 0.9+ | 2006 09 19 | E12 | 0.8− | 0.5+ |
| 2001 10 20 | 704 | 0.6+ | 0.7− | 2001 12 17 | 704 | 0.2− | 1.0+ | 2006 09 19 | E12 | 0.8− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4+ | 0.7− | 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 09 28 | 428 | 0.5− | 0.4+ | | |
| 2001 10 20 | 704 | 0.1+ | 0.4− | 2001 12 17 | 704 | 0.3− | 0.9+ | 2006 09 29 | E12 | 0.4− | 0.7+ | | |
| 2001 10 20 | 704 | 0.3+ | 0.6− | 2001 12 17 | 704 | 0.1+ | 0.3+ | 2006 09 29 | E12 | 0.6− | 0.5+ | | |
| 2001 10 20 | 704 | 0.3+ | 0.6− | 2001 12 17 | 704 | 0.0 | 0.9+ | 2006 09 29 | E12 | 0.4− | 0.2+ | | |
| 2001 11 09 | 704 | 0.3− | 0.4+ | 2001 12 18 | 699 | 0.1+ | 0.4+ | 2006 09 30 | 428 | 0.6+ | 0.3+ | | |
| 2001 11 09 | 704 | 0.4− | 0.4+ | 2001 12 18 | 699 | 0.2+ | 0.0 | 2006 10 13 | E12 | 0.2− | 0.5+ | | |
| 2001 11 09 | 704 | 0.4+ | 0.7+ | 2001 12 18 | 699 | 0.3− | 0.3+ | 2006 10 13 | E12 | 0.0 | 0.3+ | | |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2001 12 18 | 699 | 0.1− | 0.3− | 2006 10 13 | E12 | 0.6− | 0.8+ | | |
| 2001 11 09 | 704 | 0.1+ | 0.5+ | 2001 12 20 | 644 | 0.2− | 0.2− | 2006 10 13 | E12 | 0.5+ | 0.3− | | |
| 2001 11 15 | 644 | 0.4− | 0.0 | 2001 12 20 | 644 | 0.3− | 0.2− | 2006 10 28 | E12 | 0.7− | 0.4+ | | |
| 2001 11 15 | 644 | 0.3− | 0.1+ | 2001 12 20 | 644 | 0.3− | 0.1− | 2006 10 28 | E12 | 0.5− | 0.7+ | | |
| 2001 11 15 | 644 | 0.8− | 0.2− | 2001 12 21 | 704 | 0.3+ | 0.1− | 2006 10 28 | E12 | 0.2− | 0.1+ | | |
| 2001 11 17 | 704 | 0.2− | 0.0 | 2001 12 21 | 704 | 0.2+ | 1.2+ | 2006 10 28 | E12 | 0.4− | 0.2− | | |
| 2001 11 17 | 704 | 0.0 | 0.1− | 2001 12 21 | 704 | 0.5+ | 0.9+ | | | | | | |
| 2001 11 17 | 704 | 0.1− | 0.4− | 2002 01 08 | 704 | 0.4− | 1.3+ | | | | | | |

**(138358)∗ 2000 GL$_{127}$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.28173 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22783970 | $\omega$ | 151.38998 | | −0.31744863 | +0.91746496 | |
| $a$ | 2.6549098 | $\Omega$ | 99.24381 | | −0.90972433 | −0.22328935 | |
| $e$ | 0.1495107 | $i$ | 14.05857 | | −0.26763411 | −0.32924143 | |
| $P$ | 4.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 699 | 0.3− | 0.0 | 2000 05 03 | 704 | 0.2+ | 0.1+ | 2002 12 10 | 644 | 0.5− | 0.8+ | | |
| 2000 03 12 | 699 | 0.5− | 0.9+ | 2000 05 03 | 704 | 0.2− | 0.5+ | 2002 12 10 | 644 | 0.5− | 0.6+ | | |
| 2000 03 12 | 699 | 1.2− | 0.5+ | 2000 05 03 | 704 | 0.6+ | 0.4+ | 2002 12 10 | 644 | 0.1+ | 1.0+ | | |
| 2000 03 12 | 699 | 0.8− | 1.2+ | 2000 05 03 | 704 | 0.4+ | 0.4+ | 2002 12 10 | 644 | 0.5− | 0.7+ | | |
| 2000 04 08 | 704 | 0.6− | 0.6− | 2000 05 03 | 704 | 0.0 | 0.3− | 2002 12 13 | 704 | 0.9+ | 0.3+ | | |
| 2000 04 08 | 704 | 0.4+ | 0.1+ | 2000 05 08 | 704 | 0.2− | 0.4+ | 2002 12 13 | 704 | 0.6− | 1.1+ | | |
| 2000 04 08 | 704 | 0.4+ | 0.9− | 2000 05 08 | 704 | 0.3+ | 1.5+ | 2002 12 13 | 704 | 1.1− | 0.3+ | | |
| 2000 04 12 | 704 | 1.0− | 0.1− | 2000 05 08 | 704 | 0.2+ | 0.1+ | 2003 12 25 | 645 | 0.1− | 0.1− | | |
| 2000 04 12 | 704 | 0.1+ | 0.8+ | 2000 05 26 | 699 | 0.5+ | 0.1+ | 2003 12 25 | 645 | 0.1− | 0.2− | | |
| 2000 04 12 | 704 | 0.7− | 0.1− | 2000 05 26 | 699 | 1.1− | 0.5+ | 2004 03 18 | 644 | 0.1− | 0.0 | | |
| 2000 04 12 | 704 | 0.7+ | 0.1+ | 2000 05 26 | 699 | 1.2+ | 0.2+ | 2004 03 18 | 644 | 0.2+ | 0.7− | | |
| 2000 04 14 | 704 | 0.4− | 0.1+ | 2000 05 26 | 699 | 0.5− | 0.0 | 2004 03 18 | 644 | 0.2+ | 0.1− | | |
| 2000 04 14 | 704 | 0.4+ | 0.2+ | 2000 05 26 | 699 | 0.8+ | 0.0 | 2004 03 28 | 704 | 0.0 | 0.8− | | |
| 2000 04 14 | 704 | 0.7− | 0.4+ | 2000 05 26 | 699 | 1.0− | 0.8+ | 2004 03 28 | 704 | 1.0+ | 0.2+ | | |
| 2000 04 14 | 704 | 0.1+ | 0.4− | 2000 05 26 | 699 | 0.2+ | 0.0 | 2004 03 28 | 704 | 0.1− | 0.2+ | | |
| 2000 04 14 | 704 | 0.5+ | 0.0 | 2000 05 26 | 699 | 0.3+ | 0.6+ | 2004 03 28 | 704 | 0.8+ | 0.7+ | | |
| 2000 04 28 | 704 | 1.2+ | 1.1+ | 2000 06 07 | 699 | 1.5+ | 0.2+ | 2005 08 10 | E12 | 0.5− | 0.8+ | | |
| 2000 04 28 | 704 | 0.8+ | 0.6+ | 2000 06 07 | 699 | 0.3− | 0.4+ | 2005 08 10 | E12 | 0.6− | 0.8+ | | |
| 2000 04 28 | 704 | 1.0− | 0.3+ | 2000 06 07 | 699 | 1.2+ | 0.1+ | 2005 08 10 | E12 | 0.3+ | 1.0− | | |
| 2000 04 28 | 704 | 0.5− | 0.5− | 2000 06 07 | 699 | 0.8+ | 0.1+ | 2005 08 10 | E12 | 0.7− | 0.3+ | | |
| 2000 04 29 | 699 | 0.1− | 0.0 | 2001 07 27 | 644 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 1.1+ | | |
| 2000 04 29 | 699 | 1.1+ | 0.3+ | 2001 07 27 | 644 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.0 | 0.0 | | |
| 2000 04 29 | 699 | 0.5− | 0.1− | 2001 07 27 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 1.1+ | | |
| 2000 04 29 | 699 | 0.9+ | 0.2+ | 2002 12 08 | 608 | 0.6− | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.7+ | | |
| 2000 04 29 | 699 | 0.5− | 0.2+ | 2002 12 08 | 608 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.1+ | 0.1+ | | |
| 2000 04 29 | 699 | 1.1+ | 0.2+ | 2002 12 08 | 608 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.4+ | | |
| 2000 04 29 | 699 | 0.6− | 1.1+ | 2002 12 10 | 644 | 0.8− | 0.6+ | 2006 11 13 | 703 | 0.4− | 0.1+ | | |
| 2000 04 29 | 699 | 1.1+ | 0.0 | 2002 12 10 | 644 | 0.1− | 1.1+ | 2006 11 13 | 703 | 0.2+ | 0.9+ | | |

**(138359)∗ 2000 GX$_{127}$**

Discovered 2000 Apr. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.03642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.80823586 | $\omega$ | 4.66727 | | +0.66330405 | −0.70863582 | |
| $a$ | 1.1414160 | $\Omega$ | 44.04734 | | +0.67491326 | +0.42760221 | |
| $e$ | 0.3614160 | $i$ | 20.24197 | | +0.32329527 | +0.56124115 | |
| $P$ | 1.22 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 691 | 0.3− | 0.0 | 2000 05 01 | 402 | 1.5+ | 0.3+ | 2006 01 11 | 461 | 0.4+ | 0.2+ | | |
| 2000 04 10 | 691 | 0.1− | 0.0 | 2000 05 01 | 402 | 1.6+ | 0.4− | 2006 01 11 | 461 | 0.2+ | 0.1+ | | |
| 2000 04 10 | 691 | 0.1− | 0.1− | 2000 05 02 | 860 | 0.2− | 1.0− | 2006 03 17 | 084 | 0.0 | 0.1+ | | |
| 2000 04 11 | 691 | 0.2− | 0.3− | 2000 05 02 | 860 | 0.6+ | 0.2− | 2006 03 23 | 703 | 0.4− | 0.9− | | |
| 2000 04 11 | 691 | 0.0 | 0.1− | 2000 05 02 | 860 | 1.2− | 0.5+ | 2006 03 23 | 703 | 0.2+ | 0.1+ | | |
| 2000 04 11 | 691 | 0.2− | 0.2− | 2000 05 03 | 691 | 0.3+ | 0.3− | 2006 03 23 | 703 | 1.2− | 0.2+ | | |
| 2000 04 12 | 691 | 0.6+ | 0.4+ | 2000 05 03 | 691 | 0.2+ | 0.4− | 2006 03 23 | 703 | 0.4− | 0.5+ | | |
| 2000 04 12 | 691 | 0.8+ | 0.1− | 2000 05 03 | 691 | 0.3+ | 0.4− | 2006 03 31 | 084 | 0.9− | 0.9− | | |
| 2000 04 12 | 360 | 0.0 | 0.2− | 2000 05 05 | 360 | 0.3+ | 0.3+ | 2006 03 31 | 084 | 0.2+ | 0.2− | | |
| 2000 04 12 | 360 | 0.2− | 0.1− | 2000 05 05 | 360 | 0.7+ | 0.1+ | 2006 04 03 | H45 | 0.2+ | 0.1+ | | |
| 2000 04 12 | 360 | 0.1+ | 0.2− | 2000 05 05 | 360 | 0.0 | 0.0 | 2006 04 03 | H45 | 0.1− | 0.1+ | | |
| 2000 04 13 | 557 | 0.1+ | 0.3− | 2000 05 07 | 704 | 0.4+ | 0.5+ | 2006 04 03 | H45 | 0.4− | 0.1+ | | |
| 2000 04 13 | 557 | 0.3− | 0.1+ | 2000 05 07 | 704 | 0.3+ | 1.2+ | 2006 04 03 | H45 | 0.1+ | 0.1+ | | |
| 2000 04 13 | 557 | 0.6+ | 0.2+ | 2000 05 07 | 704 | 0.3+ | 0.4+ | 2006 04 03 | H45 | 0.0 | 0.0 | | |
| 2000 04 13 | 704 | (0.2− | 4.0−) | 2000 05 07 | 704 | 0.2+ | 0.4+ | 2006 04 05 | H55 | 0.6− | 0.2− | | |
| 2000 04 13 | 704 | 0.4+ | 0.8− | 2000 05 07 | 704 | 0.1+ | 0.3+ | 2006 04 05 | H55 | 0.1− | 0.2− | | |
| 2000 04 13 | 704 | 1.0+ | 1.0+ | 2000 05 10 | 704 | 0.4+ | 0.9+ | 2006 04 05 | H55 | 0.2− | 0.4− | | |
| 2000 04 13 | 691 | 0.0 | 0.0 | 2000 05 10 | 704 | 0.3+ | 0.8+ | 2006 04 07 | 699 | 0.0 | 0.4− | | |
| 2000 04 13 | 691 | 0.0 | 0.1− | 2000 05 10 | 704 | 0.5+ | 1.1+ | 2006 04 07 | 699 | 0.3− | 0.2+ | | |
| 2000 04 13 | 691 | 0.0 | 0.0 | 2000 05 10 | 704 | 0.2− | 0.3+ | 2006 04 07 | 699 | 0.6− | 0.2− | | |
| 2000 04 14 | 860 | 1.3+ | 0.6+ | 2000 05 10 | 704 | 0.1− | 0.1+ | 2006 04 07 | 699 | 0.8+ | 0.9− | | |
| 2000 04 14 | 860 | 1.0− | 0.1+ | 2000 05 10 | 704 | 0.4+ | 0.1+ | 2006 04 08 | H45 | 0.3− | 0.5+ | | |
| 2000 04 14 | 860 | 1.6+ | 0.4− | 2000 05 10 | 704 | 0.0 | 0.9+ | 2006 04 08 | H45 | 0.2+ | 0.0 | | |
| 2000 04 14 | 860 | 0.2− | 0.6− | 2000 05 10 | 704 | 1.3+ | 0.2− | 2006 04 08 | H45 | 0.0 | 0.0 | | |
| 2000 04 15 | 046 | 0.4+ | 0.7+ | 2000 05 10 | 704 | 0.3+ | 0.4+ | 2006 04 08 | H45 | 0.1− | 0.0 | | |
| 2000 04 15 | 046 | 0.2− | 0.4+ | 2000 05 10 | 704 | 0.3+ | 0.2+ | 2006 04 08 | 084 | 0.9+ | 0.1− | | |
| 2000 04 15 | 046 | 0.9+ | 0.4+ | 2000 05 13 | 118 | 0.1+ | 0.6+ | 2006 04 09 | 703 | 0.2− | 0.1− | | |
| 2000 04 15 | 046 | 0.4− | 0.0 | 2000 05 13 | 118 | 0.1+ | 0.7+ | 2006 04 09 | 703 | 0.6− | 0.5− | | |
| 2000 04 15 | 046 | 0.1− | 0.7+ | 2000 05 13 | 118 | 0.7+ | 0.5+ | 2006 04 09 | 703 | 0.4− | 0.1+ | | |
| 2000 04 15 | 557 | 0.3+ | 0.2+ | 2000 05 28 | 691 | 1.2− | 0.1+ | 2006 04 09 | 703 | 0.2− | 0.9− | | |
| 2000 04 15 | 557 | 0.7+ | 0.5+ | 2000 05 28 | 691 | 1.2− | 0.2+ | 2006 04 17 | H45 | 0.3+ | 0.3− | | |
| 2000 04 15 | 557 | 0.6+ | 0.0 | 2000 05 28 | 691 | 1.4− | 0.2+ | 2006 04 17 | H45 | 0.3+ | 0.0 | | |
| 2000 04 15 | 673 | (3.5− | 1.9+) | 2000 06 04 | 691 | 1.1− | 0.1+ | 2006 04 17 | H45 | 0.2+ | 0.5+ | | |
| 2000 04 15 | 673 | (3.0− | 1.9+) | 2000 06 04 | 691 | 1.5− | 0.2+ | 2006 04 17 | H45 | 0.2− | 0.3+ | | |
| 2000 04 15 | 673 | (3.0− | 1.5+) | 2000 06 04 | 691 | 1.2− | 0.2+ | 2006 04 17 | H45 | 0.1+ | 0.0 | | |
| 2000 04 15 | 428 | 0.5− | 0.6+ | 2000 07 23 | 413 | 0.1− | 0.4+ | 2006 04 19 | 704 | 0.5+ | 0.0 | | |
| 2000 04 15 | 428 | 0.2− | 0.8− | 2000 07 23 | 413 | 0.2− | 0.3+ | 2006 04 19 | 704 | 0.8+ | 0.0 | | |
| 2000 04 24 | 699 | 0.1+ | 0.7+ | 2000 09 02 | 413 | 0.9− | 1.0+ | 2006 04 19 | 704 | 0.5+ | 0.1− | | |
| 2000 04 24 | 699 | 0.1− | 0.0 | 2001 02 26 | 587 | (1.6+ | 1.1−) | 2006 04 19 | 704 | 0.1+ | 0.1+ | | |
| 2000 04 24 | 699 | 0.3+ | 0.1+ | 2001 02 26 | 587 | 0.5+ | 0.6+ | 2006 04 19 | 704 | 0.2+ | 0.0 | | |
| 2000 04 24 | 699 | 0.6+ | 0.0 | 2001 03 01 | 587 | 1.2− | 0.9− | 2006 04 22 | A53 | 0.2− | 0.3+ | | |
| 2000 04 24 | 402 | 0.3+ | 1.1− | 2001 05 10 | 540 | 0.6− | 1.3− | 2006 04 22 | A53 | 0.2+ | 0.3+ | | |
| 2000 04 24 | 402 | 1.0+ | 0.5+ | 2001 05 10 | 540 | (0.1+ | 2.3−) | 2006 04 22 | A53 | 0.8+ | 0.7+ | | |
| 2000 04 24 | 402 | 1.1+ | 0.3+ | 2001 05 10 | 540 | 1.5− | 1.4− | 2006 04 25 | 703 | 0.1− | 0.1− | | |
| 2000 04 26 | 860 | 1.0+ | 0.4+ | 2001 05 13 | 540 | 0.6− | 0.3− | 2006 04 25 | 703 | 0.0 | 0.9− | | |
| 2000 04 26 | 860 | 0.4− | 0.1− | 2001 05 13 | 540 | (0.3+ | 1.7−) | 2006 04 25 | 703 | 0.2− | 1.0− | | |
| 2000 04 26 | 860 | 1.7− | 0.5− | 2001 05 15 | 691 | 0.2+ | 0.4− | 2006 04 25 | 703 | 0.1+ | 1.0− | | |
| 2000 04 27 | 118 | 0.8+ | 0.0 | 2001 05 15 | 691 | 0.4+ | 0.3− | 2006 04 27 | 704 | 0.7+ | 0.3+ | | |
| 2000 04 27 | 118 | 0.7+ | 0.2+ | 2001 05 15 | 691 | 0.5− | 0.2− | 2006 04 27 | 704 | 0.4+ | 0.6+ | | |
| 2000 04 27 | 118 | 0.6+ | 0.2+ | 2001 05 22 | 691 | 0.1+ | 0.1− | 2006 04 27 | 704 | 0.6− | 0.0 | | |
| 2000 04 27 | 704 | 0.4+ | 0.2− | 2001 05 22 | 691 | 0.0 | 0.4− | 2006 04 27 | 704 | 0.6− | 0.3+ | | |
| 2000 04 27 | 704 | 0.4+ | 0.7+ | 2001 05 22 | 691 | 0.1+ | 0.5− | 2006 04 27 | 704 | 0.4− | 0.4+ | | |
| 2000 04 27 | 704 | 0.7+ | 0.9+ | 2005 05 05 | F65 | 0.3+ | 0.4+ | 2006 05 12 | 644 | 0.1− | 0.6+ | | |
| 2000 04 27 | 704 | 0.7+ | 0.7+ | 2005 05 05 | F65 | 0.5+ | 0.7− | 2006 05 12 | 644 | 0.3+ | 0.2− | | |
| 2000 04 27 | 704 | 0.8+ | 1.2+ | 2005 05 05 | F65 | 0.3+ | 0.1+ | 2006 05 12 | 644 | 0.0 | 0.2+ | | |
| 2000 04 28 | 360 | 0.0 | 0.4− | 2005 05 22 | E17 | 0.3− | 0.4− | 2006 05 21 | 703 | 0.7− | 0.0 | | |
| 2000 04 28 | 360 | 0.0 | 0.3− | 2005 05 22 | E17 | 0.7− | 0.7− | 2006 05 21 | 703 | 1.1− | 0.8− | | |
| 2000 04 28 | 360 | 0.5− | 0.4− | 2005 05 22 | E17 | 0.0 | 0.0 | 2006 05 21 | 703 | 0.6− | 1.3− | | |
| 2000 05 01 | 699 | 0.5+ | 0.7+ | 2006 01 11 | 461 | 0.3+ | 0.1+ | 2006 05 21 | 703 | 0.5− | 0.3− | | |
| 2000 05 01 | 699 | 0.3+ | 0.3+ | 2006 01 11 | 461 | 0.2+ | 0.2+ | 2006 05 25 | 703 | 0.7− | 1.2+ | | |
| 2000 05 01 | 699 | 0.3+ | 0.8+ | 2006 01 11 | 461 | 0.2+ | 0.2+ | 2006 05 25 | 703 | 0.2− | 1.1+ | | |
| 2000 05 01 | 699 | 0.5+ | 0.3− | 2006 01 11 | 461 | 0.5+ | 0.2+ | 2006 05 25 | 703 | (0.9− | 1.8+) | | |
| 2000 05 01 | 402 | 1.4+ | 0.2+ | 2006 01 11 | 461 | 0.1+ | 0.1+ | 2006 05 25 | 703 | 0.6+ | 1.4− | | |

**(138360)∗ 2000 GA$_{130}$ = 2004 FD$_{77}$**

Discovered 2000 Apr. 5 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60663)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.91970 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23641053 | $\omega$ | 287.41468 | | +0.05733669 | −0.99833633 | |
| $a$ | 2.5903484 | $\Omega$ | 159.29549 | | +0.92238510 | +0.05063913 | |
| $e$ | 0.0668536 | $i$ | 0.98679 | | +0.38199244 | +0.02757258 | |
| $P$ | 4.17 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 13 | 691 | 0.0 | 0.3+ | 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.2+ | |
| 1993 08 13 | 691 | 0.3− | 0.4+ | 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | |
| 1993 08 13 | 691 | 0.1+ | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.0 | |
| 2000 03 27 | 691 | 0.9− | 0.1+ | 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.1+ | |
| 2000 03 27 | 691 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.1− | 0.5− | 2006 10 21 | 703 | 0.1− | 0.3− | |
| 2000 03 27 | 691 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.4+ | 0.6− | |
| 2000 04 05 | 691 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.7+ | 1.1− | |
| 2000 04 05 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.4+ | |
| 2000 04 05 | 691 | 0.3− | 0.6− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.5+ | 0.2− | |
| 2000 04 11 | 691 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2000 04 11 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | |
| 2000 04 11 | 691 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2− | |
| 2002 11 04 | 644 | 0.3− | 0.0 | 2006 09 24 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 291 | 0.2+ | 0.2+ | |
| 2002 11 04 | 644 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.3− | |
| 2002 11 04 | 644 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 23 | 291 | 0.1+ | 0.1+ | |
| 2004 02 17 | 291 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 23 | 291 | 0.1+ | 0.2+ | |
| 2004 02 17 | 291 | 0.5− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.4− | |
| 2004 02 17 | 291 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.5− | 0.1− | |
| 2004 03 15 | 184 | (1.8− | 0.2+) | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.3− | |
| 2004 03 16 | 184 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.4− | 0.2+ | |
| 2004 03 16 | 184 | 0.2− | 0.5+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.1+ | |
| 2004 03 18 | 704 | 0.8+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.2+ | |
| 2004 03 18 | 704 | 0.7+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.3− | 2006 11 13 | 291 | 0.1− | 0.2+ | |
| 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 13 | 291 | 0.2+ | 0.2+ | |
| 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.6− | 2006 11 13 | 291 | 0.1+ | 0.1− | |
| 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 13 | 291 | 0.0 | 0.1− | |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 13 | 291 | 0.1− | 0.3+ | |
| 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 13 | 291 | 0.2+ | 0.2− | |

**(138361)∗ 2000 GZ$_{131}$ = 2004 EA$_{72}$**

Discovered 2000 Apr. 8 by Spacewatch at Kitt Peak.
Id. G. V. Williams (*MPO* 60663)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.54094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23696462 | $\omega$ | 210.94246 | | +0.80780637 | −0.58940222 | |
| $a$ | 2.5863088 | $\Omega$ | 185.19029 | | +0.55604798 | +0.76610703 | |
| $e$ | 0.0753638 | $i$ | 4.65443 | | +0.19560038 | +0.25629093 | |
| $P$ | 4.16 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.9+ | 0.6− | 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 | |
| 2000 04 05 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.1+ | |
| 2000 04 05 | 704 | 0.5+ | 0.1+ | 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 | |
| 2000 04 05 | 704 | 0.2+ | 0.2− | 2004 03 31 | 691 | 0.5− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 | |
| 2000 04 08 | 691 | 0.5− | 0.0 | 2004 03 31 | 691 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.3+ | 0.0 | |
| 2000 04 08 | 691 | 0.4− | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.4+ | 0.3− | |
| 2000 04 08 | 691 | 0.5− | 0.0 | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.4+ | 0.2− | |
| 2000 04 12 | 691 | 0.3+ | 0.3− | 2004 04 25 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.9+ | |
| 2000 04 12 | 691 | 0.3+ | 0.1+ | 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.7+ | |
| 2000 04 12 | 691 | 0.1+ | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1+ | |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.3− | 0.4+ | 2006 11 11 | 703 | (2.0− | 3.2+) | |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.3+ | |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.8+ | |
| 2002 12 01 | 704 | 0.2+ | 0.5− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 14 | 704 | (1.7+ | 0.4+) | |
| 2002 12 01 | 704 | 0.6− | 1.0− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.6+ | 0.1− | |
| 2002 12 01 | 704 | 0.8+ | 0.8− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.5− | |
| 2002 12 01 | 704 | (0.6− | 1.7−) | 2006 10 11 | 691 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− | |
| 2004 03 15 | 703 | 0.2+ | 1.0− | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3− | |
| 2004 03 15 | 703 | 0.7+ | 1.4+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.5− | |
| 2004 03 15 | 703 | 0.5+ | 1.5+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 1.1+ | 0.1− | |
| 2004 03 15 | 703 | 0.7− | 0.0 | 2006 10 15 | 691 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 1.3− | 0.1+ | |
| 2004 03 18 | 704 | 1.0+ | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.5+ | 0.5− | |
| 2004 03 18 | 704 | (1.5+ | 0.7−) | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.5+ | |
| 2004 03 18 | 704 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.3+ | 0.0 | | | | | |

**(138362)∗ 2000 GP$_{132}$ = 2001 UM$_{128}$**

Discovered 2000 Apr. 12 by NEAT at Haleakala.
Id. G. V. Williams (*MPO* 19629)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.33430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37721933 | $\omega$ | 8.20069 | | +0.75166113 | −0.62814076 | |
| $a$ | 1.8970266 | $\Omega$ | 33.53241 | | +0.58258991 | +0.48939537 | |
| $e$ | 0.0677786 | $i$ | 21.34962 | | +0.30918367 | +0.60492261 | |
| $P$ | 2.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.2+ | 0.3+ | 2001 10 24 | 704 | (0.9+ | 1.8+) | 2006 09 25 | 703 | 1.0+ | 0.7+ | |
| 2000 04 07 | 704 | 0.7+ | 0.2− | 2001 10 24 | 704 | 0.5+ | 1.0+ | 2006 09 25 | 703 | 0.2+ | 0.6+ | |
| 2000 04 07 | 704 | 0.0 | 0.0 | 2001 10 24 | 704 | (0.9+ | 1.8+) | 2006 09 25 | 703 | 0.0 | 0.4+ | |
| 2000 04 12 | 608 | 0.1− | 0.1− | 2001 10 24 | 704 | (1.0+ | 1.9+) | 2006 10 02 | 703 | 0.1+ | 0.3− | |
| 2000 04 12 | 608 | 0.1− | 0.2− | 2001 10 24 | 704 | 0.7+ | 1.1+ | 2006 10 02 | 703 | 0.2− | 0.1− | |
| 2000 04 12 | 608 | 0.4− | 0.3+ | 2001 10 25 | 704 | (1.1+ | 3.2−) | 2006 10 02 | 703 | 0.0 | 0.4− | |
| 2000 04 13 | 608 | 0.1− | 0.1− | 2001 10 25 | 704 | (0.4− | 2.4−) | 2006 10 02 | 703 | 0.4− | 0.3− | |
| 2000 04 13 | 608 | 0.1+ | 0.5− | 2001 10 25 | 704 | (0.2+ | 3.1−) | 2006 10 16 | 703 | 0.3− | 0.3+ | |
| 2000 04 13 | 608 | 0.0 | 0.1+ | 2001 10 25 | 704 | (0.4+ | 2.9−) | 2006 10 16 | 703 | 0.3− | 0.1− | |
| 2000 04 26 | 699 | 0.0 | 0.6+ | 2001 12 08 | 704 | 1.1− | 0.1− | 2006 10 16 | 703 | (0.6+ | 2.4+) | |
| 2000 04 26 | 699 | 0.4+ | 0.4+ | 2001 12 08 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.1− | |
| 2000 04 26 | 699 | 0.1− | 0.2+ | 2001 12 08 | 704 | 1.0− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.4+ | |
| 2000 04 26 | 699 | 0.4− | 0.6+ | 2001 12 08 | 704 | 1.0− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 2000 04 29 | 704 | 0.6+ | 0.1+ | 2001 12 23 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.6− | 0.3+ | |
| 2000 04 29 | 704 | 0.3+ | 0.7+ | 2001 12 23 | 704 | 1.0+ | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.1+ | |
| 2000 04 29 | 704 | 0.4+ | 0.7+ | 2001 12 23 | 704 | 1.0+ | 0.7+ | 2006 10 22 | 703 | 0.2− | 0.1− | |
| 2000 04 29 | 704 | 0.5+ | 0.5+ | 2001 12 23 | 704 | (0.8+ | 2.0+) | 2006 10 22 | 703 | 0.7− | 0.1− | |
| 2000 04 29 | 704 | 0.5+ | 1.2+ | 2004 12 22 | 703 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.1+ | |
| 2000 04 30 | 704 | 0.5+ | 0.4+ | 2004 12 22 | 703 | 0.3+ | 0.6+ | 2006 10 23 | 644 | 0.4− | 0.2+ | |
| 2000 04 30 | 704 | 0.6+ | 0.8+ | 2004 12 22 | 703 | (0.0 | 1.6−) | 2006 10 23 | 644 | 0.4− | 0.1+ | |
| 2000 04 30 | 699 | 0.8+ | 0.1+ | 2004 12 22 | 703 | 0.6− | 0.3− | 2006 10 23 | 644 | 0.4− | 0.2+ | |
| 2000 04 30 | 704 | 0.9+ | 0.7+ | 2005 01 17 | 703 | 0.4− | 0.9+ | 2006 10 27 | 704 | 1.2− | 0.0 | |
| 2000 04 30 | 699 | 0.9+ | 1.4+ | 2005 01 17 | 703 | 0.5− | 0.2+ | 2006 10 27 | 704 | (1.6− | 0.4+) | |
| 2000 04 30 | 704 | 0.7+ | 0.5+ | 2005 01 17 | 703 | 0.1− | 0.6+ | 2006 10 27 | 704 | 0.6− | 0.0 | |
| 2000 04 30 | 704 | 1.1+ | 1.5+ | 2005 01 17 | 703 | 0.0 | 0.1+ | 2006 10 27 | 704 | 0.8− | 1.2+ | |
| 2000 04 30 | 699 | 0.7+ | 0.8+ | 2005 03 05 | 941 | 0.4+ | 0.2− | 2006 10 27 | 704 | 0.2− | 0.2+ | |
| 2000 04 30 | 699 | 0.3+ | 0.9+ | 2005 03 05 | 941 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.4− | 0.2+ | |
| 2000 05 01 | 704 | 0.6+ | 0.7+ | 2005 03 05 | 941 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.3+ | |
| 2000 05 01 | 704 | 0.6+ | 0.9+ | 2005 03 05 | 941 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.3− | 0.2+ | |
| 2000 05 01 | 704 | 0.3+ | 1.7+ | 2005 03 05 | 941 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2− | |
| 2000 05 01 | 704 | 1.0+ | 1.2+ | 2005 03 08 | 703 | 0.5− | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.0 | |
| 2000 05 03 | 704 | 0.5+ | 0.5− | 2005 03 08 | 703 | 1.1− | 0.3− | 2006 11 14 | G96 | 0.2− | 0.1− | |
| 2000 05 03 | 704 | 0.6+ | 0.2− | 2005 03 08 | 703 | 0.5− | 0.2− | 2006 11 14 | G96 | 0.4− | 0.2− | |
| 2000 05 03 | 704 | 0.5+ | 0.1+ | 2005 03 08 | 703 | 0.3− | 0.2+ | 2006 11 18 | 704 | 1.2− | 1.4+ | |
| 2000 05 03 | 704 | 0.4+ | 0.3− | 2005 03 12 | 704 | 0.9+ | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.5+ | |
| 2000 05 05 | 704 | 0.1− | 0.9+ | 2005 03 12 | 704 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.2− | |
| 2000 05 05 | 704 | 0.4− | 0.4− | 2005 03 12 | 704 | 0.5+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.0+ | |
| 2000 05 05 | 704 | 0.2+ | 0.1− | 2005 03 12 | 704 | 0.9+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.0+ | |
| 2000 05 05 | 704 | 1.1+ | 0.5− | 2005 03 12 | 704 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.1− | 0.7+ | |
| 2000 05 07 | 704 | 0.9+ | 0.0 | 2005 03 14 | 703 | 0.4− | 0.6− | 2006 11 21 | 704 | 0.6− | 0.2+ | |
| 2000 05 07 | 704 | 0.7+ | 0.3+ | 2005 03 14 | 703 | 0.8− | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.7+ | |
| 2000 05 07 | 704 | 0.5+ | 0.7+ | 2005 03 14 | 703 | 0.1− | 0.2+ | 2006 11 21 | 704 | (0.1− | 1.6+) | |
| 2000 05 07 | 704 | 0.0 | 0.1+ | 2005 03 14 | 703 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.5− | 0.4+ | |
| 2000 05 25 | 699 | 0.5− | 0.9+ | 2005 04 13 | 704 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.6+ | 1.3+ | |
| 2000 05 25 | 699 | 0.4+ | 0.1+ | 2005 04 13 | 704 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.4+ | 1.0+ | |
| 2000 05 25 | 699 | 0.7+ | 0.3+ | 2005 04 13 | 704 | 0.2− | 1.4+ | 2006 11 21 | 704 | 0.3− | 0.8+ | |
| 2000 05 25 | 699 | 0.2+ | 0.5− | 2005 04 13 | 704 | (1.7+ | 1.2−) | 2006 11 21 | 704 | 0.7+ | 0.8+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 704 | 0.8− | 0.8+ | 2006 09 24 | 699 | 0.3− | 0.0 | 2006 11 21 | 704 | (0.8− | 1.8+) |
| 2001 10 19 | 704 | 1.0− | 0.3− | 2006 09 24 | 699 | 0.8− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2001 10 19 | 704 | 1.1− | 0.6+ | 2006 09 24 | 699 | 0.6− | 0.4+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2001 10 19 | 704 | 0.4− | 0.2+ | 2006 09 24 | 699 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2001 10 19 | 704 | 0.6− | 0.3+ | 2006 09 25 | 703 | 0.6− | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.2− |

**(138363)∗ 2000 GO$_{137}$ = 2002 VE$_{39}$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37490)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 267.09507 | | (2000.0) | | | |
| $n$ | 0.22463520 | $\omega$ | 19.49717 | | −0.34883021 | −0.88941423 |
| $a$ | 2.6800990 | $\Omega$ | 91.83242 | | +0.81583741 | −0.44330387 |
| $e$ | 0.0944690 | $i$ | 17.19045 | | +0.46122316 | +0.11146303 |
| $P$ | 4.39 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 1.6+ | 0.0 | 2002 12 13 | 644 | 0.5− | 0.5− | 2004 04 08 | 644 | 0.1− | 0.3+ |
| 2000 04 08 | 704 | 0.6+ | 0.2− | 2003 01 05 | 699 | 0.7+ | 0.3+ | 2004 04 08 | 644 | 0.0 | 0.2+ |
| 2000 04 08 | 704 | 0.1− | 0.3− | 2003 01 05 | 699 | 0.1+ | 0.6+ | 2004 04 14 | 704 | 0.3− | 1.3+ |
| 2000 04 14 | 704 | 0.7− | 1.7+ | 2003 01 05 | 699 | 0.8+ | 0.3− | 2004 04 14 | 704 | 0.4− | 0.7+ |
| 2000 04 14 | 704 | 0.8− | 0.4+ | 2003 01 05 | 699 | 0.0 | 0.7− | 2004 04 14 | 704 | 0.4− | 0.1+ |
| 2000 04 14 | 704 | 0.0 | 0.9+ | 2003 01 07 | 704 | 0.1+ | 0.6+ | 2004 04 14 | 704 | 0.7− | 1.2+ |
| 2000 04 14 | 704 | (1.6− | 2.4+) | 2003 01 07 | 704 | 0.1− | 1.2+ | 2004 04 14 | 704 | 0.0 | 1.1+ |
| 2000 05 04 | 704 | 1.6+ | 1.4+ | 2003 01 07 | 704 | 0.1− | 0.3+ | 2004 04 15 | 704 | 0.2+ | 0.2+ |
| 2000 05 04 | 704 | 0.6+ | 0.7+ | 2003 01 07 | 704 | 0.3− | 0.3+ | 2004 04 15 | 704 | 0.8− | 0.2+ |
| 2000 05 04 | 704 | 0.2+ | 0.8+ | 2003 01 27 | 644 | 0.5+ | 0.4+ | 2004 04 15 | 704 | 0.6− | 0.4− |
| 2000 05 04 | 704 | 0.2− | 0.3− | 2003 01 27 | 644 | 0.8+ | 0.1+ | 2004 04 15 | 704 | 1.3− | 0.7− |
| 2000 05 04 | 704 | 0.4+ | 1.1+ | 2003 01 27 | 644 | 0.5+ | 0.1+ | 2004 04 15 | 704 | 0.1− | 1.2+ |
| 2000 05 26 | 699 | (0.4+ | 2.2+) | 2003 02 02 | 644 | 0.3+ | 0.1− | 2004 04 17 | 704 | 0.8− | 0.0 |
| 2000 05 26 | 699 | (0.2− | 2.7+) | 2003 02 02 | 644 | 0.3+ | 0.0 | 2004 04 17 | 704 | 1.3+ | 1.5+ |
| 2000 05 26 | 699 | (0.5+ | 2.3+) | 2003 02 02 | 644 | 0.5+ | 0.2− | 2004 04 17 | 704 | 0.8+ | 0.5− |
| 2000 05 26 | 699 | 0.2− | 0.7+ | 2004 02 16 | 704 | 0.4+ | 0.3− | 2004 04 17 | 704 | 0.7− | 0.2− |
| 2002 10 10 | 644 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.5+ | 0.8− | 2004 04 19 | 704 | 0.1+ | 0.2+ |
| 2002 10 10 | 644 | 0.4− | 0.0 | 2004 02 16 | 704 | 1.2+ | 0.7− | 2004 04 19 | 704 | 0.1− | 0.5+ |
| 2002 10 10 | 644 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.9+ | 0.4− | 2004 04 19 | 704 | 0.8+ | 0.3− |
| 2002 10 31 | 704 | 0.3− | 0.5+ | 2004 02 16 | 704 | 0.7+ | 0.5− | 2004 04 19 | 704 | 1.2+ | 0.1− |
| 2002 10 31 | 704 | 0.5− | 0.4+ | 2004 03 10 | 644 | 0.1+ | 0.2+ | 2004 04 19 | 704 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.3− | 0.4+ | 2004 03 10 | 644 | 0.2+ | 0.0 | 2004 04 26 | 704 | 0.4− | 0.5+ |
| 2002 10 31 | 704 | 0.1+ | 0.3+ | 2004 03 10 | 644 | 0.2+ | 0.1− | 2004 04 26 | 704 | 0.5− | 0.5+ |
| 2002 10 31 | 704 | 0.6− | 0.2+ | 2004 03 10 | 644 | 0.3+ | 0.0 | 2004 04 26 | 704 | 0.4+ | 0.7+ |
| 2002 11 05 | 704 | 0.5− | 0.5+ | 2004 03 10 | 644 | 0.1− | 0.2− | 2004 04 26 | 704 | 0.3+ | 0.5+ |
| 2002 11 05 | 704 | 0.6− | 1.0+ | 2004 03 10 | 644 | 0.1+ | 0.4− | 2004 04 26 | 704 | 0.0 | 0.4+ |
| 2002 11 05 | 704 | 0.0 | 0.3+ | 2004 03 14 | 704 | 1.1+ | 0.9− | 2006 09 22 | 703 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | 0.5− | 0.6+ | 2004 03 14 | 704 | 0.4+ | 0.0 | 2006 09 22 | 703 | 0.3− | 0.1+ |
| 2002 11 06 | 699 | 0.9− | 0.2+ | 2004 03 14 | 704 | 0.8+ | 0.2− | 2006 09 22 | 703 | 0.3+ | 0.4+ |
| 2002 11 06 | 699 | 0.2− | 0.1− | 2004 03 14 | 704 | 0.8+ | 0.1+ | 2006 09 22 | 703 | (0.4+ | 1.8−) |
| 2002 11 06 | 699 | 0.1+ | 0.2− | 2004 03 18 | 703 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.2+ | 0.7+ |
| 2002 11 06 | 699 | 0.2− | 0.1− | 2004 03 18 | 703 | 1.3− | 1.4− | 2006 09 27 | 703 | 0.8− | 0.3− |
| 2002 11 30 | 704 | 0.1+ | 0.2− | 2004 03 18 | 703 | 0.9− | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.1− |
| 2002 11 30 | 704 | 0.4− | 0.2− | 2004 03 18 | 703 | 1.2− | 0.2− | 2006 09 27 | 703 | 0.4− | 1.0+ |
| 2002 11 30 | 704 | 0.2− | 0.2− | 2004 03 29 | 704 | 0.0 | 0.3− | 2006 11 18 | 703 | 0.1− | 0.0 |
| 2002 12 02 | 608 | 0.3+ | 1.1+ | 2004 03 29 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 703 | 0.7− | 1.0+ |
| 2002 12 02 | 608 | 0.4+ | 0.9+ | 2004 03 29 | 704 | 0.1− | 0.2− | 2006 11 18 | 703 | (1.8− | 0.0 ) |
| 2002 12 02 | 608 | 0.6+ | 0.7+ | 2004 03 29 | 704 | 0.3− | 0.2− | 2006 11 18 | 703 | 0.7− | 0.1− |
| 2002 12 13 | 644 | 0.4− | 0.6− | 2004 03 29 | 704 | 0.3− | 0.2− | | | | |
| 2002 12 13 | 644 | 0.1− | 0.8− | 2004 04 08 | 644 | 0.0 | 0.3+ | | | | |

**(138364)∗ 2000 GU$_{138}$ = 2004 BF$_{89}$**

Discovered 2000 Apr. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60664)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.42873 | | (2000.0) | | | |
| $n$ | 0.24003143 | $\omega$ | 337.59219 | | −0.25599367 | −0.95933770 |
| $a$ | 2.5642320 | $\Omega$ | 127.03915 | | +0.90796596 | −0.28083411 |
| $e$ | 0.1812048 | $i$ | 8.56678 | | +0.33176053 | +0.02834403 |
| $P$ | 4.11 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.2+ | 0.7+ | 2003 12 27 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 704 | 0.6+ | 1.0+ |
| 2000 04 04 | 699 | 0.2− | 0.9+ | 2004 01 23 | 704 | 1.3+ | 0.3− | 2004 04 15 | 704 | 0.8+ | 0.6+ |
| 2000 04 04 | 699 | 0.4+ | 0.5+ | 2004 01 23 | 704 | 0.8+ | 0.5− | 2004 04 15 | 704 | 1.1+ | 0.8+ |
| 2000 04 04 | 699 | 0.5+ | 0.9+ | 2004 01 23 | 704 | (1.6+ | 0.5+) | 2004 04 15 | 704 | (0.7+ | 2.2+) |
| 2000 04 07 | 699 | 0.5− | 0.1+ | 2004 01 23 | 704 | 1.3+ | 0.0 | 2004 04 15 | 704 | 0.2− | 0.4+ |
| 2000 04 07 | 699 | 1.1− | 1.1+ | 2004 01 23 | 704 | (1.7+ | 0.5+) | 2004 04 25 | 699 | (2.0− | 1.1+) |
| 2000 04 07 | 699 | 1.3+ | 0.8+ | 2004 01 29 | 704 | 0.4+ | 0.3− | 2004 04 25 | 699 | (0.4− | 1.8−) |
| 2000 04 07 | 699 | 0.7− | 1.3+ | 2004 01 29 | 704 | 0.3+ | 0.4+ | 2004 04 25 | 699 | 0.3+ | 0.1− |
| 2000 04 08 | 704 | 0.5+ | 0.4+ | 2004 01 29 | 704 | 0.4+ | 0.4− | 2004 04 25 | 699 | 1.4− | 0.0 |
| 2000 04 08 | 704 | 0.3+ | 0.2+ | 2004 01 29 | 704 | 1.0+ | 0.1+ | 2006 08 23 | 704 | (1.5− | 1.9+) |
| 2000 04 08 | 704 | 0.1− | 0.4− | 2004 02 19 | 704 | 0.1− | 0.7− | 2006 08 23 | 704 | 1.3− | 1.1+ |
| 2000 04 08 | 704 | 0.7+ | 0.4+ | 2004 02 19 | 704 | 0.4− | 0.7+ | 2006 08 23 | 704 | 0.5− | 0.1− |
| 2000 04 08 | 704 | 0.4+ | 0.6− | 2004 02 19 | 704 | 0.2− | 0.7+ | 2006 08 28 | 699 | 0.9+ | 0.2− |
| 2000 05 04 | 704 | 0.6− | 0.7+ | 2004 02 19 | 704 | 0.2− | 0.5+ | 2006 08 28 | 699 | 0.0 | 0.6+ |
| 2000 05 04 | 704 | 0.3− | 0.6+ | 2004 02 19 | 704 | 1.1− | 0.2+ | 2006 08 28 | 699 | 0.3− | 1.1+ |
| 2000 05 04 | 704 | (0.2− | 2.0+) | 2004 02 27 | 704 | 0.7− | 0.3− | 2006 08 28 | 699 | (1.5− | 1.8+) |
| 2000 05 04 | 704 | 0.4− | 1.4+ | 2004 02 27 | 704 | 0.7− | 0.3− | 2006 09 13 | 644 | 0.1− | 0.4+ |
| 2000 05 04 | 704 | 0.0 | 0.4+ | 2004 02 27 | 704 | 0.4− | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.5+ |
| 2002 09 05 | 645 | 0.1+ | 0.2+ | 2004 02 27 | 704 | 0.5+ | 0.3+ | 2006 09 13 | 644 | 0.5− | 0.5+ |
| 2002 09 05 | 645 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.5+ |
| 2002 09 29 | 608 | 0.9− | 1.4+ | 2004 03 15 | 704 | 0.4− | 0.5− | 2006 09 18 | 699 | 1.1+ | 0.8+ |
| 2002 09 29 | 608 | (0.6− | 1.7+) | 2004 03 15 | 704 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.4+ |
| 2002 09 29 | 608 | (0.4− | 1.8+) | 2004 03 15 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.5+ |
| 2002 10 06 | 704 | (1.6− | 0.1−) | 2004 03 15 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.0 | 0.3+ |
| 2002 10 06 | 704 | 1.2− | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.3+ |
| 2002 10 06 | 704 | (0.4+ | 2.2+) | 2004 03 23 | 704 | 0.2− | 0.8+ | 2006 09 19 | 703 | 0.6− | 0.5+ |
| 2002 10 06 | 704 | 0.7− | 1.4+ | 2004 03 23 | 704 | 0.2− | 0.6+ | 2006 09 19 | 703 | 0.3+ | 0.5+ |
| 2002 10 06 | 704 | 1.0− | 0.7+ | 2004 03 23 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 703 | 0.5− | 0.2+ |
| 2002 10 06 | 608 | 0.0 | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 09 26 | 703 | 0.0 | 0.1− |
| 2002 10 06 | 608 | 0.2− | 0.2− | 2004 03 28 | 703 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.2− |
| 2002 10 06 | 608 | 0.2− | 0.0 | 2004 03 28 | 703 | 0.6− | 0.1− | 2006 09 26 | 703 | (0.9− | 2.3−) |
| 2002 10 15 | 644 | 0.5− | 0.4+ | 2004 03 28 | 703 | 1.2− | 0.5+ | 2006 10 02 | 703 | 0.9− | 0.1+ |
| 2002 10 15 | 644 | 0.5− | 0.6+ | 2004 03 28 | 703 | 0.4− | 0.0 | 2006 10 02 | 703 | 0.6− | 0.8+ |
| 2002 10 15 | 644 | 0.3− | 0.4+ | 2004 03 29 | 704 | 0.4+ | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.2+ |
| 2002 10 28 | 644 | 0.4+ | 0.3+ | 2004 03 29 | 704 | 0.7+ | 0.4+ | 2006 10 02 | 703 | 0.0 | 0.3+ |
| 2002 10 28 | 644 | 0.2+ | 0.3+ | 2004 03 29 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 703 | (2.3+ | 1.8+) |
| 2002 10 28 | 644 | 0.1− | 0.3+ | 2004 03 29 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2002 11 06 | 644 | 0.3− | 0.5+ | 2004 03 29 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2002 11 06 | 644 | 0.2− | 0.4+ | 2004 03 30 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.3+ |
| 2002 11 06 | 644 | 0.2− | 0.4+ | 2004 03 30 | 704 | 0.7+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2002 11 21 | 644 | 0.2− | 0.4+ | 2004 03 30 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 11 21 | 644 | 0.1− | 0.4+ | 2004 03 30 | 704 | 0.7+ | 1.0+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2002 11 21 | 644 | 0.1− | 0.7+ | 2004 03 30 | 704 | 0.2− | 0.9+ | 2006 10 28 | 703 | 0.6+ | 0.8− |
| 2003 12 22 | 704 | 0.7+ | 0.1+ | 2004 03 31 | 704 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.4+ |
| 2003 12 22 | 704 | 0.4+ | 0.6+ | 2004 03 31 | 704 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.4+ | 0.2− |
| 2003 12 22 | 704 | 0.9+ | 0.1+ | 2004 03 31 | 704 | 0.1− | 0.2+ | 2006 10 28 | 703 | 1.0− | 0.5− |
| 2003 12 22 | 704 | 0.0 | 0.3+ | 2004 03 31 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 644 | 0.0 | 0.5+ |
| 2003 12 27 | 704 | 0.8+ | 0.4+ | 2004 03 31 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 644 | 0.1− | 0.5+ |
| 2003 12 27 | 704 | 0.4+ | 1.1− | 2004 04 02 | 608 | 0.0 | 0.9+ | 2006 11 11 | 644 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.8+ | 0.3− | 2004 04 02 | 608 | 0.4+ | 1.1+ | | | | |
| 2003 12 27 | 704 | 1.2+ | 1.1− | 2004 04 02 | 608 | 1.0+ | 0.9+ | | | | |

**(138365)∗ 2000 GG$_{139}$**

Discovered 2000 Apr. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 67.76610 | | | (2000.0) | | |
| $n$ | 0.22310068 | $\omega$ | 227.11287 | | +0.82714503 | +0.53189212 |
| $a$ | 2.6923744 | $\Omega$ | 99.97414 | | −0.44682714 | +0.81824441 |
| $e$ | 0.2527601 | $i$ | 10.61614 | | −0.34084689 | +0.21809825 |
| $P$ | 4.42 | $H$ | 14.4 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 30 | 566 | 0.7− | 1.5+ | 2001 10 11 | 704 | 1.3− | 1.0− | 2003 01 09 | 704 | 0.7− | 0.9− |
| 1997 11 30 | 566 | 0.4+ | 0.3+ | 2001 10 11 | 704 | 0.9− | 0.9− | 2003 01 09 | 704 | 0.5− | 0.1− |
| 1997 11 30 | 566 | 0.4+ | 0.2+ | 2001 10 11 | 704 | 0.5− | 0.5− | 2003 01 09 | 704 | 0.1+ | 0.0 |
| 2000 04 04 | 699 | 0.9+ | 1.0+ | 2001 10 11 | 704 | 0.3− | 0.4− | 2003 01 10 | 704 | 0.8− | 1.3+ |
| 2000 04 04 | 699 | 0.8+ | 0.1− | 2001 10 11 | 704 | 0.2+ | 1.0− | 2003 01 10 | 704 | 0.5+ | 1.2+ |
| 2000 04 04 | 699 | 1.1+ | 0.3+ | 2001 10 14 | 644 | 0.2+ | 0.6+ | 2003 01 10 | 704 | 0.3− | 1.0+ |
| 2000 04 04 | 699 | 0.6+ | 0.8+ | 2001 10 14 | 644 | 0.1+ | 0.4+ | 2003 01 10 | 704 | 0.4− | 1.3+ |
| 2000 04 07 | 699 | 0.3+ | 0.1+ | 2001 10 14 | 644 | 0.3+ | 0.6+ | 2003 01 10 | 704 | 0.8− | 0.5+ |
| 2000 04 07 | 699 | 0.3− | 0.8+ | 2001 10 26 | 608 | 0.5+ | 0.4+ | 2004 03 19 | 644 | 0.4+ | 0.4+ |
| 2000 04 07 | 699 | 0.2− | 0.5+ | 2001 10 26 | 608 | 0.4+ | 0.7+ | 2004 03 19 | 644 | 0.5+ | 0.6+ |
| 2000 04 07 | 699 | 0.2+ | 0.6+ | 2001 10 26 | 608 | 0.6+ | 0.1+ | 2004 03 19 | 644 | 0.4+ | 0.5+ |
| 2001 07 19 | 644 | 0.3− | 0.3+ | 2001 11 07 | 644 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.4+ | 1.4+ |
| 2001 07 19 | 644 | 0.4− | 0.3+ | 2001 11 07 | 644 | 0.1+ | 0.5+ | 2004 03 23 | 704 | 1.3− | 1.5+ |
| 2001 07 19 | 644 | 0.4− | 0.3+ | 2001 11 07 | 644 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 1.0− | 0.2+ |
| 2001 08 19 | 704 | 0.0 | 0.6+ | 2001 11 19 | 608 | 0.0 | 0.5− | 2004 03 23 | 704 | 0.5− | 0.6− |
| 2001 08 19 | 704 | 0.1+ | 1.1+ | 2001 11 19 | 608 | 0.3+ | 0.7− | 2004 03 23 | 704 | (0.1+ | 2.9+) |
| 2001 08 19 | 704 | 0.0 | 0.7+ | 2001 11 19 | 608 | 0.0 | 0.7− | 2006 11 14 | 704 | 0.6+ | 0.2− |
| 2001 08 19 | 704 | 0.1− | 0.8+ | 2002 12 31 | 704 | 0.7− | 0.0 | 2006 11 14 | 704 | 1.1+ | 1.0− |
| 2001 08 19 | 704 | 0.4+ | 0.8+ | 2002 12 31 | 704 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.2− |
| 2001 08 29 | 644 | 1.0− | 1.3+ | 2002 12 31 | 704 | 0.5− | 0.4+ | 2006 11 14 | 704 | 0.6− | 0.4+ |
| 2001 08 29 | 644 | (0.8− | 1.5+) | 2003 01 04 | 704 | (0.3− | 2.6+) | 2006 11 17 | 704 | 0.3− | 1.1− |
| 2001 08 29 | 644 | 0.9− | 1.4+ | 2003 01 04 | 704 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2003 01 04 | 704 | 1.0+ | 0.5− | 2006 11 17 | 704 | 0.4+ | 0.7− |
| 2001 09 12 | 704 | 0.7− | 0.5+ | 2003 01 07 | 704 | 0.4+ | 1.0− | 2006 11 17 | 704 | 0.4− | 0.6+ |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2003 01 07 | 704 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.9+ |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2003 01 07 | 704 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.4− | 0.2+ | 2003 01 07 | 704 | 1.0+ | 0.8+ | 2006 11 29 | 704 | 0.3+ | 0.1− |
| 2001 09 29 | 608 | 0.3+ | 0.3− | 2003 01 07 | 704 | 0.3+ | 0.7+ | 2006 11 29 | 704 | 0.1+ | 0.7− |
| 2001 09 29 | 608 | 0.1+ | 0.3− | 2003 01 09 | 704 | 0.2+ | 0.3− | 2006 11 29 | 704 | 1.2+ | 0.1+ |
| 2001 09 29 | 608 | 0.2− | 0.3− | 2003 01 09 | 704 | 0.2+ | 0.1− | | | | |

**(138366)∗ 2000 GH$_{139}$ = 2002 XQ$_{23}$**

Discovered 2000 Apr. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 40093)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.99100 | | | (2000.0) | | |
| $n$ | 0.21890916 | $\omega$ | 241.31842 | | +0.54025901 | +0.80876831 |
| $a$ | 2.7266335 | $\Omega$ | 63.24091 | | −0.65226012 | +0.57697440 |
| $e$ | 0.0842164 | $i$ | 15.08689 | | −0.53167371 | +0.11399279 |
| $P$ | 4.50 | $H$ | 14.9 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.7− | 0.4+ | 2003 01 05 | 704 | 0.2− | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2000 04 04 | 699 | 0.2− | 0.9+ | 2003 01 05 | 704 | 0.1− | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2000 04 04 | 699 | 0.5+ | 0.6− | 2004 03 17 | 644 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 04 04 | 699 | 0.0 | 0.5+ | 2004 03 17 | 644 | 0.0 | 1.0+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2000 04 07 | 699 | 1.0− | 0.5+ | 2004 03 17 | 644 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2000 04 07 | 699 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.5+ |
| 2000 04 07 | 699 | 0.0 | 0.9+ | 2006 09 19 | 703 | 0.9− | 0.4− | 2006 10 16 | 703 | 0.6− | 0.8+ |
| 2000 04 07 | 699 | 0.3− | 0.2− | 2006 09 19 | 703 | 1.2− | 0.4− | 2006 10 16 | 703 | 1.0− | 1.1− |
| 2000 04 25 | 049 | 1.1+ | 0.4+ | 2006 09 19 | 703 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.2− |
| 2000 04 25 | 049 | 2.0+ | 0.0 | 2006 09 21 | 699 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.7+ | 0.0 |
| 2000 04 25 | 049 | 1.1+ | 0.3+ | 2006 09 21 | 699 | 0.9+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2001 07 22 | 644 | 0.7− | 0.8+ | 2006 09 21 | 699 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 1.2− | 0.4+ |
| 2001 07 22 | 644 | 0.4− | 0.8+ | 2006 09 21 | 699 | 0.1+ | 1.1+ | 2006 10 22 | 703 | (0.4− | 1.7−) |
| 2001 07 22 | 644 | 0.5− | 0.8+ | 2006 09 26 | 703 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.7− |
| 2002 11 06 | 704 | (0.7+ | 1.7+) | 2006 09 26 | 703 | 0.0 | 0.3− | 2006 10 22 | 703 | 1.2+ | 1.4− |
| 2002 11 06 | 704 | 0.8+ | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.7− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | 0.7− | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 1.1+ | 2006 09 29 | 699 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 09 29 | 699 | (1.6− | 0.6+) | 2006 10 23 | 644 | 0.5− | 0.4+ |
| 2002 12 05 | 704 | 1.1+ | 0.3+ | 2006 09 29 | 699 | 0.3+ | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.7− | 0.7+ | 2006 09 29 | 699 | 0.9+ | 1.1+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 1.4− | 0.5+ | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.4− | 0.4− | 2006 10 28 | 703 | 0.8+ | 0.2− |
| 2002 12 06 | 704 | 0.4− | 0.3+ | 2006 09 30 | 704 | 1.0+ | 0.4+ | 2006 10 28 | 703 | 1.1+ | 0.1− |
| 2002 12 06 | 704 | 0.2+ | 0.5− | 2006 09 30 | 704 | 0.9− | 0.6+ | 2006 10 28 | 703 | 0.3+ | 0.6− |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.5− | 0.3− | 2006 11 16 | 703 | 0.7+ | 0.1− |
| 2002 12 06 | 704 | 0.6+ | 1.0− | 2006 10 10 | 644 | 0.2− | 0.4+ | 2006 11 16 | 703 | 0.5+ | 0.9+ |
| 2003 01 05 | 704 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.4+ | 0.9+ |
| 2003 01 05 | 704 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.9− | 0.7− |
| 2003 01 05 | 704 | 0.9− | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.2+ | | | | |

**(138367)∗ 2000 GJ$_{139}$**

Discovered 2000 Apr. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.15162 | | | (2000.0) | | |
| $n$ | 0.24211253 | $\omega$ | 80.56195 | | −0.86584640 | −0.47592324 |
| $a$ | 2.5495168 | $\Omega$ | 70.88299 | | +0.37050218 | −0.81719107 |
| $e$ | 0.1199522 | $i$ | 9.39856 | | +0.33621145 | −0.32510896 |
| $P$ | 4.07 | $H$ | 16.5 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 18 | 691 | 0.0 | 0.1+ | 2000 05 04 | 645 | 0.1− | 0.0 | 2004 04 25 | 699 | 1.3− | 0.6− |
| 1996 05 18 | 691 | 0.3− | 0.3+ | 2000 05 04 | 645 | 0.0 | 0.0 | 2004 05 12 | 644 | 0.2+ | 0.2+ |
| 1996 05 18 | 691 | 0.2− | 0.2+ | 2002 11 14 | 644 | 0.0 | 0.3+ | 2004 05 12 | 644 | 0.1− | 0.4+ |
| 1999 02 10 | 691 | 0.2− | 0.2+ | 2002 11 14 | 644 | 0.1+ | 0.3+ | 2004 05 12 | 644 | 0.1+ | 0.4+ |
| 1999 02 10 | 691 | 0.5+ | 0.9− | 2002 11 14 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.8− |
| 1999 02 10 | 691 | 0.4+ | 0.5− | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 2000 04 04 | 699 | 0.1+ | 0.8− | 2004 03 15 | 704 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 2000 04 04 | 699 | 0.4− | 0.4− | 2004 03 15 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.8− | 0.4− |
| 2000 04 04 | 699 | 0.2− | 0.2+ | 2004 03 15 | 704 | 0.3+ | 1.1− | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 2000 04 04 | 699 | 0.4− | 0.3− | 2004 03 23 | 704 | 1.3− | 1.4+ | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2000 04 07 | 699 | 0.7+ | 0.1− | 2004 03 23 | 704 | 0.5− | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 2000 04 07 | 699 | 1.8+ | 0.4+ | 2004 03 23 | 704 | (0.0 | 2.0+) | 2006 10 16 | 703 | 0.8− | 1.2+ |
| 2000 04 07 | 699 | 0.6+ | 0.2− | 2004 03 23 | 704 | (1.6− | 1.3+) | 2006 11 17 | 704 | 0.1+ | 1.5+ |
| 2000 04 07 | 699 | 0.5+ | 0.4− | 2004 03 28 | 703 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 1.2+ | 0.5+ |
| 2000 04 08 | 704 | 1.0+ | 0.2+ | 2004 03 28 | 703 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.0 | 0.8+ |
| 2000 04 08 | 704 | 0.3− | 0.4− | 2004 03 28 | 703 | 0.9+ | 1.0+ | 2006 11 17 | 704 | 0.4− | 1.1+ |
| 2000 04 08 | 704 | 0.4+ | 0.1− | 2004 03 28 | 703 | (1.6+ | 0.5−) | 2006 11 20 | 704 | 0.4− | 1.5+ |
| 2000 04 08 | 704 | 0.6− | 0.9− | 2004 04 12 | 703 | 0.1− | 1.0+ | 2006 11 20 | 704 | 0.5− | 1.1+ |
| 2000 04 27 | 699 | 0.6+ | 0.4− | 2004 04 12 | 703 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2000 04 27 | 699 | 0.3+ | 0.7− | 2004 04 12 | 703 | 0.7+ | 0.2− | 2006 11 20 | 704 | 0.9+ | 0.1− |
| 2000 04 27 | 704 | 0.2− | 0.2+ | 2004 04 12 | 703 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.7− | 0.3− |
| 2000 04 27 | 699 | 0.6+ | 0.7− | 2004 04 23 | 704 | 0.4+ | 1.4+ | 2006 11 23 | G96 | 0.4− | 0.5− |
| 2000 04 27 | 704 | 0.1− | 1.2+ | 2004 04 23 | 704 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2000 04 27 | 699 | 0.1− | 0.4+ | 2004 04 23 | 704 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2000 04 27 | 704 | 0.8+ | 0.8+ | 2004 04 25 | 699 | 0.4+ | 0.8− | 2006 11 23 | G96 | 0.7− | 0.1− |
| 2000 04 27 | 704 | 0.1− | 1.5+ | 2004 04 25 | 699 | 0.8− | 0.0 | 2006 11 23 | G96 | 0.8+ | 0.3− |
| 2000 04 27 | 704 | 0.1+ | 1.0+ | 2004 04 25 | 699 | 0.7+ | 0.1+ | 2006 11 23 | G96 | 0.8− | 0.0 |

**(138368)∗ 2000 GE$_{140}$ = 2001 SU$_{175}$**

Discovered 2000 Apr. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 17304)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.98499 | | (2000.0) | | | |
| $n$ | 0.21486813 | $\omega$ | 188.09511 | | +0.45502982 | +0.88523547 |
| $a$ | 2.7607137 | $\Omega$ | 109.01646 | | −0.81117414 | +0.45675774 |
| $e$ | 0.2399657 | $i$ | 5.85644 | | −0.36734775 | +0.08792344 |
| $P$ | 4.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 14 | 691 | 0.3+ | 0.2+ | 2001 08 27 | 699 | 0.6− | 0.2+ | 2001 10 16 | 704 | 0.2− | 0.3− |
| 1991 04 14 | 691 | 0.0 | 0.1+ | 2001 09 07 | 699 | 0.8+ | 1.2+ | 2001 10 16 | 644 | 0.9− | 0.2+ |
| 1991 04 14 | 691 | 0.1+ | 0.1+ | 2001 09 07 | 699 | 1.2− | 0.1+ | 2001 10 16 | 704 | 0.0 | 0.5− |
| 1992 12 02 | 691 | 0.2+ | 0.1− | 2001 09 07 | 699 | (1.0− | 1.8+) | 2001 10 16 | 644 | 0.9− | 0.2+ |
| 1992 12 02 | 691 | 0.2− | 0.1− | 2001 09 07 | 699 | 0.5− | 0.7− | 2001 10 19 | 699 | 0.3− | 1.0+ |
| 1992 12 02 | 691 | 0.1+ | 0.3− | 2001 09 16 | 704 | 0.0 | 0.5+ | 2001 10 19 | 699 | 0.5− | 1.2+ |
| 1996 07 22 | 566 | 1.9+ | 0.8+ | 2001 09 16 | 704 | 0.5+ | 0.6+ | 2001 10 19 | 699 | 0.3+ | 0.3+ |
| 1996 07 22 | 566 | (2.9− | 0.4+) | 2001 09 16 | 704 | 1.4− | 0.2+ | 2001 10 19 | 699 | 0.1+ | 0.3− |
| 1996 07 22 | 566 | (2.2− | 2.0−) | 2001 09 16 | 704 | 0.2− | 0.7+ | 2001 10 20 | 704 | (1.9− | 1.0−) |
| 2000 03 09 | 691 | 0.7− | 0.1+ | 2001 09 16 | 704 | 0.7+ | 0.4+ | 2001 10 20 | 704 | 1.2− | 0.0 |
| 2000 03 09 | 691 | 0.7− | 0.3+ | 2001 09 16 | 704 | 0.1− | 0.6+ | 2001 10 20 | 704 | (2.1− | 0.6+) |
| 2000 03 09 | 691 | 0.6− | 0.1+ | 2001 09 16 | 704 | 0.2+ | 1.2+ | 2001 10 20 | 704 | 1.2− | 0.7+ |
| 2000 04 04 | 699 | 0.4− | 0.4− | 2001 09 18 | 645 | 0.1+ | 0.2− | 2001 10 20 | 704 | (1.7− | 0.2+) |
| 2000 04 04 | 699 | 1.8+ | 0.9− | 2001 09 18 | 645 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2000 04 04 | 699 | 1.6+ | 0.4− | 2001 09 21 | 704 | 0.8− | 0.0 | 2006 10 22 | 703 | (1.2− | 1.7−) |
| 2000 04 04 | 699 | 1.1+ | 0.4+ | 2001 09 21 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.5− | 0.9− |
| 2000 04 07 | 699 | 0.5− | 0.4+ | 2001 09 21 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.3− | 1.5− |
| 2000 04 07 | 699 | 0.7+ | 1.0+ | 2001 09 21 | 644 | 0.1− | 0.7+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2000 04 07 | 699 | 0.2+ | 1.7+ | 2001 09 21 | 704 | 0.7− | 0.3− | 2006 11 22 | G96 | 0.7+ | 0.2− |
| 2000 04 07 | 699 | 0.0 | 0.4+ | 2001 09 21 | 704 | 0.5− | 0.0 | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2000 04 27 | 699 | 0.7+ | 0.2+ | 2001 09 21 | 644 | 0.2+ | 1.1+ | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 2000 04 27 | 699 | 0.5+ | 0.1− | 2001 09 21 | 704 | 1.0− | 1.2− | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2000 04 27 | 699 | 0.2+ | 0.1− | 2001 10 10 | 644 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2000 04 27 | 699 | 0.0 | 1.1+ | 2001 10 10 | 644 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2000 05 26 | 699 | 0.4+ | 1.2+ | 2001 10 10 | 644 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.4+ |
| 2000 05 26 | 699 | 0.5− | 0.5+ | 2001 10 12 | 608 | 0.1+ | 0.8− | 2006 11 27 | 691 | 0.2+ | 0.4+ |
| 2000 05 26 | 699 | 1.1+ | 1.4+ | 2001 10 12 | 608 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.5+ | 0.4+ |
| 2000 05 26 | 699 | 0.4+ | 0.3+ | 2001 10 12 | 608 | 0.7− | 0.0 | 2006 11 28 | 704 | 0.7− | 1.8+ |
| 2001 08 05 | 644 | 0.1+ | 0.7+ | 2001 10 13 | 557 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2001 08 05 | 644 | 0.2+ | 0.8+ | 2001 10 13 | 557 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.2+ |
| 2001 08 05 | 644 | 0.0 | 0.9+ | 2001 10 16 | 704 | 0.6+ | 0.1− | 2006 11 28 | 704 | 0.6− | 0.5+ |
| 2001 08 27 | 699 | 0.2+ | 0.6+ | 2001 10 16 | 704 | 0.0 | 0.7+ | 2006 11 28 | 704 | 0.1− | 1.8+ |
| 2001 08 27 | 699 | 0.2− | 0.6+ | 2001 10 16 | 704 | 0.9− | 0.2+ | | | | |
| 2001 08 27 | 699 | 1.0− | 0.0 | 2001 10 16 | 644 | 0.7− | 0.2+ | | | | |

**(138369)∗ 2000 $GL_{140}$ = 2004 $JF_{31}$**

Discovered 2000 Apr. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 64726)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.57326 | | (2000.0) | | | |
| $n$ | 0.26273390 | $\omega$ | 40.50551 | | −0.86316265 | −0.50160638 |
| $a$ | 2.4143041 | $\Omega$ | 109.29889 | | +0.44599692 | −0.81108278 |
| $e$ | 0.1297196 | $i$ | 3.51130 | | +0.23672133 | −0.30089161 |
| $P$ | 3.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.3− | 0.7+ | 2005 09 01 | 691 | 0.2− | 0.2− |
| 2000 04 04 | 699 | 0.8− | 0.4+ | 2002 12 10 | 704 | 0.3− | 0.0 | 2005 09 07 | A50 | 0.1+ | 0.0 |
| 2000 04 04 | 699 | 0.5− | 0.1− | 2002 12 10 | 704 | 0.3+ | 0.7+ | 2005 09 11 | 691 | 0.1− | 0.5+ |
| 2000 04 04 | 699 | 0.4+ | 0.3+ | 2004 04 30 | 691 | 0.2− | 0.4+ | 2005 09 11 | 691 | 0.1− | 0.2+ |
| 2000 04 05 | 699 | 0.9− | 1.0+ | 2004 04 30 | 691 | 0.1− | 0.3+ | 2005 09 11 | 691 | 0.1+ | 0.4+ |
| 2000 04 05 | 699 | 0.0 | 0.9+ | 2004 04 30 | 691 | 0.0 | 0.3+ | 2005 09 14 | 691 | 0.0 | 0.3+ |
| 2000 04 05 | 699 | 0.4− | 1.7+ | 2004 05 15 | 704 | 0.4− | 0.6+ | 2005 09 14 | 691 | 0.1+ | 0.3+ |
| 2000 04 05 | 699 | 0.9+ | 0.9+ | 2004 05 15 | 704 | 0.0 | 0.6+ | 2005 09 14 | 691 | 0.1− | 0.1+ |
| 2000 04 07 | 699 | 0.9+ | 0.4+ | 2004 05 15 | 704 | 0.4+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2000 04 07 | 699 | 0.5+ | 0.4+ | 2004 05 15 | 704 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.5+ | 0.1+ |
| 2000 04 07 | 699 | 0.9+ | 1.0+ | 2004 05 17 | 704 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.4− | 0.5+ |
| 2000 04 07 | 699 | 0.7+ | 0.8+ | 2004 05 17 | 704 | 0.2+ | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2000 04 08 | 704 | 0.8+ | 0.1− | 2004 05 17 | 704 | 0.6+ | 0.5− | 2006 10 29 | G96 | 0.2+ | 0.1+ |
| 2000 04 08 | 704 | 1.0− | 0.7+ | 2004 05 17 | 704 | 0.7+ | 0.4− | 2006 10 29 | G96 | 0.3+ | 0.3+ |
| 2000 04 08 | 704 | 0.7+ | 0.1− | 2004 06 11 | 599 | (1.9− | 0.2+) | 2006 10 29 | G96 | 0.4− | 0.3+ |
| 2000 04 08 | 704 | 0.1− | 0.2+ | 2004 06 11 | 599 | (1.7− | 0.7+) | 2006 10 29 | G96 | 0.1+ | 0.2+ |
| 2000 04 08 | 704 | 0.2− | 0.9− | 2004 06 11 | 599 | (2.2− | 0.2+) | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2000 04 10 | 608 | 0.3+ | 0.4− | 2005 08 26 | 644 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3+ |
| 2000 04 10 | 608 | 0.5+ | 0.4− | 2005 08 26 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2000 04 10 | 608 | 0.4+ | 0.2− | 2005 08 26 | 644 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2002 11 28 | 608 | 0.5− | 0.4+ | 2005 08 28 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 1.2+ |
| 2002 11 28 | 608 | 0.3− | 0.4+ | 2005 08 28 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.1+ |
| 2002 11 28 | 608 | 0.1− | 0.6+ | 2005 08 28 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 1.9+ |
| 2002 12 10 | 704 | 0.4+ | 1.1+ | 2005 09 01 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.0+ | 0.2+ |
| 2002 12 10 | 704 | 0.6− | 0.6+ | 2005 09 01 | 691 | 0.1− | 0.1+ | | | | |

**(138370)∗ 2000 $GS_{143}$ = 2002 $VY_{112}$**

Discovered 2000 Apr. 7 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37492)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 161.88142 | | (2000.0) | | | |
| $n$ | 0.22250552 | $\omega$ | 153.40528 | | −0.86454998 | +0.47380155 |
| $a$ | 2.6971734 | $\Omega$ | 55.87731 | | −0.48956045 | −0.71874201 |
| $e$ | 0.0440460 | $i$ | 11.67542 | | −0.11350726 | −0.50884380 |
| $P$ | 4.43 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 699 | 0.4+ | 1.0+ | 2002 11 23 | 644 | 0.4+ | 1.1+ | 2004 03 14 | 704 | 0.4− | 0.3+ |
| 2000 04 07 | 699 | 0.2+ | 0.3+ | 2002 11 23 | 644 | 0.1+ | 0.9+ | 2004 03 25 | 704 | (2.2+ | 0.2+) |
| 2000 04 07 | 699 | 0.4+ | 0.8+ | 2002 11 23 | 644 | 0.6+ | 1.0+ | 2004 03 25 | 704 | 1.2+ | 0.5+ |
| 2000 04 07 | 699 | 0.1− | 0.0 | 2002 11 27 | 699 | 0.4− | 0.8− | 2004 03 25 | 704 | 0.7+ | 0.6+ |
| 2000 04 09 | 699 | 0.6+ | 1.1+ | 2002 11 27 | 699 | 0.4+ | 0.1+ | 2004 03 25 | 704 | 0.9+ | 0.2+ |
| 2000 04 09 | 699 | 1.2+ | 0.1− | 2002 11 28 | 699 | 0.8+ | 0.8− | 2004 03 25 | 704 | 1.3+ | 1.0− |
| 2000 04 09 | 699 | 1.4+ | 0.1+ | 2002 11 28 | 699 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.9+ |
| 2000 04 09 | 699 | 0.4+ | 0.2− | 2002 11 28 | 699 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.8− | 0.5+ |
| 2000 04 27 | 704 | 1.3+ | 0.4− | 2002 11 28 | 699 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.7− | 0.1− |
| 2000 04 27 | 699 | 0.4+ | 0.9+ | 2002 12 05 | 704 | 0.0 | 0.8+ | 2006 09 25 | 699 | 1.2− | 1.3+ |
| 2000 04 27 | 704 | 0.9+ | 0.2− | 2002 12 05 | 704 | 0.6+ | 0.1− | 2006 09 26 | 703 | 0.8− | 1.0+ |
| 2000 04 27 | 699 | 0.6− | 0.7+ | 2002 12 05 | 704 | 0.1+ | 0.5− | 2006 09 26 | 703 | (1.6− | 0.1+) |
| 2000 04 27 | 704 | 0.4+ | 1.5+ | 2002 12 05 | 704 | 0.0 | 0.4− | 2006 09 26 | 703 | 1.4− | 0.3− |
| 2000 04 27 | 699 | 0.1+ | 0.7+ | 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | (0.6+ | 2.2−) |
| 2000 04 27 | 699 | 0.2− | 0.8+ | 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 09 29 | 699 | 0.1− | 1.2+ |
| 2000 04 30 | 704 | 0.7− | 0.5+ | 2002 12 10 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 1.0+ | 0.0 |
| 2000 04 30 | 704 | 0.1+ | 1.3+ | 2002 12 10 | 704 | 0.0 | 1.2+ | 2006 09 29 | 699 | 1.4− | 1.0+ |
| 2000 04 30 | 704 | 0.4+ | 2.0+ | 2002 12 10 | 704 | 0.2+ | 1.1+ | 2006 09 29 | 699 | 1.0− | 0.7+ |
| 2000 04 30 | 704 | 0.1− | 0.2+ | 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2000 04 30 | 704 | 0.1+ | 0.9+ | 2002 12 31 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2000 04 30 | 704 | 0.7+ | 0.7+ | 2002 12 31 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.9+ |
| 2000 04 30 | 704 | 0.2+ | 1.4+ | 2002 12 31 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2000 04 30 | 704 | 0.7+ | 0.5+ | 2002 12 31 | 704 | 0.3+ | 0.7− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2000 04 30 | 704 | 0.8+ | 1.3+ | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.7+ |
| 2000 04 30 | 704 | 0.1+ | 0.6+ | 2004 01 30 | 704 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.8+ |
| 2002 10 28 | 291 | 0.4− | 0.0 | 2004 01 30 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.8+ |
| 2002 10 28 | 291 | 0.7− | 0.1+ | 2004 01 30 | 704 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.7+ |
| 2002 10 28 | 291 | 0.3− | 0.0 | 2004 02 15 | 704 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 11 13 | 644 | 0.6+ | 0.5+ | 2004 02 15 | 704 | 0.6− | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2002 11 13 | 644 | 0.3+ | 0.4+ | 2004 02 15 | 704 | 0.6− | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.6+ |
| 2002 11 13 | 644 | 0.1− | 0.7+ | 2004 02 15 | 704 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2002 11 14 | 704 | 0.7+ | 0.2− | 2004 02 15 | 704 | 0.3+ | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2002 11 14 | 704 | 0.7+ | 0.0 | 2004 03 14 | 704 | 0.2− | 1.0+ | 2006 10 28 | 703 | 1.0− | 0.6+ |
| 2002 11 14 | 704 | 0.1+ | 0.1− | 2004 03 14 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.2− | 1.1− | 2004 03 14 | 704 | 0.8+ | 0.2− | 2006 10 28 | 703 | 0.2+ | 0.7+ |

**(138371)∗ 2000 $GK_{144}$ = 2006 $PJ_{24}$**

Discovered 2000 Apr. 7 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 103173)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.20049 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19856482 | $\omega$ | 283.07630 | | +0.46369850 | | +0.88596591 |
| $a$ | 2.9098315 | $\Omega$ | 14.55575 | | −0.80181463 | | +0.42296022 |
| $e$ | 0.0730098 | $i$ | 1.58154 | | −0.37693103 | | +0.19018168 |
| $P$ | 4.96 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.8+ | 0.3− | 2004 01 22 | 704 | 0.5+ | 0.7+ | 2005 05 01 | 644 | 0.3+ | 0.2+ |
| 2000 04 05 | 704 | 0.8− | 0.0 | 2004 02 12 | 291 | 0.3+ | 0.3+ | 2006 08 12 | 644 | 0.1+ | 0.5+ |
| 2000 04 05 | 704 | 0.1+ | 0.8+ | 2004 02 12 | 291 | 0.2+ | 0.2+ | 2006 08 12 | 644 | 0.3+ | 0.5+ |
| 2000 04 05 | 704 | 0.2− | 0.3+ | 2004 02 12 | 291 | 0.2+ | 0.5+ | 2006 08 12 | 644 | 0.1+ | 0.3+ |
| 2000 04 07 | 691 | 0.3− | 0.1− | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 08 14 | 644 | 0.1+ | 0.7+ |
| 2000 04 07 | 691 | 0.3− | 0.1+ | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 08 14 | 644 | 0.1− | 0.5+ |
| 2000 04 07 | 691 | 1.2+ | 1.0+ | 2005 03 11 | G96 | 0.1− | 0.1− | 2006 08 14 | 644 | 0.1− | 0.4+ |
| 2000 04 13 | 691 | 0.1− | 0.2− | 2005 03 11 | G96 | 0.0 | 0.2− | 2006 08 20 | 644 | 0.0 | 0.7+ |
| 2000 04 13 | 691 | 0.1− | 0.0 | 2005 03 11 | G96 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.1− | 0.5+ |
| 2000 04 13 | 691 | 0.1− | 0.2− | 2005 03 11 | G96 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.0 | 0.5+ |
| 2002 10 30 | 049 | 0.4− | 0.5+ | 2005 04 10 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2002 10 31 | 049 | 0.5− | 0.5+ | 2005 04 10 | G96 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.8− | 0.1− |
| 2002 10 31 | 049 | 0.0 | 0.4+ | 2005 04 10 | G96 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.6− | 0.1+ |
| 2004 01 22 | 704 | 0.4+ | 0.5+ | 2005 04 10 | G96 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.7+ | 0.6+ | 2005 05 01 | 644 | 0.0 | 0.1+ | | | | |
| 2004 01 22 | 704 | 0.4+ | 0.8+ | 2005 05 01 | 644 | 0.0 | 0.4+ | | | | |

**(138372)∗ 2000 GN$_{144}$ = 2002 UM$_{17}$**

Discovered 2000 Apr. 7 by Spacewatch at Kitt Peak.
Id. G. V. Williams (*MPO* 37492)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.18400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21046631 | $\omega$ | 16.62238 | | +0.80962864 | | −0.58690956 |
| $a$ | 2.7990737 | $\Omega$ | 19.31959 | | +0.53634898 | | +0.73549768 |
| $e$ | 0.1121438 | $i$ | 1.07642 | | +0.23839303 | | +0.33849716 |
| $P$ | 4.68 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 691 | 0.3+ | 0.4+ | 2002 11 06 | 704 | 0.0 | 0.2+ | 2002 12 10 | 704 | 0.2+ | 0.6+ |
| 2000 04 07 | 691 | 0.4+ | 0.1+ | 2002 11 06 | 704 | 0.1− | 0.6+ | 2002 12 11 | 704 | (1.3+ | 1.5−) |
| 2000 04 07 | 691 | 0.4− | 0.0 | 2002 11 06 | 704 | 0.5− | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.9− |
| 2000 04 13 | 691 | 0.1+ | 0.1− | 2002 11 06 | 704 | 0.5+ | 0.5− | 2002 12 11 | 704 | (0.2− | 1.8−) |
| 2000 04 13 | 691 | 0.3+ | 0.4+ | 2002 11 06 | 704 | 0.1− | 0.1+ | 2002 12 11 | 704 | (0.0 | 2.2−) |
| 2000 04 13 | 691 | 0.1− | 0.0 | 2002 11 06 | 704 | 0.5+ | 0.3+ | 2004 02 11 | 291 | 0.3+ | 0.1+ |
| 2000 05 02 | 688 | 0.2+ | 0.9+ | 2002 11 06 | 704 | 0.6− | 0.5+ | 2004 02 11 | 291 | 0.6− | 0.3+ |
| 2000 05 02 | 688 | 0.3− | 0.4+ | 2002 11 06 | 704 | 0.7+ | 0.4− | 2004 02 11 | 291 | 0.4+ | 0.4− |
| 2000 05 02 | 688 | 0.0 | 0.9+ | 2002 11 06 | 704 | 0.2− | 0.3+ | 2004 02 17 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2002 11 10 | 704 | 0.1− | 0.1− | 2004 02 17 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.3+ | 0.4+ | 2002 11 10 | 704 | 0.0 | 0.9− | 2004 02 17 | 691 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.0 | 0.6− | 2002 11 10 | 704 | 0.3− | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.3+ |
| 2002 10 11 | 704 | 0.2+ | 0.6− | 2002 11 14 | 704 | 0.2+ | 0.6− | 2004 02 29 | 691 | 0.0 | 0.1+ |
| 2002 10 16 | 699 | 0.2+ | 1.2+ | 2002 11 14 | 704 | 0.2− | 0.1− | 2004 02 29 | 691 | 0.0 | 0.1+ |
| 2002 10 16 | 699 | 1.1+ | 0.5− | 2002 11 14 | 704 | 0.1− | 0.2− | 2004 03 26 | 691 | 0.0 | 0.0 |
| 2002 10 16 | 699 | 0.7+ | 0.1+ | 2002 11 14 | 704 | 0.1− | 0.1+ | 2004 03 26 | 691 | 0.2+ | 0.3+ |
| 2002 10 16 | 699 | 0.6+ | 0.8− | 2002 11 14 | 704 | 0.0 | 0.3− | 2004 03 26 | 691 | 0.1− | 0.4+ |
| 2002 10 28 | 608 | 0.1− | 0.2+ | 2002 11 27 | 699 | 0.1− | 0.6+ | 2006 08 14 | 644 | 0.7− | 0.3+ |
| 2002 10 28 | 608 | 0.1− | 0.5− | 2002 11 27 | 699 | 0.6+ | 1.2+ | 2006 08 14 | 644 | 0.4− | 0.7+ |
| 2002 10 28 | 608 | 0.4− | 0.2− | 2002 11 27 | 699 | 0.4+ | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.6+ |
| 2002 10 31 | 644 | 0.2+ | 0.2+ | 2002 11 27 | 699 | 0.9− | 1.0− | 2006 08 19 | 699 | 1.3+ | 0.9+ |
| 2002 10 31 | 644 | 0.0 | 0.3+ | 2002 12 01 | 704 | 0.0 | 0.3+ | 2006 08 19 | 699 | (0.1+ | 1.6+) |
| 2002 10 31 | 644 | 0.1+ | 0.1+ | 2002 12 01 | 704 | 0.1+ | 0.5+ | 2006 08 19 | 699 | (0.2− | 1.7+) |
| 2002 11 04 | 644 | 0.1− | 0.0 | 2002 12 01 | 704 | 0.4− | 0.3− | 2006 08 19 | 699 | 0.3− | 1.3+ |
| 2002 11 04 | 644 | 0.4− | 0.6+ | 2002 12 05 | 704 | 0.6− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.6+ |
| 2002 11 04 | 644 | 0.2− | 0.4+ | 2002 12 05 | 704 | 0.8− | 0.6+ | 2006 08 20 | 644 | 0.5− | 0.5+ |
| 2002 11 05 | 704 | 0.4− | 0.3− | 2002 12 05 | 704 | 1.0− | 0.8+ | 2006 08 20 | 644 | 0.5− | 0.6+ |
| 2002 11 05 | 704 | 0.1+ | 0.3− | 2002 12 05 | 704 | 0.4+ | 0.7+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2002 12 05 | 704 | 1.0− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2002 12 10 | 644 | 0.7− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.4+ |
| 2002 11 05 | 704 | 0.2− | 0.4− | 2002 12 10 | 644 | 0.4− | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2002 11 05 | 699 | 0.1− | 1.0+ | 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2002 11 05 | 699 | 0.1− | 0.6+ | 2002 12 10 | 704 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.4− | 0.0 |
| 2002 11 05 | 699 | 1.0+ | 0.5− | 2002 12 10 | 704 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2002 11 05 | 699 | 1.0+ | 0.4+ | 2002 12 10 | 704 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.2− |

**(138373)∗ 2000 GQ$_{150}$ = 1981 VY$_2$ = 2002 XD$_{47}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 40094), M. E. Sansaturio (*MPO* 42923)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.04248 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23913620 | $\omega$ | 193.70234 | | +0.94323229 | | −0.33202380 |
| $a$ | 2.5706276 | $\Omega$ | 185.71102 | | +0.31224730 | | +0.89523324 |
| $e$ | 0.3005223 | $i$ | 4.92708 | | +0.11320103 | | +0.29718283 |
| $P$ | 4.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 11 03 | 033 | 0.1+ | 0.1− | 2003 01 01 | 704 | 0.6− | 0.5− | 2005 06 11 | 703 | (2.8− | 2.5−) |
| 1981 11 03 | 033 | 0.7+ | 0.2− | 2003 01 07 | 704 | 0.5− | 0.9− | 2005 06 11 | 703 | (1.2+ | 3.8−) |
| 1996 04 12 | 691 | 0.5− | 0.0 | 2003 01 07 | 704 | 0.4− | 0.5− | 2005 06 11 | 703 | 1.1− | 0.1+ |
| 1996 04 12 | 691 | 0.8− | 0.4+ | 2003 01 07 | 704 | 0.4− | 0.3− | 2005 06 27 | 644 | 0.2+ | 0.6+ |
| 1996 04 12 | 691 | 0.2− | 0.0 | 2003 01 07 | 704 | 0.6− | 0.1− | 2005 06 27 | 644 | 0.1− | 0.6+ |
| 2000 03 27 | 691 | (2.4− | 0.9−) | 2003 01 08 | 704 | 0.4+ | 0.3+ | 2005 06 27 | 644 | 0.1− | 0.7+ |
| 2000 03 27 | 691 | 0.9− | 0.1− | 2003 01 08 | 704 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.5− | 0.5+ |
| 2000 03 27 | 691 | 0.8− | 0.2− | 2003 01 08 | 704 | 0.3+ | 0.1− | 2005 07 27 | 644 | 0.2+ | 0.5+ |
| 2000 04 05 | 704 | 0.5+ | 0.1− | 2003 01 08 | 704 | 0.5+ | 0.0 | 2005 07 27 | 644 | 0.2+ | 0.7+ |
| 2000 04 05 | 704 | 0.4+ | 0.5+ | 2003 01 08 | 704 | 0.2− | 0.1+ | 2006 10 22 | 704 | 0.4− | 0.2+ |
| 2000 04 05 | 704 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.5− | 0.3+ | 2006 10 22 | 704 | 0.6+ | 0.0 |
| 2000 04 05 | 704 | 0.5+ | 0.2+ | 2003 01 08 | 704 | 0.5− | 0.2− | 2006 10 22 | 704 | (2.1+ | 1.0−) |
| 2000 04 05 | 704 | 0.5− | 0.4+ | 2003 01 13 | 644 | 0.1− | 0.3− | 2006 10 22 | 704 | 0.9+ | 0.1− |
| 2000 04 11 | 691 | 0.1+ | 0.3− | 2003 01 13 | 644 | 0.2+ | 0.5− | 2006 10 22 | 704 | (1.7+ | 1.5−) |
| 2000 04 11 | 691 | 0.2− | 0.1+ | 2003 01 13 | 644 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.6− | 0.0 |
| 2000 04 11 | 691 | 0.1+ | 0.1− | 2003 01 27 | 704 | 0.5+ | 0.3+ | 2006 11 14 | 704 | 0.7− | 1.1− |
| 2002 11 07 | 704 | 1.2+ | 0.4+ | 2003 01 27 | 704 | 0.3+ | 0.0 | 2006 11 14 | 704 | 1.2− | 0.2− |
| 2002 11 07 | 704 | (1.6+ | 0.3+) | 2003 01 27 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2002 11 07 | 704 | 0.2+ | 0.4+ | 2003 01 27 | 704 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.6− | 0.0 |
| 2002 11 07 | 704 | 0.4+ | 1.3+ | 2003 01 27 | 704 | 0.5+ | 1.2+ | 2006 11 20 | 704 | 1.0− | 0.0 |
| 2002 12 08 | 608 | 0.2− | 0.3+ | 2004 03 30 | 291 | 1.1+ | 0.1− | 2006 11 20 | 704 | 1.0+ | 0.7− |
| 2002 12 08 | 608 | 0.1− | 0.6+ | 2004 03 30 | 291 | 1.2+ | 0.1− | 2006 11 25 | 704 | 0.2+ | 0.4− |
| 2002 12 08 | 608 | 0.2− | 0.3+ | 2004 03 30 | 291 | 1.2+ | 0.2− | 2006 11 25 | 704 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.5− | 0.8+ | 2005 06 02 | E12 | 0.1− | 0.1− | 2006 11 25 | 704 | 0.3+ | 0.8− |
| 2002 12 11 | 704 | 0.6+ | 1.1+ | 2005 06 02 | E12 | 1.3+ | 0.1− | 2006 11 25 | 704 | 0.7− | 0.5+ |
| 2002 12 11 | 704 | 0.1− | 0.6+ | 2005 06 02 | E12 | 0.6+ | 0.1− | 2006 11 29 | 704 | 1.1+ | 1.7+ |
| 2002 12 11 | 704 | 0.2− | 0.6+ | 2005 06 02 | E12 | 0.2− | 0.4+ | 2006 11 29 | 704 | 1.0+ | 1.0+ |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2005 06 03 | 703 | 1.4+ | 0.5+ | 2006 11 29 | 704 | 0.2+ | 0.4+ |
| 2003 01 01 | 704 | 0.5− | 0.7− | 2005 06 03 | 703 | 0.6− | 0.3+ | 2006 11 29 | 704 | 0.4+ | 1.2+ |
| 2003 01 01 | 704 | 0.9− | 1.1− | 2005 06 03 | 703 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.4+ | 1.0+ |
| 2003 01 01 | 704 | 0.3− | 0.8− | 2005 06 03 | 703 | 0.6− | 0.0 | | | | |
| 2003 01 01 | 704 | 0.4− | 0.4− | 2005 06 11 | 703 | 0.7− | 1.0− | | | | |

**(138374)∗ 2000 GA$_{151}$ = 1992 TQ**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. T. B. Spahr (*MPO* 11781)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.56797 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21283102 | $\omega$ | 111.64843 | | +0.48470370 | | +0.87466494 |
| $a$ | 2.7783019 | $\Omega$ | 187.35024 | | −0.81588002 | | +0.45011274 |
| $e$ | 0.1582103 | $i$ | 2.17493 | | −0.31528102 | | +0.17988820 |
| $P$ | 4.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 02 | 691 | 0.1− | 1.4− | 2001 08 24 | 644 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 1992 10 02 | 691 | 0.2+ | 0.4− | 2001 08 24 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1992 10 02 | 691 | 0.2+ | 0.1− | 2001 08 24 | 644 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.1+ |
| 1992 10 04 | 691 | 0.1+ | 0.3+ | 2005 05 18 | 644 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.4− | 0.4− |
| 1992 10 04 | 691 | 0.0 | 0.2+ | 2005 05 18 | 644 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1992 10 04 | 691 | 0.3+ | 0.4− | 2005 05 18 | 644 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2000 03 27 | 691 | 0.9− | 0.4+ | 2005 05 20 | G96 | 0.6− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2000 03 27 | 691 | 0.3+ | 0.5+ | 2005 05 20 | G96 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.4+ | 0.4+ |
| 2000 03 27 | 691 | 0.4− | 0.2+ | 2005 05 20 | G96 | 0.5− | 0.3− | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.7+ | 0.5− | 2005 05 20 | G96 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2000 04 05 | 704 | 1.5+ | 0.0 | 2005 06 10 | 691 | 0.7+ | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2000 04 05 | 704 | 1.1+ | 0.5− | 2005 06 10 | 691 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2000 04 11 | 691 | 0.1− | 1.0− | 2005 06 10 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.1+ |
| 2000 04 11 | 691 | 0.2+ | 0.3− | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2000 04 11 | 691 | 0.1− | 0.2+ | 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.5− |
| 2001 08 23 | 699 | 1.0− | 1.2+ | 2005 06 14 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2001 08 23 | 699 | 1.0+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 08 23 | 699 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2001 08 23 | 699 | 0.8− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1− | | | | |

**(138375)∗ 2000 GS$_{151}$ = 2002 WE$_{11}$**

Discovered 2000 Apr. 5 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 40094)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.87512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23604574 | $\omega$ | 94.63349 | | −0.32446554 | −0.94578127 | |
| $a$ | 2.5930165 | $\Omega$ | 14.32656 | | +0.84235152 | −0.29604327 | |
| $e$ | 0.0890153 | $i$ | 3.43572 | | +0.43030923 | −0.13362701 | |
| $P$ | 4.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 08 | 691 | 0.0 | 0.5− | 2002 12 11 | 644 | 0.7− | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 1991 02 08 | 691 | 0.2− | 0.3− | 2002 12 11 | 644 | 0.7− | 1.4+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1991 02 08 | 691 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.5+ | 1.2+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2000 03 27 | 691 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2000 03 27 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2000 03 27 | 691 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2000 04 05 | 691 | 0.5− | 0.1− | 2004 03 18 | 704 | 1.1+ | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 691 | 0.4− | 0.0 | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2000 04 05 | 691 | 0.7− | 0.2− | 2004 03 27 | 704 | 0.6− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 1.5+ | 0.0 | 2004 03 27 | 704 | 0.7+ | 1.4+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 0.4+ | 0.7− | 2004 03 27 | 704 | (0.2− | 1.9+) | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2000 04 06 | 704 | 1.6+ | 0.2− | 2004 04 16 | 644 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2000 04 06 | 704 | 1.4+ | 1.1+ | 2004 04 16 | 644 | 0.2+ | 0.7+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2000 04 06 | 704 | 1.7+ | 0.2+ | 2004 04 16 | 644 | 0.1+ | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 0.1+ | 0.1− | 2004 04 21 | 704 | 1.5+ | 1.1+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.1− | 0.2− | 2004 04 21 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.6− |
| 2002 11 12 | 704 | 0.5+ | 0.3− | 2004 04 21 | 704 | 0.2− | 0.9+ | 2006 11 11 | 703 | 1.0− | 0.8− |
| 2002 11 27 | 699 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.5− | 0.9− |
| 2002 11 27 | 699 | 0.5+ | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 11 27 | 699 | 0.5− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 1.0+ | 0.7+ |
| 2002 11 27 | 699 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2002 11 28 | 699 | 1.3+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.1− | 0.6+ |
| 2002 11 28 | 699 | 1.3+ | 0.7+ | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2002 11 28 | 699 | 0.9+ | 1.2+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 11 28 | 699 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 12 02 | 704 | 0.8− | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 12 02 | 704 | 0.2+ | 1.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.2+ |
| 2002 12 02 | 704 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.4− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 12 02 | 704 | 0.5− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2002 12 06 | 704 | 0.1+ | 1.4− | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.1− | 0.7− | 2006 10 23 | 691 | 0.7− | 0.1− | 2006 11 27 | 691 | 0.5+ | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.7− | 2006 10 23 | 691 | 0.8− | 0.0 | 2006 11 27 | 691 | 0.5+ | 0.2− |
| 2002 12 11 | 644 | 0.4− | 1.4+ | 2006 10 23 | 691 | 0.9− | 0.1+ | | | | |

**(138376)∗ 2000 GV$_{152}$ = 2002 TV$_{92}$**

Discovered 2000 Apr. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37493)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.22327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23635095 | $\omega$ | 191.12593 | | −0.63094552 | −0.77380615 | |
| $a$ | 2.5907836 | $\Omega$ | 298.01930 | | +0.71658486 | −0.55360272 | |
| $e$ | 0.1715940 | $i$ | 3.63457 | | +0.29734473 | −0.30781174 | |
| $P$ | 4.17 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 16 | 691 | 0.6− | 0.1− | 2002 10 04 | 644 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.4− | 0.3+ |
| 1993 08 16 | 691 | 0.4− | 0.1− | 2002 10 04 | 644 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.8+ |
| 1993 08 16 | 691 | 0.2− | 0.5+ | 2002 10 09 | 704 | 1.0− | 0.8+ | 2004 03 18 | 704 | 0.1− | 0.3+ |
| 2000 04 05 | 699 | 0.6+ | 0.6+ | 2002 10 09 | 704 | 0.2− | 0.9+ | 2004 03 18 | 704 | 0.0 | 0.5+ |
| 2000 04 05 | 699 | 0.1− | 0.6+ | 2002 10 09 | 704 | 1.0− | 1.4+ | 2004 03 20 | 704 | 0.1− | 0.4+ |
| 2000 04 05 | 699 | 0.7+ | 1.0+ | 2002 10 12 | 704 | 0.7− | 0.9+ | 2004 03 20 | 704 | 0.1+ | 0.6− |
| 2000 04 05 | 699 | 0.1+ | 1.0+ | 2002 10 12 | 704 | 0.6− | 0.7− | 2004 03 20 | 704 | 0.1− | 0.6+ |
| 2000 04 06 | 699 | 0.7+ | 1.1+ | 2002 10 12 | 704 | 0.1+ | 1.1+ | 2004 03 20 | 704 | 0.1+ | 0.6+ |
| 2000 04 06 | 699 | 0.5+ | 0.1− | 2002 10 12 | 704 | 0.1+ | 0.3− | 2004 03 20 | 704 | 0.0 | 0.2+ |
| 2000 04 06 | 699 | 0.6+ | 0.4+ | 2002 10 12 | 704 | 0.7+ | 0.8− | 2004 04 09 | 703 | 0.5− | 0.4− |
| 2000 04 06 | 699 | 0.5+ | 0.1+ | 2002 11 01 | 704 | 1.4+ | 1.0+ | 2004 04 09 | 703 | 1.2+ | 0.3− |
| 2000 04 07 | 704 | 0.2+ | 0.4+ | 2002 11 01 | 704 | 0.5+ | 0.4+ | 2004 04 09 | 703 | (1.7+ | 2.2−) |
| 2000 04 07 | 704 | 0.1− | 0.3− | 2002 11 01 | 704 | 0.6− | 0.6+ | 2004 04 09 | 703 | (4.1− | 1.1+) |
| 2000 04 07 | 704 | 0.1+ | 0.2− | 2002 11 02 | 608 | 0.3− | 0.4+ | 2004 04 12 | 691 | 0.3− | 0.1+ |
| 2000 04 07 | 704 | 0.3+ | 0.6− | 2002 11 02 | 608 | 0.6− | 0.3+ | 2004 04 12 | 691 | 0.1− | 0.0 |
| 2000 04 07 | 704 | (0.1− | 2.5−) | 2002 11 02 | 608 | 0.1− | 0.7+ | 2004 04 12 | 691 | 0.1− | 0.1+ |
| 2000 04 08 | 704 | 1.2+ | 0.1− | 2004 02 15 | 703 | 1.3− | 0.1− | 2006 08 28 | 703 | (0.1− | 1.8+) |
| 2000 04 08 | 704 | 0.3− | 0.5+ | 2004 02 15 | 703 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.2+ |
| 2000 04 08 | 704 | 0.3+ | 0.1− | 2004 02 15 | 703 | 0.4+ | 1.5+ | 2006 08 28 | 703 | 0.6− | 0.1− |
| 2000 04 08 | 704 | 0.3− | 0.3− | 2004 02 15 | 703 | 1.3− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.3+ |
| 2000 04 08 | 704 | 0.7+ | 1.0+ | 2004 02 19 | 704 | 0.6+ | 0.3− | 2006 09 25 | 704 | (0.2+ | 1.5+) |
| 2000 04 08 | 704 | 0.1+ | 1.0− | 2004 02 19 | 704 | 0.2− | 0.7− | 2006 09 25 | 704 | 0.4+ | 0.6+ |
| 2000 04 08 | 704 | 0.7+ | 0.9− | 2004 02 19 | 704 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.7+ |
| 2000 04 08 | 704 | 0.5+ | 0.1− | 2004 02 19 | 704 | 0.7− | 0.4− | 2006 09 29 | 704 | 0.6− | 0.9+ |
| 2000 04 08 | 704 | 0.3+ | 0.3+ | 2004 02 19 | 704 | 0.4− | 0.3+ | 2006 09 29 | 704 | 0.5− | 0.1+ |
| 2000 04 08 | 704 | 0.5− | 1.1+ | 2004 02 23 | 704 | 0.9+ | 0.3+ | 2006 09 29 | 704 | 0.5− | 0.7+ |
| 2000 04 08 | 704 | 0.3+ | 0.3− | 2004 02 23 | 704 | 0.2− | 1.0+ | 2006 09 29 | 704 | 0.6− | 0.8+ |
| 2000 04 08 | 704 | 0.7+ | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.8+ | 0.9+ |
| 2000 04 08 | 704 | 0.6+ | 0.2− | 2004 02 26 | 704 | 1.4+ | 1.0+ | 2006 10 12 | 644 | 0.3+ | 0.5+ |
| 2000 04 08 | 704 | 0.4+ | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.8+ | 2006 10 12 | 644 | 0.3+ | 1.0+ |
| 2000 04 08 | 704 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.3+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 06 29 | 691 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2001 06 29 | 691 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 06 29 | 691 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2002 10 01 | 699 | 0.2− | 0.1− | 2004 03 16 | 704 | 0.1+ | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.2+ |
| 2002 10 01 | 699 | 0.2+ | 0.6+ | 2004 03 16 | 704 | 0.2+ | 1.0+ | 2006 10 23 | G96 | 0.1− | 0.3+ |
| 2002 10 01 | 699 | 0.0 | 0.6+ | 2004 03 16 | 704 | 0.4− | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 2002 10 01 | 699 | 0.7− | 0.5+ | 2004 03 16 | 704 | 0.4+ | 0.3+ | | | | |
| 2002 10 04 | 644 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.7+ | | | | |

**(138377)∗ 2000 GX$_{153}$**

Discovered 2000 Apr. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.80029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26942546 | $\omega$ | 132.30564 | | −0.69273391 | −0.72109401 | |
| $a$ | 2.3741617 | $\Omega$ | 1.69042 | | +0.48241351 | −0.47564515 | |
| $e$ | 0.2040567 | $i$ | 23.92841 | | +0.53609415 | −0.50377089 | |
| $P$ | 3.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 704 | 0.1− | 0.9− | 2000 03 27 | 699 | 0.1+ | 0.6− | 2000 05 06 | 704 | 0.2+ | 1.1+ |
| 1998 09 27 | 704 | 0.7− | 0.2− | 2000 03 27 | 699 | 0.2+ | 0.2− | 2002 11 11 | 704 | 1.0+ | 0.1+ |
| 1998 09 27 | 704 | 0.7− | 1.0− | 2000 04 05 | 699 | 0.1+ | 0.4− | 2002 11 11 | 704 | 0.7+ | 0.3− |
| 1998 09 27 | 704 | (2.8− | 1.1−) | 2000 04 05 | 699 | 0.3− | 0.1+ | 2002 11 11 | 704 | 0.3+ | 0.5+ |
| 1998 11 16 | 097 | 0.8− | 1.0+ | 2000 04 05 | 699 | 0.4− | 0.8+ | 2002 11 11 | 704 | 0.8+ | 0.3+ |
| 1998 11 16 | 097 | 0.6− | 0.8+ | 2000 04 05 | 699 | 0.3− | 0.7+ | 2002 12 12 | 704 | 0.0 | 0.7+ |
| 1998 11 16 | 097 | 0.8− | 1.0+ | 2000 04 06 | 699 | 0.1− | 0.5+ | 2002 12 12 | 704 | 0.9− | 0.5− |
| 2000 01 08 | 704 | 0.0 | 0.5+ | 2000 04 06 | 699 | 0.1− | 1.0+ | 2002 12 12 | 704 | 0.1− | 0.3+ |
| 2000 01 08 | 704 | 1.1− | 0.2− | 2000 04 06 | 699 | 0.3− | 0.6+ | 2002 12 28 | 704 | 0.5− | 0.1+ |
| 2000 01 08 | 704 | 0.6+ | 0.8+ | 2000 04 06 | 699 | 0.5− | 0.3− | 2002 12 28 | 704 | 0.3− | 0.5+ |
| 2000 01 08 | 704 | 0.1+ | 0.2− | 2000 04 07 | 704 | 0.5+ | 0.1− | 2002 12 28 | 704 | 0.6− | 0.5− |
| 2000 02 08 | 704 | 0.6+ | 0.5+ | 2000 04 07 | 704 | 0.2+ | 0.2+ | 2002 12 28 | 704 | 0.4− | 0.1+ |
| 2000 02 08 | 704 | 1.4+ | 1.9− | 2000 04 07 | 704 | 0.3− | 0.5+ | 2005 07 28 | 644 | 0.3+ | 0.7+ |
| 2000 02 08 | 704 | 0.2− | 1.6− | 2000 04 07 | 704 | 0.5− | 0.6+ | 2005 07 28 | 644 | 0.3− | 1.2+ |
| 2000 03 04 | 703 | (2.1− | 5.4+) | 2000 04 07 | 704 | 0.2+ | 0.8+ | 2005 07 28 | 644 | 0.1− | 0.8+ |
| 2000 03 04 | 703 | 0.4− | 0.4− | 2000 05 01 | 699 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 1.1+ |
| 2000 03 04 | 703 | 0.1+ | 0.4− | 2000 05 01 | 699 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.7+ |
| 2000 03 04 | 703 | 0.4+ | 0.1− | 2000 05 01 | 699 | 0.3+ | 0.3− | 2006 11 11 | 703 | 1.2− | 0.1− |
| 2000 03 05 | 608 | 0.6− | 0.8+ | 2000 05 01 | 699 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.7+ |
| 2000 03 05 | 608 | 0.5− | 0.7− | 2000 05 06 | 704 | 0.7+ | 0.7+ | 2006 11 19 | 703 | 0.8+ | 0.5− |
| 2000 03 05 | 608 | 0.4− | 0.6− | 2000 05 06 | 704 | 1.0+ | 0.2+ | 2006 11 19 | 703 | 0.5+ | 0.7+ |
| 2000 03 27 | 699 | 0.2+ | 0.1− | 2000 05 06 | 704 | 0.6+ | 0.1− | 2006 11 19 | 703 | 0.2+ | 0.3+ |
| 2000 03 27 | 699 | 0.1+ | 0.1+ | 2000 05 06 | 704 | 1.3+ | 0.5− | 2006 11 19 | 703 | 0.9− | 0.2− |

**(138378)∗ 2000 GP$_{154}$**

Discovered 2000 Apr. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.63591 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22944273 | $\omega$ | 278.37278 | | −0.78166611 | +0.61936036 | |
| $a$ | 2.6425295 | $\Omega$ | 299.92978 | | −0.53369919 | −0.72513967 | |
| $e$ | 0.1507280 | $i$ | 4.85997 | | −0.32274333 | −0.30094053 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 699 | 1.4+ | 0.2− | 2004 03 15 | 704 | 1.1+ | 0.5− | 2006 09 26 | 691 | 0.4+ | 0.1− |
| 2000 04 06 | 699 | 0.6− | 0.4+ | 2004 03 15 | 704 | 0.5+ | 1.0− | 2006 09 30 | 691 | 0.4+ | 0.2+ |
| 2000 04 06 | 699 | 1.1− | 0.0 | 2004 03 15 | 704 | 0.5− | 0.5− | 2006 09 30 | 691 | 0.3− | 0.1− |
| 2000 04 06 | 699 | 0.4+ | 0.6+ | 2005 06 17 | G96 | 0.0 | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2000 04 07 | 704 | 0.1+ | 0.6+ | 2005 06 17 | G96 | 0.2+ | 0.8+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2000 04 07 | 704 | 0.7+ | 0.3+ | 2005 06 17 | G96 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.3− | 0.1+ |
| 2000 04 07 | 704 | 0.4+ | 1.1+ | 2005 06 17 | G96 | 0.3+ | 0.9+ | 2006 10 17 | 691 | 0.3− | 0.1− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2005 07 15 | G96 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2005 07 15 | G96 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.6− | 0.1− |
| 2004 02 11 | 644 | 0.0 | 0.4+ | 2005 07 15 | G96 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.7+ | 0.4+ |
| 2004 02 12 | 691 | 0.0 | 0.8+ | 2005 07 15 | G96 | 0.5− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.3+ |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1+ |

**(138379)∗ 2000 GD$_{157}$**

Discovered 2000 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.86433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22220573 | $\omega$ | 157.87032 | | +0.99611009 | −0.07701391 | |
| $a$ | 2.6995987 | $\Omega$ | 206.65566 | | +0.05950769 | +0.94632291 | |
| $e$ | 0.0423489 | $i$ | 5.47703 | | +0.06498869 | +0.31391370 | |
| $P$ | 4.44 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.1− | 0.6− | 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 10 01 | 701 | 0.2+ | 0.0 |
| 1993 12 14 | 691 | 0.5+ | 0.6− | 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 10 01 | 701 | 0.5+ | 0.0 |
| 1993 12 14 | 691 | 0.1− | 0.8− | 2004 03 18 | 704 | 0.2+ | 0.5− | 2006 10 15 | 691 | 0.3+ | 0.4+ |
| 1997 11 01 | 691 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.3+ | 1.2+ | 2006 10 15 | 691 | 0.2+ | 0.2+ |
| 1997 11 01 | 691 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.2− | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 1997 11 01 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.5− | 1.3+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2000 04 06 | 704 | 0.4+ | 0.9+ | 2004 03 18 | 704 | 0.2− | 1.0+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2000 04 06 | 704 | 0.2+ | 0.8− | 2004 03 20 | 704 | (0.2− | 1.8+) | 2006 10 19 | 644 | 0.2− | 0.6+ |
| 2000 04 06 | 704 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.7− | 1.1+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2000 04 06 | 704 | 0.4− | 0.8− | 2004 03 20 | 704 | 0.2− | 1.1+ | 2006 10 21 | 703 | 0.7+ | 1.1− |
| 2000 04 10 | 695 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2000 04 10 | 695 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.7+ | 1.2+ | 2006 10 21 | 703 | 0.1+ | 0.3+ |
| 2000 04 29 | 704 | 0.0 | 1.0+ | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2000 04 29 | 704 | 0.9+ | 0.3− | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2000 04 29 | 704 | 0.5− | 0.4+ | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2000 04 29 | 704 | 0.4+ | 1.4+ | 2004 03 27 | 704 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2000 05 01 | 699 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2000 05 01 | 699 | 0.5− | 0.1+ | 2004 03 27 | 704 | 0.9+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2000 05 01 | 699 | 0.6+ | 0.2− | 2004 03 27 | 704 | 1.0+ | 0.0 | 2006 10 28 | 691 | 0.4− | 0.4+ |
| 2000 05 01 | 699 | 0.7+ | 0.2+ | 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.5+ |
| 2001 07 20 | 699 | (1.0+ | 1.7+) | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2001 07 20 | 699 | (2.0− | 3.0+) | 2004 04 13 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.6− |
| 2001 07 20 | 699 | (1.7− | 1.5+) | 2004 04 21 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.2+ |
| 2001 07 20 | 699 | 0.3− | 0.4+ | 2004 04 21 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2004 03 16 | 703 | (1.7− | 1.1+) | 2004 04 21 | 691 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.7− |
| 2004 03 16 | 703 | (4.0+ | 0.6+) | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 2.0+ |
| 2004 03 16 | 703 | 0.9+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2004 03 16 | 703 | 0.1+ | 0.9+ | 2006 09 25 | G96 | 0.9− | 1.3+ | 2006 11 21 | 704 | 0.7− | 1.0+ |
| 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1− | | | | |

**(138380)∗ 2000 GM$_{157}$**

Discovered 2000 Apr. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.60854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22320110 | $\omega$ | 306.79534 | | −0.79585281 | +0.57096187 | |
| $a$ | 2.6915668 | $\Omega$ | 268.88450 | | −0.47120898 | −0.79306863 | |
| $e$ | 0.1445220 | $i$ | 11.62962 | | −0.38023728 | −0.21223734 | |
| $P$ | 4.42 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 10 | 704 | 1.3− | 0.5− | 2001 07 16 | 699 | 0.0 | 0.9+ | 2004 01 17 | 608 | 0.6− | 0.6− |
| 2000 01 10 | 704 | 1.5− | 0.7+ | 2001 08 16 | 644 | 1.1− | 0.6− | 2004 01 17 | 608 | 0.4− | 0.7− |
| 2000 01 10 | 704 | 1.0− | 0.2+ | 2001 08 16 | 644 | 0.9− | 0.9− | 2004 01 17 | 608 | 0.5− | 0.8− |
| 2000 03 09 | 704 | 0.1+ | 0.0 | 2001 08 16 | 644 | 0.9− | 0.6− | 2004 01 29 | 704 | 0.6+ | 0.0 |
| 2000 03 09 | 704 | 0.7+ | 0.4− | 2001 08 25 | 704 | 0.5+ | 0.4− | 2004 01 29 | 704 | 0.2+ | 0.0 |
| 2000 03 09 | 704 | 0.9+ | 0.6− | 2001 08 25 | 704 | 0.1+ | 0.6+ | 2004 01 29 | 704 | 0.6+ | 0.4+ |
| 2000 03 09 | 704 | 0.6− | 0.4− | 2001 08 25 | 704 | 0.1+ | 0.3+ | 2004 01 29 | 704 | 0.5+ | 1.1+ |
| 2000 04 05 | 699 | 1.0+ | 0.3+ | 2001 08 25 | 704 | 0.4− | 0.3+ | 2004 01 29 | 704 | 0.3+ | 1.0+ |
| 2000 04 05 | 699 | 1.3+ | 0.3+ | 2001 08 25 | 704 | 0.1− | 0.4+ | 2004 02 17 | 704 | 0.0 | 0.1− |
| 2000 04 05 | 699 | 1.7+ | 0.3+ | 2002 11 14 | 644 | 0.3− | 0.5+ | 2004 02 17 | 704 | 0.1+ | 0.9+ |
| 2000 04 05 | 699 | 1.8+ | 0.1− | 2002 11 14 | 644 | 0.1− | 0.4+ | 2004 02 17 | 704 | 0.3− | 0.1− |
| 2000 04 07 | 704 | 0.1− | 0.2− | 2002 11 14 | 644 | 0.0 | 0.3+ | 2004 02 17 | 704 | 0.2− | 0.7+ |
| 2000 04 07 | 704 | 0.3− | 0.2+ | 2003 12 01 | 704 | 0.0 | 1.4+ | 2006 08 29 | 699 | 0.5+ | 0.2+ |
| 2000 04 07 | 704 | 0.6+ | 0.3− | 2003 12 01 | 704 | 0.6+ | 0.1− | 2006 08 29 | 699 | 0.6− | 0.3+ |
| 2000 04 07 | 704 | 0.4− | 1.0+ | 2003 12 01 | 704 | 0.4− | 0.2+ | 2006 08 29 | 699 | 0.4+ | 0.7+ |
| 2000 04 07 | 704 | 0.0 | 0.1+ | 2003 12 01 | 704 | 0.6− | 0.7+ | 2006 08 29 | 699 | 0.3+ | 1.0+ |
| 2000 04 08 | 699 | 0.3− | 0.3− | 2003 12 01 | 704 | 0.1+ | 1.1− | 2006 09 06 | 644 | 0.1+ | 0.8+ |
| 2000 04 08 | 699 | 0.1− | 0.3+ | 2003 12 18 | 644 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.2+ |
| 2000 04 08 | 699 | 1.2+ | 0.8+ | 2003 12 18 | 644 | 0.1+ | 0.4+ | 2006 09 06 | 644 | 0.0 | 0.5+ |
| 2000 04 08 | 699 | 0.1+ | 0.2+ | 2003 12 18 | 644 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2000 05 02 | 699 | 0.2+ | 0.1+ | 2003 12 21 | 608 | 0.5− | 0.1− | 2006 09 14 | 644 | 0.3+ | 0.2+ |
| 2000 05 02 | 699 | 0.1− | 0.3+ | 2003 12 21 | 608 | 0.0 | 0.6+ | 2006 09 14 | 644 | 0.1+ | 0.3+ |
| 2000 05 02 | 699 | 0.4− | 0.2+ | 2003 12 21 | 608 | 0.2− | 0.5− | 2006 09 28 | 703 | 0.1− | 0.6+ |
| 2000 05 02 | 699 | 0.0 | 0.3+ | 2003 12 22 | 704 | (0.6− | 1.6−) | 2006 09 28 | 703 | 0.5− | 0.1+ |
| 2001 06 16 | 699 | 0.3+ | 0.6− | 2003 12 22 | 704 | 0.7− | 0.3− | 2006 09 28 | 703 | 0.9− | 0.2− |
| 2001 06 16 | 699 | (0.9+ | 2.2+) | 2003 12 22 | 704 | 0.4− | 0.1− | 2006 09 28 | 703 | 0.7− | 0.8+ |
| 2001 06 16 | 699 | 0.5+ | 0.6+ | 2003 12 22 | 704 | 0.5− | 0.1+ | 2006 10 20 | 703 | 2.3+ | 0.1− |
| 2001 06 16 | 699 | (2.4+ | 0.7+) | 2003 12 22 | 704 | 1.1− | 0.1− | 2006 10 20 | 703 | 0.5− | 0.9− |
| 2001 07 16 | 699 | 0.8− | 0.2+ | 2004 01 13 | 644 | 0.0 | 0.2+ | 2006 10 20 | 703 | 0.8+ | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 699 | 0.5− | 0.5+ | 2004 01 13 | 644 | 0.1− | 0.3+ | 2006 10 20 | 703 | 1.1+ | 0.2+ | | |
| 2001 07 16 | 699 | 0.2− | 0.7+ | 2004 01 13 | 644 | 0.1+ | 0.1+ | | | | | | |

**(138381)∗ 2000 GL$_{162}$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 175.78903 | | (2000.0) | | | |
| $n$ | 0.23529566 | $\omega$ | 146.46632 | | −0.85029148 | +0.47326284 |
| $a$ | 2.5985243 | $\Omega$ | 63.42769 | | −0.52149190 | −0.69850582 |
| $e$ | 0.1424313 | $i$ | 14.92010 | | −0.07106751 | −0.53676057 |
| $P$ | 4.19 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.1+ | 1.2+ | 2002 11 12 | 644 | 0.1− | 0.3+ | 2005 08 06 | E12 | 0.4− | 0.5+ | | |
| 2000 02 03 | 704 | 0.5+ | 1.1+ | 2002 11 22 | 644 | 0.5− | 0.3+ | 2005 08 06 | E12 | 0.7− | 0.3+ | | |
| 2000 02 03 | 704 | 1.1+ | 0.9+ | 2002 11 22 | 644 | 0.3− | 0.0 | 2005 08 06 | E12 | 0.2− | 0.4+ | | |
| 2000 02 03 | 704 | 0.6+ | 0.0 | 2002 11 22 | 644 | 0.1− | 0.3+ | 2005 08 06 | E12 | 0.3− | 1.1+ | | |
| 2000 03 04 | 704 | 0.2− | 0.6+ | 2002 12 01 | 704 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.4− | 1.2+ | | |
| 2000 03 04 | 704 | 0.3− | 0.7+ | 2002 12 01 | 704 | 0.2− | 0.1− | 2006 09 29 | 699 | 0.6+ | 0.5+ | | |
| 2000 03 04 | 704 | 0.5− | 0.6+ | 2002 12 01 | 704 | 0.6− | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.0 | | |
| 2000 03 04 | 704 | 0.3− | 0.2+ | 2002 12 01 | 704 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.5− | 1.4+ | | |
| 2000 03 04 | 704 | 0.5− | 1.4+ | 2002 12 01 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2000 04 02 | 704 | 0.3− | 0.3+ | 2003 12 30 | 704 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2000 04 02 | 704 | 0.5+ | 0.4+ | 2003 12 30 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2000 04 02 | 704 | 0.4− | 0.4+ | 2003 12 30 | 704 | 0.1− | 1.0− | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2000 04 02 | 704 | 1.8+ | 1.3+ | 2004 01 02 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2000 04 08 | 704 | 1.0+ | 0.4+ | 2004 01 02 | 704 | 0.7+ | 0.6− | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2000 04 08 | 704 | 0.3+ | 1.3+ | 2004 01 02 | 704 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2000 04 08 | 704 | 0.0 | 0.8+ | 2004 01 02 | 704 | 0.1+ | 0.8− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2000 04 08 | 704 | 0.5+ | 0.2+ | 2004 01 30 | 703 | (2.7+ | 2.1+) | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2000 04 08 | 704 | 0.8+ | 0.3+ | 2004 01 30 | 703 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2000 04 09 | 608 | 0.3+ | 0.2− | 2004 01 30 | 703 | 0.5− | 1.2− | 2006 10 12 | 644 | 0.0 | 0.4+ | | |
| 2000 04 09 | 608 | 0.0 | 0.2+ | 2004 01 30 | 703 | 1.2− | 0.9− | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2000 04 09 | 608 | 0.4+ | 0.1− | 2004 02 02 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.4+ | | |
| 2000 05 02 | 608 | 1.1+ | 0.1− | 2004 02 02 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 1.1− | 0.2+ | | |
| 2000 05 02 | 608 | 0.8+ | 1.1− | 2004 02 02 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 1.2+ | 0.5+ | | |
| 2000 05 02 | 608 | 0.3+ | 0.7− | 2004 02 02 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 1.3+ | 1.1+ | | |
| 2002 10 30 | 644 | 0.2− | 0.6− | 2004 02 02 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 703 | (2.5− | 1.3−) | | |
| 2002 10 30 | 644 | 0.0 | 0.2− | 2004 02 10 | 644 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.6− | 1.0− | | |
| 2002 10 30 | 644 | 0.1+ | 0.5− | 2004 02 10 | 644 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.1− | | |
| 2002 11 03 | 608 | 0.6− | 0.3+ | 2004 02 10 | 644 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.1+ | | |
| 2002 11 03 | 608 | 0.8− | 0.1+ | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.3− | 0.2+ | | |
| 2002 11 03 | 608 | 0.2− | 0.2+ | 2004 02 10 | 644 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.5+ | | |
| 2002 11 07 | 704 | 0.6+ | 1.2+ | 2004 02 10 | 644 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2002 11 07 | 704 | 0.8+ | 0.2+ | 2004 03 08 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.7− | 0.7+ | | |
| 2002 11 07 | 704 | 1.1+ | 0.4+ | 2004 03 08 | 644 | 0.4+ | 0.1− | 2006 11 19 | 703 | 0.6− | 0.1− | | |
| 2002 11 07 | 704 | 0.1+ | 0.0 | 2004 03 08 | 644 | 0.3+ | 0.2− | 2006 11 19 | 703 | 0.4+ | 0.7+ | | |
| 2002 11 11 | 704 | 0.3− | 0.4− | 2004 03 17 | 644 | 0.3+ | 0.1− | 2006 11 19 | 703 | 0.5+ | 1.0+ | | |
| 2002 11 11 | 704 | 1.1− | 1.3− | 2004 03 17 | 644 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.6− | | |
| 2002 11 11 | 704 | 0.1− | 0.5+ | 2004 03 17 | 644 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.5− | | |
| 2002 11 11 | 704 | 0.1+ | 0.4+ | 2005 06 03 | E12 | 0.7− | 1.2+ | 2006 11 24 | G96 | 0.0 | 0.6− | | |
| 2002 11 11 | 704 | 0.8− | 0.8+ | 2005 06 03 | E12 | 0.5− | 0.7+ | 2006 11 24 | G96 | 0.3+ | 0.1− | | |
| 2002 11 12 | 644 | 0.0 | 0.1+ | 2005 06 03 | E12 | (1.9+ | 0.2−) | | | | | | |
| 2002 11 12 | 644 | 0.2+ | 0.2+ | 2005 06 03 | E12 | 0.2+ | 0.8+ | | | | | | |

**(138382)∗ 2000 GM$_{162}$ = 1996 GL$_{14}$**

Discovered 2000 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 1291)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.58910 | | (2000.0) | | | |
| $n$ | 0.23653463 | $\omega$ | 89.04179 | | −0.49287584 | −0.86074396 |
| $a$ | 2.5894422 | $\Omega$ | 31.52839 | | +0.66966683 | −0.46863723 |
| $e$ | 0.0856528 | $i$ | 14.08433 | | +0.55553554 | −0.19874352 |
| $P$ | 4.17 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.4+ | 0.7+ | 2002 10 11 | 644 | 0.3− | 0.5+ | 2004 03 30 | 703 | 1.0+ | 0.6+ | | |
| 1996 04 12 | 691 | 0.3+ | 0.6+ | 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 03 30 | 703 | 0.6+ | 0.8+ | | |
| 1996 04 12 | 691 | 0.1+ | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.3+ | 2004 03 30 | 703 | 1.1+ | 0.3+ | | |
| 1996 04 19 | 691 | 0.4+ | 1.0+ | 2002 10 11 | 644 | 0.4− | 0.5+ | 2004 03 30 | 703 | 0.3− | 1.0+ | | |
| 1996 04 19 | 691 | 0.5+ | 0.8+ | 2002 11 01 | 704 | 0.0 | 0.2− | 2004 04 13 | 703 | 0.8− | 0.3− | | |
| 1996 04 19 | 691 | 0.6+ | 0.8+ | 2002 11 01 | 704 | 0.4+ | 0.3+ | 2004 04 13 | 703 | 1.4− | 0.5+ | | |
| 2000 03 12 | 703 | 0.7+ | 0.7+ | 2002 11 01 | 704 | 0.3− | 0.5+ | 2004 04 13 | 703 | 0.6− | 0.1+ | | |
| 2000 03 12 | 703 | 0.3+ | 0.4− | 2002 11 06 | 704 | 0.8+ | 0.3− | 2004 04 13 | 703 | 0.5− | 0.0 | | |
| 2000 03 12 | 703 | 0.2− | 0.6− | 2002 11 06 | 704 | 0.3+ | 0.5− | 2006 09 12 | 703 | 0.1− | 0.0 | | |
| 2000 03 12 | 703 | 0.5+ | 0.4+ | 2002 11 06 | 704 | 0.4+ | 0.0 | 2006 09 12 | 703 | 0.5− | 0.4+ | | |
| 2000 03 12 | 704 | 0.3+ | 1.0+ | 2002 11 06 | 704 | 0.5+ | 0.7− | 2006 09 12 | 703 | 0.4− | 1.3+ | | |
| 2000 03 12 | 704 | 0.3+ | 0.6+ | 2002 11 10 | 704 | 0.7+ | 0.5+ | 2006 09 12 | 703 | 0.3+ | 0.9+ | | |
| 2000 03 12 | 704 | 0.7+ | 1.2+ | 2002 11 10 | 704 | 1.3− | 0.2− | 2006 09 18 | 703 | 1.4− | 0.5+ | | |
| 2000 03 12 | 704 | 0.8+ | 1.4+ | 2002 11 10 | 704 | 0.4+ | 0.3− | 2006 09 18 | 703 | 0.7− | 0.1+ | | |
| 2000 03 29 | 704 | 0.2+ | 0.5+ | 2002 11 10 | 704 | 0.5− | 0.7+ | 2006 09 18 | 703 | 1.1− | 0.6+ | | |
| 2000 03 29 | 704 | 0.2+ | 0.3+ | 2002 11 11 | 704 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.8− | 0.6+ | | |
| 2000 03 29 | 704 | 0.2+ | 0.6+ | 2002 11 11 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 704 | (1.6− | 1.6+) | | |
| 2000 03 29 | 704 | 0.2+ | 0.6+ | 2002 11 11 | 704 | 0.2− | 0.6+ | 2006 09 22 | 704 | 0.1− | 0.4+ | | |
| 2000 03 29 | 704 | 0.0 | 0.6+ | 2002 11 22 | 644 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 1.4− | 0.9+ | | |
| 2000 04 08 | 704 | 1.3+ | 0.6+ | 2002 11 22 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.1+ | 1.1+ | | |
| 2000 04 08 | 704 | 0.7+ | 0.3− | 2002 11 22 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 704 | (1.6− | 1.5+) | | |
| 2000 04 08 | 704 | 0.4+ | 0.0 | 2002 12 11 | 704 | 0.3− | 0.5− | 2006 09 26 | 704 | 0.6− | 0.1+ | | |
| 2000 04 08 | 704 | 0.5+ | 0.6+ | 2002 12 11 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | (0.2− | 2.0+) | | |
| 2000 04 08 | 704 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.7− | 0.1− | 2006 09 26 | 704 | 0.7− | 1.0− | | |
| 2000 04 11 | 608 | 0.3+ | 1.2− | 2003 12 29 | 704 | (1.5− | 0.2−) | 2006 09 30 | 703 | 0.3− | 0.5− | | |
| 2000 04 11 | 608 | 0.5+ | 1.1− | 2003 12 29 | 704 | 0.5− | 0.1+ | 2006 09 30 | 704 | 1.1− | 0.7+ | | |
| 2000 04 11 | 608 | 0.3+ | 0.9− | 2003 12 29 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.5− | 0.6+ | | |
| 2000 05 04 | 704 | 0.1+ | 0.1+ | 2003 12 29 | 704 | (1.6− | 1.2+) | 2006 09 30 | 703 | 0.8− | 0.4− | | |
| 2000 05 04 | 704 | 0.0 | 0.6+ | 2004 01 30 | 704 | 1.3+ | 0.3− | 2006 09 30 | 704 | 0.8− | 1.2+ | | |
| 2000 05 04 | 704 | 1.0+ | 0.9+ | 2004 01 30 | 704 | 1.1+ | 0.1− | 2006 09 30 | 703 | 0.6− | 1.1+ | | |
| 2000 05 04 | 704 | 0.1+ | 1.3+ | 2004 01 30 | 704 | 0.9+ | 0.5+ | 2006 09 30 | 704 | 0.4+ | 1.3+ | | |
| 2000 05 04 | 704 | 1.2+ | 0.7+ | 2004 01 30 | 704 | 0.8+ | 0.1− | 2006 09 30 | 704 | 0.6− | 1.2+ | | |
| 2002 10 02 | 704 | 1.1− | 1.0+ | 2004 01 30 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.7+ | 1.2+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.8− | 2004 02 16 | 704 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.9+ | | |
| 2002 10 02 | 704 | (0.6+ | 1.7+) | 2004 02 16 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.5+ | | |
| 2002 10 02 | 704 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.4− | 1.1+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.4+ | 2004 02 16 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2002 10 03 | 704 | 0.8− | 0.0 | 2004 02 16 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4+ | | |
| 2002 10 03 | 704 | (0.2+ | 1.6−) | 2004 03 14 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.3− | 2004 03 14 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.7+ | | |
| 2002 10 07 | 704 | 0.0 | 0.2− | 2004 03 14 | 704 | 0.2− | 0.4+ | 2006 10 22 | 703 | 1.0− | 0.5+ | | |
| 2002 10 07 | 704 | 0.5− | 0.9+ | 2004 03 14 | 704 | 0.4− | 0.2+ | 2006 10 22 | 703 | 1.5− | 0.5− | | |
| 2002 10 07 | 704 | 0.6− | 0.3+ | 2004 03 14 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.8+ | | |
| 2002 10 09 | 704 | 0.1+ | 0.2+ | 2004 03 18 | 703 | (3.5+ | 1.7−) | 2006 11 06 | 644 | 0.2− | 0.5+ | | |
| 2002 10 09 | 704 | 0.6− | 0.3+ | 2004 03 18 | 644 | 0.1− | 0.3− | 2006 11 06 | 644 | 0.3− | 0.2+ | | |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2004 03 18 | 703 | 0.7− | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.2+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.9+ | 2004 03 18 | 703 | 0.6− | 0.9− | 2006 11 06 | 644 | 0.2− | 0.7+ | | |
| 2002 10 09 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 644 | 0.0 | 0.3− | 2006 11 06 | 644 | 0.4− | 1.0+ | | |
| 2002 10 10 | 291 | 0.3− | 0.1− | 2004 03 18 | 703 | 0.2+ | 0.3− | 2006 11 06 | 644 | 0.4− | 0.4+ | | |
| 2002 10 10 | 291 | 0.1− | 0.0 | 2004 03 18 | 644 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2− | 0.1+ | | |
| 2002 10 10 | 291 | 0.1− | 0.1+ | 2004 03 25 | 704 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.0 | | |
| 2002 10 11 | 644 | 0.3− | 0.5+ | 2004 03 25 | 704 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2002 10 11 | 704 | 0.3− | 0.2+ | 2004 03 25 | 704 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2004 03 25 | 704 | 0.1+ | 0.2− | | | | | | |

**(138383)∗ 2000 GA$_{163}$**

Discovered 2000 Apr. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.98374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21169445 | $\omega$ | 193.73997 | | +0.30897029 | +0.93200714 | |
| $a$ | 2.7882373 | $\Omega$ | 94.51742 | | −0.85365080 | +0.35959451 | |
| $e$ | 0.1981434 | $i$ | 10.95649 | | −0.41930619 | −0.04532638 | |
| $P$ | 4.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 30 | 691 | 0.7+ | 0.1+ | 2000 05 04 | 704 | 0.3+ | 0.1− | 2005 06 05 | 704 | 0.1− | 0.1+ | |
| 1998 01 30 | 691 | 0.2+ | 0.1− | 2000 05 04 | 704 | 0.4+ | 0.1+ | 2005 06 05 | 704 | 0.4+ | 0.7− | |
| 1998 01 30 | 691 | 0.6+ | 0.1+ | 2000 05 04 | 704 | 0.1− | 0.2+ | 2005 06 17 | G96 | 0.5− | 0.1− | |
| 2000 04 07 | 699 | 1.1− | 1.0+ | 2000 05 04 | 704 | 0.9+ | 0.6+ | 2005 06 17 | G96 | 0.2+ | 0.2− | |
| 2000 04 07 | 699 | 1.5− | 0.6+ | 2000 05 04 | 704 | 0.1+ | 0.3− | 2005 07 04 | 704 | 0.4− | 0.0 | |
| 2000 04 07 | 699 | 0.2+ | 1.4− | 2000 05 04 | 704 | 0.5+ | 0.6+ | 2005 07 04 | 704 | 0.3+ | 0.9− | |
| 2000 04 07 | 699 | 0.8− | 0.6+ | 2000 05 26 | 699 | 0.1+ | 0.0 | 2005 07 04 | 704 | 0.1+ | 0.2+ | |
| 2000 04 09 | 699 | 0.6− | 1.8+ | 2000 05 26 | 699 | 0.4+ | 0.6+ | 2005 07 04 | 704 | 1.1+ | 0.1+ | |
| 2000 04 09 | 699 | 0.8+ | 0.1− | 2000 05 26 | 699 | 0.8+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.6+ | |
| 2000 04 09 | 699 | 0.1+ | 0.3+ | 2000 05 26 | 699 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.8+ | |
| 2000 04 09 | 699 | 1.6− | 0.9+ | 2001 09 12 | 704 | 0.6− | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.7+ | |
| 2000 04 13 | 704 | 0.7+ | 1.7+ | 2001 09 12 | 704 | 0.6− | 0.8+ | 2006 10 16 | 703 | 0.4− | 0.7+ | |
| 2000 04 13 | 704 | 0.9+ | 0.6+ | 2001 09 12 | 704 | 0.4− | 1.0+ | 2006 10 16 | 703 | 1.2− | 1.2+ | |
| 2000 04 13 | 704 | 0.0 | 1.2+ | 2001 09 12 | 704 | 0.8− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 1.2+ | |
| 2000 04 13 | 704 | 0.8+ | 1.5+ | 2001 10 14 | 644 | 0.7− | 0.8+ | 2006 10 16 | 703 | (4.1− | 4.5+) | |
| 2000 04 27 | 699 | 0.4− | 0.3− | 2001 10 14 | 644 | 1.0− | 1.1+ | 2006 10 22 | 703 | 0.0 | 0.0 | |
| 2000 04 27 | 699 | 0.9+ | 0.1+ | 2001 10 14 | 644 | 0.9− | 0.3+ | 2006 10 22 | 703 | (0.6− | 1.7+) | |
| 2000 04 27 | 699 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.0 | 1.4+ | 2006 10 22 | 703 | 0.5+ | 0.3− | |
| 2000 04 27 | 699 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.2− | 0.7+ | 2006 10 22 | 703 | 0.1− | 0.3+ | |
| 2000 05 04 | 704 | 0.4− | 0.4− | 2004 02 15 | 704 | 0.6+ | 0.6− | 2006 11 13 | 703 | 1.1− | 0.1− | |
| 2000 05 04 | 704 | 0.6+ | 0.2− | 2004 02 15 | 704 | 0.6+ | 0.9+ | 2006 11 13 | 703 | 0.4+ | 1.1− | |
| 2000 05 04 | 704 | 0.1− | 0.4+ | 2005 06 05 | 704 | 0.4+ | 0.9− | 2006 11 13 | 703 | 1.0− | 0.3− | |
| 2000 05 04 | 704 | 0.0 | 0.0 | 2005 06 05 | 704 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.8− | 0.6+ | |

**(138384)∗ 2000 GJ$_{164}$ = 2004 CR$_{92}$**

Discovered 2000 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60669)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.53978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23934713 | $\omega$ | 222.67934 | | −0.95351133 | −0.30062811 | |
| $a$ | 2.5691171 | $\Omega$ | 299.81415 | | +0.28259249 | −0.86782828 | |
| $e$ | 0.1412003 | $i$ | 1.38356 | | +0.10467869 | −0.39559678 | |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.2− | 0.0 | 2004 02 18 | 704 | 1.3+ | 0.2− | 2004 03 30 | 691 | 0.2− | 0.4+ | |
| 2000 02 12 | 645 | 0.3− | 0.0 | 2004 02 18 | 704 | 1.1+ | 0.8+ | 2004 03 30 | 691 | 0.3− | 0.2+ | |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2004 02 18 | 704 | 0.4+ | 0.1− | 2005 06 03 | 691 | 0.4− | 0.1+ | |
| 2000 03 03 | 645 | 0.1+ | 0.2− | 2004 02 18 | 608 | 0.4− | 0.4− | 2005 06 03 | 691 | 0.2+ | 0.1+ | |
| 2000 03 11 | 704 | 0.4+ | 0.5− | 2004 02 18 | 608 | 0.6− | 0.2− | 2005 06 03 | 691 | 0.1+ | 0.5− | |
| 2000 03 11 | 704 | 0.3+ | 0.5+ | 2004 02 18 | 608 | 0.4− | 0.3+ | 2005 06 08 | 691 | 0.1+ | 0.1+ | |
| 2000 03 11 | 704 | 0.4− | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.0 | 2005 06 08 | 691 | 0.1− | 0.1− | |
| 2000 03 11 | 704 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2005 06 08 | 691 | 0.2+ | 0.1− | |
| 2000 03 11 | 704 | 0.7− | 0.0 | 2004 02 26 | 704 | 0.5− | 0.2− | 2006 10 17 | 703 | 1.3− | 0.8+ | |
| 2000 04 05 | 704 | 0.9+ | 0.4+ | 2004 02 26 | 704 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.9− | 0.3− | |
| 2000 04 05 | 704 | 1.1+ | 0.7− | 2004 02 26 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 1.1+ | 0.2+ | |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2004 03 15 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.3+ | 1.0− | |
| 2000 04 05 | 704 | 1.5+ | 0.3+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− | |
| 2000 04 10 | 695 | 0.2− | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.6+ | 0.1− | |
| 2000 04 10 | 695 | 0.2− | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2006 10 19 | G96 | 0.6+ | 0.1− | |
| 2004 02 12 | 644 | 0.6− | 0.2− | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.2− | |
| 2004 02 12 | 644 | 0.4− | 0.3+ | 2004 03 18 | 704 | 1.2+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.1− | |
| 2004 02 12 | 644 | 0.5− | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.2− | |
| 2004 02 14 | 608 | 0.1+ | 0.4− | 2004 03 18 | 704 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.2+ | 0.3− | |
| 2004 02 14 | 608 | 0.3+ | 0.7− | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 11 15 | G96 | 0.5+ | 0.4− | |
| 2004 02 14 | 608 | 0.0 | 0.3− | 2004 03 30 | 691 | 0.1− | 0.1+ | | | | | |

**(138385)∗ 2000 GZ$_{168}$ = 2001 SU$_{72}$**

Discovered 2000 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17312)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.69968 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37857221 | $\omega$ | 140.78237 | | −0.93849459 | +0.16899014 | |
| $a$ | 1.8925044 | $\Omega$ | 51.66549 | | −0.32187699 | −0.74383268 | |
| $e$ | 0.0270577 | $i$ | 22.57410 | | +0.12499247 | −0.64664927 | |
| $P$ | 2.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 0.2+ | 0.1+ | 2001 10 24 | 333 | 0.6+ | 0.4+ | 2002 01 23 | 704 | 0.7− | 0.8− | |
| 2000 03 27 | 699 | 0.1+ | 0.2+ | 2001 10 24 | 333 | 0.6− | 1.1+ | 2002 01 23 | 704 | 0.9+ | 0.6+ | |
| 2000 03 27 | 699 | 0.1− | 0.3− | 2001 10 24 | 333 | 0.2+ | 0.1− | 2002 01 23 | 704 | 0.2− | 0.1− | |
| 2000 03 27 | 699 | 0.3+ | 1.0+ | 2001 10 24 | 704 | 0.5+ | 0.2+ | 2004 12 16 | 703 | 0.6− | 0.6− | |
| 2000 04 04 | 704 | 0.6+ | 0.1− | 2001 10 24 | 704 | 0.3− | 0.5− | 2004 12 16 | 703 | 0.1+ | 0.5− | |
| 2000 04 04 | 704 | 0.3− | 1.1+ | 2001 10 24 | 704 | 0.4+ | 0.4− | 2004 12 16 | 703 | 0.8− | 1.1− | |
| 2000 04 04 | 704 | 0.1− | 0.7+ | 2001 10 24 | 704 | 0.1+ | 0.3+ | 2004 12 16 | 703 | 0.4+ | 1.0− | |
| 2000 04 04 | 704 | 0.4+ | 0.7+ | 2001 10 24 | 704 | 0.7+ | 0.7+ | 2005 02 28 | 704 | (2.9+ | 1.0−) | |
| 2000 04 04 | 704 | 0.6+ | 0.1− | 2001 11 09 | 704 | 0.4− | 0.4+ | 2005 02 28 | 704 | (1.4+ | 2.2−) | |
| 2000 04 10 | 608 | 0.3− | 0.4− | 2001 11 09 | 704 | 0.3− | 0.5− | 2005 02 28 | 704 | (1.5− | 1.1−) | |
| 2000 04 10 | 608 | 0.3− | 0.2− | 2001 11 09 | 704 | 0.1− | 0.1+ | 2005 02 28 | 704 | (0.2+ | 1.6+) | |
| 2000 04 10 | 608 | 0.1− | 0.5− | 2001 11 09 | 704 | 0.1− | 0.1+ | 2005 04 01 | 704 | 0.1− | 0.4− | |
| 2000 04 11 | 608 | 0.3− | 0.1− | 2001 11 09 | 644 | 0.4− | 0.2+ | 2005 04 01 | 704 | 0.4+ | 0.3+ | |
| 2000 04 11 | 608 | 0.1+ | 0.2− | 2001 11 09 | 644 | 0.0 | 0.3+ | 2005 04 01 | 704 | 0.7− | 0.1− | |
| 2000 04 11 | 608 | (0.0 | 2.7+) | 2001 11 09 | 644 | 0.2− | 0.2+ | 2005 05 06 | 703 | (0.1+ | 1.5+) | |
| 2000 04 28 | 704 | 0.2− | 0.9+ | 2001 11 12 | 704 | 0.5− | 0.5+ | 2005 05 06 | 703 | 1.2+ | 0.9+ | |
| 2000 04 28 | 704 | 0.4+ | 0.6+ | 2001 11 12 | 704 | 0.6− | 0.7+ | 2005 05 06 | 703 | (1.7+ | 0.0 ) | |
| 2000 04 28 | 704 | 1.0+ | 0.5+ | 2001 11 12 | 704 | 0.4+ | 0.2+ | 2005 05 06 | 703 | 1.0+ | 0.8+ | |
| 2000 04 28 | 704 | 0.8+ | 0.3− | 2001 11 12 | 704 | 0.4− | 0.5+ | 2006 09 22 | 703 | 0.5− | 0.7− | |
| 2000 04 28 | 699 | 0.0 | 0.9+ | 2001 11 12 | 704 | 0.3− | 0.5+ | 2006 09 22 | 703 | 0.6− | 0.1− | |
| 2000 04 28 | 699 | 0.4+ | 0.8+ | 2001 11 16 | 644 | 0.3+ | 0.8− | 2006 09 22 | 703 | 0.8− | 0.4+ | |
| 2000 04 28 | 699 | 0.3+ | 0.1+ | 2001 11 16 | 644 | 0.3+ | 0.8− | 2006 09 24 | 699 | 0.5− | 0.8+ | |
| 2000 04 28 | 699 | 0.9+ | 0.9+ | 2001 11 16 | 644 | 0.2+ | 1.0− | 2006 09 24 | 699 | 0.0 | 0.2− | |
| 2001 09 17 | 704 | 0.4− | 0.1− | 2001 11 17 | 644 | 0.3+ | 0.2+ | 2006 09 24 | 699 | 0.3+ | 0.8+ | |
| 2001 09 17 | 704 | 0.1− | 0.4− | 2001 11 17 | 644 | 0.3+ | 0.3+ | 2006 09 24 | 699 | 0.2+ | 0.1+ | |
| 2001 09 17 | 704 | 0.4− | 0.4+ | 2001 11 17 | 644 | 0.6− | 0.1− | 2006 09 27 | 703 | 0.3− | 0.3+ | |
| 2001 09 17 | 704 | 0.1+ | 0.2+ | 2001 11 19 | 704 | 0.5− | 0.4+ | 2006 09 27 | 703 | 1.3− | 0.3− | |
| 2001 09 19 | 704 | 1.3− | 1.3+ | 2001 11 19 | 704 | 0.7− | 0.1− | 2006 09 27 | 703 | 0.7− | 0.8+ | |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2001 11 19 | 704 | 0.6− | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.5+ | |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2001 11 19 | 704 | 0.3− | 0.7+ | 2006 10 25 | E12 | (0.2− | 2.0+) | |
| 2001 10 17 | 704 | 0.0 | 1.0+ | 2001 11 19 | 704 | 0.1− | 0.3+ | 2006 10 25 | E12 | 0.0 | 0.3+ | |
| 2001 10 17 | 704 | (0.9+ | 1.8+) | 2001 11 24 | 704 | 0.4− | 0.7+ | 2006 10 25 | E12 | 0.1+ | 0.3+ | |
| 2001 10 17 | 704 | 0.6+ | 0.6+ | 2001 11 24 | 704 | 0.0 | 0.4+ | 2006 10 25 | E12 | 0.3+ | 0.2+ | |
| 2001 10 17 | 704 | 0.5+ | 0.9+ | 2001 11 24 | 704 | 0.4+ | 0.2− | 2006 10 31 | 703 | 0.0 | 1.2+ | |
| 2001 10 20 | 704 | 0.5+ | 0.8− | 2001 11 24 | 704 | 0.5+ | 0.4− | 2006 10 31 | 703 | (2.1− | 0.6+) | |
| 2001 10 20 | 704 | 0.3+ | 0.7− | 2001 11 24 | 704 | 0.1− | 0.3− | 2006 10 31 | 703 | 0.5− | 0.7+ | |
| 2001 10 20 | 704 | 0.1− | 0.1− | 2001 12 10 | 704 | 0.4− | 0.3− | 2006 10 31 | 703 | 0.9− | 0.7+ | |
| 2001 10 22 | 704 | 0.3+ | 0.1+ | 2001 12 10 | 704 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.6+ | |
| 2001 10 22 | 704 | 0.7+ | 0.0 | 2001 12 10 | 704 | 0.2− | 1.0− | 2006 11 17 | 703 | 2.1+ | 2.3− | |
| 2001 10 22 | 704 | 0.9+ | 0.9− | 2002 01 08 | 704 | 0.9+ | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.4− | |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2002 01 08 | 704 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.5− | |
| 2001 10 23 | 704 | 0.1− | 0.4− | 2002 01 08 | 704 | 0.3− | 0.2+ | 2006 11 23 | 703 | 0.1+ | 0.1+ | |
| 2001 10 23 | 704 | 0.2+ | 0.3− | 2002 01 08 | 704 | 0.6− | 0.1− | 2006 11 23 | 703 | 0.2− | 0.5− | |
| 2001 10 23 | 704 | 0.5− | 0.1+ | 2002 01 08 | 704 | 0.9− | 0.3+ | 2006 11 23 | 703 | 0.4− | 1.7− | |
| 2001 10 23 | 704 | 0.3− | 0.0 | 2002 01 23 | 704 | 0.3+ | 0.6+ | 2006 11 23 | 703 | 0.5− | 0.6+ | |

**(138386)∗ 2000 GF$_{169}$**

Discovered 2000 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.09972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21697672 | $\omega$ | 248.31319 | | +0.54524088 | +0.81400506 | |
| $a$ | 2.7427988 | $\Omega$ | 56.29594 | | −0.65223673 | +0.56202543 | |
| $e$ | 0.1727708 | $i$ | 13.92987 | | −0.52659247 | +0.14670777 | |
| $P$ | 4.54 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 704 | 0.3+ | 0.9+ | 2001 10 18 | 699 | 0.2+ | 0.3+ | 2006 11 02 | 703 | (0.9+ | 1.7+) |
| 2000 04 04 | 704 | 0.2+ | 1.0+ | 2001 10 18 | 699 | 0.6+ | 0.7+ | 2006 11 02 | 703 | (1.7+ | 0.2+) |
| 2000 04 04 | 704 | 1.0+ | 0.9+ | 2001 10 18 | 699 | 0.2+ | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.0 |
| 2000 04 07 | 699 | 0.3− | 0.2+ | 2001 10 23 | 644 | 0.5− | 0.4+ | 2006 11 02 | 703 | 1.3− | 1.1+ |
| 2000 04 07 | 699 | 0.4+ | 1.0+ | 2001 10 23 | 644 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2000 04 07 | 699 | 0.0 | 1.0+ | 2001 10 23 | 644 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2000 04 07 | 699 | 0.4− | 0.1+ | 2002 12 10 | 644 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2000 04 09 | 699 | 1.2− | 1.5+ | 2002 12 10 | 644 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2000 04 09 | 699 | 0.2+ | 0.5+ | 2002 12 10 | 644 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2000 04 09 | 699 | 0.5+ | 0.6+ | 2004 03 14 | 704 | 0.0 | 0.7− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2000 04 09 | 699 | 1.4+ | 0.5+ | 2004 03 14 | 704 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2000 04 27 | 699 | 0.8+ | 0.9+ | 2004 03 14 | 704 | 0.4+ | 0.9+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2000 04 27 | 699 | 1.4+ | 1.5+ | 2004 03 14 | 704 | 1.0+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2000 04 27 | 699 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 1.0+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2000 04 27 | 699 | 1.3+ | 1.0+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2001 08 19 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.7+ | 0.3− | 2006 11 17 | 703 | 1.4− | 0.3+ |
| 2001 08 19 | 704 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 1.0+ | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2001 08 19 | 704 | 0.9− | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2001 08 19 | 704 | 0.7− | 0.8+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.8− | 0.9+ |
| 2001 08 19 | 704 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.6− | 2006 11 18 | 704 | 0.3+ | 1.1+ |
| 2001 09 11 | 704 | 0.4− | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 18 | 704 | (0.7+ | 1.7−) |
| 2001 09 11 | 704 | 0.5− | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2001 09 11 | 704 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.3− | 2006 11 21 | 704 | 0.4− | 1.0+ |
| 2001 10 15 | 704 | 0.5− | 0.5− | 2006 10 16 | 703 | (1.6+ | 0.1+) | 2006 11 21 | 704 | 0.3− | 1.1+ |
| 2001 10 15 | 704 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2001 10 15 | 704 | 0.6+ | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 1.0− | 0.8+ |
| 2001 10 15 | 704 | 0.4− | 0.9+ | 2006 10 18 | 691 | 0.4+ | 0.0 | | | | |
| 2001 10 18 | 699 | 0.1− | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | | | | |

**(138387)∗ 2000 GY$_{172}$ = 2002 TA$_{293}$**

Discovered 2000 Apr. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37500)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.43350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22874582 | $\omega$ | 338.60285 | | +0.97186382 | −0.19342012 | |
| $a$ | 2.6478940 | $\Omega$ | 33.45578 | | +0.23548738 | +0.78542093 | |
| $e$ | 0.1697269 | $i$ | 14.11276 | | +0.00513857 | +0.58796481 | |
| $P$ | 4.31 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.0 | 1.2+ | 2002 12 15 | 704 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.7+ | 0.2+ |
| 2000 03 29 | 704 | 0.3− | 0.4+ | 2002 12 15 | 704 | 0.3+ | 0.1− | 2006 09 22 | 704 | 0.4+ | 0.5+ |
| 2000 03 29 | 704 | 0.3− | 0.1− | 2002 12 15 | 704 | 0.7+ | 0.4+ | 2006 09 22 | 704 | 0.3+ | 0.3+ |
| 2000 04 02 | 699 | 0.3− | 0.0 | 2002 12 29 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.4+ | 0.6+ |
| 2000 04 02 | 699 | 0.1+ | 0.1+ | 2002 12 29 | 704 | 1.2+ | 0.6− | 2006 09 25 | 704 | 0.6− | 0.2+ |
| 2000 04 02 | 699 | 0.0 | 0.8+ | 2002 12 29 | 704 | 1.0+ | 0.4− | 2006 09 25 | 704 | 0.8− | 0.1+ |
| 2000 04 02 | 699 | 1.2+ | 0.6+ | 2003 01 07 | 704 | (2.1− | 0.1+) | 2006 09 25 | 704 | 0.7− | 0.5+ |
| 2000 04 07 | 704 | 0.4+ | 1.2+ | 2003 01 07 | 704 | 1.5− | 0.5− | 2006 09 26 | 704 | 0.3− | 0.7+ |
| 2000 04 07 | 704 | 0.4+ | 0.7+ | 2003 01 07 | 704 | (1.6− | 0.4−) | 2006 09 26 | 704 | 0.5− | 0.6+ |
| 2000 04 07 | 704 | 0.5+ | 0.8+ | 2003 01 07 | 704 | 1.1− | 0.1− | 2006 09 26 | 704 | 0.6− | 1.0+ |
| 2000 04 07 | 704 | 0.1+ | 0.1+ | 2003 01 13 | 704 | 0.0 | 1.2+ | 2006 09 26 | 704 | 0.3− | 0.7+ |
| 2000 04 08 | 704 | (1.8− | 2.6+) | 2003 01 13 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.4− | 0.5+ |
| 2000 04 08 | 704 | 0.3+ | 1.5+ | 2003 01 13 | 704 | 1.0− | 0.2− | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 2000 04 08 | 704 | 1.4+ | 0.8+ | 2003 12 20 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2002 09 06 | 704 | (1.7− | 0.7+) | 2003 12 20 | 704 | 0.1+ | 0.7− | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2002 09 06 | 704 | 0.6− | 0.3+ | 2003 12 20 | 704 | 0.1− | 0.7− | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 2002 09 06 | 704 | (2.1− | 1.3+) | 2003 12 20 | 704 | 1.1+ | 0.3+ | 2006 10 15 | 703 | 0.1+ | 0.6− |
| 2002 09 06 | 704 | 1.4− | 0.0 | 2004 01 27 | 703 | (1.8− | 0.4−) | 2006 10 15 | 703 | 0.4− | 0.2− |
| 2002 10 04 | 704 | 0.2+ | 0.2+ | 2004 01 27 | 703 | 0.4− | 1.2+ | 2006 10 15 | 703 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.2− | 2004 01 27 | 703 | 0.2− | 1.0− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2004 01 27 | 703 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.5+ | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.8− | 0.4− | 2004 02 17 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 10 | 704 | 0.4+ | 0.1− | 2004 02 17 | 704 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.5+ | 0.0 | 2004 02 17 | 704 | (1.6− | 0.2+) | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 10 | 704 | 0.8+ | 0.6− | 2004 02 17 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 2002 10 10 | 704 | 0.8+ | 0.6− | 2004 02 18 | 201 | 0.1+ | 0.7+ | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | 0.8+ | 0.1− | 2004 02 18 | 201 | 0.3− | 0.6+ | 2006 10 21 | 703 | 0.6+ | 0.0 |
| 2002 10 12 | 704 | 0.2+ | 0.0 | 2004 02 18 | 201 | 0.3+ | 0.7+ | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.0 | 2004 02 23 | 608 | 0.4+ | 0.8− | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.1− | 0.9− | 2004 02 23 | 608 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2002 10 12 | 704 | 0.2− | 0.9− | 2004 02 23 | 608 | 0.7+ | 0.6− | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.0 | 0.3+ | 2004 03 11 | 644 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 0.8− | 2004 03 11 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.7+ | 0.6− | 2004 03 11 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.2+ | 0.7− | 2004 03 11 | 644 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 704 | 0.5+ | 1.4− | 2004 03 11 | 644 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | 1.1+ | 0.4+ | 2004 03 11 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.6+ | 0.2+ | 2004 03 15 | 704 | 1.2+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.3+ | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 10 23 | 704 | 0.1+ | 0.5+ |
| 2002 11 06 | 704 | 0.8+ | 0.6+ | 2004 03 15 | 704 | 0.8+ | 0.0 | 2006 10 23 | 704 | 0.0 | 1.0+ |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.7+ | 2006 10 23 | 704 | 0.1+ | 0.3+ |
| 2002 11 15 | 704 | 0.4− | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 704 | 0.0 | 0.4+ |
| 2002 11 15 | 704 | 0.3− | 0.5− | 2004 03 23 | 704 | 0.5+ | 0.1− | 2006 10 23 | 704 | 0.2− | 0.8+ |
| 2002 11 15 | 704 | 0.6− | 1.0− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.2− | 0.0 |
| 2002 12 06 | 704 | (1.8+ | 0.2−) | 2004 03 23 | 704 | 0.0 | 0.2− | 2006 10 28 | 704 | 0.6− | 0.0 |
| 2002 12 06 | 704 | (2.1+ | 0.3+) | 2004 03 23 | 704 | 0.1− | 0.5+ | 2006 10 28 | 704 | 0.2+ | 0.5− |
| 2002 12 06 | 704 | (3.2+ | 1.6+) | 2004 03 23 | 704 | 0.6+ | 0.1− | 2006 10 28 | 704 | 0.4− | 0.1+ |
| 2002 12 06 | 704 | (1.6+ | 0.1+) | 2004 03 25 | 704 | 0.7+ | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.0 |
| 2002 12 06 | 704 | (1.8+ | 0.1−) | 2004 03 25 | 704 | 0.8+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 12 07 | 704 | 0.0 | 0.8− | 2004 03 25 | 704 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 12 07 | 704 | 0.1− | 0.5− | 2004 03 26 | 703 | (1.6+ | 0.3+) | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 12 07 | 704 | 0.4− | 0.5− | 2004 03 26 | 703 | (1.7+ | 1.2+) | 2006 11 07 | 644 | 0.2+ | 0.0 |
| 2002 12 07 | 704 | (1.5− | 0.8−) | 2004 03 26 | 703 | 0.6− | 0.5+ | 2006 11 07 | 644 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.1− | 2004 03 26 | 703 | 1.3+ | 0.5+ | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.1− | 0.1− | 2004 04 13 | 703 | 0.6− | 0.9− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2004 04 13 | 703 | (0.6− | 1.7+) | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.5− | 0.1− | 2004 04 13 | 703 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | (0.2− | 2.0−) | 2004 04 13 | 703 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 0.2− | 0.4− | 2004 04 15 | 704 | 0.8− | 0.6+ | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | (1.6− | 1.9−) | 2004 04 15 | 704 | 0.5− | 0.8+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.2− | 2004 04 15 | 704 | 0.5− | 1.3+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2002 12 11 | 704 | 0.2+ | 0.1− | 2006 08 23 | 704 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2002 12 11 | 704 | 0.1+ | 0.3− | 2006 08 23 | 704 | 0.4− | 0.9+ | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2002 12 11 | 704 | 0.5− | 0.1− | 2006 08 23 | 704 | 0.6+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2002 12 11 | 704 | (0.0 | 2.0−) | 2006 08 23 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2002 12 11 | 704 | 0.4− | 0.2− | 2006 08 23 | 704 | 0.6− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.3+ | 0.3− |
| 2002 12 11 | 704 | 0.3+ | 0.1− | 2006 08 28 | 704 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2006 08 28 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2002 12 11 | 704 | 0.4− | 0.0 | 2006 08 28 | 704 | 0.3− | 1.1+ | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2002 12 11 | 704 | (0.4+ | 2.1−) | 2006 09 16 | 704 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.4− | 2006 09 16 | 704 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2002 12 11 | 704 | (2.2− | 1.7−) | 2006 09 16 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 09 16 | 704 | 0.9+ | 1.0+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 1.2+ | 0.3− | 2006 09 16 | 704 | 0.6− | 0.5− | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.4− | 0.2− |
| 2002 12 11 | 704 | 1.0+ | 1.5− | 2006 09 16 | 699 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.2− |
| 2002 12 11 | 704 | 0.8+ | 0.3− | 2006 09 16 | 699 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2002 12 11 | 704 | 1.3− | 1.5− | 2006 09 19 | 704 | 0.3− | 0.6− | 2006 11 21 | 704 | 0.3+ | 0.4− |
| 2002 12 11 | 704 | 0.7− | 0.5+ | 2006 09 19 | 704 | 0.6− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 704 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 09 19 | 704 | 0.6+ | 0.2− | 2006 11 21 | 704 | 0.1− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 1.1− | 0.8+ | 2006 09 19 | 704 | 1.0− | 0.1+ | 2006 11 26 | 704 | 0.2+ | 0.8+ |
| 2002 12 11 | 704 | (0.0 | 2.0−) | 2006 09 20 | 699 | 0.5− | 0.7+ | 2006 11 26 | 704 | 0.7+ | 0.7+ |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.8+ | 2006 11 26 | 704 | 0.4− | 0.3+ |
| 2002 12 11 | 704 | (2.8− | 1.4−) | 2006 09 20 | 699 | 0.2+ | 0.7+ | 2006 11 26 | 704 | 0.2− | 0.6+ |
| 2002 12 15 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.5+ | | | | |
| 2002 12 15 | 704 | 0.6+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.3− | | | | |

**(138388)∗ 2000 GX$_{173}$ = 2004 RF$_{105}$**

Discovered 2000 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 68656)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.62440 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12509672 | $\omega$ | 194.88417 | | −0.18510659 | −0.97354974 | |
| $a$ | 3.9594855 | $\Omega$ | 265.91847 | | +0.91478996 | −0.12091542 | |
| $e$ | 0.1287554 | $i$ | 7.71627 | | +0.35901932 | −0.19385657 | |
| $P$ | 7.88 | $H$ | 13.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 03 07 | 260 | 0.4+ | 0.3− | 2004 10 09 | 699 | 0.4+ | 0.6− | 2005 12 02 | 704 | 0.4− | 0.1+ |
| 1984 03 07 | 260 | 0.6+ | 0.1− | 2004 10 09 | 699 | 0.1+ | 0.0 | 2005 12 05 | 704 | 0.1− | 0.2− |
| 1995 07 03 | 691 | 0.2− | 0.0 | 2004 10 09 | 699 | 0.3+ | 0.7+ | 2005 12 05 | 704 | 0.2+ | 0.1− |
| 1995 07 03 | 691 | 0.6− | 0.4− | 2004 10 09 | 699 | 0.3+ | 0.7− | 2005 12 05 | 704 | 0.1+ | 0.5+ |
| 1995 07 03 | 691 | 0.3− | 0.0 | 2004 10 10 | 704 | 0.5− | 0.1+ | 2005 12 05 | 704 | 0.1+ | 0.0 |
| 2000 03 27 | 699 | 1.2+ | 1.1+ | 2004 10 10 | 704 | 0.1− | 0.1+ | 2005 12 05 | 704 | 0.1+ | 0.3+ |
| 2000 03 27 | 699 | 1.2+ | 0.4+ | 2004 10 10 | 704 | 0.0 | 0.0 | 2005 12 10 | 691 | 0.2− | 0.0 |
| 2000 03 27 | 699 | 0.9+ | 0.1+ | 2004 10 10 | 704 | 1.0+ | 0.3− | 2005 12 10 | 691 | 0.2− | 0.1+ |
| 2000 03 27 | 699 | 0.6+ | 0.2− | 2004 10 10 | 704 | 0.4− | 0.0 | 2005 12 10 | 691 | 0.4− | 0.2+ |
| 2000 04 05 | 699 | 0.3− | 0.4+ | 2004 10 15 | 704 | 0.1+ | 0.2+ | 2005 12 10 | 704 | 0.4+ | 0.2+ |
| 2000 04 05 | 699 | 0.7− | 0.4+ | 2004 10 15 | 704 | 0.2+ | 0.1+ | 2005 12 10 | 704 | (2.4− | 0.1−) |
| 2000 04 05 | 699 | 0.0 | 0.5+ | 2004 10 15 | 704 | 0.5+ | 0.1+ | 2005 12 10 | 704 | 0.1− | 0.9− |
| 2000 04 05 | 699 | 0.0 | 0.5+ | 2004 10 15 | 704 | 0.8+ | 0.4− | 2005 12 10 | 704 | 0.1− | 0.8− |
| 2000 04 07 | 704 | 0.9− | 0.8+ | 2004 10 15 | 704 | 0.1− | 0.4− | 2005 12 10 | 704 | 0.1+ | 1.1− |
| 2000 04 07 | 704 | 0.1+ | 0.5+ | 2004 10 15 | 704 | 0.5+ | 0.9− | 2005 12 23 | 703 | 0.7+ | 1.2+ |
| 2000 04 07 | 704 | 0.1− | 1.0+ | 2004 10 15 | 704 | 0.4+ | 0.5+ | 2005 12 23 | 703 | 0.2− | 1.1+ |
| 2000 04 07 | 704 | 1.5+ | 0.7+ | 2004 10 15 | 704 | 0.6+ | 0.1+ | 2005 12 23 | 703 | 0.4+ | 0.9+ |
| 2000 04 07 | 704 | 0.1+ | 1.2+ | 2004 10 15 | 704 | 0.2+ | 0.2− | 2005 12 23 | 703 | 0.2− | 0.5+ |
| 2003 11 16 | 691 | 0.0 | 0.1+ | 2004 10 15 | 704 | 0.1+ | 1.2+ | 2005 12 27 | 699 | 0.3− | 0.1+ |
| 2003 11 16 | 691 | 0.0 | 0.2− | 2004 10 21 | 704 | 0.4+ | 0.9+ | 2005 12 27 | 699 | 0.3+ | 0.3− |
| 2003 11 16 | 691 | 0.4+ | 0.0 | 2004 10 21 | 704 | 0.1+ | 0.3− | 2005 12 27 | 699 | 0.0 | 0.3− |
| 2004 09 08 | 644 | 0.2+ | 0.2+ | 2004 10 21 | 704 | 0.1− | 0.2+ | 2005 12 27 | 699 | 0.3− | 0.6+ |
| 2004 09 08 | 644 | 0.1+ | 0.1+ | 2004 10 21 | 704 | 0.2+ | 0.1+ | 2005 12 28 | 644 | 0.1− | 0.0 |
| 2004 09 08 | 644 | 0.1+ | 0.0 | 2005 10 29 | 704 | 0.4− | 0.6+ | 2005 12 28 | 644 | 0.0 | 0.1+ |
| 2004 09 10 | 704 | 0.3+ | 0.2− | 2005 10 29 | 704 | 0.2+ | 0.3+ | 2005 12 28 | 644 | 0.1− | 0.1+ |
| 2004 09 10 | 704 | 0.7− | 1.2+ | 2005 10 29 | 704 | 0.8− | 0.7+ | 2005 12 29 | 704 | 1.1+ | 0.6− |
| 2004 09 10 | 704 | 0.2− | 0.5+ | 2005 10 29 | 704 | 0.2+ | 1.2+ | 2005 12 29 | 704 | 0.7+ | 0.2− |
| 2004 09 10 | 704 | 0.4+ | 0.1+ | 2005 11 01 | 704 | 0.5+ | 0.3− | 2005 12 29 | 704 | 0.1+ | 0.1+ |
| 2004 09 10 | 704 | 0.3+ | 0.3− | 2005 11 01 | 704 | 0.0 | 1.1+ | 2005 12 29 | 704 | 0.5+ | 0.3− |
| 2004 09 11 | 644 | 0.2− | 0.1+ | 2005 11 01 | 704 | 0.1− | 0.1− | 2005 12 29 | 703 | 0.5− | 0.3+ |
| 2004 09 11 | 644 | 0.1− | 0.1+ | 2005 11 01 | 704 | 0.1+ | 0.6− | 2005 12 29 | 704 | 0.4+ | 0.9− |
| 2004 09 11 | 644 | 0.1+ | 0.0 | 2005 11 01 | 704 | 0.1+ | 0.1− | 2005 12 29 | 703 | 0.9− | 0.3− |
| 2004 09 13 | 704 | 1.1+ | 0.5− | 2005 11 08 | 704 | 0.0 | 0.9+ | 2005 12 29 | 703 | 0.3− | 0.6+ |
| 2004 09 13 | 704 | 0.7+ | 0.1+ | 2005 11 08 | 704 | 0.3+ | 0.6+ | 2005 12 29 | 703 | 0.7− | 0.2+ |
| 2004 09 13 | 704 | 0.8− | 0.5+ | 2005 11 08 | 704 | 0.6− | 1.0+ | 2005 12 31 | 704 | 0.1+ | 0.7− |
| 2004 09 13 | 704 | 0.5− | 0.5+ | 2005 11 08 | 704 | 0.2− | 0.4+ | 2005 12 31 | 704 | 0.0 | 0.2− |
| 2004 09 13 | 704 | 0.2− | 0.3+ | 2005 11 12 | 691 | 0.0 | 0.1+ | 2005 12 31 | 704 | 0.0 | 0.3− |
| 2004 09 15 | 699 | 0.1+ | 0.1+ | 2005 11 12 | 691 | 0.0 | 0.1+ | 2005 12 31 | G96 | 0.1− | 0.2− |
| 2004 09 15 | 699 | 0.8+ | 0.3− | 2005 11 12 | 691 | 0.1− | 0.0 | 2005 12 31 | G96 | 0.0 | 0.2− |
| 2004 09 15 | 699 | 0.3− | 0.8+ | 2005 11 21 | 691 | 0.1− | 0.0 | 2005 12 31 | G96 | 0.1+ | 0.2− |
| 2004 09 15 | 699 | 0.3− | 0.3+ | 2005 11 21 | 691 | 0.5− | 0.0 | 2005 12 31 | G96 | 0.1− | 0.2− |
| 2004 09 18 | 704 | 0.6− | 0.5− | 2005 11 21 | 691 | 0.1− | 0.1+ | 2006 01 04 | 699 | 0.7+ | 0.3− |
| 2004 09 18 | 704 | 1.0+ | 0.1+ | 2005 11 21 | 703 | 0.4+ | 0.3− | 2006 01 04 | 699 | 0.6− | 0.1+ |
| 2004 09 18 | 704 | 1.1− | 1.0+ | 2005 11 21 | 703 | 0.5− | 0.1− | 2006 01 04 | 699 | 0.7+ | 0.5+ |
| 2004 09 18 | 704 | 0.2+ | 0.9+ | 2005 11 21 | 703 | 0.6+ | 0.3− | 2006 01 04 | 699 | 0.6+ | 0.3+ |
| 2004 09 18 | 704 | 0.3+ | 0.0 | 2005 11 25 | 691 | 0.1− | 0.0 | 2006 01 05 | 704 | 0.5+ | 0.3+ |
| 2004 09 22 | 704 | 0.2− | 0.3+ | 2005 11 25 | 691 | 0.2− | 0.1− | 2006 01 05 | 704 | 0.4+ | 0.0 |
| 2004 09 22 | 704 | 0.1+ | 0.4+ | 2005 11 25 | 691 | 0.1− | 0.1− | 2006 01 05 | 704 | 0.2+ | 0.1+ |
| 2004 09 22 | 704 | 0.4− | 0.2+ | 2005 11 28 | 704 | 0.2− | 0.1− | 2006 01 05 | 704 | 0.2+ | 0.0 |
| 2004 09 22 | 704 | 0.2+ | 0.2+ | 2005 11 28 | 704 | 0.0 | 0.3+ | 2006 01 05 | 704 | 0.1− | 0.1+ |
| 2004 09 22 | 704 | 0.0 | 0.8+ | 2005 11 28 | 704 | 0.4+ | 0.3+ | 2006 01 07 | G96 | 0.2+ | 0.7− |
| 2004 09 22 | 704 | 0.3+ | 1.5+ | 2005 11 28 | 704 | 0.1+ | 0.3− | 2006 01 07 | G96 | 0.1+ | 0.7− |
| 2004 09 22 | 704 | 0.1− | 1.0+ | 2005 11 28 | 704 | 0.6− | 0.1− | 2006 01 07 | G96 | 0.5+ | 0.6− |
| 2004 09 22 | 704 | 0.1− | 0.4+ | 2005 11 28 | 703 | (0.1+ | 2.8−) | 2006 01 07 | G96 | 0.3+ | 0.7− |
| 2004 09 22 | 704 | 0.1− | 0.3+ | 2005 11 28 | 703 | 0.9+ | 1.9− | 2006 02 12 | 644 | 0.4− | 0.2+ |
| 2004 09 22 | 704 | 0.4− | 0.2+ | 2005 11 28 | 703 | 0.3+ | 0.3− | 2006 02 12 | 644 | 0.0 | 0.2+ |
| 2004 09 23 | 704 | 0.9− | 0.3− | 2005 11 28 | 703 | 0.3− | 0.1− | 2006 02 12 | 644 | 0.2− | 0.1+ |
| 2004 09 23 | 704 | 0.9− | 0.3− | 2005 12 02 | 704 | 0.1+ | 0.2+ | 2006 03 03 | G96 | 0.0 | 0.0 |
| 2004 09 23 | 704 | 0.5− | 0.8− | 2005 12 02 | 704 | 0.1− | 0.3− | 2006 03 03 | G96 | 0.1− | 0.2− |
| 2004 09 23 | 704 | 0.3− | 0.1+ | 2005 12 02 | 704 | 0.1+ | 0.2− | 2006 03 03 | G96 | 0.1+ | 0.4+ |
| 2004 09 23 | 704 | 0.1− | 0.1− | 2005 12 02 | 704 | 0.1− | 0.3− | 2006 03 03 | G96 | 0.7− | 0.0 |

**(138389)∗ 2000 GS$_{174}$ = 2002 US$_{36}$**

Discovered 2000 Apr. 2 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37501)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.68309 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22333694 | $\omega$ | 245.43743 | | −0.03091155 | −0.99944176 | |
| $a$ | 2.6904753 | $\Omega$ | 206.34340 | | +0.92706737 | −0.02392842 | |
| $e$ | 0.0668771 | $i$ | 1.63676 | | +0.37361822 | −0.02331534 | |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 1.2+ | 0.7+ | 2002 11 06 | 704 | 0.9− | 0.4− | 2004 03 27 | 704 | 1.4+ | 0.5+ |
| 1995 03 10 | 691 | 0.3− | 0.3+ | 2002 11 06 | 704 | 0.1− | 0.6+ | 2004 03 29 | 691 | 0.3− | 0.2+ |
| 1995 03 10 | 691 | 0.1+ | 0.9+ | 2002 11 06 | 704 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.3− | 0.1+ |
| 2000 04 02 | 691 | 0.1− | 0.5+ | 2002 11 06 | 704 | 0.5− | 0.0 | 2004 03 29 | 691 | 0.4− | 0.2− |
| 2000 04 02 | 691 | 0.0 | 0.3− | 2002 11 07 | 699 | (1.7+ | 1.3−) | 2006 08 24 | 644 | 0.0 | 0.4+ |
| 2000 04 02 | 691 | 0.0 | 0.2− | 2002 11 07 | 699 | 0.4+ | 0.4− | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 2000 04 06 | 704 | 0.5+ | 1.4+ | 2002 11 07 | 699 | 1.3− | 1.1− | 2006 08 24 | 644 | 0.0 | 0.7+ |
| 2000 04 06 | 704 | 0.2− | 0.7+ | 2002 11 07 | 699 | (0.5+ | 2.0−) | 2006 09 14 | 644 | 0.4− | 0.0 |
| 2000 04 06 | 704 | 0.5+ | 0.3+ | 2002 11 11 | 291 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.6+ |
| 2000 04 06 | 704 | 0.1+ | 0.3+ | 2002 11 11 | 291 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.4+ |
| 2000 04 06 | 704 | 0.5+ | 0.9+ | 2002 11 11 | 291 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 2000 04 29 | 704 | 0.2− | 1.2+ | 2002 11 22 | 644 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.5+ |
| 2000 04 29 | 704 | 0.0 | 0.3+ | 2002 11 22 | 644 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 2000 04 29 | 704 | 1.0+ | 1.2+ | 2002 11 22 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | (0.5− | 1.7+) |
| 2000 04 29 | 704 | 0.9+ | 0.4+ | 2004 02 22 | 695 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.4+ |
| 2001 06 29 | 691 | 0.0 | 0.4+ | 2004 02 22 | 695 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.2+ | 1.0+ |
| 2001 06 29 | 691 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 704 | 1.0+ | 0.7+ |
| 2001 06 29 | 691 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.4+ | 1.3+ |
| 2001 07 21 | 608 | 0.4− | 0.9− | 2004 02 26 | 704 | 0.6+ | 0.0 | 2006 09 23 | 691 | 0.2− | 0.2+ |
| 2001 07 21 | 608 | 0.7− | 0.7− | 2004 02 26 | 704 | 0.6+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 2001 07 21 | 608 | 0.9− | 0.8− | 2004 02 26 | 704 | 0.6+ | 0.0 | 2006 09 23 | 691 | 0.7− | 0.1+ |
| 2002 10 03 | 291 | 0.5− | 0.1− | 2004 03 10 | 644 | 0.0 | 1.0+ | 2006 09 27 | 704 | (0.5+ | 1.6+) |
| 2002 10 03 | 291 | 0.2+ | 1.0− | 2004 03 10 | 644 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.6+ | 1.1+ |
| 2002 10 03 | 291 | 0.7+ | 0.1+ | 2004 03 10 | 644 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.4− | 0.8+ |
| 2002 10 04 | 599 | 0.2+ | 0.4+ | 2004 03 15 | 704 | (1.5+ | 1.8+) | 2006 10 11 | 644 | 0.2+ | 0.8+ |
| 2002 10 04 | 599 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 1.1+ |
| 2002 10 04 | 599 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 10 31 | 699 | 0.5+ | 0.7− | 2004 03 18 | 704 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2002 10 31 | 699 | 0.7+ | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2002 10 31 | 699 | 0.8+ | 0.9+ | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 10 31 | 699 | 0.5− | 1.0+ | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 11 04 | 291 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2004 03 27 | 704 | (2.0+ | 0.9+) | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2002 11 06 | 704 | 0.1− | 1.0− | 2004 03 27 | 704 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.4− | 0.4− |

**(138390)∗ 2000 GB$_{175}$**

Discovered 2000 Apr. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.92157 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22644615 | $\omega$ | 301.09099 | | −0.62495175 | −0.78062277 | |
| $a$ | 2.6657910 | $\Omega$ | 187.60273 | | +0.73518347 | −0.58508201 | |
| $e$ | 0.0305947 | $i$ | 3.45049 | | +0.26256540 | −0.21978882 | |
| $P$ | 4.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 06 | 910 | 0.9+ | 0.9+ | 2004 03 18 | 704 | 0.7− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.3+ |
| 1997 09 06 | 910 | 0.9+ | 0.9+ | 2004 03 18 | 704 | 0.7− | 0.2− | 2006 09 14 | 691 | 1.0+ | 1.2− |
| 1997 09 06 | 910 | 1.1+ | 1.0+ | 2004 03 19 | 704 | 0.4+ | 0.0 | 2006 09 14 | 691 | 0.1− | 0.3+ |
| 1997 10 09 | 691 | 0.3− | 0.7+ | 2004 03 19 | 704 | (2.3+ | 0.0 ) | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 1997 10 09 | 691 | 0.6− | 0.2+ | 2004 03 19 | 704 | 0.7− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.3+ |
| 1997 10 09 | 691 | 0.5− | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 2000 04 03 | 691 | 0.1+ | 0.4+ | 2004 03 19 | 704 | 0.0 | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.8+ |
| 2000 04 03 | 691 | 0.0 | 0.1+ | 2004 03 20 | 699 | (0.4+ | 1.6−) | 2006 09 25 | 691 | 0.3− | 0.1− |
| 2000 04 03 | 691 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.5+ | 0.8+ | 2006 09 25 | 691 | 0.3− | 0.1+ |
| 2000 04 06 | 704 | 0.0 | 1.4+ | 2004 03 20 | 704 | 0.3+ | 1.3+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.5− | 1.7+ | 2004 03 20 | 699 | 0.5+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2000 04 06 | 704 | 0.4− | 1.2+ | 2004 03 20 | 704 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2000 05 07 | 704 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.6+ | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2000 05 07 | 704 | 0.7+ | 1.0+ | 2004 03 20 | 704 | (1.9+ | 0.1+) | 2006 10 15 | 703 | 0.6+ | 0.1+ |
| 2000 05 07 | 704 | 0.6+ | 1.0+ | 2004 03 20 | 699 | 0.6− | 1.2+ | 2006 10 15 | 703 | 0.4− | 0.6− |
| 2000 05 07 | 704 | 0.9+ | 0.1+ | 2004 03 20 | 704 | 0.1+ | 1.1+ | 2006 10 15 | 703 | 0.3− | 0.8− |
| 2002 11 23 | 644 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 10 15 | 703 | 0.4− | 0.3− |
| 2002 11 23 | 644 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2002 11 23 | 644 | 0.1− | 0.4+ | 2004 03 20 | 699 | 0.6− | 1.0+ | 2006 10 16 | G96 | 0.4− | 0.0 |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2004 03 21 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2002 12 10 | 644 | 0.1− | 0.6− | 2004 03 21 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.4− | 0.2− |
| 2002 12 10 | 644 | 0.3+ | 0.4+ | 2004 03 21 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3− | 0.5+ |
| 2004 02 26 | 704 | 1.3+ | 0.8+ | 2004 03 30 | 691 | 0.5− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.2+ |
| 2004 02 26 | 704 | 0.8+ | 0.4+ | 2004 03 30 | 691 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 2004 02 26 | 704 | 0.7+ | 0.3+ | 2004 03 30 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 2004 02 26 | 704 | 0.1− | 0.3+ | 2004 03 31 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.6− | 0.6+ |
| 2004 02 26 | 704 | 0.4− | 0.4+ | 2004 03 31 | 691 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.8+ |
| 2004 03 16 | 683 | 1.0+ | 0.3+ | 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2004 03 16 | 683 | (1.6+ | 1.0−) | 2004 04 14 | 291 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2004 03 16 | 704 | 1.1+ | 0.8+ | 2004 04 14 | 291 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2004 03 16 | 683 | (2.5+ | 0.6+) | 2004 04 14 | 291 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2004 03 16 | 704 | 0.1+ | 1.3− | 2004 04 24 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 291 | 0.1− | 0.4+ |
| 2004 03 16 | 704 | 0.5− | 0.4− | 2004 04 24 | 691 | 0.2+ | 0.0 | 2006 10 29 | 291 | 0.1− | 0.3+ |
| 2004 03 16 | 704 | 0.3+ | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.0 | 2006 10 29 | 291 | 0.3− | 0.1+ |
| 2004 03 16 | 704 | 0.5− | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.9− | 0.6− | 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.7+ | 0.2− |
| 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 07 22 | G96 | 0.7+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2004 03 18 | 704 | 0.1+ | 0.5− | 2006 07 22 | G96 | 0.8− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.3− |

**(138391)∗ 2000 GK$_{177}$ = 2002 VE$_{76}$ = 2005 KV$_2$**

Discovered 2000 Apr. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 99949)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.27649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22383908 | $\omega$ | 160.08178 | | +0.85273047 | +0.52216701 | |
| $a$ | 2.6864501 | $\Omega$ | 168.41022 | | −0.48811719 | +0.80601735 | |
| $e$ | 0.0735720 | $i$ | 3.95864 | | −0.18599022 | +0.27870710 | |
| $P$ | 4.40 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 19 | 691 | 0.5+ | 0.1− | 2005 05 19 | G96 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 1993 09 19 | 691 | 0.3− | 0.1− | 2005 05 19 | G96 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.5+ |
| 1993 09 19 | 691 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | (1.7+ | 0.1−) |
| 2000 02 12 | 645 | 0.1+ | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.6+ |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.4− | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.5+ |
| 2000 04 03 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | (2.1+ | 1.1+) | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2000 04 03 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | (1.4+ | 1.5+) | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2000 04 03 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | (1.8+ | 0.4+) | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2000 04 05 | 704 | 0.0 | 0.6+ | 2006 08 28 | 703 | 1.1+ | 0.9+ | 2006 09 30 | G96 | 0.4− | 0.2− |
| 2000 04 05 | 704 | 1.0+ | 0.8+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2000 04 05 | 704 | 0.3+ | 1.0+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.4− |
| 2002 11 07 | 704 | 0.5+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.1− | 0.8− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.6− | 0.5− |
| 2002 11 11 | 704 | 0.1− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.6+ | 0.5− | 2006 10 20 | G96 | 0.5− | 0.1− |
| 2002 11 11 | 704 | 0.6− | 0.6+ | 2006 09 17 | 704 | 1.0+ | 0.0 | 2006 10 20 | G96 | 0.4− | 0.4− |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2004 01 30 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2005 05 16 | G96 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.7− | 0.3+ | 2006 11 17 | G96 | 0.7− | 0.2− |
| 2005 05 16 | G96 | 0.1+ | 0.2+ | 2006 09 18 | 699 | (1.6+ | 0.1−) | 2006 11 17 | G96 | 0.3− | 1.0+ |
| 2005 05 16 | G96 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2005 05 16 | G96 | 0.2− | 0.6− | 2006 09 27 | 704 | (0.2− | 1.6+) | 2006 11 17 | G96 | 0.3− | 0.5+ |
| 2005 05 19 | G96 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.7+ | | | | |
| 2005 05 19 | G96 | 0.8− | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.4+ | | | | |

**(138392)∗ 2000 HY**

Discovered 2000 Apr. 24 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.83560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22002685 | $\omega$ | 84.48950 | | −0.38456803 | −0.92244891 | |
| $a$ | 2.7173918 | $\Omega$ | 28.20569 | | +0.81532123 | −0.35699309 | |
| $e$ | 0.1153534 | $i$ | 4.19514 | | +0.43284954 | −0.14711883 | |
| $P$ | 4.48 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 16 | 704 | 0.1+ | 1.7− | 2002 10 11 | 704 | 0.3+ | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.3+ |
| 1999 01 16 | 704 | 0.3+ | 1.3− | 2002 10 11 | 704 | 0.3+ | 0.3− | 2004 03 15 | 704 | 0.1+ | 0.2+ |
| 1999 01 16 | 704 | 0.4+ | 0.5− | 2002 10 29 | 291 | 0.5+ | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.1+ |
| 1999 01 16 | 704 | 0.4+ | 0.6+ | 2002 10 29 | 291 | 0.2+ | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.1+ |
| 2000 04 24 | 691 | 0.0 | 0.3+ | 2002 10 29 | 291 | 0.4+ | 0.1− | 2004 03 15 | 704 | 0.0 | 0.0 |
| 2000 04 24 | 691 | 0.1− | 0.4+ | 2002 10 31 | 291 | 0.4− | 0.1− | 2004 03 19 | 704 | 0.0 | 0.2+ |
| 2000 04 24 | 691 | 0.1+ | 0.3+ | 2002 10 31 | 644 | 0.5− | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.3+ |
| 2000 04 25 | 691 | 0.4− | 0.1− | 2002 10 31 | 644 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.5+ |
| 2000 04 25 | 691 | 0.4− | 0.0 | 2002 10 31 | 291 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.1+ | 0.2+ |
| 2000 04 25 | 691 | 0.7− | 0.7− | 2002 10 31 | 644 | 0.7− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.1− |
| 2000 04 29 | 704 | 1.3+ | 0.2− | 2002 10 31 | 644 | 0.1− | 0.3+ | 2004 03 22 | 704 | 0.7+ | 0.2− |
| 2000 04 29 | 704 | 0.6+ | 0.3− | 2002 10 31 | 699 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.3− | 0.2+ |
| 2000 04 29 | 704 | 0.2+ | 0.9+ | 2002 10 31 | 291 | 0.0 | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.2+ |
| 2000 04 29 | 704 | 1.9+ | 0.8+ | 2002 10 31 | 644 | 0.5− | 0.1+ | 2004 03 22 | 704 | 0.4− | 0.8+ |
| 2000 04 29 | 704 | 0.7+ | 0.7+ | 2002 10 31 | 644 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.1− | 0.2+ |
| 2000 04 30 | 691 | 0.2− | 0.5− | 2002 10 31 | 699 | 1.5− | 1.0+ | 2004 03 26 | 703 | 0.6+ | 0.2+ |
| 2000 04 30 | 691 | 0.3− | 0.5− | 2002 10 31 | 699 | 1.1− | 1.2+ | 2004 03 26 | 703 | 1.2− | 0.6+ |
| 2000 04 30 | 691 | 0.4− | 0.5− | 2002 10 31 | 699 | 1.2− | 0.8+ | 2004 03 26 | 703 | 0.9− | 1.0− |
| 2000 05 01 | 699 | 1.4+ | 1.0+ | 2002 11 06 | 704 | 0.4− | 0.1− | 2004 03 26 | 703 | 0.3− | 0.3− |
| 2000 05 01 | 699 | 0.6+ | 1.2+ | 2002 11 06 | 704 | 0.1− | 1.1+ | 2004 03 28 | 704 | 0.4+ | 0.3+ |
| 2000 05 01 | 699 | 0.8+ | 0.6+ | 2002 11 06 | 704 | 0.1+ | 0.0 | 2004 03 28 | 704 | 0.7+ | 0.5+ |
| 2000 05 01 | 699 | 0.7+ | 0.3+ | 2002 11 06 | 704 | 0.3− | 0.6+ | 2004 03 28 | 704 | 0.5+ | 0.9+ |
| 2000 05 07 | 704 | 1.1+ | 0.9+ | 2002 11 10 | 704 | 0.8+ | 0.7+ | 2004 03 28 | 704 | 0.5+ | 0.7+ |
| 2000 05 07 | 704 | 0.4+ | 0.1− | 2002 11 10 | 704 | 1.1+ | 0.8+ | 2004 05 21 | 704 | 0.3− | 1.0+ |
| 2000 05 07 | 704 | 0.4− | 0.0 | 2002 11 10 | 704 | 0.8− | 0.6− | 2004 05 21 | 704 | 0.5+ | 0.1− |
| 2002 10 02 | 704 | 0.9+ | 0.5+ | 2002 11 12 | 644 | 0.0 | 0.3+ | 2004 05 21 | 704 | 1.1+ | 0.2+ |
| 2002 10 02 | 704 | 0.8+ | 0.5− | 2002 11 12 | 644 | 0.2+ | 0.2+ | 2004 05 21 | 704 | 0.6− | 0.5+ |
| 2002 10 02 | 704 | 0.4+ | 0.5− | 2002 11 12 | 644 | 0.5− | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.7+ |
| 2002 10 02 | 608 | 0.1+ | 0.1− | 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.8+ |
| 2002 10 02 | 608 | 0.2− | 0.7− | 2002 11 22 | 644 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.3− | 0.9+ |
| 2002 10 02 | 608 | 0.1− | 1.1− | 2002 11 22 | 644 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.7− | 1.2+ |
| 2002 10 03 | 704 | 0.5+ | 0.3− | 2003 12 27 | 704 | (2.0+ | 0.8+) | 2006 08 30 | 699 | 0.0 | 0.6+ |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2003 12 27 | 704 | 0.3+ | 0.0 | 2006 08 30 | 699 | 1.5− | 0.9+ |
| 2002 10 03 | 704 | 0.6+ | 0.1+ | 2003 12 27 | 704 | 0.6+ | 0.9+ | 2006 08 30 | 699 | 0.8+ | 0.5+ |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2004 01 29 | 704 | 0.8+ | 0.7+ | 2006 09 14 | 703 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.4− | 0.7− | 2004 01 29 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.5+ | 0.4− |
| 2002 10 07 | 704 | 0.6− | 1.2+ | 2004 01 29 | 704 | 0.1− | 1.5+ | 2006 09 14 | 703 | 0.2− | 0.4+ |
| 2002 10 07 | 704 | 0.1− | 0.2− | 2004 02 02 | 699 | 1.0− | 0.5− | 2006 09 14 | 703 | 0.6− | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.3− | 0.5− | 2004 02 02 | 699 | 0.3− | 0.5+ | 2006 09 21 | 699 | 0.6− | 1.0+ |
| 2002 10 07 | 704 | 0.1+ | 0.9+ | 2004 02 02 | 699 | 0.4+ | 0.3− | 2006 09 21 | 699 | (2.4− | 1.6+) |
| 2002 10 08 | 699 | 0.1− | 0.6− | 2004 02 02 | 699 | 1.1− | 0.5+ | 2006 09 21 | 699 | 0.1− | 0.9+ |
| 2002 10 08 | 699 | 0.9− | 0.1+ | 2004 02 15 | 703 | 0.8+ | 0.0 | 2006 09 21 | 699 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 0.1+ | 0.1− | 2004 02 15 | 703 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.1+ | 0.0 | 2004 02 15 | 703 | 0.7+ | 0.4− | 2006 10 22 | G96 | 0.1− | 0.4+ |
| 2002 10 09 | 704 | 0.2− | 0.1+ | 2004 02 15 | 703 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.5+ |
| 2002 10 09 | 704 | 1.2− | 0.6+ | 2004 02 18 | 704 | 0.8+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2002 10 09 | 704 | 0.5− | 1.1− | 2004 02 18 | 704 | 0.7+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2002 10 09 | 704 | (0.8− | 1.6−) | 2004 02 18 | 704 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.0 | 0.4− | 2004 02 18 | 704 | 0.6− | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2004 02 18 | 704 | 0.6+ | 0.5+ | 2006 11 17 | G96 | 0.4− | 0.3+ |

**(138393)∗ 2000 $HF_3$ = 2002 $XW_{12}$**

Discovered 2000 Apr. 26 by Spacewatch at Kitt Peak.
Id. A. Doppler (*MPO* 46401)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.14919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23193433 | $\omega$ | 6.69481 | | +0.71431074 | −0.69340615 | |
| $a$ | 2.6235702 | $\Omega$ | 37.78852 | | +0.63470895 | +0.58495991 | |
| $e$ | 0.1881988 | $i$ | 8.88066 | | +0.29479606 | +0.42072534 | |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.1+ | 1.2+ | 2006 11 15 | 704 | 0.2+ | 0.2+ |
| 2000 04 05 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 1.4− | 1.3+ | 2006 11 15 | 704 | 0.3− | 0.3− |
| 2000 04 05 | 691 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.5− | 1.3+ | 2006 11 15 | 704 | 0.1+ | 0.0 |
| 2000 04 26 | 691 | 0.3− | 0.4− | 2006 09 20 | 704 | 0.2− | 0.7− | 2006 11 16 | 691 | 0.6+ | 1.2− |
| 2000 04 26 | 691 | 0.6+ | 0.2− | 2006 09 20 | 704 | 0.7− | 0.4− | 2006 11 16 | 691 | 0.3+ | 0.3− |
| 2000 04 26 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.9− | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.3− |
| 2000 04 27 | 691 | 0.5− | 0.3− | 2006 09 20 | 704 | 0.5− | 0.5+ | 2006 11 16 | 704 | (3.2+ | 2.1−) |
| 2000 04 27 | 691 | 0.4− | 0.3− | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2000 04 27 | 691 | 0.5− | 0.2− | 2006 09 25 | H07 | 0.9− | 0.9− | 2006 11 16 | 704 | (1.2− | 2.2+) |
| 2000 05 04 | 691 | 0.3− | 0.4− | 2006 09 25 | H07 | 0.2− | 0.8− | 2006 11 16 | 704 | 0.6− | 0.2− |
| 2000 05 04 | 691 | 0.5− | 0.5− | 2006 09 25 | H07 | 0.4− | 0.3+ | 2006 11 16 | 704 | 0.7− | 0.3+ |
| 2000 05 04 | 691 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2001 07 19 | 644 | 0.2+ | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2001 07 19 | 644 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2001 07 19 | 644 | 0.2+ | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 11 16 | 704 | 0.4+ | 0.7+ |
| 2002 12 03 | 644 | 0.5+ | 0.5+ | 2006 09 27 | 704 | 1.3− | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 2002 12 03 | 644 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 0.4− | 0.8+ | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2002 12 03 | 644 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2002 12 05 | 704 | (0.2− | 1.8+) | 2006 09 27 | 704 | 1.2− | 1.2− | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 0.3− | 0.8− | 2006 11 18 | 704 | 0.2− | 1.0− |
| 2002 12 05 | 704 | (0.5+ | 1.6+) | 2006 10 21 | 704 | 0.1+ | 1.1+ | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | (0.1+ | 1.6+) | 2006 10 21 | 704 | 0.2+ | 1.4+ | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 2002 12 05 | 704 | 1.3+ | 1.0+ | 2006 10 21 | 704 | 0.8− | 1.3+ | 2006 11 19 | 704 | 1.1+ | 0.7+ |
| 2003 01 04 | 704 | 0.3+ | 0.9− | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.8− | 0.1+ |
| 2003 01 04 | 704 | 0.2− | 0.9− | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2003 01 13 | 704 | 0.7− | 0.9+ | 2006 10 29 | 704 | 0.7− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2003 01 13 | 704 | 0.8− | 0.9+ | 2006 10 29 | 704 | (1.6− | 0.7−) | 2006 11 19 | 704 | 0.8+ | 0.0 |
| 2003 01 13 | 704 | 0.5+ | 0.6− | 2006 10 29 | 704 | (1.6− | 0.9+) | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2003 01 13 | 704 | 1.0− | 0.1− | 2006 10 29 | 704 | (0.2− | 2.4+) | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 20 | 704 | (0.2+ | 2.2+) |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.2− |
| 2004 04 11 | 644 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2004 04 11 | 644 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2004 04 11 | 644 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2004 05 09 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2004 05 09 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.8+ | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2004 05 09 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.4− |
| 2006 08 28 | 703 | 1.1+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.8− | 0.2− |
| 2006 08 28 | 703 | 0.2+ | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.5+ | 0.8+ |
| 2006 09 16 | 703 | 0.8+ | 0.5− | 2006 11 14 | 703 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.6− | 0.1+ |
| 2006 09 16 | 703 | 0.4− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.6− | 2006 12 01 | 704 | 0.1− | 0.3+ |
| 2006 09 16 | 703 | 0.7+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.5− | 2006 12 01 | 704 | 0.6+ | 1.1− |
| 2006 09 16 | 703 | (0.6− | 1.5+) | 2006 11 14 | 703 | 0.2− | 0.8− | | | | |
| 2006 09 17 | 704 | (0.1− | 2.7+) | 2006 11 15 | 704 | 0.3− | 0.6− | | | | |

**(138394)∗ 2000 $HA_4$ = 2002 $XD_{96}$**

Discovered 2000 Apr. 26 by Spacewatch at Kitt Peak.
Id. A. Doppler (*MPO* 46401)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.52499 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22064568 | $\omega$ | 224.94082 | | +0.10143293 | −0.99463562 | |
| $a$ | 2.7123086 | $\Omega$ | 219.25071 | | +0.92152038 | +0.10161914 | |
| $e$ | 0.0435700 | $i$ | 1.83692 | | +0.37484871 | +0.01932698 | |
| $P$ | 4.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 0.1+ | 0.1− | 2002 12 10 | 704 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 1993 12 16 | 691 | 0.3− | 0.0 | 2002 12 10 | 704 | 1.2− | 1.1+ | 2006 09 26 | 691 | (0.6− | 1.8+) |
| 1993 12 16 | 691 | 0.2− | 0.2− | 2002 12 10 | 704 | 1.1− | 0.8+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 1999 01 13 | 691 | 0.1+ | 0.3− | 2002 12 10 | 704 | (0.5− | 1.7+) | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 1999 01 13 | 691 | 0.3− | 0.9− | 2003 01 27 | 291 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 1999 01 13 | 691 | 0.4+ | 0.4− | 2003 01 27 | 291 | 0.9+ | 0.1− | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2000 04 26 | 691 | 0.1− | 0.1− | 2003 01 27 | 291 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2000 04 26 | 691 | 0.3− | 0.3− | 2004 03 12 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2000 04 26 | 691 | 0.2− | 0.2− | 2004 03 12 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2000 04 28 | 691 | 0.6− | 0.7− | 2004 03 12 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2000 04 28 | 691 | 0.3− | 0.8− | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2000 04 28 | 691 | 0.3− | 0.9− | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 10 17 | 703 | 1.5+ | 0.3+ |
| 2000 05 07 | 704 | 0.6+ | 0.7+ | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 1.2+ | 0.8− |
| 2000 05 07 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.7+ | 1.2+ | 2006 10 17 | 703 | 0.3+ | 0.9− |
| 2000 05 07 | 704 | 0.2− | 0.9+ | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 1.0+ | 0.7+ |
| 2000 05 07 | 704 | 0.6+ | 1.3+ | 2004 03 23 | 691 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2000 05 11 | 691 | 0.0 | 0.3− | 2004 03 23 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2000 05 11 | 691 | 0.6+ | 0.3− | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2000 05 11 | 691 | 0.2+ | 0.3− | 2004 03 27 | 704 | 1.0+ | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2000 06 02 | 691 | 0.5− | 0.3+ | 2004 03 27 | 704 | 0.9+ | 1.4+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2000 06 02 | 691 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2000 06 02 | 691 | 0.1+ | 0.2− | 2004 03 31 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.6− | 0.1+ |
| 2001 08 16 | 704 | 0.1+ | 0.8+ | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2001 08 16 | 704 | 0.3+ | 0.9+ | 2004 03 31 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 08 16 | 704 | 0.8+ | 0.9+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 11 05 | 704 | 1.4− | 1.0− | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 11 05 | 704 | 1.0− | 1.3− | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 0.4− | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.2− | 2006 11 02 | G96 | 0.4− | 1.1+ |
| 2002 11 05 | 704 | 0.4+ | 0.9− | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 11 02 | G96 | 1.0− | 0.3+ |
| 2002 11 05 | 704 | 0.4− | 0.7− | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 11 02 | G96 | 0.5− | 0.7+ |
| 2002 11 24 | 644 | 0.0 | 0.8+ | 2006 09 18 | 699 | 1.0− | 1.1− | 2006 11 02 | G96 | 0.4+ | 0.1− |
| 2002 11 24 | 644 | 0.7+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 1.0− | 2006 11 02 | G96 | 0.3− | 0.1+ |
| 2002 11 24 | 644 | 0.6+ | 0.9+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.5− | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.8− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.6− | 0.1+ | 2006 09 21 | 621 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2002 12 05 | 704 | (1.8− | 0.8−) | 2006 09 21 | 621 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.8− |
| 2002 12 05 | 704 | 0.3− | 1.0− | 2006 09 21 | 621 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.5− | 0.0 |
| 2002 12 05 | 704 | 0.7− | 0.6− | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.3− | 0.6− |

**(138395)∗ 2000 $HD_5$ = 2002 $VR_1$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. A. Doppler (*MPO* 37503)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.20772 | | (2000.0) | | | |
| $n$ | 0.23991691 | $\omega$ | 271.31685 | | −0.60295396 | −0.73094568 |
| $a$ | 2.5650479 | $\Omega$ | 221.87445 | | +0.77594159 | −0.63041843 |
| $e$ | 0.1759668 | $i$ | 28.61031 | | −0.18536766 | −0.26132548 |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 704 | 0.6+ | 1.5+ | 2002 12 07 | 704 | 0.7+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.2− |
| 2000 04 27 | 704 | 1.0− | 0.5+ | 2002 12 07 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 703 | 0.2− | 0.1− |
| 2000 04 27 | 704 | 0.0 | 0.7+ | 2002 12 07 | 704 | 0.9+ | 0.1+ | 2006 10 19 | A50 | 0.3+ | 0.2− |
| 2000 04 27 | 704 | 0.2− | 0.9+ | 2002 12 07 | 704 | 0.5+ | 0.2+ | 2006 10 19 | A50 | 0.2+ | 0.4+ |
| 2000 04 29 | 704 | (0.8+ | 2.2−) | 2004 03 16 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2000 04 29 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2000 04 29 | 704 | 0.1+ | 0.4+ | 2004 03 16 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2000 05 06 | 704 | 1.1− | 0.3+ | 2004 03 16 | 644 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2000 05 06 | 704 | 0.9− | 0.8+ | 2004 03 16 | 644 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2000 05 06 | 704 | 1.0− | 0.7+ | 2004 03 16 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2000 05 11 | 699 | 0.4+ | 1.1+ | 2004 03 16 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2000 05 11 | 699 | 0.9− | 1.5+ | 2004 03 16 | 644 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2000 05 11 | 699 | 0.1+ | 0.1+ | 2004 03 16 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2000 05 11 | 699 | 0.3+ | 0.2− | 2004 04 13 | 644 | 0.9− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2000 05 24 | 858 | 0.1− | 0.6+ | 2004 04 13 | 644 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 05 24 | 858 | 1.0− | 0.7+ | 2004 04 13 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2000 05 24 | 858 | 0.6− | 0.1+ | 2004 04 21 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2000 05 24 | 699 | 0.4+ | 0.8+ | 2004 04 21 | 704 | 0.1− | 0.9+ | 2006 10 29 | 104 | 0.1+ | 0.3+ |
| 2000 05 24 | 699 | 0.8+ | 0.0 | 2004 04 21 | 704 | 1.1− | 1.3− | 2006 10 29 | 104 | 0.5+ | 0.5+ |
| 2000 05 24 | 699 | 0.6− | 1.4+ | 2004 04 21 | 704 | 0.3− | 0.2− | 2006 10 29 | 104 | 0.2+ | 0.5+ |
| 2000 05 24 | 699 | 0.3+ | 0.8− | 2004 04 21 | 704 | 1.0− | 0.4+ | 2006 10 30 | 104 | 0.0 | 0.4+ |
| 2002 10 11 | 704 | 0.6− | 0.1− | 2004 04 24 | 704 | 0.1+ | 0.4+ | 2006 10 30 | 104 | 0.1+ | 0.9+ |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2004 04 24 | 704 | 0.7+ | 0.7+ | 2006 10 30 | 104 | 0.4− | 0.2− |
| 2002 10 11 | 704 | 0.3+ | 0.6+ | 2004 04 24 | 704 | 0.6+ | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.1− | 1.2+ | 2004 04 24 | 704 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 11 02 | 950 | (3.5+ | 0.9+) | 2004 04 25 | 704 | 0.5− | 0.2− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2002 11 02 | 950 | (3.5+ | 1.0+) | 2004 04 25 | 704 | 1.2− | 0.8− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 11 02 | 950 | (3.2+ | 0.8+) | 2004 04 25 | 704 | 0.7− | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2002 11 03 | 950 | 0.2+ | 1.2+ | 2004 04 25 | 704 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 11 03 | 950 | 0.2+ | 1.2+ | 2004 05 11 | 699 | (0.1+ | 1.8+) | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 2002 11 03 | 950 | 0.3+ | 1.3+ | 2004 05 11 | 699 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.9− | 1.1− |
| 2002 11 05 | 699 | 0.2− | 0.1− | 2004 05 11 | 699 | 0.6+ | 1.0− | 2006 11 14 | 703 | (0.6− | 1.7−) |
| 2002 11 05 | 699 | 0.3+ | 0.0 | 2004 05 11 | 699 | (1.8− | 1.8+) | 2006 11 14 | 703 | 0.1− | 1.3− |
| 2002 11 05 | 699 | 0.4− | 1.2+ | 2004 05 13 | 691 | 0.4− | 0.5+ | 2006 11 17 | 691 | 0.4+ | 0.0 |
| 2002 11 05 | 699 | 0.7− | 0.0 | 2004 05 13 | 704 | (0.3− | 2.1+) | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 0.1+ | 2004 05 13 | 704 | 0.9+ | 0.7− | 2006 11 17 | 691 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.3− | 1.1+ | 2004 05 13 | 704 | 0.8+ | 1.1− | 2006 11 17 | 703 | 0.6− | 0.3− |
| 2002 11 06 | 704 | 0.2− | 0.2+ | 2004 05 13 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 1.2+ |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2004 05 13 | 704 | 0.0 | 0.7+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.7+ | 0.7+ | 2004 05 13 | 704 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2002 11 10 | 704 | 0.7+ | 0.3− | 2004 05 13 | 691 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 11 10 | 704 | 0.6− | 0.9+ | 2004 05 16 | 704 | 0.9+ | 0.7+ | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2002 11 10 | 704 | 0.5+ | 0.1+ | 2004 05 16 | 704 | 1.2+ | 0.8+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2002 11 10 | 704 | 0.5− | 0.9+ | 2004 05 16 | 704 | 0.8+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 2002 11 10 | 704 | (1.0− | 3.8+) | 2004 05 16 | 704 | 0.1− | 0.3+ | 2006 11 25 | 703 | 1.0− | 0.0 |
| 2002 11 10 | 704 | 0.8− | 0.6+ | 2004 05 21 | 691 | 0.3+ | 0.3+ | 2006 11 25 | 703 | 1.0− | 0.3− |
| 2002 11 10 | 704 | 0.3+ | 0.8+ | 2004 05 21 | 691 | 0.3+ | 0.5+ | 2006 11 25 | 703 | 0.5− | 0.2+ |
| 2002 11 12 | 644 | 1.3+ | 0.2+ | 2004 05 21 | 691 | 0.1+ | 0.5+ | 2006 11 25 | 703 | 0.5− | 0.2+ |
| 2002 11 12 | 644 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.2+ | 1.1+ |
| 2002 11 12 | 644 | 0.8+ | 0.9+ | 2006 09 17 | 703 | 1.2− | 0.6− | 2006 11 27 | 703 | 0.7− | 2.0+ |
| 2002 12 01 | 704 | 0.8+ | 0.1− | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 11 27 | 703 | 0.3+ | 0.7+ |
| 2002 12 01 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 703 | (1.7− | 0.0 ) | 2006 11 27 | 703 | 0.8− | 0.5+ |
| 2002 12 01 | 704 | (1.7− | 0.3−) | 2006 10 19 | 703 | 0.0 | 0.7+ | | | | |
| 2002 12 01 | 704 | 0.7+ | 1.0− | 2006 10 19 | 703 | 0.1+ | 0.1+ | | | | |

**(138396)∗ 2000 HV$_7$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 204.61519 | | (2000.0) | | | |
| $n$ | 0.21625772 | $\omega$ | 98.20203 | | −0.81913462 | −0.56045552 |
| $a$ | 2.7488749 | $\Omega$ | 47.81058 | | +0.43966447 | −0.75018657 |
| $e$ | 0.0899062 | $i$ | 9.48512 | | +0.36839331 | −0.35086995 |
| $P$ | 4.56 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.2− | 1.6− | 2002 11 06 | 699 | 1.2− | 0.5+ | 2004 02 15 | 704 | 0.2+ | 0.4− |
| 2000 04 05 | 699 | 0.6+ | 0.8− | 2002 11 06 | 699 | 0.1+ | 0.3− | 2004 02 15 | 704 | 0.2− | 0.1− |
| 2000 04 05 | 699 | 0.9− | 0.4− | 2002 11 06 | 699 | 0.4− | 0.8+ | 2004 02 15 | 704 | 0.3− | 0.5− |
| 2000 04 05 | 699 | 0.3− | 0.8+ | 2002 11 06 | 699 | 1.2+ | 0.3− | 2004 02 15 | 704 | 0.2− | 0.5− |
| 2000 04 10 | 695 | 0.2+ | 0.6− | 2003 12 19 | 704 | 0.3+ | 0.6+ | 2004 02 15 | 704 | 0.0 | 0.1− |
| 2000 04 10 | 695 | 0.1+ | 0.4− | 2003 12 19 | 704 | 0.6+ | 0.4+ | 2004 02 16 | 703 | 0.6− | 0.6+ |
| 2000 04 27 | 704 | 0.5+ | 0.6− | 2003 12 19 | 704 | 0.9+ | 0.4+ | 2004 02 16 | 703 | 0.1+ | 0.0 |
| 2000 04 27 | 704 | 0.5− | 0.7+ | 2003 12 19 | 704 | 0.2− | 0.4− | 2004 02 16 | 703 | 0.4+ | 0.7+ |
| 2000 04 27 | 704 | 0.1+ | 0.7+ | 2003 12 28 | 704 | 0.4− | 0.6− | 2004 02 16 | 703 | 0.2+ | 0.6+ |
| 2000 04 27 | 704 | 0.8+ | 0.4+ | 2003 12 28 | 704 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.2+ |
| 2000 04 29 | 704 | 0.6− | 0.0 | 2003 12 28 | 704 | 0.6− | 0.5− | 2004 03 23 | 704 | 0.1+ | 0.8+ |
| 2000 04 29 | 704 | 0.5+ | 0.5− | 2003 12 28 | 704 | 0.9− | 0.5− | 2004 03 23 | 704 | 0.4− | 0.2+ |
| 2000 04 29 | 704 | 0.7+ | 0.7− | 2004 01 17 | 644 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.6− | 0.4+ |
| 2000 04 29 | 704 | 0.5− | 0.5− | 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 03 25 | 704 | (4.2+ | 4.1+) |
| 2000 05 01 | 699 | 0.5− | 0.4+ | 2004 01 17 | 644 | 0.1+ | 0.0 | 2004 03 25 | 704 | (4.4+ | 2.0+) |
| 2000 05 01 | 699 | 0.4+ | 0.0 | 2004 01 20 | 704 | 0.5+ | 0.2− | 2004 03 25 | 704 | (4.8+ | 1.2+) |
| 2000 05 01 | 699 | 1.1− | 0.4+ | 2004 01 20 | 704 | 0.1+ | 0.7+ | 2004 03 26 | 703 | 0.3+ | 0.4+ |
| 2000 05 01 | 699 | 0.0 | 0.3+ | 2004 01 20 | 704 | 0.3− | 0.2− | 2004 03 26 | 703 | 1.3+ | 0.8+ |
| 2000 05 05 | 704 | 0.9− | 1.3+ | 2004 01 31 | 704 | 1.0+ | 0.6+ | 2004 03 26 | 703 | 0.4− | 0.0 |
| 2000 05 05 | 704 | 0.1− | 0.2− | 2004 01 31 | 704 | 0.1+ | 0.6+ | 2004 03 26 | 703 | 0.3+ | 0.7+ |
| 2000 05 05 | 704 | 1.3+ | 0.6+ | 2004 01 31 | 704 | 0.2− | 1.3+ | 2005 01 19 | 809 | 0.6− | 0.3− |
| 2000 05 07 | 704 | 1.1− | 1.2+ | 2004 01 31 | 704 | 0.9+ | 1.3+ | 2005 01 19 | 809 | 0.1+ | 0.1+ |
| 2000 05 07 | 704 | 0.3+ | 0.9+ | 2004 01 31 | 704 | 0.4+ | 0.2+ | 2005 01 19 | 809 | 0.0 | 0.2− |
| 2000 05 07 | 704 | 0.6+ | 0.0 | 2004 02 10 | 644 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.4− | 1.2+ |
| 2000 05 07 | 704 | 0.3+ | 0.4− | 2004 02 10 | 644 | 0.1− | 0.3− | 2006 08 23 | 644 | 0.5− | 0.6+ |
| 2000 05 10 | 704 | 0.8+ | 1.8+ | 2004 02 10 | 644 | 0.3+ | 0.2− | 2006 08 23 | 644 | 0.4− | 1.0+ |
| 2000 05 10 | 704 | 0.1+ | 0.7+ | 2004 02 10 | 644 | 0.1− | 0.6− | 2006 09 26 | 703 | 0.4+ | 1.1+ |
| 2000 05 10 | 704 | 0.1+ | 0.4+ | 2004 02 10 | 644 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.8− | 0.6+ |
| 2000 05 22 | 699 | 0.2+ | 0.2+ | 2004 02 10 | 644 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.9− | 0.8+ |
| 2000 05 22 | 699 | 0.3+ | 0.5− | 2004 02 12 | 644 | 0.1− | 0.5− | 2006 09 26 | 703 | 0.6− | 0.7+ |
| 2000 05 22 | 699 | 0.9− | 0.4− | 2004 02 12 | 644 | 0.2− | 0.1+ | | | | |
| 2000 05 22 | 699 | 1.2+ | 0.8− | 2004 02 12 | 644 | 0.1− | 0.2+ | | | | |

**(138397)∗ 2000 HB$_{11}$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 198.77836 | | (2000.0) | | | |
| $n$ | 0.21736473 | $\omega$ | 99.37613 | | −0.94899165 | −0.30861200 |
| $a$ | 2.7395338 | $\Omega$ | 62.67135 | | +0.25315471 | −0.86791779 |
| $e$ | 0.1042551 | $i$ | 4.17016 | | +0.18795624 | −0.38920091 |
| $P$ | 4.53 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 704 | 0.3+ | 0.2+ | 2004 01 23 | 704 | 0.0 | 0.9+ | 2004 03 20 | 704 | 0.3− | 0.6+ |
| 2000 04 27 | 704 | 1.0− | 1.3+ | 2004 01 23 | 704 | (1.2+ | 3.1+) | 2004 03 20 | 704 | 0.3+ | 0.6+ |
| 2000 04 27 | 704 | 0.4+ | 1.3+ | 2004 01 23 | 704 | 1.4− | 1.3+ | 2004 03 20 | 704 | 0.1− | 0.6+ |
| 2000 04 29 | 704 | 0.2− | 0.4+ | 2004 01 23 | 699 | 0.3− | 1.3+ | 2004 03 26 | 703 | 1.1− | 1.0+ |
| 2000 04 29 | 704 | 0.3+ | 0.5+ | 2004 01 23 | 704 | 0.8− | 0.5+ | 2004 03 26 | 703 | 0.4− | 0.0 |
| 2000 04 29 | 704 | 0.4+ | 0.3+ | 2004 01 23 | 699 | 0.2− | 0.2+ | 2004 03 26 | 703 | 0.0 | 0.5− |
| 2000 05 06 | 704 | 0.0 | 0.1+ | 2004 01 23 | 704 | 0.5+ | 1.1+ | 2004 03 26 | 703 | 0.2− | 0.1+ |
| 2000 05 06 | 704 | 0.7− | 1.6− | 2004 01 23 | 699 | 0.5+ | 0.4− | 2006 08 20 | 691 | 0.3− | 0.6+ |
| 2000 05 06 | 704 | 0.1− | 0.0 | 2004 01 23 | 699 | 0.2− | 0.3+ | 2006 08 20 | 691 | 0.5− | 0.6+ |
| 2000 05 06 | 704 | 0.3+ | 1.2+ | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2006 08 20 | 691 | 1.1− | 1.0+ |
| 2000 05 06 | 704 | 0.0 | 0.6+ | 2004 01 30 | 704 | 0.7+ | 0.7+ | 2006 08 29 | 691 | 0.3− | 0.7+ |
| 2000 05 28 | 704 | 1.0+ | 0.3+ | 2004 01 30 | 704 | (1.9+ | 1.6+) | 2006 08 29 | 691 | 0.2− | 0.9+ |
| 2000 05 28 | 704 | 0.3− | 0.2− | 2004 01 30 | 704 | 0.8+ | 0.2− | 2006 08 29 | 691 | 0.0 | 0.8+ |
| 2000 05 28 | 704 | 0.3+ | 0.8+ | 2004 02 14 | 608 | 0.9+ | 0.7+ | 2006 09 14 | 703 | 0.4− | 1.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.6− | 0.7+ | 2004 02 14 | 608 | 1.0+ | 0.5+ | 2006 09 14 | 703 | (1.7− | 1.7+) |
| 2000 05 28 | 704 | 0.5− | 0.2+ | 2004 02 14 | 608 | 1.0+ | 0.5− | 2006 09 14 | 703 | 0.6− | 1.4+ |
| 2000 05 29 | 704 | 1.4+ | 0.6+ | 2004 02 17 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.8+ |
| 2000 05 29 | 704 | 0.4+ | 0.0 | 2004 02 17 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.7+ | 0.3+ |
| 2000 05 29 | 704 | 0.7+ | 0.7+ | 2004 02 17 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 2000 05 29 | 704 | 1.1+ | 0.8+ | 2004 02 17 | 704 | 0.4− | 0.7+ | 2006 09 18 | 703 | 1.4+ | 1.0− |
| 2000 05 29 | 704 | 0.2+ | 1.1+ | 2004 02 17 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | 0.8+ | 0.3− |
| 2002 10 31 | 644 | 0.1+ | 0.7+ | 2004 03 10 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 1.4− | 0.2+ |
| 2002 10 31 | 644 | 0.1+ | 0.9+ | 2004 03 10 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.9− | 0.3+ |
| 2002 10 31 | 644 | 0.1+ | 0.7+ | 2004 03 10 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | (0.9+ | 2.0+) |
| 2002 11 22 | 644 | 0.3− | 0.0 | 2004 03 14 | 704 | 0.9+ | 0.0 | 2006 09 18 | 699 | 0.8− | 0.8+ |
| 2002 11 22 | 644 | 0.0 | 0.5− | 2004 03 14 | 704 | 0.2+ | 0.7+ | 2006 10 03 | G96 | 0.0 | 0.2+ |
| 2002 11 22 | 644 | 0.2− | 0.1− | 2004 03 14 | 704 | 1.0+ | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.3+ |
| 2002 12 10 | 644 | 0.1− | 0.3+ | 2004 03 14 | 704 | 1.2+ | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.2+ |
| 2002 12 10 | 644 | 0.3− | 0.3+ | 2004 03 14 | 704 | (1.9+ | 1.1+) | 2006 10 03 | G96 | 0.0 | 0.3+ |
| 2002 12 10 | 644 | 0.2+ | 0.5+ | 2004 03 19 | 644 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 0.7+ | 0.6+ | 2004 03 19 | 644 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.6− | 0.3− |
| 2003 12 22 | 704 | 0.3− | 0.1+ | 2004 03 19 | 644 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.3+ | 0.8+ | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2003 12 22 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.6+ | | | | |

**(138398)∗ 2000 HG$_{11}$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.68442 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21246358 | $\omega$ | 197.01627 | | +0.11218806 | +0.99219389 | |
| $a$ | 2.7815042 | $\Omega$ | 79.45066 | | −0.90512100 | +0.12465035 | |
| $e$ | 0.1493689 | $i$ | 3.17520 | | −0.41008513 | −0.00368545 | |
| $P$ | 4.64 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 699 | 0.6+ | 0.8+ | 2000 05 28 | 704 | 0.2− | 0.8+ | 2004 02 18 | 608 | 0.3− | 0.0 |
| 2000 04 24 | 699 | 0.1+ | 0.4− | 2000 05 28 | 699 | 0.4+ | 0.6− | 2004 02 18 | 608 | 0.4− | 0.0 |
| 2000 04 24 | 699 | 0.5− | 0.5+ | 2000 05 28 | 699 | 0.2+ | 0.2− | 2004 02 23 | 704 | 1.1+ | 0.9+ |
| 2000 04 24 | 699 | 1.3+ | 0.5+ | 2000 05 28 | 699 | 1.2+ | 1.0− | 2004 02 23 | 704 | 0.6+ | 0.7+ |
| 2000 04 27 | 704 | 0.8+ | 0.5+ | 2000 05 29 | 704 | 1.2− | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.8+ |
| 2000 04 27 | 704 | 0.9− | 0.5+ | 2000 05 29 | 704 | 0.8+ | 0.4+ | 2004 02 23 | 704 | 0.7+ | 1.2+ |
| 2000 04 27 | 704 | 0.2+ | 0.7+ | 2000 05 29 | 704 | 0.0 | 0.8+ | 2004 03 19 | 644 | 0.2+ | 1.2+ |
| 2000 04 27 | 704 | 0.8+ | 1.5+ | 2000 05 29 | 704 | 0.5− | 0.3+ | 2004 03 19 | 644 | 1.3+ | 0.7+ |
| 2000 04 29 | 704 | 0.1+ | 0.1− | 2000 05 29 | 704 | 1.0− | 1.3+ | 2004 03 19 | 644 | 0.3+ | 0.8+ |
| 2000 04 29 | 704 | 0.0 | 0.6+ | 2000 06 04 | 608 | (1.6+ | 2.2−) | 2004 03 19 | 704 | (0.4− | 1.8+) |
| 2000 04 29 | 704 | 0.1− | 0.7+ | 2000 06 04 | 608 | (1.5+ | 2.6−) | 2004 03 19 | 704 | 0.4+ | 1.2+ |
| 2000 04 29 | 704 | 0.6+ | 0.3+ | 2000 06 04 | 608 | (0.9+ | 2.7−) | 2004 03 19 | 704 | (0.1+ | 2.0+) |
| 2000 04 29 | 704 | 0.3+ | 0.2+ | 2000 06 05 | 699 | 0.1+ | 0.7− | 2004 03 19 | 704 | 0.7+ | 1.0+ |
| 2000 04 30 | 699 | 0.0 | 0.4− | 2000 06 05 | 699 | 1.6+ | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2000 04 30 | 699 | 0.9− | 0.4+ | 2000 06 05 | 699 | 1.8− | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2000 04 30 | 699 | 0.7− | 0.1+ | 2000 06 05 | 699 | 0.9− | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.2+ |
| 2000 04 30 | 699 | 0.2+ | 0.8+ | 2000 06 05 | 699 | 0.9− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2000 05 03 | 704 | 1.0+ | 0.6+ | 2000 06 05 | 699 | 1.1+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.6+ |
| 2000 05 03 | 704 | 1.2+ | 0.2+ | 2000 06 05 | 699 | 0.5− | 0.2+ | 2006 10 18 | 691 | 0.5+ | 0.4+ |
| 2000 05 03 | 704 | 0.5− | 0.4+ | 2000 06 05 | 699 | 0.6+ | 0.1− | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2000 05 03 | 704 | 0.9+ | 0.4+ | 2001 07 19 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2000 05 10 | 704 | 0.3+ | 0.1− | 2001 07 19 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.7+ |
| 2000 05 10 | 704 | 0.4− | 0.3+ | 2001 07 19 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.9+ |
| 2000 05 10 | 704 | 0.4− | 0.3+ | 2001 09 18 | 699 | 0.5− | 0.8+ | 2006 10 22 | 691 | 0.4− | 0.4+ |
| 2000 05 10 | 704 | 0.1− | 0.4+ | 2001 09 18 | 699 | 0.4− | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2000 05 10 | 704 | 0.0 | 0.5+ | 2001 09 18 | 699 | 0.4− | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2000 05 11 | 704 | 0.2− | 0.4− | 2001 09 18 | 699 | 0.7− | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2000 05 11 | 704 | 0.1+ | 0.3+ | 2001 09 25 | 644 | 0.2+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2000 05 11 | 704 | 0.7+ | 0.3+ | 2001 09 25 | 644 | 0.6− | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2000 05 11 | 704 | 0.5− | 0.4− | 2001 09 25 | 644 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2000 05 11 | 704 | 0.2− | 1.2+ | 2001 10 20 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.4+ |
| 2000 05 23 | 699 | 0.9+ | 0.4+ | 2001 10 20 | 704 | 0.5− | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.4+ |
| 2000 05 23 | 699 | 0.1− | 0.1+ | 2001 10 20 | 704 | 0.4− | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.9+ |
| 2000 05 23 | 699 | 0.1+ | 0.2+ | 2001 10 20 | 704 | 0.4− | 1.0+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2000 05 23 | 699 | 0.3+ | 0.0 | 2001 10 20 | 704 | 0.1+ | 0.9+ | 2006 11 11 | 703 | (1.8− | 0.0 ) |
| 2000 05 28 | 704 | 0.0 | 0.4− | 2001 10 20 | 704 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.6− | 1.3+ |
| 2000 05 28 | 704 | 0.2+ | 0.4+ | 2001 10 20 | 704 | 0.0 | 0.8+ | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2000 05 28 | 699 | 0.4+ | 0.2− | 2001 10 20 | 704 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.4+ |
| 2000 05 28 | 704 | 0.1− | 0.4+ | 2001 10 20 | 704 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.7+ |
| 2000 05 28 | 704 | 0.1− | 0.3+ | 2004 02 18 | 608 | 0.3− | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.4+ |

**(138399)∗ 2000 HK$_{11}$**

Discovered 2000 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.10265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24293667 | $\omega$ | 54.48777 | | +0.27386633 | −0.95757760 | |
| $a$ | 2.5437475 | $\Omega$ | 20.19177 | | +0.77668089 | +0.16520406 | |
| $e$ | 0.1255102 | $i$ | 15.05921 | | +0.56724248 | +0.23612024 | |
| $P$ | 4.06 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.0 | 0.6− | 2002 11 15 | 704 | (0.2− | 1.9−) | 2004 03 24 | 699 | 0.9+ | 0.4− |
| 2000 04 05 | 704 | 1.0+ | 0.1+ | 2002 11 15 | 704 | (1.5− | 1.4−) | 2004 03 24 | 699 | 0.6− | 0.6− |
| 2000 04 05 | 704 | 0.1− | 0.1− | 2002 11 15 | 704 | 0.1+ | 1.0− | 2004 03 24 | 699 | (1.8+ | 1.0−) |
| 2000 04 05 | 704 | 0.1− | 0.1− | 2002 11 15 | 704 | 0.4+ | 1.5− | 2004 03 28 | 704 | 0.5+ | 0.6+ |
| 2000 04 06 | 704 | 0.4− | 0.3− | 2002 11 25 | 644 | 1.3+ | 0.4+ | 2004 03 28 | 704 | 1.0− | 1.0− |
| 2000 04 06 | 704 | 0.7− | 0.3− | 2002 11 25 | 644 | 0.0 | 0.1− | 2004 03 28 | 704 | 0.3− | 0.0 |
| 2000 04 06 | 704 | 0.5− | 0.1+ | 2002 11 25 | 644 | 0.9+ | 0.7+ | 2004 03 28 | 704 | 0.7+ | 0.6+ |
| 2000 04 06 | 704 | 1.4− | 0.4+ | 2002 11 25 | 644 | 0.1− | 0.0 | 2004 04 20 | 691 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.6− | 0.2+ | 2002 11 25 | 644 | 1.1+ | 0.4+ | 2004 04 20 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.5− | 0.0 | 2002 11 25 | 644 | 0.0 | 0.0 | 2004 04 20 | 691 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.2− | 0.0 | 2002 12 03 | 644 | 0.1+ | 0.0 | 2004 04 21 | 704 | 0.6+ | 0.2+ |
| 2000 04 06 | 704 | 0.4− | 0.5− | 2002 12 03 | 644 | 0.0 | 0.2+ | 2004 04 21 | 704 | 0.3− | 0.0 |
| 2000 04 06 | 704 | 0.4− | 0.3− | 2002 12 03 | 644 | 0.2− | 0.1+ | 2004 04 21 | 704 | 0.6+ | 0.8− |
| 2000 04 06 | 704 | 0.3− | 0.6+ | 2002 12 06 | 704 | 0.3− | 0.2+ | 2004 04 21 | 704 | 0.3+ | 0.4− |
| 2000 04 28 | 704 | 0.3+ | 0.0 | 2002 12 06 | 704 | 0.2− | 0.0 | 2004 04 21 | 704 | 0.4− | 0.5− |
| 2000 04 28 | 704 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.2+ | 1.3+ |
| 2000 04 28 | 704 | 0.2+ | 0.4+ | 2002 12 06 | 704 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.0 |
| 2000 04 29 | 704 | 0.2+ | 0.3+ | 2002 12 06 | 704 | 0.7− | 0.1− | 2006 08 29 | 703 | 0.5+ | 0.2+ |
| 2000 04 29 | 704 | 0.5− | 1.3+ | 2002 12 06 | 699 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.7+ | 0.3− |
| 2000 04 29 | 704 | 0.1+ | 0.4− | 2002 12 06 | 699 | 0.7− | 0.4− | 2006 09 18 | 704 | (2.4+ | 1.5+) |
| 2000 04 29 | 704 | 0.4− | 0.4− | 2002 12 06 | 699 | 0.2− | 0.1− | 2006 09 18 | 704 | (2.1+ | 1.8+) |
| 2000 04 29 | 704 | 1.5+ | 1.3− | 2002 12 06 | 699 | 0.4− | 0.2− | 2006 09 18 | 704 | (2.7+ | 1.7+) |
| 2000 05 05 | 704 | 0.2− | 0.3+ | 2004 03 13 | 644 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.5+ | 1.0+ |
| 2000 05 05 | 704 | 0.2+ | 0.1+ | 2004 03 13 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.2− |
| 2000 05 05 | 704 | 0.4+ | 0.6+ | 2004 03 13 | 644 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.6− | 0.1− |
| 2000 05 05 | 704 | 0.4+ | 0.7+ | 2004 03 13 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 0.0 | 0.8+ | 2004 03 13 | 644 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.3− | 0.0 |
| 2002 09 06 | 704 | 1.3+ | 1.2+ | 2004 03 13 | 644 | 0.6+ | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2004 03 14 | 703 | 0.2+ | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2002 09 06 | 704 | 0.7− | 0.3− | 2004 03 14 | 703 | 1.1− | 0.3− | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.2+ | 0.8− | 2004 03 14 | 703 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 03 14 | 703 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.4− |
| 2002 10 04 | 704 | 0.5+ | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.3− | 2006 10 27 | 703 | 0.4− | 0.0 |
| 2002 10 04 | 704 | 0.9− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.4− | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2002 10 12 | 704 | 0.6− | 0.4− | 2004 03 19 | 704 | 0.5+ | 0.2− | 2006 11 15 | 703 | 0.5+ | 0.0 |
| 2002 10 12 | 704 | 0.3− | 0.6− | 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.2+ |
| 2002 10 12 | 704 | 1.2− | 0.8− | 2004 03 22 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.6+ | 0.7− | 2004 03 22 | 704 | 0.9+ | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.1+ | 2004 03 22 | 704 | 0.7+ | 0.4+ | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 644 | 0.3− | 0.3− |
| 2002 11 07 | 704 | 0.4+ | 0.8− | 2004 03 23 | 704 | 0.3− | 0.3− | 2006 11 22 | 703 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 703 | 0.2− | 0.3+ |
| 2002 11 13 | 644 | 0.2+ | 0.9+ | 2004 03 23 | 704 | 0.8+ | 0.4+ | 2006 11 22 | 703 | 1.2− | 0.9− |
| 2002 11 13 | 644 | 0.3+ | 0.9+ | 2004 03 23 | 704 | 0.2− | 0.5− | 2006 11 22 | 703 | 0.1− | 0.2+ |
| 2002 11 13 | 644 | 0.1+ | 1.0+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | | | | |
| 2002 11 15 | 704 | 0.6− | 0.9− | 2004 03 24 | 699 | 0.3− | 0.7− | | | | |

**(138400)∗ 2000 HL$_{12}$ = 2004 FK$_{98}$**

Discovered 2000 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60672)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 168.99915 | | (2000.0) | | | |
| $n$ | 0.23158330 | $\omega$ | 196.00465 | | −0.55789096 | +0.80984204 |
| $a$ | 2.6262207 | $\Omega$ | 40.57522 | | −0.72756560 | −0.37209485 |
| $e$ | 0.0875050 | $i$ | 16.19563 | | −0.39925678 | −0.45354305 |
| $P$ | 4.26 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 699 | 0.8+ | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.0 | 2004 04 25 | 699 | 1.1− | 0.6− |
| 2000 04 24 | 699 | 0.6+ | 0.9+ | 2004 03 15 | 704 | 0.0 | 0.4+ | 2004 04 25 | 699 | 0.8− | 0.1+ |
| 2000 04 24 | 699 | (2.2+ | 0.1+) | 2004 03 22 | 699 | 0.3− | 0.3− | 2004 05 13 | 704 | 0.7− | 0.3+ |
| 2000 04 24 | 699 | 0.8+ | 0.4+ | 2004 03 22 | 699 | 0.5− | 0.3− | 2004 05 13 | 704 | 0.2+ | 0.1+ |
| 2000 04 28 | 704 | 0.9+ | 1.9+ | 2004 03 22 | 699 | 0.6− | 0.1− | 2004 05 13 | 704 | 0.2+ | 0.1− |
| 2000 04 28 | 704 | 0.4+ | 0.9+ | 2004 03 22 | 699 | 0.3− | 0.1− | 2004 05 13 | 704 | 0.6+ | 0.1− |
| 2000 04 28 | 704 | 0.9+ | 0.6+ | 2004 03 23 | 704 | 0.7+ | 0.2− | 2004 05 13 | 704 | 0.4+ | 0.4+ |
| 2000 04 28 | 704 | (0.2− | 2.5+) | 2004 03 23 | 704 | 0.2+ | 0.1− | 2004 05 22 | 704 | 0.3+ | 1.1+ |
| 2000 04 28 | 704 | 0.6+ | 1.8+ | 2004 03 23 | 704 | 0.3+ | 0.0 | 2004 05 22 | 704 | 1.0+ | 0.1− |
| 2000 04 29 | 704 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.0 | 0.1+ | 2004 05 22 | 704 | 1.2+ | 0.7− |
| 2000 04 29 | 704 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2004 05 22 | 704 | 0.5− | 0.4+ |
| 2000 04 29 | 704 | 0.6+ | 0.5+ | 2004 03 25 | 704 | 0.3+ | 0.8− | 2004 05 22 | 704 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 0.3+ | 1.2+ | 2004 03 25 | 704 | 0.4− | 0.4− | 2005 07 27 | E12 | 0.8− | 1.3+ |
| 2000 04 29 | 704 | 0.5+ | 0.2+ | 2004 03 25 | 704 | 0.5− | 0.3− | 2005 07 27 | E12 | 0.8− | 1.0+ |
| 2000 04 30 | 699 | 0.8− | 1.0+ | 2004 03 28 | 703 | 0.6+ | 0.4+ | 2005 07 27 | E12 | 0.4− | 1.4+ |
| 2000 04 30 | 699 | 0.1− | 0.8+ | 2004 03 28 | 703 | 0.2+ | 0.2− | 2005 07 27 | E12 | 0.4+ | 1.2+ |
| 2000 04 30 | 699 | 0.4+ | 0.8− | 2004 03 28 | 703 | 0.7+ | 0.5− | 2005 08 08 | E12 | 0.4− | 0.9+ |
| 2000 04 30 | 699 | 0.1− | 0.5+ | 2004 03 28 | 703 | 0.5+ | 0.5+ | 2005 08 08 | E12 | 0.3− | 1.0+ |
| 2000 05 06 | 704 | 0.1− | 0.9− | 2004 03 30 | 704 | 0.1− | 0.0 | 2005 08 08 | E12 | 0.5− | 0.2+ |
| 2000 05 06 | 704 | 0.5+ | 0.4− | 2004 03 30 | 704 | 0.4+ | 1.0+ | 2005 08 08 | E12 | (0.2+ | 1.8+) |
| 2000 05 06 | 704 | 0.4+ | 0.3− | 2004 03 30 | 704 | 0.1− | 0.4− | 2006 10 04 | G96 | 0.2− | 0.0 |
| 2000 05 07 | 704 | 0.7+ | 0.1+ | 2004 03 30 | 704 | 0.3− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.2+ |
| 2000 05 07 | 704 | 0.2− | 0.2− | 2004 03 30 | 704 | 0.5+ | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2000 05 07 | 704 | 0.7+ | 0.6− | 2004 03 30 | 704 | 0.7+ | 1.2+ | 2006 10 04 | G96 | 0.5− | 0.2+ |
| 2000 05 07 | 704 | 0.1+ | 0.4− | 2004 03 30 | 704 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.5+ |
| 2000 05 07 | 704 | 0.3+ | 0.2− | 2004 03 30 | 704 | 0.1− | 0.6− | 2006 11 11 | 691 | 0.4− | 0.5+ |
| 2000 05 09 | 704 | 0.2− | 0.8+ | 2004 03 30 | 704 | 0.5+ | 1.4+ | 2006 11 11 | 691 | 0.3− | 0.3+ |
| 2000 05 09 | 704 | 0.0 | 0.6+ | 2004 03 30 | 704 | 0.5+ | 0.9− | 2006 11 17 | 691 | 0.1− | 0.4+ |
| 2000 05 09 | 704 | 0.0 | 0.5+ | 2004 03 30 | 704 | 1.0+ | 0.1− | 2006 11 17 | 691 | 0.2− | 0.5+ |
| 2000 05 09 | 704 | 0.3+ | 0.5+ | 2004 03 30 | 704 | 0.5− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.3+ |
| 2000 05 09 | 704 | 0.8+ | 1.6+ | 2004 03 30 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2000 05 10 | 704 | 0.5− | 0.2− | 2004 03 30 | 704 | 0.6+ | 0.3− | 2006 11 19 | 691 | 0.5− | 0.4+ |
| 2000 05 10 | 704 | 0.5+ | 0.1+ | 2004 03 30 | 704 | 0.8− | 1.0+ | 2006 11 19 | 691 | 0.3− | 0.6+ |
| 2000 05 10 | 704 | 0.5+ | 0.4+ | 2004 03 30 | 704 | 0.6− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2000 05 10 | 704 | 0.6+ | 0.6+ | 2004 03 30 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 1.1+ | 1.4+ |
| 2000 05 10 | 704 | 0.5+ | 0.3+ | 2004 04 15 | 704 | 0.6+ | 1.3− | 2006 11 19 | 704 | 0.8+ | 0.5+ |
| 2000 05 24 | 699 | 0.4+ | 0.0 | 2004 04 15 | 704 | 0.5+ | 0.6+ | 2006 11 19 | 704 | 1.3+ | 0.2+ |
| 2000 05 24 | 699 | 0.1+ | 1.8+ | 2004 04 15 | 704 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.5+ |
| 2000 05 24 | 699 | 0.1+ | 0.4− | 2004 04 15 | 704 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.4− | 0.4+ |
| 2000 05 24 | 699 | 0.6+ | 0.0 | 2004 04 23 | 704 | 0.6− | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.4+ |
| 2001 09 11 | 704 | 1.2− | 0.2− | 2004 04 23 | 704 | 0.8− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2001 09 11 | 704 | 1.0− | 0.1+ | 2004 04 23 | 704 | 0.7− | 0.4+ | 2006 11 22 | 704 | 0.8− | 0.1+ |
| 2001 09 11 | 704 | 1.3− | 0.0 | 2004 04 23 | 704 | 1.2− | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.3− |
| 2004 03 15 | 704 | 0.2+ | 0.1+ | 2004 04 23 | 704 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.3− | 1.6− |
| 2004 03 15 | 704 | 0.2+ | 0.7+ | 2004 04 25 | 699 | 1.0− | 0.0 | | | | |
| 2004 03 15 | 704 | 0.2− | 0.1− | 2004 04 25 | 699 | 0.1− | 0.1+ | | | | |

**(138401)∗ 2000 HB$_{13}$**

Discovered 2000 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.15886 | | (2000.0) | | | |
| $n$ | 0.21941198 | $\omega$ | 88.99841 | | +0.73881512 | +0.63583269 |
| $a$ | 2.7224662 | $\Omega$ | 231.47757 | | −0.67364027 | +0.70613788 |
| $e$ | 0.1904129 | $i$ | 16.58482 | | +0.01899990 | +0.31158641 |
| $P$ | 4.49 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 704 | 0.3− | 1.4− | 2000 06 05 | 699 | 0.1+ | 0.4+ | 2001 11 24 | 704 | 0.7+ | 1.0+ |
| 2000 04 28 | 704 | 0.6− | 0.7− | 2000 06 05 | 699 | 0.4− | 0.3− | 2001 11 24 | 704 | 0.4+ | 1.2+ |
| 2000 04 28 | 704 | 0.1− | 0.2− | 2001 08 22 | 644 | 0.9− | 0.8− | 2001 11 24 | 704 | 0.4+ | 0.8+ |
| 2000 04 28 | 704 | 0.7+ | 0.7− | 2001 08 22 | 644 | 0.6− | 0.8− | 2001 12 11 | 704 | 0.2+ | 0.9+ |
| 2000 04 28 | 704 | 0.1− | 0.3− | 2001 08 22 | 644 | 0.1− | 0.6− | 2001 12 11 | 704 | 0.4+ | 0.4+ |
| 2000 04 29 | 704 | 0.3+ | 0.1+ | 2001 09 19 | 699 | 0.1+ | 0.1− | 2001 12 11 | 704 | 0.1+ | 0.2+ |
| 2000 04 29 | 704 | 0.0 | 0.1− | 2001 09 19 | 699 | 0.4+ | 0.3+ | 2001 12 11 | 704 | 0.3+ | 0.3+ |
| 2000 04 29 | 704 | 0.4+ | 0.5+ | 2001 09 19 | 699 | 0.7+ | 0.4+ | 2001 12 11 | 704 | 0.0 | 0.5+ |
| 2000 04 29 | 704 | 0.1+ | 0.4+ | 2001 09 19 | 699 | 1.0+ | 0.1+ | 2001 12 15 | 704 | 0.2− | 1.0+ |
| 2000 04 29 | 704 | 0.4+ | 1.0+ | 2001 09 25 | 704 | 0.3− | 0.3− | 2001 12 15 | 704 | 0.7− | 1.0+ |
| 2000 05 06 | 704 | 0.2+ | 0.1− | 2001 09 25 | 704 | 0.3+ | 0.0 | 2001 12 15 | 704 | 0.3− | 0.9+ |
| 2000 05 06 | 704 | 0.6+ | 0.8− | 2001 09 25 | 704 | 0.7− | 0.1+ | 2001 12 15 | 704 | 0.2− | 1.5+ |
| 2000 05 06 | 704 | 0.1+ | 0.4+ | 2001 09 25 | 704 | 0.5− | 0.5+ | 2004 03 16 | E12 | 0.4− | 1.1+ |
| 2000 05 06 | 704 | 0.2− | 0.4+ | 2001 09 25 | 704 | 0.9− | 1.1+ | 2004 03 16 | E12 | 0.1− | 0.9+ |
| 2000 05 07 | 704 | 0.1− | 0.3− | 2001 09 26 | 704 | 0.4+ | 0.3+ | 2004 03 16 | E12 | 0.2− | 0.4+ |
| 2000 05 07 | 704 | 0.0 | 0.3− | 2001 09 26 | 704 | 0.3+ | 0.2− | 2004 03 16 | E12 | 0.2− | 0.7+ |
| 2000 05 07 | 704 | 0.3+ | 0.2− | 2001 09 26 | 704 | 0.3+ | 0.4− | 2004 03 17 | 704 | 0.3+ | 0.7+ |
| 2000 05 07 | 704 | 0.1+ | 0.3+ | 2001 09 26 | 704 | 0.5+ | 0.4− | 2004 03 17 | 704 | 0.0 | 0.2+ |
| 2000 05 07 | 704 | 0.2+ | 0.1+ | 2001 09 26 | 704 | 0.7+ | 0.2− | 2004 03 17 | 704 | (0.0 | 1.5+) |
| 2000 05 09 | 704 | 0.7− | 0.4− | 2001 10 13 | 644 | 0.3− | 0.3+ | 2004 03 17 | 704 | 0.4+ | 0.2− |
| 2000 05 09 | 704 | 1.2+ | 0.9− | 2001 10 13 | 644 | 0.2− | 0.3+ | 2004 03 17 | 704 | 0.2− | 0.4+ |
| 2000 05 09 | 704 | 0.6− | 1.2− | 2001 10 13 | 644 | 0.4− | 0.3+ | 2004 03 26 | 704 | (1.6+ | 0.7+) |
| 2000 05 10 | 704 | 0.1− | 0.6− | 2001 10 18 | 704 | 0.4− | 0.2+ | 2004 03 26 | 704 | 0.1− | 0.5+ |
| 2000 05 10 | 704 | 0.5+ | 0.1− | 2001 10 18 | 704 | 0.2− | 0.5+ | 2004 03 26 | 704 | 0.4− | 0.6+ |
| 2000 05 10 | 704 | (2.1+ | 0.2+) | 2001 10 18 | 704 | 0.3− | 0.3+ | 2004 04 17 | 704 | 1.0+ | 0.9+ |
| 2000 05 11 | 699 | 0.1− | 0.4+ | 2001 10 18 | 704 | 0.1− | 0.1+ | 2004 04 17 | 704 | (0.4+ | 2.0+) |
| 2000 05 11 | 699 | 0.7− | 0.2+ | 2001 10 18 | 704 | 0.1− | 0.1− | 2004 04 17 | 704 | 0.8+ | 0.8+ |
| 2000 05 11 | 699 | 0.4+ | 0.3− | 2001 10 19 | 704 | 0.5+ | 0.8+ | 2005 06 06 | 704 | 0.3− | 0.3+ |
| 2000 05 11 | 699 | 0.1+ | 0.0 | 2001 10 19 | 704 | 0.3+ | 0.6+ | 2005 06 06 | 704 | 0.4− | 0.1+ |
| 2000 05 28 | 704 | 0.3+ | 0.4+ | 2001 10 19 | 704 | 0.4+ | 0.6+ | 2005 06 06 | 704 | 0.6− | 0.3+ |
| 2000 05 28 | 704 | 0.2+ | 0.1− | 2001 10 19 | 704 | 0.9+ | 0.7+ | 2005 06 06 | 704 | 0.3− | 0.3+ |
| 2000 05 28 | 699 | 0.5− | 0.6− | 2001 10 19 | 704 | 0.2+ | 0.6− | 2005 06 06 | 704 | 0.3− | 0.1− |
| 2000 05 28 | 704 | 0.1+ | 0.2+ | 2001 10 28 | 704 | 0.5+ | 0.0 | 2005 07 29 | 704 | 0.5− | 0.7+ |
| 2000 05 28 | 704 | 0.1+ | 0.2+ | 2001 10 28 | 704 | 0.4+ | 1.2+ | 2005 07 29 | 704 | 0.8+ | 0.6− |
| 2000 05 28 | 704 | 0.0 | 0.5+ | 2001 10 28 | 704 | (0.1− | 1.5+) | 2005 07 29 | 704 | 0.8− | 0.2+ |
| 2000 05 28 | 699 | 0.0 | 0.3− | 2001 10 28 | 704 | (0.0 | 1.6+) | 2005 07 29 | 704 | 0.6+ | 0.2− |
| 2000 05 28 | 699 | 0.6− | 0.1− | 2001 11 11 | 699 | 0.2− | 0.3+ | 2005 12 02 | 703 | 0.0 | 0.6+ |
| 2000 05 28 | 699 | 0.4− | 0.4− | 2001 11 11 | 699 | 0.2+ | 0.2− | 2005 12 02 | 703 | 1.2+ | 0.4− |
| 2000 05 29 | 704 | 0.4− | 0.1− | 2001 11 11 | 699 | 1.1− | 0.4+ | 2005 12 02 | 703 | 0.8+ | 0.5+ |
| 2000 05 29 | 704 | 0.1+ | 0.4+ | 2001 11 11 | 699 | 0.0 | 0.3+ | 2005 12 02 | 703 | (2.5− | 0.6+) |
| 2000 05 29 | 704 | 0.4+ | 1.2+ | 2001 11 17 | 704 | 0.2− | 0.1+ | 2006 11 16 | D35 | 0.0 | 0.7+ |
| 2000 05 29 | 704 | 0.6+ | 0.8+ | 2001 11 17 | 704 | 1.5− | 0.0 | 2006 11 16 | D35 | 0.0 | 0.5+ |
| 2000 05 29 | 704 | 0.0 | 0.7+ | 2001 11 17 | 704 | 0.6− | 0.1+ | 2006 11 16 | D35 | 0.0 | 0.8+ |
| 2000 05 31 | 691 | 0.0 | 0.9+ | 2001 11 17 | 704 | 1.2− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.5+ |
| 2000 05 31 | 691 | 0.0 | 1.0+ | 2001 11 17 | 644 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.5+ |
| 2000 05 31 | 691 | 0.1− | 0.9+ | 2001 11 17 | 704 | 0.5− | 0.5+ | 2006 11 18 | G96 | 0.4+ | 0.4+ |
| 2000 06 01 | 691 | 0.1− | 0.8+ | 2001 11 17 | 644 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.5+ |
| 2000 06 01 | 691 | 0.0 | 0.5+ | 2001 11 17 | 644 | 0.3− | 0.6− | 2006 11 28 | 704 | 1.1+ | 0.5+ |
| 2000 06 01 | 691 | 0.0 | 0.8+ | 2001 11 20 | 699 | 0.5− | 0.8+ | 2006 11 28 | 704 | 0.3− | 1.3+ |
| 2000 06 01 | 608 | 0.2− | 0.1+ | 2001 11 20 | 699 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.5+ | 0.6+ |
| 2000 06 01 | 608 | 0.7− | 0.0 | 2001 11 20 | 699 | 0.5− | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2000 06 01 | 608 | 0.2− | 0.5− | 2001 11 20 | 699 | 0.5− | 1.4+ | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2000 06 05 | 699 | 0.3+ | 0.5+ | 2001 11 24 | 704 | (0.6− | 1.5+) | | | | |
| 2000 06 05 | 699 | 1.1+ | 0.5+ | 2001 11 24 | 704 | 0.1− | 0.7+ | | | | |

**(138402)∗ 2000 HN$_{14}$ = 1988 SP$_{1}$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 524)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.72992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38717780 | $\omega$ | 287.43988 | | +0.51873681 | −0.84974904 | |
| $a$ | 1.8643570 | $\Omega$ | 130.93631 | | +0.82401359 | +0.46763652 | |
| $e$ | 0.1542156 | $i$ | 7.14900 | | +0.22784583 | +0.24339813 | |
| $P$ | 2.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 09 16 | 807 | 0.5− | 0.6− | 2002 02 09 | 704 | 0.4− | 0.0 | 2005 05 08 | 703 | 0.3− | 0.6− |
| 1988 09 18 | 807 | 0.4− | 0.1− | 2002 02 11 | 704 | 0.3− | 0.0 | 2005 05 08 | 703 | 0.0 | 0.5− |
| 2000 04 27 | 704 | 0.4+ | 0.6+ | 2002 02 11 | 704 | 0.1+ | 0.0 | 2005 05 08 | 703 | 0.8− | 0.0 |
| 2000 04 27 | 704 | 0.8+ | 1.6+ | 2002 02 11 | 704 | 0.1− | 0.1− | 2006 08 23 | 704 | 0.2− | 0.3+ |
| 2000 04 27 | 704 | 0.1+ | 1.5+ | 2002 02 11 | 704 | 0.3− | 0.2− | 2006 08 23 | 704 | (2.1− | 1.6+) |
| 2000 04 27 | 704 | 0.4+ | 1.0+ | 2002 02 11 | 704 | 0.1+ | 0.3− | 2006 08 23 | 704 | 0.2+ | 0.5+ |
| 2000 04 27 | 704 | 0.2− | 0.1− | 2002 02 20 | 704 | 0.3− | 0.8− | 2006 08 23 | 704 | 0.3+ | 0.3+ |
| 2000 04 30 | 704 | 0.4+ | 0.0 | 2002 02 20 | 704 | 0.2− | 1.0+ | 2006 08 23 | 704 | 0.6− | 0.8+ |
| 2000 04 30 | 704 | 0.5+ | 1.1+ | 2002 02 20 | 704 | 0.7+ | 0.6+ | 2006 09 18 | 703 | 0.7− | 0.4+ |
| 2000 04 30 | 704 | 0.1− | 0.3+ | 2002 02 20 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.5+ |
| 2000 04 30 | 704 | 0.4− | 0.9+ | 2005 03 10 | 703 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.4+ |
| 2000 04 30 | 704 | 0.1+ | 0.5+ | 2005 03 10 | 703 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.1+ |
| 2000 05 01 | 704 | 0.5+ | 0.8+ | 2005 03 10 | 703 | 0.3− | 1.0− | 2006 09 30 | 699 | 0.1− | 0.9+ |
| 2000 05 01 | 704 | 0.1− | 0.3+ | 2005 03 10 | 703 | 0.1+ | 0.2+ | 2006 09 30 | 699 | 0.3− | 0.5+ |
| 2000 05 01 | 704 | 0.6+ | 0.7+ | 2005 03 30 | 683 | (0.8+ | 1.6+) | 2006 09 30 | 699 | 0.1− | 0.1− |
| 2000 05 01 | 704 | 1.0+ | 0.0 | 2005 03 30 | 683 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 2000 05 01 | 704 | 0.1− | 0.3+ | 2005 04 01 | 699 | 0.4+ | 1.3+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2000 05 02 | 704 | 0.5− | 0.6+ | 2005 04 01 | 699 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2000 05 02 | 704 | 0.3+ | 0.8+ | 2005 04 01 | 699 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2000 05 02 | 704 | 0.4+ | 0.0 | 2005 04 01 | 683 | (0.9+ | 4.3−) | 2006 10 01 | 704 | 0.2− | 0.2− |
| 2000 05 02 | 704 | 0.8+ | 0.0 | 2005 04 01 | 683 | (0.5+ | 1.8−) | 2006 10 01 | 704 | (1.6− | 0.5−) |
| 2000 05 02 | 704 | 0.0 | 1.0+ | 2005 04 01 | 699 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 1.1− | 0.3+ |
| 2000 05 02 | 704 | 0.5+ | 0.8+ | 2005 04 01 | 683 | 0.3+ | 1.4− | 2006 10 01 | 704 | 0.7− | 0.5− |
| 2000 05 02 | 704 | 0.7+ | 0.6+ | 2005 04 04 | 703 | 0.6− | 0.4− | 2006 10 01 | 704 | 0.1− | 0.9− |
| 2000 05 02 | 704 | 1.4+ | 0.1− | 2005 04 04 | 703 | 1.0− | 0.8− | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.4+ | 0.8+ | 2005 04 04 | 703 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.0 | 1.0+ |
| 2001 10 17 | 704 | 0.5+ | 0.5+ | 2005 04 04 | 703 | 0.7− | 0.7− | 2006 10 28 | 703 | 0.3+ | 0.4+ |
| 2001 10 17 | 704 | 0.1− | 0.5− | 2005 04 06 | 704 | 0.7+ | 0.2+ | 2006 10 28 | 703 | 0.3+ | 1.1+ |
| 2001 10 17 | 704 | 0.2+ | 0.3+ | 2005 04 06 | 704 | 0.9+ | 1.3+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2001 10 17 | 704 | 0.4+ | 0.1− | 2005 04 06 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.0 |
| 2001 12 11 | 704 | 0.0 | 0.3− | 2005 04 06 | 704 | 0.4+ | 1.4+ | 2006 10 28 | 703 | 0.4+ | 0.6+ |
| 2001 12 11 | 704 | 0.0 | 0.4− | 2005 04 13 | 703 | 0.4− | 0.0 | 2006 10 31 | 704 | 0.1+ | 0.9+ |
| 2001 12 11 | 704 | 0.0 | 0.3− | 2005 04 13 | 703 | 1.0− | 0.2+ | 2006 10 31 | 704 | 0.3+ | 0.4+ |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2005 04 13 | 703 | 0.7− | 1.1− | 2006 10 31 | 704 | 0.2+ | 1.1+ |
| 2001 12 11 | 704 | 0.1− | 0.3− | 2005 04 13 | 703 | 0.7− | 0.4− | 2006 10 31 | 704 | 0.1+ | 0.5+ |
| 2001 12 14 | 636 | 0.5− | 0.4− | 2005 04 14 | 704 | 0.4+ | 0.2+ | 2006 10 31 | 704 | 0.5− | 0.7+ |
| 2001 12 14 | 636 | 0.4− | 0.5+ | 2005 04 14 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.0 |
| 2001 12 14 | 636 | 0.2− | 0.3− | 2005 04 14 | 704 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2002 01 09 | 704 | 0.1+ | 0.8− | 2005 04 14 | 704 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2002 01 09 | 704 | 0.2+ | 0.9− | 2005 04 14 | 704 | 0.4− | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.1+ |
| 2002 01 09 | 704 | 0.5+ | 0.2− | 2005 04 15 | 699 | 0.5− | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.5+ |
| 2002 01 09 | 704 | 0.1+ | 0.7− | 2005 04 15 | 699 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.0 |
| 2002 01 09 | 704 | 0.7+ | 0.6− | 2005 04 15 | 699 | 0.1− | 0.6+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2002 01 14 | 704 | 0.4+ | 0.3+ | 2005 04 15 | 699 | 0.6− | 0.1− | 2006 11 19 | 703 | 0.1− | 0.2+ |
| 2002 01 14 | 704 | 0.7+ | 0.0 | 2005 04 18 | 703 | 0.2+ | 0.1− | 2006 11 20 | 703 | 0.2+ | 0.3+ |
| 2002 01 14 | 704 | 0.6− | 0.8+ | 2005 04 18 | 703 | 1.1+ | 0.6− | 2006 11 20 | 703 | 0.2+ | 0.1+ |
| 2002 01 14 | 704 | 0.8+ | 0.2+ | 2005 04 18 | 703 | 0.3− | 0.5+ | 2006 11 20 | 703 | 0.1+ | 0.2− |
| 2002 01 14 | 704 | 0.6+ | 0.4+ | 2005 04 18 | 703 | 1.1+ | 0.9+ | 2006 11 20 | 703 | 0.2+ | 0.2− |
| 2002 02 07 | 704 | 0.2− | 0.5− | 2005 04 18 | 704 | 0.7+ | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2002 02 07 | 704 | 0.6− | 0.1+ | 2005 04 18 | 704 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2002 02 07 | 704 | 0.0 | 0.4− | 2005 04 18 | 704 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2002 02 07 | 704 | 0.5− | 0.1− | 2005 04 30 | 699 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2002 02 07 | 704 | 0.2− | 0.1− | 2005 04 30 | 699 | 0.5− | 0.6+ | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2002 02 09 | 704 | 0.7+ | 0.0 | 2005 04 30 | 699 | 0.2− | 0.1+ | 2006 11 24 | H51 | (4.9− | 1.1+) |
| 2002 02 09 | 704 | (1.7+ | 0.9+) | 2005 04 30 | 699 | 0.9− | 1.2+ | 2006 11 24 | H51 | 0.1− | 0.2+ |
| 2002 02 09 | 704 | 0.4+ | 0.0 | 2005 05 08 | 703 | 1.1− | 0.2− | 2006 11 24 | H51 | 0.7+ | 0.5+ |

**(138403)∗ 2000 HM$_{21}$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.68991 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23356192 | $\omega$ | 119.45904 | | −0.97359203 | +0.18317963 | |
| $a$ | 2.6113676 | $\Omega$ | 71.37832 | | −0.22495340 | −0.87149516 | |
| $e$ | 0.1434271 | $i$ | 8.26640 | | +0.03891681 | −0.45490814 | |
| $P$ | 4.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 699 | 0.8− | 0.7− | 2000 05 30 | 704 | 1.0− | 0.9+ | 2004 03 25 | 704 | 0.3+ | 0.1+ |
| 2000 04 24 | 699 | 0.2− | 0.4− | 2000 05 30 | 704 | 0.8− | 0.0 | 2004 03 25 | 704 | 0.5+ | 0.0 |
| 2000 04 24 | 699 | 0.4− | 0.4+ | 2000 05 30 | 704 | 0.6− | 0.4+ | 2004 03 25 | 704 | 0.1− | 0.3+ |
| 2000 04 24 | 699 | 0.0 | 0.4− | 2000 06 05 | 699 | 1.6+ | 0.5+ | 2004 03 25 | 704 | 0.2+ | 0.0 |
| 2000 04 27 | 704 | 1.3− | 1.1− | 2000 06 05 | 699 | 0.3+ | 0.3− | 2004 03 28 | 703 | 0.1+ | 0.6+ |
| 2000 04 27 | 704 | 0.6− | 1.6+ | 2000 06 05 | 699 | 0.4− | 0.2+ | 2004 03 28 | 703 | 1.0+ | 0.2+ |
| 2000 04 27 | 704 | 0.1− | 0.7+ | 2000 06 05 | 699 | 1.5+ | 0.8− | 2004 03 28 | 703 | 0.6− | 0.3+ |
| 2000 04 27 | 704 | 0.1− | 1.3+ | 2002 11 13 | 644 | 0.2− | 1.1+ | 2004 03 28 | 703 | 0.2− | 0.7+ |
| 2000 04 30 | 704 | 0.5− | 0.2+ | 2002 11 13 | 644 | 0.6− | 1.1+ | 2004 04 02 | 608 | 0.1+ | 0.4+ |
| 2000 04 30 | 699 | 0.0 | 0.2+ | 2002 11 13 | 644 | 0.2− | 0.9+ | 2004 04 02 | 608 | 0.3− | 0.3+ |
| 2000 04 30 | 704 | 0.1+ | 0.0 | 2002 11 23 | 644 | 0.0 | 0.9+ | 2004 04 02 | 608 | 0.2− | 0.1+ |
| 2000 04 30 | 699 | 0.1+ | 0.5− | 2002 11 23 | 644 | 0.0 | 0.9+ | 2004 04 14 | 557 | 0.6− | 0.7+ |
| 2000 04 30 | 704 | 0.3+ | 0.3− | 2002 11 23 | 644 | 0.3− | 0.8+ | 2004 04 14 | 557 | 1.3− | 1.3+ |
| 2000 04 30 | 704 | 0.4+ | 0.1− | 2003 12 28 | 704 | 1.1+ | 0.2+ | 2004 04 15 | 704 | 0.3+ | 0.3+ |
| 2000 04 30 | 699 | 0.3− | 0.0 | 2003 12 28 | 704 | 0.2− | 0.6+ | 2004 04 15 | 704 | 0.1− | 0.2+ |
| 2000 04 30 | 704 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.9+ | 0.5− | 2004 04 15 | 704 | 0.0 | 0.2+ |
| 2000 04 30 | 704 | 0.3+ | 1.1− | 2003 12 28 | 704 | 0.1+ | 0.4+ | 2004 04 15 | 704 | 0.6+ | 0.2− |
| 2000 04 30 | 699 | 0.1+ | 0.5+ | 2003 12 28 | 704 | 0.8+ | 0.9+ | 2004 04 15 | 704 | 0.4− | 0.1+ |
| 2000 04 30 | 704 | 0.2+ | 0.2− | 2004 01 27 | 703 | 1.2− | 0.6+ | 2004 04 16 | 704 | 0.7+ | 0.5+ |
| 2000 04 30 | 704 | 1.3+ | 0.6− | 2004 01 27 | 703 | 0.1+ | 0.3+ | 2004 04 16 | 704 | 0.0 | 0.1+ |
| 2000 04 30 | 704 | (2.5+ | 0.0 ) | 2004 01 27 | 703 | (0.2+ | 1.6−) | 2004 04 16 | 704 | 0.2+ | 0.0 |
| 2000 05 01 | 704 | 0.6− | 0.0 | 2004 01 27 | 703 | 0.2− | 1.2− | 2004 04 16 | 704 | 0.5+ | 0.1+ |
| 2000 05 01 | 704 | 0.3+ | 0.5− | 2004 01 29 | 704 | 0.2+ | 0.1+ | 2004 04 16 | 704 | 0.3+ | 0.2− |
| 2000 05 01 | 704 | 1.0+ | 0.1− | 2004 01 29 | 704 | 0.0 | 0.1+ | 2004 05 23 | 704 | 0.5− | 0.1+ |
| 2000 05 01 | 704 | 0.3+ | 0.6− | 2004 01 29 | 704 | 0.2+ | 0.4+ | 2004 05 23 | 704 | 0.0 | 0.0 |
| 2000 05 01 | 704 | 0.2+ | 0.2− | 2004 01 29 | 704 | 0.2+ | 0.2+ | 2004 05 23 | 704 | 0.5+ | 1.0+ |
| 2000 05 02 | 704 | 0.8+ | 0.4− | 2004 02 18 | 704 | 0.2+ | 0.2+ | 2004 05 23 | 704 | 0.4+ | 0.1+ |
| 2000 05 02 | 704 | 0.1− | 1.1+ | 2004 02 18 | 704 | 1.0+ | 1.1+ | 2004 05 27 | 291 | 0.4− | 0.2− |
| 2000 05 02 | 704 | 1.1+ | 0.2+ | 2004 02 18 | 704 | 0.6+ | 0.4+ | 2004 05 27 | 291 | 0.5− | 0.2− |
| 2000 05 02 | 704 | 0.6− | 1.0− | 2004 02 27 | 704 | 0.4+ | 0.1+ | 2004 05 27 | 291 | 0.6− | 0.3− |
| 2000 05 02 | 704 | 0.7− | 0.6− | 2004 02 27 | 704 | 0.2+ | 1.1− | 2005 07 03 | 644 | 0.3− | 0.4+ |
| 2000 05 02 | 704 | 0.5+ | 0.8− | 2004 02 27 | 704 | 0.3+ | 0.4− | 2005 07 03 | 644 | 0.1− | 0.4+ |
| 2000 05 02 | 704 | 0.1− | 0.0 | 2004 02 27 | 704 | 0.3+ | 0.3− | 2005 07 03 | 644 | 0.0 | 0.6+ |
| 2000 05 02 | 704 | 0.5− | 0.5+ | 2004 03 15 | 704 | 0.1− | 0.7+ | 2005 07 03 | 644 | 0.0 | 0.6+ |
| 2000 05 02 | 704 | 0.3+ | 0.2− | 2004 03 15 | 704 | 0.5− | 0.4+ | 2005 07 03 | 644 | 0.1− | 0.3+ |
| 2000 05 05 | 704 | 1.2+ | 0.3+ | 2004 03 15 | 704 | 0.3− | 0.2+ | 2005 07 03 | 644 | 0.1− | 0.4+ |
| 2000 05 05 | 704 | 0.2− | 0.5+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2005 09 06 | E12 | 0.8+ | 1.3+ |
| 2000 05 05 | 704 | 0.5− | 0.4+ | 2004 03 15 | 704 | 0.3− | 1.1− | 2005 09 06 | E12 | 0.9− | 0.8+ |
| 2000 05 05 | 704 | 0.1+ | 0.8+ | 2004 03 21 | 699 | 0.1+ | 0.8− | 2005 09 06 | E12 | 0.2− | 0.4+ |
| 2000 05 05 | 704 | 0.2+ | 0.4+ | 2004 03 21 | 699 | 0.3− | 0.7− | 2005 09 06 | E12 | 0.0 | 0.5+ |
| 2000 05 24 | 699 | 0.1− | 0.4− | 2004 03 21 | 699 | 1.1− | 1.4− | 2006 10 21 | G96 | 0.5− | 0.1+ |
| 2000 05 24 | 699 | 0.2− | 0.2+ | 2004 03 21 | 699 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.4− | 0.2+ |
| 2000 05 24 | 699 | 0.2− | 0.5+ | 2004 03 23 | 704 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.2+ |
| 2000 05 24 | 699 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.3+ |
| 2000 05 27 | 704 | 0.1+ | 0.5+ | 2004 03 23 | 704 | 0.6+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.3+ |
| 2000 05 27 | 704 | 0.7− | 0.8+ | 2004 03 23 | 704 | 0.6+ | 0.0 | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2000 05 27 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2000 05 27 | 704 | 0.3− | 0.8+ | 2004 03 25 | 704 | 0.6+ | 0.3− | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2000 05 30 | 704 | 0.9+ | 0.5+ | 2004 03 25 | 704 | 0.4+ | 0.3+ | | | | |
| 2000 05 30 | 704 | 0.4− | 0.9+ | 2004 03 25 | 704 | 0.1+ | 0.0 | | | | |

**(138404)∗ 2000 HA$_{24}$**

Discovered 2000 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.83536 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.81032163 | $\omega$ | 141.70509 | | −0.02731682 | −0.99920289 | |
| $a$ | 1.1394565 | $\Omega$ | 309.84064 | | +0.90754084 | −0.01258158 | |
| $e$ | 0.3187512 | $i$ | 2.17271 | | +0.41907448 | −0.03788526 | |
| $P$ | 1.22 | $H$ | 19.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 07 20 | 260 | (5.5− | 2.2+) | 2000 05 02 | 704 | 0.5+ | 0.1+ | 2000 05 11 | 704 | 0.2+ | 0.5+ | |
| 1982 07 20 | 260 | (5.7− | 3.5+) | 2000 05 02 | 704 | 0.4− | 0.8+ | 2000 05 11 | 704 | 1.4+ | 0.1+ | |
| 1989 03 29 | 413 | (11.0+ | 5.1−) | 2000 05 02 | 704 | 0.5+ | 0.8− | 2000 05 13 | 118 | 0.4+ | 0.5+ | |
| 1989 03 29 | 413 | (2.1+ | 3.4−) | 2000 05 02 | 651 | 1.2− | 0.4+ | 2000 05 13 | 118 | 1.5+ | 0.4− | |
| 1993 08 22 | 675 | 0.6− | 1.2− | 2000 05 02 | 651 | 1.2− | 0.7+ | 2000 05 24 | 699 | 0.2+ | 0.9+ | |
| 1993 08 23 | 675 | 1.1+ | 0.2− | 2000 05 02 | 651 | 1.0− | 0.1+ | 2000 05 24 | 699 | 0.0 | 0.3+ | |
| 1993 08 23 | 675 | 1.1+ | 1.6− | 2000 05 02 | 467 | 0.1− | 0.4− | 2000 05 24 | 699 | 0.4− | 0.9+ | |
| 2000 04 28 | 704 | 1.2+ | 0.7− | 2000 05 02 | 467 | 0.0 | 0.2− | 2000 05 24 | 699 | 0.2− | 1.3+ | |
| 2000 04 28 | 704 | 0.6+ | 1.0− | 2000 05 02 | 467 | 0.2− | 0.1− | 2000 05 30 | 747 | 0.0 | 0.1+ | |
| 2000 04 28 | 704 | 0.7− | 0.3− | 2000 05 02 | 467 | 0.2+ | 0.9− | 2000 05 30 | 747 | 0.2+ | 0.3+ | |
| 2000 04 28 | 704 | 0.3+ | 0.9− | 2000 05 02 | 046 | 1.1− | 0.4− | 2000 05 30 | 747 | 0.0 | 0.5+ | |
| 2000 04 28 | 704 | 0.7− | 0.9+ | 2000 05 02 | 046 | 0.0 | 0.9− | 2000 06 07 | 360 | 0.5+ | 0.2− | |
| 2000 04 29 | 704 | 0.1− | 0.0 | 2000 05 02 | 046 | 0.3− | 0.1+ | 2000 06 07 | 360 | 0.5+ | 0.5− | |
| 2000 04 29 | 704 | 0.7− | 0.9+ | 2000 05 02 | 046 | 0.1− | 0.4− | 2000 06 07 | 360 | 0.3+ | 0.3− | |
| 2000 04 29 | 704 | 0.1+ | 0.8− | 2000 05 03 | 704 | 0.1+ | 0.3− | 2004 05 24 | 291 | 0.8− | 0.6− | |
| 2000 04 29 | 704 | 0.4+ | 0.7+ | 2000 05 03 | 704 | 0.3− | 0.3+ | 2004 05 24 | 291 | 0.4− | 0.7+ | |
| 2000 04 29 | 704 | 1.7+ | 0.4+ | 2000 05 03 | 704 | 0.1+ | 1.1− | 2005 05 11 | F65 | 0.0 | 0.8+ | |
| 2000 04 29 | 704 | 0.3− | 0.2− | 2000 05 03 | 704 | 0.1− | 0.2+ | 2005 05 11 | F65 | 0.1+ | 0.7+ | |
| 2000 04 29 | 704 | 0.3− | 0.1+ | 2000 05 03 | 704 | 0.3+ | 0.2− | 2005 07 01 | 474 | 0.4+ | 0.4+ | |
| 2000 04 29 | 704 | 0.4− | 0.1+ | 2000 05 03 | 704 | 0.3− | 0.4+ | 2005 07 01 | 474 | 0.1− | 0.8+ | |
| 2000 04 29 | 422 | 0.1+ | 0.2− | 2000 05 03 | 704 | 0.7− | 0.4+ | 2005 07 01 | 474 | 0.5+ | 0.6+ | |
| 2000 04 29 | 422 | 0.0 | 0.1+ | 2000 05 03 | 704 | 0.5+ | 0.5+ | 2006 03 26 | 696 | 0.4+ | 1.2− | |
| 2000 04 29 | 402 | 0.2+ | 0.4− | 2000 05 07 | 704 | 0.2− | 1.0+ | 2006 03 26 | 696 | 0.2− | 0.5− | |
| 2000 04 29 | 402 | 0.2− | 0.0 | 2000 05 07 | 704 | 0.3− | 0.6+ | 2006 04 01 | 461 | 0.0 | 0.6− | |
| 2000 04 30 | 704 | 0.6− | 0.1− | 2000 05 07 | 704 | 0.3− | 0.6− | 2006 04 01 | 461 | 0.2+ | 0.3− | |
| 2000 04 30 | 704 | 0.1+ | 0.3− | 2000 05 07 | 704 | 0.0 | 0.2+ | 2006 04 13 | 941 | 0.3+ | 0.7− | |
| 2000 04 30 | 704 | 0.7− | 0.3− | 2000 05 07 | 704 | 0.2− | 0.4+ | 2006 04 13 | 941 | 0.7+ | 0.4− | |
| 2000 04 30 | 704 | 0.1+ | 0.1+ | 2000 05 08 | 360 | 0.2− | 0.0 | 2006 04 13 | 941 | (1.6+ | 0.4−) | |
| 2000 04 30 | 704 | (2.8− | 1.2−) | 2000 05 08 | 360 | 0.2− | 0.2+ | 2006 04 13 | 941 | 1.2+ | 0.2− | |
| 2000 04 30 | 704 | 0.0 | 0.1+ | 2000 05 08 | 360 | 0.2+ | 0.0 | 2006 04 14 | 850 | 1.2− | 0.5+ | |
| 2000 04 30 | 704 | 1.1− | 1.0− | 2000 05 08 | 046 | 0.2− | 0.2+ | 2006 04 14 | 850 | 0.9− | 0.3+ | |
| 2000 04 30 | 704 | 0.6+ | 0.2− | 2000 05 08 | 046 | 0.1− | 0.1+ | 2006 04 14 | 850 | 0.1− | 0.8− | |
| 2000 04 30 | 704 | 0.1+ | 0.9− | 2000 05 08 | 046 | 0.2− | 0.4− | 2006 04 20 | 704 | 0.4+ | 1.2+ | |
| 2000 04 30 | 704 | 0.1+ | 0.4− | 2000 05 08 | 046 | 0.2+ | 0.2− | 2006 04 20 | 704 | 1.0+ | 0.1+ | |
| 2000 04 30 | 046 | 0.7+ | 0.1− | 2000 05 09 | 704 | 0.9+ | 0.1+ | 2006 04 20 | 703 | 1.4− | 0.3− | |
| 2000 04 30 | 046 | 0.2+ | 0.3− | 2000 05 09 | 704 | 0.7+ | 0.1+ | 2006 04 20 | 703 | 0.3− | 0.4+ | |
| 2000 04 30 | 046 | 0.2− | 0.4+ | 2000 05 09 | 704 | 0.2+ | 0.2+ | 2006 04 20 | 704 | 0.6+ | 0.2+ | |
| 2000 04 30 | 046 | 0.1− | 0.2+ | 2000 05 09 | 704 | 0.6− | 1.7+ | 2006 04 20 | 703 | 0.5+ | 0.4− | |
| 2000 04 30 | 046 | 0.3− | 0.5− | 2000 05 10 | 808 | 0.2+ | 1.3− | 2006 04 20 | 704 | 0.8+ | 0.0 | |
| 2000 05 01 | 860 | 1.2+ | 0.2− | 2000 05 10 | 808 | 0.4+ | 0.7− | 2006 04 20 | 703 | 1.2− | 0.2− | |
| 2000 05 01 | 860 | 0.1− | 0.2− | 2000 05 10 | 704 | 0.4+ | 0.1− | 2006 04 21 | 704 | 0.6− | 0.4+ | |
| 2000 05 01 | 860 | 1.0− | 0.1− | 2000 05 10 | 704 | 0.6− | 0.3+ | 2006 04 21 | 704 | 0.4− | 0.2+ | |
| 2000 05 01 | 860 | 0.0 | 0.4− | 2000 05 10 | 704 | 0.3+ | 0.6+ | 2006 04 21 | 704 | 0.4− | 0.4+ | |
| 2000 05 02 | 704 | 0.3+ | 0.1− | 2000 05 10 | 704 | 0.0 | 0.2− | 2006 04 21 | 704 | 0.2− | 0.7− | |
| 2000 05 02 | 704 | 0.5+ | 0.1− | 2000 05 10 | 046 | 0.4− | 1.0− | 2006 04 21 | 704 | 0.5+ | 0.1+ | |
| 2000 05 02 | 704 | 0.0 | 0.2− | 2000 05 10 | 046 | 0.3− | 0.5+ | 2006 04 26 | 704 | 0.1+ | 0.7+ | |
| 2000 05 02 | 704 | 0.2− | 0.5− | 2000 05 10 | 046 | 0.5− | 0.0 | 2006 04 26 | 704 | 1.0+ | 0.7+ | |
| 2000 05 02 | 704 | 0.3− | 0.2+ | 2000 05 10 | 046 | 0.1+ | 0.2− | 2006 04 26 | 704 | 0.3+ | 0.6+ | |
| 2000 05 02 | 704 | 0.0 | 0.8− | 2000 05 11 | 704 | 0.2− | 0.1+ | 2006 04 26 | 704 | (0.6+ | 2.4+) | |
| 2000 05 02 | 704 | 0.3+ | 0.2− | 2000 05 11 | 704 | 0.0 | 0.9+ | | | | | |

**(138405)∗ 2000 HV$_{24}$ = 2002 VC$_{123}$**

Discovered 2000 Apr. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 40098)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.98009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24184790 | $\omega$ | 93.11807 | | −0.57594381 | −0.79907981 | |
| $a$ | 2.5513762 | $\Omega$ | 33.98083 | | +0.57209443 | −0.54471979 | |
| $e$ | 0.1317125 | $i$ | 17.97812 | | +0.58394922 | −0.25446376 | |
| $P$ | 4.08 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 699 | 0.3+ | 0.2− | 2004 04 21 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.5+ | |
| 2000 04 24 | 699 | 0.5− | 0.7− | 2004 04 21 | 704 | 0.8+ | 0.0 | 2006 10 22 | 644 | 0.3− | 0.4+ | |
| 2000 04 24 | 699 | 0.1− | 0.6− | 2004 04 21 | 704 | 0.8+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.4+ | |
| 2000 04 24 | 699 | 0.6− | 0.5− | 2004 04 25 | 703 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.2+ | |
| 2000 04 25 | 699 | 0.5− | 0.0 | 2004 04 25 | 703 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.7− | 0.4+ | |
| 2000 04 25 | 699 | 1.1− | 0.2− | 2004 04 25 | 703 | 0.1+ | 1.0+ | 2006 10 27 | 703 | 0.4− | 0.7− | |
| 2000 04 25 | 699 | 1.0− | 0.1+ | 2004 04 25 | 703 | 0.2− | 1.0+ | 2006 10 27 | 703 | 0.3− | 0.3− | |
| 2000 04 25 | 699 | 1.0− | 0.2− | 2004 04 30 | 291 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.3+ | |
| 2000 05 06 | 704 | 0.2− | 0.1+ | 2004 04 30 | 291 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.5− | |
| 2000 05 06 | 704 | 0.7+ | 0.1− | 2004 04 30 | 291 | 0.5+ | 0.3+ | 2006 11 02 | 691 | 0.1− | 0.0 | |
| 2000 05 06 | 704 | 0.0 | 0.4+ | 2004 05 11 | 699 | 0.0 | 1.2− | 2006 11 02 | 691 | 0.2− | 0.2+ | |
| 2002 11 13 | 644 | 0.2− | 0.1+ | 2004 05 11 | 699 | 0.4+ | 0.4+ | 2006 11 02 | 691 | 0.2− | 0.1+ | |
| 2002 11 13 | 644 | 0.0 | 0.2+ | 2004 05 11 | 699 | 0.8+ | 0.6− | 2006 11 08 | 644 | 0.2− | 0.1+ | |
| 2002 11 13 | 644 | 0.1− | 0.2+ | 2004 05 11 | 699 | 0.7− | 0.7− | 2006 11 08 | 644 | 0.1+ | 0.0 | |
| 2002 11 15 | 704 | 0.4− | 0.3+ | 2004 05 15 | 704 | 1.0+ | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.0 | |
| 2002 11 15 | 704 | 0.6− | 0.1+ | 2004 05 15 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.5− | 0.1− | |
| 2002 11 15 | 704 | 0.7+ | 0.3+ | 2004 05 15 | 704 | 0.7+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.0 | |
| 2002 12 03 | 644 | 0.4+ | 0.3− | 2004 05 15 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 | |
| 2002 12 03 | 644 | 0.4+ | 0.2− | 2004 05 16 | 704 | 0.2+ | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.0 | |
| 2002 12 03 | 644 | 0.1+ | 0.5− | 2004 05 16 | 704 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.4+ | |
| 2002 12 06 | 704 | 0.6+ | 0.1− | 2004 05 16 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1+ | |
| 2002 12 06 | 704 | 0.4+ | 0.5− | 2004 05 18 | 704 | 0.7+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.2+ | |
| 2002 12 06 | 704 | 0.0 | 0.9− | 2004 05 18 | 704 | 0.2+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.1+ | |
| 2002 12 06 | 704 | 0.8+ | 0.5− | 2004 05 18 | 704 | 1.4+ | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.1+ | |
| 2002 12 12 | 644 | 0.4+ | 0.3− | 2004 05 18 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 1.3+ | 0.1− | |
| 2002 12 12 | 644 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 1.4+ | 0.3+ | |
| 2002 12 12 | 644 | 0.4+ | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.5+ | |
| 2002 12 12 | 644 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 1.1+ | 0.7− | |
| 2002 12 12 | 644 | 0.4+ | 0.3− | 2006 09 27 | G96 | 0.3− | 0.3+ | 2006 11 13 | 644 | 0.3− | 0.1− | |
| 2002 12 12 | 644 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.3+ | |
| 2003 01 29 | 644 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.6+ | 0.1+ | |
| 2003 01 29 | 644 | 0.1+ | 0.7− | 2006 09 30 | G96 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.3+ | |
| 2003 01 29 | 644 | 0.4+ | 0.3− | 2006 09 30 | G96 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.2+ | |
| 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 10 17 | 691 | 0.4− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.3− | |
| 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.9− | 0.0 | |
| 2004 03 19 | 704 | 0.1+ | 0.3− | 2006 10 17 | 691 | 0.3− | 0.6+ | 2006 11 16 | 704 | 0.6+ | 1.5+ | |
| 2004 03 19 | 704 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.2− | |
| 2004 03 19 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.8− | |
| 2004 03 28 | 704 | 0.7+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.6+ | |
| 2004 03 28 | 704 | 0.1+ | 1.0+ | 2006 10 19 | 703 | 0.6− | 0.0 | 2006 11 22 | 703 | 0.1− | 0.1+ | |
| 2004 03 28 | 704 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.5− | |
| 2004 03 28 | 704 | 0.7+ | 0.6− | 2006 10 19 | G96 | 0.1+ | 0.0 | 2006 11 22 | 703 | 1.1+ | 0.1+ | |
| 2004 03 28 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.4− | 2006 11 22 | 703 | 1.4+ | 0.7− | |
| 2004 04 21 | 704 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.8− | 0.4+ | | | | | |
| 2004 04 21 | 704 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.3+ | | | | | |

**(138406)∗ 2000 HN$_{27}$ = 2002 TD$_{240}$**

Discovered 2000 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37507)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.97076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22128778 | $\omega$ | 338.31176 | | −0.96080761 | +0.02601212 | |
| $a$ | 2.7070592 | $\Omega$ | 207.97191 | | −0.07124962 | −0.98531435 | |
| $e$ | 0.1378761 | $i$ | 36.04515 | | −0.26790340 | +0.16875722 | |
| $P$ | 4.45 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 691 | 0.1− | 0.1+ | 2000 05 25 | 699 | 0.6− | 0.1− | 2002 10 31 | 608 | 0.0 | 0.4− |
| 1993 10 10 | 691 | 0.1+ | 0.2+ | 2000 05 25 | 699 | 0.4− | 0.4+ | 2002 11 01 | 704 | (0.7+ | 1.8+) |
| 1993 10 10 | 691 | 0.1+ | 0.5+ | 2002 09 16 | 699 | 0.1+ | 0.1− | 2002 11 01 | 704 | (1.9+ | 0.6+) |
| 2000 04 06 | 704 | 0.7− | 0.3− | 2002 09 16 | 699 | 0.8− | 0.1+ | 2002 11 01 | 704 | 0.7+ | 0.1− |
| 2000 04 06 | 704 | 0.1− | 0.1+ | 2002 09 16 | 699 | 0.2+ | 0.1− | 2002 11 11 | 704 | 0.3− | 1.2+ |
| 2000 04 06 | 704 | 0.3+ | 0.2− | 2002 09 16 | 699 | 1.1+ | 0.8− | 2002 11 11 | 704 | 0.4+ | 0.6+ |
| 2000 04 28 | 704 | 0.7− | 0.3− | 2002 10 09 | 704 | 0.8− | 0.6+ | 2002 11 11 | 704 | 0.7− | 0.4+ |
| 2000 04 28 | 704 | 0.7+ | 0.6+ | 2002 10 09 | 704 | 0.7+ | 0.9+ | 2002 11 11 | 704 | 1.4+ | 0.1+ |
| 2000 04 28 | 704 | 0.4− | 0.7+ | 2002 10 09 | 704 | 0.2+ | 1.1+ | 2005 05 15 | 704 | 0.1+ | 0.3+ |
| 2000 04 28 | 704 | 0.1+ | 1.1+ | 2002 10 09 | 704 | 0.5− | 0.9+ | 2005 05 15 | 704 | 0.0 | 0.8+ |
| 2000 05 03 | 704 | 0.6+ | 0.9+ | 2002 10 10 | 704 | (1.7+ | 0.1−) | 2005 05 15 | 704 | 0.6− | 0.6+ |
| 2000 05 03 | 704 | 0.4− | 0.0 | 2002 10 10 | 704 | 0.1+ | 0.3+ | 2005 05 15 | 704 | 0.5− | 1.3+ |
| 2000 05 03 | 704 | 0.2+ | 0.0 | 2002 10 10 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.5− | 0.5− |
| 2000 05 03 | 704 | 0.4− | 0.4+ | 2002 10 10 | 704 | 0.3+ | 0.3− | 2006 09 17 | 703 | 0.0 | 1.2− |
| 2000 05 03 | 704 | 0.1− | 0.4+ | 2002 10 10 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.2+ | 0.7− |
| 2000 05 04 | 699 | 0.0 | 0.3− | 2002 10 11 | 704 | 1.2+ | 0.6+ | 2006 09 17 | 703 | 0.3− | 0.2− |
| 2000 05 04 | 699 | 0.0 | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 09 22 | 699 | 1.4− | 0.3+ |
| 2000 05 04 | 699 | 0.1− | 0.5+ | 2002 10 11 | 704 | 0.2− | 0.1− | 2006 09 22 | 699 | (0.6+ | 1.7−) |
| 2000 05 04 | 699 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 699 | 0.8− | 0.4− |
| 2000 05 05 | 704 | 0.3+ | 0.5+ | 2002 10 11 | 704 | 0.5+ | 0.8+ | 2006 09 22 | 699 | 1.3+ | 0.7+ |
| 2000 05 05 | 704 | 0.3− | 0.1− | 2002 10 11 | 704 | 0.2+ | 1.4+ | 2006 09 28 | 703 | 1.1+ | 0.2− |
| 2000 05 05 | 704 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.7+ | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.1+ |
| 2000 05 05 | 704 | 0.5+ | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.6− | 0.6− |
| 2000 05 05 | 704 | 0.5+ | 0.2+ | 2002 10 11 | 704 | 0.3− | 0.5− | 2006 09 28 | 703 | 0.0 | 0.1− |
| 2000 05 22 | 699 | 0.4+ | 0.2+ | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 703 | 0.3− | 0.0 |
| 2000 05 22 | 699 | 0.1− | 0.6+ | 2002 10 30 | 644 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.4+ | 0.4− |
| 2000 05 22 | 699 | 0.0 | 0.1+ | 2002 10 30 | 644 | 0.3− | 0.2+ | 2006 10 20 | 703 | 0.1− | 0.3− |
| 2000 05 22 | 699 | 0.3− | 0.1+ | 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 10 20 | 703 | 0.6+ | 0.0 |
| 2000 05 25 | 699 | 0.3+ | 0.5+ | 2002 10 31 | 608 | 0.2+ | 0.2− | | | | |
| 2000 05 25 | 699 | 0.7− | 0.0 | 2002 10 31 | 608 | 0.4− | 0.6− | | | | |

**(138407)∗ 2000 HR$_{27}$ = 2001 SR$_{111}$**

Discovered 2000 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17328)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 186.00955 | | (2000.0) | | | |
| $n$ | 0.36843227 | $\omega$ | 299.30256 | | −0.91259819 | −0.32716015 |
| $a$ | 1.9270705 | $\Omega$ | 222.95036 | | +0.36526209 | −0.92186136 |
| $e$ | 0.0704497 | $i$ | 21.09340 | | −0.18370668 | −0.20769656 |
| $P$ | 2.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 704 | 1.5− | 1.5+ | 2001 10 12 | 699 | 0.5− | 0.9+ | 2001 11 20 | 704 | 0.2+ | 0.3− |
| 2000 04 28 | 704 | 0.4− | 0.1− | 2001 10 14 | 704 | 0.4+ | 0.3+ | 2001 11 20 | 704 | 0.1− | 0.3− |
| 2000 04 28 | 704 | 1.0− | 0.2− | 2001 10 14 | 704 | 0.1+ | 0.2+ | 2001 11 20 | 704 | 0.1+ | 0.5− |
| 2000 04 28 | 704 | 0.8− | 0.5− | 2001 10 14 | 704 | 0.1+ | 0.6+ | 2001 11 21 | 704 | 0.4+ | 0.3− |
| 2000 04 30 | 699 | 0.5− | 0.9+ | 2001 10 14 | 704 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.3+ | 0.4+ |
| 2000 04 30 | 699 | 0.3+ | 0.8+ | 2001 10 19 | 644 | 0.5+ | 0.2− | 2001 11 21 | 704 | 0.3+ | 0.6− |
| 2000 04 30 | 699 | 0.4+ | 0.4+ | 2001 10 19 | 644 | 0.3+ | 0.1− | 2001 11 21 | 704 | 0.6+ | 0.5+ |
| 2000 04 30 | 699 | 0.0 | 0.6+ | 2001 10 19 | 644 | 0.4+ | 0.1− | 2001 11 21 | 704 | 0.1− | 0.1− |
| 2000 05 03 | 704 | 0.1+ | 0.9+ | 2001 10 21 | 704 | 0.1− | 0.4+ | 2001 11 23 | 608 | 0.2+ | 0.5− |
| 2000 05 03 | 704 | 0.3+ | 0.7+ | 2001 10 21 | 704 | 0.2− | 0.6+ | 2001 11 23 | 608 | 0.2+ | 1.5− |
| 2000 05 03 | 704 | 0.6+ | 0.5+ | 2001 10 21 | 704 | 0.0 | 0.5+ | 2001 11 23 | 608 | 0.1− | 1.3− |
| 2000 05 03 | 704 | 0.1+ | 0.5+ | 2001 10 21 | 704 | 0.5+ | 0.8+ | 2001 11 24 | 644 | 0.8− | 0.1+ |
| 2000 05 03 | 704 | 0.3+ | 0.7+ | 2001 10 21 | 704 | 0.3+ | 0.9+ | 2001 11 24 | 644 | 0.2− | 0.1+ |
| 2000 05 06 | 704 | 0.4+ | 1.3− | 2001 10 24 | 291 | 0.1− | 0.2+ | 2001 11 24 | 644 | 0.1− | 0.3+ |
| 2000 05 06 | 704 | 0.7+ | 0.3+ | 2001 10 24 | 291 | 0.1+ | 0.1− | 2001 12 07 | 704 | 0.2+ | 0.6+ |
| 2000 05 06 | 704 | 0.1+ | 0.7+ | 2001 10 24 | 291 | 0.2− | 0.2+ | 2001 12 07 | 704 | 1.0+ | 0.6+ |
| 2000 05 06 | 704 | 0.2− | 1.1+ | 2001 10 26 | 704 | 0.4+ | 0.3+ | 2001 12 07 | 704 | 1.1+ | 0.5+ |
| 2000 05 06 | 704 | 0.5+ | 0.1− | 2001 10 26 | 704 | 0.1− | 0.4− | 2001 12 07 | 704 | 1.4+ | 0.0 |
| 2000 05 11 | 704 | 0.2− | 0.2+ | 2001 10 26 | 704 | 0.4− | 0.2+ | 2001 12 09 | 699 | 0.2− | 0.1− |
| 2000 05 11 | 704 | 0.5+ | 1.5+ | 2001 10 26 | 704 | 0.2− | 0.3+ | 2001 12 09 | 699 | 0.5+ | 0.3+ |
| 2000 05 11 | 704 | 0.4+ | 0.6+ | 2001 10 26 | 644 | 0.4− | 0.4+ | 2001 12 09 | 699 | 0.3− | 0.6+ |
| 2000 05 11 | 704 | 0.5+ | 0.0 | 2001 10 26 | 644 | 0.3− | 0.6+ | 2001 12 09 | 699 | 0.5+ | 0.6− |
| 2000 05 22 | 699 | 0.2+ | 0.2+ | 2001 10 26 | 644 | 0.4− | 0.4+ | 2003 07 29 | 704 | 0.2+ | 0.3− |
| 2000 05 22 | 699 | 0.0 | 0.4+ | 2001 11 09 | 704 | 0.4− | 0.5+ | 2003 07 29 | 704 | 0.3− | 0.1+ |
| 2000 05 22 | 699 | 0.2+ | 0.1+ | 2001 11 09 | 704 | 0.6− | 0.2+ | 2003 07 29 | 704 | 0.5+ | 0.0 |
| 2000 05 22 | 699 | 0.5+ | 0.5+ | 2001 11 09 | 704 | 0.2− | 0.4+ | 2003 07 29 | 704 | 0.1− | 0.8+ |
| 2000 06 06 | 699 | 0.1− | 0.8+ | 2001 11 09 | 704 | 0.3− | 0.5+ | 2003 07 29 | 704 | 0.1− | 0.2+ |
| 2000 06 06 | 699 | 0.6+ | 0.7+ | 2001 11 09 | 704 | 0.1− | 0.4+ | 2006 08 12 | 644 | 0.1− | 0.1+ |
| 2000 06 06 | 699 | 1.3− | 0.5+ | 2001 11 12 | 704 | 0.1− | 0.6+ | 2006 08 12 | 644 | 0.3+ | 0.0 |
| 2000 06 06 | 699 | 0.7− | 0.3+ | 2001 11 12 | 704 | 0.1+ | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2001 11 12 | 704 | 0.4+ | 0.7+ | 2006 08 14 | 644 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 0.3− | 2001 11 12 | 704 | 0.2+ | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 11 12 | 704 | 0.7+ | 0.7+ | 2006 08 14 | 644 | 0.1+ | 0.2+ |
| 2001 09 22 | 704 | 1.0+ | 0.3− | 2001 11 17 | 704 | 0.7− | 0.6+ | 2006 10 23 | 703 | 0.3− | 0.5+ |
| 2001 09 22 | 704 | 0.4+ | 0.2− | 2001 11 17 | 704 | 0.5− | 0.4+ | 2006 10 23 | 703 | 0.9− | 0.6+ |
| 2001 09 22 | 704 | 0.4+ | 0.8+ | 2001 11 17 | 704 | 0.4− | 0.2+ | 2006 10 23 | 703 | 0.7+ | 1.5− |
| 2001 10 12 | 699 | 0.5− | 0.7+ | 2001 11 17 | 704 | 0.8− | 1.2+ | 2006 10 23 | 703 | 0.4− | 0.3− |
| 2001 10 12 | 699 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.1− | 0.0 | | | | |
| 2001 10 12 | 699 | (1.7− | 2.4+) | 2001 11 20 | 704 | 0.1+ | 0.0 | | | | |

**(138408)∗ 2000 HY$_{28}$**

Discovered 2000 Apr. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.78142 | | (2000.0) | | | |
| $n$ | 0.27566204 | $\omega$ | 75.79165 | | −0.86258907 | −0.32660574 |
| $a$ | 2.3382166 | $\Omega$ | 83.97897 | | +0.16011041 | −0.90067383 |
| $e$ | 0.2421209 | $i$ | 22.86097 | | +0.47990078 | −0.28655775 |
| $P$ | 3.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.4− | 0.1− | 2002 12 07 | 644 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 1995 12 27 | 691 | 0.1− | 0.1− | 2002 12 07 | 644 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.2+ | 0.3+ |
| 1995 12 27 | 691 | 0.1− | 0.1− | 2002 12 07 | 644 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2000 01 29 | 704 | 0.9+ | 0.3+ | 2002 12 08 | 644 | 0.4− | 1.0+ | 2006 10 01 | 691 | 0.5+ | 0.1− |
| 2000 01 29 | 704 | 0.5+ | 0.1+ | 2002 12 08 | 644 | 0.5+ | 0.9+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2000 01 29 | 704 | 0.4+ | 0.5− | 2002 12 08 | 644 | 0.3+ | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2000 01 29 | 704 | 0.2+ | 0.5− | 2002 12 10 | 644 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2000 01 29 | 704 | 0.5+ | 0.5− | 2002 12 10 | 644 | 0.2− | 0.6+ | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2000 03 26 | 704 | 0.1+ | 0.7+ | 2002 12 10 | 644 | 0.1− | 0.8+ | 2006 11 02 | G96 | 0.1− | 0.4− |
| 2000 03 26 | 704 | 0.1+ | 0.7+ | 2002 12 13 | 644 | 0.3+ | 0.2+ | 2006 11 02 | G96 | 0.3− | 0.4− |
| 2000 03 26 | 704 | 0.1+ | 0.1+ | 2002 12 13 | 644 | 0.3+ | 0.7+ | 2006 11 02 | G96 | 0.3+ | 0.4− |
| 2000 03 26 | 704 | 0.4+ | 0.7+ | 2002 12 13 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 2000 03 26 | 704 | 0.2+ | 0.5+ | 2002 12 30 | 608 | 0.6− | 0.3− | 2006 11 16 | 704 | 0.1− | 0.3− |
| 2000 04 12 | 699 | 0.1− | 0.2− | 2002 12 30 | 608 | 0.3− | 0.7− | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2000 04 12 | 699 | 0.2− | 0.0 | 2002 12 30 | 608 | 1.3− | 1.2− | 2006 11 16 | 704 | 1.2− | 0.6− |
| 2000 04 12 | 699 | 0.2+ | 0.2+ | 2002 12 31 | 608 | 0.7− | 0.5− | 2006 11 19 | 704 | 0.4− | 1.0+ |
| 2000 04 12 | 699 | 0.5− | 0.6+ | 2002 12 31 | 608 | 0.2− | 1.1− | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2000 04 30 | 704 | (1.6+ | 4.1+) | 2002 12 31 | 608 | 1.0− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2000 04 30 | 704 | (0.5+ | 4.1+) | 2003 01 02 | 704 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2000 04 30 | 704 | (0.9− | 3.7+) | 2003 01 02 | 704 | (0.1+ | 1.7+) | 2006 11 22 | 703 | 0.4+ | 0.3− |
| 2000 04 30 | 704 | (0.3+ | 3.9+) | 2003 01 02 | 704 | (0.1− | 1.6+) | 2006 11 22 | 703 | 0.0 | 0.0 |
| 2000 05 03 | 704 | 0.7+ | 0.0 | 2003 01 02 | 704 | (1.6− | 1.0+) | 2006 11 22 | 703 | (2.3− | 0.6+) |
| 2000 05 03 | 704 | 0.2+ | 0.0 | 2003 01 02 | 704 | 0.3− | 0.6+ | 2006 11 22 | 703 | 0.7− | 0.8− |
| 2000 05 03 | 704 | 0.1− | 0.0 | 2004 04 23 | 704 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.0 | 0.3− |
| 2000 05 03 | 704 | 0.1+ | 0.7+ | 2004 04 23 | 704 | (1.5+ | 1.8−) | 2006 11 23 | 703 | 1.2− | 0.4− |
| 2000 05 03 | 704 | 0.2+ | 0.1+ | 2004 04 23 | 704 | (1.3+ | 2.3−) | 2006 11 23 | 703 | 0.8− | 0.1− |
| 2002 10 30 | 704 | 0.3+ | 0.4+ | 2004 06 14 | 704 | 0.5− | 1.1+ | 2006 11 23 | 703 | 0.6− | 0.2− |
| 2002 10 30 | 704 | 0.8+ | 0.4− | 2004 06 14 | 704 | 0.4+ | 0.1− | 2006 11 29 | 704 | 0.9+ | 0.3+ |
| 2002 10 30 | 704 | (1.5+ | 0.3−) | 2004 06 14 | 704 | 0.1+ | 0.6+ | 2006 11 29 | 704 | 0.2+ | 0.1+ |
| 2002 11 16 | 644 | 0.1+ | 1.3+ | 2004 06 14 | 704 | 0.5− | 0.8+ | 2006 11 29 | 704 | 0.9− | 0.0 |
| 2002 11 16 | 644 | 0.2+ | 1.4+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.0 |
| 2002 11 16 | 644 | 0.0 | 1.3+ | 2006 09 26 | 691 | 1.2+ | 0.3− | | | | |

**(138409)∗ 2000 HH$_{30}$**

Discovered 2000 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 105.06957 | | (2000.0) | | | |
| $n$ | 0.21809516 | $\omega$ | 124.78479 | | +0.14702607 | +0.98343581 |
| $a$ | 2.7334137 | $\Omega$ | 153.07173 | | −0.96667672 | +0.16556720 |
| $e$ | 0.1995525 | $i$ | 13.53707 | | −0.20956971 | −0.07376665 |
| $P$ | 4.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | 0.9+ | 0.3− | 2001 09 12 | 704 | 0.8+ | 0.2+ | 2004 02 18 | 291 | 0.0 | 0.1+ |
| 2000 03 08 | 704 | 1.3+ | 0.6+ | 2001 09 18 | 699 | 0.5− | 0.2+ | 2004 02 18 | 291 | 0.2+ | 0.1+ |
| 2000 03 08 | 704 | 0.4+ | 1.4+ | 2001 09 18 | 699 | 0.1+ | 0.9+ | 2004 02 23 | 704 | 0.5+ | 0.4− |
| 2000 03 08 | 704 | 0.0 | 1.7+ | 2001 09 18 | 699 | 0.4− | 0.6+ | 2004 02 23 | 704 | 0.2+ | 0.2− |
| 2000 04 07 | 699 | 0.4+ | 0.2+ | 2001 09 18 | 699 | (0.6− | 1.6+) | 2004 02 23 | 704 | 0.7+ | 0.5− |
| 2000 04 07 | 699 | 0.6+ | 1.3+ | 2001 09 25 | 704 | 0.0 | 0.5− | 2004 02 23 | 704 | 0.5+ | 0.5− |
| 2000 04 07 | 699 | 0.8+ | 0.4− | 2001 09 25 | 704 | 0.3+ | 1.0+ | 2004 02 23 | 704 | 0.4− | 0.8− |
| 2000 04 07 | 699 | 0.1− | 1.2− | 2001 09 25 | 704 | 1.2− | 0.4+ | 2004 03 10 | 644 | 0.2− | 0.0 |
| 2000 04 12 | 608 | 0.4+ | 0.2− | 2001 09 25 | 704 | 0.9− | 0.5− | 2004 03 10 | 644 | 0.3− | 0.1+ |
| 2000 04 12 | 608 | 0.0 | 0.2+ | 2001 10 11 | 704 | (1.6− | 0.5−) | 2004 03 10 | 644 | 0.0 | 0.1+ |
| 2000 04 12 | 608 | 0.0 | 0.0 | 2001 10 11 | 704 | 0.6− | 1.1+ | 2004 03 19 | 644 | 0.0 | 0.3+ |
| 2000 04 27 | 699 | 0.7− | 0.5+ | 2001 10 11 | 704 | 1.2+ | 0.5+ | 2004 03 19 | 644 | 0.2− | 0.4+ |
| 2000 04 27 | 699 | 0.5− | 0.1+ | 2001 10 20 | 704 | 1.0− | 0.5+ | 2004 03 19 | 644 | 0.3− | 0.4+ |
| 2000 04 27 | 699 | 0.5− | 0.3+ | 2001 10 20 | 704 | 0.2− | 1.4+ | 2004 03 19 | 704 | 0.4− | 1.0− |
| 2000 04 27 | 699 | 0.4− | 0.2+ | 2001 10 20 | 704 | 0.2− | 1.5+ | 2004 03 19 | 704 | 0.1− | 0.3+ |
| 2000 04 28 | 704 | 1.0− | 0.0 | 2004 01 24 | 704 | 1.0+ | 0.4+ | 2004 03 19 | 704 | 0.3− | 0.4− |
| 2000 04 28 | 704 | 1.4− | 1.0− | 2004 01 24 | 704 | 1.2+ | 0.3− | 2004 03 19 | 704 | 0.2− | 0.1− |
| 2000 04 28 | 704 | 0.1− | 0.6− | 2004 01 24 | 704 | 1.3+ | 0.3− | 2004 03 19 | 704 | 1.4− | 0.8+ |
| 2000 05 03 | 704 | 0.8− | 0.2+ | 2004 01 24 | 704 | 1.3+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2000 05 03 | 704 | 0.6+ | 0.3+ | 2004 01 24 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.8− |
| 2000 05 03 | 704 | 0.1+ | 0.6+ | 2004 02 14 | 608 | 0.1− | 0.3+ | 2006 09 30 | 703 | (0.3+ | 1.9−) |
| 2000 05 03 | 704 | 0.2+ | 1.0+ | 2004 02 14 | 608 | 0.5+ | 1.2+ | 2006 09 30 | 703 | 1.5+ | 0.1− |
| 2000 05 03 | 704 | 0.6− | 0.9+ | 2004 02 14 | 608 | 0.5+ | 0.9+ | 2006 10 17 | 703 | 0.9− | 0.7+ |
| 2000 05 26 | 699 | 0.3+ | 0.0 | 2004 02 17 | 691 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.5+ | 1.1+ |
| 2000 05 26 | 699 | 0.4+ | 0.5+ | 2004 02 17 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2000 05 26 | 699 | 0.2− | 0.3− | 2004 02 17 | 691 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.8− | 0.5− |
| 2000 05 26 | 699 | 0.5+ | 0.1− | 2004 02 18 | 704 | 0.4+ | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2001 09 01 | 644 | 0.2− | 1.5+ | 2004 02 18 | 704 | 0.1+ | 1.0+ | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2001 09 01 | 644 | (0.1+ | 1.9+) | 2004 02 18 | 291 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.4− | 0.8− |
| 2001 09 01 | 644 | (0.5− | 2.2+) | 2004 02 18 | 704 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.3+ |
| 2001 09 12 | 704 | 1.3+ | 0.4− | 2004 02 18 | 704 | 0.2+ | 0.4+ | | | | |
| 2001 09 12 | 704 | 0.7+ | 0.3− | 2004 02 18 | 704 | 0.3+ | 0.5+ | | | | |

**(138410)∗ 2000 HV$_{31}$ = 2002 TX$_{164}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37508), K. E. Smalley (*MPO* 60674)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 235.88448 | | (2000.0) | | | |
| $n$ | 0.22292991 | $\omega$ | 38.64736 | | −0.60703273 | −0.69368606 |
| $a$ | 2.6937492 | $\Omega$ | 92.34237 | | +0.59798159 | −0.72004940 |
| $e$ | 0.0604520 | $i$ | 22.83159 | | +0.52338253 | +0.01812468 |
| $P$ | 4.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 699 | 0.3+ | 0.3+ | 2002 11 16 | 644 | 0.2− | 0.5+ | 2004 03 01 | 704 | 0.7+ | 0.1+ |
| 2000 04 07 | 699 | 0.5+ | 1.0+ | 2002 11 16 | 644 | 0.0 | 0.3+ | 2004 03 01 | 704 | 1.4− | 1.3+ |
| 2000 04 07 | 699 | 0.2− | 0.7+ | 2002 11 16 | 644 | 0.3+ | 0.2+ | 2004 03 01 | 704 | 0.7+ | 0.2− |
| 2000 04 07 | 699 | 1.6+ | 1.4+ | 2002 12 10 | 644 | 0.1− | 0.6+ | 2004 03 01 | 704 | 1.2+ | 0.1+ |
| 2000 04 29 | 704 | 1.7+ | 0.7+ | 2002 12 10 | 644 | 0.2− | 0.6+ | 2004 03 17 | 644 | 0.3+ | 0.1− |
| 2000 04 29 | 704 | 1.3+ | 0.3+ | 2002 12 10 | 644 | 0.0 | 0.5+ | 2004 03 17 | 644 | 0.3+ | 0.0 |
| 2000 04 29 | 704 | 0.6+ | 0.8+ | 2002 12 13 | 644 | 0.7− | 0.3+ | 2004 03 17 | 644 | 0.3+ | 0.0 |
| 2000 05 03 | 704 | 1.0+ | 1.2+ | 2002 12 13 | 644 | 0.4− | 0.5+ | 2004 04 12 | 704 | 0.2+ | 0.1+ |
| 2000 05 03 | 704 | 0.5+ | 0.7+ | 2002 12 13 | 644 | 0.4− | 0.6+ | 2004 04 12 | 704 | 0.4− | 0.5− |
| 2000 05 03 | 704 | 0.0 | 0.2+ | 2003 01 02 | 704 | (2.2− | 1.4−) | 2004 04 12 | 704 | 0.5− | 0.6− |
| 2000 05 03 | 704 | 0.9+ | 0.9+ | 2003 01 02 | 704 | 0.3− | 0.4+ | 2004 04 12 | 704 | 0.0 | 0.7− |
| 2000 05 03 | 704 | 0.4+ | 1.6+ | 2003 01 02 | 704 | 0.4− | 0.3− | 2004 04 12 | 704 | 0.4− | 0.4+ |
| 2000 05 09 | 704 | 0.1− | 0.6+ | 2003 01 02 | 704 | 0.3− | 0.1− | 2006 09 16 | E12 | 0.1− | 0.8+ |
| 2000 05 09 | 704 | 0.3− | 0.5− | 2004 01 27 | 703 | 0.9− | 0.3− | 2006 09 16 | E12 | 0.4− | 0.2+ |
| 2000 05 09 | 704 | 0.6− | 0.4+ | 2004 01 27 | 703 | 0.4+ | 0.0 | 2006 09 16 | E12 | 0.5− | 0.3+ |
| 2000 05 09 | 704 | 1.4− | 1.0+ | 2004 01 27 | 703 | 0.5− | 0.4− | 2006 09 16 | E12 | 0.8− | 1.0+ |
| 2000 05 27 | 699 | 0.7+ | 0.7+ | 2004 01 27 | 703 | 0.5− | 0.4− | 2006 09 23 | E12 | 0.0 | 0.1+ |
| 2000 05 27 | 699 | 0.6+ | 0.2+ | 2004 01 31 | 704 | 0.2+ | 0.0 | 2006 09 23 | E12 | 0.8− | 0.8+ |
| 2000 05 27 | 699 | 0.6+ | 0.9+ | 2004 01 31 | 704 | 0.9− | 0.4+ | 2006 09 23 | E12 | 0.5− | 0.9+ |
| 2000 05 27 | 699 | 0.7− | 0.5+ | 2004 01 31 | 704 | 0.2+ | 0.3− | 2006 09 23 | E12 | 0.3− | 0.1+ |
| 2000 05 31 | 699 | 0.4+ | 0.4+ | 2004 02 02 | 704 | 0.0 | 0.3− | 2006 10 02 | E12 | 0.5− | 0.4+ |
| 2000 05 31 | 699 | 0.3− | 0.6− | 2004 02 02 | 704 | 1.5+ | 0.3+ | 2006 10 02 | E12 | 0.8− | 0.6+ |
| 2000 05 31 | 699 | 0.9− | 0.2+ | 2004 02 02 | 704 | (1.7+ | 0.5+) | 2006 10 02 | E12 | (1.9− | 0.1+) |
| 2000 05 31 | 699 | 0.5+ | 0.2− | 2004 02 02 | 704 | 0.1− | 0.3− | 2006 10 02 | E12 | 0.7− | 0.4+ |
| 2000 06 05 | 608 | 0.6− | 0.8− | 2004 02 10 | 644 | 0.3+ | 0.6− | 2006 10 13 | E12 | 0.5+ | 0.4+ |
| 2000 06 05 | 608 | 0.8− | 0.4− | 2004 02 10 | 644 | 0.8+ | 0.1+ | 2006 10 13 | E12 | 0.2+ | 0.4− |
| 2000 06 05 | 608 | 1.0− | 1.2− | 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 10 13 | E12 | 0.3+ | 0.8+ |
| 2002 10 05 | 644 | 0.1+ | 0.7+ | 2004 02 11 | 704 | 0.3+ | 0.8+ | 2006 10 13 | E12 | 0.4+ | 0.0 |
| 2002 10 05 | 644 | 0.1− | 0.6+ | 2004 02 11 | 704 | 0.1+ | 1.1+ | 2006 11 11 | E12 | 0.1+ | 0.4+ |
| 2002 10 05 | 644 | 0.1+ | 0.7+ | 2004 02 11 | 704 | 0.2+ | 0.2+ | 2006 11 11 | E12 | 0.5− | 0.3− |
| 2002 10 06 | 644 | 0.0 | 0.1+ | 2004 02 11 | 704 | 1.0− | 0.0 | 2006 11 11 | E12 | 0.8− | 0.1− |
| 2002 10 06 | 644 | 0.0 | 0.4+ | 2004 02 11 | 704 | 0.4+ | 0.7+ | 2006 11 11 | E12 | 0.0 | 0.6− |
| 2002 10 06 | 644 | 0.1− | 0.7+ | 2004 03 01 | 704 | 0.6+ | 0.0 | | | | |

**(138411)∗ 2000 HY$_{33}$ = 2001 ST$_{68}$**

Discovered 2000 Apr. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 19662)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 106.80532 | | (2000.0) | | | |
| $n$ | 0.37677479 | $\omega$ | 53.19775 | | −0.40559123 | +0.90973988 |
| $a$ | 1.8985184 | $\Omega$ | 193.73426 | | −0.91144060 | −0.40985657 |
| $e$ | 0.0265426 | $i$ | 21.93996 | | −0.06907812 | +0.06626420 |
| $P$ | 2.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.1− | 0.6+ | 2003 06 21 | 704 | 0.6− | 1.5− | 2006 09 18 | 683 | 0.1+ | 0.7+ |
| 2000 03 09 | 704 | 0.5− | 0.4− | 2003 06 22 | 704 | 0.4+ | 0.5+ | 2006 09 20 | G92 | 0.3− | 0.0 |
| 2000 03 09 | 704 | 0.7+ | 0.0 | 2003 06 22 | 704 | 0.6+ | 0.1+ | 2006 09 20 | G92 | 0.2− | 0.1+ |
| 2000 03 09 | 704 | 0.2+ | 0.7+ | 2003 06 22 | 704 | 0.7+ | 0.2+ | 2006 09 20 | G92 | 0.4− | 0.2+ |
| 2000 04 02 | 699 | 1.0+ | 0.4+ | 2003 06 22 | 704 | 1.0+ | 0.8+ | 2006 09 21 | 699 | 0.3+ | 0.0 |
| 2000 04 02 | 699 | 0.0 | 0.7+ | 2003 06 22 | 704 | 0.5− | 0.2+ | 2006 09 21 | 699 | 0.5+ | 0.0 |
| 2000 04 02 | 699 | 0.1− | 0.3+ | 2003 06 22 | 704 | 0.4− | 0.6+ | 2006 09 21 | 699 | 0.3+ | 0.3+ |
| 2000 04 02 | 699 | 0.2+ | 0.6+ | 2003 06 22 | 704 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.8+ | 0.2− |
| 2000 04 25 | 699 | 1.0− | 0.9+ | 2003 06 22 | 704 | 0.4+ | 1.1+ | 2006 09 27 | 703 | 0.0 | 0.3− |
| 2000 04 25 | 699 | 0.6+ | 1.2+ | 2003 06 29 | 608 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.4− | 0.0 |
| 2000 04 25 | 699 | 0.3+ | 0.7+ | 2003 06 29 | 608 | 0.4− | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.3− |
| 2000 04 25 | 699 | 0.5− | 0.3+ | 2003 06 29 | 608 | 0.7− | 0.3− | 2006 09 27 | 703 | 0.2− | 0.4+ |
| 2000 04 26 | 699 | 0.4+ | 0.4+ | 2006 08 29 | 699 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.9− | 0.1− |
| 2000 04 26 | 699 | 0.3+ | 0.5+ | 2006 08 29 | 699 | 0.5− | 0.4+ | 2006 09 29 | 699 | 0.3− | 0.0 |
| 2000 04 26 | 699 | 0.5+ | 1.3+ | 2006 08 29 | 699 | 1.0+ | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.2− |
| 2000 04 26 | 699 | 0.7− | 0.8+ | 2006 08 29 | 699 | 0.3+ | 0.2− | 2006 09 29 | 699 | 0.4+ | 0.8+ |
| 2001 09 17 | 704 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 703 | 0.2+ | 0.2+ |
| 2001 09 17 | 704 | 0.2+ | 0.8+ | 2006 09 01 | 704 | 0.1+ | 0.5+ | 2006 10 01 | 703 | 0.7− | 0.2− |
| 2001 09 17 | 704 | 0.3+ | 0.1+ | 2006 09 01 | 704 | 0.3− | 0.6+ | 2006 10 01 | 703 | 0.2+ | 0.6− |
| 2001 09 17 | 699 | 0.0 | 0.3+ | 2006 09 01 | 704 | 0.4− | 0.5− | 2006 10 01 | 703 | 0.1− | 0.3− |
| 2001 09 17 | 704 | 0.2+ | 0.4+ | 2006 09 01 | 106 | 0.3+ | 0.9− | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2001 09 17 | 699 | 0.1+ | 0.3+ | 2006 09 01 | 106 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2001 09 17 | 704 | 0.3+ | 1.3+ | 2006 09 01 | 106 | 0.1+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2001 09 17 | 699 | 0.8− | 0.0 | 2006 09 02 | 106 | 0.6− | 0.7− | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2001 09 17 | 699 | 0.3+ | 0.5− | 2006 09 16 | 703 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.4− | 1.1+ | 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 11 10 | 704 | 1.4+ | 0.4+ |
| 2001 09 19 | 704 | 0.6+ | 0.5− | 2006 09 16 | 703 | 0.4+ | 0.1+ | 2006 11 10 | 704 | 0.6+ | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.6+ | 0.2+ | 2006 11 10 | 704 | 0.6+ | 0.2+ |
| 2001 10 23 | 644 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 1.4+ | 0.8+ | 2006 11 11 | 703 | 0.6+ | 0.3+ |
| 2001 10 23 | 644 | 0.4+ | 0.5+ | 2006 09 16 | 703 | 1.2+ | 0.9+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2001 10 23 | 644 | 0.6+ | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.6− | 1.0− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.6− | 0.4+ | 2006 09 16 | 703 | 0.1− | 0.3− | 2006 11 11 | 703 | 1.0− | 0.5− | | |
| 2001 10 28 | 644 | 0.3− | 0.5+ | 2006 09 16 | 703 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2001 10 28 | 644 | 0.3− | 0.8+ | 2006 09 16 | 703 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.4− | 0.0 | | |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.5− | 0.1− | 2006 11 17 | G96 | 0.3− | 0.1− | | |
| 2001 11 19 | 704 | 1.1− | 0.2+ | 2006 09 17 | 703 | (1.9+ | 0.3+) | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2001 11 19 | 704 | (1.7− | 0.2−) | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 11 18 | 703 | 0.1+ | 0.9+ | | |
| 2003 06 02 | 704 | 0.5− | 1.4+ | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 11 18 | 703 | 0.3+ | 1.2+ | | |
| 2003 06 02 | 704 | 0.4+ | 0.3− | 2006 09 17 | 703 | 0.4+ | 0.5− | 2006 11 18 | 703 | (0.5− | 1.6+) | | |
| 2003 06 02 | 704 | 0.3− | 0.0 | 2006 09 17 | 683 | (0.6− | 1.8−) | 2006 11 18 | 703 | 0.2− | 1.0+ | | |
| 2003 06 02 | 704 | 1.3− | 0.2− | 2006 09 17 | 683 | (1.0− | 1.6−) | 2006 11 25 | G96 | 0.1− | 0.4− | | |
| 2003 06 21 | 704 | 0.0 | 1.0+ | 2006 09 17 | 683 | 1.4− | 0.9− | 2006 11 25 | G96 | 0.2− | 0.4− | | |
| 2003 06 21 | 704 | 0.3− | 0.5− | 2006 09 18 | 683 | 0.1+ | 0.6− | 2006 11 25 | G96 | 0.3− | 0.5− | | |
| 2003 06 21 | 704 | 0.0 | 0.3+ | 2006 09 18 | 683 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.3− | | |

**(138412)∗ 2000 HD$_{34}$**

Discovered 2000 Apr. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.40697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22550701 | $\omega$ | 217.99055 | | −0.82125425 | +0.57041849 | |
| $a$ | 2.6731870 | $\Omega$ | 356.70927 | | −0.45341768 | −0.66610702 | |
| $e$ | 0.1061030 | $i$ | 12.89879 | | −0.34634356 | −0.48054572 | |
| $P$ | 4.37 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.7− | 0.8+ | 2002 11 05 | 704 | 0.2+ | 0.4− | 2006 09 17 | 704 | 0.2+ | 0.3+ | | |
| 2000 02 11 | 704 | 0.3+ | 0.8+ | 2002 11 05 | 704 | 0.7+ | 0.5− | 2006 09 17 | 704 | 0.3− | 0.7− | | |
| 2000 02 11 | 704 | 0.9− | 0.1+ | 2002 11 05 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 1.1+ | 0.1− | | |
| 2000 02 26 | 703 | (0.5− | 2.2−) | 2002 11 05 | 704 | 0.0 | 0.7+ | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 2000 02 26 | 703 | 1.9+ | 1.4+ | 2002 11 05 | 704 | 0.9+ | 0.5− | 2006 09 17 | 691 | 0.1− | 0.3+ | | |
| 2000 02 26 | 703 | 1.5+ | 0.9− | 2002 11 06 | 704 | 0.3+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 2000 02 26 | 703 | (2.5+ | 1.1+) | 2002 11 06 | 704 | 0.2− | 0.9− | 2006 09 19 | 699 | 0.0 | 0.4− | | |
| 2000 03 02 | 703 | 0.3− | 1.1+ | 2002 11 06 | 704 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.3+ | | |
| 2000 03 02 | 703 | 0.4+ | 0.5+ | 2003 12 17 | 644 | 0.2+ | 0.3− | 2006 09 19 | 699 | 1.0+ | 0.9+ | | |
| 2000 03 02 | 703 | 0.2+ | 0.3+ | 2003 12 17 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.2+ | 1.1+ | | |
| 2000 03 02 | 703 | 1.8+ | 0.6− | 2003 12 17 | 644 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2000 03 11 | 704 | 0.3+ | 0.4+ | 2003 12 29 | 704 | 1.3+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 2000 03 11 | 704 | 0.7+ | 0.5− | 2003 12 29 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.1+ | | |
| 2000 03 11 | 704 | 0.8+ | 0.4− | 2003 12 29 | 704 | 0.6− | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.0 | | |
| 2000 04 02 | 699 | 0.1− | 0.2− | 2003 12 29 | 703 | 0.7− | 0.6− | 2006 09 25 | 691 | 0.2− | 0.0 | | |
| 2000 04 02 | 699 | 0.1+ | 0.8+ | 2003 12 29 | 704 | 0.9+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 2000 04 02 | 699 | 0.0 | 0.8+ | 2003 12 29 | 703 | 0.8− | 0.7− | 2006 09 27 | 691 | 0.3− | 0.1+ | | |
| 2000 04 02 | 699 | 0.8+ | 0.1+ | 2003 12 29 | 704 | 1.4+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2000 04 05 | 704 | 0.5+ | 0.4+ | 2003 12 29 | 703 | 1.4− | 0.8− | 2006 09 27 | 691 | 0.4− | 0.2+ | | |
| 2000 04 05 | 704 | 0.3+ | 0.1− | 2003 12 29 | 703 | (2.0− | 0.0 ) | 2006 09 27 | 704 | 0.3+ | 0.6+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.6+ | 2003 12 30 | 704 | 0.3+ | 0.1− | 2006 09 27 | 704 | 1.1− | 0.4+ | | |
| 2000 04 05 | 704 | 0.3− | 0.4+ | 2003 12 30 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.3+ | | |
| 2000 04 05 | 704 | 0.1+ | 0.5+ | 2003 12 30 | 704 | 0.8+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.4+ | | |
| 2000 04 05 | 704 | 0.4− | 0.6+ | 2003 12 30 | 704 | 1.1+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2000 04 05 | 704 | 0.3+ | 1.4+ | 2003 12 30 | 704 | 0.0 | 1.2+ | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 2000 04 05 | 704 | 0.3− | 0.0 | 2004 01 18 | 703 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2000 04 05 | 704 | 0.6+ | 0.1+ | 2004 01 18 | 703 | 0.0 | 0.5+ | 2006 10 01 | 704 | 0.2+ | 0.2+ | | |
| 2000 04 06 | 704 | 0.9− | 0.9+ | 2004 01 18 | 703 | 1.1− | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.5+ | | |
| 2000 04 06 | 704 | 0.3+ | 0.8+ | 2004 01 18 | 703 | 0.1+ | 1.3+ | 2006 10 01 | 704 | 1.4+ | 1.1+ | | |
| 2000 04 06 | 704 | 0.2+ | 0.8+ | 2004 01 30 | 699 | 0.2− | 0.7− | 2006 10 01 | 704 | 0.7+ | 0.6+ | | |
| 2000 04 25 | 699 | 1.2+ | 0.8− | 2004 01 30 | 699 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2000 04 25 | 699 | 0.2− | 0.5− | 2004 01 30 | 699 | 0.2+ | 0.6− | 2006 10 02 | 691 | 0.2− | 0.1+ | | |
| 2000 04 25 | 699 | 0.3− | 0.0 | 2004 01 30 | 699 | 1.0− | 0.5− | 2006 10 02 | 691 | 0.0 | 0.2+ | | |
| 2000 04 25 | 699 | 0.9− | 1.0+ | 2004 02 02 | 704 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.4− | 0.3+ | | |
| 2000 04 26 | 699 | 0.6+ | 0.3− | 2004 02 02 | 704 | 0.0 | 1.0+ | 2006 10 09 | 644 | 0.4− | 0.2− | | |
| 2000 04 26 | 699 | 0.5− | 0.8+ | 2004 02 02 | 704 | 0.4+ | 0.1+ | 2006 10 09 | 644 | 0.3− | 0.1− | | |
| 2000 04 26 | 699 | 0.8+ | 0.7− | 2004 02 02 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.5− | 0.3+ | | |
| 2000 04 26 | 699 | 0.4− | 0.3− | 2004 02 14 | 704 | 1.1− | 0.9− | 2006 10 11 | 644 | 0.6− | 0.1− | | |
| 2001 08 24 | 644 | 0.1− | 0.8+ | 2004 02 14 | 704 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.3− | 0.0 | | |
| 2001 08 24 | 644 | 0.4− | 0.2+ | 2004 02 14 | 704 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.4− | | |
| 2001 08 24 | 644 | 0.6− | 0.1+ | 2004 02 14 | 704 | 0.2+ | 0.1− | 2006 10 17 | 703 | (1.7− | 2.1−) | | |
| 2002 10 05 | 704 | 0.3− | 0.6− | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.7− | 0.2− | | |
| 2002 10 05 | 704 | 0.4− | 0.9− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | (2.6− | 0.6−) | | |
| 2002 10 05 | 704 | 0.6− | 0.6− | 2006 08 24 | 644 | 0.8− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2002 10 05 | 704 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.1− | 0.9+ | 2006 10 23 | G96 | 0.1+ | 0.3− | | |
| 2002 10 05 | 704 | 0.5− | 0.5+ | 2006 08 28 | 703 | 0.4− | 0.4− | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2002 11 01 | 644 | 0.5+ | 0.2− | 2006 08 28 | 703 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.2+ | 0.4− | | |
| 2002 11 01 | 644 | 1.1+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.6+ | | | | | | |
| 2002 11 01 | 644 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.6+ | | | | | | |

**(138413)∗ 2000 HW$_{39}$ = 2002 WM$_{12}$**

Discovered 2000 Apr. 30 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 40099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.96528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23164945 | $\omega$ | 184.76735 | | +0.98933840 | −0.14489381 | |
| $a$ | 2.6257207 | $\Omega$ | 183.66237 | | +0.14005851 | +0.97422862 | |
| $e$ | 0.2745880 | $i$ | 13.28027 | | +0.03991414 | +0.17287101 | |
| $P$ | 4.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 24 | 691 | 0.2+ | 0.2− | 2006 08 31 | 704 | 1.3− | 1.2+ | 2006 09 29 | 699 | 0.4+ | 0.4− | | |
| 1996 04 24 | 691 | 0.0 | 0.5− | 2006 08 31 | 704 | 1.4− | 0.4+ | 2006 09 29 | 699 | 0.7− | 0.6+ | | |
| 1996 04 24 | 691 | 0.5+ | 0.1− | 2006 08 31 | 704 | (1.6− | 0.1+) | 2006 09 29 | 699 | 0.6− | 0.3+ | | |
| 2000 04 30 | 691 | 0.6+ | 0.1+ | 2006 08 31 | 704 | 1.4− | 0.6− | 2006 09 29 | 699 | 0.4− | 0.2+ | | |
| 2000 04 30 | 691 | 0.6+ | 0.4+ | 2006 09 01 | 704 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.6− | 0.1+ | | |
| 2000 04 30 | 691 | 0.5+ | 0.0 | 2006 09 01 | 704 | 1.3− | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.0 | | |
| 2000 05 05 | 691 | 0.6+ | 0.1+ | 2006 09 01 | 704 | 0.7− | 0.4− | 2006 10 01 | 704 | 0.0 | 0.0 | | |
| 2000 05 05 | 691 | 0.1+ | 0.5+ | 2006 09 01 | 704 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.8− | 0.1+ | | |
| 2000 05 05 | 691 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.8− | | |
| 2000 05 06 | 691 | 0.7− | 0.3− | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1− | | |
| 2000 05 06 | 691 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2− | | |
| 2000 05 06 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.2− | | |
| 2000 05 09 | 691 | 0.8− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 2000 05 09 | 691 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.6+ | 0.2− | | |
| 2000 05 09 | 691 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.3− | | |
| 2002 10 31 | 704 | 0.4− | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2− | | |
| 2002 10 31 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.2− | | |
| 2002 10 31 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.5+ | | |
| 2002 11 27 | 699 | 0.5− | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.2− | | |
| 2002 11 27 | 699 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.1+ | | |
| 2002 11 27 | 699 | 0.5− | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.7+ | 0.1+ | | |
| 2002 11 27 | 699 | 0.6+ | 0.3+ | 2006 09 17 | 704 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1− | | |
| 2002 11 30 | 704 | 0.5− | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2− | | |
| 2002 11 30 | 704 | 0.3− | 1.1− | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2002 11 30 | 704 | 0.3− | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2002 11 30 | 704 | 0.7− | 0.7+ | 2006 09 18 | 699 | (1.7+ | 0.4+) | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2003 01 02 | 704 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2003 01 02 | 704 | 0.5− | 0.4− | 2006 09 18 | 699 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2003 01 02 | 704 | 0.7+ | 0.6− | 2006 09 18 | 699 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2003 01 26 | 644 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 1.4− | | |
| 2003 01 26 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.2− | | |
| 2003 01 26 | 644 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.3− | | |
| 2003 01 28 | 704 | 0.6− | 1.1+ | 2006 09 20 | 704 | 0.7− | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.3− | | |
| 2003 01 28 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 704 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2003 01 28 | 704 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.2− | | |
| 2003 01 28 | 704 | 0.2− | 0.7+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.5− | | |
| 2003 01 28 | 704 | 0.9+ | 0.8+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.2− | | |
| 2005 05 15 | 644 | 0.1+ | 0.2+ | 2006 09 22 | 608 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.6− | | |
| 2005 05 15 | 644 | 0.3+ | 0.8+ | 2006 09 22 | 608 | 0.4− | 0.9+ | 2006 10 28 | 703 | 0.1+ | 0.1+ | | |
| 2005 05 15 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 608 | 0.0 | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.1+ | | |
| 2006 08 25 | 704 | 0.5− | 1.2+ | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.3− | 0.0 | | |
| 2006 08 25 | 704 | 0.1− | 1.3+ | 2006 09 26 | 704 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.3+ | | |
| 2006 08 25 | 704 | 0.6+ | 0.7+ | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.2− | 0.0 | | |
| 2006 08 25 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 11 10 | 704 | 0.7+ | 0.3+ | | |
| 2006 08 25 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 11 10 | 704 | 1.0+ | 0.5− | | |
| 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 10 | 704 | 0.7+ | 0.7− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.1+ | |
| 2006 08 28 | 703 | 0.7− | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 704 | 0.4− | 0.0 | |
| 2006 08 30 | 699 | 0.8+ | 0.8− | 2006 09 28 | 704 | 0.3+ | 0.2+ | 2006 11 10 | 704 | 0.1+ | 0.9− | |
| 2006 08 30 | 699 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.5+ | 0.8− | |
| 2006 08 30 | 699 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.0 | 0.1+ | 2006 11 16 | 703 | (1.7− | 1.1−) | |
| 2006 08 30 | 699 | 0.6+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | (2.2− | 1.0−) | |
| 2006 08 31 | 704 | 1.2− | 0.9+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | (2.2− | 0.2+) | |

**(138414)∗ 2000 HY$_{41}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.70833 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24110958 | $\omega$ | 253.72057 | | −0.46724225 | −0.88324585 | |
| $a$ | 2.5565820 | $\Omega$ | 224.20460 | | +0.83127581 | −0.42365010 | |
| $e$ | 0.1654333 | $i$ | 3.24897 | | +0.30110664 | −0.20099092 | |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 27 | 691 | 0.0 | 0.5− | 2004 03 18 | 704 | 0.8− | 0.1+ | 2004 04 12 | 691 | 0.1+ | 0.4+ | |
| 1998 10 27 | 691 | 0.2+ | 0.1− | 2004 03 20 | 704 | 0.1+ | 1.3+ | 2004 04 12 | 691 | 0.1+ | 0.2+ | |
| 1998 10 27 | 691 | 0.2+ | 0.3− | 2004 03 20 | 704 | 0.6− | 1.4+ | 2004 04 16 | 704 | 0.5− | 1.0+ | |
| 2000 04 06 | 704 | (1.4+ | 2.0−) | 2004 03 20 | 704 | 0.7− | 1.0+ | 2004 04 16 | 704 | 0.1+ | 0.2+ | |
| 2000 04 06 | 704 | 0.7+ | 0.0 | 2004 03 20 | 704 | 0.3− | 1.3+ | 2004 04 16 | 704 | 0.3− | 1.3+ | |
| 2000 04 06 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.8− | 0.6+ | 2004 04 19 | 691 | 0.2− | 0.2+ | |
| 2000 04 06 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2004 04 19 | 691 | 0.0 | 0.1+ | |
| 2000 04 06 | 704 | 0.4+ | 0.8+ | 2004 03 27 | 704 | 0.0 | 0.4+ | 2004 04 19 | 691 | 0.2+ | 0.1+ | |
| 2000 04 29 | 704 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.4− | 0.5− | |
| 2000 04 29 | 704 | 0.5+ | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.0 | 2004 04 20 | 704 | 0.2+ | 0.0 | |
| 2000 04 29 | 704 | 0.7+ | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.0 | 2004 04 20 | 704 | (0.1+ | 1.8−) | |
| 2000 04 29 | 704 | 0.4+ | 1.0+ | 2004 03 28 | 704 | 0.2+ | 0.5+ | 2004 04 28 | 691 | 0.0 | 0.3− | |
| 2000 04 29 | 704 | 0.6+ | 0.8+ | 2004 03 28 | 704 | 0.0 | 0.3− | 2004 04 28 | 691 | 0.1− | 0.2− | |
| 2000 05 05 | 704 | 0.2− | 0.7+ | 2004 03 28 | 704 | 0.5+ | 0.0 | 2004 04 28 | 691 | 0.1+ | 0.3− | |
| 2000 05 05 | 704 | 0.0 | 1.1+ | 2004 03 28 | 704 | 0.6+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | |
| 2000 05 05 | 704 | 0.8+ | 1.2+ | 2004 03 28 | 704 | 0.8+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.6+ | |
| 2002 10 02 | 704 | 0.2+ | 0.3+ | 2004 03 29 | 704 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.3− | 0.9+ | |
| 2002 10 02 | 704 | 0.2− | 0.1+ | 2004 03 29 | 704 | 0.2− | 0.6+ | 2006 09 17 | 703 | 0.7− | 0.8+ | |
| 2002 10 02 | 704 | 0.6+ | 1.5+ | 2004 03 29 | 704 | (0.3− | 2.2+) | 2006 09 17 | 703 | (2.4− | 1.1+) | |
| 2002 10 03 | 704 | 0.5+ | 0.7+ | 2004 03 29 | 704 | 0.6− | 0.5+ | 2006 09 17 | 703 | (0.2+ | 2.1+) | |
| 2002 10 03 | 704 | 0.2− | 0.6− | 2004 03 29 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 703 | (0.4− | 1.7−) | |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2004 03 30 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 691 | 0.1− | 0.7+ | |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2004 03 30 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.5+ | |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2004 03 30 | 704 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.3− | 0.6+ | |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2004 03 30 | 704 | 0.7+ | 0.3− | 2006 09 30 | 691 | 0.3− | 0.5+ | |
| 2002 10 11 | 704 | 0.3− | 0.8+ | 2004 03 30 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.4+ | |
| 2002 10 11 | 704 | 0.3+ | 0.4+ | 2004 03 31 | 704 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.5− | 0.6+ | |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 03 31 | 704 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.1+ | |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2004 03 31 | 704 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.2+ | |
| 2002 11 06 | 704 | 1.0− | 0.1+ | 2004 03 31 | 704 | 0.6+ | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.3+ | |
| 2002 11 06 | 704 | 0.0 | 1.1− | 2004 03 31 | 704 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.3+ | |
| 2002 11 06 | 704 | 0.0 | 0.3− | 2004 03 31 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3− | 0.7+ | |
| 2002 11 06 | 704 | 0.6− | 0.9+ | 2004 03 31 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.5+ | |
| 2002 11 25 | 291 | 0.4− | 0.8− | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.4+ | |
| 2002 11 25 | 291 | 0.4− | 0.8+ | 2004 03 31 | 704 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.2− | 0.2+ | |
| 2002 11 25 | 291 | 0.2− | 0.5+ | 2004 03 31 | 704 | 0.6+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.1+ | |
| 2004 03 16 | 703 | 0.6+ | 0.2− | 2004 04 02 | 608 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.4+ | |
| 2004 03 16 | 703 | 0.1+ | 0.2+ | 2004 04 02 | 608 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2+ | |
| 2004 03 16 | 703 | 0.1+ | 0.1+ | 2004 04 02 | 608 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.3+ | |
| 2004 03 16 | 703 | 0.3+ | 0.5+ | 2004 04 11 | 644 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.0 | |
| 2004 03 18 | 704 | 0.0 | 0.2− | 2004 04 11 | 644 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2+ | |
| 2004 03 18 | 704 | 0.2− | 0.0 | 2004 04 11 | 644 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.3+ | |
| 2004 03 18 | 704 | 1.3− | 0.6+ | 2004 04 12 | 691 | 1.2+ | 1.0+ | | | | | |

**(138415)∗ 2000 HM$_{44}$**

Discovered 2000 Apr. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.39077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22597616 | $\omega$ | 184.27231 | | −0.21793926 | +0.97169908 | |
| $a$ | 2.6694859 | $\Omega$ | 73.15867 | | −0.89258303 | −0.16068850 | |
| $e$ | 0.1622710 | $i$ | 5.46319 | | −0.39471257 | −0.17314764 | |
| $P$ | 4.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.1− | 0.5− | 2000 05 13 | 691 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.1− | |
| 1995 02 01 | 691 | 0.3+ | 0.4+ | 2000 05 13 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4− | 0.1− | |
| 1995 02 01 | 691 | 0.2− | 0.5− | 2000 06 05 | 699 | 0.6+ | 1.1− | 2006 10 19 | G96 | 0.0 | 0.5− | |
| 2000 04 05 | 699 | 0.9− | 0.0 | 2000 06 05 | 699 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.3+ | |
| 2000 04 05 | 699 | 0.4− | 1.5+ | 2000 06 05 | 699 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 2000 04 05 | 699 | 0.3− | 0.9+ | 2000 06 05 | 699 | 0.8+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.4+ | |
| 2000 04 05 | 699 | 0.2− | 1.8+ | 2001 09 12 | 704 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.4+ | |
| 2000 04 26 | 699 | 0.2+ | 0.7+ | 2001 09 12 | 704 | 0.4− | 1.3+ | 2006 11 17 | 703 | 0.5− | 0.7+ | |
| 2000 04 26 | 699 | 0.5+ | 0.1− | 2001 09 12 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.6+ | |
| 2000 04 26 | 699 | 0.5+ | 0.4+ | 2001 09 12 | 704 | 0.9− | 1.1+ | 2006 11 17 | 703 | 0.5+ | 0.7− | |
| 2000 04 26 | 699 | 0.1− | 0.5+ | 2001 09 12 | 704 | (0.1− | 1.7+) | 2006 11 17 | 703 | (0.3+ | 1.6+) | |
| 2000 04 27 | 699 | 0.0 | 0.5+ | 2001 10 16 | 644 | 1.1− | 1.3+ | 2006 11 17 | 703 | 0.8− | 0.5− | |
| 2000 04 27 | 699 | 0.4+ | 0.2+ | 2001 10 16 | 644 | 0.8− | 0.8+ | 2006 11 17 | 703 | 0.4+ | 1.4+ | |
| 2000 04 27 | 699 | 1.2+ | 0.2− | 2001 10 16 | 644 | 0.5− | 0.8+ | 2006 11 17 | 703 | 0.5+ | 0.1− | |
| 2000 04 27 | 704 | 0.2− | 0.7+ | 2004 02 17 | 704 | 0.9− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.4+ | |
| 2000 04 27 | 704 | 0.4+ | 0.6+ | 2004 02 17 | 704 | 0.5+ | 0.2+ | 2006 11 21 | 691 | 0.3− | 0.4+ | |
| 2000 04 27 | 699 | 0.3+ | 0.5+ | 2004 02 17 | 704 | 0.2+ | 1.2+ | 2006 11 21 | 691 | 0.1− | 0.3+ | |
| 2000 04 27 | 704 | 1.1+ | 0.4+ | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 691 | 0.2− | 0.3+ | |
| 2000 04 27 | 704 | 0.7+ | 0.1+ | 2004 03 23 | 704 | 1.1+ | 1.3+ | 2006 11 27 | G96 | 0.2− | 0.3− | |
| 2000 05 05 | 704 | 0.3+ | 0.4− | 2004 03 23 | 704 | 1.0+ | 0.8+ | 2006 11 27 | G96 | 0.2− | 0.2− | |
| 2000 05 05 | 704 | 0.1+ | 0.7+ | 2004 03 23 | 704 | (0.2− | 1.8+) | 2006 11 27 | G96 | 0.1+ | 0.3− | |
| 2000 05 05 | 704 | 0.7+ | 1.0+ | 2004 03 23 | 704 | (0.4+ | 2.0+) | 2006 11 27 | G96 | 0.0 | 0.3− | |
| 2000 05 05 | 704 | 0.1− | 0.5+ | 2005 07 03 | 644 | 0.1− | 0.6+ | 2006 11 27 | G96 | 0.2− | 0.1− | |
| 2000 05 05 | 704 | 0.7+ | 0.9+ | 2005 07 03 | 644 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.2− | |
| 2000 05 07 | 691 | 0.1+ | 0.2+ | 2005 07 03 | 644 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.4− | |
| 2000 05 07 | 691 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.0 | |
| 2000 05 07 | 691 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.7+ | | | | | |
| 2000 05 13 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | | | | | |

**(138416)∗ 2000 HB$_{45}$ = 2004 DT$_{33}$**

Discovered 2000 Apr. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60676)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.88839 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23114648 | $\omega$ | 118.13939 | | −0.58916644 | +0.80669346 | |
| $a$ | 2.6295284 | $\Omega$ | 115.68881 | | −0.75813601 | −0.53214730 | |
| $e$ | 0.1346095 | $i$ | 2.93463 | | −0.27948650 | −0.25703096 | |
| $P$ | 4.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.3+ | 0.3− | 2004 03 15 | 691 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.6− | |
| 1995 01 29 | 691 | 0.2− | 0.1+ | 2004 03 15 | 691 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.0 | |
| 2000 04 26 | 699 | 0.5+ | 0.4+ | 2004 03 15 | 704 | 1.5+ | 0.5+ | 2004 03 22 | 704 | 0.5+ | 0.6+ | |
| 2000 04 26 | 699 | 0.3+ | 0.3+ | 2004 03 15 | 704 | 0.7+ | 0.4+ | 2004 03 22 | 704 | 0.2− | 0.0 | |
| 2000 04 26 | 699 | 1.2+ | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.5+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | |
| 2000 04 26 | 699 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.4+ | 0.2+ | 2004 03 22 | 704 | 0.0 | 0.3+ | |
| 2000 04 27 | 699 | 0.4− | 0.0 | 2004 03 16 | 704 | 0.8+ | 0.3+ | 2004 03 22 | 704 | 0.6+ | 0.4+ | |
| 2000 04 27 | 699 | 1.0+ | 0.8+ | 2004 03 16 | 704 | 0.5+ | 1.1+ | 2004 03 27 | 691 | 0.1+ | 0.0 | |
| 2000 04 27 | 699 | 0.6− | 0.5− | 2004 03 16 | 704 | 0.3− | 1.2+ | 2004 03 27 | 691 | 0.3− | 0.0 | |
| 2000 04 27 | 699 | 0.1− | 0.5+ | 2004 03 16 | 704 | 0.1− | 0.3− | 2004 03 27 | 691 | 0.0 | 0.2− | |
| 2000 04 28 | 691 | 0.4− | 0.4+ | 2004 03 16 | 704 | 1.3+ | 0.8+ | 2004 03 30 | 691 | 0.0 | 0.3− | |
| 2000 04 28 | 691 | 0.0 | 0.3+ | 2004 03 16 | 704 | (1.0+ | 1.7+) | 2004 03 30 | 691 | 0.3− | 0.3− | |
| 2000 04 28 | 691 | 0.4− | 0.1− | 2004 03 16 | 704 | 0.9+ | 0.5+ | 2004 03 30 | 691 | 0.2− | 0.5− | |
| 2001 09 12 | 704 | 0.8+ | 1.3+ | 2004 03 16 | 704 | 0.2− | 0.5+ | 2005 07 05 | G96 | 0.3+ | 0.3+ | |
| 2001 09 12 | 704 | (0.2+ | 2.0+) | 2004 03 17 | 704 | 0.8+ | 0.8+ | 2005 07 05 | G96 | 0.4− | 0.6+ | |
| 2001 09 12 | 704 | (1.1+ | 1.9+) | 2004 03 17 | 704 | (1.0− | 1.7+) | 2005 07 05 | G96 | 0.7− | 0.8+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6+ | 1.2+ | 2004 03 17 | 704 | 0.0 | 1.0+ | 2005 07 05 | G96 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | (0.3+ | 2.0+) | 2004 03 17 | 704 | 0.2− | 0.7+ | 2005 10 28 | G96 | 0.1+ | 0.1+ |
| 2001 09 19 | 645 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.1− | 0.1+ | 2005 10 28 | G96 | 0.5+ | 0.6− |
| 2001 09 19 | 645 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.8+ | 0.0 | 2005 10 28 | G96 | 0.5+ | 0.4+ |
| 2004 02 18 | 704 | 1.1+ | 0.2− | 2004 03 19 | 704 | 0.5+ | 0.1− | 2005 10 28 | G96 | 0.7− | 0.7+ |
| 2004 02 18 | 704 | 0.9+ | 0.2+ | 2004 03 19 | 704 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.5+ |
| 2004 02 18 | 704 | 0.4− | 0.4− | 2004 03 20 | 699 | (1.8− | 0.6−) | 2006 10 22 | 691 | 0.5− | 0.3+ |
| 2004 02 18 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 699 | 0.8− | 1.0+ | 2006 10 22 | 691 | 0.0 | 0.7+ |
| 2004 02 23 | 704 | (0.1+ | 1.5+) | 2004 03 20 | 699 | 1.2− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2004 02 23 | 704 | 0.1− | 0.7+ | 2004 03 20 | 699 | (0.5− | 3.2+) | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.5+ | 1.0+ | 2004 03 22 | 704 | 0.2+ | 0.7+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2004 02 23 | 704 | 0.8+ | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.9− | 0.5− |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.0 | 0.5+ | | | | |

**(138417)∗ 2000 HN$_{48}$ = 2001 RR$_{112}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 19670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 183.47152 | | (2000.0) | | | |
| $n$ | 0.22951581 | $\omega$ | 224.69543 | | −0.82392763 | +0.56667624 |
| $a$ | 2.6419685 | $\Omega$ | 349.82036 | | −0.51235349 | −0.74837483 |
| $e$ | 0.1424480 | $i$ | 1.49638 | | −0.24215111 | −0.34469285 |
| $P$ | 4.29 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.0 | 0.3− | 2004 03 15 | 703 | 0.4− | 0.7+ | 2004 04 12 | 699 | (1.5+ | 0.5+) |
| 2000 04 29 | 704 | 0.4− | 0.2− | 2004 03 16 | 704 | 0.7+ | 0.0 | 2004 04 12 | 699 | 0.6− | 0.3− |
| 2000 04 29 | 704 | 0.1− | 0.7+ | 2004 03 16 | 704 | 0.6+ | 0.8+ | 2004 04 12 | 703 | (2.0+ | 1.6+) |
| 2000 04 29 | 704 | 1.8+ | 0.5+ | 2004 03 16 | 704 | 0.4+ | 0.0 | 2004 04 12 | 703 | (1.6+ | 0.8+) |
| 2000 04 29 | 704 | 1.6+ | 1.2+ | 2004 03 16 | 704 | 0.6+ | 0.2+ | 2004 04 12 | 703 | 0.5+ | 0.7+ |
| 2000 04 30 | 699 | 0.5− | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.2+ | 2004 04 12 | 703 | (2.0− | 0.7+) |
| 2000 04 30 | 699 | 1.3− | 1.2+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2004 04 16 | 683 | (3.7+ | 2.5−) |
| 2000 04 30 | 699 | 0.8− | 0.4+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2004 04 16 | 683 | 0.0 | 0.3− |
| 2000 04 30 | 699 | 1.4− | 2.0+ | 2004 03 17 | 691 | 0.1− | 0.2+ | 2004 04 16 | 683 | 0.2+ | 0.2− |
| 2000 05 06 | 704 | 0.8+ | 0.1− | 2004 03 18 | 704 | 0.7+ | 0.1− | 2005 07 28 | 644 | 0.4− | 0.6+ |
| 2000 05 06 | 704 | 0.4− | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.1− | 2005 07 28 | 644 | 0.3− | 0.5+ |
| 2000 05 06 | 704 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.3+ | 0.1− | 2005 07 28 | 644 | 0.5− | 0.4+ |
| 2000 05 06 | 704 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2005 08 06 | 644 | 0.0 | 0.8+ |
| 2000 05 06 | 704 | 0.5+ | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.5+ | 2005 08 06 | 644 | 0.1− | 0.8+ |
| 2000 05 23 | 699 | (2.1+ | 1.0+) | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2005 08 06 | 644 | 0.3− | 0.5+ |
| 2000 05 23 | 699 | 0.4+ | 0.4− | 2004 03 22 | 704 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.2+ |
| 2000 05 23 | 699 | 0.3+ | 0.6+ | 2004 03 22 | 704 | 0.1− | 0.5− | 2006 09 30 | G96 | 0.6+ | 0.1− |
| 2000 05 23 | 699 | 0.7− | 1.3− | 2004 03 22 | 704 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.3+ | 0.8+ | 2004 03 22 | 704 | 0.0 | 0.9− | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.3+ | 0.7+ | 2004 03 23 | 704 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.2− | 0.8+ |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2004 03 23 | 704 | 0.5− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.9+ | 2004 03 23 | 704 | 0.3− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.5+ |
| 2001 09 19 | 704 | 0.3− | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.3+ | 1.4+ | 2004 03 23 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | (0.0 | 1.7+) | 2004 03 23 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | (1.9+ | 1.4+) | 2004 03 26 | 699 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.6− | 0.3+ |
| 2001 09 21 | 704 | (0.3− | 2.3+) | 2004 03 26 | 699 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.2+ |
| 2004 02 19 | 704 | 0.1− | 0.5− | 2004 03 26 | 699 | 0.6+ | 0.5− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 02 19 | 704 | 1.5+ | 1.4− | 2004 03 26 | 699 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2004 02 19 | 704 | 0.9+ | 0.0 | 2004 03 27 | 704 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2004 02 19 | 704 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.7− |
| 2004 02 26 | 704 | 0.5+ | 0.2− | 2004 03 27 | 704 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2004 02 26 | 704 | 1.2+ | 0.4+ | 2004 03 27 | 704 | 0.2− | 0.6+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2004 02 26 | 704 | 1.0+ | 0.7+ | 2004 03 27 | 704 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2004 02 26 | 704 | 0.2+ | 0.6+ | 2004 03 31 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3+ |
| 2004 02 26 | 704 | 0.4+ | 1.1+ | 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | 0.8+ | 0.2− | 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.1+ |
| 2004 03 15 | 703 | 0.9+ | 0.7+ | 2004 04 12 | 699 | 0.7− | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 0.1+ | 1.2+ | 2004 04 12 | 699 | 0.0 | 0.8− | | | | |

**(138418)∗ 2000 HZ$_{48}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 220.38248 | | (2000.0) | | | |
| $n$ | 0.23766196 | $\omega$ | 141.74222 | | −0.97487655 | +0.17626521 |
| $a$ | 2.5812472 | $\Omega$ | 48.97703 | | −0.22123408 | −0.83732292 |
| $e$ | 0.1397677 | $i$ | 10.39944 | | +0.02590758 | −0.51751415 |
| $P$ | 4.15 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 688 | 0.1+ | 0.0 | 2002 11 24 | 644 | 0.4− | 0.6+ | 2004 05 14 | 704 | 0.6− | 0.5− |
| 2000 04 04 | 688 | 0.2+ | 0.0 | 2002 11 24 | 644 | 0.3− | 0.2+ | 2004 05 14 | 704 | (1.9− | 0.1+) |
| 2000 04 27 | 704 | 0.5+ | 0.7+ | 2002 12 11 | 704 | 0.5− | 0.2− | 2004 05 17 | 704 | 0.1− | 0.9+ |
| 2000 04 27 | 704 | 1.0− | 0.7+ | 2002 12 11 | 704 | 0.6− | 0.5− | 2004 05 17 | 704 | 0.1+ | 0.4+ |
| 2000 04 27 | 704 | 0.3+ | 0.3− | 2002 12 11 | 704 | 0.7− | 1.1+ | 2004 05 17 | 704 | 0.0 | 0.1+ |
| 2000 04 27 | 704 | (3.9− | 1.5−) | 2002 12 11 | 704 | 0.2− | 0.4+ | 2004 05 17 | 704 | 0.3− | 0.1+ |
| 2000 04 27 | 704 | (2.1− | 1.8−) | 2004 01 29 | 704 | 0.2− | 0.6− | 2004 05 24 | 699 | 0.2− | 0.2− |
| 2000 04 29 | 704 | 0.2+ | 0.4− | 2004 01 29 | 704 | 0.1+ | 0.2+ | 2004 05 24 | 699 | 0.3+ | 0.6− |
| 2000 04 29 | 704 | 0.7+ | 0.5+ | 2004 01 29 | 704 | 0.8− | 0.5+ | 2004 05 24 | 699 | 0.4+ | 0.8+ |
| 2000 04 29 | 704 | 0.5+ | 0.1+ | 2004 01 29 | 704 | 0.2+ | 0.0 | 2004 05 24 | 699 | 0.3+ | 0.1− |
| 2000 04 29 | 704 | 0.6+ | 0.2+ | 2004 01 29 | 704 | 0.6+ | 1.1− | 2004 06 14 | 704 | 0.0 | 0.4+ |
| 2000 04 29 | 704 | 0.2− | 0.4+ | 2004 03 13 | 644 | 0.4− | 0.3− | 2004 06 14 | 704 | 0.3+ | 0.4− |
| 2000 04 30 | 699 | 0.0 | 0.4+ | 2004 03 13 | 644 | 0.3− | 0.1− | 2004 06 14 | 704 | 0.2+ | 0.5− |
| 2000 04 30 | 699 | 0.2− | 0.2− | 2004 03 13 | 644 | 0.5− | 0.3− | 2004 06 14 | 704 | 1.3+ | 0.1+ |
| 2000 04 30 | 699 | 0.3+ | 0.3+ | 2004 03 14 | 703 | 1.1− | 0.1+ | 2005 07 27 | 644 | (0.9+ | 2.1+) |
| 2000 04 30 | 699 | 0.5− | 0.3+ | 2004 03 14 | 703 | 1.0− | 0.7− | 2005 07 27 | 644 | (0.9+ | 2.3+) |
| 2000 05 06 | 704 | 0.9+ | 0.4− | 2004 03 14 | 703 | 0.3− | 0.2+ | 2005 07 27 | 644 | (0.7+ | 2.3+) |
| 2000 05 06 | 704 | 0.4+ | 0.1− | 2004 03 14 | 703 | 0.6− | 0.6− | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2000 05 06 | 704 | 0.5+ | 0.6+ | 2004 03 16 | 704 | 0.8+ | 0.4+ | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2000 05 06 | 704 | 0.8+ | 0.5+ | 2004 03 16 | 704 | 0.4+ | 0.7+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2000 05 06 | 704 | 0.6+ | 0.2+ | 2004 03 16 | 704 | 0.6+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2000 05 07 | 704 | 0.5+ | 0.2+ | 2004 03 16 | 704 | 0.7+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2000 05 07 | 704 | 0.2+ | 0.3+ | 2004 03 16 | 704 | 0.6− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2000 05 07 | 704 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2000 05 07 | 704 | 0.3+ | 0.7+ | 2004 03 23 | 704 | 1.0+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.3+ |
| 2000 05 07 | 704 | 0.1+ | 0.7+ | 2004 03 23 | 704 | 1.2+ | 0.4− | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2000 05 10 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.6+ |
| 2000 05 10 | 704 | 0.8+ | 0.4+ | 2004 04 08 | E12 | (1.7− | 0.6+) | 2006 10 20 | 691 | 0.1− | 0.5+ |
| 2000 05 10 | 704 | 0.3+ | 0.1+ | 2004 04 08 | E12 | (2.3− | 0.2+) | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2000 05 10 | 704 | 0.8+ | 0.5− | 2004 04 08 | E12 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2000 05 10 | 704 | 0.1+ | 0.2− | 2004 04 08 | E12 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2000 05 11 | 704 | 0.0 | 0.3+ | 2004 04 09 | E12 | 1.2− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2000 05 11 | 704 | 0.8+ | 0.3− | 2004 04 09 | E12 | 0.7− | 0.4+ | 2006 11 11 | 703 | (0.3+ | 1.9+) |
| 2000 05 11 | 699 | 0.5+ | 0.1+ | 2004 04 09 | E12 | 1.2− | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2000 05 11 | 704 | 0.2+ | 0.0 | 2004 04 09 | E12 | 0.8− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2000 05 11 | 704 | 0.6+ | 0.0 | 2004 04 14 | 691 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 2000 05 11 | 699 | 0.2+ | 0.1+ | 2004 04 14 | 691 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.3− | 0.1− |
| 2000 05 11 | 704 | 0.4+ | 1.2+ | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.2− |
| 2000 05 11 | 699 | 0.2− | 0.4− | 2004 04 17 | 699 | 0.1− | 0.4− | 2006 11 12 | G96 | 0.4+ | 0.0 |
| 2000 05 11 | 699 | 0.4− | 0.1− | 2004 04 17 | 699 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2000 05 24 | 691 | 0.5− | 0.1− | 2004 04 17 | 699 | 0.5− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2000 05 24 | 691 | 0.5− | 0.0 | 2004 04 17 | 699 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.1− | 0.5+ |
| 2000 05 24 | 691 | 0.5− | 0.0 | 2004 04 20 | 704 | 0.0 | 0.6− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2000 05 28 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 0.1+ | 0.5− | 2006 11 14 | 691 | 0.1+ | 1.0+ |
| 2000 05 28 | 704 | 0.4+ | 0.4+ | 2004 04 20 | 703 | (1.1+ | 5.4−) | 2006 11 14 | 691 | 0.5− | 0.4− |
| 2000 05 28 | 704 | 0.1− | 1.2+ | 2004 04 20 | 704 | 0.9+ | 0.2− | 2006 11 14 | 691 | 0.4− | 0.3+ |
| 2000 05 28 | 704 | 0.6+ | 0.8+ | 2004 04 20 | 703 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.8+ |
| 2000 05 28 | 704 | 0.5+ | 0.6+ | 2004 04 20 | 704 | 0.3+ | 0.9− | 2006 11 17 | 703 | 0.6+ | 0.3+ |
| 2000 05 29 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 703 | 0.6+ | 0.1− | 2006 11 17 | 703 | (1.6− | 2.6−) |
| 2000 05 29 | 704 | 0.5− | 0.6+ | 2004 04 20 | 704 | 0.1+ | 1.1− | 2006 11 17 | 703 | 0.3+ | 0.2+ |
| 2000 05 29 | 704 | 0.5+ | 0.7+ | 2004 04 20 | 703 | 0.6− | 0.0 | 2006 11 18 | 704 | (0.3− | 3.4+) |
| 2000 05 29 | 704 | 0.0 | 0.4+ | 2004 04 22 | 704 | 0.3+ | 0.3− | 2006 11 18 | 704 | (0.7− | 2.0+) |
| 2000 05 29 | 704 | 0.2+ | 1.0+ | 2004 04 22 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | (0.7− | 2.7+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 04 | 608 | 0.3− | 0.4− | 2004 04 22 | 704 | 0.8+ | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2000 06 04 | 608 | 0.4− | 0.5− | 2004 04 22 | 704 | 0.7+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2000 06 04 | 608 | 0.6− | 0.8− | 2004 04 22 | 704 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.4− | 0.8+ | 2004 05 08 | 703 | 0.6− | 0.4− | 2006 11 21 | 704 | 0.1− | 0.5− |
| 2002 11 12 | 704 | 1.1+ | 0.1+ | 2004 05 08 | 703 | 0.1− | 1.0+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | 0.9+ | 0.3+ | 2004 05 08 | 703 | 1.0− | 0.5− | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2004 05 08 | 703 | 0.6− | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.0 | 0.0 | 2004 05 10 | 608 | 1.2+ | 0.8+ | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2002 11 14 | 704 | 0.1+ | 0.9− | 2004 05 10 | 608 | 0.4+ | 1.4+ | 2006 11 29 | 704 | 0.2− | 0.7+ |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2004 05 10 | 608 | 0.9+ | 0.9+ | | | | |
| 2002 11 24 | 644 | 0.3− | 0.4+ | 2004 05 14 | 704 | 0.4− | 0.2+ | | | | |

**(138419)∗ 2000 HU$_{56}$**

Discovered 2000 Apr. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.76891 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19032053 | $\omega$ | 81.85785 | | +0.22154288 | +0.97128219 | |
| $a$ | 2.9932682 | $\Omega$ | 201.54734 | | −0.96160259 | +0.20281673 | |
| $e$ | 0.2537351 | $i$ | 13.66630 | | −0.16198520 | +0.12440372 | |
| $P$ | 5.18 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.2− | 0.1− | 2001 10 21 | 704 | 0.2− | 0.1+ | 2005 04 15 | 699 | 0.8− | 0.5+ |
| 2000 04 05 | 699 | 0.3− | 0.2+ | 2001 10 21 | 704 | 0.1− | 0.4+ | 2005 04 15 | 699 | 0.5+ | 0.2+ |
| 2000 04 05 | 699 | 0.8− | 1.0+ | 2001 10 21 | 704 | 0.3+ | 0.7+ | 2005 04 15 | 699 | 1.4− | 0.1− |
| 2000 04 05 | 699 | 0.5+ | 0.9+ | 2001 10 21 | 704 | 0.0 | 0.1− | 2005 05 06 | G96 | 0.4− | 0.4+ |
| 2000 04 24 | 699 | 0.2+ | 0.1+ | 2001 10 21 | 704 | 0.2+ | 0.8+ | 2005 05 06 | G96 | 0.1− | 0.4+ |
| 2000 04 24 | 699 | 1.1+ | 0.2− | 2001 10 24 | 691 | 0.1+ | 0.4+ | 2005 05 06 | G96 | 0.4− | 0.0 |
| 2000 04 24 | 699 | 0.7+ | 0.1+ | 2001 10 24 | 691 | 0.1− | 0.1+ | 2005 05 06 | G96 | 0.3− | 0.0 |
| 2000 04 24 | 699 | 0.2+ | 0.6+ | 2001 10 24 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.1− |
| 2000 04 27 | 704 | 0.0 | 0.7+ | 2005 03 09 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.2+ | 0.4+ |
| 2000 04 27 | 704 | 0.1+ | 0.7+ | 2005 03 09 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.3− |
| 2000 04 27 | 704 | 0.2+ | 0.2− | 2005 03 09 | 691 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.2+ |
| 2000 04 27 | 704 | 0.0 | 0.1+ | 2005 03 10 | 699 | 1.2+ | 0.4− | 2006 09 16 | 644 | 0.0 | 0.4− |
| 2000 04 27 | 704 | 0.2+ | 0.0 | 2005 03 10 | 699 | 0.1+ | 1.2+ | 2006 09 16 | 644 | 0.4− | 0.2− |
| 2000 06 01 | 608 | 0.6− | 1.5− | 2005 03 10 | 699 | (2.5+ | 1.2−) | 2006 09 16 | 644 | 0.0 | 0.2− |
| 2000 06 01 | 608 | 0.5− | 0.9− | 2005 03 10 | 699 | 0.2+ | 0.6− | 2006 09 22 | 703 | 0.3+ | 0.6− |
| 2000 06 01 | 608 | 0.3− | 0.9− | 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 22 | 703 | 0.3+ | 0.5− |
| 2001 09 20 | 333 | 0.8+ | 0.2− | 2005 03 13 | 691 | 0.1− | 0.3+ | 2006 09 22 | 703 | 0.8− | 0.3− |
| 2001 09 20 | 333 | 0.6+ | 0.8+ | 2005 03 13 | 691 | 0.4+ | 0.5+ | 2006 09 22 | 703 | 0.4+ | 0.1− |
| 2001 09 20 | 333 | 0.5+ | 0.7− | 2005 04 01 | 699 | 0.2+ | 0.8+ | 2006 09 23 | 106 | 0.4+ | 0.0 |
| 2001 09 21 | 333 | 0.7− | 0.0 | 2005 04 01 | 699 | 0.1− | 0.0 | 2006 09 23 | 106 | 0.8− | 0.2+ |
| 2001 09 21 | 333 | 0.9+ | 0.5+ | 2005 04 01 | 699 | 0.5+ | 0.3− | 2006 09 23 | 106 | 1.0+ | 0.3+ |
| 2001 09 21 | 333 | 1.0− | 0.2− | 2005 04 01 | 699 | 0.5+ | 0.0 | 2006 09 23 | 106 | 1.2+ | 0.8+ |
| 2001 09 21 | 333 | 0.6− | 0.6+ | 2005 04 04 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.6+ | 0.9− |
| 2001 09 21 | 333 | 0.0 | 0.9+ | 2005 04 04 | 691 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.7− | 0.9+ |
| 2001 09 21 | 333 | (1.3− | 1.6+) | 2005 04 04 | 691 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 1.0− | 0.4+ |
| 2001 10 06 | 644 | 0.5− | 0.3+ | 2005 04 04 | 704 | 0.1− | 0.4− | 2006 10 01 | 704 | 0.1− | 0.7− |
| 2001 10 06 | 644 | 0.7− | 0.7+ | 2005 04 04 | 704 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 10 06 | 644 | 0.3− | 0.8+ | 2005 04 04 | 704 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2001 10 09 | 333 | 0.3+ | 0.3− | 2005 04 04 | 704 | 0.9− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2001 10 09 | 333 | 0.1+ | 0.4+ | 2005 04 11 | 699 | 0.7+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 10 09 | 333 | 0.0 | 0.1+ | 2005 04 11 | 699 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 10 11 | 644 | (1.7+ | 2.6+) | 2005 04 11 | 699 | 0.3− | 1.4+ | 2006 10 11 | 644 | 0.6+ | 0.3− |
| 2001 10 11 | 644 | (1.7+ | 2.7+) | 2005 04 11 | 699 | 1.1− | 0.9+ | 2006 10 16 | 703 | 1.0+ | 1.4+ |
| 2001 10 11 | 644 | (1.5+ | 2.7+) | 2005 04 12 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2001 10 13 | 704 | 0.1− | 0.3+ | 2005 04 12 | 704 | 0.1− | 1.5− | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 2001 10 13 | 704 | 0.8− | 1.3+ | 2005 04 12 | 704 | 0.9− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 10 13 | 704 | 0.2− | 1.0+ | 2005 04 12 | 704 | (0.5+ | 2.0+) | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 10 13 | 704 | 0.7− | 1.1− | 2005 04 12 | 704 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2001 10 18 | 644 | 0.4+ | 0.7+ | 2005 04 14 | 185 | 0.1− | 0.9− | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2001 10 18 | 644 | 0.1+ | 0.5+ | 2005 04 14 | 185 | 0.4− | 0.0 | | | | |
| 2001 10 18 | 644 | 0.0 | 0.3+ | 2005 04 15 | 699 | 1.2+ | 0.2+ | | | | |

**(138420)∗ 2000 HA$_{57}$ = 1996 KM$_8$ = 2000 JU$_{16}$**

Discovered 2000 Apr. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. T. B. Spahr (*MPO* 2514), M. E. Sansaturio (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.06455 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24459924 | $\omega$ | 113.09998 | | −0.95447294 | −0.21884303 | |
| $a$ | 2.5322076 | $\Omega$ | 54.84633 | | +0.08571497 | −0.85209161 | |
| $e$ | 0.1293776 | $i$ | 14.35464 | | +0.28571726 | −0.47544464 | |
| $P$ | 4.03 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 19 | 809 | 1.7+ | 0.9+ | 2004 03 20 | E12 | 0.4− | 0.7− | 2004 05 21 | 704 | 0.3+ | 0.8+ |
| 1996 05 19 | 809 | 0.3− | 0.4− | 2004 03 20 | E12 | 0.3− | 0.5− | 2004 05 21 | 704 | 0.2− | 0.1− |
| 1996 05 19 | 809 | 0.7+ | 0.9− | 2004 03 20 | E12 | 0.6− | 0.2+ | 2004 05 21 | 704 | 0.2− | 0.1+ |
| 1996 05 22 | 809 | 0.6+ | 1.8− | 2004 03 27 | 699 | 0.1− | 0.2+ | 2004 05 21 | 704 | 0.3+ | 0.3+ |
| 1996 05 22 | 809 | (0.7− | 3.1−) | 2004 03 27 | 699 | 1.0− | 0.6− | 2004 05 29 | 703 | 1.1− | 0.0 |
| 1996 05 22 | 809 | 1.6+ | 1.5− | 2004 03 27 | 699 | 0.0 | 0.3+ | 2004 05 29 | 703 | 0.1− | 0.3− |
| 1996 05 23 | 809 | 0.3+ | 0.6+ | 2004 03 27 | 699 | 0.9− | 0.1− | 2004 05 29 | 703 | 0.1+ | 0.9+ |
| 1996 05 23 | 809 | 0.2− | 0.5− | 2004 03 31 | 704 | (2.0+ | 1.9−) | 2004 05 29 | 703 | 0.4− | 1.0+ |
| 1996 05 23 | 809 | 0.4− | 0.3− | 2004 03 31 | 704 | 0.8+ | 0.8+ | 2004 06 14 | 704 | 0.9+ | 0.4+ |
| 2000 04 07 | 704 | 1.4− | 0.2+ | 2004 03 31 | 704 | 0.2+ | 1.0+ | 2004 06 14 | 704 | 0.7+ | 0.4− |
| 2000 04 07 | 704 | 1.2− | 0.8+ | 2004 03 31 | 704 | 0.2+ | 0.1+ | 2004 06 14 | 704 | 0.9+ | 0.3− |
| 2000 04 07 | 704 | 1.0− | 0.5+ | 2004 04 14 | 699 | 0.5− | 0.0 | 2004 06 14 | 704 | 0.7+ | 0.2− |
| 2000 04 24 | 699 | 0.1+ | 1.1+ | 2004 04 14 | 699 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.2− |
| 2000 04 24 | 699 | 0.5+ | 1.0+ | 2004 04 14 | 699 | 0.4− | 0.7− | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2000 04 24 | 699 | 0.5− | 0.8+ | 2004 04 14 | 699 | 0.7+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2000 04 24 | 699 | 0.1+ | 0.1− | 2004 04 16 | 704 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2000 04 27 | 704 | 0.2− | 1.5− | 2004 04 16 | 704 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2000 04 27 | 704 | 0.4− | 0.4+ | 2004 04 16 | 704 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2000 04 27 | 704 | 0.0 | 0.5+ | 2004 04 16 | 704 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2000 04 27 | 704 | 0.3+ | 0.2− | 2004 04 16 | 704 | 0.7− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2000 04 27 | 704 | 0.3− | 0.5− | 2004 04 20 | 704 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 2000 05 05 | 704 | 1.6− | 0.8− | 2004 04 20 | 704 | 0.6+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2000 05 05 | 704 | 0.8− | 0.5+ | 2004 04 20 | 704 | 0.2− | 0.5− | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2000 05 05 | 704 | 0.4− | 0.6+ | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2000 05 05 | 704 | 0.7− | 0.8+ | 2004 04 20 | 704 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.4+ | 0.2− |
| 2000 05 05 | 704 | 0.4− | 0.2+ | 2004 04 22 | 704 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.6+ | 0.3+ |
| 2000 05 08 | 704 | 0.5+ | 0.9+ | 2004 04 22 | 704 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2000 05 08 | 704 | 1.1+ | 1.0+ | 2004 04 22 | 704 | 0.0 | 0.8− | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2000 05 08 | 704 | 0.1+ | 1.1+ | 2004 04 22 | 704 | 0.9+ | 0.6− | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2000 05 08 | 704 | 0.1+ | 1.2+ | 2004 04 22 | 704 | 0.0 | 0.8− | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2004 04 30 | 608 | 0.2− | 0.6− | 2006 11 18 | 691 | 0.8− | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.6− | 2004 04 30 | 608 | 0.4− | 0.8− | 2006 11 18 | 691 | 0.7− | 0.2− |
| 2002 10 02 | 704 | 0.6− | 0.4− | 2004 04 30 | 608 | 0.2− | 0.9− | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2002 11 05 | 704 | (2.4+ | 0.5+) | 2004 05 09 | 608 | 0.4− | 0.7+ | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | (3.4+ | 0.4+) | 2004 05 09 | 608 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.4− |
| 2002 11 05 | 704 | (3.0+ | 0.9+) | 2004 05 09 | 608 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.5− |
| 2002 11 14 | 704 | 0.2− | 1.4+ | 2004 05 12 | 699 | 0.9+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | 1.3− | 0.5+ | 2004 05 12 | 699 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2002 11 14 | 704 | (2.0− | 0.7+) | 2004 05 12 | 699 | 0.1− | 0.6+ | 2006 11 21 | 691 | 0.1+ | 0.3− |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2004 05 12 | 699 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2004 05 14 | 704 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2004 05 14 | 704 | 0.2− | 0.4− | 2006 11 22 | 704 | 1.2+ | 0.8+ |
| 2002 12 06 | 704 | 0.8+ | 0.4+ | 2004 05 14 | 704 | 0.6+ | 0.5− | 2006 11 22 | 704 | (0.4− | 1.8+) |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2004 05 14 | 704 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.1+ | 1.5+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2004 05 14 | 704 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 1.1+ |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2004 05 17 | 704 | 1.0+ | 0.1+ | 2006 11 22 | 704 | 0.4+ | 1.2+ |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2004 05 17 | 704 | 0.4+ | 0.0 | 2006 11 25 | 691 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.5− | 2004 05 17 | 704 | 0.3+ | 0.5− | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 0.4+ | 0.5− | 2004 05 17 | 704 | 0.4+ | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.1− | 0.7− | 2004 05 17 | 704 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.3− | 0.5− |
| 2002 12 11 | 704 | 0.7− | 0.9− | 2004 05 19 | 703 | 0.9+ | 0.4+ | 2006 12 01 | 704 | 0.2− | 0.1− |
| 2003 01 05 | 704 | 1.1+ | 0.6+ | 2004 05 19 | 703 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.7− | 0.6+ |
| 2003 01 05 | 704 | 0.1− | 0.8+ | 2004 05 19 | 703 | 0.4+ | 0.7+ | 2006 12 01 | 704 | 0.4− | 0.2+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.4− | 0.6+ | 2004 05 19 | 703 | 0.5+ | 0.0 | |
| 2004 03 20 | E12 | 0.7− | 0.3− | 2004 05 21 | 704 | 0.2+ | 0.0 | |

**(138421)∗ 2000 HJ$_{59}$ = 2001 SB$_{232}$**

Discovered 2000 Apr. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 17339)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.89675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25453952 | $\omega$ | 230.95922 | | −0.28646920 | +0.95707722 | |
| $a$ | 2.4658457 | $\Omega$ | 22.51203 | | −0.83967347 | −0.22866646 | |
| $e$ | 0.1740083 | $i$ | 6.60340 | | −0.46139338 | −0.17808662 | |
| $P$ | 3.87 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 699 | 0.9+ | 0.4− | 2000 05 11 | 704 | 0.5− | 1.7+ | 2004 04 25 | 704 | 0.3+ | 0.5+ |
| 2000 03 12 | 699 | 1.1+ | 0.6+ | 2000 05 11 | 704 | 0.5+ | 0.7+ | 2004 04 25 | 704 | 0.3− | 0.1− |
| 2000 03 12 | 699 | 0.9+ | 0.7+ | 2000 05 11 | 704 | 0.9+ | 0.1− | 2004 04 25 | 704 | 1.1− | 0.4− |
| 2000 03 12 | 699 | (2.5+ | 0.2+) | 2000 05 24 | 699 | 0.1− | 0.4+ | 2004 04 25 | 704 | 0.8− | 0.3+ |
| 2000 04 06 | 704 | 0.2+ | 0.7+ | 2000 05 24 | 699 | 0.7+ | 0.1− | 2004 05 19 | 704 | 0.4− | 0.2+ |
| 2000 04 06 | 704 | 0.1− | 0.7+ | 2000 05 24 | 699 | 0.1− | 0.7+ | 2004 05 19 | 704 | 0.0 | 0.4+ |
| 2000 04 06 | 704 | 0.6+ | 1.5+ | 2000 05 24 | 699 | 0.3− | 0.5+ | 2004 05 19 | 704 | 0.2+ | 0.1− |
| 2000 04 06 | 704 | 0.4+ | 1.1+ | 2001 09 19 | 704 | 0.0 | 0.1− | 2004 05 19 | 704 | 0.8+ | 0.0 |
| 2000 04 06 | 704 | 0.8+ | 0.9+ | 2001 09 19 | 704 | 1.6+ | 0.1+ | 2004 05 19 | 704 | 0.8+ | 0.7− |
| 2000 04 25 | 699 | 0.4+ | 0.5+ | 2001 09 19 | 704 | 0.6+ | 1.1− | 2005 09 29 | 691 | 0.2+ | 0.0 |
| 2000 04 25 | 699 | 0.3+ | 0.1+ | 2001 09 19 | 704 | 1.6+ | 0.1− | 2005 09 29 | 691 | 0.2− | 0.0 |
| 2000 04 25 | 699 | 0.2+ | 0.2+ | 2001 09 19 | 704 | 0.8+ | 1.0+ | 2005 09 29 | 691 | 0.0 | 0.1+ |
| 2000 04 25 | 699 | 0.6+ | 0.2− | 2001 09 21 | 704 | 0.7+ | 0.2− | 2005 10 09 | 691 | 0.4+ | 0.4+ |
| 2000 04 28 | 704 | 0.5− | 0.2− | 2001 09 21 | 704 | 0.4+ | 1.0+ | 2005 10 09 | 691 | 0.2− | 0.4+ |
| 2000 04 28 | 704 | 0.3− | 0.3+ | 2001 09 21 | 704 | 0.8+ | 0.4+ | 2005 10 09 | 691 | 0.4− | 1.0+ |
| 2000 04 28 | 704 | 1.0− | 0.5+ | 2001 09 21 | 704 | 0.0 | 0.2− | 2005 10 13 | 691 | 0.3− | 0.8+ |
| 2000 04 28 | 704 | 0.1− | 0.1+ | 2001 09 21 | 704 | 0.0 | 0.7+ | 2005 10 13 | 691 | 0.1− | 0.3+ |
| 2000 04 28 | 704 | 0.2− | 0.5+ | 2001 10 07 | 644 | 0.1− | 0.5+ | 2005 10 13 | 691 | 0.1− | 0.5+ |
| 2000 05 01 | 699 | 0.3− | 0.3+ | 2001 10 07 | 644 | 0.5− | 0.5+ | 2005 10 22 | 703 | 0.3− | 1.2+ |
| 2000 05 01 | 699 | 0.2+ | 0.0 | 2001 10 07 | 644 | 0.0 | 0.4+ | 2005 10 22 | 703 | 1.0− | 0.9+ |
| 2000 05 01 | 699 | 0.1+ | 0.6+ | 2001 10 13 | 704 | 0.6+ | 0.6− | 2005 10 22 | 703 | 0.4+ | 0.6− |
| 2000 05 01 | 699 | 0.8− | 0.1− | 2001 10 13 | 704 | 1.9+ | 0.8+ | 2005 10 22 | 703 | 1.0− | 0.4− |
| 2000 05 06 | 704 | 0.7− | 0.1− | 2001 10 13 | 704 | 0.1+ | 0.4− | 2005 10 27 | G96 | 0.2− | 0.1− |
| 2000 05 06 | 704 | 0.9− | 0.4+ | 2001 10 13 | 704 | (2.1+ | 0.2+) | 2005 10 27 | G96 | 0.1− | 0.0 |
| 2000 05 06 | 704 | 0.9+ | 1.0+ | 2001 10 14 | 291 | 1.0− | 0.1− | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2000 05 06 | 704 | 0.3− | 1.9+ | 2001 10 14 | 291 | 0.8− | 0.2+ | 2005 10 27 | G96 | 0.0 | 0.1− |
| 2000 05 09 | 704 | 1.4+ | 0.2− | 2001 10 14 | 291 | 0.8− | 0.0 | 2005 10 28 | 703 | 1.8+ | 0.7− |
| 2000 05 09 | 704 | 0.6+ | 0.6− | 2003 01 13 | 644 | 0.1− | 0.7+ | 2005 10 28 | 703 | 0.1− | 0.3− |
| 2000 05 09 | 704 | 0.6+ | 0.9− | 2003 01 13 | 644 | 0.0 | 0.7+ | 2005 10 28 | 703 | 0.0 | 0.7− |
| 2000 05 09 | 704 | 0.1+ | 0.1+ | 2003 01 13 | 644 | 0.2− | 1.1+ | 2005 10 28 | 703 | 0.7− | 0.3− |
| 2000 05 09 | 704 | 0.7+ | 1.3− | 2004 04 25 | 704 | 0.1+ | 0.4+ | | | | |

**(138422)∗ 2000 HP$_{60}$ = 2001 QS$_{253}$ = 2002 XL$_{22}$**

Discovered 2000 Apr. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 42925)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.60539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22722806 | $\omega$ | 204.35878 | | −0.63296554 | +0.77355782 | |
| $a$ | 2.6596720 | $\Omega$ | 26.40505 | | −0.69835744 | −0.55321472 | |
| $e$ | 0.0334020 | $i$ | 4.00119 | | −0.33414296 | −0.30913067 | |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.1− | 1.5+ | 2004 03 15 | 333 | 0.2− | 0.2− | 2004 03 31 | 691 | 0.1+ | 0.1− |
| 2000 04 06 | 704 | 1.0+ | 1.4+ | 2004 03 15 | 703 | 0.2− | 0.1− | 2004 03 31 | 691 | 0.1− | 0.2− |
| 2000 04 06 | 704 | 1.2+ | 1.7+ | 2004 03 15 | 333 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.6+ | 0.3+ |
| 2000 04 25 | 699 | 0.9− | 0.0 | 2004 03 15 | 703 | 0.7− | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.5+ |
| 2000 04 25 | 699 | 0.2+ | 0.2+ | 2004 03 15 | 333 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.3+ | 0.1− |
| 2000 04 25 | 699 | 0.4+ | 0.8+ | 2004 03 15 | 703 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.1+ |
| 2000 04 25 | 699 | 0.7+ | 0.1+ | 2004 03 16 | 608 | 0.3+ | 0.6− | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2000 04 26 | 691 | 0.3− | 0.4− | 2004 03 16 | 608 | 1.3+ | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2000 04 26 | 691 | 0.2− | 0.6− | 2004 03 16 | 608 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 2000 04 26 | 691 | 0.2− | 0.6− | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2000 04 29 | 704 | 0.1+ | 1.4+ | 2004 03 17 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.6+ |
| 2000 04 29 | 704 | 0.1+ | 0.5+ | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.5+ |
| 2000 04 29 | 704 | 0.5+ | 1.8+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.4+ |
| 2000 04 29 | 704 | 0.3− | 0.7+ | 2004 03 19 | 704 | 0.3+ | 0.4− | 2006 10 15 | 691 | 0.5− | 0.4+ |
| 2000 04 29 | 704 | 0.7+ | 0.9+ | 2004 03 19 | 704 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | (0.9− | 1.7+) | 2004 03 19 | 704 | (2.0− | 0.1−) | 2006 10 15 | 691 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.8− | 1.4+ | 2004 03 19 | 704 | (2.0− | 0.1−) | 2006 10 19 | 691 | 0.2− | 0.1− |
| 2001 08 25 | 704 | 0.8+ | 1.0+ | 2004 03 20 | 699 | 0.8− | 0.3− | 2006 10 19 | 691 | 0.4− | 0.0 |
| 2001 08 27 | 644 | 0.3− | 0.1− | 2004 03 20 | 699 | 1.2− | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2001 08 27 | 644 | 0.2− | 0.2+ | 2004 03 20 | 699 | 1.4+ | 0.5− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 08 27 | 644 | 0.3− | 0.6+ | 2004 03 20 | 699 | 0.9− | 0.8+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2002 12 03 | 644 | 0.1− | 0.3− | 2004 03 22 | 704 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2002 12 03 | 644 | 0.1− | 0.4− | 2004 03 22 | 704 | 0.6+ | 0.6− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 12 03 | 644 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.5+ | 0.0 |
| 2002 12 06 | 704 | 0.2− | 1.3− | 2004 03 22 | 704 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2002 12 06 | 704 | (0.9+ | 1.7−) | 2004 03 22 | 704 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2002 12 06 | 704 | 0.7+ | 0.6+ | 2004 03 26 | 704 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2002 12 06 | 704 | 0.2+ | 0.8+ | 2004 03 26 | 704 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2004 02 23 | 704 | 0.5+ | 0.5+ | 2004 03 26 | 704 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2004 02 23 | 704 | 0.0 | 0.5+ | 2004 03 26 | 704 | 0.7− | 1.1+ | 2006 11 15 | G96 | 0.8+ | 0.6− |
| 2004 02 23 | 704 | 0.2− | 0.2+ | 2004 03 26 | 704 | 1.5+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2004 02 23 | 704 | 1.1+ | 0.2+ | 2004 03 26 | 704 | 0.0 | 0.7+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2004 03 11 | 644 | 0.0 | 0.0 | 2004 03 26 | 704 | 0.1− | 0.7+ | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2004 03 11 | 644 | 0.1− | 0.2+ | 2004 03 26 | 704 | 0.0 | 0.7+ | 2006 11 17 | 703 | 0.9− | 1.0− |
| 2004 03 11 | 644 | 0.2− | 0.2− | 2004 03 26 | 704 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.0− | 1.1+ |
| 2004 03 15 | 703 | 0.1+ | 0.5+ | 2004 03 31 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.0 | 1.2− |

**(138423)∗ 2000 HB$_{64}$**

Discovered 2000 Apr. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.34530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24678235 | $\omega$ | 117.73663 | | −0.80455944 | −0.59188796 | |
| $a$ | 2.5172517 | $\Omega$ | 26.06107 | | +0.49856867 | −0.71756528 | |
| $e$ | 0.1445421 | $i$ | 6.33880 | | +0.32266607 | −0.36710858 | |
| $P$ | 3.99 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 691 | 0.2− | 0.3− | 2002 11 12 | 704 | 0.8− | 0.6− | 2005 08 04 | 644 | 0.2− | 1.4+ |
| 2000 04 03 | 691 | 0.1− | 0.3− | 2002 11 28 | 699 | (4.7+ | 4.1+) | 2005 08 04 | 644 | 0.7− | 1.3+ |
| 2000 04 03 | 691 | 0.5− | 0.6+ | 2002 11 28 | 699 | (0.1− | 1.6+) | 2005 08 04 | 644 | 0.3− | 1.3+ |
| 2000 04 05 | 699 | 1.4+ | 0.2+ | 2002 11 28 | 699 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2+ |
| 2000 04 05 | 704 | 0.1− | 0.0 | 2002 11 28 | 699 | (1.6− | 1.4+) | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2000 04 05 | 699 | 1.5+ | 0.1+ | 2004 03 14 | 644 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 0.2− | 0.2− | 2004 03 14 | 644 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2000 04 05 | 699 | (2.4+ | 0.9+) | 2004 03 14 | 644 | 0.3+ | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 0.5+ | 0.1+ | 2004 04 11 | 703 | (2.0+ | 0.4+) | 2006 10 13 | 691 | 0.1+ | 0.4+ |
| 2000 04 05 | 699 | 1.5+ | 0.1− | 2004 04 11 | 703 | 0.7+ | 1.0− | 2006 10 13 | 691 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 0.8− | 0.5+ | 2004 04 11 | 703 | 0.9− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.5+ |
| 2000 04 05 | 704 | 0.1− | 0.4+ | 2004 04 11 | 703 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.4− | 0.5+ |
| 2000 04 06 | 704 | 0.2+ | 0.1+ | 2004 04 14 | 291 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.7+ |
| 2000 04 06 | 704 | 0.8+ | 0.1+ | 2004 04 14 | 291 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2000 04 06 | 704 | (3.0+ | 0.2+) | 2004 04 14 | 291 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2000 04 07 | 699 | 0.5+ | 0.3− | 2004 04 15 | 699 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.4+ | 0.5− |
| 2000 04 07 | 699 | 0.1+ | 1.5− | 2004 04 15 | 699 | 0.5− | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2000 04 07 | 699 | 0.7+ | 0.4+ | 2004 04 15 | 699 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2000 04 07 | 699 | 1.3− | 0.1− | 2004 04 15 | 699 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2000 04 26 | 699 | 0.5+ | 0.1+ | 2004 04 15 | 333 | 0.0 | 0.9− | 2006 11 09 | 644 | 0.0 | 0.7+ |
| 2000 04 26 | 699 | 0.3+ | 0.4− | 2004 04 15 | 333 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.8+ |
| 2000 04 26 | 699 | 1.0+ | 0.3− | 2004 04 15 | 333 | 0.3+ | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.6+ |
| 2000 04 26 | 699 | 1.4+ | 1.4+ | 2004 04 17 | 704 | 0.5− | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 2000 04 29 | 704 | 0.9+ | 0.8+ | 2004 04 17 | 704 | 0.2+ | 0.8− | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2000 04 29 | 704 | 0.1+ | 1.0+ | 2004 04 17 | 704 | 0.1+ | 0.8− | 2006 11 11 | 703 | 0.7− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.6− | 0.7+ | 2004 04 17 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.0 | | |
| 2000 04 29 | 704 | 0.0 | 1.0+ | 2004 04 21 | 704 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3+ | | |
| 2000 04 29 | 704 | 0.1+ | 1.1+ | 2004 04 21 | 704 | 1.4+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2000 05 07 | 704 | 0.4+ | 0.1+ | 2004 04 21 | 704 | 0.7+ | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2000 05 07 | 704 | 0.4− | 0.4+ | 2004 04 30 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.1− | | |
| 2000 05 07 | 704 | 0.2+ | 0.3+ | 2004 04 30 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2000 05 07 | 704 | 0.3− | 0.6+ | 2004 04 30 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.9− | 0.3+ | | |
| 2002 11 12 | 704 | 0.1+ | 1.1+ | 2004 05 28 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.6+ | | |
| 2002 11 12 | 704 | 0.3− | 0.5+ | 2004 05 28 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.1+ | | |
| 2002 11 12 | 704 | 1.0− | 0.3− | 2004 05 28 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 1.4+ | 0.3− | | |

**(138424)∗ 2000 HP$_{66}$ = 2002 XN$_{95}$**

Discovered 2000 Apr. 26 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 46403)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.70663 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22797865 | $\omega$ | 65.06062 | | −0.19491574 | −0.98047065 | |
| $a$ | 2.6538310 | $\Omega$ | 36.20992 | | +0.88314768 | −0.18705279 | |
| $e$ | 0.0759039 | $i$ | 2.53957 | | +0.42668259 | −0.06073351 | |
| $P$ | 4.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 809 | (1.6+ | 3.7+) | 2004 03 12 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | | |
| 1993 10 11 | 809 | (0.2+ | 3.4+) | 2004 03 19 | 704 | 0.8+ | 0.7+ | 2006 10 03 | 691 | 0.1− | 0.3+ | | |
| 1993 10 11 | 809 | (0.9+ | 3.7+) | 2004 03 19 | 704 | 0.9+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.3+ | | |
| 2000 04 26 | 691 | 0.2− | 0.1+ | 2004 03 19 | 704 | 0.7+ | 0.5− | 2006 10 03 | 691 | 0.2− | 0.4+ | | |
| 2000 04 26 | 691 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 1.0+ | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.4+ | | |
| 2000 04 26 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | 1.1+ | 0.0 | 2006 10 15 | 703 | (1.5− | 0.1−) | | |
| 2000 04 29 | 704 | 0.2+ | 0.6− | 2004 03 20 | 704 | (2.9+ | 0.9−) | 2006 10 15 | 703 | 0.1− | 0.3− | | |
| 2000 04 29 | 704 | 1.5+ | 0.4+ | 2004 03 20 | 704 | (2.3+ | 1.0−) | 2006 10 15 | 703 | (2.0+ | 0.1+) | | |
| 2000 04 29 | 704 | 0.9+ | 0.8+ | 2004 03 20 | 704 | (3.0+ | 0.2−) | 2006 10 16 | G96 | 0.3− | 0.2− | | |
| 2000 04 29 | 704 | 1.2+ | 0.8+ | 2004 03 24 | 699 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.2− | | |
| 2000 04 29 | 704 | 1.8+ | 1.0+ | 2004 03 24 | 699 | 0.4− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2− | | |
| 2000 05 04 | 691 | 0.4− | 0.4− | 2004 03 24 | 699 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.2− | | |
| 2000 05 04 | 691 | 0.2− | 0.1− | 2004 03 24 | 699 | 0.9− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.6+ | | |
| 2000 05 04 | 691 | 0.4− | 0.2− | 2004 03 26 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2000 05 09 | 691 | 0.0 | 0.1− | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2000 05 09 | 691 | 0.1+ | 0.3+ | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.6− | 0.6+ | | |
| 2000 05 09 | 691 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2002 11 13 | 644 | 0.1+ | 0.0 | 2004 03 28 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.7+ | | |
| 2002 11 13 | 644 | 0.3+ | 0.0 | 2004 03 28 | 704 | 1.1+ | 0.6+ | 2006 11 11 | 703 | (0.4+ | 2.2+) | | |
| 2002 11 13 | 644 | 0.2+ | 0.1+ | 2004 04 12 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.4− | | |
| 2002 12 05 | 704 | 0.2− | 0.4− | 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.1+ | 0.8− | | |
| 2002 12 05 | 704 | 0.3− | 0.3− | 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.8+ | 0.0 | | |
| 2002 12 05 | 704 | 0.0 | 0.7− | 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 1.1+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.1− | 0.3− | 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.5+ | | |
| 2002 12 10 | 704 | 0.2+ | 0.3− | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2002 12 10 | 704 | 0.1− | 0.8− | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.5− | 0.4− | | |
| 2002 12 10 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.4+ | 0.1− | | |
| 2002 12 10 | 704 | 0.7− | 0.3+ | 2006 09 18 | 699 | 0.7− | 0.6− | 2006 11 13 | 691 | 0.6− | 0.6+ | | |
| 2002 12 10 | 704 | 0.5− | 1.1+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.2− | | |
| 2002 12 27 | 644 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.9− | 0.2+ | 2006 11 20 | A44 | 0.5− | 0.6+ | | |
| 2002 12 27 | 644 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.9+ | 2006 11 20 | A44 | 1.0− | 0.1− | | |
| 2002 12 27 | 644 | 0.7+ | 0.2− | 2006 09 18 | 699 | 0.4− | 0.8− | 2006 11 20 | A44 | 0.9− | 0.2+ | | |
| 2004 03 12 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | | | |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.3+ | | | | | | |

**(138425)∗ 2000 HV$_{68}$ = 2001 QP$_{276}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17344)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.03927 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21773735 | $\omega$ | 321.15852 | | +0.98737897 | +0.14536525 | |
| $a$ | 2.7364075 | $\Omega$ | 30.65846 | | −0.09605973 | +0.86525679 | |
| $e$ | 0.1967809 | $i$ | 7.08141 | | −0.12591781 | +0.47979123 | |
| $P$ | 4.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 28 | 327 | 0.6+ | 0.1+ | 2001 10 10 | 644 | 0.1+ | 0.7− | 2006 11 15 | 691 | 0.1+ | 0.1+ | | |
| 1997 11 28 | 327 | 0.1+ | 0.3+ | 2001 10 10 | 644 | 0.3+ | 0.7− | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 1997 11 28 | 327 | 0.0 | 0.4+ | 2002 11 07 | 645 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 1999 03 20 | 097 | 0.2+ | 0.1+ | 2002 11 07 | 645 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.8+ | 0.5+ | | |
| 1999 03 20 | 097 | 0.5+ | 0.1+ | 2004 03 30 | 691 | 0.4+ | 0.3+ | 2006 11 15 | 704 | 0.5+ | 0.1+ | | |
| 1999 03 20 | 097 | 0.2+ | 0.3+ | 2004 03 30 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.3− | 0.1− | | |
| 2000 04 29 | 704 | 0.4− | 0.0 | 2004 03 30 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.3− | | |
| 2000 04 29 | 704 | 0.3− | 1.0+ | 2006 08 28 | 703 | 0.3+ | 1.3− | 2006 11 16 | 704 | 0.7+ | 0.1+ | | |
| 2000 04 29 | 704 | (0.6+ | 2.2+) | 2006 08 28 | 703 | 0.5+ | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.1+ | | |
| 2000 04 30 | 691 | 0.5− | 0.6− | 2006 08 28 | 703 | 0.2+ | 0.6− | 2006 11 16 | 704 | 0.3+ | 0.8+ | | |
| 2000 04 30 | 691 | 0.5− | 0.5− | 2006 08 28 | 703 | 1.0− | 0.2+ | 2006 11 16 | 704 | (1.1+ | 1.5+) | | |
| 2000 04 30 | 691 | 0.5− | 0.6− | 2006 09 20 | 012 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.0 | 0.1+ | | |
| 2000 05 07 | 704 | 0.4+ | 0.5− | 2006 09 20 | 012 | 0.8+ | 0.1− | 2006 11 16 | 704 | 0.1− | 0.3− | | |
| 2000 05 07 | 704 | 0.5+ | 1.0+ | 2006 09 20 | 012 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 1.2− | 0.2+ | | |
| 2000 05 07 | 704 | 1.1+ | 0.2− | 2006 09 20 | 012 | (0.9− | 1.6−) | 2006 11 16 | 704 | 0.2− | 0.1− | | |
| 2000 05 07 | 704 | 1.1+ | 0.5+ | 2006 09 20 | 012 | 0.5− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.6− | | |
| 2001 08 01 | 644 | 0.1− | 0.6+ | 2006 09 21 | 012 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.1− | 0.5+ | | |
| 2001 08 01 | 644 | 0.2− | 0.6+ | 2006 09 21 | 012 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.2+ | 0.1+ | | |
| 2001 08 01 | 644 | 0.2− | 0.7+ | 2006 09 21 | 012 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.8− | 0.8− | | |
| 2001 08 19 | 704 | 0.2− | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.7+ | | |
| 2001 08 19 | 704 | 0.5+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.1+ | | |
| 2001 08 19 | 704 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.4+ | | |
| 2001 08 19 | 704 | 0.2− | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.0 | | |
| 2001 08 19 | 704 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.3+ | | |
| 2001 08 25 | 644 | 0.3− | 1.0− | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.0 | 0.3− | | |
| 2001 08 25 | 644 | 0.5− | 0.9− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.1+ | | |
| 2001 08 25 | 644 | 0.1− | 0.9− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.2− | | |
| 2001 08 25 | 699 | 0.3− | 0.5+ | 2006 10 19 | 695 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.1− | | |
| 2001 08 25 | 699 | 0.4+ | 0.7+ | 2006 10 19 | 695 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 2001 08 25 | 699 | 0.4− | 0.4+ | 2006 10 19 | 691 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.2− | | |
| 2001 08 25 | 699 | 0.4− | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.8− | 0.3− | | |
| 2001 09 11 | 704 | 0.3+ | 0.7− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.0 | | |
| 2001 09 11 | 704 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.4+ | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.1+ | | |
| 2001 09 11 | 704 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.7− | 0.2− | | |
| 2001 09 11 | 704 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.6− | 0.1− | | |
| 2001 09 11 | 704 | 0.1+ | 0.6− | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 12 01 | 691 | 0.2− | 0.1+ | | |
| 2001 09 22 | 608 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.7− | | |
| 2001 09 22 | 608 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.6− | 0.2− | 2006 12 01 | 691 | 0.2− | 0.4+ | | |
| 2001 09 22 | 608 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.7− | 0.3− | | |
| 2001 09 25 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.2− | 0.6− | | |
| 2001 09 25 | 704 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2− | 0.5− | | |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.7− | | |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.4+ | 1.9+ | | |
| 2001 09 25 | 704 | 0.3+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.2− | 0.2+ | | |
| 2001 10 04 | 644 | 0.5− | 0.8+ | 2006 11 14 | 703 | 0.8+ | 0.1− | 2006 12 01 | 704 | 0.4+ | 1.1+ | | |
| 2001 10 04 | 644 | 0.5− | 0.7+ | 2006 11 14 | 703 | 0.4− | 0.2+ | 2006 12 01 | 704 | 0.3+ | 0.0 | | |
| 2001 10 04 | 644 | 0.1+ | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.7+ | 0.1+ | | |
| 2001 10 10 | 644 | 0.1+ | 0.9− | 2006 11 14 | 703 | 0.0 | 0.1− | | | | | | |

**(138426)∗ 2000 HY$_{69}$ = 2005 LY$_{5}$**

Discovered 2000 Apr. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 74778)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 121.39410 | | (2000.0) | | | |
| $n$ | 0.21250119 | $\omega$ | 1.64464 | | −0.66780366 | +0.72963636 |
| $a$ | 2.7811760 | $\Omega$ | 226.49093 | | −0.68521250 | −0.67986027 |
| $e$ | 0.0994781 | $i$ | 11.71045 | | −0.29072685 | −0.07362608 |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | 0.6+ | 0.2+ | 2005 06 02 | E12 | 0.2+ | 0.1− | 2005 07 27 | 644 | 0.2− | 0.1+ |
| 2000 04 26 | 699 | 0.1− | 0.2− | 2005 06 02 | E12 | 0.1+ | 0.2+ | 2006 09 16 | 683 | 0.7+ | 0.2+ |
| 2000 04 26 | 699 | 0.5− | 1.3+ | 2005 06 02 | E12 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.5+ |
| 2000 04 26 | 699 | 0.7+ | 0.4− | 2005 06 03 | 703 | 0.6− | 0.1− | 2006 09 16 | 703 | 0.1+ | 0.4+ |
| 2000 04 30 | 699 | 0.0 | 0.2− | 2005 06 03 | 703 | 0.8− | 0.1− | 2006 09 16 | 683 | 0.7− | 0.2+ |
| 2000 04 30 | 699 | 0.5+ | 0.3+ | 2005 06 03 | 703 | 0.0 | 0.0 | 2006 09 16 | 703 | (2.2+ | 1.5−) |
| 2000 04 30 | 699 | 0.3− | 0.6+ | 2005 06 03 | 703 | 0.9− | 0.6− | 2006 09 16 | 703 | 0.2− | 0.5+ |
| 2000 04 30 | 699 | 0.6+ | 0.6− | 2005 06 05 | 704 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.4+ | 0.4− |
| 2000 05 06 | 704 | 0.3+ | 0.6+ | 2005 06 05 | 704 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.2− |
| 2000 05 06 | 704 | 0.2− | 0.3+ | 2005 06 05 | 704 | 0.2+ | 0.5+ | 2006 09 21 | 699 | 0.4− | 0.4− |
| 2000 05 06 | 704 | 0.7+ | 0.6+ | 2005 06 05 | 704 | 0.2+ | 0.7+ | 2006 09 21 | 699 | 0.5+ | 0.9− |
| 2000 05 06 | 704 | 0.1− | 1.4+ | 2005 06 08 | 691 | 0.2+ | 0.2+ | 2006 09 24 | G92 | 0.1+ | 1.0+ |
| 2000 05 06 | 704 | 1.1+ | 1.0+ | 2005 06 08 | 691 | (0.5− | 1.7+) | 2006 09 24 | G92 | 0.4+ | 0.5+ |
| 2000 05 09 | 704 | 0.3− | 0.6− | 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 09 24 | G92 | 0.2− | 0.3− |
| 2000 05 09 | 704 | 0.2+ | 0.2+ | 2005 06 10 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.3+ |
| 2000 05 09 | 704 | 0.8− | 0.0 | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.5+ | 1.4+ |
| 2000 05 09 | 704 | 0.2+ | 1.7+ | 2005 06 10 | 691 | 0.1+ | 1.1− | 2006 09 27 | 703 | 0.2− | 1.5+ |
| 2001 08 29 | 644 | 0.6+ | 0.3+ | 2005 06 11 | 703 | 0.8− | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.3+ |
| 2001 08 29 | 644 | 0.3+ | 0.4+ | 2005 06 11 | 703 | 0.1− | 0.1+ | 2006 10 03 | 703 | 1.2− | 0.8+ |
| 2001 08 29 | 644 | 0.0 | 0.1+ | 2005 06 11 | 703 | 0.8− | 0.1− | 2006 10 03 | 703 | 1.1− | 1.0+ |
| 2001 09 20 | 645 | 0.0 | 0.2− | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 10 03 | 703 | (1.6− | 0.3+) |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 1.0− | 0.5+ |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2005 06 14 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2005 06 24 | 644 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | (0.7− | 2.4+) | 2005 06 24 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | 0.4− | 0.8+ | 2005 06 24 | 644 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.5− | 0.3+ |
| 2004 01 27 | 699 | 0.5− | 0.7− | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2004 01 27 | 699 | 0.4− | 1.5+ | 2005 07 05 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2004 01 27 | 699 | 0.3+ | 0.4+ | 2005 07 05 | 644 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2004 01 27 | 699 | 0.2− | 0.4− | 2005 07 27 | 644 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2005 06 02 | E12 | 0.0 | 0.2− | 2005 07 27 | 644 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1+ |

**(138427)∗ 2000 HG$_{75}$ = 2001 QH$_{192}$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17346)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.37812 | | (2000.0) | | | |
| $n$ | 0.22010788 | $\omega$ | 123.87143 | | +0.84685373 | +0.51713386 |
| $a$ | 2.7167248 | $\Omega$ | 205.66402 | | −0.53102513 | +0.83502358 |
| $e$ | 0.1473903 | $i$ | 16.65698 | | +0.02917310 | +0.18790473 |
| $P$ | 4.48 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 704 | 0.1+ | 0.1+ | 2001 10 13 | 644 | 0.5+ | 0.1− | 2004 03 28 | 691 | 0.0 | 0.4+ |
| 2000 04 27 | 704 | 0.1+ | 0.7+ | 2001 10 14 | 704 | 0.2+ | 0.1+ | 2004 03 28 | 691 | 0.1+ | 0.5+ |
| 2000 04 27 | 704 | 1.7+ | 0.2+ | 2001 10 14 | 704 | 0.3+ | 0.4+ | 2004 03 28 | 691 | 0.2+ | 0.5+ |
| 2000 04 27 | 704 | 0.1+ | 0.3+ | 2001 10 14 | 704 | 1.0− | 0.2+ | 2004 03 28 | 691 | 0.1+ | 0.2+ |
| 2000 05 01 | 699 | 0.2− | 0.6+ | 2001 10 14 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 691 | 0.2+ | 0.5+ |
| 2000 05 01 | 699 | 0.4− | 0.1+ | 2001 10 14 | 704 | 0.1+ | 0.5+ | 2004 04 19 | 704 | 0.5+ | 0.9+ |
| 2000 05 01 | 699 | 0.8− | 0.9+ | 2001 10 16 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 0.5+ | 0.1+ |
| 2000 05 01 | 699 | 0.8− | 0.3+ | 2001 10 16 | 704 | 0.2− | 0.9+ | 2004 04 19 | 704 | 0.9+ | 1.1+ |
| 2000 05 05 | 704 | 0.5− | 0.1− | 2001 10 16 | 704 | 0.5− | 1.3+ | 2004 04 19 | 704 | (1.6+ | 0.3−) |
| 2000 05 05 | 704 | 0.1+ | 0.2+ | 2001 10 16 | 704 | 0.2+ | 0.8+ | 2005 06 06 | 704 | 0.2− | 0.2− |
| 2000 05 05 | 704 | 0.2+ | 0.4+ | 2001 10 16 | 704 | 0.1− | 0.9+ | 2005 06 06 | 704 | 0.6+ | 0.1+ |
| 2000 05 05 | 704 | 0.2+ | 0.2− | 2001 10 21 | 704 | 1.0+ | 0.8+ | 2005 06 06 | 704 | 0.5+ | 0.6+ |
| 2001 06 27 | 608 | 0.0 | 0.5− | 2001 10 21 | 704 | 0.9+ | 0.4+ | 2005 06 06 | 704 | 0.1− | 0.3− |
| 2001 06 27 | 608 | 0.1− | 0.1− | 2001 10 21 | 704 | 0.8+ | 0.9+ | 2005 06 06 | 704 | 0.1− | 0.6+ |
| 2001 06 27 | 608 | 0.4+ | 0.1+ | 2001 10 21 | 704 | 0.1+ | 0.5+ | 2005 07 28 | 704 | 0.3+ | 0.2− |
| 2001 08 22 | 704 | 0.3− | 0.5+ | 2001 10 25 | 644 | 0.3+ | 0.3− | 2005 07 28 | 704 | 0.2− | 0.4+ |
| 2001 08 22 | 704 | 0.3− | 0.4+ | 2001 10 25 | 644 | 0.1− | 0.5− | 2005 07 28 | 704 | 0.9− | 0.6+ |
| 2001 08 22 | 704 | 0.1− | 0.2+ | 2001 10 25 | 644 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.6+ | 0.3+ |
| 2001 08 22 | 704 | 0.4− | 0.0 | 2001 11 10 | 704 | (1.5− | 1.1+) | 2006 09 19 | 699 | 0.1− | 0.4+ |
| 2001 08 22 | 704 | 0.5− | 0.1− | 2001 11 10 | 704 | 0.8− | 1.1+ | 2006 09 19 | 699 | 0.4− | 1.2+ |
| 2001 08 26 | 699 | 0.5− | 0.0 | 2001 11 10 | 704 | 0.6− | 0.8+ | 2006 09 19 | 699 | 1.0+ | 0.2+ |
| 2001 08 26 | 699 | 1.2+ | 0.6+ | 2001 11 10 | 704 | 1.0− | 1.0+ | 2006 10 01 | 703 | 0.1− | 0.1+ |
| 2001 08 26 | 699 | (0.0 | 1.5+) | 2001 11 10 | 704 | (0.3+ | 1.9+) | 2006 10 01 | 703 | 0.4+ | 0.4− |
| 2001 08 26 | 699 | 0.7− | 1.2+ | 2001 11 17 | 699 | 0.7+ | 0.9+ | 2006 10 01 | 703 | 0.3− | 0.6− |
| 2001 09 10 | 704 | 0.3+ | 0.2+ | 2001 11 17 | 699 | (2.2+ | 0.3−) | 2006 10 01 | 703 | 0.3− | 0.1+ |
| 2001 09 10 | 704 | 0.2+ | 0.5+ | 2001 11 17 | 699 | 1.4− | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2001 09 10 | 704 | 0.4+ | 0.4+ | 2001 11 17 | 699 | (1.7− | 1.8+) | 2006 10 16 | 703 | (0.4+ | 1.6+) |
| 2001 09 10 | 699 | 0.0 | 0.2+ | 2001 11 18 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2001 09 10 | 704 | 0.1+ | 0.4+ | 2001 11 18 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2001 09 10 | 704 | 0.6+ | 0.7+ | 2001 11 18 | 704 | 1.0− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 09 10 | 699 | 0.2− | 0.2+ | 2001 11 18 | 704 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2001 09 10 | 699 | 0.3− | 0.6+ | 2001 11 18 | 704 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 09 10 | 699 | 0.4− | 0.1+ | 2001 12 07 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2001 09 17 | 644 | 0.1− | 0.1+ | 2001 12 07 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.6+ |
| 2001 09 17 | 644 | 0.2+ | 0.0 | 2001 12 07 | 704 | 0.5+ | 1.0+ | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2001 09 17 | 644 | 0.0 | 0.2− | 2001 12 07 | 704 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2001 09 23 | 608 | 0.2− | 0.6− | 2004 03 14 | 644 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 0.5+ | 0.2+ |
| 2001 09 23 | 608 | 0.1− | 0.7− | 2004 03 14 | 644 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 0.2+ | 0.5− |
| 2001 09 23 | 608 | 0.2− | 0.5− | 2004 03 14 | 644 | 0.1+ | 0.9+ | 2006 11 13 | 703 | 0.5+ | 0.9+ |
| 2001 09 25 | 704 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.1+ | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.9− |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2004 03 17 | 704 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.2− |
| 2001 09 25 | 704 | 0.2+ | 0.0 | 2004 03 17 | 704 | 0.4− | 0.2− | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2004 03 17 | 704 | 0.5− | 0.2+ | 2006 11 19 | 703 | 0.3+ | 0.4+ |
| 2001 09 25 | 704 | 0.2+ | 0.1− | 2004 03 17 | 704 | 0.5− | 1.3+ | 2006 11 19 | 703 | 0.3+ | 0.1+ |
| 2001 10 05 | 644 | 0.3− | 1.1− | 2004 03 26 | 699 | 0.1− | 1.0− | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2001 10 05 | 644 | 0.6− | 1.0− | 2004 03 26 | 699 | 0.8− | 0.9+ | 2006 11 20 | 704 | 0.1+ | 0.7− |
| 2001 10 05 | 644 | 0.1+ | 1.1− | 2004 03 26 | 699 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.3+ | 0.8+ |
| 2001 10 13 | 644 | 0.2+ | 0.2− | 2004 03 26 | 699 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2001 10 13 | 644 | 0.1+ | 0.1− | 2004 03 28 | 691 | 0.1+ | 0.4+ | | | | |

**(138428)∗ 2000 HG$_{77}$**

Discovered 2000 Apr. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.01580 | | (2000.0) | | | |
| $n$ | 0.24072167 | $\omega$ | 251.06230 | | +0.57604493 | +0.79015030 |
| $a$ | 2.5593278 | $\Omega$ | 55.91435 | | −0.62204714 | +0.58991095 |
| $e$ | 0.1536805 | $i$ | 14.64314 | | −0.53031084 | +0.16633576 |
| $P$ | 4.09 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.6− | 0.4− | 2003 12 19 | 704 | 0.2− | 1.4+ | 2006 09 27 | G96 | 0.5− | 0.2− |
| 2000 03 04 | 704 | 0.4+ | 0.3− | 2004 01 30 | 704 | (2.2+ | 2.3+) | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2000 03 04 | 704 | 0.2− | 0.1− | 2004 01 30 | 704 | 1.3+ | 1.3+ | 2006 09 27 | G96 | 0.4− | 0.0 |
| 2000 03 04 | 704 | 0.0 | 1.1− | 2004 01 30 | 704 | 1.1− | 1.2+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2000 03 04 | 704 | 0.2+ | 0.6− | 2004 02 15 | 704 | 0.2− | 0.4− | 2006 11 10 | 691 | 0.6+ | 0.5− |
| 2000 03 15 | 704 | 0.5− | 0.0 | 2004 02 15 | 704 | 0.7+ | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2000 03 15 | 704 | 0.6− | 0.4− | 2004 02 15 | 704 | 1.3− | 0.3+ | 2006 11 15 | 704 | 0.6− | 0.0 |
| 2000 03 15 | 704 | 0.7− | 1.2− | 2004 02 15 | 704 | 0.8− | 0.1+ | 2006 11 15 | 704 | 0.9+ | 0.7+ |
| 2000 03 15 | 704 | (4.0− | 0.3+) | 2004 02 19 | 704 | 0.5+ | 1.1+ | 2006 11 15 | 704 | (1.4+ | 1.6+) |
| 2000 03 26 | 699 | 0.5− | 0.9+ | 2004 02 19 | 704 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.4− | 0.9+ |
| 2000 03 26 | 699 | 1.1+ | 0.3− | 2004 02 19 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2000 03 26 | 699 | 0.7− | 0.6− | 2004 02 19 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 704 | (0.4+ | 1.6+) |
| 2000 03 26 | 699 | 0.4+ | 0.6− | 2004 03 14 | 704 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 2000 03 26 | 699 | 0.1+ | 0.9+ | 2004 03 14 | 704 | 0.8− | 0.2− | 2006 11 16 | 704 | 0.2− | 1.0+ |
| 2000 03 26 | 699 | 0.7+ | 0.1− | 2004 03 14 | 704 | 0.0 | 0.6− | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2000 03 26 | 699 | 1.3− | 0.8+ | 2004 03 14 | 704 | 0.5− | 0.3− | 2006 11 16 | 704 | 0.8+ | 0.8+ |
| 2000 03 26 | 699 | 0.7+ | 0.1+ | 2004 03 14 | 704 | 0.0 | 0.6− | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2000 04 08 | 704 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.3− | 0.9− |
| 2000 04 08 | 704 | 0.3+ | 0.4− | 2004 03 28 | 704 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.9− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.4+ | 0.4+ | 2004 03 28 | 704 | 0.8+ | 1.4+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2000 04 08 | 704 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.4− | 0.7− | 2006 11 22 | 704 | 0.9+ | 0.0 |
| 2000 04 28 | 699 | 0.3+ | 0.6− | 2004 03 28 | 704 | 0.4+ | 0.7− | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2000 04 28 | 699 | 0.0 | 0.5− | 2004 04 14 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2000 04 28 | 699 | 0.2+ | 0.9− | 2004 04 14 | 703 | 0.7+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2000 04 28 | 699 | 0.2− | 0.4− | 2004 04 14 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2000 05 02 | 704 | 0.1+ | 0.2− | 2004 04 14 | 703 | (1.7+ | 0.4+) | 2006 11 25 | 691 | 0.3− | 0.2− |
| 2000 05 02 | 704 | 0.2− | 1.0+ | 2004 04 14 | 704 | 0.2+ | 0.4+ | 2006 11 25 | 691 | 0.4− | 0.0 |
| 2000 05 02 | 704 | 0.4+ | 0.5+ | 2004 04 14 | 644 | 0.3+ | 0.1+ | 2006 11 25 | 691 | 0.5− | 0.3− |
| 2002 12 06 | 704 | 0.1− | 0.3+ | 2004 04 14 | 703 | 1.0+ | 0.7+ | 2006 11 27 | 704 | 0.7+ | 0.4+ |
| 2002 12 06 | 704 | 0.8− | 0.3+ | 2004 04 14 | 703 | 0.5+ | 0.5+ | 2006 11 27 | 704 | 0.4− | 1.7+ |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2004 04 14 | 644 | 0.2− | 0.2+ | 2006 11 27 | 704 | 0.4− | 0.1+ |
| 2002 12 11 | 704 | 0.6− | 0.3+ | 2004 04 14 | 704 | 0.0 | 1.1− | 2006 11 27 | 704 | 1.2+ | 0.2+ |
| 2002 12 11 | 704 | 0.7+ | 0.2+ | 2005 05 30 | E12 | 0.5+ | 0.4+ | 2006 11 28 | 704 | 0.1− | 0.4+ |
| 2002 12 11 | 704 | 0.5− | 0.4− | 2005 05 30 | E12 | (0.3+ | 2.2+) | 2006 11 28 | 704 | 0.4− | 0.7+ |
| 2002 12 11 | 704 | (0.2+ | 1.8−) | 2005 05 30 | E12 | 0.0 | 1.0+ | 2006 11 28 | 704 | 1.0− | 0.8+ |
| 2003 12 19 | 704 | 0.0 | 0.5+ | 2005 07 07 | 428 | 0.4− | 1.0+ | 2006 11 28 | 704 | 0.2+ | 0.1− |
| 2003 12 19 | 704 | 1.0+ | 0.0 | 2005 07 07 | 428 | 0.0 | 1.2+ | 2006 11 28 | 704 | 0.3− | 0.1+ |
| 2003 12 19 | 704 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.5− | 0.2− | | | | |

**(138429)∗ 2000 HP$_{77}$**

Discovered 2000 Apr. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.88122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23532770 | $\omega$ | 356.75120 | | −0.50466449 | −0.83775209 | |
| $a$ | 2.5982884 | $\Omega$ | 123.45833 | | +0.79760450 | −0.54487856 | |
| $e$ | 0.1097732 | $i$ | 14.47462 | | +0.33036466 | +0.03576007 | |
| $P$ | 4.19 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.3− | 0.3+ | 2004 01 19 | 703 | (0.3− | 2.3−) | 2004 03 14 | 704 | 0.6+ | 0.3+ |
| 2000 03 29 | 704 | 0.5+ | 0.3+ | 2004 01 23 | 699 | 0.7− | 0.2− | 2004 03 14 | 704 | 0.4+ | 0.2− |
| 2000 03 29 | 704 | 0.0 | 0.8+ | 2004 01 23 | 699 | 0.5− | 0.0 | 2004 03 18 | 703 | 1.3− | 0.5− |
| 2000 03 29 | 704 | 0.2− | 0.7+ | 2004 01 23 | 699 | 0.3+ | 0.3+ | 2004 03 18 | 644 | 0.6− | 0.4− |
| 2000 04 08 | 704 | 1.0+ | 1.5+ | 2004 01 23 | 699 | 1.3− | 0.3+ | 2004 03 18 | 703 | 0.3− | 0.1+ |
| 2000 04 08 | 704 | 1.1− | 1.7+ | 2004 01 29 | 703 | 0.1− | 0.6+ | 2004 03 18 | 703 | 0.6− | 0.3+ |
| 2000 04 08 | 704 | 0.5+ | 1.5+ | 2004 01 29 | 703 | 0.4+ | 0.6+ | 2004 03 18 | 644 | 0.0 | 0.0 |
| 2000 04 08 | 704 | 0.4+ | 0.7+ | 2004 01 29 | 703 | 0.3− | 0.1− | 2004 03 18 | 703 | 0.4+ | 0.3+ |
| 2000 04 08 | 704 | 0.9− | 0.4− | 2004 01 29 | 703 | 0.5− | 0.8− | 2004 03 18 | 644 | 0.2+ | 0.0 |
| 2000 04 28 | 699 | 1.7+ | 0.0 | 2004 01 30 | 699 | 0.2− | 1.2− | 2004 03 23 | 704 | 0.0 | 0.1− |
| 2000 04 28 | 699 | 0.3− | 0.7+ | 2004 01 30 | 699 | 0.3− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.5− |
| 2000 04 28 | 699 | 1.4+ | 0.2+ | 2004 01 30 | 699 | 1.0− | 0.1− | 2004 03 23 | 704 | 0.5+ | 0.5− |
| 2000 04 28 | 699 | 0.8+ | 0.2+ | 2004 01 30 | 704 | 0.9+ | 0.0 | 2004 03 23 | 704 | 0.0 | 0.4− |
| 2000 05 02 | 704 | 0.5− | 0.3+ | 2004 01 30 | 699 | 1.0− | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.3− |
| 2000 05 02 | 704 | 0.9− | 0.6− | 2004 01 30 | 704 | 0.6+ | 0.3+ | 2004 03 25 | 704 | 0.3+ | 0.1+ |
| 2000 05 02 | 704 | 0.5− | 0.3+ | 2004 01 30 | 704 | 1.4+ | 0.0 | 2004 03 25 | 704 | 0.4+ | 0.6+ |
| 2000 05 02 | 704 | 0.2− | 1.1+ | 2004 01 30 | 704 | 1.1+ | 0.5− | 2004 03 25 | 704 | 0.2+ | 0.4+ |
| 2000 05 02 | 704 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.5+ | 0.2− | 2004 03 25 | 704 | 0.5− | 0.1+ |
| 2000 05 30 | 704 | 0.3+ | 0.2− | 2004 02 13 | 201 | 0.4− | 0.1+ | 2004 03 25 | 704 | 1.3− | 0.2+ |
| 2000 05 30 | 704 | 0.6+ | 0.5+ | 2004 02 14 | 201 | 0.2− | 0.0 | 2004 03 30 | 703 | (0.5− | 1.7+) |
| 2000 05 30 | 704 | 0.6− | 1.2+ | 2004 02 14 | 201 | 0.3− | 0.1+ | 2004 03 30 | 703 | 0.6+ | 0.7+ |
| 2002 09 29 | 608 | 0.1+ | 0.2− | 2004 02 14 | 608 | 0.2+ | 0.2+ | 2004 03 30 | 703 | (2.9+ | 2.1+) |
| 2002 09 29 | 608 | 0.1+ | 0.0 | 2004 02 14 | 608 | 0.1+ | 0.6− | 2004 03 30 | 703 | 0.9+ | 1.5− |
| 2002 09 29 | 608 | 0.3+ | 0.2+ | 2004 02 14 | 608 | 0.1− | 1.1− | 2004 04 14 | 644 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | (1.7− | 0.7+) | 2004 02 16 | 704 | 0.5− | 0.5+ | 2004 04 14 | 644 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | (2.6− | 1.5+) | 2004 02 16 | 704 | 0.8+ | 0.3+ | 2004 04 14 | 644 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | (2.0− | 1.1+) | 2004 02 16 | 704 | 0.0 | 0.8+ | 2006 09 17 | 699 | 0.2+ | 0.6+ |
| 2002 10 23 | 644 | 0.1+ | 1.4+ | 2004 02 16 | 704 | 0.1− | 0.7+ | 2006 09 17 | 699 | 1.4− | 0.6+ |
| 2002 10 23 | 644 | 1.0+ | 1.4+ | 2004 02 16 | 704 | 0.3− | 0.5+ | 2006 09 17 | 699 | 0.5− | 0.2+ |
| 2002 10 23 | 644 | 0.5+ | 0.7+ | 2004 02 18 | 608 | 1.2+ | 0.4+ | 2006 09 17 | 699 | 0.2+ | 0.9+ |
| 2002 11 05 | 644 | 0.3− | 0.2+ | 2004 02 18 | 608 | 0.6+ | 0.1+ | 2006 09 20 | 703 | 0.6− | 0.8+ |
| 2002 11 05 | 644 | 0.1− | 0.3+ | 2004 02 18 | 608 | 0.9+ | 0.8+ | 2006 09 20 | 703 | (0.3− | 2.2+) |
| 2002 11 05 | 644 | 0.4− | 0.1− | 2004 02 19 | 704 | 0.1− | 0.3− | 2006 09 20 | 703 | 0.5− | 0.8+ |
| 2003 11 20 | 691 | 0.3− | 0.1− | 2004 02 19 | 704 | 0.1+ | 0.8+ | 2006 09 20 | 703 | 1.2− | 0.3+ |
| 2003 11 20 | 691 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| 2003 11 20 | 691 | 0.1+ | 0.3− | 2004 02 19 | 704 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.6+ |
| 2003 12 22 | 704 | 1.3+ | 0.3− | 2004 02 19 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.9− | 0.4+ |
| 2003 12 22 | 704 | 0.8− | 0.1− | 2004 02 20 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2003 12 22 | 704 | 1.1− | 0.1+ | 2004 02 20 | 704 | 0.4+ | 0.8− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2003 12 22 | 704 | 0.2− | 0.5+ | 2004 02 20 | 704 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2003 12 27 | 704 | 1.1+ | 0.0 | 2004 02 23 | 608 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.3+ | 0.4+ | 2004 02 23 | 608 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2003 12 27 | 704 | 0.7− | 0.6+ | 2004 02 23 | 608 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2003 12 27 | 704 | 0.7+ | 0.5− | 2004 02 27 | 704 | 0.3+ | 0.6− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2003 12 27 | 704 | 0.6− | 0.0 | 2004 02 27 | 704 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2004 01 19 | 703 | 0.2− | 0.2− | 2004 02 27 | 704 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.5+ |
| 2004 01 19 | 703 | (1.1− | 1.6−) | 2004 03 14 | 704 | 0.4+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2004 01 19 | 703 | 0.4+ | 0.4+ | 2004 03 14 | 704 | 0.3+ | 1.1− | | | | |

**(138430)∗ 2000 HS$_{80}$**

Discovered 2000 Apr. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.23485 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20917970 | $\omega$ | 65.75679 | | −0.94664602 | +0.30594413 | |
| $a$ | 2.8105395 | $\Omega$ | 131.88720 | | −0.32224389 | −0.89420557 | |
| $e$ | 0.1079512 | $i$ | 7.81975 | | −0.00449371 | −0.32679442 | |
| $P$ | 4.71 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 704 | 0.6+ | 1.2+ | 2004 01 24 | 704 | 0.0 | 0.1+ | 2004 02 11 | 691 | 0.1− | 0.1− |
| 2000 04 12 | 704 | 0.8+ | 1.1+ | 2004 01 24 | 704 | 0.4+ | 0.7+ | 2004 02 16 | 704 | (1.0+ | 2.3+) |
| 2000 04 12 | 704 | 0.2− | 0.9+ | 2004 01 28 | 704 | 0.2+ | 0.8+ | 2004 02 16 | 704 | 0.2+ | 1.5+ |
| 2000 04 28 | 699 | 0.8− | 0.1+ | 2004 01 28 | 704 | 0.3+ | 0.3− | 2004 02 16 | 704 | 0.5+ | 1.5+ |
| 2000 04 28 | 699 | 0.2+ | 0.1+ | 2004 01 28 | 704 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.1− | 0.1+ |
| 2000 04 28 | 699 | 0.1− | 0.2− | 2004 01 28 | 704 | 0.9+ | 0.2+ | 2004 02 23 | 049 | 0.9− | 0.1+ |
| 2000 04 28 | 699 | 0.5− | 0.8+ | 2004 01 28 | 704 | 1.0+ | 0.4+ | 2004 02 23 | 049 | 0.4− | 0.0 |
| 2000 05 03 | 704 | 0.9+ | 0.6− | 2004 01 28 | 291 | 0.4− | 0.1+ | 2004 02 23 | 049 | 0.4− | 0.1− |
| 2000 05 03 | 704 | 1.0+ | 0.5+ | 2004 01 28 | 291 | 0.8− | 0.0 | 2004 04 15 | 645 | 0.1− | 0.2− |
| 2000 05 03 | 704 | 1.2+ | 0.2+ | 2004 01 28 | 291 | 0.7− | 0.1+ | 2004 04 15 | 645 | 0.1− | 0.2− |
| 2000 05 03 | 704 | 0.2− | 0.2+ | 2004 01 29 | 704 | 1.2+ | 0.7− | 2004 04 16 | 645 | 0.1− | 0.2− |
| 2000 05 24 | 699 | 0.2− | 0.8+ | 2004 01 29 | 704 | 0.5+ | 0.6+ | 2004 04 16 | 645 | 0.1− | 0.2− |
| 2000 05 24 | 699 | 0.3+ | 0.4+ | 2004 01 29 | 704 | 1.2+ | 0.5+ | 2006 08 30 | 699 | 1.6+ | 1.7+ |
| 2000 05 24 | 699 | 0.0 | 1.3+ | 2004 01 29 | 704 | 0.3+ | 0.8+ | 2006 08 30 | 699 | 0.2− | 1.7+ |
| 2000 05 24 | 699 | 0.1+ | 0.9+ | 2004 01 29 | 704 | 0.3+ | 2.0+ | 2006 08 30 | 699 | 0.2+ | 0.2+ |
| 2001 08 16 | 704 | 0.7+ | 0.5− | 2004 01 30 | 704 | 0.0 | 0.1− | 2006 08 30 | 699 | (3.5+ | 1.2+) |
| 2001 08 16 | 704 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 1.7+ | 0.1− | 2006 09 14 | 703 | 0.8− | 0.7+ |
| 2001 08 16 | 704 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.7+ | 1.8+ | 2006 09 14 | 703 | 1.5+ | 0.8− |
| 2001 08 23 | 608 | 0.5− | 0.3− | 2004 01 30 | 704 | 1.3+ | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.3− |
| 2001 08 23 | 608 | 0.9− | 0.1− | 2004 01 30 | 704 | 0.0 | 0.5− | 2006 09 14 | 703 | 1.3− | 1.2+ |
| 2001 08 23 | 608 | 0.9− | 0.0 | 2004 01 30 | 704 | 1.3+ | 0.8− | 2006 09 22 | 461 | 0.1+ | 0.5+ |
| 2004 01 17 | 644 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 09 22 | 461 | 0.0 | 0.3+ |
| 2004 01 17 | 644 | 0.1+ | 0.2+ | 2004 01 30 | 704 | 0.8+ | 0.3+ | 2006 09 22 | 461 | 0.1+ | 1.6+ |
| 2004 01 17 | 644 | 0.1+ | 0.4+ | 2004 01 30 | 704 | 0.9+ | 1.1+ | 2006 09 26 | 703 | 1.4− | 1.0+ |
| 2004 01 24 | 704 | 0.7+ | 0.2+ | 2004 01 30 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.3− |
| 2004 01 24 | 704 | 0.0 | 0.6+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 1.5+ |
| 2004 01 24 | 704 | 0.4+ | 0.5+ | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.0 |

**(138431)∗ 2000 HZ$_{81}$ = 2001 PO$_{32}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 17351)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.36810 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21686692 | $\omega$ | 320.88199 | | +0.99419325 | +0.02170870 | |
| $a$ | 2.7437245 | $\Omega$ | 38.27567 | | +0.03583929 | +0.85672481 | |
| $e$ | 0.1811874 | $i$ | 9.79637 | | −0.10146585 | +0.51531673 | |
| $P$ | 4.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 05 | 691 | 0.3− | 0.0 | 2003 01 10 | 704 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 1995 04 05 | 691 | 0.1− | 0.1+ | 2003 01 10 | 704 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.0 | 0.2+ |
| 1995 04 05 | 691 | 0.8+ | 0.0 | 2003 01 10 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.0 | 0.0 |
| 1995 04 07 | 691 | 1.1+ | 0.6+ | 2003 01 10 | 704 | 0.6+ | 0.3+ | 2006 10 28 | 704 | 0.2− | 0.3+ |
| 1995 04 07 | 691 | 0.5+ | 0.7+ | 2004 03 20 | 691 | 0.0 | 0.3+ | 2006 10 28 | 704 | 0.1− | 0.8+ |
| 1995 04 07 | 691 | 1.0+ | 0.5+ | 2004 03 20 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 704 | 0.7− | 0.0 |
| 1997 08 31 | 910 | 1.2− | 1.0− | 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 1997 08 31 | 910 | 1.0− | 1.0− | 2004 03 20 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 1997 08 31 | 910 | 0.9− | 0.6− | 2004 03 20 | 704 | 0.8− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2000 04 29 | 704 | 0.9+ | 0.4+ | 2004 03 20 | 704 | 0.1− | 1.3+ | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2000 04 29 | 704 | 0.7+ | 1.2+ | 2004 03 20 | 704 | (2.0− | 1.8+) | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2000 04 29 | 704 | 0.1− | 0.9− | 2004 03 20 | 704 | 0.8− | 1.0+ | 2006 11 01 | 691 | 0.5− | 0.2+ |
| 2000 04 29 | 704 | 0.1− | 0.5+ | 2004 03 23 | 704 | 0.2− | 1.4+ | 2006 11 02 | 704 | (0.9− | 2.1+) |
| 2000 04 29 | 704 | 0.2+ | 1.4+ | 2004 03 23 | 704 | 0.4− | 1.1+ | 2006 11 02 | 704 | 0.2+ | 1.1+ |
| 2000 05 01 | 699 | 0.0 | 0.7+ | 2004 03 23 | 704 | (0.3− | 1.6+) | 2006 11 02 | 704 | 0.9+ | 1.0+ |
| 2000 05 01 | 699 | 1.6+ | 1.4+ | 2004 03 23 | 704 | 0.3+ | 1.0+ | 2006 11 02 | 704 | 0.3− | 0.2+ |
| 2000 05 01 | 699 | (0.0 | 2.3+) | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2000 05 01 | 699 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2000 05 04 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2000 05 04 | 691 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2000 05 04 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2000 05 07 | 704 | 0.8+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2000 05 07 | 704 | 0.2− | 1.3+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2000 05 07 | 704 | 0.0 | 0.9+ | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2000 05 07 | 704 | 0.7+ | 1.3+ | 2006 09 30 | 703 | (0.3− | 5.0+) | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2001 08 10 | 644 | 0.2+ | 0.9+ | 2006 10 03 | 704 | (1.6− | 0.4−) | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2001 08 10 | 644 | 0.2+ | 0.7+ | 2006 10 03 | 704 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2001 08 10 | 644 | 0.1+ | 0.9+ | 2006 10 03 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2001 08 16 | 644 | 0.2− | 0.9+ | 2006 10 03 | 704 | 0.4+ | 0.7+ | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2001 08 16 | 644 | 0.2− | 0.9+ | 2006 10 03 | 704 | 1.3− | 1.3+ | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2001 08 16 | 644 | 0.2− | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.2+ |
| 2001 09 10 | 699 | 0.6− | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2− | 1.1+ |
| 2001 09 10 | 699 | 0.4− | 1.5+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2001 09 10 | 699 | 0.9− | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2001 09 10 | 699 | 0.0 | 1.1+ | 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2001 09 11 | 704 | 0.5− | 0.4− | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 2001 09 11 | 704 | 0.9− | 1.2− | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2001 09 11 | 704 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2001 09 11 | 704 | 0.4− | 0.9− | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.8+ | 0.5+ |
| 2001 09 11 | 704 | 0.9− | 1.1− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6− | 0.6+ |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2001 09 25 | 704 | 0.0 | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.7− | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2001 10 08 | 644 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2001 10 08 | 644 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.9− | 0.7+ |
| 2001 10 08 | 644 | 0.6+ | 0.6+ | 2006 10 23 | 704 | (2.6+ | 1.3+) | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2001 10 10 | 644 | 0.1− | 0.5+ | 2006 10 23 | 704 | 0.5− | 1.3+ | 2006 11 22 | 704 | 0.4− | 1.3+ |
| 2001 10 10 | 644 | 0.0 | 0.6+ | 2006 10 23 | 704 | 0.1+ | 0.7+ | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2001 10 10 | 644 | 0.3− | 1.0+ | 2006 10 23 | 704 | 0.0 | 0.9+ | 2006 11 29 | 704 | 1.7+ | 0.2− |
| 2001 10 18 | 699 | 0.3− | 0.7+ | 2006 10 23 | 704 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2001 10 18 | 699 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.2− | 1.3− |
| 2001 10 18 | 699 | 1.4− | 1.1+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2001 10 18 | 699 | (2.0− | 0.9+) | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.1+ |

**(138432)∗ 2000 HM$_{82}$ = 2000 JZ$_4$ = 2004 DT$_{36}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11070), G. V. Williams (*MPO* 60680)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.85538 | | (2000.0) | | | |
| $n$ | 0.21907346 | $\omega$ | 271.59172 | | −0.31438420 | −0.94914969 |
| $a$ | 2.7252700 | $\Omega$ | 196.76097 | | +0.89231598 | −0.28948086 |
| $e$ | 0.0593120 | $i$ | 3.31121 | | +0.32393637 | −0.12375661 |
| $P$ | 4.50 | $H$ | 16.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.7+ | 1.1+ | 2002 12 05 | 704 | 0.1− | 0.9+ | 2006 09 28 | 691 | 0.5− | 0.1− |
| 2000 04 29 | 704 | 1.1+ | 1.7+ | 2004 02 19 | 704 | 0.7+ | 0.4− | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2000 04 29 | 704 | 0.8+ | 0.8+ | 2004 02 19 | 704 | 0.4+ | 0.7− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2000 04 29 | 704 | 0.5+ | 0.4+ | 2004 02 19 | 704 | 1.2+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2000 05 03 | 691 | 0.3− | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2000 05 03 | 691 | 0.5− | 0.3+ | 2004 02 23 | 704 | 0.3− | 0.5− | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2000 05 03 | 691 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.0 | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.1+ |
| 2000 05 04 | 691 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2000 05 04 | 691 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.6− | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2000 05 04 | 691 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2000 05 06 | 691 | 0.0 | 0.3− | 2004 02 26 | 704 | (2.0− | 0.4+) | 2006 10 23 | G96 | 0.5+ | 0.1− |
| 2000 05 06 | 691 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2000 05 06 | 691 | 0.1+ | 0.2− | 2004 02 26 | 704 | 0.9− | 0.7+ | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | 0.7− | 0.0 | 2004 03 15 | 599 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.0 | 2004 03 15 | 599 | 0.1− | 0.1− | 2006 10 24 | 644 | 0.5− | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.1− | 2004 03 15 | 599 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.3+ |
| 2002 11 07 | 704 | 0.3− | 0.6+ | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 10 24 | 644 | 0.3− | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.6− | 2004 03 18 | 704 | 0.6+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2002 11 12 | 644 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.8+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 2002 11 12 | 644 | 0.0 | 0.1− | 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2002 11 12 | 644 | 0.1+ | 0.3+ | 2004 03 18 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.6− | 0.1+ | 2004 03 18 | 691 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2002 12 05 | 704 | 0.7+ | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 691 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2006 09 16 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− |

**(138433)∗ 2000 HV$_{82}$ = 2004 EJ$_{42}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60680)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 183.89992 | | (2000.0) | | | |
| $n$ | 0.23098658 | $\omega$ | 193.07038 | | −0.79708879 | +0.60304366 |
| $a$ | 2.6307418 | $\Omega$ | 24.10261 | | −0.54687925 | −0.69882308 |
| $e$ | 0.0750758 | $i$ | 4.41397 | | −0.25607135 | −0.38468772 |
| $P$ | 4.27 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.8− | 0.4+ | 2004 03 24 | 699 | 0.7− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 2000 04 29 | 704 | 0.2− | 0.4− | 2004 03 24 | 699 | 0.2− | 0.2+ | 2006 10 17 | 691 | 1.0− | 0.4+ |
| 2000 04 29 | 704 | 1.0+ | 1.5+ | 2004 03 24 | 699 | 0.2− | 0.4− | 2006 10 17 | 691 | 0.4− | 0.0 |
| 2000 04 29 | 704 | 1.5+ | 0.1+ | 2004 03 24 | 699 | 0.6+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2000 05 01 | 699 | 0.3− | 0.4+ | 2004 03 28 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2000 05 01 | 699 | 0.5+ | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2000 05 01 | 699 | 0.7− | 0.4+ | 2004 03 28 | 704 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2000 05 01 | 699 | 0.3+ | 0.8+ | 2004 03 28 | 704 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2000 05 09 | 704 | 0.1− | 0.2− | 2004 03 28 | 704 | 0.7+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2000 05 09 | 704 | (2.3+ | 0.2−) | 2004 04 12 | 699 | 0.5− | 0.5− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2000 05 09 | 704 | 0.5− | 0.4+ | 2004 04 12 | 699 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2000 05 09 | 704 | 0.2+ | 0.8− | 2004 04 12 | 699 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.5+ | 0.8− |
| 2004 03 15 | 703 | 0.8− | 0.8+ | 2004 04 12 | 699 | 0.5+ | 0.1+ | 2006 11 01 | G96 | 0.4− | 0.6− |
| 2004 03 15 | 703 | 0.9− | 0.4− | 2004 04 15 | 644 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.7− |
| 2004 03 15 | 703 | 0.3+ | 0.4− | 2004 04 15 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | 0.5− | 0.0 | 2004 04 15 | 644 | 0.2+ | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 2004 03 16 | 704 | 0.1+ | 1.2− | 2004 04 21 | 704 | 0.5+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 0.7+ | 0.5− | 2004 04 21 | 704 | 0.9+ | 1.1+ | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2004 03 16 | 704 | 0.3− | 1.0− | 2004 04 21 | 704 | 0.4+ | 1.2+ | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2004 03 16 | 704 | 0.1+ | 0.1+ | 2004 04 21 | 704 | 0.6+ | 0.1+ | 2006 11 09 | 644 | 0.7− | 0.9+ |
| 2004 03 18 | 704 | 0.2+ | 1.2+ | 2004 04 21 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 703 | (1.7− | 0.0 ) |
| 2004 03 18 | 704 | 0.6+ | 0.0 | 2004 04 28 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 2004 03 18 | 704 | (0.3+ | 1.6+) | 2004 04 28 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.7+ |
| 2004 03 18 | 704 | 0.3+ | 0.4− | 2004 04 28 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 1.0− |
| 2004 03 18 | 704 | 0.1+ | 0.0 | 2005 07 03 | 644 | 0.5− | 0.8+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 704 | 0.3+ | 0.3+ | 2005 07 03 | 644 | 0.9− | 0.9+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.7+ | 1.0− | 2005 07 03 | 644 | 0.4− | 0.7+ | 2006 11 13 | 691 | 0.0 | 1.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.1− | 0.5+ | 2005 11 06 | G96 | 0.2+ | 0.8+ | 2006 11 16 | 691 | 0.5+ | 0.2+ | | |
| 2004 03 18 | 704 | 0.4+ | 0.9+ | 2005 11 06 | G96 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.3+ | 0.1− | | |
| 2004 03 22 | 704 | 0.3+ | 0.5− | 2005 11 06 | G96 | 0.2+ | 0.6+ | 2006 11 16 | 691 | 0.4+ | 0.0 | | |
| 2004 03 22 | 704 | 0.8− | 0.5+ | 2005 11 06 | G96 | 0.0 | 1.1+ | 2006 11 22 | 704 | 0.1+ | 0.1+ | | |
| 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.8+ | 0.8− | | |
| 2004 03 22 | 704 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.4− | 0.2− | 2006 11 22 | 704 | 1.0+ | 0.1+ | | |
| 2004 03 22 | 704 | 0.8− | 0.5+ | 2006 09 27 | G96 | 0.5− | 0.1− | | | | | | |

**(138434)∗ 2000 HF$_{83}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.06129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24488599 | $\omega$ | 177.72993 | | −0.46857442 | +0.88104443 | |
| $a$ | 2.5302305 | $\Omega$ | 64.32228 | | −0.81165430 | −0.40038847 | |
| $e$ | 0.1179746 | $i$ | 4.12300 | | −0.34879120 | −0.25189242 | |
| $P$ | 4.02 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.5+ | 0.5+ | 2001 09 23 | 704 | 0.4− | 0.2+ | 2004 05 28 | 691 | 0.1− | 0.1+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.5+ | 2001 09 23 | 704 | 0.2− | 0.2+ | 2004 05 28 | 691 | 0.1− | 0.1+ | | |
| 2000 04 29 | 704 | 0.5− | 0.0 | 2001 09 23 | 704 | 0.2− | 0.6− | 2004 05 28 | 691 | 0.2− | 0.2− | | |
| 2000 04 29 | 704 | 1.1− | 0.1+ | 2001 09 23 | 704 | 0.6− | 1.0+ | 2004 06 07 | 699 | 1.1+ | 0.2+ | | |
| 2000 04 29 | 704 | 0.7+ | 0.2+ | 2001 09 23 | 704 | 0.1+ | 0.9+ | 2004 06 07 | 699 | (2.0+ | 0.6−) | | |
| 2000 04 30 | 699 | 0.6+ | 1.3+ | 2004 04 15 | 699 | 0.1+ | 0.5− | 2004 06 07 | 699 | 1.0+ | 0.6+ | | |
| 2000 04 30 | 699 | 0.7− | 0.6+ | 2004 04 15 | 699 | 0.3− | 0.3− | 2004 06 07 | 699 | 0.1− | 1.1− | | |
| 2000 04 30 | 699 | 0.1+ | 0.1+ | 2004 04 15 | 699 | 0.9− | 0.4+ | 2004 06 11 | 703 | 0.1+ | 0.2− | | |
| 2000 04 30 | 699 | 0.4− | 0.4+ | 2004 04 15 | 699 | 0.0 | 0.2+ | 2004 06 11 | 703 | 0.0 | 0.3− | | |
| 2000 05 07 | 704 | 1.1+ | 0.8− | 2004 04 17 | 704 | 0.1+ | 0.9− | 2004 06 11 | 703 | 0.1− | 0.6+ | | |
| 2000 05 07 | 704 | 1.3+ | 0.8+ | 2004 04 17 | 704 | 0.1− | 0.3+ | 2004 06 11 | 703 | 1.1− | 0.4+ | | |
| 2000 05 07 | 704 | 0.2+ | 0.8+ | 2004 04 17 | 704 | 0.2− | 0.2+ | 2005 08 31 | 644 | 0.1− | 0.2− | | |
| 2000 05 07 | 704 | 0.3− | 0.4+ | 2004 04 17 | 704 | 0.2− | 0.5− | 2005 08 31 | 644 | 0.0 | 0.4− | | |
| 2000 05 07 | 704 | 0.5+ | 0.4+ | 2004 04 17 | 704 | 0.1− | 0.0 | 2005 08 31 | 644 | 0.2− | 0.0 | | |
| 2000 05 11 | 699 | 0.3+ | 0.2+ | 2004 04 19 | 704 | 0.2+ | 0.2− | 2005 09 30 | 699 | 0.2+ | 0.9− | | |
| 2000 05 11 | 699 | 0.7+ | 0.4− | 2004 04 19 | 704 | 0.1− | 0.1− | 2005 09 30 | 699 | 1.2+ | 0.2− | | |
| 2000 05 11 | 699 | 0.1− | 0.5+ | 2004 04 19 | 704 | 0.5+ | 0.5− | 2005 09 30 | 699 | 0.0 | 0.3− | | |
| 2000 05 11 | 699 | 0.3+ | 0.3+ | 2004 04 19 | 704 | (1.5+ | 1.7+) | 2005 09 30 | 699 | 0.3+ | 0.6+ | | |
| 2000 05 25 | 699 | 0.1− | 0.6− | 2004 04 19 | 704 | 0.5− | 1.0+ | 2005 10 01 | 704 | (2.7+ | 1.0+) | | |
| 2000 05 25 | 699 | 0.7− | 0.6− | 2004 04 21 | 704 | 0.5+ | 0.3− | 2005 10 01 | 704 | 0.5− | 0.9+ | | |
| 2000 05 25 | 699 | 0.9− | 0.6+ | 2004 04 21 | 704 | 0.0 | 0.7+ | 2005 10 01 | 704 | 0.2− | 0.5+ | | |
| 2000 05 25 | 699 | 0.3− | 0.3+ | 2004 04 21 | 704 | 0.4+ | 1.2− | 2005 10 01 | 704 | 1.2+ | 0.5− | | |
| 2000 05 28 | 704 | 0.5+ | 0.2− | 2004 04 21 | 704 | 0.1+ | 0.5− | 2005 10 01 | 704 | 0.5+ | 0.7+ | | |
| 2000 05 28 | 704 | 0.1+ | 0.4− | 2004 05 10 | 608 | 0.1− | 0.8+ | 2005 10 03 | G96 | 0.0 | 0.2− | | |
| 2000 05 28 | 699 | 1.4− | 0.5− | 2004 05 10 | 608 | 0.2+ | 0.1− | 2005 10 03 | G96 | 0.1− | 0.2− | | |
| 2000 05 28 | 704 | 0.3+ | 0.1− | 2004 05 10 | 608 | 0.3− | 0.4− | 2005 10 03 | G96 | 0.2+ | 0.3− | | |
| 2000 05 28 | 704 | 0.2+ | 0.5− | 2004 05 15 | 704 | 0.7+ | 0.1+ | 2005 10 03 | G96 | 0.0 | 0.1− | | |
| 2000 05 28 | 704 | 0.3+ | 0.4− | 2004 05 15 | 704 | 0.3+ | 0.4+ | 2005 10 03 | G96 | 0.2− | 0.3− | | |
| 2000 05 28 | 699 | 0.0 | 0.3− | 2004 05 15 | 704 | 0.3+ | 1.1− | 2005 10 03 | G96 | 0.1+ | 0.3− | | |
| 2000 05 28 | 699 | 0.4− | 0.3− | 2004 05 15 | 704 | 0.3+ | 0.9+ | 2005 10 03 | G96 | 0.1− | 0.2− | | |
| 2000 05 28 | 699 | 0.4− | 0.3+ | 2004 05 15 | 704 | 0.5+ | 0.2− | 2005 10 05 | 703 | 0.5− | 0.1+ | | |
| 2000 05 29 | 704 | 0.1− | 1.2− | 2004 05 16 | 691 | 0.1− | 0.0 | 2005 10 05 | 703 | 0.8+ | 0.5+ | | |
| 2000 05 29 | 704 | 0.1− | 0.0 | 2004 05 16 | 691 | 0.0 | 0.0 | 2005 10 05 | 703 | 0.7− | 0.0 | | |
| 2000 05 29 | 704 | 0.1− | 0.2+ | 2004 05 16 | 704 | 0.5+ | 0.1+ | 2005 10 05 | 703 | (6.5− | 3.7+) | | |
| 2000 05 29 | 704 | 0.3+ | 0.1− | 2004 05 16 | 691 | 0.3− | 0.1+ | 2005 10 09 | 691 | 0.1− | 0.2+ | | |
| 2000 05 29 | 704 | 0.1+ | 0.2− | 2004 05 16 | 704 | 0.2+ | 0.8+ | 2005 10 09 | 691 | 0.2− | 0.1+ | | |
| 2000 05 30 | 704 | 0.2− | 0.3+ | 2004 05 16 | 704 | 0.1+ | 0.1− | 2005 10 09 | 691 | 0.2− | 0.0 | | |
| 2000 05 30 | 704 | 0.5+ | 0.5+ | 2004 05 16 | 704 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.8− | 0.3+ | | |
| 2000 05 30 | 704 | 0.2+ | 0.2+ | 2004 05 16 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.3+ | | |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2004 05 19 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4+ | | |
| 2001 09 23 | 704 | 0.6+ | 0.6− | 2004 05 19 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3+ | | |
| 2001 09 23 | 704 | 0.3− | 0.3+ | 2004 05 19 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.4+ | | |
| 2001 09 23 | 704 | 1.4+ | 0.0 | 2004 05 19 | 704 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.6+ | | |
| 2001 09 23 | 704 | 0.4− | 0.3+ | 2004 05 19 | 704 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.8+ | | |
| 2001 09 23 | 704 | 0.4− | 0.0 | 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.3+ | | |
| 2001 09 23 | 704 | 0.5− | 0.4+ | 2004 05 19 | 704 | 0.2+ | 0.2+ | | | | | | |
| 2001 09 23 | 704 | 0.1− | 0.1+ | 2004 05 19 | 704 | 0.3+ | 0.6− | | | | | | |

**(138435)∗ 2000 HX$_{87}$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.99095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21803076 | $\omega$ | 239.72578 | | +0.49206708 | +0.85795888 | |
| $a$ | 2.7339519 | $\Omega$ | 60.46980 | | −0.72907170 | +0.49876414 | |
| $e$ | 0.1195149 | $i$ | 9.76460 | | −0.47573569 | +0.12304837 | |
| $P$ | 4.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 05 13 | 691 | 0.2+ | 0.3+ | 2003 01 05 | 704 | 0.6+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.6+ | | |
| 1991 05 13 | 691 | 0.1− | 0.6+ | 2003 01 05 | 704 | 0.1− | 1.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ | | |
| 1991 05 13 | 691 | 0.0 | 0.3+ | 2003 01 05 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.3+ | | |
| 1997 10 26 | 688 | 0.3+ | 0.2− | 2003 01 05 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.5− | 0.4+ | | |
| 1997 10 26 | 688 | 0.5+ | 0.1− | 2004 03 19 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.3+ | | |
| 2000 04 27 | 704 | 0.3+ | 1.0+ | 2004 03 19 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 04 27 | 704 | 0.6+ | 0.2− | 2004 03 19 | 644 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.2+ | | |
| 2000 04 27 | 704 | 1.6+ | 0.7+ | 2004 03 23 | 704 | 0.7+ | 0.9+ | 2006 11 11 | 703 | 0.3− | 0.3− | | |
| 2000 04 27 | 704 | 0.8+ | 1.2+ | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.2− | | |
| 2000 05 05 | 704 | 0.2+ | 1.3+ | 2004 03 23 | 704 | 0.4+ | 0.9+ | 2006 11 11 | 703 | 0.4− | 0.3− | | |
| 2000 05 05 | 704 | 0.4+ | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.6− | 0.5− | | |
| 2000 05 05 | 704 | 0.0 | 0.7+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 11 12 | G96 | 0.3+ | 0.0 | | |
| 2000 05 05 | 704 | 0.1+ | 0.0 | 2005 05 20 | 644 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2000 05 05 | 704 | 0.2+ | 0.7+ | 2005 05 20 | 644 | 0.1− | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.1− | | |
| 2000 05 28 | 699 | 1.0+ | 0.3+ | 2005 05 20 | 644 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2− | | |
| 2000 05 28 | 699 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.8+ | 0.0 | | |
| 2000 05 28 | 699 | 0.4− | 0.6+ | 2006 09 30 | 703 | (0.2+ | 1.9+) | 2006 11 17 | 703 | 0.4− | 0.4− | | |
| 2000 05 28 | 699 | 0.9− | 1.6+ | 2006 09 30 | 703 | 1.0− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.2− | | |
| 2001 08 26 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.5− | | |
| 2001 08 26 | 644 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.5+ | | |
| 2001 08 26 | 644 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 1.1+ | 0.9+ | | |
| 2001 09 12 | 704 | 0.8− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.0 | | |
| 2001 09 12 | 704 | 1.2− | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.8+ | | |
| 2001 09 12 | 704 | (1.8− | 0.1+) | 2006 10 15 | D35 | 0.6+ | 0.4− | 2006 11 18 | 704 | 0.7− | 0.0 | | |
| 2001 09 12 | 704 | 0.6− | 0.6+ | 2006 10 15 | D35 | 0.2+ | 0.3− | 2006 11 18 | 704 | 1.1− | 0.6+ | | |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2006 10 15 | D35 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.3− | 0.8+ | | |
| 2001 09 25 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.8− | 2006 11 18 | 704 | 0.1− | 0.6+ | | |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 28 | 704 | 1.0− | 0.2+ | | |
| 2001 10 23 | 644 | 0.1+ | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.2− | 2006 11 28 | 704 | 0.2− | 0.4+ | | |
| 2001 10 23 | 644 | 0.1+ | 0.7+ | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.9+ | | |
| 2001 10 23 | 644 | 0.1− | 0.9+ | 2006 10 18 | 691 | 0.1− | 0.3+ | | | | | | |

**(138436)∗ 2000 HA$_{89}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.02152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23621473 | $\omega$ | 252.11474 | | −0.21812520 | −0.97176331 | |
| $a$ | 2.5917796 | $\Omega$ | 210.92815 | | +0.94852140 | −0.18940265 | |
| $e$ | 0.1019933 | $i$ | 10.08347 | | +0.22962698 | −0.14072210 | |
| $P$ | 4.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.4− | 1.4+ | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.5+ | | |
| 2000 04 29 | 704 | 0.3+ | 0.9+ | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2000 04 29 | 704 | 0.9+ | 0.5− | 2004 03 18 | 704 | 1.1− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2000 04 29 | 704 | 0.1− | 0.8+ | 2004 03 27 | 704 | 0.8+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2000 05 07 | 704 | 0.0 | 1.2+ | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | | |
| 2000 05 07 | 704 | 0.1+ | 0.5+ | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 2000 05 07 | 704 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.1+ | | |
| 2000 05 07 | 704 | 0.1− | 1.4+ | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1− | | |
| 2002 11 07 | 704 | 0.3+ | 0.3− | 2004 04 12 | 699 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.6+ | 0.4+ | | |
| 2002 11 07 | 704 | 0.7− | 1.3− | 2004 04 12 | 699 | 0.6− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 1.2+ | 0.3+ | 2004 04 12 | 699 | 0.6− | 1.3− | 2006 11 11 | 703 | 0.6− | 0.2− | | |
| 2002 11 07 | 704 | (0.1− | 1.6−) | 2004 04 12 | 699 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.8+ | | |
| 2002 11 11 | 704 | (2.2− | 0.5+) | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 15 | G92 | 0.3+ | 0.2− | | |
| 2002 11 11 | 704 | 0.4− | 0.2− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 15 | G92 | 0.3+ | 0.1+ | | |
| 2002 11 11 | 704 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 11 15 | G92 | 0.2− | 1.1− | | |
| 2002 11 16 | 644 | 0.6− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.4− | 0.9+ | | |
| 2002 11 16 | 644 | 0.5− | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 17 | 703 | (1.9− | 0.4+) | | |
| 2002 11 16 | 644 | 0.7− | 0.4− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.5− | 0.4+ | | |
| 2002 11 23 | 644 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.0− | 0.5− | | |
| 2002 11 23 | 644 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 1.1+ | 0.5+ | | |
| 2002 11 23 | 644 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 1.1+ | 0.1+ | | |
| 2002 12 01 | 704 | 0.4− | 0.4+ | 2006 10 20 | 691 | 0.6− | 0.5+ | 2006 11 18 | 704 | (2.0+ | 0.9+) | | |
| 2002 12 01 | 704 | 0.4+ | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 19 | G92 | 0.8− | 0.2− | | |
| 2002 12 01 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.7+ | 0.3+ | 2006 11 19 | G92 | (1.9− | 0.4+) | | |
| 2002 12 01 | 704 | 1.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 19 | G92 | 0.1+ | 0.1− | | |
| 2002 12 01 | 704 | (1.7+ | 0.5+) | 2006 10 21 | 644 | 0.1− | 0.3+ | | | | | | |
| 2004 03 18 | 704 | 0.1− | 1.3+ | 2006 10 29 | 691 | 0.0 | 0.1+ | | | | | | |

**(138437)∗ 2000 HN$_{89}$ = 2000 JZ$_{42}$**

Discovered 2000 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 1670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.13093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21177032 | $\omega$ | 286.94992 | | +0.87590456 | +0.39695134 | |
| $a$ | 2.7875713 | $\Omega$ | 50.57518 | | −0.17932315 | +0.79555489 | |
| $e$ | 0.2198833 | $i$ | 20.79673 | | −0.44792232 | +0.45773579 | |
| $P$ | 4.65 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 1.1+ | 1.5+ | 2001 11 15 | 644 | 0.5− | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.3+ | | |
| 2000 04 29 | 704 | 0.8+ | 1.0+ | 2001 11 15 | 644 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.3− | | |
| 2000 04 29 | 704 | 0.1+ | 0.8+ | 2001 11 15 | 644 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.3− | | |
| 2000 04 29 | 704 | 0.8+ | 1.1+ | 2001 11 19 | 704 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.1− | | |
| 2000 05 06 | 704 | (2.3+ | 0.8+) | 2001 11 19 | 704 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.2− | | |
| 2000 05 06 | 704 | 0.3+ | 0.2+ | 2001 11 19 | 704 | 0.7− | 0.1− | 2006 10 29 | 704 | 0.9− | 1.4+ | | |
| 2000 05 06 | 704 | 0.7− | 1.6− | 2001 11 19 | 704 | 0.6− | 0.2− | 2006 10 29 | 704 | 0.3+ | 0.3+ | | |
| 2000 05 07 | 704 | 0.6+ | 0.3− | 2001 11 19 | 704 | 0.9− | 0.3+ | 2006 10 29 | 704 | 0.2− | 0.2+ | | |
| 2000 05 07 | 704 | 0.3+ | 0.2− | 2001 11 20 | 608 | 0.7− | 0.4− | 2006 10 29 | 704 | 1.3− | 0.5+ | | |
| 2000 05 07 | 704 | 0.5+ | 0.2− | 2001 11 20 | 608 | 0.7− | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.3+ | | |
| 2000 05 07 | 704 | 0.4+ | 0.3− | 2001 11 20 | 608 | 0.5− | 0.4− | 2006 11 13 | 691 | 0.1− | 0.3+ | | |
| 2000 05 07 | 704 | 0.8+ | 0.3− | 2001 12 07 | 704 | 0.7− | 0.8+ | 2006 11 13 | 691 | 0.0 | 0.3+ | | |
| 2000 05 10 | 704 | 0.1− | 0.3+ | 2001 12 07 | 704 | (0.5− | 2.0+) | 2006 11 15 | 704 | 0.2+ | 0.7+ | | |
| 2000 05 10 | 704 | 0.9+ | 0.6+ | 2001 12 07 | 704 | 0.1− | 1.0+ | 2006 11 15 | 704 | 0.1+ | 0.6+ | | |
| 2000 05 10 | 704 | 0.7+ | 0.7+ | 2001 12 07 | 704 | 0.5− | 1.0+ | 2006 11 15 | 704 | 0.2− | 0.5+ | | |
| 2000 05 10 | 704 | 1.2+ | 0.2− | 2001 12 07 | 704 | 0.4− | 0.5+ | 2006 11 15 | 704 | 0.3+ | 0.4+ | | |
| 2000 05 10 | 704 | 0.8+ | 0.1− | 2001 12 17 | 209 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.3− | 0.4+ | | |
| 2000 05 23 | 699 | 0.4+ | 0.2+ | 2001 12 17 | 209 | 0.2+ | 0.1+ | 2006 11 16 | 704 | (0.1+ | 2.5+) | | |
| 2000 05 23 | 699 | 0.4+ | 0.2+ | 2001 12 17 | 209 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.3+ | | |
| 2000 05 23 | 699 | 0.2− | 0.2+ | 2001 12 18 | 704 | 0.1+ | 1.1− | 2006 11 16 | 704 | 0.1+ | 0.2+ | | |
| 2000 05 23 | 699 | 1.0+ | 0.6+ | 2001 12 18 | 704 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.1+ | | |
| 2000 05 24 | 691 | 0.4+ | 0.4+ | 2001 12 18 | 704 | 1.1− | 1.0− | 2006 11 16 | 704 | 0.4− | 0.1+ | | |
| 2000 05 24 | 691 | 0.1+ | 0.6+ | 2001 12 18 | 704 | 0.7− | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.5+ | | |
| 2000 05 24 | 691 | 0.2− | 0.5− | 2001 12 18 | 704 | 0.7− | 0.6− | 2006 11 16 | 704 | 0.0 | 0.0 | | |
| 2000 05 28 | 704 | 1.0+ | 0.8+ | 2001 12 18 | 209 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.4− | | |
| 2000 05 28 | 704 | 1.2+ | 1.2+ | 2001 12 18 | 209 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 1.0+ | 0.0 | | |
| 2000 05 28 | 704 | 0.7+ | 0.7+ | 2001 12 18 | 209 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.1− | | |
| 2000 05 28 | 699 | 1.8+ | 1.2+ | 2002 02 10 | 049 | 0.9− | 0.7− | 2006 11 17 | 704 | 0.1+ | 0.4+ | | |
| 2000 05 28 | 704 | 0.8+ | 1.2+ | 2002 02 10 | 049 | 0.5+ | 0.6− | 2006 11 17 | 704 | 0.3+ | 0.1+ | | |
| 2000 05 28 | 704 | 0.6+ | 1.1+ | 2002 02 10 | 049 | 0.5+ | 0.4− | 2006 11 17 | 704 | 0.5− | 0.0 | | |
| 2000 05 28 | 699 | 1.3+ | 1.0+ | 2004 02 16 | 704 | 1.0+ | 0.6− | 2006 11 17 | 704 | 0.4− | 0.4− | | |
| 2000 05 28 | 699 | 1.1+ | 0.4− | 2004 02 16 | 704 | (1.6+ | 1.2+) | 2006 11 19 | 704 | 1.2− | 0.2− | | |
| 2000 05 28 | 699 | 0.4+ | 0.8+ | 2004 02 16 | 704 | (1.2+ | 1.5+) | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2000 05 29 | 704 | 1.0+ | 0.9+ | 2004 02 16 | 704 | (2.3+ | 1.0+) | 2006 11 19 | 704 | 0.2− | 0.2+ | | |
| 2000 05 29 | 704 | 0.9+ | 0.9+ | 2004 03 19 | 644 | 0.9+ | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2000 05 29 | 704 | 0.3+ | 1.6+ | 2004 03 19 | 644 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.4− | | |
| 2000 05 29 | 704 | 0.8+ | 1.4+ | 2004 03 19 | 644 | 0.7+ | 0.8+ | 2006 11 22 | 704 | 0.3− | 0.1+ | | |
| 2000 05 29 | 704 | 0.5+ | 1.7+ | 2006 09 16 | 703 | 0.4− | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 2000 06 04 | 691 | 0.7− | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.4− | 0.1− | | |
| 2000 06 04 | 691 | 0.9− | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.1+ | | |
| 2000 06 04 | 691 | 0.7− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 704 | 0.6− | 1.0− | 2006 11 27 | 704 | 0.3+ | 0.0 | | |
| 2001 09 12 | 704 | 0.3+ | 0.9+ | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 11 27 | 704 | 0.2− | 0.8+ | | |
| 2001 09 12 | 704 | 0.0 | 0.5− | 2006 09 20 | 704 | 0.5+ | 0.4− | 2006 11 27 | 704 | 0.0 | 0.0 | | |
| 2001 09 22 | 644 | 0.5− | 0.3+ | 2006 09 20 | 704 | 0.7+ | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 22 | 644 | 0.7− | 0.1+ | 2006 09 20 | 704 | 0.4+ | 1.2+ | 2006 11 28 | 704 | 1.6− | 0.8+ | | |
| 2001 09 22 | 644 | 0.5− | 0.1+ | 2006 09 27 | 704 | 0.7− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.5+ | | |
| 2001 10 11 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.9− | 0.3− | | |
| 2001 10 11 | 704 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.4+ | | |
| 2001 10 11 | 704 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.3− | 0.2+ | | |
| 2001 10 11 | 704 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.5− | 0.2+ | | |
| 2001 10 11 | 704 | 0.6+ | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.3− | 0.4+ | | |
| 2001 10 14 | 644 | 0.7+ | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.7− | 0.8− | | |
| 2001 10 14 | 644 | 0.9+ | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.4− | 0.2− | | |
| 2001 10 14 | 644 | 1.0+ | 0.9+ | 2006 09 27 | 704 | 0.1− | 0.8+ | 2006 11 28 | 704 | 0.3− | 0.7+ | | |
| 2001 11 08 | 644 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.5+ | 2006 11 28 | 704 | 0.5− | 0.7+ | | |
| 2001 11 08 | 644 | 0.4− | 0.6+ | 2006 10 16 | 703 | (1.7+ | 0.2−) | 2006 11 28 | 704 | 0.6− | 0.3+ | | |
| 2001 11 08 | 644 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2− | 0.4+ | | |

**(138438)∗ 2000 HG$_{95}$ = 2004 DN**

Discovered 2000 Apr. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60681)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.01019 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23682002 | $\omega$ | 278.25095 | | −0.79317258 | +0.60381432 | |
| $a$ | 2.5873615 | $\Omega$ | 298.92974 | | −0.51699712 | −0.73642164 | |
| $e$ | 0.2068703 | $i$ | 5.19726 | | −0.32185591 | −0.30510889 | |
| $P$ | 4.16 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 14 | 704 | 0.5− | 0.9+ | 2004 02 26 | 704 | 0.2+ | 0.7− | 2004 04 14 | 699 | 0.4− | 0.4+ | | |
| 2000 03 14 | 704 | 0.5+ | 0.7+ | 2004 02 26 | 704 | 0.0 | 0.1− | 2004 04 14 | 699 | 0.1− | 0.3+ | | |
| 2000 03 14 | 704 | 0.2− | 1.1− | 2004 02 26 | 704 | 0.2− | 0.3− | 2004 04 14 | 699 | 0.4+ | 0.4+ | | |
| 2000 03 30 | 704 | 0.3+ | 0.6− | 2004 02 26 | 704 | 0.1− | 0.1− | 2004 04 14 | 699 | 0.7− | 0.5+ | | |
| 2000 03 30 | 704 | 0.5+ | 0.7+ | 2004 02 26 | 704 | 1.4+ | 0.3− | 2004 05 14 | 704 | 0.0 | 0.9+ | | |
| 2000 03 30 | 704 | 0.3− | 0.6+ | 2004 03 14 | 703 | 0.5− | 1.4+ | 2004 05 14 | 704 | 0.6− | 0.4+ | | |
| 2000 03 30 | 704 | (0.4− | 3.1+) | 2004 03 14 | 703 | 0.4− | 0.6+ | 2004 05 14 | 704 | (0.1+ | 1.8+) | | |
| 2000 04 07 | 704 | 0.3+ | 1.1+ | 2004 03 14 | 703 | 0.6− | 0.6+ | 2004 05 14 | 704 | 0.5+ | 1.5+ | | |
| 2000 04 07 | 704 | 0.2+ | 0.5− | 2004 03 14 | 703 | (0.5− | 2.7+) | 2005 07 30 | 644 | 0.2− | 0.6+ | | |
| 2000 04 07 | 704 | 0.5+ | 0.2− | 2004 03 16 | 704 | 0.1+ | 0.9− | 2005 07 30 | 644 | 0.3− | 0.4+ | | |
| 2000 04 07 | 704 | 0.3+ | 0.4− | 2004 03 16 | 704 | 0.0 | 1.1− | 2005 07 30 | 644 | 0.6+ | 0.6+ | | |
| 2000 04 07 | 704 | 0.2+ | 0.2− | 2004 03 16 | 704 | 0.9+ | 0.7− | 2005 08 26 | 599 | 0.2+ | 0.8+ | | |
| 2000 04 28 | 704 | 0.2− | 0.2− | 2004 03 16 | 704 | (0.3+ | 1.7−) | 2005 08 26 | 599 | 0.4− | 0.9+ | | |
| 2000 04 28 | 704 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.7+ | 0.5− | 2005 08 26 | 599 | 0.4− | 1.0+ | | |
| 2000 04 28 | 704 | 0.6− | 0.7+ | 2004 03 19 | 704 | 0.4− | 1.3+ | 2005 08 26 | 599 | (0.4− | 1.6+) | | |
| 2000 05 06 | 704 | 0.3− | 0.2− | 2004 03 19 | 704 | 0.7− | 1.3+ | 2006 10 19 | 691 | 0.2− | 0.0 | | |
| 2000 05 06 | 704 | 0.1+ | 0.7+ | 2004 03 19 | 704 | (0.3− | 1.6+) | 2006 10 19 | 691 | 0.2− | 0.0 | | |
| 2000 05 06 | 704 | 0.2+ | 1.0+ | 2004 03 19 | 704 | (0.2− | 1.6+) | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2000 05 06 | 704 | 0.4+ | 1.0+ | 2004 03 19 | 704 | (0.3− | 1.9+) | 2006 10 23 | 691 | 0.7− | 0.0 | | |
| 2002 11 24 | 644 | 0.2+ | 0.6− | 2004 03 21 | 704 | 0.2+ | 1.3+ | 2006 10 23 | 691 | 0.5− | 0.1+ | | |
| 2002 11 24 | 644 | 0.4+ | 0.7− | 2004 03 21 | 704 | 0.5− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2002 11 24 | 644 | 0.9+ | 0.3− | 2004 03 21 | 704 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.5+ | | |
| 2004 02 16 | 333 | 0.2+ | 0.2+ | 2004 03 21 | 704 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.6+ | | |
| 2004 02 16 | 333 | 0.2− | 0.1− | 2004 03 27 | 691 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2+ | | |
| 2004 02 17 | 333 | 0.2− | 0.2− | 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.2+ | | |
| 2004 02 17 | 333 | 0.4+ | 0.1− | 2004 03 27 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 2004 02 19 | 704 | 0.5+ | 0.5− | 2004 04 09 | 703 | 0.7− | 0.5− | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2004 02 19 | 704 | 0.6+ | 0.7− | 2004 04 09 | 703 | 0.2− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2004 02 19 | 704 | 0.4+ | 1.2− | 2004 04 09 | 703 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.5+ | | |
| 2004 02 19 | 704 | 0.6+ | 1.2− | 2004 04 09 | 703 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.6+ | | |
| 2004 02 19 | 704 | 0.3− | 0.6− | 2004 04 12 | 703 | (0.8+ | 1.5+) | 2006 11 14 | G96 | 0.4+ | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.4+ | 0.1− | 2004 04 12 | 703 | 0.3− | 0.9+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2004 02 23 | 704 | 0.7− | 0.1+ | 2004 04 12 | 703 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 02 23 | 704 | 0.0 | 0.5− | 2004 04 12 | 703 | 1.2− | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.2+ |

**(138439)∗ 2000 $HD_{98}$ = 1996 $JG_{16}$**

Discovered 2000 Apr. 26 at Ondřejov.

Id. M. E. Sansaturio (*MPO* 5756)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.26353 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23148730 | $\omega$ | 205.14532 | | +0.70566135 | | −0.70396634 |
| $a$ | 2.6269467 | $\Omega$ | 200.29583 | | +0.68296658 | | +0.70602092 |
| $e$ | 0.0977804 | $i$ | 13.41222 | | +0.18867622 | | +0.07723891 |
| $P$ | 4.26 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 15 | 691 | 0.0 | 0.4+ | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 1996 05 15 | 691 | 0.2+ | 0.1− | 2004 04 28 | 691 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 1996 05 15 | 691 | 0.1+ | 0.0 | 2004 04 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 1996 05 23 | 691 | 0.3+ | 0.6+ | 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.6+ |
| 1996 05 23 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2000 04 26 | 557 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 1.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 04 26 | 557 | 0.9− | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2000 05 07 | 691 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.4− | 1.0− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2000 05 07 | 691 | 0.2− | 0.5− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2000 05 07 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 06 15 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 06 15 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2001 07 21 | 557 | 0.4− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.6− |
| 2001 07 21 | 557 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.4+ | 1.1− |
| 2002 12 07 | 557 | 0.7+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.3− |
| 2002 12 07 | 557 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 1.1− |
| 2002 12 10 | 557 | 0.0 | 0.5+ | 2006 10 14 | D35 | 0.2− | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.2+ |
| 2002 12 10 | 557 | 0.7− | 0.1+ | 2006 10 14 | D35 | 0.4− | 0.6+ | 2006 11 19 | 703 | 0.7+ | 0.2+ |
| 2002 12 14 | 704 | 0.1− | 0.1− | 2006 10 14 | D35 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.4+ | 0.9+ |
| 2002 12 14 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 11 19 | 703 | 0.0 | 1.1+ |
| 2002 12 14 | 704 | 0.1+ | 1.3+ | 2006 10 16 | 703 | 0.0 | 0.5+ | 2006 11 19 | 703 | 0.7+ | 0.8− |
| 2002 12 14 | 704 | 0.7− | 1.1− | 2006 10 16 | 703 | 0.7+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.6+ |
| 2004 04 14 | 691 | 0.4+ | 0.0 | 2006 10 16 | 703 | (0.9+ | 1.6+) | 2006 11 19 | 703 | 1.0− | 0.1+ |
| 2004 04 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.4− | 0.3+ |

**(138440)∗ 2000 $HP_{99}$**

Discovered 2000 Apr. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.80802 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21221626 | $\omega$ | 207.31370 | | −0.67227981 | | +0.73550340 |
| $a$ | 2.7836649 | $\Omega$ | 20.80088 | | −0.62861898 | | −0.50715753 |
| $e$ | 0.1698003 | $i$ | 13.70074 | | −0.39099622 | | −0.44925047 |
| $P$ | 4.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 25 | 691 | 0.8− | 0.7+ | 2000 04 26 | 699 | 0.2+ | 0.3+ | 2003 12 30 | 704 | 0.2− | 0.8+ |
| 1992 09 25 | 691 | 1.0− | 0.0 | 2000 04 28 | 704 | 0.3+ | 0.0 | 2004 01 31 | 699 | 0.7+ | 1.5− |
| 1992 09 25 | 691 | 0.6− | 1.0+ | 2000 04 28 | 704 | 1.2+ | 0.1+ | 2004 01 31 | 699 | 0.9− | 0.6+ |
| 1997 10 06 | 691 | 0.3+ | 0.1− | 2000 04 28 | 704 | 0.5− | 1.8+ | 2004 01 31 | 699 | 0.2+ | 1.6+ |
| 1997 10 06 | 691 | 0.8+ | 0.3− | 2000 04 28 | 704 | 0.9+ | 1.1+ | 2004 01 31 | 699 | 0.2+ | 0.2+ |
| 1997 10 06 | 691 | 0.2+ | 0.2− | 2000 04 28 | 704 | (0.1− | 2.6+) | 2004 02 10 | 644 | 0.2+ | 0.9+ |
| 1997 10 11 | 691 | 0.1+ | 0.0 | 2000 05 06 | 704 | 1.1+ | 0.4− | 2004 02 10 | 644 | 0.6+ | 1.1+ |
| 1997 10 11 | 691 | 0.1+ | 0.0 | 2000 05 06 | 704 | 0.3+ | 0.1− | 2004 02 10 | 644 | 0.9+ | 1.0+ |
| 1997 10 11 | 691 | 0.2+ | 0.1+ | 2000 05 06 | 704 | 1.6+ | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.0 |
| 1997 11 21 | 691 | 0.1+ | 0.0 | 2000 05 06 | 704 | 0.5− | 1.7+ | 2006 09 18 | 691 | 0.4− | 0.1+ |
| 1997 11 21 | 691 | 0.3+ | 0.2− | 2000 05 24 | 699 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 1997 11 21 | 691 | 0.2+ | 0.2+ | 2000 05 24 | 699 | 0.1+ | 1.0+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 1997 12 06 | 691 | 0.0 | 0.4+ | 2000 05 24 | 699 | 1.5+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 1997 12 06 | 691 | 0.0 | 0.3− | 2000 05 24 | 699 | 0.9− | 0.7− | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 1997 12 06 | 691 | 0.5− | 0.5+ | 2003 12 30 | 704 | 0.4+ | 1.4+ | 2006 09 30 | 691 | 0.3− | 0.0 |
| 2000 04 26 | 699 | 1.0+ | 0.6+ | 2003 12 30 | 704 | 0.7− | 1.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2000 04 26 | 699 | 0.6+ | 0.9+ | 2003 12 30 | 704 | (1.2+ | 2.3+) | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2000 04 26 | 699 | 0.1+ | 0.5+ | 2003 12 30 | 704 | 0.5+ | 1.6+ | | | | |

**(138441)∗ 2000 $HB_{100}$**

Discovered 2000 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.23748 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21352103 | $\omega$ | 47.18125 | | −0.74209647 | | +0.67018264 |
| $a$ | 2.7723131 | $\Omega$ | 174.85640 | | −0.64776140 | | −0.71236584 |
| $e$ | 0.1923202 | $i$ | 7.80045 | | −0.17233105 | | −0.20830300 |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 26 | 691 | 0.5− | 0.9+ | 2004 01 23 | 704 | 0.2+ | 1.3+ | 2004 02 26 | 704 | 0.4+ | 0.2− |
| 1992 09 26 | 691 | (8.2− | 4.3+) | 2004 01 23 | 704 | 0.4+ | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.2− |
| 1992 09 26 | 691 | 0.6− | 1.3+ | 2004 01 23 | 704 | 0.7− | 0.8+ | 2004 02 26 | 704 | 0.4+ | 0.1+ |
| 2000 04 27 | 704 | 0.8+ | 0.2− | 2004 01 27 | 704 | 0.2− | 0.5+ | 2004 03 08 | 644 | 0.0 | 0.4+ |
| 2000 04 27 | 704 | 0.1− | 0.6+ | 2004 01 27 | 704 | 0.4+ | 0.6+ | 2004 03 08 | 644 | 0.2+ | 0.1− |
| 2000 04 27 | 704 | 0.6− | 0.1+ | 2004 01 27 | 704 | 0.0 | 0.1− | 2004 03 08 | 644 | 0.2+ | 0.6+ |
| 2000 04 27 | 704 | 1.8+ | 0.9+ | 2004 01 27 | 704 | 0.8+ | 0.1− | 2004 03 18 | 704 | 0.0 | 0.4+ |
| 2000 04 27 | 704 | 0.3− | 0.5+ | 2004 01 27 | 704 | 1.0+ | 0.5− | 2004 03 18 | 704 | 0.7+ | 0.5+ |
| 2000 05 06 | 704 | 1.2− | 0.3− | 2004 01 28 | 704 | 0.0 | 0.6+ | 2004 03 18 | 704 | 0.5− | 0.3+ |
| 2000 05 06 | 704 | 0.2− | 1.3+ | 2004 01 28 | 704 | 0.4+ | 1.0+ | 2004 03 18 | 704 | 0.1− | 0.6+ |
| 2000 05 06 | 704 | 0.5+ | 1.0+ | 2004 01 28 | 704 | 0.1+ | 0.2+ | 2005 06 30 | A50 | 0.5− | 0.6+ |
| 2000 05 06 | 704 | 0.5+ | 1.5+ | 2004 01 28 | 704 | 0.3− | 0.0 | 2005 06 30 | A50 | 0.5− | 0.7+ |
| 2000 05 27 | 704 | 0.6− | 0.1+ | 2004 01 28 | 704 | 0.6− | 0.0 | 2005 06 30 | A50 | (2.8+ | 2.9+) |
| 2000 05 27 | 704 | 0.7+ | 1.2+ | 2004 01 29 | 704 | 0.8+ | 0.2− | 2005 06 30 | A50 | (0.9− | 3.1+) |
| 2000 05 27 | 704 | 0.7+ | 0.8+ | 2004 01 29 | 704 | 0.5− | 0.5+ | 2006 09 14 | 691 | 0.2− | 0.1− |
| 2000 05 27 | 704 | 0.0 | 1.7+ | 2004 01 29 | 704 | 0.5+ | 1.2+ | 2006 09 14 | 691 | 0.4− | 0.1+ |
| 2001 09 20 | 691 | 0.3+ | 0.1+ | 2004 01 29 | 704 | (0.1− | 2.5+) | 2006 09 14 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 691 | 0.3+ | 0.3+ | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 1.3+ | 1.3+ | 2004 02 17 | 704 | 0.2− | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 691 | 0.3+ | 0.3+ | 2004 02 17 | 704 | 0.9− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2004 02 17 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2001 09 20 | 704 | (1.3+ | 1.7+) | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 1.4− | 0.2+ | 2004 02 23 | 704 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.6− | 0.1+ | 2004 02 23 | 704 | 0.5− | 0.8+ | 2006 11 17 | G96 | 0.8+ | 0.1− |
| 2001 09 22 | 704 | 0.2+ | 1.0+ | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.5− | 0.2+ |
| 2004 01 23 | 704 | 0.7+ | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2004 01 23 | 704 | 0.4+ | 0.0 | 2004 02 26 | 704 | 0.9+ | 0.3+ | | | | |

**(138442)∗ 2000 $HN_{103}$ = 2001 $PW_5$**

Discovered 2000 Apr. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 15787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.22143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21674077 | $\omega$ | 202.54444 | | +0.83452401 | | +0.53083238 |
| $a$ | 2.7447891 | $\Omega$ | 124.55733 | | −0.47422644 | | +0.82841281 |
| $e$ | 0.1452034 | $i$ | 10.32467 | | −0.28049771 | | +0.17874338 |
| $P$ | 4.55 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 608 | 0.2− | 0.9− | 2001 08 19 | 704 | 0.4− | 0.5+ | 2004 03 26 | 703 | (1.0+ | 1.5+) |
| 2000 04 13 | 608 | 0.7− | 0.6− | 2001 08 25 | 644 | (0.2+ | 1.6+) | 2004 03 26 | 703 | 0.6+ | 1.2+ |
| 2000 04 13 | 608 | 0.7− | 0.9− | 2001 08 25 | 644 | (0.1− | 1.6+) | 2004 04 09 | 644 | 0.5+ | 0.8+ |
| 2000 04 27 | 699 | 0.1− | 0.1− | 2001 08 25 | 644 | (0.2− | 1.6+) | 2004 04 09 | 644 | 0.4+ | 0.7+ |
| 2000 04 27 | 699 | 0.6+ | 0.1+ | 2001 08 25 | 699 | 0.5− | 0.7+ | 2004 04 09 | 644 | 0.2+ | 0.2+ |
| 2000 04 27 | 699 | 0.7− | 0.7+ | 2001 08 25 | 699 | 0.5+ | 1.0+ | 2005 05 16 | 704 | 0.1+ | 0.6− |
| 2000 04 27 | 699 | 0.2+ | 0.3+ | 2001 08 25 | 699 | 0.2+ | 1.0+ | 2005 05 16 | 704 | 0.5+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 704 | 0.1+ | 0.8− | 2001 08 25 | 699 | 0.5− | 0.8+ | 2005 05 16 | 704 | 0.6+ | 1.2+ | | |
| 2000 05 04 | 704 | (2.0+ | 0.8+) | 2001 09 11 | 704 | 0.2− | 0.8+ | 2005 07 05 | 704 | 0.1+ | 0.5− | | |
| 2000 05 04 | 704 | 1.0+ | 0.3+ | 2001 09 11 | 704 | 0.5− | 0.1− | 2005 07 05 | 704 | 0.1− | 0.2+ | | |
| 2000 05 04 | 704 | 0.7+ | 0.7+ | 2001 09 11 | 704 | 0.3− | 0.0 | 2005 07 05 | 704 | 0.8− | 0.3− | | |
| 2000 05 04 | 704 | 0.2+ | 0.5+ | 2001 09 11 | 704 | 0.4− | 0.2+ | 2005 07 05 | 704 | 0.9− | 0.3− | | |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2001 09 11 | 704 | (1.6− | 0.4−) | 2006 09 30 | 699 | (1.5+ | 0.0 ) | | |
| 2000 05 04 | 645 | 0.2− | 0.1+ | 2001 09 17 | 699 | 0.2− | 0.4− | 2006 09 30 | 699 | 0.1− | 0.1− | | |
| 2000 05 10 | 645 | 0.1− | 0.1+ | 2001 09 17 | 699 | 0.2− | 0.7− | 2006 09 30 | 699 | 0.5− | 0.3+ | | |
| 2000 05 10 | 645 | 0.0 | 0.0 | 2001 09 17 | 699 | 0.0 | 1.0− | 2006 09 30 | 699 | 0.2+ | 0.8+ | | |
| 2000 05 26 | 699 | 0.7+ | 0.1+ | 2001 09 17 | 699 | 0.1− | 0.4− | 2006 10 01 | 704 | 0.4+ | 0.2+ | | |
| 2000 05 26 | 699 | 1.8+ | 1.0+ | 2001 09 25 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.3− | | |
| 2000 05 26 | 699 | 2.0+ | 0.7+ | 2001 09 25 | 704 | 0.3+ | 0.6− | 2006 10 01 | 704 | 0.1− | 0.2− | | |
| 2000 05 26 | 699 | 0.1− | 0.6+ | 2001 09 25 | 704 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.1− | 0.2+ | | |
| 2001 06 20 | 699 | 0.1− | 0.6− | 2001 09 25 | 704 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2001 06 20 | 699 | 0.8+ | 1.1+ | 2003 12 22 | 691 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2001 06 20 | 699 | 1.0+ | 0.1− | 2003 12 22 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2001 06 20 | 699 | (0.1+ | 1.7+) | 2003 12 22 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 1.1− | | |
| 2001 07 22 | 704 | 0.4+ | 0.4+ | 2004 02 17 | 704 | (0.1+ | 1.9+) | 2006 10 16 | 703 | 1.1− | 0.5+ | | |
| 2001 07 22 | 704 | 0.0 | 0.8+ | 2004 02 17 | 704 | 1.3+ | 1.0+ | 2006 10 16 | 703 | (0.2− | 1.7+) | | |
| 2001 07 22 | 704 | 0.7− | 1.2+ | 2004 02 17 | 704 | (0.1+ | 2.1+) | 2006 10 16 | 703 | 0.4+ | 0.6+ | | |
| 2001 07 22 | 704 | 0.2+ | 0.7+ | 2004 02 17 | 704 | 0.0 | 1.0+ | 2006 10 22 | 703 | 1.1− | 0.4− | | |
| 2001 07 22 | 704 | 0.4+ | 0.2+ | 2004 02 17 | 704 | 0.3− | 1.1+ | 2006 10 22 | 703 | 0.2− | 0.2+ | | |
| 2001 08 01 | 644 | 0.6+ | 1.2+ | 2004 02 17 | 703 | 0.3− | 0.2+ | 2006 10 22 | 703 | 1.0− | 0.6− | | |
| 2001 08 01 | 644 | 0.5+ | 1.3+ | 2004 02 17 | 703 | (1.8+ | 0.6+) | 2006 10 22 | 703 | 0.3− | 0.3− | | |
| 2001 08 01 | 644 | 0.6+ | 1.4+ | 2004 02 17 | 703 | (1.8+ | 0.9+) | 2006 10 28 | 703 | 0.1+ | 0.5+ | | |
| 2001 08 10 | 608 | 0.6− | 0.3− | 2004 02 17 | 703 | 0.0 | 1.1+ | 2006 10 28 | 703 | 0.6− | 0.3+ | | |
| 2001 08 10 | 608 | 0.5− | 0.1− | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.4+ | | |
| 2001 08 10 | 608 | 0.6− | 0.2+ | 2004 02 29 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.6+ | 0.8+ | | |
| 2001 08 11 | 608 | 0.6− | 0.3+ | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.5− | 0.3+ | | |
| 2001 08 11 | 608 | 0.7− | 0.5+ | 2004 03 15 | 704 | 1.2+ | 1.0+ | 2006 10 28 | 703 | 0.1− | 0.1− | | |
| 2001 08 11 | 608 | 0.7− | 0.3+ | 2004 03 15 | 704 | (1.7+ | 1.3+) | 2006 10 28 | 703 | 0.7− | 0.3− | | |
| 2001 08 14 | 608 | 0.2+ | 1.0+ | 2004 03 15 | 704 | (2.6+ | 1.2+) | 2006 10 28 | 703 | 0.1+ | 0.5+ | | |
| 2001 08 14 | 608 | 0.2− | 1.4+ | 2004 03 15 | 704 | (1.9+ | 1.0+) | 2006 11 10 | 704 | 0.5+ | 0.7+ | | |
| 2001 08 14 | 608 | 0.0 | 1.1+ | 2004 03 15 | 704 | (1.9+ | 0.4+) | 2006 11 10 | 704 | 0.1− | 1.5+ | | |
| 2001 08 16 | 704 | 0.1− | 0.5+ | 2004 03 23 | 704 | 0.9+ | 0.2+ | 2006 11 10 | 704 | 0.6− | 1.0+ | | |
| 2001 08 16 | 704 | 0.0 | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.2− | 0.2+ | | |
| 2001 08 16 | 704 | 0.4− | 1.4+ | 2004 03 23 | 704 | 1.0+ | 0.3+ | 2006 11 16 | 703 | 0.2− | 0.3+ | | |
| 2001 08 16 | 704 | (0.7− | 1.7+) | 2004 03 23 | 704 | 0.8+ | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.7+ | | |
| 2001 08 18 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.8+ | 0.9+ | 2006 11 16 | 703 | 0.1− | 0.5+ | | |
| 2001 08 18 | 704 | 0.3+ | 0.2+ | 2004 03 25 | 704 | 0.4− | 0.8+ | 2006 11 17 | 644 | 0.4− | 0.1+ | | |
| 2001 08 18 | 704 | 0.2+ | 0.0 | 2004 03 25 | 704 | 0.5+ | 1.0+ | 2006 11 17 | 644 | 0.0 | 0.4+ | | |
| 2001 08 19 | 704 | 0.1+ | 1.1+ | 2004 03 25 | 704 | 0.5+ | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.2+ | | |
| 2001 08 19 | 704 | 0.1− | 0.1+ | 2004 03 25 | 704 | 0.2+ | 0.2+ | 2006 11 21 | 704 | (2.3− | 3.2+) | | |
| 2001 08 19 | 704 | 0.1− | 0.2+ | 2004 03 26 | 703 | 0.4+ | 0.8+ | 2006 11 21 | 704 | (1.0− | 1.8+) | | |
| 2001 08 19 | 704 | 0.2+ | 0.4+ | 2004 03 26 | 703 | 1.0+ | 0.8+ | 2006 11 21 | 704 | 0.6+ | 1.1+ | | |

**(138443)∗ 2000 HR$_{104}$**

Discovered 2000 Apr. 25 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.52150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22023683 | $\omega$ | 248.37937 | | +0.92118245 | +0.37071342 | |
| $a$ | 2.7156643 | $\Omega$ | 89.70130 | | −0.29871932 | +0.86850858 | |
| $e$ | 0.0300934 | $i$ | 6.79399 | | −0.24937854 | +0.32903557 | |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.1+ | 0.0 | 2003 01 08 | 704 | 1.4− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.5+ | | |
| 2000 04 25 | 691 | 0.3+ | 0.0 | 2003 01 08 | 704 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2000 04 25 | 691 | 0.2− | 0.0 | 2003 01 08 | 704 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.2− | | |
| 2000 05 03 | 691 | 0.2− | 0.1+ | 2003 01 08 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.2− | | |
| 2000 05 03 | 691 | 0.4− | 0.3+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.1+ | | |
| 2000 05 03 | 691 | 0.4− | 0.2+ | 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.9− | 1.3− | | |
| 2000 05 24 | 691 | 0.2+ | 0.2+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2000 05 24 | 691 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.2+ | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2000 05 24 | 691 | 0.2− | 0.4− | 2004 03 15 | 704 | 1.1+ | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.1− | | |
| 2001 08 23 | 608 | 0.6+ | 0.9+ | 2004 03 15 | 704 | 0.6+ | 0.1− | 2006 11 08 | 644 | 0.2− | 0.3+ | | |
| 2001 08 23 | 608 | 0.6+ | 1.2+ | 2004 03 15 | 704 | 0.5− | 1.2+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | | |
| 2001 08 23 | 608 | 0.5+ | 0.5+ | 2004 03 23 | 704 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.3− | 0.3+ | | |
| 2001 08 25 | 699 | 0.9+ | 0.4+ | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2001 08 25 | 699 | 0.8− | 0.5+ | 2004 03 23 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 | | |
| 2001 08 25 | 699 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ | | |
| 2001 08 25 | 699 | 1.2− | 0.8+ | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 644 | 0.2− | 0.4+ | | |
| 2001 09 11 | 704 | 0.7+ | 0.1+ | 2004 03 28 | 703 | 0.6− | 0.7+ | 2006 11 13 | 644 | 0.0 | 0.4+ | | |
| 2001 09 11 | 704 | 0.4− | 1.4+ | 2004 03 28 | 703 | 0.5+ | 0.7− | 2006 11 13 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 11 | 704 | 0.7− | 0.0 | 2004 03 28 | 703 | 1.4+ | 0.5− | 2006 11 17 | 704 | 0.9− | 0.2+ | | |
| 2001 09 11 | 704 | 0.1− | 0.6− | 2004 03 28 | 703 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 1.0− | 0.1− | | |
| 2002 12 11 | 291 | 0.2+ | 0.1− | 2005 06 13 | 701 | 0.8+ | 0.4+ | 2006 11 17 | 704 | 0.6+ | 0.1− | | |
| 2002 12 11 | 291 | 0.2+ | 0.0 | 2005 06 13 | 701 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.1− | 0.5+ | | |
| 2002 12 11 | 291 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.0 | 0.1− | | |
| 2002 12 31 | 704 | 0.1− | 1.1+ | 2006 09 30 | 703 | 0.4+ | 0.7− | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2002 12 31 | 704 | 0.6+ | 1.0+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 23 | G96 | 0.2− | 0.2+ | | |
| 2002 12 31 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.4+ | | | | | | |

**(138444)∗ 2000 JS$_1$ = 1996 HM$_{24}$**

Discovered 2000 May 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 555)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.67640 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24132956 | $\omega$ | 155.38638 | | −0.87559029 | +0.45657464 | |
| $a$ | 2.5550282 | $\Omega$ | 52.70855 | | −0.46951793 | −0.72763900 | |
| $e$ | 0.0644011 | $i$ | 11.43592 | | −0.11355417 | −0.51193856 | |
| $P$ | 4.08 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 809 | (1.5− | 3.2−) | 2002 12 13 | 704 | 0.4+ | 0.8+ | 2004 04 20 | 704 | 0.2+ | 0.1− | | |
| 1996 04 20 | 809 | (1.5− | 3.9−) | 2002 12 13 | 704 | 0.3− | 0.3− | 2004 04 20 | 703 | 0.3+ | 0.7+ | | |
| 1996 04 20 | 809 | (2.5− | 3.6−) | 2002 12 13 | 704 | 0.9− | 0.5+ | 2004 04 20 | 704 | 0.4+ | 0.1− | | |
| 1996 04 21 | 809 | 0.7+ | 0.5+ | 2004 03 16 | 704 | (1.7+ | 0.2−) | 2004 04 20 | 703 | 0.8+ | 1.1+ | | |
| 1996 04 21 | 809 | 0.9− | 0.1− | 2004 03 16 | 704 | 1.3+ | 0.3− | 2004 04 20 | 704 | 0.1+ | 0.0 | | |
| 1996 04 21 | 809 | (3.1− | 1.9−) | 2004 03 16 | 704 | 1.0+ | 1.2− | 2004 04 20 | 703 | 0.0 | 0.8+ | | |
| 2000 04 05 | 699 | 0.6− | 0.2+ | 2004 03 23 | 704 | 0.7+ | 0.4+ | 2004 04 22 | 704 | 0.4− | 0.7− | | |
| 2000 04 05 | 699 | 0.4+ | 0.6− | 2004 03 23 | 704 | 0.5+ | 0.5+ | 2004 04 22 | 704 | 0.4+ | 0.0 | | |
| 2000 04 05 | 699 | 0.5+ | 0.5+ | 2004 03 23 | 704 | 0.6+ | 0.6+ | 2004 04 22 | 704 | 0.4− | 0.6− | | |
| 2000 04 05 | 699 | 0.1+ | 0.6− | 2004 03 30 | 704 | 0.5+ | 1.1+ | 2004 04 22 | 704 | 0.4− | 0.2+ | | |
| 2000 05 01 | 704 | 0.4+ | 0.5− | 2004 03 30 | 704 | 0.6+ | 0.4+ | 2004 06 09 | E12 | 0.1+ | 0.5− | | |
| 2000 05 01 | 699 | 0.3− | 0.3+ | 2004 03 30 | 704 | 0.3− | 0.4+ | 2004 06 09 | E12 | 0.8− | 0.4− | | |
| 2000 05 01 | 704 | 0.5− | 0.0 | 2004 03 30 | 704 | 0.0 | 0.9+ | 2004 06 09 | E12 | 0.5− | 0.7− | | |
| 2000 05 01 | 704 | 0.4+ | 0.3− | 2004 03 31 | 704 | 0.7− | 0.2− | 2004 06 09 | E12 | 0.5+ | 0.1+ | | |
| 2000 05 01 | 699 | 0.2− | 0.1+ | 2004 03 31 | 704 | 0.9− | 0.3− | 2006 11 13 | G96 | 0.3− | 0.3+ | | |
| 2000 05 01 | 704 | 0.0 | 0.2− | 2004 03 31 | 704 | 0.5− | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.1− | | |
| 2000 05 01 | 699 | 0.1+ | 0.1+ | 2004 03 31 | 704 | 0.7− | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.1+ | | |
| 2000 05 01 | 704 | 1.2+ | 1.2+ | 2004 03 31 | 704 | 0.5− | 0.6+ | 2006 11 13 | G96 | 0.5+ | 0.3− | | |
| 2000 05 01 | 699 | 0.1− | 0.6− | 2004 04 02 | 608 | 0.0 | 0.8− | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 2000 05 03 | 704 | 0.8+ | 1.6+ | 2004 04 02 | 608 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.1− | 0.1− | | |
| 2000 05 03 | 704 | 0.2+ | 1.3+ | 2004 04 02 | 608 | 0.4+ | 1.0− | 2006 11 17 | 691 | 0.2+ | 0.1− | | |
| 2000 05 03 | 704 | 0.2− | 0.0 | 2004 04 09 | E12 | 1.1− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2000 05 05 | 704 | 0.8+ | 1.1− | 2004 04 09 | E12 | (1.7− | 0.4+) | 2006 11 21 | 691 | 0.1+ | 0.9+ | | |
| 2000 05 05 | 704 | 1.2+ | 0.7+ | 2004 04 09 | E12 | 0.9− | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.2− | | |
| 2000 05 05 | 704 | 0.3− | 0.5− | 2004 04 09 | E12 | 0.5− | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.1− | | |
| 2000 05 05 | 704 | 0.2− | 0.5+ | 2004 04 17 | 699 | 0.1+ | 0.7+ | 2006 11 22 | 704 | 0.0 | 0.4− | | |
| 2001 08 26 | 644 | 0.6− | 0.6+ | 2004 04 17 | 699 | (1.6− | 0.6+) | 2006 11 22 | 704 | 0.5− | 0.5− | | |
| 2001 08 26 | 644 | 0.6− | 0.7+ | 2004 04 17 | 699 | 0.6− | 0.3+ | 2006 11 25 | 691 | 0.1− | 0.0 | | |
| 2001 08 26 | 644 | 0.5− | 0.7+ | 2004 04 17 | 699 | 0.6− | 0.2− | 2006 11 25 | 691 | 0.2+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.9− | 0.1− | 2004 04 20 | 704 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.2+ | | |
| 2002 12 11 | 704 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.3+ | 0.5− | | | | | | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2004 04 20 | 703 | 0.3− | 0.2+ | | | | | | |

**(138445)∗ 2000 JF$_2$ = 2001 TB$_{147}$**

Discovered 2000 May 2 at Volkssternwarte Drebach, Schoenbrunn.

Id. A. Doppler (*MPO* 19697)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.17792 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27201549 | $\omega$ | 198.67923 | | +0.06196199 | | +0.99490797 |
| $a$ | 2.3590671 | $\Omega$ | 74.93347 | | −0.90491224 | | +0.08959947 |
| $e$ | 0.1410490 | $i$ | 4.72199 | | −0.42106360 | | −0.04615259 |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 25 | 691 | 0.2− | 0.3+ | 2001 10 15 | 704 | 0.6+ | 0.3+ | 2005 12 25 | G96 | 0.0 | 0.1+ |
| 1996 01 25 | 691 | 0.2+ | 0.1− | 2001 10 15 | 704 | 0.3+ | 0.2− | 2005 12 25 | G96 | 0.2− | 0.1− |
| 1996 01 25 | 691 | 0.1+ | 0.1− | 2001 10 15 | 704 | 0.3− | 0.3+ | 2005 12 25 | G96 | 0.3+ | 0.2+ |
| 2000 04 08 | 704 | 1.6+ | 0.3+ | 2001 10 15 | 704 | 0.2+ | 0.0 | 2005 12 25 | G96 | 0.2+ | 0.1+ |
| 2000 04 08 | 704 | 0.8+ | 0.9+ | 2001 10 15 | 704 | 0.5+ | 1.0+ | 2006 01 05 | G96 | 0.5+ | 0.2− |
| 2000 04 08 | 704 | 1.1+ | 0.8+ | 2001 10 16 | 644 | 0.3+ | 1.6+ | 2006 01 05 | G96 | 0.4− | 0.5− |
| 2000 05 02 | 113 | 0.6− | 0.8+ | 2001 10 16 | 644 | 0.2+ | 1.7+ | 2006 01 05 | G96 | 0.2− | 0.1− |
| 2000 05 02 | 113 | 0.2− | 0.6+ | 2001 10 16 | 644 | 0.3+ | 1.5+ | 2006 01 05 | G96 | 0.4+ | 0.2− |
| 2000 05 02 | 113 | 0.2+ | 0.8+ | 2001 11 20 | 704 | 1.1− | 0.9− | 2006 01 21 | G96 | 0.4− | 0.1− |
| 2000 05 03 | 113 | 0.7− | 0.0 | 2001 11 20 | 704 | 0.9− | 0.1+ | 2006 01 21 | G96 | 0.0 | 0.5− |
| 2000 05 03 | 113 | 0.5+ | 1.5+ | 2001 11 20 | 704 | 0.7− | 0.1+ | 2006 01 21 | G96 | 0.0 | 0.5− |
| 2000 05 05 | 113 | 0.1− | 0.1− | 2001 11 20 | 704 | 1.7− | 0.6− | 2006 01 21 | G96 | 0.3− | 0.0 |
| 2000 05 05 | 113 | 0.3− | 0.0 | 2005 12 04 | G96 | 0.2+ | 0.1+ | 2006 01 23 | G96 | 0.0 | 0.1+ |
| 2001 10 10 | 644 | 0.4− | 0.4+ | 2005 12 04 | G96 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.6+ | 0.4+ |
| 2001 10 10 | 644 | 0.4− | 0.4+ | 2005 12 04 | G96 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.1− | 0.4+ |
| 2001 10 10 | 644 | 0.5− | 0.2+ | 2005 12 04 | G96 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.1− | 0.3+ |

**(138446)∗ 2000 JP$_4$ = 2001 PD$_{54}$**

Discovered 2000 May 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 17360)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.21444 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23066307 | $\omega$ | 279.21986 | | +0.49220988 | | −0.85974406 |
| $a$ | 2.6332009 | $\Omega$ | 140.33354 | | +0.85871358 | | +0.45392307 |
| $e$ | 0.1184798 | $i$ | 12.32658 | | +0.14261982 | | +0.23408119 |
| $P$ | 4.27 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 699 | 0.4+ | 0.6− | 2001 08 24 | 699 | 0.5+ | 0.9+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 1999 01 14 | 699 | 0.9+ | 1.1+ | 2001 08 24 | 704 | 0.1+ | 1.4+ | 2006 09 30 | 703 | 0.7+ | 0.9− |
| 1999 01 14 | 699 | 0.2+ | 0.3+ | 2001 08 24 | 699 | 0.4+ | 0.9+ | 2006 09 30 | 703 | 0.9+ | 1.0− |
| 2000 05 01 | 691 | 0.4− | 0.4− | 2001 08 24 | 704 | 0.0 | 1.2+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2000 05 01 | 691 | 0.2− | 0.5− | 2001 08 24 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 703 | 0.6+ | 0.1− |
| 2000 05 01 | 691 | 0.4− | 0.4− | 2002 12 14 | 704 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.8+ | 0.3− |
| 2000 05 05 | 691 | 0.2+ | 0.1+ | 2002 12 14 | 704 | 0.3+ | 0.4− | 2006 10 28 | 703 | 0.4+ | 0.2− |
| 2000 05 05 | 691 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.1− | 1.1− | 2006 10 28 | 703 | 0.5− | 0.7− |
| 2000 05 05 | 691 | 0.0 | 0.0 | 2003 01 01 | 704 | 0.1+ | 0.0 | 2006 10 28 | 703 | (0.4− | 1.6−) |
| 2000 05 07 | 691 | 0.7− | 0.3− | 2003 01 01 | 704 | 0.6− | 0.3+ | 2006 10 31 | 704 | 0.1− | 1.3+ |
| 2000 05 07 | 691 | 0.4− | 0.0 | 2003 01 01 | 704 | 0.3+ | 0.7+ | 2006 10 31 | 704 | 0.6− | 1.0+ |
| 2000 05 07 | 691 | 0.3− | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.5+ | 2006 10 31 | 704 | 0.6− | 0.2+ |
| 2001 07 20 | 699 | 1.3+ | 0.8+ | 2003 01 05 | 704 | 0.5− | 0.6+ | 2006 11 16 | 703 | 0.7− | 0.2− |
| 2001 07 20 | 699 | 0.7− | 0.0 | 2003 01 05 | 704 | 0.2+ | 0.4+ | 2006 11 16 | 703 | 0.4− | 0.2− |
| 2001 07 20 | 699 | 0.5− | 0.6+ | 2003 01 05 | 704 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2001 07 20 | 699 | 0.1− | 1.3+ | 2003 01 05 | 704 | 0.4− | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.5− |
| 2001 08 14 | 608 | 0.2− | 0.2− | 2004 03 30 | 691 | 0.1+ | 0.6+ | 2006 11 20 | E12 | 0.3+ | 0.1+ |
| 2001 08 14 | 608 | 0.1− | 0.0 | 2004 03 30 | 691 | 0.3+ | 0.6+ | 2006 11 20 | E12 | 0.5+ | 0.6+ |
| 2001 08 14 | 608 | 0.4− | 0.3− | 2004 03 30 | 691 | 0.4+ | 0.4+ | 2006 11 20 | E12 | 0.4− | 0.3+ |
| 2001 08 16 | 704 | 0.9+ | 0.2− | 2004 04 15 | 704 | 0.7+ | 0.2− | 2006 11 22 | G92 | 0.2− | 0.5+ |
| 2001 08 16 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 704 | 0.9+ | 0.4− | 2006 11 22 | G92 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 1.4+ | 0.8− | 2004 04 15 | 704 | 1.0+ | 0.0 | 2006 11 22 | G92 | 0.1− | 0.3+ |
| 2001 08 16 | 704 | 0.9− | 0.3− | 2004 04 15 | 704 | 1.3+ | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2001 08 16 | 704 | 0.2+ | 0.8− | 2006 09 19 | 703 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2001 08 24 | 699 | 0.3− | 1.1− | 2006 09 19 | 703 | 0.8− | 0.3− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2001 08 24 | 699 | 0.1− | 1.1+ | 2006 09 19 | 703 | 0.3− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.5− |

**(138447)∗ 2000 JQ$_6$**

Discovered 2000 May 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.77520 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21709331 | $\omega$ | 171.02487 | | −0.03273528 | | +0.97110000 |
| $a$ | 2.7418167 | $\Omega$ | 96.84378 | | −0.93113305 | | +0.05632891 |
| $e$ | 0.1549257 | $i$ | 13.77526 | | −0.36320743 | | −0.23193068 |
| $P$ | 4.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 1.1− | 0.9+ | 2000 05 28 | 704 | 1.4− | 1.2− | 2005 06 04 | 704 | (2.3− | 0.1−) |
| 2000 04 04 | 699 | 0.4+ | 1.2+ | 2000 05 28 | 704 | 0.9− | 0.1+ | 2005 06 07 | E12 | 0.1+ | 0.4+ |
| 2000 04 04 | 699 | 0.0 | 0.4+ | 2000 05 28 | 704 | 0.3− | 0.7+ | 2005 06 07 | E12 | 0.2− | 0.6− |
| 2000 04 04 | 699 | 0.7+ | 1.2+ | 2000 05 28 | 704 | 0.4− | 0.6+ | 2005 06 07 | E12 | 0.2+ | 0.9+ |
| 2000 04 30 | 608 | 0.2− | 1.1+ | 2000 06 05 | 699 | 1.4− | 0.7+ | 2005 06 07 | E12 | 0.0 | 0.6+ |
| 2000 04 30 | 608 | 0.1+ | 0.4+ | 2000 06 05 | 699 | 1.0+ | 1.1+ | 2005 07 03 | 704 | 0.4+ | 0.4− |
| 2000 04 30 | 608 | 0.4− | 0.8+ | 2000 06 05 | 699 | 0.8− | 1.1+ | 2005 07 03 | 704 | 0.7+ | 1.2− |
| 2000 05 04 | 704 | 0.3+ | 0.1− | 2000 06 05 | 699 | 0.3+ | 0.8+ | 2005 07 03 | 704 | (1.8+ | 0.4+) |
| 2000 05 04 | 704 | 0.3+ | 0.0 | 2000 07 21 | 699 | (0.7− | 2.2+) | 2005 07 03 | 704 | 0.0 | 0.1+ |
| 2000 05 04 | 704 | 0.1+ | 0.0 | 2000 07 21 | 699 | (2.1+ | 0.5+) | 2005 07 06 | E12 | 0.0 | 0.4+ |
| 2000 05 04 | 704 | 0.3+ | 0.3− | 2000 07 21 | 699 | 0.4− | 0.3+ | 2005 07 06 | E12 | 0.5− | 0.4+ |
| 2000 05 04 | 704 | 0.1+ | 0.4+ | 2000 07 21 | 699 | 0.5+ | 0.8− | 2005 07 06 | E12 | 0.2− | 0.3+ |
| 2000 05 04 | 645 | 0.0 | 0.3− | 2004 02 15 | 704 | 0.1− | 0.3− | 2005 09 01 | 644 | 0.0 | 0.7+ |
| 2000 05 04 | 645 | 0.0 | 0.3− | 2004 02 15 | 704 | 0.0 | 0.2− | 2005 09 01 | 644 | 0.1+ | 0.7+ |
| 2000 05 05 | 704 | 0.8+ | 0.1+ | 2004 02 15 | 704 | 0.3+ | 0.3+ | 2005 09 01 | 644 | 0.0 | 1.0+ |
| 2000 05 05 | 704 | 0.3+ | 0.3+ | 2004 02 15 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.8− | 0.9+ |
| 2000 05 05 | 704 | 0.1− | 0.2− | 2004 03 14 | 704 | 0.5+ | 1.4+ | 2006 10 22 | 703 | 1.0+ | 1.1+ |
| 2000 05 05 | 704 | 0.1+ | 0.4− | 2004 03 14 | 704 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2000 05 05 | 704 | 0.1− | 0.2+ | 2004 03 14 | 704 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2000 05 06 | 704 | 0.1− | 0.4− | 2004 03 14 | 704 | 0.1+ | 0.8+ | 2006 11 13 | 703 | 0.0 | 0.4− |
| 2000 05 06 | 704 | 0.1− | 0.3− | 2004 03 25 | 704 | 0.3− | 0.1+ | 2006 11 13 | 703 | 1.0+ | 0.0 |
| 2000 05 06 | 704 | 0.7+ | 0.1+ | 2004 03 25 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 703 | 0.6− | 0.1− |
| 2000 05 06 | 704 | 0.2+ | 0.7+ | 2004 03 25 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.7− |
| 2000 05 06 | 704 | 0.4+ | 0.2+ | 2005 06 04 | 704 | (2.6− | 0.7+) | 2006 11 19 | 703 | 0.1+ | 0.6− |
| 2000 05 08 | 704 | 1.4+ | 1.6+ | 2005 06 04 | 704 | 0.5− | 0.1+ | 2006 11 19 | 703 | 1.7+ | 0.6+ |
| 2000 05 08 | 704 | 0.2− | 0.5+ | 2005 06 04 | 704 | (2.3− | 0.3+) | 2006 11 19 | 703 | 0.5− | 0.3− |
| 2000 05 08 | 704 | 0.4+ | 0.7+ | 2005 06 04 | 704 | (1.9− | 0.2−) | 2006 11 19 | 703 | 1.0− | 0.1− |

**(138448)∗ 2000 JV$_7$ = 2002 UK$_{21}$**

Discovered 2000 May 4 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37516)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.91553 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23181815 | $\omega$ | 72.01533 | | −0.37488365 | | −0.92468043 |
| $a$ | 2.6244467 | $\Omega$ | 40.20411 | | +0.80679778 | | −0.36076442 |
| $e$ | 0.1693988 | $i$ | 5.91713 | | +0.45666136 | | −0.12171741 |
| $P$ | 4.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 704 | 0.8+ | 0.5− | 2002 10 30 | 644 | 0.1− | 1.3+ | 2004 03 28 | 704 | (0.5− | 2.2−) |
| 1998 11 24 | 704 | (2.1+ | 3.3−) | 2002 10 30 | 644 | 0.1− | 0.9+ | 2004 03 28 | 704 | (0.3+ | 2.1−) |
| 1998 11 24 | 704 | (2.9+ | 2.4−) | 2002 10 30 | 644 | (2.7− | 2.6+) | 2004 04 23 | 691 | 0.1− | 0.4+ |
| 1998 11 24 | 704 | 1.0+ | 1.1− | 2002 10 31 | 699 | 0.0 | 0.3+ | 2004 04 23 | 691 | 0.2+ | 0.5+ |
| 2000 04 26 | 691 | 0.2+ | 0.0 | 2002 10 31 | 699 | 0.1+ | 0.6+ | 2004 04 23 | 691 | 0.0 | 0.8+ |
| 2000 04 26 | 691 | 0.2+ | 0.1+ | 2002 10 31 | 699 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 2000 04 26 | 691 | 0.4+ | 0.1+ | 2002 10 31 | 699 | 0.7− | 0.3− | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2000 04 29 | 704 | (0.5+ | 2.0−) | 2002 10 31 | 608 | 1.0− | 0.9− | 2006 09 19 | 703 | 0.5− | 0.6+ |
| 2000 04 29 | 704 | 0.7+ | 0.3− | 2002 10 31 | 608 | 1.1− | 0.7− | 2006 09 19 | 703 | 0.8− | 0.2+ |
| 2000 04 29 | 704 | 1.8+ | 0.3− | 2002 10 31 | 608 | 0.9− | 0.6− | 2006 09 26 | 704 | 0.3+ | 0.8+ |
| 2000 04 29 | 704 | 0.8+ | 0.2− | 2002 11 06 | 704 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.7+ | 0.9+ |
| 2000 05 04 | 691 | 0.3− | 0.2− | 2002 11 06 | 704 | 1.1− | 0.6+ | 2006 09 26 | 704 | (0.0 | 1.7+) |
| 2000 05 04 | 691 | 0.4− | 0.1− | 2002 11 06 | 704 | 0.5− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.7+ |
| 2000 05 04 | 691 | 0.7− | 0.3− | 2004 03 12 | 644 | 0.6+ | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.7+ |
| 2000 05 05 | 691 | (2.5− | 0.8−) | 2004 03 12 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 691 | 0.7− | 0.2+ | 2004 03 12 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.5+ |
| 2000 05 05 | 691 | 0.0 | 0.1+ | 2004 03 12 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2000 05 06 | 691 | 0.2− | 0.1− | 2004 03 12 | 644 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.8+ |
| 2000 05 06 | 691 | 0.1− | 0.3− | 2004 03 12 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 1.2− | 1.0− |
| 2000 05 06 | 691 | 0.1− | 0.2− | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2000 05 07 | 704 | 0.8+ | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2000 05 07 | 704 | 0.5+ | 1.1+ | 2004 03 14 | 691 | 0.7+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 2000 05 07 | 704 | 1.1+ | 1.0+ | 2004 03 16 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 1.2+ | 1.2+ |
| 2000 05 07 | 704 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.9+ | 0.5+ | 2006 10 16 | 703 | (1.2+ | 1.7+) |
| 2002 10 02 | 704 | 0.1− | 0.5+ | 2004 03 16 | 704 | 0.9+ | 0.0 | 2006 10 16 | 703 | 0.1− | 1.3+ |
| 2002 10 02 | 704 | 0.7+ | 0.6− | 2004 03 16 | 704 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1− | 0.9− |
| 2002 10 02 | 704 | 0.2+ | 0.2− | 2004 03 19 | 704 | 0.7+ | 1.1+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2002 10 09 | 704 | 0.1+ | 0.3+ | 2004 03 19 | 704 | (1.6+ | 0.3+) | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2002 10 09 | 704 | 0.4+ | 1.1+ | 2004 03 19 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2002 10 09 | 704 | 0.0 | 0.5+ | 2004 03 19 | 704 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2002 10 09 | 704 | 0.1− | 0.2+ | 2004 03 28 | 704 | (1.9+ | 0.8−) | | | | |
| 2002 10 09 | 704 | 0.4+ | 0.1− | 2004 03 28 | 704 | 0.4− | 0.6− | | | | |

**(138449)∗ 2000 JF$_8$ = 2001 QC$_{225}$**

Discovered 2000 May 5 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 17361)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.74674 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22158189 | $\omega$ | 197.57441 | | +0.52500158 | | +0.84928967 |
| $a$ | 2.7046633 | $\Omega$ | 104.12626 | | −0.77383523 | | +0.50347296 |
| $e$ | 0.0526341 | $i$ | 3.28094 | | −0.35433370 | | +0.15881445 |
| $P$ | 4.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 691 | 0.2− | 0.4+ | 2002 12 10 | 704 | 0.9+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 1998 12 17 | 691 | 0.5− | 0.8− | 2002 12 10 | 704 | 0.8+ | 1.0+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 1998 12 17 | 691 | 0.4− | 1.1− | 2002 12 10 | 704 | 0.9+ | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2000 04 25 | 691 | 0.2+ | 0.4+ | 2002 12 10 | 704 | 0.4+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2000 04 25 | 691 | 0.2+ | 0.5+ | 2002 12 10 | 704 | 0.9+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2000 04 25 | 691 | 0.4+ | 0.4+ | 2002 12 10 | 704 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2000 04 27 | 699 | 0.3+ | 0.5+ | 2002 12 10 | 704 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2000 04 27 | 699 | 0.7+ | 0.0 | 2004 02 23 | 704 | 0.5− | 0.6+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2000 04 27 | 704 | 0.9− | 0.1+ | 2004 02 23 | 704 | 0.9+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.8+ |
| 2000 04 27 | 699 | 1.2+ | 0.1+ | 2004 02 23 | 704 | 0.0 | 1.1+ | 2006 10 16 | 703 | 1.0− | 0.8+ |
| 2000 04 27 | 704 | 0.5+ | 1.0+ | 2004 02 23 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2000 04 27 | 699 | 0.2+ | 1.1+ | 2004 02 23 | 704 | 0.5− | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2000 04 27 | 704 | (0.9+ | 2.2+) | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2000 05 05 | 691 | 0.3+ | 0.2+ | 2004 03 18 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2000 05 05 | 691 | 0.8− | 0.1+ | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.5+ |
| 2000 05 05 | 691 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.6+ |
| 2000 05 07 | 691 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2000 05 07 | 691 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2000 05 07 | 691 | 0.3− | 0.0 | 2004 03 19 | 704 | 1.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2000 05 13 | 691 | 0.5+ | 0.3− | 2004 03 22 | 704 | 0.5− | 0.6+ | 2006 10 21 | 703 | 0.9+ | 0.5+ |
| 2000 05 13 | 691 | 0.2+ | 0.3− | 2004 03 22 | 704 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 1.0− |
| 2000 05 13 | 691 | 0.2+ | 0.3− | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.0 |
| 2001 08 24 | 644 | 0.7− | 0.9+ | 2004 03 22 | 704 | 0.2+ | 1.2+ | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2001 08 24 | 644 | 0.4− | 0.9+ | 2004 03 22 | 704 | 0.5− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 08 24 | 644 | 0.5− | 0.8+ | 2004 03 25 | 704 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 08 25 | 704 | 1.2− | 0.8+ | 2004 03 25 | 704 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | 0.4+ | 0.6+ | 2004 03 25 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 0.0 | 0.1− | 2004 03 25 | 704 | 1.3+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2002 10 29 | 291 | 0.4− | 0.3+ | 2004 03 25 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 10 29 | 291 | 0.3− | 0.5+ | 2004 03 26 | 704 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2002 10 29 | 291 | 0.0 | 0.1+ | 2004 03 26 | 704 | 1.0+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2004 03 26 | 704 | 1.1− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2004 03 26 | 704 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2004 03 26 | 704 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.6− | 2006 10 31 | G96 | 0.5+ | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2002 12 10 | 704 | 0.6+ | 0.9− | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.3+ |
| 2002 12 10 | 704 | 0.6+ | 0.7+ | 2006 09 30 | 703 | 0.6− | 0.6+ | | | | |
| 2002 12 10 | 704 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.0 | | | | |

**(138450)∗ 2000 JQ$_8$ = 1998 SU$_{34}$**

Discovered 2000 May 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 1327)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.15642 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36661788 | $\omega$ | 295.85224 | | −0.64926173 | | −0.75363779 |
| $a$ | 1.9334233 | $\Omega$ | 195.98649 | | +0.75974242 | | −0.64891375 |
| $e$ | 0.0419832 | $i$ | 21.83105 | | −0.03536478 | | −0.10459935 |
| $P$ | 2.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.4+ | 0.2− | 2005 03 02 | 704 | 0.5+ | 0.2+ | 2006 09 22 | 683 | 0.6+ | 0.6− |
| 1998 09 26 | 704 | 1.7+ | 1.4− | 2005 03 02 | 704 | 0.7+ | 0.4+ | 2006 09 22 | 683 | 1.1+ | 0.3+ |
| 1998 09 26 | 704 | (4.2+ | 0.2−) | 2005 03 02 | 704 | 0.2+ | 0.1+ | 2006 09 22 | 683 | 0.0 | 0.9+ |
| 1998 09 26 | 704 | 0.5+ | 1.6− | 2005 03 02 | 704 | 0.1+ | 0.4+ | 2006 09 24 | 106 | 0.2+ | 0.3− |
| 1998 09 26 | 704 | 1.1+ | 0.4+ | 2005 03 02 | 704 | 0.2+ | 0.0 | 2006 09 24 | 106 | 0.2− | 0.0 |
| 1998 09 27 | 704 | 0.5+ | 0.7− | 2005 03 13 | 699 | 0.1− | 0.1+ | 2006 09 24 | 106 | 0.1+ | 0.1+ |
| 1998 09 27 | 704 | 1.0+ | 0.5− | 2005 03 13 | 699 | 0.1+ | 0.1− | 2006 09 24 | 106 | 0.1− | 0.1− |
| 1998 09 27 | 704 | 0.1+ | 0.7+ | 2005 03 13 | 699 | 0.3+ | 0.5+ | 2006 09 27 | 699 | 0.2+ | 0.4+ |
| 1998 09 27 | 704 | 0.4− | 0.4+ | 2005 03 13 | 699 | 0.5+ | 0.4+ | 2006 09 27 | 699 | 0.6− | 0.3+ |
| 1998 09 27 | 704 | 0.2− | 1.4+ | 2005 03 17 | 704 | 1.0+ | 0.2− | 2006 09 27 | 699 | 0.0 | 0.4+ |
| 1998 10 01 | 327 | 0.1+ | 1.3+ | 2005 03 17 | 704 | 0.5+ | 0.3− | 2006 09 27 | 703 | 0.4− | 0.5+ |
| 1998 10 01 | 327 | 0.4+ | 0.4+ | 2005 03 17 | 704 | 0.7+ | 0.3− | 2006 09 27 | 703 | 0.3− | 0.6+ |
| 1998 10 01 | 327 | 1.9− | 0.6+ | 2005 03 17 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 703 | 0.7− | 0.3+ |
| 1998 10 12 | 691 | 0.0 | 0.1− | 2005 03 17 | 704 | 0.2+ | 0.4− | 2006 09 27 | 703 | 0.6− | 0.5+ |
| 1998 10 12 | 691 | 0.1− | 0.2− | 2005 04 05 | 703 | 0.5− | 0.0 | 2006 09 28 | 118 | 0.1+ | 0.1+ |
| 1998 10 12 | 691 | 0.2− | 0.0 | 2005 04 05 | 703 | 1.0− | 0.0 | 2006 09 28 | 118 | 0.3− | 0.0 |
| 1998 10 14 | 704 | 1.0+ | 1.5− | 2005 04 05 | 703 | 0.8− | 0.6+ | 2006 09 28 | 118 | 0.3− | 0.2+ |
| 1998 10 14 | 704 | 0.6− | 1.0− | 2005 04 05 | 703 | 0.4− | 0.9+ | 2006 09 28 | 118 | 0.2− | 0.1− |
| 1998 10 14 | 704 | 0.9+ | 0.2+ | 2005 04 09 | 704 | (1.6+ | 0.5−) | 2006 09 28 | 118 | 0.1+ | 0.2+ |
| 1998 10 14 | 704 | (5.2− | 0.5−) | 2005 04 09 | 704 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 1998 10 15 | 704 | 0.5+ | 0.9− | 2005 04 09 | 704 | 1.3+ | 1.0+ | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 1998 10 15 | 704 | 1.7− | 1.7− | 2005 04 09 | 704 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 1998 10 15 | 704 | (0.4+ | 2.3−) | 2005 04 09 | 704 | 0.1+ | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 1998 10 15 | 704 | 0.2+ | 1.2+ | 2005 04 11 | 699 | 0.5− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 1998 10 15 | 704 | 0.1+ | 0.4+ | 2005 04 11 | 699 | 0.7+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 1998 10 29 | 704 | 1.0− | 1.1− | 2005 04 11 | 699 | 0.1− | 1.4+ | 2006 10 09 | 644 | 0.3− | 0.5+ |
| 1998 10 29 | 704 | 0.4− | 0.7− | 2005 04 11 | 699 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 1998 10 29 | 704 | 1.4− | 0.4− | 2005 04 15 | 703 | 0.2− | 1.0+ | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 1998 10 29 | 704 | (7.2− | 0.1−) | 2005 04 15 | 703 | 0.2− | 1.2+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2000 05 04 | 704 | 0.1+ | 0.3− | 2005 04 15 | 703 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2000 05 04 | 704 | 0.1+ | 0.4+ | 2005 04 15 | 703 | 0.7− | 0.7− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2000 05 04 | 704 | 0.6− | 0.2+ | 2005 05 04 | 703 | 0.6− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2000 05 04 | 704 | 0.5+ | 0.1− | 2005 05 04 | 703 | 0.7− | 1.4− | 2006 10 17 | 703 | 0.7+ | 0.0 |
| 2000 05 04 | 704 | 0.7+ | 0.5− | 2005 05 04 | 703 | 0.3− | 0.8− | 2006 10 17 | 703 | 1.0− | 0.3− |
| 2000 05 06 | 704 | 0.2− | 0.3− | 2005 05 04 | 703 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.4+ | 1.0− |
| 2000 05 06 | 704 | 0.5− | 0.3− | 2005 05 06 | 704 | 0.4− | 0.4+ | 2006 10 17 | 703 | 1.3+ | 0.3− |
| 2000 05 06 | 704 | 0.7+ | 0.1− | 2005 05 06 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2000 05 06 | 704 | 0.0 | 0.1− | 2005 05 06 | 704 | (2.2− | 1.6+) | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2000 05 27 | 704 | 0.6− | 0.5− | 2005 05 11 | 703 | 0.9− | 0.9− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2000 05 27 | 704 | 0.0 | 0.4+ | 2005 05 11 | 703 | 0.3− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 05 27 | 704 | 0.1− | 0.2− | 2005 05 11 | 703 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 05 27 | 704 | 0.1− | 0.1− | 2005 05 11 | 703 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2000 05 29 | 704 | 0.1− | 0.7+ | 2006 09 01 | 704 | 1.2+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2000 05 29 | 704 | 0.1− | 0.5+ | 2006 09 01 | 704 | 0.6+ | 0.7− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2000 05 29 | 704 | 0.6+ | 0.9+ | 2006 09 01 | 704 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2000 05 29 | 704 | 0.2+ | 0.7− | 2006 09 06 | 644 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2000 05 30 | 704 | 0.1+ | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2000 05 30 | 704 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.8+ |
| 2000 05 30 | 704 | 0.4− | 0.6+ | 2006 09 14 | 644 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2000 05 30 | 704 | 0.0 | 0.5+ | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.5+ |
| 2000 05 30 | 704 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.4+ | 2006 11 14 | 704 | (0.3+ | 1.6+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 12 | 703 | 0.4+ | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 2004 12 12 | 703 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.9+ | 0.0 |
| 2004 12 12 | 703 | 0.8+ | 0.9− | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.2− | 0.8+ |
| 2004 12 12 | 703 | 0.6− | 1.5+ | 2006 09 16 | 703 | 0.5− | 0.8− | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2005 02 01 | 704 | 1.0+ | 0.2− | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 1.0+ |
| 2005 02 01 | 704 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 11 20 | 704 | (0.6− | 2.2+) |
| 2005 02 01 | 704 | 0.4+ | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.4− | 1.2+ |
| 2005 02 01 | 704 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 11 20 | 704 | (0.5− | 1.6+) |
| 2005 02 01 | 704 | 1.3− | 1.4− | 2006 09 21 | 106 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.3+ |
| 2005 02 04 | 704 | 0.8+ | 0.2+ | 2006 09 21 | 106 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2005 02 04 | 704 | 0.5− | 0.9− | 2006 09 21 | 106 | 0.4− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2+ |
| 2005 02 04 | 704 | 1.0− | 1.0− | 2006 09 21 | 106 | 0.5+ | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.1+ |
| 2005 02 04 | 704 | 0.1− | 1.2− | 2006 09 21 | 683 | (1.3+ | 1.7−) | | | | |
| 2005 02 04 | 704 | 0.5− | 1.4+ | 2006 09 21 | 683 | (2.8+ | 0.0 ) | | | | |

**(138451)∗ 2000 JR$_9$ = 2001 TD$_{51}$**

Discovered 2000 May 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19699)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.62588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18464463 | $\omega$ | 81.03178 | | +0.12714790 | +0.98840024 | |
| $a$ | 3.0542993 | $\Omega$ | 196.96241 | | −0.98455463 | +0.11560454 | |
| $e$ | 0.2629302 | $i$ | 16.54027 | | −0.12035612 | +0.09849137 | |
| $P$ | 5.34 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 11 | 691 | 0.1− | 0.1− | 2001 10 23 | 704 | 0.5+ | 0.7− | 2005 05 09 | G96 | 0.3− | 0.1− |
| 2000 04 11 | 691 | 0.0 | 0.2− | 2001 10 23 | 704 | 0.8+ | 0.7+ | 2005 05 09 | G96 | 0.3− | 0.1− |
| 2000 04 11 | 691 | 0.3− | 0.4− | 2001 10 23 | 704 | 0.9− | 0.4+ | 2005 05 11 | 703 | (1.2− | 1.7+) |
| 2000 04 27 | 699 | 0.5− | 0.2− | 2001 10 24 | 704 | 0.1− | 1.3+ | 2005 05 11 | 703 | 1.4− | 0.5+ |
| 2000 04 27 | 699 | 0.5+ | 0.2+ | 2001 10 24 | 704 | 0.1+ | 1.4+ | 2005 05 11 | 703 | 0.2− | 0.4+ |
| 2000 04 27 | 699 | 0.2+ | 0.5+ | 2001 10 24 | 704 | 1.4+ | 0.3+ | 2005 05 11 | 703 | 0.9+ | 0.0 |
| 2000 04 27 | 699 | 0.4+ | 0.5+ | 2005 03 13 | 703 | (1.5− | 0.1−) | 2005 05 13 | 699 | 0.4+ | 0.7+ |
| 2000 05 03 | 704 | 0.5− | 0.3+ | 2005 03 13 | 703 | 1.1− | 0.4− | 2005 05 13 | 699 | 0.5+ | 0.9− |
| 2000 05 03 | 704 | 0.1+ | 0.3+ | 2005 03 13 | 703 | 0.2+ | 0.4+ | 2005 05 13 | 699 | 0.8+ | 0.1+ |
| 2000 05 03 | 704 | 1.1+ | 1.5+ | 2005 03 13 | 703 | 0.6+ | 0.6+ | 2005 05 13 | 699 | (1.5+ | 0.7+) |
| 2000 05 03 | 704 | 0.6+ | 0.5+ | 2005 03 14 | G96 | 0.4− | 0.1+ | 2005 05 15 | 644 | 0.3− | 0.5+ |
| 2000 05 06 | 704 | 0.5+ | 0.1+ | 2005 03 14 | G96 | 0.5− | 0.1− | 2005 05 15 | 644 | 0.0 | 0.0 |
| 2000 05 06 | 704 | 0.2+ | 1.0− | 2005 03 14 | G96 | 0.9− | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.2+ |
| 2000 05 06 | 704 | 0.2+ | 0.3+ | 2005 03 14 | G96 | 0.7− | 0.1− | 2005 06 13 | G96 | 0.4− | 0.1− |
| 2000 05 06 | 704 | 0.0 | 0.6+ | 2005 04 02 | 644 | 0.4+ | 0.3+ | 2005 06 13 | G96 | 0.4− | 0.1+ |
| 2000 05 28 | 704 | 1.1− | 0.7− | 2005 04 02 | 644 | 0.4+ | 0.5+ | 2005 06 13 | G96 | 0.5− | 0.1+ |
| 2000 05 28 | 704 | 0.1+ | 0.3− | 2005 04 02 | 644 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.4− | 0.3+ |
| 2000 05 28 | 704 | 0.4+ | 0.4+ | 2005 04 02 | 644 | 0.3+ | 0.3+ | 2006 06 21 | 703 | 1.2− | 0.7− |
| 2000 05 28 | 704 | 0.7+ | 0.1+ | 2005 04 02 | 644 | 0.5+ | 0.5+ | 2006 06 21 | 703 | 0.7− | 0.3− |
| 2000 05 28 | 704 | 0.1+ | 0.4+ | 2005 04 02 | 644 | 0.1+ | 0.7+ | 2006 06 21 | 703 | 0.3− | 0.5+ |
| 2000 06 04 | 699 | 0.6− | 0.4+ | 2005 04 04 | 704 | 0.4+ | 0.8− | 2006 06 21 | 703 | 1.0− | 1.1− |
| 2000 06 04 | 699 | 0.2− | 0.0 | 2005 04 04 | 704 | 0.7+ | 1.5+ | 2006 08 27 | 699 | (0.9+ | 1.6−) |
| 2000 06 04 | 699 | 0.7− | 0.0 | 2005 04 04 | 704 | 0.1− | 0.7+ | 2006 08 27 | 699 | 1.0+ | 0.0 |
| 2000 06 04 | 699 | 0.3− | 1.5+ | 2005 04 04 | 704 | 0.4+ | 0.5+ | 2006 08 27 | 699 | 0.2+ | 0.4+ |
| 2001 09 20 | 704 | 0.7− | 0.3− | 2005 04 09 | 704 | 0.5+ | 0.5+ | 2006 08 27 | 699 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.7− | 0.1+ | 2005 04 09 | 704 | (2.0+ | 0.6−) | 2006 09 15 | 704 | 0.7− | 0.4+ |
| 2001 09 20 | 704 | 0.3− | 0.9+ | 2005 04 09 | 704 | 0.1− | 1.2+ | 2006 09 15 | 704 | 0.2+ | 0.1− |
| 2001 09 24 | 704 | (2.7+ | 1.6+) | 2005 04 09 | 704 | 0.2+ | 0.8+ | 2006 09 15 | 704 | 0.1+ | 0.2− |
| 2001 09 24 | 704 | 0.5+ | 0.4− | 2005 04 12 | 704 | (1.5+ | 0.1+) | 2006 09 15 | 704 | 0.8− | 0.1− |
| 2001 09 24 | 704 | 0.3+ | 0.5− | 2005 04 12 | 704 | 1.0+ | 0.5+ | 2006 09 15 | 704 | (1.8+ | 0.8+) |
| 2001 10 11 | 644 | 0.3− | 0.5+ | 2005 04 12 | 704 | 0.4+ | 0.2− | 2006 09 16 | 644 | 0.3+ | 0.2− |
| 2001 10 11 | 644 | 0.4− | 0.7+ | 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.2+ |
| 2001 10 11 | 644 | 0.3− | 0.7+ | 2005 05 02 | 691 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.4+ | 0.1− |
| 2001 10 13 | 704 | 0.1+ | 0.5+ | 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 699 | 1.1+ | 0.1+ |
| 2001 10 13 | 704 | 0.8+ | 1.0+ | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 699 | 0.4− | 0.7+ |
| 2001 10 13 | 704 | 0.5− | 0.5+ | 2005 05 04 | 644 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.5− | 0.2− |
| 2001 10 13 | 704 | 0.2+ | 0.6+ | 2005 05 04 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 0.9+ | 0.1+ |
| 2001 10 13 | 704 | 0.1+ | 0.5+ | 2005 05 04 | 703 | (0.2+ | 1.6−) | 2006 10 01 | 703 | 0.2− | 0.3− |
| 2001 10 16 | 691 | 0.1− | 0.5+ | 2005 05 04 | 703 | 0.1− | 0.3− | 2006 10 01 | 703 | 0.4− | 1.3− |
| 2001 10 16 | 691 | 0.1− | 0.5+ | 2005 05 04 | 703 | (2.0− | 0.1+) | 2006 10 01 | 703 | (0.3− | 1.5−) |
| 2001 10 16 | 691 | (2.0+ | 1.2+) | 2005 05 04 | 703 | 0.9+ | 0.6− | 2006 10 01 | 703 | 0.4+ | 1.1− |
| 2001 10 16 | 704 | 0.0 | 1.4+ | 2005 05 06 | G96 | 0.5− | 0.0 | 2006 10 22 | 703 | (2.2− | 0.2+) |
| 2001 10 16 | 704 | 1.4− | 0.7+ | 2005 05 06 | G96 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.8+ |
| 2001 10 16 | 704 | 0.7− | 0.3+ | 2005 05 06 | G96 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2001 10 16 | 704 | (1.6− | 3.6+) | 2005 05 06 | G96 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.9+ | 0.1+ |
| 2001 10 16 | 704 | 0.3− | 1.4+ | 2005 05 09 | G96 | 0.3− | 0.1− | | | | |
| 2001 10 23 | 704 | 0.8+ | 0.2+ | 2005 05 09 | G96 | 0.4− | 0.1− | | | | |

**(138452)∗ 2000 JO$_{10}$ = 2002 TL$_{226}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37516)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.83517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26300395 | $\omega$ | 91.68388 | | −0.79464287 | −0.51658059 | |
| $a$ | 2.4126512 | $\Omega$ | 57.33623 | | +0.28477083 | −0.78108961 | |
| $e$ | 0.2935662 | $i$ | 22.25869 | | +0.53614204 | −0.35077560 | |
| $P$ | 3.75 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 704 | 1.1+ | 0.8− | 2002 10 11 | 704 | 0.5− | 0.4− | 2002 12 11 | 704 | 0.0 | 0.1− |
| 1998 10 16 | 704 | 0.2− | 0.7+ | 2002 10 11 | 704 | 0.7− | 0.5− | 2002 12 11 | 644 | 0.3− | 0.3+ |
| 1998 10 16 | 704 | (2.8+ | 2.0−) | 2002 10 30 | 608 | 0.9− | 0.6− | 2002 12 11 | 704 | 0.1+ | 0.3− |
| 1998 10 16 | 704 | 0.0 | 0.2− | 2002 10 30 | 608 | 0.4− | 0.7− | 2002 12 11 | 644 | 0.2− | 0.2+ |
| 2000 04 07 | 704 | 0.4+ | 0.5+ | 2002 10 30 | 608 | 1.0− | 0.5− | 2002 12 11 | 644 | 0.3− | 0.3+ |
| 2000 04 07 | 704 | 0.4+ | 0.8+ | 2002 11 07 | 704 | 0.9− | 0.5+ | 2002 12 27 | 644 | 0.4− | 0.5+ |
| 2000 04 07 | 704 | 1.0+ | 1.3+ | 2002 11 07 | 704 | 0.4− | 0.6+ | 2002 12 27 | 644 | 0.2− | 0.4+ |
| 2000 05 07 | 704 | 0.5+ | 0.2− | 2002 11 07 | 704 | 0.2− | 0.6+ | 2002 12 27 | 644 | 0.2− | 0.5+ |
| 2000 05 07 | 704 | 0.4+ | 1.0+ | 2002 11 07 | 704 | 0.5− | 0.6+ | 2002 12 31 | 704 | 0.5− | 0.3− |
| 2000 05 07 | 704 | 0.0 | 0.3− | 2002 11 07 | 704 | 0.4− | 1.0+ | 2002 12 31 | 704 | 0.7− | 0.3− |
| 2000 05 07 | 704 | 0.4+ | 0.6− | 2002 11 11 | 704 | 0.6− | 0.0 | 2002 12 31 | 704 | 0.4− | 0.2+ |
| 2000 05 07 | 704 | 0.1− | 0.5+ | 2002 11 11 | 704 | 0.5− | 0.1+ | 2002 12 31 | 704 | 0.4− | 1.3+ |
| 2000 05 07 | 704 | 0.4+ | 0.9+ | 2002 11 11 | 704 | 0.2− | 0.1+ | 2002 12 31 | 704 | 0.1+ | 0.5+ |
| 2000 05 07 | 704 | 0.5+ | 0.3+ | 2002 11 11 | 704 | 0.0 | 0.3+ | 2003 01 05 | 704 | 0.7+ | 1.3− |
| 2000 05 07 | 704 | 0.0 | 0.6+ | 2002 11 11 | 704 | 0.2− | 0.2− | 2003 01 05 | 704 | (0.1− | 2.5−) |
| 2000 05 07 | 704 | 0.1+ | 0.1+ | 2002 11 23 | 644 | 0.0 | 0.3+ | 2003 01 05 | 704 | (0.9+ | 1.8−) |
| 2000 05 09 | 704 | 0.1− | 0.2− | 2002 11 23 | 644 | 0.1+ | 0.2+ | 2003 01 05 | 704 | (1.4+ | 2.4−) |
| 2000 05 09 | 704 | 0.6+ | 0.3+ | 2002 11 23 | 644 | 0.1+ | 0.2+ | 2003 01 05 | 704 | (0.5+ | 2.4−) |
| 2000 05 09 | 704 | 0.8+ | 0.5+ | 2002 11 27 | 699 | 0.1− | 0.3+ | 2003 01 20 | 644 | 0.1− | 0.2+ |
| 2000 05 09 | 704 | 0.4+ | 0.4− | 2002 11 27 | 699 | 0.5− | 0.4+ | 2003 01 20 | 644 | 0.1− | 0.2+ |
| 2000 05 09 | 704 | 0.6+ | 0.8+ | 2002 11 27 | 699 | 0.2− | 0.0 | 2003 01 20 | 644 | 0.1+ | 0.5+ |
| 2000 05 10 | 704 | 0.8+ | 1.8+ | 2002 11 27 | 699 | 0.3− | 0.2− | 2003 01 31 | 704 | 0.0 | 0.7+ |
| 2000 05 10 | 704 | 0.5− | 0.7+ | 2002 12 02 | 704 | 0.3− | 0.1− | 2003 01 31 | 704 | 0.2+ | 0.6+ |
| 2000 05 10 | 704 | 1.8+ | 0.8+ | 2002 12 02 | 704 | 0.4− | 0.2− | 2003 01 31 | 704 | 0.7+ | 0.4− |
| 2000 05 11 | 704 | 0.4− | 0.1− | 2002 12 02 | 704 | 0.0 | 0.0 | 2003 01 31 | 699 | 0.4+ | 0.0 |
| 2000 05 11 | 704 | 0.0 | 0.6+ | 2002 12 02 | 704 | 0.1− | 0.2− | 2003 01 31 | 704 | 0.0 | 0.8− |
| 2000 05 11 | 704 | 0.4+ | 0.6+ | 2002 12 02 | 704 | 0.4− | 0.1+ | 2003 01 31 | 699 | 0.4− | 0.2+ |
| 2000 06 07 | 704 | 0.2− | 0.9+ | 2002 12 04 | 333 | 0.1− | 0.1+ | 2003 01 31 | 699 | 0.2− | 0.7+ |
| 2000 06 07 | 704 | 0.5− | 0.3+ | 2002 12 04 | 333 | 0.2− | 0.4+ | 2003 01 31 | 699 | 0.3− | 0.6+ |
| 2000 06 07 | 704 | 0.3+ | 0.0 | 2002 12 04 | 333 | 0.3− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2000 06 07 | 704 | 0.4− | 0.2+ | 2002 12 05 | 704 | 0.7+ | 0.9+ | 2006 10 27 | 703 | 0.3− | 0.3− |
| 2000 06 07 | 704 | 0.4+ | 0.5+ | 2002 12 05 | 704 | 1.0+ | 0.9+ | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2002 09 16 | 699 | 0.6− | 0.3+ | 2002 12 05 | 704 | 0.2− | 0.9+ | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2002 09 16 | 699 | (0.4− | 1.5−) | 2002 12 05 | 704 | 0.5+ | 0.7+ | 2006 11 14 | 704 | 0.3+ | 0.4− |
| 2002 09 16 | 699 | (0.3− | 1.7+) | 2002 12 05 | 704 | 0.7+ | 0.6+ | 2006 11 14 | 704 | 0.3− | 0.1− |
| 2002 09 16 | 699 | 0.8− | 1.0+ | 2002 12 06 | 704 | 0.3+ | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.7− |
| 2002 10 08 | 699 | 0.1− | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.5+ | 2006 11 14 | 704 | 0.8+ | 1.7− |
| 2002 10 08 | 699 | 0.1+ | 0.4+ | 2002 12 06 | 704 | 0.3− | 0.5− | 2006 11 20 | 703 | 0.0 | 0.3− |
| 2002 10 08 | 699 | 0.5+ | 0.1+ | 2002 12 06 | 704 | 0.8+ | 0.1+ | 2006 11 20 | 703 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 0.1− | 0.2+ | 2002 12 06 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 703 | 0.4− | 0.2− |
| 2002 10 09 | 704 | 0.2− | 0.1+ | 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 11 20 | 703 | 0.0 | 0.3− |
| 2002 10 09 | 704 | 0.3+ | 0.8+ | 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 12 03 | 704 | 1.1− | 0.4+ |
| 2002 10 09 | 704 | 0.1+ | 0.2− | 2002 12 10 | 704 | 0.2+ | 0.1− | 2006 12 03 | 704 | 0.4+ | 1.6+ |
| 2002 10 09 | 704 | 0.9− | 0.6− | 2002 12 10 | 704 | 0.0 | 0.0 | 2006 12 03 | 704 | 0.5+ | 0.5+ |
| 2002 10 09 | 704 | 0.9− | 0.5+ | 2002 12 10 | 704 | 0.1+ | 0.7− | 2006 12 03 | 704 | 0.1+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2002 12 11 | 704 | 0.1− | 0.3+ | 2006 12 03 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2002 12 11 | 704 | 0.1+ | 0.3− | | | | | | |
| 2002 10 11 | 704 | 0.6− | 0.3− | 2002 12 11 | 704 | 0.3+ | 0.3+ | | | | | | |

**(138453)∗ 2000 JO$_{11}$ = 2001 QR$_{114}$**

Discovered 2000 May 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 15790)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.71776 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21654776 | $\omega$ | 55.26049 | | +0.55109234 | | +0.82873834 |
| $a$ | 2.7464198 | $\Omega$ | 248.47058 | | −0.79573671 | | +0.48679090 |
| $e$ | 0.0674446 | $i$ | 6.01122 | | −0.25119777 | | +0.27609307 |
| $P$ | 4.55 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | 0.1+ | 0.3+ | 2001 09 19 | 704 | 0.2− | 0.9+ | 2003 01 08 | 704 | 0.9+ | 0.2− | | |
| 1997 10 29 | 704 | (0.2− | 2.4−) | 2001 09 19 | 704 | 0.6+ | 0.1+ | 2003 01 08 | 704 | 0.7+ | 0.4+ | | |
| 1997 10 29 | 704 | 1.2− | 0.5− | 2001 09 19 | 704 | 0.0 | 0.7+ | 2004 02 19 | 704 | 0.6+ | 0.8+ | | |
| 1997 10 29 | 704 | (0.1+ | 3.0−) | 2001 09 19 | 704 | 0.2+ | 0.0 | 2004 02 19 | 704 | 0.5+ | 1.0+ | | |
| 1997 11 06 | 704 | (6.5− | 0.7−) | 2001 09 19 | 704 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.8+ | 0.3+ | | |
| 1997 11 06 | 704 | (4.4− | 1.5+) | 2001 09 20 | 704 | 1.0+ | 0.4− | 2004 02 19 | 704 | (0.2+ | 1.9+) | | |
| 1997 11 06 | 704 | (7.0− | 0.5−) | 2001 09 20 | 704 | 0.1+ | 0.0 | 2004 02 19 | 704 | 0.9− | 0.5+ | | |
| 1997 11 06 | 704 | (5.2− | 1.8+) | 2001 09 20 | 704 | 1.1+ | 0.6+ | 2004 03 16 | 704 | 1.5+ | 0.3+ | | |
| 1997 11 06 | 704 | (7.8− | 0.3−) | 2001 09 20 | 704 | 0.4− | 0.3− | 2004 03 16 | 704 | 0.0 | 0.1+ | | |
| 2000 05 03 | 704 | 0.9+ | 1.4+ | 2001 09 20 | 704 | 0.2− | 0.8+ | 2004 03 16 | 704 | 0.1+ | 0.2− | | |
| 2000 05 03 | 704 | 0.5− | 0.2+ | 2001 09 22 | 683 | 0.9− | 0.5+ | 2004 03 16 | 704 | 0.3+ | 0.3+ | | |
| 2000 05 03 | 704 | 0.2+ | 0.2+ | 2001 09 22 | 683 | (2.2− | 1.1−) | 2004 03 16 | 704 | 0.7+ | 0.1− | | |
| 2000 05 07 | 704 | 0.4− | 0.4+ | 2001 09 23 | 704 | (2.5− | 0.7−) | 2006 09 20 | 699 | 0.6+ | 0.3− | | |
| 2000 05 07 | 704 | 0.1+ | 0.3+ | 2001 09 23 | 704 | (3.3− | 0.4−) | 2006 09 20 | 699 | 0.3+ | 0.6+ | | |
| 2000 05 07 | 704 | 0.1− | 1.7+ | 2001 09 23 | 704 | (2.8− | 0.7−) | 2006 09 20 | 699 | (1.5− | 1.0+) | | |
| 2000 05 09 | 704 | 0.6− | 0.5+ | 2001 09 25 | 644 | 0.2− | 0.9+ | 2006 09 20 | 699 | 0.7− | 0.7− | | |
| 2000 05 09 | 704 | 0.5+ | 0.3+ | 2001 09 25 | 644 | 0.2− | 0.8+ | 2006 09 29 | 704 | 0.4+ | 0.6+ | | |
| 2000 05 09 | 704 | 0.7+ | 0.2− | 2001 09 25 | 644 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.4− | 0.4+ | | |
| 2000 05 09 | 704 | 0.6− | 0.6+ | 2001 09 26 | 699 | 0.3+ | 0.6− | 2006 09 29 | 704 | 0.3− | 0.1+ | | |
| 2000 05 09 | 704 | 0.6− | 0.2− | 2001 09 26 | 699 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.4− | 0.2+ | | |
| 2000 05 11 | 699 | 0.5+ | 1.4+ | 2001 09 26 | 699 | 0.8+ | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.1− | | |
| 2000 05 11 | 704 | 0.1− | 0.2− | 2001 09 26 | 699 | 0.1− | 0.7− | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 2000 05 11 | 699 | 0.3− | 0.4+ | 2001 09 28 | 704 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.3− | | |
| 2000 05 11 | 704 | 0.0 | 0.0 | 2001 09 28 | 704 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 2000 05 11 | 704 | 0.0 | 0.8− | 2001 09 28 | 704 | 0.9− | 0.4+ | 2006 10 13 | 691 | 0.3− | 0.0 | | |
| 2000 05 11 | 699 | 0.1− | 0.1− | 2001 10 14 | 704 | 0.7+ | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.1+ | | |
| 2000 05 11 | 699 | 0.7− | 0.4+ | 2001 10 14 | 704 | 1.4+ | 1.0− | 2006 10 13 | 691 | 0.2− | 0.1+ | | |
| 2000 05 23 | 699 | 0.4+ | 0.8+ | 2001 10 14 | 704 | 0.9+ | 0.1+ | 2006 10 18 | A44 | 0.1+ | 0.2− | | |
| 2000 05 23 | 699 | 0.3+ | 0.4+ | 2001 10 14 | 704 | (2.0+ | 0.1−) | 2006 10 18 | A44 | 0.2+ | 0.4− | | |
| 2000 05 23 | 699 | 0.4− | 0.0 | 2001 10 14 | 704 | 0.1+ | 0.0 | 2006 10 18 | A44 | 0.1+ | 0.2− | | |
| 2000 05 23 | 699 | 0.1+ | 0.4− | 2001 10 15 | 704 | 0.8+ | 0.5+ | 2006 10 20 | A44 | 0.3− | 0.4+ | | |
| 2000 05 28 | 699 | 0.1− | 0.6+ | 2001 10 15 | 704 | 0.1− | 0.4− | 2006 10 20 | A44 | 0.2− | 0.5+ | | |
| 2000 05 28 | 699 | 0.4− | 1.8+ | 2001 10 15 | 704 | 0.4+ | 0.4+ | 2006 10 29 | 704 | 0.5+ | 0.2+ | | |
| 2000 05 28 | 699 | 0.7+ | 0.6− | 2001 10 15 | 704 | 1.3+ | 0.2− | 2006 10 29 | 704 | 0.6+ | 1.0+ | | |
| 2000 05 28 | 699 | 0.5+ | 0.0 | 2001 12 10 | 645 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.4− | 0.5+ | | |
| 2000 06 05 | 699 | 0.9+ | 1.0+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 10 29 | 704 | (1.5− | 0.1+) | | |
| 2000 06 05 | 699 | 0.2+ | 0.5+ | 2002 09 14 | 291 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ | | |
| 2000 06 05 | 699 | 0.4− | 0.0 | 2002 09 14 | 291 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.0 | | |
| 2000 06 05 | 699 | 1.4− | 0.0 | 2002 09 14 | 291 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.0 | | |
| 2001 08 17 | 704 | 0.3+ | 0.5+ | 2002 12 05 | 704 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.1− | | |
| 2001 08 17 | 704 | 0.0 | 1.0+ | 2002 12 05 | 704 | 0.6+ | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.0 | | |
| 2001 08 17 | 704 | 0.1− | 0.6+ | 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.4+ | | |
| 2001 08 17 | 704 | 0.4+ | 0.4+ | 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.7+ | | |
| 2001 08 25 | 704 | 0.0 | 0.5+ | 2002 12 10 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.1+ | | |
| 2001 08 25 | 704 | 0.9+ | 0.1+ | 2002 12 10 | 704 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.4+ | 0.8+ | | |
| 2001 08 25 | 704 | 0.0 | 0.3− | 2002 12 10 | 704 | 0.5+ | 0.3− | 2006 11 16 | 704 | 0.3− | 0.4+ | | |
| 2001 08 25 | 704 | 0.2− | 0.1+ | 2002 12 10 | 704 | 1.3− | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.1− | | |
| 2001 08 25 | 704 | 0.1+ | 0.2− | 2002 12 13 | 704 | 0.3− | 0.4− | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2001 09 06 | 644 | 0.3+ | 0.6+ | 2002 12 13 | 704 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.0 | | |
| 2001 09 06 | 644 | 0.0 | 0.4+ | 2002 12 13 | 704 | 0.1+ | 0.7+ | 2006 11 18 | G96 | 0.3+ | 0.2− | | |
| 2001 09 06 | 644 | 0.1+ | 0.6+ | 2002 12 13 | 704 | 0.1+ | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.8+ | | |
| 2001 09 08 | 704 | 0.1− | 0.1+ | 2002 12 14 | 704 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.1− | | |
| 2001 09 08 | 704 | 0.1+ | 0.4− | 2002 12 14 | 704 | 0.7− | 0.4− | 2006 11 19 | 704 | 0.5+ | 0.1+ | | |
| 2001 09 08 | 704 | 0.3− | 0.0 | 2002 12 14 | 704 | 0.2− | 0.8− | 2006 11 19 | 704 | 0.3+ | 0.4+ | | |
| 2001 09 08 | 704 | 0.1+ | 0.3− | 2002 12 14 | 704 | 0.3− | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.0 | | |
| 2001 09 08 | 704 | 0.0 | 0.4− | 2002 12 14 | 704 | 0.3+ | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.0 | | |
| 2001 09 16 | 644 | 0.1− | 0.7+ | 2002 12 14 | 704 | 0.0 | 0.9+ | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2001 09 16 | 644 | 0.4− | 0.4+ | 2002 12 14 | 704 | 0.3+ | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.2+ | | |
| 2001 09 16 | 644 | 0.3− | 0.5+ | 2002 12 14 | 704 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.2− | 0.2+ | | |
| 2001 09 16 | 704 | 0.2− | 0.3− | 2002 12 31 | 704 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2+ | | |
| 2001 09 16 | 704 | 0.2+ | 0.4− | 2002 12 31 | 704 | 0.1− | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 0.3− | 0.4− | 2002 12 31 | 704 | 0.6+ | 1.1+ | 2006 11 23 | 691 | 0.3− | 0.1− | | |
| 2001 09 16 | 704 | 0.1− | 0.5− | 2003 01 04 | 735 | 1.1+ | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 0.3− | 0.2− | 2003 01 04 | 735 | 0.7+ | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.2− | | |
| 2001 09 18 | 699 | 0.4− | 0.5+ | 2003 01 04 | 735 | 0.3+ | 1.1+ | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2001 09 18 | 699 | 0.1+ | 0.2− | 2003 01 07 | 704 | 0.0 | 0.8− | 2006 11 27 | 691 | 0.1+ | 0.2− | | |
| 2001 09 18 | 683 | 1.1− | 0.3− | 2003 01 07 | 704 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.8− | 0.8+ | | |
| 2001 09 18 | 683 | 0.1+ | 0.3− | 2003 01 07 | 704 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.3− | 0.5+ | | |
| 2001 09 18 | 699 | 0.2+ | 0.4+ | 2003 01 07 | 704 | 0.1+ | 0.8− | 2006 11 29 | 704 | 0.0 | 0.5+ | | |
| 2001 09 18 | 683 | (0.2− | 1.7−) | 2003 01 08 | 704 | 0.2− | 0.7− | 2006 11 29 | 704 | 0.3+ | 1.2+ | | |
| 2001 09 18 | 699 | 0.8− | 0.4− | 2003 01 08 | 704 | 0.7+ | 0.2− | | | | | | |

**(138454)∗ 2000 JQ$_{11}$ = 2004 GX$_{35}$**

Discovered 2000 May 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60684)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.93687 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23893719 | $\omega$ | 299.87131 | | −0.98600093 | | +0.04817033 |
| $a$ | 2.5720548 | $\Omega$ | 243.30054 | | +0.00511503 | | −0.94817186 |
| $e$ | 0.2160298 | $i$ | 10.29300 | | −0.16666132 | | −0.31408558 |
| $P$ | 4.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 03 | 704 | 1.3− | 0.7− | 2004 04 13 | 644 | 0.2− | 0.1+ | 2004 05 19 | 704 | 0.3− | 0.8+ | | |
| 2000 05 03 | 704 | 0.3− | 0.7− | 2004 04 13 | 644 | 0.0 | 0.0 | 2004 05 19 | 704 | 0.2− | 0.4+ | | |
| 2000 05 03 | 704 | 0.2− | 0.1− | 2004 04 13 | 644 | 0.0 | 0.2+ | 2004 05 19 | 704 | 0.2+ | 1.0+ | | |
| 2000 05 03 | 704 | 0.2+ | 0.2+ | 2004 04 15 | E12 | 0.9− | 0.7+ | 2004 05 20 | E12 | (2.4+ | 0.7−) | | |
| 2000 05 07 | 704 | 0.4− | 0.2+ | 2004 04 15 | E12 | 0.1− | 0.9+ | 2004 05 20 | E12 | (3.6+ | 1.9−) | | |
| 2000 05 07 | 704 | 0.2+ | 0.5− | 2004 04 15 | E12 | 0.4− | 0.9+ | 2004 05 20 | E12 | (1.9+ | 0.5−) | | |
| 2000 05 07 | 704 | 0.3+ | 0.5+ | 2004 04 15 | E12 | 0.6− | 0.5+ | 2004 05 20 | E12 | 0.8+ | 0.2− | | |
| 2000 05 07 | 704 | 0.1+ | 0.6− | 2004 04 16 | 699 | 0.2− | 0.4+ | 2004 05 21 | 704 | 0.8+ | 0.4+ | | |
| 2000 05 07 | 704 | 0.1− | 0.2− | 2004 04 16 | 699 | 1.5+ | 1.0+ | 2004 05 21 | 704 | 0.8+ | 0.2− | | |
| 2000 05 09 | 704 | 0.2− | 0.7+ | 2004 04 16 | 699 | 0.6+ | 0.2+ | 2004 05 21 | 704 | (2.4+ | 0.6−) | | |
| 2000 05 09 | 704 | 0.6− | 0.2+ | 2004 04 16 | 699 | 0.1+ | 0.2+ | 2004 05 21 | 704 | 1.3+ | 0.6+ | | |
| 2000 05 09 | 704 | 0.7− | 0.2− | 2004 04 16 | E12 | (1.3− | 2.2+) | 2004 05 21 | 704 | 0.5+ | 0.6+ | | |
| 2000 05 09 | 704 | 0.4+ | 0.7+ | 2004 04 16 | E12 | (0.6− | 1.7+) | 2004 05 22 | 704 | 0.4+ | 0.5− | | |
| 2000 05 09 | 704 | 0.5+ | 0.1− | 2004 04 16 | E12 | 0.3− | 1.2+ | 2004 05 22 | 704 | 0.8+ | 0.4+ | | |
| 2000 05 11 | 704 | 0.8+ | 0.3− | 2004 04 16 | E12 | 0.5− | 1.4+ | 2004 05 22 | 704 | 0.2+ | 0.2+ | | |
| 2000 05 11 | 704 | 0.1+ | 0.1+ | 2004 04 17 | 704 | 0.0 | 0.4− | 2004 05 22 | 704 | 0.9+ | 0.8− | | |
| 2000 05 11 | 704 | 0.3+ | 0.1+ | 2004 04 17 | 704 | 0.1− | 0.8− | 2004 05 22 | 704 | 0.0 | 0.7− | | |
| 2000 05 11 | 704 | 0.9+ | 0.5− | 2004 04 17 | 704 | 0.3+ | 0.5− | 2004 06 04 | 644 | 0.0 | 0.1+ | | |
| 2000 05 28 | 704 | 0.1− | 0.3− | 2004 04 25 | 704 | 0.3− | 0.0 | 2004 06 04 | 644 | 0.5+ | 0.6+ | | |
| 2000 05 28 | 704 | 0.5+ | 0.2− | 2004 04 25 | 704 | 0.2+ | 0.3− | 2004 06 04 | 644 | 0.3+ | 0.3+ | | |
| 2000 05 28 | 704 | 0.0 | 0.0 | 2004 04 25 | 704 | 0.6− | 0.6− | 2004 06 04 | 644 | 0.7+ | 0.1+ | | |
| 2000 05 28 | 704 | 0.0 | 0.2− | 2004 04 25 | 704 | 0.2+ | 0.2− | 2004 06 04 | 644 | 0.4+ | 0.0 | | |
| 2000 05 28 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.6− | 0.2− | 2004 06 04 | 644 | 0.7+ | 0.5+ | | |
| 2000 05 29 | 704 | 0.2− | 0.1− | 2004 04 26 | 704 | 0.4− | 0.7− | 2004 06 14 | 704 | (1.7+ | 0.1−) | | |
| 2000 05 29 | 704 | 0.6− | 0.6− | 2004 04 26 | 704 | 0.3+ | 0.3− | 2004 06 14 | 704 | 0.0 | 1.1− | | |
| 2000 05 29 | 704 | 0.8− | 0.5+ | 2004 04 26 | 704 | 0.0 | 0.3− | 2004 06 14 | 704 | 0.9+ | 0.2+ | | |
| 2000 05 29 | 704 | 0.3+ | 0.2− | 2004 04 26 | 704 | 0.6− | 0.3− | 2004 06 14 | 704 | 0.3+ | 0.6− | | |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2004 04 26 | 704 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.0 | | |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2004 04 26 | 704 | 0.5− | 0.3− | 2006 10 04 | G96 | 0.3− | 0.1+ | | |
| 2002 11 24 | 644 | 0.2+ | 1.0+ | 2004 04 26 | 704 | 0.8− | 0.2− | 2006 10 04 | G96 | 0.2− | 0.1− | | |
| 2002 11 24 | 644 | 0.3− | 1.1+ | 2004 04 26 | 704 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.1+ | | |
| 2002 11 24 | 644 | 0.0 | 0.7+ | 2004 04 26 | 704 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.4− | 1.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | (0.7− | 1.7+) | 2004 04 26 | 704 | 0.1− | 0.7− | 2006 10 19 | 703 | 0.4− | 0.8− |
| 2002 12 06 | 704 | 0.4+ | 0.4+ | 2004 04 27 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 1.5+ | 1.1− |
| 2002 12 06 | 704 | 0.9+ | 0.2+ | 2004 04 27 | 704 | 0.3− | 0.8− | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2004 03 26 | 704 | 0.5− | 0.2+ | 2004 04 27 | 704 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.4− | 0.0 |
| 2004 03 26 | 704 | 0.7− | 0.4+ | 2004 04 27 | 704 | 0.0 | 0.9− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2004 03 26 | 699 | 0.5+ | 0.5+ | 2004 04 27 | 704 | 0.6− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2004 03 26 | 704 | 0.4− | 0.0 | 2004 05 15 | 704 | (1.5+ | 0.7+) | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2004 03 26 | 704 | 0.8− | 0.4+ | 2004 05 15 | 704 | (1.6+ | 0.8+) | 2006 11 18 | G96 | 0.4− | 0.2− |
| 2004 03 26 | 699 | 0.5+ | 0.1− | 2004 05 15 | 704 | 0.6− | 0.4− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2004 03 26 | 699 | 0.2− | 0.1− | 2004 05 15 | 704 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 03 26 | 699 | 0.4+ | 0.3+ | 2004 05 19 | 704 | 0.4+ | 1.3+ | 2006 11 18 | G96 | 0.0 | 0.0 |

**(138455)∗ 2000 JQ$_{13}$ = 2001 PU$_{64}$**

Discovered 2000 May 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 29216)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.54500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21433119 | $\omega$ | 198.41934 | | −0.01079457 | +0.99624619 | |
| $a$ | 2.7653226 | $\Omega$ | 71.03292 | | −0.90563593 | +0.02667400 | |
| $e$ | 0.0512118 | $i$ | 5.21081 | | −0.42391867 | −0.08235301 | |
| $P$ | 4.60 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 24 | 691 | 0.0 | 0.5− | 2001 08 14 | 608 | 0.1− | 0.9− | 2004 03 23 | 704 | 0.9+ | 0.3+ |
| 1995 03 24 | 691 | 0.0 | 0.6− | 2001 08 14 | 608 | 0.7− | 0.3− | 2004 03 23 | 704 | (0.6+ | 1.8+) |
| 1995 03 24 | 691 | 0.5− | 0.3− | 2001 08 25 | 644 | 1.0− | 0.4+ | 2004 03 23 | 704 | 1.2+ | 0.6+ |
| 2000 04 30 | 699 | 0.7+ | 0.5+ | 2001 08 25 | 644 | 0.8− | 0.5+ | 2004 03 23 | 704 | 0.9+ | 0.3+ |
| 2000 04 30 | 699 | 0.1+ | 0.4+ | 2001 08 25 | 644 | 0.9− | 0.5+ | 2006 09 25 | 699 | 1.0+ | 0.4− |
| 2000 04 30 | 699 | 0.1+ | 1.1+ | 2002 12 05 | 704 | (4.9+ | 1.8−) | 2006 09 25 | 699 | 0.4+ | 0.4+ |
| 2000 04 30 | 699 | 1.3+ | 2.0+ | 2002 12 05 | 704 | (1.5+ | 0.8−) | 2006 09 25 | 699 | 0.3− | 0.9+ |
| 2000 05 06 | 704 | 0.6+ | 0.9+ | 2002 12 05 | 704 | (1.8− | 1.2+) | 2006 09 25 | 699 | 0.0 | 0.6− |
| 2000 05 06 | 704 | 1.2− | 0.5− | 2002 12 06 | 704 | 0.2+ | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2000 05 06 | 704 | 0.6− | 0.1− | 2002 12 06 | 704 | 1.1− | 0.9+ | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2000 05 06 | 704 | 0.8+ | 0.5− | 2002 12 06 | 704 | 0.3− | 0.9+ | 2006 10 04 | G96 | 0.4− | 0.2− |
| 2000 05 07 | 704 | 0.0 | 0.7+ | 2002 12 06 | 704 | 0.1− | 0.6− | 2006 10 04 | G96 | 0.3− | 0.2+ |
| 2000 05 07 | 704 | 0.8+ | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2000 05 07 | 704 | 0.7+ | 0.2+ | 2002 12 06 | 704 | 0.9+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2000 05 07 | 704 | 0.4+ | 0.5+ | 2002 12 06 | 704 | (1.6+ | 0.2+) | 2006 10 10 | 644 | 0.1+ | 0.5+ |
| 2000 05 07 | 704 | 0.1− | 0.5+ | 2002 12 10 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2000 05 28 | 704 | 0.1− | 0.1+ | 2002 12 10 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 05 28 | 704 | 0.5+ | 0.1− | 2002 12 10 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2000 05 28 | 704 | 0.4− | 0.8+ | 2002 12 10 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.1+ |
| 2000 05 28 | 704 | 0.2+ | 0.4+ | 2004 03 15 | 704 | 1.0− | 1.4+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2000 05 28 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.8− | 1.4+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2000 05 29 | 704 | 1.0+ | 1.0− | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.9− | 0.1− |
| 2000 05 29 | 704 | 0.8− | 0.9− | 2004 03 15 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.9− | 0.4+ |
| 2000 05 29 | 704 | 0.0 | 0.0 | 2004 03 15 | 704 | 1.3− | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2000 05 29 | 704 | 0.6+ | 1.1+ | 2004 03 20 | 704 | 0.2− | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 08 01 | 644 | 0.6− | 0.9+ | 2004 03 20 | 704 | (0.0 | 1.7+) | 2006 10 22 | 703 | 1.6+ | 0.0 |
| 2001 08 01 | 644 | 0.3− | 1.0+ | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.2+ | 1.4+ |
| 2001 08 01 | 644 | 0.5− | 0.9+ | 2004 03 20 | 704 | 0.7+ | 0.8+ | 2006 10 22 | 703 | 0.8+ | 0.9+ |
| 2001 08 14 | 608 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.2+ | 1.4+ | 2006 10 22 | 703 | 1.1+ | 0.3− |

**(138456)∗ 2000 JD$_{21}$ = 2001 RD$_{128}$**

Discovered 2000 May 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17365)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.72946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21745045 | $\omega$ | 271.23197 | | +0.31519098 | +0.94776392 | |
| $a$ | 2.7388138 | $\Omega$ | 17.38444 | | −0.79245630 | +0.29123208 | |
| $e$ | 0.1385883 | $i$ | 9.43356 | | −0.52217589 | +0.13010548 | |
| $P$ | 4.53 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 699 | 0.3+ | 1.3+ | 2001 09 19 | 704 | 0.2+ | 0.4+ | 2001 10 23 | 704 | 0.8− | 1.4− |
| 2000 04 25 | 699 | 1.0+ | 0.0 | 2001 09 19 | 704 | 0.3+ | 0.3+ | 2001 10 23 | 704 | 1.0− | 0.9− |
| 2000 04 25 | 699 | 0.4+ | 1.0+ | 2001 09 19 | 704 | 0.1− | 0.6− | 2001 10 23 | 704 | 0.9− | 0.9− |
| 2000 04 25 | 699 | 1.1+ | 0.5+ | 2001 09 20 | 704 | 0.3− | 0.1− | 2004 02 17 | 704 | 0.1+ | 0.2+ |
| 2000 05 01 | 699 | 0.9+ | 0.5+ | 2001 09 20 | 704 | 0.3− | 0.3+ | 2004 02 17 | 704 | 0.0 | 0.2− |
| 2000 05 01 | 699 | 0.0 | 1.3+ | 2001 09 20 | 704 | 0.1− | 0.5+ | 2004 02 17 | 704 | 0.1− | 0.8+ |
| 2000 05 01 | 699 | 0.2+ | 1.4+ | 2001 09 20 | 704 | 0.4− | 0.2+ | 2004 02 17 | 704 | 1.0+ | 0.2+ |
| 2000 05 01 | 699 | 0.2+ | 0.8+ | 2001 09 20 | 704 | 0.2+ | 0.1+ | 2004 03 19 | 644 | 0.4+ | 0.8+ |
| 2000 05 06 | 704 | 0.9+ | 0.5− | 2001 09 20 | 704 | 0.4− | 0.4+ | 2004 03 19 | 644 | 0.5+ | 0.8+ |
| 2000 05 06 | 704 | 0.3− | 0.5+ | 2001 09 20 | 704 | 0.3− | 0.0 | 2004 03 19 | 644 | 0.8+ | 0.9+ |
| 2000 05 06 | 704 | 0.2+ | 0.6+ | 2001 09 20 | 704 | 0.2− | 0.8+ | 2004 03 20 | 704 | 0.3+ | 0.6+ |
| 2000 05 06 | 704 | 0.4+ | 0.2+ | 2001 09 20 | 704 | 0.3+ | 0.3− | 2004 03 20 | 704 | 0.5+ | 0.9+ |
| 2000 05 09 | 704 | 0.1+ | 0.9+ | 2001 09 20 | 704 | 0.5− | 0.7+ | 2004 03 20 | 704 | 0.3+ | 0.5+ |
| 2000 05 09 | 704 | 0.8+ | 0.9+ | 2001 09 21 | 704 | 0.8+ | 0.1− | 2004 03 20 | 704 | 0.4+ | 0.9+ |
| 2000 05 09 | 704 | 0.2− | 1.3+ | 2001 09 21 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 704 | 0.7+ | 1.1+ |
| 2000 05 09 | 704 | (0.3+ | 2.2+) | 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2000 05 09 | 704 | 0.0 | 1.2+ | 2001 09 21 | 704 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.3− |
| 2001 08 25 | 644 | 0.9− | 0.7+ | 2001 09 21 | 704 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 08 25 | 644 | 0.8− | 0.2+ | 2001 09 24 | 644 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.6+ | 0.5− |
| 2001 08 25 | 644 | 0.7− | 0.1− | 2001 09 24 | 644 | 0.4− | 0.5+ | 2006 10 13 | 691 | 0.1+ | 0.5+ |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2001 09 24 | 644 | 0.3− | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2001 09 26 | 735 | 0.2+ | 0.1− | 2006 10 13 | 691 | 0.2+ | 0.3+ |
| 2001 09 12 | 704 | 0.1+ | 0.8+ | 2001 09 26 | 735 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 0.1+ | 0.3+ | 2001 09 26 | 735 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.5− | 0.5+ |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2001 09 26 | 699 | 1.1− | 1.4+ | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2001 09 26 | 699 | (2.7− | 1.4+) | 2006 10 21 | 691 | 0.6− | 0.3+ |
| 2001 09 12 | 704 | 0.1+ | 0.2− | 2001 09 26 | 699 | 0.8− | 0.7+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2001 09 26 | 699 | (1.6− | 0.6+) | 2006 10 21 | 691 | 0.6− | 0.4+ |
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2001 10 11 | 704 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.7− |
| 2001 09 12 | 704 | 0.3+ | 0.5+ | 2001 10 11 | 704 | (1.4+ | 1.5+) | 2006 10 27 | 703 | 0.6+ | 0.4+ |
| 2001 09 13 | 735 | (6.2+ | 0.3−) | 2001 10 11 | 704 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.4− | 0.3+ |
| 2001 09 13 | 735 | 1.5+ | 0.4+ | 2001 10 11 | 704 | 0.8+ | 0.4− | 2006 10 27 | 703 | 0.4− | 1.2+ |
| 2001 09 13 | 735 | (1.9− | 0.8+) | 2001 10 17 | 644 | 1.0− | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.9− |
| 2001 09 19 | 699 | 0.0 | 0.3+ | 2001 10 17 | 644 | 0.6− | 0.4− | 2006 11 22 | 704 | (1.6+ | 0.9+) |
| 2001 09 19 | 735 | 0.7+ | 0.0 | 2001 10 17 | 644 | 0.5− | 0.7− | 2006 11 22 | 704 | 0.7+ | 0.4− |
| 2001 09 19 | 699 | 0.2+ | 0.8+ | 2001 10 18 | 644 | 0.9+ | 0.2− | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2001 09 19 | 735 | 0.1− | 0.1+ | 2001 10 18 | 644 | 0.8+ | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 09 19 | 699 | 0.0 | 0.5+ | 2001 10 18 | 644 | 0.9+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2001 09 19 | 735 | 0.6− | 0.2+ | 2001 10 20 | 704 | 0.8− | 0.9+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 09 19 | 699 | 0.3− | 0.2+ | 2001 10 20 | 704 | 0.3− | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2001 09 19 | 704 | 0.3− | 0.7− | 2001 10 20 | 704 | 0.3+ | 0.2− | | | | |
| 2001 09 19 | 704 | 0.7+ | 0.7+ | 2001 10 20 | 704 | 0.5− | 0.8+ | | | | |

**(138457)∗ 2000 JN$_{23}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.71671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22331721 | $\omega$ | 219.26505 | | −0.94984953 | +0.30923017 | |
| $a$ | 2.6906338 | $\Omega$ | 338.60899 | | −0.24508665 | −0.82853400 | |
| $e$ | 0.2317065 | $i$ | 7.32520 | | −0.19421225 | −0.46680630 | |
| $P$ | 4.41 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 14 | 704 | 1.0+ | 0.1+ | 2003 12 29 | 291 | 0.6− | 0.2+ | 2004 02 23 | 704 | 1.0+ | 0.3+ |
| 2000 03 14 | 704 | 1.3+ | 0.4− | 2004 01 05 | 703 | 0.4− | 0.5− | 2004 02 23 | 704 | 0.8+ | 0.7+ |
| 2000 03 14 | 704 | 1.3+ | 0.1+ | 2004 01 05 | 703 | 1.4− | 0.2+ | 2004 02 23 | 704 | 1.0+ | 0.2+ |
| 2000 04 06 | 704 | 0.1+ | 0.7− | 2004 01 05 | 703 | 0.1+ | 0.5− | 2004 02 23 | 704 | 0.8+ | 0.4+ |
| 2000 04 06 | 704 | 0.4− | 0.3− | 2004 01 05 | 703 | (0.4− | 1.6−) | 2004 02 29 | 691 | 0.2− | 0.1+ |
| 2000 04 06 | 704 | 0.5+ | 0.5− | 2004 01 13 | 699 | 0.8− | 0.5+ | 2004 02 29 | 691 | 0.1− | 0.2+ |
| 2000 04 06 | 704 | 1.1− | 1.6+ | 2004 01 13 | 699 | 0.5+ | 0.0 | 2004 02 29 | 691 | 0.2− | 0.0 |
| 2000 04 06 | 704 | 0.1+ | 1.1+ | 2004 01 13 | 699 | 0.6+ | 0.7+ | 2004 03 01 | 291 | 0.5− | 0.1− |
| 2000 04 28 | 704 | 0.3+ | 0.8+ | 2004 01 13 | 699 | 0.4+ | 0.3+ | 2004 03 01 | 291 | 0.4− | 0.0 |
| 2000 04 28 | 704 | 0.7− | 0.1− | 2004 01 18 | 644 | 0.3+ | 0.1+ | 2004 03 01 | 291 | 0.2− | 0.1− |
| 2000 04 28 | 704 | 0.0 | 0.1− | 2004 01 18 | 644 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.6+ | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 704 | 0.3+ | 1.0+ | 2004 01 18 | 644 | 0.1+ | 0.0 | 2004 03 27 | 704 | 0.2− | 0.3− | 2002 11 07 | 704 | 1.1− | 0.3− |
| 2000 04 28 | 704 | 0.4+ | 0.3− | 2004 01 30 | 704 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.8+ | 0.6− | 2002 11 07 | 704 | 0.9− | 1.2− |
| 2000 05 07 | 704 | 0.3+ | 0.3− | 2004 01 30 | 704 | 0.7+ | 0.1+ | 2004 04 12 | 703 | (0.3+ | 1.6−) | 2002 11 07 | 704 | 0.8− | 0.1+ |
| 2000 05 07 | 704 | 0.2+ | 0.5+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2004 04 12 | 703 | 0.5+ | 0.3− | 2002 11 07 | 704 | 0.9− | 0.3− |
| 2000 05 07 | 704 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.1+ | 0.3+ | 2004 04 12 | 699 | 0.7+ | 0.1+ | 2002 11 07 | 704 | 0.8− | 0.3− |
| 2000 05 07 | 704 | 0.8+ | 0.2+ | 2004 01 30 | 704 | 0.5+ | 0.9+ | 2004 04 12 | 703 | (1.9+ | 1.0−) | 2002 11 15 | 704 | 0.1− | 0.1− |
| 2000 05 07 | 704 | 1.1+ | 0.9+ | 2004 02 10 | 644 | 0.4+ | 0.2− | 2004 04 12 | 703 | 0.2+ | 0.5+ | 2002 11 15 | 704 | 0.5− | 0.0 |
| 2000 05 09 | 704 | 0.0 | 0.0 | 2004 02 10 | 644 | 0.4+ | 0.0 | 2004 04 12 | 699 | 1.3+ | 0.3+ | 2002 11 15 | 704 | 0.2− | 0.1− |
| 2000 05 09 | 704 | 0.0 | 0.2− | 2004 02 10 | 644 | 0.3+ | 0.0 | 2004 04 12 | 699 | 0.4+ | 0.8+ | 2002 11 15 | 704 | 0.4− | 0.3+ |
| 2000 05 09 | 704 | 0.1− | 0.3+ | 2004 02 10 | 644 | 0.4+ | 0.1− | 2004 04 12 | 699 | 0.1+ | 1.0− | 2002 11 15 | 704 | 0.4+ | 0.4+ |
| 2000 05 09 | 704 | 0.3+ | 0.1− | 2004 02 10 | 644 | 0.5+ | 0.2− | 2004 05 16 | 704 | 0.1− | 0.1− | 2002 12 07 | 704 | 0.4+ | 0.6+ |
| 2000 05 09 | 704 | 0.1− | 0.7+ | 2004 02 10 | 644 | 0.6+ | 0.0 | 2004 05 16 | 704 | 0.7+ | 0.1+ | 2002 12 07 | 704 | 0.1+ | 0.9+ |
| 2000 05 11 | 704 | 0.5− | 0.6+ | 2004 02 11 | 699 | 0.5+ | 0.1+ | 2004 05 16 | 704 | 1.1− | 0.9+ | 2002 12 07 | 704 | 1.1+ | 0.6+ |
| 2000 05 11 | 704 | 0.8+ | 0.3− | 2004 02 11 | 699 | 0.3+ | 0.4+ | 2005 07 10 | E12 | 0.0 | 0.6+ | 2002 12 07 | 704 | 0.3+ | 0.5+ |
| 2000 05 11 | 704 | 0.1− | 0.3+ | 2004 02 11 | 333 | 0.1+ | 0.1+ | 2005 07 10 | E12 | 0.0 | 0.3+ | 2002 12 12 | 644 | 0.3+ | 0.9− |
| 2000 05 11 | 704 | 0.4− | 1.0+ | 2004 02 11 | 333 | 0.1+ | 0.1+ | 2005 07 10 | E12 | 0.7− | 0.8+ | 2002 12 12 | 644 | 0.3+ | 0.0 |
| 2000 05 24 | 699 | 0.1+ | 0.1− | 2004 02 11 | 699 | 0.2− | 0.2− | 2005 07 10 | E12 | 0.1+ | 0.7− | 2002 12 12 | 644 | 0.2+ | 1.2− |
| 2000 05 24 | 699 | 0.1− | 0.2+ | 2004 02 11 | 333 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.7+ | 2002 12 12 | 644 | 0.6+ | 0.0 |
| 2000 05 24 | 699 | 0.5− | 0.1− | 2004 02 11 | 699 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.3− | 0.6+ | 2002 12 12 | 644 | 0.6+ | 1.1− |
| 2000 05 24 | 699 | 0.2− | 0.1+ | 2004 02 11 | 333 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.6+ | 2002 12 12 | 644 | 0.7+ | 0.2− |
| 2001 09 19 | 704 | 0.7− | 0.9+ | 2004 02 11 | 333 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.8+ | 2002 12 15 | 704 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2004 02 11 | 333 | 0.1− | 0.2− | 2006 10 17 | 703 | (1.7+ | 0.1−) | 2002 12 15 | 704 | 0.2+ | 0.4− |
| 2001 09 19 | 704 | 0.8− | 0.4− | 2004 02 16 | 704 | 0.9+ | 0.9+ | 2006 10 17 | 703 | 0.1+ | 1.1− | 2002 12 15 | 704 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2004 02 16 | 704 | 0.1+ | 1.0+ | 2006 10 17 | 703 | 0.9− | 0.7− | 2002 12 15 | 704 | 0.2− | 0.1− |
| 2001 09 19 | 645 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.4+ | 0.8+ | 2006 11 20 | G96 | 0.8− | 0.7− | 2003 01 13 | 704 | 0.1+ | 0.5− |
| 2001 09 19 | 645 | 0.2− | 0.2+ | 2004 02 16 | 704 | 0.5+ | 0.7+ | 2006 11 20 | G96 | 0.3+ | 0.4+ | 2003 01 13 | 704 | 0.9− | 1.1− |
| 2003 12 29 | 291 | 0.5− | 0.2+ | 2004 02 16 | 704 | 1.0+ | 0.6+ | 2006 11 20 | G96 | 1.0+ | 0.6+ | 2003 01 13 | 704 | 0.4+ | 0.1− |
| 2003 12 29 | 291 | 0.6− | 0.2+ | 2004 02 23 | 704 | 0.4+ | 0.6+ | 2006 11 20 | G96 | 0.0 | 0.6− | 2003 01 13 | 704 | 0.2+ | 0.0 |
| | | | | | | | | | | | | 2003 01 13 | 704 | 0.1+ | 0.1− |
| | | | | | | | | | | | | 2004 01 30 | 699 | 1.3− | 0.7− |
| | | | | | | | | | | | | 2004 01 30 | 699 | 0.1+ | 0.9− |
| | | | | | | | | | | | | 2004 01 30 | 699 | (1.8− | 0.8+) |

**(138458)∗ 2000 JS$_{24}$ = 2002 XR$_{87}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40107)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.95754 | | (2000.0) | | | |
| $n$ | 0.24326457 | $\omega$ | 85.69781 | | −0.29186428 | −0.95103020 |
| $a$ | 2.5414612 | $\Omega$ | 22.11110 | | +0.73470588 | −0.29104849 |
| $e$ | 0.1390169 | $i$ | 15.68630 | | +0.61239082 | −0.10407849 |
| $P$ | 4.05 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 704 | 1.5− | 0.1− | 2004 01 30 | 699 | (1.8+ | 0.7+) | 2004 04 21 | 704 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.5− | 0.1+ |
| 2000 04 28 | 704 | 0.6− | 0.9− | 2004 03 17 | 704 | 0.3+ | 0.3+ | 2004 04 21 | 704 | 0.0 | 1.3+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2000 04 28 | 704 | 0.3− | 0.8+ | 2004 03 17 | 704 | 0.3− | 0.8− | 2004 04 21 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.7+ |
| 2000 04 28 | 704 | 0.3− | 0.1− | 2004 03 17 | 704 | 0.1− | 0.4+ | 2004 04 21 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.7+ | 0.6− |
| 2000 04 28 | 704 | 0.4+ | 0.6+ | 2004 03 17 | 704 | 0.2+ | 1.3+ | 2004 04 21 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2000 05 07 | 704 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.6− | 0.4− | 2004 04 25 | 704 | 0.3− | 0.2+ | 2006 10 20 | 704 | 0.0 | 1.3+ |
| 2000 05 07 | 704 | 0.2+ | 0.2− | 2004 03 18 | 704 | 0.8− | 0.7+ | 2004 04 25 | 704 | 0.2− | 0.1− | 2006 10 20 | 704 | 0.3+ | 0.2− |
| 2000 05 07 | 704 | 1.1+ | 0.6− | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2004 04 25 | 704 | 0.4− | 0.3+ | 2006 10 20 | 704 | 1.0− | 0.2+ |
| 2000 05 09 | 704 | 0.4− | 0.7− | 2004 03 18 | 704 | 0.3− | 1.4− | 2004 04 25 | 704 | 0.1+ | 0.3− | 2006 10 20 | 704 | 1.1+ | 1.0− |
| 2000 05 09 | 704 | 0.7− | 0.2− | 2004 03 20 | 704 | 0.2− | 0.2− | 2004 04 25 | 704 | 0.4− | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.1− |
| 2000 05 09 | 704 | 0.7− | 0.4− | 2004 03 20 | 704 | 0.6− | 0.6+ | 2004 05 15 | 704 | 0.5− | 0.7− | 2006 11 02 | G96 | 0.3+ | 0.2− |
| 2000 05 09 | 704 | 0.6+ | 0.4− | 2004 03 20 | 704 | 0.7− | 1.0− | 2004 05 15 | 704 | 0.3− | 0.2− | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 2000 05 09 | 704 | 0.6+ | 0.7+ | 2004 03 20 | 704 | 0.3+ | 0.2− | 2004 05 15 | 704 | 0.2+ | 0.0 | 2006 11 02 | G96 | 0.1− | 0.1− |
| 2002 10 05 | 704 | (0.2+ | 2.1+) | 2004 03 20 | 704 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.6+ | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2002 10 05 | 704 | 0.6+ | 0.4+ | 2004 03 22 | 699 | 0.5+ | 0.3− | 2004 05 15 | 704 | 0.4− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 10 05 | 704 | 1.0+ | 0.1− | 2004 03 22 | 699 | 1.3+ | 1.1+ | 2005 08 07 | E12 | (1.2− | 2.0+) | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.4+ | 1.4+ | 2004 03 22 | 699 | 0.3− | 0.6− | 2005 08 07 | E12 | 0.9− | 0.7+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2002 10 12 | 704 | 1.3+ | 0.2+ | 2004 03 22 | 699 | 0.0 | 0.1− | 2005 08 07 | E12 | 0.7− | 1.3+ | 2006 11 15 | 704 | 0.7+ | 0.3+ |
| 2002 10 12 | 704 | 0.6+ | 0.2− | 2004 03 24 | 699 | 0.2+ | 0.2− | 2005 08 07 | E12 | 1.1+ | 1.0− | 2006 11 15 | 704 | 0.6− | 1.2+ |
| 2002 10 12 | 704 | (4.0+ | 1.5+) | 2004 03 24 | 699 | 0.5+ | 0.9+ | 2006 08 28 | 703 | (1.6+ | 1.6−) | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 2002 10 31 | 704 | 0.7− | 0.7+ | 2004 03 24 | 699 | 0.4− | 0.4+ | 2006 08 28 | 703 | (2.1+ | 1.4−) | 2006 11 15 | 704 | 0.5+ | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.8+ | 2004 03 24 | 699 | 0.4+ | 0.4− | 2006 08 28 | 703 | 0.0 | 1.3+ | 2006 11 15 | 704 | 0.9+ | 0.1− |
| 2002 10 31 | 704 | 0.3− | 1.4+ | 2004 03 25 | 699 | 0.6+ | 0.4− | 2006 08 28 | 703 | 0.4+ | 0.2+ | 2006 11 15 | 704 | 0.9+ | 0.5+ |
| 2002 10 31 | 704 | 0.2− | 0.9+ | 2004 03 25 | 699 | 0.0 | 0.7− | 2006 09 29 | 704 | 0.4+ | 0.1+ | 2006 11 21 | 703 | 0.2+ | 0.2− |
| 2002 10 31 | 704 | 0.8− | 1.2+ | 2004 03 25 | 699 | 1.1− | 1.0− | 2006 09 29 | 704 | 0.8− | 0.2+ | 2006 11 21 | 703 | 0.3− | 0.3− |
| | | | | | | | | | | | | 2006 11 21 | 703 | 0.1− | 0.1− |
| | | | | | | | | | | | | 2006 11 21 | 703 | 0.2+ | 0.1+ |
| | | | | | | | | | | | | 2006 11 29 | 704 | 1.0− | 2.2+ |
| | | | | | | | | | | | | 2006 11 29 | 704 | 1.4− | 0.1+ |
| | | | | | | | | | | | | 2006 11 29 | 704 | 1.9− | 0.5+ |
| | | | | | | | | | | | | 2006 11 29 | 704 | 1.4− | 1.2− |
| | | | | | | | | | | | | 2006 11 29 | 704 | 0.5− | 0.6+ |

**(138459)∗ 2000 JQ$_{31}$ = 2001 RX$_{135}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17373)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 102.45088 | | (2000.0) | | | |
| $n$ | 0.21225075 | $\omega$ | 232.75403 | | +0.03381801 | +0.99753855 |
| $a$ | 2.7833633 | $\Omega$ | 39.32016 | | −0.88352399 | +0.05856856 |
| $e$ | 0.1318689 | $i$ | 5.56298 | | −0.46716347 | −0.03855600 |
| $P$ | 4.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.2+ | 1.0− | 2001 10 20 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2002 10 24 | 704 | 0.3+ | 0.5+ |
| 2000 04 29 | 704 | 0.7− | 0.4− | 2001 10 20 | 704 | 0.7− | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2002 10 24 | 704 | 0.3− | 1.1+ |
| 2000 04 29 | 704 | 0.1+ | 1.0+ | 2001 10 20 | 704 | 0.1− | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2002 10 24 | 704 | 0.2+ | 0.7+ |
| 2000 04 29 | 704 | 0.5− | 0.7− | 2001 10 20 | 704 | 0.1− | 1.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2002 10 24 | 704 | 0.2+ | 0.8+ |
| 2000 04 29 | 704 | 0.9− | 0.2+ | 2001 10 20 | 704 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2002 10 24 | 704 | 0.3− | 0.2+ |
| 2000 05 07 | 704 | 0.5− | 0.9+ | 2001 10 20 | 704 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.3+ | 2002 10 24 | 704 | 0.4− | 0.5+ |
| 2000 05 07 | 704 | 0.3− | 0.1+ | 2001 10 20 | 704 | 0.5+ | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2002 10 24 | 704 | 0.4+ | 0.8+ |
| 2000 05 07 | 704 | 0.3+ | 0.4− | 2001 10 20 | 704 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2002 10 24 | 704 | 0.7+ | 1.0+ |
| 2000 05 07 | 704 | 0.4+ | 0.8+ | 2001 10 24 | 704 | 0.7+ | 1.0+ | 2006 10 27 | G96 | 0.1− | 0.0 | 2002 10 24 | 704 | 0.3+ | 0.5+ |
| 2000 05 07 | 704 | 0.2+ | 0.7+ | 2001 10 24 | 704 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2002 10 24 | 704 | 0.2+ | 0.7+ |
| 2000 05 07 | 704 | 0.4+ | 0.6+ | 2001 10 24 | 704 | 0.3− | 1.1+ | 2006 10 28 | G96 | 0.0 | 0.8− | 2002 10 24 | 704 | 0.1+ | 0.4− |
| 2000 05 07 | 704 | 0.3− | 0.2+ | 2001 10 24 | 704 | 0.2+ | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2002 10 24 | 704 | 0.1+ | 0.6− |
| 2000 05 07 | 704 | 0.4+ | 0.1+ | 2001 10 24 | 704 | 0.2+ | 0.8+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2002 10 24 | 704 | 0.1+ | 0.5− |
| 2000 05 07 | 704 | 0.4+ | 0.1+ | 2004 02 17 | 704 | 0.3− | 0.9+ | 2006 10 29 | G96 | 0.1+ | 0.6− | 2002 10 24 | 704 | 0.1+ | 0.7− |
| 2000 05 09 | 704 | 0.3− | 0.5+ | 2004 02 17 | 704 | 0.4+ | 1.0+ | 2006 10 29 | G96 | 0.1+ | 0.5− | 2002 10 24 | 704 | 0.1+ | 0.8− |
| 2000 05 09 | 704 | 0.4+ | 0.1− | 2004 02 17 | 704 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.5− | 2002 10 24 | 704 | 0.1+ | 0.9− |
| 2000 05 09 | 704 | 0.2− | 0.5+ | 2004 02 17 | 704 | 1.0− | 1.1+ | 2006 10 29 | 691 | 0.0 | 0.1− | 2002 10 24 | 704 | 0.1+ | 1.0− |
| 2000 05 09 | 704 | 0.1− | 0.3+ | 2004 02 17 | 704 | 0.3− | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.5− | 2002 10 24 | 704 | 0.1+ | 1.1− |
| 2000 05 09 | 704 | 0.9− | 0.4+ | 2004 03 10 | 644 | 0.7+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.1− | 2002 10 24 | 704 | 0.1+ | 1.2− |
| 2000 05 10 | 704 | 0.0 | 0.7+ | 2004 03 10 | 644 | 1.1+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.2− | 2002 10 24 | 704 | 0.1+ | 1.3− |
| 2000 05 10 | 704 | 0.3+ | 0.2+ | 2004 03 10 | 644 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2002 10 24 | 704 | 0.1+ | 1.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 704 | 0.1+ | 0.6+ | 2004 03 15 | 704 | 1.4+ | 1.1+ | 2006 11 09 | 691 | 0.1− | 0.3+ | | |
| 2000 05 10 | 704 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.6+ | 0.9+ | 2006 11 09 | 691 | 0.2+ | 0.2+ | | |
| 2000 05 10 | 704 | 0.2+ | 0.9+ | 2004 03 15 | 704 | 1.0+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 2000 05 11 | 704 | 0.9+ | 0.1+ | 2004 03 19 | 644 | 0.1− | 0.5+ | 2006 11 09 | 691 | 0.0 | 0.1+ | | |
| 2000 05 11 | 704 | 0.4− | 1.0− | 2004 03 19 | 644 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.4− | 0.0 | | |
| 2000 05 11 | 704 | 0.4+ | 0.1− | 2004 03 19 | 644 | 0.3+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.4− | | |
| 2000 05 11 | 704 | 0.3+ | 0.8− | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.3− | | |
| 2001 09 11 | 699 | 0.8− | 1.0+ | 2004 03 20 | 704 | 1.2+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.3+ | | |
| 2001 09 11 | 699 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.0 | | |
| 2001 09 11 | 699 | 0.9− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 11 11 | 691 | 1.2− | 0.8+ | | |
| 2001 09 11 | 699 | 0.0 | 0.4− | 2005 05 20 | 644 | 0.2+ | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.2− | | |
| 2001 09 12 | 704 | 0.3− | 0.8+ | 2005 05 20 | 644 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.3− | | |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2005 05 20 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.5− | 0.6+ | | |
| 2001 09 12 | 704 | 0.4+ | 1.4+ | 2006 09 25 | G96 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.2+ | 1.1− | | |
| 2001 09 18 | 699 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 2001 09 18 | 699 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.5− | 0.3− | 2006 11 13 | 691 | 0.2− | 0.4+ | | |
| 2001 09 18 | 699 | 0.6− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 13 | 691 | 0.0 | 0.2+ | | |
| 2001 09 18 | 699 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.2− | 1.1− | 2006 11 17 | 703 | 1.0− | 1.3− | | |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 11 17 | 703 | 0.1− | 0.5− | | |
| 2001 09 19 | 704 | 0.1+ | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.7− | 0.3− | | |
| 2001 09 19 | 704 | (1.5− | 1.4−) | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3+ | 1.0− | | |
| 2001 09 19 | 704 | 0.1− | 0.8− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | (0.1− | 1.7+) | | |
| 2001 09 19 | 704 | 0.8− | 1.0− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | (0.1+ | 1.5+) | | |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.3− | 0.3+ | | |
| 2001 09 21 | 704 | 0.9− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.1+ | | |
| 2001 09 21 | 704 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.2− | 0.2+ | | |
| 2001 09 25 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.4+ | 0.1− | | |
| 2001 09 25 | 644 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.2+ | | |
| 2001 09 25 | 644 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.5+ | 0.1+ | | |
| 2001 10 20 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | | | | | |

**(138460)∗ 2000 JP$_{33}$ = 2004 EQ$_{57}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60686)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 182.05780 | | (2000.0) | | | |
| $n$ | 0.22810203 | $\omega$ | 339.69658 | | −0.78319814 | +0.59209130 |
| $a$ | 2.6528739 | $\Omega$ | 238.05629 | | −0.53512845 | −0.79732812 |
| $e$ | 0.1935027 | $i$ | 12.92556 | | −0.31660420 | −0.11702891 |
| $P$ | 4.32 | $H$ | 15.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.2− | 0.4+ | 2000 05 29 | 704 | 0.1− | 0.2+ | 2005 08 29 | 644 | 0.0 | 0.3+ | | |
| 2000 05 07 | 704 | 0.2+ | 0.6+ | 2000 05 29 | 704 | 0.4+ | 0.7+ | 2006 10 13 | 691 | 0.2+ | 0.2+ | | |
| 2000 05 07 | 704 | 0.4+ | 0.4+ | 2004 03 04 | E12 | 0.5− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | | |
| 2000 05 07 | 704 | 0.6− | 1.0+ | 2004 03 04 | E12 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.0 | 0.1+ | | |
| 2000 05 07 | 704 | 0.5− | 0.2+ | 2004 03 04 | E12 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.5− | 0.2+ | | |
| 2000 05 07 | 704 | 0.1+ | 0.4− | 2004 03 04 | E12 | 1.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.3− | | |
| 2000 05 07 | 704 | 0.2− | 0.3+ | 2004 03 15 | 644 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.3− | 0.5+ | | |
| 2000 05 07 | 704 | 0.1+ | 0.0 | 2004 03 15 | 644 | 0.1+ | 0.6− | 2006 10 21 | 691 | 0.1− | 0.2+ | | |
| 2000 05 07 | 704 | 0.2− | 1.1− | 2004 03 15 | 644 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.3+ | | |
| 2000 05 07 | 704 | 1.1− | 0.0 | 2004 03 17 | 704 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.1− | | |
| 2000 05 09 | 704 | 0.4+ | 0.3− | 2004 03 17 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.8+ | 1.0− | | |
| 2000 05 09 | 704 | 0.1+ | 0.5− | 2004 03 17 | 704 | 0.2− | 0.2− | 2006 10 27 | 703 | 1.4+ | 1.0− | | |
| 2000 05 09 | 704 | 0.7+ | 1.7− | 2004 03 17 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | (0.9− | 1.5+) | | |
| 2000 05 09 | 704 | 0.1+ | 0.3− | 2004 03 17 | 704 | 0.4+ | 0.2+ | 2006 10 27 | 703 | (0.3+ | 2.1+) | | |
| 2000 05 10 | 704 | 0.3+ | 0.2− | 2004 03 26 | 704 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.5− | | |
| 2000 05 10 | 704 | 0.3+ | 0.2− | 2004 03 26 | 704 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3− | 0.2− | | |
| 2000 05 10 | 704 | 0.3− | 0.1− | 2004 03 26 | 704 | 0.6+ | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 2000 05 10 | 704 | 0.5+ | 0.2− | 2004 03 31 | 704 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.1− | | |
| 2000 05 10 | 704 | 0.4+ | 0.1+ | 2004 03 31 | 704 | 0.2+ | 0.9+ | 2006 11 14 | G96 | 0.0 | 0.0 | | |
| 2000 05 28 | 704 | 0.3− | 0.0 | 2004 03 31 | 704 | 1.2+ | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.2+ | | |
| 2000 05 28 | 704 | 0.2− | 0.2+ | 2004 03 31 | 704 | 0.6+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2000 05 28 | 704 | 0.2− | 0.1− | 2004 03 31 | 704 | 1.1− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.3− | | |
| 2000 05 28 | 704 | 0.1− | 1.9+ | 2004 04 16 | 644 | 0.5+ | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.9+ | | |
| 2000 05 28 | 704 | 0.0 | 0.3+ | 2004 04 16 | 644 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.3+ | | |
| 2000 05 29 | 704 | 0.1− | 0.2+ | 2004 04 16 | 644 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 2000 05 29 | 704 | 0.1+ | 0.1− | 2005 08 29 | 644 | 0.3− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.3+ | | |
| 2000 05 29 | 704 | 0.0 | 0.0 | 2005 08 29 | 644 | 0.0 | 0.5+ | | | | | | |

**(138461)∗ 2000 JA$_{35}$ = 1997 WS$_{12}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 1342)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.40752 | | (2000.0) | | | |
| $n$ | 0.21772446 | $\omega$ | 62.94708 | | +0.37091111 | +0.91818912 |
| $a$ | 2.7365154 | $\Omega$ | 229.53135 | | −0.90361389 | +0.32226977 |
| $e$ | 0.0561152 | $i$ | 10.53675 | | −0.21425892 | +0.23037128 |
| $P$ | 4.53 | $H$ | 15.9 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 06 04 | 691 | 0.1− | 0.6− | 2000 05 11 | 699 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.0 | | |
| 1991 06 04 | 691 | 0.2− | 0.0 | 2000 05 11 | 699 | 0.9+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 1991 06 04 | 691 | 0.0 | 0.1− | 2000 05 11 | 699 | 1.0+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 1997 11 06 | 704 | 0.7− | 1.2+ | 2000 05 28 | 704 | 0.2+ | 0.8− | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 1997 11 06 | 704 | (4.6− | 0.4+) | 2000 05 28 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.3− | | |
| 1997 11 06 | 704 | 1.2− | 1.3− | 2000 05 28 | 704 | 1.0+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.4− | | |
| 1997 11 06 | 704 | (6.5− | 0.5−) | 2000 05 28 | 704 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.2− | | |
| 1997 11 23 | 691 | 0.1+ | 0.4− | 2000 05 29 | 704 | 0.4+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.1+ | | |
| 1997 11 23 | 691 | 0.1+ | 0.5− | 2000 05 29 | 704 | 0.9+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 1997 11 23 | 691 | 0.2+ | 0.4− | 2000 05 29 | 704 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | | |
| 1997 11 28 | 691 | 0.3+ | 0.0 | 2000 05 29 | 704 | 0.4− | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 1997 11 28 | 691 | 0.2− | 0.5− | 2001 09 12 | 704 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 1997 11 28 | 691 | 0.2+ | 0.1+ | 2001 09 12 | 704 | (0.4− | 2.1−) | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 1997 12 04 | 691 | 0.1− | 0.5− | 2001 09 12 | 704 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 1997 12 04 | 691 | 0.3+ | 0.1+ | 2001 09 12 | 704 | 0.4− | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 1997 12 04 | 691 | 0.2+ | 0.2− | 2001 09 12 | 704 | 0.6− | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2000 04 29 | 704 | 0.2− | 0.2+ | 2001 09 16 | 704 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.4+ | | |
| 2000 04 29 | 704 | 0.7− | 0.7− | 2001 09 16 | 704 | 0.7+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.6+ | 2001 09 16 | 704 | 0.8+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.4+ | | |
| 2000 04 29 | 704 | 0.3− | 0.2− | 2001 09 16 | 704 | 0.3− | 0.9− | 2006 11 15 | 691 | 0.1− | 0.0 | | |
| 2000 04 29 | 704 | 0.6− | 0.4+ | 2001 09 16 | 704 | 0.1− | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.0 | | |
| 2000 05 07 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.1+ | | |
| 2000 05 07 | 704 | 0.0 | 0.3− | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.3+ | | |
| 2000 05 07 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2000 05 07 | 704 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.3− | 2006 11 17 | 691 | 0.0 | 0.2+ | | |
| 2000 05 07 | 704 | 0.6− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2000 05 09 | 704 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2000 05 09 | 704 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1+ | | |
| 2000 05 09 | 704 | 0.7+ | 0.2− | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2000 05 09 | 704 | 0.5+ | 0.9+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2000 05 09 | 704 | 1.6− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2000 05 11 | 699 | 0.2− | 1.3+ | 2006 10 19 | 691 | 0.1+ | 0.1− | | | | | | |

**(138462)∗ 2000 JO$_{41}$ = 1995 DG$_{5}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 2526)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.20814 | | (2000.0) | | | |
| $n$ | 0.22483885 | $\omega$ | 40.89778 | | −0.71630160 | +0.69778668 |
| $a$ | 2.6784804 | $\Omega$ | 183.35489 | | −0.65041677 | −0.66891256 |
| $e$ | 0.0611402 | $i$ | 2.35039 | | −0.25272522 | −0.25622205 |
| $P$ | 4.38 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 22 | 691 | 0.4+ | 0.4− | 2004 02 26 | 704 | 0.3+ | 0.5− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 1995 02 22 | 691 | 0.8+ | 1.1+ | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 1995 02 22 | 691 | 0.3− | 0.7− | 2004 03 12 | 644 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 1995 03 01 | 691 | 0.5− | 0.4− | 2004 03 12 | 644 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.4+ |
| 1995 03 01 | 691 | 0.2− | 0.4− | 2004 03 15 | 143 | 0.5− | 1.2+ | 2006 10 02 | 691 | 0.3− | 0.4+ |
| 1995 03 01 | 691 | 0.1− | 0.5− | 2004 03 15 | 143 | 0.6− | 1.4+ | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 1995 03 07 | 691 | 0.1− | 0.2+ | 2004 03 15 | 143 | 0.0 | 0.7− | 2006 10 02 | 691 | 0.1− | 0.6+ |
| 1995 03 07 | 691 | 1.0− | 0.2+ | 2004 03 15 | 143 | 0.9− | 1.4+ | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 1995 03 07 | 691 | 0.2− | 0.1+ | 2004 03 15 | 143 | 1.0+ | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.3− |
| 2000 04 06 | 704 | 0.0 | 0.5+ | 2004 03 15 | 143 | (2.2− | 0.4−) | 2006 10 11 | 691 | 0.4− | 0.2− |
| 2000 04 06 | 704 | 0.4+ | 0.3− | 2004 03 15 | 143 | 0.2− | 1.1− | 2006 10 15 | 691 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 0.3+ | 0.3+ | 2004 03 16 | 599 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.5+ |
| 2000 04 29 | 704 | 0.4+ | 0.2+ | 2004 03 16 | 599 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ |
| 2000 04 29 | 704 | 0.5− | 0.6+ | 2004 03 16 | 599 | 0.5− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2000 04 29 | 704 | 1.4+ | 0.6− | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2000 04 29 | 704 | 1.7+ | 0.5− | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2000 05 07 | 704 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.6− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2000 05 07 | 704 | 0.0 | 0.9+ | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2000 05 07 | 704 | 1.3− | 0.6+ | 2004 03 18 | 704 | 0.2− | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2000 05 07 | 704 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.9+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2000 05 10 | 704 | 0.3− | 0.6+ | 2004 03 23 | 704 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2000 05 10 | 704 | 1.4+ | 0.7+ | 2004 03 23 | 704 | 0.6+ | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2000 05 10 | 704 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.7+ | 1.4+ | 2006 11 01 | 691 | 0.4− | 0.6+ |
| 2000 05 10 | 704 | 1.1+ | 1.0+ | 2004 03 23 | 704 | (1.0− | 1.6+) | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2002 11 07 | 695 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.7+ | 1.0+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 11 07 | 695 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2003 01 03 | 291 | 1.1+ | 0.6− | 2004 03 23 | 704 | 0.0 | 1.1+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2003 01 03 | 291 | 0.1+ | 0.6− | 2004 03 23 | 704 | 0.7+ | 1.3+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2003 01 03 | 291 | 1.3+ | 0.2+ | 2004 03 23 | 704 | 0.5+ | 1.3+ | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2004 02 26 | 704 | 0.7+ | 0.2+ | 2004 03 23 | 704 | 0.7+ | 0.4− | 2006 11 21 | 691 | 0.1− | 0.6− |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.3− | 0.3+ |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.3+ | 2006 11 21 | 691 | 0.8− | 0.4− |
| 2004 02 26 | 704 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.6− | 0.1− | | | | |

**(138463)∗ 2000 JV$_{41}$ = 2004 GV$_{20}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60687)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.25391 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23101088 | $\omega$ | 6.22701 | | −0.76865542 | +0.62749262 | |
| $a$ | 2.6305572 | $\Omega$ | 213.67634 | | −0.59611892 | −0.77310584 | |
| $e$ | 0.1186578 | $i$ | 12.94159 | | −0.23197213 | −0.09252227 | |
| $P$ | 4.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.2− | 0.7+ | 2000 05 22 | 699 | 0.1+ | 0.5+ | 2004 04 16 | 704 | 0.2+ | 0.7− |
| 2000 04 06 | 704 | 0.7− | 0.9+ | 2000 05 22 | 699 | 0.1+ | 0.9+ | 2004 04 16 | 704 | 0.2+ | 0.2− |
| 2000 04 06 | 704 | 1.5− | 0.6− | 2000 06 01 | 608 | 1.2− | 0.2+ | 2004 04 16 | 704 | 1.3− | 0.4+ |
| 2000 04 29 | 704 | 0.5− | 0.2+ | 2000 06 01 | 608 | 0.8− | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2000 04 29 | 704 | 0.1+ | 0.6+ | 2000 06 01 | 608 | 1.0− | 0.4− | 2006 09 30 | G96 | 0.5− | 0.0 |
| 2000 04 29 | 704 | 0.5+ | 0.4+ | 2001 09 12 | 704 | 0.9+ | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.4+ |
| 2000 04 29 | 704 | 0.1− | 0.2+ | 2001 09 12 | 704 | 0.7+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2000 05 01 | 699 | 0.6− | 0.3+ | 2001 09 12 | 704 | 0.3− | 1.0+ | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 2000 05 01 | 699 | 0.1+ | 0.3+ | 2001 09 12 | 704 | 0.6+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2000 05 01 | 699 | 0.4− | 0.7+ | 2001 11 18 | 645 | 0.1− | 0.0 | 2006 10 17 | G96 | 1.0− | 0.2+ |
| 2000 05 01 | 699 | 0.9− | 0.1+ | 2001 11 18 | 645 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2000 05 07 | 704 | 0.3+ | 0.2− | 2004 03 17 | 704 | 0.4+ | 1.3+ | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2000 05 07 | 704 | 0.2+ | 0.3+ | 2004 03 17 | 704 | 1.2+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2000 05 07 | 704 | 1.2+ | 0.8− | 2004 03 17 | 704 | 1.4+ | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.5+ |
| 2000 05 07 | 704 | 0.6− | 0.0 | 2004 03 17 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2000 05 07 | 704 | 0.2+ | 0.8− | 2004 03 27 | 703 | 1.2− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2000 05 10 | 704 | 1.5+ | 0.7+ | 2004 03 27 | 703 | 1.3− | 0.5− | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 2000 05 10 | 704 | 0.1+ | 0.1− | 2004 03 27 | 703 | (2.2− | 0.2−) | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2000 05 10 | 704 | 1.3+ | 0.6+ | 2004 03 27 | 703 | 0.7+ | 1.2+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2000 05 10 | 704 | 1.9+ | 0.8− | 2004 04 11 | 644 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2000 05 22 | 699 | 0.6+ | 0.2+ | 2004 04 11 | 644 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2000 05 22 | 699 | 0.2+ | 0.6+ | 2004 04 11 | 644 | 0.2− | 0.1− | | | | |

**(138464)∗ 2000 JJ$_{42}$ = 2005 JC$_{70}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74783)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.79487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19947617 | $\omega$ | 265.84012 | | +0.61555542 | +0.77952557 | |
| $a$ | 2.9009619 | $\Omega$ | 42.87670 | | −0.63849034 | +0.57948651 | |
| $e$ | 0.3219087 | $i$ | 9.80679 | | −0.46197576 | +0.23777146 | |
| $P$ | 4.94 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.2+ | 0.2+ | 2004 02 18 | 291 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2000 04 10 | 695 | 0.2+ | 0.6+ | 2004 02 18 | 291 | 0.1+ | 0.3− | 2006 10 13 | 691 | 0.2− | 0.1+ |
| 2000 04 26 | 691 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.1+ | 0.1− | 2006 10 13 | 691 | 0.0 | 0.1+ |
| 2000 04 26 | 691 | 0.0 | 0.2+ | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 10 13 | 691 | 0.4− | 0.3+ |
| 2000 04 26 | 691 | 0.2+ | 0.1− | 2005 04 11 | G96 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.6+ |
| 2000 04 29 | 704 | 0.8− | 1.0+ | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 0.5+ | 1.5+ | 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.4− | 0.2+ |
| 2000 04 29 | 704 | 0.1+ | 0.9+ | 2005 05 07 | 691 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.6− | 0.1+ |
| 2000 04 29 | 704 | 1.5+ | 0.9+ | 2005 05 07 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.6+ |
| 2000 05 01 | 691 | 0.2+ | 0.1+ | 2005 05 11 | 691 | 0.5+ | 0.5− | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2000 05 01 | 691 | 0.0 | 0.2+ | 2005 05 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2000 05 01 | 691 | 0.2− | 0.3+ | 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2000 05 07 | 704 | 0.5− | 1.4+ | 2005 05 12 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2000 05 07 | 704 | 0.1− | 0.2+ | 2005 05 12 | 644 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2000 05 07 | 704 | 0.0 | 0.6+ | 2005 05 12 | 644 | 0.4+ | 0.2− | 2006 11 09 | 691 | 0.3− | 0.2+ |
| 2000 05 10 | 704 | 0.5+ | 0.1+ | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2000 05 10 | 704 | 0.1+ | 0.3+ | 2005 05 19 | 644 | 0.5− | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.5+ |
| 2000 05 10 | 704 | 0.3+ | 1.4+ | 2005 05 19 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2000 05 13 | 691 | 0.4− | 0.2− | 2005 06 03 | 703 | (1.1− | 1.6+) | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2000 05 13 | 691 | 0.4− | 0.1+ | 2005 06 03 | 703 | 0.9− | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2000 05 13 | 691 | 0.1− | 0.6− | 2005 06 03 | 703 | 0.5− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2001 10 23 | 291 | 0.4+ | 0.1− | 2005 06 03 | 703 | 0.2− | 1.3+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 10 23 | 291 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 291 | 0.8+ | 0.0 | 2006 09 25 | G96 | 0.4− | 0.4− | | | | |
| 2004 02 18 | 291 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.5− | 0.6− | | | | |

**(138465)∗ 2000 JV$_{42}$ = 2004 GA$_{33}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60687)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.62181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23937305 | $\omega$ | 355.23045 | | −0.85079567 | +0.51872594 | |
| $a$ | 2.5689316 | $\Omega$ | 216.41693 | | −0.47732807 | −0.82977393 | |
| $e$ | 0.1032047 | $i$ | 8.14261 | | −0.21978317 | −0.20590926 | |
| $P$ | 4.12 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.4+ | 0.1− | 2004 03 20 | 699 | 1.4+ | 0.2+ | 2004 05 15 | 704 | 0.4− | 0.0 |
| 2000 04 29 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 699 | 0.2− | 1.0+ | 2004 05 15 | 691 | 0.3− | 0.3+ |
| 2000 04 29 | 704 | 0.6− | 0.4+ | 2004 03 20 | 699 | 1.1− | 0.5− | 2004 05 15 | 704 | 0.7− | 0.2+ |
| 2000 04 29 | 704 | 0.6− | 0.8+ | 2004 03 20 | 699 | 0.0 | 0.0 | 2004 05 23 | 691 | 0.1+ | 0.3− |
| 2000 04 29 | 704 | 0.3− | 0.6− | 2004 03 27 | 704 | 0.0 | 0.8− | 2004 05 23 | 691 | 0.1+ | 0.1− |
| 2000 05 06 | 704 | (0.4+ | 3.5+) | 2004 03 27 | 704 | 0.3+ | 0.8− | 2004 05 23 | 691 | 0.2+ | 0.4− |
| 2000 05 06 | 704 | 0.5+ | 0.9+ | 2004 03 27 | 704 | 0.0 | 0.8− | 2005 08 26 | 644 | 0.0 | 0.1− |
| 2000 05 06 | 704 | 0.3+ | 0.7+ | 2004 03 27 | 704 | 1.3+ | 1.1− | 2005 08 26 | 644 | 0.2− | 0.2− |
| 2000 05 07 | 704 | 0.4+ | 0.1+ | 2004 04 12 | 699 | 0.4− | 0.9+ | 2005 08 26 | 644 | 0.2− | 0.1− |
| 2000 05 07 | 704 | 0.0 | 0.2− | 2004 04 12 | 699 | 0.5− | 0.0 | 2005 08 26 | 644 | 0.2+ | 0.1− |
| 2000 05 07 | 704 | 0.2− | 0.4+ | 2004 04 12 | 699 | (1.7− | 1.0−) | 2005 08 26 | 644 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.1+ | 0.4− | 2004 04 12 | 699 | 0.6− | 0.4− | 2005 08 26 | 644 | 0.2+ | 0.1− | | |
| 2000 05 07 | 704 | 0.6− | 0.4+ | 2004 04 17 | 704 | 0.6+ | 0.5+ | 2005 08 30 | 644 | 0.0 | 0.2+ | | |
| 2000 05 10 | 704 | 0.3+ | 0.2+ | 2004 04 17 | 704 | 0.9+ | 0.9+ | 2005 08 30 | 644 | 0.4+ | 0.3+ | | |
| 2000 05 10 | 704 | 0.6+ | 0.2+ | 2004 04 17 | 704 | 0.6+ | 0.9− | 2005 08 30 | 644 | 0.2− | 0.1+ | | |
| 2000 05 10 | 704 | 0.3− | 0.4− | 2004 04 20 | 704 | 0.5+ | 0.2+ | 2005 09 07 | A50 | 0.0 | 0.5+ | | |
| 2000 05 10 | 704 | 0.4− | 0.8+ | 2004 04 20 | 704 | 0.3+ | 0.3− | 2005 09 07 | A50 | 0.3− | 0.4+ | | |
| 2000 05 11 | 699 | 0.1+ | 1.2+ | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.4+ | | |
| 2000 05 11 | 699 | 0.4+ | 0.2+ | 2004 04 20 | 704 | 0.5− | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.1+ | | |
| 2000 05 11 | 699 | 0.0 | 0.7+ | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2000 05 11 | 699 | 0.1− | 1.2+ | 2004 04 21 | 291 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2000 05 27 | 704 | 0.7+ | 0.1+ | 2004 04 21 | 291 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.2− | 2.1+ | | |
| 2000 05 27 | 704 | 0.2+ | 0.7+ | 2004 04 21 | 291 | 0.0 | 0.4+ | 2006 11 25 | 703 | 1.0+ | 0.8+ | | |
| 2000 05 27 | 704 | 0.1− | 0.2+ | 2004 05 11 | 699 | 0.6− | 0.1+ | 2006 11 25 | 703 | 0.2+ | 1.0+ | | |
| 2001 09 16 | 704 | 0.9− | 0.2+ | 2004 05 11 | 699 | 0.9+ | 0.8− | 2006 11 25 | G96 | 0.2+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.0 | 0.8+ | 2004 05 11 | 699 | 0.3− | 0.8+ | 2006 11 25 | 703 | 0.8− | 1.3+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.4+ | 2004 05 11 | 699 | 0.7− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.2+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.5+ | 2004 05 15 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.2+ | 1.3+ | 2004 05 15 | 691 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.2+ | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.6− | 0.6− | | | | | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2004 05 15 | 704 | 1.2− | 0.0 | | | | | | |

**(138466)∗ 2000 JO$_{43}$ = 2000 KV$_9$ = 2002 UJ$_{19}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 2807), G. V. Williams (*MPO* 37519)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.85851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21749158 | $\omega$ | 274.99156 | | −0.74871915 | −0.66103551 | |
| $a$ | 2.7384685 | $\Omega$ | 223.64136 | | +0.63307216 | −0.69089620 | |
| $e$ | 0.0722097 | $i$ | 4.11425 | | +0.19656875 | −0.29273622 | |
| $P$ | 4.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 06 | 691 | 0.4− | 0.2+ | 2002 11 25 | 291 | 0.0 | 0.1+ | 2004 03 20 | 699 | 0.6− | 0.1+ | | |
| 2000 05 06 | 691 | 0.5− | 0.4+ | 2002 11 27 | 699 | 0.5− | 1.4− | 2004 03 20 | 699 | 0.4− | 0.8+ | | |
| 2000 05 06 | 691 | 0.5− | 0.4+ | 2002 11 27 | 699 | 0.4+ | 0.3+ | 2004 03 27 | 704 | 0.6+ | 0.1+ | | |
| 2000 05 07 | 704 | 1.1+ | 0.3+ | 2002 11 27 | 699 | 0.9− | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.2− | | |
| 2000 05 07 | 704 | 0.1+ | 1.4+ | 2002 11 27 | 699 | 0.6+ | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.3+ | | |
| 2000 05 07 | 704 | 0.2− | 1.3+ | 2002 12 05 | 704 | 0.1− | 0.9+ | 2004 03 27 | 704 | 1.1+ | 0.8+ | | |
| 2000 05 07 | 704 | 0.5+ | 0.8+ | 2002 12 05 | 704 | 0.6+ | 0.1− | 2004 03 27 | 704 | 0.0 | 0.8+ | | |
| 2000 05 10 | 704 | (0.3− | 2.0+) | 2002 12 05 | 704 | 0.1+ | 0.5+ | 2006 08 21 | 691 | 0.3− | 0.3+ | | |
| 2000 05 10 | 704 | 0.0 | 0.6+ | 2002 12 05 | 704 | (0.8+ | 1.8+) | 2006 08 21 | 691 | 0.4− | 0.5+ | | |
| 2000 05 10 | 704 | 0.5+ | 1.0+ | 2002 12 10 | 704 | 0.0 | 0.4+ | 2006 08 21 | 691 | 0.5− | 0.4+ | | |
| 2000 05 10 | 704 | 0.7+ | 1.3+ | 2002 12 10 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.3− | 0.1+ | | |
| 2000 05 10 | 704 | 0.6+ | 1.0+ | 2002 12 10 | 704 | 0.5+ | 0.1− | 2006 08 29 | 703 | (1.3− | 2.0−) | | |
| 2000 05 28 | 704 | 0.7+ | 0.1+ | 2002 12 10 | 704 | 0.5− | 0.2− | 2006 08 29 | 703 | (2.1− | 2.8−) | | |
| 2000 05 28 | 704 | 0.4+ | 0.1− | 2002 12 10 | 704 | 1.3+ | 0.8+ | 2006 08 29 | 703 | (1.9− | 2.8−) | | |
| 2000 05 28 | 704 | 0.8+ | 0.1− | 2004 02 17 | 703 | 0.3+ | 1.0+ | 2006 09 25 | 691 | 0.2− | 0.4+ | | |
| 2000 05 29 | 704 | 0.3+ | 0.3− | 2004 02 17 | 703 | (0.0 | 2.0+) | 2006 09 25 | 691 | 0.1− | 0.4+ | | |
| 2000 05 29 | 704 | 1.7+ | 0.2− | 2004 02 17 | 703 | 0.6+ | 1.0+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | | |
| 2000 05 29 | 704 | 0.8+ | 0.9+ | 2004 02 17 | 703 | 0.2+ | 1.3+ | 2006 09 27 | 691 | (2.8+ | 0.7+) | | |
| 2000 05 29 | 704 | 0.4+ | 0.2− | 2004 03 13 | 644 | 0.4+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 1.0+ | | |
| 2000 05 29 | 704 | 0.1− | 0.2+ | 2004 03 13 | 644 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.4+ | | |
| 2002 10 30 | 608 | 0.4− | 0.1− | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.3+ | 0.2+ | | |
| 2002 10 30 | 608 | 0.0 | 0.2− | 2004 03 14 | 703 | 0.9+ | 0.9+ | 2006 10 01 | 703 | (1.8− | 0.3−) | | |
| 2002 10 30 | 608 | 0.2− | 0.0 | 2004 03 14 | 703 | 0.4+ | 0.7− | 2006 10 01 | 703 | 0.5− | 0.3− | | |
| 2002 10 31 | 644 | (0.5+ | 1.7+) | 2004 03 14 | 703 | (0.2− | 1.7+) | 2006 10 01 | 703 | 0.6− | 0.5− | | |
| 2002 10 31 | 644 | 0.1− | 1.2+ | 2004 03 14 | 703 | 0.9− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.5+ | | |
| 2002 10 31 | 644 | 0.5+ | 1.4+ | 2004 03 16 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 703 | (0.1+ | 1.9−) | | |
| 2002 11 06 | 704 | 1.0+ | 0.1+ | 2004 03 16 | 704 | 0.4+ | 1.0+ | 2006 10 01 | 691 | 0.0 | 0.3+ | | |
| 2002 11 06 | 704 | 1.1− | 0.8− | 2004 03 16 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.7− | 1.1− | 2004 03 16 | 704 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 11 06 | 704 | 1.0− | 0.9− | 2004 03 16 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.2+ | 1.0+ | 2004 03 18 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.6+ | | |
| 2002 11 14 | 704 | 0.3− | 1.2+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 11 14 | 704 | 0.0 | 1.3+ | 2004 03 18 | 704 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2002 11 14 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.3+ | 1.1+ | 2006 10 23 | G96 | 0.2+ | 0.0 | | |
| 2002 11 14 | 704 | 0.7− | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.7+ | 2006 10 23 | G96 | 0.3− | 0.0 | | |
| 2002 11 25 | 291 | 0.3− | 0.2+ | 2004 03 20 | 699 | 0.5− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2002 11 25 | 291 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.3− | | |

**(138467)∗ 2000 JL$_{44}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.56766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21977294 | $\omega$ | 195.06632 | | −0.24100948 | +0.95989947 | |
| $a$ | 2.7194844 | $\Omega$ | 61.16831 | | −0.87268133 | −0.14977614 | |
| $e$ | 0.0830158 | $i$ | 9.40823 | | −0.42466660 | −0.23698127 | |
| $P$ | 4.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | (3.0+ | 1.5+) | 2002 12 06 | 704 | 0.1+ | 0.9+ | 2005 07 29 | E12 | 0.4− | 0.1− | | |
| 2000 04 26 | 699 | 0.0 | 0.2+ | 2002 12 06 | 704 | 0.7− | 0.7− | 2005 07 29 | E12 | 0.6+ | 0.3+ | | |
| 2000 04 26 | 699 | 0.5+ | 0.4+ | 2002 12 06 | 704 | 0.1+ | 1.2+ | 2005 07 29 | E12 | 0.9+ | 0.1+ | | |
| 2000 04 26 | 699 | 0.0 | 0.8+ | 2004 02 23 | 608 | 0.0 | 0.3− | 2005 07 29 | E12 | 0.9+ | 0.0 | | |
| 2000 05 07 | 704 | 1.1+ | 0.4− | 2004 02 23 | 608 | 0.2− | 1.0− | 2005 08 06 | E12 | 0.6− | 0.4+ | | |
| 2000 05 07 | 704 | 0.4− | 0.7− | 2004 02 23 | 608 | 0.2− | 0.7− | 2005 08 06 | E12 | 0.7+ | 0.8− | | |
| 2000 05 07 | 704 | 0.1+ | 0.2+ | 2004 03 11 | 644 | 0.2− | 0.4+ | 2005 08 06 | E12 | 0.4− | 0.3+ | | |
| 2000 05 07 | 704 | 0.2+ | 0.6+ | 2004 03 11 | 644 | 0.0 | 0.4+ | 2005 08 06 | E12 | 0.6− | 0.6+ | | |
| 2000 05 10 | 704 | 0.2+ | 0.2− | 2004 03 11 | 644 | 0.0 | 0.3+ | 2005 08 24 | E12 | 0.0 | 0.2− | | |
| 2000 05 10 | 704 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.1+ | 1.0+ | 2005 08 24 | E12 | 0.3− | 0.5+ | | |
| 2000 05 10 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.9− | 1.0+ | 2005 08 24 | E12 | 1.0− | 0.4+ | | |
| 2000 05 10 | 704 | 0.6+ | 0.9+ | 2004 03 15 | 704 | 0.1− | 0.6+ | 2005 08 24 | E12 | 0.3+ | 1.2+ | | |
| 2000 05 10 | 704 | 0.3+ | 0.9+ | 2004 03 17 | 704 | 0.2+ | 1.5+ | 2006 10 03 | G96 | 0.0 | 0.0 | | |
| 2000 05 11 | 699 | 0.8+ | 0.0 | 2004 03 17 | 704 | 0.9+ | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.0 | | |
| 2000 05 11 | 699 | 0.5+ | 0.3− | 2004 03 17 | 704 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.1+ | | |
| 2000 05 11 | 699 | 0.0 | 0.1+ | 2004 03 17 | 704 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.5+ | | |
| 2000 05 11 | 699 | 0.3− | 0.3− | 2004 03 17 | 704 | 0.5− | 0.4− | 2006 10 14 | D35 | 0.8− | 0.9+ | | |
| 2000 05 28 | 704 | 0.1+ | 0.0 | 2004 03 17 | 704 | 0.2+ | 0.5+ | 2006 10 14 | D35 | 0.3− | 0.5+ | | |
| 2000 05 28 | 704 | 0.0 | 0.2− | 2004 03 17 | 704 | 0.9+ | 0.2+ | 2006 10 14 | D35 | 0.3− | 0.6+ | | |
| 2000 05 28 | 699 | 0.1− | 0.6+ | 2004 03 17 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.3+ | | |
| 2000 05 28 | 704 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.7+ | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.3+ | | |
| 2000 05 28 | 704 | 0.4+ | 0.8− | 2004 03 23 | 704 | 1.0+ | 0.2+ | 2006 10 16 | 703 | 1.1+ | 0.9+ | | |
| 2000 05 28 | 704 | 0.3+ | 0.3− | 2004 03 23 | 704 | 0.2+ | 1.2+ | 2006 10 16 | 703 | (0.8− | 4.6+) | | |
| 2000 05 28 | 699 | 0.2− | 0.7− | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.9+ | 0.0 | | |
| 2000 05 28 | 699 | 0.6+ | 0.1+ | 2004 03 25 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2000 05 28 | 699 | 0.0 | 0.2− | 2004 03 25 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | | |
| 2000 05 29 | 704 | 0.4− | 0.1− | 2004 03 25 | 704 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.2+ | | |
| 2000 05 29 | 704 | 0.5− | 0.1− | 2004 04 13 | 703 | 1.0+ | 0.8+ | 2006 11 08 | 644 | 0.3+ | 0.5+ | | |
| 2000 05 29 | 704 | 0.1− | 0.4+ | 2004 04 13 | 703 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.5+ | | |
| 2000 05 29 | 704 | 0.5− | 0.6+ | 2004 04 13 | 703 | (1.6+ | 1.0+) | 2006 11 13 | 703 | 0.9− | 1.0+ | | |
| 2000 05 29 | 704 | 0.2− | 0.1+ | 2004 04 13 | 703 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.8− | 0.6+ | | |
| 2000 06 05 | 699 | 0.6+ | 0.8− | 2005 06 08 | E12 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.7− | 0.2+ | | |
| 2000 06 05 | 699 | 0.4− | 0.4− | 2005 06 08 | E12 | 0.6− | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.3+ | | |
| 2000 06 05 | 699 | 0.7− | 0.6− | 2005 06 08 | E12 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.0 | | |
| 2000 06 05 | 699 | 0.3− | 0.2+ | 2005 06 08 | E12 | 0.8+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.0 | | |
| 2001 08 25 | 644 | 0.8− | 1.0+ | 2005 07 06 | E12 | 0.5+ | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.1− | | |
| 2001 08 25 | 644 | 0.7− | 0.8+ | 2005 07 06 | E12 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2001 08 25 | 644 | 1.0− | 0.3+ | 2005 07 06 | E12 | 0.3− | 0.2+ | | | | | | |
| 2002 12 06 | 704 | 0.6− | 0.4+ | 2005 07 06 | E12 | 1.0− | 0.5+ | | | | | | |

**(138468)∗ 2000 JW$_{44}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.85916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26129824 | $\omega$ | 111.50218 | | −0.91118065 | −0.41185804 | |
| $a$ | 2.4231394 | $\Omega$ | 44.17824 | | +0.37188088 | −0.83371840 | |
| $e$ | 0.1461812 | $i$ | 0.91104 | | +0.17735397 | −0.36781324 | |
| $P$ | 3.77 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 16 | 691 | 0.4+ | 0.5+ | 2000 05 29 | 704 | 1.6− | 1.1− | 2005 10 13 | 291 | 0.4+ | 0.7+ |
| 1996 03 16 | 691 | 0.5+ | 0.5+ | 2000 05 29 | 704 | 0.3+ | 0.2+ | 2005 10 13 | 291 | 0.0 | 0.9+ |
| 1996 03 16 | 691 | 0.4+ | 0.4+ | 2000 05 29 | 704 | 0.3− | 0.5− | 2005 10 13 | 291 | 0.3− | 0.9+ |
| 1998 12 11 | 691 | 0.2− | 0.1+ | 2000 05 29 | 704 | 0.0 | 0.5+ | 2005 12 01 | G96 | 0.0 | 0.5− |
| 1998 12 11 | 691 | 0.2− | 0.2− | 2000 05 29 | 704 | 0.3+ | 0.1− | 2005 12 01 | G96 | 0.2− | 0.1+ |
| 1998 12 11 | 691 | 0.5− | 0.0 | 2000 06 04 | 691 | 0.5− | 0.1− | 2005 12 01 | G96 | 0.1+ | 0.1− |
| 1998 12 17 | 691 | 0.9+ | 0.0 | 2000 06 04 | 691 | 0.5− | 0.0 | 2005 12 01 | G96 | 0.2− | 0.1+ |
| 1998 12 17 | 691 | 0.6+ | 0.1− | 2000 06 04 | 691 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.6− |
| 1998 12 17 | 691 | 0.6+ | 0.0 | 2002 12 31 | 704 | 0.4− | 0.5+ | 2006 10 23 | G96 | 0.3+ | 0.6− |
| 1998 12 26 | 691 | 0.8− | 0.0 | 2002 12 31 | 704 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.5− |
| 1998 12 26 | 691 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.4− | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.7− |
| 1998 12 26 | 691 | 0.4− | 0.2− | 2003 01 04 | 704 | 0.7− | 0.6+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2000 05 07 | 704 | 0.2+ | 0.3− | 2003 01 04 | 704 | 0.4+ | 0.8+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2000 05 07 | 704 | 0.2− | 0.4+ | 2003 01 04 | 704 | 0.4− | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2000 05 07 | 704 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.4− | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.7− |
| 2000 05 07 | 704 | 0.9+ | 0.2− | 2003 01 08 | 704 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2000 05 10 | 704 | 0.5+ | 0.7+ | 2003 01 08 | 704 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2000 05 10 | 704 | 0.5+ | 0.2+ | 2005 10 07 | G96 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2000 05 10 | 704 | 1.1+ | 0.2+ | 2005 10 07 | G96 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.5− | 0.4− |
| 2000 05 10 | 704 | 0.1− | 1.0+ | 2005 10 07 | G96 | 0.7− | 0.0 | | | | |
| 2000 05 10 | 704 | 0.3+ | 0.7+ | 2005 10 07 | G96 | 0.7− | 0.0 | | | | |

**(138469)∗ 2000 JJ$_{56}$**

Discovered 2000 May 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.45944 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20982801 | $\omega$ | 166.70990 | | −0.33270999 | +0.92946907 | |
| $a$ | 2.8047473 | $\Omega$ | 83.67709 | | −0.87921145 | −0.24463061 | |
| $e$ | 0.1688017 | $i$ | 9.22557 | | −0.34101508 | −0.27612155 | |
| $P$ | 4.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 02 | 691 | 0.1+ | 0.3− | 2001 10 23 | 644 | (0.3+ | 2.1+) | 2004 02 16 | 691 | 0.2+ | 0.1− |
| 1998 01 02 | 691 | 0.2− | 0.1− | 2001 10 23 | 644 | (0.1− | 2.1+) | 2004 02 16 | 691 | 0.2− | 0.3− |
| 1998 01 02 | 691 | 0.0 | 0.3− | 2001 10 23 | 644 | (0.1+ | 1.9+) | 2004 02 17 | 608 | 0.3− | 0.1+ |
| 2000 05 06 | 704 | 0.6− | 0.2+ | 2002 12 11 | 704 | 0.2− | 1.3+ | 2004 02 17 | 608 | 0.1− | 0.2− |
| 2000 05 06 | 704 | 0.1− | 0.9+ | 2002 12 11 | 704 | 0.3+ | 0.9+ | 2004 02 17 | 608 | 0.2− | 0.1+ |
| 2000 05 06 | 704 | 0.3+ | 1.8+ | 2002 12 11 | 704 | 0.4− | 0.9+ | 2004 03 20 | 291 | 0.2+ | 0.2− |
| 2000 05 11 | 704 | 0.3− | 1.0− | 2003 01 04 | 291 | 0.2+ | 0.1+ | 2004 03 20 | 291 | 0.1+ | 0.1− |
| 2000 05 11 | 704 | 0.2− | 0.6+ | 2003 01 04 | 291 | 0.2+ | 0.1+ | 2004 03 20 | 291 | 0.0 | 0.3− |
| 2000 05 11 | 704 | 0.5− | 0.6+ | 2003 01 04 | 291 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.1+ | 1.0+ |
| 2000 05 11 | 704 | 0.6+ | 0.5+ | 2004 01 30 | 699 | 0.7+ | 0.8+ | 2004 03 23 | 704 | 0.4+ | 0.5+ |
| 2000 05 11 | 704 | 0.5− | 0.1− | 2004 01 30 | 699 | 1.2− | 0.3− | 2004 03 23 | 704 | 0.5+ | 0.7+ |
| 2000 05 27 | 704 | 0.7+ | 0.3− | 2004 01 30 | 699 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.5+ | 0.6+ |
| 2000 05 27 | 704 | 0.0 | 0.5+ | 2004 01 30 | 699 | 0.8+ | 0.6+ | 2004 03 23 | 704 | 0.7− | 1.1+ |
| 2000 05 27 | 704 | 0.3− | 0.4+ | 2004 01 30 | 699 | 0.2− | 0.6+ | 2004 03 25 | 704 | 0.5− | 0.7+ |
| 2000 05 27 | 704 | 0.0 | 0.5+ | 2004 01 30 | 699 | 0.8+ | 0.2+ | 2004 03 25 | 704 | 0.3+ | 0.4− |
| 2000 05 27 | 704 | 0.0 | 0.2− | 2004 01 30 | 699 | 0.1− | 0.4+ | 2004 03 25 | 704 | 0.5− | 0.3+ |
| 2000 06 24 | 704 | 1.3+ | 0.8+ | 2004 01 30 | 699 | 0.2− | 0.8+ | 2004 03 25 | 704 | (0.2+ | 1.5+) |
| 2000 06 24 | 704 | 0.5− | 0.6+ | 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 09 28 | G92 | 0.8− | 1.3+ |
| 2000 06 24 | 704 | 0.9+ | 1.2+ | 2004 01 30 | 704 | 0.2+ | 0.4+ | 2006 09 28 | G92 | 0.4− | 0.2− |
| 2000 06 24 | 704 | 1.7+ | 0.7+ | 2004 01 30 | 704 | 0.8+ | 0.1+ | 2006 09 28 | G92 | 1.1− | 1.0+ |
| 2001 09 18 | 699 | 0.2+ | 1.0+ | 2004 01 30 | 704 | 0.3− | 0.7− | 2006 09 30 | G92 | 0.2− | 0.6+ |
| 2001 09 18 | 699 | (0.2− | 1.8+) | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 09 30 | G92 | 0.0 | 0.2+ |
| 2001 09 18 | 699 | 0.8+ | 0.7+ | 2004 02 13 | 644 | 0.4− | 0.2+ | 2006 09 30 | G92 | 0.1+ | 0.9+ |
| 2001 09 18 | 699 | 0.3+ | 0.6+ | 2004 02 13 | 644 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2004 02 13 | 644 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.7+ |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2004 02 15 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.7− | 0.4+ |
| 2001 09 25 | 704 | 0.9− | 0.6+ | 2004 02 15 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.7+ |
| 2001 10 15 | 644 | (0.3+ | 1.7+) | 2004 02 15 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 1.5− | 0.4− |
| 2001 10 15 | 644 | (0.4+ | 2.1+) | 2004 02 15 | 704 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.1− | 1.0+ |
| 2001 10 15 | 644 | (0.2+ | 2.0+) | 2004 02 16 | 691 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.3− | 0.4+ |

**(138470)∗ 2000 JF$_{60}$ = 2001 SN$_{297}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22167)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.11236 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23773043 | $\omega$ | 285.24859 | | −0.86124400 | +0.50663343 | |
| $a$ | 2.5807516 | $\Omega$ | 285.20558 | | −0.44901291 | −0.79526645 | |
| $e$ | 0.1714157 | $i$ | 2.36175 | | −0.23800456 | −0.33297724 | |
| $P$ | 4.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 12 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2004 04 30 | 608 | 0.6+ | 0.2− |
| 1991 01 12 | 691 | 0.3+ | 0.4+ | 2004 03 20 | 704 | 0.4+ | 0.4+ | 2005 07 30 | 644 | 0.0 | 0.5+ |
| 1991 01 12 | 691 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.8+ | 1.2+ | 2005 07 30 | 644 | 0.2+ | 0.3+ |
| 2000 04 28 | 704 | 1.0− | 0.9− | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2005 07 30 | 644 | 0.2− | 0.3+ |
| 2000 04 28 | 704 | 1.2− | 1.5− | 2004 03 27 | 699 | 1.3− | 0.3− | 2005 08 27 | 699 | 0.3− | 0.1− |
| 2000 04 28 | 704 | 0.5+ | 1.0+ | 2004 03 27 | 699 | 0.9− | 0.1+ | 2005 08 27 | 699 | (1.7− | 1.3−) |
| 2000 04 28 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 699 | 0.6− | 0.1+ | 2005 08 27 | 699 | 1.5+ | 1.2+ |
| 2000 05 07 | 704 | 0.3+ | 0.6+ | 2004 03 27 | 703 | 0.1− | 1.3+ | 2005 08 27 | 699 | 0.8− | 1.0+ |
| 2000 05 07 | 704 | 0.2− | 0.3− | 2004 03 27 | 699 | 0.0 | 1.0− | 2005 08 29 | 691 | 0.1− | 0.5+ |
| 2000 05 07 | 704 | 0.3+ | 0.5+ | 2004 03 27 | 703 | 0.3+ | 0.8+ | 2005 08 29 | 691 | 0.1+ | 0.3+ |
| 2000 05 07 | 704 | 0.5− | 0.7+ | 2004 03 27 | 703 | 0.1+ | 0.4− | 2005 08 29 | 691 | 0.2− | 0.5+ |
| 2000 05 07 | 704 | 0.0 | 0.3+ | 2004 03 27 | 703 | 0.7− | 0.7+ | 2005 08 29 | 291 | 0.4− | 0.4+ |
| 2000 05 11 | 704 | 0.8− | 0.0 | 2004 03 31 | 704 | 0.4+ | 0.5− | 2005 08 29 | 291 | 0.5− | 0.4+ |
| 2000 05 11 | 704 | 0.5− | 0.4− | 2004 03 31 | 704 | 0.5+ | 1.1− | 2005 08 29 | 291 | 0.7− | 0.5+ |
| 2000 05 11 | 704 | 0.3− | 0.0 | 2004 03 31 | 704 | (0.1− | 1.8−) | 2005 09 25 | 691 | 0.0 | 0.1− |
| 2000 05 11 | 704 | 0.4− | 0.1− | 2004 04 09 | E12 | 0.1+ | 0.1− | 2005 09 25 | 691 | 0.0 | 0.0 |
| 2000 05 11 | 704 | 0.3+ | 0.2− | 2004 04 09 | E12 | 0.5− | 0.5+ | 2005 09 25 | 691 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.6− | 2004 04 09 | E12 | 0.3+ | 0.8+ | 2005 10 07 | 691 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2004 04 09 | E12 | 0.1+ | 0.0 | 2005 10 07 | 691 | 0.3+ | 0.7+ |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2004 04 12 | 699 | 0.4− | 0.0 | 2005 10 07 | 691 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 0.6+ | 2004 04 12 | 699 | 0.1+ | 0.2− | 2005 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 22 | 704 | (1.6− | 1.6+) | 2004 04 12 | 699 | 0.2− | 0.2− | 2005 10 31 | G96 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 1.5− | 0.1+ | 2004 04 12 | 699 | 0.3− | 0.6+ | 2005 10 31 | G96 | 0.4− | 0.2+ |
| 2001 09 22 | 704 | 0.1+ | 0.5− | 2004 04 16 | 644 | 0.1+ | 0.6+ | 2005 10 31 | G96 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 644 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.1+ | 0.5+ | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | 0.2+ | 0.1− | 2004 04 17 | 704 | 0.2− | 0.6− | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 0.1− | 0.4+ | 2004 04 17 | 704 | 0.1+ | 0.6− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2001 09 23 | 704 | 0.1+ | 0.9+ | 2004 04 17 | 704 | 1.2− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2004 03 14 | 644 | 0.1+ | 0.8+ | 2004 04 17 | 704 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2004 03 14 | 644 | 0.2+ | 0.6+ | 2004 04 17 | 699 | 0.3+ | 0.1− | 2006 10 28 | 291 | 0.4− | 0.2+ |
| 2004 03 14 | 644 | 0.3+ | 0.4+ | 2004 04 17 | 699 | 0.9+ | 0.3+ | 2006 10 28 | 291 | 0.2− | 0.2+ |
| 2004 03 17 | 704 | 0.3+ | 0.7+ | 2004 04 17 | 699 | 0.4− | 0.3+ | 2006 10 28 | 291 | 0.4− | 0.1+ |
| 2004 03 17 | 704 | 0.0 | 0.4+ | 2004 04 17 | 699 | 0.5+ | 0.9+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2004 03 17 | 704 | 0.3− | 0.7+ | 2004 04 20 | 704 | 0.1+ | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2004 03 17 | 704 | 0.4+ | 1.2+ | 2004 04 20 | 704 | 0.7+ | 1.1+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2004 03 17 | 704 | 0.6+ | 1.0+ | 2004 04 20 | 704 | 0.2+ | 0.7+ | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 1.1+ | 0.1+ | 2004 04 20 | 704 | 0.9+ | 0.9+ | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 1.1+ | 0.5+ | 2004 04 20 | 704 | 0.3+ | 1.3+ | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.3+ | 0.3+ | 2004 04 26 | 699 | 0.5+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.0 | 1.0+ | 2004 04 26 | 699 | 0.1− | 0.9− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 1.0+ | 0.5+ | 2004 04 26 | 699 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2004 03 20 | 704 | 1.1+ | 0.8+ | 2004 04 26 | 699 | 0.4− | 0.3− | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2004 03 20 | 704 | 0.8+ | 0.6+ | 2004 04 30 | 608 | 0.3+ | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.4+ |
| 2004 03 20 | 704 | 1.3+ | 0.7+ | 2004 04 30 | 608 | 0.6+ | 0.0 | 2006 11 22 | 691 | 0.2− | 0.4+ |

**(138471)∗ 2000 JC$_{75}$ = 2004 EM$_{33}$**

Discovered 2000 May 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60689)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 88.74691 | | (2000.0) | | | |
| $n$ | 0.23266240 | $\omega$ | 294.72122 | | +0.55235778 | +0.82987214 |
| $a$ | 2.6180941 | $\Omega$ | 9.99757 | | −0.50060417 | +0.40582803 |
| $e$ | 0.0221738 | $i$ | 27.00284 | | −0.66655559 | +0.38290449 |
| $P$ | 4.24 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.3− | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.1+ | 2004 04 19 | 704 | 1.0− | 1.4+ |
| 2000 04 07 | 704 | 0.0 | 0.5+ | 2004 03 20 | 704 | 0.5+ | 0.4+ | 2004 04 19 | 704 | 0.2− | 0.7− |
| 2000 04 07 | 704 | 0.1− | 0.0 | 2004 03 21 | 699 | 0.3− | 0.1+ | 2004 04 19 | 704 | 0.4+ | 0.2− |
| 2000 04 07 | 704 | 0.4+ | 1.4− | 2004 03 21 | 699 | 0.4+ | 0.5− | 2004 04 19 | 704 | (1.0− | 1.8−) |
| 2000 04 07 | 704 | 1.1− | 0.6− | 2004 03 21 | 699 | 0.6− | 0.8− | 2004 04 22 | 704 | 0.8+ | 0.4− |
| 2000 05 05 | 699 | 0.5+ | 0.3− | 2004 03 21 | 699 | 1.4− | 0.2+ | 2004 04 22 | 704 | 0.6+ | 0.9+ |
| 2000 05 05 | 699 | 0.0 | 0.1+ | 2004 03 21 | 608 | 0.2− | 0.2+ | 2004 04 22 | 704 | 0.2+ | 0.2+ |
| 2000 05 05 | 699 | 0.1− | 0.4− | 2004 03 21 | 608 | 0.1− | 0.3+ | 2004 04 22 | 704 | 0.2− | 0.2+ |
| 2000 05 05 | 699 | 0.2+ | 0.1− | 2004 03 21 | 608 | 0.6+ | 0.3− | 2004 04 22 | 704 | 0.9− | 0.3+ |
| 2000 05 06 | 704 | 0.2+ | 0.4+ | 2004 03 28 | 703 | 0.6+ | 0.1− | 2004 04 25 | 691 | 0.3− | 0.0 |
| 2000 05 06 | 704 | 0.2+ | 0.7+ | 2004 03 28 | 703 | 0.5− | 0.9+ | 2004 04 25 | 691 | 0.1− | 0.0 |
| 2000 05 06 | 704 | 0.7+ | 0.0 | 2004 03 28 | 703 | 1.1+ | 0.3+ | 2004 04 25 | 691 | 0.2− | 0.1− |
| 2000 05 06 | 704 | 0.6+ | 1.2+ | 2004 03 28 | 703 | 0.3+ | 0.5+ | 2005 07 06 | E12 | 0.0 | 0.3+ |
| 2004 02 18 | 704 | 0.7+ | 0.1− | 2004 03 30 | 691 | 0.0 | 0.1+ | 2005 07 06 | E12 | 0.9− | 0.1+ |
| 2004 02 18 | 704 | 0.1− | 0.7− | 2004 03 30 | 691 | 0.0 | 0.1− | 2005 07 06 | E12 | 0.1− | 0.4+ |
| 2004 02 18 | 704 | 0.1− | 0.0 | 2004 03 30 | 691 | 0.2− | 0.1+ | 2005 07 06 | E12 | 0.1− | 0.1− |
| 2004 02 18 | 704 | 0.9+ | 0.6− | 2004 04 10 | 644 | 0.3+ | 0.0 | 2005 08 29 | E12 | 0.4− | 0.4+ |
| 2004 02 18 | 704 | 0.7+ | 0.3− | 2004 04 10 | 644 | 0.1+ | 0.1− | 2005 08 29 | E12 | 0.5+ | 0.8+ |
| 2004 02 27 | 704 | 0.4− | 1.1− | 2004 04 10 | 644 | 0.3+ | 0.2+ | 2005 08 29 | E12 | 0.6+ | 0.9+ |
| 2004 02 27 | 704 | 0.8− | 0.1+ | 2004 04 12 | 699 | 0.7− | 0.3− | 2005 08 29 | E12 | 0.0 | 0.4+ |
| 2004 02 27 | 704 | 0.6− | 0.1+ | 2004 04 12 | 699 | 0.2− | 0.4− | 2006 10 23 | 703 | 0.6− | 0.0 |
| 2004 03 15 | 704 | 1.0− | 0.1− | 2004 04 12 | 699 | 0.2− | 0.2+ | 2006 10 23 | 703 | 0.6− | 0.4− |
| 2004 03 15 | 704 | 0.3+ | 0.4+ | 2004 04 12 | 699 | 0.1− | 0.4− | 2006 10 23 | 703 | 0.2+ | 0.1− |
| 2004 03 15 | 704 | 0.2+ | 0.1− | 2004 04 12 | 703 | 0.2+ | 0.2− | 2006 10 23 | 703 | 0.5− | 0.0 |
| 2004 03 15 | 704 | 0.3+ | 0.1− | 2004 04 12 | 703 | (1.7− | 1.0−) | 2006 11 13 | 704 | 0.6− | 0.6+ |
| 2004 03 15 | 704 | 0.3− | 0.5+ | 2004 04 12 | 703 | 1.2+ | 0.4+ | 2006 11 13 | 704 | (0.0 | 2.7+) |
| 2004 03 20 | 691 | 0.1+ | 0.0 | 2004 04 12 | 703 | 0.6+ | 0.1+ | 2006 11 13 | 704 | 0.5− | 1.1+ |
| 2004 03 20 | 691 | 0.0 | 0.0 | 2004 04 15 | 704 | 0.4+ | 0.5+ | 2006 11 20 | 703 | 0.5+ | 0.7+ |
| 2004 03 20 | 691 | 0.0 | 0.1− | 2004 04 15 | 704 | 0.4+ | 0.2− | 2006 11 20 | 703 | 0.8− | 0.3+ |
| 2004 03 20 | 704 | 0.3+ | 0.8+ | 2004 04 15 | 704 | 0.0 | 0.5− | 2006 11 20 | 703 | 0.8− | 0.9+ |
| 2004 03 20 | 704 | 0.2+ | 0.5+ | 2004 04 15 | 704 | 0.2+ | 1.1+ | 2006 11 20 | 703 | 0.0 | 0.5+ |
| 2004 03 20 | 704 | 0.6+ | 0.7+ | 2004 04 15 | 704 | 1.5+ | 0.2− | | | | |

**(138472)∗ 2000 JB$_{77}$ = 2000 KS$_{38}$ = 2001 RH$_{104}$**

Discovered 2000 May 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11070), G. V. Williams (*MPO* 17393)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.03916 | | (2000.0) | | | |
| $n$ | 0.22744656 | $\omega$ | 301.18660 | | +0.99097825 | +0.11822288 |
| $a$ | 2.6579683 | $\Omega$ | 52.09942 | | −0.07849477 | +0.89377505 |
| $e$ | 0.1119802 | $i$ | 4.58888 | | −0.10863097 | +0.43265403 |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 09 | 691 | 0.1+ | 0.4− | 2001 08 25 | 704 | 0.4+ | 0.6+ | 2001 10 24 | 644 | 0.4+ | 0.3− |
| 1991 04 09 | 691 | 0.3− | 0.7− | 2001 08 25 | 704 | (1.9+ | 1.6+) | 2001 10 24 | 644 | 0.4+ | 0.5− |
| 1991 04 09 | 691 | 0.2+ | 0.3− | 2001 09 07 | 644 | (2.7− | 0.9+) | 2002 12 06 | 645 | 0.0 | 0.0 |
| 1997 10 29 | 704 | 0.7+ | 1.7− | 2001 09 07 | 644 | (2.9− | 0.8+) | 2002 12 06 | 645 | 0.0 | 0.1+ |
| 1997 10 29 | 704 | 0.8− | 2.0− | 2001 09 07 | 644 | (3.2− | 1.1+) | 2003 01 05 | 704 | 0.6+ | 0.2+ |
| 1997 10 29 | 704 | 0.6+ | 0.9− | 2001 09 12 | 704 | 0.1+ | 0.3+ | 2003 01 05 | 704 | 0.9+ | 0.5+ |
| 1997 10 29 | 704 | (4.8− | 1.1+) | 2001 09 12 | 704 | 0.6+ | 0.6+ | 2003 01 05 | 704 | 0.3+ | 0.2+ |
| 2000 04 26 | 691 | 0.7− | 0.5− | 2001 09 12 | 704 | 0.4− | 0.2+ | 2003 01 05 | 704 | 0.8+ | 0.2+ |
| 2000 04 26 | 691 | 0.5− | 0.5− | 2001 09 12 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 691 | 0.4+ | 0.0 |
| 2000 04 26 | 691 | 0.1− | 0.3− | 2001 09 19 | 699 | 0.1+ | 0.5+ | 2004 03 16 | 691 | 0.1+ | 0.1− |
| 2000 05 07 | 704 | 0.3+ | 0.4+ | 2001 09 19 | 704 | 0.2+ | 0.2− | 2004 03 16 | 691 | 0.6+ | 0.0 |
| 2000 05 07 | 704 | 0.7+ | 1.6+ | 2001 09 19 | 699 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.5− | 0.2+ |
| 2000 05 07 | 704 | 0.6+ | 1.7+ | 2001 09 19 | 704 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.5+ | 0.2− |
| 2000 05 07 | 704 | 0.7+ | 0.3− | 2001 09 19 | 699 | 0.3− | 0.6+ | 2004 03 22 | 704 | 0.0 | 0.5+ |
| 2000 05 07 | 704 | 1.1+ | 0.2− | 2001 09 19 | 704 | 1.2+ | 0.8+ | 2004 03 22 | 704 | 0.2+ | 0.1− |
| 2000 05 09 | 704 | 0.3+ | 1.2+ | 2001 09 19 | 699 | 0.1+ | 0.1− | 2005 07 10 | E12 | 0.0 | 0.2− |
| 2000 05 09 | 704 | 0.7+ | 1.8+ | 2001 09 19 | 704 | 0.4+ | 0.4+ | 2005 07 10 | E12 | 1.0+ | 0.4− |
| 2000 05 09 | 704 | (2.7+ | 2.0+) | 2001 09 19 | 704 | 0.4+ | 0.0 | 2005 07 10 | E12 | 0.3+ | 0.4+ |
| 2000 05 24 | 691 | 0.1− | 0.4+ | 2001 09 21 | 704 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2000 05 24 | 691 | 0.1+ | 0.1+ | 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2000 05 24 | 691 | 0.4+ | 0.4+ | 2001 09 21 | 704 | 0.5+ | 0.4− | 2006 11 10 | 691 | 0.4− | 0.2+ |
| 2000 05 31 | 691 | 0.3− | 0.5+ | 2001 09 21 | 704 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.2− | 0.5+ |
| 2000 05 31 | 691 | 0.4− | 0.7+ | 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2000 05 31 | 691 | 0.4− | 0.7+ | 2001 10 10 | 644 | 0.2− | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.5+ |
| 2001 08 11 | 608 | 1.0− | 0.0 | 2001 10 10 | 644 | 0.5+ | 0.8+ | 2006 11 22 | 704 | 0.3− | 1.3+ |
| 2001 08 11 | 608 | 1.0− | 0.4+ | 2001 10 10 | 644 | 0.3− | 0.8+ | 2006 11 22 | 704 | 0.2− | 0.9+ |
| 2001 08 11 | 608 | 0.8− | 0.5− | 2001 10 16 | 644 | 0.9− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 1.6− |
| 2001 08 25 | 704 | 1.1− | 0.3− | 2001 10 16 | 644 | 0.7− | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2001 08 25 | 704 | 0.0 | 0.0 | 2001 10 16 | 644 | 0.6− | 0.2+ | | | | |
| 2001 08 25 | 704 | 0.3− | 0.2+ | 2001 10 24 | 644 | 0.6+ | 0.3− | | | | |

**(138473)∗ 2000 JT$_{78}$ = 2002 VN$_{48}$**

Discovered 2000 May 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37521)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.44611 | | (2000.0) | | | |
| $n$ | 0.22368968 | $\omega$ | 182.12610 | | +0.89548158 | −0.43402475 |
| $a$ | 2.6876461 | $\Omega$ | 204.36068 | | +0.41181877 | +0.89201841 |
| $e$ | 0.0708974 | $i$ | 13.83967 | | +0.16887287 | +0.12619697 |
| $P$ | 4.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 06 | 691 | 0.2+ | 0.0 | 2002 12 06 | 704 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.8+ |
| 1997 10 06 | 691 | 0.4+ | 0.1− | 2002 12 06 | 704 | 0.9− | 0.6+ | 2006 09 25 | 704 | 0.2+ | 0.7+ |
| 1997 10 06 | 691 | 0.3+ | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.4− | 1.4+ |
| 2000 04 05 | 704 | 0.6+ | 1.0+ | 2002 12 06 | 704 | 0.4− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2000 04 05 | 704 | 0.8+ | 0.1+ | 2002 12 13 | 644 | 0.6+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2002 12 13 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2000 04 05 | 704 | 0.6+ | 0.9+ | 2002 12 13 | 644 | 0.2− | 0.1+ | 2006 09 27 | 699 | (0.9− | 3.1+) |
| 2000 04 05 | 704 | 1.1+ | 1.3+ | 2004 03 16 | 691 | 0.5+ | 0.2+ | 2006 09 27 | 699 | 0.9+ | 0.3+ |
| 2000 04 26 | 691 | 0.1− | 0.7+ | 2004 03 16 | 704 | 0.4+ | 0.1− | 2006 09 27 | 699 | 0.7− | 0.4+ |
| 2000 04 26 | 691 | 0.2− | 0.3+ | 2004 03 16 | 704 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.0 |
| 2000 04 26 | 691 | 0.1− | 0.5+ | 2004 03 16 | 691 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.2+ |
| 2000 05 02 | 691 | 0.0 | 0.1+ | 2004 03 16 | 704 | 1.1+ | 0.8− | 2006 09 29 | 704 | 0.8+ | 0.3+ |
| 2000 05 02 | 691 | 0.0 | 0.1+ | 2004 03 16 | 704 | (2.6+ | 1.2−) | 2006 09 29 | 704 | 0.0 | 0.1− |
| 2000 05 02 | 691 | 0.1+ | 0.2+ | 2004 03 16 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 1.0+ | 0.1− |
| 2000 05 04 | 691 | 0.5− | 0.7+ | 2004 03 27 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2000 05 04 | 691 | 0.6− | 0.2+ | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2000 05 04 | 691 | 0.6− | 0.2+ | 2004 03 27 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2000 05 07 | 704 | 0.6− | 0.1+ | 2006 08 29 | 699 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2000 05 07 | 704 | 0.5+ | 0.1+ | 2006 08 29 | 699 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2000 05 07 | 704 | 0.3+ | 0.9+ | 2006 08 29 | 699 | 0.0 | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2000 05 07 | 704 | 0.4+ | 0.0 | 2006 08 29 | 699 | 1.1− | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 11 05 | 704 | 0.2− | 0.1− | 2006 08 31 | 704 | (0.5+ | 1.7+) | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.7− | 0.4+ | 2006 08 31 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | 0.5+ | 0.4− | 2006 08 31 | 704 | 0.2− | 0.2− | 2006 10 17 | 703 | (2.8+ | 0.7+) |
| 2002 11 07 | 704 | 0.4+ | 0.1+ | 2006 09 15 | 683 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.7− |
| 2002 11 07 | 704 | 0.4− | 1.2+ | 2006 09 15 | 683 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.2− |
| 2002 11 07 | 704 | 0.9− | 0.4− | 2006 09 15 | 683 | 0.3− | 1.3+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 11 07 | 704 | 0.0 | 1.5+ | 2006 09 16 | 703 | (0.7− | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.5− | 1.3+ | 2006 09 16 | 703 | (0.5+ | 2.6+) | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 11 12 | 644 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 644 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.4− | 0.5− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 11 12 | 644 | 0.0 | 0.4+ | 2006 09 17 | 683 | (3.9+ | 0.4−) | 2006 10 22 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.2− | 0.1+ | 2006 09 17 | 683 | (2.7+ | 2.0+) | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2002 12 01 | 704 | 0.3− | 0.3− | 2006 09 17 | 683 | (2.8+ | 1.2−) | 2006 10 31 | G96 | 0.2− | 0.3− | | |
| 2002 12 01 | 704 | 0.4+ | 0.1− | 2006 09 18 | 704 | 0.5− | 1.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2002 12 01 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 704 | 0.7+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2002 12 01 | 704 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 704 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.3− | | |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.8+ | | | | | | |
| 2002 12 06 | 704 | 0.4− | 0.1− | 2006 09 25 | 704 | (0.1+ | 1.5+) | | | | | | |

**(138474)∗ 2000 JP$_{79}$ = 2002 VN$_{34}$**

Discovered 2000 May 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 40109)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.53146 | | (2000.0) | | | |
| $n$ | 0.26846266 | $\omega$ | 45.21937 | | −0.72774917 | −0.68340683 |
| $a$ | 2.3798347 | $\Omega$ | 91.57779 | | +0.61180829 | −0.68494484 |
| $e$ | 0.1635826 | $i$ | 3.31252 | | +0.30995446 | −0.25259783 |
| $P$ | 3.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.4+ | 0.5+ | 2002 11 14 | 704 | 0.0 | 0.3− | 2003 01 09 | 704 | 0.2− | 0.9+ | | |
| 2000 04 05 | 699 | 0.3+ | 0.5+ | 2002 11 14 | 704 | 0.1+ | 0.4− | 2005 08 28 | 691 | 0.0 | 0.3+ | | |
| 2000 04 05 | 699 | 0.3+ | 0.9+ | 2002 11 14 | 704 | 0.1+ | 0.1+ | 2005 08 28 | 691 | 0.1− | 0.4+ | | |
| 2000 04 05 | 699 | 0.2− | 0.2+ | 2002 12 10 | 704 | 0.3+ | 0.3+ | 2005 08 28 | 691 | 0.2− | 0.5+ | | |
| 2000 04 27 | 691 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.3+ | 0.1+ | 2005 09 01 | 691 | 0.4− | 0.1+ | | |
| 2000 04 27 | 691 | 0.1+ | 0.5+ | 2002 12 10 | 704 | 0.0 | 0.2− | 2005 09 01 | 691 | 0.2− | 0.3+ | | |
| 2000 04 27 | 691 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.6+ | 0.5+ | 2005 09 01 | 691 | 0.2− | 0.1+ | | |
| 2000 04 27 | 699 | 0.7+ | 0.6+ | 2002 12 10 | 704 | 0.4+ | 0.6+ | 2005 09 11 | 691 | 0.1− | 0.6+ | | |
| 2000 04 27 | 699 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.0 | 0.3+ | 2005 09 11 | 691 | 0.1+ | 0.3+ | | |
| 2000 04 27 | 699 | 0.0 | 0.0 | 2002 12 11 | 704 | (1.0− | 1.8−) | 2005 09 11 | 691 | 0.0 | 0.4+ | | |
| 2000 04 27 | 699 | 0.0 | 0.4+ | 2002 12 11 | 704 | 0.0 | 0.7+ | 2006 09 28 | G96 | 0.3− | 0.2− | | |
| 2000 05 05 | 704 | 0.9+ | 0.5+ | 2002 12 11 | 704 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.1− | 0.3+ | | |
| 2000 05 05 | 704 | 0.5+ | 0.2+ | 2002 12 31 | 704 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.1− | | |
| 2000 05 05 | 704 | 1.3+ | 1.5+ | 2002 12 31 | 704 | 0.6+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.5− | | |
| 2000 05 05 | 704 | 1.1+ | 1.6+ | 2002 12 31 | 704 | 0.3+ | 0.9+ | 2006 10 23 | G96 | 0.1− | 0.4− | | |
| 2000 05 05 | 704 | 1.0+ | 1.7+ | 2002 12 31 | 704 | 0.7+ | 1.1+ | 2006 10 23 | G96 | 0.4− | 0.5− | | |
| 2000 05 07 | 691 | 0.1− | 0.2− | 2003 01 04 | 291 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.6− | | |
| 2000 05 07 | 691 | 0.1− | 0.1− | 2003 01 04 | 291 | 0.5− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.5− | | |
| 2000 05 07 | 691 | 0.1− | 0.1− | 2003 01 04 | 291 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.4+ | | |
| 2001 08 19 | 807 | 0.5− | 0.1+ | 2003 01 04 | 704 | 0.7− | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 19 | 807 | 0.7− | 0.1− | 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2002 11 05 | 704 | (1.8− | 0.1+) | 2003 01 04 | 704 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2002 11 05 | 704 | 1.2− | 1.0− | 2003 01 04 | 704 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.1− | | |
| 2002 11 05 | 704 | 0.6− | 0.4+ | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2003 01 08 | 704 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.6− | | |
| 2002 11 05 | 704 | (1.9− | 0.3+) | 2003 01 08 | 704 | 0.2+ | 0.6+ | 2006 11 24 | G96 | 0.1− | 0.9− | | |
| 2002 11 06 | 704 | 0.0 | 0.3− | 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.5− | | |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2003 01 08 | 704 | 0.5− | 0.8+ | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2002 11 06 | 704 | 0.2+ | 0.1+ | 2003 01 09 | 704 | 0.2+ | 0.8+ | 2006 11 24 | G96 | 0.3− | 0.4− | | |
| 2002 11 14 | 704 | 0.2+ | 0.1− | 2003 01 09 | 704 | 0.0 | 1.0+ | | | | | | |
| 2002 11 14 | 704 | 0.3+ | 0.3− | 2003 01 09 | 704 | 0.5+ | 0.8+ | | | | | | |

**(138475)∗ 2000 JD$_{84}$ = 2003 BZ$_{25}$**

Discovered 2000 May 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40110)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.03930 | | (2000.0) | | | |
| $n$ | 0.24095225 | $\omega$ | 245.42023 | | +0.07479470 | −0.99422856 |
| $a$ | 2.5576948 | $\Omega$ | 200.73205 | | +0.97536585 | +0.08899008 |
| $e$ | 0.1606698 | $i$ | 12.54840 | | +0.20752641 | −0.05991942 |
| $P$ | 4.09 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 704 | 0.9− | 0.4− | 2004 03 26 | 291 | 0.2− | 0.1+ | 2004 05 22 | 704 | 0.4− | 0.5+ | | |
| 2000 05 05 | 704 | 0.3− | 0.2− | 2004 03 26 | 291 | 0.2− | 0.1+ | 2004 05 22 | 704 | (0.2− | 2.4+) | | |
| 2000 05 05 | 704 | 0.2+ | 0.9+ | 2004 03 28 | 704 | 0.1+ | 0.0 | 2004 05 22 | 704 | 1.1− | 0.3− | | |
| 2000 05 05 | 704 | 0.2+ | 1.4+ | 2004 03 28 | 704 | 0.5+ | 0.2+ | 2004 05 22 | 704 | 0.5− | 0.9+ | | |
| 2000 05 11 | 699 | 0.7+ | 0.2− | 2004 03 28 | 704 | 0.4+ | 0.4+ | 2005 06 29 | 644 | 0.1− | 0.1+ | | |
| 2000 05 11 | 699 | 0.0 | 1.1+ | 2004 03 28 | 704 | 0.3− | 0.2− | 2005 06 29 | 644 | 0.0 | 0.3+ | | |
| 2000 05 11 | 699 | 0.9− | 0.3− | 2004 03 28 | 704 | 0.9+ | 0.0 | 2005 06 29 | 644 | 0.2− | 0.3+ | | |
| 2000 05 11 | 699 | 0.4− | 1.6+ | 2004 03 31 | 704 | 0.7− | 0.6− | 2006 08 31 | 704 | 0.4− | 0.2− | | |
| 2000 05 24 | 699 | 0.3− | 0.4− | 2004 03 31 | 704 | 0.5+ | 0.5+ | 2006 08 31 | 704 | 0.6− | 1.5+ | | |
| 2000 05 24 | 699 | 0.0 | 0.7+ | 2004 03 31 | 704 | 0.1+ | 1.1+ | 2006 08 31 | 704 | (0.5− | 1.9+) | | |
| 2000 05 24 | 699 | 0.2− | 1.2− | 2004 03 31 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.5− | | |
| 2000 05 24 | 699 | 0.5+ | 0.6+ | 2004 03 31 | 704 | 0.2+ | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.7+ | | |
| 2001 08 25 | 644 | 0.2− | 0.8+ | 2004 04 12 | 699 | 0.8− | 0.4− | 2006 09 19 | 699 | 0.1+ | 0.6+ | | |
| 2001 08 25 | 644 | 0.0 | 0.7+ | 2004 04 12 | 699 | 1.0+ | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.0 | | |
| 2001 08 25 | 644 | 0.2− | 0.9+ | 2004 04 12 | 699 | 0.8+ | 0.2+ | 2006 09 22 | 704 | 0.9− | 0.3− | | |
| 2002 10 09 | 704 | 0.6+ | 0.3− | 2004 04 12 | 699 | 1.3− | 1.0− | 2006 09 22 | 704 | 0.2− | 0.4+ | | |
| 2002 10 09 | 704 | 1.2+ | 0.6+ | 2004 04 15 | 699 | 0.1− | 0.5− | 2006 09 22 | 704 | 0.3+ | 0.1− | | |
| 2002 10 09 | 704 | 0.1+ | 0.1+ | 2004 04 15 | 699 | 0.2− | 0.0 | 2006 10 01 | 703 | 0.4+ | 0.0 | | |
| 2002 10 09 | 704 | 0.1+ | 0.4− | 2004 04 15 | 699 | 0.5− | 0.2− | 2006 10 01 | 703 | 0.0 | 0.2+ | | |
| 2002 11 30 | 704 | 0.8+ | 0.1+ | 2004 04 15 | 699 | 0.5− | 0.1+ | 2006 10 01 | 703 | 0.1+ | 0.3+ | | |
| 2002 11 30 | 704 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 10 01 | 703 | 0.4− | 0.3+ | | |
| 2002 11 30 | 704 | 0.3− | 0.2+ | 2004 04 19 | 704 | 0.4− | 0.2− | 2006 10 03 | 704 | 0.1+ | 0.1− | | |
| 2002 11 30 | 704 | 0.1− | 0.3+ | 2004 04 19 | 704 | 0.4− | 0.0 | 2006 10 03 | 704 | 0.8+ | 0.6+ | | |
| 2002 11 30 | 704 | 0.3− | 0.6+ | 2004 04 19 | 704 | 0.5− | 0.1+ | 2006 10 03 | 704 | 0.6− | 0.6+ | | |
| 2002 12 17 | 608 | (0.2+ | 1.9+) | 2004 04 19 | 704 | 0.5− | 0.8+ | 2006 10 03 | 704 | 0.2− | 0.3+ | | |
| 2002 12 17 | 608 | 0.2+ | 0.6+ | 2004 04 22 | 704 | 0.8+ | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.1− | | |
| 2002 12 17 | 608 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 1.3− | 1.2+ | | |
| 2003 01 02 | 704 | 0.7+ | 0.9− | 2004 04 22 | 704 | 0.9+ | 0.9+ | 2006 10 16 | 683 | 0.4+ | 0.5+ | | |
| 2003 01 02 | 704 | 0.5+ | 0.7− | 2004 04 22 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.1+ | | |
| 2003 01 02 | 704 | (0.6+ | 1.6−) | 2004 04 22 | 704 | 0.9+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.1+ | | |
| 2003 01 02 | 704 | 0.3+ | 1.1− | 2004 04 22 | 599 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.1+ | | |
| 2003 01 02 | 704 | 0.2+ | 1.1− | 2004 04 22 | 599 | 0.3+ | 0.4+ | 2006 10 16 | 683 | 0.1+ | 1.2+ | | |
| 2003 01 26 | 644 | 0.1− | 0.5+ | 2004 04 22 | 599 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2003 01 26 | 644 | 0.0 | 0.5+ | 2004 04 22 | 599 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2003 01 26 | 644 | 0.1− | 0.3+ | 2004 04 30 | 608 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2003 01 28 | 704 | 0.5− | 0.4+ | 2004 04 30 | 608 | 0.5+ | 0.6− | 2006 10 22 | 703 | 0.2+ | 0.3+ | | |
| 2003 01 28 | 704 | 0.5− | 0.4+ | 2004 04 30 | 608 | 0.5+ | 0.5− | 2006 10 22 | 703 | 0.0 | 0.9+ | | |
| 2003 01 28 | 704 | 0.6− | 0.2− | 2004 05 01 | 703 | 0.0 | 1.0− | 2006 10 22 | 703 | 0.0 | 0.7+ | | |
| 2003 02 18 | 608 | 0.0 | 1.0+ | 2004 05 01 | 703 | 0.6− | 0.5− | 2006 10 29 | 703 | (2.1+ | 0.0 ) | | |
| 2003 02 18 | 608 | 0.4− | 0.9+ | 2004 05 01 | 703 | 0.1− | 0.7+ | 2006 10 29 | 703 | 0.8+ | 0.0 | | |
| 2003 02 18 | 608 | 0.3− | 0.9+ | 2004 05 01 | 703 | 0.6+ | 0.0 | 2006 10 29 | 703 | 1.1+ | 1.2− | | |
| 2004 03 17 | 703 | 1.2− | 0.2− | 2004 05 10 | 703 | 0.3+ | 0.3− | 2006 10 29 | 703 | 0.2+ | 0.1+ | | |
| 2004 03 17 | 703 | 0.6− | 0.0 | 2004 05 10 | 703 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.2− | | |
| 2004 03 17 | 703 | 0.2+ | 1.1+ | 2004 05 10 | 703 | 0.6+ | 1.1+ | 2006 11 13 | 703 | 0.5+ | 0.0 | | |
| 2004 03 17 | 703 | (0.7− | 1.7+) | 2004 05 10 | 703 | 0.4− | 0.6+ | 2006 11 13 | 703 | 0.4+ | 0.4+ | | |
| 2004 03 19 | 704 | 0.7+ | 0.2− | 2004 05 16 | 704 | 0.1+ | 1.0+ | 2006 11 13 | 703 | 0.5+ | 0.3− | | |
| 2004 03 19 | 704 | 0.1+ | 0.1− | 2004 05 16 | 704 | 0.5+ | 0.7+ | 2006 11 19 | 703 | 0.3− | 0.2+ | | |
| 2004 03 19 | 704 | 0.1+ | 0.2− | 2004 05 16 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.0 | | |
| 2004 03 19 | 704 | 0.2+ | 0.6+ | 2004 05 16 | 704 | 0.3+ | 1.2+ | 2006 11 19 | 703 | 0.3− | 0.1+ | | |
| 2004 03 22 | 704 | 0.0 | 1.1− | 2004 05 16 | 704 | 0.1− | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.0 | | |
| 2004 03 22 | 704 | 0.4+ | 0.1− | 2004 05 18 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.2+ | | |
| 2004 03 22 | 704 | 0.8+ | 1.3− | 2004 05 18 | 704 | 0.8− | 0.6− | 2006 11 20 | 704 | 0.3− | 0.3− | | |
| 2004 03 22 | 704 | 0.1+ | 0.9− | 2004 05 18 | 704 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.2+ | | |
| 2004 03 22 | 704 | 0.2+ | 1.4− | 2004 05 18 | 704 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.6+ | | |
| 2004 03 26 | 291 | 0.1− | 0.1+ | 2004 05 18 | 704 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.4− | 0.3− | | |

**(138476)∗ 2000 JJ$_{85}$ = 2004 CA$_{104}$**

Discovered 2000 May 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 68661)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.27478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22450349 | $\omega$ | 326.41766 | | −0.92088140 | +0.35719442 | |
| $a$ | 2.6811472 | $\Omega$ | 235.27752 | | −0.30262394 | −0.90752544 | |
| $e$ | 0.1283766 | $i$ | 10.95326 | | −0.24575636 | −0.22092925 | |
| $P$ | 4.39 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 704 | (1.6+ | 2.2−) | 2002 11 14 | 704 | 1.0− | 0.2+ | 2006 09 16 | 703 | 0.4− | 0.1− |
| 2000 03 30 | 704 | 1.0+ | 0.7− | 2002 11 14 | 704 | 0.7− | 0.3+ | 2006 09 16 | 703 | (2.8− | 0.9−) |
| 2000 03 30 | 704 | 0.9− | 0.7+ | 2004 01 28 | 704 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.6− | 0.5+ |
| 2000 05 04 | 699 | (2.3+ | 0.8+) | 2004 01 28 | 704 | 0.2+ | 0.5− | 2006 09 28 | 703 | 0.8− | 1.3− |
| 2000 05 04 | 699 | 0.3− | 0.3+ | 2004 01 28 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.9+ | 0.2− |
| 2000 05 04 | 699 | 1.6+ | 1.1+ | 2004 01 28 | 704 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 0.5− | 0.4+ |
| 2000 05 04 | 699 | 0.3− | 0.1− | 2004 01 28 | 704 | 0.5+ | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.7− |
| 2000 05 04 | 699 | 1.7+ | 1.0+ | 2004 02 13 | 644 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 2000 05 04 | 699 | 0.3+ | 0.8+ | 2004 02 13 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.7+ |
| 2000 05 04 | 699 | (2.3+ | 0.9+) | 2004 02 13 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2000 05 04 | 699 | 0.6− | 0.7− | 2004 02 19 | 704 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.7+ | 0.7+ |
| 2000 05 11 | 704 | 0.5+ | 1.9+ | 2004 02 19 | 704 | 0.2+ | 0.4− | 2006 10 17 | 703 | 1.0+ | 0.8− |
| 2000 05 11 | 704 | 0.5− | 0.3+ | 2004 02 19 | 704 | 0.7− | 0.3− | 2006 10 17 | 703 | 1.4− | 0.5+ |
| 2000 05 11 | 704 | 1.0− | 0.1− | 2004 02 19 | 704 | 0.5+ | 0.4− | 2006 10 17 | 703 | 1.0+ | 0.7− |
| 2000 05 11 | 704 | 0.2− | 0.5+ | 2004 02 19 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 11 01 | 644 | 0.3+ | 0.9+ | 2004 03 16 | 704 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 11 01 | 644 | 0.7+ | 1.0+ | 2004 03 16 | 704 | 0.0 | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 11 01 | 644 | 0.1+ | 0.3+ | 2004 03 16 | 704 | 0.2+ | 1.4+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2002 11 14 | 704 | 0.3− | 0.5+ | 2004 03 16 | 704 | 0.5+ | 0.4− | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2002 11 14 | 704 | 0.4+ | 0.7+ | 2004 03 16 | 704 | 1.4− | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.8+ |
| 2002 11 14 | 704 | (0.3+ | 2.0+) | 2006 09 16 | 703 | 0.3+ | 0.9− | | | | |

**(138477)∗ 2000 JY$_{86}$**

Discovered 2000 May 1 by Spacewatch at Kitt Peak.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.66089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17940294 | $\omega$ | 261.27400 | | +0.85544063 | +0.42061502 | |
| $a$ | 3.1135058 | $\Omega$ | 73.38327 | | −0.25549945 | +0.85024704 | |
| $e$ | 0.2647894 | $i$ | 18.38102 | | −0.45049014 | +0.31648534 | |
| $P$ | 5.49 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 691 | 0.3− | 1.5+ | 2001 09 11 | 704 | 0.1− | 0.3− | 2001 11 16 | 699 | 0.2+ | 0.4+ |
| 2000 04 06 | 691 | 0.0 | 0.4+ | 2001 09 11 | 704 | 0.1+ | 0.1+ | 2001 11 16 | 699 | 0.4+ | 0.6+ |
| 2000 04 06 | 691 | 0.3+ | 0.5+ | 2001 09 22 | 644 | 0.2+ | 1.1− | 2001 11 16 | 699 | (1.6− | 0.9−) |
| 2000 05 01 | 691 | 0.2− | 0.4− | 2001 09 22 | 644 | 0.2+ | 1.0− | 2002 01 05 | 699 | (3.6+ | 1.5+) |
| 2000 05 01 | 691 | 0.1− | 0.5− | 2001 09 22 | 644 | 0.1+ | 1.0− | 2002 01 05 | 699 | 0.6− | 0.6+ |
| 2000 05 01 | 691 | 0.1− | 0.5− | 2001 09 25 | 699 | 0.8+ | 0.6− | 2002 01 05 | 699 | (1.7+ | 1.3−) |
| 2000 05 11 | 699 | 1.3+ | 0.3+ | 2001 09 25 | 699 | 0.7+ | 0.6− | 2002 01 05 | 699 | 1.0− | 0.3+ |
| 2000 05 11 | 699 | 0.3+ | 1.2+ | 2001 09 25 | 699 | 0.6+ | 0.6− | 2003 01 11 | 644 | 0.2− | 0.7+ |
| 2000 05 11 | 699 | 1.2+ | 0.4+ | 2001 09 25 | 699 | 0.4+ | 0.5− | 2003 01 11 | 644 | 0.6+ | 0.9+ |
| 2000 05 11 | 699 | 1.1+ | 0.4+ | 2001 10 15 | 704 | 0.2− | 0.0 | 2003 01 11 | 644 | 0.6+ | 0.6+ |
| 2000 05 25 | 699 | 0.4+ | 0.1+ | 2001 10 15 | 704 | 0.3− | 0.1− | 2004 03 16 | 645 | 0.0 | 0.0 |
| 2000 05 25 | 699 | 0.3− | 0.3− | 2001 10 15 | 704 | 0.4− | 0.1− | 2004 03 16 | 645 | 0.0 | 0.1+ |
| 2000 05 25 | 699 | 0.8+ | 0.5− | 2001 10 15 | 704 | 0.1− | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.0 |
| 2000 05 25 | 699 | 0.2+ | 1.5− | 2001 10 15 | 704 | 0.5− | 0.4+ | 2004 03 18 | 645 | 0.1− | 0.1− |
| 2001 08 19 | 704 | 0.1− | 0.5+ | 2001 10 18 | 699 | 0.6− | 0.3+ | 2006 06 26 | E12 | 0.1− | 0.6− |
| 2001 08 19 | 704 | 0.4+ | 0.3+ | 2001 10 18 | 699 | 0.4− | 0.0 | 2006 06 26 | E12 | 0.1− | 0.4− |
| 2001 08 19 | 704 | 0.3+ | 0.6+ | 2001 10 18 | 699 | 0.4− | 0.4+ | 2006 06 26 | E12 | (0.4+ | 1.7−) |
| 2001 08 19 | 704 | 0.4+ | 0.2− | 2001 10 18 | 699 | 0.1− | 0.4+ | 2006 06 26 | E12 | 0.2+ | 0.0 |
| 2001 08 19 | 704 | 0.4+ | 0.3− | 2001 11 07 | 644 | 0.3− | 0.9+ | 2006 10 14 | E12 | 0.2+ | 0.1+ |
| 2001 09 11 | 704 | 0.4− | 0.4+ | 2001 11 07 | 644 | 0.4− | 0.7+ | 2006 10 14 | E12 | 0.0 | 0.6+ |
| 2001 09 11 | 704 | 0.1− | 0.0 | 2001 11 07 | 644 | 0.6− | 0.9+ | 2006 10 14 | E12 | 0.4+ | 0.5+ |
| 2001 09 11 | 704 | 0.1− | 0.3− | 2001 11 16 | 699 | 0.1+ | 0.5+ | 2006 10 14 | E12 | 0.1− | 0.8+ |

**(138478)∗ 2000 JF$_{87}$**

Discovered 2000 May 2 by T. L. Farnham at the McDonald Observatory.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.59665 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22519817 | $\omega$ | 282.55024 | | +0.74699495 | −0.66349214 | |
| $a$ | 2.6756305 | $\Omega$ | 119.03343 | | +0.62715784 | +0.68221044 | |
| $e$ | 0.0341573 | $i$ | 2.76327 | | +0.22061638 | +0.30719230 | |
| $P$ | 4.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 21 | 809 | 0.6+ | 0.4− | 2002 12 01 | 704 | 1.0− | 0.8− | 2006 09 18 | 703 | 1.1− | 0.7− |
| 1993 10 21 | 809 | 0.5+ | 0.0 | 2002 12 01 | 704 | (2.0− | 0.0 ) | 2006 09 30 | 703 | 0.3+ | 0.7− |
| 1993 10 21 | 809 | 1.3+ | 1.4− | 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.5+ |
| 1995 01 27 | 691 | 0.0 | 0.6+ | 2002 12 10 | 644 | 0.7− | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.2− |
| 1995 01 27 | 691 | (3.2− | 1.1+) | 2002 12 10 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 1995 01 27 | 691 | (3.9− | 1.2+) | 2003 01 03 | 291 | 0.1− | 0.6− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2000 05 02 | 711 | 0.5+ | 0.8− | 2003 01 03 | 291 | 0.8+ | 0.5− | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2000 05 02 | 711 | 1.3− | 2.0− | 2003 01 03 | 291 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2000 05 02 | 711 | 1.3− | 0.7− | 2004 02 23 | 704 | 0.9+ | 0.4+ | 2006 10 15 | 106 | 1.1+ | 0.0 |
| 2000 05 02 | 711 | 1.2− | 1.9− | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 106 | 0.6− | 0.4+ |
| 2000 05 03 | 711 | (2.1− | 0.0 ) | 2004 02 23 | 704 | 0.6+ | 0.9+ | 2006 10 15 | 106 | 0.1− | 0.6− |
| 2000 05 03 | 711 | 0.6− | 0.0 | 2004 03 18 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 106 | 1.2− | 0.5+ |
| 2000 05 03 | 711 | 0.5− | 0.4− | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3− |
| 2002 10 30 | 608 | 0.6− | 0.8− | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 10 30 | 608 | (0.7− | 1.6−) | 2006 08 18 | 644 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 30 | 608 | 0.7− | 0.9− | 2006 08 18 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.6+ | 0.5+ | 2006 08 18 | 644 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 11 11 | 704 | 0.2− | 0.9+ | 2006 09 12 | 703 | 0.7+ | 0.5+ | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2002 11 23 | 644 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.8− | 0.4− | 2006 10 22 | 703 | 0.9− | 0.6+ |
| 2002 11 23 | 644 | 0.2− | 0.2− | 2006 09 12 | 703 | (0.9− | 4.7−) | 2006 10 22 | 703 | 0.3+ | 1.1+ |
| 2002 11 23 | 644 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.1+ | 2006 10 22 | 703 | 0.2+ | 1.0+ |
| 2002 12 01 | 704 | 0.8− | 1.0− | 2006 09 18 | 703 | 1.3+ | 0.1+ | | | | |
| 2002 12 01 | 704 | 1.3− | 0.5− | 2006 09 18 | 703 | 0.3+ | 0.8− | | | | |

**(138479)∗ 2000 KU$_{2}$**

Discovered 2000 May 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.80436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18381950 | $\omega$ | 120.83976 | | −0.01730712 | +0.98626303 | |
| $a$ | 3.0634325 | $\Omega$ | 146.92296 | | −0.98897142 | +0.00728431 | |
| $e$ | 0.3398416 | $i$ | 17.51741 | | −0.14709182 | −0.16502174 | |
| $P$ | 5.36 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 08 | 809 | 0.2+ | 0.9− | 2000 09 03 | 704 | 0.0 | 0.3+ | 2005 05 02 | 703 | 0.1− | 0.2− |
| 1994 02 08 | 809 | 0.3+ | 1.9− | 2000 09 03 | 704 | 0.1− | 0.9− | 2005 05 02 | 703 | 0.0 | 0.2+ |
| 1994 02 08 | 809 | 0.2+ | 1.6− | 2000 09 03 | 704 | 1.3+ | 0.9− | 2005 05 11 | 704 | 0.9+ | 0.4+ |
| 2000 04 14 | 704 | 0.1+ | 0.1− | 2005 03 09 | 704 | 1.1+ | 0.8− | 2005 05 11 | 704 | 0.3+ | 0.8+ |
| 2000 04 14 | 704 | 0.8− | 1.9+ | 2005 03 09 | 704 | 0.9+ | 0.1− | 2005 05 11 | 704 | 0.8+ | 0.7+ |
| 2000 04 14 | 704 | 1.2+ | 0.2+ | 2005 03 09 | 704 | 1.5+ | 0.4− | 2005 05 11 | 704 | 0.6+ | 0.5+ |
| 2000 04 14 | 704 | 0.0 | 1.1+ | 2005 03 10 | 703 | 0.1− | 0.3+ | 2005 06 08 | 704 | 1.2+ | 1.3+ |
| 2000 05 04 | 704 | 0.9− | 0.1− | 2005 03 10 | 703 | 0.1− | 0.2− | 2005 06 08 | 704 | 0.5+ | 1.1+ |
| 2000 05 04 | 704 | 0.6− | 0.4+ | 2005 03 10 | 703 | 0.5− | 0.5+ | 2005 06 08 | 704 | (1.4+ | 1.7+) |
| 2000 05 04 | 704 | 0.2− | 0.0 | 2005 03 10 | 703 | 0.1+ | 0.3+ | 2005 07 05 | 703 | 0.4− | 0.2− |
| 2000 05 04 | 704 | 0.3− | 0.0 | 2005 03 18 | 703 | 0.3+ | 0.4+ | 2005 07 05 | 703 | 0.6− | 0.7− |
| 2000 05 04 | 704 | 0.5− | 1.1+ | 2005 03 18 | 703 | 0.3+ | 0.1+ | 2005 07 05 | 703 | 0.2− | 0.3+ |
| 2000 05 26 | 704 | 0.6+ | 0.9− | 2005 03 18 | 703 | 0.5− | 0.2+ | 2005 07 05 | 703 | 0.0 | 0.3+ |
| 2000 05 26 | 704 | 0.5− | 0.6− | 2005 03 18 | 703 | 0.4− | 0.6+ | 2006 08 18 | 291 | 0.6− | 0.2+ |
| 2000 05 26 | 704 | 0.6− | 1.1− | 2005 03 30 | 703 | 0.5− | 0.9+ | 2006 08 18 | 291 | 0.5− | 0.2+ |
| 2000 05 26 | 704 | 1.0+ | 1.0− | 2005 03 30 | 703 | 0.1− | 0.5+ | 2006 08 18 | 291 | 0.4− | 0.1+ |
| 2000 05 27 | 704 | 0.0 | 0.2+ | 2005 03 30 | 703 | 0.2− | 0.1− | 2006 09 17 | 699 | 0.9− | 0.4+ |
| 2000 05 27 | 704 | 0.1− | 0.2+ | 2005 03 30 | 703 | 0.6− | 0.3+ | 2006 09 17 | 699 | 0.3− | 1.0+ |
| 2000 05 27 | 704 | 0.1− | 0.3+ | 2005 04 02 | 703 | 0.5− | 0.0 | 2006 09 17 | 699 | 0.3+ | 0.8+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.5− | 0.0 | 2005 04 02 | 703 | 0.9− | 0.2− | 2006 09 17 | 699 | 0.8+ | 0.4+ |
| 2000 06 11 | 704 | 0.4− | 0.2− | 2005 04 02 | 703 | 0.6− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.9+ |
| 2000 06 11 | 704 | 0.1+ | 0.3− | 2005 04 02 | 703 | 0.5− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.4+ |
| 2000 06 11 | 704 | 0.2− | 0.4− | 2005 04 09 | 703 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.8− | 1.2+ |
| 2000 06 11 | 704 | 0.1+ | 0.1− | 2005 04 09 | 703 | 0.5− | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.8+ |
| 2000 06 11 | 704 | 0.2− | 0.7− | 2005 04 09 | 703 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.2+ | 0.4+ |
| 2000 06 11 | 704 | 0.0 | 0.5− | 2005 04 09 | 703 | 0.3− | 0.1+ | 2006 09 25 | 703 | 0.3+ | 0.4+ |
| 2000 06 11 | 704 | 0.2+ | 0.8− | 2005 04 12 | 704 | 1.1+ | 1.4+ | 2006 09 25 | 703 | 0.1+ | 0.4+ |
| 2000 06 11 | 704 | 0.2+ | 0.2+ | 2005 04 12 | 704 | 1.2+ | 1.1+ | 2006 09 25 | 703 | 0.3+ | 0.5+ |
| 2000 06 11 | 704 | 0.3− | 0.6− | 2005 04 12 | 704 | (0.9+ | 1.7+) | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 2000 06 11 | 704 | 0.2+ | 0.3− | 2005 04 12 | 704 | 1.1+ | 1.5+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2000 07 06 | 704 | 0.1− | 0.1− | 2005 04 12 | 704 | 0.0 | 1.1+ | 2006 10 09 | 644 | 0.7+ | 0.1+ |
| 2000 07 06 | 704 | 0.5+ | 0.2− | 2005 04 16 | 703 | 0.6+ | 1.0+ | 2006 10 09 | 644 | 0.6+ | 0.1+ |
| 2000 07 06 | 704 | 0.6+ | 0.2− | 2005 04 16 | 703 | 0.9− | 1.1+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2000 08 03 | 704 | 0.5− | 0.4− | 2005 04 16 | 703 | 0.7− | 0.3+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2000 08 03 | 704 | 0.0 | 0.2− | 2005 04 16 | 703 | (2.8− | 0.3−) | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2000 08 03 | 704 | 0.5− | 0.1+ | 2005 04 26 | 644 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.6+ | 0.3+ |
| 2000 08 03 | 704 | 0.5− | 0.4+ | 2005 04 26 | 644 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2000 08 03 | 704 | 0.1+ | 0.6+ | 2005 04 26 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2000 09 03 | 704 | 0.2+ | 0.4− | 2005 05 02 | 703 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 2000 09 03 | 704 | 0.2+ | 0.2− | 2005 05 02 | 703 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.1+ |

**(138480)∗ 2000 KZ$_2$**

Discovered 2000 May 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.15482 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.37064734 | $\omega$ | 134.35591 | | −0.82449129 | +0.41911185 |
| $a$ | 1.9193851 | $\Omega$ | 73.93407 | | −0.56217344 | −0.68338237 |
| $e$ | 0.0534496 | $i$ | 23.30731 | | +0.06461529 | −0.59777404 |
| $P$ | 2.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 699 | 0.4+ | 0.6+ | 2000 06 06 | 699 | 0.5+ | 0.5+ | 2005 01 16 | 704 | 0.1− | 0.5+ |
| 2000 05 02 | 699 | 0.9− | 0.4+ | 2000 06 07 | 691 | 0.5− | 0.2− | 2005 01 16 | 704 | 0.2+ | 0.0 |
| 2000 05 02 | 699 | 0.1− | 0.4+ | 2000 06 07 | 691 | 0.2− | 0.3− | 2005 01 16 | 704 | 0.2− | 0.1− |
| 2000 05 02 | 699 | 0.0 | 0.1− | 2000 06 07 | 691 | 0.2− | 0.2− | 2005 01 16 | 704 | 0.7− | 0.9− |
| 2000 05 27 | 704 | 0.4+ | 0.1+ | 2001 11 20 | 704 | 0.6+ | 0.7+ | 2005 04 01 | 704 | 0.5+ | 0.3+ |
| 2000 05 27 | 704 | 0.4+ | 0.3− | 2001 11 20 | 704 | 0.5+ | 0.4+ | 2005 04 01 | 704 | (0.6− | 2.2+) |
| 2000 05 27 | 704 | 0.0 | 0.5− | 2001 11 20 | 704 | 0.1+ | 0.4+ | 2005 04 01 | 704 | 1.0+ | 1.7+ |
| 2000 05 27 | 704 | 0.3+ | 0.2+ | 2001 12 09 | 704 | 0.3+ | 0.3+ | 2005 04 01 | 704 | (1.5+ | 3.3+) |
| 2000 05 27 | 704 | 0.8+ | 0.1+ | 2001 12 09 | 704 | 0.1+ | 0.0 | 2006 09 24 | 703 | 0.4− | 1.1+ |
| 2000 05 28 | 704 | 0.7+ | 0.7+ | 2001 12 09 | 704 | 0.1− | 0.0 | 2006 09 24 | 703 | 0.3− | 0.4+ |
| 2000 05 28 | 704 | 0.4+ | 1.6+ | 2001 12 09 | 704 | 0.2− | 0.5− | 2006 09 24 | 703 | 0.6− | 0.4+ |
| 2000 05 28 | 704 | 0.9+ | 0.3+ | 2001 12 09 | 704 | 0.4+ | 0.0 | 2006 09 24 | 703 | 0.9− | 1.1+ |
| 2000 05 28 | 704 | 0.7+ | 0.5+ | 2001 12 17 | 704 | 0.9− | 0.0 | 2006 09 27 | 703 | 0.0 | 0.4− |
| 2000 05 28 | 704 | 1.1+ | 0.5+ | 2001 12 17 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 703 | 0.1+ | 0.2− |
| 2000 06 04 | 691 | 0.1+ | 0.3+ | 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 09 27 | 703 | 1.0− | 0.4+ |
| 2000 06 04 | 691 | 0.2+ | 0.2− | 2001 12 22 | 704 | 0.8− | 0.3+ | 2006 09 27 | 703 | 1.0− | 0.7+ |
| 2000 06 04 | 691 | 0.1− | 0.3+ | 2001 12 22 | 704 | 0.5− | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.3+ |
| 2000 06 06 | 699 | 0.1+ | 0.3+ | 2001 12 22 | 704 | 0.6− | 0.3+ | 2006 11 19 | 703 | 0.5− | 0.0 |
| 2000 06 06 | 699 | 0.1+ | 0.9+ | 2001 12 22 | 704 | 0.0 | 0.5+ | 2006 11 19 | 703 | 0.1+ | 1.0+ |
| 2000 06 06 | 699 | 0.1− | 0.3+ | 2001 12 22 | 704 | 0.6− | 0.5+ | 2006 11 19 | 703 | 0.3+ | 1.2− |

**(138481)∗ 2000 KD$_3$ = 2001 UE$_{162}$**

Discovered 2000 May 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 19745)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.77904 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22242895 | $\omega$ | 107.03282 | | +0.92071976 | +0.36441621 |
| $a$ | 2.6977923 | $\Omega$ | 231.82040 | | −0.38989737 | +0.87374504 |
| $e$ | 0.3201004 | $i$ | 10.22622 | | +0.01597375 | +0.32213419 |
| $P$ | 4.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 08 | 691 | 0.1− | 0.4+ | 2001 11 24 | 291 | (1.0+ | 2.1+) | 2005 09 11 | 704 | 0.0 | 0.2+ |
| 1996 06 08 | 691 | 0.2− | 0.5+ | 2001 11 24 | 291 | 0.2− | 0.2− | 2005 09 11 | 704 | 0.1− | 0.4+ |
| 2000 04 29 | 704 | 0.4− | 1.0+ | 2001 11 24 | 291 | 1.0− | 0.1+ | 2005 09 11 | 704 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 0.2− | 0.3+ | 2001 11 24 | 291 | 0.4− | 0.1− | 2005 09 11 | 704 | 0.2− | 0.1+ |
| 2000 04 29 | 704 | 0.2+ | 0.2− | 2001 12 08 | 699 | 0.4+ | 0.3+ | 2005 09 26 | 703 | 0.2− | 0.6− |
| 2000 04 29 | 704 | 1.0+ | 1.1+ | 2001 12 08 | 699 | 0.9+ | 0.5+ | 2005 09 26 | 703 | 0.2+ | 1.6− |
| 2000 05 07 | 704 | 0.1+ | 0.5+ | 2001 12 08 | 699 | 0.2+ | 1.7+ | 2005 09 26 | 703 | 0.1+ | 0.8− |
| 2000 05 07 | 704 | 0.0 | 0.7+ | 2001 12 08 | 699 | 0.0 | 0.8− | 2005 09 26 | 703 | 0.0 | 0.6− |
| 2000 05 07 | 704 | 0.0 | 0.6+ | 2001 12 11 | 704 | 0.1+ | 0.3− | 2005 09 27 | 951 | 0.3+ | 0.7+ |
| 2000 05 07 | 704 | 0.5− | 0.8− | 2001 12 11 | 704 | 0.1+ | 0.4− | 2005 09 27 | 951 | 0.1− | 0.3− |
| 2000 05 26 | 691 | 0.2+ | 0.1+ | 2001 12 11 | 704 | 0.4+ | 0.6− | 2005 09 27 | 951 | 0.6+ | 0.5+ |
| 2000 05 26 | 691 | 0.1− | 0.4+ | 2001 12 11 | 704 | 0.2− | 0.1+ | 2005 10 02 | 699 | 0.0 | 0.0 |
| 2000 05 26 | 691 | 0.0 | 0.3+ | 2001 12 18 | 644 | 0.6− | 0.4+ | 2005 10 02 | 699 | 0.2+ | 0.2− |
| 2000 05 28 | 704 | 0.5+ | 0.9+ | 2001 12 18 | 644 | 0.6− | 0.2+ | 2005 10 02 | 699 | 0.2− | 0.0 |
| 2000 05 28 | 704 | 0.5+ | 0.5+ | 2001 12 18 | 644 | 0.6− | 0.2+ | 2005 10 10 | 703 | 0.3+ | 0.7− |
| 2000 05 28 | 704 | 0.4+ | 1.1+ | 2001 12 18 | 704 | 0.7+ | 0.8− | 2005 10 10 | 703 | 0.2+ | 0.2− |
| 2000 05 28 | 691 | 0.4− | 0.4− | 2001 12 18 | 704 | 0.6+ | 1.0− | 2005 10 10 | 703 | 0.1+ | 0.5+ |
| 2000 05 28 | 704 | 0.2+ | 0.9+ | 2001 12 18 | 704 | 0.4+ | 0.5− | 2005 10 10 | 703 | 1.0− | 0.3− |
| 2000 05 28 | 704 | 0.7+ | 1.1+ | 2001 12 18 | 704 | 0.1+ | 1.2− | 2005 10 21 | 644 | 0.3− | 0.2− |
| 2000 05 28 | 691 | 0.4− | 0.8− | 2002 01 08 | 644 | 0.0 | 0.1+ | 2005 10 21 | 644 | 0.1+ | 0.1− |
| 2000 05 28 | 691 | 0.3− | 0.3− | 2002 01 08 | 644 | 0.3− | 0.5+ | 2005 10 21 | 644 | 0.1+ | 0.0 |
| 2000 05 29 | 704 | 0.4+ | 0.1+ | 2002 01 08 | 644 | 0.2− | 0.3+ | 2005 10 30 | 699 | 0.3+ | 0.3+ |
| 2000 05 29 | 704 | 0.4+ | 0.2+ | 2002 01 08 | 644 | 0.1− | 0.6+ | 2005 10 30 | 699 | 0.4+ | 0.2− |
| 2000 05 29 | 704 | 0.4+ | 1.1+ | 2002 01 08 | 644 | 0.2− | 0.2+ | 2005 10 30 | 699 | 0.0 | 0.0 |
| 2000 05 29 | 704 | 0.4+ | 0.7+ | 2002 01 08 | 644 | 0.1− | 0.6+ | 2005 10 30 | 704 | 0.1− | 0.2+ |
| 2000 05 29 | 704 | 0.0 | 1.2+ | 2005 05 15 | 703 | 0.4− | 0.1+ | 2005 10 30 | 704 | 0.2− | 0.7+ |
| 2001 09 26 | 704 | 1.2− | 0.1+ | 2005 05 15 | 703 | 0.8− | 0.9+ | 2005 10 30 | 699 | 0.0 | 0.4+ |
| 2001 09 26 | 704 | 0.7+ | 0.1+ | 2005 05 15 | 703 | 0.1− | 0.5+ | 2005 10 30 | 704 | 0.2− | 0.4+ |
| 2001 09 26 | 704 | 0.7− | 0.1+ | 2005 05 15 | 703 | 0.2+ | 0.1+ | 2005 10 30 | 704 | 0.7− | 0.9+ |
| 2001 09 26 | 704 | 0.6+ | 0.8+ | 2005 06 03 | 699 | 0.4− | 1.6+ | 2005 10 30 | 704 | 0.2− | 0.4+ |
| 2001 09 26 | 704 | 0.8+ | 0.3− | 2005 06 03 | 699 | 0.3− | 0.3+ | 2005 11 02 | 704 | 0.6− | 0.4+ |
| 2001 10 23 | 704 | 0.3− | 0.3− | 2005 06 03 | 699 | 0.4− | 0.5− | 2005 11 02 | 704 | 0.2− | 0.5+ |
| 2001 10 23 | 704 | 0.3− | 0.3− | 2005 06 17 | 699 | 0.1− | 0.5− | 2005 11 02 | 704 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.1− | 0.9− | 2005 06 17 | 699 | 0.1− | 0.1+ | 2005 11 02 | 704 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.2+ | 0.5− | 2005 06 17 | 699 | 0.3+ | 0.1− | 2005 11 02 | 704 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | 0.2+ | 0.7− | 2005 06 17 | 699 | 0.2− | 0.8+ | 2005 11 04 | 704 | 0.5+ | 0.5+ |
| 2001 10 24 | 704 | 0.0 | 0.2− | 2005 07 02 | 703 | 0.6− | 0.6− | 2005 11 04 | 704 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.1+ | 0.5− | 2005 07 02 | 703 | 0.4− | 0.4− | 2005 11 04 | 704 | 0.3+ | 0.7+ |
| 2001 10 24 | 704 | (0.7+ | 2.4−) | 2005 07 02 | 703 | 0.5− | 0.4− | 2005 11 04 | 704 | 0.1− | 0.7+ |
| 2001 10 26 | 704 | 0.8− | 1.0+ | 2005 07 02 | 703 | 0.6− | 0.7− | 2005 11 13 | 703 | 1.0− | 0.4+ |
| 2001 10 26 | 704 | 0.5− | 0.2− | 2005 07 03 | 608 | 1.0− | 1.0+ | 2005 11 13 | 703 | 0.7− | 0.4− |
| 2001 10 26 | 704 | 1.3− | 0.7+ | 2005 07 03 | 608 | 0.9− | 0.7+ | 2005 11 13 | 703 | 0.7+ | 0.2− |
| 2001 10 26 | 704 | 0.1+ | 1.1+ | 2005 07 03 | 608 | 0.5− | 0.6+ | 2005 11 13 | 703 | 1.0− | 1.2− |
| 2001 10 26 | 704 | 0.5− | 0.5+ | 2005 07 08 | 699 | 0.2− | 0.1− | 2005 11 29 | 699 | 0.6+ | 0.4− |
| 2001 11 12 | 704 | 0.6+ | 0.1+ | 2005 07 08 | 699 | 0.4− | 0.7+ | 2005 11 29 | 699 | 0.8+ | 0.3− |
| 2001 11 12 | 704 | 0.1+ | 0.1+ | 2005 07 08 | 699 | 0.7+ | 0.2− | 2005 11 29 | 699 | 0.6+ | 0.8+ |
| 2001 11 12 | 704 | 0.4+ | 0.0 | 2005 07 08 | 699 | 0.9− | 0.4− | 2005 11 29 | 699 | 0.9− | 0.5+ |
| 2001 11 12 | 704 | 0.0 | 0.7− | 2005 07 26 | 608 | 1.2+ | 0.1− | 2005 12 02 | 704 | 0.4− | 0.2− |
| 2001 11 12 | 704 | 0.2+ | 0.1− | 2005 07 26 | 608 | 0.7+ | 0.2+ | 2005 12 02 | 704 | 0.3− | 0.0 |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2005 07 26 | 608 | 0.3+ | 0.4+ | 2005 12 02 | 704 | 0.2+ | 0.4+ |
| 2001 11 20 | 704 | 0.3− | 0.1+ | 2005 08 14 | 608 | 1.6+ | 0.7− | 2005 12 02 | 703 | 0.1+ | 0.6− |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2005 08 14 | 608 | 1.2+ | 0.7− | 2005 12 02 | 703 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2005 08 14 | 608 | 1.5+ | 0.5− | 2005 12 02 | 703 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.1− | 2005 08 27 | 699 | 0.2+ | 0.3+ | 2005 12 02 | 703 | 0.1− | 0.7− |
| 2001 11 24 | 704 | 0.9− | 0.5− | 2005 08 27 | 699 | 0.4+ | 0.2+ | 2005 12 29 | 704 | (2.3− | 0.6−) |
| 2001 11 24 | 704 | 0.1− | 0.4+ | 2005 08 27 | 699 | 0.2+ | 0.2+ | 2005 12 29 | 704 | 1.2− | 0.8− |
| 2001 11 24 | 704 | 1.8+ | 0.2− | 2005 08 27 | 699 | 0.6+ | 0.1+ | 2005 12 29 | 704 | 1.8− | 0.7+ |
| 2001 11 24 | 704 | 0.6− | 0.5− | 2005 09 01 | 608 | 0.3+ | 0.5− | 2006 02 02 | G96 | 0.2− | 0.3− |
| 2001 11 24 | 704 | 0.1− | 0.2− | 2005 09 01 | 608 | 0.3+ | 0.5− | 2006 02 02 | G96 | 0.1+ | 0.2− |
| 2001 11 24 | 291 | 1.2+ | 1.6+ | 2005 09 01 | 608 | 0.0 | 0.5− | 2006 02 02 | G96 | 0.2− | 0.0 |
| 2001 11 24 | 291 | 0.8+ | 1.8+ | 2005 09 11 | 704 | 0.0 | 0.2+ | 2006 02 02 | G96 | 0.1− | 0.5− |

**(138482)∗ 2000 KR$_4$ = 2001 WQ$_{38}$**

Discovered 2000 May 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22172)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.84910 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37062128 | $\omega$ | 268.84182 | | −0.77134581 | −0.56794127 | |
| $a$ | 1.9194751 | $\Omega$ | 236.47958 | | +0.62801151 | −0.75235458 | |
| $e$ | 0.0739348 | $i$ | 20.14887 | | −0.10308825 | −0.33377433 | |
| $P$ | 2.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.1− | 0.2− | 2001 11 20 | 704 | 0.7− | 0.2+ | 2005 04 03 | 704 | (0.5+ | 2.0−) |
| 2000 05 07 | 704 | 0.5− | 0.4− | 2001 11 20 | 704 | 0.0 | 0.5+ | 2005 04 03 | 704 | 0.6+ | 0.9+ |
| 2000 05 07 | 704 | 1.0− | 0.1− | 2001 11 20 | 704 | 0.3+ | 0.7+ | 2005 04 03 | 704 | (1.8+ | 1.0+) |
| 2000 05 27 | 704 | 0.7+ | 0.2+ | 2001 12 11 | 704 | 0.5+ | 0.0 | 2005 04 03 | 704 | 0.3− | 0.6+ |
| 2000 05 27 | 704 | 0.0 | 0.5+ | 2001 12 11 | 704 | 0.5+ | 0.8− | 2005 04 07 | 644 | 0.2+ | 0.2+ |
| 2000 05 27 | 704 | 0.4+ | 0.2+ | 2001 12 11 | 704 | 0.1+ | 0.5− | 2005 04 07 | 644 | 0.2+ | 0.1+ |
| 2000 05 27 | 704 | 0.4+ | 0.2+ | 2001 12 11 | 704 | 0.5+ | 0.8− | 2005 04 07 | 644 | 0.3+ | 0.1+ |
| 2000 05 27 | 704 | 0.1+ | 0.3+ | 2001 12 11 | 704 | 0.2+ | 0.5− | 2006 09 24 | 699 | 0.6+ | 0.2− |
| 2000 05 29 | 704 | 0.2+ | 0.8+ | 2001 12 19 | 704 | (1.8− | 0.1−) | 2006 09 24 | 699 | 1.3+ | 0.1− |
| 2000 05 29 | 704 | 0.8− | 1.0+ | 2001 12 19 | 704 | 1.2− | 0.6+ | 2006 09 24 | 699 | 0.5− | 0.7− |
| 2000 05 29 | 704 | 0.3− | 0.0 | 2001 12 19 | 704 | (1.8− | 0.6+) | 2006 09 24 | 699 | 0.6− | 1.1+ |
| 2000 05 30 | 704 | 0.0 | 0.4+ | 2001 12 19 | 704 | 1.4− | 0.5+ | 2006 09 25 | 703 | 0.1− | 0.9− |
| 2000 05 30 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | (2.7− | 0.3−) | 2006 09 25 | 703 | 0.5+ | 0.4+ |
| 2000 05 30 | 704 | 1.2+ | 0.4+ | 2002 01 06 | 608 | 0.3+ | 1.2− | 2006 09 25 | 703 | 0.2− | 0.1+ |
| 2000 05 30 | 704 | 1.0+ | 0.9+ | 2002 01 06 | 608 | 0.7+ | 1.2− | 2006 09 25 | 703 | 0.1+ | 0.4+ |
| 2000 05 30 | 704 | 0.9+ | 0.4+ | 2002 01 06 | 608 | 0.3+ | 0.6− | 2006 09 25 | 703 | 1.2− | 0.1− |
| 2000 06 25 | 691 | 0.1− | 0.2− | 2002 01 07 | 699 | 0.9− | 0.2− | 2006 09 25 | 703 | 0.3+ | 1.2+ |
| 2000 06 25 | 691 | 0.2− | 0.2− | 2002 01 07 | 699 | 0.4+ | 0.2− | 2006 09 25 | 703 | 0.4− | 0.5− |
| 2000 06 25 | 691 | 0.3− | 0.5− | 2002 01 07 | 699 | 0.9− | 0.1+ | 2006 09 25 | 703 | 0.6− | 1.0+ |
| 2001 11 17 | 704 | 0.1+ | 1.2+ | 2002 01 07 | 699 | (1.9+ | 3.6+) | 2006 11 15 | 703 | 0.6− | 0.2+ |
| 2001 11 17 | 704 | 0.7− | 0.8+ | 2005 03 02 | E12 | 0.9− | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.4− |
| 2001 11 17 | 704 | 0.5+ | 1.0+ | 2005 03 02 | E12 | 0.2+ | 1.2+ | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2001 11 17 | 704 | 0.2+ | 0.8+ | 2005 03 02 | E12 | 0.1− | 0.2− | 2006 11 15 | 703 | 1.4+ | 0.5+ |
| 2001 11 17 | 704 | 1.1+ | 0.8+ | 2005 03 02 | E12 | 0.2+ | 0.9− | | | | |

**(138483)∗ 2000 KT$_7$ = 2004 EY$_{36}$**

Discovered 2000 May 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.32468 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22663112 | $\omega$ | 75.29686 | | −0.74331390 | +0.66836432 | |
| $a$ | 2.6643402 | $\Omega$ | 146.63034 | | −0.63155568 | −0.68745800 | |
| $e$ | 0.1404353 | $i$ | 2.89846 | | −0.22050366 | −0.28406098 | |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.5− | 0.7+ | 2004 03 19 | 704 | 0.7+ | 0.2+ | 2004 04 23 | 691 | 0.0 | 0.6+ |
| 2000 05 27 | 704 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.6+ | 0.3− | 2005 07 11 | G96 | 0.2− | 0.2+ |
| 2000 05 27 | 704 | 1.0− | 1.8+ | 2004 03 19 | 704 | 0.8+ | 0.4− | 2005 07 11 | G96 | 0.3− | 0.1+ |
| 2000 05 29 | 704 | 0.1− | 0.3+ | 2004 03 19 | 704 | 1.5+ | 0.1+ | 2005 07 11 | G96 | 0.2+ | 0.2− |
| 2000 05 29 | 704 | 1.8+ | 0.2− | 2004 03 21 | 699 | 1.5− | 0.6+ | 2005 07 11 | G96 | 0.1+ | 0.1+ |
| 2000 05 29 | 704 | 0.2+ | 0.8− | 2004 03 21 | 699 | 0.7− | 0.9− | 2005 07 29 | 644 | 0.2− | 0.3+ |
| 2000 05 29 | 704 | 0.2+ | 0.5− | 2004 03 21 | 699 | 0.9− | 0.1+ | 2005 07 29 | 644 | 0.1− | 0.2+ |
| 2000 05 30 | 704 | 0.2+ | 0.2+ | 2004 03 21 | 699 | 0.0 | 0.7+ | 2005 07 29 | 644 | 0.1− | 0.4+ |
| 2000 05 30 | 704 | 0.3− | 0.0 | 2004 03 22 | 704 | 0.4− | 0.4+ | 2005 08 05 | 644 | 0.1+ | 0.2+ |
| 2000 05 30 | 704 | 0.9+ | 0.6+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2005 08 05 | 644 | 0.1− | 0.0 |
| 2000 05 30 | 704 | 0.6− | 0.6+ | 2004 03 22 | 704 | 0.9+ | 0.3+ | 2005 08 05 | 644 | 0.1− | 0.1+ |
| 2000 05 30 | 704 | 1.1+ | 0.3− | 2004 03 22 | 704 | 0.9+ | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.3+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.0 | 0.5− | 2006 09 30 | G96 | 0.0 | 0.6+ |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2004 03 24 | 699 | 1.3− | 0.3+ | 2006 09 30 | G96 | 0.6− | 0.9+ |
| 2001 09 19 | 704 | 1.2− | 0.1+ | 2004 03 24 | 699 | 0.3+ | 0.9− | 2006 09 30 | G96 | 0.4− | 0.7+ |
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2004 03 24 | 699 | 0.7− | 0.6− | 2006 10 16 | 621 | 0.2+ | 0.5+ |
| 2004 03 13 | 644 | 0.3+ | 0.3+ | 2004 03 24 | 699 | 0.8− | 0.4− | 2006 10 16 | 621 | 0.0 | 0.1+ |
| 2004 03 13 | 644 | 0.3+ | 0.4+ | 2004 03 28 | 704 | 0.3+ | 0.6− | 2006 10 16 | 621 | 0.4− | 0.3− |
| 2004 03 13 | 644 | 0.1+ | 0.2+ | 2004 03 28 | 704 | 1.0+ | 0.1− | 2006 10 17 | G96 | 0.7− | 0.1− |
| 2004 03 16 | 704 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.3+ | 0.9+ | 2006 10 17 | G96 | 0.8+ | 0.5− |
| 2004 03 16 | 704 | 0.6− | 0.1+ | 2004 03 28 | 704 | 1.1+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.5+ |
| 2004 03 16 | 704 | 0.8− | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2004 03 16 | 704 | 1.0− | 0.9− | 2004 04 19 | 704 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.2+ | 0.3+ |
| 2004 03 16 | 704 | 1.0− | 0.6+ | 2004 04 19 | 704 | 0.8+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.6+ |
| 2004 03 17 | 704 | 0.3+ | 0.1− | 2004 04 19 | 704 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.7+ |
| 2004 03 17 | 704 | 1.0− | 0.1+ | 2004 04 19 | 704 | 0.5− | 0.6− | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2004 03 17 | 704 | 0.3− | 0.2− | 2004 04 19 | 704 | 0.2− | 1.2+ | 2006 11 16 | G96 | 0.3+ | 0.2+ |
| 2004 03 17 | 704 | 0.5+ | 0.2+ | 2004 04 23 | 691 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2004 03 19 | 704 | 0.9+ | 0.1− | 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2+ |

**(138484)∗ 2000 KD$_9$**

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.65290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21274085 | $\omega$ | 124.95359 | | −0.98174495 | +0.13340433 | |
| $a$ | 2.7790869 | $\Omega$ | 63.05636 | | −0.18139233 | −0.87110250 | |
| $e$ | 0.1580404 | $i$ | 8.74756 | | +0.05721601 | −0.47263488 | |
| $P$ | 4.63 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 704 | 1.6− | 0.6+ | 2002 11 07 | 704 | 0.2− | 0.4+ | 2004 01 31 | 704 | 0.8+ | 0.2− |
| 2000 04 27 | 704 | (2.5− | 2.0+) | 2002 11 07 | 704 | 0.9+ | 0.0 | 2004 01 31 | 704 | 0.3+ | 0.3− |
| 2000 04 27 | 704 | 0.6+ | 1.1+ | 2002 12 11 | 704 | 0.9− | 0.7− | 2004 01 31 | 704 | 0.3+ | 0.2− |
| 2000 04 27 | 704 | 0.8+ | 1.8+ | 2002 12 11 | 704 | 0.9− | 0.1+ | 2004 01 31 | 704 | 0.2+ | 0.0 |
| 2000 04 27 | 704 | 0.5− | 1.0+ | 2002 12 11 | 704 | 0.1+ | 0.9+ | 2004 01 31 | 704 | 0.6+ | 0.2+ |
| 2000 05 11 | 704 | 0.9+ | 0.3+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2004 02 13 | 699 | 0.3− | 0.3− |
| 2000 05 11 | 699 | 0.3+ | 0.1+ | 2003 12 17 | 644 | 0.2− | 0.0 | 2004 02 13 | 699 | 0.1+ | 0.2+ |
| 2000 05 11 | 704 | 0.3+ | 0.3+ | 2003 12 17 | 644 | 0.2− | 0.0 | 2004 02 13 | 699 | 0.2+ | 0.3− |
| 2000 05 11 | 699 | 0.2+ | 1.2+ | 2003 12 17 | 644 | 0.2+ | 0.3+ | 2004 02 13 | 699 | 0.7− | 0.3+ |
| 2000 05 11 | 704 | 0.5+ | 0.8+ | 2003 12 17 | 644 | 0.2+ | 0.4+ | 2004 02 14 | 704 | 0.9+ | 0.9+ |
| 2000 05 11 | 699 | 0.3− | 0.1+ | 2003 12 17 | 644 | 0.2+ | 0.5+ | 2004 02 14 | 704 | 0.2− | 0.0 |
| 2000 05 11 | 704 | 0.0 | 0.1− | 2003 12 17 | 644 | 0.0 | 0.3+ | 2004 02 14 | 704 | 0.2− | 1.3+ |
| 2000 05 11 | 699 | 0.4− | 0.8+ | 2003 12 27 | 704 | 0.1+ | 0.8+ | 2004 02 14 | 704 | 0.2− | 0.7+ |
| 2000 05 23 | 699 | 0.0 | 0.2+ | 2003 12 27 | 704 | 0.7+ | 0.1+ | 2004 02 14 | 704 | 0.4+ | 0.1− |
| 2000 05 23 | 699 | 0.3− | 0.1− | 2003 12 27 | 704 | 0.7− | 0.2− | 2004 04 14 | 699 | 0.4+ | 0.4+ |
| 2000 05 23 | 699 | 0.6− | 0.2+ | 2003 12 27 | 704 | 0.4+ | 0.8+ | 2004 04 14 | 699 | 0.4+ | 0.7− |
| 2000 05 23 | 699 | 0.2+ | 0.1− | 2003 12 29 | 704 | 0.2− | 0.5+ | 2004 04 14 | 699 | 1.3+ | 0.2− |
| 2000 05 28 | 704 | 0.1+ | 1.2+ | 2003 12 29 | 704 | 0.0 | 0.7+ | 2004 04 14 | 699 | 0.8− | 0.8+ |
| 2000 05 28 | 704 | 0.7+ | 0.7− | 2003 12 29 | 704 | 0.4+ | 0.3− | 2005 01 20 | 809 | 0.3− | 0.1− |
| 2000 05 28 | 704 | 1.1+ | 1.3− | 2003 12 29 | 704 | 1.3− | 0.6− | 2005 01 20 | 809 | 0.4− | 0.1− |
| 2000 05 28 | 704 | 0.7+ | 0.6+ | 2003 12 29 | 704 | 0.3− | 1.3+ | 2005 01 20 | 809 | 0.3− | 0.3− |
| 2000 05 28 | 704 | 0.6+ | 0.3− | 2004 01 13 | 699 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.4− | 0.6+ |
| 2000 05 29 | 704 | 0.2− | 1.8+ | 2004 01 13 | 699 | 0.5− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.8+ |
| 2000 05 29 | 704 | 0.4+ | 0.5+ | 2004 01 13 | 699 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.6− | 0.7+ |
| 2000 05 29 | 704 | 0.6+ | 0.5− | 2004 01 13 | 699 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.2− |
| 2001 08 27 | 644 | 0.4+ | 0.4+ | 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.2+ |
| 2001 08 27 | 644 | 0.5+ | 0.8+ | 2004 01 17 | 644 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.4− | 0.4− |
| 2001 08 27 | 644 | 0.0 | 0.2+ | 2004 01 17 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.5+ |
| 2002 10 16 | 644 | 0.2− | 1.3+ | 2004 01 17 | 644 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.0 | 0.9− |
| 2002 10 16 | 644 | 0.1+ | 1.5+ | 2004 01 17 | 644 | 0.1− | 0.2− | 2006 10 02 | 703 | 1.3+ | 1.4+ |
| 2002 10 16 | 644 | 0.0 | 1.3+ | 2004 01 17 | 644 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.2+ | 0.2− |
| 2002 11 06 | 608 | 0.8− | 0.7+ | 2004 01 30 | 703 | 0.7+ | 0.0 | 2006 10 02 | 703 | (1.7− | 0.7+) |
| 2002 11 06 | 608 | 0.5− | 0.6+ | 2004 01 30 | 703 | 0.7− | 1.4− | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2002 11 06 | 608 | 0.7− | 0.6+ | 2004 01 30 | 703 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.5− | 0.7+ |
| 2002 11 07 | 704 | 0.9− | 0.5− | 2004 01 30 | 703 | (0.4− | 2.2+) | 2006 10 11 | 644 | 0.5− | 0.6+ |

**(138485)∗ 2000 KY$_9$ = 2004 GT$_{39}$**

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74786)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.51859 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23580211 | $\omega$ | 212.22147 | | +0.05566426 | −0.96927092 | |
| $a$ | 2.5948022 | $\Omega$ | 235.67403 | | +0.96653420 | +0.11250255 | |
| $e$ | 0.1258852 | $i$ | 16.86670 | | +0.25042588 | −0.21876258 | |
| $P$ | 4.18 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.1+ | 0.7− | 2004 04 16 | E12 | 0.5− | 0.4− | 2006 11 17 | 704 | 0.4− | 0.5+ | |
| 2000 05 28 | 704 | 1.2+ | 1.1+ | 2004 04 16 | E12 | 0.4+ | 1.0+ | 2006 11 17 | 704 | 0.8− | 0.1− | |
| 2000 05 28 | 704 | 0.8− | 0.7+ | 2004 04 16 | E12 | 0.8+ | 1.1+ | 2006 11 17 | 704 | 0.1− | 0.4+ | |
| 2000 05 28 | 704 | 0.1+ | 0.5+ | 2004 04 16 | E12 | 0.1− | 1.2+ | 2006 11 17 | 703 | 0.4− | 0.2+ | |
| 2000 05 28 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.2+ | |
| 2000 05 29 | 704 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.1− | 0.2+ | |
| 2000 05 29 | 704 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.0 | 0.2+ | |
| 2000 05 29 | 704 | 0.5+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.5− | 0.0 | |
| 2000 05 31 | 691 | 0.3− | 0.5− | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.6− | 0.0 | |
| 2000 05 31 | 691 | 0.7− | 0.7− | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.5− | 0.1+ | |
| 2000 05 31 | 691 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.1+ | |
| 2001 07 12 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.8− | 0.1+ | |
| 2001 07 12 | 644 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 21 | 691 | 0.2− | 0.1+ | |
| 2001 07 12 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.2− | 0.0 | |
| 2001 07 27 | 644 | 0.0 | 1.1+ | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.3− | 0.0 | |
| 2001 07 27 | 644 | 0.2+ | 1.0+ | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.2+ | |
| 2001 07 27 | 644 | 0.2+ | 1.3+ | 2006 11 09 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.5+ | |
| 2002 12 01 | 704 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3− | 0.4+ | |
| 2002 12 01 | 704 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4+ | |
| 2002 12 01 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.2− | |
| 2002 12 14 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | (1.9+ | 1.2+) | 2006 11 27 | G96 | 0.2+ | 0.1− | |
| 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.4− | |
| 2002 12 14 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.0 | 0.2+ | |
| 2002 12 14 | 704 | 0.0 | 0.4− | 2006 11 11 | 703 | (2.2− | 0.8+) | 2006 11 27 | G96 | 0.1+ | 0.3− | |
| 2002 12 14 | 704 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.2− | |
| 2003 02 04 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.4+ | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.1− | |
| 2003 02 04 | 644 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.6− | |
| 2003 02 04 | 644 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3− | 0.0 | |
| 2004 04 15 | E12 | 0.8+ | 0.9+ | 2006 11 13 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.6+ | |
| 2004 04 15 | E12 | 0.8+ | 0.8+ | 2006 11 13 | 644 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.3+ | |
| 2004 04 15 | E12 | 0.7+ | 1.2+ | 2006 11 17 | 704 | 0.8+ | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.5+ | |
| 2004 04 15 | E12 | 0.4+ | 1.0+ | 2006 11 17 | 704 | 0.2+ | 0.9+ | 2006 11 29 | 704 | 0.4+ | 0.8− | |

**(138486)∗ 2000 KH$_{11}$ = 2001 SV$_{117}$**

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17399)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.87965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21691131 | $\omega$ | 19.64283 | | −0.16810166 | +0.98379650 | |
| $a$ | 2.7433502 | $\Omega$ | 240.72328 | | −0.91371380 | −0.17923605 | |
| $e$ | 0.0763288 | $i$ | 4.09836 | | −0.36995800 | −0.00434472 | |
| $P$ | 4.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.0 | 0.5+ | 2001 09 20 | 704 | 0.1+ | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | |
| 2000 05 07 | 704 | 0.4+ | 0.1+ | 2001 09 20 | 704 | 0.3− | 0.2− | 2006 10 17 | 691 | 1.2− | 0.5− | |
| 2000 05 07 | 704 | 0.7+ | 0.7+ | 2001 09 20 | 704 | 1.4+ | 0.3+ | 2006 10 17 | 691 | 0.3+ | 0.3+ | |
| 2000 05 07 | 704 | 0.5+ | 0.8+ | 2001 09 24 | 704 | 0.1− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.1+ | |
| 2000 05 07 | 704 | 0.0 | 0.5+ | 2001 09 24 | 704 | 0.8+ | 0.7− | 2006 10 19 | 691 | 0.3− | 0.4+ | |
| 2000 05 11 | 699 | 0.5− | 0.1− | 2001 09 24 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.6+ | |
| 2000 05 11 | 699 | 0.2+ | 0.2− | 2001 09 24 | 704 | 1.0− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.6+ | |
| 2000 05 11 | 699 | 0.0 | 0.6+ | 2001 09 24 | 704 | 0.9+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 | |
| 2000 05 11 | 699 | 0.5− | 0.4+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2000 05 28 | 704 | 0.4+ | 0.8+ | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.5− | 0.2+ | |
| 2000 05 28 | 704 | 1.0+ | 1.1+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1+ | |
| 2000 05 28 | 704 | 0.6+ | 1.3+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ | |
| 2000 05 29 | 704 | 1.7+ | 0.0 | 2004 03 20 | 704 | (0.1− | 1.6+) | 2006 10 23 | 691 | 0.5− | 0.2+ | |
| 2000 05 29 | 704 | 0.5+ | 0.4+ | 2004 03 20 | 704 | 0.9+ | 1.3+ | 2006 10 28 | 691 | 0.3+ | 0.3+ | |
| 2000 05 29 | 704 | 0.8− | 0.3+ | 2004 03 20 | 704 | 0.1+ | 1.4+ | 2006 10 28 | 691 | 0.3+ | 0.2+ | |
| 2000 05 29 | 704 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.9+ | 1.5+ | 2006 10 28 | 691 | 0.2+ | 0.1− | |
| 2000 05 29 | 704 | 0.8+ | 1.5+ | 2004 03 20 | 704 | (2.2+ | 1.8+) | 2006 10 31 | 691 | 0.3+ | 0.1− | |
| 2000 06 04 | 691 | 0.4− | 0.1− | 2004 03 27 | 704 | (1.0+ | 2.1+) | 2006 10 31 | 691 | 0.3+ | 0.2+ | |
| 2000 06 04 | 691 | 0.2+ | 0.4− | 2004 03 27 | 704 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.4+ | 0.1− | |
| 2000 06 04 | 691 | 0.5− | 0.1− | 2004 03 27 | 704 | 0.7− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.2+ | |
| 2001 09 16 | 704 | (1.8− | 2.4+) | 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.2+ | |
| 2001 09 16 | 704 | 1.1− | 0.8+ | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.3+ | |
| 2001 09 16 | 704 | 0.7+ | 0.8+ | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 1.0− | 0.9− | |
| 2001 09 16 | 704 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.8+ | 0.3+ | |
| 2001 09 16 | 704 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.0− | 0.3+ | |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.5+ | 0.2− | 2006 11 11 | 703 | 1.3− | 1.9− | |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.4+ | 0.2+ | | | | | |

**(138487)∗ 2000 KF$_{15}$ = 2002 VZ$_{126}$**

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37523)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.67155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23010322 | $\omega$ | 112.67829 | | −0.97823040 | −0.08458110 | |
| $a$ | 2.6374704 | $\Omega$ | 62.92189 | | −0.01655767 | −0.87844787 | |
| $e$ | 0.1303264 | $i$ | 12.28837 | | +0.20686017 | −0.47029285 | |
| $P$ | 4.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.3+ | 1.7+ | 2002 12 05 | 704 | 0.4+ | 1.0+ | 2004 04 23 | 703 | 0.8+ | 1.3+ | |
| 2000 05 07 | 704 | 0.0 | 0.6+ | 2002 12 05 | 704 | 1.1− | 0.2− | 2004 04 23 | 703 | 0.9− | 0.7+ | |
| 2000 05 07 | 704 | (1.9+ | 2.3+) | 2002 12 27 | 644 | 0.1− | 0.4+ | 2004 04 25 | 699 | 0.6− | 0.1+ | |
| 2000 05 25 | 699 | 0.0 | 0.6+ | 2002 12 27 | 644 | 0.0 | 0.5+ | 2004 04 25 | 699 | 0.0 | 0.3− | |
| 2000 05 25 | 699 | 1.2− | 0.3+ | 2002 12 27 | 644 | 0.0 | 1.0+ | 2004 04 25 | 699 | 0.3− | 0.1+ | |
| 2000 05 25 | 699 | 0.4− | 1.3− | 2004 03 15 | 704 | 0.6+ | 0.2+ | 2004 04 25 | 699 | 1.1− | 0.3− | |
| 2000 05 25 | 699 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2005 08 10 | E12 | 0.5− | 0.1+ | |
| 2000 05 28 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2005 08 10 | E12 | 0.8− | 0.1+ | |
| 2000 05 28 | 704 | 0.4+ | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.5+ | 2005 08 10 | E12 | 0.5+ | 0.5+ | |
| 2000 05 28 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.7+ | 0.2+ | 2005 08 10 | E12 | 0.2− | 0.3+ | |
| 2000 05 28 | 704 | 0.3+ | 1.4+ | 2004 03 21 | 691 | 0.3− | 0.2+ | 2005 08 10 | E12 | 0.2+ | 1.0+ | |
| 2000 05 29 | 704 | 0.5+ | 0.2+ | 2004 03 21 | 691 | 0.2− | 0.2+ | 2005 08 10 | E12 | 0.8+ | 1.0+ | |
| 2000 05 29 | 704 | 0.4+ | 0.2+ | 2004 03 21 | 691 | 0.2− | 0.2+ | 2005 08 10 | E12 | 0.7− | 0.4+ | |
| 2000 05 29 | 704 | 0.8+ | 0.8+ | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2005 08 10 | E12 | 0.2− | 1.2+ | |
| 2000 05 29 | 704 | 0.9+ | 1.0+ | 2004 03 23 | 704 | 0.7+ | 0.2+ | 2006 10 16 | 703 | 1.4− | 0.6− | |
| 2002 11 13 | 644 | 0.2− | 0.9+ | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.8+ | |
| 2002 11 13 | 644 | 0.0 | 0.5+ | 2004 03 23 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.2+ | |
| 2002 11 13 | 644 | 0.0 | 0.7+ | 2004 03 23 | 704 | 0.1− | 1.2+ | 2006 10 16 | 703 | 0.6− | 1.2− | |
| 2002 11 16 | 644 | 0.3− | 0.4+ | 2004 04 12 | 703 | 0.3− | 0.8+ | 2006 10 22 | 703 | 0.6+ | 0.4+ | |
| 2002 11 16 | 644 | 0.1− | 0.5+ | 2004 04 12 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.9+ | 0.5− | |
| 2002 11 16 | 644 | 0.0 | 0.7+ | 2004 04 12 | 703 | 0.6− | 0.4+ | 2006 10 22 | 703 | 0.5+ | 0.7− | |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2004 04 12 | 703 | 0.9+ | 0.5+ | 2006 10 22 | 703 | 0.2+ | 0.7+ | |
| 2002 11 24 | 644 | 0.1− | 0.5+ | 2004 04 15 | 704 | 0.5+ | 0.9− | 2006 11 09 | 644 | 0.3− | 0.4+ | |
| 2002 11 24 | 644 | 0.0 | 0.5+ | 2004 04 15 | 704 | 0.5+ | 0.7− | 2006 11 09 | 644 | 0.5− | 0.1+ | |
| 2002 11 25 | 644 | 0.6− | 1.0+ | 2004 04 15 | 704 | 0.2+ | 1.2− | 2006 11 09 | 644 | 0.0 | 0.6+ | |
| 2002 11 25 | 644 | 0.6− | 0.9+ | 2004 04 15 | 704 | 0.9+ | 1.1− | 2006 11 22 | G96 | 0.3+ | 0.2+ | |
| 2002 11 25 | 644 | 0.2− | 0.8+ | 2004 04 15 | 704 | 0.5+ | 1.2− | 2006 11 22 | G96 | 0.6− | 0.1+ | |
| 2002 12 05 | 704 | 0.5− | 0.1+ | 2004 04 23 | 703 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.0 | |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2004 04 23 | 703 | (3.9+ | 0.1+) | 2006 11 22 | G96 | 0.0 | 0.3+ | |

**(138488)∗ 2000 KY$_{16}$**

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.21065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21446469 | $\omega$ | 356.15780 | | −0.54071389 | +0.82387096 | |
| $a$ | 2.7641749 | $\Omega$ | 241.03390 | | −0.76652357 | −0.56575044 | |
| $e$ | 0.1282441 | $i$ | 11.19736 | | −0.34651134 | −0.03410402 | |
| $P$ | 4.60 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 20 | 691 | 0.0 | 0.2− | 2001 09 25 | 704 | 0.0 | 0.8+ | 2005 07 05 | 704 | 0.0 | 0.7+ |
| 1996 06 20 | 691 | 0.2− | 0.2− | 2001 09 25 | 704 | 0.2− | 0.3+ | 2005 07 05 | 704 | 0.4− | 0.2− |
| 1996 06 20 | 691 | 0.2+ | 0.1− | 2001 09 25 | 704 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.9+ |
| 2000 05 07 | 704 | 0.6+ | 0.8− | 2001 09 26 | 704 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2000 05 07 | 704 | 0.4− | 0.2− | 2001 09 26 | 704 | 0.5+ | 0.7+ | 2006 10 12 | 644 | 0.4− | 0.5+ |
| 2000 05 07 | 704 | 0.1− | 0.9+ | 2001 09 26 | 704 | 0.4− | 0.1− | 2006 10 19 | 703 | (1.6− | 0.4+) |
| 2000 05 28 | 704 | 0.0 | 0.3+ | 2001 09 26 | 704 | 1.3+ | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.3+ |
| 2000 05 28 | 704 | 0.4+ | 0.2− | 2001 10 13 | 644 | 0.4− | 1.0+ | 2006 10 19 | 703 | 0.4+ | 0.3+ |
| 2000 05 28 | 704 | 0.3+ | 0.0 | 2001 10 13 | 644 | 0.8− | 0.9+ | 2006 10 19 | 703 | 0.8− | 1.2− |
| 2000 05 28 | 704 | 0.1− | 0.3+ | 2001 10 13 | 644 | 0.7− | 0.9+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2000 05 28 | 704 | 0.4+ | 0.1+ | 2004 03 16 | 704 | 0.6+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2000 05 29 | 704 | 0.5− | 0.3+ | 2004 03 16 | 704 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2000 05 29 | 704 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.4+ | 0.9+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2000 05 29 | 704 | 0.8− | 0.3− | 2004 03 16 | 704 | 0.0 | 1.0+ | 2006 11 19 | 704 | 0.9− | 1.0+ |
| 2000 06 01 | 608 | 0.4− | 0.0 | 2004 03 16 | 608 | 0.1+ | 0.6− | 2006 11 19 | 704 | (1.2− | 1.6+) |
| 2000 06 01 | 608 | 0.4− | 0.1+ | 2004 03 16 | 608 | 0.2+ | 0.2− | 2006 11 19 | 704 | (3.9− | 3.2+) |
| 2000 06 01 | 608 | 0.5− | 0.6− | 2004 03 16 | 608 | 0.1+ | 0.2− | 2006 11 22 | 704 | 1.3− | 0.0 |
| 2000 06 24 | 704 | 0.1− | 0.1+ | 2005 06 06 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.7+ |
| 2000 06 24 | 704 | 0.8+ | 0.7+ | 2005 06 06 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.9+ |
| 2000 06 24 | 704 | 0.8− | 0.0 | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2000 06 24 | 704 | 0.4+ | 1.1+ | 2005 06 11 | 691 | 0.1+ | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2001 09 18 | 645 | 0.1+ | 0.1− | 2005 06 11 | 691 | 0.3− | 0.7− | 2006 11 25 | G96 | 0.8− | 0.1− |
| 2001 09 18 | 645 | 0.1+ | 0.2− | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.6+ |
| 2001 09 25 | 704 | 0.4+ | 0.9+ | 2005 07 05 | 704 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.7+ | 0.0 |

**(138489)∗ 2000 KL$_{17}$ = 2001 SR$_{293}$**

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 26964)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.24908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26795041 | $\omega$ | 30.49664 | | −0.99549927 | +0.09408924 | |
| $a$ | 2.3828668 | $\Omega$ | 154.89475 | | −0.09144683 | −0.92232235 | |
| $e$ | 0.1237781 | $i$ | 1.53051 | | −0.02487334 | −0.37479153 | |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 25 | 699 | 0.3− | 0.2+ | 2001 09 23 | 704 | 0.0 | 0.6+ | 2003 02 05 | 608 | 0.1− | 0.3+ |
| 2000 05 25 | 699 | 0.7− | 0.4+ | 2002 12 10 | 644 | 0.5+ | 1.1+ | 2003 02 05 | 608 | 0.2+ | 0.3+ |
| 2000 05 25 | 699 | 0.6− | 0.9+ | 2002 12 10 | 644 | 0.1+ | 0.8+ | 2005 10 28 | 703 | (0.0 | 1.6+) |
| 2000 05 25 | 699 | 0.1− | 0.6+ | 2002 12 10 | 644 | 0.2+ | 0.9+ | 2005 10 28 | 703 | 0.8− | 0.1− |
| 2000 05 28 | 704 | 1.5+ | 0.4+ | 2003 01 04 | 704 | 0.9+ | 0.4+ | 2005 10 28 | 703 | 0.0 | 0.2+ |
| 2000 05 28 | 704 | 1.0+ | 1.8+ | 2003 01 04 | 704 | 0.7+ | 0.6+ | 2005 10 28 | 703 | 0.9− | 0.1+ |
| 2000 05 28 | 704 | 1.1− | 0.2+ | 2003 01 04 | 704 | 1.3+ | 0.0 | 2005 10 29 | G96 | 0.3− | 0.1− |
| 2000 05 29 | 704 | 0.2+ | 1.0+ | 2003 01 04 | 704 | 0.4+ | 0.2+ | 2005 10 29 | G96 | 0.2+ | 0.2− |
| 2000 05 29 | 704 | 0.2+ | 0.8+ | 2003 01 08 | 704 | 0.3− | 0.3− | 2005 10 29 | G96 | 0.0 | 0.1− |
| 2000 05 29 | 704 | 0.3− | 0.9+ | 2003 01 08 | 704 | 1.1+ | 0.0 | 2005 10 29 | G96 | 0.2− | 0.0 |
| 2000 05 29 | 704 | 1.2+ | 0.2+ | 2003 01 08 | 704 | 0.3− | 0.1− | 2005 12 01 | G96 | 0.1+ | 0.1− |
| 2001 09 18 | 291 | 0.3− | 0.2+ | 2003 01 08 | 704 | 0.6+ | 0.3− | 2005 12 01 | G96 | 0.5+ | 0.1− |
| 2001 09 18 | 291 | 0.1+ | 0.4+ | 2003 01 08 | 704 | 0.2+ | 0.8− | 2005 12 01 | G96 | 0.3+ | 0.3− |
| 2001 09 18 | 291 | 0.0 | 0.3+ | 2003 01 25 | 645 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2003 01 25 | 645 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2003 01 30 | 699 | 0.3− | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.5+ |
| 2001 09 19 | 704 | 0.6+ | 1.0+ | 2003 01 30 | 699 | 0.6+ | 0.8+ | 2006 10 22 | G96 | 0.6+ | 0.2− |
| 2001 09 19 | 704 | 0.6− | 0.7+ | 2003 01 30 | 699 | 0.5− | 0.5+ | 2006 10 22 | G96 | 0.4+ | 0.2+ |
| 2001 09 21 | 704 | (0.5− | 1.8−) | 2003 01 30 | 699 | 0.1+ | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2001 09 21 | 704 | (1.6− | 0.3−) | 2003 02 03 | 704 | 0.9− | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2001 09 21 | 704 | (1.6− | 1.7+) | 2003 02 03 | 704 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.7− | 1.1+ | 2003 02 03 | 704 | 0.6+ | 1.3+ | 2006 12 01 | G96 | 0.5+ | 0.0 |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2003 02 03 | 704 | (0.0 | 1.8+) | | | | |
| 2001 09 23 | 704 | 0.5− | 0.0 | 2003 02 05 | 608 | 0.3+ | 0.7+ | | | | |

**(138490)∗ 2000 KK$_{20}$**

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.23839 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24183455 | $\omega$ | 332.89998 | | −0.87469724 | +0.48268219 | |
| $a$ | 2.5514701 | $\Omega$ | 236.02833 | | −0.43454553 | −0.82108801 | |
| $e$ | 0.1697621 | $i$ | 3.03079 | | −0.21465069 | −0.30468409 | |
| $P$ | 4.08 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.7+ | 0.1+ | 2004 04 21 | 704 | 0.1− | 0.1− | 2004 05 16 | 704 | 0.2− | 0.1+ |
| 2000 05 07 | 704 | 0.1− | 0.7+ | 2004 04 21 | 704 | 0.4− | 0.4+ | 2004 05 16 | 704 | 0.3− | 0.2− |
| 2000 05 07 | 704 | 0.2− | 0.3+ | 2004 04 21 | 704 | 0.4− | 0.4− | 2004 05 16 | 704 | 0.3− | 0.7− |
| 2000 05 07 | 704 | 0.7+ | 0.3+ | 2004 04 25 | 704 | (0.0 | 2.1−) | 2004 05 16 | 704 | 0.1+ | 0.3+ |
| 2000 05 28 | 704 | 0.4+ | 0.4− | 2004 04 25 | 704 | (0.1− | 1.7−) | 2004 05 19 | 704 | 0.5+ | 0.1− |
| 2000 05 28 | 704 | 0.2+ | 0.2− | 2004 04 25 | 704 | (0.6+ | 1.7−) | 2004 05 19 | 704 | 0.2+ | 0.4+ |
| 2000 05 28 | 704 | 0.5+ | 0.1+ | 2004 04 25 | 704 | (0.7+ | 2.6−) | 2004 05 19 | 704 | 0.1− | 0.3+ |
| 2000 05 28 | 704 | 0.2+ | 0.1+ | 2004 04 25 | 704 | (0.1− | 2.2−) | 2004 05 19 | 704 | 0.2− | 0.4+ |
| 2000 05 28 | 704 | 0.4+ | 0.9+ | 2004 04 26 | 699 | 0.1+ | 0.3+ | 2004 05 19 | 704 | 0.3− | 0.6+ |
| 2000 05 29 | 704 | 1.2− | 0.3+ | 2004 04 26 | 699 | 0.3− | 0.4+ | 2004 06 11 | 704 | 0.8+ | 0.7− |
| 2000 05 29 | 704 | 1.4− | 0.1− | 2004 04 26 | 699 | 0.3+ | 0.6− | 2004 06 11 | 704 | 0.9+ | 0.3+ |
| 2000 05 29 | 704 | 1.2− | 0.5+ | 2004 04 26 | 699 | 0.1− | 0.1+ | 2004 06 11 | 704 | 0.1− | 0.1+ |
| 2000 05 29 | 704 | 1.6− | 0.2− | 2004 05 09 | 644 | 0.6+ | 0.4+ | 2004 06 11 | 704 | (0.8− | 1.5+) |
| 2000 05 29 | 704 | 0.6− | 0.2− | 2004 05 09 | 644 | 0.2+ | 0.1+ | 2005 09 22 | 644 | 0.0 | 0.3+ |
| 2000 06 04 | 608 | 0.1+ | 0.5− | 2004 05 09 | 644 | 0.4+ | 0.0 | 2005 09 22 | 644 | 0.1− | 0.2+ |
| 2000 06 04 | 608 | 0.7+ | 0.3− | 2004 05 11 | 333 | 0.2− | 1.3+ | 2005 09 22 | 644 | 0.2− | 0.0 |
| 2000 06 04 | 608 | 0.7+ | 0.6− | 2004 05 11 | 333 | 0.0 | 0.4+ | 2005 10 30 | G96 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.6+ | 0.5+ | 2004 05 11 | 333 | 0.2− | 0.3+ | 2005 10 30 | G96 | 0.4− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2004 05 12 | 699 | 0.5+ | 0.4− | 2005 10 30 | G96 | 0.8− | 1.2− |
| 2001 09 20 | 704 | 0.9+ | 1.2+ | 2004 05 12 | 699 | 0.4− | 0.2+ | 2005 10 30 | G96 | 0.6− | 0.4− |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2004 05 12 | 699 | 0.2− | 0.3− | 2005 11 30 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.4+ | 1.2+ | 2004 05 12 | 699 | 0.2− | 0.4− | 2005 11 30 | G96 | 0.1− | 0.9− |
| 2001 09 23 | 704 | (1.0− | 1.6+) | 2004 05 12 | E12 | 0.8− | 0.9+ | 2005 11 30 | G96 | 0.4− | 0.4− |
| 2001 09 23 | 704 | 0.8+ | 0.0 | 2004 05 12 | E12 | 0.5− | 1.0+ | 2005 11 30 | G96 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 0.9− | 2004 05 12 | E12 | 0.8− | 0.8+ | 2006 11 11 | G96 | 0.2− | 0.3+ |
| 2001 09 23 | 704 | 0.9+ | 0.3+ | 2004 05 12 | E12 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.4+ |
| 2001 10 11 | 644 | 1.0− | 0.5+ | 2004 05 13 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.6+ | 0.1− |
| 2001 10 11 | 644 | 0.5− | 0.3+ | 2004 05 13 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 10 11 | 644 | 0.6− | 0.5+ | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.3− |
| 2004 04 17 | 704 | 0.4+ | 0.1− | 2004 05 15 | 704 | (1.2+ | 2.1−) | 2006 11 15 | 691 | 0.5− | 0.2+ |
| 2004 04 17 | 704 | 0.0 | 0.4− | 2004 05 15 | 704 | 0.7+ | 1.3− | 2006 11 15 | 691 | 0.8+ | 0.1+ |
| 2004 04 17 | 704 | 0.1− | 0.4− | 2004 05 15 | 704 | (1.7+ | 1.3−) | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2004 04 17 | 704 | 0.4+ | 0.9− | 2004 05 15 | 704 | 1.0+ | 1.5− | 2006 11 19 | 691 | 0.3− | 0.3+ |
| 2004 04 17 | 704 | 0.3+ | 0.3+ | 2004 05 15 | 704 | 0.9+ | 0.8− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2004 04 21 | 704 | 0.3+ | 0.3+ | 2004 05 16 | 704 | 0.6− | 0.9+ | | | | |

**(138491)∗ 2000 KE$_{27}$**

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.11139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21432012 | $\omega$ | 124.65349 | | +0.95873658 | −0.25425859 | |
| $a$ | 2.7654178 | $\Omega$ | 250.36698 | | +0.19591468 | +0.91507230 | |
| $e$ | 0.1695216 | $i$ | 7.76084 | | +0.20601363 | +0.31304195 | |
| $P$ | 4.60 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.2− | 0.8+ | 2001 12 11 | 704 | 0.5+ | 0.5− | 2006 09 25 | 704 | 0.6+ | 0.9+ |
| 2000 05 28 | 704 | 0.8− | 0.1− | 2001 12 11 | 704 | 0.4+ | 0.5− | 2006 10 28 | 704 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | (2.2− | 1.5−) | 2001 12 11 | 704 | 0.0 | 0.6− | 2006 10 28 | 704 | 0.1+ | 0.1− | | |
| 2000 05 29 | 704 | 0.2+ | 0.2+ | 2001 12 11 | 704 | 0.1− | 0.8− | 2006 10 28 | 704 | 1.3− | 0.3+ | | |
| 2000 05 29 | 704 | 0.5+ | 0.3− | 2001 12 19 | 699 | 0.3− | 1.0+ | 2006 10 28 | 704 | 0.6− | 0.3− | | |
| 2000 05 29 | 704 | 0.0 | 0.2− | 2001 12 19 | 699 | 0.3+ | 1.0+ | 2006 11 01 | G96 | 0.2− | 0.5− | | |
| 2001 08 04 | 608 | 0.1+ | 0.1+ | 2001 12 19 | 699 | 0.1+ | 0.6+ | 2006 11 01 | G96 | 0.2+ | 0.4− | | |
| 2001 08 04 | 608 | 0.1− | 0.5+ | 2001 12 19 | 699 | 0.6− | 1.2+ | 2006 11 01 | G96 | 0.0 | 0.4− | | |
| 2001 08 04 | 608 | 0.0 | 0.5+ | 2002 11 16 | 644 | 0.5− | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.4− | | |
| 2001 08 16 | 644 | 0.1+ | 0.2+ | 2002 11 16 | 644 | 0.7− | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.1+ | | |
| 2001 08 16 | 644 | 0.1+ | 0.2+ | 2002 11 16 | 644 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2001 08 16 | 644 | 0.1− | 0.4+ | 2003 01 07 | 704 | 0.1+ | 0.9+ | 2006 11 10 | 691 | 0.3+ | 0.0 | | |
| 2001 08 28 | 699 | 0.7− | 0.5+ | 2003 01 07 | 704 | 0.1+ | 0.7+ | 2006 11 15 | 703 | 0.2− | 0.2+ | | |
| 2001 08 28 | 699 | 0.3− | 0.5− | 2003 01 07 | 704 | 0.1− | 0.9+ | 2006 11 15 | 703 | 0.2− | 0.1− | | |
| 2001 08 28 | 699 | 0.2− | 0.2+ | 2003 01 07 | 704 | 0.3+ | 0.7+ | 2006 11 15 | 703 | 0.1− | 0.2− | | |
| 2001 08 28 | 699 | 0.2− | 0.3+ | 2003 01 16 | 644 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.1− | | |
| 2001 09 10 | 704 | 0.1− | 0.1− | 2003 01 16 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.1− | | |
| 2001 09 10 | 704 | 0.6− | 0.0 | 2003 01 16 | 644 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1− | | |
| 2001 09 10 | 704 | 0.7− | 0.0 | 2003 01 26 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2− | | |
| 2001 09 10 | 704 | 0.2− | 0.3− | 2003 01 26 | 644 | 0.6+ | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.8− | | |
| 2001 09 10 | 704 | 0.5− | 0.5− | 2003 01 26 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.1− | | |
| 2001 09 24 | 644 | 0.4− | 0.3+ | 2003 01 27 | 608 | 0.9+ | 0.1− | 2006 11 18 | 704 | 0.3− | 0.4− | | |
| 2001 09 24 | 644 | 0.5− | 0.3+ | 2003 01 27 | 608 | 1.0+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.3− | | |
| 2001 09 24 | 644 | 0.4− | 0.6+ | 2003 01 27 | 608 | 1.3+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.1− | | |
| 2001 09 25 | 704 | 0.2− | 0.1− | 2003 02 02 | 704 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.1+ | | |
| 2001 09 25 | 704 | 0.0 | 0.2− | 2003 02 02 | 704 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.9+ | 0.1− | | |
| 2001 09 25 | 704 | 0.1− | 0.2− | 2003 02 02 | 608 | 0.3− | 0.8+ | 2006 11 21 | 704 | 0.9− | 0.4− | | |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2003 02 02 | 704 | 0.2− | 0.0 | 2006 11 21 | 704 | (1.6+ | 0.4+) | | |
| 2001 09 25 | 704 | 0.0 | 0.2+ | 2003 02 02 | 608 | 0.3− | 0.7+ | 2006 11 21 | 704 | (1.9− | 0.2+) | | |
| 2001 10 13 | 699 | 0.2+ | 0.4+ | 2003 02 02 | 608 | 0.3− | 0.9+ | 2006 11 23 | 691 | 0.0 | 0.2− | | |
| 2001 10 13 | 699 | 0.6+ | 0.1+ | 2003 02 02 | 704 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2001 10 13 | 699 | 0.2+ | 0.1− | 2003 02 08 | 608 | 0.5− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.3− | | |
| 2001 10 13 | 699 | 0.0 | 0.5+ | 2003 02 08 | 608 | 0.1− | 0.1− | 2006 11 24 | 703 | 0.2+ | 0.7− | | |
| 2001 10 17 | 704 | 0.3+ | 0.4+ | 2003 02 08 | 608 | 0.0 | 0.2− | 2006 11 24 | 703 | 1.0− | 0.2− | | |
| 2001 10 17 | 704 | 0.3− | 0.4+ | 2003 02 19 | 644 | 0.0 | 0.3+ | 2006 11 24 | 703 | 0.6− | 0.6− | | |
| 2001 10 17 | 704 | 0.1+ | 0.3+ | 2003 02 19 | 644 | 0.1− | 0.3+ | 2006 11 24 | 703 | 0.8− | 0.6− | | |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2003 02 19 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.0 | 0.2− | | |
| 2001 10 17 | 704 | 0.1− | 0.7+ | 2004 04 13 | 644 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.1− | | |
| 2001 10 19 | 704 | 0.0 | 0.5+ | 2004 04 13 | 644 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 19 | 704 | 0.4+ | 0.3+ | 2004 04 13 | 644 | 0.4+ | 0.5+ | 2006 11 27 | 704 | 0.1− | 0.5− | | |
| 2001 10 19 | 704 | 0.3− | 0.3− | 2004 04 17 | 704 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2− | | |
| 2001 10 19 | 704 | 0.5− | 0.0 | 2004 04 17 | 704 | 0.1+ | 0.9+ | 2006 11 27 | 704 | 0.8+ | 0.4+ | | |
| 2001 11 11 | 644 | 0.1− | 0.2+ | 2004 04 17 | 704 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.4+ | | |
| 2001 11 11 | 644 | 0.2+ | 0.0 | 2004 04 17 | 704 | 0.3+ | 0.2− | 2006 12 01 | 704 | 0.2− | 0.3+ | | |
| 2001 11 11 | 644 | 0.0 | 0.0 | 2004 04 25 | 704 | (1.9+ | 1.6+) | 2006 12 01 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 17 | 704 | 0.9+ | 1.4+ | 2004 04 25 | 704 | 0.2+ | 0.5+ | 2006 12 01 | 704 | 0.1− | 0.0 | | |
| 2001 11 17 | 704 | 0.2− | 0.8+ | 2004 04 25 | 704 | 0.9+ | 0.8+ | 2006 12 01 | 704 | 0.3− | 0.2+ | | |
| 2001 11 17 | 704 | 0.2− | 0.5− | 2004 04 25 | 704 | 0.2+ | 0.4+ | 2006 12 01 | 691 | 0.0 | 0.2+ | | |
| 2001 11 17 | 644 | 0.0 | 0.1+ | 2006 08 29 | 703 | (1.6− | 0.5−) | 2006 12 01 | 704 | 0.0 | 0.4+ | | |
| 2001 11 17 | 644 | 0.1− | 1.1+ | 2006 08 29 | 703 | 1.2− | 1.4− | 2006 12 01 | 691 | 0.0 | 0.1+ | | |
| 2001 11 17 | 644 | 0.4+ | 0.1− | 2006 08 29 | 703 | 1.2− | 0.1− | 2006 12 03 | 644 | 0.1+ | 0.1− | | |
| 2001 11 17 | 644 | 0.1− | 1.3+ | 2006 08 29 | 703 | 0.8− | 1.3− | 2006 12 03 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 17 | 644 | 0.5+ | 0.4− | 2006 09 25 | 704 | 0.4+ | 0.6+ | 2006 12 03 | 644 | 0.1− | 0.1+ | | |
| 2001 11 17 | 644 | 0.3− | 1.1+ | 2006 09 25 | 704 | 0.2− | 0.8+ | | | | | | |
| 2001 12 11 | 704 | 0.1+ | 0.9− | 2006 09 25 | 704 | 0.2− | 0.0 | | | | | | |

**(138492)∗ 2000 KF$_{34}$**

Discovered 2000 May 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.73730 | | (2000.0) | | | |
| $n$ | 0.21422162 | $\omega$ | 272.24732 | | +0.97412229 | +0.16885571 |
| $a$ | 2.7662654 | $\Omega$ | 78.05784 | | −0.09121522 | +0.90189549 |
| $e$ | 0.2227388 | $i$ | 8.83379 | | −0.20679835 | +0.39758305 |
| $P$ | 4.60 | $H$ | 15.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 691 | 0.1+ | 0.3+ | 2001 10 19 | 699 | 0.3− | 0.3+ | 2004 03 21 | 691 | 0.1+ | 0.4+ | | |
| 2000 04 27 | 691 | 0.2− | 0.2+ | 2001 10 19 | 699 | 0.1− | 0.6+ | 2004 03 21 | 691 | 0.1+ | 0.3+ | | |
| 2000 04 27 | 691 | 0.0 | 0.3+ | 2001 10 20 | 704 | 0.0 | 0.3− | 2004 03 21 | 691 | 0.1− | 0.5+ | | |
| 2000 05 03 | 691 | 0.1+ | 0.2+ | 2001 10 20 | 704 | 0.5− | 0.2− | 2004 03 23 | 704 | 0.1+ | 0.6+ | | |
| 2000 05 03 | 691 | 0.0 | 0.5+ | 2001 10 20 | 704 | 0.2+ | 0.1− | 2004 03 23 | 704 | 1.0+ | 0.7+ | | |
| 2000 05 03 | 691 | 0.0 | 0.4+ | 2001 10 20 | 704 | 0.3− | 0.5+ | 2004 03 23 | 704 | (2.4+ | 0.4+) | | |
| 2000 05 27 | 704 | 1.5+ | 1.2+ | 2001 10 20 | 704 | 0.2− | 0.4− | 2004 03 23 | 704 | (0.0 | 1.7+) | | |
| 2000 05 27 | 704 | 1.3+ | 0.7+ | 2001 10 20 | 608 | 0.4− | 0.1− | 2006 09 22 | 704 | 0.8− | 0.0 | | |
| 2000 05 27 | 704 | 0.6+ | 0.3− | 2001 10 20 | 608 | 0.9− | 0.4+ | 2006 09 22 | 704 | 0.5+ | 0.2− | | |
| 2000 05 27 | 704 | 1.3+ | 0.5− | 2001 10 20 | 608 | 0.4− | 0.3+ | 2006 09 22 | 704 | 0.4+ | 0.1− | | |
| 2000 05 30 | 704 | 1.0+ | 0.5+ | 2001 10 22 | 644 | 0.5− | 0.1+ | 2006 11 15 | 703 | 0.8+ | 0.1− | | |
| 2000 05 30 | 704 | 1.1+ | 0.8+ | 2001 10 22 | 644 | 0.4− | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.5− | | |
| 2000 05 30 | 704 | 0.6+ | 0.9+ | 2001 10 22 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | (2.4− | 3.4−) | | |
| 2000 05 30 | 704 | 1.6− | 1.9+ | 2001 10 23 | 644 | 0.4− | 0.3+ | 2006 11 15 | 703 | (0.7+ | 4.1−) | | |
| 2001 08 29 | 644 | 0.1− | 0.3+ | 2001 10 23 | 644 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2001 08 29 | 644 | 0.1− | 0.2+ | 2001 10 23 | 644 | 0.5+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2001 08 29 | 644 | 0.2− | 0.6− | 2001 10 23 | 644 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2− | | |
| 2001 09 12 | 704 | 0.8− | 0.2+ | 2001 10 23 | 644 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.3− | 0.3+ | | |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2001 10 23 | 644 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.6− | 0.7+ | | |
| 2001 09 12 | 704 | 0.4− | 0.6+ | 2001 11 08 | 644 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.5+ | 0.9+ | | |
| 2001 09 12 | 704 | 0.9− | 0.7+ | 2001 11 08 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.5− | | |
| 2001 09 17 | 699 | 0.1+ | 1.4+ | 2001 11 08 | 644 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 2001 09 17 | 699 | 0.2+ | 0.2+ | 2001 11 20 | 608 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2001 09 17 | 699 | 0.1+ | 0.1− | 2001 11 20 | 608 | 0.3+ | 0.4− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2001 09 17 | 699 | 0.0 | 0.1+ | 2001 11 20 | 608 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2001 09 21 | 644 | 0.5+ | 0.3+ | 2001 12 07 | 704 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.2− | | |
| 2001 09 21 | 644 | 0.5+ | 0.2+ | 2001 12 07 | 704 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.3+ | | |
| 2001 09 21 | 644 | 0.7+ | 0.4+ | 2001 12 07 | 704 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | 0.2− | 0.9+ | 2001 12 07 | 704 | 0.9− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2001 09 25 | 704 | 0.3− | 0.6+ | 2001 12 07 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.1+ | | |
| 2001 09 25 | 704 | 0.2− | 0.8+ | 2001 12 18 | 209 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2001 09 25 | 704 | 0.3− | 1.2+ | 2001 12 18 | 209 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2001 09 25 | 704 | 0.4− | 0.9+ | 2001 12 18 | 209 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.0 | | |
| 2001 10 11 | 704 | 0.8− | 0.2+ | 2002 01 02 | 644 | 0.1+ | 0.6+ | 2006 12 01 | 704 | 0.1+ | 0.5+ | | |
| 2001 10 11 | 704 | 0.7− | 0.3+ | 2002 01 02 | 644 | 0.3+ | 0.5+ | 2006 12 01 | 704 | 0.7+ | 0.2+ | | |
| 2001 10 11 | 704 | 0.4− | 0.4+ | 2002 01 02 | 644 | 0.2+ | 0.5+ | 2006 12 01 | 704 | 0.1+ | 0.2− | | |
| 2001 10 11 | 704 | 0.7− | 0.4+ | 2003 01 10 | 704 | 0.6+ | 1.0+ | 2006 12 01 | 704 | 0.1+ | 0.6+ | | |
| 2001 10 11 | 704 | 0.7− | 0.3+ | 2003 01 10 | 704 | 0.5+ | 0.4+ | 2006 12 01 | 704 | 0.3+ | 0.4+ | | |
| 2001 10 15 | 644 | 0.4+ | 0.8− | 2003 01 10 | 704 | 0.7+ | 0.6+ | 2006 12 01 | 691 | 0.3− | 0.2+ | | |
| 2001 10 15 | 644 | 0.4+ | 0.9− | 2003 01 29 | 645 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.1+ | | |
| 2001 10 15 | 644 | 0.5+ | 0.7− | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.1− | 0.1+ | | |
| 2001 10 19 | 699 | 0.0 | 0.1− | 2003 02 01 | 645 | 0.0 | 0.0 | | | | | | |
| 2001 10 19 | 699 | 0.2+ | 0.7+ | 2003 02 01 | 645 | 0.0 | 0.0 | | | | | | |

**(138493)∗ 2000 KQ$_{35}$ = 2292 T-1 = 2004 HT$_{9}$**

Discovered 2000 May 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60692)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.19057 | | (2000.0) | | | |
| $n$ | 0.24043971 | $\omega$ | 99.64980 | | −0.64213707 | +0.76462933 |
| $a$ | 2.5613283 | $\Omega$ | 130.25358 | | −0.72848124 | −0.58640001 |
| $e$ | 0.1741768 | $i$ | 4.11687 | | −0.23869453 | −0.26735188 |
| $P$ | 4.10 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 25 | 675 | 1.2− | 2.4− | 2001 10 25 | 645 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.6− | 0.1− | | |
| 1971 03 25 | 675 | (1.2+ | 3.3−) | 2001 10 25 | 645 | 0.0 | 0.1− | 2004 05 18 | 704 | 0.5+ | 0.3+ | | |
| 1971 03 26 | 675 | 0.6− | 2.3− | 2004 04 17 | 704 | 0.2+ | 0.0 | 2004 05 18 | 704 | 0.5+ | 0.8+ | | |
| 1971 03 27 | 675 | 0.2− | 0.9+ | 2004 04 17 | 704 | 0.4+ | 1.1+ | 2004 05 18 | 704 | 0.0 | 0.0 | | |
| 2000 05 27 | 704 | 0.4+ | 0.2− | 2004 04 17 | 704 | 1.4+ | 1.0+ | 2004 05 18 | 704 | 0.0 | 0.5+ | | |
| 2000 05 27 | 704 | 0.3+ | 0.1− | 2004 04 20 | 704 | 0.2+ | 0.2+ | 2004 05 18 | 704 | 0.0 | 0.3+ | | |
| 2000 05 27 | 704 | 0.9+ | 0.1+ | 2004 04 20 | 704 | 0.3− | 0.4+ | 2004 05 22 | 704 | 0.2− | 0.4+ | | |
| 2000 05 27 | 704 | 0.1+ | 0.5− | 2004 04 20 | 704 | 0.3+ | 0.6+ | 2004 05 22 | 704 | 0.6+ | 0.1+ | | |
| 2000 05 27 | 704 | 0.4+ | 0.9− | 2004 04 20 | 704 | 0.1+ | 0.7+ | 2004 05 22 | 704 | 0.2+ | 0.4+ | | |
| 2000 05 30 | 704 | 0.8+ | 0.4+ | 2004 04 20 | 704 | 0.1+ | 0.2− | 2004 05 22 | 704 | 0.2+ | 1.4+ | | |
| 2000 05 30 | 704 | 0.3+ | 0.8+ | 2004 04 22 | 704 | 0.6− | 0.1+ | 2004 05 22 | 704 | 0.7+ | 0.3− | | |
| 2000 05 30 | 704 | 0.2+ | 0.4+ | 2004 04 22 | 704 | 1.2− | 0.4+ | 2005 10 09 | 691 | 0.8− | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 704 | 0.7+ | 0.6+ | 2004 04 22 | 704 | 0.3− | 0.2− | 2005 10 09 | 691 | 0.2+ | 0.1+ | | |
| 2000 06 01 | 704 | 0.1+ | 0.7− | 2004 04 22 | 704 | 1.4− | 0.6+ | 2005 10 09 | 691 | 0.1− | 0.1− | | |
| 2000 06 01 | 704 | 0.3− | 1.0− | 2004 05 10 | 703 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.2− | 0.1− | | |
| 2000 06 01 | 704 | 0.2+ | 0.5− | 2004 05 10 | 703 | 1.3+ | 0.5− | 2006 11 27 | 691 | 0.0 | 0.4+ | | |
| 2000 06 01 | 704 | 0.2− | 0.2− | 2004 05 10 | 703 | 0.8+ | 1.3+ | 2006 11 27 | 691 | 0.1+ | 0.5+ | | |
| 2000 06 01 | 704 | 0.4+ | 0.5+ | 2004 05 10 | 703 | 1.3− | 0.7+ | 2006 12 01 | 691 | 0.0 | 0.5+ | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.6− | 0.1+ | 2006 12 01 | 691 | 0.5+ | 0.6+ | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.8− | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.4+ | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.5− | 0.3+ | | | | | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.6− | 0.0 | | | | | | |

**(138494)∗ 2000 KD$_{37}$ = 2001 QC$_{253}$**

Discovered 2000 May 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 17406)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.38020 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20930001 | $\omega$ | 295.79114 | | +0.88424428 | +0.46468594 | |
| $a$ | 2.8094623 | $\Omega$ | 36.57051 | | −0.39551026 | +0.79824619 | |
| $e$ | 0.1047381 | $i$ | 4.49357 | | −0.24836203 | +0.38323621 | |
| $P$ | 4.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.2− | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.3− | 0.1− | | |
| 2000 04 25 | 691 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.7− | 2006 10 01 | 704 | (5.8− | 1.8+) | | |
| 2000 04 25 | 691 | 0.0 | 0.2+ | 2003 01 05 | 704 | 0.6− | 0.3− | 2006 10 02 | 691 | 0.1− | 0.5− | | |
| 2000 05 24 | 691 | 0.0 | 0.5+ | 2003 01 05 | 704 | 0.2− | 0.4− | 2006 10 02 | 691 | 0.2− | 0.4− | | |
| 2000 05 24 | 691 | 0.0 | 0.3+ | 2004 02 16 | 291 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.2− | | |
| 2000 05 24 | 691 | 0.3− | 0.3+ | 2004 02 16 | 291 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.2− | | |
| 2000 05 30 | 691 | 0.0 | 0.2+ | 2004 02 16 | 291 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 05 30 | 691 | 0.1− | 0.1+ | 2004 02 23 | 704 | 1.3+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 05 30 | 691 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.6− | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 2000 06 04 | 691 | 0.2+ | 0.8− | 2004 02 23 | 704 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 2000 06 04 | 691 | 0.4− | 0.9− | 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2000 06 04 | 691 | 0.1− | 0.5− | 2004 03 18 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.2+ | | |
| 2001 08 25 | 704 | 1.2− | 0.0 | 2004 03 18 | 691 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2001 08 25 | 704 | 0.2+ | 0.2− | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2001 08 25 | 704 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2001 08 25 | 704 | 0.1− | 0.9− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 08 25 | 704 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 08 27 | 699 | 0.9+ | 1.0− | 2006 09 25 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 703 | (1.7− | 0.2−) | | |
| 2001 08 27 | 699 | (0.8− | 1.8+) | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.0 | | |
| 2001 08 27 | 699 | 1.0+ | 1.2+ | 2006 09 25 | 699 | (1.5+ | 0.1+) | 2006 10 22 | 703 | 0.5+ | 0.2− | | |
| 2001 08 27 | 699 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.4− | | |
| 2001 09 19 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 0.8− | 0.7− | 2006 11 14 | G96 | 0.7+ | 0.3− | | |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.5+ | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.8− | | |
| 2001 09 19 | 704 | 0.1+ | 1.4+ | 2006 09 25 | 699 | 1.0− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.4− | | |
| 2001 09 19 | 704 | 0.1+ | 0.9+ | 2006 09 28 | 691 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.5− | | |
| 2001 09 19 | 704 | (1.6− | 1.3+) | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.4− | | |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.6− | 0.2+ | | |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.6− | 0.0 | | |
| 2001 09 21 | 704 | 0.4+ | 0.8+ | 2006 10 01 | 704 | 1.5− | 0.8+ | | | | | | |

**(138495)∗ 2000 KG$_{37}$ = 2004 FY$_{162}$**

Discovered 2000 May 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 74787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.53732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21115925 | $\omega$ | 333.69778 | | +0.97267142 | −0.22346649 | |
| $a$ | 2.7929466 | $\Omega$ | 39.38040 | | +0.22667325 | +0.85511303 | |
| $e$ | 0.1729423 | $i$ | 5.70154 | | +0.05029460 | +0.46780812 | |
| $P$ | 4.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.1− | 0.3− | 2006 08 23 | 644 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.4− | 1.5+ | | |
| 2000 04 25 | 691 | 0.2− | 0.2− | 2006 08 23 | 644 | 0.3− | 0.1− | 2006 09 28 | 704 | 0.5+ | 0.3+ | | |
| 2000 04 25 | 691 | 0.2+ | 0.3− | 2006 08 23 | 644 | 0.5− | 0.4+ | 2006 09 28 | 704 | 1.3+ | 0.2+ | | |
| 2000 05 24 | 691 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2000 05 24 | 691 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.2− | | |
| 2000 05 24 | 691 | 0.2− | 0.4+ | 2006 09 12 | 703 | 0.5− | 1.3+ | 2006 09 30 | 703 | 0.0 | 0.4+ | | |
| 2000 05 30 | 691 | 0.6− | 0.8+ | 2006 09 12 | 703 | 0.6+ | 0.8− | 2006 09 30 | 703 | 0.1− | 0.3+ | | |
| 2000 05 30 | 691 | 0.2+ | 0.1− | 2006 09 16 | 704 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.6+ | | |
| 2000 05 30 | 691 | 0.1− | 0.1− | 2006 09 16 | 704 | 0.5− | 1.3+ | 2006 09 30 | 704 | 0.3− | 0.9+ | | |
| 2001 07 28 | 699 | 0.5+ | 0.4+ | 2006 09 16 | 704 | 0.5− | 0.2− | 2006 09 30 | 704 | 0.5− | 0.7+ | | |
| 2001 07 28 | 699 | 0.8+ | 0.0 | 2006 09 16 | 704 | 0.7− | 0.1+ | 2006 09 30 | 704 | (1.0− | 1.9+) | | |
| 2001 07 28 | 699 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.8+ | 0.1+ | 2006 09 30 | 704 | 0.5− | 0.6+ | | |
| 2001 07 28 | 699 | (1.9+ | 0.2+) | 2006 09 18 | 703 | (0.8− | 2.6−) | 2006 10 19 | 644 | 0.3− | 0.1− | | |
| 2001 08 19 | 704 | 1.1+ | 0.3+ | 2006 09 18 | 703 | (0.4+ | 1.7−) | 2006 10 19 | 644 | 0.4− | 0.5− | | |
| 2001 08 19 | 704 | (0.8+ | 1.9−) | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.1+ | | |
| 2001 08 19 | 704 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2001 08 19 | 704 | 0.2+ | 1.3+ | 2006 09 18 | 699 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2001 09 11 | 704 | (2.0+ | 0.6−) | 2006 09 18 | 699 | 0.8− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2001 09 11 | 704 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2001 09 11 | 704 | 0.6− | 0.1− | 2006 09 19 | 704 | (0.1− | 1.7−) | 2006 10 21 | 644 | 0.4− | 0.1+ | | |
| 2001 09 11 | 704 | 0.5+ | 0.5− | 2006 09 19 | 704 | 0.9− | 0.2− | 2006 10 21 | 703 | 1.6− | 0.3− | | |
| 2001 09 11 | 704 | 0.6− | 0.5+ | 2006 09 19 | 704 | 0.7− | 0.4− | 2006 10 21 | 703 | (2.0− | 0.7−) | | |
| 2003 01 08 | 704 | 0.4+ | 0.2− | 2006 09 22 | 704 | 0.5− | 0.5− | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2003 01 08 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.4− | 0.0 | 2006 10 21 | 703 | (2.4− | 0.8+) | | |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.5− | 0.1− | 2006 10 21 | 703 | (1.3− | 2.1−) | | |
| 2003 01 08 | 704 | 0.9− | 0.3− | 2006 09 22 | 704 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.4− | | |
| 2004 02 27 | 695 | 0.0 | 0.4+ | 2006 09 22 | 704 | 0.4− | 0.8− | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2004 02 27 | 695 | 0.0 | 0.3+ | 2006 09 26 | 704 | 1.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2004 03 18 | 691 | 0.7+ | 0.6+ | 2006 09 26 | 704 | 0.5+ | 1.1+ | 2006 11 21 | 704 | 0.2+ | 0.8− | | |
| 2004 03 18 | 691 | 0.5+ | 0.4+ | 2006 09 26 | 704 | (0.4− | 2.2+) | 2006 11 21 | 704 | 2.0+ | 1.3− | | |
| 2004 03 18 | 691 | 0.6+ | 0.2+ | 2006 09 26 | 704 | (0.0 | 2.3+) | 2006 11 21 | 704 | 2.1+ | 0.4− | | |
| 2004 03 30 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 1.3+ | 2006 11 21 | 704 | 1.6+ | 0.9− | | |
| 2004 03 30 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.3− | 0.7+ | | | | | | |
| 2004 03 30 | 691 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 0.3− | 1.5+ | | | | | | |

**(138496)∗ 2000 KE$_{38}$**

Discovered 2000 May 24 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.17079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21166753 | $\omega$ | 163.95870 | | +0.27337516 | +0.95969268 | |
| $a$ | 2.7884737 | $\Omega$ | 121.86521 | | −0.89076123 | +0.27817052 | |
| $e$ | 0.0541856 | $i$ | 4.40548 | | −0.36305708 | +0.04013867 | |
| $P$ | 4.66 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 12 | 691 | 0.3+ | 0.5− | 2000 06 23 | 691 | 0.6− | 0.7+ | 2004 04 12 | 291 | 0.1+ | 0.2+ | | |
| 1994 01 12 | 691 | 0.5− | 0.4+ | 2000 06 23 | 691 | 0.0 | 0.1− | 2004 04 13 | 291 | 0.4+ | 0.2+ | | |
| 1994 01 12 | 691 | 0.1− | 0.6− | 2000 06 23 | 691 | 0.2+ | 0.2− | 2004 04 13 | 291 | 0.3+ | 0.0 | | |
| 1995 04 08 | 691 | 0.1− | 0.0 | 2001 09 12 | 704 | 0.1− | 1.3+ | 2004 04 13 | 291 | 0.2− | 0.1+ | | |
| 1995 04 08 | 691 | 0.3+ | 0.0 | 2001 09 12 | 704 | 0.8− | 0.6+ | 2006 10 02 | G96 | 0.2− | 0.3+ | | |
| 1995 04 08 | 691 | 0.4+ | 0.2− | 2001 09 12 | 704 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.4+ | | |
| 1999 01 17 | 691 | 0.4− | 0.5− | 2004 03 15 | 703 | 1.0+ | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.2+ | | |
| 1999 01 17 | 691 | 0.0 | 0.4− | 2004 03 15 | 703 | 0.5+ | 0.9+ | 2006 10 22 | G96 | 0.1− | 0.3+ | | |
| 1999 01 17 | 691 | 0.0 | 0.1− | 2004 03 15 | 703 | (1.1− | 1.6+) | 2006 10 22 | G96 | 0.3− | 0.3+ | | |
| 2000 05 24 | 691 | 0.2− | 0.5− | 2004 03 15 | 703 | 0.4+ | 1.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2000 05 24 | 691 | 0.3− | 0.1− | 2004 03 17 | 691 | 0.3− | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.2+ | | |
| 2000 05 24 | 691 | 0.1− | 0.3− | 2004 03 17 | 691 | 0.5− | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.3+ | | |
| 2000 05 30 | 691 | 0.1+ | 0.0 | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.1+ | | |
| 2000 05 30 | 691 | 0.1+ | 0.3− | 2004 04 12 | 291 | 0.4+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.2+ | | |
| 2000 05 30 | 691 | 0.0 | 0.0 | 2004 04 12 | 291 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.3+ | | |

**(138497)∗ 2000 KS$_{42}$ = 1998 WS$_{29}$**

Discovered 2000 May 25 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 7038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.51525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25742493 | $\omega$ | 248.75044 | | −0.48676578 | −0.86672640 | |
| $a$ | 2.4473851 | $\Omega$ | 230.84804 | | +0.84444425 | −0.43500680 | |
| $e$ | 0.1947980 | $i$ | 8.06767 | | +0.22354639 | −0.24403775 | |
| $P$ | 3.83 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 20 | 699 | 1.3+ | 1.2+ | 2002 11 05 | 704 | 0.2− | 0.7+ | 2003 01 07 | 704 | 0.5+ | 1.0− |
| 1998 11 20 | 699 | 0.6+ | 0.0 | 2002 11 06 | 704 | 0.3− | 0.8+ | 2003 01 07 | 704 | 0.1+ | 1.3− |
| 1998 11 20 | 699 | 0.9+ | 0.1+ | 2002 11 06 | 704 | 0.8− | 0.0 | 2003 01 18 | 644 | 0.2− | 0.0 |
| 1998 11 23 | 691 | 0.6− | 0.5− | 2002 11 06 | 704 | 0.4− | 0.9+ | 2003 01 18 | 644 | 0.0 | 0.4+ |
| 1998 11 23 | 691 | 0.6− | 0.5− | 2002 11 06 | 704 | 0.0 | 1.3+ | 2003 01 18 | 644 | 0.3− | 0.1+ |
| 1998 11 26 | 691 | 0.2− | 0.5− | 2002 11 14 | 704 | 0.3− | 0.4+ | 2003 01 25 | 699 | (2.3− | 0.4−) |
| 1998 11 26 | 691 | 0.4− | 0.4− | 2002 11 14 | 704 | 1.1+ | 0.4+ | 2003 01 25 | 699 | 0.4− | 0.9− |
| 1998 11 26 | 691 | 0.1− | 0.2− | 2002 11 14 | 704 | (3.6+ | 1.6+) | 2003 01 25 | 699 | 0.5− | 0.1− |
| 1998 12 08 | 699 | 0.2+ | 0.6+ | 2002 11 14 | 704 | (1.9− | 1.6+) | 2003 01 25 | 699 | 0.6− | 0.5− |
| 1998 12 08 | 699 | 1.1+ | 0.8+ | 2002 11 14 | 704 | 0.9+ | 0.4+ | 2003 01 27 | 704 | 0.5+ | 0.0 |
| 1998 12 08 | 699 | 1.3+ | 0.4+ | 2002 11 24 | 644 | 0.5+ | 0.0 | 2003 01 27 | 704 | 0.8− | 0.2+ |
| 2000 04 29 | 704 | 0.5− | 0.3− | 2002 11 24 | 644 | 0.3+ | 0.0 | 2003 01 27 | 704 | 0.3− | 0.1+ |
| 2000 04 29 | 704 | 0.2+ | 1.1+ | 2002 11 24 | 644 | 0.5+ | 0.2− | 2003 01 27 | 704 | 0.3− | 0.5+ |
| 2000 04 29 | 704 | 0.0 | 0.1+ | 2002 12 10 | 644 | 0.3+ | 0.1− | 2003 01 27 | 704 | (1.7− | 0.3+) |
| 2000 04 29 | 704 | 1.0+ | 1.3+ | 2002 12 10 | 644 | 0.5+ | 0.2− | 2004 05 17 | 704 | 1.0− | 0.1+ |
| 2000 05 25 | 691 | 0.0 | 0.5− | 2002 12 10 | 644 | 0.2+ | 0.2− | 2004 05 17 | 704 | 1.1− | 0.4− |
| 2000 05 25 | 691 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.2− | 0.7− | 2004 05 17 | 704 | 0.5+ | 0.1− |
| 2000 05 25 | 691 | 0.2+ | 0.7+ | 2002 12 11 | 704 | 0.9+ | 0.0 | 2004 05 17 | 704 | 0.6+ | 0.4− |
| 2000 05 28 | 704 | 1.0+ | 0.5+ | 2002 12 11 | 704 | 0.2+ | 0.1− | 2004 06 11 | 644 | 0.0 | 0.6+ |
| 2000 05 28 | 704 | 1.3+ | 0.3+ | 2002 12 11 | 704 | 0.6+ | 0.2+ | 2004 06 11 | 644 | 0.1+ | 0.8+ |
| 2000 05 28 | 704 | 0.5+ | 0.2+ | 2002 12 27 | 644 | (0.6+ | 1.6−) | 2004 06 11 | 644 | 0.4− | 0.8+ |
| 2000 05 28 | 704 | 0.4+ | 0.6+ | 2002 12 27 | 644 | 0.0 | 0.2+ | 2005 07 31 | 644 | 0.0 | 0.8+ |
| 2000 06 01 | 691 | 0.6− | 0.1− | 2002 12 27 | 644 | 0.1+ | 0.3+ | 2005 07 31 | 644 | 0.0 | 0.7+ |
| 2000 06 01 | 691 | 0.4− | 0.1+ | 2002 12 28 | 699 | 0.5− | 0.5+ | 2005 07 31 | 644 | 0.3+ | 0.7+ |
| 2000 06 01 | 691 | 0.1+ | 1.2− | 2002 12 28 | 699 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2002 12 28 | 699 | 0.2− | 1.1+ | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2002 12 28 | 699 | 0.3− | 0.8+ | 2006 11 20 | 704 | 1.3− | 0.6+ |
| 2002 10 03 | 704 | 0.3+ | 0.1− | 2003 01 01 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2002 10 31 | 608 | 0.2− | 0.9− | 2003 01 01 | 704 | 1.5+ | 0.4− | 2006 11 20 | 704 | (0.2+ | 1.9+) |
| 2002 10 31 | 608 | 0.1+ | 0.6− | 2003 01 01 | 704 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.5− | 0.5+ |
| 2002 10 31 | 608 | 0.2+ | 0.8− | 2003 01 01 | 704 | 0.4+ | 1.2+ | 2006 11 28 | 704 | 0.7− | 0.9+ |
| 2002 11 05 | 704 | 0.3+ | 0.7+ | 2003 01 07 | 704 | 0.6+ | 0.6− | 2006 11 28 | 704 | 0.4− | 0.8− |
| 2002 11 05 | 704 | 0.3+ | 0.8+ | 2003 01 07 | 704 | (0.8+ | 1.8−) | 2006 11 28 | 704 | 0.4+ | 0.2− |
| 2002 11 05 | 704 | 0.1+ | 0.7+ | 2003 01 07 | 704 | (1.3+ | 1.8−) | 2006 11 28 | 704 | 0.2+ | 0.0 |

**(138498)∗ 2000 KV$_{42}$ = 2000 JH$_{89}$**

Discovered 2000 May 25 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 22180)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.28854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21271029 | $\omega$ | 295.12192 | | +0.93682676 | +0.34631963 | |
| $a$ | 2.7793531 | $\Omega$ | 44.66036 | | −0.29042655 | +0.84845881 | |
| $e$ | 0.0991842 | $i$ | 4.01180 | | −0.19495650 | +0.40022538 | |
| $P$ | 4.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 704 | 0.9+ | 0.8+ | 2004 02 23 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.3− | 0.2− |
| 2000 05 10 | 704 | (0.8+ | 2.0+) | 2004 03 15 | 704 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2000 05 10 | 704 | 1.0+ | 1.7+ | 2004 03 15 | 704 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2000 05 25 | 691 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.7− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.7− |
| 2000 05 25 | 691 | 0.2− | 0.2− | 2004 03 15 | 704 | 0.9− | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2000 05 25 | 691 | 0.0 | 0.1+ | 2004 03 19 | 704 | 1.5+ | 1.3+ | 2006 10 17 | G96 | 0.2− | 0.5− |
| 2000 06 01 | 691 | 0.4− | 1.1− | 2004 03 19 | 704 | 0.8+ | 1.1+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 2000 06 01 | 691 | 0.2− | 0.7− | 2004 03 19 | 704 | 0.9+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2000 06 01 | 691 | 0.7− | 0.7− | 2004 03 19 | 704 | 1.2+ | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 07 19 | 699 | 0.7− | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 07 19 | 699 | (1.8− | 0.7+) | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 704 | 0.0 | 0.1+ |
| 2001 07 19 | 699 | 0.6− | 0.5+ | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 23 | 704 | 0.4− | 0.3+ |
| 2001 07 19 | 699 | 0.2− | 0.8+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 704 | 0.8− | 0.7− |
| 2001 08 16 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 704 | 1.2+ | 1.4− |
| 2001 08 16 | 704 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3− |
| 2001 08 16 | 704 | (0.0 | 1.7+) | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 08 25 | 704 | 0.3− | 0.6+ | 2006 09 20 | 704 | (1.6+ | 1.0+) | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2001 08 25 | 704 | 0.5− | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 08 25 | 704 | 0.2− | 0.9+ | 2006 09 20 | 704 | 0.8+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 09 10 | 699 | 0.0 | 0.7+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 09 10 | 699 | 0.2− | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2001 09 10 | 699 | 0.3− | 1.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.9− |
| 2001 09 10 | 699 | 0.1+ | 0.5− | 2006 10 15 | 703 | 0.9− | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.5+ | 0.3− | 2006 11 20 | G96 | 0.6+ | 0.3− |
| 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 10 15 | 703 | 0.2− | 0.3− | 2006 11 20 | G96 | 0.3+ | 0.7− |
| 2004 02 23 | 704 | 0.3− | 0.6+ | 2006 10 15 | 703 | 0.2+ | 0.2− | | | | |

**(138499)∗ 2000 KE$_{43}$ = 2001 RC$_{8}$**

Discovered 2000 May 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 17408)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.25187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21851600 | $\omega$ | 96.59198 | | +0.88021375 | +0.47190498 | |
| $a$ | 2.7299030 | $\Omega$ | 235.26149 | | −0.45601240 | +0.81166658 | |
| $e$ | 0.1043700 | $i$ | 3.50882 | | −0.13143989 | +0.34424273 | |
| $P$ | 4.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 11 | 704 | 0.8+ | 0.9+ | 2001 09 22 | 704 | 0.2+ | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2000 05 11 | 704 | 0.6+ | 0.5+ | 2001 09 22 | 704 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.5− |
| 2000 05 11 | 704 | 0.2+ | 0.9+ | 2001 09 22 | 704 | 0.8+ | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.2− |
| 2000 05 26 | 691 | 0.1− | 0.5− | 2001 09 23 | 704 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.5− |
| 2000 05 26 | 691 | 0.6+ | 0.6− | 2001 09 23 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.8+ | 0.8+ |
| 2000 05 26 | 691 | 0.3+ | 0.3− | 2001 09 23 | 704 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2000 06 01 | 691 | 0.4− | 0.4− | 2001 09 23 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2000 06 01 | 691 | 1.2− | 0.5− | 2001 09 23 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2000 06 01 | 691 | 0.9− | 0.6− | 2001 09 24 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 08 24 | 699 | 0.3− | 1.0+ | 2001 09 24 | 704 | 0.4− | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2001 08 24 | 699 | 0.3− | 1.0+ | 2001 09 24 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.1− |
| 2001 08 24 | 699 | 0.4− | 0.8+ | 2001 09 24 | 704 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 08 24 | 699 | 0.8− | 0.7+ | 2001 09 24 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 09 08 | 704 | 0.2+ | 0.4+ | 2001 09 24 | 704 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2001 09 08 | 704 | 0.1+ | 0.4− | 2001 09 24 | 704 | 0.7+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 09 08 | 704 | 0.0 | 0.2− | 2001 09 24 | 704 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 09 08 | 704 | 0.0 | 0.1+ | 2001 09 24 | 704 | 1.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2001 09 10 | 333 | 0.4+ | 0.6− | 2001 09 24 | 704 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 09 10 | 704 | 0.0 | 0.3+ | 2001 09 25 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2001 09 10 | 704 | 0.7+ | 0.9+ | 2001 09 25 | 704 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 09 10 | 683 | (0.3+ | 2.0+) | 2001 09 25 | 704 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 09 10 | 704 | 0.6+ | 0.8+ | 2001 09 25 | 704 | 0.5+ | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 09 10 | 333 | 0.0 | 0.1− | 2001 09 25 | 704 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 09 10 | 683 | 1.3− | 0.3+ | 2001 09 25 | 704 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2001 09 10 | 704 | 0.4+ | 1.1+ | 2001 09 25 | 704 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2001 09 10 | 683 | 0.1+ | 0.8− | 2001 09 25 | 704 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.4− | 0.3+ |
| 2001 09 10 | 704 | 0.1+ | 1.0+ | 2001 09 25 | 704 | 0.4− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2001 09 11 | 704 | 0.3− | 0.5+ | 2001 09 25 | 704 | 0.0 | 0.7+ | 2006 11 16 | 703 | 0.3− | 0.2− |
| 2001 09 11 | 691 | 0.2− | 0.4+ | 2001 09 26 | 699 | 0.6− | 0.2− | 2006 11 16 | 703 | (1.7− | 1.8+) |
| 2001 09 11 | 704 | 0.0 | 0.8+ | 2001 09 26 | 699 | 0.6− | 0.8+ | 2006 11 16 | 703 | 0.1− | 0.6+ |
| 2001 09 11 | 691 | 0.3− | 0.3+ | 2001 09 26 | 699 | 0.6− | 0.2− | 2006 11 16 | 703 | 0.1− | 0.3+ |
| 2001 09 11 | 704 | 0.2− | 1.3+ | 2001 09 26 | 699 | 0.5+ | 1.2+ | 2006 11 18 | 704 | 0.7+ | 0.9+ |
| 2001 09 11 | 691 | 0.4− | 0.4+ | 2001 09 26 | 049 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2001 09 11 | 704 | 0.0 | 0.7+ | 2001 09 26 | 049 | 0.6+ | 0.6+ | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2001 09 26 | 049 | 0.3+ | 0.0 | 2006 11 21 | 704 | (1.8+ | 0.3+) |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2001 09 28 | 644 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.5+ | 1.1− |
| 2001 09 12 | 683 | (0.5− | 2.1+) | 2001 09 28 | 644 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2001 09 12 | 683 | (1.8+ | 0.5+) | 2001 09 28 | 644 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.3− |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2001 10 14 | 704 | 0.1− | 1.5+ | 2006 11 21 | 704 | 1.0+ | 0.0 |
| 2001 09 12 | 333 | 0.1+ | 0.3− | 2001 10 14 | 704 | 0.7− | 1.0+ | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2001 09 12 | 683 | (2.4+ | 0.8−) | 2001 10 14 | 704 | (0.2− | 1.9+) | 2006 11 22 | 704 | 0.1− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 0.7+ | 2001 10 14 | 704 | 0.6− | 0.9+ | 2006 11 22 | 704 | 1.0− | 0.4+ | | |
| 2001 09 12 | 704 | 0.1− | 0.4+ | 2001 10 14 | 704 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.8+ | 0.2− | | |
| 2001 09 12 | 333 | 0.5− | 0.4− | 2001 10 14 | 645 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.1+ | | |
| 2001 09 16 | 704 | 0.2+ | 0.2+ | 2001 10 14 | 645 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.6− | 0.4+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.2− | 2001 10 21 | 704 | 0.9+ | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.6− | 0.4− | 2001 10 21 | 704 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.8+ | 0.3− | | |
| 2001 09 16 | 704 | 0.3+ | 0.4− | 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.5− | | |
| 2001 09 16 | 704 | 0.0 | 0.3− | 2001 11 12 | 645 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.5− | | |
| 2001 09 18 | 699 | 1.1+ | 0.1− | 2001 11 12 | 645 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.2+ | 0.9+ | | |
| 2001 09 18 | 699 | 0.9+ | 0.2− | 2001 12 10 | 645 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.5− | 1.1− | | |
| 2001 09 18 | 699 | 0.8+ | 0.1− | 2001 12 10 | 645 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.1− | 0.5− | | |
| 2001 09 18 | 699 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 1.3+ | 0.4+ | 2006 11 29 | 704 | 0.6+ | 0.2− | | |
| 2001 09 20 | 704 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.7+ | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.1− | | |
| 2001 09 20 | 704 | 0.9+ | 0.6− | 2004 03 27 | 704 | 1.4+ | 0.2− | 2006 11 29 | 704 | 0.6− | 1.1+ | | |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2004 03 27 | 704 | (1.6+ | 0.1−) | 2006 12 01 | G96 | 0.1− | 0.5− | | |
| 2001 09 20 | 704 | 0.5+ | 0.6+ | 2004 04 15 | 691 | 0.3+ | 0.7+ | 2006 12 01 | G96 | 0.3+ | 0.5− | | |
| 2001 09 20 | 704 | 0.7+ | 0.3− | 2004 04 15 | 691 | 0.2+ | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.9− | | |
| 2001 09 22 | 704 | 0.0 | 0.5+ | 2004 04 15 | 691 | 0.4+ | 1.1+ | 2006 12 01 | G96 | 0.1− | 0.6− | | |

**(138500)∗ 2000 KF$_{51}$ = 2001 QL$_{96}$**

Discovered 2000 May 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 15809)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.90667 | | (2000.0) | | | |
| $n$ | 0.21711336 | $\omega$ | 77.56375 | | +0.68238098 | +0.73026248 |
| $a$ | 2.7416480 | $\Omega$ | 235.51609 | | −0.68516659 | +0.62333995 |
| $e$ | 0.1074825 | $i$ | 2.27741 | | −0.25476056 | +0.27957827 |
| $P$ | 4.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 1.1− | 0.5+ | 2001 09 21 | 704 | 0.0 | 1.0+ | 2006 09 27 | G96 | 0.2− | 0.4− | | |
| 2000 04 29 | 704 | 0.6− | 0.1− | 2001 09 21 | 704 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | | |
| 2000 04 29 | 704 | 1.0+ | 0.2− | 2001 09 21 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.1− | | |
| 2000 05 07 | 704 | 0.1− | 0.2+ | 2001 09 21 | 704 | 0.8− | 0.7+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | | |
| 2000 05 07 | 704 | 0.7+ | 0.1+ | 2001 09 21 | 704 | 0.2− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | | |
| 2000 05 07 | 704 | 0.6+ | 0.3+ | 2001 09 21 | 704 | 0.3− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | | |
| 2000 05 07 | 704 | 0.6+ | 0.2+ | 2001 09 21 | 704 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.4+ | | |
| 2000 05 09 | 704 | (3.6+ | 2.1+) | 2001 09 21 | 704 | 0.7− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.3+ | | |
| 2000 05 09 | 704 | 1.1+ | 0.9+ | 2001 09 21 | 704 | (1.6+ | 1.4+) | 2006 10 20 | 691 | 0.1+ | 0.1+ | | |
| 2000 05 09 | 704 | 0.9+ | 0.2− | 2001 09 22 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2000 05 09 | 704 | 0.8+ | 0.3+ | 2001 09 22 | 704 | 0.7+ | 0.2− | 2006 10 28 | 691 | 0.3− | 0.1+ | | |
| 2000 05 30 | 691 | 0.1+ | 0.9+ | 2001 09 22 | 704 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2000 05 30 | 691 | 0.2+ | 0.2− | 2001 09 22 | 704 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.2+ | | |
| 2000 05 30 | 691 | 0.2+ | 0.5+ | 2001 09 23 | 704 | 0.4− | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.0 | | |
| 2000 06 06 | 691 | 0.2− | 0.1+ | 2001 09 23 | 704 | 0.8− | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2000 06 06 | 691 | 0.3− | 0.3+ | 2001 09 23 | 704 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2000 06 06 | 691 | 0.3− | 0.1− | 2001 09 23 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | (1.2+ | 3.9−) | | |
| 2001 08 16 | 704 | 0.9+ | 0.6+ | 2001 09 23 | 704 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.4− | | |
| 2001 08 16 | 704 | 0.9− | 0.2+ | 2001 09 26 | 699 | (0.1− | 1.9+) | 2006 11 11 | 703 | 1.0− | 0.0 | | |
| 2001 08 16 | 704 | 0.2− | 0.7+ | 2001 09 26 | 699 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 1.1+ | | |
| 2001 08 24 | 704 | 0.9+ | 0.3− | 2001 09 26 | 699 | (0.7− | 1.7+) | 2006 11 12 | 703 | 1.0+ | 0.0 | | |
| 2001 08 24 | 704 | 0.2+ | 0.6+ | 2001 09 26 | 699 | 0.2+ | 0.6+ | 2006 11 12 | 703 | 0.2− | 0.2+ | | |
| 2001 08 24 | 704 | 0.9+ | 0.4− | 2001 10 11 | 644 | 0.4− | 0.5+ | 2006 11 12 | 703 | 0.2+ | 0.3+ | | |
| 2001 09 11 | 699 | 0.1+ | 0.5+ | 2001 10 11 | 644 | 0.7− | 0.2+ | 2006 11 12 | 703 | 0.8− | 0.5− | | |
| 2001 09 11 | 699 | 0.2− | 0.1+ | 2001 10 11 | 644 | 0.5− | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2001 09 11 | 699 | 0.5− | 0.1+ | 2001 10 19 | 644 | 0.1− | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2001 09 11 | 699 | 0.5− | 0.4+ | 2001 10 19 | 644 | 0.4− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.0 | | |
| 2001 09 12 | 704 | 1.1+ | 0.6− | 2001 10 19 | 644 | 0.3− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.0 | | |
| 2001 09 12 | 704 | 1.0+ | 1.1− | 2001 10 21 | 704 | (2.6+ | 0.5+) | 2006 11 17 | 703 | 0.2− | 0.2− | | |
| 2001 09 12 | 704 | 0.9+ | 1.3− | 2001 10 21 | 704 | 0.2− | 0.2+ | 2006 11 17 | 703 | (1.1− | 2.0−) | | |
| 2001 09 12 | 704 | 0.0 | 0.5− | 2001 10 21 | 704 | 0.4− | 1.3+ | 2006 11 17 | 703 | 0.3+ | 1.1− | | |
| 2001 09 12 | 704 | 0.6+ | 1.4− | 2004 03 20 | 704 | 0.1+ | 0.9+ | 2006 11 17 | 703 | 0.5− | 0.9− | | |
| 2001 09 15 | 644 | 0.5− | 0.8+ | 2004 03 20 | 704 | (1.8+ | 0.5+) | 2006 11 20 | G96 | 0.1+ | 0.1− | | |
| 2001 09 15 | 644 | 0.1− | 0.9+ | 2004 03 20 | 704 | 1.0+ | 0.6+ | 2006 11 20 | G96 | 0.3− | 0.1− | | |
| 2001 09 15 | 644 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.6− | | |
| 2001 09 16 | 704 | 0.4− | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.1− | 0.4− | | |
| 2001 09 16 | 704 | 1.0− | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 11 21 | 704 | (1.0+ | 2.1−) | | |
| 2001 09 16 | 704 | 0.8− | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 1.1+ | 0.6+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.2− | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.9− | | |
| 2001 09 20 | 704 | 0.1+ | 0.5− | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.6− | | |
| 2001 09 20 | 704 | 0.2+ | 0.6− | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.6− | 0.9+ | | |
| 2001 09 20 | 704 | 0.0 | 0.5− | 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.6+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.6− | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.3+ | 1.3+ | | |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.2− | 1.0+ | | |

**(138501)∗ 2000 KH$_{52}$ = 2002 VR$_{57}$**

Discovered 2000 May 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37524)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.69661 | | (2000.0) | | | |
| $n$ | 0.24132291 | $\omega$ | 80.73049 | | −0.91821264 | −0.38140565 |
| $a$ | 2.5550751 | $\Omega$ | 76.79001 | | +0.30646751 | −0.85500427 |
| $e$ | 0.2205627 | $i$ | 6.30069 | | +0.25092471 | −0.35142200 |
| $P$ | 4.08 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.6+ | 0.1+ | 2004 03 22 | 704 | 1.0+ | 0.3+ | 2004 05 14 | 704 | 0.7+ | 0.2+ | | |
| 2000 04 07 | 704 | 0.1− | 0.7+ | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2004 05 14 | 704 | 0.4+ | 0.0 | | |
| 2000 04 07 | 704 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.5+ | 0.5− | 2004 05 14 | 704 | 0.8− | 0.3+ | | |
| 2000 04 07 | 704 | 0.5− | 0.8+ | 2004 03 22 | 704 | 0.1+ | 0.0 | 2004 05 18 | 704 | 0.2+ | 0.2+ | | |
| 2000 05 23 | 699 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.3− | 2004 05 18 | 704 | 0.2− | 0.8+ | | |
| 2000 05 23 | 699 | 0.5− | 0.4+ | 2004 03 31 | 704 | 0.4+ | 0.4+ | 2004 05 18 | 704 | 0.1+ | 0.4+ | | |
| 2000 05 23 | 699 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.4+ | 0.2− | 2004 05 22 | 704 | 0.7+ | 0.7+ | | |
| 2000 05 23 | 699 | 0.3− | 0.7+ | 2004 03 31 | 704 | 0.6+ | 0.5+ | 2004 05 22 | 704 | 0.5+ | 1.3+ | | |
| 2000 05 27 | 704 | 0.6− | 0.3+ | 2004 03 31 | 704 | 0.5+ | 0.0 | 2004 05 22 | 704 | 0.9+ | 0.2− | | |
| 2000 05 27 | 704 | 0.5+ | 0.6+ | 2004 03 31 | 704 | 0.1+ | 0.1+ | 2004 05 22 | 704 | 0.6+ | 0.3+ | | |
| 2000 05 27 | 704 | 0.2− | 0.2− | 2004 04 13 | 703 | 0.6+ | 0.1+ | 2004 05 22 | 704 | 0.5+ | 1.0+ | | |
| 2000 05 28 | 699 | 1.1+ | 1.1− | 2004 04 13 | 703 | 0.5− | 0.3− | 2004 05 24 | 699 | 0.3− | 0.1+ | | |
| 2000 05 28 | 699 | 0.2+ | 0.8+ | 2004 04 13 | 703 | 0.4− | 0.3+ | 2004 05 24 | 699 | 0.7− | 0.4+ | | |
| 2000 05 28 | 699 | 0.2− | 0.3+ | 2004 04 13 | 703 | 0.0 | 0.1+ | 2004 05 24 | 699 | 0.3+ | 0.2− | | |
| 2000 05 28 | 699 | 0.1+ | 0.1+ | 2004 04 13 | 691 | 0.3− | 0.0 | 2004 05 24 | 699 | 0.6− | 0.8+ | | |
| 2000 06 04 | 608 | 0.3− | 1.0− | 2004 04 13 | 691 | 0.3− | 0.1− | 2004 06 11 | 699 | 0.2+ | 0.3+ | | |
| 2000 06 04 | 608 | 0.0 | 0.8− | 2004 04 13 | 691 | 0.3− | 0.0 | 2004 06 11 | 699 | 0.3− | 0.2− | | |
| 2000 06 04 | 608 | 0.1− | 0.5− | 2004 04 16 | 704 | 0.2− | 0.1− | 2004 06 11 | 699 | 0.9+ | 0.2+ | | |
| 2002 11 01 | 704 | 0.2− | 1.0+ | 2004 04 16 | 704 | 0.1+ | 0.1+ | 2004 06 11 | 699 | 0.7+ | 0.8− | | |
| 2002 11 01 | 704 | 0.8− | 1.1+ | 2004 04 16 | 704 | 0.1+ | 0.3− | 2004 06 12 | 704 | 0.1− | 0.0 | | |
| 2002 11 01 | 704 | 0.3− | 0.8+ | 2004 04 16 | 704 | 0.3+ | 0.2− | 2004 06 12 | 704 | 0.9+ | 1.3+ | | |
| 2002 11 06 | 608 | 0.2− | 1.0+ | 2004 04 16 | 704 | 0.0 | 0.1− | 2004 06 12 | 704 | 0.4− | 0.6− | | |
| 2002 11 06 | 608 | 0.1+ | 0.9+ | 2004 04 16 | 644 | 0.1− | 0.1− | 2004 06 12 | 704 | 0.1+ | 0.4− | | |
| 2002 11 06 | 608 | 0.1− | 1.2+ | 2004 04 16 | 644 | 0.2+ | 0.0 | 2004 06 12 | 704 | 0.8+ | 0.2+ | | |
| 2002 11 07 | 704 | (0.2+ | 1.9+) | 2004 04 16 | 644 | 0.0 | 0.0 | 2004 06 18 | 704 | 0.8+ | 0.1+ | | |
| 2002 11 07 | 704 | (0.1+ | 1.6+) | 2004 04 17 | 699 | 0.4− | 0.6− | 2004 06 18 | 704 | 1.3+ | 1.1+ | | |
| 2002 11 07 | 704 | (0.5− | 1.6+) | 2004 04 17 | 699 | 0.9− | 0.3+ | 2004 06 18 | 704 | 1.1+ | 0.3− | | |
| 2002 11 07 | 704 | (0.4− | 1.6+) | 2004 04 17 | 699 | 0.8− | 0.0 | 2006 10 03 | G96 | 0.5− | 1.2+ | | |
| 2002 11 21 | 644 | 0.1− | 1.0+ | 2004 04 17 | 699 | 0.8− | 0.1− | 2006 10 03 | G96 | 0.5− | 0.0 | | |
| 2002 11 21 | 644 | 0.4− | 0.9+ | 2004 04 20 | 704 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.0 | | |
| 2002 11 21 | 644 | 0.9− | 0.9+ | 2004 04 20 | 704 | 0.2− | 0.5+ | 2006 10 03 | G96 | 0.2− | 0.1+ | | |
| 2002 11 22 | 644 | 0.2+ | 0.7+ | 2004 04 20 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.0 | | |
| 2002 11 22 | 644 | 0.4+ | 1.0+ | 2004 04 20 | 704 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.5− | | |
| 2002 11 22 | 644 | 0.2− | 0.6+ | 2004 04 20 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | (1.8− | 2.5+) | | |
| 2004 02 19 | 704 | (0.2+ | 2.3+) | 2004 04 21 | 703 | 0.3− | 0.7+ | 2006 10 16 | 703 | 1.0+ | 0.3+ | | |
| 2004 02 19 | 704 | 0.4+ | 1.4+ | 2004 04 21 | 703 | 0.2− | 0.1+ | 2006 11 13 | 703 | (3.2+ | 2.9+) | | |
| 2004 02 19 | 704 | 0.2+ | 0.1+ | 2004 04 21 | 703 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.1− | 1.1+ | | |
| 2004 02 25 | 704 | 0.2+ | 0.3− | 2004 04 21 | 703 | 0.3+ | 0.7+ | 2006 11 13 | 703 | 0.6+ | 0.9+ | | |
| 2004 02 25 | 704 | 0.3+ | 1.1− | 2004 04 22 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 1.0− | 1.1− | | |
| 2004 02 25 | 704 | 0.8+ | 0.9− | 2004 04 22 | 704 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.6− | 0.1− | | |
| 2004 03 20 | 704 | 0.6+ | 0.6− | 2004 04 22 | 704 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.0 | | |
| 2004 03 20 | 704 | 0.7+ | 0.3− | 2004 04 22 | 704 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.4− | 0.0 | | |
| 2004 03 20 | 704 | 0.0 | 0.4+ | 2004 04 22 | 704 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.7− | 0.0 | | |
| 2004 03 20 | 704 | 0.3− | 0.5+ | 2004 05 14 | 704 | 0.0 | 0.0 | | | | | | |
| 2004 03 20 | 704 | 0.6− | 0.2− | 2004 05 14 | 704 | 0.1+ | 0.3+ | | | | | | |

**(138502)∗ 2000 KQ$_{52}$ = 2001 SG$_{138}$**

Discovered 2000 May 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 19765)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.27824 | | (2000.0) | | | |
| $n$ | 0.20967962 | $\omega$ | 76.86720 | | +0.03199104 | +0.99895234 |
| $a$ | 2.8060704 | $\Omega$ | 195.08140 | | −0.95881993 | +0.02142873 |
| $e$ | 0.1893280 | $i$ | 7.22499 | | −0.28220721 | +0.04043565 |
| $P$ | 4.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 699 | 0.0 | 0.6+ | 2001 10 11 | 644 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.2+ | 1.2+ |
| 2000 04 24 | 699 | 0.6− | 0.3+ | 2001 10 11 | 644 | 0.3− | 0.3+ | 2004 02 26 | 704 | 0.7− | 1.4+ |
| 2000 04 24 | 699 | 0.3+ | 0.6+ | 2001 10 11 | 644 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.3+ | 0.0 |
| 2000 04 24 | 699 | 0.3− | 1.0+ | 2001 10 13 | 704 | 0.3+ | 0.8+ | 2005 07 05 | 704 | 0.1− | 0.1− |
| 2000 05 11 | 699 | 0.4+ | 0.5− | 2001 10 13 | 704 | 0.1− | 0.3+ | 2005 07 05 | 704 | 0.1− | 0.5+ |
| 2000 05 11 | 699 | 0.2+ | 0.5+ | 2001 10 13 | 704 | 0.9+ | 0.0 | 2005 07 05 | 704 | 0.2+ | 0.2+ |
| 2000 05 11 | 699 | 0.1+ | 0.1− | 2001 10 13 | 699 | 0.4+ | 0.3+ | 2005 07 05 | 704 | 0.4− | 0.1− |
| 2000 05 11 | 699 | 0.1+ | 0.4− | 2001 10 13 | 704 | 0.4+ | 0.7+ | 2005 07 05 | 704 | 0.6+ | 1.0+ |
| 2000 05 24 | 699 | 0.5+ | 0.5+ | 2001 10 13 | 699 | 0.5+ | 0.1− | 2006 07 21 | G96 | 0.9− | 0.3− |
| 2000 05 24 | 699 | 0.7− | 0.0 | 2001 10 13 | 704 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.6− |
| 2000 05 24 | 699 | 0.4+ | 0.5+ | 2001 10 13 | 699 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.6− | 0.4− |
| 2000 05 24 | 699 | 0.2+ | 0.4− | 2001 10 13 | 699 | 0.1+ | 0.3− | 2006 07 21 | G96 | 0.0 | 0.1− |
| 2000 05 28 | 699 | 0.3+ | 0.4+ | 2001 10 14 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2000 05 28 | 699 | 0.1+ | 1.8+ | 2001 10 14 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2000 05 28 | 699 | (1.0+ | 2.1+) | 2001 10 14 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2000 05 28 | 699 | 0.5− | 0.3− | 2001 10 15 | 691 | 0.9− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2001 08 27 | 699 | 0.7+ | 0.3− | 2001 10 15 | 691 | 0.6− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2001 08 27 | 699 | 0.0 | 0.1− | 2001 10 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2001 08 27 | 699 | 0.4− | 0.7+ | 2001 10 16 | 704 | 0.5− | 0.5− | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2001 08 27 | 699 | (1.6+ | 0.8−) | 2001 10 16 | 704 | 0.3+ | 1.0+ | 2006 09 30 | 703 | 1.1+ | 0.1− |
| 2001 09 16 | 704 | 0.1− | 0.1+ | 2001 10 16 | 704 | 0.5+ | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2001 10 16 | 704 | (0.4− | 2.8−) | 2006 09 30 | 703 | 1.0+ | 0.7− |
| 2001 09 16 | 704 | 0.5− | 0.2− | 2001 10 17 | 691 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.1− | 1.1− |
| 2001 09 16 | 704 | 0.1− | 0.1− | 2001 10 17 | 691 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.3− |
| 2001 09 20 | 704 | 0.8− | 0.3− | 2001 10 17 | 691 | 0.1+ | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 1.2− | 0.2− | 2001 10 21 | 704 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.9− | 0.8− | 2001 10 21 | 704 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 1.2− | 0.6− | 2001 10 21 | 704 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.8− | 0.6− | 2001 10 21 | 704 | (1.7− | 0.3−) | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 09 23 | 691 | 0.0 | 0.2− | 2001 10 23 | 704 | 0.0 | 1.3+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 09 23 | 691 | 0.0 | 0.7+ | 2001 10 23 | 704 | (0.6− | 1.5+) | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.6+ | 0.4+ | 2001 10 23 | 704 | 0.0 | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 09 23 | 704 | 0.4− | 0.7+ | 2001 11 20 | 291 | 0.6+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2001 09 23 | 691 | 0.1− | 0.0 | 2001 11 20 | 291 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2001 09 23 | 704 | 0.6+ | 0.6+ | 2001 11 20 | 291 | 0.5+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2004 02 25 | 704 | 0.3+ | 0.9+ | 2006 11 01 | G96 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | 0.2− | 0.2+ | 2004 02 25 | 704 | 1.3+ | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2001 09 24 | 704 | 0.2+ | 0.5+ | 2004 02 25 | 704 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2001 09 24 | 704 | 0.6− | 0.2− | 2004 02 25 | 704 | 0.2− | 1.4+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 09 24 | 704 | 0.4+ | 0.3+ | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.6+ |
| 2001 09 24 | 704 | 0.3+ | 0.5+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.2+ |

**(138503)∗ 2000 KC$_{58}$ = 2002 YU$_{9}$**

Discovered 2000 May 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 40112)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.31286 | | (2000.0) | | | |
| $n$ | 0.27256763 | $\omega$ | 70.12436 | | −0.99082607 | +0.04607105 |
| $a$ | 2.3558802 | $\Omega$ | 112.34529 | | −0.08781002 | −0.93408213 |
| $e$ | 0.1510058 | $i$ | 7.89525 | | +0.10272832 | −0.35407348 |
| $P$ | 3.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 704 | 0.1− | 0.6+ | 2003 01 01 | 704 | 0.1− | 0.1− | 2004 06 18 | 704 | 0.2+ | 0.8− |
| 2000 04 27 | 704 | 0.8+ | 0.0 | 2003 01 01 | 704 | 0.1− | 0.2− | 2004 06 18 | 704 | 0.1+ | 1.3− |
| 2000 04 27 | 704 | 0.5+ | 0.5+ | 2003 01 01 | 704 | 0.1+ | 0.1+ | 2004 06 18 | 704 | 0.6− | 0.3− |
| 2000 04 27 | 704 | 0.0 | 0.3− | 2003 01 01 | 704 | 0.2+ | 0.6+ | 2004 06 18 | 704 | 0.4− | 0.5− |
| 2000 04 27 | 704 | 0.6− | 0.1+ | 2003 01 01 | 704 | 0.3+ | 0.4+ | 2004 07 16 | 807 | 0.3+ | 0.5+ |
| 2000 05 05 | 704 | 0.6− | 0.5+ | 2003 01 02 | 704 | 0.0 | 0.5− | 2004 07 16 | 807 | 0.2− | 0.2+ |
| 2000 05 05 | 704 | 0.1− | 0.5− | 2003 01 02 | 704 | 0.9− | 1.4− | 2005 10 27 | 644 | 0.4− | 0.2+ |
| 2000 05 05 | 704 | 1.2− | 1.8+ | 2003 01 02 | 704 | 0.4− | 0.6− | 2005 10 27 | 644 | 0.3− | 0.8+ |
| 2000 05 24 | 699 | 0.1+ | 0.9− | 2003 01 02 | 704 | 0.0 | 0.3− | 2005 10 27 | 644 | 0.3− | 0.3+ |
| 2000 05 24 | 699 | 0.1+ | 0.3+ | 2003 01 02 | 704 | 0.2+ | 0.0 | 2005 10 27 | 703 | 0.2− | 0.4− |
| 2000 05 24 | 699 | 0.1− | 0.6+ | 2003 01 04 | 704 | 0.2+ | 0.4− | 2005 10 27 | 703 | 1.3+ | 0.5+ |
| 2000 05 24 | 699 | 0.1− | 0.1+ | 2003 01 04 | 704 | 0.5+ | 0.4− | 2005 10 27 | 703 | 0.8− | 0.5+ |
| 2000 05 27 | 704 | 0.0 | 0.2− | 2003 01 04 | 704 | 0.4+ | 0.5− | 2005 10 27 | 703 | 0.0 | 0.9+ |
| 2000 05 27 | 704 | 0.4+ | 0.2+ | 2003 01 04 | 704 | (1.3+ | 2.6−) | 2005 11 01 | 703 | 0.9− | 0.1+ |
| 2000 05 27 | 704 | 0.7+ | 0.2− | 2003 01 04 | 704 | 0.3+ | 0.1− | 2005 11 01 | 703 | 1.0+ | 0.1− |
| 2000 05 27 | 704 | 0.9+ | 0.0 | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2005 11 01 | 703 | 0.9− | 1.2− |
| 2000 06 05 | 699 | 0.1− | 1.2+ | 2003 01 05 | 704 | 0.3+ | 0.3+ | 2005 11 01 | 703 | 0.2− | 1.4+ |
| 2000 06 05 | 699 | 0.3− | 0.3− | 2003 01 05 | 704 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.5− |
| 2000 06 05 | 699 | 0.3+ | 0.8+ | 2003 01 05 | 704 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2000 06 05 | 699 | 1.0+ | 0.2+ | 2003 01 08 | 704 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.6− | 0.2+ |
| 2002 12 11 | 704 | (2.2− | 2.7+) | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.5− | 0.8+ |
| 2002 12 11 | 704 | (1.6− | 2.1+) | 2003 01 08 | 704 | 0.6− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 12 11 | 704 | (2.0− | 1.0+) | 2003 01 08 | 704 | 0.5− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.2− |
| 2002 12 11 | 704 | (3.1− | 2.0+) | 2003 01 08 | 704 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.0 | 2004 06 15 | 704 | 0.4− | 1.1− | 2006 11 24 | 691 | 0.3+ | 0.2− |
| 2002 12 31 | 704 | 0.1− | 0.1+ | 2004 06 15 | 704 | 1.2+ | 1.0+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | 0.2− | 0.4+ | 2004 06 15 | 704 | 0.3− | 0.9− | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2004 06 15 | 704 | 0.4+ | 0.3− | | | | |
| 2002 12 31 | 704 | 0.4+ | 0.6+ | 2004 06 18 | 704 | 0.1− | 0.5− | | | | |

**(138504)∗ 2000 KW$_{62}$**

Discovered 2000 May 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.67112 | | (2000.0) | | | |
| $n$ | 0.26690852 | $\omega$ | 77.68450 | | −0.94887930 | +0.28556803 |
| $a$ | 2.3890638 | $\Omega$ | 118.77606 | | −0.31448165 | −0.89177927 |
| $e$ | 0.1923479 | $i$ | 8.82413 | | +0.02700685 | −0.35097098 |
| $P$ | 3.69 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 09 | 691 | 0.1− | 0.0 | 2000 06 25 | 691 | 0.3+ | 0.2− | 2004 07 16 | 704 | 0.4− | 0.4+ |
| 1992 01 09 | 691 | 0.0 | 0.3− | 2000 07 04 | 691 | 0.0 | 0.9− | 2004 07 16 | 704 | 0.3− | 0.1+ |
| 1993 06 22 | 691 | 0.2− | 0.9+ | 2000 07 04 | 691 | 0.0 | 0.6− | 2004 07 16 | 704 | 0.0 | 0.1+ |
| 1993 06 22 | 691 | 0.1− | 0.7+ | 2000 07 04 | 691 | 0.1+ | 0.3− | 2005 10 27 | 704 | 0.3+ | 0.8+ |
| 1993 06 22 | 691 | 0.1− | 0.3+ | 2000 07 05 | 699 | 2.0+ | 0.7+ | 2005 10 27 | 704 | 0.2− | 0.2+ |
| 2000 03 09 | 704 | 0.2+ | 1.8+ | 2000 07 05 | 699 | 0.7− | 1.6+ | 2005 10 27 | 704 | 0.1+ | 0.5− |
| 2000 03 09 | 704 | 0.7− | 0.2− | 2000 07 05 | 699 | (1.0+ | 2.1+) | 2005 10 27 | 704 | 0.9+ | 0.7− |
| 2000 03 09 | 704 | 0.3+ | 0.4+ | 2000 07 05 | 699 | 1.2+ | 0.4− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2000 04 28 | 704 | 0.6− | 1.2+ | 2002 12 31 | 704 | 0.3+ | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 2000 04 28 | 704 | 0.2+ | 0.4− | 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.8+ |
| 2000 04 28 | 704 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.9− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2000 04 28 | 704 | 0.1− | 0.5+ | 2003 01 07 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2000 05 26 | 699 | 0.4− | 0.3+ | 2003 01 07 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2000 05 26 | 699 | 0.2− | 0.6+ | 2003 01 07 | 704 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2000 05 26 | 699 | 1.2− | 0.5+ | 2003 01 08 | 704 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.7− | 0.0 |
| 2000 05 26 | 699 | 0.1+ | 0.0 | 2003 01 08 | 704 | (0.4− | 1.6−) | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2000 05 27 | 704 | 0.5− | 1.6− | 2003 01 08 | 704 | 0.0 | 0.7− | 2006 11 15 | G96 | 0.4− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.2+ | 0.7− | 2003 01 08 | 704 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.3− | | |
| 2000 05 27 | 704 | 0.6− | 0.1− | 2003 01 08 | 704 | 0.3− | 0.5− | 2006 11 15 | 703 | 0.7+ | 2.3+ | | |
| 2000 05 27 | 704 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 11 15 | 703 | 1.2− | 0.2+ | | |
| 2000 05 27 | 704 | 0.3− | 0.2+ | 2003 02 02 | 704 | 0.8− | 1.0+ | 2006 11 15 | 703 | 0.9+ | 1.3+ | | |
| 2000 05 27 | 704 | 0.0 | 0.2+ | 2003 02 02 | 704 | 1.3+ | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.7+ | | |
| 2000 06 04 | 699 | 0.5+ | 0.4+ | 2003 02 02 | 704 | 0.2+ | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2000 06 04 | 699 | 0.1− | 0.2+ | 2004 06 18 | 704 | (0.4+ | 1.5−) | 2006 11 16 | G96 | 0.2− | 0.3+ | | |
| 2000 06 04 | 699 | 0.6− | 0.4+ | 2004 06 18 | 704 | (1.1+ | 2.3−) | 2006 11 16 | G96 | 0.4− | 0.1+ | | |
| 2000 06 04 | 699 | 0.9+ | 0.8+ | 2004 06 18 | 704 | (3.8+ | 1.4−) | 2006 11 16 | G96 | 0.4− | 0.1+ | | |
| 2000 06 25 | 691 | 0.2+ | 0.2− | 2004 07 16 | 704 | 0.3− | 0.4+ | | | | | | |
| 2000 06 25 | 691 | 0.3+ | 0.2− | 2004 07 16 | 704 | 0.7− | 0.2+ | | | | | | |

**(138505)∗ 2000 KY$_{63}$**

Discovered 2000 May 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.95502 | | (2000.0) | | | |
| $n$ | 0.21981663 | $\omega$ | 342.72272 | | −0.96555818 | −0.26000878 |
| $a$ | 2.7191240 | $\Omega$ | 182.27397 | | +0.25805089 | −0.95223779 |
| $e$ | 0.1400673 | $i$ | 14.05347 | | +0.03327363 | −0.16012066 |
| $P$ | 4.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 704 | 1.4− | 0.3+ | 2004 01 29 | 699 | 0.7− | 0.3+ | 2004 03 27 | 703 | 0.8+ | 0.3+ | | |
| 2000 04 13 | 704 | 0.1− | 0.5+ | 2004 01 29 | 699 | 0.7− | 0.3+ | 2004 03 27 | 703 | 0.3− | 0.1+ | | |
| 2000 04 13 | 704 | 1.2+ | 0.3− | 2004 01 29 | 699 | 0.5+ | 0.5+ | 2004 03 27 | 703 | 0.2+ | 1.2− | | |
| 2000 04 13 | 704 | 0.5− | 1.6+ | 2004 01 29 | 699 | 0.3+ | 0.3+ | 2004 03 27 | 703 | 0.5− | 0.4+ | | |
| 2000 05 05 | 704 | 1.9− | 0.5+ | 2004 01 29 | 699 | 0.3− | 0.7− | 2006 08 21 | 691 | 0.2− | 0.4+ | | |
| 2000 05 05 | 704 | 0.4+ | 0.7− | 2004 01 30 | 699 | 1.0− | 1.3+ | 2006 08 21 | 691 | 0.1− | 0.6+ | | |
| 2000 05 05 | 704 | 0.3− | 0.2− | 2004 01 30 | 699 | 0.4+ | 0.6+ | 2006 08 21 | 691 | 0.2− | 0.8+ | | |
| 2000 05 05 | 704 | 0.6− | 0.7− | 2004 01 30 | 699 | 0.1− | 0.9+ | 2006 08 28 | 703 | 1.3− | 1.2+ | | |
| 2000 05 26 | 699 | 0.7− | 0.9+ | 2004 01 30 | 699 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.0 | 0.2+ | | |
| 2000 05 26 | 699 | 0.4− | 1.6+ | 2004 02 15 | 703 | 0.7− | 0.9+ | 2006 08 28 | 703 | 0.5+ | 0.0 | | |
| 2000 05 26 | 699 | 0.6+ | 1.4+ | 2004 02 15 | 703 | 0.2− | 0.5+ | 2006 08 28 | 703 | 1.4+ | 1.0+ | | |
| 2000 05 26 | 699 | 0.1+ | 1.7+ | 2004 02 15 | 703 | (1.0+ | 1.8+) | 2006 09 16 | 691 | 0.0 | 0.8+ | | |
| 2000 05 28 | 704 | 0.8+ | 0.5+ | 2004 02 15 | 703 | 0.2− | 1.2+ | 2006 09 16 | 691 | 0.0 | 0.6+ | | |
| 2000 05 28 | 704 | 0.1− | 0.0 | 2004 02 17 | 703 | 0.3+ | 0.2+ | 2006 09 16 | 691 | 0.0 | 0.5+ | | |
| 2000 05 28 | 704 | 1.0+ | 0.7+ | 2004 02 17 | 703 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.5− | 0.1+ | | |
| 2000 05 28 | 704 | 0.3+ | 0.8+ | 2004 02 17 | 703 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3+ | | |
| 2000 06 05 | 699 | 1.0+ | 0.3+ | 2004 02 17 | 703 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.2+ | | |
| 2000 06 05 | 699 | 0.2+ | 1.0+ | 2004 02 19 | 704 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.2− | 0.2+ | | |
| 2000 06 05 | 699 | 0.6+ | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.2+ | | |
| 2000 06 05 | 699 | 1.1+ | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.0 | | |
| 2002 10 31 | 704 | 0.0 | 1.1+ | 2004 02 19 | 704 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.1+ | | |
| 2002 10 31 | 704 | 1.1− | 0.3+ | 2004 02 19 | 704 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.1+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.7+ | 2004 03 01 | 703 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.1+ | | |
| 2002 10 31 | 704 | 0.5+ | 0.7+ | 2004 03 01 | 703 | 0.2− | 1.0+ | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2002 10 31 | 704 | 0.7+ | 0.9+ | 2004 03 01 | 703 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2002 11 05 | 704 | 0.5− | 1.0− | 2004 03 01 | 703 | 0.1+ | 0.6+ | 2006 10 16 | G96 | 0.2− | 0.0 | | |
| 2002 11 05 | 704 | 0.1− | 0.3− | 2004 03 15 | 703 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.4− | 0.3+ | | |
| 2002 11 05 | 704 | 0.7+ | 1.0+ | 2004 03 15 | 703 | 1.1− | 1.3+ | 2006 10 20 | G96 | 0.0 | 0.4+ | | |
| 2002 11 30 | 704 | (1.1− | 1.6+) | 2004 03 15 | 703 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.0 | | |
| 2002 11 30 | 704 | 1.2− | 0.3+ | 2004 03 15 | 703 | 0.4− | 1.1+ | 2006 10 20 | G96 | 0.1− | 0.2+ | | |
| 2002 11 30 | 704 | (0.2− | 1.7+) | 2004 03 16 | 704 | 1.1+ | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.3+ | | |
| 2002 11 30 | 704 | (0.8+ | 1.8+) | 2004 03 16 | 704 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.3− | 0.3+ | | |
| 2004 01 28 | 704 | 0.5+ | 0.5− | 2004 03 16 | 704 | 0.3+ | 0.8+ | 2006 10 20 | G96 | 0.4+ | 0.5+ | | |
| 2004 01 28 | 704 | 0.9+ | 1.0− | 2004 03 16 | 704 | 0.6+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.0 | | |
| 2004 01 28 | 704 | 0.9+ | 0.2− | 2004 03 16 | 704 | 0.7+ | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.2+ | | |
| 2004 01 28 | 704 | 0.4+ | 0.4+ | 2004 03 19 | 704 | (0.5− | 2.2+) | 2006 10 20 | G96 | 0.2− | 0.3+ | | |
| 2004 01 29 | 699 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2006 10 20 | G96 | 0.2− | 0.2+ | | |
| 2004 01 29 | 699 | (1.6− | 0.4−) | 2004 03 19 | 704 | 0.0 | 1.1+ | 2006 10 20 | G96 | 0.0 | 0.2+ | | |
| 2004 01 29 | 699 | 0.3− | 0.7+ | 2004 03 19 | 704 | 0.4+ | 0.8+ | | | | | | |

**(138506)∗ 2000 KP$_{64}$**

Discovered 2000 May 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 177.08295 | | (2000.0) | | | |
| $n$ | 0.22374031 | $\omega$ | 85.67921 | | −0.93882012 | +0.33701147 |
| $a$ | 2.6872406 | $\Omega$ | 114.00303 | | −0.33871036 | −0.86612214 |
| $e$ | 0.2311868 | $i$ | 4.45716 | | −0.06238645 | −0.36912832 |
| $P$ | 4.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 704 | (1.1+ | 4.2+) | 2004 01 23 | 699 | 1.0− | 0.1+ | 2004 03 14 | 704 | 0.0 | 0.4+ | | |
| 2000 05 05 | 704 | 0.2+ | 0.3+ | 2004 01 23 | 699 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 1.2+ | 0.4− | | |
| 2000 05 05 | 704 | 0.1+ | 0.4− | 2004 01 23 | 699 | 1.3− | 1.0+ | 2004 03 19 | 704 | 0.0 | 0.8+ | | |
| 2000 05 11 | 699 | 0.3+ | 0.5+ | 2004 01 23 | 699 | 0.1− | 1.0− | 2004 03 19 | 704 | 1.4+ | 0.6+ | | |
| 2000 05 11 | 699 | 0.4− | 0.6+ | 2004 01 30 | 704 | 0.5+ | 0.2− | 2004 03 19 | 704 | 0.3− | 0.3− | | |
| 2000 05 11 | 699 | 0.7− | 0.1− | 2004 01 30 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 703 | 0.8+ | 0.4+ | | |
| 2000 05 11 | 699 | 0.3+ | 0.9+ | 2004 01 30 | 704 | 0.4+ | 0.9+ | 2004 03 20 | 703 | 1.1+ | 0.5− | | |
| 2000 05 27 | 704 | 0.4+ | 0.4+ | 2004 02 10 | 333 | 0.2− | 0.0 | 2004 03 20 | 703 | 0.4+ | 0.2− | | |
| 2000 05 27 | 704 | 0.6+ | 0.2+ | 2004 02 10 | 333 | 0.3+ | 0.4+ | 2004 03 20 | 703 | 0.2+ | 0.9− | | |
| 2000 05 27 | 704 | 0.0 | 0.9− | 2004 02 10 | 333 | 0.4+ | 0.0 | 2005 07 04 | 644 | 0.0 | 0.0 | | |
| 2000 05 27 | 704 | 0.3− | 0.5+ | 2004 02 10 | 703 | 0.6− | 0.9− | 2005 07 04 | 644 | 0.5− | 0.3+ | | |
| 2000 05 27 | 704 | 0.1+ | 0.0 | 2004 02 10 | 703 | 0.8− | 0.1+ | 2005 07 04 | 644 | 0.1− | 0.6+ | | |
| 2000 05 28 | 699 | 0.6− | 1.3+ | 2004 02 10 | 703 | 0.4+ | 1.4− | 2005 07 04 | 644 | 0.1+ | 0.6+ | | |
| 2000 05 28 | 699 | 0.3− | 0.3+ | 2004 02 10 | 703 | 0.3− | 0.6− | 2005 07 04 | 644 | 0.2+ | 0.4+ | | |
| 2000 05 28 | 699 | 0.6+ | 0.2+ | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2005 07 04 | 644 | 0.3+ | 0.2+ | | |
| 2000 05 28 | 699 | 0.1− | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2005 07 18 | 644 | 0.2+ | 0.1+ | | |
| 2000 06 05 | 699 | 0.3− | 0.6+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2005 07 18 | 644 | 0.1− | 0.5+ | | |
| 2000 06 05 | 699 | 0.5+ | 0.6+ | 2004 02 16 | 704 | 0.2+ | 0.6+ | 2005 07 18 | 644 | 0.0 | 0.2+ | | |
| 2000 06 05 | 699 | 0.4− | 0.3+ | 2004 02 16 | 704 | 0.1+ | 0.4+ | 2005 07 18 | 644 | 0.4− | 0.2+ | | |
| 2000 06 05 | 699 | 0.9− | 0.2+ | 2004 02 16 | 704 | 0.6+ | 0.2+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 22 | 291 | 0.5+ | 0.8+ | 2004 02 16 | 704 | 0.7+ | 0.5+ | 2005 07 18 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 22 | 291 | 0.0 | 1.4+ | 2004 02 16 | 704 | 0.2+ | 0.1− | 2006 09 17 | 691 | 0.7− | 0.1+ | | |
| 2001 09 22 | 291 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 691 | 0.4− | 0.3+ | | |
| 2004 01 19 | 703 | 0.6− | 0.3− | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.3+ | | |
| 2004 01 19 | 703 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.4− | 0.4− | | |
| 2004 01 19 | 703 | 0.8− | 0.5− | 2004 02 23 | 704 | (1.6+ | 0.6−) | 2006 09 27 | 691 | 0.3+ | 0.2+ | | |
| 2004 01 19 | 703 | (2.2− | 0.4+) | 2004 02 27 | 608 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.3− | 0.3+ | | |
| 2004 01 22 | 704 | 0.9+ | 0.9+ | 2004 02 27 | 608 | 0.2+ | 0.8+ | 2006 11 24 | G96 | 0.3− | 0.1− | | |
| 2004 01 22 | 704 | 0.9+ | 0.9+ | 2004 02 27 | 608 | 0.0 | 0.6+ | 2006 11 24 | G96 | 0.4+ | 0.2− | | |
| 2004 01 22 | 704 | 0.0 | 0.9+ | 2004 03 14 | 704 | 0.5− | 0.7+ | 2006 11 24 | G96 | 0.2− | 0.5− | | |
| 2004 01 22 | 704 | 0.9+ | 1.1+ | 2004 03 14 | 704 | 1.1− | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.2+ | | |
| 2004 01 22 | 704 | 0.3+ | 0.7+ | 2004 03 14 | 704 | 0.5− | 0.2+ | | | | | | |

**(138507)∗ 2000 KA$_{68}$ = 2004 CT$_{98}$**

Discovered 2000 May 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60695)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.76722 | | (2000.0) | | | |
| $n$ | 0.21543142 | $\omega$ | 62.63273 | | −0.93426252 | +0.35455172 |
| $a$ | 2.7558993 | $\Omega$ | 138.10271 | | −0.34397298 | −0.86795730 |
| $e$ | 0.0536043 | $i$ | 3.26506 | | −0.09400072 | −0.34776890 |
| $P$ | 4.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.6+ | 0.1+ | 2004 02 23 | 704 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.4− | 0.5+ | | |
| 1999 01 13 | 691 | 0.6− | 1.8− | 2004 02 26 | 695 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.9− | 0.5+ | | |
| 1999 01 13 | 691 | 0.8+ | 0.3− | 2004 02 26 | 695 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.5− | 0.4+ | | |
| 1999 01 22 | 691 | 0.2− | 0.6− | 2004 03 15 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | (2.4+ | 0.2−) | | |
| 1999 01 22 | 691 | 0.6− | 0.1− | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 09 30 | 703 | 1.4+ | 0.1− | | |
| 1999 01 22 | 691 | 0.6− | 0.1− | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 09 30 | 703 | 1.2+ | 0.5+ | | |
| 2000 05 27 | 704 | 0.6+ | 0.8− | 2004 03 15 | 704 | (0.0 | 1.6+) | 2006 09 30 | 703 | 0.9+ | 0.7+ | | |
| 2000 05 27 | 704 | 0.2− | 0.4+ | 2004 03 15 | 704 | 0.1− | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.3+ | | |
| 2000 05 27 | 704 | 0.3− | 0.4− | 2004 03 18 | 704 | 1.1+ | 0.8+ | 2006 10 02 | 691 | 0.2− | 0.3+ | | |
| 2000 05 30 | 704 | 0.5+ | 1.8− | 2004 03 18 | 704 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.4− | 0.2+ | | |
| 2000 05 30 | 704 | 0.3− | 0.6+ | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.5+ | | |
| 2000 05 30 | 704 | 0.3− | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 06 | 699 | 0.2− | 0.8+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.7+ | | |
| 2000 06 06 | 699 | 0.1− | 0.3+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.9+ | | |
| 2000 06 06 | 699 | 0.3+ | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.7+ | | |
| 2000 06 06 | 699 | 0.1+ | 0.6− | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.1+ | | |
| 2001 05 23 | 807 | 0.2+ | 0.2+ | 2004 03 19 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 1.4− | 0.0 | | |
| 2001 05 23 | 807 | 0.9− | 0.2− | 2004 03 19 | 704 | 0.3− | 1.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 11 24 | 644 | 0.6+ | 0.5+ | 2004 03 19 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2002 11 24 | 644 | 0.2− | 0.9+ | 2004 03 19 | 704 | 0.5+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 11 24 | 644 | 0.1+ | 0.6+ | 2004 03 19 | 704 | 0.1− | 1.2+ | 2006 10 21 | 644 | 0.5− | 0.8+ | | |
| 2004 02 14 | 703 | 0.5+ | 0.4+ | 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.6+ | | |
| 2004 02 14 | 703 | 0.9− | 1.4+ | 2004 03 19 | 704 | 0.6+ | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | | |
| 2004 02 14 | 703 | 0.2+ | 0.9+ | 2004 03 19 | 704 | 0.9+ | 0.8+ | 2006 10 22 | 703 | (1.7− | 0.6−) | | |
| 2004 02 14 | 703 | 1.3− | 0.2+ | 2004 03 19 | 704 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.4− | | |
| 2004 02 18 | 704 | 0.6+ | 0.3+ | 2004 03 19 | 704 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.7− | | |
| 2004 02 18 | 704 | 0.6+ | 0.6+ | 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.7− | | |
| 2004 02 18 | 704 | 0.6− | 0.5+ | 2004 03 28 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1+ | | |
| 2004 02 18 | 704 | 0.3− | 0.9+ | 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3+ | | |
| 2004 02 23 | 704 | 0.3− | 1.4+ | 2004 03 28 | 704 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.3− | 0.1+ | | |
| 2004 02 23 | 704 | 0.6+ | 0.1+ | 2004 03 28 | 704 | 1.2+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.4+ | | |
| 2004 02 23 | 704 | 0.3+ | 0.7+ | 2004 03 28 | 704 | 1.0+ | 0.2− | | | | | | |
| 2004 02 23 | 704 | 0.5+ | 0.3+ | 2004 03 28 | 704 | 1.0+ | 0.1+ | | | | | | |

### (138508)∗ 2000 KO$_{69}$

Discovered 2000 May 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.60998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35961659 | $\omega$ | 342.30400 | | −0.81346658 | −0.56770371 | |
| $a$ | 1.9584368 | $\Omega$ | 161.35874 | | +0.56991713 | −0.82142143 | |
| $e$ | 0.0552084 | $i$ | 23.29951 | | +0.11604564 | +0.05458327 | |
| $P$ | 2.74 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 704 | 1.2− | 0.0 | 2005 03 13 | 699 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.8− | | |
| 2000 05 02 | 704 | 0.5+ | 0.0 | 2005 04 02 | 703 | (1.7− | 0.2+) | 2006 08 28 | 703 | 0.3+ | 0.5− | | |
| 2000 05 02 | 704 | 0.2+ | 0.2+ | 2005 04 02 | 703 | 1.2+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.0 | | |
| 2000 05 02 | 704 | 0.5+ | 0.4+ | 2005 04 02 | 703 | 0.0 | 1.2+ | 2006 08 28 | 703 | 0.5+ | 0.1+ | | |
| 2000 05 02 | 704 | 0.3+ | 0.2− | 2005 04 02 | 703 | 0.3− | 0.5+ | 2006 08 28 | 699 | 0.5+ | 0.9+ | | |
| 2000 05 29 | 704 | 0.7− | 0.7+ | 2005 04 04 | 704 | 0.7+ | 0.7+ | 2006 08 28 | 699 | 0.3− | 0.0 | | |
| 2000 05 29 | 704 | 0.3+ | 1.5+ | 2005 04 04 | 704 | 1.3+ | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | | |
| 2000 05 29 | 704 | 0.0 | 0.5+ | 2005 04 04 | 704 | 1.1+ | 0.6+ | 2006 08 29 | 691 | 0.0 | 0.2+ | | |
| 2000 05 29 | 704 | 0.6+ | 0.7+ | 2005 04 05 | G96 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.0 | 0.2+ | | |
| 2000 06 07 | 699 | 0.5− | 0.1− | 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 09 12 | 704 | 1.5− | 0.2+ | | |
| 2000 06 07 | 699 | 0.3+ | 0.3− | 2005 04 05 | G96 | 0.2+ | 0.1+ | 2006 09 12 | 704 | (0.3− | 1.8+) | | |
| 2000 06 07 | 699 | 0.1− | 0.5− | 2005 04 05 | G96 | 0.2− | 0.0 | 2006 09 12 | 704 | (0.4− | 2.2+) | | |
| 2000 06 07 | 699 | 0.1− | 0.0 | 2005 04 06 | G96 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1+ | | |
| 2001 11 16 | 699 | 0.9+ | 1.1+ | 2005 04 06 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.7− | | |
| 2001 11 16 | 699 | 0.2+ | 0.1+ | 2005 04 06 | G96 | 0.3− | 0.1+ | 2006 09 14 | 703 | (1.7− | 0.2+) | | |
| 2001 11 16 | 699 | 1.2+ | 0.5+ | 2005 04 06 | G96 | 0.6− | 0.8+ | 2006 09 14 | 644 | 0.2− | 0.2+ | | |
| 2001 11 16 | 699 | 0.1− | 0.3− | 2005 04 09 | 703 | (0.8+ | 1.9+) | 2006 09 14 | 703 | 0.1+ | 0.2+ | | |
| 2001 11 17 | 608 | 0.2− | 0.2+ | 2005 04 09 | 703 | (0.3+ | 1.6+) | 2006 09 14 | 703 | 0.9− | 0.3− | | |
| 2001 11 17 | 608 | 0.5− | 0.1− | 2005 04 09 | 703 | (3.4− | 2.9+) | 2006 09 14 | 644 | 0.1− | 0.2+ | | |
| 2001 11 17 | 608 | 0.5− | 0.4+ | 2005 04 09 | 703 | (1.2+ | 1.6+) | 2006 09 17 | 704 | 0.5− | 0.2+ | | |
| 2001 12 20 | 608 | 0.3− | 1.4− | 2005 04 12 | 704 | 0.5− | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.2+ | | |
| 2001 12 20 | 608 | 0.1+ | 1.1− | 2005 04 12 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.1+ | 1.1+ | | |
| 2001 12 20 | 608 | 0.2− | 0.4− | 2005 04 12 | 704 | 0.1+ | 0.7+ | 2006 09 17 | 704 | 0.2− | 1.0+ | | |
| 2001 12 25 | 608 | 0.3− | 0.7+ | 2005 04 12 | 704 | 0.3+ | 0.9+ | 2006 09 17 | 704 | 0.3− | 1.0+ | | |
| 2001 12 25 | 608 | 0.0 | 1.1+ | 2006 08 18 | 704 | 0.3− | 0.1+ | 2006 09 19 | 704 | 0.7− | 0.5− | | |
| 2001 12 25 | 608 | 0.2+ | 0.8+ | 2006 08 18 | 704 | 0.7+ | 0.7+ | 2006 09 19 | 704 | 0.1− | 0.6+ | | |
| 2005 01 19 | 703 | 0.7− | 0.5− | 2006 08 18 | 704 | 1.0+ | 0.8− | 2006 09 19 | 704 | (1.0+ | 2.0+) | | |
| 2005 01 19 | 703 | 0.2− | 0.6+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.6+ | 0.6+ | | |
| 2005 01 19 | 703 | 1.0− | 0.2− | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.5+ | | |
| 2005 01 19 | 703 | 0.1− | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.0+ | 0.3− | | |
| 2005 02 02 | 644 | 0.0 | 0.1+ | 2006 08 24 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 699 | (2.1− | 1.3+) | | |
| 2005 02 02 | 644 | 0.2− | 0.3+ | 2006 08 24 | 704 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.5+ | 0.1+ | | |
| 2005 02 02 | 644 | 0.0 | 0.4+ | 2006 08 24 | 704 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.4− | | |
| 2005 02 04 | 703 | 0.3− | 0.3+ | 2006 08 24 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.8− | | |
| 2005 02 04 | 703 | 0.3+ | 0.5− | 2006 08 24 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.6− | 0.3− | | |
| 2005 02 04 | 703 | 0.2− | 0.1− | 2006 08 25 | 704 | 1.2+ | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.9− | | |
| 2005 02 04 | 703 | 1.4− | 0.5− | 2006 08 25 | 704 | 1.0+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.2− | | |
| 2005 02 14 | 703 | 0.3− | 0.3+ | 2006 08 25 | 704 | 1.2+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 1.0− | | |
| 2005 02 14 | 703 | 0.2− | 1.0+ | 2006 08 25 | 704 | 0.9+ | 0.8+ | 2006 09 30 | 703 | 0.7− | 0.5− | | |
| 2005 02 14 | 703 | 0.2− | 0.5+ | 2006 08 25 | 704 | (0.7+ | 1.8+) | 2006 10 12 | 644 | 0.3− | 0.2+ | | |
| 2005 02 14 | 703 | 0.3− | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2005 03 13 | 699 | 1.1+ | 0.6+ | 2006 08 27 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2005 03 13 | 699 | (1.6+ | 0.3+) | 2006 08 27 | 691 | 0.1− | 0.0 | | | | | | |
| 2005 03 13 | 699 | 0.6+ | 0.8+ | 2006 08 28 | 699 | 0.2− | 0.2+ | | | | | | |

### (138509)∗ 2000 KO$_{72}$

Discovered 2000 May 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.52998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18430671 | $\omega$ | 158.92478 | | +0.62801192 | +0.76232326 | |
| $a$ | 3.0580315 | $\Omega$ | 149.33118 | | −0.75064573 | +0.64642424 | |
| $e$ | 0.0898542 | $i$ | 17.85700 | | −0.20526086 | −0.03160611 | |
| $P$ | 5.35 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.4+ | 0.1+ | 2001 09 12 | 704 | 0.2− | 0.0 | 2005 05 03 | 703 | 0.1− | 1.4+ | | |
| 2000 05 28 | 704 | 0.8+ | 0.8+ | 2001 09 12 | 704 | 0.1+ | 0.6+ | 2005 05 03 | 703 | 0.8− | 0.7+ | | |
| 2000 05 28 | 704 | 0.2− | 0.1− | 2001 09 17 | 699 | 0.5+ | 0.6+ | 2005 05 09 | 703 | 0.2− | 0.9− | | |
| 2000 05 31 | 699 | 0.6+ | 0.1+ | 2001 09 17 | 699 | 0.1− | 0.0 | 2005 05 09 | 703 | 0.0 | 0.4− | | |
| 2000 05 31 | 699 | 0.1− | 0.6+ | 2001 09 17 | 699 | 1.0− | 0.9+ | 2005 05 09 | 703 | 0.3− | 1.3− | | |
| 2000 05 31 | 699 | 0.5+ | 1.1+ | 2001 09 17 | 699 | 0.8+ | 0.8+ | 2005 05 09 | 703 | 0.6− | 0.0 | | |
| 2000 05 31 | 699 | 0.0 | 0.3+ | 2001 10 10 | 644 | 0.7− | 0.1− | 2006 07 21 | 703 | 0.7+ | 0.2− | | |
| 2001 08 14 | 608 | 0.7− | 0.6− | 2001 10 10 | 644 | 0.6− | 0.0 | 2006 07 21 | 703 | 0.3+ | 0.2+ | | |
| 2001 08 14 | 608 | 0.2− | 0.4− | 2001 10 10 | 644 | 0.3− | 0.1− | 2006 07 21 | 703 | 0.4+ | 0.1− | | |
| 2001 08 14 | 608 | 1.1− | 0.2− | 2004 03 01 | 691 | 0.2+ | 0.4+ | 2006 07 21 | 703 | 0.7+ | 0.1− | | |
| 2001 08 25 | 704 | 0.7+ | 0.2+ | 2004 03 01 | 691 | 0.0 | 0.2+ | 2006 07 26 | 644 | 0.4+ | 0.4+ | | |
| 2001 08 25 | 704 | 1.0− | 0.5− | 2004 03 01 | 691 | 0.2+ | 0.6+ | 2006 07 26 | 644 | 0.0 | 0.2+ | | |
| 2001 08 25 | 704 | 1.1+ | 0.7− | 2005 04 06 | 703 | 0.1− | 0.7− | 2006 07 26 | 644 | 0.1− | 0.1+ | | |
| 2001 08 25 | 704 | 0.4− | 1.5+ | 2005 04 06 | 703 | 0.2− | 1.0− | 2006 10 21 | G96 | 0.3− | 0.1− | | |
| 2001 08 25 | 704 | 0.0 | 1.5+ | 2005 04 06 | 703 | 1.0− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.3− | | |
| 2001 08 25 | 699 | 0.1− | 0.1+ | 2005 04 06 | 703 | (1.2− | 2.9−) | 2006 10 21 | G96 | 0.3− | 0.2− | | |
| 2001 08 25 | 699 | 0.8+ | 0.2+ | 2005 04 06 | G96 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1− | | |
| 2001 08 25 | 699 | 0.1+ | 0.7+ | 2005 04 06 | G96 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.7− | | |
| 2001 08 25 | 699 | 0.2+ | 0.0 | 2005 04 06 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.0 | 0.3− | | |
| 2001 09 12 | 704 | 0.2+ | 0.2− | 2005 04 06 | G96 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.5− | 0.4− | | |
| 2001 09 12 | 704 | 0.0 | 0.5+ | 2005 05 03 | 703 | (0.7+ | 1.7+) | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2005 05 03 | 703 | 0.2− | 1.1+ | | | | | | |

### (138510)∗ 2000 KT$_{73}$

Discovered 2000 May 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.06429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23850487 | $\omega$ | 120.05813 | | +0.38450942 | +0.92290580 | |
| $a$ | 2.5751620 | $\Omega$ | 172.47322 | | −0.89067528 | +0.37658316 | |
| $e$ | 0.2202752 | $i$ | 8.75352 | | −0.24259030 | +0.08018734 | |
| $P$ | 4.13 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 699 | 0.5− | 0.4+ | 2004 03 24 | 699 | 0.7+ | 0.6+ | 2005 10 06 | 699 | 0.1+ | 1.5− | | |
| 2000 04 28 | 699 | 0.1− | 0.6+ | 2004 03 24 | 699 | 0.8− | 1.2+ | 2005 10 06 | 699 | 0.3− | 1.2+ | | |
| 2000 04 28 | 699 | 0.5− | 0.3− | 2004 03 24 | 699 | 1.4+ | 0.1− | 2005 10 07 | 703 | 0.3+ | 0.3+ | | |
| 2000 04 28 | 699 | 0.3− | 0.3+ | 2004 03 24 | 699 | 1.3− | 0.9+ | 2005 10 07 | 703 | 0.6− | 0.6+ | | |
| 2000 05 06 | 704 | 0.2+ | 0.0 | 2004 03 25 | 699 | 0.2− | 0.0 | 2005 10 07 | 703 | 0.4− | 0.7+ | | |
| 2000 05 06 | 704 | 0.5+ | 0.8− | 2004 03 25 | 699 | 0.7− | 0.6− | 2005 10 07 | 703 | 0.3+ | 0.4+ | | |
| 2000 05 06 | 704 | 0.1+ | 0.2− | 2004 03 25 | 699 | 0.8− | 0.5+ | 2005 10 22 | 644 | 0.3+ | 0.6+ | | |
| 2000 05 06 | 704 | 0.6+ | 0.9+ | 2004 03 25 | 699 | 2.0+ | 0.3− | 2005 10 22 | 703 | 0.2− | 0.0 | | |
| 2000 05 06 | 704 | 0.1+ | 0.1− | 2004 04 14 | 691 | 0.4− | 0.0 | 2005 10 22 | 703 | 1.9− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.1− | 0.3− | 2004 04 14 | 691 | 0.3− | 0.1+ | 2005 10 22 | 703 | 0.5− | 1.0+ | | |
| 2000 05 27 | 704 | 0.2+ | 0.7− | 2004 04 14 | 691 | 0.4− | 0.1+ | 2005 10 22 | 644 | 0.6+ | 0.7+ | | |
| 2000 05 27 | 704 | 0.5+ | 0.1− | 2004 04 17 | 699 | 0.8+ | 1.4+ | 2005 10 22 | 703 | 0.1+ | 1.9+ | | |
| 2000 05 27 | 704 | 0.0 | 0.4− | 2004 04 17 | 699 | 0.0 | 0.2+ | 2005 10 22 | 644 | 0.4+ | 0.7+ | | |
| 2000 06 05 | 699 | 0.3− | 0.7+ | 2004 04 17 | 699 | 0.2− | 0.2− | 2005 10 27 | 644 | 0.4+ | 0.3+ | | |
| 2000 06 05 | 699 | 0.2+ | 1.9+ | 2004 04 17 | 699 | 1.0− | 2.0+ | 2005 10 27 | 644 | 0.0 | 0.7+ | | |
| 2000 06 05 | 699 | 0.9− | 0.8+ | 2004 04 20 | 704 | 1.4+ | 0.3+ | 2005 10 27 | 644 | 0.2+ | 0.3+ | | |
| 2000 06 05 | 699 | 0.4− | 0.8+ | 2004 04 20 | 704 | 0.2+ | 0.8+ | 2005 10 28 | 703 | 0.4− | 0.0 | | |
| 2001 10 19 | 644 | 0.5+ | 0.0 | 2004 04 20 | 704 | 1.0+ | 0.6+ | 2005 10 28 | 703 | 0.0 | 0.2− | | |
| 2001 10 19 | 644 | 0.5+ | 0.2+ | 2004 04 20 | 704 | 1.0+ | 0.3+ | 2005 10 28 | 703 | 0.7− | 0.1+ | | |
| 2001 10 19 | 644 | 0.8+ | 0.0 | 2004 04 20 | 704 | 2.0+ | 0.5− | 2005 10 28 | 703 | 0.9− | 0.0 | | |
| 2004 03 20 | 704 | 0.3− | 0.4+ | 2004 04 22 | 704 | 0.4+ | 0.2− | 2005 10 31 | 699 | (2.3+ | 0.9−) | | |
| 2004 03 20 | 704 | 0.4+ | 0.7+ | 2004 04 22 | 704 | 1.2+ | 0.5− | 2005 10 31 | 699 | 0.6− | 2.4+ | | |
| 2004 03 20 | 704 | 0.4− | 0.3− | 2004 04 22 | 704 | 0.6+ | 0.3− | 2005 10 31 | 699 | 0.1− | 2.3+ | | |
| 2004 03 20 | 704 | 0.2+ | 1.3+ | 2005 10 01 | 703 | 0.3+ | 0.1− | 2005 10 31 | 699 | 0.7+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.3+ | 0.6+ | 2005 10 01 | 703 | 0.4+ | 0.3+ | 2005 11 03 | 703 | 0.7+ | 0.3+ | | |
| 2004 03 22 | 704 | 0.2− | 1.4+ | 2005 10 01 | 703 | 0.5− | 0.1− | 2005 11 03 | 703 | 0.4− | 0.1− | | |
| 2004 03 22 | 704 | 0.5+ | 0.1+ | 2005 10 01 | 703 | 0.2+ | 0.7+ | 2005 11 03 | 703 | 1.1− | 0.1− | | |
| 2004 03 22 | 704 | 0.2+ | 0.9+ | 2005 10 06 | 699 | 1.0− | 1.0+ | 2005 11 03 | 703 | 1.1− | 0.5+ | | |
| 2004 03 22 | 704 | 0.6+ | 0.7+ | 2005 10 06 | 699 | 0.1− | 0.1+ | | | | | | |

**(138511)∗ 2000 KZ$_{82}$**

Discovered 2000 May 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.92636 | | (2000.0) | | | |
| $n$ | 0.19044785 | $\omega$ | 45.05397 | | −0.69372059 | +0.72024155 |
| $a$ | 2.9919339 | $\Omega$ | 181.02674 | | −0.68780467 | −0.66328165 |
| $e$ | 0.1054077 | $i$ | 6.28707 | | −0.21372056 | −0.20324754 |
| $P$ | 5.18 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.1− | 0.2+ | 2004 01 23 | 704 | 1.2− | 0.1− | 2005 05 03 | 704 | 0.3+ | 0.3+ | | |
| 1996 09 06 | 691 | 0.2+ | 0.2+ | 2004 01 23 | 704 | 0.6− | 0.4+ | 2005 05 03 | 704 | 0.8− | 0.2+ | | |
| 1996 09 06 | 691 | 0.1+ | 0.4+ | 2004 01 23 | 704 | 0.0 | 0.2+ | 2005 05 03 | 704 | 0.0 | 0.4+ | | |
| 2000 05 25 | 699 | 0.7+ | 0.6+ | 2004 01 23 | 704 | 1.5+ | 1.2+ | 2005 05 03 | 704 | 1.1+ | 0.8+ | | |
| 2000 05 25 | 699 | 0.6− | 0.3− | 2005 04 02 | 699 | 0.3+ | 0.8− | 2005 05 08 | 703 | 0.1− | 0.3− | | |
| 2000 05 25 | 699 | 0.2+ | 0.5+ | 2005 04 02 | 699 | 0.1+ | 1.1+ | 2005 05 08 | 703 | 0.2− | 0.8− | | |
| 2000 05 25 | 699 | 0.3− | 0.6− | 2005 04 02 | 699 | 0.8+ | 0.2+ | 2005 05 08 | 703 | 0.2+ | 0.4− | | |
| 2000 06 06 | 699 | 0.7+ | 0.2+ | 2005 04 02 | 699 | 0.6− | 1.6+ | 2005 05 08 | 703 | 0.6− | 0.0 | | |
| 2000 06 06 | 699 | 0.1− | 0.8+ | 2005 04 04 | 704 | 0.1+ | 0.3− | 2005 05 09 | 699 | 0.2− | 0.3+ | | |
| 2000 06 06 | 699 | 0.0 | 0.5+ | 2005 04 04 | 704 | 0.4− | 0.3− | 2005 05 09 | 699 | 0.4+ | 0.0 | | |
| 2000 06 06 | 699 | 0.8+ | 0.9+ | 2005 04 04 | 704 | 0.3− | 0.5+ | 2005 05 09 | 699 | 1.1− | 0.1+ | | |
| 2001 08 23 | 699 | 0.7+ | 0.8+ | 2005 04 04 | 704 | 0.1+ | 0.1+ | 2005 05 09 | 704 | 0.6+ | 0.2− | | |
| 2001 08 23 | 699 | 0.1− | 0.7+ | 2005 04 05 | 703 | 0.9− | 1.0− | 2005 05 09 | 699 | 0.2+ | 0.1+ | | |
| 2001 08 23 | 699 | 0.6− | 0.2+ | 2005 04 05 | 703 | (0.3− | 2.5−) | 2005 05 09 | 704 | 0.9+ | 0.3+ | | |
| 2001 08 23 | 699 | 0.0 | 0.4− | 2005 04 05 | 703 | 1.7− | 0.0 | 2005 05 09 | 704 | 0.1− | 0.3+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2005 04 05 | 703 | 0.6− | 1.3− | 2005 05 09 | 704 | 0.6− | 0.1+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.6− | 2005 04 06 | 691 | 0.5− | 0.2− | 2005 05 18 | 644 | 0.4+ | 0.2+ | | |
| 2001 09 12 | 704 | 1.2+ | 1.1− | 2005 04 06 | 691 | 0.2− | 0.2− | 2005 05 18 | 644 | 0.1+ | 0.0 | | |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2005 04 06 | 691 | 0.1− | 0.1− | 2005 05 18 | 644 | 0.2+ | 0.1− | | |
| 2001 09 19 | 645 | 0.2− | 0.0 | 2005 04 07 | 704 | (2.2+ | 0.7−) | 2006 07 21 | A50 | 0.5+ | 0.3+ | | |
| 2001 09 20 | 704 | (0.1− | 2.4+) | 2005 04 07 | 704 | 0.4+ | 0.4− | 2006 07 21 | A50 | 0.1+ | 0.1+ | | |
| 2001 09 20 | 704 | (0.9+ | 2.9+) | 2005 04 07 | 704 | 0.4+ | 0.5− | 2006 08 14 | E12 | 1.1+ | 0.9− | | |
| 2001 09 20 | 704 | (0.0 | 2.1+) | 2005 04 18 | 691 | 0.3+ | 0.1+ | 2006 08 14 | E12 | 0.5− | 0.4+ | | |
| 2003 12 22 | 704 | 0.4+ | 0.9+ | 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 08 14 | E12 | 0.3+ | 0.1+ | | |
| 2003 12 22 | 704 | 0.0 | 0.7+ | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 08 14 | E12 | 1.0+ | 0.3− | | |
| 2003 12 22 | 704 | 0.8+ | 0.7− | 2005 05 03 | 704 | 0.9+ | 0.5+ | 2006 08 14 | E12 | 0.2+ | 0.4− | | |

**(138512)∗ 2000 LE$_3$**

Discovered 2000 June 3 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.82907 | | (2000.0) | | | |
| $n$ | 0.17659973 | $\omega$ | 16.12230 | | +0.21895274 | +0.78924827 |
| $a$ | 3.1463668 | $\Omega$ | 269.49444 | | −0.94657924 | +0.02915123 |
| $e$ | 0.3338940 | $i$ | 35.01113 | | −0.23674341 | +0.61338191 |
| $P$ | 5.58 | $H$ | 13.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 03 | 699 | 0.4− | 0.2+ | 2000 06 24 | 704 | 0.5+ | 1.1+ | 2002 10 04 | 644 | 0.2− | 0.6+ | | |
| 2000 06 03 | 699 | 0.5− | 0.2+ | 2000 06 24 | 704 | 0.9− | 0.1− | 2002 10 04 | 644 | 0.7+ | 0.4+ | | |
| 2000 06 03 | 699 | 0.4− | 0.2− | 2000 06 24 | 704 | 0.2− | 0.6+ | 2003 12 26 | 608 | 0.0 | 0.3− | | |
| 2000 06 03 | 699 | 0.8− | 0.4+ | 2000 06 24 | 704 | 0.6− | 0.2+ | 2003 12 26 | 608 | 0.7+ | 0.4+ | | |
| 2000 06 04 | 673 | 0.2+ | 0.8− | 2000 07 22 | 704 | 0.1+ | 0.3− | 2003 12 26 | 608 | 0.2− | 0.3+ | | |
| 2000 06 04 | 673 | 0.1− | 0.7− | 2000 07 22 | 704 | 0.8− | 1.0+ | 2005 04 30 | 423 | 0.2− | 0.3+ | | |
| 2000 06 04 | 673 | 0.1− | 0.6− | 2000 07 22 | 704 | 0.5+ | 0.4− | 2005 04 30 | 423 | 0.2− | 0.4+ | | |
| 2000 06 04 | 699 | 0.3− | 0.5+ | 2000 08 09 | 704 | 0.3+ | 0.4− | 2005 05 09 | 423 | 0.1+ | 0.2+ | | |
| 2000 06 04 | 699 | 0.2− | 0.1+ | 2000 08 09 | 704 | 0.6+ | 0.4− | 2005 05 09 | 423 | 0.5− | 0.1− | | |
| 2000 06 04 | 699 | 0.1− | 0.8+ | 2000 08 09 | 704 | 0.2+ | 0.1− | 2005 05 09 | 423 | 0.0 | 0.2− | | |
| 2000 06 04 | 699 | 0.2− | 0.3+ | 2000 08 09 | 704 | 0.6+ | 0.3− | 2005 05 20 | 423 | 0.1− | 0.2+ | | |
| 2000 06 04 | 402 | 0.1− | 0.3− | 2000 08 09 | 704 | 0.4+ | 1.1− | 2005 05 20 | 423 | 0.2+ | 0.1+ | | |
| 2000 06 04 | 402 | 0.1− | 0.4− | 2000 08 23 | 704 | 0.0 | 0.1+ | 2005 05 28 | 423 | 0.1− | 0.0 | | |
| 2000 06 04 | 402 | 0.1− | 0.1− | 2000 08 23 | 704 | 0.3− | 0.5+ | 2005 05 28 | 423 | 0.0 | 0.3+ | | |
| 2000 06 04 | 402 | 0.2+ | 0.7− | 2000 08 23 | 704 | 0.2+ | 0.5− | 2005 06 12 | 423 | 0.1+ | 0.1+ | | |
| 2000 06 04 | 046 | 0.7− | 0.2− | 2000 08 23 | 704 | 0.2+ | 0.3− | 2005 06 12 | 423 | 0.3+ | 0.2+ | | |
| 2000 06 04 | 046 | 0.9− | 0.8+ | 2000 08 24 | 145 | 0.8− | 0.5+ | 2005 06 12 | 423 | 0.3+ | 0.2− | | |
| 2000 06 04 | 046 | 0.1+ | 0.0 | 2000 08 24 | 145 | 0.9− | 0.5+ | 2005 07 04 | E12 | 0.3− | 0.1− | | |
| 2000 06 04 | 046 | 0.2+ | 0.4+ | 2000 08 24 | 145 | 0.7− | 0.3+ | 2005 07 04 | E12 | 0.3− | 0.2+ | | |
| 2000 06 04 | 046 | 0.0 | 0.1− | 2000 08 24 | 145 | 1.1− | 0.3+ | 2005 07 04 | E12 | 0.2+ | 0.6− | | |
| 2000 06 05 | 557 | 0.2− | 0.2− | 2000 09 25 | 704 | 1.5+ | 0.3+ | 2005 07 27 | E12 | 0.2− | 0.2− | | |
| 2000 06 05 | 557 | 0.1− | 0.0 | 2000 09 25 | 704 | 0.6+ | 0.2+ | 2005 07 27 | E12 | 0.2+ | 0.5+ | | |
| 2000 06 05 | 557 | 0.0 | 0.1− | 2000 09 25 | 704 | 1.1+ | 0.4− | 2005 07 27 | E12 | 0.0 | 0.1− | | |
| 2000 06 05 | 557 | 0.3− | 0.1+ | 2000 09 25 | 704 | 1.2+ | 0.2− | 2005 07 27 | E12 | 0.0 | 0.2+ | | |
| 2000 06 05 | 557 | 0.1− | 0.0 | 2000 09 25 | 704 | 0.4− | 0.4+ | 2005 08 27 | E12 | 0.1− | 0.1− | | |
| 2000 06 05 | 118 | 0.0 | 0.1− | 2000 09 27 | 704 | 0.6+ | 0.5− | 2005 08 27 | E12 | 0.1+ | 0.2+ | | |
| 2000 06 05 | 118 | 0.3− | 0.1− | 2000 09 27 | 704 | 0.1− | 0.1− | 2005 08 27 | E12 | 0.1+ | 0.1+ | | |
| 2000 06 05 | 118 | 0.6− | 0.0 | 2000 09 27 | 704 | 0.0 | 0.0 | 2005 09 05 | E12 | 0.1+ | 0.1+ | | |
| 2000 06 05 | 651 | 0.7− | 0.1+ | 2000 09 28 | 704 | 0.1− | 0.3− | 2005 09 05 | E12 | 0.3− | 0.2− | | |
| 2000 06 05 | 651 | 0.0 | 0.3− | 2000 09 28 | 704 | 0.0 | 0.1− | 2005 09 05 | E12 | 0.5+ | 0.4+ | | |
| 2000 06 05 | 651 | 0.1− | 0.6− | 2000 09 28 | 704 | 0.2+ | 0.6+ | 2005 09 06 | E12 | 0.1− | 0.5+ | | |
| 2000 06 05 | 344 | 0.1+ | 0.0 | 2000 09 28 | 704 | 0.2− | 0.8+ | 2005 09 06 | E12 | (0.0 | 3.7+) | | |
| 2000 06 05 | 344 | 0.0 | 0.6− | 2000 11 30 | 704 | 0.4− | 0.6− | 2005 09 06 | E12 | 0.6− | 0.1+ | | |
| 2000 06 05 | 344 | 0.1+ | 0.1− | 2000 11 30 | 704 | 0.8+ | 0.5− | 2005 09 06 | E12 | 0.0 | 0.2+ | | |
| 2000 06 05 | 344 | 0.2+ | 0.0 | 2000 11 30 | 704 | 0.9+ | 0.5− | 2006 08 31 | 235 | 1.1− | 0.4− | | |
| 2000 06 05 | 344 | 0.0 | 0.2− | 2000 11 30 | 704 | 0.1+ | 0.0 | 2006 09 06 | A74 | 0.0 | 0.4+ | | |
| 2000 06 06 | 860 | 0.0 | 0.2+ | 2001 12 09 | 704 | 0.4+ | 1.1+ | 2006 09 06 | A74 | 0.1+ | 0.4+ | | |
| 2000 06 06 | 860 | 0.7− | 0.4− | 2001 12 09 | 704 | 0.1+ | 1.0+ | 2006 09 06 | A74 | 0.2+ | 0.3+ | | |
| 2000 06 06 | 860 | 0.7+ | 0.4− | 2001 12 09 | 704 | 0.0 | 0.4− | 2006 09 06 | A74 | 0.3+ | 0.3+ | | |
| 2000 06 06 | 860 | 0.6− | 0.3− | 2001 12 09 | 704 | 0.6− | 1.2+ | 2006 09 06 | A74 | 0.3+ | 0.3+ | | |
| 2000 06 06 | 860 | 0.2− | 0.0 | 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 09 06 | A74 | 0.2+ | 0.4+ | | |
| 2000 06 18 | 608 | 1.4+ | 1.6+ | 2002 10 04 | 644 | 0.0 | 0.1− | 2006 09 06 | A74 | 0.1− | 0.2+ | | |
| 2000 06 18 | 608 | 1.3+ | 0.6+ | 2002 10 04 | 644 | 0.4+ | 0.4− | 2006 09 06 | A74 | 0.0 | 0.1+ | | |
| 2000 06 18 | 608 | 1.2+ | 0.8+ | 2002 10 04 | 644 | 0.2+ | 0.1− | | | | | | |

**(138513)∗ 2000 LT$_6$ = 2001 QP$_{129}$**

Discovered 2000 June 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 15814)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.38547 | | (2000.0) | | | |
| $n$ | 0.22630805 | $\omega$ | 191.84599 | | +0.75626439 | −0.65068663 |
| $a$ | 2.6668753 | $\Omega$ | 209.10471 | | +0.61116737 | +0.73986818 |
| $e$ | 0.1441106 | $i$ | 8.07738 | | +0.23353503 | +0.17088588 |
| $P$ | 4.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.8+ | 1.4− | 2001 09 06 | 644 | 0.7− | 0.8+ | 2006 11 14 | 704 | 0.2+ | 1.0+ | | |
| 1997 10 30 | 704 | 0.5− | 1.1− | 2001 09 06 | 644 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.6− | 1.4− | 2001 09 06 | 644 | 0.0 | 0.9+ | 2006 11 17 | 704 | 0.2+ | 0.2+ |
| 1997 10 30 | 704 | 0.3− | 0.4− | 2001 09 06 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 1997 10 30 | 704 | 0.3− | 1.3− | 2001 09 18 | 699 | 0.3− | 1.4+ | 2006 11 17 | 704 | 0.4+ | 0.9+ |
| 1997 10 30 | 566 | 0.0 | 0.1+ | 2001 09 18 | 699 | (1.2− | 1.8+) | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 1997 10 30 | 566 | 0.3+ | 0.1+ | 2001 09 18 | 699 | 0.1− | 0.2− | 2006 11 18 | 704 | 1.1+ | 0.8+ |
| 1997 10 30 | 566 | 0.1+ | 0.5+ | 2001 09 18 | 699 | (1.1− | 1.7+) | 2006 11 18 | 704 | 0.1+ | 0.9+ |
| 2000 05 24 | 691 | 0.3− | 0.4− | 2003 01 01 | 704 | 0.2− | 1.2− | 2006 11 18 | 704 | 0.3+ | 1.3− |
| 2000 05 24 | 691 | 0.2− | 0.3+ | 2003 01 01 | 704 | (0.5+ | 1.8−) | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2000 05 24 | 691 | 0.1+ | 1.7+ | 2003 01 01 | 704 | (1.5+ | 2.0−) | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2000 06 01 | 691 | 1.2− | 0.1− | 2003 01 05 | 704 | 1.0+ | 0.8+ | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2000 06 01 | 691 | 0.7+ | 0.2− | 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2000 06 01 | 691 | 0.1− | 0.3+ | 2003 01 05 | 704 | 0.8+ | 0.9+ | 2006 11 20 | 704 | 0.1+ | 0.5− |
| 2000 06 07 | 691 | 0.1− | 0.5− | 2003 01 05 | 704 | 0.4+ | 1.1+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2000 06 07 | 691 | 0.2+ | 0.4− | 2004 03 23 | 291 | 0.3+ | 0.6+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2000 06 07 | 691 | 0.3+ | 0.4− | 2004 03 23 | 291 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2001 07 25 | 608 | (0.1− | 1.7+) | 2004 03 23 | 291 | 0.0 | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2001 07 25 | 608 | 0.1− | 0.8+ | 2004 05 23 | 691 | 0.2+ | 0.3+ | 2006 11 25 | 704 | 0.3− | 0.8+ |
| 2001 07 25 | 608 | 0.5− | 1.5+ | 2004 05 23 | 691 | 0.2+ | 0.0 | 2006 11 25 | 704 | 0.6− | 0.6+ |
| 2001 08 20 | 704 | 0.3+ | 0.6+ | 2004 05 23 | 691 | 0.3+ | 0.7+ | 2006 11 25 | 704 | 0.9− | 0.9+ |
| 2001 08 20 | 704 | 0.7+ | 1.0+ | 2005 06 11 | 691 | 0.7− | 0.1− | 2006 11 25 | 703 | 1.0− | 1.0+ |
| 2001 08 20 | 704 | 0.0 | 0.3− | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 11 25 | 703 | 0.7− | 0.8+ |
| 2001 08 20 | 704 | 0.2− | 0.5+ | 2005 06 11 | 691 | 0.1+ | 0.4+ | 2006 11 25 | 703 | 0.3− | 1.1+ |
| 2001 08 25 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 703 | 0.5− | 0.1+ | 2006 11 25 | 703 | 0.0 | 1.2+ |
| 2001 08 25 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 703 | 0.5+ | 0.0 | 2006 11 28 | 704 | 0.6+ | 0.2− |
| 2001 08 25 | 704 | 0.3− | 0.3+ | 2006 10 01 | 703 | 0.1− | 0.6+ | 2006 11 28 | 704 | 0.4+ | 0.3− |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.4− |
| 2001 08 25 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.8+ | 2006 11 28 | 704 | 0.1− | 0.3− |
| 2001 09 06 | 644 | (0.1+ | 1.6+) | 2006 11 14 | 704 | 0.6− | 0.5+ | | | | |
| 2001 09 06 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.3− | 0.8+ | | | | |

**(138514)∗ 2000 LA$_{10}$ = 2001 XK$_{10}$**

Discovered 2000 June 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22187)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 165.86763 | | (2000.0) | | | |
| $n$ | 0.36982867 | $\omega$ | 137.50053 | | −0.71617880 | +0.56289342 |
| $a$ | 1.9222166 | $\Omega$ | 81.50371 | | −0.69790162 | −0.58151471 |
| $e$ | 0.0554054 | $i$ | 24.65659 | | +0.00461000 | −0.58735989 |
| $P$ | 2.67 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 11 | 704 | 0.8− | 0.3− | 2001 12 13 | 704 | 1.3+ | 1.0+ | 2005 03 11 | 703 | 0.8− | 0.2− |
| 2000 05 11 | 704 | 0.6− | 0.3+ | 2001 12 19 | 644 | (1.9− | 0.3+) | 2005 03 11 | 703 | 1.1− | 0.2+ |
| 2000 05 11 | 704 | 0.9+ | 0.7+ | 2001 12 19 | 644 | 0.2− | 0.0 | 2005 03 11 | 703 | (1.9− | 0.7+) |
| 2000 05 11 | 704 | 0.1+ | 0.7+ | 2001 12 19 | 644 | 0.1− | 0.2+ | 2005 03 11 | 703 | 1.3− | 0.2− |
| 2000 06 07 | 704 | 1.0+ | 0.1+ | 2001 12 22 | 704 | 0.3− | 0.0 | 2005 03 22 | 704 | 0.2− | 0.4− |
| 2000 06 07 | 704 | 0.6− | 0.3+ | 2001 12 22 | 704 | 0.3− | 0.1− | 2005 03 22 | 704 | 0.0 | 0.2− |
| 2000 06 07 | 704 | 0.5+ | 0.7+ | 2001 12 22 | 704 | 0.4+ | 0.7− | 2005 03 22 | 704 | 0.2+ | 0.7+ |
| 2000 06 07 | 704 | 0.3+ | 0.3− | 2001 12 22 | 704 | 0.7+ | 0.0 | 2005 03 22 | 704 | 0.2− | 0.5+ |
| 2000 06 07 | 704 | 0.1+ | 0.5+ | 2001 12 23 | 704 | 0.3− | 0.4− | 2005 03 22 | 704 | 0.1− | 0.0 |
| 2000 06 08 | 704 | 0.2− | 0.1− | 2001 12 23 | 704 | 0.1+ | 0.6− | 2005 03 27 | 699 | 0.2− | 0.4− |
| 2000 06 08 | 704 | 0.5+ | 0.6− | 2001 12 23 | 704 | 0.2− | 0.6− | 2005 03 27 | 699 | 0.2− | 0.3− |
| 2000 06 08 | 704 | 0.6− | 0.0 | 2001 12 23 | 704 | 0.7− | 0.3− | 2005 03 27 | 699 | 1.3+ | 0.1+ |
| 2000 06 08 | 704 | 0.6+ | 0.9− | 2001 12 23 | 704 | 0.0 | 0.5− | 2005 03 27 | 699 | 1.0+ | 1.2− |
| 2000 06 10 | 704 | 0.5− | 0.3+ | 2002 01 05 | 644 | 0.4− | 0.0 | 2005 04 07 | 703 | 0.0 | 0.2+ |
| 2000 06 10 | 704 | 0.2+ | 0.3+ | 2002 01 05 | 644 | 0.6− | 0.1− | 2005 04 07 | 703 | 0.0 | 0.3+ |
| 2000 06 10 | 704 | 0.5+ | 0.4+ | 2002 01 05 | 644 | 0.5− | 0.0 | 2005 04 07 | 703 | 0.5− | 0.2− |
| 2000 06 11 | 704 | 0.3+ | 0.4+ | 2002 01 06 | 704 | 1.0− | 0.6− | 2005 04 07 | 703 | 0.8− | 0.0 |
| 2000 06 11 | 704 | 0.7+ | 0.4+ | 2002 01 06 | 704 | 0.8− | 0.3− | 2005 04 20 | 704 | 0.3+ | 1.0+ |
| 2000 06 11 | 704 | 0.2− | 0.6+ | 2002 01 06 | 704 | 0.7− | 0.6− | 2005 04 20 | 704 | 0.3+ | 1.4+ |
| 2000 06 11 | 704 | 0.5+ | 0.3− | 2002 01 06 | 704 | 0.6− | 0.7− | 2005 04 20 | 704 | 0.9+ | 0.6+ |
| 2000 06 11 | 704 | 0.8+ | 0.6+ | 2002 01 06 | 704 | 0.5− | 0.6− | 2005 05 01 | 704 | 0.5+ | 0.8+ |
| 2000 06 12 | 704 | 0.4− | 0.4+ | 2002 01 14 | 644 | 0.1− | 0.7+ | 2005 05 01 | 704 | 0.5+ | 0.7+ |
| 2000 06 12 | 704 | 0.3+ | 0.3− | 2002 01 14 | 644 | 0.3− | 0.1+ | 2005 05 01 | 704 | 0.3+ | 0.1− |
| 2000 06 12 | 704 | 0.9− | 1.0+ | 2002 01 14 | 644 | 0.2− | 0.5+ | 2005 05 01 | 704 | 0.9+ | 1.0+ |
| 2000 06 12 | 704 | 0.4− | 0.2+ | 2002 01 14 | 644 | 0.1+ | 0.1+ | 2005 06 01 | 703 | 0.8− | 0.0 |
| 2001 11 12 | 704 | 0.5+ | 1.0+ | 2002 01 14 | 644 | 0.0 | 0.7+ | 2005 06 01 | 703 | 1.3− | 0.4+ |
| 2001 11 12 | 704 | 0.2− | 1.1+ | 2002 01 14 | 644 | 0.1+ | 0.2− | 2005 06 01 | 703 | 1.4− | 1.2− |
| 2001 11 12 | 704 | 0.6− | 1.1+ | 2002 01 23 | 704 | (0.9+ | 3.1+) | 2005 06 01 | 703 | (2.5− | 1.9+) |
| 2001 11 12 | 704 | 0.2− | 0.6+ | 2002 01 23 | 704 | 1.3+ | 1.1+ | 2006 10 09 | 644 | 0.7− | 0.5+ |
| 2001 12 09 | 704 | 0.4− | 1.0− | 2002 01 23 | 704 | 0.9− | 0.6+ | 2006 10 09 | 644 | 0.6− | 0.9+ |
| 2001 12 09 | 704 | 0.0 | 1.4− | 2002 01 23 | 704 | 0.7− | 0.3+ | 2006 10 09 | 644 | 0.5− | 0.7+ |
| 2001 12 09 | 704 | (0.0 | 1.7−) | 2005 01 16 | 704 | 1.1+ | 0.7+ | 2006 11 01 | 703 | 0.1+ | 0.2+ |
| 2001 12 09 | 704 | 0.1+ | 1.1− | 2005 01 16 | 704 | 0.6+ | 0.1+ | 2006 11 01 | 703 | 0.4− | 0.9+ |
| 2001 12 09 | 704 | 0.7+ | 1.4− | 2005 01 16 | 704 | 0.1+ | 0.5+ | 2006 11 01 | 703 | (1.6− | 0.9+) |
| 2001 12 10 | 704 | 0.5+ | 0.1− | 2005 01 16 | 704 | 0.1− | 0.2+ | 2006 11 01 | 703 | 0.6− | 0.7− |
| 2001 12 10 | 704 | 0.4+ | 0.4+ | 2005 01 16 | 704 | 1.0+ | 1.1− | 2006 11 06 | 644 | 0.0 | 0.7+ |
| 2001 12 10 | 704 | 0.3+ | 0.1− | 2005 02 20 | 704 | 0.4+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2001 12 10 | 704 | 0.2+ | 0.4− | 2005 02 20 | 704 | 1.4+ | 0.3+ | 2006 11 06 | 644 | 0.4− | 0.6+ |
| 2001 12 10 | 704 | 0.7+ | 0.2+ | 2005 02 20 | 704 | 0.7+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 1.1+ |
| 2001 12 10 | 704 | 0.3+ | 0.2− | 2005 02 20 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2001 12 10 | 704 | 0.8+ | 0.1− | 2005 02 20 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 703 | 0.2− | 0.8+ |
| 2001 12 10 | 704 | 0.2+ | 0.3− | 2005 03 01 | 704 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2001 12 13 | 704 | 0.9+ | 0.7+ | 2005 03 01 | 704 | 0.2+ | 0.4+ | 2006 11 23 | 703 | 1.3− | 0.7+ |
| 2001 12 13 | 704 | 1.4+ | 0.7+ | 2005 03 01 | 704 | 0.3+ | 0.2+ | 2006 11 23 | 703 | 1.4− | 0.8+ |
| 2001 12 13 | 704 | 1.1+ | 1.0+ | 2005 03 01 | 704 | 0.4− | 0.7− | 2006 11 23 | 703 | 0.4− | 0.5+ |
| 2001 12 13 | 704 | (1.3+ | 2.1+) | 2005 03 01 | 704 | 0.9+ | 0.3− | 2006 11 23 | 703 | 0.1+ | 0.3+ |

**(138515)∗ 2000 LN$_{24}$**

Discovered 2000 June 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.81353 | | (2000.0) | | | |
| $n$ | 0.18016877 | $\omega$ | 122.33060 | | −0.36236651 | +0.90242859 |
| $a$ | 3.1046766 | $\Omega$ | 124.66212 | | −0.92166610 | −0.30975675 |
| $e$ | 0.3536954 | $i$ | 16.45957 | | −0.13864381 | −0.29945516 |
| $P$ | 5.47 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.3− | 0.1+ | 2000 07 06 | 704 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.2− |
| 1999 01 13 | 691 | 0.1− | 0.2+ | 2000 07 06 | 704 | 0.6− | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.0 |
| 1999 01 13 | 691 | 0.2+ | 0.1− | 2000 07 06 | 704 | 0.5− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.3− |
| 1999 01 22 | 691 | 0.3+ | 0.2− | 2000 07 06 | 704 | 0.3− | 1.3+ | 2006 08 16 | 644 | 0.1+ | 0.2− |
| 1999 01 22 | 691 | 0.0 | 0.2− | 2000 08 02 | 704 | 0.7+ | 0.2− | 2006 08 16 | 644 | 0.3− | 0.3− |
| 1999 01 22 | 691 | 0.1+ | 0.0 | 2000 08 02 | 704 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3− |
| 2000 04 14 | 704 | 0.1− | 0.8+ | 2000 08 02 | 704 | 0.2− | 1.1+ | 2006 08 28 | E12 | 0.6− | 1.1+ |
| 2000 04 14 | 704 | 1.6+ | 0.7− | 2005 03 02 | 703 | 0.5+ | 0.4+ | 2006 08 28 | E12 | 0.0 | 0.6+ |
| 2000 04 14 | 704 | 1.4+ | 0.8− | 2005 03 02 | 703 | 1.1+ | 0.4+ | 2006 08 28 | E12 | 0.4+ | 0.1− |
| 2000 06 01 | 704 | 0.5− | 0.3+ | 2005 03 02 | 703 | 0.1− | 0.8+ | 2006 08 28 | E12 | 0.6+ | 0.4− |
| 2000 06 01 | 704 | 0.0 | 0.2− | 2005 03 02 | 703 | 0.0 | 0.2+ | 2006 09 17 | 699 | 1.8+ | 0.0 |
| 2000 06 01 | 704 | 0.6+ | 0.9− | 2005 04 01 | 703 | 0.6− | 0.7+ | 2006 09 17 | 699 | 0.4+ | 1.1+ |
| 2000 06 01 | 704 | 0.2+ | 0.6− | 2005 04 01 | 703 | 0.7− | 0.2− | 2006 09 17 | 699 | 0.4− | 0.2+ |
| 2000 06 11 | 704 | 0.6+ | 0.4+ | 2005 04 01 | 703 | 0.4− | 0.0 | 2006 09 17 | 699 | (2.1− | 0.8+) |
| 2000 06 11 | 704 | 0.4− | 0.5+ | 2005 04 01 | 703 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.6+ | 1.2+ |
| 2000 06 11 | 704 | 0.2− | 0.7− | 2005 04 10 | 703 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.8− | 0.3+ |
| 2000 06 11 | 704 | 0.6− | 0.6− | 2005 04 10 | 703 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.3− | 0.2+ |
| 2000 06 11 | 704 | 0.1− | 0.5− | 2005 04 10 | 703 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.8− | 0.6− |
| 2000 07 06 | 704 | 1.7− | 0.7− | 2005 04 10 | 703 | 0.2− | 0.4+ | | | | |

**(138516)∗ 2000 LM$_{32}$ = 2001 SZ$_{210}$**

Discovered 2000 June 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 19794)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 156.25981 | | (2000.0) | | | |
| $n$ | 0.22834912 | $\omega$ | 70.75984 | | −0.35131804 | +0.93625011 |
| $a$ | 2.6509599 | $\Omega$ | 178.65812 | | −0.90395346 | −0.33825725 |
| $e$ | 0.1291483 | $i$ | 8.27465 | | −0.24381094 | −0.09496187 |
| $P$ | 4.32 | $H$ | 15.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 704 | 1.7− | 1.0− | 2001 09 28 | 704 | 0.1− | 0.4− | 2004 04 12 | 683 | 0.9+ | 0.6− |
| 2000 05 05 | 704 | 0.7+ | 1.3− | 2001 10 11 | 644 | 0.1+ | 0.4+ | 2004 04 12 | 699 | 0.4− | 0.2− |
| 2000 05 05 | 704 | (2.9+ | 2.4−) | 2001 10 11 | 644 | 0.5+ | 0.8+ | 2004 04 12 | 683 | 0.4− | 0.1− |
| 2000 05 27 | 704 | 0.5+ | 0.5+ | 2001 10 11 | 644 | 0.3+ | 0.3+ | 2004 04 12 | 691 | 0.1− | 0.4+ |
| 2000 05 27 | 704 | 0.7+ | 0.3− | 2001 10 17 | 644 | 0.0 | 0.7+ | 2004 04 12 | 699 | 1.1− | 0.7+ |
| 2000 05 27 | 704 | 0.3− | 0.0 | 2001 10 17 | 644 | 0.0 | 1.0+ | 2004 04 12 | 699 | 0.4− | 0.6+ |
| 2000 05 27 | 704 | 1.0+ | 0.1− | 2001 10 17 | 644 | 0.1− | 0.8+ | 2004 04 12 | 691 | 0.2− | 0.6+ |
| 2000 05 27 | 704 | 0.1− | 0.5− | 2001 10 20 | 704 | 0.7− | 0.9+ | 2004 04 15 | 699 | (2.0− | 2.0−) |
| 2000 06 04 | 704 | 0.1− | 1.4− | 2001 10 20 | 704 | (0.9− | 2.2+) | 2004 04 15 | 699 | 1.0+ | 0.5− |
| 2000 06 04 | 704 | 0.2− | 0.4− | 2001 10 20 | 704 | (1.9− | 0.4+) | 2004 04 15 | 699 | 1.1+ | 0.4− |
| 2000 06 04 | 704 | 0.4− | 0.4+ | 2001 10 20 | 704 | 0.4− | 1.4+ | 2004 04 15 | 699 | 0.3+ | 0.1+ |
| 2000 06 04 | 704 | 0.5− | 0.3+ | 2004 02 26 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.1+ | 0.0 |
| 2000 06 05 | 699 | 1.3+ | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2004 04 19 | 704 | 0.1− | 0.1+ |
| 2000 06 05 | 699 | 0.8− | 0.9+ | 2004 02 26 | 704 | 0.1+ | 0.8− | 2004 04 19 | 704 | 0.0 | 0.4− |
| 2000 06 05 | 699 | 0.7− | 0.6+ | 2004 02 26 | 704 | 0.6− | 0.2− | 2004 04 19 | 704 | 0.1− | 0.8+ |
| 2000 06 05 | 699 | 0.7+ | 0.7+ | 2004 02 26 | 704 | 0.4− | 0.2+ | 2004 04 21 | 691 | 0.1− | 0.2+ |
| 2001 09 09 | 644 | 0.5− | 0.9+ | 2004 03 15 | 703 | 0.1+ | 0.4+ | 2004 04 21 | 691 | 0.3− | 0.0 |
| 2001 09 09 | 644 | 0.1− | 0.7+ | 2004 03 15 | 703 | 0.4− | 0.9+ | 2004 04 21 | 691 | 0.1+ | 0.0 |
| 2001 09 09 | 644 | 0.1+ | 0.6+ | 2004 03 15 | 703 | 0.4− | 0.1+ | 2004 04 22 | 704 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.4− | 0.3+ | 2004 03 15 | 703 | 0.6+ | 0.2− | 2004 04 22 | 704 | 0.8− | 1.4+ |
| 2001 09 18 | 699 | 1.0− | 0.4− | 2004 03 16 | 704 | 0.7+ | 0.7− | 2004 04 22 | 704 | 0.4− | 0.7+ |
| 2001 09 18 | 699 | (1.9− | 0.6+) | 2004 03 16 | 704 | 1.0+ | 1.1+ | 2004 04 22 | 704 | 0.4+ | 0.6+ |
| 2001 09 18 | 699 | 0.6+ | 1.0+ | 2004 03 16 | 704 | 1.3+ | 0.4+ | 2004 04 22 | 704 | 0.6+ | 0.5+ |
| 2001 09 19 | 704 | 0.9− | 0.1+ | 2004 03 16 | 704 | 0.7+ | 0.2+ | 2005 07 30 | 644 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.2− | 0.4− | 2004 03 18 | 704 | 1.1+ | 0.7+ | 2005 07 30 | 644 | 0.4+ | 0.3+ |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2004 03 18 | 704 | 1.2+ | 0.7+ | 2005 07 30 | 644 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2004 03 18 | 704 | 1.4+ | 0.2− | 2005 10 25 | G96 | 0.7− | 0.1− |
| 2001 09 19 | 704 | 1.0− | 0.2− | 2004 03 18 | 704 | 0.9+ | 1.4+ | 2005 10 25 | G96 | 0.6− | 0.2− |
| 2001 09 19 | 691 | 0.0 | 0.4+ | 2004 03 18 | 704 | 1.1+ | 1.4+ | 2005 10 25 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 691 | 0.0 | 0.3+ | 2004 03 21 | 704 | 0.4− | 0.9+ | 2005 10 25 | G96 | 0.4− | 0.2− |
| 2001 09 19 | 691 | 0.0 | 0.3+ | 2004 03 21 | 704 | 1.0+ | 1.1+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 1.0+ | 0.2− | 2004 03 21 | 704 | 0.9− | 1.5+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2004 03 21 | 704 | (3.3− | 0.2−) | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 1.0− | 1.4+ | 2004 03 24 | 699 | 0.5− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 1.2− | 0.1+ | 2004 03 24 | 699 | 0.5− | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2001 09 24 | 704 | 0.1+ | 0.9+ | 2004 03 24 | 699 | 0.8− | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.3+ |
| 2001 09 24 | 704 | 0.5− | 0.6+ | 2004 03 24 | 699 | 0.1− | 0.6+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | (0.7− | 1.5+) | 2004 03 26 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2001 09 24 | 704 | 0.4− | 0.8+ | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.5− | 0.2+ |
| 2001 09 24 | 704 | (0.7− | 1.7+) | 2004 03 26 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.2+ | 0.9+ | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.6+ | 0.8+ | 2004 03 27 | 704 | 0.8+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.1+ |
| 2001 09 26 | 704 | 0.4+ | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2001 09 26 | 704 | 0.7+ | 0.5+ | 2004 03 27 | 704 | 0.8+ | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2001 09 26 | 704 | 0.1− | 0.5+ | 2004 03 27 | 704 | 0.4− | 0.7+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2001 09 28 | 704 | 0.4+ | 0.5+ | 2004 04 12 | 699 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2001 09 28 | 704 | 0.4− | 0.2− | 2004 04 12 | 683 | 0.5+ | 1.3− | | | | |
| 2001 09 28 | 704 | (3.1+ | 0.4+) | 2004 04 12 | 691 | 0.1− | 0.5+ | | | | |

**(138517)∗ 2000 LO$_{32}$**

Discovered 2000 June 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.06751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18261826 | $\omega$ | 71.35491 | | −0.18697638 | +0.98218964 | |
| $a$ | 3.0768518 | $\Omega$ | 187.93771 | | −0.94429338 | −0.18489837 | |
| $e$ | 0.2423896 | $i$ | 7.71104 | | −0.27083175 | −0.03340802 | |
| $P$ | 5.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 03 | 691 | 0.1− | 0.1− | 2001 09 22 | 291 | 0.8− | 0.3+ | 2005 05 04 | 703 | 1.0+ | 0.0 |
| 2000 06 03 | 691 | 0.0 | 0.3− | 2001 09 22 | 291 | 0.1− | 1.0+ | 2005 05 04 | 703 | 0.5− | 0.3+ |
| 2000 06 03 | 691 | 0.1− | 0.3− | 2005 03 04 | G96 | 0.3− | 0.1+ | 2005 05 04 | 703 | 0.4+ | 0.0 |
| 2000 06 04 | 704 | 0.7+ | 1.0+ | 2005 03 04 | G96 | 0.8− | 0.3+ | 2005 05 04 | 703 | 1.7+ | 0.5+ |
| 2000 06 04 | 704 | 0.5+ | 0.6+ | 2005 03 04 | G96 | 1.5− | 0.3+ | 2005 05 09 | G96 | 0.1− | 0.3+ |
| 2000 06 04 | 704 | (0.1+ | 2.4+) | 2005 03 04 | G96 | (2.2− | 0.3+) | 2005 05 09 | G96 | 0.2+ | 0.2+ |
| 2000 06 04 | 704 | 0.1− | 1.3+ | 2005 03 08 | 699 | (3.0+ | 1.8+) | 2005 05 09 | G96 | 0.3− | 0.3+ |
| 2000 06 06 | 699 | 0.4− | 0.9+ | 2005 03 08 | 699 | (4.0+ | 0.1+) | 2005 05 09 | G96 | 0.5− | 0.1+ |
| 2000 06 06 | 699 | 0.6− | 0.1− | 2005 03 08 | 699 | 1.0+ | 0.0 | 2006 05 25 | G96 | 0.2+ | 0.2+ |
| 2000 06 06 | 699 | 0.5+ | 0.6− | 2005 03 08 | 699 | 1.6+ | 0.2− | 2006 05 25 | G96 | 0.0 | 0.1− |
| 2000 06 06 | 699 | 0.5+ | 0.8+ | 2005 03 12 | 695 | 0.0 | 0.6+ | 2006 05 25 | G96 | 0.2− | 0.0 |
| 2001 08 27 | 644 | 0.3− | 0.4− | 2005 03 12 | 695 | 0.6+ | 0.0 | 2006 08 21 | 644 | 0.1− | 0.2− |
| 2001 08 27 | 644 | 0.2− | 0.1− | 2005 03 31 | 701 | 0.1− | 0.2+ | 2006 08 21 | 644 | 0.2− | 0.2− |
| 2001 08 27 | 644 | 0.0 | 0.3− | 2005 03 31 | 701 | 0.3− | 0.0 | 2006 08 21 | 644 | 0.0 | 0.3− |
| 2001 09 12 | 695 | 0.4+ | 0.1− | 2005 03 31 | 701 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.0 |
| 2001 09 12 | 695 | 0.5+ | 0.2− | 2005 04 04 | G96 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.5+ | 0.3+ | 2005 04 04 | G96 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.1− | 0.4− | 2005 04 04 | G96 | 0.0 | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 1.3+ | 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.6+ | 0.7+ | 2005 04 11 | 695 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2001 09 22 | 291 | 0.1+ | 0.5+ | 2005 04 11 | 695 | 0.2− | 0.5+ | | | | |

**(138518)∗ 2000 NB$_7$ = 1996 VN$_{29}$**

Discovered 2000 July 4 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 17432)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.81333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19312637 | $\omega$ | 240.10664 | | +0.80932643 | −0.58539591 | |
| $a$ | 2.9642057 | $\Omega$ | 155.62580 | | +0.57099204 | +0.76499369 | |
| $e$ | 0.0726070 | $i$ | 6.67673 | | +0.13769102 | +0.26850751 | |
| $P$ | 5.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 17 | 691 | 0.4− | 0.7+ | 2000 07 10 | 691 | 0.9+ | 0.0 | 2005 07 11 | G96 | 0.3− | 0.1− |
| 1993 02 17 | 691 | 0.5− | 0.1+ | 2001 11 24 | 704 | 0.3− | 0.2− | 2005 07 11 | G96 | 0.2− | 0.5− |
| 1993 02 17 | 691 | 0.4− | 0.1− | 2001 11 24 | 704 | 0.9+ | 0.1− | 2005 07 11 | G96 | 0.3+ | 0.0 |
| 1995 07 02 | 691 | 0.6− | 0.6+ | 2001 11 24 | 704 | 0.4− | 1.2+ | 2006 09 30 | 703 | 0.8− | 0.8− |
| 1995 07 02 | 691 | 0.5− | 0.2− | 2003 02 07 | 644 | 0.5+ | 0.4− | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 1995 07 02 | 691 | 0.9− | 0.2+ | 2003 02 07 | 644 | 0.9+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.2− |
| 1996 11 09 | 691 | 0.3+ | 0.3+ | 2003 02 07 | 644 | 0.7+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 1996 11 09 | 691 | 0.4+ | 0.2+ | 2003 02 09 | 608 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1996 11 09 | 691 | 1.0+ | 0.7+ | 2003 02 09 | 608 | 0.7+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 1996 11 14 | 691 | 0.3− | 0.2− | 2003 02 09 | 608 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 1.2+ |
| 1996 11 14 | 691 | 0.6− | 0.2− | 2003 02 21 | 644 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 1996 11 14 | 691 | 0.5− | 0.0 | 2003 02 21 | 644 | 0.7+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 1.2+ |
| 1996 11 18 | 691 | 0.4+ | 0.3− | 2003 02 21 | 644 | 1.1+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 1996 11 18 | 691 | 0.5+ | 0.5− | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.8− |
| 1996 11 18 | 691 | 0.1− | 0.1− | 2005 06 04 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2000 06 25 | 691 | 0.1+ | 0.2+ | 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.3+ |
| 2000 06 25 | 691 | 0.1− | 0.3+ | 2005 06 09 | 691 | 0.8− | 0.9− | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2000 06 25 | 691 | 0.0 | 0.3+ | 2005 06 09 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | 1.0− | 0.1− |
| 2000 07 04 | 691 | 0.3+ | 0.2+ | 2005 06 09 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2000 07 04 | 691 | 0.5+ | 0.1+ | 2005 06 13 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2000 07 04 | 691 | 0.8+ | 0.2+ | 2005 06 13 | 691 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2000 07 10 | 691 | 0.3+ | 0.1− | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | (3.4− | 1.5−) |
| 2000 07 10 | 691 | 0.7+ | 0.1− | 2005 07 11 | G96 | 0.1+ | 0.2− | | | | |

**(138519)∗ 2000 NE$_{12}$**

Discovered 2000 July 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.02011 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17794474 | $\omega$ | 69.99797 | | +0.63748283 | +0.73825214 | |
| $a$ | 3.1304921 | $\Omega$ | 241.59715 | | −0.76673328 | +0.57974634 | |
| $e$ | 0.3519745 | $i$ | 14.51428 | | −0.07573447 | +0.34478683 | |
| $P$ | 5.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.1+ | 0.2+ | 2000 09 25 | 699 | 0.6− | 0.4− | 2005 06 27 | 644 | 0.0 | 0.3+ |
| 1995 11 18 | 691 | 0.1− | 0.0 | 2000 09 25 | 699 | 0.2− | 0.2− | 2005 10 06 | G96 | 0.5− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.0 | 0.1− | 2000 09 28 | 704 | 0.1+ | 0.2− | 2005 10 06 | G96 | 0.0 | 0.6+ |
| 2000 07 05 | 699 | 0.3− | 0.4+ | 2000 09 28 | 704 | 0.4− | 0.5+ | 2005 10 06 | G96 | 0.0 | 0.6+ |
| 2000 07 05 | 699 | 0.0 | 0.3+ | 2000 09 28 | 704 | 0.1+ | 0.6− | 2005 10 06 | G96 | 0.5− | 0.3+ |
| 2000 07 05 | 699 | 0.0 | 0.1+ | 2000 09 28 | 704 | 0.4− | 0.6+ | 2006 08 29 | 703 | (1.7− | 0.1+) |
| 2000 07 05 | 699 | 0.8+ | 1.1− | 2000 09 28 | 704 | 0.5− | 0.3+ | 2006 08 29 | 703 | 1.1+ | 1.3+ |
| 2000 07 06 | 699 | 1.4+ | 1.1+ | 2000 10 04 | 704 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.6+ | 0.1+ |
| 2000 07 06 | 699 | 1.6+ | 1.6+ | 2000 10 04 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.3− |
| 2000 07 06 | 699 | 1.6+ | 1.4+ | 2000 10 04 | 704 | 0.3− | 0.5+ | 2006 10 19 | 703 | 1.0+ | 1.3− |
| 2000 07 06 | 699 | 1.1+ | 1.8+ | 2000 10 04 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.9+ |
| 2000 08 04 | 704 | 0.3+ | 0.0 | 2000 10 04 | 704 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.9+ | 0.7+ |
| 2000 08 04 | 704 | 0.4+ | 0.7− | 2000 11 19 | 704 | 1.8− | 0.5− | 2006 10 19 | 703 | 1.1+ | 1.3+ |
| 2000 08 04 | 704 | 0.6− | 0.2− | 2000 11 19 | 704 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.4+ | 0.0 |
| 2000 08 04 | 704 | 0.1+ | 0.3+ | 2000 11 19 | 704 | 0.1− | 0.6− | 2006 10 27 | 703 | 0.7− | 0.2+ |
| 2000 08 04 | 704 | 0.4− | 0.5− | 2000 11 19 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.3+ |
| 2000 09 04 | 739 | 0.2+ | 0.5− | 2000 11 19 | 704 | 1.1+ | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.3− |
| 2000 09 04 | 739 | 0.9+ | 0.0 | 2005 05 04 | 644 | 0.3+ | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2000 09 04 | 739 | 0.2− | 0.5− | 2005 05 04 | 644 | 0.3+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2000 09 06 | 704 | 0.2− | 0.6− | 2005 05 04 | 644 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2000 09 06 | 704 | 0.5− | 0.3− | 2005 05 11 | 644 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2000 09 06 | 704 | 0.7− | 0.3− | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2000 09 06 | 704 | 0.8− | 0.4− | 2005 05 11 | 644 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2000 09 06 | 704 | 0.9− | 0.1− | 2005 05 15 | 428 | 0.6+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2000 09 21 | 699 | 0.3+ | 0.5− | 2005 05 15 | 428 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2000 09 21 | 699 | 0.1+ | 0.2+ | 2005 06 04 | 703 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.9+ |
| 2000 09 21 | 699 | 0.0 | 0.9− | 2005 06 04 | 703 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2000 09 21 | 699 | 0.1− | 0.6− | 2005 06 04 | 703 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.6− | 0.4+ |
| 2000 09 22 | 704 | 0.2+ | 0.2− | 2005 06 04 | 703 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2000 09 22 | 704 | 0.1+ | 0.2− | 2005 06 11 | 703 | 0.7− | 0.7+ | 2006 11 22 | 704 | 0.5− | 0.8+ |
| 2000 09 22 | 704 | 0.1− | 0.3− | 2005 06 11 | 703 | 0.8− | 0.9+ | 2006 11 22 | 704 | 0.9− | 1.4+ |
| 2000 09 22 | 704 | 0.1+ | 0.1− | 2005 06 11 | 703 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.7− | 1.1+ |
| 2000 09 22 | 704 | 0.4+ | 0.2− | 2005 06 11 | 703 | 0.1− | 1.4+ | 2006 11 22 | 704 | 0.5− | 0.7+ |
| 2000 09 25 | 699 | 0.0 | 0.5− | 2005 06 27 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2000 09 25 | 699 | 0.7− | 0.4− | 2005 06 27 | 644 | 0.1− | 0.2+ | | | | |

**(138520)∗ 2000 NK$_{14}$**

Discovered 2000 July 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.42150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18245658 | $\omega$ | 305.58999 | | −0.23706320 | +0.95146127 | |
| $a$ | 3.0786693 | $\Omega$ | 309.47670 | | −0.78865297 | −0.30645259 | |
| $e$ | 0.1633277 | $i$ | 14.73070 | | −0.56729845 | +0.02843001 | |
| $P$ | 5.40 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 09 | 699 | 0.6+ | 1.0− | 2001 08 23 | 704 | (0.4+ | 1.8+) | 2004 02 17 | 703 | 0.1+ | 0.8+ |
| 2000 06 09 | 699 | (2.3+ | 1.0+) | 2001 08 23 | 704 | 1.0− | 0.7+ | 2004 02 17 | 703 | 0.5+ | 0.5+ |
| 2000 06 09 | 699 | 0.4+ | 0.9+ | 2001 08 23 | 704 | 1.1− | 0.3+ | 2004 02 17 | 703 | 0.3+ | 0.3+ |
| 2000 06 09 | 699 | (2.2+ | 0.8+) | 2001 08 23 | 704 | 0.2− | 0.4− | 2004 02 19 | 704 | 0.4+ | 0.3+ |
| 2000 07 05 | 699 | 0.2+ | 1.4+ | 2001 10 08 | 704 | 0.0 | 0.5+ | 2004 02 19 | 704 | 0.2+ | 0.3+ |
| 2000 07 05 | 699 | 0.2− | 1.9+ | 2001 10 08 | 704 | 0.0 | 0.8+ | 2004 02 19 | 704 | 0.5+ | 0.0 |
| 2000 07 05 | 699 | 1.3+ | 1.0+ | 2001 10 08 | 704 | 0.3− | 0.8+ | 2004 02 19 | 704 | 0.3+ | 0.0 |
| 2000 07 05 | 699 | 0.4+ | 0.7+ | 2001 10 08 | 704 | 0.7− | 1.5+ | 2004 02 19 | 704 | 0.2+ | 0.3+ |
| 2000 07 06 | 699 | (0.4− | 2.3+) | 2001 10 25 | 704 | 0.2− | 0.4+ | 2004 03 01 | 703 | 0.2+ | 0.5+ |
| 2000 07 06 | 699 | (0.3− | 2.7+) | 2001 10 25 | 704 | 0.7− | 0.4+ | 2004 03 01 | 703 | 0.4+ | 1.3+ |
| 2000 07 06 | 699 | (2.4− | 2.0+) | 2001 10 25 | 704 | 0.1+ | 1.0+ | 2004 03 01 | 703 | 1.1+ | 0.4+ |
| 2000 07 06 | 699 | (2.1− | 1.6+) | 2001 10 25 | 704 | 0.7− | 0.8+ | 2004 03 01 | 703 | 0.3− | 0.3+ |
| 2000 07 07 | 704 | 0.7− | 1.0+ | 2001 10 25 | 704 | (1.8− | 0.5+) | 2004 03 16 | 704 | 0.1− | 1.0+ |
| 2000 07 07 | 704 | 0.9− | 0.7+ | 2001 10 27 | 644 | (0.5+ | 1.6+) | 2004 03 16 | 704 | 0.5+ | 0.9+ |
| 2000 07 07 | 704 | 1.3− | 0.2+ | 2001 10 27 | 644 | 0.5+ | 1.1+ | 2004 03 16 | 704 | 0.5+ | 0.7+ |
| 2000 07 07 | 704 | 0.3− | 0.7+ | 2001 10 27 | 644 | 0.4+ | 1.2+ | 2004 03 16 | 704 | 0.0 | 0.7+ |
| 2000 07 07 | 704 | 0.8− | 1.0+ | 2001 11 11 | 704 | 0.4+ | 0.0 | 2004 03 16 | 704 | 0.7+ | 0.5+ |
| 2000 07 31 | 807 | 0.3− | 0.4+ | 2001 11 11 | 704 | 0.4+ | 0.4− | 2004 03 22 | 608 | 1.2+ | 0.4− |
| 2000 07 31 | 807 | 0.0 | 0.4+ | 2001 11 11 | 704 | 0.5+ | 0.2− | 2004 03 22 | 608 | 0.8+ | 1.0− |
| 2000 08 02 | 704 | 1.0− | 0.9− | 2001 11 11 | 704 | 0.3− | 0.3− | 2004 03 22 | 608 | 0.8+ | 1.1− |
| 2000 08 02 | 704 | 0.4− | 0.4+ | 2001 12 09 | 704 | 0.4− | 0.2− | 2004 03 31 | 703 | 0.0 | 1.4+ |
| 2000 08 02 | 704 | 0.1− | 0.6+ | 2001 12 09 | 704 | 0.1+ | 0.5+ | 2004 03 31 | 703 | (0.1− | 1.6+) |
| 2000 08 02 | 704 | 0.2− | 0.7+ | 2001 12 09 | 704 | 0.5− | 0.7+ | 2004 03 31 | 703 | 0.3− | 0.8+ |
| 2000 08 02 | 704 | 1.4− | 0.2− | 2001 12 09 | 704 | 0.1+ | 1.4+ | 2004 03 31 | 703 | 0.2− | 0.8+ |
| 2000 08 04 | 704 | 0.1− | 0.3+ | 2001 12 22 | 704 | 0.5+ | 0.4+ | 2004 03 31 | 704 | 0.6− | 0.4+ |
| 2000 08 04 | 704 | 0.5+ | 0.5− | 2001 12 22 | 704 | 1.1+ | 0.7+ | 2004 03 31 | 704 | 0.3− | 0.5− |
| 2000 08 04 | 704 | 0.3+ | 0.3+ | 2001 12 22 | 704 | 0.5− | 1.0− | 2004 03 31 | 704 | 0.0 | 0.2− |
| 2000 08 04 | 704 | 0.3− | 0.3+ | 2001 12 22 | 704 | 1.1− | 0.3+ | 2004 03 31 | 704 | 0.1+ | 0.6+ |
| 2000 08 21 | 699 | 0.2− | 0.3+ | 2001 12 23 | 704 | 1.1+ | 1.1− | 2004 03 31 | 704 | 0.4− | 1.1+ |
| 2000 08 21 | 699 | 0.1− | 0.3+ | 2001 12 23 | 704 | 0.3+ | 0.4− | 2004 04 16 | 699 | 0.0 | 0.4− |
| 2000 08 21 | 699 | 0.4− | 0.3+ | 2001 12 23 | 704 | 0.1− | 0.2− | 2004 04 16 | 699 | 0.4+ | 0.5+ |
| 2000 08 21 | 699 | 0.0 | 0.7+ | 2001 12 23 | 704 | 0.2+ | 1.0− | 2004 04 16 | 699 | 0.3+ | 0.3+ |
| 2000 08 25 | 704 | 0.3+ | 0.5+ | 2003 01 04 | 704 | 0.4− | 0.6+ | 2004 04 16 | 699 | 0.2+ | 1.4+ |
| 2000 08 25 | 704 | 0.5− | 0.0 | 2003 01 04 | 704 | 0.0 | 0.2+ | 2005 05 02 | E12 | 0.1− | 0.6+ |
| 2000 08 25 | 704 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.1− | 0.0 | 2005 05 02 | E12 | 0.0 | 0.8+ |
| 2000 08 31 | 704 | 0.2− | 0.5− | 2003 01 04 | 704 | 0.1+ | 0.4+ | 2005 05 02 | E12 | (1.9+ | 2.3+) |
| 2000 08 31 | 704 | 0.0 | 0.2+ | 2004 01 28 | 704 | 0.5+ | 0.0 | 2005 05 02 | E12 | 0.2+ | 0.2+ |
| 2000 08 31 | 704 | 0.0 | 0.3− | 2004 01 28 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.7+ | 0.1− |
| 2000 08 31 | 704 | 0.5+ | 0.8− | 2004 01 28 | 704 | 1.1+ | 0.0 | 2006 09 17 | 703 | 1.1+ | 0.4− |
| 2000 09 03 | 704 | 0.1+ | 0.2− | 2004 01 28 | 704 | (1.9+ | 1.4+) | 2006 09 17 | 703 | 0.0 | 0.5− |
| 2000 09 03 | 704 | 0.1− | 0.2+ | 2004 01 28 | 704 | 1.0+ | 0.5− | 2006 09 17 | 703 | 0.5+ | 0.6+ |
| 2000 09 03 | 704 | 0.1+ | 0.1− | 2004 01 29 | 699 | 0.7+ | 0.9+ | 2006 09 22 | 699 | (0.9− | 1.5+) |
| 2000 09 03 | 704 | 0.3− | 0.0 | 2004 01 29 | 699 | 0.4− | 0.1− | 2006 09 22 | 699 | 0.4+ | 0.9+ |
| 2000 09 03 | 704 | 0.4− | 0.2− | 2004 01 29 | 699 | 0.7− | 1.4+ | 2006 09 22 | 699 | (1.2+ | 1.8+) |
| 2000 09 19 | 699 | 0.1+ | 0.5+ | 2004 01 29 | 699 | 0.5− | 1.1− | 2006 09 22 | 699 | (1.6+ | 0.1−) |
| 2000 09 19 | 699 | 0.2+ | 0.3− | 2004 01 30 | 699 | (0.6− | 1.6+) | 2006 09 28 | 703 | 0.1+ | 0.3+ |
| 2000 09 19 | 699 | 0.9− | 0.0 | 2004 01 30 | 699 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.6− | 0.6+ |
| 2000 09 19 | 699 | 0.4+ | 0.3− | 2004 01 30 | 699 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.4− | 0.2+ |
| 2000 09 23 | 699 | 1.4− | 0.0 | 2004 01 30 | 699 | 0.9+ | 0.7+ | 2006 09 28 | 703 | 0.6− | 0.0 |
| 2000 09 23 | 699 | 0.1− | 0.0 | 2004 02 14 | 644 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.7− |
| 2000 09 23 | 699 | 1.0− | 0.2+ | 2004 02 14 | 644 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.5− |
| 2000 09 23 | 699 | 0.1+ | 0.0 | 2004 02 14 | 644 | 0.0 | 0.4+ | 2006 10 19 | 703 | 1.0− | 0.6− |
| 2000 09 23 | 704 | 1.0+ | 0.3+ | 2004 02 16 | 333 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.9− | 0.2− |
| 2000 09 23 | 704 | 0.6− | 0.6− | 2004 02 16 | 333 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2000 09 23 | 704 | 0.4− | 0.3+ | 2004 02 17 | 333 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2000 09 23 | 704 | 0.1− | 0.2+ | 2004 02 17 | 333 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2000 09 23 | 704 | 0.1− | 0.6+ | 2004 02 17 | 703 | 0.9+ | 0.8+ | | | | |

**(138521)∗ 2000 NL$_{18}$**

Discovered 2000 July 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.48977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18331426 | $\omega$ | 280.18161 | | +0.79223487 | −0.58761199 | |
| $a$ | 3.0690588 | $\Omega$ | 115.99648 | | +0.60657238 | +0.72890751 | |
| $e$ | 0.1210110 | $i$ | 10.54869 | | +0.06658722 | +0.35129190 | |
| $P$ | 5.38 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 05 | 699 | 0.7− | 0.4− | 2001 11 21 | 608 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.7− |
| 2000 07 05 | 699 | 1.6+ | 0.6+ | 2001 12 08 | 699 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.3− |
| 2000 07 05 | 699 | 0.6− | 0.6+ | 2001 12 08 | 699 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.5+ |
| 2000 07 05 | 699 | 0.6− | 0.5+ | 2001 12 08 | 699 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.2+ | 0.3+ |
| 2000 07 06 | 699 | 0.8− | 0.0 | 2001 12 08 | 699 | 1.4− | 0.5+ | 2006 09 21 | 699 | 0.3+ | 0.4+ |
| 2000 07 06 | 699 | 0.1+ | 0.2− | 2001 12 11 | 704 | 0.5− | 0.1+ | 2006 09 21 | 699 | 1.4+ | 1.0+ |
| 2000 07 06 | 699 | 0.5− | 1.1+ | 2001 12 11 | 704 | 0.4− | 0.3+ | 2006 09 21 | 699 | 0.7− | 0.6+ |
| 2000 07 06 | 699 | 0.3− | 1.2− | 2001 12 11 | 704 | 0.6− | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.3− |
| 2000 07 29 | 699 | 0.3− | 0.1− | 2001 12 11 | 704 | 0.8− | 0.2+ | 2006 09 25 | 699 | 0.8+ | 0.3− |
| 2000 07 29 | 699 | 0.3+ | 0.1+ | 2001 12 11 | 704 | 0.6− | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.2+ |
| 2000 07 29 | 699 | 0.2− | 0.1− | 2001 12 15 | 704 | 0.6− | 1.2+ | 2006 09 29 | 699 | 0.6− | 0.0 |
| 2000 07 29 | 699 | 0.3− | 0.5+ | 2001 12 15 | 704 | 0.4− | 1.3+ | 2006 09 29 | 699 | 0.2+ | 0.6+ |
| 2000 08 01 | 704 | 0.5− | 0.1+ | 2001 12 15 | 704 | 0.1− | 1.1+ | 2006 09 29 | 699 | 0.9− | 1.2+ |
| 2000 08 01 | 704 | 0.4+ | 0.6+ | 2002 01 02 | 608 | 0.2+ | 1.2− | 2006 09 29 | 699 | 0.5− | 0.5− |
| 2000 08 01 | 704 | 0.6− | 0.5+ | 2002 01 02 | 608 | 0.3− | 0.9− | 2006 10 02 | 703 | 0.0 | 0.1+ |
| 2000 08 01 | 704 | 0.7+ | 0.0 | 2002 01 02 | 608 | 0.1+ | 0.9− | 2006 10 02 | 703 | 0.9− | 0.2− |
| 2000 08 26 | 704 | 0.0 | 1.0+ | 2003 02 04 | 704 | 0.3+ | 1.0+ | 2006 10 02 | 703 | 0.8− | 0.7− |
| 2000 08 26 | 704 | 0.2+ | 0.3− | 2003 02 04 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.4− |
| 2000 08 26 | 704 | 0.5+ | 0.1+ | 2003 02 04 | 704 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2000 08 26 | 704 | 0.4+ | 0.7+ | 2003 02 04 | 704 | 0.1− | 1.3+ | 2006 10 10 | 644 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.1+ | 0.8+ | 2003 02 08 | 699 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | (1.8+ | 0.4−) | 2003 02 08 | 699 | (1.7− | 1.5+) | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.2+ | 0.1− | 2003 02 08 | 699 | 1.5− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.2− | 0.6+ | 2003 02 08 | 699 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 11 12 | 699 | 0.6+ | 0.8− | 2003 02 21 | 644 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 11 12 | 699 | 0.3+ | 0.4+ | 2003 02 21 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 11 12 | 699 | 0.6+ | 0.7+ | 2003 02 21 | 644 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 11 12 | 699 | 0.6+ | 0.1+ | 2003 03 05 | 704 | 0.2+ | 0.9− | 2006 10 17 | 703 | 0.5+ | 0.2− |
| 2001 11 13 | 608 | 0.1− | 0.8− | 2003 03 05 | 704 | 0.5+ | 0.5− | 2006 10 17 | 703 | 0.4− | 1.1+ |
| 2001 11 13 | 608 | 0.4− | 0.3− | 2003 03 05 | 704 | (0.7+ | 1.8−) | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2001 11 13 | 608 | 0.2− | 0.6− | 2003 03 07 | 644 | (0.1+ | 1.6+) | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2001 11 19 | 699 | 0.5− | 0.3− | 2003 03 07 | 644 | 1.1+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.2+ | 0.3− | 2003 03 07 | 644 | 0.0 | 1.1+ | 2006 10 28 | 703 | 0.5− | 0.6− |
| 2001 11 19 | 699 | 0.6+ | 0.2− | 2003 03 07 | 644 | 0.9+ | 0.3+ | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2001 11 19 | 699 | 0.5+ | 0.1− | 2003 03 07 | 644 | 0.1+ | 1.3+ | 2006 10 28 | 703 | 0.7+ | 0.3− |
| 2001 11 21 | 608 | 1.0+ | 0.2− | 2003 03 07 | 644 | 0.1+ | 0.0 | | | | |
| 2001 11 21 | 608 | 0.7+ | 0.5− | 2006 09 19 | 703 | 0.1− | 0.8+ | | | | |

**(138522)∗ 2000 NW$_{19}$ = 2001 TJ$_{43}$**

Discovered 2000 July 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 19807)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.89628 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18119929 | $\omega$ | 91.56443 | | +0.80183260 | −0.55613893 | |
| $a$ | 3.0928942 | $\Omega$ | 302.27888 | | +0.39151957 | +0.76528959 | |
| $e$ | 0.2508957 | $i$ | 14.98258 | | +0.45141655 | +0.32410081 | |
| $P$ | 5.44 | $H$ | 13.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 06 | 699 | 0.3+ | 1.5+ | 2001 10 15 | 704 | 0.4+ | 0.1+ | 2002 02 04 | 644 | 0.1− | 0.1+ |
| 2000 06 06 | 699 | 0.2+ | 0.8− | 2001 10 15 | 704 | 0.3+ | 0.3− | 2002 02 04 | 644 | 0.3− | 0.1+ |
| 2000 06 06 | 699 | 0.2− | 0.5+ | 2001 10 15 | 704 | 1.0+ | 0.3+ | 2002 02 04 | 644 | 0.2− | 0.0 |
| 2000 06 06 | 699 | 0.1+ | 1.7+ | 2001 10 21 | 704 | 0.5− | 0.1+ | 2002 02 04 | 644 | 0.3− | 0.1− |
| 2000 07 05 | 699 | 0.5− | 0.5+ | 2001 10 21 | 704 | 0.5+ | 0.0 | 2002 02 04 | 644 | 0.0 | 0.2+ |
| 2000 07 05 | 699 | 0.4+ | 0.6+ | 2001 10 21 | 704 | 0.4− | 0.4+ | 2002 02 06 | 704 | 0.3+ | 1.2− |
| 2000 07 05 | 699 | 0.6− | 0.1+ | 2001 10 23 | 699 | 0.1+ | 0.4+ | 2002 02 06 | 704 | 0.0 | 1.3− |
| 2000 07 05 | 699 | 0.5− | 0.4+ | 2001 10 23 | 699 | 0.8+ | 0.1− | 2002 02 06 | 704 | 0.1− | 0.9− |
| 2000 07 06 | 699 | 0.6+ | 1.8+ | 2001 10 23 | 699 | 0.8+ | 0.1+ | 2002 02 06 | 704 | 0.0 | 1.1− |
| 2000 07 06 | 699 | 1.6− | 0.5+ | 2001 10 23 | 699 | 0.5+ | 0.1+ | 2002 02 06 | 704 | 0.4− | 1.0− |
| 2000 07 06 | 699 | 1.3− | 0.7+ | 2001 10 27 | 704 | (1.3− | 1.5+) | 2002 02 07 | 704 | 0.5− | 0.0 |
| 2000 07 06 | 699 | 1.1− | 0.8+ | 2001 10 27 | 704 | 0.2− | 1.3+ | 2002 02 07 | 704 | 0.7− | 0.3+ |
| 2000 07 24 | 704 | 0.1− | 1.2+ | 2001 10 27 | 704 | 1.2− | 1.4+ | 2002 02 07 | 704 | 0.2− | 0.2+ |
| 2000 07 24 | 704 | 0.2+ | 0.4+ | 2001 10 27 | 704 | (1.0− | 1.6+) | 2002 02 07 | 704 | 0.3− | 0.1+ |
| 2000 07 24 | 704 | 0.5+ | 1.1+ | 2001 10 27 | 704 | (1.2− | 1.8+) | 2002 02 07 | 704 | 0.2− | 0.7+ |
| 2000 07 24 | 704 | 0.4+ | 1.0+ | 2001 11 11 | 699 | 0.4− | 1.4+ | 2002 02 10 | 704 | 0.2+ | 0.8+ |
| 2000 07 30 | 704 | 0.0 | 0.3+ | 2001 11 11 | 699 | 0.2− | 0.6+ | 2002 02 10 | 704 | 0.2+ | 0.6+ |
| 2000 07 30 | 704 | 0.7+ | 0.8+ | 2001 11 11 | 699 | 0.2+ | 0.3+ | 2002 02 10 | 704 | 0.6+ | 0.4+ |
| 2000 07 30 | 704 | 0.2+ | 0.6+ | 2001 11 11 | 699 | 0.0 | 0.3+ | 2002 02 10 | 704 | 0.4+ | 0.2+ |
| 2000 07 30 | 704 | 0.0 | 0.8− | 2001 11 24 | 704 | 1.4+ | 0.1− | 2002 02 10 | 704 | 0.3+ | 0.1+ |
| 2000 07 30 | 704 | 0.1+ | 0.4+ | 2001 11 24 | 704 | (1.7+ | 2.0−) | 2002 02 12 | 704 | 0.9− | 1.0− |
| 2000 08 02 | 704 | 0.1+ | 0.2+ | 2001 11 24 | 704 | 0.5+ | 0.2+ | 2002 02 12 | 704 | 0.5+ | 0.2− |
| 2000 08 02 | 704 | 0.4+ | 1.5− | 2001 11 24 | 704 | 0.3− | 0.2+ | 2002 02 12 | 704 | 0.3+ | 0.0 |
| 2000 08 02 | 704 | 0.3− | 0.3− | 2001 11 24 | 704 | 1.2− | 1.4− | 2002 02 20 | 704 | (1.5− | 0.3−) |
| 2000 08 02 | 704 | 0.2− | 0.2+ | 2001 11 28 | 644 | 0.6+ | 0.6+ | 2002 02 20 | 704 | 0.9− | 0.0 |
| 2000 08 02 | 704 | 0.3− | 0.3+ | 2001 11 28 | 644 | 0.7+ | 0.2+ | 2002 02 20 | 704 | (1.7− | 0.0 ) |
| 2000 08 21 | 699 | 0.7− | 0.1+ | 2001 11 28 | 644 | 0.4+ | 1.1+ | 2002 02 20 | 704 | (1.6− | 0.6+) |
| 2000 08 21 | 699 | 0.3− | 0.3− | 2001 12 09 | 704 | 0.1+ | 0.4+ | 2002 02 20 | 704 | (1.9− | 0.5−) |
| 2000 08 21 | 699 | 0.6− | 0.1− | 2001 12 09 | 704 | 0.2− | 0.2+ | 2002 03 09 | 704 | (0.2− | 1.8+) |
| 2000 08 21 | 699 | 0.4− | 0.2− | 2001 12 09 | 704 | 0.4− | 0.2− | 2002 03 09 | 704 | (0.2+ | 1.7+) |
| 2000 08 31 | 704 | 0.1− | 0.2+ | 2001 12 09 | 704 | 0.1+ | 0.3− | 2002 03 09 | 704 | 0.7+ | 0.3+ |
| 2000 08 31 | 704 | 0.2− | 0.2− | 2001 12 09 | 704 | 0.5− | 0.2− | 2002 03 09 | 704 | 0.4− | 0.6+ |
| 2000 08 31 | 704 | 0.1+ | 0.2+ | 2001 12 13 | 704 | 0.2+ | 0.3− | 2002 03 19 | 608 | 0.8+ | 0.0 |
| 2000 08 31 | 704 | 0.4− | 0.3+ | 2001 12 13 | 704 | 0.1+ | 0.6− | 2002 03 19 | 608 | 1.2+ | 0.1+ |
| 2000 08 31 | 704 | 0.9− | 0.3+ | 2001 12 13 | 704 | 0.1+ | 0.2+ | 2002 03 19 | 608 | 0.7+ | 0.2− |
| 2000 09 02 | 699 | 1.3− | 0.1+ | 2001 12 13 | 704 | 0.5+ | 0.2− | 2003 02 23 | 699 | 0.2+ | 1.4+ |
| 2000 09 02 | 699 | 1.5− | 0.1+ | 2001 12 13 | 704 | 0.1+ | 0.1− | 2003 02 23 | 699 | (0.5+ | 2.1+) |
| 2000 09 02 | 699 | 1.0− | 0.0 | 2001 12 17 | 704 | 0.6− | 0.3+ | 2003 02 23 | 699 | 0.3− | 0.2− |
| 2000 09 02 | 699 | 1.1− | 0.2+ | 2001 12 17 | 704 | 0.5− | 0.2+ | 2003 02 23 | 699 | 1.4+ | 0.1+ |
| 2000 09 07 | 691 | 0.2+ | 0.4− | 2001 12 17 | 704 | 0.7− | 0.1+ | 2003 03 09 | 699 | 0.3− | 0.6+ |
| 2000 09 07 | 691 | 0.2+ | 0.3− | 2001 12 17 | 704 | 0.3− | 0.3+ | 2003 03 09 | 699 | 0.7+ | 0.1− |
| 2000 09 07 | 691 | 0.3+ | 0.3− | 2001 12 17 | 704 | 0.4− | 0.3+ | 2003 03 09 | 699 | 0.2− | 1.3+ |
| 2000 09 18 | 699 | 0.6− | 0.1+ | 2001 12 18 | 644 | 0.1+ | 0.7+ | 2003 03 09 | 699 | 0.1+ | 0.2+ |
| 2000 09 18 | 699 | 0.1− | 0.1+ | 2001 12 18 | 644 | 0.2+ | 0.8+ | 2003 03 28 | 699 | 0.0 | 0.6+ |
| 2000 09 18 | 699 | 0.3+ | 0.3+ | 2001 12 18 | 699 | 0.1− | 0.4+ | 2003 03 28 | 699 | 0.0 | 0.3+ |
| 2000 09 18 | 699 | 0.5− | 0.1+ | 2001 12 18 | 644 | 0.1+ | 0.8+ | 2003 03 28 | 699 | 0.4− | 0.2+ |
| 2000 09 21 | 704 | 0.3+ | 0.0 | 2001 12 18 | 699 | 0.2− | 0.5+ | 2003 03 28 | 699 | 0.5+ | 1.1+ |
| 2000 09 21 | 704 | 0.0 | 0.3+ | 2001 12 18 | 699 | 0.4− | 0.4+ | 2003 04 07 | 704 | 1.1+ | 0.5− |
| 2000 09 21 | 704 | 0.2+ | 0.7+ | 2001 12 18 | 699 | 0.1− | 0.1+ | 2003 04 07 | 704 | 1.3+ | 0.7− |
| 2000 09 21 | 704 | 0.0 | 0.4− | 2001 12 19 | 644 | 0.1− | 0.0 | 2003 04 07 | 704 | 0.8+ | 0.3− |
| 2000 09 21 | 704 | 0.2+ | 0.9+ | 2001 12 19 | 644 | 0.2− | 0.0 | 2003 04 07 | 704 | 1.1+ | 0.2+ |
| 2000 09 23 | 704 | 0.3+ | 0.2− | 2001 12 19 | 644 | 0.2+ | 0.2+ | 2003 04 08 | 599 | 0.1− | 0.7+ |
| 2000 09 23 | 704 | 0.4+ | 0.3+ | 2001 12 22 | 704 | 0.4+ | 0.7+ | 2003 04 08 | 599 | 0.1+ | 0.9+ |
| 2000 09 23 | 704 | 0.8+ | 0.0 | 2001 12 22 | 704 | 0.6+ | 1.2+ | 2005 06 11 | 704 | 1.4− | 0.7− |
| 2000 09 23 | 704 | 0.8+ | 0.5− | 2001 12 22 | 704 | 0.9+ | 1.1+ | 2005 06 11 | 704 | 1.1− | 0.6− |
| 2000 09 23 | 704 | 0.4+ | 0.9+ | 2001 12 22 | 704 | (0.6+ | 1.6+) | 2005 06 11 | 704 | 0.9+ | 0.7+ |
| 2000 09 25 | 704 | 0.5+ | 0.7+ | 2001 12 22 | 704 | 1.0+ | 1.2+ | 2005 06 17 | E12 | 0.2− | 0.4+ |
| 2000 09 25 | 704 | 0.6− | 0.8− | 2002 01 06 | 644 | 0.1− | 0.8− | 2005 06 17 | E12 | 0.4− | 0.4+ |
| 2000 09 25 | 704 | 1.1− | 0.2+ | 2002 01 06 | 644 | 0.0 | 0.7− | 2005 06 17 | E12 | 0.5− | 0.3+ |
| 2000 09 25 | 704 | 0.3− | 1.6+ | 2002 01 06 | 644 | 0.4+ | 0.7− | 2005 06 17 | E12 | 0.3− | 0.2+ |
| 2000 09 25 | 704 | 1.4− | 0.3+ | 2002 01 08 | 704 | 0.6+ | 0.2− | 2006 09 03 | 106 | 0.9+ | 0.4+ |
| 2000 09 26 | 699 | 0.7− | 0.9+ | 2002 01 08 | 704 | 0.6+ | 0.3− | 2006 09 03 | 106 | 0.9− | 0.6− |
| 2000 09 26 | 699 | 0.3+ | 1.5+ | 2002 01 08 | 704 | 0.6+ | 0.6− | 2006 09 03 | 106 | 0.2+ | 0.1− |
| 2000 09 26 | 699 | 0.2+ | 0.5+ | 2002 01 08 | 704 | 0.6+ | 0.4− | 2006 09 03 | 106 | 0.6− | 0.3− |
| 2000 09 26 | 699 | 0.3− | 0.2+ | 2002 01 08 | 704 | 0.4+ | 0.4− | 2006 10 03 | 704 | (2.5+ | 0.0 ) |
| 2000 10 25 | 608 | 0.4+ | 0.8− | 2002 01 09 | 704 | 0.0 | 0.5+ | 2006 10 03 | 704 | (2.7+ | 0.2+) |
| 2000 10 25 | 608 | 0.4+ | 0.9− | 2002 01 09 | 704 | 0.1+ | 0.4+ | 2006 10 03 | 704 | (2.3+ | 0.4+) |
| 2000 10 25 | 608 | 0.5+ | 0.6− | 2002 01 09 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 704 | 0.6+ | 0.2+ |
| 2000 11 19 | 704 | 0.2+ | 0.2+ | 2002 01 09 | 704 | (0.7+ | 3.1+) | 2006 10 16 | 704 | 0.1+ | 0.1− |
| 2000 11 19 | 704 | 0.8+ | 0.4+ | 2002 01 09 | 704 | 0.9− | 0.2+ | 2006 10 16 | 704 | 0.6+ | 0.2− |
| 2000 11 19 | 704 | 0.0 | 0.2+ | 2002 01 17 | 644 | 0.2− | 0.3+ | 2006 10 16 | 704 | 0.3− | 0.1+ |
| 2000 11 19 | 704 | 0.1+ | 1.1− | 2002 01 17 | 644 | 0.1− | 0.2+ | 2006 10 16 | 704 | 0.4− | 0.5+ |
| 2000 11 19 | 704 | 0.4+ | 1.0− | 2002 01 17 | 644 | 0.2− | 0.4+ | 2006 11 13 | 704 | 0.0 | 0.5− |
| 2000 12 23 | 699 | 0.4− | 0.1+ | 2002 01 18 | 704 | 0.4+ | 0.3+ | 2006 11 13 | 704 | 0.1+ | 0.6− |
| 2000 12 23 | 699 | 0.3+ | 0.5+ | 2002 01 18 | 704 | 0.2− | 0.2+ | 2006 11 13 | 704 | 0.1+ | 0.5− |
| 2000 12 23 | 699 | 0.3+ | 1.0+ | 2002 01 18 | 704 | 0.3− | 0.2+ | 2006 11 13 | 704 | 0.1− | 0.5− |
| 2001 10 14 | 704 | (2.4+ | 0.4+) | 2002 01 18 | 704 | 0.3− | 0.4− | 2006 11 20 | 703 | 0.4+ | 0.3− |
| 2001 10 14 | 704 | (2.6+ | 0.3+) | 2002 01 21 | 704 | 0.4+ | 0.8+ | 2006 11 20 | 703 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | (2.0+ | 0.4+) | 2002 01 21 | 704 | (1.7− | 0.1+) | 2006 11 20 | 703 | 0.3+ | 0.1− |
| 2001 10 14 | 704 | (2.4+ | 0.3+) | 2002 01 21 | 704 | 0.4− | 0.6+ | 2006 11 20 | 703 | 0.2+ | 0.2− |
| 2001 10 14 | 704 | 0.7+ | 0.5+ | 2002 01 21 | 704 | 0.8− | 0.5+ | 2006 12 01 | 704 | 0.2− | 0.4+ |
| 2001 10 15 | 704 | 0.2+ | 0.1+ | 2002 01 21 | 704 | 0.1− | 0.8+ | 2006 12 01 | 704 | 0.3+ | 0.1− |
| 2001 10 15 | 704 | 0.3+ | 0.5+ | 2002 02 04 | 644 | 0.5− | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.1− |

**(138523)∗ 2000 NL$_{20}$**

Discovered 2000 July 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.72557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17426664 | $\omega$ | 16.57631 | | +0.57751691 | +0.77228549 | |
| $a$ | 3.1743870 | $\Omega$ | 289.46243 | | −0.77725578 | +0.42098528 | |
| $e$ | 0.1784790 | $i$ | 16.30246 | | −0.24969515 | +0.47575888 | |
| $P$ | 5.66 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 06 | 691 | 0.1+ | 0.1+ | 2001 12 18 | 699 | 1.8− | 1.3+ | 2006 08 29 | 699 | 0.8− | 0.2+ |
| 2000 07 06 | 691 | 0.5+ | 0.1+ | 2001 12 18 | 699 | 0.2− | 0.9+ | 2006 08 29 | 699 | 0.1+ | 0.4− |
| 2000 07 06 | 691 | 0.8+ | 0.0 | 2001 12 22 | 704 | 0.1− | 1.1+ | 2006 08 29 | 699 | 1.5− | 0.0 |
| 2000 07 07 | 704 | 0.2− | 0.2+ | 2001 12 22 | 704 | 0.7+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.1+ |
| 2000 07 07 | 704 | 0.5− | 0.1+ | 2001 12 22 | 704 | 0.4− | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.1+ |
| 2000 07 07 | 704 | 0.3− | 0.0 | 2001 12 22 | 704 | 0.2− | 0.2− | 2006 09 06 | 644 | 0.1− | 0.1+ |
| 2000 07 07 | 704 | 0.5− | 0.0 | 2005 05 13 | E12 | 0.3− | 0.7+ | 2006 09 11 | 703 | 0.3− | 0.2− |
| 2000 07 30 | 704 | 0.8− | 0.6− | 2005 05 13 | E12 | 0.1+ | 0.6+ | 2006 09 11 | 703 | 0.0 | 0.5− |
| 2000 07 30 | 704 | 0.1− | 0.2− | 2005 05 13 | E12 | 0.4− | 0.7+ | 2006 09 11 | 703 | 0.2− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.6− | 0.6+ | 2005 05 13 | E12 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.1− | 0.5− | | |
| 2000 07 30 | 704 | 0.9− | 0.7+ | 2005 05 29 | E12 | 0.2− | 0.2+ | 2006 09 15 | 683 | 0.3+ | 0.4− | | |
| 2000 08 01 | 704 | 0.2+ | 0.0 | 2005 05 29 | E12 | 0.0 | 0.1− | 2006 09 15 | 683 | 0.8+ | 1.6− | | |
| 2000 08 01 | 704 | 0.3− | 0.4− | 2005 05 29 | E12 | 0.3+ | 0.9+ | 2006 09 16 | 683 | 0.6− | 1.6− | | |
| 2000 08 01 | 704 | 1.2− | 0.6− | 2005 05 29 | E12 | 0.2− | 0.4+ | 2006 09 16 | 683 | 1.1− | 0.9− | | |
| 2000 08 01 | 704 | 0.4− | 0.9− | 2005 06 09 | E12 | 0.5+ | 0.9+ | 2006 09 18 | 683 | 0.3+ | 0.7− | | |
| 2000 08 01 | 704 | 0.4− | 0.9− | 2005 06 09 | E12 | 0.5+ | 0.3+ | 2006 09 18 | 683 | 0.2+ | 1.4+ | | |
| 2000 09 21 | 704 | 0.3+ | 0.2− | 2005 06 09 | E12 | 0.4+ | 0.7+ | 2006 09 18 | 683 | 0.1+ | 0.1+ | | |
| 2000 09 21 | 704 | 0.0 | 0.9+ | 2005 06 09 | E12 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.2+ | 0.2+ | | |
| 2000 09 21 | 704 | 0.3− | 0.2− | 2006 08 10 | 644 | 0.2− | 0.5+ | 2006 09 20 | 699 | 1.3+ | 0.2+ | | |
| 2000 09 21 | 704 | 0.6− | 0.0 | 2006 08 10 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.3− | | |
| 2000 09 21 | 704 | 0.5+ | 0.6+ | 2006 08 10 | 644 | 0.1− | 0.2+ | 2006 09 20 | 683 | 0.7+ | 0.7− | | |
| 2000 10 03 | 704 | 0.2− | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 09 20 | 683 | 0.0 | 1.1+ | | |
| 2000 10 03 | 704 | 0.7+ | 0.7+ | 2006 08 13 | 644 | 0.0 | 0.1+ | 2006 09 20 | 683 | 0.2− | 0.7+ | | |
| 2000 10 03 | 704 | 0.4− | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.1+ | 2006 09 21 | 683 | 0.9+ | 0.4− | | |
| 2001 08 23 | 704 | 0.3− | 0.0 | 2006 08 19 | 106 | 1.1− | 0.6− | 2006 09 21 | 683 | 1.3+ | 0.9+ | | |
| 2001 08 23 | 704 | 0.4− | 1.2+ | 2006 08 19 | 106 | 0.2+ | 0.1− | 2006 09 21 | 683 | 0.5+ | 0.8+ | | |
| 2001 08 23 | 704 | 0.2+ | 0.5+ | 2006 08 19 | 106 | 0.2+ | 0.5− | 2006 09 27 | 703 | 0.3+ | 0.2− | | |
| 2001 08 23 | 704 | 0.2+ | 0.1− | 2006 08 19 | 106 | 0.5+ | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.1− | | |
| 2001 08 23 | 704 | 0.3− | 0.4+ | 2006 08 26 | 704 | 0.0 | 0.9+ | 2006 09 27 | 703 | 0.5+ | 0.3− | | |
| 2001 12 18 | 699 | 0.8+ | 1.4+ | 2006 08 26 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.3− | | |
| 2001 12 18 | 699 | 0.1− | 0.5+ | 2006 08 26 | 704 | 0.8− | 1.2+ | | | | | | |

**(138524)∗ 2000 OJ$_8$**

Discovered 2000 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.54408 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27083888 | $\omega$ | 180.88861 | | +0.67379531 | −0.73469296 | |
| $a$ | 2.3658945 | $\Omega$ | 226.75587 | | +0.67861053 | +0.65751863 | |
| $e$ | 0.5650696 | $i$ | 6.21857 | | +0.29238267 | +0.16701949 | |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.6− | 0.3+ | 2000 08 17 | 739 | (2.3− | 1.1−) | 2000 11 21 | 704 | 0.5− | 0.6+ | | |
| 2000 07 30 | 704 | 0.2− | 0.5+ | 2000 08 17 | 739 | 1.7− | 0.4− | 2000 11 21 | 704 | 0.5− | 1.0+ | | |
| 2000 07 30 | 704 | 0.6− | 0.1+ | 2000 08 19 | 118 | 0.0 | 0.0 | 2000 11 21 | 704 | 0.1− | 0.1− | | |
| 2000 07 30 | 704 | 1.0− | 0.2+ | 2000 08 19 | 118 | 0.1+ | 0.5− | 2000 12 22 | 113 | 0.2− | 0.4+ | | |
| 2000 07 30 | 704 | 0.4− | 0.1+ | 2000 08 19 | 118 | 0.1+ | 0.1− | 2000 12 22 | 113 | (1.2+ | 2.0+) | | |
| 2000 07 30 | 557 | 0.1+ | 0.6+ | 2000 08 20 | 860 | 1.5− | 0.0 | 2000 12 22 | 113 | 0.3− | 1.8+ | | |
| 2000 07 30 | 046 | 0.8+ | 0.7− | 2000 08 20 | 860 | 0.5− | 0.4+ | 2000 12 23 | 704 | 0.7− | 0.2+ | | |
| 2000 07 30 | 046 | 0.3− | 0.2+ | 2000 08 21 | 118 | 0.0 | 0.4− | 2000 12 23 | 704 | 0.4− | 0.3+ | | |
| 2000 07 30 | 046 | 0.1+ | 0.5+ | 2000 08 21 | 118 | 0.2− | 0.0 | 2000 12 23 | 704 | 0.3− | 0.4+ | | |
| 2000 07 30 | 046 | 0.3+ | 0.4+ | 2000 08 22 | 587 | 1.7− | 0.6− | 2000 12 23 | 704 | 0.1− | 0.6+ | | |
| 2000 07 30 | 557 | 0.0 | 0.2+ | 2000 08 22 | 587 | 0.7− | 0.3+ | 2000 12 23 | 704 | 0.2− | 0.3+ | | |
| 2000 07 30 | 557 | 0.1− | 0.2+ | 2000 08 24 | 658 | 0.0 | 0.4+ | 2000 12 23 | 428 | 0.1+ | 0.7− | | |
| 2000 07 30 | 046 | 0.5− | 0.7+ | 2000 08 24 | 658 | 0.1− | 0.1+ | 2000 12 23 | 428 | 0.6− | 0.2− | | |
| 2000 07 30 | 151 | 0.7+ | 0.3+ | 2000 08 24 | 658 | 0.5+ | 0.3+ | 2000 12 23 | 106 | 0.8+ | 0.7+ | | |
| 2000 07 30 | 151 | 0.3− | 0.2− | 2000 08 25 | 658 | 0.1+ | 0.4+ | 2000 12 23 | 106 | 0.4− | 0.0 | | |
| 2000 07 30 | 151 | 0.4+ | 0.5+ | 2000 08 25 | 658 | 0.4− | 0.5+ | 2000 12 29 | 711 | 1.1− | 0.5− | | |
| 2000 07 30 | 151 | 0.8− | 0.7+ | 2000 08 25 | 658 | 0.6+ | 0.2+ | 2000 12 29 | 711 | 0.9− | 0.3− | | |
| 2000 07 30 | 151 | 0.6+ | 0.0 | 2000 08 26 | 808 | 0.2− | 0.8+ | 2000 12 29 | 711 | 0.7− | 0.4− | | |
| 2000 07 30 | 151 | 0.1− | 1.4+ | 2000 08 26 | 808 | 0.2− | 0.6+ | 2001 01 12 | 118 | 0.7+ | 0.4+ | | |
| 2000 07 30 | 143 | 1.2− | 1.1+ | 2000 08 26 | 608 | 0.6− | 0.3− | 2001 01 12 | 118 | 0.2+ | 0.5+ | | |
| 2000 07 30 | 143 | 0.1− | 0.2+ | 2000 08 26 | 608 | 0.6− | 0.3− | 2001 01 13 | 118 | 0.2− | 0.1+ | | |
| 2000 07 30 | 143 | 1.8+ | 0.6+ | 2000 08 26 | 608 | 0.1− | 0.2− | 2001 01 13 | 118 | 0.4− | 0.0 | | |
| 2000 07 31 | 859 | 0.6− | 0.2+ | 2000 08 27 | 118 | 0.5+ | 0.4− | 2001 01 19 | 704 | 0.2+ | 0.3+ | | |
| 2000 07 31 | 859 | 0.3− | 0.1+ | 2000 08 27 | 118 | 0.2+ | 0.1− | 2001 01 19 | 704 | 0.2+ | 0.3− | | |
| 2000 07 31 | 859 | 0.1+ | 0.0 | 2000 08 31 | 704 | 0.2+ | 0.2+ | 2001 01 19 | 704 | 0.1− | 0.5+ | | |
| 2000 07 31 | 859 | 0.8− | 0.2− | 2000 08 31 | 704 | 0.2+ | 0.5+ | 2001 01 19 | 704 | 0.3+ | 0.5+ | | |
| 2000 07 31 | 808 | 1.2+ | 1.8− | 2000 08 31 | 704 | 0.0 | 0.1+ | 2001 01 19 | 704 | 0.1− | 0.4+ | | |
| 2000 07 31 | 808 | 0.3+ | 1.9− | 2000 08 31 | 704 | 0.1+ | 0.1+ | 2001 01 21 | 704 | 0.5+ | 0.4+ | | |
| 2000 07 31 | 808 | 0.3+ | 1.6− | 2000 08 31 | 704 | 0.7+ | 0.5+ | 2001 01 21 | 704 | 0.1+ | 0.1+ | | |
| 2000 07 31 | 808 | 0.1+ | 1.7− | 2000 09 03 | 711 | 0.3− | 0.0 | 2001 01 21 | 704 | 0.4− | 0.4+ | | |
| 2000 07 31 | 658 | 0.1− | 0.1− | 2000 09 03 | 711 | 1.2+ | 0.3+ | 2001 01 21 | 704 | 0.2− | 0.5+ | | |
| 2000 07 31 | 658 | 0.1− | 0.1+ | 2000 09 03 | 711 | 0.4− | 0.2+ | 2001 01 26 | 071 | 0.2− | 0.1+ | | |
| 2000 07 31 | 658 | 0.5− | 0.2+ | 2000 09 05 | 704 | 0.5+ | 0.3− | 2001 01 26 | 071 | 0.3+ | 0.5+ | | |
| 2000 07 31 | 704 | 0.5+ | 0.8+ | 2000 09 05 | 704 | 0.2+ | 0.3+ | 2001 01 26 | 071 | 0.2+ | 0.4+ | | |
| 2000 07 31 | 704 | 0.5− | 0.2+ | 2000 09 05 | 704 | 0.7+ | 0.6+ | 2001 01 26 | 108 | (5.1− | 0.1+) | | |
| 2000 07 31 | 474 | 0.2− | 0.0 | 2000 09 05 | 704 | 0.3+ | 0.1+ | 2001 01 26 | 108 | 1.3+ | 0.0 | | |
| 2000 07 31 | 474 | 0.4− | 0.2+ | 2000 09 05 | 704 | 0.1+ | 0.2+ | 2001 01 26 | 108 | (1.9− | 0.7+) | | |
| 2000 07 31 | 474 | 0.1− | 0.3+ | 2000 09 05 | 360 | 0.2− | 0.1+ | 2001 01 27 | 151 | 0.1− | 0.2+ | | |
| 2000 07 31 | 704 | 0.8− | 0.0 | 2000 09 05 | 360 | 0.2− | 0.0 | 2001 01 27 | 151 | 0.2+ | 0.1+ | | |
| 2000 07 31 | 557 | 0.2− | 0.7− | 2000 09 05 | 360 | 0.3+ | 0.1+ | 2001 01 27 | 151 | 0.2− | 0.3+ | | |
| 2000 07 31 | 557 | 0.1− | 0.4− | 2000 09 06 | 704 | 0.3− | 0.6+ | 2001 01 27 | 151 | 0.3+ | 0.2+ | | |
| 2000 07 31 | 118 | 0.2− | 0.6+ | 2000 09 06 | 704 | 0.7+ | 0.0 | 2001 01 27 | 151 | 0.1+ | 0.4+ | | |
| 2000 07 31 | 557 | 0.0 | 0.4− | 2000 09 06 | 704 | 0.4+ | 0.1− | 2001 01 27 | 151 | 0.2+ | 0.3+ | | |
| 2000 07 31 | 118 | 0.1− | 0.3− | 2000 09 06 | 704 | 0.4+ | 0.4+ | 2001 01 28 | 608 | (2.6+ | 1.1+) | | |
| 2000 07 31 | 118 | 0.2− | 0.4+ | 2000 09 06 | 704 | 1.6+ | 2.0+ | 2001 01 28 | 608 | (2.6+ | 1.2+) | | |
| 2000 07 31 | 163 | 1.4+ | 0.5+ | 2000 09 07 | 704 | 1.2− | 0.1+ | 2001 01 28 | 608 | (2.5+ | 0.9+) | | |
| 2000 07 31 | 163 | 0.0 | 0.0 | 2000 09 07 | 704 | (2.6− | 0.5+) | 2001 01 28 | 046 | 0.3− | 0.5+ | | |
| 2000 07 31 | 163 | 0.3+ | 0.0 | 2000 09 07 | 704 | 1.7− | 1.5− | 2001 01 28 | 046 | 0.5− | 0.5+ | | |
| 2000 07 31 | 106 | 0.5− | 0.1+ | 2000 09 18 | 413 | 0.0 | 0.1+ | 2001 01 28 | 046 | 0.1− | 0.4+ | | |
| 2000 07 31 | 106 | 0.1− | 0.4+ | 2000 09 18 | 413 | 0.0 | 0.1+ | 2001 01 28 | 046 | 0.2+ | 0.5+ | | |
| 2000 07 31 | 587 | 0.4+ | 0.1+ | 2000 09 18 | 413 | 0.0 | 0.2+ | 2001 01 29 | 608 | (1.6+ | 2.7+) | | |
| 2000 07 31 | 106 | 0.2+ | 0.7+ | 2000 09 18 | 413 | 0.0 | 0.1+ | 2001 01 29 | 608 | (1.5+ | 2.8+) | | |
| 2000 07 31 | 587 | 0.3+ | 0.9+ | 2000 09 18 | 413 | 0.0 | 0.0 | 2001 01 29 | 608 | (1.6+ | 3.0+) | | |
| 2000 08 01 | 808 | (0.5+ | 2.8−) | 2000 09 20 | 413 | 0.1+ | 0.4+ | 2001 02 17 | 704 | 0.8+ | 0.1− | | |
| 2000 08 01 | 739 | 0.0 | 0.5− | 2000 09 20 | 413 | 0.4+ | 0.4+ | 2001 02 17 | 704 | 0.1− | 0.5+ | | |
| 2000 08 01 | 739 | 0.5+ | 0.2− | 2000 09 20 | 413 | 0.2+ | 0.3+ | 2001 02 17 | 704 | 0.9+ | 0.6+ | | |
| 2000 08 01 | 739 | 0.2+ | 0.3− | 2000 09 23 | 704 | 0.3+ | 0.3+ | 2002 03 13 | 291 | 0.0 | 1.0+ | | |
| 2000 08 01 | 704 | 0.3+ | 0.3+ | 2000 09 23 | 704 | 0.5+ | 0.4+ | 2002 03 13 | 291 | 0.2+ | 0.8+ | | |
| 2000 08 01 | 704 | 0.1+ | 0.1+ | 2000 09 23 | 704 | 0.1+ | 0.2+ | 2002 03 13 | 291 | 0.6+ | 0.1+ | | |
| 2000 08 01 | 808 | 0.2− | 1.7− | 2000 09 23 | 704 | 0.3+ | 0.3+ | 2002 03 21 | 291 | 0.2+ | 0.1− | | |
| 2000 08 01 | 704 | 0.1+ | 0.0 | 2000 09 23 | 704 | 1.3+ | 0.7+ | 2002 03 21 | 291 | (1.1− | 2.0+) | | |
| 2000 08 01 | 704 | 0.2− | 0.3+ | 2000 09 27 | 360 | 0.2+ | 0.3− | 2002 03 21 | 291 | 0.1− | 1.3+ | | |
| 2000 08 01 | 704 | 0.1− | 0.4+ | 2000 09 27 | 360 | 0.3+ | 0.0 | 2003 06 04 | 291 | 0.1+ | 0.3+ | | |
| 2000 08 01 | 711 | 0.1+ | 0.4− | 2000 09 27 | 360 | 0.3+ | 0.2+ | 2003 06 04 | 291 | 0.1− | 0.6+ | | |
| 2000 08 01 | 658 | 0.1+ | 0.3+ | 2000 10 22 | 046 | 0.0 | 0.0 | 2003 06 04 | 291 | 0.2+ | 0.2+ | | |
| 2000 08 01 | 711 | 0.0 | 0.3− | 2000 10 22 | 046 | 0.7− | 0.5+ | 2004 12 03 | 291 | 0.4− | 1.4+ | | |
| 2000 08 01 | 658 | 0.0 | 0.4+ | 2000 10 22 | 046 | 0.0 | 0.4+ | 2004 12 03 | 291 | 0.8+ | 0.8+ | | |
| 2000 08 01 | 658 | 0.5− | 0.9+ | 2000 10 22 | 046 | 0.2− | 0.5+ | 2005 03 08 | 691 | 0.4+ | 0.2+ | | |
| 2000 08 01 | 711 | 0.2+ | 0.2− | 2000 10 22 | 046 | 0.0 | 0.2+ | 2005 03 08 | 691 | 0.1− | 0.5+ | | |
| 2000 08 01 | 118 | 0.0 | 0.2− | 2000 10 23 | 046 | 0.3− | 0.3+ | 2005 03 08 | 691 | 0.2+ | 0.3+ | | |
| 2000 08 01 | 118 | 0.2+ | 0.6+ | 2000 10 23 | 046 | 0.2− | 0.2+ | 2005 03 09 | 691 | 0.1+ | 0.5+ | | |
| 2000 08 02 | 704 | 0.3+ | 0.0 | 2000 10 23 | 046 | 0.4− | 0.2+ | 2005 03 09 | 691 | 0.3+ | 0.3+ | | |
| 2000 08 02 | 704 | 0.4− | 0.2+ | 2000 10 23 | 046 | 0.2− | 0.1+ | 2005 03 09 | 691 | 0.2+ | 0.3+ | | |
| 2000 08 02 | 704 | 0.1− | 0.5+ | 2000 10 29 | 711 | 1.2+ | 0.3+ | 2005 03 09 | 691 | 0.1+ | 0.4+ | | |
| 2000 08 02 | 704 | 0.1− | 0.2+ | 2000 10 29 | 711 | 1.1+ | 0.3+ | 2005 03 09 | 691 | 0.0 | 0.3+ | | |
| 2000 08 02 | 704 | 0.4+ | 0.6+ | 2000 10 29 | 711 | 1.3+ | 0.3+ | 2005 03 09 | 691 | 0.0 | 0.2+ | | |
| 2000 08 02 | 704 | 0.5− | 0.4+ | 2000 10 31 | 670 | 0.9− | 0.3+ | 2005 03 09 | 691 | 0.5+ | 0.3+ | | |
| 2000 08 02 | 704 | 0.2+ | 0.3+ | 2000 10 31 | 670 | 0.0 | 0.1+ | 2005 03 09 | 691 | 0.1− | 0.3− | | |
| 2000 08 02 | 704 | 0.4− | 0.4+ | 2000 10 31 | 670 | 1.9− | 0.7− | 2005 03 09 | 691 | 0.1+ | 0.3+ | | |
| 2000 08 02 | 704 | 0.3− | 0.8+ | 2000 11 05 | 046 | 0.4− | 0.0 | 2005 03 10 | G96 | 0.2− | 0.1+ | | |
| 2000 08 03 | 704 | 0.4+ | 0.2+ | 2000 11 05 | 046 | 0.4− | 0.2+ | 2005 03 10 | G96 | 0.6− | 0.1+ | | |
| 2000 08 03 | 704 | 0.4− | 0.3+ | 2000 11 05 | 046 | 0.1+ | 0.6+ | 2005 03 10 | G96 | 0.7− | 0.4+ | | |
| 2000 08 03 | 704 | 0.1+ | 0.3+ | 2000 11 05 | 046 | 1.1+ | 0.2− | 2005 03 10 | G96 | 0.7− | 0.1+ | | |
| 2000 08 03 | 704 | 0.4− | 0.7+ | 2000 11 12 | 046 | 1.4− | 0.9+ | 2005 03 11 | G96 | 0.6− | 0.0 | | |
| 2000 08 03 | 704 | 0.0 | 0.8+ | 2000 11 12 | 046 | 0.4− | 1.2+ | 2005 03 11 | G96 | 0.4− | 0.6− | | |
| 2000 08 03 | 360 | 0.0 | 0.1− | 2000 11 12 | 046 | 0.7− | 0.9+ | 2005 03 11 | G96 | 0.2− | 0.2+ | | |
| 2000 08 03 | 360 | 0.3+ | 0.1− | 2000 11 12 | 046 | 0.2+ | 1.0+ | 2005 03 11 | G96 | 0.4− | 0.1+ | | |
| 2000 08 03 | 360 | 0.1+ | 0.3− | 2000 11 12 | 046 | 1.7− | 0.2− | 2005 03 11 | 691 | 0.3+ | 0.5+ | | |
| 2000 08 09 | 422 | 0.6− | 0.5+ | 2000 11 18 | 704 | 0.0 | 0.5+ | 2005 03 11 | 691 | 0.1+ | 0.5+ | | |
| 2000 08 09 | 422 | 0.1+ | 0.3+ | 2000 11 18 | 704 | 0.2− | 0.5+ | 2005 03 11 | 691 | 0.3+ | 0.3+ | | |
| 2000 08 09 | 422 | 0.0 | 0.5− | 2000 11 18 | 704 | 0.3− | 0.1+ | 2006 04 27 | 807 | 0.4− | 0.1+ | | |
| 2000 08 17 | 739 | 1.4+ | 1.5+ | 2000 11 18 | 704 | 0.4− | 0.7− | 2006 04 27 | 807 | 0.3+ | 0.3+ | | |
| 2000 08 17 | 739 | 1.3− | 0.3− | 2000 11 21 | 704 | 0.4+ | 1.3+ | | | | | | |

**(138525)∗ 2000 OP$_8$ = 2002 AW$_{116}$**

Discovered 2000 July 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22232)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 199.78219 | | (2000.0) | | | |
| $n$ | 0.36742287 | $\omega$ | 76.83614 | | −0.84413994 | +0.43680319 |
| $a$ | 1.9305983 | $\Omega$ | 128.13867 | | −0.49554161 | −0.85698884 |
| $e$ | 0.0602326 | $i$ | 23.28025 | | +0.20461249 | −0.27344672 |
| $P$ | 2.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 23 | 704 | 0.6− | 0.6+ | 2002 01 18 | 704 | 0.0 | 0.6− | 2002 03 31 | 644 | (0.3+ | 2.3+) |
| 2000 07 23 | 704 | 0.3+ | 0.6+ | 2002 01 18 | 704 | 0.8+ | 0.5− | 2005 03 13 | 699 | 1.4+ | 1.1− |
| 2000 07 23 | 704 | 1.3+ | 0.1− | 2002 01 19 | 333 | 0.0 | 0.7− | 2005 03 13 | 699 | 0.5+ | 0.2+ |
| 2000 07 30 | 807 | 0.4+ | 0.1+ | 2002 01 19 | 333 | 0.6+ | 1.0− | 2005 03 13 | 699 | 0.4+ | 0.6− |
| 2000 07 30 | 807 | 0.1− | 0.2+ | 2002 01 19 | 333 | 0.1+ | 0.4− | 2005 03 13 | 699 | 0.3+ | 0.1+ |
| 2000 08 01 | 691 | 0.2+ | 0.8+ | 2002 01 21 | 704 | 0.5+ | 0.0 | 2005 04 14 | 704 | 0.6+ | 0.1+ |
| 2000 08 01 | 691 | 0.2− | 0.9+ | 2002 01 21 | 704 | 1.0+ | 0.6+ | 2005 04 14 | 704 | 0.3+ | 0.3− |
| 2000 08 01 | 704 | 0.5+ | 0.2− | 2002 01 21 | 704 | 1.2+ | 0.0 | 2005 04 14 | 704 | 0.1− | 0.1+ |
| 2000 08 01 | 704 | 0.8+ | 0.2− | 2002 01 21 | 704 | 1.4+ | 0.5+ | 2005 04 19 | 703 | (1.9− | 2.1−) |
| 2000 08 01 | 691 | 0.3− | 0.8+ | 2002 01 21 | 704 | 1.3+ | 0.4− | 2005 04 19 | 703 | 0.6− | 0.6− |
| 2000 08 01 | 704 | 0.8− | 1.8− | 2002 02 04 | 644 | 0.3+ | 0.6− | 2005 04 19 | 703 | 0.5− | 0.5− |
| 2000 08 01 | 704 | 0.6+ | 2.0− | 2002 02 04 | 644 | 0.4+ | 0.8− | 2005 05 16 | 703 | 0.3+ | 0.0 |
| 2001 12 20 | 704 | 1.1+ | 0.1− | 2002 02 04 | 644 | 0.1− | 0.7− | 2005 05 16 | 703 | 0.9− | 0.1+ |
| 2001 12 20 | 704 | 1.2+ | 0.4− | 2002 02 06 | 704 | 1.4− | 0.5+ | 2005 05 16 | 703 | 0.6+ | 0.7+ |
| 2001 12 20 | 704 | 0.7+ | 0.3− | 2002 02 06 | 704 | 1.2− | 0.3+ | 2005 05 16 | 703 | 0.3+ | 0.2+ |
| 2001 12 20 | 704 | 1.4+ | 0.0 | 2002 02 06 | 704 | 1.3− | 0.2+ | 2005 06 01 | 703 | 1.1− | 0.0 |
| 2001 12 26 | 608 | 0.6− | 0.4− | 2002 02 06 | 704 | (1.7− | 0.1−) | 2005 06 01 | 703 | 0.6− | 0.6− |
| 2001 12 26 | 608 | 0.0 | 0.6− | 2002 02 06 | 704 | 1.4− | 0.5− | 2005 06 01 | 703 | 0.3− | 0.4− |
| 2001 12 26 | 608 | 0.2− | 0.7− | 2002 02 08 | 704 | 0.2+ | 0.5+ | 2005 06 01 | 703 | 0.4− | 1.3+ |
| 2002 01 09 | 704 | 0.0 | 1.2+ | 2002 02 08 | 704 | 0.0 | 1.1+ | 2005 06 07 | 704 | 0.3− | 1.4+ |
| 2002 01 09 | 704 | (0.1− | 2.0+) | 2002 02 08 | 704 | 0.2+ | 0.0 | 2005 06 07 | 704 | 0.3+ | 1.0+ |
| 2002 01 09 | 704 | (0.9− | 1.5+) | 2002 02 08 | 704 | 0.3+ | 0.6+ | 2005 06 07 | 704 | 0.1− | 0.6+ |
| 2002 01 09 | 704 | (1.3− | 1.9+) | 2002 02 08 | 704 | 0.7+ | 0.4+ | 2005 06 07 | 704 | (0.7+ | 1.9+) |
| 2002 01 09 | 704 | 0.3− | 1.1+ | 2002 02 12 | 704 | 0.3− | 0.3− | 2005 06 07 | 704 | 0.7+ | 1.0+ |
| 2002 01 13 | 333 | 0.7+ | 0.6− | 2002 02 12 | 704 | 0.5− | 0.0 | 2006 11 01 | 703 | (0.5− | 1.7+) |
| 2002 01 13 | 333 | 0.1− | 0.4− | 2002 02 12 | 704 | 0.6− | 0.0 | 2006 11 01 | 703 | 1.0+ | 0.8+ |
| 2002 01 13 | 333 | 0.5− | 0.0 | 2002 02 12 | 704 | 0.7− | 0.0 | 2006 11 01 | 703 | 0.1− | 0.0 |
| 2002 01 13 | 291 | 0.0 | 0.2+ | 2002 02 12 | 704 | 0.4− | 0.3+ | 2006 11 01 | 703 | 0.2− | 0.5+ |
| 2002 01 13 | 291 | 0.1− | 0.2+ | 2002 03 04 | 699 | 0.6− | 0.9+ | 2006 11 19 | 703 | 0.4− | 0.1− |
| 2002 01 13 | 291 | 0.0 | 0.1+ | 2002 03 04 | 699 | 0.4− | 0.3+ | 2006 11 19 | 703 | 0.5− | 1.0+ |
| 2002 01 14 | 704 | 0.5− | 1.2+ | 2002 03 04 | 699 | 0.5+ | 0.2− | 2006 11 19 | 703 | 0.8+ | 0.6+ |
| 2002 01 14 | 704 | 0.5− | 0.7+ | 2002 03 04 | 699 | 0.1− | 0.8+ | 2006 11 19 | 703 | 0.4− | 0.3+ |
| 2002 01 14 | 704 | 0.5− | 0.7+ | 2002 03 20 | 644 | 0.3− | 0.1+ | 2006 11 24 | 703 | 0.0 | 1.3+ |
| 2002 01 14 | 704 | 0.3− | 1.3+ | 2002 03 20 | 644 | 0.2− | 0.2− | 2006 11 24 | 703 | 1.2− | 0.3− |
| 2002 01 14 | 704 | 0.7− | 1.3+ | 2002 03 20 | 644 | 0.4− | 0.3− | 2006 11 24 | 703 | 0.5− | 0.3+ |
| 2002 01 18 | 704 | 0.2+ | 0.3+ | 2002 03 31 | 644 | 0.4+ | 0.2+ | 2006 11 24 | 703 | 0.7− | 0.1+ |
| 2002 01 18 | 704 | 0.2− | 0.2+ | 2002 03 31 | 644 | 0.4+ | 0.3+ | | | | |

**(138526)∗ 2000 OR$_8$ = 2001 YL$_{113}$**

Discovered 2000 July 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22233)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.20090 | | (2000.0) | | | |
| $n$ | 0.36275917 | $\omega$ | 44.61783 | | −0.95345739 | −0.02664879 |
| $a$ | 1.9471098 | $\Omega$ | 131.29688 | | −0.01086595 | −0.99240329 |
| $e$ | 0.0523727 | $i$ | 23.56385 | | +0.30133194 | −0.12010640 |
| $P$ | 2.72 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 10 | 704 | 0.5− | 0.4+ | 2002 02 03 | 644 | 0.3+ | 0.3+ | 2005 05 08 | 704 | 0.5+ | 0.5− |
| 2000 06 10 | 704 | 0.3− | 0.1+ | 2002 02 04 | 699 | 0.2− | 0.1+ | 2005 05 08 | 704 | 0.1− | 0.1− |
| 2000 06 10 | 704 | 0.3− | 0.2+ | 2002 02 04 | 699 | 0.3+ | 0.3+ | 2005 05 08 | 704 | 1.2+ | 0.4− |
| 2000 06 10 | 704 | 0.6− | 0.4− | 2002 02 04 | 699 | 0.3+ | 0.3+ | 2005 05 08 | 704 | 0.6+ | 0.2− |
| 2000 07 23 | 704 | 0.9+ | 1.0+ | 2002 02 04 | 699 | 0.0 | 0.3+ | 2005 05 08 | 704 | 0.8+ | 0.3− |
| 2000 07 23 | 704 | 0.2+ | 0.9+ | 2002 02 10 | 704 | 0.0 | 0.4+ | 2005 05 09 | 704 | 0.1− | 0.2+ |
| 2000 07 23 | 704 | 0.0 | 0.7+ | 2002 02 10 | 704 | 0.1+ | 0.4+ | 2005 05 09 | 704 | 0.7+ | 0.7− |
| 2000 07 23 | 704 | 0.8− | 1.7+ | 2002 02 10 | 704 | 0.1− | 0.6+ | 2005 05 09 | 704 | 0.3+ | 0.1− |
| 2000 08 01 | 704 | 0.3− | 1.1+ | 2002 02 10 | 704 | 0.2− | 0.4+ | 2005 05 09 | 704 | 0.5+ | 0.2− |
| 2000 08 01 | 704 | 0.3− | 0.6+ | 2002 02 10 | 704 | 0.2− | 0.3+ | 2005 05 09 | 704 | 0.2+ | 0.1+ |
| 2000 08 01 | 704 | 0.3+ | 0.5+ | 2002 03 05 | 704 | 1.2+ | 0.9+ | 2005 05 12 | 628 | 0.1− | 0.1− |
| 2000 08 01 | 704 | 0.1− | 0.5+ | 2002 03 05 | 704 | 0.5+ | 0.3+ | 2005 05 12 | 628 | 0.4− | 0.1+ |
| 2000 08 01 | 704 | 0.4− | 0.3+ | 2002 03 05 | 704 | 0.7+ | 1.1+ | 2005 05 12 | 628 | 0.1− | 0.1+ |
| 2000 08 04 | 704 | 0.0 | 0.5+ | 2002 03 05 | 704 | 0.0 | 0.7+ | 2005 05 16 | 703 | 0.7− | 0.2− |
| 2000 08 04 | 704 | 0.1− | 0.4− | 2002 03 05 | 704 | 0.7+ | 0.4+ | 2005 05 16 | 703 | 0.3+ | 0.2− |
| 2000 08 04 | 704 | 0.4+ | 0.7+ | 2002 03 09 | 699 | 0.6− | 0.3− | 2005 05 16 | 703 | (1.0− | 1.7−) |
| 2000 08 20 | 699 | 1.5+ | 0.1+ | 2002 03 09 | 699 | 0.5− | 0.2+ | 2005 05 16 | 703 | 0.9+ | 1.2− |
| 2000 08 20 | 699 | 0.4− | 0.1+ | 2002 03 09 | 699 | 0.4− | 0.6+ | 2005 06 07 | 704 | 0.0 | 1.1+ |
| 2000 08 20 | 699 | 1.0+ | 0.9− | 2002 03 09 | 699 | 1.0− | 0.1− | 2005 06 07 | 704 | 0.2− | 1.3+ |
| 2000 08 20 | 699 | 0.2+ | 0.2+ | 2002 03 21 | 704 | 0.3− | 0.1+ | 2005 06 07 | 704 | 0.2− | 1.2+ |
| 2000 09 02 | 704 | 0.0 | 0.7+ | 2002 03 21 | 704 | 0.7− | 0.3− | 2005 06 07 | 704 | 0.4+ | 0.7+ |
| 2000 09 02 | 704 | 0.1− | 0.4− | 2002 03 21 | 704 | 0.4− | 0.6− | 2005 06 07 | 704 | 0.5+ | 0.6+ |
| 2000 09 02 | 704 | 0.6+ | 0.4+ | 2002 03 21 | 704 | 0.5− | 0.2+ | 2005 06 16 | 703 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.3+ | 0.4− | 2002 03 30 | 644 | 0.1− | 0.4+ | 2005 06 16 | 703 | 0.1− | 0.8− |
| 2001 12 19 | 704 | 0.7+ | 0.1+ | 2002 03 30 | 644 | 0.1− | 0.2+ | 2005 06 16 | 703 | 0.9− | 0.7+ |
| 2001 12 19 | 704 | 0.4+ | 0.1+ | 2002 03 30 | 644 | 0.1− | 0.3+ | 2005 06 16 | 703 | 0.6− | 1.5− |
| 2001 12 19 | 704 | 1.0+ | 0.5− | 2002 04 18 | 699 | 0.4− | 0.2− | 2005 06 29 | 703 | 0.3− | 0.5− |
| 2001 12 19 | 704 | 0.3+ | 0.2− | 2002 04 18 | 699 | 0.5+ | 0.2+ | 2005 06 29 | 703 | 1.2− | 0.2+ |
| 2001 12 20 | 704 | 0.4+ | 0.4+ | 2002 04 18 | 699 | 0.6− | 0.6+ | 2005 06 29 | 703 | 1.4− | 0.6− |
| 2001 12 20 | 704 | 0.0 | 0.1+ | 2002 04 18 | 699 | 0.4− | 1.1+ | 2005 06 29 | 703 | 1.1− | 0.7− |
| 2001 12 20 | 704 | 0.2+ | 0.6+ | 2002 05 04 | 704 | 0.3− | 0.3− | 2005 07 28 | 704 | 0.1− | 0.3+ |
| 2001 12 20 | 704 | 0.2+ | 0.4+ | 2002 05 04 | 704 | 0.3+ | 0.4+ | 2005 07 28 | 704 | 0.4+ | 0.7− |
| 2001 12 20 | 704 | 0.7+ | 0.3+ | 2002 05 04 | 704 | 0.4+ | 0.3− | 2005 07 28 | 704 | 0.0 | 0.5+ |
| 2002 01 14 | 704 | 0.5− | 0.4+ | 2002 05 04 | 704 | 0.7+ | 0.3+ | 2005 07 28 | 704 | 0.5− | 0.1− |
| 2002 01 14 | 704 | 0.5− | 0.0 | 2002 05 04 | 704 | 0.2− | 1.5− | 2006 09 28 | 703 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.6− | 0.0 | 2005 03 12 | 704 | 0.1+ | 0.5− | 2006 09 28 | 703 | 0.7+ | 0.4+ |
| 2002 01 14 | 704 | 0.6− | 0.3− | 2005 03 12 | 704 | 0.1+ | 0.5− | 2006 09 28 | 703 | 0.4− | 0.2+ |
| 2002 01 14 | 704 | 0.6− | 0.3− | 2005 03 12 | 704 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2002 01 18 | 704 | 0.3+ | 0.1+ | 2005 04 13 | 704 | 0.4+ | 0.3+ | 2006 11 20 | E12 | 0.1− | 0.4+ |
| 2002 01 18 | 704 | 0.2− | 0.4− | 2005 04 13 | 704 | 0.2+ | 0.3+ | 2006 11 20 | E12 | 0.2+ | 0.2+ |
| 2002 01 18 | 704 | 0.4+ | 0.6+ | 2005 04 13 | 704 | 0.7+ | 0.0 | 2006 11 20 | E12 | 0.7+ | 0.2+ |
| 2002 01 18 | 704 | 0.1− | 0.3+ | 2005 05 06 | 703 | (2.5+ | 1.3−) | 2006 11 20 | E12 | 0.2+ | 0.0 |
| 2002 01 18 | 704 | 0.2− | 0.1+ | 2005 05 06 | 703 | 0.9− | 0.3+ | 2006 11 25 | 703 | 0.3− | 0.1+ |
| 2002 02 03 | 644 | 0.2+ | 0.1+ | 2005 05 06 | 703 | 0.4− | 0.0 | 2006 11 25 | 703 | 0.7− | 0.5− |
| 2002 02 03 | 644 | 0.1+ | 0.1− | 2005 05 06 | 703 | 0.9− | 0.2+ | 2006 11 25 | 703 | 1.0− | 0.9+ |

**(138527)∗ 2000 OJ$_{20}$**

Discovered 2000 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.58302 | | (2000.0) | | | |
| $n$ | 0.17777151 | $\omega$ | 60.29807 | | +0.94561579 | +0.16398582 |
| $a$ | 3.1325254 | $\Omega$ | 289.03227 | | −0.28428570 | +0.83635208 |
| $e$ | 0.1703805 | $i$ | 17.28776 | | +0.15808990 | +0.52309067 |
| $P$ | 5.54 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 09 | 691 | 0.5+ | 0.5− | 2001 12 22 | 704 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.3− | 0.1− |
| 2000 07 09 | 691 | 0.4+ | 0.5− | 2001 12 22 | 704 | 0.6− | 0.4− | 2006 09 16 | 703 | 0.5− | 0.1+ |
| 2000 07 09 | 691 | 0.2+ | 0.6− | 2001 12 22 | 704 | 0.9− | 0.7− | 2006 09 21 | 699 | 0.1+ | 0.7+ |
| 2000 07 30 | 704 | 0.0 | 0.1− | 2002 01 07 | 704 | 0.3+ | 0.5− | 2006 09 21 | 699 | (1.9− | 1.4+) |
| 2000 07 30 | 704 | 0.4− | 0.5+ | 2002 01 07 | 704 | 1.0+ | 1.0− | 2006 09 21 | 699 | 0.2+ | 1.2+ |
| 2000 07 30 | 704 | 0.5− | 0.7+ | 2002 01 07 | 704 | 0.5+ | 1.1− | 2006 10 18 | 106 | 0.4+ | 0.3− |
| 2000 07 30 | 704 | 0.5− | 0.5+ | 2003 02 19 | 644 | 0.1+ | 0.5+ | 2006 10 18 | 106 | 0.1− | 0.1− |
| 2000 08 01 | 704 | 0.6− | 0.2+ | 2003 02 19 | 644 | 0.5+ | 0.2+ | 2006 10 18 | 106 | 0.6+ | 0.1− |
| 2000 08 01 | 704 | 0.2− | 0.9+ | 2003 02 19 | 644 | 0.2+ | 0.3+ | 2006 10 18 | 106 | 0.3+ | 0.1− |
| 2000 08 01 | 704 | 0.1− | 0.4+ | 2006 07 24 | 704 | 0.6− | 1.0+ | 2006 11 15 | 703 | 0.2+ | 0.5+ |
| 2000 08 01 | 704 | 0.5− | 0.9+ | 2006 07 24 | 704 | 0.0 | 0.3+ | 2006 11 15 | 703 | 1.4+ | 0.4+ |
| 2000 08 01 | 704 | 0.2− | 1.0+ | 2006 07 24 | 704 | (0.1− | 1.7+) | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2001 12 09 | 704 | 0.8+ | 0.2− | 2006 08 20 | 106 | 0.7+ | 0.5+ | 2006 11 15 | 703 | 0.5− | 0.2− |
| 2001 12 09 | 704 | 0.1− | 0.1− | 2006 08 20 | 106 | 0.3− | 0.1− | 2006 11 25 | 703 | 0.7− | 0.8− |
| 2001 12 09 | 704 | 0.4− | 0.8+ | 2006 08 20 | 106 | 0.1+ | 0.4− | 2006 11 25 | 703 | 0.1+ | 0.1+ |
| 2001 12 09 | 704 | 0.2− | 0.9+ | 2006 08 20 | 106 | 0.5− | 0.4+ | 2006 11 25 | 703 | 0.4+ | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.4− | 0.1+ | 2006 11 25 | 703 | 0.9− | 0.5− | | |
| 2001 12 22 | 704 | (0.5− | 1.7−) | 2006 09 16 | 703 | 0.6− | 0.0 | | | | | | |

**(138528)∗ 2000 OX$_{21}$**

Discovered 2000 July 30 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.38450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18832930 | $\omega$ | 339.25730 | | +0.50212759 | +0.85329827 | |
| $a$ | 3.0143299 | $\Omega$ | 320.51528 | | −0.75903939 | +0.35699361 | |
| $e$ | 0.1277245 | $i$ | 12.76839 | | −0.41439967 | +0.38004951 | |
| $P$ | 5.23 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.2+ | 0.8− | 2001 12 18 | 699 | (1.6+ | 1.1+) | 2006 09 17 | 703 | 0.1+ | 0.5− | | |
| 2000 07 07 | 704 | 1.0+ | 0.0 | 2002 12 31 | 645 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.3− | | |
| 2000 07 07 | 704 | 0.5+ | 0.2− | 2002 12 31 | 645 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.1+ | 1.1+ | | |
| 2000 07 30 | 428 | 0.7− | 0.2+ | 2003 01 05 | 704 | 1.1− | 1.1+ | 2006 09 28 | 703 | 0.8+ | 0.4+ | | |
| 2000 07 30 | 428 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.5+ | 0.4− | 2006 09 28 | 703 | (2.0+ | 0.0 | ) | |
| 2000 08 01 | 704 | 0.8− | 0.0 | 2003 01 05 | 704 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.2+ | | |
| 2000 08 01 | 704 | 0.1− | 0.6+ | 2003 01 05 | 704 | 0.2− | 1.0− | 2006 10 19 | 703 | 0.3− | 0.4− | | |
| 2000 08 01 | 704 | 0.1− | 0.1+ | 2003 01 26 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.1− | | |
| 2000 08 01 | 704 | 0.1+ | 0.3− | 2003 01 26 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.4− | | |
| 2000 08 01 | 704 | 0.5+ | 0.5+ | 2003 01 26 | 644 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.0 | | |
| 2000 08 02 | 428 | 0.2+ | 0.5+ | 2003 02 04 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.4+ | | |
| 2000 08 09 | 428 | 0.4+ | 0.6− | 2003 02 04 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.0 | | |
| 2000 08 09 | 428 | 0.0 | 0.3+ | 2003 02 04 | 644 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 2000 08 20 | 699 | 0.1− | 0.4+ | 2004 03 16 | 703 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.4− | | |
| 2000 08 20 | 699 | 1.0− | 0.4− | 2004 03 16 | 703 | 0.3+ | 0.6− | 2006 10 20 | 703 | 0.4+ | 0.2+ | | |
| 2000 08 20 | 699 | 0.0 | 0.1− | 2004 03 16 | 703 | 0.0 | 0.2− | 2006 10 20 | 703 | 0.0 | 0.5+ | | |
| 2000 08 20 | 699 | 0.3+ | 0.1− | 2004 03 16 | 703 | 0.4+ | 0.5+ | 2006 10 20 | 703 | 1.0− | 0.3+ | | |
| 2000 08 24 | 704 | 0.4− | 0.3− | 2004 03 17 | 704 | 0.2− | 0.3− | 2006 10 20 | 703 | 0.9− | 0.3+ | | |
| 2000 08 24 | 704 | 0.1+ | 0.0 | 2004 03 17 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.4+ | | |
| 2000 08 24 | 704 | 0.6− | 0.3− | 2004 03 17 | 704 | 0.6− | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.4+ | | |
| 2000 08 24 | 704 | 1.1− | 0.2+ | 2004 03 17 | 704 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.5+ | | |
| 2000 08 26 | 704 | 0.2− | 0.2+ | 2004 03 17 | 704 | 0.6+ | 0.3+ | 2006 10 27 | 703 | 1.4+ | 0.8− | | |
| 2000 08 26 | 704 | 0.4+ | 0.4− | 2004 04 16 | 644 | 0.0 | 0.6+ | 2006 10 27 | 703 | (4.1+ | 0.3−) | | |
| 2000 08 26 | 704 | 0.3− | 0.1+ | 2004 04 16 | 644 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.3− | 0.7+ | | |
| 2000 08 26 | 704 | 0.5+ | 0.0 | 2004 04 16 | 644 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.6+ | | |
| 2000 09 04 | 704 | 0.4− | 0.8+ | 2005 07 09 | 428 | 0.8+ | 1.3− | 2006 11 15 | 703 | 0.4− | 0.2+ | | |
| 2000 09 04 | 704 | 1.1+ | 0.9+ | 2005 07 09 | 428 | 0.6− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.6− | | |
| 2000 09 04 | 704 | 0.4+ | 0.0 | 2005 07 09 | 428 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.8+ | | |
| 2000 09 04 | 704 | 0.0 | 0.1+ | 2006 08 12 | 644 | 0.3− | 0.4+ | 2006 11 15 | 703 | 0.8+ | 0.2− | | |
| 2000 09 04 | 704 | 0.1− | 0.9− | 2006 08 12 | 644 | 0.0 | 0.5+ | 2006 11 22 | 703 | 0.8− | 0.3− | | |
| 2001 12 18 | 699 | 0.2− | 0.2+ | 2006 08 12 | 644 | 0.4− | 0.3+ | 2006 11 22 | 703 | 1.0− | 1.7− | | |
| 2001 12 18 | 699 | 0.8+ | 0.2+ | 2006 09 17 | 703 | 0.2+ | 0.4− | 2006 11 22 | 703 | 0.1− | 0.7− | | |
| 2001 12 18 | 699 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.4− | 2006 11 22 | 703 | 0.3+ | 0.1+ | | |

**(138529)∗ 2000 OB$_{31}$**

Discovered 2000 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.21500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18314391 | $\omega$ | 96.55719 | | +0.96435619 | −0.20401883 | |
| $a$ | 3.0709616 | $\Omega$ | 275.31088 | | +0.12059596 | +0.90569673 | |
| $e$ | 0.2145940 | $i$ | 9.74306 | | +0.23552866 | +0.37160429 | |
| $P$ | 5.38 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.3− | 0.3+ | 2001 11 12 | 704 | 0.6− | 0.6+ | 2004 05 13 | 644 | 0.5+ | 0.0 | | |
| 1996 12 07 | 691 | 0.6− | 0.5+ | 2001 11 12 | 704 | 0.3+ | 0.1+ | 2006 08 23 | 704 | 0.3− | 0.1+ | | |
| 1996 12 07 | 691 | 0.4− | 0.4+ | 2001 11 12 | 704 | 0.2− | 0.6+ | 2006 08 23 | 704 | 0.1− | 0.4− | | |
| 1996 12 15 | 691 | 0.0 | 0.3+ | 2001 11 12 | 704 | 0.2− | 0.0 | 2006 08 23 | 704 | 0.3+ | 0.4+ | | |
| 1996 12 15 | 691 | 0.4+ | 0.1+ | 2001 11 24 | 704 | (1.1− | 2.2+) | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 1996 12 15 | 691 | 0.2+ | 0.2+ | 2001 11 24 | 704 | (1.1− | 2.1+) | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 1996 12 17 | 691 | 0.7+ | 0.8+ | 2001 11 24 | 704 | (0.0 | 2.1+) | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 1996 12 17 | 691 | 0.3+ | 0.8+ | 2001 11 24 | 704 | 0.7− | 1.5+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 1996 12 17 | 691 | 0.9+ | 0.1− | 2001 11 24 | 704 | 0.7− | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2000 06 12 | 699 | 0.8− | 1.2+ | 2001 12 15 | 704 | 1.1− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2000 06 12 | 699 | 0.1− | 0.2+ | 2001 12 15 | 704 | 1.2− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.2− | | |
| 2000 06 12 | 699 | 0.9− | 0.1+ | 2001 12 15 | 704 | 0.8− | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.1− | | |
| 2000 06 12 | 699 | 0.7− | 1.0+ | 2001 12 18 | 704 | 1.3− | 1.3− | 2006 10 19 | 703 | 0.1+ | 0.3− | | |
| 2000 07 30 | 704 | 0.9+ | 0.2− | 2001 12 18 | 704 | 0.6− | 1.0− | 2006 10 19 | 703 | 0.2− | 0.5− | | |
| 2000 07 30 | 704 | 0.5+ | 0.5− | 2001 12 18 | 704 | 0.4− | 0.3− | 2006 10 20 | 704 | 0.4+ | 0.3− | | |
| 2000 07 30 | 704 | 0.5− | 0.1− | 2001 12 18 | 704 | 0.8− | 0.2− | 2006 10 20 | 704 | 0.7− | 0.2+ | | |
| 2000 07 30 | 704 | 0.7+ | 0.2+ | 2001 12 18 | 704 | 0.7− | 0.2− | 2006 10 20 | 704 | 0.1+ | 0.8− | | |
| 2000 07 30 | 704 | 0.2+ | 0.6+ | 2001 12 19 | 704 | 0.9+ | 1.3− | 2006 10 20 | 704 | 0.5− | 1.0+ | | |
| 2000 08 02 | 704 | 0.4− | 0.5+ | 2001 12 19 | 704 | 1.5+ | 1.4− | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2000 08 02 | 704 | 0.5− | 0.2+ | 2001 12 19 | 704 | 1.2+ | 1.4− | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2000 08 02 | 704 | 0.4− | 1.2+ | 2001 12 19 | 704 | 1.7+ | 1.6− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2000 08 02 | 704 | 0.2− | 0.7+ | 2001 12 19 | 704 | 0.3− | 0.9+ | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2000 08 02 | 704 | 0.3− | 1.2+ | 2001 12 19 | 704 | 0.2− | 1.0+ | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2000 08 21 | 699 | 0.2− | 0.6− | 2001 12 19 | 704 | 0.2+ | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2000 08 21 | 699 | 0.3− | 0.5− | 2001 12 19 | 704 | 0.3+ | 0.9+ | 2006 10 27 | 703 | 0.1− | 0.1+ | | |
| 2000 08 21 | 699 | 0.4− | 0.2+ | 2001 12 19 | 704 | 0.1+ | 1.0+ | 2006 10 27 | 703 | 0.5+ | 0.2− | | |
| 2000 08 21 | 699 | 0.2− | 0.0 | 2001 12 21 | 704 | 1.1+ | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.3+ | | |
| 2000 08 31 | 704 | 0.0 | 0.4+ | 2001 12 21 | 704 | 1.0+ | 0.0 | 2006 10 27 | 703 | 0.0 | 0.1− | | |
| 2000 08 31 | 704 | 0.5− | 0.4− | 2001 12 21 | 704 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2000 08 31 | 704 | 0.2− | 0.0 | 2002 01 08 | 704 | 0.6+ | 1.7− | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 2000 08 31 | 704 | 0.2+ | 0.0 | 2002 01 08 | 704 | 1.3+ | 1.9− | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2000 08 31 | 704 | 1.3− | 0.0 | 2002 01 08 | 704 | 0.7+ | 1.5− | 2006 11 15 | 703 | 0.5+ | 0.2− | | |
| 2000 09 03 | 704 | 0.2− | 0.1− | 2002 01 08 | 704 | 0.6+ | 1.9− | 2006 11 15 | 703 | 0.0 | 0.2− | | |
| 2000 09 03 | 704 | 0.7− | 0.4− | 2002 01 08 | 704 | 0.9+ | 1.6− | 2006 11 15 | 703 | 0.0 | 0.4− | | |
| 2000 09 03 | 704 | 0.6− | 0.0 | 2002 01 13 | 704 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.2− | | |
| 2000 09 03 | 704 | 0.9− | 0.1+ | 2002 01 13 | 704 | 0.0 | 0.6+ | 2006 11 16 | 704 | 0.2+ | 0.6+ | | |
| 2000 09 18 | 699 | 0.0 | 1.3+ | 2002 01 13 | 704 | 0.0 | 0.6+ | 2006 11 16 | 704 | 1.1+ | 0.3− | | |
| 2000 09 18 | 699 | 0.7− | 0.1+ | 2002 01 13 | 704 | 0.2+ | 0.8+ | 2006 11 16 | 704 | 1.6− | 0.7− | | |
| 2000 09 18 | 699 | 0.6+ | 0.4+ | 2002 01 15 | 704 | 0.8− | 1.0+ | 2006 11 16 | 704 | 0.7− | 0.1+ | | |
| 2000 09 18 | 699 | 0.1− | 0.6+ | 2002 01 15 | 704 | 0.8− | 0.8+ | 2006 11 16 | 704 | 0.2+ | 0.1+ | | |
| 2000 09 26 | 699 | 0.5− | 1.1+ | 2002 01 15 | 704 | 0.8− | 0.7+ | 2006 11 22 | 703 | 1.9− | 1.0− | | |
| 2000 09 26 | 699 | 0.4− | 1.3+ | 2002 01 15 | 704 | 0.7− | 1.2+ | 2006 11 22 | 703 | 0.4− | 0.0 | | |
| 2000 09 26 | 699 | 0.2+ | 0.6+ | 2002 01 15 | 704 | 0.3− | 1.4+ | 2006 11 22 | 703 | (1.2+ | 2.1+) | | |
| 2000 09 26 | 699 | 1.0+ | 0.7+ | 2002 01 21 | 704 | 0.5+ | 0.3+ | 2006 11 28 | 704 | 1.6+ | 0.9− | | |
| 2000 10 03 | 704 | 0.3+ | 0.2+ | 2002 01 21 | 704 | 0.3+ | 0.7+ | 2006 11 28 | 704 | (0.5+ | 3.4+) | | |
| 2000 10 03 | 704 | 0.3+ | 0.4+ | 2002 01 21 | 704 | 0.1+ | 1.0+ | 2006 11 28 | 704 | 1.3+ | 1.5− | | |
| 2000 10 03 | 704 | 0.4+ | 0.8+ | 2002 01 21 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 1.1+ | 0.9+ | | |
| 2000 10 03 | 704 | 0.1+ | 0.2+ | 2004 05 13 | 644 | 0.2+ | 0.7+ | 2006 11 28 | 704 | (1.5− | 2.6−) | | |
| 2000 10 03 | 704 | 0.5+ | 0.7+ | 2004 05 13 | 644 | 0.3+ | 0.8+ | | | | | | |

**(138530)∗ 2000 OJ$_{34}$ = 2001 TC$_{44}$**

Discovered 2000 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19819)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.09790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18509832 | $\omega$ | 82.03634 | | +0.98516060 | −0.09707377 | |
| $a$ | 3.0493064 | $\Omega$ | 283.45176 | | +0.02816292 | +0.90494091 | |
| $e$ | 0.1981879 | $i$ | 8.36847 | | +0.16930870 | +0.41431706 | |
| $P$ | 5.32 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.7− | 0.0 | 2001 12 10 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 703 | 0.1− | 0.2− | | |
| 2000 07 30 | 704 | 0.1+ | 0.8+ | 2001 12 18 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.3− | | |
| 2000 07 30 | 704 | 0.2− | 0.3+ | 2001 12 18 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.4− | 0.3− | | |
| 2000 07 30 | 704 | 0.6− | 0.6+ | 2001 12 18 | 704 | 0.3+ | 0.8+ | 2006 10 19 | 703 | 0.4− | 0.2− | | |
| 2000 08 02 | 704 | 0.6+ | 0.4+ | 2001 12 18 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 704 | 0.3+ | 0.1− | | |
| 2000 08 02 | 704 | 0.1+ | 0.2− | 2001 12 18 | 704 | 0.4+ | 1.1+ | 2006 10 20 | 704 | 0.6+ | 0.2+ | | |
| 2000 08 02 | 704 | 0.6− | 0.0 | 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 704 | 1.0+ | 0.5+ | | |
| 2000 08 02 | 704 | 0.2− | 0.1− | 2001 12 19 | 704 | 0.0 | 0.0 | 2006 10 20 | 704 | 0.2+ | 0.8+ | | |
| 2000 08 02 | 704 | 0.1+ | 0.3+ | 2001 12 19 | 704 | 1.2+ | 0.1+ | 2006 10 20 | 704 | 0.2+ | 0.6+ | | |
| 2000 08 21 | 699 | 0.2− | 0.2+ | 2001 12 20 | 704 | 0.3− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.3− | | |
| 2000 08 21 | 699 | 0.7+ | 0.0 | 2001 12 20 | 704 | 0.2+ | 1.2− | 2006 10 27 | 703 | 0.0 | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.2− | 0.3+ | 2001 12 20 | 704 | 1.1− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.7− |
| 2000 08 21 | 699 | 0.0 | 0.1+ | 2002 01 08 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.4− |
| 2000 08 29 | 704 | 0.8+ | 0.4+ | 2002 01 08 | 704 | 0.4+ | 0.7+ | 2006 11 02 | 703 | 0.1− | 0.1+ |
| 2000 08 29 | 704 | 0.8+ | 0.8− | 2002 01 08 | 704 | 0.9+ | 0.6− | 2006 11 02 | 703 | 0.1+ | 0.4− |
| 2000 08 29 | 704 | 0.3− | 0.2− | 2002 01 08 | 704 | (0.7− | 2.0+) | 2006 11 02 | 703 | 0.2− | 0.1− |
| 2000 09 02 | 699 | 1.2− | 0.5− | 2002 01 08 | 704 | 0.3+ | 1.4+ | 2006 11 02 | 703 | 0.0 | 0.6− |
| 2000 09 02 | 699 | 0.0 | 0.0 | 2002 01 14 | 704 | 0.3− | 0.6− | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2000 09 02 | 699 | 0.6− | 0.1− | 2002 01 14 | 704 | 0.4− | 0.7− | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2000 09 02 | 699 | 1.1− | 1.1+ | 2002 01 14 | 704 | 0.8− | 0.5− | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2000 09 03 | 704 | 0.2− | 0.3− | 2002 01 14 | 704 | 0.6− | 0.8− | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2000 09 03 | 704 | 0.2+ | 0.8+ | 2002 01 14 | 704 | 0.6− | 0.6− | 2006 11 13 | 104 | 0.3+ | 0.0 |
| 2000 09 03 | 704 | 0.6− | 0.9+ | 2002 01 21 | 704 | 0.5− | 1.0− | 2006 11 13 | 104 | 0.3+ | 0.1− |
| 2000 09 03 | 704 | 0.4+ | 1.5+ | 2002 01 21 | 704 | 0.3+ | 0.4− | 2006 11 13 | 104 | 0.4+ | 0.1+ |
| 2000 09 03 | 704 | 0.1+ | 0.6+ | 2002 01 21 | 704 | 0.5+ | 0.5− | 2006 11 14 | 644 | 0.2− | 0.2− |
| 2000 09 18 | 699 | 0.6+ | 0.6− | 2002 01 21 | 704 | 0.5+ | 1.2− | 2006 11 14 | 644 | 0.1− | 0.1− |
| 2000 09 18 | 699 | 0.1+ | 0.0 | 2003 03 26 | 699 | (1.2+ | 1.6+) | 2006 11 14 | 644 | 0.0 | 0.0 |
| 2000 09 18 | 699 | 0.5− | 0.3− | 2003 03 26 | 699 | (0.6+ | 2.3+) | 2006 11 14 | 703 | 0.4+ | 0.9+ |
| 2000 09 18 | 699 | 0.0 | 0.5− | 2003 03 26 | 699 | (0.0 | 2.0+) | 2006 11 14 | 703 | 0.8+ | 0.1− |
| 2000 10 03 | 704 | 0.9− | 1.0− | 2003 03 26 | 699 | 0.4+ | 1.3+ | 2006 11 14 | 703 | 0.6+ | 0.3+ |
| 2000 10 03 | 704 | 1.0+ | 0.0 | 2004 04 16 | E12 | 0.9+ | 1.1+ | 2006 11 14 | 703 | 0.5+ | 0.5+ |
| 2000 10 03 | 704 | 0.6+ | 0.3− | 2004 04 16 | E12 | (0.4− | 3.0+) | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2000 10 03 | 704 | 0.7+ | 0.2− | 2004 04 16 | E12 | (0.9+ | 1.8+) | 2006 11 16 | 704 | 0.2− | 0.1− |
| 2001 10 14 | 704 | 0.6− | 0.4+ | 2004 04 16 | E12 | (0.1+ | 1.9+) | 2006 11 16 | 704 | 0.3− | 0.3+ |
| 2001 10 14 | 704 | 0.9− | 0.6+ | 2004 04 17 | 704 | 0.4+ | 0.3− | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2001 10 14 | 704 | 0.5− | 0.8+ | 2004 04 17 | 704 | 0.2− | 0.7+ | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 1.3− | 1.0+ | 2004 04 17 | 704 | (1.7− | 1.0−) | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2001 10 15 | 704 | 0.7− | 0.1− | 2004 04 25 | 704 | 0.9− | 1.1+ | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2001 10 15 | 704 | 0.1− | 0.2− | 2004 04 25 | 704 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | 0.4− | 1.0− | 2004 04 25 | 704 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.4− | 0.7+ |
| 2001 10 15 | 704 | 0.4+ | 0.6− | 2004 04 25 | 704 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 1.1− | 0.4− |
| 2001 12 10 | 704 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.0 |
| 2001 12 10 | 704 | 0.3+ | 0.6+ | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.6− | 0.0 |
| 2001 12 10 | 704 | 0.7+ | 0.7+ | 2006 08 29 | 703 | 0.5− | 0.3− | 2006 11 28 | 704 | 0.8− | 0.8+ |
| 2001 12 10 | 704 | 0.5+ | 0.9+ | 2006 08 29 | 703 | 0.2− | 0.1− | | | | |

**(138531)∗ 2000 OC$_{38}$ = 2001 TU$_{44}$**

Discovered 2000 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19820)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.91083 | | (2000.0) | | | |
| $n$ | 0.18104952 | $\omega$ | 129.31917 | | +0.76751113 | −0.58466562 |
| $a$ | 3.0945996 | $\Omega$ | 268.05089 | | +0.47678985 | +0.79474637 |
| $e$ | 0.2166600 | $i$ | 15.24857 | | +0.42848349 | +0.16292429 |
| $P$ | 5.44 | $H$ | 13.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 25 | 704 | 1.2− | 0.5+ | 2001 12 10 | 704 | 0.5+ | 0.4+ | 2003 03 29 | 699 | 0.4− | 0.3− |
| 2000 06 25 | 704 | 0.9− | 0.0 | 2001 12 10 | 704 | 0.0 | 0.3+ | 2003 03 29 | 699 | 0.2+ | 0.3+ |
| 2000 06 25 | 704 | 0.6− | 0.7+ | 2001 12 10 | 704 | 0.5− | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 2000 06 25 | 704 | 0.4+ | 1.7+ | 2001 12 14 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2000 07 30 | 704 | 0.7+ | 0.3− | 2001 12 14 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 2000 07 30 | 704 | 0.9− | 0.1+ | 2001 12 14 | 704 | 1.1+ | 0.3− | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2000 07 30 | 704 | 0.4+ | 0.4+ | 2001 12 14 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 703 | 0.6− | 0.1+ |
| 2000 07 30 | 704 | 0.8− | 0.8− | 2001 12 14 | 704 | 0.5+ | 0.2− | 2006 09 25 | 703 | 0.0 | 0.3+ |
| 2000 08 03 | 704 | 0.3− | 0.0 | 2001 12 17 | 704 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.3− | 0.0 |
| 2000 08 03 | 704 | 0.0 | 0.6+ | 2001 12 17 | 704 | 0.2− | 0.3− | 2006 09 25 | 703 | 0.7+ | 0.0 |
| 2000 08 03 | 704 | 0.1− | 0.6+ | 2001 12 17 | 704 | 0.0 | 0.2− | 2006 10 02 | 704 | 1.1+ | 0.7+ |
| 2000 08 03 | 704 | 0.6+ | 0.3− | 2001 12 17 | 704 | 0.0 | 0.4− | 2006 10 02 | 704 | 0.8+ | 0.9+ |
| 2000 08 03 | 704 | 0.1− | 0.6+ | 2001 12 17 | 704 | 0.1+ | 0.3− | 2006 10 02 | 704 | 0.8+ | 0.2+ |
| 2000 08 31 | 704 | 0.8+ | 0.6+ | 2001 12 19 | 704 | 0.1+ | 0.1− | 2006 10 02 | 704 | 1.0+ | 0.1− |
| 2000 08 31 | 704 | 0.4− | 0.7+ | 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 10 02 | 704 | 1.0+ | 0.2+ |
| 2000 08 31 | 704 | 0.7− | 0.6− | 2001 12 19 | 704 | 0.5+ | 0.5− | 2006 10 02 | 703 | 0.6− | 0.1− |
| 2000 08 31 | 704 | 0.3+ | 0.6+ | 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.5− | 0.1− |
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.3− | 0.3− |
| 2001 10 14 | 704 | 1.0+ | 0.2+ | 2001 12 20 | 704 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.2− | 0.1− |
| 2001 10 14 | 704 | 0.4+ | 0.2− | 2001 12 20 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 704 | 1.4+ | 0.1− |
| 2001 10 14 | 704 | 0.4+ | 0.2− | 2001 12 20 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 704 | 0.9+ | 0.2− |
| 2001 10 15 | 704 | 0.2− | 0.3− | 2001 12 20 | 704 | 0.3+ | 0.7+ | 2006 10 17 | 704 | (0.2+ | 2.2−) |
| 2001 10 15 | 704 | 0.1+ | 0.1− | 2001 12 20 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 704 | 0.3− | 0.4+ |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2002 01 09 | 704 | 0.2+ | 0.2− | 2006 10 20 | 704 | 1.1− | 0.5+ |
| 2001 10 15 | 704 | 0.1− | 0.5− | 2002 01 09 | 704 | 0.6− | 0.4− | 2006 10 20 | 704 | 0.6+ | 0.0 |
| 2001 10 15 | 704 | 0.4+ | 0.5− | 2002 01 09 | 704 | 0.1− | 0.5− | 2006 10 20 | 704 | 0.2− | 0.9+ |
| 2001 10 27 | 704 | 0.5+ | 0.1− | 2002 01 13 | 704 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2001 10 27 | 704 | 0.5+ | 0.4− | 2002 01 13 | 704 | 0.4− | 0.5− | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2001 10 27 | 704 | 0.3+ | 0.2− | 2002 01 13 | 704 | 0.5+ | 0.3− | 2006 10 27 | 703 | 0.4− | 0.3− |
| 2001 10 27 | 704 | 0.8+ | 0.1+ | 2002 01 15 | 704 | 0.8− | 0.8− | 2006 10 27 | 703 | 0.6− | 0.1− |
| 2001 10 27 | 704 | 0.5+ | 0.3− | 2002 01 15 | 704 | 1.2− | 1.3− | 2006 11 15 | 703 | 0.3− | 0.5− |
| 2001 11 12 | 704 | 0.3− | 0.6+ | 2002 01 15 | 704 | 1.1− | 1.5− | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2001 11 12 | 704 | 0.4+ | 0.1− | 2002 01 15 | 704 | (0.2+ | 3.2−) | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.1+ | 0.4− | 2002 01 15 | 704 | (1.5− | 2.7−) | 2006 11 15 | 703 | 0.4− | 0.3− |
| 2001 11 12 | 704 | 0.2+ | 0.1− | 2002 01 19 | 704 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.3− | 0.1+ | 2002 01 19 | 704 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2001 11 17 | 644 | 0.3+ | 0.4+ | 2002 01 19 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.7− | 0.1+ |
| 2001 11 17 | 644 | 0.0 | 0.3+ | 2002 01 19 | 704 | 0.1− | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.6− |
| 2001 11 17 | 644 | 0.1+ | 0.7+ | 2002 01 19 | 704 | 0.4− | 1.0+ | 2006 11 16 | 704 | 0.2− | 0.5− |
| 2001 11 19 | 704 | (1.9+ | 1.4−) | 2002 01 22 | 704 | 0.7+ | 1.4+ | 2006 11 22 | 703 | 0.5− | 0.7− |
| 2001 11 19 | 704 | (2.4+ | 1.7−) | 2002 01 22 | 704 | 0.6− | 0.5+ | 2006 11 22 | 703 | 0.3− | 0.3− |
| 2001 11 19 | 704 | (2.4+ | 1.9−) | 2002 01 22 | 704 | 0.6− | 0.5+ | 2006 11 22 | 703 | 0.6− | 0.6− |
| 2001 11 21 | 704 | 0.5− | 0.8+ | 2002 01 22 | 704 | 0.7− | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.5− |
| 2001 11 21 | 704 | 0.5− | 0.6+ | 2003 02 09 | 644 | (0.9+ | 1.8+) | 2006 12 01 | 704 | 0.3+ | 0.6+ |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2003 02 09 | 644 | 1.0+ | 1.3+ | 2006 12 01 | 704 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 1.2− | 0.0 | 2003 02 09 | 644 | 0.7+ | 1.3+ | 2006 12 01 | 704 | 0.2+ | 0.0 |
| 2001 12 10 | 704 | (1.8− | 0.5−) | 2003 03 29 | 699 | 0.1− | 0.9+ | 2006 12 01 | 704 | 0.6+ | 0.3+ |
| 2001 12 10 | 704 | 0.3+ | 0.3+ | 2003 03 29 | 699 | 1.1+ | 0.9+ | 2006 12 01 | 704 | 0.8+ | 0.2+ |

**(138532)∗ 2000 OA$_{40}$**

Discovered 2000 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.19543 | | (2000.0) | | | |
| $n$ | 0.18247987 | $\omega$ | 70.68825 | | +0.65840562 | +0.73525024 |
| $a$ | 3.0784072 | $\Omega$ | 241.56640 | | −0.74083527 | +0.59530133 |
| $e$ | 0.1598287 | $i$ | 10.54710 | | −0.13291032 | +0.32407317 |
| $P$ | 5.40 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 03 | 691 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.5+ | 1.2+ | 2006 09 20 | 699 | 0.1+ | 0.1− |
| 2000 06 03 | 691 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.5+ | 1.4+ | 2006 09 20 | 699 | 0.3+ | 0.1− |
| 2000 06 03 | 691 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.6− | 1.2+ | 2006 09 20 | 699 | 0.1+ | 0.2+ |
| 2000 07 30 | 704 | 0.5− | 0.0 | 2001 12 10 | 704 | 1.0− | 0.2+ | 2006 09 20 | 699 | 0.4− | 0.7− |
| 2000 07 30 | 704 | 0.8− | 0.1+ | 2001 12 10 | 704 | 0.8− | 1.4+ | 2006 09 28 | 703 | 0.5+ | 0.3− |
| 2000 07 30 | 704 | 0.4− | 0.1− | 2001 12 10 | 704 | 0.7− | 0.3− | 2006 09 28 | 703 | 0.8− | 0.4− |
| 2000 08 03 | 704 | 0.3− | 0.1+ | 2001 12 10 | 704 | 0.7+ | 0.7+ | 2006 09 28 | 703 | 0.6− | 0.4− |
| 2000 08 03 | 704 | 0.5− | 0.2− | 2001 12 15 | 704 | 0.4− | 1.1− | 2006 09 28 | 703 | 0.4− | 0.3+ |
| 2000 08 03 | 704 | 0.7+ | 1.1+ | 2001 12 15 | 704 | (0.3− | 1.6−) | 2006 10 04 | 703 | 0.1+ | 0.3− |
| 2000 08 03 | 704 | 0.2+ | 1.0+ | 2001 12 15 | 704 | 0.4+ | 1.4− | 2006 10 04 | 703 | 0.5+ | 0.3− |
| 2000 08 03 | 704 | 0.2+ | 1.2+ | 2001 12 15 | 704 | (0.2− | 1.7−) | 2006 10 04 | 703 | 0.3+ | 0.3− |
| 2001 10 21 | 704 | 0.2+ | 0.2− | 2001 12 15 | 704 | (0.2− | 2.3−) | 2006 10 04 | 703 | 0.4− | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2001 12 19 | 644 | 0.2− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.4− | 0.6− | 2001 12 19 | 644 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 10 26 | 644 | 0.2− | 0.0 | 2001 12 19 | 644 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 10 26 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 1.1+ |
| 2001 10 26 | 644 | 0.1+ | 0.1− | 2004 03 23 | 704 | 0.8+ | 1.3+ | 2006 10 17 | 703 | 0.6− | 0.7− |
| 2001 11 09 | 704 | 1.0− | 0.9+ | 2004 03 23 | 704 | (1.1+ | 2.0+) | 2006 10 17 | 703 | 0.6+ | 0.5+ |
| 2001 11 09 | 704 | 0.8− | 1.0+ | 2004 03 23 | 704 | 1.0+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.9− |
| 2001 11 09 | 704 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.5+ | 1.2+ | 2006 10 17 | 703 | 0.4+ | 0.9+ |
| 2001 11 09 | 704 | 0.4− | 1.2+ | 2004 04 15 | 460 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.9− |
| 2001 11 09 | 704 | (1.1− | 2.1+) | 2004 04 15 | 460 | 0.3+ | 0.5− | 2006 10 17 | 703 | 1.0+ | 1.1+ |
| 2001 11 19 | 704 | 0.1+ | 0.3− | 2004 04 15 | 460 | 0.0 | 0.0 | 2006 10 17 | 703 | (0.3− | 1.7+) |
| 2001 11 19 | 704 | 0.1− | 0.5− | 2004 04 16 | 460 | 0.5− | 1.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 11 19 | 704 | 0.3+ | 0.1− | 2004 04 16 | 460 | 0.3+ | 1.3+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.5− | 0.8− | 2005 06 05 | 704 | 0.3+ | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2005 06 05 | 704 | 0.9+ | 1.0+ | 2006 11 14 | 703 | 0.6+ | 0.5+ |
| 2001 11 19 | 704 | 0.1− | 1.3− | 2005 06 05 | 704 | 0.5− | 1.5+ | 2006 11 14 | 703 | 0.6+ | 0.4+ |
| 2001 11 19 | 704 | 0.6+ | 0.3+ | 2005 06 05 | 704 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.9+ |
| 2001 11 19 | 704 | 0.6+ | 0.8+ | 2005 07 12 | G96 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.5+ |
| 2001 11 21 | 704 | 0.5+ | 1.1+ | 2005 07 12 | G96 | 1.0− | 0.2+ | | | | |
| 2001 11 21 | 704 | 0.7+ | 1.2+ | 2005 07 12 | G96 | 0.6− | 0.1+ | | | | |

**(138533)∗ 2000 OF$_{40}$ = 2001 TF$_{33}$**

Discovered 2000 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19821)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.96317 | | (2000.0) | | +0.78523673 | −0.59067303 |
| $n$ | 0.17608970 | $\omega$ | 122.13966 | | +0.48655189 | +0.77415909 |
| $a$ | 3.1524394 | $\Omega$ | 274.72772 | | +0.38297590 | +0.22755894 |
| $e$ | 0.0724983 | $i$ | 10.74272 | | | |
| $P$ | 5.60 | $H$ | 14.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 699 | 0.3− | 1.0+ | 2001 11 21 | 704 | 1.1− | 0.0 | 2003 03 07 | 608 | 1.3+ | 0.9+ |
| 2000 07 07 | 699 | 0.5− | 0.4− | 2001 11 21 | 704 | 0.1− | 0.0 | 2003 03 07 | 608 | 0.7+ | 0.3+ |
| 2000 07 07 | 699 | (2.2− | 2.2+) | 2001 11 21 | 704 | 0.6− | 0.3+ | 2003 03 07 | 608 | 1.0+ | 1.2+ |
| 2000 07 07 | 699 | (3.4− | 1.2−) | 2001 11 21 | 704 | 0.8− | 0.2+ | 2003 03 09 | 704 | 0.2+ | 0.4+ |
| 2000 07 30 | 704 | 0.5+ | 0.9− | 2001 11 24 | 704 | (1.6− | 0.3+) | 2003 03 09 | 704 | 0.1+ | 0.7+ |
| 2000 07 30 | 704 | 0.2− | 0.9+ | 2001 11 24 | 704 | 0.8− | 0.6− | 2003 03 09 | 704 | 0.0 | 0.8+ |
| 2000 07 30 | 704 | 0.4− | 1.6+ | 2001 11 24 | 704 | 1.1− | 0.4− | 2003 03 09 | 704 | 0.2+ | 0.8+ |
| 2000 08 03 | 704 | 0.4− | 0.3− | 2001 11 24 | 704 | 0.0 | 0.5− | 2003 03 09 | 704 | 0.1− | 0.6+ |
| 2000 08 03 | 704 | 0.1− | 0.1+ | 2001 11 24 | 704 | 1.3− | 0.4− | 2004 04 12 | E12 | 0.8− | 0.7+ |
| 2000 08 03 | 704 | 0.4− | 0.9+ | 2001 12 17 | 704 | 1.1− | 0.0 | 2004 04 12 | E12 | 0.2+ | 0.4+ |
| 2000 08 03 | 704 | 0.5+ | 0.7+ | 2001 12 17 | 704 | 0.6− | 0.1− | 2004 04 12 | E12 | 0.2+ | 1.2+ |
| 2000 08 03 | 704 | 0.0 | 0.9− | 2001 12 17 | 704 | (1.8− | 0.3+) | 2004 04 12 | E12 | 0.7− | 0.9+ |
| 2000 08 31 | 704 | 0.1+ | 0.6+ | 2001 12 17 | 704 | 1.0− | 0.3+ | 2004 04 13 | 644 | 0.4− | 0.1+ |
| 2000 08 31 | 704 | 0.6− | 0.7+ | 2001 12 17 | 704 | 1.0− | 0.5+ | 2004 04 13 | 644 | 0.3− | 0.6+ |
| 2000 08 31 | 704 | 0.2+ | 0.6+ | 2002 01 06 | 644 | 0.3− | 0.4+ | 2004 04 13 | 644 | 0.1− | 0.9+ |
| 2000 08 31 | 704 | 0.2+ | 0.0 | 2002 01 06 | 644 | 0.3− | 0.1+ | 2004 04 22 | E12 | (2.4− | 2.0+) |
| 2000 08 31 | 704 | 1.0− | 0.1+ | 2002 01 06 | 644 | 0.1− | 0.2+ | 2004 04 22 | E12 | (1.0− | 1.6+) |
| 2000 09 03 | 704 | 0.1+ | 0.3+ | 2003 01 07 | 704 | (0.3+ | 2.4+) | 2004 04 22 | E12 | (1.0− | 1.6+) |
| 2000 09 03 | 704 | 0.2+ | 0.9+ | 2003 01 07 | 704 | (0.4+ | 2.2+) | 2004 04 22 | E12 | (1.7− | 1.7+) |
| 2000 09 03 | 704 | 0.6+ | 0.3+ | 2003 01 07 | 704 | (0.4+ | 1.9+) | 2006 09 02 | 106 | 0.2+ | 0.1− |
| 2000 09 03 | 704 | 0.1+ | 1.2+ | 2003 01 07 | 704 | (0.9+ | 3.5+) | 2006 09 02 | 106 | 0.9− | 0.3− |
| 2000 09 03 | 704 | 0.3− | 1.0+ | 2003 01 28 | 704 | (1.6+ | 0.6−) | 2006 09 02 | 106 | 0.1+ | 0.1− |
| 2000 09 04 | 699 | 0.6− | 1.2+ | 2003 01 28 | 704 | 0.3+ | 0.4+ | 2006 09 02 | 106 | 0.3− | 0.3− |
| 2000 09 04 | 699 | 1.1− | 1.5+ | 2003 01 28 | 704 | 0.6+ | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.2+ |
| 2000 09 04 | 699 | (0.8− | 2.1+) | 2003 01 28 | 704 | 0.4+ | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.2+ |
| 2000 09 04 | 699 | 1.1− | 1.0+ | 2003 01 28 | 704 | 0.7+ | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.1+ |
| 2000 09 23 | 704 | 0.6+ | 0.3+ | 2003 01 28 | 608 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.2− | 0.1+ |
| 2000 09 23 | 704 | 0.5− | 0.3− | 2003 01 28 | 608 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.0 |
| 2000 09 23 | 704 | 0.3− | 1.0− | 2003 01 28 | 608 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.1+ |
| 2000 09 23 | 704 | 0.4+ | 0.5+ | 2003 01 30 | 683 | 1.4+ | 1.3− | 2006 09 16 | 703 | 0.3− | 0.1+ |
| 2000 09 23 | 704 | 0.7− | 0.5− | 2003 01 30 | 704 | 0.5− | 0.9+ | 2006 09 21 | 699 | 0.9− | 0.7− |
| 2000 09 23 | 704 | 0.7+ | 1.3+ | 2003 01 30 | 683 | 1.3+ | 0.7− | 2006 09 21 | 699 | 0.5+ | 0.1+ |
| 2000 09 23 | 704 | 0.0 | 0.7+ | 2003 01 30 | 704 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.9+ | 0.3− |
| 2000 09 23 | 704 | 0.5+ | 0.6+ | 2003 01 30 | 683 | 1.3+ | 0.0 | 2006 09 21 | 699 | 0.7− | 1.1− |
| 2001 10 14 | 704 | 0.8+ | 0.2− | 2003 01 30 | 704 | (0.8+ | 1.9+) | 2006 09 29 | 699 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 0.0 | 0.4− | 2003 01 30 | 704 | 0.8− | 0.1− | 2006 09 29 | 699 | 0.3− | 0.2+ |
| 2001 10 14 | 704 | 0.5+ | 0.6+ | 2003 01 30 | 704 | 0.8− | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.2+ |
| 2001 10 14 | 704 | 0.7+ | 0.8+ | 2003 02 01 | 683 | 0.2+ | 1.0− | 2006 09 29 | 699 | 0.5+ | 0.2+ |
| 2001 10 15 | 704 | 0.0 | 0.0 | 2003 02 01 | 683 | 0.3− | 0.3− | 2006 10 03 | 704 | 0.0 | 0.4+ |
| 2001 10 15 | 704 | 0.3+ | 0.4− | 2003 02 01 | 683 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.8+ |
| 2001 10 15 | 704 | 0.4− | 0.2− | 2003 02 01 | 699 | 0.6+ | 0.8+ | 2006 10 03 | 704 | 0.6+ | 0.4+ |
| 2001 10 15 | 704 | 0.1− | 0.2− | 2003 02 01 | 699 | 0.7− | 0.1+ | 2006 10 03 | 704 | 0.4+ | 1.1+ |
| 2001 10 19 | 704 | (0.9+ | 2.1+) | 2003 02 01 | 699 | 0.6− | 0.3+ | 2006 10 03 | 704 | 1.0+ | 0.4− |
| 2001 10 19 | 704 | 0.1− | 0.4− | 2003 02 01 | 699 | (1.6− | 0.2−) | 2006 10 16 | 106 | 0.1− | 0.9− |
| 2001 10 19 | 704 | 0.6+ | 0.7− | 2003 02 03 | 608 | 0.2− | 0.3− | 2006 10 16 | 106 | 0.1− | 0.5+ |
| 2001 10 19 | 704 | 0.3+ | 1.1+ | 2003 02 03 | 608 | 0.0 | 0.3− | 2006 10 16 | 106 | 0.1− | 0.1− |
| 2001 10 19 | 704 | 0.9+ | 0.6+ | 2003 02 03 | 608 | 0.1+ | 0.2+ | 2006 10 16 | 106 | 0.6+ | 0.8+ |
| 2001 10 27 | 704 | 0.0 | 0.7− | 2003 02 04 | 704 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 10 27 | 704 | 0.2+ | 0.4− | 2003 02 04 | 704 | 0.7+ | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.8+ |
| 2001 10 27 | 704 | 0.1− | 0.5+ | 2003 02 04 | 704 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.2+ |
| 2001 10 27 | 704 | 0.3+ | 0.9+ | 2003 02 04 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2001 10 27 | 704 | (0.3− | 1.7−) | 2003 02 04 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.0 | 0.3− |
| 2001 11 19 | 699 | 0.7+ | 0.1− | 2003 02 09 | 608 | 0.1+ | 0.4+ | 2006 10 23 | 703 | 0.2− | 0.1− |
| 2001 11 19 | 699 | 0.6+ | 0.4+ | 2003 02 09 | 608 | 0.5+ | 0.5+ | 2006 10 23 | 703 | 0.3− | 0.5− |
| 2001 11 19 | 699 | 0.5+ | 0.5− | 2003 02 09 | 608 | 0.2+ | 0.4+ | 2006 10 23 | 703 | 0.1− | 0.5− |
| 2001 11 19 | 699 | 0.7+ | 0.1+ | 2003 02 22 | 333 | 0.6− | 0.0 | | | | |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2003 02 22 | 333 | 0.2− | 0.1+ | | | | |

**(138534)∗ 2000 OT$_{41}$**

Discovered 2000 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.75310 | | (2000.0) | | +0.86721925 | +0.49550278 |
| $n$ | 0.18240432 | $\omega$ | 132.92146 | | −0.49095725 | +0.83448892 |
| $a$ | 3.0792572 | $\Omega$ | 197.55596 | | −0.08301654 | +0.24105028 |
| $e$ | 0.0890023 | $i$ | 9.36223 | | | |
| $P$ | 5.40 | $H$ | 14.8 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.4+ | 0.3− | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.6+ | 0.4− |
| 2000 07 30 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.0 | 1.4+ | 2006 09 26 | G96 | 0.4+ | 0.5− |
| 2000 07 30 | 704 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.5− | 1.4+ | 2006 09 26 | G96 | 0.8+ | 0.6− |
| 2000 08 03 | 704 | 0.1− | 1.1+ | 2004 04 15 | 699 | 0.2+ | 1.0− | 2006 09 29 | 704 | 0.8+ | 1.2+ |
| 2000 08 03 | 704 | 0.4− | 1.1+ | 2004 04 15 | 699 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.1− |
| 2000 08 03 | 704 | 0.2− | 0.8+ | 2004 04 15 | 699 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.0 | 0.1− |
| 2000 08 03 | 704 | 0.1+ | 0.2+ | 2004 04 15 | 699 | 0.9+ | 1.4− | 2006 09 29 | 704 | 1.2− | 0.2− |
| 2000 08 03 | 704 | 0.5+ | 0.3+ | 2004 04 21 | 704 | 0.4− | 0.1+ | 2006 09 29 | 691 | 0.3+ | 0.2− |
| 2000 08 31 | 704 | 0.8− | 0.7+ | 2004 04 21 | 704 | 0.1− | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.1− |
| 2000 08 31 | 704 | 0.2− | 0.4+ | 2004 04 21 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 691 | 0.2− | 0.3− |
| 2000 08 31 | 704 | 0.5+ | 0.8+ | 2004 04 21 | 704 | 0.8+ | 1.0+ | 2006 10 03 | 691 | 0.3+ | 0.1− |
| 2000 08 31 | 704 | 0.3− | 0.5− | 2006 09 14 | 703 | (1.7+ | 0.1−) | 2006 10 03 | 691 | 0.3+ | 0.2+ |
| 2000 08 31 | 704 | 0.7− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.3+ | 0.0 |
| 2000 09 03 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.6+ | 0.6− | 2006 10 15 | 703 | 0.4− | 0.3− |
| 2000 09 03 | 704 | 0.3− | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.7+ | 2006 10 15 | 703 | 1.0− | 0.1− |
| 2000 09 03 | 704 | 1.3+ | 0.6− | 2006 09 17 | 704 | 0.3+ | 0.9+ | 2006 10 15 | 703 | 0.1− | 0.3+ |
| 2000 09 03 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.5− |
| 2001 11 17 | 704 | 0.7+ | 1.1+ | 2006 09 17 | 704 | 0.3− | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 11 17 | 704 | 0.7− | 1.0+ | 2006 09 17 | 704 | 0.7+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2001 11 17 | 704 | (1.1− | 1.6+) | 2006 09 17 | 704 | 0.6+ | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2001 11 19 | 699 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 16 | G96 | 0.5+ | 0.4− |
| 2001 11 19 | 699 | 0.5− | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 11 19 | 699 | 0.1+ | 1.1+ | 2006 09 18 | 699 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 11 19 | 699 | 0.6− | 1.1+ | 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 11 20 | 608 | 0.1− | 1.0− | 2006 09 18 | 699 | 1.4+ | 0.2− | 2006 10 29 | 291 | 0.1+ | 0.0 |
| 2001 11 20 | 608 | 0.1− | 1.0− | 2006 09 18 | 699 | 0.1+ | 0.4− | 2006 10 29 | 291 | 0.1− | 0.1− |
| 2001 11 20 | 608 | (0.2− | 2.0−) | 2006 09 18 | 699 | 0.0 | 0.6− | 2006 10 29 | 291 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 1.2+ | 0.4+ | 2006 09 20 | 704 | 1.1− | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.7− | 1.3+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2001 12 11 | 704 | 0.2+ | 0.7+ | 2006 09 20 | 704 | 0.9− | 1.0+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2001 12 11 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 012 | 0.3− | 0.8− | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 2001 12 18 | 704 | 0.5− | 0.5+ | 2006 09 22 | 012 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.7− | 0.1− | 2006 09 22 | 012 | 0.7− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 12 18 | 704 | 0.3+ | 0.9+ | 2006 09 22 | 012 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2001 12 18 | 704 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2001 12 18 | 704 | 0.1− | 1.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2004 03 27 | 704 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.4− |

**(138535)∗ 2000 OO$_{57}$ = 2001 VQ$_{89}$**

Discovered 2000 July 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 19825)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.31359 | | (2000.0) | | | |
| $n$ | 0.18408885 | $\omega$ | 316.55930 | | +0.28068864 | +0.95879731 |
| $a$ | 3.0604437 | $\Omega$ | 329.66379 | | −0.85515571 | +0.22908758 |
| $e$ | 0.1487070 | $i$ | 4.97906 | | −0.43580110 | +0.16800774 |
| $P$ | 5.35 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.5− | 0.7+ | 2003 01 05 | 704 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.0 | 0.6− |
| 1995 10 20 | 691 | 0.4− | 0.6+ | 2003 01 05 | 704 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.6− | 1.0− |
| 1995 10 20 | 691 | 0.2− | 0.8+ | 2004 02 19 | 704 | (2.2− | 0.1+) | 2006 09 22 | 224 | 0.7− | 0.4+ |
| 2000 06 01 | 699 | 0.1− | 1.0+ | 2004 02 19 | 704 | (0.3+ | 1.5+) | 2006 09 22 | 224 | 0.5+ | 0.1+ |
| 2000 06 01 | 699 | (2.1+ | 0.5+) | 2004 02 19 | 704 | 0.1+ | 0.9+ | 2006 09 22 | 224 | 0.6+ | 0.7+ |
| 2000 06 01 | 699 | 1.5+ | 2.0− | 2004 02 19 | 704 | 0.3+ | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2000 06 01 | 699 | 0.1+ | 0.3+ | 2004 03 16 | 704 | 0.9+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2000 07 29 | 699 | 0.2− | 0.5+ | 2004 03 16 | 704 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2000 07 29 | 699 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.7+ |
| 2000 07 29 | 699 | 0.1− | 0.1− | 2004 03 16 | 704 | 1.3+ | 0.1− | 2006 09 29 | 704 | 1.3− | 0.7− |
| 2000 07 29 | 699 | 0.1+ | 0.4− | 2004 03 16 | 704 | 1.3+ | 0.3+ | 2006 09 29 | 704 | 0.4− | 1.0+ |
| 2000 08 01 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 704 | (1.6− | 1.2+) |
| 2000 08 01 | 704 | 0.5− | 0.7+ | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2000 08 01 | 704 | 0.4+ | 0.8+ | 2004 03 18 | 704 | 1.0− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2000 08 01 | 704 | 0.8+ | 0.2− | 2004 03 18 | 704 | 0.2+ | 1.3+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2000 08 01 | 704 | 1.0+ | 0.7+ | 2004 03 18 | 704 | 0.8− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2000 08 26 | 704 | 0.8− | 1.1+ | 2004 03 20 | 699 | (2.7+ | 0.4+) | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2000 08 26 | 704 | 0.8− | 0.4+ | 2004 03 20 | 699 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.1− |
| 2000 08 26 | 704 | 0.2− | 1.4+ | 2004 03 20 | 704 | (1.6− | 0.0 ) | 2006 10 16 | 683 | (0.0 | 2.4−) |
| 2000 08 26 | 704 | 0.3− | 0.1+ | 2004 03 20 | 699 | 0.9− | 0.7+ | 2006 10 16 | 683 | 0.5− | 1.4− |
| 2000 08 26 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 10 16 | 683 | 0.8− | 0.1− |
| 2000 09 02 | 699 | 0.6− | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2000 09 02 | 699 | 0.1+ | 0.4+ | 2004 03 20 | 699 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2000 09 02 | 699 | 0.3− | 0.7+ | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.3− |
| 2000 09 02 | 699 | 0.3+ | 1.7+ | 2004 03 21 | 691 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 2000 09 04 | 704 | 0.5− | 0.5+ | 2004 03 21 | 691 | 0.4+ | 0.6+ | 2006 10 19 | 683 | 0.3+ | 0.3+ |
| 2000 09 04 | 704 | 1.4− | 0.6− | 2004 03 21 | 691 | 0.4+ | 0.3+ | 2006 10 19 | 683 | 0.7+ | 0.4+ |
| 2000 09 04 | 704 | 0.8− | 0.4− | 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 0.3+ | 0.6+ | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.2+ | 0.5+ | 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 10 14 | 704 | 0.4− | 0.8+ | 2004 03 31 | 691 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.6+ |
| 2001 10 14 | 704 | 0.2+ | 0.9+ | 2004 03 31 | 691 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2004 03 31 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.7+ | 2006 09 17 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.5+ | 0.7+ | 2006 09 17 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2001 11 18 | 704 | 1.2− | 0.4− | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 10 22 | 683 | 0.3− | 1.1+ |
| 2001 11 18 | 704 | 0.4− | 0.3+ | 2006 09 18 | 703 | 1.3− | 0.3− | 2006 10 22 | 683 | (0.2+ | 1.8+) |
| 2001 11 18 | 704 | 0.8− | 0.4+ | 2006 09 18 | 703 | (1.6− | 0.4−) | 2006 10 22 | 683 | 1.2− | 0.6+ |
| 2001 11 18 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 10 23 | 683 | 0.2− | 0.3+ |
| 2001 11 18 | 704 | 0.8− | 0.1+ | 2006 09 18 | 704 | 0.8− | 0.3+ | 2006 10 23 | 683 | 0.2+ | 1.3+ |
| 2001 11 24 | 704 | (0.4− | 2.3+) | 2006 09 18 | 704 | (1.6− | 0.4−) | 2006 10 23 | 683 | (2.2+ | 1.6+) |
| 2001 11 24 | 704 | 0.2+ | 0.3− | 2006 09 18 | 704 | 0.7− | 0.8− | 2006 11 18 | G96 | 0.1+ | 0.7− |
| 2001 11 24 | 704 | 0.2− | 0.5− | 2006 09 18 | 704 | 0.8+ | 1.1− | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2001 11 24 | 704 | 0.0 | 0.6+ | 2006 09 18 | 704 | 0.6− | 0.6− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2003 01 05 | 704 | (0.4− | 1.8−) | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2003 01 05 | 704 | 0.3− | 0.7− | 2006 09 19 | 703 | 0.1+ | 0.6+ | | | | |

**(138536)∗ 2000 OZ$_{59}$ = 1995 UK$_{10}$**

Discovered 2000 July 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 3716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.21574 | | (2000.0) | | | |
| $n$ | 0.18448003 | $\omega$ | 102.55539 | | +0.93891893 | +0.34101251 |
| $a$ | 3.0561158 | $\Omega$ | 237.52287 | | −0.33319487 | +0.86716123 |
| $e$ | 0.1539374 | $i$ | 3.14472 | | −0.08609546 | +0.36296261 |
| $P$ | 5.34 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.4− | 0.6− | 2001 11 12 | 704 | (0.3+ | 1.7+) | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 1995 10 17 | 691 | 0.2− | 0.3− | 2001 11 12 | 704 | (0.1− | 1.7+) | 2006 10 19 | 644 | 0.5− | 0.5+ |
| 1995 10 17 | 691 | 0.1− | 0.0 | 2001 11 12 | 704 | 0.3+ | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.8+ |
| 1995 10 22 | 691 | 0.9+ | 1.3− | 2001 11 20 | 704 | 0.1− | 1.0+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 1995 10 22 | 691 | 0.0 | 0.4− | 2001 11 20 | 704 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1995 10 22 | 691 | 0.2+ | 0.4− | 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 07 06 | 699 | 1.2− | 0.5− | 2001 11 20 | 704 | 0.3+ | 0.3+ | 2006 10 21 | H07 | 0.6− | 0.1+ |
| 2000 07 06 | 699 | 1.6− | 0.2+ | 2001 11 20 | 291 | 0.3− | 0.3+ | 2006 10 21 | H07 | 0.2+ | 0.5− |
| 2000 07 06 | 699 | 0.3− | 0.4+ | 2001 11 20 | 291 | 0.8+ | 0.3+ | 2006 10 21 | H07 | 0.4− | 0.8− |
| 2000 07 06 | 699 | (2.1− | 0.6+) | 2001 11 20 | 291 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2000 07 29 | 699 | 0.5+ | 0.4+ | 2001 11 21 | 704 | 0.7− | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2000 07 29 | 699 | 0.2− | 0.6+ | 2001 11 21 | 704 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2000 07 29 | 699 | 0.3− | 0.3+ | 2001 11 21 | 704 | 0.2− | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2000 07 29 | 699 | 1.1− | 1.2+ | 2001 11 21 | 704 | 0.4− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2000 07 30 | 704 | 1.1+ | 1.8+ | 2001 12 14 | 704 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2000 07 30 | 704 | 0.5− | 1.0+ | 2001 12 14 | 704 | 0.9− | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.6+ |
| 2000 07 30 | 704 | 0.4+ | 0.8+ | 2001 12 14 | 704 | 0.8− | 0.9− | 2006 11 01 | 691 | 0.1+ | 0.6+ |
| 2000 08 21 | 699 | 0.6+ | 0.0 | 2001 12 14 | 704 | 0.8− | 0.9− | 2006 11 01 | 691 | 0.2+ | 0.6+ |
| 2000 08 21 | 699 | 1.9+ | 0.6+ | 2001 12 17 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2000 08 21 | 699 | 0.6+ | 1.1− | 2001 12 17 | 704 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2000 08 21 | 699 | 1.2+ | 0.0 | 2001 12 17 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2000 08 29 | 704 | 0.1− | 0.4+ | 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2000 08 29 | 704 | 0.0 | 0.2+ | 2001 12 17 | 704 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2000 08 29 | 704 | 0.3− | 0.1− | 2001 12 20 | 704 | (1.9+ | 0.5+) | 2006 11 13 | 644 | 0.4− | 0.3+ |
| 2000 08 29 | 704 | 0.3− | 0.7+ | 2001 12 20 | 704 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.8− | 0.1+ |
| 2000 08 31 | 704 | 0.0 | 0.1− | 2001 12 20 | 704 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2000 08 31 | 704 | 0.6+ | 1.4+ | 2001 12 20 | 704 | 0.6− | 0.5+ | 2006 11 14 | G96 | 0.4+ | 0.0 |
| 2000 08 31 | 704 | 0.5+ | 0.2+ | 2001 12 20 | 704 | 0.1− | 0.7− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2000 08 31 | 704 | 0.5− | 0.5+ | 2001 12 24 | 691 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.2− |
| 2000 08 31 | 704 | 0.6− | 0.1+ | 2001 12 24 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2000 09 03 | 704 | 1.7+ | 0.4− | 2001 12 24 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 1.0− | 0.1− |
| 2000 09 03 | 704 | 1.7+ | 0.1+ | 2004 04 13 | 691 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2000 09 03 | 704 | 0.5+ | 0.5+ | 2004 04 13 | 691 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 0.3− | 0.7− |
| 2000 09 03 | 691 | 0.1− | 0.1− | 2004 04 13 | 691 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.2− | 1.4− |
| 2000 09 03 | 691 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 18 | 704 | (0.1+ | 1.7−) |
| 2000 09 03 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.7− | 0.1+ |
| 2000 09 04 | 699 | 1.7− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.5− | 0.9− |
| 2000 09 04 | 699 | 0.8− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2000 09 04 | 699 | 1.4− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 1.0+ |
| 2000 09 04 | 699 | 0.3− | 0.8+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.9+ |
| 2001 11 09 | 704 | 0.8+ | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 0.2+ | 0.5− | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 26 | 704 | 0.2+ | 1.1+ |
| 2001 11 09 | 704 | 0.5+ | 0.5− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 26 | 704 | 0.1− | 0.3+ |
| 2001 11 09 | 704 | 0.8+ | 0.6− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 26 | 704 | 0.2− | 0.0 |
| 2001 11 12 | 704 | (0.3− | 1.8+) | 2006 10 19 | 691 | 0.2− | 0.1+ | | | | |

**(138537)∗ 2000 OK$_{67}$**

Discovered 2000 July 29 by M. W. Buie and S. D. Kern at Cerro Tololo.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.16848 | | (2000.0) | | | |
| $n$ | 0.00311140 | $\omega$ | 358.34532 | | +0.99890205 | −0.04640275 |
| $a$ | 46.4692694 | $\Omega$ | 4.33009 | | +0.04390208 | +0.87923329 |
| $e$ | 0.1378997 | $i$ | 4.89321 | | +0.01634930 | +0.47412615 |
| $P$ | 317 | $H$ | 5.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.2− | 0.2+ | 2001 05 19 | 568 | 0.0 | 0.1+ | 2003 07 07 | 568 | 0.5− | 0.1− |
| 2000 07 29 | 807 | 0.3− | 0.2+ | 2001 05 20 | 568 | 0.1+ | 0.2+ | 2003 07 08 | 568 | 0.5− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.4− | 0.3+ | 2001 06 26 | 568 | 0.4+ | 0.2− | 2003 07 09 | 568 | 0.7− | 0.1− |
| 2000 08 01 | 807 | 0.1− | 0.2+ | 2001 06 26 | 568 | 0.3+ | 0.2− | 2003 07 09 | 568 | 0.1− | 0.5− |
| 2000 08 26 | 807 | 0.1− | 0.1+ | 2001 06 26 | 568 | 0.5+ | 0.1+ | 2005 09 30 | 688 | 0.5+ | 0.5+ |
| 2000 08 26 | 807 | 0.2− | 0.1+ | 2001 06 27 | 568 | 0.1− | 0.2− | 2005 09 30 | 688 | 0.0 | 0.2+ |
| 2000 08 27 | 807 | 0.2− | 0.1+ | 2001 07 20 | 568 | 0.5+ | 0.0 | 2006 08 21 | 807 | 0.1+ | 0.1− |
| 2000 08 27 | 807 | 0.3− | 0.1− | 2001 07 21 | 568 | 0.3− | 0.1+ | 2006 08 22 | 807 | 0.1+ | 0.0 |
| 2000 09 19 | 695 | 0.2− | 0.4− | 2001 10 11 | 304 | 0.2− | 0.0 | 2006 08 23 | 807 | 0.0 | 0.1− |
| 2000 09 19 | 695 | 0.3− | 0.3− | 2001 10 11 | 304 | 0.1− | 0.2+ | 2006 08 23 | 807 | 0.1+ | 0.2− |
| 2000 11 26 | 695 | 0.4+ | 0.3+ | 2002 07 11 | 304 | 0.0 | 0.2+ | 2006 09 25 | 688 | 0.1− | 0.0 |
| 2000 11 27 | 695 | 0.0 | 0.3− | 2002 07 11 | 304 | 0.0 | 0.0 | 2006 09 25 | 688 | 0.1+ | 0.3+ |
| 2000 11 27 | 695 | 0.1+ | 0.3− | 2003 07 06 | 568 | 0.8− | 0.2− | | | | |

**(138538)∗ 2000 PL$_3$ = 2001 XR$_{118}$**

Discovered 2000 Aug. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22276)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.49978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35534393 | $\omega$ | 261.13309 | | −0.80126004 | +0.56048568 | |
| $a$ | 1.9741044 | $\Omega$ | 312.63249 | | −0.37269508 | −0.74131002 | |
| $e$ | 0.0711226 | $i$ | 16.53427 | | −0.46806061 | −0.36920897 | |
| $P$ | 2.77 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 1.0− | 0.1− | 2002 01 21 | 704 | 0.8− | 0.1+ | 2002 03 09 | 704 | 0.5+ | 0.6+ |
| 2000 08 01 | 704 | 0.7+ | 1.2+ | 2002 01 21 | 704 | 0.7− | 0.1+ | 2002 03 09 | 704 | 0.7− | 0.4+ |
| 2000 08 01 | 704 | 1.1− | 0.5+ | 2002 01 21 | 704 | 0.8− | 0.5+ | 2002 03 09 | 704 | 0.5+ | 0.3+ |
| 2000 08 01 | 704 | 0.2+ | 0.7+ | 2002 01 21 | 704 | 1.0− | 0.7+ | 2002 03 09 | 704 | (0.7+ | 2.1+) |
| 2000 08 01 | 704 | 0.4− | 1.2+ | 2002 01 21 | 704 | 0.7− | 0.2+ | 2002 03 16 | 704 | 0.3− | 1.1+ |
| 2000 08 04 | 704 | 0.9− | 1.1+ | 2002 02 04 | 699 | 0.1− | 0.1+ | 2002 03 16 | 704 | 0.6+ | 1.0+ |
| 2000 08 04 | 704 | 0.2+ | 0.0 | 2002 02 04 | 699 | 0.1− | 0.2− | 2002 03 16 | 704 | 0.2+ | 0.0 |
| 2000 08 04 | 704 | 0.4− | 0.5+ | 2002 02 04 | 699 | 0.2− | 0.2+ | 2002 03 16 | 704 | 0.7+ | 0.6+ |
| 2000 08 24 | 704 | 0.0 | 0.1+ | 2002 02 04 | 699 | 0.5− | 0.0 | 2003 08 25 | 644 | 0.6− | 0.5+ |
| 2000 08 24 | 704 | 0.7− | 0.8+ | 2002 02 07 | 704 | 0.1+ | 0.3+ | 2003 08 25 | 644 | 0.5− | 0.4+ |
| 2000 08 24 | 704 | 0.3− | 0.2+ | 2002 02 07 | 704 | 0.2+ | 0.0 | 2003 08 25 | 644 | 0.5− | 0.3+ |
| 2000 08 24 | 704 | (1.3− | 2.1+) | 2002 02 07 | 704 | 0.1− | 0.3− | 2003 09 19 | 608 | 0.4− | 0.3+ |
| 2000 08 24 | 704 | 0.8− | 1.5+ | 2002 02 07 | 704 | (0.3− | 1.9−) | 2003 09 19 | 608 | 0.8− | 1.0+ |
| 2001 12 13 | 704 | 0.9+ | 0.1+ | 2002 02 07 | 704 | 0.4− | 0.1+ | 2003 09 19 | 608 | 0.4− | 0.6+ |
| 2001 12 13 | 704 | 0.4+ | 0.1+ | 2002 02 08 | 691 | 0.2− | 0.3+ | 2003 10 14 | 644 | 0.1− | 0.4+ |
| 2001 12 13 | 704 | (1.5+ | 0.1+) | 2002 02 08 | 691 | 0.0 | 0.3+ | 2003 10 14 | 644 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 0.8+ | 0.7− | 2002 02 08 | 691 | 0.2− | 0.3+ | 2003 10 14 | 644 | 0.0 | 0.4+ |
| 2001 12 17 | 704 | 0.9+ | 0.3+ | 2002 02 10 | 704 | (0.9+ | 4.8+) | 2003 10 19 | 699 | 0.0 | 0.4+ |
| 2001 12 17 | 704 | (1.8+ | 0.3+) | 2002 02 10 | 704 | (0.9+ | 5.2+) | 2003 10 19 | 699 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | (1.7+ | 0.3+) | 2002 02 10 | 704 | (1.1+ | 6.1+) | 2003 10 19 | 699 | 0.5+ | 0.4− |
| 2001 12 17 | 704 | 0.3+ | 0.3+ | 2002 02 10 | 704 | (0.8+ | 6.0+) | 2003 10 19 | 699 | 1.1− | 0.8− |
| 2002 01 06 | 691 | 0.6− | 0.1− | 2002 02 10 | 704 | (0.7+ | 6.8+) | 2003 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 01 06 | 691 | 0.8− | 0.1− | 2002 02 11 | 644 | 0.5+ | 0.1− | 2003 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 01 06 | 691 | 0.7− | 0.2− | 2002 02 11 | 644 | 0.3+ | 0.2+ | 2003 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 01 07 | 691 | 0.1+ | 0.2+ | 2002 02 11 | 644 | 0.3− | 0.2+ | 2005 04 01 | E12 | 0.6+ | 0.5+ |
| 2002 01 07 | 691 | 0.3+ | 0.2+ | 2002 02 11 | 704 | 0.4+ | 0.1− | 2005 04 01 | E12 | 0.3+ | 0.1− |
| 2002 01 07 | 691 | 0.2+ | 0.1+ | 2002 02 11 | 704 | 0.8+ | 0.2+ | 2005 04 01 | E12 | 0.5+ | 0.4− |
| 2002 01 08 | 608 | 0.3+ | 0.0 | 2002 02 11 | 704 | 0.5+ | 0.1+ | 2005 04 01 | E12 | 0.7+ | 0.5+ |
| 2002 01 08 | 608 | 0.3+ | 0.4+ | 2002 02 11 | 704 | 0.5+ | 0.1+ | 2005 04 03 | 704 | 0.4+ | 1.3− |
| 2002 01 08 | 608 | 0.2+ | 0.1+ | 2002 02 11 | 704 | 0.9+ | 0.1− | 2005 04 03 | 704 | 0.4− | 1.0+ |
| 2002 01 09 | 704 | 0.5+ | 0.1+ | 2002 02 13 | 704 | 0.4+ | 0.5+ | 2005 04 03 | 704 | 0.0 | 0.6+ |
| 2002 01 09 | 704 | 0.5+ | 0.4− | 2002 02 13 | 704 | 0.2+ | 0.5+ | 2005 04 03 | 704 | 0.8− | 0.0 |
| 2002 01 09 | 704 | 0.8+ | 0.1− | 2002 02 13 | 704 | 0.5+ | 0.3− | 2006 09 28 | 106 | 1.2+ | 0.2− |
| 2002 01 09 | 704 | 0.9+ | 0.6− | 2002 02 13 | 704 | 0.6+ | 0.3− | 2006 09 29 | 106 | 0.2− | 0.7− |
| 2002 01 09 | 704 | 0.6+ | 0.4− | 2002 02 13 | 704 | 0.6+ | 0.2+ | 2006 09 29 | 106 | 0.5+ | 0.4− |
| 2002 01 14 | 608 | 0.6+ | 0.0 | 2002 02 20 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 106 | 0.5+ | 0.5− |
| 2002 01 14 | 704 | 0.1+ | 0.0 | 2002 02 20 | 704 | 0.8− | 0.1− | 2006 10 31 | 703 | 0.6+ | 0.5− |
| 2002 01 14 | 608 | 1.0+ | 0.1+ | 2002 02 20 | 704 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.3− | 1.0+ |
| 2002 01 14 | 608 | 0.7+ | 0.2+ | 2002 02 20 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 0.7− | 0.9− |
| 2002 01 14 | 704 | 0.2+ | 0.3− | 2002 02 20 | 704 | 0.3+ | 0.1+ | 2006 11 21 | 703 | 0.1− | 0.3− |
| 2002 01 14 | 704 | 0.1+ | 0.1+ | 2002 02 20 | 691 | 0.0 | 0.0 | 2006 11 21 | 703 | 0.4− | 0.2− |
| 2002 01 14 | 704 | 0.0 | 0.0 | 2002 02 20 | 704 | 0.3+ | 0.2− | 2006 11 21 | 703 | 0.5− | 0.6+ |
| 2002 01 14 | 704 | 0.0 | 0.3− | 2002 02 20 | 704 | 0.4+ | 0.6− | 2006 11 21 | 703 | 0.1− | 0.0 |

**(138539)∗ 2000 PB$_6$**

Discovered 2000 Aug. 5 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.61431 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17495739 | $\omega$ | 120.90197 | | +0.60457573 | +0.79476244 | |
| $a$ | 3.1660263 | $\Omega$ | 187.05153 | | −0.79415153 | +0.60659238 | |
| $e$ | 0.2742337 | $i$ | 25.73250 | | +0.06173766 | +0.01995840 | |
| $P$ | 5.63 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 03 | 675 | 0.4+ | 0.8− | 2005 05 13 | 699 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.3− |
| 1994 06 03 | 675 | 1.0− | 1.2− | 2005 05 13 | 699 | 0.3+ | 0.3+ | 2006 09 17 | 703 | 0.5+ | 0.4− |
| 2000 06 11 | 704 | 0.4+ | 0.4− | 2005 05 13 | 699 | 0.6+ | 0.4− | 2006 09 17 | 703 | 0.0 | 0.2− |
| 2000 06 11 | 704 | 0.3+ | 0.7+ | 2005 05 13 | 699 | 0.4+ | 0.3− | 2006 09 17 | 703 | 0.1+ | 0.2− |
| 2000 06 11 | 704 | 1.4+ | 0.5+ | 2005 05 30 | 703 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.0 |
| 2000 08 04 | 704 | 0.2+ | 0.5− | 2005 05 30 | 703 | 1.2− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2000 08 04 | 704 | 0.5+ | 0.3+ | 2005 05 30 | 703 | (1.9− | 0.2−) | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2000 08 04 | 704 | 0.5+ | 1.3+ | 2005 05 30 | 703 | 0.8− | 1.3+ | 2006 09 19 | 699 | 0.0 | 0.1+ |
| 2000 08 04 | 704 | 0.4− | 0.5− | 2005 06 02 | 704 | 0.9+ | 0.5+ | 2006 09 20 | 704 | 0.3− | 0.1+ |
| 2000 08 05 | 608 | 0.3− | 1.4− | 2005 06 02 | 704 | 1.4+ | 1.1+ | 2006 09 20 | 704 | 0.1+ | 0.4+ |
| 2000 08 05 | 608 | 0.4− | 1.3− | 2005 06 02 | 704 | (0.1+ | 2.0+) | 2006 09 20 | 704 | 0.1+ | 0.2+ |
| 2000 08 05 | 608 | 0.5− | 1.3− | 2005 06 02 | 704 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.3+ |
| 2000 08 07 | 608 | 1.0− | 1.5− | 2005 06 02 | 704 | 0.7+ | 1.0+ | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 2000 08 07 | 608 | 1.0− | 1.5− | 2005 06 07 | 703 | 0.3− | 0.4+ | 2006 09 21 | A50 | 0.1+ | 0.3− |
| 2000 08 07 | 608 | 1.1− | 1.4− | 2005 06 07 | 703 | 0.8− | 0.6+ | 2006 09 24 | 691 | 0.4+ | 0.2+ |
| 2000 09 01 | 704 | 0.2+ | 0.0 | 2005 06 07 | 703 | 0.2− | 0.2− | 2006 09 24 | 691 | 0.4+ | 0.0 |
| 2000 09 01 | 704 | 0.4+ | 0.1+ | 2005 06 07 | 703 | 0.6− | 0.2− | 2006 09 24 | 691 | 0.4+ | 0.0 |
| 2000 09 01 | 704 | 0.9+ | 0.8− | 2005 06 08 | 699 | 0.5+ | 1.3+ | 2006 09 24 | 608 | 0.7+ | 1.4− |
| 2000 09 01 | 704 | 0.2+ | 0.2+ | 2005 06 08 | 699 | 1.0+ | 0.1− | 2006 09 24 | 608 | 0.6+ | 1.5− |
| 2000 09 01 | 704 | 0.5+ | 0.1− | 2005 06 08 | 699 | 0.5+ | 0.2+ | 2006 09 24 | 608 | (1.1+ | 1.8−) |
| 2000 09 22 | 704 | 0.4+ | 0.4+ | 2005 06 08 | 699 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2000 09 22 | 704 | 0.2+ | 0.4+ | 2006 08 19 | 683 | (2.5+ | 0.6+) | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2000 09 22 | 704 | 0.3+ | 0.1− | 2006 08 19 | 683 | (3.7+ | 0.1−) | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2000 09 26 | 704 | 0.1− | 0.3+ | 2006 08 19 | 683 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2000 09 26 | 704 | 0.3− | 0.0 | 2006 08 24 | 704 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2000 09 26 | 704 | 0.0 | 0.4+ | 2006 08 24 | 704 | 0.7+ | 1.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2000 09 26 | 704 | 0.1+ | 0.7+ | 2006 08 24 | 704 | 0.8+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2000 09 26 | 704 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 704 | 1.4+ | 1.2+ |
| 2001 12 13 | 644 | 1.1+ | 0.5+ | 2006 08 24 | 704 | 0.7+ | 0.3− | 2006 09 27 | 704 | (1.6+ | 1.4+) |
| 2001 12 13 | 644 | 0.4+ | 0.7+ | 2006 08 26 | 704 | 0.4+ | 0.8+ | 2006 09 27 | 704 | 1.3+ | 1.4+ |
| 2001 12 13 | 644 | 0.7+ | 0.6+ | 2006 08 26 | 704 | 0.1− | 0.9+ | 2006 09 27 | 704 | (1.6+ | 1.3+) |
| 2005 04 03 | 644 | 0.5+ | 0.3+ | 2006 08 26 | 704 | 0.3+ | 0.7+ | 2006 09 27 | 704 | (1.6+ | 1.1+) |
| 2005 04 03 | 644 | 0.5+ | 0.4+ | 2006 08 26 | 704 | (0.5− | 2.0+) | 2006 09 28 | 704 | 0.5+ | 0.2− |
| 2005 04 03 | 644 | 0.5+ | 0.6+ | 2006 08 26 | 704 | 1.4− | 1.3+ | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 2005 04 04 | 703 | 0.6− | 0.8− | 2006 08 26 | 704 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.6+ | 0.4+ |
| 2005 04 04 | 703 | 0.8− | 0.1+ | 2006 08 26 | 704 | 0.8− | 0.6+ | 2006 09 28 | 704 | 0.6+ | 0.2+ |
| 2005 04 04 | 703 | 0.5− | 0.3− | 2006 08 29 | 699 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 1.1+ | 0.6+ |
| 2005 04 04 | 703 | 1.3− | 0.7+ | 2006 08 29 | 699 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.3+ |
| 2005 04 09 | 683 | 0.3+ | 0.4+ | 2006 08 29 | 699 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.2+ |
| 2005 04 09 | 683 | (2.7+ | 0.0 ) | 2006 08 29 | 699 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.3+ |
| 2005 04 09 | 683 | 1.1− | 1.0+ | 2006 08 30 | 704 | 0.9− | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.1− |
| 2005 04 13 | 703 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.7− | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.4− |
| 2005 04 13 | 703 | 0.5− | 0.2− | 2006 08 30 | 704 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2005 04 13 | 703 | 0.2+ | 0.5− | 2006 08 30 | 704 | 1.1− | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2005 04 13 | 703 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 04 18 | 704 | 0.2+ | 0.6+ | 2006 08 31 | 704 | 1.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2005 04 18 | 704 | 0.6− | 1.2+ | 2006 08 31 | 704 | 0.8− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 04 18 | 704 | 0.0 | 0.7+ | 2006 08 31 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2005 04 18 | 704 | 1.3− | 1.5+ | 2006 08 31 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 04 18 | 704 | 0.0 | 0.9+ | 2006 08 31 | 704 | (2.1− | 0.7+) | 2006 10 21 | 703 | 0.7− | 1.4+ |
| 2005 05 03 | 703 | 0.1− | 0.2− | 2006 09 14 | A50 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 05 03 | 703 | 0.3− | 0.3− | 2006 09 14 | A50 | 0.4− | 0.1+ | 2006 10 21 | 703 | 1.1− | 0.0 |
| 2005 05 03 | 703 | 0.7− | 0.3+ | 2006 09 15 | 704 | 0.8+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 05 03 | 703 | 0.2− | 0.4+ | 2006 09 15 | 704 | 0.3+ | 0.5− | 2006 10 21 | 703 | 1.0− | 1.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 703 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 1.3− | 1.3− |
| 2005 05 09 | 703 | 0.1+ | 0.2+ | 2006 09 15 | 704 | 0.1− | 0.3+ | 2006 10 22 | 704 | 0.4− | 0.1+ |
| 2005 05 09 | 703 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.6− | 0.8+ | 2006 10 22 | 704 | 0.7− | 0.1+ |
| 2005 05 12 | 704 | (2.9+ | 1.5−) | 2006 09 17 | 704 | 0.2− | 1.4− | 2006 10 22 | 704 | 0.4− | 0.9− |
| 2005 05 12 | 704 | (0.1+ | 1.8+) | 2006 09 17 | 704 | (2.4− | 0.8+) | 2006 10 22 | 704 | 1.1− | 0.8+ |
| 2005 05 12 | 704 | 0.1− | 0.8+ | 2006 09 17 | 704 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.4− | 1.8+ |
| 2005 05 12 | 608 | (1.5+ | 0.6+) | 2006 09 17 | 704 | 1.1− | 0.0 | 2006 11 17 | 704 | 0.3+ | 1.2+ |
| 2005 05 12 | 704 | 0.8+ | 0.9+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 1.4− | 2.0+ |
| 2005 05 12 | 608 | 0.9+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.4− |
| 2005 05 12 | 608 | 1.5+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.0 | | | | |

**(138540)∗ 2000 PZ$_{14}$ = 2001 VC$_{94}$**

Discovered 2000 Aug. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22284)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.99470 | | (2000.0) | | | |
| $n$ | 0.18081091 | $\omega$ | 256.99552 | | +0.92847797 | −0.30164422 |
| $a$ | 3.0973215 | $\Omega$ | 120.18811 | | +0.35385217 | +0.89564993 |
| $e$ | 0.1955115 | $i$ | 14.51587 | | −0.11277099 | +0.32683629 |
| $P$ | 5.45 | $H$ | 13.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 04 | 699 | (1.4− | 3.0+) | 2001 12 20 | 209 | 0.0 | 0.3+ | 2003 03 08 | 704 | 0.5− | 1.1+ |
| 2000 07 04 | 699 | 1.7− | 0.2+ | 2001 12 20 | 209 | 0.7− | 0.1− | 2004 03 30 | 691 | 0.0 | 0.2+ |
| 2000 07 04 | 699 | 0.6− | 0.0 | 2002 01 07 | 699 | 0.5− | 0.2+ | 2004 03 30 | 691 | 0.3+ | 0.2+ |
| 2000 07 04 | 699 | 0.2− | 0.2+ | 2002 01 07 | 699 | 0.7− | 0.4− | 2004 03 30 | 691 | 0.0 | 0.3+ |
| 2000 08 01 | 704 | 0.3+ | 0.5+ | 2002 01 07 | 699 | 0.1− | 0.4− | 2004 04 25 | 699 | (1.6+ | 0.2−) |
| 2000 08 01 | 704 | 0.1+ | 0.3− | 2002 01 07 | 699 | 1.0− | 0.5+ | 2004 04 25 | 699 | 0.7− | 0.4− |
| 2000 08 01 | 704 | 0.6+ | 1.2+ | 2002 01 08 | 608 | 0.6+ | 1.2− | 2004 04 25 | 699 | 0.7− | 0.2+ |
| 2000 08 01 | 704 | 0.0 | 0.6+ | 2002 01 08 | 608 | 0.5+ | 0.5− | 2004 04 25 | 699 | 0.8+ | 0.7+ |
| 2000 08 01 | 704 | 0.6+ | 0.4+ | 2002 01 08 | 608 | 0.9+ | 0.7− | 2005 07 05 | 704 | 0.3+ | 1.3+ |
| 2000 08 07 | 608 | 0.1− | 0.0 | 2002 02 02 | 608 | 0.3+ | 0.5− | 2005 07 05 | 704 | 0.1+ | 0.1+ |
| 2000 08 07 | 608 | 0.0 | 0.2− | 2002 02 02 | 608 | 0.1+ | 0.1− | 2005 07 05 | 704 | 0.5+ | 0.5+ |
| 2000 08 07 | 608 | 0.4− | 0.2− | 2002 02 02 | 608 | 0.0 | 0.0 | 2005 07 05 | 704 | 1.3+ | 0.1− |
| 2001 11 15 | 704 | 0.2+ | 0.3+ | 2003 01 27 | 704 | 0.3− | 0.0 | 2006 09 12 | 704 | (0.5− | 2.5+) |
| 2001 11 15 | 704 | 0.2− | 1.1+ | 2003 01 27 | 704 | 0.5− | 0.6+ | 2006 09 12 | 704 | (1.8− | 1.7+) |
| 2001 11 15 | 704 | 0.2− | 1.0+ | 2003 01 27 | 704 | 0.1− | 0.8+ | 2006 09 12 | 704 | 1.4− | 0.7+ |
| 2001 11 15 | 704 | 0.4+ | 0.7+ | 2003 01 27 | 704 | 0.1− | 0.7+ | 2006 09 22 | 703 | 0.4− | 0.6+ |
| 2001 11 15 | 704 | 0.1+ | 0.0 | 2003 01 28 | 704 | 0.8+ | 0.6+ | 2006 09 22 | 703 | 0.1− | 0.6+ |
| 2001 11 18 | 704 | 0.3+ | 0.5− | 2003 01 28 | 704 | 0.3+ | 0.9+ | 2006 09 22 | 703 | 0.9− | 0.5+ |
| 2001 11 18 | 704 | 0.4+ | 0.2− | 2003 01 28 | 704 | 0.7+ | 1.2+ | 2006 09 22 | 703 | 0.0 | 0.5+ |
| 2001 11 18 | 704 | 0.6+ | 0.3− | 2003 01 28 | 704 | 0.8+ | 0.7+ | 2006 09 24 | 699 | 0.8− | 0.3+ |
| 2001 11 18 | 704 | 0.3+ | 0.6− | 2003 01 30 | 704 | 0.3− | 0.1+ | 2006 09 24 | 699 | 0.1+ | 0.3+ |
| 2001 11 18 | 704 | 1.2+ | 0.5− | 2003 01 30 | 704 | 0.2− | 0.1− | 2006 09 24 | 699 | 0.3− | 0.3− |
| 2001 12 07 | 704 | 0.2− | 0.3− | 2003 01 30 | 704 | 0.7− | 0.6+ | 2006 09 24 | 699 | 0.0 | 1.1+ |
| 2001 12 07 | 704 | 1.0+ | 0.5+ | 2003 01 30 | 704 | 0.3− | 0.3− | 2006 09 24 | 699 | 0.6− | 0.3+ |
| 2001 12 07 | 704 | 0.9− | 0.0 | 2003 01 30 | 704 | 1.0− | 1.4+ | 2006 09 24 | 699 | 0.2+ | 0.9+ |
| 2001 12 07 | 704 | 0.5− | 0.3− | 2003 02 04 | 699 | 0.4+ | 0.7− | 2006 09 24 | 699 | 0.6− | 0.5+ |
| 2001 12 19 | 704 | 0.2+ | 0.3+ | 2003 02 04 | 699 | 0.5− | 0.3+ | 2006 09 24 | 699 | 0.1+ | 0.8+ |
| 2001 12 19 | 704 | 0.1− | 0.4+ | 2003 02 04 | 699 | 0.4− | 0.3+ | 2006 10 25 | E12 | 0.3+ | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2003 02 04 | 699 | 0.1+ | 0.2+ | 2006 10 25 | E12 | 0.6+ | 0.4+ |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2003 03 07 | 644 | 0.8+ | 0.1− | 2006 10 25 | E12 | 0.4+ | 0.2+ |
| 2001 12 19 | 704 | 0.2− | 0.1− | 2003 03 07 | 644 | 0.6+ | 0.4− | 2006 10 25 | E12 | 0.2+ | 0.3+ |
| 2001 12 19 | 209 | 0.1+ | 0.3+ | 2003 03 07 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2001 12 19 | 209 | 0.1− | 0.2+ | 2003 03 08 | 704 | 1.3+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2001 12 19 | 209 | 0.0 | 0.2+ | 2003 03 08 | 704 | 0.4+ | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2001 12 20 | 209 | 0.1− | 0.2+ | 2003 03 08 | 704 | 0.1− | 1.5+ | | | | |

**(138541)∗ 2000 PV$_{20}$ = 1992 WB$_{7}$**

Discovered 2000 Aug. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 4595)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 163.45075 | | (2000.0) | | | |
| $n$ | 0.21974020 | $\omega$ | 180.44483 | | +0.29282482 | +0.94000104 |
| $a$ | 2.7197545 | $\Omega$ | 106.58982 | | −0.87670013 | +0.33703236 |
| $e$ | 0.1341244 | $i$ | 10.52593 | | −0.38164186 | −0.05298338 |
| $P$ | 4.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 20 | 691 | 0.3− | 0.3− | 2000 08 07 | 608 | 1.1− | 0.8− | 2004 07 16 | 704 | 0.4+ | 0.6+ |
| 1992 11 20 | 691 | 0.0 | 0.5+ | 2000 08 07 | 608 | 1.2− | 1.3− | 2005 11 06 | 703 | 0.4+ | 1.1+ |
| 1992 11 20 | 691 | 0.0 | 0.0 | 2000 08 07 | 608 | 1.4− | 1.6− | 2005 11 06 | 703 | 1.0− | 0.3− |
| 1992 11 20 | 691 | 0.0 | 0.3+ | 2000 08 21 | 699 | 0.9+ | 0.6+ | 2005 11 06 | 703 | 0.4− | 0.1+ |
| 1992 11 20 | 691 | 0.3+ | 0.4− | 2000 08 21 | 699 | 1.4+ | 0.2+ | 2005 11 06 | 703 | 0.2− | 0.4− |
| 1992 11 20 | 691 | 0.2+ | 0.3− | 2000 08 21 | 699 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.1− | 1.3− |
| 1992 11 24 | 691 | 0.1+ | 0.5+ | 2000 08 21 | 699 | 0.2− | 1.5− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 1992 11 24 | 691 | 0.1− | 0.2− | 2000 08 26 | 704 | 0.8− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 1992 11 24 | 691 | 0.3− | 0.2+ | 2000 08 26 | 704 | (0.1+ | 2.3+) | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 1998 01 02 | 691 | 0.3− | 0.3+ | 2000 08 26 | 704 | 0.4− | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 1998 01 02 | 691 | 0.2− | 0.3− | 2004 06 11 | 704 | 0.2− | 0.5+ | 2006 11 01 | G96 | 0.4+ | 0.2− |
| 1998 01 02 | 691 | 0.5+ | 0.7+ | 2004 06 11 | 704 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2000 08 01 | 704 | 0.0 | 0.7+ | 2004 06 11 | 704 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2000 08 01 | 704 | 1.0+ | 0.5+ | 2004 06 11 | 704 | 0.7+ | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2000 08 01 | 704 | 0.7+ | 0.6+ | 2004 06 11 | 704 | 1.0− | 0.8+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2000 08 01 | 704 | 1.5+ | 0.5+ | 2004 07 16 | 704 | (2.1+ | 0.1−) | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2000 08 01 | 704 | 1.1+ | 1.5+ | 2004 07 16 | 704 | 0.6+ | 1.4+ | 2006 11 27 | G96 | 0.2+ | 0.2+ |

**(138542)∗ 2000 PK$_{25}$ = 2004 DE$_{6}$**

Discovered 2000 Aug. 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 60702)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.21302 | | (2000.0) | | | |
| $n$ | 0.18262993 | $\omega$ | 184.01677 | | −0.07073625 | +0.99724130 |
| $a$ | 3.0767208 | $\Omega$ | 81.92799 | | −0.91454950 | −0.05583304 |
| $e$ | 0.2262030 | $i$ | 1.30206 | | −0.39824062 | −0.04891272 |
| $P$ | 5.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 29 | 691 | 0.1− | 0.2− | 2001 11 21 | 704 | (1.8+ | 0.1+) | 2006 10 01 | 691 | 0.4− | 0.2− |
| 1998 01 29 | 691 | (3.4− | 5.4−) | 2001 11 21 | 704 | 0.5+ | 0.2+ | 2006 10 13 | D35 | 0.0 | 0.1+ |
| 1998 01 29 | 691 | 0.2− | 0.4− | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 13 | D35 | 0.3− | 0.1+ |
| 2000 08 03 | 691 | 0.0 | 0.1+ | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 10 13 | D35 | 0.3− | 0.0 |
| 2000 08 03 | 691 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 2000 08 03 | 691 | 0.0 | 0.1− | 2004 02 18 | 291 | 0.0 | 0.1+ | 2006 10 21 | 703 | (0.2+ | 2.0+) |
| 2000 08 07 | 608 | 1.5− | 0.9− | 2004 02 18 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 703 | (0.6− | 1.6+) |
| 2000 08 07 | 608 | 1.4− | 0.9− | 2004 02 18 | 291 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.2− |
| 2000 08 07 | 608 | 1.6− | 0.8− | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2000 08 24 | 704 | 0.1− | 0.8+ | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2000 08 24 | 704 | 0.3+ | 1.4+ | 2004 03 14 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 1.1+ | 0.3+ |
| 2000 08 24 | 704 | 0.6+ | 1.0+ | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2000 08 24 | 704 | 0.3+ | 0.3+ | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.5+ | 0.3− |
| 2000 08 24 | 704 | 0.6+ | 0.7+ | 2004 03 30 | 691 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.5+ |
| 2000 08 27 | 807 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 2000 08 27 | 807 | 0.0 | 0.4+ | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2000 08 29 | 704 | (1.5+ | 4.1+) | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.7+ | 0.3− |
| 2000 08 29 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2000 08 29 | 704 | 0.3+ | 1.2+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2000 08 29 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.4− | 0.1+ |
| 2001 11 21 | 704 | 1.1+ | 1.2− | 2006 10 01 | 691 | 0.5− | 0.2+ | | | | |

**(138543)∗ 2000 QR$_{6}$ = 1977 RL$_{11}$**

Discovered 2000 Aug. 25 by S. Sposetti at Gnosca.

Id. G. V. Williams (*MPO* 4600)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.59476 | | (2000.0) | | +0.95126815 | −0.30752411 |
| $n$ | 0.17241352 | $\omega$ | 220.03148 | | +0.29610904 | +0.89037152 |
| $a$ | 3.1970922 | $\Omega$ | 157.84692 | | +0.08607178 | +0.33565976 |
| $e$ | 0.2320027 | $i$ | 3.45977 | | | |
| $P$ | 5.72 | $H$ | 14.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 09 09 | 675 | (1.7− | 2.9−) | 2001 12 20 | 704 | 0.0 | 0.6+ | 2006 09 26 | 704 | (1.5+ | 1.2−) |
| 1977 09 10 | 675 | 0.1+ | 0.3− | 2002 01 05 | 608 | 0.6− | 0.6− | 2006 09 26 | 704 | 0.9+ | 0.9+ |
| 2000 08 24 | 704 | 0.7+ | 1.2+ | 2002 01 05 | 608 | 0.3− | 0.6− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2000 08 24 | 704 | 0.2+ | 0.4− | 2002 01 05 | 608 | 0.5− | 0.6− | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2000 08 24 | 704 | 0.3+ | 0.7− | 2002 01 08 | 644 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2000 08 24 | 704 | 0.1+ | 0.1+ | 2002 01 08 | 644 | 0.2− | 0.4+ | 2006 09 28 | 704 | 0.7+ | 0.2+ |
| 2000 08 24 | 704 | 0.5− | 0.1+ | 2002 01 08 | 644 | 0.0 | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 2000 08 25 | 143 | 0.2− | 0.9+ | 2002 01 09 | 704 | 0.1+ | 1.4+ | 2006 09 28 | 704 | 0.6+ | 0.8+ |
| 2000 08 25 | 143 | (0.3− | 2.3+) | 2002 01 09 | 704 | 0.4+ | 1.1+ | 2006 10 15 | 703 | 0.1+ | 0.4− |
| 2000 08 25 | 143 | 1.4− | 1.1− | 2002 01 09 | 704 | 0.1− | 1.2+ | 2006 10 15 | 703 | 0.1− | 0.1− |
| 2000 08 25 | 143 | 0.7+ | 0.9+ | 2002 01 09 | 704 | 0.1+ | 1.3+ | 2006 10 15 | 703 | 0.0 | 0.5− |
| 2000 08 25 | 143 | 0.8− | 0.0 | 2002 01 09 | 608 | 0.4+ | 1.0− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2000 08 25 | 143 | 0.5− | 0.2+ | 2002 01 09 | 608 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2000 08 25 | 143 | 0.7− | 0.6+ | 2002 01 09 | 704 | 0.2+ | 1.1+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2000 08 26 | 807 | 0.3− | 0.1+ | 2002 01 09 | 608 | 0.3− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2000 08 26 | 807 | 0.2− | 0.1− | 2002 01 13 | 704 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2000 08 28 | 704 | 0.3+ | 0.3+ | 2002 01 13 | 704 | 0.2− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2000 08 28 | 704 | 0.6− | 0.7+ | 2002 01 13 | 704 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2000 08 28 | 704 | 0.2+ | 0.2+ | 2002 01 13 | 704 | 0.6− | 0.8− | 2006 10 21 | 703 | 0.2− | 0.4− |
| 2000 08 28 | 704 | 0.6− | 0.4− | 2002 01 15 | 704 | 0.2+ | 0.8− | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2000 08 31 | 704 | 0.1− | 0.4+ | 2002 01 15 | 704 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2000 08 31 | 704 | 0.7− | 0.5+ | 2002 01 15 | 704 | 0.2+ | 0.7− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2000 08 31 | 704 | 0.1+ | 0.8+ | 2002 01 19 | 704 | 0.4− | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.6− |
| 2000 08 31 | 704 | 0.1− | 0.4+ | 2002 01 19 | 704 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2000 08 31 | 704 | 0.6− | 0.6+ | 2002 01 19 | 704 | 1.3+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2000 09 05 | 704 | 0.3− | 1.0+ | 2002 01 19 | 704 | (1.9− | 0.2−) | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2000 09 05 | 704 | 0.2− | 0.9+ | 2002 01 19 | 704 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2000 09 05 | 704 | 0.5− | 0.8+ | 2002 02 06 | 644 | 0.5− | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2000 09 05 | 704 | 0.7− | 0.3+ | 2002 02 06 | 644 | 0.5− | 0.9+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2000 09 05 | 704 | 0.0 | 0.3+ | 2002 02 06 | 644 | 0.3− | 1.2+ | 2006 10 22 | 691 | 0.2− | 0.3− |
| 2000 09 20 | 608 | (2.3− | 1.1+) | 2003 01 29 | 291 | 0.1− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2000 09 20 | 608 | 2.0− | 1.4+ | 2003 01 29 | 291 | 0.1− | 0.7+ | 2006 10 27 | 704 | 0.6− | 0.3− |
| 2000 09 20 | 608 | (2.3− | 1.3+) | 2003 01 29 | 291 | 0.5− | 0.8+ | 2006 10 27 | 704 | 0.3− | 0.3+ |
| 2000 09 24 | 704 | 0.1+ | 0.4+ | 2003 04 01 | 645 | 0.1+ | 0.1+ | 2006 10 27 | 704 | 0.5− | 0.1+ |
| 2000 09 24 | 704 | 0.4+ | 0.0 | 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 10 27 | 704 | 0.6− | 0.4+ |
| 2000 09 24 | 704 | 0.0 | 0.5+ | 2003 04 07 | 691 | 0.5+ | 0.4+ | 2006 10 27 | 704 | 0.3− | 0.1+ |
| 2000 09 24 | 704 | 0.2+ | 0.1+ | 2003 04 07 | 691 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2000 09 24 | 704 | 0.4+ | 0.4+ | 2003 04 07 | 691 | 0.6+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2000 09 25 | 699 | 0.6− | 0.7+ | 2006 08 25 | 704 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2000 09 25 | 699 | 0.3− | 0.5+ | 2006 08 25 | 704 | 0.4+ | 0.7+ | 2006 11 07 | 644 | 0.1+ | 0.3− |
| 2000 09 25 | 699 | 0.2− | 0.3+ | 2006 08 25 | 704 | 0.4− | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2000 09 25 | 699 | 0.3− | 0.4+ | 2006 08 25 | 704 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 1.0+ | 0.9+ | 2006 08 25 | 704 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 2000 10 01 | 704 | 0.6+ | 0.2+ | 2006 09 15 | 644 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.5+ | 0.3− |
| 2000 10 01 | 704 | 1.1+ | 0.6+ | 2006 09 15 | 644 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2000 10 01 | 699 | 0.5− | 0.2+ | 2006 09 15 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.2+ |
| 2000 10 01 | 699 | 0.6− | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2000 10 01 | 699 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.1+ |
| 2000 10 01 | 699 | 0.3+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.3− | 0.1+ |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.1− | 1.4− | 2006 11 14 | 704 | 0.6+ | 0.5+ |
| 2000 10 02 | 704 | 0.5− | 0.0 | 2006 09 20 | 699 | 0.9− | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.1− |
| 2000 10 02 | 704 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.7+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.1+ |
| 2000 10 02 | 704 | 1.5+ | 0.6− | 2006 09 20 | 699 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2000 10 02 | 704 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.6+ |
| 2001 12 14 | 704 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.2− |
| 2001 12 14 | 704 | 0.3+ | 0.3− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.8− | 0.9− |
| 2001 12 14 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2001 12 14 | 704 | 0.4− | 0.4− | 2006 09 22 | 704 | 0.5+ | 0.6− | 2006 11 20 | 704 | 1.5+ | 0.0 |
| 2001 12 17 | 704 | 1.0+ | 0.6+ | 2006 09 22 | 704 | 0.6+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.8+ |
| 2001 12 17 | 644 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.6+ | 0.3− | 2006 11 20 | 704 | 0.6+ | 0.8+ |
| 2001 12 17 | 644 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.2− |
| 2001 12 17 | 704 | 0.6+ | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 1.2+ | 0.6− |
| 2001 12 17 | 644 | 0.1+ | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2001 12 17 | 704 | 0.9+ | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 1.5+ |
| 2001 12 17 | 704 | (1.4+ | 2.4+) | 2006 09 26 | 704 | 0.5+ | 0.1+ | 2006 11 20 | 704 | 1.3− | 0.5+ |
| 2001 12 20 | 704 | 0.0 | 0.6− | 2006 09 26 | 704 | 0.1+ | 0.6− | 2006 11 20 | 704 | 0.5+ | 0.8− |
| 2001 12 20 | 704 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.2− | 0.7− | | | | |

**(138544)∗ 2000 QY$_9$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.74238 | | (2000.0) | | +0.92121650 | +0.35874708 |
| $n$ | 0.19228040 | $\omega$ | 31.35335 | | −0.38440457 | +0.77970201 |
| $a$ | 2.9728937 | $\Omega$ | 306.87235 | | −0.05994394 | +0.51319130 |
| $e$ | 0.1580541 | $i$ | 10.84626 | | | |
| $P$ | 5.13 | $H$ | 14.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.2− | 0.3+ | 2001 11 11 | 704 | 0.8+ | 1.1+ | 2003 02 22 | 644 | 0.6+ | 0.4+ |
| 2000 08 01 | 704 | 0.2+ | 0.3+ | 2001 12 09 | 704 | 0.5+ | 0.2+ | 2004 03 26 | 704 | 0.6+ | 0.2+ |
| 2000 08 01 | 704 | 0.0 | 0.2− | 2001 12 09 | 704 | 0.4+ | 0.0 | 2004 03 26 | 704 | 0.4− | 0.6− |
| 2000 08 01 | 704 | 0.3− | 0.4− | 2001 12 09 | 704 | 0.8+ | 0.4+ | 2004 03 26 | 704 | 0.3− | 0.6− |
| 2000 08 01 | 704 | 0.4− | 0.2− | 2001 12 09 | 704 | 0.5+ | 0.7+ | 2004 03 26 | 704 | 1.3+ | 0.2+ |
| 2000 08 24 | 704 | 1.4− | 1.3+ | 2001 12 09 | 704 | 0.8+ | 0.7+ | 2004 03 26 | 704 | 0.1− | 0.6− |
| 2000 08 24 | 704 | 0.1− | 0.2+ | 2001 12 14 | 704 | 0.5− | 0.1− | 2006 10 23 | 703 | 1.3+ | 0.4− |
| 2000 08 24 | 704 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.6− | 0.3+ | 2006 10 23 | 703 | 0.5+ | 0.1+ |
| 2000 08 24 | 704 | 1.1+ | 0.1− | 2001 12 14 | 704 | 0.1+ | 0.8− | 2006 10 23 | 703 | 0.1+ | 0.2− |
| 2000 08 26 | 704 | 0.4− | 0.3+ | 2001 12 22 | 704 | 0.0 | 1.2− | 2006 10 29 | 703 | 0.2+ | 0.1− |
| 2000 08 26 | 704 | 0.0 | 0.2+ | 2001 12 22 | 704 | 0.6+ | 1.0− | 2006 10 29 | 703 | 0.1− | 0.2− |
| 2000 08 26 | 704 | 0.6+ | 0.9− | 2001 12 22 | 704 | 0.4− | 0.4− | 2006 10 29 | 703 | 0.7− | 0.4− |
| 2000 08 26 | 704 | 0.2− | 0.6+ | 2001 12 22 | 704 | 0.2+ | 0.8− | 2006 10 29 | 703 | 0.6− | 0.4− |
| 2001 09 25 | 704 | 0.1+ | 0.6+ | 2001 12 22 | 704 | (0.6+ | 1.8−) | 2006 11 15 | 703 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.1+ | 0.8+ | 2002 01 08 | 704 | 0.5− | 0.2− | 2006 11 15 | 703 | 0.0 | 0.6+ |
| 2001 09 25 | 704 | 0.3+ | 0.1+ | 2002 01 08 | 704 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.0 | 0.3− | 2002 01 08 | 704 | 0.8+ | 0.1+ | 2006 11 15 | 703 | 0.6+ | 0.1+ |
| 2001 09 25 | 704 | 0.5− | 0.6+ | 2003 01 31 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 644 | 0.2+ | 0.0 |
| 2001 09 28 | 704 | 0.1− | 1.0+ | 2003 01 31 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2001 09 28 | 704 | 0.5+ | 0.6− | 2003 01 31 | 704 | 0.5− | 0.4+ | 2006 11 17 | 644 | 0.1+ | 0.1− |
| 2001 09 28 | 704 | 0.5− | 0.7− | 2003 01 31 | 704 | (0.2− | 1.7+) | 2006 11 21 | 703 | 0.4− | 0.4− |
| 2001 10 25 | 704 | 0.3− | 0.1+ | 2003 01 31 | 704 | 0.4− | 0.8+ | 2006 11 21 | 703 | 0.1− | 0.2− |
| 2001 10 25 | 704 | 0.7− | 0.7+ | 2003 02 07 | 333 | 0.6− | 0.2− | 2006 11 21 | 703 | 0.0 | 0.4− |
| 2001 10 25 | 704 | 0.3− | 0.2+ | 2003 02 07 | 333 | 0.9− | 0.2− | 2006 11 21 | 703 | 0.2− | 0.2− |
| 2001 10 25 | 704 | 0.2− | 0.6+ | 2003 02 07 | 333 | 0.8− | 0.5− | 2006 11 29 | 704 | 1.4− | 0.3+ |
| 2001 10 25 | 704 | 0.6+ | 0.1− | 2003 02 21 | 644 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.2− | 0.1+ |
| 2001 11 11 | 704 | 0.3+ | 0.1+ | 2003 02 21 | 644 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.7− |
| 2001 11 11 | 704 | 0.5+ | 1.3− | 2003 02 21 | 644 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2001 11 11 | 704 | 0.6− | 0.5+ | 2003 02 22 | 644 | 0.3+ | 0.3+ | | | | |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2003 02 22 | 644 | 1.0+ | 0.3+ | | | | |

**(138545)∗ 2000 QD$_{11}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.64378 | | (2000.0) | | +0.78961218 | +0.60367464 |
| $n$ | 0.18235972 | $\omega$ | 177.01821 | | −0.56687246 | +0.78625781 |
| $a$ | 3.0797592 | $\Omega$ | 145.07933 | | −0.23487914 | +0.13181649 |
| $e$ | 0.1313699 | $i$ | 11.07397 | | | |
| $P$ | 5.40 | $H$ | 14.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.0 | 0.3− | 2001 11 18 | 704 | (1.9+ | 0.1−) | 2006 09 25 | 699 | 1.0+ | 0.5− |
| 2000 07 31 | 807 | 0.2− | 0.3− | 2001 11 18 | 704 | (1.5− | 0.1−) | 2006 09 25 | 699 | 0.2+ | 0.4− |
| 2000 08 01 | 704 | 0.2− | 0.4+ | 2001 11 18 | 704 | 0.1+ | 0.7− | 2006 09 26 | 703 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.1+ | 0.4+ | 2001 11 18 | 704 | 0.7+ | 0.3− | 2006 09 26 | 703 | 0.6− | 0.0 |
| 2000 08 01 | 704 | 0.3+ | 0.5+ | 2001 11 20 | 699 | 1.1+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.9+ |
| 2000 08 01 | 704 | 0.4− | 0.6+ | 2001 11 20 | 699 | 1.2− | 0.6+ | 2006 09 26 | 703 | 0.9+ | 0.4+ |
| 2000 08 01 | 704 | 0.1− | 0.5+ | 2001 11 20 | 699 | 0.5− | 1.1+ | 2006 09 29 | 699 | 1.3+ | 1.0− |
| 2000 08 24 | 704 | 0.6− | 0.2+ | 2001 11 20 | 699 | 0.2+ | 0.7− | 2006 09 29 | 699 | 0.9+ | 0.3− |
| 2000 08 24 | 704 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.1− | 0.3+ |
| 2000 08 24 | 704 | 0.1+ | 1.0− | 2004 03 23 | 704 | 0.6+ | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.1+ |
| 2000 08 24 | 704 | 0.4+ | 0.9− | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 1.1+ |
| 2000 08 24 | 704 | 0.1+ | 0.5+ | 2004 03 23 | 704 | 0.6− | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.1+ |
| 2000 08 26 | 704 | 0.6− | 0.6− | 2004 04 10 | 644 | 0.2+ | 1.3+ | 2006 10 17 | 703 | (1.8+ | 1.2−) |
| 2000 08 26 | 704 | 0.5+ | 0.7− | 2004 04 10 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2000 08 26 | 704 | 1.6− | 0.8− | 2004 04 10 | 644 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2000 08 26 | 704 | 0.2+ | 1.3+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2000 08 26 | 704 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2000 09 04 | 704 | 0.6+ | 1.6+ | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2000 09 04 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.3− |
| 2000 09 04 | 704 | 0.9+ | 0.2− | 2006 09 21 | 699 | 0.0 | 0.8+ | 2006 10 23 | 644 | 0.4− | 0.4− |
| 2000 09 04 | 704 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.9− | 0.5+ |
| 2001 11 15 | 704 | 0.4− | 0.5+ | 2006 09 21 | 699 | 0.7− | 1.1+ | 2006 10 28 | 703 | 0.4+ | 0.3+ |
| 2001 11 15 | 704 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.7− | 0.6− | 2006 10 28 | 703 | 1.0− | 0.4− |
| 2001 11 15 | 704 | (0.0 | 2.1+) | 2006 09 25 | 699 | 0.5+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.1− |

**(138546)∗ 2000 QM$_{12}$ = 2001 XQ$_{33}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22303)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.27151 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18237875 | $\omega$ | 221.08976 | | +0.97673408 | | +0.21203495 |
| $a$ | 3.0795451 | $\Omega$ | 126.64018 | | −0.18480610 | | +0.90819402 |
| $e$ | 0.2011008 | $i$ | 2.29418 | | −0.10879908 | | +0.36086673 |
| $P$ | 5.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.3+ | 0.2− | 2002 01 13 | 704 | 0.7− | 0.1− | 2006 10 22 | 691 | 0.3+ | 0.0 |
| 2000 08 01 | 704 | 0.1− | 0.6+ | 2002 01 13 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2000 08 01 | 704 | 1.1+ | 1.3+ | 2002 01 13 | 704 | 0.7+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2000 08 01 | 704 | 0.3− | 0.4+ | 2003 02 04 | 291 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2000 08 01 | 704 | 1.1− | 0.1+ | 2003 02 04 | 291 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2000 08 20 | 699 | 1.0+ | 1.1− | 2003 02 04 | 291 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2000 08 20 | 699 | 1.5− | 1.2+ | 2004 03 16 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2000 08 20 | 699 | 0.4+ | 0.5− | 2004 03 16 | 691 | 0.7+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2000 08 20 | 699 | 0.7− | 0.3+ | 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2000 08 24 | 704 | 1.3+ | 1.4+ | 2004 04 13 | 691 | 0.1+ | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2000 08 24 | 704 | 0.4− | 1.6+ | 2004 04 13 | 691 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 2000 08 24 | 704 | 0.2+ | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 1.0− | 0.6− |
| 2000 08 24 | 704 | 0.9− | 0.4+ | 2004 04 20 | 691 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2000 08 24 | 704 | 0.2− | 0.3− | 2004 04 20 | 691 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2000 08 26 | 704 | 0.2+ | 0.6+ | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2000 08 26 | 704 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2000 08 26 | 704 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.8+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2000 08 26 | 704 | 0.1− | 1.5+ | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2000 08 26 | 704 | 0.3− | 0.9+ | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2000 09 04 | 699 | 1.1− | 1.0+ | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2000 09 04 | 699 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2000 09 04 | 699 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2000 09 04 | 699 | 0.4− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 2001 12 07 | 704 | 0.4− | 0.1+ | 2006 10 16 | 683 | 0.6+ | 1.1+ | 2006 11 17 | 703 | 0.1− | 1.0+ |
| 2001 12 07 | 704 | 1.2− | 0.5− | 2006 10 16 | 683 | 1.5+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2001 12 07 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.6− | 0.4+ |
| 2001 12 07 | 704 | 0.5− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2001 12 07 | 704 | 0.9− | 0.2+ | 2006 10 16 | 683 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2001 12 14 | 704 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2001 12 14 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 1.2− | 2006 11 19 | 704 | 0.9− | 0.7+ |
| 2001 12 14 | 704 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.9+ |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 10 18 | 691 | 0.7− | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.5+ |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2001 12 17 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 1.0+ |
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.9+ | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2001 12 17 | 704 | 0.3+ | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.1+ | | | | |

**(138547)∗ 2000 QA$_{15}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.30264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18222932 | $\omega$ | 210.04758 | | +0.19821764 | | +0.97998768 |
| $a$ | 3.0812284 | $\Omega$ | 71.39033 | | −0.89539343 | | +0.18862813 |
| $e$ | 0.2006151 | $i$ | 1.10481 | | −0.39872343 | | +0.06358907 |
| $P$ | 5.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 12 | 599 | 0.2+ | 0.7+ | 2001 10 24 | 704 | (0.5− | 2.0+) | 2006 09 25 | G96 | 0.1+ | 0.6− |
| 1996 11 13 | 599 | 0.2− | 0.2− | 2001 10 24 | 704 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.5− |
| 1999 04 15 | 691 | 0.4+ | 0.2+ | 2001 10 24 | 704 | 0.1+ | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 1999 04 15 | 691 | 0.7+ | 0.4+ | 2001 11 14 | 291 | 0.2+ | 0.1+ | 2006 10 13 | D35 | 0.9− | 0.0 |
| 1999 04 15 | 691 | 0.6+ | 0.4+ | 2001 11 14 | 291 | 0.0 | 0.1+ | 2006 10 13 | D35 | 1.3− | 0.8+ |
| 1999 06 06 | 691 | 0.3− | 0.4− | 2001 11 14 | 291 | 0.0 | 0.1+ | 2006 10 13 | D35 | 0.9− | 0.5+ |
| 1999 06 06 | 691 | 0.2− | 0.5+ | 2001 11 20 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.1− |
| 1999 06 06 | 691 | 0.3− | 0.1− | 2001 11 20 | 704 | 0.4− | 0.8+ | 2006 10 16 | 691 | 0.2− | 0.1− |
| 2000 06 09 | 699 | 1.1+ | 1.2+ | 2001 11 20 | 704 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.3− |
| 2000 06 09 | 699 | 1.6+ | 0.1− | 2001 11 20 | 704 | 1.2− | 0.8+ | 2006 10 18 | H07 | 0.1+ | 0.2+ |
| 2000 06 09 | 699 | 1.2+ | 0.9− | 2001 11 20 | 704 | 0.2− | 0.5+ | 2006 10 18 | H07 | 0.8+ | 0.3+ |
| 2000 06 09 | 699 | 0.8+ | 0.8+ | 2001 11 21 | 704 | 1.2+ | 0.1− | 2006 10 18 | H07 | 0.1− | 0.2+ |
| 2000 08 01 | 704 | 0.2+ | 0.5− | 2001 11 21 | 704 | 0.6+ | 0.3− | 2006 10 18 | H07 | 0.6+ | 0.1+ |
| 2000 08 01 | 704 | 0.3− | 0.3− | 2001 11 21 | 704 | 0.2− | 0.8− | 2006 10 19 | 644 | 0.9+ | 0.3+ |
| 2000 08 01 | 704 | 0.2+ | 0.3+ | 2002 12 06 | 645 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2000 08 01 | 704 | 0.1+ | 0.2+ | 2002 12 06 | 645 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2000 08 01 | 704 | 0.3− | 0.8− | 2004 02 22 | 695 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2000 08 21 | 699 | 0.2+ | 1.0− | 2004 02 22 | 695 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2000 08 21 | 699 | 0.3− | 0.1+ | 2004 02 23 | 704 | 0.9+ | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2000 08 21 | 699 | 1.3− | 0.8− | 2004 02 23 | 704 | 0.2+ | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2000 08 21 | 699 | 0.4− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.9+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2000 08 24 | 704 | (2.3+ | 0.7+) | 2004 02 23 | 704 | 0.4+ | 1.0+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2000 08 24 | 704 | 0.6− | 1.7+ | 2005 01 24 | 809 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2000 08 24 | 704 | 0.4− | 0.3+ | 2005 01 24 | 809 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2000 08 24 | 704 | 0.0 | 0.2− | 2005 01 24 | 809 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 08 24 | 704 | 0.2− | 0.3+ | 2005 01 24 | 809 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2000 08 26 | 704 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2000 08 26 | 704 | 0.2+ | 0.3− | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2000 08 26 | 704 | 0.8− | 0.6+ | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2000 08 26 | 704 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2000 09 04 | 704 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2000 09 04 | 704 | 0.1− | 0.3− | 2006 09 14 | 691 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2000 09 04 | 704 | 0.1− | 0.0 | 2006 09 18 | 699 | 1.0+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2000 09 05 | 704 | 0.5− | 0.9− | 2006 09 18 | 699 | 1.1− | 0.4− | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2000 09 05 | 704 | 0.7− | 0.6− | 2006 09 18 | 699 | 0.1− | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2000 09 05 | 704 | 0.8+ | 0.2− | 2006 09 18 | 699 | 1.2− | 0.2+ | | | | |
| 2000 09 05 | 704 | 0.6− | 0.7+ | 2006 09 25 | G96 | 0.4+ | 0.5− | | | | |

**(138548)∗ 2000 QN$_{16}$ = 2001 XE$_{36}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22306)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.68889 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18270167 | $\omega$ | 80.75284 | | +0.48471568 | | −0.87301603 |
| $a$ | 3.0759153 | $\Omega$ | 339.97802 | | +0.72809764 | | +0.43680533 |
| $e$ | 0.1079303 | $i$ | 9.03952 | | +0.48469015 | | +0.21689655 |
| $P$ | 5.39 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.5− | 0.9+ | 2002 01 08 | 704 | 0.7− | 0.6− | 2003 04 05 | 691 | 0.1− | 0.0 | |
| 2000 08 01 | 807 | 0.4− | 0.6+ | 2002 01 08 | 704 | 0.4− | 0.7+ | 2003 04 05 | 691 | 0.1− | 0.3− | |
| 2000 08 24 | 704 | 0.0 | 0.7+ | 2002 01 08 | 704 | 0.6− | 0.6+ | 2006 08 30 | 699 | 0.5+ | 0.0 | |
| 2000 08 24 | 704 | 0.6− | 0.5− | 2002 01 08 | 704 | 0.3− | 0.6+ | 2006 08 30 | 699 | (1.6− | 0.6−) | |
| 2000 08 24 | 704 | 0.4+ | 1.5+ | 2003 02 06 | 291 | 0.2− | 0.1+ | 2006 08 30 | 699 | (0.3+ | 2.0−) | |
| 2000 08 24 | 704 | 1.2− | 0.9+ | 2003 02 06 | 291 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.9− | 0.3+ | |
| 2000 08 24 | 704 | 0.6+ | 0.9− | 2003 02 06 | 291 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.4+ | |
| 2000 08 26 | 704 | 0.5− | 0.6+ | 2003 02 22 | 644 | 0.5+ | 0.5+ | 2006 09 20 | 699 | 0.1− | 0.4+ | |
| 2000 08 26 | 704 | 1.0− | 1.1+ | 2003 02 22 | 644 | 0.3+ | 0.7+ | 2006 09 20 | 699 | 0.7− | 0.3+ | |
| 2000 08 26 | 704 | 0.3− | 1.4+ | 2003 02 22 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 1.4+ | 0.8+ | |
| 2001 08 24 | 644 | 0.0 | 0.2− | 2003 02 23 | 699 | 1.3+ | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.2+ | |
| 2001 08 24 | 644 | 0.3+ | 0.3− | 2003 02 23 | 699 | 0.2+ | 0.7− | 2006 09 30 | 703 | 0.5− | 0.3− | |
| 2001 08 24 | 644 | 0.1+ | 0.1− | 2003 02 23 | 699 | 0.5+ | 1.0− | 2006 09 30 | 703 | 0.7+ | 0.5+ | |
| 2001 10 25 | 704 | 0.2− | 0.3− | 2003 02 23 | 699 | (2.1− | 1.9+) | 2006 09 30 | 703 | 0.1− | 0.2− | |
| 2001 10 25 | 704 | 0.1+ | 0.1− | 2003 03 06 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.5− | |
| 2001 10 25 | 704 | 0.1+ | 0.3− | 2003 03 06 | 644 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.7+ | 0.3+ | |
| 2001 10 25 | 704 | 0.1+ | 0.6+ | 2003 03 06 | 644 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.6+ | |
| 2001 10 25 | 704 | 0.1− | 0.3+ | 2003 03 09 | 704 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 1.0− | 0.9+ | |
| 2001 12 09 | 704 | 0.4− | 0.1− | 2003 03 09 | 704 | 0.7+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.1+ | |
| 2001 12 09 | 704 | 0.2+ | 0.4+ | 2003 03 09 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.0 | |
| 2001 12 09 | 704 | 0.4− | 0.1+ | 2003 03 09 | 704 | 0.3+ | 1.3+ | 2006 10 19 | 644 | 0.3− | 0.4+ | |
| 2001 12 09 | 704 | 0.2− | 0.3+ | 2003 03 09 | 704 | 0.2+ | 0.8+ | 2006 10 31 | 703 | 0.2+ | 0.8− | |
| 2001 12 14 | 704 | 0.7+ | 0.2+ | 2003 03 26 | 644 | 0.4+ | 0.8+ | 2006 10 31 | 703 | 0.6+ | 0.5+ | |
| 2001 12 14 | 704 | 0.6− | 0.3− | 2003 03 26 | 644 | 0.5+ | 0.7+ | 2006 10 31 | 703 | 0.5− | 0.7+ | |
| 2001 12 14 | 704 | 0.4− | 0.2− | 2003 03 26 | 644 | 0.7+ | 1.2+ | 2006 10 31 | 703 | 0.1− | 0.9− | |
| 2001 12 22 | 704 | 0.0 | 0.6− | 2003 03 26 | 699 | (2.0− | 1.9+) | 2006 11 14 | 703 | 0.7− | 0.2− | |
| 2001 12 22 | 704 | 0.6+ | 0.5− | 2003 03 26 | 699 | 0.3− | 0.9− | 2006 11 14 | 703 | 0.2+ | 0.8− | |
| 2001 12 22 | 704 | 0.3+ | 0.4+ | 2003 03 26 | 699 | 0.1+ | 0.9+ | 2006 11 14 | 703 | 0.0 | 0.0 | |
| 2001 12 22 | 704 | 1.0+ | 0.6− | 2003 03 26 | 699 | (1.8− | 1.1−) | 2006 11 14 | 703 | 1.2− | 0.3− | |
| 2001 12 22 | 704 | 0.9+ | 0.3− | 2003 04 05 | 691 | 0.0 | 0.3− | | | | | |

**(138549)∗ 2000 QY$_{21}$ = 2004 FV$_{56}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60703)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.77861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17424692 | $\omega$ | 134.56297 | | +0.59341987 | +0.80383852 | |
| $a$ | 3.1746266 | $\Omega$ | 171.53930 | | −0.79478075 | +0.59328280 | |
| $e$ | 0.2019057 | $i$ | 16.25685 | | −0.12718654 | +0.04311780 | |
| $P$ | 5.66 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.1− | 0.4+ | 2000 10 01 | 704 | 0.2+ | 0.3+ | 2005 07 28 | 704 | 0.3+ | 0.4− | |
| 2000 08 24 | 704 | 0.3− | 0.4− | 2000 10 01 | 704 | 0.1+ | 0.1+ | 2005 07 28 | 644 | 0.3− | 0.1+ | |
| 2000 08 24 | 704 | 1.0+ | 0.5− | 2000 10 02 | 704 | 0.5+ | 0.3− | 2005 08 27 | 644 | 0.1− | 0.2− | |
| 2000 08 24 | 704 | 1.1+ | 0.1− | 2000 10 02 | 704 | 0.5+ | 0.5− | 2005 08 27 | 644 | 0.3+ | 0.2+ | |
| 2000 08 26 | 704 | 0.1+ | 0.2− | 2000 10 02 | 704 | 0.7+ | 1.3− | 2005 08 27 | 644 | 0.6+ | 0.1− | |
| 2000 08 26 | 704 | 0.2+ | 0.8+ | 2004 02 17 | 291 | 0.3− | 0.6+ | 2006 09 16 | 699 | 0.3− | 1.2− | |
| 2000 08 26 | 704 | 0.6+ | 0.6+ | 2004 02 17 | 291 | (0.4+ | 1.8+) | 2006 09 16 | 699 | 0.8+ | 1.0+ | |
| 2000 08 26 | 704 | 0.6+ | 1.0+ | 2004 02 17 | 291 | 0.1+ | 0.9+ | 2006 09 16 | 699 | 0.6− | 0.4+ | |
| 2000 08 31 | 704 | 0.8+ | 0.1− | 2004 03 16 | 599 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 0.6− | 0.6− | |
| 2000 08 31 | 704 | 0.8+ | 0.7− | 2004 03 16 | 599 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.6+ | |
| 2000 08 31 | 704 | 0.8+ | 0.1− | 2004 03 16 | 599 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.5+ | |
| 2000 08 31 | 704 | 0.3+ | 0.6− | 2004 03 16 | 599 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.2+ | |
| 2000 08 31 | 704 | 0.7+ | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 703 | (1.6− | 0.1+) | |
| 2000 09 05 | 704 | 1.4+ | 0.5+ | 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.3− | |
| 2000 09 05 | 704 | 0.3+ | 0.2− | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.4+ | |
| 2000 09 05 | 704 | 0.6+ | 0.4− | 2004 03 22 | 704 | (1.8+ | 0.5+) | 2006 10 10 | 644 | 0.0 | 0.8+ | |
| 2000 09 05 | 704 | 0.0 | 0.6− | 2004 03 22 | 704 | 0.2− | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | |
| 2000 09 07 | 704 | 0.5+ | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.6− | 2006 10 12 | 644 | 0.3+ | 0.5+ | |
| 2000 09 07 | 704 | 1.3− | 0.6+ | 2004 03 22 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | |
| 2000 09 07 | 704 | 0.8− | 0.6+ | 2005 06 01 | 704 | 0.8− | 0.1+ | 2006 10 16 | 703 | (1.0+ | 1.6+) | |
| 2000 09 07 | 704 | 1.5− | 0.5+ | 2005 06 01 | 704 | 1.3− | 0.4+ | 2006 10 16 | 703 | (1.0− | 1.7+) | |
| 2000 09 07 | 704 | 0.7− | 1.0+ | 2005 06 01 | 704 | 0.6− | 0.0 | 2006 10 16 | 703 | (1.0+ | 1.7+) | |
| 2000 09 07 | 704 | 0.8− | 1.1+ | 2005 06 01 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.8+ | 1.2+ | |
| 2000 09 07 | 704 | 1.2− | 1.6− | 2005 06 01 | 704 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.6+ | 0.8+ | |
| 2000 09 07 | 704 | 0.9− | 1.3+ | 2005 06 01 | 704 | 0.8− | 0.0 | 2006 10 22 | 703 | (1.6− | 0.7+) | |
| 2000 09 21 | 699 | 1.3− | 1.0+ | 2005 06 01 | 704 | 0.8− | 1.0+ | 2006 10 22 | 703 | 0.6− | 0.3+ | |
| 2000 09 21 | 699 | 0.1− | 0.9+ | 2005 06 06 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.5− | |
| 2000 09 21 | 699 | 0.6− | 0.5+ | 2005 06 06 | 704 | 0.5+ | 0.0 | 2006 10 28 | 703 | 0.3− | 0.6− | |
| 2000 09 21 | 699 | 1.2− | 1.5+ | 2005 06 06 | 704 | 0.3+ | 0.9+ | 2006 10 28 | 703 | 0.4+ | 0.5− | |
| 2000 09 24 | 704 | 0.2+ | 0.1+ | 2005 06 06 | 704 | 1.1+ | 1.1− | 2006 10 28 | 703 | 0.3+ | 0.2− | |
| 2000 09 24 | 704 | 0.6− | 0.6+ | 2005 06 06 | 704 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.5− | 1.0+ | |
| 2000 09 24 | 704 | 0.3+ | 0.3+ | 2005 07 28 | 704 | (2.6+ | 1.1−) | 2006 11 07 | 644 | 0.2− | 0.3− | |
| 2000 09 24 | 704 | 0.0 | 0.6+ | 2005 07 28 | 644 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.1+ | |
| 2000 09 24 | 704 | 0.3− | 0.2+ | 2005 07 28 | 704 | (2.0+ | 1.2−) | 2006 11 07 | 644 | 0.0 | 0.1+ | |
| 2000 10 01 | 704 | 0.2+ | 0.4+ | 2005 07 28 | 644 | 0.2− | 0.1+ | | | | | |
| 2000 10 01 | 704 | 1.5− | 0.1+ | 2005 07 28 | 704 | 1.4+ | 0.6+ | | | | | |

**(138550)∗ 2000 QD$_{31}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.96360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17128146 | $\omega$ | 226.29052 | | +0.98408417 | −0.01023372 | |
| $a$ | 3.2111640 | $\Omega$ | 133.42478 | | +0.05186700 | +0.97141044 | |
| $e$ | 0.2505287 | $i$ | 14.13872 | | −0.16996516 | +0.23718565 | |
| $P$ | 5.75 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.7− | 0.2+ | 2000 09 30 | 699 | 0.1+ | 0.2− | 2006 07 31 | E12 | 0.0 | 0.6+ | |
| 2000 07 07 | 704 | 0.3+ | 0.8+ | 2001 12 11 | 704 | 0.4− | 0.5+ | 2006 07 31 | E12 | 0.1− | 0.5+ | |
| 2000 07 07 | 704 | 0.2− | 1.7+ | 2001 12 11 | 704 | 0.2− | 0.4+ | 2006 08 10 | 644 | 0.3− | 0.1+ | |
| 2000 07 07 | 704 | 0.1− | 0.7+ | 2001 12 11 | 704 | 1.3− | 0.9+ | 2006 08 10 | 644 | 0.1− | 0.1+ | |
| 2000 07 07 | 704 | 0.3− | 0.7+ | 2001 12 11 | 704 | 1.0− | 0.2+ | 2006 08 10 | 644 | 0.1− | 0.0 | |
| 2000 08 01 | 704 | 0.2+ | 0.9+ | 2002 12 14 | 645 | 0.1+ | 0.4+ | 2006 09 12 | 704 | 0.2+ | 0.5+ | |
| 2000 08 01 | 704 | 0.2+ | 0.2+ | 2002 12 14 | 645 | 0.1+ | 0.2+ | 2006 09 12 | 704 | 0.2− | 0.7+ | |
| 2000 08 01 | 704 | 0.0 | 0.3+ | 2004 03 21 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 704 | 0.3+ | 1.1+ | |
| 2000 08 01 | 704 | 0.3+ | 0.5+ | 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 09 12 | 704 | 0.1− | 0.0 | |
| 2000 08 01 | 704 | 0.3− | 0.0 | 2004 03 21 | 691 | 0.4+ | 0.4+ | 2006 09 12 | 704 | 0.2+ | 0.3+ | |
| 2000 08 26 | 704 | 0.2− | 0.5− | 2005 05 16 | G96 | (0.2− | 6.1+) | 2006 09 17 | 699 | 0.0 | 0.5+ | |
| 2000 08 26 | 704 | 0.7+ | 0.0 | 2005 05 16 | G96 | (0.3− | 6.5+) | 2006 09 17 | 699 | 0.6− | 0.1+ | |
| 2000 08 26 | 704 | 0.1− | 0.6− | 2005 05 16 | G96 | (0.4− | 7.2+) | 2006 09 17 | 699 | 0.1+ | 0.2+ | |
| 2000 08 28 | 704 | 0.3− | 0.1+ | 2005 05 16 | G96 | (0.3− | 5.4+) | 2006 09 17 | 699 | 0.2− | 0.6+ | |
| 2000 08 28 | 704 | 0.0 | 0.7+ | 2005 06 13 | 691 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.3− | |
| 2000 08 28 | 704 | 0.2+ | 0.6+ | 2005 06 13 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.5− | |
| 2000 08 28 | 704 | 0.7+ | 0.6+ | 2005 06 13 | 691 | 0.3+ | 1.1+ | 2006 09 19 | 703 | 0.5− | 0.1− | |
| 2000 09 04 | 704 | 0.0 | 0.4+ | 2005 06 17 | 691 | 0.1− | 0.8+ | 2006 09 19 | 703 | 0.4− | 0.1− | |
| 2000 09 04 | 704 | 0.4+ | 0.4+ | 2005 06 17 | 691 | 0.1− | 0.1− | 2006 09 19 | 608 | 0.4+ | 0.7+ | |
| 2000 09 04 | 704 | 0.8+ | 0.9− | 2005 06 17 | 691 | 0.0 | 0.2− | 2006 09 19 | 608 | 0.6+ | 0.6+ | |
| 2000 09 04 | 704 | 0.1+ | 0.3− | 2005 07 02 | 703 | 1.3− | 1.1− | 2006 09 19 | 608 | 0.5+ | 0.4+ | |
| 2000 09 20 | 704 | 0.3− | 0.4− | 2005 07 02 | 703 | 0.6+ | 0.8− | 2006 10 11 | 644 | 0.1− | 0.2− | |
| 2000 09 20 | 704 | 0.2− | 0.1+ | 2005 07 02 | 703 | 0.8− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2000 09 20 | 704 | 0.5− | 0.0 | 2005 07 02 | 703 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1+ | |
| 2000 09 20 | 704 | 0.1− | 1.1+ | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.0 | 0.2+ | |
| 2000 09 20 | 704 | 0.3− | 0.2− | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.1− | |
| 2000 09 30 | 699 | 0.5− | 0.2+ | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.2− | 0.4+ | |
| 2000 09 30 | 699 | 0.4− | 0.4+ | 2006 07 31 | E12 | 0.2+ | 0.3+ | | | | | |
| 2000 09 30 | 699 | 0.1− | 0.2− | 2006 07 31 | E12 | 0.5− | 0.0 | | | | | |

**(138551)∗ 2000 QF$_{32}$ = 2001 XZ$_{33}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22318)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.33409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17076269 | $\omega$ | 275.61066 | | +0.99204266 | −0.06655087 | |
| $a$ | 3.2176642 | $\Omega$ | 88.23742 | | +0.10406318 | +0.91123945 | |
| $e$ | 0.1526888 | $i$ | 6.13814 | | −0.07086756 | +0.40646481 | |
| $P$ | 5.77 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.1− | 0.2+ | 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 08 28 | 699 | 0.0 | 0.2+ | |
| 2000 08 26 | 704 | 1.0− | 0.6+ | 2001 12 17 | 704 | 0.2− | 1.2+ | 2006 08 28 | 699 | 0.8+ | 0.6+ | |
| 2000 08 26 | 704 | 0.6+ | 1.3+ | 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.3− | 0.9+ | |
| 2000 08 26 | 704 | (0.1− | 2.1+) | 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 09 17 | 699 | 0.1+ | 0.0 | |
| 2000 08 28 | 704 | 0.1+ | 0.4− | 2001 12 17 | 704 | 0.2− | 0.4− | 2006 09 17 | 699 | 0.0 | 0.2+ | |
| 2000 08 28 | 704 | 0.7+ | 0.1+ | 2001 12 20 | 704 | 0.5− | 0.7+ | 2006 09 17 | 699 | 1.4+ | 0.1+ | |
| 2000 08 28 | 704 | 0.6+ | 0.5+ | 2001 12 20 | 704 | (2.2− | 0.6+) | 2006 09 17 | 699 | 1.1+ | 0.7− | |
| 2000 08 28 | 704 | 0.3− | 1.1+ | 2001 12 20 | 704 | (0.5− | 1.6+) | 2006 09 25 | 703 | 0.8− | 0.2+ | |
| 2000 09 04 | 704 | 0.1+ | 1.0+ | 2001 12 20 | 704 | 0.4− | 0.1+ | 2006 09 25 | 703 | 0.7− | 0.3+ | |
| 2000 09 04 | 704 | 0.2− | 0.7− | 2002 01 08 | 704 | 0.3+ | 1.0− | 2006 09 25 | 703 | 0.5+ | 0.8− | |
| 2000 09 04 | 704 | 0.0 | 0.5− | 2002 01 08 | 704 | 0.2+ | 0.0 | 2006 09 25 | 703 | (0.4− | 2.7−) | |
| 2000 09 04 | 704 | 0.5− | 1.1− | 2002 01 08 | 704 | 0.0 | 0.6− | 2006 10 04 | 703 | 0.3+ | 0.6− | |
| 2000 09 04 | 704 | 0.5− | 0.7− | 2002 01 13 | 704 | 0.2+ | 1.0+ | 2006 10 04 | 703 | 0.4− | 0.5+ | |
| 2000 09 20 | 704 | 0.0 | 1.0− | 2002 01 13 | 704 | 0.5+ | 0.9+ | 2006 10 04 | 703 | 0.4+ | 0.3+ | |
| 2000 09 20 | 704 | 0.1+ | 0.3− | 2002 01 13 | 704 | 0.2+ | 0.3+ | 2006 10 04 | 703 | 0.4− | 0.8+ | |
| 2000 09 20 | 704 | 0.8+ | 0.7+ | 2002 01 13 | 704 | 0.5− | 0.8+ | 2006 10 21 | 703 | 0.3− | 0.5− | |
| 2000 09 20 | 704 | 0.8− | 0.1+ | 2002 01 15 | 704 | 0.1− | 1.2+ | 2006 10 21 | 703 | 0.9− | 0.5+ | |
| 2001 11 21 | 704 | 0.2+ | 0.3− | 2002 01 15 | 704 | 0.8− | 1.1+ | 2006 10 21 | 703 | 0.5− | 0.4− | |
| 2001 11 21 | 704 | 0.2+ | 0.4+ | 2002 01 15 | 704 | 0.4− | 0.7+ | 2006 10 21 | 703 | 1.2− | 0.9+ | |
| 2001 11 21 | 704 | 0.1+ | 0.0 | 2002 01 15 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− | |
| 2001 12 08 | 704 | 0.2+ | 1.4− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2001 12 08 | 704 | 0.7+ | 0.4− | 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | |
| 2001 12 08 | 704 | 0.1+ | 0.4− | 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.0 | |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 08 23 | 704 | 0.5− | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.2+ | |
| 2001 12 14 | 704 | 0.2− | 0.5+ | 2006 08 23 | 704 | 0.8− | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.1− | |
| 2001 12 14 | 704 | 0.4+ | 0.1+ | 2006 08 23 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.2− | |
| 2001 12 14 | 704 | 0.3− | 0.7− | 2006 08 23 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.2− | |
| 2001 12 14 | 704 | 0.3− | 1.0− | 2006 08 28 | 699 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ | |

**(138552)∗ 2000 QF$_{33}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.04433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18183138 | $\omega$ | 264.59677 | | +0.68692648 | +0.71474004 | |
| $a$ | 3.0857222 | $\Omega$ | 49.69321 | | −0.57964293 | +0.64796155 | |
| $e$ | 0.2295687 | $i$ | 9.92568 | | −0.43834471 | +0.26323470 | |
| $P$ | 5.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.0 | 1.2+ | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.1− | |
| 2000 08 01 | 704 | 0.5− | 0.4+ | 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 11 11 | 703 | 0.5+ | 0.4− | |
| 2000 08 01 | 704 | 1.0− | 0.0 | 2004 04 09 | 413 | 0.5− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.1+ | |
| 2000 08 01 | 704 | 0.7− | 0.1− | 2004 04 09 | 413 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− | |
| 2000 08 26 | 704 | 0.3+ | 0.1− | 2004 04 09 | 413 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.4+ | |
| 2000 08 26 | 704 | 0.1+ | 0.1+ | 2004 04 16 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− | |
| 2000 08 26 | 704 | 0.4+ | 0.2− | 2004 04 16 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.3− | |
| 2000 08 26 | 704 | 0.3+ | 0.1− | 2004 04 16 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.2− | |
| 2000 08 26 | 704 | 0.2+ | 0.8+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | 2006 11 12 | 703 | 0.8− | 0.8− | |
| 2000 08 28 | 704 | 0.3− | 0.0 | 2004 04 21 | 691 | 0.1+ | 0.0 | 2006 11 12 | 703 | 0.3− | 0.4− | |
| 2000 08 28 | 704 | 0.1− | 0.2− | 2004 04 21 | 691 | 0.0 | 0.0 | 2006 11 12 | 703 | 0.2− | 0.3− | |
| 2000 08 28 | 704 | 0.6− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 12 | 703 | 0.1− | 0.5− | |
| 2000 09 20 | 704 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 11 13 | 644 | 0.0 | 0.2+ | |
| 2000 09 20 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | (1.9− | 0.3+) | 2006 11 13 | 644 | 0.3− | 0.2+ | |
| 2000 09 20 | 704 | 1.3+ | 0.7− | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 11 13 | 644 | 0.2− | 0.0 | |
| 2000 09 20 | 704 | 1.3− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.6− | 1.4+ | |
| 2000 09 20 | 704 | 0.4− | 1.3+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.9+ | 1.0+ | |
| 2000 10 01 | 704 | 0.6− | 0.5+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.8− | 0.4− | |
| 2000 10 01 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.2+ | |
| 2000 10 01 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.4+ | |
| 2000 10 01 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.2− | |
| 2000 10 01 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.5− | |
| 2000 10 02 | 699 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.8+ | |
| 2000 10 02 | 699 | 0.3+ | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.3− | |
| 2000 10 02 | 699 | 0.6+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.0− | 0.6+ | |
| 2000 10 02 | 699 | 1.3− | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6− | 1.3+ | |
| 2001 12 22 | 704 | 0.3+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5− | 0.6+ | |
| 2001 12 22 | 704 | 0.9+ | 0.7− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.7+ | |
| 2001 12 22 | 704 | 0.4+ | 1.1− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | (0.4− | 1.7+) | |
| 2001 12 22 | 704 | 0.5− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.5+ | 0.4− | |
| 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.4− | 0.6− | |
| 2004 03 15 | 704 | 0.3+ | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.2− | 0.9+ | |
| 2004 03 15 | 704 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.0 | 1.4+ | |
| 2004 03 15 | 704 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.2+ | 1.2+ | |
| 2004 03 23 | 704 | 0.7− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.9+ | |
| 2004 03 23 | 704 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.9− | |
| 2004 03 23 | 704 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ | | | | | |

**(138553)∗ 2000 QZ$_{40}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.35037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18560032 | $\omega$ | 262.02248 | | +0.40537204 | −0.91303979 | |
| $a$ | 3.0438056 | $\Omega$ | 163.83487 | | +0.88949548 | +0.38258368 | |
| $e$ | 0.1357734 | $i$ | 9.31761 | | +0.21088220 | +0.14137916 | |
| $P$ | 5.31 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.4− | 0.3+ | 2002 01 08 | 608 | 0.9+ | 0.1− | 2006 08 31 | 704 | 0.0 | 0.4+ | |
| 2000 08 01 | 807 | 0.4− | 0.3+ | 2002 01 08 | 608 | 0.5+ | 0.5− | 2006 08 31 | 704 | 0.6+ | 1.3+ | |
| 2000 08 24 | 704 | 0.5+ | 0.8+ | 2002 01 08 | 608 | 0.1+ | 0.1− | 2006 08 31 | 704 | 0.2− | 1.0+ | |
| 2000 08 24 | 704 | 1.5− | 0.1− | 2002 01 09 | 644 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.5+ | |
| 2000 08 24 | 704 | 1.4+ | 1.3+ | 2002 01 09 | 644 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.8− | 0.9+ | |
| 2000 08 24 | 704 | 0.3+ | 0.2− | 2002 01 09 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.1+ | |
| 2000 08 29 | 704 | 0.2− | 0.8+ | 2003 03 05 | 704 | (0.9− | 2.6+) | 2006 09 22 | 704 | 0.7− | 0.3+ | |
| 2000 08 29 | 704 | 1.3− | 0.9+ | 2003 03 05 | 704 | 0.0 | 1.0+ | 2006 09 22 | 704 | 0.3− | 0.6− | |
| 2000 08 29 | 704 | 0.2− | 1.9+ | 2003 03 05 | 704 | (1.7− | 0.1−) | 2006 09 26 | 704 | 0.0 | 0.7+ | |
| 2000 08 29 | 704 | 0.4− | 1.0+ | 2003 03 05 | 704 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.8+ | |
| 2000 08 29 | 704 | 0.8+ | 0.7+ | 2003 03 06 | 699 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.6+ | |
| 2000 09 05 | 704 | 0.8− | 1.6+ | 2003 03 06 | 699 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.4− | 0.7+ | |
| 2000 09 05 | 704 | 0.8+ | 0.8+ | 2003 03 06 | 699 | (2.2+ | 0.0 ) | 2006 09 30 | 703 | 0.2+ | 0.3− | |
| 2000 09 05 | 704 | 1.0+ | 0.8+ | 2003 03 06 | 699 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.3− | 0.5− | |
| 2000 09 24 | 704 | 0.1+ | 1.3+ | 2003 03 07 | 699 | 0.4− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.5− | |
| 2000 09 24 | 704 | 0.4− | 0.3+ | 2003 03 07 | 699 | 0.6− | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.3− | |
| 2000 09 24 | 704 | 1.2− | 1.4+ | 2003 03 07 | 699 | 0.1+ | 1.0+ | 2006 10 01 | 704 | 0.9− | 1.2+ | |
| 2000 09 24 | 704 | 0.7− | 1.5+ | 2003 03 07 | 699 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.7+ | |
| 2001 10 17 | 704 | 0.9− | 0.6− | 2003 03 09 | 704 | (1.9+ | 0.0 ) | 2006 10 01 | 704 | 0.8− | 0.6− | |
| 2001 10 17 | 704 | 0.4+ | 0.0 | 2003 03 09 | 704 | 0.3− | 0.8− | 2006 10 01 | 704 | 1.0− | 0.2+ | |
| 2001 10 17 | 704 | 0.2+ | 0.2− | 2003 03 09 | 704 | 0.5+ | 0.0 | 2006 10 01 | 704 | 1.1− | 0.2+ | |
| 2001 10 17 | 704 | 0.3− | 0.9− | 2003 03 09 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.3+ | |
| 2001 10 17 | 704 | 0.2+ | 0.5+ | 2003 03 13 | 608 | 0.2− | 1.2+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | |
| 2001 12 11 | 704 | 0.1+ | 0.3+ | 2003 03 13 | 608 | 0.3+ | 1.5+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | |
| 2001 12 11 | 704 | 0.1+ | 0.1+ | 2003 03 13 | 608 | 0.1− | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | |
| 2001 12 11 | 704 | 0.0 | 0.2+ | 2003 03 15 | 608 | 0.4− | 0.8− | 2006 10 12 | 644 | 0.3+ | 0.3+ | |
| 2001 12 11 | 704 | 0.1+ | 0.3+ | 2003 03 15 | 608 | 0.2− | 0.8− | 2006 10 12 | 644 | 0.5+ | 0.2+ | |
| 2001 12 11 | 704 | 0.1− | 0.1+ | 2003 03 15 | 608 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.5− | 0.0 | |
| 2001 12 14 | 201 | 0.6− | 0.2− | 2003 03 24 | 691 | 0.7+ | 0.9+ | 2006 10 16 | 703 | 0.7+ | 0.3− | |
| 2001 12 14 | 201 | 0.6+ | 0.2− | 2003 03 24 | 691 | 0.8+ | 1.0+ | 2006 10 16 | 703 | 0.2+ | 0.5+ | |
| 2001 12 14 | 201 | 0.2+ | 0.4− | 2003 03 24 | 691 | 1.1+ | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.1− | |
| 2001 12 23 | 209 | 0.5− | 0.0 | 2003 03 26 | 644 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.1+ | |
| 2001 12 23 | 209 | 0.5− | 0.1− | 2003 03 26 | 644 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.8− | |
| 2001 12 23 | 209 | 1.5− | 0.2− | 2003 03 26 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.2+ | |
| 2001 12 24 | 608 | 0.5− | 0.7− | 2003 03 26 | 699 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.0 | |
| 2001 12 24 | 608 | 0.5− | 1.0− | 2003 03 26 | 699 | 0.3+ | 0.2+ | 2006 10 31 | 704 | 0.3− | 1.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 24 | 608 | 0.7− | 0.5− | 2003 03 26 | 699 | 0.5+ | 0.8− | 2006 10 31 | 704 | 0.2− | 1.3+ | | |
| 2001 12 31 | 448 | 0.7+ | 0.6+ | 2003 03 26 | 699 | 0.8− | 0.7+ | 2006 10 31 | 704 | (0.4− | 1.8+) | | |
| 2001 12 31 | 448 | 0.4+ | 0.3− | 2003 03 30 | 704 | 0.5+ | 1.0+ | 2006 10 31 | 704 | 0.7+ | 0.2+ | | |
| 2001 12 31 | 448 | 0.1+ | 0.1− | 2003 03 30 | 704 | 0.9− | 0.2− | 2006 11 13 | 703 | 0.1+ | 0.6− | | |
| 2001 12 31 | 448 | 0.3− | 0.8+ | 2003 03 30 | 704 | (1.7+ | 0.1+) | 2006 11 13 | 703 | 0.8+ | 0.3− | | |
| 2002 01 02 | 209 | 0.6+ | 0.1+ | 2003 03 30 | 704 | 0.4− | 0.6+ | 2006 11 13 | 703 | 0.1+ | 0.2− | | |
| 2002 01 02 | 209 | 0.4+ | 0.1+ | 2003 03 30 | 704 | 0.3+ | 1.1+ | 2006 11 13 | 703 | 0.1+ | 0.0 | | |
| 2002 01 02 | 209 | 0.3+ | 0.8+ | 2003 04 07 | 691 | 0.5− | 0.3+ | 2006 11 14 | 644 | 0.0 | 0.4+ | | |
| 2002 01 04 | 209 | 0.4+ | 0.5+ | 2003 04 07 | 691 | 0.4− | 0.6+ | 2006 11 14 | 644 | 0.2+ | 0.4+ | | |
| 2002 01 04 | 209 | 0.1+ | 0.3+ | 2003 04 07 | 691 | 0.2− | 0.5+ | 2006 11 14 | 644 | 0.1+ | 0.3+ | | |
| 2002 01 04 | 209 | 0.1+ | 0.4+ | 2005 07 30 | E12 | 0.2− | 0.9+ | 2006 11 19 | 703 | 0.3− | 0.2+ | | |
| 2002 01 07 | 699 | 0.1+ | 0.8+ | 2005 07 30 | E12 | 0.4− | 0.6+ | 2006 11 19 | 703 | 0.1− | 0.4− | | |
| 2002 01 07 | 699 | 0.1− | 0.6+ | 2005 07 30 | E12 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.6− | 0.5− | | |
| 2002 01 07 | 699 | 1.0− | 0.5+ | 2005 07 30 | E12 | 0.6− | 0.2+ | 2006 11 19 | 703 | 0.4− | 0.2− | | |
| 2002 01 07 | 699 | 0.6+ | 0.3+ | 2006 08 31 | 704 | 0.6+ | 0.7+ | | | | | | |

**(138554)∗ 2000 QN$_{44}$ = 2001 XA$_{162}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22326)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 46.67987 | | (2000.0) | | +0.99705393 | −0.06471990 |
| *n* | 0.19489151 | ω | 241.37579 | | +0.07543452 | +0.92459004 |
| *a* | 2.9462806 | Ω | 122.30739 | | −0.01389562 | +0.37542588 |
| *e* | 0.1135521 | *i* | 2.79188 | | | |
| *P* | 5.06 | *H* | 15.8 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 18 | 691 | 0.6+ | 0.9+ | 2001 12 20 | 704 | 0.0 | 0.6− | 2005 08 26 | 699 | (2.2+ | 2.1+) | | |
| 1999 06 18 | 691 | 0.4− | 0.6+ | 2001 12 20 | 704 | 0.2− | 0.9− | 2005 08 26 | 699 | 1.4+ | 1.0+ | | |
| 1999 06 18 | 691 | 0.0 | 0.3+ | 2001 12 20 | 704 | 0.7− | 1.1− | 2005 11 03 | G96 | 0.0 | 0.0 | | |
| 2000 08 01 | 807 | 0.2− | 0.3+ | 2001 12 20 | 704 | (1.7− | 1.1+) | 2005 11 03 | G96 | 0.1− | 0.4− | | |
| 2000 08 01 | 807 | 0.3− | 0.3+ | 2001 12 22 | 691 | 0.4+ | 0.1+ | 2005 11 03 | G96 | 0.2+ | 0.4− | | |
| 2000 08 02 | 691 | 0.3− | 0.1− | 2001 12 22 | 691 | 0.2+ | 0.1− | 2005 11 03 | G96 | 0.0 | 0.9− | | |
| 2000 08 02 | 691 | 0.4− | 0.0 | 2001 12 22 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 | | |
| 2000 08 02 | 691 | 0.3− | 0.0 | 2002 01 08 | 691 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2000 08 24 | 704 | 0.3+ | 1.5+ | 2002 01 08 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2000 08 24 | 704 | 0.2+ | 0.5+ | 2002 01 08 | 691 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.2− | | |
| 2000 08 24 | 704 | 0.6− | 0.9+ | 2003 02 23 | 291 | 0.1+ | 0.6+ | 2006 11 15 | 691 | 0.3− | 0.1− | | |
| 2000 08 24 | 704 | 0.7− | 0.8+ | 2003 02 23 | 291 | 0.4+ | 0.7+ | 2006 11 15 | 691 | 0.3− | 0.0 | | |
| 2000 08 29 | 704 | 0.8+ | 1.2+ | 2003 02 23 | 291 | 0.4+ | 0.4+ | 2006 11 20 | G96 | 0.2+ | 0.1− | | |
| 2000 08 29 | 704 | 0.1− | 1.5+ | 2005 06 17 | G96 | 0.4− | 0.1− | 2006 11 20 | G96 | 0.1− | 1.3+ | | |
| 2000 08 29 | 704 | 0.4− | 1.3+ | 2005 06 17 | G96 | 0.1− | 0.4− | 2006 11 20 | G96 | 0.0 | 0.3− | | |
| 2000 08 29 | 704 | 0.1− | 0.6+ | 2005 06 17 | G96 | 0.3− | 0.6− | 2006 11 20 | G96 | 0.3− | 0.2− | | |
| 2001 11 20 | 704 | 1.3+ | 1.4+ | 2005 06 17 | G96 | 0.5− | 0.3− | 2006 11 21 | H55 | 1.5+ | 0.1− | | |
| 2001 11 20 | 704 | 1.4+ | 0.4+ | 2005 07 12 | G96 | 0.9+ | 0.2+ | 2006 11 21 | H55 | 0.2+ | 0.2− | | |
| 2001 11 20 | 704 | 0.1+ | 0.9+ | 2005 07 12 | G96 | 0.3+ | 0.1+ | 2006 11 21 | H55 | 0.0 | 0.2− | | |
| 2001 12 14 | 704 | 0.5− | 0.6+ | 2005 07 12 | G96 | 0.7+ | 0.1+ | 2006 11 21 | H55 | 0.3+ | 0.2− | | |
| 2001 12 14 | 704 | 0.0 | 0.9+ | 2005 07 12 | G96 | 0.6+ | 0.1+ | 2006 11 23 | 691 | 0.7− | 0.3+ | | |
| 2001 12 14 | 704 | 0.1+ | 1.2+ | 2005 07 28 | 644 | 0.3+ | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.3+ | | |
| 2001 12 14 | 704 | 0.1− | 1.3+ | 2005 07 28 | 644 | 0.2+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.3+ | | |
| 2001 12 17 | 704 | 0.3− | 1.1+ | 2005 07 28 | 644 | 0.3+ | 0.3+ | 2006 12 01 | 691 | 0.2+ | 0.1− | | |
| 2001 12 17 | 704 | 0.6− | 1.1+ | 2005 08 26 | 699 | 0.7− | 0.0 | 2006 12 01 | 691 | 0.4− | 0.0 | | |
| 2001 12 17 | 704 | (0.2+ | 2.1+) | 2005 08 26 | 699 | 0.2− | 0.4− | 2006 12 01 | 691 | 0.3− | 0.2+ | | |

**(138555)∗ 2000 QS$_{44}$ = 1997 CZ$_{22}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 4614)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 18.82619 | | (2000.0) | | +0.90425858 | −0.42297181 |
| *n* | 0.18740191 | ω | 255.21117 | | +0.41513480 | +0.83889541 |
| *a* | 3.0242663 | Ω | 129.77532 | | +0.09989759 | +0.34256290 |
| *e* | 0.1891788 | *i* | 4.35836 | | | |
| *P* | 5.26 | *H* | 16.1 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 14 | 691 | 0.1− | 0.1+ | 2000 08 24 | 704 | 0.4+ | 0.8+ | 2005 07 15 | G96 | 0.4+ | 0.2− | | |
| 1990 11 14 | 691 | 0.2− | 0.0 | 2000 08 24 | 704 | 0.2+ | 0.8+ | 2005 07 15 | G96 | 0.1+ | 0.1− | | |
| 1990 11 14 | 691 | 0.2+ | 0.1− | 2000 08 24 | 704 | 1.4+ | 1.2− | 2005 07 15 | G96 | 0.2− | 0.4+ | | |
| 1996 12 11 | 691 | 0.8+ | 0.4+ | 2000 08 24 | 704 | 0.5− | 1.0− | 2006 11 17 | G96 | 0.4− | 0.6− | | |
| 1996 12 11 | 691 | 0.5+ | 0.3+ | 2000 08 27 | 807 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 1996 12 11 | 691 | 0.5+ | 0.2+ | 2000 08 27 | 807 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.3− | | |
| 1997 02 04 | 691 | 0.1− | 0.1− | 2000 08 29 | 704 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.2− | | |
| 1997 02 04 | 691 | 0.0 | 0.2− | 2000 08 29 | 704 | 0.4+ | 1.1+ | 2006 11 18 | 691 | 0.0 | 0.3− | | |
| 1997 02 04 | 691 | 0.1− | 0.3− | 2000 08 29 | 704 | 1.3+ | 1.3+ | 2006 11 18 | 691 | 0.1− | 0.3− | | |
| 1997 02 11 | 691 | 0.5− | 0.4− | 2000 08 29 | 704 | 0.8− | 0.9+ | 2006 11 18 | 691 | 0.1+ | 0.2− | | |
| 1997 02 11 | 691 | 0.9− | 0.0 | 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.5− | 0.2− | | |
| 1997 02 11 | 691 | 0.2− | 0.2− | 2001 12 17 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.0 | | |
| 1997 02 14 | 691 | 0.3+ | 0.1+ | 2001 12 17 | 704 | 0.2− | 0.6+ | 2006 11 20 | 704 | 0.8− | 0.2+ | | |
| 1997 02 14 | 691 | 0.3+ | 0.0 | 2001 12 17 | 704 | 0.8+ | 1.1+ | 2006 11 20 | 704 | 0.8− | 0.4+ | | |
| 1997 02 14 | 691 | 0.2− | 0.1− | 2001 12 17 | 704 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.2− | 0.8+ | | |
| 1998 03 25 | 691 | 0.4− | 0.3− | 2002 01 09 | 704 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.3− | | |
| 1998 03 25 | 691 | 1.0− | 0.0 | 2002 01 09 | 704 | 0.5+ | 0.5+ | 2006 11 22 | 691 | 1.1+ | 0.8− | | |
| 1998 03 25 | 691 | 0.0 | 0.1− | 2002 01 09 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.3− | | |
| 1998 04 04 | 691 | 0.2− | 0.0 | 2002 01 09 | 704 | 0.4+ | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.2+ | | |
| 1998 04 04 | 691 | 0.8+ | 1.0− | 2002 01 09 | 704 | 0.6+ | 0.4− | 2006 11 29 | 704 | 0.3− | 0.3− | | |
| 1998 04 04 | 691 | 0.2+ | 0.0 | 2002 01 15 | 704 | 0.2− | 1.1+ | 2006 11 29 | 704 | 0.2+ | 0.2+ | | |
| 2000 08 02 | 691 | 0.3− | 0.6− | 2002 01 15 | 704 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.7+ | 0.7+ | | |
| 2000 08 02 | 691 | 0.1− | 0.5− | 2002 01 15 | 704 | 0.6− | 0.3− | 2006 11 29 | 704 | 0.8− | 0.2+ | | |
| 2000 08 02 | 691 | 0.0 | 0.4− | 2005 07 15 | G96 | 0.4− | 0.5− | | | | | | |

**(138556)∗ 2000 QC$_{47}$ = 1999 LP$_{31}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 3779)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 28.68608 | | (2000.0) | | +0.99309716 | +0.10976558 |
| *n* | 0.18178448 | ω | 220.90852 | | −0.08749796 | +0.92802614 |
| *a* | 3.0862529 | Ω | 132.73893 | | −0.07811617 | +0.35597611 |
| *e* | 0.1746881 | *i* | 3.22722 | | | |
| *P* | 5.42 | *H* | 15.1 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 683 | 0.7+ | 0.5+ | | |
| 1995 10 21 | 691 | 0.0 | 0.2− | 2001 12 17 | 704 | 0.3− | 0.0 | 2006 10 27 | 704 | 0.0 | 0.3+ | | |
| 1995 10 21 | 691 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 10 27 | 704 | 0.6− | 1.5+ | | |
| 1995 10 26 | 691 | 0.0 | 0.4− | 2001 12 20 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 704 | 0.3− | 0.8+ | | |
| 1995 10 26 | 691 | 0.1+ | 0.3− | 2001 12 20 | 704 | 0.8+ | 0.6+ | 2006 10 27 | 704 | 0.7− | 0.3+ | | |
| 1995 10 26 | 691 | 0.2+ | 0.4− | 2001 12 20 | 704 | 0.8+ | 0.1+ | 2006 10 28 | 683 | 1.2− | 0.1+ | | |
| 1998 02 21 | 691 | 0.2− | 0.0 | 2001 12 20 | 704 | (1.6+ | 0.6+) | 2006 10 28 | 683 | 0.1− | 1.1+ | | |
| 1998 02 21 | 691 | 0.2+ | 0.0 | 2001 12 23 | 704 | 0.1+ | 0.0 | 2006 10 28 | 683 | 0.7− | 0.3− | | |
| 1998 02 21 | 691 | 0.3+ | 0.3+ | 2001 12 23 | 704 | 0.8+ | 0.1− | 2006 10 31 | 683 | (2.5− | 0.9−) | | |
| 1999 06 11 | 691 | 0.1− | 0.4+ | 2001 12 23 | 704 | 0.2+ | 0.1+ | 2006 10 31 | 683 | 0.3+ | 1.0+ | | |
| 1999 06 11 | 691 | 0.5− | 0.5+ | 2001 12 23 | 704 | 0.0 | 0.9− | 2006 10 31 | 683 | (0.5+ | 2.8+) | | |
| 1999 06 11 | 691 | 0.6− | 0.2+ | 2002 12 07 | 645 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ | | |
| 1999 06 19 | 691 | 0.2− | 0.7+ | 2002 12 07 | 645 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 1999 06 19 | 691 | 0.1− | 0.1+ | 2003 02 22 | 644 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 1999 06 19 | 691 | 0.2− | 0.7+ | 2003 02 22 | 644 | 0.7+ | 1.1+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 08 24 | 704 | 0.1− | 0.2+ | 2003 02 22 | 644 | 0.2+ | 1.2+ | 2006 11 10 | 644 | 0.0 | 0.1+ | | |
| 2000 08 24 | 704 | 0.2+ | 0.3+ | 2004 04 14 | 691 | 0.8+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.0 | | |
| 2000 08 24 | 704 | 0.7+ | 0.3+ | 2004 04 14 | 691 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.7− | 1.0− | | |
| 2000 08 24 | 704 | 0.1+ | 0.8+ | 2004 04 14 | 691 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.5− | | |
| 2000 08 24 | 704 | 0.6+ | 0.3+ | 2004 04 19 | 704 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.4− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.4+ | 0.5+ | 2004 04 19 | 704 | 1.2+ | 1.0+ | 2006 11 11 | 703 | 0.5− | 0.1+ | | |
| 2000 08 29 | 704 | 0.2+ | 0.6+ | 2004 04 19 | 704 | 0.7+ | 0.0 | 2006 11 11 | 644 | 0.0 | 0.1+ | | |
| 2000 08 29 | 704 | 0.0 | 0.4+ | 2004 04 19 | 704 | 0.0 | 0.8+ | 2006 11 11 | 644 | 0.3− | 0.3− | | |
| 2000 08 29 | 704 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 11 | 644 | 0.3− | 0.1− | | |
| 2000 08 29 | 704 | 0.2− | 0.8+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2000 08 31 | 704 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 13 | 644 | 0.2− | 0.1+ | | |
| 2000 08 31 | 704 | 0.7+ | 0.9+ | 2006 10 03 | G96 | 0.4+ | 0.4− | 2006 11 13 | 644 | 0.0 | 0.1− | | |
| 2000 08 31 | 704 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1− | 1.0+ | 2006 11 14 | 704 | 0.0 | 0.6+ | | |
| 2000 08 31 | 704 | 0.1− | 0.4− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.8+ | | |
| 2000 08 31 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 14 | 704 | 1.1− | 0.9+ | | |
| 2000 09 05 | 704 | 1.0− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.5− | 0.9+ | | |
| 2000 09 05 | 704 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.3+ | 0.5+ | | |
| 2000 09 05 | 704 | 0.6− | 1.0+ | 2006 10 16 | 703 | 0.5+ | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2000 09 21 | 704 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.3− | | |
| 2000 09 21 | 704 | 0.4+ | 1.9+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2000 09 21 | 704 | 0.7− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2000 09 21 | 704 | 0.0 | 1.4+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | (0.2− | 1.9+) | | |
| 2000 09 24 | 704 | 0.2− | 1.7+ | 2006 10 20 | 683 | 0.4− | 0.8− | 2006 11 17 | 704 | (0.2+ | 1.7+) | | |
| 2000 09 24 | 704 | 0.1− | 0.2− | 2006 10 20 | 683 | 0.6+ | 1.4− | 2006 11 17 | 704 | 1.0− | 0.5+ | | |
| 2000 09 24 | 704 | 0.4+ | 0.8+ | 2006 10 20 | 683 | (3.1− | 0.5+) | 2006 11 17 | 704 | (0.0 | 1.6+) | | |
| 2000 09 24 | 704 | 0.4+ | 1.5+ | 2006 10 21 | 683 | (0.3− | 1.5+) | 2006 11 17 | 704 | (1.1+ | 1.5+) | | |
| 2000 10 02 | 704 | 1.0+ | 0.2− | 2006 10 21 | 683 | (0.7− | 2.4−) | 2006 11 19 | 704 | 0.9+ | 1.3+ | | |
| 2000 10 02 | 704 | 0.2+ | 0.2− | 2006 10 21 | 683 | (2.0− | 0.4−) | 2006 11 19 | 704 | (2.4+ | 0.3+) | | |
| 2000 10 02 | 704 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.2− | 1.3+ | | |
| 2000 10 02 | 704 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.3+ | 1.1+ | | |
| 2000 10 02 | 704 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.0 | 1.2+ | | |
| 2001 12 14 | 704 | 0.6+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.2+ | 1.3+ | | |
| 2001 12 14 | 704 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.6− | 0.2+ | 2006 11 20 | 704 | 0.3− | 1.2+ | | |
| 2001 12 14 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | (0.3− | 2.0+) | | |
| 2001 12 14 | 704 | 1.3+ | 0.2+ | 2006 10 23 | 683 | 0.0 | 0.0 | 2006 11 20 | 704 | (0.0 | 1.5+) | | |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2006 10 23 | 683 | 0.6+ | 0.0 | 2006 11 20 | 704 | (0.2+ | 2.0+) | | |

**(138557)∗ 2000 QS$_{47}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.55802 | | (2000.0) | | +0.74027298 | −0.67220899 |
| $n$ | 0.17422334 | $\omega$ | 243.63757 | | +0.62746656 | +0.68468707 |
| $a$ | 3.1749129 | $\Omega$ | 158.59405 | | +0.24141590 | +0.28167124 |
| $e$ | 0.2356369 | $i$ | 1.79699 | | | |
| $P$ | 5.66 | $H$ | 14.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.3− | 0.1+ | 2001 12 20 | 704 | (0.0 | 2.4+) | 2006 09 18 | 691 | 0.2+ | 0.3+ | | |
| 2000 08 24 | 704 | 0.4+ | 0.4+ | 2001 12 20 | 704 | (0.0 | 3.0+) | 2006 09 18 | 691 | 0.1+ | 0.1− | | |
| 2000 08 24 | 704 | 0.5− | 0.2+ | 2001 12 21 | 704 | 0.6− | 0.6+ | 2006 09 18 | 699 | 1.3+ | 1.4+ | | |
| 2000 08 24 | 704 | 0.1+ | 0.4+ | 2001 12 21 | 704 | 0.6+ | 1.4+ | 2006 09 18 | 699 | 0.1+ | 0.0 | | |
| 2000 08 24 | 704 | 0.0 | 0.8+ | 2001 12 21 | 704 | 0.8− | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.3+ | | |
| 2000 08 29 | 704 | 0.2− | 0.1− | 2001 12 21 | 704 | 0.0 | 0.5− | 2006 09 20 | 704 | (1.1− | 1.7+) | | |
| 2000 08 29 | 704 | 0.1+ | 0.2− | 2001 12 21 | 704 | 0.3− | 1.3+ | 2006 09 20 | 704 | 0.3− | 0.6+ | | |
| 2000 08 29 | 704 | 0.1− | 0.0 | 2001 12 25 | 608 | 0.4+ | 0.4− | 2006 09 20 | 704 | 0.3− | 0.1+ | | |
| 2000 08 29 | 704 | 0.3− | 0.5+ | 2001 12 25 | 608 | 0.2+ | 0.5− | 2006 09 20 | 704 | 0.1− | 1.0+ | | |
| 2000 08 29 | 704 | 0.2+ | 0.1− | 2001 12 25 | 608 | 0.3+ | 0.9− | 2006 09 20 | 704 | 0.3− | 0.6+ | | |
| 2000 09 05 | 704 | 0.7− | 0.0 | 2002 01 05 | 608 | 0.5− | 0.3− | 2006 09 20 | 644 | 0.1+ | 0.0 | | |
| 2000 09 05 | 704 | 0.5+ | 0.5− | 2002 01 05 | 608 | 0.3− | 0.6− | 2006 09 20 | 644 | 0.0 | 0.1+ | | |
| 2000 09 05 | 704 | 0.3− | 0.1− | 2002 01 05 | 608 | 0.6− | 0.3− | 2006 09 20 | 644 | 0.1− | 0.2+ | | |
| 2000 09 21 | 704 | 0.7+ | 1.0+ | 2002 01 05 | 608 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.2+ | | |
| 2000 09 21 | 704 | 0.6+ | 1.3+ | 2002 01 05 | 608 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 21 | 704 | 1.0+ | 0.6+ | 2002 01 05 | 608 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1+ | | |
| 2000 09 21 | 704 | 0.5+ | 0.5+ | 2002 01 09 | 704 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.2− | | |
| 2000 09 21 | 704 | 1.2+ | 0.1+ | 2002 01 09 | 704 | 0.3− | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2000 09 24 | 704 | 0.3− | 0.6− | 2002 01 09 | 608 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− | | |
| 2000 09 24 | 704 | 0.2− | 0.2− | 2002 01 09 | 608 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2000 09 24 | 704 | 0.1+ | 0.2− | 2002 01 09 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.2− | | |
| 2000 09 24 | 704 | 0.4+ | 0.7+ | 2002 01 09 | 608 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.0 | | |
| 2000 09 24 | 704 | 0.8− | 1.5+ | 2002 01 09 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.2− | 0.2+ | | |
| 2000 10 02 | 704 | 0.7− | 0.7+ | 2002 01 09 | 704 | 0.0 | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.0 | | |
| 2000 10 02 | 704 | 0.0 | 0.8+ | 2002 01 13 | 704 | (0.3+ | 1.6−) | 2006 09 27 | 704 | 0.3− | 0.4+ | | |
| 2000 10 02 | 704 | 0.3− | 0.2+ | 2002 01 13 | 704 | 0.0 | 0.9− | 2006 09 29 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 02 | 704 | 1.5− | 0.3+ | 2002 01 13 | 704 | 0.0 | 0.9− | 2006 09 29 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.4− | 0.5− | 2002 01 13 | 704 | 0.0 | 1.0− | 2006 09 29 | 691 | 0.0 | 0.1− | | |
| 2001 12 09 | 691 | 0.1− | 0.2+ | 2002 01 15 | 704 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.0 | | |
| 2001 12 09 | 691 | 0.5− | 0.2+ | 2002 01 15 | 704 | 0.7− | 0.3− | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 2001 12 09 | 699 | 0.5+ | 0.4+ | 2002 01 15 | 704 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.5− | 0.1+ | | |
| 2001 12 09 | 691 | 0.4− | 0.2+ | 2002 01 15 | 704 | 0.3− | 0.1− | 2006 10 15 | 703 | 0.7− | 0.2+ | | |
| 2001 12 09 | 699 | 0.2+ | 0.1− | 2002 01 15 | 608 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.5− | 0.6+ | | |
| 2001 12 09 | 699 | 0.1+ | 1.1+ | 2002 01 15 | 704 | 0.4− | 0.3− | 2006 10 15 | 703 | 0.1− | 0.1+ | | |
| 2001 12 09 | 699 | 0.7+ | 0.5+ | 2002 01 15 | 608 | 0.3+ | 0.9− | 2006 10 15 | 703 | 0.5− | 0.5+ | | |
| 2001 12 10 | 704 | 0.0 | 0.3+ | 2002 01 15 | 608 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− | | |
| 2001 12 10 | 704 | 0.3+ | 0.9+ | 2002 01 19 | 704 | 0.4+ | 0.7− | 2006 10 17 | G96 | 0.1− | 0.4− | | |
| 2001 12 10 | 704 | 0.1+ | 0.9+ | 2002 01 19 | 704 | 0.3+ | 0.7− | 2006 10 17 | G96 | 0.3− | 0.1− | | |
| 2001 12 10 | 704 | 0.3− | 0.8+ | 2002 01 19 | 704 | 1.0+ | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.3− | | |
| 2001 12 14 | 732 | 0.0 | 0.2− | 2002 02 07 | 704 | 0.2+ | 1.5+ | 2006 10 17 | G96 | 0.1− | 0.2− | | |
| 2001 12 14 | 732 | 0.0 | 0.5− | 2002 02 07 | 704 | 0.6− | 0.9+ | 2006 10 17 | G96 | 0.3− | 0.3− | | |
| 2001 12 14 | 732 | 0.2− | 0.1− | 2002 02 07 | 704 | 1.2− | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.2+ | | |
| 2001 12 14 | 704 | 0.4− | 0.2+ | 2002 02 07 | 704 | (0.6− | 2.2+) | 2006 10 17 | G96 | 0.4+ | 0.2− | | |
| 2001 12 14 | 704 | 0.5− | 0.1− | 2002 02 11 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2001 12 14 | 704 | 0.3− | 0.5− | 2002 02 11 | 704 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.3+ | | |
| 2001 12 14 | 704 | 1.0− | 0.8− | 2002 02 11 | 704 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ | | |
| 2001 12 14 | 704 | 0.9− | 0.4− | 2002 02 11 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2001 12 15 | 732 | 0.2+ | 0.3− | 2003 04 07 | 691 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 12 15 | 732 | 0.1+ | 0.2− | 2003 04 07 | 691 | (1.0− | 2.0+) | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2001 12 15 | 732 | 0.1+ | 0.2− | 2003 04 07 | 691 | 0.3+ | 1.1+ | 2006 10 21 | 291 | 0.1+ | 0.1+ | | |
| 2001 12 16 | 732 | 0.2− | 0.1+ | 2003 04 24 | 691 | (0.8+ | 1.7+) | 2006 10 21 | 291 | 0.0 | 0.3+ | | |
| 2001 12 16 | 732 | 0.2+ | 0.6− | 2003 04 24 | 691 | (0.2+ | 2.0+) | 2006 10 21 | 291 | 0.0 | 0.2+ | | |
| 2001 12 16 | 732 | 0.0 | 0.4− | 2003 04 24 | 691 | 1.2+ | 1.0+ | 2006 10 21 | 703 | 0.7− | 0.3+ | | |
| 2001 12 16 | 732 | 0.2+ | 0.0 | 2003 05 01 | 691 | 1.2+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2001 12 16 | 732 | 0.3+ | 0.3+ | 2003 05 01 | 691 | 1.1+ | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2001 12 16 | 732 | 0.7− | 0.2+ | 2003 05 01 | 691 | 0.7+ | 0.3− | 2006 10 21 | 703 | 0.4− | 0.2+ | | |
| 2001 12 17 | 732 | 1.4+ | 0.7+ | 2004 04 28 | 691 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2001 12 17 | 704 | 0.6− | 0.1− | 2004 04 28 | 691 | 0.2− | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.1+ | | |
| 2001 12 17 | 644 | 1.1+ | 0.5+ | 2004 04 28 | 691 | 0.4− | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2001 12 17 | 704 | 0.3− | 0.7− | 2004 06 13 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.1− | | |
| 2001 12 17 | 644 | 0.8+ | 0.6+ | 2004 06 13 | 691 | 0.5− | 0.0 | 2006 10 23 | 704 | 0.3+ | 0.1+ | | |
| 2001 12 17 | 732 | 0.3+ | 0.2+ | 2004 06 13 | 691 | 0.2− | 0.8+ | 2006 10 23 | 704 | 0.1− | 0.0 | | |
| 2001 12 17 | 704 | 0.0 | 0.0 | 2006 08 06 | 699 | 0.2− | 0.4+ | 2006 10 23 | 704 | 0.2− | 0.1− | | |
| 2001 12 17 | 644 | 0.7+ | 0.7+ | 2006 08 06 | 699 | 0.6+ | 0.3− | 2006 10 23 | 704 | 0.7+ | 0.4+ | | |
| 2001 12 17 | 732 | 0.6+ | 0.1− | 2006 08 06 | 699 | 0.9− | 0.7− | 2006 10 23 | 704 | 0.8+ | 0.5+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2006 08 06 | 699 | 1.3− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2001 12 17 | 732 | 0.3+ | 0.1− | 2006 09 06 | 644 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2006 09 06 | 644 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2001 12 18 | 732 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2001 12 18 | 732 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.0 | 0.1+ | | |
| 2001 12 18 | 732 | 0.5+ | 0.1− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.0 | | |
| 2001 12 18 | 732 | 0.1+ | 0.4− | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.0 | | |
| 2001 12 18 | 732 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 2001 12 19 | 644 | 0.3+ | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.2− | | |
| 2001 12 19 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.1+ | | |
| 2001 12 19 | 644 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.9− | 0.6− | | |
| 2001 12 20 | 704 | (0.1− | 2.7+) | 2006 09 17 | 704 | 0.4− | 0.2− | | | | | | |
| 2001 12 20 | 704 | (0.0 | 2.3+) | 2006 09 18 | 691 | 0.1+ | 0.1− | | | | | | |

**(138558)∗ 2000 QP$_{51}$ = 1995 UJ$_{83}$ = 2004 FQ$_{145}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60705), A. Doppler (*MPO* 93834)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.83503 | | (2000.0) | | +0.57230960 | +0.81885327 |
| $n$ | 0.18538043 | $\omega$ | 149.48415 | | −0.77209104 | +0.55617073 |
| $a$ | 3.0462120 | $\Omega$ | 155.34456 | | −0.27629179 | +0.14196278 |
| $e$ | 0.2573602 | $i$ | 6.06244 | | | |
| $P$ | 5.32 | $H$ | 15.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.0 | 0.2+ | 2000 08 29 | 704 | 0.0 | 1.3+ | 2004 03 31 | 691 | 0.1− | 0.2+ |
| 1995 09 24 | 691 | 0.3+ | 0.4+ | 2000 08 29 | 704 | 0.6− | 0.9+ | 2004 03 31 | 691 | 0.1+ | 0.6+ |
| 1995 09 24 | 691 | 0.1+ | 0.2+ | 2000 09 02 | 704 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.9+ |
| 1995 10 26 | 104 | 1.4− | 1.1+ | 2000 09 02 | 704 | 1.0+ | 0.4+ | 2006 09 30 | 703 | 0.7+ | 1.2+ |
| 1995 10 26 | 104 | 1.7− | 0.7+ | 2000 09 02 | 704 | 0.2− | 0.4+ | 2006 09 30 | 703 | (2.2− | 0.1−) |
| 1995 10 26 | 104 | 1.5− | 0.8+ | 2000 09 05 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | (1.9− | 0.6+) |
| 1995 10 26 | 104 | 1.4− | 0.6+ | 2000 09 05 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.2− | 0.9+ |
| 1995 10 31 | 104 | 0.9+ | 0.6− | 2000 09 05 | 704 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.5+ |
| 1995 10 31 | 104 | 0.7+ | 0.1− | 2000 09 05 | 704 | 0.2− | 0.9− | 2006 10 16 | 703 | 0.2− | 0.0 |
| 1995 10 31 | 104 | 0.9+ | 0.4+ | 2000 09 05 | 704 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2000 08 21 | 699 | 0.4− | 0.4+ | 2004 03 15 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.3+ | 0.4+ |
| 2000 08 21 | 699 | 0.1− | 0.7+ | 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | 1.3− | 1.1+ |
| 2000 08 21 | 699 | 0.5− | 0.9+ | 2004 03 15 | 691 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2000 08 21 | 699 | 0.1− | 0.6+ | 2004 03 23 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.6− | 0.2+ |
| 2000 08 24 | 704 | 0.7− | 1.5+ | 2004 03 23 | 691 | 0.5+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2000 08 24 | 704 | 1.1− | 0.1+ | 2004 03 23 | 691 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2000 08 24 | 704 | 0.1− | 0.9+ | 2004 03 30 | 691 | 0.1− | 0.8+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2000 08 24 | 704 | 1.6+ | 0.6− | 2004 03 30 | 691 | 0.4− | 0.8+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2000 08 29 | 704 | 0.7− | 1.3+ | 2004 03 30 | 691 | 0.2− | 0.6+ | | | | |
| 2000 08 29 | 704 | 0.2− | 0.7+ | 2004 03 31 | 691 | 0.2+ | 0.3+ | | | | |

**(138559)∗ 2000 QZ$_{56}$ = 2002 AL$_{35}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25077)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.42315 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18045567 | $\omega$ | 303.43466 | | +0.76689024 | −0.64013661 | |
| $a$ | 3.1013851 | $\Omega$ | 96.41089 | | +0.60308223 | +0.69436177 | |
| $e$ | 0.1686585 | $i$ | 2.64590 | | +0.21947935 | +0.32876564 | |
| $P$ | 5.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.1+ | 0.0 | 2004 05 13 | 691 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2000 08 26 | 704 | 0.3+ | 0.5+ | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2000 08 26 | 704 | 0.6− | 0.2+ | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2000 08 26 | 704 | 0.3+ | 0.6+ | 2004 05 21 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2000 08 26 | 704 | 0.4+ | 0.3+ | 2004 05 21 | 691 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.7− | 0.6+ |
| 2000 08 29 | 704 | 0.1− | 0.0 | 2004 05 21 | 691 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2000 08 29 | 704 | 0.4− | 0.6− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2000 08 29 | 704 | 1.1+ | 0.9+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 08 29 | 704 | 0.8− | 1.6+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2000 08 30 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 11 13 | 644 | 0.5+ | 0.1− |
| 2000 08 30 | 691 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2000 08 30 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.7+ | 0.7− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.0 | 1.0+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.9− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 10 14 | D35 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2001 12 17 | 704 | 0.5+ | 0.3+ | 2006 10 14 | D35 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 1.0− | 0.7+ |
| 2002 01 08 | 704 | 0.4− | 0.4− | 2006 10 14 | D35 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2002 01 08 | 704 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2002 01 08 | 704 | 0.7+ | 1.0− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 1.5+ |
| 2002 01 08 | 704 | (1.6− | 0.2−) | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 1.5+ |
| 2002 01 13 | 704 | 1.1+ | 0.7− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2002 01 13 | 704 | 0.8+ | 0.9− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | (0.5+ | 2.3+) |
| 2002 01 13 | 704 | 0.5+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | (0.9+ | 2.0+) |
| 2002 01 13 | 704 | 0.6+ | 0.7− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.7− | 1.0+ |
| 2003 03 13 | 291 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2003 03 13 | 291 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2003 03 13 | 291 | 0.6− | 0.3+ | 2006 10 22 | 691 | (1.6− | 1.3−) | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.5− | 0.7+ |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− | | | | |

**(138560)∗ 2000 QM$_{59}$ = 2004 FE$_{157}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64760)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.73044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17984543 | $\omega$ | 316.92236 | | +0.74673423 | +0.66508860 | |
| $a$ | 3.1083968 | $\Omega$ | 1.43976 | | −0.51414400 | +0.58360882 | |
| $e$ | 0.1979338 | $i$ | 15.50856 | | −0.42195252 | +0.46589472 | |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 1.1− | 0.9+ | 2004 03 27 | 704 | 0.4+ | 1.0+ | 2006 10 17 | A50 | 0.2− | 0.0 |
| 2000 08 21 | 699 | 1.2− | 0.6+ | 2004 04 15 | 691 | 0.3− | 0.3+ | 2006 10 18 | A50 | 0.3− | 0.5+ |
| 2000 08 21 | 699 | 0.2+ | 1.3+ | 2004 04 15 | 691 | 0.1+ | 0.4+ | 2006 10 18 | A50 | 0.1+ | 0.3+ |
| 2000 08 21 | 699 | 0.1− | 0.1+ | 2004 04 15 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.2+ |
| 2000 08 26 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.5+ |
| 2000 08 26 | 704 | 0.5− | 0.9+ | 2004 04 25 | 691 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2000 08 26 | 704 | 0.2+ | 0.6+ | 2004 04 25 | 691 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.4+ |
| 2000 08 26 | 704 | 0.0 | 0.8+ | 2006 08 30 | 699 | 0.1− | 0.6+ | 2006 10 21 | 704 | 0.6+ | 0.5− |
| 2000 08 29 | 704 | 0.4− | 0.8+ | 2006 08 30 | 699 | 1.1− | 1.4+ | 2006 10 21 | 704 | 0.1+ | 0.9− |
| 2000 08 29 | 704 | 0.5− | 0.2− | 2006 08 30 | 699 | 0.3− | 1.0+ | 2006 10 21 | 704 | 0.2+ | 0.1+ |
| 2000 08 29 | 704 | 0.8+ | 0.8− | 2006 08 30 | 699 | 0.3+ | 0.5+ | 2006 10 21 | 704 | 0.3− | 0.8+ |
| 2000 08 29 | 704 | 0.6− | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2000 09 20 | 704 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2000 09 20 | 704 | 0.2− | 1.0+ | 2006 09 16 | 703 | 0.5− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2000 09 20 | 704 | 0.0 | 0.6+ | 2006 09 16 | 703 | 0.6− | 0.7− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2000 09 20 | 704 | 0.1+ | 0.9− | 2006 09 20 | 699 | (1.1− | 1.7+) | 2006 10 23 | 644 | 0.4− | 0.6− |
| 2000 09 20 | 704 | 0.1− | 1.9− | 2006 09 20 | 699 | 1.1+ | 0.7− | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2001 12 23 | 704 | 1.1− | 0.5+ | 2006 09 20 | 699 | 0.9− | 0.7− | 2006 10 27 | 703 | 0.2− | 0.5+ |
| 2001 12 23 | 704 | 0.1− | 0.2− | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.4− | 1.2+ |
| 2001 12 23 | 704 | 1.1+ | 0.0 | 2006 09 28 | 703 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2004 03 17 | 691 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.6− | 0.0 | 2006 11 09 | 104 | 0.3− | 0.4+ |
| 2004 03 17 | 691 | 0.6+ | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.0 | 2006 11 09 | 104 | 0.0 | 0.1+ |
| 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.3− | 2006 11 09 | 104 | 0.0 | 0.4+ |
| 2004 03 27 | 704 | (0.4+ | 2.0+) | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 15 | 703 | 1.0+ | 2.0+ |
| 2004 03 27 | 704 | 0.9+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.3+ |
| 2004 03 27 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.5+ | 0.0 |
| 2004 03 27 | 704 | 0.2+ | 0.9+ | 2006 10 17 | A50 | 0.3− | 0.4− | 2006 11 15 | 703 | 0.0 | 1.0− |

**(138561)∗ 2000 QY$_{66}$**

Discovered 2000 Aug. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.23582 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28005274 | $\omega$ | 247.00744 | | +0.99504953 | −0.08355240 | |
| $a$ | 2.3137131 | $\Omega$ | 117.74858 | | +0.09760752 | +0.92346139 | |
| $e$ | 0.2320361 | $i$ | 3.48581 | | −0.01868705 | +0.37448373 | |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 704 | 0.7− | 1.9+ | 2000 09 21 | 699 | 0.0 | 0.8+ | 2004 12 03 | 691 | 0.2− | 0.0 |
| 2000 08 28 | 704 | 0.9+ | 1.6+ | 2000 09 24 | 704 | 0.2− | 0.3+ | 2004 12 03 | 691 | 0.1− | 0.2+ |
| 2000 08 28 | 704 | 0.4+ | 1.5+ | 2000 09 24 | 704 | 0.3+ | 0.1− | 2004 12 03 | 691 | 0.0 | 0.1+ |
| 2000 08 29 | 704 | 0.4+ | 0.7+ | 2000 09 24 | 704 | 0.1− | 0.7+ | 2005 01 15 | 704 | 0.2+ | 0.3+ |
| 2000 08 29 | 704 | 0.3+ | 0.1− | 2000 09 24 | 704 | 0.1− | 0.5+ | 2005 01 15 | 704 | 0.4+ | 0.7+ |
| 2000 08 29 | 704 | 0.3− | 0.4− | 2000 09 24 | 704 | 0.6− | 1.0+ | 2005 01 15 | 704 | 0.3+ | 1.1+ |
| 2000 09 02 | 699 | 0.9− | 0.2+ | 2000 10 02 | 699 | 1.4+ | 1.0+ | 2005 01 15 | 704 | 1.0+ | 0.6+ |
| 2000 09 02 | 699 | 1.2− | 0.1− | 2000 10 02 | 699 | 1.0+ | 1.7+ | 2005 01 15 | 704 | 0.4− | 0.6− |
| 2000 09 02 | 699 | 0.9− | 0.1+ | 2000 10 02 | 699 | (2.1+ | 0.8+) | 2005 01 17 | 704 | 0.5+ | 0.7+ |
| 2000 09 02 | 699 | 0.9− | 0.4− | 2000 10 02 | 699 | 1.5+ | 1.7+ | 2005 01 17 | 704 | 0.6+ | 0.5+ |
| 2000 09 05 | 704 | 0.4− | 1.3+ | 2000 10 02 | 704 | 0.6+ | 0.7+ | 2005 01 17 | 704 | 0.0 | 0.6+ |
| 2000 09 05 | 704 | 0.2+ | 0.7+ | 2000 10 02 | 704 | 0.1+ | 0.0 | 2005 01 17 | 704 | 0.9− | 0.3+ |
| 2000 09 05 | 704 | 0.4− | 0.3+ | 2000 10 02 | 704 | 0.6+ | 0.2+ | 2005 01 17 | 704 | 0.5+ | 1.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 704 | 0.4+ | 0.6+ | 2000 10 02 | 704 | 0.7− | 0.3− | 2006 03 24 | 691 | 0.9+ | 0.9+ |
| 2000 09 05 | 691 | 1.0− | 0.1− | 2000 10 02 | 704 | 0.5+ | 0.2+ | 2006 03 24 | 691 | 0.1+ | 1.0+ |
| 2000 09 05 | 704 | 0.4− | 0.2+ | 2000 12 04 | 691 | 0.2− | 0.2− | 2006 03 24 | 691 | 0.1− | 1.2+ |
| 2000 09 05 | 691 | 0.2− | 0.3− | 2000 12 04 | 691 | 0.2− | 0.2− | 2006 04 30 | 691 | 0.1+ | 0.6+ |
| 2000 09 05 | 691 | 0.3− | 0.3− | 2000 12 04 | 691 | 0.3− | 0.0 | 2006 04 30 | 691 | 0.1− | 0.1+ |
| 2000 09 21 | 699 | 0.3+ | 0.4+ | 2002 02 19 | 691 | 0.4− | 0.4+ | 2006 04 30 | 691 | 0.3+ | 0.4+ |
| 2000 09 21 | 699 | 0.5+ | 1.2+ | 2002 02 19 | 691 | 0.1+ | 0.7+ | 2006 05 01 | 715 | 0.3+ | 0.3− |
| 2000 09 21 | 699 | 0.2+ | 0.6+ | 2002 02 19 | 691 | 0.8+ | 0.0 | 2006 05 01 | 715 | (2.9− | 1.1+) |

**(138562)∗ 2000 QC$_{68}$**

Discovered 2000 Aug. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.34433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17994226 | $\omega$ | 344.56413 | | +0.98599869 | −0.15245604 | |
| $a$ | 3.1072815 | $\Omega$ | 24.51467 | | +0.16497398 | +0.83282416 | |
| $e$ | 0.2153883 | $i$ | 9.37021 | | +0.02429326 | +0.53212881 | |
| $P$ | 5.48 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 704 | 0.3− | 0.4+ | 2001 12 09 | 704 | 0.3− | 1.3+ | 2006 10 19 | 703 | 0.4+ | 0.3+ |
| 2000 08 28 | 704 | 1.3− | 0.1+ | 2001 12 09 | 704 | (0.7− | 2.2+) | 2006 10 27 | 703 | 0.5− | 0.2+ |
| 2000 08 28 | 704 | 0.0 | 0.4+ | 2001 12 09 | 704 | (0.8− | 1.7+) | 2006 10 27 | 703 | 0.4− | 0.3+ |
| 2000 08 29 | 704 | 0.1+ | 0.7+ | 2001 12 09 | 704 | 0.4− | 1.2+ | 2006 10 27 | 703 | 0.9+ | 0.4+ |
| 2000 08 29 | 704 | 0.4− | 0.3+ | 2001 12 09 | 704 | (1.0+ | 3.0+) | 2006 10 27 | 703 | 0.7+ | 0.3− |
| 2000 08 29 | 704 | 0.3+ | 0.1+ | 2001 12 18 | 699 | 0.9+ | 0.1+ | 2006 10 29 | 704 | 0.2+ | 1.5− |
| 2000 09 09 | 699 | 0.5+ | 0.8+ | 2001 12 18 | 699 | 1.4− | 0.8+ | 2006 10 29 | 704 | 0.1+ | 0.6+ |
| 2000 09 09 | 699 | 0.3− | 0.7+ | 2001 12 18 | 699 | 0.2− | 0.3− | 2006 10 29 | 704 | 0.5− | 1.0+ |
| 2000 09 09 | 699 | 0.7+ | 0.4+ | 2001 12 18 | 699 | 0.2+ | 0.6+ | 2006 10 29 | 704 | 0.2+ | 0.7+ |
| 2000 09 09 | 699 | 0.9+ | 0.4+ | 2001 12 19 | 645 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2000 09 24 | 704 | 0.0 | 0.2− | 2001 12 19 | 645 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1− | 0.4− |
| 2000 09 24 | 704 | 0.1− | 0.1− | 2001 12 19 | 644 | 0.0 | 0.8+ | 2006 11 13 | 644 | 0.4− | 0.2− |
| 2000 09 24 | 704 | 0.1+ | 0.2+ | 2001 12 19 | 644 | 0.1− | 0.6+ | 2006 11 15 | 704 | 0.3+ | 0.4+ |
| 2000 09 24 | 704 | 0.2− | 0.0 | 2001 12 19 | 644 | 0.1− | 1.0+ | 2006 11 15 | 704 | 0.3− | 0.5− |
| 2000 09 24 | 704 | 0.5+ | 0.2+ | 2002 01 14 | 644 | 0.5+ | 0.5+ | 2006 11 15 | 704 | 0.3− | 0.0 |
| 2000 10 02 | 699 | 0.6− | 0.5+ | 2002 01 14 | 644 | 0.4+ | 0.5+ | 2006 11 15 | 704 | 1.5− | 1.0− |
| 2000 10 02 | 699 | 0.3− | 0.4+ | 2002 01 14 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 704 | 0.5+ | 0.5− |
| 2000 10 02 | 699 | 0.2− | 0.0 | 2002 02 03 | 644 | 0.0 | 1.0+ | 2006 11 15 | 704 | 0.2− | 0.4+ |
| 2000 10 02 | 699 | 0.4− | 0.4+ | 2002 02 03 | 644 | 0.2− | 0.6+ | 2006 11 15 | 704 | 0.2− | 1.1+ |
| 2000 10 02 | 704 | 0.1+ | 0.1− | 2002 02 03 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 0.2− | 0.3− | 2003 04 04 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.1− |
| 2000 10 02 | 704 | 1.3− | 0.3− | 2003 04 04 | 691 | 0.9+ | 0.5+ | 2006 11 16 | 704 | 0.0 | 0.5− |
| 2000 10 02 | 704 | 0.2− | 0.4− | 2003 04 04 | 691 | 0.6+ | 0.5+ | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 2000 10 02 | 704 | 0.5+ | 0.4+ | 2004 05 23 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2000 11 19 | 699 | 0.1− | 0.3+ | 2004 05 23 | 691 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2000 11 19 | 699 | 0.8− | 1.3+ | 2004 05 23 | 691 | 0.6− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2000 11 19 | 699 | 0.7− | 0.2+ | 2005 07 25 | E12 | 0.7+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2000 11 19 | 699 | 0.3− | 0.3− | 2005 07 25 | E12 | 0.5+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2000 11 25 | 704 | 0.2− | 0.0 | 2005 07 25 | E12 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2000 11 25 | 704 | 0.8− | 0.7+ | 2005 07 25 | E12 | 0.2− | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2000 11 25 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.6− |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.6− | | | | |

**(138563)∗ 2000 QE$_{69}$**

Discovered 2000 Aug. 27 by J. V. McClusky at Fair Oaks Ranch.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.80193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17764316 | $\omega$ | 67.25249 | | +0.93291838 | −0.20397338 | |
| $a$ | 3.1340342 | $\Omega$ | 303.28749 | | +0.00735833 | +0.83471988 | |
| $e$ | 0.1423124 | $i$ | 20.79284 | | +0.36001270 | +0.51150521 | |
| $P$ | 5.55 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.3− | 0.7− | 2001 12 18 | 446 | 0.6+ | 0.4− | 2003 02 03 | 608 | 0.9+ | 1.2− |
| 2000 07 07 | 704 | 0.3+ | 0.3− | 2001 12 18 | 446 | 0.8− | 0.0 | 2003 02 03 | 608 | 0.5+ | 0.8− |
| 2000 07 07 | 704 | 0.2+ | 0.8− | 2001 12 18 | 446 | 0.2+ | 0.2− | 2003 02 09 | 608 | 0.3− | 0.9+ |
| 2000 07 07 | 704 | 0.0 | 0.0 | 2001 12 23 | 704 | 0.3− | 0.3− | 2003 02 09 | 608 | 0.3+ | 1.4+ |
| 2000 07 07 | 704 | 0.0 | 0.4+ | 2001 12 23 | 704 | 0.3− | 0.3− | 2003 02 09 | 608 | 0.3− | 1.3+ |
| 2000 08 01 | 704 | 1.0− | 0.6− | 2001 12 23 | 704 | 0.1− | 0.0 | 2003 02 19 | 644 | 0.2+ | 0.1+ |
| 2000 08 01 | 704 | 0.4− | 0.8+ | 2001 12 23 | 704 | 0.4− | 0.8− | 2003 02 19 | 644 | 0.2+ | 0.4+ |
| 2000 08 01 | 704 | 0.5− | 1.0+ | 2001 12 23 | 704 | 0.2− | 1.1− | 2003 02 19 | 644 | 0.5+ | 0.1+ |
| 2000 08 01 | 704 | 0.5− | 0.2+ | 2002 01 06 | 704 | 0.6+ | 1.1+ | 2006 08 24 | 704 | (2.7− | 0.8+) |
| 2000 08 20 | 699 | 1.0+ | 0.6+ | 2002 01 06 | 704 | 0.6+ | 0.9+ | 2006 08 24 | 704 | (1.6− | 1.0+) |
| 2000 08 20 | 699 | 0.7+ | 0.6+ | 2002 01 06 | 704 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 1.1− | 1.0+ |
| 2000 08 20 | 699 | 1.3+ | 0.2+ | 2002 01 06 | 704 | 0.3+ | 0.3− | 2006 08 24 | 704 | 0.2− | 0.5+ |
| 2000 08 20 | 699 | (2.2+ | 0.7−) | 2002 12 14 | 645 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.5− | 0.5+ |
| 2000 08 27 | 725 | 0.4− | 0.0 | 2002 12 14 | 645 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.3− | 1.4− |
| 2000 08 27 | 725 | (4.6− | 0.3−) | 2003 01 07 | 704 | 0.7+ | 0.1+ | 2006 09 16 | 703 | 0.4+ | 0.4− |
| 2000 08 27 | 725 | 0.2− | 0.2− | 2003 01 07 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.6+ |
| 2000 08 27 | 725 | 0.4− | 0.0 | 2003 01 07 | 704 | 0.2− | 1.1+ | 2006 09 21 | 699 | 0.9+ | 0.1+ |
| 2000 08 30 | 725 | 0.0 | 0.4+ | 2003 01 07 | 704 | 0.5+ | 0.3− | 2006 09 21 | 699 | 0.6+ | 0.6+ |
| 2000 08 30 | 725 | 0.1− | 0.5+ | 2003 01 07 | 704 | 0.6+ | 0.6+ | 2006 09 21 | 699 | 0.7+ | 0.8+ |
| 2000 09 07 | 725 | 0.0 | 0.3− | 2003 01 26 | 644 | 0.2− | 0.4+ | 2006 09 21 | 699 | 0.5+ | 1.2+ |
| 2000 09 07 | 725 | 0.3+ | 0.7+ | 2003 01 26 | 644 | 0.5+ | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2000 09 07 | 725 | 0.1− | 0.2− | 2003 01 26 | 644 | 1.3+ | 0.6+ | 2006 09 28 | 703 | 0.3− | 0.3+ |
| 2000 09 17 | 725 | 0.4− | 0.7+ | 2003 01 28 | 608 | 0.2+ | 0.9+ | 2006 09 28 | 703 | 0.2− | 0.0 |
| 2000 09 19 | 725 | 0.7− | 0.4− | 2003 01 28 | 608 | 0.2− | 1.1+ | 2006 09 28 | 703 | 0.3− | 0.3+ |
| 2000 09 19 | 725 | 0.2− | 0.0 | 2003 01 28 | 608 | 0.2+ | 0.9+ | 2006 10 20 | 703 | 0.7− | 0.6− |
| 2001 12 11 | 732 | 0.2− | 0.8− | 2003 02 02 | 704 | 0.2+ | 1.4+ | 2006 10 20 | 703 | 1.3− | 0.5+ |
| 2001 12 11 | 732 | 0.7+ | 1.2− | 2003 02 02 | 704 | 0.1− | 0.6− | 2006 10 20 | 703 | 1.3− | 0.6− |
| 2001 12 11 | 732 | 0.2− | 1.3− | 2003 02 02 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 703 | 0.3− | 0.2+ |
| 2001 12 17 | 446 | 0.6− | 0.6+ | 2003 02 02 | 704 | (0.9+ | 1.6+) | | | | |
| 2001 12 17 | 446 | 0.1− | 1.0+ | 2003 02 03 | 608 | 0.3+ | 1.1− | | | | |

**(138564)∗ 2000 QH$_{74}$ = 2002 AY$_{122}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22349)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.87787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17536197 | $\omega$ | 95.67923 | | +0.46194519 | −0.88338141 | |
| $a$ | 3.1611549 | $\Omega$ | 326.44252 | | +0.74660566 | +0.43541341 | |
| $e$ | 0.3062686 | $i$ | 8.21854 | | +0.47873440 | +0.17335641 | |
| $P$ | 5.62 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 11 | 691 | 0.5+ | 0.3+ | 2002 01 21 | 704 | 0.9+ | 0.6− | 2002 03 13 | 704 | 0.6+ | 0.4− |
| 1997 04 11 | 691 | 0.0 | 0.1− | 2002 01 21 | 704 | 0.7+ | 0.6− | 2002 03 13 | 704 | 0.1+ | 0.1+ |
| 1997 04 11 | 691 | 0.1− | 0.4+ | 2002 02 04 | 608 | 0.7− | 0.4+ | 2002 03 13 | 704 | 0.6− | 0.2+ |
| 2000 08 24 | 704 | 0.1+ | 0.7+ | 2002 02 04 | 608 | 0.9− | 0.1+ | 2002 03 13 | 704 | 0.3+ | 0.2+ |
| 2000 08 24 | 704 | 0.3− | 1.0+ | 2002 02 04 | 608 | 0.6− | 0.2+ | 2002 03 15 | 704 | 0.7+ | 0.4− |
| 2000 08 24 | 704 | 0.9− | 0.1− | 2002 02 05 | 699 | 0.1+ | 0.4− | 2002 03 15 | 704 | 1.1+ | 0.0 |
| 2000 08 24 | 704 | 0.1+ | 0.2+ | 2002 02 05 | 699 | 0.7+ | 0.7+ | 2002 03 15 | 704 | 0.2+ | 0.7+ |
| 2000 08 24 | 704 | 0.7− | 0.5+ | 2002 02 05 | 699 | 0.4+ | 0.2+ | 2002 03 15 | 704 | 0.3− | 0.3− |
| 2000 08 31 | 704 | 0.9− | 1.7+ | 2002 02 05 | 699 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2000 08 31 | 704 | 0.5− | 1.1+ | 2002 02 05 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.4− |
| 2000 08 31 | 704 | 1.0− | 0.9+ | 2002 02 05 | 644 | 0.2+ | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.3− |
| 2000 08 31 | 704 | 0.3− | 0.8+ | 2002 02 05 | 644 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2000 08 31 | 704 | 0.1− | 1.2+ | 2002 02 05 | 644 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2000 09 03 | 704 | 0.9− | 0.4+ | 2002 02 05 | 644 | 0.6+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2000 09 03 | 704 | 0.7− | 0.8+ | 2002 02 05 | 644 | 0.0 | 0.9+ | 2006 10 19 | 703 | 0.5− | 1.0− |
| 2000 09 03 | 704 | 0.3+ | 0.7+ | 2002 02 07 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.4− |
| 2000 09 03 | 704 | 0.4− | 1.5+ | 2002 02 07 | 704 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.1+ |
| 2000 09 03 | 704 | 1.2− | 0.7+ | 2002 02 07 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.1+ |
| 2000 09 23 | 699 | 0.4− | 0.8+ | 2002 02 07 | 704 | 0.1+ | 0.0 | 2006 10 20 | 704 | 0.0 | 0.2+ |
| 2000 09 23 | 699 | 0.2− | 0.3− | 2002 02 07 | 704 | 0.3+ | 0.0 | 2006 10 20 | 704 | 0.6− | 0.6+ |
| 2000 09 23 | 699 | 0.3− | 0.5+ | 2002 02 10 | 704 | 0.4− | 0.1+ | 2006 10 20 | 704 | 0.4− | 1.2+ |
| 2000 09 23 | 699 | 0.3+ | 0.5+ | 2002 02 10 | 691 | 0.6− | 0.2+ | 2006 10 20 | 704 | 0.4+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 106 | 0.6+ | 1.3+ | 2002 02 10 | 704 | 0.4− | 0.3+ | 2006 10 20 | 704 | 0.5+ | 0.1− | | |
| 2000 09 27 | 106 | 0.5− | 0.9+ | 2002 02 10 | 691 | 0.6− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2000 09 27 | 106 | 0.7− | 0.2+ | 2002 02 10 | 704 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 2000 10 03 | 704 | 0.5− | 0.2− | 2002 02 10 | 704 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.3− | | |
| 2000 10 03 | 704 | 0.5− | 0.8+ | 2002 02 10 | 691 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.2− | | |
| 2000 10 03 | 704 | 0.9+ | 1.4− | 2002 02 10 | 704 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.7− | | |
| 2000 10 03 | 704 | 0.1− | 0.2+ | 2002 02 10 | 608 | 0.1+ | 0.8− | 2006 10 27 | 703 | 0.2− | 0.2− | | |
| 2002 01 09 | 704 | 0.9+ | 0.6+ | 2002 02 10 | 608 | 0.5+ | 0.2− | 2006 10 27 | 703 | 0.3− | 0.2− | | |
| 2002 01 09 | 704 | 0.2+ | 0.9+ | 2002 02 10 | 608 | 0.3+ | 0.1− | 2006 11 15 | 703 | (1.4+ | 1.8−) | | |
| 2002 01 09 | 704 | 0.7+ | 1.2+ | 2002 02 12 | 704 | 0.2− | 1.1+ | 2006 11 15 | 703 | 0.2− | 0.6− | | |
| 2002 01 09 | 704 | 0.5+ | 0.6+ | 2002 02 12 | 704 | 0.5+ | 0.6+ | 2006 11 15 | 703 | 0.3+ | 0.5− | | |
| 2002 01 09 | 704 | 0.0 | 0.7+ | 2002 02 12 | 704 | 0.0 | 1.3+ | 2006 11 15 | 703 | 0.4− | 0.3− | | |
| 2002 01 14 | 704 | 0.8+ | 0.0 | 2002 02 12 | 704 | 0.1+ | 1.0+ | 2006 11 16 | 704 | 0.9+ | 0.2+ | | |
| 2002 01 14 | 704 | 0.8+ | 0.2− | 2002 02 12 | 704 | 0.6+ | 0.9+ | 2006 11 16 | 704 | 0.4+ | 0.3+ | | |
| 2002 01 14 | 704 | 1.0+ | 0.1+ | 2002 02 13 | 704 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.6+ | | |
| 2002 01 14 | 704 | 0.9+ | 0.1+ | 2002 02 13 | 704 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.1− | 0.2+ | | |
| 2002 01 14 | 704 | 0.8+ | 0.2− | 2002 02 13 | 704 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.6− | | |
| 2002 01 18 | 704 | 0.1− | 0.2− | 2002 02 13 | 704 | 0.4+ | 0.0 | 2006 11 22 | 703 | 0.0 | 0.9− | | |
| 2002 01 18 | 704 | 0.7+ | 0.2+ | 2002 02 13 | 704 | 0.7+ | 0.8+ | 2006 11 22 | 703 | 0.2+ | 0.8− | | |
| 2002 01 18 | 704 | 1.0+ | 0.5+ | 2002 02 15 | 608 | (0.7− | 1.8+) | 2006 11 22 | 703 | 0.2+ | 0.6− | | |
| 2002 01 18 | 704 | 0.1+ | 0.2− | 2002 02 15 | 608 | (0.8− | 1.8+) | 2006 11 22 | 703 | 0.1− | 0.3− | | |
| 2002 01 20 | 333 | 0.8+ | 0.6+ | 2002 02 15 | 608 | 0.4− | 1.3+ | 2006 11 28 | 704 | 1.1+ | 0.7+ | | |
| 2002 01 20 | 333 | 0.9− | 0.4− | 2002 03 03 | 703 | (1.6− | 0.1+) | 2006 11 28 | 704 | 0.5+ | 0.3+ | | |
| 2002 01 20 | 333 | 0.6− | 0.6− | 2002 03 03 | 703 | 0.3+ | 1.3− | 2006 11 28 | 704 | 0.7+ | 0.1+ | | |
| 2002 01 21 | 704 | 0.3− | 0.3− | 2002 03 03 | 703 | (1.8− | 1.3−) | 2006 11 28 | 704 | 0.8+ | 0.5− | | |
| 2002 01 21 | 704 | 0.1+ | 0.1+ | 2002 03 03 | 703 | (3.2− | 0.4+) | | | | | | |
| 2002 01 21 | 704 | 0.4− | 0.4− | 2002 03 13 | 704 | 1.0+ | 0.8− | | | | | | |

**(138565)∗ 2000 QG$_{76}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.74509 | | (2000.0) | | | |
| $n$ | 0.17304885 | $\omega$ | 62.71135 | | +0.79161328 | −0.60109593 |
| $a$ | 3.1892623 | $\Omega$ | 333.78368 | | +0.43498915 | +0.68047008 |
| $e$ | 0.1506416 | $i$ | 14.37714 | | +0.42910704 | +0.41909921 |
| $P$ | 5.70 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.1− | 0.1− | 2001 11 19 | 644 | 0.2− | 0.3+ | 2003 03 26 | 644 | 0.6+ | 0.3+ | | |
| 2000 08 24 | 704 | 0.0 | 0.1+ | 2001 11 19 | 644 | 0.1− | 0.2+ | 2003 03 28 | 699 | 1.4+ | 0.5+ | | |
| 2000 08 24 | 704 | 0.4+ | 1.1+ | 2001 12 08 | 704 | 0.1− | 0.2− | 2003 03 28 | 699 | (2.6+ | 0.6−) | | |
| 2000 08 24 | 704 | 0.4+ | 1.2+ | 2001 12 08 | 704 | 0.1− | 0.1− | 2003 03 28 | 699 | (1.6+ | 0.2−) | | |
| 2000 08 24 | 704 | 0.5+ | 0.2+ | 2001 12 08 | 704 | 0.4+ | 0.4+ | 2003 03 28 | 699 | 1.3− | 0.3+ | | |
| 2000 08 31 | 704 | 0.0 | 0.6+ | 2001 12 20 | 644 | 0.1− | 1.1+ | 2005 07 05 | E12 | 0.2− | 0.1+ | | |
| 2000 08 31 | 704 | 0.5+ | 0.0 | 2001 12 20 | 644 | 0.0 | 0.7+ | 2005 07 05 | E12 | 0.1+ | 0.7+ | | |
| 2000 08 31 | 704 | 0.4+ | 0.4+ | 2001 12 20 | 644 | 0.2− | 0.8+ | 2005 07 05 | E12 | 0.7− | 1.2+ | | |
| 2000 08 31 | 704 | 0.3+ | 0.1+ | 2001 12 23 | 704 | 0.3− | 0.3− | 2005 07 05 | E12 | 0.5− | 1.0+ | | |
| 2000 08 31 | 704 | 1.1+ | 0.3+ | 2001 12 23 | 704 | 0.1− | 0.7+ | 2006 08 25 | 704 | 0.4− | 1.0+ | | |
| 2000 09 02 | 699 | 1.8− | 0.7+ | 2001 12 23 | 704 | 0.1− | 0.3+ | 2006 08 25 | 704 | 0.2− | 0.8+ | | |
| 2000 09 02 | 699 | (2.1− | 0.6+) | 2001 12 23 | 704 | 0.1+ | 0.2− | 2006 08 25 | 704 | 0.1+ | 0.9+ | | |
| 2000 09 02 | 699 | (2.1− | 0.8+) | 2001 12 23 | 704 | 0.3+ | 0.2− | 2006 08 25 | 704 | (0.3+ | 1.6+) | | |
| 2000 09 02 | 699 | 1.3− | 1.4+ | 2002 01 05 | 644 | 0.3− | 0.7+ | 2006 08 25 | 704 | 0.0 | 0.4+ | | |
| 2000 09 03 | 704 | 1.1− | 0.7− | 2002 01 05 | 644 | 0.3− | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.1+ | | |
| 2000 09 03 | 704 | 0.1− | 0.5− | 2002 01 05 | 644 | 0.2− | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.0 | | |
| 2000 09 03 | 704 | 0.6− | 0.4+ | 2002 01 06 | 704 | 0.5+ | 0.6− | 2006 09 14 | 644 | 0.1+ | 0.1+ | | |
| 2000 09 03 | 704 | 0.3− | 0.4− | 2002 01 06 | 704 | 0.3+ | 0.3− | 2006 09 22 | 699 | 0.2+ | 0.3− | | |
| 2000 09 22 | 699 | 0.0 | 0.3− | 2002 01 06 | 704 | 0.2+ | 0.4− | 2006 09 22 | 699 | 0.1+ | 0.3− | | |
| 2000 09 22 | 699 | 0.9+ | 0.4+ | 2002 01 06 | 704 | 0.1− | 0.9− | 2006 09 22 | 699 | 0.3+ | 0.1+ | | |
| 2000 09 22 | 699 | 0.5+ | 1.5+ | 2002 01 06 | 704 | 0.1− | 0.4− | 2006 09 22 | 699 | 0.3− | 0.3+ | | |
| 2000 09 22 | 699 | 1.0+ | 0.9+ | 2002 01 14 | 644 | 0.6− | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.1− | | |
| 2000 09 23 | 699 | 0.2− | 0.4− | 2002 01 14 | 644 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.3− | | |
| 2000 09 23 | 699 | 0.7− | 0.6+ | 2002 01 14 | 644 | 0.4− | 0.0 | 2006 09 28 | 703 | 0.8+ | 0.3+ | | |
| 2000 09 23 | 699 | 0.4+ | 1.2+ | 2002 02 02 | 644 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.6− | | |
| 2000 09 23 | 704 | 0.3− | 1.1+ | 2002 02 02 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 704 | (2.3− | 0.3−) | | |
| 2000 09 23 | 699 | 0.0 | 0.5+ | 2002 02 02 | 644 | 0.3+ | 0.0 | 2006 09 30 | 704 | (2.2− | 0.2+) | | |
| 2000 09 23 | 704 | 0.1+ | 0.1+ | 2003 01 27 | 291 | 0.0 | 0.2+ | 2006 09 30 | 704 | (2.7− | 0.2+) | | |
| 2000 09 23 | 704 | 0.1+ | 0.1+ | 2003 01 27 | 291 | 0.3− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.1− | | |
| 2000 09 23 | 704 | 0.0 | 0.1− | 2003 01 27 | 291 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2000 09 23 | 704 | 0.1− | 1.1+ | 2003 02 09 | 608 | 0.5+ | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.0 | | |
| 2000 09 24 | 691 | 0.5− | 0.1− | 2003 02 09 | 608 | 0.0 | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2000 09 24 | 691 | 0.2− | 0.1− | 2003 02 09 | 608 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2000 09 24 | 691 | 0.2− | 0.5+ | 2003 03 06 | 699 | 1.5+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2000 09 25 | 704 | 0.0 | 0.5+ | 2003 03 06 | 699 | 0.7+ | 0.3− | 2006 10 19 | 703 | 0.0 | 0.5− | | |
| 2000 09 25 | 704 | 0.0 | 0.2− | 2003 03 06 | 699 | 1.2+ | 0.9− | 2006 10 19 | 703 | 0.0 | 0.3− | | |
| 2000 09 25 | 704 | 0.9− | 0.7− | 2003 03 06 | 699 | 0.6+ | 0.8+ | 2006 10 19 | 703 | 0.2+ | 0.5− | | |
| 2000 09 25 | 704 | 0.5− | 0.1− | 2003 03 07 | 699 | 0.1− | 0.8+ | 2006 10 19 | 703 | 0.4− | 0.4− | | |
| 2000 09 25 | 704 | 0.2− | 0.6− | 2003 03 07 | 704 | 0.2+ | 1.2+ | 2006 10 22 | 644 | 0.3+ | 0.0 | | |
| 2000 10 03 | 704 | 0.5+ | 0.7− | 2003 03 07 | 699 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2000 10 03 | 704 | 1.2+ | 1.6− | 2003 03 07 | 704 | 1.0− | 1.2+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.7− | 1.9− | 2003 03 07 | 699 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2000 10 03 | 704 | 0.2− | 1.0− | 2003 03 07 | 704 | (1.0+ | 1.9+) | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 10 25 | 704 | 0.0 | 0.5− | 2003 03 07 | 699 | 0.7+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2001 10 25 | 704 | 0.1+ | 0.9− | 2003 03 07 | 704 | 1.2+ | 0.9+ | 2006 10 31 | 703 | 0.6− | 0.4+ | | |
| 2001 10 25 | 704 | 1.0+ | 0.2+ | 2003 03 07 | 704 | 1.1+ | 0.1− | 2006 10 31 | 703 | 0.1− | 0.1+ | | |
| 2001 10 25 | 704 | 1.0+ | 0.1− | 2003 03 26 | 644 | 0.3+ | 0.3+ | 2006 10 31 | 703 | 0.6− | 0.4+ | | |
| 2001 11 19 | 644 | 0.2− | 0.0 | 2003 03 26 | 644 | 0.6+ | 0.2+ | 2006 10 31 | 703 | 0.6− | 0.2+ | | |

**(138566)∗ 2000 QS$_{78}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.20869 | | (2000.0) | | | |
| $n$ | 0.17507995 | $\omega$ | 24.27502 | | +0.99534240 | +0.07924424 |
| $a$ | 3.1645486 | $\Omega$ | 331.01637 | | −0.09596662 | +0.86859315 |
| $e$ | 0.1525403 | $i$ | 6.50534 | | +0.00916041 | +0.48914854 |
| $P$ | 5.63 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.8− | 0.1+ | 2001 12 09 | 704 | 0.9+ | 0.3− | 2006 09 28 | 703 | 0.1− | 0.1− | | |
| 2000 08 24 | 704 | 0.3− | 0.0 | 2001 12 09 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.3− | | |
| 2000 08 24 | 704 | 0.7− | 0.3+ | 2001 12 09 | 704 | 0.0 | 1.2− | 2006 09 28 | 703 | 0.0 | 0.5− | | |
| 2000 08 24 | 704 | 0.3− | 0.1− | 2001 12 09 | 704 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1− | | |
| 2000 08 31 | 704 | 1.0+ | 0.8+ | 2001 12 09 | 704 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2− | | |
| 2000 08 31 | 704 | 0.1+ | 0.1− | 2001 12 17 | 704 | 0.7− | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.0 | | |
| 2000 08 31 | 704 | 0.4− | 0.2+ | 2001 12 17 | 704 | 0.6− | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.4− | | |
| 2000 08 31 | 704 | 0.4+ | 0.1+ | 2001 12 17 | 704 | 0.7− | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.6− | | |
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2001 12 17 | 704 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.6− | | |
| 2000 09 02 | 699 | 1.2− | 0.4+ | 2001 12 22 | 704 | 0.9+ | 1.2− | 2006 10 19 | 703 | 0.2− | 0.4− | | |
| 2000 09 02 | 699 | 1.7− | 1.3+ | 2001 12 22 | 704 | 1.1+ | 0.4− | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2000 09 02 | 699 | 1.5− | 0.7+ | 2001 12 22 | 704 | 0.0 | 1.2− | 2006 10 23 | 644 | 0.5− | 0.0 | | |
| 2000 09 02 | 699 | 1.2− | 1.2+ | 2001 12 22 | 704 | 0.7+ | 1.2− | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2000 09 03 | 704 | 0.3− | 0.4+ | 2002 01 08 | 704 | 1.1− | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.4− | | |
| 2000 09 03 | 704 | 0.3− | 0.7+ | 2002 01 08 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.4− | | |
| 2000 09 03 | 704 | 0.5+ | 0.2+ | 2002 01 08 | 704 | 1.0− | 0.4− | 2006 10 27 | 703 | 0.2− | 0.1+ | | |
| 2000 09 03 | 704 | 0.9− | 0.5+ | 2002 12 07 | 645 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.4− | | |
| 2000 09 03 | 704 | 0.3− | 0.7+ | 2002 12 07 | 645 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.1− | 0.2− | | |
| 2000 09 19 | 608 | 0.1+ | 0.3− | 2003 01 25 | 291 | 0.3− | 0.6+ | 2006 11 07 | 644 | 0.4− | 0.3+ | | |
| 2000 09 19 | 608 | 0.4− | 0.3− | 2003 01 25 | 291 | 0.3− | 0.8+ | 2006 11 07 | 644 | 0.4− | 0.0 | | |
| 2000 09 19 | 608 | 0.4− | 0.5− | 2003 01 25 | 291 | 0.5+ | 0.5+ | 2006 11 07 | 644 | 0.2+ | 0.2+ | | |
| 2000 09 24 | 704 | 0.2+ | 0.5+ | 2003 02 10 | 291 | 0.1+ | 0.4+ | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 2000 09 24 | 704 | 0.6+ | 0.1+ | 2003 02 10 | 291 | 0.3+ | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.1− | | |
| 2000 09 24 | 704 | 0.2− | 0.2+ | 2003 02 10 | 291 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.5− | 0.3− | | |
| 2000 09 24 | 704 | 1.1+ | 0.0 | 2003 02 22 | 644 | 0.9+ | 0.5+ | 2006 11 14 | 703 | 0.2− | 0.4+ | | |
| 2000 09 24 | 704 | 0.6+ | 0.5− | 2003 02 22 | 644 | 0.3+ | 0.9+ | 2006 11 14 | 703 | 0.2+ | 0.1+ | | |
| 2000 09 25 | 699 | 0.5− | 0.9+ | 2003 02 22 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.5+ | | |
| 2000 09 25 | 699 | 0.3+ | 0.3+ | 2003 03 07 | 291 | 0.0 | 0.3+ | 2006 11 14 | 703 | (1.6+ | 2.5+) | | |
| 2000 09 25 | 704 | 1.2+ | 1.5+ | 2003 03 07 | 291 | 0.8+ | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.1+ | | |
| 2000 09 25 | 704 | 0.8+ | 0.3+ | 2003 03 07 | 291 | 0.8+ | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.2+ | | |
| 2000 09 25 | 699 | 0.5− | 0.4+ | 2006 08 30 | 699 | 0.5− | 0.4− | 2006 11 14 | 703 | 0.5− | 0.8+ | | |
| 2000 09 25 | 704 | 0.4+ | 0.0 | 2006 08 30 | 699 | 0.8− | 0.7+ | 2006 11 29 | 704 | 0.9+ | 0.3+ | | |
| 2000 09 25 | 704 | 0.9− | 0.7− | 2006 08 30 | 699 | 0.4− | 1.3+ | 2006 11 29 | 704 | 0.7+ | 0.8+ | | |
| 2000 09 25 | 699 | 0.0 | 0.3− | 2006 08 30 | 699 | 0.6− | 0.6+ | 2006 11 29 | 704 | 0.5+ | 0.5+ | | |
| 2000 10 03 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.3− | 0.2+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.6− | 1.1+ | |
| 2000 10 03 | 704 | (2.6− | 1.0+) | 2006 09 26 | 691 | 0.1+ | 0.0 | | | | | |
| 2000 10 03 | 704 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.4− | | | | | |

**(138567)∗ 2000 QU$_{79}$ = 2004 JC$_{55}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64763)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.62200 | | (2000.0) | | | |
| $n$ | 0.18130673 | $\omega$ | 346.69145 | | +0.87905536 | +0.47665002 |
| $a$ | 3.0916721 | $\Omega$ | 344.83366 | | −0.43447981 | +0.79401370 |
| $e$ | 0.1775553 | $i$ | 1.78517 | | −0.19618604 | +0.37728901 |
| $P$ | 5.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.4− | 0.9+ | 2000 10 02 | 704 | 0.8+ | 1.5− | 2005 07 17 | E12 | 0.0 | 0.1+ | |
| 2000 08 24 | 704 | 0.1− | 0.7+ | 2000 10 02 | 704 | 0.5− | 0.9+ | 2006 10 31 | G96 | 0.2− | 0.1− | |
| 2000 08 24 | 704 | 0.9− | 0.4− | 2000 10 02 | 704 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1+ | |
| 2000 08 24 | 704 | 0.4− | 0.9+ | 2000 10 02 | 704 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.3+ | |
| 2000 08 24 | 704 | 0.3− | 1.2+ | 2003 01 28 | 645 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.1− | |
| 2000 08 31 | 704 | 0.7− | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.4+ | |
| 2000 08 31 | 704 | 0.4− | 0.8+ | 2003 01 31 | 291 | 0.4− | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.3+ | |
| 2000 08 31 | 704 | 0.7+ | 0.0 | 2003 01 31 | 291 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.4+ | |
| 2000 08 31 | 704 | 0.7+ | 0.2− | 2003 01 31 | 291 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 1.3− | 0.2+ | |
| 2000 09 24 | 704 | 0.1− | 0.5+ | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | (1.0− | 2.0+) | |
| 2000 09 24 | 704 | 0.2− | 0.6+ | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.6− | |
| 2000 09 24 | 704 | 0.3+ | 0.4− | 2004 04 12 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.5+ | |
| 2000 09 24 | 704 | 0.2+ | 0.9+ | 2004 05 10 | 691 | 0.6+ | 0.1− | 2006 11 15 | 704 | 0.7+ | 0.1+ | |
| 2000 09 25 | 704 | 0.5− | 1.1+ | 2004 05 10 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.8+ | 0.3+ | |
| 2000 09 25 | 704 | 0.4+ | 0.2+ | 2004 05 10 | 691 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.5+ | 0.5+ | |
| 2000 09 25 | 704 | 0.2+ | 1.1+ | 2004 05 24 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 1.1+ | 1.4+ | |
| 2000 09 25 | 704 | 0.4− | 1.3+ | 2004 05 24 | 691 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.8+ | 0.8+ | |
| 2000 09 25 | 704 | 0.0 | 0.6+ | 2004 05 24 | 691 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 1.2− | 0.8+ | |
| 2000 09 27 | 691 | 0.1− | 0.3+ | 2005 07 07 | 691 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.0 | 1.1− | |
| 2000 09 27 | 691 | 0.4− | 0.2+ | 2005 07 07 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.6− | |
| 2000 09 27 | 691 | 0.3− | 0.2+ | 2005 07 07 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.3− | |
| 2000 10 01 | 704 | 0.5+ | 0.1− | 2005 07 17 | E12 | 0.6− | 0.6− | 2006 12 01 | G96 | 0.0 | 0.6− | |
| 2000 10 01 | 704 | 0.3− | 0.3− | 2005 07 17 | E12 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.4+ | 0.0 | |
| 2000 10 01 | 704 | 0.0 | 0.4− | 2005 07 17 | E12 | 0.1− | 0.6− | | | | | |

**(138568)∗ 2000 QK$_{81}$ = 2004 GU$_{67}$ = 2005 NS$_{32}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84570)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.96542 | | (2000.0) | | | |
| $n$ | 0.18077135 | $\omega$ | 124.61479 | | +0.38778348 | +0.92107350 |
| $a$ | 3.0977734 | $\Omega$ | 168.04673 | | −0.89165724 | +0.38455921 |
| $e$ | 0.0458334 | $i$ | 9.81920 | | −0.23360510 | +0.06113770 |
| $P$ | 5.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 1.0− | 0.4+ | 2004 04 13 | 703 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.5− | 0.8+ | |
| 2000 08 24 | 704 | 0.0 | 0.3+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.2+ | 0.2+ | |
| 2000 08 24 | 704 | 1.0+ | 1.0+ | 2004 04 13 | 703 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.1− | |
| 2000 08 31 | 704 | 0.4+ | 0.2+ | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.6− | |
| 2000 08 31 | 704 | 0.3− | 0.0 | 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.5+ | |
| 2000 08 31 | 704 | 0.5+ | 0.1+ | 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.6− | |
| 2000 08 31 | 704 | 0.1− | 1.4+ | 2004 04 20 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.7+ | 0.6+ | |
| 2000 08 31 | 704 | 0.3+ | 0.2+ | 2004 04 20 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.7+ | 0.0 | |
| 2000 09 02 | 699 | 1.0− | 0.3− | 2004 04 23 | 704 | (3.1+ | 0.4+) | 2006 09 30 | 703 | 0.1+ | 0.9− | |
| 2000 09 02 | 699 | 0.4− | 0.3+ | 2004 04 23 | 704 | 1.0+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.3+ | |
| 2000 09 02 | 699 | 0.6− | 0.1+ | 2004 04 23 | 704 | (1.8+ | 0.9−) | 2006 10 16 | 703 | 0.0 | 0.5+ | |
| 2000 09 02 | 699 | 1.0− | 0.4+ | 2005 05 22 | 644 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.9− | 0.0 | |
| 2000 09 05 | 704 | 0.1+ | 0.4+ | 2005 05 22 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | (1.6− | 0.7+) | |
| 2000 09 05 | 704 | 0.3+ | 0.6+ | 2005 05 22 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | (3.0− | 0.0 ) | |
| 2000 09 05 | 704 | 0.1+ | 0.1+ | 2005 07 05 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1− | |
| 2000 09 05 | 704 | 1.0+ | 0.3+ | 2005 07 05 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3− | |
| 2000 09 05 | 704 | 0.5− | 0.4+ | 2005 07 05 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.8− | 0.3+ | |
| 2003 01 28 | 645 | 0.0 | 0.3+ | 2005 07 09 | 691 | 0.4− | 1.1+ | 2006 10 22 | 703 | (0.2− | 1.5+) | |
| 2003 01 28 | 645 | 0.1− | 0.3+ | 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.2+ | |
| 2003 01 28 | 608 | 0.8+ | 1.2− | 2005 07 09 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.0 | 0.9+ | |
| 2003 01 28 | 608 | 0.9+ | 1.2− | 2005 07 15 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.4+ | |
| 2003 01 28 | 608 | 0.3+ | 0.2− | 2005 07 15 | 691 | (1.2− | 1.7−) | 2006 11 07 | 644 | 0.4− | 0.1− | |
| 2003 02 02 | 704 | (1.5− | 0.1+) | 2005 07 15 | 691 | 0.3− | 0.4− | 2006 11 07 | 644 | 0.5− | 0.8+ | |
| 2003 02 02 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 703 | 0.5+ | 1.2+ | 2006 11 07 | 644 | 0.5− | 0.1+ | |
| 2003 02 02 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 1.4− | 0.3− | 2006 11 16 | 703 | 0.9+ | 0.8+ | |
| 2003 02 02 | 704 | 0.2− | 1.4+ | 2006 09 18 | 703 | 0.6+ | 0.4+ | 2006 11 16 | 703 | (0.5− | 1.8+) | |
| 2003 02 02 | 704 | (1.9+ | 0.7−) | 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 11 16 | 703 | 0.5+ | 1.1+ | |
| 2004 04 13 | 703 | 0.2+ | 0.6+ | 2006 09 20 | 699 | 0.4+ | 0.7+ | 2006 11 16 | 703 | 0.8+ | 0.9+ | |
| 2004 04 13 | 703 | 0.6+ | 1.0+ | 2006 09 20 | 699 | 1.4+ | 0.5− | | | | | |

**(138569)∗ 2000 QQ$_{81}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.16116 | | (2000.0) | | | |
| $n$ | 0.17492339 | $\omega$ | 9.04594 | | +0.97605968 | +0.21044391 |
| $a$ | 3.1664366 | $\Omega$ | 338.56500 | | −0.20777820 | +0.82744270 |
| $e$ | 0.0726110 | $i$ | 8.65000 | | −0.06430956 | +0.52062648 |
| $P$ | 5.63 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 23 | 691 | 0.2− | 0.1+ | 2001 12 22 | 704 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.6− | 0.6+ | |
| 1998 03 23 | 691 | 0.5− | 0.3− | 2003 02 09 | 644 | 0.3+ | 1.1+ | 2006 09 16 | 703 | 0.2+ | 0.5− | |
| 1998 03 23 | 691 | 0.2− | 0.2+ | 2003 02 09 | 644 | 0.1+ | 0.6+ | 2006 09 16 | 703 | 0.2− | 0.0 | |
| 2000 08 24 | 704 | 0.2− | 0.9+ | 2003 02 09 | 644 | 0.0 | 0.4+ | 2006 09 16 | 703 | 0.0 | 1.0− | |
| 2000 08 24 | 704 | 0.1+ | 0.6+ | 2003 02 22 | 291 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.0 | |
| 2000 08 24 | 704 | 0.2+ | 0.9+ | 2003 02 22 | 291 | 0.0 | 0.8+ | 2006 09 17 | 691 | 0.1− | 0.1− | |
| 2000 08 24 | 704 | 0.4− | 0.5− | 2003 02 22 | 291 | 0.5+ | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.0 | |
| 2000 08 31 | 704 | 0.8− | 0.6+ | 2003 02 22 | 291 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.1− | |
| 2000 08 31 | 704 | 0.7− | 0.8+ | 2003 02 22 | 291 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.4+ | |
| 2000 08 31 | 704 | 0.7+ | 0.7+ | 2003 02 22 | 291 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.9+ | |
| 2000 08 31 | 704 | 0.9− | 1.4+ | 2003 02 22 | 291 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.3− | 0.4+ | |
| 2000 08 31 | 704 | 0.7− | 1.3+ | 2003 02 22 | 291 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.2+ | |
| 2000 09 05 | 704 | 0.9+ | 0.1+ | 2003 02 22 | 291 | 0.0 | 0.1+ | 2006 09 27 | 699 | 1.3+ | 0.6+ | |
| 2000 09 05 | 704 | 0.8− | 1.0+ | 2003 02 23 | 291 | 0.7+ | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.7+ | |
| 2000 09 05 | 704 | 0.2+ | 0.2− | 2003 02 23 | 291 | 0.6+ | 0.8+ | 2006 09 27 | 699 | 0.7− | 1.3+ | |
| 2000 09 05 | 704 | 0.7+ | 1.1+ | 2003 02 23 | 291 | 0.3+ | 0.4+ | 2006 09 27 | 699 | 0.7+ | 0.0 | |
| 2000 09 20 | 691 | 0.4− | 0.3− | 2003 02 23 | 291 | 0.2+ | 0.1− | 2006 10 03 | 704 | 0.1− | 0.1− | |
| 2000 09 20 | 691 | 0.5− | 0.0 | 2003 02 23 | 291 | 0.6+ | 0.1− | 2006 10 03 | 704 | 0.2+ | 1.3+ | |
| 2000 09 20 | 691 | 0.5− | 0.1− | 2003 02 23 | 291 | 0.6+ | 0.2− | 2006 10 03 | G96 | 0.2− | 0.5− | |
| 2000 09 23 | 699 | 0.7+ | 0.1+ | 2004 04 13 | 644 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.5+ | |
| 2000 09 23 | 699 | 1.3+ | 0.8+ | 2004 04 13 | 644 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.3− | 0.5− | |
| 2000 09 23 | 699 | 0.8+ | 0.8+ | 2004 04 13 | 644 | 0.3+ | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.6− | |
| 2000 09 23 | 699 | 0.8+ | 0.4− | 2004 04 13 | 644 | 0.0 | 0.5+ | 2006 10 03 | 704 | 1.0− | 1.2+ | |
| 2000 09 24 | 704 | 0.3− | 0.4+ | 2004 04 13 | 644 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.0 | |
| 2000 09 24 | 704 | 0.3− | 0.6+ | 2004 04 13 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2− | |
| 2000 09 24 | 704 | 0.1− | 0.8+ | 2004 04 14 | 699 | 0.3− | 0.8− | 2006 10 11 | 644 | 0.0 | 0.1+ | |
| 2000 09 24 | 704 | 0.1+ | 0.4+ | 2004 04 14 | 699 | 0.3− | 0.3+ | 2006 10 13 | 291 | 0.1− | 0.0 | |
| 2001 11 11 | 704 | 0.4+ | 0.9− | 2004 04 14 | 699 | 0.9− | 0.4− | 2006 10 13 | 291 | 0.1− | 0.0 | |
| 2001 11 11 | 704 | 0.0 | 0.4− | 2004 04 14 | 699 | 1.0+ | 0.6− | 2006 10 13 | 291 | 0.2− | 0.1− | |
| 2001 11 11 | 704 | 0.4+ | 0.4+ | 2005 07 03 | 644 | 0.2− | 0.9+ | 2006 10 17 | 703 | 0.8− | 0.3+ | |
| 2001 11 11 | 704 | 1.1− | 0.3+ | 2005 07 03 | 644 | 0.0 | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.7− | |
| 2001 12 09 | 704 | (0.2− | 1.5−) | 2005 07 03 | 644 | (0.2− | 1.9+) | 2006 10 17 | 703 | 0.0 | 0.8− | |
| 2001 12 09 | 704 | 0.3+ | 0.9− | 2006 08 29 | 699 | 0.6+ | 0.5− | 2006 10 17 | 703 | 0.3− | 0.1+ | |
| 2001 12 09 | 704 | 0.1− | 0.7− | 2006 08 29 | 699 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 2001 12 09 | 704 | 0.4− | 1.0− | 2006 08 29 | 699 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 2001 12 09 | 704 | 0.1− | 1.0− | 2006 08 29 | 699 | 1.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2001 12 22 | 704 | 0.1− | 0.2− | 2006 09 14 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.5− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 0.4+ | 0.8− | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.9− |
| 2001 12 22 | 704 | 0.1+ | 0.4− | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |

**(138570)∗ 2000 QS$_{84}$ = 2002 DG$_{10}$**

Discovered 2000 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 26990)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 263.02694 | | $\omega$ | (2000.0) | +0.99641668 | −0.07409542 | |
| $n$ | 0.29251056 | | $\Omega$ | 130.73121 | +0.05384853 | +0.92761664 | |
| $a$ | 2.2475448 | | $i$ | 2.90633 | +0.06522372 | +0.36611098 | |
| $P$ | 3.37 | | $H$ | 16.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 704 | 0.5+ | 1.8+ | 2002 01 22 | 704 | 0.0 | 0.2+ | 2004 12 21 | 691 | 0.1+ | 0.1+ |
| 2000 08 25 | 704 | 0.6− | 0.7+ | 2002 02 06 | 644 | 0.4+ | 1.2+ | 2005 01 13 | 704 | 0.6− | 0.3+ |
| 2000 08 25 | 704 | 0.6− | 1.3+ | 2002 02 06 | 644 | 0.1+ | 1.2+ | 2005 01 13 | 704 | 0.7+ | 0.3+ |
| 2000 08 31 | 704 | 0.6+ | 1.1+ | 2002 02 06 | 644 | 0.2+ | 0.9+ | 2005 01 13 | 704 | 0.8− | 1.3+ |
| 2000 08 31 | 704 | 0.0 | 0.8+ | 2002 02 11 | 704 | 0.7+ | 0.3+ | 2005 01 13 | 704 | 0.6− | 0.4− |
| 2000 08 31 | 704 | 0.3+ | 0.8+ | 2002 02 11 | 704 | 1.6+ | 0.0 | 2006 03 26 | 691 | 0.4+ | 0.2+ |
| 2000 08 31 | 704 | 0.3+ | 0.4+ | 2002 02 11 | 704 | 0.3+ | 0.5+ | 2006 03 26 | 691 | 0.3+ | 0.2+ |
| 2000 08 31 | 704 | 1.2+ | 0.0 | 2002 02 11 | 704 | 0.6+ | 0.9+ | 2006 03 26 | 691 | 0.2+ | 0.2+ |
| 2000 09 03 | 704 | 0.1+ | 1.9+ | 2002 02 16 | 644 | 0.4− | 0.5+ | 2006 04 09 | 691 | 0.0 | 0.4+ |
| 2000 09 03 | 704 | 0.1+ | 0.3− | 2002 02 16 | 644 | 0.2+ | 0.7+ | 2006 04 09 | 691 | 0.1+ | 0.2+ |
| 2000 09 03 | 645 | 0.2− | 0.2+ | 2002 02 16 | 644 | 0.1+ | 0.6+ | 2006 04 09 | 691 | 0.3+ | 0.5+ |
| 2000 09 03 | 704 | 0.8+ | 0.8− | 2002 02 20 | 704 | 0.3− | 0.3− | 2006 04 21 | 703 | 1.4− | 0.1+ |
| 2000 09 03 | 645 | 0.2− | 0.2+ | 2002 02 20 | 704 | 0.1+ | 0.1+ | 2006 04 21 | 703 | 0.5+ | 1.1− |
| 2000 09 24 | 704 | 0.7− | 0.0 | 2002 02 20 | 704 | 0.1− | 0.2− | 2006 04 21 | 703 | 1.8− | 0.4+ |
| 2000 09 24 | 704 | 0.5+ | 0.4+ | 2002 02 20 | 704 | 0.9+ | 0.9+ | 2006 04 21 | 703 | 0.7+ | 0.4+ |
| 2000 09 24 | 704 | 0.1+ | 0.1− | 2002 02 21 | 704 | 0.3− | 0.1+ | 2006 05 23 | G96 | 0.4− | 0.0 |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2002 02 21 | 704 | 0.8+ | 1.0+ | 2006 05 23 | G96 | 0.0 | 0.0 |
| 2000 09 24 | 704 | 0.7− | 0.7+ | 2002 02 21 | 704 | 0.2− | 1.9+ | 2006 05 23 | G96 | 0.3− | 0.1− |
| 2002 01 22 | 704 | 0.4− | 0.5+ | 2002 02 21 | 704 | 0.5+ | 1.3+ | 2006 05 23 | G96 | 0.0 | 0.0 |
| 2002 01 22 | 704 | 0.5+ | 0.3+ | 2004 12 21 | 691 | 0.2+ | 0.3+ | | | | |
| 2002 01 22 | 704 | 0.4− | 1.3+ | 2004 12 21 | 691 | 0.0 | 0.2+ | | | | |

**(138571)∗ 2000 QY$_{87}$**

Discovered 2000 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 63.19432 | | $\omega$ | (2000.0) | +0.66220055 | +0.73350966 | |
| $n$ | 0.17988716 | | $\Omega$ | 347.76000 | −0.66402354 | +0.47972406 | |
| $a$ | 3.1079160 | | $i$ | 323.38456 | −0.34722207 | +0.48148562 | |
| $e$ | 0.0455968 | | $H$ | 14.87837 | $G$ 0.15 | $U$ | 1 |
| $P$ | 5.48 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 704 | 1.2− | 0.9+ | 2003 01 27 | 704 | 0.5+ | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.3+ |
| 2000 08 25 | 704 | 0.6− | 0.0 | 2003 01 27 | 699 | 0.3− | 0.5+ | 2006 09 28 | 703 | 0.2+ | 0.4− |
| 2000 08 25 | 704 | 0.5− | 0.1+ | 2003 01 27 | 704 | 0.7− | 0.3+ | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2000 08 25 | 704 | 0.5− | 0.5− | 2003 01 27 | 699 | (0.9+ | 1.7+) | 2006 10 19 | 703 | 0.7− | 0.6− |
| 2000 08 27 | 807 | 0.6− | 0.1− | 2003 01 30 | 699 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2000 08 27 | 807 | 0.6− | 0.0 | 2003 01 30 | 699 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2000 08 31 | 704 | 0.2− | 1.1+ | 2003 01 30 | 699 | 0.3+ | 1.0+ | 2006 10 19 | 703 | (0.9− | 4.0−) |
| 2000 08 31 | 704 | 0.2− | 0.7+ | 2003 01 30 | 699 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2000 08 31 | 704 | 0.1− | 0.8+ | 2003 01 31 | 644 | (1.7+ | 1.8+) | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2003 01 31 | 644 | 0.6+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2000 08 31 | 704 | 0.3+ | 0.6+ | 2003 01 31 | 644 | 0.4+ | 0.8+ | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 2000 09 23 | 704 | 0.1+ | 1.2+ | 2003 03 06 | 644 | (0.5+ | 1.8+) | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2000 09 23 | 704 | 0.4− | 0.5+ | 2003 03 06 | 644 | (0.4+ | 1.7+) | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2000 09 23 | 704 | 0.3− | 0.3− | 2003 03 06 | 644 | (0.7+ | 2.0+) | 2006 10 27 | 703 | (2.7− | 0.4+) |
| 2000 09 25 | 704 | 0.5− | 0.3+ | 2004 04 13 | E12 | 0.5+ | 0.6+ | 2006 10 27 | 703 | (1.9− | 1.7+) |
| 2000 09 25 | 704 | 0.1− | 0.8+ | 2004 04 13 | E12 | 0.8+ | 0.9+ | 2006 10 27 | 703 | (0.2+ | 1.7+) |
| 2000 09 25 | 704 | 0.4− | 0.6+ | 2004 04 13 | E12 | 0.4− | 1.0+ | 2006 10 27 | 703 | (1.6+ | 2.9+) |
| 2001 12 08 | 704 | 0.0 | 1.3+ | 2004 04 13 | E12 | 1.0+ | 0.9+ | 2006 10 27 | 703 | 0.5− | 0.4+ |
| 2001 12 08 | 704 | 0.4+ | 0.4+ | 2004 04 24 | E12 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2001 12 08 | 704 | (0.1+ | 1.7+) | 2004 04 24 | E12 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2001 12 08 | 704 | 0.1− | 1.0+ | 2004 04 24 | E12 | 0.4+ | 0.0 | 2006 10 27 | 703 | (1.5− | 3.8−) |
| 2001 12 08 | 704 | 0.6− | 0.3+ | 2004 04 24 | E12 | 1.2+ | 1.3+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2001 12 22 | 704 | 0.2+ | 0.9+ | 2005 06 08 | E12 | 0.4+ | 0.0 | 2006 11 15 | 703 | 0.6+ | 0.2+ |
| 2001 12 22 | 704 | 0.1+ | 1.3− | 2005 06 08 | E12 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.5+ |
| 2001 12 22 | 704 | 0.5− | 0.1− | 2005 06 08 | E12 | 0.5− | 0.7+ | 2006 11 15 | 703 | 0.9+ | 0.5− |
| 2001 12 22 | 704 | 1.2+ | 0.7− | 2005 06 08 | E12 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.1− | 0.4− |
| 2003 01 27 | 704 | 0.7+ | 0.0 | 2006 09 17 | 703 | 0.5− | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.6− |
| 2003 01 27 | 699 | 0.8+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.7+ | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2003 01 27 | 704 | 1.4+ | 0.9+ | 2006 09 17 | 703 | 0.2− | 0.7− | 2006 11 22 | 703 | 0.1− | 0.7+ |
| 2003 01 27 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.2− | 0.5+ | | | | |
| 2003 01 27 | 699 | 0.6+ | 0.8+ | 2006 09 28 | 703 | 0.4− | 0.2− | | | | |

**(138572)∗ 2000 QV$_{92}$ = 2001 XC$_{65}$**

Discovered 2000 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22363)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 331.00975 | | $\omega$ | (2000.0) | +0.36629947 | −0.92883617 | |
| $n$ | 0.17695988 | | $\Omega$ | 155.14184 | +0.84413642 | +0.35683573 | |
| $a$ | 3.1420964 | | $i$ | 273.33052 | +0.39148231 | +0.09965753 | |
| $e$ | 0.1424248 | | $H$ | 3.19098 | $G$ 0.15 | $U$ | 0 |
| $P$ | 5.57 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 704 | 0.1+ | 0.1− | 2001 12 14 | 704 | 0.4+ | 0.1+ | 2005 07 07 | 691 | 0.2+ | 0.3+ |
| 2000 08 25 | 704 | 0.5− | 0.2+ | 2001 12 14 | 704 | 1.3+ | 1.3+ | 2005 07 07 | 691 | 0.1+ | 0.3+ |
| 2000 08 25 | 704 | 1.2− | 0.2− | 2001 12 14 | 704 | 0.3− | 0.3+ | 2005 07 07 | 691 | 0.5− | 0.2+ |
| 2000 08 31 | 704 | 0.2− | 0.1− | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2005 07 18 | 644 | 0.4− | 0.1+ |
| 2000 08 31 | 704 | 0.7+ | 0.2+ | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2005 07 18 | 644 | 0.3− | 0.2+ |
| 2000 08 31 | 704 | 0.1− | 1.1+ | 2001 12 17 | 704 | 1.2+ | 0.2+ | 2005 07 18 | 644 | 0.2− | 0.1+ |
| 2000 08 31 | 704 | 0.8− | 0.3− | 2001 12 17 | 704 | 0.8+ | 0.1+ | 2006 09 29 | 704 | 0.5+ | 0.8+ |
| 2000 08 31 | 704 | 0.5− | 0.6− | 2001 12 17 | 704 | 0.7+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.1+ |
| 2000 09 01 | 049 | 1.4+ | 0.1+ | 2001 12 17 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.6− |
| 2000 09 01 | 049 | 1.9+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2000 09 01 | 049 | 1.5+ | 0.6+ | 2001 12 19 | 704 | 1.0+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2000 09 02 | 699 | 1.8− | 0.3+ | 2001 12 19 | 704 | 0.8+ | 0.7+ | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2000 09 02 | 699 | 1.0− | 0.4+ | 2001 12 19 | 704 | 0.9+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2000 09 02 | 699 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 704 | 0.6− | 1.1+ |
| 2000 09 02 | 699 | 0.8− | 2.0+ | 2001 12 21 | 704 | 0.3− | 0.3+ | 2006 10 19 | 704 | 0.9− | 0.1− |
| 2000 09 03 | 704 | 0.8− | 0.3− | 2001 12 21 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 704 | 0.2+ | 0.3+ |
| 2000 09 03 | 704 | 0.0 | 0.6+ | 2001 12 21 | 704 | 0.4+ | 0.2− | 2006 10 19 | 704 | (0.0 | 1.7+) |
| 2000 09 03 | 704 | 0.3− | 1.0+ | 2001 12 21 | 704 | 0.2− | 0.1− | 2006 10 19 | 704 | 0.2+ | 0.6+ |
| 2000 09 03 | 704 | 0.3+ | 0.5+ | 2001 12 21 | 704 | 0.4− | 0.5− | 2006 10 21 | 691 | 1.0− | 0.9− |
| 2000 09 03 | 704 | 0.1− | 0.6− | 2002 01 04 | 608 | 0.9− | 1.1+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2000 09 04 | 691 | 0.6+ | 0.3− | 2002 01 04 | 608 | 0.9− | 1.3+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2000 09 04 | 691 | 0.4+ | 0.3− | 2002 01 04 | 608 | 0.7− | 1.4+ | 2006 10 29 | 704 | 0.2− | 0.2+ |
| 2000 09 04 | 691 | 0.5+ | 0.2− | 2002 01 08 | 704 | 0.2+ | 0.2+ | 2006 10 29 | 704 | 0.4− | 0.7+ |
| 2000 09 21 | 699 | 0.0 | 1.2+ | 2002 01 08 | 704 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.4+ |
| 2000 09 21 | 699 | (1.2− | 2.1+) | 2002 01 08 | 704 | 0.2− | 0.1+ | 2006 10 29 | 704 | 0.6− | 0.9+ |
| 2000 09 21 | 699 | 0.1− | 1.1+ | 2002 01 08 | 704 | 0.6− | 0.2− | 2006 11 14 | 703 | 0.4+ | 0.5− |
| 2000 09 21 | 699 | (3.1− | 2.5+) | 2002 01 08 | 704 | 0.6− | 0.0 | 2006 11 14 | 703 | 0.5− | 0.3− |
| 2000 09 23 | 704 | 0.6+ | 0.4+ | 2002 01 15 | 704 | 0.5+ | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 2000 09 23 | 704 | 0.1− | 0.2+ | 2002 01 15 | 704 | 0.3+ | 0.3− | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2000 09 23 | 704 | 0.2+ | 0.4+ | 2002 01 15 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.5+ | 0.2− |
| 2000 09 23 | 704 | 0.3− | 0.2+ | 2002 01 19 | 704 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.5+ |
| 2000 09 23 | 704 | 0.0 | 0.4+ | 2002 01 19 | 704 | 0.1+ | 0.9+ | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2000 09 26 | 704 | 0.7+ | 0.3− | 2002 01 19 | 704 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.3+ |
| 2000 09 26 | 704 | 0.4+ | 0.2+ | 2003 03 30 | 691 | 0.2+ | 1.1+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2000 09 26 | 704 | 0.3− | 0.3+ | 2003 03 30 | 691 | 0.0 | 1.0+ | 2006 11 18 | 704 | 0.8+ | 0.5− |
| 2000 09 26 | 704 | 0.1+ | 0.4+ | 2003 03 30 | 691 | 0.2+ | 1.2+ | 2006 11 18 | 704 | 0.7+ | 0.1+ |
| 2000 09 26 | 704 | 0.3− | 0.4+ | 2003 03 31 | 704 | (0.7− | 2.3+) | 2006 11 18 | 704 | 0.2− | 1.1+ |
| 2000 10 01 | 699 | 0.6− | 0.3+ | 2003 03 31 | 704 | (1.7− | 0.4−) | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2000 10 01 | 699 | 0.3− | 0.5+ | 2003 03 31 | 704 | 1.2+ | 1.2+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 699 | 0.3+ | 0.8+ | 2003 03 31 | 704 | (0.8− | 1.9−) | 2006 11 19 | 704 | 0.8+ | 0.4+ | |
| 2000 10 01 | 699 | 0.1+ | 0.5+ | 2003 04 03 | 699 | (0.0 | 1.8+) | 2006 11 19 | 704 | 0.8+ | 0.5+ | |
| 2000 10 03 | 704 | 0.4− | 0.7+ | 2003 04 03 | 699 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.1+ | |
| 2000 10 03 | 704 | 0.5+ | 0.1− | 2003 04 03 | 699 | 0.2− | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.5+ | |
| 2000 10 03 | 704 | 0.4− | 0.5− | 2003 04 03 | 699 | 0.3+ | 1.1+ | 2006 11 22 | 704 | 0.3+ | 0.1+ | |
| 2000 10 03 | 704 | 0.6− | 0.5− | 2003 04 28 | 699 | 1.1+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.2+ | |
| 2000 10 27 | 691 | 0.8− | 0.3− | 2003 04 28 | 699 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.0 | |
| 2000 10 27 | 691 | 0.5− | 0.3− | 2003 04 28 | 699 | 0.5− | 0.7− | 2006 11 22 | 704 | 0.3− | 0.2+ | |
| 2000 10 27 | 691 | 0.7− | 0.6− | 2003 04 28 | 699 | 0.4− | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.5+ | |
| 2001 10 26 | 704 | 0.0 | 0.2+ | 2005 06 27 | 691 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.2− | 0.4+ | |
| 2001 10 26 | 704 | 0.4− | 0.7+ | 2005 06 27 | 691 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 0.1+ | 0.0 | |
| 2001 10 26 | 704 | 0.3+ | 0.9+ | 2005 06 27 | 691 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.2+ | 0.7− | |
| 2001 12 10 | 704 | 0.1+ | 0.8− | 2005 07 02 | 691 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.4+ | 0.2+ | |
| 2001 12 10 | 704 | 0.3− | 0.1− | 2005 07 02 | 691 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.4− | |
| 2001 12 10 | 704 | 0.3+ | 1.0− | 2005 07 02 | 691 | 0.1− | 0.4+ | | | | | |

**(138573)∗ 2000 QB$_{107}$ = 2001 YN$_{25}$**

Discovered 2000 Aug. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22373)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.80717 | | (2000.0) | | | |
| $n$ | 0.17106243 | $\omega$ | 45.96319 | | +0.89851841 | +0.43246366 |
| $a$ | 3.2139044 | $\Omega$ | 288.28134 | | −0.42193953 | +0.80384087 |
| $e$ | 0.1270794 | $i$ | 4.53631 | | −0.12096154 | +0.40842998 |
| $P$ | 5.76 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.3− | 0.5− | 2001 11 24 | 704 | 0.6− | 1.4+ | 2006 09 19 | 699 | 0.3− | 0.0 | |
| 1995 11 19 | 691 | 0.1− | 0.2+ | 2001 12 18 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1+ | |
| 1995 11 19 | 691 | 0.3− | 0.3+ | 2001 12 18 | 704 | 0.7+ | 0.3− | 2006 09 25 | 691 | 0.0 | 0.0 | |
| 2000 08 29 | 704 | 0.3+ | 0.5+ | 2001 12 18 | 704 | 1.2+ | 1.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ | |
| 2000 08 29 | 704 | 0.7+ | 0.6− | 2001 12 18 | 704 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.1− | |
| 2000 08 29 | 704 | 0.7+ | 0.8+ | 2001 12 19 | 704 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.4+ | |
| 2000 08 29 | 704 | 0.6− | 0.4+ | 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.4+ | |
| 2000 08 31 | 704 | 0.2+ | 0.4+ | 2001 12 19 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 704 | (1.6− | 1.0+) | |
| 2000 08 31 | 704 | 0.0 | 0.5+ | 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.2+ | |
| 2000 08 31 | 704 | 0.6+ | 0.2− | 2001 12 20 | 644 | 0.7− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1− | |
| 2000 08 31 | 704 | 0.6+ | 1.1+ | 2001 12 20 | 644 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1− | |
| 2000 08 31 | 704 | 0.6+ | 0.6+ | 2001 12 20 | 644 | 0.5+ | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.1− | |
| 2000 09 07 | 691 | 0.5− | 0.2− | 2002 01 08 | 704 | 1.2+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.2+ | |
| 2000 09 07 | 691 | 0.3− | 0.1− | 2002 01 08 | 704 | 0.4+ | 0.9− | 2006 09 27 | 699 | 0.2+ | 1.2+ | |
| 2000 09 07 | 691 | 0.4− | 0.1− | 2002 01 08 | 704 | 0.4− | 0.5− | 2006 09 27 | 699 | 0.3− | 0.2− | |
| 2000 09 19 | 608 | (2.5+ | 3.0+) | 2003 02 07 | 333 | 0.6− | 0.4− | 2006 10 01 | 703 | 0.3− | 0.3− | |
| 2000 09 19 | 608 | (2.0+ | 2.8+) | 2003 02 07 | 333 | 0.3− | 0.5− | 2006 10 01 | 703 | 1.0− | 0.9− | |
| 2000 09 19 | 608 | (2.1+ | 3.2+) | 2003 02 07 | 333 | 0.3− | 0.5− | 2006 10 01 | 703 | (5.7− | 0.3+) | |
| 2000 09 23 | 704 | 0.6+ | 0.5+ | 2006 07 21 | 703 | 0.6− | 0.0 | 2006 10 01 | 703 | (3.5− | 2.0+) | |
| 2000 09 23 | 704 | 0.4− | 0.1− | 2006 07 21 | 703 | 0.1− | 1.0− | 2006 10 10 | 644 | 0.2+ | 0.1− | |
| 2000 09 23 | 704 | 0.2+ | 0.2− | 2006 07 21 | 703 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.0 | |
| 2000 09 23 | 704 | 0.7+ | 0.4+ | 2006 07 21 | 703 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.3+ | |
| 2000 09 25 | 704 | 0.4+ | 0.4− | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1− | |
| 2000 09 25 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.1− | |
| 2000 09 25 | 704 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− | |
| 2000 09 25 | 704 | 1.6− | 0.1− | 2006 09 15 | 704 | 0.9+ | 0.5− | 2006 10 17 | 703 | 0.8− | 0.1+ | |
| 2000 10 02 | 704 | 0.5+ | 0.5+ | 2006 09 15 | 704 | 0.6+ | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.5− | |
| 2000 10 02 | 704 | 0.4+ | 0.4+ | 2006 09 15 | 704 | 1.5+ | 0.4− | 2006 10 17 | 703 | 0.5− | 0.1− | |
| 2000 10 02 | 704 | 0.3− | 1.2− | 2006 09 15 | 704 | 0.4+ | 0.4− | 2006 10 17 | 703 | 0.2+ | 1.2− | |
| 2000 10 02 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.0 | |
| 2000 10 03 | 704 | 0.7− | 0.7− | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.9− | |
| 2000 10 03 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.3− | |
| 2000 10 03 | 704 | 0.4+ | 0.9+ | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.6− | |
| 2000 10 03 | 704 | 1.6+ | 0.3− | 2006 09 18 | 704 | 0.4− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2001 11 19 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2001 11 19 | 704 | 0.1+ | 0.6− | 2006 09 18 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3− | |
| 2001 11 19 | 704 | 0.5+ | 0.5− | 2006 09 18 | 704 | 0.1+ | 0.7− | 2006 10 23 | G96 | 0.1+ | 0.3− | |
| 2001 11 24 | 704 | 0.2+ | 1.1+ | 2006 09 18 | 704 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.3− | |
| 2001 11 24 | 704 | 0.0 | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.2− | |
| 2001 11 24 | 704 | (1.0− | 2.0+) | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.1− | |
| 2001 11 24 | 704 | (0.3− | 1.7+) | 2006 09 19 | 699 | 0.3+ | 0.4+ | | | | | |

**(138574)∗ 2000 QS$_{109}$**

Discovered 2000 Aug. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.91590 | | (2000.0) | | | |
| $n$ | 0.18265612 | $\omega$ | 118.61283 | | +0.01757861 | +0.99623233 |
| $a$ | 3.0764267 | $\Omega$ | 152.00474 | | −0.96887000 | +0.03795059 |
| $e$ | 0.0566068 | $i$ | 10.42344 | | −0.24694515 | −0.07798010 |
| $P$ | 5.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 05 | 703 | 0.1− | 0.3− | 2000 09 01 | 691 | 0.5+ | 0.4+ | 2004 04 22 | 703 | 1.2− | 0.5+ | |
| 1999 06 05 | 703 | 0.2− | 0.2+ | 2001 11 18 | 704 | 0.6+ | 0.2+ | 2005 06 06 | 691 | 0.0 | 0.1+ | |
| 1999 06 05 | 703 | 0.0 | 1.9− | 2001 11 18 | 704 | 0.1+ | 0.2− | 2005 06 06 | 691 | 0.1+ | 0.1+ | |
| 1999 06 05 | 703 | 0.6+ | 1.8− | 2001 11 18 | 704 | (2.4− | 2.0−) | 2005 06 06 | 691 | 0.1− | 0.0 | |
| 2000 07 30 | 807 | 0.1+ | 0.0 | 2004 03 22 | 699 | 0.0 | 0.8− | 2005 06 11 | 691 | 0.0 | 0.0 | |
| 2000 07 30 | 807 | 0.1+ | 0.1+ | 2004 03 22 | 699 | 1.0− | 0.8+ | 2005 06 11 | 691 | 0.1+ | 0.1+ | |
| 2000 08 07 | 608 | 1.0− | 1.6− | 2004 03 22 | 699 | 1.4+ | 0.6+ | 2005 06 11 | 691 | 0.1+ | 0.3+ | |
| 2000 08 07 | 608 | 0.9− | 1.6− | 2004 03 22 | 699 | 0.4+ | 1.4+ | 2006 10 16 | 703 | 0.3− | 0.5− | |
| 2000 08 07 | 608 | 1.1− | 1.6− | 2004 03 23 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.2− | |
| 2000 08 29 | 704 | 1.5+ | 0.7+ | 2004 03 23 | 704 | 0.7+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.0 | |
| 2000 08 29 | 704 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.2+ | |
| 2000 08 29 | 704 | 0.3− | 0.8+ | 2004 03 29 | 703 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.7+ | |
| 2000 08 29 | 704 | 0.3+ | 0.7+ | 2004 03 29 | 703 | (1.8− | 0.9−) | 2006 10 22 | 644 | 0.5+ | 0.2+ | |
| 2000 08 31 | 691 | 0.2− | 0.2− | 2004 03 29 | 703 | 0.1− | 0.6− | 2006 10 22 | 644 | 0.3− | 0.6+ | |
| 2000 08 31 | 691 | 0.3− | 0.1− | 2004 03 29 | 703 | 0.6− | 1.1+ | 2006 11 16 | 703 | 0.2− | 0.4+ | |
| 2000 08 31 | 691 | 0.2− | 0.1− | 2004 04 22 | 703 | (1.8− | 0.5−) | 2006 11 16 | 703 | 0.2+ | 0.2− | |
| 2000 09 01 | 691 | 0.0 | 0.4+ | 2004 04 22 | 703 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.1+ | 0.4− | |
| 2000 09 01 | 691 | 0.1+ | 0.3+ | 2004 04 22 | 703 | 0.6− | 0.7+ | 2006 11 16 | 703 | 0.1− | 0.2+ | |

**(138575)∗ 2000 QG$_{114}$ = 2001 XX$_{214}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22377)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.51486 | | (2000.0) | | | |
| $n$ | 0.17201237 | $\omega$ | 30.30968 | | +0.68258325 | −0.73047800 |
| $a$ | 3.2020610 | $\Omega$ | 16.67774 | | +0.65420974 | +0.59737478 |
| $e$ | 0.1732444 | $i$ | 4.38738 | | +0.32571417 | +0.33097622 |
| $P$ | 5.73 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.0 | 1.2+ | 2003 04 05 | 691 | 0.5+ | 0.7+ | 2006 09 25 | G96 | 0.3− | 0.1− | |
| 2000 08 24 | 704 | 0.2+ | 0.0 | 2003 04 05 | 691 | 0.6+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.2+ | |
| 2000 08 24 | 704 | 1.1+ | 0.1+ | 2003 04 05 | 691 | 0.9+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | |
| 2000 08 31 | 704 | 0.2− | 0.6+ | 2003 05 01 | 691 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | |
| 2000 08 31 | 704 | 1.1− | 0.4+ | 2003 05 01 | 691 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.6+ | |
| 2000 08 31 | 704 | 0.6− | 0.0 | 2003 05 01 | 691 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.6− | 0.8+ | |
| 2000 08 31 | 704 | 0.8− | 0.6− | 2004 04 21 | 691 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.4+ | |
| 2000 10 02 | 699 | 1.6+ | 0.7+ | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.5− | |
| 2000 10 02 | 699 | 0.6− | 1.4+ | 2004 04 21 | 691 | 0.1− | 0.8+ | 2006 09 29 | 704 | 0.0 | 0.2− | |
| 2000 10 02 | 704 | 0.2+ | 0.8+ | 2004 06 13 | 691 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.1− | |
| 2000 10 02 | 699 | 1.4− | 1.9+ | 2004 06 13 | 691 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.8− | 0.4+ | |
| 2000 10 02 | 699 | 0.7− | 0.3+ | 2004 06 13 | 691 | 0.0 | 0.4− | 2006 09 29 | 704 | 0.5+ | 0.3− | |
| 2000 10 02 | 704 | 0.2− | 0.6− | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.2+ | |
| 2000 10 02 | 704 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.1− | 0.2− | |
| 2000 10 02 | 704 | 0.5− | 1.4+ | 2006 08 18 | 644 | 0.4− | 0.2+ | 2006 10 15 | 703 | 0.3+ | 0.1− | |
| 2001 12 13 | 704 | 0.7+ | 0.7− | 2006 09 03 | 850 | 1.1+ | 0.2+ | 2006 10 15 | 703 | 0.2+ | 0.2− | |
| 2001 12 13 | 704 | 0.6+ | 0.2− | 2006 09 03 | 850 | 0.5− | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.3− | |
| 2001 12 13 | 704 | 0.5+ | 1.1− | 2006 09 03 | 850 | 0.9− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.3− | |
| 2001 12 13 | 704 | 1.1+ | 0.5− | 2006 09 14 | 703 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.4− | |
| 2001 12 13 | 704 | 0.6− | 1.0− | 2006 09 14 | 703 | 0.5− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.4− | 1.4+ | 2006 09 14 | 703 | 0.6− | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2001 12 18 | 704 | 0.5− | 1.1+ | 2006 09 14 | 703 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 12 18 | 704 | 0.0 | 1.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2001 12 18 | 704 | 0.1− | 1.3+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.2+ | 1.3+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.4− | 1.0+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.5+ | 1.2+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.1− | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 12 18 | 704 | (0.3− | 2.5+) | 2006 09 17 | 704 | 0.0 | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.9− | 1.1+ | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | 0.9+ | 0.3− | 2006 09 17 | 704 | 0.5− | 0.8− | 2006 10 28 | 704 | 0.5+ | 0.3− |
| 2001 12 22 | 704 | 0.1− | 0.9− | 2006 09 17 | 704 | 0.5+ | 0.1− | 2006 10 28 | 704 | 0.9− | 1.1+ |
| 2001 12 22 | 704 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 28 | 704 | (0.8− | 2.1+) |
| 2001 12 22 | 704 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 28 | 704 | 0.3− | 0.0 |
| 2001 12 22 | 704 | 0.4− | 0.5− | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2002 01 06 | 644 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.3− | 0.3− | 2006 11 06 | 644 | 0.2+ | 0.2− |
| 2002 01 06 | 644 | 0.1+ | 0.5− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.3+ |
| 2002 01 06 | 644 | 0.1+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.7− |
| 2002 01 08 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2002 01 08 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | (0.1− | 3.5+) | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2002 01 08 | 704 | 1.5− | 0.9+ | 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.8− |
| 2002 01 08 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2002 01 08 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 704 | (1.0+ | 2.3+) | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2002 01 08 | 704 | 0.2+ | 0.7− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2002 01 08 | 704 | 0.7− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2002 01 08 | 704 | 0.7− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1− | | | | |

**(138576)∗ 2000 QU$_{114}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.57931 | | (2000.0) | | +0.85087467 | −0.52202657 |
| $n$ | 0.18055099 | $\omega$ | 229.10750 | | +0.52104964 | +0.82410039 |
| $a$ | 3.1002934 | $\Omega$ | 162.10822 | | +0.06722773 | +0.21987907 |
| $e$ | 0.1381860 | $i$ | 11.10359 | | | |
| $P$ | 5.46 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.1+ | 0.1+ | 2000 10 02 | 704 | 0.7+ | 0.3+ | 2006 09 18 | 703 | (3.6+ | 3.2−) |
| 2000 08 24 | 704 | 0.3+ | 0.3+ | 2000 10 02 | 704 | (3.0+ | 0.6+) | 2006 09 30 | 703 | 0.2+ | 0.7+ |
| 2000 08 24 | 704 | 0.6+ | 0.5− | 2000 11 27 | 645 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.3− |
| 2000 08 31 | 704 | 0.1− | 0.2+ | 2000 11 27 | 645 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.8− | 0.1+ |
| 2000 08 31 | 704 | 0.3− | 0.0 | 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.3+ | 0.4− |
| 2000 08 31 | 704 | 0.1− | 0.5− | 2003 04 01 | 645 | 0.1+ | 0.2+ | 2006 10 16 | 703 | (1.0+ | 2.9+) |
| 2000 09 05 | 704 | 0.5− | 0.2+ | 2005 07 05 | 644 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 2000 09 05 | 704 | 0.5− | 0.7+ | 2005 07 05 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2000 09 05 | 704 | 0.2− | 0.9+ | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2000 09 05 | 704 | 0.2+ | 1.0− | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.6− | 1.0+ |
| 2000 09 24 | 704 | 0.6− | 0.3+ | 2005 07 08 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.3− | 0.2+ |
| 2000 09 24 | 704 | 0.7− | 0.0 | 2005 07 08 | 691 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.4− | 1.0+ |
| 2000 09 24 | 704 | 0.7− | 0.3− | 2005 07 11 | 703 | 0.4− | 1.3+ | 2006 10 28 | 703 | 0.6− | 1.0+ |
| 2000 09 24 | 704 | 0.4− | 0.1− | 2005 07 11 | 703 | 0.0 | 0.5− | 2006 10 30 | 703 | 0.6− | 0.1− |
| 2000 09 24 | 704 | 0.8− | 0.3− | 2005 07 11 | 703 | 0.8− | 0.9− | 2006 10 30 | 703 | 0.5+ | 0.2− |
| 2000 10 01 | 699 | 0.1+ | 0.8+ | 2005 07 11 | 703 | 0.2+ | 0.4− | 2006 10 30 | 703 | 1.0+ | 0.2− |
| 2000 10 01 | 699 | 0.5− | 0.3+ | 2005 07 26 | 644 | 0.1− | 0.3+ | 2006 10 30 | 703 | 0.3− | 0.8+ |
| 2000 10 01 | 699 | 0.9+ | 0.2+ | 2005 07 26 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.5+ |
| 2000 10 01 | 699 | 0.5+ | 0.4+ | 2005 07 26 | 644 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 1.0− | 0.1− |
| 2000 10 02 | 699 | 0.3− | 1.9+ | 2005 07 30 | 644 | 0.0 | 0.1− | 2006 11 13 | 703 | 1.0+ | 0.6− |
| 2000 10 02 | 699 | 0.7+ | 0.1− | 2005 07 30 | 644 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2000 10 02 | 699 | 0.7+ | 0.5+ | 2005 07 30 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.6+ |
| 2000 10 02 | 699 | 0.4+ | 1.1+ | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.4+ | 0.4− |
| 2000 10 02 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.9+ | 0.4− |
| 2000 10 02 | 704 | 0.8− | 1.1+ | 2006 09 18 | 703 | 1.0− | 1.1+ | 2006 11 19 | 703 | 0.1− | 0.2+ |

**(138577)∗ 2000 QX$_{122}$**

Discovered 2000 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.90247 | | (2000.0) | | +0.75319403 | −0.65193160 |
| $n$ | 0.17509058 | $\omega$ | 211.42854 | | +0.65758854 | +0.74960423 |
| $a$ | 3.1644206 | $\Omega$ | 190.69358 | | +0.01661538 | −0.11436212 |
| $e$ | 0.1911962 | $i$ | 28.19065 | | | |
| $P$ | 5.63 | $H$ | 13.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 704 | 0.8+ | 0.3+ | 2000 11 02 | 704 | 0.1+ | 0.3+ | 2005 07 30 | 704 | 0.1+ | 0.6+ |
| 2000 08 25 | 704 | 1.7+ | 0.7− | 2000 11 02 | 704 | 0.7+ | 0.9+ | 2005 07 30 | 704 | 0.1− | 0.8+ |
| 2000 08 25 | 704 | 0.1− | 1.8+ | 2000 11 02 | 704 | 0.9+ | 0.6+ | 2005 07 30 | 704 | 0.3+ | 0.2+ |
| 2000 08 25 | 704 | 0.4+ | 0.5+ | 2000 11 20 | 704 | 0.8− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.1− |
| 2000 08 25 | 704 | 1.2+ | 0.2+ | 2000 11 20 | 704 | 1.2− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.4+ |
| 2000 09 01 | 704 | 0.3+ | 0.3+ | 2000 11 20 | 704 | 0.3− | 1.2+ | 2006 09 19 | 703 | 0.4− | 0.0 |
| 2000 09 01 | 704 | 0.4+ | 0.3− | 2000 11 20 | 704 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2000 09 01 | 704 | 0.8+ | 0.1+ | 2000 11 25 | 704 | 0.2+ | 1.1+ | 2006 09 20 | 699 | 0.1+ | 0.4+ |
| 2000 09 01 | 704 | 0.4+ | 0.4+ | 2000 11 25 | 704 | 0.0 | 1.6+ | 2006 09 20 | 699 | 0.9+ | 0.5+ |
| 2000 09 01 | 704 | 0.9+ | 0.4+ | 2000 11 25 | 704 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.1+ |
| 2000 09 03 | 704 | 0.2+ | 0.4+ | 2000 11 25 | 704 | 0.7+ | 0.2− | 2006 09 20 | 699 | 0.4+ | 0.2+ |
| 2000 09 03 | 704 | 0.3− | 0.0 | 2000 11 25 | 704 | 0.4+ | 0.1− | 2006 09 20 | 608 | (0.8+ | 1.8−) |
| 2000 09 03 | 704 | 0.7− | 0.1+ | 2000 12 03 | 608 | 1.9+ | 1.7+ | 2006 09 20 | 608 | (1.2+ | 1.8−) |
| 2000 09 03 | 704 | 0.3− | 0.4+ | 2000 12 03 | 608 | 1.3+ | 1.8+ | 2006 09 20 | 608 | (0.9+ | 1.8−) |
| 2000 09 03 | 704 | 0.0 | 0.1− | 2000 12 03 | 608 | (1.0+ | 2.2+) | 2006 09 30 | 704 | 0.1− | 0.4− |
| 2000 09 24 | 704 | 0.1− | 0.0 | 2003 03 10 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 704 | 0.5− | 0.2− |
| 2000 09 24 | 704 | 0.3+ | 0.4+ | 2003 03 10 | 704 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2000 09 24 | 704 | 0.0 | 0.1+ | 2003 03 10 | 704 | 1.4− | 0.8+ | 2006 09 30 | 703 | 0.5− | 0.5+ |
| 2000 09 24 | 704 | 0.3+ | 0.2+ | 2003 03 10 | 704 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2000 09 24 | 704 | 0.1− | 0.5+ | 2003 03 10 | 704 | 0.6− | 1.0+ | 2006 09 30 | 703 | 0.8+ | 0.6+ |
| 2000 09 26 | 699 | 1.2− | 1.3+ | 2003 03 27 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2000 09 26 | 699 | 0.5− | 0.5+ | 2003 03 27 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2000 09 26 | 699 | 0.4− | 0.4+ | 2003 03 27 | 644 | (1.3− | 2.2+) | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2000 09 26 | 699 | 0.8− | 0.4+ | 2003 04 01 | 704 | 0.3+ | 1.2+ | 2006 10 21 | 232 | 0.2− | 0.5− |
| 2000 10 01 | 704 | 0.1− | 0.1+ | 2003 04 01 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 232 | 0.3+ | 0.1− |
| 2000 10 01 | 704 | 0.4− | 0.0 | 2003 04 01 | 704 | 0.6− | 0.9+ | 2006 10 21 | 232 | 0.5+ | 0.3+ |
| 2000 10 01 | 704 | 0.2− | 0.2− | 2003 04 01 | 704 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2000 10 01 | 704 | 0.4− | 0.1+ | 2003 04 03 | 699 | 0.8− | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 2000 10 01 | 704 | 0.4− | 0.3− | 2003 04 03 | 699 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 2000 10 02 | 704 | 0.0 | 0.4+ | 2003 04 03 | 699 | 0.1+ | 0.7− | 2006 10 21 | 703 | 0.2− | 0.5+ |
| 2000 10 02 | 704 | 0.2+ | 0.3+ | 2003 04 03 | 699 | 0.7− | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.2− |
| 2000 10 02 | 704 | 0.2− | 0.2+ | 2003 04 04 | 691 | 0.1− | 0.5+ | 2006 10 28 | 703 | 0.0 | 0.6+ |
| 2000 10 02 | 704 | 0.2− | 0.0 | 2003 04 04 | 691 | 0.0 | 0.7+ | 2006 10 28 | 703 | 0.3− | 0.2− |
| 2000 10 02 | 704 | 0.1− | 0.3+ | 2003 04 04 | 691 | 0.0 | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.6− |
| 2000 10 06 | 704 | 0.4− | 0.0 | 2003 04 30 | 691 | 0.3+ | 1.0+ | 2006 11 01 | 703 | 0.1− | 0.3+ |
| 2000 10 06 | 704 | 0.1+ | 0.1+ | 2003 04 30 | 691 | 0.4+ | 1.0+ | 2006 11 01 | 703 | 0.2+ | 1.0+ |
| 2000 10 06 | 704 | 0.3− | 0.0 | 2003 04 30 | 691 | 0.1+ | 1.0+ | 2006 11 01 | 703 | 0.3+ | 0.3+ |
| 2000 10 06 | 704 | 0.5+ | 0.1+ | 2004 05 14 | 691 | 0.2− | 0.2+ | 2006 11 01 | 703 | 0.6+ | 0.3+ |
| 2000 10 06 | 704 | 0.2− | 0.6+ | 2004 05 14 | 691 | 0.1− | 0.2+ | 2006 11 18 | 703 | 0.1+ | 0.1− |
| 2000 10 29 | 704 | 0.1+ | 0.5+ | 2004 05 14 | 691 | 0.4− | 0.0 | 2006 11 18 | 703 | 0.2− | 0.2− |
| 2000 10 29 | 704 | 0.2− | 0.5+ | 2004 06 10 | 704 | 0.1− | 0.3− | 2006 11 18 | 703 | 0.6+ | 0.0 |
| 2000 10 29 | 704 | 0.3− | 0.8+ | 2004 06 10 | 704 | 0.6+ | 0.8− | 2006 11 18 | 703 | 0.1− | 0.0 |
| 2000 10 29 | 704 | 1.2− | 0.9+ | 2004 06 10 | 704 | 0.1+ | 0.4+ | 2006 11 24 | 703 | 0.1+ | 0.4+ |
| 2000 10 29 | 704 | 1.3− | 0.9+ | 2004 06 16 | 644 | 0.3− | 0.1+ | 2006 11 24 | 703 | 0.1− | 0.0 |
| 2000 11 02 | 704 | 1.1+ | 0.3+ | 2004 06 16 | 644 | 0.3− | 0.2+ | 2006 11 24 | 703 | 0.1+ | 0.4+ |
| 2000 11 02 | 704 | 1.2+ | 0.2− | 2004 06 16 | 644 | 0.2− | 0.3+ | 2006 11 24 | 703 | 1.2− | 1.5− |

**(138578)∗ 2000 QL$_{124}$**

Discovered 2000 Aug. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.81844 | | (2000.0) | | | |
| $n$ | 0.17170975 | $\omega$ | 196.11202 | | +0.82415535 | −0.56336108 |
| $a$ | 3.2058221 | $\Omega$ | 198.53581 | | +0.53775533 | +0.81064712 |
| $e$ | 0.1045926 | $i$ | 10.55699 | | +0.17772780 | +0.15961059 |
| $P$ | 5.74 | $H$ | 14.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 13 | 691 | 0.3− | 0.0 | 2004 04 17 | 704 | 0.0 | 0.9+ | 2006 10 03 | 704 | (1.6− | 0.5+) |
| 1997 03 13 | 691 | 0.2− | 0.2− | 2004 04 17 | 704 | 0.7+ | 0.6+ | 2006 10 03 | 704 | 1.1− | 0.1+ |
| 1997 03 13 | 691 | 0.1− | 0.2− | 2004 05 15 | 704 | 0.7+ | 0.7− | 2006 10 03 | 704 | 1.5− | 0.1+ |
| 2000 08 28 | 704 | 0.1− | 0.7+ | 2004 05 15 | 704 | 0.4+ | 1.0− | 2006 10 03 | 704 | 0.3− | 0.1− |
| 2000 08 28 | 704 | 0.2+ | 0.2− | 2004 05 15 | 704 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2+ |
| 2000 08 28 | 704 | 0.3+ | 0.3+ | 2004 05 15 | 704 | 0.1− | 0.5− | 2006 10 11 | 691 | 0.0 | 0.0 |
| 2000 08 28 | 704 | 0.5+ | 0.2+ | 2004 05 16 | 704 | 0.6− | 0.2+ | 2006 10 11 | 691 | 0.5− | 0.3+ |
| 2000 08 28 | 704 | 0.2− | 0.1− | 2004 05 16 | 704 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2000 09 01 | 704 | 0.3+ | 1.2+ | 2004 05 16 | 704 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2000 09 01 | 704 | 0.2− | 0.2− | 2004 05 16 | 704 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2000 09 01 | 704 | 0.4+ | 0.6+ | 2004 05 22 | 704 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.5− | 0.1− |
| 2000 09 01 | 704 | 0.5− | 0.3+ | 2004 05 22 | 704 | (1.5− | 0.5−) | 2006 10 15 | 691 | 0.2+ | 0.0 |
| 2000 09 01 | 704 | 0.0 | 0.1− | 2004 05 22 | 704 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2000 09 02 | 699 | 0.4− | 0.6+ | 2004 06 09 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2000 09 02 | 699 | 0.8− | 0.9+ | 2004 06 09 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.5− |
| 2000 09 02 | 699 | 0.1− | 0.6+ | 2004 06 09 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2000 09 02 | 699 | 0.6− | 0.4+ | 2004 06 16 | 704 | 0.3− | 0.8+ | 2006 10 17 | G96 | (1.9− | 0.5−) |
| 2000 09 03 | 704 | 0.1+ | 0.7− | 2004 06 16 | 704 | 0.5+ | 1.4+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2000 09 03 | 704 | 0.5− | 0.7+ | 2004 06 16 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2000 09 03 | 704 | 0.4− | 1.0− | 2004 06 16 | 704 | 0.0 | 1.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2000 09 03 | 704 | 0.2− | 0.1− | 2005 05 14 | G96 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2000 09 03 | 704 | 0.3+ | 0.6+ | 2005 05 14 | G96 | 0.1+ | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2000 09 23 | 704 | 0.2+ | 0.2+ | 2005 05 14 | G96 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2000 09 23 | 704 | 0.4+ | 0.0 | 2005 05 14 | G96 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2000 09 23 | 704 | 1.2− | 1.0− | 2006 09 17 | 704 | 0.1+ | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 09 24 | 699 | 0.2+ | 1.5+ | 2006 09 17 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2000 09 24 | 699 | 0.7+ | 0.5+ | 2006 09 17 | 704 | 0.7− | 0.7+ | 2006 10 21 | 703 | 0.4− | 0.5− |
| 2000 09 24 | 699 | 0.1+ | 0.8+ | 2006 09 17 | 704 | 0.7− | 0.6+ | 2006 10 21 | 703 | 0.8− | 0.5− |
| 2000 09 24 | 699 | 0.3+ | 0.4+ | 2006 09 18 | 683 | 1.4+ | 0.7− | 2006 10 21 | 703 | 0.4+ | 0.6− |
| 2000 10 01 | 699 | 0.1+ | 0.0 | 2006 09 18 | 683 | 1.0+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 2000 10 01 | 699 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.3− |
| 2000 10 01 | 699 | 0.4− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 10 01 | 699 | 0.4+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.3− |
| 2000 10 02 | 704 | 0.1− | 0.1+ | 2006 09 19 | 683 | 0.8+ | 0.5− | 2006 10 23 | 704 | 0.3− | 1.4− |
| 2000 10 02 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 683 | (2.0+ | 1.4−) | 2006 10 23 | 704 | (0.6+ | 3.2+) |
| 2000 10 02 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 683 | 0.6+ | 0.5− | 2006 10 23 | 704 | 0.0 | 0.7− |
| 2000 10 02 | 704 | 0.3− | 0.3− | 2006 09 20 | 699 | 0.4+ | 0.4+ | 2006 10 23 | 704 | 0.1+ | 0.2− |
| 2000 10 02 | 704 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.2+ | 0.9+ | 2006 10 27 | 704 | 1.0− | 0.3+ |
| 2000 10 29 | 704 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.3− | 0.0 | 2006 10 27 | 704 | 0.4− | 0.1+ |
| 2000 10 29 | 704 | 0.1+ | 1.0+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.9− | 0.3+ |
| 2000 10 29 | 704 | 0.8+ | 1.6+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 704 | 0.5+ | 0.4+ |
| 2000 10 29 | 704 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 27 | 704 | 0.1+ | 0.3+ |
| 2000 10 29 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 683 | 1.2+ | 0.5− | 2006 11 11 | 703 | 0.8+ | 0.3+ |
| 2000 11 02 | 704 | 0.3+ | 0.4− | 2006 09 21 | 683 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.2− | 1.2− |
| 2000 11 02 | 704 | 0.7− | 0.2− | 2006 09 21 | 683 | 1.1− | 0.4+ | 2006 11 11 | 703 | 0.9+ | 1.0− |
| 2000 11 02 | 704 | 0.4− | 1.1− | 2006 09 22 | 683 | 0.1− | 0.5+ | 2006 11 11 | 703 | 1.2+ | 0.2− |
| 2003 03 07 | 699 | 1.3+ | 0.6+ | 2006 09 22 | 683 | 0.6− | 0.2+ | 2006 11 14 | 704 | 1.3+ | 0.7+ |
| 2003 03 07 | 704 | 1.1− | 0.1+ | 2006 09 22 | 683 | 1.0− | 0.9− | 2006 11 14 | 704 | 0.4− | 0.6+ |
| 2003 03 07 | 699 | 0.3+ | 0.1− | 2006 09 24 | 691 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.0 | 1.0+ |
| 2003 03 07 | 704 | 0.1+ | 1.3+ | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.4− | 0.5+ |
| 2003 03 07 | 699 | 0.3+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.8+ |
| 2003 03 07 | 699 | (2.0− | 1.1−) | 2006 09 25 | 683 | (2.1+ | 0.0 ) | 2006 11 17 | 704 | 0.2+ | 0.0 |
| 2003 03 07 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 683 | 1.1+ | 1.0+ | 2006 11 17 | 704 | 1.3+ | 0.4+ |
| 2003 03 07 | 704 | 1.3+ | 1.3+ | 2006 09 25 | 683 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2003 03 07 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 683 | (1.8+ | 0.8−) | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2003 03 11 | 704 | (0.1+ | 1.8+) | 2006 09 26 | 683 | 0.9+ | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2003 03 11 | 704 | 0.3− | 1.2+ | 2006 09 26 | 683 | 0.9+ | 0.8+ | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2003 03 11 | 704 | (0.6+ | 1.6+) | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2003 03 30 | 644 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2003 03 30 | 644 | 0.8+ | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.9− |
| 2003 03 30 | 644 | 0.1+ | 0.9+ | 2006 09 27 | 704 | 0.7− | 0.7− | 2006 11 20 | 704 | 1.0+ | 0.3+ |
| 2003 03 31 | 704 | 0.4+ | 1.3+ | 2006 09 27 | 704 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.4− | 1.0+ |
| 2003 03 31 | 704 | 0.2+ | 1.3+ | 2006 09 27 | 704 | 0.4− | 0.4+ | 2006 11 20 | 704 | 0.8+ | 0.7+ |
| 2003 03 31 | 704 | (0.5+ | 2.2+) | 2006 09 27 | 704 | 0.5− | 0.4− | 2006 11 20 | 704 | 0.7+ | 0.2+ |
| 2003 03 31 | 704 | (0.7+ | 2.9+) | 2006 09 27 | 704 | 1.0− | 0.8− | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2003 03 31 | 704 | (0.2+ | 2.4+) | 2006 09 28 | 704 | 0.2+ | 1.2− | 2006 11 20 | 704 | 0.7+ | 0.7+ |
| 2004 04 17 | 704 | 0.9+ | 0.3− | 2006 09 28 | 704 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.5− | 0.2− |
| 2004 04 17 | 704 | 0.3− | 0.4+ | 2006 09 28 | 704 | 0.6+ | 0.1+ | 2006 11 20 | 704 | 0.9+ | 1.0− |
| 2004 04 17 | 704 | (1.0+ | 1.6+) | 2006 10 03 | 704 | 0.4− | 0.3+ | | | | |

**(138579)∗ 2000 QA$_{132}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.30141 | | (2000.0) | | | |
| $n$ | 0.18096516 | $\omega$ | 23.04166 | | +0.95578133 | +0.23545554 |
| $a$ | 3.0955613 | $\Omega$ | 321.94061 | | −0.29402587 | +0.75380314 |
| $e$ | 0.1891740 | $i$ | 16.60668 | | −0.00555269 | +0.61346681 |
| $P$ | 5.45 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.1+ | 0.4− | 2000 09 05 | 704 | 0.5− | 0.0 | 2006 08 24 | 704 | 0.1+ | 0.6+ |
| 2000 08 02 | 704 | 0.4+ | 0.7+ | 2000 09 05 | 704 | 0.1+ | 0.1− | 2006 09 15 | H51 | 0.2+ | 0.1− |
| 2000 08 02 | 704 | 0.8− | 0.0 | 2000 09 05 | 704 | 0.0 | 0.3+ | 2006 09 15 | H51 | 0.3− | 0.4− |
| 2000 08 02 | 704 | 0.2− | 1.2+ | 2000 09 20 | 704 | 0.3− | 1.1− | 2006 09 15 | H51 | 0.0 | 0.2− |
| 2000 08 02 | 704 | 0.3− | 0.3+ | 2000 09 20 | 704 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.3− | 0.0 |
| 2000 08 02 | 704 | 0.7− | 1.3+ | 2000 09 20 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.1− | 0.1+ |
| 2000 08 02 | 704 | 0.4+ | 0.3+ | 2000 09 20 | 704 | 0.8+ | 0.3− | 2006 09 17 | 703 | 0.7− | 0.2− |
| 2000 08 02 | 704 | 0.2+ | 0.4+ | 2001 12 08 | 704 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 2000 08 02 | 704 | 0.3− | 0.7+ | 2001 12 08 | 704 | (2.3− | 0.7+) | 2006 09 24 | 699 | 0.1− | 0.3+ |
| 2000 08 02 | 704 | 0.3+ | 0.2+ | 2001 12 08 | 704 | 0.8− | 1.0+ | 2006 09 24 | 699 | 0.1− | 0.0 |
| 2000 08 02 | 704 | 0.1+ | 0.4+ | 2001 12 08 | 704 | 1.1− | 0.9+ | 2006 09 24 | 699 | 0.2+ | 0.9+ |
| 2000 08 02 | 704 | 1.5+ | 0.2+ | 2001 12 23 | 704 | 0.6+ | 0.3+ | 2006 09 24 | 699 | 0.0 | 0.3− |
| 2000 08 02 | 704 | 0.2+ | 0.6+ | 2001 12 23 | 704 | 0.1− | 0.3− | 2006 09 28 | 703 | 1.1+ | 0.3− |
| 2000 08 02 | 704 | 0.5− | 0.9+ | 2001 12 23 | 704 | 0.1+ | 0.7− | 2006 09 28 | 703 | 0.1+ | 0.2+ |
| 2000 08 26 | 704 | 0.3+ | 0.1− | 2001 12 23 | 704 | 0.5+ | 0.7− | 2006 09 28 | 703 | 0.5− | 0.2+ |
| 2000 08 26 | 704 | 0.5+ | 0.6− | 2001 12 23 | 704 | 0.2− | 1.4− | 2006 09 28 | 703 | 0.3+ | 0.3− |
| 2000 08 26 | 704 | 0.3− | 1.2+ | 2002 01 06 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 703 | 0.4+ | 0.1− |
| 2000 08 26 | 704 | 0.1− | 0.9+ | 2002 01 06 | 704 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 2000 08 26 | 704 | 0.4+ | 0.7+ | 2002 01 06 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.2+ |
| 2000 09 02 | 704 | 0.9− | 1.9− | 2002 01 06 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2000 09 02 | 704 | 0.3+ | 0.5− | 2003 03 23 | 291 | 0.4+ | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2000 09 02 | 704 | 0.2+ | 0.9− | 2003 03 23 | 291 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2000 09 04 | 704 | 0.4− | 0.7+ | 2003 03 23 | 291 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2000 09 04 | 704 | 0.6− | 1.2− | 2006 08 24 | 704 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.7− | 0.4+ |
| 2000 09 04 | 704 | 1.3− | 0.3+ | 2006 08 24 | 704 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.0 | 0.5− |
| 2000 09 04 | 704 | 0.9− | 0.4− | 2006 08 24 | 704 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2000 09 04 | 704 | 0.7− | 0.8− | 2006 08 24 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.9− | 0.3+ |

**(138580)∗ 2000 QC$_{132}$ = 1997 EH$_{40}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 3820)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.05134 | | (2000.0) | | | |
| $n$ | 0.18452063 | $\omega$ | 78.16378 | | +0.69139920 | −0.70419865 |
| $a$ | 3.0556675 | $\Omega$ | 326.20594 | | +0.49642694 | +0.62543475 |
| $e$ | 0.2638693 | $i$ | 16.87579 | | +0.52490708 | +0.33605896 |
| $P$ | 5.34 | $H$ | 13.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 704 | 1.7+ | 0.2+ | 2000 09 05 | 704 | 0.0 | 1.0+ | 2002 02 03 | 644 | 0.2− | 0.3+ |
| 1997 03 05 | 704 | 1.3+ | 1.3− | 2000 09 20 | 704 | 1.0+ | 0.8+ | 2002 02 10 | 704 | 0.6− | 0.8− |
| 1997 03 06 | 704 | 1.1− | 1.9− | 2000 09 20 | 704 | 0.4− | 0.4− | 2002 02 10 | 704 | 0.4− | 1.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 06 | 704 | 1.4+ | 0.4+ | 2000 09 20 | 704 | 0.4+ | 0.4+ | 2002 02 10 | 704 | 0.5− | 1.0− |
| 2000 08 02 | 704 | 0.1+ | 0.8− | 2000 09 20 | 704 | 0.0 | 0.0 | 2002 02 10 | 704 | 0.4− | 0.9− |
| 2000 08 02 | 704 | 0.3+ | 0.3− | 2000 09 20 | 704 | 0.2+ | 0.6− | 2002 02 10 | 704 | 0.4− | 0.9− |
| 2000 08 02 | 704 | 0.3+ | 0.1− | 2000 11 18 | 704 | 0.9+ | 1.4+ | 2002 03 05 | 704 | 0.7+ | 0.9+ |
| 2000 08 02 | 704 | 0.1− | 0.2+ | 2000 11 18 | 704 | 0.3− | 0.9+ | 2002 03 05 | 704 | 0.4+ | 0.8+ |
| 2000 08 02 | 704 | 0.3− | 0.4+ | 2000 11 18 | 704 | 0.3− | 0.3+ | 2002 03 05 | 704 | 0.1− | 1.5+ |
| 2000 08 20 | 699 | (3.7+ | 1.4−) | 2000 11 18 | 704 | 0.0 | 0.3− | 2003 04 07 | 644 | 0.2+ | 0.8+ |
| 2000 08 20 | 699 | 0.2− | 0.4+ | 2001 10 25 | 704 | (1.7+ | 0.6+) | 2003 04 07 | 644 | 0.9+ | 0.8+ |
| 2000 08 20 | 699 | 1.0− | 0.0 | 2001 10 25 | 704 | 0.6− | 0.2+ | 2003 04 07 | 644 | 0.1+ | 0.5+ |
| 2000 08 20 | 699 | 0.4− | 0.6− | 2001 10 25 | 704 | (0.8− | 2.0+) | 2005 06 06 | E12 | 0.1− | 0.0 |
| 2000 08 23 | 300 | 0.4− | 0.6− | 2001 10 25 | 704 | 0.1− | 1.2+ | 2005 06 06 | E12 | 0.1− | 0.6+ |
| 2000 08 23 | 300 | 0.2− | 0.4+ | 2001 10 25 | 704 | 0.3+ | 0.8+ | 2005 06 06 | E12 | 0.7− | 0.1− |
| 2000 08 26 | 704 | 0.3− | 0.1− | 2001 11 08 | 704 | 0.0 | 0.4+ | 2005 06 06 | E12 | 0.1− | 0.5+ |
| 2000 08 26 | 704 | 0.2+ | 0.3− | 2001 11 08 | 704 | 0.5− | 0.4+ | 2006 09 18 | 704 | 1.2+ | 0.2+ |
| 2000 08 26 | 704 | 0.2+ | 0.4− | 2001 11 08 | 704 | 0.2+ | 1.1+ | 2006 09 18 | 704 | 1.0+ | 0.0 |
| 2000 08 26 | 704 | 0.1− | 0.4+ | 2001 12 23 | 704 | 0.3− | 0.3− | 2006 09 18 | 704 | 1.5+ | 0.9+ |
| 2000 08 26 | 704 | 0.0 | 0.7+ | 2001 12 23 | 704 | 1.4− | 0.0 | 2006 09 18 | 704 | 0.8+ | 0.4+ |
| 2000 09 02 | 704 | 0.0 | 0.2+ | 2001 12 23 | 704 | 0.7− | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.2+ |
| 2000 09 02 | 704 | 0.5− | 0.3+ | 2001 12 23 | 704 | 0.8− | 0.0 | 2006 10 04 | 704 | 0.1+ | 0.9+ |
| 2000 09 02 | 704 | 1.0+ | 0.2− | 2002 01 05 | 644 | 0.0 | 0.0 | 2006 10 04 | 704 | 0.8+ | 0.0 |
| 2000 09 02 | 699 | 0.1− | 0.1− | 2002 01 05 | 644 | 0.3+ | 0.5+ | 2006 10 04 | 704 | 0.8+ | 0.1+ |
| 2000 09 02 | 704 | 1.0− | 0.6+ | 2002 01 05 | 644 | 0.1− | 0.1− | 2006 10 04 | 704 | 0.4+ | 0.4+ |
| 2000 09 02 | 704 | 0.5+ | 0.9− | 2002 01 05 | 644 | 0.2+ | 0.6+ | 2006 10 16 | 704 | 0.2− | 0.2+ |
| 2000 09 02 | 699 | 0.6− | 0.3+ | 2002 01 05 | 644 | 0.1− | 0.1− | 2006 10 16 | 704 | 0.2− | 0.2+ |
| 2000 09 02 | 699 | 1.1− | 0.0 | 2002 01 05 | 644 | 0.1+ | 0.6+ | 2006 10 16 | 704 | 0.0 | 1.1+ |
| 2000 09 02 | 699 | 1.0− | 0.1+ | 2002 01 06 | 704 | 0.1− | 0.6+ | 2006 10 16 | 704 | 0.2− | 0.3+ |
| 2000 09 04 | 704 | 0.1− | 0.1+ | 2002 01 06 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 704 | 0.3− | 0.2+ |
| 2000 09 04 | 704 | 0.0 | 0.4+ | 2002 01 06 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 704 | 0.2+ | 0.1+ |
| 2000 09 04 | 704 | 0.0 | 0.2+ | 2002 01 06 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 704 | 0.1+ | 0.0 |
| 2000 09 04 | 704 | 0.2+ | 0.4+ | 2002 01 06 | 704 | 0.6+ | 1.1+ | 2006 11 13 | 704 | 0.1+ | 0.1+ |
| 2000 09 04 | 704 | 0.6+ | 0.8+ | 2002 02 02 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 704 | 0.0 | 0.1− |
| 2000 09 05 | 704 | 0.1+ | 1.5− | 2002 02 02 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.0 | 0.3− |
| 2000 09 05 | 704 | 1.1+ | 0.3− | 2002 02 02 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 703 | 0.2− | 0.6− |
| 2000 09 05 | 704 | 1.5− | 0.6+ | 2002 02 03 | 644 | (0.8− | 2.0+) | 2006 11 20 | 703 | 0.3− | 2.2− |
| 2000 09 05 | 704 | 0.3+ | 0.6− | 2002 02 03 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 703 | 1.3− | 2.4− |

**(138581)∗ 2000 QQ$_{133}$ = 1978 UU$_5$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 3821)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.52535 | | (2000.0) | | | |
| $n$ | 0.17757824 | $\omega$ | 343.12114 | | +0.98871575 | +0.14963685 |
| $a$ | 3.1347979 | $\Omega$ | 8.28260 | | −0.13115170 | +0.88744991 |
| $e$ | 0.2495243 | $i$ | 2.81272 | | −0.07239053 | +0.43593747 |
| $P$ | 5.55 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 10 27 | 675 | 0.4− | 0.9− | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 22 | 683 | 0.3+ | 0.2− |
| 1978 10 28 | 675 | 0.5+ | 0.4− | 2006 09 18 | 699 | 0.7+ | 0.2− | 2006 10 22 | 683 | (0.1− | 1.7+) |
| 1978 10 29 | 675 | 0.5+ | 0.4− | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 22 | 683 | 0.5− | 0.7+ |
| 2000 08 01 | 704 | 0.6− | 0.3− | 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 23 | 704 | (1.6− | 1.1+) |
| 2000 08 01 | 704 | 0.2− | 0.1− | 2006 09 24 | 691 | 0.4− | 0.1− | 2006 10 23 | 683 | 1.1+ | 1.0− |
| 2000 08 01 | 704 | 0.0 | 1.3+ | 2006 09 27 | 704 | 0.8− | 0.2− | 2006 10 23 | 704 | 0.2− | 0.8− |
| 2000 08 01 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 683 | 0.4+ | 0.3− |
| 2000 08 01 | 704 | 0.2− | 1.3+ | 2006 09 27 | 704 | 0.0 | 1.0+ | 2006 10 23 | 704 | 0.2− | 1.2+ |
| 2000 08 20 | 699 | 0.8− | 0.1− | 2006 09 27 | 704 | 0.3+ | 1.0+ | 2006 10 23 | 683 | 0.5+ | 1.0+ |
| 2000 08 20 | 699 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.3− | 0.6+ | 2006 10 23 | 704 | 0.7+ | 0.4− |
| 2000 08 20 | 699 | 1.0− | 0.6− | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 23 | 704 | 0.6− | 0.2− |
| 2000 08 20 | 699 | 0.5− | 0.7− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 25 | 106 | 0.3− | 0.7− |
| 2000 08 26 | 807 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 25 | 106 | 0.4− | 0.7− |
| 2000 08 26 | 807 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.1− | 2006 10 25 | 106 | 0.2− | 0.2− |
| 2000 08 26 | 704 | 0.3− | 0.4+ | 2006 10 02 | 691 | 0.5− | 0.7+ | 2006 10 25 | 106 | 0.1− | 0.6− |
| 2000 08 26 | 704 | 0.1+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.6+ | 2006 10 28 | 704 | 0.4+ | 0.3+ |
| 2000 08 26 | 704 | 0.2+ | 0.6+ | 2006 10 03 | 704 | 0.7+ | 0.2− | 2006 10 28 | 704 | 0.2+ | 0.7+ |
| 2000 08 26 | 704 | 0.8+ | 1.4+ | 2006 10 03 | 704 | 1.1+ | 0.0 | 2006 10 28 | 704 | 0.3+ | 0.7+ |
| 2000 09 02 | 704 | 0.4+ | 0.3+ | 2006 10 03 | 704 | (0.6+ | 1.6+) | 2006 10 28 | 704 | 0.9+ | 1.2+ |
| 2000 09 02 | 704 | 0.4+ | 0.7− | 2006 10 10 | 644 | 0.3− | 0.2− | 2006 10 28 | 704 | 0.0 | 0.1+ |
| 2000 09 02 | 704 | 0.9+ | 0.6+ | 2006 10 10 | 644 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.5− |
| 2000 09 02 | 704 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.4− | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2001 12 18 | 704 | 0.4− | 0.5− | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.6− |
| 2001 12 18 | 704 | 0.1− | 1.2+ | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 11 07 | 644 | 1.0− | 0.1+ |
| 2001 12 18 | 704 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.2− | 0.2− |
| 2001 12 18 | 704 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.5− | 2006 11 07 | 644 | 0.3− | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.5− |
| 2001 12 19 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 683 | 0.9+ | 0.6− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.2− | 0.7+ | 2006 10 16 | 683 | 1.2+ | 0.7− | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | (0.8+ | 1.6+) | 2006 10 16 | 683 | 1.3+ | 0.4− | 2006 11 17 | 703 | 0.2+ | 0.1+ |
| 2002 01 08 | 704 | 1.1+ | 1.3− | 2006 10 17 | 683 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.8− | 0.2− |
| 2002 01 08 | 704 | 1.5+ | 0.3− | 2006 10 17 | 683 | 0.7+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.7+ |
| 2002 01 08 | 704 | 1.0+ | 1.3− | 2006 10 17 | 683 | 0.5+ | 0.5+ | 2006 11 17 | 703 | 1.3− | 0.0 |
| 2002 01 14 | 704 | 0.2+ | 0.1− | 2006 10 19 | 683 | 0.1− | 0.7− | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2002 01 14 | 704 | 0.8− | 0.3− | 2006 10 19 | 683 | 0.5− | 0.4− | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 2002 01 14 | 704 | 0.8− | 0.1+ | 2006 10 19 | 683 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2002 01 14 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1− | 1.1+ |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.8− | 0.0 |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2006 08 21 | 704 | 0.1+ | 1.2− | 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2006 08 21 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.5− | 0.6− |
| 2006 08 21 | 704 | (1.7− | 1.5+) | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.8− | 0.7+ |
| 2006 08 21 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.9− | 2006 11 21 | 704 | 0.9+ | 0.3+ |
| 2006 08 21 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 703 | 0.6− | 0.5− | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2006 09 18 | 699 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.6− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2006 09 18 | 699 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2− | | | | |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3− | | | | |

**(138582)∗ 2000 QP$_{134}$ = 1993 HG$_{10}$ = 2001 XL$_{166}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22391), A. Doppler (*MPO* 74803)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.35004 | | (2000.0) | | | |
| $n$ | 0.18487762 | $\omega$ | 251.45652 | | +0.98629062 | −0.13816607 |
| $a$ | 3.0517327 | $\Omega$ | 116.40141 | | +0.16145733 | +0.92095016 |
| $e$ | 0.1739892 | $i$ | 5.78142 | | −0.03409301 | +0.36436376 |
| $P$ | 5.33 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.2+ | 0.5− | 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 11 01 | 703 | 0.6− | 0.9− |
| 1993 04 21 | 691 | 0.2+ | 0.8− | 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.2− | 0.7+ |
| 1993 04 21 | 691 | 0.2− | 0.8− | 2001 12 20 | 704 | 0.1− | 0.6+ | 2006 11 01 | 703 | 0.1+ | 0.4− |
| 1993 04 22 | 691 | 0.0 | 0.1+ | 2001 12 20 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.6− |
| 1993 04 22 | 691 | 0.6− | 0.3− | 2001 12 20 | 704 | 0.7+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.4− |
| 1993 04 22 | 691 | 0.1+ | 0.3+ | 2001 12 20 | 704 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.4− |
| 2000 07 06 | 699 | 1.9− | 1.7+ | 2001 12 20 | 704 | 0.3+ | 0.6+ | 2006 11 13 | 644 | 0.1+ | 0.3− |
| 2000 07 06 | 699 | 0.6+ | 0.7+ | 2001 12 21 | 704 | 0.4+ | 0.8− | 2006 11 13 | 703 | 0.7− | 0.3+ |
| 2000 07 06 | 699 | 1.2+ | 0.3+ | 2001 12 21 | 704 | 0.5+ | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.4− |
| 2000 07 06 | 699 | 0.1+ | 1.1+ | 2001 12 21 | 704 | 0.8+ | 0.6− | 2006 11 13 | 703 | 0.7− | 0.5− |
| 2000 08 01 | 704 | 0.6− | 0.7− | 2001 12 21 | 704 | 0.1+ | 0.7+ | 2006 11 14 | 704 | 1.0+ | 0.5− |
| 2000 08 01 | 704 | 0.8+ | 0.7+ | 2002 01 09 | 704 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.2− |
| 2000 08 01 | 704 | 0.7− | 0.7+ | 2002 01 09 | 704 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.2− |
| 2000 08 01 | 704 | 0.0 | 0.3− | 2002 01 09 | 704 | 0.1− | 0.7− | 2006 11 14 | 704 | 0.1+ | 0.4− |
| 2000 08 01 | 704 | 0.7− | 0.4+ | 2002 01 09 | 704 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.1− |
| 2000 08 21 | 699 | 1.4− | 0.5+ | 2002 01 13 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.4+ |
| 2000 08 21 | 699 | 0.5− | 0.8+ | 2002 01 13 | 704 | 0.4+ | 0.6+ | 2006 11 17 | 704 | 0.2+ | 0.9− |
| 2000 08 21 | 699 | 0.4+ | 0.4− | 2002 01 13 | 704 | 0.1+ | 1.3+ | 2006 11 17 | 704 | 0.8+ | 0.6− |
| 2000 08 21 | 699 | 0.8− | 0.4− | 2002 01 15 | 704 | 0.2− | 0.6− | 2006 11 17 | 704 | 0.5+ | 0.2+ |
| 2000 08 26 | 704 | 0.1+ | 0.1− | 2002 01 15 | 704 | 0.6+ | 1.1− | 2006 11 18 | G96 | 0.2+ | 0.7− |
| 2000 08 26 | 704 | 0.2+ | 0.1+ | 2002 01 15 | 704 | 1.2− | 0.8− | 2006 11 18 | G96 | 0.2+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.2+ | 0.2− | 2002 01 15 | 704 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.6− |
| 2000 08 26 | 704 | 0.8+ | 0.3+ | 2002 12 11 | 645 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2000 09 02 | 704 | 0.2+ | 0.5+ | 2002 12 11 | 645 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2000 09 02 | 704 | 0.2+ | 1.4− | 2003 02 28 | 608 | 0.4− | 0.6+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2000 09 02 | 704 | 0.5+ | 0.4− | 2003 02 28 | 608 | 0.1− | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2000 09 02 | 704 | 0.2+ | 0.6− | 2003 02 28 | 608 | 1.0+ | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2000 09 02 | 704 | 0.3− | 1.2− | 2004 04 20 | 704 | 1.3+ | 1.2+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2000 09 04 | 704 | 0.2− | 0.6− | 2004 04 20 | 704 | (2.0+ | 0.3+) | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2000 09 04 | 704 | 0.3+ | 0.0 | 2004 04 20 | 704 | 0.5+ | 1.1+ | 2006 11 19 | 704 | (3.0+ | 2.5−) |
| 2000 09 04 | 704 | 0.1+ | 0.0 | 2005 06 26 | 644 | 0.3− | 0.4+ | 2006 11 19 | 704 | (1.5+ | 2.2−) |
| 2000 09 04 | 704 | 0.2+ | 0.9− | 2005 06 26 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.6− | 0.6− |
| 2001 12 14 | 704 | 0.3+ | 0.1− | 2005 06 26 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.5+ | 1.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.9− | 0.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 20 | 704 | (0.5− | 1.8+) |
| 2001 12 14 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.6− | 2006 11 20 | 704 | 0.2+ | 0.7− |
| 2001 12 17 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2001 12 17 | 704 | 0.5− | 0.5− | 2006 10 22 | 703 | 0.0 | 0.6+ | 2006 11 28 | 704 | 1.9− | 1.7+ |
| 2001 12 17 | 704 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.1+ | 3.0+ |
| 2001 12 19 | 704 | 1.4− | 0.8+ | 2006 10 22 | 703 | 0.1+ | 0.0 | 2006 11 28 | 704 | 1.0+ | 0.3− |
| 2001 12 19 | 704 | 0.7− | 0.8+ | 2006 10 22 | 703 | 0.6− | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.1+ |
| 2001 12 19 | 704 | 0.9− | 0.5+ | 2006 11 01 | 703 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.2− | 2.0+ |

**(138583)∗ 2000 QF$_{136}$ = 2001 XL$_7$**

Discovered 2000 Aug. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22392)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.74288 | | (2000.0) | | | |
| $n$ | 0.18118331 | $\omega$ | 202.39046 | | +0.99704886 | −0.02266185 |
| $a$ | 3.0930760 | $\Omega$ | 158.51494 | | +0.03825372 | +0.97503143 |
| $e$ | 0.1365930 | $i$ | 11.55243 | | −0.06655998 | +0.22090758 |
| $P$ | 5.44 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.9+ | 0.0 | 2001 12 07 | 704 | 1.2− | 0.0 | 2006 09 29 | 699 | 0.7+ | 0.3− |
| 2000 08 21 | 699 | 0.1+ | 0.4+ | 2001 12 08 | 699 | 0.5+ | 0.2− | 2006 09 29 | 699 | 0.4+ | 0.7+ |
| 2000 08 21 | 699 | 1.2− | 1.0+ | 2001 12 08 | 699 | 0.7+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.6+ |
| 2000 08 21 | 699 | 0.4− | 1.0+ | 2001 12 08 | 699 | 0.8+ | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.2+ |
| 2000 08 28 | 807 | 0.1− | 0.0 | 2001 12 08 | 699 | 0.9− | 0.9+ | 2006 09 29 | 699 | 0.1+ | 0.1+ |
| 2000 08 28 | 807 | 0.0 | 0.0 | 2001 12 10 | 704 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.4+ | 0.4+ |
| 2000 08 29 | 704 | 0.1− | 0.6+ | 2001 12 10 | 704 | 0.1− | 0.6+ | 2006 10 01 | 704 | 0.9+ | 0.0 |
| 2000 08 29 | 704 | 0.2− | 0.1− | 2001 12 10 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.7+ | 0.8+ |
| 2000 08 29 | 704 | 0.7+ | 0.2+ | 2001 12 10 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.6+ |
| 2000 08 29 | 704 | 0.2+ | 0.0 | 2001 12 19 | 704 | 0.4+ | 1.4− | 2006 10 01 | 704 | 0.4+ | 0.0 |
| 2000 09 02 | 704 | 0.1+ | 0.5+ | 2001 12 19 | 704 | 0.6− | 1.1− | 2006 10 02 | 704 | (0.6− | 1.7+) |
| 2000 09 02 | 704 | 0.9− | 0.4− | 2001 12 19 | 704 | 0.6− | 1.3− | 2006 10 02 | 704 | 0.8− | 0.3+ |
| 2000 09 02 | 704 | 0.8− | 1.1+ | 2001 12 19 | 704 | 0.1− | 1.5− | 2006 10 02 | 704 | 0.1+ | 0.1− |
| 2000 09 02 | 704 | 0.4+ | 0.3− | 2003 02 09 | 644 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 0.4− | 0.9− |
| 2000 09 04 | 699 | (0.7− | 2.5−) | 2003 02 09 | 644 | 0.6+ | 0.3+ | 2006 10 03 | 704 | 0.5− | 0.0 |
| 2000 09 04 | 699 | 0.1− | 0.5− | 2003 02 09 | 644 | 0.7+ | 0.6+ | 2006 10 03 | 704 | 0.2− | 0.3− |
| 2000 09 04 | 699 | 0.1− | 0.9− | 2003 02 22 | 644 | 0.2+ | 0.7+ | 2006 10 03 | 704 | 0.1− | 0.3+ |
| 2000 09 04 | 699 | (2.4− | 0.6−) | 2003 02 22 | 644 | 0.5+ | 0.6+ | 2006 10 03 | 704 | 0.2− | 1.3− |
| 2000 09 05 | 704 | 0.9+ | 1.2+ | 2003 02 22 | 644 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2000 09 05 | 704 | 0.3+ | 0.8+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2000 09 05 | 704 | 0.1+ | 1.1− | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2000 09 24 | 704 | (2.4+ | 0.7+) | 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.3− |
| 2000 09 24 | 704 | 0.9+ | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.6+ |
| 2000 09 24 | 704 | 0.8− | 0.8− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 28 | 703 | 1.2− | 0.3+ |
| 2001 10 17 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2001 10 17 | 704 | 0.9+ | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 10 28 | 703 | 0.0 | 0.8+ |
| 2001 10 17 | 704 | 0.5+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 11 10 | 704 | 0.6+ | 0.2+ |
| 2001 11 18 | 704 | (2.2+ | 1.8+) | 2006 09 18 | 703 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.5− | 0.3+ |
| 2001 11 18 | 704 | (1.5+ | 2.6+) | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 11 10 | 704 | 0.1+ | 1.0− |
| 2001 11 18 | 704 | (3.6+ | 2.9+) | 2006 09 26 | 703 | 0.8− | 0.1+ | 2006 11 16 | 703 | 0.5+ | 0.3+ |
| 2001 11 18 | 704 | (1.8+ | 3.2+) | 2006 09 26 | 703 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.9− | 1.1+ |
| 2001 12 07 | 704 | (1.6− | 0.6+) | 2006 09 26 | 703 | 0.9− | 0.0 | 2006 11 16 | 703 | 0.7− | 0.3+ |
| 2001 12 07 | 704 | 1.4− | 1.0+ | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2001 12 07 | 704 | 1.0− | 0.7+ | 2006 09 29 | 699 | 0.8+ | 0.4+ | | | | |

**(138584)∗ 2000 QC$_{139}$ = 2004 GQ$_3$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60707)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.43991 | | (2000.0) | | | |
| $n$ | 0.17535539 | $\omega$ | 325.58432 | | +0.83404663 | +0.55169235 |
| $a$ | 3.1612339 | $\Omega$ | 0.93558 | | −0.48601962 | +0.73590302 |
| $e$ | 0.1744643 | $i$ | 4.68752 | | −0.26105776 | +0.39253318 |
| $P$ | 5.62 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 29 | 691 | 0.6− | 0.0 | 2000 10 02 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 1992 02 29 | 691 | 0.4− | 0.9− | 2000 10 02 | 704 | 1.1− | 0.6− | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 1992 02 29 | 691 | 0.1+ | 0.4− | 2003 02 21 | 644 | 0.7+ | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2000 08 31 | 704 | 0.5+ | 0.4+ | 2003 02 21 | 644 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.4− | 0.1+ |
| 2000 08 31 | 704 | 0.6− | 0.0 | 2003 02 21 | 644 | 0.8+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.2+ |
| 2000 08 31 | 704 | 0.4− | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.4− | 0.3− |
| 2000 08 31 | 704 | 0.6− | 0.7+ | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.4+ | 0.3− |
| 2000 08 31 | 704 | 0.3+ | 0.7+ | 2004 03 23 | 691 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.6− |
| 2000 09 02 | 704 | 0.7− | 0.2+ | 2004 04 10 | 703 | 0.0 | 1.1+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2000 09 02 | 704 | 0.8− | 0.6+ | 2004 04 10 | 703 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.4− | 0.1− |
| 2000 09 02 | 704 | 0.5− | 0.2+ | 2004 04 10 | 703 | 0.5− | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2000 09 02 | 704 | 0.1+ | 0.3+ | 2004 04 10 | 703 | 0.8+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2000 09 02 | 704 | 0.3− | 0.8+ | 2004 04 13 | 691 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.7− | 0.4+ |
| 2000 09 02 | 699 | 1.0− | 0.4+ | 2004 04 13 | 691 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.5− | 0.2+ |
| 2000 09 02 | 699 | 0.9− | 0.5+ | 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2000 09 02 | 699 | 0.9− | 0.2+ | 2004 04 15 | 699 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.5− | 0.0 |
| 2000 09 02 | 699 | 0.9− | 0.9+ | 2004 04 15 | 699 | 0.4− | 0.2− | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2000 09 24 | 699 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.1+ | 0.7+ | 2006 11 08 | 644 | 0.7− | 0.0 |
| 2000 09 24 | 699 | 0.2− | 0.3+ | 2004 04 15 | 699 | 0.2− | 0.5+ | 2006 11 14 | 703 | 0.1− | 0.3+ |
| 2000 09 24 | 704 | 0.2+ | 0.3+ | 2004 04 17 | 704 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.3+ | 0.3+ |
| 2000 09 24 | 699 | 0.2+ | 0.6+ | 2004 04 17 | 704 | 1.2+ | 0.7+ | 2006 11 14 | 703 | 0.3+ | 0.6+ |
| 2000 09 24 | 704 | 0.3+ | 0.2− | 2004 04 17 | 704 | 1.3+ | 0.2− | 2006 11 14 | 703 | 0.7+ | 0.6+ |
| 2000 09 24 | 699 | 0.5− | 0.1+ | 2004 04 17 | 704 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.5+ |
| 2000 09 24 | 704 | 0.3− | 0.5− | 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.2− |
| 2000 09 24 | 691 | 0.1− | 0.4− | 2004 04 19 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2000 09 24 | 704 | 0.1− | 0.7− | 2004 04 19 | 704 | 0.3− | 0.6+ | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2000 09 24 | 691 | 0.0 | 0.5− | 2004 04 19 | 704 | 0.2− | 0.8+ | 2006 11 16 | 704 | 0.3− | 0.6+ |
| 2000 09 24 | 704 | 0.5− | 0.6− | 2004 04 19 | 704 | 0.3+ | 0.8+ | 2006 11 16 | 704 | 0.4+ | 0.4+ |
| 2000 09 24 | 691 | 0.0 | 0.4− | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | 1.0+ | 1.0+ |
| 2000 09 26 | 704 | 0.3+ | 0.2+ | 2004 04 20 | 704 | 0.6− | 0.5+ | 2006 11 16 | 704 | 0.5− | 0.9+ |
| 2000 09 26 | 704 | 0.0 | 0.5− | 2004 04 20 | 704 | 0.6− | 0.7− | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2000 09 26 | 704 | 0.4− | 0.5+ | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2000 09 26 | 704 | 0.5+ | 0.3− | 2004 04 20 | 704 | 0.9+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2000 09 26 | 704 | 0.2+ | 0.0 | 2004 04 20 | 704 | 0.7+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2000 09 26 | 608 | 0.1− | 0.8+ | 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.8+ |
| 2000 09 26 | 608 | 0.1+ | 0.7+ | 2005 07 03 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2000 09 26 | 608 | 0.0 | 0.7+ | 2005 07 03 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 2000 10 01 | 704 | 0.3+ | 0.7+ | 2005 07 03 | 644 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.6+ | 1.1+ |
| 2000 10 01 | 704 | 0.4+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | (2.5+ | 0.6+) |
| 2000 10 01 | 704 | 0.1− | 1.1+ | 2006 10 12 | 644 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2000 10 01 | 699 | 1.5+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | (0.1− | 2.2+) |
| 2000 10 01 | 699 | 1.7+ | 0.6+ | 2006 10 13 | 691 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2000 10 01 | 699 | (2.4+ | 0.1+) | 2006 10 13 | 691 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.3− |
| 2000 10 01 | 699 | 1.5+ | 0.6+ | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.9− | 0.6+ |
| 2000 10 02 | 704 | 0.5+ | 0.5− | 2006 10 21 | G96 | 0.2− | 0.0 | 2006 11 27 | 104 | 0.8+ | 0.4+ |
| 2000 10 02 | 704 | 0.2− | 1.0+ | 2006 10 21 | G96 | 0.0 | 0.1+ | 2006 11 27 | 104 | 0.8+ | 0.3+ |
| 2000 10 02 | 704 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1+ | 2006 11 27 | 104 | 0.2− | 0.2+ |

**(138585)∗ 2000 QG$_{140}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.07246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17608435 | $\omega$ | 171.19709 | | +0.99884075 | −0.03007368 | |
| $a$ | 3.1525033 | $\Omega$ | 190.74316 | | +0.02162236 | +0.97792111 | |
| $e$ | 0.1746720 | $i$ | 11.63261 | | +0.04300723 | +0.20679912 | |
| $P$ | 5.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 704 | 0.0 | 0.6− | 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.7+ |
| 2000 08 03 | 704 | 0.8− | 0.1− | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.2− |
| 2000 08 03 | 704 | 0.2− | 0.2− | 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.5− |
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.8− | 0.5− |
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.9− |
| 2000 08 31 | 704 | 0.6+ | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2000 09 02 | 704 | 0.7− | 0.1− | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2000 09 02 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.8− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2000 09 02 | 704 | 1.0+ | 1.0− | 2006 09 14 | 703 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2000 09 02 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2000 09 03 | 704 | 0.4+ | 0.3+ | 2006 09 14 | 703 | (2.6− | 1.2+) | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2000 09 03 | 704 | 1.1− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2000 09 03 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2000 09 03 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.7− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2000 09 03 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2000 09 04 | 704 | 0.1− | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 09 04 | 704 | 0.2+ | 1.0+ | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 09 04 | 704 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 09 04 | 704 | 0.4− | 0.0 | 2006 09 17 | 704 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2000 09 04 | 704 | 0.8+ | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2000 09 04 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 09 04 | 704 | 0.5+ | 0.1− | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2000 09 04 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 699 | (1.8+ | 0.6+) | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2000 09 23 | 704 | 0.4+ | 0.4− | 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2000 09 23 | 704 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.9− | 0.0 |
| 2000 09 23 | 704 | 0.5+ | 1.0− | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 22 | 703 | (0.7− | 1.6−) |
| 2000 09 23 | 704 | 0.2− | 0.1− | 2006 09 20 | 704 | 1.3+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.9− |
| 2000 09 25 | 704 | 0.7+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 703 | 1.3+ | 0.7− |
| 2000 09 25 | 704 | 0.6− | 0.1− | 2006 09 20 | 704 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2000 09 25 | 704 | 0.3− | 0.3− | 2006 09 20 | 704 | 0.3+ | 0.9+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2000 09 25 | 704 | 1.0− | 0.7− | 2006 09 20 | 704 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2000 10 03 | 704 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2000 10 03 | 704 | 0.2− | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2000 10 03 | 704 | 0.6− | 0.6+ | 2006 09 20 | 644 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2000 10 03 | 704 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | (1.8+ | 0.5+) | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 28 | 704 | 1.0+ | 0.5− |
| 2001 12 19 | 704 | 0.0 | 0.9+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 28 | 704 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | 1.4+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 28 | 704 | 0.1− | 0.1+ |
| 2002 01 18 | 209 | 0.6− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 28 | 704 | 0.3− | 0.5+ |
| 2002 01 18 | 209 | 0.7− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2002 01 18 | 209 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.1− | 1.1+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.8− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.0 |

**(138586)∗ 2000 QL$_{142}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.55291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17938496 | $\omega$ | 147.68386 | | +0.84989799 | +0.52692768 | |
| $a$ | 3.1137139 | $\Omega$ | 180.57938 | | −0.52586994 | +0.84867972 | |
| $e$ | 0.0991581 | $i$ | 26.68516 | | +0.03367791 | −0.04571595 | |
| $P$ | 5.49 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.2+ | 0.5+ | 2000 10 02 | 704 | 0.0 | 0.3+ | 2005 09 09 | 704 | 0.7− | 0.1− |
| 2000 08 31 | 704 | 0.5− | 1.2+ | 2000 10 02 | 704 | 0.2+ | 0.5+ | 2005 09 09 | 704 | 0.3− | 1.0+ |
| 2000 08 31 | 704 | 0.3+ | 0.8+ | 2000 10 02 | 704 | 0.6+ | 0.1+ | 2005 09 23 | 291 | 0.1+ | 0.2+ |
| 2000 08 31 | 704 | 0.3+ | 0.1− | 2000 10 02 | 704 | 0.1+ | 0.5− | 2005 09 23 | 291 | 0.3+ | 0.1+ |
| 2000 08 31 | 704 | 0.2+ | 0.5+ | 2000 10 02 | 704 | 0.1− | 0.2− | 2005 09 23 | 291 | 0.4+ | 0.2+ |
| 2000 09 02 | 704 | 1.1+ | 1.2− | 2000 10 07 | 691 | 0.6− | 0.5− | 2006 09 19 | 703 | 0.3− | 0.6+ |
| 2000 09 02 | 704 | 0.1+ | 0.2− | 2000 10 07 | 691 | 0.7− | 0.3− | 2006 09 19 | 703 | 0.2− | 0.6+ |
| 2000 09 02 | 704 | 0.3+ | 1.9+ | 2000 10 07 | 691 | 0.7− | 0.4− | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2000 09 02 | 704 | 0.1− | 0.5+ | 2003 04 01 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 1.2+ | 0.4+ |
| 2000 09 04 | 699 | 0.7− | 0.5− | 2003 04 01 | 691 | 0.8+ | 0.2+ | 2006 10 11 | 644 | 0.5+ | 0.6+ |
| 2000 09 04 | 699 | 0.3+ | 0.6− | 2003 04 01 | 691 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2000 09 04 | 699 | 0.7+ | 1.2− | 2004 04 15 | 704 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2000 09 04 | 699 | 0.5− | 0.0 | 2004 04 15 | 704 | 0.9+ | 0.8+ | 2006 11 01 | 703 | 0.5− | 0.5+ |
| 2000 09 24 | 704 | 0.6+ | 0.4− | 2004 04 15 | 704 | 0.0 | 0.3+ | 2006 11 01 | 703 | 0.7+ | 0.4+ |
| 2000 09 24 | 704 | 0.2+ | 0.8+ | 2004 04 15 | 704 | 0.3+ | 1.1+ | 2006 11 01 | 703 | 0.1+ | 0.0 |
| 2000 09 24 | 704 | 0.7+ | 0.4+ | 2004 04 26 | 704 | 0.6− | 0.3+ | 2006 11 01 | 703 | (1.3+ | 1.9+) |
| 2000 09 24 | 704 | 0.0 | 0.0 | 2004 04 26 | 704 | 0.4+ | 0.2+ | 2006 11 18 | 703 | (1.8− | 0.3+) |
| 2000 09 24 | 704 | 0.1− | 0.5+ | 2004 04 26 | 704 | 0.5− | 0.2+ | 2006 11 18 | 703 | 0.2+ | 0.4− |
| 2000 09 26 | 699 | 0.9+ | 0.0 | 2004 04 26 | 704 | 0.5− | 0.1+ | 2006 11 18 | 703 | 0.7− | 0.4+ |
| 2000 09 26 | 699 | 0.5+ | 0.8− | 2004 04 26 | 704 | 0.6− | 0.4+ | 2006 11 18 | 703 | 0.3− | 0.1− |
| 2000 09 26 | 699 | 1.5+ | 1.1+ | 2004 05 20 | 599 | 0.7− | 0.2+ | 2006 11 24 | 703 | 1.1− | 0.0 |
| 2000 09 26 | 699 | 1.2+ | 0.4+ | 2004 05 20 | 599 | 0.8− | 0.1− | 2006 11 24 | 703 | 0.7+ | 0.5+ |
| 2000 10 01 | 699 | 0.0 | 0.1+ | 2004 05 20 | 599 | 0.2− | 0.0 | 2006 11 24 | 703 | 1.1− | 1.4+ |
| 2000 10 01 | 699 | 0.5− | 0.7+ | 2004 05 20 | 599 | 0.5− | 0.0 | 2006 11 24 | 703 | 0.8− | 0.2− |
| 2000 10 01 | 699 | 0.0 | 0.8+ | 2005 09 09 | 704 | 0.4+ | 0.5− | | | | |
| 2000 10 01 | 699 | 0.1+ | 0.2+ | 2005 09 09 | 704 | 0.1+ | 0.4− | | | | |

**(138587)∗ 2000 QF$_{143}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.20167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17869630 | $\omega$ | 329.53373 | | +0.99235816 | +0.12329937 | |
| $a$ | 3.1217085 | $\Omega$ | 23.38513 | | −0.11065959 | +0.90633118 | |
| $e$ | 0.2051676 | $i$ | 0.68534 | | −0.05458689 | +0.40417948 | |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.9− | 1.4+ | 2000 10 01 | 704 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2000 08 31 | 704 | 0.1+ | 0.6+ | 2000 10 01 | 704 | 0.1+ | 0.9+ | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 2000 08 31 | 704 | 0.2+ | 0.3+ | 2000 10 02 | 704 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.9− |
| 2000 08 31 | 704 | 0.7− | 0.9+ | 2000 10 02 | 704 | 0.5− | 1.5+ | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2000 09 02 | 704 | 0.3− | 0.3+ | 2000 10 02 | 704 | 0.2− | 0.4− | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2000 09 02 | 704 | 0.9− | 0.4+ | 2000 10 02 | 704 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2000 09 02 | 704 | 0.2+ | 0.3+ | 2000 10 02 | 645 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.3− |
| 2000 09 02 | 704 | 0.1− | 0.9+ | 2000 10 02 | 704 | 1.0− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2000 09 02 | 699 | 0.6+ | 0.9+ | 2000 10 02 | 645 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2000 09 02 | 699 | 0.5+ | 0.3+ | 2002 01 14 | 704 | (1.7+ | 0.9−) | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2000 09 02 | 699 | 0.5+ | 0.9+ | 2002 01 14 | 704 | 0.6+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2000 09 02 | 699 | 0.4+ | 0.9+ | 2002 01 14 | 704 | 1.0+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2000 09 05 | 704 | 0.3− | 0.5+ | 2002 01 14 | 704 | 0.9+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2000 09 05 | 704 | 0.4+ | 0.3− | 2003 03 09 | 291 | 0.9+ | 0.2− | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2000 09 05 | 704 | 0.3+ | 0.1+ | 2003 03 09 | 291 | 0.2− | 0.4+ | 2006 11 11 | 703 | 1.3− | 0.7+ |
| 2000 09 05 | 097 | (4.6+ | 1.5+) | 2003 03 09 | 291 | 1.0− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.3+ |
| 2000 09 05 | 097 | (4.3+ | 1.5+) | 2005 06 08 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.5− |
| 2000 09 11 | 327 | 0.0 | 0.2− | 2005 06 08 | 691 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2000 09 11 | 327 | 0.3+ | 0.2− | 2005 06 08 | 691 | 0.3+ | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2000 09 11 | 327 | 0.1+ | 0.2− | 2005 06 12 | 691 | 0.6− | 1.4− | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2000 09 24 | 699 | 1.0− | 1.8+ | 2005 06 12 | 691 | 1.2+ | 1.0− | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2000 09 24 | 699 | 0.4+ | 0.0 | 2005 06 12 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.3− |
| 2000 09 24 | 704 | 0.0 | 1.4+ | 2005 06 16 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2− | 0.3− |
| 2000 09 24 | 699 | 1.4+ | 0.4+ | 2005 06 16 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 2000 09 24 | 704 | 0.3+ | 0.5+ | 2005 06 16 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2000 09 24 | 699 | 1.9+ | 0.2+ | 2005 06 26 | G96 | 0.3− | 0.6+ | 2006 11 18 | 704 | 0.7+ | 0.7− |
| 2000 09 24 | 704 | 0.7+ | 0.2− | 2005 06 26 | G96 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 1.1− | 0.6− |
| 2000 09 24 | 704 | 0.4− | 0.8− | 2005 06 26 | G96 | 0.1− | 0.9+ | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2000 09 24 | 704 | 0.4− | 0.7− | 2005 06 26 | G96 | 0.9+ | 0.4+ | 2006 11 21 | 704 | 1.3+ | 1.0− |
| 2000 09 25 | 608 | 0.1− | 0.4− | 2005 06 28 | G96 | 0.3− | 0.6+ | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2000 09 25 | 608 | 0.3− | 0.1− | 2005 06 28 | G96 | 0.5− | 0.8+ | 2006 11 22 | 691 | 0.2+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 608 | 0.4− | 0.4− | 2005 06 28 | G96 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.3− | | |
| 2000 09 26 | 704 | 0.4− | 0.1− | 2005 06 28 | G96 | 1.0− | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.5− | | |
| 2000 09 26 | 704 | 0.3+ | 0.4+ | 2005 07 07 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2− | 0.1− | | |
| 2000 09 26 | 704 | 0.3− | 0.3+ | 2005 07 07 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1− | 0.4− | | |
| 2000 09 26 | 704 | 0.2− | 0.0 | 2005 07 07 | 691 | 0.2+ | 0.5− | 2006 12 01 | G96 | 0.2− | 0.3+ | | |
| 2000 09 26 | 704 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.2− | | |
| 2000 10 01 | 704 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.2− | | | | | | |
| 2000 10 01 | 704 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.1− | | | | | | |

**(138588)∗ 2000 QY$_{146}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.69754 | | (2000.0) | | −0.82757022 | +0.56091847 |
| $n$ | 0.28766161 | $\omega$ | 203.84635 | | −0.49302514 | −0.70724308 |
| $a$ | 2.2727314 | $\Omega$ | 10.36102 | | −0.26842828 | −0.43032277 |
| $e$ | 0.0371814 | $i$ | 7.12767 | | | |
| $P$ | 3.43 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.9− | 0.7+ | 2002 01 08 | 704 | 0.6− | 0.0 | 2002 02 12 | 704 | 0.2+ | 0.5+ | | |
| 2000 08 31 | 704 | 0.6− | 0.4+ | 2002 01 08 | 704 | 0.7− | 0.3− | 2002 02 12 | 704 | 0.6− | 0.2− | | |
| 2000 08 31 | 704 | 0.2− | 1.1+ | 2002 01 08 | 704 | 1.3+ | 0.7− | 2002 02 12 | 704 | (0.7− | 2.5−) | | |
| 2000 08 31 | 704 | 0.9− | 1.9+ | 2002 01 20 | 699 | (2.4+ | 0.3+) | 2002 02 12 | 704 | 1.5+ | 0.7+ | | |
| 2000 09 02 | 704 | 1.0− | 0.3− | 2002 01 20 | 699 | (2.1+ | 0.8−) | 2002 03 03 | 644 | 0.1− | 0.2+ | | |
| 2000 09 02 | 704 | 0.0 | 0.9+ | 2002 01 20 | 699 | 0.2+ | 0.2− | 2002 03 03 | 644 | 0.1− | 0.1− | | |
| 2000 09 02 | 704 | (1.4− | 2.0+) | 2002 01 20 | 699 | 0.2+ | 0.5+ | 2002 03 03 | 644 | 0.2+ | 0.0 | | |
| 2000 09 02 | 704 | 1.2− | 1.2+ | 2002 01 21 | 704 | 0.5+ | 0.1+ | 2002 03 05 | 699 | 0.9− | 0.5− | | |
| 2000 09 24 | 704 | 0.4+ | 0.8+ | 2002 01 21 | 704 | 0.3+ | 0.1− | 2002 03 05 | 699 | 0.4− | 0.4+ | | |
| 2000 09 24 | 704 | 0.0 | 0.7+ | 2002 01 21 | 704 | 0.1+ | 0.4− | 2002 03 05 | 699 | 0.3− | 0.3− | | |
| 2000 09 24 | 704 | 0.6+ | 0.6+ | 2002 01 21 | 704 | 0.2+ | 0.5+ | 2002 03 05 | 699 | 1.5− | 0.3− | | |
| 2000 09 24 | 704 | 0.6+ | 0.1− | 2002 01 21 | 704 | 0.9− | 1.1+ | 2002 03 11 | 644 | 0.1− | 0.1− | | |
| 2000 09 24 | 704 | 1.1+ | 0.4+ | 2002 02 03 | 644 | 0.1− | 0.1+ | 2002 03 11 | 644 | 0.3− | 0.1− | | |
| 2000 09 24 | 608 | 0.8− | 0.0 | 2002 02 03 | 644 | 0.1− | 0.4+ | 2002 03 11 | 644 | 0.4− | 0.1− | | |
| 2000 09 24 | 608 | 1.2− | 0.1− | 2002 02 03 | 644 | 0.0 | 0.5+ | 2004 12 02 | 644 | 0.3+ | 0.0 | | |
| 2000 09 24 | 608 | 1.0− | 0.3+ | 2002 02 06 | 704 | 0.3+ | 0.3+ | 2004 12 02 | 704 | 0.1+ | 0.1− | | |
| 2000 09 25 | 704 | 0.4+ | 1.0− | 2002 02 06 | 704 | 0.2+ | 0.8+ | 2004 12 02 | 704 | 0.2+ | 0.6− | | |
| 2000 09 25 | 704 | 0.3− | 0.4+ | 2002 02 06 | 704 | 0.6+ | 0.8+ | 2004 12 02 | 704 | 0.0 | 0.4− | | |
| 2000 09 25 | 704 | 1.0+ | 0.8+ | 2002 02 06 | 704 | 0.8+ | 0.9+ | 2004 12 02 | 704 | 0.1+ | 0.3− | | |
| 2000 09 25 | 704 | 0.6− | 0.9+ | 2002 02 06 | 704 | 0.9+ | 0.9+ | 2004 12 02 | 644 | 0.2+ | 0.0 | | |
| 2000 09 25 | 704 | 0.1− | 1.3+ | 2002 02 08 | 704 | 0.2+ | 1.2+ | 2004 12 02 | 644 | 0.1+ | 0.3− | | |
| 2000 10 01 | 704 | 0.4− | 0.5+ | 2002 02 08 | 704 | 0.4+ | 1.4+ | 2004 12 15 | 703 | 0.4− | 0.4− | | |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2002 02 08 | 704 | 0.1+ | 2.0+ | 2004 12 15 | 703 | 0.1− | 1.1+ | | |
| 2000 10 01 | 704 | 0.4− | 0.5+ | 2002 02 08 | 704 | (1.0+ | 2.2+) | 2004 12 15 | 703 | 0.0 | 0.3+ | | |
| 2000 10 01 | 699 | 0.5− | 0.5− | 2002 02 08 | 704 | 0.3+ | 1.5+ | 2004 12 15 | 703 | 0.4− | 0.7+ | | |
| 2000 10 01 | 704 | 0.8− | 0.5+ | 2002 02 12 | 704 | 0.5− | 0.0 | 2006 04 29 | E12 | 0.3+ | 0.4+ | | |
| 2000 10 01 | 704 | 0.3− | 0.6+ | 2002 02 12 | 704 | 0.2− | 0.1+ | 2006 04 29 | E12 | 0.3+ | 0.6+ | | |
| 2000 10 01 | 699 | 0.5− | 0.1+ | 2002 02 12 | 704 | 0.9+ | 0.7+ | 2006 04 29 | E12 | 0.1+ | 0.5+ | | |
| 2000 10 01 | 699 | 0.7+ | 0.7− | 2002 02 12 | 704 | 0.4− | 0.5+ | 2006 04 29 | E12 | 0.5+ | 1.0+ | | |
| 2000 10 01 | 699 | 1.3− | 0.9+ | 2002 02 12 | 704 | 0.0 | 0.2− | 2006 05 08 | E12 | 0.1− | 0.8+ | | |
| 2000 10 02 | 704 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.2+ | 0.8+ | 2006 05 08 | E12 | 0.6+ | 0.6+ | | |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2002 02 12 | 704 | 1.3+ | 0.7+ | 2006 05 08 | E12 | 0.1− | 0.1+ | | |
| 2000 10 02 | 704 | 0.6− | 0.7+ | 2002 02 12 | 704 | 0.1− | 0.6+ | 2006 05 08 | E12 | 0.4+ | 0.4+ | | |
| 2000 10 02 | 704 | 0.4− | 1.3+ | 2002 02 12 | 704 | 0.1− | 0.0 | 2006 05 16 | 644 | 0.3+ | 1.0+ | | |
| 2000 10 02 | 704 | 0.3− | 0.8+ | 2002 02 12 | 704 | 0.0 | 0.2+ | 2006 05 16 | 644 | 0.3+ | 1.0+ | | |
| 2001 12 13 | 704 | 0.0 | 1.0− | 2002 02 12 | 704 | 1.1+ | 0.6+ | 2006 05 16 | 644 | 0.3+ | 1.0+ | | |
| 2001 12 13 | 704 | 1.0− | 1.5− | 2002 02 12 | 704 | 0.4− | 0.8+ | 2006 05 22 | E12 | 0.4+ | 0.4+ | | |
| 2001 12 13 | 704 | 0.9+ | 0.2− | 2002 02 12 | 704 | 0.3− | 0.2− | 2006 05 22 | E12 | 0.1+ | 0.8+ | | |
| 2001 12 13 | 704 | 0.3− | 0.7− | 2002 02 12 | 704 | 1.0+ | 0.5− | 2006 05 22 | E12 | 0.6+ | 0.5+ | | |
| 2002 01 08 | 704 | 0.6− | 0.1− | 2002 02 12 | 704 | 1.7+ | 0.5+ | 2006 05 22 | E12 | 0.0 | 0.7+ | | |

**(138589)∗ 2000 QC$_{154}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.66495 | | (2000.0) | | +0.98832494 | −0.06971311 |
| $n$ | 0.18577774 | $\omega$ | 128.67879 | | +0.02491787 | +0.95116727 |
| $a$ | 3.0418673 | $\Omega$ | 235.72018 | | +0.15030940 | +0.30070070 |
| $e$ | 0.1123040 | $i$ | 9.43661 | | | |
| $P$ | 5.31 | $H$ | 14.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 08 | 691 | (7.6+ | 3.9+) | 2001 11 24 | 704 | (0.6− | 1.6−) | 2006 10 22 | 644 | 0.0 | 0.3− | | |
| 1999 06 08 | 691 | 0.4− | 0.6+ | 2001 12 09 | 644 | 0.2+ | 0.6− | 2006 10 27 | 408 | 0.8+ | 1.0− | | |
| 1999 06 08 | 691 | 0.0 | 0.1+ | 2001 12 09 | 644 | 0.3+ | 0.2− | 2006 10 27 | 408 | 0.9+ | 0.8− | | |
| 1999 06 13 | 691 | 0.2− | 0.9− | 2001 12 09 | 644 | 0.4+ | 0.4− | 2006 10 29 | 704 | 0.8+ | 0.7− | | |
| 1999 06 13 | 691 | (1.0− | 2.4−) | 2001 12 17 | 704 | 0.1+ | 0.7+ | 2006 10 29 | 704 | 0.1+ | 0.5+ | | |
| 1999 06 13 | 691 | 0.4− | 0.1− | 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.5− | | |
| 2000 08 03 | 704 | 0.0 | 0.6+ | 2001 12 17 | 704 | 0.1− | 0.8+ | 2006 10 29 | 704 | 0.5− | 0.1+ | | |
| 2000 08 03 | 704 | 0.3+ | 0.3+ | 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.5− | | |
| 2000 08 03 | 704 | 0.3− | 0.5+ | 2001 12 17 | 704 | 0.1− | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.6− | | |
| 2000 08 03 | 704 | 0.3+ | 0.1+ | 2001 12 20 | 704 | 0.9+ | 0.8− | 2006 11 01 | G96 | 0.2+ | 0.3− | | |
| 2000 08 03 | 704 | 0.5+ | 0.3− | 2001 12 20 | 704 | 0.6+ | 0.5− | 2006 11 01 | G96 | 0.0 | 0.6− | | |
| 2000 08 31 | 704 | 0.0 | 0.5− | 2001 12 20 | 704 | 0.7+ | 0.8− | 2006 11 08 | 644 | 0.0 | 0.3− | | |
| 2000 08 31 | 704 | 0.1− | 0.1+ | 2001 12 20 | 704 | 0.5+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.2− | | |
| 2000 08 31 | 704 | 0.1+ | 0.8+ | 2001 12 20 | 704 | 0.6+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2000 08 31 | 704 | 0.1− | 0.3+ | 2002 01 09 | 704 | 0.7+ | 1.3+ | 2006 11 14 | 703 | 0.3− | 0.4− | | |
| 2000 08 31 | 704 | 0.5− | 0.4+ | 2002 01 09 | 704 | 0.8+ | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.5− | | |
| 2000 09 03 | 704 | 0.0 | 0.1− | 2002 01 09 | 704 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.2− | 0.3+ | | |
| 2000 09 03 | 704 | 0.5− | 0.0 | 2002 01 09 | 704 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.5− | | |
| 2000 09 03 | 704 | 0.4+ | 0.7+ | 2002 01 09 | 704 | 0.2− | 0.3− | 2006 11 14 | 703 | 0.2+ | 0.3+ | | |
| 2000 09 03 | 704 | 0.3+ | 0.2− | 2002 01 13 | 704 | 0.3+ | 1.4+ | 2006 11 14 | 703 | 0.3− | 0.3− | | |
| 2000 09 03 | 704 | 0.3+ | 0.0 | 2002 01 13 | 704 | 0.9− | 0.6+ | 2006 11 14 | 703 | 0.9+ | 0.0 | | |
| 2000 09 23 | 704 | 0.9+ | 0.6+ | 2002 01 13 | 704 | 0.4− | 0.4− | 2006 11 16 | 704 | 1.1+ | 0.5− | | |
| 2000 09 23 | 704 | 1.1− | 0.2+ | 2002 01 13 | 704 | 1.0− | 0.5+ | 2006 11 16 | 704 | (0.7− | 2.5+) | | |
| 2000 09 23 | 704 | 0.6+ | 0.3+ | 2002 01 13 | 704 | 0.6− | 0.2− | 2006 11 16 | 704 | 0.8− | 0.4+ | | |
| 2000 09 25 | 704 | 0.7− | 0.4+ | 2004 04 25 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.7+ | | |
| 2000 09 25 | 704 | 0.3− | 0.3+ | 2004 04 25 | 704 | 0.4+ | 0.3− | 2006 11 16 | 704 | 0.5− | 0.6+ | | |
| 2000 09 25 | 704 | 1.2− | 0.4+ | 2004 04 25 | 704 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.9+ | | |
| 2000 09 25 | 704 | 0.4− | 0.1+ | 2004 04 25 | 704 | 0.3+ | 0.6+ | 2006 11 18 | 704 | 0.6+ | 1.4+ | | |
| 2000 09 25 | 704 | 0.1+ | 0.5− | 2004 05 16 | 704 | 0.7+ | 0.9− | 2006 11 18 | 704 | 0.4+ | 0.3− | | |
| 2001 09 26 | 704 | 0.2+ | 0.4− | 2004 05 16 | 704 | (2.9+ | 0.2−) | 2006 11 18 | 704 | 0.1+ | 1.3+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.2− | 2004 05 16 | 704 | 0.8+ | 1.2+ | 2006 11 18 | 704 | 0.2+ | 1.0+ | | |
| 2001 09 26 | 704 | 0.2− | 0.2+ | 2005 07 05 | 704 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2001 09 26 | 704 | 0.8+ | 0.3+ | 2005 07 05 | 704 | 0.5+ | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.5+ | | |
| 2001 10 24 | 704 | 0.5+ | 0.1+ | 2005 07 05 | 704 | 0.6+ | 0.4+ | 2006 11 21 | 704 | 0.7+ | 0.1− | | |
| 2001 10 24 | 704 | 0.5+ | 0.5+ | 2005 07 05 | 704 | 0.3+ | 0.9+ | 2006 11 21 | 704 | 0.0 | 0.7+ | | |
| 2001 10 24 | 704 | 0.3+ | 0.3+ | 2005 07 05 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.9+ | | |
| 2001 10 24 | 704 | 0.1+ | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 22 | 704 | 0.0 | 0.8− | | |
| 2001 10 24 | 704 | 0.5+ | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.3− | 0.2+ | | |
| 2001 11 15 | 049 | 0.8− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.0 | 0.5+ | | |
| 2001 11 15 | 049 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.1− | 0.1− | | |
| 2001 11 16 | 049 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.5+ | | |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.4+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.1+ | 1.0+ | | |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2006 10 13 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.5+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 1.3− | 1.0+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.2− | 0.4+ | | |
| 2001 11 20 | 691 | 0.6− | 0.1− | 2006 10 20 | 408 | 1.0− | 0.8− | 2006 11 27 | G96 | 0.0 | 0.6− | | |
| 2001 11 20 | 691 | 1.0− | 0.0 | 2006 10 20 | 408 | 0.1+ | 1.0− | 2006 11 27 | G96 | 0.2+ | 0.4− | | |
| 2001 11 20 | 691 | 0.1− | 0.7+ | 2006 10 21 | 691 | 0.5− | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.6− | | |
| 2001 11 22 | 691 | 0.6+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.6− | | |
| 2001 11 22 | 691 | 0.7+ | 0.2− | 2006 10 21 | 691 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.4+ | | |
| 2001 11 22 | 691 | 0.5+ | 0.0 | 2006 10 21 | 408 | 0.2+ | 1.1− | 2006 11 29 | 704 | 0.5− | 0.3+ | | |
| 2001 11 24 | 704 | 1.5− | 0.7− | 2006 10 21 | 408 | 0.2+ | 1.2− | 2006 11 29 | 704 | 0.2+ | 0.6+ | | |
| 2001 11 24 | 704 | (0.3− | 2.1−) | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4+ | 1.0+ | | |
| 2001 11 24 | 704 | 0.9− | 0.9− | 2006 10 22 | 644 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.4− | | |

**(138590)∗ 2000 QN$_{154}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.26214 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18974221 | $\omega$ | 228.88292 | | +0.47286528 | −0.87856408 | |
| $a$ | 2.9993472 | $\Omega$ | 193.38472 | | +0.87015238 | +0.47762306 | |
| $e$ | 0.2504008 | $i$ | 16.89054 | | +0.13868407 | −0.00117098 | |
| $P$ | 5.19 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 28 | 691 | 0.6− | 0.6− | 2000 09 23 | 704 | 0.0 | 0.8− | 2005 07 08 | 703 | 0.6− | 0.2− |
| 1993 05 28 | 691 | 1.1− | 0.9− | 2000 09 23 | 704 | 0.1+ | 0.1+ | 2005 07 08 | 703 | 0.9+ | 0.9+ |
| 1993 05 28 | 691 | 0.7+ | 0.2− | 2000 09 23 | 704 | 0.2− | 0.7+ | 2005 07 08 | 703 | (0.9+ | 1.8+) |
| 1995 10 24 | 691 | 0.4+ | 0.3− | 2000 09 23 | 704 | 0.3+ | 0.9+ | 2005 07 08 | 703 | 0.3− | 0.4+ |
| 1995 10 24 | 691 | 0.3+ | 0.3− | 2000 09 26 | 704 | 0.9+ | 0.6+ | 2005 07 28 | 704 | 0.9+ | 1.1+ |
| 1995 10 24 | 691 | 0.2+ | 0.3− | 2000 09 26 | 704 | 0.6+ | 0.8+ | 2005 07 28 | 704 | 0.6+ | 0.4+ |
| 2000 08 31 | 704 | 0.3+ | 0.6+ | 2000 09 26 | 704 | 0.6− | 0.2− | 2005 07 28 | 704 | 0.2− | 0.0 |
| 2000 08 31 | 704 | 0.7+ | 0.6+ | 2000 09 26 | 704 | (2.1− | 0.6+) | 2006 10 02 | 703 | 0.7− | 0.4+ |
| 2000 08 31 | 704 | (2.2+ | 0.0 ) | 2000 10 02 | 645 | 0.1− | 0.2− | 2006 10 02 | 703 | 1.2− | 0.1+ |
| 2000 08 31 | 704 | 0.2+ | 0.2− | 2000 10 02 | 645 | 0.1− | 0.1− | 2006 10 02 | 703 | 1.1− | 0.5+ |
| 2000 08 31 | 704 | 0.1− | 0.2+ | 2002 01 12 | 704 | (2.6+ | 0.9−) | 2006 10 02 | 703 | 0.5− | 1.1+ |
| 2000 09 03 | 704 | 0.3− | 0.1+ | 2002 01 12 | 704 | (3.5+ | 1.1−) | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2000 09 03 | 704 | 1.0− | 0.5+ | 2002 01 12 | 704 | (2.8+ | 0.8−) | 2006 10 22 | 703 | 0.8− | 0.3− |
| 2000 09 03 | 704 | 0.5+ | 0.2+ | 2002 01 12 | 704 | (2.5+ | 1.3−) | 2006 10 22 | 703 | 0.8− | 0.2− |
| 2000 09 03 | 704 | 0.2+ | 0.3+ | 2002 01 12 | 704 | (2.4+ | 2.0−) | 2006 10 31 | 704 | 0.3+ | 0.0 |
| 2000 09 03 | 704 | 1.3− | 0.8+ | 2002 02 15 | 704 | 0.6+ | 1.0+ | 2006 10 31 | 704 | 0.3− | 0.6+ |
| 2000 09 03 | 704 | 0.4− | 0.6+ | 2002 02 15 | 704 | 0.5+ | 0.5+ | 2006 10 31 | 704 | 0.4− | 0.3+ |
| 2000 09 03 | 704 | 0.8− | 0.2− | 2002 02 15 | 704 | 0.7+ | 0.2+ | 2006 10 31 | 704 | 1.1+ | 0.1+ |
| 2000 09 03 | 704 | 0.2− | 0.5− | 2004 06 20 | 691 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2000 09 03 | 704 | 0.2− | 0.5+ | 2004 06 20 | 691 | 0.3+ | 0.6+ | 2006 11 22 | 704 | 0.5+ | 0.8+ |
| 2000 09 03 | 704 | 0.4− | 0.7+ | 2004 06 20 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 1.9+ | 1.1− |
| 2000 09 20 | 608 | 0.1− | 0.7− | 2005 06 30 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2000 09 20 | 608 | 0.3− | 0.7− | 2005 06 30 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2000 09 20 | 608 | 0.7− | 1.3− | 2005 06 30 | 644 | 0.2+ | 0.3+ | | | | |

**(138591)∗ 2000 QB$_{156}$ = 2001 YW$_{23}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22402)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.61000 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18120395 | $\omega$ | 54.33563 | | +0.86836486 | +0.47520247 | |
| $a$ | 3.0928411 | $\Omega$ | 276.90431 | | −0.48854042 | +0.77050273 | |
| $e$ | 0.1089375 | $i$ | 8.21564 | | −0.08526851 | +0.42486252 | |
| $P$ | 5.44 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.3− | 0.1+ | 2001 11 24 | 704 | 0.4+ | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.0 |
| 2000 07 30 | 704 | 0.9+ | 0.8+ | 2001 11 24 | 704 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.4− |
| 2000 07 30 | 704 | (0.2+ | 3.0+) | 2001 11 24 | 704 | 0.4− | 0.0 | 2006 09 28 | 703 | 0.5+ | 0.8− |
| 2000 08 31 | 704 | 0.8− | 0.3+ | 2001 12 18 | 704 | (1.7− | 0.2−) | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2000 08 31 | 704 | 0.3− | 0.0 | 2001 12 18 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2000 08 31 | 704 | 0.3− | 0.1− | 2001 12 18 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2000 08 31 | 704 | 0.0 | 0.3− | 2001 12 18 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 1.1− |
| 2000 08 31 | 704 | 0.5− | 0.9+ | 2001 12 19 | 704 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.4+ | 0.6− |
| 2000 09 03 | 704 | 0.3+ | 0.4+ | 2001 12 19 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 703 | 0.4+ | 1.4− |
| 2000 09 03 | 704 | 0.6− | 0.4+ | 2001 12 19 | 704 | 0.6− | 0.4+ | 2006 10 19 | 703 | 0.5+ | 0.0 |
| 2000 09 03 | 704 | 0.8− | 0.1− | 2001 12 19 | 704 | 0.4− | 0.2− | 2006 10 21 | 704 | 1.0− | 0.6+ |
| 2000 09 03 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.4+ | 0.3− | 2006 10 21 | 704 | 0.0 | 0.3+ |
| 2000 09 21 | 699 | 0.0 | 1.2− | 2003 02 22 | 644 | 0.1+ | 0.1− | 2006 10 21 | 704 | 0.4− | 0.5+ |
| 2000 09 21 | 699 | (3.0− | 0.2+) | 2003 02 22 | 644 | 0.0 | 0.4+ | 2006 10 21 | 704 | 0.7− | 1.1+ |
| 2000 09 21 | 699 | 1.6− | 0.6− | 2003 02 22 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.8− | 0.6+ |
| 2000 09 21 | 699 | 0.7− | 0.4+ | 2006 09 17 | 703 | 0.5− | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.1− |
| 2000 10 05 | 691 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.6− | 0.1+ |
| 2000 10 05 | 691 | 0.5+ | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.3+ |
| 2000 10 05 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.6+ | 0.7+ | | | | |
| 2001 11 24 | 704 | 0.7− | 0.3− | 2006 09 28 | 703 | 0.1+ | 0.6− | | | | |

**(138592)∗ 2000 QD$_{160}$ = 2001 XN$_{57}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22404)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.38629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17811350 | $\omega$ | 153.78539 | | +0.82433350 | −0.55135449 | |
| $a$ | 3.1285144 | $\Omega$ | 240.26462 | | +0.48994303 | +0.80845526 | |
| $e$ | 0.0949685 | $i$ | 8.50251 | | +0.28360204 | +0.20593280 | |
| $P$ | 5.53 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 19 | 704 | 1.4+ | 0.1+ | 2001 12 17 | 704 | 0.2− | 0.5+ | 2006 09 20 | 699 | 0.2+ | 0.8+ |
| 1998 04 19 | 704 | 1.1− | 0.5− | 2001 12 17 | 704 | 0.4− | 0.7+ | 2006 09 20 | 699 | 0.4+ | 0.2+ |
| 1998 04 19 | 704 | 0.8+ | 0.6+ | 2001 12 17 | 704 | 0.5− | 0.7+ | 2006 09 25 | 704 | 0.8+ | 0.0 |
| 1998 04 19 | 704 | 0.6− | 1.4− | 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.2+ | 0.2− |
| 2000 08 31 | 704 | 0.1+ | 1.0− | 2001 12 20 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 0.7+ | 0.3− |
| 2000 08 31 | 704 | 0.3− | 0.1− | 2001 12 20 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.0 |
| 2000 08 31 | 704 | 0.3− | 0.2+ | 2001 12 20 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.2− | 0.4− |
| 2000 08 31 | 704 | 0.6− | 0.1+ | 2001 12 20 | 704 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2000 08 31 | 704 | 0.9+ | 0.5− | 2001 12 20 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.0 |
| 2000 09 03 | 704 | 0.4− | 0.3− | 2001 12 21 | 704 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 0.3+ | 0.4+ |
| 2000 09 03 | 704 | 0.9− | 0.1+ | 2001 12 21 | 704 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 2000 09 03 | 704 | 0.8− | 0.4+ | 2001 12 21 | 704 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2000 09 03 | 704 | 0.3+ | 0.2− | 2001 12 23 | 704 | 1.1− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2000 09 03 | 704 | 0.1+ | 0.1− | 2001 12 23 | 704 | 1.2− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2000 09 22 | 699 | 0.2− | 0.4+ | 2001 12 23 | 704 | 0.0 | 0.4+ | 2006 10 11 | 291 | 0.1+ | 0.2− |
| 2000 09 22 | 699 | 0.3+ | 0.6− | 2001 12 23 | 704 | 0.2− | 0.7+ | 2006 10 11 | 291 | 0.1+ | 0.1− |
| 2000 09 22 | 699 | 0.0 | 0.3− | 2002 01 09 | 704 | 0.0 | 0.4− | 2006 10 11 | 291 | 0.0 | 0.1− |
| 2000 09 22 | 699 | 0.7+ | 0.6− | 2002 01 09 | 704 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2000 09 23 | 704 | 0.1− | 0.7+ | 2002 01 09 | 704 | 0.0 | 0.8+ | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2000 09 23 | 704 | 0.3− | 0.5− | 2002 01 09 | 704 | 0.2− | 1.3− | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2000 09 23 | 704 | 0.1− | 0.1+ | 2002 01 13 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 2000 09 23 | 704 | 0.1− | 0.3+ | 2002 01 13 | 704 | 0.1− | 0.7− | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2000 09 23 | 704 | 0.3+ | 0.4− | 2002 01 13 | 704 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 2000 09 26 | 704 | 0.6+ | 0.6+ | 2002 01 13 | 704 | 0.6− | 1.3− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2000 09 26 | 704 | 0.1+ | 0.1− | 2002 01 13 | 704 | 0.5− | 0.5− | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2000 09 26 | 704 | 0.5+ | 1.1− | 2002 01 15 | 704 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2000 09 28 | 704 | 0.6− | 0.5− | 2002 01 15 | 704 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2000 09 28 | 704 | 0.3− | 0.1+ | 2002 01 15 | 704 | 0.5− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2000 09 28 | 704 | 0.5− | 0.1+ | 2002 01 15 | 704 | 0.8− | 0.4− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2000 09 28 | 704 | 0.7− | 0.0 | 2002 01 15 | 704 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2000 09 30 | 704 | 0.9− | 0.0 | 2004 05 09 | 691 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2000 09 30 | 704 | 0.9+ | 1.0+ | 2004 05 09 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 704 | (2.0− | 0.4+) |
| 2000 09 30 | 704 | 0.1+ | 0.9+ | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 704 | (2.1− | 1.8+) |
| 2000 10 03 | 704 | 0.6+ | 0.6+ | 2004 05 10 | 608 | 0.1+ | 0.6− | 2006 10 29 | 704 | 1.4+ | 0.8+ |
| 2000 10 03 | 704 | 0.6+ | 0.5+ | 2004 05 10 | 608 | 0.1+ | 0.6− | 2006 10 29 | 704 | (1.7− | 0.9+) |
| 2000 10 03 | 704 | 0.4+ | 1.4+ | 2004 05 10 | 608 | 1.4+ | 0.0 | 2006 10 29 | 704 | (1.6+ | 2.3+) |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2004 05 15 | 704 | 1.5− | 0.9+ | 2006 11 14 | 703 | 1.0+ | 1.5− |
| 2001 11 09 | 704 | 1.0− | 0.1− | 2004 05 15 | 704 | 0.4− | 0.7+ | 2006 11 14 | 703 | (2.8+ | 0.3−) |
| 2001 11 09 | 704 | 0.5− | 1.1− | 2004 05 15 | 704 | 0.1− | 0.7+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2001 11 09 | 704 | 0.8− | 0.9− | 2004 05 15 | 704 | 0.9+ | 0.1+ | 2006 11 16 | 704 | 0.3+ | 1.3+ |
| 2001 11 09 | 704 | (1.2− | 1.7−) | 2004 05 16 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.4− |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2004 05 16 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.6+ | 0.4+ | 2004 05 16 | 704 | 0.1− | 0.9+ | 2006 11 16 | 704 | 1.0− | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.7+ | 2004 05 16 | 704 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2001 11 20 | 704 | 0.7+ | 0.4+ | 2004 05 16 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2001 11 21 | 704 | 0.9+ | 0.6+ | 2004 05 16 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2004 05 16 | 704 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2001 11 21 | 704 | 0.3+ | 0.3+ | 2004 05 16 | 704 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2001 11 21 | 704 | 0.3− | 0.7− | 2004 05 19 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.7+ |
| 2001 11 21 | 704 | 0.5+ | 0.0 | 2004 05 19 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2001 12 10 | 704 | 0.3+ | 0.7+ | 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.7− | 0.9+ |
| 2001 12 10 | 704 | 0.2+ | 0.1+ | 2005 06 17 | 691 | (2.7+ | 3.3+) | 2006 11 22 | 704 | 1.0− | 0.7+ |
| 2001 12 10 | 704 | (0.5+ | 1.6+) | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2001 12 14 | 704 | 0.9+ | 0.5+ | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 1.0+ | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 1.1+ | 0.8+ | 2006 08 12 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.8+ |
| 2001 12 14 | 704 | 1.0+ | 0.7+ | 2006 08 12 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2001 12 14 | 704 | 0.7+ | 0.4+ | 2006 08 12 | 644 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.5− |
| 2001 12 14 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.4+ | | | | |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.5+ | 0.5+ | | | | |

**(138593)∗ 2000 QH$_{160}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.99899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17995945 | $\omega$ | 228.79074 | | +0.65729106 | −0.75363651 | |
| $a$ | 3.1070836 | $\Omega$ | 180.12214 | | +0.75108829 | +0.65514281 | |
| $e$ | 0.2614031 | $i$ | 18.76030 | | +0.06192609 | +0.05310277 | |
| $P$ | 5.48 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.5− | 0.0 | 2000 09 28 | 704 | 0.1− | 0.2+ | 2006 09 20 | 608 | (1.0+ | 2.0−) |
| 2000 08 31 | 704 | 0.5− | 0.7− | 2000 09 28 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 608 | (1.0+ | 1.8−) |
| 2000 08 31 | 704 | 0.7− | 0.5− | 2000 09 28 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.4− | 1.2− |
| 2000 08 31 | 704 | 1.6− | 0.3− | 2000 10 03 | 704 | 0.9+ | 1.1+ | 2006 09 30 | 703 | 0.0 | 0.6− |
| 2000 08 31 | 704 | 1.4− | 0.1+ | 2000 10 03 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 2000 09 03 | 704 | 0.7− | 0.1+ | 2000 10 03 | 704 | 1.5− | 1.0− | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 2000 09 03 | 704 | 0.8− | 0.9+ | 2000 10 03 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.6+ | 0.3+ |
| 2000 09 03 | 704 | 0.9− | 0.4− | 2002 01 12 | 704 | 1.0+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 2000 09 03 | 704 | 0.5− | 0.4+ | 2002 01 12 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.5+ |
| 2000 09 03 | 704 | 0.6− | 0.1+ | 2002 01 12 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.4+ |
| 2000 09 22 | 699 | 0.1− | 0.9+ | 2002 01 12 | 704 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.4− | 0.5− |
| 2000 09 22 | 699 | 0.2+ | 1.0+ | 2002 01 12 | 704 | 0.5− | 1.2− | 2006 10 01 | 704 | 0.5− | 0.2+ |
| 2000 09 22 | 699 | (0.8− | 2.2+) | 2002 02 15 | 704 | 0.6+ | 1.1+ | 2006 10 01 | 704 | 0.2− | 0.1+ |
| 2000 09 22 | 699 | 0.1+ | 0.3+ | 2002 02 15 | 704 | 0.1− | 1.2+ | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 2000 09 23 | 704 | 0.2− | 0.7+ | 2002 02 15 | 704 | 0.1+ | 0.9+ | 2006 10 01 | 704 | 0.9− | 0.1+ |
| 2000 09 23 | 704 | 0.3− | 0.3− | 2002 02 15 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 703 | 0.4+ | 0.3+ |
| 2000 09 23 | 699 | 0.1− | 0.7+ | 2002 02 15 | 704 | 0.3+ | 1.0+ | 2006 10 20 | 703 | 0.1− | 0.1− |
| 2000 09 23 | 704 | 0.9− | 0.1+ | 2002 02 20 | 644 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.1− | 0.1+ |
| 2000 09 23 | 699 | 0.3− | 1.0+ | 2002 02 20 | 644 | 0.2− | 0.6+ | 2006 10 20 | 703 | 0.1− | 0.3+ |
| 2000 09 23 | 704 | 0.0 | 0.6+ | 2002 02 20 | 644 | 0.2− | 0.7+ | 2006 10 28 | 703 | 0.0 | 0.5+ |
| 2000 09 23 | 699 | 0.5+ | 0.1+ | 2003 04 08 | 644 | 0.0 | 0.8+ | 2006 10 28 | 703 | 0.1+ | 0.8+ |
| 2000 09 23 | 704 | 0.6− | 0.5+ | 2003 04 08 | 644 | 0.5+ | 0.7+ | 2006 10 28 | 703 | 0.4+ | 0.6+ |
| 2000 09 23 | 699 | 0.5+ | 1.5+ | 2003 04 08 | 644 | 0.3− | 0.5+ | 2006 10 28 | 703 | 1.1+ | 1.0+ |
| 2000 09 24 | 691 | 1.1+ | 0.6− | 2003 05 02 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.3+ | 0.7+ |
| 2000 09 24 | 691 | 0.8+ | 0.2+ | 2003 05 02 | 691 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.4− | 0.3+ |
| 2000 09 24 | 691 | 0.7+ | 0.1+ | 2003 05 02 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 704 | 0.1+ | 0.4+ |
| 2000 09 25 | 704 | 0.0 | 0.4+ | 2004 05 21 | 691 | 0.1− | 0.3+ | 2006 11 10 | 704 | 0.2− | 0.4+ |
| 2000 09 25 | 704 | 0.1− | 0.3+ | 2004 05 21 | 691 | 0.0 | 0.6+ | 2006 11 10 | 704 | 0.6− | 0.2+ |
| 2000 09 25 | 704 | 0.5+ | 0.1− | 2004 05 21 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2000 09 25 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2000 09 25 | 704 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2000 09 27 | 704 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2000 09 27 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.1+ | 1.1− | 2006 11 23 | 703 | 0.1+ | 0.2− |
| 2000 09 27 | 704 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.0 | 0.6− |
| 2000 09 27 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.2− | 0.6+ |
| 2000 09 27 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.3− |
| 2000 09 28 | 704 | 0.6− | 0.3− | 2006 09 20 | 699 | 0.6− | 0.2+ | | | | |
| 2000 09 28 | 704 | 0.6− | 0.3− | 2006 09 20 | 608 | (0.8+ | 2.1−) | | | | |

**(138594)∗ 2000 QM$_{160}$ = 1999 LJ$_9$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17447)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.57731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16982705 | $\omega$ | 70.89292 | | +0.04698265 | +0.99588274 | |
| $a$ | 3.2294716 | $\Omega$ | 202.23509 | | −0.97609773 | +0.02928512 | |
| $e$ | 0.0919606 | $i$ | 11.82206 | | −0.21219296 | +0.08579018 | |
| $P$ | 5.80 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 08 | 704 | 0.4+ | 0.2+ | 2004 03 26 | 699 | 0.0 | 0.3+ | 2006 09 18 | 704 | (1.2+ | 2.8−) |
| 1999 06 08 | 704 | 0.0 | 0.5− | 2004 03 26 | 699 | 0.6− | 1.0+ | 2006 09 19 | 703 | 0.1− | 0.6+ |
| 1999 06 08 | 704 | 0.3+ | 0.2− | 2004 03 26 | 699 | 0.8− | 0.0 | 2006 09 19 | 703 | 0.2− | 0.6+ |
| 1999 06 08 | 704 | 0.8− | 0.7+ | 2004 03 26 | 699 | 1.2+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.2− |
| 1999 06 14 | 704 | 1.1+ | 0.8− | 2004 03 28 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 1.1− | 0.9+ |
| 1999 06 14 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 691 | 0.2− | 0.4+ | 2006 09 20 | 699 | 0.8+ | 0.1+ |
| 1999 06 14 | 704 | 1.0− | 0.9− | 2004 03 28 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.8− | 0.9+ |
| 1999 06 14 | 704 | 0.1+ | 1.0− | 2004 04 16 | 704 | 0.6− | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.8+ |
| 1999 06 14 | 704 | (2.4− | 0.6−) | 2004 04 16 | 704 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.8− | 0.2+ |
| 2000 08 31 | 704 | 0.3− | 0.4+ | 2004 04 16 | 704 | (0.6+ | 2.3+) | 2006 09 25 | 704 | 0.8− | 0.7− |
| 2000 08 31 | 704 | 0.3− | 0.6+ | 2004 04 20 | 704 | (0.2+ | 1.8−) | 2006 09 25 | 704 | 0.5+ | 0.6+ |
| 2000 08 31 | 704 | 0.1− | 0.3+ | 2004 04 20 | 704 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.9+ | 0.9+ |
| 2000 08 31 | 704 | 0.5− | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.1− | 1.1+ |
| 2000 08 31 | 704 | 0.2+ | 0.5+ | 2004 04 20 | 704 | 0.6+ | 1.4+ | 2006 09 27 | 704 | 0.3+ | 0.4− |
| 2000 09 03 | 704 | 0.1− | 1.0− | 2006 09 01 | 704 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.6+ | 0.2+ |
| 2000 09 03 | 704 | 0.3+ | 1.0− | 2006 09 01 | 704 | 0.7− | 0.3− | 2006 09 29 | 704 | 0.0 | 0.2+ |
| 2000 09 03 | 704 | 0.2− | 0.6+ | 2006 09 01 | 704 | 0.5− | 0.6+ | 2006 09 29 | 704 | 0.1− | 0.9+ |
| 2000 09 03 | 704 | 0.2− | 0.7+ | 2006 09 15 | 704 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.3− | 0.6+ |
| 2000 09 03 | 704 | 0.2− | 0.7+ | 2006 09 15 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 1.3− | 0.2+ |
| 2000 09 26 | 704 | 0.2− | 0.8+ | 2006 09 15 | 704 | 1.2+ | 0.0 | 2006 10 16 | 703 | 0.1− | 1.1+ |
| 2000 09 26 | 704 | 0.4− | 0.7+ | 2006 09 15 | 704 | 0.0 | 1.1+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2000 09 26 | 704 | 1.1− | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2000 09 26 | 704 | 1.2+ | 0.2− | 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 10 18 | 291 | 0.2− | 0.3+ |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 18 | 291 | 0.2+ | 0.4+ |
| 2004 03 16 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.3+ | 0.4+ | 2006 10 18 | 291 | 0.1+ | 0.4+ |
| 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.5− | 2006 11 14 | G96 | 0.5− | 0.1− |
| 2004 03 19 | 704 | (0.8+ | 1.8+) | 2006 09 17 | 703 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2004 03 19 | 704 | 0.8+ | 1.2+ | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2004 03 19 | 704 | 0.2− | 1.1+ | 2006 09 18 | 704 | 0.8+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 1.0+ | 0.9+ | 2006 09 18 | 704 | (1.7+ | 0.5−) | | | | |
| 2004 03 19 | 704 | 0.7+ | 1.3+ | 2006 09 18 | 704 | (1.6+ | 1.1−) | | | | |

**(138595)∗ 2000 QD$_{161}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.68051 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18157968 | $\omega$ | 151.18855 | | +0.99689588 | −0.03524323 | |
| $a$ | 3.0885731 | $\Omega$ | 211.07351 | | +0.01360438 | +0.95787286 | |
| $e$ | 0.2581831 | $i$ | 7.83974 | | +0.07754689 | +0.28502192 | |
| $P$ | 5.43 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 04 | 699 | 0.5− | 1.0+ | 2000 09 24 | 704 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.7+ |
| 2000 07 04 | 699 | 0.9− | 1.4+ | 2000 09 24 | 704 | 0.1− | 1.2− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2000 07 04 | 699 | 0.3− | 1.7+ | 2000 09 26 | 699 | 0.4− | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.1+ |
| 2000 07 04 | 699 | 1.2− | 1.4+ | 2000 09 26 | 699 | 0.8− | 1.4− | 2006 11 11 | 703 | 1.1− | 1.0+ |
| 2000 08 03 | 704 | 0.5− | 1.4+ | 2000 09 26 | 699 | 0.8− | 0.1− | 2006 11 11 | 644 | 0.1− | 0.0 |
| 2000 08 03 | 704 | 0.6− | 0.6+ | 2000 09 26 | 699 | 1.0− | 0.8+ | 2006 11 11 | 644 | 0.4− | 0.0 |
| 2000 08 03 | 704 | 0.2− | 1.3+ | 2002 01 09 | 704 | 0.6+ | 1.2+ | 2006 11 14 | 704 | (0.9+ | 2.1+) |
| 2000 08 03 | 704 | 0.1− | 0.1+ | 2002 01 09 | 704 | 0.0 | 0.4+ | 2006 11 14 | 704 | (0.6+ | 1.9+) |
| 2000 08 21 | 699 | 0.4+ | 0.5− | 2002 01 09 | 704 | 0.1− | 0.3+ | 2006 11 14 | 704 | (0.6+ | 1.9+) |
| 2000 08 21 | 699 | 0.4+ | 0.8− | 2004 04 12 | 691 | 0.0 | 0.7+ | 2006 11 14 | 704 | 0.1− | 0.8+ |
| 2000 08 21 | 699 | 1.5+ | 0.3− | 2004 04 12 | 691 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2000 08 21 | 699 | 0.7+ | 0.4− | 2004 04 12 | 691 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2000 08 31 | 704 | 0.1− | 0.6− | 2004 05 10 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2000 08 31 | 704 | 0.5− | 0.2+ | 2004 05 10 | 691 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2000 08 31 | 704 | 0.2+ | 0.2+ | 2004 05 10 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | (0.7+ | 2.6−) | 2006 08 21 | 704 | 1.0+ | 1.2+ | 2006 11 17 | 704 | (1.7+ | 0.1+) | 2000 09 02 | 699 | 0.4+ | 1.3− | 2006 09 17 | 704 | 1.0− | 1.1+ | 2006 09 29 | 704 | 0.2+ | 1.0+ |
| 2000 08 31 | 704 | 0.1+ | 0.4− | 2006 08 21 | 704 | 0.1+ | 0.3− | 2006 11 17 | 704 | 1.2+ | 0.3+ | 2000 09 03 | 704 | 0.2+ | 0.2− | 2006 09 17 | 704 | 0.8− | 0.0 | 2006 09 29 | 704 | 1.2+ | 0.2+ |
| 2000 09 02 | 699 | 0.6− | 0.6− | 2006 08 21 | 704 | 0.9+ | 0.3− | 2006 11 17 | 704 | 1.4+ | 0.4+ | 2000 09 03 | 704 | 1.0− | 0.6− | 2006 09 17 | 704 | 1.4+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 2000 09 02 | 699 | 0.7− | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.3+ | 2006 11 17 | 704 | (1.8+ | 0.3+) | 2000 09 03 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2000 09 02 | 699 | 1.1− | 0.5− | 2006 08 28 | 703 | 0.5− | 0.7− | 2006 11 17 | 704 | 0.3− | 0.7− | 2000 09 03 | 704 | 0.7− | 0.7− | 2006 09 18 | 699 | 0.1− | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2000 09 02 | 699 | 1.1− | 0.6− | 2006 08 28 | 703 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.6+ | 2000 09 03 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.9+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2000 09 03 | 704 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 1.0+ | | | | | | | | | | | | |
| 2000 09 03 | 704 | 0.3+ | 0.4− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.8+ | | | | | | | | | | | | |
| 2000 09 03 | 704 | 0.8+ | 0.5− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.9+ | | | | | | | | | | | | |
| 2000 09 03 | 704 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.4+ | | | | | | | | | | | | |
| 2000 09 04 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.5− | 0.3+ | | | | | | | | | | | | |
| 2000 09 04 | 691 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.2− | 1.2+ | | | | | | | | | | | | |
| 2000 09 04 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.4− | 1.2+ | | | | | | | | | | | | |
| 2000 09 18 | 699 | 0.6+ | 0.9− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.5− | 1.2+ | | | | | | | | | | | | |
| 2000 09 18 | 699 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.2− | 1.2+ | | | | | | | | | | | | |
| 2000 09 18 | 699 | 0.4+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 23 | 683 | (2.2− | 1.3−) | | | | | | | | | | | | |
| 2000 09 18 | 699 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 23 | 683 | (1.0− | 2.3−) | | | | | | | | | | | | |
| 2000 09 23 | 699 | 0.3− | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 23 | 683 | (4.0− | 1.5−) | | | | | | | | | | | | |
| 2000 09 23 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 28 | 683 | 0.6+ | 1.3− | | | | | | | | | | | | |
| 2000 09 23 | 704 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 28 | 683 | 1.1+ | 1.4− | | | | | | | | | | | | |
| 2000 09 23 | 699 | 0.5+ | 0.4+ | 2006 11 02 | 703 | 0.4− | 0.4− | 2006 11 28 | 683 | 0.4− | 0.6− | | | | | | | | | | | | |
| 2000 09 23 | 704 | 0.0 | 0.3− | 2006 11 02 | 703 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.4+ | 0.5+ | | | | | | | | | | | | |
| 2000 09 23 | 699 | 0.3− | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.0 | 0.5+ | | | | | | | | | | | | |
| 2000 09 23 | 704 | 0.2+ | 0.6− | 2006 11 02 | 703 | 0.5+ | 0.2− | 2006 11 28 | 704 | 0.2− | 0.1+ | | | | | | | | | | | | |
| 2000 09 23 | 699 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.6+ | | | | | | | | | | | | |
| 2000 09 23 | 704 | 0.9+ | 1.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.3+ | | | | | | | | | | | | |
| 2000 09 24 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 | | | | | | | | | | | | | | | | |
| 2000 09 24 | 704 | 1.0− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.6+ | | | | | | | | | | | | | | | | |

**(138596)∗ 2000 QL$_{161}$ = 1995 VS$_3$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 4673)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.88745 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17446952 | $\omega$ | 122.79821 | | +0.67354074 | +0.73861855 | |
| $a$ | 3.1719257 | $\Omega$ | 189.69593 | | −0.72154439 | +0.64879841 | |
| $e$ | 0.2036753 | $i$ | 9.57925 | | −0.16036383 | +0.18303897 | |
| $P$ | 5.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 691 | 0.3+ | 0.3− | 2005 05 09 | 691 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.7+ | 0.3− | 2000 08 02 | 704 | 0.3+ | 0.1+ | 2002 01 06 | 644 | 0.1+ | 0.1+ | 2002 02 12 | 704 | 0.1− | 0.5+ |
| 1993 04 18 | 691 | 0.2− | 0.8− | 2005 05 09 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.0 | 2000 08 02 | 704 | 0.1− | 0.2+ | 2002 01 06 | 644 | 0.1+ | 0.0 | 2002 02 12 | 704 | 0.3+ | 0.3+ |
| 1993 04 18 | 691 | 0.2+ | 0.3− | 2005 05 09 | 691 | 0.2− | 0.3+ | 2006 09 20 | 704 | 1.0− | 0.7+ | 2000 08 02 | 704 | 0.1− | 0.9+ | 2002 01 06 | 644 | 0.1+ | 0.1− | 2002 02 12 | 704 | 0.1+ | 0.8+ |
| 1995 11 14 | 691 | 0.8− | 0.4− | 2005 05 20 | G96 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.0 | 0.1+ | 2000 08 31 | 704 | 1.0− | 1.3+ | 2002 01 08 | 704 | 0.6− | 0.8− | 2003 03 23 | 644 | 0.2+ | 1.1+ |
| 1995 11 14 | 691 | 0.7− | 0.5− | 2005 05 20 | G96 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.2− | 2000 08 31 | 704 | 0.3− | 0.1− | 2002 01 08 | 704 | 0.7− | 0.9− | 2003 03 23 | 644 | 0.4+ | 0.7+ |
| 1995 11 14 | 691 | 0.3− | 0.4− | 2005 05 20 | G96 | 0.6− | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.7+ | 2000 08 31 | 704 | 0.7+ | 0.3+ | 2002 01 08 | 704 | 0.7− | 0.8− | 2003 03 23 | 644 | 0.5+ | 1.0+ |
| 1995 11 19 | 691 | 0.2+ | 0.2+ | 2005 05 20 | G96 | 0.6− | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.2− | 2000 08 31 | 704 | 0.2+ | 0.6+ | 2002 01 08 | 704 | 0.8− | 0.9− | 2003 03 31 | 644 | 0.9+ | 0.8+ |
| 1995 11 19 | 691 | 0.4+ | 0.0 | 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2000 08 31 | 704 | 0.6− | 0.9+ | 2002 01 08 | 704 | 0.5− | 1.1− | 2003 03 31 | 644 | 0.7+ | 0.4+ |
| 1995 11 19 | 691 | 0.5+ | 0.3+ | 2005 06 05 | 691 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1+ | 2000 09 03 | 704 | 0.0 | 0.3− | 2002 01 14 | 704 | 0.1+ | 0.1− | 2003 03 31 | 644 | 0.6+ | 0.8+ |
| 2000 08 03 | 704 | 0.6+ | 0.1− | 2005 06 05 | 691 | 0.2+ | 0.2− | 2006 09 23 | 691 | 0.2− | 0.0 | 2000 09 03 | 704 | 0.3− | 0.2+ | 2002 01 14 | 704 | 0.6− | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.0 |
| 2000 08 03 | 704 | 0.7+ | 1.0− | 2005 06 11 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2000 09 03 | 704 | 0.4− | 0.1+ | 2002 01 14 | 704 | 0.3+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.1− |
| 2000 08 03 | 704 | 0.9+ | 0.8+ | 2005 06 11 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.4− | 2000 09 03 | 704 | 0.5− | 0.0 | 2002 01 14 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.2− | 0.1− |
| 2000 08 03 | 704 | 0.1− | 0.4+ | 2005 06 11 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2000 09 03 | 704 | 0.4+ | 0.3+ | 2002 01 14 | 704 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.2− |
| 2000 08 03 | 704 | 0.1+ | 0.8+ | 2005 06 15 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.4− | 2000 09 23 | 704 | (0.6+ | 2.8−) | 2002 01 17 | 644 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.0 |
| 2000 08 21 | 699 | 0.3− | 0.1− | 2005 06 15 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.5− | 2000 09 23 | 704 | 0.8+ | 1.4− | 2002 01 17 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 2000 08 21 | 699 | 0.9− | 0.3− | 2005 06 15 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2000 09 23 | 704 | 0.8− | 0.2− | 2002 01 17 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.3+ |
| 2000 08 21 | 699 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2001 10 14 | 704 | 0.1+ | 0.1+ | 2002 01 21 | 704 | 0.9+ | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.2− |
| 2000 08 21 | 699 | 1.1+ | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.5+ | 0.1− | 2001 10 14 | 704 | 0.7− | 0.4− | 2002 01 21 | 704 | 0.4+ | 1.0+ | 2006 09 28 | 703 | 0.1− | 0.3− |
| 2000 08 31 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.2− | 2006 09 27 | 704 | 1.0+ | 0.6− | 2001 10 14 | 704 | 0.2− | 0.1+ | 2002 01 21 | 704 | 0.8+ | 1.2+ | 2006 09 28 | 703 | 0.1− | 0.5− |
| 2000 08 31 | 704 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.5− | 0.3− | 2006 09 27 | 704 | 0.0 | 0.5+ | 2001 10 14 | 704 | 0.1+ | 1.0− | 2002 01 21 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 703 | 0.7− | 0.0 |
| 2000 08 31 | 704 | 0.8+ | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.8− | 2001 10 14 | 704 | (2.9− | 0.2−) | 2002 01 21 | 704 | 1.2+ | 0.9+ | 2006 09 28 | 703 | 0.6− | 0.1+ |
| 2000 08 31 | 704 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.0 | 1.3+ | 2006 09 27 | 704 | 0.5+ | 1.1− | 2001 10 15 | 704 | 0.2− | 1.0+ | 2002 02 04 | 644 | 0.1− | 0.7− | 2006 09 30 | 704 | 0.2− | 0.5+ |
| 2000 09 02 | 699 | 1.0+ | 1.0− | 2006 09 12 | 703 | 0.9+ | 0.4− | 2006 09 27 | 704 | 0.9− | 0.5+ | 2001 10 15 | 704 | 0.6− | 0.7− | 2002 02 04 | 644 | 0.3− | 0.9− | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2000 09 02 | 699 | 0.3− | 0.5+ | 2006 09 12 | 703 | 0.7+ | 0.7− | 2006 09 29 | 704 | 0.4+ | 0.4− | 2001 10 15 | 704 | 0.1− | 0.4− | 2002 02 04 | 644 | 0.1− | 0.8− | 2006 09 30 | 704 | 1.1− | 0.2+ |
| 2000 09 02 | 699 | 0.4+ | 0.4− | 2006 09 17 | 704 | 1.0− | 0.9− | 2006 09 29 | 704 | 0.8+ | 0.6+ | 2001 10 15 | 704 | (0.7− | 1.5+) | 2002 02 05 | 644 | 0.3+ | 0.7− | 2006 09 30 | 704 | 0.3− | 0.2+ |
| | | | | | | | | | | | | 2001 10 15 | 704 | (0.4+ | 1.9+) | 2002 02 05 | 644 | 0.0 | 0.7− | 2006 10 20 | 703 | 0.7− | 0.1− |
| | | | | | | | | | | | | 2001 10 21 | 704 | 0.8+ | 0.9+ | 2002 02 05 | 644 | 0.4+ | 0.7− | 2006 10 20 | 703 | 0.3− | 0.1+ |
| | | | | | | | | | | | | 2001 10 21 | 704 | 0.0 | 0.3− | 2002 02 06 | 704 | 0.0 | 0.4− | 2006 10 20 | 703 | 0.1− | 0.1− |
| | | | | | | | | | | | | 2001 10 21 | 704 | 0.7+ | 0.5+ | 2002 02 06 | 704 | 0.3− | 0.1− | 2006 10 20 | 703 | 0.2+ | 0.1− |
| | | | | | | | | | | | | 2001 12 13 | 704 | 0.3+ | 0.5+ | 2002 02 06 | 704 | 0.2+ | 1.2− | 2006 10 21 | 704 | 0.1+ | 0.2+ |
| | | | | | | | | | | | | 2001 12 13 | 704 | 0.0 | 0.5+ | 2002 02 06 | 704 | 0.2+ | 0.7− | 2006 10 21 | 704 | 1.2+ | 0.5− |
| | | | | | | | | | | | | 2001 12 13 | 704 | 0.0 | 0.8+ | 2002 02 06 | 704 | 0.5− | 0.8− | 2006 10 21 | 704 | 0.2+ | 0.9− |
| | | | | | | | | | | | | 2001 12 13 | 704 | 0.1− | 0.8+ | 2002 02 07 | 704 | 0.1− | 1.3+ | 2006 10 21 | 704 | 0.5+ | 0.3− |
| | | | | | | | | | | | | 2001 12 13 | 704 | 0.1− | 0.1+ | 2002 02 07 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 704 | (0.6− | 2.0−) |
| | | | | | | | | | | | | 2001 12 17 | 704 | 0.2+ | 0.1− | 2002 02 07 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.5− | 1.1+ |
| | | | | | | | | | | | | 2001 12 17 | 704 | 0.0 | 0.2− | 2002 02 07 | 704 | 0.7+ | 1.1+ | 2006 11 17 | 704 | 0.0 | 1.3+ |
| | | | | | | | | | | | | 2001 12 17 | 704 | 0.0 | 0.0 | 2002 02 07 | 704 | 0.4+ | 1.0+ | 2006 11 17 | 704 | (0.3+ | 1.7+) |
| | | | | | | | | | | | | 2001 12 17 | 704 | 0.2− | 0.2− | 2002 02 08 | 608 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.9− | 1.5+ |
| | | | | | | | | | | | | 2001 12 17 | 704 | 0.2− | 0.3− | 2002 02 08 | 608 | (0.2− | 1.6−) | 2006 11 17 | 704 | 0.2+ | 0.9+ |
| | | | | | | | | | | | | 2001 12 18 | 699 | 0.7− | 0.3+ | 2002 02 08 | 608 | (0.7− | 1.7−) | 2006 11 29 | 704 | 0.0 | 0.4+ |
| | | | | | | | | | | | | 2001 12 18 | 699 | 0.4+ | 0.3+ | 2002 02 10 | 704 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.4+ | 0.2+ |
| | | | | | | | | | | | | 2001 12 18 | 699 | 0.3+ | 0.1− | 2002 02 10 | 704 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| | | | | | | | | | | | | 2001 12 18 | 644 | 0.3− | 0.3+ | 2002 02 10 | 704 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| | | | | | | | | | | | | 2001 12 18 | 644 | 0.2− | 0.4+ | 2002 02 10 | 704 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.8− |
| | | | | | | | | | | | | 2001 12 18 | 699 | 0.3− | 0.1− | 2002 02 12 | 704 | 0.1− | 0.7+ | | | | |
| | | | | | | | | | | | | 2001 12 18 | 644 | 0.2− | 0.1+ | 2002 02 12 | 704 | 0.4+ | 0.6+ | | | | |

**(138597)∗ 2000 QZ$_{161}$ = 2001 XU$_{115}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22404)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.34064 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17398709 | $\omega$ | 106.76797 | | +0.63630908 | −0.74089345 | |
| $a$ | 3.1777864 | $\Omega$ | 301.72335 | | +0.57584465 | +0.64155657 | |
| $e$ | 0.2802057 | $i$ | 14.63506 | | +0.51333585 | +0.19870094 | |
| $P$ | 5.66 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.3+ | 0.1+ | 2002 01 06 | 644 | 0.1+ | 0.1+ | 2002 02 12 | 704 | 0.1− | 0.5+ | | | |
| 2000 08 02 | 704 | 0.1− | 0.2+ | 2002 01 06 | 644 | 0.1+ | 0.0 | 2002 02 12 | 704 | 0.3+ | 0.3+ | | | |
| 2000 08 02 | 704 | 0.1− | 0.9+ | 2002 01 06 | 644 | 0.1+ | 0.1− | 2002 02 12 | 704 | 0.1+ | 0.8+ | | | |
| 2000 08 31 | 704 | 1.0− | 1.3+ | 2002 01 08 | 704 | 0.6− | 0.8− | 2003 03 23 | 644 | 0.2+ | 1.1+ | | | |
| 2000 08 31 | 704 | 0.3− | 0.1− | 2002 01 08 | 704 | 0.7− | 0.9− | 2003 03 23 | 644 | 0.4+ | 0.7+ | | | |
| 2000 08 31 | 704 | 0.7+ | 0.3+ | 2002 01 08 | 704 | 0.7− | 0.8− | 2003 03 23 | 644 | 0.5+ | 1.0+ | | | |
| 2000 08 31 | 704 | 0.2+ | 0.6+ | 2002 01 08 | 704 | 0.8− | 0.9− | 2003 03 31 | 644 | 0.9+ | 0.8+ | | | |
| 2000 08 31 | 704 | 0.6− | 0.9+ | 2002 01 08 | 704 | 0.5− | 1.1− | 2003 03 31 | 644 | 0.7+ | 0.4+ | | | |
| 2000 09 03 | 704 | 0.0 | 0.3− | 2002 01 14 | 704 | 0.1+ | 0.1− | 2003 03 31 | 644 | 0.6+ | 0.8+ | | | |
| 2000 09 03 | 704 | 0.3− | 0.2+ | 2002 01 14 | 704 | 0.6− | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.0 | | | |
| 2000 09 03 | 704 | 0.4− | 0.1+ | 2002 01 14 | 704 | 0.3+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.1− | | | |
| 2000 09 03 | 704 | 0.5− | 0.0 | 2002 01 14 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.2− | 0.1− | | | |
| 2000 09 03 | 704 | 0.4+ | 0.3+ | 2002 01 14 | 704 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.2− | | | |
| 2000 09 23 | 704 | (0.6+ | 2.8−) | 2002 01 17 | 644 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.0 | | | |
| 2000 09 23 | 704 | 0.8+ | 1.4− | 2002 01 17 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.4− | | | |
| 2000 09 23 | 704 | 0.8− | 0.2− | 2002 01 17 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.3+ | | | |
| 2001 10 14 | 704 | 0.1+ | 0.1+ | 2002 01 21 | 704 | 0.9+ | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.2− | | | |
| 2001 10 14 | 704 | 0.7− | 0.4− | 2002 01 21 | 704 | 0.4+ | 1.0+ | 2006 09 28 | 703 | 0.1− | 0.3− | | | |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2002 01 21 | 704 | 0.8+ | 1.2+ | 2006 09 28 | 703 | 0.1− | 0.5− | | | |
| 2001 10 14 | 704 | 0.1+ | 1.0− | 2002 01 21 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 703 | 0.7− | 0.0 | | | |
| 2001 10 14 | 704 | (2.9− | 0.2−) | 2002 01 21 | 704 | 1.2+ | 0.9+ | 2006 09 28 | 703 | 0.6− | 0.1+ | | | |
| 2001 10 15 | 704 | 0.2− | 1.0+ | 2002 02 04 | 644 | 0.1− | 0.7− | 2006 09 30 | 704 | 0.2− | 0.5+ | | | |
| 2001 10 15 | 704 | 0.6− | 0.7− | 2002 02 04 | 644 | 0.3− | 0.9− | 2006 09 30 | 704 | 0.1+ | 0.3+ | | | |
| 2001 10 15 | 704 | 0.1− | 0.4− | 2002 02 04 | 644 | 0.1− | 0.8− | 2006 09 30 | 704 | 1.1− | 0.2+ | | | |
| 2001 10 15 | 704 | (0.7− | 1.5+) | 2002 02 05 | 644 | 0.3+ | 0.7− | 2006 09 30 | 704 | 0.3− | 0.2+ | | | |
| 2001 10 15 | 704 | (0.4+ | 1.9+) | 2002 02 05 | 644 | 0.0 | 0.7− | 2006 10 20 | 703 | 0.7− | 0.1− | | | |
| 2001 10 21 | 704 | 0.8+ | 0.9+ | 2002 02 05 | 644 | 0.4+ | 0.7− | 2006 10 20 | 703 | 0.3− | 0.1+ | | | |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2002 02 06 | 704 | 0.0 | 0.4− | 2006 10 20 | 703 | 0.1− | 0.1− | | | |
| 2001 10 21 | 704 | 0.7+ | 0.5+ | 2002 02 06 | 704 | 0.3− | 0.1− | 2006 10 20 | 703 | 0.2+ | 0.1− | | | |
| 2001 12 13 | 704 | 0.3+ | 0.5+ | 2002 02 06 | 704 | 0.2+ | 1.2− | 2006 10 21 | 704 | 0.1+ | 0.2+ | | | |
| 2001 12 13 | 704 | 0.0 | 0.5+ | 2002 02 06 | 704 | 0.2+ | 0.7− | 2006 10 21 | 704 | 1.2+ | 0.5− | | | |
| 2001 12 13 | 704 | 0.0 | 0.8+ | 2002 02 06 | 704 | 0.5− | 0.8− | 2006 10 21 | 704 | 0.2+ | 0.9− | | | |
| 2001 12 13 | 704 | 0.1− | 0.8+ | 2002 02 07 | 704 | 0.1− | 1.3+ | 2006 10 21 | 704 | 0.5+ | 0.3− | | | |
| 2001 12 13 | 704 | 0.1− | 0.1+ | 2002 02 07 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 704 | (0.6− | 2.0−) | | | |
| 2001 12 17 | 704 | 0.2+ | 0.1− | 2002 02 07 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.5− | 1.1+ | | | |
| 2001 12 17 | 704 | 0.0 | 0.2− | 2002 02 07 | 704 | 0.7+ | 1.1+ | 2006 11 17 | 704 | 0.0 | 1.3+ | | | |
| 2001 12 17 | 704 | 0.0 | 0.0 | 2002 02 07 | 704 | 0.4+ | 1.0+ | 2006 11 17 | 704 | (0.3+ | 1.7+) | | | |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2002 02 08 | 608 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.9− | 1.5+ | | | |
| 2001 12 17 | 704 | 0.2− | 0.3− | 2002 02 08 | 608 | (0.2− | 1.6−) | 2006 11 17 | 704 | 0.2+ | 0.9+ | | | |
| 2001 12 18 | 699 | 0.7− | 0.3+ | 2002 02 08 | 608 | (0.7− | 1.7−) | 2006 11 29 | 704 | 0.0 | 0.4+ | | | |
| 2001 12 18 | 699 | 0.4+ | 0.3+ | 2002 02 10 | 704 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.4+ | 0.2+ | | | |
| 2001 12 18 | 699 | 0.3+ | 0.1− | 2002 02 10 | 704 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.1+ | | | |
| 2001 12 18 | 644 | 0.3− | 0.3+ | 2002 02 10 | 704 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1− | 0.3+ | | | |
| 2001 12 18 | 644 | 0.2− | 0.4+ | 2002 02 10 | 704 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.8− | | | |
| 2001 12 18 | 699 | 0.3− | 0.1− | 2002 02 12 | 704 | 0.1− | 0.7+ | | | | | | | |
| 2001 12 18 | 644 | 0.2− | 0.1+ | 2002 02 12 | 704 | 0.4+ | 0.6+ | | | | | | | |

**(138598)∗ 2000 QV$_{164}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.14981 | | | (2000.0) | | |
| $n$ | 0.17514492 | $\omega$ | 134.46382 | | +0.99414863 | −0.01844206 |
| $a$ | 3.1637659 | $\Omega$ | 226.90594 | | −0.01466903 | +0.95314215 |
| $e$ | 0.0835322 | $i$ | 8.38098 | | +0.10702016 | +0.30196016 |
| $P$ | 5.63 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1+ | 1.0− | 2001 12 11 | 704 | 0.8− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2000 08 31 | 704 | 0.0 | 0.2+ | 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 2000 08 31 | 704 | 0.5+ | 0.1− | 2004 04 22 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 1.1− | 0.7+ | |
| 2000 09 03 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.0 | |
| 2000 09 03 | 704 | 0.2+ | 0.1+ | 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.1− | |
| 2000 09 03 | 704 | 0.6− | 0.4+ | 2004 05 13 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | (0.3− | 1.6−) | |
| 2000 09 26 | 704 | 0.6+ | 0.8+ | 2004 05 13 | 691 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.4− | 0.3+ | |
| 2000 09 26 | 704 | 0.5− | 0.2+ | 2004 05 21 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.3+ | |
| 2000 09 26 | 704 | 0.9− | 0.2− | 2004 05 21 | 691 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.3− | |
| 2001 11 20 | 704 | 0.6− | 0.6+ | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.7+ | |
| 2001 11 20 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1+ | |
| 2001 11 20 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 1.1+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ | |
| 2001 11 20 | 704 | 0.3+ | 1.1+ | 2006 09 18 | 699 | 0.6+ | 0.3− | 2006 11 18 | G96 | 0.5− | 0.2− | |
| 2001 11 20 | 704 | 0.4+ | 1.5+ | 2006 09 18 | 699 | 1.5+ | 1.0− | 2006 11 18 | G96 | 0.2− | 0.1− | |
| 2001 12 11 | 704 | 0.5+ | 1.4− | 2006 10 10 | 644 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.1− | |
| 2001 12 11 | 704 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.1− | |
| 2001 12 11 | 704 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | | | | |
| 2001 12 11 | 704 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3+ | | | | | |

**(138599)∗ 2000 QO$_{166}$ = 2003 GB$_9$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46443)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 250.54829 | | | (2000.0) | | |
| $n$ | 0.26288033 | $\omega$ | 97.15803 | | +0.56166798 | +0.82617468 |
| $a$ | 2.4134075 | $\Omega$ | 207.16152 | | −0.79224707 | +0.52161550 |
| $e$ | 0.1398027 | $i$ | 5.57171 | | −0.23848198 | +0.21296165 |
| $P$ | 3.75 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.4+ | 0.5+ | 2003 04 07 | 333 | 0.6− | 0.5+ | 2004 09 15 | 699 | 0.4+ | 0.1+ | |
| 1995 02 25 | 691 | 0.1+ | 0.4+ | 2003 04 07 | 333 | 0.1+ | 0.3+ | 2004 09 17 | 704 | 0.1− | 0.3+ | |
| 1995 02 25 | 691 | 0.1+ | 0.2+ | 2003 04 07 | 333 | 0.7− | 0.0 | 2004 09 17 | 704 | 0.4+ | 0.1+ | |
| 2000 08 31 | 704 | 0.6+ | 0.3+ | 2003 04 14 | 699 | 0.1− | 0.2+ | 2004 09 17 | 704 | 0.6+ | 0.8+ | |
| 2000 08 31 | 704 | 1.2+ | 0.3+ | 2003 04 14 | 699 | 0.2+ | 0.9− | 2004 09 17 | 704 | 0.0 | 0.3+ | |
| 2000 08 31 | 704 | 0.5+ | 0.1+ | 2003 04 14 | 699 | 0.2− | 0.1+ | 2004 09 17 | 704 | 0.1+ | 0.2+ | |
| 2000 08 31 | 704 | 0.3+ | 0.3+ | 2003 04 14 | 699 | 0.2+ | 1.0+ | 2004 09 17 | 691 | 0.1+ | 0.2+ | |
| 2000 08 31 | 704 | 0.3+ | 0.1− | 2003 04 21 | 703 | 0.2+ | 0.7− | 2004 09 17 | 691 | 0.1− | 0.2+ | |
| 2000 09 02 | 699 | 0.0 | 0.1− | 2003 04 21 | 703 | 0.2+ | 0.5− | 2004 09 17 | 691 | 0.0 | 0.2+ | |
| 2000 09 02 | 699 | 1.0− | 1.5+ | 2003 04 21 | 703 | 0.0 | 0.6− | 2004 09 22 | 704 | 0.2+ | 0.0 | |
| 2000 09 02 | 699 | 0.6− | 0.6− | 2003 04 21 | 703 | 0.9+ | 0.5− | 2004 09 22 | 704 | 0.0 | 0.1+ | |
| 2000 09 02 | 699 | 0.1+ | 0.4− | 2003 04 28 | 704 | 0.0 | 1.7+ | 2004 09 22 | 704 | 0.2− | 0.3+ | |
| 2000 09 03 | 704 | 0.3+ | 0.2− | 2003 04 28 | 704 | 0.1− | 0.3+ | 2004 09 22 | 704 | 1.0− | 1.8+ | |
| 2000 09 03 | 704 | 0.2− | 0.3+ | 2003 04 28 | 704 | 1.5+ | 1.4+ | 2004 09 22 | 691 | 0.0 | 0.4+ | |
| 2000 09 03 | 704 | 0.0 | 0.3+ | 2003 04 28 | 704 | 0.1+ | 0.3+ | 2004 09 22 | 691 | 0.3− | 0.3+ | |
| 2000 09 03 | 704 | 0.4+ | 0.2+ | 2003 04 28 | 704 | 0.4+ | 0.8+ | 2004 09 22 | 691 | 0.2− | 0.3+ | |
| 2000 09 03 | 704 | 0.1+ | 0.2+ | 2003 04 29 | 704 | 0.0 | 0.8+ | 2004 09 23 | 704 | 0.5− | 0.6+ | |
| 2000 09 09 | 739 | 1.1− | 0.7+ | 2003 04 29 | 704 | 0.2+ | 0.8+ | 2004 09 23 | 704 | 1.4+ | 0.5+ | |
| 2000 09 09 | 739 | 1.0+ | 0.1− | 2003 04 29 | 704 | 0.3− | 1.1+ | 2004 09 23 | 704 | 0.5+ | 1.2+ | |
| 2000 09 09 | 739 | 0.8+ | 0.2− | 2003 04 29 | 704 | 0.2+ | 1.0+ | 2004 09 23 | 704 | 0.7+ | 1.7+ | |
| 2000 09 09 | 739 | 1.9+ | 0.8+ | 2003 04 29 | 704 | 0.1− | 0.4+ | 2004 10 07 | 699 | 0.6+ | 0.2− | |
| 2000 09 22 | 699 | 0.3+ | 0.1− | 2003 04 29 | 704 | 0.2+ | 2.0+ | 2004 10 07 | 699 | 0.0 | 0.2+ | |
| 2000 09 22 | 699 | 0.3− | 0.0 | 2003 04 29 | 704 | 0.2− | 0.6+ | 2004 10 07 | 699 | 0.0 | 0.4+ | |
| 2000 09 22 | 699 | 0.5+ | 1.0+ | 2003 04 29 | 704 | 0.3+ | 0.5+ | 2004 10 07 | 699 | 0.6+ | 0.2+ | |
| 2000 09 22 | 699 | 0.4− | 0.0 | 2003 04 29 | 704 | 0.7+ | 0.6+ | 2004 10 09 | 704 | 0.5+ | 0.2+ | |
| 2000 09 22 | 699 | 0.7− | 0.2+ | 2003 04 29 | 704 | 0.3+ | 0.7+ | 2004 10 09 | 704 | 0.0 | 0.1+ | |
| 2000 09 22 | 699 | 0.5− | 0.3− | 2003 04 29 | 704 | 0.4+ | 1.8+ | 2004 10 09 | 704 | 0.6+ | 0.4− | |
| 2000 09 22 | 699 | 0.1− | 0.4+ | 2003 04 29 | 704 | 0.2+ | 1.1+ | 2004 10 09 | 704 | 0.0 | 1.3+ | |
| 2000 09 22 | 699 | 0.2− | 0.2+ | 2003 04 29 | 704 | 0.2− | 0.2+ | 2004 10 09 | 704 | 0.3− | 0.6+ | |
| 2000 09 23 | 699 | 0.1+ | 0.0 | 2003 04 29 | 704 | 0.5+ | 0.9+ | 2004 10 12 | 699 | 0.6+ | 0.8− | |
| 2000 09 23 | 699 | 0.1− | 0.0 | 2003 05 05 | 704 | 1.5+ | 1.0+ | 2004 10 12 | 691 | 0.3− | 0.3− | |
| 2000 09 23 | 699 | 0.1− | 0.9+ | 2003 05 05 | 704 | 1.0+ | 0.7+ | 2004 10 12 | 699 | 0.6+ | 0.1+ | |
| 2000 09 23 | 704 | 0.0 | 0.6+ | 2003 05 05 | 704 | 0.8+ | 1.2+ | 2004 10 12 | 691 | 0.0 | 0.1+ | |
| 2000 09 23 | 699 | 0.0 | 0.3+ | 2003 05 05 | 704 | 1.0+ | 0.8+ | 2004 10 12 | 691 | 0.1− | 0.2+ | |
| 2000 09 23 | 704 | 0.0 | 0.3+ | 2003 05 05 | 704 | 1.5+ | 1.2+ | 2004 10 12 | 699 | 0.2− | 0.0 | |
| 2000 09 23 | 704 | 0.1+ | 0.4− | 2003 05 10 | 291 | 0.1+ | 0.0 | 2004 10 12 | 699 | 0.3+ | 0.2+ | |
| 2000 09 23 | 704 | 0.7+ | 0.5− | 2003 05 10 | 291 | 0.0 | 0.0 | 2004 10 14 | 704 | 0.6+ | 1.2+ | |
| 2000 09 23 | 704 | 0.4+ | 0.2− | 2003 05 10 | 291 | 0.1+ | 0.1+ | 2004 10 14 | 704 | 0.9− | 0.1+ | |
| 2000 09 25 | 691 | 0.4− | 0.0 | 2003 05 25 | 699 | 1.4− | 0.4+ | 2004 10 14 | 704 | 0.6− | 0.5+ | |
| 2000 09 25 | 691 | 0.5− | 0.1+ | 2003 05 25 | 699 | 0.5− | 0.7+ | 2004 10 14 | 704 | 0.4− | 0.2− | |
| 2000 09 25 | 691 | 0.4− | 0.2+ | 2003 05 25 | 699 | 0.0 | 0.3− | 2004 10 15 | G96 | 0.1− | 0.1− | |
| 2000 09 25 | 704 | 0.1− | 0.1+ | 2003 05 25 | 699 | 0.3− | 0.3+ | 2004 10 15 | G96 | 0.0 | 0.1− | |
| 2000 09 25 | 704 | 0.6− | 0.7− | 2003 05 27 | 608 | 0.8+ | 0.4+ | 2004 10 15 | G96 | 0.1+ | 0.1− | |
| 2000 09 25 | 704 | 0.9− | 0.4− | 2003 05 27 | 608 | 0.8+ | 0.5+ | 2004 10 15 | G96 | 0.0 | 0.0 | |
| 2000 09 25 | 704 | 0.2− | 0.5− | 2003 05 27 | 608 | 0.6+ | 0.2+ | 2004 10 20 | 704 | 0.2− | 0.4+ | |
| 2000 09 25 | 704 | 0.7− | 0.3− | 2003 05 29 | 691 | 0.4− | 0.0 | 2004 10 20 | 704 | 0.2− | 0.4+ | |
| 2000 10 03 | 704 | 0.7+ | 1.0+ | 2003 05 29 | 691 | 0.3− | 0.2+ | 2004 10 20 | 704 | 0.5− | 0.3+ | |
| 2000 10 03 | 704 | 0.1+ | 0.1+ | 2003 05 29 | 691 | 0.4− | 0.1+ | 2004 10 20 | 704 | 0.1− | 0.3+ | |
| 2000 10 03 | 704 | 1.0− | 0.5− | 2004 08 11 | 704 | 0.2− | 0.4+ | 2004 10 20 | 704 | 0.2− | 0.6+ | |
| 2000 10 03 | 704 | 0.0 | 0.7− | 2004 08 11 | 704 | 0.1+ | 0.6+ | 2004 11 04 | 699 | 0.3+ | 0.1+ | |
| 2000 10 03 | 704 | 0.1+ | 0.9− | 2004 08 11 | 704 | 0.1− | 0.2+ | 2004 11 04 | 699 | 0.4− | 0.8+ | |
| 2003 03 27 | 699 | 0.4− | 1.2+ | 2004 08 11 | 704 | 0.8+ | 0.2− | 2004 11 04 | 699 | 0.0 | 0.4+ | |
| 2003 03 27 | 699 | 1.4− | 0.1+ | 2004 08 17 | 704 | 0.1− | 0.5+ | 2004 11 04 | 699 | 0.4− | 0.6+ | |
| 2003 03 27 | 699 | 0.7− | 0.6− | 2004 08 17 | 704 | 0.1+ | 0.1+ | 2004 11 06 | 704 | 0.8− | 0.6+ | |
| 2003 03 27 | 699 | 0.9− | 0.4− | 2004 08 17 | 704 | 0.2+ | 0.3+ | 2004 11 06 | 704 | 0.7− | 0.0 | |
| 2003 04 01 | 704 | 1.0+ | 0.2− | 2004 08 17 | 704 | 1.0+ | 0.1− | 2004 11 06 | 704 | 0.5+ | 0.6+ | |
| 2003 04 01 | 704 | 0.7+ | 0.1− | 2004 09 07 | 691 | 0.1− | 0.1+ | 2004 11 06 | 704 | 0.8− | 1.2+ | |
| 2003 04 01 | 704 | 0.2− | 0.1− | 2004 09 07 | 691 | 0.2− | 0.1+ | 2004 11 06 | 704 | 0.9− | 1.1+ | |
| 2003 04 01 | 704 | 0.3+ | 0.0 | 2004 09 07 | 691 | 0.1− | 0.2+ | 2006 01 22 | 699 | 0.7− | 0.3+ | |
| 2003 04 04 | 699 | 0.8+ | 1.0+ | 2004 09 08 | 644 | 0.5− | 0.3+ | 2006 01 22 | 699 | 0.5+ | 0.8+ | |
| 2003 04 04 | 699 | 1.4+ | 0.0 | 2004 09 08 | 644 | 0.2− | 0.3+ | 2006 01 22 | 699 | 1.1− | 1.3+ | |
| 2003 04 04 | 699 | 0.5+ | 0.7+ | 2004 09 08 | 644 | 0.4− | 0.3+ | 2006 01 22 | 699 | 1.0+ | 0.0 | |
| 2003 04 04 | 699 | 0.7+ | 0.6+ | 2004 09 13 | 704 | 0.6− | 0.4+ | 2006 01 23 | 704 | 0.8− | 1.2+ | |
| 2003 04 06 | 333 | 0.2− | 0.0 | 2004 09 13 | 704 | 0.2− | 0.5+ | 2006 01 23 | 704 | 0.5+ | 0.9+ | |
| 2003 04 06 | 333 | 0.1− | 0.3+ | 2004 09 13 | 704 | 0.1− | 0.5+ | 2006 01 23 | 704 | 0.2+ | 0.9+ | |
| 2003 04 07 | 704 | 0.1− | 0.6+ | 2004 09 13 | 704 | 0.6− | 0.4+ | 2006 01 23 | 704 | 0.2− | 0.1− | |
| 2003 04 07 | 704 | 1.3+ | 1.0+ | 2004 09 13 | 704 | 0.9− | 0.1− | 2006 01 30 | 703 | 0.2− | 0.3+ | |
| 2003 04 07 | 704 | 0.3− | 0.5+ | 2004 09 15 | 699 | 0.1+ | 0.0 | 2006 01 30 | 703 | 0.2+ | 1.0+ | |
| 2003 04 07 | 704 | 0.5− | 0.3+ | 2004 09 15 | 699 | 0.4+ | 1.1+ | 2006 01 30 | 703 | 0.1+ | 0.0 | |
| 2003 04 07 | 333 | 0.6− | 0.7+ | 2004 09 15 | 699 | 0.0 | 0.1+ | 2006 01 30 | 703 | 0.0 | 0.8+ | |

**(138600)∗ 2000 QJ$_{174}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.00496 | | | (2000.0) | | |
| $n$ | 0.18341039 | $\omega$ | 184.25714 | | +0.99911866 | −0.04162936 |
| $a$ | 3.0679864 | $\Omega$ | 178.10361 | | +0.04168434 | +0.96899135 |
| $e$ | 0.0800817 | $i$ | 9.34776 | | +0.00493059 | +0.24356264 |
| $P$ | 5.37 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.1− | 0.5− | 2001 12 11 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.7+ | 1.0− | |
| 1995 10 01 | 691 | 0.0 | 0.3− | 2001 12 23 | 209 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.8− | 0.1− | |
| 1995 10 01 | 691 | 0.1+ | 0.3− | 2001 12 23 | 209 | 0.6− | 0.5− | 2006 10 16 | 703 | 0.5− | 0.2− | |
| 1997 12 31 | 691 | 0.8− | 0.0 | 2001 12 23 | 209 | 0.5− | 1.2− | 2006 10 22 | 703 | (2.3+ | 1.2+) | |
| 1997 12 31 | 691 | 0.6− | 0.3+ | 2001 12 24 | 608 | 0.7+ | 0.7− | 2006 10 22 | 703 | 0.2− | 0.5+ | |
| 1997 12 31 | 691 | 0.6− | 0.0 | 2001 12 24 | 608 | 0.3+ | 0.9− | 2006 10 22 | 703 | 0.6+ | 0.2+ | |
| 2000 08 31 | 704 | 0.0 | 1.0+ | 2001 12 24 | 608 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.8+ | 1.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2003 02 22 | 644 | 0.7+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.4− | 0.8+ | 2003 02 22 | 644 | 0.8+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2000 08 31 | 704 | 0.3+ | 0.2− | 2003 02 22 | 644 | 0.9+ | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2000 08 31 | 704 | 1.4+ | 0.6− | 2003 03 07 | 704 | 1.3+ | 0.0 | 2006 10 27 | 704 | 1.3− | 0.9+ |
| 2000 09 03 | 704 | 0.8+ | 0.1− | 2003 03 07 | 704 | 1.4+ | 0.0 | 2006 10 27 | 704 | (1.6− | 0.3+) |
| 2000 09 03 | 704 | 0.5− | 0.1− | 2003 03 07 | 704 | 0.5+ | 0.7+ | 2006 10 27 | 704 | 0.5− | 0.1+ |
| 2000 09 03 | 704 | 0.2+ | 0.0 | 2003 03 07 | 704 | (2.3+ | 1.0+) | 2006 11 14 | 704 | 1.1− | 1.0+ |
| 2000 09 24 | 704 | 0.2+ | 0.2+ | 2003 03 07 | 704 | (2.7+ | 2.2+) | 2006 11 14 | 704 | 0.9− | 0.4+ |
| 2000 09 24 | 704 | 0.1− | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.5+ | 0.7+ |
| 2000 09 24 | 704 | 0.2− | 0.6+ | 2004 04 20 | 704 | 1.1+ | 0.4+ | 2006 11 14 | 704 | 1.0− | 0.0 |
| 2000 09 24 | 704 | 0.5+ | 0.8+ | 2004 04 20 | 704 | (1.9+ | 1.2+) | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2000 09 24 | 704 | 0.5+ | 0.7+ | 2004 04 20 | 704 | (0.7− | 1.8+) | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 2001 12 05 | 608 | 0.1+ | 0.6− | 2005 06 11 | 691 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.1− |
| 2001 12 05 | 608 | 0.4+ | 0.9− | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.1+ |
| 2001 12 05 | 608 | 0.4+ | 0.7− | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.1− |
| 2001 12 11 | 704 | (1.8+ | 2.4+) | 2006 09 29 | 699 | 1.2+ | 0.8+ | 2006 11 17 | 644 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.6− | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 1.0− | 1.1− |
| 2001 12 11 | 704 | 1.3+ | 1.1+ | 2006 09 29 | 699 | 0.6+ | 0.5+ | 2006 11 19 | 703 | 0.3− | 1.4− |
| 2001 12 11 | 704 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.3+ |
| 2001 12 11 | 704 | 1.3+ | 1.4+ | 2006 09 30 | 703 | 0.9+ | 0.6+ | 2006 11 19 | 703 | (1.8+ | 0.4+) |
| 2001 12 11 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | (1.7+ | 0.6+) | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 0.1− | 1.0+ | 2006 09 30 | 703 | 1.1− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2001 12 11 | 704 | 0.6+ | 1.3+ | 2006 10 16 | 703 | 1.1− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.3− |

**(138601)**∗ **2000 QK$_{175}$ = 2001 XJ$_{84}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22415)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.76869 | | (2000.0) | | | |
| $n$ | 0.17996946 | $\omega$ | 168.59785 | | +0.95741909 | +0.28834747 |
| $a$ | 3.1069684 | $\Omega$ | 174.57925 | | −0.27535420 | +0.92691875 |
| $e$ | 0.1134497 | $i$ | 8.70521 | | −0.08676844 | +0.24016114 |
| $P$ | 5.48 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.0 | 0.3− | 2002 01 05 | 209 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.8+ |
| 2000 08 31 | 704 | 0.5+ | 0.1− | 2003 02 22 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.7+ | 0.4− |
| 2000 08 31 | 704 | 0.2+ | 0.1− | 2003 02 22 | 644 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.5+ | 0.9+ |
| 2000 08 31 | 704 | 0.4+ | 1.1+ | 2003 02 22 | 644 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 1.0− | 0.7+ |
| 2000 08 31 | 704 | 0.0 | 1.0+ | 2004 03 22 | 704 | 1.4− | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 2000 09 03 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2000 09 03 | 704 | 0.6+ | 0.3+ | 2004 03 22 | 704 | 0.5− | 0.2− | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2000 09 03 | 704 | 0.0 | 0.3+ | 2004 03 28 | 704 | 0.3+ | 0.7+ | 2006 10 03 | G96 | 0.3− | 0.1− |
| 2000 09 21 | 699 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 1.2+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2000 09 21 | 704 | 0.5− | 1.1− | 2004 03 28 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2000 09 21 | 699 | 0.4− | 0.2+ | 2004 04 14 | 691 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.4− | 0.4+ |
| 2000 09 21 | 704 | 0.3+ | 1.0− | 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2000 09 21 | 699 | 0.6− | 0.2+ | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 2000 09 21 | 704 | 0.9− | 0.1− | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 1.1+ | 0.2+ |
| 2000 09 21 | 704 | 0.2− | 0.5+ | 2004 04 20 | 704 | 0.8+ | 1.3+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2000 09 21 | 699 | 0.1− | 0.0 | 2004 04 20 | 704 | 1.3− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 1.3+ | 0.8+ | 2006 09 16 | 699 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.3− | 0.6+ | 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2001 12 11 | 704 | 0.0 | 1.3+ | 2006 09 16 | 699 | 0.7− | 0.1+ | 2006 11 13 | 703 | 0.9− | 0.1+ |
| 2001 12 11 | 704 | 0.7+ | 0.6+ | 2006 09 20 | 699 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.6− | 1.1+ |
| 2001 12 14 | 704 | 0.0 | 0.8− | 2006 09 20 | 699 | 0.3+ | 0.4− | 2006 11 13 | 703 | 0.8− | 0.4+ |
| 2001 12 14 | 704 | 0.5− | 0.4− | 2006 09 20 | 699 | 0.6− | 1.1+ | 2006 11 13 | 703 | 0.3− | 0.4+ |
| 2001 12 14 | 704 | 0.3− | 0.6− | 2006 09 20 | 699 | 0.6+ | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.2+ | 0.3− | 2006 09 22 | 704 | 0.8+ | 1.2+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.8− | 0.5− | 2006 09 22 | 704 | 0.7− | 1.0+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2002 01 05 | 209 | 0.1− | 0.6− | 2006 09 22 | 704 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2002 01 05 | 209 | 0.3− | 0.1− | 2006 09 22 | 704 | 0.1+ | 0.1+ | | | | |

**(138602)**∗ **2000 QY$_{176}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.05172 | | (2000.0) | | | |
| $n$ | 0.17929179 | $\omega$ | 239.20766 | | +0.43255672 | −0.90151278 |
| $a$ | 3.1147924 | $\Omega$ | 185.21355 | | +0.86841134 | +0.42046839 |
| $e$ | 0.1638252 | $i$ | 8.23483 | | +0.24239725 | +0.10237694 |
| $P$ | 5.50 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.1− | 0.2− | 2005 07 05 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 1995 10 27 | 691 | 0.1− | 0.2− | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.2− |
| 1995 10 27 | 691 | 0.1− | 0.2− | 2005 07 09 | 691 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2000 08 31 | 704 | 1.0+ | 0.4− | 2005 07 09 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 2000 08 31 | 704 | 0.3+ | 0.8+ | 2005 07 09 | 691 | (0.6− | 1.5−) | 2006 10 27 | 704 | (2.3+ | 0.6+) |
| 2000 08 31 | 704 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.8+ | 2006 10 27 | 704 | 0.1+ | 0.3+ |
| 2000 08 31 | 704 | 1.2− | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.7− | 2006 10 27 | 704 | 0.3+ | 1.0+ |
| 2000 09 03 | 704 | 0.1+ | 0.5− | 2006 09 30 | 703 | 1.0+ | 0.0 | 2006 10 27 | 704 | (0.4+ | 3.0−) |
| 2000 09 03 | 704 | 0.0 | 0.7− | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.8− | 0.3+ |
| 2000 09 03 | 704 | 1.3+ | 0.2+ | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.0 | 0.8− |
| 2000 09 03 | 704 | 1.6+ | 0.6− | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.4+ | 0.5− |
| 2000 09 24 | 704 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.5− |
| 2000 09 24 | 704 | 0.1− | 0.7+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.6− | 0.6+ |
| 2000 09 24 | 704 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.9+ | 2006 11 14 | 704 | 0.8− | 0.3+ |
| 2000 09 24 | 704 | 0.4− | 1.6+ | 2006 10 16 | 703 | 0.3− | 0.9+ | 2006 11 14 | 644 | 0.4− | 0.2+ |
| 2001 12 11 | 704 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.9+ | 2006 11 14 | 704 | (1.5− | 1.6+) |
| 2001 12 11 | 704 | 1.0+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 1.0+ | 2006 11 14 | 644 | 0.1− | 0.1+ |
| 2001 12 11 | 704 | 0.7+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.1− | 2006 11 14 | 644 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.1+ | 1.8+ |
| 2003 03 24 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.1+ | 1.1+ |
| 2003 03 24 | 691 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.5− | 0.8+ |
| 2003 03 24 | 691 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.8+ |
| 2003 04 24 | 691 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2003 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.9+ |
| 2003 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1− | 0.1− |
| 2003 04 29 | 691 | 0.1− | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2003 04 29 | 691 | 0.0 | 1.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2003 04 29 | 691 | 0.3− | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2004 06 15 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 20 | 704 | 1.0+ | 0.4− |
| 2004 06 15 | 691 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2004 06 15 | 691 | 0.5+ | 0.1+ | 2006 10 22 | 704 | 1.2− | 0.7+ | 2006 11 20 | 704 | 0.3− | 1.1+ |
| 2005 06 13 | 291 | 0.2− | 0.4+ | 2006 10 22 | 704 | 0.2− | 1.0+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2005 06 13 | 291 | 0.4− | 0.4+ | 2006 10 22 | 704 | 0.7− | 1.1+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2005 06 13 | 291 | 0.4− | 0.4+ | 2006 10 22 | 704 | 0.8− | 0.9+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2005 07 05 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 704 | 0.4− | 0.5+ | 2006 11 22 | G96 | 0.4+ | 0.1− |

**(138603)**∗ **2000 QG$_{177}$ = 2001 XW$_{240}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22417)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.79775 | | (2000.0) | | | |
| $n$ | 0.18183120 | $\omega$ | 87.89440 | | +0.69037062 | −0.71857396 |
| $a$ | 3.0857243 | $\Omega$ | 318.02648 | | +0.60384477 | +0.63621584 |
| $e$ | 0.2011647 | $i$ | 7.20714 | | +0.39844687 | +0.28085737 |
| $P$ | 5.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2001 12 15 | 704 | 0.3− | 1.1+ | 2002 02 10 | 704 | 1.0− | 0.1− |
| 2000 08 31 | 704 | 0.5+ | 0.1+ | 2001 12 15 | 704 | 0.1+ | 0.2− | 2002 02 12 | 704 | 0.6+ | 0.6+ |
| 2000 08 31 | 704 | 0.0 | 0.5+ | 2001 12 15 | 704 | 0.5− | 0.5− | 2002 02 12 | 704 | 0.1+ | 1.0+ |
| 2000 08 31 | 704 | 0.4+ | 0.1− | 2001 12 18 | 644 | 0.1− | 0.4+ | 2002 02 12 | 704 | 0.6+ | 0.3+ |
| 2000 08 31 | 704 | 0.8+ | 0.7+ | 2001 12 18 | 644 | 0.1− | 0.6+ | 2002 02 12 | 704 | 0.0 | 0.9+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 699 | 1.6− | 0.1+ | 2001 12 18 | 644 | 0.2− | 0.6+ | 2002 02 12 | 704 | 0.5+ | 0.1+ | |
| 2000 09 02 | 699 | 1.8− | 0.1− | 2001 12 18 | 704 | 0.7+ | 0.6+ | 2002 02 14 | 644 | 0.0 | 0.2+ | |
| 2000 09 02 | 699 | 0.7− | 0.1+ | 2001 12 18 | 704 | 0.1− | 0.4+ | 2002 02 14 | 644 | 0.2− | 0.7+ | |
| 2000 09 02 | 699 | 0.5− | 0.1+ | 2001 12 18 | 704 | 0.2+ | 0.3+ | 2002 02 14 | 644 | 0.0 | 0.3+ | |
| 2000 09 03 | 704 | 0.5− | 1.1+ | 2001 12 18 | 704 | 0.7+ | 0.5+ | 2002 02 20 | 704 | 0.0 | 0.3+ | |
| 2000 09 03 | 704 | 0.2+ | 0.2+ | 2001 12 18 | 704 | 0.8+ | 0.0 | 2002 02 20 | 704 | 0.2− | 0.1+ | |
| 2000 09 03 | 704 | 0.3+ | 0.3+ | 2001 12 19 | 704 | 0.1+ | 0.1+ | 2002 02 20 | 704 | 0.3− | 0.1− | |
| 2000 09 03 | 704 | 0.3+ | 0.2+ | 2001 12 19 | 704 | 0.4+ | 0.0 | 2002 02 20 | 704 | 0.9− | 0.6+ | |
| 2000 09 03 | 704 | 0.5+ | 0.1+ | 2001 12 19 | 704 | 0.5+ | 0.2+ | 2002 02 20 | 704 | 1.3− | 0.8− | |
| 2000 09 07 | 691 | 1.0− | 0.0 | 2001 12 19 | 704 | 0.6+ | 0.2+ | 2005 07 02 | 691 | 0.3− | 0.1+ | |
| 2000 09 07 | 691 | 1.1− | 0.2+ | 2001 12 19 | 704 | 0.9+ | 0.4+ | 2005 07 02 | 691 | 0.2+ | 0.3+ | |
| 2000 09 07 | 691 | 1.1− | 0.1+ | 2001 12 20 | 645 | 0.1− | 0.2− | 2005 07 02 | 691 | 0.1+ | 0.2+ | |
| 2000 09 23 | 704 | 0.0 | 0.2+ | 2001 12 20 | 645 | 0.1− | 0.1− | 2005 08 02 | 704 | 0.1− | 0.4− | |
| 2000 09 23 | 704 | 1.0+ | 0.5+ | 2002 01 08 | 704 | 1.4− | 1.4+ | 2005 08 02 | 704 | 0.3+ | 1.1+ | |
| 2000 09 23 | 699 | 0.4+ | 1.2+ | 2002 01 08 | 704 | 1.1− | 1.0+ | 2005 08 02 | 704 | 0.7− | 0.6− | |
| 2000 09 23 | 704 | 0.1+ | 0.0 | 2002 01 08 | 704 | 1.1− | 0.8+ | 2005 08 02 | 704 | 0.0 | 0.4− | |
| 2000 09 23 | 699 | 1.5+ | 0.4+ | 2002 01 08 | 704 | 0.8− | 0.8+ | 2005 08 09 | 704 | 0.3+ | 1.1− | |
| 2000 09 23 | 704 | 0.1+ | 0.2+ | 2002 01 08 | 704 | 0.8− | 0.7+ | 2005 08 09 | 704 | 0.4+ | 0.5− | |
| 2000 09 23 | 699 | 0.7+ | 0.1− | 2002 01 14 | 704 | 1.2+ | 0.0 | 2005 08 09 | 704 | 0.4+ | 0.4− | |
| 2000 09 23 | 704 | 0.1+ | 0.3+ | 2002 01 14 | 704 | 1.0+ | 0.2− | 2005 08 09 | 704 | 0.5− | 0.0 | |
| 2000 09 23 | 699 | 0.2+ | 0.4+ | 2002 01 14 | 704 | 1.0+ | 0.3− | 2005 08 10 | 704 | 0.0 | 0.2+ | |
| 2000 09 24 | 691 | 0.0 | 0.0 | 2002 01 14 | 704 | 1.2+ | 0.8− | 2005 08 10 | 704 | 0.1+ | 0.3− | |
| 2000 09 24 | 691 | 0.0 | 0.0 | 2002 01 14 | 704 | 1.2+ | 0.9− | 2005 08 10 | 704 | 0.2− | 0.2+ | |
| 2000 09 24 | 691 | 0.1+ | 0.0 | 2002 01 17 | 644 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.4+ | 0.6− | |
| 2000 09 25 | 704 | 0.3+ | 0.0 | 2002 01 17 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 703 | 0.2+ | 0.3− | |
| 2000 09 25 | 704 | 1.0+ | 0.3− | 2002 01 17 | 644 | 0.0 | 0.1+ | 2006 10 23 | 703 | 0.0 | 0.2− | |
| 2000 09 25 | 704 | 1.0+ | 0.2+ | 2002 01 18 | 704 | 0.1− | 0.3+ | 2006 10 23 | 703 | (2.9− | 2.5+) | |
| 2000 09 25 | 704 | 0.1− | 0.2− | 2002 01 18 | 704 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.1+ | 1.1− | |
| 2000 09 25 | 704 | 1.0+ | 0.2− | 2002 01 18 | 704 | 0.3+ | 0.0 | 2006 11 15 | 703 | 1.0+ | 0.9− | |
| 2000 10 03 | 704 | 1.2+ | 0.7− | 2002 01 18 | 704 | 0.2− | 0.7− | 2006 11 15 | 703 | 0.3+ | 0.3− | |
| 2000 10 03 | 704 | 0.8+ | 0.1− | 2002 01 21 | 704 | (2.0− | 0.0 ) | 2006 11 15 | 703 | 0.0 | 1.0− | |
| 2000 10 03 | 704 | 0.6+ | 0.3+ | 2002 01 21 | 704 | (2.3− | 0.6+) | 2006 11 15 | 704 | 0.3− | 0.4+ | |
| 2000 10 03 | 704 | 0.7+ | 0.2+ | 2002 01 21 | 704 | (1.8− | 0.7+) | 2006 11 15 | 704 | 0.7− | 0.3+ | |
| 2000 10 04 | 704 | 0.3− | 0.2− | 2002 01 21 | 704 | (2.1− | 0.3+) | 2006 11 15 | 704 | 0.5− | 1.0+ | |
| 2000 10 04 | 704 | 0.2+ | 0.1+ | 2002 01 21 | 704 | (1.8− | 0.7+) | 2006 11 15 | 704 | 0.6+ | 0.3+ | |
| 2000 10 04 | 704 | 0.2+ | 0.3+ | 2002 02 06 | 704 | 0.5+ | 0.0 | 2006 11 15 | 704 | 0.0 | 0.3+ | |
| 2000 10 04 | 704 | 0.1+ | 0.1− | 2002 02 06 | 704 | 0.3+ | 0.3+ | 2006 11 21 | 703 | 0.4+ | 0.6− | |
| 2000 10 04 | 704 | 0.1− | 0.4− | 2002 02 06 | 704 | 0.6+ | 0.4+ | 2006 11 21 | 703 | 0.2+ | 0.4− | |
| 2001 10 14 | 704 | 0.5− | 1.3+ | 2002 02 06 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 703 | 0.1+ | 0.6− | |
| 2001 10 14 | 704 | 0.3− | 1.1+ | 2002 02 07 | 704 | 0.5+ | 0.1− | 2006 11 21 | 703 | 0.4+ | 0.6− | |
| 2001 10 14 | 704 | 0.4− | 1.0+ | 2002 02 07 | 704 | 0.8− | 1.4+ | 2006 11 29 | 704 | 0.1+ | 0.5− | |
| 2001 10 14 | 704 | (2.2− | 0.5+) | 2002 02 07 | 704 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.4− | 0.2− | |
| 2001 11 12 | 704 | 0.6+ | 0.9− | 2002 02 07 | 704 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.6− | |
| 2001 11 12 | 704 | 0.4+ | 1.4− | 2002 02 07 | 704 | 0.3+ | 1.0+ | 2006 11 29 | 704 | 0.2+ | 0.3− | |
| 2001 11 12 | 704 | 0.2+ | 0.8+ | 2002 02 10 | 704 | (2.0− | 1.0+) | 2006 11 29 | 704 | 0.5− | 0.6− | |
| 2001 11 12 | 704 | 0.4+ | 0.9− | 2002 02 10 | 704 | (1.5− | 0.5+) | | | | | |
| 2001 11 12 | 704 | 0.5+ | 0.6− | 2002 02 10 | 704 | 0.6− | 0.2+ | | | | | |

**(138604)∗ 2000 QO$_{177}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.47347 | | (2000.0) | | | |
| $n$ | 0.17709816 | $\omega$ | 19.02242 | | +0.24411305 | +0.96884023 |
| $a$ | 3.1404606 | $\Omega$ | 265.12399 | | −0.89509123 | +0.20847635 |
| $e$ | 0.2440930 | $i$ | 2.41137 | | −0.37312265 | +0.13373936 |
| $P$ | 5.57 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 691 | 0.3+ | 0.4− | 2000 10 02 | 704 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.4+ | |
| 1993 03 20 | 691 | 0.6+ | 0.2− | 2000 10 02 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.4− | 0.1+ | |
| 1993 03 20 | 691 | 0.2− | 0.4− | 2000 10 02 | 704 | 0.5− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.0 | |
| 1999 03 22 | 691 | 0.1− | 0.5+ | 2001 11 12 | 691 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.4+ | |
| 1999 03 22 | 691 | 0.2− | 0.6+ | 2001 11 12 | 691 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 1999 03 22 | 691 | 0.6− | 0.6+ | 2001 11 12 | 691 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 2000 08 31 | 704 | 0.3− | 0.6+ | 2001 12 18 | 704 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2+ | |
| 2000 08 31 | 704 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.2− | |
| 2000 08 31 | 704 | 0.7− | 0.8+ | 2001 12 18 | 704 | 0.9− | 0.6− | 2006 10 17 | 703 | 0.4− | 0.1− | |
| 2000 08 31 | 704 | 0.3+ | 0.8+ | 2001 12 18 | 704 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.0 | |
| 2000 08 31 | 704 | 0.4− | 0.5+ | 2001 12 18 | 704 | 1.0− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 2000 09 03 | 704 | 0.0 | 1.1+ | 2004 02 16 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 2000 09 03 | 704 | 0.8− | 0.8+ | 2004 02 16 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | |
| 2000 09 03 | 704 | 0.2− | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 683 | (1.6+ | 1.2−) | |
| 2000 09 03 | 704 | 0.1− | 0.6+ | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 683 | 0.8+ | 0.1− | |
| 2000 09 03 | 704 | 0.4+ | 0.5+ | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 10 23 | 683 | 0.2− | 0.5+ | |
| 2000 09 22 | 699 | 0.2− | 0.1+ | 2004 03 29 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 683 | 0.2− | 0.5− | |
| 2000 09 22 | 699 | (2.0+ | 1.2+) | 2005 02 11 | 809 | 0.4+ | 0.3+ | 2006 10 23 | 683 | (2.7+ | 0.7+) | |
| 2000 09 22 | 699 | 0.5+ | 0.8− | 2005 02 11 | 809 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.0 | |
| 2000 09 22 | 699 | 0.4+ | 0.2+ | 2005 02 11 | 809 | 0.1− | 0.9+ | 2006 11 10 | 691 | 0.1− | 0.1− | |
| 2000 09 24 | 704 | 0.3+ | 0.9+ | 2005 02 15 | 809 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.0 | |
| 2000 09 24 | 704 | 0.1− | 0.3+ | 2005 02 15 | 809 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3+ | |
| 2000 09 24 | 704 | 0.2− | 0.8− | 2005 02 15 | 809 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.2+ | |
| 2000 09 24 | 704 | 0.4+ | 1.2+ | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1+ | |
| 2000 09 24 | 704 | 0.5+ | 1.2− | 2006 10 10 | 644 | 0.4− | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.1+ | |
| 2000 09 25 | 704 | 0.7− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.3+ | 0.1+ | |
| 2000 09 25 | 704 | 0.2− | 1.1− | 2006 10 10 | 644 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.2+ | |
| 2000 09 25 | 704 | 0.2− | 0.8− | 2006 10 10 | 644 | 0.4− | 0.3+ | | | | | |

**(138605)∗ 2000 QW$_{177}$ = 2004 DZ$_{37}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60709)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.93966 | | (2000.0) | | | |
| $n$ | 0.18562693 | $\omega$ | 108.36646 | | +0.14786339 | +0.98656609 |
| $a$ | 3.0435146 | $\Omega$ | 169.38956 | | −0.98826642 | +0.15010638 |
| $e$ | 0.1824535 | $i$ | 22.16012 | | −0.03828707 | −0.06446253 |
| $P$ | 5.31 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.8+ | 0.6+ | 2004 02 23 | 704 | 1.4+ | 0.7+ | 2004 04 25 | 699 | (1.8− | 0.1+) | |
| 2000 08 31 | 704 | 0.4+ | 0.2+ | 2004 02 23 | 704 | 0.8+ | 0.3− | 2004 04 25 | 699 | (1.7− | 1.3−) | |
| 2000 08 31 | 704 | 0.6+ | 0.2+ | 2004 03 12 | 644 | 0.6+ | 0.3+ | 2004 04 25 | 699 | 1.3− | 0.5− | |
| 2000 08 31 | 704 | 0.2+ | 0.3+ | 2004 03 12 | 644 | 0.1+ | 0.5+ | 2004 04 25 | 699 | 0.3− | 0.0 | |
| 2000 08 31 | 704 | 0.6+ | 0.9+ | 2004 03 12 | 644 | 0.0 | 0.4+ | 2005 06 24 | 644 | 0.1− | 0.4+ | |
| 2000 09 02 | 699 | 0.4− | 0.7− | 2004 03 15 | 704 | 0.6+ | 0.1− | 2005 06 24 | 644 | 0.5+ | 0.6+ | |
| 2000 09 02 | 699 | 1.6− | 0.3− | 2004 03 15 | 704 | 0.2− | 0.3+ | 2005 06 24 | 644 | 0.5+ | 0.3+ | |
| 2000 09 02 | 699 | 0.4− | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.0 | 2005 07 18 | 644 | 0.3+ | 0.4+ | |
| 2000 09 02 | 699 | 1.2− | 0.9− | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2005 07 18 | 644 | 0.3+ | 0.2+ | |
| 2000 09 03 | 704 | 0.2− | 1.0− | 2004 03 15 | 704 | 0.2− | 0.4+ | 2005 07 18 | 644 | 0.4+ | 0.4+ | |
| 2000 09 03 | 704 | 0.6− | 0.8+ | 2004 03 20 | 704 | 0.7+ | 0.6+ | 2005 07 28 | 704 | 0.3− | 0.3+ | |
| 2000 09 03 | 704 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.4+ | 1.0+ | 2005 07 28 | 704 | 0.9− | 0.5+ | |
| 2000 09 03 | 704 | 0.5+ | 0.6− | 2004 03 20 | 704 | 0.6− | 0.2+ | 2005 07 28 | 704 | 0.3− | 0.0 | |
| 2000 09 03 | 704 | 0.2+ | 0.6+ | 2004 03 20 | 704 | (0.3− | 2.4+) | 2005 07 28 | 704 | 0.0 | 1.1− | |
| 2000 09 05 | 704 | 1.0+ | 1.2+ | 2004 03 21 | 699 | 0.9− | 0.6+ | 2005 07 28 | 704 | (2.5+ | 1.4−) | |
| 2000 09 05 | 704 | 0.2− | 0.1+ | 2004 03 21 | 699 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.9+ | 0.6− | |
| 2000 09 05 | 704 | 0.1− | 0.2− | 2004 03 21 | 699 | 0.3− | 1.0− | 2006 09 26 | 703 | 0.3− | 0.1+ | |
| 2000 09 05 | 704 | 1.3+ | 1.0+ | 2004 03 21 | 699 | 0.5− | 0.0 | 2006 09 26 | 703 | 0.5+ | 1.0+ | |
| 2000 09 20 | 691 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | (0.9+ | 1.7+) | |
| 2000 09 20 | 691 | 0.3− | 0.1− | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2006 10 20 | 703 | (2.4+ | 1.6−) | |
| 2000 09 20 | 691 | 0.2− | 0.3− | 2004 03 23 | 704 | 1.0+ | 0.2+ | 2006 10 20 | 703 | (1.2− | 1.6+) | |
| 2000 10 01 | 704 | 1.2+ | 1.0+ | 2004 03 23 | 704 | 0.3− | 0.4+ | 2006 10 20 | 703 | 0.5+ | 1.4+ | |
| 2000 10 01 | 704 | 0.1+ | 1.0+ | 2004 03 23 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 703 | 0.8+ | 0.6+ | |
| 2000 10 01 | 704 | 0.7+ | 0.8+ | 2004 03 28 | 703 | 0.1− | 1.0− | 2006 10 21 | 703 | 0.8− | 0.4+ | |
| 2000 10 02 | 704 | 0.7− | 0.0 | 2004 03 28 | 703 | 1.0− | 0.8− | 2006 10 21 | 703 | 1.0+ | 0.4+ | |
| 2000 10 02 | 704 | 0.0 | 0.4+ | 2004 03 28 | 703 | (1.9− | 0.7−) | 2006 10 21 | 703 | 0.6+ | 0.5+ | |
| 2000 10 02 | 704 | 0.1− | 0.2+ | 2004 03 28 | 703 | 0.1− | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.7− | |
| 2004 02 19 | 704 | 0.1− | 0.9+ | 2004 04 15 | 704 | 1.0+ | 0.2− | 2006 10 31 | 703 | 1.9− | 0.2+ | |
| 2004 02 19 | 704 | 0.1+ | 1.2+ | 2004 04 15 | 704 | 0.1− | 0.3− | 2006 10 31 | 703 | 1.1− | 0.3− | |
| 2004 02 19 | 704 | (0.9− | 2.5+) | 2004 04 15 | 704 | 0.2− | 1.1− | 2006 10 31 | 703 | 0.0 | 1.1+ | |
| 2004 02 23 | 704 | 0.1− | 0.8+ | 2004 04 16 | 691 | 0.2− | 0.2+ | 2006 10 31 | 703 | 1.0− | 0.1+ | |
| 2004 02 23 | 704 | 0.4+ | 0.3− | 2004 04 16 | 691 | 0.2− | 0.1+ | | | | | |
| 2004 02 23 | 704 | 1.2+ | 0.8+ | 2004 04 16 | 691 | 0.2− | 0.0 | | | | | |

**(138606)∗ 2000 QR$_{179}$ = 2001 XU$_{13}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22419)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.17159 | | (2000.0) | | | |
| $n$ | 0.17173105 | $\omega$ | 316.63149 | | +0.94959152 | +0.31127990 |
| $a$ | 3.2055570 | $\Omega$ | 25.30305 | | −0.25861007 | +0.84482962 |
| $e$ | 0.1175560 | $i$ | 4.98760 | | −0.17719135 | +0.43516403 |
| $P$ | 5.74 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.5+ | 0.2+ | 2001 12 11 | 704 | 0.1− | 1.3− | 2006 10 15 | 703 | 0.0 | 0.3− |
| 1997 01 09 | 691 | 0.5+ | 0.2+ | 2001 12 17 | 704 | 0.2− | 0.3− | 2006 10 15 | 703 | 0.7− | 0.4− |
| 1997 01 09 | 691 | 0.5+ | 0.3+ | 2001 12 17 | 704 | 0.5− | 0.8− | 2006 10 15 | 703 | 0.8− | 0.0 |
| 2000 08 26 | 807 | 0.4− | 0.5− | 2001 12 17 | 704 | 0.6+ | 0.3− | 2006 10 15 | 703 | 0.5− | 0.3− |
| 2000 08 26 | 807 | 0.3− | 0.1− | 2001 12 17 | 704 | 1.2− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2000 08 31 | 704 | 0.1+ | 0.2− | 2001 12 17 | 704 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2000 08 31 | 704 | 0.9− | 0.7− | 2002 01 14 | 704 | 1.0+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2000 08 31 | 704 | 0.4+ | 0.1− | 2002 01 14 | 704 | (0.9+ | 1.6−) | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2000 08 31 | 704 | 0.9− | 0.1+ | 2002 01 14 | 704 | (0.6+ | 2.1−) | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2000 09 03 | 704 | 0.5− | 1.0− | 2004 05 19 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2000 09 03 | 704 | 0.2− | 0.1− | 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2000 09 03 | 704 | 1.3− | 0.1+ | 2004 05 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.1+ |
| 2000 09 04 | 704 | 0.3− | 0.0 | 2004 05 28 | 691 | 0.2− | 0.3+ | 2006 10 19 | 695 | 0.1− | 0.0 |
| 2000 09 04 | 704 | 0.9+ | 0.7− | 2004 05 28 | 691 | 0.4+ | 0.4+ | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2000 09 04 | 704 | 0.0 | 0.3+ | 2004 05 28 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.5− |
| 2000 09 04 | 704 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.9− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2000 09 04 | 704 | 0.8+ | 0.2− | 2006 09 14 | 703 | (0.9− | 2.1−) | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2000 09 05 | 704 | 1.8+ | 0.8+ | 2006 09 14 | 703 | 1.4− | 0.3− | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2000 09 05 | 704 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.9− | 0.4− | 2006 10 21 | 703 | 0.7+ | 0.4− |
| 2000 09 05 | 704 | 0.5+ | 0.0 | 2006 09 14 | 691 | 0.5+ | 1.1− | 2006 10 21 | 703 | 0.9+ | 0.3− |
| 2000 09 05 | 704 | 1.0− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.2− |
| 2000 09 25 | 704 | 0.4+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.6+ | 0.5− |
| 2000 09 25 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.8− | 0.6− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2000 09 25 | 704 | 0.2+ | 1.1+ | 2006 09 17 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 09 25 | 704 | 0.1+ | 0.7− | 2006 09 17 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2000 09 25 | 704 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2000 10 01 | 699 | 1.1− | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 10 01 | 699 | 1.1− | 0.8+ | 2006 09 18 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2000 10 01 | 699 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2000 10 01 | 699 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2000 10 02 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2000 10 02 | 704 | 1.1+ | 0.2+ | 2006 09 18 | 699 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2000 10 02 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2000 10 02 | 704 | 1.0+ | 1.8+ | 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2000 10 02 | 704 | 0.6− | 1.4+ | 2006 09 20 | 644 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2000 10 03 | 704 | 0.2+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2000 10 03 | 704 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.6− |
| 2000 10 03 | 704 | 0.8− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2000 10 03 | 704 | 0.4− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2000 10 03 | 704 | 0.3+ | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2000 10 03 | 704 | 0.5+ | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2000 10 03 | 704 | 0.0 | 0.8+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2000 10 03 | 704 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2000 10 03 | 704 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2000 10 04 | 704 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2000 10 04 | 704 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2000 10 04 | 704 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2000 10 04 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.1− | 0.1− |
| 2000 10 04 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 691 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.8+ | 0.8+ |
| 2000 10 06 | 691 | 0.5− | 0.1− | 2006 09 29 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | (3.3+ | 0.9+) |
| 2000 10 06 | 691 | 0.3− | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2000 10 06 | 691 | 0.3− | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2001 12 09 | 704 | 0.5− | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2001 12 09 | 704 | 0.6− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2001 12 09 | 704 | 0.9− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2001 12 09 | 704 | 0.6− | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2001 12 11 | 704 | 0.0 | 0.8+ | 2006 10 13 | A50 | 0.3+ | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2001 12 11 | 704 | 0.5− | 0.9+ | 2006 10 13 | A50 | 0.6+ | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2001 12 11 | 704 | 1.2− | 0.1+ | 2006 10 14 | A50 | 0.3− | 0.3+ | | | | |
| 2001 12 11 | 704 | 0.6− | 0.3+ | 2006 10 14 | A50 | 0.5− | 0.7− | | | | |

**(138607)∗ 2000 QF$_{184}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.02833 | | (2000.0) | | | |
| $n$ | 0.17660363 | $\omega$ | 28.00090 | | +0.97970476 | −0.17726601 |
| $a$ | 3.1463205 | $\Omega$ | 341.48572 | | +0.07805128 | +0.76733540 |
| $e$ | 0.1515529 | $i$ | 17.13779 | | +0.18462554 | +0.61625737 |
| $P$ | 5.58 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 04 | 608 | 1.2− | 0.3− | 2001 12 23 | 704 | 0.1− | 0.5− | 2006 09 06 | 644 | 0.3− | 0.0 |
| 2000 08 04 | 608 | 1.3− | 0.1+ | 2001 12 23 | 704 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.1− | 1.2− |
| 2000 08 04 | 608 | 0.9− | 0.0 | 2001 12 23 | 704 | 0.2− | 0.6− | 2006 09 16 | 703 | 0.5− | 0.1− |
| 2000 08 26 | 704 | 0.3+ | 0.1+ | 2001 12 23 | 704 | 0.0 | 0.4− | 2006 09 16 | 703 | 0.5− | 0.2+ |
| 2000 08 26 | 704 | 0.1+ | 0.1− | 2002 01 06 | 704 | (1.2+ | 3.8+) | 2006 09 16 | 703 | 0.1− | 0.4− |
| 2000 08 26 | 704 | 0.5+ | 1.6− | 2002 01 06 | 704 | (1.6+ | 3.9+) | 2006 09 22 | 106 | 0.4− | 0.3+ |
| 2000 08 26 | 704 | 0.4+ | 0.3− | 2002 01 06 | 704 | (1.2+ | 2.6+) | 2006 09 22 | 106 | 0.2+ | 0.4− |
| 2000 09 04 | 704 | 0.2− | 0.1− | 2003 02 21 | 644 | 0.5+ | 0.4+ | 2006 09 22 | 106 | 0.2+ | 0.6− |
| 2000 09 04 | 704 | 0.6+ | 0.6+ | 2003 02 21 | 644 | 0.4+ | 0.6+ | 2006 09 22 | 106 | 0.5+ | 0.2+ |
| 2000 09 04 | 704 | 1.0+ | 0.5− | 2003 02 21 | 644 | 0.5+ | 0.4+ | 2006 09 29 | H51 | 0.1+ | 0.2+ |
| 2000 09 20 | 704 | 0.1+ | 0.1− | 2006 08 26 | 704 | 0.0 | 0.7+ | 2006 09 29 | H51 | 0.2+ | 0.4− |
| 2000 09 20 | 704 | 0.7+ | 0.5− | 2006 08 26 | 704 | 0.1− | 0.6+ | 2006 09 29 | H51 | 0.6+ | 0.2− |
| 2000 09 20 | 704 | 1.0+ | 1.1− | 2006 08 26 | 704 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.9− | 0.3+ |
| 2000 09 24 | 704 | 0.4− | 1.2− | 2006 08 29 | 699 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.7− | 0.1+ |
| 2000 09 24 | 704 | 0.4+ | 0.9− | 2006 08 29 | 699 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.5− | 0.3+ |
| 2000 09 24 | 704 | 0.6− | 1.1+ | 2006 08 29 | 699 | 0.5+ | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2000 10 02 | 704 | 0.3+ | 0.4+ | 2006 08 29 | 699 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2000 10 02 | 704 | 0.3+ | 1.2+ | 2006 08 31 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.5− | 0.6− |
| 2000 10 02 | 704 | 1.1+ | 0.7+ | 2006 08 31 | 704 | 0.8− | 0.6+ | 2006 10 19 | 703 | 0.8+ | 0.1+ |
| 2000 10 02 | 704 | 0.3− | 0.0 | 2006 08 31 | 704 | 1.1− | 1.2+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2001 12 08 | 704 | (1.8+ | 0.5+) | 2006 09 01 | 704 | (1.8+ | 0.3+) | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 12 08 | 704 | 0.6− | 0.1+ | 2006 09 01 | 704 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 12 08 | 704 | 0.6+ | 0.5− | 2006 09 01 | 704 | 1.2+ | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 12 08 | 704 | 0.2+ | 0.6− | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 12 23 | 704 | 0.6+ | 0.4− | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ |

**(138608)∗ 2000 QX$_{184}$ = 2004 FN$_{34}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60709)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.08998 | | (2000.0) | | | |
| $n$ | 0.17879193 | $\omega$ | 318.20009 | | +0.51820364 | +0.85233572 |
| $a$ | 3.1205952 | $\Omega$ | 342.63395 | | −0.70848281 | +0.38154537 |
| $e$ | 0.1113312 | $i$ | 13.68836 | | −0.47907943 | +0.35769673 |
| $P$ | 5.51 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.9+ | 0.4+ | 2003 01 10 | 704 | 0.8− | 0.6− | 2004 04 26 | 699 | (2.4− | 2.7+) |
| 2000 08 01 | 704 | 0.6− | 0.9+ | 2003 01 10 | 704 | 1.1+ | 0.9+ | 2004 04 26 | 699 | (0.2− | 1.7+) |
| 2000 08 01 | 704 | 0.6− | 0.3+ | 2003 01 10 | 704 | 0.3+ | 0.8+ | 2004 04 26 | 699 | 1.4− | 0.1+ |
| 2000 08 01 | 704 | 0.2− | 0.7+ | 2004 02 18 | 608 | 0.6+ | 0.1− | 2004 04 26 | 699 | 0.5− | 1.3− |
| 2000 08 26 | 704 | 0.3− | 0.4+ | 2004 02 18 | 608 | 0.6+ | 0.9+ | 2006 09 16 | 703 | 0.6− | 0.1− |
| 2000 08 26 | 704 | 0.3− | 0.6+ | 2004 02 18 | 608 | 0.4+ | 0.8+ | 2006 09 16 | 703 | 0.4+ | 0.4+ |
| 2000 08 26 | 704 | 1.8− | 0.6+ | 2004 03 16 | 703 | 0.7− | 1.0− | 2006 09 16 | 703 | 0.3− | 0.2+ |
| 2000 08 26 | 704 | 0.6− | 0.5+ | 2004 03 16 | 703 | 1.2− | 0.7+ | 2006 09 16 | 703 | 0.4− | 1.3− |
| 2000 09 04 | 704 | 0.1− | 1.0− | 2004 03 16 | 703 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 0.3− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 04 | 704 | 0.0 | 0.3− | 2004 03 16 | 703 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.6+ |
| 2000 09 04 | 704 | 0.5− | 1.1− | 2004 03 19 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.6+ |
| 2000 09 04 | 704 | 0.5− | 1.0− | 2004 03 19 | 704 | 0.3+ | 1.0+ | 2006 09 19 | 699 | 0.1+ | 0.9+ |
| 2000 09 05 | 704 | 0.4+ | 0.0 | 2004 03 19 | 704 | 0.7+ | 0.0 | 2006 09 27 | 699 | 1.0+ | 0.1+ |
| 2000 09 05 | 704 | 1.5+ | 0.0 | 2004 03 19 | 704 | 1.2+ | 0.8+ | 2006 09 27 | 699 | 0.3− | 0.1− |
| 2000 09 05 | 704 | 0.7+ | 0.5− | 2004 04 11 | 644 | 0.7+ | 0.8+ | 2006 09 27 | 699 | 0.6− | 0.9+ |
| 2000 09 05 | 704 | 0.2+ | 0.1− | 2004 04 11 | 644 | 1.2+ | 0.5+ | 2006 09 27 | 699 | 1.4+ | 0.5+ |
| 2000 09 05 | 704 | 0.3− | 0.3+ | 2004 04 11 | 644 | 0.8+ | 0.8+ | 2006 09 27 | 703 | 0.7− | 0.6− |
| 2000 09 21 | 699 | 0.4+ | 0.4+ | 2004 04 16 | 644 | 0.5+ | 0.7+ | 2006 09 27 | 703 | 0.6− | 0.1+ |
| 2000 09 21 | 699 | 0.1− | 0.6+ | 2004 04 16 | 644 | 0.4+ | 0.5+ | 2006 09 27 | 703 | 0.0 | 0.3− |
| 2000 09 21 | 699 | 0.5− | 0.3− | 2004 04 16 | 704 | (1.5+ | 0.7+) | 2006 09 27 | 703 | 0.6− | 0.3− |
| 2000 09 21 | 699 | 1.2+ | 0.9+ | 2004 04 16 | 644 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.6+ |
| 2000 09 24 | 704 | 1.1− | 0.9+ | 2004 04 16 | 704 | (2.0+ | 1.6+) | 2006 10 17 | 703 | 0.4− | 1.2+ |
| 2000 09 24 | 704 | 0.0 | 0.5+ | 2004 04 16 | 704 | (0.4+ | 1.8+) | 2006 10 17 | 703 | 0.7− | 0.8+ |
| 2000 09 24 | 704 | 0.7− | 0.4+ | 2004 04 16 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.7+ |
| 2000 09 24 | 704 | 0.5− | 0.3− | 2004 04 19 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2000 09 24 | 704 | 0.5+ | 1.1+ | 2004 04 19 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2002 01 05 | 644 | 0.6− | 0.3+ | 2004 04 19 | 704 | 0.3+ | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 01 05 | 644 | 0.5− | 0.6+ | 2004 04 19 | 704 | 0.9+ | 0.6+ | | | | |
| 2002 01 05 | 644 | 0.2− | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.2+ | | | | |

**(138609)∗ 2000 QH$_{188}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.07038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18273543 | $\omega$ | 278.32853 | | +0.98804942 | +0.11012197 | |
| $a$ | 3.0755365 | $\Omega$ | 75.39946 | | −0.05494403 | +0.90536033 | |
| $e$ | 0.1605679 | $i$ | 6.39882 | | −0.14401214 | +0.41011684 | |
| $P$ | 5.39 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.8− | 0.8− | 2004 03 31 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.7+ |
| 1993 04 19 | 691 | 0.4− | 0.6− | 2004 03 31 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 644 | 0.2− | 0.2− |
| 2000 08 01 | 704 | 0.1+ | 1.1+ | 2004 04 21 | 599 | 0.4+ | 0.7+ | 2006 11 13 | 683 | (0.7− | 2.1−) |
| 2000 08 01 | 704 | 1.0− | 0.0 | 2004 04 21 | 599 | 0.5+ | 0.7+ | 2006 11 13 | 683 | (2.3− | 2.3−) |
| 2000 08 01 | 704 | 1.5− | 0.8+ | 2004 04 21 | 599 | 0.2+ | 0.7+ | 2006 11 13 | 683 | (2.9− | 2.6−) |
| 2000 08 01 | 704 | 0.2− | 1.0+ | 2004 04 21 | 599 | 0.7+ | 0.3+ | 2006 11 13 | 104 | 0.1+ | 0.2+ |
| 2000 08 26 | 704 | 0.7+ | 0.5− | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 13 | 104 | 0.5+ | 0.8+ |
| 2000 08 26 | 704 | 1.0+ | 1.0− | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 13 | 104 | 0.3− | 0.1+ |
| 2000 08 26 | 704 | 0.0 | 0.9− | 2006 10 03 | G96 | 0.3− | 0.4− | 2006 11 14 | 683 | 0.9+ | 1.0− |
| 2000 08 26 | 704 | 0.1+ | 0.6− | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 14 | 683 | (1.6+ | 1.0−) |
| 2000 09 04 | 704 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.6− | 0.9+ | 2006 11 14 | 683 | 0.1+ | 0.9− |
| 2000 09 04 | 704 | 0.7+ | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.3− | 2006 11 17 | 704 | 1.4+ | 0.3+ |
| 2000 09 04 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.6− | 2006 11 17 | 704 | 0.4− | 0.2+ |
| 2000 09 04 | 704 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2000 09 20 | 704 | 0.1− | 0.6− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.5+ |
| 2000 09 20 | 704 | 0.5+ | 0.5− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2000 09 20 | 704 | 0.5+ | 0.2− | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2000 09 20 | 704 | 0.1+ | 1.4+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 0.3− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.9+ | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 0.1+ | 2006 11 02 | 703 | 0.1+ | 0.8− | 2006 11 19 | 704 | 0.7− | 0.1+ |
| 2001 11 20 | 704 | 0.2− | 0.7+ | 2006 11 02 | 703 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2001 12 14 | 291 | 0.4− | 0.2+ | 2006 11 02 | 703 | 0.3− | 0.8− | 2006 11 19 | 704 | (1.9− | 1.2+) |
| 2001 12 14 | 291 | 0.7+ | 0.4− | 2006 11 02 | 703 | 0.7+ | 0.2+ | 2006 11 20 | 704 | 0.8+ | 1.1+ |
| 2001 12 14 | 291 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.7− | 1.4+ |
| 2001 12 18 | 704 | 0.7+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.7+ |
| 2001 12 18 | 704 | 1.4+ | 1.0− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.4− | 1.2− |
| 2001 12 18 | 704 | 1.2+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2001 12 18 | 704 | 0.4+ | 1.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 22 | 683 | 0.4+ | 0.7+ |
| 2001 12 19 | 704 | 1.2+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 22 | 683 | 0.4+ | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 22 | 683 | 1.1+ | 0.9+ |
| 2001 12 19 | 704 | (2.6+ | 2.0−) | 2006 11 10 | 644 | 0.6− | 0.1+ | 2006 11 23 | 683 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.9+ | 0.5− | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 23 | 683 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 1.2+ | 0.1+ | 2006 11 11 | 683 | 0.6+ | 0.4− | 2006 11 23 | 683 | (2.8+ | 1.1+) |
| 2001 12 20 | 291 | 0.6− | 0.1− | 2006 11 11 | 683 | 0.5+ | 0.5− | 2006 11 28 | 683 | 0.3+ | 0.5− |
| 2001 12 20 | 291 | 0.1− | 0.2− | 2006 11 11 | 683 | 0.8− | 0.3+ | 2006 11 28 | 704 | 0.5+ | 1.4+ |
| 2001 12 20 | 291 | 0.3− | 0.1+ | 2006 11 11 | 644 | 0.2− | 0.0 | 2006 11 28 | 683 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.7− | 0.3− | 2006 11 11 | 703 | 0.9− | 0.4− | 2006 11 28 | 683 | 0.4+ | 0.1+ |
| 2002 01 14 | 704 | 0.5− | 1.3− | 2006 11 11 | 703 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.3− | 0.6+ |
| 2002 01 14 | 704 | (0.1− | 2.3−) | 2006 11 11 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.5− | 0.4− |
| 2004 03 31 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.6− | 0.3+ |

**(138610)∗ 2000 QY$_{188}$ = 2001 XJ$_{151}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22424)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.68862 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17778147 | $\omega$ | 280.14504 | | +0.97870764 | −0.17764249 | |
| $a$ | 3.1324085 | $\Omega$ | 90.14180 | | +0.20409364 | +0.89553170 | |
| $e$ | 0.1411205 | $i$ | 5.90231 | | −0.02184362 | +0.40800261 | |
| $P$ | 5.54 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.8− | 0.9+ | 2001 12 19 | 704 | 0.6+ | 1.1− | 2006 09 20 | 699 | 0.1+ | 0.1− |
| 1993 05 20 | 691 | 0.1+ | 0.1− | 2001 12 19 | 704 | (1.7+ | 2.1−) | 2006 09 20 | 699 | 0.4+ | 0.6+ |
| 1993 05 20 | 691 | 0.5− | 0.6− | 2001 12 19 | 704 | (1.6+ | 2.7−) | 2006 09 20 | 699 | 0.6− | 0.3+ |
| 1993 05 20 | 691 | 0.4+ | 0.3+ | 2001 12 20 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.1− | 0.5+ |
| 2000 08 26 | 704 | 0.0 | 2.0+ | 2001 12 20 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.7− |
| 2000 08 26 | 704 | 1.1+ | 0.9+ | 2001 12 20 | 704 | 0.3+ | 0.9+ | 2006 09 30 | 703 | 0.7− | 0.9+ |
| 2000 08 26 | 704 | 0.6− | 0.5− | 2001 12 21 | 704 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2000 08 26 | 704 | 1.0− | 0.1− | 2001 12 21 | 704 | 0.7− | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.3− |
| 2000 09 04 | 704 | 0.2+ | 0.6− | 2001 12 21 | 704 | 0.4+ | 1.4+ | 2006 10 01 | 704 | 1.0− | 0.0 |
| 2000 09 04 | 704 | 0.0 | 0.6+ | 2002 01 08 | 704 | 1.4+ | 0.8− | 2006 10 01 | 704 | 0.1− | 0.2− |
| 2000 09 04 | 704 | 0.9− | 0.1− | 2002 01 08 | 704 | 1.4+ | 0.3− | 2006 10 01 | 704 | 0.1− | 1.1− |
| 2000 09 04 | 704 | 0.5− | 0.6+ | 2002 01 08 | 704 | 0.9+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2000 09 04 | 704 | 0.1+ | 0.3+ | 2002 01 08 | 704 | 0.8+ | 1.0− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2000 09 20 | 704 | 0.4− | 0.0 | 2002 01 08 | 704 | 1.4+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2000 09 20 | 704 | 1.5+ | 0.5+ | 2002 01 09 | 704 | 0.9− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.5− |
| 2000 09 20 | 704 | 1.3− | 0.7+ | 2002 01 09 | 704 | 0.4− | 0.7− | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 1.2− | 0.2− | 2002 01 09 | 704 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 1.0− |
| 2001 11 21 | 704 | 0.4− | 0.0 | 2002 01 09 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.4+ | 0.1+ | 2002 01 12 | 291 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.1− | 2002 01 12 | 291 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 0.7+ | 0.4+ | 2002 01 12 | 291 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 12 14 | 704 | 0.3− | 1.0+ | 2002 01 13 | 704 | 0.5− | 0.1+ | 2006 10 27 | 704 | 0.4+ | 0.1+ |
| 2001 12 14 | 704 | 0.2− | 1.0+ | 2002 01 13 | 704 | 0.7− | 0.2− | 2006 10 27 | 704 | 0.2+ | 0.8− |
| 2001 12 14 | 704 | 0.1+ | 1.0+ | 2002 01 13 | 704 | 0.6− | 0.0 | 2006 10 27 | 704 | (2.0+ | 0.6−) |
| 2001 12 17 | 704 | 0.4− | 0.2+ | 2002 01 13 | 704 | 0.3− | 0.2− | 2006 11 13 | 703 | 0.2+ | 0.9− |
| 2001 12 17 | 704 | 0.4+ | 0.2+ | 2002 01 13 | 704 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.7− | 0.2+ |
| 2001 12 17 | 704 | 0.0 | 0.0 | 2002 01 15 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2002 01 15 | 704 | 0.9− | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.6− |
| 2001 12 18 | 704 | 1.4+ | 0.2− | 2002 01 15 | 704 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.2+ | 1.0+ |
| 2001 12 18 | 704 | 0.3− | 0.5+ | 2002 01 15 | 704 | 0.6− | 0.7+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.6+ | 0.7− | 2002 01 15 | 704 | 0.7− | 1.1+ | 2006 11 14 | 704 | 0.1+ | 0.2+ |
| 2001 12 18 | 704 | 0.8+ | 0.6− | 2003 02 21 | 644 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.3− | 1.1+ |
| 2001 12 18 | 691 | 0.0 | 0.1− | 2003 02 21 | 644 | 0.3+ | 0.8+ | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2001 12 18 | 691 | 0.4+ | 0.4− | 2003 02 21 | 644 | 0.5+ | 0.8+ | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2001 12 18 | 691 | 0.0 | 0.0 | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2001 12 19 | 704 | 0.3+ | 0.5− | 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.4+ |
| 2001 12 19 | 704 | (1.7+ | 0.8−) | 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | 0.7+ | 1.0− | 2006 09 15 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | (1.7+ | 1.5−) | 2006 09 15 | 644 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.3+ | 0.9− | 2006 09 15 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.4− |

**(138611)∗ 2000 QJ$_{189}$ = 2001 WB$_{13}$**

Discovered 2000 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19856)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.43358 | | (2000.0) | | | |
| $n$ | 0.17738337 | $\omega$ | 220.61294 | | +0.69743686 | +0.69511798 |
| $a$ | 3.1370934 | $\Omega$ | 94.41369 | | −0.60388911 | +0.70103279 |
| $e$ | 0.1603844 | $i$ | 10.07016 | | −0.38587533 | +0.15926085 |
| $P$ | 5.56 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 14 | 704 | 0.7− | 0.0 | 2001 12 17 | 704 | 0.6− | 0.8− | 2006 09 25 | 699 | 1.1− | 0.6+ |
| 1999 06 14 | 704 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.3+ | 1.2+ |
| 1999 06 14 | 704 | 1.0− | 0.5+ | 2001 12 17 | 704 | 0.4− | 0.4− | 2006 09 26 | 703 | 0.8+ | 0.7+ |
| 1999 06 14 | 704 | 0.0 | 0.7+ | 2001 12 17 | 704 | 1.2− | 0.0 | 2006 09 26 | 703 | 0.8− | 1.0+ |
| 2000 08 01 | 704 | 0.4+ | 1.3− | 2001 12 18 | 704 | 0.9− | 0.3+ | 2006 09 26 | 703 | 0.8+ | 1.0+ |
| 2000 08 01 | 704 | 0.5+ | 0.1+ | 2001 12 18 | 704 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.9+ | 0.2+ |
| 2000 08 01 | 704 | 0.7+ | 0.1+ | 2001 12 18 | 704 | 0.6+ | 1.3− | 2006 09 29 | 699 | (1.4− | 1.6+) |
| 2000 08 01 | 704 | 0.5− | 0.3− | 2001 12 18 | 704 | 1.0+ | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.3+ |
| 2000 08 26 | 704 | 0.3− | 0.5− | 2001 12 20 | 704 | 0.5− | 0.0 | 2006 09 29 | 699 | 0.2− | 0.8+ |
| 2000 08 26 | 704 | 1.0+ | 0.5− | 2001 12 20 | 704 | 1.0+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2000 08 26 | 704 | 0.0 | 1.1+ | 2001 12 20 | 704 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2000 08 26 | 704 | 0.1+ | 0.3+ | 2001 12 20 | 704 | (1.9− | 0.1−) | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2000 08 26 | 704 | 0.6− | 0.7+ | 2002 01 13 | 704 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2000 09 04 | 704 | 0.2− | 1.0+ | 2002 01 13 | 704 | 1.4+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2000 09 04 | 704 | 0.4− | 0.5− | 2002 01 13 | 704 | 0.6+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2000 09 04 | 704 | 0.6+ | 0.2+ | 2002 01 13 | 704 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2000 09 04 | 704 | 0.7+ | 1.0+ | 2002 01 13 | 704 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2000 09 04 | 704 | 0.8+ | 0.8− | 2002 01 15 | 704 | 0.6+ | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2000 09 30 | 699 | 0.0 | 0.2− | 2002 01 15 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2000 09 30 | 699 | 0.7− | 0.3− | 2002 01 15 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2000 09 30 | 699 | 0.3− | 0.1+ | 2002 01 15 | 704 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.9− | 0.2− |
| 2000 09 30 | 699 | 0.0 | 0.3− | 2004 03 12 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2000 10 01 | 704 | 0.4− | 0.2+ | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.7+ | 0.3+ |
| 2000 10 01 | 704 | 0.5+ | 0.1− | 2004 03 12 | 644 | 0.7+ | 0.4+ | 2006 10 28 | 703 | 0.7− | 0.4− |
| 2000 10 01 | 704 | 0.5− | 0.7− | 2004 03 23 | 704 | 0.1+ | 0.7+ | 2006 10 28 | 703 | 0.8+ | 0.2− |
| 2001 11 17 | 704 | (1.9+ | 0.6+) | 2004 03 23 | 704 | 0.5− | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.5− |
| 2001 11 17 | 704 | 0.0 | 0.1− | 2004 03 23 | 704 | 1.1+ | 1.1+ | 2006 11 07 | 644 | 0.3− | 0.5− |
| 2001 11 17 | 704 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.9+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2001 11 18 | 704 | 0.6+ | 0.4+ | 2004 03 25 | 704 | 0.4+ | 0.5+ | 2006 11 10 | 704 | 0.6− | 0.8− |
| 2001 11 18 | 704 | 0.2− | 0.4+ | 2004 03 25 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 704 | (1.8− | 2.3−) |
| 2001 11 18 | 704 | 0.9− | 0.1+ | 2004 03 25 | 704 | 0.4+ | 0.6− | 2006 11 10 | 704 | 0.2+ | 0.3− |
| 2001 11 18 | 704 | 1.1− | 0.3+ | 2006 09 18 | 703 | 0.6+ | 0.1− | 2006 11 10 | 704 | 0.1− | 0.2− |
| 2001 12 11 | 704 | 0.6− | 0.9− | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.6− | 0.2+ |
| 2001 12 11 | 704 | (0.1− | 1.8−) | 2006 09 18 | 703 | 1.0− | 0.0 | 2006 11 16 | 703 | 0.5− | 0.5− |
| 2001 12 11 | 704 | 0.1− | 1.4− | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2001 12 11 | 704 | 0.5+ | 0.2− | 2006 09 21 | 699 | 0.3+ | 1.0+ | 2006 11 16 | 703 | 0.8− | 0.4+ |
| 2001 12 14 | 704 | (1.9+ | 1.1−) | 2006 09 21 | 699 | (0.8− | 1.6+) | 2006 11 16 | 703 | 0.4− | 0.2− |
| 2001 12 14 | 704 | 1.3+ | 1.1− | 2006 09 21 | 699 | 0.4− | 1.0+ | 2006 11 16 | 703 | 0.0 | 0.6− |
| 2001 12 14 | 704 | 1.0+ | 0.8− | 2006 09 21 | 699 | 1.2+ | 0.3+ | 2006 11 16 | 703 | 0.7− | 0.3+ |
| 2001 12 14 | 704 | 0.0 | 1.4− | 2006 09 25 | 699 | 0.5− | 0.8+ | 2006 11 16 | 703 | 1.3− | 0.1+ |
| 2001 12 14 | 704 | (1.4+ | 1.9−) | 2006 09 25 | 699 | 0.2− | 0.6+ | | | | |
| 2001 12 17 | 704 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.8+ | 0.7+ | | | | |

**(138612)∗ 2000 QM$_{194}$ = 2001 VV$_{27}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19857)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.21977 | | (2000.0) | | | |
| $n$ | 0.18216785 | $\omega$ | 112.32982 | | +0.98731874 | +0.00210713 |
| $a$ | 3.0819215 | $\Omega$ | 247.84777 | | −0.05548297 | +0.94143468 |
| $e$ | 0.1139936 | $i$ | 9.86849 | | +0.14873918 | +0.33718882 |
| $P$ | 5.41 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 704 | 0.3− | 0.6+ | 2001 11 19 | 704 | 0.9+ | 0.4− | 2006 09 22 | 104 | 0.3− | 0.1− |
| 2000 08 03 | 704 | 0.7− | 0.3+ | 2001 11 21 | 704 | 0.6− | 0.5+ | 2006 09 22 | 104 | 0.1+ | 0.1+ |
| 2000 08 03 | 704 | 0.4− | 0.0 | 2001 11 21 | 704 | 0.6− | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.4+ |
| 2000 08 03 | 704 | 0.0 | 0.8− | 2001 11 21 | 704 | 0.8− | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.6− |
| 2000 08 03 | 704 | 0.4− | 0.1− | 2001 11 21 | 704 | 0.5− | 0.3+ | 2006 09 28 | 703 | 0.3− | 1.0+ |
| 2000 08 31 | 704 | 0.2+ | 0.2− | 2001 11 21 | 704 | 1.1− | 0.3+ | 2006 09 28 | 703 | 0.9− | 0.2− |
| 2000 08 31 | 704 | 0.6− | 0.5− | 2001 12 10 | 704 | 0.3− | 0.4− | 2006 09 30 | 704 | 0.8+ | 0.8− |
| 2000 08 31 | 704 | 0.8− | 0.8+ | 2001 12 10 | 704 | 0.4+ | 0.2− | 2006 09 30 | 704 | 0.6+ | 0.5− |
| 2000 08 31 | 704 | 0.2+ | 1.0+ | 2001 12 10 | 704 | 0.5− | 0.3− | 2006 09 30 | 704 | 0.3+ | 0.2− |
| 2000 09 04 | 704 | 0.1− | 0.4+ | 2001 12 10 | 704 | 0.3− | 0.4− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2000 09 04 | 704 | 0.1+ | 0.7+ | 2001 12 10 | 704 | 0.2− | 0.7− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2000 09 04 | 704 | 0.4+ | 0.1+ | 2001 12 14 | 704 | 0.8− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2000 09 04 | 704 | 0.2− | 0.6− | 2001 12 14 | 704 | 0.0 | 1.2+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 09 04 | 704 | 0.2+ | 0.9+ | 2001 12 14 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 09 25 | 704 | 0.6− | 0.2+ | 2001 12 14 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2000 09 25 | 704 | 0.9+ | 0.2+ | 2001 12 14 | 704 | 0.6− | 1.5+ | 2006 10 31 | 703 | 0.4− | 0.2− |
| 2000 09 25 | 704 | 0.7+ | 1.0+ | 2001 12 17 | 704 | 0.0 | 0.0 | 2006 10 31 | 703 | 1.4+ | 0.1− |
| 2000 09 25 | 704 | 0.1+ | 0.1+ | 2001 12 17 | 704 | 0.1+ | 0.2− | 2006 10 31 | 703 | 0.6− | 0.4− |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2001 12 17 | 704 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 1.0− | 0.4+ |
| 2001 10 21 | 704 | 0.7− | 0.8− | 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 11 10 | 291 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.2− | 0.6− | 2001 12 17 | 704 | 0.1− | 0.0 | 2006 11 10 | 291 | 0.3+ | 0.2− |
| 2001 11 09 | 704 | 0.6+ | 0.2− | 2001 12 23 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 291 | 0.2+ | 0.3− |
| 2001 11 09 | 704 | (0.5+ | 1.7−) | 2001 12 23 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2001 11 09 | 704 | 0.6+ | 0.5− | 2001 12 23 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 1.2− |
| 2001 11 09 | 704 | 0.4+ | 0.2− | 2002 01 18 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.0 |
| 2001 11 09 | 704 | 0.5+ | 0.8− | 2002 01 18 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 1.0+ | 0.4+ |
| 2001 11 12 | 691 | 0.0 | 0.1− | 2002 01 18 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2001 11 12 | 691 | 0.0 | 0.1− | 2004 04 13 | 644 | 0.1+ | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2001 11 12 | 704 | 0.3+ | 1.0+ | 2004 04 13 | 644 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2001 11 12 | 691 | 0.1− | 0.1− | 2004 04 13 | 644 | 0.4+ | 0.7+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2001 11 12 | 704 | 0.7+ | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.9+ |
| 2001 11 12 | 704 | 0.5− | 1.4+ | 2006 09 17 | 703 | 0.7− | 1.1+ | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.8+ | 2006 11 29 | 704 | 0.8+ | 0.1− |
| 2001 11 19 | 704 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.3− | 2006 11 29 | 704 | 1.8− | 0.5+ |
| 2001 11 19 | 704 | 0.1+ | 0.6− | 2006 09 22 | 104 | 0.1− | 0.8− | | | | |

**(138613)∗ 2000 QV$_{196}$**

Discovered 2000 Aug. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.38476 | | (2000.0) | | | |
| $n$ | 0.17232371 | $\omega$ | 7.50728 | | +0.91116146 | +0.39430736 |
| $a$ | 3.1982030 | $\Omega$ | 328.41172 | | −0.38892300 | +0.72711019 |
| $e$ | 0.0890647 | $i$ | 13.19965 | | −0.13610176 | +0.56198975 |
| $P$ | 5.72 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.6+ | 0.8+ | 2001 12 09 | 704 | 0.2− | 0.3+ | 2006 08 24 | 704 | 0.7+ | 1.7+ |
| 2000 08 21 | 699 | 0.4+ | 1.3+ | 2001 12 09 | 704 | 0.8− | 0.6− | 2006 09 01 | 704 | 0.6− | 1.0+ |
| 2000 08 21 | 699 | 0.4+ | 0.3+ | 2001 12 09 | 704 | 0.4− | 1.0− | 2006 09 01 | 704 | 0.6− | 0.0 |
| 2000 08 21 | 699 | 1.8+ | 1.1+ | 2003 01 27 | 699 | 0.1+ | 0.2− | 2006 09 01 | 704 | 0.4+ | 1.5− |
| 2000 08 24 | 704 | 0.3− | 0.9+ | 2003 01 27 | 699 | 0.8− | 0.9+ | 2006 09 01 | 704 | 0.5+ | 0.4− |
| 2000 08 24 | 704 | 0.8− | 0.6+ | 2003 01 27 | 699 | 0.3+ | 0.4− | 2006 09 01 | 704 | 0.2− | 0.2− |
| 2000 08 24 | 704 | 0.2− | 0.0 | 2003 01 27 | 699 | 0.3− | 0.1− | 2006 09 06 | 644 | 0.5+ | 0.2− |
| 2000 08 24 | 704 | (1.4+ | 2.3−) | 2003 01 30 | 699 | 0.6+ | 1.9+ | 2006 09 06 | 644 | 0.5+ | 0.0 |
| 2000 08 29 | 704 | 0.2+ | 0.6+ | 2003 01 30 | 699 | 0.5+ | 0.1− | 2006 09 06 | 644 | 0.4+ | 0.1− |
| 2000 08 29 | 704 | 0.4− | 0.5+ | 2003 01 30 | 699 | 1.2− | 0.5+ | 2006 09 15 | 704 | 0.5+ | 0.4− |
| 2000 08 29 | 704 | 0.6− | 0.3+ | 2003 01 30 | 699 | (0.8− | 2.2+) | 2006 09 15 | 704 | 0.1− | 0.6− |
| 2000 08 29 | 704 | 0.0 | 0.8+ | 2003 02 01 | 704 | 0.4− | 0.2+ | 2006 09 15 | 704 | 0.5+ | 0.0 |
| 2000 08 29 | 704 | 0.3− | 0.5+ | 2003 02 01 | 704 | 0.6+ | 0.8+ | 2006 09 15 | 704 | 0.4+ | 0.6− |
| 2000 09 05 | 704 | 0.6− | 1.0+ | 2003 02 01 | 704 | (0.2+ | 3.4+) | 2006 09 15 | 704 | 0.8+ | 0.1− |
| 2000 09 05 | 704 | 0.9− | 0.7+ | 2003 02 01 | 704 | 1.8+ | 1.0+ | 2006 09 16 | 704 | 0.0 | 1.2− |
| 2000 09 05 | 704 | 1.1− | 0.6− | 2003 02 01 | 704 | 0.4+ | 0.8+ | 2006 09 16 | 704 | 0.3+ | 1.8+ |
| 2000 09 05 | 704 | 0.5+ | 0.2+ | 2003 02 23 | 699 | 1.1+ | 0.3+ | 2006 09 16 | 704 | 0.2+ | 0.2− |
| 2000 09 21 | 704 | 1.1− | 1.2+ | 2003 02 23 | 699 | 0.1− | 1.3+ | 2006 09 16 | 704 | 0.2+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 704 | 0.3− | 0.5+ | 2003 02 23 | 699 | 0.8− | 0.5− | 2006 09 16 | 704 | 0.1− | 0.4− |
| 2000 09 21 | 704 | 0.2+ | 0.3+ | 2003 02 23 | 699 | 1.7+ | 1.3+ | 2006 09 17 | 703 | 0.2+ | 0.2− |
| 2000 09 21 | 704 | 0.6− | 1.7− | 2004 04 15 | 703 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.2+ | 0.4− |
| 2000 09 24 | 704 | 0.6− | 0.4− | 2004 04 15 | 703 | 0.0 | 1.5− | 2006 09 17 | 703 | 0.6+ | 0.6− |
| 2000 09 24 | 704 | 0.5− | 0.4− | 2004 04 15 | 703 | 0.3− | 0.8+ | 2006 09 17 | 703 | 0.0 | 0.2− |
| 2000 09 24 | 704 | 0.6− | 0.4− | 2004 04 15 | 703 | 0.9+ | 1.1+ | 2006 09 20 | 699 | 0.5+ | 0.5+ |
| 2000 09 24 | 704 | 1.9− | 0.7+ | 2006 08 18 | 699 | 0.2+ | 0.6+ | 2006 09 20 | 699 | 0.7− | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.8− | 2006 08 18 | 699 | 1.0− | 0.4+ | 2006 09 20 | 699 | 0.3− | 0.1+ |
| 2001 09 25 | 704 | 0.1− | 0.1− | 2006 08 18 | 699 | 0.4− | 0.7− | 2006 09 20 | 699 | 0.4− | 0.1+ |
| 2001 09 25 | 704 | 1.1+ | 1.1− | 2006 08 18 | 699 | 0.4+ | 0.0 | 2006 10 01 | 703 | 0.1− | 0.0 |
| 2001 09 28 | 704 | 0.5+ | 0.3+ | 2006 08 24 | 704 | 0.8− | 0.0 | 2006 10 01 | 703 | 0.3− | 0.1− |
| 2001 09 28 | 704 | 0.6+ | 0.4+ | 2006 08 24 | 704 | 0.1− | 0.0 | 2006 10 01 | 703 | 0.0 | 0.2+ |
| 2001 09 28 | 704 | 1.0+ | 1.1+ | 2006 08 24 | 704 | 0.4− | 0.4− | 2006 10 01 | 703 | 0.1− | 0.7− |

**(138614)∗ 2000 QO$_{197}$**

Discovered 2000 Aug. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 308.36942 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17556496 | | $\omega$ | 292.56901 | | −0.03563992 | | −0.99219202 | |
| $a$ | 3.1587178 | | $\Omega$ | 158.41711 | | +0.99394775 | | −0.04762757 | |
| $e$ | 0.2885009 | | $i$ | 18.96043 | | +0.10391185 | | +0.11526759 | |
| $P$ | 5.61 | | $H$ | 14.5 | $G$ | 0.15 | | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.6+ | 0.0 | 2003 04 01 | 645 | 0.1+ | 0.0 | 2006 10 04 | 703 | 0.7+ | 0.1+ |
| 2000 08 29 | 704 | 0.4+ | 0.4− | 2003 04 01 | 645 | 0.1+ | 0.1+ | 2006 10 04 | 703 | 1.0+ | 0.6+ |
| 2000 08 29 | 704 | 0.6+ | 0.5+ | 2003 04 09 | 704 | 0.9− | 0.1+ | 2006 10 04 | 703 | 0.1+ | 0.8− |
| 2000 08 29 | 704 | 0.1− | 0.4+ | 2003 04 09 | 704 | 0.2+ | 0.7+ | 2006 10 04 | 703 | 0.2− | 0.2− |
| 2000 08 29 | 704 | 0.4+ | 0.4+ | 2003 04 09 | 704 | 1.0+ | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2000 09 05 | 704 | 0.1− | 0.3− | 2003 04 09 | 704 | 0.5+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2000 09 05 | 704 | 0.6− | 0.9+ | 2003 04 09 | 704 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2000 09 05 | 704 | 1.1− | 0.9− | 2003 04 27 | 645 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.2− |
| 2000 09 05 | 704 | 0.4+ | 0.5+ | 2003 04 27 | 645 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.4− |
| 2000 09 24 | 699 | 0.1+ | 0.4+ | 2003 04 28 | 645 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.2− |
| 2000 09 24 | 704 | 0.1+ | 0.4+ | 2003 04 28 | 645 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2000 09 24 | 704 | 0.4+ | 0.5+ | 2006 08 10 | 644 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2000 09 24 | 699 | 0.5− | 0.4− | 2006 08 10 | 644 | 0.4− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2000 09 24 | 704 | 0.0 | 0.5− | 2006 08 10 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2000 09 24 | 699 | 0.4− | 0.1− | 2006 08 28 | 699 | (0.0 | 1.8+) | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2000 09 24 | 704 | 0.8+ | 0.9+ | 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2000 09 24 | 699 | 0.9− | 1.0+ | 2006 08 28 | 699 | 1.0+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 2002 01 12 | 704 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.1+ | 1.0+ | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2002 01 12 | 704 | 0.2− | 0.3+ | 2006 08 28 | 699 | 1.3− | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.1+ |
| 2002 01 12 | 704 | 0.5− | 0.8+ | 2006 08 28 | 699 | 1.3− | 1.1+ | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2002 01 12 | 704 | 0.6− | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.3+ | 2006 10 31 | 703 | 0.6− | 0.8+ |
| 2002 01 12 | 704 | 0.8− | 0.0 | 2006 08 28 | 699 | 1.0+ | 0.3+ | 2006 10 31 | 703 | 0.7+ | 0.1+ |
| 2002 03 17 | 704 | (0.1− | 1.6+) | 2006 09 17 | 699 | 0.2− | 0.7+ | 2006 10 31 | 703 | 1.0− | 0.1+ |
| 2002 03 17 | 704 | 0.0 | 1.2+ | 2006 09 17 | 699 | 0.8− | 0.3+ | 2006 10 31 | 703 | 0.3+ | 0.3+ |
| 2002 03 17 | 704 | (2.1− | 1.3+) | 2006 09 17 | 699 | 0.3− | 0.4+ | 2006 11 13 | 644 | 0.4+ | 0.3+ |
| 2002 04 14 | 704 | 1.3+ | 0.3+ | 2006 09 25 | 703 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2002 04 14 | 704 | 0.0 | 0.3+ | 2006 09 25 | 703 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.5+ |
| 2002 04 14 | 704 | 1.2+ | 1.1+ | 2006 09 25 | 703 | 0.2− | 0.3− | | | | |
| 2002 04 14 | 704 | 1.0+ | 0.0 | 2006 09 25 | 703 | 0.4+ | 0.3− | | | | |

**(138615)∗ 2000 QY$_{197}$**

Discovered 2000 Aug. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 49.93026 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18001165 | | $\omega$ | 332.64406 | | +0.78009425 | | +0.62429349 | |
| $a$ | 3.1064829 | | $\Omega$ | 348.44389 | | −0.52965841 | | +0.62376200 | |
| $e$ | 0.1211380 | | $i$ | 11.91490 | | −0.33303894 | | +0.47029629 | |
| $P$ | 5.48 | | $H$ | 14.5 | $G$ | 0.15 | | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 22 | 104 | (3.9− | 1.4−) | 2000 09 24 | 704 | 0.1− | 0.0 | 2006 10 17 | A50 | 0.2− | 0.1+ |
| 2000 08 23 | 104 | 0.3+ | 1.1+ | 2000 09 24 | 699 | 0.2+ | 0.2+ | 2006 10 17 | A50 | 0.1+ | 0.3+ |
| 2000 08 23 | 104 | 0.6− | 0.1− | 2000 10 02 | 704 | 0.4− | 0.3+ | 2006 10 17 | A50 | 0.1+ | 0.1− |
| 2000 08 29 | 704 | 0.7− | 0.2− | 2000 10 02 | 704 | 0.6− | 0.5− | 2006 10 18 | A50 | 0.4− | 0.0 |
| 2000 08 29 | 704 | 0.0 | 0.4− | 2000 10 02 | 704 | 0.0 | 1.0− | 2006 10 18 | A50 | 0.2− | 0.3+ |
| 2000 08 29 | 704 | 0.4− | 0.1+ | 2000 10 02 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.3− |
| 2000 08 29 | 704 | 0.1− | 0.3− | 2000 10 02 | 704 | 0.5− | 1.7− | 2006 10 19 | 703 | 0.0 | 0.6+ |
| 2000 08 29 | 704 | 0.1− | 0.4− | 2003 01 10 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 703 | 0.3+ | 0.2− |
| 2000 09 05 | 704 | 0.8− | 0.3+ | 2003 01 10 | 704 | 0.4− | 1.0+ | 2006 10 19 | 703 | 0.4− | 0.3− |
| 2000 09 05 | 704 | 0.3− | 1.9+ | 2003 01 10 | 704 | 0.1− | 1.1+ | 2006 10 21 | 704 | 0.2− | 0.4+ |
| 2000 09 05 | 704 | 1.0+ | 1.2+ | 2003 02 04 | 699 | 1.1+ | 0.5+ | 2006 10 21 | 704 | 0.4+ | 1.5+ |
| 2000 09 05 | 704 | 0.1+ | 0.4+ | 2003 02 04 | 699 | 0.2− | 0.7+ | 2006 10 21 | 704 | 0.6− | 0.3+ |
| 2000 09 05 | 704 | 0.4− | 0.7+ | 2003 02 04 | 699 | 0.9+ | 0.0 | 2006 10 21 | 704 | 0.2+ | 1.1+ |
| 2000 09 21 | 704 | 0.4− | 0.3+ | 2003 02 04 | 699 | 1.0+ | 0.1+ | 2006 10 21 | 704 | 0.2− | 0.6+ |
| 2000 09 21 | 704 | 0.0 | 0.1+ | 2003 03 03 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2000 09 21 | 704 | 0.9+ | 0.7− | 2003 03 03 | 644 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2000 09 21 | 704 | 0.2− | 0.5− | 2003 03 03 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2000 09 23 | 699 | 0.4− | 0.2+ | 2004 03 31 | 704 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2000 09 23 | 699 | 0.2+ | 0.2− | 2004 03 31 | 704 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2000 09 23 | 699 | 1.0+ | 0.2− | 2004 03 31 | 704 | 0.6+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2000 09 23 | 699 | (2.1+ | 1.6+) | 2004 04 17 | 704 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.3− |
| 2000 09 24 | 704 | 0.1+ | 0.6+ | 2004 04 17 | 704 | 0.0 | 1.3+ | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2000 09 24 | 699 | 0.2+ | 1.0+ | 2004 04 17 | 704 | (0.2+ | 2.3+) | 2006 10 27 | 703 | 0.1− | 0.5+ |
| 2000 09 24 | 704 | 0.2− | 0.6+ | 2006 09 28 | 703 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.3+ | 1.1− |
| 2000 09 24 | 704 | 0.5− | 0.8+ | 2006 09 28 | 703 | 0.1+ | 0.4− | 2006 11 15 | 703 | 0.9+ | 0.2− |
| 2000 09 24 | 699 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.8− | 0.8− | 2006 11 15 | 703 | 0.4+ | 0.9− |
| 2000 09 24 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.0 | 0.6− |
| 2000 09 24 | 699 | 0.2− | 0.6+ | 2006 10 17 | A50 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.5− |

**(138616)∗ 2000 QZ$_{204}$ = 1995 UD$_{59}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14906)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 14.43699 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18020342 | | $\omega$ | 195.87929 | | +0.91772454 | | −0.39705025 | |
| $a$ | 3.1042787 | | $\Omega$ | 187.54504 | | +0.37332434 | | +0.87206841 | |
| $e$ | 0.1508655 | | $i$ | 5.03445 | | +0.13568571 | | +0.28609052 | |
| $P$ | 5.47 | | $H$ | 15.3 | $G$ | 0.15 | | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.2− | 0.6− | 2005 07 07 | G92 | 0.3− | 0.4− | 2006 11 13 | 703 | 0.4− | 1.0+ |
| 1995 10 18 | 691 | 0.1− | 0.6− | 2005 07 07 | G92 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.3− | 0.1+ |
| 1995 10 18 | 691 | 0.1− | 0.6− | 2005 07 30 | E12 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.9− | 0.8+ |
| 1995 10 20 | 691 | 0.1− | 0.0 | 2005 07 30 | E12 | 0.7− | 0.0 | 2006 11 14 | 704 | 0.0 | 0.0 |
| 1995 10 20 | 691 | 0.1− | 0.1+ | 2005 07 30 | E12 | 0.7− | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 1995 10 20 | 691 | 0.0 | 0.2+ | 2005 07 30 | E12 | 0.1− | 0.1+ | 2006 11 14 | 704 | 0.3+ | 0.4+ |
| 1995 10 25 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.3− | 0.2+ |
| 1995 10 25 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.2− | 0.1− |
| 1995 10 25 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.4− | 0.0 |
| 2000 08 31 | 704 | 0.6− | 0.8+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2000 08 31 | 704 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2000 08 31 | 704 | 0.2+ | 1.0+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2000 08 31 | 704 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.3+ |
| 2000 09 05 | 704 | 0.3+ | 0.9+ | 2006 10 18 | 691 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 2000 09 05 | 704 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.7+ | 0.0 |
| 2000 09 05 | 704 | 0.9− | 1.2+ | 2006 10 18 | 691 | (2.3+ | 1.5−) | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 2000 09 05 | 704 | 0.7+ | 1.4+ | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 20 | 704 | (0.1+ | 2.1+) |
| 2000 09 20 | 608 | 0.7− | 1.5− | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.9− | 0.5+ |
| 2000 09 20 | 608 | 0.8− | 1.4− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 1.4+ | 1.4− |
| 2000 09 20 | 608 | 0.8− | 1.2− | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.8+ | 1.0+ |
| 2000 09 24 | 704 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.8+ | 0.9+ |
| 2000 09 24 | 704 | 1.8+ | 1.2− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2000 09 24 | 704 | 0.4− | 0.4− | 2006 11 02 | 703 | 0.3− | 0.8+ | 2006 11 23 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.4− | 1.0− | 2006 11 02 | 703 | 0.5+ | 1.2− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.5− | 0.8+ | 2006 11 02 | 703 | 0.3− | 0.9+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2000 10 01 | 704 | 0.5− | 1.2+ | 2006 11 02 | 703 | 1.1− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2000 10 01 | 704 | 0.3− | 0.8+ | 2006 11 09 | 644 | 0.5+ | 0.2+ | 2006 11 27 | 691 | 0.4− | 0.1+ |
| 2000 10 02 | 704 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.8− | 1.0+ |
| 2000 10 02 | 704 | 0.7+ | 1.7+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.9+ | 0.0 |
| 2000 10 02 | 704 | 1.0+ | 1.1+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2000 10 02 | 704 | 1.8+ | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.7+ | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2003 03 24 | 691 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.2+ |
| 2003 03 24 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.7− | 0.5− | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2003 03 24 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.7− | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2005 07 07 | G92 | 0.5− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.7+ | 2006 12 01 | 691 | 0.2+ | 0.3− |

**(138617)∗ 2000 QP$_{205}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.29584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17640749 | $\omega$ | 3.05925 | | +0.99784435 | +0.06217438 | |
| $a$ | 3.1486523 | $\Omega$ | 353.26742 | | −0.06337018 | +0.82973073 | |
| $e$ | 0.2197446 | $i$ | 10.31884 | | −0.01705487 | +0.55469024 | |
| $P$ | 5.59 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.7− | 0.3+ | 2000 10 01 | 699 | 0.3+ | 0.0 | 2003 03 24 | 691 | 0.2+ | 0.3+ |
| 2000 08 31 | 704 | 0.9− | 0.2− | 2000 10 02 | 704 | 0.3+ | 0.3+ | 2003 03 24 | 691 | 0.3+ | 0.1+ |
| 2000 08 31 | 704 | 0.3− | 0.1− | 2000 10 02 | 704 | 0.2+ | 0.2− | 2003 03 31 | 645 | 0.1+ | 0.0 |
| 2000 08 31 | 704 | 0.5− | 0.5+ | 2000 10 02 | 704 | 0.5+ | 0.5+ | 2003 03 31 | 645 | 0.1+ | 0.0 |
| 2000 08 31 | 704 | 0.0 | 0.1+ | 2000 10 02 | 704 | 0.2+ | 0.8+ | 2006 08 29 | 703 | 0.2+ | 0.4− |
| 2000 09 05 | 704 | 0.3− | 0.3− | 2000 10 02 | 704 | 0.3+ | 1.1+ | 2006 08 29 | 703 | 0.1− | 1.1− |
| 2000 09 05 | 704 | 0.3+ | 0.3+ | 2000 10 03 | 704 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.3− | 1.0− |
| 2000 09 05 | 704 | 0.0 | 0.4+ | 2000 10 03 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.6+ | 0.1+ |
| 2000 09 05 | 704 | 0.6− | 0.8+ | 2000 10 03 | 704 | 0.3+ | 0.8+ | 2006 10 01 | 704 | 1.3− | 0.1+ |
| 2000 09 05 | 704 | 0.1− | 0.1+ | 2000 10 03 | 704 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.5− | 0.0 |
| 2000 09 09 | 699 | 0.5− | 0.1− | 2000 10 03 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.3+ |
| 2000 09 09 | 699 | 0.6− | 0.5+ | 2000 10 03 | 704 | 0.7+ | 1.3+ | 2006 10 01 | 704 | 1.4− | 0.5+ |
| 2000 09 09 | 699 | 0.3− | 0.6+ | 2000 10 03 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 704 | 0.2+ | 0.9+ |
| 2000 09 09 | 699 | 0.2+ | 0.1− | 2000 10 03 | 704 | 0.3− | 0.7+ | 2006 10 20 | 704 | 0.4+ | 0.3− |
| 2000 09 21 | 699 | 0.1+ | 0.1+ | 2000 10 03 | 704 | 0.6+ | 1.4+ | 2006 10 20 | 704 | 0.4+ | 0.1− |
| 2000 09 21 | 699 | 0.2− | 0.3− | 2000 10 03 | 704 | 0.5− | 0.2− | 2006 10 20 | 704 | 0.1− | 0.1+ |
| 2000 09 21 | 699 | 0.3+ | 0.2− | 2000 10 03 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.5+ | 0.1− |
| 2000 09 21 | 699 | 0.1+ | 0.0 | 2000 10 03 | 704 | 0.0 | 0.9+ | 2006 10 27 | 703 | 0.6+ | 0.4− |
| 2000 09 24 | 704 | 0.1+ | 0.3+ | 2000 10 03 | 704 | 0.2+ | 0.5+ | 2006 10 27 | 703 | 1.1+ | 0.5− |
| 2000 09 24 | 704 | 0.0 | 0.3+ | 2000 10 03 | 704 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2000 09 24 | 704 | 0.1+ | 0.1+ | 2000 10 24 | 704 | (2.1+ | 0.1+) | 2006 11 02 | 703 | 0.0 | 0.6− |
| 2000 09 24 | 704 | 0.1− | 0.1− | 2000 10 24 | 704 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.4− | 0.1+ |
| 2000 09 24 | 704 | 0.1− | 0.5+ | 2000 10 24 | 704 | 0.3− | 0.8+ | 2006 11 02 | 703 | 0.2− | 0.2− |
| 2000 09 25 | 704 | 0.2+ | 0.2− | 2000 10 24 | 704 | 0.6− | 1.0+ | 2006 11 02 | 703 | 0.1− | 0.6− |
| 2000 09 25 | 704 | 0.5+ | 0.7− | 2000 10 25 | 704 | 0.3+ | 0.7− | 2006 11 15 | 703 | 0.3− | 0.1− |
| 2000 09 25 | 704 | 0.1+ | 1.1− | 2000 10 25 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2000 09 25 | 704 | 1.0− | 0.2− | 2000 10 25 | 704 | 0.5− | 0.8+ | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2000 09 25 | 704 | 0.1− | 0.3− | 2000 11 20 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2000 09 28 | 691 | 0.4− | 0.6− | 2000 11 20 | 704 | 1.4+ | 1.1+ | 2006 11 15 | 704 | 1.0− | 0.4− |
| 2000 09 28 | 691 | 0.5− | 0.6− | 2000 11 20 | 704 | (2.6+ | 2.0−) | 2006 11 15 | 704 | 0.6+ | 0.9− |
| 2000 09 28 | 691 | 0.5− | 0.6− | 2001 12 09 | 704 | (2.1+ | 1.9+) | 2006 11 15 | 704 | 0.7+ | 0.9− |
| 2000 10 01 | 704 | 0.3− | 0.3+ | 2001 12 09 | 704 | 1.1+ | 1.3+ | 2006 11 17 | 644 | 0.3+ | 0.2− |
| 2000 10 01 | 704 | 0.3− | 0.4+ | 2001 12 09 | 704 | 0.4− | 1.5+ | 2006 11 17 | 644 | 0.3+ | 0.3− |
| 2000 10 01 | 704 | 0.3− | 0.4+ | 2001 12 19 | 644 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.4+ | 0.2− |
| 2000 10 01 | 699 | 0.5+ | 0.3+ | 2001 12 19 | 644 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.4− | 0.2− |
| 2000 10 01 | 704 | 0.5− | 0.4+ | 2001 12 19 | 644 | 0.0 | 0.0 | 2006 11 21 | 703 | 0.5+ | 0.2+ |
| 2000 10 01 | 704 | 0.4− | 1.2+ | 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 11 21 | 703 | 1.0+ | 0.1+ |
| 2000 10 01 | 699 | 0.1+ | 0.1+ | 2003 03 23 | 645 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.9+ | 0.4+ |
| 2000 10 01 | 699 | 0.6+ | 0.7+ | 2003 03 24 | 691 | 0.0 | 0.3+ | | | | |

**(138618)∗ 2000 QZ$_{209}$ = 1979 OG$_1$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 4698)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.77482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18936889 | $\omega$ | 99.19757 | | +0.67786488 | +0.73485992 | |
| $a$ | 3.0032879 | $\Omega$ | 213.51292 | | −0.68914522 | +0.62474971 | |
| $e$ | 0.2643574 | $i$ | 2.27442 | | −0.25608216 | +0.26394830 | |
| $P$ | 5.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 07 24 | 675 | 0.3+ | 0.0 | 2000 09 25 | 704 | 0.2+ | 0.3+ | 2005 08 01 | E12 | 0.0 | 0.2+ |
| 1979 07 24 | 413 | 1.0+ | 0.4+ | 2000 09 25 | 704 | 0.7+ | 0.5+ | 2005 08 01 | E12 | 0.4+ | 0.2+ |
| 1979 07 25 | 675 | 0.5+ | 0.1+ | 2000 09 25 | 704 | 0.8+ | 0.6+ | 2005 08 01 | E12 | 0.3− | 0.2+ |
| 1994 05 04 | 691 | 1.1− | 0.2+ | 2000 09 25 | 704 | 0.9+ | 1.3+ | 2005 08 01 | E12 | 0.4− | 0.2− |
| 1994 05 04 | 691 | 0.4− | 0.3− | 2000 10 02 | 704 | 0.2− | 0.0 | 2005 10 01 | G96 | 0.3+ | 0.1− |
| 1994 05 04 | 691 | 0.7− | 0.1+ | 2000 10 02 | 704 | 0.2+ | 0.8− | 2005 10 01 | G96 | 0.3− | 0.1− |
| 2000 08 31 | 704 | 0.2+ | 0.2+ | 2000 10 02 | 704 | 0.0 | 0.2+ | 2005 10 01 | G96 | 0.3+ | 0.1− |
| 2000 08 31 | 704 | 1.4− | 0.7+ | 2000 10 02 | 704 | 0.4− | 0.4− | 2005 10 01 | G96 | 0.3+ | 0.3− |
| 2000 08 31 | 704 | 0.2− | 0.5+ | 2000 10 02 | 704 | 0.1− | 0.3− | 2005 10 26 | G96 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 1.1− | 0.0 | 2004 04 12 | 691 | 0.4+ | 0.3− | 2005 10 26 | G96 | 0.4− | 0.1+ |
| 2000 08 31 | 704 | 0.3+ | 0.1− | 2004 04 12 | 691 | 0.6+ | 0.1− | 2005 10 26 | G96 | 0.3− | 0.1+ |
| 2000 09 05 | 704 | 0.4− | 0.0 | 2004 04 12 | 691 | 0.3+ | 0.3− | 2005 10 26 | G96 | 0.3+ | 0.3− |
| 2000 09 05 | 704 | 0.9− | 0.7− | 2004 04 19 | 691 | 0.6+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2000 09 05 | 704 | 0.3+ | 0.1+ | 2004 04 19 | 691 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2000 09 05 | 704 | 0.8− | 0.2+ | 2004 04 19 | 691 | 0.4+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2000 09 05 | 704 | 0.3− | 0.4+ | 2005 05 20 | G96 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2000 09 22 | 699 | (2.2+ | 0.9−) | 2005 05 20 | G96 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2000 09 22 | 699 | 0.7+ | 0.6+ | 2005 05 20 | G96 | 0.5− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2000 09 22 | 699 | 0.5+ | 0.5+ | 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2000 09 22 | 699 | 1.0− | 0.9+ | 2005 06 29 | 691 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.2− | 1.3− | 2005 06 29 | 691 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2000 09 24 | 704 | 0.1+ | 0.7− | 2005 06 29 | 691 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.2− | 0.4− | 2005 07 08 | 691 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.1− | 0.3− |
| 2000 09 24 | 704 | 0.1+ | 0.9− | 2005 07 08 | 691 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2000 09 25 | 704 | 1.0+ | 0.9+ | 2005 07 08 | 691 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.4− | 0.3− |

**(138619)∗ 2000 QL$_{211}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.54771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17577134 | $\omega$ | 321.50073 | | +0.50338104 | −0.86294239 | |
| $a$ | 3.1562448 | $\Omega$ | 98.23489 | | +0.80337083 | +0.44865713 | |
| $e$ | 0.2265342 | $i$ | 2.54941 | | +0.31812395 | +0.23245904 | |
| $P$ | 5.61 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.5− | 0.9+ | 2002 01 09 | 106 | 0.5+ | 0.2+ | 2006 10 01 | 683 | 0.7− | 0.8+ |
| 2000 08 31 | 704 | 0.2− | 1.4+ | 2002 01 09 | 106 | 0.2+ | 0.2+ | 2006 10 03 | 704 | 1.3+ | 0.6− |
| 2000 08 31 | 704 | 0.9− | 1.5+ | 2002 01 12 | 691 | 0.2+ | 0.0 | 2006 10 03 | 704 | (1.6+ | 0.0 ) |
| 2000 08 31 | 704 | 1.0− | 0.4+ | 2002 01 12 | 691 | 0.2+ | 0.1− | 2006 10 03 | 704 | (2.2+ | 0.3+) |
| 2000 09 05 | 704 | 0.4− | 1.2+ | 2002 01 12 | 691 | 0.6+ | 0.8− | 2006 10 03 | 704 | 0.3− | 0.7− |
| 2000 09 05 | 704 | 0.1+ | 0.4− | 2002 01 14 | 704 | 0.4+ | 0.2+ | 2006 10 03 | 704 | 0.5+ | 1.2− |
| 2000 09 05 | 704 | 0.1+ | 0.1+ | 2002 01 14 | 704 | 0.3+ | 0.1+ | 2006 10 04 | 683 | (1.7+ | 0.7−) |
| 2000 09 05 | 704 | 0.6− | 0.5− | 2002 01 14 | 704 | 0.1+ | 0.3+ | 2006 10 04 | 683 | (0.3+ | 2.1+) |
| 2000 09 05 | 704 | 0.4+ | 0.4− | 2002 01 14 | 704 | 0.3+ | 0.4+ | 2006 10 14 | D35 | 0.3+ | 0.2− |
| 2000 09 24 | 699 | 0.3− | 1.2+ | 2002 01 14 | 704 | 0.5+ | 0.5+ | 2006 10 14 | D35 | 0.1+ | 0.3− |
| 2000 09 24 | 699 | 0.4− | 0.5+ | 2002 01 17 | 644 | 0.1+ | 0.8+ | 2006 10 14 | D35 | 0.1+ | 0.0 |
| 2000 09 24 | 699 | 0.7− | 0.8+ | 2002 01 17 | 644 | 0.1− | 0.8+ | 2006 10 18 | 691 | 0.2+ | 0.2− |
| 2000 09 24 | 699 | 0.5− | 0.6+ | 2002 01 17 | 644 | 0.3+ | 0.7+ | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 2000 09 24 | 704 | 0.9− | 0.8+ | 2002 01 20 | 699 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 2000 09 24 | 704 | 0.6− | 0.5+ | 2002 01 20 | 699 | 0.4+ | 0.0 | 2006 10 19 | 644 | 1.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 1.6− | 0.6+ | 2002 01 20 | 699 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.1− | | |
| 2000 09 24 | 704 | 0.2− | 1.0+ | 2002 01 20 | 699 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2000 09 24 | 704 | 0.4− | 0.7+ | 2002 01 21 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.4− | 0.1+ | | |
| 2000 10 02 | 699 | 0.6+ | 1.0+ | 2002 01 21 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.4+ | 0.7+ | | |
| 2000 10 02 | 704 | 0.5+ | 0.2+ | 2002 01 21 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.2− | | |
| 2000 10 02 | 699 | 1.1+ | 0.2+ | 2002 01 21 | 704 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2000 10 02 | 704 | 0.3+ | 0.3+ | 2002 01 21 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.4+ | 0.0 | | |
| 2000 10 02 | 699 | 0.3+ | 0.7− | 2002 01 23 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1− | | |
| 2000 10 02 | 704 | 0.0 | 0.6+ | 2002 01 23 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.1− | | |
| 2000 10 02 | 704 | 0.3+ | 0.5+ | 2002 01 23 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1− | | |
| 2000 10 02 | 699 | 1.0+ | 0.4+ | 2002 01 23 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.1− | | |
| 2000 10 02 | 704 | 0.0 | 0.0 | 2002 01 23 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2000 11 18 | 699 | 0.7− | 0.2+ | 2002 01 26 | 644 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2000 11 18 | 699 | 0.7− | 0.8+ | 2002 01 26 | 644 | 1.2− | 1.1+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2000 11 18 | 699 | 0.7− | 0.5+ | 2002 01 26 | 644 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2000 11 18 | 699 | 0.5+ | 1.2+ | 2002 02 05 | 644 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 11 13 | 608 | 0.3+ | 0.8− | 2002 02 05 | 644 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 11 13 | 608 | 0.9+ | 0.5− | 2002 02 05 | 644 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.3− | | |
| 2001 11 13 | 608 | 0.0 | 1.3− | 2002 02 07 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.2− | | |
| 2001 12 09 | 699 | 0.1+ | 0.3− | 2002 02 07 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3− | | |
| 2001 12 09 | 699 | 0.0 | 0.1− | 2002 02 07 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.2+ | 0.3− | | |
| 2001 12 09 | 699 | 0.2+ | 0.2+ | 2002 02 07 | 704 | 0.0 | 0.1− | 2006 10 23 | 704 | 0.0 | 0.0 | | |
| 2001 12 09 | 699 | 0.0 | 0.2+ | 2002 02 07 | 704 | 0.3− | 0.1+ | 2006 10 23 | 704 | 0.0 | 0.4− | | |
| 2001 12 14 | 333 | 0.5− | 0.5− | 2002 02 07 | 704 | 0.1− | 0.0 | 2006 10 23 | 704 | 0.3+ | 0.3− | | |
| 2001 12 14 | 333 | 0.3− | 0.8− | 2002 02 07 | 704 | 0.2− | 0.0 | 2006 10 23 | 704 | 0.2+ | 0.1− | | |
| 2001 12 14 | 333 | 0.7− | 0.1− | 2002 02 07 | 704 | 0.4− | 0.4− | 2006 10 26 | 224 | 0.5− | 0.0 | | |
| 2001 12 17 | 333 | 1.5− | 0.0 | 2002 02 10 | 704 | 0.3− | 0.0 | 2006 10 26 | 224 | 0.0 | 0.5− | | |
| 2001 12 17 | 333 | 1.1+ | 0.6− | 2002 02 10 | 704 | 0.1+ | 0.1+ | 2006 10 27 | 224 | 0.2+ | 0.4− | | |
| 2001 12 17 | 333 | 1.0+ | 0.2− | 2002 02 10 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 704 | 0.3+ | 0.7+ | | |
| 2001 12 17 | 333 | 0.8+ | 0.9− | 2002 02 10 | 704 | 0.1− | 0.2+ | 2006 10 27 | 704 | 1.0− | 0.9+ | | |
| 2001 12 17 | 333 | 0.4+ | 1.5− | 2002 02 10 | 704 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.4+ | 0.1+ | | |
| 2001 12 17 | 333 | 0.1+ | 1.3− | 2002 02 12 | 704 | 0.7− | 0.3− | 2006 10 27 | 704 | 0.6+ | 0.4− | | |
| 2001 12 17 | 644 | 0.3+ | 0.0 | 2002 02 12 | 704 | (1.7− | 0.5+) | 2006 10 27 | 704 | (1.2− | 2.0+) | | |
| 2001 12 17 | 644 | 0.2− | 0.1− | 2002 02 12 | 704 | 0.8− | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2001 12 17 | 644 | 0.2+ | 0.0 | 2002 02 20 | 704 | 0.8+ | 0.5+ | 2006 10 31 | G96 | 0.4+ | 0.5− | | |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2002 02 20 | 704 | 0.2− | 1.2+ | 2006 10 31 | G96 | 0.0 | 0.6− | | |
| 2001 12 18 | 704 | 0.2− | 0.3− | 2002 02 20 | 704 | 0.1+ | 1.1+ | 2006 10 31 | G96 | 0.3+ | 0.5− | | |
| 2001 12 18 | 704 | 0.2+ | 0.1− | 2002 02 20 | 704 | 0.2+ | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.1+ | | |
| 2001 12 18 | 704 | 0.2− | 0.6− | 2003 04 08 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.5− | | |
| 2001 12 18 | 704 | 0.1+ | 0.5− | 2003 04 08 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.4− | | |
| 2001 12 20 | 704 | 0.3− | 0.7+ | 2003 04 08 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1+ | | |
| 2001 12 20 | 704 | 1.2− | 0.2− | 2003 04 26 | 691 | (0.4+ | 1.6+) | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2001 12 20 | 704 | (1.6− | 0.0 ) | 2003 04 26 | 691 | 0.2+ | 1.5+ | 2006 11 16 | G96 | 0.2+ | 0.4− | | |
| 2001 12 20 | 704 | 0.6− | 0.4+ | 2003 04 26 | 691 | 0.8+ | 1.5+ | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2001 12 20 | 704 | (1.9− | 0.2+) | 2005 08 01 | E12 | 0.7+ | 0.9+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2001 12 21 | 704 | 0.3+ | 1.1− | 2005 08 01 | E12 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.4− | | |
| 2001 12 21 | 704 | 0.5− | 0.9+ | 2005 08 01 | E12 | 0.9− | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.4− | | |
| 2001 12 21 | 704 | 0.0 | 0.6+ | 2005 08 01 | E12 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.0 | | |
| 2001 12 21 | 704 | 0.3− | 0.5+ | 2006 08 28 | 683 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.1+ | | |
| 2001 12 23 | 608 | 0.1+ | 0.4− | 2006 08 28 | 683 | 0.9+ | 0.8− | 2006 11 18 | 704 | 0.0 | 1.2+ | | |
| 2001 12 23 | 608 | 0.8− | 0.0 | 2006 08 28 | 683 | (1.3− | 1.7+) | 2006 11 18 | 704 | 0.4− | 1.1+ | | |
| 2001 12 23 | 608 | 0.5− | 0.1− | 2006 09 27 | 704 | 1.1+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 1.0+ | | |
| 2001 12 23 | 691 | 0.5− | 0.1− | 2006 09 27 | 704 | 0.8+ | 0.2− | 2006 11 18 | 704 | 0.0 | 1.0+ | | |
| 2001 12 23 | 691 | 0.6− | 0.1+ | 2006 09 27 | 704 | 1.4− | 0.5+ | 2006 11 18 | 704 | 0.3+ | 1.2+ | | |
| 2001 12 23 | 691 | 0.7− | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.6− | 1.1+ | | |
| 2002 01 06 | 608 | 0.0 | 0.6− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 1.0− | 0.2+ | | |
| 2002 01 06 | 608 | (0.2− | 2.0−) | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.7− | 0.1+ | | |
| 2002 01 06 | 608 | 0.4+ | 1.5− | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.7+ | | |
| 2002 01 09 | 704 | (0.9+ | 2.3+) | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.2− | 0.1− | | |
| 2002 01 09 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.3+ | 2.1+ | | |
| 2002 01 09 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.6+ | 2006 11 21 | 704 | 0.2+ | 1.0+ | | |
| 2002 01 09 | 704 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.6− | 1.7+ | | |
| 2002 01 09 | 704 | 0.8+ | 0.2+ | 2006 10 01 | 683 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.6− | 1.4+ | | |
| 2002 01 09 | 106 | 0.8+ | 0.3+ | 2006 10 01 | 683 | 0.1− | 0.5+ | 2006 11 21 | 704 | 1.6− | 1.1+ | | |

**(138620)∗ 2000 QD$_{220}$**

Discovered 2000 Aug. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.59263 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18716379 | $\omega$ | 345.33819 | | +0.56095865 | +0.82383387 | |
| $a$ | 3.0268310 | $\Omega$ | 318.69575 | | −0.74657816 | +0.46096487 | |
| $e$ | 0.0256919 | $i$ | 7.08238 | | −0.35769602 | +0.32986230 | |
| $P$ | 5.27 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.2− | 0.5+ | 2001 11 24 | 704 | 0.2+ | 0.9+ | 2006 09 28 | 703 | (1.5+ | 1.8+) | | |
| 2000 08 21 | 699 | 1.4− | 0.1+ | 2001 11 24 | 704 | 1.5+ | 1.5+ | 2006 09 28 | 703 | 0.0 | 0.5+ | | |
| 2000 08 21 | 699 | 0.6− | 0.3+ | 2003 03 09 | 291 | 0.2+ | 0.4+ | 2006 09 28 | 703 | (1.6+ | 0.8+) | | |
| 2000 08 21 | 699 | 0.3+ | 0.1− | 2003 03 09 | 291 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2000 08 24 | 704 | 0.1− | 1.1+ | 2003 03 09 | 291 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.3− | | |
| 2000 08 24 | 704 | 1.3− | 1.5+ | 2004 04 15 | E12 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2000 08 24 | 704 | 0.2+ | 0.3+ | 2004 04 15 | E12 | 0.6− | 0.9+ | 2006 10 19 | 703 | 1.0+ | 0.3− | | |
| 2000 08 24 | 704 | 0.2+ | 1.2+ | 2004 04 15 | E12 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.4− | | |
| 2001 10 15 | 704 | 0.1− | 0.2− | 2004 04 15 | E12 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.0 | | |
| 2001 10 15 | 704 | 0.5− | 0.8+ | 2004 05 15 | 704 | 0.2+ | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.1+ | | |
| 2001 10 15 | 704 | 0.1+ | 0.9+ | 2004 05 15 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2001 11 11 | 704 | 0.3+ | 0.6+ | 2004 05 15 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.4− | | |
| 2001 11 11 | 704 | 1.0− | 0.5+ | 2005 07 30 | E12 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2001 11 11 | 704 | 0.5− | 0.2− | 2005 07 30 | E12 | 0.4+ | 0.2+ | 2006 10 27 | 703 | (2.6− | 0.9−) | | |
| 2001 11 11 | 704 | 0.9− | 0.3− | 2005 07 30 | E12 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.4− | | |
| 2001 11 11 | 704 | 0.5+ | 0.5+ | 2005 07 30 | E12 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.3− | 1.3− | | |
| 2001 11 21 | 704 | (0.8+ | 2.6−) | 2005 10 05 | G96 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.7− | 0.7− | | |
| 2001 11 21 | 704 | (0.2− | 2.1−) | 2005 10 05 | G96 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.6+ | 0.4− | | |
| 2001 11 21 | 704 | 0.1+ | 0.9+ | 2005 10 05 | G96 | 0.6− | 1.1− | 2006 11 14 | 703 | 0.1− | 0.0 | | |
| 2001 11 24 | 704 | 0.7+ | 0.4− | 2005 10 05 | G96 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.3− | | |
| 2001 11 24 | 704 | 1.1− | 0.6− | 2006 09 28 | 703 | 0.4+ | 0.9+ | 2006 11 14 | 703 | 0.1+ | 0.3− | | |

**(138621)∗ 2000 QQ$_{221}$**

Discovered 2000 Aug. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.13529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18302531 | $\omega$ | 240.45101 | | +0.34658527 | +0.93482587 | |
| $a$ | 3.0722881 | $\Omega$ | 50.03552 | | −0.82192804 | +0.34238138 | |
| $e$ | 0.2087780 | $i$ | 5.79036 | | −0.45200990 | +0.09421038 | |
| $P$ | 5.39 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.3− | 0.2− | 2001 11 19 | 704 | 0.1+ | 0.8− | 2006 10 19 | 691 | 0.1− | 0.1− | | |
| 2000 08 01 | 704 | 0.1+ | 0.2− | 2001 11 19 | 704 | 0.1+ | 0.9− | 2006 10 19 | 691 | 0.1+ | 0.1− | | |
| 2000 08 01 | 704 | 1.0+ | 0.0 | 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | |
| 2000 08 01 | 704 | 0.4+ | 0.7− | 2001 11 21 | 704 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.2+ | | |
| 2000 08 01 | 704 | 0.4+ | 0.5− | 2001 11 21 | 704 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2000 08 21 | 699 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.5+ | | |
| 2000 08 21 | 699 | 0.3− | 0.1− | 2001 11 21 | 704 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.1− | 0.1+ | | |
| 2000 08 21 | 699 | 0.9− | 0.6+ | 2002 12 06 | 645 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2000 08 21 | 699 | 0.2− | 0.4+ | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2000 08 26 | 704 | 0.4− | 0.5− | 2002 12 13 | 645 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2000 08 26 | 704 | 0.2+ | 0.1+ | 2002 12 13 | 645 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2000 08 26 | 704 | 0.6− | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2000 08 26 | 704 | 0.4− | 0.4+ | 2004 02 13 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2000 08 26 | 704 | 0.5+ | 0.8+ | 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.4+ | 0.1+ | | |
| 2000 09 20 | 704 | 0.0 | 0.0 | 2004 03 20 | 704 | 1.0+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2000 09 20 | 704 | 0.9− | 0.4− | 2004 03 20 | 704 | 0.4+ | 1.0+ | 2006 11 11 | 703 | 0.9− | 1.3+ | | |
| 2000 09 20 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | (0.8+ | 1.5+) | 2006 11 11 | 703 | 0.2− | 0.5− | | |
| 2000 09 20 | 704 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 1.3+ | 2006 11 11 | 703 | 0.4− | 2.0− | | |
| 2000 09 24 | 704 | 0.0 | 0.8+ | 2004 03 20 | 704 | 0.4+ | 0.9+ | 2006 11 11 | 703 | 1.5+ | 0.0 | | |
| 2000 09 24 | 704 | 0.4+ | 0.3− | 2006 10 11 | 691 | 0.2− | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2000 09 24 | 704 | 1.4+ | 0.2+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.0 | | |
| 2001 11 16 | 291 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.6− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.0 | | |
| 2001 11 16 | 291 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.0 | | |
| 2001 11 16 | 291 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.3− | 0.3+ | | | | | | |
| 2001 11 19 | 704 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.1− | 0.1+ | | | | | | |

**(138622)∗ 2000 QU$_{221}$**

Discovered 2000 Aug. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.68871 | | | (2000.0) | | |
| $n$ | 0.18468781 | $\omega$ | 274.23185 | | +0.36764542 | +0.92873333 |
| $a$ | 3.0538233 | $\Omega$ | 17.57344 | | −0.77791524 | +0.33533209 |
| $e$ | 0.1212742 | $i$ | 9.12202 | | −0.50959270 | +0.15813533 |
| $P$ | 5.34 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 04 | 608 | 1.7− | 0.6− | 2004 03 24 | 699 | 0.4− | 0.9+ | 2006 07 21 | G96 | 0.3− | 0.0 |
| 2000 08 04 | 608 | 1.4− | 0.5− | 2004 03 24 | 699 | (1.9+ | 0.0 ) | 2006 07 21 | G96 | 0.0 | 0.0 |
| 2000 08 04 | 608 | 1.3− | 0.0 | 2004 03 24 | 699 | 0.2− | 0.4− | 2006 09 18 | 691 | 0.4− | 0.1+ |
| 2000 08 21 | 699 | 0.1+ | 0.8+ | 2004 03 24 | 699 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.3+ |
| 2000 08 21 | 699 | 0.3− | 0.1+ | 2004 03 24 | 699 | 0.1+ | 0.8+ | 2006 09 18 | 691 | 0.1+ | 0.4+ |
| 2000 08 21 | 699 | 0.1− | 1.1+ | 2004 03 27 | 704 | 1.1+ | 0.2− | 2006 10 03 | 691 | 0.2− | 0.2+ |
| 2000 08 21 | 699 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 0.6+ | 0.7+ | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 2000 08 26 | 704 | 1.7+ | 0.9+ | 2004 03 27 | 704 | 0.7+ | 0.6+ | 2006 10 03 | 691 | 0.4− | 0.1− |
| 2000 08 26 | 704 | (2.8+ | 0.3+) | 2004 03 27 | 704 | 0.2+ | 1.0+ | 2006 10 16 | 691 | 0.2+ | 0.4+ |
| 2000 08 26 | 704 | 1.2+ | 1.0+ | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.6− | 1.0+ | 2004 04 12 | 699 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.3− | 0.2− | 2004 04 12 | 699 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.7− | 0.4− | 2004 04 12 | 699 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | (2.2− | 0.1+) | 2004 04 12 | 699 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2001 11 12 | 704 | 1.3− | 0.8− | 2004 04 14 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.6− | 0.2+ |
| 2001 11 24 | 704 | 1.0+ | 0.6+ | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 11 24 | 704 | 0.2− | 0.1+ | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2001 11 24 | 704 | 0.7+ | 0.6+ | 2004 04 20 | 704 | (1.8+ | 1.4+) | 2006 10 21 | 703 | 1.0+ | 0.8+ |
| 2001 11 24 | 704 | 0.6+ | 0.5+ | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2001 11 24 | 704 | (1.6+ | 1.4+) | 2004 04 20 | 704 | 0.7+ | 0.0 | 2006 10 21 | 703 | 0.8− | 0.0 |
| 2004 03 19 | 704 | 0.7+ | 0.0 | 2004 04 21 | 704 | 0.6− | 1.4+ | 2006 10 21 | 703 | 0.3+ | 0.4+ |
| 2004 03 19 | 704 | 0.7+ | 0.5− | 2004 04 21 | 704 | 0.3+ | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | (1.6+ | 1.0+) | 2004 04 21 | 704 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | (0.7+ | 2.2+) | 2004 04 21 | 704 | 0.0 | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 03 22 | 704 | 0.8+ | 0.1− | 2004 04 28 | 691 | 0.4+ | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2004 03 22 | 704 | 0.3+ | 0.3− | 2004 04 28 | 691 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2004 03 22 | 704 | 0.9+ | 0.0 | 2004 04 28 | 691 | 0.3+ | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2004 03 22 | 704 | 0.6+ | 0.0 | 2005 07 05 | E12 | 1.2− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2004 03 22 | 704 | (1.6+ | 1.0+) | 2005 07 05 | E12 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2004 03 24 | 699 | 0.1− | 0.2− | 2005 07 05 | E12 | 0.3+ | 1.5+ | 2006 11 11 | 703 | 0.0 | 1.0− |
| 2004 03 24 | 699 | 0.1− | 0.5+ | 2005 07 05 | E12 | (1.6+ | 1.7+) | 2006 11 11 | 703 | 2.6− | 0.8− |
| 2004 03 24 | 699 | 0.7− | 0.7− | 2006 07 21 | G96 | 0.1− | 0.1+ | | | | |

**(138623)∗ 2000 QQ$_{225}$ = 2005 OC$_2$**

Discovered 2000 Aug. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 84580)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 104.89694 | | | (2000.0) | | |
| $n$ | 0.18731468 | $\omega$ | 291.24716 | | +0.10850117 | +0.99332995 |
| $a$ | 3.0252052 | $\Omega$ | 344.82463 | | −0.84783966 | +0.07196896 |
| $e$ | 0.0777166 | $i$ | 8.57398 | | −0.51903314 | +0.09008928 |
| $P$ | 5.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 07 | 608 | 0.1− | 0.8− | 2004 05 15 | 704 | 0.7− | 0.8+ | 2006 10 19 | 703 | 0.8− | 0.7− |
| 2000 08 07 | 608 | 0.6− | 0.8− | 2005 07 26 | 428 | 0.7+ | 0.6+ | 2006 10 19 | 703 | 0.7− | 1.1+ |
| 2000 08 07 | 608 | 0.5− | 0.6− | 2005 07 26 | 428 | 0.6− | 0.9+ | 2006 10 19 | A50 | 0.8+ | 0.7+ |
| 2000 08 29 | 704 | 0.3+ | 0.8+ | 2005 07 27 | 428 | 0.7− | 0.8− | 2006 10 19 | A50 | 0.3− | 0.0 |
| 2000 08 29 | 704 | 0.8+ | 0.1+ | 2005 07 27 | 428 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.5− | 0.3+ |
| 2000 08 29 | 704 | 1.3+ | 0.5− | 2005 07 29 | E12 | 0.8− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2000 08 30 | 691 | 0.0 | 0.1+ | 2005 07 29 | E12 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2000 08 30 | 691 | 0.1− | 0.1+ | 2005 07 29 | E12 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2000 08 30 | 691 | 0.1− | 0.0 | 2005 07 29 | E12 | 0.8+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2001 10 15 | 704 | 0.1+ | 0.9+ | 2005 08 12 | E12 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2001 10 15 | 704 | 0.3− | 0.2− | 2005 08 12 | E12 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.9− |
| 2001 10 15 | 704 | 0.7+ | 0.2+ | 2005 08 12 | E12 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 2004 04 17 | 704 | 1.2+ | 0.8− | 2005 08 12 | E12 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.1+ |
| 2004 04 17 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 1.0− |
| 2004 04 17 | 704 | (1.9+ | 0.1−) | 2006 09 28 | 703 | 1.1− | 0.7+ | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2004 04 17 | 704 | 0.3+ | 0.9+ | 2006 09 28 | 703 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.7+ | 0.4− |
| 2004 05 15 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.2− |
| 2004 05 15 | 704 | 0.4− | 0.8+ | 2006 10 19 | 703 | 0.1− | 0.6+ | 2006 11 14 | 703 | 0.2+ | 1.1+ |
| 2004 05 15 | 704 | (0.5+ | 1.7+) | 2006 10 19 | 703 | 0.4− | 0.6− | | | | |

**(138624)∗ 2000 QX$_{226}$ = 2001 YH$_{23}$**

Discovered 2000 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22445)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.94038 | | | (2000.0) | | |
| $n$ | 0.18255183 | $\omega$ | 61.75555 | | +0.73564458 | +0.66032268 |
| $a$ | 3.0775982 | $\Omega$ | 256.49265 | | −0.66308383 | +0.65647226 |
| $e$ | 0.1350148 | $i$ | 8.93394 | | −0.13837228 | +0.36471650 |
| $P$ | 5.40 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1− | 0.4− | 2001 12 18 | 704 | 0.5+ | 0.7+ | 2006 09 28 | 703 | 0.7+ | 0.2− |
| 2000 08 31 | 704 | 0.9+ | 1.4− | 2001 12 18 | 704 | 0.6+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.5− | 0.9+ | 2001 12 18 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2000 08 31 | 704 | 1.1+ | 1.3+ | 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2000 09 03 | 704 | 1.3+ | 0.3− | 2001 12 18 | 704 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2000 09 03 | 704 | 0.6+ | 0.9+ | 2001 12 19 | 704 | 0.9+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2000 09 03 | 704 | 1.1+ | 0.3+ | 2001 12 19 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2000 09 03 | 704 | 0.4− | 0.1+ | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2000 09 23 | 704 | 0.6− | 1.0− | 2001 12 19 | 704 | 0.8+ | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.5− |
| 2000 09 23 | 704 | 1.1− | 0.8+ | 2001 12 19 | 704 | 0.1+ | 0.9+ | 2006 10 27 | 703 | 0.0 | 0.8− |
| 2000 09 23 | 704 | 0.7+ | 0.3+ | 2002 01 08 | 691 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2000 09 23 | 704 | 0.4− | 0.8+ | 2002 01 08 | 691 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.3+ | 0.2− |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2002 01 08 | 691 | 0.3− | 0.1+ | 2006 11 07 | 644 | 0.4− | 0.0 |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2002 12 14 | 645 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.2− | 0.5+ |
| 2001 11 21 | 704 | 0.2− | 1.4+ | 2002 12 14 | 645 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2001 11 21 | 704 | (1.2− | 2.1+) | 2006 09 28 | 703 | 1.1+ | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.6− |
| 2001 11 21 | 704 | 0.2− | 0.9+ | 2006 09 28 | 703 | 0.4− | 0.2− | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2001 11 21 | 704 | (0.3− | 2.0+) | 2006 09 28 | 703 | 0.1+ | 0.9− | 2006 11 25 | G96 | 0.1− | 0.5− |

**(138625)∗ 2000 QL$_{244}$**

Discovered 2000 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.51282 | | | (2000.0) | | |
| $n$ | 0.17663771 | $\omega$ | 309.48514 | | +0.59746512 | +0.80189139 |
| $a$ | 3.1459158 | $\Omega$ | 357.20024 | | −0.72000009 | +0.53514249 |
| $e$ | 0.1718991 | $i$ | 2.78543 | | −0.35303725 | +0.26569291 |
| $P$ | 5.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.1− | 0.0 | 2004 01 22 | 568 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.5+ |
| 1995 10 28 | 691 | 0.6− | 0.4+ | 2004 03 15 | 691 | 0.5+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2000 07 29 | 699 | 0.1− | 0.8− | 2004 03 15 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2000 07 29 | 699 | 1.4− | 1.3− | 2004 03 15 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 2000 07 29 | 699 | 1.0+ | 0.4− | 2004 03 17 | 291 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.6− |
| 2000 07 29 | 699 | 1.3+ | 0.6− | 2004 03 17 | 291 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.6− |
| 2000 08 24 | 704 | 0.7− | 0.2− | 2004 03 17 | 291 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.9+ |
| 2000 08 24 | 704 | 0.1+ | 0.8+ | 2004 03 29 | 291 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2000 08 24 | 704 | 1.7+ | 1.5+ | 2004 03 29 | 291 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.7− | 1.0− |
| 2000 08 27 | 807 | 0.2− | 0.4+ | 2004 03 29 | 291 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.8− | 0.7+ |
| 2000 08 27 | 807 | 0.1− | 0.4+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 17 | 703 | (1.6− | 1.1−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | (1.7+ | 0.6−) | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.7− | 0.3+ | | |
| 2001 11 19 | 704 | 1.2+ | 0.5− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.4− | 0.6+ | | |
| 2001 11 19 | 704 | 0.9+ | 0.5− | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.7− | 0.5+ | | |
| 2001 11 19 | 704 | 0.6+ | 0.7− | 2006 09 19 | 699 | 0.8+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2001 12 15 | 704 | 0.7+ | 0.7− | 2006 09 19 | 699 | 0.5− | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 12 15 | 704 | 0.4+ | 1.5− | 2006 09 19 | 699 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.5− | 0.4+ | | |
| 2001 12 15 | 704 | 0.0 | 1.0− | 2006 09 19 | 699 | 0.9+ | 0.5+ | 2006 10 28 | G96 | 0.6− | 0.1− | | |
| 2001 12 15 | 704 | (2.1− | 0.7+) | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.4− | 0.1+ | | |
| 2004 01 22 | 568 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.1− | | |
| 2004 01 22 | 568 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1− | | |

**(138626)**∗ **2000 QM$_{248}$**

Discovered 2000 Aug. 28 by M. W. Buie at Cerro Tololo.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 345.74982 | | | (2000.0) | | | **P** | **Q** | |
| $n$ | 0.18841140 | | $\omega$ | 317.66826 | | | +0.54779367 | −0.83648511 | |
| $a$ | 3.0134543 | | $\Omega$ | 99.11095 | | | +0.77149880 | +0.49830548 | |
| $e$ | 0.1159675 | | $i$ | 0.85041 | | | +0.32359186 | +0.22800069 | |
| $P$ | 5.23 | | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.9− | 0.8+ | 2001 12 19 | 691 | 1.3− | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.2− | | |
| 1995 09 17 | 691 | 0.6− | 0.3+ | 2001 12 19 | 703 | 1.3+ | 0.7+ | 2006 10 29 | G96 | 0.2+ | 0.2− | | |
| 1995 09 17 | 691 | 0.1+ | 0.1+ | 2001 12 19 | 704 | 1.1+ | 1.2− | 2006 10 29 | G96 | 0.3+ | 0.0 | | |
| 1995 09 18 | 809 | 1.8+ | 0.4− | 2001 12 19 | 703 | (1.8+ | 0.4+) | 2006 10 29 | G96 | 0.4+ | 0.0 | | |
| 1995 09 23 | 809 | 1.6+ | 0.0 | 2001 12 19 | 703 | 0.0 | 0.7+ | 2006 10 29 | G96 | 0.1− | 0.0 | | |
| 2000 08 03 | 691 | 0.4+ | 0.4− | 2002 01 08 | 704 | 0.7+ | 0.3+ | 2006 10 30 | G96 | 0.3+ | 0.0 | | |
| 2000 08 03 | 691 | 0.1+ | 0.4− | 2002 01 08 | 704 | 0.3+ | 0.1+ | 2006 10 30 | G96 | 0.2+ | 0.1− | | |
| 2000 08 03 | 691 | 0.3+ | 0.3− | 2002 01 08 | 704 | 0.5+ | 1.3− | 2006 10 30 | G96 | 0.3+ | 0.2− | | |
| 2000 08 28 | 807 | 0.4+ | 0.0 | 2002 01 08 | 704 | 0.5− | 0.8− | 2006 10 30 | G96 | 0.1+ | 0.0 | | |
| 2000 08 28 | 807 | 0.4+ | 0.0 | 2005 06 30 | 691 | 0.1− | 0.7+ | 2006 11 12 | G96 | 0.2− | 0.2− | | |
| 2000 09 02 | 691 | 0.0 | 0.2− | 2005 06 30 | 691 | 0.1+ | 0.5+ | 2006 11 12 | G96 | 0.4− | 0.2− | | |
| 2000 09 02 | 691 | 0.3+ | 0.2− | 2005 06 30 | 691 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.2− | | |
| 2000 09 02 | 691 | 0.6− | 0.2− | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.1− | | |
| 2001 11 12 | 704 | 0.3+ | 0.4+ | 2005 07 11 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.6− | 0.0 | | |
| 2001 11 12 | 704 | 0.0 | 0.0 | 2005 07 11 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.3+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.2− | 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.4+ | | |
| 2001 11 20 | 704 | 0.7+ | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.3− | | |
| 2001 11 20 | 704 | 0.5+ | 0.5− | 2005 07 12 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.3+ | | |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2005 08 31 | 691 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.8+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2005 08 31 | 691 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.6− | 0.2+ | | |
| 2001 11 21 | 704 | 0.5+ | 0.1− | 2005 08 31 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.4+ | | |
| 2001 11 21 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.8− | 0.2+ | | |
| 2001 11 21 | 704 | 0.6+ | 0.0 | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.0 | 1.0− | | |
| 2001 11 21 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.3− | | |
| 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2001 12 14 | 704 | 0.4− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.4− | | |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2001 12 14 | 704 | (1.7+ | 0.8+) | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− | | |
| 2001 12 14 | 704 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 1.2+ | 1.5+ | | |
| 2001 12 14 | 704 | 0.7− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.3− | 0.1+ | | |
| 2001 12 17 | 704 | 0.3+ | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.0 | | |
| 2001 12 17 | 704 | 0.3+ | 1.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.1− | 0.2+ | | |
| 2001 12 17 | 704 | 0.3+ | 1.0+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.6+ | | |
| 2001 12 17 | 704 | 0.5+ | 1.2+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.1+ | | |
| 2001 12 19 | 691 | 1.0− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.1+ | 1.0+ | | |
| 2001 12 19 | 704 | 1.2+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.6− | 0.3+ | | |
| 2001 12 19 | 704 | 0.3+ | 0.9− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.6+ | 1.0+ | | |
| 2001 12 19 | 691 | 0.7− | 0.3− | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.8− | | |
| 2001 12 19 | 704 | 0.8+ | 1.1− | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2001 12 19 | 703 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.2− | | |
| 2001 12 19 | 704 | 0.9+ | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.3− | | |

**(138627)**∗ **2000 QK$_{250}$ = 2001 XG$_{163}$**

Discovered 2000 Aug. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 22449)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 359.76883 | | | (2000.0) | | | **P** | **Q** | |
| $n$ | 0.17658709 | | $\omega$ | 223.90464 | | | +0.98286912 | −0.18382631 | |
| $a$ | 3.1465170 | | $\Omega$ | 146.68133 | | | +0.17506144 | +0.90863075 | |
| $e$ | 0.2177033 | | $i$ | 1.38461 | | | +0.05763486 | +0.37496407 | |
| $P$ | 5.58 | | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.2− | 0.1+ | 2002 01 09 | 704 | 0.8+ | 0.1− | 2006 09 18 | 699 | 0.7− | 0.2− | | |
| 1999 05 18 | 691 | 0.2+ | 0.0 | 2002 01 09 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 699 | 1.0+ | 0.4− | | |
| 1999 05 18 | 691 | 0.1+ | 0.2+ | 2002 01 09 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.5− | | |
| 2000 08 01 | 807 | 0.6− | 0.7+ | 2002 01 09 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 1.0+ | 0.4+ | | |
| 2000 08 01 | 704 | 0.4− | 1.3+ | 2002 01 13 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.9− | | |
| 2000 08 01 | 704 | 0.6− | 0.8+ | 2002 01 13 | 704 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.0 | 1.5+ | | |
| 2000 08 01 | 807 | 0.6− | 0.2− | 2002 01 13 | 704 | 0.0 | 0.7− | 2006 09 20 | 704 | 0.3− | 0.2− | | |
| 2000 08 01 | 704 | 0.7+ | 0.6− | 2002 01 13 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.3+ | | |
| 2000 08 20 | 699 | (2.6+ | 1.2−) | 2002 01 13 | 704 | 0.7+ | 0.5+ | 2006 09 20 | 644 | 0.5− | 0.3+ | | |
| 2000 08 20 | 699 | 0.2− | 1.7− | 2002 01 14 | 291 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.2+ | | |
| 2000 08 20 | 699 | 1.6+ | 0.5− | 2002 01 14 | 291 | 0.6− | 1.0+ | 2006 09 20 | 644 | 0.7− | 0.1+ | | |
| 2000 08 20 | 699 | (4.2+ | 0.1−) | 2002 01 14 | 291 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | | |
| 2000 08 26 | 704 | 0.7− | 0.3+ | 2002 01 15 | 704 | 0.4− | 0.4− | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 2000 08 26 | 704 | 0.0 | 0.9+ | 2002 01 15 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.0 | | |
| 2000 08 26 | 704 | 0.3+ | 0.7+ | 2002 01 15 | 704 | 0.1− | 0.2+ | 2006 09 27 | 704 | (0.1+ | 2.4+) | | |
| 2000 08 26 | 704 | 0.5− | 0.9+ | 2002 01 15 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.2+ | | |
| 2000 08 26 | 704 | 1.3− | 0.5+ | 2002 01 15 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.4+ | | |
| 2000 09 04 | 691 | 0.2− | 0.5− | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.8− | 0.3+ | | |
| 2000 09 04 | 691 | 0.2+ | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.0 | 0.0 | | |
| 2000 09 04 | 691 | 0.2− | 0.3− | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.2+ | | |
| 2000 09 04 | 691 | 0.3+ | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 01 | 704 | 1.2+ | 0.6+ | | |
| 2000 09 04 | 691 | 0.2− | 0.2− | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.7+ | | |
| 2000 09 04 | 691 | 0.3+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.7+ | 0.3− | | |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 2001 11 20 | 704 | 0.4+ | 0.4− | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.4− | | |
| 2001 11 20 | 704 | 0.8+ | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.0 | 0.7− | | |
| 2001 11 21 | 704 | 1.0+ | 0.0 | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.1− | | |
| 2001 11 21 | 704 | 1.2+ | 0.1− | 2006 09 14 | 703 | 0.8− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 11 21 | 704 | 0.4+ | 0.5− | 2006 09 14 | 703 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 11 21 | 704 | 0.2+ | 0.8− | 2006 09 14 | 703 | 0.3− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2001 12 14 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.9− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 12 14 | 704 | 1.4− | 1.1− | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2001 12 14 | 704 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.4+ | 1.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.3− | 1.0− | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 09 14 | 703 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.1− | 1.1+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2001 12 19 | 691 | 0.9− | 0.7− | 2006 09 17 | 704 | 0.8+ | 0.4− | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2001 12 19 | 691 | 0.4− | 0.4− | 2006 09 17 | 704 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.0 | | |
| 2001 12 19 | 691 | (2.2+ | 2.8−) | 2006 09 17 | 704 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.4− | | |
| 2001 12 20 | 704 | 0.5+ | 0.3+ | 2006 09 17 | 704 | 0.8− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2001 12 20 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2001 12 20 | 704 | 1.1+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2001 12 20 | 704 | 0.8+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2001 12 20 | 704 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 | | | | | | |

**(138628)**∗ **2000 QM$_{251}$**

Discovered 2000 Aug. 25 by M. W. Buie at Cerro Tololo.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.34283 | | (2000.0) | | | |
| $n$ | 0.00330785 | $\omega$ | 313.15987 | | +0.62837677 | +0.77763322 |
| $a$ | 44.6106983 | $\Omega$ | 355.61701 | | −0.61161655 | +0.47741766 |
| $e$ | 0.2662441 | $i$ | 15.72882 | | −0.48069515 | +0.40909528 |
| $P$ | 298 | $H$ | 7.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 807 | 0.3+ | 0.3− | 2001 08 20 | 807 | 0.1− | 0.0 | 2003 07 09 | 568 | 0.0 | 0.4− |
| 2000 08 25 | 807 | 0.2+ | 0.2− | 2001 09 25 | 568 | 0.7− | 0.1− | 2005 12 01 | 695 | 0.1+ | 0.2+ |
| 2000 08 26 | 807 | 0.0 | 0.3− | 2001 09 25 | 568 | 0.3− | 0.0 | 2005 12 01 | 695 | 0.2− | 0.3+ |
| 2000 08 26 | 807 | 0.3+ | 0.1− | 2001 09 26 | 568 | 0.5− | 0.1− | 2005 12 02 | 695 | 0.2+ | 0.2+ |
| 2000 08 28 | 807 | 0.2+ | 0.1+ | 2002 09 10 | 662 | 0.1− | 0.4+ | 2006 09 25 | 688 | 1.3+ | 0.4+ |
| 2000 08 28 | 807 | 0.1+ | 0.3+ | 2002 09 10 | 662 | 0.1+ | 0.7+ | 2006 09 25 | 688 | 1.1− | 1.1− |
| 2001 08 20 | 807 | 0.1+ | 0.2+ | 2003 07 08 | 568 | 0.0 | 0.3− | | | | |

**(138629)∗ 2000 RR**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.90693 | | (2000.0) | | | |
| $n$ | 0.17511804 | $\omega$ | 147.33215 | | +0.83984981 | +0.54281560 |
| $a$ | 3.1640897 | $\Omega$ | 179.76602 | | −0.54162757 | +0.83777236 |
| $e$ | 0.1727879 | $i$ | 27.40272 | | +0.03594274 | −0.05906525 |
| $P$ | 5.63 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 05 | 699 | 1.0− | 0.2− | 2004 03 20 | 704 | 1.1+ | 0.4+ | 2006 09 18 | 703 | 0.5+ | 1.2+ |
| 2000 07 05 | 699 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.1− | 0.8+ | 2006 09 18 | 703 | 0.7+ | 0.5− |
| 2000 07 05 | 699 | 0.3− | 0.0 | 2004 03 20 | 704 | 1.1− | 0.9+ | 2006 09 18 | 703 | 0.9+ | 0.9+ |
| 2000 07 05 | 699 | 1.2− | 0.3+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.7+ |
| 2000 09 01 | 704 | 0.2+ | 0.7+ | 2004 03 22 | 704 | 0.5− | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 2000 09 01 | 704 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.6− | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.0 |
| 2000 09 01 | 704 | 0.2+ | 0.2− | 2004 03 22 | 704 | 0.2− | 1.1+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2000 09 01 | 704 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 2000 09 01 | 704 | 0.2+ | 0.3− | 2004 03 22 | 704 | 0.7− | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 2000 09 02 | 704 | 0.9− | 0.6+ | 2004 04 15 | 644 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2000 09 02 | 704 | 0.1− | 0.3+ | 2004 04 15 | 644 | 0.5+ | 0.4+ | 2006 09 21 | 699 | 0.8+ | 0.0 |
| 2000 09 02 | 704 | 0.1+ | 0.2+ | 2004 04 15 | 644 | 0.5+ | 0.2+ | 2006 09 21 | 699 | 0.2− | 0.1+ |
| 2000 09 02 | 704 | 0.2+ | 0.4+ | 2004 04 16 | 691 | 0.4+ | 0.1+ | 2006 09 21 | 699 | 0.4− | 0.7+ |
| 2000 09 02 | 704 | 0.1+ | 0.0 | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.4+ |
| 2000 09 21 | 699 | 0.7+ | 0.4+ | 2004 04 16 | 691 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.3− | 0.3+ |
| 2000 09 21 | 699 | 1.0− | 0.2− | 2004 04 21 | 691 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.5− | 0.6+ |
| 2000 09 21 | 699 | 0.6+ | 0.3− | 2004 04 21 | 691 | 0.4− | 0.1+ | 2006 09 22 | 704 | (0.1− | 1.9−) |
| 2000 09 21 | 699 | 0.6+ | 0.3+ | 2004 04 21 | 691 | 0.2− | 0.2− | 2006 09 22 | 704 | 1.2− | 0.4+ |
| 2000 09 23 | 704 | 0.3+ | 0.4+ | 2005 05 11 | 704 | 0.7− | 0.4− | 2006 09 22 | 704 | 0.9− | 0.4− |
| 2000 09 23 | 704 | 0.2+ | 0.2+ | 2005 05 11 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 2000 09 23 | 704 | 0.1+ | 0.5+ | 2005 05 11 | 704 | 0.7+ | 1.3+ | 2006 09 25 | 699 | 0.6+ | 0.5+ |
| 2000 09 23 | 704 | 0.5+ | 0.3− | 2005 06 08 | 704 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.3+ | 1.1+ |
| 2000 09 23 | 704 | 0.1+ | 0.0 | 2005 06 08 | 704 | 0.4+ | 1.4+ | 2006 09 25 | 699 | 0.3+ | 0.6+ |
| 2000 09 26 | 704 | (2.2+ | 0.7−) | 2005 06 08 | 704 | (0.5− | 1.8+) | 2006 09 26 | 704 | 0.3+ | 0.4+ |
| 2000 09 26 | 704 | (2.3+ | 0.4−) | 2005 06 25 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.3+ |
| 2000 09 26 | 704 | 1.0+ | 0.5− | 2005 06 25 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 2000 09 26 | 704 | 1.4+ | 1.0− | 2005 06 25 | 644 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 2000 09 27 | 704 | 0.2+ | 0.3+ | 2005 06 26 | 699 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.4+ |
| 2000 09 27 | 704 | 0.1+ | 0.2− | 2005 06 26 | 699 | 0.1− | 0.4− | 2006 09 26 | 704 | 0.7+ | 0.1+ |
| 2000 09 27 | 704 | 0.1− | 0.1− | 2005 06 26 | 699 | 0.5− | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.4− |
| 2000 09 27 | 704 | 0.1− | 0.1− | 2005 06 26 | 699 | 0.8+ | 0.5+ | 2006 09 26 | 704 | 0.7+ | 0.9+ |
| 2000 09 27 | 704 | 0.7+ | 0.4− | 2005 06 30 | 699 | 0.5− | 0.2− | 2006 09 29 | 699 | 0.9− | 0.7+ |
| 2000 09 28 | 704 | 0.1+ | 0.0 | 2005 06 30 | 699 | 1.3− | 0.7+ | 2006 09 29 | 699 | 0.7− | 0.4+ |
| 2000 09 28 | 704 | 0.1− | 0.4+ | 2005 06 30 | 699 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.2+ | 0.8+ |
| 2000 09 28 | 704 | 0.5− | 0.8+ | 2005 06 30 | 699 | 0.6− | 0.2− | 2006 09 29 | 699 | 0.0 | 0.2− |
| 2000 09 28 | 704 | 0.5− | 0.4+ | 2005 07 30 | 704 | 1.0+ | 1.2+ | 2006 09 30 | 704 | (1.7− | 1.4+) |
| 2000 09 28 | 704 | 0.5+ | 0.6+ | 2005 07 30 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.7− | 0.2− |
| 2000 10 02 | 645 | 0.0 | 0.2− | 2005 07 30 | 704 | 1.1+ | 0.1+ | 2006 09 30 | 704 | 0.2− | 0.1+ |
| 2000 10 02 | 645 | 0.1− | 0.2− | 2005 07 30 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.0 |
| 2000 10 03 | 704 | 0.5− | 1.2+ | 2006 08 18 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.0 |
| 2000 10 03 | 704 | 0.8− | 0.5− | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2000 10 03 | 704 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2000 10 03 | 704 | 0.6− | 1.1− | 2006 08 19 | 699 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2000 10 25 | 704 | 0.5− | 0.2+ | 2006 08 19 | 699 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.4+ |
| 2000 10 25 | 704 | 1.0+ | 0.7+ | 2006 08 19 | 699 | 0.5+ | 0.5− | 2006 10 17 | D35 | 0.2+ | 0.3+ |
| 2000 10 25 | 704 | 0.1+ | 0.8+ | 2006 08 19 | 699 | 0.1− | 0.1− | 2006 10 17 | D35 | 0.0 | 0.4+ |
| 2000 10 25 | 704 | 0.6+ | 0.7− | 2006 08 28 | 704 | 0.2+ | 0.5+ | 2006 10 17 | D35 | 0.2+ | 0.4+ |
| 2004 03 15 | 703 | (2.2− | 0.1+) | 2006 08 28 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 0.4+ | 0.3+ | 2006 08 28 | 704 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2004 03 15 | 703 | 0.6− | 0.2+ | 2006 09 12 | 703 | 0.6− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | (1.6− | 1.1+) | 2006 09 12 | 703 | 0.1− | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2004 03 19 | 704 | 1.1+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2004 03 19 | 704 | 0.1− | 1.1+ | 2006 09 16 | 704 | 0.2− | 0.3− | 2006 10 28 | 703 | 0.3− | 0.6+ |
| 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 704 | 0.1− | 0.8+ | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2004 03 19 | 704 | 0.3+ | 0.8+ | 2006 09 16 | 704 | 0.2− | 1.2+ | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2004 03 20 | 704 | 1.1− | 0.5+ | 2006 09 16 | 704 | 0.6− | 0.1− | 2006 10 28 | 703 | 0.3+ | 0.4− |

**(138630)∗ 2000 RU = 2001 SW$_{282}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17455)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.97075 | | (2000.0) | | | |
| $n$ | 0.17170874 | $\omega$ | 134.59937 | | +0.71799272 | −0.61094523 |
| $a$ | 3.2058346 | $\Omega$ | 266.03647 | | +0.50541923 | +0.78705533 |
| $e$ | 0.1842776 | $i$ | 19.53088 | | +0.47857900 | +0.08538052 |
| $P$ | 5.74 | $H$ | 13.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 699 | 0.0 | 0.6+ | 2001 12 11 | 704 | 0.0 | 0.4− | 2002 02 07 | 704 | 0.1− | 0.7+ |
| 2000 05 30 | 699 | 0.2+ | 0.7+ | 2001 12 11 | 704 | 0.3− | 0.2− | 2002 02 07 | 704 | (0.8+ | 1.7+) |
| 2000 05 30 | 699 | 1.4+ | 0.6+ | 2001 12 11 | 704 | 0.5− | 0.4− | 2002 02 07 | 704 | 0.1− | 1.2+ |
| 2000 05 30 | 699 | 0.6+ | 0.6− | 2001 12 11 | 704 | 0.9− | 0.9− | 2002 03 06 | 704 | 0.9+ | 1.5+ |
| 2000 07 05 | 699 | 0.6+ | 0.4+ | 2001 12 11 | 704 | 0.7− | 0.5− | 2002 03 06 | 704 | 0.0 | 1.3+ |
| 2000 07 05 | 699 | 0.3+ | 1.0+ | 2001 12 15 | 704 | 0.1− | 0.1+ | 2002 03 06 | 704 | (0.2+ | 2.3+) |
| 2000 07 05 | 699 | 0.0 | 0.4− | 2001 12 15 | 704 | 0.3+ | 0.0 | 2003 01 12 | 644 | 0.3+ | 0.0 |
| 2000 07 05 | 699 | 0.6− | 0.5+ | 2001 12 15 | 704 | 0.1+ | 0.0 | 2003 01 12 | 644 | 0.1+ | 0.2+ |
| 2000 09 01 | 704 | 0.5− | 0.5− | 2001 12 15 | 704 | 0.3+ | 0.4− | 2003 01 12 | 644 | 0.1+ | 0.0 |
| 2000 09 01 | 704 | 0.5− | 0.1+ | 2001 12 18 | 704 | 0.1− | 0.2− | 2003 01 13 | 644 | 0.6+ | 0.6+ |
| 2000 09 01 | 704 | 0.3− | 0.4− | 2001 12 18 | 704 | 0.1− | 0.1− | 2003 01 13 | 644 | 0.1+ | 0.9+ |
| 2000 09 02 | 704 | 0.7− | 0.3+ | 2001 12 18 | 704 | 0.2− | 0.1− | 2003 01 13 | 644 | 0.2+ | 0.4+ |
| 2000 09 02 | 704 | 0.7− | 0.1+ | 2001 12 18 | 704 | 0.2− | 0.0 | 2003 02 09 | 644 | 0.3+ | 0.0 |
| 2000 09 02 | 704 | 0.5− | 0.0 | 2001 12 18 | 704 | 0.0 | 0.2+ | 2003 02 09 | 644 | 0.0 | 0.2− |
| 2000 09 02 | 704 | 0.7− | 0.7+ | 2001 12 19 | 703 | 0.6+ | 0.1+ | 2003 02 09 | 644 | 0.1+ | 0.2− |
| 2000 09 02 | 704 | 0.9− | 0.4+ | 2001 12 19 | 704 | 0.3+ | 0.2− | 2003 03 11 | 704 | 1.2+ | 0.2+ |
| 2000 09 27 | 704 | 0.0 | 0.1+ | 2001 12 19 | 703 | 0.1+ | 0.1+ | 2003 03 11 | 704 | 0.3+ | 0.5+ |
| 2000 09 27 | 704 | 0.1− | 0.1+ | 2001 12 19 | 703 | 0.5+ | 0.3− | 2003 03 11 | 704 | 0.4+ | 0.9+ |
| 2000 09 27 | 704 | 0.3+ | 0.1− | 2001 12 19 | 704 | 0.1+ | 0.1− | 2003 03 30 | 699 | 0.5− | 0.3+ |
| 2000 09 27 | 704 | 0.3+ | 0.0 | 2001 12 19 | 703 | 0.2+ | 0.1+ | 2003 03 30 | 699 | 0.3+ | 0.4+ |
| 2000 09 27 | 704 | 0.3+ | 0.3+ | 2001 12 19 | 704 | 0.0 | 0.1+ | 2003 03 30 | 699 | 0.1− | 0.9+ |
| 2000 10 21 | 704 | 0.7− | 0.4+ | 2001 12 19 | 704 | 0.0 | 0.1+ | 2003 03 30 | 699 | 0.1+ | 0.5− |
| 2000 10 21 | 704 | 0.3+ | 0.6− | 2001 12 19 | 704 | 0.1− | 0.4+ | 2003 04 02 | 608 | 0.2− | 0.4+ |
| 2000 10 21 | 704 | 0.1+ | 0.6+ | 2001 12 20 | 704 | 0.2− | 0.1− | 2003 04 02 | 608 | 0.2+ | 0.6+ |
| 2000 10 30 | 704 | 0.2+ | 0.1+ | 2001 12 20 | 704 | 0.3+ | 0.6+ | 2003 04 02 | 608 | 0.3+ | 0.4+ |
| 2000 10 30 | 704 | 0.4+ | 0.1+ | 2001 12 20 | 704 | 0.3+ | 0.1− | 2006 08 24 | 704 | 0.6+ | 0.1− |
| 2000 10 30 | 704 | 0.0 | 0.5− | 2001 12 20 | 704 | 0.3+ | 0.1+ | 2006 08 24 | 704 | 0.0 | 0.7+ |
| 2000 10 30 | 704 | (2.8− | 0.9−) | 2001 12 20 | 704 | 0.7+ | 0.9+ | 2006 08 24 | 704 | 0.3+ | 0.6+ |
| 2001 09 22 | 704 | 0.8− | 0.7− | 2001 12 20 | 704 | 0.2+ | 0.3− | 2006 08 24 | 704 | 0.7+ | 1.0+ |
| 2001 09 22 | 704 | 0.2+ | 0.3− | 2001 12 20 | 704 | 0.3+ | 0.1− | 2006 09 11 | 703 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.4− | 0.0 | 2001 12 20 | 704 | 0.3+ | 0.6+ | 2006 09 11 | 703 | 0.4− | 0.2− |
| 2001 09 22 | 704 | 0.3+ | 0.3+ | 2001 12 20 | 704 | 0.2+ | 0.2− | 2006 09 11 | 703 | 0.0 | 0.7− |
| 2001 09 28 | 704 | 0.8− | 0.9+ | 2001 12 20 | 704 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.0 | 0.4− |
| 2001 09 28 | 704 | 0.7+ | 0.3+ | 2001 12 20 | 704 | 1.4+ | 0.2+ | 2006 09 15 | 703 | 0.3− | 0.1+ |
| 2001 09 28 | 704 | 0.3− | 0.7+ | 2001 12 20 | 704 | 0.5+ | 1.0+ | 2006 09 15 | 703 | 1.2− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 0.6− | 0.7+ | 2001 12 20 | 704 | 1.3+ | 0.7+ | 2006 09 15 | 703 | 0.6− | 0.1− |
| 2001 10 14 | 704 | 0.6+ | 0.4+ | 2001 12 20 | 704 | (1.9+ | 0.6−) | 2006 09 15 | 703 | 0.4− | 0.1+ |
| 2001 10 14 | 704 | 0.2− | 0.2+ | 2001 12 20 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 1.4+ | 0.2− | 2002 01 08 | 704 | 0.0 | 0.4− | 2006 09 19 | 703 | 0.4+ | 0.5− |
| 2001 10 14 | 704 | 1.2+ | 0.4− | 2002 01 08 | 704 | 0.3− | 0.9− | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2001 10 27 | 704 | 0.9+ | 0.5+ | 2002 01 08 | 704 | 0.3+ | 0.6− | 2006 09 19 | 703 | 0.2+ | 0.5− |
| 2001 10 27 | 704 | 0.9+ | 0.3+ | 2002 01 08 | 704 | 0.2+ | 0.6− | 2006 09 21 | 699 | 0.3+ | 0.2+ |
| 2001 10 27 | 704 | 0.4+ | 0.3− | 2002 01 08 | 704 | 0.1+ | 0.5− | 2006 09 21 | 699 | 0.3+ | 0.1+ |
| 2001 10 27 | 704 | 0.5+ | 0.2− | 2002 01 13 | 704 | 0.2+ | 0.2− | 2006 09 21 | 699 | 0.5+ | 0.3− |
| 2001 10 27 | 704 | 0.1− | 0.3− | 2002 01 13 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.6+ | 0.0 |
| 2001 11 11 | 704 | 1.5− | 1.2− | 2002 01 13 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 1.2− | 0.7+ |
| 2001 11 11 | 704 | 0.8− | 0.1− | 2002 01 13 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.7+ |
| 2001 11 11 | 704 | 0.8− | 0.0 | 2002 01 13 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.7+ | 1.1+ |
| 2001 11 11 | 704 | 0.6− | 0.0 | 2002 01 15 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 703 | 0.8+ | 0.1− |
| 2001 11 21 | 704 | 0.3+ | 0.5+ | 2002 01 15 | 704 | 0.7+ | 0.3+ | 2006 10 20 | 703 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.5+ | 2002 01 15 | 704 | 0.3− | 0.2+ | 2006 10 20 | 703 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.6− | 0.2+ | 2002 01 15 | 704 | 0.4− | 0.6+ | 2006 10 20 | 703 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.2− | 2002 01 15 | 704 | 0.6− | 0.1− | 2006 11 15 | 703 | 0.1− | 0.4+ |
| 2001 11 24 | 704 | 0.6− | 1.2− | 2002 01 19 | 704 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.6− | 0.1− |
| 2001 11 24 | 704 | 1.1− | 1.2− | 2002 01 19 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.3− |
| 2001 11 24 | 704 | 1.0− | 0.2− | 2002 01 19 | 704 | 0.4− | 0.7+ | 2006 11 15 | 703 | 0.4+ | 0.0 |
| 2001 11 24 | 704 | 1.2− | 0.4− | 2002 01 19 | 704 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 1.3− | 0.3+ | 2002 01 19 | 704 | 0.3− | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2001 12 10 | 704 | 0.2+ | 0.7− | 2002 01 22 | 704 | 1.0− | 0.6− | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2001 12 10 | 704 | 0.5+ | 0.5− | 2002 01 22 | 704 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2001 12 10 | 704 | 0.9+ | 0.9− | 2002 01 22 | 704 | 0.5− | 0.6− | 2006 11 18 | 704 | 2.8− | 0.1− |
| 2001 12 10 | 704 | 1.0+ | 0.8− | 2002 01 22 | 704 | 0.4− | 0.1+ | | | | |
| 2001 12 10 | 704 | 0.5+ | 0.4− | 2002 02 07 | 704 | 0.3− | 0.8+ | | | | |

**(138631)∗ 2000 RE$_8$ = 2003 AX$_{18}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40121)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.11416 | | (2000.0) | | | |
| $n$ | 0.24041786 | $\omega$ | 229.11050 | | −0.88407286 | +0.40173968 |
| $a$ | 2.5614835 | $\Omega$ | 331.93576 | | −0.09216041 | −0.65077442 |
| $e$ | 0.2123152 | $i$ | 30.50175 | | −0.45817207 | −0.64428090 |
| $P$ | 4.10 | $H$ | 14.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 10 | 704 | 0.8− | 0.9+ | 2003 01 30 | 704 | 0.1− | 0.9+ | 2004 09 10 | 704 | 0.2− | 0.1− |
| 2000 08 10 | 704 | 0.2+ | 0.0 | 2003 01 30 | 704 | 0.2− | 0.5+ | 2004 09 10 | 704 | 0.5− | 0.1+ |
| 2000 08 10 | 704 | 0.9+ | 1.1+ | 2003 03 29 | 860 | 0.1− | 0.5+ | 2004 09 10 | 704 | 0.1− | 0.3− |
| 2000 08 10 | 704 | 0.5+ | 1.0+ | 2003 03 29 | 860 | 0.7+ | 0.3+ | 2004 09 13 | 704 | 0.3− | 0.1− |
| 2000 08 10 | 704 | 0.1+ | 0.9+ | 2003 03 29 | 860 | (2.0+ | 2.1−) | 2004 09 13 | 704 | 0.7+ | 0.3− |
| 2000 09 01 | 704 | 0.9− | 0.7− | 2004 07 15 | 704 | 0.7+ | 0.5− | 2004 09 13 | 704 | 0.2− | 0.0 |
| 2000 09 01 | 704 | 0.6− | 0.6+ | 2004 07 15 | 704 | 0.3− | 0.3− | 2004 09 15 | 699 | 0.8+ | 0.6+ |
| 2000 09 01 | 704 | 0.1− | 0.2− | 2004 07 15 | 704 | 0.0 | 0.3− | 2004 09 15 | 699 | (2.4− | 0.0 ) |
| 2000 09 01 | 704 | 1.3− | 0.5+ | 2004 07 15 | 704 | 0.7− | 0.4+ | 2004 09 15 | 699 | (1.8− | 0.8−) |
| 2000 09 03 | 704 | 0.9+ | 0.9+ | 2004 07 25 | 699 | 0.9− | 1.1+ | 2004 09 15 | 699 | 0.9− | 0.4− |
| 2000 09 03 | 704 | 0.4+ | 0.7− | 2004 07 25 | 699 | 0.6− | 0.8− | 2004 09 18 | 704 | 0.7+ | 1.0− |
| 2000 09 03 | 704 | 0.3+ | 0.3+ | 2004 07 25 | 699 | 0.4− | 1.0+ | 2004 09 18 | 704 | 0.2− | 0.8+ |
| 2000 09 03 | 704 | 0.1+ | 0.3− | 2004 07 25 | 699 | 0.3− | 0.2+ | 2004 09 18 | 704 | 0.2+ | 0.0 |
| 2000 09 05 | 704 | 0.0 | 0.0 | 2004 08 09 | 704 | 0.3− | 0.4− | 2004 09 18 | 704 | 0.2− | 0.6+ |
| 2000 09 05 | 704 | 0.4+ | 0.2− | 2004 08 09 | 699 | (0.2+ | 1.8+) | 2004 09 18 | 704 | 0.4+ | 0.0 |
| 2000 09 05 | 704 | 0.7− | 0.1− | 2004 08 09 | 704 | 0.2− | 0.8− | 2004 10 07 | 699 | 1.3− | 0.6− |
| 2000 09 05 | 704 | 0.0 | 0.8− | 2004 08 09 | 699 | 1.1+ | 1.3− | 2004 10 07 | 699 | 0.5− | 0.4+ |
| 2000 09 05 | 704 | 0.1+ | 0.2+ | 2004 08 09 | 699 | 0.1− | 0.2− | 2004 10 07 | 699 | 0.8− | 0.4+ |
| 2000 09 05 | 704 | 0.3− | 1.0− | 2004 08 09 | 704 | 0.4− | 0.5+ | 2004 10 07 | 699 | 0.2+ | 0.8− |
| 2000 09 05 | 704 | 0.9+ | 0.5+ | 2004 08 09 | 704 | 0.8− | 0.6+ | 2006 10 27 | 703 | 0.9− | 0.8− |
| 2000 09 05 | 704 | 0.5+ | 0.1+ | 2004 08 09 | 699 | 0.8− | 0.2− | 2006 10 27 | 703 | 1.7− | 0.3− |
| 2000 09 26 | 704 | 0.6+ | 0.1− | 2004 08 11 | 704 | 0.4− | 0.2+ | 2006 10 27 | 703 | 1.5− | 0.2+ |
| 2000 09 26 | 704 | 0.6+ | 1.0+ | 2004 08 11 | 704 | 0.3− | 0.6+ | 2006 10 27 | 703 | 1.2+ | 1.0+ |
| 2000 09 26 | 704 | 0.1− | 0.3− | 2004 08 11 | 704 | 0.3− | 1.0+ | 2006 11 23 | 691 | 0.3+ | 0.3+ |
| 2000 09 26 | 704 | 0.4+ | 0.4− | 2004 08 11 | 704 | 0.7− | 0.4+ | 2006 11 23 | 691 | 0.4+ | 0.0 |
| 2003 01 03 | 699 | 0.7+ | 1.0+ | 2004 08 11 | 704 | 0.7− | 0.7+ | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2003 01 03 | 699 | 0.4+ | 0.1− | 2004 08 17 | 704 | (2.8− | 0.4+) | 2006 11 27 | 703 | 0.4− | 0.4+ |
| 2003 01 03 | 699 | (2.1+ | 0.2+) | 2004 08 17 | 704 | 1.3− | 0.2− | 2006 11 27 | 703 | 0.1− | 0.2+ |
| 2003 01 03 | 699 | 0.8+ | 0.3+ | 2004 08 17 | 704 | 0.6− | 1.5+ | 2006 11 27 | 703 | 0.3+ | 1.2− |
| 2003 01 07 | 704 | 0.8+ | 1.1+ | 2004 08 17 | 704 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.8− | 0.0 |
| 2003 01 07 | 704 | 0.7+ | 0.6+ | 2004 09 08 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 1.6+ | 0.6+ |
| 2003 01 07 | 704 | 0.2+ | 0.4+ | 2004 09 08 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 2.8+ | 0.4+ |
| 2003 01 07 | 704 | 0.1+ | 0.7+ | 2004 09 08 | 704 | 0.1− | 0.4+ | 2006 11 28 | 704 | 1.4+ | 0.6+ |
| 2003 01 30 | 704 | (0.6+ | 1.6−) | 2004 09 08 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 2.0+ | 0.4+ |
| 2003 01 30 | 704 | 0.2+ | 0.0 | 2004 09 08 | 704 | 0.1− | 0.2− | | | | |

**(138632)∗ 2000 RS$_{14}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.87964 | | (2000.0) | | | |
| $n$ | 0.17129172 | $\omega$ | 205.75053 | | +0.72626070 | −0.68294663 |
| $a$ | 3.2110358 | $\Omega$ | 198.03872 | | +0.66628363 | +0.72737468 |
| $e$ | 0.0987615 | $i$ | 14.64476 | | +0.16914940 | +0.06715636 |
| $P$ | 5.75 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.3− | 0.7− | 2000 10 03 | 704 | (2.1+ | 0.0 ) | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2000 09 01 | 704 | 0.2− | 0.5− | 2000 10 03 | 704 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2000 09 01 | 704 | 0.2+ | 0.2+ | 2000 10 03 | 704 | 0.5+ | 0.3− | 2006 09 25 | 704 | 0.4− | 0.1− |
| 2000 09 01 | 704 | 1.3+ | 1.1+ | 2000 10 03 | 704 | 1.0+ | 0.0 | 2006 09 25 | 704 | 0.2− | 0.3+ |
| 2000 09 01 | 704 | 0.3+ | 0.6+ | 2001 12 19 | 704 | 0.7+ | 0.8+ | 2006 09 25 | 704 | 0.1− | 0.1+ |
| 2000 09 03 | 704 | 0.6− | 0.7+ | 2001 12 19 | 704 | 0.8− | 0.0 | 2006 09 25 | 704 | 0.0 | 0.5+ |
| 2000 09 03 | 704 | 0.6− | 0.4− | 2001 12 19 | 704 | 0.4− | 0.9+ | 2006 09 25 | 704 | 0.0 | 0.5− |
| 2000 09 03 | 704 | 0.3+ | 0.3+ | 2001 12 19 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2000 09 03 | 704 | 0.4+ | 1.3− | 2002 01 10 | 644 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2000 09 03 | 704 | 0.4+ | 0.5+ | 2002 01 10 | 644 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2000 09 03 | 704 | 0.3+ | 0.5+ | 2002 01 10 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2000 09 03 | 704 | 1.1+ | 1.0− | 2004 04 19 | 291 | 0.2+ | 0.4+ | 2006 09 27 | 699 | 0.6− | 0.6+ |
| 2000 09 03 | 704 | 0.3+ | 1.4+ | 2004 04 19 | 291 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2000 09 05 | 704 | 0.2− | 0.9− | 2004 04 19 | 291 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2000 09 05 | 704 | 0.4+ | 0.9− | 2004 05 22 | 704 | (1.1+ | 1.7+) | 2006 09 27 | 699 | 0.2− | 0.5+ |
| 2000 09 05 | 704 | 0.3− | 0.2+ | 2004 05 22 | 704 | 0.4+ | 0.1− | 2006 09 27 | 699 | 0.6− | 0.5+ |
| 2000 09 05 | 704 | 0.9− | 0.3+ | 2004 05 22 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.3+ |
| 2000 09 05 | 704 | 0.8− | 0.7+ | 2006 08 29 | 699 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.5− |
| 2000 09 06 | 704 | 1.0+ | 1.3+ | 2006 08 29 | 699 | 0.5+ | 1.5+ | 2006 09 29 | 704 | 0.1+ | 0.5+ |
| 2000 09 06 | 704 | 0.9+ | 0.4− | 2006 08 29 | 699 | 0.6− | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2000 09 06 | 704 | 0.3− | 0.7− | 2006 08 29 | 699 | 0.0 | 1.2+ | 2006 09 29 | 704 | 0.3+ | 0.2+ |
| 2000 09 06 | 704 | 0.2− | 0.3− | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2000 09 22 | 699 | 1.4− | 1.7+ | 2006 09 06 | 644 | 0.7− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2000 09 22 | 699 | 0.9− | 0.7+ | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2000 09 22 | 699 | 0.7+ | 0.9− | 2006 09 17 | 703 | 0.1− | 0.8− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2000 09 22 | 699 | 1.1− | 0.6+ | 2006 09 17 | 703 | 0.4− | 1.3− | 2006 10 09 | 644 | 0.1+ | 0.3− |
| 2000 09 23 | 704 | 0.3− | 1.3− | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 2000 09 23 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.3+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2000 09 23 | 704 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2000 09 23 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2000 09 23 | 704 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2000 09 30 | 704 | 1.2− | 0.6− | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2000 09 30 | 704 | 0.7− | 0.2+ | 2006 09 19 | 699 | 0.6+ | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2000 09 30 | 704 | 0.7+ | 0.4− | 2006 09 19 | 699 | 0.5− | 0.9− | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2000 09 30 | 704 | 0.7+ | 0.7− | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |

**(138633)∗ 2000 RD$_{15}$ = 2004 FG$_{62}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60711)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.75099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17532953 | $\omega$ | 111.67426 | | +0.43851596 | +0.89820688 | |
| $a$ | 3.1615448 | $\Omega$ | 184.68474 | | −0.89864612 | +0.43778170 | |
| $e$ | 0.1051211 | $i$ | 21.90205 | | −0.01178552 | +0.03964325 | |
| $P$ | 5.62 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 12 | 704 | 0.2+ | 0.1+ | 2004 03 22 | 704 | (2.5+ | 0.4+) | 2006 09 21 | 699 | 0.2− | 1.2+ | |
| 1999 06 12 | 704 | 0.7+ | 0.1+ | 2004 03 22 | 704 | (2.2+ | 0.0 ) | 2006 09 22 | 704 | 0.5− | 0.2− | |
| 1999 06 12 | 704 | 0.1− | 0.3− | 2004 03 22 | 704 | (3.0+ | 1.0−) | 2006 09 22 | 704 | 0.7+ | 0.7− | |
| 1999 06 12 | 704 | 0.8− | 0.4+ | 2004 03 22 | 704 | (2.6+ | 0.0 ) | 2006 09 22 | 704 | 0.6− | 1.2+ | |
| 1999 06 12 | 704 | 0.1+ | 0.8+ | 2004 03 22 | 704 | (2.4+ | 1.3−) | 2006 09 22 | 704 | 0.0 | 0.6− | |
| 2000 09 01 | 704 | 0.2− | 0.9+ | 2004 03 24 | 699 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.7+ | |
| 2000 09 01 | 704 | 0.9+ | 0.5− | 2004 03 24 | 699 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.6+ | |
| 2000 09 01 | 704 | 0.0 | 1.4+ | 2004 03 24 | 699 | 0.3− | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.6+ | |
| 2000 09 01 | 704 | 0.4+ | 0.9− | 2004 03 24 | 699 | 0.1− | 1.3+ | 2006 09 25 | 699 | 0.2+ | 0.3+ | |
| 2000 09 01 | 704 | 0.0 | 0.3+ | 2004 03 28 | 704 | 0.6− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.4+ | |
| 2000 09 03 | 704 | 0.6− | 1.5+ | 2004 03 28 | 704 | 0.6+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.4+ | |
| 2000 09 03 | 704 | 1.5+ | 0.5+ | 2004 03 28 | 704 | 0.4+ | 1.1− | 2006 09 28 | 691 | 0.1+ | 0.5+ | |
| 2000 09 03 | 704 | 0.1− | 0.2+ | 2004 03 28 | 704 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.5+ | |
| 2000 09 03 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 699 | (0.3+ | 1.5+) | |
| 2000 09 05 | 704 | 0.1− | 0.5+ | 2004 03 28 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.4+ | |
| 2000 09 05 | 704 | 0.8+ | 0.5+ | 2004 03 28 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.7+ | 1.2− | |
| 2000 09 05 | 704 | 0.6+ | 0.7+ | 2004 03 28 | 691 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.8+ | 0.2+ | |
| 2000 09 05 | 704 | 0.2+ | 0.4+ | 2004 04 12 | 699 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.6+ | 0.8+ | |
| 2000 09 05 | 704 | 0.1− | 0.4+ | 2004 04 12 | 699 | 0.2− | 0.7+ | 2006 10 01 | 704 | 0.3+ | 1.2+ | |
| 2000 09 06 | 704 | 0.4+ | 0.1+ | 2004 04 12 | 699 | 0.9− | 0.4+ | 2006 10 01 | 704 | (1.7+ | 0.5+) | |
| 2000 09 06 | 704 | 0.2− | 0.6+ | 2004 04 12 | 699 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.5+ | |
| 2000 09 06 | 704 | 0.3− | 0.8+ | 2004 04 20 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.4+ | |
| 2000 09 06 | 704 | 0.5+ | 0.5+ | 2004 04 20 | 704 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.5+ | |
| 2000 09 23 | 704 | 0.2+ | 1.0+ | 2004 04 20 | 704 | 0.3+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.2+ | |
| 2000 09 23 | 704 | 0.1+ | 0.7+ | 2004 04 20 | 704 | 0.3+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | |
| 2000 09 23 | 704 | 0.8+ | 1.3+ | 2004 04 20 | 704 | 0.6+ | 0.6+ | 2006 10 10 | 644 | 0.3+ | 0.0 | |
| 2000 09 26 | 704 | 0.3+ | 0.5+ | 2004 04 20 | E12 | (1.4+ | 2.3+) | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2000 09 26 | 704 | 0.3− | 0.2− | 2004 04 20 | E12 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2000 09 26 | 704 | 0.5+ | 1.2− | 2004 04 20 | E12 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ | |
| 2000 09 26 | 704 | 0.6− | 0.1− | 2004 04 20 | E12 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.6+ | |
| 2000 09 26 | 704 | 0.5− | 0.4− | 2004 04 21 | 683 | 0.1+ | 0.8− | 2006 10 16 | 703 | 0.3− | 0.0 | |
| 2000 09 27 | 704 | 0.7+ | 0.6− | 2004 04 21 | 683 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.1+ | |
| 2000 09 27 | 704 | 0.0 | 1.0+ | 2004 04 21 | 683 | 0.7+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.0 | |
| 2000 09 27 | 704 | 0.4+ | 0.1− | 2004 04 22 | 704 | 0.8− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1− | |
| 2000 09 27 | 704 | 0.1+ | 0.3− | 2004 04 22 | 704 | (1.6− | 0.1−) | 2006 10 19 | 644 | 0.3+ | 0.1− | |
| 2000 09 27 | 704 | 0.1+ | 2.0− | 2004 04 22 | 704 | 1.2− | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | |
| 2000 10 02 | 645 | 0.2+ | 0.0 | 2004 04 22 | 704 | 1.3− | 1.0+ | 2006 10 20 | 644 | 0.3+ | 0.3− | |
| 2000 10 02 | 645 | 0.4− | 0.6− | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 2000 10 03 | 704 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | |
| 2000 10 03 | 704 | 0.4− | 0.7+ | 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2000 10 03 | 704 | 0.1+ | 0.6− | 2006 07 22 | G96 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2000 10 03 | 704 | 0.9− | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.3+ | |
| 2004 03 19 | 704 | 0.1+ | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.1− | |
| 2004 03 19 | 704 | 0.5+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.9− | 0.3− | |
| 2004 03 19 | 704 | 0.2+ | 0.9+ | 2006 09 21 | 699 | 0.7+ | 0.4− | 2006 10 22 | 703 | 0.2+ | 0.4− | |
| 2004 03 19 | 704 | 0.4+ | 0.8+ | 2006 09 21 | 699 | 1.4− | 0.6+ | 2006 10 22 | 703 | 1.3+ | 0.1+ | |
| 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 09 21 | 699 | 0.1− | 0.6+ | | | | | |

**(138634)∗ 2000 RW$_{15}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.71422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17463872 | $\omega$ | 184.55267 | | +0.86456864 | −0.49543452 | |
| $a$ | 3.1698765 | $\Omega$ | 205.68823 | | +0.46695460 | +0.85387434 | |
| $e$ | 0.2516096 | $i$ | 11.18144 | | +0.18567301 | +0.15950938 | |
| $P$ | 5.64 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 1.4− | 0.0 | 2006 08 21 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 683 | 0.3+ | 0.4+ | |
| 2000 09 01 | 704 | 0.5− | 0.0 | 2006 08 21 | 704 | 0.6+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1− | |
| 2000 09 01 | 704 | 0.1− | 0.0 | 2006 08 21 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 683 | 0.2+ | 0.4+ | |
| 2000 09 01 | 704 | 0.2− | 0.3+ | 2006 08 21 | 704 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.0 | 0.1− | |
| 2000 09 01 | 704 | 0.5− | 0.3+ | 2006 08 25 | 704 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1+ | |
| 2000 09 03 | 704 | 1.3+ | 0.4+ | 2006 08 25 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2000 09 03 | 704 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.6+ | 0.5− | 2006 10 23 | 644 | 0.0 | 0.1+ | |
| 2000 09 03 | 704 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.6+ | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.1+ | |
| 2000 09 03 | 704 | 0.3+ | 0.1− | 2006 08 25 | 704 | 1.1+ | 1.0− | 2006 10 27 | 704 | 0.1+ | 0.4+ | |
| 2000 09 03 | 704 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 10 27 | 704 | 0.7+ | 0.4− | |
| 2000 09 05 | 699 | 0.9− | 0.8− | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 10 27 | 704 | 0.8+ | 0.4− | |
| 2000 09 05 | 699 | 1.1− | 0.6− | 2006 08 28 | 703 | 0.8+ | 0.3− | 2006 10 27 | 704 | 0.2+ | 0.3+ | |
| 2000 09 05 | 699 | 0.9− | 0.9− | 2006 08 28 | 703 | 0.6+ | 0.8− | 2006 10 27 | 704 | 0.3− | 0.2− | |
| 2000 09 05 | 699 | 1.2− | 0.3− | 2006 09 17 | 704 | 0.7+ | 0.5+ | 2006 11 01 | 703 | 0.6− | 1.3− | |
| 2000 09 23 | 704 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.8+ | 1.3+ | 2006 11 01 | 703 | 0.8− | 0.2− | |
| 2000 09 23 | 704 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.7− | 1.2− | 2006 11 01 | 703 | 0.3− | 0.2− | |
| 2000 09 23 | 704 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.5− | 0.3− | 2006 11 01 | 703 | 0.3− | 0.4− | |
| 2000 09 23 | 704 | 0.1− | 0.4− | 2006 09 20 | 704 | 0.7+ | 1.2+ | 2006 11 08 | 644 | 0.2+ | 0.1− | |
| 2000 09 23 | 704 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.7+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1− | |
| 2000 09 25 | 699 | 0.0 | 0.6+ | 2006 09 20 | 704 | (0.6+ | 2.0+) | 2006 11 08 | 644 | 0.1+ | 0.1− | |
| 2000 09 25 | 699 | 0.8− | 1.0+ | 2006 09 20 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.2− | |
| 2000 09 25 | 699 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.2− | |
| 2000 09 25 | 699 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1− | |
| 2000 09 26 | 704 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 10 | 644 | 0.2− | 0.0 | |
| 2000 09 26 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.0 | |
| 2000 09 26 | 704 | 0.3− | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.0 | |
| 2000 09 26 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.7+ | 0.2− | 2006 11 13 | 644 | 0.2− | 0.2+ | |
| 2000 09 26 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.2− | |
| 2000 10 03 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.8− | 2006 11 13 | 644 | 0.2− | 0.0 | |
| 2000 10 03 | 704 | 0.3+ | 0.0 | 2006 10 03 | 704 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.1+ | 1.1+ | |
| 2000 10 03 | 704 | 0.7+ | 1.0+ | 2006 10 03 | 704 | 0.5+ | 0.3− | 2006 11 14 | 704 | 0.0 | 0.7+ | |
| 2000 10 03 | 704 | 0.4+ | 0.7+ | 2006 10 03 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 0.6− | 0.2+ | |
| 2000 10 03 | 704 | 0.5+ | 0.5+ | 2006 10 03 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.3+ | |
| 2000 10 25 | 704 | 0.5+ | 0.8− | 2006 10 03 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.7− | 0.0 | |
| 2000 10 25 | 704 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.8− | 0.8+ | |
| 2000 10 25 | 704 | 0.8+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.4− | |
| 2000 11 03 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.5− | |
| 2000 11 03 | 704 | 0.4− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.4− | |
| 2000 11 03 | 704 | 1.1+ | 0.7+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.5− | |
| 2000 11 03 | 704 | 1.0+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.7− | |
| 2001 11 18 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 691 | (2.0+ | 2.0+) | 2006 11 17 | 704 | 0.2+ | 0.6− | |
| 2001 11 18 | 704 | 0.3+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.5− | |
| 2001 11 18 | 704 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.5− | |
| 2001 12 19 | 704 | (2.3+ | 1.5−) | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.8− | 0.5+ | |
| 2001 12 19 | 704 | (1.3+ | 1.6−) | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.6− | 0.8+ | |
| 2001 12 19 | 704 | (1.1+ | 1.8−) | 2006 10 16 | 703 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.9− | 0.3+ | |
| 2001 12 19 | 704 | (1.3+ | 2.3−) | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 19 | 703 | 0.8− | 0.3+ | |
| 2001 12 22 | 608 | 0.1+ | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.9− | |
| 2001 12 22 | 608 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.4− | 0.8− | |
| 2001 12 22 | 608 | 0.7− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.8− | |
| 2001 12 27 | 644 | 0.3− | 0.9+ | 2006 10 22 | 704 | 0.3+ | 1.1+ | 2006 11 20 | 704 | 0.8− | 0.5− | |
| 2001 12 27 | 644 | 0.2− | 1.1+ | 2006 10 22 | 704 | 0.6− | 0.5+ | 2006 11 20 | 704 | 1.0− | 0.5− | |
| 2001 12 27 | 644 | 0.4− | 0.9+ | 2006 10 22 | 704 | 0.3− | 0.7+ | 2006 11 20 | 704 | 0.3− | 0.4+ | |
| 2002 01 08 | 683 | 0.9+ | 0.2− | 2006 10 22 | 704 | (2.4+ | 0.5+) | 2006 11 20 | 704 | 0.2− | 0.7− | |
| 2002 01 08 | 683 | 1.1+ | 0.8− | 2006 10 22 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.7− | 0.6− | |
| 2002 01 10 | 644 | 0.0 | 0.2+ | 2006 10 22 | 683 | 0.1+ | 1.2− | 2006 11 20 | 704 | 0.1− | 0.9− | |
| 2002 01 10 | 644 | 0.2− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.5− | 1.3− | |
| 2002 01 10 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 683 | (0.0 | 1.9−) | 2006 11 23 | G96 | 0.1+ | 0.3− | |
| 2003 03 26 | 644 | 0.1+ | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2− | |
| 2003 03 26 | 644 | 0.5+ | 0.7+ | 2006 10 22 | 683 | 0.3− | 0.7− | 2006 11 23 | G96 | 0.0 | 0.3− | |
| 2003 03 26 | 644 | 0.5+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.3− | |
| 2006 08 21 | 704 | 0.1− | 0.2+ | 2006 10 23 | 683 | 0.3+ | 0.6− | | | | | |

**(138635)∗ 2000 RP$_{17}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.40413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18334619 | $\omega$ | 140.27655 | | +0.91693511 | +0.39240829 | |
| $a$ | 3.0687025 | $\Omega$ | 197.05356 | | −0.39903515 | +0.90125898 | |
| $e$ | 0.1269300 | $i$ | 14.29821 | | −0.00097400 | +0.18370622 | |
| $P$ | 5.38 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.1− | 0.0 | 2000 09 23 | 704 | 0.1+ | 0.5+ | 2004 04 16 | 704 | 0.2+ | 0.7+ | |
| 1995 10 27 | 691 | 0.2− | 0.0 | 2000 09 25 | 699 | (3.0+ | 0.1−) | 2004 04 20 | 704 | 0.1− | 0.9+ | |
| 1995 10 27 | 691 | 0.3− | 0.3− | 2000 09 25 | 699 | 1.7+ | 0.6+ | 2004 04 20 | 691 | 0.0 | 0.1+ | |
| 2000 09 01 | 704 | 0.1+ | 0.0 | 2000 09 25 | 699 | 0.2− | 0.7+ | 2004 04 20 | 704 | 0.8+ | 1.1+ | |
| 2000 09 01 | 704 | 0.0 | 0.3− | 2000 09 25 | 699 | 0.2+ | 0.0 | 2004 04 20 | 704 | 1.1+ | 1.1+ | |
| 2000 09 01 | 704 | 0.7− | 0.2+ | 2000 09 26 | 704 | 0.0 | 0.7+ | 2004 04 20 | 691 | 0.1− | 0.3+ | |
| 2000 09 01 | 704 | 0.0 | 0.0 | 2000 09 26 | 704 | 0.1− | 0.4+ | 2004 04 20 | 704 | 0.2+ | 0.3+ | |
| 2000 09 01 | 704 | 0.7+ | 1.8− | 2000 09 26 | 704 | 0.2− | 0.4+ | 2004 04 20 | 691 | 0.4− | 0.2+ | |
| 2000 09 03 | 704 | 0.0 | 0.1− | 2000 09 26 | 704 | 0.2− | 1.4+ | 2005 07 30 | 941 | 0.8+ | 0.5− | |
| 2000 09 03 | 704 | 0.2− | 0.1− | 2000 09 26 | 704 | 0.0 | 1.1+ | 2005 07 30 | 941 | 0.1+ | 0.9− | |
| 2000 09 03 | 704 | 0.3+ | 0.3− | 2000 10 03 | 704 | 0.2+ | 0.5− | 2005 07 30 | 941 | 0.2+ | 1.0− | |
| 2000 09 03 | 704 | 0.3− | 0.0 | 2000 10 03 | 704 | 0.3− | 1.1+ | 2005 08 25 | 644 | 0.1+ | 0.1− | |
| 2000 09 03 | 704 | 0.3− | 0.3+ | 2000 10 03 | 704 | 0.2+ | 0.8+ | 2005 08 25 | 644 | 0.1− | 0.0 | |
| 2000 09 05 | 704 | 0.2+ | 0.6+ | 2000 10 03 | 704 | 0.0 | 0.5+ | 2005 08 25 | 644 | 0.1− | 0.0 | |
| 2000 09 05 | 704 | 0.4+ | 0.7+ | 2001 11 18 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 703 | 0.8− | 1.2− | |
| 2000 09 05 | 704 | 0.5− | 0.3+ | 2001 11 18 | 704 | 1.0+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.6− | |
| 2000 09 05 | 704 | 0.2− | 0.6+ | 2001 11 18 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.2+ | |
| 2000 09 05 | 704 | 0.3+ | 0.7− | 2001 11 18 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.6− | |
| 2000 09 05 | 699 | 0.5− | 0.5− | 2001 11 18 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 1.2− | |
| 2000 09 05 | 699 | 0.5− | 0.4− | 2001 11 18 | 704 | (1.9+ | 0.3+) | 2006 10 22 | 703 | 0.3− | 0.1− | |
| 2000 09 05 | 699 | 0.7− | 0.4+ | 2001 12 19 | 704 | 1.0+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.7+ | |
| 2000 09 05 | 699 | 0.4− | 0.5− | 2001 12 19 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 0.7+ | 0.8− | |
| 2000 09 23 | 704 | 0.0 | 0.8+ | 2001 12 19 | 704 | (2.1+ | 0.6−) | 2006 10 30 | 703 | 1.1− | 0.4+ | |
| 2000 09 23 | 704 | 0.3+ | 0.8+ | 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 10 30 | 703 | 0.8− | 0.5− | |
| 2000 09 23 | 704 | 0.3− | 0.8+ | 2004 04 16 | 704 | 0.8− | 0.2− | 2006 10 30 | 703 | 0.0 | 0.7− | |
| 2000 09 23 | 704 | 1.1+ | 0.1− | 2004 04 16 | 704 | 0.1− | 0.0 | 2006 10 30 | 703 | 0.1− | 0.8+ | |

**(138636)∗ 2000 RJ$_{18}$ = 2001 XY$_{21}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22460)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.53160 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20437244 | $\omega$ | 155.61584 | | −0.35865851 | −0.92614772 | |
| $a$ | 2.8544416 | $\Omega$ | 315.15588 | | +0.82697171 | −0.25726778 | |
| $e$ | 0.1430064 | $i$ | 9.52411 | | +0.43299176 | −0.27579645 | |
| $P$ | 4.82 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.3− | 0.0 | 2001 12 18 | 699 | 0.3− | 0.8− | 2005 09 12 | 704 | 0.5+ | 1.2+ | |
| 1995 07 26 | 691 | 0.5− | 0.2− | 2001 12 18 | 699 | 0.3− | 0.0 | 2005 09 12 | 704 | 0.3+ | 0.4+ | |
| 1995 07 26 | 691 | 0.5− | 0.0 | 2001 12 18 | 699 | 0.2+ | 0.4− | 2005 09 12 | 704 | 0.1+ | 0.1+ | |
| 2000 09 01 | 704 | 0.2+ | 0.1+ | 2001 12 19 | 644 | 0.0 | 0.1+ | 2005 09 12 | 704 | 0.1+ | 0.8+ | |
| 2000 09 01 | 704 | 0.1− | 0.5+ | 2001 12 19 | 644 | 0.1− | 0.0 | 2005 09 12 | 704 | 0.0 | 0.1+ | |
| 2000 09 01 | 704 | 0.5+ | 0.4+ | 2001 12 19 | 644 | 0.1+ | 0.0 | 2005 09 26 | 644 | 0.1+ | 0.8− | |
| 2000 09 01 | 704 | 0.1− | 0.0 | 2001 12 22 | 704 | 0.1+ | 0.1− | 2005 09 26 | 644 | 0.1− | 0.1− | |
| 2000 09 01 | 704 | 0.3− | 0.2+ | 2001 12 22 | 704 | 0.1− | 0.1− | 2005 09 26 | 644 | 0.1+ | 0.2− | |
| 2000 09 03 | 704 | 0.2− | 0.4− | 2001 12 22 | 704 | 0.5− | 0.2+ | 2005 09 30 | 699 | 0.3+ | 0.8+ | |
| 2000 09 03 | 704 | 0.1+ | 0.1+ | 2001 12 22 | 704 | 0.4− | 0.3+ | 2005 09 30 | 699 | 0.0 | 0.1− | |
| 2000 09 03 | 704 | 0.2+ | 0.2− | 2001 12 22 | 704 | 0.8− | 0.0 | 2005 09 30 | 699 | 0.6+ | 0.9− | |
| 2000 09 03 | 704 | 0.3− | 0.1+ | 2002 01 08 | 704 | 0.3+ | 0.9− | 2005 09 30 | 699 | 0.1− | 1.2− | |
| 2000 09 23 | 704 | 0.5+ | 0.1− | 2002 01 08 | 704 | 0.7− | 0.6− | 2005 10 05 | 703 | 0.3− | 0.9− | |
| 2000 09 23 | 704 | 0.0 | 0.1+ | 2002 01 08 | 704 | 0.2+ | 0.8− | 2005 10 05 | 703 | (1.9− | 0.5−) | |
| 2000 09 23 | 704 | 1.3+ | 1.5+ | 2002 01 08 | 704 | 0.3+ | 0.5− | 2005 10 05 | 703 | 0.5+ | 0.2− | |
| 2000 09 23 | 704 | 0.7− | 1.1+ | 2002 01 11 | 704 | 0.6+ | 0.5+ | 2005 10 05 | 703 | 1.1− | 0.7− | |
| 2000 09 23 | 704 | (1.2− | 2.2+) | 2002 01 11 | 704 | 0.0 | 0.5− | 2005 10 05 | 703 | 0.3+ | 0.7− | |
| 2000 09 24 | 704 | 1.1+ | 1.4+ | 2002 01 11 | 704 | 0.3+ | 1.1− | 2005 10 05 | 703 | 0.9− | 1.0− | |
| 2000 09 24 | 704 | 0.8− | 0.5+ | 2002 01 12 | 204 | (0.1+ | 4.2+) | 2005 10 05 | 703 | 1.1+ | 1.4− | |
| 2000 09 24 | 704 | 0.7− | 0.9+ | 2002 01 12 | 204 | (0.1− | 2.6−) | 2005 10 05 | 703 | 0.5− | 1.2− | |
| 2000 09 25 | 699 | 0.3+ | 1.4+ | 2002 01 12 | 204 | 0.4+ | 0.2− | 2005 10 22 | 644 | 0.3+ | 0.1− | |
| 2000 09 25 | 699 | 0.2− | 0.4+ | 2002 01 12 | 204 | 0.0 | 1.2− | 2005 10 22 | 644 | 0.1− | 0.4− | |
| 2000 09 25 | 699 | 0.3+ | 0.3+ | 2002 01 12 | 204 | 0.0 | 0.2− | 2005 10 22 | 644 | 0.2+ | 0.1− | |
| 2000 09 25 | 699 | 0.7+ | 0.7− | 2002 01 15 | 704 | 0.9+ | 0.3+ | 2005 10 26 | 683 | (2.6− | 0.1+) | |
| 2000 10 03 | 704 | 0.2− | 0.7+ | 2002 01 15 | 704 | 0.9+ | 0.4+ | 2005 10 26 | 683 | (2.1+ | 0.9−) | |
| 2000 10 03 | 704 | 0.6+ | 0.7+ | 2002 01 15 | 704 | 1.0+ | 1.1− | 2005 10 26 | 683 | (2.9+ | 0.2−) | |
| 2000 10 03 | 704 | 1.1+ | 0.2+ | 2002 01 17 | 644 | 0.4+ | 0.1− | 2005 10 28 | 683 | 0.6+ | 0.2− | |
| 2001 10 14 | 704 | 0.5− | 0.4+ | 2002 01 17 | 644 | 0.7+ | 1.3+ | 2005 10 28 | 683 | 0.2+ | 0.5− | |
| 2001 10 14 | 704 | 0.5− | 0.1+ | 2002 01 17 | 644 | 0.5+ | 0.2− | 2005 10 28 | 683 | 0.1− | 1.0+ | |
| 2001 10 14 | 704 | 0.3− | 0.2− | 2002 01 19 | 704 | 0.1+ | 0.1− | 2005 10 29 | 683 | 0.3− | 0.3− | |
| 2001 10 14 | 704 | 0.7− | 0.1− | 2002 01 19 | 704 | 0.4− | 0.4− | 2005 10 29 | 683 | (1.8+ | 1.2−) | |
| 2001 10 14 | 704 | 1.3− | 0.1− | 2002 01 19 | 704 | 0.5− | 0.4+ | 2005 10 29 | 683 | (2.2+ | 0.0 ) | |
| 2001 11 10 | 644 | 0.4+ | 0.7+ | 2002 01 19 | 704 | 0.0 | 0.5− | 2005 10 30 | 683 | 0.3+ | 1.4− | |
| 2001 11 10 | 644 | 0.1+ | 0.3+ | 2002 01 19 | 704 | 0.1+ | 0.1− | 2005 10 30 | 683 | 0.9+ | 0.2− | |
| 2001 11 10 | 644 | 0.7+ | 0.5+ | 2002 02 06 | 704 | 1.4+ | 1.3− | 2005 10 30 | 683 | (2.4− | 0.1+) | |
| 2001 11 11 | 704 | 0.1+ | 0.1− | 2002 02 06 | 704 | 1.0− | 0.1− | 2005 12 02 | 703 | 0.9− | 0.3+ | |
| 2001 11 11 | 704 | 0.0 | 0.7− | 2002 02 06 | 704 | 0.2+ | 0.2− | 2005 12 02 | 703 | 0.6− | 0.3+ | |
| 2001 11 11 | 704 | 0.3+ | 0.1− | 2002 02 06 | 704 | 0.2+ | 0.4− | 2005 12 02 | 703 | 0.2+ | 0.3− | |
| 2001 11 11 | 704 | 0.2+ | 0.2+ | 2002 02 06 | 704 | 0.2− | 0.8− | 2005 12 02 | 703 | 1.4− | 0.1+ | |
| 2001 11 11 | 704 | 0.3+ | 1.0− | 2002 02 07 | 704 | 0.8+ | 0.7+ | 2005 12 07 | 704 | 0.4− | 1.3+ | |
| 2001 12 09 | 704 | 0.1− | 0.2+ | 2002 02 07 | 704 | 0.3− | 0.3− | 2005 12 07 | 704 | 0.5+ | 0.6+ | |
| 2001 12 09 | 704 | 0.0 | 0.5+ | 2002 02 07 | 704 | 0.6− | 0.2− | 2005 12 07 | 704 | 0.0 | 0.2+ | |
| 2001 12 09 | 704 | 0.2− | 0.3+ | 2002 02 10 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 704 | 0.9+ | 0.6+ | |
| 2001 12 09 | 704 | 1.0− | 0.4+ | 2002 02 10 | 704 | 0.1− | 0.4+ | 2006 11 15 | 704 | 0.2+ | 0.3+ | |
| 2001 12 09 | 704 | 0.6− | 0.3+ | 2002 02 10 | 704 | 0.3− | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.2+ | |
| 2001 12 13 | 704 | 0.4+ | 0.2+ | 2002 02 10 | 704 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.1+ | 0.3+ | |
| 2001 12 13 | 704 | 0.1− | 0.2+ | 2002 02 12 | 704 | 0.2+ | 0.6+ | 2006 11 15 | 703 | 0.8+ | 0.4+ | |
| 2001 12 13 | 704 | 0.1+ | 0.5+ | 2002 02 12 | 704 | 0.3+ | 0.9+ | 2006 11 15 | 703 | 0.4+ | 0.1+ | |
| 2001 12 13 | 704 | 0.6− | 0.4+ | 2002 02 12 | 704 | 0.3+ | 1.0+ | 2006 11 15 | 703 | (0.9− | 1.6+) | |
| 2001 12 13 | 704 | 0.7− | 0.8+ | 2002 02 12 | 704 | 0.4+ | 1.0+ | 2006 11 19 | 704 | 0.2+ | 0.4+ | |
| 2001 12 17 | 704 | 0.4− | 0.3− | 2002 02 12 | 704 | 0.4+ | 1.1+ | 2006 11 19 | 704 | 0.1− | 0.4− | |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2005 08 29 | 644 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.4+ | |
| 2001 12 17 | 704 | 0.1+ | 0.1− | 2005 08 29 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.5− | |
| 2001 12 17 | 704 | 0.6− | 0.3− | 2005 08 29 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.3+ | |
| 2001 12 17 | 704 | 0.4− | 0.3− | 2005 08 29 | A13 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.7− | 0.9+ | |
| 2001 12 18 | 699 | 0.0 | 0.0 | 2005 08 29 | A13 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.9+ | |

**(138637)∗ 2000 RN$_{20}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.88819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17496728 | $\omega$ | 39.48283 | | +0.98936733 | +0.03656379 | |
| $a$ | 3.1659070 | $\Omega$ | 317.76207 | | −0.10664182 | +0.84050673 | |
| $e$ | 0.0975874 | $i$ | 12.08773 | | +0.09889293 | +0.54056593 | |
| $P$ | 5.63 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 11 | 691 | 0.3− | 0.1+ | 2003 02 03 | 699 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.6− | |
| 1991 01 11 | 691 | 0.3− | 0.0 | 2003 02 03 | 699 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.0 | 0.2− | |
| 1991 01 11 | 691 | 0.4− | 0.1+ | 2003 02 22 | 333 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 1.4+ | 0.1− | |
| 2000 09 01 | 704 | 0.3− | 0.2− | 2003 02 22 | 333 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 1.5+ | 1.1+ | |
| 2000 09 01 | 704 | 0.2− | 0.4− | 2003 02 22 | 333 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.0 | 1.2+ | |
| 2000 09 01 | 704 | 0.3− | 0.3+ | 2003 02 23 | 699 | 0.3− | 1.0− | 2006 09 28 | 703 | 0.4+ | 0.2− | |
| 2000 09 01 | 704 | 0.2+ | 0.6− | 2003 02 23 | 699 | 0.1+ | 1.0+ | 2006 09 28 | 703 | 0.1+ | 0.1+ | |
| 2000 09 03 | 704 | 0.7+ | 1.8+ | 2003 02 23 | 699 | 0.3+ | 0.4− | 2006 09 28 | 703 | 0.1− | 0.2− | |
| 2000 09 03 | 704 | 0.1+ | 0.8+ | 2003 02 23 | 699 | 0.6− | 0.9+ | 2006 09 28 | 703 | 0.4− | 0.2− | |
| 2000 09 03 | 704 | 0.1− | 0.3+ | 2003 03 06 | 699 | 1.1+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2000 09 03 | 704 | 0.1− | 0.1+ | 2003 03 06 | 699 | 1.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | |
| 2000 09 03 | 704 | 0.3+ | 0.5+ | 2003 03 06 | 699 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2000 09 20 | 608 | 0.1− | 0.7− | 2003 03 06 | 699 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1− | |
| 2000 09 20 | 608 | 0.1− | 0.7− | 2003 03 07 | 704 | (2.5+ | 0.5+) | 2006 10 12 | 644 | 0.1− | 0.1+ | |
| 2000 09 20 | 608 | 0.2+ | 0.6− | 2003 03 07 | 704 | 0.5− | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2000 09 23 | 704 | 0.1− | 0.9+ | 2003 03 07 | 704 | (1.4+ | 1.6+) | 2006 10 19 | 703 | 0.1− | 0.4− | |
| 2000 09 23 | 699 | 0.1+ | 0.6+ | 2003 03 07 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 703 | 0.5− | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.1− | 0.0 | 2003 03 09 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.5+ |
| 2000 09 23 | 699 | 0.1+ | 1.7+ | 2003 03 09 | 704 | 1.2+ | 1.3+ | 2006 10 19 | 703 | 0.2+ | 0.4− |
| 2000 09 23 | 704 | 0.6− | 0.1+ | 2003 03 09 | 704 | 0.6+ | 1.5− | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2000 09 23 | 699 | 0.1− | 0.3+ | 2003 03 09 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.3− |
| 2000 09 23 | 704 | 0.8− | 0.2+ | 2003 03 13 | 644 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2000 09 23 | 704 | 0.4− | 0.1+ | 2003 03 13 | 644 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2000 09 23 | 699 | 0.1− | 0.8+ | 2003 03 13 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 704 | 0.7+ | 0.1+ |
| 2000 09 27 | 704 | 0.0 | 0.2− | 2003 04 02 | 460 | 0.7+ | 0.1+ | 2006 10 20 | 704 | (1.3+ | 2.1+) |
| 2000 09 27 | 704 | 0.0 | 0.1+ | 2003 04 02 | 460 | 0.7+ | 1.3+ | 2006 10 20 | 704 | 0.4+ | 0.5+ |
| 2000 09 27 | 704 | 0.2+ | 0.7+ | 2004 04 13 | E12 | 0.3+ | 0.1+ | 2006 10 20 | 704 | 0.8− | 0.5+ |
| 2000 09 27 | 704 | 0.3+ | 1.2+ | 2004 04 13 | E12 | 0.3− | 0.7+ | 2006 10 20 | 703 | 0.1− | 0.1− |
| 2000 10 03 | 704 | 0.3+ | 0.1+ | 2004 04 13 | E12 | 0.6− | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.4− |
| 2000 10 03 | 704 | 0.1− | 0.9+ | 2004 04 13 | E12 | 1.4+ | 0.1+ | 2006 10 20 | 703 | 0.2− | 0.1+ |
| 2000 10 03 | 704 | 0.4− | 0.6+ | 2005 07 06 | E12 | 0.4− | 0.4+ | 2006 10 20 | 703 | 0.5− | 0.0 |
| 2000 10 03 | 704 | 0.4+ | 0.8+ | 2005 07 06 | E12 | 0.9− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.3− |
| 2000 10 03 | 704 | 0.3+ | 1.0+ | 2005 07 06 | E12 | 0.9− | 0.1− | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2000 10 25 | 704 | 0.1+ | 0.1+ | 2005 07 06 | E12 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.3− |
| 2000 10 25 | 704 | 0.0 | 0.6+ | 2005 07 29 | E12 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.8− | 0.6− |
| 2000 10 25 | 704 | 0.2+ | 0.8+ | 2005 07 29 | E12 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.5− | 0.0 |
| 2000 10 25 | 704 | 0.2− | 0.1+ | 2005 07 29 | E12 | 0.8− | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.1− |
| 2000 10 25 | 704 | 0.1+ | 0.1+ | 2005 07 29 | E12 | 0.3− | 0.7− | 2006 11 15 | 703 | 0.2− | 0.7− |
| 2003 02 03 | 699 | (0.9+ | 2.4+) | 2006 09 17 | 703 | 0.6− | 0.8− | 2006 11 15 | 703 | 0.1− | 0.2+ |
| 2003 02 03 | 699 | 0.7+ | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.6− | | | | |

**(138638)∗ 2000 RF$_{24}$ = 2001 WZ$_{39}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22463)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.86330 | | (2000.0) | | +0.78877272 | −0.60268841 |
| $n$ | 0.17661629 | $\omega$ | 175.05721 | | +0.55768935 | +0.78434613 |
| $a$ | 3.1461701 | $\Omega$ | 222.78471 | | +0.25849600 | +0.14685989 |
| $e$ | 0.1143698 | $i$ | 10.24835 | | | |
| $P$ | 5.58 | $H$ | 14.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 1.3+ | 1.5− | 2004 04 24 | 291 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2000 09 01 | 704 | 0.3+ | 0.8− | 2004 04 24 | 291 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2000 09 01 | 704 | 0.6− | 0.6+ | 2004 04 24 | 291 | 0.5+ | 0.7+ | 2006 10 25 | 106 | 0.0 | 0.2− |
| 2000 09 01 | 704 | 1.0− | 0.1− | 2004 04 28 | 691 | 0.3− | 0.6+ | 2006 10 25 | 106 | 0.3+ | 0.5+ |
| 2000 09 03 | 704 | 0.8+ | 0.3+ | 2004 04 28 | 691 | 0.3− | 0.7+ | 2006 10 25 | 106 | 0.6− | 0.4+ |
| 2000 09 03 | 704 | 0.2+ | 1.1+ | 2004 04 28 | 691 | 0.0 | 0.6+ | 2006 10 25 | 106 | 0.3+ | 0.4− |
| 2000 09 03 | 704 | 0.1− | 1.2+ | 2006 09 25 | 704 | 0.5+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2000 09 03 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 704 | (0.9+ | 1.6+) | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2000 09 03 | 704 | 1.0+ | 0.0 | 2006 09 25 | 704 | 1.1+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2000 09 04 | 049 | 0.8+ | 0.7+ | 2006 09 28 | 691 | 0.4− | 0.0 | 2006 10 29 | 704 | (0.7− | 2.9+) |
| 2000 09 04 | 049 | 0.6+ | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.0 | 2006 10 29 | 704 | 1.1+ | 0.1− |
| 2000 09 04 | 049 | 0.9+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 29 | 704 | (0.7+ | 2.1+) |
| 2000 09 22 | 699 | 0.7+ | 0.7− | 2006 09 29 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.6+ | 1.3+ |
| 2000 09 22 | 699 | 0.7− | 0.4+ | 2006 09 29 | 691 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 09 22 | 699 | 0.3+ | 0.1+ | 2006 09 29 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 09 22 | 699 | 1.6− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2000 09 23 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.7− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2000 09 23 | 704 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2000 09 23 | 704 | 0.8− | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2000 09 23 | 704 | 1.1− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2000 09 26 | 704 | 0.9− | 1.2− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.2− |
| 2000 09 26 | 704 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.6− |
| 2000 09 26 | 704 | 1.0− | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.8− | 0.9− |
| 2000 09 26 | 704 | 0.2− | 1.0− | 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.9− | 0.1+ |
| 2000 09 26 | 704 | 0.0 | 0.8+ | 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 2.1− | 0.7− |
| 2001 11 17 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2001 11 17 | 704 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.4+ |
| 2001 11 17 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2001 11 17 | 704 | (0.9− | 1.5+) | 2006 10 17 | 703 | 0.7+ | 0.4− | 2006 11 19 | 704 | 0.6− | 1.1+ |
| 2001 11 17 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.6− | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2001 11 20 | 704 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2001 11 20 | 704 | (1.6+ | 0.3+) | 2006 10 17 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2006 10 19 | 704 | (0.3− | 2.5+) | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2001 11 20 | 704 | 1.0+ | 0.1+ | 2006 10 19 | 704 | (1.7− | 0.7+) | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2001 12 11 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 1.3− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2001 12 11 | 704 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2001 12 11 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2006 10 20 | 691 | (1.8+ | 0.3+) | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2001 12 11 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2002 01 09 | 704 | 0.7− | 1.2+ | 2006 10 21 | 703 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.9+ |
| 2002 01 09 | 704 | 0.1+ | 1.2+ | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.8+ |
| 2002 01 09 | 704 | 0.6− | 1.3+ | 2006 10 21 | 703 | 1.1− | 1.3− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2002 01 09 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.6− | 0.0 | | | | |

**(138639)∗ 2000 RH$_{24}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.66496 | | (2000.0) | | +0.23499371 | −0.95418289 |
| $n$ | 0.17776779 | $\omega$ | 118.55394 | | +0.77089970 | +0.29903479 |
| $a$ | 3.1325691 | $\Omega$ | 316.53540 | | +0.59202331 | −0.01063953 |
| $e$ | 0.2274361 | $i$ | 15.62127 | | | |
| $P$ | 5.54 | $H$ | 15.3 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.5− | 0.4+ | 2001 12 18 | 699 | 0.4+ | 0.2+ | 2002 02 10 | 704 | 0.2− | 0.6+ |
| 2000 09 01 | 704 | 0.4− | 0.3+ | 2001 12 19 | 644 | 0.1+ | 0.1+ | 2002 02 10 | 704 | 0.3+ | 0.5+ |
| 2000 09 01 | 704 | 0.1− | 0.0 | 2001 12 19 | 644 | 0.0 | 0.1+ | 2002 02 10 | 704 | 0.3− | 0.2+ |
| 2000 09 03 | 704 | 0.3− | 0.0 | 2001 12 19 | 644 | 0.2+ | 0.1+ | 2002 02 11 | 704 | 0.8− | 0.1+ |
| 2000 09 03 | 704 | 0.8− | 0.6− | 2001 12 21 | 704 | 0.3− | 0.6+ | 2002 02 11 | 704 | 0.2− | 0.3+ |
| 2000 09 03 | 704 | 0.3− | 0.2+ | 2001 12 21 | 704 | 0.4+ | 0.5+ | 2002 02 11 | 704 | 0.3+ | 0.7+ |
| 2000 09 03 | 704 | 0.4+ | 0.2− | 2001 12 21 | 704 | 0.1+ | 0.2− | 2002 02 11 | 704 | 0.4− | 0.1+ |
| 2000 09 03 | 704 | 0.1+ | 0.8− | 2002 01 07 | 699 | 0.5− | 0.2− | 2002 02 11 | 704 | 0.4− | 1.0+ |
| 2000 09 05 | 699 | 1.4− | 0.3+ | 2002 01 07 | 699 | 0.6− | 0.3+ | 2002 02 12 | 704 | 0.8+ | 0.1+ |
| 2000 09 05 | 699 | (2.2− | 0.1−) | 2002 01 07 | 699 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.2+ | 0.2+ |
| 2000 09 05 | 699 | 1.1− | 0.3+ | 2002 01 07 | 699 | 0.0 | 0.4− | 2002 02 12 | 704 | 0.6+ | 0.1+ |
| 2000 09 05 | 699 | 1.7− | 0.0 | 2002 01 08 | 704 | 0.7− | 0.6+ | 2002 02 12 | 704 | 0.3+ | 0.3− |
| 2000 09 22 | 699 | 0.9− | 0.6+ | 2002 01 08 | 704 | 0.1+ | 0.0 | 2002 02 12 | 704 | 0.1+ | 0.0 |
| 2000 09 22 | 699 | 0.5+ | 1.0+ | 2002 01 08 | 704 | 0.8− | 0.5− | 2002 03 04 | 644 | 0.2+ | 0.2+ |
| 2000 09 22 | 699 | 0.5+ | 0.5− | 2002 01 08 | 704 | 0.3− | 0.1− | 2002 03 04 | 644 | 0.4− | 0.4+ |
| 2000 09 22 | 699 | 1.6+ | 1.0+ | 2002 01 08 | 704 | 0.2− | 0.7− | 2002 03 04 | 644 | 0.1− | 0.8+ |
| 2000 09 23 | 704 | 1.0+ | 0.6− | 2002 01 17 | 644 | 0.3+ | 0.8+ | 2005 09 29 | G96 | 0.4+ | 0.1+ |
| 2000 09 23 | 704 | 0.2− | 0.3− | 2002 01 17 | 644 | 0.3+ | 0.9+ | 2005 09 29 | G96 | 0.0 | 0.1− |
| 2000 09 23 | 704 | 0.1− | 0.9− | 2002 01 17 | 644 | 0.5+ | 1.0+ | 2005 09 29 | G96 | 0.3− | 0.3+ |
| 2000 09 23 | 704 | 0.3+ | 0.2+ | 2002 02 03 | 699 | 0.4− | 0.7+ | 2005 09 29 | G96 | 0.1− | 0.2+ |
| 2000 09 27 | 704 | 0.0 | 0.8+ | 2002 02 03 | 699 | 0.2− | 0.2+ | 2006 10 16 | 704 | 0.7+ | 0.1− |
| 2000 09 27 | 704 | 0.4− | 0.4− | 2002 02 03 | 699 | 0.2+ | 0.0 | 2006 10 16 | 704 | 0.4+ | 0.6− |
| 2000 09 27 | 704 | 0.1− | 0.4− | 2002 02 03 | 699 | (2.4− | 0.3−) | 2006 10 16 | 704 | 0.5+ | 0.7− |
| 2000 09 27 | 704 | 0.1+ | 0.1+ | 2002 02 06 | 704 | 0.7− | 0.7+ | 2006 10 16 | 704 | 0.0 | 0.6− |
| 2000 09 27 | 704 | 0.4− | 0.3− | 2002 02 06 | 704 | 0.5+ | 0.3+ | 2006 11 13 | 704 | 0.0 | 0.3− |
| 2000 10 03 | 704 | 0.1+ | 0.4− | 2002 02 06 | 704 | 0.5− | 0.8+ | 2006 11 13 | 704 | 0.1+ | 0.3+ |
| 2000 10 03 | 704 | 0.2− | 0.6+ | 2002 02 07 | 704 | 0.4− | 0.1+ | 2006 11 13 | 704 | 0.3− | 0.1− |
| 2000 10 03 | 704 | 0.9+ | 0.7+ | 2002 02 07 | 704 | 0.5− | 0.0 | 2006 11 13 | 704 | 0.2+ | 0.0 |
| 2000 11 19 | 704 | 0.1− | 1.5+ | 2002 02 07 | 704 | 0.7− | 0.3+ | 2006 11 20 | 703 | 0.0 | 0.5− |
| 2000 11 19 | 704 | 0.0 | 0.6+ | 2002 02 07 | 704 | 0.6− | 0.2− | 2006 11 20 | 703 | 0.0 | 0.2+ |
| 2000 11 19 | 704 | 1.0+ | 0.7+ | 2002 02 07 | 704 | 0.0 | 0.6+ | 2006 11 20 | 703 | 0.1+ | 0.4− |
| 2001 12 18 | 699 | 0.5+ | 0.4− | 2002 02 08 | 645 | 0.1+ | 0.3− | 2006 11 20 | 703 | 0.6− | 0.6− |
| 2001 12 18 | 699 | 1.2+ | 0.1+ | 2002 02 08 | 645 | 0.1+ | 0.2− | | | | |
| 2001 12 18 | 699 | 0.8+ | 0.1+ | 2002 02 10 | 704 | 0.1+ | 0.9+ | | | | |

**(138640)∗ 2000 RO$_{26}$ = 1981 EH$_{36}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 4730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.75237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17229035 | $\omega$ | 354.54436 | | +0.71663963 | +0.68093103 | |
| $a$ | 3.1986158 | $\Omega$ | 321.08994 | | −0.63046509 | +0.53998341 | |
| $e$ | 0.1751829 | $i$ | 13.89802 | | −0.29823046 | +0.49472301 | |
| $P$ | 5.72 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 03 07 | 413 | (3.9+ | 1.3+) | 2000 09 28 | 704 | 0.1+ | 0.5+ | | 2004 03 26 | 704 | (2.0+ | 0.3−) | | | | |
| 1981 03 10 | 413 | 0.3− | 0.1− | 2000 09 28 | 704 | 1.0− | 0.3+ | | 2004 03 26 | 704 | 1.2+ | 0.7+ | | | | |
| 1981 03 12 | 413 | 0.4− | 0.0 | 2000 09 28 | 704 | 0.4+ | 0.1+ | | 2006 08 12 | 644 | 0.0 | 0.6+ | | | | |
| 2000 09 01 | 704 | 0.3− | 0.3+ | 2000 09 28 | 704 | 0.2− | 0.1− | | 2006 08 12 | 644 | 0.4− | 0.0 | | | | |
| 2000 09 01 | 704 | 0.9+ | 0.6+ | 2000 09 28 | 704 | 0.2+ | 0.7+ | | 2006 08 12 | 644 | 0.0 | 0.2+ | | | | |
| 2000 09 01 | 704 | 1.0+ | 0.6− | 2000 10 03 | 704 | 0.3− | 0.8+ | | 2006 09 17 | 703 | 0.4+ | 0.2+ | | | | |
| 2000 09 01 | 704 | 0.8+ | 1.8− | 2000 10 03 | 704 | 0.3+ | 0.1+ | | 2006 09 17 | 703 | 0.4− | 0.2− | | | | |
| 2000 09 02 | 699 | (2.3− | 0.2+) | 2000 10 03 | 704 | 0.2+ | 0.2+ | | 2006 09 17 | 703 | 0.2− | 0.1− | | | | |
| 2000 09 02 | 699 | 1.6− | 0.0 | 2000 10 03 | 704 | 0.1− | 0.4+ | | 2006 09 17 | 703 | 0.8− | 0.1+ | | | | |
| 2000 09 02 | 699 | 1.2− | 0.4− | 2000 10 03 | 704 | 0.4+ | 0.2+ | | 2006 09 28 | 703 | 0.6− | 0.0 | | | | |
| 2000 09 02 | 699 | 0.9− | 0.2+ | 2000 10 06 | 608 | 1.6+ | 1.1+ | | 2006 09 28 | 703 | 0.3− | 0.1+ | | | | |
| 2000 09 03 | 704 | 0.2− | 0.2− | 2000 10 06 | 608 | 1.4+ | 0.7+ | | 2006 09 28 | 703 | 0.5+ | 0.6− | | | | |
| 2000 09 03 | 704 | 0.6+ | 0.1− | 2000 10 06 | 608 | (2.1+ | 0.9+) | | 2006 09 28 | 703 | 0.7+ | 0.2+ | | | | |
| 2000 09 03 | 704 | 0.2+ | 0.1− | 2000 10 25 | 704 | 0.2− | 0.6+ | | 2006 10 19 | 703 | 0.8− | 0.4+ | | | | |
| 2000 09 03 | 704 | 0.2− | 0.0 | 2000 10 25 | 704 | 0.1+ | 0.6+ | | 2006 10 19 | 703 | 0.0 | 0.5− | | | | |
| 2000 09 05 | 699 | 0.3− | 0.1− | 2000 10 25 | 704 | 0.3+ | 0.2+ | | 2006 10 19 | 703 | 0.3− | 0.1+ | | | | |
| 2000 09 05 | 699 | 0.5− | 0.3+ | 2000 10 25 | 704 | 0.2+ | 0.8+ | | 2006 10 19 | 703 | 0.4− | 0.2− | | | | |
| 2000 09 05 | 699 | 0.1+ | 0.7− | 2000 10 25 | 704 | 0.1+ | 0.9+ | | 2006 10 24 | 644 | 0.4+ | 0.5+ | | | | |
| 2000 09 05 | 699 | 0.3− | 0.6− | 2004 03 15 | 644 | 0.1+ | 0.7+ | | 2006 10 24 | 644 | 0.1− | 0.3+ | | | | |
| 2000 09 23 | 704 | 0.3+ | 0.5+ | 2004 03 15 | 644 | 0.2+ | 1.0+ | | 2006 10 24 | 644 | 0.1+ | 0.2+ | | | | |
| 2000 09 23 | 704 | 0.2− | 0.1+ | 2004 03 15 | 644 | 0.0 | 0.9+ | | 2006 10 27 | 703 | 0.3− | 0.2+ | | | | |
| 2000 09 23 | 699 | 0.7− | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.9+ | | 2006 10 27 | 703 | 0.1− | 0.2+ | | | | |
| 2000 09 23 | 704 | 0.0 | 0.1− | 2004 03 17 | 704 | 0.0 | 0.6− | | 2006 10 27 | 703 | 0.3− | 0.3− | | | | |
| 2000 09 23 | 699 | 1.1− | 0.0 | 2004 03 17 | 704 | 0.1+ | 1.4+ | | 2006 10 27 | 703 | 0.1− | 0.1− | | | | |
| 2000 09 23 | 704 | 0.3− | 0.1+ | 2004 03 17 | 704 | 1.1+ | 0.9+ | | 2006 10 27 | 703 | 0.2+ | 0.5+ | | | | |
| 2000 09 23 | 699 | 0.4− | 0.2− | 2004 03 17 | 704 | 1.4+ | 0.1+ | | 2006 10 27 | 703 | 0.2− | 0.1− | | | | |
| 2000 09 23 | 704 | 0.5− | 0.2+ | 2004 03 26 | 704 | 0.4+ | 1.5+ | | 2006 10 27 | 703 | 0.1+ | 0.0 | | | | |
| 2000 09 23 | 699 | 1.0− | 0.1− | 2004 03 26 | 704 | 1.3+ | 0.3+ | | 2006 10 27 | 703 | 0.1+ | 0.1+ | | | | |

**(138641)∗ 2000 RH$_{27}$ = 2001 YO$_{118}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22467)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.83539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21260601 | $\omega$ | 101.62695 | | +0.58452632 | −0.79928922 | |
| $a$ | 2.7802618 | $\Omega$ | 311.68874 | | +0.65244876 | +0.56525209 | |
| $e$ | 0.0916378 | $i$ | 10.76791 | | +0.48232727 | +0.20402654 | |
| $P$ | 4.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 05 | 608 | 0.2− | 0.2− | 2002 01 14 | 704 | 0.7+ | 0.0 | | 2005 10 25 | 703 | 0.1− | 0.1+ | | | | |
| 2000 08 05 | 608 | 0.3+ | 0.2+ | 2002 01 21 | 704 | 0.0 | 0.6− | | 2005 10 25 | 703 | 0.6− | 0.0 | | | | |
| 2000 08 05 | 608 | 0.2+ | 0.5+ | 2002 01 21 | 704 | 0.3+ | 0.2− | | 2005 10 25 | 703 | 0.5− | 0.3+ | | | | |
| 2000 09 01 | 704 | 0.1− | 1.2+ | 2002 01 21 | 704 | 0.4+ | 0.4− | | 2005 10 25 | 703 | 0.0 | 0.7+ | | | | |
| 2000 09 01 | 704 | 0.7+ | 0.4+ | 2002 01 21 | 704 | 0.4+ | 0.0 | | 2005 11 01 | 699 | 0.2− | 0.7− | | | | |
| 2000 09 01 | 704 | 0.4− | 0.3− | 2002 01 21 | 704 | 0.4+ | 0.6+ | | 2005 11 01 | 699 | 0.2− | 1.3+ | | | | |
| 2000 09 01 | 704 | 0.4+ | 0.4+ | 2002 01 25 | 704 | 0.6+ | 0.2+ | | 2005 11 01 | 699 | 0.1− | 1.1− | | | | |
| 2000 09 02 | 699 | 1.7− | 1.0+ | 2002 01 25 | 704 | 0.3− | 0.6− | | 2005 11 01 | 699 | 0.3+ | 0.3− | | | | |
| 2000 09 02 | 699 | 0.5− | 0.3+ | 2002 01 25 | 704 | 0.1+ | 0.2− | | 2005 11 02 | 703 | 0.2+ | 0.0 | | | | |
| 2000 09 02 | 699 | 1.1− | 1.1+ | 2002 01 25 | 704 | 0.4− | 0.1− | | 2005 11 02 | 703 | 0.1− | 0.3+ | | | | |
| 2000 09 02 | 699 | 0.1− | 1.2+ | 2002 01 25 | 704 | 0.0 | 0.2− | | 2005 11 02 | 703 | 0.4− | 0.3+ | | | | |
| 2000 09 03 | 704 | 0.2− | 0.3+ | 2002 02 05 | 644 | 0.5− | 1.4+ | | 2005 11 02 | 703 | 0.7+ | 0.3− | | | | |
| 2000 09 03 | 704 | 0.9− | 0.3+ | 2002 02 05 | 644 | 0.1+ | 1.3+ | | 2005 11 10 | 703 | 0.5+ | 0.1− | | | | |
| 2000 09 03 | 704 | 0.8− | 0.9+ | 2002 02 05 | 644 | 0.4+ | 0.4+ | | 2005 11 10 | 703 | 0.9+ | 0.6− | | | | |
| 2000 09 03 | 704 | 0.7− | 0.5+ | 2002 02 05 | 644 | 0.0 | 0.9+ | | 2005 11 10 | 703 | 0.2+ | 0.8− | | | | |
| 2000 09 03 | 704 | 0.4− | 0.2+ | 2002 02 05 | 644 | 0.6+ | 0.2+ | | 2005 11 10 | 703 | 0.3+ | 0.5− | | | | |
| 2000 09 23 | 704 | 1.0− | 1.7+ | 2002 02 05 | 644 | 0.2+ | 0.4+ | | 2005 11 21 | 703 | 0.2+ | 1.0− | | | | |
| 2000 09 23 | 704 | 1.0− | 0.2+ | 2002 02 07 | 691 | 0.2− | 0.5+ | | 2005 11 21 | 703 | 0.6− | 1.0− | | | | |
| 2000 09 23 | 704 | 0.6− | 0.7+ | 2002 02 07 | 691 | 0.1− | 0.0 | | 2005 11 21 | 644 | 0.3+ | 0.6− | | | | |
| 2000 09 23 | 704 | 0.5− | 0.3+ | 2002 02 07 | 691 | 0.1− | 0.4+ | | 2005 11 21 | 703 | 0.5+ | 1.4− | | | | |
| 2000 09 28 | 704 | 0.6− | 0.2+ | 2002 02 07 | 704 | 0.2− | 0.6− | | 2005 11 21 | 703 | 0.5+ | 1.1− | | | | |
| 2000 09 28 | 704 | 0.3+ | 0.7+ | 2002 02 07 | 704 | 0.4− | 0.4+ | | 2005 11 21 | 644 | 0.3+ | 0.6− | | | | |
| 2000 09 28 | 704 | 0.1+ | 0.0 | 2002 02 07 | 704 | 0.2− | 1.0− | | 2005 11 21 | 644 | 0.0 | 0.0 | | | | |
| 2000 09 28 | 704 | 0.2+ | 0.7+ | 2002 02 07 | 704 | 0.3− | 0.9− | | 2005 11 28 | 703 | 0.2− | 0.5− | | | | |
| 2000 09 28 | 704 | 0.4− | 0.5+ | 2002 02 07 | 704 | 0.4+ | 1.2− | | 2005 11 28 | 703 | 0.2− | 0.4− | | | | |
| 2000 10 03 | 704 | 0.4+ | 0.5− | 2002 02 10 | 704 | (1.9− | 0.3−) | | 2005 11 28 | 703 | 0.3− | 0.2+ | | | | |
| 2000 10 03 | 704 | 0.9+ | 0.1− | 2002 02 10 | 704 | 0.8− | 0.4− | | 2005 11 28 | 703 | 0.8− | 0.3− | | | | |
| 2000 10 03 | 704 | 0.6− | 0.3− | 2002 02 10 | 704 | 0.9− | 0.1+ | | 2005 12 01 | 699 | (0.0 | 1.6−) | | | | |
| 2000 10 03 | 704 | 0.4− | 0.3+ | 2002 02 10 | 704 | 1.1− | 0.2− | | 2005 12 01 | 644 | 0.2+ | 0.2− | | | | |
| 2000 10 03 | 704 | 0.2+ | 0.1+ | 2002 02 10 | 704 | 1.0− | 0.0 | | 2005 12 01 | 699 | 0.5+ | 0.0 | | | | |
| 2000 10 25 | 704 | 0.3+ | 0.4+ | 2002 02 12 | 704 | 0.3+ | 0.0 | | 2005 12 01 | 644 | 0.4+ | 0.3− | | | | |
| 2000 10 25 | 704 | 0.1+ | 0.4− | 2002 02 12 | 704 | 0.2+ | 0.4+ | | 2005 12 01 | 699 | 0.2− | 0.2− | | | | |
| 2000 10 25 | 704 | 0.0 | 0.9+ | 2002 02 12 | 704 | 1.1+ | 0.0 | | 2005 12 01 | 644 | 0.2+ | 0.3− | | | | |
| 2000 10 25 | 704 | 0.1+ | 0.5+ | 2002 02 12 | 704 | 0.5+ | 0.3− | | 2005 12 01 | 699 | 0.6+ | 0.9− | | | | |
| 2000 10 25 | 704 | 0.8− | 0.6+ | 2002 02 12 | 704 | 0.7+ | 0.2+ | | 2005 12 04 | 703 | 0.9+ | 0.2− | | | | |
| 2001 12 18 | 704 | 0.7+ | 0.8+ | 2002 02 20 | 704 | 0.2+ | 0.5+ | | 2005 12 04 | 703 | 0.7+ | 1.2− | | | | |
| 2001 12 18 | 704 | 0.3+ | 1.4+ | 2002 02 20 | 704 | 0.5− | 0.8+ | | 2005 12 04 | 703 | 0.4+ | 1.0− | | | | |
| 2001 12 18 | 704 | 1.4+ | 0.9+ | 2002 02 20 | 704 | 0.5− | 0.7+ | | 2005 12 04 | 703 | 0.2+ | 0.2+ | | | | |
| 2001 12 18 | 644 | 0.3+ | 0.2+ | 2002 02 20 | 704 | 0.7− | 0.2+ | | 2006 01 27 | 703 | 0.6− | 1.0− | | | | |
| 2001 12 18 | 644 | 0.4+ | 0.0 | 2002 02 20 | 704 | 0.4− | 0.0 | | 2006 01 27 | 703 | 0.5− | 0.2+ | | | | |
| 2001 12 18 | 704 | 1.3+ | 1.4+ | 2005 09 29 | 703 | 0.1+ | 0.0 | | 2006 01 27 | 703 | 0.6+ | 0.8+ | | | | |
| 2001 12 18 | 644 | 0.3+ | 0.1+ | 2005 09 29 | 703 | 0.1+ | 0.0 | | 2006 01 27 | 703 | (1.6+ | 0.8−) | | | | |
| 2001 12 18 | 704 | 0.2+ | 0.6+ | 2005 09 29 | 703 | 0.8− | 0.0 | | 2006 10 27 | G96 | 0.9− | 0.3+ | | | | |
| 2001 12 21 | 704 | 0.3+ | 0.5+ | 2005 09 29 | 703 | 0.1+ | 0.1− | | 2006 10 27 | G96 | 0.3− | 0.4− | | | | |
| 2001 12 21 | 704 | 0.7+ | 0.7+ | 2005 10 04 | 644 | 0.1+ | 0.0 | | 2006 10 27 | G96 | 0.5− | 0.5− | | | | |
| 2001 12 21 | 704 | 0.3− | 0.5− | 2005 10 04 | 644 | 0.1+ | 0.1+ | | 2006 10 27 | G96 | 0.6− | 0.6− | | | | |
| 2002 01 08 | 704 | 0.1− | 0.4+ | 2005 10 04 | 644 | 0.2+ | 0.0 | | 2006 11 11 | G96 | 0.4+ | 1.4− | | | | |
| 2002 01 08 | 704 | 1.1+ | 0.5+ | 2005 10 10 | 703 | 0.3+ | 0.3− | | 2006 11 11 | G96 | 0.7− | 0.4− | | | | |
| 2002 01 08 | 704 | 0.3+ | 1.0+ | 2005 10 10 | 703 | 0.1− | 0.4− | | 2006 11 11 | G96 | 1.3− | 0.6− | | | | |
| 2002 01 08 | 704 | 0.3+ | 0.6+ | 2005 10 10 | 703 | 0.5+ | 0.0 | | 2006 11 11 | G96 | 0.4+ | 0.4− | | | | |
| 2002 01 08 | 704 | 1.0+ | 0.7+ | 2005 10 10 | 703 | 0.1+ | 0.3− | | 2006 11 16 | G96 | 0.2− | 0.5− | | | | |
| 2002 01 14 | 704 | 0.1+ | 0.2+ | 2005 10 12 | 699 | 1.1+ | 1.0− | | 2006 11 16 | G96 | 0.2+ | 0.3− | | | | |
| 2002 01 14 | 704 | 0.5+ | 0.8+ | 2005 10 12 | 699 | 0.0 | 0.3− | | 2006 11 16 | G96 | 0.3− | 0.8− | | | | |
| 2002 01 14 | 704 | 0.8+ | 0.6+ | 2005 10 12 | 699 | 0.0 | 0.9− | | 2006 11 16 | G96 | 0.0 | 0.5− | | | | |
| 2002 01 14 | 704 | 0.7+ | 0.4+ | 2005 10 12 | 699 | 0.1− | 0.6− | | | | | | | | | |

**(138642)∗ 2000 RV$_{27}$ = 2001 XQ$_{186}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22468)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.67865 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20669299 | $\omega$ | 98.02143 | | +0.99191942 | −0.09378835 | |
| $a$ | 2.8330368 | $\Omega$ | 267.38955 | | +0.05298172 | +0.91811965 | |
| $e$ | 0.0891211 | $i$ | 4.90630 | | +0.11527709 | +0.38504552 | |
| $P$ | 4.77 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.1− | 0.6+ | 2001 12 20 | 704 | 0.7+ | 0.8+ | | 2005 10 22 | 644 | 0.1+ | 0.2− | | | | |
| 2000 09 01 | 704 | 0.0 | 0.1− | 2001 12 20 | 704 | 0.7+ | 1.0+ | | 2005 10 22 | 703 | 1.0− | 0.0 | | | | |
| 2000 09 01 | 704 | 0.7− | 1.2+ | 2003 04 01 | 644 | 0.4+ | 0.7+ | | 2005 10 22 | 644 | 0.1+ | 0.0 | | | | |
| 2000 09 03 | 704 | 0.2+ | 0.5+ | 2003 04 01 | 644 | 0.6+ | 0.6+ | | 2005 10 22 | 644 | 0.2+ | 0.1+ | | | | |
| 2000 09 03 | 704 | 0.8+ | 0.7− | 2003 04 01 | 644 | 0.7+ | 0.6+ | | 2005 10 28 | 703 | 0.3+ | 0.0 | | | | |
| 2000 09 03 | 704 | 1.1+ | 0.1+ | 2005 09 23 | 703 | 1.5+ | 0.4+ | | 2005 10 28 | 703 | 0.6+ | 0.6+ | | | | |
| 2000 09 03 | 704 | 0.3+ | 0.7− | 2005 09 23 | 703 | 0.4− | 0.8+ | | 2005 10 28 | 703 | 0.1− | 0.2+ | | | | |
| 2000 09 05 | 699 | 1.3− | 0.1− | 2005 09 23 | 703 | 1.2− | 1.4+ | | 2005 10 28 | 703 | 0.2+ | 0.9− | | | | |
| 2000 09 05 | 699 | 1.3− | 0.6− | 2005 09 23 | 703 | (0.7+ | 1.8+) | | 2005 10 30 | 704 | 1.0+ | 0.1− | | | | |
| 2000 09 05 | 699 | 1.1− | 0.3− | 2005 09 30 | 691 | 0.3+ | 0.3− | | 2005 10 30 | 704 | 1.0+ | 0.9+ | | | | |
| 2000 09 05 | 699 | 0.2− | 0.0 | 2005 09 30 | 691 | 0.0 | 0.0 | | 2005 10 30 | 704 | 0.5+ | 0.0 | | | | |
| 2000 09 23 | 704 | 0.2− | 0.2+ | 2005 09 30 | 691 | 0.1− | 0.1− | | 2005 10 30 | 704 | 1.0+ | 1.0+ | | | | |
| 2000 09 23 | 704 | 0.1+ | 0.3+ | 2005 10 01 | 703 | 0.0 | 0.1− | | 2005 10 30 | 704 | 0.4+ | 0.2− | | | | |
| 2000 09 23 | 704 | 0.3+ | 0.7+ | 2005 10 01 | 703 | 0.4− | 0.2− | | 2005 11 02 | 704 | 0.3+ | 0.9+ | | | | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.2− | 0.6+ | | 2005 10 01 | 703 | 0.2− | 0.0 | | 2005 11 02 | 704 | 0.9− | 0.5+ | | 2000 09 23 | 704 | 0.1− | 0.1+ | | 2002 02 17 | 644 | 0.3− | 0.4+ | | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2000 09 23 | 704 | 0.2+ | 0.1+ | | 2005 10 01 | 703 | 0.1− | 0.4− | | 2005 11 02 | 704 | 0.1− | 0.2+ | | 2000 09 24 | 704 | 0.1− | 0.5− | | 2002 02 17 | 644 | 0.1+ | 0.4+ | | 2006 11 16 | 704 | 0.2+ | 1.5+ |
| 2000 09 25 | 699 | 0.5− | 0.8+ | | 2005 10 03 | 704 | 0.1+ | 0.5− | | 2005 11 02 | 704 | 1.2+ | 0.9+ | | 2000 09 24 | 704 | 0.3− | 0.1− | | 2002 02 17 | 644 | 0.0 | 0.6+ | | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2000 09 25 | 699 | 1.0− | 0.2+ | | 2005 10 03 | 704 | 0.1+ | 0.9− | | 2005 11 02 | 704 | (1.9− | 0.4−) | | 2000 09 24 | 704 | 0.2− | 0.6− | | 2002 03 12 | 704 | 0.0 | 0.3− | | 2006 11 16 | 704 | 0.1+ | 0.8+ |
| 2000 09 25 | 699 | (2.2− | 1.4+) | | 2005 10 03 | 704 | 0.8+ | 0.4− | | 2005 11 05 | 683 | (1.5− | 1.0−) | | 2000 09 24 | 704 | 0.2− | 0.5− | | 2002 03 12 | 704 | 0.0 | 0.4+ | | 2006 11 16 | 704 | 0.4+ | 0.9+ |
| 2000 09 25 | 699 | 0.8− | 0.8+ | | 2005 10 03 | 704 | 0.4+ | 0.4− | | 2005 11 05 | 683 | (1.2− | 2.0−) | | 2000 09 24 | 704 | 0.1− | 0.5+ | | 2002 03 12 | 704 | (0.9+ | 2.3+) | | 2006 11 16 | 704 | 0.8+ | 0.4+ |
| 2000 09 26 | 704 | 0.3+ | 1.3+ | | 2005 10 06 | 691 | 0.1− | 0.0 | | 2005 11 05 | 704 | 1.2+ | 0.5− | | 2000 09 25 | 704 | 0.5− | 0.3+ | | 2002 03 12 | 704 | 0.3+ | 1.1+ | | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2000 09 26 | 704 | 0.4+ | 0.8+ | | 2005 10 06 | 691 | 0.2− | 0.0 | | 2005 11 05 | 683 | 0.3+ | 1.4− | | 2000 09 25 | 704 | 0.1− | 0.7− | | 2002 04 14 | 704 | 1.4+ | 1.2+ | | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2000 09 26 | 704 | 0.1+ | 0.6+ | | 2005 10 06 | 691 | 0.3− | 0.1− | | 2005 11 05 | 704 | 0.1+ | 0.3+ | | 2000 09 25 | 704 | 0.1− | 0.3+ | | 2002 04 14 | 704 | (0.8− | 1.9+) | | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2000 10 03 | 704 | 0.1− | 0.1− | | 2005 10 08 | 704 | 0.3− | 0.2− | | 2005 11 05 | 704 | 0.4− | 0.2+ | | 2000 09 25 | 704 | 0.1− | 0.1+ | | 2002 04 14 | 704 | 0.4− | 1.2+ | | 2006 11 17 | G96 | 0.3+ | 0.6− |
| 2000 10 03 | 704 | 0.4− | 0.5− | | 2005 10 08 | 704 | 0.3+ | 0.7+ | | 2005 11 05 | 704 | 0.7+ | 0.5− | | 2000 09 25 | 704 | 0.3− | 0.3− | | 2002 04 14 | 704 | 0.2+ | 1.1+ | | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2000 10 03 | 704 | 0.2− | 0.0 | | 2005 10 08 | 704 | 0.1+ | 0.1+ | | 2005 11 05 | 704 | 0.3− | 0.1− | | 2000 09 25 | 608 | 0.3− | 0.1− | | 2005 07 04 | 691 | 0.1− | 0.3+ | | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2000 10 03 | 704 | 0.4+ | 0.4− | | 2005 10 08 | 703 | 0.1− | 0.4− | | 2005 11 06 | 683 | 0.0 | 0.4− | | 2000 09 25 | 608 | 0.2− | 0.0 | | 2005 07 04 | 691 | 0.2− | 0.4+ | | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2001 12 14 | 704 | 0.1− | 0.0 | | 2005 10 08 | 703 | 0.3+ | 1.0− | | 2005 11 06 | 683 | (0.0 | 2.0−) | | 2000 09 25 | 608 | 0.0 | 0.6− | | 2005 07 04 | 691 | 0.1− | 0.2+ | | 2006 11 17 | 704 | 0.9+ | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.5− | | 2005 10 08 | 704 | 0.4+ | 0.1− | | 2005 11 06 | 683 | (1.6− | 0.2−) | | 2000 09 28 | 704 | 0.5+ | 0.3− | | 2005 07 08 | 691 | 0.2− | 0.3+ | | 2006 11 19 | 704 | 0.2+ | 1.3+ |
| 2001 12 14 | 704 | 0.1+ | 0.3+ | | 2005 10 08 | 703 | 0.2− | 0.1+ | | 2006 09 25 | G96 | 0.6− | 0.0 | | 2000 09 28 | 704 | 0.6− | 0.5+ | | 2005 07 08 | 691 | 0.2− | 0.3+ | | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2001 12 14 | 704 | 0.5− | 0.3− | | 2005 10 08 | 704 | 0.2− | 0.4+ | | 2006 09 25 | G96 | 0.4− | 0.3− | | 2000 09 28 | 704 | 0.5+ | 0.2− | | 2005 07 08 | 691 | (1.8+ | 0.6−) | | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2001 12 17 | 644 | 0.3+ | 0.4+ | | 2005 10 08 | 703 | 0.8− | 0.9− | | 2006 09 25 | G96 | 0.7− | 0.9− | | 2000 09 28 | 704 | 0.0 | 0.6+ | | 2005 07 15 | 691 | 0.1− | 0.4+ | | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2001 12 17 | 644 | 0.5+ | 0.2+ | | 2005 10 10 | 691 | 0.1− | 0.1− | | 2006 09 25 | G96 | 0.5− | 0.5− | | 2000 09 28 | 704 | 0.4− | 0.0 | | 2005 07 15 | 691 | 0.2− | 0.3+ | | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2001 12 17 | 644 | 0.6+ | 0.4+ | | 2005 10 10 | 691 | 0.1− | 0.1− | | 2006 11 01 | G96 | 0.1− | 0.2+ | | 2000 10 03 | 704 | 0.4− | 0.1− | | 2005 07 15 | 691 | 0.1− | 0.5+ | | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2001 12 17 | 704 | 0.0 | 0.0 | | 2005 10 10 | 691 | 0.4− | 0.1− | | 2006 11 01 | G96 | 0.1+ | 0.2− | | 2000 10 03 | 704 | 0.5+ | 0.6+ | | 2005 07 26 | 644 | 0.1− | 0.1+ | | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.5− | | 2005 10 12 | 704 | 0.6+ | 0.0 | | 2006 11 01 | G96 | 0.3− | 0.2− | | 2000 10 03 | 704 | 0.4− | 0.2+ | | 2005 07 26 | 644 | 0.2− | 0.4+ | | 2006 11 22 | 704 | 0.7+ | 0.2− |
| 2001 12 17 | 704 | 0.1− | 0.4+ | | 2005 10 12 | 704 | 0.2− | 0.2− | | 2006 11 01 | G96 | 0.5− | 0.1− | | 2000 10 03 | 704 | 0.2− | 0.2− | | 2005 07 26 | 644 | 0.1− | 0.3+ | | 2006 11 22 | 704 | 0.6+ | 0.2− |
| 2001 12 17 | 704 | 0.3− | 0.8+ | | 2005 10 12 | 704 | 0.2− | 0.1− | | 2006 11 17 | G96 | 0.3− | 0.4+ | | 2000 10 03 | 704 | 0.6+ | 0.0 | | 2005 07 30 | 644 | 0.0 | 0.0 | | 2006 11 22 | 704 | 0.8+ | 0.4+ |
| 2001 12 17 | 704 | 0.1− | 0.5+ | | 2005 10 12 | 704 | 0.2+ | 0.6+ | | 2006 11 17 | G96 | 0.1− | 0.2+ | | 2000 10 25 | 704 | 0.2+ | 0.9− | | 2005 07 30 | 644 | 0.2− | 0.2+ | | 2006 11 29 | 704 | 0.1+ | 0.6+ |
| 2001 12 20 | 704 | (0.9+ | 1.6+) | | 2005 10 12 | 704 | 0.5+ | 0.2− | | 2006 11 17 | G96 | 0.4− | 0.1− | | 2000 10 25 | 704 | 0.2+ | 0.7− | | 2005 07 30 | 644 | 1.1+ | 1.5+ | | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2001 12 20 | 704 | 0.2− | 0.7+ | | 2005 10 22 | 703 | 0.4+ | 0.0 | | 2006 11 17 | G96 | 0.2− | 0.0 | | 2000 10 25 | 704 | 0.6+ | 0.2− | | 2006 10 13 | 691 | 0.1+ | 0.1+ | | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2001 12 20 | 704 | (1.7+ | 0.3+) | | 2005 10 22 | 703 | 0.6− | 0.3− | | | | | | | 2000 10 25 | 704 | 0.2+ | 0.7+ | | 2006 10 13 | 691 | 0.0 | 0.2+ | | 2006 11 29 | 704 | 0.5− | 0.5+ |
| | | | | | | | | | | | | | | | 2000 10 25 | 704 | 0.0 | 0.4+ | | 2006 10 13 | 691 | 0.0 | 0.2+ | | 2006 11 29 | 704 | 0.1+ | 0.5+ |
| | | | | | | | | | | | | | | | 2000 10 27 | 704 | 0.6+ | 0.1+ | | 2006 10 17 | 691 | 0.2− | 0.2+ | | | | | |
| | | | | | | | | | | | | | | | 2000 10 27 | 704 | 0.2− | 0.5− | | 2006 10 17 | 691 | 0.2− | 0.0 | | | | | |

**(138643)∗ 2000 RH$_{29}$ = 2001 XO$_{243}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22470)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.96428 | | (2000.0) | | | |
| $n$ | 0.17389289 | $\omega$ | 191.07094 | | +0.29914713 | −0.94604915 |
| $a$ | 3.1789340 | $\Omega$ | 241.62473 | | +0.88592160 | +0.32383757 |
| $e$ | 0.2259740 | $i$ | 8.13516 | | +0.35447696 | −0.01096492 |
| $P$ | 5.67 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 608 | 0.8+ | 0.3+ | | 2000 10 27 | 704 | 0.3− | 0.4+ | | 2006 10 17 | 691 | 0.1− | 0.3+ | | 2000 09 01 | 704 | 0.8+ | 0.2− | | 2000 10 03 | 699 | 1.6+ | 1.6+ | | 2005 07 17 | E12 | 0.0 | 0.1+ |
| 2000 08 26 | 608 | 0.5+ | 0.8+ | | 2000 10 27 | 704 | 0.2− | 0.3+ | | 2006 10 21 | 704 | (2.9− | 3.4+) | | 2000 09 01 | 704 | 0.1+ | 0.2+ | | 2000 10 03 | 699 | 1.7+ | 0.6+ | | 2005 07 17 | E12 | 0.6− | 0.6+ |
| 2000 08 26 | 608 | 0.1+ | 0.6+ | | 2000 10 27 | 704 | 0.2− | 0.2+ | | 2006 10 21 | 704 | 0.8− | 0.1− | | 2000 09 01 | 704 | 0.1+ | 0.1− | | 2000 10 03 | 699 | 0.0 | 0.4+ | | 2005 07 17 | E12 | 0.4+ | 0.0 |
| 2000 09 01 | 704 | 0.2+ | 0.3− | | 2000 10 31 | 704 | 0.9+ | 1.0− | | 2006 10 21 | 704 | 1.3− | 0.0 | | 2000 09 01 | 704 | 0.3+ | 0.2− | | 2000 10 03 | 704 | 0.1− | 0.4+ | | 2005 07 29 | E12 | 0.4+ | 0.3− |
| 2000 09 01 | 704 | 0.3+ | 0.2− | | 2000 10 31 | 704 | 0.3+ | 0.5− | | 2006 10 21 | 691 | 0.1+ | 0.3− | | 2000 09 01 | 704 | (0.6+ | 2.1−) | | 2000 10 03 | 704 | 0.2− | 0.6+ | | 2005 07 29 | E12 | 0.1− | 0.3+ |
| 2000 09 01 | 704 | 1.8+ | 0.7− | | 2000 10 31 | 704 | 0.2+ | 0.0 | | 2006 10 21 | 704 | 0.9− | 1.2+ | | 2000 09 03 | 704 | 0.0 | 0.1− | | 2000 10 03 | 704 | 0.0 | 0.2− | | 2005 07 29 | E12 | 0.1− | 0.5+ |
| 2000 09 01 | 704 | 0.1+ | 0.6− | | 2000 10 31 | 704 | 0.0 | 0.5+ | | 2006 10 21 | 691 | 0.1− | 0.3− | | 2000 09 03 | 704 | 1.0− | 0.6+ | | 2000 10 03 | 704 | 0.1− | 0.0 | | 2005 07 29 | E12 | 0.3+ | 0.0 |
| 2000 09 01 | 704 | 0.6− | 0.1+ | | 2001 12 14 | 704 | 0.6+ | 0.5+ | | 2006 10 21 | 691 | 0.1− | 0.3− | | 2000 09 03 | 704 | 1.0− | 0.3+ | | 2000 10 03 | 704 | 0.3+ | 0.0 | | 2006 10 23 | 703 | 0.1− | 0.2+ |
| 2000 09 03 | 704 | 0.1+ | 0.0 | | 2001 12 14 | 704 | 1.2+ | 0.5+ | | 2006 10 27 | 703 | 0.4+ | 0.5− | | 2000 09 03 | 704 | 0.4− | 0.2+ | | 2000 10 03 | 704 | 0.1− | 0.5+ | | 2006 10 23 | 703 | 0.4+ | 0.2+ |
| 2000 09 03 | 704 | 0.3− | 0.4− | | 2001 12 14 | 704 | 1.2+ | 0.1+ | | 2006 10 27 | 703 | 0.5− | 0.3− | | 2000 09 03 | 704 | 0.7− | 0.1+ | | 2000 10 03 | 704 | 0.4− | 0.1− | | 2006 10 23 | 703 | 0.9− | 0.9− |
| 2000 09 03 | 704 | 0.3− | 0.6− | | 2001 12 14 | 704 | 0.3+ | 0.3+ | | 2006 10 27 | 703 | 0.1+ | 0.1+ | | 2000 09 21 | 608 | 0.6− | 0.5− | | 2000 10 03 | 704 | 0.3− | 0.0 | | 2006 10 29 | 703 | 0.3+ | 0.3+ |
| 2000 09 03 | 704 | 1.1− | 0.0 | | 2001 12 14 | 704 | 1.1+ | 0.1+ | | 2006 10 27 | 703 | 0.3− | 0.3− | | 2000 09 21 | 608 | 0.9− | 0.6− | | 2000 10 03 | 704 | 0.0 | 0.4+ | | 2006 10 29 | 703 | 0.5− | 0.2+ |
| 2000 09 03 | 704 | 0.2+ | 0.1− | | 2001 12 19 | 704 | 0.6+ | 1.2− | | 2006 10 29 | 704 | 0.1+ | 0.2+ | | 2000 09 21 | 608 | 0.8− | 0.6− | | 2000 10 31 | 704 | 0.2+ | 1.0+ | | 2006 10 29 | 703 | 0.9+ | 0.4− |
| 2000 09 05 | 699 | 1.0+ | 0.1− | | 2001 12 19 | 704 | 0.4+ | 0.3− | | 2006 10 29 | 704 | 0.1+ | 0.6− | | 2000 09 22 | 699 | 0.3− | 0.2+ | | 2000 10 31 | 704 | 0.1+ | 0.3+ | | 2006 10 29 | 703 | 0.1− | 0.5− |
| 2000 09 05 | 699 | 0.3− | 0.4− | | 2001 12 19 | 704 | 0.1− | 0.3− | | 2006 10 29 | 704 | 0.2+ | 0.4+ | | 2000 09 22 | 699 | 0.6− | 0.4+ | | 2000 10 31 | 704 | 0.5+ | 0.1− | | 2006 11 14 | 644 | 0.2+ | 0.4+ |
| 2000 09 05 | 699 | 0.8+ | 0.2− | | 2001 12 19 | 704 | 0.2+ | 0.2− | | 2006 11 01 | G96 | 0.4+ | 0.4− | | 2000 09 22 | 699 | 0.2− | 0.3+ | | 2000 10 31 | 704 | 0.1+ | 0.4− | | 2006 11 14 | 644 | 0.0 | 0.2+ |
| 2000 09 05 | 699 | 0.8+ | 0.5− | | 2002 01 04 | 608 | (0.5− | 1.6+) | | 2006 11 01 | G96 | 0.3+ | 0.5− | | 2000 09 22 | 699 | 0.2− | 0.3+ | | 2000 10 31 | 704 | 0.1− | 0.5+ | | 2006 11 14 | 644 | 0.2+ | 0.0 |
| 2000 09 23 | 704 | 0.0 | 0.1− | | 2002 01 04 | 608 | (0.8− | 1.9+) | | 2006 11 01 | G96 | 0.3+ | 0.4− | | 2000 09 23 | 704 | 0.3− | 0.2− | | 2001 12 09 | 704 | 0.3+ | 0.9− | | 2006 11 15 | 703 | 0.3+ | 0.2− |
| 2000 09 23 | 699 | 0.5− | 0.3+ | | 2002 01 04 | 608 | 0.4− | 1.1+ | | 2006 11 01 | G96 | 0.1+ | 0.3− | | 2000 09 23 | 704 | 0.7+ | 0.2− | | 2001 12 09 | 704 | 0.5− | 0.2+ | | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2000 09 23 | 704 | 0.1+ | 0.3+ | | 2002 01 18 | 209 | 0.5− | 0.6+ | | 2006 11 08 | 644 | 0.4− | 0.1− | | 2000 09 23 | 704 | 0.2+ | 0.0 | | 2001 12 09 | 704 | 0.6− | 0.3− | | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2000 09 23 | 699 | 0.2+ | 0.8− | | 2002 01 18 | 209 | 0.6− | 0.7+ | | 2006 11 08 | 644 | 0.2− | 0.2− | | 2000 09 23 | 704 | 0.2+ | 0.5− | | 2003 02 23 | 699 | 0.2+ | 0.1+ | | 2006 11 15 | 703 | 0.8− | 1.0+ |
| 2000 09 23 | 704 | 0.5− | 0.1− | | 2002 01 19 | 209 | 0.5− | 0.7+ | | 2006 11 08 | 644 | 0.2− | 0.1+ | | 2000 09 23 | 704 | 0.6+ | 0.3− | | 2003 02 23 | 699 | (2.0+ | 0.8−) | | 2006 11 15 | 703 | 0.0 | 0.7+ |
| 2000 09 23 | 699 | 0.5− | 0.1+ | | 2002 02 07 | 644 | 0.0 | 0.5+ | | 2006 11 11 | 703 | 0.1+ | 0.4− | | 2000 09 26 | 608 | 0.1+ | 0.5− | | 2003 02 23 | 699 | 0.8+ | 0.6− | | 2006 11 15 | 703 | 0.3+ | 1.1+ |
| 2000 09 23 | 704 | 0.3− | 0.4+ | | 2002 02 07 | 644 | 0.3− | 0.4+ | | 2006 11 11 | 703 | 0.1− | 0.4− | | 2000 09 26 | 608 | 0.1+ | 0.6− | | 2003 02 23 | 699 | 0.2+ | 0.7+ | | 2006 11 15 | 703 | 0.3− | 0.2+ |
| 2000 09 23 | 699 | 0.6− | 0.2+ | | 2002 02 07 | 644 | 0.1+ | 0.5+ | | 2006 11 11 | 703 | 0.3− | 0.1− | | | | | | | | | | | | | | | |

**(138644)∗ 2000 RQ$_{30}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.92512 | | (2000.0) | | | |
| $n$ | 0.17586950 | $\omega$ | 30.29313 | | +0.97026678 | +0.20890328 |
| $a$ | 3.1550703 | $\Omega$ | 317.08855 | | −0.24195859 | +0.82423276 |
| $e$ | 0.1380638 | $i$ | 10.34243 | | −0.00619736 | +0.52630769 |
| $P$ | 5.60 | $H$ | 14.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 608 | 0.1− | 0.3− | 2003 03 26 | 699 | 0.2+ | 0.3− | 2006 11 15 | 703 | 1.1− | 1.0− |
| 2000 09 28 | 704 | 0.3+ | 0.1− | 2003 03 26 | 699 | (1.6− | 0.1+) | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2000 09 28 | 704 | 0.4+ | 0.3− | 2003 03 26 | 699 | 0.7− | 0.1− | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2000 09 28 | 704 | 0.0 | 0.2− | 2003 03 26 | 699 | 0.6+ | 1.4+ | 2006 11 15 | 703 | 0.1− | 0.4+ |
| 2000 09 28 | 704 | 0.1− | 0.2+ | 2004 04 14 | 644 | 0.4+ | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2000 09 28 | 704 | 0.1− | 0.3− | 2004 04 14 | 644 | 0.4+ | 0.4+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2000 09 28 | 704 | 0.4− | 0.0 | 2004 04 14 | 644 | 0.5+ | 0.4+ | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 2000 09 28 | 704 | 0.4− | 0.4− | 2004 04 25 | 704 | 1.0+ | 0.7+ | 2006 11 21 | 703 | 0.4+ | 0.5+ |
| 2000 09 28 | 704 | 0.1+ | 0.3+ | 2004 04 25 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 703 | 0.3− | 0.1+ |
| 2000 09 28 | 704 | 0.1− | 0.5− | 2004 04 25 | 704 | 1.0− | 0.7+ | 2006 11 21 | 703 | 0.1+ | 0.5+ |
| 2000 09 28 | 704 | 0.1− | 0.2+ | 2004 04 25 | 704 | 0.3− | 1.5+ | 2006 11 21 | 703 | 0.4+ | 0.9+ |
| 2000 10 03 | 699 | (3.0+ | 1.1+) | 2005 07 17 | E12 | 0.1+ | 1.2− | | | | |

**(138645)∗ 2000 RQ$_{31}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.79034 | | (2000.0) | | +0.99492573 | +0.06122937 |
| $n$ | 0.18024693 | $\omega$ | 126.55900 | | −0.08459282 | +0.93865824 |
| $a$ | 3.1037790 | $\Omega$ | 230.07309 | | +0.05446885 | +0.33936954 |
| $e$ | 0.1972200 | $i$ | 5.97572 | | | |
| $P$ | 5.47 | $H$ | 14.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.9− | 0.1+ | 2002 01 14 | 704 | 0.0 | 0.2+ | 2005 10 26 | 291 | 0.5+ | 0.3+ |
| 2000 09 01 | 704 | 0.7− | 1.0+ | 2002 01 14 | 704 | 0.5− | 0.6− | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2000 09 01 | 704 | 0.3− | 0.1+ | 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2000 09 01 | 704 | 0.2− | 0.1+ | 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2000 09 03 | 704 | 0.3− | 0.1− | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2000 09 03 | 704 | 1.3+ | 1.1− | 2005 05 22 | 644 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2000 09 03 | 704 | 0.0 | 1.0+ | 2005 05 22 | 644 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2000 09 03 | 704 | 0.6+ | 0.1+ | 2005 05 22 | 644 | 0.3− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2000 09 03 | 704 | 0.0 | 1.0+ | 2005 05 23 | 644 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2000 09 22 | 699 | 0.3− | 0.2+ | 2005 05 23 | 644 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2000 09 22 | 699 | 0.1+ | 0.2− | 2005 05 23 | 644 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2000 09 22 | 699 | 1.1+ | 0.8− | 2005 06 21 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2000 09 22 | 699 | 0.0 | 0.1− | 2005 06 21 | 644 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2000 09 22 | 608 | 0.8− | 1.6− | 2005 06 21 | 644 | 0.5− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2000 09 22 | 608 | 0.4− | 0.4− | 2005 06 29 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2000 09 22 | 608 | 0.6− | 0.3− | 2005 06 29 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2000 09 23 | 704 | 0.1+ | 0.2+ | 2005 06 29 | 691 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.1− | 0.9− |
| 2000 09 23 | 704 | 0.2+ | 0.5− | 2005 07 02 | 703 | 0.0 | 0.6− | 2006 11 15 | 703 | 0.3+ | 0.1+ |
| 2000 09 23 | 704 | 0.1+ | 0.1+ | 2005 07 02 | 703 | 0.6− | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.4− |
| 2000 09 27 | 704 | 0.2+ | 0.2− | 2005 07 02 | 703 | 1.0− | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.3+ |
| 2000 09 27 | 704 | 0.0 | 0.5− | 2005 07 02 | 703 | 0.8− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2000 09 27 | 704 | 0.8− | 0.6− | 2005 07 04 | 704 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2000 09 27 | 704 | 0.1− | 1.1− | 2005 07 04 | 704 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2000 09 27 | 704 | 0.7+ | 0.8+ | 2005 07 04 | 704 | 0.6− | 0.6+ | 2006 11 18 | 704 | 0.7− | 0.9+ |
| 2000 10 03 | 704 | 0.1+ | 0.1− | 2005 07 04 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 1.3+ | 0.6+ |
| 2000 10 03 | 704 | 0.4− | 0.5− | 2005 07 04 | 704 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.5− | 1.4+ |
| 2000 10 03 | 704 | 0.3+ | 0.2− | 2005 07 05 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | (0.3+ | 1.6+) |
| 2000 10 03 | 704 | 0.3+ | 0.2− | 2005 07 05 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | (2.1+ | 3.8+) |
| 2000 10 03 | 704 | 0.1+ | 0.3− | 2005 07 05 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.6− | 1.2+ |
| 2000 10 25 | 704 | 0.3− | 0.3− | 2005 07 07 | 704 | 0.0 | 1.4+ | 2006 11 21 | 704 | 0.9+ | 0.2+ |
| 2000 10 25 | 704 | 0.0 | 0.0 | 2005 07 07 | 704 | 0.5+ | 0.6− | 2006 11 21 | 704 | (0.7+ | 2.9+) |
| 2000 10 25 | 704 | 0.7+ | 0.6+ | 2005 07 07 | 704 | 0.1− | 0.1− | 2006 11 21 | 704 | 1.3− | 1.4+ |
| 2000 10 25 | 704 | 0.0 | 0.3− | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2000 10 25 | 704 | 0.3+ | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2000 10 30 | 704 | 0.3+ | 0.2− | 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2000 10 30 | 704 | 0.1+ | 0.9+ | 2005 07 19 | 644 | 0.4− | 0.0 | 2006 11 29 | 704 | 1.0+ | 0.5+ |
| 2000 10 30 | 704 | 0.4+ | 0.3− | 2005 07 19 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.7− | 0.1+ |
| 2000 10 30 | 704 | 0.0 | 0.7+ | 2005 07 19 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.3+ |
| 2002 01 14 | 704 | 1.3+ | 1.3+ | 2005 10 26 | 291 | 0.4+ | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.3+ |
| 2002 01 14 | 704 | 0.0 | 0.4+ | 2005 10 26 | 291 | 0.6+ | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.0 |

**(138646)∗ 2000 RK$_{34}$ = 1994 PZ$_{31}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 4740)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.88691 | | (2000.0) | | +0.54261764 | +0.83171290 |
| $n$ | 0.17218913 | $\omega$ | 358.77996 | | −0.76945946 | +0.43603877 |
| $a$ | 3.1998692 | $\Omega$ | 304.06988 | | −0.33689499 | +0.34369148 |
| $e$ | 0.1309919 | $i$ | 8.15877 | | | |
| $P$ | 5.72 | $H$ | 14.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 12 | 809 | (2.3− | 1.9+) | 2000 09 28 | 704 | 0.2− | 0.6+ | 2006 09 28 | 703 | 0.3− | 0.5+ |
| 1994 08 12 | 809 | 1.2− | 0.9+ | 2000 09 28 | 704 | 0.9− | 1.5− | 2006 09 28 | 703 | 0.7− | 0.3+ |
| 1994 08 12 | 809 | 0.1− | 0.2+ | 2000 10 03 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.5− | 1.0− |
| 1994 08 13 | 809 | 1.2+ | 0.5+ | 2000 10 03 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.8+ | 0.1− |
| 1994 08 13 | 809 | 0.5+ | 0.7+ | 2000 10 03 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.6− | 0.1+ |
| 1994 08 13 | 809 | 0.5+ | 0.2− | 2000 10 03 | 704 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.1− | 0.6+ |
| 1997 01 03 | 691 | 0.3− | 0.1− | 2000 10 03 | 704 | 0.8+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.2− |
| 1997 01 03 | 691 | 0.4− | 0.3− | 2001 12 17 | 704 | 0.7+ | 1.3+ | 2006 10 23 | 644 | 0.4+ | 0.1− |
| 1997 01 03 | 691 | 0.3− | 0.2+ | 2001 12 17 | 704 | 0.7+ | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2000 09 01 | 704 | 0.0 | 0.1− | 2001 12 17 | 704 | 0.6+ | 1.2+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2000 09 01 | 704 | 0.0 | 0.2− | 2001 12 17 | 704 | 1.4+ | 0.2− | 2006 10 25 | 106 | 1.3+ | 0.5+ |
| 2000 09 01 | 704 | 0.3+ | 0.4− | 2004 04 17 | 704 | 0.2+ | 0.6− | 2006 10 25 | 106 | 0.1− | 0.2− |
| 2000 09 01 | 704 | 0.6+ | 0.6− | 2004 04 17 | 704 | 1.0+ | 0.8+ | 2006 10 25 | 106 | 0.5− | 0.2+ |
| 2000 09 03 | 704 | 0.8− | 0.2+ | 2004 04 17 | 704 | 0.4+ | 0.4− | 2006 10 25 | 106 | 0.0 | 1.3− |
| 2000 09 03 | 704 | 0.3− | 0.4+ | 2004 04 17 | 699 | 0.3− | 1.2+ | 2006 10 27 | 703 | 0.7− | 0.8+ |
| 2000 09 03 | 704 | 0.6− | 0.6+ | 2004 04 17 | 699 | 1.1+ | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.1+ |
| 2000 09 03 | 704 | 0.5− | 0.6− | 2004 04 17 | 699 | (0.1+ | 1.9+) | 2006 10 27 | 703 | 1.0+ | 0.6− |
| 2000 09 05 | 699 | 1.4− | 0.4+ | 2004 04 17 | 699 | 0.3+ | 1.4+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2000 09 05 | 699 | 0.3+ | 0.3− | 2005 06 06 | E12 | 0.1+ | 0.5− | 2006 11 07 | 644 | 0.5+ | 0.2+ |
| 2000 09 05 | 699 | 1.0+ | 1.1− | 2005 06 06 | E12 | 0.0 | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2000 09 05 | 699 | 0.6− | 0.0 | 2005 06 06 | E12 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.5+ |
| 2000 09 22 | 699 | (2.1− | 0.9+) | 2005 06 06 | E12 | 0.5− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2000 09 22 | 699 | 0.6+ | 0.4+ | 2005 07 10 | E12 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.0 | 1.1− |
| 2000 09 22 | 699 | 0.2+ | 0.4+ | 2005 07 10 | E12 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2000 09 22 | 699 | 0.2+ | 1.3+ | 2005 07 10 | E12 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.5− | 0.7− |
| 2000 09 28 | 704 | 1.3− | 0.3+ | 2005 07 10 | E12 | 0.3+ | 0.5− | | | | |
| 2000 09 28 | 704 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.7+ | 0.1+ | | | | |

**(138647)∗ 2000 RK$_{39}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.65970 | | (2000.0) | | +0.43261678 | −0.87351521 |
| $n$ | 0.17768912 | $\omega$ | 122.27954 | | +0.71529964 | +0.48324013 |
| $a$ | 3.1334937 | $\Omega$ | 300.49588 | | +0.54880702 | +0.05873804 |
| $e$ | 0.0339619 | $i$ | 15.01203 | | | |
| $P$ | 5.55 | $H$ | 14.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.3− | 0.1− | 2001 12 22 | 704 | 0.4+ | 0.5− | 2003 02 23 | 683 | (2.2− | 0.5+) |
| 2000 09 01 | 704 | 0.1+ | 0.1− | 2001 12 22 | 704 | 1.1− | 0.7− | 2003 02 23 | 683 | 0.8− | 0.2+ |
| 2000 09 01 | 704 | 0.5− | 0.3+ | 2003 01 07 | 704 | 0.0 | 0.7− | 2003 02 23 | 683 | (2.1− | 0.3+) |
| 2000 09 01 | 704 | 0.4− | 0.5+ | 2003 01 07 | 704 | 0.1+ | 1.0− | 2003 03 06 | 683 | 1.4+ | 0.7+ |
| 2000 09 06 | 704 | 0.2− | 0.7+ | 2003 01 07 | 704 | 0.1+ | 0.2+ | 2003 03 06 | 683 | (1.8+ | 0.5−) |
| 2000 09 06 | 704 | 0.7− | 0.2+ | 2003 01 07 | 704 | 0.6+ | 0.4+ | 2003 03 06 | 683 | (2.4+ | 1.1+) |
| 2000 09 06 | 704 | 0.7− | 0.3− | 2003 01 26 | 699 | 0.7− | 0.5− | 2003 03 07 | 608 | 0.3+ | 0.5+ |
| 2000 09 06 | 704 | 0.4− | 0.2+ | 2003 01 26 | 699 | 0.2− | 0.4+ | 2003 03 07 | 608 | 0.5+ | 0.3+ |
| 2000 09 06 | 704 | 0.8− | 0.9+ | 2003 01 26 | 699 | 0.3− | 1.2+ | 2003 03 07 | 608 | 0.1− | 0.4+ |
| 2000 09 21 | 699 | 0.6− | 0.8+ | 2003 01 26 | 699 | 0.1− | 0.9+ | 2003 03 09 | 704 | 0.2− | 0.0 |
| 2000 09 21 | 699 | 0.2− | 0.7+ | 2003 01 28 | 704 | 0.2− | 0.8+ | 2003 03 09 | 704 | 0.4− | 0.0 |
| 2000 09 21 | 699 | (2.2+ | 1.0+) | 2003 01 28 | 704 | 0.1− | 0.4+ | 2003 03 09 | 704 | 0.7+ | 0.9+ |
| 2000 09 21 | 699 | 0.9+ | 0.2+ | 2003 01 28 | 704 | 0.8− | 0.7+ | 2003 03 09 | 704 | 0.3− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.1− | 0.2+ | 2003 02 01 | 683 | (0.3+ | 2.3+) | 2003 03 10 | 699 | 0.1+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.1− | 0.5+ | 2003 02 01 | 683 | (0.4+ | 1.5+) | 2003 03 10 | 699 | 0.4− | 0.7+ | | |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2003 02 01 | 683 | 0.1− | 1.4+ | 2003 03 10 | 699 | 0.7+ | 1.0− | | |
| 2000 10 02 | 704 | 0.4− | 1.8+ | 2003 02 02 | 704 | 0.6+ | 0.8+ | 2003 03 10 | 699 | 0.3− | 0.5+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.1+ | 2003 02 02 | 704 | 0.5+ | 0.2− | 2006 09 17 | 703 | 0.9− | 0.2+ | | |
| 2001 09 25 | 704 | 0.6+ | 0.8− | 2003 02 02 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 703 | 0.1− | 0.2+ | | |
| 2001 09 25 | 704 | 0.1− | 0.1− | 2003 02 02 | 704 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.9+ | 0.7+ | | |
| 2001 09 25 | 704 | 0.8+ | 0.1+ | 2003 02 02 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.3+ | 0.3+ | | |
| 2001 11 11 | 704 | 0.3− | 0.2− | 2003 02 04 | 608 | 0.2+ | 0.6− | 2006 09 28 | 703 | 1.0− | 0.5+ | | |
| 2001 11 11 | 704 | 0.0 | 0.3− | 2003 02 04 | 608 | 0.7+ | 0.8− | 2006 09 28 | 703 | (2.4− | 0.1−) | | |
| 2001 11 11 | 704 | 0.9− | 0.4+ | 2003 02 04 | 608 | 0.3+ | 0.8− | 2006 09 28 | 703 | 1.3− | 0.2+ | | |
| 2001 11 11 | 704 | 0.6− | 0.2− | 2003 02 07 | 683 | 1.0+ | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.3− | | |
| 2001 11 11 | 704 | 0.2+ | 0.1− | 2003 02 07 | 683 | 0.4− | 0.5+ | 2006 10 19 | 703 | 0.5− | 0.5− | | |
| 2001 12 09 | 704 | 0.3− | 0.0 | 2003 02 07 | 683 | 0.3+ | 1.5− | 2006 10 19 | 703 | 0.9+ | 0.6− | | |
| 2001 12 09 | 704 | 0.5+ | 0.1− | 2003 02 11 | 608 | 0.7− | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.1+ | | |
| 2001 12 09 | 704 | 0.6− | 0.2− | 2003 02 11 | 608 | 0.6− | 0.3− | 2006 10 27 | 703 | 0.3− | 0.2+ | | |
| 2001 12 09 | 704 | 0.2− | 0.3− | 2003 02 11 | 608 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.4+ | 0.5+ | | |
| 2001 12 09 | 704 | 0.1+ | 0.1+ | 2003 02 22 | 683 | 1.2+ | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.1+ | | |
| 2001 12 22 | 704 | 0.8+ | 0.9− | 2003 02 22 | 683 | 1.2+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.3+ | | |
| 2001 12 22 | 704 | 0.0 | 0.2− | 2003 02 22 | 683 | 1.4+ | 1.4+ | | | | | | |

**(138648)∗ 2000 RL$_{39}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.44320 | | (2000.0) | | | |
| $n$ | 0.18554740 | $\omega$ | 111.67401 | | +0.98324458 | +0.11309671 |
| $a$ | 3.0443842 | $\Omega$ | 242.08003 | | −0.15436846 | +0.93371505 |
| $e$ | 0.1266047 | $i$ | 9.31132 | | +0.09695602 | +0.33968417 |
| $P$ | 5.31 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.8− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2000 09 01 | 704 | 0.8− | 0.6+ | 2001 11 21 | 704 | 0.5− | 0.4− | 2006 11 09 | 644 | 0.4+ | 0.0 | | |
| 2000 09 01 | 704 | 0.0 | 0.5+ | 2001 11 21 | 704 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2000 09 01 | 704 | 0.5− | 0.1+ | 2001 11 21 | 704 | 0.7− | 0.5− | 2006 11 11 | 703 | 0.3+ | 1.0+ | | |
| 2000 09 01 | 704 | 0.3+ | 0.2− | 2001 12 18 | 704 | 1.3+ | 0.6+ | 2006 11 11 | 703 | (2.2+ | 1.2+) | | |
| 2000 09 06 | 704 | 0.2+ | 0.9− | 2001 12 18 | 704 | 0.7+ | 1.4+ | 2006 11 11 | 703 | 0.4− | 0.1+ | | |
| 2000 09 06 | 704 | 0.1+ | 0.2+ | 2001 12 18 | 704 | (0.7+ | 1.7+) | 2006 11 11 | 703 | 0.4+ | 0.9+ | | |
| 2000 09 06 | 704 | 0.6− | 0.2− | 2001 12 18 | 704 | 0.6+ | 0.9+ | 2006 11 13 | 691 | 0.1− | 0.1− | | |
| 2000 09 06 | 704 | 0.1+ | 0.9− | 2001 12 18 | 704 | 1.4+ | 0.6+ | 2006 11 13 | 691 | 0.1− | 0.2− | | |
| 2000 09 17 | 049 | 1.3− | 0.5+ | 2001 12 20 | 704 | 0.1− | 0.9+ | 2006 11 13 | 691 | 0.2− | 0.0 | | |
| 2000 09 17 | 049 | 0.1+ | 0.0 | 2001 12 20 | 704 | 0.6− | 0.7+ | 2006 11 17 | 704 | 1.2+ | 0.2+ | | |
| 2000 09 17 | 049 | 0.4− | 0.0 | 2001 12 20 | 704 | 0.5− | 0.6+ | 2006 11 17 | 704 | 0.3− | 0.4+ | | |
| 2000 09 20 | 608 | 1.4+ | 0.9+ | 2001 12 20 | 704 | 0.7− | 0.4+ | 2006 11 17 | 704 | 0.0 | 0.1+ | | |
| 2000 09 20 | 608 | 1.4+ | 1.0+ | 2001 12 20 | 704 | 0.9− | 0.7+ | 2006 11 17 | 704 | 0.9− | 0.3− | | |
| 2000 09 20 | 608 | 1.7+ | 0.6+ | 2002 01 09 | 704 | 0.4+ | 0.8− | 2006 11 18 | 691 | 0.0 | 0.0 | | |
| 2000 09 21 | 699 | (4.9+ | 2.0+) | 2002 01 09 | 704 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2000 09 21 | 699 | (1.3+ | 2.2+) | 2002 01 09 | 704 | 0.6+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.2− | | |
| 2000 09 21 | 699 | 1.3+ | 0.6+ | 2002 01 09 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.6+ | 1.2+ | | |
| 2000 09 21 | 699 | 0.2+ | 0.5− | 2005 06 21 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.7+ | | |
| 2000 09 23 | 704 | 0.6− | 0.3+ | 2005 06 21 | 644 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.8+ | 1.0+ | | |
| 2000 09 23 | 704 | 1.1− | 0.4− | 2005 06 21 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.1− | | |
| 2000 09 23 | 704 | 0.2+ | 0.1− | 2005 07 05 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.7+ | 1.1+ | | |
| 2000 09 23 | 704 | 0.6+ | 0.8+ | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2− | | |
| 2000 09 23 | 704 | 0.9− | 0.0 | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.2− | | |
| 2000 09 26 | 704 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.3+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2000 09 26 | 704 | 1.3− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2000 09 26 | 704 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 2000 09 26 | 704 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.6+ | | |
| 2000 10 03 | 704 | 0.7+ | 0.9− | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.3− | 0.1+ | | |
| 2000 10 03 | 704 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.3+ | | |
| 2000 10 03 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.1− | 0.4− | | |
| 2001 11 20 | 704 | 0.7+ | 0.1+ | 2006 11 09 | 691 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2001 11 20 | 704 | 0.0 | 0.9− | 2006 11 09 | 691 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2001 11 20 | 704 | 0.3+ | 0.4− | 2006 11 09 | 691 | 0.4− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.3− | | |

**(138649)∗ 2000 RZ$_{39}$**

Discovered 2000 Sept. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 182.72124 | | (2000.0) | | | |
| $n$ | 0.18095804 | $\omega$ | 343.44221 | | −0.92298135 | +0.36737095 |
| $a$ | 3.0956424 | $\Omega$ | 218.73817 | | −0.32905458 | −0.90783270 |
| $e$ | 0.0130644 | $i$ | 10.55692 | | −0.19957080 | −0.20218401 |
| $P$ | 5.45 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.2+ | 0.5+ | 2003 01 28 | 704 | 0.3+ | 0.6+ | 2006 10 12 | 691 | 0.2+ | 0.2− | | |
| 2000 09 03 | 704 | 0.3+ | 0.2− | 2004 04 12 | 699 | 0.4+ | 0.5− | 2006 10 12 | 691 | 0.0 | 0.1− | | |
| 2000 09 03 | 704 | 0.0 | 0.8+ | 2004 04 12 | 699 | 0.9+ | 0.9− | 2006 10 12 | 691 | 0.3+ | 0.2− | | |
| 2000 09 03 | 704 | 0.3+ | 0.7+ | 2004 04 12 | 699 | 0.3+ | 1.0+ | 2006 10 16 | 104 | 1.0− | 0.7+ | | |
| 2000 09 04 | 049 | 1.7+ | 0.2− | 2004 04 12 | 699 | (0.8− | 1.8+) | 2006 10 16 | 104 | (1.6− | 2.1−) | | |
| 2000 09 04 | 049 | 1.5+ | 0.7+ | 2004 04 21 | 704 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | | |
| 2000 09 04 | 049 | 0.8+ | 0.4+ | 2004 04 21 | 704 | 1.2+ | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | | |
| 2000 09 06 | 704 | 0.7− | 0.1− | 2004 04 21 | 704 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.0 | | |
| 2000 09 06 | 704 | 0.2− | 0.2+ | 2004 04 21 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.6+ | 0.7+ | | |
| 2000 09 06 | 704 | 0.4+ | 0.1+ | 2004 04 25 | 704 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.4− | | |
| 2000 09 06 | 704 | 0.4− | 0.4− | 2004 04 25 | 704 | 1.0− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2000 09 06 | 704 | 1.1− | 0.1− | 2004 04 25 | 704 | 0.1+ | 1.4+ | 2006 10 20 | 691 | 0.0 | 0.1− | | |
| 2000 09 23 | 704 | 1.3− | 0.3− | 2004 04 26 | 699 | 0.7− | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 23 | 704 | 0.6+ | 1.0− | 2004 04 26 | 699 | (1.1+ | 1.6+) | 2006 10 20 | 691 | 1.0− | 0.7+ | | |
| 2000 09 23 | 704 | 0.5− | 0.4− | 2004 04 26 | 699 | 0.6− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2000 09 23 | 704 | 0.5+ | 0.4− | 2004 04 26 | 699 | 1.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2000 09 24 | 704 | 0.5− | 0.1+ | 2004 04 29 | 704 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2000 09 24 | 704 | 0.1+ | 0.3− | 2004 04 29 | 704 | (1.0+ | 1.7+) | 2006 10 29 | 691 | 0.3+ | 0.4+ | | |
| 2000 09 24 | 704 | 0.1− | 0.4+ | 2004 04 29 | 704 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.4+ | | |
| 2000 09 24 | 704 | 0.1− | 0.2− | 2004 04 29 | 704 | 0.6+ | 0.8+ | 2006 10 29 | 691 | 0.4+ | 0.3+ | | |
| 2000 09 24 | 704 | 0.3+ | 1.2+ | 2004 04 29 | 704 | 0.1− | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.1+ | | |
| 2000 09 25 | 704 | 0.5+ | 0.1+ | 2004 05 12 | 699 | 0.0 | 0.2+ | 2006 11 07 | 644 | 0.3− | 0.1+ | | |
| 2000 09 25 | 704 | 0.8− | 0.3− | 2004 05 12 | 699 | 0.4− | 0.3− | 2006 11 07 | 644 | 0.1− | 0.1+ | | |
| 2000 09 25 | 704 | 0.1+ | 0.3− | 2004 05 12 | 699 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.5+ | | |
| 2000 09 25 | 704 | 0.3− | 0.7+ | 2004 05 12 | 699 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.1+ | | |
| 2001 10 18 | 333 | 0.7− | 1.0+ | 2004 05 15 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | (1.6+ | 0.2−) | | |
| 2001 10 18 | 333 | 0.5+ | 0.1+ | 2004 05 15 | 704 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.1+ | | |
| 2001 10 18 | 333 | 0.2− | 0.1+ | 2004 05 15 | 704 | 0.1− | 0.6+ | 2006 11 15 | 691 | 0.2+ | 0.2− | | |
| 2001 11 17 | 704 | 0.0 | 0.4+ | 2004 05 15 | 704 | (0.2+ | 1.5+) | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2001 11 17 | 704 | 0.5− | 0.3+ | 2004 05 15 | 704 | 0.5− | 0.9+ | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 2001 11 17 | 704 | 0.1+ | 0.9+ | 2004 05 17 | 704 | 0.1− | 0.9+ | 2006 11 17 | 703 | (1.2− | 1.5+) | | |
| 2001 11 20 | 704 | 1.3+ | 1.3+ | 2004 05 17 | 704 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.0 | | |
| 2001 11 20 | 704 | 0.2+ | 1.0+ | 2004 05 17 | 704 | 0.5− | 0.6+ | 2006 11 17 | 703 | 1.1− | 0.6+ | | |
| 2001 11 20 | 704 | (2.5− | 1.1+) | 2004 05 17 | 704 | 0.2− | 0.8+ | 2006 11 17 | 703 | 1.1− | 0.4+ | | |
| 2001 12 08 | 699 | 0.0 | 1.0+ | 2004 06 08 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 1.3− | 0.5+ | | |
| 2001 12 08 | 699 | (0.4+ | 1.6+) | 2004 06 08 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.4+ | | |
| 2001 12 08 | 699 | 0.2− | 0.1+ | 2004 06 08 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.4− | | |
| 2001 12 08 | 699 | (1.8− | 0.7−) | 2004 06 15 | 691 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.2+ | | |
| 2001 12 18 | 704 | 0.6− | 0.2+ | 2004 06 15 | 691 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.5+ | 0.0 | | |
| 2001 12 18 | 704 | 0.1+ | 0.9+ | 2004 06 15 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.3+ | 0.1+ | | |
| 2001 12 18 | 704 | 1.1− | 0.3+ | 2005 06 21 | 644 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.6+ | 0.2− | | |
| 2001 12 18 | 704 | 1.1− | 1.0+ | 2005 06 21 | 644 | 0.8− | 0.5+ | 2006 11 21 | 704 | 0.5+ | 1.3− | | |
| 2001 12 18 | 704 | 1.0− | 0.4+ | 2005 06 21 | 644 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.5+ | 0.9+ | | |
| 2003 01 25 | 644 | 0.5+ | 0.1− | 2006 09 20 | 699 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.7− | 0.1− | | |
| 2003 01 25 | 644 | 0.5+ | 0.1+ | 2006 09 20 | 699 | 0.3− | 0.8+ | 2006 11 21 | 704 | 0.6+ | 0.4− | | |
| 2003 01 25 | 644 | (1.6+ | 0.8+) | 2006 09 20 | 699 | 0.3− | 0.4+ | 2006 11 27 | 703 | 0.7− | 0.7+ | | |
| 2003 01 28 | 704 | (0.2− | 2.1+) | 2006 09 20 | 699 | 0.6− | 0.3+ | 2006 11 27 | 703 | 1.0− | 0.6− | | |
| 2003 01 28 | 704 | (2.7+ | 1.1−) | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.8− | 0.0 | | |
| 2003 01 28 | 704 | 0.1+ | 1.3+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 1.5− | 0.9− | | |
| 2003 01 28 | 704 | 1.3+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.0 | | | | | | |

**(138650)∗ 2000 RY$_{53}$ = 2000 SC$_{354}$ = 2001 XM$_{109}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11071), G. V. Williams (*MPO* 22484)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.10858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17223522 | $\omega$ | 61.40046 | | +0.97613461 | +0.00720296 | |
| $a$ | 3.1992983 | $\Omega$ | 297.44757 | | −0.11513927 | +0.86457841 | |
| $e$ | 0.1012461 | $i$ | 14.15692 | | +0.18413087 | +0.50244631 | |
| $P$ | 5.72 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 03 | 691 | (0.8− | 2.8+) | 2000 09 26 | 704 | 0.2+ | 0.9− | 2002 12 07 | 645 | 0.0 | 0.3+ | |
| 1994 07 03 | 691 | (0.4− | 2.5+) | 2000 09 26 | 704 | 0.1+ | 1.3+ | 2003 01 28 | 704 | 0.9+ | 0.2− | |
| 1994 07 03 | 691 | 0.4+ | 0.4+ | 2000 09 30 | 704 | 0.4+ | 0.2+ | 2003 01 28 | 704 | 0.1+ | 0.0 | |
| 1994 07 08 | 691 | 1.6− | 0.8+ | 2000 09 30 | 704 | 1.1+ | 0.4+ | 2003 01 28 | 704 | 0.0 | 0.1− | |
| 1994 07 08 | 691 | 1.7− | 0.7+ | 2000 09 30 | 704 | 0.5+ | 0.2− | 2003 02 03 | 699 | 0.0 | 0.2− | |
| 1994 07 08 | 691 | 1.8− | 0.4+ | 2000 09 30 | 704 | 0.9+ | 0.6− | 2003 02 03 | 699 | 0.7− | 0.4− | |
| 1994 07 09 | 691 | 0.1− | 0.5+ | 2000 09 30 | 704 | 0.2+ | 0.2− | 2003 02 03 | 699 | 0.2+ | 0.0 | |
| 1994 07 09 | 691 | 0.3+ | 0.9+ | 2001 12 11 | 704 | 0.0 | 0.9− | 2003 02 03 | 699 | 1.5− | 0.4+ | |
| 1994 07 09 | 691 | 0.0 | 0.6+ | 2001 12 11 | 704 | 0.5− | 1.0− | 2004 03 17 | E12 | 0.8+ | 0.4+ | |
| 1997 02 15 | 691 | 0.8+ | 0.4+ | 2001 12 11 | 704 | 0.3+ | 1.0− | 2004 03 17 | E12 | 0.2+ | 0.5+ | |
| 1997 02 15 | 691 | 0.7+ | 0.3+ | 2001 12 11 | 704 | 0.6+ | 1.1− | 2004 03 17 | E12 | 0.2− | 0.8+ | |
| 1997 02 15 | 691 | 0.6+ | 0.4+ | 2001 12 11 | 704 | 0.4− | 1.0− | 2004 03 17 | E12 | 1.3+ | 0.4+ | |
| 2000 09 01 | 704 | 0.8+ | 0.1+ | 2001 12 17 | 704 | 0.0 | 0.9+ | 2006 08 29 | 699 | 0.2− | 0.1− | |
| 2000 09 01 | 704 | 0.6+ | 0.1+ | 2001 12 17 | 704 | 0.5− | 0.6+ | 2006 08 29 | 699 | 0.1+ | 0.5− | |
| 2000 09 01 | 704 | 0.1+ | 0.4+ | 2001 12 17 | 704 | 0.1+ | 1.9+ | 2006 08 29 | 699 | 0.9+ | 0.2− | |
| 2000 09 01 | 704 | 0.7+ | 0.4+ | 2001 12 17 | 704 | 0.5− | 0.9+ | 2006 08 29 | 699 | 0.3+ | 0.1− | |
| 2000 09 01 | 704 | 0.3+ | 0.7+ | 2001 12 17 | 704 | 0.7− | 1.4+ | 2006 09 06 | 644 | 0.2− | 0.3− | |
| 2000 09 07 | 704 | 1.1− | 0.1− | 2001 12 18 | 704 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.0 | |
| 2000 09 07 | 704 | 1.4− | 0.5+ | 2001 12 18 | 704 | 0.2− | 0.0 | 2006 09 06 | 644 | 0.1− | 0.1− | |
| 2000 09 07 | 704 | 1.3− | 0.2+ | 2001 12 18 | 704 | 0.4− | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.4− | |
| 2000 09 07 | 704 | 0.4− | 0.1+ | 2001 12 18 | 704 | 0.7+ | 1.0+ | 2006 09 06 | 644 | 0.1− | 0.3− | |
| 2000 09 21 | 699 | 0.4+ | 0.4+ | 2001 12 18 | 704 | 0.2+ | 0.4+ | 2006 09 06 | 644 | 0.4− | 0.0 | |
| 2000 09 21 | 699 | 0.4+ | 0.6+ | 2001 12 18 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 644 | 0.2+ | 0.3− | |
| 2000 09 21 | 699 | 0.9+ | 0.3+ | 2001 12 18 | 704 | 0.4+ | 0.8+ | 2006 09 14 | 644 | 0.3+ | 0.3− | |
| 2000 09 21 | 699 | 0.3+ | 0.3+ | 2001 12 18 | 704 | 0.1− | 1.6+ | 2006 09 14 | 644 | 0.4+ | 0.3− | |
| 2000 09 23 | 704 | 0.7+ | 0.2− | 2001 12 18 | 704 | 0.3+ | 1.3+ | 2006 09 28 | 703 | 0.1+ | 1.1− | |
| 2000 09 23 | 704 | 1.1+ | 0.1− | 2001 12 18 | 704 | 0.9− | 1.1+ | 2006 09 28 | 703 | 0.1+ | 0.6− | |
| 2000 09 23 | 704 | 0.7+ | 0.1+ | 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.5− | |
| 2000 09 23 | 704 | 0.4− | 0.5+ | 2001 12 19 | 704 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 0.4− | 0.4− | |
| 2000 09 26 | 704 | 0.4+ | 0.0 | 2001 12 19 | 704 | 0.5− | 0.3+ | | | | | |
| 2000 09 26 | 704 | 0.2+ | 0.3+ | 2002 12 07 | 645 | 0.1+ | 0.3+ | | | | | |

**(138651)∗ 2000 RQ$_{59}$ = 2002 AX$_{106}$**

Discovered 2000 Sept. 7 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 22485)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.67448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17233487 | $\omega$ | 107.98034 | | +0.35948086 | −0.93167597 | |
| $a$ | 3.1980649 | $\Omega$ | 320.82379 | | +0.82164868 | +0.34268068 | |
| $e$ | 0.1534088 | $i$ | 4.76476 | | +0.44234257 | +0.12062270 | |
| $P$ | 5.72 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 691 | 0.6− | 0.4− | 2002 01 14 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2000 09 07 | 691 | 0.1− | 0.3− | 2002 01 20 | 699 | 0.7− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2000 09 07 | 691 | 0.3− | 0.5− | 2002 01 20 | 699 | 0.7+ | 0.5− | 2006 10 22 | 644 | 0.1− | 0.3− | |
| 2000 09 08 | 691 | 0.2+ | 0.1− | 2002 01 20 | 699 | 0.2+ | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.7− | |
| 2000 09 08 | 691 | 0.2+ | 0.1− | 2002 01 20 | 699 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.0 | |
| 2000 09 08 | 691 | 0.4+ | 0.3− | 2002 01 21 | 704 | (2.4+ | 1.0+) | 2006 10 27 | 703 | 0.3− | 0.5− | |
| 2000 09 28 | 704 | 0.6− | 0.2+ | 2002 01 21 | 704 | (2.2+ | 1.1+) | 2006 10 27 | 703 | 0.3+ | 0.7− | |
| 2000 09 28 | 704 | 0.1+ | 0.3+ | 2002 01 21 | 704 | (1.8+ | 0.9+) | 2006 11 08 | 644 | 0.1− | 0.1+ | |
| 2000 09 28 | 704 | 0.8+ | 0.5+ | 2002 01 21 | 704 | (1.7+ | 0.1+) | 2006 11 08 | 644 | 0.2+ | 0.0 | |
| 2000 09 28 | 704 | 0.7+ | 0.4− | 2002 01 21 | 704 | (2.1+ | 0.8+) | 2006 11 08 | 644 | 0.1+ | 0.1+ | |
| 2000 10 03 | 704 | 0.0 | 0.8+ | 2002 01 26 | 644 | 0.6− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.2+ | |
| 2000 10 03 | 704 | 0.2+ | 0.3+ | 2002 01 26 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | |
| 2000 10 03 | 704 | 0.0 | 0.3+ | 2002 01 26 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.2+ | |
| 2000 10 03 | 704 | 0.7− | 0.9+ | 2002 02 05 | 644 | 0.5+ | 0.6+ | 2006 11 14 | 703 | (0.8− | 1.7−) | |
| 2000 10 03 | 704 | 0.9− | 0.3− | 2002 02 05 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | (2.6+ | 0.1−) | |
| 2000 10 04 | 704 | 0.4− | 0.1− | 2002 02 05 | 644 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.7+ | 1.1− | |
| 2000 10 04 | 704 | 0.2− | 0.5− | 2002 02 07 | 704 | 1.1+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.2− | |
| 2000 10 04 | 704 | 0.6− | 0.1+ | 2002 02 07 | 704 | (1.6+ | 0.3+) | 2006 11 16 | 704 | 0.9+ | 1.0+ | |
| 2000 10 04 | 704 | 0.0 | 0.5− | 2002 02 07 | 704 | 1.3+ | 0.1− | 2006 11 16 | 704 | 0.3− | 0.0 | |
| 2000 10 04 | 704 | 0.4− | 0.3+ | 2002 02 07 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.5− | 0.8− | |
| 2000 10 06 | 704 | 1.2+ | 0.3− | 2002 02 12 | 704 | 0.6+ | 0.2− | 2006 11 16 | 704 | 0.8− | 0.7+ | |
| 2000 10 06 | 704 | 0.1− | 0.2− | 2002 02 12 | 704 | 0.2− | 0.9− | 2006 11 16 | 704 | 0.8+ | 0.3+ | |
| 2000 10 06 | 704 | 1.6− | 0.1− | 2002 02 12 | 704 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.9− | 0.1+ | |
| 2000 10 06 | 704 | 0.2− | 0.5+ | 2002 02 12 | 704 | 0.2− | 0.6− | 2006 11 17 | 704 | 1.2− | 0.4− | |
| 2000 10 25 | 704 | 0.4− | 0.4− | 2002 02 12 | 704 | 0.1− | 0.6− | 2006 11 17 | 704 | 0.0 | 0.6+ | |
| 2000 10 25 | 704 | 0.4+ | 0.4+ | 2005 07 12 | G96 | 0.9− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.5+ | |
| 2000 10 25 | 704 | 0.3+ | 0.8+ | 2005 07 12 | G96 | 0.8+ | 0.4− | 2006 11 19 | 704 | 0.6− | 0.5+ | |
| 2000 10 25 | 704 | 1.1+ | 0.0 | 2005 07 12 | G96 | 0.6− | 0.6+ | 2006 11 19 | 704 | 0.9− | 0.1+ | |
| 2000 10 25 | 704 | 0.5+ | 0.9+ | 2005 07 12 | G96 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.7− | 0.4+ | |
| 2000 11 02 | 704 | 0.3+ | 0.6+ | 2005 07 18 | 644 | 0.4− | 0.8+ | 2006 11 19 | 704 | 1.1− | 0.3− | |
| 2000 11 02 | 704 | 0.9+ | 0.8− | 2005 07 18 | 644 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.1− | |
| 2000 11 02 | 704 | 0.3+ | 0.6+ | 2005 07 18 | 644 | 0.2+ | 0.5+ | 2006 11 22 | 704 | 0.4− | 0.3+ | |
| 2000 11 02 | 704 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.3+ | |
| 2000 11 02 | 704 | 0.9+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.3+ | |
| 2002 01 09 | 704 | 0.3− | 0.3− | 2006 10 04 | G96 | 0.6+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.9+ | |
| 2002 01 09 | 704 | 1.0− | 0.4− | 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.3− | |
| 2002 01 09 | 704 | 0.8− | 0.1− | 2006 10 19 | 703 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.3− | |
| 2002 01 09 | 704 | 0.4− | 0.1− | 2006 10 19 | 703 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.4− | |
| 2002 01 09 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.2− | |
| 2002 01 14 | 704 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 27 | 185 | 2.0+ | 1.6+ | |
| 2002 01 14 | 704 | 0.7− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 185 | 0.3+ | 0.4+ | |
| 2002 01 14 | 704 | 0.7− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 27 | 185 | 0.7− | 0.2+ | |
| 2002 01 14 | 704 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | | | | |

**(138652)∗ 2000 RR$_{63}$**

Discovered 2000 Sept. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.94107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16917918 | $\omega$ | 131.35614 | | +0.98219897 | +0.17300710 | |
| $a$ | 3.2377112 | $\Omega$ | 218.84572 | | −0.18730354 | +0.93153566 | |
| $e$ | 0.1561818 | $i$ | 6.69911 | | +0.01423294 | +0.31985913 | |
| $P$ | 5.83 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 691 | 0.4+ | 0.4+ | 2004 04 10 | 703 | (1.9− | 0.0 ) | 2006 09 19 | 703 | 0.2− | 0.1− | |
| 1998 04 28 | 691 | 0.1+ | 0.5+ | 2004 04 10 | 703 | 0.3− | 1.0+ | 2006 09 19 | 703 | 0.6− | 0.0 | |
| 1998 04 28 | 691 | 0.3+ | 0.6+ | 2004 04 10 | 703 | (0.9− | 2.2+) | 2006 09 19 | 699 | 0.0 | 0.1+ | |
| 2000 09 01 | 704 | 0.5− | 0.9+ | 2004 04 10 | 703 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.4− | |
| 2000 09 01 | 704 | 0.2+ | 0.7− | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.7− | |
| 2000 09 01 | 704 | 0.2+ | 0.4− | 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.4− | |
| 2000 09 01 | 704 | 1.4− | 1.4− | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.3+ | 0.1− | |
| 2000 09 01 | 704 | 0.2− | 1.6− | 2004 04 19 | 704 | 0.9− | 0.6+ | 2006 09 21 | 704 | 1.2+ | 0.7+ | |
| 2000 09 03 | 704 | 0.6− | 0.0 | 2004 04 19 | 704 | 0.8+ | 0.1+ | 2006 09 21 | 704 | 0.5− | 0.3+ | |
| 2000 09 03 | 704 | 0.5− | 0.2+ | 2004 04 19 | 704 | 0.8+ | 0.5− | 2006 09 21 | 704 | 0.2− | 0.0 | |
| 2000 09 03 | 704 | 0.6− | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.3+ | |
| 2000 09 03 | 704 | 0.3− | 0.3+ | 2004 04 19 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.6− | 0.8+ | |
| 2000 09 03 | 704 | 0.8− | 0.8+ | 2004 04 20 | 704 | 1.4− | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.6+ | |
| 2000 09 04 | 704 | 0.6+ | 0.3− | 2004 04 20 | 704 | 0.7+ | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.3+ | |
| 2000 09 04 | 704 | 0.2− | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.6+ | |
| 2000 09 04 | 704 | 0.3+ | 0.1+ | 2004 04 20 | 704 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 | |
| 2000 09 04 | 704 | 0.4+ | 0.2+ | 2004 05 09 | 691 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.0 | |
| 2000 09 23 | 704 | 0.3+ | 0.2− | 2004 05 09 | 691 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1− | |
| 2000 09 23 | 704 | 0.1− | 0.3− | 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 699 | 0.2− | 0.2− | |
| 2000 09 23 | 704 | 0.1− | 0.1− | 2006 08 29 | 699 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.4− | 0.4+ | |
| 2000 09 23 | 704 | 0.0 | 0.3− | 2006 08 29 | 699 | 0.1+ | 0.3+ | 2006 09 27 | 699 | 0.1+ | 0.0 | |
| 2000 09 23 | 704 | 0.0 | 0.7− | 2006 08 29 | 699 | 0.3+ | 0.2− | 2006 09 27 | 699 | 0.3+ | 0.3+ | |
| 2000 09 25 | 699 | 0.7+ | 0.2+ | 2006 08 29 | 699 | 0.5+ | 0.3+ | 2006 09 29 | 704 | (1.1− | 1.8+) | |
| 2000 09 25 | 699 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.8− | 1.3+ | |
| 2000 09 25 | 699 | 1.0+ | 0.1+ | 2006 08 30 | 704 | 0.3+ | 1.4+ | 2006 09 29 | 704 | (0.9− | 1.7+) | |
| 2000 09 25 | 699 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.6− | 2006 09 29 | 704 | (0.9− | 1.6+) | |
| 2000 09 26 | 704 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.1− | 1.4+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 0.2− | 0.8+ | 2006 08 30 | 704 | (0.7− | 1.5+) | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2000 09 26 | 704 | 0.3+ | 0.2− | 2006 08 31 | 704 | (1.8+ | 0.4+) | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2000 09 26 | 704 | 0.5+ | 0.1+ | 2006 08 31 | 704 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2000 09 26 | 704 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | (1.7+ | 1.0+) |
| 2000 10 01 | 699 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.8+ | 0.3+ | 2006 10 17 | 703 | 1.1− | 0.6+ |
| 2000 10 01 | 699 | 0.1− | 0.3+ | 2006 09 15 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.7+ |
| 2000 10 01 | 699 | 0.1+ | 0.6+ | 2006 09 15 | 704 | 0.1− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2000 10 01 | 699 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.4− | 0.6− | 2006 10 19 | 704 | 0.7+ | 0.6+ |
| 2000 10 03 | 704 | 0.4− | 0.1− | 2006 09 15 | 704 | 0.8− | 0.2− | 2006 10 19 | 704 | 0.4+ | 0.7+ |
| 2000 10 03 | 704 | 0.0 | 0.4− | 2006 09 17 | 703 | 0.4+ | 0.2− | 2006 10 19 | 704 | (0.1− | 1.6+) |
| 2000 10 03 | 704 | 0.4− | 0.5− | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 19 | 704 | 0.3+ | 0.1− |
| 2000 10 03 | 704 | 1.0− | 0.9− | 2006 09 17 | 703 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2000 10 25 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2000 10 25 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2000 10 25 | 704 | 0.2− | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.6− | 2006 10 29 | 704 | 0.2+ | 0.4+ |
| 2000 10 25 | 704 | 1.6+ | 1.0+ | 2006 09 17 | 703 | 0.3+ | 0.5+ | 2006 10 29 | 704 | 0.0 | 0.3− |
| 2000 10 25 | 704 | 1.0+ | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 10 29 | 704 | 0.1+ | 0.1− |
| 2000 11 18 | 699 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.4− | 1.0+ |
| 2000 11 18 | 699 | 0.4− | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 29 | 704 | 0.1− | 0.2+ |
| 2000 11 18 | 699 | 0.5− | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2000 11 18 | 699 | 0.5− | 0.5− | 2006 09 18 | 703 | 0.6− | 0.9− | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2002 01 09 | 704 | 0.3− | 1.1+ | 2006 09 18 | 703 | 0.9+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 01 09 | 704 | (0.5+ | 1.7+) | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2002 01 09 | 704 | 0.2− | 1.1+ | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 11 06 | 644 | 0.0 | 0.5+ |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.2− | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 09 18 | 704 | 0.0 | 0.7+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2004 03 23 | 691 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.1− | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2004 03 27 | 704 | 0.7+ | 0.4− | 2006 09 18 | 704 | 0.8+ | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2004 03 27 | 704 | (1.5+ | 0.3+) | 2006 09 18 | 704 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2004 03 27 | 704 | 1.0+ | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.3− | | | | |

**(138653)∗ 2000 RT$_{76}$ = 2004 BW$_{97}$**

Discovered 2000 Sept. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56168)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.25048 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17677493 | $\omega$ | 307.12972 | | +0.39998683 | +0.91419866 | |
| $a$ | 3.1442877 | $\Omega$ | 346.00213 | | −0.73196031 | +0.27581736 | |
| $e$ | 0.1719215 | $i$ | 15.63799 | | −0.55158375 | +0.29692692 | |
| $P$ | 5.58 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.8− | 0.9+ | 2004 02 14 | 703 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.1− | 0.4− |
| 2000 08 01 | 704 | 0.2+ | 0.9+ | 2004 02 14 | 703 | 1.3+ | 0.6− | 2006 08 29 | 703 | 1.1− | 0.3− |
| 2000 08 01 | 704 | 0.6− | 1.5+ | 2004 02 26 | 704 | (0.2+ | 1.9−) | 2006 08 29 | 703 | 0.5− | 0.1− |
| 2000 08 01 | 704 | 0.4+ | 1.5+ | 2004 02 26 | 704 | 1.2+ | 0.1− | 2006 08 29 | 699 | 0.7− | 0.4+ |
| 2000 08 01 | 704 | 0.7− | 0.2− | 2004 02 26 | 704 | 0.0 | 0.1+ | 2006 08 29 | 699 | 1.3− | 0.3+ |
| 2000 08 21 | 699 | 0.4+ | 0.5+ | 2004 02 26 | 704 | 0.1+ | 0.3− | 2006 08 29 | 699 | 0.2− | 0.3+ |
| 2000 08 21 | 699 | 0.5− | 1.0+ | 2004 02 26 | 704 | 0.4− | 0.3− | 2006 08 30 | 704 | 0.1− | 1.4+ |
| 2000 08 21 | 699 | 0.8− | 0.4+ | 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.5+ |
| 2000 08 21 | 699 | (0.1− | 2.2+) | 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.7+ | 1.1+ |
| 2000 09 04 | 704 | 0.6− | 0.7+ | 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.2+ |
| 2000 09 04 | 704 | 1.2− | 0.5+ | 2004 03 15 | 683 | 0.9+ | 0.5− | 2006 08 30 | 704 | 0.3+ | 1.1+ |
| 2000 09 04 | 704 | 0.1− | 0.6− | 2004 03 15 | 683 | 1.1+ | 0.9+ | 2006 09 14 | 644 | 0.1+ | 0.3+ |
| 2000 09 04 | 704 | 0.1− | 0.0 | 2004 03 15 | 683 | 0.7+ | 0.9+ | 2006 09 14 | 644 | 0.2+ | 0.0 |
| 2000 09 05 | 704 | 0.8− | 0.2+ | 2004 03 16 | 683 | 0.1+ | 0.8+ | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 2000 09 05 | 704 | 1.0− | 0.5+ | 2004 03 16 | 683 | 0.5+ | 0.2− | 2006 09 16 | 703 | 0.8− | 0.2− |
| 2000 09 05 | 704 | 0.7− | 0.2+ | 2004 03 16 | 683 | 0.1− | 0.7− | 2006 09 16 | 703 | 0.6− | 0.0 |
| 2000 09 05 | 704 | 0.8− | 0.5+ | 2004 03 16 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.5− | 0.0 |
| 2000 09 05 | 704 | 1.7− | 0.8+ | 2004 03 16 | 704 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.9− | 0.6+ |
| 2000 09 19 | 608 | 0.8+ | 0.3+ | 2004 03 16 | 704 | 0.4− | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 2000 09 19 | 608 | 1.1+ | 0.6− | 2004 03 16 | 704 | 0.6− | 1.5+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2000 09 19 | 608 | 0.8+ | 0.2− | 2004 03 16 | 704 | 0.5− | 0.6+ | 2006 09 20 | 644 | 0.5− | 0.6− |
| 2001 10 25 | 704 | 0.0 | 0.3− | 2004 03 17 | 683 | (0.6+ | 2.1−) | 2006 09 20 | 644 | 0.0 | 0.0 |
| 2001 10 25 | 704 | 0.0 | 0.1− | 2004 03 17 | 683 | 0.8− | 0.7− | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 2001 10 25 | 704 | 0.7+ | 0.3− | 2004 03 17 | 683 | (0.2+ | 1.8−) | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2004 01 18 | 691 | 0.1− | 0.6+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 699 | 0.9+ | 0.9+ |
| 2004 01 18 | 691 | 0.1− | 0.3+ | 2004 03 18 | 704 | (0.6+ | 1.5+) | 2006 09 27 | 699 | 0.8− | 0.1− |
| 2004 01 18 | 691 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.8− | 0.0 | 2006 09 27 | 699 | 0.0 | 0.3+ |
| 2004 01 27 | 691 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 699 | 0.6+ | 1.4− |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 10 03 | 704 | 0.2+ | 1.3+ |
| 2004 01 27 | 691 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.9− | 0.8− | 2006 10 03 | 704 | 0.7− | 0.5+ |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.5− | 0.3+ | 2006 10 03 | 704 | 0.2− | 0.7+ |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 10 03 | 704 | 0.0 | 1.4+ |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2004 03 21 | 691 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2004 01 30 | 691 | 0.4+ | 0.2+ | 2004 03 21 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.9+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 0.8− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.2+ | 1.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | 2004 04 09 | 703 | 1.2+ | 0.6+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2004 02 13 | 291 | 0.0 | 0.4+ | 2004 04 09 | 703 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.4− |
| 2004 02 13 | 291 | 0.3− | 0.2+ | 2004 04 09 | 703 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2004 02 13 | 291 | 0.1− | 0.1+ | 2004 04 09 | 703 | 0.8+ | 0.3− | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2004 02 14 | 703 | 0.9+ | 0.6+ | 2006 08 29 | 703 | 0.1− | 0.9− | | | | |
| 2004 02 14 | 703 | (3.0+ | 0.7+) | 2006 08 29 | 699 | 0.1− | 1.1+ | | | | |

**(138654)∗ 2000 RP$_{77}$ = 2001 VY$_{98}$**

Discovered 2000 Sept. 8 by L. Šarounová at Ondřejov.

Id. A. Doppler (*MPO* 22491)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.41712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17748235 | $\omega$ | 279.20318 | | −0.15352694 | −0.98814318 | |
| $a$ | 3.1359270 | $\Omega$ | 179.61717 | | +0.97413711 | −0.15162096 | |
| $e$ | 0.2158552 | $i$ | 13.79505 | | +0.16579013 | −0.02416910 | |
| $P$ | 5.55 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 08 | 557 | 0.1− | 0.6− | 2003 03 26 | 699 | 0.6+ | 0.8+ | 2006 09 29 | 699 | 0.3− | 0.7+ |
| 2000 09 08 | 557 | 0.4− | 0.1+ | 2003 03 26 | 699 | 0.3− | 0.4+ | 2006 09 29 | 699 | 1.1+ | 0.3− |
| 2000 09 10 | 557 | 0.6+ | 0.1− | 2003 04 24 | 599 | 1.3− | 0.9+ | 2006 09 29 | 699 | 0.1− | 0.0 |
| 2000 09 10 | 557 | 0.1+ | 0.1− | 2003 04 24 | 599 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.3+ |
| 2000 09 24 | 704 | 0.3+ | 1.3+ | 2003 04 24 | 599 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 2000 09 24 | 704 | 0.7+ | 0.5+ | 2003 05 02 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.3+ |
| 2000 09 24 | 704 | 0.2− | 1.4+ | 2003 05 02 | 704 | 1.2+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.3+ |
| 2000 09 24 | 704 | 0.2− | 0.6+ | 2003 05 02 | 704 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2000 09 27 | 691 | 0.1− | 0.1+ | 2003 05 02 | 704 | 0.3+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2000 09 27 | 691 | 0.2− | 0.1+ | 2003 05 02 | 704 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2000 09 27 | 691 | 0.1− | 0.1− | 2005 06 30 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | (3.2+ | 0.2+) |
| 2001 11 15 | 704 | 0.3− | 0.7+ | 2005 06 30 | 644 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.3− |
| 2001 11 15 | 704 | 0.0 | 0.5+ | 2005 06 30 | 644 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2001 11 15 | 704 | 0.0 | 1.1+ | 2005 07 30 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 11 15 | 704 | 0.9− | 1.2+ | 2005 07 30 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 703 | (2.0+ | 0.7+) |
| 2001 11 18 | 704 | 0.9− | 0.2+ | 2005 07 30 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.7+ |
| 2001 11 18 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 1.2− | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.2+ |
| 2001 11 18 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 703 | 0.8+ | 1.2− | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2001 11 18 | 704 | 0.2+ | 0.4− | 2006 09 14 | 703 | 0.3− | 0.5− | 2006 11 10 | 704 | 1.1+ | 1.2− |
| 2001 11 18 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 1.2+ | 0.2− | 2006 11 10 | 704 | 0.0 | 1.0− |
| 2002 03 08 | 557 | 1.3+ | 0.0 | 2006 09 16 | 699 | 1.2+ | 1.4+ | 2006 11 10 | 704 | 0.9+ | 0.2+ |
| 2002 03 08 | 557 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.8− | 0.6− | 2006 11 10 | 704 | 0.2+ | 0.1+ |
| 2002 03 10 | 557 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 0.3− | 0.7+ | 2006 11 10 | 704 | 0.2+ | 0.9− |
| 2003 03 24 | 691 | 0.3− | 0.1+ | 2006 09 16 | 699 | 1.3+ | 0.4+ | 2006 11 16 | 703 | 0.3− | 0.1− |
| 2003 03 24 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.5− | 2006 11 16 | 703 | 0.4− | 0.2+ |
| 2003 03 24 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.2+ | 0.4− | 2006 11 16 | 703 | 0.4− | 0.9+ |
| 2003 03 26 | 699 | 0.4+ | 1.0− | 2006 09 26 | 704 | 1.2+ | 0.5− | 2006 11 16 | 703 | 0.4− | 0.4+ |
| 2003 03 26 | 699 | 1.5− | 0.0 | 2006 09 29 | 699 | 0.3− | 0.0 | | | | |

**(138655)∗ 2000 RG$_{81}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.95068 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16854423 | $\omega$ | 62.90882 | | +0.93553635 | −0.20371989 | |
| $a$ | 3.2458376 | $\Omega$ | 307.40311 | | +0.00170102 | +0.81952102 | |
| $e$ | 0.0851307 | $i$ | 21.30040 | | +0.35322633 | +0.53561506 | |
| $P$ | 5.85 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.4− | 0.4+ | 2001 12 23 | 704 | 0.8+ | 0.9+ | 2006 09 16 | 703 | 0.5− | 0.4− |
| 2000 09 01 | 704 | 0.0 | 0.0 | 2001 12 23 | 704 | 0.3+ | 0.7− | 2006 09 16 | 703 | 0.4− | 0.0 |
| 2000 09 01 | 704 | 0.1+ | 0.5+ | 2003 01 07 | 704 | (1.7+ | 0.4+) | 2006 09 16 | 703 | 0.1+ | 0.2+ |
| 2000 09 01 | 704 | 0.3− | 0.4− | 2003 01 07 | 704 | 0.4+ | 0.7+ | 2006 09 16 | 703 | 0.2− | 0.3− |
| 2000 09 01 | 704 | 0.6+ | 0.2− | 2003 01 07 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.5− |
| 2000 09 05 | 699 | 1.6− | 0.6− | 2003 01 07 | 704 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.4− | 0.2− |
| 2000 09 05 | 699 | 0.5− | 0.3+ | 2003 01 28 | 704 | 0.3+ | 0.7− | 2006 09 16 | 703 | 0.1− | 0.1+ |
| 2000 09 05 | 699 | 1.1− | 0.4+ | 2003 01 28 | 704 | 0.4− | 0.6− | 2006 09 16 | 703 | 1.2− | 0.5− |
| 2000 09 05 | 699 | 0.0 | 0.8+ | 2003 01 28 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.1− |
| 2000 09 22 | 699 | 0.2+ | 0.0 | 2003 01 28 | 704 | 0.6− | 0.4− | 2006 09 16 | 703 | 0.0 | 0.8+ |
| 2000 09 22 | 699 | 0.3+ | 0.2− | 2003 01 30 | 704 | (1.6− | 0.1+) | 2006 09 16 | 703 | 0.0 | 0.5− |
| 2000 09 22 | 699 | 0.1+ | 0.8+ | 2003 01 30 | 704 | 0.2− | 1.0+ | 2006 09 16 | 703 | 0.3− | 0.2− |
| 2000 09 22 | 699 | 0.2+ | 0.3+ | 2003 01 30 | 704 | (0.6+ | 3.5+) | 2006 09 17 | 703 | 0.6+ | 0.5− |
| 2000 09 22 | 704 | 0.3− | 0.4+ | 2003 01 30 | 704 | 0.6− | 0.9+ | 2006 09 17 | 703 | 0.8+ | 0.3− |
| 2000 09 22 | 704 | 0.2+ | 0.1+ | 2003 02 02 | 699 | 1.5+ | 0.6− | 2006 09 17 | 703 | 0.4+ | 1.1− |
| 2000 09 22 | 704 | 0.5− | 0.5− | 2003 02 02 | 699 | (2.5+ | 0.5+) | 2006 09 17 | 703 | 0.4− | 0.2− |
| 2000 09 22 | 704 | 0.1− | 0.5+ | 2003 02 02 | 699 | (1.9+ | 0.2−) | 2006 09 22 | 699 | 1.2+ | 0.4− |
| 2000 09 28 | 704 | 0.3− | 0.1− | 2003 02 02 | 699 | (2.0+ | 0.3−) | 2006 09 22 | 699 | 0.4+ | 0.0 |
| 2000 09 28 | 704 | 0.3− | 0.7+ | 2003 02 02 | 704 | 0.7+ | 0.4− | 2006 09 22 | 699 | 0.0 | 0.4+ |
| 2000 09 28 | 704 | 0.4+ | 0.0 | 2003 02 02 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.2− |
| 2000 09 28 | 704 | 0.2+ | 1.4+ | 2003 02 02 | 704 | 0.6+ | 1.5− | 2006 09 28 | 703 | 0.2+ | 0.3− |
| 2000 09 28 | 704 | 0.5− | 0.2+ | 2003 02 02 | 704 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2000 10 04 | 704 | 0.2+ | 0.2+ | 2003 02 04 | 608 | 0.6− | 0.7+ | 2006 09 28 | 703 | 0.3− | 0.3− |
| 2000 10 04 | 704 | 1.0− | 0.7− | 2003 02 04 | 608 | 0.5− | 1.2+ | 2006 10 21 | 704 | 0.3+ | 0.2− |
| 2000 10 04 | 704 | 0.4− | 0.0 | 2003 02 04 | 608 | 0.2− | 0.2+ | 2006 10 21 | 704 | 1.1+ | 0.9− |
| 2000 10 04 | 704 | 0.3− | 0.1− | 2003 03 10 | 699 | 0.1+ | 0.6+ | 2006 10 21 | 704 | (1.5+ | 0.8−) |
| 2000 10 04 | 704 | 0.6− | 0.6+ | 2003 03 10 | 699 | 0.5− | 0.5− | 2006 10 21 | 704 | 0.7+ | 0.0 |
| 2000 11 27 | 704 | 0.9+ | 0.2− | 2003 03 10 | 699 | 0.4− | 0.3− | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2000 11 27 | 704 | 0.2+ | 0.1+ | 2003 03 10 | 699 | 0.3+ | 0.2+ | 2006 11 16 | 703 | 0.6+ | 1.2+ |
| 2000 11 27 | 704 | 0.5+ | 0.7+ | 2006 06 03 | 703 | (2.7− | 1.6−) | 2006 11 16 | 703 | 1.5+ | 0.0 |
| 2001 12 23 | 704 | 0.4− | 0.8+ | 2006 06 03 | 703 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.2+ | 0.5− |
| 2001 12 23 | 704 | 0.3− | 0.5+ | 2006 06 03 | 703 | 0.5− | 0.1− | | | | |
| 2001 12 23 | 704 | 0.4− | 0.2+ | 2006 06 03 | 703 | (1.6− | 0.1−) | | | | |

**(138656)∗ 2000 RQ$_{81}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.15893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17425248 | $\omega$ | 249.22355 | | +0.04513176 | −0.99752409 | |
| $a$ | 3.1745590 | $\Omega$ | 198.43809 | | +0.96821869 | +0.05697284 | |
| $e$ | 0.2537487 | $i$ | 9.81830 | | +0.24599937 | −0.04122837 | |
| $P$ | 5.66 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 07 | 691 | 0.1+ | 0.2+ | 2002 01 09 | 644 | 0.1− | 0.8+ | 2006 09 29 | 704 | 0.4+ | 0.9− |
| 1992 05 07 | 691 | 0.2− | 0.3+ | 2002 01 10 | 644 | 0.1+ | 0.7− | 2006 09 29 | 704 | 0.1− | 0.4− |
| 1992 05 07 | 691 | 0.4+ | 0.7+ | 2002 01 10 | 644 | 0.1− | 0.7− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 1997 04 28 | 691 | 0.5+ | 0.1+ | 2002 01 10 | 644 | 0.1+ | 0.6− | 2006 10 02 | 691 | 0.2− | 0.0 |
| 1997 04 28 | 691 | 0.1− | 0.0 | 2002 01 12 | 683 | 0.7+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 1997 04 28 | 691 | 0.1− | 0.0 | 2002 01 12 | 683 | 0.4− | 0.2− | 2006 10 11 | 691 | 0.5− | 0.1+ |
| 1997 04 30 | 691 | 0.2− | 0.4+ | 2002 01 12 | 683 | 0.7+ | 0.9− | 2006 10 11 | 691 | 0.1− | 0.1− |
| 1997 04 30 | 691 | 0.0 | 0.7+ | 2002 01 13 | 683 | 0.2− | 1.1+ | 2006 10 11 | 691 | 0.2− | 0.2− |
| 1997 05 03 | 691 | 0.4− | 0.0 | 2002 01 13 | 683 | 0.4− | 1.0− | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 1997 05 03 | 691 | 0.2− | 0.1+ | 2002 01 13 | 683 | (6.8− | 3.8−) | 2006 10 17 | G96 | 0.2− | 0.3− |
| 1997 05 03 | 691 | 0.2− | 0.1+ | 2002 01 22 | 704 | (1.9+ | 1.9+) | 2006 10 17 | G96 | 0.0 | 0.2− |
| 2000 09 01 | 704 | 0.8− | 0.3− | 2002 01 22 | 704 | (2.4+ | 0.7+) | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2000 09 01 | 704 | 0.6+ | 0.1+ | 2002 01 22 | 704 | (2.4+ | 1.1+) | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2000 09 01 | 704 | 0.3+ | 0.1+ | 2002 01 22 | 704 | (1.6+ | 0.8+) | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2000 09 01 | 704 | 0.0 | 0.2+ | 2002 01 22 | 704 | (1.7+ | 0.2+) | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2000 09 05 | 699 | 1.0− | 1.0+ | 2002 02 04 | 209 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.6+ | 0.0 |
| 2000 09 05 | 699 | 0.9− | 1.7+ | 2002 02 04 | 209 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 2000 09 05 | 699 | 0.8− | 0.4+ | 2002 02 04 | 209 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 1.2− |
| 2000 09 05 | 699 | 1.4− | 1.8+ | 2002 02 08 | 644 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2000 09 23 | 704 | 0.3− | 0.6+ | 2002 02 08 | 644 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2000 09 23 | 704 | 0.7− | 0.5+ | 2002 02 08 | 644 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.2+ |
| 2000 09 23 | 704 | 0.2+ | 0.9+ | 2002 04 14 | 704 | 0.4− | 1.1− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2000 09 23 | 704 | 0.7+ | 0.1+ | 2002 04 14 | 704 | (1.6+ | 0.2−) | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2000 09 23 | 704 | 0.5− | 1.0+ | 2002 04 14 | 704 | (0.8+ | 2.1−) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 09 24 | 704 | 0.2+ | 0.0 | 2002 04 14 | 704 | 0.5+ | 0.8− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2000 09 24 | 704 | 1.1− | 0.5− | 2003 06 06 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.4+ | 0.6+ | 2003 06 06 | 691 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2000 09 24 | 704 | 0.6+ | 0.6+ | 2003 06 06 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.6− | 0.1− |
| 2000 09 24 | 704 | 0.8− | 0.3− | 2006 08 06 | 699 | 0.8− | 0.4+ | 2006 10 22 | 691 | 0.7− | 0.3− |
| 2000 09 25 | 704 | (1.6− | 2.3+) | 2006 08 06 | 699 | 0.2− | 0.5+ | 2006 10 23 | 704 | 0.0 | 0.6+ |
| 2000 09 25 | 704 | 1.0+ | 0.0 | 2006 08 06 | 699 | 1.3+ | 0.5+ | 2006 10 23 | 704 | 0.5+ | 0.2+ |
| 2000 09 25 | 704 | 0.1+ | 0.0 | 2006 08 06 | 699 | 1.2+ | 0.2+ | 2006 10 23 | 704 | 0.6− | 0.0 |
| 2000 09 25 | 704 | 0.9− | 0.0 | 2006 09 15 | 644 | 0.4− | 0.4− | 2006 10 23 | 704 | 0.6− | 0.3+ |
| 2000 09 25 | 704 | 0.9+ | 0.2− | 2006 09 15 | 644 | 0.3− | 0.4+ | 2006 10 23 | 704 | 0.6+ | 0.4− |
| 2000 09 26 | 704 | 0.6+ | 1.5− | 2006 09 15 | 644 | 0.3+ | 0.0 | 2006 10 28 | 704 | 0.0 | 0.7− |
| 2000 09 26 | 704 | 0.2+ | 1.3− | 2006 09 17 | 683 | 0.1− | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.0 |
| 2000 09 26 | 704 | 0.0 | 0.3− | 2006 09 17 | 683 | 0.2+ | 0.0 | 2006 10 28 | 704 | 0.2− | 0.4− |
| 2000 10 03 | 704 | 0.0 | 0.6+ | 2006 09 17 | 683 | 0.3− | 0.7− | 2006 10 28 | 704 | (3.5+ | 0.5−) |
| 2000 10 03 | 704 | 0.8+ | 1.0+ | 2006 09 18 | 699 | 1.0+ | 0.9− | 2006 10 28 | 704 | 1.2+ | 0.6− |
| 2000 10 03 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 699 | (1.6+ | 0.7+) | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2000 10 03 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2000 10 03 | 704 | 1.7+ | 0.6+ | 2006 09 18 | 699 | 0.7+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 12 19 | 704 | 0.0 | 0.7+ | 2006 09 18 | 699 | (2.1+ | 1.4+) | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 0.1− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2006 09 19 | 683 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 09 19 | 683 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.9+ | 0.4− |
| 2001 12 22 | 608 | 0.1+ | 0.1− | 2006 09 19 | 683 | 1.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2001 12 22 | 608 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2001 12 22 | 608 | 0.5+ | 0.3− | 2006 09 20 | 704 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2001 12 23 | 699 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.5+ | 2006 11 14 | 704 | 0.4+ | 0.8+ |
| 2001 12 23 | 699 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.5− | 2006 11 14 | 704 | 0.5+ | 0.9+ |
| 2001 12 23 | 699 | 0.0 | 0.3+ | 2006 09 21 | 683 | (1.7+ | 0.7+) | 2006 11 14 | 704 | 0.7+ | 0.7+ |
| 2001 12 23 | 699 | 0.6− | 0.4+ | 2006 09 21 | 683 | (0.5+ | 1.8+) | 2006 11 14 | 704 | 0.1− | 0.4+ |
| 2001 12 27 | 644 | 0.3+ | 1.0+ | 2006 09 21 | 683 | 0.8+ | 1.3+ | 2006 11 14 | 704 | 0.4− | 0.3+ |
| 2001 12 27 | 644 | 0.2+ | 0.9+ | 2006 09 22 | 683 | 1.4+ | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2001 12 27 | 644 | 0.2+ | 1.0+ | 2006 09 22 | 683 | (2.3+ | 1.0+) | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2002 01 05 | 683 | 0.6+ | 1.4+ | 2006 09 22 | 683 | (0.5+ | 1.9+) | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 01 05 | 683 | 1.0+ | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 01 05 | 683 | 0.2+ | 1.1− | 2006 09 24 | 691 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.0 | 1.4+ |
| 2002 01 06 | 683 | (0.6+ | 2.0+) | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.8− | 0.3− |
| 2002 01 06 | 683 | (2.5+ | 0.3+) | 2006 09 28 | 691 | 0.3+ | 0.7+ | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2002 01 06 | 683 | 0.3+ | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.8+ |
| 2002 01 09 | 644 | 0.3− | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 1.4− | 0.6+ |
| 2002 01 09 | 644 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.1− | | | | |

**(138657)∗ 2000 RU$_{81}$**

Discovered 2000 Sept. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.53601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17471060 | $\omega$ | 5.06427 | | +0.51462969 | +0.83205049 | |
| $a$ | 3.1690072 | $\Omega$ | 296.05113 | | −0.79452957 | +0.37202946 | |
| $e$ | 0.1450942 | $i$ | 13.32103 | | −0.32230273 | +0.41144388 | |
| $P$ | 5.64 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.2+ | 0.1− | 2003 01 27 | 644 | 0.5+ | 1.3+ | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2000 09 01 | 704 | 0.0 | 0.3+ | 2003 01 27 | 644 | 0.4+ | 1.4+ | 2006 10 19 | 703 | 0.5− | 0.1− |
| 2000 09 01 | 704 | 0.1+ | 0.1+ | 2003 01 27 | 644 | 0.2+ | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.1− | 0.2+ | 2003 01 27 | 644 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2000 09 01 | 704 | 0.1− | 0.7+ | 2003 01 27 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2000 09 05 | 699 | 1.2− | 0.3− | 2004 03 17 | 704 | 0.5+ | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2000 09 05 | 699 | 0.9− | 0.8+ | 2004 03 17 | 704 | 0.6+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2000 09 05 | 699 | 1.6− | 0.6+ | 2004 03 17 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2000 09 05 | 699 | 1.1− | 0.2− | 2004 03 17 | 704 | 0.5+ | 0.9+ | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2000 09 23 | 704 | 0.4− | 1.0+ | 2004 03 17 | 704 | 0.4+ | 0.9+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2000 09 23 | 704 | 0.3+ | 1.1+ | 2004 05 12 | E12 | 0.5+ | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2000 09 23 | 704 | 0.5+ | 0.4+ | 2004 05 12 | E12 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.4+ | 0.1+ |
| 2000 09 23 | 704 | 0.0 | 0.2+ | 2004 05 12 | E12 | (1.6− | 0.1−) | 2006 10 27 | 703 | 0.2+ | 0.3− |
| 2000 09 23 | 704 | 0.3+ | 0.0 | 2004 05 12 | E12 | 0.3− | 1.0− | 2006 10 27 | 703 | 0.6+ | 1.1− |
| 2000 09 25 | 699 | 0.2− | 0.1+ | 2006 08 12 | 644 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.5− |
| 2000 09 25 | 699 | 0.4− | 0.6+ | 2006 08 12 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2000 09 25 | 699 | 1.0− | 0.1+ | 2006 08 12 | 644 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2000 09 25 | 699 | 0.0 | 1.0− | 2006 09 17 | 703 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2000 09 26 | 608 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.6− | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.3+ |
| 2000 09 26 | 608 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.5+ | 0.7− | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2000 09 26 | 608 | 0.3+ | 0.5+ | 2006 09 17 | 703 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.2− | 1.1− |
| 2000 10 03 | 704 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.4+ | 0.2− |
| 2000 10 03 | 704 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.5− | 0.1+ | 2006 11 15 | 703 | 0.8+ | 0.9+ |
| 2000 10 03 | 704 | 0.9+ | 0.6+ | 2006 09 28 | 703 | 0.5− | 0.2− | 2006 11 22 | 703 | 0.5+ | 0.4− |
| 2000 10 03 | 704 | 0.6+ | 0.6− | 2006 09 28 | 703 | 0.5− | 1.1+ | 2006 11 22 | 703 | 0.3− | 0.9− |
| 2000 10 03 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.1+ | 2006 11 22 | 703 | 0.6+ | 0.4− |
| 2003 01 27 | 644 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 22 | 703 | 0.2− | 0.0 |

**(138658)∗ 2000 RA$_{84}$ = 1999 JZ$_9$**

Discovered 2000 Sept. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 34962)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 125.43580 | | (2000.0) | | | |
| $n$ | 0.18589687 | $\omega$ | 80.33116 | | −0.43782146 | +0.89786386 |
| $a$ | 3.0405676 | $\Omega$ | 163.46443 | | −0.87551454 | −0.41405228 |
| $e$ | 0.0905987 | $i$ | 9.38257 | | −0.20441784 | −0.14967030 |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.3+ | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.3− | 0.5− |
| 1993 03 25 | 691 | 0.3− | 0.2− | 2004 03 20 | 704 | 0.9− | 1.2+ | 2004 04 25 | 699 | 0.7+ | 0.0 |
| 1993 03 25 | 691 | 0.5− | 0.0 | 2004 03 20 | 704 | 0.5+ | 0.1+ | 2004 04 25 | 699 | 1.1− | 0.6− |
| 1998 01 26 | 691 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2004 04 25 | 699 | 0.8− | 0.7− |
| 1998 01 26 | 691 | 0.6− | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.4+ | 2004 04 25 | 699 | 0.4− | 0.0 |
| 1998 01 26 | 691 | 0.6+ | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.4+ | 2005 06 15 | 691 | 0.2− | 0.1+ |
| 1999 05 08 | 703 | 0.6+ | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.4− | 2005 06 15 | 691 | 0.1− | 0.2− |
| 1999 05 08 | 703 | 0.3+ | 1.0+ | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2005 06 15 | 691 | 0.3− | 0.3− |
| 1999 05 08 | 703 | 0.7+ | 0.6+ | 2004 03 22 | 704 | 0.7+ | 0.8+ | 2006 08 24 | D35 | 0.2+ | 0.1+ |
| 1999 05 08 | 703 | 0.1+ | 1.6+ | 2004 03 22 | 704 | 0.8+ | 0.9+ | 2006 08 24 | D35 | 0.0 | 0.3+ |
| 1999 05 16 | 703 | 0.8+ | 0.4− | 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 08 24 | D35 | 0.3+ | 0.5+ |
| 1999 05 16 | 703 | 0.2− | 0.6− | 2004 03 28 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 1999 05 16 | 703 | 0.1− | 0.6+ | 2004 03 28 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 1999 05 16 | 703 | 0.7+ | 0.7+ | 2004 03 30 | 703 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2000 09 02 | 704 | 1.1+ | 0.1+ | 2004 03 30 | 703 | 0.2− | 1.0− | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2000 09 02 | 704 | 0.6− | 1.4+ | 2004 03 30 | 703 | 0.6− | 0.1− | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2000 09 02 | 704 | 0.6+ | 1.5+ | 2004 03 30 | 703 | 0.5+ | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 2000 09 03 | 691 | 0.2− | 0.0 | 2004 04 08 | 608 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2000 09 03 | 691 | 0.0 | 0.1+ | 2004 04 08 | 608 | 0.0 | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.2+ |
| 2000 09 03 | 691 | 0.4− | 0.0 | 2004 04 08 | 608 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.5+ |
| 2000 09 04 | 699 | 0.2− | 0.1− | 2004 04 20 | 704 | 0.8+ | 0.4− | 2006 10 12 | 644 | 0.4− | 0.5+ |
| 2000 09 04 | 699 | 0.4+ | 0.6− | 2004 04 20 | 704 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.7+ |
| 2000 09 04 | 699 | 0.3− | 0.4− | 2004 04 20 | 704 | 1.2+ | 0.5− | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2000 09 04 | 699 | 1.7+ | 1.5+ | 2004 04 20 | 704 | 1.1+ | 0.5− | 2006 10 16 | 703 | 1.1+ | 0.4+ |
| 2003 01 05 | 704 | 0.3+ | 0.2+ | 2004 04 20 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 2003 01 05 | 704 | 0.6+ | 0.1− | 2004 04 20 | E12 | (3.7+ | 0.6−) | 2006 10 16 | 703 | 0.5+ | 0.9+ |
| 2003 01 05 | 704 | (0.1− | 1.9+) | 2004 04 20 | E12 | 1.2− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2004 03 16 | 704 | 0.4− | 0.1− | 2004 04 20 | E12 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2004 03 16 | 704 | 0.3− | 1.0+ | 2004 04 20 | E12 | 1.2+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2004 03 16 | 704 | 0.3+ | 0.9− | 2004 04 22 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.8+ |
| 2004 03 16 | 704 | 0.3− | 0.6+ | 2004 04 22 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 1.0+ |
| 2004 03 18 | 691 | 0.2− | 0.2+ | 2004 04 22 | 704 | 1.0+ | 0.1+ | 2006 10 22 | 703 | 0.8− | 1.1+ |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2004 04 22 | 704 | 0.3+ | 0.2− | 2006 10 22 | 703 | 1.3− | 1.2+ |

**(138659)∗ 2000 RQ$_{88}$**

Discovered 2000 Sept. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.11397 | | (2000.0) | | | |
| $n$ | 0.18363230 | $\omega$ | 82.59206 | | +0.74125193 | −0.66109585 |
| $a$ | 3.0655142 | $\Omega$ | 318.69007 | | +0.52523457 | +0.67904702 |
| $e$ | 0.1490071 | $i$ | 10.13660 | | +0.41794046 | +0.31913543 |
| $P$ | 5.37 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.4− | 0.4+ | 2000 09 26 | 704 | 0.5− | 0.1+ | 2005 07 27 | 644 | 0.0 | 0.1− |
| 2000 09 03 | 704 | 0.2− | 0.0 | 2000 09 26 | 704 | 0.1+ | 0.4+ | 2005 07 27 | 644 | 0.3+ | 0.1+ |
| 2000 09 03 | 704 | 1.1+ | 1.1+ | 2001 12 17 | 704 | 0.4− | 0.1− | 2005 08 25 | 644 | 0.2− | 0.0 |
| 2000 09 03 | 704 | 0.4+ | 0.2+ | 2001 12 17 | 704 | 0.8+ | 0.1+ | 2005 08 25 | 644 | 0.3− | 0.2+ |
| 2000 09 03 | 704 | 0.5+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.2+ | 2005 08 25 | 644 | 0.1+ | 0.3− |
| 2000 09 05 | 699 | 0.9− | 0.1− | 2001 12 17 | 704 | 0.9+ | 1.1+ | 2006 10 29 | 703 | 0.4+ | 0.3+ |
| 2000 09 05 | 699 | 1.4− | 0.5− | 2001 12 17 | 704 | 0.8+ | 1.1+ | 2006 10 29 | 703 | 0.2+ | 0.2+ |
| 2000 09 05 | 699 | 0.6− | 0.9− | 2002 01 08 | 704 | 1.2+ | 0.2− | 2006 10 29 | 703 | 0.3+ | 0.5− |
| 2000 09 05 | 699 | 1.4− | 0.5+ | 2002 01 08 | 704 | 0.8− | 0.7+ | 2006 10 29 | 703 | 0.1− | 0.5− |
| 2000 09 23 | 704 | 0.1+ | 0.4+ | 2002 01 08 | 704 | 1.2− | 1.0+ | 2006 11 14 | 704 | 0.1− | 0.1+ |
| 2000 09 23 | 704 | 0.4+ | 0.2+ | 2003 03 31 | 691 | (0.6− | 2.9+) | 2006 11 14 | 704 | 0.8− | 0.4+ |
| 2000 09 23 | 704 | 0.0 | 0.1+ | 2003 03 31 | 691 | (0.3− | 2.7+) | 2006 11 14 | 704 | 0.7− | 0.4− |
| 2000 09 23 | 704 | 0.2− | 0.4− | 2003 03 31 | 691 | (0.4− | 2.7+) | 2006 11 14 | 704 | 0.3− | 0.3− |
| 2000 09 23 | 704 | 1.0+ | 0.2+ | 2005 07 27 | 644 | 0.0 | 0.1− | 2006 11 20 | 703 | 0.9+ | 0.6− |
| 2000 09 26 | 704 | 0.1+ | 0.6+ | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.6+ | 1.0− |
| 2000 09 26 | 704 | 0.6+ | 0.0 | 2005 07 27 | 644 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.0 | 1.2− |
| 2000 09 26 | 704 | 0.2− | 0.0 | 2005 07 27 | 644 | 0.1− | 0.2+ | 2006 11 20 | 703 | 0.0 | 0.3− |

**(138660)∗ 2000 RR$_{88}$ = 2002 AT$_{71}$**

Discovered 2000 Sept. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22500)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.66461 | | (2000.0) | | | |
| $n$ | 0.21905140 | $\omega$ | 119.43863 | | +0.63766304 | −0.76602283 |
| $a$ | 2.7254530 | $\Omega$ | 290.71442 | | +0.67326126 | +0.60544275 |
| $e$ | 0.0225806 | $i$ | 4.98077 | | +0.37430619 | +0.21598172 |
| $P$ | 4.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 1.6+ | 0.4+ | 2005 10 22 | 691 | 0.1+ | 0.2− | 2005 10 31 | 703 | 1.3+ | 0.2− |
| 2000 09 03 | 704 | 0.2+ | 1.2− | 2005 10 22 | 691 | 0.1+ | 0.0 | 2005 11 02 | 704 | 0.5+ | 0.1+ |
| 2000 09 03 | 704 | 1.1+ | 0.7− | 2005 10 22 | 691 | 0.0 | 0.2− | 2005 11 02 | 704 | 0.2+ | 0.1+ |
| 2000 09 03 | 704 | 0.2− | 1.2− | 2005 10 23 | 703 | 0.6− | 1.0+ | 2005 11 02 | 704 | 0.2− | 0.8+ |
| 2000 09 04 | 691 | 0.6− | 0.2+ | 2005 10 23 | 703 | 0.5+ | 0.3+ | 2005 11 02 | 704 | 0.7− | 0.1+ |
| 2000 09 04 | 691 | 0.6− | 0.3+ | 2005 10 23 | 703 | 0.5− | 0.6+ | 2005 11 04 | 691 | 0.4+ | 0.1− |
| 2000 09 04 | 691 | 0.7− | 0.3+ | 2005 10 23 | 703 | (2.2− | 1.3+) | 2005 11 04 | 691 | 0.2+ | 0.1− |
| 2000 09 26 | 704 | 1.5+ | 0.6+ | 2005 10 26 | 699 | 0.3− | 0.9− | 2005 11 04 | 691 | 0.4+ | 0.2− |
| 2000 09 26 | 704 | 1.3+ | 0.6+ | 2005 10 26 | 699 | 1.1− | 0.4− | 2005 11 25 | 703 | (1.5+ | 0.7−) |
| 2000 09 26 | 704 | (2.7+ | 2.1+) | 2005 10 26 | 699 | (1.1− | 1.9+) | 2005 11 25 | 703 | 0.8− | 0.5+ |
| 2000 10 01 | 699 | 0.7− | 0.0 | 2005 10 26 | 699 | 0.9− | 1.3+ | 2005 11 25 | 703 | 1.0+ | 0.2− |
| 2000 10 01 | 699 | 0.7+ | 1.1− | 2005 10 27 | 691 | 0.3− | 0.3− | 2005 11 25 | 703 | 0.2+ | 0.5+ |
| 2000 10 01 | 699 | 1.0+ | 1.2− | 2005 10 27 | 691 | 0.0 | 0.2− | 2005 11 29 | 704 | 0.2− | 0.8+ |
| 2000 10 01 | 699 | 0.8− | 0.8+ | 2005 10 27 | 691 | 0.1− | 0.3− | 2005 11 29 | 704 | 0.4+ | 0.3+ |
| 2000 10 03 | 704 | 0.5+ | 0.0 | 2005 10 29 | 703 | 0.9− | 0.1+ | 2005 11 29 | 704 | 0.1− | 0.5− |
| 2000 10 03 | 704 | 0.4− | 0.5+ | 2005 10 29 | 703 | 0.8− | 0.2− | 2005 11 29 | 704 | 0.2+ | 0.1− |
| 2000 10 03 | 704 | 1.8+ | 0.1− | 2005 10 29 | 703 | 0.7+ | 0.7+ | 2005 11 29 | 704 | 0.0 | 0.2− |
| 2002 01 08 | 704 | (1.7+ | 0.9+) | 2005 10 29 | 703 | (1.7− | 0.9−) | 2005 12 02 | 704 | 0.2− | 0.7− |
| 2002 01 08 | 704 | 0.1+ | 1.3+ | 2005 10 29 | 703 | 0.1− | 0.2− | 2005 12 02 | 704 | 0.7− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.2− | 0.4+ | 2005 10 29 | 703 | 0.2+ | 0.2+ | 2005 12 02 | 704 | 0.0 | 0.4− |
| 2002 01 08 | 704 | 0.5+ | 0.4+ | 2005 10 29 | 703 | 0.1+ | 0.6− | 2005 12 02 | 704 | 0.3+ | 0.2− |
| 2002 01 08 | 704 | 0.5+ | 1.1+ | 2005 10 29 | 703 | 0.1+ | 0.5− | 2005 12 02 | 703 | 0.6− | 0.7− |
| 2002 01 14 | 704 | 0.5− | 0.0 | 2005 10 30 | 704 | 0.0 | 0.2+ | 2005 12 02 | 703 | 1.4− | 0.0 |
| 2002 01 14 | 704 | 0.4+ | 0.2+ | 2005 10 30 | 704 | 0.2− | 1.0+ | 2005 12 02 | 703 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 1.3− | 0.6+ | 2005 10 30 | 704 | 0.1+ | 0.2+ | 2005 12 02 | 703 | 0.0 | 1.0+ |
| 2002 01 14 | 704 | 1.0+ | 1.4+ | 2005 10 30 | 704 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2004 07 16 | 704 | 0.2− | 0.0 | 2005 10 30 | 704 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.8− | 0.5− |
| 2004 07 16 | 704 | 0.4− | 0.2− | 2005 10 31 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2004 07 16 | 704 | 0.0 | 0.0 | 2005 10 31 | 691 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2004 07 16 | 704 | 0.3+ | 0.2− | 2005 10 31 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2005 10 03 | 644 | 0.6+ | 0.2+ | 2005 10 31 | G96 | 0.3+ | 0.5− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2005 10 03 | 644 | 0.0 | 0.3+ | 2005 10 31 | G96 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 10 03 | 644 | 0.0 | 0.1+ | 2005 10 31 | G96 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2005 10 08 | 704 | 0.7− | 0.0 | 2005 10 31 | G96 | 0.6+ | 0.5− | 2006 11 23 | G96 | 0.1+ | 1.0− |
| 2005 10 08 | 704 | 0.6+ | 0.7+ | 2005 10 31 | 703 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2005 10 08 | 704 | 0.1+ | 1.4+ | 2005 10 31 | 703 | 1.4− | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.6− |
| 2005 10 08 | 704 | 0.4− | 0.1− | 2005 10 31 | 703 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.5− | 0.7− |

**(138661)∗ 2000 RH$_{89}$**

Discovered 2000 Sept. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.39626 | | (2000.0) | | +0.52374556 | −0.84502944 |
| $n$ | 0.17459776 | $\omega$ | 216.56414 | | +0.83305214 | +0.53450621 |
| $a$ | 3.1703723 | $\Omega$ | 202.47142 | | +0.17808626 | −0.01511137 |
| $e$ | 0.1797222 | $i$ | 16.37805 | | | |
| $P$ | 5.65 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.6− | 0.1− | 2006 09 28 | 683 | 0.3+ | 0.9− | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2000 09 03 | 704 | 0.2− | 0.4+ | 2006 09 28 | 683 | (2.6+ | 0.1+) | 2006 10 22 | 704 | (1.5+ | 0.2+) |
| 2000 09 03 | 704 | 0.5+ | 0.6+ | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 10 22 | 704 | (0.9+ | 1.6−) |
| 2000 09 05 | 699 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 22 | 704 | 0.1− | 0.6+ |
| 2000 09 05 | 699 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 22 | 704 | 0.3− | 0.5− |
| 2000 09 05 | 699 | 0.1+ | 1.0− | 2006 09 30 | 703 | 0.9+ | 0.1+ | 2006 10 27 | 704 | 0.2− | 1.0+ |
| 2000 09 05 | 699 | 0.4+ | 1.1+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 27 | 704 | (0.6− | 1.8−) |
| 2000 09 23 | 704 | 1.5− | 0.5− | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 10 27 | 704 | (3.1+ | 1.9−) |
| 2000 09 23 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 1.1+ | 0.2− | 2006 10 27 | 704 | (0.1+ | 1.7−) |
| 2000 09 23 | 704 | 1.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.3+ | 0.1− |
| 2000 09 23 | 704 | 0.6− | 0.0 | 2006 10 01 | 683 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.7− | 0.5+ |
| 2000 10 03 | 704 | 0.0 | 0.3− | 2006 10 01 | 683 | 0.5+ | 0.7+ | 2006 11 13 | 703 | 0.3+ | 0.3+ |
| 2000 10 03 | 704 | 0.0 | 0.4+ | 2006 10 01 | 683 | 0.0 | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.6− |
| 2000 10 03 | 704 | 0.7+ | 1.2+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.6+ | 1.1+ |
| 2000 10 03 | 704 | 0.5+ | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 14 | 704 | (0.3− | 2.3+) |
| 2000 10 03 | 704 | 0.7− | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.4+ | 2006 11 14 | 704 | 0.7+ | 0.4+ |
| 2000 10 25 | 704 | 0.3− | 0.9+ | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.7+ | 0.5+ |
| 2000 10 25 | 704 | 0.0 | 1.2+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2000 10 25 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 14 | 704 | (1.7+ | 1.6+) |
| 2000 10 25 | 704 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.7+ | 0.1− |
| 2001 11 18 | 704 | 1.0− | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 14 | 704 | (0.5− | 1.7+) |
| 2001 11 18 | 704 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.8+ | 0.4+ |
| 2001 11 18 | 704 | 0.2− | 0.7+ | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.0 |
| 2003 03 30 | 691 | 0.2− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2003 03 30 | 691 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2003 03 30 | 691 | 0.1+ | 0.7+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 2003 04 25 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 1.1+ | 2006 11 20 | 704 | 2.5+ | 0.5− |
| 2003 04 25 | 691 | 0.5+ | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2003 04 25 | 691 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.4− | 2006 11 20 | 704 | 1.2+ | 0.8+ |
| 2004 05 23 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2004 05 23 | 691 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.6+ | 1.1+ |
| 2004 05 23 | 691 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2006 08 30 | 699 | (0.7+ | 2.6−) | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 08 30 | 699 | 0.8− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 08 30 | 699 | 1.4+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 08 30 | 699 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.4− | 0.1− | | | | |
| 2006 09 28 | 683 | 1.1+ | 0.7− | 2006 10 22 | 691 | 0.3− | 0.2− | | | | |

**(138662)∗ 2000 RV$_{89}$ = 2003 BK$_{56}$**

Discovered 2000 Sept. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40122)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.96751 | | (2000.0) | | +0.30982987 | +0.94499428 |
| $n$ | 0.17952706 | $\omega$ | 326.42284 | | −0.83125651 | +0.21570013 |
| $a$ | 3.1120705 | $\Omega$ | 321.33115 | | −0.46153881 | +0.24588468 |
| $e$ | 0.0768552 | $i$ | 9.65944 | | | |
| $P$ | 5.49 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.1− | 0.6+ | 2003 01 30 | 699 | 0.6+ | 0.1− | 2004 05 14 | 699 | (1.9− | 1.2−) |
| 2000 09 03 | 704 | 0.2− | 1.3+ | 2003 01 30 | 699 | 0.4− | 0.7+ | 2005 07 30 | E12 | 0.1+ | 0.2+ |
| 2000 09 03 | 704 | 0.4− | 0.6− | 2003 01 30 | 699 | 0.1− | 0.1− | 2005 07 30 | E12 | 0.5− | 0.2+ |
| 2000 09 04 | 691 | 0.2− | 0.2+ | 2003 01 30 | 699 | 0.3− | 0.9+ | 2005 07 30 | E12 | 0.3+ | 0.3+ |
| 2000 09 04 | 691 | 0.3− | 0.2+ | 2004 04 12 | E12 | 1.2− | 1.2+ | 2005 07 30 | E12 | 0.1− | 1.1− |
| 2000 09 04 | 691 | 0.1− | 0.2+ | 2004 04 12 | E12 | 0.4− | 1.0+ | 2005 09 29 | G96 | 0.9− | 0.2− |
| 2000 09 23 | 704 | 0.9+ | 0.2+ | 2004 04 12 | E12 | (1.7− | 0.8+) | 2005 09 29 | G96 | 0.1+ | 0.2+ |
| 2000 09 23 | 704 | 0.2+ | 0.3− | 2004 04 12 | E12 | 0.1− | 0.5+ | 2005 09 29 | G96 | 0.4− | 0.5+ |
| 2000 09 23 | 704 | 0.2− | 0.3+ | 2004 04 14 | E12 | 0.2− | 0.6− | 2005 09 29 | G96 | 0.9− | 0.3+ |
| 2000 10 01 | 699 | 1.2+ | 0.4+ | 2004 04 14 | E12 | 0.7+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2000 10 01 | 699 | 0.4− | 0.7+ | 2004 04 14 | E12 | 0.4+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2000 10 01 | 699 | 0.8+ | 0.3− | 2004 04 14 | E12 | 1.4+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2000 10 01 | 699 | 0.6− | 0.4− | 2004 04 25 | 704 | 0.2+ | 1.1+ | 2006 10 19 | 703 | 0.7+ | 1.3− |
| 2001 12 22 | 704 | 0.2+ | 1.3+ | 2004 04 25 | 704 | 0.8+ | 0.7− | 2006 10 19 | 703 | 0.5+ | 1.4+ |
| 2001 12 22 | 704 | 0.8− | 0.4+ | 2004 04 25 | 704 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.3+ |
| 2001 12 22 | 704 | 0.7− | 1.3+ | 2004 04 25 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.1+ |
| 2001 12 22 | 704 | 0.4− | 0.6+ | 2004 04 25 | 704 | 0.4+ | 0.2+ | 2006 11 15 | 703 | 0.6− | 1.3+ |
| 2003 01 28 | 608 | 0.1− | 0.3− | 2004 05 14 | 699 | 0.0 | 1.4+ | 2006 11 15 | 703 | 0.4+ | 1.2− |
| 2003 01 28 | 608 | 0.1− | 0.7+ | 2004 05 14 | 699 | 0.7+ | 0.6+ | 2006 11 15 | 703 | 0.5− | 0.8− |
| 2003 01 28 | 608 | 0.2+ | 0.1− | 2004 05 14 | 699 | 0.2+ | 1.1− | 2006 11 15 | 703 | 0.5− | 0.2− |

**(138663)∗ 2000 RE$_{91}$ = 2001 XU$_{155}$**

Discovered 2000 Sept. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22502)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.21132 | | (2000.0) | | −0.12306651 | −0.98019108 |
| $n$ | 0.18232859 | $\omega$ | 201.34689 | | +0.93209811 | −0.06049148 |
| $a$ | 3.0801098 | $\Omega$ | 255.98478 | | +0.34065783 | −0.18859011 |
| $e$ | 0.0652603 | $i$ | 9.20334 | | | |
| $P$ | 5.41 | $H$ | 14.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.9− | 0.2− | 2001 12 14 | 704 | (2.1+ | 0.5−) | 2006 10 29 | 704 | 0.4+ | 0.1− |
| 2000 09 03 | 704 | 0.0 | 0.3+ | 2001 12 14 | 704 | (2.2+ | 0.5−) | 2006 10 29 | 704 | 0.7+ | 0.8+ |
| 2000 09 03 | 704 | 0.5− | 0.1+ | 2001 12 17 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2000 09 03 | 704 | 0.0 | 1.1− | 2001 12 17 | 704 | 0.3+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2000 09 05 | 699 | 0.9− | 1.0+ | 2001 12 17 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2000 09 05 | 699 | 0.2− | 1.5− | 2001 12 17 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.9+ |
| 2000 09 05 | 699 | 0.5+ | 0.2− | 2001 12 17 | 704 | 0.5+ | 0.0 | 2006 11 11 | 703 | 1.1− | 0.5+ |
| 2000 09 05 | 699 | 0.3− | 0.1− | 2001 12 20 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2000 09 23 | 704 | 0.1− | 0.0 | 2001 12 20 | 704 | 0.8− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2000 09 23 | 699 | 0.6+ | 0.1+ | 2001 12 20 | 704 | 0.1− | 0.1+ | 2006 11 14 | 703 | (4.1+ | 0.3−) |
| 2000 09 23 | 704 | 0.7− | 0.8+ | 2001 12 20 | 704 | 0.8− | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2000 09 23 | 704 | 0.4+ | 0.2− | 2002 01 13 | 704 | 0.9+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.5− |
| 2000 09 23 | 699 | 0.6− | 0.4+ | 2002 01 13 | 704 | 0.7+ | 0.0 | 2006 11 14 | 703 | 0.3− | 0.5− |
| 2000 09 23 | 704 | 0.1+ | 0.0 | 2002 01 13 | 704 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2000 09 23 | 699 | 0.5+ | 0.2+ | 2002 01 13 | 704 | 0.5+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2000 09 23 | 704 | 0.3+ | 0.5− | 2002 01 15 | 704 | 0.4− | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2000 09 23 | 699 | 0.9− | 1.1+ | 2002 01 15 | 704 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2000 09 24 | 704 | 0.5+ | 0.5+ | 2002 01 15 | 704 | 0.6− | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2000 09 24 | 704 | 0.3− | 0.0 | 2002 01 15 | 704 | 0.7− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.1+ | 0.3+ | 2003 03 11 | 704 | 0.6− | 1.1+ | 2006 11 15 | G96 | 0.4+ | 0.5− | | |
| 2000 09 24 | 704 | 0.2+ | 0.6+ | 2003 03 11 | 704 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.3− | | |
| 2000 09 24 | 704 | 0.3+ | 0.7+ | 2003 03 11 | 704 | 0.6+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.2− | | |
| 2000 09 24 | 704 | 0.0 | 0.5− | 2005 07 31 | 644 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.4+ | 0.2− | | |
| 2000 09 24 | 704 | 0.3− | 0.9− | 2005 07 31 | 644 | 0.0 | 0.1− | 2006 11 15 | 704 | 1.3− | 0.8+ | | |
| 2000 09 24 | 704 | 0.7+ | 0.1+ | 2005 07 31 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 704 | (1.8− | 0.1+) | | |
| 2000 09 24 | 704 | 0.9+ | 0.4− | 2005 08 30 | 699 | 0.7+ | 0.7+ | 2006 11 15 | 704 | 0.8− | 0.6+ | | |
| 2000 09 24 | 704 | 0.2+ | 1.3+ | 2005 08 30 | 699 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.7+ | 0.6+ | | |
| 2000 09 28 | 704 | 0.4− | 0.4+ | 2005 08 30 | 699 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.7+ | | |
| 2000 09 28 | 704 | 0.2+ | 0.2+ | 2005 08 30 | 699 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.2+ | | |
| 2000 09 28 | 704 | 0.4+ | 1.2+ | 2006 10 18 | A50 | 0.5− | 0.8− | 2006 11 16 | 704 | 0.5− | 0.7+ | | |
| 2000 09 28 | 704 | 0.1− | 0.7+ | 2006 10 18 | A50 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.1− | | |
| 2000 10 02 | 699 | 0.0 | 0.8+ | 2006 10 19 | A50 | 0.4+ | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.8+ | | |
| 2000 10 02 | 699 | 0.4− | 0.5− | 2006 10 19 | A50 | 0.6+ | 0.2+ | 2006 11 16 | 704 | (0.4− | 1.8+) | | |
| 2000 10 02 | 699 | 0.4− | 0.6− | 2006 10 19 | 703 | 0.4− | 0.5− | 2006 11 16 | 704 | (2.2− | 0.1−) | | |
| 2000 10 02 | 699 | 1.4− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.8− | 2006 11 16 | 704 | 0.8− | 1.2+ | | |
| 2000 10 03 | 704 | 0.8+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.5− | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2− | 0.0 | | |
| 2000 10 03 | 704 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.6− | | |
| 2000 10 03 | 704 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.1+ | | |
| 2000 10 03 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.3+ | | |
| 2001 11 20 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.8+ | 1.1+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3− | 0.1+ | | |
| 2001 11 20 | 704 | 0.2− | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.4− | 0.0 | | |
| 2001 11 20 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.0 | | |
| 2001 12 14 | 704 | (2.4+ | 0.3−) | 2006 10 29 | 704 | 0.4+ | 1.4− | 2006 11 22 | 704 | 0.4− | 0.0 | | |
| 2001 12 14 | 704 | (2.4+ | 0.4+) | 2006 10 29 | 704 | 0.3− | 0.2− | | | | | | |
| 2001 12 14 | 704 | (2.9+ | 0.6−) | 2006 10 29 | 704 | 0.5− | 0.3+ | | | | | | |

**(138664)∗ 2000 RK**$_{93}$

Discovered 2000 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.03392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17690971 | $\omega$ | 22.97073 | | +0.91569874 | −0.40185742 | |
| $a$ | 3.1426904 | $\Omega$ | 0.73814 | | +0.33134119 | +0.75141458 | |
| $e$ | 0.0821057 | $i$ | 11.35412 | | +0.22739576 | +0.52334190 | |
| $P$ | 5.57 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 04 | 699 | 0.2− | 1.5+ | 2002 01 14 | 644 | 0.1− | 0.1+ | 2003 04 01 | 645 | 0.0 | 0.0 | | |
| 2000 09 04 | 699 | (2.1− | 0.4+) | 2002 01 14 | 644 | 0.0 | 0.1+ | 2003 04 11 | 691 | 0.1+ | 0.6+ | | |
| 2000 09 04 | 699 | (3.3− | 2.8+) | 2002 01 14 | 644 | 0.3− | 0.2+ | 2003 04 11 | 691 | 0.3+ | 0.2− | | |
| 2000 09 04 | 699 | (2.3− | 1.6+) | 2003 03 04 | 615 | 1.3+ | 0.1+ | 2003 04 11 | 691 | 0.2+ | 0.7+ | | |
| 2000 09 05 | 704 | 0.1− | 1.0+ | 2003 03 04 | 615 | 0.6+ | 0.4+ | 2006 09 28 | 703 | 0.5+ | 0.2+ | | |
| 2000 09 05 | 704 | 0.3+ | 1.3+ | 2003 03 04 | 615 | 0.7+ | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.5+ | | |
| 2000 09 05 | 704 | 0.3− | 1.0+ | 2003 03 04 | 615 | 0.4− | 1.3− | 2006 09 28 | 703 | 1.0− | 0.5− | | |
| 2000 09 24 | 704 | 0.4− | 0.4+ | 2003 03 04 | 615 | 0.5+ | 0.4− | 2006 09 28 | 703 | 0.5+ | 0.1− | | |
| 2000 09 24 | 704 | 0.1− | 0.8+ | 2003 03 04 | 615 | 0.7− | 1.2− | 2006 10 18 | H06 | 0.4− | 1.1− | | |
| 2000 09 24 | 704 | 0.3+ | 0.1+ | 2003 03 04 | 615 | 0.6+ | 0.6− | 2006 10 18 | H06 | (2.3+ | 0.5−) | | |
| 2000 09 24 | 704 | 0.0 | 0.5− | 2003 03 04 | 615 | (0.5− | 1.7−) | 2006 10 18 | H06 | 0.4+ | 0.2− | | |
| 2000 09 24 | 704 | 0.1− | 0.8− | 2003 03 04 | 615 | 0.4+ | 0.9− | 2006 10 19 | 703 | 0.1− | 0.3+ | | |
| 2000 09 26 | 704 | 0.3− | 0.6+ | 2003 03 07 | 615 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.1− | | |
| 2000 09 26 | 704 | 0.1+ | 0.4+ | 2003 03 07 | 615 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.3− | | |
| 2000 09 26 | 704 | 0.2− | 0.3+ | 2003 03 07 | 615 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | | |
| 2000 09 26 | 704 | 0.8− | 0.5+ | 2003 03 08 | 615 | 0.5+ | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | | |
| 2000 09 26 | 704 | 0.5− | 0.2+ | 2003 03 08 | 615 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2000 10 01 | 704 | 0.2− | 0.6+ | 2003 03 08 | 615 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2000 10 01 | 704 | 0.3− | 0.9+ | 2003 03 08 | 615 | 0.9− | 0.9+ | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.4+ | 2003 03 08 | 615 | 0.3+ | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.4+ | | |
| 2000 10 01 | 699 | (0.3− | 2.4+) | 2003 03 08 | 615 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.0 | 0.1− | | |
| 2000 10 01 | 704 | 0.5− | 0.4+ | 2003 03 08 | 615 | 0.6+ | 1.1+ | 2006 10 27 | 703 | 0.1− | 0.7− | | |
| 2000 10 01 | 704 | 0.1+ | 0.3+ | 2003 03 08 | 615 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.6+ | 0.6+ | | |
| 2000 10 01 | 699 | 0.9+ | 1.4+ | 2003 03 08 | 615 | (3.0− | 0.5−) | 2006 10 27 | 703 | 0.5+ | 0.4− | | |
| 2000 10 01 | 699 | 0.2− | 1.6+ | 2003 03 08 | 615 | 0.8+ | 0.8+ | 2006 10 27 | 703 | 0.9+ | 1.1+ | | |
| 2000 10 01 | 699 | 0.0 | 1.1+ | 2003 03 08 | 615 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.1− | | |
| 2000 10 02 | 704 | 0.0 | 0.8+ | 2003 03 08 | 615 | (2.0− | 1.4−) | 2006 10 27 | 703 | 0.6− | 0.5+ | | |
| 2000 10 02 | 704 | 0.0 | 0.5− | 2003 03 09 | A05 | 0.4− | 0.2− | 2006 10 27 | 703 | (1.4− | 2.0+) | | |
| 2000 10 02 | 704 | 0.4− | 0.2− | 2003 03 09 | A05 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.0 | 0.5− | | |
| 2000 10 02 | 704 | 0.7+ | 1.1+ | 2003 03 09 | A05 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.0 | | |
| 2000 10 02 | 645 | 0.2− | 0.1− | 2003 03 09 | 704 | 0.2+ | 0.3− | 2006 11 15 | 703 | 0.0 | 0.5− | | |
| 2000 10 02 | 645 | 0.2− | 0.0 | 2003 03 09 | 704 | 0.3+ | 0.8+ | 2006 11 15 | 703 | 0.3+ | 0.6− | | |
| 2000 10 02 | 704 | 0.2− | 0.7+ | 2003 03 09 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | 1.3+ | 0.1+ | | |
| 2001 12 22 | 704 | 0.0 | 0.1− | 2003 03 09 | 704 | 0.3+ | 0.7+ | 2006 11 16 | 704 | 0.1+ | 0.7− | | |
| 2001 12 22 | 704 | 0.0 | 0.0 | 2003 03 09 | 704 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.6− | 0.5+ | | |
| 2001 12 22 | 704 | 1.0+ | 0.2+ | 2003 03 27 | 691 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.2+ | | |
| 2001 12 22 | 704 | 0.8+ | 0.3− | 2003 03 27 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.6− | 0.1− | | |
| 2001 12 22 | 704 | 0.3+ | 0.1− | 2003 03 27 | 691 | 0.5+ | 0.3− | 2006 11 22 | 703 | 0.3− | 0.3− | | |
| 2002 01 07 | 704 | 0.5− | 0.5− | 2003 03 31 | 691 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.6− | 0.3+ | | |
| 2002 01 07 | 704 | 0.8− | 0.3− | 2003 03 31 | 691 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.4− | 0.1− | | |
| 2002 01 07 | 704 | 0.1− | 0.9− | 2003 03 31 | 691 | 0.1− | 0.1+ | | | | | | |
| 2002 01 07 | 704 | 0.6− | 0.2− | 2003 04 01 | 645 | 0.1− | 0.0 | | | | | | |

**(138665)∗ 2000 RE**$_{96}$

Discovered 2000 Sept. 4 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.74890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17302440 | $\omega$ | 124.49868 | | +0.89928268 | +0.38870984 | |
| $a$ | 3.1895627 | $\Omega$ | 213.93275 | | −0.41316050 | +0.90538740 | |
| $e$ | 0.2254067 | $i$ | 21.04836 | | +0.14348891 | +0.17081661 | |
| $P$ | 5.70 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 25 | 691 | 0.2− | 0.6+ | 2005 06 16 | 691 | 1.3− | 0.8+ | 2006 10 29 | 704 | 0.2− | 0.4+ | | |
| 1993 04 25 | 691 | 0.4+ | 0.2− | 2005 06 24 | 644 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.5+ | 0.3+ | | |
| 1993 04 25 | 691 | 0.0 | 0.2− | 2005 06 24 | 644 | 0.3+ | 0.0 | 2006 10 29 | 704 | 0.3− | 1.0+ | | |
| 2000 09 04 | 608 | 0.4+ | 1.0− | 2005 06 24 | 644 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.2− | 0.1− | | |
| 2000 09 04 | 608 | 0.7+ | 1.2− | 2005 06 24 | 644 | 0.1+ | 0.2− | 2006 10 29 | 704 | 1.1− | 1.5+ | | |
| 2000 09 04 | 608 | 0.4+ | 0.9− | 2005 06 24 | 644 | 0.2+ | 0.1− | 2006 10 31 | 683 | 0.7− | 0.3− | | |
| 2000 09 06 | 704 | 0.5− | 0.1− | 2005 06 24 | 644 | 0.2+ | 0.3+ | 2006 10 31 | 683 | 0.9− | 1.4+ | | |
| 2000 09 06 | 704 | 0.4− | 0.0 | 2005 06 30 | 644 | 0.1+ | 0.1− | 2006 10 31 | 683 | (2.1− | 0.9+) | | |
| 2000 09 06 | 704 | 0.4+ | 0.8+ | 2005 06 30 | 644 | 0.2+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.3+ | | |
| 2000 09 06 | 704 | 0.2+ | 0.7− | 2005 06 30 | 644 | 0.5+ | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.2− | | |
| 2000 09 06 | 704 | 0.0 | 0.4− | 2006 08 12 | 644 | 0.4− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.4+ | | |
| 2000 09 22 | 699 | 1.1− | 0.4− | 2006 08 12 | 644 | 0.5− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4− | | |
| 2000 09 22 | 699 | 0.7− | 0.7+ | 2006 08 12 | 644 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.4− | | |
| 2000 09 22 | 699 | 0.7− | 0.1− | 2006 09 16 | 703 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.5+ | 0.1+ | | |
| 2000 09 22 | 699 | 1.3+ | 1.0+ | 2006 09 16 | 703 | 0.7− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.2+ | | |
| 2000 09 22 | 704 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.6− | 2006 11 11 | 703 | 1.0− | 0.4+ | | |
| 2000 09 22 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.2+ | | |
| 2000 09 22 | 704 | 0.2+ | 0.4− | 2006 09 20 | 699 | 0.9+ | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.2− | | |
| 2000 09 22 | 704 | 0.3− | 0.6− | 2006 09 20 | 699 | 0.0 | 0.6− | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2000 09 22 | 704 | 0.4− | 0.3− | 2006 09 20 | 699 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.2− | | |
| 2000 09 28 | 704 | 0.1+ | 0.4− | 2006 09 20 | 699 | 0.5+ | 0.9− | 2006 11 13 | G96 | 0.1+ | 0.4− | | |
| 2000 09 28 | 704 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.7− | 2006 11 13 | G96 | 0.0 | 0.5− | | |
| 2000 09 28 | 704 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.4− | | |
| 2000 09 28 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.0 | | |
| 2000 09 28 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 17 | 703 | (0.1+ | 1.6−) | | |
| 2000 10 04 | 704 | 0.4− | 0.4+ | 2006 10 17 | 691 | 0.4+ | 0.2− | 2006 11 17 | 703 | 1.4− | 0.2+ | | |
| 2000 10 04 | 704 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2000 10 04 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.4+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2000 10 04 | 704 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.4+ | 0.5+ | | |
| 2002 01 13 | 704 | 0.7− | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.5− | | |
| 2002 01 13 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8− | 0.1− | 2006 11 20 | G96 | 0.4− | 0.2− | | |
| 2002 01 13 | 704 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.8− | 0.5− | 2006 11 20 | G96 | 0.4+ | 0.3− | | |
| 2005 05 21 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 704 | (1.6+ | 2.1+) | 2006 11 20 | 704 | 0.6− | 1.5+ | | |
| 2005 05 21 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 704 | (1.9+ | 0.7−) | 2006 11 20 | 704 | (0.9− | 2.3+) | | |
| 2005 05 21 | 644 | 0.1− | 0.5+ | 2006 10 19 | 704 | (1.9+ | 0.1+) | 2006 11 20 | 704 | (2.0− | 1.5+) | | |
| 2005 05 31 | 703 | 0.3+ | 0.2+ | 2006 10 19 | 704 | 1.0+ | 1.3+ | 2006 11 20 | 704 | 0.9− | 0.5+ | | |
| 2005 05 31 | 703 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.5− | 0.1+ | 2006 11 20 | 704 | 1.0− | 0.9+ | | |
| 2005 05 31 | 703 | 0.4− | 0.6− | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 1.1− | 0.6+ | | |
| 2005 05 31 | 703 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.3+ | | |
| 2005 06 07 | 703 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.7− | 0.3+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 07 | 703 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.5+ | 0.1+ |
| 2005 06 07 | 703 | 1.0− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.6+ | 0.1− |
| 2005 06 07 | 703 | 1.0+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.5+ | 0.6+ |
| 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.7− |
| 2005 06 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | | | | |

**(138666)∗ 2000 RX$_{96}$**

Discovered 2000 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.93277 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36464054 | $\omega$ | 193.38816 | | −0.37880745 | | −0.87709868 |
| $a$ | 1.9404066 | $\Omega$ | 279.52184 | | +0.87429956 | | −0.23451923 |
| $e$ | 0.0786605 | $i$ | 17.42316 | | +0.30348836 | | −0.41916421 |
| $P$ | 2.70 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 23 | 704 | 0.6− | 0.9− | 2000 11 27 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.5− |
| 1998 12 23 | 704 | 0.9+ | 1.4− | 2003 09 03 | 704 | 0.5− | 0.2− | 2004 03 18 | 704 | 0.9+ | 1.0+ |
| 1998 12 23 | 704 | 1.6− | 1.8− | 2003 09 03 | 704 | 0.6− | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.2+ |
| 1998 12 23 | 704 | 0.3+ | 1.5+ | 2003 09 03 | 704 | 0.8− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.3+ |
| 1998 12 23 | 704 | 0.0 | 0.5+ | 2003 09 03 | 704 | 0.9− | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.4+ |
| 1999 02 19 | 704 | 0.2+ | 0.2− | 2003 09 03 | 704 | 1.3− | 0.2− | 2004 03 20 | 704 | 0.7+ | 0.0 |
| 1999 02 19 | 704 | 0.2− | 0.4+ | 2003 10 02 | 704 | 0.2− | 0.5− | 2004 03 20 | 704 | 0.5+ | 0.1+ |
| 1999 02 19 | 704 | 1.3+ | 1.4+ | 2003 10 02 | 704 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.8+ | 0.3+ |
| 1999 02 19 | 704 | 0.9− | 0.8+ | 2003 10 02 | 704 | 0.0 | 1.0− | 2005 06 11 | 704 | 0.1− | 0.4+ |
| 2000 08 08 | 704 | 0.6− | 0.1+ | 2003 10 02 | 704 | 0.2− | 0.4− | 2005 06 11 | 704 | 0.2− | 0.7+ |
| 2000 08 08 | 704 | 0.9− | 0.0 | 2003 10 02 | 704 | 0.6− | 1.0− | 2005 06 11 | 704 | 0.0 | 0.8+ |
| 2000 08 08 | 704 | 0.3+ | 1.0+ | 2003 11 04 | 704 | 0.1+ | 0.6− | 2005 06 11 | 704 | 0.8− | 0.1+ |
| 2000 08 08 | 704 | 0.2− | 0.3+ | 2003 11 04 | 704 | 0.8+ | 0.3− | 2005 06 11 | 704 | 1.1− | 1.4+ |
| 2000 08 08 | 704 | 0.8+ | 0.1+ | 2003 11 04 | 704 | 0.6+ | 0.7+ | 2006 10 17 | 012 | 0.3− | 0.3− |
| 2000 08 08 | 704 | 0.6− | 0.2− | 2003 11 04 | 704 | 0.3+ | 0.2+ | 2006 10 17 | 012 | 0.0 | 0.1− |
| 2000 08 08 | 704 | 1.1+ | 1.2+ | 2003 11 04 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 012 | 0.1− | 0.2+ |
| 2000 08 08 | 704 | 1.3− | 0.5+ | 2003 11 21 | 704 | 0.1− | 0.5+ | 2006 10 17 | 012 | 0.4− | 0.3− |
| 2000 09 05 | 699 | 1.3− | 0.5+ | 2003 11 21 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 703 | 0.9− | 0.1− |
| 2000 09 05 | 699 | 0.4− | 0.6− | 2003 11 21 | 704 | 0.2− | 0.8+ | 2006 10 20 | 703 | 0.4− | 0.5+ |
| 2000 09 05 | 699 | 1.7− | 0.1− | 2003 11 21 | 704 | 0.2− | 0.6+ | 2006 10 20 | 703 | 0.3− | 0.8− |
| 2000 09 05 | 699 | (2.2− | 0.1+) | 2003 11 21 | 704 | 0.1− | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.0 |
| 2000 09 06 | 704 | 0.3+ | 0.1− | 2003 12 03 | 704 | 0.3− | 0.0 | 2006 10 21 | 704 | (0.7+ | 1.9+) |
| 2000 09 06 | 704 | 0.5+ | 0.3− | 2003 12 03 | 704 | 0.1− | 0.1− | 2006 10 21 | 704 | 0.9+ | 0.8+ |
| 2000 09 06 | 704 | 0.1+ | 0.0 | 2003 12 03 | 704 | 0.0 | 0.3− | 2006 10 21 | 704 | 0.7+ | 1.0− |
| 2000 09 06 | 704 | 0.3− | 0.3+ | 2003 12 03 | 704 | 0.1− | 0.3− | 2006 10 29 | 704 | 0.7+ | 0.9+ |
| 2000 09 06 | 704 | 0.1+ | 0.1+ | 2003 12 03 | 704 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.7+ | 0.2+ |
| 2000 09 22 | 704 | 1.3+ | 0.0 | 2003 12 12 | 644 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.2+ | 0.0 |
| 2000 09 22 | 704 | 1.1+ | 0.4+ | 2003 12 12 | 644 | 0.2− | 0.3− | 2006 10 29 | 704 | 0.2+ | 0.8+ |
| 2000 09 22 | 704 | 0.3+ | 0.1− | 2003 12 12 | 644 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2000 09 22 | 704 | 0.3+ | 0.5− | 2003 12 28 | 704 | 0.3− | 0.5− | 2006 11 06 | 644 | 0.2− | 0.2− |
| 2000 09 22 | 704 | 0.6− | 0.0 | 2003 12 28 | 704 | 0.4− | 0.7− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2000 09 23 | 704 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.5− | 0.3− | 2006 11 06 | 644 | 0.1− | 0.6− |
| 2000 09 23 | 704 | 0.2− | 0.1− | 2003 12 28 | 704 | 0.6− | 1.3− | 2006 11 06 | 644 | 0.6+ | 0.1+ |
| 2000 09 23 | 704 | 0.2− | 0.3− | 2003 12 28 | 704 | 0.5− | 0.1− | 2006 11 06 | 644 | 0.4+ | 0.0 |
| 2000 09 23 | 704 | 0.2+ | 0.0 | 2003 12 30 | 704 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2000 09 23 | 704 | 0.1+ | 0.2− | 2003 12 30 | 704 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2000 09 28 | 704 | 0.4+ | 0.1− | 2003 12 30 | 704 | 0.6+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2000 09 28 | 704 | 0.6+ | 0.2+ | 2003 12 30 | 704 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2000 09 28 | 704 | 0.0 | 0.1− | 2003 12 30 | 704 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 0.5+ | 0.1− |
| 2000 09 28 | 704 | 0.0 | 0.5+ | 2004 01 20 | 704 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2000 09 28 | 704 | 0.4+ | 0.4+ | 2004 01 20 | 704 | 0.7− | 0.7− | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2000 09 30 | 704 | 0.6− | 0.0 | 2004 01 20 | 704 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.7+ | 0.4− |
| 2000 09 30 | 704 | 0.0 | 0.2+ | 2004 01 20 | 704 | 0.3− | 0.6− | 2006 11 18 | 704 | 1.3+ | 0.1+ |
| 2000 09 30 | 704 | 0.0 | 0.1− | 2004 01 28 | 703 | (2.8+ | 0.4+) | 2006 11 18 | 704 | 1.0+ | 0.9+ |
| 2000 09 30 | 704 | 0.0 | 0.9+ | 2004 01 28 | 703 | 0.3− | 0.8+ | 2006 11 18 | 704 | 0.5+ | 0.3− |
| 2000 09 30 | 704 | 0.1− | 0.1− | 2004 01 28 | 703 | (2.4− | 0.4+) | 2006 11 18 | 704 | 1.0+ | 0.2+ |
| 2000 11 01 | 704 | 0.1− | 0.0 | 2004 01 28 | 703 | 1.0− | 1.2+ | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 2000 11 01 | 704 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2000 11 01 | 704 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.5+ |
| 2000 11 01 | 704 | 0.5+ | 0.5+ | 2004 01 30 | 704 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2000 11 27 | 704 | 0.3− | 0.3+ | 2004 01 30 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2000 11 27 | 704 | 0.6+ | 0.1− | 2004 01 30 | 704 | 0.7+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2000 11 27 | 704 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.8− | 1.1+ |
| 2000 11 27 | 704 | (2.3+ | 0.1+) | 2004 02 15 | 704 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2000 11 27 | 704 | 0.3+ | 0.6+ | 2004 02 15 | 704 | 0.9− | 0.2+ | 2006 11 28 | 704 | 0.7− | 0.3+ |
| 2000 11 27 | 704 | 1.1+ | 0.1+ | 2004 02 15 | 704 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.7+ |
| 2000 11 27 | 704 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.9+ |

**(138667)∗ 2000 RZ$_{99}$ = 2004 JW$_{43}$**

Discovered 2000 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 64806)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.76200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17867750 | $\omega$ | 147.10330 | | +0.95020364 | | −0.20095152 |
| $a$ | 3.1219274 | $\Omega$ | 226.47290 | | +0.16344272 | | +0.97212112 |
| $e$ | 0.1130398 | $i$ | 19.17820 | | +0.26532910 | | +0.12082636 |
| $P$ | 5.52 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 327 | 0.0 | 0.2− | 2004 06 08 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 1995 10 28 | 327 | 0.5+ | 0.1+ | 2004 06 08 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 1995 10 28 | 327 | 0.3− | 0.2+ | 2004 06 15 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2000 09 05 | 699 | (3.0− | 0.1−) | 2004 06 15 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.2+ |
| 2000 09 05 | 699 | (2.2− | 0.2−) | 2004 06 15 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2000 09 05 | 699 | 0.7− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2000 09 05 | 699 | 1.3− | 0.5− | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 1.0− | 1.0− |
| 2000 09 06 | 704 | 0.2− | 1.0+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2000 09 06 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 18 | 704 | (0.0 | 2.0−) |
| 2000 09 06 | 704 | 0.8+ | 0.5+ | 2006 10 13 | 691 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2000 09 30 | 704 | 0.1− | 1.1− | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.9− |
| 2000 09 30 | 704 | 0.2+ | 0.3+ | 2006 10 13 | 691 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.4− |
| 2000 09 30 | 704 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2000 10 04 | 704 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.9+ | 0.3− |
| 2000 10 04 | 704 | 0.6+ | 0.4− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2000 10 04 | 704 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2000 10 04 | 704 | 0.9+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.6+ | 1.1− |
| 2004 04 25 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 04 25 | 691 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 05 12 | 699 | 0.5+ | 1.5+ | 2006 10 22 | 644 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.7− | 1.1+ |
| 2004 05 12 | 699 | 0.4− | 0.7− | 2006 11 01 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2004 05 12 | 699 | 0.9− | 1.0+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2004 05 12 | 699 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.3− |
| 2004 05 15 | 704 | 0.2− | 1.3+ | 2006 11 10 | 644 | 0.0 | 0.4+ | 2006 11 26 | 704 | 2.8− | 1.6+ |
| 2004 05 15 | 704 | 0.6− | 0.5− | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.3+ | 1.0+ |
| 2004 05 15 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.0 | 0.9+ |
| 2004 05 15 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.8+ | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2004 05 15 | 704 | (2.2− | 0.2−) | 2006 11 11 | 703 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.8− | 1.2+ |
| 2004 05 19 | 599 | 0.5+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.4+ | 0.8+ |
| 2004 05 19 | 599 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2004 05 19 | 599 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.1+ |
| 2004 06 08 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.3− | | | | |

**(138668)∗ 2000 RB$_{103}$**

Discovered 2000 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.76598 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17690693 | $\omega$ | 142.43408 | | +0.83522264 | | −0.52914096 |
| $a$ | 3.1427233 | $\Omega$ | 250.15737 | | +0.45801909 | | +0.82004479 |
| $e$ | 0.2259737 | $i$ | 9.15810 | | +0.30433807 | | +0.21802840 |
| $P$ | 5.57 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 699 | 0.5− | 0.0 | 2000 11 26 | 704 | 0.4+ | 1.4+ | 2006 11 15 | 703 | 0.1+ | 0.3− | | | | |
| 2000 09 05 | 699 | 0.9− | 0.1− | 2000 11 26 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.5− | | | | |
| 2000 09 05 | 699 | 0.5− | 0.0 | 2000 11 26 | 704 | 0.5+ | 0.9− | 2006 11 15 | 703 | 0.3− | 0.0 | | | | |
| 2000 09 05 | 699 | 0.3− | 0.2+ | 2002 01 22 | 704 | (1.3− | 1.6+) | 2006 11 15 | 703 | 0.3− | 0.3− | | | | |
| 2000 09 06 | 704 | 0.0 | 0.7+ | 2002 01 22 | 704 | 1.5− | 0.3+ | 2006 11 16 | 704 | 1.0+ | 0.3− | | | | |
| 2000 09 06 | 704 | 0.5− | 0.0 | 2002 01 22 | 704 | 0.8− | 0.8+ | 2006 11 16 | 704 | 1.4− | 0.6+ | | | | |
| 2000 09 06 | 704 | 0.7− | 0.2+ | 2002 01 22 | 704 | 0.2+ | 0.9+ | 2006 11 16 | 704 | 0.2− | 0.2+ | | | | |
| 2000 09 06 | 704 | 0.0 | 0.7+ | 2002 02 04 | 699 | 0.9+ | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.4+ | | | | |
| 2000 09 06 | 704 | 0.3− | 0.3− | 2002 02 04 | 699 | 0.7+ | 0.4− | 2006 11 16 | 704 | 0.5− | 0.3− | | | | |
| 2000 09 22 | 699 | 0.3− | 0.6+ | 2002 02 04 | 699 | 0.7− | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.1− | | | | |
| 2000 09 22 | 699 | 0.1+ | 0.3+ | 2002 02 04 | 699 | 0.3+ | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.1− | | | | |
| 2000 09 22 | 699 | 0.4+ | 0.6+ | 2002 02 07 | 644 | 0.4+ | 0.2+ | 2006 11 17 | 644 | 0.2− | 0.3− | | | | |
| 2000 09 22 | 699 | 0.7− | 0.7+ | 2002 02 07 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− | | | | |
| 2000 09 23 | 704 | 0.3− | 0.4+ | 2002 02 07 | 644 | 0.4+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 1.0+ | | | | |
| 2000 09 23 | 704 | 0.1− | 0.0 | 2002 02 17 | 644 | 0.5+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.0 | | | | |
| 2000 09 23 | 704 | 0.3+ | 0.9+ | 2002 02 17 | 644 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.2− | | | | |
| 2000 09 23 | 704 | 0.1+ | 0.2+ | 2002 02 17 | 644 | 0.6+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.6+ | | | | |
| 2000 09 23 | 704 | 0.1+ | 0.1+ | 2002 02 19 | 209 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.4+ | | | | |
| 2000 09 24 | 704 | 0.1+ | 0.0 | 2002 02 19 | 209 | 0.0 | 1.0+ | 2006 11 18 | 704 | 0.6+ | 0.4− | | | | |
| 2000 09 24 | 704 | 0.9− | 0.3+ | 2002 02 19 | 209 | 0.2+ | 0.6+ | 2006 11 18 | 704 | (0.7+ | 3.5−) | | | | |
| 2000 09 24 | 704 | 0.3+ | 0.1+ | 2005 06 27 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.4− | | | | |
| 2000 09 24 | 704 | 0.3− | 0.0 | 2005 06 27 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.4− | | | | |
| 2000 09 25 | 704 | 0.5− | 0.7+ | 2005 06 27 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1+ | | | | |
| 2000 09 25 | 704 | 0.9− | 0.3− | 2005 07 01 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.1− | | | | |
| 2000 09 25 | 704 | 0.1+ | 0.1+ | 2005 07 01 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.2− | | | | |
| 2000 09 25 | 704 | 0.0 | 0.0 | 2005 07 01 | 644 | 0.1+ | 0.1+ | 2006 11 22 | H07 | 0.2+ | 0.2− | | | | |
| 2000 09 25 | 704 | 0.2− | 0.2− | 2005 07 15 | 691 | 0.2− | 0.2+ | 2006 11 22 | H07 | 0.3+ | 0.2− | | | | |
| 2000 09 25 | 704 | 0.7+ | 0.1− | 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 11 22 | H07 | 0.1+ | 0.2− | | | | |
| 2000 09 25 | 704 | 0.3+ | 0.4− | 2005 07 15 | 691 | 0.1+ | 0.2+ | 2006 11 22 | H07 | 0.5+ | 0.4− | | | | |
| 2000 09 25 | 704 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 23 | H07 | 0.2+ | 0.4− | | | | |
| 2000 09 25 | 704 | 0.7+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 23 | H07 | 0.2+ | 0.4+ | | | | |
| 2000 10 03 | 704 | 0.5− | 0.6− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 23 | H07 | 0.2+ | 0.1− | | | | |
| 2000 10 03 | 704 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 23 | H07 | 0.3+ | 1.3− | | | | |
| 2000 10 03 | 704 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 24 | H07 | 0.4− | 0.1− | | | | |
| 2000 10 03 | 704 | 0.4− | 0.4− | 2006 10 20 | G96 | 0.3+ | 0.4− | 2006 11 24 | H07 | 0.3− | 0.1− | | | | |
| 2000 10 25 | 704 | 1.0+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 24 | H07 | 0.5− | 0.3− | | | | |
| 2000 10 25 | 704 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.0 | | | | |
| 2000 10 25 | 704 | 0.4− | 0.8− | 2006 11 01 | G96 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.2− | 0.0 | | | | |
| 2000 10 25 | 704 | 0.5+ | 0.8− | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.0 | | | | |
| 2000 10 31 | 704 | 0.7+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.1− | 0.3+ | | | | |
| 2000 10 31 | 704 | 0.6+ | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.2− | 2006 11 27 | 704 | 0.2− | 0.3− | | | | |
| 2000 10 31 | 704 | 1.4+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 27 | 704 | 1.4− | 0.4+ | | | | |
| 2000 10 31 | 704 | 0.9+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.0 | 0.1+ | | | | |
| 2000 10 31 | 704 | 1.0+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.0 | | | | |
| 2000 11 19 | 704 | (0.5+ | 3.7+) | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.2+ | | | | |
| 2000 11 19 | 704 | 0.6+ | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.3+ | 0.1− | | | | |
| 2000 11 19 | 704 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.2+ | | | | |
| 2000 11 25 | 704 | 0.7− | 0.4− | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.4− | 0.1− | | | | |
| 2000 11 25 | 704 | 0.7− | 1.1− | 2006 11 11 | 703 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.1− | 0.5+ | | | | |
| 2000 11 25 | 704 | 0.8− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.1− | 2006 12 01 | 704 | 0.4+ | 0.4+ | | | | |
| 2000 11 25 | 704 | 0.9− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.2+ | | | | |
| 2000 11 25 | 704 | 0.1+ | 0.5− | 2006 11 14 | 691 | 0.1+ | 0.0 | | | | | | | | |
| 2000 11 26 | 704 | 0.9− | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.1− | | | | | | | | |

**(138669)∗ 2000 RJ$_{104}$**

Discovered 2000 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.70386 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19653700 | $\omega$ | 76.00607 | | +0.67374650 | −0.72584826 |
| $a$ | 2.9298126 | $\Omega$ | 330.13842 | | +0.52362999 | +0.60128929 |
| $e$ | 0.0943554 | $i$ | 16.16268 | | +0.52141854 | +0.33405912 |
| $P$ | 5.01 | $H$ | 14.3 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 04 | 608 | 0.5+ | 1.7+ | 2002 02 08 | 704 | 0.6− | 0.4− | 2005 09 03 | 644 | 0.0 | 0.2− | | | | |
| 2000 08 04 | 608 | 0.3+ | 0.9+ | 2002 02 08 | 704 | 0.4− | 0.3− | 2005 09 03 | 644 | 0.3− | 0.6− | | | | |
| 2000 08 04 | 608 | 0.5+ | 0.9+ | 2002 02 08 | 704 | 0.1− | 0.1+ | 2005 09 13 | 704 | 0.3− | 0.6+ | | | | |
| 2000 09 06 | 704 | 0.7− | 0.2− | 2002 02 08 | 704 | 0.8− | 0.4− | 2005 09 13 | 704 | 0.3+ | 0.5+ | | | | |
| 2000 09 06 | 704 | 0.1+ | 0.2+ | 2002 02 08 | 704 | 0.6− | 0.2− | 2005 09 13 | 704 | 0.6+ | 0.1+ | | | | |
| 2000 09 06 | 704 | 0.0 | 0.8+ | 2002 02 12 | 704 | 0.1+ | 0.3− | 2005 09 13 | 704 | 0.1+ | 0.6− | | | | |
| 2000 09 06 | 704 | 0.3− | 0.1+ | 2002 02 12 | 704 | 0.3− | 0.2+ | 2005 09 13 | 704 | 0.0 | 0.9+ | | | | |
| 2000 09 06 | 704 | 0.5+ | 0.4+ | 2002 02 12 | 704 | 0.2+ | 0.9+ | 2005 09 29 | 703 | 0.6− | 0.1+ | | | | |
| 2000 09 08 | 699 | 1.3− | 0.1+ | 2002 02 12 | 704 | 0.2+ | 0.7+ | 2005 09 29 | 703 | 0.2+ | 0.4− | | | | |
| 2000 09 08 | 699 | 0.9− | 0.2− | 2002 02 12 | 704 | 0.2− | 0.0 | 2005 09 29 | 703 | 0.4+ | 0.6− | | | | |
| 2000 09 08 | 699 | 0.1− | 0.3+ | 2002 02 14 | 644 | 0.3− | 0.1+ | 2005 09 29 | 703 | 0.3− | 1.0− | | | | |
| 2000 09 08 | 699 | 0.0 | 0.3− | 2002 02 14 | 644 | 0.2− | 0.1+ | 2005 10 11 | 699 | 0.3− | 0.6− | | | | |
| 2000 10 03 | 699 | 0.5+ | 0.1− | 2002 02 14 | 644 | 0.4− | 0.3+ | 2005 10 11 | 699 | 0.2− | 0.1− | | | | |
| 2000 10 03 | 699 | 0.6− | 0.5+ | 2002 03 04 | 704 | 0.2+ | 0.3− | 2005 10 11 | 699 | 0.0 | 0.5− | | | | |
| 2000 10 03 | 699 | 0.5− | 1.4− | 2002 03 04 | 704 | 0.2+ | 0.5+ | 2005 10 14 | 704 | (1.1+ | 1.9+) | | | | |
| 2000 10 03 | 699 | 0.7− | 0.6− | 2002 03 04 | 704 | 1.0+ | 0.0 | 2005 10 14 | 704 | 0.4+ | 1.4+ | | | | |
| 2000 10 04 | 704 | 0.1− | 0.3− | 2002 03 04 | 704 | 0.4+ | 0.8+ | 2005 10 14 | 704 | 0.7+ | 1.2+ | | | | |
| 2000 10 04 | 704 | 0.1+ | 0.7− | 2002 03 04 | 704 | 0.8+ | 1.0+ | 2005 10 14 | 704 | 0.1+ | 0.1+ | | | | |
| 2000 10 04 | 704 | 0.5− | 0.5− | 2002 03 06 | 704 | 0.2+ | 0.3+ | 2005 10 14 | 704 | (0.8+ | 1.6+) | | | | |
| 2000 10 04 | 704 | 0.7− | 0.3− | 2002 03 06 | 704 | 0.4+ | 0.5+ | 2005 10 29 | 703 | 0.3− | 0.1− | | | | |
| 2000 10 04 | 704 | 0.1+ | 0.6− | 2002 03 06 | 704 | 0.8+ | 0.2− | 2005 10 29 | 703 | 0.7− | 0.3− | | | | |
| 2000 10 26 | 699 | 0.8− | 0.9+ | 2002 03 06 | 704 | 0.6+ | 0.2− | 2005 10 29 | 703 | 0.0 | 0.2+ | | | | |
| 2000 10 26 | 699 | 1.0+ | 0.4+ | 2002 03 09 | 691 | 0.6+ | 0.3+ | 2005 10 29 | 703 | 0.3− | 0.1+ | | | | |
| 2000 10 26 | 699 | 0.4− | 1.5+ | 2002 03 09 | 691 | 0.5+ | 0.1+ | 2005 11 04 | 703 | 0.2+ | 0.2− | | | | |
| 2000 10 26 | 699 | (1.6− | 2.2+) | 2002 03 09 | 691 | 0.4+ | 0.1+ | 2005 11 04 | 703 | 0.5− | 0.1+ | | | | |
| 2000 12 30 | 704 | 0.8+ | 0.1+ | 2002 03 09 | 704 | 0.2+ | 0.2− | 2005 11 04 | 703 | 0.0 | 0.3− | | | | |
| 2000 12 30 | 704 | 0.5+ | 0.1− | 2002 03 09 | 704 | 1.4+ | 0.3− | 2005 11 04 | 703 | 0.3− | 0.3− | | | | |
| 2000 12 30 | 704 | 0.7− | 0.6+ | 2002 03 09 | 291 | 0.0 | 0.1− | 2005 11 29 | 704 | 0.4+ | 0.2+ | | | | |
| 2000 12 30 | 704 | 1.0+ | 0.0 | 2002 03 09 | 291 | 0.0 | 0.1− | 2005 11 29 | 704 | 0.9+ | 0.3− | | | | |
| 2002 01 08 | 704 | 0.3− | 0.1− | 2002 03 09 | 704 | 0.1− | 1.0− | 2005 11 29 | 704 | 1.5+ | 0.9− | | | | |
| 2002 01 08 | 704 | 0.0 | 0.7− | 2002 03 09 | 291 | 0.0 | 0.3− | 2005 11 29 | 704 | (0.7+ | 1.6−) | | | | |
| 2002 01 08 | 704 | 0.1+ | 0.6− | 2002 03 12 | 691 | 0.0 | 0.0 | 2005 12 29 | 703 | 0.4− | 0.2+ | | | | |
| 2002 01 08 | 704 | 0.0 | 0.1− | 2002 03 12 | 644 | 0.2+ | 0.6+ | 2005 12 29 | 703 | 0.1+ | 0.8+ | | | | |
| 2002 01 08 | 704 | 0.6+ | 0.4− | 2002 03 12 | 691 | 0.1− | 0.1+ | 2005 12 29 | 703 | 0.5− | 0.3− | | | | |
| 2002 01 11 | 699 | 0.8− | 0.7+ | 2002 03 12 | 644 | 0.2+ | 0.3+ | 2005 12 29 | 703 | 1.0+ | 1.4+ | | | | |
| 2002 01 11 | 699 | 0.6− | 0.3− | 2002 03 12 | 691 | 0.2− | 0.1− | 2006 01 05 | 703 | 0.1+ | 0.1+ | | | | |
| 2002 01 11 | 699 | 1.1− | 0.1+ | 2002 03 12 | 644 | 0.3+ | 0.5+ | 2006 01 05 | 703 | (2.4− | 0.2−) | | | | |
| 2002 01 11 | 699 | 0.9− | 0.3− | 2002 03 14 | 704 | 0.4+ | 0.5+ | 2006 01 05 | 703 | (2.6+ | 1.5−) | | | | |
| 2002 01 20 | 699 | 1.2+ | 0.4− | 2002 03 14 | 704 | 0.8+ | 0.5+ | 2006 01 05 | 703 | 0.5+ | 0.6− | | | | |
| 2002 01 20 | 699 | 0.7+ | 0.1− | 2002 03 14 | 704 | 0.0 | 0.0 | 2006 01 05 | 704 | (1.5+ | 0.0 ) | | | | |
| 2002 01 20 | 699 | 0.8+ | 0.2− | 2002 03 14 | 704 | 0.8+ | 0.3+ | 2006 01 05 | 704 | 0.4+ | 0.7− | | | | |
| 2002 01 20 | 699 | 0.1− | 0.0 | 2002 03 14 | 704 | 0.5+ | 0.8+ | 2006 01 05 | 704 | 0.1+ | 0.7− | | | | |
| 2002 02 03 | 699 | 0.4− | 0.4− | 2002 03 16 | 704 | 0.7− | 0.0 | 2006 09 24 | 703 | 1.0+ | 0.4− | | | | |
| 2002 02 03 | 699 | 0.9− | 0.5− | 2002 03 16 | 704 | 1.3− | 0.2− | 2006 09 24 | 703 | 1.1− | 0.9+ | | | | |
| 2002 02 03 | 699 | 0.3− | 0.4+ | 2002 03 16 | 704 | 0.5− | 0.5+ | 2006 09 24 | 703 | 0.4− | 0.0 | | | | |
| 2002 02 03 | 699 | 0.2− | 0.4− | 2002 04 01 | 699 | 0.2+ | 0.2+ | 2006 09 24 | 703 | 0.2+ | 1.1− | | | | |
| 2002 02 04 | 644 | 0.4− | 0.8+ | 2002 04 01 | 699 | 0.0 | 0.1− | 2006 10 21 | 703 | 1.3− | 0.3+ | | | | |
| 2002 02 04 | 644 | 0.5− | 0.6+ | 2002 04 01 | 699 | 0.2+ | 0.8− | 2006 10 21 | 703 | (1.4+ | 3.0+) | | | | |
| 2002 02 04 | 644 | 0.1− | 0.7+ | 2002 04 01 | 699 | 0.3+ | 0.7− | 2006 10 21 | 703 | (2.1− | 0.4−) | | | | |
| 2002 02 06 | 704 | 0.3− | 0.2+ | 2005 08 04 | 704 | 0.6+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 1.1+ | | | | |
| 2002 02 06 | 704 | 0.1− | 0.1+ | 2005 08 04 | 704 | 0.2− | 0.5+ | 2006 11 15 | 703 | 0.7− | 1.0− | | | | |
| 2002 02 06 | 704 | 0.1− | 0.1+ | 2005 08 04 | 704 | 1.3+ | 0.8+ | 2006 11 15 | 703 | 0.7− | 0.0 | | | | |
| 2002 02 06 | 704 | 0.4− | 0.3+ | 2005 08 04 | 704 | 1.3− | 0.6− | 2006 11 15 | 703 | 0.6− | 1.4− | | | | |
| 2002 02 06 | 704 | 0.2− | 0.1+ | 2005 09 03 | 644 | 0.4− | 0.4− | 2006 11 15 | 703 | 0.6− | 0.1− | | | | |

**(138670)∗ 2000 RH$_{106}$ = 2004 MU$_1$**

Discovered 2000 Sept. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 64808)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 189.17275 | | (2000.0) | | +0.08972709 | +0.99173183 |
| $n$ | 0.22456473 | $\omega$ | 330.72621 | | −0.89082693 | +0.03871968 |
| $a$ | 2.6806597 | $\Omega$ | 304.27800 | | −0.44539470 | +0.12234693 |
| $e$ | 0.1362129 | $i$ | 6.37460 | | | |
| $P$ | 4.39 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 12 | 691 | 0.2+ | 0.2− | 2000 09 25 | 704 | (2.0− | 0.6+) | 2005 10 30 | 703 | 1.0+ | 0.5− |
| 1994 01 12 | 691 | (0.8+ | 2.2+) | 2000 09 25 | 704 | 0.3− | 1.3+ | 2005 10 30 | 703 | 0.1− | 0.8+ |
| 1994 01 12 | 691 | 0.6− | 0.4− | 2003 04 27 | 460 | 1.2+ | 0.7+ | 2005 10 30 | 703 | 0.4− | 0.6− |
| 1996 11 05 | 691 | 0.5− | 0.1− | 2003 04 27 | 460 | 1.0+ | 1.1+ | 2005 11 01 | 699 | (1.4+ | 1.7+) |
| 1996 11 05 | 691 | 0.5− | 0.3− | 2003 04 27 | 460 | 0.0 | 0.5+ | 2005 11 01 | 699 | 1.0− | 1.2− |
| 1996 11 05 | 691 | 0.3+ | 0.1+ | 2004 06 14 | 704 | 0.4− | 0.4− | 2005 11 01 | 699 | (0.2+ | 1.9+) |
| 2000 09 03 | 704 | 0.3− | 0.1− | 2004 06 14 | 704 | 0.4− | 0.5− | 2005 11 01 | 699 | 0.1− | 0.1− |
| 2000 09 03 | 704 | 0.3+ | 0.7+ | 2004 06 14 | 704 | 0.3+ | 1.1− | 2005 11 02 | 704 | 0.2+ | 0.4− |
| 2000 09 03 | 704 | 0.3− | 0.2+ | 2004 06 14 | 704 | 0.6− | 0.4− | 2005 11 02 | 704 | 0.1+ | 0.7− |
| 2000 09 03 | 704 | 0.6+ | 0.1− | 2004 06 17 | 428 | 0.8− | 0.1− | 2005 11 02 | 704 | 0.0 | 1.3+ |
| 2000 09 03 | 704 | 0.1− | 0.1+ | 2004 06 17 | 428 | 0.2+ | 0.0 | 2005 11 25 | 703 | (2.1+ | 0.8+) |
| 2000 09 22 | 699 | 0.7+ | 1.3+ | 2004 06 18 | 428 | 0.0 | 0.3− | 2005 11 25 | 703 | 0.4+ | 0.7− |
| 2000 09 22 | 699 | 0.7+ | 0.5− | 2004 06 18 | 428 | 0.3− | 0.1+ | 2005 11 25 | 703 | 0.0 | 0.7+ |
| 2000 09 22 | 699 | 0.4+ | 1.1+ | 2004 06 18 | 428 | 0.2+ | 0.0 | 2005 11 25 | 703 | 1.2− | 0.7+ |
| 2000 09 22 | 699 | 0.1+ | 1.2− | 2005 10 29 | 703 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2000 09 23 | 699 | 0.6+ | 0.9− | 2005 10 29 | 703 | 0.5− | 0.5+ | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2000 09 23 | 699 | 0.2+ | 0.1+ | 2005 10 29 | 703 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2000 09 23 | 699 | (0.3+ | 3.0+) | 2005 10 29 | 703 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2000 09 23 | 699 | 0.1− | 0.4+ | 2005 10 29 | 703 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.7+ | 0.3− |
| 2000 09 25 | 691 | 0.2+ | 0.0 | 2005 10 29 | 703 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.9− |
| 2000 09 25 | 691 | 0.2+ | 0.1+ | 2005 10 29 | 703 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.4+ |
| 2000 09 25 | 691 | 0.2+ | 0.0 | 2005 10 29 | 703 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.8− |
| 2000 09 25 | 704 | (2.4− | 1.3−) | 2005 10 30 | 703 | 0.4+ | 0.4− | | | | |

**(138671)∗ 2000 SY$_3$ = 2001 YU$_{107}$**

Discovered 2000 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22516)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.92570 | | (2000.0) | | +0.92286904 | −0.30595607 |
| $n$ | 0.17427020 | $\omega$ | 246.72657 | | +0.35317171 | +0.91453956 |
| $a$ | 3.1743438 | $\Omega$ | 130.21847 | | −0.15356589 | +0.26459077 |
| $e$ | 0.2689768 | $i$ | 17.83648 | | | |
| $P$ | 5.66 | $H$ | 13.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.4+ | 0.4+ | 2002 01 09 | 704 | 0.0 | 0.6+ | 2002 02 20 | 704 | 0.3+ | 0.1+ |
| 2000 08 02 | 704 | 0.5− | 1.2+ | 2002 01 09 | 644 | 0.4+ | 1.0+ | 2002 03 04 | 644 | (0.5− | 1.5−) |
| 2000 08 02 | 704 | 0.3− | 0.4+ | 2002 01 09 | 704 | 0.5− | 0.1+ | 2002 03 04 | 644 | 0.1− | 0.1− |
| 2000 08 02 | 704 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.5− | 0.7+ | 2002 03 04 | 644 | 0.6− | 0.1− |
| 2000 08 26 | 704 | 0.3+ | 0.5+ | 2002 01 09 | 704 | 0.6+ | 0.2− | 2003 03 12 | 644 | 0.0 | 0.6+ |
| 2000 08 26 | 704 | 0.3+ | 0.9+ | 2002 01 09 | 704 | 0.1− | 0.3− | 2003 03 12 | 644 | 0.0 | 0.9+ |
| 2000 08 26 | 704 | 0.3− | 0.9+ | 2002 01 09 | 644 | 0.6+ | 0.8+ | 2003 03 12 | 644 | 0.2+ | 0.4+ |
| 2000 08 26 | 704 | 0.4+ | 0.9+ | 2002 01 13 | 704 | 1.0+ | 0.4+ | 2003 04 05 | 699 | (0.2+ | 2.2+) |
| 2000 08 26 | 704 | 0.2− | 0.6+ | 2002 01 13 | 704 | 1.4+ | 0.1+ | 2003 04 05 | 699 | (1.8+ | 1.8+) |
| 2000 09 20 | 704 | 0.0 | 0.1+ | 2002 01 13 | 704 | 1.4+ | 0.2+ | 2003 04 05 | 699 | 0.9− | 1.0+ |
| 2000 09 20 | 704 | 0.1− | 0.7+ | 2002 01 13 | 704 | 1.2+ | 0.1+ | 2003 04 05 | 699 | 0.6+ | 0.8+ |
| 2000 09 20 | 704 | 0.0 | 0.6+ | 2002 01 13 | 704 | 1.3+ | 0.0 | 2003 04 09 | 644 | 0.0 | 0.7+ |
| 2000 09 20 | 704 | 0.6− | 1.1+ | 2002 01 14 | 699 | (1.7− | 0.9−) | 2003 04 09 | 644 | 0.0 | 1.0+ |
| 2000 09 20 | 704 | 0.2− | 1.5+ | 2002 01 14 | 699 | 0.8− | 0.7+ | 2003 04 09 | 644 | 0.0 | 0.7+ |
| 2000 09 22 | 704 | 0.4+ | 0.3+ | 2002 01 14 | 699 | 0.2− | 0.2+ | 2006 08 25 | E12 | 0.7+ | 1.3+ |
| 2000 09 22 | 608 | (2.3+ | 1.0−) | 2002 01 14 | 699 | 0.0 | 0.4+ | 2006 08 25 | E12 | 0.6+ | 0.4+ |
| 2000 09 22 | 704 | 0.0 | 0.7+ | 2002 01 15 | 704 | 0.6− | 0.1+ | 2006 08 25 | E12 | 1.0+ | 0.3+ |
| 2000 09 22 | 608 | 1.8+ | 0.4− | 2002 01 15 | 704 | 1.3− | 0.1− | 2006 08 25 | E12 | 0.9+ | 0.1− |
| 2000 09 22 | 608 | (2.2+ | 0.5−) | 2002 01 15 | 704 | 1.3− | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.5− |
| 2000 09 22 | 704 | 0.5− | 1.0+ | 2002 01 22 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.0 | 0.6− |
| 2000 09 30 | 699 | 0.5− | 0.4+ | 2002 01 22 | 704 | (0.4− | 1.7+) | 2006 09 19 | 703 | 0.1+ | 0.4− |
| 2000 09 30 | 699 | 0.4− | 0.1+ | 2002 01 22 | 704 | 0.5− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.5− |
| 2000 09 30 | 699 | 0.3− | 0.2− | 2002 01 22 | 704 | 0.9− | 0.5+ | 2006 09 20 | 699 | 0.0 | 0.4− |
| 2000 09 30 | 699 | 0.3− | 0.5+ | 2002 01 23 | 704 | 0.6− | 0.3+ | 2006 09 20 | 699 | 0.6+ | 0.1+ |
| 2000 11 17 | 704 | 0.2− | 0.4− | 2002 01 23 | 704 | 0.6− | 0.3− | 2006 09 20 | 699 | 1.0+ | 0.3− |
| 2000 11 17 | 704 | 0.7+ | 0.5− | 2002 01 23 | 704 | 1.1− | 0.3+ | 2006 09 20 | 699 | 0.9+ | 0.3− |
| 2000 11 17 | 704 | 0.5+ | 0.1− | 2002 01 23 | 704 | 1.0− | 0.4− | 2006 09 28 | 703 | 0.0 | 0.5+ |
| 2000 11 17 | 704 | 0.0 | 1.0− | 2002 01 23 | 704 | 0.5− | 0.7− | 2006 09 28 | 703 | 0.2+ | 0.5+ |
| 2000 11 17 | 704 | 0.2− | 1.6− | 2002 01 26 | 644 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.1− | 0.4+ |
| 2000 11 29 | 699 | 0.9− | 0.3− | 2002 01 26 | 644 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.2+ |
| 2000 11 29 | 699 | 0.7− | 0.3− | 2002 01 26 | 644 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.5− | 0.5+ |
| 2000 11 29 | 699 | 0.2+ | 0.3− | 2002 02 05 | 644 | 0.5− | 0.0 | 2006 09 30 | 704 | 0.4− | 0.7+ |
| 2000 11 29 | 699 | (1.0+ | 2.0−) | 2002 02 05 | 644 | 0.5− | 0.1− | 2006 09 30 | 704 | 1.0+ | 0.6+ |
| 2000 12 22 | 704 | 0.1− | 0.1+ | 2002 02 05 | 644 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.7− | 0.2+ |
| 2000 12 22 | 704 | 0.9− | 0.2− | 2002 02 07 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.1− |
| 2000 12 22 | 704 | 1.3− | 0.2− | 2002 02 07 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.4− |
| 2001 12 14 | 704 | 0.7− | 0.2− | 2002 02 07 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.4− |
| 2001 12 14 | 704 | 1.1− | 1.2+ | 2002 02 07 | 704 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.4− |
| 2001 12 14 | 704 | 0.6− | 0.1− | 2002 02 07 | 704 | (2.2+ | 0.2+) | 2006 10 21 | 703 | 0.8− | 0.2+ |
| 2001 12 14 | 704 | 1.2− | 0.5+ | 2002 02 09 | 704 | 0.6− | 0.8− | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | (1.4− | 3.4+) | 2002 02 09 | 704 | (0.8− | 1.8−) | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.9+ | 0.6− | 2002 02 09 | 704 | 0.2+ | 1.5− | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.7+ | 0.7− | 2002 02 09 | 704 | 0.9− | 1.3− | 2006 10 28 | 703 | 0.2− | 0.3− |
| 2001 12 17 | 704 | 0.5+ | 1.1− | 2002 02 11 | 704 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2001 12 17 | 704 | 0.5+ | 0.6− | 2002 02 11 | 704 | 0.1+ | 0.5− | 2006 10 28 | 703 | 0.5− | 0.3− |
| 2001 12 17 | 704 | (0.3− | 1.7−) | 2002 02 11 | 704 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.0 | 0.2− |
| 2001 12 20 | 704 | 0.5+ | 0.0 | 2002 02 11 | 704 | 0.3+ | 0.1+ | 2006 11 07 | 644 | 0.5− | 0.5− |
| 2001 12 20 | 704 | 0.7+ | 0.6+ | 2002 02 11 | 704 | 0.1− | 0.3− | 2006 11 07 | 644 | 0.5− | 0.5− |
| 2001 12 20 | 704 | 0.2+ | 0.3+ | 2002 02 12 | 291 | 0.4+ | 0.1− | 2006 11 07 | 644 | 0.1− | 0.6− |
| 2001 12 20 | 704 | 0.1− | 0.9+ | 2002 02 12 | 291 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.9+ |
| 2001 12 20 | 704 | 0.2+ | 0.8+ | 2002 02 12 | 291 | 0.5+ | 0.1− | 2006 11 17 | 703 | (2.7+ | 1.0+) |
| 2001 12 23 | 608 | 0.3− | 0.0 | 2002 02 13 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2001 12 23 | 608 | 0.3+ | 0.0 | 2002 02 13 | 704 | 0.7+ | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2001 12 23 | 608 | 0.1+ | 0.6+ | 2002 02 13 | 704 | 1.2+ | 0.4+ | 2006 11 23 | 703 | 0.2+ | 0.5− |
| 2002 01 08 | 644 | 0.2− | 1.1+ | 2002 02 20 | 704 | 0.5− | 0.5− | 2006 11 23 | 703 | 0.3− | 0.3− |
| 2002 01 08 | 644 | 0.1+ | 1.1+ | 2002 02 20 | 704 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.1− | 0.7− |
| 2002 01 08 | 644 | 0.2+ | 1.0+ | 2002 02 20 | 704 | 0.1− | 0.4− | 2006 11 23 | 703 | 0.5+ | 0.4− |
| 2002 01 09 | 644 | 0.2+ | 0.6+ | 2002 02 20 | 704 | 0.6− | 0.2− | | | | |

**(138672)∗ 2000 SL$_4$**

Discovered 2000 Sept. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.52441 | | (2000.0) | | +0.84057358 | −0.52106523 |
| $n$ | 0.18122326 | $\omega$ | 158.89396 | | +0.46681748 | +0.83546510 |
| $a$ | 3.0926214 | $\Omega$ | 233.37672 | | +0.27480447 | +0.17461126 |
| $e$ | 0.1309695 | $i$ | 10.63219 | | | |
| $P$ | 5.44 | $H$ | 14.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 704 | (2.1− | 1.9+) | 2001 12 18 | 704 | 0.5− | 0.7+ | 2006 10 19 | 704 | 0.7+ | 0.1+ |
| 2000 08 03 | 704 | 1.0− | 0.0 | 2003 01 14 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2000 08 03 | 704 | 0.2+ | 0.2+ | 2003 01 14 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2000 08 03 | 704 | 1.1− | 0.4+ | 2003 01 14 | 644 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2000 08 03 | 704 | 0.6− | 0.9+ | 2003 03 08 | 699 | 1.0+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 08 03 | 704 | 0.4− | 0.6− | 2003 03 08 | 699 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 08 03 | 704 | 0.3+ | 1.1+ | 2003 03 08 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2000 08 31 | 704 | 0.6− | 0.8− | 2003 03 08 | 699 | (2.7− | 0.2+) | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 08 31 | 704 | 0.1− | 0.0 | 2006 08 12 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.9− | 0.1− | 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 08 31 | 704 | 0.5+ | 0.9+ | 2006 08 12 | 644 | 0.3− | 0.2+ | 2006 10 29 | 704 | (1.7+ | 1.5+) |
| 2000 08 31 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 699 | 0.7+ | 0.1+ | 2006 10 29 | 704 | 0.4+ | 0.3+ |
| 2000 09 22 | 691 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.6+ | 0.3+ | 2006 10 29 | 704 | 0.3+ | 0.3− |
| 2000 09 22 | 691 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.1+ | 0.4+ | 2006 10 29 | 704 | (1.5+ | 0.3+) |
| 2000 09 22 | 691 | 0.1+ | 0.1− | 2006 09 20 | 699 | 1.1+ | 0.2− | 2006 10 29 | 704 | 0.5− | 0.0 |
| 2000 09 23 | 691 | 0.2+ | 0.0 | 2006 09 21 | 704 | (2.2− | 2.0+) | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2000 09 23 | 691 | 0.2+ | 0.1+ | 2006 09 21 | 704 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.4− | 0.3+ |
| 2000 09 23 | 691 | 0.0 | 0.0 | 2006 09 21 | 704 | 0.7− | 0.4+ | 2006 11 14 | 703 | 0.6− | 0.7+ |
| 2000 09 23 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 704 | (1.7− | 0.5−) | 2006 11 14 | 703 | 0.2+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.7− | 1.2+ | 2006 09 28 | 703 | 0.4+ | 0.5− | 2006 11 19 | 704 | 1.1+ | 0.4+ | | |
| 2000 09 23 | 704 | 0.2− | 1.0+ | 2006 09 28 | 703 | 0.1+ | 0.2− | 2006 11 19 | 704 | (0.0 | 2.7+) | | |
| 2000 09 23 | 704 | 0.5+ | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.1+ | 0.6− | | |
| 2001 08 28 | 644 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.7+ | 0.2− | 2006 11 19 | 704 | 1.3− | 0.5+ | | |
| 2001 08 28 | 644 | 0.5+ | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.5− | 2006 11 19 | 704 | (1.8− | 0.2+) | | |
| 2001 08 28 | 644 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2+ | 1.0+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.4− | 0.2− | 2006 11 22 | 704 | (1.0− | 2.2+) | | |
| 2001 12 11 | 704 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.7+ | 0.0 | 2006 11 22 | 704 | 0.7− | 0.9+ | | |
| 2001 12 11 | 704 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.6+ | | |
| 2001 12 11 | 704 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.4− | 0.3− | 2006 11 22 | 704 | 0.7− | 0.4− | | |
| 2001 12 11 | 704 | 0.3+ | 0.7− | 2006 10 17 | 703 | 0.3+ | 0.9− | 2006 11 28 | 704 | 0.2+ | 0.2− | | |
| 2001 12 18 | 704 | 0.5− | 0.4+ | 2006 10 19 | 704 | 0.5− | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.4− | | |
| 2001 12 18 | 704 | 0.7− | 1.2+ | 2006 10 19 | 704 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.1− | | |
| 2001 12 18 | 704 | 0.3− | 0.6+ | 2006 10 19 | 704 | 0.6− | 0.3+ | 2006 11 28 | 704 | 0.4− | 1.0− | | |

**(138673)∗ 2000 SH$_6$ = 2002 AS$_{125}$**

Discovered 2000 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22517)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.99110 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17750983 | $\omega$ | 306.31390 | | +0.06547247 | | −0.96010750 |
| $a$ | 3.1356033 | $\Omega$ | 137.29594 | | +0.99470538 | | +0.04116980 |
| $e$ | 0.2593311 | $i$ | 23.63106 | | +0.07921211 | | +0.27658387 |
| $P$ | 5.55 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.6+ | 0.8+ | 2002 01 14 | 691 | 0.4− | 0.0 | 2002 03 11 | 644 | 0.5+ | 0.6+ | | |
| 2000 09 20 | 704 | 0.5+ | 0.4+ | 2002 01 14 | 691 | 0.2− | 0.0 | 2002 03 11 | 644 | 0.6+ | 0.6+ | | |
| 2000 09 20 | 704 | 0.6+ | 0.2+ | 2002 01 18 | 704 | (1.5− | 0.0 ) | 2002 03 20 | 704 | 0.2− | 0.3+ | | |
| 2000 09 20 | 704 | 0.2− | 0.2− | 2002 01 18 | 704 | 0.5+ | 0.5+ | 2002 03 20 | 704 | 0.3+ | 0.2− | | |
| 2000 09 23 | 704 | 0.4− | 0.9+ | 2002 01 18 | 704 | 0.3− | 0.8+ | 2002 03 20 | 704 | 0.5− | 0.3+ | | |
| 2000 09 23 | 704 | 0.0 | 0.3− | 2002 01 18 | 704 | 0.6− | 0.2+ | 2002 03 20 | 704 | 0.8− | 0.1+ | | |
| 2000 09 23 | 704 | 0.4+ | 0.3− | 2002 01 18 | 704 | 1.0− | 1.0+ | 2002 03 20 | 704 | 0.2− | 0.7+ | | |
| 2000 09 23 | 704 | 0.8+ | 0.5+ | 2002 01 21 | 704 | 0.2− | 0.5+ | 2002 03 21 | 644 | 0.1+ | 0.4+ | | |
| 2000 09 24 | 704 | 0.0 | 0.6+ | 2002 01 21 | 704 | 0.6− | 0.3+ | 2002 03 21 | 644 | 0.3+ | 0.2+ | | |
| 2000 09 24 | 704 | 0.8− | 1.2+ | 2002 01 21 | 704 | 0.6− | 0.3+ | 2002 03 21 | 644 | 0.2+ | 0.3+ | | |
| 2000 09 24 | 704 | 0.4+ | 0.3− | 2002 01 21 | 704 | 0.3− | 0.3+ | 2002 04 01 | 644 | 0.1+ | 0.2+ | | |
| 2000 09 24 | 704 | 0.7+ | 0.6+ | 2002 01 21 | 704 | 0.1+ | 0.4+ | 2002 04 01 | 644 | 0.3+ | 0.3+ | | |
| 2000 09 29 | 699 | 0.2− | 0.2+ | 2002 02 04 | 699 | 0.8+ | 0.1+ | 2002 04 01 | 644 | 0.2+ | 0.2+ | | |
| 2000 09 29 | 699 | 0.0 | 0.4− | 2002 02 04 | 699 | 0.1− | 0.1+ | 2005 07 04 | G96 | 0.5− | 0.3+ | | |
| 2000 09 29 | 699 | 0.6− | 0.2− | 2002 02 04 | 699 | 0.5− | 0.4− | 2005 07 04 | G96 | 0.3+ | 0.3+ | | |
| 2000 09 29 | 699 | 0.5− | 0.2+ | 2002 02 04 | 699 | 0.8+ | 0.3− | 2005 07 04 | G96 | 0.1+ | 0.2+ | | |
| 2000 09 30 | 699 | 0.6− | 0.0 | 2002 02 06 | 608 | 0.1+ | 0.8− | 2005 07 04 | G96 | 0.1+ | 0.4+ | | |
| 2000 09 30 | 699 | 0.3− | 0.8+ | 2002 02 06 | 608 | 0.1+ | 0.9− | 2005 07 11 | 701 | 0.0 | 0.7+ | | |
| 2000 09 30 | 699 | 0.1− | 0.4− | 2002 02 06 | 608 | 0.2− | 0.7− | 2005 07 11 | 701 | 0.2− | 0.5+ | | |
| 2000 09 30 | 699 | 0.3− | 0.1− | 2002 02 08 | 704 | 0.8− | 1.3+ | 2005 07 11 | 701 | 0.5− | 0.1+ | | |
| 2000 11 29 | 699 | 1.1+ | 0.3− | 2002 02 08 | 704 | 0.0 | 0.4+ | 2005 07 28 | 644 | 0.0 | 0.7+ | | |
| 2000 11 29 | 699 | 0.2− | 1.6+ | 2002 02 08 | 704 | 0.5− | 0.7+ | 2005 07 28 | 644 | 0.1− | 0.5+ | | |
| 2000 11 29 | 699 | 0.7+ | 1.5+ | 2002 02 08 | 704 | 1.4− | 1.0+ | 2005 07 28 | 644 | 0.1+ | 0.5+ | | |
| 2000 11 29 | 699 | 1.5− | 0.6+ | 2002 02 08 | 704 | 0.8− | 0.9+ | 2006 10 01 | E12 | 0.1− | 0.1+ | | |
| 2001 12 20 | 704 | 0.5+ | 1.4− | 2002 02 12 | 704 | 1.4+ | 0.6+ | 2006 10 01 | E12 | 0.3+ | 0.2− | | |
| 2001 12 20 | 704 | 0.1+ | 0.7− | 2002 02 12 | 704 | (1.9+ | 0.2+) | 2006 10 01 | E12 | 0.2+ | 0.2− | | |
| 2001 12 20 | 704 | 1.0+ | 0.3− | 2002 02 12 | 704 | (1.7+ | 0.1−) | 2006 10 01 | E12 | 0.1+ | 0.4+ | | |
| 2001 12 20 | 704 | 0.1− | 0.0 | 2002 02 12 | 704 | (1.7+ | 0.5+) | 2006 10 25 | E12 | 1.2+ | 0.5− | | |
| 2001 12 20 | 704 | 0.3+ | 0.4− | 2002 02 12 | 704 | (1.7+ | 0.1+) | 2006 10 25 | E12 | 1.2+ | 0.2+ | | |
| 2001 12 22 | 608 | 0.3+ | 0.7− | 2002 02 14 | 644 | 0.3+ | 0.2+ | 2006 11 01 | 703 | 0.6+ | 0.4− | | |
| 2001 12 22 | 608 | 0.1− | 0.5− | 2002 02 14 | 644 | 0.3+ | 0.3+ | 2006 11 01 | 703 | 0.3+ | 0.0 | | |
| 2001 12 22 | 608 | 0.3+ | 0.5− | 2002 02 14 | 644 | 0.5+ | 0.3+ | 2006 11 01 | 703 | 0.4+ | 0.1− | | |
| 2002 01 07 | 608 | 0.8+ | 0.3+ | 2002 02 23 | 644 | 0.3− | 0.3+ | 2006 11 01 | 703 | 0.1+ | 0.4+ | | |
| 2002 01 07 | 608 | 0.9+ | 0.0 | 2002 02 23 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 704 | 1.5− | 0.3− | | |
| 2002 01 07 | 608 | 0.6+ | 0.4+ | 2002 02 23 | 644 | 0.1− | 0.4+ | 2006 11 13 | 704 | (1.9− | 0.8−) | | |
| 2002 01 11 | 704 | 0.4− | 0.2+ | 2002 02 23 | 644 | 0.2+ | 0.0 | 2006 11 13 | 704 | 0.9− | 0.7− | | |
| 2002 01 11 | 704 | 0.2− | 0.6+ | 2002 02 23 | 644 | 0.8+ | 0.4+ | 2006 11 13 | 704 | 0.2+ | 0.7− | | |
| 2002 01 11 | 704 | 0.2− | 0.3+ | 2002 02 23 | 644 | 0.5+ | 0.1+ | 2006 11 13 | 704 | 1.1− | 0.4− | | |
| 2002 01 14 | 704 | 0.0 | 0.3+ | 2002 03 06 | 704 | (2.1+ | 0.3+) | 2006 11 19 | 703 | 0.7+ | 0.3+ | | |
| 2002 01 14 | 704 | 0.4− | 0.7+ | 2002 03 06 | 704 | (2.1+ | 0.7+) | 2006 11 19 | 703 | 0.3− | 0.7− | | |
| 2002 01 14 | 704 | 0.7− | 0.2+ | 2002 03 06 | 704 | (1.7+ | 0.3−) | 2006 11 19 | 703 | 0.4+ | 0.1− | | |
| 2002 01 14 | 704 | 0.3+ | 0.3− | 2002 03 06 | 704 | (2.0+ | 1.1−) | 2006 11 19 | 703 | 0.2− | 0.2+ | | |
| 2002 01 14 | 704 | 0.3− | 0.3− | 2002 03 06 | 704 | (2.2+ | 0.0 ) | | | | | | |
| 2002 01 14 | 691 | 0.0 | 0.6− | 2002 03 11 | 644 | 0.5+ | 0.4+ | | | | | | |

**(138674)∗ 2000 SJ$_6$**

Discovered 2000 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.14849 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17154022 | $\omega$ | 303.68232 | | +0.94570141 | | −0.13519102 |
| $a$ | 3.2079339 | $\Omega$ | 65.67082 | | +0.27349300 | | +0.82238566 |
| $e$ | 0.2019912 | $i$ | 18.92901 | | −0.17564291 | | +0.55263480 |
| $P$ | 5.75 | $H$ | 13.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 1.6+ | 0.2+ | 2000 12 22 | 704 | 0.5+ | 1.0+ | 2004 04 16 | 704 | 0.4+ | 0.1− | | |
| 2000 08 01 | 704 | 0.8+ | 0.3− | 2000 12 22 | 704 | 0.1− | 1.4+ | 2004 04 16 | 704 | 0.3− | 0.5+ | | |
| 2000 08 01 | 704 | (0.5+ | 2.0−) | 2000 12 22 | 704 | 0.5+ | 0.1+ | 2004 04 16 | 704 | (0.2+ | 1.7+) | | |
| 2000 08 26 | 704 | 0.1+ | 0.1+ | 2000 12 23 | 704 | (2.6− | 0.3+) | 2004 04 16 | 704 | 0.4+ | 0.5+ | | |
| 2000 08 26 | 704 | 1.0− | 0.0 | 2000 12 23 | 704 | 1.7− | 0.7+ | 2004 04 23 | 704 | (0.5+ | 1.5+) | | |
| 2000 08 26 | 704 | 0.3− | 0.4+ | 2000 12 23 | 704 | 1.0− | 0.7+ | 2004 04 23 | 704 | (1.7+ | 0.5−) | | |
| 2000 08 26 | 704 | 0.2− | 0.7+ | 2000 12 23 | 704 | 0.3+ | 1.2+ | 2004 04 23 | 704 | 0.3+ | 0.7+ | | |
| 2000 08 26 | 704 | 0.5− | 0.1− | 2000 12 23 | 704 | 0.2− | 0.3+ | 2004 04 23 | 704 | 0.5+ | 0.8+ | | |
| 2000 09 20 | 704 | 0.2+ | 0.0 | 2001 12 09 | 704 | 0.3+ | 0.5+ | 2004 04 23 | 704 | 0.8+ | 0.8+ | | |
| 2000 09 20 | 704 | 0.7+ | 0.9− | 2001 12 09 | 704 | 1.1+ | 0.7+ | 2006 09 29 | 699 | 0.4+ | 0.1− | | |
| 2000 09 20 | 704 | 0.1− | 0.8+ | 2001 12 09 | 704 | 0.8− | 0.5− | 2006 09 29 | 699 | 0.5+ | 0.3− | | |
| 2000 09 20 | 704 | 0.4+ | 0.6+ | 2001 12 14 | 704 | (0.1− | 1.8−) | 2006 09 29 | 699 | 1.2+ | 0.1+ | | |
| 2000 09 20 | 704 | 0.8+ | 0.4+ | 2001 12 14 | 704 | (1.3+ | 1.7−) | 2006 09 29 | 699 | 0.1+ | 0.2− | | |
| 2000 09 23 | 704 | 0.2− | 2.0+ | 2001 12 14 | 704 | (0.8− | 2.1−) | 2006 09 30 | 704 | (2.6+ | 0.3−) | | |
| 2000 09 23 | 704 | 0.5− | 0.5+ | 2001 12 14 | 704 | (0.3− | 1.9−) | 2006 09 30 | 704 | 0.2− | 0.8+ | | |
| 2000 09 23 | 704 | 0.8+ | 0.6− | 2001 12 22 | 704 | 0.5+ | 0.2− | 2006 09 30 | 704 | 1.2− | 1.0+ | | |
| 2000 09 23 | 704 | 0.4+ | 0.6− | 2001 12 22 | 704 | 0.6+ | 0.1− | 2006 09 30 | 704 | 0.3+ | 0.5+ | | |
| 2000 09 25 | 704 | 0.2− | 0.0 | 2001 12 22 | 704 | 0.6+ | 0.0 | 2006 09 30 | 704 | 0.4− | 0.2− | | |
| 2000 09 25 | 704 | 0.5− | 0.0 | 2002 01 05 | 699 | 0.2+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.3− | | |
| 2000 09 25 | 704 | 0.1+ | 0.6− | 2002 01 05 | 699 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.3− | | |
| 2000 09 25 | 704 | 0.1− | 0.6− | 2002 01 05 | 699 | 0.8− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.3− | | |
| 2000 09 25 | 704 | 0.2− | 0.3+ | 2002 01 05 | 699 | 0.8− | 1.3+ | 2006 10 17 | 703 | 0.3+ | 0.4− | | |
| 2000 09 29 | 699 | 0.6− | 0.3− | 2002 01 06 | 704 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.4− | | |
| 2000 09 29 | 699 | 0.6− | 0.4− | 2002 01 06 | 704 | 0.9− | 0.8+ | 2006 10 17 | 703 | 0.4+ | 0.4− | | |
| 2000 09 29 | 699 | 0.4− | 0.2− | 2002 01 06 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.4− | | |
| 2000 09 29 | 699 | 0.1− | 0.5− | 2002 01 14 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.5− | | |
| 2000 09 30 | 699 | 0.3− | 0.2+ | 2002 01 14 | 644 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.3− | | |
| 2000 09 30 | 699 | 0.1− | 0.0 | 2002 01 14 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.5− | | |
| 2000 09 30 | 699 | 0.3− | 0.1+ | 2002 01 25 | 704 | (1.5− | 4.9−) | 2006 10 28 | 703 | 0.1− | 0.1− | | |
| 2000 09 30 | 699 | 0.4− | 0.0 | 2002 01 25 | 704 | (0.3− | 4.3−) | 2006 11 10 | 704 | 0.1− | 0.1+ | | |
| 2000 10 04 | 608 | 1.4− | 0.7+ | 2002 01 25 | 704 | (0.3− | 3.3−) | 2006 11 10 | 704 | 0.2− | 0.1+ | | |
| 2000 10 04 | 608 | 1.1− | 0.6+ | 2002 01 25 | 704 | (1.1+ | 3.5−) | 2006 11 10 | 704 | 0.1− | 0.6+ | | |
| 2000 10 04 | 608 | 1.5− | 0.8+ | 2003 02 26 | 704 | (0.5+ | 1.5−) | 2006 11 10 | 704 | 0.2− | 0.1+ | | |
| 2000 10 18 | 704 | 0.2− | 0.2− | 2003 02 26 | 704 | 1.3+ | 0.4+ | 2006 11 10 | 704 | 0.1− | 0.1+ | | |
| 2000 10 18 | 704 | 0.4− | 0.1+ | 2003 02 26 | 704 | 0.0 | 0.1+ | 2006 11 14 | 644 | 0.3+ | 0.4− | | |
| 2000 10 18 | 704 | 0.7− | 0.7− | 2003 02 26 | 704 | 0.3− | 0.3+ | 2006 11 14 | 644 | 0.4+ | 0.2− | | |
| 2000 10 18 | 704 | 0.4+ | 0.1+ | 2003 03 09 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 644 | 0.4+ | 0.2− | | |
| 2000 11 17 | 704 | 0.3− | 0.2+ | 2003 03 09 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.7+ | 0.4− | | |
| 2000 11 17 | 704 | 0.7+ | 0.0 | 2003 03 09 | 644 | 0.5+ | 0.7+ | 2006 11 19 | 703 | 0.2+ | 0.8− | | |
| 2000 11 17 | 704 | 0.0 | 0.2+ | 2003 03 22 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.3+ | 0.7− | | |
| 2000 11 17 | 704 | 0.4+ | 0.4− | 2003 03 22 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.5+ | 0.9− | | |
| 2000 11 17 | 704 | 0.7+ | 0.4− | 2003 03 22 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.7− | | |
| 2000 11 29 | 699 | 0.4− | 1.9+ | 2004 04 14 | 699 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.7− | | |
| 2000 11 29 | 699 | 0.4− | 1.3+ | 2004 04 14 | 699 | (0.5− | 2.2+) | 2006 11 21 | 704 | 0.5− | 0.3+ | | |
| 2000 11 29 | 699 | 0.1− | 1.4+ | 2004 04 14 | 699 | 0.5− | 1.2− | 2006 11 21 | 704 | 0.3− | 0.6+ | | |
| 2000 11 29 | 699 | 0.1− | 1.7+ | 2004 04 14 | 699 | 0.1− | 0.8+ | 2006 11 21 | 704 | 1.0− | 0.8− | | |

**(138675)∗ 2000 SU$_8$ = 2002 GO$_{40}$**

Discovered 2000 Sept. 23 by P. G. Comba at Prescott.

Id. A. Doppler (*MPO* 31331)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.32303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30767525 | $\omega$ | 183.59529 | | +0.10774162 | −0.99358902 | |
| $a$ | 2.1730731 | $\Omega$ | 260.22171 | | +0.91300590 | +0.11251759 | |
| $e$ | 0.0319273 | $i$ | 1.99131 | | +0.39346153 | +0.01098373 | |
| $P$ | 3.20 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 684 | 1.3+ | 0.5− | 2002 04 04 | 644 | 0.3− | 0.8+ | 2005 03 13 | G96 | 0.1+ | 0.0 | |
| 2000 09 23 | 684 | 0.9+ | 0.1− | 2002 04 04 | 644 | 0.4− | 0.7+ | 2005 03 13 | G96 | 0.0 | 0.2− | |
| 2000 09 23 | 684 | 0.7+ | 0.2+ | 2002 04 04 | 644 | 0.2− | 0.5+ | 2005 03 13 | G96 | 0.1− | 0.2+ | |
| 2000 09 24 | 684 | 0.0 | 0.7− | 2002 04 05 | 699 | 0.2+ | 1.1+ | 2005 03 13 | G96 | 0.0 | 0.1+ | |
| 2000 09 24 | 684 | 0.7+ | 0.0 | 2002 04 05 | 699 | 0.1+ | 0.7+ | 2006 05 24 | G96 | 0.1+ | 0.0 | |
| 2000 09 24 | 684 | 0.2− | 0.6− | 2002 04 05 | 699 | 0.8− | 1.0+ | 2006 05 24 | G96 | 0.4− | 0.0 | |
| 2000 09 25 | 684 | 0.5− | 0.1− | 2002 04 05 | 699 | 1.3+ | 0.1+ | 2006 05 24 | G96 | 0.3+ | 0.1− | |
| 2000 09 25 | 684 | 0.0 | 0.1− | 2002 04 14 | 704 | (2.0+ | 0.0 ) | 2006 05 24 | G96 | 0.4+ | 0.5− | |
| 2000 09 25 | 684 | 0.8− | 0.2+ | 2002 04 14 | 704 | 0.3− | 0.4+ | 2006 08 13 | 644 | 0.2+ | 0.3+ | |
| 2000 11 17 | 691 | 0.5+ | 0.4− | 2002 04 14 | 704 | 0.6− | 0.0 | 2006 08 13 | 644 | 0.1+ | 0.2+ | |
| 2000 11 17 | 691 | 1.0− | 0.3+ | 2002 04 14 | 704 | 0.4+ | 0.5− | 2006 08 13 | 644 | 0.5+ | 0.3+ | |
| 2000 11 17 | 691 | 0.4− | 1.3+ | 2003 08 25 | 704 | 0.0 | 1.2+ | 2006 10 19 | G96 | 0.1− | 0.2− | |
| 2002 03 13 | 704 | 1.4+ | 0.4− | 2003 08 25 | 704 | 1.3− | 1.2+ | 2006 10 19 | G96 | 0.8− | 0.2+ | |
| 2002 03 13 | 704 | 1.0+ | 0.2− | 2003 08 25 | 704 | 1.0− | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.1− | |
| 2002 03 13 | 704 | 0.0 | 0.0 | 2003 09 29 | 684 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.2+ | |
| 2002 03 13 | 704 | 0.3+ | 1.0+ | 2003 09 29 | 684 | 0.5+ | 0.1+ | | | | | |

**(138676)∗ 2000 SZ$_{15}$ = 2002 AA$_{18}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22522)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.47323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17697321 | $\omega$ | 96.39142 | | +0.36494475 | −0.92919251 | |
| $a$ | 3.1419386 | $\Omega$ | 331.98096 | | +0.79744814 | +0.34436933 | |
| $e$ | 0.2292516 | $i$ | 7.14772 | | +0.48051201 | +0.13420527 | |
| $P$ | 5.57 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 1.0+ | 0.4+ | 2002 01 09 | 291 | 0.3+ | 0.4− | 2002 03 12 | 644 | 0.1+ | 0.0 | |
| 2000 09 01 | 704 | 0.6+ | 0.2+ | 2002 01 09 | 291 | 0.4+ | 0.5− | 2002 03 12 | 644 | 0.2− | 0.4+ | |
| 2000 09 01 | 704 | 0.2+ | 0.2+ | 2002 01 09 | 291 | 0.4+ | 0.4− | 2002 03 12 | 644 | 0.1+ | 0.0 | |
| 2000 09 01 | 704 | 0.3+ | 0.8+ | 2002 01 09 | 608 | 0.0 | 1.1+ | 2002 03 12 | 644 | 0.1− | 0.4+ | |
| 2000 09 01 | 704 | 0.3+ | 0.5+ | 2002 01 09 | 608 | 0.4+ | 1.2+ | 2002 03 12 | 644 | 0.2+ | 0.1+ | |
| 2000 09 21 | 699 | 0.5− | 0.7+ | 2002 01 09 | 608 | 0.0 | 0.9+ | 2002 04 17 | 704 | 0.2+ | 0.1− | |
| 2000 09 21 | 699 | 0.2− | 0.7+ | 2002 01 14 | 608 | 0.9+ | 0.2+ | 2002 04 17 | 704 | 0.3− | 0.9+ | |
| 2000 09 21 | 699 | 0.8− | 0.4+ | 2002 01 14 | 704 | 0.4+ | 0.2+ | 2002 04 17 | 704 | 1.2− | 0.1+ | |
| 2000 09 21 | 699 | 0.5− | 0.3+ | 2002 01 14 | 608 | 0.3+ | 0.3+ | 2005 07 03 | 644 | 0.5− | 0.4+ | |
| 2000 09 23 | 704 | 0.7− | 1.4+ | 2002 01 14 | 704 | 0.8+ | 0.2+ | 2005 07 03 | 644 | 0.7− | 1.1+ | |
| 2000 09 23 | 704 | 0.1− | 0.6− | 2002 01 14 | 608 | 1.0+ | 0.2+ | 2005 07 03 | 644 | 0.0 | 0.7+ | |
| 2000 09 23 | 704 | 0.8− | 0.6+ | 2002 01 14 | 704 | 0.4+ | 0.4− | 2005 07 03 | 644 | 0.4− | 0.8+ | |
| 2000 09 23 | 704 | 0.1+ | 0.6+ | 2002 01 14 | 704 | 0.6+ | 0.4− | 2005 07 03 | 644 | 0.3− | 0.5+ | |
| 2000 09 23 | 704 | 0.3− | 0.4+ | 2002 01 14 | 704 | 0.5+ | 0.8− | 2005 07 03 | 644 | 0.7− | 0.6+ | |
| 2000 09 24 | 704 | 0.9+ | 0.5+ | 2002 01 21 | 704 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.1− | 0.2− | |
| 2000 09 24 | 704 | 0.2− | 0.2+ | 2002 01 21 | 704 | 0.2+ | 0.6− | 2005 10 25 | G96 | 0.7+ | 0.1+ | |
| 2000 09 24 | 704 | 0.7− | 0.1+ | 2002 01 21 | 704 | 0.4+ | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.2− | |
| 2000 09 24 | 704 | 0.2+ | 0.5+ | 2002 01 21 | 704 | 0.0 | 0.5+ | 2005 10 25 | G96 | 0.3− | 0.3+ | |
| 2000 09 25 | 704 | 0.4− | 0.9+ | 2002 01 21 | 704 | 0.3− | 0.2+ | 2006 08 24 | 704 | 0.1+ | 0.1+ | |
| 2000 09 25 | 704 | 0.4− | 0.4+ | 2002 01 23 | 704 | 0.2+ | 0.4− | 2006 08 24 | 704 | 0.3+ | 0.4− | |
| 2000 09 25 | 704 | 0.0 | 0.4+ | 2002 01 23 | 704 | 0.2+ | 0.1− | 2006 08 24 | 704 | 0.5+ | 0.2− | |
| 2000 09 25 | 704 | 0.4− | 0.4+ | 2002 01 23 | 704 | 0.3+ | 0.3+ | 2006 08 24 | 704 | 0.6+ | 0.0 | |
| 2000 09 25 | 704 | 0.2+ | 0.5+ | 2002 01 23 | 704 | 0.6+ | 0.1− | 2006 08 29 | 703 | 0.4+ | 0.3− | |
| 2000 09 25 | 704 | 0.8− | 0.1+ | 2002 01 23 | 704 | 0.3+ | 0.4− | 2006 08 29 | 703 | 0.9− | 0.8− | |
| 2000 09 25 | 704 | 0.4− | 0.3+ | 2002 01 25 | 704 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.7− | 0.0 | |
| 2000 09 25 | 704 | 0.2− | 0.7+ | 2002 01 25 | 704 | 1.1− | 0.5+ | 2006 08 29 | 703 | 0.2+ | 0.3+ | |
| 2000 09 25 | 704 | 0.2− | 0.4− | 2002 01 25 | 704 | 0.7+ | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.4+ | |
| 2000 09 25 | 704 | 1.5− | 0.9+ | 2002 01 25 | 704 | 0.7+ | 0.4+ | 2006 08 30 | 704 | 0.5+ | 0.5+ | |
| 2000 09 26 | 704 | 0.2− | 0.8+ | 2002 01 25 | 704 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.6+ | |
| 2000 09 26 | 704 | 0.4− | 0.5+ | 2002 01 25 | 704 | 0.5− | 0.1− | 2006 08 30 | 704 | (1.5+ | 0.9−) | |
| 2000 09 26 | 704 | 0.2− | 0.7+ | 2002 01 25 | 704 | 0.8+ | 0.2+ | 2006 08 30 | 704 | 0.9+ | 0.6+ | |
| 2000 09 26 | 704 | 0.4+ | 0.2+ | 2002 01 25 | 704 | 0.2− | 0.4+ | 2006 10 19 | 703 | (0.0 | 2.4−) | |
| 2000 09 26 | 704 | 0.0 | 0.2− | 2002 01 25 | 704 | 0.3− | 0.6+ | 2006 10 19 | 703 | (1.8+ | 2.7−) | |
| 2000 09 26 | 704 | 0.2− | 0.3− | 2002 01 25 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.1− | |
| 2000 09 26 | 704 | 0.4+ | 0.7+ | 2002 01 25 | 704 | 0.6− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.1− | |
| 2000 09 26 | 704 | 0.2− | 0.6+ | 2002 01 25 | 704 | 0.5− | 0.5+ | 2006 10 20 | 704 | 0.4+ | 0.2+ | |
| 2000 09 26 | 704 | 0.5− | 0.3+ | 2002 02 05 | 699 | 0.1− | 0.1+ | 2006 10 20 | 704 | 0.5− | 0.3+ | |
| 2000 09 26 | 704 | 0.2+ | 1.0− | 2002 02 05 | 699 | 0.2− | 0.1+ | 2006 10 20 | 704 | 0.0 | 0.3+ | |
| 2000 10 01 | 699 | 0.6+ | 0.2− | 2002 02 05 | 699 | 0.2+ | 0.2+ | 2006 10 20 | 704 | 0.1− | 0.4+ | |
| 2000 10 01 | 699 | 1.6− | 1.0+ | 2002 02 05 | 699 | 0.5+ | 0.7+ | 2006 10 20 | 704 | 1.4− | 0.3+ | |
| 2000 10 01 | 699 | 0.2− | 1.0+ | 2002 02 07 | 704 | 0.5− | 0.2+ | 2006 10 23 | 703 | 0.3− | 0.4− | |
| 2000 10 01 | 699 | 0.5− | 0.6+ | 2002 02 07 | 704 | 0.7− | 0.1− | 2006 10 23 | 703 | 0.1− | 1.1− | |
| 2000 10 03 | 704 | 0.2− | 0.7+ | 2002 02 07 | 704 | 0.4− | 0.2+ | 2006 10 23 | 703 | 0.1+ | 1.1− | |
| 2000 10 03 | 704 | 0.6+ | 0.3+ | 2002 02 07 | 704 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.2+ | 0.9− | |
| 2000 10 03 | 704 | 0.1− | 0.0 | 2002 02 07 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 703 | 0.2+ | 0.9− | |
| 2000 10 03 | 704 | 0.2− | 0.4− | 2002 02 07 | 608 | 0.4− | 0.1+ | 2006 10 29 | 703 | 0.2− | 0.8− | |
| 2000 10 03 | 704 | 0.6− | 1.0− | 2002 02 07 | 608 | 0.3− | 0.1− | 2006 10 29 | 703 | 0.2+ | 0.9− | |
| 2000 11 18 | 699 | 1.2− | 0.0 | 2002 02 07 | 608 | 0.1− | 0.1+ | 2006 10 29 | 703 | 0.2+ | 0.3− | |
| 2000 11 18 | 699 | 0.0 | 0.2+ | 2002 02 10 | 704 | 0.4− | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.9− | |
| 2000 11 18 | 699 | 0.5− | 1.2+ | 2002 02 10 | 704 | 0.0 | 0.4+ | 2006 11 02 | G96 | 0.4+ | 0.8− | |
| 2000 11 18 | 699 | 0.2+ | 1.8− | 2002 02 10 | 704 | 0.1− | 0.3+ | 2006 11 02 | G96 | 0.3+ | 1.0− | |
| 2001 11 16 | 699 | (1.6− | 0.8−) | 2002 02 10 | 704 | 0.0 | 0.5+ | 2006 11 02 | G96 | 0.2+ | 0.8− | |
| 2001 11 16 | 699 | 1.0+ | 0.7+ | 2002 02 10 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.4− | |
| 2001 11 16 | 699 | 0.6− | 0.0 | 2002 02 12 | 704 | 0.4− | 1.1+ | 2006 11 13 | 644 | 0.1+ | 0.5− | |
| 2001 11 16 | 699 | 0.7− | 0.8+ | 2002 02 12 | 704 | 0.1+ | 1.5+ | 2006 11 13 | 644 | 0.1− | 0.3− | |
| 2001 11 24 | 704 | 0.1− | 0.5+ | 2002 02 12 | 704 | (0.0 | 1.6+) | 2006 11 15 | 703 | 0.1+ | 0.3− | |
| 2001 11 24 | 704 | 0.4− | 0.2+ | 2002 02 12 | 704 | (0.3+ | 1.7+) | 2006 11 15 | 703 | 0.3+ | 0.8− | |
| 2001 11 24 | 704 | 0.5− | 0.1− | 2002 02 12 | 704 | (0.2+ | 2.0+) | 2006 11 15 | 703 | 0.1− | 0.5− | |
| 2001 11 24 | 704 | 0.2+ | 0.6+ | 2002 02 12 | 143 | (3.2− | 6.9+) | 2006 11 15 | 703 | 0.3− | 0.6− | |
| 2001 11 24 | 704 | 0.3− | 0.5− | 2002 02 12 | 143 | (7.1− | 6.7+) | 2006 11 15 | 704 | 0.0 | 0.2− | |
| 2002 01 05 | 691 | 0.2+ | 0.5+ | 2002 02 14 | 644 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.2− | 0.4− | |
| 2002 01 05 | 691 | 0.1+ | 0.4+ | 2002 02 14 | 644 | 0.4+ | 0.4+ | 2006 11 15 | 704 | 0.2− | 0.7− | |
| 2002 01 05 | 691 | 0.3+ | 0.7+ | 2002 02 14 | 644 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.3− | 0.7− | |
| 2002 01 07 | 699 | 0.1+ | 0.3− | 2002 02 20 | 704 | 0.4− | 0.3− | 2006 11 15 | 704 | 0.3− | 0.8− | |
| 2002 01 07 | 699 | 0.7− | 0.3+ | 2002 02 20 | 704 | 0.0 | 0.2− | 2006 11 21 | 703 | 0.3+ | 0.7+ | |
| 2002 01 07 | 699 | 0.2− | 0.0 | 2002 02 20 | 704 | 0.0 | 0.6− | 2006 11 21 | 703 | 0.5+ | 0.0 | |
| 2002 01 07 | 699 | 0.6+ | 0.9+ | 2002 02 20 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 703 | 0.1− | 0.7− | |
| 2002 01 09 | 704 | 0.6− | 0.5− | 2002 02 20 | 704 | 0.3+ | 0.1− | 2006 11 21 | 703 | 0.4− | 0.8− | |
| 2002 01 09 | 608 | 0.5+ | 1.2+ | 2002 03 04 | 644 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 1.2+ | 0.4+ | |
| 2002 01 09 | 704 | 0.3− | 0.4− | 2002 03 04 | 644 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.8+ | 0.6+ | |
| 2002 01 09 | 608 | 0.5+ | 1.1+ | 2002 03 04 | 644 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.9+ | 0.3+ | |
| 2002 01 09 | 608 | 0.0 | 1.0+ | 2002 03 06 | 704 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.2+ | |
| 2002 01 09 | 704 | 0.5− | 0.4− | 2002 03 06 | 704 | 0.6+ | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.4− | |
| 2002 01 09 | 704 | 0.3− | 0.5− | 2002 03 06 | 704 | 0.4+ | 1.1− | | | | | |
| 2002 01 09 | 704 | 0.5− | 0.3− | 2002 03 12 | 644 | 0.0 | 0.2+ | | | | | |

**(138677)∗ 2000 SU$_{16}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.52551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18142062 | $\omega$ | 225.06264 | | +0.08319629 | −0.99209504 | |
| $a$ | 3.0903781 | $\Omega$ | 220.44332 | | +0.95022932 | +0.10737991 | |
| $e$ | 0.2424096 | $i$ | 8.32700 | | +0.30023760 | −0.06493827 | |
| $P$ | 5.43 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.2− | 0.4+ | 2000 10 25 | 704 | 0.3+ | 0.6− | 2003 05 24 | 691 | (0.3+ | 2.3+) | |
| 2000 09 03 | 704 | 0.1+ | 0.3+ | 2000 10 25 | 704 | 0.5+ | 0.9+ | 2003 05 24 | 691 | (0.0 | 2.2+) | |
| 2000 09 03 | 704 | 1.1+ | 0.1− | 2000 10 25 | 704 | 0.0 | 0.3+ | 2003 05 24 | 691 | (0.1+ | 1.9+) | |
| 2000 09 23 | 704 | 0.9− | 0.1− | 2000 11 01 | 704 | 0.4− | 0.1− | 2006 08 29 | 703 | 0.3− | 0.7− | |
| 2000 09 23 | 704 | 0.2+ | 0.9+ | 2000 11 01 | 704 | 0.2− | 1.5+ | 2006 08 29 | 703 | 0.3− | 0.1+ | |
| 2000 09 23 | 704 | 0.1+ | 0.9+ | 2000 11 01 | 704 | 1.3+ | 0.6+ | 2006 08 29 | 703 | 0.8− | 0.0 | |
| 2000 09 23 | 704 | 0.1+ | 0.3+ | 2000 11 01 | 704 | 0.7+ | 0.5− | 2006 10 21 | D35 | 0.1+ | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.3− | 0.6− | 2002 01 11 | 704 | 1.2− | 1.3+ | 2006 10 21 | D35 | 0.0 | 0.2+ |
| 2000 09 24 | 704 | 1.2− | 1.9+ | 2002 01 11 | 704 | 0.2− | 0.5+ | 2006 10 21 | D35 | 0.1+ | 0.2+ |
| 2000 09 24 | 704 | 0.6+ | 0.6+ | 2002 01 11 | 704 | 1.0+ | 0.5+ | 2006 11 14 | 704 | 0.4+ | 0.3+ |
| 2000 09 24 | 704 | 0.1− | 0.4− | 2002 01 22 | 704 | 0.5+ | 0.8+ | 2006 11 14 | 704 | 0.2− | 0.3− |
| 2000 09 24 | 704 | 0.2+ | 0.1+ | 2002 01 22 | 704 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.1+ | 0.8+ |
| 2000 09 24 | 704 | 0.1− | 0.0 | 2002 01 22 | 704 | 0.4− | 1.4+ | 2006 11 14 | 704 | 1.0− | 0.1− |
| 2000 09 24 | 704 | 1.1− | 0.1+ | 2002 01 22 | 704 | (0.1+ | 1.8+) | 2006 11 17 | 704 | 1.0+ | 0.8− |
| 2000 09 24 | 704 | 0.0 | 0.2− | 2002 02 03 | 608 | 0.0 | 0.2− | 2006 11 17 | 704 | 1.3+ | 0.2− |
| 2000 09 24 | 704 | 0.5− | 0.0 | 2002 02 03 | 608 | 0.3+ | 0.5− | 2006 11 17 | 704 | 0.3− | 1.5− |
| 2000 09 24 | 704 | 0.3− | 0.2+ | 2002 02 03 | 608 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2000 09 24 | 704 | 0.1+ | 0.0 | 2002 02 06 | 699 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2000 09 24 | 704 | 0.3+ | 0.1− | 2002 02 06 | 699 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2000 09 24 | 704 | 0.4− | 0.9+ | 2002 02 06 | 699 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2000 09 27 | 704 | 0.2− | 0.5+ | 2002 02 06 | 699 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2000 09 27 | 704 | 0.6− | 0.2+ | 2002 02 07 | 644 | 0.6+ | 1.3+ | 2006 11 18 | 704 | 0.8− | 0.2− |
| 2000 09 27 | 704 | 0.3− | 0.4+ | 2002 02 07 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2000 09 27 | 704 | 0.3− | 0.0 | 2002 02 07 | 644 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2000 09 27 | 704 | 0.2− | 0.3− | 2002 02 17 | 644 | 0.5+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2000 10 02 | 699 | 0.4− | 0.1+ | 2002 02 17 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.5+ | 0.6− |
| 2000 10 02 | 699 | 0.0 | 0.0 | 2002 02 17 | 644 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.5− |
| 2000 10 02 | 699 | 0.8− | 0.1+ | 2002 03 05 | 645 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.1− | 0.4− |
| 2000 10 02 | 699 | 0.7− | 0.3+ | 2002 03 05 | 645 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.5− |
| 2000 10 03 | 704 | 1.0− | 0.4+ | 2002 03 12 | 704 | 0.6+ | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2000 10 03 | 704 | 0.2+ | 0.4+ | 2002 03 12 | 704 | 0.0 | 0.6+ | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2000 10 03 | 704 | 0.5+ | 0.1− | 2002 03 12 | 704 | 0.5+ | 0.9+ | 2006 11 29 | 704 | 0.3+ | 0.6+ |
| 2000 10 03 | 704 | 0.6+ | 0.5+ | 2003 05 06 | 291 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2000 10 03 | 704 | 0.1+ | 1.1+ | 2003 05 06 | 291 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2000 10 25 | 704 | 0.1+ | 0.7+ | 2003 05 06 | 291 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 0.1+ | 0.6+ |

**(138678)∗ 2000 SS$_{23}$**

Discovered 2000 Sept. 26 by W. K. Y. Yeung at Desert Beaver Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.98152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23187509 | $\omega$ | 126.00095 | | +0.92051251 | −0.38943441 | |
| $a$ | 2.6240171 | $\Omega$ | 256.93709 | | +0.34722955 | +0.85245075 | |
| $e$ | 0.2321707 | $i$ | 1.85804 | | +0.17913224 | +0.34881020 | |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 09 15 | 260 | 0.2− | 0.3+ | 2000 11 01 | 704 | 1.2+ | 0.6− | 2004 08 27 | 703 | 1.1+ | 0.2+ |
| 1987 09 15 | 260 | 0.4+ | 0.1− | 2000 11 01 | 704 | 0.2− | 0.3− | 2004 09 08 | 704 | 0.2− | 0.1− |
| 1987 10 14 | 260 | 0.8− | 0.4+ | 2000 11 01 | 704 | 0.3− | 0.5− | 2004 09 08 | 704 | 0.3+ | 0.8+ |
| 1987 10 14 | 260 | 0.7− | 0.3+ | 2000 11 01 | 704 | 0.1− | 0.2− | 2004 09 08 | 704 | 0.3− | 0.3+ |
| 1996 10 14 | 261 | 0.2+ | 0.2+ | 2000 11 01 | 704 | 0.0 | 0.3− | 2004 09 08 | 704 | 0.3− | 1.1+ |
| 1996 10 14 | 261 | 0.1− | 0.4− | 2000 11 03 | 704 | 0.3− | 0.1+ | 2004 09 08 | 704 | 0.6+ | 1.0+ |
| 2000 08 05 | 608 | 1.4+ | 0.8+ | 2000 11 03 | 704 | 0.7− | 0.5− | 2004 09 10 | 704 | (1.5− | 3.8+) |
| 2000 08 05 | 608 | 1.2+ | 0.9+ | 2000 11 03 | 704 | 0.1− | 0.1+ | 2004 09 10 | 704 | (0.5− | 3.0+) |
| 2000 08 05 | 608 | 1.0+ | 0.5+ | 2000 11 03 | 704 | 0.0 | 0.1− | 2004 09 10 | 704 | (1.1− | 3.7+) |
| 2000 09 24 | 704 | 1.1+ | 0.7− | 2000 11 03 | 704 | 0.3+ | 0.2− | 2004 09 10 | 704 | (1.5+ | 1.8−) |
| 2000 09 24 | 704 | 0.8+ | 0.6− | 2000 11 03 | 704 | 0.0 | 0.0 | 2004 09 10 | 704 | 0.6− | 0.1− |
| 2000 09 24 | 704 | 0.8+ | 0.4+ | 2000 11 03 | 704 | 0.0 | 0.1− | 2004 09 13 | 704 | 0.3− | 0.8+ |
| 2000 09 24 | 704 | 0.3+ | 0.1+ | 2000 11 03 | 704 | 0.0 | 0.3+ | 2004 09 13 | 704 | (1.3− | 1.9+) |
| 2000 09 24 | 704 | 0.2− | 0.2+ | 2000 11 03 | 704 | 0.2− | 0.1− | 2004 09 13 | 704 | 0.5− | 0.5+ |
| 2000 09 26 | 919 | (3.5− | 4.0−) | 2000 11 03 | 704 | 0.0 | 0.1− | 2004 09 13 | 704 | 0.5+ | 0.3+ |
| 2000 09 26 | 919 | (3.2− | 3.4−) | 2000 11 20 | 699 | 0.7+ | 0.8+ | 2004 09 13 | 699 | (0.7+ | 1.6+) |
| 2000 09 27 | 919 | (2.3− | 6.4−) | 2000 11 20 | 699 | 1.0− | 0.7+ | 2004 09 13 | 704 | 0.4+ | 0.9+ |
| 2000 09 27 | 919 | (1.8− | 5.5−) | 2000 11 20 | 699 | 0.2+ | 0.4+ | 2004 09 13 | 699 | 0.6+ | 0.2+ |
| 2000 09 28 | 704 | 0.4− | 0.0 | 2000 11 20 | 699 | 0.2− | 1.1+ | 2004 09 13 | 699 | 0.4− | 0.3+ |
| 2000 09 28 | 704 | 0.4− | 0.3+ | 2000 11 20 | 704 | 0.3+ | 0.3+ | 2004 09 13 | 699 | 0.2− | 0.2+ |
| 2000 09 28 | 704 | 0.1− | 0.1+ | 2000 11 20 | 704 | 0.1− | 0.3+ | 2004 09 17 | 704 | 0.4+ | 0.3− |
| 2000 09 28 | 704 | 0.0 | 0.1− | 2000 11 20 | 704 | 0.8− | 0.5+ | 2004 09 17 | 704 | 0.6− | 0.4+ |
| 2000 09 28 | 704 | 0.2+ | 0.2− | 2000 11 20 | 704 | 0.4− | 0.2− | 2004 09 17 | 704 | 0.4− | 0.2− |
| 2000 10 01 | 919 | 0.8+ | 1.7− | 2000 11 20 | 704 | 0.1+ | 0.8− | 2004 09 17 | 704 | 0.0 | 0.4− |
| 2000 10 01 | 919 | 1.3− | 1.7− | 2002 03 13 | 644 | 0.3− | 0.6+ | 2004 09 17 | 704 | 0.3+ | 0.3− |
| 2000 10 02 | 704 | 0.4− | 0.1+ | 2002 03 13 | 644 | 0.2+ | 0.5+ | 2004 09 21 | 704 | 1.1+ | 0.2+ |
| 2000 10 02 | 704 | 0.5− | 0.8+ | 2002 03 13 | 644 | 0.1+ | 0.3+ | 2004 09 21 | 704 | (1.9+ | 0.4−) |
| 2000 10 02 | 704 | (2.3− | 3.1+) | 2002 03 15 | 291 | 0.5+ | 0.7+ | 2004 09 21 | 704 | 0.2− | 0.2− |
| 2000 10 02 | 704 | 0.6− | 0.6+ | 2002 03 15 | 291 | 1.1+ | 1.2+ | 2004 09 21 | 704 | 0.2− | 0.1− |
| 2000 10 02 | 704 | 0.0 | 1.0+ | 2002 03 15 | 291 | (1.5+ | 1.9+) | 2004 09 22 | 691 | 0.1− | 0.0 |
| 2000 10 06 | 699 | 1.2+ | 0.5+ | 2003 06 04 | 691 | (0.3+ | 3.0+) | 2004 09 22 | 691 | 0.1− | 0.0 |
| 2000 10 06 | 699 | 0.9+ | 0.2+ | 2003 06 04 | 691 | (0.7+ | 3.1+) | 2004 09 22 | 691 | 0.3− | 0.0 |
| 2000 10 06 | 699 | 0.2+ | 0.6+ | 2003 06 04 | 691 | (0.0 | 3.0+) | 2004 11 13 | 703 | 0.4− | 0.3− |
| 2000 10 06 | 699 | 0.6+ | 0.7+ | 2004 08 11 | 704 | 0.1+ | 0.1− | 2004 11 13 | 703 | (0.3− | 1.5−) |
| 2000 10 07 | 699 | 0.0 | 0.1− | 2004 08 11 | 704 | 0.0 | 0.3+ | 2004 11 13 | 703 | (2.0− | 0.9−) |
| 2000 10 07 | 699 | 0.0 | 0.5+ | 2004 08 11 | 704 | 0.1− | 0.5+ | 2004 11 13 | 703 | 0.5− | 0.4− |
| 2000 10 07 | 699 | 0.2+ | 0.5+ | 2004 08 11 | 704 | 0.0 | 0.0 | 2006 01 06 | G96 | 1.4− | 0.4+ |
| 2000 10 07 | 699 | 0.1− | 0.3+ | 2004 08 11 | 704 | 0.2− | 0.1− | 2006 01 06 | G96 | 0.7− | 0.2+ |
| 2000 10 24 | 704 | 0.6− | 0.5− | 2004 08 17 | 704 | 0.0 | 0.1+ | 2006 01 06 | G96 | 0.4− | 0.0 |
| 2000 10 24 | 704 | 0.3− | 0.4− | 2004 08 17 | 704 | 0.1− | 0.4− | 2006 01 06 | G96 | 0.5+ | 0.2+ |
| 2000 10 24 | 704 | 1.2− | 0.1− | 2004 08 17 | 704 | 0.6− | 0.3+ | 2006 02 01 | G96 | 0.0 | 0.3− |
| 2000 10 25 | 704 | 0.9− | 0.1+ | 2004 08 27 | 703 | 0.4− | 0.1− | 2006 02 01 | G96 | 0.1+ | 0.0 |
| 2000 10 25 | 704 | 0.1+ | 0.7− | 2004 08 27 | 703 | 0.6− | 0.2+ | 2006 02 01 | G96 | 0.4− | 0.1+ |
| 2000 10 25 | 704 | 0.0 | 0.7− | 2004 08 27 | 703 | 0.1+ | 0.3+ | 2006 02 01 | G96 | 0.3− | 0.1+ |

**(138679)∗ 2000 SD$_{30}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.26367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19869372 | $\omega$ | 284.02356 | | +0.99320731 | +0.10689427 | |
| $a$ | 2.9085729 | $\Omega$ | 69.85584 | | −0.07856054 | +0.90744098 | |
| $e$ | 0.0914674 | $i$ | 2.80637 | | −0.08583408 | +0.40635512 | |
| $P$ | 4.96 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | (2.2+ | 0.7+) | 2000 10 04 | 704 | 0.0 | 0.1+ | 2005 09 28 | 644 | 0.3+ | 0.0 |
| 2000 09 09 | 699 | (1.0+ | 2.0−) | 2000 10 04 | 704 | 0.8+ | 0.8− | 2005 09 28 | 644 | 0.0 | 0.0 |
| 2000 09 09 | 699 | 1.1+ | 0.3+ | 2000 10 04 | 704 | 0.8+ | 0.2+ | 2005 10 01 | 704 | 0.5− | 0.8− |
| 2000 09 09 | 699 | 1.2− | 0.7+ | 2000 10 05 | 691 | 0.6− | 0.2− | 2005 10 01 | 704 | 0.5− | 0.2+ |
| 2000 09 09 | 699 | 0.8− | 0.3− | 2000 10 05 | 691 | 0.6− | 0.2− | 2005 10 01 | 704 | 0.6− | 0.5− |
| 2000 09 24 | 704 | 1.4+ | 0.2+ | 2000 10 05 | 691 | 0.6− | 0.2− | 2005 10 01 | 704 | (0.8− | 2.1−) |
| 2000 09 24 | 704 | 0.8+ | 0.1+ | 2002 01 14 | 704 | 0.4− | 0.1+ | 2005 10 01 | 704 | 0.5− | 0.8− |
| 2000 09 24 | 704 | 0.8+ | 0.0 | 2002 01 14 | 704 | 0.7− | 0.6+ | 2005 10 05 | 704 | 0.5− | 0.2+ |
| 2000 09 24 | 704 | 0.3+ | 0.6− | 2002 01 14 | 704 | 0.4− | 0.6+ | 2005 10 05 | 704 | 0.4+ | 0.6+ |
| 2000 09 24 | 704 | 0.7+ | 0.2− | 2002 01 14 | 704 | 0.7+ | 0.4+ | 2005 10 05 | 704 | 0.3− | 0.5+ |
| 2000 09 24 | 704 | 0.2+ | 0.0 | 2003 03 23 | 691 | 0.5+ | 0.2+ | 2005 10 05 | 704 | 0.5− | 0.6+ |
| 2000 09 24 | 699 | (0.0 | 2.1+) | 2003 03 23 | 691 | 0.4+ | 0.3+ | 2005 10 05 | 704 | 0.2+ | 0.2+ |
| 2000 09 24 | 704 | 0.3+ | 0.6+ | 2003 03 23 | 691 | 0.2+ | 0.1+ | 2005 10 07 | 703 | 0.4+ | 0.3+ |
| 2000 09 24 | 704 | 0.2− | 0.2+ | 2003 03 26 | 644 | 0.2+ | 0.7+ | 2005 10 07 | 703 | 0.7− | 0.1+ |
| 2000 09 24 | 704 | 0.3+ | 0.9+ | 2003 03 26 | 644 | 0.5+ | 0.7+ | 2005 10 07 | 703 | 0.2+ | 0.4− |
| 2000 09 24 | 704 | 0.3+ | 0.6+ | 2003 03 26 | 644 | 0.6+ | 0.8+ | 2005 10 07 | 703 | 0.0 | 0.7+ |
| 2000 09 24 | 699 | 0.8− | 0.5+ | 2003 04 05 | 691 | 0.3− | 0.3+ | 2005 10 20 | 644 | 0.2+ | 0.3+ |
| 2000 09 24 | 699 | 1.1− | 0.7+ | 2003 04 05 | 691 | 0.3− | 0.5+ | 2005 10 20 | 644 | 0.3+ | 0.4+ |
| 2000 09 24 | 699 | 0.4− | 0.1− | 2003 04 05 | 691 | 0.0 | 0.1+ | 2005 10 20 | 644 | 0.5+ | 0.0 |
| 2000 09 25 | 704 | 0.2+ | 0.6+ | 2005 08 27 | 691 | 0.0 | 0.8+ | 2005 12 01 | G96 | 0.5+ | 0.3− |
| 2000 09 25 | 704 | 0.4+ | 0.7+ | 2005 08 27 | 691 | 0.1+ | 0.1− | 2005 12 01 | G96 | 0.0 | 0.1− |
| 2000 09 25 | 704 | 0.1+ | 0.2+ | 2005 08 27 | 691 | 0.2− | 0.1− | 2005 12 01 | G96 | 0.0 | 0.1− |
| 2000 09 25 | 704 | 0.2− | 0.7− | 2005 08 28 | 691 | 0.0 | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.1− |
| 2000 10 01 | 699 | 0.9− | 0.6+ | 2005 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.4+ | 0.1+ |
| 2000 10 01 | 699 | 0.0 | 0.3− | 2005 08 28 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.3+ | 0.1+ |
| 2000 10 01 | 699 | 0.3+ | 0.2+ | 2005 09 03 | 644 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 699 | 0.8+ | 0.7+ | 2005 09 03 | 644 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2000 10 02 | 704 | 0.8+ | 0.4+ | 2005 09 03 | 644 | 0.2− | 0.3− | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2000 10 02 | 704 | 0.1− | 0.4+ | 2005 09 11 | 691 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2000 10 02 | 704 | 0.8− | 0.7+ | 2005 09 11 | 691 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2000 10 02 | 704 | 0.2− | 0.3+ | 2005 09 11 | 691 | 0.2− | 0.5− | 2006 10 29 | G96 | 0.2− | 0.1− |
| 2000 10 02 | 704 | 1.3− | 0.2+ | 2005 09 23 | 703 | 1.2+ | 1.2+ | 2006 10 29 | G96 | 0.3+ | 0.0 |
| 2000 10 03 | 704 | 0.0 | 1.3+ | 2005 09 23 | 703 | 0.0 | 0.5+ | 2006 10 29 | G96 | 0.2+ | 0.7− |
| 2000 10 03 | 704 | 0.3+ | 0.8+ | 2005 09 23 | 703 | 0.9+ | 0.7+ | 2006 10 29 | G96 | 0.0 | 0.2− |
| 2000 10 03 | 704 | 0.7+ | 0.9− | 2005 09 23 | 703 | 0.2− | 1.4+ | 2006 11 27 | G96 | 0.5− | 0.1− |
| 2000 10 03 | 704 | 0.5+ | 0.3− | 2005 09 25 | 644 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2000 10 03 | 704 | 0.6+ | 0.3− | 2005 09 25 | 644 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2000 10 04 | 704 | 0.7− | 0.7− | 2005 09 25 | 644 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2000 10 04 | 704 | 1.7+ | 0.2− | 2005 09 28 | 644 | 0.2+ | 0.0 | | | | |

**(138680)∗ 2000 $SN_{31}$ = 2004 $HO_{61}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60714)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.52627 | | (2000.0) | | | |
| $n$ | 0.18518077 | $\omega$ | 9.64400 | | +0.98244314 | +0.18650324 |
| $a$ | 3.0484012 | $\Omega$ | 339.60540 | | −0.17205224 | +0.89602189 |
| $e$ | 0.1346382 | $i$ | 0.77147 | | −0.07213530 | +0.40294084 |
| $P$ | 5.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 04 | 699 | 0.6− | 0.6+ | 2004 04 25 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2000 09 04 | 699 | (3.3− | 0.7−) | 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.4− |
| 2000 09 04 | 699 | 1.2− | 0.3− | 2004 04 30 | 291 | 0.7− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2000 09 04 | 699 | 0.8− | 0.5− | 2004 04 30 | 291 | 1.0− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2000 09 24 | 704 | 0.4+ | 1.0+ | 2004 04 30 | 291 | 0.7− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2000 09 24 | 704 | 0.4− | 0.7+ | 2004 05 16 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.5− |
| 2000 09 24 | 704 | 0.5+ | 0.1− | 2004 05 16 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.4+ |
| 2000 09 24 | 704 | 0.2− | 1.0+ | 2004 05 16 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2000 09 25 | 704 | 0.1+ | 0.0 | 2005 06 29 | 644 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2000 09 25 | 704 | 0.5+ | 0.2+ | 2005 06 29 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.2− | 0.7− |
| 2000 09 25 | 704 | 1.3− | 1.1+ | 2005 06 29 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2000 09 25 | 704 | 0.3+ | 0.0 | 2005 07 12 | G96 | 0.8+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2000 09 25 | 704 | 1.1+ | 0.7+ | 2005 07 12 | G96 | (1.8+ | 0.4+) | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2000 09 28 | 691 | 0.5− | 0.1− | 2005 07 12 | G96 | 0.2+ | 0.0 | 2006 11 15 | 703 | (1.3+ | 1.7−) |
| 2000 09 28 | 691 | 0.4− | 0.0 | 2005 07 12 | G96 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.5− | 1.0− |
| 2000 09 28 | 691 | 0.4− | 0.1− | 2005 07 18 | 644 | 0.5+ | 0.2+ | 2006 11 15 | 703 | (2.8− | 1.0+) |
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.7+ | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2000 10 01 | 704 | 0.5+ | 0.1− | 2005 07 18 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2000 10 01 | 704 | 1.6+ | 0.6+ | 2005 08 02 | 704 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2000 10 01 | 704 | 0.8+ | 0.1− | 2005 08 02 | 704 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2000 10 01 | 704 | 0.7+ | 0.5+ | 2005 08 02 | 704 | 0.5− | 1.1− | 2006 11 22 | 691 | 0.6− | 0.5− |
| 2003 03 09 | 291 | 0.2+ | 0.4+ | 2005 08 06 | 704 | 0.0 | 0.9+ | 2006 11 22 | 691 | 0.2− | 0.4+ |
| 2003 03 09 | 291 | 0.6+ | 0.4+ | 2005 08 06 | 704 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2003 03 09 | 291 | 1.2+ | 0.2+ | 2005 08 06 | 704 | 0.9+ | 0.5+ | | | | |
| 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1− | | | | |

**(138681)∗ 2000 $SX_{32}$ = 2001 $XC_{14}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22531)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.33089 | | (2000.0) | | | |
| $n$ | 0.17128386 | $\omega$ | 76.41707 | | −0.17302273 | −0.98310918 |
| $a$ | 3.2111340 | $\Omega$ | 23.79742 | | +0.83680219 | −0.17868026 |
| $e$ | 0.1132798 | $i$ | 8.50281 | | +0.51944704 | −0.03961943 |
| $P$ | 5.75 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | (2.2− | 1.4+) | 2003 03 27 | 703 | 0.7− | 0.4+ | 2006 10 17 | 701 | 0.5+ | 0.3+ |
| 2000 09 23 | 699 | 0.0 | 0.1+ | 2003 03 27 | 703 | 0.6− | 0.9− | 2006 10 17 | 701 | 0.1+ | 0.3+ |
| 2000 09 23 | 699 | 0.8+ | 0.4− | 2003 03 30 | 704 | (1.9+ | 0.7+) | 2006 10 17 | 701 | 1.3+ | 0.4+ |
| 2000 09 23 | 699 | (0.2− | 2.6+) | 2003 03 30 | 704 | 1.5+ | 0.0 | 2006 10 19 | 701 | 0.0 | 0.2− |
| 2000 09 24 | 704 | 0.2+ | 0.8+ | 2003 03 30 | 704 | (2.5+ | 0.5+) | 2006 10 19 | 701 | 0.5− | 0.0 |
| 2000 09 24 | 704 | 0.0 | 0.3+ | 2003 03 30 | 704 | (2.4+ | 0.1−) | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2000 09 24 | 704 | 0.6+ | 0.7+ | 2003 04 02 | 608 | 0.3+ | 0.2+ | 2006 10 19 | 701 | 0.3− | 0.1+ |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2003 04 02 | 608 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.3+ | 0.6+ |
| 2000 09 25 | 704 | 0.3− | 0.1+ | 2003 04 02 | 608 | 0.0 | 0.4+ | 2006 10 19 | 701 | 0.2− | 0.0 |
| 2000 09 25 | 704 | 0.4− | 0.5+ | 2003 04 07 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 2000 09 25 | 704 | 0.4+ | 0.4− | 2003 04 07 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2000 09 25 | 704 | 1.0− | 1.5+ | 2003 04 07 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 09 25 | 704 | 0.2− | 0.2− | 2003 04 26 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 10 01 | 691 | 0.2+ | 0.3− | 2003 04 26 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2000 10 01 | 691 | 0.0 | 0.2− | 2003 04 26 | 691 | 0.5+ | 0.6+ | 2006 10 21 | 703 | 0.7+ | 0.0 |
| 2000 10 01 | 691 | 0.4− | 1.0− | 2005 08 04 | 644 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.2+ |
| 2000 10 01 | 699 | 0.2− | 1.3+ | 2005 08 04 | 644 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2000 10 01 | 699 | 0.1− | 1.6+ | 2005 08 04 | 644 | 0.0 | 0.7+ | 2006 10 27 | 691 | 1.0− | 0.9− |
| 2000 10 01 | 699 | 0.5+ | 0.8− | 2005 08 04 | 644 | 0.2− | 1.1+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 10 01 | 699 | 0.4− | 0.5+ | 2005 08 04 | 644 | 0.0 | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 11 11 | 704 | 0.6+ | 0.6+ | 2005 08 04 | 644 | 0.0 | 0.9+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.2+ | 0.6− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | 0.0 | 0.8+ | 2006 09 18 | 699 | 0.1− | 1.2− | 2006 10 31 | 691 | 0.8− | 1.0+ |
| 2001 11 24 | 704 | 0.0 | 0.5− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2001 12 09 | 704 | 0.5− | 0.1− | 2006 09 18 | 699 | 0.8+ | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.7+ |
| 2001 12 09 | 704 | 0.4+ | 1.3+ | 2006 09 18 | 699 | 0.8− | 0.8− | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2001 12 09 | 704 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.4+ |
| 2001 12 09 | 704 | 0.8+ | 1.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.2− |
| 2001 12 11 | 704 | 0.6− | 0.6− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2001 12 11 | 704 | 0.5− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | (1.8− | 0.5−) |
| 2001 12 11 | 704 | 0.2− | 0.3+ | 2006 09 29 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 0.4− | 0.1+ | 2006 09 29 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2001 12 11 | 704 | 0.1− | 0.2− | 2006 09 29 | 691 | 0.4+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2001 12 19 | 644 | 0.6+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.2− |
| 2001 12 19 | 644 | 0.6+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.4− | 0.3− |
| 2001 12 19 | 644 | 0.5+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.4+ | 2006 11 20 | G96 | 0.4− | 0.6− |
| 2003 03 14 | 608 | 0.9+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.6− |
| 2003 03 14 | 608 | 0.6+ | 1.2− | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.8+ | 0.4− |
| 2003 03 14 | 608 | 0.7+ | 1.1− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1− |
| 2003 03 26 | 691 | 0.3− | 0.5+ | 2006 10 16 | 701 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2003 03 26 | 691 | 0.0 | 0.7+ | 2006 10 16 | 701 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.9− |
| 2003 03 26 | 691 | 1.0− | 0.0 | 2006 10 16 | 701 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.5− |
| 2003 03 27 | 703 | 0.4+ | 0.2+ | 2006 10 16 | 701 | (1.7+ | 0.7−) | | | | |
| 2003 03 27 | 703 | 0.3+ | 0.6− | 2006 10 17 | 701 | 0.7+ | 0.2− | | | | |

**(138682)∗ 2000 $SJ_{34}$ = 2002 $AL_{19}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22532)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.74824 | | (2000.0) | | | |
| $n$ | 0.17479020 | $\omega$ | 358.36763 | | +0.82602197 | −0.55488415 |
| $a$ | 3.1680449 | $\Omega$ | 35.91578 | | +0.51902032 | +0.68036370 |
| $e$ | 0.0919735 | $i$ | 9.71148 | | +0.21978539 | +0.47875757 |
| $P$ | 5.64 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 06 | 691 | 0.6− | 0.7+ | 2002 01 09 | 704 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.3− | 0.0 |
| 1994 09 06 | 691 | 0.4− | 0.2+ | 2002 01 09 | 704 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.5− | 0.1− |
| 1994 09 06 | 691 | 0.7− | 0.2+ | 2002 01 09 | 704 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2000 09 02 | 704 | 0.5+ | 1.1− | 2003 03 07 | 699 | 1.2+ | 1.2− | 2006 11 13 | 644 | 0.5− | 0.2− |
| 2000 09 02 | 704 | 0.6− | 0.2+ | 2003 03 07 | 699 | 0.0 | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2000 09 02 | 704 | 0.5− | 0.8− | 2003 03 07 | 699 | 1.5+ | 1.5+ | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2000 09 02 | 704 | 0.4+ | 1.0− | 2003 03 07 | 699 | (0.7− | 2.5+) | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2000 09 23 | 699 | 0.5− | 0.4+ | 2003 03 26 | 699 | 0.9+ | 0.9+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2000 09 23 | 699 | 1.5− | 0.5− | 2003 03 26 | 699 | 0.1+ | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2000 09 23 | 699 | 0.1− | 1.0+ | 2003 03 26 | 699 | 0.4+ | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.1− |
| 2000 09 23 | 699 | 0.4− | 1.3+ | 2003 03 26 | 699 | 1.4− | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.3+ |
| 2000 09 24 | 704 | 0.3− | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.5+ | 0.6+ |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 11 16 | 704 | 0.7+ | 0.2+ |
| 2000 09 24 | 704 | 1.6+ | 1.6− | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2000 09 25 | 704 | 0.5+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 11 17 | 703 | 0.7+ | 0.9− |
| 2000 09 25 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 1.1+ | 0.8− | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2000 09 25 | 704 | 0.6− | 0.0 | 2006 09 27 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 703 | 0.3+ | 0.3− |
| 2000 09 25 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 1.1− | 1.2+ |
| 2000 09 25 | 704 | 0.4− | 0.7− | 2006 09 27 | 704 | 0.3+ | 0.8− | 2006 11 18 | 704 | 0.3− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 699 | 1.3+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.5+ | | |
| 2000 10 01 | 699 | 1.3+ | 1.1+ | 2006 09 29 | 704 | 0.4− | 0.3− | 2006 11 18 | 704 | 1.0− | 1.0+ | | |
| 2000 10 01 | 699 | 1.0+ | 1.0+ | 2006 09 29 | 704 | 0.6− | 1.2+ | 2006 11 18 | 704 | 0.2+ | 0.2+ | | |
| 2000 10 01 | 699 | 1.6+ | 0.3− | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 11 18 | 704 | 0.1− | 0.9+ | | |
| 2000 10 02 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.5+ | | |
| 2000 10 02 | 704 | 0.8+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.5+ | 0.9+ | | |
| 2000 10 02 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.6− | 1.0+ | | |
| 2000 10 02 | 704 | 0.8+ | 0.7+ | 2006 10 04 | G96 | 0.3− | 0.7− | 2006 11 18 | 704 | 0.4− | 0.2+ | | |
| 2000 10 02 | 704 | 0.3+ | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.4+ | 0.1− | | |
| 2001 12 09 | 704 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.6− | 2006 11 21 | 704 | 0.1+ | 0.1+ | | |
| 2001 12 09 | 704 | 0.3− | 1.0+ | 2006 10 04 | G96 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.3− | 0.1+ | | |
| 2001 12 09 | 704 | 0.7− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.7+ | | |
| 2001 12 09 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.5+ | | |
| 2001 12 09 | 704 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 26 | 704 | 1.2+ | 0.1− | | |
| 2001 12 19 | 644 | 0.6− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.4− | 2006 11 26 | 704 | 1.2− | 0.0 | | |
| 2001 12 19 | 644 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.3− | 2006 11 26 | 704 | 0.5− | 0.4+ | | |
| 2001 12 19 | 644 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.5− | 2006 11 26 | 704 | 0.0 | 0.4− | | |
| 2002 01 08 | 704 | 0.8+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.4− | 2006 11 26 | 704 | 1.4+ | 0.5+ | | |
| 2002 01 08 | 704 | 1.2+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.5+ | 0.0 | | |
| 2002 01 08 | 704 | 0.9+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.4− | 0.4+ | | |
| 2002 01 08 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.7− | 2006 11 29 | 704 | 0.4− | 0.8− | | |
| 2002 01 09 | 704 | 0.6− | 0.8+ | 2006 11 13 | 644 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.9+ | 0.1+ | | |
| 2002 01 09 | 704 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.1− | | | | | | |

**(138683)∗ 2000 $SS_{35}$ = 1994 $NC_3$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 7139)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.28863 | | (2000.0) | | +0.97034081 | +0.24037237 |
| $n$ | 0.18194702 | $\omega$ | 208.49822 | | −0.21394034 | +0.90336193 |
| $a$ | 3.0844146 | $\Omega$ | 137.56788 | | −0.11255331 | +0.35518775 |
| $e$ | 0.1912829 | $i$ | 2.18186 | | | |
| $P$ | 5.42 | $H$ | 15.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 11 | 809 | (2.1+ | 5.4+) | 2000 10 02 | 704 | 0.2− | 0.4− | 2006 09 28 | G96 | 0.1− | 0.0 | | |
| 1994 07 11 | 809 | (2.9+ | 5.5+) | 2000 10 02 | 704 | 0.0 | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | | |
| 1994 07 11 | 809 | (3.4+ | 5.5+) | 2000 10 02 | 704 | 0.2+ | 1.2− | 2006 09 28 | G96 | 0.8− | 0.4− | | |
| 1994 07 12 | 809 | (1.2+ | 5.2+) | 2000 10 02 | 704 | 1.0+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.1+ | | |
| 1994 07 12 | 809 | (1.4+ | 3.6+) | 2000 10 02 | 704 | 0.1+ | 0.6− | 2006 10 23 | G96 | 0.3− | 0.0 | | |
| 1994 07 12 | 809 | (1.8+ | 2.9+) | 2000 10 02 | 704 | 1.2+ | 1.1+ | 2006 10 23 | G96 | 0.1− | 0.2− | | |
| 2000 08 31 | 704 | 0.3− | 0.4+ | 2004 04 24 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.3− | 0.4− | | |
| 2000 08 31 | 704 | 1.1− | 0.4+ | 2004 04 24 | 691 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.2− | | |
| 2000 08 31 | 704 | 0.7− | 0.2− | 2004 04 24 | 691 | 0.0 | 0.5+ | 2006 11 12 | G96 | 0.3− | 0.0 | | |
| 2000 08 31 | 704 | 1.6− | 1.1+ | 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.3− | 0.2− | | |
| 2000 09 24 | 699 | 0.4− | 0.1+ | 2005 05 19 | G96 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2− | 0.0 | | |
| 2000 09 24 | 699 | 1.3+ | 0.3+ | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.9− | | |
| 2000 09 24 | 704 | 0.4− | 0.3+ | 2005 05 19 | G96 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1+ | | |
| 2000 09 24 | 704 | 0.0 | 0.6+ | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 24 | 699 | 0.9+ | 0.3+ | 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 1.3− | | |
| 2000 09 24 | 704 | 1.0− | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 2000 09 24 | 704 | 0.6+ | 1.3− | 2005 07 06 | 599 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.2+ | | |
| 2000 09 24 | 699 | 0.2+ | 0.8+ | 2005 07 06 | 599 | 0.5+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2+ | | |
| 2000 09 24 | 704 | 0.3+ | 0.6− | 2005 07 07 | 599 | 0.5+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.3+ | | |
| 2000 09 25 | 704 | 0.4+ | 0.6+ | 2005 07 07 | 599 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 25 | 704 | 0.5− | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.0 | 0.3+ | | |
| 2000 09 25 | 704 | 0.5− | 0.0 | 2005 07 09 | 691 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.3+ | | |
| 2000 09 25 | 704 | 0.8− | 1.3− | 2005 07 09 | 691 | 0.4− | 1.2− | 2006 11 24 | 691 | 0.0 | 0.0 | | |
| 2000 09 25 | 704 | 0.8− | 0.1− | 2005 07 15 | G96 | 0.5+ | 0.1+ | 2006 11 29 | 704 | 0.8− | 0.0 | | |
| 2000 10 01 | 699 | 0.5− | 0.6+ | 2005 07 15 | G96 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.5+ | | |
| 2000 10 01 | 699 | 0.9− | 1.0+ | 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 11 29 | 704 | 1.1+ | 0.7− | | |
| 2000 10 01 | 699 | 0.0 | 0.5+ | 2005 07 15 | G96 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.8+ | 0.2− | | |
| 2000 10 01 | 699 | 0.2+ | 0.9+ | 2005 08 02 | 704 | 0.4+ | 0.6− | 2006 11 29 | 704 | 0.1+ | 0.2− | | |
| 2000 10 02 | 704 | 0.4− | 0.2+ | 2005 08 02 | 704 | 0.4− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2000 10 02 | 704 | 0.0 | 0.4− | 2005 08 02 | 704 | 0.2+ | 0.5− | 2006 12 01 | G96 | 1.1− | 0.7− | | |
| 2000 10 02 | 704 | 0.7+ | 0.0 | 2005 08 02 | 704 | 0.4+ | 0.6− | 2006 12 01 | G96 | 0.8+ | 0.4− | | |
| 2000 10 02 | 704 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.3− | | |

**(138684)∗ 2000 $SS_{40}$ = 2004 $HB_{18}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64816)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 136.17344 | | (2000.0) | | −0.31050553 | +0.94136530 |
| $n$ | 0.18104078 | $\omega$ | 27.82703 | | −0.90339016 | −0.33543346 |
| $a$ | 3.0946992 | $\Omega$ | 224.43609 | | −0.29575756 | +0.03627350 |
| $e$ | 0.1037632 | $i$ | 10.86566 | | | |
| $P$ | 5.44 | $H$ | 14.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2+ | 0.2+ | 2004 04 21 | 704 | 0.9− | 0.5− | 2006 09 28 | G96 | 0.4+ | 0.4− | | |
| 1995 10 15 | 691 | 1.5− | 1.8+ | 2004 04 21 | 704 | (0.6+ | 1.9+) | 2006 09 28 | G96 | 0.1+ | 0.3− | | |
| 1995 10 15 | 691 | 0.2+ | 0.0 | 2004 04 21 | 704 | 0.4+ | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.3− | | |
| 2000 09 24 | 704 | 1.0− | 1.1+ | 2004 04 25 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 | | |
| 2000 09 24 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 704 | 0.8− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.3+ | | |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2004 04 25 | 704 | 0.5− | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2000 09 25 | 704 | 0.3+ | 0.3− | 2004 04 25 | 704 | 0.4+ | 0.8+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | | |
| 2000 09 25 | 704 | 0.5+ | 0.4− | 2004 04 25 | 704 | 0.9+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.3+ | | |
| 2000 09 25 | 704 | 0.2− | 0.1− | 2004 04 26 | 291 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.4+ | | |
| 2000 09 26 | 699 | 0.3+ | 0.2+ | 2004 04 26 | 291 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.4+ | | |
| 2000 09 26 | 699 | 0.2+ | 0.5+ | 2004 04 26 | 291 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.4+ | | |
| 2000 09 26 | 699 | 0.2+ | 0.4− | 2004 05 11 | 699 | 0.3− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.4+ | | |
| 2000 09 26 | 699 | 0.5+ | 0.3− | 2004 05 11 | 699 | 0.3− | 0.4− | 2006 11 11 | 703 | 1.2− | 0.0 | | |
| 2000 09 28 | 704 | 0.8+ | 0.3+ | 2004 05 11 | 699 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.8− | | |
| 2000 09 28 | 704 | 0.4+ | 1.1− | 2004 05 11 | 699 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.4− | 0.7+ | | |
| 2000 09 28 | 704 | 0.0 | 0.6− | 2004 05 15 | 704 | 0.8+ | 0.5+ | 2006 11 11 | 703 | 0.6+ | 0.1− | | |
| 2000 09 28 | 704 | 0.4− | 0.4+ | 2004 05 15 | 704 | 0.7+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.1− | | |
| 2000 10 03 | 704 | 0.8+ | 0.3− | 2004 05 15 | 704 | 0.3− | 0.6+ | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2000 10 03 | 704 | 0.3+ | 0.1− | 2004 05 15 | 704 | 1.4+ | 0.5− | 2006 11 12 | G96 | 0.4+ | 0.0 | | |
| 2000 10 03 | 704 | 1.2+ | 1.5+ | 2004 05 16 | 691 | 0.4+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.0 | | |
| 2000 10 03 | 704 | 0.9+ | 0.9+ | 2004 05 16 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 1.6+ | | |
| 2001 11 17 | 704 | (1.2+ | 1.5−) | 2004 05 16 | 704 | 0.4+ | 0.8+ | 2006 11 17 | 703 | 1.1− | 0.2− | | |
| 2001 11 17 | 704 | 0.7+ | 1.0− | 2004 05 16 | 704 | 0.3− | 0.8+ | 2006 11 17 | 703 | 0.8− | 0.7+ | | |
| 2001 11 17 | 704 | 0.6− | 0.3+ | 2004 05 16 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.1− | | |
| 2003 01 28 | 704 | 0.9+ | 0.3+ | 2004 05 16 | 704 | 0.6+ | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.0 | | |
| 2003 01 28 | 704 | 0.6+ | 0.4+ | 2004 05 16 | 704 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2003 01 28 | 704 | (2.7+ | 0.7+) | 2004 05 16 | 704 | 0.5+ | 0.7+ | 2006 11 21 | 704 | 0.9+ | 0.8− | | |
| 2003 01 28 | 704 | (2.5+ | 0.2+) | 2004 05 19 | 704 | 0.7+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1+ | | |
| 2004 04 17 | 704 | 0.0 | 1.4+ | 2004 05 19 | 704 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.5− | 0.1− | | |
| 2004 04 17 | 704 | 0.6− | 0.8− | 2004 05 19 | 704 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.7− | 0.3+ | | |
| 2004 04 17 | 704 | 0.7− | 0.8− | 2005 08 29 | 644 | 0.2− | 0.8− | 2006 11 21 | 704 | 0.3+ | 1.1− | | |
| 2004 04 17 | 704 | 0.7− | 0.5+ | 2005 08 29 | 644 | 0.3− | 0.8− | 2006 11 21 | 704 | 0.4+ | 1.6− | | |
| 2004 04 17 | 704 | 0.4− | 0.1+ | 2005 08 29 | 644 | 0.2− | 0.7− | | | | | | |
| 2004 04 21 | 704 | 0.9− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.3− | | | | | | |

**(138685)∗ 2000 $SM_{45}$**

Discovered 2000 Sept. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.87562 | | (2000.0) | | +0.88828418 | −0.32583018 |
| $n$ | 0.18062753 | $\omega$ | 87.01658 | | +0.13628494 | +0.86003501 |
| $a$ | 3.0994176 | $\Omega$ | 291.81563 | | +0.43860874 | +0.39265058 |
| $e$ | 0.1026670 | $i$ | 20.40643 | | | |
| $P$ | 5.46 | $H$ | 14.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 704 | 0.2+ | 0.7+ | 2001 12 18 | 704 | 0.2+ | 0.1+ | 2006 09 24 | 113 | 0.1− | 0.1+ | | |
| 2000 08 03 | 704 | 0.3− | 0.4+ | 2001 12 18 | 704 | 0.5− | 0.4+ | 2006 09 24 | 113 | 0.1− | 0.1+ | | |
| 2000 08 03 | 704 | 0.3+ | 0.1− | 2001 12 18 | 704 | 0.0 | 0.2− | 2006 09 24 | 113 | 0.0 | 0.1+ | | |
| 2000 08 03 | 704 | 0.2− | 0.5− | 2001 12 18 | 704 | 1.0− | 0.7+ | 2006 09 24 | 699 | 0.7+ | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.5− | 0.6+ | 2001 12 18 | 704 | 0.5+ | 0.4− | 2006 09 24 | 699 | 0.4− | 0.1+ | |
| 2000 09 01 | 704 | 0.1+ | 0.1+ | 2001 12 22 | 704 | 0.5+ | 0.6+ | 2006 09 24 | 699 | 1.3+ | 0.2− | |
| 2000 09 01 | 704 | 1.4− | 1.2+ | 2001 12 22 | 704 | 0.8+ | 0.3+ | 2006 09 24 | 699 | 0.5− | 0.9− | |
| 2000 09 01 | 704 | 1.0− | 0.0 | 2001 12 22 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 703 | 0.3− | 0.3+ | |
| 2000 09 01 | 704 | 1.1− | 0.6+ | 2002 02 08 | 704 | 0.5− | 0.9− | 2006 09 25 | 703 | 0.9+ | 0.2+ | |
| 2000 09 22 | 704 | 0.3+ | 0.4+ | 2002 02 08 | 704 | 0.2− | 0.6− | 2006 09 25 | 703 | 0.4− | 0.3− | |
| 2000 09 22 | 704 | 0.6− | 0.4+ | 2002 02 08 | 704 | 0.1− | 0.4+ | 2006 09 25 | 703 | 0.1− | 0.5− | |
| 2000 09 22 | 704 | 0.1+ | 0.8− | 2002 02 08 | 704 | 0.1− | 0.3+ | 2006 10 16 | 704 | 0.3− | 0.6+ | |
| 2000 09 22 | 704 | 0.0 | 0.4+ | 2002 02 08 | 704 | 0.2− | 0.5− | 2006 10 16 | 704 | 0.1− | 0.1− | |
| 2000 09 26 | 704 | 0.7+ | 0.4+ | 2003 01 14 | 644 | 0.3+ | 0.7+ | 2006 10 16 | 704 | 0.1− | 0.1− | |
| 2000 09 26 | 704 | 0.1+ | 0.1− | 2003 01 14 | 644 | 0.1+ | 1.2+ | 2006 10 16 | 704 | 0.2− | 0.3− | |
| 2000 09 26 | 704 | 0.1+ | 0.6+ | 2003 01 14 | 644 | 0.2+ | 0.6+ | 2006 10 16 | 704 | 0.3− | 0.1+ | |
| 2000 09 26 | 704 | 0.6+ | 0.5− | 2003 02 06 | 644 | 0.3+ | 0.5− | 2006 11 14 | 704 | 0.9+ | 1.0− | |
| 2001 12 08 | 704 | 0.3− | 0.3− | 2003 02 06 | 644 | 0.4+ | 0.4− | 2006 11 14 | 704 | 0.0 | 0.2+ | |
| 2001 12 08 | 704 | 0.2− | 0.1− | 2003 02 06 | 644 | 1.0+ | 0.2− | 2006 11 14 | 704 | 0.7+ | 0.0 | |
| 2001 12 08 | 704 | 0.0 | 0.2− | 2003 02 25 | 608 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.4− | |
| 2001 12 08 | 704 | 0.4+ | 0.3+ | 2003 02 25 | 608 | 0.4− | 0.4+ | 2006 11 22 | 703 | 1.0− | 0.3− | |
| 2001 12 18 | 704 | 0.0 | 0.2+ | 2003 02 25 | 608 | 0.3− | 0.5− | 2006 11 22 | 703 | 0.3− | 0.3+ | |
| 2001 12 18 | 704 | 0.0 | 0.1+ | 2003 03 09 | 699 | 0.6+ | 0.1+ | 2006 11 22 | 703 | 0.3+ | 0.8− | |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2003 03 09 | 699 | (1.9+ | 2.0+) | 2006 11 22 | 703 | 0.1+ | 0.2+ | |
| 2001 12 18 | 704 | 0.3+ | 0.2+ | 2003 03 09 | 699 | 0.1+ | 1.2+ | | | | | |
| 2001 12 18 | 704 | 0.2− | 0.4+ | 2003 03 09 | 699 | (1.9+ | 0.4−) | | | | | |

### (138686)∗ 2000 SK$_{50}$

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.75270 | | (2000.0) | | | |
| $n$ | 0.17937462 | $\omega$ | 150.33822 | | +0.96870746 | +0.24358284 |
| $a$ | 3.1138335 | $\Omega$ | 195.77981 | | −0.24787003 | +0.93940267 |
| $e$ | 0.0798354 | $i$ | 10.09768 | | −0.01289556 | +0.24122608 |
| $P$ | 5.49 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 01 | 704 | 0.4+ | 0.2+ | 2000 10 02 | 704 | 0.5− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2− | |
| 1998 04 01 | 704 | 0.2− | 1.0+ | 2000 10 02 | 704 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 1998 04 01 | 704 | 1.0− | 0.4− | 2000 10 07 | 691 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 1998 04 01 | 704 | 1.6− | 0.3+ | 2000 10 07 | 691 | 0.5− | 1.4− | 2006 11 01 | 703 | 0.4+ | 0.5+ | |
| 2000 09 02 | 699 | 0.1− | 0.5+ | 2000 10 07 | 691 | 0.4− | 1.0− | 2006 11 01 | 703 | 0.1+ | 0.5− | |
| 2000 09 02 | 699 | 0.8− | 1.0+ | 2001 12 11 | 704 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.2+ | 0.5+ | |
| 2000 09 02 | 699 | 0.1− | 0.1+ | 2001 12 11 | 704 | 0.9+ | 0.5+ | 2006 11 01 | 703 | 0.6+ | 0.2+ | |
| 2000 09 02 | 699 | 0.2+ | 0.7+ | 2001 12 11 | 704 | 0.5+ | 1.1+ | 2006 11 08 | 644 | 0.3− | 0.1+ | |
| 2000 09 21 | 695 | 0.6− | 0.2+ | 2001 12 11 | 704 | 0.4+ | 0.9+ | 2006 11 08 | 644 | 0.3− | 0.1− | |
| 2000 09 21 | 695 | 0.3− | 0.1+ | 2004 05 18 | 704 | 1.3+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.0 | |
| 2000 09 21 | 699 | 1.1+ | 0.8+ | 2004 05 18 | 704 | 0.4+ | 0.7+ | 2006 11 09 | 644 | 0.4+ | 0.3− | |
| 2000 09 21 | 699 | 1.8+ | 0.9+ | 2004 05 18 | 704 | 0.7+ | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.1− | |
| 2000 09 21 | 699 | 0.4+ | 0.8+ | 2004 05 18 | 704 | 0.1− | 1.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 | |
| 2000 09 21 | 699 | 1.7+ | 1.0− | 2004 05 18 | 704 | (0.6+ | 2.1+) | 2006 11 11 | 703 | (0.7− | 2.3−) | |
| 2000 09 23 | 704 | 0.1+ | 0.8+ | 2004 06 17 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.2− | 1.3− | |
| 2000 09 23 | 704 | 0.1+ | 0.2+ | 2004 06 17 | 644 | 0.3+ | 0.9+ | 2006 11 11 | 703 | 0.0 | 0.7− | |
| 2000 09 23 | 704 | 0.3+ | 0.1− | 2004 06 17 | 644 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.7− | |
| 2000 09 23 | 704 | 0.6+ | 0.6+ | 2005 06 21 | 644 | 0.1− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 1.3+ | |
| 2000 09 23 | 704 | 0.4+ | 0.3− | 2005 06 21 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.4+ | 1.1+ | |
| 2000 09 26 | 704 | 1.0− | 0.8+ | 2005 06 21 | 644 | 0.3− | 0.9− | 2006 11 14 | 704 | 0.0 | 0.8+ | |
| 2000 09 26 | 704 | 0.5− | 0.0 | 2005 07 12 | 703 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.6+ | |
| 2000 09 26 | 704 | 0.3+ | 0.4+ | 2005 07 12 | 703 | 0.2− | 0.8+ | 2006 11 14 | 704 | 0.2− | 1.3+ | |
| 2000 09 26 | 704 | 1.4+ | 0.2+ | 2005 07 12 | 703 | 0.7− | 0.1− | 2006 11 19 | 703 | 0.2+ | 1.0+ | |
| 2000 09 26 | 704 | 0.0 | 1.4+ | 2005 07 12 | 703 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.3+ | 0.3− | |
| 2000 09 26 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 19 | 703 | 0.5− | 0.3+ | |
| 2000 09 26 | 704 | 1.5+ | 0.5+ | 2006 09 30 | 703 | 1.3− | 1.4− | 2006 11 19 | 703 | 0.7+ | 0.4− | |
| 2000 09 26 | 704 | 0.4+ | 0.7− | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.5− | |
| 2000 09 26 | 704 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.5− | 0.2− | |
| 2000 10 01 | 699 | 1.1− | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.6+ | 0.2+ | |
| 2000 10 01 | 699 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.2− | 0.5+ | |
| 2000 10 01 | 699 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.1+ | 1.1+ | |
| 2000 10 01 | 699 | 0.8− | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.4− | |
| 2000 10 02 | 704 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.4− | |
| 2000 10 02 | 704 | 0.1+ | 1.0+ | 2006 10 18 | 691 | 0.4− | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.5− | |
| 2000 10 02 | 704 | 0.1+ | 1.3+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.6− | |

### (138687)∗ 2000 SJ$_{51}$ = 2001 XU$_{234}$

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22540)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.61409 | | (2000.0) | | | |
| $n$ | 0.18432802 | $\omega$ | 52.49657 | | +0.83338479 | +0.53709649 |
| $a$ | 3.0577958 | $\Omega$ | 274.66240 | | −0.53934565 | +0.73878121 |
| $e$ | 0.0671229 | $i$ | 7.51617 | | −0.12073132 | +0.40709910 |
| $P$ | 5.35 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 704 | 1.3− | 0.1− | 2001 12 18 | 704 | 1.0− | 0.8+ | 2005 08 06 | 644 | 0.0 | 0.1− | |
| 2000 09 05 | 704 | 0.4+ | 0.2− | 2001 12 18 | 704 | 0.2+ | 1.0+ | 2005 08 06 | 644 | 0.0 | 0.3− | |
| 2000 09 05 | 704 | 0.7+ | 0.9+ | 2001 12 19 | 704 | 0.3− | 0.7+ | 2005 09 03 | 644 | 0.1− | 0.1+ | |
| 2000 09 05 | 704 | 0.8+ | 0.0 | 2001 12 19 | 704 | 0.6− | 0.9+ | 2005 09 03 | 644 | 0.0 | 0.1− | |
| 2000 09 05 | 699 | 1.2− | 0.4− | 2001 12 19 | 704 | 0.4− | 0.9+ | 2005 09 03 | 644 | 0.3− | 0.1+ | |
| 2000 09 05 | 699 | (1.4− | 2.9−) | 2001 12 19 | 704 | 0.1+ | 1.4+ | 2005 09 03 | 644 | 0.1+ | 0.0 | |
| 2000 09 05 | 699 | (2.2− | 0.6−) | 2001 12 19 | 704 | (0.1− | 1.5+) | 2005 09 03 | 644 | 0.1− | 0.1− | |
| 2000 09 05 | 699 | 1.6− | 0.4− | 2005 07 04 | 691 | 0.1− | 0.3+ | 2005 09 03 | 644 | 0.3− | 0.1+ | |
| 2000 09 23 | 704 | 1.2+ | 0.3− | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.9+ | 0.6+ | |
| 2000 09 23 | 704 | 0.9+ | 0.1− | 2005 07 04 | 691 | 0.2− | 0.1+ | 2006 10 19 | 703 | (1.1+ | 1.7−) | |
| 2000 09 23 | 704 | 1.2+ | 1.0− | 2005 07 05 | 644 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.5− | |
| 2000 09 23 | 704 | (0.3+ | 2.1−) | 2005 07 05 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.3− | |
| 2000 09 26 | 704 | 0.9− | 0.6− | 2005 07 05 | 644 | 0.1+ | 0.3+ | 2006 10 20 | A50 | 0.2+ | 0.3− | |
| 2000 09 26 | 704 | 0.0 | 0.7− | 2005 07 08 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.4− | |
| 2000 09 26 | 704 | 1.0+ | 0.0 | 2005 07 08 | 691 | 0.1− | 0.5+ | 2006 10 27 | 703 | 1.0− | 0.8− | |
| 2001 12 15 | 704 | 0.7+ | 0.6− | 2005 07 08 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.7− | |
| 2001 12 15 | 704 | 0.4+ | 0.3− | 2005 07 12 | 703 | 0.1− | 0.4− | 2006 10 27 | 703 | 0.8− | 0.2− | |
| 2001 12 15 | 704 | 0.4+ | 0.3− | 2005 07 12 | 703 | 0.6− | 1.2+ | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 2001 12 18 | 704 | 0.2− | 0.1− | 2005 07 12 | 703 | 0.9− | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.0 | |
| 2001 12 18 | 704 | 0.1− | 1.3+ | 2005 07 12 | 703 | 0.6− | 0.5− | 2006 11 09 | 644 | 0.2+ | 0.1+ | |
| 2001 12 18 | 704 | 1.1+ | 0.8+ | 2005 08 06 | 644 | 0.3+ | 0.1− | | | | | |

### (138688)∗ 2000 SE$_{53}$

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.97531 | | (2000.0) | | | |
| $n$ | 0.18492916 | $\omega$ | 147.14568 | | +0.99623846 | +0.07938434 |
| $a$ | 3.0511657 | $\Omega$ | 208.36257 | | −0.08646253 | +0.93728621 |
| $e$ | 0.1390416 | $i$ | 4.19407 | | +0.00575840 | +0.33940049 |
| $P$ | 5.33 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 704 | 0.2+ | 0.1+ | 2000 09 29 | 691 | 0.4+ | 0.2+ | 2005 08 03 | J95 | 0.1+ | 0.5− | |
| 2000 08 25 | 704 | 0.6− | 0.3− | 2000 09 29 | 691 | 0.5+ | 0.0 | 2005 08 03 | J95 | 0.5+ | 0.2+ | |
| 2000 08 25 | 704 | 1.5− | 0.1+ | 2000 10 01 | 699 | (2.2+ | 2.2+) | 2005 08 25 | 644 | 0.3+ | 0.3+ | |
| 2000 09 02 | 699 | 0.3− | 0.8+ | 2000 10 01 | 699 | 1.4+ | 1.0+ | 2005 08 25 | 644 | 0.4+ | 0.5+ | |
| 2000 09 02 | 699 | 0.9− | 0.3− | 2000 10 01 | 699 | 1.0+ | 1.3+ | 2005 08 25 | 644 | 0.4+ | 0.4+ | |
| 2000 09 02 | 699 | 0.7− | 0.7+ | 2000 10 01 | 699 | 0.7+ | 0.5+ | 2005 10 30 | G96 | 0.0 | 0.4− | |
| 2000 09 02 | 699 | 1.3− | 0.2+ | 2000 10 02 | 704 | 0.9− | 0.4+ | 2005 10 30 | G96 | 0.5+ | 0.5− | |
| 2000 09 21 | 699 | 0.1− | 0.3+ | 2000 10 02 | 704 | 0.8+ | 0.8− | 2005 10 30 | G96 | 0.7− | 0.7− | |
| 2000 09 21 | 699 | 0.5+ | 0.3− | 2000 10 02 | 704 | 0.5− | 1.2− | 2005 10 30 | G96 | 0.2− | 0.6− | |
| 2000 09 21 | 699 | 0.8− | 0.9+ | 2000 10 02 | 704 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.3− | |
| 2000 09 21 | 699 | 0.2+ | 0.1− | 2000 10 02 | 704 | 1.1− | 1.3− | 2006 10 31 | G96 | 0.0 | 0.3− | |
| 2000 09 24 | 704 | 0.0 | 0.2+ | 2003 04 05 | 691 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.2− | |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2003 04 05 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.4− | |
| 2000 09 24 | 704 | 0.9+ | 0.0 | 2003 04 05 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.2− | 0.1+ | |
| 2000 09 24 | 704 | 0.2− | 0.1+ | 2005 06 29 | 644 | 0.1+ | 0.8+ | 2006 11 12 | G96 | 0.2+ | 0.0 | |
| 2000 09 24 | 704 | 0.1− | 0.2− | 2005 06 29 | 644 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.4− | |
| 2000 09 26 | 704 | 0.7− | 0.6+ | 2005 06 29 | 644 | 0.4+ | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.6− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 0.5− | 0.0 | 2005 07 29 | 644 | 0.6+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.0 | | |
| 2000 09 26 | 704 | 0.1+ | 1.1+ | 2005 07 29 | 644 | 0.5+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2000 09 26 | 704 | 0.9− | 0.8+ | 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2000 09 26 | 704 | 0.1+ | 0.2+ | 2005 08 01 | J95 | 0.3+ | 0.0 | 2006 11 24 | 691 | 0.1− | 0.2− | | |
| 2000 09 26 | 608 | 0.6− | 0.3+ | 2005 08 01 | J95 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.3− | | |
| 2000 09 26 | 608 | 0.3− | 0.2− | 2005 08 01 | J95 | 0.7− | 0.7− | 2006 11 24 | 691 | 0.0 | 0.1− | | |
| 2000 09 26 | 608 | 0.8− | 0.0 | 2005 08 03 | J95 | 0.6− | 0.3− | | | | | | |
| 2000 09 29 | 691 | 0.3+ | 0.0 | 2005 08 03 | J95 | 0.5+ | 0.6− | | | | | | |

**(138689)∗ 2000 SW$_{55}$ = 2003 FQ$_{43}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46469)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 295.17353 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17996545 | ω | 281.12931 | | −0.42235375 | −0.90541681 | |
| *a* | 3.1070145 | Ω | 194.09013 | | +0.88511346 | −0.40176273 | |
| *e* | 0.1296677 | *i* | 10.14205 | | +0.19542641 | −0.13713903 | |
| *P* | 5.48 | *H* | 14.5 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 327 | 0.1− | 0.2+ | 2003 03 27 | 699 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.7− | | |
| 1997 04 03 | 327 | 0.6− | 0.2+ | 2003 03 27 | 644 | 0.7+ | 0.1+ | 2006 11 01 | 703 | 0.1− | 0.2+ | | |
| 1997 04 03 | 327 | 0.1− | 0.1− | 2003 04 01 | 704 | 1.1+ | 0.4+ | 2006 11 01 | 703 | 0.1+ | 0.4+ | | |
| 1997 04 03 | 327 | 0.3+ | 0.3+ | 2003 04 01 | 704 | 0.1+ | 0.3+ | 2006 11 01 | 703 | 0.2+ | 0.6− | | |
| 2000 09 24 | 699 | 0.4− | 1.1+ | 2003 04 01 | 704 | 0.6+ | 0.4− | 2006 11 01 | 703 | 0.6− | 0.2− | | |
| 2000 09 24 | 704 | 0.2+ | 0.5+ | 2003 04 01 | 704 | 0.3− | 1.0+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2000 09 24 | 699 | 1.4− | 0.3− | 2003 04 03 | 699 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2000 09 24 | 704 | 0.2+ | 0.2− | 2003 04 03 | 699 | 0.9− | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.4+ | | |
| 2000 09 24 | 699 | 0.9− | 0.0 | 2003 04 03 | 699 | 0.1+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.5+ | | |
| 2000 09 24 | 704 | 0.2+ | 0.5+ | 2003 04 03 | 699 | 0.1+ | 0.7− | 2006 11 10 | 644 | 0.1− | 0.3+ | | |
| 2000 09 24 | 704 | 0.1− | 1.1+ | 2003 04 08 | 691 | 0.2− | 1.0+ | 2006 11 10 | 644 | 0.2+ | 0.3+ | | |
| 2000 09 24 | 699 | 0.8− | 0.4− | 2003 04 08 | 691 | 0.1− | 1.0+ | 2006 11 11 | 703 | 0.6− | 0.8+ | | |
| 2000 09 24 | 704 | 0.5− | 0.4+ | 2003 04 08 | 691 | 0.2+ | 1.1+ | 2006 11 11 | 703 | 0.4− | 0.5+ | | |
| 2000 09 25 | 691 | 0.0 | 0.3+ | 2003 04 20 | 608 | 0.2− | 1.1+ | 2006 11 11 | 703 | 0.4+ | 1.3+ | | |
| 2000 09 25 | 691 | 0.2+ | 0.5+ | 2003 04 20 | 608 | 0.2− | 1.2+ | 2006 11 11 | 703 | 1.1− | 0.9+ | | |
| 2000 09 25 | 691 | 0.2+ | 0.2+ | 2003 04 20 | 608 | 0.1+ | 0.5+ | 2006 11 14 | 704 | (1.0− | 1.6+) | | |
| 2000 09 26 | 704 | 1.2+ | 0.6+ | 2003 04 27 | 699 | 0.2− | 0.4+ | 2006 11 14 | 704 | (0.1+ | 2.2+) | | |
| 2000 09 26 | 704 | 0.1− | 0.8+ | 2003 04 27 | 699 | 0.3+ | 0.6− | 2006 11 14 | 704 | (1.6+ | 2.4+) | | |
| 2000 09 26 | 704 | 0.1+ | 1.4+ | 2003 04 27 | 699 | 0.8− | 0.0 | 2006 11 14 | 704 | 0.6+ | 0.8+ | | |
| 2000 09 26 | 704 | 0.1− | 0.3− | 2003 04 27 | 699 | 0.3− | 0.9+ | 2006 11 14 | 704 | 0.6+ | 0.7+ | | |
| 2000 10 02 | 704 | 0.3− | 1.5+ | 2003 05 05 | 704 | 1.0+ | 0.8+ | 2006 11 17 | 704 | 0.4+ | 1.1+ | | |
| 2000 10 02 | 704 | 0.2− | 0.5+ | 2003 05 05 | 704 | 0.3+ | 0.6− | 2006 11 17 | 704 | 0.0 | 0.4+ | | |
| 2000 10 02 | 704 | 0.8− | 0.9+ | 2003 05 05 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.5+ | | |
| 2000 10 02 | 704 | 0.7− | 0.8+ | 2005 07 31 | 644 | 0.6− | 0.3− | 2006 11 19 | 703 | 0.2− | 0.0 | | |
| 2000 10 02 | 704 | 0.0 | 0.9+ | 2005 07 31 | 644 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.1+ | | |
| 2001 12 11 | 704 | 0.2+ | 0.4− | 2005 07 31 | 644 | 0.4− | 0.3+ | 2006 11 19 | 703 | 0.1− | 0.0 | | |
| 2001 12 11 | 704 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.4− | 0.9+ | 2006 11 19 | 703 | 1.3− | 0.0 | | |
| 2001 12 11 | 704 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.7+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.1− | 1.1+ | | |
| 2003 03 23 | 291 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.0 | 2006 11 20 | 704 | 1.1− | 0.1+ | | |
| 2003 03 23 | 291 | 0.1+ | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.3− | 0.4+ | | |
| 2003 03 23 | 291 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.1+ | | |
| 2003 03 27 | 644 | 0.4+ | 0.0 | 2006 10 03 | G96 | 0.6+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1− | | |
| 2003 03 27 | 699 | 0.9+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2003 03 27 | 699 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 1.3+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2003 03 27 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.5− | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2003 03 27 | 699 | 1.0+ | 1.0− | 2006 10 16 | 703 | 0.1− | 0.4− | | | | | | |

**(138690)∗ 2000 SY$_{56}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 33.87350 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17934664 | ω | 155.95324 | | +0.99996888 | +0.00716461 | |
| *a* | 3.1141573 | Ω | 203.63697 | | −0.00788539 | +0.92042443 | |
| *e* | 0.1847473 | *i* | 0.47191 | | +0.00023925 | +0.39085487 | |
| *P* | 5.50 | *H* | 15.8 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.2+ | 0.1+ | 2000 10 01 | 704 | 0.2− | 1.4− | 2006 09 27 | G96 | 0.1+ | 0.0 | | |
| 1997 01 31 | 691 | 0.0 | 0.0 | 2000 10 01 | 699 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− | | |
| 1997 01 31 | 691 | 0.2− | 0.3− | 2000 10 01 | 699 | 0.9+ | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.4− | | |
| 2000 08 31 | 704 | 0.7− | 0.0 | 2000 10 01 | 699 | 0.7− | 0.8+ | 2006 09 27 | G96 | 0.6− | 0.5− | | |
| 2000 08 31 | 704 | 0.2− | 0.0 | 2000 10 01 | 699 | 0.1+ | 0.4− | 2006 10 19 | G96 | 0.5− | 0.0 | | |
| 2000 08 31 | 704 | 0.0 | 0.9+ | 2000 10 02 | 704 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.3+ | | |
| 2000 09 02 | 699 | 0.4− | 0.2+ | 2000 10 02 | 704 | 0.8+ | 0.2+ | 2006 10 19 | G96 | 0.9+ | 0.3+ | | |
| 2000 09 02 | 699 | (2.2− | 0.3+) | 2000 10 02 | 704 | 0.3− | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.4− | | |
| 2000 09 02 | 699 | 1.7− | 0.1− | 2000 10 02 | 704 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2000 09 02 | 699 | 0.4− | 0.9− | 2000 10 02 | 704 | 0.8+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2000 09 24 | 704 | 0.3− | 0.0 | 2000 10 04 | 704 | 1.0− | 0.9+ | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2000 09 24 | 704 | 0.5+ | 0.4+ | 2000 10 04 | 704 | 0.6+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2000 09 24 | 704 | 0.2− | 0.8+ | 2000 10 04 | 704 | 0.4+ | 0.5− | 2006 11 10 | 691 | 0.2− | 0.2− | | |
| 2000 09 24 | 704 | 0.2+ | 0.0 | 2000 10 04 | 704 | 0.4+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.1+ | | |
| 2000 09 24 | 704 | 0.4+ | 0.2− | 2005 06 14 | G96 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2− | | |
| 2000 09 26 | 704 | 0.2+ | 0.1− | 2005 06 14 | G96 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.0 | | |
| 2000 09 26 | 704 | 0.3− | 0.4− | 2005 06 14 | G96 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 1.3− | | |
| 2000 09 26 | 704 | 0.1+ | 0.5− | 2005 06 14 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.4− | 0.4− | | |
| 2000 09 26 | 704 | 0.2− | 0.4+ | 2005 06 28 | G96 | 0.7− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.1+ | | |
| 2000 09 27 | 704 | 0.4+ | 0.3− | 2005 06 28 | G96 | 0.7− | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.0 | | |
| 2000 09 27 | 704 | 1.2− | 1.0+ | 2005 06 28 | G96 | 1.2− | 0.3+ | 2006 11 14 | 691 | 0.3+ | 0.1− | | |
| 2000 09 27 | 704 | 0.5+ | 1.1− | 2005 06 28 | G96 | 1.2− | 1.0+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 27 | 704 | 0.3− | 1.3− | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 | | |
| 2000 09 28 | 704 | 0.3− | 1.1+ | 2005 07 04 | 691 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 28 | 704 | 0.7+ | 0.5+ | 2005 07 04 | 691 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1+ | | |
| 2000 09 28 | 704 | 0.3+ | 0.9− | 2005 07 07 | 568 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.4− | 1.1+ | | |
| 2000 09 28 | 704 | 0.7− | 1.3+ | 2005 07 07 | 568 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.4− | | |
| 2000 09 28 | 704 | 0.5+ | 0.7− | 2005 07 07 | 568 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.6− | | |
| 2000 10 01 | 704 | 0.1− | 0.0 | 2005 07 15 | G96 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.8+ | 1.0+ | | |
| 2000 10 01 | 704 | 0.4+ | 0.3− | 2005 07 15 | G96 | 0.5+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 2000 10 01 | 704 | 0.3− | 0.5− | 2005 07 15 | G96 | 0.4+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.3+ | | |
| 2000 10 01 | 704 | 0.4+ | 0.1− | 2005 07 15 | G96 | 0.4+ | 0.1− | 2006 11 22 | 691 | 0.2− | 0.1+ | | |

**(138691)∗ 2000 SP$_{57}$ = 1998 FU$_{137}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 5952)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 106.81745 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17807553 | ω | 276.15615 | | +0.13915305 | +0.99018537 | |
| *a* | 3.1289591 | Ω | 1.98843 | | −0.69334090 | +0.10680325 | |
| *e* | 0.0585002 | *i* | 22.02866 | | −0.70704655 | +0.09014436 | |
| *P* | 5.53 | *H* | 14.7 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.1− | 0.7− | 2000 09 26 | 704 | 0.3+ | 0.1+ | 2003 02 01 | 644 | 0.5+ | 0.2+ | | |
| 1998 03 20 | 704 | 0.9− | 0.6+ | 2000 09 26 | 704 | 0.1− | 0.2+ | 2003 02 26 | 704 | 0.0 | 0.1− | | |
| 1998 03 20 | 704 | (2.7+ | 1.4−) | 2000 09 26 | 704 | 1.3+ | 0.7− | 2003 02 26 | 704 | 0.0 | 0.9+ | | |
| 1998 03 20 | 704 | 1.6− | 1.9+ | 2000 09 26 | 704 | 0.3+ | 1.1+ | 2003 02 26 | 704 | 0.5− | 0.5+ | | |
| 1998 03 24 | 704 | (3.0+ | 1.7−) | 2000 09 27 | 704 | 0.3− | 0.5+ | 2003 02 26 | 704 | 0.3− | 0.7+ | | |
| 1998 03 24 | 704 | (2.0+ | 1.3−) | 2000 09 27 | 704 | 0.2− | 0.6+ | 2003 03 03 | 644 | 0.5+ | 0.1− | | |
| 1998 03 24 | 704 | 0.1− | 0.7− | 2000 09 27 | 704 | 0.4− | 0.6+ | 2003 03 03 | 644 | 0.5+ | 0.5+ | | |
| 1998 03 24 | 704 | 1.2− | 0.3− | 2000 09 27 | 704 | 0.3− | 0.7+ | 2003 03 03 | 644 | 0.3+ | 0.1+ | | |
| 1998 03 28 | 704 | 0.6+ | 1.1− | 2000 09 28 | 704 | 0.4+ | 0.1+ | 2003 03 08 | 644 | 0.4+ | 0.1− | | |
| 1998 03 28 | 704 | 0.4+ | 1.8+ | 2000 09 28 | 704 | 0.2+ | 0.6+ | 2003 03 08 | 644 | 0.4+ | 0.0 | | |
| 1998 03 28 | 704 | (2.2− | 0.0 ) | 2000 09 28 | 704 | 0.2+ | 0.0 | 2003 03 08 | 644 | 0.5+ | 0.1+ | | |
| 1998 03 28 | 704 | 1.2− | 1.3+ | 2000 09 28 | 704 | 1.1− | 0.5+ | 2004 06 14 | E12 | 0.6+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.3+ | 1.2− | 2000 09 28 | 704 | 0.5+ | 0.1− | 2004 06 14 | E12 | 1.0+ | 0.0 |
| 1998 03 29 | 704 | 0.5+ | 0.9− | 2000 10 01 | 704 | 0.4− | 0.3− | 2004 06 14 | E12 | 0.9+ | 0.7− |
| 1998 03 29 | 704 | (2.1+ | 1.9−) | 2000 10 01 | 704 | 0.3− | 0.0 | 2004 06 14 | E12 | 0.5+ | 0.4+ |
| 1998 03 29 | 704 | 0.9+ | 0.1+ | 2000 10 01 | 704 | 1.0− | 0.2+ | 2005 08 28 | I10 | (2.1− | 0.5+) |
| 1998 03 29 | 704 | 1.0+ | 0.5+ | 2000 10 01 | 704 | 0.0 | 0.1− | 2005 08 28 | I10 | (1.4− | 1.9+) |
| 1998 04 01 | 704 | 0.9+ | 1.1+ | 2000 10 02 | 704 | 1.1− | 0.4+ | 2005 08 28 | I10 | 0.5+ | 0.1− |
| 1998 04 01 | 704 | 1.0+ | 1.4+ | 2000 10 02 | 704 | 0.4− | 0.4+ | 2005 09 06 | E12 | 0.3− | 0.1+ |
| 1998 04 01 | 704 | 0.5+ | 1.9+ | 2000 10 02 | 704 | 0.1− | 0.5+ | 2005 09 06 | E12 | 0.6− | 0.3− |
| 1998 04 01 | 704 | 0.7+ | 1.3+ | 2000 10 02 | 704 | 0.2− | 0.5+ | 2005 09 06 | E12 | 0.9− | 0.2+ |
| 1998 04 01 | 704 | (3.3− | 0.7−) | 2000 10 02 | 645 | 0.2− | 0.1− | 2005 09 06 | E12 | 0.3− | 0.3− |
| 2000 09 24 | 699 | 1.0+ | 1.7+ | 2000 10 02 | 645 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.3− | 1.1− |
| 2000 09 24 | 699 | 0.6+ | 0.0 | 2000 10 02 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2000 09 24 | 704 | 0.9− | 0.1+ | 2000 10 03 | 704 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.4+ | 0.3− |
| 2000 09 24 | 704 | 0.2+ | 0.7+ | 2000 10 03 | 704 | 0.3+ | 1.2+ | 2006 09 28 | 703 | 0.3− | 0.6− |
| 2000 09 24 | 699 | 0.0 | 0.3+ | 2000 10 03 | 704 | 1.0+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2000 09 24 | 704 | 0.9+ | 0.1+ | 2000 10 04 | 704 | 0.9+ | 0.5− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2000 09 24 | 699 | 0.6+ | 1.3+ | 2000 10 04 | 704 | 1.0− | 0.4+ | 2006 10 23 | 644 | 0.6+ | 0.3+ |
| 2000 09 24 | 704 | 0.2− | 0.8+ | 2000 10 04 | 704 | 0.8+ | 1.1+ | 2006 10 27 | 703 | 0.5− | 0.2+ |
| 2000 09 24 | 704 | 0.2− | 0.3− | 2000 10 04 | 704 | 1.1− | 0.9+ | 2006 10 27 | 703 | 0.7− | 0.5+ |
| 2000 09 26 | 704 | 0.9− | 0.2+ | 2003 01 26 | 699 | 0.2− | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.7− |
| 2000 09 26 | 704 | 0.1+ | 0.6+ | 2003 01 26 | 699 | 0.5+ | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.5− |
| 2000 09 26 | 704 | 0.4− | 0.2+ | 2003 01 26 | 699 | 1.1+ | 0.4− | 2006 11 16 | 703 | 0.4− | 0.2− |
| 2000 09 26 | 704 | 0.1− | 0.9+ | 2003 01 26 | 699 | 0.9+ | 0.8− | 2006 11 16 | 703 | 0.9+ | 0.6− |
| 2000 09 26 | 704 | 0.6− | 0.1+ | 2003 02 01 | 644 | 0.5+ | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.3+ |
| 2000 09 26 | 704 | 0.4− | 0.3+ | 2003 02 01 | 644 | 0.5+ | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.6− |

**(138692)∗ 2000 SV$_{58}$ = 2000 SU$_{184}$ = 2001 XL$_{41}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11071), G. V. Williams (*MPO* 22544)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.10299 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17106344 | $\omega$ | 29.62179 | | +0.88506099 | | −0.46544363 |
| $a$ | 3.2138918 | $\Omega$ | 358.09225 | | +0.38870877 | | +0.74544023 |
| $e$ | 0.0785591 | $i$ | 9.35228 | | +0.25607133 | | +0.47715940 |
| $P$ | 5.76 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 704 | 0.1− | 0.1+ | 2001 12 09 | 704 | 0.4− | 0.1− | 2006 09 20 | 699 | 0.3− | 0.7+ |
| 2000 09 02 | 704 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.8+ | 0.1− | 2006 09 20 | 699 | 0.9− | 0.1+ |
| 2000 09 02 | 704 | 0.4− | 0.4− | 2001 12 14 | 704 | 0.5− | 1.2− | 2006 09 20 | 699 | 0.2− | 0.5− |
| 2000 09 02 | 704 | 0.3− | 0.2+ | 2001 12 14 | 704 | 0.0 | 1.0− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2000 09 20 | 608 | 1.1− | 0.6+ | 2001 12 14 | 704 | 0.2− | 1.6− | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2000 09 20 | 608 | 0.9− | 0.5+ | 2003 02 09 | 608 | 0.5+ | 0.6− | 2006 09 28 | 691 | 0.2− | 0.1− |
| 2000 09 20 | 608 | 0.7− | 0.4+ | 2003 02 09 | 608 | 0.0 | 0.7− | 2006 10 02 | 691 | 0.2+ | 0.5− |
| 2000 09 24 | 704 | 1.0− | 1.3− | 2003 02 09 | 608 | 0.9+ | 0.5− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2000 09 24 | 704 | 0.4+ | 0.4− | 2003 03 06 | 704 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.6+ | 0.2− |
| 2000 09 24 | 704 | 0.2+ | 0.0 | 2003 03 06 | 704 | 0.7− | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.3+ |
| 2000 09 24 | 704 | 0.7+ | 1.6+ | 2003 03 06 | 704 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2000 09 26 | 704 | 0.8− | 0.3+ | 2003 03 06 | 704 | (0.3+ | 2.2+) | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2000 09 26 | 704 | 1.0− | 1.1+ | 2003 03 07 | 699 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2000 09 26 | 704 | 0.4+ | 1.1+ | 2003 03 07 | 699 | (0.1− | 1.6+) | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2000 09 26 | 704 | 0.1− | 0.0 | 2003 03 07 | 699 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2000 10 01 | 704 | 0.8+ | 0.1− | 2003 03 07 | 699 | (1.9+ | 0.2+) | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2000 10 01 | 704 | 0.3+ | 0.2+ | 2003 03 13 | 291 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 0.2+ | 0.3+ | 2003 03 13 | 291 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2000 10 01 | 704 | 0.4+ | 0.3+ | 2003 03 13 | 291 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2000 10 01 | 699 | 0.9− | 0.2+ | 2003 03 30 | 695 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2000 10 01 | 699 | 1.1− | 0.1− | 2003 03 30 | 695 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2000 10 01 | 699 | 0.2− | 0.2− | 2003 03 31 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2000 10 01 | 699 | 0.6− | 1.5+ | 2003 03 31 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 10 02 | 704 | 0.5− | 1.2+ | 2003 03 31 | 691 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2000 10 02 | 704 | 0.7+ | 0.1+ | 2003 04 03 | 699 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 10 02 | 704 | 0.5+ | 0.1− | 2003 04 03 | 699 | 0.3+ | 0.0 | 2006 10 29 | 704 | 0.4+ | 1.6+ |
| 2000 10 02 | 704 | 1.0+ | 0.3− | 2003 04 03 | 699 | 0.4− | 0.6− | 2006 10 29 | 704 | 0.5− | 1.6+ |
| 2000 10 02 | 704 | 0.4− | 0.1− | 2003 04 03 | 699 | 0.8+ | 0.3− | 2006 10 29 | 704 | 0.4− | 0.2− |
| 2001 12 09 | 704 | 0.3− | 0.1+ | 2003 04 09 | 691 | 0.1− | 0.5+ | 2006 10 29 | 704 | 0.1+ | 0.7+ |
| 2001 12 09 | 704 | 0.1− | 0.0 | 2003 04 09 | 691 | 0.2− | 0.6+ | 2006 10 29 | 704 | 0.2− | 0.7+ |
| 2001 12 09 | 704 | 0.5− | 0.2− | 2003 04 09 | 691 | 0.4− | 0.2+ | | | | |
| 2001 12 09 | 704 | 0.7+ | 0.2− | 2006 09 20 | 699 | 0.3− | 0.2− | | | | |

**(138693)∗ 2000 ST$_{59}$ = 2004 HP$_{64}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64819)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.49665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18115185 | $\omega$ | 117.26975 | | +0.74735097 | | +0.66377312 |
| $a$ | 3.0934341 | $\Omega$ | 201.18438 | | −0.63483810 | | +0.70024706 |
| $e$ | 0.1628580 | $i$ | 4.68661 | | −0.19607936 | | +0.26279138 |
| $P$ | 5.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 0.3− | 0.2+ | 2000 10 02 | 704 | 0.2− | 0.7− | 2005 07 11 | 703 | 1.1− | 0.5+ |
| 2000 09 24 | 699 | 0.6+ | 0.2− | 2000 10 02 | 704 | 0.0 | 0.8+ | 2005 07 11 | 703 | 0.1− | 0.3+ |
| 2000 09 24 | 704 | 0.4+ | 0.4− | 2000 10 03 | 704 | 0.4− | 0.9− | 2005 09 13 | 691 | 0.1− | 0.1+ |
| 2000 09 24 | 699 | 0.1− | 0.3+ | 2000 10 03 | 704 | 0.5+ | 0.6− | 2005 09 13 | 691 | 0.3+ | 0.1+ |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2000 10 03 | 704 | 0.5− | 1.1+ | 2005 09 13 | 691 | 0.1+ | 0.1− |
| 2000 09 24 | 699 | 0.9− | 0.4+ | 2000 10 03 | 704 | 0.2+ | 0.7− | 2005 10 30 | G96 | 0.1− | 0.1+ |
| 2000 09 24 | 704 | 0.5+ | 0.6− | 2000 10 03 | 704 | 0.3− | 1.1− | 2005 10 30 | G96 | 0.0 | 0.4− |
| 2000 09 24 | 704 | 0.3− | 0.4− | 2004 04 16 | 691 | 0.2+ | 0.5+ | 2005 10 30 | G96 | 0.3+ | 0.3− |
| 2000 09 24 | 704 | 0.4− | 0.2+ | 2004 04 16 | 691 | 0.0 | 0.4+ | 2005 10 30 | G96 | 0.0 | 0.3− |
| 2000 09 26 | 704 | 1.0− | 0.4+ | 2004 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2000 09 26 | 704 | 0.0 | 0.4− | 2004 04 25 | 291 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2000 09 26 | 704 | 0.9− | 0.9+ | 2004 04 25 | 291 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2000 09 26 | 704 | 0.9+ | 0.4− | 2004 04 25 | 291 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2000 09 26 | 704 | 0.1− | 1.0+ | 2005 06 28 | 644 | 0.6+ | 0.3− | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2000 09 26 | 704 | 0.2+ | 0.2− | 2005 06 28 | 644 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2000 09 26 | 704 | 1.1+ | 1.6+ | 2005 06 28 | 644 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2000 09 26 | 704 | 1.0+ | 0.6+ | 2005 06 29 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2000 09 26 | 704 | 0.5− | 0.3+ | 2005 06 29 | 691 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.3− | 0.4+ |
| 2000 09 26 | 608 | 0.6− | 1.2+ | 2005 06 29 | 691 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2000 09 26 | 608 | 0.1− | 0.5+ | 2005 07 05 | 644 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2000 09 26 | 608 | 0.8− | 1.0+ | 2005 07 05 | 644 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2000 10 01 | 699 | 0.3+ | 0.2+ | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.5+ |
| 2000 10 01 | 699 | 0.3− | 0.5− | 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 2000 10 01 | 699 | 0.1+ | 1.2+ | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2000 10 01 | 699 | 0.7+ | 0.8+ | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2000 10 02 | 704 | 0.4− | 1.9− | 2005 07 11 | 703 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2000 10 02 | 704 | 0.1− | 0.8+ | 2005 07 11 | 703 | 0.6+ | 0.5+ | | | | |

**(138694)∗ 2000 SV$_{59}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.44954 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17830859 | $\omega$ | 103.66141 | | +0.37079053 | | +0.92691380 |
| $a$ | 3.1262320 | $\Omega$ | 188.78642 | | −0.92871509 | | +0.36996091 |
| $e$ | 0.0787356 | $i$ | 22.24937 | | −0.00163006 | | +0.06292636 |
| $P$ | 5.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 695 | 0.1− | 0.1− | 2000 10 01 | 699 | 0.6+ | 1.4+ | 2004 06 12 | 699 | (0.5− | 2.0+) |
| 2000 09 19 | 695 | 0.3− | 0.1− | 2000 10 01 | 699 | 1.3+ | 0.4+ | 2004 06 12 | 699 | 0.2− | 1.1+ |
| 2000 09 24 | 699 | 0.5− | 0.5− | 2000 10 02 | 704 | 0.2+ | 0.1+ | 2004 06 12 | 699 | (3.8− | 1.4+) |
| 2000 09 24 | 699 | 0.6− | 0.1− | 2000 10 02 | 704 | 0.5− | 0.1+ | 2005 07 01 | 644 | 0.2+ | 0.3− |
| 2000 09 24 | 704 | 0.5+ | 0.9− | 2000 10 02 | 704 | 0.5− | 0.0 | 2005 07 01 | 644 | 0.1− | 0.4− |
| 2000 09 24 | 699 | 0.6− | 0.1− | 2000 10 02 | 704 | 1.4+ | 1.2+ | 2005 07 01 | 644 | 0.1+ | 0.2− |
| 2000 09 24 | 704 | 0.8− | 1.2− | 2000 10 02 | 704 | 0.7+ | 1.1+ | 2005 07 29 | 704 | 0.4− | 0.1− |
| 2000 09 24 | 699 | 0.9− | 0.4+ | 2000 10 21 | 691 | 0.0 | 0.6− | 2005 07 29 | 704 | 0.0 | 0.6− |
| 2000 09 24 | 704 | (2.1+ | 0.7−) | 2000 10 21 | 691 | 0.0 | 0.1− | 2005 07 29 | 704 | 0.5+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.8+ | 0.4− | 2000 10 21 | 691 | 0.5+ | 0.1+ | 2005 07 29 | 704 | 0.4− | 0.4− |
| 2000 09 24 | 704 | 0.3− | 0.9− | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2005 07 29 | 704 | 0.3+ | 0.5− |
| 2000 09 26 | 704 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.4+ | 1.4+ | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2000 09 26 | 704 | 0.1− | 0.9+ | 2004 03 27 | 704 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 2000 09 26 | 704 | 0.1+ | 0.8+ | 2004 03 27 | 704 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2000 09 26 | 608 | 0.1− | 0.0 | 2004 04 24 | 704 | 0.8− | 0.6− | 2006 09 30 | 703 | 0.3+ | 0.8+ |
| 2000 09 26 | 608 | 0.2− | 0.3+ | 2004 04 24 | 704 | 1.2− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2000 09 26 | 608 | 0.6− | 0.2+ | 2004 04 24 | 704 | 0.6− | 0.9+ | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2000 10 01 | 704 | 0.1− | 0.1+ | 2004 05 24 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2000 10 01 | 704 | 0.8− | 0.2+ | 2004 05 24 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 1.0+ | 0.9− |
| 2000 10 01 | 704 | 0.2− | 1.2+ | 2004 05 24 | 704 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.2− |
| 2000 10 01 | 704 | 0.8− | 1.1+ | 2004 05 24 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.4+ |
| 2000 10 01 | 699 | 0.2− | 0.1+ | 2004 05 24 | 704 | 0.5+ | 0.4− | 2006 10 28 | 703 | 0.4− | 1.8− |
| 2000 10 01 | 699 | 0.8+ | 1.2+ | 2004 06 12 | 699 | (2.7+ | 0.1+) | 2006 10 28 | 703 | 1.6+ | 1.5+ |

**(138695)∗ 2000 SD$_{60}$ = 2002 EM$_{57}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29327)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.49218 | | (2000.0) | | | |
| $n$ | 0.18997302 | $\omega$ | 184.41050 | | +0.45492673 | −0.89038929 |
| $a$ | 2.9969174 | $\Omega$ | 238.53000 | | +0.81760868 | +0.42462651 |
| $e$ | 0.2703632 | $i$ | 1.05919 | | +0.35292734 | +0.16400987 |
| $P$ | 5.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 1.2− | 1.6+ | 2000 10 06 | 704 | 0.6− | 0.1− | 2005 09 08 | 704 | 0.6− | 0.1+ |
| 2000 09 24 | 699 | 1.4− | 0.9+ | 2000 10 06 | 704 | 0.5− | 0.3+ | 2005 09 08 | 704 | 0.4+ | 0.9+ |
| 2000 09 24 | 704 | 0.5+ | 0.3+ | 2000 10 06 | 704 | 0.6− | 0.3+ | 2005 09 08 | 704 | 0.0 | 0.4+ |
| 2000 09 24 | 699 | 1.4− | 1.1+ | 2000 10 06 | 704 | 0.5− | 0.4− | 2005 09 08 | 704 | 0.6+ | 0.2+ |
| 2000 09 24 | 704 | 0.0 | 0.2− | 2002 02 11 | 704 | 1.1+ | 1.2+ | 2005 09 13 | 691 | 0.2− | 0.3+ |
| 2000 09 24 | 699 | (2.1− | 1.2+) | 2002 02 11 | 704 | 0.7+ | 0.0 | 2005 09 13 | 691 | 0.1− | 0.4+ |
| 2000 09 24 | 704 | 0.3+ | 0.1− | 2002 02 11 | 704 | (1.5+ | 0.1+) | 2005 09 13 | 691 | 0.2− | 0.4+ |
| 2000 09 24 | 704 | 0.2+ | 0.4− | 2002 02 11 | 704 | 0.4+ | 0.1− | 2005 09 22 | 644 | 0.0 | 0.0 |
| 2000 09 24 | 704 | 0.1+ | 0.4− | 2002 02 11 | 704 | 0.4+ | 0.4− | 2005 09 22 | 644 | 0.2− | 0.0 |
| 2000 09 25 | 691 | 0.4+ | 0.3− | 2002 02 13 | 645 | 0.0 | 0.1+ | 2005 09 22 | 644 | 0.0 | 0.1+ |
| 2000 09 25 | 691 | 0.3+ | 0.2− | 2002 02 13 | 645 | 0.0 | 0.1+ | 2005 09 23 | 703 | 0.3− | 0.4+ |
| 2000 09 25 | 691 | 0.4+ | 0.2− | 2002 02 21 | 704 | (0.5+ | 1.8−) | 2005 09 23 | 703 | 0.2+ | 0.6− |
| 2000 09 26 | 704 | 0.2+ | 0.6+ | 2002 02 21 | 704 | 0.8+ | 0.7− | 2005 09 23 | 703 | 0.8+ | 0.4− |
| 2000 09 26 | 704 | 0.0 | 0.2− | 2002 02 21 | 704 | 1.2+ | 1.2− | 2005 09 23 | 703 | 0.7− | 0.2+ |
| 2000 09 26 | 704 | 0.1+ | 0.1+ | 2002 03 05 | 645 | 0.1− | 0.1+ | 2005 09 23 | 703 | 0.5− | 0.0 |
| 2000 09 26 | 704 | 0.2+ | 0.3+ | 2002 03 05 | 645 | 0.1− | 0.1+ | 2005 09 23 | 703 | 0.9− | 0.0 |
| 2000 09 26 | 704 | 0.6− | 0.1+ | 2002 03 05 | 644 | 0.3+ | 1.0+ | 2005 09 23 | 703 | 0.5+ | 0.0 |
| 2000 09 26 | 608 | 1.1− | 0.2− | 2002 03 05 | 644 | 0.5+ | 0.6+ | 2005 09 23 | 703 | 0.4− | 1.2+ |
| 2000 09 26 | 608 | 0.8− | 0.6− | 2002 03 05 | 644 | 0.4+ | 0.6+ | 2005 09 27 | 644 | 0.5− | 0.0 |
| 2000 09 26 | 608 | 1.0− | 0.5− | 2002 03 11 | 691 | 0.0 | 0.1+ | 2005 09 27 | 644 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 1.1+ | 0.2− | 2002 03 11 | 691 | 0.1− | 0.3+ | 2005 09 27 | 644 | 0.2+ | 0.2+ |
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2002 03 11 | 691 | 0.2+ | 0.5− | 2005 09 30 | G96 | 0.3− | 0.2− |
| 2000 10 01 | 704 | 0.5+ | 0.1− | 2002 03 13 | 704 | 0.3+ | 0.6+ | 2005 09 30 | G96 | 0.4− | 0.1− |
| 2000 10 01 | 704 | 0.6+ | 0.1+ | 2002 03 13 | 704 | 0.6− | 0.8+ | 2005 09 30 | G96 | 0.5− | 0.2− |
| 2000 10 01 | 699 | 0.9+ | 0.1+ | 2002 03 13 | 704 | 0.4+ | 0.6+ | 2005 09 30 | G96 | 0.1− | 0.1− |
| 2000 10 01 | 699 | 0.4+ | 0.0 | 2002 03 13 | 704 | 0.4+ | 0.6+ | 2005 10 01 | 699 | 1.4+ | 0.7+ |
| 2000 10 01 | 699 | 1.0+ | 0.4+ | 2002 03 13 | 704 | 0.4+ | 0.2+ | 2005 10 01 | 699 | (0.2+ | 1.5+) |
| 2000 10 01 | 699 | 0.1− | 0.2+ | 2002 03 13 | 644 | (0.6+ | 1.7+) | 2005 10 01 | 699 | 0.2+ | 0.2− |
| 2000 10 02 | 704 | 0.1− | 0.4+ | 2002 03 13 | 644 | (0.6+ | 1.6+) | 2005 10 01 | 699 | (0.0 | 2.9+) |
| 2000 10 02 | 704 | 0.8+ | 1.5+ | 2002 03 13 | 644 | (0.6+ | 1.8+) | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2000 10 02 | 704 | 0.1− | 0.1− | 2002 03 15 | 704 | (0.7+ | 1.9+) | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.4− | 0.7− | 2002 03 15 | 704 | 0.7+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2000 10 02 | 704 | 0.1+ | 0.3− | 2002 03 15 | 704 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2000 10 03 | 704 | 0.3− | 0.1− | 2002 03 15 | 704 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2000 10 03 | 704 | 0.1− | 0.1+ | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.6− |
| 2000 10 03 | 704 | 1.0− | 0.3− | 2005 07 30 | 644 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.9− |
| 2000 10 03 | 704 | 0.6+ | 0.4+ | 2005 07 30 | 644 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2000 10 03 | 704 | 0.5− | 0.1+ | 2005 08 25 | 644 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2000 10 03 | 704 | 1.0− | 0.1+ | 2005 08 25 | 644 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.6− |
| 2000 10 03 | 704 | 0.3− | 0.2+ | 2005 08 25 | 644 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2000 10 03 | 704 | 0.5− | 0.2− | 2005 08 27 | 699 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2000 10 04 | 704 | 0.4+ | 0.3+ | 2005 08 27 | 699 | (1.9+ | 1.4−) | 2006 11 21 | G96 | 0.4− | 0.2+ |
| 2000 10 04 | 704 | 1.9+ | 0.1− | 2005 08 27 | 699 | 1.0+ | 0.1− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2000 10 04 | 704 | 1.2− | 0.1+ | 2005 08 27 | 699 | (2.1+ | 0.0 ) | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2000 10 04 | 704 | 0.1− | 0.0 | 2005 08 30 | 704 | 0.5− | 1.0+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2000 10 04 | 704 | 0.5+ | 0.2− | 2005 08 30 | 704 | (0.1+ | 1.5+) | | | | |
| 2000 10 06 | 704 | 0.1+ | 0.8− | 2005 08 30 | 704 | 0.3− | 1.2+ | | | | |

**(138696)∗ 2000 SB$_{69}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.98335 | | (2000.0) | | | |
| $n$ | 0.17049263 | $\omega$ | 190.82851 | | +0.93369598 | −0.35663023 |
| $a$ | 3.2210612 | $\Omega$ | 190.24035 | | +0.34051671 | +0.91204203 |
| $e$ | 0.1392921 | $i$ | 10.38350 | | +0.11072569 | +0.20247028 |
| $P$ | 5.78 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 704 | 0.9+ | 0.1+ | 2000 10 03 | 704 | 0.8+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.7− |
| 2000 09 02 | 704 | 0.1+ | 1.2+ | 2000 10 03 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 2000 09 02 | 704 | 0.1+ | 1.6+ | 2000 10 04 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2000 09 02 | 704 | 0.2+ | 1.0+ | 2000 10 04 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2000 09 21 | 691 | 0.5+ | 0.1+ | 2000 10 04 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.5− |
| 2000 09 21 | 691 | 0.2+ | 0.2+ | 2000 10 04 | 704 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2000 09 21 | 691 | 0.3+ | 0.2+ | 2000 10 04 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2000 09 24 | 704 | 0.2+ | 0.4+ | 2000 10 06 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2000 09 24 | 704 | 0.6+ | 0.1− | 2000 10 06 | 704 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2000 09 24 | 704 | 0.2+ | 0.4− | 2000 10 06 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.2− | 0.7− | 2000 10 06 | 704 | 0.2+ | 0.6− | 2006 10 22 | 703 | 0.3− | 0.3− |
| 2000 09 24 | 704 | 0.2− | 1.6− | 2000 10 24 | 704 | 0.0 | 1.1+ | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2000 09 25 | 608 | 0.6− | 1.0− | 2000 10 24 | 704 | 0.8− | 0.6− | 2006 10 22 | 703 | 0.7− | 0.4− |
| 2000 09 25 | 608 | 0.7− | 1.3− | 2000 10 24 | 704 | 0.8− | 0.0 | 2006 10 22 | 703 | 0.2− | 1.2− |
| 2000 09 25 | 608 | 0.9− | 0.8− | 2000 11 02 | 704 | 0.3− | 0.6+ | 2006 11 14 | 704 | 0.4− | 0.0 |
| 2000 09 26 | 699 | 0.7− | 0.8+ | 2000 11 02 | 704 | 0.3+ | 1.1+ | 2006 11 14 | 704 | 0.7+ | 0.4+ |
| 2000 09 26 | 704 | 0.1− | 0.3+ | 2000 11 02 | 704 | 0.2+ | 1.2+ | 2006 11 14 | 704 | 0.1+ | 0.0 |
| 2000 09 26 | 699 | 1.2+ | 0.9+ | 2000 11 02 | 704 | 1.4+ | 0.2+ | 2006 11 14 | 644 | 0.4+ | 0.0 |
| 2000 09 26 | 704 | 0.5− | 0.4+ | 2000 11 02 | 704 | 0.3+ | 1.8+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2000 09 26 | 704 | 1.1− | 1.2+ | 2001 12 19 | 704 | 0.5− | 0.8+ | 2006 11 14 | 644 | 0.1− | 0.3− |
| 2000 09 26 | 699 | 0.4+ | 1.2+ | 2001 12 19 | 704 | 0.1+ | 0.9+ | 2006 11 14 | 704 | 0.4− | 0.2+ |
| 2000 09 26 | 704 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.2+ | 0.8+ | 2006 11 14 | 644 | 0.0 | 0.0 |
| 2000 09 26 | 699 | 0.2− | 0.1+ | 2003 03 24 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2000 09 26 | 704 | 0.5− | 0.2+ | 2003 03 24 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2000 10 01 | 704 | 0.5+ | 0.0 | 2003 03 24 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.5+ | 2003 04 07 | 691 | 0.1− | 0.4+ | 2006 11 17 | 644 | 0.1+ | 0.3− |
| 2000 10 01 | 704 | 0.1+ | 0.7+ | 2003 04 07 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 1.1− |
| 2000 10 01 | 704 | 0.5− | 1.0+ | 2003 04 07 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2000 10 01 | 699 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 2000 10 01 | 704 | 0.0 | 0.7+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.2− |
| 2000 10 01 | 699 | 0.5+ | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.8− |
| 2000 10 01 | 699 | 0.3+ | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.2− | 0.1− |
| 2000 10 01 | 699 | 0.1+ | 0.2+ | 2006 07 22 | G96 | (1.6− | 1.2+) | 2006 11 19 | 703 | 0.5+ | 0.4− |
| 2000 10 02 | 704 | 0.3+ | 1.5− | 2006 07 22 | G96 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.6+ |
| 2000 10 02 | 704 | 0.5− | 0.3− | 2006 07 22 | G96 | 0.8− | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2000 10 02 | 704 | 0.3− | 0.8− | 2006 07 22 | G96 | 0.1+ | 0.9+ | 2006 11 20 | 704 | 0.3+ | 0.8+ |
| 2000 10 02 | 704 | 0.6− | 0.6− | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2000 10 02 | 704 | 0.7− | 0.2− | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.4+ | 0.3− |
| 2000 10 03 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2000 10 03 | 704 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.7− |
| 2000 10 03 | 704 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.7− |
| 2000 10 03 | 704 | 0.3+ | 0.6+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.6− |
| 2000 10 03 | 704 | 0.4− | 0.4− | 2006 10 03 | G96 | 0.5+ | 1.0− | | | | |
| 2000 10 03 | 704 | 0.9− | 0.6− | 2006 10 03 | G96 | 0.1− | 0.5− | | | | |

**(138697)∗ 2000 ST$_{69}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.56436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28333773 | $\omega$ | 302.96741 | | +0.96523318 | −0.25260767 | |
| $a$ | 2.2957950 | $\Omega$ | 71.74116 | | +0.25716688 | +0.87170966 | |
| $e$ | 0.2338603 | $i$ | 4.05710 | | +0.04679852 | +0.41989479 | |
| $P$ | 3.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.5+ | 1.0− | 2000 10 02 | 704 | 0.3+ | 0.2+ | 2005 01 16 | 704 | 0.1− | 0.8+ |
| 1995 02 03 | 691 | 0.2+ | 0.4+ | 2000 10 29 | 704 | 0.3+ | 1.0+ | 2005 01 16 | 704 | 0.8+ | 0.5+ |
| 1995 02 03 | 691 | 0.8− | 0.4+ | 2000 10 29 | 704 | 0.5+ | 0.4+ | 2005 01 16 | 704 | 0.0 | 0.7+ |
| 2000 08 05 | 608 | 1.8+ | 0.2− | 2000 10 29 | 704 | 0.3+ | 0.4+ | 2005 01 19 | 704 | 0.7+ | 1.2− |
| 2000 08 05 | 608 | 1.8+ | 0.0 | 2000 10 29 | 704 | 0.0 | 0.2− | 2005 01 19 | 704 | 0.3− | 0.2+ |
| 2000 08 05 | 608 | 1.7+ | 0.4+ | 2000 11 02 | 704 | 0.1+ | 0.3− | 2005 01 19 | 704 | 0.1− | 0.4− |
| 2000 08 25 | 704 | 0.6+ | 1.8− | 2000 11 02 | 704 | 0.2− | 0.2+ | 2005 01 20 | 704 | 0.1− | 0.6− |
| 2000 08 25 | 704 | 0.8− | 0.3+ | 2000 11 02 | 704 | 0.2+ | 0.5+ | 2005 01 20 | 704 | 0.3− | 0.7− |
| 2000 08 25 | 704 | 1.6− | 0.4+ | 2000 11 02 | 704 | 0.1− | 0.2− | 2005 01 20 | 704 | 0.7+ | 0.2+ |
| 2000 09 23 | 699 | 0.7− | 0.5+ | 2000 11 26 | 704 | 0.4− | 0.7− | 2005 01 20 | 704 | 0.5+ | 0.4+ |
| 2000 09 23 | 699 | 0.9− | 1.2+ | 2000 11 26 | 704 | 0.8− | 0.4+ | 2005 02 14 | 704 | 0.4− | 0.8+ |
| 2000 09 23 | 699 | 1.0− | 1.0+ | 2000 11 26 | 704 | 0.1− | 0.9+ | 2005 02 14 | 704 | 0.7+ | 0.6+ |
| 2000 09 23 | 699 | 0.1− | 0.5+ | 2000 11 26 | 704 | 0.2− | 0.3− | 2005 02 14 | 704 | 0.1+ | 1.3+ |
| 2000 09 24 | 704 | 0.4+ | 0.2+ | 2000 11 26 | 704 | 0.1+ | 0.3− | 2005 02 14 | 704 | 1.5+ | 1.1+ |
| 2000 09 24 | 704 | 0.0 | 0.5+ | 2004 12 20 | 621 | 0.2− | 0.7− | 2005 02 14 | 704 | 0.7+ | 0.8+ |
| 2000 09 24 | 704 | 0.3− | 0.2+ | 2004 12 20 | 621 | 0.1+ | 0.6− | 2006 01 28 | 691 | 0.9+ | 0.6+ |
| 2000 09 24 | 704 | 0.2+ | 0.2+ | 2004 12 20 | 621 | 0.6− | 0.0 | 2006 01 28 | 691 | 0.0 | 0.7+ |
| 2000 09 24 | 704 | 0.3− | 0.3+ | 2004 12 20 | 621 | 0.0 | 0.7− | 2006 01 28 | 691 | 0.8+ | 0.1− |
| 2000 09 26 | 704 | 0.1− | 0.2+ | 2004 12 21 | 621 | 0.4− | 0.3− | 2006 03 25 | 691 | 0.2+ | 0.4+ |
| 2000 09 26 | 704 | 0.6− | 0.3− | 2004 12 21 | 621 | 0.1− | 0.8− | 2006 03 25 | 691 | 0.2+ | 0.6+ |
| 2000 09 26 | 704 | 1.1− | 0.0 | 2004 12 21 | 621 | 0.7− | 0.7− | 2006 03 25 | 691 | 0.4− | 0.7+ |
| 2000 09 26 | 704 | 0.1− | 0.0 | 2005 01 07 | 704 | 0.6− | 0.8+ | 2006 04 25 | A50 | 0.3+ | 0.2− |
| 2000 09 26 | 704 | 1.2− | 0.1+ | 2005 01 07 | 704 | 0.8+ | 0.6+ | 2006 05 24 | G96 | 1.6− | 0.0 |
| 2000 10 02 | 704 | 0.3− | 0.0 | 2005 01 07 | 704 | 0.4+ | 0.1+ | 2006 05 24 | G96 | 0.8+ | 0.3− |
| 2000 10 02 | 704 | 0.1+ | 0.4+ | 2005 01 13 | 691 | 0.2− | 0.0 | 2006 05 24 | G96 | 0.3− | 0.5+ |
| 2000 10 02 | 704 | 0.1+ | 0.3+ | 2005 01 13 | 691 | 0.1− | 0.0 | 2006 05 24 | G96 | 0.6− | 0.5+ |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2005 01 13 | 691 | 0.2− | 0.1− | | | | |

**(138698)∗ 2000 SQ$_{76}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.22201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20490232 | $\omega$ | 233.41756 | | +0.81633918 | −0.57591501 | |
| $a$ | 2.8495184 | $\Omega$ | 161.61901 | | +0.56426552 | +0.77908295 | |
| $e$ | 0.3141675 | $i$ | 7.97122 | | +0.12326702 | +0.24769268 | |
| $P$ | 4.81 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.1− | 0.3− | 2000 10 29 | 704 | 0.0 | 0.0 | 2005 11 25 | 703 | 0.1− | 0.2− |
| 1995 07 26 | 691 | 0.2− | 0.6− | 2000 10 29 | 704 | 0.4− | 0.1− | 2005 11 25 | 703 | 0.2+ | 0.2− |
| 1995 07 26 | 691 | 0.2− | 0.5− | 2000 11 03 | 704 | 0.2− | 0.5+ | 2005 11 25 | 703 | 0.1+ | 0.3− |
| 2000 09 21 | 608 | 0.4+ | 0.3− | 2000 11 03 | 704 | 0.1− | 0.2− | 2005 11 26 | 703 | 0.3− | 0.3− |
| 2000 09 21 | 608 | 0.4+ | 0.5− | 2000 11 03 | 704 | 0.1− | 0.2− | 2005 11 26 | 703 | 0.2− | 0.2+ |
| 2000 09 21 | 608 | 0.2+ | 0.4− | 2000 11 03 | 704 | 0.2− | 0.4+ | 2005 11 26 | 703 | 0.1+ | 0.3+ |
| 2000 09 24 | 704 | 0.7− | 0.1− | 2000 11 03 | 704 | 0.1− | 0.4+ | 2005 11 26 | 703 | 0.4− | 0.0 |
| 2000 09 24 | 704 | 0.7+ | 0.3+ | 2000 11 17 | 682 | 2.1− | 0.1− | 2005 11 29 | 644 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.2+ | 0.0 | 2000 11 17 | 682 | 0.6− | 0.7+ | 2005 11 29 | 644 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.8+ | 0.5+ | 2000 11 17 | 682 | 1.0+ | 0.1− | 2005 11 29 | 644 | 0.3− | 0.2+ |
| 2000 09 24 | 704 | 0.2+ | 0.4− | 2000 11 17 | 682 | (0.1+ | 2.2+) | 2005 12 07 | 703 | 0.3+ | 0.4− |
| 2000 09 26 | 704 | 0.4+ | 0.7+ | 2002 02 14 | 691 | 0.3+ | 0.2+ | 2005 12 07 | 703 | 0.0 | 0.4− |
| 2000 09 26 | 704 | 0.1+ | 0.0 | 2002 02 14 | 691 | 0.3+ | 0.4+ | 2005 12 07 | 703 | 1.5− | 1.6− |
| 2000 09 26 | 704 | 0.5+ | 0.6+ | 2002 02 14 | 691 | 0.7+ | 0.2+ | 2005 12 07 | 704 | 0.2+ | 1.0− |
| 2000 09 26 | 704 | 0.3+ | 0.9+ | 2002 03 05 | 645 | 0.1− | 0.1− | 2005 12 07 | 704 | 0.5+ | 0.9− |
| 2000 09 26 | 704 | 0.3+ | 1.0+ | 2002 03 05 | 645 | 0.1− | 0.2− | 2005 12 07 | 704 | 0.4+ | 1.2− |
| 2000 09 30 | 699 | 0.3+ | 0.2+ | 2002 03 12 | 691 | 0.0 | 0.4+ | 2005 12 07 | 704 | 0.2+ | 0.4− |
| 2000 09 30 | 699 | 0.3+ | 0.2+ | 2002 03 12 | 691 | 0.0 | 0.0 | 2005 12 07 | 704 | 0.2+ | 1.0− |
| 2000 09 30 | 699 | 0.3+ | 0.2− | 2002 03 12 | 691 | 0.2+ | 0.1− | 2005 12 27 | 703 | 0.1− | 0.2− |
| 2000 09 30 | 699 | 0.6+ | 0.3+ | 2005 11 05 | 704 | 0.5+ | 0.5− | 2005 12 27 | 703 | 0.6− | 0.2+ |
| 2000 10 02 | 688 | 0.1+ | 0.2+ | 2005 11 05 | 704 | 0.7+ | 0.5+ | 2005 12 27 | 703 | 0.2+ | 0.1+ |
| 2000 10 02 | 704 | 0.1+ | 0.7+ | 2005 11 05 | 704 | 1.5+ | 0.8− | 2005 12 27 | 703 | 0.2− | 0.5+ |
| 2000 10 02 | 704 | 0.5− | 0.3+ | 2005 11 05 | 704 | 0.5+ | 0.9+ | 2006 01 02 | 704 | 0.9− | 0.7+ |
| 2000 10 02 | 688 | 0.1+ | 0.1+ | 2005 11 20 | 644 | 0.0 | 0.2− | 2006 01 02 | 704 | 1.0− | 1.5+ |
| 2000 10 02 | 704 | 0.2+ | 0.6+ | 2005 11 20 | 644 | 0.0 | 0.1− | 2006 01 02 | 704 | 0.9− | 1.6+ |
| 2000 10 02 | 704 | 0.6+ | 0.5+ | 2005 11 20 | 644 | 0.3− | 0.1− | 2006 01 05 | 699 | 0.1− | 0.9− |
| 2000 10 02 | 704 | 0.1− | 0.8+ | 2005 11 24 | 644 | 0.4− | 0.0 | 2006 01 05 | 699 | 1.1+ | 1.7− |
| 2000 10 29 | 704 | 0.5+ | 0.8− | 2005 11 24 | 644 | 0.3− | 0.1− | 2006 01 05 | 699 | 0.2+ | 0.7+ |
| 2000 10 29 | 704 | 0.6− | 0.5+ | 2005 11 24 | 644 | 0.1+ | 0.3− | 2006 01 05 | 699 | 0.2+ | 0.0 |
| 2000 10 29 | 704 | 0.5− | 0.1− | 2005 11 25 | 703 | 1.2− | 0.2+ | | | | |

**(138699)∗ 2000 SL$_{77}$ = 2002 AP$_{9}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22554)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.64731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16295018 | $\omega$ | 130.73839 | | +0.26331057 | −0.96429445 | |
| $a$ | 3.3197049 | $\Omega$ | 303.97320 | | +0.87448247 | +0.25098976 | |
| $e$ | 0.2470853 | $i$ | 1.95911 | | +0.40736710 | +0.08450062 | |
| $P$ | 6.05 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3− | 1.4+ | 2002 01 22 | 704 | 0.9− | 0.6+ | 2006 08 19 | 691 | 0.9− | 0.3− |
| 2000 09 24 | 704 | 0.1+ | 1.0+ | 2002 01 22 | 291 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.2+ |
| 2000 09 24 | 704 | 0.2− | 0.6+ | 2002 01 22 | 704 | 0.1− | 0.8+ | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 2000 09 24 | 704 | 0.3− | 0.4+ | 2002 01 22 | 291 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.5+ |
| 2000 09 26 | 704 | 0.9− | 1.3+ | 2002 01 22 | 704 | 0.5− | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.7+ |
| 2000 09 26 | 704 | 0.1− | 0.1+ | 2002 01 22 | 291 | 0.1− | 0.4+ | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2000 09 26 | 704 | 0.0 | 0.2− | 2002 01 22 | 704 | 0.2− | 1.1+ | 2006 09 19 | 699 | 1.1− | 0.6+ |
| 2000 09 26 | 704 | 1.0− | 0.3+ | 2002 01 26 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 1.2+ |
| 2000 09 26 | 704 | 0.4+ | 0.5+ | 2002 01 26 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.0 |
| 2000 10 02 | 704 | 0.5− | 0.8+ | 2002 01 26 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.6− |
| 2000 10 02 | 704 | 0.1− | 0.6+ | 2002 02 05 | 644 | 0.0 | 0.2+ | 2006 09 20 | 691 | 0.3− | 0.4+ |
| 2000 10 02 | 704 | 0.8− | 0.5+ | 2002 02 05 | 644 | 0.1− | 0.3+ | 2006 09 20 | 691 | 0.1− | 0.3+ |
| 2000 10 02 | 704 | 0.4− | 1.5+ | 2002 02 05 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 2001 12 18 | 704 | 0.4+ | 0.4− | 2002 02 07 | 704 | 0.2− | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.4+ |
| 2001 12 18 | 704 | 0.4− | 1.5− | 2002 02 07 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.4− | 1.2− | 2002 02 07 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 1.0+ | 0.4+ |
| 2001 12 18 | 704 | 1.4− | 0.3− | 2002 02 07 | 704 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.7+ |
| 2002 01 09 | 704 | 0.1+ | 0.5− | 2002 02 11 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.2+ | 0.4− |
| 2002 01 09 | 704 | 0.3+ | 0.4− | 2002 02 11 | 704 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2002 01 09 | 704 | 0.4− | 0.4− | 2002 02 11 | 704 | 0.2+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2002 01 09 | 704 | 0.6+ | 0.0 | 2002 02 11 | 704 | 0.3+ | 1.0+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2002 01 09 | 704 | 1.1− | 0.2+ | 2002 02 11 | 704 | 0.3+ | 1.4+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 01 11 | 333 | 0.4− | 0.6− | 2002 02 12 | 291 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 1.2+ | 0.0 |
| 2002 01 11 | 333 | 0.3− | 0.2− | 2002 02 12 | 291 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.5+ |
| 2002 01 11 | 333 | 0.5+ | 0.1+ | 2002 02 12 | 291 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 2002 01 12 | 333 | 0.0 | 0.7− | 2002 02 20 | 704 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 01 12 | 333 | 0.5− | 0.3− | 2002 02 20 | 704 | 0.5+ | 0.8− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 01 12 | 333 | 0.4+ | 0.0 | 2002 02 20 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 01 13 | 333 | 0.4− | 0.6− | 2002 02 20 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 01 13 | 333 | 0.0 | 0.7− | 2002 02 20 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.5+ | 0.5+ |
| 2002 01 13 | 333 | 0.0 | 0.3− | 2002 03 03 | 461 | 0.6− | 1.3− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2002 01 14 | 704 | 0.5+ | 0.2− | 2002 03 03 | 461 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 01 14 | 704 | 0.3+ | 0.2− | 2002 03 05 | 644 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 1.2+ | 0.4− |
| 2002 01 14 | 704 | 0.6+ | 0.4+ | 2002 03 05 | 644 | 0.1+ | 0.8+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2002 01 14 | 704 | 1.0+ | 0.1− | 2002 03 05 | 644 | 0.3+ | 0.9+ | 2006 10 23 | G96 | 0.6− | 0.3− |
| 2002 01 14 | 704 | 1.1+ | 1.1+ | 2003 04 05 | 691 | 0.0 | 0.9+ | 2006 10 24 | 644 | 0.1+ | 0.4+ |
| 2002 01 21 | 704 | 0.1− | 0.5+ | 2003 04 05 | 691 | 0.3+ | 1.3+ | 2006 10 24 | 644 | 0.2− | 0.6+ |
| 2002 01 21 | 704 | 0.0 | 0.4+ | 2003 04 05 | 691 | 0.3+ | 1.0+ | 2006 10 24 | 644 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 21 | 704 | 0.2+ | 0.9+ | 2003 04 29 | 691 | 0.5+ | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2002 01 21 | 704 | 0.1+ | 0.7+ | 2003 04 29 | 691 | 0.3+ | 0.7+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 01 21 | 704 | 0.0 | 0.4+ | 2003 04 29 | 691 | 0.7+ | 0.6+ | 2006 10 24 | 644 | 0.1− | 0.3+ |

**(138700)∗ 2000 $SD_{79}$ = 2004 $HM_9$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 99.62336 | | (2000.0) | | | |
| $n$ | 0.18263240 | $\omega$ | 268.04462 | | +0.41210419 | +0.90740280 |
| $a$ | 3.0766930 | $\Omega$ | 26.77113 | | −0.74621868 | +0.38802335 |
| $e$ | 0.1357485 | $i$ | 10.54131 | | −0.52280763 | +0.16142499 |
| $P$ | 5.40 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.2+ | 0.8+ | 2004 04 17 | 704 | 0.8− | 0.4+ | 2005 09 03 | 644 | 0.1+ | 0.0 |
| 1998 03 25 | 704 | (1.0+ | 4.5+) | 2004 04 20 | 704 | 0.6+ | 0.3− | 2005 09 03 | 644 | 0.3+ | 0.1+ |
| 1998 03 25 | 704 | (2.8− | 0.6+) | 2004 04 20 | 704 | 0.5+ | 0.0 | 2005 09 08 | E12 | 0.8+ | 0.4− |
| 1998 03 25 | 704 | (2.4− | 1.7−) | 2004 04 20 | 704 | 0.8+ | 0.1+ | 2005 09 08 | E12 | 0.3+ | 0.2− |
| 2000 09 24 | 704 | 0.3− | 0.3− | 2004 04 20 | 704 | 0.2+ | 0.7+ | 2005 09 08 | E12 | 0.1+ | 0.3− |
| 2000 09 24 | 704 | 0.2+ | 1.1+ | 2004 04 25 | 704 | 0.3− | 1.0− | 2005 09 08 | E12 | 0.1− | 0.6− |
| 2000 09 24 | 704 | 1.1+ | 0.3+ | 2004 04 25 | 704 | 0.5− | 0.2− | 2005 09 26 | 703 | 0.2− | 1.2+ |
| 2000 09 26 | 704 | 0.2− | 0.1− | 2004 04 25 | 704 | 0.5− | 0.6+ | 2005 09 26 | 703 | 1.2− | 0.9− |
| 2000 09 26 | 704 | 0.3+ | 0.4− | 2004 05 14 | 691 | 0.1+ | 0.2+ | 2005 09 26 | 703 | 0.2− | 0.1− |
| 2000 09 26 | 704 | 0.3− | 0.3+ | 2004 05 14 | 691 | 0.2+ | 0.1+ | 2005 09 26 | 703 | 0.7+ | 0.4+ |
| 2000 09 26 | 704 | 1.0+ | 1.0− | 2004 05 14 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 1.1− | 0.6+ |
| 2000 09 26 | 704 | 0.2− | 0.8+ | 2004 05 15 | 704 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.3+ |
| 2000 10 02 | 704 | 0.3− | 1.0− | 2004 05 15 | 704 | 0.5− | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.3+ |
| 2000 10 02 | 704 | 0.7− | 0.2− | 2004 05 15 | 704 | 0.3+ | 0.3− | 2006 10 27 | 703 | 0.3− | 0.8+ |
| 2000 10 02 | 704 | 0.1− | 0.3+ | 2004 05 16 | 704 | 1.0+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2000 10 02 | 704 | 0.0 | 0.5− | 2004 05 16 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 2000 10 02 | 704 | 0.6− | 0.8− | 2004 05 16 | 704 | 0.6+ | 1.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2000 10 04 | 704 | 0.7− | 0.5+ | 2004 05 16 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2000 10 04 | 704 | 0.3+ | 0.3− | 2004 05 16 | 704 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2000 10 04 | 704 | 0.4+ | 0.6+ | 2004 05 19 | 704 | (1.4+ | 2.1+) | 2006 11 17 | 691 | 0.5− | 0.1− |
| 2000 10 04 | 704 | 0.2− | 0.5− | 2004 05 19 | 704 | 0.5+ | 1.4+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2000 10 04 | 704 | 0.4− | 0.8+ | 2004 05 19 | 704 | 1.1+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2000 10 04 | 704 | 0.1− | 1.3+ | 2005 07 27 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2000 10 04 | 704 | 0.2+ | 0.9+ | 2005 07 27 | 644 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2000 10 04 | 704 | 0.6− | 1.0+ | 2005 07 27 | 644 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2000 10 04 | 704 | 0.4+ | 1.4+ | 2005 08 28 | E12 | 0.8+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2000 10 25 | 704 | 0.4− | 0.8− | 2005 08 28 | E12 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.9+ |
| 2000 10 25 | 704 | 0.7− | 0.6+ | 2005 08 28 | E12 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.5− | 1.2+ |
| 2000 10 25 | 704 | 0.2− | 0.5− | 2005 08 30 | 699 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.4+ | 0.1− |
| 2000 10 25 | 704 | 0.3− | 0.1− | 2005 08 30 | 699 | 0.4− | 1.4+ | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2000 10 25 | 704 | 0.1+ | 0.4+ | 2005 08 30 | 699 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.2− | 0.9+ |
| 2004 04 17 | 704 | 0.8− | 0.6− | 2005 08 30 | 699 | 0.3− | 0.7− | | | | |
| 2004 04 17 | 704 | (1.6+ | 1.3−) | 2005 09 03 | 644 | 0.0 | 0.1+ | | | | |

**(138701)∗ 2000 $SJ_{80}$ = 2003 $DY_{11}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 46474)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 105.79221 | | (2000.0) | | | |
| $n$ | 0.18706056 | $\omega$ | 333.86593 | | +0.54632792 | +0.83752146 |
| $a$ | 3.0279444 | $\Omega$ | 329.24706 | | −0.76528964 | +0.49471404 |
| $e$ | 0.0844233 | $i$ | 1.02461 | | −0.34037856 | +0.23198239 |
| $P$ | 5.27 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.2+ | 0.0 | 2003 03 06 | 699 | 0.0 | 0.1+ | 2005 09 06 | 699 | 0.3+ | 0.3− |
| 2000 09 20 | 691 | 0.1+ | 0.0 | 2003 03 06 | 699 | 1.0− | 0.0 | 2005 09 08 | 704 | 0.1− | 0.7+ |
| 2000 09 20 | 691 | 0.2+ | 0.2− | 2003 03 06 | 699 | 0.6+ | 0.6+ | 2005 09 08 | 704 | 0.0 | 0.2− |
| 2000 09 24 | 704 | 0.9− | 1.2+ | 2003 03 06 | 699 | 0.4− | 0.5+ | 2005 09 08 | 704 | (0.2− | 2.0−) |
| 2000 09 24 | 704 | 0.7− | 1.7+ | 2003 03 31 | 291 | 0.2+ | 0.3+ | 2005 10 01 | 699 | 0.6− | 0.6+ |
| 2000 09 24 | 704 | 0.3− | 0.1− | 2003 03 31 | 291 | 0.9+ | 0.2+ | 2005 10 01 | 699 | 0.9+ | 0.5− |
| 2000 09 24 | 704 | 0.0 | 0.6+ | 2003 03 31 | 291 | 0.5+ | 0.4+ | 2005 10 01 | 699 | 0.4+ | 1.3− |
| 2000 09 26 | 704 | 1.6− | 0.8+ | 2004 06 09 | E12 | 0.3+ | 0.3+ | 2005 10 01 | 699 | 1.5+ | 1.0+ |
| 2000 09 26 | 704 | 0.1− | 0.9− | 2004 06 09 | E12 | 0.4− | 0.2+ | 2005 11 25 | G96 | 0.2− | 0.1+ |
| 2000 09 26 | 704 | 0.2+ | 0.0 | 2004 06 09 | E12 | 0.6− | 0.3+ | 2005 11 25 | G96 | 0.5− | 0.1− |
| 2000 10 01 | 704 | 0.4+ | 0.4+ | 2004 06 09 | E12 | 0.7− | 0.6+ | 2005 11 25 | G96 | 0.1− | 0.3− |
| 2000 10 01 | 704 | 0.0 | 0.2− | 2005 07 30 | 644 | 0.2− | 0.2+ | 2005 11 25 | G96 | 0.1+ | 0.1+ |
| 2000 10 01 | 704 | 0.3− | 0.7− | 2005 07 30 | 644 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.8− | 0.7− |
| 2000 10 01 | 704 | 0.2− | 0.6− | 2005 07 30 | 644 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2000 10 02 | 704 | 0.6+ | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.8− |
| 2000 10 02 | 704 | 1.5+ | 0.7+ | 2005 08 24 | 644 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 2000 10 02 | 704 | 0.4− | 0.9− | 2005 08 24 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2000 10 02 | 704 | 0.8− | 0.2− | 2005 08 26 | 699 | 1.1− | 1.0+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2003 01 01 | 291 | 0.3− | 0.7+ | 2005 08 26 | 699 | 0.7− | 0.8+ | 2006 11 01 | G96 | 0.5− | 0.6− |
| 2003 01 01 | 291 | 0.0 | 0.9+ | 2005 08 26 | 699 | 0.8+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.8− |
| 2003 01 01 | 291 | 0.3+ | 1.1+ | 2005 08 26 | 699 | 0.6− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2003 02 25 | 599 | 0.4+ | 0.4+ | 2005 08 29 | 691 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2003 02 25 | 599 | 0.3+ | 0.2+ | 2005 08 29 | 691 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2003 02 25 | 599 | 0.0 | 0.7+ | 2005 08 29 | 691 | 0.1+ | 0.4+ | 2006 11 24 | 691 | 0.4− | 0.1+ |
| 2003 02 25 | 599 | 0.4+ | 0.2+ | 2005 08 29 | 704 | 0.1− | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2003 02 26 | 599 | 0.5+ | 0.2+ | 2005 08 29 | 704 | (1.7− | 0.7+) | 2006 11 24 | 691 | 0.3+ | 0.3− |
| 2003 02 26 | 599 | 0.3+ | 0.3+ | 2005 08 29 | 704 | 0.3− | 0.7+ | 2006 11 30 | 691 | 0.2− | 0.3+ |
| 2003 02 26 | 599 | 0.3+ | 0.2− | 2005 08 29 | 704 | 0.7− | 0.0 | 2006 11 30 | 691 | 0.2− | 0.2+ |
| 2003 02 27 | 599 | 0.4+ | 0.4+ | 2005 08 29 | 704 | 0.8− | 1.2+ | 2006 11 30 | 691 | 0.4+ | 0.1− |
| 2003 02 28 | 608 | 0.1+ | 0.9− | 2005 09 06 | 699 | 0.1+ | 1.2+ | 2006 12 01 | H07 | 1.2− | 0.3− |
| 2003 02 28 | 608 | 0.1− | 0.9− | 2005 09 06 | 699 | 0.3− | 0.9+ | 2006 12 01 | H07 | 0.9+ | 1.2− |
| 2003 02 28 | 608 | 0.3− | 1.0− | 2005 09 06 | 699 | 0.4− | 1.1+ | 2006 12 01 | H07 | 0.6+ | 1.1+ |

**(138702)∗ 2000 $SW_{85}$ = 2002 $GN_{77}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29334)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 178.43661 | | (2000.0) | | | |
| $n$ | 0.27269305 | $\omega$ | 310.83025 | | +0.05289352 | −0.99678522 |
| $a$ | 2.3551578 | $\Omega$ | 136.02433 | | +0.94030548 | +0.02942661 |
| $e$ | 0.0943748 | $i$ | 4.97200 | | +0.33619619 | +0.07452041 |
| $P$ | 3.61 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 31 | 691 | 0.3− | 0.1− | 2000 10 29 | 704 | 0.0 | 0.4+ | 2002 04 16 | 704 | 0.0 | 0.8+ |
| 1998 01 31 | 691 | 0.4− | 0.1− | 2000 10 29 | 704 | 0.3+ | 0.2+ | 2002 04 16 | 704 | 1.0+ | 0.0 |
| 1998 01 31 | 691 | 0.2− | 0.2− | 2000 10 29 | 704 | 0.4+ | 0.1+ | 2004 12 21 | 691 | 0.1− | 0.2+ |
| 1998 02 03 | 691 | 0.1+ | 0.0 | 2002 03 09 | 704 | 1.1+ | 0.2− | 2004 12 21 | 691 | 0.0 | 0.5+ |
| 1998 02 03 | 691 | 0.1+ | 0.1− | 2002 03 09 | 704 | 0.0 | 0.7− | 2004 12 21 | 691 | 0.2− | 0.4+ |
| 1998 02 03 | 691 | 0.0 | 0.1− | 2002 03 09 | 704 | 1.6+ | 1.5+ | 2005 01 13 | 704 | 0.2+ | 0.2+ |
| 2000 09 22 | 699 | 0.3− | 0.9+ | 2002 03 09 | 704 | 0.5+ | 0.2− | 2005 01 13 | 704 | 0.2+ | 0.6− |
| 2000 09 22 | 699 | 1.7− | 0.5+ | 2002 04 09 | 699 | 0.6+ | 1.1+ | 2005 01 13 | 704 | 0.7+ | 0.8− |
| 2000 09 22 | 699 | 0.1+ | 0.4+ | 2002 04 09 | 699 | 0.5+ | 0.9+ | 2005 01 13 | 704 | 0.2+ | 0.3− |
| 2000 09 22 | 699 | 0.8− | 1.7+ | 2002 04 09 | 699 | 0.6+ | 0.4+ | 2006 05 01 | 691 | 0.1+ | 0.2+ |
| 2000 09 24 | 704 | 0.5+ | 0.4+ | 2002 04 09 | 699 | 0.1+ | 0.9+ | 2006 05 01 | 691 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.5− | 0.2− | 2002 04 11 | 704 | 0.3+ | 0.4− | 2006 05 01 | 691 | 0.0 | 0.1− |
| 2000 09 24 | 704 | 0.3− | 0.2− | 2002 04 11 | 704 | 0.6− | 0.9− | 2006 05 05 | 691 | 0.2− | 0.2+ |
| 2000 09 26 | 704 | 0.8+ | 0.5+ | 2002 04 11 | 704 | 0.0 | 0.0 | 2006 05 05 | 691 | 0.1− | 0.2+ |
| 2000 09 26 | 704 | 0.6− | 0.5− | 2002 04 11 | 704 | 0.2− | 0.4− | 2006 05 05 | 691 | 0.2− | 0.1+ |
| 2000 09 26 | 704 | 0.1+ | 0.5+ | 2002 04 11 | 704 | 0.1+ | 0.3− | 2006 05 18 | 644 | 0.1− | 0.2− |
| 2000 09 26 | 704 | 0.9+ | 1.5− | 2002 04 12 | 644 | 0.1+ | 0.3+ | 2006 05 18 | 644 | 0.4− | 0.2+ |
| 2000 09 26 | 704 | 0.3− | 0.8+ | 2002 04 12 | 644 | 0.0 | 0.2+ | 2006 05 18 | 644 | 0.1− | 0.0 |
| 2000 10 02 | 704 | 0.0 | 0.5+ | 2002 04 12 | 644 | 0.1+ | 0.3+ | 2006 05 22 | 691 | 0.0 | 0.0 |
| 2000 10 02 | 704 | 0.6+ | 0.5+ | 2002 04 13 | 644 | 0.3+ | 0.2+ | 2006 05 22 | 691 | 0.1+ | 0.1+ |
| 2000 10 02 | 704 | 0.1− | 1.0+ | 2002 04 13 | 644 | 0.5+ | 0.2+ | 2006 05 22 | 691 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 0.6− | 0.7+ | 2002 04 13 | 644 | 0.1+ | 0.1+ | 2006 05 30 | G96 | 0.6− | 0.1− |
| 2000 10 02 | 704 | 0.0 | 0.4+ | 2002 04 16 | 704 | 0.4+ | 0.5+ | 2006 05 30 | G96 | 0.4− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 29 | 704 | 0.3− | 0.2− | 2002 04 16 | 704 | 0.6+ | 0.9+ | 2006 05 30 | G96 | 0.8− | 0.0 | |
| 2000 10 29 | 704 | 0.5+ | 0.2− | 2002 04 16 | 704 | 0.2− | 0.2+ | 2006 05 30 | G96 | 0.6− | 0.1− | |

**(138703)∗ 2000 SK$_{89}$ = 2000 SX$_{103}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 7670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.76194 | | (2000.0) | | | |
| $n$ | 0.17172360 | $\omega$ | 56.15542 | | +0.01563824 | −0.98996968 |
| $a$ | 3.2056496 | $\Omega$ | 33.80558 | | +0.81361054 | −0.06902838 |
| $e$ | 0.1539126 | $i$ | 14.61770 | | +0.58119991 | +0.12326844 |
| $P$ | 5.74 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 1.4− | 1.7+ | 2002 03 05 | 704 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.7− | 0.1− | |
| 2000 09 23 | 699 | 0.0 | 0.3− | 2002 03 05 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ | |
| 2000 09 23 | 699 | 1.2− | 1.0+ | 2002 03 05 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2000 09 23 | 699 | (0.1+ | 2.1−) | 2002 03 05 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 2000 09 24 | 704 | 0.1+ | 0.7− | 2002 03 05 | 704 | 0.6− | 0.1− | 2006 10 23 | 704 | (1.7− | 0.4+) | |
| 2000 09 24 | 704 | 0.2− | 1.1+ | 2003 03 26 | 699 | 0.7− | 0.2− | 2006 10 23 | 704 | 0.1+ | 0.6+ | |
| 2000 09 24 | 704 | 0.2− | 0.1+ | 2003 03 26 | 699 | 0.0 | 0.5+ | 2006 10 23 | 704 | 0.2− | 0.4+ | |
| 2000 09 24 | 704 | 0.4− | 0.0 | 2003 03 26 | 699 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.8− | 0.5− | |
| 2000 09 24 | 704 | 0.3+ | 1.1+ | 2003 03 26 | 699 | 0.8− | 0.2− | 2006 10 23 | 704 | 0.4− | 0.5+ | |
| 2000 09 28 | 704 | 0.5+ | 0.3− | 2003 04 04 | 699 | 0.7+ | 1.3+ | 2006 10 28 | 691 | 0.2− | 0.1+ | |
| 2000 09 28 | 704 | 0.3− | 0.0 | 2003 04 04 | 699 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.3+ | |
| 2000 09 28 | 704 | 0.8− | 0.2+ | 2003 04 04 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.3+ | |
| 2000 09 28 | 704 | 0.1+ | 0.3+ | 2003 04 04 | 699 | 0.7+ | 0.0 | 2006 10 29 | 704 | 0.2− | 0.7+ | |
| 2000 09 28 | 704 | 0.8− | 0.1− | 2003 04 24 | 699 | 0.1+ | 0.8+ | 2006 10 29 | 704 | 0.0 | 0.8+ | |
| 2000 09 28 | 704 | 0.0 | 1.3+ | 2003 04 24 | 699 | 0.1− | 0.3+ | 2006 10 29 | 704 | 1.1− | 0.8− | |
| 2000 09 28 | 704 | (2.5− | 3.1+) | 2003 04 24 | 699 | 0.6+ | 0.3+ | 2006 11 01 | H07 | 0.0 | 0.9− | |
| 2000 09 29 | 704 | 0.2+ | 0.6+ | 2003 04 24 | 699 | 0.2+ | 1.2+ | 2006 11 01 | H07 | 0.2+ | 0.2+ | |
| 2000 09 29 | 704 | 0.5+ | 1.3+ | 2003 04 25 | 691 | 0.0 | 0.7+ | 2006 11 01 | H07 | 0.1− | 0.5− | |
| 2000 09 29 | 704 | 0.5− | 0.4+ | 2003 04 25 | 691 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.0 | |
| 2000 09 29 | 704 | 0.4+ | 0.6+ | 2003 04 25 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ | |
| 2000 10 02 | 704 | 0.0 | 0.4+ | 2003 05 10 | 291 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.1+ | |
| 2000 10 02 | 704 | 0.4− | 0.4− | 2003 05 10 | 291 | 0.4+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.0 | |
| 2000 10 02 | 704 | 0.0 | 0.4+ | 2003 05 10 | 291 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.1− | |
| 2000 10 02 | 704 | 0.9− | 0.6+ | 2003 05 27 | 291 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1+ | |
| 2000 10 29 | 704 | 0.6+ | 0.9+ | 2003 05 27 | 291 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.1+ | |
| 2000 10 29 | 704 | 0.0 | 0.7+ | 2003 05 27 | 291 | 0.7+ | 0.0 | 2006 11 14 | 703 | 0.7− | 0.1+ | |
| 2000 10 29 | 704 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.0 | 0.1− | |
| 2000 10 29 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.2− | |
| 2000 11 02 | 704 | 0.0 | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.1+ | |
| 2000 11 02 | 704 | 0.3+ | 1.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.2− | 0.2− | |
| 2000 11 02 | 704 | 1.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.1− | 0.1+ | |
| 2000 11 02 | 704 | 0.8− | 0.8+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.1+ | |
| 2000 11 18 | 699 | 1.0− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.4− | 1.4+ | |
| 2000 11 18 | 699 | 1.1− | 0.3+ | 2006 09 27 | J75 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.7+ | 0.4+ | |
| 2000 11 18 | 699 | 0.4− | 0.7− | 2006 09 27 | J75 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.7− | 0.3+ | |
| 2000 11 18 | 699 | 1.6− | 0.3+ | 2006 09 27 | J75 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.0 | 0.3− | |
| 2000 11 28 | 691 | 0.3+ | 0.6− | 2006 09 27 | J75 | 0.5+ | 0.8− | 2006 11 17 | G96 | 0.3− | 0.3− | |
| 2000 11 28 | 691 | 0.5+ | 0.5− | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.3− | |
| 2000 11 28 | 691 | 0.2+ | 0.6− | 2006 09 27 | 704 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.0 | |
| 2001 11 11 | 704 | 0.5− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.8+ | 2006 11 17 | G96 | (2.5− | 0.5+) | |
| 2001 11 11 | 704 | 0.7− | 1.3+ | 2006 09 27 | 704 | 0.0 | 0.6− | 2006 11 17 | 704 | 0.2− | 0.1+ | |
| 2001 11 11 | 704 | 0.5− | 0.6− | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.1− | |
| 2001 11 11 | 704 | 0.3− | 0.8+ | 2006 09 27 | J75 | 0.2+ | 0.7− | 2006 11 17 | 704 | 0.0 | 0.0 | |
| 2002 01 09 | 645 | 0.0 | 0.2− | 2006 09 28 | J75 | 0.7+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.0 | |
| 2002 01 09 | 645 | 0.1− | 0.2− | 2006 09 28 | J75 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.3− | |
| 2002 01 18 | 699 | 0.4− | 1.0+ | 2006 09 29 | 704 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.5+ | 0.3+ | |
| 2002 01 18 | 699 | 0.4+ | 0.9+ | 2006 09 29 | 704 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.1− | |
| 2002 01 18 | 699 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.9+ | 0.8+ | 2006 11 19 | 704 | 0.7+ | 0.0 | |
| 2002 01 18 | 699 | 0.4+ | 0.7+ | 2006 09 29 | 704 | (0.4+ | 1.7+) | 2006 11 22 | 704 | 0.1+ | 0.3+ | |
| 2002 01 21 | 699 | 0.4− | 0.8+ | 2006 09 29 | 704 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.5+ | |
| 2002 01 21 | 699 | 0.3− | 0.3+ | 2006 10 04 | 703 | 0.4− | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.0 | |
| 2002 01 21 | 699 | 0.2+ | 0.9+ | 2006 10 04 | 703 | 0.4− | 0.3− | 2006 11 22 | 704 | 0.4− | 0.9+ | |
| 2002 01 21 | 699 | 0.1+ | 0.7+ | 2006 10 04 | 703 | 0.8− | 0.7− | 2006 11 22 | 704 | 0.4+ | 0.6+ | |
| 2002 02 19 | 704 | 0.1+ | 0.8+ | 2006 10 04 | 703 | 0.4− | 0.1− | 2006 11 24 | 408 | 1.3+ | 0.4+ | |
| 2002 02 19 | 704 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 24 | 408 | 1.0+ | 0.4+ | |
| 2002 02 19 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 25 | 408 | 0.6+ | 0.5− | |
| 2002 02 19 | 704 | 0.7+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 25 | 408 | 0.7+ | 0.1− | |
| 2002 02 21 | 704 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.1+ | |
| 2002 02 21 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.6+ | |
| 2002 02 21 | 704 | 0.9+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.1− | |
| 2002 02 21 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.1+ | |
| 2002 02 21 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.2− | |

**(138704)∗ 2000 SO$_{90}$ = 2002 AL$_{84}$**

Discovered 2000 Sept. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22561)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.23840 | | (2000.0) | | | |
| $n$ | 0.18310862 | $\omega$ | 121.26595 | | +0.89100900 | −0.39404133 |
| $a$ | 3.0713562 | $\Omega$ | 262.78287 | | +0.29919374 | +0.88319708 |
| $e$ | 0.2075226 | $i$ | 13.13613 | | +0.34144703 | +0.25435084 |
| $P$ | 5.38 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.1− | 0.5+ | 2000 10 07 | 704 | 0.3− | 0.2− | 2006 10 02 | 704 | 0.6− | 0.9− | |
| 2000 07 30 | 704 | 0.0 | 0.8− | 2000 10 21 | 704 | 0.2− | 0.4+ | 2006 10 02 | 704 | 0.1+ | 1.0+ | |
| 2000 07 30 | 704 | 0.3− | 0.1− | 2000 10 21 | 704 | 0.7+ | 0.6+ | 2006 10 02 | 704 | 1.2− | 0.5+ | |
| 2000 07 30 | 704 | 0.5− | 0.0 | 2000 10 21 | 704 | 0.2− | 0.6− | 2006 10 02 | 704 | 0.5− | 0.3− | |
| 2000 07 30 | 704 | 0.4− | 0.8+ | 2000 11 26 | 704 | 1.3+ | 0.6+ | 2006 10 02 | 704 | 1.1− | 0.0 | |
| 2000 09 01 | 704 | 0.3+ | 0.5+ | 2000 11 26 | 704 | 0.4+ | 0.9+ | 2006 11 15 | 704 | 0.0 | 0.2+ | |
| 2000 09 01 | 704 | 0.2+ | 0.4+ | 2000 11 26 | 704 | 1.1+ | 1.1+ | 2006 11 15 | 704 | 0.4− | 0.7− | |
| 2000 09 01 | 704 | 0.4− | 0.2+ | 2001 12 18 | 704 | 0.3− | 0.9+ | 2006 11 15 | 704 | 0.1+ | 0.1− | |
| 2000 09 01 | 704 | 0.3− | 0.6+ | 2001 12 18 | 704 | 0.5+ | 0.7+ | 2006 11 15 | 704 | 0.1+ | 0.1+ | |
| 2000 09 01 | 704 | 0.2− | 0.7+ | 2001 12 18 | 704 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.2− | |
| 2000 09 22 | 699 | 0.3− | 0.3+ | 2001 12 18 | 704 | (1.7− | 0.4+) | 2006 11 15 | 704 | 0.3+ | 0.3− | |
| 2000 09 22 | 699 | 0.2+ | 0.3+ | 2002 01 09 | 704 | 1.1+ | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.1+ | |
| 2000 09 22 | 699 | 0.2− | 0.0 | 2002 01 09 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.4+ | 0.2− | |
| 2000 09 22 | 699 | 0.1+ | 0.1+ | 2002 01 09 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.5+ | |
| 2000 09 22 | 704 | 0.2− | 0.2+ | 2002 01 09 | 608 | 0.9+ | 0.8+ | 2006 11 16 | 704 | 0.4+ | 0.1+ | |
| 2000 09 22 | 704 | 0.3− | 0.1+ | 2002 01 09 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.1+ | |
| 2000 09 22 | 704 | 0.4− | 0.3+ | 2002 01 09 | 608 | 1.3+ | 1.3+ | 2006 11 16 | 704 | 0.3+ | 0.5+ | |
| 2000 09 22 | 704 | 0.0 | 0.3+ | 2002 01 09 | 608 | 0.8+ | 1.0+ | 2006 11 16 | 704 | 0.5+ | 0.1+ | |
| 2000 09 22 | 608 | 1.0+ | 1.0+ | 2002 01 09 | 608 | 0.1+ | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.6+ | |
| 2000 09 22 | 608 | 0.2+ | 0.7+ | 2002 01 09 | 608 | 0.4+ | 1.1+ | 2006 11 17 | 691 | 0.0 | 0.3− | |
| 2000 09 22 | 608 | 0.6+ | 0.7+ | 2002 01 09 | 608 | 1.0+ | 1.1+ | 2006 11 17 | 691 | 0.0 | 0.3− | |
| 2000 09 25 | 699 | 0.1− | 0.3+ | 2002 01 14 | 704 | 1.0− | 0.9+ | 2006 11 17 | 691 | 0.1+ | 0.3− | |
| 2000 09 25 | 699 | 0.4− | 0.5+ | 2002 01 14 | 704 | 0.3− | 1.0+ | 2006 11 19 | 704 | 0.6+ | 0.9− | |
| 2000 09 25 | 699 | 0.4− | 0.4+ | 2002 01 14 | 704 | 0.7+ | 1.1+ | 2006 11 19 | 704 | 0.6+ | 0.9− | |
| 2000 09 25 | 699 | 0.2− | 0.7+ | 2002 01 14 | 704 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.4+ | 1.0− | |
| 2000 09 27 | 704 | 0.1− | 0.2+ | 2003 03 09 | 699 | (1.5+ | 0.0 ) | 2006 11 19 | 704 | 0.2− | 0.8− | |
| 2000 09 27 | 704 | 0.4+ | 0.4+ | 2003 03 09 | 699 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.2+ | 1.2− | |
| 2000 09 27 | 704 | 0.1− | 0.3+ | 2003 03 09 | 699 | 0.4+ | 1.0+ | 2006 11 22 | 704 | 0.3− | 0.5− | |
| 2000 09 27 | 704 | 0.2+ | 0.2+ | 2003 03 09 | 699 | 0.0 | 0.8+ | 2006 11 22 | 704 | 0.6− | 0.3− | |
| 2000 09 27 | 704 | 0.6+ | 0.2− | 2005 06 11 | 691 | 0.2− | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.4− | |
| 2000 09 27 | 645 | 0.1− | 0.2− | 2005 06 11 | 691 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.3− | 0.2− | |
| 2000 09 27 | 645 | 0.1− | 0.2− | 2005 06 11 | 691 | 0.3− | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.0 | |
| 2000 09 28 | 704 | 0.1+ | 0.2+ | 2005 06 21 | 644 | 0.2− | 0.5+ | 2006 11 25 | 691 | 1.1− | 2.6+ | |
| 2000 09 28 | 704 | 0.1+ | 0.0 | 2005 06 21 | 644 | 0.1− | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.3− | |
| 2000 09 28 | 704 | 0.4+ | 0.7+ | 2005 06 21 | 644 | 0.1− | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.5− | |
| 2000 09 28 | 704 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.7+ | 0.2− | 2006 11 27 | 704 | 0.1− | 0.0 | |
| 2000 09 28 | 704 | 0.3+ | 0.2− | 2006 08 30 | 704 | 1.2+ | 0.8− | 2006 11 27 | 704 | 0.1− | 0.3− | |
| 2000 10 04 | 704 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.1+ | 0.1− | 2006 11 27 | 704 | 0.1+ | 0.3− | |
| 2000 10 04 | 704 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.1− | 1.1− | 2006 11 28 | 704 | 0.3+ | 0.3− | |
| 2000 10 04 | 704 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.8+ | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.1− | |
| 2000 10 04 | 704 | 0.4− | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.9+ | 2006 11 28 | 704 | 0.0 | 0.5− | |
| 2000 10 04 | 704 | 0.4− | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.7+ | 2006 11 28 | 704 | 0.2+ | 0.1− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 704 | 0.7− | 0.1− | 2006 09 18 | 704 | 1.3+ | 0.5− | 2006 11 28 | 704 | 1.9− | 0.6+ | | |
| 2000 10 07 | 704 | 0.2+ | 1.0+ | 2006 09 18 | 704 | 0.3+ | 0.4+ | | | | | | |

**(138705)∗ 2000 SU$_{90}$**

Discovered 2000 Sept. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.87316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17166504 | $\omega$ | 121.42930 | | +0.89246873 | −0.28628004 | |
| $a$ | 3.2063787 | $\Omega$ | 257.22658 | | +0.18359100 | +0.93643291 | |
| $e$ | 0.1172792 | $i$ | 20.94536 | | +0.41206056 | +0.20282293 | |
| $P$ | 5.74 | $H$ | 13.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 09 | 704 | 0.5− | 0.3+ | 2000 11 28 | 704 | 0.3+ | 0.6+ | 2004 05 22 | 704 | 0.6− | 0.1− | | |
| 2000 08 09 | 704 | 0.6− | 0.9+ | 2000 12 17 | 704 | 0.0 | 0.5+ | 2004 05 22 | 704 | 0.4− | 0.4− | | |
| 2000 08 09 | 704 | 0.2− | 0.4+ | 2000 12 17 | 704 | 0.6− | 0.2+ | 2004 05 22 | 704 | 0.5+ | 0.5+ | | |
| 2000 08 09 | 704 | 0.1− | 0.1− | 2000 12 17 | 704 | 0.6− | 0.4+ | 2006 09 25 | 703 | 0.2+ | 0.3+ | | |
| 2000 08 09 | 704 | 0.6+ | 0.2+ | 2000 12 17 | 704 | 0.8+ | 0.3+ | 2006 09 25 | 703 | 0.4+ | 0.1− | | |
| 2000 09 07 | 704 | 0.8− | 1.2+ | 2000 12 17 | 704 | 0.5− | 1.6+ | 2006 09 25 | 703 | 0.2+ | 0.4+ | | |
| 2000 09 07 | 704 | 1.4− | 0.3+ | 2000 12 28 | 699 | 0.6− | 0.1− | 2006 09 25 | 703 | 0.5− | 0.2+ | | |
| 2000 09 07 | 704 | (2.2− | 0.8+) | 2000 12 28 | 699 | 1.6− | 0.3+ | 2006 09 27 | 106 | 0.0 | 0.4− | | |
| 2000 09 22 | 704 | 0.4+ | 0.3− | 2000 12 28 | 699 | 1.1− | 0.2+ | 2006 09 27 | 106 | 0.6+ | 0.7− | | |
| 2000 09 22 | 704 | 0.1+ | 0.4+ | 2000 12 28 | 699 | 1.0− | 0.7− | 2006 09 27 | 106 | 0.1+ | 0.6− | | |
| 2000 09 22 | 704 | 0.1− | 0.2+ | 2001 10 13 | 704 | 0.4− | 0.6+ | 2006 09 27 | 106 | 0.1+ | 0.2− | | |
| 2000 09 22 | 704 | 0.5− | 0.7+ | 2001 10 13 | 704 | 0.2+ | 0.8+ | 2006 10 03 | 703 | 0.2+ | 0.3+ | | |
| 2000 09 22 | 704 | 0.7− | 1.2+ | 2001 10 13 | 704 | 0.1+ | 0.8+ | 2006 10 03 | 703 | 0.5− | 0.1+ | | |
| 2000 09 26 | 699 | 0.0 | 0.9+ | 2001 10 13 | 704 | 0.4− | 0.7+ | 2006 10 03 | 703 | 0.6− | 0.1− | | |
| 2000 09 26 | 699 | 0.1− | 0.2+ | 2001 11 12 | 704 | 0.6+ | 0.0 | 2006 10 03 | 703 | 0.1− | 0.6− | | |
| 2000 09 26 | 699 | 0.4− | 0.8+ | 2001 11 12 | 704 | 0.2− | 0.2− | 2006 10 23 | 703 | 0.0 | 0.0 | | |
| 2000 09 26 | 699 | 0.0 | 0.5+ | 2001 11 12 | 704 | 0.6+ | 0.8+ | 2006 10 23 | 703 | 0.4− | 0.5− | | |
| 2000 09 27 | 704 | 0.4− | 0.3− | 2001 11 12 | 704 | 0.1− | 0.3− | 2006 10 23 | 703 | 0.3− | 0.3− | | |
| 2000 09 27 | 704 | 0.0 | 0.1+ | 2001 12 11 | 704 | 0.4− | 0.2+ | 2006 10 23 | 703 | 0.3− | 0.1− | | |
| 2000 09 27 | 704 | 0.4− | 0.4− | 2001 12 11 | 704 | 0.8+ | 0.9− | 2006 10 27 | 106 | 0.1− | 0.7− | | |
| 2000 09 27 | 704 | 0.1+ | 0.0 | 2001 12 11 | 704 | 0.4+ | 0.1− | 2006 10 27 | 106 | 0.2+ | 0.5− | | |
| 2000 09 27 | 704 | 0.3− | 1.1− | 2001 12 11 | 704 | 0.6− | 0.4+ | 2006 10 27 | 106 | 0.1− | 0.4− | | |
| 2000 10 04 | 704 | 0.3+ | 0.2+ | 2001 12 11 | 704 | 0.6+ | 0.4− | 2006 10 27 | 106 | 0.6+ | 0.3− | | |
| 2000 10 04 | 704 | 0.2+ | 0.5− | 2001 12 18 | 704 | (1.7− | 1.0−) | 2006 10 31 | 703 | 0.6− | 0.1+ | | |
| 2000 10 04 | 704 | 0.5+ | 0.2− | 2001 12 18 | 704 | 1.3− | 0.7− | 2006 10 31 | 703 | 0.1+ | 0.0 | | |
| 2000 10 04 | 704 | 0.5+ | 0.7− | 2001 12 18 | 704 | (1.8− | 0.2−) | 2006 10 31 | 703 | 0.3− | 0.3− | | |
| 2000 10 04 | 704 | 0.7+ | 0.2+ | 2001 12 18 | 704 | (0.5− | 2.4+) | 2006 10 31 | 703 | 0.1− | 0.4− | | |
| 2000 10 21 | 704 | 0.9+ | 0.4− | 2002 01 09 | 704 | 0.2− | 0.5+ | 2006 11 16 | 703 | 0.2− | 0.4− | | |
| 2000 10 21 | 704 | 0.7+ | 0.0 | 2002 01 09 | 704 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.3− | | |
| 2000 10 21 | 704 | 0.2+ | 0.4− | 2002 01 09 | 704 | 0.5+ | 0.2+ | 2006 11 16 | 703 | 0.1+ | 0.6− | | |
| 2000 10 21 | 704 | 1.1+ | 0.6− | 2002 01 09 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 703 | 0.2− | 0.6− | | |
| 2000 11 01 | 704 | 0.2− | 0.5+ | 2002 01 09 | 704 | 0.5+ | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.1+ | | |
| 2000 11 01 | 704 | 0.2+ | 0.1+ | 2003 02 09 | 644 | 0.6+ | 0.9+ | 2006 11 22 | 703 | 0.1− | 0.3− | | |
| 2000 11 01 | 704 | 0.7+ | 0.2+ | 2003 02 09 | 644 | 0.4+ | 0.3+ | 2006 11 22 | 703 | 0.4+ | 0.1+ | | |
| 2000 11 01 | 704 | 0.6− | 0.7+ | 2003 02 09 | 644 | 0.3+ | 0.5+ | 2006 11 28 | 704 | 0.9+ | 0.1− | | |
| 2000 11 01 | 704 | 1.1+ | 1.2+ | 2003 03 12 | 644 | (0.1− | 1.9+) | 2006 11 28 | 704 | 1.7+ | 0.7− | | |
| 2000 11 28 | 704 | 0.4+ | 0.5− | 2003 03 12 | 644 | (0.1− | 1.9+) | 2006 11 28 | 704 | 0.9+ | 0.3− | | |
| 2000 11 28 | 704 | 0.6− | 0.2− | 2003 03 12 | 644 | (0.3− | 2.2+) | 2006 11 28 | 704 | 0.0 | 0.6+ | | |

**(138706)∗ 2000 SR$_{92}$ = 2001 XN$_{166}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.97967 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17763587 | $\omega$ | 116.96368 | | +0.98903131 | −0.01868584 | |
| $a$ | 3.1341199 | $\Omega$ | 244.41831 | | −0.03077445 | +0.94412798 | |
| $e$ | 0.1039414 | $i$ | 9.34876 | | +0.14446455 | +0.32904891 | |
| $P$ | 5.55 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.5+ | 1.1+ | 2001 12 17 | 704 | 0.2+ | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2000 09 01 | 704 | 0.7+ | 0.2− | 2002 01 09 | 704 | 0.5− | 1.2+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2000 09 01 | 704 | 0.3+ | 0.6+ | 2002 01 09 | 704 | (0.9+ | 1.8+) | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2000 09 01 | 704 | 0.9+ | 0.2− | 2002 01 09 | 704 | (1.2− | 1.7+) | 2006 10 27 | 703 | 0.4+ | 0.5− | | |
| 2000 09 23 | 704 | 0.1− | 0.3+ | 2002 01 09 | 704 | 0.0 | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.1+ | | |
| 2000 09 23 | 704 | 0.0 | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.7+ | 0.3− | | |
| 2000 09 23 | 704 | 0.2− | 0.6+ | 2005 05 13 | G96 | 0.3− | 0.3− | 2006 10 27 | 703 | 0.0 | 0.1− | | |
| 2000 09 23 | 704 | 0.7− | 0.8− | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.2+ | | |
| 2000 09 23 | 704 | 0.7− | 0.5+ | 2005 05 13 | G96 | 0.4− | 0.4− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2000 09 27 | 704 | 0.0 | 0.5− | 2005 06 06 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2000 09 27 | 704 | 0.5− | 1.0− | 2005 06 06 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.3− | | |
| 2000 09 27 | 704 | 0.0 | 0.7+ | 2005 06 06 | 691 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.0 | | |
| 2000 09 27 | 704 | 0.0 | 0.4+ | 2005 06 11 | 691 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.2− | 0.2+ | | |
| 2000 09 27 | 704 | 0.8− | 0.4− | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.8+ | | |
| 2000 10 02 | 699 | 0.6− | 0.3− | 2005 06 11 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.9+ | 0.1− | | |
| 2000 10 02 | 699 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.9+ | | |
| 2000 10 02 | 699 | 1.3+ | 1.8− | 2006 09 28 | 703 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 1.1− | | |
| 2000 10 02 | 699 | 0.0 | 0.2− | 2006 09 28 | 703 | 1.1− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.4− | | |
| 2001 12 14 | 704 | 1.0− | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.7− | 2006 11 19 | 704 | 0.9+ | 1.0+ | | |
| 2001 12 14 | 704 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.3− | 1.2+ | | |
| 2001 12 14 | 704 | 1.0− | 0.1− | 2006 10 20 | 644 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.7− | 1.4+ | | |
| 2001 12 14 | 704 | (2.2− | 0.9+) | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 22 | 104 | 0.6+ | 0.1− | | |
| 2001 12 17 | 704 | 0.9+ | 0.6− | 2006 10 21 | 691 | 0.2− | 0.4− | 2006 11 22 | 104 | 0.3+ | 0.9− | | |
| 2001 12 17 | 704 | 0.9+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 22 | 104 | 0.2− | 0.2+ | | |
| 2001 12 17 | 704 | 0.9+ | 0.7− | 2006 10 21 | 691 | 0.1− | 0.2− | | | | | | |

**(138707)∗ 2000 SP$_{95}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.00665 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16810697 | $\omega$ | 114.04699 | | +0.81526119 | +0.56936947 | |
| $a$ | 3.2514636 | $\Omega$ | 211.55239 | | −0.57700388 | +0.78319084 | |
| $e$ | 0.0810076 | $i$ | 11.65112 | | −0.04915004 | +0.24986098 | |
| $P$ | 5.86 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.6− | 0.4+ | 2000 10 04 | 704 | 0.0 | 0.4− | 2006 09 25 | 683 | (2.4+ | 0.7+) | | |
| 2000 09 01 | 704 | 0.0 | 0.3− | 2000 10 04 | 704 | 0.1− | 0.4− | 2006 09 25 | 683 | 0.6+ | 1.0+ | | |
| 2000 09 01 | 704 | 0.3− | 0.9− | 2000 10 04 | 704 | 0.5− | 0.5− | 2006 09 25 | 683 | (3.2+ | 2.6−) | | |
| 2000 09 23 | 704 | 0.2+ | 0.7+ | 2001 12 11 | 704 | (3.0+ | 0.9+) | 2006 09 29 | 704 | (2.0− | 0.7−) | | |
| 2000 09 23 | 704 | 0.6+ | 0.1+ | 2001 12 11 | 704 | 0.0 | 0.3− | 2006 09 29 | 704 | (1.9− | 1.9+) | | |
| 2000 09 23 | 704 | 0.2− | 0.7+ | 2001 12 11 | 704 | (2.2+ | 0.1−) | 2006 09 29 | 704 | 1.2+ | 1.1+ | | |
| 2000 09 23 | 704 | 0.0 | 0.2− | 2001 12 11 | 704 | 0.2+ | 1.4+ | 2006 09 29 | 704 | 0.5+ | 0.2+ | | |
| 2000 09 23 | 704 | 0.2+ | 0.1− | 2001 12 19 | 704 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.3− | | |
| 2000 09 23 | 704 | 1.0+ | 1.6− | 2001 12 19 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.2− | | |
| 2000 09 23 | 704 | 1.4+ | 0.7− | 2001 12 19 | 704 | 0.1+ | 1.0+ | 2006 09 30 | 703 | 0.0 | 0.7− | | |
| 2000 09 23 | 704 | 0.8+ | 0.9+ | 2004 04 15 | 699 | 0.6− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.6− | | |
| 2000 09 23 | 704 | 0.3+ | 1.0+ | 2004 04 15 | 699 | 0.5− | 1.0+ | 2006 10 02 | G96 | 0.3− | 0.4− | | |
| 2000 09 25 | 608 | 0.4− | 0.0 | 2004 04 15 | 699 | 0.3− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.3− | | |
| 2000 09 25 | 608 | 0.4− | 0.1− | 2004 04 15 | 699 | 1.4+ | 1.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | | |
| 2000 09 25 | 608 | 0.2− | 0.7+ | 2004 04 16 | 644 | 0.3+ | 0.7+ | 2006 10 02 | G96 | 0.3− | 0.3− | | |
| 2000 09 26 | 699 | 0.8− | 0.5+ | 2004 04 16 | 644 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.7− | | |
| 2000 09 26 | 699 | 1.0− | 0.3− | 2004 04 16 | 644 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 0.7− | 0.0 | | |
| 2000 09 26 | 699 | 0.4− | 0.5+ | 2004 04 30 | 691 | 0.1− | 0.8+ | 2006 10 17 | 703 | 0.5− | 0.4− | | |
| 2000 09 26 | 699 | 1.0− | 0.3+ | 2004 04 30 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.3− | 1.4− | | |
| 2000 09 27 | 704 | 0.4− | 0.4+ | 2004 04 30 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2000 09 27 | 704 | 0.3− | 0.7+ | 2006 09 19 | 699 | 1.3+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2000 09 27 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2000 09 27 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 2000 10 03 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | (1.8+ | 1.4+) | 2006 10 20 | 644 | 0.3− | 0.3+ | | |
| 2000 10 03 | 704 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.8+ | 1.0+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2000 10 03 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 704 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 04 | 704 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.1+ | |
| 2000 10 04 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 1.0− | 0.9+ | | | | | |

**(138708)∗ 2000 SW$_{95}$ = 2001 YC$_{77}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22567)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.70403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17945710 | $\omega$ | 99.59761 | | +0.44847290 | −0.89217645 | |
| $a$ | 3.1128793 | $\Omega$ | 323.60213 | | +0.78037919 | +0.42019447 | |
| $e$ | 0.1010901 | $i$ | 5.20083 | | +0.43575266 | +0.16570395 | |
| $P$ | 5.49 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.4− | 0.6− | 2002 01 14 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− | |
| 2000 09 23 | 704 | 0.0 | 1.4+ | 2002 01 14 | 704 | 0.8+ | 0.1− | 2006 11 15 | 704 | 0.9+ | 0.5+ | |
| 2000 09 23 | 704 | 0.3+ | 0.6− | 2002 01 14 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 704 | 0.2− | 0.0 | |
| 2000 09 23 | 704 | 0.3− | 0.4+ | 2002 01 14 | 704 | 0.7+ | 0.2− | 2006 11 15 | 704 | 0.0 | 0.2− | |
| 2000 09 27 | 704 | 0.1− | 0.5− | 2002 01 14 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 704 | 0.5+ | 0.8+ | |
| 2000 09 27 | 704 | 0.2+ | 0.6+ | 2002 01 15 | 704 | 0.5− | 0.7− | 2006 11 19 | 704 | 0.7+ | 0.1+ | |
| 2000 09 27 | 704 | 0.0 | 0.7+ | 2002 01 15 | 704 | 0.5− | 1.5+ | 2006 11 19 | 704 | 0.0 | 0.4+ | |
| 2000 09 27 | 704 | 0.2+ | 0.0 | 2002 01 15 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.5− | |
| 2000 10 01 | 699 | 0.3+ | 0.3+ | 2002 01 15 | 704 | 0.1+ | 1.3+ | 2006 11 19 | 704 | 0.4− | 0.0 | |
| 2000 10 01 | 699 | 0.4− | 0.0 | 2002 01 18 | 704 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.4+ | |
| 2000 10 01 | 699 | 0.2− | 0.1− | 2002 01 18 | 704 | 0.3− | 1.0+ | 2006 11 22 | 704 | 0.2+ | 0.3+ | |
| 2000 10 01 | 699 | 0.6− | 0.5− | 2002 01 18 | 704 | 0.1+ | 1.0+ | 2006 11 22 | 703 | 0.0 | 1.1− | |
| 2000 10 03 | 704 | 0.1+ | 0.1− | 2005 07 12 | G96 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.3+ | |
| 2000 10 03 | 704 | 0.6− | 0.6+ | 2005 07 12 | G96 | 0.9− | 0.1− | 2006 11 22 | 703 | 0.3+ | 1.0− | |
| 2000 10 03 | 704 | 0.1− | 0.1+ | 2005 07 12 | G96 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.8+ | |
| 2000 10 03 | 704 | 0.7− | 0.9+ | 2005 07 12 | G96 | 0.8− | 0.3− | 2006 11 22 | 703 | 0.0 | 0.4− | |
| 2000 10 03 | 704 | 0.2+ | 1.5+ | 2005 08 06 | 644 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.2+ | |
| 2001 12 18 | 644 | 0.3+ | 0.2+ | 2005 08 06 | 644 | 0.4+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.7− | |
| 2001 12 18 | 644 | 0.4+ | 0.3+ | 2005 08 06 | 644 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.6− | 0.3+ | |
| 2001 12 18 | 704 | 1.3− | 0.7+ | 2005 08 27 | 644 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.2− | 0.4− | |
| 2001 12 18 | 704 | 0.8− | 1.0+ | 2005 08 27 | 644 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.4− | 0.2− | |
| 2001 12 18 | 644 | 0.1+ | 0.1+ | 2005 08 27 | 644 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.8+ | 0.4− | |
| 2001 12 18 | 704 | 0.7− | 0.2+ | 2005 10 26 | G96 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.5− | 0.5− | |
| 2001 12 18 | 704 | 0.7− | 0.7+ | 2005 10 26 | G96 | 0.5+ | 0.1+ | 2006 11 23 | 703 | 0.3− | 0.8− | |
| 2001 12 19 | 704 | 0.3+ | 0.6− | 2005 10 26 | G96 | 0.3+ | 0.4+ | 2006 11 23 | 703 | 0.9+ | 0.9− | |
| 2001 12 19 | 704 | 0.1+ | 0.6− | 2005 10 26 | G96 | 0.1− | 0.5− | 2006 11 23 | 703 | 0.1+ | 0.5− | |
| 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 10 18 | A50 | 0.1− | 0.5− | 2006 11 23 | 703 | 0.1− | 0.8− | |
| 2001 12 19 | 704 | 0.2− | 0.0 | 2006 10 18 | A50 | 0.2− | 0.9+ | 2006 11 27 | 204 | 0.2− | 0.6− | |
| 2002 01 08 | 704 | 0.1+ | 0.6− | 2006 10 27 | 703 | 0.1+ | 0.4+ | 2006 11 27 | 204 | 0.2+ | 0.2+ | |
| 2002 01 08 | 704 | (0.4+ | 2.4+) | 2006 10 27 | 703 | 0.7− | 0.2− | 2006 11 27 | 213 | 0.7+ | 0.5− | |
| 2002 01 08 | 704 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.7− | 0.2+ | 2006 11 27 | 213 | 0.5+ | 0.6− | |
| 2002 01 08 | 704 | 0.7+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 27 | 213 | 0.5+ | 0.8− | |
| 2002 01 08 | 704 | 0.6+ | 0.6− | 2006 11 09 | 644 | 0.1+ | 0.3− | | | | | |

**(138709)∗ 2000 SJ$_{101}$ = 2001 YQ$_{103}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22571)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.53347 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18163427 | $\omega$ | 179.84043 | | +0.17738414 | −0.96802347 | |
| $a$ | 3.0879542 | $\Omega$ | 259.93952 | | +0.90273266 | +0.23182687 | |
| $e$ | 0.1055088 | $i$ | 10.37879 | | +0.39192935 | −0.09584808 | |
| $P$ | 5.43 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.1− | 0.3+ | 2001 12 20 | 704 | 0.4− | 0.7− | 2006 11 15 | 704 | 0.0 | 1.1+ | |
| 2000 09 24 | 704 | 0.7+ | 0.1+ | 2001 12 20 | 704 | 0.3+ | 0.4− | 2006 11 15 | 704 | 0.1+ | 0.8+ | |
| 2000 09 24 | 704 | 0.1+ | 0.4+ | 2001 12 20 | 704 | 0.2+ | 0.7− | 2006 11 15 | 704 | 0.2+ | 0.4+ | |
| 2000 09 24 | 704 | 0.5− | 0.5+ | 2001 12 20 | 704 | 1.1− | 0.8− | 2006 11 15 | 704 | 0.1− | 0.9+ | |
| 2000 09 24 | 704 | (0.3− | 2.8+) | 2001 12 20 | 704 | 0.5− | 0.9− | 2006 11 16 | 704 | 0.7+ | 1.4+ | |
| 2000 09 27 | 704 | 0.0 | 0.7− | 2001 12 23 | 704 | 0.6− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 1.2+ | |
| 2000 09 27 | 704 | 0.9+ | 0.3+ | 2001 12 23 | 704 | 0.9− | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.4− | |
| 2000 09 27 | 704 | 0.7+ | 1.0+ | 2001 12 23 | 704 | 0.9− | 0.5− | 2006 11 16 | 704 | 0.2− | 0.2+ | |
| 2000 09 27 | 704 | 0.6− | 0.2− | 2001 12 23 | 704 | 0.9− | 0.2− | 2006 11 17 | 691 | 0.3− | 0.0 | |
| 2000 09 27 | 645 | 0.1− | 0.2− | 2001 12 23 | 704 | 0.9− | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.1+ | |
| 2000 09 27 | 645 | 0.1− | 0.2− | 2002 01 09 | 704 | 0.1− | 0.4− | 2006 11 17 | 691 | 0.2− | 0.1+ | |
| 2000 09 28 | 704 | 0.2− | 1.6+ | 2002 01 09 | 704 | 0.7+ | 0.0 | 2006 11 19 | 691 | 0.2− | 0.1+ | |
| 2000 09 28 | 704 | 0.5+ | 0.3+ | 2002 01 09 | 704 | 0.2+ | 0.9− | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 2000 09 28 | 704 | 1.2+ | 0.3+ | 2003 03 23 | 644 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.1− | |
| 2000 09 28 | 704 | 0.4+ | 0.8+ | 2003 03 23 | 644 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.6− | |
| 2000 09 28 | 704 | 0.6+ | 0.5+ | 2003 03 23 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.0 | |
| 2000 10 03 | 704 | 0.2+ | 0.1− | 2005 07 31 | 644 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.5− | |
| 2000 10 03 | 704 | 1.1+ | 0.2− | 2005 07 31 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.5+ | |
| 2000 10 03 | 704 | 1.3+ | 0.4− | 2005 07 31 | 644 | 0.6− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.0 | |
| 2000 10 03 | 704 | 0.7+ | 0.8+ | 2005 08 29 | 644 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.5+ | 0.4+ | |
| 2001 11 20 | 704 | 0.3+ | 1.4+ | 2005 08 29 | 644 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1− | |
| 2001 11 20 | 704 | (0.6+ | 2.1+) | 2005 08 29 | 644 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.3+ | |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2006 08 29 | 703 | 0.5+ | 1.1− | 2006 11 22 | 704 | 1.3+ | 0.6− | |
| 2001 11 20 | 704 | 1.2+ | 0.3+ | 2006 08 29 | 703 | 1.2− | 0.9+ | 2006 11 22 | 704 | (1.8+ | 0.3−) | |
| 2001 11 20 | 704 | 1.0+ | 0.7− | 2006 08 29 | 703 | 0.9+ | 0.9+ | 2006 11 22 | 704 | (1.6+ | 0.5−) | |
| 2001 11 20 | 704 | 0.4+ | 0.4+ | 2006 08 29 | 703 | 1.3− | 1.4+ | 2006 11 22 | 704 | 0.0 | 0.5− | |
| 2001 11 20 | 704 | 0.7+ | 1.0− | 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 22 | 704 | 1.2+ | 0.5+ | |
| 2001 11 20 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.2+ | 0.7− | 2006 11 23 | 703 | 0.1+ | 0.0 | |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2006 10 27 | 703 | 1.2− | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.6+ | |
| 2001 12 17 | 704 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 0.4− | 0.2+ | |
| 2001 12 17 | 704 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.2− | 0.0 | |
| 2001 12 17 | 704 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.3+ | 0.6− | |
| 2001 12 17 | 704 | 0.4− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2− | 0.6− | |
| 2001 12 20 | 704 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.6− | |
| 2001 12 20 | 704 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.6− | |
| 2001 12 20 | 704 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.1+ | | | | | |

**(138710)∗ 2000 SE$_{103}$ = 1995 YG$_{26}$ = 2004 HZ$_{40}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.60951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18023107 | $\omega$ | 141.06411 | | +0.89095296 | +0.45371842 | |
| $a$ | 3.1039612 | $\Omega$ | 191.99466 | | −0.43570809 | +0.84268699 | |
| $e$ | 0.1776789 | $i$ | 5.10849 | | −0.12791127 | +0.28985898 | |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 20 | 691 | 0.3− | 0.0 | 2000 10 03 | 704 | 0.3− | 0.1− | 2005 07 26 | 644 | 0.1− | 0.0 | |
| 1995 12 20 | 691 | 0.1− | 0.2− | 2000 10 04 | 704 | 0.3+ | 0.5+ | 2005 07 26 | 608 | 0.7− | 1.2+ | |
| 1995 12 20 | 691 | 0.1− | 0.1+ | 2000 10 04 | 704 | 0.0 | 0.0 | 2005 07 26 | 608 | (0.2− | 1.6+) | |
| 2000 09 05 | 704 | 0.7+ | 0.4+ | 2000 10 04 | 704 | 0.1− | 0.0 | 2005 07 26 | 608 | 0.1+ | 0.7+ | |
| 2000 09 05 | 704 | 0.5+ | 0.8+ | 2000 10 04 | 704 | 0.0 | 0.3+ | 2005 07 30 | 644 | 0.3− | 0.1+ | |
| 2000 09 05 | 704 | 0.1+ | 0.5− | 2000 10 04 | 704 | 0.4− | 0.1+ | 2005 07 30 | 644 | 0.0 | 0.0 | |
| 2000 09 05 | 704 | 0.3− | 0.2− | 2000 10 04 | 704 | 0.1+ | 0.2+ | 2005 07 30 | 644 | 0.1− | 0.0 | |
| 2000 09 21 | 691 | 0.2+ | 0.2− | 2000 10 04 | 704 | 0.3− | 0.0 | 2005 08 05 | 644 | 0.3− | 0.0 | |
| 2000 09 21 | 691 | 0.1− | 0.1− | 2000 10 04 | 704 | 0.5+ | 0.3+ | 2005 08 05 | 644 | 0.1+ | 0.1− | |
| 2000 09 21 | 691 | 0.2+ | 0.3− | 2000 10 04 | 704 | 0.1− | 0.0 | 2005 08 05 | 644 | 0.1− | 0.0 | |
| 2000 09 24 | 704 | 0.6+ | 1.0+ | 2000 10 04 | 704 | 0.3+ | 0.2− | 2005 08 29 | 691 | (2.5− | 1.4+) | |
| 2000 09 24 | 704 | 0.1− | 0.4− | 2000 10 06 | 704 | 0.9+ | 0.5+ | 2005 08 29 | 691 | 0.0 | 0.1− | |
| 2000 09 24 | 704 | 0.1+ | 0.2+ | 2000 10 06 | 704 | 0.9+ | 0.3− | 2005 08 29 | 691 | 0.3− | 0.3− | |
| 2000 09 24 | 704 | 0.6− | 0.1− | 2000 10 06 | 704 | 1.1+ | 0.1+ | 2005 09 13 | 691 | 0.0 | 0.1− | |
| 2000 09 24 | 704 | 0.2− | 0.1+ | 2000 10 06 | 704 | 0.6− | 0.3− | 2005 09 13 | 691 | 0.2+ | 0.2+ | |
| 2000 09 25 | 608 | 0.6− | 0.0 | 2000 10 06 | 704 | 0.8+ | 1.0− | 2005 09 13 | 691 | 0.2+ | 0.1+ | |
| 2000 09 25 | 608 | 0.0 | 0.5− | 2004 04 19 | 704 | 0.7+ | 0.4+ | 2005 09 17 | 644 | 0.0 | 0.1− | |
| 2000 09 25 | 608 | 0.1− | 0.2− | 2004 04 19 | 704 | 0.1+ | 0.4− | 2005 09 17 | 644 | 0.1+ | 0.1− | |
| 2000 09 26 | 699 | 0.1− | 0.9+ | 2004 04 19 | 704 | 0.3− | 0.9+ | 2005 09 17 | 644 | 0.0 | 0.1− | |
| 2000 09 26 | 699 | 0.6+ | 1.4+ | 2004 04 19 | 704 | 1.2+ | 0.3+ | 2006 10 23 | G96 | 0.4+ | 0.2− | |
| 2000 09 26 | 699 | 1.0− | 0.8+ | 2004 04 24 | 691 | 0.3+ | 0.6+ | 2006 10 23 | G96 | 0.1− | 0.2− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 0.2− | 1.0+ | 2004 04 24 | 691 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2000 09 27 | 704 | 0.3− | 0.2+ | 2004 04 24 | 691 | 0.1+ | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2000 09 27 | 704 | 0.6+ | 0.1− | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 11 05 | 644 | 0.2+ | 0.2− |
| 2000 09 27 | 704 | 0.6− | 0.1+ | 2005 06 29 | 691 | 0.1+ | 0.1− | 2006 11 05 | 644 | 0.4+ | 0.2− |
| 2000 09 27 | 704 | 0.4− | 1.1+ | 2005 06 29 | 691 | 0.1+ | 0.1− | 2006 11 05 | 644 | 0.1+ | 0.1+ |
| 2000 09 27 | 704 | 0.1− | 0.6+ | 2005 07 05 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | (1.5+ | 1.6+) |
| 2000 10 01 | 704 | 0.0 | 0.1+ | 2005 07 05 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.1− | 0.9+ |
| 2000 10 01 | 704 | 0.2+ | 0.2+ | 2005 07 05 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.4+ |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2005 07 07 | 704 | 1.1+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2000 10 01 | 704 | 0.1+ | 0.5+ | 2005 07 07 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 2000 10 01 | 699 | 0.5+ | 0.4+ | 2005 07 07 | 704 | 0.7+ | 0.7+ | 2006 11 17 | 644 | 0.1− | 0.4+ |
| 2000 10 01 | 704 | 0.2+ | 1.1+ | 2005 07 07 | 704 | 0.6− | 1.1− | 2006 11 17 | 644 | 0.4+ | 0.4+ |
| 2000 10 01 | 699 | 1.3+ | 0.4− | 2005 07 08 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2000 10 01 | 699 | 0.5− | 0.4+ | 2005 07 08 | 691 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2000 10 01 | 699 | 0.0 | 0.9+ | 2005 07 08 | 691 | 0.4+ | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2000 10 02 | 704 | 0.1− | 0.6+ | 2005 07 11 | 703 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2000 10 02 | 704 | 0.8− | 0.5− | 2005 07 11 | 703 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2000 10 02 | 704 | 0.6− | 0.2− | 2005 07 11 | 703 | 0.1− | 0.0 | 2006 11 20 | 704 | 1.2− | 0.3+ |
| 2000 10 02 | 704 | 0.3− | 0.3− | 2005 07 11 | 703 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.2+ | 1.0+ |
| 2000 10 03 | 704 | 0.1− | 0.1− | 2005 07 12 | 703 | 0.7− | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.1+ |
| 2000 10 03 | 704 | 0.1− | 0.1+ | 2005 07 12 | 703 | 0.7− | 0.6− | 2006 11 20 | 704 | 0.9+ | 0.1− |
| 2000 10 03 | 704 | 0.4− | 0.1− | 2005 07 12 | 703 | 0.5− | 0.9+ | 2006 11 29 | 704 | 0.5− | 1.3+ |
| 2000 10 03 | 704 | 0.3− | 0.1+ | 2005 07 12 | 703 | 1.0− | 0.0 | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2000 10 03 | 704 | 0.8− | 0.2+ | 2005 07 26 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2000 10 03 | 704 | 0.5− | 0.2+ | 2005 07 26 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 1.2− | 0.5− |

**(138711)∗ 2000 SN$_{104}$ = 2005 XJ$_{66}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 93853)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.56996 | | (2000.0) | | | |
| $n$ | 0.21819777 | $\omega$ | 149.62704 | | +0.93069509 | +0.36576692 |
| $a$ | 2.7325567 | $\Omega$ | 188.92181 | | −0.34130171 | +0.86377533 |
| $e$ | 0.0951332 | $i$ | 1.70193 | | −0.13160471 | +0.34656419 |
| $P$ | 4.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 695 | 0.1− | 0.3+ | 2002 01 13 | 704 | 1.2− | 0.0 | 2005 12 07 | 941 | 0.0 | 0.2− |
| 2000 09 21 | 695 | 0.1− | 0.3+ | 2002 01 13 | 704 | 0.4+ | 1.0+ | 2005 12 07 | 941 | 0.1+ | 0.3− |
| 2000 09 24 | 704 | 0.3− | 0.7+ | 2002 02 11 | 704 | 0.5− | 0.8+ | 2005 12 07 | 941 | 0.2− | 1.0− |
| 2000 09 24 | 704 | 0.3− | 1.0+ | 2002 02 11 | 704 | 0.0 | 0.5+ | 2005 12 07 | 941 | 0.5− | 0.9− |
| 2000 09 24 | 704 | 0.1+ | 0.6+ | 2002 02 11 | 704 | 0.8− | 1.4+ | 2005 12 07 | 941 | 0.7− | 0.6− |
| 2000 09 24 | 704 | 0.9− | 0.9+ | 2003 04 06 | 691 | 0.9− | 0.6− | 2005 12 09 | 941 | 0.5+ | 0.6+ |
| 2000 09 24 | 704 | 0.2+ | 1.0+ | 2003 04 06 | 691 | 0.1− | 0.2− | 2005 12 09 | 941 | 0.4+ | 0.3+ |
| 2000 09 27 | 704 | 1.5+ | 1.4+ | 2003 04 06 | 691 | 0.1− | 0.3+ | 2005 12 09 | 941 | 0.9+ | 0.2+ |
| 2000 09 27 | 704 | 0.4+ | 0.4− | 2003 04 09 | 644 | 1.1+ | 0.1+ | 2005 12 09 | 941 | 0.5+ | 0.4+ |
| 2000 09 27 | 704 | 1.4− | 1.1− | 2003 04 09 | 644 | 0.9+ | 0.3− | 2005 12 09 | 941 | 0.7+ | 0.1+ |
| 2000 10 01 | 704 | 0.4− | 0.9+ | 2003 04 09 | 644 | 0.9+ | 1.0+ | 2005 12 09 | 941 | 0.3+ | 0.5− |
| 2000 10 01 | 704 | 0.4− | 0.8+ | 2003 04 24 | 691 | 0.5+ | 0.1+ | 2005 12 10 | 941 | 0.6− | 0.5− |
| 2000 10 01 | 704 | 0.3− | 1.2+ | 2003 04 24 | 691 | 0.1+ | 0.2− | 2005 12 10 | 941 | 0.3− | 0.6− |
| 2000 10 01 | 704 | 0.2− | 0.6+ | 2003 04 24 | 691 | 0.3+ | 0.3+ | 2005 12 10 | 941 | 0.0 | 1.1− |
| 2000 10 03 | 704 | 1.5+ | 0.1+ | 2004 08 11 | 704 | 0.0 | 2.8− | 2005 12 10 | 941 | 0.1+ | 1.3− |
| 2000 10 03 | 704 | 0.0 | 0.6+ | 2004 08 11 | 704 | 0.2− | 1.3− | 2005 12 10 | 941 | 0.7+ | 2.1− |
| 2000 10 03 | 704 | 0.3+ | 0.3− | 2004 08 11 | 704 | 0.1+ | 0.4+ | 2005 12 29 | G96 | 0.2− | 0.3− |
| 2000 10 04 | 704 | 0.3− | 0.9− | 2004 08 11 | 704 | 0.9− | 1.0− | 2005 12 29 | G96 | 0.1+ | 0.2− |
| 2000 10 04 | 704 | 0.6− | 0.1+ | 2004 08 11 | 704 | 0.5+ | 1.5− | 2005 12 29 | G96 | 0.2+ | 0.1+ |
| 2000 10 04 | 704 | 1.3− | 0.4+ | 2005 10 25 | G96 | 1.6+ | 0.9+ | 2005 12 29 | G96 | 0.3− | 0.1− |
| 2000 10 04 | 704 | 0.8+ | 0.6+ | 2005 10 25 | G96 | 0.3+ | 0.6− | 2006 01 06 | G96 | 0.3− | 0.6− |
| 2002 01 13 | 704 | 0.7− | 0.3− | 2005 10 25 | G96 | 0.4+ | 0.3− | 2006 01 06 | G96 | 0.5− | 0.4+ |
| 2002 01 13 | 704 | 0.1+ | 0.3+ | 2005 10 25 | G96 | 0.0 | 0.4− | 2006 01 06 | G96 | 0.4− | 0.5− |
| 2002 01 13 | 704 | 0.1− | 0.0 | 2005 12 07 | 941 | 0.1− | 0.1− | 2006 01 06 | G96 | 0.0 | 0.3− |

**(138712)∗ 2000 SJ$_{105}$ = 2005 ND$_{97}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84598)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.81971 | | (2000.0) | | | |
| $n$ | 0.18362483 | $\omega$ | 147.55239 | | +0.87124988 | +0.49081125 |
| $a$ | 3.0655973 | $\Omega$ | 183.06823 | | −0.46878756 | +0.82886565 |
| $e$ | 0.1756741 | $i$ | 5.66973 | | −0.14547121 | +0.26848845 |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 691 | 0.1− | 0.2− | 2000 10 02 | 704 | 0.3+ | 0.2− | 2005 08 29 | 691 | 0.1+ | 0.0 |
| 2000 08 26 | 691 | 0.2− | 0.0 | 2000 10 02 | 704 | 0.6+ | 0.7+ | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2000 08 26 | 691 | 0.3− | 0.3− | 2000 10 02 | 704 | 0.0 | 1.1+ | 2005 10 27 | G96 | 0.4+ | 0.3− |
| 2000 09 24 | 704 | 0.9− | 0.4+ | 2004 05 13 | 691 | 0.1− | 0.8+ | 2005 10 27 | G96 | 0.0 | 0.3− |
| 2000 09 24 | 704 | 0.3+ | 0.2− | 2004 05 13 | 691 | 0.3− | 0.6+ | 2005 10 27 | G96 | 0.2+ | 0.2− |
| 2000 09 24 | 704 | 0.1+ | 0.4+ | 2004 05 13 | 691 | 0.4+ | 0.6+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2000 09 24 | 704 | 0.1+ | 0.6+ | 2004 05 21 | 691 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2000 09 27 | 704 | 0.5+ | 0.3+ | 2004 05 21 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2000 09 27 | 704 | 0.5− | 0.8+ | 2004 05 21 | 691 | 0.2+ | 0.4− | 2006 10 23 | G96 | 0.9− | 0.7− |
| 2000 09 27 | 704 | 0.3− | 0.4+ | 2005 06 29 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2000 09 27 | 704 | 0.1− | 0.3+ | 2005 06 29 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2000 09 28 | 704 | 0.5+ | 0.6+ | 2005 06 29 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2000 09 28 | 704 | 1.1+ | 0.4+ | 2005 07 08 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2000 09 28 | 704 | 0.3− | 0.7+ | 2005 07 08 | 691 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.5+ |
| 2000 09 28 | 704 | 0.6− | 0.0 | 2005 07 08 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2000 09 28 | 704 | 0.1− | 0.3− | 2005 07 12 | 703 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.9+ | 0.0 |
| 2000 10 01 | 704 | 0.3− | 0.6− | 2005 07 12 | 703 | (2.1− | 0.5+) | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2000 10 01 | 704 | 0.2+ | 0.1− | 2005 07 12 | 703 | (2.0− | 1.0+) | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 0.3− | 0.5− | 2005 07 12 | 703 | (1.0− | 2.1+) | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.3− | 2005 07 26 | 644 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.1− | 2005 07 26 | 644 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2000 10 01 | 699 | 0.1− | 0.4− | 2005 07 26 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2000 10 01 | 699 | 0.5− | 0.9+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2000 10 01 | 699 | 0.7+ | 0.1+ | 2005 08 06 | 644 | 0.2+ | 0.2+ | 2006 11 24 | 691 | 0.3− | 0.2+ |
| 2000 10 01 | 699 | 0.4+ | 0.6− | 2005 08 06 | 644 | 0.2+ | 0.3+ | 2006 11 24 | 691 | 0.3− | 0.2+ |
| 2000 10 02 | 704 | 0.6− | 0.2+ | 2005 08 29 | 691 | 0.2− | 0.1− | 2006 11 24 | 691 | 0.4− | 0.3+ |
| 2000 10 02 | 704 | 0.5+ | 0.5+ | 2005 08 29 | 691 | 0.1+ | 0.0 | | | | |

**(138713)∗ 2000 SK$_{117}$ = 1989 TL$_{8}$ = 1989 TT$_{13}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 4831), S. Nakano (d, MPC 16003)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 203.18843 | | (2000.0) | | | |
| $n$ | 0.26918545 | $\omega$ | 284.79769 | | +0.56790054 | −0.82227599 |
| $a$ | 2.3755727 | $\Omega$ | 130.53848 | | +0.77255870 | +0.51709189 |
| $e$ | 0.1842490 | $i$ | 2.77237 | | +0.28397542 | +0.23765136 |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 03 | 809 | 1.7− | 1.3− | 2000 10 06 | 691 | 0.1− | 0.2− | 2005 01 07 | A30 | 0.1− | 0.3− |
| 1989 10 03 | 809 | 2.2− | 0.8− | 2000 10 06 | 691 | 0.1− | 0.2− | 2005 01 07 | A30 | 0.1− | 0.2− |
| 1989 10 03 | 809 | 2.1− | 0.5− | 2000 10 24 | 704 | 0.1− | 0.3+ | 2005 01 07 | A30 | 0.3− | 0.2− |
| 1989 10 07 | 809 | 0.8+ | 0.6+ | 2000 10 24 | 704 | 0.1− | 0.7+ | 2005 01 11 | 704 | 1.3− | 0.5+ |
| 1989 10 07 | 809 | 1.2+ | 1.1+ | 2000 10 24 | 704 | 0.8+ | 0.7+ | 2005 01 11 | 704 | 0.5+ | 0.3+ |
| 1989 10 07 | 809 | 1.5+ | 0.8+ | 2000 10 24 | 704 | 0.4− | 0.8+ | 2005 01 11 | 704 | 0.0 | 0.5− |
| 1989 10 08 | 809 | (2.8+ | 0.1+) | 2000 10 24 | 704 | (2.2+ | 1.0+) | 2005 01 11 | 704 | 0.0 | 0.1+ |
| 1989 10 08 | 809 | 0.9+ | 0.9+ | 2000 10 30 | 704 | 0.5− | 0.2− | 2005 01 11 | A41 | 0.9− | 0.3− |
| 1989 10 08 | 809 | 1.3+ | 0.9+ | 2000 10 30 | 704 | 0.2− | 0.3+ | 2005 01 12 | A41 | 0.4− | 0.7− |
| 1998 03 01 | 691 | 0.5− | 0.2− | 2000 10 30 | 704 | 0.3− | 0.6− | 2005 01 15 | 704 | 0.9+ | 0.9+ |
| 1998 03 01 | 691 | 0.1− | 0.5− | 2000 10 30 | 704 | 0.5− | 0.8− | 2005 01 15 | 704 | 0.7+ | 0.4+ |
| 1998 03 01 | 691 | 0.1− | 0.3− | 2000 10 30 | 704 | 0.2− | 0.3− | 2005 01 15 | 704 | 0.5+ | 0.8+ |
| 2000 09 22 | 699 | 0.5− | 0.2+ | 2000 11 02 | 704 | 0.4+ | 0.5− | 2005 01 15 | 704 | 0.1− | 0.9+ |
| 2000 09 22 | 699 | 0.1− | 0.1+ | 2000 11 02 | 704 | 0.1+ | 0.0 | 2005 01 15 | 704 | 0.3+ | 0.4+ |
| 2000 09 22 | 699 | 0.6− | 0.1+ | 2000 11 02 | 704 | 0.5+ | 1.6− | 2005 01 17 | 704 | 0.1− | 1.1+ |
| 2000 09 22 | 699 | 0.7− | 0.6+ | 2000 11 02 | 704 | 0.3+ | 0.3− | 2005 01 17 | 704 | 0.0 | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.0 | 0.1+ | 2000 11 02 | 704 | 0.2− | 0.1− | 2005 01 17 | 704 | 0.3− | 0.4+ | | |
| 2000 09 24 | 704 | 0.2− | 0.2+ | 2004 11 07 | 704 | 0.7− | 0.3+ | 2005 01 17 | 704 | 0.2− | 0.9+ | | |
| 2000 09 24 | 704 | 1.1− | 0.8+ | 2004 11 07 | 704 | 0.2+ | 0.3+ | 2005 02 02 | 704 | 0.4− | 0.2− | | |
| 2000 09 24 | 704 | 0.5− | 0.4+ | 2004 11 07 | 704 | 0.8+ | 1.5+ | 2005 02 02 | 704 | (0.5+ | 2.1+) | | |
| 2000 09 27 | 704 | 0.3− | 0.1+ | 2004 12 14 | 703 | 1.4− | 0.4− | 2005 02 02 | 704 | 0.4+ | 1.7+ | | |
| 2000 09 27 | 704 | 0.1+ | 0.5+ | 2004 12 14 | 703 | 0.1+ | 0.0 | 2005 02 02 | 704 | 0.3− | 0.1− | | |
| 2000 09 27 | 704 | 0.7− | 0.7+ | 2004 12 14 | 703 | 0.2+ | 0.2− | 2005 02 02 | 704 | 1.8+ | 0.9+ | | |
| 2000 09 27 | 704 | 0.8− | 0.3+ | 2004 12 14 | 703 | 0.5− | 0.3+ | 2006 04 24 | 691 | 0.0 | 0.4+ | | |
| 2000 09 27 | 704 | 0.2+ | 0.5+ | 2004 12 18 | 691 | 0.3+ | 0.0 | 2006 04 24 | 691 | 0.0 | 0.5+ | | |
| 2000 09 30 | 699 | 0.3+ | 1.4+ | 2004 12 18 | 691 | 0.2+ | 0.0 | 2006 04 24 | 691 | 0.1− | 0.4+ | | |
| 2000 09 30 | 699 | 1.2+ | 0.3− | 2004 12 18 | 691 | 0.1+ | 0.0 | 2006 05 05 | 691 | 0.5+ | 0.6+ | | |
| 2000 09 30 | 699 | 1.8+ | 1.1+ | 2005 01 07 | A30 | 0.1+ | 0.2− | 2006 05 05 | 691 | 0.0 | 0.5+ | | |
| 2000 09 30 | 699 | 1.2+ | 0.7+ | 2005 01 07 | A30 | 0.1− | 0.3− | 2006 05 05 | 691 | 0.4+ | 0.3+ | | |
| 2000 10 06 | 691 | 0.0 | 0.2− | 2005 01 07 | A30 | 0.1− | 0.2− | | | | | | |

**(138714)∗ 2000 SC$_{126}$ = 2004 HV$_{37}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.37562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17845714 | $\omega$ | 282.48840 | | +0.58134374 | +0.81283447 | |
| $a$ | 3.1244969 | $\Omega$ | 23.17406 | | −0.70573283 | +0.52610981 | |
| $e$ | 0.1213821 | $i$ | 5.33657 | | −0.40494521 | +0.25001719 | |
| $P$ | 5.52 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3+ | 0.1− | 2004 04 22 | 691 | 0.6+ | 0.2+ | 2005 08 28 | E12 | 0.4+ | 0.4− | | |
| 2000 09 24 | 704 | 0.2+ | 0.4+ | 2004 04 22 | 691 | 0.3+ | 0.3+ | 2005 08 28 | E12 | 0.0 | 0.2− | | |
| 2000 09 24 | 704 | 1.2− | 1.0+ | 2004 04 23 | E12 | 1.4− | 0.2+ | 2005 08 28 | E12 | 0.2+ | 0.4− | | |
| 2000 09 27 | 704 | 0.3− | 0.5+ | 2004 04 23 | E12 | 0.2+ | 1.0+ | 2005 09 01 | 644 | 0.2− | 0.1− | | |
| 2000 09 27 | 704 | 1.0+ | 0.2− | 2004 04 23 | E12 | 0.0 | 0.9+ | 2005 09 01 | 644 | 0.2− | 0.1− | | |
| 2000 09 27 | 704 | 0.0 | 0.1+ | 2004 04 23 | E12 | 0.2− | 1.3+ | 2005 09 01 | 644 | 0.2− | 0.1− | | |
| 2000 09 27 | 704 | 0.4+ | 0.1+ | 2004 05 16 | 704 | 0.8+ | 0.3− | 2005 11 06 | G96 | 0.1− | 0.5− | | |
| 2000 09 27 | 691 | 0.1− | 0.2+ | 2004 05 16 | 704 | 0.4+ | 1.2+ | 2005 11 06 | G96 | 0.2+ | 0.4+ | | |
| 2000 09 27 | 691 | 0.4− | 0.2+ | 2004 05 16 | 704 | 0.1− | 0.9+ | 2005 11 06 | G96 | 0.1− | 0.1− | | |
| 2000 09 27 | 691 | 0.1− | 0.2+ | 2004 05 16 | 704 | 0.1+ | 0.1− | 2005 11 06 | G96 | 0.1− | 0.1− | | |
| 2000 10 01 | 704 | 0.8+ | 0.5+ | 2004 05 18 | 704 | 0.0 | 1.4+ | 2006 10 19 | 691 | 0.4− | 0.5− | | |
| 2000 10 01 | 704 | 0.8+ | 0.5+ | 2004 05 18 | 704 | 0.2+ | 1.4+ | 2006 10 19 | 691 | 0.1+ | 0.1− | | |
| 2000 10 01 | 704 | 0.2+ | 0.2+ | 2004 05 18 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.4+ | | |
| 2000 10 01 | 704 | 0.3+ | 0.7− | 2004 05 18 | 704 | 0.9+ | 1.1+ | 2006 10 23 | 691 | 0.4− | 0.4+ | | |
| 2000 10 01 | 704 | 0.8+ | 0.1− | 2005 07 04 | 644 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2000 10 02 | 704 | 0.5− | 0.4− | 2005 07 04 | 644 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2000 10 02 | 704 | 0.1− | 0.3− | 2005 07 04 | 644 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.1− | 0.5+ | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.3+ | | |
| 2000 10 02 | 704 | 0.2+ | 0.1+ | 2005 07 27 | 644 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.6+ | | |
| 2000 10 02 | 704 | 0.1− | 0.6+ | 2005 07 27 | 644 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1− | 0.2+ | | |
| 2000 10 02 | 704 | 0.3− | 0.2+ | 2005 08 01 | E12 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2000 10 02 | 704 | 0.3− | 0.0 | 2005 08 01 | E12 | 0.7− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.1+ | | |
| 2000 10 02 | 704 | 1.3− | 0.3+ | 2005 08 01 | E12 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.4− | | |
| 2000 10 02 | 704 | 0.6+ | 0.2− | 2005 08 01 | E12 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ | | |
| 2000 11 02 | 704 | 0.8− | 0.1+ | 2005 08 04 | 644 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2000 11 02 | 704 | 0.6− | 0.7− | 2005 08 04 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.2− | 0.8+ | | |
| 2000 11 02 | 704 | 0.2− | 1.0+ | 2005 08 04 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.1+ | 0.4+ | | |
| 2004 04 22 | 691 | 0.2+ | 0.3+ | 2005 08 28 | E12 | 0.4− | 0.9+ | 2006 11 22 | 704 | (1.5+ | 0.1−) | | |

**(138715)∗ 2000 SK$_{129}$**

Discovered 2000 Sept. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.97452 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17970235 | $\omega$ | 235.92991 | | +0.08000069 | −0.97916700 | |
| $a$ | 3.1100465 | $\Omega$ | 211.13929 | | +0.99135887 | +0.09768452 | |
| $e$ | 0.2396988 | $i$ | 21.15598 | | +0.10395903 | −0.17801606 | |
| $P$ | 5.48 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.4− | 0.4+ | 2003 05 05 | 691 | 0.3− | 1.0+ | 2006 10 23 | 704 | 0.3+ | 0.2+ | | |
| 2000 09 01 | 704 | 0.3− | 0.7+ | 2003 05 05 | 691 | 0.5− | 1.1+ | 2006 10 23 | 683 | 0.2+ | 0.1− | | |
| 2000 09 01 | 704 | 0.3− | 0.8+ | 2003 05 05 | 691 | 0.3− | 1.1+ | 2006 10 23 | 704 | 0.2+ | 0.6+ | | |
| 2000 09 01 | 704 | 0.1+ | 0.2− | 2003 05 06 | 704 | 0.2− | 1.5+ | 2006 10 23 | 683 | 0.3+ | 0.8+ | | |
| 2000 09 01 | 704 | 0.4− | 1.2+ | 2003 05 06 | 704 | 0.1− | 0.9+ | 2006 10 23 | 704 | 0.1− | 0.4+ | | |
| 2000 09 22 | 704 | 0.1+ | 0.3+ | 2003 05 06 | 704 | 0.9− | 1.1+ | 2006 10 23 | 704 | 0.2− | 0.4+ | | |
| 2000 09 22 | 704 | 0.4+ | 0.1+ | 2003 05 06 | 704 | 0.4− | 1.4+ | 2006 10 23 | 704 | 0.4+ | 0.3+ | | |
| 2000 09 22 | 704 | 0.1− | 0.0 | 2003 06 16 | 644 | 0.1− | 0.3+ | 2006 10 25 | 106 | 0.2+ | 0.0 | | |
| 2000 09 22 | 704 | 0.0 | 0.6+ | 2003 06 16 | 644 | 0.2− | 0.2+ | 2006 10 25 | 106 | 0.2+ | 0.2+ | | |
| 2000 09 28 | 704 | 0.4+ | 0.5− | 2003 06 16 | 644 | 0.1− | 0.3+ | 2006 10 25 | 106 | 0.2+ | 0.1− | | |
| 2000 09 28 | 704 | 0.3− | 0.1− | 2004 05 24 | 704 | 0.7− | 0.9+ | 2006 10 25 | 106 | 0.0 | 0.0 | | |
| 2000 09 28 | 704 | 0.3− | 1.0− | 2004 05 24 | 704 | 0.7− | 0.3+ | 2006 10 26 | 704 | 0.6+ | 0.0 | | |
| 2000 09 28 | 704 | 0.1− | 0.1+ | 2004 05 24 | 704 | 0.8− | 0.1− | 2006 10 26 | 704 | 0.3+ | 0.5+ | | |
| 2000 09 28 | 704 | 0.6+ | 0.1− | 2005 07 17 | 644 | 1.0+ | 0.7+ | 2006 10 26 | 704 | 0.3+ | 0.5− | | |
| 2000 10 04 | 704 | 0.3− | 1.3+ | 2005 07 17 | 644 | 1.2+ | 0.7+ | 2006 10 27 | 691 | 0.2+ | 0.1− | | |
| 2000 10 04 | 704 | 0.3− | 0.5+ | 2005 07 17 | 644 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1− | | |
| 2000 10 04 | 704 | 0.6− | 0.4+ | 2006 08 30 | 699 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 2000 10 04 | 704 | 0.2+ | 0.2− | 2006 08 30 | 699 | 0.3− | 0.1+ | 2006 10 28 | 704 | 0.3− | 0.2+ | | |
| 2000 10 04 | 704 | 0.2− | 0.6− | 2006 08 30 | 699 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.9+ | 0.4+ | | |
| 2000 11 19 | 704 | 0.3+ | 0.1− | 2006 08 30 | 699 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.0 | 0.2+ | | |
| 2000 11 19 | 704 | 0.2− | 0.5− | 2006 09 20 | 699 | 0.4+ | 0.1− | 2006 10 28 | 704 | (0.3− | 1.6+) | | |
| 2000 11 19 | 704 | 0.0 | 0.6+ | 2006 09 20 | 699 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.6− | 0.7+ | | |
| 2000 11 19 | 704 | 0.3− | 0.7− | 2006 09 20 | 699 | 0.6+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2000 11 19 | 704 | 0.1− | 0.8+ | 2006 09 20 | 699 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.5− | | |
| 2001 11 15 | 704 | (1.7− | 0.4+) | 2006 09 25 | 704 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− | | |
| 2001 11 15 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2001 11 15 | 704 | 0.0 | 0.8+ | 2006 09 25 | 704 | 0.6+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 15 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 704 | 0.8+ | 0.8+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2002 01 12 | 704 | (3.3− | 0.7+) | 2006 09 25 | 704 | 1.0− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | | |
| 2002 01 12 | 704 | (3.3− | 0.4+) | 2006 09 29 | 704 | 1.3+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.4+ | | |
| 2002 01 12 | 704 | (3.5− | 1.3+) | 2006 09 29 | 704 | 0.4− | 1.1+ | 2006 11 11 | 703 | 0.4+ | 0.9+ | | |
| 2002 01 12 | 704 | (4.1− | 0.9+) | 2006 09 29 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.4+ | | |
| 2002 03 12 | 704 | (0.2− | 1.6+) | 2006 09 29 | 704 | 1.0− | 0.1− | 2006 11 11 | 703 | 0.8− | 0.4+ | | |
| 2002 03 12 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 1.1+ | 0.1+ | 2006 11 13 | 704 | 0.5− | 0.6+ | | |
| 2002 03 12 | 704 | 1.1+ | 0.1+ | 2006 09 29 | 704 | 0.9− | 0.1+ | 2006 11 13 | 704 | 0.0 | 0.9+ | | |
| 2002 03 12 | 704 | 0.5− | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.2+ | 2006 11 13 | 704 | 0.6− | 0.2+ | | |
| 2002 03 12 | 704 | 0.4− | 1.0+ | 2006 09 29 | 704 | (1.7− | 0.6+) | 2006 11 13 | 704 | 0.2− | 0.8+ | | |
| 2003 03 07 | 704 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.3+ | 2006 11 13 | 704 | 0.1− | 0.0 | | |
| 2003 03 07 | 704 | 0.0 | 0.1− | 2006 09 29 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 704 | 0.8− | 0.1− | | |
| 2003 03 07 | 704 | 0.2− | 0.2+ | 2006 09 29 | 691 | 0.2+ | 0.6+ | 2006 11 13 | 704 | 0.2− | 1.0+ | | |
| 2003 03 07 | 704 | 0.6+ | 0.1+ | 2006 09 29 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 704 | 0.5− | 0.4+ | | |
| 2003 03 07 | 704 | 1.3+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.2− | 2006 11 13 | 704 | 0.2− | 0.0 | | |
| 2003 03 27 | 699 | (2.0− | 0.8+) | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 13 | 704 | 0.1− | 0.8+ | | |
| 2003 03 27 | 699 | 0.1+ | 0.5− | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 11 13 | 704 | 0.1− | 0.4+ | | |
| 2003 03 27 | 699 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 13 | 704 | 0.7− | 0.1− | | |
| 2003 03 27 | 699 | (0.9− | 1.8+) | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 13 | 704 | 0.1+ | 0.8+ | | |
| 2003 03 31 | 704 | 0.9+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2003 03 31 | 704 | 0.3+ | 0.5− | 2006 10 15 | 104 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2003 03 31 | 704 | 0.2− | 0.4− | 2006 10 15 | 104 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2003 04 07 | 704 | 1.4− | 0.8+ | 2006 10 15 | 104 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.1+ | | |
| 2003 04 07 | 704 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.8− | | |
| 2003 04 07 | 704 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.4+ | | |
| 2003 04 07 | 704 | 1.0+ | 0.9− | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.9+ | | |
| 2003 04 07 | 704 | 0.4− | 0.5− | 2006 10 17 | 104 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.6− | 0.7+ | | |
| 2003 04 09 | 644 | 0.8− | 0.5+ | 2006 10 17 | 104 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.4+ | | |
| 2003 04 09 | 644 | 0.8− | 0.7+ | 2006 10 17 | 104 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.8− | 0.4+ | | |
| 2003 04 09 | 644 | 0.6− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.4− | 0.3+ | | |
| 2003 04 24 | 699 | 0.2− | 1.2+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.6+ | | |
| 2003 04 24 | 699 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 24 | 699 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2003 04 24 | 699 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2003 04 28 | 704 | 1.3+ | 1.2+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.3− | 0.1+ |
| 2003 04 28 | 704 | 1.2+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2003 04 28 | 704 | 1.4+ | 0.8+ | 2006 10 21 | 703 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2003 04 28 | 704 | (0.9+ | 2.0+) | 2006 10 21 | 703 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.6− | 0.9+ |
| 2003 04 28 | 704 | 1.1+ | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2003 04 29 | 704 | 1.1+ | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2003 04 29 | 704 | 0.8+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.1− | 2006 11 21 | 704 | 1.0− | 0.5+ |
| 2003 04 29 | 704 | 0.7+ | 1.4+ | 2006 10 21 | 703 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.7− | 0.3+ |
| 2003 04 29 | 699 | 0.3− | 0.6− | 2006 10 21 | 644 | 0.4− | 0.0 | 2006 11 21 | 704 | 1.2− | 0.3+ |
| 2003 04 29 | 704 | 0.8+ | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2003 04 29 | 699 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 26 | 704 | 0.5+ | 0.3+ |
| 2003 04 29 | 704 | 0.8+ | 1.1+ | 2006 10 22 | 683 | 0.8− | 1.1− | 2006 11 26 | 704 | 0.3− | 0.4+ |
| 2003 04 29 | 699 | 0.1− | 0.1+ | 2006 10 22 | 683 | (0.8− | 1.8−) | 2006 11 26 | 704 | 0.3− | 0.3+ |
| 2003 04 29 | 699 | 0.9− | 0.2− | 2006 10 22 | 683 | 0.7− | 0.9− | 2006 11 26 | 704 | 0.1+ | 0.4− |

**(138716)∗ 2000 SU$_{130}$**

Discovered 2000 Sept. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.37993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17396514 | $\omega$ | 6.69866 | | −0.03227278 | +0.96864208 | |
| $a$ | 3.1780537 | $\Omega$ | 261.66028 | | −0.92816989 | −0.12047824 | |
| $e$ | 0.2070247 | $i$ | 14.41765 | | −0.37075481 | +0.21729590 | |
| $P$ | 5.67 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 0.3− | 0.2+ | 2000 09 28 | 704 | 0.4+ | 1.0− | 2004 03 27 | 699 | 0.8+ | 0.3+ |
| 1999 05 10 | 704 | 0.0 | 0.0 | 2000 09 28 | 704 | 0.8+ | 0.5+ | 2005 07 04 | 704 | 0.6− | 0.1+ |
| 1999 05 10 | 704 | 0.9− | 1.0+ | 2001 10 14 | 704 | 0.1+ | 0.1− | 2005 07 04 | 704 | 0.2+ | 0.3+ |
| 1999 05 10 | 704 | 0.3+ | 1.6+ | 2001 10 14 | 704 | 0.3− | 0.5− | 2005 07 04 | 704 | (4.0− | 0.2+) |
| 1999 05 22 | 699 | 0.7+ | 1.1− | 2001 10 14 | 704 | 0.9− | 0.5− | 2006 09 22 | 699 | 0.6+ | 0.8+ |
| 1999 05 22 | 699 | 0.1+ | 0.0 | 2001 10 15 | 704 | 0.2− | 0.4− | 2006 09 22 | 699 | 0.8+ | 0.2− |
| 1999 05 22 | 699 | 0.5+ | 0.5− | 2001 10 15 | 704 | 0.0 | 0.9− | 2006 09 22 | 699 | 0.1− | 0.9+ |
| 2000 09 06 | 704 | 0.9+ | 0.3+ | 2001 10 15 | 704 | 0.1− | 0.5− | 2006 09 22 | 699 | (1.7+ | 0.8−) |
| 2000 09 06 | 704 | 0.6− | 1.1+ | 2001 10 15 | 704 | 0.3− | 0.3− | 2006 09 24 | 113 | 0.9− | 1.0− |
| 2000 09 06 | 704 | 0.7− | 0.2+ | 2001 12 20 | 644 | 0.4+ | 0.4+ | 2006 09 24 | 113 | 1.1− | 0.7− |
| 2000 09 06 | 704 | 0.7− | 0.8+ | 2001 12 20 | 644 | 0.3− | 0.9+ | 2006 09 28 | 703 | (2.6− | 0.5+) |
| 2000 09 06 | 704 | 0.1− | 0.5+ | 2001 12 20 | 644 | 0.6− | 0.8+ | 2006 09 28 | 703 | 0.0 | 1.0+ |
| 2000 09 22 | 704 | 0.6− | 0.2+ | 2003 01 07 | 704 | (2.2+ | 0.5+) | 2006 09 28 | 703 | (0.1+ | 3.1+) |
| 2000 09 22 | 704 | 0.4+ | 0.3+ | 2003 01 07 | 704 | (0.8+ | 2.0+) | 2006 09 28 | 703 | 0.3+ | 0.3− |
| 2000 09 22 | 704 | 0.3− | 0.2+ | 2003 01 07 | 704 | (1.6+ | 1.8+) | 2006 10 10 | 644 | 0.2+ | 0.4+ |
| 2000 09 22 | 704 | 0.4− | 0.3+ | 2003 01 07 | 704 | 0.8+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.6+ |
| 2000 09 22 | 704 | 0.2− | 1.1+ | 2004 03 17 | 704 | 0.4+ | 1.4+ | 2006 10 10 | 644 | 0.3+ | 0.5+ |
| 2000 09 25 | 699 | 0.5− | 0.0 | 2004 03 17 | 704 | 1.0+ | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2000 09 25 | 699 | 0.6− | 0.7− | 2004 03 17 | 704 | 0.5− | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2000 09 25 | 699 | 0.6+ | 0.6+ | 2004 03 17 | 704 | (1.8+ | 1.0−) | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2000 09 25 | 699 | 0.5− | 0.5+ | 2004 03 17 | 704 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2000 09 28 | 704 | 0.5− | 0.5− | 2004 03 27 | 699 | 0.2− | 1.4+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2000 09 28 | 704 | 0.4+ | 0.0 | 2004 03 27 | 699 | 0.5+ | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2000 09 28 | 704 | 0.8+ | 0.4− | 2004 03 27 | 699 | 0.4+ | 0.2− | | | | |

**(138717)∗ 2000 SB$_{135}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.51060 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16949512 | $\omega$ | 103.09267 | | +0.89879370 | +0.40650901 | |
| $a$ | 3.2336865 | $\Omega$ | 233.16286 | | −0.43747903 | +0.85564340 | |
| $e$ | 0.0336001 | $i$ | 11.82978 | | +0.02796403 | +0.32035106 | |
| $P$ | 5.81 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 23 | 691 | 0.3+ | 0.0 | 2001 12 11 | 704 | 0.8− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.3− |
| 1998 05 23 | 691 | 0.3+ | 0.7+ | 2004 04 20 | 704 | 0.4+ | 1.3− | 2006 09 30 | 703 | 0.3− | 0.2− |
| 1998 05 30 | 691 | 0.1+ | 0.2− | 2004 04 20 | 704 | 0.6− | 0.5− | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 1998 05 30 | 691 | 0.3− | 0.1+ | 2004 04 20 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 1998 05 30 | 691 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.7+ | 1.3+ |
| 2000 09 05 | 699 | 1.3− | 0.1+ | 2004 05 09 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2000 09 05 | 699 | 0.9− | 0.6− | 2004 05 09 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2000 09 05 | 699 | 0.1− | 1.2− | 2004 05 09 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2000 09 05 | 699 | 0.8− | 0.7+ | 2004 05 12 | 699 | (1.8− | 0.4−) | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2000 09 23 | 704 | 0.6− | 0.7+ | 2004 05 12 | 699 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2000 09 23 | 704 | 0.3+ | 0.3+ | 2004 05 12 | 699 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2000 09 23 | 704 | 0.3+ | 0.9+ | 2004 05 12 | 699 | 0.1+ | 0.8− | 2006 10 17 | 703 | (2.3− | 0.2+) |
| 2000 09 23 | 704 | 0.0 | 0.5+ | 2004 05 15 | 704 | (0.2+ | 1.7+) | 2006 10 17 | 703 | 0.3+ | 1.2+ |
| 2000 09 28 | 704 | 0.3− | 0.3+ | 2004 05 15 | 704 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.8+ | 0.3+ |
| 2000 09 28 | 704 | 0.7+ | 0.4− | 2004 05 15 | 704 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2000 09 28 | 704 | 0.8+ | 0.2− | 2004 05 15 | 704 | 0.9+ | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2000 09 28 | 704 | 0.4− | 0.3+ | 2004 05 15 | 704 | 0.7− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2000 09 28 | 704 | 0.0 | 0.6+ | 2004 05 16 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2000 10 03 | 704 | 0.0 | 1.3+ | 2004 05 16 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.7− | 1.0+ |
| 2000 10 03 | 704 | 0.3− | 0.1+ | 2004 05 16 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2000 10 03 | 704 | 0.5+ | 0.2+ | 2005 05 14 | G96 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.8− | 0.4+ |
| 2000 10 25 | 704 | 0.1+ | 0.3− | 2005 05 14 | G96 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.7− | 0.2+ |
| 2000 10 25 | 704 | 0.8+ | 0.0 | 2005 05 14 | G96 | 0.3− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2000 10 25 | 704 | 0.2+ | 0.3− | 2005 05 14 | G96 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2000 10 25 | 704 | 0.5+ | 1.6− | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2001 12 11 | 704 | 0.7+ | 1.3+ | 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2001 12 11 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 0.5+ | 1.1− | | | | |

**(138718)∗ 2000 SW$_{139}$ = 2002 AX$_{136}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22590)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.33947 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17140656 | $\omega$ | 94.52774 | | +0.99420356 | −0.08028122 | |
| $a$ | 3.2096013 | $\Omega$ | 270.08861 | | +0.04548060 | +0.91675162 | |
| $e$ | 0.1614155 | $i$ | 4.10094 | | +0.09742077 | +0.39130730 | |
| $P$ | 5.75 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 27 | 691 | 0.3− | 0.0 | 2002 01 09 | 704 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.3− |
| 1994 09 27 | 691 | 0.1− | 0.1+ | 2002 01 15 | 704 | 0.7+ | 0.7+ | 2006 10 27 | 703 | 0.6− | 1.0+ |
| 1994 09 27 | 691 | 0.2+ | 0.9− | 2002 01 15 | 704 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.6+ | 0.6+ |
| 2000 09 04 | 699 | 0.1− | 0.6− | 2002 01 15 | 704 | 0.7+ | 0.4+ | 2006 10 29 | 704 | 0.7− | 0.3+ |
| 2000 09 04 | 699 | 0.6− | 1.3+ | 2002 01 15 | 704 | 0.4− | 0.7− | 2006 10 29 | 704 | 0.2− | 1.2+ |
| 2000 09 04 | 699 | (2.2− | 0.7−) | 2002 01 19 | 704 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2000 09 04 | 699 | 0.8− | 0.4+ | 2002 01 19 | 704 | 0.9+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2000 09 23 | 704 | 0.5− | 0.5+ | 2002 01 19 | 704 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.6− |
| 2000 09 23 | 704 | 1.1+ | 0.9+ | 2002 01 19 | 704 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2000 09 23 | 704 | 0.8+ | 0.7− | 2002 01 19 | 704 | 0.5+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2000 09 28 | 704 | 0.2+ | 0.6+ | 2004 05 16 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2000 09 28 | 704 | 0.3+ | 0.7+ | 2004 05 16 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2000 09 28 | 704 | 1.0− | 0.4− | 2004 05 16 | 691 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.1− |
| 2000 09 28 | 704 | 0.5− | 0.8+ | 2005 06 14 | G96 | 0.9− | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2000 09 28 | 704 | 0.2− | 0.2+ | 2005 06 14 | G96 | 0.5− | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 2000 10 03 | 704 | 0.2+ | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2000 10 03 | 704 | 0.2+ | 0.3+ | 2005 06 14 | G96 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2000 10 03 | 704 | 0.3+ | 0.4− | 2005 07 03 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2000 10 03 | 704 | 0.7− | 0.9+ | 2005 07 03 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.4− | 0.0 |
| 2000 10 03 | 704 | 0.3− | 0.5− | 2005 07 03 | G96 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2000 10 06 | 704 | 0.6− | 0.3+ | 2005 07 03 | G96 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2000 10 06 | 704 | 0.6− | 1.1+ | 2005 07 10 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2000 10 06 | 704 | 0.7− | 0.1− | 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2000 10 06 | 704 | 0.1+ | 0.9+ | 2005 07 10 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2000 10 25 | 704 | 0.5+ | 0.4− | 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.2− | 0.6+ | 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− | | |
| 2000 10 25 | 704 | 0.8+ | 0.6+ | 2005 07 15 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.3− | | |
| 2000 10 25 | 704 | 0.6+ | 0.6+ | 2005 07 15 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.6+ | | |
| 2000 10 25 | 704 | 0.9+ | 0.2+ | 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.6− | | |
| 2000 10 31 | 704 | 0.6+ | 0.5+ | 2005 07 15 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.2− | | |
| 2000 10 31 | 704 | 1.0+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.2− | | |
| 2000 10 31 | 704 | 0.1+ | 1.1− | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.3− | 0.2− | | |
| 2000 11 03 | 704 | 0.4+ | 0.4− | 2006 10 04 | G96 | (2.5− | 0.5−) | 2006 11 19 | 704 | 0.4+ | 0.8+ | | |
| 2000 11 03 | 704 | 0.3− | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1+ | | |
| 2000 11 03 | 704 | 0.7− | 0.6− | 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.9+ | | |
| 2000 11 03 | 704 | 0.8+ | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.8+ | | |
| 2000 11 03 | 704 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.9+ | | |
| 2001 12 17 | 704 | (2.0+ | 1.2+) | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.5− | 0.4+ | | |
| 2001 12 17 | 704 | (3.8+ | 1.0+) | 2006 10 17 | 691 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.8− | 0.7+ | | |
| 2001 12 17 | 704 | (1.9+ | 0.7+) | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3− | 1.0+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.5− | 0.7+ | | |
| 2002 01 09 | 704 | 1.3− | 0.4− | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.8+ | 1.6+ | | |
| 2002 01 09 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.5+ | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.9+ | | |
| 2002 01 09 | 704 | 0.7− | 1.2+ | 2006 10 27 | 703 | 0.1+ | 0.2+ | | | | | | |

**(138719)∗ 2000 SB$_{144}$ = 2003 FA$_{15}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46481)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 311.46066 | | (2000.0) | | | |
| *n* | 0.18060892 | $\omega$ | 270.89369 | | −0.17242752 | −0.98467053 |
| *a* | 3.0996305 | $\Omega$ | 189.16270 | | +0.95666701 | −0.16103939 |
| *e* | 0.0409400 | *i* | 9.51352 | | +0.23464225 | −0.06700936 |
| *P* | 5.46 | *H* | 14.8 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 691 | 0.1− | 0.2+ | 2000 10 02 | 704 | 0.1+ | 0.3+ | 2003 04 08 | 704 | 0.1+ | 1.0+ | | |
| 2000 09 21 | 691 | 0.3− | 0.2+ | 2003 03 23 | 703 | 0.5+ | 0.9− | 2003 04 26 | 691 | (0.3+ | 1.6+) | | |
| 2000 09 21 | 691 | 0.2− | 0.3+ | 2003 03 23 | 703 | (0.3− | 2.2−) | 2003 04 26 | 691 | 0.3+ | 1.4+ | | |
| 2000 09 23 | 699 | 0.1− | 0.8+ | 2003 03 23 | 703 | (0.9+ | 2.3−) | 2003 04 26 | 691 | 0.3+ | 1.5+ | | |
| 2000 09 23 | 699 | 1.0− | 1.0+ | 2003 03 23 | 703 | 0.2− | 0.8− | 2005 07 31 | 644 | 0.1− | 0.2+ | | |
| 2000 09 23 | 699 | 0.4+ | 1.0+ | 2003 03 24 | 691 | 0.2− | 0.1+ | 2005 07 31 | 644 | 0.0 | 0.3+ | | |
| 2000 09 23 | 699 | 1.0− | 1.3+ | 2003 03 24 | 691 | 0.1− | 0.1− | 2005 07 31 | 644 | 0.2− | 0.5+ | | |
| 2000 09 24 | 704 | 0.3− | 0.7+ | 2003 03 24 | 691 | 0.0 | 0.1− | 2005 08 26 | 644 | 0.1− | 0.3+ | | |
| 2000 09 24 | 704 | 0.6+ | 1.1+ | 2003 03 31 | 699 | (0.6+ | 2.3+) | 2005 08 26 | 644 | 0.5− | 0.4+ | | |
| 2000 09 24 | 704 | 0.5− | 0.3− | 2003 03 31 | 699 | 0.5− | 0.5− | 2005 08 26 | 644 | 0.2− | 0.2+ | | |
| 2000 09 24 | 704 | 0.6+ | 0.4− | 2003 03 31 | 699 | 0.6− | 0.4+ | 2005 08 26 | 644 | 0.4− | 0.3+ | | |
| 2000 09 28 | 704 | 0.1− | 1.2+ | 2003 03 31 | 699 | 0.6− | 0.7+ | 2005 08 26 | 644 | 0.1+ | 0.3+ | | |
| 2000 09 28 | 704 | 1.1− | 0.1− | 2003 04 01 | 704 | 0.1+ | 1.0+ | 2005 08 26 | 644 | 0.3− | 0.2+ | | |
| 2000 09 28 | 704 | 0.3− | 0.5+ | 2003 04 01 | 704 | 0.7+ | 0.2+ | 2005 10 06 | 691 | 0.0 | 0.5+ | | |
| 2000 09 28 | 704 | 0.7+ | 0.2− | 2003 04 01 | 704 | 0.2− | 1.0+ | 2005 10 06 | 691 | 0.0 | 0.3+ | | |
| 2000 09 28 | 704 | 0.7− | 1.0+ | 2003 04 01 | 704 | 0.5− | 1.4+ | 2005 10 06 | 691 | 0.1− | 0.3+ | | |
| 2000 09 28 | 704 | 1.2− | 0.6+ | 2003 04 01 | 704 | 0.3+ | 1.3+ | 2005 11 01 | G96 | 0.1− | 0.2+ | | |
| 2000 09 28 | 704 | 0.6+ | 0.6+ | 2003 04 01 | 704 | 0.2− | 1.3+ | 2005 11 01 | G96 | 0.0 | 0.2− | | |
| 2000 09 28 | 704 | 0.2− | 1.5+ | 2003 04 01 | 704 | 0.2− | 0.8+ | 2005 11 01 | G96 | 0.7+ | 0.2+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.5+ | 2003 04 01 | 704 | 0.2− | 0.3+ | 2005 11 01 | G96 | 0.4− | 0.2+ | | |
| 2000 10 01 | 704 | 0.0 | 0.4+ | 2003 04 01 | 704 | 0.9+ | 0.6+ | 2006 10 20 | 644 | 0.4+ | 1.0+ | | |
| 2000 10 01 | 704 | 0.2+ | 0.2+ | 2003 04 01 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.5+ | | |
| 2000 10 01 | 704 | 0.2− | 0.2− | 2003 04 03 | 699 | 0.5− | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.8+ | | |
| 2000 10 01 | 699 | 1.5+ | 0.6− | 2003 04 03 | 699 | 0.5+ | 0.0 | 2006 11 13 | 703 | 0.0 | 0.7+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.1− | 2003 04 03 | 699 | 0.9− | 1.4− | 2006 11 13 | 703 | 0.5+ | 0.3− | | |
| 2000 10 01 | 699 | 0.6− | 0.3− | 2003 04 03 | 699 | 0.5+ | 0.5− | 2006 11 13 | 703 | 0.6− | 0.6+ | | |
| 2000 10 01 | 699 | 1.3+ | 0.1+ | 2003 04 07 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 1.8+ | 1.2− | | |
| 2000 10 01 | 699 | 0.7+ | 0.3− | 2003 04 07 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.7− | 0.6+ | | |
| 2000 10 02 | 704 | 0.2− | 0.8+ | 2003 04 07 | 691 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.2− | 1.4+ | | |
| 2000 10 02 | 704 | 0.3− | 0.1+ | 2003 04 08 | 704 | (1.1+ | 2.4+) | 2006 11 19 | 703 | 0.7− | 0.1+ | | |
| 2000 10 02 | 704 | 0.1− | 0.0 | 2003 04 08 | 704 | 1.1+ | 0.7+ | 2006 11 19 | 703 | 0.7− | 0.1+ | | |

**(138720)∗ 2000 SV$_{156}$ = 2001 VE$_{97}$**

Discovered 2000 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19885)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 342.71280 | | (2000.0) | | | |
| *n* | 0.17889202 | $\omega$ | 183.87394 | | +0.72718943 | −0.64153842 |
| *a* | 3.1194312 | $\Omega$ | 219.74737 | | +0.63961146 | +0.76239548 |
| *e* | 0.1429872 | *i* | 22.45064 | | +0.24918408 | −0.08474427 |
| *P* | 5.51 | *H* | 14.6 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 25 | 691 | 0.5− | 0.1− | 2001 12 07 | 704 | 0.1+ | 0.7− | 2006 10 25 | 106 | 0.0 | 0.7− | | |
| 1993 05 25 | 691 | 0.1− | 0.6+ | 2001 12 22 | 608 | 0.2− | 0.9− | 2006 10 25 | 106 | 0.4+ | 0.2− | | |
| 1993 05 25 | 691 | (2.7− | 1.2−) | 2001 12 22 | 608 | 0.5− | 0.8− | 2006 10 29 | 691 | 0.0 | 0.2+ | | |
| 1993 05 26 | 691 | 0.3− | 0.2− | 2001 12 22 | 608 | 0.4− | 0.7− | 2006 10 29 | 691 | 1.0− | 0.1− | | |
| 1993 05 26 | 691 | 0.0 | 0.6− | 2002 01 08 | 608 | 0.9+ | 0.4− | 2006 10 29 | 691 | 0.0 | 0.3+ | | |
| 1993 05 26 | 691 | 0.1− | 0.7− | 2002 01 08 | 608 | 0.6+ | 0.0 | 2006 10 29 | 704 | 0.2+ | 1.2+ | | |
| 2000 09 06 | 704 | 0.3− | 0.2− | 2002 01 08 | 608 | 0.7+ | 0.9− | 2006 10 29 | 704 | 0.1+ | 1.0+ | | |
| 2000 09 06 | 704 | 1.1− | 0.0 | 2002 01 12 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.3− | 0.4+ | | |
| 2000 09 06 | 704 | 0.3− | 0.1+ | 2002 01 12 | 704 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.7+ | | |
| 2000 09 06 | 704 | 0.9− | 0.2+ | 2002 01 12 | 704 | 0.8+ | 0.0 | 2006 10 29 | 704 | 0.3− | 0.9+ | | |
| 2000 09 25 | 704 | 0.5+ | 0.1− | 2002 01 12 | 704 | 0.1− | 0.1− | 2006 11 07 | 644 | (1.5+ | 0.0 ) | | |
| 2000 09 25 | 704 | 0.5+ | 0.5+ | 2002 01 12 | 704 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.0 | 0.0 | | |
| 2000 09 25 | 704 | 1.4+ | 0.3− | 2002 02 09 | 644 | 0.1+ | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.0 | | |
| 2000 09 25 | 704 | 0.1+ | 0.8+ | 2002 02 09 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.7− | | |
| 2000 09 25 | 704 | 1.4+ | 0.5− | 2002 02 09 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.3− | | |
| 2000 09 25 | 704 | 1.2+ | 0.6− | 2004 04 22 | 704 | 0.0 | 1.0+ | 2006 11 11 | 703 | 0.8− | 0.2+ | | |
| 2000 09 25 | 704 | 0.6+ | 0.8− | 2004 04 22 | 704 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.1+ | | |
| 2000 09 25 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 704 | 1.3+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2000 09 25 | 704 | 0.2+ | 0.1+ | 2004 04 22 | 704 | 0.7+ | 0.9+ | 2006 11 16 | 691 | 0.2+ | 0.1− | | |
| 2000 09 28 | 704 | 0.7+ | 0.3+ | 2006 08 12 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.2− | | |
| 2000 09 28 | 704 | 0.7+ | 1.3+ | 2006 08 12 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.7+ | | |
| 2000 09 28 | 704 | 0.6− | 0.7− | 2006 08 12 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.7+ | | |
| 2000 09 28 | 704 | 0.7− | 0.5− | 2006 09 17 | 703 | 0.1− | 0.6+ | 2006 11 16 | 704 | 0.5− | 0.5+ | | |
| 2000 10 04 | 704 | 0.3+ | 0.4− | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.2− | 0.4+ | | |
| 2000 10 04 | 704 | 0.5+ | 0.3− | 2006 09 17 | 703 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.2+ | | |
| 2000 10 04 | 704 | 0.3− | 1.0− | 2006 09 17 | 703 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.2− | | |
| 2000 10 04 | 704 | 1.0+ | 0.4− | 2006 09 28 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 704 | (0.9− | 1.8+) | | |
| 2000 10 04 | 704 | 0.6− | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.2− | | |
| 2001 11 11 | 936 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.6− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.8+ | | |
| 2001 11 11 | 936 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.3− | 2006 11 19 | 704 | 1.2+ | 0.3+ | | |
| 2001 11 15 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.7− | | |
| 2001 11 15 | 704 | 0.1− | 0.6− | 2006 10 17 | 703 | 0.5− | 0.1− | 2006 11 19 | 704 | 1.2+ | 0.1− | | |
| 2001 11 15 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.1− | 2006 11 22 | 704 | 0.9+ | 1.4+ | | |
| 2001 11 18 | 704 | 0.3− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.6− | 2006 11 22 | 704 | 0.2+ | 0.7− | | |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 1.2+ | 1.5+ | | |
| 2001 11 18 | 704 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.6− | 2006 11 22 | 704 | 0.6+ | 0.4+ | | |
| 2001 11 18 | 704 | 1.1− | 0.6− | 2006 10 19 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | (0.6− | 1.7+) | | |
| 2001 11 18 | 704 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.0 | 2006 11 26 | 704 | 0.3+ | 0.4+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.2− | 2006 11 26 | 704 | 0.7− | 0.3+ | | |
| 2001 11 19 | 704 | 0.9+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 26 | 704 | 0.7− | 0.2− | | |
| 2001 11 19 | 704 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.8− | 0.2− | | |
| 2001 12 07 | 704 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.3− | 0.1+ | | |
| 2001 12 07 | 704 | 0.3+ | 0.7− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4− | 1.6− | | |
| 2001 12 07 | 704 | 0.1+ | 0.5− | 2006 10 25 | 106 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.4+ | | |
| 2001 12 07 | 704 | 0.4+ | 0.3− | 2006 10 25 | 106 | 0.0 | 0.6− | | | | | | |

**(138721)∗ 2000 SY$_{156}$**

Discovered 2000 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.26064 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18115538 | $\omega$ | 98.10848 | | +0.75246327 | −0.60846284 | |
| $a$ | 3.0933939 | $\Omega$ | 299.75199 | | +0.42930250 | +0.74342101 | |
| $e$ | 0.2882813 | $i$ | 16.88294 | | +0.49949813 | +0.27766558 | |
| $P$ | 5.44 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 08 | 704 | (0.4− | 2.6−) | 2002 01 14 | 704 | 0.9− | 1.3+ | 2005 08 01 | 599 | 0.1+ | 0.3+ | |
| 2000 08 08 | 704 | 0.8+ | 1.2− | 2002 01 14 | 704 | (1.4+ | 1.8+) | 2005 08 01 | 599 | 0.3+ | 0.4+ | |
| 2000 08 08 | 704 | 0.7+ | 1.3− | 2002 01 14 | 704 | 0.3− | 0.8+ | 2005 08 01 | 599 | 0.2+ | 0.4+ | |
| 2000 09 07 | 704 | 0.5+ | 0.6− | 2002 01 14 | 704 | 0.7− | 0.2+ | 2005 08 01 | 599 | 0.2+ | 0.4+ | |
| 2000 09 07 | 704 | 0.7+ | 0.2− | 2002 01 14 | 704 | 0.2− | 0.5+ | 2005 08 30 | 704 | 0.2+ | 0.0 | |
| 2000 09 07 | 704 | 0.7+ | 0.1+ | 2002 02 05 | 608 | (0.0 | 1.7−) | 2005 08 30 | 704 | 0.1+ | 0.1+ | |
| 2000 09 07 | 704 | (2.8+ | 0.8+) | 2002 02 05 | 608 | 0.4+ | 1.3− | 2005 08 30 | 704 | 0.3+ | 0.1+ | |
| 2000 09 26 | 704 | 0.0 | 0.1− | 2002 02 05 | 608 | 0.7+ | 1.0− | 2005 08 30 | 704 | 0.1− | 0.5+ | |
| 2000 09 26 | 704 | 0.0 | 0.5− | 2002 02 07 | 644 | 0.0 | 0.5+ | 2005 09 03 | 644 | 0.2− | 0.0 | |
| 2000 09 26 | 704 | 0.1− | 0.2− | 2002 02 07 | 644 | 0.1+ | 0.8+ | 2005 09 03 | 644 | 0.0 | 0.0 | |
| 2000 09 26 | 704 | 0.3− | 0.2+ | 2002 02 07 | 644 | 0.2+ | 0.6+ | 2005 09 03 | 644 | 0.2− | 0.0 | |
| 2000 09 26 | 704 | 0.4− | 0.3+ | 2002 02 10 | 608 | 0.1− | 0.8+ | 2005 09 12 | 691 | 0.0 | 0.3+ | |
| 2000 09 28 | 704 | 0.1− | 0.0 | 2002 02 10 | 608 | 0.4+ | 0.1− | 2005 09 12 | 691 | 0.0 | 0.2+ | |
| 2000 09 28 | 704 | 0.2+ | 0.0 | 2002 02 10 | 608 | 0.3− | 0.7− | 2005 09 12 | 691 | 0.1− | 0.2+ | |
| 2000 09 28 | 704 | 0.2+ | 0.1+ | 2002 02 12 | 704 | 1.5+ | 0.7+ | 2005 09 19 | 644 | 0.0 | 0.1− | |
| 2000 09 28 | 704 | 0.1+ | 0.4+ | 2002 02 12 | 704 | 1.3+ | 0.6+ | 2005 09 19 | 644 | 0.1+ | 0.1− | |
| 2000 09 28 | 704 | 0.2+ | 0.5+ | 2002 02 12 | 704 | 0.7+ | 0.4+ | 2005 09 19 | 644 | 0.0 | 0.1− | |
| 2000 10 04 | 704 | 0.2+ | 0.1+ | 2002 02 12 | 704 | 0.9+ | 0.7+ | 2005 09 19 | 644 | 0.0 | 0.1− | |
| 2000 10 04 | 704 | 0.3+ | 0.1+ | 2002 02 12 | 704 | 1.0+ | 0.5+ | 2005 09 19 | 644 | 0.0 | 0.1+ | |
| 2000 10 04 | 704 | 0.0 | 0.6+ | 2002 02 15 | 704 | 0.9+ | 0.9+ | 2005 09 19 | 644 | 0.1+ | 0.0 | |
| 2000 10 04 | 704 | 0.4− | 0.1+ | 2002 02 15 | 704 | 0.1+ | 0.8+ | 2005 09 19 | 644 | 0.1− | 0.1− | |
| 2000 10 06 | 704 | 0.1+ | 0.2+ | 2002 02 15 | 704 | 0.1− | 0.5+ | 2005 09 19 | 644 | 0.2+ | 0.0 | |
| 2000 10 06 | 704 | 0.2− | 0.1− | 2002 02 15 | 704 | 0.6+ | 0.9+ | 2005 09 19 | 644 | 0.1− | 0.0 | |
| 2000 10 06 | 704 | 0.1− | 0.1+ | 2002 02 15 | 704 | 0.6+ | 0.3+ | 2005 09 19 | 644 | 0.1+ | 0.1+ | |
| 2000 10 06 | 704 | 0.3+ | 0.2− | 2002 03 05 | 608 | 0.7+ | 0.6+ | 2005 09 19 | 644 | 0.0 | 0.0 | |
| 2000 10 06 | 704 | 0.2− | 0.2+ | 2002 03 05 | 608 | 0.1− | 0.1− | 2005 09 19 | 644 | 0.0 | 0.2+ | |
| 2000 10 06 | 704 | 0.2− | 0.1− | 2002 03 05 | 608 | 0.2− | 0.4+ | 2005 09 19 | 644 | 0.1+ | 0.0 | |
| 2000 10 06 | 704 | 0.9− | 0.2− | 2002 03 15 | 644 | 1.1+ | 0.1+ | 2005 09 19 | 644 | 0.0 | 0.0 | |
| 2000 10 06 | 704 | 0.6− | 0.2− | 2002 03 15 | 644 | 0.5+ | 0.4+ | 2005 09 19 | 644 | 0.0 | 0.0 | |
| 2000 10 06 | 704 | 0.3− | 0.2− | 2002 03 15 | 644 | 0.5+ | 0.4+ | 2005 09 19 | 644 | 0.1− | 0.1− | |
| 2000 10 06 | 704 | 0.3− | 0.1− | 2005 06 17 | G96 | 0.3− | 0.1− | 2005 09 19 | 644 | 0.1− | 0.0 | |
| 2000 11 04 | 300 | 0.6+ | 0.1+ | 2005 06 17 | G96 | 0.3− | 0.0 | 2005 09 19 | 644 | 0.2− | 0.1− | |
| 2000 11 04 | 300 | 0.2+ | 0.2− | 2005 06 17 | G96 | 0.1− | 0.1+ | 2005 09 21 | 644 | 0.0 | 0.1− | |
| 2000 11 04 | 300 | 0.3− | 0.3− | 2005 06 17 | G96 | 0.1− | 0.2− | 2005 09 21 | 644 | 0.2− | 0.1+ | |
| 2000 11 26 | 699 | 0.3− | 0.4+ | 2005 06 21 | 644 | 0.0 | 0.1+ | 2005 09 21 | 644 | 0.1− | 0.2+ | |
| 2000 11 26 | 699 | 0.2− | 0.1+ | 2005 06 21 | 644 | 0.2+ | 0.1+ | 2005 09 23 | 644 | 0.0 | 0.0 | |
| 2000 11 26 | 699 | 0.5− | 0.1− | 2005 06 21 | 644 | 0.2+ | 0.2+ | 2005 09 23 | 644 | 0.1+ | 0.0 | |
| 2000 11 26 | 699 | 0.5− | 0.3+ | 2005 06 28 | 644 | 0.0 | 0.0 | 2005 09 23 | 644 | 0.0 | 0.2− | |
| 2000 11 29 | 704 | 0.1− | 0.0 | 2005 06 28 | 644 | 0.1− | 0.3+ | 2005 10 26 | 704 | 0.1+ | 0.6− | |
| 2000 11 29 | 704 | 0.2− | 0.0 | 2005 06 28 | 644 | 0.0 | 0.2+ | 2005 10 26 | 704 | (1.6− | 0.8−) | |
| 2000 11 29 | 704 | 0.4− | 0.2+ | 2005 07 01 | 691 | 0.1− | 0.2+ | 2005 10 26 | 704 | 0.2+ | 0.1− | |
| 2000 11 29 | 704 | 0.5− | 0.7+ | 2005 07 01 | 691 | 0.6− | 0.3+ | 2005 10 26 | 704 | 0.5− | 0.1− | |
| 2000 11 29 | 704 | 0.1+ | 0.3+ | 2005 07 01 | 691 | 0.1− | 0.1+ | 2005 11 02 | 704 | 0.2+ | 1.1+ | |
| 2000 12 17 | 704 | 0.5+ | 0.4+ | 2005 07 03 | 704 | 0.7− | 0.5+ | 2005 11 02 | 704 | 0.4− | 0.4+ | |
| 2000 12 17 | 704 | 0.0 | 0.1− | 2005 07 03 | 704 | 0.2− | 1.3+ | 2005 11 02 | 704 | 0.1− | 0.3+ | |
| 2000 12 17 | 704 | 0.0 | 0.3+ | 2005 07 03 | 704 | 1.0− | 0.5− | 2005 11 02 | 704 | 0.5− | 0.0 | |
| 2000 12 17 | 704 | 0.4+ | 0.1+ | 2005 07 03 | 704 | 0.7− | 0.2− | 2005 11 22 | 703 | 1.3− | 0.3+ | |
| 2000 12 17 | 704 | 0.3− | 0.2− | 2005 07 03 | 704 | 0.2− | 0.3+ | 2005 11 22 | 703 | 0.0 | 0.6+ | |
| 2000 12 27 | 699 | 0.4+ | 0.8+ | 2005 07 06 | 691 | 0.1− | 0.0 | 2005 11 22 | 703 | 0.4− | 0.7+ | |
| 2000 12 27 | 699 | 0.3+ | 0.7+ | 2005 07 06 | 691 | 0.2− | 0.2+ | 2005 11 22 | 703 | 0.4+ | 0.5− | |
| 2000 12 27 | 699 | 0.7+ | 0.3+ | 2005 07 06 | 691 | 0.0 | 0.2+ | 2005 12 01 | 703 | 1.2− | 0.8− | |
| 2000 12 27 | 699 | 0.3+ | 0.2+ | 2005 07 07 | 704 | 0.0 | 0.4+ | 2005 12 01 | 703 | 0.1+ | 0.5− | |
| 2000 12 30 | 704 | 1.3− | 0.2+ | 2005 07 07 | 704 | 0.3+ | 0.4− | 2005 12 01 | 703 | 0.7− | 1.1− | |
| 2000 12 30 | 704 | 1.2− | 0.0 | 2005 07 07 | 704 | 0.4+ | 0.0 | 2005 12 01 | 703 | 1.5− | 0.1+ | |
| 2000 12 30 | 704 | 0.9− | 0.4+ | 2005 07 07 | 704 | 0.4− | 0.6− | 2006 10 19 | 703 | 0.2+ | 0.1+ | |
| 2000 12 30 | 704 | 0.3+ | 0.1+ | 2005 07 07 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.5− | |
| 2000 12 30 | 704 | 0.1+ | 1.0+ | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.6− | |
| 2001 01 18 | 704 | 0.4− | 0.5− | 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.4+ | |
| 2001 01 18 | 704 | 0.3+ | 1.0− | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 704 | 0.0 | 0.0 | |
| 2001 01 18 | 704 | 0.8+ | 0.5− | 2005 07 10 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 704 | 1.2+ | 1.0− | |
| 2001 01 18 | 704 | 0.0 | 0.3+ | 2005 07 10 | 703 | 0.3− | 0.1− | 2006 10 20 | 704 | 0.4− | 0.3− | |
| 2001 01 18 | 704 | 0.0 | 0.6− | 2005 07 10 | 703 | 0.1− | 0.3+ | 2006 10 20 | 704 | 1.0+ | 0.3− | |
| 2001 02 19 | 699 | 1.1− | 0.9+ | 2005 07 10 | 703 | 0.6+ | 0.3− | 2006 10 27 | 703 | (1.1− | 2.5−) | |
| 2001 02 19 | 699 | 0.1+ | 0.5− | 2005 07 26 | 608 | 0.7+ | 0.5− | 2006 10 27 | 703 | (1.3− | 3.3−) | |
| 2001 02 19 | 699 | 0.4− | 1.1+ | 2005 07 26 | 608 | 0.9+ | 0.6− | 2006 10 27 | 703 | 0.7− | 0.4− | |
| 2001 02 19 | 699 | 0.0 | 1.4+ | 2005 07 26 | 608 | 0.8+ | 0.5− | 2006 10 27 | 703 | 0.5− | 0.4− | |
| 2002 01 11 | 704 | 0.6− | 0.0 | 2005 07 31 | E12 | 0.2+ | 0.2− | 2006 11 17 | 644 | 0.2− | 0.2+ | |
| 2002 01 11 | 704 | 1.3− | 0.1+ | 2005 07 31 | E12 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.4− | 0.3+ | |
| 2002 01 11 | 704 | 0.7− | 0.3+ | 2005 07 31 | E12 | 0.1− | 0.6− | 2006 11 17 | 644 | 0.3− | 0.2+ | |
| 2002 01 11 | 704 | (1.7− | 0.0 ) | 2005 07 31 | E12 | 0.3− | 0.0 | | | | | |

**(138722)∗ 2000 SA$_{157}$ = 2004 HU$_{51}$**

Discovered 2000 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60718)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.88932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17816799 | $\omega$ | 95.15940 | | +0.74143109 | +0.66490240 | |
| $a$ | 3.1278765 | $\Omega$ | 223.20717 | | −0.65605027 | +0.68993520 | |
| $e$ | 0.0697873 | $i$ | 7.59339 | | −0.14098930 | +0.28617164 | |
| $P$ | 5.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 0.5+ | 0.6+ | 2005 06 13 | 291 | 0.4− | 0.0 | 2006 10 27 | 224 | 0.8− | 0.5+ | |
| 2000 09 21 | 699 | 0.9− | 0.5+ | 2005 06 13 | 291 | 0.4− | 0.0 | 2006 10 27 | 224 | 0.6− | 0.6+ | |
| 2000 09 21 | 699 | 0.6+ | 0.6+ | 2005 06 13 | 291 | 0.7− | 0.1− | 2006 10 27 | 224 | 0.5− | 0.9+ | |
| 2000 09 21 | 699 | 0.7− | 0.8− | 2005 07 05 | 644 | 0.0 | 0.3− | 2006 11 09 | 691 | 0.1− | 0.2+ | |
| 2000 09 26 | 704 | 0.1− | 0.7+ | 2005 07 05 | 644 | 0.6+ | 0.6− | 2006 11 09 | 691 | 0.2+ | 0.2+ | |
| 2000 09 26 | 704 | 0.5+ | 0.2− | 2005 07 05 | 644 | 0.4+ | 0.3− | 2006 11 09 | 691 | 0.1− | 0.2+ | |
| 2000 09 26 | 704 | 0.1+ | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.2+ | |
| 2000 09 28 | 704 | 0.7+ | 0.4+ | 2005 07 09 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1− | |
| 2000 09 28 | 704 | 0.8− | 0.9− | 2005 07 09 | 691 | 1.1+ | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.0 | |
| 2000 09 28 | 704 | 0.0 | 1.1− | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.2+ | |
| 2000 09 28 | 704 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.1+ | |
| 2004 04 12 | 644 | 0.1− | 1.1+ | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 11 | 691 | 0.4− | 0.3+ | |
| 2004 04 12 | 644 | 1.0+ | 1.2+ | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.4+ | |
| 2004 04 12 | 644 | 0.2+ | 1.4+ | 2006 10 16 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.4+ | |
| 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.4+ | |
| 2004 04 24 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 22 | 691 | 0.3+ | 0.1+ | |
| 2004 04 24 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1+ | |
| 2004 04 25 | 291 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 22 | 691 | 0.3− | 0.3+ | |
| 2004 04 25 | 291 | 0.2− | 0.8+ | 2006 10 20 | 691 | 0.6− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2+ | |
| 2004 04 25 | 291 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.4+ | |
| 2004 05 27 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.2− | 0.2+ | |
| 2004 05 27 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.3− | | | | | |
| 2004 05 27 | 691 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | | | | |

**(138723)∗ 2000 SY$_{158}$ = 2001 XM$_{217}$**

Discovered 2000 Sept. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 22599)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.07642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18048121 | $\omega$ | 308.56729 | | +0.55718199 | −0.82944352 | |
| $a$ | 3.1010925 | $\Omega$ | 107.52708 | | +0.77421454 | +0.50163489 | |
| $e$ | 0.1982743 | $i$ | 2.38273 | | +0.30023338 | +0.24573540 | |
| $P$ | 5.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 27 | 807 | 0.4− | 0.1+ | 2002 01 12 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 2000 08 27 | 807 | 0.1+ | 0.2+ | 2002 01 14 | 704 | 0.1+ | 0.1− | 2006 11 02 | 703 | 0.4+ | 0.0 | |
| 2000 09 02 | 699 | 1.9− | 0.7+ | 2002 01 14 | 704 | 0.5− | 0.8− | 2006 11 02 | 703 | 1.1− | 0.4− | |
| 2000 09 02 | 699 | 0.7− | 0.6+ | 2002 01 14 | 704 | 0.4+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.6+ | |
| 2000 09 02 | 699 | 0.1− | 1.0+ | 2002 01 14 | 704 | 0.3+ | 0.1+ | 2006 11 02 | 703 | 0.4− | 0.1− | |
| 2000 09 02 | 699 | 0.8− | 0.5+ | 2002 01 14 | 704 | 1.0+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.2+ | 0.0 | 2002 01 18 | 704 | (3.0− | 0.9+) | 2006 11 09 | 644 | 0.2− | 0.1− | | |
| 2000 09 27 | 691 | 0.1− | 0.0 | 2002 01 18 | 704 | 0.8+ | 0.0 | 2006 11 09 | 644 | 0.5− | 0.1− | | |
| 2000 09 27 | 691 | 0.2+ | 0.0 | 2002 01 18 | 704 | 0.8+ | 0.4+ | 2006 11 11 | 703 | (2.8+ | 0.2−) | | |
| 2000 09 28 | 691 | 0.3+ | 0.0 | 2002 01 21 | 704 | 0.3− | 0.7+ | 2006 11 11 | 703 | 0.4+ | 0.3+ | | |
| 2000 09 28 | 691 | 0.2+ | 0.0 | 2002 01 21 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.6+ | | |
| 2000 09 28 | 691 | 0.2+ | 0.2+ | 2002 01 21 | 704 | 0.7− | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.3+ | | |
| 2000 09 28 | 691 | 0.4+ | 0.0 | 2002 01 21 | 704 | 0.6+ | 0.5− | 2006 11 11 | 644 | 0.1− | 0.1+ | | |
| 2000 09 28 | 691 | 0.1+ | 0.2− | 2002 02 11 | 704 | 0.9+ | 0.4− | 2006 11 11 | 644 | 0.0 | 0.1+ | | |
| 2000 09 28 | 691 | 0.0 | 0.0 | 2002 02 11 | 704 | 1.3+ | 0.4− | 2006 11 11 | 644 | 0.2+ | 0.0 | | |
| 2001 12 14 | 704 | 0.5+ | 0.4− | 2002 02 11 | 704 | (2.2+ | 0.7−) | 2006 11 13 | G96 | 0.1+ | 0.3− | | |
| 2001 12 14 | 704 | 0.2+ | 1.2− | 2002 02 11 | 704 | 1.5+ | 0.8− | 2006 11 13 | G96 | 0.4+ | 0.2− | | |
| 2001 12 14 | 291 | 0.1− | 0.2+ | 2002 02 11 | 704 | (2.0+ | 0.1+) | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 2001 12 14 | 704 | 0.2+ | 0.5− | 2003 03 27 | 691 | 1.0+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.4− | | |
| 2001 12 14 | 704 | 0.6+ | 0.0 | 2003 03 27 | 691 | 1.2+ | 0.4+ | 2006 11 14 | 704 | (0.5+ | 1.9+) | | |
| 2001 12 14 | 291 | 0.0 | 0.3+ | 2003 03 27 | 691 | 0.9+ | 0.7+ | 2006 11 14 | 704 | (1.8+ | 1.7+) | | |
| 2001 12 14 | 704 | 0.2− | 0.1− | 2003 04 04 | 691 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.6+ | 0.7+ | | |
| 2001 12 14 | 291 | 0.1− | 0.3+ | 2003 04 04 | 691 | 0.0 | 0.7+ | 2006 11 14 | 704 | (0.1− | 2.2+) | | |
| 2001 12 18 | 704 | 0.2+ | 0.2+ | 2003 04 04 | 691 | 0.4− | 0.7+ | 2006 11 14 | 704 | 0.4+ | 0.5+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.2+ | 2003 04 30 | 691 | 0.3+ | 0.7+ | 2006 11 17 | 703 | 1.0+ | 0.8− | | |
| 2001 12 18 | 704 | 0.4+ | 0.9+ | 2003 04 30 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.0 | | |
| 2001 12 18 | 704 | 0.5− | 0.1− | 2003 04 30 | 691 | 0.4+ | 0.9+ | 2006 11 17 | 703 | 0.2− | 0.4− | | |
| 2001 12 19 | 291 | 0.8− | 0.2− | 2005 06 30 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.2+ | | |
| 2001 12 19 | 291 | 1.1− | 0.1− | 2005 06 30 | 691 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.1− | | |
| 2001 12 19 | 291 | 1.0− | 0.2− | 2005 06 30 | 691 | 0.1− | 0.6+ | 2006 11 18 | 704 | 0.1− | 0.4− | | |
| 2001 12 19 | 704 | 1.1+ | 1.0+ | 2005 07 05 | 691 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.8+ | 0.4+ | | |
| 2001 12 19 | 704 | 1.1+ | 1.1+ | 2005 07 05 | 691 | 0.2− | 0.4+ | 2006 11 18 | 704 | 1.0− | 0.1− | | |
| 2001 12 19 | 704 | 1.1+ | 0.7+ | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.3+ | | |
| 2001 12 20 | 291 | 0.1− | 0.1− | 2005 07 09 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.2+ | | |
| 2001 12 20 | 291 | 0.1− | 0.0 | 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.4+ | | |
| 2001 12 20 | 291 | 0.1− | 0.1+ | 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.3− | | |
| 2001 12 26 | 608 | 0.2− | 0.6+ | 2005 07 12 | G96 | 0.6− | 0.6+ | 2006 11 18 | 704 | 0.4+ | 0.1+ | | |
| 2001 12 26 | 608 | 0.7+ | 0.5+ | 2005 07 12 | G96 | 0.3− | 0.5+ | 2006 11 18 | 704 | 0.2+ | 1.3+ | | |
| 2001 12 26 | 608 | 0.9+ | 1.0+ | 2005 07 12 | G96 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.9+ | 0.7+ | | |
| 2002 01 05 | 608 | 0.2− | 0.5+ | 2005 07 12 | G96 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.3− | 0.0 | | |
| 2002 01 05 | 608 | 0.2− | 0.8+ | 2005 07 16 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.0+ | | |
| 2002 01 05 | 608 | 0.7− | 1.0+ | 2005 07 16 | 691 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.9− | 0.1+ | | |
| 2002 01 05 | 608 | 0.1− | 1.2+ | 2005 07 16 | 691 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.4+ | | |
| 2002 01 05 | 608 | 0.3− | 1.2+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2002 01 05 | 608 | 0.3− | 1.2+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2002 01 09 | 704 | (1.7+ | 1.6−) | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2002 01 09 | 645 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2002 01 09 | 645 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 26 | 704 | 0.4− | 0.4− | | |
| 2002 01 09 | 704 | (2.1+ | 1.9−) | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 26 | 704 | 0.7− | 1.0+ | | |
| 2002 01 09 | 704 | (2.6+ | 1.9−) | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 26 | 704 | 0.2+ | 1.1+ | | |
| 2002 01 09 | 704 | (2.7+ | 1.7−) | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 1.2+ | | |
| 2002 01 09 | 704 | (2.2+ | 2.1−) | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.6+ | | |
| 2002 01 12 | 691 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.2+ | 1.1+ | | |
| 2002 01 12 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.0 | 1.0+ | | |

**(138724)∗ 2000 SZ$_{164}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.34165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28092795 | $\omega$ | 250.20015 | | −0.31781621 | −0.94487130 | |
| $a$ | 2.3089051 | $\Omega$ | 218.61506 | | +0.91031771 | −0.28083225 | |
| $e$ | 0.0551348 | $i$ | 7.25477 | | +0.26516884 | −0.16837895 | |
| $P$ | 3.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.9+ | 1.3+ | 2001 12 22 | 608 | 0.4+ | 0.9− | 2004 12 12 | 291 | 0.1+ | 0.1+ | | |
| 2000 09 23 | 704 | 1.0− | 1.0+ | 2001 12 22 | 608 | 0.9+ | 1.1− | 2004 12 12 | 291 | 0.0 | 0.3+ | | |
| 2000 09 23 | 704 | 0.0 | 0.2− | 2001 12 22 | 608 | 0.4+ | 1.3− | 2004 12 12 | 291 | 0.2− | 0.3+ | | |
| 2000 09 23 | 704 | 0.1+ | 0.2+ | 2002 02 07 | 644 | 0.0 | 0.8+ | 2006 03 25 | G96 | 0.4− | 0.0 | | |
| 2000 09 23 | 704 | 1.1− | 0.1+ | 2002 02 07 | 644 | 0.4+ | 0.6+ | 2006 03 25 | G96 | 0.1− | 0.3+ | | |
| 2000 09 30 | 704 | 0.4+ | 0.9+ | 2002 02 07 | 644 | 0.1+ | 0.5+ | 2006 03 25 | G96 | 0.1− | 0.1− | | |
| 2000 09 30 | 704 | 0.2− | 1.0+ | 2002 02 15 | 704 | 0.6+ | 0.3+ | 2006 03 25 | G96 | 0.4− | 0.2+ | | |
| 2000 09 30 | 704 | 0.3+ | 0.2+ | 2002 02 15 | 704 | 0.7+ | 0.3+ | 2006 04 07 | 691 | 0.0 | 0.1+ | | |
| 2000 09 30 | 704 | 0.6+ | 0.1− | 2002 02 15 | 704 | 0.2− | 0.8+ | 2006 04 07 | 691 | 0.2− | 0.0 | | |
| 2000 09 30 | 704 | 0.8+ | 0.1+ | 2002 02 15 | 704 | 0.3+ | 0.3+ | 2006 04 07 | 691 | 0.2− | 0.1− | | |
| 2000 10 01 | 699 | 0.3− | 1.3+ | 2002 02 15 | 704 | 0.8− | 1.8+ | 2006 04 19 | G96 | 0.3− | 0.0 | | |
| 2000 10 01 | 699 | 0.0 | 0.1+ | 2002 03 12 | 704 | 0.6− | 1.0− | 2006 04 19 | G96 | 0.1− | 0.2− | | |
| 2000 10 01 | 699 | 0.5+ | 1.0+ | 2002 03 12 | 704 | 0.2+ | 0.6− | 2006 04 19 | G96 | 0.4− | 0.2− | | |
| 2000 10 01 | 699 | 0.9− | 0.1− | 2002 03 12 | 704 | 1.8+ | 0.2+ | 2006 04 19 | G96 | 0.1− | 0.6+ | | |
| 2000 10 03 | 704 | 0.7+ | 0.9+ | 2002 03 14 | 644 | 0.1+ | 0.9+ | 2006 04 21 | 291 | 0.1− | 0.7+ | | |
| 2000 10 03 | 704 | 0.1+ | 1.1+ | 2002 03 14 | 644 | 0.2+ | 0.2+ | 2006 04 21 | 291 | 0.1+ | 0.7+ | | |
| 2000 10 03 | 704 | 0.2− | 0.9+ | 2002 03 14 | 644 | 0.4+ | 0.1+ | 2006 04 21 | 291 | 0.2− | 0.7+ | | |
| 2000 10 30 | 691 | 0.5− | 0.1+ | 2002 03 19 | 608 | 1.3− | 1.2+ | 2006 05 06 | 691 | 0.4+ | 0.2− | | |
| 2000 10 30 | 691 | 0.2− | 0.0 | 2002 03 19 | 608 | 0.2− | 0.8+ | 2006 05 06 | 691 | 0.4+ | 0.0 | | |
| 2000 10 30 | 691 | 0.5− | 0.0 | 2002 03 19 | 608 | 1.2− | 0.7+ | 2006 05 06 | 691 | 0.5+ | 0.1− | | |

**(138725)∗ 2000 SF$_{175}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.58376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17119424 | $\omega$ | 125.56622 | | +0.89386704 | −0.41193655 | |
| $a$ | 3.2122545 | $\Omega$ | 259.34908 | | +0.33051124 | +0.87213831 | |
| $e$ | 0.1260202 | $i$ | 10.37257 | | +0.30292580 | +0.26397548 | |
| $P$ | 5.76 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.3− | 1.0+ | 2000 11 01 | 704 | 0.6− | 0.4− | 2006 11 14 | 703 | 0.1− | 0.6− | | |
| 1999 07 13 | 704 | 0.1+ | 0.1− | 2000 11 19 | 704 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 1999 07 13 | 704 | 1.0− | 0.3− | 2000 11 19 | 704 | 0.3+ | 0.8+ | 2006 11 15 | 691 | 0.1− | 0.1− | | |
| 1999 07 13 | 704 | 0.6− | 0.9+ | 2000 11 19 | 704 | 0.4+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 1999 07 13 | 704 | 0.4− | 0.6+ | 2000 11 19 | 704 | 0.7+ | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.0 | | |
| 2000 09 22 | 699 | 0.3+ | 0.1+ | 2000 11 19 | 704 | 0.2− | 0.5− | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2000 09 22 | 699 | 0.8+ | 0.4+ | 2002 01 09 | 644 | 0.2− | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2000 09 22 | 699 | 0.7+ | 0.6+ | 2002 01 09 | 644 | 0.3− | 0.6+ | 2006 11 16 | 704 | (2.3+ | 2.3+) | | |
| 2000 09 22 | 699 | 1.1+ | 0.4+ | 2002 01 09 | 644 | 0.5− | 1.0+ | 2006 11 16 | 704 | (1.3+ | 1.8+) | | |
| 2000 09 28 | 704 | 0.5+ | 0.1+ | 2002 01 14 | 704 | 0.4+ | 1.0+ | 2006 11 16 | 704 | 1.2+ | 0.6+ | | |
| 2000 09 28 | 704 | 0.5− | 0.2− | 2002 01 14 | 704 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.7+ | 1.1+ | | |
| 2000 09 28 | 704 | 0.3+ | 0.1− | 2002 01 14 | 704 | 0.8+ | 0.2+ | 2006 11 16 | 704 | 0.9− | 1.2+ | | |
| 2000 09 28 | 704 | 0.5+ | 0.1− | 2002 01 14 | 704 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 1.2+ | | |
| 2000 09 30 | 704 | 0.7+ | 0.8+ | 2002 02 11 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.7+ | 1.3− | | |
| 2000 09 30 | 704 | 0.3− | 0.2− | 2002 02 11 | 704 | 0.1+ | 0.7+ | 2006 11 16 | 704 | (1.9+ | 1.0+) | | |
| 2000 09 30 | 704 | 0.3+ | 0.0 | 2002 02 11 | 704 | 0.6+ | 0.1− | 2006 11 16 | 704 | 0.5+ | 1.4+ | | |
| 2000 09 30 | 704 | 0.2− | 0.0 | 2004 05 13 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.7− | 0.1− | 2004 05 13 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.0 | | |
| 2000 10 03 | 704 | 0.1− | 0.9+ | 2004 05 13 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 2000 10 03 | 704 | 0.3+ | 0.4+ | 2005 06 28 | 644 | 0.7+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1+ | | |
| 2000 10 03 | 704 | 0.6+ | 0.5− | 2005 06 28 | 644 | 0.5+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2000 10 25 | 704 | 1.0− | 0.3+ | 2005 06 28 | 644 | 0.6+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2000 10 25 | 704 | 0.0 | 0.4+ | 2005 07 12 | 703 | 1.1− | 1.0− | 2006 11 19 | 704 | 0.1− | 0.1− | | |
| 2000 10 25 | 704 | 0.3− | 0.4− | 2005 07 12 | 703 | 0.9− | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.3+ | | |
| 2000 10 25 | 704 | 0.3+ | 0.5− | 2005 07 12 | 703 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.1− | | |
| 2000 10 25 | 704 | 0.5+ | 0.1− | 2005 07 12 | 703 | 0.8− | 0.9+ | 2006 11 19 | 704 | 0.0 | 0.7+ | | |
| 2000 10 29 | 704 | 0.4− | 0.8+ | 2005 08 31 | 704 | (0.2+ | 1.6+) | 2006 11 19 | 704 | 0.5+ | 0.1+ | | |
| 2000 10 29 | 704 | 0.3− | 0.4− | 2005 08 31 | 704 | 0.7+ | 0.9+ | 2006 11 22 | 691 | 0.2− | 0.2− | | |
| 2000 10 29 | 704 | 0.3+ | 0.8+ | 2005 08 31 | 704 | 0.9+ | 0.6− | 2006 11 22 | 691 | 0.1− | 0.3− | | |
| 2000 10 29 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.7+ | 0.9+ | 2006 11 22 | 691 | 0.0 | 0.2− | | |
| 2000 10 29 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.4+ | | |
| 2000 10 30 | 704 | 0.0 | 0.2− | 2006 10 19 | 703 | 1.1− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.6+ | | |
| 2000 10 30 | 704 | 0.6− | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.6+ | 2006 11 22 | 704 | 0.3− | 0.3+ | | |
| 2000 10 30 | 704 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.6− | 0.7− | 2006 11 22 | 704 | 0.7− | 0.2+ | | |
| 2000 10 30 | 704 | 0.7− | 0.4− | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.0 | | |
| 2000 10 31 | 704 | 0.2+ | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.8− | 2006 12 01 | G96 | 0.3+ | 0.9− | | |
| 2000 10 31 | 704 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.4− | 0.4− | | |
| 2000 10 31 | 704 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.7− | | |
| 2000 10 31 | 704 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.7− | | |
| 2000 11 01 | 704 | 0.7− | 0.7− | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.6− | 0.1+ | | |
| 2000 11 01 | 704 | 0.6+ | 0.9− | 2006 11 14 | 703 | (1.8+ | 0.2−) | 2006 12 01 | 704 | 1.3− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.6− | 2006 12 01 | 704 | 0.1+ | 0.1+ | | |
| 2000 11 01 | 704 | 0.4− | 0.2− | 2006 11 14 | 703 | 0.8− | 0.6− | 2006 12 01 | 704 | 0.2− | 0.1− | | |

**(138726)∗ 2000 SY$_{176}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.20116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17244106 | $\omega$ | 115.31168 | | +0.97561254 | +0.08972487 | |
| $a$ | 3.1967519 | $\Omega$ | 240.11727 | | −0.14501845 | +0.94856851 | |
| $e$ | 0.0255422 | $i$ | 13.35839 | | +0.16477202 | +0.30359058 | |
| $P$ | 5.72 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 699 | 0.7− | 0.0 | 2001 12 19 | 704 | 1.1− | 0.1+ | 2006 10 29 | G96 | 0.5+ | 0.5− | | |
| 2000 09 22 | 699 | 0.5− | 0.2+ | 2001 12 19 | 704 | 0.1+ | 0.5+ | 2006 10 29 | G96 | 0.3+ | 0.3− | | |
| 2000 09 22 | 699 | 0.5− | 1.0+ | 2003 03 30 | 699 | 0.0 | 0.7− | 2006 10 29 | G96 | 0.1+ | 0.3− | | |
| 2000 09 22 | 699 | 0.1− | 0.3− | 2003 03 30 | 699 | 0.3+ | 0.9+ | 2006 10 29 | G96 | 0.4+ | 0.4− | | |
| 2000 09 28 | 704 | 0.4− | 0.1+ | 2003 03 30 | 699 | 0.4− | 0.1+ | 2006 11 11 | 703 | (0.5+ | 1.9−) | | |
| 2000 09 28 | 704 | 1.0+ | 0.5− | 2003 03 30 | 699 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.0 | | |
| 2000 09 28 | 704 | 0.1− | 0.0 | 2005 08 28 | 699 | 0.0 | 0.3− | 2006 11 11 | 703 | (0.3− | 1.7+) | | |
| 2000 09 28 | 704 | 0.4+ | 0.5+ | 2005 08 28 | 699 | 1.0+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.1− | | |
| 2000 09 30 | 704 | 0.3− | 0.1+ | 2005 08 28 | 699 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2000 09 30 | 704 | 0.5+ | 0.1+ | 2005 08 28 | 699 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.4− | | |
| 2000 09 30 | 704 | 0.6+ | 0.4+ | 2005 08 29 | 644 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.0 | | |
| 2000 09 30 | 704 | 0.0 | 0.1+ | 2005 08 29 | 644 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.0 | | |
| 2000 09 30 | 704 | 0.3+ | 0.9+ | 2005 08 29 | 644 | 0.3− | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1− | | |
| 2000 10 25 | 704 | 0.0 | 0.1+ | 2005 09 11 | 704 | 1.1+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.0 | | |
| 2000 10 25 | 704 | 0.9− | 0.6+ | 2005 09 11 | 704 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.5− | | |
| 2000 10 25 | 704 | 0.3+ | 0.5+ | 2005 09 11 | 704 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.3+ | | |
| 2000 10 25 | 704 | 0.2+ | 0.3+ | 2005 09 11 | 704 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.2− | | |
| 2000 11 01 | 704 | 0.6− | 0.9+ | 2005 09 26 | 703 | (2.2+ | 0.6−) | 2006 11 18 | 704 | 0.1+ | 0.4− | | |
| 2000 11 01 | 704 | 0.7+ | 0.6− | 2005 09 26 | 703 | (0.2− | 1.8−) | 2006 11 18 | 704 | 0.2+ | 0.9− | | |
| 2000 11 01 | 704 | 0.5− | 0.6+ | 2005 09 26 | 703 | 0.5− | 0.2− | 2006 11 21 | 704 | 1.3− | 0.2+ | | |
| 2000 11 01 | 704 | 0.4+ | 0.0 | 2005 09 26 | 703 | 0.8− | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.0 | | |
| 2000 11 03 | 704 | 0.4+ | 0.6− | 2005 10 02 | 699 | 0.6+ | 0.4+ | 2006 11 21 | 704 | 1.4− | 0.3+ | | |
| 2000 11 03 | 704 | (2.1+ | 0.5−) | 2005 10 02 | 699 | (1.1− | 1.8−) | 2006 11 21 | 704 | 0.7− | 0.1− | | |
| 2000 11 03 | 704 | 0.2− | 0.5− | 2005 10 02 | 699 | (0.4+ | 1.8+) | 2006 11 21 | 704 | 0.2+ | 0.6+ | | |
| 2000 11 03 | 704 | 0.4+ | 0.0 | 2005 10 02 | 699 | 0.1− | 1.0+ | 2006 11 22 | 691 | 0.1+ | 0.3+ | | |
| 2000 11 20 | 704 | 0.0 | 0.0 | 2005 11 04 | G96 | 0.1− | 0.7− | 2006 11 22 | 691 | 0.1+ | 0.1+ | | |
| 2000 11 20 | 704 | 0.7+ | 0.2− | 2005 11 04 | G96 | 0.2+ | 0.6− | 2006 11 22 | 691 | 0.0 | 0.3− | | |
| 2000 11 20 | 704 | 0.1− | 0.0 | 2005 11 04 | G96 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2000 11 20 | 704 | 0.1+ | 0.9+ | 2005 11 04 | G96 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2000 11 20 | 704 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.3− | | |
| 2000 12 17 | 699 | (2.6− | 1.3+) | 2006 10 17 | G96 | (0.9− | 2.1−) | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2000 12 17 | 699 | 0.6− | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.2− | 0.3− | | |
| 2000 12 17 | 699 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 27 | 703 | 0.7− | 0.3− | | |
| 2000 12 17 | 699 | 0.5− | 1.3+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.5− | | |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.1+ | | |
| 2001 12 19 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.5− | 0.2+ | | | | | | |

**(138727)∗ 2000 SU$_{180}$**

Discovered 2000 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.64668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.32348216 | $\omega$ | 135.33238 | | −0.24717357 | −0.96304520 | |
| $a$ | 2.1016924 | $\Omega$ | 328.51786 | | +0.82184212 | −0.14986264 | |
| $e$ | 0.6081380 | $i$ | 11.82312 | | +0.51330376 | −0.22379710 | |
| $P$ | 3.05 | $H$ | 19.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 1.3− | 0.1+ | 2000 10 04 | 704 | 0.4− | 0.2+ | 2003 07 29 | 568 | 0.2− | 0.0 | | |
| 2000 09 27 | 704 | 1.5− | 0.2+ | 2000 10 04 | 704 | 0.3− | 0.7− | 2003 07 30 | 568 | 0.0 | 0.0 | | |
| 2000 09 27 | 704 | 1.4− | 0.5+ | 2000 10 04 | 704 | 0.1− | 0.4+ | 2003 07 30 | 568 | 0.0 | 0.0 | | |
| 2000 09 27 | 704 | (2.3− | 0.8+) | 2000 10 04 | 704 | 0.2− | 0.1+ | 2003 08 30 | 291 | 0.0 | 0.1− | | |
| 2000 09 30 | 704 | 0.5+ | 0.9− | 2000 10 04 | 704 | 0.1+ | 0.5+ | 2003 08 30 | 291 | 0.1− | 0.1− | | |
| 2000 09 30 | 704 | 0.6+ | 0.5+ | 2000 10 04 | 704 | 0.0 | 0.2+ | 2003 08 30 | 291 | 0.1− | 0.2− | | |
| 2000 09 30 | 704 | 0.1− | 0.2+ | 2000 10 04 | 704 | 0.4− | 0.4+ | 2003 08 31 | 807 | 0.2+ | 0.2− | | |
| 2000 10 01 | 858 | 0.1+ | 0.5− | 2000 10 04 | 704 | 0.2+ | 0.1+ | 2003 08 31 | 807 | 0.5+ | 0.3+ | | |
| 2000 10 01 | 858 | 0.3− | 0.5− | 2000 10 04 | 704 | 0.2− | 0.6+ | 2003 08 31 | 807 | 0.4− | 0.0 | | |
| 2000 10 01 | 858 | 0.6− | 0.1− | 2000 10 06 | 704 | 0.3+ | 0.1− | 2003 08 31 | 807 | 0.4+ | 0.3− | | |
| 2000 10 01 | 704 | 0.4+ | 0.0 | 2000 10 06 | 704 | 0.8− | 0.4− | 2003 08 31 | 807 | 0.9+ | 0.5− | | |
| 2000 10 01 | 704 | 0.0 | 0.1+ | 2000 10 06 | 704 | 0.1+ | 0.1+ | 2003 08 31 | 291 | 0.4− | 0.9− | | |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2000 10 06 | 704 | 0.6+ | 0.5+ | 2003 08 31 | 291 | 0.0 | 0.8− | | |
| 2000 10 01 | 711 | 0.5+ | 0.8− | 2000 10 06 | 704 | 0.8+ | 0.6+ | 2003 08 31 | 291 | 0.3− | 0.7− | | |
| 2000 10 01 | 711 | 0.3+ | 0.6− | 2000 10 06 | 704 | 1.7+ | 0.1+ | 2003 09 21 | 644 | 0.1− | 0.0 | | |
| 2000 10 01 | 704 | 0.0 | 0.1− | 2000 10 06 | 704 | 0.9+ | 1.9− | 2003 09 21 | 644 | 0.1− | 0.1+ | | |
| 2000 10 01 | 711 | 0.2+ | 0.7− | 2000 10 06 | 704 | 0.1+ | 0.1+ | 2003 09 21 | 644 | 0.4− | 0.3+ | | |
| 2000 10 01 | 704 | 0.0 | 0.2− | 2000 10 06 | 704 | 0.7+ | 0.8− | 2003 10 21 | 926 | 0.6+ | 0.3+ | | |
| 2000 10 02 | 850 | 0.8− | 1.7+ | 2000 10 16 | 046 | 0.2− | 0.0 | 2003 10 21 | 926 | 0.0 | 0.5+ | | |
| 2000 10 02 | 850 | 1.7− | 0.5+ | 2000 10 16 | 046 | 0.2− | 0.3+ | 2003 10 21 | 926 | 1.0− | 0.4+ | | |
| 2000 10 02 | 704 | 0.7+ | 0.1+ | 2000 10 16 | 046 | 0.4− | 0.1− | 2003 10 22 | 291 | 0.1+ | 0.4+ | | |
| 2000 10 02 | 704 | 0.2− | 0.4+ | 2000 10 16 | 046 | 0.1+ | 0.0 | 2003 10 22 | 291 | 0.2+ | 0.4+ | | |
| 2000 10 02 | 704 | 0.3+ | 0.3+ | 2000 10 16 | 046 | 0.2− | 0.1− | 2003 10 22 | 291 | 0.3+ | 0.8− | | |
| 2000 10 02 | 704 | 1.0+ | 0.2+ | 2000 10 16 | 046 | 0.1+ | 0.4+ | 2003 10 22 | 926 | 0.3+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.2− | 0.2− | 2000 10 22 | 046 | 0.0 | 0.4− | 2003 10 22 | 926 | 0.1+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.8+ | 0.1+ | 2000 10 22 | 046 | 0.3− | 0.1− | 2003 10 22 | 926 | 0.4− | 0.1+ | | |
| 2000 10 02 | 704 | 0.4+ | 0.3+ | 2000 10 22 | 046 | 0.0 | 0.5+ | 2003 10 24 | 711 | 0.1− | 0.2+ | | |
| 2000 10 02 | 704 | 0.0 | 0.0 | 2000 10 22 | 046 | 0.2+ | 0.5+ | 2003 10 24 | 711 | 0.6+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.1− | 0.5+ | 2000 10 22 | 587 | 0.3+ | 0.8− | 2003 10 24 | 711 | 0.4+ | 0.4+ | | |
| 2000 10 02 | 704 | 1.0+ | 0.3− | 2000 10 22 | 587 | 0.1+ | 0.3− | 2003 10 24 | 941 | 1.0− | 0.5− | | |
| 2000 10 02 | 704 | 0.0 | 0.2− | 2000 11 01 | 118 | 0.1+ | 0.1+ | 2003 10 24 | 941 | 0.6− | 0.4− | | |
| 2000 10 02 | 704 | 0.1+ | 0.9+ | 2000 11 01 | 118 | 0.2+ | 0.1− | 2003 10 24 | 941 | 0.2− | 0.4− | | |
| 2000 10 02 | 704 | 0.1− | 0.1− | 2000 11 04 | 587 | 0.3− | 0.6− | 2003 10 24 | 941 | 0.0 | 0.5− | | |
| 2000 10 02 | 704 | 0.2+ | 0.2+ | 2000 11 04 | 587 | 0.7+ | 0.5+ | 2003 10 24 | 941 | 0.0 | 0.4− | | |
| 2000 10 02 | 611 | 0.7− | 0.1− | 2000 11 18 | 853 | 0.5+ | 0.4− | 2003 10 24 | 941 | 0.6+ | 0.1− | | |
| 2000 10 03 | 704 | 0.6+ | 0.2+ | 2000 11 18 | 853 | 0.1+ | 0.3− | 2003 11 01 | 413 | 0.1+ | 0.1− | | |
| 2000 10 03 | 704 | 0.2− | 0.1+ | 2000 11 18 | 853 | 0.2+ | 0.2− | 2003 11 01 | 413 | 0.2+ | 0.2− | | |
| 2000 10 03 | 704 | 0.2− | 0.4− | 2000 11 18 | 540 | 0.3− | 1.2+ | 2004 04 15 | E12 | (1.0+ | 1.8−) | | |
| 2000 10 03 | 704 | 0.2+ | 0.1− | 2000 11 18 | 540 | 0.1− | 0.5+ | 2004 04 15 | E12 | 0.4+ | 0.7− | | |
| 2000 10 04 | 704 | 0.1+ | 0.2− | 2000 11 18 | 540 | 0.4+ | 0.2+ | 2004 04 15 | E12 | 0.9+ | 0.3− | | |
| 2000 10 04 | 704 | 0.4+ | 0.5+ | 2000 11 18 | 540 | 0.4− | 0.0 | 2004 04 15 | E12 | (1.8+ | 2.3−) | | |
| 2000 10 04 | 704 | 0.1− | 0.8+ | 2000 11 18 | 540 | 0.4+ | 0.0 | 2006 08 29 | 691 | 0.4+ | 0.3+ | | |
| 2000 10 04 | 704 | 0.1− | 0.6+ | 2001 03 03 | 474 | 0.3+ | 0.1− | 2006 08 29 | 691 | 1.1+ | 0.5− | | |
| 2000 10 04 | 704 | 0.3+ | 0.6+ | 2001 03 03 | 474 | 0.4− | 1.1+ | 2006 08 29 | 691 | 0.3+ | 0.3+ | | |
| 2000 10 04 | 704 | 0.3− | 0.1− | 2001 03 03 | 474 | 0.7− | 0.6+ | 2006 10 26 | 711 | 0.4+ | 0.3+ | | |
| 2000 10 04 | 704 | 0.4− | 0.2+ | 2001 03 04 | 474 | 0.2− | 0.0 | 2006 10 26 | 711 | (0.8+ | 1.6+) | | |
| 2000 10 04 | 704 | 0.1+ | 0.6+ | 2001 03 04 | 474 | 0.1− | 0.0 | 2006 11 21 | 711 | 0.5− | 0.4+ | | |
| 2000 10 04 | 704 | 0.5− | 0.3+ | 2001 03 04 | 474 | 0.4− | 1.1− | 2006 11 21 | 711 | 0.9− | 0.2− | | |
| 2000 10 04 | 704 | 0.3− | 0.4+ | 2003 07 29 | 568 | 0.0 | 0.2+ | | | | | | |

**(138728)∗ 2000 SO$_{186}$ = 2003 EQ$_{15}$**

Discovered 2000 Sept. 21 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 46485)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.33789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18378629 | $\omega$ | 238.80998 | | +0.09766094 | −0.99263158 | |
| $a$ | 3.0638016 | $\Omega$ | 205.87771 | | +0.95986251 | +0.11298658 | |
| $e$ | 0.0489771 | $i$ | 9.45908 | | +0.26291881 | −0.04377874 | |
| $P$ | 5.36 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 13 | 691 | 0.0 | 0.3+ | 2003 03 10 | 704 | 0.7+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.4+ | | |
| 1993 06 13 | 691 | 0.5− | 0.1+ | 2003 03 10 | 704 | 1.5+ | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 1993 06 13 | 691 | 1.3− | 1.8+ | 2003 03 10 | 699 | 0.2− | 0.5− | 2006 11 11 | 683 | 0.8− | 0.1+ | | |
| 1995 10 28 | 691 | 0.5+ | 0.2− | 2003 03 10 | 704 | 0.0 | 0.5+ | 2006 11 11 | 683 | 0.1+ | 1.1+ | | |
| 1995 10 28 | 691 | 0.2+ | 0.0 | 2003 03 10 | 704 | 0.0 | 0.7− | 2006 11 11 | 683 | 0.3− | 0.5+ | | |
| 1995 10 28 | 691 | 0.4+ | 0.3− | 2003 03 10 | 704 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.7+ | | |
| 2000 09 21 | 608 | 0.5− | 0.2+ | 2003 03 10 | 704 | 1.0+ | 1.1+ | 2006 11 11 | 703 | 0.3− | 0.3+ | | |
| 2000 09 21 | 608 | (0.8− | 2.1+) | 2003 03 10 | 704 | 1.0+ | 0.1− | 2006 11 11 | 703 | 1.1− | 0.7− | | |
| 2000 09 21 | 608 | (0.6− | 2.2+) | 2003 03 10 | 704 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 1.1+ | 0.4+ | 2003 03 25 | 644 | 0.3+ | 0.0 | 2006 11 14 | 704 | (1.4+ | 1.7+) |
| 2000 09 23 | 704 | 1.3+ | 1.2+ | 2003 03 25 | 644 | 0.2+ | 0.2− | 2006 11 14 | 683 | (1.4− | 1.6+) |
| 2000 09 23 | 704 | 0.1− | 1.0+ | 2003 03 25 | 699 | 0.1− | 0.1− | 2006 11 14 | 704 | (0.8+ | 1.9+) |
| 2000 09 23 | 704 | 0.3− | 1.3+ | 2003 03 25 | 644 | 0.3+ | 0.0 | 2006 11 14 | 683 | 1.4− | 0.9+ |
| 2000 09 23 | 704 | 0.4+ | 0.7+ | 2003 03 25 | 699 | 0.9− | 0.6+ | 2006 11 14 | 704 | (0.1− | 1.7+) |
| 2000 10 03 | 704 | 0.1+ | 0.5+ | 2003 03 25 | 699 | 0.9− | 0.2+ | 2006 11 14 | 704 | (0.5− | 2.6+) |
| 2000 10 03 | 704 | 0.2− | 0.7+ | 2003 03 25 | 699 | 1.2− | 0.1− | 2006 11 14 | 683 | 0.1− | 1.4+ |
| 2000 10 03 | 704 | 1.0+ | 1.3+ | 2003 03 27 | 644 | 0.3+ | 0.2+ | 2006 11 14 | 704 | (0.6+ | 2.0+) |
| 2001 12 11 | 704 | 0.6− | 0.2− | 2003 03 27 | 644 | 0.5+ | 0.0 | 2006 11 15 | 683 | 0.2+ | 0.6− |
| 2001 12 11 | 704 | 0.5− | 0.0 | 2003 03 27 | 644 | 0.5+ | 0.1+ | 2006 11 15 | 683 | (0.3+ | 2.0+) |
| 2001 12 11 | 704 | 0.4− | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.9+ | 2006 11 15 | 683 | 0.2− | 0.9+ |
| 2001 12 11 | 704 | 0.3− | 0.1− | 2005 08 24 | 644 | 0.1− | 0.8+ | 2006 11 17 | 704 | 0.7− | 0.4+ |
| 2003 03 07 | 704 | 0.6+ | 0.6+ | 2005 08 24 | 644 | 0.4− | 0.9+ | 2006 11 17 | 704 | 1.2− | 0.2+ |
| 2003 03 07 | 704 | 0.9+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 1.0− | 0.8+ |
| 2003 03 07 | 704 | (1.7+ | 0.1+) | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2003 03 08 | 704 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2003 03 08 | 704 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2003 03 08 | 704 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.7− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2003 03 08 | 704 | 0.6+ | 1.0+ | 2006 10 16 | 703 | (0.3− | 1.8−) | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2003 03 09 | 704 | (1.5+ | 0.2+) | 2006 10 16 | 703 | (3.1− | 2.3−) | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2003 03 09 | 704 | (1.8+ | 0.4−) | 2006 10 16 | 703 | (1.8− | 0.6−) | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2003 03 09 | 704 | 0.5+ | 0.8− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2003 03 09 | 704 | 1.1+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.4+ | 1.1+ |
| 2003 03 09 | 704 | 1.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.9− | 1.3− |
| 2003 03 10 | 699 | 0.4− | 1.3+ | 2006 11 02 | 703 | 0.7− | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.8− |
| 2003 03 10 | 699 | 0.2− | 0.6+ | 2006 11 02 | 703 | 0.9+ | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2003 03 10 | 704 | 0.8+ | 0.8+ | 2006 11 02 | 703 | 0.3− | 1.0+ | 2006 11 28 | 704 | 0.3− | 0.4+ |
| 2003 03 10 | 704 | 0.8+ | 0.0 | 2006 11 02 | 703 | 0.3− | 1.3+ | | | | |
| 2003 03 10 | 699 | 0.5+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | | | |

**(138729)∗ 2000 SB$_{187}$**

Discovered 2000 Sept. 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.65890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17854181 | $\omega$ | 162.76503 | | +0.48037495 | −0.84864228 | |
| $a$ | 3.1235090 | $\Omega$ | 258.03232 | | +0.77565193 | +0.52892910 | |
| $e$ | 0.2603594 | $i$ | 13.08429 | | +0.40939466 | −0.00634688 | |
| $P$ | 5.52 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 06 | 704 | 0.2+ | 0.5+ | 2000 11 01 | 704 | 0.2+ | 0.4− | 2006 08 30 | 704 | (1.5+ | 2.7−) |
| 2000 09 06 | 704 | 0.4+ | 0.1− | 2000 11 01 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 704 | 0.5− | 0.2+ |
| 2000 09 06 | 704 | 0.3+ | 0.4+ | 2000 11 01 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 704 | 0.7− | 0.1− |
| 2000 09 06 | 704 | 0.1+ | 0.5− | 2000 11 01 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 704 | 0.5− | 0.0 |
| 2000 09 06 | 704 | 0.7− | 0.1− | 2000 11 01 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 704 | 0.4− | 0.2+ |
| 2000 09 10 | 699 | 0.3− | 1.3+ | 2000 11 27 | 704 | 1.1+ | 0.5− | 2006 10 19 | 704 | 0.1+ | 0.1+ |
| 2000 09 10 | 699 | 0.4− | 0.9+ | 2000 11 27 | 704 | 0.5+ | 1.5+ | 2006 10 28 | 704 | 0.3− | 1.4+ |
| 2000 09 10 | 699 | 0.7− | 0.9+ | 2000 11 27 | 704 | 0.8− | 0.3+ | 2006 10 28 | 704 | (0.0 | 2.3+) |
| 2000 09 10 | 699 | 1.1− | 0.3+ | 2000 11 27 | 704 | 0.3+ | 0.9+ | 2006 10 28 | 704 | (0.2− | 2.1+) |
| 2000 09 21 | 608 | (3.1+ | 0.8+) | 2000 11 27 | 704 | 0.5− | 0.6+ | 2006 10 28 | 704 | (0.6− | 2.2+) |
| 2000 09 21 | 608 | (3.2+ | 0.7+) | 2000 11 27 | 704 | 0.2+ | 0.4− | 2006 10 28 | 704 | (1.9− | 2.4+) |
| 2000 09 21 | 608 | (3.4+ | 0.7+) | 2002 01 10 | 644 | (0.8− | 1.6−) | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2000 09 22 | 704 | 0.0 | 0.1− | 2002 01 10 | 644 | 0.6+ | 1.2− | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2000 09 22 | 704 | 0.7+ | 0.6− | 2002 01 10 | 644 | 0.2+ | 0.6− | 2006 11 11 | 691 | (1.8+ | 1.2−) |
| 2000 09 22 | 704 | 0.1− | 0.6− | 2002 01 12 | 704 | (0.4− | 1.9+) | 2006 11 13 | 958 | (1.8− | 0.5+) |
| 2000 09 25 | 699 | 0.3+ | 0.1+ | 2002 01 12 | 704 | 0.5− | 1.3+ | 2006 11 13 | 958 | (1.6− | 0.1−) |
| 2000 09 25 | 699 | 0.2+ | 0.1− | 2002 01 12 | 704 | 0.3− | 1.4+ | 2006 11 13 | 958 | 0.6− | 0.1− |
| 2000 09 25 | 699 | 0.2+ | 0.4+ | 2002 02 10 | 699 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.5+ | 0.1− |
| 2000 09 25 | 699 | 0.3− | 0.3+ | 2002 02 10 | 699 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2000 09 30 | 704 | 0.3+ | 0.7− | 2002 02 10 | 699 | 0.2− | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2000 09 30 | 704 | 0.1− | 0.2− | 2002 02 10 | 699 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.5+ | 0.2+ |
| 2000 09 30 | 704 | 0.3+ | 0.2− | 2002 03 12 | 699 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.5− | 0.6+ |
| 2000 10 03 | 699 | 0.7− | 0.2+ | 2002 03 12 | 699 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.2− |
| 2000 10 03 | 699 | 0.6− | 0.2+ | 2002 03 12 | 699 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.2− |
| 2000 10 03 | 699 | 0.2− | 0.2+ | 2002 03 12 | 699 | 0.8+ | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2000 10 03 | 699 | 0.4− | 0.2+ | 2002 03 15 | 644 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2000 10 04 | 704 | 0.2− | 0.3− | 2002 03 15 | 644 | 0.7+ | 1.0+ | 2006 11 18 | 704 | 0.4− | 0.2− |
| 2000 10 04 | 704 | 0.3− | 0.3− | 2002 03 15 | 644 | 0.6+ | 0.8+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2000 10 04 | 704 | 0.1+ | 0.3− | 2002 04 05 | 699 | 0.1+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2000 10 04 | 704 | (2.6+ | 0.1+) | 2002 04 05 | 699 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2000 10 04 | 704 | 0.5+ | 0.2− | 2002 04 05 | 699 | 0.2− | 1.0+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2000 10 04 | 704 | 0.2+ | 0.4− | 2002 04 05 | 699 | 1.4+ | 0.2− | 2006 11 21 | 704 | (2.1− | 0.1−) |
| 2000 10 04 | 704 | 0.3− | 0.7− | 2005 06 21 | 644 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2000 10 04 | 704 | 0.1+ | 0.6− | 2005 06 21 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | (1.9− | 0.6−) |
| 2000 10 04 | 704 | 0.2+ | 0.0 | 2005 06 21 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2000 10 04 | 704 | 0.3− | 1.2+ | 2005 07 16 | 703 | 0.4− | 0.9+ | 2006 11 21 | 704 | (2.0− | 0.3−) |
| 2000 10 04 | 704 | 0.5− | 0.5− | 2005 07 16 | 703 | 0.5− | 0.2+ | 2006 11 21 | 704 | 1.0+ | 1.3+ |
| 2000 10 04 | 704 | 0.0 | 0.3− | 2005 07 16 | 703 | 0.3− | 0.1+ | 2006 11 21 | 704 | (2.0− | 0.0 ) |
| 2000 10 04 | 704 | 0.6− | 0.0 | 2005 07 16 | 703 | 0.6+ | 0.6+ | 2006 11 21 | 704 | (2.2− | 0.6−) |
| 2000 10 04 | 704 | 0.3− | 0.6+ | 2005 07 31 | 644 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.3− | 1.1− |
| 2000 10 04 | 704 | 1.3− | 0.0 | 2005 07 31 | 644 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1− | 1.0− |
| 2000 10 04 | 704 | 0.0 | 0.2− | 2005 07 31 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.5+ |
| 2000 10 04 | 704 | 0.2+ | 0.4− | 2005 09 02 | 644 | 0.1− | 0.1+ | 2006 12 01 | 704 | 1.0+ | 1.6− |
| 2000 10 04 | 704 | 0.4− | 0.8+ | 2005 09 02 | 644 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.0 |
| 2000 10 07 | 704 | 0.2− | 0.2+ | 2005 09 02 | 644 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.1− | 0.0 |
| 2000 10 07 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.3− | 2006 12 01 | 704 | 0.3+ | 0.2+ |
| 2000 10 07 | 704 | 1.0+ | 0.6+ | 2006 08 30 | 704 | 0.3− | 1.0− | | | | |

**(138730)∗ 2000 SP$_{187}$ = 2001 YG$_{129}$**

Discovered 2000 Sept. 21 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 22614)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.01524 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17698732 | $\omega$ | 34.85317 | | +0.98528314 | +0.12698217 | |
| $a$ | 3.1417717 | $\Omega$ | 317.38967 | | −0.16780817 | +0.84594484 | |
| $e$ | 0.0460488 | $i$ | 9.73043 | | +0.03251989 | +0.51793133 | |
| $P$ | 5.57 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 608 | 0.2− | 0.6− | 2001 12 17 | 704 | 0.4− | 0.6− | 2005 08 26 | 699 | 0.1− | 0.1+ |
| 2000 09 21 | 608 | 0.2− | 0.8− | 2001 12 17 | 704 | 1.1− | 1.1− | 2005 08 26 | 699 | 0.7− | 0.3+ |
| 2000 09 21 | 608 | 0.3− | 0.7− | 2001 12 17 | 704 | 0.6− | 1.3− | 2005 08 26 | 699 | 0.7− | 0.6− |
| 2000 09 23 | 704 | 0.5+ | 0.5+ | 2001 12 22 | 704 | 0.2+ | 1.0− | 2005 08 26 | 699 | 1.0+ | 0.3+ |
| 2000 09 23 | 704 | 0.2+ | 0.1+ | 2001 12 22 | 704 | 0.4+ | 0.1+ | 2005 10 30 | G96 | 0.3+ | 0.6− |
| 2000 09 23 | 704 | 1.0− | 1.8+ | 2001 12 22 | 704 | 0.6+ | 0.3+ | 2005 10 30 | G96 | 0.8+ | 0.4− |
| 2000 09 26 | 699 | 0.3− | 0.7+ | 2001 12 22 | 704 | 0.0 | 0.4+ | 2005 10 30 | G96 | 0.3− | 0.1+ |
| 2000 09 26 | 699 | 1.4− | 0.6+ | 2005 07 11 | G96 | 0.7+ | 1.2− | 2005 10 30 | G96 | 0.4+ | 0.5− |
| 2000 09 26 | 699 | 0.4− | 0.7− | 2005 07 11 | G96 | 0.1+ | 0.6− | 2006 10 29 | 703 | 0.6+ | 0.6+ |
| 2000 09 26 | 699 | 0.2− | 0.1+ | 2005 07 11 | G96 | 0.0 | 0.2− | 2006 10 29 | 703 | 0.3+ | 0.5− |
| 2000 10 03 | 704 | 0.4+ | 0.6+ | 2005 07 11 | G96 | 0.0 | 0.2− | 2006 10 29 | 703 | 0.1− | 0.3+ |
| 2000 10 03 | 704 | 0.6+ | 1.0+ | 2005 07 28 | 644 | 0.4+ | 0.1− | 2006 10 29 | 703 | 0.4− | 0.5+ |
| 2000 10 03 | 704 | 0.6− | 0.7+ | 2005 07 28 | 644 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2000 10 03 | 704 | 0.7+ | 0.9+ | 2005 07 28 | 644 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2000 10 06 | 608 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.4+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2000 10 06 | 608 | 0.1− | 0.7+ | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2000 10 06 | 608 | 0.1− | 0.3− | 2005 08 06 | 644 | 0.0 | 0.5− | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2001 12 09 | 704 | 0.1− | 0.5− | 2005 08 22 | 644 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2001 12 09 | 704 | 0.7+ | 0.0 | 2005 08 22 | 644 | 0.3+ | 0.6− | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2001 12 09 | 704 | 0.4− | 0.4+ | 2005 08 22 | 644 | 0.0 | 0.2− | | | | |

**(138731)∗ 2000 SE$_{191}$ = 2001 YU$_{159}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74827)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.36694 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17875858 | $\omega$ | 24.23983 | | +0.56715752 | −0.81599353 | |
| $a$ | 3.1209833 | $\Omega$ | 31.55197 | | +0.71647819 | +0.42190834 | |
| $e$ | 0.1418338 | $i$ | 12.33049 | | +0.40619128 | +0.39515555 | |
| $P$ | 5.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 1.5+ | 0.8+ | 2002 01 14 | 644 | 0.6+ | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2000 09 24 | 704 | 0.2+ | 0.7+ | 2002 01 14 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.4+ |
| 2000 09 24 | 704 | 0.5− | 1.0+ | 2002 01 14 | 644 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 1.0− | 0.9− |
| 2000 09 24 | 704 | 0.1+ | 1.2+ | 2002 01 23 | 704 | 0.6+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2000 09 24 | 704 | (0.6− | 2.1+) | 2002 01 23 | 704 | 0.1− | 1.0+ | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 2000 09 25 | 608 | 0.5− | 1.0− | 2002 01 23 | 704 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2000 09 25 | 608 | 1.0− | 1.0− | 2002 01 23 | 704 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.8+ |
| 2000 09 25 | 608 | 0.8− | 0.9− | 2003 03 27 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2000 10 02 | 704 | 0.7− | 0.4− | 2003 03 27 | 691 | 0.1+ | 0.6− | 2006 10 27 | 703 | 0.6− | 0.2− |
| 2000 10 02 | 704 | 0.8− | 0.9+ | 2003 03 27 | 691 | 0.2+ | 0.1− | 2006 10 27 | 703 | (1.9− | 0.7+) |
| 2000 10 02 | 704 | 0.7+ | 1.1+ | 2003 05 05 | 691 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 12 09 | 704 | 0.1+ | 0.3+ | 2003 05 05 | 691 | 0.2+ | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 12 09 | 704 | 0.5− | 0.5+ | 2003 05 05 | 691 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 12 09 | 704 | (1.2− | 1.7+) | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.7− | 0.2− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.4+ | 1.2+ |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.1+ | 1.0+ |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 15 | 704 | 0.9+ | 0.1+ |
| 2001 12 19 | 645 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2001 12 20 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.5+ | 2006 11 20 | G96 | 0.5+ | 0.1+ |
| 2001 12 20 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2001 12 20 | 644 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.7+ | 2006 11 20 | G96 | 0.3− | 0.1− |

**(138732)∗ 2000 SG$_{191}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.85095 | | (2000.0) | | +0.99126613 | −0.07101098 |
| $n$ | 0.18750095 | $\omega$ | 325.20529 | | +0.11862118 | +0.84830656 |
| $a$ | 3.0232013 | $\Omega$ | 39.33003 | | −0.05762352 | +0.52472224 |
| $e$ | 0.1002120 | $i$ | 10.09821 | | | |
| $P$ | 5.26 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 28 | 691 | 0.6+ | 0.3− | 2000 10 02 | 704 | 0.4+ | 0.8+ | 2005 08 28 | E12 | 0.0 | 0.4+ |
| 1995 11 28 | 691 | 0.9+ | 1.3− | 2000 10 02 | 699 | 0.9− | 1.5+ | 2005 08 28 | E12 | 0.6− | 0.2+ |
| 1995 11 28 | 691 | 0.4+ | 1.2− | 2000 10 02 | 704 | 1.9− | 0.7+ | 2005 08 28 | E12 | 0.0 | 0.6+ |
| 2000 08 31 | 704 | 1.9− | 1.4+ | 2001 12 09 | 704 | 0.2− | 0.2+ | 2005 08 28 | E12 | 0.9+ | 0.1− |
| 2000 08 31 | 704 | 0.9− | 0.5+ | 2001 12 09 | 704 | 0.4− | 0.9+ | 2005 09 01 | 644 | 0.5− | 0.0 |
| 2000 08 31 | 704 | 0.9− | 0.4+ | 2001 12 09 | 704 | 1.4− | 0.2− | 2005 09 01 | 644 | 0.5− | 0.0 |
| 2000 08 31 | 704 | 0.8+ | 0.3+ | 2001 12 09 | 704 | 0.2− | 0.2− | 2005 09 01 | 644 | 0.4− | 0.0 |
| 2000 09 24 | 704 | 0.4+ | 0.5+ | 2001 12 19 | 644 | 0.1− | 0.4+ | 2005 09 26 | 704 | 0.2+ | 0.7+ |
| 2000 09 24 | 704 | 0.6− | 0.3+ | 2001 12 19 | 644 | 0.1+ | 0.9+ | 2005 09 26 | 703 | 1.0− | 0.7+ |
| 2000 09 24 | 704 | 0.6+ | 0.1− | 2001 12 19 | 644 | 0.3− | 0.5+ | 2005 09 26 | 703 | (2.2− | 0.0 ) |
| 2000 09 24 | 704 | 0.0 | 0.7+ | 2002 01 17 | 291 | 0.2− | 1.5+ | 2005 09 26 | 704 | 0.1− | 0.0 |
| 2000 09 24 | 704 | 0.7+ | 0.5+ | 2002 01 17 | 291 | (0.4− | 2.3+) | 2005 09 26 | 703 | (2.1− | 0.7+) |
| 2000 09 25 | 608 | (1.8− | 2.9−) | 2002 01 17 | 291 | (0.3− | 2.2+) | 2005 09 26 | 703 | (0.4− | 1.6+) |
| 2000 09 25 | 608 | (1.5− | 2.8−) | 2003 03 23 | 645 | 0.1+ | 0.1+ | 2005 09 26 | 704 | 0.1− | 0.4− |
| 2000 09 25 | 608 | (1.3− | 2.6−) | 2003 03 23 | 645 | 0.1+ | 0.2+ | 2005 09 26 | 704 | 0.5− | 0.3− |
| 2000 10 02 | 699 | 0.5+ | 1.6+ | 2003 03 25 | 644 | 0.4+ | 0.3− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2000 10 02 | 704 | 0.5− | 0.3− | 2003 03 25 | 644 | 0.3+ | 0.7− | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2000 10 02 | 699 | 0.7− | 1.1+ | 2003 03 25 | 644 | 0.7+ | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2000 10 02 | 704 | 0.3− | 1.5+ | 2005 07 27 | 644 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2000 10 02 | 704 | 1.3− | 0.8+ | 2005 07 27 | 644 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2000 10 02 | 699 | 1.4− | 1.7+ | 2005 07 27 | 644 | 0.4− | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.3− |

**(138733)∗ 2000 SB$_{195}$ = 2002 CP$_{155}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40122)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.81443 | | (2000.0) | | +0.68209290 | −0.73126446 |
| $n$ | 0.18201467 | $\omega$ | 46.02945 | | +0.64789332 | +0.60353309 |
| $a$ | 3.0836502 | $\Omega$ | 0.96576 | | +0.33909220 | +0.31780513 |
| $e$ | 0.1607740 | $i$ | 4.25465 | | | |
| $P$ | 5.41 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 0.5− | 0.7+ | 2002 02 12 | 704 | 1.0− | 0.5+ | 2006 11 16 | 704 | 0.0 | 1.4+ |
| 2000 09 21 | 699 | 1.7− | 0.2+ | 2002 02 12 | 704 | 1.4− | 0.6+ | 2006 11 16 | 704 | 0.9− | 0.8+ |
| 2000 09 21 | 699 | 0.1− | 1.7+ | 2002 02 12 | 704 | 0.5− | 1.4+ | 2006 11 16 | 704 | 0.5+ | 0.3+ |
| 2000 09 21 | 699 | 0.2− | 0.5− | 2002 04 13 | 291 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.1− |
| 2000 09 24 | 704 | 1.2+ | 0.7+ | 2002 04 13 | 291 | 0.5+ | 0.4− | 2006 11 19 | 704 | 1.3− | 1.3+ |
| 2000 09 24 | 704 | 0.8− | 0.4+ | 2002 04 13 | 291 | 0.4+ | 0.3− | 2006 11 19 | 704 | 1.3+ | 0.6+ |
| 2000 09 24 | 704 | 0.9+ | 0.4+ | 2003 03 26 | 691 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2000 09 24 | 704 | 1.7− | 0.1+ | 2003 03 26 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 1.1+ |
| 2000 10 01 | 704 | 0.0 | 0.6+ | 2003 03 26 | 691 | 0.4+ | 0.7+ | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2000 10 01 | 704 | 0.5− | 1.3+ | 2003 04 08 | 691 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2000 10 01 | 704 | 0.4− | 1.1+ | 2003 04 08 | 691 | 0.3+ | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2000 10 01 | 704 | 0.3− | 1.5+ | 2003 04 08 | 691 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2001 12 23 | 704 | (0.7+ | 1.6+) | 2003 04 25 | 691 | 0.9+ | 1.5+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 12 23 | 704 | 0.5− | 0.2− | 2003 04 25 | 691 | (0.6+ | 2.0+) | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2001 12 23 | 704 | 0.3− | 1.2+ | 2003 04 25 | 691 | (0.7+ | 1.9+) | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 12 23 | 704 | 0.0 | 0.8+ | 2005 07 04 | 644 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.7+ | 0.6+ |
| 2002 01 08 | 704 | 0.8+ | 0.7+ | 2005 07 04 | 644 | 0.2− | 1.1+ | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2002 01 08 | 704 | 0.4+ | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2002 01 08 | 704 | 0.3+ | 1.3+ | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2002 01 09 | 645 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 01 09 | 645 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.4+ | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.2+ |
| 2002 01 17 | 644 | 0.7− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2002 01 17 | 644 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.7− | 0.3− |
| 2002 01 17 | 644 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.4− | 2006 11 27 | 704 | 0.1+ | 0.1+ |
| 2002 02 06 | 704 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.0 | 2006 11 27 | 704 | 0.5− | 0.5+ |
| 2002 02 06 | 704 | 0.6+ | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.4− | 2006 11 27 | 704 | 0.2+ | 0.7+ |
| 2002 02 06 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.3+ | 1.0+ | 2006 11 27 | 704 | 0.3− | 0.0 |
| 2002 02 12 | 704 | 0.9− | 0.4+ | 2006 11 16 | 704 | 0.8− | 0.4+ | | | | |

**(138734)∗ 2000 SG$_{195}$ = 2003 GW$_2$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46486)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.80489 | | (2000.0) | | +0.25396734 | −0.96705823 |
| $n$ | 0.17677067 | $\omega$ | 260.33498 | | +0.94569798 | +0.24452884 |
| $a$ | 3.1443382 | $\Omega$ | 174.85435 | | +0.20286919 | +0.07073909 |
| $e$ | 0.0933050 | $i$ | 11.11533 | | | |
| $P$ | 5.58 | $H$ | 14.9 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3− | 0.3+ | 2003 04 01 | 704 | 0.2+ | 0.4− | 2006 09 29 | 699 | 0.6+ | 0.6+ |
| 2000 09 24 | 704 | 0.1− | 0.6+ | 2003 04 01 | 704 | 0.5− | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2000 09 24 | 704 | 0.8− | 0.2− | 2003 04 01 | 704 | (0.0 | 1.6+) | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 09 24 | 704 | 0.2− | 0.1− | 2003 04 03 | 699 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2000 09 24 | 704 | 0.6− | 0.7− | 2003 04 03 | 699 | 0.0 | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2000 10 01 | 704 | 0.0 | 1.2+ | 2003 04 03 | 699 | 0.6− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2000 10 01 | 704 | 0.1− | 0.9+ | 2003 04 03 | 699 | (0.7− | 2.2+) | 2006 10 12 | 644 | 0.1+ | 0.6+ |
| 2000 10 01 | 704 | 0.2− | 0.6+ | 2003 04 05 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2000 10 01 | 699 | 0.3+ | 0.0 | 2003 04 05 | 691 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.4− |
| 2000 10 01 | 704 | 0.4+ | 0.1− | 2003 04 05 | 691 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2000 10 01 | 699 | 1.1+ | 0.9+ | 2004 06 13 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.3− |
| 2000 10 01 | 699 | 0.7− | 0.8+ | 2004 06 13 | 691 | 0.3− | 0.1+ | 2006 10 22 | 703 | (1.6− | 0.2−) |
| 2000 10 01 | 699 | 0.6− | 1.0+ | 2004 06 13 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 1.4− | 0.2− |
| 2000 10 02 | 704 | 0.2− | 1.4+ | 2005 06 27 | 691 | 0.6+ | 0.1+ | 2006 10 22 | 703 | (1.4− | 3.3+) |
| 2000 10 02 | 704 | 0.5− | 0.8+ | 2005 06 27 | 691 | 0.1− | 0.0 | 2006 10 22 | 703 | 1.3− | 0.8+ |
| 2000 10 02 | 704 | 0.1− | 0.3+ | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 1.0+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.3+ | 0.3+ | 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.3+ |
| 2001 12 19 | 704 | 0.1− | 0.6− | 2005 07 15 | 691 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.6+ | 0.4+ |
| 2001 12 19 | 704 | 0.6+ | 0.4− | 2005 07 15 | 691 | 0.1− | 0.3+ | 2006 11 13 | 703 | 1.1− | 0.7− |
| 2001 12 19 | 704 | 0.1− | 0.9− | 2005 08 24 | 644 | 0.0 | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.4+ |
| 2003 03 05 | 209 | 0.1+ | 0.6+ | 2005 08 24 | 644 | 0.2− | 0.1− | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2003 03 05 | 209 | 0.3− | 0.4+ | 2005 08 24 | 644 | 0.5+ | 0.0 | 2006 11 17 | 644 | 0.3− | 0.5+ |
| 2003 03 05 | 209 | 0.3− | 0.4+ | 2005 09 12 | 691 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.3+ | 1.1+ |
| 2003 03 29 | 291 | 0.3− | 0.7+ | 2005 09 12 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.4− |
| 2003 03 29 | 291 | 0.2− | 0.5+ | 2005 09 12 | 691 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.1− | 1.2+ |
| 2003 03 29 | 291 | 0.3+ | 0.8+ | 2006 09 29 | 699 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.4− | 0.4+ |
| 2003 04 01 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.4+ | | | | |
| 2003 04 01 | 704 | 0.9+ | 0.9+ | 2006 09 29 | 699 | 0.3+ | 0.1+ | | | | |

**(138735)∗ 2000 SR$_{199}$ = 2001 YB$_{112}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25222)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 347.70567 | | (2000.0) | | +0.62335221 | −0.78061877 |
| *n* | 0.17512408 | ω | 34.62662 | | +0.67758028 | +0.51022832 |
| *a* | 3.1640170 | Ω | 16.96025 | | +0.39027809 | +0.36097284 |
| *e* | 0.0897630 | *i* | 8.96499 | | +0.36097284 | +0.36097284 |
| *P* | 5.63 | *H* | 15.2 | *G* 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.4+ | 0.3− | 2000 10 02 | 704 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 1997 03 05 | 691 | 0.3+ | 0.5− | 2000 10 02 | 704 | 0.2+ | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 1997 03 05 | 691 | 0.3+ | 0.4− | 2000 10 05 | 704 | 0.9+ | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.4− |
| 1997 03 12 | 691 | 0.3− | 0.2− | 2000 10 05 | 704 | 0.9− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 1997 03 12 | 691 | 0.7− | 0.3− | 2000 10 05 | 704 | 0.3− | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.2− |
| 1997 03 12 | 691 | 0.9− | 0.5− | 2001 12 14 | 704 | 0.3+ | 0.6+ | 2006 10 13 | 691 | 0.2− | 0.0 |
| 1997 03 13 | 691 | 0.4− | 0.1− | 2001 12 14 | 704 | 0.9+ | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.0 |
| 1997 03 13 | 691 | 0.2− | 0.2− | 2001 12 14 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 1997 03 13 | 691 | 0.2− | 0.1− | 2001 12 18 | 699 | 0.4− | 0.5+ | 2006 10 27 | 703 | 1.2− | 0.5− |
| 1997 03 14 | 691 | 0.2− | 0.4− | 2001 12 18 | 699 | 0.0 | 0.8− | 2006 10 27 | 703 | 0.9− | 0.4− |
| 1997 03 14 | 691 | 0.4− | 0.5− | 2001 12 18 | 699 | 0.4− | 1.2+ | 2006 10 27 | 703 | 0.2− | 0.6− |
| 1997 03 14 | 691 | 0.3− | 0.4− | 2001 12 18 | 699 | 0.3+ | 0.8+ | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2000 09 24 | 704 | 0.9− | 1.3− | 2001 12 19 | 644 | 0.9+ | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.2− |
| 2000 09 24 | 704 | 0.3− | 1.1+ | 2001 12 19 | 644 | 0.9+ | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2000 09 24 | 704 | 0.4+ | 0.6+ | 2001 12 19 | 644 | 1.3+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2000 09 24 | 704 | 0.3+ | 1.1+ | 2001 12 22 | 704 | 0.0 | 0.5− | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2000 09 25 | 049 | 1.5+ | 0.1− | 2001 12 22 | 704 | 0.5+ | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2000 09 25 | 049 | 1.3+ | 1.3− | 2001 12 22 | 704 | 1.2+ | 1.4+ | 2006 11 10 | 644 | 0.5+ | 0.7+ |
| 2000 09 25 | 049 | 1.3+ | 1.7− | 2001 12 22 | 704 | 0.6− | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2000 09 26 | 699 | 1.3− | 0.2− | 2001 12 22 | 704 | 0.1+ | 1.1+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2000 09 26 | 699 | 0.6− | 0.2− | 2002 01 21 | 704 | 0.8− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2000 09 26 | 699 | 0.2+ | 0.3− | 2002 01 21 | 704 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1− | 1.0− |
| 2000 09 26 | 699 | 1.0− | 0.3+ | 2002 01 21 | 704 | 1.1+ | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2000 10 01 | 704 | 0.2− | 0.3− | 2003 03 24 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.6− |
| 2000 10 01 | 704 | 0.1+ | 0.2− | 2003 03 24 | 691 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2000 10 01 | 704 | 0.3+ | 0.2− | 2003 03 24 | 691 | 0.6+ | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2000 10 01 | 704 | 0.5+ | 0.4− | 2003 04 07 | 691 | 0.1+ | 0.6+ | 2006 11 22 | 704 | (1.5+ | 0.3−) |
| 2000 10 01 | 699 | 1.1− | 0.2− | 2003 04 07 | 691 | 0.4+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.5− |
| 2000 10 01 | 704 | 0.1+ | 0.4− | 2003 04 07 | 691 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 1.1+ |
| 2000 10 01 | 699 | 0.5− | 0.0 | 2003 04 29 | 691 | (1.0− | 3.4+) | 2006 11 22 | 703 | 2.0+ | 0.1− |
| 2000 10 01 | 699 | 0.3− | 0.3+ | 2003 04 29 | 691 | (1.0− | 3.6+) | 2006 11 22 | 703 | 1.4− | 0.6+ |
| 2000 10 01 | 699 | 0.2+ | 0.3+ | 2003 04 29 | 691 | (0.7− | 3.0+) | 2006 11 22 | 703 | 0.2+ | 0.5− |
| 2000 10 02 | 704 | 0.4− | 0.2− | 2005 07 26 | 644 | 0.7+ | 0.7+ | 2006 11 22 | 703 | 2.1− | 1.8+ |
| 2000 10 02 | 704 | 0.3+ | 0.2+ | 2005 07 26 | 644 | 0.3+ | 0.3+ | | | | |
| 2000 10 02 | 704 | 0.6+ | 0.1− | 2005 07 26 | 644 | 0.5+ | 0.8+ | | | | |

**(138736)∗ 2000 SV$_{199}$ = 2001 YE$_{21}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22618)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 60.46867 | | (2000.0) | | +0.55541815 | +0.83130957 |
| *n* | 0.16870697 | ω | 262.84675 | | −0.74983101 | +0.51150992 |
| *a* | 3.2437499 | Ω | 40.91548 | | −0.35953321 | +0.21744424 |
| *e* | 0.1366083 | *i* | 1.82504 | | −0.35953321 | +0.21744424 |
| *P* | 5.84 | *H* | 14.6 | *G* 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.1− | 0.1+ | 2004 04 12 | 699 | 0.9+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.4− |
| 2000 09 24 | 704 | 1.4− | 0.0 | 2004 04 12 | 699 | 1.2+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2000 09 24 | 704 | 0.2+ | 0.1− | 2004 04 12 | 699 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.1+ | 0.5+ | 2004 04 12 | 699 | 0.9+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2000 10 01 | 704 | 0.4+ | 0.6− | 2004 04 13 | 691 | 0.0 | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.8+ |
| 2000 10 01 | 704 | 0.6+ | 0.0 | 2004 04 13 | 691 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2000 10 01 | 699 | 0.4− | 0.1− | 2004 04 13 | 691 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 1.0− | 0.9+ |
| 2000 10 01 | 704 | 0.5+ | 0.7− | 2004 04 21 | 704 | 0.8− | 0.3− | 2006 10 21 | 703 | 0.4− | 1.0+ |
| 2000 10 01 | 699 | 0.0 | 1.1+ | 2004 04 21 | 704 | 1.1− | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2000 10 01 | 699 | 0.1− | 1.1+ | 2004 04 21 | 704 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 10 01 | 699 | 1.0− | 1.0+ | 2004 04 21 | 704 | (0.5− | 2.2+) | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 10 02 | 704 | 0.0 | 0.3− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2000 10 02 | 704 | 0.1− | 0.5− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2000 10 02 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.9+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2000 10 02 | 704 | 0.1− | 1.1− | 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2001 12 18 | 704 | 0.3− | 0.9− | 2006 09 18 | 699 | 0.8+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.0 | 0.9− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 12 18 | 704 | 0.2− | 1.0− | 2006 09 18 | 699 | 0.3− | 0.8− | 2006 11 01 | 691 | 0.2− | 0.6+ |
| 2001 12 18 | 704 | 0.1− | 0.7− | 2006 09 18 | 699 | (1.6− | 0.1+) | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.1− | 0.6− | 2006 09 18 | 699 | (2.8− | 0.4−) | 2006 11 01 | 691 | 0.2− | 0.7+ |
| 2001 12 18 | 704 | 0.5− | 0.4− | 2006 09 20 | 644 | 0.0 | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.7− | 0.8− | 2006 09 20 | 644 | 0.1+ | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.6+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 12 18 | 704 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2001 12 19 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 09 25 | G96 | 1.1− | 0.2+ | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 2001 12 19 | 704 | 0.8+ | 1.0+ | 2006 09 29 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 691 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2001 12 19 | 704 | 1.1+ | 0.7+ | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.6− | 0.7+ | 2006 10 03 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2001 12 19 | 704 | (1.5+ | 1.7+) | 2006 10 14 | A50 | 0.0 | 0.8− | 2006 11 17 | 703 | 2.2+ | 0.0 |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 10 14 | A50 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.6+ | 0.0 |
| 2004 03 27 | 704 | 1.3+ | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.3− | 2006 11 17 | 703 | 1.1− | 1.1+ |
| 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 0.2+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.4− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 0.4+ | 0.7− | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 03 27 | 704 | 1.1+ | 0.8− | 2006 10 19 | 644 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.1− |

**(138737)∗ 2000 SX$_{201}$ = 2002 AG$_{96}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22619)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 358.88414 | | (2000.0) | | +0.69885777 | −0.71461086 |
| *n* | 0.17822926 | ω | 342.22731 | | +0.66030768 | +0.62819754 |
| *a* | 3.1271596 | Ω | 63.42454 | | +0.27493924 | +0.30773231 |
| *e* | 0.1538005 | *i* | 1.95318 | | +0.27493924 | +0.30773231 |
| *P* | 5.53 | *H* | 15.8 | *G* 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.6− | 0.2+ | 2002 01 14 | 704 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2000 09 24 | 704 | 0.0 | 0.8+ | 2002 01 18 | 704 | 0.9+ | 0.5− | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2000 09 24 | 704 | 0.7− | 0.4+ | 2002 01 18 | 704 | 1.2+ | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2000 09 29 | 691 | 0.2− | 0.3+ | 2002 01 18 | 704 | 0.7+ | 0.9+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2000 09 29 | 691 | 0.5− | 0.1+ | 2002 01 23 | 704 | (1.1− | 2.1+) | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2000 09 29 | 691 | 0.3− | 0.3+ | 2002 01 23 | 704 | 1.1− | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2000 10 01 | 704 | 0.2+ | 0.7+ | 2002 01 23 | 704 | (1.7− | 0.1+) | 2006 11 18 | 704 | (2.9− | 0.6+) |
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2003 03 23 | 291 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.3− |
| 2000 10 01 | 704 | 0.1+ | 0.9+ | 2003 03 23 | 291 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.7+ | 0.4− |
| 2000 10 01 | 699 | 1.1+ | 0.0 | 2003 03 23 | 291 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.9+ |
| 2000 10 01 | 699 | 0.7− | 1.1+ | 2005 07 18 | 644 | 0.7− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2000 10 01 | 699 | 0.7− | 0.3+ | 2005 07 18 | 644 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2000 10 01 | 699 | 0.2− | 0.0 | 2005 07 18 | 644 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2000 10 02 | 704 | 0.2− | 0.2+ | 2005 10 28 | G96 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2000 10 02 | 704 | 0.5− | 0.7+ | 2005 10 28 | G96 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.9+ | 0.5+ |
| 2000 10 02 | 704 | 0.9− | 0.8− | 2005 10 28 | G96 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.2+ | 1.0+ |
| 2000 10 02 | 645 | 0.2+ | 0.1− | 2005 10 28 | G96 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.4− | 1.1+ |
| 2000 10 02 | 645 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2001 12 19 | 704 | 1.5− | 0.2− | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.7+ | 0.5+ |
| 2001 12 19 | 704 | 0.4− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.8− | 0.7− |
| 2001 12 19 | 704 | 0.6− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.9− | 0.4+ |
| 2001 12 19 | 704 | 0.4− | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.6− | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 2002 01 08 | 704 | (0.6− | 1.6+) | 2006 10 17 | G96 | 0.6− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2002 01 08 | 704 | 0.2+ | 0.9+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2002 01 08 | 704 | 0.3+ | 1.5+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.1− | 0.6− |
| 2002 01 08 | 704 | 0.4+ | 1.5+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.6− | 0.5− |
| 2002 01 08 | 704 | 0.0 | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.0 | 1.2+ |
| 2002 01 09 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.3− | 0.5− | 2006 11 27 | 703 | 0.0 | 0.5+ |
| 2002 01 09 | 691 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | (1.0+ | 3.1+) |
| 2002 01 09 | 691 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.6+ |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.3− | 2006 11 29 | 704 | 1.4+ | 0.8− |
| 2002 01 14 | 645 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.0 |
| 2002 01 14 | 704 | 0.2− | 0.6− | 2006 11 10 | 691 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.6+ |
| 2002 01 14 | 704 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | 1.0+ | 0.6− |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1− | 0.3− | 2006 11 29 | 704 | 1.3+ | 0.4− |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1− | 0.1− | | | | |

**(138738)∗ 2000 SZ$_{203}$ = 1994 PH$_{12}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 4849)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.15999 | | (2000.0) | | +0.55478878 | −0.83198991 |
| $n$ | 0.17739953 | $\omega$ | 235.52158 | | +0.79443056 | +0.53027251 |
| $a$ | 3.1369029 | $\Omega$ | 180.78683 | | +0.24716291 | +0.16310690 |
| $e$ | 0.0617717 | $i$ | 6.21473 | | | |
| $P$ | 5.56 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 0.3− | 0.1− | 2003 03 31 | 704 | 0.3− | 1.0+ | 2006 10 20 | 703 | 0.2− | 0.8− |
| 1992 03 25 | 691 | 0.2− | 0.6+ | 2003 03 31 | 704 | 1.2+ | 0.4+ | 2006 10 20 | 703 | 0.6+ | 0.2− |
| 1992 03 25 | 691 | 0.3− | 0.1+ | 2003 03 31 | 704 | 1.2+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 1994 08 10 | 809 | 0.8+ | 1.5+ | 2003 03 31 | 699 | 0.5− | 0.7+ | 2006 10 20 | 644 | 0.6+ | 0.1+ |
| 1994 08 10 | 809 | 1.1+ | 1.9+ | 2003 03 31 | 704 | 1.3+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1994 08 10 | 809 | 0.9+ | 0.2− | 2003 03 31 | 704 | 0.0 | 0.6+ | 2006 10 30 | 703 | 0.2+ | 0.3+ |
| 1994 08 11 | 809 | (2.3+ | 4.3+) | 2003 03 31 | 704 | 1.2+ | 0.5+ | 2006 10 30 | 703 | 0.2− | 0.5+ |
| 1994 08 11 | 809 | (0.3− | 2.5+) | 2003 03 31 | 704 | 0.7+ | 0.4+ | 2006 10 30 | 703 | 0.4+ | 0.4+ |
| 1994 08 11 | 809 | (0.8+ | 4.7+) | 2005 07 30 | 644 | 0.3+ | 0.3+ | 2006 10 30 | 703 | 0.7− | 0.4+ |
| 2000 09 03 | 691 | 0.3+ | 0.1+ | 2005 07 30 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 683 | 0.6− | 0.2− |
| 2000 09 03 | 691 | 0.3+ | 0.1+ | 2005 07 30 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 683 | 1.2+ | 1.3− |
| 2000 09 03 | 691 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 11 11 | 683 | 0.9− | 0.7− |
| 2000 09 23 | 699 | 0.8− | 0.7+ | 2005 08 06 | 644 | 0.0 | 0.3+ | 2006 11 14 | 683 | 0.1+ | 0.5+ |
| 2000 09 23 | 699 | 0.2− | 0.1+ | 2005 08 06 | 644 | 0.0 | 0.4+ | 2006 11 14 | 683 | 0.2− | 1.4+ |
| 2000 09 23 | 699 | 0.1+ | 0.0 | 2005 08 24 | 644 | 0.1− | 0.4+ | 2006 11 14 | 683 | 0.6+ | 1.3+ |
| 2000 09 23 | 699 | 0.7+ | 1.1− | 2005 08 24 | 644 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.5+ | 0.6− |
| 2000 09 24 | 704 | 0.1− | 0.5− | 2005 08 24 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.0 |
| 2000 09 24 | 704 | 0.9− | 0.5− | 2005 08 26 | 699 | 0.7+ | 0.3− | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 2000 09 24 | 704 | 0.7− | 0.1+ | 2005 08 26 | 699 | 0.7− | 0.9+ | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2000 09 24 | 704 | 0.0 | 0.3− | 2005 08 26 | 699 | 0.6− | 0.8+ | 2006 11 17 | 704 | 0.3− | 0.8+ |
| 2000 09 24 | 704 | 0.2− | 0.1− | 2005 08 26 | 699 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.8+ |
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2005 08 29 | 699 | 1.2− | 0.4+ | 2006 11 19 | 704 | 0.9− | 0.2− |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2005 08 29 | 699 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2000 10 01 | 704 | 0.3− | 0.2+ | 2005 08 29 | 699 | 1.2− | 1.1+ | 2006 11 19 | 704 | 0.0 | 1.3+ |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2005 08 29 | 699 | 0.1+ | 0.9+ | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2000 10 01 | 704 | 0.3+ | 0.4− | 2005 10 25 | G96 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.6+ | 1.0+ |
| 2000 10 06 | 608 | 1.0− | 0.6− | 2005 10 25 | G96 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2000 10 06 | 608 | 1.1− | 0.5− | 2005 10 25 | G96 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.4− |
| 2000 10 06 | 608 | 0.8− | 0.4− | 2005 10 25 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.1+ |
| 2002 01 09 | 704 | 0.1− | 0.2+ | 2005 11 30 | G96 | 0.1− | 0.2− | 2006 11 25 | 704 | 0.3− | 0.1+ |
| 2002 01 09 | 704 | 0.6+ | 0.1+ | 2005 11 30 | G96 | 0.4− | 0.0 | 2006 11 25 | 704 | 0.8− | 0.3+ |
| 2002 01 09 | 704 | 0.8+ | 1.5− | 2005 11 30 | G96 | 0.5+ | 0.1+ | 2006 11 25 | 704 | 0.0 | 0.3− |
| 2003 03 30 | 291 | 0.5+ | 0.6+ | 2005 11 30 | G96 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2003 03 30 | 291 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.4− | 0.7+ |
| 2003 03 30 | 291 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 11 28 | 704 | 0.4− | 0.1− |
| 2003 03 31 | 699 | 1.1− | 0.0 | 2006 10 16 | 703 | (0.0 | 1.7−) | 2006 11 28 | 704 | 1.0− | 0.6+ |
| 2003 03 31 | 699 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.4+ |
| 2003 03 31 | 699 | 0.0 | 0.5− | 2006 10 20 | 703 | 0.0 | 0.6− | | | | |
| 2003 03 31 | 704 | 0.7− | 0.1− | 2006 10 20 | 703 | 1.4− | 0.6+ | | | | |

**(138739)∗ 2000 SF$_{206}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.62433 | | (2000.0) | | +0.90036980 | −0.43510650 |
| $n$ | 0.16614882 | $\omega$ | 201.16822 | | +0.40610962 | +0.84364971 |
| $a$ | 3.2769605 | $\Omega$ | 184.62994 | | +0.15623442 | +0.31454331 |
| $e$ | 0.2405979 | $i$ | 2.88878 | | | |
| $P$ | 5.93 | $H$ | 15.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.3− | 0.2− | 2000 11 02 | 704 | 0.3− | 0.4+ | 2006 10 28 | 704 | 0.2− | 0.4+ |
| 1995 12 26 | 691 | 0.2− | 0.6− | 2000 11 02 | 704 | 0.3+ | 0.8− | 2006 10 28 | 683 | 0.3− | 0.6− |
| 1995 12 26 | 691 | 0.5− | 0.1+ | 2000 11 02 | 704 | 0.4+ | 1.0+ | 2006 10 28 | 704 | 0.5+ | 0.2− |
| 1995 12 26 | 691 | 0.1− | 0.2− | 2000 11 02 | 704 | 0.3+ | 0.4− | 2006 10 28 | 683 | 0.8− | 1.0− |
| 1996 01 29 | 691 | 0.3+ | 0.2− | 2002 02 11 | 704 | 0.7− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 1996 01 29 | 691 | 0.2+ | 0.2− | 2002 02 11 | 704 | 0.0 | 1.4+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 1996 01 29 | 691 | 0.3+ | 0.4+ | 2002 02 11 | 704 | 0.6+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2000 09 24 | 704 | 0.0 | 0.1− | 2002 02 11 | 704 | 0.9+ | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.5+ | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2000 09 24 | 704 | 1.0+ | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.8+ | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 2000 10 01 | 704 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2000 10 01 | 704 | 0.9− | 0.2+ | 2006 07 22 | G96 | 1.0− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 1.4− |
| 2000 10 01 | 704 | 0.5− | 0.1− | 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2000 10 01 | 704 | 0.3− | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2000 10 01 | 704 | 0.4− | 0.7− | 2006 07 22 | G96 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2000 10 02 | 704 | 0.7− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2000 10 02 | 704 | 0.5− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2000 10 02 | 704 | 0.8+ | 0.6− | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.7+ | 0.5+ |
| 2000 10 02 | 704 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.6+ | 0.5+ |
| 2000 10 02 | 704 | 0.4− | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.2+ |
| 2000 10 07 | 699 | 0.6− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.1+ |
| 2000 10 07 | 699 | 0.6− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (0.2+ | 4.9+) |
| 2000 10 07 | 699 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | (0.0 | 1.8+) |
| 2000 10 07 | 699 | 0.5− | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.8+ |
| 2000 10 22 | 106 | 0.3+ | 1.5− | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2000 10 22 | 106 | 0.2+ | 1.0− | 2006 10 16 | 703 | 0.6− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2000 10 22 | 106 | 1.5+ | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2000 10 24 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.5+ | 2006 11 19 | 704 | 0.6− | 0.2+ |
| 2000 10 24 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.9+ |
| 2000 10 24 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.7+ |
| 2000 10 27 | 704 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 27 | 704 | 0.9− | 0.5− | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2000 10 27 | 704 | 0.3+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2000 10 27 | 704 | 0.7− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2000 10 27 | 704 | 0.7− | 0.3− | 2006 10 23 | 691 | 0.0 | 0.3− | 2006 11 26 | 704 | 0.2+ | 0.3+ |
| 2000 10 31 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 26 | 704 | 1.0+ | 0.1+ |
| 2000 10 31 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 26 | 704 | 0.6+ | 0.3+ |
| 2000 10 31 | 704 | 0.5+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2000 10 31 | 704 | 0.6− | 0.3+ | 2006 10 28 | 704 | 1.2+ | 0.8+ | 2006 11 28 | 704 | 1.5− | 0.6+ |
| 2000 10 31 | 704 | 0.4− | 0.3+ | 2006 10 28 | 683 | (0.8− | 1.6+) | 2006 11 28 | 704 | 0.7− | 0.3+ |
| 2000 11 02 | 704 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.1+ | 0.7+ | 2006 11 28 | 704 | 0.8− | 0.8+ |

**(138740)∗ 2000 SB$_{209}$**

Discovered 2000 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.60952 | | (2000.0) | | | |
| $n$ | 0.17152766 | $\omega$ | 2.57805 | | +0.74843166 | −0.64785519 |
| $a$ | 3.2080904 | $\Omega$ | 39.03013 | | +0.60438245 | +0.57815639 |
| $e$ | 0.1525012 | $i$ | 13.02195 | | +0.27307857 | +0.49600286 |
| $P$ | 5.75 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 1.2− | 0.7+ | 2003 03 26 | 691 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.6+ | 0.2+ |
| 2000 09 23 | 699 | 0.4− | 0.5+ | 2003 03 26 | 691 | 0.1− | 0.5+ | 2006 10 23 | 704 | (0.5− | 2.2+) |
| 2000 09 23 | 699 | 0.4− | 0.5+ | 2003 03 26 | 691 | 0.4+ | 0.6+ | 2006 10 28 | 704 | 0.5+ | 1.4− |
| 2000 09 23 | 699 | 0.7− | 0.1− | 2003 03 30 | 291 | 0.3+ | 0.6+ | 2006 10 28 | 704 | 0.7− | 0.6+ |
| 2000 09 25 | 704 | 0.8− | 1.8+ | 2003 03 30 | 291 | 0.3+ | 0.5+ | 2006 10 28 | 704 | 0.4− | 0.5+ |
| 2000 09 25 | 704 | 0.6+ | 1.0− | 2003 03 30 | 291 | 0.4+ | 0.6+ | 2006 10 28 | 704 | 0.4− | 0.4− |
| 2000 09 25 | 704 | 0.1+ | 0.9+ | 2003 04 01 | 645 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2000 09 25 | 704 | 0.3+ | 0.1+ | 2003 04 01 | 645 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.2− | 1.8+ | 2005 08 06 | E12 | 0.6+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2000 10 01 | 704 | 0.2+ | 0.3− | 2005 08 06 | E12 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2005 08 06 | E12 | 0.8+ | 0.4+ | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.3− | 0.3− | 2005 08 06 | E12 | 0.9+ | 0.0 | 2006 10 29 | 691 | 0.2− | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.1+ | 2006 09 21 | 224 | 0.3− | 0.7− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2000 10 01 | 699 | 0.7− | 0.1+ | 2006 09 21 | 224 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2000 10 01 | 699 | 0.1− | 0.8+ | 2006 09 21 | 224 | 0.6+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2000 10 01 | 699 | 0.4− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2000 10 01 | 699 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 2000 10 25 | 704 | 0.2− | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2000 10 25 | 704 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2000 10 25 | 704 | 1.1− | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2000 10 25 | 704 | 1.2− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.6+ | 2006 11 11 | 703 | (1.5− | 3.9−) |
| 2000 10 25 | 704 | 0.4+ | 0.5− | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 11 | 291 | 0.1+ | 0.0 |
| 2000 10 25 | 704 | 0.6− | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 11 | 291 | 0.1+ | 0.1− |
| 2000 10 25 | 704 | 1.6− | 1.8− | 2006 10 03 | 704 | 0.3− | 0.7+ | 2006 11 11 | 291 | 0.1+ | 0.1+ |
| 2000 10 25 | 704 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.3− |
| 2000 10 25 | 704 | 0.6− | 1.5+ | 2006 10 03 | 704 | (0.7− | 1.9+) | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2000 11 02 | 704 | 0.6− | 0.8+ | 2006 10 03 | 704 | 0.6− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.5− |
| 2000 11 02 | 704 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2000 11 02 | 704 | 0.7− | 0.9+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2000 11 02 | 704 | 0.5+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2000 11 02 | 704 | 0.8+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.6− |
| 2001 12 15 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 1.1− | 0.2− |
| 2001 12 15 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2001 12 18 | 645 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2001 12 23 | 704 | 1.4+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2001 12 23 | 704 | 1.0+ | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2001 12 23 | 704 | 0.9+ | 0.5− | 2006 10 19 | 644 | 0.4− | 0.1+ | 2006 11 18 | 704 | (2.3− | 0.0 ) |
| 2001 12 23 | 704 | 1.2+ | 0.5− | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2001 12 23 | 704 | (1.7+ | 0.2−) | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.9− |
| 2002 01 05 | 699 | 1.0+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.4+ |
| 2002 01 05 | 699 | 1.2− | 0.6+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.2− | 0.4− |
| 2002 01 05 | 699 | 0.1− | 1.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 1.2− | 0.5− |
| 2002 01 05 | 699 | 0.0 | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 01 14 | 644 | (1.5+ | 1.6+) | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 1.2− | 0.8+ |
| 2002 01 14 | 644 | 0.5+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4− | 1.4+ |
| 2002 01 14 | 644 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.4− |
| 2002 01 14 | 644 | (1.4+ | 1.5+) | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.9+ | 0.2− |
| 2002 01 14 | 644 | 0.6+ | 0.8+ | 2006 10 21 | H07 | 0.1− | 1.2− | 2006 11 28 | 704 | 0.1− | 1.4+ |
| 2002 01 14 | 644 | (1.2+ | 1.6+) | 2006 10 21 | H07 | 0.1− | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2002 01 23 | 704 | 0.2+ | 1.2− | 2006 10 21 | H07 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.3− | 0.0 |
| 2002 01 23 | 704 | 0.9+ | 0.7− | 2006 10 23 | 704 | (0.8+ | 1.6+) | 2006 11 28 | 704 | 0.6− | 0.7+ |
| 2002 01 23 | 704 | (1.3+ | 1.8+) | 2006 10 23 | 704 | 0.2+ | 0.8− | | | | |

**(138741)∗ 2000 SE$_{213}$ = 2002 CO$_{29}$**

Discovered 2000 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25228)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.67514 | | (2000.0) | | | |
| $n$ | 0.17589390 | $\omega$ | 326.75555 | | +0.51920464 | −0.84375883 |
| $a$ | 3.1547785 | $\Omega$ | 91.62327 | | +0.81080413 | +0.43597448 |
| $e$ | 0.1791105 | $i$ | 7.81994 | | +0.27022806 | +0.31304518 |
| $P$ | 5.60 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 704 | (0.2+ | 2.2+) | 2002 02 06 | 704 | 0.6− | 0.4− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2000 09 25 | 704 | 0.7+ | 0.4+ | 2002 02 06 | 704 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2000 09 25 | 704 | 0.7+ | 1.0+ | 2002 02 06 | 704 | 0.5+ | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.2+ |
| 2000 10 01 | 704 | 0.7− | 0.5− | 2002 02 08 | 704 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2002 02 08 | 704 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.4+ |
| 2000 10 01 | 704 | 0.3+ | 0.5− | 2002 02 08 | 704 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 2000 10 01 | 704 | 0.2+ | 0.6− | 2002 02 12 | 704 | (0.3− | 2.4+) | 2006 11 20 | 704 | 0.1+ | 0.5− |
| 2000 10 01 | 704 | 1.3− | 0.1− | 2002 02 12 | 704 | (0.2− | 2.3+) | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2000 11 03 | 704 | 0.6− | 1.5+ | 2002 02 12 | 704 | (1.8+ | 2.7+) | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2000 11 03 | 704 | 0.3− | 1.0+ | 2005 07 03 | 644 | 0.6− | 0.2− | 2006 11 20 | 704 | 0.2− | 0.2− |
| 2000 11 03 | 704 | 0.3+ | 0.5− | 2005 07 03 | 644 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.9− |
| 2002 01 08 | 704 | 0.3+ | 0.2− | 2005 07 03 | 644 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2002 01 08 | 704 | 0.6− | 0.6+ | 2005 09 01 | 644 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2002 01 08 | 704 | 0.9+ | 0.7+ | 2005 09 01 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.1− |
| 2002 01 08 | 704 | 0.1+ | 0.8+ | 2005 09 01 | 644 | 0.8+ | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.3− |
| 2002 02 04 | 644 | (0.4+ | 1.8+) | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.4− |
| 2002 02 04 | 644 | (0.5+ | 1.8+) | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.0 |
| 2002 02 04 | 644 | (0.5+ | 1.8+) | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.3− | 0.0 |
| 2002 02 06 | 704 | 0.1+ | 0.2− | 2006 10 23 | G96 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2002 02 06 | 704 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.1+ |

**(138742)∗ 2000 SR$_{223}$ = 2004 ED$_{2}$**

Discovered 2000 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60718)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.66982 | | (2000.0) | | | |
| $n$ | 0.17353263 | $\omega$ | 253.97254 | | −0.00061982 | +0.99163898 |
| $a$ | 3.1833321 | $\Omega$ | 17.58598 | | −0.67333174 | +0.09499186 |
| $e$ | 0.2195008 | $i$ | 25.28346 | | −0.73934024 | −0.08734229 |
| $P$ | 5.68 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 0.1+ | 0.6+ | 2004 04 12 | 699 | 0.2− | 0.1+ | 2004 05 16 | 704 | 0.0 | 1.3+ |
| 2000 09 27 | 704 | 1.0− | 0.0 | 2004 04 12 | 683 | (0.5− | 2.7−) | 2004 05 16 | 704 | (0.3+ | 1.6+) |
| 2000 09 27 | 704 | 0.3− | 0.6− | 2004 04 12 | 699 | 0.6+ | 0.5+ | 2004 05 16 | 704 | 1.2+ | 1.1+ |
| 2000 09 27 | 704 | 0.4− | 0.4+ | 2004 04 12 | 683 | (0.5− | 1.5−) | 2004 05 23 | 699 | 0.6+ | 0.7+ |
| 2000 09 27 | 704 | 0.9− | 0.1− | 2004 04 12 | 699 | 0.5+ | 0.6+ | 2004 05 23 | 699 | 0.6− | 0.8+ |
| 2000 10 01 | 704 | 0.2+ | 0.5+ | 2004 04 12 | 683 | 1.2− | 1.4− | 2004 05 23 | 699 | 1.1+ | 0.6+ |
| 2000 10 01 | 704 | 0.2− | 0.4+ | 2004 04 12 | 699 | 0.2− | 0.6+ | 2004 05 23 | 699 | 0.9+ | 0.3+ |
| 2000 10 01 | 704 | 0.2− | 0.1+ | 2004 04 13 | 683 | 0.2− | 0.3+ | 2005 06 16 | E12 | 0.3− | 0.1+ |
| 2000 10 01 | 704 | 0.0 | 0.1− | 2004 04 13 | 683 | (0.6+ | 1.5−) | 2005 06 16 | E12 | 0.2+ | 0.1+ |
| 2000 10 02 | 704 | 0.3− | 0.0 | 2004 04 13 | 683 | 0.2− | 0.3+ | 2005 06 16 | E12 | 0.5+ | 0.4+ |
| 2000 10 02 | 704 | 1.4− | 1.3+ | 2004 04 14 | 683 | 0.6− | 1.1− | 2005 06 16 | E12 | 0.2− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.2− | 0.6+ | 2004 04 14 | 683 | 0.5− | 0.5− | 2005 07 03 | E12 | 0.0 | 0.2+ | |
| 2000 10 02 | 704 | 0.1+ | 0.3+ | 2004 04 14 | 683 | 0.1− | 0.1+ | 2005 07 03 | E12 | 0.4− | 0.1+ | |
| 2000 10 02 | 704 | 0.5− | 0.2+ | 2004 04 15 | 644 | 0.2+ | 0.2+ | 2005 07 03 | E12 | 0.3+ | 1.0+ | |
| 2000 11 02 | 704 | 0.9− | 0.7+ | 2004 04 15 | 644 | 0.2− | 0.3+ | 2005 07 03 | E12 | 0.5− | 0.0 | |
| 2000 11 02 | 704 | 0.3− | 1.2+ | 2004 04 15 | 699 | 0.1+ | 0.1+ | 2005 07 28 | E12 | 0.3− | 0.5+ | |
| 2000 11 02 | 704 | 0.9− | 0.8+ | 2004 04 15 | 683 | 0.9+ | 0.6− | 2005 07 28 | E12 | (1.6− | 0.3+) | |
| 2000 11 02 | 704 | 1.1− | 0.1+ | 2004 04 15 | 644 | 0.1+ | 0.2+ | 2005 07 28 | E12 | 0.6− | 0.3− | |
| 2000 11 25 | 691 | 0.2+ | 0.0 | 2004 04 15 | 683 | (1.9+ | 1.7−) | 2005 07 28 | E12 | 0.2− | 1.3+ | |
| 2000 11 25 | 691 | 0.1− | 0.1+ | 2004 04 15 | 699 | 0.2− | 0.4+ | 2005 08 10 | E12 | 0.7− | 0.6+ | |
| 2000 11 25 | 691 | 0.1+ | 0.0 | 2004 04 15 | 683 | (1.5− | 2.1−) | 2005 08 10 | E12 | 0.1− | 0.3+ | |
| 2004 02 25 | 704 | 1.0+ | 0.6− | 2004 04 15 | 699 | 1.0+ | 0.2− | 2005 08 10 | E12 | 0.2− | 0.1+ | |
| 2004 02 25 | 704 | 0.1+ | 0.3− | 2004 04 15 | 699 | 0.4− | 1.3+ | 2005 08 10 | E12 | 0.1− | 0.2+ | |
| 2004 02 25 | 704 | 1.3+ | 0.6+ | 2004 04 16 | 683 | 0.8+ | 0.1+ | 2005 08 25 | E12 | 0.4+ | 0.5+ | |
| 2004 03 12 | 644 | 0.0 | 0.1+ | 2004 04 16 | 683 | 0.5+ | 0.6+ | 2005 08 25 | E12 | 0.4+ | 1.0− | |
| 2004 03 12 | 644 | 0.0 | 0.1− | 2004 04 16 | 683 | 0.0 | 1.2+ | 2005 08 25 | E12 | 0.7− | 0.2+ | |
| 2004 03 12 | 644 | 0.2+ | 0.3− | 2004 04 19 | 704 | 0.1+ | 0.6+ | 2005 08 25 | E12 | 1.0− | 0.7+ | |
| 2004 03 14 | 691 | 0.0 | 0.2− | 2004 04 19 | 704 | 0.1+ | 0.6+ | 2005 09 02 | E12 | 0.0 | 0.6+ | |
| 2004 03 14 | 691 | 0.0 | 0.2− | 2004 04 19 | 704 | 0.0 | 0.8+ | 2005 09 02 | E12 | 0.6− | 0.2+ | |
| 2004 03 14 | 691 | 0.0 | 0.3− | 2004 04 19 | 704 | 0.4+ | 0.7+ | 2005 09 02 | E12 | 0.7+ | 0.1− | |
| 2004 03 16 | 704 | 0.3+ | 0.5− | 2004 04 19 | 704 | 0.5− | 0.4− | 2005 09 02 | E12 | 0.1− | 0.3− | |
| 2004 03 16 | 704 | 0.4+ | 0.0 | 2004 04 20 | 683 | 0.3+ | 0.2+ | 2006 09 28 | 703 | (2.2− | 1.0+) | |
| 2004 03 16 | 704 | 0.5+ | 0.1− | 2004 04 20 | 683 | 0.6+ | 0.2− | 2006 09 28 | 703 | 1.2− | 1.3+ | |
| 2004 03 16 | 704 | 0.9+ | 0.4− | 2004 04 20 | 683 | 1.2− | 0.4− | 2006 09 28 | 703 | 0.1− | 0.3− | |
| 2004 03 16 | 704 | 1.0+ | 0.3+ | 2004 04 21 | 683 | (1.7− | 2.9−) | 2006 09 28 | 703 | 0.0 | 0.6− | |
| 2004 03 20 | 704 | 0.4+ | 0.0 | 2004 04 21 | 683 | 0.6+ | 0.9+ | 2006 10 19 | 703 | 0.4− | 0.1+ | |
| 2004 03 20 | 704 | 1.4+ | 0.6+ | 2004 04 21 | 683 | 1.1+ | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.6+ | |
| 2004 03 20 | 704 | 0.4+ | 0.3− | 2004 04 22 | 704 | 1.3+ | 0.6− | 2006 10 19 | 703 | 0.1+ | 0.2+ | |
| 2004 03 20 | 704 | 0.7+ | 0.6+ | 2004 04 22 | 704 | 0.3+ | 0.9+ | 2006 10 19 | 703 | (1.7− | 0.6+) | |
| 2004 03 20 | 704 | 0.8+ | 0.2− | 2004 04 22 | 704 | 0.6+ | 0.4+ | 2006 10 19 | A50 | 0.3− | 0.7+ | |
| 2004 03 21 | 699 | 0.7+ | 0.1− | 2004 04 22 | 704 | 0.2+ | 0.9+ | 2006 10 19 | A50 | 0.1+ | 0.1− | |
| 2004 03 21 | 699 | 0.3− | 0.4+ | 2004 04 22 | 704 | 1.1+ | 0.5+ | 2006 10 27 | 703 | 0.0 | 1.0+ | |
| 2004 03 21 | 699 | 0.0 | 0.1− | 2004 04 23 | 703 | 1.0− | 0.3− | 2006 10 27 | 703 | 0.5− | 1.4+ | |
| 2004 03 21 | 699 | 0.1− | 0.7− | 2004 04 23 | 703 | 0.8+ | 1.3+ | 2006 10 27 | 703 | 0.5+ | 0.5+ | |
| 2004 03 22 | 704 | 1.0− | 0.6+ | 2004 04 23 | 703 | 1.5− | 0.2− | 2006 10 27 | 703 | 0.0 | 0.5+ | |
| 2004 03 22 | 704 | 0.5+ | 1.3− | 2004 04 23 | 703 | 1.2− | 0.7+ | 2006 11 15 | 703 | 0.9− | 0.5+ | |
| 2004 03 22 | 704 | 0.6+ | 0.0 | 2004 04 28 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 1.2− | 0.2− | |
| 2004 03 22 | 704 | 0.4+ | 0.0 | 2004 04 28 | 691 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 1.5− | 0.3+ | |
| 2004 03 22 | 704 | 0.4+ | 0.0 | 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 11 15 | 703 | (1.7− | 0.4−) | |
| 2004 03 24 | 699 | 0.5− | 0.1+ | 2004 05 14 | 608 | 0.4− | 0.5+ | 2006 11 15 | 703 | 0.4− | 0.7+ | |
| 2004 03 24 | 699 | 0.2− | 0.5+ | 2004 05 14 | 608 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.7− | 0.3− | |
| 2004 03 24 | 699 | 0.1− | 0.2+ | 2004 05 14 | 608 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 1.3+ | |
| 2004 03 24 | 699 | 0.3− | 0.0 | 2004 05 16 | 704 | (0.4+ | 1.7+) | 2006 11 15 | 703 | 1.2− | 0.1− | |

**(138743)∗ 2000 SC$_{225}$**

Discovered 2000 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.10644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19995709 | $\omega$ | 43.93288 | | +0.85771028 | −0.51410629 | |
| $a$ | 2.8963087 | $\Omega$ | 347.00188 | | +0.46500209 | +0.78008070 | |
| $e$ | 0.0760234 | $i$ | 1.34331 | | +0.21933112 | +0.35660739 | |
| $P$ | 4.93 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 25 | 691 | 0.6+ | 0.1− | 2002 02 05 | 644 | 0.2− | 0.8+ | 2005 10 23 | 703 | 0.5+ | 0.4+ | |
| 1990 09 25 | 691 | 0.7+ | 0.5− | 2002 02 10 | 704 | 0.4− | 0.1− | 2005 10 23 | 703 | 0.8+ | 0.2+ | |
| 1990 09 25 | 691 | 0.1+ | 0.5+ | 2002 02 10 | 704 | 0.1+ | 0.1+ | 2005 10 23 | 703 | 0.2+ | 0.5− | |
| 1995 10 18 | 691 | 0.5− | 0.3+ | 2002 02 10 | 704 | 0.0 | 0.5+ | 2005 10 23 | 703 | 0.1+ | 0.7+ | |
| 1995 10 18 | 691 | 0.5− | 0.1+ | 2002 02 10 | 704 | 0.0 | 0.3+ | 2005 10 23 | 703 | 0.6+ | 0.4− | |
| 1995 10 18 | 691 | 0.5− | 0.2+ | 2002 02 12 | 691 | 0.2+ | 0.4− | 2005 10 24 | 699 | 1.4+ | 0.4+ | |
| 2000 09 27 | 704 | 0.3− | 0.3+ | 2002 02 12 | 704 | 0.1− | 0.1− | 2005 10 24 | 699 | 0.6+ | 0.4+ | |
| 2000 09 27 | 704 | 0.5− | 1.4+ | 2002 02 12 | 704 | 1.0+ | 0.5+ | 2005 10 24 | 699 | 0.3+ | 0.8− | |
| 2000 09 27 | 704 | 0.5− | 1.5+ | 2002 02 12 | 691 | 0.3+ | 0.2− | 2005 10 24 | 699 | (1.5+ | 0.6+) | |
| 2000 09 27 | 704 | 0.9− | 0.3+ | 2002 02 12 | 704 | 0.4+ | 0.7+ | 2005 10 24 | 683 | 0.3+ | 0.8+ | |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2002 02 12 | 704 | (2.3+ | 0.6+) | 2005 10 24 | 683 | 1.4+ | 0.4+ | |
| 2000 10 01 | 704 | 0.1− | 0.5+ | 2002 02 12 | 691 | 0.4+ | 0.2− | 2005 10 24 | 683 | (2.3+ | 2.4+) | |
| 2000 10 01 | 704 | 0.7− | 0.3+ | 2002 02 12 | 704 | 0.1+ | 0.4+ | 2005 10 25 | 683 | 1.2+ | 0.2− | |
| 2000 10 01 | 704 | 0.1− | 0.2− | 2003 05 05 | 691 | (0.5+ | 1.9+) | 2005 10 25 | 683 | 0.7+ | 1.3− | |
| 2000 10 01 | 704 | 0.1+ | 0.4+ | 2003 05 05 | 691 | 0.8+ | 1.3+ | 2005 10 25 | 683 | 0.2− | 0.8+ | |
| 2000 10 03 | 704 | 0.5− | 0.3− | 2003 05 05 | 691 | 0.4+ | 1.3+ | 2005 10 29 | 703 | 0.4+ | 0.1+ | |
| 2000 10 03 | 704 | 1.0− | 0.9− | 2005 09 24 | 691 | 0.0 | 0.0 | 2005 10 29 | 703 | 0.1+ | 0.1+ | |
| 2000 10 03 | 704 | 1.2+ | 0.0 | 2005 09 24 | 691 | 0.2+ | 0.1+ | 2005 10 29 | 703 | 0.6− | 0.6− | |
| 2000 10 03 | 704 | 0.2− | 0.9− | 2005 09 24 | 691 | 0.2+ | 0.1− | 2005 10 29 | 703 | 0.2− | 0.3− | |
| 2000 10 03 | 704 | 0.8− | 0.0 | 2005 09 29 | 699 | 0.9− | 0.0 | 2005 10 29 | 703 | 0.5− | 0.4+ | |
| 2000 10 04 | 704 | 0.2+ | 0.1+ | 2005 09 29 | 699 | 0.3− | 0.1− | 2005 10 29 | 703 | 0.2− | 0.1− | |
| 2000 10 04 | 704 | 0.1+ | 1.4+ | 2005 09 29 | 699 | 0.4+ | 0.1+ | 2005 10 29 | 703 | 0.4− | 0.0 | |
| 2000 10 04 | 704 | 0.2+ | 1.3− | 2005 09 29 | 699 | 1.1+ | 0.7+ | 2005 10 29 | 703 | 0.1− | 0.0 | |
| 2000 10 05 | 704 | 0.6+ | 0.0 | 2005 09 30 | 691 | 0.1+ | 0.1+ | 2005 10 30 | 691 | 0.6− | 0.6+ | |
| 2000 10 05 | 704 | 0.5− | 0.2− | 2005 09 30 | 691 | 0.2+ | 0.1− | 2005 10 30 | 691 | 0.1+ | 0.3− | |
| 2000 10 05 | 704 | 0.3+ | 0.6− | 2005 09 30 | 691 | 0.1+ | 0.0 | 2005 10 30 | 691 | 0.2+ | 0.2− | |
| 2000 10 05 | 704 | 0.2− | 0.1+ | 2005 10 02 | G96 | 0.4− | 0.1− | 2005 11 05 | 704 | 0.3+ | 0.1+ | |
| 2000 10 05 | 704 | 0.7− | 0.1+ | 2005 10 02 | G96 | 0.6− | 0.1+ | 2005 11 05 | 704 | 0.2− | 0.0 | |
| 2000 10 05 | 704 | 0.2+ | 0.9− | 2005 10 02 | G96 | 0.6− | 0.1− | 2005 11 05 | 704 | 0.5− | 0.2+ | |
| 2000 10 05 | 704 | 0.3− | 1.8− | 2005 10 02 | G96 | 0.5− | 0.1− | 2005 11 05 | 704 | 0.9+ | 0.2− | |
| 2000 10 05 | 704 | 0.8+ | 0.2+ | 2005 10 03 | G96 | 0.0 | 0.3− | 2005 11 09 | 703 | (0.4+ | 2.4+) | |
| 2000 10 05 | 704 | 0.4− | 0.1− | 2005 10 03 | G96 | 0.1+ | 0.1− | 2005 11 09 | 703 | (1.1− | 2.7+) | |
| 2000 10 06 | 699 | 1.0− | 0.2+ | 2005 10 03 | G96 | 0.1+ | 0.3− | 2005 11 09 | 703 | 0.3+ | 0.6− | |
| 2000 10 06 | 699 | 1.0− | 0.4+ | 2005 10 03 | G96 | 0.3− | 0.3− | 2005 11 09 | 703 | 0.9+ | 0.7− | |
| 2000 10 06 | 699 | 0.5− | 1.2+ | 2005 10 06 | 703 | 0.2+ | 0.1+ | 2005 11 12 | 691 | 0.0 | 0.4+ | |
| 2000 10 06 | 699 | 1.1− | 0.1− | 2005 10 06 | 703 | 0.7− | 0.4+ | 2005 11 12 | 691 | 0.7− | 0.4+ | |
| 2000 10 06 | 699 | 0.1− | 1.8+ | 2005 10 06 | 703 | 1.2− | 1.3+ | 2005 11 12 | 691 | 0.2− | 0.0 | |
| 2000 10 06 | 699 | (1.3− | 2.3+) | 2005 10 06 | 703 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.3− | |
| 2000 10 06 | 699 | 0.1− | 0.4+ | 2005 10 22 | 691 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.4− | 0.2+ | |
| 2000 10 06 | 699 | 0.1− | 0.1− | 2005 10 22 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.6− | 0.3− | |
| 2002 01 14 | 704 | 0.2+ | 0.3+ | 2005 10 22 | 691 | 0.3+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.8− | |
| 2002 01 14 | 704 | 0.3− | 0.0 | 2005 10 22 | 683 | 1.2+ | 0.5− | 2006 11 16 | G96 | 0.3− | 0.1− | |
| 2002 01 14 | 704 | 0.1− | 0.3+ | 2005 10 22 | 683 | (2.1+ | 1.2−) | 2006 11 16 | G96 | 0.3− | 0.1− | |
| 2002 01 14 | 704 | 0.3− | 0.4+ | 2005 10 22 | 683 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.3− | |
| 2002 01 14 | 704 | 0.3− | 0.6+ | 2005 10 23 | 683 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.7− | 0.7− | |
| 2002 01 26 | 644 | 0.3− | 0.3+ | 2005 10 23 | 683 | 0.7− | 1.4+ | 2006 11 27 | G96 | 0.3− | 0.3− | |
| 2002 01 26 | 644 | 0.4− | 0.5+ | 2005 10 23 | 683 | 0.9− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.3− | |
| 2002 01 26 | 644 | 0.3− | 0.1+ | 2005 10 23 | 703 | 0.4− | 0.2+ | 2006 11 27 | G96 | 0.4− | 0.1− | |
| 2002 02 05 | 644 | 0.1+ | 1.4+ | 2005 10 23 | 703 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.6− | 0.4− | |
| 2002 02 05 | 644 | 0.4− | 0.4+ | 2005 10 23 | 703 | 0.1− | 0.2+ | | | | | |

**(138744)∗ 2000 SB$_{235}$ = 1995 VS$_{16}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 6051)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.21108 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18050915 | $\omega$ | 1.98801 | | +0.79115159 | −0.61136604 | |
| $a$ | 3.1007725 | $\Omega$ | 35.71960 | | +0.56073302 | +0.71351649 | |
| $e$ | 0.1981372 | $i$ | 1.73022 | | +0.24424914 | +0.34223645 | |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.1− | 0.2− | 2002 01 14 | 704 | 0.7+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.7− | |
| 1995 11 15 | 691 | 0.1− | 0.4− | 2002 01 14 | 704 | 0.8+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.0 | |
| 1995 11 15 | 691 | 0.5− | 0.4− | 2002 01 14 | 704 | 0.7+ | 1.1− | 2006 11 18 | 704 | 0.2+ | 0.0 | |
| 1995 11 20 | 691 | 0.1+ | 0.1− | 2002 01 14 | 704 | 0.7+ | 1.0− | 2006 11 18 | 704 | 0.1+ | 0.7+ | |
| 1995 11 20 | 691 | 0.2+ | 0.4− | 2002 01 14 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.0 | |
| 1995 11 20 | 691 | 0.2+ | 0.4− | 2002 02 12 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.1− | |
| 1997 02 11 | 691 | 0.3+ | 0.0 | 2002 02 12 | 704 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.4− | 0.1− | |
| 1997 02 11 | 691 | 0.2− | 0.0 | 2002 02 12 | 704 | 0.2− | 0.8+ | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 1997 02 11 | 691 | 0.3+ | 0.5− | 2003 03 11 | 291 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.0 | |
| 2000 08 31 | 704 | 0.1+ | 0.4+ | 2003 03 11 | 291 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.6+ | |
| 2000 08 31 | 704 | 0.5+ | 0.3− | 2003 03 11 | 291 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.1− | |
| 2000 08 31 | 704 | 0.9+ | 0.3− | 2003 03 23 | 291 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.7+ | |
| 2000 08 31 | 704 | 0.1+ | 0.6− | 2003 03 23 | 291 | 0.3+ | 0.6+ | 2006 11 21 | 704 | 0.1− | 0.0 | |
| 2000 09 24 | 704 | 0.3− | 1.0+ | 2003 03 23 | 291 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1− | 0.2+ | |
| 2000 09 24 | 704 | 1.0− | 0.1+ | 2005 07 02 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2+ | |
| 2000 09 24 | 704 | 0.0 | 0.5+ | 2005 07 02 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3+ | 0.5+ | 2005 07 02 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.2+ | | |
| 2000 09 24 | 704 | 1.0+ | 1.7+ | 2006 09 27 | G96 | 0.2− | 0.8− | 2006 11 27 | 703 | 0.0 | 0.5− | | |
| 2000 10 01 | 704 | 0.5− | 0.8+ | 2006 09 27 | G96 | 0.9− | 1.1− | 2006 11 27 | 703 | 0.5− | 0.2− | | |
| 2000 10 01 | 704 | 1.4− | 1.5+ | 2006 09 27 | G96 | 0.7− | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 01 | 704 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 27 | 703 | 0.5− | 0.1− | | |
| 2000 10 01 | 704 | 0.3− | 0.8+ | 2006 10 29 | G96 | 0.4− | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.1− | 1.6+ | 2006 10 29 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 1.1− | 0.2+ | | |
| 2000 10 02 | 704 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.0 | 0.2− | 2006 12 01 | 704 | 1.1+ | 1.7+ | | |
| 2000 10 02 | 704 | 0.1− | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.6+ | 0.2+ | | |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 1.3− | 0.1+ | 2006 12 01 | 704 | 1.6+ | 0.7+ | | |
| 2002 01 08 | 704 | 1.1+ | 1.3+ | 2006 11 15 | 703 | 0.5− | 0.3− | 2006 12 01 | 704 | 0.5+ | 2.5+ | | |
| 2002 01 08 | 704 | 1.1+ | 0.7+ | 2006 11 15 | 703 | 0.6− | 0.0 | | | | | | |
| 2002 01 08 | 704 | 0.3− | 0.9+ | 2006 11 15 | 703 | (1.8− | 1.0−) | | | | | | |

**(138745)∗ 2000 SM$_{235}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.26143 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18907777 | $\omega$ | 38.31660 | | +0.09061491 | −0.99567744 | |
| $a$ | 3.0063699 | $\Omega$ | 46.49463 | | +0.90663770 | +0.07400925 | |
| $e$ | 0.2828959 | $i$ | 1.61019 | | +0.41206434 | +0.05611659 | |
| $P$ | 5.21 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.2+ | 0.1− | 2002 02 12 | 704 | (2.2+ | 0.0 ) | 2002 03 23 | 644 | 0.0 | 0.4+ | | |
| 1995 09 18 | 691 | 0.2+ | 0.1− | 2002 02 20 | 704 | 0.3− | 0.5− | 2002 03 23 | 644 | 0.2+ | 0.0 | | |
| 1995 09 18 | 691 | 0.3+ | 0.0 | 2002 02 20 | 704 | 0.3+ | 0.0 | 2005 07 29 | 644 | 0.4− | 0.5+ | | |
| 2000 09 21 | 699 | 0.6− | 0.7− | 2002 02 20 | 704 | 0.2+ | 0.2− | 2005 07 29 | 644 | 0.2− | 0.5+ | | |
| 2000 09 21 | 699 | 1.4− | 0.4+ | 2002 02 20 | 704 | 0.1+ | 0.2− | 2005 07 29 | 644 | 0.1− | 0.2+ | | |
| 2000 09 21 | 699 | 1.1− | 0.2− | 2002 02 24 | 644 | 0.7+ | 0.4+ | 2005 08 06 | 644 | 0.1− | 0.3+ | | |
| 2000 09 21 | 699 | 0.9− | 0.2+ | 2002 02 24 | 644 | 0.2+ | 0.5+ | 2005 08 06 | 644 | 0.0 | 0.6+ | | |
| 2000 09 24 | 704 | 1.7− | 1.3+ | 2002 02 24 | 644 | 0.6+ | 0.5+ | 2005 08 06 | 644 | 0.4− | 0.5+ | | |
| 2000 09 24 | 704 | 0.7− | 0.4+ | 2002 03 04 | 644 | 0.1+ | 0.6+ | 2005 08 31 | 691 | 0.2+ | 0.3+ | | |
| 2000 09 24 | 704 | 0.3− | 0.2− | 2002 03 04 | 644 | 0.3+ | 0.5+ | 2005 08 31 | 691 | 0.0 | 0.1+ | | |
| 2000 09 24 | 704 | 0.1+ | 0.8+ | 2002 03 04 | 644 | 0.2+ | 0.5+ | 2005 08 31 | 691 | 0.0 | 0.5+ | | |
| 2000 09 24 | 704 | 0.9+ | 0.9+ | 2002 03 09 | 704 | 1.0+ | 0.6+ | 2005 09 14 | 691 | 0.2− | 0.6+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.2− | 2002 03 09 | 704 | 1.2+ | 0.5− | 2005 09 14 | 691 | 0.4− | 0.9+ | | |
| 2000 10 01 | 704 | 0.3+ | 1.6+ | 2002 03 09 | 704 | (1.3+ | 2.1+) | 2005 09 14 | 691 | 0.1+ | 0.4+ | | |
| 2000 10 01 | 704 | 0.9− | 1.3− | 2002 03 09 | 704 | (2.2+ | 0.6+) | 2005 09 26 | 703 | (2.2− | 1.2−) | | |
| 2000 10 01 | 704 | 0.0 | 0.6− | 2002 03 09 | 704 | 1.3+ | 0.7− | 2005 09 26 | 703 | 0.0 | 0.2+ | | |
| 2000 10 01 | 704 | 1.6+ | 0.4− | 2002 03 12 | 644 | 0.4+ | 0.5+ | 2005 09 26 | 703 | 0.8+ | 0.8+ | | |
| 2000 10 02 | 704 | 0.2+ | 0.0 | 2002 03 12 | 644 | 0.3+ | 0.5+ | 2005 09 26 | 703 | 1.1− | 0.4+ | | |
| 2000 10 02 | 704 | 0.7− | 0.1− | 2002 03 12 | 644 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.1− | | |
| 2000 10 02 | 704 | 0.1− | 1.4+ | 2002 03 14 | 704 | 0.4+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.1− | | |
| 2000 10 02 | 704 | 0.0 | 0.5− | 2002 03 14 | 704 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2000 10 06 | 691 | 0.0 | 0.1+ | 2002 03 14 | 704 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.2− | | |
| 2000 10 06 | 691 | 0.3− | 0.1+ | 2002 03 14 | 704 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.4+ | | |
| 2000 10 06 | 691 | 0.0 | 0.1+ | 2002 03 14 | 704 | 0.2+ | 0.9+ | 2006 10 17 | G96 | 0.4+ | 0.2+ | | |
| 2002 01 21 | 704 | 0.2+ | 0.8− | 2002 03 16 | 704 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.1− | | |
| 2002 01 21 | 704 | 0.5+ | 0.6− | 2002 03 16 | 704 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.4− | 0.2+ | | |
| 2002 01 21 | 704 | 0.7− | 0.4+ | 2002 03 16 | 704 | 0.1− | 0.4+ | 2006 10 20 | 703 | 0.8+ | 0.9+ | | |
| 2002 01 21 | 704 | 0.8+ | 0.8+ | 2002 03 16 | 704 | 0.2− | 0.6+ | 2006 10 20 | 703 | 0.1+ | 0.4+ | | |
| 2002 01 22 | 644 | 0.1+ | 0.6+ | 2002 03 16 | 704 | 0.8− | 0.6+ | 2006 10 20 | 703 | 0.1− | 0.3+ | | |
| 2002 01 22 | 644 | 0.1+ | 0.3+ | 2002 03 19 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 703 | (0.3− | 3.3−) | | |
| 2002 01 22 | 644 | 0.1+ | 0.6+ | 2002 03 19 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 1.0− | 0.5− | | |
| 2002 02 07 | 704 | 0.1− | 1.4+ | 2002 03 19 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.9− | 0.3+ | | |
| 2002 02 07 | 704 | 0.3− | 0.7+ | 2002 03 19 | 644 | 0.1+ | 0.5+ | 2006 11 14 | 703 | (1.3− | 2.1−) | | |
| 2002 02 07 | 704 | 0.4− | 0.2+ | 2002 03 19 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.1+ | | |
| 2002 02 07 | 704 | 0.1+ | 0.3+ | 2002 03 19 | 644 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 1.0+ | 0.1− | | |
| 2002 02 07 | 704 | 0.3− | 0.0 | 2002 03 20 | 333 | 1.1− | 0.0 | 2006 11 18 | 704 | (1.8+ | 0.2+) | | |
| 2002 02 10 | 704 | 0.0 | 0.4+ | 2002 03 20 | 333 | 0.4+ | 0.9− | 2006 11 27 | 703 | 0.1− | 0.8+ | | |
| 2002 02 10 | 704 | 0.4− | 0.5+ | 2002 03 20 | 333 | 0.6− | 0.6+ | 2006 11 27 | 703 | 0.6− | 1.8− | | |
| 2002 02 10 | 704 | 0.4− | 0.3+ | 2002 03 20 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.6− | 0.5+ | | |
| 2002 02 10 | 704 | 0.2− | 0.2+ | 2002 03 20 | 644 | 0.4+ | 0.6+ | 2006 11 27 | 703 | 2.0+ | 1.2− | | |
| 2002 02 10 | 704 | 0.4− | 0.4+ | 2002 03 20 | 644 | 0.2+ | 0.2+ | 2006 11 28 | G96 | 0.2− | 0.3− | | |
| 2002 02 12 | 704 | (1.6+ | 0.5−) | 2002 03 20 | 644 | 0.1+ | 0.4+ | 2006 11 28 | G96 | 0.0 | 0.3− | | |
| 2002 02 12 | 704 | (1.8+ | 0.4−) | 2002 03 20 | 644 | 0.2+ | 0.4+ | 2006 11 28 | G96 | 0.3− | 0.2− | | |
| 2002 02 12 | 704 | (2.0+ | 0.4−) | 2002 03 20 | 644 | 0.1+ | 0.3+ | 2006 11 28 | G96 | 0.0 | 0.2− | | |
| 2002 02 12 | 704 | (1.7+ | 0.0 ) | 2002 03 23 | 644 | 0.0 | 0.3+ | | | | | | |

**(138746)∗ 2000 SD$_{246}$ = 1995 WC$_{29}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 13206)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.91294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17457724 | $\omega$ | 262.16121 | | +0.14425706 | +0.98855214 | |
| $a$ | 3.1706207 | $\Omega$ | 16.33368 | | −0.83462374 | +0.14555307 | |
| $e$ | 0.0406603 | $i$ | 9.04461 | | −0.53159488 | +0.03973623 | |
| $P$ | 5.65 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.1+ | 0.5+ | 2001 12 19 | 704 | 0.4+ | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.2− | | |
| 1995 11 19 | 691 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.0 | | |
| 1995 11 19 | 691 | 0.2+ | 0.4− | 2001 12 19 | 704 | 0.6− | 0.4− | 2006 09 24 | 691 | 1.2− | 0.8+ | | |
| 1995 11 24 | 691 | 0.8− | 0.0 | 2003 03 07 | 644 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 1995 11 24 | 691 | 0.1− | 0.2− | 2003 03 07 | 644 | 1.0+ | 1.0+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 1995 11 24 | 691 | 0.9− | 0.1− | 2003 03 07 | 644 | 0.5+ | 0.1+ | 2006 09 28 | 691 | 0.3+ | 0.0 | | |
| 1998 04 20 | 704 | (3.1− | 0.3+) | 2003 03 07 | 644 | 0.9+ | 1.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 | | |
| 1998 04 20 | 704 | 1.2+ | 1.8− | 2003 03 07 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | | |
| 1998 04 20 | 704 | 0.9+ | 0.5+ | 2003 03 07 | 644 | 1.1+ | 1.4+ | 2006 10 16 | 691 | 0.3+ | 0.2− | | |
| 1998 04 20 | 704 | 0.8− | 0.6+ | 2004 05 12 | E12 | (1.9− | 0.9+) | 2006 10 20 | 644 | 0.3− | 0.3− | | |
| 2000 09 23 | 699 | 0.3+ | 1.1+ | 2004 05 12 | E12 | 0.1− | 1.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2000 09 23 | 699 | 0.3− | 1.3+ | 2004 05 12 | E12 | 1.5− | 1.0+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2000 09 23 | 699 | 1.2− | 0.4+ | 2004 05 12 | E12 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2000 09 23 | 699 | 0.4+ | 0.8+ | 2004 05 13 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2000 09 24 | 704 | 0.7+ | 1.0− | 2004 05 13 | 644 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2000 09 24 | 704 | 0.8+ | 0.6+ | 2004 05 13 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2000 09 24 | 699 | 1.5− | 0.4+ | 2004 05 15 | 704 | 0.2+ | 0.9− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2000 09 24 | 704 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2000 09 24 | 699 | 0.4+ | 0.3+ | 2004 05 15 | 704 | 1.0+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2000 09 24 | 704 | 0.1+ | 0.3+ | 2004 05 15 | 704 | 1.0+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1− | | |
| 2000 09 24 | 699 | 0.5− | 0.5+ | 2004 05 15 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 24 | 699 | 0.4+ | 0.5− | 2004 05 17 | 704 | 1.3− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2000 10 01 | 699 | 0.0 | 1.3+ | 2004 05 17 | 704 | 0.1− | 0.7− | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2000 10 01 | 699 | 0.6− | 0.2+ | 2004 05 17 | 704 | 0.6− | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.1− | | |
| 2000 10 01 | 699 | 0.7− | 0.9+ | 2005 07 10 | E12 | 0.9− | 0.8+ | 2006 11 10 | 691 | 0.2− | 0.0 | | |
| 2000 10 01 | 699 | 0.6+ | 0.6+ | 2005 07 10 | E12 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2000 10 02 | 704 | 0.4+ | 0.3− | 2005 07 10 | E12 | (3.5− | 0.7−) | 2006 11 10 | 691 | 0.1− | 0.0 | | |
| 2000 10 02 | 704 | 0.9+ | 1.1− | 2005 07 10 | E12 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.5− | | |
| 2000 10 02 | 704 | 1.3+ | 0.1+ | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.8− | | |
| 2000 10 02 | 704 | 1.1+ | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.5− | | |
| 2000 10 02 | 704 | 0.8+ | 0.3− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.9− | 0.9+ | | |
| 2001 12 09 | 704 | 1.2+ | 0.3− | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 2001 12 09 | 704 | 0.8+ | 0.2− | 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.2− | | |
| 2001 12 09 | 704 | 0.2+ | 1.1− | 2006 07 22 | G96 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2001 12 09 | 704 | 1.0+ | 1.2+ | 2006 07 22 | G96 | 0.8− | 0.1+ | | | | | | |
| 2001 12 19 | 704 | 0.4− | 0.5− | 2006 07 22 | G96 | 1.3− | 0.2+ | | | | | | |

**(138747)∗ 2000 SR$_{246}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.11169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17527205 | $\omega$ | 76.04206 | | −0.32175713 | −0.94241175 | |
| $a$ | 3.1622360 | $\Omega$ | 33.17802 | | +0.79151017 | −0.32063236 | |
| $e$ | 0.0616572 | $i$ | 9.60205 | | +0.51959985 | −0.09515770 | |
| $P$ | 5.62 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.0 | 0.8− | 2005 07 26 | 644 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.6+ | 1.0− |
| 2000 09 24 | 704 | 0.3− | 0.8− | 2005 07 26 | 644 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.8− |
| 2000 09 24 | 704 | 0.6+ | 1.1− | 2005 08 04 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | 1.0+ | 0.9− |
| 2000 09 24 | 704 | 0.2+ | 0.8+ | 2005 08 04 | 644 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.3+ | 0.5− | 2005 08 04 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 10 01 | 699 | 0.9− | 0.5+ | 2005 09 01 | E12 | 1.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2000 10 01 | 699 | 0.1+ | 0.5+ | 2005 09 01 | E12 | 0.6− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 10 01 | 699 | 0.6− | 0.6+ | 2005 09 01 | E12 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 10 01 | 699 | 0.8− | 0.2+ | 2005 09 01 | E12 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2000 10 02 | 704 | 0.0 | 0.7+ | 2005 12 01 | 695 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2000 10 02 | 704 | 1.0− | 0.8+ | 2005 12 02 | 695 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2000 10 02 | 704 | 0.9+ | 0.7+ | 2005 12 02 | 695 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2000 10 02 | 704 | 0.1− | 0.7+ | 2006 08 22 | 461 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2000 10 02 | 704 | 0.3+ | 0.9+ | 2006 08 22 | 461 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.5− |
| 2001 12 09 | 704 | 0.9− | 0.7+ | 2006 09 17 | 683 | (2.3+ | 0.4+) | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 12 09 | 704 | 1.0− | 0.2+ | 2006 09 17 | 683 | 1.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 12 09 | 704 | 1.3− | 1.3+ | 2006 09 17 | 683 | 1.2− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | 1.5− | 1.3+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 12 22 | 704 | 0.7+ | 0.7− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 12 22 | 704 | 0.5+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.3− |
| 2001 12 22 | 704 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 12 22 | 704 | 0.6+ | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 12 22 | 704 | 0.7+ | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7− | 0.6− |
| 2002 01 07 | 704 | 0.8+ | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2002 01 07 | 704 | 0.2+ | 0.9− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2002 01 07 | 704 | 0.4+ | 0.8− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2002 01 07 | 704 | 0.4+ | 1.2− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2003 02 28 | 704 | 0.7+ | 1.0+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2003 02 28 | 704 | 0.5+ | 1.4+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2003 02 28 | 704 | 0.8+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2003 02 28 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.7+ |
| 2003 03 15 | 608 | 1.1+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.5+ |
| 2003 03 15 | 608 | 0.9+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 1.2+ | 0.4+ |
| 2003 03 15 | 608 | 0.7+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.8+ |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.1+ | 0.8+ |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.9− | 1.2+ |
| 2003 03 26 | 699 | 0.1− | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.8− | 1.0+ |
| 2003 03 26 | 699 | 0.4− | 0.3− | 2006 10 15 | A94 | 1.2− | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2003 03 26 | 699 | 0.1+ | 0.2+ | 2006 10 15 | A94 | 0.8− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2003 03 26 | 699 | (0.1+ | 1.7+) | 2006 10 15 | A94 | (1.5+ | 0.4+) | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2003 03 31 | 645 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.7+ | 0.9− |
| 2003 03 31 | 645 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2003 04 05 | 699 | 0.3+ | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.5+ | 0.7− |
| 2003 04 05 | 699 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.4+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2003 04 05 | 699 | 1.1− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2003 04 05 | 699 | 0.1− | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2005 07 03 | 644 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2005 07 03 | 644 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.9+ |
| 2005 07 03 | 644 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2005 07 26 | 644 | 0.4− | 0.9+ | 2006 10 21 | 703 | 0.8+ | 0.0 | | | | |

**(138748)∗ 2000 SU$_{246}$ = 2001 TA$_{41}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22634)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.13383 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17358507 | $\omega$ | 64.82944 | | −0.28150735 | −0.95597791 |
| $a$ | 3.1826910 | $\Omega$ | 41.80012 | | +0.82957604 | −0.28584462 |
| $e$ | 0.1071746 | $i$ | 7.13808 | | +0.48224186 | −0.06632555 |
| $P$ | 5.68 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.9− | 0.2− | 2002 01 08 | 704 | 0.5− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2000 08 31 | 704 | 0.2− | 0.2+ | 2002 01 08 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2000 08 31 | 704 | 0.3− | 0.7+ | 2002 01 15 | 704 | 1.3+ | 0.5− | 2006 10 17 | G96 | 0.2− | 0.3− |
| 2000 08 31 | 704 | 1.1− | 1.1+ | 2002 01 15 | 704 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2000 09 23 | 699 | 1.5− | 1.2+ | 2002 01 15 | 704 | (0.9+ | 2.2+) | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2000 09 23 | 699 | (1.2− | 2.9+) | 2002 01 15 | 704 | (0.4+ | 1.6+) | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2000 09 23 | 699 | 0.7− | 0.2− | 2003 02 28 | 608 | 0.8+ | 0.7+ | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2000 09 23 | 699 | 0.0 | 1.1+ | 2003 02 28 | 608 | 1.2+ | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2003 02 28 | 608 | 0.8+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2000 09 24 | 704 | 0.1+ | 0.5+ | 2003 03 06 | 704 | 1.3− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.4− | 0.2− | 2003 03 06 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 09 24 | 704 | 0.3+ | 0.4+ | 2003 03 06 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.3+ | 0.3− | 2003 03 06 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.4+ | 0.0 |
| 2000 10 02 | 704 | 0.5− | 1.3+ | 2003 03 06 | 704 | (0.3− | 1.8+) | 2006 10 21 | 703 | 1.0+ | 0.3− |
| 2000 10 02 | 704 | 0.5− | 0.5+ | 2003 03 09 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2000 10 02 | 704 | 0.2+ | 0.0 | 2003 03 09 | 704 | 0.2− | 0.9+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2000 10 02 | 704 | 0.2+ | 0.4+ | 2003 03 09 | 704 | 0.6+ | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.2− | 0.1− | 2003 03 09 | 704 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.1− |
| 2001 10 14 | 704 | 0.7− | 0.7− | 2003 03 09 | 704 | 0.5+ | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.9− | 0.7− | 2003 03 23 | 683 | 1.3+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | 1.0− | 0.6− | 2003 03 23 | 683 | 0.9+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 10 15 | 704 | 0.7− | 0.3− | 2003 03 23 | 683 | (2.3+ | 0.3−) | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2001 10 15 | 704 | 1.0+ | 1.3− | 2003 03 25 | 683 | 0.6− | 0.7− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 11 11 | 704 | 0.0 | 0.7+ | 2003 03 25 | 683 | 0.1+ | 0.9− | 2006 10 23 | 704 | 0.2+ | 0.8− |
| 2001 11 11 | 704 | 0.2− | 1.5+ | 2003 03 25 | 683 | (2.3− | 1.7−) | 2006 10 23 | 704 | 0.4+ | 0.2− |
| 2001 11 11 | 704 | 0.5− | 0.6+ | 2003 03 26 | 644 | 0.2+ | 0.9+ | 2006 10 23 | 704 | 1.0+ | 0.8− |
| 2001 11 11 | 704 | 0.0 | 1.3+ | 2003 03 26 | 644 | 0.2+ | 1.0+ | 2006 10 23 | 704 | 0.3+ | 0.6− |
| 2001 11 11 | 704 | 0.1+ | 1.4+ | 2003 03 26 | 644 | 0.0 | 1.0+ | 2006 10 23 | 704 | 0.4− | 0.6+ |
| 2001 11 21 | 704 | (0.2+ | 2.6−) | 2003 03 30 | 704 | 0.1+ | 0.8+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2001 11 21 | 704 | (0.7− | 2.2−) | 2003 03 30 | 704 | 0.5+ | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.1− | 1.5− | 2003 03 30 | 704 | 1.0+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 11 21 | 704 | (0.6− | 1.8−) | 2003 03 31 | 699 | 0.0 | 0.8+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.5− | 0.7− | 2003 03 31 | 699 | 0.2+ | 1.0+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 11 24 | 704 | (0.7+ | 2.0−) | 2003 03 31 | 699 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | 0.8+ | 1.1− | 2003 03 31 | 699 | 0.5+ | 0.9+ | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 2001 11 24 | 704 | (0.1+ | 2.1−) | 2003 04 09 | 704 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2001 12 09 | 704 | 0.9+ | 0.4− | 2003 04 09 | 704 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2001 12 09 | 704 | 0.7+ | 0.4− | 2003 04 09 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | 0.2− | 0.5+ | 2003 04 09 | 704 | 0.3+ | 0.7+ | 2006 11 13 | 704 | 0.1− | 0.7+ |
| 2001 12 09 | 704 | 0.4+ | 0.6− | 2003 04 09 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 704 | 0.3+ | 0.1− |
| 2001 12 13 | 704 | 0.4− | 0.0 | 2003 04 26 | 699 | 0.3− | 0.8+ | 2006 11 13 | 704 | 0.3+ | 0.2+ |
| 2001 12 13 | 704 | 0.5− | 0.3− | 2003 04 26 | 699 | (1.9+ | 0.2−) | 2006 11 13 | 704 | 1.4− | 0.1− |
| 2001 12 13 | 704 | (0.2+ | 1.7−) | 2003 04 26 | 699 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 12 13 | 704 | 0.3− | 0.0 | 2003 04 26 | 699 | 0.7− | 1.2− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 12 13 | 704 | 0.2− | 0.2− | 2005 08 04 | 644 | 0.3+ | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 12 17 | 704 | 0.2+ | 0.1− | 2005 08 04 | 644 | 0.4+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 0.1− | 2005 08 04 | 644 | 0.2+ | 1.0+ | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2001 12 17 | 704 | 0.5+ | 0.1− | 2005 09 08 | E12 | 0.2+ | 0.8− | 2006 11 18 | 704 | 1.4− | 1.3+ |
| 2001 12 17 | 704 | 0.2+ | 0.0 | 2005 09 08 | E12 | 1.0− | 0.8+ | 2006 11 18 | 704 | 0.8− | 0.4+ |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2005 09 08 | E12 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2001 12 19 | 644 | 0.2− | 0.0 | 2005 09 08 | E12 | 0.6+ | 0.7− | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2001 12 19 | 644 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 2001 12 19 | 644 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.9+ | 1.1+ |
| 2001 12 22 | 704 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2001 12 22 | 704 | 0.5+ | 0.3− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2001 12 22 | 704 | 0.8− | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2001 12 22 | 704 | 0.5− | 0.6− | 2006 09 27 | 704 | 0.2− | 0.9+ | 2006 11 27 | 703 | 0.7− | 0.2− |
| 2002 01 08 | 704 | 1.0+ | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.4+ | 2006 11 27 | 703 | 0.4− | 0.2− |
| 2002 01 08 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.9+ | 2006 11 27 | 703 | 0.7− | 0.2+ |
| 2002 01 08 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.7+ |

**(138749)∗ 2000 SD$_{253}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.41273 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17212620 | $\omega$ | 152.97359 | | +0.99186498 | −0.12259669 | |
| $a$ | 3.2006491 | $\Omega$ | 214.12226 | | +0.10294073 | +0.93083405 | |
| $e$ | 0.1429981 | $i$ | 3.50169 | | +0.07488033 | +0.34426446 | |
| $P$ | 5.73 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.6− | 0.7− | 2006 09 18 | 691 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2000 09 03 | 704 | 0.5− | 0.3− | 2006 09 18 | 691 | 0.6+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2000 09 03 | 704 | 0.1+ | 0.7− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 25 | 106 | 0.3− | 1.2− |
| 2000 09 24 | 704 | 0.9+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 25 | 106 | 0.2+ | 0.8+ |
| 2000 09 24 | 704 | 0.5− | 0.2+ | 2006 09 28 | 691 | 0.1− | 1.1+ | 2006 10 25 | 106 | 1.0+ | 0.1− |
| 2000 09 24 | 704 | 1.0+ | 0.9+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 25 | 106 | 0.3+ | 0.7+ |
| 2000 09 24 | 704 | 0.7+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 2000 10 02 | 704 | 0.2− | 1.3+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2000 10 02 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2000 10 02 | 704 | 1.6− | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2000 10 02 | 704 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 12 17 | 704 | 1.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 12 17 | 704 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 12 17 | 704 | 1.0− | 1.0+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 1.2− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2002 01 09 | 012 | 1.0+ | 0.7− | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 01 09 | 012 | 0.4+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 01 09 | 012 | (0.8+ | 2.5+) | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2002 01 09 | 012 | 0.7+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2002 01 09 | 012 | 0.8− | 0.7+ | 2006 10 15 | 691 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.5− | 0.2− |
| 2002 01 09 | 012 | (1.1+ | 2.1+) | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 2002 01 15 | 704 | 1.2+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2002 01 15 | 704 | 1.5+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8− | 1.1− |
| 2002 01 15 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.9− | 2006 11 17 | 703 | 0.1− | 0.8− |
| 2004 04 24 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 1.2− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 05 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.4+ |
| 2004 05 14 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1− | | | | |

**(138750)∗ 2000 SH$_{253}$ = 2005 MS$_{42}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84608)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.72330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18211548 | $\omega$ | 185.76759 | | +0.85465621 | +0.51740711 | |
| $a$ | 3.0825122 | $\Omega$ | 142.97127 | | −0.47344883 | +0.81069649 | |
| $e$ | 0.1619951 | $i$ | 4.09861 | | −0.21309380 | +0.27397277 | |
| $P$ | 5.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.1+ | 0.5+ | 2004 04 13 | 691 | 0.2− | 0.4+ | 2005 07 27 | 644 | 0.1+ | 0.2− |
| 1998 03 02 | 691 | 0.3− | 0.0 | 2005 05 19 | G96 | 0.2− | 0.2− | 2005 08 06 | 704 | 0.1− | 0.7+ |
| 1998 03 02 | 691 | 0.3− | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.1− | 2005 08 06 | 704 | 0.1− | 1.1+ |
| 2000 09 24 | 704 | 1.1− | 0.1+ | 2005 05 19 | G96 | 0.2+ | 0.4+ | 2005 08 06 | 704 | 0.5− | 1.1+ |
| 2000 09 24 | 704 | 0.1+ | 0.9+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2005 08 29 | 704 | 0.8− | 0.5− |
| 2000 09 24 | 704 | 1.3− | 0.3+ | 2005 06 29 | 644 | 0.1+ | 0.1+ | 2005 08 29 | 704 | 0.7− | 0.3− |
| 2000 09 24 | 704 | (2.7− | 0.6+) | 2005 06 29 | 644 | 0.2− | 0.1+ | 2005 08 29 | 704 | 0.1+ | 0.5− |
| 2000 09 26 | 699 | 0.3+ | 0.3+ | 2005 06 29 | 644 | 0.1− | 0.2+ | 2005 10 03 | G96 | 0.2− | 0.1+ |
| 2000 09 26 | 699 | 0.5− | 0.2+ | 2005 07 05 | G96 | 1.4+ | 0.4+ | 2005 10 03 | G96 | 0.1− | 0.1+ |
| 2000 09 26 | 699 | 0.6− | 0.0 | 2005 07 05 | G96 | 0.0 | 0.1+ | 2005 10 03 | G96 | 0.1− | 0.1+ |
| 2000 09 26 | 699 | 0.2− | 0.9+ | 2005 07 05 | G96 | 0.1+ | 0.0 | 2005 10 03 | G96 | 0.1+ | 0.1+ |
| 2000 10 01 | 699 | 1.2+ | 1.5+ | 2005 07 05 | G96 | 0.2− | 0.0 | 2005 10 25 | G96 | 0.0 | 0.4+ |
| 2000 10 01 | 699 | (4.1+ | 0.2−) | 2005 07 05 | 644 | 0.1+ | 0.0 | 2005 10 25 | G96 | 0.1− | 0.0 |
| 2000 10 01 | 699 | (2.1+ | 0.8−) | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.1+ |
| 2000 10 01 | 699 | 1.9+ | 0.9− | 2005 07 05 | 644 | 0.1+ | 0.2+ | 2005 10 25 | G96 | 0.1− | 0.1+ |
| 2000 10 02 | 704 | 0.2+ | 0.8+ | 2005 07 11 | 691 | 0.0 | 0.4+ | 2005 10 25 | G96 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.9− | 0.7+ | 2005 07 11 | 691 | 0.0 | 0.2+ | 2005 10 25 | G96 | 0.4− | 0.0 |
| 2000 10 02 | 704 | 0.6− | 0.9+ | 2005 07 11 | 691 | 0.3− | 0.9+ | 2005 10 25 | G96 | 0.2− | 0.0 |
| 2000 10 06 | 608 | 0.3− | 0.9+ | 2005 07 15 | G96 | 0.2− | 0.1− | 2005 10 25 | G96 | 0.1+ | 0.1− |
| 2000 10 06 | 608 | 0.0 | 1.1+ | 2005 07 15 | G96 | 0.3− | 0.2− | 2006 10 28 | 291 | 0.3− | 0.3+ |
| 2000 10 06 | 608 | 0.0 | 1.4+ | 2005 07 15 | G96 | 0.1+ | 0.3− | 2006 10 28 | 291 | 0.2− | 0.0 |
| 2002 12 07 | 645 | 0.0 | 0.2+ | 2005 07 15 | G96 | 0.0 | 0.0 | 2006 10 28 | 291 | 0.1− | 0.1+ |
| 2002 12 07 | 645 | 0.1− | 0.2+ | 2005 07 18 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.2− |
| 2003 03 30 | 645 | 0.0 | 0.2+ | 2005 07 18 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.4− | 0.2+ |
| 2003 03 30 | 645 | 0.3+ | 0.2+ | 2005 07 18 | 644 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.8+ | 0.8+ |
| 2004 04 13 | 691 | 0.4+ | 0.4+ | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.9+ | 1.2+ |
| 2004 04 13 | 691 | 0.6+ | 0.4+ | 2005 07 27 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.8− | 0.1+ |

**(138751)∗ 2000 SC$_{259}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.87345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17465612 | $\omega$ | 352.15740 | | +0.58881949 | −0.79364042 | |
| $a$ | 3.1696661 | $\Omega$ | 61.63947 | | +0.75068915 | +0.46679007 | |
| $e$ | 0.0961614 | $i$ | 10.01659 | | +0.29959540 | +0.39018190 | |
| $P$ | 5.64 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.5− | 0.1− | 2003 03 29 | 699 | 0.3− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2000 09 24 | 704 | 0.1+ | 0.1+ | 2003 03 29 | 699 | (1.2+ | 1.8−) | 2006 11 16 | 704 | 0.7− | 0.2+ |
| 2000 09 24 | 704 | 0.4− | 0.8+ | 2003 04 21 | 691 | 0.2− | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.5+ |
| 2000 10 02 | 704 | 0.6+ | 0.5− | 2003 04 21 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.1− |
| 2000 10 02 | 704 | 1.4− | 0.2− | 2003 04 21 | 691 | 0.4− | 0.0 | 2006 11 17 | 644 | 0.1+ | 0.2− |
| 2000 10 02 | 704 | 0.2+ | 0.9+ | 2003 05 02 | 691 | 0.9+ | 0.2− | 2006 11 17 | 644 | 0.2− | 0.4− |
| 2000 10 02 | 704 | 0.1+ | 0.1+ | 2003 05 02 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.2− |
| 2000 10 07 | 699 | 0.1+ | 0.5+ | 2003 05 02 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2000 10 07 | 699 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.3− | 0.1− |
| 2000 10 07 | 699 | 1.0+ | 1.7+ | 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.1+ | 1.2+ |
| 2000 10 07 | 699 | 0.5− | 0.8+ | 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2000 10 24 | 704 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.6+ | 1.0+ |
| 2000 10 24 | 704 | 0.9− | 0.9− | 2006 10 19 | G96 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2000 10 24 | 704 | 0.3+ | 0.8+ | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2000 10 24 | 704 | 1.0+ | 0.8− | 2006 10 19 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.5− | 0.0 |
| 2000 10 30 | 704 | 1.2− | 0.9+ | 2006 10 28 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2000 10 30 | 704 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2000 10 30 | 704 | 1.5+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.6− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2000 10 30 | 704 | 0.2+ | 0.7− | 2006 10 28 | G96 | 0.1− | 0.6− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2000 11 02 | 704 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2000 11 02 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.4+ | 0.7+ |
| 2000 11 02 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 691 | (1.7− | 0.5−) | 2006 11 27 | 703 | 0.5− | 0.1+ |
| 2000 11 02 | 704 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.3− | 0.3− |
| 2000 11 02 | 704 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2000 11 26 | 704 | 0.5− | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.6+ | 2006 11 27 | 703 | 0.7− | 0.5+ |
| 2000 11 26 | 704 | 0.2+ | 0.6− | 2006 11 11 | 703 | 0.5− | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2000 11 26 | 704 | 0.3− | 0.7− | 2006 11 15 | 703 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.8− |
| 2002 02 08 | 645 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.4− | 0.4− | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2002 02 08 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1+ | 2006 12 01 | 691 | 0.3+ | 0.2− |
| 2003 03 29 | 699 | 0.4+ | 1.3− | 2006 11 15 | 703 | 0.3− | 0.4− | 2006 12 01 | 691 | 0.3+ | 0.0 |
| 2003 03 29 | 699 | 0.6+ | 0.3− | 2006 11 15 | 691 | 0.1− | 0.0 | | | | |

**(138752)∗ 2000 SP$_{259}$**

Discovered 2000 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.57386 | | (2000.0) | | | |
| $n$ | 0.17807578 | $\omega$ | 48.13853 | | −0.14928321 | −0.96977036 |
| $a$ | 3.1289562 | $\Omega$ | 51.49190 | | +0.81832807 | −0.23074780 |
| $e$ | 0.0557924 | $i$ | 14.28086 | | +0.55502585 | +0.07937823 |
| $P$ | 5.53 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.0 | 1.4+ | 2002 01 21 | 699 | 0.1+ | 0.2+ | 2005 09 01 | 644 | 0.2− | 0.3+ |
| 2000 09 24 | 704 | 0.9− | 0.8+ | 2002 01 21 | 699 | 0.3+ | 0.0 | 2005 09 01 | 644 | 0.1− | 0.5+ |
| 2000 09 24 | 704 | 0.4− | 1.4+ | 2002 01 21 | 699 | 1.0+ | 0.5+ | 2005 09 01 | 644 | 0.3− | 0.6+ |
| 2000 09 24 | 704 | 1.2+ | 1.5− | 2002 01 23 | 704 | 0.6+ | 0.1− | 2005 09 01 | 644 | 0.4− | 0.5+ |
| 2000 10 02 | 704 | 0.1− | 0.7+ | 2002 01 23 | 704 | 0.6− | 0.2+ | 2005 09 26 | 704 | 0.7+ | 0.5+ |
| 2000 10 02 | 704 | 0.9− | 1.2+ | 2002 01 23 | 704 | 0.9+ | 0.9+ | 2005 09 26 | 704 | 1.0+ | 0.4+ |
| 2000 10 02 | 704 | 0.3+ | 0.5+ | 2002 01 23 | 704 | 0.6+ | 0.3+ | 2005 09 26 | 704 | 0.6− | 0.2− |
| 2000 10 02 | 704 | 0.0 | 0.6+ | 2002 01 23 | 704 | 1.1+ | 0.2+ | 2005 09 26 | 704 | 0.5− | 0.4+ |
| 2000 10 24 | 704 | 0.0 | 0.4+ | 2002 02 12 | 644 | 0.3+ | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2000 10 24 | 704 | 1.5+ | 1.2+ | 2002 02 12 | 644 | 0.3+ | 0.4− | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2000 10 24 | 704 | 0.7− | 1.4− | 2002 02 12 | 644 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2000 10 24 | 704 | 0.8+ | 0.2− | 2002 03 05 | 704 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2000 11 20 | 699 | 1.6− | 0.8+ | 2002 03 05 | 704 | 0.7− | 0.8− | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2000 11 20 | 699 | 1.0− | 0.1− | 2002 03 05 | 704 | (0.5+ | 2.3−) | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2000 11 20 | 699 | 1.3− | 0.5+ | 2002 03 05 | 704 | (0.9+ | 3.2−) | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2000 11 20 | 699 | 1.4− | 0.1− | 2003 03 24 | 608 | 0.6+ | 0.6− | 2006 11 13 | G96 | 0.6+ | 0.1+ |
| 2001 12 09 | 704 | 0.9− | 0.3+ | 2003 03 24 | 608 | (0.5− | 1.6−) | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2001 12 09 | 704 | 0.1− | 0.8+ | 2003 03 24 | 608 | 0.0 | 1.1− | 2006 11 13 | 691 | 0.3− | 0.2− |
| 2001 12 09 | 704 | 0.3− | 0.7+ | 2003 03 29 | 699 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.3− | 0.2− |
| 2001 12 09 | 704 | 0.2− | 0.9+ | 2003 03 29 | 699 | 0.4+ | 0.1+ | 2006 11 15 | 704 | 1.2+ | 0.4− |
| 2001 12 18 | 699 | 1.0− | 0.4− | 2003 03 29 | 699 | 0.1+ | 0.4− | 2006 11 15 | 704 | 0.0 | 0.2+ |
| 2001 12 18 | 699 | 0.7− | 0.5+ | 2003 03 29 | 699 | 0.8− | 0.1+ | 2006 11 15 | 704 | 1.2+ | 1.0− |
| 2001 12 18 | 699 | 0.0 | 0.0 | 2003 04 02 | 608 | 0.3− | 0.3+ | 2006 11 15 | 704 | 0.5+ | 0.5− |
| 2001 12 18 | 699 | 0.5− | 0.2− | 2003 04 02 | 608 | 0.7− | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.0 |
| 2001 12 23 | 704 | 0.3+ | 0.2+ | 2003 04 02 | 608 | 0.2− | 0.5+ | 2006 11 16 | 704 | 0.8+ | 0.2− |
| 2001 12 23 | 704 | 0.6+ | 0.4− | 2003 04 08 | 704 | 0.1− | 1.1+ | 2006 11 16 | 704 | 0.6− | 0.2− |
| 2001 12 23 | 704 | 0.2+ | 0.2− | 2003 04 08 | 704 | 0.6+ | 0.3+ | 2006 11 17 | 691 | 0.4+ | 0.1− |
| 2001 12 23 | 704 | 0.2+ | 0.4− | 2003 04 08 | 704 | 1.2+ | 0.9+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 12 23 | 704 | 0.3+ | 0.4− | 2003 04 08 | 704 | 0.8+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2002 01 07 | 699 | 0.7+ | 0.5+ | 2003 04 10 | 691 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2002 01 07 | 699 | 0.3+ | 0.5+ | 2003 04 10 | 691 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 01 07 | 699 | 0.6+ | 0.7+ | 2003 04 10 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.9+ |
| 2002 01 07 | 699 | 0.4− | 0.1+ | 2003 04 25 | 699 | 0.6− | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 01 18 | 699 | 1.1− | 0.1+ | 2003 04 25 | 699 | 0.1− | 0.9− | 2006 11 22 | 704 | 0.4− | 0.2− |
| 2002 01 18 | 699 | 0.5− | 0.7+ | 2003 04 25 | 699 | 0.1− | 0.8− | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2002 01 18 | 699 | 0.7− | 0.4+ | 2003 04 25 | 699 | 1.3+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.7+ |
| 2002 01 18 | 699 | 0.1+ | 0.5− | 2005 09 01 | 644 | 0.6− | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2002 01 21 | 699 | 0.8+ | 0.0 | 2005 09 01 | 644 | 0.9− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.8+ |

**(138753)∗ 2000 $SP_{270}$ = 1997 $GM_4$**

Discovered 2000 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 4853)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.94566 | | (2000.0) | | | |
| $n$ | 0.17720926 | $\omega$ | 220.22288 | | +0.81821841 | −0.57468586 |
| $a$ | 3.1391479 | $\Omega$ | 174.77935 | | +0.56218779 | +0.79399884 |
| $e$ | 0.0780042 | $i$ | 10.10358 | | +0.12026438 | +0.19824736 |
| $P$ | 5.56 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.0 | 0.3+ | 2000 11 03 | 704 | 0.6+ | 1.2+ | 2005 09 22 | 644 | 0.1− | 0.1− |
| 1994 09 11 | 691 | 0.6− | 0.4+ | 2000 11 03 | 704 | 0.4+ | 0.9+ | 2005 10 07 | 691 | 0.3− | 0.1+ |
| 1994 09 11 | 691 | 0.2− | 0.4+ | 2000 11 03 | 704 | 1.3− | 1.0+ | 2005 10 07 | 691 | 0.1− | 0.2+ |
| 1997 04 07 | 691 | 0.2+ | 0.4− | 2000 11 03 | 704 | 0.1− | 1.6+ | 2005 10 07 | 691 | 0.2− | 0.3+ |
| 1997 04 07 | 691 | 0.3+ | 0.4− | 2002 02 07 | 644 | 0.3− | 0.9+ | 2005 10 27 | G96 | 0.3+ | 0.4− |
| 1997 04 07 | 691 | 0.6+ | 0.2+ | 2002 02 07 | 644 | 0.5− | 0.7+ | 2005 10 27 | G96 | 0.0 | 0.6− |
| 1997 04 09 | 691 | 0.4− | 0.0 | 2002 02 07 | 644 | 0.5− | 0.8+ | 2005 10 27 | G96 | 0.1+ | 0.0 |
| 1997 04 09 | 691 | 0.3− | 0.1− | 2003 03 27 | 699 | 0.1− | 0.9+ | 2005 10 27 | G96 | 0.3+ | 0.5− |
| 1997 04 09 | 691 | 0.9− | 0.5− | 2003 03 27 | 699 | 0.7− | 0.6− | 2005 11 25 | G96 | 0.5− | 0.2− |
| 2000 09 27 | 704 | 1.2+ | 0.1+ | 2003 03 27 | 699 | 0.6+ | 0.3+ | 2005 11 25 | G96 | 0.2− | 0.1− |
| 2000 09 27 | 704 | 0.5− | 0.0 | 2003 03 27 | 699 | 0.1+ | 1.0− | 2005 11 25 | G96 | 0.1+ | 0.3− |
| 2000 09 27 | 704 | 1.0− | 0.6− | 2003 03 27 | 691 | 0.1+ | 0.0 | 2005 11 25 | G96 | 0.0 | 0.3− |
| 2000 10 02 | 704 | 0.1+ | 0.3− | 2003 03 27 | 691 | 0.3− | 0.5+ | 2006 11 05 | 644 | 0.3− | 0.2+ |
| 2000 10 02 | 704 | 0.4− | 0.5+ | 2003 03 27 | 691 | 0.1+ | 0.5+ | 2006 11 05 | 644 | 0.1+ | 0.8+ |
| 2000 10 02 | 704 | 0.8− | 0.5− | 2003 04 09 | 691 | 0.4+ | 0.6+ | 2006 11 05 | 644 | 0.6− | 0.5+ |
| 2000 10 02 | 704 | 0.5− | 0.8− | 2003 04 09 | 691 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2000 10 02 | 704 | 0.1− | 0.8− | 2003 04 09 | 691 | 0.5+ | 0.5+ | 2006 11 17 | 703 | (2.1− | 2.2+) |
| 2000 10 06 | 699 | 1.7+ | 0.1+ | 2005 07 31 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 1.0− | 0.4− |
| 2000 10 06 | 699 | 0.7+ | 0.6+ | 2005 07 31 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2000 10 06 | 699 | 1.7+ | 0.1− | 2005 07 31 | 644 | 0.3+ | 0.0 | 2006 12 01 | 703 | 0.2+ | 1.1+ |
| 2000 10 06 | 699 | 0.2+ | 0.1+ | 2005 08 24 | 644 | 0.1+ | 0.1− | 2006 12 01 | 703 | 0.2− | 0.2+ |
| 2000 10 07 | 699 | 0.0 | 0.1+ | 2005 08 24 | 644 | 0.2+ | 0.2− | 2006 12 01 | 703 | 1.3+ | 0.8− |
| 2000 10 07 | 699 | 1.6+ | 0.8+ | 2005 08 24 | 644 | 0.0 | 0.3− | 2006 12 01 | 703 | 0.7− | 0.1− |
| 2000 10 07 | 699 | 0.3− | 0.3− | 2005 09 22 | 644 | 0.0 | 0.0 | | | | |
| 2000 10 07 | 699 | 0.8+ | 0.4+ | 2005 09 22 | 644 | 0.1+ | 0.1+ | | | | |

**(138754)∗ 2000 $SA_{272}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.69247 | | (2000.0) | | | |
| $n$ | 0.18024297 | $\omega$ | 28.31763 | | +0.31538331 | +0.90917493 |
| $a$ | 3.1038245 | $\Omega$ | 261.16245 | | −0.91430443 | +0.21439173 |
| $e$ | 0.1563969 | $i$ | 15.97248 | | −0.25412747 | +0.35698337 |
| $P$ | 5.47 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 06 | 704 | 0.0 | 0.3+ | 2001 12 14 | 644 | 0.0 | 0.1+ | 2005 06 08 | G92 | 0.4− | 0.0 |
| 2000 09 06 | 704 | 0.8+ | 0.3+ | 2001 12 14 | 644 | 0.2− | 0.3+ | 2005 06 08 | G92 | 0.8− | 0.1− |
| 2000 09 06 | 704 | 0.2− | 0.5− | 2001 12 15 | 704 | 0.4− | 0.6+ | 2005 06 08 | G92 | (3.5− | 3.2+) |
| 2000 09 06 | 704 | 0.4+ | 0.1− | 2001 12 15 | 704 | 0.5− | 0.4+ | 2005 07 05 | 704 | 0.6− | 0.9+ |
| 2000 09 28 | 704 | 0.6+ | 0.0 | 2001 12 15 | 704 | 1.2− | 0.0 | 2005 07 05 | 704 | 0.3− | 1.0+ |
| 2000 09 28 | 704 | 0.2− | 0.2+ | 2001 12 15 | 704 | 1.2− | 0.5+ | 2005 07 05 | 704 | 1.0− | 0.8+ |
| 2000 09 28 | 704 | 1.2+ | 0.6− | 2001 12 18 | 704 | 0.7+ | 1.3+ | 2005 07 05 | 704 | 0.1+ | 0.2+ |
| 2000 09 28 | 704 | 0.1− | 0.6− | 2001 12 18 | 704 | (0.8− | 2.1+) | 2005 07 05 | 704 | 0.0 | 1.2+ |
| 2000 09 28 | 704 | 0.8− | 0.2− | 2001 12 18 | 704 | (0.4− | 2.3+) | 2006 10 19 | 703 | 0.6+ | 0.1− |
| 2000 10 02 | 704 | 0.5+ | 0.8− | 2001 12 18 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2000 10 02 | 704 | 0.2+ | 0.3+ | 2001 12 18 | 704 | 1.1+ | 0.5+ | 2006 10 19 | 703 | 1.2+ | 1.0+ |
| 2000 10 02 | 704 | 1.4− | 0.9− | 2001 12 19 | 704 | 1.0+ | 1.2+ | 2006 10 19 | 703 | (0.8+ | 1.7−) |
| 2000 10 02 | 704 | 0.5− | 0.1− | 2001 12 19 | 704 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.6+ | 0.3− |
| 2000 10 02 | 704 | 0.1+ | 0.2− | 2001 12 19 | 704 | 0.6+ | 1.3+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2000 10 04 | 704 | 0.0 | 0.7− | 2001 12 19 | 704 | 0.7+ | 1.2+ | 2006 10 23 | 644 | 0.4+ | 0.2− |
| 2000 10 04 | 704 | 0.0 | 0.7− | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.9+ | 0.1− |
| 2000 10 04 | 704 | 0.1− | 0.0 | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 27 | 703 | (3.6− | 1.1+) |
| 2000 10 04 | 704 | 1.3+ | 1.0+ | 2004 03 26 | 704 | 0.6+ | 0.2− | 2006 10 27 | 703 | (0.5− | 2.7+) |
| 2000 10 04 | 704 | 0.6+ | 0.2− | 2004 03 26 | 704 | 0.3+ | 1.0− | 2006 10 27 | 703 | 0.9− | 0.7− |
| 2001 11 11 | 704 | 0.4− | 0.3+ | 2004 03 26 | 704 | 1.0+ | 0.4− | 2006 11 15 | 703 | 0.0 | 0.7− |
| 2001 11 11 | 704 | 0.1+ | 0.1+ | 2005 06 06 | G92 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.0 | 0.6+ | 2005 06 06 | G92 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.6− | 1.3− |
| 2001 12 14 | 644 | 0.1− | 0.3+ | 2005 06 06 | G92 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.6− |

**(138755)∗ 2000 $SL_{272}$ = 2003 $FM_{113}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46494)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.25976 | | (2000.0) | | | |
| $n$ | 0.17828654 | $\omega$ | 205.45606 | | +0.44298988 | −0.89488138 |
| $a$ | 3.1264898 | $\Omega$ | 218.31453 | | +0.83679323 | +0.43444939 |
| $e$ | 0.0184847 | $i$ | 5.02358 | | +0.32177176 | +0.10218139 |
| $P$ | 5.53 | $H$ | 14.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.4+ | 0.6+ | 2005 08 01 | 599 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2000 09 28 | 704 | 0.5− | 0.6+ | 2005 08 01 | 599 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2000 09 28 | 704 | 1.1− | 0.3+ | 2005 08 24 | 644 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2000 09 28 | 704 | 0.0 | 0.2+ | 2005 08 24 | 644 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2000 09 28 | 704 | 0.9− | 1.1+ | 2005 08 24 | 644 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.7+ |
| 2000 10 02 | 704 | 0.2+ | 0.5+ | 2005 08 27 | 699 | 0.5− | 0.1− | 2006 11 18 | 704 | 1.3− | 0.2− |
| 2000 10 02 | 704 | 0.3− | 0.2− | 2005 08 27 | 699 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.6− | 1.0+ |
| 2000 10 02 | 704 | 0.7+ | 0.1− | 2005 08 27 | 699 | 1.4− | 0.9+ | 2006 11 18 | 704 | 1.3− | 0.2− |
| 2000 10 02 | 704 | 0.3+ | 0.6+ | 2005 08 27 | 699 | 0.4− | 0.6+ | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2000 10 02 | 704 | 0.5+ | 0.0 | 2005 09 06 | 704 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2000 10 31 | 704 | 0.3+ | 0.6+ | 2005 09 06 | 704 | 0.5+ | 0.7+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2000 10 31 | 704 | 1.0− | 1.7+ | 2005 09 06 | 704 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.6− |
| 2000 10 31 | 704 | 0.5− | 1.2+ | 2005 09 23 | 703 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2000 10 31 | 704 | 0.3− | 0.6− | 2005 09 23 | 703 | 0.9− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2003 03 26 | 644 | 0.8+ | 0.5+ | 2005 09 23 | 703 | 0.1+ | 1.3+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2003 03 26 | 644 | 0.5+ | 0.5+ | 2005 09 23 | 703 | 0.2− | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 03 26 | 644 | 1.0+ | 0.6+ | 2005 10 06 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.7+ | 0.1− |
| 2003 03 31 | 691 | 0.2+ | 0.0 | 2005 10 06 | 691 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.6+ | 0.3− |
| 2003 03 31 | 691 | 0.1− | 0.0 | 2005 10 06 | 691 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 2003 03 31 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 04 03 | 699 | 0.1− | 1.1+ | 2006 10 19 | G96 | 0.5− | 0.3+ | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2003 04 03 | 699 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2003 04 03 | 699 | 0.3− | 0.5− | 2006 10 19 | G96 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2003 04 03 | 699 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2003 04 07 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2003 04 07 | 691 | 0.7+ | 1.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2003 04 07 | 691 | 0.6+ | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2003 04 24 | 691 | 0.1+ | 0.6+ | 2006 11 01 | G96 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.3− | 1.4+ |
| 2003 04 24 | 691 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.4+ |
| 2003 04 24 | 691 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.2− | 0.8+ | 2006 11 27 | 703 | 0.3+ | 0.5− |
| 2003 05 01 | 691 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.1− | 0.7− | 2006 11 27 | 703 | 0.4+ | 0.2− |
| 2003 05 01 | 691 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.5+ | 0.7− | 2006 11 29 | 704 | 0.4+ | 0.4+ |
| 2003 05 01 | 691 | 0.1+ | 0.4+ | 2006 11 02 | 703 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2005 07 31 | 644 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.9+ | 0.4+ |
| 2005 07 31 | 644 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.8+ |
| 2005 07 31 | 644 | 0.4− | 0.1+ | 2006 11 11 | 691 | 0.7− | 1.1− | 2006 11 29 | 704 | 0.2+ | 0.4+ |
| 2005 07 31 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | (2.9− | 1.1−) | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2005 07 31 | 644 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.4+ | 2006 12 01 | 691 | 0.2+ | 0.0 |
| 2005 07 31 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.9+ | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2005 08 01 | 599 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | | | | |
| 2005 08 01 | 599 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.5− | | | | |

**(138756)∗ 2000 SC$_{273}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.83156 | | (2000.0) | | | |
| $n$ | 0.16913811 | $\omega$ | 120.07943 | | +0.77029231 | +0.59095647 |
| $a$ | 3.2382353 | $\Omega$ | 206.17593 | | −0.58234444 | +0.80500821 |
| $e$ | 0.1281726 | $i$ | 32.90235 | | +0.25985516 | +0.05227077 |
| $P$ | 5.83 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | (1.1+ | 2.2+) | 2000 10 07 | 691 | 0.1+ | 0.5− | 2004 04 23 | 704 | 1.1− | 0.3− |
| 1998 04 21 | 704 | 0.5+ | 0.1− | 2000 11 02 | 704 | 0.7+ | 0.2+ | 2004 04 23 | 704 | 0.0 | 0.4+ |
| 1998 04 21 | 704 | (0.3− | 2.4−) | 2000 11 02 | 704 | 0.4− | 0.7+ | 2004 04 23 | 704 | 0.5− | 1.3− |
| 1998 04 21 | 704 | (2.7− | 0.9+) | 2000 11 02 | 704 | 0.6+ | 0.1+ | 2004 05 23 | 704 | 0.3+ | 0.6+ |
| 1999 08 11 | 704 | 0.1+ | 0.0 | 2000 11 02 | 704 | 0.7+ | 0.6+ | 2004 05 23 | 704 | 0.1+ | 1.3+ |
| 1999 08 11 | 704 | 0.4− | 0.1+ | 2000 11 20 | 699 | 0.6− | 0.1− | 2004 05 23 | 704 | 0.3− | 0.3+ |
| 1999 08 11 | 704 | 0.1+ | 0.5− | 2000 11 20 | 699 | 1.6− | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.2− |
| 2000 09 22 | 699 | 0.7− | 0.2+ | 2000 11 20 | 699 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.4+ | 0.7− |
| 2000 09 22 | 699 | 1.2− | 1.5+ | 2000 11 20 | 699 | 0.8− | 1.3+ | 2006 08 28 | 703 | 0.0 | 0.5− |
| 2000 09 22 | 699 | 0.3+ | 0.3+ | 2000 11 26 | 704 | 0.9+ | 1.1+ | 2006 08 28 | 703 | 0.6− | 0.1− |
| 2000 09 22 | 699 | 0.3− | 1.2+ | 2000 11 26 | 704 | 1.1− | 1.3+ | 2006 09 22 | 699 | 0.3− | 0.4+ |
| 2000 09 24 | 704 | 0.2+ | 0.0 | 2000 11 26 | 704 | 0.8+ | 0.4+ | 2006 09 22 | 699 | 0.5+ | 0.5+ |
| 2000 09 24 | 704 | 0.7+ | 0.4+ | 2000 11 26 | 704 | 0.0 | 0.8+ | 2006 09 22 | 699 | (1.9+ | 0.4+) |
| 2000 09 24 | 704 | 0.6− | 0.0 | 2004 03 22 | 704 | 0.5+ | 1.4+ | 2006 09 22 | 699 | 1.1+ | 1.3+ |
| 2000 09 24 | 704 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.9+ | 1.1+ | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2000 09 24 | 704 | 0.5− | 0.5+ | 2004 03 22 | 704 | 1.5+ | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.4+ |
| 2000 09 28 | 704 | 0.4− | 0.2− | 2004 03 22 | 704 | 0.9+ | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2000 09 28 | 704 | 0.7+ | 1.4− | 2004 03 22 | 704 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.9+ | 0.3− |
| 2000 09 28 | 704 | 0.3+ | 0.6− | 2004 04 14 | 699 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.5− |
| 2000 09 28 | 704 | 1.3+ | 0.3− | 2004 04 14 | 699 | (1.7− | 0.7−) | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2000 10 02 | 704 | 0.1− | 0.0 | 2004 04 14 | 699 | 0.1+ | 1.0− | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2000 10 02 | 704 | 0.1− | 0.5− | 2004 04 14 | 699 | 0.2− | 1.0+ | 2006 10 16 | 703 | 0.5+ | 0.3− |
| 2000 10 02 | 704 | 0.0 | 0.4− | 2004 04 16 | 704 | (1.9+ | 1.9+) | 2006 10 22 | 703 | 0.7− | 0.2+ |
| 2000 10 02 | 704 | 0.7− | 0.1− | 2004 04 16 | 704 | (0.6+ | 1.9+) | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 0.1+ | 0.4+ | 2004 04 16 | 704 | (1.8+ | 0.7+) | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2000 10 06 | 699 | 0.5+ | 0.0 | 2004 04 16 | 704 | (2.6+ | 1.2+) | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2000 10 06 | 699 | 0.8− | 0.2− | 2004 04 20 | 704 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2000 10 06 | 699 | 0.1+ | 0.1+ | 2004 04 20 | 704 | 0.7− | 1.5− | 2006 10 23 | 644 | 0.2− | 0.4− |
| 2000 10 06 | 699 | 0.2+ | 1.1+ | 2004 04 20 | 704 | 0.4− | 1.0− | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2000 10 07 | 699 | 0.0 | 0.6+ | 2004 04 20 | 704 | 1.4− | 0.1− | 2006 11 13 | 703 | 0.1− | 0.0 |
| 2000 10 07 | 699 | 1.1+ | 0.3+ | 2004 04 22 | 704 | 0.1− | 1.0− | 2006 11 13 | 703 | 0.5+ | 0.4− |
| 2000 10 07 | 699 | 0.3− | 0.3+ | 2004 04 22 | 704 | 0.2− | 0.7+ | 2006 11 13 | 703 | 1.3− | 0.5+ |
| 2000 10 07 | 699 | 0.5+ | 0.0 | 2004 04 22 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2000 10 07 | 691 | 0.2+ | 0.4− | 2004 04 22 | 704 | 1.0+ | 1.5+ | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2000 10 07 | 691 | 0.1+ | 0.4− | 2004 04 22 | 704 | 0.8− | 0.9+ | 2006 11 17 | 644 | 0.0 | 0.2+ |

**(138757)∗ 2000 SR$_{280}$**

Discovered 2000 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 247.53883 | | (2000.0) | | | |
| $n$ | 0.17125707 | $\omega$ | 285.53834 | | −0.87340478 | −0.43440265 |
| $a$ | 3.2114689 | $\Omega$ | 229.26993 | | +0.47698105 | −0.85425761 |
| $e$ | 0.0677657 | $i$ | 16.88743 | | −0.09825052 | −0.28554909 |
| $P$ | 5.76 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 20 | 260 | (6.6− | 4.2+) | 2003 04 07 | 704 | (0.1+ | 1.7−) | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 1991 02 20 | 260 | (5.8− | 5.3+) | 2003 04 07 | 704 | (0.4− | 1.8−) | 2006 11 11 | 703 | 0.5− | 0.2− |
| 1995 11 17 | 261 | (8.4− | 5.8+) | 2003 04 11 | 699 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 1.1− | 1.1− |
| 1995 11 17 | 261 | (7.9− | 5.7+) | 2003 04 11 | 699 | 1.1+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2000 09 30 | 704 | 0.1+ | 0.5− | 2003 04 11 | 699 | (1.5+ | 0.4−) | 2006 11 14 | 703 | 0.4− | 0.3+ |
| 2000 09 30 | 704 | 0.4− | 0.0 | 2003 04 11 | 699 | 0.6+ | 0.6− | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2000 09 30 | 704 | 0.8+ | 0.5− | 2005 08 27 | 699 | 0.6+ | 0.2+ | 2006 11 14 | 703 | 0.6+ | 1.1− |
| 2000 09 30 | 704 | 0.1+ | 0.3− | 2005 08 27 | 699 | 0.4− | 0.2+ | 2006 11 14 | 703 | 1.1− | 0.2+ |
| 2000 10 05 | 704 | 0.5− | 0.4+ | 2005 08 27 | 699 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2000 10 05 | 704 | 0.2+ | 1.0+ | 2005 08 27 | 699 | 0.8− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2000 10 05 | 704 | 1.3+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2000 10 05 | 704 | 1.1+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2000 10 25 | 704 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.9+ |
| 2000 10 25 | 704 | 0.5+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | (2.0+ | 2.7+) |
| 2000 10 25 | 704 | 1.2− | 1.4− | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 1.1+ | 0.8+ |
| 2000 10 25 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.7+ | 2006 11 17 | 703 | (0.7+ | 2.2+) |
| 2000 11 30 | 645 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2000 11 30 | 645 | 0.0 | 0.2− | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.7− |
| 2003 03 23 | 644 | 0.0 | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.8− | 0.8+ |
| 2003 03 23 | 644 | 0.2− | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2003 03 23 | 644 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2003 03 30 | 699 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2003 03 30 | 699 | 0.3− | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2003 03 30 | 699 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2003 03 30 | 699 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.4− | 1.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 644 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2003 03 31 | 644 | 0.4+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | (0.1− | 1.6+) |
| 2003 03 31 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 1.2+ | 0.6− |
| 2003 04 05 | 608 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2003 04 05 | 608 | 0.7− | 1.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2003 04 05 | 608 | 0.0 | 0.7− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2003 04 07 | 704 | (1.2− | 1.8−) | 2006 11 08 | 644 | 0.4− | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2003 04 07 | 704 | 0.3− | 0.5− | 2006 11 08 | 644 | 0.1− | 0.1+ | | | | |

**(138758)∗ 2000 SS$_{280}$**

Discovered 2000 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.04015 | | (2000.0) | | +0.60350537 | −0.78528502 |
| $n$ | 0.17531843 | $\omega$ | 158.09004 | | +0.70862212 | +0.60770285 |
| $a$ | 3.1616783 | $\Omega$ | 254.52091 | | +0.36556252 | +0.11842586 |
| $e$ | 0.0878914 | $i$ | 8.24678 | | | |
| $P$ | 5.62 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.6− | 0.0 | 2002 01 09 | 704 | 0.7− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2000 09 30 | 704 | 0.4− | 0.9+ | 2002 01 09 | 704 | 1.0− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2000 09 30 | 704 | 0.3− | 1.4+ | 2002 01 09 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2000 09 30 | 704 | 0.1+ | 0.2+ | 2002 01 09 | 704 | 0.8− | 0.7+ | 2006 11 14 | 691 | 0.3− | 0.0 |
| 2000 10 05 | 704 | 0.1− | 0.3+ | 2002 01 14 | 704 | (2.2+ | 0.7+) | 2006 11 14 | 691 | 0.5− | 0.0 |
| 2000 10 05 | 704 | 0.4+ | 0.3+ | 2002 01 14 | 704 | 1.0+ | 0.5− | 2006 11 14 | 691 | 0.3− | 0.0 |
| 2000 10 05 | 704 | 0.1+ | 0.4+ | 2002 01 14 | 704 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.7− |
| 2000 10 05 | 704 | 0.7− | 1.8+ | 2002 01 14 | 704 | 0.8− | 1.2+ | 2006 11 18 | 691 | 0.1+ | 0.4− |
| 2000 10 05 | 704 | 0.2+ | 0.1+ | 2002 01 16 | 608 | 0.5+ | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2000 10 05 | 704 | 0.3+ | 0.5+ | 2002 01 16 | 608 | (0.5+ | 1.6−) | 2006 11 18 | 704 | 1.3+ | 1.0+ |
| 2000 10 05 | 704 | 0.1+ | 0.0 | 2002 01 16 | 608 | 0.4− | 1.0− | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2000 10 05 | 704 | 0.7− | 1.1+ | 2002 02 06 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 2000 10 05 | 704 | 1.5− | 1.0+ | 2002 02 06 | 644 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2000 10 25 | 704 | 0.6+ | 1.2+ | 2002 02 06 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2000 10 25 | 704 | 0.2− | 0.6+ | 2002 02 07 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | 1.3+ | 0.6+ |
| 2000 10 25 | 704 | 0.4− | 0.3− | 2002 02 07 | 644 | 0.0 | 0.9+ | 2006 11 21 | 704 | 1.0+ | 0.3+ |
| 2000 11 16 | 699 | 0.9+ | 0.1+ | 2002 02 07 | 644 | 0.3+ | 0.5+ | 2006 11 21 | 704 | 0.4− | 0.8+ |
| 2000 11 16 | 699 | 0.9− | 0.7+ | 2002 02 11 | 704 | 0.8+ | 0.8+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2000 11 16 | 699 | 0.3+ | 0.0 | 2002 02 11 | 704 | 1.2+ | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.9+ |
| 2000 11 16 | 699 | 0.2− | 0.4+ | 2002 02 11 | 704 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.3+ | 0.3− |
| 2000 11 19 | 704 | 0.6+ | 0.5+ | 2005 07 31 | 644 | 0.2+ | 0.4+ | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2000 11 19 | 704 | 0.0 | 0.1− | 2005 07 31 | 644 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.3+ | 0.2− |
| 2000 11 19 | 704 | 0.9+ | 0.2− | 2005 07 31 | 644 | 0.3+ | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2000 11 19 | 704 | 0.1− | 1.3− | 2005 08 27 | 699 | 0.7− | 1.0+ | 2006 11 22 | 704 | 0.7+ | 1.4+ |
| 2000 11 27 | 704 | 0.9+ | 0.2+ | 2005 08 27 | 699 | 0.5+ | 0.5− | 2006 11 22 | 704 | 0.4− | 0.7+ |
| 2000 11 27 | 704 | 0.0 | 0.1+ | 2005 08 27 | 699 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2000 11 27 | 704 | 0.7+ | 0.0 | 2005 08 27 | 699 | 0.5− | 0.3+ | 2006 11 27 | 704 | 0.9− | 0.5+ |
| 2000 11 27 | 704 | 0.3− | 1.0+ | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 27 | 704 | 0.8+ | 0.6− |
| 2000 11 27 | 704 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.5+ | 0.0 |
| 2000 11 30 | 645 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.4− | 0.4− | 2006 12 01 | 704 | 0.8− | 0.1− |
| 2000 11 30 | 645 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1− | 0.6− | 2006 12 01 | 704 | 0.3− | 0.9− |
| 2002 01 08 | 644 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.5− | 0.6− |
| 2002 01 08 | 644 | 0.6+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.3+ | 1.2+ |
| 2002 01 08 | 644 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.0 | 0.1+ |
| 2002 01 09 | 704 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.3+ | | | | |

**(138759)∗ 2000 SK$_{281}$ = 2001 YJ$_{75}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22646)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.84802 | | (2000.0) | | +0.97841460 | −0.14653445 |
| $n$ | 0.17949833 | $\omega$ | 79.22741 | | +0.06873364 | +0.89572994 |
| $a$ | 3.1124026 | $\Omega$ | 289.07642 | | +0.19488600 | +0.41975652 |
| $e$ | 0.1586724 | $i$ | 8.86929 | | | |
| $P$ | 5.49 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 05 | 608 | 0.3− | 0.8− | 2005 06 12 | 691 | 0.4+ | 0.1− | 2006 11 02 | 703 | 0.2− | 0.9− |
| 2000 08 05 | 608 | 0.7− | 0.9− | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 11 02 | 703 | 0.0 | 0.7− |
| 2000 08 05 | 608 | 0.1− | 0.4− | 2005 06 13 | G96 | 0.5− | 0.0 | 2006 11 02 | 703 | 0.7− | 0.1+ |
| 2000 09 03 | 704 | 0.8+ | 0.8+ | 2005 06 13 | G96 | 0.2− | 0.0 | 2006 11 02 | 703 | 0.2− | 0.3+ |
| 2000 09 03 | 704 | 0.3− | 1.2+ | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 11 14 | 644 | 0.5+ | 0.2+ |
| 2000 09 03 | 704 | 0.4− | 1.1+ | 2005 06 16 | 691 | 0.2+ | 0.3− | 2006 11 14 | 644 | 0.4+ | 0.2− |
| 2000 09 03 | 704 | 0.4− | 1.2+ | 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 11 14 | 644 | 0.5+ | 0.1− |
| 2000 09 23 | 704 | 0.1+ | 0.2− | 2005 06 16 | 691 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 2000 09 23 | 704 | 0.2− | 0.3− | 2005 06 16 | 691 | 0.3+ | 0.1− | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2000 09 23 | 704 | 0.2− | 0.5− | 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2000 09 23 | 704 | 0.2− | 0.4− | 2005 06 16 | 691 | 1.4− | 0.7+ | 2006 11 15 | 703 | 0.1+ | 0.3+ |
| 2000 10 03 | 704 | 0.3− | 0.2+ | 2005 06 26 | 644 | 0.3+ | 0.1− | 2006 11 15 | 704 | 0.2− | 0.5− |
| 2000 10 03 | 704 | 0.5+ | 0.2+ | 2005 06 26 | 644 | 0.4+ | 0.0 | 2006 11 15 | 704 | (0.3+ | 1.6+) |
| 2000 10 03 | 704 | 0.0 | 1.1+ | 2005 06 26 | 644 | 0.5+ | 0.4+ | 2006 11 15 | 704 | (0.5− | 2.4+) |
| 2001 12 18 | 704 | 0.1+ | 0.7− | 2005 06 28 | G96 | 0.6− | 0.6+ | 2006 11 17 | 644 | 0.3+ | 0.0 |
| 2001 12 18 | 704 | 0.4+ | 0.9− | 2005 06 28 | G96 | 0.4− | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 1.0+ | 0.4− | 2005 06 28 | G96 | 0.1− | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.8− | 0.2+ | 2005 06 28 | G96 | 0.4− | 0.4+ | 2006 11 21 | 703 | (0.7− | 3.9+) |
| 2001 12 19 | 704 | 0.6− | 0.0 | 2005 07 15 | G96 | 0.1+ | 0.0 | 2006 11 21 | 703 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.7+ | 2005 07 15 | G96 | 0.2+ | 0.1− | 2006 11 21 | 703 | 0.2− | 1.9− |
| 2001 12 19 | 704 | 0.1+ | 0.9+ | 2005 07 15 | G96 | 0.4+ | 0.1− | 2006 11 21 | 703 | 1.1+ | 1.3− |
| 2005 06 03 | 691 | 0.0 | 0.3− | 2005 07 15 | G96 | 0.2+ | 0.1− | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2005 06 03 | 691 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.8− | 0.1+ | 2006 11 22 | 703 | 0.2+ | 0.4− |
| 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 1.0+ | 0.1− | 2006 11 22 | 703 | 0.5− | 0.2− |
| 2005 06 12 | 691 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.3− | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2005 06 12 | 691 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.7− | 0.2− | | | | |

**(138760)∗ 2000 SO$_{283}$ = 2001 XS$_{185}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22647)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.46093 | | (2000.0) | | +0.82077010 | −0.55447922 |
| $n$ | 0.18851040 | $\omega$ | 141.88464 | | +0.48229958 | +0.80153551 |
| $a$ | 3.0123991 | $\Omega$ | 252.33168 | | +0.30614304 | +0.22381605 |
| $e$ | 0.0814605 | $i$ | 8.29339 | | | |
| $P$ | 5.23 | $H$ | 14.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 699 | 1.3− | 0.9− | 2001 12 20 | 704 | 0.6− | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2000 09 02 | 699 | 0.9− | 0.1− | 2001 12 20 | 704 | 0.1+ | 0.7+ | 2006 11 11 | 691 | 0.5+ | 1.1+ |
| 2000 09 02 | 699 | (2.3− | 2.1+) | 2001 12 20 | 704 | 0.3− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2000 09 02 | 699 | 0.2+ | 0.1− | 2002 01 09 | 704 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 1.0− |
| 2000 09 23 | 699 | 0.5+ | 0.3+ | 2002 01 09 | 704 | 0.8− | 0.7− | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2000 09 23 | 704 | 0.5+ | 0.2+ | 2002 01 09 | 704 | 0.4− | 0.5− | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2000 09 23 | 704 | 1.3+ | 0.2− | 2003 03 28 | 691 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2000 09 23 | 699 | 0.2− | 0.4+ | 2003 03 28 | 691 | 0.2+ | 0.7+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2000 09 23 | 704 | 0.4+ | 0.5+ | 2003 03 28 | 691 | 0.5+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2000 09 23 | 699 | 0.9− | 0.7+ | 2003 04 04 | 699 | 0.6+ | 0.4− | 2006 11 19 | 691 | 1.1+ | 0.1− |
| 2000 09 23 | 704 | 0.4− | 0.1− | 2003 04 04 | 699 | (0.4+ | 2.1+) | 2006 12 01 | 291 | 0.4− | 0.1+ |
| 2000 09 23 | 699 | 0.2− | 0.4− | 2003 04 04 | 699 | (0.5+ | 2.5+) | 2006 12 01 | 291 | 0.4− | 0.1+ |
| 2000 10 03 | 704 | 0.0 | 0.5+ | 2003 04 04 | 699 | 1.1− | 0.6− | 2006 12 01 | 291 | 0.6− | 0.4+ |
| 2000 10 03 | 704 | 0.7+ | 0.4+ | 2005 08 27 | 699 | 0.7+ | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2000 10 03 | 704 | 0.5− | 0.4+ | 2005 08 27 | 699 | 0.5− | 0.0 | 2006 12 01 | G96 | 0.7+ | 1.2− |
| 2000 10 03 | 704 | 0.1− | 1.1+ | 2005 08 27 | 699 | 0.2− | 0.5− | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2001 12 14 | 704 | 0.1− | 0.5+ | 2005 08 27 | 699 | 0.6+ | 0.8+ | 2006 12 01 | G96 | 0.3+ | 0.3− |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2005 09 09 | 704 | 0.4− | 0.6+ | 2006 12 01 | 691 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4− | 0.9+ | 2005 09 09 | 704 | 0.0 | 0.7− | 2006 12 01 | 691 | 0.3− | 0.1− | | |
| 2001 12 17 | 704 | 0.4+ | 0.1+ | 2005 09 09 | 704 | 0.3+ | 0.1− | 2006 12 01 | 291 | 0.1− | 0.2− | | |
| 2001 12 17 | 704 | 0.0 | 0.1− | 2005 09 11 | 699 | 0.4+ | 0.7− | 2006 12 01 | 691 | 0.1− | 0.2− | | |
| 2001 12 17 | 704 | 0.5+ | 0.3+ | 2005 09 11 | 699 | 1.0− | 0.3+ | 2006 12 01 | 291 | 0.0 | 0.1− | | |
| 2001 12 17 | 704 | 0.6+ | 0.3+ | 2005 09 11 | 699 | 0.8− | 1.3+ | 2006 12 01 | 291 | 0.1− | 0.2− | | |
| 2001 12 20 | 704 | 0.2+ | 0.9− | 2005 09 11 | 699 | 0.6− | 1.4+ | | | | | | |

**(138761)∗ 2000 $SN_{286}$ = 2004 $FN_{127}$**

Discovered 2000 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60721)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.14772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17248663 | $\omega$ | 140.30807 | | +0.83143736 | +0.55318718 | |
| $a$ | 3.1961888 | $\Omega$ | 186.74410 | | −0.55135161 | +0.83300094 | |
| $e$ | 0.1546651 | $i$ | 26.23984 | | +0.06872632 | −0.00966266 | |
| $P$ | 5.71 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.2− | 2005 06 20 | 644 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.2− | 0.4− | | |
| 1999 03 20 | 645 | 0.1− | 0.2− | 2005 06 20 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.3− | | |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2005 08 25 | 644 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.2− | | |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2005 08 25 | 644 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.3− | | |
| 2000 09 01 | 704 | 1.0− | 0.8+ | 2005 08 25 | 644 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− | | |
| 2000 09 01 | 704 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.0 | | |
| 2000 09 01 | 704 | 1.6+ | 0.1− | 2006 08 28 | 703 | 0.9− | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.1− | | |
| 2000 09 01 | 704 | 0.1+ | 1.1+ | 2006 08 28 | 703 | 0.2+ | 1.3− | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 2000 09 17 | 049 | 1.1+ | 1.9+ | 2006 08 28 | 703 | 1.1+ | 0.8+ | 2006 09 27 | 704 | 0.7− | 1.0+ | | |
| 2000 09 17 | 049 | 0.6+ | 1.9+ | 2006 08 31 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.1− | | |
| 2000 09 17 | 049 | 1.0+ | 1.1+ | 2006 08 31 | 704 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.6− | 0.8+ | | |
| 2000 09 26 | 704 | 0.5− | 0.7+ | 2006 08 31 | 704 | 1.4− | 1.1+ | 2006 09 27 | 704 | 0.8− | 1.5+ | | |
| 2000 09 26 | 704 | 0.2+ | 0.5+ | 2006 08 31 | 704 | 0.9− | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.4− | | |
| 2000 09 26 | 704 | 0.1+ | 1.1+ | 2006 09 15 | 704 | (1.3+ | 1.7+) | 2006 09 28 | 704 | 0.5+ | 0.4+ | | |
| 2000 10 03 | 704 | 0.5+ | 0.1− | 2006 09 15 | 704 | 0.6+ | 0.9− | 2006 09 28 | 704 | (3.2+ | 0.2−) | | |
| 2000 10 03 | 704 | 0.4− | 0.5− | 2006 09 15 | 704 | (2.2− | 0.9+) | 2006 09 28 | 704 | 0.3+ | 0.1− | | |
| 2000 10 03 | 704 | 0.1− | 0.4+ | 2006 09 15 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 704 | 0.6+ | 0.3− | | |
| 2000 10 03 | 704 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.6+ | 0.6+ | | |
| 2004 03 27 | 704 | 0.4+ | 0.9+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1− | | |
| 2004 03 27 | 704 | 0.7+ | 1.3+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1− | | |
| 2004 03 27 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 27 | 704 | 0.9+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.1− | 0.4+ | | |
| 2004 03 29 | 291 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.1+ | 0.1+ | | |
| 2004 03 29 | 291 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.4+ | | |
| 2004 03 29 | 291 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.3− | | |
| 2005 06 20 | 644 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.2− | 0.4− | 2006 10 01 | 704 | 0.5− | 0.5+ | | |
| 2005 06 20 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.2+ | | |
| 2005 06 20 | 644 | 0.1+ | 0.2− | 2006 09 24 | 691 | 0.2− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2005 06 20 | 644 | 0.6+ | 0.4+ | 2006 09 24 | 691 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.0 | 0.3+ | | |

**(138762)∗ 2000 $SR_{287}$ = 2004 $GH_{23}$**

Discovered 2000 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60721)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.58336 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17819571 | $\omega$ | 267.88579 | | +0.52693197 | +0.84559318 | |
| $a$ | 3.1275520 | $\Omega$ | 34.35284 | | −0.70704384 | +0.49197478 | |
| $e$ | 0.1625259 | $i$ | 8.71771 | | −0.47162667 | +0.20720276 | |
| $P$ | 5.53 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.2+ | 0.4− | 2004 04 21 | 704 | 0.8+ | 0.3+ | 2005 10 02 | E12 | 0.2− | 0.3+ | | |
| 2000 09 24 | 704 | 0.6− | 0.6+ | 2004 04 21 | 704 | 0.4+ | 0.2+ | 2005 10 02 | E12 | 0.5+ | 1.2+ | | |
| 2000 09 24 | 704 | 0.2− | 0.2+ | 2004 04 21 | 704 | (0.4+ | 1.6+) | 2005 10 02 | E12 | 0.2− | 0.2− | | |
| 2000 09 24 | 704 | 1.0− | 0.1− | 2004 05 10 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.0 | | |
| 2000 09 26 | 704 | 1.9− | 1.4+ | 2004 05 10 | 691 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 2000 09 26 | 704 | 0.9− | 0.3+ | 2004 05 10 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.0 | | |
| 2000 09 26 | 704 | 0.6− | 0.6+ | 2005 02 13 | 809 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.1− | 0.2− | | |
| 2000 09 26 | 704 | 0.3+ | 0.8+ | 2005 02 13 | 809 | 0.5− | 0.1− | 2006 10 13 | 691 | 0.0 | 0.3+ | | |
| 2000 10 03 | 704 | 0.5− | 0.1+ | 2005 02 13 | 809 | 0.4− | 0.0 | 2006 10 13 | 691 | 0.0 | 0.3+ | | |
| 2000 10 03 | 704 | 0.3+ | 0.6+ | 2005 02 13 | 809 | 0.4− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.2+ | | |
| 2000 10 03 | 704 | 0.3+ | 0.5+ | 2005 05 19 | E12 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.4− | 0.5+ | | |
| 2000 10 03 | 704 | 0.2− | 0.5+ | 2005 05 19 | E12 | 1.1− | 0.1− | 2006 10 17 | 691 | 0.3− | 0.2+ | | |
| 2000 10 03 | 704 | 0.0 | 0.3+ | 2005 05 19 | E12 | 1.4+ | 0.8− | 2006 10 17 | 691 | 0.0 | 0.2+ | | |
| 2000 10 25 | 704 | 0.4+ | 0.3− | 2005 05 19 | E12 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.4+ | | |
| 2000 10 25 | 704 | 0.7+ | 0.5− | 2005 05 20 | 644 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.3+ | | |
| 2000 10 25 | 704 | 0.3− | 0.2+ | 2005 05 20 | 644 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.2+ | 1.2− | | |
| 2000 10 25 | 704 | 0.6+ | 0.1− | 2005 05 20 | 644 | 0.1+ | 0.4+ | 2006 10 26 | A13 | 0.2+ | 0.4− | | |
| 2000 10 25 | 704 | 0.0 | 0.7+ | 2005 07 10 | E12 | 0.5− | 0.3+ | 2006 10 26 | A13 | 0.4− | 0.3+ | | |
| 2000 10 25 | 704 | 0.0 | 0.2+ | 2005 07 10 | E12 | 0.1+ | 0.3+ | 2006 10 26 | A13 | 0.2+ | 0.1+ | | |
| 2000 10 25 | 704 | 0.0 | 0.2+ | 2005 07 10 | E12 | 0.3+ | 0.3− | 2006 10 26 | A13 | 0.3− | 0.3− | | |
| 2004 03 27 | 704 | 1.1− | 0.2− | 2005 07 10 | E12 | 0.0 | 0.3+ | 2006 10 26 | A13 | 0.0 | 0.2− | | |
| 2004 03 27 | 704 | 0.2− | 0.2− | 2005 07 29 | E12 | 0.3− | 0.4+ | 2006 10 27 | 703 | 0.4− | 1.1− | | |
| 2004 03 27 | 704 | 0.8− | 0.6+ | 2005 07 29 | E12 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.6+ | 0.6− | | |
| 2004 03 27 | 704 | 0.1− | 0.1− | 2005 08 10 | E12 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 1.1− | | |
| 2004 03 27 | 704 | (2.0− | 0.1+) | 2005 08 10 | E12 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.3− | 0.2+ | | |
| 2004 04 12 | 699 | 0.7+ | 0.1+ | 2005 08 10 | E12 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.3− | 0.3− | | |
| 2004 04 12 | 699 | 0.0 | 0.0 | 2005 08 10 | E12 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.3− | | |
| 2004 04 12 | 691 | 0.3+ | 0.3+ | 2005 08 15 | E12 | 0.2+ | 0.6− | 2006 11 01 | G96 | 0.1− | 0.1+ | | |
| 2004 04 12 | 699 | 0.3+ | 0.3+ | 2005 08 15 | E12 | 0.3+ | 0.6− | 2006 11 01 | G96 | 0.2− | 0.2− | | |
| 2004 04 12 | 699 | 0.2+ | 0.6+ | 2005 08 15 | E12 | 0.6− | 0.5+ | 2006 11 09 | 691 | 0.1+ | 0.2+ | | |
| 2004 04 12 | 691 | 0.3+ | 0.4+ | 2005 08 15 | E12 | 0.7+ | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.2+ | | |
| 2004 04 12 | 691 | 0.2+ | 0.4+ | 2005 09 05 | E12 | 0.3+ | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.1+ | | |
| 2004 04 16 | 704 | 0.2− | 0.9+ | 2005 09 05 | E12 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.2+ | | |
| 2004 04 16 | 704 | (0.8+ | 2.0+) | 2005 09 05 | E12 | 1.2− | 0.5− | 2006 11 13 | 691 | 0.2+ | 0.5+ | | |
| 2004 04 16 | 704 | 0.7+ | 0.9+ | 2005 09 05 | E12 | 0.2− | 0.8− | 2006 11 13 | 691 | 0.1+ | 0.1+ | | |
| 2004 04 21 | 704 | 0.5+ | 0.4+ | 2005 10 02 | E12 | 0.1+ | 0.2− | | | | | | |

**(138763)∗ 2000 $SX_{290}$ = 1994 $RM_{19}$**

Discovered 2000 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 6075), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.69577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17286934 | $\omega$ | 39.57760 | | +0.99551216 | −0.08475556 | |
| $a$ | 3.1914697 | $\Omega$ | 325.21544 | | +0.05665285 | +0.89006755 | |
| $e$ | 0.1291391 | $i$ | 4.23159 | | +0.07580232 | +0.44787973 | |
| $P$ | 5.70 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 05 | 809 | (1.7+ | 4.3+) | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.2− | | |
| 1994 09 05 | 809 | (1.4+ | 5.1+) | 2001 12 19 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 1994 09 05 | 809 | (0.3+ | 4.0+) | 2001 12 19 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 1994 09 06 | 809 | (1.5+ | 4.6+) | 2001 12 19 | 704 | 0.7+ | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | | |
| 1994 09 06 | 809 | (0.9+ | 4.2+) | 2002 01 14 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.0 | | |
| 1994 09 06 | 809 | (0.1+ | 4.1+) | 2002 01 14 | 704 | 0.1− | 0.0 | 2006 10 29 | 704 | 1.3+ | 0.4+ | | |
| 1997 02 03 | 691 | 0.3− | 0.0 | 2002 01 14 | 704 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.6+ | | |
| 1997 02 03 | 691 | 0.2− | 0.6− | 2002 01 14 | 704 | 0.7− | 0.1+ | 2006 10 29 | 704 | 0.6+ | 0.2+ | | |
| 1997 02 03 | 691 | 0.2− | 0.1− | 2002 01 14 | 704 | 0.6− | 0.1+ | 2006 10 29 | 704 | 0.1+ | 0.8+ | | |
| 2000 09 26 | 699 | 0.3− | 0.6+ | 2003 01 31 | 291 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.3− | | |
| 2000 09 26 | 699 | 0.5− | 1.1+ | 2003 01 31 | 291 | 0.0 | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.3− | | |
| 2000 09 26 | 699 | 0.1− | 0.8+ | 2003 01 31 | 291 | 0.4− | 0.6+ | 2006 11 01 | G96 | 0.4+ | 0.3− | | |
| 2000 09 27 | 704 | 0.5− | 0.0 | 2003 02 23 | 599 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.1− | 0.4− | | |
| 2000 09 27 | 704 | 0.0 | 0.3+ | 2003 02 23 | 599 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.4− | | |
| 2000 09 27 | 704 | 0.3+ | 0.7+ | 2003 02 24 | 599 | 0.0 | 0.6+ | 2006 11 14 | 703 | (1.9− | 0.1−) | | |
| 2000 09 27 | 704 | 0.0 | 0.4+ | 2003 02 24 | 599 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.5− | 0.7− | | |
| 2000 09 27 | 704 | 0.5+ | 0.3− | 2003 04 09 | 691 | 0.9+ | 0.4+ | 2006 11 14 | 703 | 1.4+ | 1.2− | | |
| 2000 10 03 | 704 | 0.2− | 0.2+ | 2003 04 09 | 691 | 0.5+ | 0.0 | 2006 11 14 | 703 | 0.7− | 1.0− | | |
| 2000 10 03 | 704 | 0.7− | 0.3+ | 2003 04 09 | 691 | 0.6+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.5− | | |
| 2000 10 03 | 704 | 0.2+ | 0.1+ | 2005 08 01 | E12 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.0 | | |
| 2000 10 03 | 704 | 0.2+ | 0.6− | 2005 08 01 | E12 | 0.1− | 0.7+ | 2006 11 14 | 703 | 0.6− | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.6− | 0.2+ | 2005 08 01 | E12 | 0.2− | 1.0+ | 2006 11 16 | 704 | (0.2+ | 3.2+) | | |
| 2000 10 25 | 704 | 0.5− | 0.1− | 2005 08 01 | E12 | 0.5− | 1.0+ | 2006 11 16 | 704 | 0.3+ | 0.6+ | | |
| 2000 10 25 | 704 | 0.2− | 0.7+ | 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.1− | 0.6+ | | |
| 2000 10 25 | 704 | 0.5− | 0.1+ | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.7+ | 0.9+ | | |
| 2000 10 25 | 704 | 0.1− | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.1− | 0.4− | | |
| 2000 10 31 | 704 | 0.5− | 1.3+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.1− | | |
| 2000 10 31 | 704 | 0.8+ | 1.1− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.2− | | |
| 2000 10 31 | 704 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.2− | | |
| 2000 10 31 | 704 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.1+ | | |
| 2000 10 31 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.0 | | |
| 2001 12 18 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 704 | 1.0− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.1− | | |
| 2001 12 18 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 704 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.1− | | |
| 2001 12 18 | 704 | (2.0+ | 0.9+) | 2006 10 21 | 704 | 0.5+ | 0.8+ | 2006 11 22 | 704 | 1.5− | 0.3+ | | |
| 2001 12 18 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 704 | 0.5− | 0.4− | 2006 11 22 | 704 | 0.3− | 0.3+ | | |
| 2001 12 19 | 704 | 0.3+ | 0.8− | 2006 10 21 | 691 | 0.1− | 0.3− | | | | | | |

**(138764)∗ 2000 SP$_{292}$**

Discovered 2000 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.17557 | | (2000.0) | | | |
| $n$ | 0.17436158 | $\omega$ | 149.61109 | | +0.61687216 | −0.75446636 |
| $a$ | 3.1732347 | $\Omega$ | 261.34633 | | +0.66878086 | +0.65262075 |
| $e$ | 0.2400620 | $i$ | 13.10550 | | +0.41497095 | +0.06976157 |
| $P$ | 5.65 | $H$ | 14.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 704 | 1.5+ | 1.6− | 2000 12 19 | 704 | 0.5− | 0.1− | 2005 07 25 | 608 | 0.3+ | 1.1+ | | |
| 2000 09 07 | 704 | 0.2+ | 1.3− | 2000 12 19 | 704 | 0.2+ | 0.5+ | 2005 07 29 | 699 | 0.2+ | 0.3+ | | |
| 2000 09 07 | 704 | 0.3+ | 0.1+ | 2000 12 19 | 704 | 0.7− | 0.1+ | 2005 07 29 | 699 | 0.6+ | 1.2+ | | |
| 2000 09 22 | 699 | 0.0 | 0.4+ | 2000 12 19 | 704 | 0.3− | 0.6+ | 2005 07 29 | 699 | 0.3− | 0.8+ | | |
| 2000 09 22 | 699 | 0.4+ | 0.6+ | 2000 12 19 | 704 | 0.7− | 0.2+ | 2005 07 29 | 699 | 0.2+ | 0.6+ | | |
| 2000 09 22 | 699 | 0.1− | 0.1− | 2000 12 30 | 704 | 1.6− | 1.1− | 2005 07 31 | 644 | 0.1+ | 0.0 | | |
| 2000 09 22 | 699 | 0.4+ | 0.3+ | 2000 12 30 | 704 | 0.3− | 0.9+ | 2005 07 31 | 644 | 0.1− | 0.0 | | |
| 2000 09 27 | 704 | 0.4+ | 0.8+ | 2000 12 30 | 704 | 0.7+ | 0.4+ | 2005 07 31 | 644 | 0.2+ | 0.0 | | |
| 2000 09 27 | 704 | 0.1− | 0.2+ | 2000 12 30 | 704 | 0.2− | 0.7+ | 2005 09 06 | 151 | 0.3+ | 0.0 | | |
| 2000 09 27 | 704 | 0.4− | 0.4+ | 2000 12 30 | 704 | 0.1+ | 0.4+ | 2005 09 06 | 151 | 0.3− | 0.1− | | |
| 2000 09 27 | 704 | 0.2+ | 0.5+ | 2001 01 19 | 704 | 0.4+ | 0.3− | 2005 09 06 | 151 | 0.3− | 0.2− | | |
| 2000 09 27 | 704 | 0.6− | 0.1+ | 2001 01 19 | 704 | 0.2− | 0.4+ | 2006 10 20 | 704 | 0.3+ | 1.5+ | | |
| 2000 10 03 | 704 | 0.6+ | 0.0 | 2001 01 19 | 704 | 0.2− | 0.4+ | 2006 10 20 | 704 | 0.3− | 0.4+ | | |
| 2000 10 03 | 704 | 0.7+ | 0.1+ | 2001 01 19 | 704 | 0.3− | 1.1+ | 2006 10 20 | 704 | 0.3+ | 0.5+ | | |
| 2000 10 03 | 704 | 0.2+ | 0.1+ | 2001 01 19 | 704 | 0.1− | 0.2+ | 2006 10 20 | 704 | 0.4+ | 0.2+ | | |
| 2000 10 03 | 704 | 0.2+ | 0.0 | 2002 02 08 | 644 | 0.1+ | 0.5+ | 2006 10 23 | 704 | (0.2+ | 3.2+) | | |
| 2000 10 03 | 704 | 0.0 | 0.2− | 2002 02 08 | 644 | 0.5+ | 0.6+ | 2006 10 23 | 704 | 0.1+ | 1.3+ | | |
| 2000 10 06 | 704 | 0.0 | 0.8− | 2002 02 08 | 644 | 0.4+ | 0.4+ | 2006 10 23 | 704 | 0.1+ | 0.7+ | | |
| 2000 10 06 | 704 | 0.3− | 1.1− | 2002 03 06 | 703 | (0.3+ | 2.1+) | 2006 11 18 | 704 | 0.1+ | 0.2+ | | |
| 2000 10 06 | 704 | 1.7− | 0.6− | 2002 03 06 | 703 | (1.1− | 1.9+) | 2006 11 18 | 704 | 0.1− | 0.4+ | | |
| 2000 10 26 | 699 | 0.4− | 0.1− | 2002 03 06 | 703 | 0.7− | 1.0+ | 2006 11 18 | 704 | 0.6+ | 1.1+ | | |
| 2000 10 26 | 699 | 0.5− | 0.2+ | 2002 03 06 | 703 | 0.7+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.7+ | | |
| 2000 10 26 | 699 | 0.6− | 0.6+ | 2002 03 10 | 644 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.2+ | | |
| 2000 10 26 | 699 | 0.6+ | 0.6− | 2002 03 10 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.1− | | |
| 2000 11 19 | 704 | 0.0 | 0.1− | 2002 03 10 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.1+ | | |
| 2000 11 19 | 704 | 0.3+ | 0.4− | 2005 07 06 | 699 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.0 | | |
| 2000 11 19 | 704 | 0.5+ | 0.8− | 2005 07 06 | 699 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.2+ | | |
| 2000 11 19 | 704 | 0.4+ | 1.2− | 2005 07 06 | 699 | 1.0− | 0.8+ | 2006 11 28 | 704 | 0.4− | 1.9− | | |
| 2000 11 19 | 704 | 0.2− | 0.7− | 2005 07 06 | 699 | 0.7− | 0.4− | 2006 11 28 | 704 | 0.7− | 1.7− | | |
| 2000 11 29 | 704 | 0.4+ | 0.4+ | 2005 07 08 | 703 | 0.2+ | 0.5− | 2006 11 28 | 704 | 0.5− | 0.0 | | |
| 2000 11 29 | 704 | 0.2+ | 0.6+ | 2005 07 08 | 703 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.6+ | 1.8− | | |
| 2000 11 29 | 704 | 0.6+ | 0.2− | 2005 07 08 | 703 | 0.1+ | 0.6+ | 2006 11 28 | 704 | 0.3+ | 1.2− | | |
| 2000 11 29 | 704 | 0.1− | 0.1− | 2005 07 08 | 703 | 0.5− | 0.1− | 2006 12 01 | 704 | 0.2− | 0.3+ | | |
| 2000 11 29 | 704 | 0.1− | 0.3+ | 2005 07 16 | 703 | 0.1− | 0.9− | 2006 12 01 | 704 | 0.5− | 0.1− | | |
| 2000 12 04 | 704 | 0.5+ | 0.2+ | 2005 07 16 | 703 | 0.2− | 0.6− | 2006 12 01 | 704 | 0.1+ | 0.4+ | | |
| 2000 12 04 | 704 | 0.3− | 0.2+ | 2005 07 16 | 703 | 1.0− | 0.3− | 2006 12 01 | 704 | 0.4− | 0.2+ | | |
| 2000 12 04 | 704 | 0.1− | 0.4+ | 2005 07 16 | 703 | 0.7− | 0.1+ | 2006 12 01 | 704 | 0.2− | 0.2+ | | |
| 2000 12 04 | 704 | 0.1+ | 0.1− | 2005 07 25 | 608 | 0.6+ | 0.9+ | | | | | | |
| 2000 12 04 | 704 | 0.1+ | 0.6− | 2005 07 25 | 608 | 0.3+ | 0.0 | | | | | | |

**(138765)∗ 2000 SD$_{306}$**

Discovered 2000 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.93942 | | (2000.0) | | | |
| $n$ | 0.17521550 | $\omega$ | 210.65544 | | +0.19042519 | −0.95837572 |
| $a$ | 3.1629163 | $\Omega$ | 229.27236 | | +0.94800275 | +0.23580819 |
| $e$ | 0.1568003 | $i$ | 16.30281 | | +0.25500791 | −0.16096730 |
| $P$ | 5.63 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 699 | 0.0 | 0.0 | 2002 01 12 | 704 | 0.1+ | 0.7− | 2006 11 14 | 704 | 0.3− | 0.3− | | |
| 2000 09 25 | 699 | 1.4− | 1.0+ | 2005 08 29 | 644 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.2+ | | |
| 2000 09 25 | 699 | 1.1− | 0.5+ | 2005 08 29 | 644 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.3+ | | |
| 2000 09 25 | 699 | 1.5− | 0.9− | 2005 08 29 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.3− | | |
| 2000 09 30 | 704 | 0.9+ | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.3− | 0.0 | | |
| 2000 09 30 | 704 | 0.9− | 0.7− | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.7+ | | |
| 2000 09 30 | 704 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 17 | 448 | 1.4+ | 0.6− | | |
| 2000 09 30 | 704 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 17 | 704 | 0.0 | 0.6+ | | |
| 2000 10 03 | 704 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 17 | 448 | 0.1+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.2+ | 0.7+ | | |
| 2000 10 03 | 704 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 17 | 448 | 0.6+ | 0.4+ | | |
| 2000 10 03 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.2+ | | |
| 2000 10 03 | 704 | 0.7+ | 1.0− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 17 | 291 | 0.1+ | 0.1− | | |
| 2000 10 25 | 704 | 1.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 17 | 291 | 0.1+ | 0.1− | | |
| 2000 10 25 | 704 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | 291 | 0.2+ | 0.0 | | |
| 2000 10 25 | 704 | 0.8+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.1+ | | |
| 2000 10 25 | 704 | 0.7+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.2− | 1.0+ | | |
| 2000 11 01 | 704 | 1.0− | 0.8− | 2006 11 10 | 691 | 0.1+ | 0.3− | 2006 11 18 | 704 | (1.0− | 2.0+) | | |
| 2000 11 01 | 704 | 1.0− | 1.3− | 2006 11 10 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2000 11 01 | 704 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.0+ | 1.1+ | | |
| 2000 11 19 | 704 | 0.6+ | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.9− | 2006 11 20 | 704 | 1.2− | 0.9+ | | |
| 2000 11 19 | 704 | 0.5+ | 1.1+ | 2006 11 10 | 644 | 0.2+ | 0.5− | 2006 11 20 | 704 | 0.6− | 1.0+ | | |
| 2000 11 19 | 704 | 0.7+ | 1.2+ | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.6− | 1.2+ | | |
| 2000 11 19 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 20 | 704 | 1.0− | 0.8+ | | |
| 2000 11 19 | 704 | 1.0+ | 1.5+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 20 | 704 | 1.5− | 0.5+ | | |
| 2001 12 13 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2001 12 13 | 644 | 0.8+ | 0.1+ | 2006 11 11 | 703 | (0.0 | 1.7−) | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 2001 12 13 | 644 | 0.4+ | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 2002 01 11 | 644 | 0.6+ | 0.1− | 2006 11 13 | 703 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2002 01 11 | 644 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.6− | 2006 11 27 | 691 | 0.1− | 0.3+ | | |
| 2002 01 11 | 644 | 0.8+ | 0.1− | 2006 11 13 | 703 | 0.4− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2002 01 12 | 704 | 0.1− | 0.6+ | 2006 11 14 | 691 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.2− | 0.1+ | | |
| 2002 01 12 | 704 | 0.8− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.2− | 0.2− | | |
| 2002 01 12 | 704 | 0.8− | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.2+ | 0.1− | | |
| 2002 01 12 | 704 | 0.8− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1− | | | | | | |

**(138766)∗ 2000 SL$_{308}$ = 2002 AC$_{84}$**

Discovered 2000 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22658)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.24641 | | (2000.0) | | | |
| $n$ | 0.17751480 | $\omega$ | 119.02527 | | +0.95865883 | −0.21435787 |
| $a$ | 3.1355447 | $\Omega$ | 253.87696 | | +0.14137281 | +0.92954761 |
| $e$ | 0.0496519 | $i$ | 11.23358 | | +0.24695543 | +0.29998657 |
| $P$ | 5.55 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.4+ | 0.4− | 2002 01 09 | 704 | (0.3− | 1.6+) | 2006 10 20 | G96 | 0.3+ | 0.3− | | |
| 2000 09 30 | 704 | 0.7+ | 0.7+ | 2002 01 09 | 704 | 0.1+ | 0.9+ | 2006 11 10 | 691 | 0.6− | 0.1+ | | |
| 2000 09 30 | 704 | 0.2+ | 0.5+ | 2002 01 14 | 704 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.2− | | |
| 2000 09 30 | 704 | 0.2− | 0.1− | 2002 01 14 | 704 | 1.1− | 0.5− | 2006 11 10 | 691 | 0.2− | 0.2+ | | |
| 2000 10 03 | 704 | 1.1− | 0.4+ | 2002 01 14 | 704 | 0.2+ | 0.1− | 2006 11 14 | 691 | 1.1+ | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.5+ | 0.4+ | 2002 01 14 | 704 | 0.3− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2000 10 03 | 704 | 1.1+ | 1.0− | 2002 01 14 | 704 | 0.5+ | 1.0− | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2000 10 03 | 704 | 0.6+ | 0.3+ | 2004 06 14 | 704 | 0.3+ | 0.6− | 2006 11 16 | 704 | 0.3+ | 0.1− |
| 2000 10 25 | 704 | 0.2− | 0.6+ | 2004 06 14 | 704 | (0.3− | 1.6+) | 2006 11 16 | 704 | 0.8+ | 0.0 |
| 2000 10 25 | 704 | 1.0− | 0.5+ | 2004 06 14 | 704 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2000 10 25 | 704 | 0.2+ | 0.3+ | 2004 06 14 | 704 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2000 11 01 | 704 | 0.7− | 0.1+ | 2005 08 05 | 644 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2000 11 01 | 704 | 0.9− | 1.4− | 2005 08 05 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2000 11 01 | 704 | 0.9− | 0.8+ | 2005 08 05 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 1.0+ | 0.3+ |
| 2000 11 01 | 704 | 0.3+ | 0.2+ | 2005 11 04 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2000 11 19 | 704 | 0.0 | 1.2+ | 2005 11 04 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.6− | 0.1− |
| 2000 11 19 | 704 | 0.2+ | 0.2+ | 2005 11 04 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | (0.1+ | 1.6−) |
| 2000 11 19 | 704 | 0.2+ | 0.5+ | 2005 11 04 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.6− |
| 2000 11 19 | 704 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.8− | 2006 12 01 | 704 | 0.4+ | 0.1− |
| 2000 11 19 | 704 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.3− | 0.1− | 2006 12 01 | 704 | 1.1− | 0.2+ |
| 2002 01 08 | 644 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.3− | 0.9− | 2006 12 01 | 704 | 0.4+ | 0.5+ |
| 2002 01 08 | 644 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.8− | 1.1− | 2006 12 01 | 704 | 0.0 | 0.3− |
| 2002 01 08 | 644 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.5− | 0.1− | 2006 12 01 | 704 | 1.1+ | 0.4+ |
| 2002 01 09 | 704 | 0.3+ | 0.9+ | 2006 10 20 | G96 | 0.0 | 0.5− | | | | |

**(138767)∗ 2000 ST$_{313}$ = 1997 EC$_{17}$**

Discovered 2000 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 8221)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.74779 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.16992631 | $\omega$ | 42.18591 | | +0.97771195 | +0.13457347 |
| $a$ | 3.2282139 | $\Omega$ | 309.35206 | | −0.19925801 | +0.83660451 |
| $e$ | 0.0786770 | $i$ | 12.02873 | | +0.06614820 | +0.53102060 |
| $P$ | 5.80 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 20 | 691 | 0.5+ | 0.2− | 2000 10 04 | 704 | 1.0− | 0.3− | 2005 07 31 | E12 | 0.3− | 0.3+ |
| 1991 02 20 | 691 | 0.5+ | 0.5+ | 2001 12 19 | 644 | 0.1− | 1.4+ | 2005 07 31 | E12 | (1.7− | 1.4+) |
| 1991 02 20 | 691 | 0.5+ | 0.4+ | 2001 12 19 | 644 | 0.5− | 1.3+ | 2005 07 31 | E12 | 0.6− | 0.7− |
| 1997 03 03 | 691 | 0.6− | 0.1− | 2001 12 19 | 644 | 0.4− | 1.4+ | 2005 07 31 | E12 | 0.8+ | 1.0+ |
| 1997 03 03 | 691 | 0.2− | 0.2− | 2002 01 09 | 704 | 0.5+ | 0.3+ | 2006 10 02 | 703 | 0.4− | 0.1+ |
| 1997 03 03 | 691 | 0.0 | 0.3− | 2002 01 09 | 704 | 0.5+ | 0.1− | 2006 10 02 | 703 | 1.3+ | 0.7+ |
| 1997 03 09 | 691 | 0.1− | 0.3− | 2002 01 09 | 704 | (1.5+ | 1.6+) | 2006 10 02 | 703 | 1.1+ | 0.8+ |
| 1997 03 09 | 691 | 0.3+ | 0.4− | 2002 01 09 | 704 | 0.4+ | 0.7+ | 2006 10 02 | 703 | 0.9+ | 0.5+ |
| 1997 03 09 | 691 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.5− |
| 1997 03 10 | 691 | 0.4− | 0.1− | 2005 07 11 | 691 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 1997 03 10 | 691 | 0.4− | 0.3− | 2005 07 11 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.4+ | 0.5− |
| 1997 03 10 | 691 | 0.7− | 0.3− | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 10 23 | 703 | 0.9+ | 0.4− |
| 1997 03 16 | 691 | 0.1− | 0.1+ | 2005 07 11 | 691 | 0.2+ | 0.2− | 2006 10 23 | 703 | 0.0 | 0.1+ |
| 1997 03 16 | 691 | 0.2− | 0.0 | 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 10 23 | 703 | 1.0+ | 0.3+ |
| 1997 03 16 | 691 | 0.0 | 0.1− | 2005 07 12 | G96 | 0.3− | 0.4− | 2006 10 23 | 703 | 0.3− | 0.9+ |
| 2000 09 27 | 704 | 0.1− | 0.7− | 2005 07 12 | G96 | 0.8− | 0.5− | 2006 11 21 | 703 | 1.2− | 0.7− |
| 2000 09 27 | 704 | 0.6− | 1.0− | 2005 07 12 | G96 | 0.5+ | 0.4− | 2006 11 21 | 703 | 0.4− | 0.8− |
| 2000 09 27 | 704 | 0.2− | 1.3− | 2005 07 15 | G96 | 0.3− | 0.2− | 2006 11 21 | 703 | 0.0 | 0.9− |
| 2000 10 04 | 704 | 0.2+ | 1.1− | 2005 07 15 | G96 | 0.3− | 0.2− | 2006 11 21 | 703 | 0.5+ | 0.3− |
| 2000 10 04 | 704 | 0.9+ | 0.8− | 2005 07 15 | G96 | 0.2− | 0.1− | | | | |
| 2000 10 04 | 704 | 0.2− | 0.4− | 2005 07 15 | G96 | 0.2− | 0.0 | | | | |

**(138768)∗ 2000 SM$_{314}$ = 2001 XV$_{38}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22663)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.46003 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17429020 | $\omega$ | 120.03216 | | +0.53416886 | −0.81510138 |
| $a$ | 3.1741010 | $\Omega$ | 295.99710 | | +0.66397510 | +0.56868681 |
| $e$ | 0.0503161 | $i$ | 14.44546 | | +0.52325968 | +0.11047649 |
| $P$ | 5.65 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 14 | 566 | 0.5+ | 0.5+ | 2001 12 22 | 704 | 0.6+ | 0.5− | 2006 09 17 | 703 | 1.3+ | 0.3− |
| 1997 01 14 | 566 | 0.2− | 0.5+ | 2001 12 22 | 704 | 1.0+ | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 1997 01 14 | 566 | 0.1+ | 0.7+ | 2001 12 22 | 704 | 0.2+ | 1.1+ | 2006 09 17 | 703 | 0.1− | 0.4− |
| 2000 09 01 | 704 | 0.6− | 0.5+ | 2005 06 13 | G96 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.9− | 0.2− |
| 2000 09 01 | 704 | 0.4+ | 0.8+ | 2005 06 13 | G96 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.3+ |
| 2000 09 01 | 704 | 0.1− | 0.0 | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.2+ |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.0 |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2005 07 06 | 599 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.1− |
| 2000 09 28 | 704 | 0.2+ | 0.5+ | 2005 07 06 | 599 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.8− |
| 2000 09 28 | 704 | 0.3− | 0.8+ | 2005 07 07 | 599 | 0.2− | 0.3+ | 2006 10 19 | 703 | (1.4− | 2.3−) |
| 2000 09 28 | 704 | 0.7+ | 0.5+ | 2005 07 07 | 599 | 0.3− | 0.9+ | 2006 10 19 | 703 | (0.1− | 1.7−) |
| 2000 09 28 | 704 | 0.5− | 0.1− | 2005 07 09 | 691 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2000 09 28 | 704 | 0.5− | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2000 10 04 | 704 | 0.6+ | 0.0 | 2005 07 09 | 691 | (3.3+ | 1.0+) | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2000 10 04 | 704 | 0.1− | 0.1− | 2005 07 15 | G96 | 0.4+ | 0.4− | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2000 10 04 | 704 | 0.6+ | 0.2+ | 2005 07 15 | G96 | 0.8− | 0.5− | 2006 10 24 | 644 | 0.4+ | 0.3+ |
| 2000 10 04 | 704 | 0.2+ | 0.4− | 2005 07 15 | G96 | 0.1+ | 0.3− | 2006 10 24 | 644 | 0.4+ | 0.1− |
| 2001 12 09 | 704 | 0.6+ | 0.1+ | 2005 07 15 | G96 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.6− | 0.1+ |
| 2001 12 09 | 704 | 0.6+ | 0.4+ | 2005 07 30 | E12 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.3+ | 1.2+ |
| 2001 12 09 | 704 | 0.8+ | 0.0 | 2005 07 30 | E12 | 0.6− | 1.0+ | 2006 10 27 | 703 | 0.1− | 0.2+ |
| 2001 12 09 | 704 | 0.5+ | 0.1+ | 2005 07 30 | E12 | 0.2+ | 0.4+ | 2006 10 27 | 703 | (0.6− | 2.1+) |
| 2001 12 09 | 704 | 0.2+ | 0.2− | 2005 07 30 | E12 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.8+ | 0.8− |
| 2001 12 14 | 704 | 0.7− | 0.7+ | 2006 08 12 | 644 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.7− | 0.1+ |
| 2001 12 14 | 704 | 0.4− | 1.0+ | 2006 08 12 | 644 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2001 12 14 | 704 | 0.8− | 1.2+ | 2006 08 12 | 644 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.3− | 1.0− |
| 2001 12 14 | 704 | 1.1− | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.4+ | | | | |

**(138769)∗ 2000 SP$_{314}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.50999 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17239191 | $\omega$ | 107.27603 | | +0.13497525 | −0.95688634 |
| $a$ | 3.1973595 | $\Omega$ | 330.88351 | | +0.58153329 | +0.28666656 |
| $e$ | 0.2027077 | $i$ | 31.90911 | | +0.80224729 | −0.04680623 |
| $P$ | 5.72 | $H$ | 13.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 699 | 0.8− | 1.4+ | 2002 01 20 | 699 | 0.0 | 0.5+ | 2002 03 11 | 644 | 0.0 | 0.1− |
| 2000 09 05 | 699 | 1.2− | 0.2+ | 2002 01 20 | 699 | 0.3+ | 0.2+ | 2002 03 11 | 644 | 0.2+ | 0.0 |
| 2000 09 05 | 699 | 0.8− | 0.9+ | 2002 01 20 | 699 | 0.4+ | 0.5+ | 2002 04 17 | 704 | 0.1+ | 0.2+ |
| 2000 09 05 | 699 | 1.3− | 0.5+ | 2002 01 23 | 704 | 0.2+ | 0.1− | 2002 04 17 | 704 | 0.2+ | 0.6+ |
| 2000 09 06 | 704 | (2.4− | 0.1+) | 2002 01 23 | 704 | 0.4− | 0.2− | 2002 04 17 | 704 | 1.3+ | 0.1− |
| 2000 09 06 | 704 | 0.4+ | 0.2+ | 2002 01 23 | 704 | 0.3− | 0.2+ | 2002 04 17 | 704 | 0.4− | 0.9+ |
| 2000 09 06 | 704 | 0.1− | 0.2+ | 2002 01 23 | 704 | 0.0 | 0.3− | 2002 04 17 | 704 | 0.3+ | 0.8+ |
| 2000 09 06 | 704 | 0.8+ | 0.2+ | 2002 01 23 | 704 | 0.2+ | 0.2− | 2005 07 03 | 644 | 0.5− | 0.8+ |
| 2000 09 06 | 704 | 0.1− | 0.3+ | 2002 02 10 | 704 | 0.1− | 0.5+ | 2005 07 03 | 644 | 0.8− | 0.5+ |
| 2000 09 28 | 704 | 0.4+ | 0.2+ | 2002 02 10 | 704 | 0.1− | 0.6+ | 2005 07 03 | 644 | 1.0− | 0.4+ |
| 2000 09 28 | 704 | 0.0 | 0.1+ | 2002 02 10 | 704 | 0.1− | 0.6+ | 2005 08 04 | 644 | 0.4− | 0.4+ |
| 2000 09 28 | 704 | 0.7− | 0.6− | 2002 02 10 | 704 | 0.2+ | 1.0+ | 2005 08 04 | 644 | 0.8− | 0.4+ |
| 2000 09 28 | 704 | 0.7+ | 0.5− | 2002 02 10 | 704 | 0.2− | 0.9+ | 2005 08 04 | 644 | 0.7− | 0.4+ |
| 2000 09 28 | 704 | 0.4− | 0.4+ | 2002 02 12 | 644 | 0.0 | 0.2− | 2006 08 18 | 235 | 0.0 | 0.2− |
| 2000 10 04 | 704 | 0.2+ | 0.0 | 2002 02 12 | 644 | 0.4+ | 0.1− | 2006 10 09 | 160 | 0.1+ | 0.0 |
| 2000 10 04 | 704 | 0.1+ | 0.0 | 2002 02 12 | 644 | 0.2− | 0.4+ | 2006 10 09 | 160 | 0.7+ | 0.4− |
| 2000 10 04 | 704 | 0.2+ | 0.7− | 2002 03 03 | 644 | 0.2+ | 0.3+ | 2006 10 09 | 160 | 0.5+ | 0.3− |
| 2000 10 04 | 704 | 0.1− | 0.3− | 2002 03 03 | 644 | 0.2+ | 0.2− | 2006 10 09 | 160 | 0.3− | 0.4− |
| 2000 10 04 | 704 | 0.3+ | 0.4− | 2002 03 03 | 644 | 0.2+ | 0.3+ | 2006 10 09 | 160 | 0.0 | 0.1+ |
| 2002 01 11 | 699 | 0.6+ | 0.1+ | 2002 03 05 | 699 | 0.4+ | 0.1− | 2006 10 09 | 160 | 0.5− | 0.5− |
| 2002 01 11 | 699 | (2.5+ | 1.5+) | 2002 03 05 | 699 | 0.9+ | 0.7− | 2006 11 11 | 704 | 0.4− | 0.9+ |
| 2002 01 11 | 699 | 0.3+ | 0.8− | 2002 03 05 | 699 | 0.6+ | 0.6− | 2006 11 11 | 704 | 0.2+ | 0.6− |
| 2002 01 11 | 699 | 0.2− | 0.2− | 2002 03 05 | 699 | 0.4+ | 0.3− | 2006 11 11 | 704 | 0.1+ | 0.2+ |
| 2002 01 20 | 699 | 0.0 | 0.3+ | 2002 03 11 | 644 | 0.0 | 0.0 | 2006 11 11 | 704 | 0.9+ | 0.2− |

**(138770)∗ 2000 SK$_{315}$ = 2004 JE$_{37}$**

Discovered 2000 Sept. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64855)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.24170 | | (2000.0) | | | |
| $n$ | 0.17761621 | $\omega$ | 76.05727 | | +0.83353828 | +0.49780989 |
| $a$ | 3.1343511 | $\Omega$ | 253.60246 | | −0.55190016 | +0.76986558 |
| $e$ | 0.1129545 | $i$ | 14.46208 | | +0.02490287 | +0.39936488 |
| $P$ | 5.55 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.3− | 0.4− | 2005 07 01 | 699 | 1.5+ | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.4+ | |
| 2000 09 28 | 704 | 0.7− | 0.2+ | 2005 07 01 | 699 | (0.6+ | 1.5+) | 2006 10 19 | 703 | 0.9− | 1.3− | |
| 2000 09 28 | 704 | 0.7+ | 0.5+ | 2005 07 01 | 699 | 0.3− | 1.4+ | 2006 11 09 | 644 | 0.3− | 0.4− | |
| 2000 09 28 | 704 | 1.0− | 0.3+ | 2005 07 01 | 699 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.3+ | |
| 2000 09 28 | 704 | 0.4− | 1.3+ | 2005 07 06 | 699 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.3− | 0.0 | |
| 2000 10 03 | 699 | 0.7+ | 0.5+ | 2005 07 06 | 699 | 0.9+ | 0.8− | 2006 11 14 | 703 | 0.6− | 0.2− | |
| 2000 10 03 | 699 | 0.9+ | 1.0+ | 2005 07 06 | 699 | 0.9− | 0.4+ | 2006 11 14 | 703 | 0.4− | 0.4− | |
| 2000 10 03 | 699 | 1.8+ | 0.6+ | 2005 07 06 | 699 | 0.5+ | 0.9− | 2006 11 14 | 703 | 0.6− | 0.4− | |
| 2000 10 03 | 699 | 0.0 | 0.4+ | 2005 07 08 | 703 | 0.1− | 0.1− | 2006 11 14 | 703 | (0.4− | 1.7−) | |
| 2000 10 04 | 704 | 0.9+ | 0.1+ | 2005 07 08 | 703 | 0.4− | 0.2− | 2006 11 15 | 704 | 0.7+ | 1.1− | |
| 2000 10 04 | 704 | 0.9− | 0.8+ | 2005 07 08 | 703 | 0.4+ | 0.4− | 2006 11 15 | 704 | 0.4+ | 0.1− | |
| 2000 10 04 | 704 | 1.2− | 0.2+ | 2005 07 08 | 703 | 0.5− | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.3+ | |
| 2000 10 04 | 704 | 1.4− | 0.7− | 2005 07 11 | 703 | 0.2+ | 0.7− | 2006 11 16 | 704 | 0.3+ | 0.2− | |
| 2000 10 25 | 704 | 0.4+ | 0.1+ | 2005 07 11 | 703 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.1+ | |
| 2000 10 25 | 704 | 0.5− | 0.2− | 2005 07 11 | 703 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.4+ | 0.1− | |
| 2000 10 25 | 704 | 0.1+ | 0.2− | 2005 07 11 | 703 | 1.0− | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.6+ | |
| 2000 11 19 | 704 | 0.4− | 0.3+ | 2005 07 29 | 699 | 0.2− | 0.0 | 2006 11 19 | 704 | (1.6+ | 0.0 ) | |
| 2000 11 19 | 704 | 0.7− | 0.8− | 2005 07 29 | 699 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.6+ | 1.0− | |
| 2000 11 19 | 704 | 0.1+ | 0.6+ | 2005 07 29 | 699 | 0.5− | 0.6− | 2006 11 19 | 704 | 0.3− | 0.7− | |
| 2000 11 19 | 704 | 0.8+ | 0.5− | 2005 07 29 | 699 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.7+ | 1.2− | |
| 2004 05 13 | 644 | 0.8− | 0.6+ | 2005 09 06 | A50 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.2+ | 0.3− | |
| 2004 05 13 | 644 | 0.9− | 0.5+ | 2005 09 06 | A50 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.8− | 0.0 | |
| 2004 05 13 | 644 | 0.3+ | 0.5− | 2005 09 09 | 704 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.3− | |
| 2004 05 19 | E12 | 0.4+ | 1.2− | 2005 09 09 | 704 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.7+ | |
| 2004 05 19 | E12 | 0.8+ | 1.2− | 2005 09 09 | 704 | 0.7+ | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.2− | |
| 2004 05 19 | E12 | (0.6− | 1.9−) | 2005 09 09 | 704 | 0.4+ | 0.6+ | 2006 11 25 | 691 | 0.1− | 0.0 | |
| 2004 05 19 | E12 | (0.9+ | 1.6−) | 2005 09 09 | 704 | 0.5+ | 0.3+ | 2006 11 25 | 691 | 0.1− | 0.3− | |
| 2005 06 15 | 699 | (2.0+ | 0.1+) | 2005 09 28 | 644 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.0 | 0.7− | |
| 2005 06 15 | 699 | 0.1+ | 0.0 | 2005 09 28 | 644 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.9− | |
| 2005 06 15 | 699 | 0.8− | 0.5+ | 2005 09 28 | 644 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.6− | |
| 2005 06 15 | 699 | 0.6+ | 1.4− | 2005 10 20 | 644 | 0.4+ | 0.0 | 2006 11 28 | 704 | 1.0+ | 0.6− | |
| 2005 06 30 | 703 | 0.5− | 0.3− | 2005 10 20 | 644 | 0.3+ | 0.0 | 2006 12 01 | 704 | 0.0 | 1.2+ | |
| 2005 06 30 | 703 | 1.0− | 0.0 | 2005 10 20 | 644 | 0.2+ | 0.3− | 2006 12 01 | 704 | 0.1− | 0.9+ | |
| 2005 06 30 | 703 | 0.5− | 0.9− | 2005 10 27 | 704 | 0.4− | 0.7− | 2006 12 01 | 704 | 0.8− | 1.2+ | |
| 2005 06 30 | 703 | 1.1+ | 0.2+ | 2005 10 27 | 704 | 0.3+ | 0.1− | 2006 12 01 | 704 | 0.1− | 0.3+ | |
| 2005 06 30 | 644 | 0.3+ | 0.1+ | 2005 10 27 | 704 | 0.5− | 0.2+ | 2006 12 01 | 704 | 0.3− | 0.9+ | |
| 2005 06 30 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.0 | | | | | |
| 2005 06 30 | 644 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.1+ | | | | | |

**(138771)∗ 2000 SP$_{316}$ = 2001 XZ$_{66}$**

Discovered 2000 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22665)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 325.57128 | | (2000.0) | | | |
| $n$ | 0.17887985 | $\omega$ | 161.67329 | | +0.05915987 | −0.96054211 |
| $a$ | 3.1195726 | $\Omega$ | 284.23319 | | +0.87722827 | +0.17995396 |
| $e$ | 0.1885613 | $i$ | 16.28269 | | +0.47641438 | −0.21207411 |
| $P$ | 5.51 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 608 | 0.1− | 0.2− | 2001 12 19 | 691 | 0.2− | 0.1+ | 2002 01 15 | 704 | 1.1+ | 0.3+ | |
| 2000 09 21 | 608 | 0.3− | 0.1+ | 2001 12 19 | 691 | 0.2− | 0.1+ | 2002 01 19 | 704 | 0.1+ | 0.1+ | |
| 2000 09 21 | 608 | 0.4− | 0.1+ | 2001 12 19 | 691 | 0.0 | 0.1+ | 2002 01 19 | 704 | 0.1− | 0.1− | |
| 2000 09 30 | 704 | 0.5+ | 0.3+ | 2001 12 20 | 704 | 0.3+ | 1.1− | 2002 01 19 | 704 | 0.0 | 0.2− | |
| 2000 09 30 | 704 | 0.1+ | 0.5− | 2001 12 20 | 704 | 0.1− | 1.3− | 2002 01 19 | 704 | 0.4+ | 0.2+ | |
| 2000 09 30 | 704 | 0.5+ | 0.2− | 2001 12 20 | 704 | 0.2+ | 1.1− | 2002 01 19 | 704 | 0.2− | 0.2− | |
| 2000 09 30 | 704 | 0.8+ | 0.1− | 2001 12 20 | 704 | 0.1− | 1.1− | 2002 01 19 | 704 | 0.2+ | 0.4+ | |
| 2000 09 30 | 704 | 1.1− | 1.4+ | 2001 12 20 | 704 | 0.2+ | 1.3− | 2002 01 19 | 704 | 0.1+ | 0.3− | |
| 2000 10 04 | 704 | 0.6− | 0.1+ | 2001 12 21 | 704 | 0.2+ | 0.1− | 2002 01 19 | 704 | 0.2+ | 0.2+ | |
| 2000 10 04 | 704 | 0.3+ | 0.7− | 2001 12 21 | 704 | 0.4− | 0.6− | 2002 01 19 | 704 | 0.4− | 0.7− | |
| 2000 10 04 | 704 | 0.1− | 0.2− | 2001 12 21 | 704 | 0.7+ | 0.4+ | 2002 01 22 | 704 | 0.1− | 0.1− | |
| 2001 10 14 | 704 | 1.0+ | 0.6+ | 2001 12 21 | 704 | 0.0 | 0.0 | 2002 01 22 | 704 | 0.0 | 0.2− | |
| 2001 10 14 | 704 | 0.2+ | 0.0 | 2001 12 21 | 704 | 0.2− | 0.3+ | 2002 01 22 | 704 | 0.2+ | 0.6− | |
| 2001 10 14 | 704 | 0.0 | 0.5+ | 2001 12 26 | 608 | 0.1+ | 1.1− | 2002 02 03 | 608 | 1.2− | 0.7+ | |
| 2001 10 14 | 704 | 1.0+ | 0.4+ | 2001 12 26 | 608 | 0.1+ | 0.9− | 2002 02 03 | 608 | 1.1− | 0.9+ | |
| 2001 10 14 | 704 | 0.4+ | 0.2+ | 2001 12 26 | 608 | 0.1− | 0.8− | 2002 02 03 | 608 | 0.9− | 0.6+ | |
| 2001 11 12 | 704 | 1.1+ | 0.1− | 2002 01 05 | 608 | 0.0 | 0.2− | 2002 02 08 | 704 | 0.6+ | 0.1− | |
| 2001 11 12 | 704 | 0.5+ | 0.2+ | 2002 01 05 | 608 | 0.1− | 0.0 | 2002 02 08 | 704 | 0.2− | 0.0 | |
| 2001 11 12 | 704 | 1.1+ | 0.3+ | 2002 01 05 | 608 | 0.1− | 0.5− | 2002 02 08 | 704 | 0.8+ | 0.1− | |
| 2001 11 12 | 704 | 0.4+ | 0.3+ | 2002 01 05 | 608 | 0.6− | 0.3− | 2002 02 08 | 704 | 0.3+ | 0.3− | |
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2002 01 05 | 608 | 0.7− | 0.4− | 2002 02 11 | 704 | 0.8− | 0.4− | |
| 2001 11 16 | 644 | 0.2− | 0.0 | 2002 01 05 | 608 | (0.4− | 2.4−) | 2002 02 11 | 704 | 0.5− | 0.0 | |
| 2001 11 16 | 644 | 0.2+ | 0.3+ | 2002 01 07 | 644 | 0.1+ | 0.2+ | 2002 02 11 | 704 | 0.4− | 0.5− | |
| 2001 11 16 | 644 | 0.1− | 0.2+ | 2002 01 07 | 644 | 0.3+ | 0.2+ | 2002 02 11 | 704 | 0.3− | 0.5− | |
| 2001 12 10 | 704 | 0.2− | 1.2+ | 2002 01 07 | 644 | 0.2+ | 0.1+ | 2005 07 30 | 644 | 0.1+ | 0.1+ | |
| 2001 12 10 | 704 | 0.6− | 0.0 | 2002 01 08 | 644 | 0.0 | 0.1+ | 2005 07 30 | 644 | 0.0 | 0.4+ | |
| 2001 12 10 | 704 | 0.0 | 0.6+ | 2002 01 08 | 644 | 0.1+ | 0.3+ | 2005 07 30 | 644 | 0.2− | 0.1+ | |
| 2001 12 10 | 704 | 0.4− | 0.2+ | 2002 01 08 | 644 | 0.1− | 0.1+ | 2005 09 02 | 644 | 0.2− | 0.3+ | |
| 2001 12 14 | 704 | 0.5− | 0.1+ | 2002 01 09 | 704 | 1.0+ | 0.3+ | 2005 09 02 | 644 | 0.0 | 0.2+ | |
| 2001 12 14 | 704 | 0.2− | 0.1+ | 2002 01 09 | 704 | 0.9+ | 1.1+ | 2005 09 02 | 644 | 0.3− | 0.4+ | |
| 2001 12 14 | 704 | 0.8− | 0.1+ | 2002 01 09 | 704 | 0.6+ | 1.0+ | 2006 10 16 | 704 | 1.2+ | 1.4− | |
| 2001 12 14 | 704 | 0.8− | 0.2+ | 2002 01 09 | 704 | 0.7+ | 1.3+ | 2006 10 16 | 704 | 0.3− | 0.0 | |
| 2001 12 14 | 704 | 0.7− | 0.2+ | 2002 01 09 | 704 | 0.6+ | 1.5+ | 2006 10 16 | 704 | 0.6− | 1.2− | |
| 2001 12 17 | 644 | (0.2+ | 1.6+) | 2002 01 09 | 608 | 0.3− | 0.3+ | 2006 10 16 | 704 | 0.1+ | 0.9+ | |
| 2001 12 17 | 644 | 0.1+ | 0.1+ | 2002 01 09 | 608 | 0.5− | 0.7− | 2006 11 13 | 704 | 0.3− | 0.1+ | |
| 2001 12 17 | 704 | 0.5+ | 0.1+ | 2002 01 09 | 608 | 0.1+ | 0.5− | 2006 11 13 | 704 | 0.6+ | 0.1− | |
| 2001 12 17 | 644 | 0.0 | 0.1+ | 2002 01 13 | 704 | 0.5− | 0.1− | 2006 11 13 | 704 | 0.2− | 0.8+ | |
| 2001 12 17 | 644 | 0.4+ | 0.6+ | 2002 01 13 | 704 | 0.6− | 0.5− | 2006 11 13 | 704 | 0.4− | 0.8+ | |
| 2001 12 17 | 644 | 0.3+ | 0.8+ | 2002 01 13 | 704 | 0.6− | 0.4− | 2006 11 20 | 703 | 0.4+ | 0.3− | |
| 2001 12 17 | 704 | 0.4+ | 0.0 | 2002 01 13 | 704 | 0.5− | 0.5− | 2006 11 20 | 703 | 0.2− | 0.7− | |
| 2001 12 17 | 644 | 0.1+ | 0.6+ | 2002 01 13 | 704 | 0.8− | 0.4− | 2006 11 20 | 703 | 0.3− | 0.4− | |
| 2001 12 17 | 704 | 0.5+ | 0.0 | 2002 01 15 | 704 | 0.3+ | 0.9+ | 2006 11 20 | 703 | 0.2+ | 1.0− | |
| 2001 12 17 | 704 | 0.6+ | 0.5− | 2002 01 15 | 704 | 0.3+ | 0.8+ | | | | | |
| 2001 12 17 | 704 | 0.8+ | 0.8− | 2002 01 15 | 704 | 0.3+ | 0.6+ | | | | | |

**(138772)∗ 2000 SH$_{317}$**

Discovered 2000 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 71.57816 | | (2000.0) | | | |
| $n$ | 0.17246843 | $\omega$ | 40.63907 | | +0.26703011 | +0.93929861 |
| $a$ | 3.1964137 | $\Omega$ | 245.84995 | | −0.93400468 | +0.19719744 |
| $e$ | 0.2003135 | $i$ | 13.65654 | | −0.23733980 | +0.28076910 |
| $P$ | 5.71 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 704 | 1.2+ | 0.5− | 2000 09 30 | 704 | 0.4+ | 0.4− | 2006 09 17 | 703 | 0.5− | 0.3+ | |
| 1999 05 18 | 704 | 0.9− | 0.2+ | 2000 09 30 | 704 | 0.4+ | 0.6− | 2006 09 17 | 703 | 0.4− | 0.2+ | |
| 1999 05 18 | 704 | 0.3− | 1.8+ | 2000 09 30 | 704 | 1.0− | 0.3+ | 2006 09 17 | 703 | (1.8− | 0.2−) | |
| 1999 05 18 | 704 | 0.2− | 0.8+ | 2000 10 04 | 704 | 0.3+ | 0.8+ | 2006 09 17 | 703 | (1.6− | 0.3+) | |
| 1999 06 15 | 704 | 1.0− | 1.3+ | 2000 10 04 | 704 | 0.5− | 0.2− | 2006 09 22 | 104 | 1.3− | 0.5− | |
| 1999 06 15 | 704 | 0.8− | 0.1+ | 2000 10 04 | 704 | 0.4+ | 0.8+ | 2006 09 22 | 104 | 1.3+ | 0.4− | |
| 1999 06 15 | 704 | 0.4− | 1.1+ | 2000 10 04 | 704 | 0.8− | 0.7+ | 2006 09 22 | 104 | 0.3− | 0.2+ | |
| 1999 06 15 | 704 | 0.1− | 1.3+ | 2000 10 04 | 704 | 0.0 | 0.5+ | 2006 09 22 | 104 | 1.1− | 0.2+ | |
| 1999 06 22 | 691 | 0.1+ | 0.2+ | 2001 12 09 | 644 | 0.1− | 0.1− | 2006 09 22 | 104 | 0.6− | 0.5− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 22 | 691 | 0.4− | 0.0 | 2001 12 09 | 644 | 0.4+ | 0.1− | 2006 09 28 | 703 | (1.5− | 0.8+) | | |
| 1999 06 22 | 691 | 0.4+ | 1.0− | 2001 12 09 | 644 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.8− | 0.7+ | | |
| 2000 09 06 | 704 | 0.4+ | 0.0 | 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.5− | | |
| 2000 09 06 | 704 | 0.2+ | 0.7− | 2002 12 14 | 645 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.4− | | |
| 2000 09 06 | 704 | 0.2+ | 0.0 | 2004 03 17 | 704 | 0.0 | 1.0+ | 2006 10 17 | A50 | 0.0 | 0.4− | | |
| 2000 09 06 | 704 | 0.3− | 0.6+ | 2004 03 17 | 704 | (0.7− | 2.0+) | 2006 10 17 | A50 | 0.1− | 0.6− | | |
| 2000 09 22 | 704 | 0.3− | 0.2+ | 2004 03 17 | 704 | (0.0 | 1.9+) | 2006 10 17 | A50 | 0.4+ | 0.2+ | | |
| 2000 09 22 | 704 | 0.6− | 0.8+ | 2004 03 17 | 704 | (0.9+ | 3.2+) | 2006 10 17 | A50 | 0.1+ | 0.0 | | |
| 2000 09 22 | 704 | 0.3+ | 0.4+ | 2005 07 05 | 704 | (4.1+ | 0.2+) | 2006 10 18 | A50 | 0.0 | 0.3+ | | |
| 2000 09 22 | 704 | 0.7+ | 0.7+ | 2005 07 05 | 704 | (1.6+ | 1.7−) | 2006 10 18 | A50 | 0.3+ | 0.0 | | |
| 2000 09 30 | 704 | 0.6+ | 0.7+ | 2005 07 05 | 704 | 1.8+ | 1.5+ | | | | | | |
| 2000 09 30 | 704 | 0.3− | 0.5+ | 2005 07 05 | 704 | (2.5+ | 0.5+) | | | | | | |

**(138773)∗ 2000 SS$_{318}$**

Discovered 2000 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.21364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17785892 | $\omega$ | 223.08593 | | −0.60964787 | −0.74174303 | |
| $a$ | 3.1314991 | $\Omega$ | 266.47773 | | +0.78186400 | −0.50465961 | |
| $e$ | 0.3360251 | $i$ | 16.26477 | | +0.13045370 | −0.44174197 | |
| $P$ | 5.54 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 0.1+ | 0.0 | 2002 04 21 | 704 | 0.7+ | 1.2+ | 2006 10 20 | 704 | 0.1+ | 0.2+ | | |
| 2000 09 26 | 704 | 0.6+ | 0.2− | 2002 05 09 | 704 | 0.3+ | 0.1− | 2006 10 20 | 704 | 0.4+ | 0.7+ | | |
| 2000 09 26 | 704 | 0.1+ | 0.6+ | 2002 05 09 | 704 | 0.6+ | 0.7+ | 2006 11 15 | 704 | 0.2− | 1.4+ | | |
| 2000 09 26 | 704 | 0.2− | 0.7+ | 2002 05 09 | 704 | 0.7+ | 0.2+ | 2006 11 15 | 704 | 0.1− | 0.5+ | | |
| 2000 09 26 | 704 | 0.4− | 0.2+ | 2002 05 09 | 704 | 0.2− | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.0 | | |
| 2000 10 06 | 704 | 1.7− | 1.1− | 2002 05 09 | 704 | 0.2− | 0.4− | 2006 11 15 | 704 | 0.1+ | 0.8+ | | |
| 2000 10 06 | 704 | 1.1− | 1.1− | 2005 08 29 | 599 | 0.4+ | 0.1+ | 2006 11 15 | 704 | 0.5+ | 0.5+ | | |
| 2000 10 06 | 704 | 0.7− | 0.2− | 2005 08 29 | 599 | 0.4+ | 0.2+ | 2006 11 15 | 704 | 0.4− | 0.9+ | | |
| 2000 11 29 | 704 | 0.3− | 0.5+ | 2005 08 29 | 599 | 0.3+ | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.2+ | | |
| 2000 11 29 | 704 | 1.0+ | 0.5− | 2005 08 29 | 599 | 0.7+ | 0.1+ | 2006 11 15 | 704 | 0.6− | 1.2+ | | |
| 2000 11 29 | 704 | 0.1− | 0.1+ | 2005 09 03 | 703 | 0.3− | 0.3− | 2006 11 15 | 704 | 0.1+ | 0.3+ | | |
| 2000 11 29 | 704 | 0.2− | 0.1− | 2005 09 03 | 703 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.5− | 0.2+ | | |
| 2000 11 29 | 704 | 0.4+ | 0.5+ | 2005 09 03 | 703 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.3+ | | |
| 2000 12 04 | 704 | 0.2− | 0.0 | 2005 09 03 | 703 | 0.7− | 0.5− | 2006 11 16 | 704 | 0.0 | 0.1− | | |
| 2000 12 04 | 704 | 0.4+ | 0.2− | 2005 10 02 | 644 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.2− | | |
| 2000 12 04 | 704 | 0.1+ | 0.1− | 2005 10 02 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.2+ | | |
| 2000 12 04 | 704 | 0.7− | 1.4− | 2005 10 02 | 644 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.0 | 0.2+ | | |
| 2000 12 04 | 699 | 0.3− | 0.4− | 2005 10 07 | 703 | 0.2− | 0.0 | 2006 11 19 | 704 | (2.5+ | 1.5−) | | |
| 2000 12 04 | 699 | 0.2+ | 0.9+ | 2005 10 07 | 703 | 0.8+ | 0.4+ | 2006 11 19 | 704 | (0.7+ | 1.6−) | | |
| 2000 12 04 | 699 | 1.0− | 1.3+ | 2005 10 07 | 703 | 1.0− | 1.0− | 2006 11 19 | 704 | 0.4− | 0.1− | | |
| 2000 12 04 | 699 | 0.3+ | 0.3− | 2005 10 07 | 703 | 0.5+ | 1.2− | 2006 11 19 | 704 | 0.1− | 0.2− | | |
| 2000 12 19 | 704 | 0.1− | 0.4+ | 2005 11 01 | 703 | 0.7+ | 0.6+ | 2006 11 19 | 704 | 0.6− | 0.1− | | |
| 2000 12 19 | 704 | 0.1+ | 0.2+ | 2005 11 01 | 703 | 0.3− | 1.1− | 2006 11 22 | 704 | 0.1− | 0.5− | | |
| 2000 12 19 | 704 | 0.5+ | 0.0 | 2005 11 01 | 703 | 0.4+ | 1.4− | 2006 11 22 | 704 | 0.1− | 0.1+ | | |
| 2000 12 19 | 704 | (2.2+ | 0.1+) | 2005 11 01 | 703 | 1.0− | 1.2− | 2006 11 22 | 704 | 0.2− | 0.4− | | |
| 2000 12 30 | 704 | 0.2− | 1.3+ | 2006 09 25 | 704 | 0.3− | 1.0+ | 2006 11 22 | 704 | 0.2− | 0.1− | | |
| 2000 12 30 | 704 | 0.7+ | 0.3+ | 2006 09 25 | 704 | 0.8− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.5− | | |
| 2000 12 30 | 704 | 1.0+ | 0.8+ | 2006 09 25 | 704 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.2− | 0.3− | | |
| 2001 01 18 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 691 | 1.0− | 0.7− | | |
| 2001 01 18 | 704 | 0.9+ | 0.6+ | 2006 10 02 | 704 | 0.4− | 0.5+ | 2006 11 22 | 691 | 0.2+ | 0.2+ | | |
| 2001 01 18 | 704 | 0.4+ | 1.2+ | 2006 10 02 | 704 | 0.4− | 0.6− | 2006 11 26 | 691 | 0.1− | 0.0 | | |
| 2001 01 18 | 704 | 0.2− | 0.1+ | 2006 10 02 | 704 | 0.0 | 0.4− | 2006 11 26 | 691 | 1.0+ | 0.4− | | |
| 2002 03 15 | 704 | (0.4− | 1.7−) | 2006 10 02 | 704 | 0.0 | 0.7+ | 2006 11 26 | 691 | 0.2− | 0.0 | | |
| 2002 03 15 | 704 | 1.0− | 1.3− | 2006 10 02 | 704 | 0.5+ | 0.2− | 2006 11 27 | 704 | 0.2− | 0.3+ | | |
| 2002 03 15 | 704 | 0.7− | 1.4− | 2006 10 19 | 704 | 0.8− | 0.6+ | 2006 11 27 | 704 | 0.3− | 0.1+ | | |
| 2002 03 15 | 704 | (1.2− | 1.9−) | 2006 10 19 | 704 | 0.3+ | 0.6− | 2006 11 27 | 704 | 0.2− | 0.3− | | |
| 2002 03 15 | 704 | 0.8− | 1.4− | 2006 10 19 | 704 | 0.6+ | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.2− | | |
| 2002 04 21 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 704 | 0.6+ | 0.6− | 2006 11 28 | 704 | 0.0 | 0.3+ | | |
| 2002 04 21 | 704 | 0.0 | 0.7+ | 2006 10 19 | 704 | 0.8+ | 0.4− | 2006 11 28 | 704 | 0.9+ | 0.5+ | | |
| 2002 04 21 | 704 | 0.2+ | 0.0 | 2006 10 20 | 704 | 0.8+ | 0.5− | 2006 11 28 | 704 | 2.1+ | 2.5− | | |
| 2002 04 21 | 704 | (0.6+ | 1.7+) | 2006 10 20 | 704 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 1.0− | 0.4− | | |

**(138774)∗ 2000 SJ$_{320}$**

Discovered 2000 Sept. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.25814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18380899 | $\omega$ | 150.68535 | | +0.88858081 | +0.45867416 | |
| $a$ | 3.0635494 | $\Omega$ | 182.04651 | | −0.44827509 | +0.86525784 | |
| $e$ | 0.0676398 | $i$ | 10.47494 | | −0.09733233 | +0.20235339 | |
| $P$ | 5.36 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 10 | 691 | 0.1− | 0.1+ | 2001 11 12 | 699 | 0.9− | 1.1+ | 2006 09 30 | 703 | 0.8− | 0.4+ | | |
| 1990 11 10 | 691 | 0.2− | 0.3+ | 2001 11 12 | 699 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.8+ | | |
| 1990 11 10 | 691 | 0.0 | 0.2+ | 2001 11 12 | 699 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.2+ | | |
| 1993 04 29 | 691 | 0.2− | 1.0− | 2001 11 21 | 608 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.2− | | |
| 1993 04 29 | 691 | 0.0 | 1.1− | 2001 11 21 | 608 | 0.1+ | 0.6− | 2006 10 03 | G96 | 0.4− | 0.2− | | |
| 1993 04 29 | 691 | 0.1+ | 1.0− | 2001 11 21 | 608 | 0.3+ | 0.2− | 2006 10 03 | G96 | 0.2− | 0.3− | | |
| 1995 10 01 | 691 | 0.0 | 0.3+ | 2001 12 08 | 699 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.2− | 0.4− | | |
| 1995 10 01 | 691 | 0.2− | 0.2− | 2001 12 08 | 699 | (1.6+ | 0.3+) | 2006 10 16 | 703 | 0.3− | 0.9− | | |
| 1995 10 01 | 691 | 0.1− | 0.3− | 2001 12 08 | 699 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.1+ | 1.0− | | |
| 1999 06 14 | 704 | 0.6− | 0.1− | 2001 12 08 | 699 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.1− | | |
| 1999 06 14 | 704 | 1.2+ | 1.3+ | 2003 02 19 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.1+ | | |
| 1999 06 14 | 704 | 0.3+ | 1.6+ | 2003 02 19 | 644 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 1999 06 14 | 704 | 0.5− | 0.8+ | 2003 02 19 | 644 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 1999 06 14 | 704 | 1.4− | 1.0+ | 2004 04 20 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2000 08 31 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 703 | 0.1− | 0.5+ | | |
| 2000 08 31 | 704 | 0.8+ | 0.9+ | 2004 04 20 | 704 | 0.7− | 1.4+ | 2006 10 22 | 703 | 0.6+ | 1.2+ | | |
| 2000 08 31 | 704 | 0.2+ | 0.3− | 2004 04 20 | 704 | 0.3− | 1.1+ | 2006 10 22 | 703 | 0.9+ | 0.3+ | | |
| 2000 08 31 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 704 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.2+ | 1.3+ | | |
| 2000 08 31 | 704 | 0.3+ | 0.5+ | 2004 04 21 | 703 | 0.3+ | 0.5− | 2006 11 13 | 703 | 0.0 | 0.4− | | |
| 2000 09 29 | 691 | 0.3− | 0.5− | 2004 04 21 | 703 | 0.7+ | 0.2− | 2006 11 13 | 703 | 1.3+ | 0.3− | | |
| 2000 09 29 | 691 | 0.2− | 0.9− | 2004 04 21 | 703 | 0.2+ | 1.3+ | 2006 11 13 | 703 | 0.4+ | 0.2− | | |
| 2000 09 29 | 691 | 0.2− | 0.5− | 2004 04 21 | 703 | (2.1− | 0.5−) | 2006 11 13 | 703 | 0.4− | 0.4− | | |
| 2000 10 03 | 691 | 0.9+ | 0.3+ | 2004 04 22 | 704 | 0.4+ | 1.4+ | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2000 10 03 | 691 | 0.2− | 0.2− | 2004 04 22 | 704 | 0.4− | 0.4− | 2006 11 24 | G96 | 0.1− | 0.4− | | |
| 2000 10 03 | 691 | 0.1+ | 0.1− | 2004 04 22 | 704 | 0.3− | 1.2+ | 2006 11 24 | G96 | 0.3− | 0.5− | | |
| 2001 11 12 | 699 | (0.9+ | 1.6+) | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.3− | | |

**(138775)∗ 2000 SA$_{328}$**

Discovered 2000 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.28503 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16961568 | $\omega$ | 67.07655 | | +0.17772370 | −0.98024132 | |
| $a$ | 3.2321541 | $\Omega$ | 13.57797 | | +0.71152693 | +0.06703902 | |
| $e$ | 0.0566077 | $i$ | 21.70933 | | +0.67981153 | +0.18609871 | |
| $P$ | 5.81 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 699 | 1.9− | 0.0 | 2001 12 20 | 645 | 0.0 | 0.0 | 2003 04 01 | 704 | 0.5+ | 1.0+ | | |
| 2000 09 22 | 699 | 1.0− | 1.3+ | 2001 12 23 | 704 | 0.8+ | 0.1− | 2003 04 01 | 704 | 0.4+ | 1.3+ | | |
| 2000 09 22 | 699 | 0.8− | 0.8+ | 2001 12 23 | 704 | 0.2+ | 0.6− | 2003 04 01 | 704 | 0.2+ | 1.3+ | | |
| 2000 09 22 | 699 | 0.5− | 0.6+ | 2001 12 23 | 704 | 0.5+ | 0.3− | 2003 04 01 | 704 | (1.4− | 1.6+) | | |
| 2000 09 30 | 704 | 0.7− | 0.4+ | 2001 12 23 | 704 | 0.5+ | 0.1+ | 2003 04 04 | 704 | 0.3+ | 1.0+ | | |
| 2000 09 30 | 704 | 0.2+ | 0.6+ | 2001 12 23 | 704 | 0.5+ | 0.2+ | 2003 04 04 | 704 | 0.3− | 1.0+ | | |
| 2000 09 30 | 704 | 0.6+ | 0.0 | 2002 01 21 | 699 | 0.1+ | 1.3+ | 2003 04 04 | 704 | 0.5− | 0.7+ | | |
| 2000 10 05 | 608 | 0.4− | 0.4+ | 2002 01 21 | 699 | (1.7+ | 0.3+) | 2003 04 04 | 704 | 0.2+ | 0.7+ | | |
| 2000 10 05 | 608 | 0.2+ | 0.1− | 2002 01 21 | 699 | 0.5− | 0.2+ | 2003 04 08 | 691 | 0.4+ | 0.1− | | |
| 2000 10 05 | 608 | 0.3− | 0.5+ | 2002 01 21 | 699 | 0.4− | 0.2+ | 2003 04 08 | 691 | 0.2+ | 0.0 | | |
| 2000 10 25 | 704 | 0.4− | 0.1+ | 2002 01 25 | 704 | 0.6+ | 0.6+ | 2003 04 08 | 691 | 0.4+ | 0.2− | | |
| 2000 10 25 | 704 | 0.2− | 0.3+ | 2002 01 25 | 704 | 0.5+ | 0.6+ | 2005 10 02 | E12 | 0.3− | 0.8+ | | |
| 2000 10 25 | 704 | 0.3− | 0.4− | 2002 01 25 | 704 | 1.1+ | 0.6+ | 2005 10 02 | E12 | 0.7− | 0.4+ | | |
| 2000 10 25 | 704 | 0.6+ | 0.2+ | 2002 01 25 | 704 | 0.8+ | 0.2− | 2005 10 02 | E12 | 0.1− | 1.0+ | | |
| 2000 10 25 | 704 | 0.1+ | 0.3+ | 2002 01 25 | 704 | 0.7+ | 0.3+ | 2005 10 02 | E12 | 0.5− | 0.8+ | | |
| 2000 11 01 | 704 | 1.2+ | 0.0 | 2002 02 21 | 704 | 0.6+ | 0.5− | 2006 09 25 | 703 | 0.2− | 1.4− | | |
| 2000 11 01 | 704 | 0.5+ | 1.0− | 2002 02 21 | 704 | 1.3− | 0.4+ | 2006 09 25 | 703 | 0.4− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.2− | 0.2− | 2002 02 21 | 704 | 0.1+ | 0.7− | 2006 09 25 | 703 | 0.2− | 0.1− |
| 2000 11 01 | 704 | 0.1+ | 0.3+ | 2002 02 21 | 704 | 0.4− | 0.6+ | 2006 09 25 | 703 | (2.7− | 0.2−) |
| 2000 11 01 | 704 | 0.3− | 0.2+ | 2002 02 21 | 704 | 0.8+ | 0.0 | 2006 10 23 | 703 | 0.3− | 0.1− |
| 2000 11 16 | 699 | 0.4− | 0.7+ | 2002 02 21 | 704 | 0.9− | 0.0 | 2006 10 23 | 703 | 0.0 | 0.3− |
| 2000 11 16 | 699 | 0.5+ | 0.1− | 2002 02 21 | 704 | 1.0+ | 0.7− | 2006 10 23 | 703 | 0.4+ | 0.5− |
| 2000 11 16 | 699 | 0.6− | 0.4− | 2002 02 21 | 704 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.7− | 0.1− |
| 2000 11 16 | 699 | 0.0 | 0.1+ | 2002 02 21 | 704 | 1.2+ | 1.2− | 2006 10 29 | 703 | 0.0 | 0.3− |
| 2000 11 19 | 704 | 0.6− | 0.4+ | 2003 03 27 | 644 | 0.7+ | 0.0 | 2006 10 29 | 703 | 0.2− | 0.1− |
| 2000 11 19 | 704 | 0.8− | 0.5+ | 2003 03 27 | 699 | 0.3− | 0.3− | 2006 10 29 | 703 | 0.6+ | 0.1+ |
| 2000 11 19 | 704 | 0.8− | 0.4+ | 2003 03 27 | 644 | 0.8+ | 0.3− | 2006 10 29 | 703 | 0.1+ | 0.3+ |
| 2000 11 19 | 704 | 0.4− | 0.8+ | 2003 03 27 | 699 | 0.5− | 1.2− | 2006 11 21 | 703 | 0.1+ | 0.0 |
| 2001 12 15 | 645 | 0.1− | 0.0 | 2003 03 27 | 691 | 0.2− | 0.4+ | 2006 11 21 | 703 | 0.3+ | 0.1− |
| 2001 12 15 | 645 | 0.1− | 0.0 | 2003 03 27 | 699 | 0.1− | 0.9− | 2006 11 21 | 703 | 0.4+ | 0.2+ |
| 2001 12 18 | 645 | 0.1− | 0.1+ | 2003 03 27 | 644 | 0.6+ | 0.1− | 2006 11 21 | 703 | 0.4+ | 0.5+ |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 03 27 | 699 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.3+ | 0.0 |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2003 03 27 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.6+ |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2003 03 27 | 691 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.4− |
| 2001 12 20 | 645 | 0.1− | 0.0 | 2003 04 01 | 704 | 0.6+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.0 |

**(138776)∗ 2000 SH$_{328}$ = 2001 XX$_{176}$**

Discovered 2000 Sept. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 22669)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.50652 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20107545 | $\omega$ | 242.18733 | | +0.96771208 | −0.24925858 | |
| $a$ | 2.8855594 | $\Omega$ | 132.22014 | | +0.24538399 | +0.89764835 | |
| $e$ | 0.0400854 | $i$ | 2.89966 | | +0.05761968 | +0.36345232 | |
| $P$ | 4.90 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 21 | 691 | 0.3− | 1.3− | 2001 12 20 | 704 | (1.7− | 0.1−) | 2005 09 23 | 691 | 0.2+ | 0.2+ |
| 1998 03 21 | 691 | 0.1− | 1.5− | 2001 12 20 | 704 | 0.0 | 0.1− | 2005 09 23 | 691 | 0.0 | 1.0+ |
| 1998 03 21 | 691 | 0.1+ | 1.4− | 2002 01 13 | 704 | 0.1+ | 0.7− | 2005 09 24 | 703 | 1.4− | 0.8− |
| 2000 09 26 | 704 | 0.0 | 0.3− | 2002 01 13 | 704 | 0.1+ | 0.2− | 2005 09 24 | 703 | 0.7− | 0.2+ |
| 2000 09 26 | 704 | 0.1− | 0.6− | 2002 01 13 | 704 | 0.7− | 0.1+ | 2005 09 24 | 703 | 0.4− | 0.3+ |
| 2000 09 26 | 704 | 0.1+ | 0.5− | 2003 03 23 | 291 | 0.3+ | 0.4+ | 2005 09 24 | 703 | 0.1− | 0.6− |
| 2000 09 26 | 704 | 0.5− | 0.3+ | 2003 03 23 | 291 | 0.1+ | 0.3+ | 2005 10 01 | 704 | 0.0 | 0.4+ |
| 2000 09 30 | 691 | 0.6− | 0.1+ | 2003 03 23 | 291 | 0.0 | 0.4+ | 2005 10 01 | 704 | 0.5− | 0.8+ |
| 2000 09 30 | 691 | 0.7− | 0.2+ | 2003 03 25 | 608 | 0.0 | 0.3+ | 2005 10 01 | 704 | 0.6− | 0.4+ |
| 2000 09 30 | 691 | 0.4− | 0.2+ | 2003 03 25 | 608 | 0.4− | 0.5+ | 2005 10 01 | 704 | 0.7+ | 0.5+ |
| 2000 10 01 | 699 | 1.1+ | 0.4+ | 2003 03 25 | 608 | 0.3− | 0.9+ | 2005 10 01 | 704 | 0.1+ | 0.5+ |
| 2000 10 01 | 699 | 1.8+ | 0.8− | 2003 03 27 | 644 | 0.4+ | 0.6+ | 2005 10 07 | 703 | 0.5+ | 0.0 |
| 2000 10 01 | 699 | 1.1+ | 0.9+ | 2003 03 27 | 699 | 1.3− | 0.3− | 2005 10 07 | 703 | 0.2+ | 0.7+ |
| 2000 10 01 | 699 | 1.2− | 0.7+ | 2003 03 27 | 644 | 0.2+ | 0.2+ | 2005 10 07 | 703 | 1.0+ | 0.3− |
| 2001 12 09 | 691 | 0.3− | 0.5+ | 2003 03 27 | 699 | 1.4− | 0.3− | 2005 10 07 | 703 | 0.7+ | 0.3− |
| 2001 12 09 | 691 | 0.1− | 0.7+ | 2003 03 27 | 699 | 0.5− | 0.6− | 2005 10 11 | A50 | 0.9− | 0.6+ |
| 2001 12 09 | 691 | 0.1− | 0.5+ | 2003 03 27 | 644 | 0.3+ | 0.1+ | 2005 10 28 | 704 | 0.5+ | 0.4− |
| 2001 12 14 | 704 | 0.1+ | 0.2+ | 2003 03 27 | 699 | 0.7+ | 1.1− | 2005 10 28 | 704 | 0.7+ | 0.5+ |
| 2001 12 14 | 704 | 0.2− | 0.4− | 2003 03 27 | 691 | 0.9+ | 0.4+ | 2005 10 28 | 704 | 0.6− | 1.3+ |
| 2001 12 14 | 704 | 0.2+ | 1.2− | 2003 03 27 | 691 | 0.7+ | 0.9+ | 2006 10 21 | G96 | 0.7− | 0.3− |
| 2001 12 14 | 704 | 1.2+ | 0.4− | 2003 03 27 | 691 | 0.6+ | 1.1+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 12 14 | 704 | 0.8+ | 0.0 | 2003 04 03 | 699 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 12 17 | 704 | 0.1+ | 0.4− | 2003 04 03 | 699 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.4+ | 0.5− | 2003 04 03 | 699 | 0.3+ | 0.6− | 2006 10 22 | G96 | 0.5+ | 0.8− |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2003 04 03 | 699 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2001 12 17 | 704 | 0.2+ | 0.0 | 2003 04 09 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 1.2− | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2003 04 09 | 691 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2001 12 18 | 644 | 0.0 | 0.5+ | 2003 04 09 | 691 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2001 12 18 | 644 | 0.3− | 0.7+ | 2003 05 05 | 691 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.4+ | 0.5− |
| 2001 12 18 | 644 | 0.1− | 0.4+ | 2003 05 05 | 691 | 0.0 | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2001 12 20 | 704 | 0.1+ | 1.1+ | 2003 05 05 | 691 | 0.1− | 0.9+ | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2001 12 20 | 704 | 0.8− | 0.2− | 2005 09 23 | 691 | 0.2+ | 0.2+ | | | | |

**(138777)∗ 2000 SX$_{330}$**

Discovered 2000 Sept. 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.83450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17134562 | $\omega$ | 239.07352 | | +0.99351614 | −0.10256689 | |
| $a$ | 3.2103623 | $\Omega$ | 126.76899 | | +0.11340356 | +0.92470386 | |
| $e$ | 0.1803494 | $i$ | 3.51038 | | −0.00808175 | +0.36660989 | |
| $P$ | 5.75 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.2− | 0.1− | 2004 05 24 | 735 | (0.0 | 2.0+) | 2005 10 28 | G96 | 0.3− | 0.3+ |
| 2000 09 27 | 691 | 0.2− | 0.2− | 2004 05 24 | 735 | 0.5+ | 1.0− | 2005 10 28 | G96 | 0.3− | 0.3− |
| 2000 09 27 | 691 | 0.2− | 0.1− | 2004 05 24 | 735 | 0.6− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2000 10 02 | 704 | 0.5+ | 0.0 | 2005 06 27 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2000 10 02 | 704 | 0.3− | 0.2+ | 2005 06 27 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2000 10 02 | 704 | 0.1− | 0.5− | 2005 06 27 | 691 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2000 10 02 | 704 | 0.5+ | 0.5− | 2005 07 03 | G96 | 0.3+ | 0.2+ | 2006 11 02 | 703 | 0.7+ | 0.7+ |
| 2000 10 02 | 704 | 0.2+ | 0.2+ | 2005 07 03 | G96 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.6+ | 0.2+ |
| 2000 10 31 | 704 | 0.2− | 0.1+ | 2005 07 03 | G96 | 0.0 | 0.2+ | 2006 11 02 | 703 | 1.2+ | 0.0 |
| 2000 10 31 | 704 | 0.1− | 0.8+ | 2005 07 03 | G96 | 0.1+ | 0.1− | 2006 11 02 | 703 | 0.7+ | 1.4+ |
| 2000 10 31 | 704 | 0.3+ | 0.2− | 2005 07 04 | 644 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2000 10 31 | 704 | 0.7+ | 0.3+ | 2005 07 04 | 644 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2000 10 31 | 704 | 0.3+ | 0.5− | 2005 07 04 | 644 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2000 11 02 | 704 | 0.4− | 0.4+ | 2005 07 04 | 644 | 0.5− | 0.3+ | 2006 11 17 | 704 | (1.0+ | 2.1+) |
| 2000 11 02 | 704 | 0.6+ | 0.1+ | 2005 07 04 | 644 | 0.3− | 0.3+ | 2006 11 17 | 704 | (0.3+ | 2.6+) |
| 2000 11 02 | 704 | 0.6− | 0.8+ | 2005 07 04 | 644 | 0.4− | 0.3+ | 2006 11 17 | 704 | (1.2+ | 1.5+) |
| 2000 11 02 | 704 | 0.7− | 0.0 | 2005 07 05 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 704 | (0.2+ | 1.7+) |
| 2000 11 06 | 704 | 0.5+ | 0.2− | 2005 07 05 | 691 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 0.4+ | 0.8+ |
| 2000 11 06 | 704 | 1.5+ | 1.2+ | 2005 07 05 | 691 | 0.2+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2000 11 06 | 704 | 0.9− | 0.5+ | 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 01 13 | 704 | 0.4+ | 0.4+ | 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 01 13 | 704 | 0.2+ | 0.8+ | 2005 07 09 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2002 01 13 | 704 | 0.7− | 1.4+ | 2005 07 16 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.9+ | 1.2+ |
| 2002 01 13 | 704 | 0.2+ | 1.1+ | 2005 07 16 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 1.0− | 0.5+ |
| 2002 01 13 | 704 | 0.4− | 0.0 | 2005 07 16 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.8− |
| 2002 01 21 | 704 | 0.0 | 1.4+ | 2005 07 30 | E12 | 0.1− | 0.2+ | 2006 11 25 | 704 | 0.7− | 0.2− |
| 2002 01 21 | 704 | 0.1+ | 0.9+ | 2005 07 30 | E12 | 0.5+ | 0.3− | 2006 11 25 | 704 | 1.1+ | 1.2+ |
| 2002 01 21 | 704 | (0.2+ | 1.6+) | 2005 07 30 | E12 | 0.1+ | 0.1− | 2006 11 25 | 704 | 0.9+ | 0.6+ |
| 2002 01 21 | 704 | 0.9+ | 1.1+ | 2005 07 30 | E12 | 0.2+ | 0.3+ | 2006 11 25 | 704 | 0.1+ | 0.1− |
| 2003 04 05 | 691 | 0.0 | 0.8+ | 2005 08 22 | E12 | 0.5+ | 0.4+ | 2006 11 29 | 704 | 0.3+ | 1.1+ |
| 2003 04 05 | 691 | 0.6+ | 0.5+ | 2005 08 22 | E12 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.5+ |
| 2003 04 05 | 691 | 0.1+ | 0.8+ | 2005 08 22 | E12 | 1.3− | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2004 05 22 | 735 | 0.0 | 0.7− | 2005 08 22 | E12 | (1.9+ | 0.2+) | 2006 11 29 | 704 | 0.6− | 0.6+ |
| 2004 05 22 | 735 | 0.9+ | 0.3+ | 2005 10 28 | G96 | 0.3− | 0.3− | | | | |
| 2004 05 22 | 735 | 0.1+ | 0.3− | 2005 10 28 | G96 | 0.1+ | 0.0 | | | | |

**(138778)∗ 2000 ST$_{334}$ = 2003 FF$_{95}$**

Discovered 2000 Sept. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 46498)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.61314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18090186 | $\omega$ | 307.35340 | | −0.86342032 | −0.49763515 | |
| $a$ | 3.0962833 | $\Omega$ | 203.15609 | | +0.50322553 | −0.83797098 | |
| $e$ | 0.0686244 | $i$ | 12.16305 | | +0.03562890 | −0.22397298 | |
| $P$ | 5.45 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 0.4− | 1.6+ | 2003 04 01 | 644 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.2− | 0.1− |
| 2000 09 26 | 699 | 0.5− | 0.1− | 2003 04 01 | 644 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.1− |
| 2000 09 26 | 699 | 0.0 | 1.5+ | 2003 04 01 | 644 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.2+ |
| 2000 09 26 | 691 | 0.2+ | 0.1− | 2003 04 03 | 699 | 1.2− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2000 09 26 | 699 | 1.0− | 1.6+ | 2003 04 03 | 699 | 1.1− | 1.1+ | 2006 11 09 | 644 | 0.5+ | 0.2+ |
| 2000 09 26 | 691 | 0.1+ | 0.1− | 2003 04 03 | 699 | 0.6− | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2000 09 26 | 691 | 0.2+ | 0.1− | 2003 04 03 | 699 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.6− | 0.5+ |
| 2000 09 27 | 704 | 0.1+ | 1.2+ | 2003 04 26 | 699 | (2.3− | 0.1−) | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2000 09 27 | 704 | 0.9− | 0.2− | 2003 04 26 | 699 | 0.5− | 0.1− | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2000 09 27 | 704 | 1.7− | 0.5+ | 2003 04 26 | 699 | 0.6− | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.5+ |
| 2000 09 27 | 704 | 0.7− | 0.6+ | 2003 04 26 | 699 | 0.7− | 0.7− | 2006 11 13 | 644 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 18 | 691 | 0.1+ | 0.1− | 2003 04 29 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.6+ | 0.5+ | | |
| 2000 11 18 | 691 | 0.0 | 0.3− | 2003 04 29 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 1.0+ | 0.7− | | |
| 2000 11 18 | 691 | 0.2+ | 0.2+ | 2003 04 29 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.5+ | | |
| 2000 11 19 | 691 | 0.4+ | 0.5− | 2005 09 03 | 568 | 0.4+ | 0.7+ | 2006 11 13 | 703 | 0.9− | 0.1− | | |
| 2000 11 19 | 691 | 0.0 | 0.1+ | 2005 09 03 | 568 | 0.4+ | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.5+ | | |
| 2000 11 19 | 691 | 0.2− | 0.4− | 2005 09 03 | 568 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.8− | 0.6+ | | |
| 2001 12 19 | 704 | 0.5+ | 1.2− | 2005 09 05 | 568 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2001 12 19 | 704 | 0.1− | 0.9− | 2005 09 09 | 704 | 0.1− | 0.5+ | 2006 11 19 | 703 | (1.5− | 3.6−) | | |
| 2001 12 19 | 704 | 0.2+ | 0.8− | 2005 09 09 | 704 | 0.0 | 1.4+ | 2006 11 19 | 704 | 0.3− | 0.6+ | | |
| 2003 03 26 | 644 | 0.7+ | 0.2+ | 2005 09 09 | 704 | 0.8− | 0.4+ | 2006 11 19 | 703 | (0.2+ | 4.0−) | | |
| 2003 03 26 | 644 | 0.7+ | 0.2+ | 2005 09 09 | 704 | 0.7− | 0.1− | 2006 11 19 | 703 | 0.7− | 0.3+ | | |
| 2003 03 26 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 703 | (0.1+ | 2.0+) | 2006 11 19 | 703 | 0.0 | 0.5+ | | |
| 2003 03 28 | 691 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.7− | 2006 11 23 | G96 | 0.2− | 0.0 | | |
| 2003 03 28 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2003 03 28 | 691 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2003 03 30 | 699 | (0.1+ | 2.0−) | 2006 10 03 | G96 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.2− | | |
| 2003 03 30 | 699 | 0.2− | 1.1− | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 11 28 | 012 | 0.5+ | 0.6+ | | |
| 2003 03 30 | 699 | 0.3+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 28 | 012 | 0.0 | 0.2+ | | |
| 2003 03 30 | 699 | 0.6− | 0.6− | 2006 10 03 | G96 | 0.4− | 0.2− | 2006 11 28 | 012 | 0.4+ | 0.4+ | | |
| 2003 03 31 | 704 | 1.1+ | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 28 | 012 | 0.4+ | 0.5+ | | |
| 2003 03 31 | 704 | 1.0+ | 0.8+ | 2006 10 16 | 703 | 1.1− | 0.2− | 2006 11 28 | 012 | 0.4− | 0.2+ | | |
| 2003 03 31 | 704 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 28 | 012 | 0.5+ | 0.7+ | | |
| 2003 03 31 | 704 | 0.9+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.3+ | | | | | | |
| 2003 03 31 | 704 | 0.7+ | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.1+ | | | | | | |

**(138779)∗ 2000 SL$_{335}$**

Discovered 2000 Sept. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.85143 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18322201 | $\omega$ | 169.14116 | | +0.68311427 | −0.71875746 | |
| $a$ | 3.0700889 | $\Omega$ | 237.62381 | | +0.65804310 | +0.68262411 | |
| $e$ | 0.0098707 | $i$ | 8.81297 | | +0.31675570 | +0.13195466 | |
| $P$ | 5.38 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.5+ | 0.5− | 2005 09 11 | 704 | 0.7+ | 0.3− | 2006 11 11 | 291 | 0.6+ | 0.0 | | |
| 1995 11 15 | 691 | 0.5+ | 0.5− | 2005 09 11 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 291 | 0.4+ | 0.0 | | |
| 1995 11 15 | 691 | 0.6+ | 0.6− | 2005 09 11 | 704 | (0.6+ | 1.8+) | 2006 11 12 | 703 | 1.2− | 0.5+ | | |
| 1999 07 13 | 704 | 0.2+ | 0.6+ | 2005 09 11 | 704 | 0.1+ | 0.2+ | 2006 11 12 | 703 | 0.7− | 0.1+ | | |
| 1999 07 13 | 704 | 0.8+ | 0.0 | 2005 09 23 | 644 | 0.1− | 0.3+ | 2006 11 12 | 703 | 1.1− | 0.9+ | | |
| 1999 07 13 | 704 | 0.2− | 0.5− | 2005 09 23 | 644 | 0.0 | 0.8+ | 2006 11 12 | 703 | 1.1− | 0.2− | | |
| 1999 07 13 | 704 | 0.1− | 0.5+ | 2005 09 23 | 644 | 0.1− | 0.5+ | 2006 11 15 | 691 | 0.4− | 0.0 | | |
| 2000 09 26 | 691 | 0.7− | 0.2− | 2005 09 24 | 699 | 0.9− | 1.2+ | 2006 11 15 | 691 | 0.3− | 0.1− | | |
| 2000 09 26 | 691 | 0.6− | 0.4− | 2005 09 24 | 699 | 0.7+ | 0.7+ | 2006 11 15 | 691 | 0.6− | 0.1− | | |
| 2000 09 26 | 691 | 0.7− | 0.2− | 2005 09 24 | 703 | 0.1− | 0.4− | 2006 11 18 | 704 | 1.3+ | 0.5+ | | |
| 2000 09 30 | 704 | 0.1− | 1.0− | 2005 09 24 | 699 | 0.4− | 0.5+ | 2006 11 18 | 704 | 0.3+ | 1.3+ | | |
| 2000 09 30 | 704 | 1.3− | 0.4− | 2005 09 24 | 703 | 0.9+ | 1.1− | 2006 11 18 | 704 | 0.2+ | 0.2+ | | |
| 2000 09 30 | 704 | 0.3+ | 0.1+ | 2005 09 24 | 703 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (0.6− | 2.2+) | | |
| 2000 10 25 | 704 | 0.5+ | 0.9+ | 2005 09 24 | 699 | 1.2− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.1− | | |
| 2000 10 25 | 704 | 1.2− | 0.5+ | 2005 09 24 | 703 | 0.5+ | 0.9− | 2006 11 21 | 704 | 0.1− | 0.2+ | | |
| 2000 10 25 | 704 | 0.3− | 0.3+ | 2005 10 01 | 699 | 0.8+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.3− | | |
| 2000 10 25 | 704 | 0.1− | 0.7+ | 2005 10 01 | 699 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2000 10 25 | 704 | 0.1+ | 0.1− | 2005 10 01 | 699 | 0.3+ | 0.9+ | 2006 11 21 | 704 | 0.4− | 0.2− | | |
| 2000 11 01 | 704 | 0.0 | 1.2− | 2005 10 01 | 699 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2+ | | |
| 2000 11 01 | 704 | 0.9− | 0.7+ | 2005 10 21 | 644 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.2+ | | |
| 2000 11 01 | 704 | 0.7+ | 0.0 | 2005 10 21 | 644 | 0.1+ | 0.5+ | 2006 11 22 | 691 | 0.1− | 0.7− | | |
| 2000 11 01 | 704 | 0.6− | 0.7− | 2005 10 21 | 644 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1+ | | |
| 2002 01 09 | 704 | (1.6− | 0.7+) | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.3+ | | |
| 2002 01 09 | 704 | (1.6− | 0.6+) | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.3− | 0.2+ | | |
| 2002 01 09 | 704 | 1.2− | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.1+ | | |
| 2003 03 28 | 691 | 0.3+ | 0.1− | 2006 11 11 | 291 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.1− | | |
| 2003 03 28 | 691 | 0.1− | 0.1+ | 2006 11 11 | 291 | 0.5+ | 0.0 | 2006 11 24 | G96 | 0.6− | 0.1− | | |
| 2003 03 28 | 691 | 0.4− | 0.2+ | 2006 11 11 | 291 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.3− | 0.1− | | |
| 2003 04 07 | 704 | (2.4+ | 1.2+) | 2006 11 11 | 291 | 0.6+ | 0.2+ | 2006 11 27 | 185 | 0.0 | 0.5+ | | |
| 2003 04 07 | 704 | (1.7+ | 1.3+) | 2006 11 11 | 291 | 0.5+ | 0.1+ | 2006 11 27 | 185 | 0.5− | 0.4− | | |
| 2003 04 07 | 704 | (1.3+ | 1.8+) | 2006 11 11 | 291 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.8− | 0.3+ | | |
| 2005 08 29 | 644 | 0.1+ | 0.0 | 2006 11 11 | 291 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.0 | | |
| 2005 08 29 | 644 | 0.0 | 0.1− | 2006 11 11 | 291 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.2− | | |
| 2005 08 29 | 644 | 0.0 | 0.0 | 2006 11 11 | 291 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.5+ | | |
| 2005 09 11 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 291 | 0.5+ | 0.0 | 2006 11 29 | 704 | 1.1− | 0.5+ | | |

**(138780)∗ 2000 SR$_{338}$ = 2003 FY$_{30}$**

Discovered 2000 Sept. 25 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 46499)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.88196 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16901187 | $\omega$ | 17.97951 | | +0.68846819 | −0.71768956 | |
| $a$ | 3.2398476 | $\Omega$ | 28.79100 | | +0.63591487 | +0.52801876 | |
| $e$ | 0.0429992 | $i$ | 12.53917 | | +0.34874610 | +0.45400207 | |
| $P$ | 5.83 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 25 | 691 | 0.4+ | 0.8+ | 2003 04 10 | 691 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.5+ | | |
| 1992 04 25 | 691 | 0.0 | 0.4+ | 2004 04 25 | 704 | 0.2− | 1.4+ | 2006 10 19 | 644 | 0.1− | 0.4+ | | |
| 1992 04 25 | 691 | 0.2+ | 0.1+ | 2004 04 25 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2000 09 07 | 704 | 1.9− | 0.3+ | 2004 04 25 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2000 09 07 | 704 | (2.9− | 1.5+) | 2004 04 25 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2000 09 07 | 704 | (2.8− | 0.9+) | 2006 09 06 | 644 | 0.1− | 0.9+ | 2006 10 21 | 703 | 0.1+ | 0.4− | | |
| 2000 09 25 | 608 | 0.2− | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.9+ | 2006 10 21 | 703 | 0.3+ | 0.2+ | | |
| 2000 09 25 | 608 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.3− | | |
| 2000 09 25 | 608 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.5− | 0.2− | | |
| 2000 10 01 | 699 | 0.2− | 0.5+ | 2006 09 25 | 699 | 1.5− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2000 10 01 | 699 | 0.1+ | 1.5+ | 2006 09 25 | 699 | (1.5− | 1.9+) | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2000 10 01 | 699 | 0.4− | 0.4+ | 2006 09 25 | 699 | 1.0− | 0.5− | 2006 10 22 | G96 | 0.4− | 0.0 | | |
| 2000 10 01 | 699 | 0.8− | 1.9+ | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.1− | | |
| 2000 10 21 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2000 10 21 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2000 10 21 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.9− | 2006 10 31 | G96 | 0.1− | 0.0 | | |
| 2003 02 25 | 599 | 0.8+ | 0.5+ | 2006 10 01 | 704 | (0.7+ | 1.7+) | 2006 10 31 | G96 | 0.1+ | 0.1+ | | |
| 2003 02 25 | 599 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.5+ | 1.0+ | 2006 11 11 | 703 | 0.3− | 0.2+ | | |
| 2003 02 25 | 599 | 0.3+ | 0.7− | 2006 10 01 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 1.3− | 0.8− | | |
| 2003 03 08 | 644 | 1.0+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.3+ | | |
| 2003 03 08 | 644 | 1.0+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.9+ | | |
| 2003 03 08 | 644 | 1.0+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.4− | | |
| 2003 03 23 | 644 | 0.6+ | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.7+ | 0.1− | | |
| 2003 03 23 | 644 | 0.5+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.0 | | |
| 2003 03 23 | 644 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.0 | | |
| 2003 03 26 | 691 | 0.2− | 1.2+ | 2006 10 15 | 703 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.2− | | |
| 2003 03 26 | 691 | 0.2− | 0.9+ | 2006 10 15 | 703 | 0.3− | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.6− | | |
| 2003 03 26 | 691 | 0.3− | 1.3+ | 2006 10 15 | 703 | 0.8− | 0.0 | 2006 11 14 | 703 | 0.1− | 0.9− | | |
| 2003 04 10 | 691 | 0.3+ | 0.6− | 2006 10 15 | 703 | 0.2− | 1.2− | 2006 11 14 | 703 | 0.1− | 0.3− | | |
| 2003 04 10 | 691 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.1− | 0.2+ | | | | | | |

**(138781)∗ 2000 SH$_{339}$**

Discovered 2000 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.79331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15552821 | $\omega$ | 293.58533 | | +0.92827699 | −0.20671254 | |
| $a$ | 3.4244955 | $\Omega$ | 79.51534 | | +0.33033066 | +0.84017749 | |
| $e$ | 0.1708622 | $i$ | 18.32436 | | −0.17083176 | +0.50136984 | |
| $P$ | 6.34 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 704 | 0.2− | 0.2+ | 2001 12 22 | 704 | 0.7− | 0.5+ | 2003 03 22 | 644 | 0.3+ | 0.3+ | | |
| 2000 09 25 | 704 | 0.3+ | 0.3− | 2001 12 22 | 704 | 0.4− | 0.0 | 2003 04 07 | 644 | 0.7+ | 0.7+ | | |
| 2000 09 25 | 704 | 0.3+ | 0.2− | 2001 12 22 | 704 | 0.2+ | 0.4− | 2003 04 07 | 644 | 0.3+ | 0.6+ | | |
| 2000 09 25 | 704 | 0.1+ | 0.5+ | 2001 12 22 | 704 | 0.1− | 1.3− | 2003 04 07 | 644 | 0.5+ | 0.8+ | | |
| 2000 09 26 | 699 | 0.3− | 0.2− | 2001 12 22 | 704 | 0.5− | 0.9− | 2004 04 19 | 113 | 0.4− | 0.1+ | | |
| 2000 09 26 | 699 | 1.1− | 0.4+ | 2002 01 05 | 699 | 0.0 | 0.1− | 2004 04 19 | 113 | (1.9+ | 0.8−) | | |
| 2000 09 26 | 699 | 1.1+ | 0.2− | 2002 01 05 | 699 | 0.0 | 0.4+ | 2004 04 19 | 113 | 0.6− | 0.7+ | | |
| 2000 09 26 | 699 | 0.6+ | 0.1− | 2002 01 05 | 699 | 0.1+ | 0.2+ | 2004 04 24 | 704 | 0.9− | 0.6− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 608 | 0.7− | 0.5+ | 2002 01 05 | 699 | 0.3− | 0.2+ | 2004 04 24 | 704 | 0.5− | 0.1− | | |
| 2000 09 26 | 608 | 0.9− | 0.6+ | 2002 01 06 | 448 | 1.0+ | 0.4− | 2004 04 24 | 704 | 0.3− | 0.3− | | |
| 2000 09 26 | 608 | 0.7− | 0.5+ | 2002 01 06 | 448 | 0.8− | 1.1+ | 2004 04 24 | 704 | 1.1+ | 0.0 | | |
| 2000 10 29 | 704 | 0.0 | 0.5− | 2002 01 06 | 448 | (0.3− | 1.7−) | 2006 07 30 | E12 | 0.6− | 0.7+ | | |
| 2000 10 29 | 704 | 0.0 | 0.3+ | 2002 01 08 | 644 | 0.5− | 0.0 | 2006 07 30 | E12 | 0.2+ | 0.2+ | | |
| 2000 10 29 | 704 | 0.2+ | 0.8− | 2002 01 08 | 644 | 0.4− | 0.4+ | 2006 07 30 | E12 | 0.0 | 0.4+ | | |
| 2000 10 29 | 704 | 0.5+ | 0.2− | 2002 01 08 | 644 | 0.1− | 0.3+ | 2006 07 30 | E12 | 0.1− | 0.2+ | | |
| 2000 10 29 | 704 | 0.0 | 0.7− | 2002 01 14 | 644 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.4− | 0.1+ | | |
| 2000 11 20 | 699 | 0.4+ | 0.7+ | 2002 01 14 | 644 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.0 | | |
| 2000 11 20 | 699 | 0.0 | 0.6+ | 2002 01 14 | 644 | 0.1− | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.0 | | |
| 2000 11 20 | 699 | 0.7− | 0.4+ | 2002 01 23 | 704 | 0.8+ | 0.1+ | 2006 09 16 | E12 | 0.2+ | 0.3− | | |
| 2000 11 20 | 699 | 0.2+ | 0.2− | 2002 01 23 | 704 | 0.3+ | 0.7+ | 2006 09 16 | E12 | 0.3+ | 0.4− | | |
| 2000 11 25 | 704 | 0.3− | 0.7+ | 2002 01 23 | 704 | 0.4+ | 0.2− | 2006 09 16 | E12 | 0.1− | 0.4− | | |
| 2000 11 25 | 704 | 0.1+ | 0.1+ | 2002 01 23 | 704 | 0.7+ | 0.2+ | 2006 09 16 | E12 | 0.2+ | 0.0 | | |
| 2000 11 25 | 704 | 0.1− | 0.2− | 2002 02 03 | 644 | 0.4+ | 1.2+ | 2006 09 22 | E12 | 0.3+ | 0.3− | | |
| 2000 11 25 | 704 | 0.5− | 0.2− | 2002 02 03 | 644 | 0.0 | 1.2+ | 2006 09 22 | E12 | 0.1+ | 0.4+ | | |
| 2000 11 25 | 704 | 0.5− | 0.2+ | 2002 02 03 | 644 | 0.5+ | 1.3+ | 2006 09 22 | E12 | 0.1+ | 0.3+ | | |
| 2000 12 23 | 704 | 0.1− | 0.4− | 2002 02 10 | 704 | 0.5− | 0.3+ | 2006 09 22 | E12 | 0.1− | 0.4+ | | |
| 2000 12 23 | 704 | 0.2− | 0.3− | 2002 02 10 | 704 | 0.6+ | 0.1+ | 2006 10 02 | E12 | 0.3+ | 0.4− | | |
| 2000 12 23 | 704 | 0.1+ | 0.6+ | 2002 02 10 | 704 | 0.2− | 0.1− | 2006 10 02 | E12 | 0.1+ | 0.7+ | | |
| 2000 12 23 | 704 | 0.5+ | 0.2+ | 2002 02 10 | 704 | 0.2− | 0.1+ | 2006 10 02 | E12 | 0.4+ | 0.5+ | | |
| 2000 12 23 | 704 | 1.2+ | 0.1− | 2002 02 10 | 704 | 0.3+ | 0.1+ | 2006 10 02 | E12 | 0.0 | 0.0 | | |
| 2001 12 18 | 699 | 0.2+ | 0.4+ | 2002 02 13 | 644 | 0.3− | 0.3+ | 2006 10 12 | E12 | 0.3+ | 0.2+ | | |
| 2001 12 18 | 699 | 0.5− | 0.6+ | 2002 02 13 | 644 | 0.6− | 0.1+ | 2006 10 12 | E12 | 0.1− | 0.0 | | |
| 2001 12 18 | 699 | (1.7− | 1.2−) | 2002 02 13 | 644 | 0.4+ | 0.1− | 2006 10 12 | E12 | 0.2− | 0.3− | | |
| 2001 12 18 | 699 | 0.3+ | 0.5+ | 2003 03 08 | 699 | 0.8− | 0.0 | 2006 10 12 | E12 | 0.1+ | 0.3− | | |
| 2001 12 19 | 644 | 0.1+ | 1.0+ | 2003 03 08 | 699 | 0.6+ | 0.5− | 2006 11 09 | E12 | 0.1− | 0.0 | | |
| 2001 12 19 | 644 | 0.2+ | 1.1+ | 2003 03 08 | 699 | (0.3+ | 2.5−) | 2006 11 09 | E12 | 0.2− | 0.2− | | |
| 2001 12 19 | 644 | 0.1+ | 0.9+ | 2003 03 08 | 699 | 0.1+ | 0.2− | 2006 11 09 | E12 | 0.2− | 0.2− | | |
| 2001 12 20 | 645 | 0.1− | 0.3− | 2003 03 09 | 644 | 0.4+ | 0.5+ | 2006 11 09 | E12 | 0.3− | 0.2+ | | |
| 2001 12 20 | 645 | 0.1− | 0.3− | 2003 03 09 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 644 | 0.4− | 0.0 | | |
| 2001 12 22 | 704 | 0.1+ | 0.1+ | 2003 03 09 | 644 | 0.6+ | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.0 | | |
| 2001 12 22 | 704 | 0.2− | 0.6+ | 2003 03 22 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.5− | 0.1+ | | |
| 2001 12 22 | 704 | 1.1+ | 0.2+ | 2003 03 22 | 644 | 0.2+ | 0.0 | | | | | | |

**(138782)∗ 2000 SV$_{344}$**

Discovered 2000 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.65614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17959210 | $\omega$ | 286.28215 | | +0.94039012 | −0.26032628 | |
| $a$ | 3.1113192 | $\Omega$ | 89.21103 | | +0.32894633 | +0.85964731 | |
| $e$ | 0.2404905 | $i$ | 12.64289 | | −0.08637555 | +0.43958700 | |
| $P$ | 5.49 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.5− | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.6− | | |
| 2000 08 26 | 704 | 0.9− | 0.6+ | 2001 12 19 | 644 | 0.6+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.2− | | |
| 2000 08 26 | 704 | 0.4+ | 0.4+ | 2001 12 19 | 644 | 0.7+ | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2000 08 26 | 704 | 0.2− | 0.5+ | 2001 12 19 | 644 | 0.9+ | 0.9+ | 2006 11 17 | G96 | 0.2+ | 0.2− | | |
| 2000 08 26 | 704 | 0.7+ | 0.5+ | 2002 01 14 | 645 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2000 09 20 | 704 | 0.5− | 0.5+ | 2002 01 14 | 645 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2000 09 20 | 704 | 0.5+ | 0.6− | 2002 01 20 | 699 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.4+ | | |
| 2000 09 20 | 704 | 0.5− | 0.5+ | 2002 01 20 | 699 | 0.9− | 0.9+ | 2006 11 18 | 704 | 0.3+ | 0.0 | | |
| 2000 09 20 | 704 | 0.0 | 0.6+ | 2002 01 20 | 699 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.1+ | | |
| 2000 09 20 | 704 | 0.0 | 0.9+ | 2002 01 20 | 699 | 1.0− | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.2+ | | |
| 2000 09 24 | 699 | 0.8+ | 0.5− | 2005 07 06 | E12 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.6+ | 0.2+ | | |
| 2000 09 24 | 699 | 1.0− | 0.0 | 2005 07 06 | E12 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.1− | | |
| 2000 09 24 | 699 | 0.7− | 0.6− | 2005 07 06 | E12 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.1− | 0.2− | | |
| 2000 09 24 | 699 | 1.3+ | 0.1− | 2006 10 01 | 703 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.2− | | |
| 2000 09 26 | 608 | 0.3− | 0.6− | 2006 10 01 | 703 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.3− | | |
| 2000 09 26 | 608 | 0.1− | 0.8− | 2006 10 01 | 703 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.7+ | | |
| 2000 09 26 | 608 | 0.2− | 0.8− | 2006 10 01 | 703 | 0.9− | 0.4− | 2006 11 29 | 704 | 0.1− | 0.6+ | | |
| 2000 10 18 | 699 | (1.0− | 2.1+) | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.1+ | | |
| 2000 10 18 | 699 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.5+ | | |
| 2000 10 18 | 699 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.2+ | | |
| 2000 10 18 | 699 | 0.1+ | 0.6− | 2006 11 14 | 704 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.7+ | 0.3+ | | |
| 2000 10 18 | 699 | 0.4− | 1.0+ | 2006 11 14 | 704 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.6+ | 0.2+ | | |
| 2000 10 18 | 699 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.6+ | 0.2+ | | |
| 2000 10 18 | 699 | (0.7− | 2.1+) | 2006 11 17 | 704 | 1.0− | 0.6− | 2006 12 03 | 644 | 0.2− | 0.2+ | | |
| 2000 10 18 | 699 | 0.2− | 0.8− | 2006 11 17 | 704 | 1.1− | 1.2− | 2006 12 03 | 644 | 0.2− | 0.0 | | |
| 2001 12 17 | 704 | (2.4− | 0.0 ) | 2006 11 17 | 704 | 1.1− | 0.5− | 2006 12 03 | 644 | 0.0 | 0.3+ | | |
| 2001 12 17 | 704 | 0.8− | 1.2+ | 2006 11 17 | 704 | 0.4− | 0.1− | | | | | | |

**(138783)∗ 2000 SJ$_{349}$ = 2001 XS$_{113}$**

Discovered 2000 Sept. 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 22673)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.22098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17134957 | $\omega$ | 259.13674 | | +0.84672343 | +0.47483482 | |
| $a$ | 3.2103130 | $\Omega$ | 72.13668 | | −0.33354278 | +0.82517714 | |
| $e$ | 0.1394021 | $i$ | 14.60402 | | −0.41449806 | +0.30596499 | |
| $P$ | 5.75 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 699 | 0.0 | 0.1+ | 2005 06 03 | E12 | 0.2− | 1.3+ | 2006 10 31 | A50 | 0.2− | 0.5+ | | |
| 2000 09 30 | 699 | 0.2+ | 0.5− | 2005 07 05 | E12 | 0.4− | 0.3+ | 2006 10 31 | A50 | 0.2+ | 0.1− | | |
| 2000 09 30 | 699 | 0.1+ | 0.3+ | 2005 07 05 | E12 | 0.4+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2000 09 30 | 699 | 0.5− | 0.2+ | 2005 07 05 | E12 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 2000 10 02 | 699 | 0.3− | 1.0+ | 2005 07 05 | E12 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2000 10 02 | 699 | 0.4− | 0.1+ | 2005 07 25 | E12 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.0 | | |
| 2000 10 02 | 699 | 0.2− | 0.0 | 2005 07 25 | E12 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.7− | | |
| 2000 10 02 | 699 | 0.3− | 0.1− | 2005 07 25 | E12 | 0.6+ | 0.4− | 2006 11 11 | 703 | 0.5− | 0.2+ | | |
| 2000 11 25 | 704 | 0.1− | 0.8+ | 2005 07 25 | E12 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.4− | | |
| 2000 11 25 | 704 | 0.6− | 0.7+ | 2005 08 07 | E12 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.7+ | 0.9+ | | |
| 2000 11 25 | 704 | (1.7− | 2.3+) | 2005 08 07 | E12 | 0.3+ | 0.4− | 2006 11 14 | 704 | 0.2+ | 0.6+ | | |
| 2001 12 11 | 704 | 0.2+ | 0.9+ | 2005 08 07 | E12 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.7+ | 0.7+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.9+ | 2005 08 07 | E12 | 0.3− | 0.5+ | 2006 11 14 | 704 | 0.2+ | 0.6+ | | |
| 2001 12 11 | 704 | 0.5− | 0.7+ | 2005 08 08 | E12 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.1− | | |
| 2001 12 17 | 704 | (1.6+ | 1.2+) | 2005 08 08 | E12 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.2+ | | |
| 2001 12 17 | 704 | 0.7+ | 0.8+ | 2005 08 08 | E12 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.1− | | |
| 2001 12 17 | 704 | 0.1+ | 0.6+ | 2005 08 08 | E12 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.4− | 0.1+ | | |
| 2001 12 17 | 704 | 0.5+ | 0.4+ | 2005 09 01 | E12 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.5+ | | |
| 2001 12 22 | 704 | 0.3− | 0.0 | 2005 09 01 | E12 | 0.1− | 0.6+ | 2006 11 17 | 704 | 1.2− | 0.3+ | | |
| 2001 12 22 | 704 | 0.0 | 0.0 | 2005 09 01 | E12 | (1.5+ | 0.2+) | 2006 11 18 | G96 | 0.0 | 0.4− | | |
| 2001 12 22 | 704 | 0.3− | 1.4− | 2005 09 01 | E12 | 0.4− | 0.5+ | 2006 11 18 | G96 | 0.5+ | 0.2− | | |
| 2004 04 23 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 1.1− | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 2004 04 23 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.2− | | |
| 2004 04 23 | 704 | 0.0 | 0.9+ | 2006 10 16 | 703 | 1.3− | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.2+ | | |
| 2004 04 23 | 704 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 0.0 | 0.7+ | 2006 11 20 | 704 | (0.6+ | 1.6−) | | |
| 2004 04 23 | 704 | 0.7+ | 1.2+ | 2006 10 22 | 703 | 0.9− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.5− | | |
| 2005 06 03 | E12 | 0.4+ | 0.3− | 2006 10 22 | 703 | 1.0− | 0.5− | 2006 11 20 | 704 | 0.8+ | 0.6− | | |
| 2005 06 03 | E12 | 0.1+ | 1.1− | 2006 10 22 | 703 | 0.7− | 0.4− | 2006 11 20 | 704 | 0.3− | 0.3− | | |
| 2005 06 03 | E12 | 0.5− | 1.0+ | 2006 10 22 | 703 | 0.2+ | 0.4− | | | | | | |

**(138784)∗ 2000 SN$_{350}$**

Discovered 2000 Sept. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.56618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17735049 | $\omega$ | 248.19823 | | +0.79565224 | −0.57887709 | |
| $a$ | 3.1374811 | $\Omega$ | 146.40557 | | +0.60222910 | +0.78765598 | |
| $e$ | 0.2295751 | $i$ | 18.81328 | | −0.06525048 | +0.21094876 | |
| $P$ | 5.56 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 17 | 691 | 0.0 | 0.5+ | 2000 10 02 | 699 | 0.6− | 0.5+ | 2005 07 05 | 644 | 0.3+ | 0.5+ | | |
| 1991 02 17 | 691 | 0.1− | 0.4+ | 2000 10 02 | 699 | 0.5− | 0.0 | 2005 07 09 | 691 | (0.4− | 1.7+) | | |
| 1991 02 17 | 691 | 0.0 | 0.4+ | 2000 10 02 | 699 | 0.1+ | 0.4+ | 2005 07 09 | 691 | 0.3+ | 0.2+ | | |
| 1991 02 19 | 691 | 0.1+ | 0.1− | 2000 10 02 | 699 | 0.9− | 1.4+ | 2005 07 09 | 691 | 0.2+ | 0.2+ | | |
| 1991 02 19 | 691 | 0.3+ | 0.3+ | 2002 02 06 | 644 | 0.1+ | 0.7+ | 2006 09 20 | 703 | 0.6− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 19 | 691 | 0.0 | 0.1− | 2002 02 06 | 644 | 0.3+ | 0.7+ | 2006 09 20 | 703 | 0.8+ | 0.5− | | |
| 1991 02 20 | 691 | 0.1+ | 0.0 | 2002 02 06 | 644 | 0.5+ | 0.1+ | 2006 09 20 | 703 | 0.1+ | 1.3− | | |
| 1991 02 20 | 691 | 0.3− | 0.1− | 2002 02 16 | 644 | 0.4+ | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.8+ | | |
| 1991 02 20 | 691 | 0.0 | 0.0 | 2002 02 16 | 644 | 0.3+ | 0.3− | 2006 10 30 | 703 | 0.2− | 0.3− | | |
| 2000 09 10 | 699 | 0.2+ | 0.3− | 2002 02 16 | 644 | 0.4+ | 0.6+ | 2006 10 30 | 703 | 0.4− | 0.2− | | |
| 2000 09 10 | 699 | 0.3− | 1.4+ | 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.4− | 0.2− | | |
| 2000 09 10 | 699 | 0.1+ | 1.0+ | 2003 03 23 | 645 | 0.1− | 0.1+ | 2006 10 30 | 703 | 0.4+ | 0.3+ | | |
| 2000 09 10 | 699 | 0.4− | 0.7+ | 2004 05 21 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.3+ | | |
| 2000 09 20 | 608 | 0.7+ | 0.6− | 2004 05 21 | 691 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.1+ | | |
| 2000 09 20 | 608 | 0.9+ | 0.3− | 2004 05 21 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.6+ | 0.3+ | | |
| 2000 09 20 | 608 | 0.5+ | 0.6− | 2005 07 05 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.8+ | 0.9+ | | |
| 2000 09 29 | 699 | 0.1− | 0.1− | 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.8− | 0.5+ | | |
| 2000 09 29 | 699 | 0.5− | 0.9+ | 2005 07 05 | 691 | 0.7− | 0.6+ | 2006 11 23 | 703 | 0.0 | 0.9+ | | |
| 2000 09 29 | 699 | 0.4− | 0.5+ | 2005 07 05 | 644 | 0.4− | 0.4+ | 2006 11 23 | 703 | 0.2− | 0.6+ | | |
| 2000 09 29 | 699 | (0.4+ | 2.0+) | 2005 07 05 | 644 | 0.2− | 0.4+ | | | | | | |

**(138785)∗ 2000 SA$_{351}$**

Discovered 2000 Sept. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.58066 | | (2000.0) | | +0.15244055 | −0.93740802 |
| $n$ | 0.17989859 | $\omega$ | 21.34464 | | +0.84708556 | −0.03926892 |
| $a$ | 3.1077843 | $\Omega$ | 61.10674 | | +0.50912467 | +0.34601178 |
| $e$ | 0.2334203 | $i$ | 20.95343 | | | |
| $P$ | 5.48 | $H$ | 14.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.4− | 0.6+ | 2002 03 21 | 704 | (0.8+ | 1.7+) | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2000 09 20 | 704 | 1.1− | 1.0+ | 2002 03 21 | 704 | 0.5+ | 1.4+ | 2006 10 28 | 704 | 0.1+ | 0.8− | | |
| 2000 09 20 | 704 | 0.2− | 0.6+ | 2002 03 21 | 704 | (0.8+ | 2.1+) | 2006 10 28 | G96 | 0.5− | 0.1− | | |
| 2000 09 20 | 704 | 0.3− | 1.1+ | 2002 03 21 | 704 | (0.6+ | 1.9+) | 2006 10 28 | G96 | 0.1+ | 0.6− | | |
| 2000 09 29 | 699 | 0.5+ | 0.1− | 2002 03 27 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.1− | | |
| 2000 09 29 | 699 | 1.0− | 0.4+ | 2002 03 27 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.1+ | | |
| 2000 09 29 | 699 | 0.1− | 0.5− | 2002 03 27 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.1− | 0.1− | | |
| 2000 09 29 | 699 | 0.1+ | 0.7+ | 2002 04 02 | 704 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.1− | | |
| 2000 09 30 | 699 | 0.2− | 0.2+ | 2002 04 02 | 704 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.6− | 0.3+ | | |
| 2000 09 30 | 699 | 0.2− | 0.1− | 2002 04 02 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 704 | 0.7− | 0.8+ | | |
| 2000 09 30 | 699 | 0.2+ | 0.5+ | 2002 04 02 | 704 | 0.2− | 0.3− | 2006 11 15 | 704 | 0.9− | 0.3+ | | |
| 2000 09 30 | 699 | 0.4− | 0.5+ | 2002 05 04 | 704 | 0.5+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.8+ | | |
| 2000 10 18 | 699 | 1.5− | 1.0+ | 2002 05 04 | 704 | 0.1+ | 0.6− | 2006 11 15 | 704 | 0.9− | 1.1+ | | |
| 2000 10 18 | 699 | 0.4− | 0.3− | 2002 05 04 | 704 | 0.8− | 0.4− | 2006 11 16 | 704 | 0.1+ | 1.0+ | | |
| 2000 10 18 | 699 | 0.3− | 0.7+ | 2002 05 04 | 704 | 1.1− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.7+ | | |
| 2000 10 18 | 699 | 0.7− | 1.4+ | 2003 05 02 | 704 | 0.5+ | 0.5− | 2006 11 16 | 704 | 0.4+ | 0.2− | | |
| 2000 11 17 | 704 | 0.6+ | 0.0 | 2003 05 02 | 704 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.7+ | | |
| 2000 11 17 | 704 | 0.3+ | 0.2+ | 2003 05 02 | 704 | 0.6+ | 0.1+ | 2006 11 16 | 704 | 0.5+ | 0.2− | | |
| 2000 11 17 | 704 | 0.1− | 0.4− | 2003 05 02 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2000 11 17 | 704 | 0.2+ | 0.3− | 2003 05 05 | 704 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.5+ | | |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2003 05 05 | 704 | (0.1+ | 1.7+) | 2006 11 16 | 704 | 0.1+ | 0.5+ | | |
| 2001 12 09 | 704 | 0.6+ | 0.1+ | 2003 05 05 | 704 | 0.8+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2001 12 09 | 704 | 0.2+ | 0.4+ | 2003 05 05 | 704 | 0.7+ | 0.4− | 2006 11 16 | 704 | 0.4+ | 0.0 | | |
| 2001 12 09 | 704 | 0.3− | 0.2+ | 2003 05 11 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.6+ | | |
| 2001 12 09 | 704 | 0.0 | 0.3− | 2003 05 11 | 691 | 0.3− | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.6+ | | |
| 2001 12 16 | 699 | 0.5+ | 0.1− | 2003 05 11 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.1+ | | |
| 2001 12 16 | 699 | 0.5+ | 0.0 | 2006 09 16 | 703 | 0.5− | 0.8− | 2006 11 19 | 704 | 0.4+ | 0.3+ | | |
| 2001 12 16 | 699 | 0.1+ | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2001 12 16 | 699 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.4+ | 0.9− | 2006 11 19 | 704 | 0.3+ | 0.2− | | |
| 2001 12 22 | 704 | 0.8+ | 0.8+ | 2006 09 16 | 703 | 0.5+ | 0.9− | 2006 11 19 | 704 | 0.0 | 0.3+ | | |
| 2001 12 22 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 704 | 0.1− | 1.2− | 2006 11 19 | 704 | 0.3+ | 0.7− | | |
| 2001 12 22 | 704 | 0.9+ | 0.6+ | 2006 09 19 | 704 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.4+ | 0.6+ | | |
| 2001 12 22 | 704 | (1.5+ | 0.2+) | 2006 09 19 | 704 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.3+ | | |
| 2001 12 22 | 704 | 1.4+ | 0.8+ | 2006 09 19 | 704 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.3+ | | |
| 2001 12 23 | 704 | 0.4− | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.5+ | | |
| 2001 12 23 | 704 | 0.5− | 0.4+ | 2006 09 22 | 704 | 1.0− | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.2+ | | |
| 2001 12 23 | 704 | 0.4− | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.8− | 2006 11 23 | 703 | 0.1− | 0.4− | | |
| 2001 12 23 | 704 | 0.7− | 0.3+ | 2006 09 26 | 704 | 1.0+ | 0.9− | 2006 11 23 | 703 | 0.6− | 0.4− | | |
| 2001 12 23 | 704 | 1.0− | 0.3+ | 2006 09 26 | 704 | 0.3+ | 0.1− | 2006 11 23 | 703 | 0.7− | 0.0 | | |
| 2002 01 25 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 704 | 0.7− | 0.7− | 2006 11 23 | 703 | 0.4− | 0.8− | | |
| 2002 01 25 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 703 | 0.0 | 0.8+ | 2006 11 25 | 691 | 0.1− | 0.1− | | |
| 2002 01 25 | 704 | 0.6+ | 0.6+ | 2006 10 01 | 703 | 0.1− | 0.0 | 2006 11 25 | 691 | 0.8+ | 0.6− | | |
| 2002 01 25 | 704 | 0.6+ | 1.0+ | 2006 10 01 | 703 | 0.3− | 0.7+ | 2006 11 25 | 691 | 0.1− | 0.2− | | |
| 2002 01 25 | 704 | 0.6+ | 1.1+ | 2006 10 01 | 703 | 0.4− | 0.3− | 2006 11 27 | 704 | 0.1− | 0.2− | | |
| 2002 02 08 | 645 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.5− | 2006 11 27 | 704 | 0.7+ | 0.4− | | |
| 2002 02 08 | 645 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.7− | 2006 11 27 | 704 | 0.2− | 0.2− | | |
| 2002 02 19 | 704 | 0.6− | 0.6+ | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 27 | 704 | 0.2− | 0.2− | | |
| 2002 02 19 | 704 | 0.7− | 0.7+ | 2006 10 21 | 704 | 0.6− | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.3− | | |
| 2002 02 19 | 704 | 0.8− | 0.2− | 2006 10 21 | 704 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.8+ | | |
| 2002 02 21 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 704 | 0.7− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.4− | | |
| 2002 02 21 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 704 | (1.7+ | 0.4+) | 2006 11 28 | 704 | 1.3+ | 0.6− | | |
| 2002 02 21 | 704 | 1.4+ | 0.0 | 2006 10 21 | 704 | 1.5+ | 1.1+ | 2006 11 28 | 704 | (2.8+ | 3.2+) | | |
| 2002 02 21 | 704 | 1.5+ | 0.1− | 2006 10 23 | 704 | 0.7− | 0.4− | 2006 11 29 | 704 | 0.2− | 0.5+ | | |
| 2002 03 04 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 704 | 0.4− | 0.6+ | 2006 11 29 | 704 | 0.2+ | 0.0 | | |
| 2002 03 04 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 704 | 0.3− | 1.0+ | 2006 11 29 | 704 | 0.0 | 0.4+ | | |
| 2002 03 04 | 704 | 0.7+ | 0.9+ | 2006 10 28 | 704 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.0 | 0.5+ | | |
| 2002 03 04 | 704 | (1.0+ | 1.6+) | 2006 10 28 | 704 | 0.2− | 0.9− | 2006 11 29 | 704 | 0.2+ | 0.4+ | | |
| 2002 03 04 | 704 | (1.6+ | 1.0+) | 2006 10 28 | G96 | 0.1− | 0.2− | | | | | | |
| 2002 03 21 | 704 | 0.4+ | 1.1+ | 2006 10 28 | 704 | 0.4+ | 0.4− | | | | | | |

**(138786)∗ 2000 SL$_{355}$ = 1995 VD$_{18}$**

Discovered 2000 Sept. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 13210)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.71377 | | (2000.0) | | +0.93081308 | +0.32100994 |
| $n$ | 0.18144008 | $\omega$ | 286.26815 | | −0.19710911 | +0.84352861 |
| $a$ | 3.0901572 | $\Omega$ | 55.32584 | | −0.30779052 | +0.43059506 |
| $e$ | 0.1657954 | $i$ | 12.26860 | | | |
| $P$ | 5.43 | $H$ | 15.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.1− | 0.3− | 2005 07 03 | 644 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.8− | 0.5+ | | |
| 1995 11 15 | 691 | 0.1− | 0.6− | 2005 07 03 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 691 | (2.0− | 0.2−) | | |
| 1995 11 15 | 691 | 0.3+ | 0.1+ | 2005 07 27 | E12 | 0.5− | 0.2− | 2006 11 14 | 691 | (3.1− | 0.4−) | | |
| 1995 11 21 | 691 | 0.0 | 0.2− | 2005 07 27 | E12 | 1.1+ | 0.3− | 2006 11 15 | 701 | 0.7+ | 0.8− | | |
| 1995 11 21 | 691 | 0.5+ | 0.3− | 2005 07 27 | E12 | 0.9+ | 1.0− | 2006 11 15 | G96 | 0.0 | 0.2+ | | |
| 1995 11 21 | 691 | 0.0 | 0.4− | 2005 07 27 | E12 | 0.7− | 1.2− | 2006 11 15 | G96 | 0.1− | 0.1+ | | |
| 1995 11 28 | 691 | 0.2+ | 0.6− | 2005 09 06 | E12 | 1.2− | 1.2+ | 2006 11 15 | G96 | 0.4+ | 0.3+ | | |
| 1995 11 28 | 691 | 0.1+ | 0.4− | 2005 09 06 | E12 | 0.0 | 0.4− | 2006 11 15 | 701 | 0.7+ | 0.1− | | |
| 1995 11 28 | 691 | (3.8− | 5.6−) | 2005 09 06 | E12 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.2+ | | |
| 2000 09 10 | 699 | 0.7− | 1.2− | 2005 09 06 | E12 | 0.5− | 0.3+ | 2006 11 15 | 701 | (3.1+ | 2.8−) | | |
| 2000 09 10 | 699 | 1.9− | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 15 | 701 | (1.9+ | 1.1−) | | |
| 2000 09 10 | 699 | 0.6− | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 15 | 701 | 1.2+ | 0.4− | | |
| 2000 09 10 | 699 | (2.9− | 1.6+) | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.5+ | | |
| 2000 09 29 | 699 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.3+ | | |
| 2000 09 29 | 699 | 0.7− | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.4+ | | |
| 2000 09 29 | 699 | 0.4+ | 0.9+ | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.5− | | |
| 2000 09 29 | 699 | 0.4+ | 1.5+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 1.1+ | | |
| 2000 10 01 | 704 | 0.5+ | 0.3− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.5+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1+ | | |
| 2000 10 01 | 704 | 0.2+ | 1.0+ | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.6+ | | |
| 2000 10 01 | 704 | 0.7+ | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.1+ | 2006 11 27 | 704 | 1.3− | 0.2− | | |
| 2004 04 22 | 691 | 1.1+ | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.1+ | 2006 11 27 | 704 | 0.9− | 0.1+ | | |
| 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.4− | 0.2+ | 2006 11 27 | 704 | 0.1− | 0.7+ | | |
| 2004 04 22 | 691 | 0.4− | 0.5+ | 2006 11 10 | 691 | 0.4− | 0.1+ | | | | | | |
| 2005 07 03 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.6− | 0.7+ | | | | | | |

**(138787)∗ 2000 SJ$_{358}$**

Discovered 2000 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.01878 | | (2000.0) | | −0.80413590 | −0.57384039 |
| $n$ | 0.17197556 | $\omega$ | 210.46425 | | −0.57384254 | −0.68123727 |
| $a$ | 3.2025178 | $\Omega$ | 293.71478 | | +0.15514572 | −0.45455802 |
| $e$ | 0.1237753 | $i$ | 9.75662 | | | |
| $P$ | 5.73 | $H$ | 13.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 24 | 809 | 1.2− | 1.0+ | 2002 01 08 | 704 | 0.1+ | 0.5− | 2003 04 28 | 699 | 0.2− | 0.4+ |
| 2000 09 03 | 704 | 0.9− | 1.4+ | 2002 01 08 | 704 | 0.5+ | 0.7+ | 2003 04 28 | 699 | 0.6+ | 1.2− |
| 2000 09 03 | 704 | 0.4− | 1.1+ | 2002 01 08 | 704 | 0.1+ | 0.6− | 2003 04 28 | 699 | 0.3+ | 0.7+ |
| 2000 09 03 | 704 | 0.1− | 0.8+ | 2002 01 14 | 704 | 0.1+ | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.6+ |
| 2000 09 03 | 704 | 0.4− | 0.2+ | 2002 01 14 | 704 | 0.2+ | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.4+ |
| 2000 09 23 | 704 | 0.1− | 0.2+ | 2002 01 14 | 704 | 0.3+ | 0.7+ | 2005 08 06 | 644 | 0.1− | 0.6+ |
| 2000 09 23 | 704 | 0.2+ | 0.1− | 2002 01 14 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 703 | 0.3− | 0.7+ |
| 2000 09 23 | 704 | 0.1+ | 0.5+ | 2002 01 14 | 704 | 0.5− | 0.9+ | 2006 09 17 | 703 | 1.0− | 0.2+ |
| 2000 09 26 | 699 | 0.4− | 0.6+ | 2002 01 21 | 704 | 0.7− | 0.1− | 2006 09 17 | 703 | 0.3− | 0.6+ |
| 2000 09 26 | 699 | 0.8+ | 0.1− | 2002 01 21 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 2000 09 26 | 699 | 0.5− | 0.2+ | 2002 01 21 | 704 | 0.8− | 0.6− | 2006 09 28 | 703 | 0.4+ | 0.2− |
| 2000 09 26 | 699 | 0.6− | 0.1+ | 2002 02 06 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.1− |
| 2000 11 19 | 704 | 0.3− | 0.9+ | 2002 02 06 | 704 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.9+ | 0.3− |
| 2000 11 19 | 704 | 0.2− | 1.6+ | 2002 02 06 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.0 |
| 2000 11 19 | 704 | 0.6+ | 0.9+ | 2002 02 06 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2000 11 19 | 704 | 0.9+ | 0.2− | 2002 02 06 | 704 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.6− | 1.1+ | 2002 02 07 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.2− | 1.5+ | 2002 02 07 | 704 | 0.6+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 0.7− | 0.8+ | 2002 02 07 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 1.3+ | 0.0 | 2002 02 07 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 11 11 | 704 | (2.1+ | 0.1−) | 2002 02 07 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.6+ | 1.0+ | 2002 02 10 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2002 02 10 | 704 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.6+ | 0.6− |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2002 02 10 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.4+ | 0.4− | 2002 02 10 | 704 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 1.0− | 0.2− | 2003 01 30 | 704 | (0.5+ | 1.6+) | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2001 11 21 | 704 | 0.9− | 0.0 | 2003 01 30 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.6− | 0.6− | 2003 01 30 | 704 | 0.6+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.5+ |
| 2001 12 09 | 704 | 0.4+ | 0.6− | 2003 01 30 | 704 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 12 09 | 704 | 0.3+ | 0.7− | 2003 03 08 | 699 | 1.2+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 12 09 | 704 | 0.2− | 0.3− | 2003 03 08 | 699 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.7− |
| 2001 12 09 | 704 | 0.2+ | 0.3− | 2003 03 08 | 699 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2001 12 13 | 704 | 1.0+ | 0.4− | 2003 03 08 | 699 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 2001 12 13 | 704 | 1.0+ | 0.5− | 2003 03 23 | 644 | 0.2+ | 0.9+ | 2006 10 27 | 703 | 0.8− | 0.4− |
| 2001 12 13 | 704 | 0.9+ | 0.5− | 2003 03 23 | 644 | 0.6+ | 0.9+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2001 12 13 | 704 | 0.7+ | 0.2+ | 2003 03 23 | 644 | 0.3+ | 1.0+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2003 03 30 | 699 | 0.6− | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.1+ | 0.4− | 2003 03 30 | 699 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 0.2− | 0.4− | 2003 03 30 | 699 | 0.1+ | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 2001 12 17 | 704 | 0.2− | 0.5− | 2003 03 30 | 699 | 0.6− | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.0 | 0.5− | 2003 04 07 | 704 | 0.3+ | 0.9+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2001 12 21 | 704 | 0.8− | 0.1+ | 2003 04 07 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 703 | 1.1− | 0.9− |
| 2001 12 21 | 704 | 1.0− | 0.2+ | 2003 04 07 | 704 | 0.8+ | 0.7+ | 2006 11 15 | 703 | 1.2− | 0.0 |
| 2001 12 21 | 704 | 1.2− | 0.7+ | 2003 04 07 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.4− |
| 2001 12 21 | 704 | 0.6− | 0.9+ | 2003 04 12 | 715 | 0.6− | 0.9+ | 2006 11 22 | 703 | 0.1+ | 0.1+ |
| 2001 12 21 | 704 | 0.6− | 0.5+ | 2003 04 12 | 715 | 0.1+ | 0.8+ | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.2+ | 0.6− | 2003 04 12 | 715 | 0.7+ | 0.6+ | 2006 11 22 | 703 | 0.5+ | 0.0 |
| 2002 01 08 | 704 | 0.2− | 0.6− | 2003 04 28 | 699 | 0.6+ | 0.2+ | 2006 11 22 | 703 | 0.1− | 0.4+ |

**(138788)∗ 2000 SQ$_{359}$**

Discovered 2000 Sept. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.11199 | | (2000.0) | | +0.93318991 | −0.28717511 |
| $n$ | 0.17686847 | $\omega$ | 134.56377 | | +0.22072992 | +0.93246043 |
| $a$ | 3.1431789 | $\Omega$ | 243.24231 | | +0.28361046 | +0.21919856 |
| $e$ | 0.0519221 | $i$ | 14.00366 | | | |
| $P$ | 5.57 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 08 | 699 | 1.5+ | 0.4− | 2004 05 16 | 704 | 0.7− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2000 09 08 | 699 | (2.3− | 0.2+) | 2004 06 14 | 704 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 09 08 | 699 | 0.0 | 0.5+ | 2004 06 14 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2000 09 08 | 699 | 0.6− | 1.2+ | 2004 06 14 | 704 | 0.5+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2000 09 26 | 699 | 0.7+ | 0.4+ | 2005 09 09 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2000 09 26 | 699 | 0.7+ | 0.2− | 2005 09 09 | 704 | 0.0 | 0.3+ | 2006 11 16 | 704 | (0.7− | 1.6+) |
| 2000 09 26 | 699 | 0.6+ | 0.6+ | 2005 09 09 | 704 | 1.2+ | 0.6+ | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2000 09 26 | 699 | 0.4+ | 0.4+ | 2005 09 09 | 704 | 0.6− | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2000 09 28 | 704 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 16 | 704 | (0.8− | 1.5+) |
| 2000 09 28 | 704 | 0.4+ | 0.3− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2000 09 28 | 704 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2000 09 28 | 704 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2000 11 01 | 704 | 0.2− | 1.4− | 2006 10 16 | 703 | 0.7− | 0.8+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2000 11 01 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.3− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2000 11 01 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.4− | 1.0+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2000 11 19 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.8+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2000 11 19 | 704 | 0.8+ | 1.5+ | 2006 10 19 | A50 | 0.7− | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.5+ |
| 2000 11 19 | 704 | 0.5+ | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2000 11 19 | 704 | 0.7+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2000 11 30 | 645 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.3− |
| 2000 11 30 | 645 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 27 | 113 | 0.4− | 0.4+ |
| 2003 03 09 | 699 | 0.4+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 27 | 113 | 0.2+ | 0.2+ |
| 2003 03 09 | 699 | 1.0− | 1.2− | 2006 10 31 | 691 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2003 03 09 | 699 | 0.6+ | 0.5+ | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2003 03 09 | 699 | 1.0+ | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2004 05 16 | 704 | 0.6− | 0.6+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2004 05 16 | 704 | 0.5− | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | | | |

**(138789)∗ 2000 SU$_{362}$ = 2001 XK$_{242}$**

Discovered 2000 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22678)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.83550 | | (2000.0) | | +0.51846417 | +0.84032592 |
| $n$ | 0.18237695 | $\omega$ | 212.49757 | | −0.74682315 | +0.53513434 |
| $a$ | 3.0795653 | $\Omega$ | 89.18656 | | −0.41647340 | +0.08650774 |
| $e$ | 0.2188531 | $i$ | 9.10703 | | | |
| $P$ | 5.40 | $H$ | 14.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 10 | 704 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2000 08 10 | 704 | 1.2+ | 1.3+ | 2001 11 20 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2000 08 10 | 704 | 0.1+ | 1.4+ | 2001 11 20 | 704 | 0.6+ | 0.0 | 2006 10 22 | 703 | 1.0+ | 0.2− |
| 2000 08 10 | 704 | (2.0+ | 0.6+) | 2001 11 20 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.7− | 1.0− |
| 2000 08 26 | 704 | 0.5− | 0.6+ | 2001 12 14 | 704 | 0.5− | 1.0+ | 2006 11 01 | 703 | 0.9− | 0.1+ |
| 2000 08 26 | 704 | 0.1+ | 0.6+ | 2001 12 14 | 704 | 0.9− | 0.5+ | 2006 11 01 | 703 | 0.1− | 0.1+ |
| 2000 08 26 | 704 | 0.3− | 0.3+ | 2001 12 14 | 704 | 0.1+ | 0.3− | 2006 11 01 | 703 | 0.2+ | 0.1− |
| 2000 08 26 | 704 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 11 01 | 703 | (0.7− | 1.6−) |
| 2000 08 26 | 704 | 0.3− | 0.1+ | 2001 12 19 | 704 | 0.8+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2000 09 20 | 704 | 0.7− | 0.8− | 2001 12 19 | 704 | 0.1+ | 0.8+ | 2006 11 08 | 644 | 0.3+ | 0.2− |
| 2000 09 20 | 704 | 0.3− | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2000 09 20 | 704 | 0.3+ | 0.0 | 2001 12 19 | 704 | 0.8+ | 1.3+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2000 09 20 | 704 | 0.4− | 0.1− | 2004 03 23 | 704 | 0.0 | 1.4+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2000 09 20 | 704 | 0.1− | 0.9+ | 2004 03 23 | 704 | 0.3+ | 1.3+ | 2006 11 08 | 644 | 0.6+ | 0.0 |
| 2000 09 21 | 699 | 0.2+ | 0.6− | 2004 03 23 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2000 09 21 | 699 | 0.4− | 0.4+ | 2004 03 23 | 704 | 0.1− | 1.4+ | 2006 11 09 | 644 | 0.5+ | 0.1− |
| 2000 09 21 | 699 | 0.4− | 0.3− | 2005 06 04 | 704 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 0.3− | 0.3− | 2005 06 04 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.1+ | |
| 2000 10 01 | 704 | 0.3− | 0.3+ | 2005 06 04 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | (1.8+ | 1.2−) | |
| 2000 10 01 | 704 | 0.4− | 0.6+ | 2005 06 04 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 1.0− | 0.1− | |
| 2000 10 01 | 704 | 0.1− | 0.1+ | 2005 06 04 | 704 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.3− | |
| 2000 10 02 | 699 | (3.8+ | 0.9−) | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.5+ | 0.4− | |
| 2000 10 02 | 699 | (3.3+ | 1.6−) | 2006 09 30 | 703 | 1.4− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.5− | |
| 2000 10 02 | 699 | (2.7+ | 0.6+) | 2006 09 30 | 703 | 0.6+ | 1.1− | 2006 11 23 | G96 | 0.3+ | 0.5− | |
| 2000 10 02 | 699 | (4.1+ | 2.4−) | 2006 09 30 | 703 | 0.0 | 0.7+ | | | | | |

**(138790)∗ 2000 SZ$_{362}$ = 2001 YN$_{78}$**

Discovered 2000 Sept. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 22678)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.44208 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20913286 | $\omega$ | 46.39168 | | +0.88258369 | −0.46980385 | |
| $a$ | 2.8109591 | $\Omega$ | 341.60643 | | +0.41306771 | +0.79330206 | |
| $e$ | 0.1109584 | $i$ | 3.30221 | | +0.22454641 | +0.38724176 | |
| $P$ | 4.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.2− | 1.1+ | 2002 01 14 | 704 | 0.3+ | 0.3− | 2005 10 07 | 704 | 1.4− | 0.7+ | |
| 2000 08 24 | 704 | 0.4+ | 1.4+ | 2002 01 14 | 704 | 0.4+ | 0.7− | 2005 10 07 | 704 | 0.7+ | 0.4− | |
| 2000 08 24 | 704 | 0.1+ | 0.7+ | 2002 02 06 | 704 | 0.2+ | 0.0 | 2005 10 07 | 704 | 0.1+ | 0.4+ | |
| 2000 08 24 | 704 | 0.9+ | 0.6+ | 2002 02 06 | 704 | 0.5− | 0.6+ | 2005 10 07 | 704 | 0.1+ | 0.4+ | |
| 2000 09 02 | 699 | 1.4− | 1.0+ | 2002 02 06 | 704 | 0.4− | 1.3+ | 2005 10 07 | 704 | 0.3− | 0.1− | |
| 2000 09 02 | 699 | 1.6− | 0.1+ | 2003 03 24 | 691 | 0.0 | 0.2− | 2005 10 09 | 691 | 0.2+ | 0.0 | |
| 2000 09 02 | 699 | 0.9− | 0.8+ | 2003 03 24 | 691 | 0.1− | 0.3+ | 2005 10 09 | 691 | 0.2− | 0.1+ | |
| 2000 09 02 | 699 | 0.9− | 0.9+ | 2003 03 24 | 691 | 0.2+ | 0.4+ | 2005 10 09 | 691 | 0.0 | 0.1− | |
| 2000 09 19 | 691 | 0.4+ | 0.3− | 2003 04 25 | 691 | 0.8+ | 0.8+ | 2005 10 13 | 691 | 0.1− | 0.1− | |
| 2000 09 19 | 691 | 0.1− | 0.9− | 2003 04 25 | 691 | 0.7+ | 0.9+ | 2005 10 13 | 691 | 0.2− | 0.2+ | |
| 2000 09 19 | 691 | 0.3+ | 0.3− | 2003 04 25 | 691 | 0.2+ | 1.1+ | 2005 10 13 | 691 | 0.2− | 0.1− | |
| 2000 09 22 | 699 | 0.1+ | 0.2− | 2005 09 24 | 691 | 0.2+ | 0.0 | 2005 10 21 | 644 | 0.1+ | 0.2+ | |
| 2000 09 22 | 699 | 0.1− | 1.3+ | 2005 09 24 | 691 | 0.2− | 0.2+ | 2005 10 21 | 644 | 0.3+ | 0.7+ | |
| 2000 09 22 | 699 | 0.0 | 0.4− | 2005 09 24 | 691 | 0.0 | 0.1+ | 2005 10 21 | 644 | 0.0 | 0.7+ | |
| 2000 09 22 | 699 | 0.5− | 0.7+ | 2005 09 25 | 644 | 0.1− | 0.1+ | 2005 10 22 | 703 | 1.1+ | 0.6+ | |
| 2001 12 18 | 704 | 0.2− | 0.9+ | 2005 09 25 | 644 | 0.3− | 0.3+ | 2005 10 22 | 703 | 0.4− | 0.4+ | |
| 2001 12 18 | 704 | 0.5+ | 0.1+ | 2005 09 25 | 644 | 0.3− | 0.6+ | 2005 10 22 | 703 | 0.7+ | 1.5+ | |
| 2001 12 18 | 704 | 0.6+ | 0.2− | 2005 09 25 | 644 | 0.0 | 0.0 | 2005 10 22 | 703 | (1.4+ | 1.6+) | |
| 2001 12 18 | 704 | 0.0 | 0.5+ | 2005 09 25 | 644 | 0.3− | 0.1− | 2005 10 22 | 703 | (1.7− | 1.0+) | |
| 2001 12 18 | 704 | 0.3+ | 0.1+ | 2005 09 25 | 644 | 0.4− | 0.3+ | 2005 10 22 | 703 | 0.5+ | 0.5+ | |
| 2001 12 19 | 645 | 0.1− | 0.0 | 2005 09 29 | 691 | 0.0 | 0.2+ | 2005 10 22 | 703 | 0.7− | 0.2− | |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2005 09 29 | 691 | 0.1+ | 0.2+ | 2005 10 22 | 703 | 0.1− | 0.2+ | |
| 2001 12 19 | 704 | 0.2+ | 0.6+ | 2005 09 29 | 691 | 0.1+ | 0.0 | 2005 10 24 | 699 | 1.4− | 0.8− | |
| 2001 12 19 | 704 | 0.1− | 0.3− | 2005 10 03 | 703 | 0.5− | 0.1+ | 2005 10 24 | 699 | 0.6+ | 0.0 | |
| 2001 12 19 | 704 | 0.1+ | 0.0 | 2005 10 03 | 691 | 0.0 | 0.1+ | 2005 10 24 | 699 | 0.5− | 1.0+ | |
| 2001 12 19 | 704 | 0.4+ | 1.5+ | 2005 10 03 | 703 | 1.0− | 0.7+ | 2005 10 24 | 699 | 0.4− | 0.1− | |
| 2001 12 19 | 704 | 0.9− | 0.5+ | 2005 10 03 | 703 | 0.2+ | 0.3− | 2005 11 04 | 704 | 0.5+ | 0.5+ | |
| 2002 01 08 | 704 | 0.5+ | 0.7+ | 2005 10 03 | 703 | 0.2− | 0.2+ | 2005 11 04 | 704 | 0.2+ | 0.7+ | |
| 2002 01 08 | 704 | 0.0 | 0.9+ | 2005 10 03 | 691 | 0.1− | 0.1+ | 2005 11 04 | 704 | 0.7− | 0.8+ | |
| 2002 01 08 | 704 | 0.6+ | 0.6+ | 2005 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.0 | |
| 2002 01 08 | 704 | 1.4+ | 0.5− | 2005 10 06 | 699 | 0.3+ | 0.5− | 2006 11 22 | G96 | 0.5− | 0.4− | |
| 2002 01 14 | 704 | 0.3+ | 1.5− | 2005 10 06 | 699 | 0.0 | 0.6− | 2006 11 22 | G96 | 0.2− | 0.1− | |
| 2002 01 14 | 704 | 0.4+ | 0.4− | 2005 10 06 | 699 | 0.5− | 0.7− | 2006 11 22 | G96 | 0.5− | 0.1− | |
| 2002 01 14 | 704 | 0.7+ | 0.4− | 2005 10 06 | 699 | 0.3+ | 0.2− | | | | | |

**(138791)∗ 2000 SK$_{363}$**

Discovered 2000 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.75789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17520253 | $\omega$ | 153.75634 | | +0.87844753 | +0.47778072 | |
| $a$ | 3.1630724 | $\Omega$ | 177.66294 | | −0.46423552 | +0.85703003 | |
| $e$ | 0.2124084 | $i$ | 10.52851 | | −0.11320476 | +0.19293807 | |
| $P$ | 5.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | (0.2− | 2.1−) | 2005 06 09 | 703 | 0.4− | 0.7+ | 2006 09 21 | 699 | 0.4+ | 0.3+ | |
| 2000 07 30 | 704 | (0.3− | 2.7−) | 2005 06 09 | 703 | 0.5− | 0.4+ | 2006 09 28 | 704 | (2.7+ | 0.8−) | |
| 2000 07 30 | 704 | 0.5− | 0.1+ | 2005 06 09 | 703 | 0.8− | 0.1+ | 2006 09 28 | 704 | (3.1+ | 1.7−) | |
| 2000 07 30 | 704 | 0.5− | 0.3+ | 2005 06 09 | 703 | 0.9− | 0.0 | 2006 09 28 | 704 | 1.2+ | 0.6− | |
| 2000 08 21 | 699 | 0.0 | 0.2− | 2005 06 14 | 691 | 0.2+ | 0.1− | 2006 09 28 | 704 | 1.3+ | 0.7− | |
| 2000 08 21 | 699 | 0.6− | 0.4− | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 | |
| 2000 08 21 | 699 | 0.6− | 0.4− | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.1− | |
| 2000 08 21 | 699 | 0.3− | 0.2+ | 2005 06 17 | 691 | 0.7+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 | |
| 2000 08 31 | 704 | 0.3+ | 0.2+ | 2005 06 17 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.8+ | |
| 2000 08 31 | 704 | 0.0 | 0.4+ | 2005 06 17 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 1.2+ | |
| 2000 08 31 | 704 | 0.4− | 0.3− | 2005 06 24 | 644 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.7+ | 0.5+ | |
| 2000 08 31 | 704 | 0.9+ | 0.1+ | 2005 06 24 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.3+ | |
| 2000 08 31 | 704 | 0.6+ | 0.8+ | 2005 06 24 | 644 | 0.3− | 0.3− | 2006 10 01 | 704 | 1.3− | 0.9+ | |
| 2000 09 21 | 699 | 0.0 | 0.1− | 2005 06 29 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 1.2− | 1.3− | |
| 2000 09 21 | 699 | 0.7+ | 0.3− | 2005 06 29 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.3− | 0.1+ | |
| 2000 09 21 | 699 | 0.0 | 0.0 | 2005 06 29 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.4− | 0.2− | |
| 2000 09 21 | 699 | 0.3− | 0.6+ | 2005 07 02 | 703 | (1.7− | 0.7+) | 2006 10 01 | 704 | 0.5+ | 0.1− | |
| 2000 09 23 | 704 | 1.3+ | 1.1+ | 2005 07 02 | 703 | 0.9− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.6− | |
| 2000 09 23 | 704 | 0.3+ | 0.5− | 2005 07 02 | 703 | 0.5− | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.1− | |
| 2000 09 23 | 704 | 0.1− | 0.1− | 2005 07 02 | 703 | 0.7− | 0.5− | 2006 10 02 | 691 | 0.2− | 0.2+ | |
| 2000 10 29 | 691 | 0.3− | 0.3− | 2005 08 05 | 644 | 0.1+ | 0.0 | 2006 10 12 | 291 | 0.0 | 0.1+ | |
| 2000 10 29 | 691 | 0.1+ | 0.1+ | 2005 08 05 | 644 | 0.0 | 0.5+ | 2006 10 12 | 291 | 0.2+ | 0.1+ | |
| 2000 10 29 | 691 | 0.0 | 0.4+ | 2005 08 05 | 644 | 0.2+ | 0.0 | 2006 10 12 | 291 | 0.2+ | 0.1+ | |
| 2001 12 11 | 704 | 0.2− | 0.0 | 2006 07 22 | G96 | 0.3− | 0.3− | 2006 10 16 | 703 | (0.5− | 1.8−) | |
| 2001 12 11 | 704 | 0.7+ | 0.8+ | 2006 07 22 | G96 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.2+ | 1.5− | |
| 2001 12 11 | 704 | 0.9− | 0.4+ | 2006 07 22 | G96 | 0.1− | 0.5− | 2006 10 16 | 703 | 1.0− | 1.3− | |
| 2001 12 11 | 704 | 1.1− | 1.1+ | 2006 07 22 | G96 | 0.5− | 0.5− | 2006 10 16 | 703 | 1.5− | 0.0 | |
| 2001 12 11 | 704 | (1.0− | 2.9+) | 2006 09 20 | 704 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2004 03 26 | 691 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2004 03 26 | 691 | 0.5+ | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2004 03 26 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.9− | 1.2+ | |
| 2005 06 02 | 703 | 0.8− | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.5+ | |
| 2005 06 02 | 703 | 0.8− | 0.2− | 2006 09 21 | 699 | 0.9+ | 1.2+ | 2006 10 22 | 703 | 0.9+ | 0.9+ | |
| 2005 06 02 | 703 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.9+ | |
| 2005 06 02 | 703 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.1+ | 0.2+ | | | | | |

**(138792)∗ 2000 SP$_{365}$**

Discovered 2000 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.77656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17692477 | $\omega$ | 274.64314 | | +0.32244408 | −0.93931221 | |
| $a$ | 3.1425121 | $\Omega$ | 155.52303 | | +0.94119434 | +0.30494956 | |
| $e$ | 0.2310316 | $i$ | 16.42317 | | +0.10091098 | +0.15715703 | |
| $P$ | 5.57 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 17 | 691 | 0.1+ | 0.2+ | 2002 01 06 | 699 | 0.1− | 0.4+ | 2006 09 30 | 704 | (1.0− | 1.7−) | |
| 1991 02 17 | 691 | 0.4+ | 0.1− | 2002 01 06 | 699 | 0.2− | 0.5− | 2006 10 20 | 703 | 0.4+ | 0.7+ | |
| 1991 02 17 | 691 | 0.2+ | 0.1− | 2002 01 06 | 699 | 0.3− | 0.1+ | 2006 10 20 | 703 | 0.8− | 0.6+ | |
| 2000 07 25 | 691 | 0.4− | 0.0 | 2002 01 17 | 209 | 0.9+ | 0.9− | 2006 10 20 | 703 | 0.2+ | 0.6+ | |
| 2000 07 25 | 691 | 0.7− | 0.1− | 2002 01 18 | 209 | 0.1+ | 0.8− | 2006 10 20 | 703 | 0.2+ | 0.6+ | |
| 2000 07 25 | 691 | 0.5− | 0.1− | 2002 01 18 | 209 | 0.0 | 0.6− | 2006 10 21 | 703 | 0.6+ | 0.4+ | |
| 2000 09 02 | 699 | 0.9− | 0.4− | 2002 01 22 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.2+ | |
| 2000 09 02 | 699 | 0.6+ | 0.4+ | 2002 01 22 | 704 | 0.6− | 0.4+ | 2006 10 21 | 703 | 0.9+ | 0.0 | |
| 2000 09 02 | 699 | 0.8− | 0.4+ | 2002 01 22 | 704 | 1.0− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.0 | |
| 2000 09 02 | 699 | 0.3− | 0.4− | 2002 01 22 | 704 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.4+ | 0.5+ | |
| 2000 09 21 | 699 | 0.1− | 0.7+ | 2002 02 04 | 699 | 0.4− | 0.7− | 2006 10 21 | 703 | 0.1− | 1.2+ | |
| 2000 09 21 | 699 | 0.2+ | 1.2+ | 2002 02 04 | 699 | 0.8− | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.5+ | |
| 2000 09 21 | 699 | (2.4+ | 0.5−) | 2002 02 04 | 699 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.7+ | 0.9− | |
| 2000 09 21 | 699 | 0.4+ | 1.2− | 2002 02 04 | 699 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.4− | |
| 2000 09 24 | 704 | 0.8+ | 0.5− | 2002 02 07 | 644 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.2− | 0.1− | |
| 2000 09 24 | 704 | 0.7+ | 0.1− | 2002 02 07 | 644 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.6+ | 0.2− | |
| 2000 09 24 | 704 | 0.0 | 0.2− | 2002 02 07 | 644 | 0.3− | 0.2− | 2006 11 07 | 644 | 0.0 | 0.3− | |
| 2000 09 24 | 704 | 1.4+ | 1.1+ | 2002 02 16 | 608 | 0.4− | 0.8+ | 2006 11 07 | 644 | 0.0 | 0.3− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 0.0 | 0.4+ | 2002 02 16 | 608 | 0.6− | 0.9+ | 2006 11 07 | 644 | 0.0 | 0.2− |
| 2000 10 02 | 699 | 0.6− | 0.0 | 2002 02 16 | 608 | 0.5− | 1.0+ | 2006 11 17 | 703 | 0.4− | 0.7− |
| 2000 10 02 | 699 | (0.3− | 2.0−) | 2002 02 17 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2000 10 02 | 699 | 0.7− | 0.2− | 2002 02 17 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2001 11 19 | 608 | (0.1+ | 1.6−) | 2002 02 17 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.2+ |
| 2001 11 19 | 608 | 0.1+ | 0.9− | 2005 07 29 | 644 | 0.9+ | 0.2+ | 2006 11 23 | 703 | 0.4+ | 0.3− |
| 2001 11 19 | 608 | 0.4+ | 1.1− | 2005 07 29 | 644 | 1.1+ | 0.8+ | 2006 11 23 | 703 | 0.6− | 0.8− |
| 2001 12 27 | 644 | 0.3+ | 1.2+ | 2005 07 29 | 644 | 1.0+ | 0.8+ | 2006 11 23 | 703 | 0.5+ | 0.3+ |
| 2001 12 27 | 644 | 0.7+ | 0.7+ | 2006 09 30 | 704 | 1.0− | 0.4+ | 2006 11 23 | 703 | 0.0 | 0.3− |
| 2001 12 27 | 644 | 0.4+ | 0.6+ | 2006 09 30 | 704 | 0.1+ | 0.1− | | | | |
| 2002 01 06 | 699 | 0.7− | 0.2− | 2006 09 30 | 704 | 0.1+ | 0.4− | | | | |

**(138793)∗ 2000 SV$_{368}$ = 2004 GK$_{52}$**

Discovered 2000 Sept. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.32269 | | (2000.0) | | | |
| $n$ | 0.18913341 | $\omega$ | 247.29642 | | +0.67482382 | +0.73763501 |
| $a$ | 3.0057802 | $\Omega$ | 65.16408 | | −0.66764808 | +0.62323198 |
| $e$ | 0.1903960 | $i$ | 1.42230 | | −0.31441828 | +0.25976239 |
| $P$ | 5.21 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 1.1− | 0.3+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2005 09 08 | E12 | 0.0 | 0.1− |
| 2000 08 24 | 704 | 0.1+ | 0.2+ | 2005 07 04 | 644 | 0.1+ | 0.2− | 2005 09 08 | E12 | 0.2− | 0.6− |
| 2000 08 24 | 704 | 0.3− | 0.6+ | 2005 07 04 | 644 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.4− | 0.8− |
| 2000 08 24 | 704 | 0.3+ | 0.5+ | 2005 07 04 | 644 | 0.1+ | 0.1− | 2005 10 28 | G96 | 0.3− | 0.1+ |
| 2000 08 24 | 704 | 0.1+ | 0.8+ | 2005 07 18 | 644 | 0.1+ | 0.1+ | 2005 10 28 | G96 | 0.2− | 0.3− |
| 2000 09 05 | 704 | 0.8− | 0.7+ | 2005 07 18 | 644 | 0.0 | 0.1− | 2005 10 28 | G96 | 0.4− | 0.4− |
| 2000 09 05 | 704 | 0.5+ | 1.0+ | 2005 07 18 | 644 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.5− | 0.0 |
| 2000 09 05 | 704 | 0.0 | 1.2+ | 2005 08 06 | 704 | 0.6− | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.1+ |
| 2000 09 05 | 704 | 0.0 | 0.6+ | 2005 08 06 | 704 | 0.6+ | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2000 09 25 | 699 | 0.6+ | 0.2+ | 2005 08 06 | 704 | 0.5+ | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2000 09 25 | 699 | 0.1+ | 0.2+ | 2005 08 06 | 704 | 0.5+ | 0.1− | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2000 09 25 | 699 | 0.3− | 0.0 | 2005 08 27 | E12 | 0.3− | 0.7− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2000 09 25 | 699 | 0.5+ | 0.5+ | 2005 08 27 | E12 | (1.7− | 0.7+) | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2000 09 26 | 608 | 0.7− | 0.5− | 2005 08 27 | E12 | 0.8− | 1.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2000 09 26 | 608 | 0.7− | 0.7− | 2005 08 27 | E12 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2000 09 26 | 608 | 0.7− | 0.6− | 2005 08 29 | 699 | (2.5+ | 1.5+) | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 04 13 | 691 | 0.0 | 0.6+ | 2005 08 29 | 699 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 04 13 | 691 | 0.5+ | 0.2+ | 2005 08 29 | 699 | 0.1+ | 0.9+ | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2004 04 13 | 691 | 0.1+ | 0.4+ | 2005 08 29 | 699 | 0.9+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 04 19 | 691 | 0.1− | 0.4+ | 2005 09 08 | E12 | 0.1+ | 0.3+ | | | | |
| 2004 04 19 | 691 | 0.2+ | 0.3+ | 2005 09 08 | E12 | 0.5− | 0.2− | | | | |

**(138794)∗ 2000 TU$_2$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.35495 | | (2000.0) | | | |
| $n$ | 0.17511405 | $\omega$ | 194.94084 | | +0.98344939 | −0.18111409 |
| $a$ | 3.1641378 | $\Omega$ | 175.48488 | | +0.17206383 | +0.92495368 |
| $e$ | 0.2009146 | $i$ | 3.64029 | | +0.05675682 | +0.33415323 |
| $P$ | 5.63 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.1− | 0.2+ | 2002 01 09 | 704 | 0.8+ | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1995 12 16 | 691 | 0.1+ | 0.2− | 2002 01 09 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1995 12 16 | 691 | 0.2− | 0.5− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2− |
| 1995 12 22 | 691 | (5.3+ | 3.8−) | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2− |
| 1995 12 22 | 691 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 |
| 1995 12 22 | 691 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.5+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1995 12 27 | 691 | 0.6+ | 0.5− | 2006 09 20 | 699 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 1995 12 27 | 691 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.7+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1995 12 27 | 691 | 0.1+ | 0.4− | 2006 09 20 | 699 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2000 08 24 | 704 | 0.4− | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2000 08 24 | 704 | 0.4− | 1.3+ | 2006 09 20 | 644 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2000 08 24 | 704 | 0.0 | 0.8+ | 2006 09 20 | 644 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 08 24 | 704 | 0.7+ | 0.0 | 2006 09 27 | 704 | 0.4− | 1.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2000 08 24 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 704 | 1.4+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 08 27 | 807 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2000 08 27 | 807 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2000 09 02 | 699 | 1.9− | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.2+ |
| 2000 09 02 | 699 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.6− | 2006 11 11 | 703 | 0.4+ | 0.4− |
| 2000 09 02 | 699 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2000 09 02 | 699 | 1.3− | 0.7+ | 2006 09 30 | 703 | (2.8+ | 1.1+) | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2000 09 19 | 691 | 0.3+ | 0.5− | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.3+ |
| 2000 09 19 | 691 | 0.1+ | 0.5− | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2000 09 19 | 691 | 0.1− | 0.6− | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2000 10 01 | 704 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2000 10 01 | 704 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2000 10 01 | 704 | 0.4− | 1.0+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.0 | 1.0− |
| 2000 10 02 | 704 | 0.4+ | 1.5+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.7+ | 0.2− |
| 2000 10 02 | 704 | 0.9+ | 1.9+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.6− | 1.8− |
| 2000 10 02 | 704 | 1.5+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.2− | 0.6− |
| 2000 10 02 | 704 | 0.4− | 0.9+ | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.2− |
| 2001 11 20 | 704 | 0.2+ | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 1.0− |
| 2001 11 20 | 704 | 0.0 | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2001 12 14 | 704 | 0.1+ | 1.4+ | 2006 10 19 | 644 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2001 12 14 | 704 | (0.0 | 1.7+) | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2001 12 14 | 704 | 0.5+ | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2001 12 14 | 704 | 0.6− | 0.9− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 1.2− | 1.0− |
| 2001 12 17 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 1.1+ | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.9− |
| 2001 12 17 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.1− |
| 2002 01 09 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2002 01 09 | 704 | 0.3− | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 | | | | |

**(138795)∗ 2000 TB$_4$ = 2000 SM$_{353}$ = 2004 GH$_{26}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11071), G. V. Williams (*MPO* 60722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.92586 | | (2000.0) | | | |
| $n$ | 0.17789287 | $\omega$ | 73.67023 | | −0.12220046 | +0.99202119 |
| $a$ | 3.1311006 | $\Omega$ | 189.47382 | | −0.96727463 | −0.12603376 |
| $e$ | 0.1032576 | $i$ | 10.85594 | | −0.22236645 | +0.00307518 |
| $P$ | 5.54 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.2− | 0.7− | 2004 03 31 | 704 | 0.1+ | 0.4+ | 2004 05 09 | 608 | 0.0 | 0.8− |
| 2000 09 24 | 704 | 0.3− | 1.0− | 2004 04 14 | 699 | 0.2+ | 0.1− | 2004 05 14 | 704 | 0.0 | 0.6+ |
| 2000 09 24 | 704 | 1.3− | 0.8+ | 2004 04 14 | 699 | 0.2− | 0.5− | 2004 05 14 | 704 | (0.5− | 1.6−) |
| 2000 10 01 | 704 | 1.0+ | 0.4+ | 2004 04 14 | 699 | 0.8+ | 0.4+ | 2004 05 14 | 704 | 0.2+ | 0.6− |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2004 04 14 | 699 | 0.3− | 0.4+ | 2004 05 14 | 704 | 1.0− | 0.2− |
| 2000 10 01 | 704 | 0.8+ | 0.9− | 2004 04 16 | 704 | 0.3− | 0.2+ | 2004 05 18 | 704 | 1.0− | 0.7+ |
| 2000 10 01 | 704 | 0.4+ | 0.2− | 2004 04 16 | 704 | 0.5− | 0.2+ | 2004 05 18 | 704 | 0.3− | 0.9+ |
| 2000 10 01 | 699 | 1.5− | 0.6+ | 2004 04 16 | 704 | 0.2− | 0.2− | 2004 05 18 | 704 | 0.5− | 0.3+ |
| 2000 10 01 | 699 | 1.4− | 1.1+ | 2004 04 16 | 704 | 0.2+ | 0.1− | 2004 05 18 | 704 | 0.0 | 0.7+ |
| 2000 10 01 | 699 | 0.1− | 0.7+ | 2004 04 16 | 704 | 0.6− | 0.0 | 2004 05 18 | 704 | 0.0 | 0.2+ |
| 2000 10 01 | 699 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.7+ |
| 2000 10 02 | 704 | 0.5+ | 0.7+ | 2004 04 20 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | (0.4− | 1.7−) |
| 2000 10 02 | 704 | 0.1− | 0.1− | 2004 04 20 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.5− |
| 2000 10 02 | 704 | 0.7+ | 0.5+ | 2004 04 20 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2+ | 1.3− |
| 2000 10 02 | 704 | 0.6− | 0.6− | 2004 04 20 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.9− | 1.2+ |
| 2000 10 21 | 691 | 0.2+ | 0.1− | 2004 04 22 | 704 | 1.0− | 0.8− | 2006 10 16 | 703 | 0.8+ | 0.8+ |
| 2000 10 21 | 691 | 0.1+ | 0.1− | 2004 04 22 | 704 | 0.9+ | 0.6+ | 2006 10 16 | 703 | (0.8+ | 2.6+) |
| 2000 10 21 | 691 | 0.2+ | 0.1− | 2004 04 22 | 704 | (2.3+ | 0.7+) | 2006 10 16 | 703 | 0.9+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.5− | 0.4+ | 2004 04 22 | 704 | 0.9− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2001 12 11 | 704 | 0.5+ | 0.1− | 2004 04 22 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.9+ |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2004 04 30 | 608 | 0.7+ | 0.7+ | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2004 03 31 | 704 | 0.8+ | 0.7− | 2004 04 30 | 608 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2004 03 31 | 704 | 0.4− | 0.6+ | 2004 04 30 | 608 | 0.8+ | 0.2+ | 2006 11 08 | 644 | 0.7− | 0.2+ |
| 2004 03 31 | 704 | 1.1+ | 0.3− | 2004 05 09 | 608 | 0.2− | 0.7− | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2004 03 31 | 704 | 0.6+ | 1.3+ | 2004 05 09 | 608 | 0.1− | 0.6− | 2006 11 08 | 644 | 0.2− | 0.5+ |

**(138796)∗ 2000 TV$_6$ = 2005 SU$_{115}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84616)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.58477 | | (2000.0) | | | |
| $n$ | 0.19946446 | $\omega$ | 154.78002 | | +0.98488232 | +0.17310992 |
| $a$ | 2.9010755 | $\Omega$ | 195.25527 | | −0.16271615 | +0.91203572 |
| $e$ | 0.0757577 | $i$ | 1.37326 | | −0.05941600 | +0.37178463 |
| $P$ | 4.94 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.4− | 0.2+ | 2003 04 07 | 691 | 0.4+ | 0.3+ | 2005 10 06 | 699 | 0.5− | 0.4+ |
| 2000 09 20 | 691 | 0.3− | 0.1− | 2003 04 07 | 691 | 0.5+ | 0.4+ | 2005 10 06 | 699 | (1.9+ | 1.5+) |
| 2000 09 20 | 691 | 0.7− | 0.2+ | 2003 04 29 | 691 | 0.0 | 0.6+ | 2005 10 07 | 691 | 0.2+ | 0.6+ |
| 2000 10 01 | 704 | 0.4− | 0.5+ | 2003 04 29 | 691 | 0.4− | 0.4+ | 2005 10 07 | 691 | 0.0 | 0.2+ |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2003 04 29 | 691 | 0.0 | 0.8+ | 2005 10 07 | 691 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.3+ | 0.5+ | 2005 09 27 | 691 | 0.1− | 0.2+ | 2005 10 20 | G96 | 0.3− | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.6+ | 2005 09 27 | 691 | 0.1+ | 0.3+ | 2005 10 20 | G96 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 1.5+ | 1.1+ | 2005 09 27 | 691 | 0.2− | 0.3+ | 2005 10 20 | G96 | 0.1− | 0.4− |
| 2000 10 02 | 704 | 0.1+ | 0.2− | 2005 09 30 | G96 | 0.2+ | 0.0 | 2005 10 20 | G96 | 0.8− | 0.0 |
| 2000 10 02 | 704 | 0.5+ | 0.3− | 2005 09 30 | G96 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.5− | 0.6+ |
| 2000 10 02 | 704 | 0.5+ | 0.4+ | 2005 09 30 | G96 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.6− |
| 2001 12 19 | 644 | 0.5+ | 0.6+ | 2005 09 30 | G96 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2001 12 19 | 644 | 0.2+ | 0.0 | 2005 10 06 | 703 | 1.0+ | 1.2+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2001 12 19 | 644 | 0.3− | 0.8+ | 2005 10 06 | 703 | (1.6− | 0.8+) | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2002 01 15 | 704 | 0.0 | 0.1+ | 2005 10 06 | 699 | 0.3+ | 1.1+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2002 01 15 | 704 | 0.4+ | 0.2+ | 2005 10 06 | 703 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 01 15 | 704 | 0.6+ | 0.8− | 2005 10 06 | 703 | 0.0 | 0.7− | 2006 11 16 | G96 | 0.5− | 0.5− |
| 2003 04 07 | 691 | 0.6+ | 0.4+ | 2005 10 06 | 699 | 0.4− | 0.9− | | | | |

**(138797)∗ 2000 TR$_9$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.70763 | | (2000.0) | | | |
| $n$ | 0.17446095 | $\omega$ | 171.46742 | | +0.98479617 | −0.16651970 |
| $a$ | 3.1720296 | $\Omega$ | 198.34305 | | +0.14865783 | +0.95519823 |
| $e$ | 0.0937278 | $i$ | 9.04488 | | +0.08987415 | +0.24467841 |
| $P$ | 5.65 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.3− | 0.3+ | 2005 07 15 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.5+ | 1.1− |
| 2000 09 23 | 699 | 0.2+ | 0.5+ | 2005 07 15 | 691 | (2.0+ | 1.0−) | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2000 09 23 | 699 | 0.5+ | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2000 09 23 | 699 | 0.8− | 0.5+ | 2005 08 24 | 644 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.1+ | 0.1+ | 2005 08 24 | 644 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2000 10 01 | 704 | 0.0 | 0.1− | 2005 08 31 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2000 10 01 | 704 | 0.2− | 0.0 | 2005 08 31 | 704 | 0.6− | 1.5+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2000 10 01 | 704 | 0.2+ | 0.1+ | 2005 08 31 | 704 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2000 10 01 | 704 | 0.1+ | 0.2+ | 2005 08 31 | 704 | 0.3+ | 0.8− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2000 10 02 | 704 | 0.3− | 0.5− | 2005 09 19 | 644 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2000 10 02 | 704 | 0.5− | 0.3+ | 2005 09 19 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2000 10 02 | 704 | 0.4+ | 0.4+ | 2005 09 19 | 644 | 0.6− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2000 10 02 | 704 | 0.0 | 0.3− | 2005 09 19 | 644 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2000 10 02 | 704 | 0.1+ | 1.2+ | 2005 09 19 | 644 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2000 10 06 | 608 | 0.3− | 0.5− | 2005 09 19 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2000 10 06 | 608 | 0.5− | 0.7− | 2005 09 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2000 10 06 | 608 | 0.5− | 0.5− | 2005 09 19 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2000 11 02 | 704 | 0.2− | 0.0 | 2005 09 19 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.3− |
| 2000 11 02 | 704 | 0.3+ | 0.2− | 2005 09 19 | 644 | 0.4− | 0.3+ | 2006 11 14 | 704 | (0.5− | 1.7+) |
| 2000 11 02 | 704 | 0.3+ | 1.5− | 2005 09 19 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.5− | 1.2+ |
| 2000 11 02 | 704 | 1.6+ | 1.0+ | 2005 09 19 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.7+ |
| 2003 03 07 | 699 | 0.3+ | 0.3+ | 2005 09 19 | 644 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 2003 03 07 | 704 | 0.5− | 0.9− | 2005 09 19 | 644 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.9+ |
| 2003 03 07 | 699 | 0.2+ | 0.6+ | 2005 09 19 | 644 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.9+ | 0.1+ |
| 2003 03 07 | 704 | 0.0 | 1.3+ | 2005 09 19 | 644 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.1− |
| 2003 03 07 | 699 | (1.0− | 2.2+) | 2005 09 19 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.5+ | 0.6+ |
| 2003 03 07 | 699 | (2.0+ | 0.1+) | 2005 09 19 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 2003 03 07 | 704 | 0.3− | 0.9+ | 2005 09 19 | 644 | 0.2− | 0.1+ | 2006 11 17 | 704 | (0.8− | 1.9+) |
| 2003 03 07 | 704 | 0.4+ | 1.5+ | 2005 09 19 | 644 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2003 03 07 | 704 | (0.3+ | 1.5+) | 2005 09 19 | 644 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2003 03 30 | 644 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2003 03 30 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.4+ | 0.7− | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2003 03 30 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 1.2− | 2006 11 19 | 704 | 0.4+ | 0.9+ |
| 2005 06 28 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.5+ | 0.8+ |
| 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2005 06 28 | 644 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2005 07 11 | 703 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.8− | 0.1− |
| 2005 07 11 | 703 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2005 07 11 | 703 | 0.9− | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2005 07 11 | 703 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2005 07 15 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.5+ | | | | |

**(138798)∗ 2000 TA$_{13}$ = 2005 NM$_{70}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 84617)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.91413 | | (2000.0) | | | |
| $n$ | 0.16822082 | $\omega$ | 75.89293 | | +0.11630791 | +0.99271501 |
| $a$ | 3.2499964 | $\Omega$ | 200.86401 | | −0.94193160 | +0.10020274 |
| $e$ | 0.0090959 | $i$ | 5.06682 | | −0.31501957 | +0.06690531 |
| $P$ | 5.86 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.5+ | 0.8+ | 2005 07 30 | 599 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2000 10 01 | 704 | 0.7+ | 0.5+ | 2005 07 30 | 599 | 1.1− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2000 10 01 | 704 | 0.0 | 1.6− | 2005 07 30 | 599 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 10 02 | 704 | 0.2+ | 1.2+ | 2005 08 06 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 10 02 | 704 | 0.4+ | 0.4+ | 2005 08 06 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2000 10 02 | 704 | 0.7− | 0.5− | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.6+ | 0.3− |
| 2000 10 02 | 704 | 0.7− | 0.3− | 2005 08 11 | A50 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2000 10 06 | 699 | 0.4− | 0.4+ | 2005 08 11 | A50 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2000 10 06 | 699 | 0.7+ | 1.3+ | 2005 08 11 | A50 | 1.5+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2000 10 06 | 699 | 1.2+ | 0.1− | 2005 08 11 | A50 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2000 10 06 | 699 | 0.8+ | 0.5− | 2005 08 29 | G92 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2000 11 16 | 691 | 0.5− | 0.3− | 2005 08 29 | G92 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2000 11 16 | 691 | 0.7− | 0.1− | 2005 08 29 | G92 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2000 11 16 | 691 | 0.7+ | 0.8− | 2005 10 03 | 291 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2003 02 27 | 599 | 0.2− | 0.8+ | 2005 10 03 | 291 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2003 02 27 | 599 | 0.5+ | 0.6+ | 2005 10 03 | 291 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2003 02 27 | 599 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 03 07 | 699 | 0.6+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2003 03 07 | 704 | 0.4− | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2003 03 07 | 699 | (0.1+ | 2.9+) | 2006 09 25 | G96 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2003 03 07 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 1.3− | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.1− |
| 2003 03 07 | 699 | (1.2+ | 2.2+) | 2006 09 30 | 703 | 0.6− | 0.5+ | 2006 11 11 | 703 | 0.3+ | 1.4− |
| 2003 03 07 | 704 | 0.7+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.2− | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2003 03 07 | 699 | (0.7+ | 2.1+) | 2006 09 30 | 703 | 0.0 | 1.0− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2003 03 07 | 704 | 0.7+ | 1.3+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2003 03 07 | 704 | 0.2+ | 1.0+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2005 06 29 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.5+ | 2006 11 17 | 703 | 1.1− | 1.0+ |
| 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.8− |
| 2005 07 04 | 691 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.7− | 0.5+ | 2006 11 17 | 703 | 1.4− | 0.8− |
| 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.7− |
| 2005 07 04 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.6+ | 0.3− |
| 2005 07 12 | 703 | 0.2− | 1.2− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.4− |
| 2005 07 12 | 703 | 0.5+ | 1.1− | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.5+ | 0.6+ |
| 2005 07 12 | 703 | 1.4− | 1.1− | 2006 10 20 | 644 | 0.0 | 0.2+ | | | | |
| 2005 07 12 | 703 | 0.2− | 1.0− | 2006 10 20 | 644 | 0.2+ | 0.1+ | | | | |

**(138799)∗ 2000 TT$_{15}$ = 2002 AB$_{138}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25268)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 82.03137 | | (2000.0) | | +0.85172105 | +0.52320648 |
| $n$ | 0.17917233 | $\omega$ | 123.23617 | | −0.50038556 | +0.79583923 |
| $a$ | 3.1161768 | $\Omega$ | 205.25196 | | −0.15551703 | +0.30478664 |
| $e$ | 0.0627595 | $i$ | 3.86352 | | | |
| $P$ | 5.50 | $H$ | 14.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.8+ | 0.3+ | 2005 08 26 | 699 | 1.0+ | 0.8+ | 2005 09 27 | 644 | 0.4− | 0.2+ |
| 2000 10 01 | 704 | 0.7+ | 0.9+ | 2005 08 26 | 699 | 0.9+ | 0.7− | 2005 09 27 | 644 | 0.4− | 0.3+ |
| 2000 10 01 | 704 | 0.0 | 0.7+ | 2005 08 26 | 699 | 0.9− | 1.1+ | 2005 09 28 | 644 | 0.1+ | 0.4+ |
| 2000 10 01 | 704 | 0.4+ | 0.6+ | 2005 08 26 | 699 | (1.3+ | 2.3+) | 2005 09 28 | 644 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.8+ | 0.8+ | 2005 08 29 | 699 | 0.6− | 0.6+ | 2005 09 28 | 644 | 0.1− | 0.3+ |
| 2000 10 02 | 704 | 0.1+ | 0.8+ | 2005 08 29 | 699 | 0.7− | 0.2+ | 2005 10 01 | 699 | 0.5− | 0.1− |
| 2000 10 02 | 704 | 1.0+ | 0.8+ | 2005 08 29 | 699 | 1.1+ | 0.8+ | 2005 10 01 | 699 | 0.4− | 0.6− |
| 2000 10 02 | 704 | 0.8+ | 0.3+ | 2005 08 29 | 699 | 0.7− | 1.0+ | 2005 10 01 | 699 | 0.5− | 0.2+ |
| 2000 10 07 | 691 | 0.3− | 0.1− | 2005 08 31 | 691 | 0.2+ | 0.0 | 2005 10 01 | 699 | (0.1+ | 2.4−) |
| 2000 10 07 | 691 | 0.3− | 0.3− | 2005 08 31 | 691 | 0.0 | 0.1+ | 2005 11 29 | G96 | 0.1+ | 0.2+ |
| 2000 10 07 | 691 | 0.4− | 0.1− | 2005 08 31 | 691 | 0.1+ | 0.0 | 2005 11 29 | G96 | 0.2+ | 0.9− |
| 2002 01 08 | 644 | 0.1+ | 0.5+ | 2005 09 06 | 699 | (1.8+ | 0.1+) | 2005 11 29 | G96 | 0.0 | 0.2− |
| 2002 01 08 | 644 | 0.1+ | 0.6+ | 2005 09 06 | 699 | 0.2+ | 0.6+ | 2005 11 29 | G96 | 1.0− | 0.6− |
| 2002 01 08 | 644 | 0.3− | 0.4+ | 2005 09 06 | 704 | 0.3− | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 01 09 | 704 | (0.1+ | 1.5+) | 2005 09 06 | 699 | 0.4− | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 01 09 | 704 | (1.8+ | 0.5+) | 2005 09 06 | 704 | 0.1+ | 1.4+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2002 01 09 | 704 | (2.0+ | 0.2−) | 2005 09 06 | 704 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 01 15 | 704 | 0.0 | 0.1+ | 2005 09 08 | 704 | 0.8+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2002 01 15 | 704 | 0.3− | 0.1+ | 2005 09 08 | 704 | 1.0− | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2002 01 15 | 704 | 0.8− | 0.1+ | 2005 09 08 | 704 | 0.0 | 0.5+ | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2002 01 15 | 704 | 1.1− | 0.5+ | 2005 09 11 | 704 | 0.4+ | 0.4+ | 2006 11 12 | G96 | 0.5+ | 0.5− |
| 2003 03 25 | 644 | 0.0 | 0.3+ | 2005 09 11 | 704 | 1.3+ | 0.2− | 2006 11 20 | 704 | 0.9+ | 0.7+ |
| 2003 03 25 | 644 | 0.3− | 0.4+ | 2005 09 11 | 704 | 0.8+ | 0.7+ | 2006 11 20 | 704 | 0.3− | 0.8− |
| 2003 03 25 | 644 | 0.4− | 0.7+ | 2005 09 11 | 704 | 1.4+ | 0.4+ | 2006 11 20 | 704 | 0.9+ | 1.0+ |
| 2003 04 06 | 691 | 0.9+ | 1.5+ | 2005 09 23 | 703 | 0.8− | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.4− |
| 2003 04 06 | 691 | 0.5+ | 0.8+ | 2005 09 23 | 703 | (1.2+ | 2.3−) | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2003 04 06 | 691 | 0.5+ | 1.1+ | 2005 09 23 | 703 | 0.4− | 1.2− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2005 08 10 | 807 | 0.3− | 0.2+ | 2005 09 23 | 703 | 0.5− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2005 08 10 | 807 | 0.4− | 0.2+ | 2005 09 26 | 691 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.2− |
| 2005 08 25 | 644 | 0.3− | 0.2+ | 2005 09 26 | 691 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.8+ |
| 2005 08 25 | 644 | 0.3− | 0.1+ | 2005 09 26 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2005 08 25 | 644 | 0.1− | 0.1+ | 2005 09 27 | 644 | 0.6− | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.6+ |

**(138800)∗ 2000 TZ$_{19}$ = 2001 YG$_{158}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74838)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.35407 | | (2000.0) | | +0.92717770 | −0.32089185 |
| $n$ | 0.18230578 | $\omega$ | 299.41157 | | +0.37382818 | +0.82608669 |
| $a$ | 3.0803667 | $\Omega$ | 79.87569 | | −0.02437234 | +0.46325933 |
| $e$ | 0.0940076 | $i$ | 11.32481 | | | |
| $P$ | 5.41 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 25 | 691 | 0.1+ | 0.8+ | 2001 12 18 | 645 | 0.0 | 0.0 | 2005 09 03 | 644 | 0.0 | 0.6+ |
| 1993 04 25 | 691 | 0.1− | 1.2+ | 2001 12 18 | 645 | 0.0 | 0.0 | 2005 09 03 | 644 | 0.5+ | 0.1+ |
| 1993 04 25 | 691 | 0.5− | 0.4+ | 2001 12 19 | 645 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.8− | 0.2− |
| 2000 09 25 | 608 | 1.5− | 0.2+ | 2001 12 19 | 645 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.5− | 0.1− |
| 2000 09 25 | 608 | 1.5− | 0.2+ | 2002 01 08 | 704 | 1.0+ | 0.3+ | 2006 11 12 | G96 | 0.3− | 0.0 |
| 2000 09 25 | 608 | 1.4− | 0.8+ | 2002 01 08 | 704 | 0.9+ | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2000 09 26 | 645 | 0.1+ | 0.2− | 2002 01 08 | 704 | (1.6+ | 1.3+) | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2000 09 26 | 645 | 0.1+ | 0.1− | 2002 01 08 | 704 | (1.5+ | 1.3+) | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2000 09 29 | 699 | 0.0 | 0.4− | 2002 01 17 | 644 | 1.1+ | 0.6+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2000 09 29 | 699 | 1.3+ | 0.3− | 2002 01 17 | 644 | 1.1+ | 0.8+ | 2006 11 18 | 704 | (1.2− | 1.6+) |
| 2000 09 29 | 699 | 0.6+ | 0.9+ | 2002 01 17 | 644 | 0.7+ | 0.6+ | 2006 11 18 | 704 | (3.0− | 1.8+) |
| 2000 09 29 | 699 | 0.7+ | 0.3+ | 2003 03 25 | 644 | 0.7+ | 0.6+ | 2006 11 18 | 704 | 1.0+ | 1.3+ |
| 2000 10 01 | 704 | 0.7− | 0.6+ | 2003 03 25 | 644 | 0.8+ | 0.7+ | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2000 10 01 | 704 | 0.3− | 1.0+ | 2003 03 25 | 644 | 0.7+ | 0.5+ | 2006 11 21 | 704 | 0.9− | 0.8− |
| 2000 10 01 | 704 | 0.5− | 0.0 | 2004 06 14 | 704 | 0.5+ | 1.0+ | 2006 11 21 | 704 | 1.2− | 0.3− |
| 2000 10 01 | 704 | 0.4+ | 1.4+ | 2004 06 14 | 704 | 0.8+ | 0.8+ | 2006 11 21 | 704 | 0.9− | 0.3+ |
| 2000 10 01 | 704 | 0.3− | 1.3+ | 2004 06 14 | 704 | 0.7+ | 0.2− | 2006 11 21 | 704 | (1.7− | 0.0 ) |
| 2000 10 05 | 704 | 0.0 | 0.6+ | 2004 06 14 | 704 | 0.7+ | 0.5− | 2006 11 23 | 691 | 0.3− | 0.1+ |
| 2000 10 05 | 704 | 0.0 | 1.3+ | 2005 07 27 | 644 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2000 10 05 | 704 | 0.7− | 1.5+ | 2005 07 27 | 644 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.4− | 0.0 |
| 2000 10 05 | 704 | 0.7− | 0.2+ | 2005 07 27 | 644 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2000 10 05 | 704 | 0.7+ | 1.2+ | 2005 07 30 | 644 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2001 12 15 | 645 | 0.1− | 0.0 | 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2001 12 15 | 645 | 0.1− | 0.1+ | 2005 07 30 | 644 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.8− | 0.2− | 2005 08 26 | I10 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.6+ | 0.7+ |
| 2001 12 17 | 704 | 0.4− | 0.3− | 2005 08 26 | I10 | 0.7+ | 1.2− | 2006 12 01 | 704 | 0.5+ | 1.0+ |
| 2001 12 17 | 704 | 0.7− | 0.5+ | 2005 08 26 | I10 | (3.6+ | 0.3−) | 2006 12 01 | 691 | 0.1+ | 0.5− |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2005 08 28 | E12 | 0.4+ | 0.1+ | 2006 12 01 | 704 | 0.6− | 0.7+ |
| 2001 12 17 | 704 | 1.2+ | 0.7+ | 2005 08 28 | E12 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2001 12 18 | 644 | 0.2+ | 0.4− | 2005 08 28 | E12 | 0.2− | 0.6+ | 2006 12 01 | 704 | 0.9+ | 0.0 |
| 2001 12 18 | 644 | 0.1+ | 0.2− | 2005 08 28 | E12 | 0.2+ | 0.3+ | 2006 12 01 | 691 | 0.4− | 0.2+ |
| 2001 12 18 | 644 | 0.0 | 0.1− | 2005 09 03 | 644 | 0.3− | 0.7+ | | | | |

**(138801)∗ 2000 TJ$_{26}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 135.66505 | | (2000.0) | | −0.23244242 | −0.97257852 |
| $n$ | 0.26139529 | $\omega$ | 301.78726 | | +0.90056513 | −0.21826383 |
| $a$ | 2.4225395 | $\Omega$ | 161.64875 | | +0.36735945 | −0.08032380 |
| $e$ | 0.1379659 | $i$ | 1.42771 | | | |
| $P$ | 3.77 | $H$ | 17.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 691 | 0.0 | 0.5+ | 2002 03 21 | 599 | 0.2− | 0.1+ | 2006 03 24 | G96 | 0.3− | 0.2+ |
| 2000 09 03 | 691 | 0.2− | 0.3− | 2002 03 21 | 599 | 0.2+ | 0.4+ | 2006 03 24 | G96 | 0.0 | 0.3− |
| 2000 09 03 | 691 | 0.2+ | 0.3+ | 2002 04 05 | 291 | 0.1+ | 0.0 | 2006 03 24 | G96 | 0.2− | 0.1− |
| 2000 10 01 | 704 | 0.0 | 0.1+ | 2002 04 05 | 291 | 0.1+ | 0.2− | 2006 03 24 | G96 | 0.3− | 0.2+ |
| 2000 10 01 | 704 | 0.6− | 0.7+ | 2002 04 05 | 291 | 0.1+ | 0.1+ | 2006 03 25 | 691 | 0.1+ | 0.1+ |
| 2000 10 01 | 704 | 0.2− | 0.4+ | 2002 04 21 | 691 | 0.1+ | 0.1+ | 2006 03 25 | 691 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.4+ | 2002 04 21 | 691 | 0.3+ | 0.2− | 2006 03 25 | 691 | 0.1+ | 0.2+ |
| 2000 10 04 | 704 | 0.5− | 0.3+ | 2002 04 21 | 691 | 0.2+ | 0.2+ | 2006 04 02 | 691 | 0.0 | 0.3+ |
| 2000 10 04 | 704 | 0.1− | 0.5+ | 2004 10 10 | 691 | 0.1+ | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.4+ |
| 2000 10 04 | 704 | 0.8− | 1.0+ | 2004 10 10 | 691 | 0.1− | 0.1+ | 2006 04 02 | 691 | 0.4+ | 0.4+ |
| 2000 10 04 | 704 | 0.2− | 0.4+ | 2004 10 10 | 691 | 0.1+ | 0.1− | 2006 04 07 | 691 | 0.1+ | 0.0 |
| 2002 03 16 | 704 | 0.9− | 0.1+ | 2004 10 23 | 691 | 0.0 | 0.2+ | 2006 04 07 | 691 | 0.1+ | 0.1+ |
| 2002 03 16 | 704 | 0.5− | 0.5+ | 2004 10 23 | 691 | 0.2− | 0.2+ | 2006 04 07 | 691 | 0.1+ | 0.4+ |
| 2002 03 16 | 704 | 1.2− | 0.2− | 2004 10 23 | 691 | 0.3+ | 0.3+ | 2006 04 19 | G96 | 0.3+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 704 | 0.3− | 0.7− | 2004 11 04 | 703 | 0.7− | 0.3+ | 2006 04 19 | G96 | 0.2− | 0.3+ | | |
| 2002 03 21 | 644 | 0.0 | 1.6+ | 2004 11 04 | 703 | 0.6− | 0.2+ | 2006 04 19 | G96 | 0.1− | 0.1+ | | |
| 2002 03 21 | 644 | 0.5+ | 0.2+ | 2004 11 04 | 703 | 0.0 | 0.7+ | 2006 04 19 | G96 | 0.3+ | 0.2+ | | |
| 2002 03 21 | 644 | 0.1+ | 0.1− | 2004 11 04 | 703 | 0.5− | 0.3+ | | | | | | |

**(138802)∗ 2000 TL$_{27}$**

Discovered 2000 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.47156 | | (2000.0) | | | |
| $n$ | 0.17469787 | $\omega$ | 34.66305 | | +0.28637904 | −0.94865417 |
| $a$ | 3.1691611 | $\Omega$ | 39.18625 | | +0.82393235 | +0.17228788 |
| $e$ | 0.0797765 | $i$ | 12.27400 | | +0.48900156 | +0.26527750 |
| $P$ | 5.64 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.0 | 0.8+ | 2003 03 26 | 608 | 0.5+ | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.2− | | |
| 2000 10 03 | 704 | 0.1− | 1.7+ | 2003 03 26 | 608 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.1− | | |
| 2000 10 03 | 704 | 0.2+ | 0.0 | 2003 03 29 | 699 | 0.5− | 0.5− | 2006 11 14 | 703 | 0.4− | 0.0 | | |
| 2000 10 03 | 704 | 0.7− | 0.8+ | 2003 03 29 | 699 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.3− | | |
| 2000 10 03 | 704 | 1.4+ | 1.4− | 2003 03 29 | 699 | 1.3+ | 1.0+ | 2006 11 14 | 703 | 1.0− | 1.2+ | | |
| 2000 10 04 | 704 | 0.1+ | 0.4− | 2003 03 29 | 699 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.4− | 0.5+ | | |
| 2000 10 04 | 704 | 0.2− | 0.6− | 2003 04 09 | 644 | 0.2+ | 0.9+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 04 | 704 | 1.2− | 1.9− | 2003 04 09 | 644 | 0.6+ | 0.8+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 06 | 699 | 0.6− | 0.6+ | 2003 04 09 | 644 | 0.4+ | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 06 | 699 | 0.7− | 0.4+ | 2003 04 11 | 691 | 0.3+ | 1.0+ | 2006 11 15 | 704 | 0.7+ | 0.1+ | | |
| 2000 10 06 | 699 | 1.2− | 0.6+ | 2003 04 11 | 691 | 0.3+ | 1.0+ | 2006 11 15 | 704 | 0.6+ | 0.9− | | |
| 2000 10 06 | 699 | 0.6− | 0.5+ | 2003 04 11 | 691 | 0.8+ | 1.1+ | 2006 11 15 | 704 | 0.8+ | 1.2+ | | |
| 2000 10 07 | 699 | 1.3− | 1.1+ | 2005 08 28 | E12 | 0.7− | 0.9+ | 2006 11 15 | 704 | 0.5− | 0.1− | | |
| 2000 10 07 | 699 | 0.4− | 0.8+ | 2005 08 28 | E12 | 0.0 | 0.9+ | 2006 11 16 | 704 | 0.7− | 0.6+ | | |
| 2000 10 07 | 699 | 0.1− | 0.7+ | 2005 08 28 | E12 | 0.7− | 0.4+ | 2006 11 16 | 704 | 0.2+ | 1.3+ | | |
| 2000 10 07 | 699 | 1.3− | 0.3+ | 2005 08 28 | E12 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.6− | 0.4− | | |
| 2000 11 02 | 704 | 1.3+ | 0.1+ | 2005 09 02 | 644 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.1− | 0.9− | | |
| 2000 11 02 | 704 | 1.1+ | 0.2+ | 2005 09 02 | 644 | 0.2− | 0.6+ | 2006 11 16 | 704 | 0.4+ | 0.4− | | |
| 2000 11 02 | 704 | 0.1+ | 0.7+ | 2005 09 02 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2001 12 09 | 704 | 0.4− | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2001 12 09 | 704 | 0.7+ | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2001 12 09 | 704 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.6+ | 1.0− | | |
| 2001 12 09 | 704 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.0 | | |
| 2001 12 09 | 704 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2002 01 14 | 644 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.7+ | | |
| 2002 01 14 | 644 | 0.2+ | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.2− | 0.2+ | | |
| 2002 01 14 | 644 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 | | |
| 2002 01 19 | 699 | 0.7− | 1.2+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.2− | 0.0 | | |
| 2002 01 19 | 699 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.4+ | | |
| 2002 01 19 | 699 | 0.4− | 1.2− | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.1+ | | |
| 2002 01 19 | 699 | 0.8+ | 0.9− | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.4− | 0.2+ | | |
| 2002 01 23 | 704 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.1+ | | |
| 2002 01 23 | 704 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.3− | | |
| 2002 01 23 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.1+ | 2006 11 25 | 291 | 0.5− | 0.1− | | |
| 2002 01 23 | 704 | 0.7+ | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.3+ | 2006 11 25 | 291 | 0.3− | 0.2− | | |
| 2002 01 23 | 704 | 0.2+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 25 | 291 | 0.4− | 0.1− | | |
| 2002 02 10 | 704 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.5+ | 0.0 | | |
| 2002 02 10 | 704 | 0.0 | 0.5− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.2− | 0.1− | | |
| 2002 02 10 | 704 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.2+ | | |
| 2002 02 10 | 704 | 0.4+ | 0.5− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.1+ | | |
| 2002 02 10 | 704 | 0.7− | 1.0− | 2006 11 09 | 644 | 0.0 | 0.1− | | | | | | |
| 2003 03 26 | 608 | 0.1+ | 1.1− | 2006 11 10 | 644 | 0.0 | 0.0 | | | | | | |

**(138803)∗ 2000 TT$_{34}$ = 2005 MC$_1$**

Discovered 2000 Oct. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 74838)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.00949 | | (2000.0) | | | |
| $n$ | 0.18058970 | $\omega$ | 181.98000 | | +0.84503377 | +0.53414766 |
| $a$ | 3.0998503 | $\Omega$ | 145.69754 | | −0.48998814 | +0.79193884 |
| $e$ | 0.1069022 | $i$ | 2.49984 | | −0.21407838 | +0.29583635 |
| $P$ | 5.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3− | 0.2+ | 2005 06 17 | G96 | 0.3+ | 0.1− | 2005 10 05 | 691 | 0.2− | 0.0 | | |
| 2000 09 24 | 704 | 0.4+ | 0.0 | 2005 06 18 | G96 | 0.0 | 0.2+ | 2005 10 05 | 691 | 0.3− | 0.3+ | | |
| 2000 09 24 | 704 | 0.7− | 0.5− | 2005 06 18 | G96 | 0.5+ | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 2000 09 24 | 704 | 0.7− | 0.1− | 2005 06 18 | G96 | 0.6+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.1− | | |
| 2000 09 27 | 691 | 0.2+ | 0.2+ | 2005 06 18 | G96 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 2000 09 27 | 691 | 0.2+ | 0.2+ | 2005 08 25 | 644 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.1− | | |
| 2000 09 27 | 691 | 0.0 | 0.2+ | 2005 08 25 | 644 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.2− | | |
| 2000 10 06 | 699 | 0.4− | 1.1+ | 2005 08 25 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.1− | | |
| 2000 10 06 | 699 | 0.6+ | 0.9+ | 2005 08 29 | 704 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2000 10 06 | 699 | 0.3− | 0.5+ | 2005 08 29 | 704 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.4− | 0.1− | | |
| 2000 10 06 | 699 | 0.1− | 1.1+ | 2005 08 29 | 704 | 0.2− | 0.4− | 2006 11 12 | G96 | 0.1− | 0.7+ | | |
| 2000 10 07 | 699 | 0.9− | 0.5+ | 2005 08 29 | 704 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.8− | 0.1+ | | |
| 2000 10 07 | 699 | 0.6− | 0.2− | 2005 08 29 | 704 | 0.3− | 1.1+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2000 10 07 | 699 | 0.3− | 1.3+ | 2005 08 29 | 699 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.2+ | | |
| 2000 10 07 | 699 | 1.2− | 1.4+ | 2005 08 29 | 699 | 0.4+ | 0.4+ | 2006 11 16 | 691 | 0.3+ | 0.1− | | |
| 2003 03 07 | 291 | 0.2− | 0.7+ | 2005 08 29 | 699 | 0.4+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.3+ | | |
| 2003 03 07 | 291 | 0.2+ | 0.9+ | 2005 08 29 | 699 | 0.9+ | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1− | | |
| 2003 03 07 | 291 | 0.4+ | 0.5+ | 2005 09 13 | 703 | 0.5− | 0.4+ | 2006 11 19 | H07 | 1.3+ | 0.4− | | |
| 2003 03 30 | 695 | 0.3+ | 0.3+ | 2005 09 13 | 703 | (1.5+ | 1.2+) | 2006 11 19 | H07 | 0.7+ | 0.6+ | | |
| 2003 03 30 | 695 | 0.4+ | 0.3+ | 2005 09 13 | 703 | (0.6− | 2.5+) | 2006 11 19 | H07 | 0.1+ | 0.1+ | | |
| 2003 04 09 | 691 | (0.3− | 1.7+) | 2005 09 13 | 703 | (0.3+ | 2.1+) | 2006 11 19 | H07 | 0.0 | 0.6− | | |
| 2003 04 09 | 691 | (0.8+ | 1.6+) | 2005 09 22 | 644 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 | | |
| 2003 04 09 | 691 | 0.9+ | 1.2+ | 2005 09 22 | 644 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.3− | 0.1− | | |
| 2004 06 17 | 691 | 0.1− | 0.2+ | 2005 09 22 | 644 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2004 06 17 | 691 | 0.2+ | 0.1+ | 2005 10 01 | G96 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.4+ | 0.1+ | | |
| 2004 06 17 | 691 | 0.1− | 0.2+ | 2005 10 01 | G96 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.2− | 0.0 | | |
| 2005 06 17 | G96 | (0.7+ | 1.6−) | 2005 10 01 | G96 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.4− | 0.5− | | |
| 2005 06 17 | G96 | 0.9+ | 0.2− | 2005 10 01 | G96 | 0.1− | 0.1− | | | | | | |
| 2005 06 17 | G96 | 0.6+ | 0.4+ | 2005 10 05 | 691 | 0.2− | 0.4+ | | | | | | |

**(138804)∗ 2000 TG$_{36}$**

Discovered 2000 Oct. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.42803 | | (2000.0) | | | |
| $n$ | 0.17311636 | $\omega$ | 218.65652 | | +0.13392606 | −0.98711022 |
| $a$ | 3.1884332 | $\Omega$ | 223.84783 | | +0.93774977 | +0.15482517 |
| $e$ | 0.1231344 | $i$ | 7.26634 | | +0.32045152 | −0.04052869 |
| $P$ | 5.69 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 699 | 0.4+ | 1.3+ | 2002 01 22 | 704 | 0.8+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.4− | | |
| 2000 09 22 | 699 | 0.3− | 0.3− | 2002 01 22 | 704 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2000 09 22 | 699 | 0.0 | 0.4+ | 2003 05 29 | 691 | 0.0 | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.3+ | | |
| 2000 09 22 | 699 | 0.6− | 0.6+ | 2003 05 29 | 691 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.3+ | | |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2003 05 29 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.8− | | |
| 2000 10 02 | 704 | 0.9+ | 1.0− | 2005 08 26 | 644 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.6− | | |
| 2000 10 02 | 704 | 0.4+ | 0.1− | 2005 08 26 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | (0.7− | 3.7−) | | |
| 2000 10 02 | 704 | 0.1+ | 0.2− | 2005 08 26 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | (2.6+ | 2.8−) | | |
| 2000 10 02 | 704 | 0.6+ | 0.4+ | 2005 08 27 | 699 | 1.1+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.4− | | |
| 2000 10 06 | 699 | 0.3− | 0.0 | 2005 08 27 | 699 | 1.0− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.2− | | |
| 2000 10 06 | 699 | 0.3+ | 0.1+ | 2005 08 27 | 699 | (0.5+ | 1.7+) | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2000 10 06 | 699 | 0.2− | 0.2+ | 2005 08 27 | 699 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.6− | | |
| 2000 10 06 | 699 | 0.5+ | 0.4+ | 2005 08 31 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.5+ | | |
| 2000 10 07 | 699 | 0.1+ | 0.1+ | 2005 08 31 | 704 | 0.8+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.3+ | | |
| 2000 10 07 | 699 | 0.7− | 0.3+ | 2005 08 31 | 704 | 1.2+ | 0.8+ | 2006 11 18 | 704 | 1.2+ | 0.1+ | | |
| 2000 10 07 | 699 | 0.0 | 0.5+ | 2005 09 11 | 699 | (5.2− | 0.1+) | 2006 11 18 | 704 | 0.6+ | 0.1− | | |
| 2000 10 07 | 699 | 0.1− | 0.8+ | 2005 09 11 | 699 | 0.6− | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 24 | 704 | 0.3+ | 1.2+ | 2005 09 11 | 699 | 0.5− | 0.7+ | 2006 11 18 | 704 | 0.4− | 0.2− | | |
| 2000 10 24 | 704 | 0.1+ | 0.2+ | 2005 09 11 | 699 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.6− | | |
| 2000 10 24 | 704 | 1.1− | 1.3+ | 2005 09 23 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.3+ | | |
| 2000 10 25 | 704 | 0.6− | 0.2+ | 2005 09 23 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2000 10 25 | 704 | 0.1+ | 0.1+ | 2005 09 23 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.2− | | |
| 2000 10 25 | 704 | 0.3+ | 0.4− | 2006 08 29 | 703 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2000 10 25 | 704 | 0.0 | 0.6+ | 2006 08 29 | 703 | 1.4− | 0.6− | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 25 | 704 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.4− | 0.3− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2000 11 01 | 704 | 0.8+ | 0.6− | 2006 08 29 | 703 | 0.5+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.3+ | | |
| 2000 11 01 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 704 | 1.1+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.0 | | |
| 2000 11 01 | 704 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.7+ | 0.8+ | 2006 11 19 | 704 | 0.4− | 0.1+ | | |
| 2000 11 01 | 704 | 0.4− | 0.7+ | 2006 09 17 | 704 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.5+ | 0.1+ | | |
| 2000 11 01 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.5− | 0.5− | 2006 11 19 | 704 | (0.8+ | 2.7−) | | |
| 2000 11 03 | 704 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.9− | 0.2+ | | |
| 2000 11 03 | 704 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.3− | | |
| 2000 11 03 | 704 | 0.4− | 0.4+ | 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.3− | 0.1+ | | |
| 2000 11 03 | 704 | 0.4− | 0.8+ | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.3+ | | |
| 2000 11 03 | 704 | 1.1− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.1+ | | |
| 2000 11 20 | 699 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2000 11 20 | 699 | 1.5− | 0.0 | 2006 10 16 | 703 | (2.6− | 0.4−) | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 2000 11 20 | 699 | 0.0 | 0.5− | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.1+ | | |
| 2000 11 20 | 699 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1− | | |
| 2000 11 23 | 691 | 0.3+ | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2000 11 23 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2000 11 23 | 691 | 0.0 | 0.6− | 2006 10 28 | 704 | 0.9+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.3+ | | |
| 2000 11 26 | 704 | 1.0− | 0.0 | 2006 10 28 | 704 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1− | 0.1− | | |
| 2000 11 26 | 704 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.7− | 1.0+ | 2006 11 29 | 704 | 0.0 | 0.1+ | | |
| 2000 11 26 | 704 | 0.9+ | 0.2− | 2006 10 28 | 704 | 0.5− | 0.0 | 2006 11 29 | 704 | 1.0− | 0.4+ | | |
| 2002 01 10 | 209 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.0 | 0.2+ | | |
| 2002 01 10 | 209 | 0.2+ | 0.8+ | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.3+ | | |
| 2002 01 10 | 209 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 12 01 | 691 | 0.1− | 0.1+ | | |
| 2002 01 22 | 704 | 0.9+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 12 01 | 691 | 0.2− | 0.1+ | | |
| 2002 01 22 | 704 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.2− | | | | | | |

**(138805)∗ 2000 TE$_{39}$ = 2002 AG$_2$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25273)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.82560 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17870180 | $\omega$ | 109.06676 | | −0.48780162 | | −0.86849873 |
| $a$ | 3.1216445 | $\Omega$ | 11.42014 | | +0.53463009 | | −0.37699297 |
| $e$ | 0.2309780 | $i$ | 26.41605 | | +0.69008713 | | −0.32184820 |
| $P$ | 5.52 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.2+ | 0.1− | 2002 01 10 | 704 | 1.1− | 0.6− | 2006 09 28 | 703 | 0.5− | 0.0 | | |
| 2000 09 05 | 645 | 0.3+ | 0.2− | 2002 01 10 | 704 | 1.2+ | 0.2+ | 2006 09 28 | 703 | 1.0− | 0.3− | | |
| 2000 09 26 | 608 | 1.1− | 1.7+ | 2002 01 10 | 704 | 1.4− | 0.3− | 2006 09 28 | 703 | 0.0 | 0.8− | | |
| 2000 09 26 | 608 | 1.1− | 1.6+ | 2002 01 10 | 704 | 0.1− | 0.4+ | 2006 09 28 | 703 | 1.0− | 1.4+ | | |
| 2000 09 26 | 608 | 1.0− | 1.9+ | 2002 04 02 | 704 | 0.4+ | 0.4− | 2006 10 17 | A50 | 0.4− | 0.2− | | |
| 2000 10 01 | 704 | 0.1− | 0.4+ | 2002 04 02 | 704 | 0.8+ | 0.7− | 2006 10 17 | A50 | 0.5+ | 0.2+ | | |
| 2000 10 01 | 704 | 0.4+ | 0.0 | 2002 04 02 | 704 | 0.3+ | 0.9− | 2006 10 18 | A50 | 0.1+ | 0.0 | | |
| 2000 10 01 | 704 | 0.2+ | 0.4+ | 2002 04 02 | 704 | 0.0 | 0.1+ | 2006 10 18 | A50 | 0.1+ | 0.1− | | |
| 2000 10 01 | 704 | 0.1+ | 1.1− | 2002 04 02 | 704 | 0.6+ | 0.6− | 2006 10 19 | 703 | 0.1− | 0.1− | | |
| 2000 10 01 | 704 | 0.2− | 1.7− | 2003 03 07 | 704 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.2− | 0.1+ | | |
| 2000 10 02 | 699 | 1.4− | 0.5− | 2003 03 07 | 704 | (0.4− | 1.6+) | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 2000 10 02 | 699 | 0.4− | 0.5+ | 2003 03 07 | 704 | 0.4− | 0.8+ | 2006 10 19 | 703 | 0.3− | 0.1− | | |
| 2000 10 02 | 699 | 0.4− | 0.5+ | 2003 03 07 | 704 | 0.1− | 1.0+ | 2006 10 19 | 703 | 0.0 | 0.7+ | | |
| 2000 10 02 | 699 | 0.8− | 0.1− | 2003 03 28 | 699 | 0.1− | 0.3+ | 2006 10 19 | 703 | 1.0− | 0.9+ | | |
| 2001 11 27 | 704 | 0.3− | 0.1+ | 2003 03 28 | 699 | 0.5− | 0.2+ | 2006 10 19 | 703 | 1.4+ | 0.7+ | | |
| 2001 11 27 | 704 | 0.1− | 0.4− | 2003 03 28 | 699 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.3+ | | |
| 2001 11 27 | 704 | 0.1− | 0.6− | 2003 03 28 | 699 | 0.4− | 0.3+ | 2006 10 21 | 704 | 1.0+ | 0.9+ | | |
| 2001 11 27 | 704 | 0.1+ | 0.5+ | 2003 04 12 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 704 | (0.0 | 1.9+) | | |
| 2001 11 27 | 704 | 0.5− | 0.6− | 2003 04 12 | 704 | 0.2− | 1.0+ | 2006 10 21 | 704 | 0.0 | 0.0 | | |
| 2002 01 03 | 704 | 0.9− | 0.1− | 2003 04 12 | 704 | 0.5+ | 0.1− | 2006 10 21 | 704 | 0.4− | 1.1+ | | |
| 2002 01 03 | 704 | 0.8+ | 1.5− | 2003 04 30 | 704 | 0.4+ | 0.2− | 2006 10 21 | 704 | 0.7− | 0.5+ | | |
| 2002 01 03 | 704 | 0.9+ | 1.5− | 2003 04 30 | 704 | 1.3+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.2− | | |
| 2002 01 08 | 704 | 0.5+ | 0.1+ | 2003 04 30 | 704 | 0.6+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 01 08 | 704 | 0.3− | 0.5+ | 2003 04 30 | 704 | 0.5− | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.2+ | | |
| 2002 01 08 | 704 | 0.4+ | 0.1+ | 2003 04 30 | 704 | 0.2+ | 1.1− | 2006 10 23 | 644 | 0.2+ | 0.3+ | | |
| 2002 01 08 | 704 | 0.2− | 0.1+ | 2003 05 08 | 704 | 0.6+ | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.3+ | | |
| 2002 01 08 | 704 | 0.4+ | 0.3+ | 2003 05 08 | 704 | 0.4+ | 1.2+ | 2006 10 23 | 644 | 0.2+ | 0.4+ | | |
| 2002 01 08 | 704 | 0.3− | 0.2+ | 2003 05 08 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.4− | 0.1+ | | |
| 2002 01 08 | 704 | 0.3+ | 0.2+ | 2003 05 08 | 704 | 1.0+ | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.2+ | | |
| 2002 01 08 | 704 | 0.4+ | 0.0 | 2003 05 08 | 704 | 1.0+ | 0.3+ | 2006 10 27 | 703 | 1.1− | 0.5− | | |
| 2002 01 08 | 704 | 0.4+ | 0.1+ | 2006 07 22 | G96 | 1.1− | 0.1− | 2006 10 27 | 703 | 0.1− | 0.6− | | |
| 2002 01 08 | 704 | 0.2+ | 0.3− | 2006 07 22 | G96 | 0.3+ | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.1− | | |
| 2002 01 09 | 704 | 0.0 | 0.2+ | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.7− | 0.2− | | |
| 2002 01 09 | 704 | 0.0 | 0.3− | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.1− | 0.4+ | | |
| 2002 01 09 | 704 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.9− | 0.2− | 2006 11 15 | 703 | 0.5+ | 0.8+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.6− | 0.0 | 2006 11 23 | 703 | 0.2− | 0.2+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.1− | 0.4+ | | |
| 2002 01 10 | 704 | 1.0− | 0.7+ | 2006 08 30 | 704 | 0.5− | 0.9+ | 2006 11 23 | 703 | 0.0 | 0.2+ | | |
| 2002 01 10 | 704 | 0.8− | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.1− | 2006 11 23 | 703 | 0.1+ | 0.1+ | | |
| 2002 01 10 | 704 | (2.3− | 0.1−) | 2006 09 20 | 699 | 0.4+ | 0.2+ | | | | | | |
| 2002 01 10 | 704 | 1.0− | 0.3+ | 2006 09 20 | 699 | 1.4− | 0.2− | | | | | | |

**(138806)∗ 2000 TK$_{39}$ = 2001 YS$_{64}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22692)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.50336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17893353 | $\omega$ | 274.35860 | | +0.96435051 | | +0.22063972 |
| $a$ | 3.1189487 | $\Omega$ | 72.94492 | | −0.13788406 | | +0.89018766 |
| $e$ | 0.2166381 | $i$ | 8.79063 | | −0.22586741 | | +0.39860261 |
| $P$ | 5.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 691 | 0.2+ | 0.2− | 2004 04 14 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 1995 12 23 | 691 | 0.1+ | 0.2+ | 2004 04 14 | 691 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.6− | | |
| 1995 12 23 | 691 | 0.1− | 0.1+ | 2004 04 14 | 691 | 0.3+ | 0.5+ | 2006 11 13 | 703 | 0.2− | 0.2− | | |
| 1995 12 23 | 691 | 0.1+ | 0.2+ | 2004 04 23 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.2+ | 0.3+ | | |
| 1999 06 12 | 691 | 0.1− | 0.7+ | 2004 04 23 | 691 | 0.5+ | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.6+ | | |
| 1999 06 12 | 691 | 0.0 | 0.6+ | 2004 04 23 | 691 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.7− | 0.4+ | | |
| 1999 06 12 | 691 | 0.0 | 0.7+ | 2006 10 16 | 703 | (2.1+ | 0.0 ) | 2006 11 14 | 704 | 0.0 | 0.8+ | | |
| 2000 09 20 | 608 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.6− | 0.9+ | | |
| 2000 09 20 | 608 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.5+ | | |
| 2000 09 20 | 608 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 14 | 704 | 0.0 | 0.6+ | | |
| 2000 09 24 | 699 | 0.7+ | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2000 09 24 | 699 | 0.2+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2000 09 24 | 699 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.2− | | |
| 2000 09 24 | 699 | 0.7+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 17 | 704 | 1.2+ | 0.7+ | | |
| 2000 10 01 | 704 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.8+ | 0.7+ | | |
| 2000 10 01 | 704 | 0.8+ | 0.7− | 2006 10 18 | 691 | 0.6− | 0.1+ | 2006 11 17 | 704 | 1.2+ | 0.0 | | |
| 2000 10 01 | 704 | 0.1+ | 0.3− | 2006 10 18 | 691 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.5− | | |
| 2000 10 01 | 704 | 0.2+ | 0.6− | 2006 10 20 | 703 | 0.4− | 0.5+ | 2006 11 17 | 704 | 0.6+ | 0.4+ | | |
| 2000 10 01 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 703 | 0.6− | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.3− | | |
| 2000 10 02 | 699 | 1.7− | 1.1+ | 2006 10 20 | 703 | 0.7+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.3− | | |
| 2000 10 02 | 699 | 1.9− | 1.0+ | 2006 10 20 | 703 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.2+ | | |
| 2000 10 02 | 699 | 0.8− | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.7− | | |
| 2000 10 02 | 699 | 1.4− | 1.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | (0.9+ | 1.7+) | | |
| 2001 12 18 | 704 | 0.9− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.7+ | 1.3+ | | |
| 2001 12 18 | 704 | (1.7+ | 1.5+) | 2006 11 02 | 703 | 0.1+ | 0.8+ | 2006 11 18 | 704 | 0.3− | 1.3+ | | |
| 2001 12 18 | 704 | 0.3− | 0.6+ | 2006 11 02 | 703 | 0.1− | 0.1+ | 2006 11 18 | 704 | 1.3− | 0.5− | | |
| 2001 12 18 | 704 | (0.3+ | 1.5+) | 2006 11 02 | 703 | 0.7− | 1.1− | 2006 11 20 | 704 | 0.7+ | 0.1− | | |
| 2001 12 18 | 704 | 0.2− | 0.3− | 2006 11 02 | 703 | 0.4− | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.0 | | |
| 2001 12 18 | 704 | (1.3+ | 2.0+) | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.7− | | |
| 2001 12 19 | 704 | 1.2− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.5+ | | |
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.2+ | | |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.8− | 0.2− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 1.2+ |
| 2002 01 14 | 704 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.5+ |
| 2002 01 14 | 704 | 0.9+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.3− | 1.2+ |
| 2002 01 14 | 704 | 1.2+ | 1.2+ | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.1− | 0.5+ |

**(138807)∗ 2000 TA$_{43}$ = 2003 FV$_{117}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46505)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.02735 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17957933 | $\omega$ | 241.94660 | | +0.83759193 | −0.52914208 | |
| $a$ | 3.1114666 | $\Omega$ | 149.41640 | | +0.54592687 | +0.81988519 | |
| $e$ | 0.0925724 | $i$ | 15.48310 | | −0.02009017 | +0.21862511 | |
| $P$ | 5.49 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.8− | 0.8+ | 2003 03 26 | 699 | 0.2− | 0.6− | 2005 09 29 | G96 | 0.0 | 0.2− |
| 2000 08 31 | 704 | 0.0 | 0.8+ | 2003 03 31 | 645 | 0.1+ | 0.3+ | 2005 09 29 | G96 | 0.4+ | 0.1− |
| 2000 08 31 | 704 | 1.1+ | 0.2+ | 2003 03 31 | 645 | 0.0 | 0.3+ | 2005 09 29 | G96 | 0.3+ | 0.1− |
| 2000 08 31 | 704 | 0.2+ | 0.1− | 2003 04 01 | 704 | 0.2+ | 1.2+ | 2005 10 03 | 644 | 0.5− | 0.1− |
| 2000 09 04 | 699 | (3.7− | 1.9−) | 2003 04 01 | 704 | 0.3+ | 0.4− | 2005 10 03 | 644 | 0.0 | 0.3− |
| 2000 09 04 | 699 | 0.7+ | 0.0 | 2003 04 01 | 704 | 0.8+ | 0.5− | 2005 10 03 | 644 | 0.2− | 0.3− |
| 2000 09 04 | 699 | 0.0 | 0.6− | 2004 04 22 | 691 | 0.2− | 0.1− | 2005 10 25 | G96 | 0.3− | 0.3+ |
| 2000 09 04 | 699 | 1.6− | 0.4+ | 2004 04 22 | 691 | 0.1+ | 0.3− | 2005 10 25 | G96 | 0.1+ | 0.0 |
| 2000 09 23 | 699 | 0.5− | 1.0+ | 2004 04 22 | 691 | 0.1− | 0.1+ | 2005 10 25 | G96 | 0.4− | 0.1− |
| 2000 09 23 | 699 | 0.7− | 0.3+ | 2005 06 29 | 644 | 0.8+ | 0.3− | 2005 10 25 | G96 | 0.1− | 0.0 |
| 2000 09 23 | 699 | 0.2− | 0.4+ | 2005 06 29 | 644 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.1+ | 0.0 |
| 2000 09 23 | 699 | 0.8− | 0.5+ | 2005 06 29 | 644 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.4+ | 0.0 |
| 2000 09 24 | 699 | 0.1+ | 0.6+ | 2005 07 04 | 691 | 0.1+ | 0.0 | 2005 10 25 | G96 | 0.4+ | 0.1− |
| 2000 09 24 | 699 | 0.8− | 0.6− | 2005 07 04 | 691 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.1+ | 0.1− |
| 2000 09 24 | 699 | 0.3− | 0.6+ | 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.4− |
| 2000 09 24 | 699 | 0.4− | 0.5+ | 2005 07 08 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.2− | 0.4+ |
| 2000 10 01 | 704 | 0.4+ | 1.2+ | 2005 07 08 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.5+ |
| 2000 10 01 | 704 | 0.2+ | 0.7+ | 2005 07 08 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.9− |
| 2000 10 01 | 704 | 0.2− | 0.5+ | 2005 07 12 | 703 | 0.6− | 0.4− | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2000 10 01 | 704 | 0.3− | 0.0 | 2005 07 12 | 703 | 0.7− | 0.4+ | 2006 10 28 | 703 | 0.5+ | 0.0 |
| 2000 10 01 | 704 | 0.5+ | 0.0 | 2005 07 12 | 703 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.3− | 0.3− |
| 2000 10 02 | 699 | 0.7+ | 0.7+ | 2005 07 12 | 703 | 0.9− | 0.4− | 2006 10 28 | 703 | 0.2− | 0.4+ |
| 2000 10 02 | 699 | 0.1− | 0.2− | 2005 07 30 | 599 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.2+ | 0.3+ |
| 2000 10 02 | 699 | 0.5+ | 1.0+ | 2005 07 30 | 599 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.7+ | 0.6− |
| 2000 10 02 | 699 | 0.7+ | 0.1− | 2005 07 30 | 599 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.1− | 0.3+ |
| 2003 03 25 | 644 | 0.4+ | 0.5+ | 2005 07 30 | 599 | 0.1+ | 0.3+ | 2006 11 16 | 703 | 0.6− | 0.5+ |
| 2003 03 25 | 644 | 0.2+ | 0.9+ | 2005 08 29 | 699 | 0.3+ | 1.5+ | 2006 11 16 | 703 | 0.2+ | 0.4+ |
| 2003 03 25 | 644 | 0.2− | 1.2+ | 2005 08 29 | 699 | 0.4+ | 0.8+ | 2006 11 16 | 703 | 0.2− | 0.3+ |
| 2003 03 26 | 699 | 0.2+ | 0.2+ | 2005 08 29 | 699 | 0.2− | 1.2+ | 2006 11 16 | 703 | 0.6+ | 0.7+ |
| 2003 03 26 | 699 | (2.1− | 0.8+) | 2005 08 29 | 699 | 0.7+ | 0.3+ | | | | |
| 2003 03 26 | 699 | 0.8− | 1.0+ | 2005 09 29 | G96 | 0.1+ | 0.3− | | | | |

**(138808)∗ 2000 TD$_{43}$ = 2001 XA$_{48}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22694)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.23569 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18594394 | $\omega$ | 40.12801 | | +0.05619214 | −0.98872776 | |
| $a$ | 3.0400545 | $\Omega$ | 47.14093 | | +0.86062957 | −0.02249509 | |
| $e$ | 0.1372511 | $i$ | 10.91333 | | +0.50612171 | +0.14802499 | |
| $P$ | 5.30 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.0 | 0.8+ | 2002 01 14 | 644 | 0.2+ | 0.1+ | 2003 05 05 | 704 | 0.1− | 0.7+ |
| 2000 09 23 | 699 | 0.1− | 0.6+ | 2002 01 14 | 644 | 0.0 | 0.1+ | 2003 05 05 | 704 | 0.4+ | 0.1+ |
| 2000 09 23 | 699 | 1.8− | 1.0+ | 2002 01 18 | 699 | 0.2+ | 0.0 | 2003 05 29 | 691 | 0.2+ | 0.2+ |
| 2000 09 23 | 699 | 0.8− | 1.6+ | 2002 01 18 | 699 | (2.1− | 1.5+) | 2003 05 29 | 691 | 0.3+ | 0.1+ |
| 2000 10 01 | 704 | 1.3− | 0.5+ | 2002 01 18 | 699 | 0.1− | 0.5− | 2003 05 29 | 691 | 0.3+ | 0.1+ |
| 2000 10 01 | 704 | 1.0− | 1.4+ | 2002 01 18 | 699 | (2.0− | 1.2−) | 2005 07 30 | 644 | 0.1− | 0.5+ |
| 2000 10 01 | 704 | 1.4− | 0.4+ | 2002 01 19 | 699 | 0.0 | 1.0− | 2005 07 30 | 644 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.1− | 1.3+ | 2002 01 19 | 699 | 0.3+ | 0.3+ | 2005 07 30 | 644 | 0.2− | 0.4+ |
| 2000 10 02 | 699 | 1.3− | 0.8+ | 2002 01 19 | 699 | 0.2− | 0.2+ | 2005 09 01 | 644 | 0.2− | 0.3+ |
| 2000 10 02 | 699 | 0.9− | 0.4+ | 2002 01 19 | 699 | 0.2− | 0.1+ | 2005 09 01 | 644 | 0.1− | 0.2+ |
| 2000 10 02 | 699 | 0.8− | 1.4+ | 2002 01 23 | 704 | 0.2− | 0.1− | 2005 09 01 | 644 | 0.2− | 0.2+ |
| 2000 10 02 | 699 | 1.5− | 0.8+ | 2002 01 23 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 704 | 0.0 | 0.6+ |
| 2000 11 30 | 691 | 0.2+ | 0.3+ | 2002 01 23 | 704 | 0.2− | 0.5+ | 2006 11 15 | 704 | 0.1− | 0.0 |
| 2000 11 30 | 691 | 0.2+ | 0.5+ | 2002 01 23 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 704 | 0.9− | 0.4+ |
| 2000 11 30 | 691 | 0.2+ | 0.3+ | 2002 01 23 | 704 | 0.7− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.8+ |
| 2001 11 11 | 704 | (0.3+ | 1.8+) | 2002 02 02 | 644 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.1+ |
| 2001 11 11 | 704 | 0.4+ | 0.7+ | 2002 02 02 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.8− | 0.3+ |
| 2001 11 11 | 704 | 0.1− | 1.1+ | 2002 02 02 | 644 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.8+ |
| 2001 11 20 | 699 | 0.4− | 0.2+ | 2002 02 10 | 704 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 2001 11 20 | 699 | (2.1− | 1.1+) | 2002 02 10 | 704 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2001 11 20 | 699 | (0.6+ | 2.0+) | 2002 02 10 | 704 | 0.6− | 0.3− | 2006 11 19 | 704 | 1.0+ | 0.4+ |
| 2001 11 20 | 699 | 0.6+ | 0.6+ | 2002 02 10 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | (2.6+ | 0.6+) | 2002 02 10 | 704 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2001 12 09 | 704 | (1.9+ | 0.3−) | 2003 04 11 | 644 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2001 12 09 | 704 | 1.1+ | 0.5+ | 2003 04 11 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.3− |
| 2001 12 09 | 704 | (1.8+ | 1.6−) | 2003 04 11 | 644 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2001 12 14 | 704 | (0.1− | 1.6+) | 2003 04 22 | 012 | 0.6+ | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.3+ | 2003 04 22 | 012 | 0.2− | 0.5+ | 2006 11 22 | 704 | 0.8− | 0.2+ |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2003 04 23 | 012 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2001 12 14 | 704 | 0.2− | 0.5+ | 2003 04 23 | 012 | 0.7− | 0.4+ | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2001 12 18 | 699 | 0.7− | 0.4+ | 2003 04 23 | 012 | 0.2− | 0.4+ | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 699 | 0.7+ | 0.5+ | 2003 04 30 | 691 | 0.8+ | 1.2+ | 2006 11 25 | 691 | 0.1− | 0.5+ |
| 2001 12 18 | 699 | (0.2− | 2.0−) | 2003 04 30 | 691 | 0.7+ | 1.3+ | 2006 11 27 | 704 | 0.3+ | 0.3+ |
| 2001 12 18 | 699 | 0.5+ | 0.0 | 2003 04 30 | 608 | 0.3+ | 0.6− | 2006 11 27 | 704 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | 0.1+ | 0.4− | 2003 04 30 | 608 | 0.0 | 0.7− | 2006 11 27 | 704 | 0.4+ | 0.2+ |
| 2001 12 22 | 704 | 0.4− | 0.4− | 2003 04 30 | 608 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2001 12 22 | 704 | 0.3+ | 0.4− | 2003 04 30 | 691 | 0.6+ | 1.3+ | 2006 11 29 | 704 | 0.8+ | 0.5+ |
| 2001 12 22 | 704 | 0.1− | 1.1− | 2003 05 05 | 704 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 1.4− | 0.5− |
| 2002 01 14 | 644 | 0.2+ | 0.2+ | 2003 05 05 | 704 | 0.3+ | 1.0+ | 2006 11 29 | 704 | 0.1+ | 0.5− |

**(138809)∗ 2000 TF$_{43}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.81750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17113676 | $\omega$ | 11.09422 | | +0.73634212 | −0.65282990 | |
| $a$ | 3.2129738 | $\Omega$ | 31.98348 | | +0.59224826 | +0.49481286 | |
| $e$ | 0.1385753 | $i$ | 19.61394 | | +0.32717317 | +0.57356199 | |
| $P$ | 5.76 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.4− | 0.6+ | 2002 02 21 | 704 | 0.4+ | 1.1+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2000 09 23 | 699 | 1.4− | 0.4+ | 2002 02 21 | 704 | 0.5− | 0.7+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2000 09 23 | 699 | 0.4+ | 0.3− | 2002 04 02 | 704 | 0.6+ | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2000 09 23 | 699 | 0.0 | 0.2+ | 2002 04 02 | 704 | 0.1− | 1.8+ | 2006 10 23 | 704 | (0.7− | 2.3+) |
| 2000 09 26 | 645 | 0.1+ | 0.2− | 2002 04 02 | 704 | 1.3+ | 1.5+ | 2006 10 23 | 704 | 0.0 | 1.1+ |
| 2000 09 26 | 645 | 0.1+ | 0.2− | 2002 04 02 | 704 | 1.0+ | 0.7+ | 2006 10 23 | 704 | 0.1− | 1.2+ |
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2005 07 03 | E12 | 0.0 | 0.6+ | 2006 10 23 | 704 | 1.2− | 1.5+ |
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2005 07 03 | E12 | 0.1− | 0.5+ | 2006 10 23 | 704 | 1.1− | 1.1+ |
| 2000 10 01 | 704 | 0.0 | 0.5+ | 2005 07 03 | E12 | 0.1− | 0.3+ | 2006 10 28 | 704 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.5− | 1.3+ | 2005 07 03 | E12 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2000 10 01 | 704 | 0.5− | 1.0+ | 2005 09 05 | E12 | 1.7+ | 0.7− | 2006 10 28 | 704 | 0.2− | 0.7+ |
| 2000 10 05 | 608 | (2.6+ | 2.2+) | 2005 09 05 | E12 | 0.7− | 0.2+ | 2006 10 28 | 704 | 0.8− | 0.1− |
| 2000 10 05 | 608 | (2.0+ | 2.3+) | 2005 09 05 | E12 | 0.8− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2000 10 05 | 608 | (2.2+ | 2.4+) | 2005 09 05 | E12 | 0.5− | 1.8+ | 2006 10 28 | 704 | 1.0+ | 0.7− |
| 2000 11 03 | 704 | 0.3− | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.2+ | 2006 10 28 | 691 | 1.4+ | 0.6− |
| 2000 11 03 | 704 | 0.3− | 0.5+ | 2006 09 16 | 699 | 0.4− | 0.5− | 2006 10 28 | 704 | 1.1− | 1.1+ |
| 2000 11 03 | 704 | 1.0+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2000 11 25 | 704 | 1.2+ | 0.3− | 2006 09 16 | 699 | 0.4− | 0.8− | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2000 11 25 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 1.8− | 2.0− | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2000 11 25 | 704 | 0.4− | 1.1+ | 2006 09 20 | 699 | 0.5− | 1.1− | 2006 11 11 | 703 | 0.6− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.7− | 0.3− | 2006 09 20 | 699 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.1+ | | |
| 2001 10 25 | 704 | 0.7− | 0.2− | 2006 09 20 | 699 | 0.3− | 0.8− | 2006 11 11 | 703 | 0.9− | 0.1− | | |
| 2001 10 25 | 704 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.4+ | | |
| 2001 11 08 | 704 | 0.7+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2001 11 08 | 704 | 0.5+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2001 11 08 | 704 | 1.0+ | 0.2− | 2006 09 26 | 704 | 0.4− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.2− | | |
| 2001 11 17 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.5+ | | |
| 2001 11 17 | 699 | 0.0 | 0.3− | 2006 09 26 | 704 | 0.2− | 0.5+ | 2006 11 19 | 704 | 1.6+ | 0.1+ | | |
| 2001 11 17 | 699 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2001 11 17 | 699 | 0.9− | 1.4+ | 2006 09 26 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.7+ | 0.6+ | | |
| 2001 12 23 | 704 | 0.7+ | 0.7− | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.4+ | | |
| 2001 12 23 | 704 | 0.5− | 1.5− | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2001 12 23 | 704 | 0.0 | 1.1− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.9+ | | |
| 2001 12 23 | 704 | 0.6− | 1.1− | 2006 10 01 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 1.0+ | 0.0 | | |
| 2001 12 23 | 704 | 0.8− | 0.9− | 2006 10 01 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.5+ | | |
| 2002 01 19 | 699 | 0.4− | 0.8− | 2006 10 01 | 691 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.8+ | 0.5+ | | |
| 2002 01 19 | 699 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.2+ | | |
| 2002 01 19 | 699 | 0.6+ | 0.9− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2002 01 19 | 699 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.2+ | 0.1+ | | |
| 2002 01 21 | 699 | 1.4− | 0.4− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6− | 0.3+ | | |
| 2002 01 21 | 699 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.5− | | |
| 2002 01 21 | 699 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.3− | | |
| 2002 01 21 | 699 | 0.9− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.0 | | |
| 2002 01 25 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.5− | 0.2+ | | |
| 2002 01 25 | 704 | 0.8− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | (4.0+ | 0.6−) | | |
| 2002 01 25 | 704 | 0.9+ | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 11 28 | 704 | 1.3− | 0.7− | | |
| 2002 01 25 | 704 | 0.9− | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.2− | 0.8+ | | |
| 2002 02 21 | 704 | 0.0 | 1.2+ | 2006 10 21 | 703 | 0.0 | 0.1+ | 2006 11 28 | 704 | (3.5+ | 0.3−) | | |
| 2002 02 21 | 704 | 0.2+ | 0.9+ | 2006 10 21 | 703 | 0.0 | 0.5− | 2006 11 28 | 704 | (4.1+ | 1.6−) | | |

**(138810)∗ 2000 TB$_{50}$ = 2001 TG$_{44}$**

Discovered 2000 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 19900)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.39307 | | (2000.0) | | | |
| $n$ | 0.17377565 | $\omega$ | 69.31147 | | −0.13976134 | −0.98598402 |
| $a$ | 3.1803636 | $\Omega$ | 29.18771 | | +0.82468252 | −0.16683932 |
| $e$ | 0.1155627 | $i$ | 10.76844 | | +0.54805612 | −0.00038862 |
| $P$ | 5.67 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.2− | 0.9− | 2003 03 09 | 704 | (1.4− | 3.1+) | 2006 09 27 | 691 | 0.2+ | 0.5+ | | |
| 2000 09 23 | 699 | 1.3− | 1.3+ | 2003 03 09 | 704 | 0.5− | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.6+ | | |
| 2000 09 23 | 699 | 0.9− | 0.0 | 2003 03 09 | 704 | (1.4+ | 1.6+) | 2006 10 11 | 691 | 0.4− | 0.1+ | | |
| 2000 09 23 | 699 | 0.9− | 0.6+ | 2003 03 14 | 608 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.0 | 0.2+ | | |
| 2000 10 01 | 699 | 1.0− | 0.0 | 2003 03 14 | 608 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2+ | | |
| 2000 10 01 | 699 | 0.0 | 0.7+ | 2003 03 14 | 608 | 0.1− | 0.2− | 2006 10 12 | A13 | 0.1− | 0.2− | | |
| 2000 10 01 | 699 | (0.6+ | 2.2+) | 2003 03 23 | 683 | (2.7− | 0.1+) | 2006 10 12 | A13 | 0.6− | 1.4− | | |
| 2000 10 01 | 699 | 0.0 | 0.5+ | 2003 03 23 | 683 | 0.5− | 0.5+ | 2006 10 12 | A13 | 0.9− | 0.3+ | | |
| 2000 10 02 | 704 | 0.8− | 1.0+ | 2003 03 23 | 683 | (2.2− | 0.2−) | 2006 10 15 | 691 | 0.3+ | 0.0 | | |
| 2000 10 02 | 704 | 1.0+ | 0.5+ | 2003 03 23 | 608 | 0.9+ | 0.7+ | 2006 10 15 | 691 | 0.3+ | 0.0 | | |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2003 03 23 | 608 | 1.1+ | 1.0+ | 2006 10 15 | 691 | 0.2− | 0.3+ | | |
| 2000 10 02 | 704 | 0.0 | 0.5+ | 2003 03 23 | 608 | 0.6+ | 0.4+ | 2006 10 17 | G96 | 0.2− | 0.1− | | |
| 2000 10 02 | 704 | 0.6− | 0.6+ | 2003 03 24 | 683 | 0.8+ | 1.2+ | 2006 10 17 | G96 | 0.1+ | 0.1− | | |
| 2001 10 14 | 704 | 0.2+ | 0.9− | 2003 03 24 | 683 | 1.4+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.3− | | |
| 2001 10 14 | 704 | (0.2+ | 1.6−) | 2003 03 24 | 683 | 0.9− | 0.2− | 2006 10 17 | G96 | 0.1− | 0.1− | | |
| 2001 10 14 | 704 | 0.7− | 0.8− | 2003 03 25 | 683 | 1.0+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.0 | | |
| 2001 10 14 | 704 | 0.2− | 0.6− | 2003 03 25 | 683 | 0.6+ | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.0 | | |
| 2001 10 15 | 704 | 0.3− | 1.3− | 2003 03 25 | 683 | 1.0+ | 0.8− | 2006 10 19 | 691 | 0.2− | 0.1+ | | |
| 2001 10 15 | 704 | 0.3− | 0.3+ | 2003 03 26 | 691 | 0.8+ | 1.1+ | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2001 10 15 | 704 | 0.1− | 0.8− | 2003 03 26 | 691 | 0.8+ | 1.1+ | 2006 10 19 | 644 | 0.2+ | 0.5+ | | |
| 2001 10 15 | 704 | 0.6+ | 0.8− | 2003 03 26 | 683 | 0.1+ | 1.1− | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2001 10 15 | 704 | 0.4− | 0.1− | 2003 03 26 | 691 | 0.6+ | 1.0+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2001 12 09 | 704 | 0.1− | 0.7− | 2003 03 26 | 683 | (1.9+ | 0.2−) | 2006 10 20 | 703 | 0.1+ | 0.0 | | |
| 2001 12 09 | 704 | 1.2+ | 1.1− | 2003 03 26 | 683 | 0.5+ | 0.5− | 2006 10 20 | 703 | 0.1+ | 0.1− | | |
| 2001 12 09 | 704 | (1.7− | 0.6−) | 2003 03 27 | 683 | (0.2+ | 1.7−) | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2001 12 09 | 704 | (1.7− | 0.1−) | 2003 03 27 | 683 | 0.1− | 1.1− | 2006 10 20 | 703 | 0.1+ | 0.4+ | | |
| 2001 12 11 | 704 | 0.9+ | 1.0− | 2003 03 27 | 683 | 1.4− | 0.3− | 2006 10 20 | 703 | 0.4− | 0.5− | | |
| 2001 12 11 | 704 | 1.2+ | 0.4− | 2003 03 30 | 704 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 12 11 | 704 | 0.4+ | 0.1− | 2003 03 30 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 691 | 0.5− | 0.1+ | | |
| 2001 12 11 | 704 | 0.6+ | 0.5− | 2003 03 30 | 704 | 0.9− | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 2001 12 11 | 704 | 0.3+ | 0.4− | 2003 03 30 | 704 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.2+ | | |
| 2001 12 14 | 704 | 0.6− | 0.4− | 2003 03 31 | 699 | 0.8+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 12 14 | 704 | 0.1− | 1.0− | 2003 03 31 | 699 | 1.5+ | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2003 03 31 | 699 | 0.4− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 2001 12 14 | 704 | (1.7− | 1.1−) | 2003 03 31 | 699 | 1.3− | 1.0+ | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 2001 12 14 | 704 | 0.3− | 0.4− | 2003 04 02 | 608 | 1.5+ | 0.9− | 2006 10 27 | G96 | 0.2+ | 0.1− | | |
| 2001 12 19 | 644 | 0.1− | 0.6+ | 2003 04 02 | 608 | (1.6+ | 0.1+) | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2001 12 19 | 644 | 0.1− | 0.5+ | 2003 04 02 | 608 | 1.3+ | 0.6− | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2001 12 19 | 644 | 0.0 | 0.2+ | 2003 04 09 | 704 | (2.3+ | 0.3−) | 2006 10 31 | 691 | 0.5− | 0.1− | | |
| 2001 12 20 | 644 | 0.0 | 0.4− | 2003 04 09 | 704 | 1.0+ | 0.0 | 2006 10 31 | 691 | 0.5− | 0.1− | | |
| 2001 12 20 | 644 | 0.3− | 0.6− | 2003 04 09 | 704 | 0.2− | 0.9+ | 2006 10 31 | 691 | 0.6− | 0.2− | | |
| 2001 12 20 | 644 | 0.1− | 0.2− | 2003 04 09 | 704 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2001 12 22 | 704 | (0.5+ | 2.0+) | 2003 04 10 | 691 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.4+ | | |
| 2001 12 22 | 704 | 0.1+ | 1.4+ | 2003 04 10 | 691 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.2+ | | |
| 2001 12 22 | 704 | (0.6+ | 1.5+) | 2003 04 10 | 691 | 0.5− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 2001 12 22 | 704 | (0.4− | 1.5+) | 2003 04 26 | 699 | (2.2− | 0.3−) | 2006 11 09 | 644 | 0.1− | 0.6+ | | |
| 2001 12 22 | 704 | (0.1+ | 2.5+) | 2003 04 26 | 699 | 0.4− | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.5+ | | |
| 2002 01 21 | 704 | 0.2+ | 0.9+ | 2003 04 26 | 699 | 1.0+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.3− | | |
| 2002 01 21 | 704 | 0.4+ | 0.1+ | 2003 04 26 | 699 | (0.6− | 1.9+) | 2006 11 11 | 703 | 0.4− | 0.6+ | | |
| 2002 01 21 | 704 | 0.4− | 0.0 | 2005 08 10 | E12 | (1.7+ | 1.6+) | 2006 11 11 | 703 | 0.1+ | 0.1+ | | |
| 2002 01 21 | 704 | 0.5− | 0.3+ | 2005 08 10 | E12 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.3− | | |
| 2002 03 17 | 704 | (1.6− | 0.6−) | 2005 08 10 | E12 | 0.1+ | 1.3+ | 2006 11 13 | G96 | 0.0 | 0.2− | | |
| 2002 03 17 | 704 | 0.2− | 0.2− | 2005 08 10 | E12 | 0.5+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.0 | | |
| 2002 03 17 | 704 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.1− | | |
| 2002 03 17 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.0 | 0.2− | | |
| 2003 02 28 | 608 | 0.3− | 0.7− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.9+ | | |
| 2003 02 28 | 608 | 0.2− | 0.6− | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.6+ | | |
| 2003 02 28 | 608 | 0.6− | 0.4− | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.7+ | | |
| 2003 03 06 | 704 | 0.7+ | 0.8+ | 2006 09 23 | 691 | (0.9− | 1.6+) | 2006 11 19 | 704 | 0.0 | 0.2+ | | |
| 2003 03 06 | 704 | 1.1+ | 1.2+ | 2006 09 27 | 704 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.7+ | | |
| 2003 03 06 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.6− | 0.3− | 2006 11 21 | 704 | 0.7− | 0.1+ | | |
| 2003 03 06 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.5+ | | |
| 2003 03 09 | 704 | (1.7+ | 0.6+) | 2006 09 27 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 1.1+ | | |
| 2003 03 09 | 704 | 0.9− | 0.9+ | 2006 09 27 | 691 | 0.6+ | 0.6+ | 2006 11 21 | 704 | 0.9− | 1.3+ | | |

**(138811)∗ 2000 TW$_{50}$ = 2001 XL$_{68}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22697)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.85660 | | (2000.0) | | | |
| $n$ | 0.17382379 | $\omega$ | 63.12744 | | −0.78186911 | −0.57270961 |
| $a$ | 3.1797763 | $\Omega$ | 80.94083 | | +0.44581197 | −0.78981627 |
| $e$ | 0.2515053 | $i$ | 14.44518 | | +0.43581232 | −0.21953121 |
| $P$ | 5.67 | $H$ | 13.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 699 | 0.8+ | 1.1+ | 2002 01 20 | 699 | 0.1+ | 0.0 | 2003 05 30 | 704 | 0.2+ | 0.4+ | | |
| 2000 09 30 | 699 | 0.0 | 0.1+ | 2002 01 20 | 699 | 0.0 | 0.4− | 2003 05 30 | 704 | 0.0 | 1.4+ | | |
| 2000 09 30 | 699 | 0.9− | 1.0− | 2002 01 20 | 699 | 0.2+ | 0.1− | 2003 05 30 | 704 | 0.2− | 1.1+ | | |
| 2000 09 30 | 699 | 0.2− | 0.4+ | 2002 01 20 | 699 | 0.2− | 0.1+ | 2003 05 30 | 704 | 0.2+ | 1.2+ | | |
| 2000 10 01 | 704 | 1.0− | 0.4+ | 2002 01 23 | 704 | 0.1+ | 0.9− | 2003 06 04 | 291 | 0.4+ | 1.0+ | | |
| 2000 10 01 | 704 | 0.5− | 0.1+ | 2002 01 23 | 704 | 0.5− | 0.6− | 2003 06 04 | 291 | 0.3+ | 0.4+ | | |
| 2000 10 01 | 704 | 1.3− | 0.2+ | 2002 01 23 | 704 | 0.7− | 0.2− | 2003 06 04 | 291 | 0.4+ | 0.5+ | | |
| 2000 10 01 | 704 | 0.3− | 0.5+ | 2002 01 23 | 704 | 0.7− | 0.3− | 2003 07 08 | 644 | 0.2+ | 0.0 | | |
| 2000 10 01 | 704 | 0.8− | 1.1+ | 2002 01 23 | 704 | 1.0− | 0.3− | 2003 07 08 | 644 | 0.0 | 0.4+ | | |
| 2000 10 02 | 699 | 0.3− | 0.3+ | 2002 02 11 | 699 | 0.0 | 0.2− | 2003 07 08 | 644 | 0.2+ | 0.5+ | | |
| 2000 10 02 | 699 | 0.6− | 0.0 | 2002 02 11 | 699 | 0.0 | 0.1− | 2005 10 02 | E12 | 0.6− | 0.6+ | | |
| 2000 10 02 | 699 | 0.5− | 0.4+ | 2002 02 11 | 699 | 0.1− | 0.4− | 2005 10 02 | E12 | 0.1− | 0.9+ | | |
| 2000 10 02 | 699 | 0.2− | 0.9+ | 2002 02 11 | 699 | 0.1− | 0.0 | 2005 10 02 | E12 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 699 | 0.3+ | 0.9+ | 2002 02 12 | 644 | 0.1+ | 0.0 | 2005 10 02 | E12 | 0.3− | 0.3+ |
| 2000 11 20 | 699 | 0.4− | 0.8+ | 2002 02 12 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2000 11 20 | 699 | 0.6− | 1.4+ | 2002 02 12 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2000 11 20 | 699 | 1.5− | 1.3+ | 2002 02 13 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2000 11 25 | 704 | 0.7+ | 0.7+ | 2002 02 13 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 1.0+ |
| 2000 11 25 | 704 | 0.6+ | 0.5+ | 2002 02 13 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.6+ | 0.5− |
| 2000 11 25 | 704 | 0.4− | 0.3+ | 2002 02 19 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.2+ |
| 2000 11 25 | 704 | 0.0 | 0.6+ | 2002 02 19 | 704 | 0.2− | 0.5+ | 2006 10 22 | 703 | 1.6− | 0.3+ |
| 2001 11 16 | 699 | 0.0 | 0.0 | 2002 02 19 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.4− |
| 2001 11 16 | 699 | 0.6+ | 0.7− | 2002 02 19 | 704 | 0.2+ | 0.4+ | 2006 11 01 | 703 | 0.5− | 0.2− |
| 2001 11 16 | 699 | 0.3+ | 0.2− | 2002 02 21 | 704 | 0.2− | 0.2+ | 2006 11 01 | 703 | 0.3− | 0.3+ |
| 2001 11 16 | 699 | 0.5+ | 0.2− | 2002 02 21 | 704 | 0.2+ | 0.2+ | 2006 11 01 | 703 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2002 02 21 | 704 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.4− | 0.8+ | 2002 02 21 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.6+ | 0.6+ | 2002 02 21 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | 0.9+ | 0.1+ | 2002 03 05 | 704 | 0.8+ | 1.0+ | 2006 11 13 | 703 | 0.2− | 0.2+ |
| 2001 11 24 | 704 | 0.3+ | 0.6+ | 2002 03 05 | 704 | (0.8+ | 1.7+) | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2001 11 24 | 704 | 0.8+ | 0.7+ | 2002 03 05 | 704 | 1.2+ | 1.1− | 2006 11 13 | 703 | 0.7− | 0.3− |
| 2001 11 24 | 704 | 0.6+ | 0.4+ | 2002 03 05 | 704 | 1.0+ | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 0.5+ | 0.3+ | 2002 03 05 | 704 | 0.5+ | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.8+ | 0.6+ | 2002 03 20 | 704 | 0.8+ | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.2− |
| 2001 12 10 | 704 | 0.4− | 1.3+ | 2002 03 20 | 704 | 0.9+ | 0.6− | 2006 11 19 | 703 | 0.9− | 0.3+ |
| 2001 12 10 | 704 | (1.0− | 1.9+) | 2002 03 20 | 704 | 0.7+ | 0.3− | 2006 11 19 | 703 | 0.0 | 0.1+ |
| 2001 12 10 | 704 | 0.8− | 0.8+ | 2002 03 20 | 704 | (1.7+ | 0.6−) | 2006 11 19 | 703 | 0.7− | 0.2− |
| 2001 12 10 | 704 | (1.8+ | 1.9+) | 2002 03 20 | 704 | 0.6+ | 1.5− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.0 | 0.5+ | 2002 04 03 | 704 | 0.3− | 0.4− | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.5+ | 0.5+ | 2002 04 03 | 704 | 1.3− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2002 04 03 | 704 | 0.8− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 0.6+ | 0.2+ | 2002 04 03 | 704 | 0.9− | 0.3+ | 2006 11 27 | 012 | 0.4+ | 0.2− |
| 2001 12 14 | 704 | 0.1+ | 0.0 | 2002 04 17 | 704 | 0.1− | 0.1+ | 2006 11 27 | 012 | 0.4+ | 0.2− |
| 2001 12 21 | 704 | 0.2+ | 1.4+ | 2002 04 17 | 704 | 0.3− | 0.0 | 2006 11 27 | 012 | 0.1+ | 0.2− |
| 2001 12 21 | 704 | 0.1− | 1.5+ | 2002 04 17 | 704 | 0.0 | 0.3+ | 2006 11 27 | 012 | 0.7+ | 0.2− |
| 2001 12 21 | 704 | 0.2+ | 1.3+ | 2002 04 17 | 704 | 0.1− | 0.1+ | 2006 11 27 | 012 | 0.1+ | 0.4− |
| 2001 12 21 | 704 | (0.2− | 1.7+) | 2002 04 17 | 704 | 0.2− | 0.2+ | 2006 11 27 | 012 | 0.3+ | 0.1− |
| 2001 12 21 | 704 | 0.2+ | 1.3+ | 2002 05 05 | 704 | 0.4− | 0.0 | 2006 11 27 | 012 | 0.6+ | 0.2− |
| 2002 01 07 | 699 | 0.1− | 0.2+ | 2002 05 05 | 704 | 0.2− | 0.5− | 2006 11 27 | 012 | 0.5+ | 0.1− |
| 2002 01 07 | 699 | 0.5− | 0.5+ | 2002 05 05 | 704 | 0.4− | 0.1− | 2006 11 27 | 012 | 0.5+ | 0.3− |
| 2002 01 07 | 699 | 0.2− | 0.2+ | 2002 05 05 | 704 | 1.0− | 0.3+ | 2006 11 28 | 012 | 0.5+ | 0.4− |
| 2002 01 07 | 699 | 0.4− | 0.2− | 2002 05 05 | 704 | 0.1− | 0.3− | 2006 11 28 | 012 | 0.3+ | 0.0 |
| 2002 01 08 | 704 | 0.2− | 0.3+ | 2002 05 14 | 704 | 0.4+ | 0.4+ | 2006 11 28 | 012 | 0.5+ | 0.0 |
| 2002 01 08 | 704 | 0.1− | 0.4+ | 2002 05 14 | 704 | 0.1+ | 0.3− | 2006 11 28 | 012 | 0.1+ | 0.3− |
| 2002 01 08 | 704 | 0.3− | 0.3+ | 2002 05 14 | 704 | 0.1− | 0.2+ | 2006 11 28 | 012 | 0.4+ | 0.0 |
| 2002 01 08 | 704 | 0.3− | 0.4+ | 2002 05 14 | 704 | 0.1+ | 0.7+ | 2006 11 28 | 012 | 0.0 | 0.1− |
| 2002 01 08 | 704 | 0.3− | 0.4+ | 2003 05 05 | 704 | 0.7+ | 0.7+ | 2006 11 28 | 012 | 0.2+ | 0.0 |
| 2002 01 11 | 699 | 0.1+ | 0.2− | 2003 05 05 | 704 | 0.1− | 0.8+ | 2006 11 28 | 012 | 0.3− | 0.3+ |
| 2002 01 11 | 699 | 0.2+ | 0.1− | 2003 05 05 | 704 | 0.9+ | 1.4+ | 2006 11 28 | 012 | 0.2− | 0.5+ |
| 2002 01 11 | 699 | 0.1+ | 0.2− | 2003 05 05 | 704 | 0.3+ | 1.3+ | 2006 11 28 | 012 | 0.1+ | 0.4+ |
| 2002 01 11 | 699 | 0.1+ | 0.3+ | 2003 05 30 | 704 | (2.3− | 0.5+) | | | | |

**(138812)∗ 2000 TY$_{54}$ = 1995 VM$_{14}$ = 2002 CN$_{92}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25276)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.31563 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18788857 | $\omega$ | 30.69890 | | +0.45451165 | | −0.89067876 |
| $a$ | 3.0190419 | $\Omega$ | 32.27098 | | +0.81318836 | | +0.41009431 |
| $e$ | 0.1369825 | $i$ | 1.12815 | | +0.36351595 | | +0.19624987 |
| $P$ | 5.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.2+ | 0.5− | 2002 02 07 | 704 | 0.9− | 0.3+ | 2005 11 25 | G96 | 0.6− | 0.0 |
| 1995 11 15 | 691 | 0.1+ | 0.2− | 2002 02 09 | 691 | 0.4+ | 0.4+ | 2005 11 25 | G96 | 0.2− | 0.6− |
| 1995 11 15 | 691 | 0.1+ | 0.5− | 2002 02 09 | 691 | 0.4+ | 0.5+ | 2005 11 25 | G96 | 0.1+ | 0.2− |
| 1995 11 20 | 691 | 0.2+ | 0.3+ | 2002 02 09 | 691 | 0.4+ | 0.4+ | 2005 11 25 | G96 | 0.1− | 0.3− |
| 1995 11 20 | 691 | 0.5− | 0.3− | 2002 02 10 | 704 | 0.1− | 0.5+ | 2005 12 01 | G96 | 0.3− | 0.2− |
| 1995 11 20 | 691 | 0.3− | 0.3− | 2002 02 10 | 704 | 0.5+ | 0.1+ | 2005 12 01 | G96 | 0.6+ | 0.1+ |
| 2000 10 01 | 704 | 1.1+ | 1.1+ | 2002 02 10 | 704 | 0.0 | 0.5+ | 2005 12 01 | G96 | 0.3− | 0.0 |
| 2000 10 01 | 704 | 0.3+ | 0.2− | 2002 02 10 | 704 | 0.6+ | 0.9+ | 2005 12 01 | G96 | 0.4+ | 0.1− |
| 2000 10 01 | 704 | 0.2+ | 0.7+ | 2002 02 10 | 704 | 0.2+ | 1.4+ | 2006 10 22 | G96 | 0.4− | 0.5− |
| 2000 10 01 | 704 | 0.5+ | 0.1+ | 2005 08 28 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2000 10 03 | 691 | 0.3− | 0.1− | 2005 08 28 | 691 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2000 10 03 | 691 | 0.1+ | 0.1− | 2005 08 28 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2000 10 03 | 691 | 0.2+ | 0.3+ | 2005 09 01 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2000 11 18 | 691 | 0.3− | 0.2+ | 2005 09 01 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2000 11 18 | 691 | 0.4+ | 0.2+ | 2005 09 01 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.7+ | 0.9− |
| 2000 11 18 | 691 | 0.2+ | 0.3+ | 2005 09 29 | G96 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.8− | 0.9− |
| 2002 02 07 | 704 | 1.0− | 0.2+ | 2005 09 29 | G96 | 0.4− | 0.7+ | | | | |
| 2002 02 07 | 704 | 0.7− | 0.1+ | 2005 09 29 | G96 | 0.6− | 0.2+ | | | | |

**(138813)∗ 2000 TO$_{56}$ = 2002 AG$_{80}$**

Discovered 2000 Oct. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 22698)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.67727 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18035710 | $\omega$ | 110.18211 | | +0.54561076 | | −0.82926834 |
| $a$ | 3.1025150 | $\Omega$ | 306.16505 | | +0.70206561 | | +0.53109449 |
| $e$ | 0.0925213 | $i$ | 8.61452 | | +0.45761641 | | +0.17393292 |
| $P$ | 5.46 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 699 | 1.7− | 0.6+ | 2002 01 08 | 704 | 1.1+ | 0.2− | 2005 11 01 | G96 | 0.2+ | 0.5− |
| 2000 09 02 | 699 | 1.1− | 0.3+ | 2002 01 08 | 704 | (2.2+ | 1.1+) | 2005 11 01 | G96 | 0.1+ | 0.2− |
| 2000 09 02 | 699 | 1.2− | 0.2− | 2002 01 08 | 704 | 1.2+ | 0.0 | 2006 10 23 | 703 | 0.6− | 1.3+ |
| 2000 09 02 | 699 | 1.3− | 0.1− | 2002 01 14 | 704 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.1+ | 0.2+ |
| 2000 10 02 | 699 | 0.1+ | 0.6− | 2002 01 14 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 703 | 0.2+ | 0.7+ |
| 2000 10 02 | 699 | 0.4+ | 0.0 | 2002 01 14 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 703 | 0.4+ | 0.3− |
| 2000 10 02 | 699 | 0.8+ | 1.0+ | 2002 01 14 | 704 | 0.3− | 0.7+ | 2006 11 02 | G96 | 0.3+ | 0.6− |
| 2000 10 02 | 699 | 0.7− | 0.3− | 2002 01 14 | 704 | 0.5+ | 1.0+ | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2000 10 03 | 704 | 0.6+ | 0.5+ | 2005 07 28 | 644 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2000 10 03 | 704 | 0.3+ | 0.0 | 2005 07 28 | 644 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.2+ | 0.6− |
| 2000 10 03 | 704 | 0.1+ | 1.0+ | 2005 07 28 | 644 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2000 10 03 | 704 | 1.1+ | 0.7+ | 2005 08 25 | 644 | 0.1− | 0.1− | 2006 11 15 | 703 | 1.1− | 0.3− |
| 2000 10 03 | 704 | 0.4+ | 0.9+ | 2005 08 25 | 644 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.9− |
| 2001 12 17 | 704 | 0.8− | 0.3+ | 2005 08 25 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.6− | 0.4+ | 2005 08 27 | 644 | 0.4+ | 0.0 | 2006 11 21 | 703 | 0.6+ | 0.9− |
| 2001 12 17 | 704 | 1.4− | 0.3− | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 11 21 | 703 | 0.1− | 0.7− |
| 2001 12 17 | 704 | 0.5− | 0.6− | 2005 08 27 | 644 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.6+ | 0.4− |
| 2001 12 17 | 704 | (1.8− | 0.6+) | 2005 11 01 | G96 | 0.3+ | 0.1+ | 2006 11 21 | 703 | 0.3+ | 0.5− |
| 2002 01 08 | 704 | 1.3+ | 1.3+ | 2005 11 01 | G96 | 0.3− | 0.2− | | | | |

**(138814)∗ 2000 TD$_{58}$ = 2000 US$_{113}$ = 2000 UN$_{113}$**

Discovered 2000 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 11071; d, *MPO* 24065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.13282 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18282947 | $\omega$ | 345.74680 | | +0.48045744 | | −0.86968097 |
| $a$ | 3.0744818 | $\Omega$ | 75.43100 | | +0.81566967 | | +0.39568169 |
| $e$ | 0.1990917 | $i$ | 6.71711 | | +0.32224778 | | +0.29511185 |
| $P$ | 5.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 15 | 691 | 0.3+ | 0.0 | 2002 02 08 | 704 | (2.3+ | 0.6+) | 2005 08 31 | 644 | 0.0 | 0.3+ |
| 1997 04 15 | 691 | 0.3+ | 0.1+ | 2002 02 08 | 704 | (2.1+ | 1.6+) | 2005 09 13 | 703 | 0.1− | 0.3− |
| 1997 04 15 | 691 | 0.1+ | 0.1− | 2002 02 08 | 704 | (2.9+ | 1.0+) | 2005 09 13 | 703 | 0.6+ | 0.5+ |
| 2000 09 30 | 699 | 0.3+ | 0.2+ | 2002 02 08 | 704 | (1.7+ | 0.0 ) | 2005 09 13 | 703 | 1.2− | 0.5− |
| 2000 09 30 | 699 | 1.0+ | 0.1− | 2002 02 12 | 704 | 1.1− | 1.1− | 2005 09 13 | 703 | 0.2+ | 1.0+ |
| 2000 09 30 | 699 | 0.4+ | 0.2− | 2002 02 12 | 704 | 1.0− | 0.3+ | 2006 09 18 | 691 | 0.5+ | 0.4+ |
| 2000 09 30 | 699 | 0.2+ | 0.3− | 2002 02 12 | 704 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.1− | 0.5+ | 2002 02 12 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | | |
| 2000 10 02 | 704 | (2.0+ | 0.3+) | 2002 03 11 | 644 | 0.5+ | 0.7+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | | |
| 2000 10 02 | 704 | 0.9− | 0.5+ | 2002 03 11 | 644 | 0.6+ | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2000 10 02 | 704 | 0.7− | 0.5+ | 2002 03 11 | 644 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.5+ | 0.2+ | | |
| 2000 10 06 | 608 | 1.4− | 1.3− | 2003 05 24 | 291 | 0.6+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.1+ | | |
| 2000 10 06 | 608 | 1.1− | 1.0− | 2003 05 24 | 291 | 0.4+ | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.0 | | |
| 2000 10 06 | 608 | 1.6− | 1.4− | 2003 05 24 | 291 | 0.9− | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.1− | | |
| 2000 10 29 | 704 | 0.4− | 1.2+ | 2005 07 29 | 644 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2000 10 29 | 704 | 0.2+ | 0.4− | 2005 07 29 | 644 | 0.1− | 0.8+ | 2006 10 29 | G96 | 0.7− | 0.2− | | |
| 2000 10 29 | 704 | 0.5+ | 1.1+ | 2005 07 29 | 644 | 0.3− | 0.6+ | 2006 10 29 | G96 | 0.3− | 0.2− | | |
| 2000 10 29 | 704 | 0.9− | 0.8+ | 2005 08 28 | E12 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.3− | 0.0 | | |
| 2000 10 29 | 704 | 0.3− | 0.3− | 2005 08 28 | E12 | 0.7+ | 0.4+ | 2006 10 29 | G96 | 0.6− | 0.4− | | |
| 2000 11 20 | 699 | 0.4+ | 0.9+ | 2005 08 28 | E12 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.2+ | | |
| 2000 11 20 | 699 | 0.8+ | 0.6+ | 2005 08 28 | E12 | 0.5+ | 0.2− | 2006 11 22 | G96 | 0.3− | 0.1+ | | |
| 2000 11 20 | 699 | 0.3+ | 0.2+ | 2005 08 31 | 644 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.9− | 0.5+ | | |
| 2000 11 20 | 699 | 0.2+ | 0.9+ | 2005 08 31 | 644 | 0.1+ | 0.2− | | | | | | |

**(138815)∗ 2000 TQ$_{64}$**

Discovered 2000 Oct. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.80286 | | | | | |
| $n$ | 0.32660542 | $\omega$ | 227.67094 | | −0.37382100 | +0.92612888 |
| $a$ | 2.0882723 | $\Omega$ | 20.54385 | | −0.80310459 | −0.29600587 |
| $e$ | 0.3826549 | $i$ | 8.26233 | | −0.46398370 | −0.23380724 |
| $P$ | 3.02 | $H$ | 18.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 691 | 0.1+ | 0.4− | 2000 12 01 | 568 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.6− | | |
| 2000 10 07 | 691 | 0.1− | 0.5− | 2002 01 17 | 291 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2+ | | |
| 2000 10 07 | 691 | 0.2− | 0.1− | 2002 01 17 | 291 | 0.5− | 1.0+ | 2006 09 25 | G96 | 0.1+ | 0.1+ | | |
| 2000 10 18 | 691 | 0.6+ | 0.2− | 2002 01 17 | 291 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.2+ | | |
| 2000 10 18 | 691 | 0.4+ | 0.5− | 2002 02 13 | 291 | 0.1+ | 1.0− | 2006 09 28 | 691 | 0.4+ | 0.0 | | |
| 2000 10 18 | 691 | 0.1+ | 0.6− | 2002 02 13 | 291 | 1.0+ | 0.8− | 2006 09 28 | 691 | 0.0 | 0.3+ | | |
| 2000 10 21 | 691 | 0.6+ | 0.9+ | 2002 02 13 | 291 | (0.1+ | 1.8−) | 2006 09 28 | 691 | 0.4− | 0.1+ | | |
| 2000 10 21 | 691 | 0.5− | 0.0 | 2003 09 26 | 696 | 0.0 | 0.4+ | 2006 10 15 | 691 | 1.0+ | 1.0− | | |
| 2000 10 30 | 691 | 0.0 | 1.9+ | 2003 09 26 | 696 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.7− | 0.3+ | | |
| 2000 10 30 | 691 | (3.0+ | 2.3+) | 2003 09 29 | 691 | 0.2− | 0.5+ | 2006 10 15 | 691 | (1.6− | 0.4+) | | |
| 2000 10 30 | 691 | 0.9+ | 0.7− | 2003 09 29 | 691 | 0.5+ | 0.4+ | 2006 10 31 | 691 | (1.0+ | 1.6+) | | |
| 2000 11 02 | 691 | 0.2+ | 0.5− | 2003 09 29 | 691 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.8+ | 0.6− | | |
| 2000 11 02 | 691 | 0.1− | 0.5− | 2003 10 21 | 291 | 0.7− | 0.5+ | 2006 10 31 | 691 | 0.6− | 0.4− | | |
| 2000 11 02 | 691 | 0.2+ | 0.3− | 2003 10 21 | 291 | 0.5− | 0.4+ | | | | | | |
| 2000 12 01 | 568 | 0.3− | 0.0 | 2003 10 21 | 291 | 0.1− | 0.3+ | | | | | | |

**(138816)∗ 2000 TG$_{65}$ = 2002 BU$_{14}$**

Discovered 2000 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 22703)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.02751 | | | | | |
| $n$ | 0.16327771 | $\omega$ | 229.85665 | | −0.48815470 | −0.87233047 |
| $a$ | 3.3152640 | $\Omega$ | 249.38269 | | +0.80934278 | −0.44076434 |
| $e$ | 0.2638316 | $i$ | 1.67062 | | +0.32660259 | −0.21158062 |
| $P$ | 6.04 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 17 | 691 | 0.0 | 0.2+ | 2002 02 11 | 704 | 0.6− | 0.8− | 2002 03 13 | 704 | 0.1− | 0.4− | | |
| 1999 08 17 | 691 | 0.2+ | 0.4+ | 2002 02 12 | 704 | 0.5− | 0.1− | 2002 03 15 | 704 | 0.5− | 0.5− | | |
| 1999 08 17 | 691 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.1+ | 0.3+ | 2002 03 15 | 704 | 0.4− | 0.2− | | |
| 2000 10 01 | 704 | 0.8+ | 0.5+ | 2002 02 12 | 704 | 0.6− | 0.4− | 2002 03 15 | 704 | 0.3− | 0.2− | | |
| 2000 10 01 | 704 | 0.5+ | 0.7− | 2002 02 12 | 704 | 0.8− | 0.3− | 2002 03 15 | 704 | 0.6− | 0.1− | | |
| 2000 10 01 | 704 | 0.9+ | 0.2− | 2002 02 12 | 704 | 0.3+ | 0.3− | 2002 03 15 | 704 | 0.6− | 0.1+ | | |
| 2000 10 01 | 704 | 0.2+ | 0.6+ | 2002 02 16 | 704 | 1.0− | 0.7− | 2005 10 01 | G96 | 0.4− | 0.3+ | | |
| 2000 10 01 | 704 | 0.2+ | 0.5+ | 2002 02 16 | 704 | 0.3− | 0.6− | 2005 10 01 | G96 | 0.1+ | 0.2+ | | |
| 2000 10 07 | 691 | 0.3+ | 0.0 | 2002 02 16 | 704 | (0.8+ | 1.9−) | 2005 10 01 | G96 | 0.4− | 0.3+ | | |
| 2000 10 07 | 691 | 0.0 | 0.5− | 2002 02 16 | 704 | 0.5− | 0.0 | 2005 10 01 | G96 | 0.9− | 0.0 | | |
| 2000 10 07 | 691 | 0.6+ | 0.1− | 2002 02 16 | 644 | 1.2+ | 1.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | | |
| 2000 10 21 | 691 | 0.9− | 0.4− | 2002 02 16 | 644 | 0.3+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | | |
| 2000 10 21 | 691 | 0.7− | 0.5− | 2002 02 16 | 644 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 21 | 691 | 0.5+ | 0.2+ | 2002 02 20 | 704 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.0 | | |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2002 02 20 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.3+ | 0.2+ | | |
| 2001 12 11 | 704 | 0.8− | 0.7+ | 2002 02 20 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | | |
| 2001 12 11 | 704 | 0.7− | 0.5+ | 2002 02 20 | 704 | 0.0 | 1.0+ | 2006 09 30 | 691 | 0.0 | 0.3+ | | |
| 2001 12 20 | 704 | 0.1+ | 0.3− | 2002 02 20 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.2+ | | |
| 2001 12 20 | 704 | 0.3− | 0.2+ | 2002 02 21 | 704 | 0.8+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2001 12 20 | 704 | 0.1+ | 0.1− | 2002 02 21 | 704 | 0.8+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1+ | | |
| 2001 12 20 | 704 | 0.3+ | 0.2− | 2002 02 21 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.2+ | | |
| 2001 12 20 | 704 | 0.4+ | 0.1+ | 2002 02 21 | 704 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | | |
| 2002 01 19 | 704 | 0.7+ | 1.0− | 2002 02 21 | 704 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.6− | 0.0 | | |
| 2002 01 19 | 704 | 0.2+ | 1.1− | 2002 02 22 | 704 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.3+ | | |
| 2002 01 19 | 704 | 0.1− | 0.6− | 2002 02 22 | 704 | 0.5− | 0.4+ | 2006 10 15 | 691 | 0.3− | 0.6+ | | |
| 2002 01 19 | 704 | 0.5+ | 0.1− | 2002 02 22 | 704 | 0.3− | 0.1+ | 2006 10 21 | 703 | (1.7− | 0.4+) | | |
| 2002 01 19 | 704 | 0.3− | 0.2− | 2002 02 22 | 704 | 0.3− | 0.8+ | 2006 10 21 | 703 | 1.5− | 0.3+ | | |
| 2002 01 22 | 704 | 0.2− | 0.1+ | 2002 02 22 | 704 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.1+ | | |
| 2002 01 22 | 704 | 0.2− | 0.1− | 2002 02 22 | 704 | 0.4− | 0.6+ | 2006 10 21 | 703 | 0.3+ | 0.3− | | |
| 2002 01 22 | 704 | 0.3− | 0.5− | 2002 02 22 | 704 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 2002 01 22 | 704 | 0.2− | 0.1+ | 2002 02 22 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2002 01 22 | 704 | 0.4− | 0.3+ | 2002 02 23 | 704 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2002 01 26 | 644 | 0.2− | 0.1− | 2002 02 23 | 704 | 0.5− | 0.5+ | 2006 10 27 | 691 | 0.3− | 0.0 | | |
| 2002 01 26 | 644 | 0.1− | 0.0 | 2002 02 23 | 704 | 0.6− | 0.6+ | 2006 10 27 | 691 | 0.2+ | 0.1− | | |
| 2002 01 26 | 644 | 0.3− | 0.2− | 2002 02 23 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.1− | | |
| 2002 02 05 | 644 | 0.1+ | 0.1− | 2002 03 05 | 644 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.2− | 0.1+ | | |
| 2002 02 05 | 644 | 0.2+ | 0.1− | 2002 03 05 | 644 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.9− | 0.1− | | |
| 2002 02 05 | 644 | 0.3+ | 0.4− | 2002 03 05 | 644 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.6+ | 0.4+ | | |
| 2002 02 06 | 644 | 0.2+ | 0.6+ | 2002 03 09 | 704 | 0.3− | 0.7+ | 2006 10 28 | G96 | 0.1− | 0.1+ | | |
| 2002 02 06 | 644 | 0.2+ | 0.4+ | 2002 03 09 | 704 | 0.1+ | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 2002 02 06 | 644 | 0.3+ | 0.5+ | 2002 03 09 | 704 | 0.4+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.5− | | |
| 2002 02 07 | 704 | 0.7+ | 0.2+ | 2002 03 09 | 704 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.4− | | |
| 2002 02 07 | 704 | 0.8+ | 1.0+ | 2002 03 09 | 704 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.4+ | 0.1+ | | |
| 2002 02 07 | 704 | 1.2+ | 0.6+ | 2002 03 10 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− | | |
| 2002 02 07 | 704 | 0.5+ | 0.3+ | 2002 03 10 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2002 02 07 | 704 | 0.4+ | 0.8+ | 2002 03 10 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.2− | | |
| 2002 02 11 | 704 | 0.2− | 0.4− | 2002 03 13 | 704 | 0.3+ | 0.8− | 2006 11 13 | 691 | 0.4+ | 0.2− | | |
| 2002 02 11 | 704 | 0.4− | 0.3− | 2002 03 13 | 704 | 0.8+ | 0.6− | 2006 11 13 | 691 | 0.0 | 0.5− | | |
| 2002 02 11 | 704 | 0.3− | 0.5− | 2002 03 13 | 704 | 0.2+ | 0.7− | | | | | | |
| 2002 02 11 | 704 | 0.2− | 0.6− | 2002 03 13 | 704 | 0.5+ | 0.4− | | | | | | |

**(138817)∗ 2000 UR$_{8}$ = 2002 BW$_{8}$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22706)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 264.89106 | | | | | |
| $n$ | 0.24679610 | $\omega$ | 247.68307 | | +0.57659320 | +0.80746719 |
| $a$ | 2.5171583 | $\Omega$ | 58.12711 | | −0.68517505 | +0.56098351 |
| $e$ | 0.0831468 | $i$ | 8.44029 | | −0.44505667 | +0.18246707 |
| $P$ | 3.99 | $H$ | 14.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.4− | 0.0 | 2002 03 02 | 644 | 1.1+ | 0.4+ | 2004 11 07 | 704 | 0.9− | 0.1+ | | |
| 1996 11 17 | 691 | 0.3− | 0.1− | 2002 03 03 | 608 | 1.0+ | 1.3+ | 2004 11 07 | 704 | 0.2− | 0.4− | | |
| 1996 11 17 | 691 | 0.4− | 0.1− | 2002 03 03 | 608 | 1.0+ | 0.7+ | 2004 11 07 | 704 | 0.2− | 0.1− | | |
| 2000 09 11 | 699 | 1.6− | 1.4+ | 2002 03 03 | 608 | 1.0+ | 1.0+ | 2004 11 12 | 703 | 0.1− | 0.3− | | |
| 2000 09 11 | 699 | 1.8− | 0.7+ | 2002 03 06 | 704 | 0.5+ | 1.2− | 2004 11 12 | 703 | 0.2− | 0.5− | | |
| 2000 09 11 | 699 | 0.6− | 1.5+ | 2002 03 06 | 704 | 0.9+ | 1.2− | 2004 11 12 | 703 | 0.0 | 0.0 | | |
| 2000 09 11 | 699 | 0.0 | 0.2− | 2002 03 06 | 704 | 0.4+ | 1.1− | 2004 11 12 | 703 | 0.1+ | 0.6− | | |
| 2000 10 24 | 704 | 0.6− | 0.7+ | 2002 03 06 | 704 | 0.2− | 0.7− | 2004 11 18 | 704 | 0.3+ | 0.2− | | |
| 2000 10 24 | 704 | 0.4− | 0.2+ | 2002 03 06 | 704 | 0.4+ | 1.3− | 2004 11 18 | 704 | 0.6− | 1.1− | | |
| 2000 10 24 | 704 | 0.4− | 0.5− | 2002 03 20 | 704 | 0.7− | 1.0+ | 2004 11 18 | 704 | 0.7+ | 0.8− | | |
| 2000 10 24 | 704 | 0.2+ | 0.3+ | 2002 03 20 | 704 | 0.3− | 0.6− | 2004 11 18 | 704 | 0.7+ | 0.3− | | |
| 2000 10 24 | 704 | 0.7− | 0.5+ | 2002 03 20 | 704 | 0.7− | 0.4− | 2004 11 18 | 704 | 0.0 | 0.6− | | |
| 2000 10 26 | 704 | 0.3− | 0.1− | 2002 03 20 | 704 | 0.3+ | 1.1− | 2004 11 19 | 703 | 0.0 | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 26 | 704 | 0.6+ | 0.2− | 2002 03 20 | 704 | 0.5− | 0.2− | 2004 11 19 | 703 | 0.3− | 1.2− | 2002 02 10 | 704 | 0.8− | 0.2+ |
| 2000 10 26 | 704 | 0.6− | 0.5+ | 2002 03 21 | 644 | 0.4+ | 0.1+ | 2004 11 19 | 703 | 0.3− | 0.1− | 2002 02 10 | 704 | 1.0− | 0.5+ |
| 2000 10 26 | 704 | 0.4− | 0.0 | 2002 03 21 | 644 | 0.3+ | 0.2+ | 2004 11 19 | 703 | 0.1+ | 1.1− | 2002 02 10 | 704 | 1.0− | 0.4+ |
| 2000 11 01 | 704 | 0.4− | 0.9+ | 2002 03 21 | 644 | 0.1+ | 0.1+ | 2004 11 20 | 704 | 0.3− | 0.0 | 2002 02 10 | 704 | 1.2− | 0.3+ |
| 2000 11 01 | 704 | 0.2− | 0.3+ | 2002 05 05 | 704 | 0.3+ | 0.1+ | 2004 11 20 | 691 | 0.6+ | 0.2− | 2002 02 10 | 704 | 0.9− | 0.3+ |
| 2000 11 01 | 704 | 0.9− | 1.0+ | 2002 05 05 | 704 | 0.5+ | 0.1+ | 2004 11 20 | 704 | 0.1− | 0.1+ | 2002 02 24 | 608 | 0.5+ | 0.6+ |
| 2000 11 01 | 704 | 0.3− | 0.3+ | 2002 05 05 | 704 | 0.1+ | 1.2+ | 2004 11 20 | 704 | 0.6− | 0.0 | 2002 02 24 | 608 | 0.8+ | 0.1− |
| 2000 11 01 | 704 | 0.1− | 1.2+ | 2004 08 23 | 097 | 0.0 | 0.2+ | 2004 11 20 | 691 | 0.1− | 0.2− | 2002 02 24 | 608 | 0.7+ | 1.3+ |
| 2000 11 02 | 704 | 0.9− | 1.7+ | 2004 08 23 | 097 | 0.4+ | 0.4+ | 2004 11 20 | 691 | 0.0 | 0.2− | 2002 03 02 | 644 | 0.7+ | 0.4+ |
| 2000 11 02 | 704 | 0.9− | 0.7+ | 2004 08 23 | 097 | 0.2− | 0.1+ | 2004 11 30 | 699 | 0.6+ | 0.4+ | 2002 03 02 | 644 | 0.6+ | 0.6+ |
| 2000 11 02 | 704 | 0.2− | 1.3+ | 2004 08 24 | 097 | 0.2− | 0.1+ | 2004 11 30 | 699 | 1.0− | 0.1+ | | | | |
| 2000 11 02 | 704 | 0.8− | 0.8+ | 2004 08 24 | 097 | 0.5+ | 0.5+ | 2004 11 30 | 699 | 0.1− | 0.8+ | | | | |
| 2000 11 02 | 704 | 1.2+ | 0.6+ | 2004 08 24 | 097 | 1.1+ | 0.6+ | 2004 11 30 | 699 | 1.5+ | 0.2− | | | | |
| 2000 11 19 | 739 | 0.0 | 0.1− | 2004 09 09 | 704 | 1.0− | 0.5+ | 2004 12 04 | 704 | 0.1+ | 0.9+ | | | | |
| 2000 11 19 | 739 | 0.3+ | 0.3+ | 2004 09 09 | 704 | 0.5− | 0.1+ | 2004 12 04 | 704 | 0.1+ | 0.2+ | | | | |
| 2000 11 19 | 739 | 0.2+ | 0.2+ | 2004 09 09 | 704 | 0.6− | 0.4− | 2004 12 04 | 704 | 0.2+ | 0.6− | | | | |
| 2000 11 19 | 739 | 0.3+ | 1.0+ | 2004 09 12 | 704 | 0.6− | 0.2− | 2004 12 04 | 704 | 0.5+ | 0.9− | | | | |
| 2000 11 21 | 704 | 0.4+ | 0.2− | 2004 09 12 | 704 | 0.6− | 0.6+ | 2004 12 04 | 704 | 0.1− | 0.3+ | | | | |
| 2000 11 21 | 704 | 0.2+ | 0.1− | 2004 09 12 | 704 | 0.4− | 0.2+ | 2004 12 09 | 703 | 1.3− | 0.8− | | | | |
| 2000 11 21 | 704 | 0.3+ | 0.1+ | 2004 09 12 | 704 | 0.4− | 0.0 | 2004 12 09 | 703 | 0.7− | 1.3− | | | | |
| 2000 11 21 | 704 | 0.3+ | 0.4+ | 2004 09 12 | 704 | 0.3− | 0.1+ | 2004 12 09 | 703 | 0.2+ | 1.5− | | | | |
| 2000 11 21 | 704 | 1.0+ | 0.5+ | 2004 09 17 | 704 | 1.0− | 1.1− | 2004 12 09 | 703 | 0.9+ | 0.8− | | | | |
| 2000 11 24 | 699 | 0.2+ | 0.2+ | 2004 09 17 | 704 | 0.2− | 0.7+ | 2004 12 14 | 703 | 0.3− | 0.2− | | | | |
| 2000 11 24 | 699 | 0.1+ | 0.2+ | 2004 09 17 | 704 | 0.8+ | 0.3− | 2004 12 14 | 703 | 0.2− | 0.1+ | | | | |
| 2000 11 24 | 699 | 1.1− | 0.2+ | 2004 09 17 | 704 | 0.1+ | 0.4− | 2004 12 14 | 703 | 0.6− | 0.4+ | | | | |
| 2000 11 24 | 699 | 0.1+ | 0.1− | 2004 09 17 | 704 | 0.7+ | 0.3+ | 2004 12 14 | 703 | 0.4− | 0.0 | | | | |
| 2000 11 26 | 704 | 0.4+ | 0.0 | 2004 10 07 | 699 | 0.7+ | 1.0+ | 2004 12 16 | 704 | 1.3+ | 0.4+ | | | | |
| 2000 11 26 | 704 | 0.1+ | 0.0 | 2004 10 07 | 699 | 0.2+ | 0.6+ | 2004 12 16 | 704 | 1.4+ | 1.3+ | | | | |
| 2000 11 26 | 704 | 0.5+ | 0.4− | 2004 10 07 | 691 | 0.0 | 0.1− | 2004 12 16 | 704 | 0.3+ | 0.3+ | | | | |
| 2000 11 26 | 704 | 0.2− | 0.4− | 2004 10 07 | 691 | 0.1+ | 0.0 | 2004 12 16 | 704 | 0.3+ | 0.1+ | | | | |
| 2000 11 26 | 704 | 0.4− | 0.3− | 2004 10 07 | 699 | 0.9+ | 0.2+ | 2004 12 16 | 704 | 0.9+ | 0.2+ | | | | |
| 2000 11 27 | 704 | 0.0 | 0.0 | 2004 10 07 | 699 | 0.5+ | 0.4+ | 2006 01 12 | 644 | 0.2− | 0.2+ | | | | |
| 2000 11 27 | 704 | 0.2+ | 0.0 | 2004 10 07 | 691 | 0.1+ | 0.0 | 2006 01 12 | 644 | 0.1− | 0.0 | | | | |
| 2000 11 27 | 704 | 0.3+ | 0.2+ | 2004 10 07 | 691 | 0.0 | 0.2+ | 2006 01 12 | 644 | 0.3− | 0.2+ | | | | |
| 2000 11 27 | 704 | 0.1+ | 0.1− | 2004 10 07 | 691 | 0.2+ | 0.0 | 2006 01 26 | 703 | 0.8− | 0.1+ | | | | |
| 2000 11 27 | 704 | 0.7+ | 0.5+ | 2004 10 07 | 691 | 0.2+ | 0.1+ | 2006 01 26 | 703 | 0.6− | 0.3+ | | | | |
| 2000 11 30 | 327 | 0.0 | 0.6+ | 2004 10 09 | 704 | 0.7+ | 0.1+ | 2006 01 26 | 703 | 0.4− | 0.6+ | | | | |
| 2000 11 30 | 327 | 1.1− | 1.0+ | 2004 10 09 | 704 | 0.1− | 0.2+ | 2006 01 26 | 703 | 0.3+ | 0.0 | | | | |
| 2000 11 30 | 327 | 1.0− | 0.4+ | 2004 10 09 | 704 | 0.3+ | 0.6+ | 2006 01 28 | 699 | 0.4− | 0.2− | | | | |
| 2000 12 21 | 704 | 0.4− | 0.0 | 2004 10 09 | 704 | 0.2+ | 0.3− | 2006 01 28 | 699 | 0.7− | 0.9+ | | | | |
| 2000 12 21 | 704 | 0.4− | 0.1+ | 2004 10 14 | 704 | 0.4− | 0.2− | 2006 01 28 | 699 | 0.3− | 0.5− | | | | |
| 2000 12 21 | 704 | 1.0− | 0.2+ | 2004 10 14 | 704 | 0.0 | 0.5− | 2006 01 28 | 699 | 0.4− | 0.3+ | | | | |
| 2000 12 30 | 699 | 0.5− | 0.6+ | 2004 10 14 | 704 | 0.2+ | 0.6− | 2006 02 22 | 703 | 0.6− | 0.3+ | | | | |
| 2000 12 30 | 699 | 0.2− | 0.5− | 2004 10 14 | 704 | 0.2− | 0.3− | 2006 02 22 | 699 | 0.1− | 0.6− | | | | |
| 2000 12 30 | 699 | 1.6− | 0.6+ | 2004 10 14 | 704 | 0.6− | 0.8− | 2006 02 22 | 703 | 0.9− | 0.4− | | | | |
| 2000 12 30 | 699 | 0.7− | 0.7+ | 2004 10 20 | 704 | 0.1+ | 0.1− | 2006 02 22 | 703 | 0.5− | 0.6− | | | | |
| 2001 01 04 | 691 | 0.2+ | 0.2− | 2004 10 20 | 704 | 0.0 | 0.4+ | 2006 02 22 | 699 | 0.2− | 0.0 | | | | |
| 2001 01 04 | 691 | 1.3+ | 0.4− | 2004 10 20 | 704 | 0.2− | 0.4− | 2006 02 22 | 703 | 0.6− | 0.2+ | | | | |
| 2001 01 04 | 691 | 0.4+ | 0.2− | 2004 10 20 | 704 | 0.7+ | 0.3− | 2006 02 22 | 699 | 0.2− | 0.2+ | | | | |
| 2001 01 19 | 704 | 0.7− | 0.2+ | 2004 10 20 | 704 | 0.1− | 0.0 | 2006 03 03 | 699 | 0.5+ | 0.1+ | | | | |
| 2001 01 19 | 704 | 0.3− | 0.1+ | 2004 10 23 | 691 | 0.1+ | 0.1− | 2006 03 03 | 699 | 0.6+ | 0.3− | | | | |
| 2001 01 19 | 704 | 0.1+ | 0.7+ | 2004 10 23 | 691 | 0.2+ | 0.1− | 2006 03 03 | 699 | 0.1+ | 0.1− | | | | |
| 2001 01 19 | 704 | 0.3+ | 0.1− | 2004 10 23 | 691 | 0.1+ | 0.1− | 2006 03 03 | 699 | 0.1− | 0.4+ | | | | |
| 2001 01 19 | 704 | 1.0+ | 0.3+ | 2004 10 24 | 699 | 0.9− | 0.2+ | 2006 03 09 | 703 | 0.3− | 0.5− | | | | |
| 2002 01 09 | 704 | 1.8+ | 0.7+ | 2004 10 24 | 699 | 0.5+ | 1.3− | 2006 03 09 | 703 | 0.8+ | 1.1− | | | | |
| 2002 01 09 | 704 | 0.1+ | 0.3− | 2004 10 24 | 699 | 0.7− | 0.2+ | 2006 03 09 | 703 | 0.3− | 0.2+ | | | | |
| 2002 01 09 | 704 | 0.8+ | 0.3+ | 2004 10 24 | 699 | 1.3+ | 0.3− | 2006 03 09 | 703 | 0.8− | 0.2− | | | | |
| 2002 01 09 | 704 | 1.1+ | 0.0 | 2004 10 24 | 699 | 0.4+ | 0.3+ | 2006 03 17 | 185 | 0.7− | 0.6− | | | | |
| 2002 01 18 | 704 | 0.3+ | 0.4+ | 2004 10 24 | 699 | 0.2+ | 0.2− | 2006 03 17 | 185 | 0.0 | 0.3− | | | | |
| 2002 01 18 | 704 | 0.4+ | 0.6+ | 2004 10 24 | 699 | 0.2+ | 0.3− | 2006 03 17 | 185 | 0.1− | 0.5+ | | | | |
| 2002 01 18 | 704 | 0.6− | 0.6+ | 2004 10 24 | 699 | 0.9+ | 0.2+ | 2006 03 19 | 704 | 0.3+ | 0.4+ | | | | |
| 2002 01 21 | 704 | 0.3+ | 0.0 | 2004 11 02 | 699 | 0.7+ | 0.2+ | 2006 03 19 | 704 | 0.3− | 0.2+ | | | | |
| 2002 01 21 | 704 | 0.1+ | 0.7− | 2004 11 02 | 699 | 0.5+ | 0.1− | 2006 03 19 | 704 | 0.1+ | 0.3− | | | | |
| 2002 01 21 | 704 | 0.2+ | 0.2− | 2004 11 02 | 699 | 0.1− | 0.6− | 2006 03 19 | 704 | 0.0 | 0.7− | | | | |
| 2002 01 21 | 704 | 0.7+ | 0.3− | 2004 11 02 | 699 | 0.9+ | 0.2− | 2006 03 19 | 704 | 0.6− | 0.3+ | | | | |
| 2002 01 21 | 644 | 0.0 | 0.6− | 2004 11 04 | 691 | 0.1− | 0.1− | 2006 03 25 | 703 | 1.1− | 0.8− | | | | |
| 2002 01 21 | 644 | 0.1+ | 0.4− | 2004 11 04 | 691 | 0.1− | 0.2− | 2006 03 25 | 703 | 0.6− | 0.6+ | | | | |
| 2002 01 21 | 644 | 0.1+ | 0.4− | 2004 11 04 | 691 | 0.2− | 0.1− | 2006 03 25 | 703 | 0.3− | 0.7− | | | | |
| 2002 02 10 | 704 | 0.8− | 0.2+ | 2004 11 04 | 699 | 0.0 | 0.0 | 2006 03 25 | 703 | 0.5− | 0.1− | | | | |
| 2002 02 10 | 704 | 1.0− | 0.5+ | 2004 11 04 | 699 | 0.0 | 0.2− | 2006 03 29 | 704 | 0.2+ | 0.2+ | | | | |
| 2002 02 10 | 704 | 1.0− | 0.4+ | 2004 11 04 | 699 | 0.3+ | 0.4− | 2006 03 29 | 704 | 0.5+ | 0.2+ | | | | |
| 2002 02 10 | 704 | 1.2− | 0.3+ | 2004 11 04 | 699 | 0.2+ | 0.0 | 2006 03 29 | 704 | 1.2+ | 1.2+ | | | | |
| 2002 02 10 | 704 | 0.9− | 0.3+ | 2004 11 04 | 703 | 0.2− | 0.3− | 2006 03 31 | 699 | 0.9+ | 0.7+ | | | | |
| 2002 02 24 | 608 | 0.5+ | 0.6+ | 2004 11 04 | 703 | 0.2− | 0.4− | 2006 03 31 | 699 | 0.5− | 0.3+ | | | | |
| 2002 02 24 | 608 | 0.8+ | 0.1− | 2004 11 04 | 703 | 0.4− | 0.7− | 2006 03 31 | 699 | 0.4− | 0.6+ | | | | |
| 2002 02 24 | 608 | 0.7+ | 1.3+ | 2004 11 04 | 703 | 0.4+ | 0.1− | 2006 03 31 | 699 | 0.4+ | 0.8− | | | | |
| 2002 03 02 | 644 | 0.7+ | 0.4+ | 2004 11 07 | 704 | 0.9− | 0.1+ | | | | | | | | |
| 2002 03 02 | 644 | 0.6+ | 0.6+ | 2004 11 07 | 704 | 0.7− | 0.5+ | | | | | | | | |

**(138818)∗ 2000 UK$_{15}$**

Discovered 2000 Oct. 29 by J. M. Roe at Oaxaca.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.90831 | | (2000.0) | | | |
| $n$ | 0.17982191 | $\omega$ | 19.03995 | | +0.33885743 | −0.94079697 |
| $a$ | 3.1086678 | $\Omega$ | 51.15375 | | +0.86173604 | +0.30661839 |
| $e$ | 0.2124471 | $i$ | 0.64427 | | +0.37760647 | +0.14452064 |
| $P$ | 5.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 29 | 732 | (1.2+ | 2.5−) | 2000 11 17 | 732 | 1.7− | 0.1− | 2002 03 16 | 704 | 0.4+ | 0.8+ | | |
| 2000 10 29 | 732 | 0.4+ | 1.6− | 2000 11 17 | 732 | 0.9− | 0.2− | 2005 08 29 | 691 | 0.1− | 0.2+ | | |
| 2000 10 30 | 732 | 0.4− | 0.1+ | 2000 11 17 | 732 | (2.2− | 0.8+) | 2005 08 29 | 691 | 0.3− | 0.3+ | | |
| 2000 10 30 | 732 | 0.2+ | 0.1− | 2000 11 21 | 704 | 1.1− | 1.1+ | 2005 08 29 | 691 | 0.2− | 0.3+ | | |
| 2000 10 30 | 732 | 0.6+ | 0.1+ | 2000 11 21 | 704 | 0.6− | 0.6+ | 2005 09 12 | 691 | 0.1− | 0.6+ | | |
| 2000 10 31 | 732 | 1.0− | 0.3− | 2000 11 21 | 704 | 0.2− | 1.1+ | 2005 09 12 | 691 | 0.2− | 0.3+ | | |
| 2000 10 31 | 732 | (2.3− | 0.8−) | 2000 11 21 | 704 | 0.8+ | 0.6− | 2005 09 12 | 691 | 0.1− | 0.4+ | | |
| 2000 10 31 | 732 | 0.5− | 0.4− | 2000 11 27 | 704 | 0.4+ | 1.4− | 2005 11 02 | 695 | 0.3+ | 0.2+ | | |
| 2000 11 01 | 732 | 0.8− | 1.0+ | 2000 11 27 | 704 | 0.5− | 0.8+ | 2005 11 03 | 695 | 0.1− | 0.2+ | | |
| 2000 11 01 | 732 | (2.7− | 1.3+) | 2000 11 27 | 704 | 0.1+ | 0.4+ | 2005 11 03 | 695 | 0.4− | 0.3+ | | |
| 2000 11 01 | 704 | 1.1+ | 0.9+ | 2000 11 27 | 704 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.4− | 0.1+ | | |
| 2000 11 01 | 704 | 0.3− | 0.1− | 2000 11 28 | 691 | 0.1+ | 0.2− | 2005 11 25 | G96 | 0.1+ | 0.0 | | |
| 2000 11 01 | 704 | 0.6− | 1.7+ | 2000 11 28 | 691 | 0.0 | 0.2− | 2005 11 25 | G96 | 0.0 | 0.0 | | |
| 2000 11 01 | 704 | 0.1− | 1.6+ | 2000 11 28 | 691 | 0.1+ | 0.1− | 2005 11 25 | G96 | 0.6+ | 0.6+ | | |
| 2000 11 02 | 732 | 0.5+ | 0.5− | 2000 12 04 | 691 | 0.8+ | 0.2− | 2006 09 18 | 691 | 0.4+ | 0.2+ | | |
| 2000 11 02 | 732 | 0.3− | 0.5+ | 2000 12 04 | 691 | 0.7+ | 0.4− | 2006 09 18 | 691 | 0.4− | 0.4+ | | |
| 2000 11 02 | 732 | 0.9− | 0.7− | 2000 12 04 | 691 | 0.6+ | 0.4− | 2006 09 18 | 691 | 0.6+ | 0.1+ | | |
| 2000 11 02 | 732 | (2.1− | 0.3−) | 2002 02 09 | 291 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.9− | 0.4− | | |
| 2000 11 02 | 704 | 0.5− | 0.1− | 2002 02 09 | 291 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.5− | 0.6− | | |
| 2000 11 02 | 704 | 0.8− | 0.0 | 2002 02 09 | 291 | 0.6+ | 0.9+ | 2006 10 31 | G96 | 0.4+ | 0.1− | | |
| 2000 11 02 | 704 | 0.6+ | 0.5+ | 2002 03 05 | 645 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.7− | 0.1− | | |
| 2000 11 02 | 704 | 0.8+ | 0.7+ | 2002 03 05 | 645 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.5− | | |
| 2000 11 02 | 704 | 0.5− | 0.1+ | 2002 03 16 | 704 | 0.9+ | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.2− | | |
| 2000 11 04 | 732 | 1.7+ | 0.3− | 2002 03 16 | 704 | 0.4+ | 1.3+ | 2006 11 15 | G96 | 0.5− | 0.1− | | |
| 2000 11 16 | 732 | 1.5− | 0.8+ | 2002 03 16 | 704 | 1.4+ | 1.3+ | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2000 11 16 | 732 | 1.7− | 0.8− | 2002 03 16 | 704 | (1.0+ | 2.1+) | | | | | | |

**(138819)∗ 2000 UL$_{22}$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.42031 | | (2000.0) | | | |
| $n$ | 0.17395907 | $\omega$ | 60.35224 | | −0.34734105 | −0.90769989 |
| $a$ | 3.1781276 | $\Omega$ | 51.89908 | | +0.72318685 | −0.41912390 |
| $e$ | 0.0959463 | $i$ | 17.40945 | | +0.59695475 | −0.02039776 |
| $P$ | 5.67 | $H$ | 14.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 24 | 704 | 0.3− | 1.0+ | 2002 02 11 | 699 | 0.4− | 0.1− | 2005 10 02 | E12 | 1.0− | 0.9+ | | |
| 2000 10 24 | 704 | 0.7− | 1.0+ | 2002 02 11 | 699 | 0.3− | 0.3− | 2005 10 02 | E12 | 0.2− | 0.2+ | | |
| 2000 10 24 | 704 | 0.6− | 0.8+ | 2002 02 11 | 699 | 0.2− | 0.5+ | 2006 10 27 | 703 | 1.0− | 1.0− | | |
| 2000 10 24 | 704 | 0.4− | 0.4+ | 2002 02 11 | 699 | 0.4− | 0.4− | 2006 10 27 | 703 | 0.1+ | 0.5− | | |
| 2000 10 31 | 704 | 0.2+ | 0.5+ | 2002 02 21 | 704 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.2− | 1.0− | | |
| 2000 10 31 | 704 | 0.1− | 0.5+ | 2002 02 21 | 704 | 0.1+ | 1.0+ | 2006 10 27 | 703 | 1.1− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 31 | 704 | 0.6− | 0.6+ | 2002 02 21 | 704 | 0.3+ | 0.9+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2000 10 31 | 704 | 0.2− | 0.6+ | 2002 02 21 | 704 | 0.1− | 0.9+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2000 10 31 | 704 | 1.9− | 0.3+ | 2002 02 21 | 704 | 0.3+ | 1.3+ | 2006 11 13 | 691 | 0.3+ | 1.0− |
| 2000 11 02 | 704 | 0.8+ | 1.2− | 2002 03 05 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 704 | (1.2− | 1.9−) |
| 2000 11 02 | 704 | 0.4+ | 0.1+ | 2002 03 05 | 704 | 0.7+ | 0.4− | 2006 11 15 | 704 | 0.4+ | 1.2+ |
| 2000 11 02 | 704 | 0.9− | 0.0 | 2002 03 05 | 704 | 0.2+ | 0.9− | 2006 11 15 | 704 | 0.2+ | 1.0+ |
| 2000 11 05 | 704 | 0.3− | 0.3− | 2002 03 21 | 704 | 0.9+ | 0.9− | 2006 11 15 | 704 | 0.3− | 0.3− |
| 2000 11 05 | 704 | 1.0− | 0.8− | 2002 03 21 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 704 | (0.8− | 2.2+) |
| 2000 11 05 | 704 | 0.1− | 0.6− | 2002 03 21 | 704 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.7− | 0.5+ |
| 2000 11 19 | 699 | 0.0 | 1.0+ | 2003 03 31 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.9+ | 0.7+ |
| 2000 11 19 | 699 | 0.7+ | 1.0+ | 2003 03 31 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2000 11 19 | 699 | 0.5+ | 0.7+ | 2003 03 31 | 691 | 0.3− | 0.3+ | 2006 11 16 | 704 | 1.2+ | 1.4− |
| 2000 11 19 | 699 | 0.5− | 0.5+ | 2003 04 02 | 608 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.4− | 0.6+ |
| 2000 11 21 | 704 | 0.5− | 0.5− | 2003 04 02 | 608 | 0.4+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.9+ |
| 2000 11 21 | 704 | 0.1− | 0.2+ | 2003 04 02 | 608 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.7+ |
| 2000 11 21 | 704 | 0.1− | 0.2− | 2003 04 29 | 699 | 0.4+ | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2000 11 21 | 704 | 0.1+ | 0.1− | 2003 04 29 | 699 | 0.3− | 0.7− | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2000 11 27 | 704 | 0.1− | 0.0 | 2003 04 29 | 699 | 0.5+ | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2000 11 27 | 704 | (2.2− | 0.0 ) | 2003 04 29 | 699 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2000 11 27 | 704 | 0.2− | 0.7+ | 2003 05 01 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2000 11 27 | 704 | 0.4+ | 0.8+ | 2003 05 01 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2000 11 27 | 704 | 0.1− | 0.2+ | 2003 05 01 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2000 11 27 | 704 | 1.1− | 0.2− | 2003 05 02 | 703 | (0.2− | 2.6+) | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2000 11 27 | 704 | (2.2+ | 1.0−) | 2003 05 02 | 703 | (1.1− | 1.6+) | 2006 11 22 | 704 | 1.4− | 0.4+ |
| 2000 11 27 | 704 | 0.8+ | 0.2+ | 2003 05 02 | 703 | 0.1− | 1.2+ | 2006 11 22 | 704 | 0.4− | 0.5+ |
| 2000 12 30 | 699 | 0.1− | 1.5+ | 2003 05 02 | 703 | (0.3+ | 1.7+) | 2006 11 22 | 704 | 0.7− | 0.3+ |
| 2000 12 30 | 699 | 0.2+ | 0.4+ | 2003 05 05 | 704 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2000 12 30 | 699 | 0.8− | 0.8+ | 2003 05 05 | 704 | 1.1+ | 0.4− | 2006 11 22 | 704 | 2.6+ | 0.1− |
| 2000 12 30 | 699 | 0.1− | 0.1+ | 2003 05 05 | 704 | 0.9+ | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2001 12 09 | 704 | 0.3+ | 0.3− | 2003 05 05 | 704 | 0.5+ | 0.4− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2001 12 09 | 704 | 0.2− | 1.0+ | 2005 09 26 | 704 | (0.1− | 2.0+) | 2006 11 23 | G96 | 0.5+ | 0.8− |
| 2001 12 09 | 704 | 0.3+ | 0.2+ | 2005 09 26 | 704 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2001 12 09 | 704 | 0.5+ | 1.2+ | 2005 09 26 | 704 | 0.6+ | 0.6+ | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2001 12 22 | 704 | 0.3+ | 0.0 | 2005 09 26 | 704 | 1.2− | 0.5+ | 2006 11 29 | 704 | 0.9− | 0.3+ |
| 2001 12 22 | 704 | 0.1− | 0.3− | 2005 10 02 | E12 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.9− | 0.3+ |
| 2001 12 22 | 704 | 0.1+ | 0.4− | 2005 10 02 | E12 | 0.8− | 1.3+ | 2006 11 29 | 704 | 0.5+ | 0.4− |

**(138820)∗ 2000 UN$_{22}$ = 2002 CM$_{64}$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25284)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.30890 | | (2000.0) | | | |
| $n$ | 0.17540931 | $\omega$ | 4.05347 | | +0.39621553 | −0.90638085 |
| $a$ | 3.1605861 | $\Omega$ | 62.65843 | | +0.83768508 | +0.29149118 |
| $e$ | 0.1574857 | $i$ | 9.49838 | | +0.37589488 | +0.30578856 |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 699 | 0.7− | 0.1+ | 2002 01 23 | 704 | 1.3+ | 1.0− | 2003 05 05 | 291 | 0.1+ | 0.4+ |
| 2000 09 25 | 699 | 0.1+ | 0.7− | 2002 01 23 | 704 | 0.9− | 0.6− | 2003 05 05 | 291 | 0.5+ | 0.7+ |
| 2000 09 25 | 699 | 0.7+ | 0.4+ | 2002 01 23 | 704 | 1.0− | 0.1+ | 2003 05 05 | 291 | 0.3+ | 0.5+ |
| 2000 09 25 | 699 | 0.2+ | 0.5+ | 2002 02 06 | 704 | 0.7− | 0.0 | 2005 08 30 | 699 | 0.7− | 0.2+ |
| 2000 09 30 | 699 | 0.7− | 0.1+ | 2002 02 06 | 704 | 0.8+ | 0.1+ | 2005 08 30 | 699 | 0.8− | 1.2+ |
| 2000 09 30 | 699 | 0.3− | 0.0 | 2002 02 06 | 704 | 0.5+ | 1.3+ | 2005 08 30 | 699 | (0.6− | 1.7+) |
| 2000 09 30 | 699 | 0.6+ | 1.2+ | 2002 02 06 | 704 | 0.0 | 1.0+ | 2005 08 30 | 699 | 0.5+ | 0.2− |
| 2000 09 30 | 699 | 0.3+ | 0.3+ | 2002 02 06 | 704 | 1.2+ | 1.3+ | 2005 09 25 | 703 | 0.3− | 0.7− |
| 2000 10 24 | 704 | 0.0 | 0.3+ | 2002 02 10 | 704 | 0.4+ | 0.4+ | 2005 09 25 | 703 | 0.1+ | 0.7+ |
| 2000 10 24 | 704 | 1.2− | 0.2+ | 2002 02 10 | 704 | 0.2+ | 0.2+ | 2005 09 25 | 703 | 0.7− | 0.3+ |
| 2000 10 24 | 704 | 0.3+ | 0.7+ | 2002 02 10 | 704 | 0.5+ | 0.0 | 2005 09 25 | 703 | 0.3+ | 1.1+ |
| 2000 10 24 | 704 | 1.0− | 0.0 | 2002 02 10 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2000 10 24 | 704 | 0.4+ | 0.5+ | 2002 02 10 | 704 | 0.5− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2000 10 31 | 704 | 0.3− | 1.0+ | 2002 03 21 | 644 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2000 10 31 | 704 | 0.4− | 0.2− | 2002 03 21 | 644 | 0.0 | 0.5+ | 2006 11 26 | 691 | 0.0 | 0.1+ |
| 2000 10 31 | 704 | 0.3+ | 0.0 | 2002 03 21 | 644 | 0.3− | 0.3+ | 2006 11 26 | 691 | 0.1− | 0.2− |
| 2000 10 31 | 704 | 1.2− | 0.7+ | 2002 04 01 | 644 | 0.1− | 0.3+ | 2006 11 26 | 691 | 0.0 | 0.2− |
| 2000 11 02 | 704 | 0.3+ | 1.1+ | 2002 04 01 | 644 | 0.0 | 0.6+ | 2006 11 26 | 691 | 0.1+ | 0.2− |
| 2000 11 02 | 704 | 0.1− | 1.1+ | 2002 04 01 | 644 | 0.0 | 0.3+ | 2006 11 26 | 691 | 0.2− | 0.2− |
| 2000 11 02 | 704 | 0.4− | 0.3− | 2003 04 29 | 691 | (1.0+ | 1.6+) | 2006 11 26 | 691 | 0.1+ | 0.1− |
| 2000 11 02 | 704 | 0.2− | 0.6+ | 2003 04 29 | 691 | (1.2+ | 1.8+) | | | | |
| 2000 11 02 | 704 | 0.4− | 0.7+ | 2003 04 29 | 691 | (1.1+ | 1.7+) | | | | |

**(138821)∗ 2000 UM$_{23}$ = 2002 CQ$_{185}$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25285)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.81684 | | (2000.0) | | | |
| $n$ | 0.17668079 | $\omega$ | 276.89254 | | +0.90332357 | −0.41522249 |
| $a$ | 3.1454045 | $\Omega$ | 107.68695 | | +0.42449437 | +0.82916320 |
| $e$ | 0.1490103 | $i$ | 6.49009 | | +0.06173377 | +0.37427086 |
| $P$ | 5.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 691 | 0.5+ | 0.8+ | 2000 11 02 | 704 | 1.0+ | 2.0+ | 2005 07 29 | 644 | 0.1− | 0.4+ |
| 1998 04 22 | 691 | 0.3+ | 0.6+ | 2000 11 02 | 704 | 1.6+ | 0.3− | 2005 07 29 | 644 | 0.4− | 0.2+ |
| 1998 04 22 | 691 | 0.4+ | 0.8+ | 2000 11 02 | 704 | 0.2− | 1.1− | 2005 07 29 | 644 | 0.2− | 0.4+ |
| 1999 06 15 | 691 | 0.5− | 0.5+ | 2000 11 02 | 704 | 0.7− | 0.3− | 2005 08 28 | E12 | 0.1− | 0.2− |
| 1999 06 15 | 691 | 0.6− | 0.4+ | 2000 11 19 | 699 | 0.4+ | 1.2+ | 2005 08 28 | E12 | 0.2− | 0.1− |
| 1999 06 15 | 691 | 0.3− | 0.9+ | 2000 11 19 | 699 | 1.0+ | 1.1+ | 2005 08 28 | E12 | 1.1+ | 0.3+ |
| 2000 10 24 | 704 | 1.0− | 1.1+ | 2000 11 19 | 699 | 1.2− | 0.1− | 2005 08 28 | E12 | 0.8+ | 0.3+ |
| 2000 10 24 | 704 | 1.0+ | 0.6+ | 2000 11 19 | 699 | 0.7− | 0.4+ | 2005 09 24 | 644 | 0.5− | 0.2+ |
| 2000 10 24 | 704 | 0.2− | 0.9+ | 2002 01 14 | 704 | 1.0+ | 0.8+ | 2005 09 24 | 644 | 0.2− | 0.2− |
| 2000 10 24 | 704 | (1.3− | 2.4+) | 2002 01 14 | 704 | 0.7+ | 1.2+ | 2005 09 24 | 644 | 0.0 | 0.0 |
| 2000 10 24 | 704 | 0.0 | 1.2+ | 2002 01 14 | 704 | 1.1+ | 0.7+ | 2005 09 26 | 703 | 0.1+ | 0.6+ |
| 2000 10 31 | 704 | 0.4− | 0.1+ | 2002 01 14 | 704 | 0.7+ | 0.1− | 2005 09 26 | 703 | 0.0 | 0.5+ |
| 2000 10 31 | 704 | 0.2− | 0.0 | 2002 02 10 | 704 | 0.4− | 1.1+ | 2005 09 26 | 703 | 0.9+ | 0.3+ |
| 2000 10 31 | 704 | 0.4+ | 0.4+ | 2002 02 10 | 704 | 0.0 | 0.7+ | 2005 09 26 | 703 | 0.4+ | 0.5+ |
| 2000 10 31 | 704 | 0.5− | 0.4+ | 2002 02 10 | 704 | (1.1+ | 1.7+) | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2000 10 31 | 704 | 1.2− | 0.1− | 2002 02 10 | 704 | 0.1+ | 1.5+ | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2000 11 01 | 704 | 0.3+ | 0.7+ | 2002 02 10 | 704 | 0.3+ | 0.5+ | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2000 11 01 | 704 | 0.0 | 0.1+ | 2002 02 12 | 704 | 0.6− | 0.1− | 2006 11 28 | 691 | 0.2− | 0.0 |
| 2000 11 01 | 704 | 0.4− | 0.3− | 2002 02 12 | 704 | 0.6− | 0.0 | 2006 11 28 | 691 | 0.2− | 0.0 |
| 2000 11 01 | 704 | 0.6− | 0.5+ | 2002 02 12 | 704 | 0.5+ | 0.7+ | 2006 11 28 | 691 | 0.1− | 0.1+ |
| 2000 11 01 | 704 | 0.1+ | 0.3− | 2002 02 12 | 704 | 0.4+ | 0.7+ | | | | |

**(138822)∗ 2000 UR$_{23}$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.85943 | | (2000.0) | | | |
| $n$ | 0.17687954 | $\omega$ | 352.48593 | | +0.52001189 | −0.83351507 |
| $a$ | 3.1430477 | $\Omega$ | 66.01183 | | +0.79391931 | +0.39104542 |
| $e$ | 0.2195725 | $i$ | 11.78859 | | +0.31508692 | +0.39030257 |
| $P$ | 5.57 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 24 | 704 | 0.1− | 0.4− | 2000 11 18 | 699 | 0.1− | 0.0 | 2005 09 02 | 644 | 0.1+ | 0.4+ |
| 2000 10 24 | 704 | 0.1+ | 0.5− | 2000 11 18 | 699 | 0.0 | 0.3+ | 2005 10 24 | 644 | 0.1− | 0.0 |
| 2000 10 24 | 704 | 0.2+ | 0.7− | 2000 11 27 | 704 | 0.4+ | 0.7− | 2005 10 24 | 644 | 0.3− | 0.2+ |
| 2000 10 24 | 704 | 0.2+ | 0.7+ | 2000 11 27 | 704 | 1.2+ | 0.9− | 2005 10 24 | 644 | 0.1+ | 0.2+ |
| 2000 10 24 | 704 | 0.2+ | 0.0 | 2000 11 27 | 704 | 0.6+ | 1.3− | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2000 10 31 | 704 | 0.2− | 0.4+ | 2000 11 27 | 704 | 0.6− | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2000 10 31 | 704 | 1.0− | 0.4− | 2000 12 30 | 699 | 0.6+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2000 10 31 | 704 | 0.2+ | 0.7+ | 2000 12 30 | 699 | 0.3− | 0.2− | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2000 10 31 | 704 | 0.2− | 0.1− | 2000 12 30 | 699 | 0.9− | 0.8+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2000 10 31 | 704 | 0.5+ | 0.1+ | 2000 12 30 | 699 | 0.3− | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.3− |
| 2000 10 31 | 704 | 0.2− | 0.8− | 2002 03 06 | 704 | 1.0+ | 0.4+ | 2006 11 19 | 704 | (0.4+ | 2.0−) |
| 2000 10 31 | 704 | 0.1+ | 0.6+ | 2002 03 06 | 704 | 0.0 | 0.2+ | 2006 11 19 | 704 | (0.7− | 1.6+) |
| 2000 10 31 | 704 | 0.2− | 0.8− | 2002 03 06 | 704 | 1.0− | 0.5− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2000 10 31 | 704 | 0.4+ | 0.2− | 2005 07 28 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 1.1− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 31 | 704 | 0.1− | 0.6− | 2005 07 28 | 644 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.4+ |
| 2000 11 02 | 704 | 0.0 | 0.9+ | 2005 07 28 | 644 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.9+ | 0.8+ |
| 2000 11 02 | 704 | 0.0 | 0.3− | 2005 08 28 | E12 | 0.2+ | 0.5− | 2006 11 22 | 704 | (0.3+ | 1.8+) |
| 2000 11 02 | 704 | 0.7+ | 0.0 | 2005 08 28 | E12 | 0.5+ | 0.1+ | 2006 11 22 | 704 | (1.8− | 1.0+) |
| 2000 11 02 | 704 | 0.7+ | 0.4− | 2005 08 28 | E12 | 1.0− | 0.9+ | 2006 11 27 | 704 | 0.3+ | 0.5+ |
| 2000 11 02 | 704 | 0.1+ | 0.4− | 2005 08 28 | E12 | 1.0− | 0.6+ | 2006 11 27 | 704 | 0.1− | 0.8+ |
| 2000 11 18 | 699 | 0.3− | 0.2+ | 2005 09 02 | 644 | 0.3+ | 0.6+ | 2006 11 27 | 704 | 0.1+ | 1.1+ |
| 2000 11 18 | 699 | 0.3− | 0.6+ | 2005 09 02 | 644 | 0.1+ | 0.4+ | | | | |

**(138823)∗ 2000 UR$_{24}$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.28661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17414992 | $\omega$ | 105.33179 | | −0.84561643 | −0.50374812 | |
| $a$ | 3.1758052 | $\Omega$ | 44.81322 | | +0.34061794 | −0.76388778 | |
| $e$ | 0.0892517 | $i$ | 14.50713 | | +0.41098937 | −0.40337735 | |
| $P$ | 5.66 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.7− | 0.4+ | 2002 01 25 | 704 | 0.8+ | 0.2− | 2003 05 29 | 691 | 0.6+ | 0.3+ |
| 2000 09 24 | 704 | 0.6− | 0.4+ | 2002 01 25 | 704 | 0.6+ | 0.2− | 2003 05 29 | 691 | 0.6+ | 0.5+ |
| 2000 09 24 | 704 | 0.5− | 0.2+ | 2002 02 12 | 644 | 0.2+ | 0.7− | 2003 05 29 | 691 | 0.6+ | 0.5+ |
| 2000 09 24 | 704 | 0.4− | 0.5+ | 2002 02 12 | 644 | 0.1+ | 0.2− | 2003 06 16 | 644 | 0.4+ | 0.3+ |
| 2000 10 02 | 704 | 0.2+ | 1.6+ | 2002 02 12 | 644 | 0.1+ | 0.2− | 2003 06 16 | 644 | 0.3+ | 0.2+ |
| 2000 10 02 | 704 | 0.3− | 0.1+ | 2002 03 05 | 704 | 0.6+ | 1.7+ | 2003 06 16 | 644 | 0.5+ | 0.4+ |
| 2000 10 02 | 704 | 1.3− | 0.5+ | 2002 03 05 | 704 | 0.5+ | 0.7+ | 2005 09 25 | 703 | 0.7− | 1.1+ |
| 2000 10 02 | 704 | 0.4− | 0.9+ | 2002 03 05 | 704 | 0.8+ | 0.9+ | 2005 09 25 | 703 | 0.3− | 0.2− |
| 2000 10 02 | 704 | 1.7− | 1.0+ | 2002 03 05 | 704 | 0.5− | 1.3+ | 2005 09 25 | 703 | (0.6+ | 2.3+) |
| 2000 10 24 | 704 | 1.1+ | 0.9− | 2002 03 05 | 704 | 0.2+ | 1.5+ | 2005 09 25 | 703 | 0.6− | 0.6− |
| 2000 10 24 | 704 | 0.2+ | 1.1− | 2003 03 10 | 704 | 0.5+ | 0.0 | 2005 09 26 | 704 | 1.4+ | 0.3− |
| 2000 10 24 | 704 | 0.5− | 0.9− | 2003 03 10 | 704 | 0.3− | 0.7+ | 2005 09 26 | 704 | 0.9− | 0.3+ |
| 2000 10 31 | 704 | 0.6+ | 0.3+ | 2003 03 10 | 704 | 0.6+ | 1.0+ | 2005 09 26 | 704 | 0.4− | 0.6− |
| 2000 10 31 | 704 | 0.0 | 0.2+ | 2003 03 10 | 704 | 0.9− | 0.5+ | 2005 09 26 | 704 | 0.3− | 0.2+ |
| 2000 10 31 | 704 | 0.1− | 0.0 | 2003 03 10 | 704 | 0.1+ | 0.9+ | 2005 10 10 | 703 | 1.5− | 1.4+ |
| 2000 10 31 | 704 | 0.3+ | 0.4+ | 2003 03 25 | 608 | 0.2+ | 0.7− | 2005 10 10 | 703 | 0.5+ | 1.8+ |
| 2000 11 02 | 704 | 0.4+ | 0.5− | 2003 03 25 | 608 | 0.6+ | 0.6− | 2005 10 10 | 703 | 1.5− | 1.2+ |
| 2000 11 02 | 704 | 0.1+ | 0.2+ | 2003 03 25 | 608 | 0.4+ | 0.3− | 2005 10 10 | 703 | 1.2− | 0.1+ |
| 2000 11 02 | 704 | 0.2− | 0.1− | 2003 03 26 | 699 | 0.4− | 0.8+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2000 11 02 | 704 | 0.1− | 0.2+ | 2003 03 26 | 699 | 0.4− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2000 11 02 | 704 | 0.6− | 0.9+ | 2003 03 26 | 699 | 0.5− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2000 11 03 | 704 | 0.4− | 0.3− | 2003 03 26 | 699 | 0.7+ | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2000 11 03 | 704 | 0.2− | 1.1+ | 2003 03 27 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 691 | 0.3+ | 0.0 |
| 2000 11 03 | 704 | 0.6− | 0.1+ | 2003 03 27 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.1− |
| 2000 11 03 | 704 | 0.4+ | 1.2+ | 2003 03 27 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2000 11 05 | 704 | 0.2− | 1.0+ | 2003 03 30 | 704 | 0.1− | 1.1+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2000 11 05 | 704 | 0.3+ | 1.0+ | 2003 03 30 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2000 11 05 | 704 | 0.6− | 0.7+ | 2003 03 30 | 704 | 0.5− | 0.7+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2000 11 05 | 704 | 0.1− | 0.8+ | 2003 03 30 | 704 | 0.8+ | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2000 11 05 | 704 | 0.0 | 0.6+ | 2003 04 02 | 704 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2000 11 05 | 704 | 0.4− | 0.3+ | 2003 04 02 | 704 | 0.4+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2000 11 05 | 704 | 0.4− | 1.0+ | 2003 04 02 | 704 | 0.6+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2000 11 05 | 704 | 0.9− | 0.2− | 2003 04 02 | 704 | 1.0+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2000 11 20 | 699 | 0.4− | 0.8+ | 2003 04 02 | 704 | 0.6+ | 1.0+ | 2006 11 14 | 703 | 0.8+ | 0.2− |
| 2000 11 20 | 699 | 0.0 | 0.1+ | 2003 04 04 | 699 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.1+ |
| 2000 11 20 | 699 | 0.3− | 0.9+ | 2003 04 04 | 699 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.4+ |
| 2000 11 20 | 699 | 1.1− | 0.5+ | 2003 04 04 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.2− |
| 2000 12 17 | 699 | 1.0− | 1.3+ | 2003 04 04 | 699 | 0.2− | 0.2+ | 2006 11 15 | 704 | 0.2− | 1.3+ |
| 2000 12 17 | 699 | 1.1+ | 0.9+ | 2003 04 04 | 699 | 0.9+ | 0.3− | 2006 11 15 | 704 | 0.0 | 0.8+ |
| 2000 12 17 | 699 | 0.7+ | 0.8+ | 2003 04 04 | 691 | 0.1− | 0.4+ | 2006 11 15 | 704 | 0.1− | 1.7+ |
| 2000 12 17 | 699 | 1.2− | 0.5+ | 2003 04 04 | 691 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.7− | 0.2+ |
| 2001 11 21 | 645 | 0.1− | 0.1− | 2003 04 08 | 704 | 0.2− | 1.0− | 2006 11 16 | 704 | 1.0− | 0.9+ |
| 2001 11 21 | 645 | 0.1− | 0.1− | 2003 04 08 | 704 | 0.8− | 0.1+ | 2006 11 16 | 704 | 1.8+ | 0.1+ |
| 2001 12 09 | 704 | 0.0 | 1.0− | 2003 04 08 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 704 | 0.3+ | 0.9+ |
| 2001 12 09 | 704 | 0.4− | 0.5− | 2003 04 08 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.1− | 1.3+ |
| 2001 12 09 | 704 | 0.1+ | 1.4− | 2003 04 11 | 644 | 0.1+ | 0.9+ | 2006 11 16 | 704 | 0.0 | 0.6+ |
| 2001 12 09 | 704 | 0.2− | 1.1− | 2003 04 11 | 644 | 0.2+ | 1.1+ | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2001 12 09 | 704 | 0.1+ | 0.2− | 2003 04 11 | 644 | 0.2+ | 0.9+ | 2006 11 16 | 704 | 0.2+ | 0.7+ |
| 2001 12 18 | 645 | 0.1− | 0.2− | 2003 04 14 | 699 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.5+ |
| 2001 12 18 | 645 | 0.1− | 0.2− | 2003 04 14 | 699 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2001 12 20 | 644 | 0.8+ | 0.0 | 2003 04 14 | 699 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2001 12 20 | 644 | 1.1+ | 0.3+ | 2003 04 14 | 699 | 1.7− | 1.6+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2001 12 20 | 644 | 0.5+ | 0.4+ | 2003 04 27 | 704 | 0.9+ | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.6+ |
| 2001 12 22 | 704 | 0.0 | 0.1+ | 2003 04 27 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2001 12 22 | 704 | 0.5− | 0.2+ | 2003 04 27 | 704 | 0.5+ | 1.3+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2001 12 22 | 704 | 0.4− | 0.6+ | 2003 04 27 | 704 | 0.4+ | 0.9+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | 0.8− | 0.1− | 2003 04 27 | 704 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.7− | 0.0 |
| 2001 12 22 | 704 | 0.1− | 0.3− | 2003 04 30 | 608 | (0.8− | 3.0+) | 2006 11 22 | 704 | 0.5− | 0.8+ |
| 2002 01 06 | 704 | 0.5− | 0.3+ | 2003 04 30 | 608 | (1.1− | 2.9+) | 2006 11 22 | 704 | 0.2+ | 0.6− |
| 2002 01 06 | 704 | 0.3− | 0.8+ | 2003 04 30 | 608 | (0.7− | 2.6+) | 2006 11 28 | 704 | 0.3− | 0.1− |
| 2002 01 06 | 704 | 0.5+ | 0.7+ | 2003 05 01 | 704 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 1.1− | 0.6− |
| 2002 01 06 | 704 | 0.2+ | 1.3+ | 2003 05 01 | 704 | 0.1+ | 0.6+ | 2006 11 28 | 704 | 1.6− | 1.0+ |
| 2002 01 21 | 699 | 0.2+ | 0.6+ | 2003 05 01 | 704 | 0.2− | 0.2+ | 2006 11 28 | 704 | 1.5− | 0.0 |
| 2002 01 21 | 699 | 0.6− | 0.1− | 2003 05 01 | 704 | 1.3+ | 0.0 | 2006 12 01 | G96 | 2.9+ | 2.2+ |
| 2002 01 21 | 699 | 1.5− | 0.2+ | 2003 05 01 | 704 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2002 01 21 | 699 | 0.8+ | 0.0 | 2003 05 05 | 704 | (1.3+ | 2.8+) | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2002 01 23 | 704 | 0.4+ | 0.8+ | 2003 05 05 | 704 | (1.7+ | 3.1+) | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2002 01 23 | 704 | 0.3− | 1.5+ | 2003 05 05 | 704 | (1.6+ | 3.5+) | 2006 12 01 | 704 | 0.9− | 0.1− |
| 2002 01 23 | 704 | 0.0 | 0.5+ | 2003 05 05 | 704 | (1.7+ | 3.3+) | 2006 12 01 | 704 | 0.1− | 0.7− |
| 2002 01 23 | 704 | 0.7+ | 0.4+ | 2003 05 05 | 704 | (0.7+ | 3.9+) | 2006 12 01 | 704 | 0.8− | 0.2+ |
| 2002 01 23 | 704 | 0.4− | 0.3− | 2003 05 08 | 703 | 1.7+ | 1.1− | 2006 12 01 | 704 | 0.5− | 1.0− |
| 2002 01 25 | 704 | 0.8+ | 0.4+ | 2003 05 08 | 703 | (5.7+ | 0.9+) | 2006 12 01 | 704 | 2.0− | 1.2− |
| 2002 01 25 | 704 | 0.5+ | 0.2− | 2003 05 08 | 703 | 0.3+ | 0.2− | | | | |
| 2002 01 25 | 704 | 0.7+ | 0.2− | 2003 05 08 | 703 | 2.0+ | 0.3− | | | | |

**(138824)∗ 2000 UK$_{28}$**

Discovered 2000 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.18169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18990969 | $\omega$ | 96.09554 | | +0.80362084 | −0.57445584 | |
| $a$ | 2.9975836 | $\Omega$ | 299.06976 | | +0.45094738 | +0.75830844 | |
| $e$ | 0.1544571 | $i$ | 10.25110 | | +0.38838126 | +0.30817009 | |
| $P$ | 5.19 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 699 | 0.3+ | 0.5− | 2002 02 06 | 644 | 0.2+ | 0.3+ | 2005 10 10 | 703 | 0.3− | 0.4− |
| 2000 09 22 | 699 | 0.9+ | 0.3+ | 2002 02 06 | 644 | 0.5+ | 0.5+ | 2005 10 13 | 704 | 0.4− | 0.6− |
| 2000 09 22 | 699 | 0.4+ | 0.5+ | 2002 02 13 | 645 | 0.0 | 0.0 | 2005 10 13 | 704 | 0.9− | 0.4− |
| 2000 09 22 | 699 | 0.1− | 0.0 | 2002 02 13 | 645 | 0.0 | 0.0 | 2005 10 13 | 704 | 0.1− | 1.1+ |
| 2000 10 25 | 704 | 0.3− | 0.6+ | 2002 03 06 | 644 | 0.1+ | 0.3+ | 2005 10 23 | 703 | 0.4− | 0.3− |
| 2000 10 25 | 704 | 0.3− | 0.1+ | 2002 03 06 | 644 | 0.1+ | 0.5+ | 2005 10 23 | 703 | 0.0 | 0.1+ |
| 2000 10 25 | 704 | 0.5− | 0.1− | 2002 03 06 | 644 | 0.2− | 0.5+ | 2005 10 23 | 703 | 0.3− | 0.5− |
| 2000 10 25 | 704 | 0.0 | 0.2+ | 2002 03 12 | 645 | 0.0 | 0.0 | 2005 10 23 | 703 | 1.0− | 0.8− |
| 2000 10 25 | 704 | 0.3− | 0.0 | 2002 03 12 | 645 | 0.1+ | 0.0 | 2005 11 01 | 699 | 0.9+ | 0.2− |
| 2000 10 31 | 704 | 0.1− | 0.4+ | 2005 09 02 | 644 | 0.2− | 0.3+ | 2005 11 01 | 699 | 0.1− | 0.3− |
| 2000 10 31 | 704 | 0.8− | 0.3− | 2005 09 02 | 644 | 0.1− | 0.1− | 2005 11 01 | 699 | 0.7+ | 0.9+ |
| 2000 10 31 | 704 | 1.2+ | 0.1− | 2005 09 02 | 644 | 0.0 | 0.0 | 2005 11 01 | 699 | 1.0+ | 1.2− |
| 2000 10 31 | 704 | 0.4− | 0.6− | 2005 09 11 | 699 | (2.0− | 0.8−) | 2005 11 03 | 704 | 0.5− | 0.6+ |
| 2000 10 31 | 704 | 0.4+ | 0.4+ | 2005 09 11 | 699 | 0.2− | 0.6+ | 2005 11 03 | 704 | 0.3+ | 0.3− |
| 2000 10 31 | 704 | 0.4+ | 0.1− | 2005 09 11 | 699 | 0.7+ | 0.2+ | 2005 11 03 | 704 | 0.3− | 1.3+ |
| 2000 10 31 | 704 | 0.1− | 0.0 | 2005 09 11 | 699 | 0.2− | 0.9+ | 2005 11 03 | 704 | 1.0+ | 0.2+ |
| 2000 10 31 | 704 | 0.2− | 0.3− | 2005 09 13 | 704 | 1.1+ | 0.6− | 2005 11 07 | 704 | 0.3− | 0.6+ |
| 2000 11 01 | 704 | 0.6− | 0.4+ | 2005 09 13 | 704 | 0.0 | 0.5− | 2005 11 07 | 704 | 0.2− | 0.5− |
| 2000 11 01 | 704 | 0.3+ | 0.5+ | 2005 09 13 | 704 | (0.5+ | 1.6+) | 2005 11 07 | 704 | 0.0 | 0.7− |
| 2000 11 01 | 704 | 0.6+ | 0.3+ | 2005 09 13 | 704 | 0.2+ | 0.2− | 2005 11 07 | 704 | 0.6− | 0.5− |
| 2000 11 01 | 704 | 0.5+ | 1.2+ | 2005 09 23 | 703 | 0.8− | 0.3− | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2000 11 19 | 704 | (2.1− | 0.4+) | 2005 09 23 | 703 | 1.0− | 0.8− | 2006 10 23 | G96 | 0.2− | 0.0 |
| 2000 11 19 | 704 | 0.3− | 0.8− | 2005 09 23 | 703 | (1.2− | 1.6−) | 2006 10 23 | G96 | 1.1− | 0.1+ |
| 2000 11 19 | 704 | 0.3+ | 0.1− | 2005 10 02 | 644 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.7− | 0.2− |
| 2000 12 19 | 704 | 0.5+ | 0.2− | 2005 10 02 | 644 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2000 12 19 | 704 | 0.3− | 0.1+ | 2005 10 02 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2000 12 19 | 704 | 0.5+ | 0.1− | 2005 10 03 | 703 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.9+ | 0.1+ |
| 2000 12 19 | 704 | 1.3− | 1.1− | 2005 10 03 | 703 | 0.6+ | 0.6+ | 2006 11 16 | G96 | 0.6− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.7+ | 0.0 | 2005 10 03 | 703 | 1.2+ | 0.9+ | 2006 11 16 | G96 | 0.7− | 0.1− |
| 2000 12 30 | 704 | 0.5+ | 1.1− | 2005 10 03 | 703 | 0.4+ | 0.6+ | 2006 11 16 | G96 | 0.7− | 0.4− |
| 2000 12 30 | 704 | 0.3− | 0.1+ | 2005 10 08 | 703 | 0.6− | 1.0+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2000 12 30 | 704 | 1.1− | 1.9− | 2005 10 08 | 703 | 0.0 | 1.1+ | 2006 11 27 | G96 | 0.4− | 0.0 |
| 2002 01 13 | 704 | 0.8− | 0.0 | 2005 10 08 | 703 | 1.0− | 0.6+ | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2002 01 13 | 704 | 0.6− | 0.3+ | 2005 10 08 | 703 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.4− | 0.3− |
| 2002 01 13 | 704 | 0.5+ | 0.6+ | 2005 10 10 | 703 | 0.1− | 0.4− | 2006 11 27 | G96 | 0.4− | 0.2− |
| 2002 01 13 | 704 | 0.0 | 0.6+ | 2005 10 10 | 703 | 0.2+ | 0.0 | | | | |
| 2002 02 06 | 644 | 0.3+ | 0.1+ | 2005 10 10 | 703 | 0.4+ | 0.0 | | | | |

**(138825)∗ 2000 UR$_{31}$**

Discovered 2000 Oct. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.42025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18737857 | $\omega$ | 73.26890 | | −0.77815824 | −0.62455819 | |
| $a$ | 3.0245176 | $\Omega$ | 68.03119 | | +0.54556942 | −0.72447230 | |
| $e$ | 0.1039952 | $i$ | 4.10016 | | +0.31116516 | −0.29166238 | |
| $P$ | 5.26 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.2− | 0.4− | 2002 01 09 | 704 | 0.1− | 0.4+ | 2005 10 07 | G96 | 0.2+ | 0.3− |
| 1995 12 18 | 691 | 0.1− | 0.4− | 2002 01 09 | 704 | 0.4− | 0.0 | 2005 10 07 | G96 | 0.4− | 0.2− |
| 1995 12 18 | 691 | 0.4− | 0.2− | 2002 01 12 | 644 | 0.5− | 0.1+ | 2005 10 07 | G96 | 0.2+ | 0.2− |
| 1995 12 23 | 691 | 0.1+ | 0.2+ | 2002 01 12 | 644 | 0.9+ | 0.8+ | 2005 10 07 | 703 | 0.2− | 0.6− |
| 1995 12 23 | 691 | 0.0 | 0.0 | 2002 01 12 | 644 | 0.3+ | 0.4+ | 2005 10 07 | 703 | 0.6− | 0.5− |
| 1995 12 23 | 691 | 0.1− | 0.4+ | 2002 02 08 | 704 | 0.2+ | 0.8+ | 2005 10 07 | 703 | 1.2− | 0.7+ |
| 2000 10 02 | 691 | 0.2+ | 0.3− | 2002 02 08 | 704 | 0.3+ | 0.7+ | 2005 10 07 | 703 | (4.9− | 1.0+) |
| 2000 10 02 | 691 | 0.3+ | 0.1− | 2002 02 08 | 704 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.7− | 0.7− |
| 2000 10 02 | 691 | 0.4+ | 0.3− | 2005 09 25 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2000 10 29 | 691 | 0.3+ | 0.1− | 2005 09 25 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2000 10 29 | 691 | 0.2+ | 0.1− | 2005 09 25 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2000 10 29 | 691 | 0.6+ | 0.1− | 2005 10 01 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2000 11 02 | 691 | 0.3− | 0.4+ | 2005 10 01 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2000 11 02 | 691 | 0.1+ | 0.4+ | 2005 10 01 | 691 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2000 11 02 | 691 | 0.0 | 0.3+ | 2005 10 06 | 691 | 0.3− | 0.4+ | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2002 01 09 | 704 | 0.7+ | 0.3− | 2005 10 06 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2002 01 09 | 704 | 0.4− | 0.9+ | 2005 10 06 | 691 | 0.5− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2002 01 09 | 704 | 0.1+ | 0.7+ | 2005 10 07 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.3− |

**(138826)∗ 2000 UY$_{42}$ = 2004 JK$_{33}$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64870)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.71855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16945754 | $\omega$ | 118.82550 | | +0.89629198 | +0.40078503 | |
| $a$ | 3.2341646 | $\Omega$ | 218.43940 | | −0.43091995 | +0.88820744 | |
| $e$ | 0.1392881 | $i$ | 17.77817 | | +0.10473151 | +0.22463058 | |
| $P$ | 5.82 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.2− | 0.2− | 2000 11 18 | 699 | 1.9+ | 1.5− | 2005 07 28 | 704 | 0.2− | 0.2+ |
| 1994 10 28 | 691 | 0.1− | 0.1− | 2000 11 18 | 699 | 0.4− | 0.3− | 2005 07 28 | 704 | 0.5− | 0.4− |
| 1994 10 28 | 691 | 0.1+ | 0.6− | 2000 11 18 | 699 | 0.2− | 0.7+ | 2005 08 29 | 644 | 0.1+ | 0.0 |
| 1998 04 27 | 561 | 0.5− | 1.6− | 2000 11 18 | 699 | 0.6− | 0.7+ | 2005 08 29 | 644 | 0.0 | 0.1+ |
| 1998 04 27 | 561 | 1.3− | 0.5− | 2004 05 15 | 704 | 0.0 | 0.6+ | 2005 08 29 | 644 | 0.0 | 0.1+ |
| 1998 04 27 | 561 | (1.6− | 3.1−) | 2004 05 15 | 704 | 1.0+ | 0.7+ | 2005 09 11 | 704 | 0.3− | 0.3+ |
| 1998 04 27 | 561 | 1.5− | 0.7− | 2004 05 15 | 704 | 0.1+ | 0.5+ | 2005 09 11 | 704 | 0.6+ | 0.4− |
| 1998 04 27 | 561 | 1.1+ | 1.1− | 2004 05 15 | 704 | 0.3− | 1.4+ | 2005 09 11 | 704 | 0.5+ | 0.4+ |
| 1998 04 27 | 561 | 1.0− | 0.6− | 2004 05 18 | 704 | 0.1+ | 0.3+ | 2005 09 11 | 704 | 0.3+ | 0.4− |
| 2000 10 24 | 704 | 0.3+ | 0.8+ | 2004 05 18 | 704 | 0.4+ | 0.3+ | 2005 10 07 | 699 | 1.0− | 0.1+ |
| 2000 10 24 | 704 | 0.3− | 0.3+ | 2004 05 18 | 704 | 0.8+ | 0.1− | 2005 10 07 | 699 | 0.2− | 0.5− |
| 2000 10 24 | 704 | 0.4− | 0.3+ | 2004 05 18 | 704 | (1.6− | 0.1+) | 2005 10 07 | 699 | 0.2+ | 0.0 |
| 2000 10 24 | 704 | (0.6+ | 2.2+) | 2004 05 22 | 704 | 0.3− | 0.9+ | 2005 10 07 | 699 | 1.4+ | 0.4− |
| 2000 10 24 | 704 | (1.1+ | 2.6+) | 2004 05 22 | 704 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2000 11 01 | 704 | 0.7+ | 0.2+ | 2004 05 22 | 704 | 0.2+ | 0.9− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2000 11 01 | 704 | 0.5+ | 0.3+ | 2004 06 16 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2000 11 01 | 704 | 0.1+ | 0.0 | 2004 06 16 | 704 | 0.4+ | 1.4+ | 2006 11 15 | 703 | 1.2− | 0.3+ |
| 2000 11 01 | 704 | 0.4+ | 0.4+ | 2004 06 16 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.9− | 0.4+ |
| 2000 11 01 | 704 | 0.6+ | 1.1+ | 2005 06 25 | 644 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2000 11 02 | 704 | 0.2+ | 1.0− | 2005 06 25 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.2− |
| 2000 11 02 | 704 | 0.5+ | 0.9+ | 2005 06 25 | 644 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2000 11 02 | 704 | 0.6+ | 1.0+ | 2005 07 28 | 704 | 0.4− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2000 11 02 | 704 | 0.3+ | 0.3− | 2005 07 28 | 704 | 0.4− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2000 11 02 | 704 | 0.8+ | 1.1+ | 2005 07 28 | 704 | 0.9− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2− |

**(138827)∗ 2000 UB$_{44}$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.59718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23011157 | $\omega$ | 151.67411 | | +0.40691983 | −0.91305498 | |
| $a$ | 2.6374066 | $\Omega$ | 274.30325 | | +0.83282918 | +0.38312366 | |
| $e$ | 0.1383649 | $i$ | 1.57045 | | +0.37524900 | +0.13981011 | |
| $P$ | 4.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 704 | (3.1− | 0.2−) | 2004 09 10 | 704 | 0.3+ | 0.8+ | 2004 10 14 | 691 | 0.1− | 0.2+ |
| 2000 09 07 | 704 | 2.3− | 0.6+ | 2004 09 10 | 704 | 0.9− | 0.7+ | 2004 10 14 | 691 | 0.1+ | 0.2+ |
| 2000 09 07 | 704 | (3.1− | 0.1−) | 2004 09 13 | 704 | 1.0− | 1.9+ | 2004 10 14 | 691 | 0.0 | 0.3− |
| 2000 09 07 | 704 | 2.3− | 0.0 | 2004 09 13 | 704 | 0.3− | 0.4+ | 2004 10 15 | 691 | 0.2+ | 0.0 |
| 2000 09 07 | 704 | (3.7− | 0.8+) | 2004 09 13 | 704 | 0.1+ | 0.0 | 2004 10 15 | 691 | 0.2+ | 0.0 |
| 2000 09 07 | 704 | 2.3− | 0.1− | 2004 09 13 | 704 | 1.1− | 0.1− | 2004 10 15 | 691 | 0.2+ | 0.0 |
| 2000 09 07 | 704 | (3.7− | 0.5+) | 2004 09 13 | 699 | 0.9− | 0.6+ | 2006 01 22 | 691 | 0.3+ | 0.1+ |
| 2000 09 07 | 704 | 1.8− | 0.4+ | 2004 09 13 | 699 | 0.1− | 1.4+ | 2006 01 22 | 691 | 0.1+ | 0.2+ |
| 2000 09 07 | 704 | (3.1− | 0.7+) | 2004 09 13 | 699 | 0.0 | 0.1− | 2006 01 22 | 691 | 0.3+ | 0.3+ |
| 2000 09 07 | 704 | 2.5− | 0.2+ | 2004 09 13 | 699 | 0.3+ | 0.2− | 2006 01 26 | 691 | 0.2+ | 0.2+ |
| 2000 10 24 | 704 | 0.3+ | 0.1− | 2004 09 18 | 843 | (2.8− | 1.1−) | 2006 01 26 | 691 | 0.2− | 0.2+ |
| 2000 10 24 | 704 | 1.3+ | 0.4− | 2004 09 18 | 843 | 2.1− | 1.6− | 2006 01 26 | 691 | 0.1+ | 0.3+ |
| 2000 10 24 | 704 | 0.2+ | 0.8+ | 2004 09 18 | 843 | 1.1− | 0.5− | 2006 01 27 | 291 | 0.1− | 0.5+ |
| 2000 11 01 | 704 | 0.6+ | 0.0 | 2004 09 18 | 704 | 0.5+ | 0.4+ | 2006 01 27 | 291 | 0.1− | 0.5+ |
| 2000 11 01 | 704 | 0.8+ | 0.5+ | 2004 09 18 | 843 | 1.8− | 1.0− | 2006 01 27 | 291 | 0.0 | 0.6+ |
| 2000 11 01 | 704 | 1.2+ | 0.3− | 2004 09 18 | 704 | 0.4+ | 0.1− | 2006 01 28 | G96 | 0.1− | 0.2− |
| 2000 11 01 | 704 | 0.7+ | 0.5− | 2004 09 18 | 704 | 0.2− | 0.2+ | 2006 01 28 | G96 | 0.1− | 0.3− |
| 2000 11 01 | 704 | 0.1+ | 0.3+ | 2004 09 18 | 704 | 0.6− | 0.7+ | 2006 01 28 | G96 | 0.1− | 0.0 |
| 2000 11 02 | 704 | 0.5+ | 0.1+ | 2004 09 18 | 704 | 0.2− | 0.8+ | 2006 01 28 | G96 | 0.5− | 0.3− |
| 2000 11 02 | 704 | 0.3− | 1.2+ | 2004 09 22 | 704 | 0.6+ | 0.5+ | 2006 01 30 | 691 | 0.0 | 0.3+ |
| 2000 11 02 | 704 | 0.8− | 0.4+ | 2004 09 22 | 704 | 0.2+ | 0.3+ | 2006 01 30 | 691 | 0.1− | 0.5+ |
| 2000 11 02 | 704 | 0.4+ | 0.1− | 2004 09 22 | 704 | 0.8+ | 1.0+ | 2006 01 30 | 691 | 0.1+ | 0.5+ |
| 2000 11 02 | 704 | 0.5+ | 0.3− | 2004 09 22 | 704 | 0.4+ | 0.5+ | 2006 01 31 | G96 | 0.5− | 0.1− |
| 2000 11 02 | 704 | 0.6+ | 0.5− | 2004 09 22 | 704 | 0.1+ | 0.7+ | 2006 01 31 | G96 | 0.4− | 0.1− |
| 2000 11 02 | 704 | 0.3+ | 0.0 | 2004 09 23 | 704 | 0.0 | 0.0 | 2006 01 31 | G96 | 0.3− | 0.0 |
| 2000 11 02 | 704 | 0.3+ | 0.2− | 2004 09 23 | 704 | 0.4+ | 0.9− | 2006 01 31 | G96 | 0.4− | 0.1− |
| 2000 11 02 | 704 | 0.5+ | 0.0 | 2004 09 23 | 704 | 0.0 | 0.6+ | 2006 02 20 | 703 | 0.1− | 1.3+ |
| 2000 11 02 | 704 | 0.4+ | 0.2− | 2004 09 23 | 704 | 0.4+ | 1.0+ | 2006 02 20 | 703 | 0.6− | 0.1+ |
| 2000 11 20 | 704 | 0.9+ | 0.3− | 2004 09 24 | 704 | 0.6− | 1.5+ | 2006 02 20 | 703 | 0.0 | 1.2+ |
| 2000 11 20 | 704 | 0.4+ | 0.4− | 2004 09 24 | 704 | 1.8− | 1.0+ | 2006 02 20 | 703 | 1.1− | 0.4− |
| 2000 11 20 | 704 | 0.6+ | 1.1− | 2004 09 24 | 704 | 0.4− | 0.5+ | 2006 02 24 | 704 | 1.5+ | 0.0 |
| 2000 11 20 | 704 | 0.4+ | 1.2− | 2004 10 07 | 704 | 0.3− | 0.4+ | 2006 02 24 | 704 | 1.2+ | 0.2+ |
| 2000 11 20 | 704 | 0.6− | 1.4− | 2004 10 07 | 704 | 0.7− | 0.3− | 2006 02 24 | 704 | 1.5+ | 0.8− |
| 2000 11 24 | 699 | 0.3− | 0.4− | 2004 10 07 | 704 | 0.0 | 0.5+ | 2006 02 24 | 704 | 1.2+ | 0.1− |
| 2000 11 24 | 699 | 0.2+ | 0.8− | 2004 10 07 | 704 | 0.2+ | 0.8+ | 2006 02 25 | 691 | 0.3+ | 0.1− |
| 2000 11 24 | 699 | 0.3+ | 0.4− | 2004 10 09 | 704 | 0.4− | 0.7+ | 2006 02 25 | 691 | 0.4+ | 0.1− |
| 2000 11 24 | 699 | 0.2+ | 0.2− | 2004 10 09 | 704 | 1.5− | 0.4− | 2006 02 25 | 691 | 0.3+ | 0.1− |
| 2001 01 04 | 691 | 0.4+ | 0.3− | 2004 10 09 | 704 | 0.1+ | 0.3+ | 2006 03 03 | G96 | 0.4− | 0.0 |
| 2001 01 04 | 691 | 0.6+ | 0.5− | 2004 10 09 | 704 | 0.2+ | 0.4+ | 2006 03 03 | G96 | 0.3− | 0.2+ |
| 2001 01 04 | 691 | 0.7+ | 0.5− | 2004 10 09 | 704 | 0.2+ | 0.6− | 2006 03 03 | G96 | 0.1− | 0.1+ |
| 2002 04 04 | 644 | 0.4+ | 0.2+ | 2004 10 10 | 704 | 1.6+ | 0.4− | 2006 03 03 | G96 | 0.0 | 0.2− |
| 2002 04 04 | 644 | 0.7+ | 0.4+ | 2004 10 10 | 704 | 0.5+ | 0.5+ | 2006 03 24 | 691 | 0.2+ | 0.3− |
| 2002 04 04 | 644 | 0.7+ | 0.2+ | 2004 10 10 | 704 | 1.2+ | 0.2+ | 2006 03 24 | 691 | 0.3− | 0.2− |
| 2004 09 10 | 704 | 0.1+ | 0.1− | 2004 10 11 | 691 | 0.1− | 0.0 | 2006 03 24 | 691 | 0.6− | 0.3+ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2004 09 10 | 704 | 0.2+ | 1.0+ | 2004 10 11 | 691 | 0.0 | 0.0 |
| 2004 09 10 | 704 | 0.1+ | 1.1+ | 2004 10 11 | 691 | 0.1+ | 0.1+ |

**(138828)∗ 2000 UD$_{52}$ = 1999 QL$_3$**

Discovered 2000 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 34969)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.59942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16953595 | $\omega$ | 158.46027 | | +0.86807681 | −0.48434024 | |
| $a$ | 3.2331673 | $\Omega$ | 230.97721 | | +0.43254237 | +0.84558339 | |
| $e$ | 0.0647374 | $i$ | 8.05718 | | +0.24361802 | +0.22450672 | |
| $P$ | 5.81 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 29 | 691 | 0.3− | 0.5− | 2000 12 16 | 691 | 0.3+ | 0.3+ | 2005 10 01 | 699 | 0.6− | 1.2+ |
| 1994 11 29 | 691 | 0.7+ | 1.4− | 2000 12 16 | 691 | 0.3+ | 0.3+ | 2005 10 01 | 699 | 0.0 | 0.4+ |
| 1994 11 29 | 691 | 0.0 | 0.5− | 2000 12 16 | 691 | 0.2+ | 0.3+ | 2005 10 27 | 644 | 0.4− | 0.1+ |
| 1999 08 20 | 143 | 1.0+ | 0.0 | 2001 01 21 | 691 | 0.0 | 0.5+ | 2005 10 27 | 644 | 0.5− | 0.2+ |
| 1999 08 20 | 143 | 0.2− | 1.2− | 2001 01 21 | 691 | 0.8− | 0.9+ | 2005 10 27 | 644 | 0.7− | 0.1− |
| 2000 10 24 | 704 | 0.3− | 0.5− | 2001 01 21 | 691 | 0.6− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2000 10 24 | 704 | 0.7+ | 0.1− | 2001 01 25 | 691 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2000 10 24 | 704 | 0.6+ | 0.0 | 2001 01 25 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2000 10 24 | 704 | 0.4+ | 0.7− | 2001 01 25 | 691 | 0.0 | 1.1+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2000 11 01 | 704 | 0.2+ | 0.9+ | 2002 02 03 | 608 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2000 11 01 | 704 | 0.6− | 0.3+ | 2002 02 03 | 608 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2000 11 01 | 704 | 0.5+ | 0.7+ | 2002 02 03 | 608 | 0.2− | 0.4− | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2000 11 01 | 704 | 1.0− | 0.3− | 2005 08 31 | 699 | 0.6− | 0.4+ | 2006 11 12 | G96 | 0.4− | 1.0− |
| 2000 11 02 | 704 | 1.2+ | 0.3− | 2005 08 31 | 699 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.5+ | 0.5− |
| 2000 11 02 | 704 | 0.4+ | 0.5− | 2005 08 31 | 699 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.1− | 1.2− |
| 2000 11 02 | 704 | 0.6− | 0.0 | 2005 08 31 | 699 | 0.5− | 1.1− | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2000 11 02 | 704 | 0.4+ | 0.1− | 2005 09 26 | A50 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.7+ | 0.0 |
| 2000 11 18 | 699 | 0.4− | 1.7+ | 2005 09 26 | A50 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2000 11 18 | 699 | 0.7− | 1.2+ | 2005 09 30 | 703 | 0.2− | 1.2+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2000 11 18 | 699 | 0.1− | 0.9− | 2005 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2000 11 18 | 699 | 0.0 | 0.3− | 2005 09 30 | 703 | 0.8+ | 0.9+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2000 11 21 | 704 | 0.2− | 0.9− | 2005 09 30 | 703 | 0.0 | 0.8+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2000 11 21 | 704 | 0.0 | 0.1+ | 2005 10 01 | 699 | 0.5− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2000 11 21 | 704 | 0.9+ | 1.4− | 2005 10 01 | 699 | (3.1− | 1.1+) | 2006 11 22 | 691 | 0.0 | 0.1− |

**(138829)∗ 2000 UL$_{58}$**

Discovered 2000 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.05973 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17754165 | $\omega$ | 271.38450 | | −0.65645052 | −0.71947869 | |
| $a$ | 3.1352286 | $\Omega$ | 222.68183 | | +0.75341988 | −0.64037634 | |
| $e$ | 0.2042123 | $i$ | 19.54216 | | −0.03783126 | −0.26882810 | |
| $P$ | 5.55 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.5+ | 0.2+ | 2002 01 12 | 644 | 0.6+ | 0.1− | 2003 06 03 | 691 | 0.3+ | 0.5+ |
| 2000 10 25 | 704 | 0.3+ | 0.2+ | 2002 01 12 | 644 | 0.5+ | 0.4+ | 2003 06 04 | 291 | 0.3− | 0.3+ |
| 2000 10 25 | 704 | 0.8− | 0.4+ | 2002 01 13 | 704 | 0.7− | 0.1− | 2003 06 04 | 291 | 0.2− | 0.3+ |
| 2000 10 25 | 704 | 0.8− | 2.0+ | 2002 01 13 | 704 | 1.0− | 0.2− | 2003 06 04 | 291 | 0.2− | 0.3+ |
| 2000 10 25 | 704 | 0.6− | 0.7+ | 2002 01 13 | 704 | 0.4− | 0.2− | 2003 07 08 | 644 | 0.2− | 0.2+ |
| 2000 11 01 | 704 | 1.3− | 0.5+ | 2002 01 13 | 704 | 1.4− | 0.4− | 2003 07 08 | 644 | 0.1− | 0.2+ |
| 2000 11 01 | 704 | 0.3− | 0.1+ | 2002 01 13 | 704 | 0.9− | 0.1+ | 2003 07 08 | 644 | 0.0 | 0.1+ |
| 2000 11 01 | 704 | 0.8+ | 1.0− | 2002 02 13 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.3− |
| 2000 11 01 | 704 | 0.7+ | 0.1+ | 2002 02 13 | 704 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.4+ |
| 2000 11 01 | 704 | 0.0 | 0.6+ | 2002 02 13 | 704 | 0.3+ | 0.9+ | 2006 09 16 | 703 | 0.5− | 1.0− |
| 2000 11 03 | 704 | 1.0+ | 1.5+ | 2002 02 13 | 704 | 0.1− | 0.6+ | 2006 09 16 | 703 | (1.0+ | 1.8+) |
| 2000 11 03 | 704 | 0.9− | 0.5+ | 2002 02 13 | 704 | 0.3− | 1.0+ | 2006 10 01 | 703 | 0.0 | 0.8+ |
| 2000 11 03 | 704 | 0.5+ | 0.5+ | 2002 03 18 | 704 | 0.0 | 0.2+ | 2006 10 01 | 703 | (2.3− | 1.0−) |
| 2000 11 03 | 704 | 0.3+ | 0.7+ | 2002 03 18 | 704 | 0.2+ | 0.6+ | 2006 10 01 | 703 | (1.6− | 0.6−) |
| 2000 11 03 | 704 | 0.2− | 0.6− | 2002 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 01 | 703 | 1.3− | 0.3− |
| 2000 11 20 | 704 | 0.1+ | 0.3+ | 2002 03 18 | 704 | 0.7+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 2000 11 20 | 704 | 0.2− | 0.2− | 2002 04 10 | 704 | (0.3+ | 1.7−) | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2000 11 20 | 704 | 0.5− | 0.4− | 2002 04 10 | 704 | 0.4+ | 0.8− | 2006 10 20 | 644 | 0.6+ | 0.0 |
| 2000 11 20 | 704 | 0.9+ | 0.0 | 2002 04 10 | 704 | 0.1− | 0.3− | 2006 11 15 | 703 | (0.2− | 3.3−) |
| 2000 11 20 | 704 | 0.0 | 0.5+ | 2003 05 05 | 704 | 0.6− | 0.3+ | 2006 11 15 | 703 | (1.1+ | 1.6−) |
| 2000 12 04 | 691 | 0.1− | 0.3+ | 2003 05 05 | 704 | 0.9− | 0.5+ | 2006 11 15 | 703 | (3.6+ | 0.1+) |
| 2000 12 04 | 691 | 0.1− | 0.1+ | 2003 05 05 | 704 | 0.7− | 1.0+ | 2006 11 15 | 703 | 0.3+ | 0.1+ |
| 2000 12 04 | 691 | 0.1+ | 0.4+ | 2003 05 08 | 704 | 0.1+ | 0.4+ | 2006 11 25 | 704 | 0.7− | 1.0− |
| 2001 12 09 | 644 | 0.5+ | 0.6+ | 2003 05 08 | 704 | 0.8− | 0.7+ | 2006 11 25 | 704 | 0.1+ | 1.2+ |
| 2001 12 09 | 644 | 0.3+ | 0.1+ | 2003 05 08 | 704 | 0.9− | 1.3+ | 2006 11 25 | 704 | 0.3− | 0.9+ |
| 2001 12 09 | 644 | 0.3+ | 0.3+ | 2003 05 26 | 608 | 0.5+ | 0.7− | 2006 11 25 | 704 | 0.8+ | 1.3+ |
| 2002 01 12 | 644 | 0.5+ | 0.0 | 2003 05 26 | 608 | 0.7+ | 0.4− | 2006 12 01 | 703 | 0.5+ | 0.0 |
| 2002 01 12 | 644 | 0.8+ | 0.5+ | 2003 05 26 | 608 | 0.3+ | 0.7− | 2006 12 01 | 703 | 0.7+ | 0.3+ |
| 2002 01 12 | 644 | 0.7+ | 0.1− | 2003 06 03 | 691 | 0.5+ | 0.5+ | 2006 12 01 | 703 | 0.2− | 1.1+ |
| 2002 01 12 | 644 | 0.5+ | 0.5+ | 2003 06 03 | 691 | 0.1+ | 0.6+ | 2006 12 01 | 703 | 0.6− | 0.0 |

**(138830)∗ 2000 UJ$_{62}$**

Discovered 2000 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.68788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17506722 | $\omega$ | 67.45960 | | +0.03952369 | −0.99589018 | |
| $a$ | 3.1647020 | $\Omega$ | 20.77760 | | +0.81146440 | −0.01559802 | |
| $e$ | 0.2921007 | $i$ | 13.28040 | | +0.58306381 | +0.08921577 | |
| $P$ | 5.63 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3− | 0.2+ | 2000 11 28 | 704 | 0.3− | 0.7− | 2001 01 18 | 704 | 0.8− | 0.2− |
| 2000 09 24 | 704 | 0.4− | 0.3+ | 2000 11 28 | 704 | 0.0 | 0.5+ | 2001 01 18 | 704 | 0.5+ | 0.9+ |
| 2000 09 24 | 704 | 0.4+ | 0.7+ | 2000 11 28 | 704 | 0.1+ | 0.1+ | 2002 03 18 | 704 | 0.9+ | 0.0 |
| 2000 09 24 | 704 | 0.3− | 0.4+ | 2000 11 28 | 704 | 0.4− | 0.1+ | 2002 03 18 | 704 | 0.5+ | 0.7+ |
| 2000 10 02 | 704 | 0.4− | 0.1+ | 2000 11 28 | 704 | 0.4− | 0.1+ | 2002 03 18 | 704 | 0.5+ | 0.4− |
| 2000 10 02 | 704 | 0.6− | 0.3− | 2000 11 30 | 704 | 0.9− | 0.3− | 2002 03 18 | 704 | 0.5− | 0.7− |
| 2000 10 02 | 704 | 0.1+ | 1.1+ | 2000 11 30 | 704 | 0.3− | 0.3+ | 2002 04 12 | 644 | 0.1− | 0.8+ |
| 2000 10 25 | 704 | 0.4+ | 0.1− | 2000 11 30 | 704 | 0.3− | 0.2− | 2002 04 12 | 644 | 0.1+ | 0.9+ |
| 2000 10 25 | 704 | 0.6− | 0.2− | 2000 11 30 | 704 | 0.1+ | 0.1− | 2002 04 12 | 644 | 0.1+ | 1.0+ |
| 2000 10 25 | 704 | 0.1− | 0.0 | 2000 11 30 | 704 | 0.7− | 0.2+ | 2005 09 01 | 644 | 0.2− | 0.1+ |
| 2000 10 25 | 704 | 0.1+ | 0.3+ | 2000 12 04 | 704 | 0.1+ | 0.6− | 2005 09 01 | 644 | 0.0 | 0.0 |
| 2000 10 25 | 704 | 0.4+ | 0.6− | 2000 12 04 | 704 | 0.3− | 0.2− | 2005 09 01 | 644 | 0.1− | 0.6+ |
| 2000 11 01 | 704 | 0.4− | 0.0 | 2000 12 04 | 704 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2000 11 01 | 704 | 0.4+ | 0.7− | 2000 12 04 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.7− | 1.2− |
| 2000 11 01 | 704 | 0.6+ | 0.9− | 2000 12 04 | 704 | 0.0 | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.7− |
| 2000 11 01 | 704 | 0.3+ | 0.5− | 2000 12 17 | 699 | 0.5+ | 0.1− | 2006 10 27 | 703 | 0.3+ | 0.7− |
| 2000 11 01 | 704 | 0.5+ | 0.3+ | 2000 12 17 | 699 | 0.1− | 0.6+ | 2006 11 13 | 704 | 1.5+ | 1.3+ |
| 2000 11 03 | 704 | 0.3+ | 0.7+ | 2000 12 17 | 699 | 0.2− | 0.3+ | 2006 11 13 | 704 | 0.9− | 0.1+ |
| 2000 11 03 | 704 | 0.2− | 0.1+ | 2000 12 17 | 699 | 0.0 | 0.5− | 2006 11 13 | 704 | 0.1− | 1.1+ |
| 2000 11 03 | 704 | 0.0 | 0.1− | 2000 12 30 | 704 | 0.4+ | 0.3− | 2006 11 13 | 704 | 0.3+ | 0.1− |
| 2000 11 03 | 704 | 0.7− | 0.2− | 2000 12 30 | 704 | 0.7+ | 0.0 | 2006 11 20 | 703 | 0.4− | 1.1− |
| 2000 11 03 | 704 | 0.6− | 0.5+ | 2000 12 30 | 704 | 0.1+ | 0.6− | 2006 11 20 | 703 | 0.4+ | 0.0 |
| 2000 11 16 | 699 | 0.8+ | 0.8− | 2000 12 30 | 704 | 0.1− | 0.1− | 2006 11 20 | 703 | 0.1− | 0.3− |
| 2000 11 16 | 699 | 0.7+ | 0.0 | 2000 12 30 | 704 | 0.4+ | 0.6+ | 2006 11 20 | 703 | 0.5− | 0.3− |
| 2000 11 16 | 699 | 0.3+ | 0.4− | 2001 01 18 | 704 | 0.9− | 0.2+ | | | | |
| 2000 11 16 | 699 | 0.1+ | 0.8+ | 2001 01 18 | 704 | 0.0 | 0.9+ | | | | |

**(138831)∗ 2000 UD$_{68}$**

Discovered 2000 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.96599 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17347579 | $\omega$ | 256.58222 | | −0.84082942 | −0.50169350 | |
| $a$ | 3.1840275 | $\Omega$ | 252.96925 | | +0.54122055 | −0.77275133 | |
| $e$ | 0.1921451 | $i$ | 12.27295 | | +0.00928454 | −0.38879174 | |
| $P$ | 5.68 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.3+ | 0.9+ | 2003 04 30 | 704 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.5+ | 0.3+ |
| 2000 09 30 | 704 | 0.1+ | 0.2+ | 2003 04 30 | 704 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.4− | 0.4− |
| 2000 09 30 | 704 | 0.1+ | 0.3− | 2003 04 30 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2000 09 30 | 704 | 0.4− | 0.3+ | 2003 04 30 | 704 | 0.2− | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2000 10 25 | 704 | 0.6− | 0.2+ | 2003 04 30 | 704 | 0.4− | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2000 10 25 | 704 | 1.0− | 0.6+ | 2003 05 01 | 704 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2000 10 25 | 704 | 0.4+ | 0.5− | 2003 05 01 | 704 | 1.2+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2000 11 01 | 704 | 0.7+ | 0.2− | 2003 05 01 | 704 | 0.1− | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2000 11 01 | 704 | 0.5+ | 0.3+ | 2003 05 01 | 704 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.4+ | 0.2− |
| 2000 11 01 | 704 | 0.5− | 0.4− | 2003 05 01 | 704 | 1.3+ | 0.3+ | 2006 11 11 | 644 | 0.0 | 0.1− |
| 2000 11 01 | 704 | 0.7+ | 0.8+ | 2003 05 01 | 704 | 0.7− | 0.5− | 2006 11 11 | 644 | 0.0 | 0.2− |
| 2000 11 19 | 704 | 0.1− | 0.4− | 2003 05 01 | 704 | (1.1+ | 1.9+) | 2006 11 11 | 644 | 0.2+ | 0.0 |
| 2000 11 19 | 704 | 0.6− | 0.4− | 2003 05 01 | 704 | 0.3− | 1.0− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2000 11 19 | 704 | 0.1+ | 0.6+ | 2003 05 01 | 704 | (1.6+ | 1.1+) | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2000 11 19 | 704 | 0.3+ | 0.4+ | 2003 05 08 | 704 | (0.1− | 1.8−) | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 11 19 | 608 | 0.1− | 0.3− | 2003 05 08 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.4+ |
| 2001 11 19 | 608 | 0.0 | 0.9− | 2003 05 08 | 704 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.3− |
| 2001 11 19 | 608 | 0.0 | 0.6− | 2003 05 08 | 704 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2001 12 11 | 704 | 0.7+ | 1.1+ | 2003 05 08 | 704 | 0.8− | 0.3− | 2006 11 16 | 704 | 0.3− | 0.6− |
| 2001 12 11 | 704 | (0.0 | 1.6+) | 2003 05 11 | 428 | 1.0+ | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.5− |
| 2001 12 11 | 704 | (1.7+ | 0.6+) | 2003 05 31 | 704 | 0.7− | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.6− |
| 2001 12 11 | 704 | 0.1+ | 0.4+ | 2003 05 31 | 704 | 0.4− | 1.1− | 2006 11 16 | 704 | 0.3− | 0.6− |
| 2001 12 18 | 699 | 0.1− | 1.5+ | 2003 05 31 | 704 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.4− |
| 2001 12 18 | 699 | 0.2− | 0.8+ | 2003 05 31 | 704 | 0.8− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.4− |
| 2001 12 18 | 699 | 0.5− | 0.2+ | 2003 05 31 | 704 | (1.7− | 0.0 ) | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2001 12 18 | 699 | 0.0 | 1.0+ | 2005 09 11 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2005 09 11 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.2− | 2005 09 11 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2005 10 07 | 703 | 1.0− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2001 12 19 | 704 | 0.0 | 0.3+ | 2005 10 07 | 703 | 0.3− | 0.7− | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 0.4− | 2005 10 07 | 703 | 0.2+ | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2002 01 06 | 699 | 0.2+ | 0.8+ | 2005 10 07 | 703 | 0.7− | 0.7+ | 2006 11 22 | 704 | 0.1− | 0.3+ |
| 2002 01 06 | 699 | 0.2− | 0.3+ | 2006 10 17 | A50 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.8− | 0.1− |
| 2002 01 06 | 699 | 0.4− | 0.0 | 2006 10 18 | A50 | 0.9− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.7+ |
| 2002 01 06 | 699 | 0.4− | 0.7+ | 2006 10 18 | A50 | 0.5+ | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.4− |
| 2002 01 16 | 608 | 0.0 | 0.9− | 2006 10 19 | A50 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.1− | 0.1− |
| 2002 01 16 | 608 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2002 01 16 | 608 | 0.2− | 0.8− | 2006 10 19 | 703 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2002 01 22 | 704 | 0.9+ | 0.6− | 2006 10 19 | 703 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.2− | 0.3+ |
| 2002 01 22 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.1− | 2006 12 01 | 704 | 0.4− | 0.0 |
| 2002 01 22 | 704 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.3− | 1.1− | 2006 12 01 | 704 | 0.4− | 0.3+ |

**(138832)∗ 2000 UX$_{88}$ = 2002 CQ$_{36}$**

Discovered 2000 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25302)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.01574 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17142319 | $\omega$ | 276.01412 | | +0.88328159 | −0.46011964 |
| $a$ | 3.2093937 | $\Omega$ | 111.41020 | | +0.45926050 | +0.81050996 |
| $e$ | 0.1667524 | $i$ | 5.54874 | | +0.09430498 | +0.36244105 |
| $P$ | 5.75 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 16 | 691 | 0.5− | 0.3+ | 2002 02 10 | 704 | 1.2+ | 1.2− | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 1998 05 16 | 691 | 0.3− | 0.7+ | 2002 02 10 | 704 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2000 10 02 | 704 | 0.4+ | 0.8+ | 2002 02 10 | 704 | 0.0 | 0.6− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2000 10 02 | 704 | 0.8− | 0.2+ | 2002 02 10 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2000 10 02 | 704 | 0.3+ | 0.0 | 2002 02 12 | 704 | 1.3+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.8− | 0.3+ | 2002 02 12 | 704 | 0.4+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2000 10 31 | 704 | 0.5− | 0.2+ | 2002 02 12 | 704 | 0.8+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2000 10 31 | 704 | 0.4+ | 0.5− | 2005 07 04 | 644 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2000 10 31 | 704 | 0.6+ | 1.0+ | 2005 07 04 | 644 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2000 11 02 | 704 | 0.3− | 0.3+ | 2005 07 04 | 644 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.6+ |
| 2000 11 02 | 704 | 0.3− | 0.7− | 2005 07 18 | 644 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.2− |
| 2000 11 02 | 704 | 0.5− | 0.2+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2000 11 02 | 704 | 0.3+ | 0.7+ | 2005 07 18 | 644 | 0.3+ | 0.2+ | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2000 11 02 | 704 | 0.2− | 1.1+ | 2005 07 27 | 644 | 0.3+ | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 01 21 | 291 | 0.2− | 0.4− | 2005 07 27 | 644 | 0.1+ | 0.4+ | 2006 11 24 | 703 | 1.1− | 0.4− |
| 2002 01 21 | 291 | 0.2− | 0.3+ | 2005 07 27 | 644 | 0.4+ | 0.4+ | 2006 11 24 | 703 | 0.7− | 0.9+ |
| 2002 01 21 | 291 | 0.1+ | 0.4+ | 2005 11 06 | G96 | 0.6+ | 0.3+ | 2006 11 24 | 703 | 0.3+ | 1.0− |
| 2002 02 07 | 704 | 1.1+ | 0.3+ | 2005 11 06 | G96 | 0.1+ | 0.1+ | 2006 11 24 | 703 | 0.3− | 0.1− |
| 2002 02 07 | 704 | 0.6− | 0.0 | 2005 11 06 | G96 | 0.1+ | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2002 02 07 | 704 | 0.4− | 0.1− | 2005 11 06 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.1− | 0.2− |
| 2002 02 07 | 704 | 0.7+ | 0.6+ | 2006 11 02 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.1− | 0.2+ |
| 2002 02 07 | 704 | 0.2− | 0.2− | 2006 11 02 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2002 02 08 | 704 | 0.0 | 0.4+ | 2006 11 02 | G96 | 0.1+ | 0.6− | 2006 11 29 | 704 | 0.1+ | 0.1− |
| 2002 02 08 | 704 | 1.0+ | 0.5+ | 2006 11 02 | G96 | (2.0− | 1.3−) | | | | |
| 2002 02 08 | 704 | 1.0+ | 1.1+ | 2006 11 17 | G96 | 0.4− | 0.5− | | | | |

**(138833)∗ 2000 UE$_{91}$**

Discovered 2000 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.48248 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17778184 | $\omega$ | 201.61879 | | −0.88606591 | +0.46240759 |
| $a$ | 3.1324041 | $\Omega$ | 6.22655 | | −0.36882486 | −0.66056061 |
| $e$ | 0.0542571 | $i$ | 17.52301 | | −0.28081207 | −0.59147181 |
| $P$ | 5.54 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 26 | 691 | 0.2− | 0.5− | 2003 03 09 | 704 | 0.6+ | 0.2+ | 2003 04 09 | 704 | 0.8+ | 0.7− |
| 1992 03 26 | 691 | 0.8− | 0.7− | 2003 03 09 | 704 | 0.7+ | 0.8+ | 2003 04 09 | 704 | 0.6+ | 0.1− |
| 1992 03 26 | 691 | 0.8− | 0.6− | 2003 03 23 | 691 | 0.4− | 0.3+ | 2003 04 29 | 704 | 1.4+ | 0.7+ |
| 2000 10 03 | 704 | 1.1+ | 0.4+ | 2003 03 23 | 691 | 0.3− | 0.4+ | 2003 04 29 | 704 | 0.6+ | 0.4− |
| 2000 10 03 | 704 | 0.3+ | 0.5− | 2003 03 23 | 691 | 0.2− | 0.4+ | 2003 04 29 | 704 | (2.0+ | 0.5−) |
| 2000 10 03 | 704 | 0.2− | 0.4+ | 2003 03 26 | 644 | 0.2+ | 0.7+ | 2003 04 29 | 704 | 0.8+ | 0.3+ |
| 2000 10 03 | 704 | 0.1+ | 1.0+ | 2003 03 26 | 644 | 0.4+ | 0.7+ | 2003 04 29 | 704 | 1.0+ | 0.1+ |
| 2000 10 25 | 704 | 1.1− | 0.1− | 2003 03 26 | 644 | 0.4+ | 0.7+ | 2005 08 06 | E12 | 0.0 | 0.8+ |
| 2000 10 25 | 704 | 0.8− | 0.5− | 2003 03 26 | 699 | 0.6− | 1.0+ | 2005 08 06 | E12 | 0.4+ | 0.2− |
| 2000 10 25 | 704 | 0.8− | 1.0+ | 2003 03 26 | 699 | 0.4− | 0.5+ | 2005 08 06 | E12 | 0.2− | 0.6+ |
| 2000 11 03 | 704 | 0.8− | 0.0 | 2003 03 26 | 699 | 0.0 | 0.5+ | 2005 08 06 | E12 | 0.1− | 0.5+ |
| 2000 11 03 | 704 | 0.4+ | 0.1+ | 2003 03 26 | 699 | 0.4− | 0.1− | 2005 09 25 | 703 | 0.3− | 0.5− |
| 2000 11 03 | 704 | 0.1+ | 1.4+ | 2003 03 27 | 703 | 0.3− | 0.9− | 2005 09 25 | 703 | 0.1+ | 0.2+ |
| 2001 12 23 | 704 | 0.4+ | 0.5+ | 2003 03 27 | 703 | 0.6+ | 0.4− | 2005 09 25 | 703 | 0.0 | 1.3− |
| 2001 12 23 | 704 | 0.6− | 0.3− | 2003 03 27 | 703 | 0.1+ | 0.1+ | 2005 09 25 | 703 | 0.0 | 0.2− |
| 2001 12 23 | 704 | 0.2+ | 0.4+ | 2003 03 27 | 703 | 0.0 | 1.0− | 2005 10 03 | 703 | 0.0 | 0.4+ |
| 2001 12 23 | 644 | 0.4+ | 0.4− | 2003 04 01 | 704 | (1.6+ | 0.2+) | 2005 10 03 | 703 | 0.1− | 1.2+ |
| 2001 12 23 | 704 | 0.0 | 0.1− | 2003 04 01 | 704 | 0.9+ | 0.3− | 2005 10 03 | 703 | 0.7− | 0.7− |
| 2001 12 23 | 644 | 0.0 | 1.0− | 2003 04 01 | 704 | (1.8+ | 0.1+) | 2005 10 03 | 703 | (0.8− | 2.0−) |
| 2001 12 23 | 704 | 0.1− | 0.4− | 2003 04 01 | 704 | 1.0+ | 0.5+ | 2005 12 02 | 695 | 0.1− | 0.2+ |
| 2001 12 23 | 644 | 0.1+ | 0.3− | 2003 04 01 | 704 | 0.6+ | 0.1+ | 2005 12 02 | 695 | 0.2− | 0.3+ |
| 2003 03 06 | 704 | 1.0− | 0.6+ | 2003 04 03 | 699 | 0.0 | 1.0+ | 2006 11 12 | A94 | 0.6+ | 0.4− |
| 2003 03 06 | 704 | 0.1− | 0.3+ | 2003 04 03 | 699 | 0.3+ | 0.4+ | 2006 11 12 | A94 | 0.0 | 0.6+ |
| 2003 03 06 | 704 | 0.4+ | 0.2− | 2003 04 03 | 699 | 0.3+ | 0.6+ | 2006 11 12 | A94 | 0.7+ | 0.3+ |
| 2003 03 06 | 704 | 0.5+ | 0.4+ | 2003 04 03 | 699 | 0.4+ | 0.5+ | 2006 11 21 | 703 | 0.5− | 0.3− |
| 2003 03 09 | 704 | 0.5+ | 0.6+ | 2003 04 09 | 704 | 0.5+ | 0.2− | 2006 11 21 | 703 | 0.7− | 0.1+ |
| 2003 03 09 | 704 | 1.2+ | 0.7+ | 2003 04 09 | 704 | 0.5+ | 0.4− | 2006 11 21 | 703 | 0.1− | 0.6− |
| 2003 03 09 | 704 | 0.8+ | 0.1− | 2003 04 09 | 704 | 0.5+ | 1.0− | 2006 11 21 | 703 | 0.8− | 0.6− |

**(138834)∗ 2000 UQ$_{92}$ = 2000 WO$_{195}$ = 2003 EU$_{30}$**

Discovered 2000 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 34970; *MPO* 46511)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.66281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16963007 | $\omega$ | 341.37541 | | +0.91330638 | +0.40691512 | |
| $a$ | 3.2319712 | $\Omega$ | 354.52187 | | −0.34725149 | +0.75611737 | |
| $e$ | 0.0791837 | $i$ | 10.30306 | | −0.21280944 | +0.51254912 | |
| $P$ | 5.81 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.5− | 0.7+ | 2002 01 05 | 644 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.5+ | 0.9− |
| 2000 10 03 | 704 | 0.6− | 1.1+ | 2002 01 05 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.4+ |
| 2000 10 03 | 704 | 0.2+ | 0.4+ | 2002 01 05 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.9− | 0.5+ |
| 2000 10 03 | 704 | 0.6− | 0.4+ | 2002 01 14 | 644 | 0.5− | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.1− |
| 2000 10 03 | 704 | 0.9+ | 0.0 | 2002 01 14 | 644 | 0.1− | 0.5+ | 2006 10 27 | 703 | (1.3+ | 2.1+) |
| 2000 10 25 | 704 | 0.2− | 0.0 | 2002 01 14 | 644 | 0.1− | 0.7+ | 2006 10 27 | 703 | (1.8+ | 1.7+) |
| 2000 10 25 | 704 | 0.9− | 0.3+ | 2003 03 06 | 644 | 0.7+ | 0.3− | 2006 10 27 | 703 | 0.7− | 0.5+ |
| 2000 10 25 | 704 | 0.4− | 0.3+ | 2003 03 06 | 644 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2000 10 25 | 704 | 0.8− | 0.2+ | 2003 03 06 | 644 | 0.4+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2000 11 03 | 704 | 1.2+ | 0.5− | 2003 03 10 | 291 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.6+ | 0.2+ |
| 2000 11 03 | 704 | 0.7+ | 0.2− | 2003 03 10 | 291 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.6+ | 0.3+ |
| 2000 11 03 | 704 | 0.6− | 0.6+ | 2003 03 10 | 291 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.6− |
| 2000 11 03 | 704 | 1.0− | 0.2− | 2003 03 31 | 691 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.7+ | 0.4+ |
| 2000 11 03 | 704 | 0.7− | 0.4− | 2003 03 31 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.5− |
| 2000 11 03 | 704 | 0.2− | 0.1+ | 2003 03 31 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.6+ | 0.2− |
| 2000 11 03 | 704 | 0.8+ | 1.1+ | 2005 09 03 | 644 | 0.5− | 0.8+ | 2006 11 22 | 703 | 0.3+ | 0.0 |
| 2000 11 03 | 704 | 0.7− | 0.4+ | 2005 09 03 | 644 | 0.2− | 0.6+ | 2006 11 22 | 703 | 0.7+ | 0.9− |
| 2000 11 19 | 704 | 0.3+ | 0.2+ | 2005 09 03 | 644 | 0.8− | 0.7+ | 2006 11 22 | 703 | 0.0 | 0.6− |
| 2000 11 19 | 704 | 0.1+ | 0.7− | 2005 09 03 | 644 | 0.2− | 0.7+ | 2006 11 22 | 703 | 1.0− | 1.2− |
| 2000 11 19 | 704 | 1.1+ | 0.2− | 2005 09 03 | 644 | 0.5− | 1.1+ | | | | |
| 2000 11 19 | 704 | 0.1− | 0.7+ | 2005 09 03 | 644 | 0.0 | 0.6+ | | | | |

**(138835)∗ 2000 UZ$_{97}$**

Discovered 2000 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.26568 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18769230 | $\omega$ | 111.71258 | | −0.01871281 | −0.99936245 | |
| $a$ | 3.0211462 | $\Omega$ | 339.28992 | | +0.88261480 | −0.00222409 | |
| $e$ | 0.2282094 | $i$ | 4.93237 | | +0.46972434 | −0.03563339 | |
| $P$ | 5.25 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 08 | 691 | 0.0 | 0.3+ | 2002 04 14 | 704 | 0.6+ | 1.0+ | 2005 10 24 | 699 | 1.3− | 0.8+ |
| 1991 02 08 | 691 | 0.3− | 0.1− | 2002 04 14 | 704 | 0.1− | 0.5+ | 2005 10 24 | 699 | 0.4− | 1.3+ |
| 1991 02 08 | 691 | 0.3+ | 0.5− | 2002 04 14 | 704 | 0.0 | 0.4+ | 2005 10 24 | 699 | 1.1− | 1.2− |
| 2000 10 25 | 704 | 0.6− | 0.5− | 2005 09 24 | 691 | 0.2+ | 0.1+ | 2005 10 24 | 683 | 0.1− | 0.1+ |
| 2000 10 25 | 704 | 0.6+ | 0.4− | 2005 09 24 | 691 | 0.0 | 0.1+ | 2005 10 24 | 699 | 0.8+ | 0.4− |
| 2000 10 25 | 704 | 0.6+ | 0.3− | 2005 09 24 | 691 | 0.0 | 0.1+ | 2005 10 24 | 683 | (1.6− | 0.9−) |
| 2000 10 25 | 704 | 0.9+ | 0.6− | 2005 09 29 | 691 | 0.0 | 0.0 | 2005 10 24 | 683 | (0.2+ | 1.6+) |
| 2000 11 03 | 704 | 0.2− | 0.1+ | 2005 09 29 | 691 | 0.1+ | 0.1− | 2005 10 28 | 703 | 0.4+ | 0.1+ |
| 2000 11 03 | 704 | 1.1− | 0.4+ | 2005 09 29 | 691 | 0.2+ | 0.1− | 2005 10 28 | 683 | (1.9+ | 0.0 ) |
| 2000 11 03 | 704 | 1.9− | 0.9+ | 2005 09 29 | 699 | 0.6+ | 0.2+ | 2005 10 28 | 703 | 1.0− | 0.0 |
| 2000 11 03 | 704 | 0.8+ | 0.4− | 2005 09 29 | 699 | 0.1− | 0.3− | 2005 10 28 | 703 | 0.3− | 0.3− |
| 2000 11 05 | 704 | 0.5+ | 0.9− | 2005 09 29 | 699 | 0.6+ | 0.2− | 2005 10 28 | 703 | 0.1− | 0.6− |
| 2000 11 05 | 704 | 0.4+ | 1.2− | 2005 09 29 | 699 | 0.9+ | 0.2− | 2005 10 28 | 683 | 0.7− | 1.1+ |
| 2000 11 05 | 704 | 0.3− | 1.4+ | 2005 10 03 | 703 | 1.1− | 0.8+ | 2005 10 28 | 683 | (1.1− | 2.3+) |
| 2000 11 05 | 704 | 0.5− | 0.2+ | 2005 10 03 | 691 | 0.1+ | 0.0 | 2005 10 30 | 704 | 0.8+ | 0.7+ |
| 2000 11 19 | 704 | 0.2+ | 0.9+ | 2005 10 03 | 703 | 0.0 | 0.1+ | 2005 10 30 | 704 | 0.7− | 1.0+ |
| 2000 11 19 | 704 | 1.3+ | 0.3− | 2005 10 03 | 703 | 0.1+ | 0.2+ | 2005 10 30 | 704 | 0.8+ | 0.6+ |
| 2000 11 19 | 704 | 0.5− | 0.5− | 2005 10 03 | 703 | 0.1+ | 0.5+ | 2005 10 30 | 704 | 0.0 | 0.2+ |
| 2000 11 19 | 704 | 0.3− | 0.1+ | 2005 10 03 | 691 | 0.2− | 0.0 | 2005 11 02 | 704 | 0.1+ | 0.9+ |
| 2000 11 19 | 704 | 0.3− | 0.1+ | 2005 10 03 | 691 | 0.1− | 0.1+ | 2005 11 02 | 704 | 0.2+ | 0.9+ |
| 2000 11 30 | 699 | 0.0 | 0.0 | 2005 10 07 | 704 | 0.4+ | 1.2− | 2005 11 02 | 704 | 0.3+ | 1.3+ |
| 2000 11 30 | 699 | 0.2− | 0.2+ | 2005 10 07 | 704 | 1.3+ | 0.8− | 2005 11 02 | 704 | 0.1+ | 1.0+ |
| 2000 11 30 | 699 | 0.1+ | 0.9+ | 2005 10 07 | 704 | 0.9+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2000 11 30 | 699 | 0.6− | 0.3− | 2005 10 09 | 691 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2002 04 04 | 644 | 0.7+ | 0.7+ | 2005 10 09 | 691 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2002 04 04 | 644 | 0.5+ | 0.6+ | 2005 10 09 | 691 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.8− |
| 2002 04 04 | 644 | 0.7+ | 1.1+ | 2005 10 13 | 691 | 0.2− | 0.1− | 2006 11 26 | 691 | 0.0 | 0.5− |
| 2002 04 14 | 704 | 0.8+ | 1.3+ | 2005 10 13 | 691 | 0.0 | 0.1− | 2006 11 26 | 691 | 0.3− | 0.1− |
| 2002 04 14 | 704 | 0.2+ | 0.7+ | 2005 10 13 | 691 | 0.3− | 0.1− | 2006 11 26 | 691 | 0.0 | 0.4+ |

**(138836)∗ 2000 UW$_{100}$ = 2002 CV$_{55}$**

Discovered 2000 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25306)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.17554 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17433923 | $\omega$ | 136.71235 | | +0.24579273 | −0.96679561 | |
| $a$ | 3.1735058 | $\Omega$ | 298.94546 | | +0.86611353 | +0.25144924 | |
| $e$ | 0.1607129 | $i$ | 4.58447 | | +0.43523934 | +0.04560191 | |
| $P$ | 5.65 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.7+ | 0.3− | 2002 02 09 | 704 | 0.0 | 0.9+ | 2005 08 29 | 699 | 1.1− | 1.1+ |
| 2000 10 25 | 704 | 0.2+ | 0.1− | 2002 02 11 | 704 | 0.9+ | 0.0 | 2005 08 29 | 699 | 0.4− | 0.8+ |
| 2000 10 25 | 704 | 0.5+ | 0.0 | 2002 02 11 | 704 | 1.3+ | 0.2− | 2005 08 31 | 599 | 0.1+ | 0.3+ |
| 2000 10 25 | 704 | 0.6+ | 0.6− | 2002 02 11 | 704 | 1.3+ | 0.4+ | 2005 08 31 | 599 | 0.0 | 0.2+ |
| 2000 10 25 | 704 | 0.1− | 0.0 | 2002 02 11 | 704 | (1.9+ | 1.1+) | 2005 08 31 | 599 | 0.1− | 0.3+ |
| 2000 11 03 | 704 | 0.1− | 0.6+ | 2002 02 11 | 704 | (1.6+ | 1.0+) | 2005 08 31 | 599 | 0.2− | 0.4+ |
| 2000 11 03 | 704 | 0.1+ | 0.1+ | 2002 02 15 | 704 | 0.5+ | 0.7+ | 2005 08 31 | 691 | 0.1− | 0.3+ |
| 2000 11 03 | 704 | 0.5− | 0.3+ | 2002 02 15 | 704 | 0.7+ | 0.1− | 2005 08 31 | 691 | 0.1− | 0.0 |
| 2000 11 03 | 704 | 0.3+ | 0.1− | 2002 02 15 | 704 | 0.4+ | 0.5+ | 2005 08 31 | 691 | 0.1− | 0.2+ |
| 2000 11 05 | 704 | 0.9− | 0.7+ | 2002 02 15 | 704 | 0.6+ | 0.1+ | 2005 09 06 | 699 | 1.4− | 0.2+ |
| 2000 11 05 | 704 | 0.1+ | 0.4+ | 2002 02 15 | 704 | 0.0 | 0.5− | 2005 09 06 | 699 | 0.7− | 0.6− |
| 2000 11 05 | 704 | 0.5− | 0.9− | 2002 02 20 | 704 | 0.1+ | 0.4+ | 2005 09 06 | 699 | 0.6− | 0.5+ |
| 2000 11 05 | 704 | 0.3+ | 0.0 | 2002 02 20 | 704 | 0.6− | 0.0 | 2005 09 06 | 699 | 0.4− | 0.6+ |
| 2000 11 05 | 704 | 0.9+ | 0.3+ | 2002 02 20 | 704 | 0.1+ | 0.7+ | 2005 09 09 | 704 | 0.7+ | 0.8+ |
| 2000 11 20 | 704 | 0.3+ | 0.3− | 2002 02 20 | 704 | 0.3+ | 0.1+ | 2005 09 09 | 704 | 0.7+ | 1.4+ |
| 2000 11 20 | 704 | 0.9+ | 0.4− | 2002 02 25 | 644 | 0.4− | 0.6+ | 2005 09 09 | 704 | 0.8+ | 0.9+ |
| 2000 11 20 | 704 | 0.6+ | 0.4− | 2002 02 25 | 644 | 0.2− | 0.4+ | 2005 09 09 | 704 | 0.6+ | 0.3+ |
| 2000 11 20 | 704 | 0.4+ | 0.8− | 2002 02 25 | 644 | 0.2− | 0.6+ | 2005 09 09 | 704 | 0.6+ | 0.4+ |
| 2000 11 20 | 704 | 0.4+ | 0.8− | 2002 03 04 | 703 | 0.8+ | 0.5+ | 2005 09 23 | 703 | 0.8− | 0.5+ |
| 2000 11 29 | 704 | 0.0 | 0.2+ | 2002 03 04 | 703 | 0.0 | 0.7+ | 2005 09 23 | 703 | 0.8+ | 0.5+ |
| 2000 11 29 | 704 | 0.0 | 0.3+ | 2002 03 04 | 703 | 0.1+ | 1.2+ | 2005 09 23 | 703 | 0.1+ | 0.8+ |
| 2000 11 29 | 704 | 0.2− | 0.1+ | 2002 03 04 | 703 | 0.6− | 0.5+ | 2005 09 23 | 703 | 0.4− | 0.0 |
| 2000 11 29 | 704 | 0.0 | 0.1+ | 2002 03 09 | 704 | 1.0− | 0.3+ | 2005 09 29 | 699 | 0.1− | 0.5+ |
| 2000 11 29 | 704 | 0.0 | 0.0 | 2002 03 09 | 704 | 1.4− | 0.8+ | 2005 09 29 | 699 | 0.0 | 0.7+ |
| 2000 11 30 | 699 | 0.6+ | 0.4+ | 2002 03 09 | 704 | (2.1− | 1.2−) | 2005 09 29 | 699 | 0.2− | 0.5+ |
| 2000 11 30 | 699 | 0.5− | 0.2+ | 2002 03 09 | 704 | 0.5− | 0.9− | 2005 10 01 | 703 | 0.6− | 0.4+ |
| 2000 11 30 | 699 | 0.7− | 0.7+ | 2002 03 09 | 704 | 1.0− | 0.2+ | 2005 10 01 | 703 | 0.6− | 0.3+ |
| 2000 11 30 | 699 | 0.4− | 0.7+ | 2002 03 12 | 704 | 0.1+ | 0.2− | 2005 10 01 | 703 | 0.6− | 0.3+ |
| 2000 12 04 | 300 | 0.5− | 0.2− | 2002 03 12 | 704 | 0.3+ | 0.2+ | 2005 10 01 | 703 | 0.5− | 0.8+ |
| 2000 12 04 | 300 | 1.0+ | 0.6+ | 2002 03 12 | 704 | 1.1+ | 0.3+ | 2005 10 07 | 704 | 0.2− | 0.1+ |
| 2000 12 20 | 704 | 0.1− | 0.3+ | 2002 03 12 | 704 | 0.5+ | 0.2+ | 2005 10 07 | 704 | 0.5− | 1.0+ |
| 2000 12 20 | 704 | 0.4− | 0.1− | 2002 03 12 | 704 | 1.0+ | 0.1+ | 2005 10 07 | 704 | 0.6− | 0.3+ |
| 2000 12 20 | 704 | 0.1+ | 0.4− | 2002 03 13 | 704 | 1.1+ | 0.7+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2000 12 20 | 704 | 0.4− | 0.2+ | 2002 03 13 | 704 | 1.3+ | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2000 12 20 | 704 | 1.0− | 0.2+ | 2002 03 13 | 704 | 0.9+ | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2000 12 30 | 704 | 0.9− | 0.7+ | 2002 03 13 | 704 | 0.8+ | 0.9+ | 2006 11 02 | G96 | 0.3− | 0.3− |
| 2000 12 30 | 704 | 0.2− | 0.9− | 2002 03 13 | 704 | 0.9+ | 1.0+ | 2006 11 02 | G96 | 0.4− | 0.2− |
| 2000 12 30 | 704 | 0.5+ | 0.1− | 2002 03 13 | 644 | 0.2− | 0.5+ | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 2000 12 30 | 704 | 0.7− | 0.3− | 2002 03 13 | 644 | 0.2+ | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.7− |
| 2000 12 30 | 704 | 0.6+ | 0.7− | 2002 03 13 | 644 | 0.3+ | 0.4+ | 2006 11 22 | G96 | 0.3− | 0.5− |
| 2001 01 21 | 699 | 0.5− | 1.1+ | 2002 03 15 | 704 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.4− |
| 2001 01 21 | 699 | 0.8− | 0.5+ | 2002 03 15 | 704 | 0.4+ | 0.5+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2001 01 21 | 699 | 0.9− | 0.3+ | 2002 03 15 | 704 | 0.1+ | 1.0+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2001 01 21 | 699 | 0.4− | 1.1+ | 2002 03 15 | 704 | 0.3+ | 0.9+ | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2002 01 25 | 644 | 0.2+ | 0.2+ | 2002 03 15 | 704 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2002 01 25 | 644 | 0.2+ | 0.6+ | 2005 08 09 | A50 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2002 01 25 | 644 | 0.1− | 1.0+ | 2005 08 09 | A50 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2002 02 07 | 704 | 1.1− | 0.2− | 2005 08 26 | 699 | 0.3+ | 0.9+ | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2002 02 07 | 704 | 0.5+ | 0.1+ | 2005 08 26 | 699 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 704 | 0.3+ | 0.8+ | 2005 08 26 | 699 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2002 02 09 | 704 | 0.8+ | 0.5+ | 2005 08 26 | 699 | 1.2− | 1.0+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2002 02 09 | 704 | 0.1− | 0.1+ | 2005 08 29 | 699 | 0.6− | 0.3+ | | | | |
| 2002 02 09 | 704 | 0.4− | 1.5+ | 2005 08 29 | 699 | 0.1− | 0.6+ | | | | |

**(138837)∗ 2000 UC$_{109}$**

Discovered 2000 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.98563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18350279 | $\omega$ | 263.79598 | | +0.99021999 | −0.01062091 | |
| $a$ | 3.0669564 | $\Omega$ | 96.75193 | | +0.06311115 | +0.92334691 | |
| $e$ | 0.1424851 | $i$ | 8.05256 | | −0.12442412 | +0.38381985 | |
| $P$ | 5.37 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 31 | 704 | 0.7− | 1.2+ | 2002 02 08 | 704 | (0.1+ | 3.5+) | 2005 09 13 | 703 | 0.7− | 1.1+ |
| 2000 10 31 | 704 | 0.5− | 0.0 | 2002 02 08 | 704 | (0.2+ | 2.8+) | 2005 09 13 | 703 | 0.8− | 0.9+ |
| 2000 10 31 | 704 | 0.2− | 1.7+ | 2002 02 08 | 704 | (1.0− | 3.0+) | 2005 09 24 | 699 | 0.5− | 1.3+ |
| 2000 11 03 | 704 | 0.6− | 1.4+ | 2002 02 08 | 704 | (0.2+ | 3.5+) | 2005 09 24 | 699 | 0.6− | 1.4+ |
| 2000 11 03 | 704 | 0.3− | 0.8+ | 2003 03 31 | 699 | 0.9− | 0.6+ | 2005 09 24 | 699 | 0.0 | 0.7+ |
| 2000 11 03 | 704 | 0.1− | 1.0+ | 2003 03 31 | 699 | 1.0+ | 1.1− | 2005 09 24 | 699 | 0.5− | 0.7+ |
| 2000 11 20 | 704 | 0.8+ | 0.4+ | 2003 03 31 | 699 | 0.2− | 0.1− | 2005 09 28 | 644 | 0.7− | 0.3+ |
| 2000 11 20 | 704 | 0.2− | 1.0+ | 2003 03 31 | 699 | (2.0− | 0.5−) | 2005 09 28 | 644 | 0.7− | 0.6+ |
| 2000 11 20 | 704 | 0.7− | 0.5+ | 2003 04 09 | 691 | 0.4+ | 1.2+ | 2005 09 28 | 644 | 0.8− | 0.7+ |
| 2000 11 20 | 704 | 0.8+ | 0.3+ | 2003 04 09 | 691 | 0.0 | 1.1+ | 2006 09 26 | 691 | 0.8+ | 0.3− |
| 2000 11 22 | 608 | 0.3+ | 0.3+ | 2003 04 09 | 691 | 0.4+ | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2000 11 22 | 608 | 0.6− | 0.3+ | 2003 05 02 | 691 | 0.4+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2000 11 22 | 608 | 0.8− | 0.3− | 2003 05 02 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.6− | 0.4+ |
| 2002 01 07 | 691 | 0.2− | 0.0 | 2003 05 02 | 691 | 0.6+ | 0.6+ | 2006 10 28 | G96 | 1.2+ | 0.9− |
| 2002 01 07 | 691 | 0.0 | 0.0 | 2005 08 27 | 699 | (0.3+ | 2.1+) | 2006 10 28 | G96 | 1.0− | 0.3− |
| 2002 01 07 | 691 | 0.2− | 0.2+ | 2005 08 27 | 699 | (0.2+ | 2.2+) | 2006 10 28 | G96 | 0.2− | 0.7− |
| 2002 01 12 | 644 | 0.3+ | 0.1+ | 2005 08 27 | 699 | 0.0 | 0.8+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2002 01 12 | 644 | 0.2+ | 0.0 | 2005 08 27 | 699 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2002 01 12 | 644 | 0.2+ | 0.1− | 2005 09 13 | 703 | 0.4− | 1.4+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2002 02 08 | 704 | (0.3− | 2.5+) | 2005 09 13 | 703 | (0.5+ | 1.8+) | 2006 11 27 | G96 | 0.3− | 0.1− |

**(138838)∗ 2000 VL$_3$**

Discovered 2000 Nov. 1 by W. K. Y. Yeung at Desert Beaver Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.78305 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26151640 | $\omega$ | 340.26778 | | +0.93184013 | −0.35588784 | |
| $a$ | 2.4217916 | $\Omega$ | 40.80248 | | +0.34578663 | +0.81169860 | |
| $e$ | 0.2105397 | $i$ | 6.22329 | | +0.11002540 | +0.46312982 | |
| $P$ | 3.77 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1951 11 28 | 261 | 0.2− | 0.0 | 2000 11 29 | 704 | 0.6− | 0.5+ | 2005 01 08 | 704 | 0.1+ | 0.7− |
| 1951 11 28 | 261 | 0.1+ | 0.3+ | 2000 11 29 | 704 | 0.9− | 0.9+ | 2005 01 16 | 704 | 0.4+ | 0.1− |
| 2000 10 24 | 704 | 0.6− | 0.5+ | 2000 11 29 | 704 | 0.5− | 0.4+ | 2005 01 16 | 704 | 0.5+ | 0.5− |
| 2000 10 24 | 704 | 0.6+ | 0.2− | 2000 11 29 | 704 | 0.2+ | 0.3+ | 2005 01 16 | 704 | 1.1+ | 0.2− |
| 2000 10 24 | 704 | 0.1− | 0.6+ | 2000 11 29 | 704 | 0.2+ | 0.2− | 2005 01 16 | 704 | 0.2− | 0.5− |
| 2000 10 24 | 704 | 0.4+ | 1.7+ | 2000 12 20 | 704 | 0.2+ | 0.3− | 2005 01 19 | 704 | 0.2− | 0.3+ |
| 2000 10 24 | 704 | 0.3− | 1.0+ | 2000 12 20 | 704 | 1.3− | 1.3+ | 2005 01 19 | 704 | 0.6− | 0.9− |
| 2000 11 01 | 919 | 0.3+ | 0.4− | 2000 12 20 | 704 | 0.9− | 0.2+ | 2005 01 19 | 704 | (2.0+ | 0.4−) |
| 2000 11 01 | 919 | 0.0 | 0.4− | 2004 12 14 | 699 | 0.0 | 0.3− | 2005 01 19 | 704 | 0.2− | 0.4− |
| 2000 11 02 | 919 | (2.7− | 1.5+) | 2004 12 14 | 699 | 0.8− | 1.3+ | 2005 01 31 | 704 | 0.7+ | 0.2+ |
| 2000 11 02 | 919 | (2.5− | 2.0+) | 2004 12 14 | 699 | 0.0 | 0.3+ | 2005 01 31 | 704 | 0.2+ | 0.2− |
| 2000 11 03 | 704 | 0.2− | 0.1− | 2004 12 14 | 699 | 1.0− | 0.3+ | 2005 01 31 | 704 | 0.5+ | 0.8+ |
| 2000 11 03 | 704 | 0.0 | 0.3+ | 2004 12 21 | 703 | 0.6− | 0.8+ | 2005 01 31 | 704 | 0.1+ | 0.6+ |
| 2000 11 03 | 704 | 0.1+ | 0.9− | 2004 12 21 | 703 | 0.5− | 0.1+ | 2005 02 04 | G96 | 0.0 | 0.3− |
| 2000 11 05 | 704 | 0.4− | 0.3− | 2004 12 21 | 703 | 0.3− | 0.3+ | 2005 02 04 | G96 | 0.2− | 0.4− |
| 2000 11 05 | 704 | 0.4− | 0.2− | 2004 12 21 | 703 | 0.4− | 0.8− | 2005 02 04 | G96 | 0.1− | 0.4− |
| 2000 11 05 | 704 | 0.1− | 0.2− | 2005 01 07 | 704 | 0.1− | 0.1+ | 2005 02 04 | G96 | 0.1+ | 0.3− |
| 2000 11 05 | 704 | 0.2− | 0.7− | 2005 01 07 | 704 | 0.0 | 0.3+ | 2006 04 29 | 691 | 0.2+ | 0.1+ |
| 2000 11 05 | 704 | 0.2− | 0.1− | 2005 01 07 | 704 | 0.6+ | 0.6+ | 2006 04 29 | 691 | 0.1− | 0.3− |
| 2000 11 17 | 919 | 0.1+ | 0.5+ | 2005 01 07 | 704 | 0.4+ | 0.1+ | 2006 04 29 | 691 | 0.2+ | 0.3+ |
| 2000 11 17 | 919 | (3.4+ | 0.9−) | 2005 01 07 | 704 | 0.1− | 0.0 | 2006 05 09 | G96 | 0.7− | 0.6+ |
| 2000 11 17 | 919 | 0.1+ | 0.0 | 2005 01 08 | 704 | 0.3+ | 0.3+ | 2006 05 09 | G96 | 0.1− | 0.6+ |
| 2000 11 17 | 919 | 0.9+ | 0.6− | 2005 01 08 | 704 | 0.0 | 0.2− | 2006 05 09 | G96 | 0.0 | 0.3+ |
| 2000 11 18 | 919 | 0.9− | 1.2− | 2005 01 08 | 704 | 0.1− | 0.1− | 2006 05 09 | G96 | 0.2− | 0.3− |
| 2000 11 18 | 919 | 0.4+ | 0.3− | 2005 01 08 | 704 | 0.0 | 0.5− | 2006 05 19 | G96 | 0.6+ | 0.1− |
| 2000 11 20 | 704 | 0.0 | 0.1+ | 2005 01 08 | 704 | 0.0 | 0.2− | 2006 05 19 | G96 | 0.1+ | 0.4+ |
| 2000 11 20 | 704 | 0.6+ | 0.3− | 2005 01 08 | 704 | 0.1− | 0.6− | 2006 05 19 | G96 | 0.6+ | 0.8+ |
| 2000 11 20 | 704 | 0.7+ | 0.2+ | 2005 01 08 | 704 | 0.1+ | 0.0 | 2006 05 19 | G96 | (2.6− | 0.4+) |
| 2000 11 20 | 704 | 0.7+ | 0.2+ | 2005 01 08 | 704 | 0.1+ | 0.6− | | | | |
| 2000 11 20 | 704 | 1.1+ | 0.3+ | 2005 01 08 | 704 | 0.3+ | 0.1+ | | | | |

**(138839)∗ 2000 VA$_{10}$**

Discovered 2000 Nov. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.78770 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17172989 | $\omega$ | 267.46400 | | +0.94489826 | +0.32497367 | |
| $a$ | 3.2055714 | $\Omega$ | 73.56984 | | −0.28161019 | +0.86840695 | |
| $e$ | 0.1771893 | $i$ | 2.35955 | | −0.16692205 | +0.37451499 | |
| $P$ | 5.74 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.1+ | 0.1− | 2005 07 04 | 644 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2000 09 30 | 704 | 0.2− | 0.6+ | 2005 07 04 | 644 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2000 09 30 | 704 | 0.2− | 1.6+ | 2005 07 04 | 644 | 0.4− | 0.4+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2000 11 01 | 704 | 0.9− | 0.7+ | 2005 07 18 | 644 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.4+ |
| 2000 11 01 | 704 | 0.3+ | 0.3− | 2005 07 18 | 644 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.2+ |
| 2000 11 01 | 704 | 0.4− | 0.4+ | 2005 07 18 | 644 | 0.1− | 0.7+ | 2006 11 15 | 703 | 1.3− | 0.1+ |
| 2000 11 01 | 704 | 0.1− | 0.7+ | 2005 07 27 | 644 | 0.3− | 0.5+ | 2006 11 18 | 704 | 0.6+ | 1.4− |
| 2000 11 02 | 704 | 0.3− | 1.7+ | 2005 07 27 | 644 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2000 11 02 | 704 | 0.5− | 1.0+ | 2005 07 27 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | (1.6+ | 1.1+) |
| 2000 11 02 | 704 | 0.7− | 1.4+ | 2005 08 29 | 699 | (1.8+ | 1.1+) | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 2000 11 02 | 704 | 0.8− | 1.7+ | 2005 08 29 | 699 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2000 11 02 | 704 | 0.9+ | 1.1+ | 2005 08 29 | 699 | 0.8+ | 0.9+ | 2006 11 21 | 704 | 0.3+ | 1.2+ |
| 2000 11 03 | 049 | 0.0 | 0.3− | 2005 08 29 | 699 | 0.8+ | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2000 11 03 | 049 | 0.9− | 2.0+ | 2005 10 28 | G96 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2000 11 03 | 049 | 0.6− | 0.5+ | 2005 10 28 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2000 11 03 | 691 | 0.1+ | 0.2− | 2005 10 28 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 1.0+ |
| 2000 11 03 | 691 | 0.1− | 0.1− | 2005 10 28 | G96 | 0.5+ | 0.1+ | 2006 11 22 | H07 | 0.2+ | 0.0 |
| 2000 11 03 | 691 | (0.6+ | 2.7+) | 2005 11 03 | G96 | 0.5− | 0.4− | 2006 11 22 | H07 | 0.2+ | 0.0 |
| 2002 01 14 | 704 | 0.1− | 0.8− | 2005 11 03 | G96 | 0.3− | 0.4+ | 2006 11 22 | H07 | 0.0 | 0.0 |
| 2002 01 14 | 704 | 0.1+ | 0.5+ | 2005 11 03 | G96 | 0.4− | 0.2− | 2006 11 22 | H07 | 0.1− | 0.1− |
| 2002 01 14 | 704 | 0.4+ | 0.6+ | 2005 11 03 | G96 | 0.2− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 01 14 | 704 | 0.5+ | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.4− |
| 2003 04 07 | 691 | 0.5+ | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2003 04 07 | 691 | 0.1+ | 0.6+ | 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2003 04 07 | 691 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2004 05 28 | 691 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2004 05 28 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2004 05 28 | 691 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.8+ | 0.8+ |
| 2004 06 08 | 691 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2004 06 08 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.4− | | | | |
| 2004 06 08 | 691 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.6− | | | | |

**(138840)∗ 2000 VB$_{10}$ = 2005 SN$_{122}$**

Discovered 2000 Nov. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 93883)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.35887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17934073 | $\omega$ | 298.52196 | | +0.97926718 | +0.16681031 | |
| $a$ | 3.1142257 | $\Omega$ | 52.10902 | | −0.09317963 | +0.87471225 | |
| $e$ | 0.0290531 | $i$ | 8.37426 | | −0.17987034 | +0.45503055 | |
| $P$ | 5.50 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 13 | 691 | 0.2+ | 0.1− | 2002 02 08 | 645 | 0.2− | 0.1− | 2005 09 13 | 703 | 0.8+ | 0.2+ |
| 1997 03 13 | 691 | 0.2+ | 0.4− | 2003 03 22 | 644 | 0.1− | 0.0 | 2005 09 13 | 703 | 1.3− | 0.4+ |
| 1997 03 13 | 691 | 0.1+ | 0.3− | 2003 03 22 | 644 | 0.1+ | 0.1+ | 2005 09 13 | 703 | 0.3+ | 1.3+ |
| 2000 11 01 | 704 | 0.7− | 1.4+ | 2003 03 22 | 644 | 0.3+ | 0.3+ | 2005 09 24 | 699 | 0.1+ | 1.2+ |
| 2000 11 01 | 704 | 1.1− | 0.6+ | 2003 03 28 | 691 | (2.2− | 0.1−) | 2005 09 24 | 699 | (2.5− | 1.1+) |
| 2000 11 01 | 704 | 0.2− | 0.4+ | 2003 03 28 | 691 | 0.2+ | 0.4+ | 2005 09 24 | 699 | (0.4− | 1.8+) |
| 2000 11 02 | 704 | 0.5− | 0.4− | 2003 03 28 | 691 | 0.5+ | 0.1+ | 2005 09 24 | 699 | 0.3+ | 0.4+ |
| 2000 11 02 | 704 | 0.2− | 0.6+ | 2003 03 31 | 699 | 0.0 | 0.0 | 2005 09 29 | 644 | 0.8− | 0.1+ |
| 2000 11 02 | 704 | 0.4+ | 0.4+ | 2003 03 31 | 699 | 1.1+ | 0.5− | 2005 09 29 | 644 | 0.8− | 0.4+ |
| 2000 11 02 | 704 | 0.1− | 0.7+ | 2003 03 31 | 699 | 1.3− | 0.1+ | 2005 09 29 | 644 | 0.7− | 0.3+ |
| 2000 11 02 | 704 | 0.0 | 1.1+ | 2003 03 31 | 699 | 0.1− | 0.1+ | 2005 09 30 | 699 | 1.0− | 0.9+ |
| 2000 11 29 | 691 | 0.2+ | 0.1− | 2003 04 07 | 691 | 0.5+ | 0.5+ | 2005 09 30 | 699 | 0.4− | 0.0 |
| 2000 11 29 | 691 | 0.1+ | 0.2− | 2003 04 07 | 691 | 0.3+ | 0.7+ | 2005 09 30 | 699 | 0.6− | 1.4+ |
| 2000 11 29 | 691 | 0.0 | 0.3− | 2003 04 07 | 691 | 0.8+ | 0.8+ | 2005 09 30 | 699 | 0.6− | 1.3+ |
| 2002 01 20 | 699 | 0.4+ | 0.6+ | 2003 04 25 | 699 | 0.1+ | 0.6− | 2005 10 05 | 703 | (1.6− | 0.3−) |
| 2002 01 20 | 699 | 0.1+ | 0.1+ | 2003 04 25 | 699 | 1.1+ | 0.2+ | 2005 10 05 | 703 | 0.0 | 0.1+ |
| 2002 01 20 | 699 | 0.1− | 0.2− | 2003 04 25 | 699 | 0.5− | 0.0 | 2005 10 05 | 703 | 0.3− | 0.3+ |
| 2002 01 20 | 699 | 0.2− | 0.6+ | 2003 04 25 | 699 | 0.6+ | 0.2+ | 2005 10 05 | 703 | 0.3− | 0.5− |
| 2002 02 03 | 699 | 0.5− | 0.0 | 2003 05 02 | 691 | 0.3− | 0.6+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2002 02 03 | 699 | 0.1− | 0.0 | 2003 05 02 | 691 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 02 03 | 699 | 0.6+ | 0.3+ | 2003 05 02 | 691 | 0.0 | 0.6+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2002 02 03 | 699 | 0.7− | 0.5+ | 2005 09 03 | 703 | 1.4+ | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.4+ |
| 2002 02 03 | 644 | 0.2+ | 0.4+ | 2005 09 03 | 703 | 1.3− | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.3+ |
| 2002 02 03 | 644 | (0.7+ | 1.6+) | 2005 09 03 | 703 | 0.7− | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.3+ |
| 2002 02 03 | 644 | 0.5+ | 0.4+ | 2005 09 03 | 703 | (0.9+ | 1.5+) | | | | |
| 2002 02 08 | 645 | 0.1− | 0.1− | 2005 09 13 | 703 | 0.8− | 1.2+ | | | | |

**(138841)∗ 2000 VT$_{15}$**

Discovered 2000 Nov. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.70413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21600059 | $\omega$ | 287.03434 | | −0.75878901 | −0.64511679 | |
| $a$ | 2.7510559 | $\Omega$ | 212.95497 | | +0.64256132 | −0.71886360 | |
| $e$ | 0.2735374 | $i$ | 9.50158 | | +0.10655608 | −0.25895841 | |
| $P$ | 4.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 03 | 691 | 0.3− | 0.0 | 2002 05 12 | 704 | 0.2− | 0.0 | 2006 01 30 | 703 | 0.0 | 0.2+ |
| 1995 09 03 | 691 | 0.3− | 0.1+ | 2002 05 12 | 704 | 0.5− | 0.3− | 2006 01 30 | 703 | 0.1+ | 0.1− |
| 1995 09 03 | 691 | 0.1− | 0.0 | 2002 05 14 | 699 | 0.1− | 1.6+ | 2006 01 30 | 703 | 0.3− | 0.1− |
| 2000 11 01 | 704 | 1.0+ | 1.1+ | 2002 05 14 | 699 | 0.2− | 1.3+ | 2006 01 30 | 703 | 0.8− | 0.0 |
| 2000 11 01 | 704 | 0.9+ | 0.4+ | 2002 05 14 | 699 | 0.6− | 1.5+ | 2006 02 07 | 703 | 0.5+ | 0.2+ |
| 2000 11 01 | 704 | 0.1+ | 0.5+ | 2002 05 14 | 699 | 0.3− | 0.1− | 2006 02 07 | 703 | 0.7− | 0.3+ |
| 2000 11 01 | 704 | 0.8− | 0.2− | 2005 10 30 | 644 | 0.2+ | 0.5+ | 2006 02 07 | 703 | 0.0 | 0.0 |
| 2000 11 01 | 704 | 0.7+ | 0.9+ | 2005 10 30 | 644 | 0.1− | 0.0 | 2006 02 07 | 703 | 0.0 | 0.3+ |
| 2000 11 02 | 704 | 0.1+ | 0.6+ | 2005 10 30 | 644 | 0.1+ | 0.2+ | 2006 02 23 | 703 | 0.1− | 0.4− |
| 2000 11 02 | 704 | 0.1− | 0.3+ | 2005 10 30 | 644 | 0.0 | 0.5+ | 2006 02 23 | 703 | 0.2− | 0.1− |
| 2000 11 02 | 704 | 0.8− | 0.1+ | 2005 10 30 | 644 | 0.2+ | 0.6+ | 2006 02 23 | 703 | 0.3− | 0.1+ |
| 2000 11 02 | 704 | 0.4+ | 0.7− | 2005 10 30 | 644 | 0.2+ | 0.1+ | 2006 03 17 | 644 | 0.2+ | 0.1+ |
| 2000 11 02 | 704 | 0.1+ | 0.9+ | 2005 11 06 | 703 | 0.2− | 1.1+ | 2006 03 17 | 644 | 0.0 | 0.0 |
| 2000 11 24 | 699 | 0.6− | 1.1+ | 2005 11 06 | 703 | (2.7− | 2.7+) | 2006 03 17 | 644 | 0.1− | 0.1+ |
| 2000 11 24 | 699 | 0.4+ | 0.8+ | 2005 11 06 | 703 | 1.5− | 0.9+ | 2006 03 24 | 704 | 0.2− | 1.1− |
| 2000 11 24 | 699 | 0.2+ | 1.1+ | 2005 11 06 | 703 | 0.9− | 0.9+ | 2006 03 24 | 704 | 0.9+ | 0.5+ |
| 2000 11 24 | 699 | 0.3− | 0.6+ | 2005 12 06 | 704 | 1.4+ | 0.4− | 2006 03 24 | 704 | 0.1− | 0.1+ |
| 2000 11 27 | 704 | 1.6+ | 0.7+ | 2005 12 06 | 704 | 1.0+ | 0.1− | 2006 03 24 | 704 | 0.3+ | 0.3− |
| 2000 11 27 | 704 | 0.6+ | 0.6− | 2005 12 06 | 704 | 1.2+ | 0.4− | 2006 03 24 | 704 | 0.4+ | 0.2− |
| 2000 11 27 | 704 | (1.0+ | 2.2+) | 2005 12 06 | 704 | 0.2+ | 0.0 | 2006 04 03 | 703 | 0.7− | 0.0 |
| 2000 11 27 | 704 | 0.9+ | 0.4+ | 2005 12 06 | 704 | 0.6+ | 0.1− | 2006 04 03 | 703 | 0.0 | 1.0− |
| 2000 12 06 | 691 | 0.3− | 0.1− | 2005 12 06 | 703 | 0.1− | 0.3+ | 2006 04 03 | 703 | 0.0 | 0.2− |
| 2000 12 06 | 691 | 0.2− | 0.0 | 2005 12 06 | 703 | 1.4− | 0.5+ | 2006 04 03 | 703 | 0.7− | 0.3− |
| 2000 12 06 | 691 | 0.2− | 0.2− | 2005 12 06 | 703 | 0.1+ | 0.9+ | 2006 04 12 | 644 | 0.0 | 0.3+ |
| 2002 05 04 | 644 | 1.0+ | 0.3+ | 2006 01 07 | 699 | 0.3+ | 0.4− | 2006 04 12 | 644 | 0.0 | 0.1+ |
| 2002 05 04 | 644 | 0.8+ | 0.2+ | 2006 01 07 | 699 | 0.5+ | 0.1+ | 2006 04 12 | 644 | 0.2+ | 0.3+ |
| 2002 05 04 | 644 | 0.7+ | 0.1+ | 2006 01 07 | 699 | 0.4+ | 0.1− | 2006 04 20 | 703 | 1.6− | 0.2− |
| 2002 05 10 | 704 | 0.2+ | 1.4+ | 2006 01 07 | 699 | 0.6− | 0.7− | 2006 04 20 | 703 | 0.6+ | 0.2+ |
| 2002 05 10 | 704 | 0.3+ | 0.7+ | 2006 01 10 | 703 | 0.3+ | 0.4− | 2006 04 20 | 703 | 0.5− | 0.0 |
| 2002 05 10 | 704 | 0.2+ | 1.6+ | 2006 01 10 | 703 | 0.2− | 0.1+ | 2006 04 20 | 703 | 1.2+ | 0.0 |
| 2002 05 10 | 704 | 0.5− | 1.3+ | 2006 01 10 | 703 | 0.0 | 0.0 | | | | |
| 2002 05 12 | 704 | 0.4+ | 0.1+ | 2006 01 10 | 703 | 0.5− | 0.1+ | | | | |

**(138842)∗ 2000 VN$_{22}$**

Discovered 2000 Nov. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.72525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17012981 | $\omega$ | 21.97649 | | −0.38556464 | −0.91618698 | |
| $a$ | 3.2256391 | $\Omega$ | 90.84156 | | +0.82944259 | −0.39604369 | |
| $e$ | 0.1198052 | $i$ | 6.27428 | | +0.40418424 | −0.06124386 | |
| $P$ | 5.79 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.4− | 1.0+ | 2002 02 08 | 704 | 0.5− | 0.4+ | 2003 05 25 | 691 | 0.5+ | 0.1+ |
| 2000 11 01 | 704 | 0.4+ | 0.4− | 2002 02 08 | 704 | 0.9− | 0.3− | 2003 05 30 | 704 | 0.2+ | 0.1+ |
| 2000 11 01 | 704 | 0.6− | 0.3+ | 2002 02 10 | 608 | 0.3+ | 0.6+ | 2003 05 30 | 704 | 0.6+ | 0.1− |
| 2000 11 01 | 704 | 0.2+ | 0.6+ | 2002 02 10 | 608 | 1.4+ | 0.7+ | 2003 05 30 | 704 | 0.4− | 0.5+ |
| 2000 11 02 | 704 | 0.3+ | 1.3+ | 2002 02 10 | 608 | 0.4+ | 0.0 | 2003 05 30 | 704 | 0.6+ | 0.1+ |
| 2000 11 02 | 704 | 0.6− | 1.2+ | 2002 02 12 | 704 | 0.4− | 0.2− | 2003 06 03 | 926 | 0.1+ | 0.1− |
| 2000 11 02 | 704 | 1.0− | 0.9+ | 2002 02 12 | 704 | 0.6+ | 0.8− | 2003 06 03 | 926 | 0.1− | 0.0 |
| 2000 11 27 | 704 | 0.4− | 1.6+ | 2002 02 12 | 704 | 0.4+ | 0.1− | 2003 06 03 | 926 | 0.2+ | 0.1− |
| 2000 11 27 | 704 | 0.7− | 0.6+ | 2002 02 14 | 644 | 0.1− | 0.8+ | 2003 06 06 | 691 | 0.5+ | 1.2+ |
| 2000 11 27 | 704 | 0.2+ | 0.8+ | 2002 02 14 | 644 | 0.2− | 0.8+ | 2003 06 06 | 691 | 0.7+ | 1.2+ |
| 2000 11 27 | 704 | 0.2− | 0.7+ | 2002 02 14 | 644 | 0.2+ | 0.7+ | 2003 06 06 | 691 | 0.9+ | 1.4+ |
| 2000 11 27 | 704 | 0.6− | 0.0 | 2002 03 11 | 644 | 0.4+ | 0.6+ | 2005 10 12 | 291 | 0.1+ | 0.9+ |
| 2000 11 27 | 704 | 0.2+ | 1.2+ | 2002 03 11 | 644 | 0.4+ | 0.7+ | 2005 10 12 | 291 | 0.3− | 0.8+ |
| 2000 11 27 | 704 | 0.1+ | 1.7+ | 2002 03 11 | 644 | 0.6+ | 0.7+ | 2005 10 12 | 291 | 0.7− | 1.3+ |
| 2000 11 27 | 704 | 0.0 | 0.5+ | 2002 03 17 | 704 | 0.6+ | 0.8− | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2000 12 01 | 691 | 0.3− | 0.4− | 2002 03 17 | 704 | 0.2+ | 1.4− | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2000 12 01 | 691 | 0.0 | 0.7− | 2002 03 17 | 704 | (0.4+ | 1.7−) | 2006 11 11 | 691 | 0.1+ | 0.5+ |
| 2000 12 01 | 691 | 0.3− | 0.3− | 2002 03 22 | 644 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2000 12 17 | 699 | 0.6− | 0.1+ | 2002 03 22 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1− | 1.2− |
| 2000 12 17 | 699 | 1.3− | 1.5+ | 2002 03 22 | 644 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2000 12 17 | 699 | 0.3− | 0.1+ | 2002 04 02 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2000 12 17 | 699 | 0.6− | 1.6+ | 2002 04 02 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.4− |
| 2001 01 19 | 691 | 0.7+ | 0.3+ | 2002 04 02 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.3+ |
| 2001 01 19 | 691 | 0.1− | 0.0 | 2003 04 05 | 691 | 0.6+ | 0.9+ | 2006 11 18 | 704 | 1.1− | 0.4+ |
| 2001 01 19 | 691 | 0.3+ | 0.7+ | 2003 04 05 | 691 | 0.2− | 1.2+ | 2006 11 18 | 704 | 1.1− | 0.4+ |
| 2002 01 19 | 704 | 0.5− | 0.4+ | 2003 04 05 | 691 | 0.3+ | 1.1+ | 2006 11 19 | 691 | 0.4− | 0.4+ |
| 2002 01 19 | 704 | 1.2− | 0.7− | 2003 05 05 | 704 | 1.1+ | 1.5+ | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2002 01 19 | 704 | 0.5+ | 0.3− | 2003 05 05 | 704 | 0.6+ | 1.0+ | 2006 11 19 | 691 | 0.6− | 0.6+ |
| 2002 01 19 | 704 | 0.0 | 0.7− | 2003 05 05 | 291 | 0.3− | 0.2− | 2006 12 01 | 704 | 0.5+ | 0.3+ |
| 2002 01 21 | 644 | 0.7+ | 0.8+ | 2003 05 05 | 704 | 0.6+ | 0.7+ | 2006 12 01 | 704 | 0.4+ | 1.5+ |
| 2002 01 21 | 644 | 1.2+ | 0.1+ | 2003 05 05 | 291 | 0.5− | 0.1+ | 2006 12 01 | 704 | 1.4+ | 0.8+ |
| 2002 01 21 | 644 | 0.8+ | 0.4+ | 2003 05 05 | 704 | 0.7+ | 0.7+ | 2006 12 01 | 691 | 0.0 | 0.4+ |
| 2002 02 08 | 704 | 0.6− | 0.4− | 2003 05 05 | 291 | 0.5− | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.4+ |
| 2002 02 08 | 704 | 0.5− | 0.2− | 2003 05 25 | 691 | 0.2− | 0.7+ | 2006 12 01 | 691 | 0.0 | 0.6+ |
| 2002 02 08 | 704 | 1.2− | 0.0 | 2003 05 25 | 691 | 0.2− | 0.8+ | | | | |

**(138843)∗ 2000 VF$_{39}$**

Discovered 2000 Nov. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 103.99844 | | (2000.0) | | −0.12883017 | +0.90556901 |
| $n$ | 0.49277528 | $\omega$ | 220.59933 | | −0.70304382 | +0.20402929 |
| $a$ | 1.5874624 | $\Omega$ | 46.59658 | | −0.69937985 | −0.37190969 |
| $e$ | 0.1648273 | $i$ | 33.79956 | | | |
| $P$ | 2.00 | $H$ | 18.3 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.9+ | 0.9− | 2002 11 05 | 644 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1994 11 01 | 691 | 1.1+ | 0.7− | 2002 11 05 | 644 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 1994 11 01 | 691 | 1.1+ | 0.8− | 2002 11 05 | 291 | 0.4− | 0.4+ | 2006 11 01 | 691 | 0.6+ | 0.2+ |
| 2000 10 26 | 691 | 0.1− | 0.8− | 2002 11 05 | 291 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2000 10 26 | 691 | 0.0 | 0.8− | 2002 11 05 | 291 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.8− | 1.3− |
| 2000 10 26 | 691 | 0.2− | 0.8− | 2002 11 05 | 644 | 0.2+ | 1.0+ | 2006 11 11 | 703 | 0.7− | 1.1− |
| 2000 11 02 | 704 | 0.4+ | 0.9+ | 2002 11 12 | 704 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.7− | 1.4− |
| 2000 11 02 | 704 | 0.3+ | 1.3+ | 2002 11 12 | 704 | 0.9− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2000 11 02 | 704 | 0.2+ | 1.1+ | 2002 11 12 | 704 | 0.5− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2000 11 03 | 704 | 0.5− | 0.8− | 2002 11 12 | 704 | (0.0 | 2.0+) | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2000 11 03 | 704 | 0.9+ | 0.2+ | 2002 11 12 | 704 | 0.2+ | 0.8+ | 2006 11 14 | G96 | 0.5− | 0.3− |
| 2000 11 03 | 704 | 0.1− | 1.3+ | 2002 11 14 | 704 | (0.6+ | 1.6+) | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2000 11 05 | 046 | 1.6− | 1.0+ | 2002 11 14 | 704 | 0.9− | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2000 11 05 | 046 | 0.8− | 0.8+ | 2002 11 14 | 704 | 1.2− | 1.2+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2000 11 05 | 046 | 0.2+ | 0.3+ | 2002 11 24 | 644 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2000 11 05 | 046 | 0.7+ | 1.4+ | 2002 11 24 | 644 | (1.8+ | 0.1−) | 2006 11 19 | 704 | 0.4− | 0.8+ |
| 2000 11 05 | 046 | 0.8− | 0.0 | 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.3+ | 0.1− |
| 2000 11 05 | 046 | 0.1+ | 0.5+ | 2004 11 04 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.9+ | 0.8+ |
| 2002 10 31 | 644 | 0.7− | 0.1+ | 2004 11 04 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2002 10 31 | 644 | 0.2+ | 0.5− | 2004 11 04 | 691 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.0 |
| 2002 10 31 | 644 | 0.2− | 0.3+ | 2004 11 04 | 703 | 1.1− | 0.5− | 2006 11 22 | 703 | 0.7− | 0.5− |
| 2002 11 03 | 608 | 0.8+ | 0.9− | 2004 11 04 | 703 | 0.4− | 0.2+ | 2006 11 22 | 703 | 0.4− | 0.4− |
| 2002 11 03 | 608 | 0.3+ | 1.1− | 2004 11 04 | 703 | 0.5− | 0.3+ | 2006 11 22 | 703 | 0.3+ | 1.3− |
| 2002 11 03 | 608 | 0.3− | 0.7− | 2004 11 04 | 703 | 0.8− | 0.8− | 2006 11 25 | G96 | 0.2+ | 0.3+ |
| 2002 11 04 | 673 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.6+ | 2006 11 25 | G96 | 0.6+ | 0.3− |
| 2002 11 04 | 673 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2002 11 04 | 673 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.8+ | | | | |

**(138844)∗ 2000 VC$_{41}$**

Discovered 2000 Nov. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.30887 | | (2000.0) | | −0.38877674 | −0.92045068 |
| $n$ | 0.17353934 | $\omega$ | 95.51865 | | +0.78346343 | −0.35329400 |
| $a$ | 3.1832500 | $\Omega$ | 17.52743 | | +0.48480687 | −0.16719417 |
| $e$ | 0.1154845 | $i$ | 7.68795 | | | |
| $P$ | 5.68 | $H$ | 14.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 02 | 691 | 0.1− | 0.3+ | 2002 02 03 | 644 | 0.1− | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.4− |
| 1994 10 02 | 691 | 0.4− | 0.2+ | 2002 02 06 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 691 | 0.8+ | 0.6+ |
| 1994 10 02 | 691 | 0.4− | 0.3− | 2002 02 06 | 704 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 1994 10 27 | 691 | 0.1+ | 0.2+ | 2002 02 06 | 704 | 0.1+ | 0.0 | 2006 11 15 | 704 | 1.2+ | 0.2− |
| 1994 10 27 | 691 | 0.7+ | 0.8− | 2002 02 06 | 704 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.8− | 0.4− |
| 1994 10 27 | 691 | 0.1+ | 0.1− | 2002 02 06 | 704 | 0.3− | 0.2+ | 2006 11 15 | 704 | 0.7− | 0.9+ |
| 1997 04 03 | 704 | 0.4+ | 1.2+ | 2002 02 08 | 704 | 1.3+ | 0.8+ | 2006 11 15 | 704 | (1.9− | 0.6−) |
| 1997 04 03 | 704 | 1.5− | 0.6− | 2002 02 08 | 704 | (0.7− | 2.3+) | 2006 11 16 | 704 | 1.3− | 0.6+ |
| 2000 11 01 | 704 | 0.8+ | 0.4+ | 2002 02 08 | 704 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2000 11 01 | 704 | 0.2+ | 0.1+ | 2002 02 08 | 704 | 0.7+ | 0.9+ | 2006 11 16 | 704 | 0.7− | 1.0+ |
| 2000 11 01 | 704 | 0.1− | 0.1+ | 2002 02 08 | 704 | 1.3+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2000 11 01 | 704 | 0.7− | 1.2+ | 2002 02 23 | 644 | 0.0 | 0.4+ | 2006 11 17 | 644 | 0.1+ | 0.1− |
| 2000 11 03 | 704 | 0.9+ | 1.2+ | 2002 02 23 | 644 | 0.1+ | 0.4+ | 2006 11 17 | 644 | 0.0 | 0.2− |
| 2000 11 03 | 704 | 0.2− | 0.7+ | 2002 02 23 | 644 | 0.0 | 0.8+ | 2006 11 17 | 644 | 0.5+ | 0.5− |
| 2000 11 03 | 704 | 0.8− | 1.0+ | 2002 03 05 | 699 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2002 01 11 | 699 | 0.1− | 0.1+ | 2002 03 05 | 699 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2002 01 11 | 699 | 0.0 | 0.4− | 2002 03 05 | 699 | 0.3+ | 1.3+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2002 01 11 | 699 | 1.0− | 0.9− | 2002 03 05 | 699 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.4− |
| 2002 01 11 | 699 | 0.1− | 0.8+ | 2002 03 11 | 644 | 0.7− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.8− |
| 2002 01 15 | 608 | 1.1+ | 0.4+ | 2002 03 11 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2002 01 15 | 608 | 0.6+ | 0.2− | 2002 03 11 | 644 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.9− |
| 2002 01 15 | 608 | 1.1+ | 0.3+ | 2002 03 11 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.8− |
| 2002 01 20 | 699 | 0.3− | 0.3− | 2002 03 11 | 644 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 2002 01 20 | 699 | 0.3+ | 0.7+ | 2002 03 11 | 644 | 0.1+ | 0.2+ | 2006 11 24 | 703 | (0.2− | 4.1−) |
| 2002 01 20 | 699 | 0.3− | 0.1+ | 2005 08 28 | 691 | 0.0 | 0.5+ | 2006 11 24 | 703 | (1.6+ | 4.3−) |
| 2002 01 20 | 699 | 0.0 | 0.8+ | 2005 08 28 | 691 | 0.1− | 0.2+ | 2006 11 24 | 703 | 0.5+ | 0.0 |
| 2002 01 21 | 704 | 0.1− | 0.0 | 2005 08 28 | 691 | 0.1− | 0.0 | 2006 11 24 | 703 | 0.0 | 0.5− |
| 2002 01 21 | 704 | 0.7+ | 1.2+ | 2005 09 01 | 691 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.4− | 0.5− |
| 2002 01 21 | 704 | 0.7+ | 0.7+ | 2005 09 01 | 691 | 0.3− | 0.3+ | 2006 11 27 | 704 | 1.1− | 0.6+ |
| 2002 01 21 | 704 | 0.6+ | 0.7− | 2005 09 01 | 691 | 0.4− | 0.1− | 2006 11 27 | 704 | 0.9− | 0.4− |
| 2002 01 21 | 704 | 0.1+ | 0.3+ | 2005 09 11 | 691 | 0.0 | 0.5+ | 2006 11 27 | 704 | 1.0− | 0.1− |
| 2002 02 03 | 644 | 0.2+ | 0.0 | 2005 09 11 | 691 | 0.2− | 0.4+ | | | | |
| 2002 02 03 | 644 | 0.1+ | 0.0 | 2005 09 11 | 691 | 0.2− | 0.6+ | | | | |

**(138845)∗ 2000 VV$_{57}$**

Discovered 2000 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 153.48292 | | (2000.0) | | +0.91147402 | −0.40091104 |
| $n$ | 0.22818696 | $\omega$ | 342.00226 | | +0.39230688 | +0.77982823 |
| $a$ | 2.6522157 | $\Omega$ | 42.01230 | | +0.12373529 | +0.48076841 |
| $e$ | 0.2519125 | $i$ | 7.91091 | | | |
| $P$ | 4.32 | $H$ | 15.2 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 704 | 0.1+ | 0.3− | 2004 09 08 | 704 | 0.5− | 0.6+ | 2004 10 20 | 703 | 0.6+ | 0.7+ |
| 2000 11 03 | 704 | 0.3− | 0.1+ | 2004 09 08 | 704 | 0.9− | 0.2− | 2004 10 20 | 703 | (0.3− | 2.9+) |
| 2000 11 03 | 704 | 0.4+ | 0.8+ | 2004 09 08 | 704 | 0.4− | 0.5+ | 2004 10 20 | 703 | 0.8+ | 1.4+ |
| 2000 11 03 | 704 | 0.1− | 0.4− | 2004 09 08 | 704 | 0.9− | 0.3+ | 2004 11 11 | 699 | 0.1− | 0.1− |
| 2000 11 03 | 704 | 0.1+ | 0.3+ | 2004 09 09 | 113 | 0.3− | 0.5− | 2004 11 11 | 699 | 0.0 | 0.1+ |
| 2000 11 05 | 704 | 0.1+ | 0.1+ | 2004 09 09 | 113 | 0.6− | 0.3− | 2004 11 11 | 699 | 0.3− | 0.5+ |
| 2000 11 05 | 704 | 0.7− | 0.1+ | 2004 09 09 | 113 | 0.2− | 0.1− | 2004 11 11 | 699 | 0.1− | 0.3− |
| 2000 11 05 | 704 | 1.0− | 1.7+ | 2004 09 09 | 113 | 0.3− | 0.2− | 2004 11 12 | 704 | 0.3+ | 0.1− |
| 2000 11 05 | 704 | 0.4− | 0.5+ | 2004 09 17 | 699 | 0.2+ | 0.0 | 2004 11 12 | 704 | 0.4+ | 0.7+ |
| 2000 11 20 | 704 | 0.3− | 0.1− | 2004 09 17 | 699 | 0.2+ | 0.1+ | 2004 11 12 | 704 | 0.1+ | 0.9+ |
| 2000 11 20 | 704 | 0.1+ | 0.8− | 2004 09 17 | 699 | 0.3+ | 0.1− | 2004 11 12 | 704 | 0.1− | 0.4+ |
| 2000 11 20 | 704 | 0.1− | 0.6− | 2004 09 17 | 699 | 0.1+ | 0.0 | 2004 11 12 | 704 | 0.4+ | 0.2− |
| 2000 11 20 | 704 | 0.4− | 0.2− | 2004 09 21 | 704 | 0.5+ | 0.0 | 2004 11 12 | 704 | 0.4− | 0.7+ |
| 2000 11 20 | 704 | 1.0− | 0.4+ | 2004 09 21 | 704 | 0.7+ | 0.2+ | 2004 11 12 | 704 | 0.5+ | 0.0 |
| 2000 11 30 | 704 | 0.2+ | 0.0 | 2004 09 21 | 704 | 0.5+ | 0.1+ | 2004 11 12 | 704 | 0.1− | 0.2+ |
| 2000 11 30 | 704 | 0.3+ | 0.1+ | 2004 09 21 | 704 | 0.6+ | 0.0 | 2004 11 12 | 704 | 0.0 | 0.1− |
| 2000 11 30 | 704 | (2.9− | 0.0 ) | 2004 09 21 | 704 | 0.7+ | 0.1− | 2004 11 12 | 704 | 0.2+ | 0.2+ |
| 2000 11 30 | 704 | 1.0− | 0.1− | 2004 10 03 | 644 | 0.4− | 0.2− | 2004 11 20 | 703 | 0.4+ | 0.3+ |
| 2000 11 30 | 704 | 0.1− | 0.2− | 2004 10 03 | 644 | 0.3− | 0.1− | 2004 11 20 | 703 | 0.1− | 0.2− |
| 2000 11 30 | 704 | 0.2− | 0.1+ | 2004 10 03 | 644 | 0.2− | 0.0 | 2004 11 20 | 703 | 0.1− | 0.9− |
| 2000 11 30 | 704 | 0.7+ | 0.4− | 2004 10 04 | 644 | 0.8− | 0.0 | 2004 11 20 | 703 | 0.6− | 0.7− |
| 2000 12 01 | 704 | 0.2+ | 0.0 | 2004 10 04 | 644 | 0.8− | 0.1− | 2004 12 07 | 704 | 0.5+ | 0.4− |
| 2000 12 01 | 704 | 0.5+ | 0.5− | 2004 10 04 | 644 | 0.3+ | 0.1− | 2004 12 07 | 704 | 0.2+ | 0.0 |
| 2000 12 01 | 704 | 0.1− | 0.6− | 2004 10 05 | 704 | 0.5− | 0.0 | 2004 12 07 | 704 | 0.4+ | 0.0 |
| 2000 12 04 | 704 | 0.7+ | 0.0 | 2004 10 05 | 704 | 0.2− | 0.3+ | 2004 12 07 | 704 | 1.1− | 0.3+ |
| 2000 12 04 | 704 | 0.4− | 0.0 | 2004 10 05 | 704 | 0.5− | 0.1− | 2006 01 25 | 291 | 0.8+ | 0.6+ |
| 2000 12 04 | 704 | 0.5+ | 0.3− | 2004 10 06 | 704 | 0.2+ | 0.2+ | 2006 01 25 | 291 | 0.9+ | 0.7+ |
| 2000 12 04 | 704 | 0.4− | 0.3− | 2004 10 06 | 704 | 0.2+ | 0.3− | 2006 01 25 | 291 | 0.5+ | 0.7+ |
| 2000 12 04 | 704 | 0.3− | 0.3− | 2004 10 06 | 704 | 0.1+ | 0.1+ | 2006 02 20 | 703 | 0.6+ | 0.6+ |
| 2000 12 05 | 300 | 0.0 | 0.2+ | 2004 10 06 | 704 | 0.1− | 0.1+ | 2006 02 20 | 703 | 0.1− | 1.7+ |
| 2000 12 05 | 300 | 0.1+ | 0.6− | 2004 10 06 | 704 | 0.1− | 0.1− | 2006 02 20 | 703 | (0.4− | 2.4+) |
| 2000 12 05 | 300 | 0.1+ | 0.7− | 2004 10 09 | 704 | 0.5− | 0.2+ | 2006 02 20 | 703 | 0.4+ | 1.9+ |
| 2000 12 20 | 704 | 0.6+ | 0.0 | 2004 10 09 | 704 | 0.5− | 0.3+ | 2006 02 20 | 703 | 0.0 | 1.0+ |
| 2000 12 20 | 704 | 0.1− | 1.1− | 2004 10 09 | 704 | 0.1− | 0.5+ | 2006 02 20 | 703 | 1.0− | 0.3− |
| 2000 12 20 | 704 | 1.0+ | 0.5− | 2004 10 09 | 704 | 0.1− | 0.0 | 2006 02 20 | 703 | 0.2− | 0.4+ |
| 2000 12 20 | 704 | 0.3+ | 0.9− | 2004 10 09 | 704 | 0.3− | 0.1− | 2006 02 20 | 703 | 0.0 | 0.6+ |
| 2000 12 20 | 704 | 0.9+ | 0.6− | 2004 10 09 | 699 | 0.2+ | 0.3+ | 2006 02 22 | 703 | 0.6− | 1.7− |
| 2001 01 04 | 704 | 0.5+ | 0.7− | 2004 10 09 | 699 | 0.5− | 0.2+ | 2006 02 22 | 703 | 1.2− | 1.4− |
| 2001 01 04 | 704 | 1.3+ | 0.6− | 2004 10 09 | 699 | 0.2− | 0.1− | 2006 02 22 | 703 | 0.4− | 1.4− |
| 2001 01 04 | 704 | 0.6+ | 0.5+ | 2004 10 09 | 699 | 0.4− | 0.1− | 2006 02 22 | 703 | 0.5− | 1.6− |
| 2001 01 04 | 704 | 0.2+ | 0.5+ | 2004 10 18 | 704 | 0.0 | 1.1+ | 2006 03 03 | 699 | 0.8− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 699 | 0.8+ | 2.3+ | 2004 10 18 | 704 | 0.1− | 0.1+ | 2006 03 03 | 699 | 0.8+ | 0.1− |
| 2002 03 09 | 699 | 0.6+ | 0.8+ | 2004 10 18 | 704 | 0.3− | 0.3+ | 2006 03 03 | 699 | 0.6+ | 0.1+ |
| 2002 03 09 | 699 | 0.2− | 0.9− | 2004 10 18 | 704 | 0.0 | 0.3+ | 2006 03 03 | 699 | 0.3− | 0.4+ |
| 2002 03 09 | 699 | 0.3− | 1.1+ | 2004 10 18 | 704 | 0.3− | 0.9+ | | | | |
| 2004 09 08 | 704 | 0.4+ | 0.3+ | 2004 10 20 | 703 | 0.7− | 1.0+ | | | | |

**(138846)∗ 2000 VJ$_{61}$**

Discovered 2000 Nov. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.87496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30534428 | $\omega$ | 280.46144 | | −0.92933467 | +0.18403952 | |
| $a$ | 2.1841184 | $\Omega$ | 270.70118 | | −0.05181535 | −0.92335365 | |
| $e$ | 0.5636701 | $i$ | 18.67066 | | −0.36558480 | −0.33696809 | |
| $P$ | 3.23 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 704 | 0.4+ | 0.7+ | 2003 11 05 | 461 | 0.2− | 0.2− | 2004 01 21 | 704 | 0.0 | 0.3− |
| 2000 11 02 | 704 | 0.3+ | 0.8+ | 2003 11 14 | 941 | 0.7+ | 0.1− | 2004 01 21 | 704 | 0.3+ | 0.0 |
| 2000 11 02 | 704 | (0.1− | 2.9+) | 2003 11 14 | 941 | 0.5+ | 0.3− | 2004 01 21 | 704 | 0.5+ | 0.2+ |
| 2000 11 06 | 704 | 0.5+ | 0.6+ | 2003 11 14 | 941 | 0.4+ | 0.9− | 2004 01 21 | 704 | 0.4+ | 0.8+ |
| 2000 11 06 | 704 | 0.4+ | 0.6+ | 2003 11 14 | 941 | 0.4+ | 1.1− | 2004 01 23 | 084 | 0.3− | 0.2+ |
| 2000 11 06 | 704 | 0.4+ | 0.3− | 2003 11 15 | 170 | 0.5+ | 0.1− | 2004 01 24 | 830 | 0.0 | 0.2+ |
| 2000 11 06 | 704 | 0.6− | 0.1− | 2003 11 15 | 170 | 0.3+ | 0.3+ | 2004 01 24 | 830 | 0.1+ | 0.2+ |
| 2000 11 06 | 704 | 0.4+ | 0.1− | 2003 11 15 | 170 | 0.3+ | 0.3+ | 2004 01 24 | 830 | 0.1+ | 0.4+ |
| 2000 11 06 | 704 | 0.6− | 0.3− | 2003 11 19 | 704 | 0.3+ | 0.1+ | 2004 01 24 | H72 | 1.3+ | 0.3− |
| 2000 11 06 | 704 | 0.7+ | 0.5+ | 2003 11 19 | 704 | 0.1+ | 0.2− | 2004 01 24 | H72 | 1.1− | 0.8+ |
| 2000 11 06 | 704 | 0.2− | 0.5− | 2003 11 19 | 704 | 0.0 | 0.2+ | 2004 01 24 | H72 | 1.1− | 0.9+ |
| 2000 11 09 | 046 | 0.3+ | 0.1+ | 2003 11 19 | 704 | 0.0 | 0.1− | 2004 01 24 | H72 | 0.8+ | 0.2+ |
| 2000 11 09 | 046 | 1.3+ | 0.2+ | 2003 11 19 | 704 | 0.2+ | 0.0 | 2004 01 24 | 704 | 0.4+ | 0.5+ |
| 2000 11 09 | 046 | 0.1− | 0.2+ | 2003 11 29 | 711 | 0.4− | 0.3− | 2004 01 24 | 704 | 0.4+ | 1.2+ |
| 2000 11 09 | 046 | 0.6− | 0.5− | 2003 11 29 | 711 | 0.1+ | 0.1+ | 2004 01 24 | 704 | 0.5+ | 0.4+ |
| 2000 11 09 | 046 | 0.3− | 0.1+ | 2003 11 29 | 711 | 0.3− | 0.3− | 2004 01 24 | 704 | 0.9+ | 0.8+ |
| 2000 11 09 | 344 | (2.3+ | 1.8−) | 2003 12 03 | 704 | 0.3+ | 0.0 | 2004 01 26 | 699 | 0.2− | 0.0 |
| 2000 11 09 | 344 | 0.0 | 0.2− | 2003 12 03 | 704 | 0.1− | 0.3+ | 2004 01 26 | 699 | 0.0 | 0.2− |
| 2000 11 09 | 344 | 1.5+ | 0.9− | 2003 12 03 | 704 | 0.3+ | 0.5+ | 2004 01 26 | 699 | 0.2− | 0.3− |
| 2000 11 09 | 344 | 0.5+ | 0.5− | 2003 12 03 | 704 | 1.5− | 0.3+ | 2004 01 26 | 699 | 0.2− | 0.3− |
| 2000 11 09 | 344 | 0.5+ | 0.4− | 2003 12 03 | 704 | 0.1+ | 0.3+ | 2004 01 26 | 699 | 0.3+ | 0.1− |
| 2000 11 16 | 853 | 0.2+ | 0.2− | 2003 12 16 | J92 | (2.6+ | 1.6+) | 2004 01 26 | 699 | 0.1+ | 0.3− |
| 2000 11 16 | 853 | 0.0 | 0.1− | 2003 12 16 | J92 | 0.0 | 0.0 | 2004 01 26 | 699 | 0.0 | 0.2− |
| 2000 11 16 | 853 | 0.2+ | 0.2− | 2003 12 16 | J92 | (3.3+ | 1.7+) | 2004 01 26 | 699 | 0.1+ | 0.7− |
| 2000 11 16 | 853 | 0.2− | 0.4− | 2003 12 16 | J92 | 0.6+ | 0.0 | 2004 01 30 | 704 | 0.9− | 0.1− |
| 2000 12 01 | 608 | 0.1− | 1.7+ | 2003 12 16 | J92 | (3.8+ | 1.9+) | 2004 01 30 | 704 | 1.1− | 0.2+ |
| 2000 12 01 | 608 | 0.2− | 1.6+ | 2003 12 16 | J92 | 0.4+ | 0.2− | 2004 01 30 | 704 | 0.9− | 1.0+ |
| 2000 12 01 | 608 | 0.1− | 1.4+ | 2003 12 16 | J92 | 0.2+ | 0.1− | 2004 01 30 | 704 | 1.5− | 0.3+ |
| 2000 12 01 | 413 | 0.1+ | 0.1− | 2003 12 16 | J92 | 0.3− | 0.0 | 2004 02 11 | 644 | 0.2− | 0.2+ |
| 2000 12 01 | 413 | 0.1+ | 0.3− | 2003 12 16 | J92 | 0.3+ | 0.2− | 2004 02 11 | 644 | 0.1− | 0.3+ |
| 2000 12 01 | 413 | 0.5+ | 0.2− | 2003 12 16 | 113 | 0.3+ | 0.0 | 2004 02 11 | 644 | 0.1− | 0.2+ |
| 2000 12 07 | 046 | 0.4+ | 0.1+ | 2003 12 16 | 113 | 0.2+ | 0.2− | 2004 02 17 | 704 | 0.2+ | 0.7+ |
| 2000 12 07 | 046 | 0.4+ | 0.2+ | 2003 12 16 | 113 | 0.3+ | 0.1− | 2004 02 17 | 704 | 0.1− | 0.6+ |
| 2000 12 07 | 046 | 0.3+ | 0.0 | 2003 12 16 | 113 | 0.3+ | 0.1− | 2004 02 17 | 704 | 0.0 | 0.8+ |
| 2000 12 07 | 046 | 0.6+ | 0.0 | 2003 12 16 | 113 | 0.4+ | 0.1− | 2004 02 17 | 704 | 0.5− | 1.3+ |
| 2000 12 27 | 670 | 1.0− | 0.5+ | 2003 12 16 | 113 | 0.1+ | 0.2− | 2004 02 19 | 084 | 0.5− | 0.0 |
| 2000 12 27 | 670 | 1.4− | 0.7− | 2003 12 16 | 113 | 0.1+ | 0.0 | 2004 02 21 | 084 | 0.1+ | 0.3− |
| 2000 12 27 | 670 | 0.4+ | 0.1− | 2003 12 17 | J92 | (3.7+ | 1.9+) | 2004 02 22 | 608 | 0.1− | 0.4− |
| 2001 01 31 | 474 | 0.3− | 0.2− | 2003 12 17 | J92 | 0.7+ | 0.1+ | 2004 02 22 | 608 | 0.1+ | 0.0 |
| 2001 01 31 | 474 | 0.1− | 0.5− | 2003 12 17 | J92 | 0.4+ | 0.2− | 2004 02 22 | 608 | 0.3+ | 0.5− |
| 2001 01 31 | 474 | (2.0+ | 0.5−) | 2003 12 17 | J92 | 0.1− | 0.3− | 2004 02 24 | 198 | 0.9+ | 0.1+ |
| 2001 01 31 | 474 | 0.4− | 1.5− | 2003 12 17 | J92 | 0.1+ | 0.2− | 2004 02 24 | 198 | 1.0+ | 0.1− |
| 2001 02 22 | 422 | 0.2− | 0.2+ | 2003 12 17 | A35 | 0.3+ | 0.0 | 2004 02 24 | 198 | (1.6+ | 0.5−) |
| 2001 02 22 | 422 | 0.2− | 0.1+ | 2003 12 17 | A35 | 0.3+ | 0.1− | 2004 03 05 | 113 | 0.1+ | 0.6+ |
| 2001 04 13 | 413 | 0.3− | 0.0 | 2003 12 17 | A35 | 0.3+ | 0.2− | 2004 03 05 | 113 | 0.2+ | 0.4+ |
| 2001 04 13 | 413 | 0.2− | 0.1+ | 2003 12 18 | 704 | 0.4+ | 0.3− | 2004 03 05 | 113 | 0.1− | 0.1− |
| 2001 04 13 | 413 | 0.2− | 0.1+ | 2003 12 18 | 704 | 0.2+ | 0.5− | 2004 03 05 | 113 | 0.2+ | 0.2− |
| 2001 05 24 | 926 | 0.2− | 0.2+ | 2003 12 18 | 704 | 0.9+ | 0.0 | 2004 03 05 | 113 | 0.1− | 0.3− |
| 2001 05 24 | 926 | 0.2− | 0.0 | 2003 12 18 | 704 | 0.4+ | 0.1− | 2004 03 08 | 699 | (1.1+ | 1.6+) |
| 2001 05 24 | 926 | 0.3− | 0.3+ | 2003 12 18 | 704 | 0.0 | 0.8− | 2004 03 08 | 699 | 1.2− | 0.8+ |
| 2001 05 26 | 046 | 0.0 | 1.1+ | 2003 12 19 | H72 | 0.1− | 0.2+ | 2004 03 08 | 699 | 0.2− | 1.1+ |
| 2001 05 26 | 046 | 0.5+ | 0.7+ | 2003 12 19 | H72 | (0.8− | 3.7−) | 2004 03 08 | 699 | (0.4− | 2.6+) |
| 2001 05 26 | 046 | 0.9+ | 0.9+ | 2003 12 19 | H72 | (2.6+ | 2.7−) | 2004 03 09 | 084 | 0.8− | 0.3− |
| 2001 05 26 | 046 | 0.3+ | 1.1+ | 2003 12 20 | H72 | 0.1− | 0.5− | 2004 03 10 | 084 | 0.5− | 0.0 |
| 2001 05 26 | 046 | 0.7+ | 0.4+ | 2003 12 20 | H72 | 0.3+ | 0.4− | 2004 03 11 | 084 | 0.5+ | 0.7+ |
| 2001 05 27 | 711 | 0.1− | 0.4+ | 2003 12 20 | H72 | 1.3+ | 0.3− | 2004 03 12 | 084 | 0.1+ | 0.8+ |
| 2001 05 27 | 711 | 0.2− | 0.9+ | 2003 12 20 | H72 | 0.9+ | 0.1+ | 2004 03 13 | 084 | 0.6− | 0.1+ |
| 2001 06 15 | 704 | 0.2− | 0.5− | 2003 12 23 | 704 | 0.5+ | 0.6+ | 2004 03 15 | 704 | 0.8− | 0.4+ |
| 2001 06 15 | 704 | 0.7− | 1.0+ | 2003 12 23 | 704 | 0.6+ | 0.6+ | 2004 03 15 | 704 | 0.4− | 0.2+ |
| 2001 06 15 | 704 | 0.1− | 0.9+ | 2003 12 23 | 704 | 0.6+ | 0.6+ | 2004 03 15 | 704 | 0.6− | 0.2+ |
| 2001 06 15 | 704 | 0.2− | 0.9+ | 2003 12 23 | 704 | 0.4+ | 1.0+ | 2004 03 15 | 704 | 0.6− | 0.3+ |
| 2001 06 17 | 699 | 0.7− | 0.2+ | 2003 12 23 | 704 | 0.2+ | 0.5+ | 2004 03 15 | 704 | 0.1+ | 0.7+ |
| 2001 06 17 | 699 | 0.4− | 0.7+ | 2003 12 24 | 379 | 0.1− | 0.8− | 2004 03 19 | 084 | 0.8− | 0.7+ |
| 2001 06 17 | 699 | 0.3− | 0.8+ | 2003 12 24 | 379 | 1.4+ | 0.8− | 2004 04 01 | 084 | 0.5+ | 0.0 |
| 2001 06 17 | 699 | 0.8− | 0.6+ | 2003 12 26 | D85 | 0.2− | 0.1+ | 2004 04 02 | 084 | 0.9− | 0.3− |
| 2001 06 20 | 704 | 0.5+ | 0.6+ | 2003 12 26 | D85 | 0.3+ | 0.4− | 2004 04 04 | 084 | 0.5+ | 0.1− |
| 2001 06 20 | 704 | 0.3− | 0.9+ | 2003 12 26 | D85 | 0.2+ | 0.7− | 2004 05 29 | E12 | 0.3+ | 0.4+ |
| 2001 06 20 | 704 | 0.1− | 0.2− | 2003 12 26 | 130 | 0.0 | 0.6+ | 2004 05 29 | E12 | 0.1+ | 1.5+ |
| 2001 06 20 | 704 | 0.0 | 0.2+ | 2003 12 26 | 130 | 0.4+ | 0.4+ | 2004 05 29 | E12 | 0.7+ | 0.6+ |
| 2001 06 20 | 704 | 0.1− | 0.6+ | 2003 12 26 | 130 | 0.3+ | 0.6+ | 2004 05 29 | E12 | 0.2+ | 0.8+ |
| 2001 06 21 | 493 | 0.2− | 0.2+ | 2003 12 26 | 130 | 0.9+ | 0.6+ | 2004 07 01 | E12 | 0.1+ | 0.4+ |
| 2001 06 21 | 493 | 0.1− | 0.3+ | 2003 12 26 | 104 | 0.3− | 0.3+ | 2004 07 01 | E12 | 0.4+ | 0.3+ |
| 2001 06 25 | 711 | 0.8− | 0.4+ | 2003 12 26 | 104 | 0.0 | 0.1+ | 2004 07 01 | E12 | 0.3+ | 0.4+ |
| 2001 06 25 | 711 | 0.5+ | 0.1− | 2003 12 26 | 434 | 0.4− | 0.6− | 2004 07 01 | E12 | 0.5+ | 0.3+ |
| 2001 06 25 | 711 | 0.4− | 0.5+ | 2003 12 26 | 434 | 0.4+ | 0.7+ | 2004 07 19 | E12 | (0.3− | 1.6+) |
| 2001 06 27 | 046 | 0.0 | 0.4+ | 2003 12 26 | 104 | 0.1− | 0.4+ | 2004 07 19 | E12 | 0.3+ | 0.4+ |
| 2001 06 27 | 046 | 0.4− | 0.5+ | 2003 12 26 | 434 | 0.2− | 0.1+ | 2004 07 19 | E12 | 0.1+ | 0.4+ |
| 2001 06 27 | 046 | 0.5− | 0.4+ | 2003 12 27 | 704 | 0.4− | 0.1− | 2004 07 19 | E12 | 0.4− | 0.2+ |
| 2001 06 27 | 046 | 0.1− | 0.5+ | 2003 12 27 | 704 | 0.1− | 0.2− | 2004 07 19 | 322 | (2.8− | 1.1−) |
| 2001 06 27 | 608 | (1.7+ | 0.2−) | 2003 12 27 | 704 | 0.4− | 0.1+ | 2004 07 19 | 322 | 0.4− | 0.9− |
| 2001 06 27 | 608 | 1.3+ | 0.8+ | 2003 12 27 | 704 | 0.4− | 0.1− | 2004 07 19 | 322 | 1.3+ | 0.4+ |
| 2001 06 27 | 608 | 0.8+ | 0.9+ | 2003 12 27 | 704 | 0.7− | 0.3− | 2004 07 19 | 322 | 1.0− | 1.0− |
| 2001 06 28 | 699 | 0.8− | 0.2+ | 2003 12 28 | H72 | 0.2− | 0.7+ | 2004 07 19 | 071 | (2.8− | 0.3+) |
| 2001 06 28 | 699 | 0.2− | 0.7+ | 2003 12 28 | H72 | 0.2− | 0.7+ | 2004 07 19 | 071 | (2.8− | 0.1−) |
| 2001 06 28 | 699 | 0.4+ | 0.8+ | 2003 12 28 | H72 | 1.1− | 0.8+ | 2004 07 19 | 071 | (3.0− | 0.3−) |
| 2001 06 28 | 699 | 0.0 | 0.0 | 2003 12 28 | H72 | 0.4+ | 1.5+ | 2004 07 30 | 859 | 1.3− | 0.2− |
| 2001 07 13 | 608 | 0.6− | 0.8− | 2003 12 31 | 170 | 0.3+ | 0.2+ | 2004 07 30 | 859 | 0.6+ | 0.8+ |
| 2001 07 13 | 608 | 0.5− | 0.8− | 2003 12 31 | 170 | 0.1− | 0.1+ | 2004 07 30 | 859 | 0.1− | 0.1− |
| 2001 07 13 | 608 | 0.6− | 1.1− | 2003 12 31 | 170 | 0.0 | 0.1− | 2004 07 30 | 859 | 0.9+ | 0.1+ |
| 2001 07 31 | 046 | 0.9− | 0.2− | 2004 01 09 | 084 | 0.1− | 0.1− | 2004 07 30 | 859 | 1.4+ | 0.5+ |
| 2001 07 31 | 046 | 0.4− | 0.1− | 2004 01 10 | 108 | (1.4+ | 1.5+) | 2004 07 31 | 859 | 0.1+ | 0.2+ |
| 2001 07 31 | 046 | 0.6− | 1.0− | 2004 01 10 | 108 | 0.3+ | 0.1+ | 2004 08 11 | 941 | 0.1− | 0.0 |
| 2001 07 31 | 046 | 0.4− | 1.2− | 2004 01 10 | 108 | 1.0+ | 0.1+ | 2004 08 11 | 941 | 0.2− | 0.0 |
| 2001 08 12 | 118 | (2.2+ | 0.0 ) | 2004 01 17 | H72 | 1.4− | 1.1+ | 2004 08 11 | 941 | 0.3+ | 0.0 |
| 2001 08 12 | 118 | 1.1+ | 0.4− | 2004 01 17 | H72 | 0.4+ | 0.4+ | 2004 08 11 | 941 | 0.3+ | 0.2− |
| 2001 09 28 | 711 | (2.1+ | 9.2+) | 2004 01 17 | H72 | 0.9− | 0.7+ | 2004 08 11 | 941 | 0.1+ | 0.0 |
| 2001 09 28 | 711 | (2.4+ | 0.7−) | 2004 01 17 | H72 | 1.0− | 0.3− | 2005 07 04 | 291 | 0.9− | 0.6+ |
| 2001 09 28 | 711 | 1.4+ | 1.5+ | 2004 01 17 | 644 | 0.0 | 0.0 | 2005 07 04 | 291 | 0.2− | 0.3+ |
| 2002 08 15 | 291 | 0.1+ | 0.4− | 2004 01 17 | 644 | 0.1− | 0.0 | 2005 07 04 | 291 | 0.5− | 0.5− |
| 2002 08 15 | 291 | 1.3− | 0.2− | 2004 01 17 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 113 | 0.3+ | 1.0− |
| 2002 08 15 | 291 | 0.7− | 0.3− | 2004 01 17 | 941 | 0.6− | 0.3− | 2006 10 17 | 113 | 0.6+ | 1.1− |
| 2002 10 14 | 644 | 1.0− | 0.1− | 2004 01 17 | 941 | 0.7− | 0.2− | 2006 11 12 | A94 | (1.3− | 2.5−) |
| 2003 11 05 | 461 | 0.3− | 0.2− | 2004 01 17 | 941 | 0.6− | 0.2− | 2006 11 12 | A94 | 0.6+ | 0.0 |
| 2003 11 05 | 461 | 0.0 | 0.2− | 2004 01 17 | 941 | 0.7− | 0.0 | 2006 11 12 | A94 | (4.0− | 1.8−) |
| 2003 11 05 | 461 | 0.0 | 0.3− | 2004 01 21 | 704 | 0.1− | 0.4+ | | | | |

**(138847)∗ 2000 VE$_{62}$**

Discovered 2000 Nov. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.58223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.47849879 | $\omega$ | 16.13940 | | −0.73691115 | +0.65362006 | |
| $a$ | 1.6188831 | $\Omega$ | 207.18219 | | −0.65443282 | −0.75371794 | |
| $e$ | 0.2875507 | $i$ | 22.18038 | | −0.16935062 | +0.06848425 | |
| $P$ | 2.06 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 03 05 | 413 | 1.3+ | 0.9+ | 2002 10 11 | 704 | 0.3− | 0.7+ | 2004 10 20 | 704 | 0.0 | 0.2− |
| 1983 03 05 | 413 | 0.7− | 1.1+ | 2002 10 11 | 704 | (0.9+ | 2.5+) | 2004 10 20 | 704 | 0.1− | 0.1− |
| 1985 02 01 | 262 | 1.3− | 1.3− | 2002 10 30 | 644 | 0.1+ | 0.2+ | 2006 09 05 | 673 | 0.0 | 0.2+ |
| 1985 02 01 | 262 | 0.9− | 0.7− | 2002 10 30 | 644 | 0.0 | 0.3+ | 2006 09 05 | 673 | 0.1− | 0.2+ |
| 2000 11 03 | 704 | 0.1− | 0.5+ | 2002 10 30 | 644 | 0.3+ | 0.1+ | 2006 09 05 | 673 | 0.1− | 0.2+ |
| 2000 11 03 | 704 | 0.1− | 0.5− | 2002 10 31 | 608 | 0.5+ | 0.2+ | 2006 09 06 | H55 | 0.2+ | 0.0 |
| 2000 11 03 | 704 | 0.0 | 0.4− | 2002 10 31 | 608 | 0.1− | 0.1+ | 2006 09 06 | H55 | 0.2+ | 0.3− |
| 2000 11 03 | 704 | 0.4− | 0.8+ | 2002 10 31 | 608 | 0.4+ | 0.2+ | 2006 09 06 | H55 | 0.8+ | 0.0 |
| 2000 11 05 | 046 | 0.4− | 0.8+ | 2002 11 05 | 608 | 1.1− | 0.5− | 2006 09 16 | 703 | (0.4− | 1.9+) |
| 2000 11 05 | 046 | 1.1+ | 0.4+ | 2002 11 05 | 608 | 0.5− | 0.5− | 2006 09 16 | 703 | 1.0− | 0.2+ |
| 2000 11 05 | 046 | 0.6+ | 1.3+ | 2002 11 05 | 608 | 0.9− | 0.4− | 2006 09 16 | 703 | 0.9− | 0.1− |
| 2000 11 05 | 046 | 0.1+ | 0.4+ | 2002 11 07 | 704 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.9+ |
| 2000 11 05 | 557 | 1.0+ | 0.5− | 2002 11 07 | 704 | 0.6− | 0.2− | 2006 09 20 | 240 | 0.2− | 0.0 |
| 2000 11 05 | 557 | 1.4+ | 0.9− | 2002 11 07 | 704 | 0.4+ | 0.3− | 2006 09 20 | 240 | 0.2− | 0.2− |
| 2000 11 16 | 704 | 0.3+ | 0.1+ | 2002 11 08 | 704 | 0.2− | 0.4+ | 2006 09 20 | 240 | 0.4− | 0.3− |
| 2000 11 16 | 704 | 0.3− | 0.8+ | 2002 11 08 | 704 | 0.2− | 0.1+ | 2006 09 20 | 240 | 0.5− | 0.4− |
| 2000 11 16 | 704 | 0.3+ | 0.6− | 2002 11 08 | 704 | 0.5+ | 0.4− | 2006 09 20 | 240 | 0.6− | 0.4− |
| 2000 11 16 | 704 | 1.4− | 0.1+ | 2002 11 13 | 704 | 1.0+ | 0.0 | 2006 09 20 | 240 | 0.7− | 0.5− |
| 2000 11 17 | 704 | 0.1+ | 0.2+ | 2002 11 13 | 704 | 0.5+ | 1.2− | 2006 09 28 | 703 | 0.3+ | 0.2− |
| 2000 11 17 | 704 | 0.4+ | 0.2+ | 2002 11 13 | 704 | (0.6− | 1.6−) | 2006 09 28 | 703 | 0.2− | 0.4− |
| 2000 11 17 | 704 | 0.1− | 0.4− | 2004 09 13 | 704 | 0.5− | 0.3+ | 2006 09 28 | 703 | 0.6+ | 0.2+ |
| 2000 11 17 | 704 | 0.5+ | 0.8+ | 2004 09 13 | 704 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.0 |
| 2000 11 18 | 853 | 0.3+ | 0.1− | 2004 09 13 | 704 | 0.4− | 0.6− | 2006 10 15 | H55 | 0.0 | 0.5+ |
| 2000 11 18 | 853 | 0.3+ | 0.1− | 2004 09 18 | 461 | 0.4− | 0.3− | 2006 10 15 | H55 | 0.5− | 0.1+ |
| 2000 11 18 | 853 | 0.0 | 0.1+ | 2004 09 18 | 461 | 0.1− | 0.1+ | 2006 10 15 | H55 | 0.0 | 0.2+ |
| 2000 11 19 | 699 | 0.7− | 0.2− | 2004 09 18 | 461 | 0.9− | 0.2− | 2006 10 15 | H55 | 0.5+ | 0.4+ |
| 2000 11 19 | 704 | 0.0 | 0.0 | 2004 09 18 | 461 | 0.1− | 0.2+ | 2006 10 16 | 113 | 0.3+ | 0.1+ |
| 2000 11 19 | 699 | 0.2+ | 0.4+ | 2004 09 18 | 461 | 0.3− | 0.0 | 2006 10 16 | 113 | 0.1+ | 0.7− |
| 2000 11 19 | 704 | 0.8− | 0.3+ | 2004 09 18 | 704 | 0.3− | 0.3+ | 2006 10 16 | 113 | 0.0 | 0.6− |
| 2000 11 19 | 704 | 0.0 | 1.5+ | 2004 09 18 | 704 | 0.1− | 0.4+ | 2006 10 17 | 130 | 0.2− | 0.5− |
| 2000 11 19 | 699 | 0.2− | 0.1− | 2004 09 18 | 704 | 0.1+ | 0.0 | 2006 10 17 | 130 | 0.1− | 0.6− |
| 2000 11 19 | 699 | 0.6− | 0.3+ | 2004 09 18 | 704 | 0.4+ | 1.3+ | 2006 10 17 | 130 | 0.3+ | 0.3− |
| 2000 11 19 | 704 | 0.1+ | 0.4+ | 2004 10 07 | 699 | 0.4− | 0.1+ | 2006 10 17 | 130 | 0.4+ | 0.4− |
| 2000 12 05 | 693 | 0.8− | 1.1− | 2004 10 07 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2000 12 05 | 693 | 0.8− | 0.4− | 2004 10 07 | 699 | 0.7+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2000 12 05 | 693 | 0.6− | 0.4− | 2004 10 07 | 699 | 0.9+ | 0.4+ | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2000 12 21 | 696 | 0.7+ | 0.1− | 2004 10 09 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 12 21 | 696 | 0.4+ | 0.5− | 2004 10 09 | 691 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 09 28 | 696 | 0.1+ | 0.0 | 2004 10 09 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 09 28 | 696 | 0.7− | 0.3− | 2004 10 09 | 704 | 0.8+ | 0.8+ | 2006 10 25 | A41 | 1.1− | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2004 10 09 | 704 | 0.1+ | 0.2+ | 2006 10 26 | A41 | 0.7− | 0.1− |
| 2002 10 03 | 704 | 0.6− | 1.1− | 2004 10 09 | 691 | 0.2+ | 0.2− | 2006 10 26 | A41 | 1.0− | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 10 09 | 704 | 0.4+ | 0.0 | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.4− | 2004 10 09 | 691 | 0.3+ | 0.1− | 2006 11 06 | 644 | 0.5+ | 0.2+ |
| 2002 10 03 | 704 | 0.2− | 0.9− | 2004 10 14 | 704 | 0.6+ | 0.4+ | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.6− | 0.6− | 2004 10 14 | 704 | 1.1+ | 0.3− | 2006 11 13 | G96 | 0.5− | 0.7− |
| 2002 10 09 | 704 | 0.5+ | 0.1− | 2004 10 14 | 704 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.9+ | 1.1− |
| 2002 10 09 | 704 | 0.1− | 0.7+ | 2004 10 14 | 704 | 0.2+ | 0.9+ | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.3+ | 0.7+ | 2004 10 20 | 704 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.4− | 1.1− |
| 2002 10 11 | 704 | 0.3+ | 0.6+ | 2004 10 20 | 704 | 0.4− | 0.1+ | | | | |
| 2002 10 11 | 704 | 0.2+ | 0.5+ | 2004 10 20 | 704 | 0.1+ | 0.1+ | | | | |

**(138848)∗ 2000 WD$_1$ = 2003 SE$_{155}$**

Discovered 2000 Nov. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 52698)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.31604 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30446447 | $\omega$ | 103.74788 | | +0.80198553 | +0.59670243 | |
| $a$ | 2.1883241 | $\Omega$ | 219.62822 | | −0.56344699 | +0.74028481 | |
| $e$ | 0.2354762 | $i$ | 2.48612 | | −0.19836002 | +0.30971698 | |
| $P$ | 3.24 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 16 | 691 | 0.6+ | 0.0 | 2003 09 30 | 106 | 0.3+ | 0.1+ | 2003 10 26 | 703 | (7.9− | 0.9−) |
| 2000 11 16 | 691 | 0.9− | 0.7− | 2003 09 30 | 106 | 0.2+ | 0.1− | 2003 10 26 | 703 | 0.1− | 0.5+ |
| 2000 11 16 | 691 | 0.5+ | 0.0 | 2003 09 30 | 106 | 0.7+ | 0.5− | 2003 10 26 | 703 | 0.6− | 0.1+ |
| 2000 11 17 | 691 | 0.1+ | 0.6− | 2003 10 06 | 608 | (0.9− | 1.8+) | 2003 10 28 | 704 | 0.9− | 0.1− |
| 2000 11 17 | 691 | 0.4+ | 0.6− | 2003 10 06 | 608 | (0.8− | 1.7+) | 2003 10 28 | 704 | 0.4− | 0.3+ |
| 2000 11 17 | 691 | 0.3+ | 0.8− | 2003 10 06 | 608 | (1.0− | 2.0+) | 2003 10 28 | 704 | 0.2− | 0.4+ |
| 2000 11 18 | 853 | 0.3− | 0.2− | 2003 10 15 | 699 | 0.3− | 0.5+ | 2003 10 28 | 704 | 0.1− | 0.1− |
| 2000 11 18 | 853 | 0.6− | 0.8+ | 2003 10 15 | 699 | 0.9− | 0.1− | 2003 10 28 | 704 | 0.4+ | 0.1+ |
| 2000 11 18 | 557 | 0.1− | 0.1− | 2003 10 15 | 699 | 0.0 | 0.2− | 2005 02 14 | 691 | 0.0 | 0.3+ |
| 2000 11 18 | 557 | 1.2− | 0.0 | 2003 10 15 | 699 | 0.3+ | 0.0 | 2005 02 14 | 691 | 0.3+ | 0.4+ |
| 2003 09 17 | 644 | 0.3+ | 0.1+ | 2003 10 20 | 704 | 1.1− | 0.3+ | 2005 02 14 | 691 | 0.0 | 0.2+ |
| 2003 09 17 | 644 | 0.4+ | 0.2+ | 2003 10 20 | 704 | 0.0 | 0.3+ | 2005 03 13 | G96 | 0.3− | 0.4+ |
| 2003 09 17 | 644 | 0.3+ | 0.0 | 2003 10 20 | 704 | 0.0 | 0.6+ | 2005 03 13 | G96 | 0.5− | 1.0+ |
| 2003 09 19 | 699 | 0.4+ | 0.5+ | 2003 10 20 | 704 | 0.5− | 0.5+ | 2005 03 13 | G96 | 1.1+ | 0.2+ |
| 2003 09 19 | 699 | 0.3− | 0.5+ | 2003 10 20 | 704 | 0.1− | 0.2+ | 2005 03 13 | G96 | 0.0 | 0.2+ |
| 2003 09 19 | 699 | 0.0 | 0.1+ | 2003 10 21 | 704 | 0.3− | 0.2+ | 2006 06 09 | 644 | 0.0 | 0.4− |
| 2003 09 19 | 699 | 0.4+ | 0.1+ | 2003 10 21 | 704 | 0.7− | 0.1− | 2006 06 09 | 644 | 0.2− | 0.3− |
| 2003 09 20 | 704 | 0.3+ | 0.5− | 2003 10 21 | 704 | 0.6− | 0.2+ | 2006 06 09 | 644 | 0.0 | 0.5− |
| 2003 09 20 | 704 | 0.1+ | 0.3+ | 2003 10 21 | 704 | 0.8− | 0.1+ | 2006 07 18 | 704 | (0.2− | 2.3−) |
| 2003 09 20 | 704 | 0.5− | 0.3+ | 2003 10 21 | 704 | 1.3− | 0.6+ | 2006 07 18 | 704 | 0.3+ | 0.5− |
| 2003 09 20 | 704 | 0.6+ | 0.2− | 2003 10 24 | 704 | 0.3− | 0.1+ | 2006 07 18 | 704 | (0.2+ | 1.7−) |
| 2003 09 20 | 704 | 0.1+ | 0.3− | 2003 10 24 | 704 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.7− |
| 2003 09 27 | 704 | 0.6+ | 0.0 | 2003 10 24 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2003 09 27 | 704 | 0.4− | 0.0 | 2003 10 24 | 704 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2003 09 27 | 704 | 0.9+ | 1.3− | 2003 10 24 | 704 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2003 09 27 | 704 | 0.6+ | 0.3+ | 2003 10 25 | 704 | 0.0 | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2003 09 27 | 704 | 0.5+ | 0.8+ | 2003 10 25 | 704 | 0.1− | 0.6+ | 2006 11 18 | G96 | 0.5− | 0.3− |
| 2003 09 27 | 704 | 0.2− | 0.1+ | 2003 10 25 | 704 | 0.5+ | 1.1+ | 2006 11 18 | G96 | 0.6+ | 0.0 |
| 2003 09 27 | 704 | 0.1+ | 0.4− | 2003 10 25 | 704 | 0.2− | 0.6+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2003 09 27 | 704 | 1.2− | 1.2+ | 2003 10 25 | 704 | 0.0 | 0.9+ | | | | |
| 2003 09 27 | 704 | 0.1− | 0.3− | 2003 10 26 | 703 | (3.3− | 0.3−) | | | | |

**(138849)∗ 2000 WL$_3$**

Discovered 2000 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.16543 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17545310 | $\omega$ | 307.20641 | | +0.51890799 | −0.71487416 | |
| $a$ | 3.1600602 | $\Omega$ | 104.80871 | | +0.85331287 | +0.46583402 | |
| $e$ | 0.2913476 | $i$ | 29.00027 | | −0.05090830 | +0.52149170 | |
| $P$ | 5.62 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 18 | 704 | 0.4+ | 0.1+ | 2000 12 28 | 704 | 0.8− | 0.8− | 2005 08 05 | E12 | 0.2+ | 0.0 |
| 2000 10 18 | 704 | 0.6− | 0.9− | 2000 12 28 | 704 | 0.2+ | 0.1+ | 2005 08 05 | E12 | 0.0 | 0.4+ |
| 2000 10 18 | 704 | 0.8+ | 0.2− | 2000 12 28 | 704 | 0.2+ | 0.1+ | 2005 08 05 | E12 | 0.3− | 0.2+ |
| 2000 10 18 | 704 | 0.7− | 0.4+ | 2000 12 28 | 704 | 0.2+ | 1.2+ | 2005 08 15 | E12 | 0.3+ | 0.4+ |
| 2000 10 18 | 704 | 1.0− | 1.5+ | 2000 12 28 | 608 | 0.6+ | 0.7+ | 2005 08 15 | E12 | 0.1+ | 0.1− |
| 2000 10 18 | 699 | 0.1+ | 0.4+ | 2000 12 28 | 608 | 0.8+ | 0.7+ | 2005 08 15 | E12 | 0.1+ | 0.5+ |
| 2000 10 18 | 699 | 1.2+ | 0.8+ | 2000 12 28 | 608 | 0.7+ | 0.7+ | 2005 08 25 | E12 | 0.5+ | 0.3− |
| 2000 10 18 | 699 | 0.3+ | 0.5+ | 2001 01 02 | 608 | 0.2+ | 0.7+ | 2005 08 25 | E12 | 0.2− | 0.3+ |
| 2000 10 18 | 699 | 1.1+ | 0.0 | 2001 01 02 | 608 | 0.3+ | 0.6+ | 2005 08 25 | E12 | 0.4− | 0.0 |
| 2000 11 17 | 704 | 0.5+ | 0.1− | 2001 01 02 | 608 | 0.1− | 0.4+ | 2005 08 25 | E12 | 0.0 | 0.2− |
| 2000 11 17 | 704 | 0.9− | 0.3− | 2001 01 18 | 608 | 0.2+ | 0.8− | 2006 11 01 | 704 | 1.3+ | 0.7− |
| 2000 11 17 | 704 | 0.2− | 0.6− | 2001 01 18 | 608 | 0.2− | 0.2− | 2006 11 01 | 704 | 0.7− | 0.5− |
| 2000 11 17 | 704 | 0.0 | 0.6− | 2001 01 18 | 608 | 0.0 | 0.7+ | 2006 11 01 | 704 | 0.7+ | 0.4− |
| 2000 11 17 | 704 | 0.3− | 0.2+ | 2001 01 27 | 608 | 0.2− | 0.7− | 2006 11 01 | 704 | 1.0− | 0.3− |
| 2000 11 20 | 704 | 0.1+ | 0.4− | 2001 01 27 | 608 | 0.1+ | 0.7− | 2006 11 14 | 704 | (1.6− | 0.7+) |
| 2000 11 20 | 704 | 0.3+ | 0.2− | 2001 01 27 | 608 | 0.1− | 0.9− | 2006 11 14 | 704 | 0.1− | 0.2− |
| 2000 11 20 | 704 | 0.4+ | 0.2− | 2001 01 30 | 704 | 0.3+ | 0.4− | 2006 11 14 | 704 | 0.1− | 0.4− |
| 2000 11 20 | 704 | 0.3− | 0.3− | 2001 01 30 | 704 | 1.1− | 0.4− | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 2000 11 20 | 704 | 0.1+ | 0.0 | 2001 01 30 | 704 | 0.6+ | 0.2− | 2006 11 14 | 704 | 0.5+ | 1.2− |
| 2000 11 21 | 704 | 0.4+ | 0.1+ | 2001 01 30 | 704 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.2− | 0.6+ |
| 2000 11 21 | 704 | 0.0 | 0.6+ | 2001 02 21 | 699 | 0.2+ | 0.7− | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2000 11 21 | 704 | 0.3− | 0.1− | 2001 02 21 | 699 | 0.6− | 0.5+ | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 2000 11 21 | 704 | 0.1− | 1.0+ | 2001 02 21 | 699 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2000 11 21 | 608 | (0.7− | 2.4+) | 2001 02 21 | 699 | 0.2− | 0.9+ | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 2000 11 21 | 608 | (0.7− | 3.0+) | 2002 02 22 | 704 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.0 | 1.5+ |
| 2000 11 21 | 608 | (0.8− | 2.8+) | 2002 02 22 | 704 | 0.7+ | 1.3+ | 2006 11 19 | 704 | (0.7+ | 1.9+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 699 | 0.0 | 0.1− | 2002 02 22 | 704 | 0.9+ | 0.8+ | 2006 11 19 | 704 | (0.1+ | 2.0+) |
| 2000 11 29 | 699 | 0.1− | 0.0 | 2002 02 22 | 704 | 0.3− | 0.9+ | 2006 11 19 | 704 | (0.3+ | 1.7+) |
| 2000 11 29 | 699 | 0.4− | 0.2− | 2002 02 22 | 704 | 0.4+ | 1.4+ | 2006 11 19 | 704 | 0.8+ | 1.6+ |
| 2000 11 29 | 699 | 0.3− | 0.2+ | 2005 06 20 | 644 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.8− | 0.3− |
| 2000 12 06 | 608 | (0.1+ | 2.7+) | 2005 06 20 | 644 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2000 12 06 | 608 | (0.1+ | 2.6+) | 2005 06 20 | 644 | 0.3− | 0.7+ | 2006 11 20 | 704 | 0.8+ | 0.6+ |
| 2000 12 06 | 608 | (0.2+ | 2.4+) | 2005 07 03 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2000 12 22 | 704 | 0.6− | 0.6− | 2005 07 03 | 644 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.5− | 1.0+ |
| 2000 12 22 | 704 | 0.5− | 0.5− | 2005 07 03 | 644 | 0.3− | 0.7+ | 2006 11 29 | 704 | 0.9− | 0.6+ |
| 2000 12 22 | 704 | 0.2+ | 0.0 | 2005 07 06 | E12 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.7− | 0.2− |
| 2000 12 22 | 704 | 0.2− | 0.1− | 2005 07 06 | E12 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.8+ | 0.5− |
| 2000 12 22 | 704 | 0.4− | 0.1+ | 2005 07 06 | E12 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.9− | 0.0 |
| 2000 12 28 | 704 | 1.4− | 1.6− | 2005 08 05 | E12 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.9− |

**(138850)∗ 2000 WR$_6$**

Discovered 2000 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.00533 | | (2000.0) | | +0.88302533 | −0.45993617 |
| $n$ | 0.30855032 | $\omega$ | 87.57803 | | +0.37636665 | +0.81286008 |
| $a$ | 2.1689625 | $\Omega$ | 299.79121 | | +0.28038261 | +0.35737545 |
| $e$ | 0.0844113 | $i$ | 6.17883 | | | |
| $P$ | 3.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 0.2− | 0.2− | 2003 09 04 | 704 | 0.9− | 0.3+ | 2006 06 20 | G96 | 0.3− | 0.5− |
| 1995 02 05 | 691 | 0.3− | 0.3+ | 2003 09 17 | 608 | 0.1+ | 0.7− | 2006 06 20 | G96 | 0.4− | 0.3− |
| 1995 02 05 | 691 | 0.4+ | 0.4− | 2003 09 17 | 608 | 0.7+ | 1.6− | 2006 06 20 | G96 | 0.0 | 0.9− |
| 2000 10 25 | 704 | 1.7+ | 0.9+ | 2003 09 17 | 608 | 0.5+ | 1.3− | 2006 06 20 | G96 | 0.1− | 0.3− |
| 2000 10 25 | 704 | 0.1+ | 0.1+ | 2003 09 18 | 644 | 0.0 | 0.2− | 2006 07 28 | A50 | 0.1− | 0.3− |
| 2000 10 25 | 704 | 0.8+ | 0.6+ | 2003 09 18 | 644 | 0.0 | 0.1− | 2006 07 28 | A50 | 0.5− | 0.2− |
| 2000 10 25 | 704 | 0.4+ | 0.9+ | 2003 09 18 | 644 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2000 10 25 | 704 | 0.7+ | 1.0+ | 2003 09 20 | 691 | 0.4+ | 0.8− | 2006 08 18 | 644 | 0.0 | 0.0 |
| 2000 11 05 | 704 | 0.4− | 0.5− | 2003 09 20 | 691 | 0.1− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.0 |
| 2000 11 05 | 704 | 0.2+ | 0.5− | 2003 09 20 | 691 | 0.0 | 0.3− | 2006 08 19 | 699 | 0.0 | 0.1+ |
| 2000 11 05 | 704 | 1.0− | 0.6+ | 2003 09 21 | 704 | 1.0− | 0.1+ | 2006 08 19 | 699 | 0.3+ | 0.3+ |
| 2000 11 05 | 704 | 0.2− | 0.6+ | 2003 09 21 | 704 | 0.5+ | 0.9+ | 2006 08 19 | 699 | 0.4+ | 0.6+ |
| 2000 11 05 | 704 | 0.0 | 0.2− | 2003 09 21 | 644 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.3+ | 0.5+ |
| 2000 11 19 | 704 | 0.2− | 0.0 | 2003 09 21 | 704 | 0.6− | 0.7+ | 2006 08 30 | 704 | 0.4− | 0.7− |
| 2000 11 19 | 704 | 0.7+ | 0.7− | 2003 09 21 | 644 | 0.1+ | 0.0 | 2006 08 30 | 704 | (1.7+ | 2.8+) |
| 2000 11 19 | 704 | 0.3+ | 0.0 | 2003 09 21 | 644 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.1+ |
| 2000 11 19 | 704 | 0.5+ | 0.2− | 2003 09 22 | 704 | (1.6+ | 2.1−) | 2006 08 30 | 704 | (1.0+ | 2.8+) |
| 2000 11 19 | 704 | 0.1− | 0.7− | 2003 09 22 | 704 | (1.4+ | 2.2−) | 2006 08 30 | 704 | 0.2+ | 0.2+ |
| 2000 11 21 | 704 | 0.7+ | 0.7+ | 2003 09 22 | 704 | 0.1+ | 0.5+ | 2006 08 30 | 704 | 0.0 | 0.4− |
| 2000 11 21 | 704 | 0.9− | 0.0 | 2003 09 30 | 704 | (4.0− | 0.3−) | 2006 08 30 | 704 | (2.2+ | 2.9+) |
| 2000 11 21 | 704 | 0.6+ | 0.4+ | 2003 09 30 | 704 | 1.2− | 0.1+ | 2006 08 30 | 704 | 0.3− | 0.0 |
| 2000 11 29 | 704 | 0.5− | 0.7− | 2003 09 30 | 704 | 1.0− | 1.0+ | 2006 08 30 | 704 | (2.8+ | 2.1+) |
| 2000 11 29 | 704 | 0.1+ | 0.9− | 2003 09 30 | 704 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.9+ | 0.0 |
| 2000 11 29 | 704 | 0.2+ | 0.2+ | 2003 10 21 | 644 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 1.0− | 0.2+ |
| 2000 11 29 | 704 | 0.4− | 0.0 | 2003 10 21 | 644 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.5− | 0.3+ |
| 2000 11 29 | 704 | 0.0 | 0.3+ | 2003 10 21 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.3− |
| 2000 11 30 | 699 | 0.3− | 0.2+ | 2003 10 21 | 704 | 0.2− | 0.6− | 2006 08 30 | 704 | 0.4+ | 0.2− |
| 2000 11 30 | 699 | 0.1+ | 0.5+ | 2003 10 21 | 704 | 0.1+ | 1.0+ | 2006 09 16 | 699 | 0.6− | 0.3+ |
| 2000 11 30 | 699 | 0.9− | 0.3− | 2003 10 21 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.8+ | 0.4− |
| 2000 11 30 | 699 | 0.8− | 0.2− | 2003 10 21 | 704 | 0.1− | 0.8+ | 2006 09 16 | 699 | 1.1+ | 0.2+ |
| 2003 09 04 | 704 | 0.4− | 0.1− | 2005 03 13 | 703 | 0.0 | 0.7+ | 2006 09 16 | 699 | 0.1− | 0.1− |
| 2003 09 04 | 704 | 0.5− | 0.1+ | 2005 03 13 | 703 | 1.1+ | 0.8− | 2006 09 18 | 691 | 0.1− | 0.4+ |
| 2003 09 04 | 704 | 0.2− | 0.5− | 2005 03 13 | 703 | 0.4− | 1.0+ | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 2003 09 04 | 704 | 0.4+ | 0.9− | 2005 03 13 | 703 | 0.8− | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.6+ |

**(138851)∗ 2000 WW$_7$**

Discovered 2000 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.20988 | | (2000.0) | | +0.90788151 | −0.37458187 |
| $n$ | 0.17716803 | $\omega$ | 286.69630 | | +0.41892684 | +0.82760335 |
| $a$ | 3.1396348 | $\Omega$ | 95.62152 | | −0.01585790 | +0.41804439 |
| $e$ | 0.2437664 | $i$ | 10.90399 | | | |
| $P$ | 5.56 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 03 | 691 | 0.6+ | 1.3+ | 2000 11 29 | 704 | 0.0 | 0.4+ | 2005 09 02 | I10 | 0.8− | 0.6− |
| 1998 04 03 | 691 | 0.2− | 0.3+ | 2000 11 30 | 704 | 0.6− | 0.9+ | 2005 09 06 | 428 | 1.3− | 0.2− |
| 1998 04 03 | 691 | 0.1− | 0.4+ | 2000 11 30 | 704 | 0.9+ | 0.5+ | 2005 09 09 | 428 | 0.2− | 0.2+ |
| 2000 10 31 | 704 | 0.3+ | 0.2− | 2000 11 30 | 704 | 0.2− | 0.4+ | 2005 09 10 | 699 | 1.0− | 0.4− |
| 2000 10 31 | 704 | 0.2− | 0.1− | 2000 11 30 | 704 | 0.5+ | 0.7+ | 2005 09 10 | 699 | 0.1− | 0.4+ |
| 2000 10 31 | 704 | 0.5− | 0.0 | 2000 11 30 | 704 | 0.3− | 0.8+ | 2005 09 10 | 699 | 0.1+ | 0.5+ |
| 2000 10 31 | 704 | 0.4+ | 0.4+ | 2000 11 30 | 699 | 0.5− | 0.3+ | 2005 09 10 | 699 | 0.5− | 0.1+ |
| 2000 10 31 | 704 | 0.1+ | 0.0 | 2000 11 30 | 699 | 0.1− | 1.2+ | 2005 10 02 | E12 | 0.3+ | 0.2+ |
| 2000 11 20 | 699 | 0.2− | 0.2− | 2000 11 30 | 699 | 0.1− | 0.3− | 2005 10 02 | E12 | 0.2+ | 0.3− |
| 2000 11 20 | 704 | 0.1− | 0.1− | 2000 11 30 | 699 | 0.8− | 0.3− | 2005 10 02 | E12 | 0.6+ | 0.2− |
| 2000 11 20 | 704 | 0.4+ | 0.4− | 2000 12 17 | 699 | 0.2− | 0.3− | 2005 10 02 | E12 | 0.8+ | 0.0 |
| 2000 11 20 | 699 | 0.2− | 0.2− | 2000 12 17 | 699 | 0.1− | 0.4− | 2005 10 04 | 644 | 0.2+ | 0.7+ |
| 2000 11 20 | 704 | 0.2− | 0.2− | 2000 12 17 | 699 | 0.6− | 0.6− | 2005 10 04 | 644 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 0.5− | 0.5− | 2000 12 17 | 699 | 0.2− | 0.1− | 2005 10 04 | 644 | 0.1+ | 0.2+ |
| 2000 11 20 | 699 | 0.4− | 0.2+ | 2000 12 31 | 699 | (2.9+ | 1.0+) | 2005 10 25 | 644 | 0.4+ | 0.5+ |
| 2000 11 20 | 704 | 0.4− | 0.4− | 2000 12 31 | 699 | (2.6+ | 0.1−) | 2005 10 25 | 644 | 0.1+ | 0.6+ |
| 2000 11 20 | 699 | 0.3− | 0.3− | 2000 12 31 | 699 | 1.6+ | 1.0+ | 2005 10 25 | 644 | 0.4+ | 0.7+ |
| 2000 11 21 | 704 | 0.2+ | 0.1− | 2000 12 31 | 699 | 1.6+ | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2000 11 21 | 704 | 0.0 | 0.4+ | 2002 02 10 | 704 | 0.8+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2000 11 21 | 704 | 0.1− | 0.5+ | 2002 02 10 | 704 | 1.3+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2000 11 21 | 704 | 0.2+ | 0.1− | 2002 02 10 | 704 | (2.1+ | 0.3−) | 2006 10 01 | 691 | 0.1+ | 0.8+ |
| 2000 11 21 | 704 | 0.6− | 0.2+ | 2002 02 10 | 704 | 1.2+ | 1.2+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2000 11 24 | 699 | 0.7− | 0.1+ | 2005 07 11 | 699 | 0.3− | 1.0− | 2006 10 01 | 691 | 0.3+ | 0.2+ |
| 2000 11 24 | 699 | 0.2− | 0.5+ | 2005 07 11 | 699 | (1.5+ | 2.5+) | 2006 10 28 | G96 | 0.4− | 0.4− |
| 2000 11 24 | 699 | 0.1+ | 0.4+ | 2005 07 11 | 699 | 0.8+ | 0.9+ | 2006 10 28 | G96 | 0.4− | 0.3− |
| 2000 11 24 | 699 | 0.1+ | 0.2+ | 2005 07 11 | 699 | (2.0+ | 0.6+) | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2000 11 26 | 704 | 0.1− | 0.3+ | 2005 07 27 | 644 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.6− |
| 2000 11 26 | 704 | 0.1− | 0.2− | 2005 07 27 | 644 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.4− | 0.7− |
| 2000 11 26 | 704 | 0.1− | 0.4− | 2005 07 27 | 644 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2000 11 26 | 704 | 0.9− | 0.5+ | 2005 08 28 | E12 | 0.0 | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2000 11 26 | 704 | 0.8+ | 0.2− | 2005 08 28 | E12 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2000 11 29 | 704 | 0.4+ | 0.7+ | 2005 08 28 | E12 | 0.4+ | 0.0 | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2000 11 29 | 704 | 0.8+ | 0.3+ | 2005 08 28 | E12 | 0.5+ | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.6− |
| 2000 11 29 | 704 | 0.4− | 0.3+ | 2005 09 02 | I10 | 0.8− | 0.0 | 2006 12 01 | G96 | 0.4− | 0.6− |
| 2000 11 29 | 704 | 0.5− | 0.2+ | 2005 09 02 | I10 | 0.3− | 0.0 | | | | |

**(138852)∗ 2000 WN$_{10}$**

Discovered 2000 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.01951 | | (2000.0) | | +0.23546351 | +0.91763129 |
| $n$ | 0.98332328 | $\omega$ | 225.15949 | | −0.75606264 | +0.37994825 |
| $a$ | 1.0015482 | $\Omega$ | 61.01156 | | −0.61067686 | −0.11658538 |
| $e$ | 0.2992669 | $i$ | 21.47089 | | | |
| $P$ | 1.00 | $H$ | 20.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.2− | 0.3− | 2002 12 01 | 113 | 0.3+ | 0.4+ | 2005 11 23 | 379 | 0.4+ | 0.5+ |
| 2000 11 20 | 704 | 0.3− | 0.6+ | 2002 12 01 | 113 | 0.2+ | 0.2+ | 2005 11 23 | 379 | 0.0 | 0.6+ |
| 2000 11 20 | 704 | 0.4+ | 0.8+ | 2002 12 01 | 113 | 0.4+ | 0.2+ | 2005 11 23 | 379 | 0.5+ | 0.3+ |
| 2000 11 20 | 704 | 0.5− | 0.1− | 2002 12 01 | 113 | 0.3+ | 0.2+ | 2005 11 23 | 379 | 0.6+ | 0.1+ |
| 2000 11 20 | 704 | 0.3− | 0.5+ | 2002 12 01 | 113 | 0.1+ | 0.4+ | 2005 11 24 | H45 | 0.2− | 1.1+ |
| 2000 11 21 | 704 | 0.3− | 0.0 | 2002 12 01 | 113 | 0.1− | 0.4+ | 2005 11 24 | H45 | 0.3− | 0.7− |
| 2000 11 21 | 704 | 0.2+ | 0.6− | 2002 12 01 | 113 | 0.2+ | 0.1+ | 2005 11 24 | H45 | 0.3− | 0.2− |
| 2000 11 21 | 704 | 0.2+ | 0.1− | 2003 11 15 | 413 | 0.0 | 0.2− | 2005 11 24 | H45 | 0.1− | 0.4+ |
| 2000 11 21 | 704 | 0.1− | 0.2+ | 2003 11 15 | 413 | 0.2+ | 0.3− | 2005 11 24 | 379 | 0.6− | 0.2+ |
| 2000 11 21 | 587 | 0.4+ | 0.5+ | 2003 11 15 | 413 | 0.1+ | 0.3− | 2005 11 24 | 379 | 0.1− | 0.1+ |
| 2000 11 22 | 046 | 0.1− | 0.1+ | 2003 11 16 | 649 | 0.1+ | 0.1+ | 2005 11 24 | 379 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 22 | 046 | 0.1− | 0.1− | 2003 11 16 | 649 | 0.2+ | 0.1+ | 2005 11 25 | 379 | 0.0 | 0.3+ | | |
| 2000 11 22 | 046 | 0.2− | 0.7+ | 2003 11 16 | 649 | 0.1− | 0.1− | 2005 11 25 | 379 | 0.5+ | 0.3− | | |
| 2000 11 22 | 046 | 0.4− | 0.0 | 2003 11 16 | 649 | 0.2+ | 0.1− | 2005 11 25 | 379 | 0.2− | 0.4+ | | |
| 2000 11 22 | 046 | 0.3+ | 0.1− | 2003 11 16 | 649 | 0.6− | 0.3− | 2005 11 26 | 379 | 0.1− | 0.5− | | |
| 2000 11 22 | 046 | 0.5− | 0.5− | 2003 11 21 | 704 | 0.6− | 0.1− | 2005 11 26 | 379 | 0.1− | 0.2− | | |
| 2000 11 23 | 853 | 0.5− | 0.1− | 2003 11 21 | 704 | 0.7− | 0.2− | 2005 11 26 | 379 | 0.3− | 0.2+ | | |
| 2000 11 23 | 853 | 0.6− | 0.4− | 2003 11 21 | 704 | (2.5− | 0.7+) | 2005 11 26 | 185 | 0.0 | 0.5− | | |
| 2000 11 23 | 853 | 0.6− | 0.4− | 2003 11 21 | 704 | 0.2− | 0.0 | 2005 11 26 | 185 | 0.1+ | 0.1− | | |
| 2000 11 24 | 918 | 0.2+ | 0.5− | 2003 11 24 | 704 | 0.7+ | 0.5− | 2005 11 26 | 185 | 0.0 | 0.0 | | |
| 2000 11 24 | 918 | 0.7− | 0.3+ | 2003 11 24 | 704 | 0.4+ | 0.3+ | 2005 11 26 | 185 | 0.1+ | 0.3+ | | |
| 2000 11 24 | 918 | 0.4− | 0.5+ | 2003 11 24 | 704 | 0.1+ | 0.6− | 2005 12 01 | 644 | 0.2− | 0.2+ | | |
| 2000 11 24 | 918 | 1.3− | 0.2+ | 2003 11 24 | 704 | 0.4+ | 0.6− | 2005 12 01 | 644 | 0.2− | 0.1+ | | |
| 2000 11 24 | 670 | 0.3− | 0.8+ | 2003 11 24 | 704 | 0.6+ | 0.3+ | 2005 12 01 | 644 | 0.0 | 0.1+ | | |
| 2000 11 25 | 587 | 1.9− | 0.7+ | 2003 11 29 | 704 | 0.6+ | 0.3− | 2005 12 02 | H45 | 1.0+ | 0.0 | | |
| 2000 11 27 | 853 | 0.1− | 0.0 | 2003 11 29 | 704 | 0.3− | 0.1− | 2005 12 02 | H45 | 0.7+ | 0.4− | | |
| 2000 11 27 | 853 | 0.1− | 0.2+ | 2003 11 29 | 704 | 0.1+ | 0.3+ | 2005 12 02 | H45 | 1.0− | 0.4− | | |
| 2000 11 28 | 360 | 0.2− | 0.3− | 2003 11 29 | 704 | 0.7+ | 1.1− | 2005 12 02 | H45 | 1.1− | 0.7+ | | |
| 2000 11 28 | 360 | 0.2− | 0.1− | 2003 11 29 | 704 | 0.0 | 0.2− | 2005 12 04 | 703 | 0.2− | 0.3+ | | |
| 2000 11 28 | 360 | 0.2− | 0.0 | 2003 12 03 | 704 | (1.7+ | 0.4+) | 2005 12 04 | 703 | 1.1− | 0.5+ | | |
| 2000 12 05 | 704 | 0.3+ | 0.0 | 2003 12 03 | 704 | 0.3+ | 0.4+ | 2005 12 04 | 703 | 0.3− | 0.0 | | |
| 2000 12 05 | 704 | 1.1+ | 0.3− | 2003 12 03 | 704 | 0.5− | 0.0 | 2005 12 04 | 703 | 0.4− | 0.3+ | | |
| 2000 12 05 | 704 | 1.1+ | 0.1+ | 2003 12 03 | 704 | 0.3+ | 0.8− | 2006 11 13 | 130 | 0.3− | 0.4+ | | |
| 2000 12 05 | 704 | 0.8+ | 0.4− | 2003 12 15 | 704 | 0.5− | 0.1+ | 2006 11 13 | 130 | 0.0 | 0.3− | | |
| 2000 12 07 | 704 | 0.2− | 0.3− | 2003 12 15 | 704 | 0.2+ | 0.2+ | 2006 11 13 | 130 | 0.1− | 0.4− | | |
| 2000 12 07 | 704 | 0.1+ | 0.4− | 2003 12 15 | 704 | 0.0 | 1.0+ | 2006 11 13 | 130 | 0.3+ | 0.3− | | |
| 2000 12 07 | 704 | 0.3+ | 0.5− | 2003 12 15 | 704 | 0.8− | 1.1+ | 2006 11 15 | 703 | 0.1− | 0.3− | | |
| 2000 12 07 | 704 | 0.4+ | 0.7− | 2004 11 06 | 704 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.4− | 0.4− | | |
| 2000 12 07 | 704 | 0.2− | 1.2− | 2004 11 06 | 704 | 0.3− | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.1− | | |
| 2000 12 20 | 696 | 0.3+ | 0.3− | 2004 11 06 | 704 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.4+ | | |
| 2000 12 20 | 696 | 0.1− | 0.5− | 2004 11 18 | 704 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.2+ | | |
| 2000 12 29 | 711 | 0.4+ | 0.4+ | 2004 11 18 | 704 | 0.4+ | 0.8− | 2006 11 17 | 704 | 0.2− | 0.0 | | |
| 2000 12 29 | 711 | 0.4+ | 0.8+ | 2004 11 18 | 704 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.3+ | | |
| 2000 12 29 | 711 | 0.3+ | 0.2− | 2004 11 18 | 704 | 1.1− | 1.3− | 2006 11 17 | 704 | 0.1− | 0.4+ | | |
| 2001 10 29 | 649 | 0.2− | 1.4− | 2004 11 21 | A48 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 1.0− | 0.6+ | | |
| 2001 10 29 | 649 | 1.5+ | 0.4+ | 2004 11 21 | A48 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.3− | | |
| 2001 10 29 | 649 | 0.5− | 0.3+ | 2004 11 21 | A48 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.2− | | |
| 2001 10 30 | 649 | 0.0 | 0.0 | 2004 11 21 | A56 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.3− | | |
| 2001 10 30 | 649 | 0.1− | 0.6− | 2004 11 22 | A56 | 0.4+ | 0.8+ | 2006 11 18 | 704 | 0.1+ | 0.6+ | | |
| 2001 10 30 | 649 | 0.1+ | 0.7+ | 2004 11 22 | A56 | 0.3− | 1.1+ | 2006 11 20 | 726 | 0.0 | 0.3+ | | |
| 2001 10 30 | 649 | 0.2+ | 0.0 | 2004 11 22 | A56 | 0.3− | 0.8+ | 2006 11 20 | 726 | 0.7− | 0.8+ | | |
| 2001 11 19 | 704 | 0.2− | 0.1+ | 2004 11 22 | A56 | 0.1− | 1.1+ | 2006 11 20 | 726 | 0.3− | 0.1+ | | |
| 2001 11 19 | 704 | 0.0 | 0.1+ | 2004 11 22 | 704 | 0.7+ | 1.2+ | 2006 11 20 | 726 | 0.2+ | 0.7− | | |
| 2001 11 19 | 704 | 0.0 | 0.2+ | 2004 11 22 | 704 | 0.2+ | 0.5+ | 2006 11 20 | 726 | 0.1− | 0.0 | | |
| 2001 11 19 | 704 | 0.2+ | 0.4− | 2004 11 22 | 704 | 0.1− | 0.2− | 2006 11 20 | 726 | 0.4+ | 0.2− | | |
| 2001 11 21 | 704 | 0.1− | 0.7+ | 2004 11 22 | 704 | 0.4+ | 0.5+ | 2006 11 20 | 691 | 0.3− | 0.0 | | |
| 2001 11 21 | 704 | (1.3+ | 2.2+) | 2004 11 22 | 084 | 0.2− | 0.2+ | 2006 11 20 | 691 | (2.0+ | 1.8−) | | |
| 2001 11 21 | 704 | 0.4− | 0.7+ | 2004 11 23 | A16 | (1.7− | 0.7+) | 2006 11 20 | 691 | (3.7+ | 3.0−) | | |
| 2001 11 21 | 704 | 0.5− | 0.7+ | 2004 11 23 | A16 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.7− | | |
| 2001 11 24 | 704 | 0.3− | 0.3+ | 2004 11 23 | A16 | 1.0− | 1.3+ | 2006 11 21 | 704 | 0.2− | 0.8− | | |
| 2001 11 24 | 704 | 0.0 | 0.5+ | 2004 11 23 | A16 | (2.0− | 0.9+) | 2006 11 21 | 704 | 0.4− | 0.8− | | |
| 2001 11 24 | 704 | 0.5− | 0.4+ | 2004 11 26 | 084 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.7− | | |
| 2001 11 24 | 704 | 0.3− | 0.5+ | 2004 12 01 | 703 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.3− | 0.8− | | |
| 2001 11 24 | 704 | 0.3− | 1.0+ | 2004 12 01 | 703 | 0.1+ | 0.5− | 2006 11 23 | 204 | 0.1+ | 0.3− | | |
| 2001 12 03 | 118 | 0.1− | 0.1− | 2004 12 01 | 703 | 0.2− | 0.3+ | 2006 11 23 | 204 | 0.2+ | 0.3− | | |
| 2001 12 03 | 118 | 0.1− | 0.3+ | 2004 12 01 | 703 | 0.7− | 0.0 | 2006 11 23 | 204 | 0.1+ | 0.3− | | |
| 2001 12 08 | 704 | 0.3− | 0.1+ | 2004 12 06 | 240 | 0.2+ | 0.0 | 2006 11 23 | 726 | (1.5− | 0.6−) | | |
| 2001 12 08 | 704 | 0.3+ | 0.5+ | 2004 12 06 | 240 | 0.2+ | 0.0 | 2006 11 23 | 726 | 0.2+ | 0.5− | | |
| 2001 12 08 | 704 | 0.1+ | 0.0 | 2004 12 06 | 240 | 0.4+ | 0.2+ | 2006 11 23 | 726 | 0.0 | 0.2+ | | |
| 2001 12 08 | 704 | 0.2− | 0.1+ | 2004 12 06 | 240 | 0.2+ | 0.0 | 2006 11 25 | 691 | 0.1− | 0.3+ | | |
| 2001 12 08 | 704 | 0.1− | 0.1+ | 2004 12 06 | 240 | 0.2+ | 0.0 | 2006 11 25 | 726 | 0.1− | 0.0 | | |
| 2001 12 19 | 704 | 1.2+ | 0.4− | 2004 12 06 | 240 | 0.1+ | 0.3+ | 2006 11 25 | 726 | 0.3− | 1.3− | | |
| 2001 12 19 | 704 | 0.6+ | 0.5− | 2004 12 13 | 240 | 0.1+ | 0.5− | 2006 11 25 | 726 | 0.7− | 0.8+ | | |
| 2001 12 19 | 704 | 1.2+ | 1.0+ | 2004 12 13 | 240 | 0.1+ | 0.3− | 2006 11 25 | 691 | 0.6+ | 0.3− | | |
| 2002 10 31 | 696 | 0.1+ | 0.3+ | 2004 12 13 | 240 | 0.0 | 0.1− | 2006 11 25 | 726 | 0.3− | 0.2− | | |
| 2002 10 31 | 696 | 0.3+ | 0.1+ | 2004 12 15 | 703 | 0.1+ | 0.5+ | 2006 11 25 | 726 | 0.4− | 0.3− | | |
| 2002 11 25 | 649 | 0.1− | 0.1+ | 2004 12 15 | 703 | 0.6+ | 0.4+ | 2006 11 25 | 691 | 1.5+ | 0.3− | | |
| 2002 11 25 | 649 | 0.1+ | 0.1+ | 2004 12 15 | 703 | 0.5+ | 0.2− | 2006 11 26 | 113 | 0.7− | 0.4− | | |
| 2002 11 25 | 649 | 0.2+ | 0.0 | 2004 12 15 | 703 | 0.3+ | 0.1− | 2006 11 26 | 113 | 0.4− | 0.2− | | |
| 2002 11 26 | 170 | (1.5+ | 0.3−) | 2005 11 21 | 701 | (3.2+ | 2.9−) | 2006 11 29 | 704 | 0.8+ | 0.3− | | |
| 2002 11 26 | 170 | 1.1+ | 0.4− | 2005 11 21 | 701 | (9.3+ | 7.3−) | 2006 11 29 | 704 | 0.7+ | 0.3− | | |
| 2002 11 26 | 170 | 0.1− | 0.2+ | 2005 11 21 | 701 | (3.4+ | 3.0−) | 2006 11 29 | 704 | 0.2− | 0.3− | | |
| 2002 11 26 | 170 | 0.1+ | 0.6+ | 2005 11 22 | 379 | 0.2+ | 0.7− | 2006 11 29 | 704 | 0.1− | 0.2+ | | |
| 2002 12 01 | 113 | 0.0 | 0.5+ | 2005 11 22 | 379 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.1+ | | |

**(138853)∗ 2000 WN$_{13}$ = 2003 UR$_{103}$**

Discovered 2000 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 52699)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.41451 | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.31701915 | $\omega$ | 288.45339 | +0.97567453 | | +0.19985988 | |
| $a$ | 2.1301608 | $\Omega$ | 60.10470 | −0.14044848 | | +0.88538131 | |
| $e$ | 0.2044477 | $i$ | 5.96444 | −0.16832537 | | +0.41970937 | |
| $P$ | 3.11 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.0 | 0.3+ | 2003 11 16 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.9− | 0.4+ | | |
| 1996 05 11 | 691 | 0.4+ | 0.7+ | 2003 11 16 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.8+ | 0.2+ | | |
| 1996 05 11 | 691 | 0.2+ | 0.3+ | 2003 11 18 | 703 | 0.2+ | 1.1− | 2006 09 26 | 704 | 0.8− | 0.7+ | | |
| 2000 11 21 | 704 | 0.9− | 0.9− | 2003 11 18 | 703 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.3− | 0.4+ | | |
| 2000 11 21 | 704 | 0.5− | 0.3− | 2003 11 18 | 703 | 0.3− | 1.3− | 2006 09 26 | 703 | 0.6+ | 0.2+ | | |
| 2000 11 21 | 704 | 0.2+ | 0.2+ | 2003 11 18 | 703 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.0 | | |
| 2000 11 21 | 704 | 0.8− | 0.4+ | 2003 11 21 | 695 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.3+ | | |
| 2000 11 25 | 704 | 0.2− | 0.5+ | 2003 11 21 | 704 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.1+ | | |
| 2000 11 25 | 704 | 0.2+ | 0.2+ | 2003 11 21 | 704 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.5+ | | |
| 2000 11 25 | 704 | 0.0 | 1.0+ | 2003 11 21 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.4+ | | |
| 2000 11 25 | 704 | 0.1+ | 0.7− | 2003 11 21 | 704 | 0.8+ | 0.5+ | 2006 09 29 | 699 | 0.1− | 0.1− | | |
| 2000 11 26 | 704 | 0.9− | 1.0+ | 2003 11 21 | 695 | 0.4− | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.3+ | | |
| 2000 11 26 | 704 | 0.2+ | 0.6+ | 2003 11 21 | 704 | 0.3− | 0.7+ | 2006 09 30 | 704 | 0.1− | 0.1− | | |
| 2000 11 26 | 704 | 0.2− | 0.8− | 2003 11 23 | 291 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.0 | | |
| 2000 11 29 | 704 | 0.3− | 0.2+ | 2003 11 23 | 291 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.6− | 0.2− | | |
| 2000 11 29 | 704 | 0.5− | 0.2+ | 2003 11 23 | 291 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.3+ | 0.6+ | | |
| 2000 11 29 | 704 | 0.8− | 0.8− | 2003 11 24 | 699 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.2+ | | |
| 2000 11 29 | 704 | 0.7− | 0.5+ | 2003 11 24 | 703 | 0.9+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.3− | | |
| 2002 04 15 | 644 | 0.6+ | 0.6+ | 2003 11 24 | 699 | 0.4− | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.3− | | |
| 2002 04 15 | 644 | 0.8+ | 0.7+ | 2003 11 24 | 703 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.3− | | |
| 2002 04 15 | 644 | 0.4+ | 0.3+ | 2003 11 24 | 699 | 1.3− | 0.9+ | 2006 10 04 | G96 | 0.1− | 0.3− | | |
| 2003 09 20 | 608 | 0.0 | 0.4− | 2003 11 24 | 703 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2003 09 20 | 608 | 0.1− | 0.0 | 2003 11 24 | 703 | 1.3− | 0.7− | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 2003 09 20 | 608 | 0.1− | 0.3− | 2003 11 24 | 699 | 1.0− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.2− | | |
| 2003 09 26 | 333 | 0.2− | 0.0 | 2003 11 30 | 703 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1− | | |
| 2003 09 26 | 333 | 0.4− | 0.1+ | 2003 11 30 | 703 | (3.7− | 0.2−) | 2006 10 16 | 703 | 0.5− | 0.3+ | | |
| 2003 09 26 | 333 | 0.4+ | 0.1+ | 2003 11 30 | 703 | 0.8− | 0.6− | 2006 10 16 | 703 | 0.7− | 0.5− | | |
| 2003 10 02 | 333 | 0.6− | 0.0 | 2003 11 30 | 703 | 0.8+ | 0.4− | 2006 10 16 | 703 | 0.4− | 1.0− | | |
| 2003 10 02 | 333 | 0.1− | 0.2− | 2003 11 30 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2− | | |
| 2003 10 02 | 333 | 0.0 | 0.3− | 2003 11 30 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.3− | | |
| 2003 10 09 | 699 | 0.2+ | 0.3+ | 2003 11 30 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.2− | | |
| 2003 10 09 | 699 | (2.1− | 0.5+) | 2003 12 01 | 704 | 0.2+ | 0.9− | 2006 10 21 | 644 | 0.1− | 0.3− | | |
| 2003 10 09 | 699 | 0.7− | 0.3− | 2003 12 01 | 704 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.0 | 0.4− | | |
| 2003 10 09 | 699 | 0.1+ | 0.4+ | 2003 12 01 | 704 | 0.4+ | 0.7− | 2006 10 21 | G96 | 0.3+ | 0.5− | | |
| 2003 10 18 | 699 | 0.1+ | 0.2− | 2003 12 01 | 704 | 1.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2003 10 18 | 699 | 0.3+ | 0.2− | 2003 12 01 | 704 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2003 10 18 | 699 | 1.3+ | 0.9+ | 2003 12 11 | 703 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.4− | | |
| 2003 10 18 | 699 | 1.2+ | 0.0 | 2003 12 11 | 703 | 1.3− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3− | | |
| 2003 10 20 | 691 | 0.2+ | 0.1+ | 2003 12 11 | 703 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2003 10 20 | 691 | 0.2+ | 0.0 | 2003 12 11 | 703 | (0.9+ | 1.5+) | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2003 10 20 | 691 | 0.2+ | 0.1+ | 2003 12 21 | 291 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2003 10 21 | 704 | 0.4− | 0.3+ | 2003 12 21 | 291 | 0.3+ | 0.7− | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2003 10 21 | 704 | 1.0− | 0.0 | 2003 12 21 | 291 | 0.4+ | 0.8− | 2006 10 22 | 703 | 0.6− | 0.1− | | |
| 2003 10 21 | 704 | 0.5− | 0.7+ | 2006 08 19 | 699 | 0.1− | 0.7− | 2006 10 22 | 703 | 0.0 | 0.1+ | | |
| 2003 10 23 | 608 | 0.2− | 0.1+ | 2006 08 19 | 699 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.1+ | | |
| 2003 10 23 | 608 | 0.2+ | 0.1− | 2006 08 19 | 699 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.6− | 0.2− | | |
| 2003 10 23 | 608 | 0.2− | 0.4+ | 2006 08 19 | 699 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.2− | 0.5− | | |
| 2003 10 24 | 704 | 1.1+ | 0.6− | 2006 09 17 | 608 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.5− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 704 | 1.3+ | 0.1− | 2006 09 17 | 608 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 0.2− | 0.6− |
| 2003 10 24 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 608 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.1− |
| 2003 10 24 | 704 | 0.9+ | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.7+ |
| 2003 10 24 | 704 | 1.0+ | 0.8+ | 2006 09 18 | 703 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.7+ | 1.1+ |
| 2003 10 28 | 704 | 0.9− | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 1.1+ |
| 2003 10 28 | 704 | (1.6− | 0.2+) | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.8− | 1.4+ |
| 2003 10 28 | 704 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.1− | 1.1+ |
| 2003 10 28 | 704 | 0.3− | 0.2− | 2006 09 21 | 699 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.8− | 1.7+ |
| 2003 11 01 | 704 | 0.9+ | 0.2+ | 2006 09 21 | 699 | 0.5+ | 0.5− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2003 11 01 | 704 | 1.0+ | 0.3+ | 2006 09 21 | 699 | 0.5+ | 0.5+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2003 11 01 | 704 | 1.0+ | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2003 11 01 | 704 | 0.9+ | 0.3− | 2006 09 25 | 699 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2003 11 01 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 699 | 0.8− | 0.1− | | | | |
| 2003 11 16 | 691 | 0.7− | 0.5− | 2006 09 25 | 699 | 0.5− | 0.4− | | | | |

**(138854)∗ 2000 WK$_{17}$**

Discovered 2000 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.11881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16627948 | $\omega$ | 111.22542 | | −0.70738554 | −0.70676313 | |
| $a$ | 3.2752436 | $\Omega$ | 23.80575 | | +0.63939367 | −0.64561079 | |
| $e$ | 0.2665519 | $i$ | 1.35856 | | +0.30129957 | −0.28926214 | |
| $P$ | 5.93 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 15 | 566 | 1.8+ | 1.9+ | 2002 03 20 | 333 | 0.7+ | 1.2+ | 2005 10 01 | G96 | 0.2+ | 0.4+ |
| 1996 03 15 | 566 | 1.2+ | 1.4+ | 2002 03 20 | 333 | 0.2− | 0.3+ | 2005 10 01 | G96 | 0.6− | 0.4− |
| 1996 03 15 | 566 | 1.3+ | 1.8+ | 2002 03 21 | 333 | 0.1− | 0.5+ | 2005 10 01 | G96 | 0.9+ | 0.1+ |
| 1999 09 04 | 691 | 1.2− | 0.2+ | 2002 03 21 | 333 | 0.0 | 0.6− | 2005 10 01 | G96 | 0.8+ | 0.7+ |
| 1999 09 04 | 691 | 0.9− | 0.5+ | 2002 03 21 | 333 | 0.5− | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.2+ |
| 1999 09 04 | 691 | 0.9− | 0.3+ | 2002 04 05 | 699 | 0.8+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2000 11 21 | 704 | 1.2+ | 0.1+ | 2002 04 05 | 699 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.3+ |
| 2000 11 21 | 704 | 0.1− | 1.0+ | 2002 04 05 | 699 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 2000 11 21 | 704 | 0.6− | 0.4+ | 2002 04 05 | 699 | 0.4+ | 0.2+ | 2006 10 29 | G96 | 0.2− | 0.3+ |
| 2000 11 21 | 704 | 1.1− | 0.7+ | 2002 04 06 | 291 | 0.5− | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.4+ |
| 2000 11 24 | 699 | (0.3− | 2.0+) | 2002 04 06 | 291 | 0.4− | 0.4+ | 2006 10 29 | G96 | 0.1− | 0.1+ |
| 2000 11 24 | 699 | 0.4− | 0.3+ | 2002 04 06 | 291 | 0.4− | 0.5+ | 2006 10 29 | G96 | 0.1− | 0.2+ |
| 2000 11 24 | 699 | 0.2− | 1.0+ | 2002 04 12 | 704 | 1.3+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2000 11 24 | 699 | 0.4+ | 0.9+ | 2002 04 12 | 704 | 0.4− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2000 11 25 | 704 | 0.6+ | 1.2− | 2002 04 12 | 704 | 0.7+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2000 11 25 | 704 | 0.1+ | 0.5− | 2002 04 12 | 704 | 0.9+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2000 11 25 | 704 | 0.2+ | 0.3− | 2002 04 14 | 704 | 0.5+ | 0.8+ | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2000 12 20 | 691 | 0.4+ | 0.5− | 2002 04 14 | 704 | 0.3+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.3+ |
| 2000 12 20 | 691 | 0.1+ | 0.3− | 2002 04 14 | 704 | 0.1+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.2+ |
| 2000 12 20 | 691 | 0.1+ | 0.4− | 2002 04 14 | 704 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.9− | 0.6+ |
| 2002 03 09 | 704 | 0.9+ | 0.5+ | 2002 04 14 | 704 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.4− |
| 2002 03 09 | 704 | (1.7+ | 0.1−) | 2002 04 14 | 704 | (1.8+ | 1.5−) | 2006 11 18 | 704 | 0.5− | 0.1− |
| 2002 03 09 | 704 | 0.9+ | 0.4− | 2002 04 14 | 704 | 0.0 | 0.1− | 2006 11 18 | 704 | (0.6− | 2.2+) |
| 2002 03 09 | 704 | 0.2+ | 1.2+ | 2002 04 14 | 704 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.5+ |
| 2002 03 09 | 704 | 1.3+ | 0.7+ | 2002 04 14 | 704 | 0.6+ | 0.2+ | 2006 11 21 | 704 | (0.9− | 1.7+) |
| 2002 03 15 | 704 | (1.7− | 0.1+) | 2002 04 14 | 704 | 0.7+ | 0.7+ | 2006 11 21 | 704 | (0.5− | 2.5+) |
| 2002 03 15 | 704 | (1.9− | 1.9+) | 2002 04 17 | 704 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.9− | 1.0+ |
| 2002 03 15 | 704 | 0.5+ | 0.9− | 2002 04 17 | 704 | 0.4+ | 0.0 | 2006 11 21 | 704 | (1.9− | 0.1+) |
| 2002 03 15 | 704 | 0.7+ | 0.4+ | 2002 04 17 | 704 | 0.3+ | 0.8+ | 2006 12 01 | 704 | 0.0 | 0.0 |
| 2002 03 15 | 704 | 0.7− | 0.1+ | 2002 04 17 | 704 | 0.3+ | 0.5+ | 2006 12 01 | 704 | 0.2+ | 0.4+ |
| 2002 03 19 | 333 | 0.4− | 0.2+ | 2002 04 17 | 704 | 0.0 | 0.3+ | 2006 12 01 | 704 | 1.1− | 0.1− |
| 2002 03 19 | 333 | 0.2− | 0.2+ | 2005 09 11 | 691 | 0.2+ | 1.3+ | 2006 12 01 | 704 | 0.3− | 0.7+ |
| 2002 03 19 | 333 | 0.2+ | 0.0 | 2005 09 11 | 691 | 0.2+ | 1.1+ | | | | |
| 2002 03 20 | 333 | 0.1+ | 0.4+ | 2005 09 11 | 691 | 0.1+ | 1.1+ | | | | |

**(138855)∗ 2000 WU$_{28}$ = 2003 SG$_{217}$**

Discovered 2000 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 52701)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.54794 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31358426 | $\omega$ | 147.89416 | | +0.86269299 | +0.50572453 | |
| $a$ | 2.1456879 | $\Omega$ | 181.72965 | | −0.47611408 | +0.81092349 | |
| $e$ | 0.1932825 | $i$ | 3.55338 | | −0.17051742 | +0.29435656 | |
| $P$ | 3.14 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 0.2+ | 0.2− | 2003 11 01 | 704 | 0.9+ | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.9+ |
| 2000 11 21 | 704 | 1.1− | 0.4+ | 2003 11 01 | 704 | (1.8+ | 1.0+) | 2006 09 20 | 704 | 0.5− | 1.4− |
| 2000 11 21 | 704 | 0.9− | 0.4− | 2003 11 01 | 704 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.9+ |
| 2000 11 22 | 557 | 0.2+ | 0.3+ | 2003 11 19 | 703 | (1.6− | 0.5−) | 2006 09 20 | 704 | 0.3+ | 0.4− |
| 2000 11 22 | 557 | 1.1+ | 0.7− | 2003 11 19 | 703 | 0.1− | 0.4− | 2006 09 22 | A50 | 0.1+ | 0.2+ |
| 2000 11 22 | 557 | 0.6− | 1.1− | 2003 11 19 | 703 | 0.3− | 0.2+ | 2006 09 22 | A50 | 0.1− | 0.1− |
| 2000 11 23 | 853 | 0.4− | 0.4− | 2003 11 19 | 703 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2000 11 23 | 853 | 0.1− | 0.4− | 2003 11 21 | 699 | 0.0 | 1.3+ | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2000 11 26 | 704 | 0.5+ | 0.9+ | 2003 11 21 | 699 | 0.2− | 0.7+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2000 11 26 | 704 | 1.4− | 0.7+ | 2003 11 21 | 699 | 0.8− | 0.8− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2000 11 26 | 704 | 0.9+ | 1.2+ | 2003 11 21 | 699 | 0.3+ | 0.6− | 2006 09 25 | G96 | 0.0 | 0.6− |
| 2000 11 26 | 704 | 0.5+ | 1.0+ | 2003 11 26 | 699 | 0.5+ | 0.8− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2000 11 26 | 704 | 0.3+ | 0.5+ | 2003 11 26 | 699 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.1+ |
| 2000 11 26 | 704 | 0.6− | 0.6− | 2003 11 26 | 699 | 0.8+ | 0.9+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2000 11 27 | 704 | 1.4+ | 0.8+ | 2003 11 26 | 699 | 0.5− | 1.1− | 2006 09 26 | 704 | 0.0 | 0.1+ |
| 2000 11 27 | 704 | 0.1− | 0.7+ | 2005 03 04 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.2+ |
| 2000 11 27 | 704 | 1.2− | 0.3− | 2005 03 04 | 691 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.1+ | 0.2− |
| 2000 11 27 | 853 | 0.3+ | 0.5+ | 2005 03 04 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.1− |
| 2000 11 27 | 853 | 0.1+ | 0.5+ | 2005 03 09 | G96 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.5+ |
| 2000 11 27 | 853 | 0.1+ | 0.3+ | 2005 03 09 | G96 | 1.1+ | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.3+ |
| 2000 11 27 | 704 | 0.5− | 0.3+ | 2005 03 09 | G96 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.1− |
| 2000 11 27 | 704 | 0.3− | 0.3− | 2005 03 09 | G96 | 0.5− | 0.0 | 2006 09 27 | 704 | 0.7− | 0.3+ |
| 2000 11 27 | 046 | 0.5+ | 0.1+ | 2005 03 12 | 695 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.3+ |
| 2000 11 27 | 046 | 0.4+ | 0.6+ | 2005 03 12 | 695 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 2000 11 27 | 046 | 0.1+ | 0.3+ | 2005 04 04 | 691 | 0.4+ | 0.3+ | 2006 09 29 | 608 | (0.8+ | 2.2−) |
| 2000 11 27 | 046 | 0.6+ | 0.4+ | 2005 04 04 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 608 | (0.8+ | 2.5−) |
| 2000 11 30 | 699 | 0.5− | 0.3+ | 2005 04 04 | 691 | 0.3− | 0.1− | 2006 09 29 | 608 | (0.3+ | 2.2−) |
| 2000 11 30 | 699 | 0.5+ | 1.7− | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2000 11 30 | 699 | 0.4+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2000 11 30 | 699 | 0.3− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2003 09 27 | 333 | 0.2− | 0.1+ | 2006 08 19 | 691 | 0.5− | 1.3+ | 2006 09 30 | 704 | (0.3− | 1.6+) |
| 2003 09 27 | 333 | 0.2− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 09 30 | 704 | (1.8− | 0.3+) |
| 2003 09 27 | 333 | 0.1− | 0.6− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.8− | 0.4− |
| 2003 09 28 | 333 | 0.1− | 0.4− | 2006 08 25 | 704 | 0.4− | 0.2+ | 2006 09 30 | 704 | (1.6− | 0.0 ) |
| 2003 09 28 | 333 | 0.0 | 0.4− | 2006 08 25 | 704 | 1.0+ | 0.9− | 2006 09 30 | 704 | 1.1− | 0.2− |
| 2003 09 28 | 333 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.2+ | 0.2+ | 2006 10 01 | 703 | 0.3− | 0.1− |
| 2003 09 29 | 333 | 0.2− | 0.3− | 2006 08 25 | 704 | 0.1+ | 0.6+ | 2006 10 01 | 703 | 0.1− | 0.4− |
| 2003 09 29 | 333 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.5− | 0.3− | 2006 10 01 | 703 | 0.4+ | 0.2+ |
| 2003 09 29 | 333 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 10 01 | 703 | 0.2− | 0.1+ |
| 2003 09 29 | 704 | 0.8+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 10 17 | 106 | 0.4+ | 0.0 |
| 2003 09 29 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.6− | 0.0 | 2006 10 17 | 106 | 0.3− | 0.2+ |
| 2003 09 29 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.4+ | 2006 10 17 | 106 | 0.2+ | 0.5− |
| 2003 09 29 | 704 | 0.0 | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 106 | 0.1− | 0.1+ |
| 2003 10 14 | 699 | 1.3+ | 1.2− | 2006 08 28 | 691 | 0.7+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2003 10 14 | 699 | (1.7+ | 1.5−) | 2006 09 01 | 704 | 0.5− | 0.7− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2003 10 14 | 699 | 0.8− | 0.0 | 2006 09 01 | 704 | 0.5− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2003 10 14 | 699 | (1.8+ | 0.1−) | 2006 09 01 | 704 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2003 10 18 | 608 | 0.0 | 0.3− | 2006 09 01 | 704 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2003 10 18 | 608 | 0.2− | 0.2− | 2006 09 01 | 704 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2003 10 18 | 608 | 0.3− | 0.3− | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2003 10 21 | 704 | 0.2+ | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2003 10 21 | 704 | 0.4+ | 0.0 | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2003 10 21 | 704 | 1.2+ | 0.2− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2003 10 21 | 704 | 0.0 | 0.2− | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2003 10 24 | 704 | 1.1− | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 10 24 | 704 | 1.3− | 0.2− | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 10 24 | 704 | 0.9− | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2003 10 24 | 704 | 0.4− | 0.1+ | 2006 09 16 | 699 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2003 10 24 | 704 | 0.7− | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 608 | 0.5− | 0.1− | 2006 09 17 | 704 | 0.4+ | 0.2− | 2006 10 24 | 644 | 0.1− | 0.2+ | | |
| 2003 10 25 | 608 | 0.7− | 0.4− | 2006 09 17 | 704 | 0.1+ | 0.2− | 2006 10 24 | 644 | 0.2+ | 0.1− | | |
| 2003 10 25 | 608 | 0.5− | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.4− | 2006 10 24 | 644 | 0.1− | 0.3+ | | |
| 2003 10 28 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2003 10 28 | 704 | 0.1+ | 0.4− | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 2003 10 28 | 704 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2003 10 28 | 704 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.4− | | |
| 2003 10 28 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.5+ | | | | | | |
| 2003 11 01 | 704 | 1.0+ | 0.3− | 2006 09 20 | 704 | 0.1− | 1.0+ | | | | | | |

**(138856)∗ 2000 WT$_{34}$**

Discovered 2000 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.18839 | | (2000.0) | | | |
| $n$ | 0.26381278 | $\omega$ | 192.26595 | | +0.80008869 | −0.59834275 |
| $a$ | 2.4077173 | $\Omega$ | 204.64045 | | +0.55871859 | +0.76933590 |
| $e$ | 0.1498014 | $i$ | 5.91186 | | +0.21838413 | +0.22384867 |
| $P$ | 3.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 691 | 0.3− | 0.6+ | 2000 11 27 | 704 | 0.1+ | 0.2+ | 2005 01 18 | 703 | 0.2− | 0.4− |
| 1996 10 10 | 691 | 0.2− | 0.5+ | 2000 11 27 | 704 | 0.0 | 1.1+ | 2005 01 18 | 703 | 0.5− | 0.1+ |
| 1996 10 10 | 691 | 0.2− | 0.6+ | 2000 12 20 | 704 | 0.7− | 0.2+ | 2005 01 18 | 703 | 0.1− | 0.1+ |
| 1996 10 16 | 691 | 0.8+ | 0.1+ | 2000 12 20 | 704 | 0.4+ | 0.2+ | 2006 04 02 | 691 | 0.2+ | 0.3+ |
| 1996 10 16 | 691 | 1.0− | 1.0− | 2000 12 20 | 704 | 0.5+ | 0.7+ | 2006 04 02 | 691 | 0.3+ | 0.3+ |
| 2000 11 20 | 704 | 1.0+ | 0.0 | 2000 12 20 | 704 | 0.6+ | 0.2+ | 2006 04 02 | 691 | 0.1− | 0.1+ |
| 2000 11 20 | 704 | 0.4+ | 1.0+ | 2002 04 08 | 807 | 0.6− | 0.6− | 2006 05 01 | 691 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 1.6+ | 0.5+ | 2002 04 08 | 807 | 0.0 | 0.1+ | 2006 05 01 | 691 | 0.1+ | 0.5+ |
| 2000 11 20 | 704 | 0.8+ | 0.7+ | 2002 05 17 | 291 | 0.3− | 0.2− | 2006 05 01 | 691 | 0.2+ | 0.3+ |
| 2000 11 27 | 704 | 0.4+ | 0.1+ | 2002 05 17 | 291 | 0.5+ | 0.2+ | 2006 05 05 | 691 | 0.1+ | 0.3+ |
| 2000 11 27 | 704 | 0.0 | 0.3+ | 2002 05 17 | 291 | 0.2+ | 0.0 | 2006 05 05 | 691 | 0.2− | 0.7+ |
| 2000 11 27 | 704 | 0.1+ | 0.3+ | 2005 01 13 | 703 | 0.7− | 0.5+ | 2006 05 05 | 691 | 0.4+ | 0.0 |
| 2000 11 27 | 704 | 0.7+ | 0.3+ | 2005 01 13 | 703 | 1.0− | 0.5− | 2006 05 23 | G96 | 0.2− | 0.3− |
| 2000 11 27 | 704 | 0.6− | 0.2+ | 2005 01 13 | 703 | 0.7− | 0.4− | 2006 05 23 | G96 | 0.6− | 0.1+ |
| 2000 11 27 | 704 | 0.7+ | 0.3+ | 2005 01 13 | 703 | 0.8− | 0.4+ | 2006 05 23 | G96 | 0.4− | 0.0 |
| 2000 11 27 | 704 | (2.1− | 0.6−) | 2005 01 18 | 703 | 1.0− | 0.0 | 2006 05 23 | G96 | 0.2− | 0.2+ |

**(138857)∗ 2000 WC$_{47}$ = 2002 EE$_{124}$**

Discovered 2000 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 29547)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.64265 | | (2000.0) | | | |
| $n$ | 0.28453087 | $\omega$ | 144.26086 | | +0.94797267 | +0.31719985 |
| $a$ | 2.2893724 | $\Omega$ | 197.30593 | | −0.30911871 | +0.89682829 |
| $e$ | 0.1915442 | $i$ | 5.21856 | | −0.07611463 | +0.30835575 |
| $P$ | 3.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.1+ | 0.4+ | 2003 07 03 | 691 | 0.1− | 0.1+ | 2003 09 24 | 644 | 0.1+ | 0.4+ |
| 1998 02 23 | 691 | 0.1− | 0.1− | 2003 07 03 | 691 | 0.2− | 0.1+ | 2003 09 27 | 704 | 0.5− | 0.7+ |
| 1998 02 23 | 691 | 0.1− | 0.0 | 2003 07 03 | 691 | 0.1− | 0.0 | 2003 09 27 | 704 | 0.5+ | 0.0 |
| 1998 03 05 | 691 | 0.6+ | 0.1+ | 2003 07 09 | 691 | 0.0 | 0.1+ | 2003 09 27 | 704 | 0.3− | 0.5+ |
| 1998 03 05 | 691 | 0.3+ | 0.2− | 2003 07 09 | 691 | 0.2− | 0.2+ | 2003 09 27 | 704 | 0.4+ | 0.7+ |
| 1998 03 05 | 691 | 0.1+ | 0.1+ | 2003 07 09 | 691 | 0.1− | 0.2+ | 2003 09 27 | 608 | 1.2+ | 0.7− |
| 1999 04 14 | 691 | 0.0 | 0.0 | 2003 07 24 | 599 | 0.2− | 0.6+ | 2003 09 27 | 608 | 1.0+ | 0.8− |
| 1999 04 14 | 691 | 0.4− | 0.4− | 2003 07 24 | 599 | 0.0 | 0.5+ | 2003 09 27 | 608 | 1.4+ | 0.5− |
| 1999 04 14 | 691 | 0.3− | 0.2+ | 2003 07 24 | 599 | 0.4− | 0.4+ | 2003 10 24 | 704 | 0.8− | 0.6+ |
| 2000 11 21 | 704 | 0.1+ | 1.1+ | 2003 07 24 | 599 | 0.0 | 0.5+ | 2003 10 24 | 704 | 0.2+ | 0.1− |
| 2000 11 21 | 704 | 0.5− | 0.4+ | 2003 07 28 | 608 | 0.7+ | 0.2+ | 2003 10 24 | 704 | 0.2+ | 0.9+ |
| 2000 11 21 | 704 | 0.1− | 1.6+ | 2003 07 28 | 608 | 0.9+ | 0.3− | 2003 10 24 | 704 | 0.7+ | 0.5+ |
| 2000 11 27 | 704 | 1.2− | 1.1+ | 2003 07 28 | 608 | 0.1+ | 1.0− | 2003 10 24 | 704 | 0.9+ | 0.5+ |
| 2000 11 27 | 704 | 0.6+ | 0.8+ | 2003 08 24 | 704 | (2.5+ | 0.0 ) | 2006 04 24 | 691 | 0.1+ | 0.2− |
| 2000 11 27 | 704 | 0.0 | 0.5+ | 2003 08 24 | 704 | 2.0+ | 1.4+ | 2006 04 24 | 691 | 0.1+ | 0.1− |
| 2000 11 27 | 704 | 1.0− | 0.1+ | 2003 08 24 | 704 | (0.6+ | 2.5+) | 2006 04 24 | 691 | 0.1− | 0.0 |
| 2000 11 29 | 704 | 0.7− | 0.0 | 2003 08 24 | 704 | (2.7+ | 1.2+) | 2006 05 02 | 691 | 0.1− | 0.0 |
| 2000 11 29 | 704 | 0.0 | 0.1− | 2003 08 30 | 691 | 0.1− | 0.4+ | 2006 05 02 | 691 | 0.4+ | 0.2− |
| 2000 11 29 | 704 | 0.5− | 0.5+ | 2003 08 30 | 691 | 0.1− | 0.4+ | 2006 05 02 | 691 | 0.1− | 0.1+ |
| 2000 11 29 | 704 | 0.2− | 0.8+ | 2003 08 30 | 691 | 0.2− | 0.3+ | 2006 05 06 | 691 | 0.2− | 0.1+ |
| 2000 11 29 | 704 | 1.0− | 0.5+ | 2003 08 31 | 608 | 0.1+ | 1.5− | 2006 05 06 | 691 | 0.3− | 0.2+ |
| 2000 11 30 | 699 | 0.6− | 0.5+ | 2003 08 31 | 608 | 0.1+ | 1.1− | 2006 05 06 | 691 | 0.2+ | 1.1+ |
| 2000 11 30 | 699 | 0.4− | 0.3+ | 2003 08 31 | 608 | 0.2+ | 0.9− | 2006 05 09 | 691 | 0.3− | 0.3+ |
| 2000 11 30 | 699 | 0.4+ | 0.2− | 2003 09 01 | 704 | 1.2− | 0.3− | 2006 05 09 | 691 | 0.0 | 0.3+ |
| 2000 11 30 | 699 | 0.4− | 0.5+ | 2003 09 01 | 704 | 0.9− | 0.2− | 2006 05 09 | 691 | 0.1− | 0.2+ |
| 2002 03 12 | 291 | 0.6+ | 0.5+ | 2003 09 01 | 704 | 1.2− | 0.2+ | 2006 05 26 | G96 | 0.6− | 0.3+ |
| 2002 03 12 | 291 | 0.6+ | 0.2+ | 2003 09 22 | 608 | 0.2+ | 0.6+ | 2006 05 26 | G96 | 0.2− | 0.1+ |
| 2002 03 12 | 291 | 0.6+ | 0.6+ | 2003 09 22 | 608 | 0.4+ | 1.3+ | 2006 05 26 | G96 | 0.2− | 0.3+ |
| 2002 03 13 | 644 | 0.1− | 0.6+ | 2003 09 22 | 608 | 0.2+ | 0.7+ | 2006 05 26 | G96 | 0.2+ | 0.1− |
| 2002 03 13 | 644 | 0.4+ | 0.4+ | 2003 09 24 | 644 | 0.0 | 0.4+ | | | | |
| 2002 03 13 | 644 | 0.0 | 0.3+ | 2003 09 24 | 644 | 0.1− | 0.0 | | | | |

**(138858)∗ 2000 WE$_{62}$**

Discovered 2000 Nov. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.06959 | | (2000.0) | | | |
| $n$ | 0.17592293 | $\omega$ | 330.17189 | | +0.41598067 | −0.86826255 |
| $a$ | 3.1544313 | $\Omega$ | 94.07150 | | +0.87873779 | +0.30728327 |
| $e$ | 0.2035005 | $i$ | 15.72482 | | +0.23405123 | +0.38948316 |
| $P$ | 5.60 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 0.6− | 0.8− | 2001 02 19 | 704 | 0.5+ | 0.9+ | 2005 11 05 | 699 | 0.6− | 0.0 |
| 2000 09 26 | 704 | 0.5− | 1.0+ | 2001 02 19 | 704 | 0.3− | 0.3+ | 2005 11 05 | 699 | 1.3− | 0.2+ |
| 2000 09 26 | 704 | 0.7+ | 0.6+ | 2001 02 22 | 704 | 0.6+ | 0.8+ | 2006 10 21 | G96 | 0.1− | 0.8− |
| 2000 09 26 | 704 | (1.1− | 2.1+) | 2001 02 22 | 704 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.5− | 1.3− |
| 2000 10 30 | 704 | 0.2− | 0.3+ | 2001 02 22 | 704 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.8− |
| 2000 10 30 | 704 | 0.7+ | 0.3− | 2002 01 09 | 704 | 0.6+ | 1.2+ | 2006 10 21 | G96 | 0.0 | 0.8− |
| 2000 10 30 | 704 | 0.6+ | 0.1+ | 2002 01 09 | 704 | 1.1+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.7− |
| 2000 10 30 | 704 | 0.0 | 0.2+ | 2002 01 09 | 704 | (1.7+ | 0.8+) | 2006 10 28 | G96 | 0.3− | 0.9− |
| 2000 10 30 | 704 | 0.7+ | 0.1− | 2002 01 09 | 704 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2000 11 21 | 608 | (2.5+ | 0.4−) | 2002 01 23 | 704 | 1.0+ | 0.3+ | 2006 10 28 | G96 | 0.8− | 0.7− |
| 2000 11 21 | 608 | (2.2+ | 0.7−) | 2002 01 23 | 704 | 0.5+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2000 11 21 | 608 | (2.2+ | 0.7−) | 2002 01 23 | 704 | 1.0+ | 0.5+ | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2000 11 26 | 704 | 0.3− | 0.3+ | 2002 01 23 | 704 | (2.4+ | 0.5−) | 2006 11 14 | G96 | 0.4− | 0.6− |
| 2000 11 26 | 704 | 0.1+ | 0.1− | 2002 01 23 | 704 | (2.1+ | 0.6−) | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2000 11 26 | 704 | 0.4+ | 0.3+ | 2002 02 21 | 704 | 0.1− | 1.0+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2000 11 26 | 704 | 0.3+ | 0.5+ | 2002 02 21 | 704 | 0.4+ | 1.4+ | 2006 11 14 | G96 | 0.2− | 0.6− |
| 2000 11 26 | 704 | 0.4+ | 0.8+ | 2002 02 21 | 704 | 0.9− | 1.2+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2000 11 28 | 704 | 0.5− | 0.2− | 2002 02 21 | 704 | 0.5− | 1.0+ | 2006 11 17 | 703 | 0.9− | 0.2− |
| 2000 11 28 | 704 | 0.6− | 0.2− | 2002 02 21 | 704 | 0.4− | 1.2+ | 2006 11 17 | 703 | 0.1− | 0.7− |
| 2000 11 28 | 704 | 1.3− | 0.1+ | 2002 03 21 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 1.4− | 0.7− |
| 2000 11 29 | 608 | 0.4− | 0.0 | 2002 03 21 | 704 | 0.0 | 1.0+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2000 11 29 | 608 | 0.2− | 0.0 | 2002 03 21 | 704 | 0.1− | 0.7+ | 2006 11 18 | 704 | 0.3+ | 1.2− |
| 2000 11 29 | 608 | 0.4− | 0.0 | 2002 03 21 | 704 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.7− |
| 2000 12 03 | 608 | 0.3− | 0.2+ | 2005 08 27 | E12 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2000 12 03 | 608 | 0.2− | 0.2+ | 2005 08 27 | E12 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2000 12 03 | 608 | 0.4− | 0.5+ | 2005 08 27 | E12 | 0.2+ | 0.8+ | 2006 11 18 | 704 | 0.7− | 0.4− |
| 2000 12 17 | 699 | 0.3+ | 0.3+ | 2005 08 27 | E12 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2000 12 17 | 699 | 0.2+ | 0.1− | 2005 09 26 | 704 | 0.8− | 0.5+ | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2000 12 17 | 699 | 0.5− | 0.1− | 2005 09 26 | 704 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2000 12 17 | 699 | 0.4− | 0.4− | 2005 09 26 | 704 | 0.5− | 0.4+ | 2006 11 21 | 704 | 0.3− | 1.1+ |
| 2000 12 28 | 704 | 0.5− | 0.4− | 2005 10 02 | E12 | 0.1− | 1.1+ | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2000 12 28 | 704 | 0.3+ | 0.5+ | 2005 10 02 | E12 | 0.2+ | 1.3+ | 2006 12 01 | 704 | (3.8+ | 0.1−) |
| 2000 12 28 | 704 | 0.1− | 0.3+ | 2005 10 02 | E12 | 0.1− | 1.0+ | 2006 12 01 | 704 | 0.6+ | 0.4− |
| 2000 12 28 | 704 | 0.1+ | 0.4+ | 2005 10 02 | E12 | 0.7+ | 0.4+ | 2006 12 01 | 704 | 0.2+ | 0.4+ |
| 2000 12 28 | 704 | 0.3+ | 0.6+ | 2005 11 05 | 699 | 0.1+ | 0.7− | 2006 12 01 | 704 | 0.7+ | 0.1− |
| 2001 02 19 | 704 | 0.2− | 0.7+ | 2005 11 05 | 699 | (0.2+ | 1.6+) | 2006 12 01 | 704 | 0.6+ | 0.0 |

**(138859)∗ 2000 WN$_{63}$**

Discovered 2000 Nov. 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.54520 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.49930658 | $\omega$ | 144.26274 | | −0.92521031 | +0.32925215 | |
| $a$ | 1.5735886 | $\Omega$ | 56.03469 | | −0.37895256 | −0.77617582 | |
| $e$ | 0.5318116 | $i$ | 13.14572 | | −0.01951507 | −0.53772123 | |
| $P$ | 1.97 | $H$ | 19.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 691 | 0.3− | 0.2+ | 2000 12 05 | 691 | 0.6− | 0.6− | 2004 11 21 | 941 | 0.3+ | 0.5+ |
| 2000 11 27 | 691 | 0.2+ | 0.1+ | 2000 12 20 | 696 | 0.1− | 0.1− | 2004 12 10 | 715 | 0.7+ | 0.1+ |
| 2000 11 27 | 691 | 0.3+ | 0.2+ | 2000 12 20 | 696 | 0.3− | 0.1+ | 2004 12 10 | 715 | 0.7− | 0.4− |
| 2000 11 27 | 691 | 0.2+ | 0.3− | 2001 02 28 | 568 | 0.0 | 0.1+ | 2004 12 10 | 715 | 0.6− | 0.1− |
| 2000 11 27 | 691 | 0.2+ | 0.4+ | 2001 02 28 | 568 | 0.1+ | 0.1+ | 2004 12 11 | 291 | 0.1+ | 0.1+ |
| 2000 11 27 | 691 | 0.2+ | 0.2− | 2001 03 26 | 691 | (1.5+ | 1.2+) | 2004 12 11 | 291 | 0.1+ | 0.2+ |
| 2000 11 28 | 691 | 0.0 | 0.4+ | 2001 03 26 | 691 | 0.1− | 0.0 | 2004 12 11 | 291 | 0.1− | 0.0 |
| 2000 11 28 | 691 | 0.1+ | 0.2+ | 2001 03 26 | 691 | (2.1− | 1.0+) | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2000 11 28 | 691 | 0.1− | 0.2+ | 2001 07 24 | 474 | 0.0 | 0.6+ | 2006 11 10 | 691 | 0.4− | 0.0 |
| 2000 11 29 | 691 | 0.1+ | 0.1− | 2001 07 24 | 474 | (3.7+ | 3.6−) | 2006 11 10 | 691 | 1.0+ | 0.7− |
| 2000 11 29 | 691 | 0.1− | 0.3− | 2001 07 24 | 474 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.5+ |
| 2000 11 29 | 691 | 0.1− | 0.1− | 2002 10 31 | 696 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.5+ | 0.1− |
| 2000 12 01 | 691 | 0.4− | 0.3+ | 2002 10 31 | 696 | 1.1+ | 0.2+ | 2006 11 14 | 691 | 0.4+ | 0.5− |
| 2000 12 01 | 691 | 0.3+ | 0.3− | 2002 11 23 | 644 | 1.0− | 1.5+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2000 12 01 | 691 | 0.1− | 0.0 | 2002 11 23 | 644 | 0.4− | 0.5− | 2006 11 18 | 691 | 0.5− | 0.0 |
| 2000 12 03 | 691 | 0.2− | 0.4− | 2003 07 28 | 859 | 0.2+ | 0.7− | 2006 11 18 | 691 | 0.4− | 0.2+ |
| 2000 12 03 | 691 | 0.2+ | 0.5− | 2003 07 28 | 859 | (2.6− | 0.1+) | 2006 11 22 | 691 | 0.6− | 0.3− |
| 2000 12 03 | 691 | 0.3+ | 0.0 | 2004 11 20 | 941 | 0.5+ | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.5− |
| 2000 12 05 | 691 | 0.3+ | 0.6+ | 2004 11 20 | 941 | 0.1+ | 0.2+ | | | | |
| 2000 12 05 | 691 | 0.4− | 0.3+ | 2004 11 20 | 941 | 0.4+ | 0.5+ | | | | |

**(138860)∗ 2000 WO$_{77}$**

Discovered 2000 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.48603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18177040 | $\omega$ | 167.61603 | | +0.29958755 | −0.93937619 | |
| $a$ | 3.0864123 | $\Omega$ | 264.76987 | | +0.86043219 | +0.34155359 | |
| $e$ | 0.0342298 | $i$ | 9.64189 | | +0.41219383 | −0.03022437 | |
| $P$ | 5.42 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.1− | 2004 06 19 | 691 | 0.3+ | 0.3+ | 2005 10 23 | 644 | 0.4− | 0.1+ |
| 1999 10 13 | 645 | 0.1− | 0.1− | 2004 07 16 | 704 | 0.6+ | 0.1− | 2005 10 23 | 703 | 0.1+ | 0.4− |
| 2000 11 05 | 704 | 0.3− | 0.1− | 2004 07 16 | 704 | 0.3− | 0.9+ | 2005 10 23 | 703 | 0.6− | 0.9− |
| 2000 11 05 | 704 | 0.6+ | 0.2+ | 2004 07 16 | 704 | 0.2+ | 0.5+ | 2005 10 23 | 448 | 0.3+ | 0.3− |
| 2000 11 05 | 704 | 0.2+ | 1.4+ | 2004 07 16 | 704 | 0.0 | 1.3+ | 2005 10 23 | 703 | (0.2+ | 2.2−) |
| 2000 11 20 | 704 | 0.3+ | 0.1+ | 2004 07 18 | 704 | 0.2+ | 0.9− | 2005 10 23 | 703 | (1.1+ | 2.1−) |
| 2000 11 20 | 704 | 0.7+ | 0.5− | 2004 07 18 | 704 | 0.2+ | 0.0 | 2005 10 23 | 448 | 0.3+ | 0.1− |
| 2000 11 20 | 704 | 0.3− | 0.2+ | 2004 07 18 | 704 | 1.1− | 1.0− | 2005 10 23 | 448 | 0.2− | 0.3− |
| 2000 11 20 | 704 | 0.5− | 0.8− | 2004 07 18 | 704 | 0.9− | 0.5+ | 2006 01 24 | 291 | (1.9− | 0.1+) |
| 2000 11 29 | 704 | 0.4+ | 0.9+ | 2005 10 01 | 703 | 0.5+ | 0.5+ | 2006 01 24 | 291 | 0.1− | 0.3+ |
| 2000 11 29 | 704 | 0.1− | 0.3+ | 2005 10 01 | 703 | 0.7+ | 0.1+ | 2006 01 24 | 291 | 0.2+ | 0.0 |
| 2000 11 29 | 704 | 0.6+ | 0.1− | 2005 10 01 | 703 | 0.6− | 1.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2000 11 29 | 704 | 0.3+ | 0.0 | 2005 10 01 | 703 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2000 11 29 | 704 | 0.3+ | 0.2+ | 2005 10 23 | 715 | 0.7− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2002 02 07 | 644 | 0.1− | 0.4+ | 2005 10 23 | 715 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 02 07 | 644 | 0.1− | 0.7+ | 2005 10 23 | 644 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 02 07 | 644 | 0.3+ | 0.3+ | 2005 10 23 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 02 15 | 704 | 0.7+ | 0.7+ | 2005 10 23 | 715 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2002 02 15 | 704 | 0.2− | 0.3+ | 2005 10 23 | 291 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.4− | 0.1− |
| 2002 02 15 | 704 | 0.4+ | 0.3+ | 2005 10 23 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2002 02 15 | 704 | 0.4− | 0.4+ | 2005 10 23 | 644 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2002 02 15 | 704 | 0.4+ | 0.9+ | 2005 10 23 | 291 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2004 06 19 | 691 | 0.0 | 0.3+ | 2005 10 23 | 291 | 0.0 | 0.2− | | | | |
| 2004 06 19 | 691 | 0.0 | 0.4+ | 2005 10 23 | 644 | 0.1− | 0.2+ | | | | |

**(138861)∗ 2000 WO$_{87}$**

Discovered 2000 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.08506 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29105517 | $\omega$ | 170.15045 | | −0.29841470 | −0.95003632 | |
| $a$ | 2.2550309 | $\Omega$ | 297.16348 | | +0.86852832 | −0.23053555 | |
| $e$ | 0.1946786 | $i$ | 5.90552 | | +0.39573630 | −0.21043848 | |
| $P$ | 3.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | (0.6− | 2.5−) | 2001 01 20 | 704 | 0.0 | 0.2+ | 2003 10 03 | 691 | 0.0 | 0.1− |
| 2000 09 27 | 704 | 0.3− | 0.8− | 2001 01 21 | 704 | 0.3+ | 0.2+ | 2003 10 17 | 691 | 0.0 | 0.1− |
| 2000 09 27 | 704 | 0.5+ | 1.0− | 2001 01 21 | 704 | 0.0 | 0.4+ | 2003 10 17 | 691 | 0.2− | 0.0 |
| 2000 11 20 | 704 | 0.1− | 0.0 | 2001 01 21 | 704 | 0.2− | 0.4+ | 2003 10 17 | 699 | 0.3− | 0.3+ |
| 2000 11 20 | 704 | 0.1+ | 0.4+ | 2001 01 21 | 704 | 0.0 | 0.1+ | 2003 10 17 | 691 | 0.1− | 0.1− |
| 2000 11 20 | 704 | 0.1− | 0.4+ | 2001 01 21 | 704 | 0.1+ | 0.5+ | 2003 10 17 | 699 | 0.5− | 0.6+ |
| 2000 11 20 | 704 | 0.3− | 0.1− | 2001 01 25 | 704 | 0.3− | 0.9+ | 2003 10 17 | 699 | 0.6− | 0.2+ |
| 2000 11 20 | 704 | 0.1− | 0.1− | 2001 01 25 | 704 | 0.6+ | 0.5+ | 2003 10 17 | 699 | 0.6− | 0.3− |
| 2000 11 29 | 704 | 0.1+ | 0.1+ | 2001 01 25 | 704 | 0.7+ | 0.4+ | 2003 10 22 | 704 | 0.4− | 0.3− |
| 2000 11 29 | 704 | 0.1+ | 0.2+ | 2001 01 25 | 704 | 0.6+ | 0.8+ | 2003 10 22 | 704 | 1.1− | 0.2+ |
| 2000 11 29 | 704 | 0.1− | 0.1+ | 2001 01 25 | 704 | 0.5+ | 1.0+ | 2003 10 22 | 704 | 0.6− | 0.2+ |
| 2000 11 29 | 704 | 0.1+ | 0.4− | 2001 01 29 | 704 | 0.1+ | 0.5− | 2003 10 22 | 704 | 0.4− | 0.3+ |
| 2000 12 18 | 699 | 0.7+ | 0.7+ | 2001 01 29 | 704 | 0.8+ | 0.1− | 2003 11 02 | 704 | 0.9+ | 0.2− |
| 2000 12 18 | 699 | 2.0+ | 1.1+ | 2001 01 29 | 704 | 0.5+ | 0.3+ | 2003 11 02 | 704 | 1.3+ | 0.1+ |
| 2000 12 18 | 699 | (2.1+ | 1.8+) | 2001 02 03 | 704 | 0.3− | 0.3+ | 2003 11 02 | 704 | 0.2+ | 0.9+ |
| 2000 12 18 | 699 | (2.3+ | 0.1+) | 2001 02 03 | 704 | 0.2+ | 1.2+ | 2003 11 02 | 704 | 1.7+ | 0.4+ |
| 2000 12 27 | 699 | 0.3− | 0.1+ | 2001 02 03 | 704 | 0.1− | 0.6+ | 2003 11 19 | 704 | 0.0 | 0.3+ |
| 2000 12 27 | 699 | 0.7+ | 0.1+ | 2001 02 19 | 704 | 0.0 | 1.3+ | 2003 11 19 | 704 | 0.2+ | 0.1− |
| 2000 12 27 | 699 | 0.4+ | 0.1− | 2001 02 19 | 704 | 0.2+ | 0.9+ | 2003 11 19 | 704 | 0.1+ | 0.1− |
| 2000 12 27 | 699 | 0.2− | 0.0 | 2001 02 19 | 704 | 0.0 | 0.7+ | 2003 11 19 | 704 | 0.1− | 0.4− |
| 2000 12 29 | 919 | 0.5+ | 1.1− | 2001 02 19 | 704 | 0.6− | 0.6+ | 2003 11 19 | 704 | 0.2− | 0.6− |
| 2000 12 29 | 919 | 0.3− | 0.8− | 2001 02 19 | 704 | 0.6− | 0.3− | 2005 05 12 | 703 | 0.7− | 0.5+ |
| 2000 12 30 | 704 | 0.2− | 0.2+ | 2001 03 18 | 704 | 1.5+ | 0.3+ | 2005 05 12 | 703 | 0.7+ | 0.5− |
| 2000 12 30 | 704 | 0.1− | 0.1+ | 2001 03 18 | 704 | 0.3+ | 0.6+ | 2005 05 12 | 703 | 0.8− | 0.9+ |
| 2000 12 30 | 704 | 0.1− | 0.1− | 2001 03 18 | 704 | 0.1+ | 1.3+ | 2005 05 19 | 644 | 0.3+ | 1.0+ |
| 2000 12 30 | 704 | 0.4+ | 0.2+ | 2003 09 16 | 012 | 0.4− | 0.5− | 2005 05 19 | 644 | 0.1+ | 1.5+ |
| 2000 12 30 | 704 | 0.0 | 0.6+ | 2003 09 16 | 012 | 0.1− | 0.3− | 2005 05 19 | 644 | 0.5+ | 0.9+ |
| 2000 12 30 | 919 | (2.9+ | 1.0−) | 2003 09 16 | 012 | 0.1+ | 0.4− | 2006 08 13 | 644 | 0.3− | 0.1+ |
| 2000 12 30 | 919 | 0.0 | 1.9− | 2003 09 16 | 012 | 0.2+ | 0.2− | 2006 08 13 | 644 | 0.4− | 0.2− |
| 2001 01 02 | 704 | 0.4+ | 0.3− | 2003 09 16 | 012 | 0.1− | 0.2− | 2006 08 13 | 644 | 0.3− | 0.2+ |
| 2001 01 02 | 704 | 0.3+ | 0.0 | 2003 09 16 | 012 | 0.5− | 0.4− | 2006 08 15 | 644 | 0.4− | 0.4+ |
| 2001 01 02 | 704 | 0.3+ | 0.3− | 2003 09 17 | 644 | 0.1− | 0.1+ | 2006 08 15 | 644 | 0.2− | 0.3+ |
| 2001 01 02 | 704 | 0.1− | 0.4− | 2003 09 17 | 644 | 0.2+ | 0.0 | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2001 01 02 | 704 | 0.0 | 0.3− | 2003 09 17 | 644 | 0.3− | 0.3+ | 2006 08 24 | 704 | 0.8+ | 0.8+ |
| 2001 01 03 | 699 | 0.2+ | 0.0 | 2003 09 20 | 644 | 0.0 | 0.1− | 2006 08 24 | 704 | 0.7− | 1.0+ |
| 2001 01 03 | 699 | 0.2+ | 0.0 | 2003 09 20 | 644 | 0.3+ | 0.1− | 2006 08 24 | 704 | 0.3+ | 0.5+ |
| 2001 01 03 | 704 | 0.4+ | 0.2− | 2003 09 20 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 704 | 1.1+ | 0.3+ |
| 2001 01 03 | 699 | 0.1− | 0.1+ | 2003 09 21 | 699 | 0.2− | 0.3− | 2006 08 24 | 704 | 0.4+ | 0.3− |
| 2001 01 03 | 704 | 0.1+ | 0.1+ | 2003 09 21 | 699 | 0.3− | 0.1− | 2006 08 24 | 704 | 0.8+ | 1.8+ |
| 2001 01 03 | 704 | 0.3+ | 0.1+ | 2003 09 21 | 699 | 0.9+ | 0.5− | 2006 08 24 | 704 | 0.1+ | 1.8+ |
| 2001 01 03 | 699 | 0.2− | 0.4− | 2003 09 21 | 699 | 0.7− | 0.6+ | 2006 08 24 | 704 | 0.2+ | 0.8+ |
| 2001 01 03 | 704 | 0.3+ | 0.4− | 2003 09 22 | 704 | 0.1+ | 0.6+ | 2006 08 24 | 704 | 0.6+ | 1.1+ |
| 2001 01 03 | 704 | 0.0 | 0.3− | 2003 09 22 | 704 | 0.2− | 0.7− | 2006 08 25 | 704 | 1.2− | 1.3+ |
| 2001 01 14 | 300 | 1.0− | 0.4− | 2003 09 22 | 704 | (2.1− | 0.4−) | 2006 08 25 | 704 | 1.5− | 0.6+ |
| 2001 01 14 | 300 | 0.2− | 0.1− | 2003 09 22 | 704 | 0.9+ | 0.7+ | 2006 08 25 | 704 | 1.8− | 0.9+ |
| 2001 01 14 | 300 | 0.1+ | 0.3− | 2003 09 22 | 704 | 0.4− | 0.3+ | 2006 08 25 | 704 | 0.6− | 0.3+ |
| 2001 01 19 | 691 | 0.3− | 0.1+ | 2003 09 30 | 704 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.8− |
| 2001 01 19 | 691 | 0.5− | 0.1+ | 2003 09 30 | 704 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.3− |
| 2001 01 19 | 691 | 0.3− | 0.1+ | 2003 09 30 | 704 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.8− |
| 2001 01 20 | 704 | 0.0 | 0.1+ | 2003 09 30 | 704 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.2− |
| 2001 01 20 | 704 | 0.2− | 0.3+ | 2003 09 30 | 704 | 0.6− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2001 01 20 | 704 | 0.2− | 0.1+ | 2003 10 03 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 01 20 | 704 | 0.2+ | 0.1+ | 2003 10 03 | 691 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.5+ |

**(138862)∗ 2000 WP$_{113}$ = 2002 JZ$_{90}$**

Discovered 2000 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29571)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.02593 | | (2000.0) | | | |
| $n$ | 0.21490785 | $\omega$ | 94.98671 | | −0.75334088 | −0.64329626 |
| $a$ | 2.7603736 | $\Omega$ | 45.06167 | | +0.50058019 | −0.69560145 |
| $e$ | 0.2060967 | $i$ | 11.12273 | | +0.42649383 | −0.31985707 |
| $P$ | 4.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1− | 0.4+ | 2001 01 05 | 704 | 0.7− | 1.0+ | 2005 12 05 | 703 | 0.1+ | 1.7− |
| 1995 10 21 | 691 | 0.5− | 0.3+ | 2001 01 05 | 704 | 1.8+ | 0.5− | 2006 01 02 | 703 | 0.1− | 0.8− |
| 1995 10 21 | 691 | 0.5− | 0.2+ | 2001 01 05 | 704 | 0.1+ | 0.5− | 2006 01 02 | 703 | 0.6− | 1.1− |
| 2000 09 06 | 704 | 0.2+ | 1.5+ | 2002 04 13 | 691 | 0.3− | 0.1+ | 2006 01 02 | 703 | 0.6− | 0.3− |
| 2000 09 06 | 704 | 0.8+ | 1.3+ | 2002 04 13 | 691 | 0.3− | 0.4+ | 2006 01 02 | 703 | 0.3+ | 0.0 |
| 2000 09 06 | 704 | 0.4+ | 0.2+ | 2002 04 13 | 691 | 0.2− | 1.1+ | 2006 01 05 | 703 | 0.4− | 0.4− |
| 2000 11 20 | 704 | 0.8− | 0.2+ | 2002 05 11 | 704 | 0.1− | 0.8+ | 2006 01 05 | 703 | 0.5− | 0.4− |
| 2000 11 20 | 704 | 0.1− | 0.0 | 2002 05 11 | 704 | 0.4+ | 0.6+ | 2006 01 05 | 703 | 0.6− | 0.1− |
| 2000 11 20 | 704 | 0.5+ | 0.0 | 2002 05 11 | 704 | 0.4+ | 0.5+ | 2006 01 05 | 703 | 1.1− | 1.0− |
| 2000 11 20 | 704 | 0.8− | 0.3− | 2002 05 11 | 704 | 0.6+ | 0.1− | 2006 01 06 | 704 | 1.1+ | 0.2− |
| 2000 11 20 | 704 | 0.0 | 0.1+ | 2002 05 13 | 704 | 1.0+ | 0.6+ | 2006 01 06 | 704 | 1.0+ | 0.2− |
| 2000 11 30 | 704 | 0.7+ | 0.5+ | 2002 05 13 | 704 | 0.4+ | 0.5+ | 2006 01 06 | 704 | 1.1+ | 0.0 |
| 2000 11 30 | 704 | 0.2+ | 0.4+ | 2002 05 13 | 704 | 0.9+ | 0.3− | 2006 01 06 | 704 | 0.3+ | 0.1− |
| 2000 11 30 | 704 | 1.1+ | 0.4− | 2002 05 13 | 704 | 1.5+ | 0.3− | 2006 01 06 | 704 | 0.5+ | 0.2+ |
| 2000 12 04 | 704 | 0.4− | 0.3+ | 2002 05 13 | 704 | 0.6+ | 0.1+ | 2006 01 11 | 699 | 0.5− | 0.1− |
| 2000 12 04 | 704 | 0.3+ | 1.7+ | 2002 05 16 | 608 | 0.0 | 0.9− | 2006 01 11 | 699 | 0.9− | 0.9+ |
| 2000 12 04 | 704 | 1.3− | 1.0+ | 2002 05 16 | 608 | 0.1+ | 0.5− | 2006 01 11 | 699 | 0.7+ | 0.5+ |
| 2000 12 04 | 704 | 0.5− | 0.5− | 2002 05 16 | 608 | 0.1+ | 1.4− | 2006 01 11 | 699 | 1.3+ | 1.9+ |
| 2000 12 05 | 704 | 0.1+ | 1.2+ | 2002 05 19 | 735 | 1.0+ | 0.6+ | 2006 01 22 | 703 | 0.1− | 1.1− |
| 2000 12 05 | 704 | 0.9− | 0.3− | 2002 05 19 | 735 | 0.6+ | 0.0 | 2006 01 22 | 703 | 1.5− | 0.3− |
| 2000 12 05 | 704 | 0.4+ | 0.5+ | 2002 05 19 | 735 | 0.7− | 0.2− | 2006 01 22 | 703 | 0.3− | 1.2− |
| 2000 12 05 | 704 | 1.1+ | 0.7− | 2002 05 20 | 735 | 0.6+ | 0.0 | 2006 01 22 | 703 | 0.6− | 0.2− |
| 2000 12 06 | 704 | (2.4− | 0.9+) | 2002 05 20 | 735 | 0.5+ | 0.6+ | 2006 02 06 | 704 | 1.1+ | 0.1+ |
| 2000 12 06 | 704 | (2.8− | 0.1+) | 2002 05 20 | 735 | 0.8− | 0.8+ | 2006 02 06 | 704 | 0.0 | 0.7+ |
| 2000 12 06 | 704 | (2.6− | 1.1+) | 2005 11 28 | 703 | 1.9− | 1.1− | 2006 02 06 | 704 | 0.2− | 1.5+ |
| 2000 12 06 | 704 | 0.0 | 0.7+ | 2005 11 28 | 703 | 0.5+ | 0.8− | 2006 02 06 | 704 | 0.4− | 0.5+ |
| 2000 12 06 | 704 | 0.3− | 0.3+ | 2005 11 28 | 703 | (2.2+ | 2.9−) | 2006 02 06 | 704 | 0.6+ | 0.6+ |
| 2000 12 06 | 704 | 0.3+ | 0.4− | 2005 11 28 | 703 | (2.8+ | 1.5−) | 2006 02 24 | 699 | 0.2+ | 0.6+ |
| 2000 12 06 | 704 | 0.9− | 0.4+ | 2005 12 04 | 703 | 0.3− | 0.2− | 2006 02 24 | 699 | 1.0+ | 0.1+ |
| 2000 12 19 | 704 | 0.1− | 0.1+ | 2005 12 04 | 703 | 1.0− | 1.6+ | 2006 02 24 | 699 | 0.7+ | 0.2− |
| 2000 12 19 | 704 | 0.3+ | 0.1+ | 2005 12 04 | 703 | 0.3− | 1.4+ | 2006 02 24 | 699 | 0.6+ | 0.4+ |
| 2000 12 19 | 704 | 0.6− | 0.2− | 2005 12 04 | 703 | 0.1− | 0.4+ | 2006 03 24 | 703 | 0.1− | 0.2+ |
| 2000 12 19 | 704 | 0.7+ | 0.9− | 2005 12 05 | 703 | 1.1− | 0.4− | 2006 03 24 | 703 | 0.6− | 0.1+ |
| 2000 12 19 | 704 | 0.1+ | 0.2− | 2005 12 05 | 703 | 0.9+ | 0.4+ | 2006 03 24 | 703 | 0.4+ | 0.4− |
| 2001 01 05 | 704 | 0.3− | 0.5+ | 2005 12 05 | 703 | 0.1− | 0.4− | 2006 03 24 | 703 | 1.0− | 0.1+ |

**(138863)∗ 2000 WO$_{119}$**

Discovered 2000 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.53668 | | (2000.0) | | | |
| $n$ | 0.17665963 | $\omega$ | 262.07964 | | −0.89881196 | −0.14778754 |
| $a$ | 3.1456556 | $\Omega$ | 268.70933 | | +0.30766315 | −0.88328037 |
| $e$ | 0.2106280 | $i$ | 24.37921 | | −0.31221859 | −0.44494341 |
| $P$ | 5.58 | $H$ | 14.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.0 | 0.3+ | 2001 01 21 | 704 | 0.7+ | 0.2− | 2005 11 12 | 703 | 0.2− | 0.9− |
| 2000 11 20 | 704 | 0.3− | 0.3+ | 2001 01 21 | 704 | 0.2− | 0.4+ | 2005 11 12 | 703 | 1.2− | 1.2− |
| 2000 11 20 | 704 | 0.5− | 0.4+ | 2001 01 21 | 704 | 0.7+ | 0.1− | 2005 12 22 | 644 | 0.1− | 0.5− |
| 2000 11 30 | 704 | 0.4− | 0.9+ | 2001 01 21 | 704 | 0.2+ | 0.2+ | 2005 12 22 | 644 | 0.1− | 0.2− |
| 2000 11 30 | 704 | 0.7− | 0.2+ | 2001 01 21 | 704 | 0.3+ | 0.4+ | 2005 12 22 | 644 | 0.6+ | 0.4− |
| 2000 11 30 | 704 | 0.1− | 0.1− | 2001 01 21 | 704 | 0.4+ | 0.2− | 2006 10 01 | 291 | 0.4− | 0.1+ |
| 2000 12 30 | 704 | 0.3+ | 0.3− | 2001 01 21 | 704 | 0.5− | 0.8− | 2006 10 01 | 291 | 0.0 | 0.2+ |
| 2000 12 30 | 704 | 0.4− | 0.1+ | 2001 01 21 | 704 | 0.0 | 0.7+ | 2006 10 01 | 291 | 0.1+ | 0.3+ |
| 2000 12 30 | 704 | 0.2+ | 0.3− | 2001 01 21 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 291 | 0.0 | 0.2+ |
| 2000 12 30 | 704 | 0.1+ | 0.2− | 2001 01 21 | 704 | 0.6+ | 0.4+ | 2006 10 02 | 291 | 0.1+ | 0.3+ |
| 2001 01 03 | 704 | 0.4+ | 0.4− | 2001 01 21 | 704 | 0.4+ | 1.1+ | 2006 10 02 | 291 | 0.1+ | 0.2+ |
| 2001 01 03 | 704 | 0.0 | 0.3+ | 2001 01 21 | 704 | 0.5+ | 0.4+ | 2006 10 03 | 291 | 0.3− | 0.0 |
| 2001 01 03 | 704 | 0.8− | 0.7+ | 2003 05 25 | 691 | 0.6− | 0.7+ | 2006 10 03 | 291 | 0.0 | 0.0 |
| 2001 01 03 | 704 | 0.4+ | 0.6− | 2003 05 25 | 691 | 0.2− | 0.5+ | 2006 10 03 | 291 | 0.1+ | 0.1+ |
| 2001 01 03 | 704 | 0.4+ | 1.1− | 2003 05 25 | 691 | 0.5− | 0.6+ | 2006 10 31 | 703 | 0.3+ | 1.3− |
| 2001 01 20 | 704 | 0.2− | 0.3+ | 2005 11 08 | A20 | 0.1+ | 0.0 | 2006 10 31 | 703 | 1.4+ | 0.2− |
| 2001 01 20 | 704 | 0.4− | 0.1− | 2005 11 08 | A20 | 0.5+ | 0.7− | 2006 10 31 | 703 | 1.6+ | 0.3+ |
| 2001 01 20 | 704 | 0.4+ | 1.3+ | 2005 11 08 | A20 | 1.0+ | 0.3+ | 2006 10 31 | 703 | 0.7+ | 1.4+ |
| 2001 01 20 | 704 | 0.0 | 0.5+ | 2005 11 12 | 703 | 0.3− | 1.0+ | | | | |
| 2001 01 21 | 704 | 0.2+ | 0.1− | 2005 11 12 | 703 | 0.7+ | 0.2+ | | | | |

**(138864)∗ 2000 WM$_{143}$**

Discovered 2000 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.79986 | | (2000.0) | | | |
| $n$ | 0.17507685 | $\omega$ | 302.90614 | | +0.43216217 | −0.79454361 |
| $a$ | 3.1645860 | $\Omega$ | 115.61298 | | +0.90080317 | +0.40253273 |
| $e$ | 0.2533487 | $i$ | 28.23061 | | −0.04230260 | +0.45460736 |
| $P$ | 5.63 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 31 | 704 | 0.3− | 0.9− | 2001 01 21 | 704 | 0.2− | 0.2+ | 2005 10 22 | E12 | 0.0 | 0.1− |
| 2000 10 31 | 704 | 0.4− | 0.4+ | 2001 01 21 | 704 | 0.5− | 0.2− | 2005 10 22 | E12 | 0.4+ | 0.3− |
| 2000 10 31 | 704 | 0.2− | 0.2− | 2001 01 21 | 704 | 0.2− | 0.6− | 2005 10 22 | E12 | 0.2+ | 0.2− |
| 2000 10 31 | 704 | 0.0 | 0.0 | 2001 01 21 | 704 | 0.4+ | 0.1− | 2005 10 22 | E12 | 0.1+ | 0.1+ |
| 2000 11 20 | 704 | 0.0 | 0.3− | 2001 01 21 | 704 | 0.2+ | 0.5− | 2005 10 27 | E12 | 0.3− | 0.9+ |
| 2000 11 20 | 704 | 0.3− | 0.5− | 2001 01 22 | 704 | 0.1− | 0.1+ | 2005 10 27 | E12 | 0.1+ | 0.1− |
| 2000 11 20 | 704 | 0.1+ | 0.2+ | 2001 01 22 | 704 | 0.5− | 0.2+ | 2005 10 27 | E12 | 0.2+ | 0.0 |
| 2000 11 20 | 704 | 0.2− | 0.3− | 2001 01 22 | 704 | 0.0 | 0.5+ | 2005 10 27 | E12 | 0.1+ | 0.8+ |
| 2000 11 20 | 704 | 0.8− | 0.5+ | 2001 01 22 | 704 | 0.3− | 0.2+ | 2005 11 17 | E12 | 0.0 | 0.1+ |
| 2000 11 25 | 699 | 0.4− | 0.0 | 2001 01 22 | 704 | 0.3− | 0.4+ | 2005 11 17 | E12 | 0.3+ | 0.1− |
| 2000 11 25 | 699 | 0.0 | 0.0 | 2001 01 25 | 704 | 0.6+ | 0.7− | 2005 11 17 | E12 | 0.4+ | 0.7+ |
| 2000 11 25 | 699 | 0.3+ | 0.2− | 2001 01 25 | 704 | 0.7+ | 0.5− | 2005 11 17 | E12 | 0.1+ | 0.1+ |
| 2000 11 25 | 699 | 0.7+ | 0.2− | 2001 01 25 | 704 | 0.3− | 0.2+ | 2005 11 19 | E12 | 0.6− | 0.2− |
| 2000 12 30 | 704 | 0.5− | 0.4+ | 2001 01 25 | 704 | 0.6+ | 1.0− | 2005 11 19 | E12 | 0.6+ | 0.5− |
| 2000 12 30 | 704 | 0.1− | 0.7+ | 2001 01 25 | 704 | 0.1− | 0.4+ | 2005 11 19 | E12 | 0.4+ | 0.1− |
| 2000 12 30 | 704 | 0.2+ | 0.9+ | 2001 01 26 | 704 | 0.2− | 0.2+ | 2005 11 19 | E12 | 0.3− | 0.0 |
| 2000 12 30 | 704 | 0.5− | 0.7+ | 2001 01 26 | 704 | 0.0 | 0.0 | 2005 12 05 | E12 | 0.2− | 0.1− |
| 2000 12 30 | 704 | 0.5− | 0.1+ | 2001 01 26 | 704 | 0.2− | 0.2− | 2005 12 05 | E12 | 0.3+ | 0.3− |
| 2001 01 02 | 704 | 0.5− | 0.2+ | 2001 01 26 | 704 | 0.3− | 0.0 | 2005 12 05 | E12 | 0.6− | 0.2− |
| 2001 01 02 | 704 | 0.4+ | 0.4− | 2001 01 26 | 704 | 0.1+ | 0.6+ | 2005 12 11 | 699 | (0.3+ | 3.4+) |
| 2001 01 02 | 704 | 0.1+ | 0.6− | 2001 02 03 | 704 | 0.3− | 0.3+ | 2005 12 11 | 699 | (1.5+ | 0.6+) |
| 2001 01 03 | 704 | 0.0 | 0.2+ | 2001 02 03 | 704 | 0.6− | 0.7+ | 2005 12 11 | 699 | 0.8− | 1.2+ |
| 2001 01 03 | 704 | 1.0+ | 0.3− | 2001 02 03 | 704 | 0.0 | 0.2+ | 2005 12 11 | 699 | (1.0+ | 1.7−) |
| 2001 01 03 | 704 | 0.4+ | 0.4+ | 2001 02 03 | 704 | 0.2− | 0.7+ | 2005 12 26 | E12 | 0.5− | 0.5+ |
| 2001 01 03 | 704 | 0.5+ | 0.4+ | 2001 02 03 | 704 | 0.0 | 0.5+ | 2005 12 26 | E12 | 0.2+ | 0.6+ |
| 2001 01 03 | 704 | 0.1− | 0.2+ | 2001 02 17 | 704 | 0.4+ | 0.3− | 2005 12 26 | E12 | 0.6+ | 0.1− |
| 2001 01 03 | 704 | 0.1− | 0.3+ | 2001 02 17 | 704 | 0.1− | 0.2+ | 2005 12 26 | E12 | 0.8− | 0.2− |
| 2001 01 03 | 704 | 0.2− | 0.0 | 2001 02 17 | 704 | 0.3+ | 0.4+ | 2006 03 04 | 703 | (1.4− | 2.2+) |
| 2001 01 03 | 704 | 0.7+ | 0.0 | 2001 02 17 | 704 | 0.3+ | 0.3+ | 2006 03 04 | 703 | 0.4− | 1.4+ |
| 2001 01 13 | 120 | 0.3− | 0.8+ | 2001 02 17 | 704 | 0.3− | 1.1+ | 2006 03 04 | 703 | (1.8− | 0.9+) |
| 2001 01 13 | 120 | 0.8− | 1.0+ | 2001 02 21 | 704 | 0.2− | 0.3+ | 2006 03 04 | 703 | 0.7− | 0.2+ |
| 2001 01 13 | 120 | 1.3+ | 0.4+ | 2001 02 21 | 704 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 01 15 | 691 | 0.0 | 0.3− | 2001 02 21 | 704 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 01 15 | 691 | 0.0 | 0.3− | 2003 06 22 | 645 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 01 15 | 691 | 0.3+ | 0.7− | 2003 06 22 | 645 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 01 20 | 704 | 0.3+ | 0.3+ | 2004 07 11 | 704 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.9+ | 0.2− |
| 2001 01 20 | 704 | 0.3− | 0.2+ | 2004 07 11 | 704 | 0.4− | 0.3+ | 2006 11 16 | 703 | 2.0− | 1.4− |
| 2001 01 20 | 704 | 0.1+ | 0.1− | 2004 07 11 | 704 | 0.1− | 0.6− | 2006 11 16 | 703 | 0.9+ | 0.0 |
| 2001 01 20 | 704 | 0.1− | 0.4− | 2005 09 29 | E12 | 0.0 | 0.3+ | 2006 11 16 | 703 | 0.6− | 0.0 |
| 2001 01 20 | 704 | 0.1+ | 0.9− | 2005 09 29 | E12 | 0.2− | 0.2− | | | | |

**(138865)∗ 2000 WP$_{159}$**

Discovered 2000 Nov. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.45153 | | (2000.0) | | | |
| $n$ | 0.17210880 | $\omega$ | 54.71522 | | −0.27457795 | −0.92317452 |
| $a$ | 3.2008648 | $\Omega$ | 53.48939 | | +0.73719610 | −0.38171263 |
| $e$ | 0.1470287 | $i$ | 19.55250 | | +0.61737254 | +0.04521369 |
| $P$ | 5.73 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.6+ | 0.3+ | 2002 03 19 | 644 | 0.3− | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 1.3+ | 0.8+ | 2002 03 19 | 644 | 0.3− | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.2− | 2002 03 19 | 644 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2000 10 01 | 704 | 0.0 | 0.5+ | 2002 03 21 | 704 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2002 03 21 | 704 | 1.2− | 1.0− | 2006 11 09 | 644 | 0.6− | 0.0 |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2002 03 21 | 704 | 0.7− | 0.7− | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2000 10 29 | 704 | 0.4+ | 1.6+ | 2002 03 21 | 704 | 0.8− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2000 10 29 | 704 | 0.8+ | 0.7+ | 2002 03 21 | 704 | 0.8− | 1.1− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2000 10 29 | 704 | 0.0 | 0.7+ | 2003 03 31 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2000 11 03 | 704 | 0.8+ | 0.2+ | 2003 03 31 | 691 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2000 11 03 | 704 | 0.4− | 0.1+ | 2003 03 31 | 691 | 0.8+ | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2000 11 03 | 704 | 1.2+ | 0.0 | 2003 05 01 | 704 | 0.5− | 0.3+ | 2006 11 11 | 703 | 0.8− | 1.2− |
| 2000 11 03 | 704 | 0.2− | 0.2− | 2003 05 01 | 704 | 0.7+ | 1.3+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2000 11 03 | 704 | 2.0− | 0.9+ | 2003 05 01 | 704 | 0.2+ | 1.4− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2000 11 20 | 699 | 1.2− | 0.8+ | 2003 05 01 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.6+ |
| 2000 11 20 | 699 | 0.5− | 0.5+ | 2003 05 05 | 704 | 0.6+ | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2000 11 20 | 699 | 0.0 | 0.2+ | 2003 05 05 | 704 | 0.8+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 11 20 | 699 | 0.7− | 1.4+ | 2003 05 05 | 704 | 0.4+ | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2000 11 26 | 704 | 0.7− | 0.5+ | 2003 05 05 | 704 | 0.6+ | 0.6+ | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2000 11 26 | 704 | 1.1− | 0.1+ | 2003 05 05 | 704 | 1.0+ | 0.1+ | 2006 11 16 | 703 | 0.7+ | 0.3− |
| 2000 11 26 | 704 | 0.4− | 0.4+ | 2003 05 24 | 691 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.5+ |
| 2000 11 26 | 704 | 0.2+ | 0.2− | 2003 05 24 | 691 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.2− | 1.4+ |
| 2001 12 09 | 704 | 0.0 | 0.2− | 2003 05 24 | 691 | 0.3− | 0.3− | 2006 11 16 | 703 | 0.3+ | 1.1+ |
| 2001 12 09 | 704 | 0.6− | 0.5+ | 2003 06 01 | 691 | 0.4+ | 0.6+ | 2006 11 17 | 704 | (1.6+ | 0.4+) |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2003 06 01 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 1.1+ |
| 2001 12 22 | 704 | 0.2− | 0.6− | 2003 06 01 | 691 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.7+ | 0.9+ |
| 2001 12 22 | 704 | (0.4− | 1.6−) | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.4+ | 1.1+ |
| 2001 12 22 | 704 | 0.2+ | 1.1− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.0 |
| 2001 12 22 | 704 | 0.4+ | 1.1− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.9+ | 0.2+ |
| 2002 01 25 | 704 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2002 01 25 | 704 | 0.2− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.2+ |
| 2002 01 25 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 1.4+ | 0.8+ |
| 2002 01 25 | 704 | 0.6− | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.5− |
| 2002 01 25 | 704 | 0.2− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | (1.7+ | 0.8+) |
| 2002 02 19 | 704 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | (0.1+ | 2.2+) |
| 2002 02 19 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | (0.4− | 2.3+) |
| 2002 02 19 | 704 | 1.4+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | (0.8− | 1.7+) |
| 2002 02 19 | 704 | 0.6+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2002 02 21 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.8− |
| 2002 02 21 | 704 | 0.4+ | 0.7− | 2006 10 28 | 704 | 0.9+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 1.0− |
| 2002 02 21 | 704 | 1.0+ | 0.6− | 2006 10 28 | 704 | 0.3− | 0.6− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 02 21 | 704 | 1.1+ | 0.3− | 2006 10 28 | 704 | 0.4+ | 0.8− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 02 21 | 704 | 1.0+ | 0.2− | 2006 10 28 | G96 | 0.4− | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2002 03 04 | 704 | 0.4+ | 0.5− | 2006 10 28 | 704 | 0.7+ | 1.3+ | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2002 03 04 | 704 | 0.8+ | 0.3− | 2006 10 28 | G96 | 0.6− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 03 04 | 704 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2002 03 09 | 699 | 0.7− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.1− | 0.9+ |
| 2002 03 09 | 699 | 0.4− | 0.5− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.2− | 0.0 |
| 2002 03 09 | 699 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.4− | 0.1− |
| 2002 03 09 | 699 | 1.0− | 0.0 | 2006 11 01 | 691 | 0.3− | 0.2+ | 2006 12 01 | 704 | 0.3+ | 0.2+ |

**(138866)∗ 2000 WO$_{163}$ = 2002 CW$_{96}$**

Discovered 2000 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25349)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.82741 | | (2000.0) | | | |
| $n$ | 0.19179867 | $\omega$ | 24.49138 | | +0.16476693 | −0.98544840 |
| $a$ | 2.9778695 | $\Omega$ | 56.05025 | | +0.89643985 | +0.13195974 |
| $e$ | 0.0819068 | $i$ | 2.88511 | | +0.41139695 | +0.10713578 |
| $P$ | 5.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 691 | 0.3− | 0.0 | 2002 03 22 | 644 | 0.5− | 0.6+ | 2005 10 31 | 691 | 0.1− | 0.3+ |
| 1997 02 06 | 691 | 0.2+ | 0.6− | 2002 03 22 | 644 | 0.4− | 0.4+ | 2005 10 31 | 691 | 0.1+ | 0.1+ |
| 1997 02 06 | 691 | 0.1− | 0.4− | 2005 10 01 | G96 | 0.3− | 0.1− | 2005 11 04 | 691 | 0.1− | 0.3+ |
| 2000 11 18 | 699 | 0.3+ | 0.2+ | 2005 10 01 | G96 | 0.2+ | 0.1− | 2005 11 04 | 691 | 0.2− | 0.2+ |
| 2000 11 18 | 699 | 1.0− | 0.0 | 2005 10 01 | G96 | 0.1+ | 0.0 | 2005 11 04 | 691 | 0.0 | 0.3+ |
| 2000 11 18 | 699 | 0.7− | 0.1− | 2005 10 01 | G96 | 0.0 | 0.2− | 2005 11 06 | 704 | 0.0 | 0.4− |
| 2000 11 18 | 699 | 0.1− | 0.4− | 2005 10 03 | G96 | 0.2+ | 0.2− | 2005 11 06 | 704 | 0.1− | 0.2+ |
| 2000 11 21 | 704 | 0.3+ | 0.8− | 2005 10 03 | G96 | 0.1− | 0.3− | 2005 11 06 | 704 | 0.5− | 0.6+ |
| 2000 11 21 | 704 | 0.5− | 1.0− | 2005 10 03 | G96 | 0.0 | 0.2− | 2005 11 06 | 704 | 0.2− | 0.3+ |
| 2000 11 21 | 704 | 0.2+ | 0.0 | 2005 10 03 | G96 | 0.2+ | 0.2− | 2005 11 06 | 704 | 0.3− | 0.3+ |
| 2000 11 21 | 704 | 0.3+ | 0.9+ | 2005 10 05 | 691 | 0.1+ | 0.5+ | 2005 11 25 | 703 | 0.9− | 0.6+ |
| 2000 11 27 | 691 | 0.1+ | 0.2− | 2005 10 05 | 691 | 0.2+ | 0.3+ | 2005 11 25 | 703 | 0.6− | 0.5+ |
| 2000 11 27 | 691 | 0.1+ | 0.2− | 2005 10 05 | 691 | 0.1− | 0.4+ | 2005 11 25 | 703 | 0.5− | 0.7− |
| 2000 11 27 | 691 | 0.3+ | 0.2− | 2005 10 05 | 691 | 0.2+ | 0.4+ | 2005 11 25 | 703 | 0.4− | 0.2− |
| 2002 02 07 | 704 | 1.3+ | 0.1− | 2005 10 05 | 691 | 0.0 | 0.5+ | 2005 11 28 | G96 | 0.0 | 0.4− |
| 2002 02 07 | 704 | 0.2+ | 0.9+ | 2005 10 05 | 691 | 0.4+ | 0.4+ | 2005 11 28 | G96 | 0.2+ | 0.6− |
| 2002 02 07 | 704 | 0.7+ | 0.5+ | 2005 10 22 | 691 | 0.1+ | 0.0 | 2005 11 28 | G96 | 0.2+ | 0.5− |
| 2002 02 07 | 704 | (0.1− | 1.8+) | 2005 10 22 | 691 | 0.2+ | 0.1− | 2005 11 28 | G96 | 0.3+ | 0.1− |
| 2002 02 10 | 704 | 0.4+ | 0.0 | 2005 10 22 | 691 | 0.1− | 0.1− | 2005 11 29 | G96 | 0.2− | 0.5− |
| 2002 02 10 | 704 | 0.6+ | 0.1+ | 2005 10 24 | 699 | 0.5+ | 0.4− | 2005 11 29 | G96 | 0.4− | 0.6− |
| 2002 02 10 | 704 | 0.7+ | 0.5+ | 2005 10 24 | 699 | 0.5+ | 0.8+ | 2005 11 29 | G96 | 0.1+ | 0.2− |
| 2002 02 10 | 704 | 0.9− | 0.4+ | 2005 10 24 | 699 | 1.0+ | 1.1− | 2005 11 29 | G96 | 0.5+ | 0.3− |
| 2002 02 12 | 704 | 0.2− | 0.3+ | 2005 10 24 | 699 | 0.8− | 0.5+ | 2005 12 04 | G96 | 0.2− | 0.5− |
| 2002 02 12 | 704 | 0.4+ | 0.0 | 2005 10 27 | 691 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.3+ | 0.4− |
| 2002 02 12 | 704 | 0.1+ | 0.3+ | 2005 10 27 | 691 | 0.3− | 0.1− | 2005 12 04 | G96 | 0.2+ | 0.4− |
| 2002 02 12 | 704 | 0.1− | 0.1+ | 2005 10 27 | 691 | 0.4− | 0.1− | 2005 12 04 | G96 | 0.3+ | 0.5− |
| 2002 02 20 | 704 | 0.1− | 1.0+ | 2005 10 28 | 599 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.4+ | 0.4− |
| 2002 02 20 | 704 | (0.6− | 1.6+) | 2005 10 28 | 599 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.2− |
| 2002 02 20 | 704 | 0.5− | 0.8+ | 2005 10 28 | 599 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.3− |
| 2002 02 20 | 704 | (0.5− | 2.4+) | 2005 10 29 | 599 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.4− | 0.4− |
| 2002 02 20 | 704 | 0.2− | 0.9+ | 2005 10 30 | 703 | (1.6− | 0.0 ) | 2006 11 25 | G96 | 0.7− | 0.1− |
| 2002 03 12 | 644 | 0.7+ | 0.7+ | 2005 10 30 | 703 | 0.1− | 0.1− | 2006 11 25 | G96 | 1.1− | 0.5− |
| 2002 03 12 | 644 | 0.3+ | 0.9+ | 2005 10 30 | 703 | 1.2− | 0.5− | 2006 11 25 | G96 | 0.9− | 1.0− |
| 2002 03 12 | 644 | 0.5+ | 0.8+ | 2005 10 30 | 703 | 0.3− | 0.6− | | | | |
| 2002 03 22 | 644 | 0.5− | 0.6+ | 2005 10 31 | 691 | 0.1− | 0.0 | | | | |

**(138867)∗ 2000 XD$_5$**

Discovered 2000 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.64285 | | (2000.0) | | | |
| $n$ | 0.15460944 | $\omega$ | 14.77368 | | +0.77864485 | −0.61934573 |
| $a$ | 3.4380488 | $\Omega$ | 24.37866 | | +0.54813118 | +0.59335193 |
| $e$ | 0.0951404 | $i$ | 14.10825 | | +0.30539223 | +0.51414429 |
| $P$ | 6.37 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.0 | 1.2+ | 2002 03 20 | 644 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2000 10 25 | 704 | 0.4+ | 0.3+ | 2002 03 20 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.1+ |
| 2000 10 25 | 704 | 0.6+ | 1.3+ | 2002 03 21 | 644 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3+ |
| 2000 10 25 | 704 | 0.2+ | 1.0+ | 2002 03 21 | 644 | 0.6− | 0.2+ | 2006 10 04 | 703 | 0.0 | 0.6+ |
| 2000 11 05 | 704 | 0.9− | 0.2− | 2002 03 21 | 644 | 0.3− | 0.3+ | 2006 10 04 | 703 | 0.9− | 0.9+ |
| 2000 11 05 | 704 | 0.1− | 0.3+ | 2002 04 01 | 644 | 0.1− | 0.6− | 2006 10 04 | 703 | 0.7− | 0.7+ |
| 2000 11 05 | 704 | 0.5+ | 0.1+ | 2002 04 01 | 644 | 0.5− | 0.6− | 2006 10 04 | 703 | 1.0− | 0.1+ |
| 2000 11 19 | 704 | 0.4+ | 0.5+ | 2002 04 01 | 644 | 0.1− | 0.8− | 2006 10 19 | 644 | 0.2− | 0.6+ |
| 2000 11 19 | 704 | 0.3− | 0.8− | 2003 04 24 | 691 | 1.4+ | 1.1+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2000 11 19 | 704 | 0.4− | 0.5− | 2003 04 24 | 691 | 1.4+ | 1.3+ | 2006 10 19 | 644 | 0.1− | 0.6+ |
| 2000 11 19 | 704 | 0.7+ | 1.3− | 2003 04 24 | 691 | (1.4+ | 1.7+) | 2006 10 20 | 644 | 0.3− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 01 | 704 | 0.1− | 0.3− | 2003 04 28 | 699 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.6+ | 2000 12 07 | 704 | 0.2+ | 0.4− | 2004 10 30 | 084 | 0.1− | 0.7+ | 2006 11 08 | A24 | 0.2+ | 0.1− |
| 2000 12 01 | 704 | 0.4− | 0.5− | 2003 04 28 | 699 | 0.4− | 0.9− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2000 12 07 | 704 | 0.1− | 0.2− | 2004 10 30 | 084 | 0.2+ | 0.2− | 2006 11 09 | A24 | 0.9− | 0.4+ |
| 2000 12 01 | 704 | 0.6− | 0.7− | 2003 04 28 | 699 | 1.0+ | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.5+ | 2000 12 07 | 704 | 0.1− | 0.3+ | 2004 11 02 | 084 | 0.0 | 0.5+ | 2006 11 09 | A24 | 0.2− | 0.3+ |
| 2000 12 01 | 704 | 0.7+ | 0.7− | 2003 04 28 | 699 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.6+ | 2000 12 07 | 704 | 0.3− | 0.6+ | 2004 11 03 | 704 | 0.6− | 0.2+ | 2006 11 09 | A24 | 0.5+ | 1.1− |
| 2000 12 04 | 704 | 0.4− | 0.0 | 2003 05 02 | 291 | 0.3+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.6+ | 2000 12 07 | 704 | 1.0− | 0.5− | 2004 11 03 | 704 | 0.2+ | 0.4+ | 2006 11 09 | A24 | 0.9+ | 0.0 |
| 2000 12 04 | 704 | 0.1− | 0.5+ | 2003 05 02 | 291 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.3+ | 2000 12 07 | 704 | 0.4− | 0.3− | 2004 11 03 | 704 | 0.8+ | 0.3+ | 2006 11 12 | A94 | 0.8+ | 0.5+ |
| 2000 12 04 | 704 | 0.2− | 0.5− | 2003 05 02 | 291 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.5− | 0.2+ | 2000 12 07 | 704 | 0.6− | 0.2− | 2004 11 03 | 704 | 0.0 | 0.1− | 2006 11 12 | A94 | 0.5+ | 0.8− |
| 2000 12 04 | 704 | 0.3+ | 0.7+ | 2003 05 08 | 691 | 1.0+ | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.3+ | 2000 12 07 | 704 | 1.0+ | 0.7+ | 2004 11 03 | 104 | (0.8+ | 1.6+) | 2006 11 12 | A94 | 0.6− | 0.6+ |
| 2000 12 19 | 704 | 0.4− | 0.3+ | 2003 05 08 | 691 | 0.5+ | 0.8+ | 2006 11 14 | 703 | 0.3− | 0.1− | 2000 12 07 | 704 | 0.0 | 0.1− | 2004 11 03 | 104 | 0.2− | 0.8+ | 2006 11 16 | 726 | (1.6− | 0.6+) |
| 2000 12 19 | 704 | 0.0 | 0.1+ | 2003 05 08 | 691 | 1.0+ | 0.6+ | 2006 11 14 | 703 | 0.8+ | 0.4+ | 2000 12 07 | 704 | 0.6+ | 0.0 | 2004 11 03 | 104 | 0.1− | 0.0 | 2006 11 16 | 726 | (2.3− | 0.3+) |
| 2000 12 19 | 704 | 0.4+ | 0.5+ | 2005 07 03 | 644 | 0.5− | 0.8+ | 2006 11 14 | 703 | 0.8− | 0.4+ | 2000 12 07 | 704 | 0.4+ | 0.4+ | 2004 11 10 | 704 | 1.5− | 0.3+ | 2006 11 16 | 726 | 0.2+ | 0.2− |
| 2000 12 19 | 704 | 0.0 | 0.1− | 2005 07 03 | 644 | 0.5− | 0.9+ | 2006 11 14 | 703 | 0.2− | 0.5+ | 2000 12 07 | 704 | 0.8+ | 0.9− | 2004 11 10 | 704 | (2.8− | 0.5+) | 2006 11 16 | 726 | 0.5+ | 0.4+ |
| 2000 12 19 | 704 | 0.1+ | 0.4+ | 2005 07 03 | 644 | 0.3− | 1.0+ | 2006 11 15 | 691 | 0.2− | 0.4+ | 2000 12 15 | 402 | 0.7+ | 0.0 | 2004 11 10 | 704 | (1.5− | 0.1−) | 2006 11 16 | 726 | 1.0+ | 0.1+ |
| 2002 01 23 | 704 | 0.0 | 0.5+ | 2005 07 27 | E12 | 0.8− | 1.0+ | 2006 11 15 | 691 | 0.1− | 0.3+ | 2000 12 15 | 402 | 1.0+ | 0.4+ | 2004 11 10 | 704 | 0.6+ | 0.3− | 2006 11 16 | 726 | 1.2+ | 0.4+ |
| 2002 01 23 | 704 | 0.0 | 0.1+ | 2005 07 27 | E12 | 0.6− | 0.3+ | 2006 11 15 | 691 | 0.4− | 0.6+ | 2000 12 15 | 402 | 0.2+ | 0.7− | 2004 11 20 | 704 | 0.2− | 0.4+ | 2006 11 19 | 726 | 0.9+ | 0.2+ |
| 2002 01 23 | 704 | (1.2+ | 2.6+) | 2005 07 27 | E12 | 0.0 | 0.6+ | 2006 11 19 | 704 | 0.2+ | 1.1− | 2000 12 17 | 704 | 1.0− | 0.0 | 2004 11 20 | 704 | 0.1− | 0.2+ | 2006 11 19 | 726 | 0.1+ | 0.3+ |
| 2002 01 23 | 704 | 0.4− | 1.0+ | 2005 07 27 | E12 | 1.1− | 1.2+ | 2006 11 19 | 704 | 0.2− | 0.1− | 2000 12 17 | 704 | 0.3− | 0.0 | 2004 11 20 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 726 | 0.6− | 0.4+ |
| 2002 01 23 | 704 | 0.3− | 0.3+ | 2006 09 20 | 699 | 1.5− | 0.6+ | 2006 11 19 | 704 | 0.3− | 0.4+ | 2000 12 17 | 704 | 0.4− | 0.4+ | 2004 11 21 | 084 | 0.5− | 0.5+ | 2006 11 20 | 726 | 0.9− | 0.8+ |
| 2002 02 12 | 644 | 0.1− | 0.1− | 2006 09 20 | 699 | 1.3− | 0.6+ | 2006 11 19 | 704 | 0.8− | 0.9− | 2000 12 29 | 711 | 0.3+ | 0.8− | 2004 11 22 | 084 | 0.6− | 0.2− | 2006 11 20 | 726 | 0.0 | 1.2+ |
| 2002 02 12 | 644 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.3− | 0.1− | 2006 11 22 | 704 | (0.0 | 1.6+) | 2000 12 29 | 711 | 0.6+ | 0.1+ | 2004 11 26 | 084 | 0.1− | 0.5+ | 2006 11 20 | 726 | (2.4− | 0.6−) |
| 2002 02 12 | 644 | 0.2+ | 0.3− | 2006 09 20 | 699 | (2.9− | 0.0 ) | 2006 11 22 | 704 | 0.8− | 1.3+ | 2000 12 29 | 711 | 0.1+ | 0.1− | 2004 12 01 | 704 | 0.4− | 0.1+ | 2006 11 20 | 726 | 0.6− | 0.3+ |
| 2002 03 20 | 644 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.5− | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.7+ | 2002 10 01 | 704 | 0.4− | 0.3− | 2004 12 01 | 704 | 0.2+ | 0.2+ | 2006 11 20 | 726 | 1.2+ | 0.1+ |
| | | | | | | | | | | | | 2002 10 01 | 704 | 0.5− | 0.2+ | 2004 12 01 | 704 | 0.2− | 0.2+ | | | | |
| | | | | | | | | | | | | 2002 10 01 | 704 | 0.3− | 0.1− | 2004 12 01 | 704 | 0.3− | 0.2− | | | | |

**(138868)∗ 2000 XR$_{15}$**

Discovered 2000 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.46515 | | (2000.0) | | | |
| $n$ | 0.48798333 | $\omega$ | 340.37250 | | +0.66275225 | +0.74296583 |
| $a$ | 1.5978379 | $\Omega$ | 330.90432 | | −0.65876089 | +0.51902053 |
| $e$ | 0.1060513 | $i$ | 11.09807 | | −0.35608081 | +0.42263396 |
| $P$ | 2.02 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 261 | 1.2+ | 0.1− | 2002 10 01 | 704 | 0.0 | 0.2− | 2004 12 01 | 704 | 0.4+ | 0.3+ | 1997 03 10 | 691 | 0.2− | 0.9− | 2004 07 15 | E12 | 0.3− | 0.5+ | 2005 11 21 | 699 | 0.5+ | 0.2− |
| 1994 12 01 | 261 | 1.1+ | 0.3− | 2002 10 29 | 704 | 0.0 | 1.2+ | 2004 12 09 | A30 | 0.2− | 0.0 | 1997 03 10 | 691 | 0.0 | 0.1+ | 2004 07 15 | E12 | 0.2− | 0.2+ | 2005 11 21 | 644 | 0.1+ | 0.1− |
| 1998 11 16 | 704 | 0.8+ | 1.2− | 2002 10 29 | 704 | 0.2+ | 0.3− | 2004 12 09 | A30 | 0.5− | 0.5− | 1997 03 10 | 691 | 0.4− | 0.1+ | 2004 07 15 | E12 | 0.1+ | 0.3− | 2005 11 21 | 699 | 0.6+ | 0.5+ |
| 1998 11 16 | 704 | 0.8− | 0.9− | 2002 10 29 | 704 | 0.4− | 0.4− | 2004 12 10 | 704 | 1.3− | 1.3− | 2000 12 01 | 704 | 0.2− | 0.9+ | 2004 07 15 | E12 | 0.2+ | 0.3+ | 2005 11 21 | 703 | 0.6+ | 0.1+ |
| 1998 11 16 | 704 | 0.5+ | 1.2− | 2002 12 10 | 704 | 1.0− | 0.6− | 2004 12 10 | 704 | 0.6− | 1.1− | 2000 12 01 | 704 | 0.3− | 0.3+ | 2005 10 10 | 703 | 0.8− | 0.3+ | 2005 11 21 | 644 | 0.2+ | 0.2− |
| 1998 11 16 | 704 | 0.3+ | 0.1+ | 2002 12 10 | 704 | 0.1+ | 1.1− | 2004 12 10 | 704 | (0.0 | 2.2−) | 2000 12 01 | 704 | 0.1− | 0.8+ | 2005 10 10 | 703 | 1.1+ | 0.6− | 2005 11 21 | 703 | (0.2+ | 1.6−) |
| 2000 12 05 | 704 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.7− | 1.3− | 2004 12 10 | 704 | 0.9+ | 0.6− | 2000 12 01 | 704 | 1.0− | 1.1+ | 2005 10 10 | 703 | (1.7+ | 0.3−) | 2005 11 21 | 699 | 0.4− | 0.5− |
| 2000 12 05 | 704 | 0.4+ | 0.4+ | 2002 12 10 | 704 | 0.1− | 1.1− | 2004 12 10 | 704 | 0.6− | 0.5− | 2000 12 06 | 704 | 0.4+ | 0.3− | 2005 10 10 | 703 | (1.8+ | 0.6−) | 2005 11 21 | 703 | 0.1− | 0.9− |
| 2000 12 05 | 704 | 0.1− | 1.0− | 2002 12 11 | 704 | 0.5− | 0.3− | 2004 12 10 | 046 | 1.2− | 0.3− | 2000 12 06 | 704 | 0.8+ | 0.4− | 2005 10 24 | 644 | 0.3+ | 0.2− | 2005 11 21 | 703 | 0.7− | 0.9− |
| 2000 12 05 | 704 | 0.4− | 0.3+ | 2002 12 11 | 704 | 0.0 | 0.3+ | 2004 12 10 | 046 | 1.5− | 0.3− | 2000 12 06 | 704 | 0.1− | 0.8+ | 2005 10 24 | 644 | 0.4+ | 0.1+ | 2005 11 28 | 703 | 1.0− | 0.4+ |
| 2000 12 05 | 704 | 0.5− | 0.1+ | 2002 12 11 | 704 | 0.1+ | 0.5+ | 2004 12 10 | 046 | 0.1− | 0.4− | 2000 12 06 | 704 | 0.8+ | 0.0 | 2005 10 24 | 644 | 1.1+ | 0.1+ | 2005 11 28 | 703 | 0.1− | 0.4+ |
| 2000 12 06 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.3+ | 0.0 | 2004 12 10 | 046 | 1.0− | 0.3+ | 2000 12 19 | 704 | 0.1− | 0.6− | 2005 11 01 | 699 | 0.6+ | 0.4+ | 2005 11 28 | 703 | 1.1− | 0.0 |
| 2000 12 06 | 704 | 0.1− | 0.6− | 2002 12 11 | 704 | 0.5+ | 0.5+ | 2004 12 12 | A57 | 0.5− | 0.9+ | 2000 12 19 | 704 | 0.3− | 0.0 | 2005 11 01 | 699 | 0.4− | 0.4− | 2005 11 28 | 703 | 0.5+ | 0.7− |
| 2000 12 06 | 704 | 0.1− | 0.0 | 2004 09 10 | 704 | 0.5+ | 1.1− | 2004 12 12 | A57 | (1.5+ | 1.3+) | 2000 12 19 | 704 | 0.5− | 0.1+ | 2005 11 01 | 699 | 0.7− | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2000 12 06 | 704 | 0.7− | 0.4− | 2004 09 10 | 704 | 0.3+ | 0.3− | 2004 12 12 | A57 | 0.3− | 0.3− | 2002 02 11 | 704 | 0.4+ | 0.9+ | 2005 11 01 | 699 | 0.7− | 1.2− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 12 06 | 704 | 0.5− | 0.6+ | 2004 09 10 | 704 | 1.1+ | 0.0 | 2004 12 12 | 046 | 0.6+ | 0.5+ | 2002 02 11 | 704 | 0.0 | 0.6+ | 2005 11 03 | 704 | 0.7+ | 0.8+ | 2006 11 01 | 691 | 0.6− | 0.2+ |
| 2000 12 06 | 704 | 0.2+ | 0.4+ | 2004 09 10 | 704 | 0.2+ | 0.3− | 2004 12 12 | 046 | 0.1+ | 0.1+ | 2002 02 11 | 704 | 0.6+ | 0.3+ | 2005 11 03 | 704 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.7− |
| 2000 12 06 | 704 | 0.4− | 0.2− | 2004 09 10 | 704 | 1.0+ | 0.3− | 2004 12 12 | 046 | 0.2+ | 0.5+ | 2002 02 11 | 704 | 0.5+ | 1.2+ | 2005 11 03 | 704 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2000 12 06 | 046 | 1.5+ | 0.9+ | 2004 09 11 | 704 | 1.4− | 0.7− | 2004 12 12 | 046 | 0.1+ | 0.3+ | 2002 02 11 | 704 | 0.2+ | 0.8+ | 2005 11 03 | 704 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2000 12 06 | 704 | 0.4− | 0.5+ | 2004 09 11 | 704 | 1.3− | 0.8− | 2004 12 12 | 046 | 0.6+ | 0.5+ | 2002 02 16 | 644 | 0.7+ | 0.1− | 2005 11 03 | 704 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2000 12 06 | 046 | 0.5+ | 0.1− | 2004 09 11 | 704 | 0.4− | 1.2− | 2004 12 12 | 046 | 0.0 | 0.2− | 2002 02 16 | 644 | 0.4+ | 0.3− | 2005 11 21 | 699 | 0.3− | 0.8− | | | | |
| 2000 12 06 | 046 | 0.2+ | 0.0 | 2004 09 18 | 461 | 0.0 | 0.0 | 2004 12 13 | 084 | 0.2+ | 0.5− | 2002 02 16 | 644 | 0.3+ | 0.1− | 2005 11 21 | 644 | 0.1+ | 0.3− | | | | |
| 2000 12 06 | 046 | 0.4− | 0.3+ | 2004 09 18 | 461 | 0.2+ | 0.1+ | 2006 09 09 | A17 | 0.5+ | 1.0+ | | | | | | | | | | | | |
| 2000 12 06 | 046 | 0.4− | 0.3+ | 2004 09 18 | 461 | 0.0 | 0.1− | 2006 09 09 | A17 | 0.1+ | 0.7− | | | | | | | | | | | | |
| 2000 12 06 | 704 | 0.2+ | 0.4− | 2004 09 18 | 461 | 0.1+ | 0.3+ | 2006 10 16 | 704 | 1.3+ | 0.5+ | | | | | | | | | | | | |
| 2000 12 06 | 046 | 0.1+ | 0.0 | 2004 09 18 | 461 | 0.1+ | 0.0 | 2006 10 16 | 704 | 0.2+ | 0.4+ | | | | | | | | | | | | |
| 2000 12 06 | 046 | 0.0 | 0.3+ | 2004 10 16 | 084 | 0.6+ | 0.5+ | 2006 10 16 | 704 | 0.3+ | 0.5− | | | | | | | | | | | | |
| 2000 12 06 | 046 | 0.3− | 0.5− | 2004 10 23 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 704 | 0.3+ | 0.2− | | | | | | | | | | | | |
| 2000 12 06 | 046 | 0.1− | 0.1− | 2004 10 23 | 704 | 0.1+ | 0.6+ | 2006 11 03 | 130 | 0.4+ | 0.1+ | | | | | | | | | | | | |
| 2000 12 06 | 046 | 0.0 | 0.1+ | 2004 10 23 | 704 | 0.2+ | 0.1− | 2006 11 03 | 130 | 0.2− | 0.3− | | | | | | | | | | | | |
| 2000 12 07 | 704 | 0.0 | 0.2+ | 2004 10 23 | 704 | 0.3+ | 0.8+ | 2006 11 03 | 130 | 0.9− | 0.5− | | | | | | | | | | | | |
| 2000 12 07 | 704 | 0.9− | 0.3− | 2004 10 23 | 704 | 0.3+ | 0.3+ | 2006 11 03 | 130 | 0.8− | 0.5− | | | | | | | | | | | | |
| 2000 12 07 | 704 | 0.7− | 0.2− | 2004 10 28 | 084 | 0.4− | 0.2− | 2006 11 08 | A24 | 0.6+ | 0.5+ | | | | | | | | | | | | |

**(138869)∗ 2000 XL$_{16}$**

Discovered 2000 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.48147 | | (2000.0) | | | |
| $n$ | 0.19087344 | $\omega$ | 62.87575 | | +0.97177941 | −0.19697626 |
| $a$ | 2.9874849 | $\Omega$ | 308.19706 | | +0.11080692 | +0.86689969 |
| $e$ | 0.1211161 | $i$ | 9.50589 | | +0.20824650 | +0.45791404 |
| $P$ | 5.16 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 691 | 0.2− | 0.9− | 2004 07 15 | E12 | 0.3− | 0.5+ | 2005 11 21 | 699 | 0.5+ | 0.2− | 2000 12 07 | 704 | 0.2+ | 0.4− | 2004 10 30 | 084 | 0.1− | 0.7+ | 2006 11 08 | A24 | 0.2+ | 0.1− |
| 1997 03 10 | 691 | 0.0 | 0.1+ | 2004 07 15 | E12 | 0.2− | 0.2+ | 2005 11 21 | 644 | 0.1+ | 0.1− | 2000 12 07 | 704 | 0.1− | 0.2− | 2004 10 30 | 084 | 0.2+ | 0.2− | 2006 11 09 | A24 | 0.9− | 0.4+ |
| 1997 03 10 | 691 | 0.4− | 0.1+ | 2004 07 15 | E12 | 0.1+ | 0.3− | 2005 11 21 | 699 | 0.6+ | 0.5+ | 2000 12 07 | 704 | 0.1− | 0.3+ | 2004 11 02 | 084 | 0.0 | 0.5+ | 2006 11 09 | A24 | 0.2− | 0.3+ |
| 2000 12 01 | 704 | 0.2− | 0.9+ | 2004 07 15 | E12 | 0.2+ | 0.3+ | 2005 11 21 | 703 | 0.6+ | 0.1+ | 2000 12 07 | 704 | 0.3− | 0.6+ | 2004 11 03 | 704 | 0.6− | 0.2+ | 2006 11 09 | A24 | 0.5+ | 1.1− |
| 2000 12 01 | 704 | 0.3− | 0.3+ | 2005 10 10 | 703 | 0.8− | 0.3+ | 2005 11 21 | 644 | 0.2+ | 0.2− | 2000 12 07 | 704 | 1.0− | 0.5− | 2004 11 03 | 704 | 0.2+ | 0.4+ | 2006 11 09 | A24 | 0.9+ | 0.0 |
| 2000 12 01 | 704 | 0.1− | 0.8+ | 2005 10 10 | 703 | 1.1+ | 0.6− | 2005 11 21 | 703 | (0.2+ | 1.6−) | 2000 12 07 | 704 | 0.4− | 0.3− | 2004 11 03 | 704 | 0.8+ | 0.3+ | 2006 11 12 | A94 | 0.8+ | 0.5+ |
| 2000 12 01 | 704 | 1.0− | 1.1+ | 2005 10 10 | 703 | (1.7+ | 0.3−) | 2005 11 21 | 699 | 0.4− | 0.5− | 2000 12 07 | 704 | 0.6− | 0.2− | 2004 11 03 | 704 | 0.0 | 0.1− | 2006 11 12 | A94 | 0.5+ | 0.8− |
| 2000 12 06 | 704 | 0.4+ | 0.3− | 2005 10 10 | 703 | (1.8+ | 0.6−) | 2005 11 21 | 703 | 0.1− | 0.9− | 2000 12 07 | 704 | 1.0+ | 0.7+ | 2004 11 03 | 104 | (0.8+ | 1.6+) | 2006 11 12 | A94 | 0.6− | 0.6+ |
| 2000 12 06 | 704 | 0.8+ | 0.4− | 2005 10 24 | 644 | 0.3+ | 0.2− | 2005 11 21 | 703 | 0.7− | 0.9− | 2000 12 07 | 704 | 0.0 | 0.1− | 2004 11 03 | 104 | 0.2− | 0.8+ | 2006 11 16 | 726 | (1.6− | 0.6+) |
| 2000 12 06 | 704 | 0.1− | 0.8+ | 2005 10 24 | 644 | 0.4+ | 0.1+ | 2005 11 28 | 703 | 1.0− | 0.4+ | 2000 12 07 | 704 | 0.6+ | 0.0 | 2004 11 03 | 104 | 0.1− | 0.0 | 2006 11 16 | 726 | (2.3− | 0.3+) |
| 2000 12 06 | 704 | 0.8+ | 0.0 | 2005 10 24 | 644 | 1.1+ | 0.1+ | 2005 11 28 | 703 | 0.1− | 0.4+ | 2000 12 07 | 704 | 0.4+ | 0.4+ | 2004 11 10 | 704 | 1.5− | 0.3+ | 2006 11 16 | 726 | 0.2+ | 0.2− |
| 2000 12 19 | 704 | 0.1− | 0.6− | 2005 11 01 | 699 | 0.6+ | 0.4+ | 2005 11 28 | 703 | 1.1− | 0.0 | 2000 12 07 | 704 | 0.8+ | 0.9− | 2004 11 10 | 704 | (2.8− | 0.5+) | 2006 11 16 | 726 | 0.5+ | 0.4+ |
| 2000 12 19 | 704 | 0.3− | 0.0 | 2005 11 01 | 699 | 0.4− | 0.4− | 2005 11 28 | 703 | 0.5+ | 0.7− | 2000 12 15 | 402 | 0.7+ | 0.0 | 2004 11 10 | 704 | (1.5− | 0.1−) | 2006 11 16 | 726 | 1.0+ | 0.1+ |
| 2000 12 19 | 704 | 0.5− | 0.1+ | 2005 11 01 | 699 | 0.7− | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.0 | 2000 12 15 | 402 | 1.0+ | 0.4+ | 2004 11 10 | 704 | 0.6+ | 0.3− | 2006 11 16 | 726 | 1.2+ | 0.4+ |
| 2002 02 11 | 704 | 0.4+ | 0.9+ | 2005 11 01 | 699 | 0.7− | 1.2− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2000 12 15 | 402 | 0.2+ | 0.7− | 2004 11 20 | 704 | 0.2− | 0.4+ | 2006 11 19 | 726 | 0.9+ | 0.2+ |
| 2002 02 11 | 704 | 0.0 | 0.6+ | 2005 11 03 | 704 | 0.7+ | 0.8+ | 2006 11 01 | 691 | 0.6− | 0.2+ | 2000 12 17 | 704 | 1.0− | 0.0 | 2004 11 20 | 704 | 0.1− | 0.2+ | 2006 11 19 | 726 | 0.1+ | 0.3+ |
| 2002 02 11 | 704 | 0.6+ | 0.3+ | 2005 11 03 | 704 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.7− | 2000 12 17 | 704 | 0.3− | 0.0 | 2004 11 20 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 726 | 0.6− | 0.4+ |
| 2002 02 11 | 704 | 0.5+ | 1.2+ | 2005 11 03 | 704 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− | 2000 12 17 | 704 | 0.4− | 0.4+ | 2004 11 21 | 084 | 0.5− | 0.5+ | 2006 11 20 | 726 | 0.9− | 0.8+ |
| 2002 02 11 | 704 | 0.2+ | 0.8+ | 2005 11 03 | 704 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− | 2000 12 29 | 711 | 0.3+ | 0.8− | 2004 11 22 | 084 | 0.6− | 0.2− | 2006 11 20 | 726 | 0.0 | 1.2+ |
| 2002 02 16 | 644 | 0.7+ | 0.1− | 2005 11 03 | 704 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.5− | 2000 12 29 | 711 | 0.6+ | 0.1+ | 2004 11 26 | 084 | 0.1− | 0.5+ | 2006 11 20 | 726 | (2.4− | 0.6−) |
| 2002 02 16 | 644 | 0.4+ | 0.3− | 2005 11 21 | 699 | 0.3− | 0.8− | | | | | 2000 12 29 | 711 | 0.1+ | 0.1− | 2004 12 01 | 704 | 0.4− | 0.1+ | 2006 11 20 | 726 | 0.6− | 0.3+ |
| 2002 02 16 | 644 | 0.3+ | 0.1− | 2005 11 21 | 644 | 0.1+ | 0.3− | | | | | 2002 10 01 | 704 | 0.4− | 0.3− | 2004 12 01 | 704 | 0.2+ | 0.2+ | 2006 11 20 | 726 | 1.2+ | 0.1+ |
| | | | | | | | | | | | | 2002 10 01 | 704 | 0.5− | 0.2+ | 2004 12 01 | 704 | 0.2− | 0.2+ | | | | |
| | | | | | | | | | | | | 2002 10 01 | 704 | 0.3− | 0.1− | 2004 12 01 | 704 | 0.3− | 0.2− | | | | |

**(138870)∗ 2000 XP$_{16}$**

Discovered 2000 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.01807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17596081 | $\omega$ | 164.43002 | | +0.01311390 | −0.97626722 | |
| $a$ | 3.1539786 | $\Omega$ | 284.44273 | | +0.89192086 | +0.10914779 | |
| $e$ | 0.1593349 | $i$ | 12.89862 | | +0.45200134 | −0.18705369 | |
| $P$ | 5.60 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 29 | 691 | 0.0 | 0.4− | 2000 12 19 | 704 | 0.4+ | 0.0 | 2005 10 28 | 703 | 0.4− | 0.4− |
| 1995 11 29 | 691 | 0.2+ | 0.1+ | 2000 12 19 | 704 | 0.0 | 0.0 | 2005 10 28 | 703 | 0.9+ | 0.1− |
| 1995 11 29 | 691 | 0.1− | 0.1+ | 2000 12 31 | 941 | 1.3− | 0.3+ | 2005 10 28 | 703 | 0.0 | 0.6+ |
| 1999 09 07 | 703 | 0.2− | 0.9+ | 2000 12 31 | 941 | 0.7+ | 0.8− | 2005 10 28 | 703 | 0.3− | 1.3− |
| 1999 09 07 | 703 | 0.4+ | 0.3+ | 2002 02 08 | 644 | 0.3+ | 0.5+ | 2005 11 03 | 703 | 0.3+ | 0.4+ |
| 1999 09 07 | 703 | 0.3+ | 0.0 | 2002 02 08 | 644 | 0.4+ | 1.1+ | 2005 11 03 | 703 | 0.5− | 0.2− |
| 1999 09 07 | 703 | 1.0− | 1.9+ | 2002 02 08 | 644 | 0.3+ | 0.6+ | 2005 11 03 | 703 | 0.3− | 0.9− |
| 2000 11 19 | 704 | 0.1− | 0.4− | 2002 03 23 | 704 | (1.1+ | 1.9+) | 2005 11 03 | 703 | 0.1− | 0.7− |
| 2000 11 19 | 704 | 1.3− | 0.9+ | 2002 03 23 | 704 | 0.1+ | 0.4+ | 2006 11 02 | G96 | 0.2− | 0.0 |
| 2000 11 19 | 704 | 0.5− | 0.6+ | 2002 03 23 | 704 | 0.6+ | 0.0 | 2006 11 02 | G96 | 0.1− | 0.0 |
| 2000 11 19 | 704 | 0.2− | 0.3+ | 2004 07 11 | 704 | 0.6− | 0.5+ | 2006 11 02 | G96 | 0.3− | 0.1+ |
| 2000 12 01 | 704 | 0.1− | 0.0 | 2004 07 11 | 704 | 0.7− | 0.1− | 2006 11 02 | G96 | 0.1− | 0.2+ |
| 2000 12 01 | 704 | 0.2+ | 0.2− | 2004 07 11 | 704 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2000 12 01 | 704 | 0.1− | 0.1+ | 2004 07 11 | 704 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2000 12 01 | 704 | 0.5+ | 0.0 | 2005 08 27 | 599 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2000 12 01 | 704 | 0.4− | 0.0 | 2005 08 27 | 599 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2000 12 06 | 704 | 0.4− | 0.4+ | 2005 08 27 | 599 | 1.2+ | 0.2− | 2006 12 01 | 704 | 1.4+ | 0.1− |
| 2000 12 06 | 704 | 0.2+ | 0.5+ | 2005 09 01 | 699 | 0.3− | 0.8− | 2006 12 01 | 704 | 1.1+ | 0.2+ |
| 2000 12 06 | 704 | 0.1+ | 0.5+ | 2005 09 01 | 699 | 1.2+ | 1.2+ | 2006 12 01 | 704 | 0.3− | 1.6− |
| 2000 12 06 | 704 | 0.3+ | 0.5+ | 2005 09 01 | 699 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2000 12 06 | 704 | 0.8+ | 0.7+ | 2005 09 01 | 699 | 0.5+ | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.3+ |
| 2000 12 19 | 704 | 0.4+ | 0.5+ | 2005 10 23 | 644 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.4− | 0.1+ |
| 2000 12 19 | 704 | 0.8− | 0.7− | 2005 10 23 | 644 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.4− | 0.0 |
| 2000 12 19 | 704 | 0.1− | 0.3+ | 2005 10 23 | 644 | 0.0 | 0.3+ | | | | |

**(138871)∗ 2000 XG$_{17}$**

Discovered 2000 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.27802 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17734517 | $\omega$ | 62.96191 | | +0.97699161 | −0.17531293 | |
| $a$ | 3.1375439 | $\Omega$ | 306.88963 | | +0.09748144 | +0.87358866 | |
| $e$ | 0.3262159 | $i$ | 8.73505 | | +0.18969649 | +0.45399145 | |
| $P$ | 5.56 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.1+ | 0.7+ | 2005 07 04 | 704 | 0.5− | 0.0 | 2005 10 22 | 644 | 0.1+ | 0.3− |
| 1999 07 16 | 704 | 0.4+ | 0.4+ | 2005 07 04 | 704 | 0.5+ | 0.5− | 2005 10 22 | 644 | 0.0 | 0.2− |
| 1999 07 16 | 704 | 0.3− | 1.0+ | 2005 07 04 | 704 | 0.8− | 0.3− | 2005 10 22 | 644 | 0.1+ | 0.2− |
| 2000 09 27 | 704 | 0.4− | 0.6+ | 2005 07 07 | 704 | 0.0 | 0.7+ | 2005 11 05 | 704 | 0.5− | 0.0 |
| 2000 09 27 | 704 | 0.1+ | 0.4+ | 2005 07 07 | 704 | 0.2+ | 0.7+ | 2005 11 05 | 704 | 0.2+ | 0.3+ |
| 2000 09 27 | 704 | 1.2+ | 0.1+ | 2005 07 07 | 704 | 0.1− | 0.9+ | 2005 11 05 | 704 | 0.2+ | 0.0 |
| 2000 11 19 | 704 | 0.5+ | 0.0 | 2005 07 07 | 704 | 0.1− | 0.5+ | 2005 11 05 | 704 | 0.0 | 0.3+ |
| 2000 11 19 | 704 | 0.9+ | 1.1+ | 2005 07 09 | 699 | (1.8− | 2.7−) | 2005 11 05 | 704 | 1.3+ | 0.2− |
| 2000 11 19 | 704 | 0.7− | 0.4+ | 2005 07 09 | 699 | 1.2− | 0.7+ | 2005 11 18 | 699 | 0.2− | 0.1− |
| 2000 11 19 | 704 | 0.3− | 0.3+ | 2005 07 09 | 699 | 0.7− | 0.1+ | 2005 11 18 | 699 | 0.3+ | 0.2+ |
| 2000 11 19 | 704 | 0.7− | 0.3+ | 2005 08 03 | 704 | 0.3+ | 0.1+ | 2005 11 18 | 699 | 0.2+ | 0.6+ |
| 2000 12 01 | 704 | 0.4− | 0.6− | 2005 08 03 | 704 | 0.9+ | 0.1+ | 2005 11 18 | 699 | 0.2− | 0.2− |
| 2000 12 01 | 704 | 0.2− | 0.1− | 2005 08 03 | 704 | 0.4+ | 0.1+ | 2005 11 20 | 644 | 0.2+ | 0.2+ |
| 2000 12 01 | 704 | 0.5+ | 0.1+ | 2005 08 16 | 704 | 0.1− | 0.4− | 2005 11 20 | 644 | 0.2+ | 0.0 |
| 2000 12 01 | 704 | 0.8− | 0.4− | 2005 08 16 | 704 | 0.7− | 0.2+ | 2005 11 20 | 644 | 0.1+ | 0.0 |
| 2000 12 06 | 704 | 0.6+ | 0.3− | 2005 08 16 | 704 | 0.7− | 0.3− | 2005 11 30 | 644 | 0.1− | 0.1+ |
| 2000 12 06 | 704 | 0.1+ | 0.0 | 2005 08 16 | 704 | 0.5− | 0.4+ | 2005 11 30 | 644 | 0.1+ | 0.2+ |
| 2000 12 06 | 704 | 1.1− | 0.0 | 2005 08 17 | 224 | 0.3− | 0.3+ | 2005 11 30 | 644 | 0.0 | 0.3+ |
| 2000 12 06 | 704 | 0.1− | 0.2+ | 2005 08 17 | 224 | 0.1− | 0.1+ | 2005 12 02 | 703 | 0.3− | 0.4− |
| 2000 12 06 | 704 | 0.2− | 1.9− | 2005 08 17 | 224 | 0.7− | 0.1+ | 2005 12 02 | 703 | 0.1+ | 0.0 |
| 2000 12 20 | 704 | 0.4+ | 0.0 | 2005 08 26 | 608 | 0.3+ | 0.1+ | 2005 12 02 | 703 | 0.2+ | 1.0− |
| 2000 12 20 | 704 | 0.6+ | 0.7+ | 2005 08 26 | 608 | 0.1+ | 0.1+ | 2005 12 07 | 704 | 0.3+ | 0.5+ |
| 2000 12 20 | 704 | 0.1+ | 0.6+ | 2005 08 26 | 608 | 0.2+ | 0.2+ | 2005 12 07 | 704 | 0.1− | 0.6+ |
| 2001 01 04 | 704 | 0.0 | 0.1+ | 2005 08 31 | 699 | 0.2+ | 0.0 | 2005 12 07 | 704 | 0.1− | 0.6+ |
| 2001 01 04 | 704 | 0.0 | 0.7+ | 2005 08 31 | 699 | 0.4+ | 0.2− | 2005 12 07 | 704 | 0.4+ | 0.4+ |
| 2001 01 04 | 704 | (0.1+ | 1.7+) | 2005 08 31 | 699 | 0.4+ | 0.2+ | 2005 12 07 | 704 | 0.0 | 1.0+ |
| 2001 01 04 | 704 | 0.2− | 1.2+ | 2005 08 31 | 699 | 0.1+ | 0.2− | 2005 12 26 | 703 | 0.1+ | 1.0− |
| 2001 01 06 | 704 | (0.3+ | 1.7+) | 2005 09 08 | A50 | 0.4+ | 0.0 | 2005 12 26 | 703 | 1.0+ | 0.9− |
| 2001 01 06 | 704 | 0.8+ | 0.3− | 2005 09 08 | A50 | 0.1+ | 0.3+ | 2005 12 26 | 703 | 0.2− | 0.2+ |
| 2001 01 06 | 704 | 0.0 | 1.2− | 2005 09 11 | 704 | 0.1− | 0.9− | 2005 12 26 | 703 | 0.3− | 0.5− |
| 2001 01 06 | 704 | 0.7− | 0.4− | 2005 09 11 | 704 | 0.0 | 0.8− | 2006 01 03 | 704 | 0.2+ | 0.8+ |
| 2001 01 06 | 704 | 0.4− | 0.3− | 2005 09 11 | 704 | 0.4+ | 0.7− | 2006 01 03 | 704 | 0.3+ | 0.4+ |
| 2001 01 19 | 704 | 0.6− | 0.1+ | 2005 09 11 | 704 | 0.3+ | 0.7− | 2006 01 03 | 704 | 0.3− | 1.0+ |
| 2001 01 19 | 704 | 0.1+ | 0.5+ | 2005 09 11 | 704 | 0.3− | 1.2− | 2006 01 03 | 704 | 0.1+ | 0.3+ |
| 2001 01 19 | 704 | 0.3+ | 0.6+ | 2005 09 11 | 608 | 0.3− | 0.1− | 2006 01 03 | 704 | 1.1− | 0.6+ |
| 2001 01 19 | 704 | 0.5+ | 0.4+ | 2005 09 11 | 608 | 0.2− | 0.2− | 2006 01 24 | 703 | 0.3− | 0.1− |
| 2002 03 06 | 644 | 0.4+ | 0.6+ | 2005 09 11 | 608 | 0.3− | 0.1− | 2006 01 24 | 703 | 0.4− | 0.6+ |
| 2002 03 06 | 644 | 0.1+ | 0.3+ | 2005 09 24 | 703 | 0.1− | 0.1− | 2006 01 24 | 703 | 0.2+ | 0.1+ |
| 2002 03 06 | 644 | 0.3+ | 0.5+ | 2005 09 24 | 703 | 0.4− | 0.0 | 2006 01 24 | 703 | 0.0 | 0.2− |
| 2005 06 01 | E12 | 0.2− | 0.4− | 2005 09 24 | 703 | 0.1− | 0.1− | 2006 01 30 | 699 | 0.8+ | 1.0+ |
| 2005 06 01 | E12 | 0.2− | 0.2+ | 2005 09 24 | 703 | 0.4− | 0.1+ | 2006 01 30 | 699 | 0.7− | 0.6+ |
| 2005 06 01 | E12 | 0.5− | 0.0 | 2005 10 01 | 703 | 0.1+ | 0.2− | 2006 01 30 | 699 | 0.6− | 1.0+ |
| 2005 06 01 | E12 | 0.3− | 0.3+ | 2005 10 01 | 703 | 0.4+ | 0.0 | 2006 01 30 | 699 | 0.4+ | 0.1− |
| 2005 06 11 | 703 | 0.5− | 0.1+ | 2005 10 01 | 703 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2005 06 11 | 703 | 0.5− | 1.2− | 2005 10 01 | 703 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2005 06 11 | 703 | 0.6− | 0.2+ | 2005 10 02 | 699 | 0.5+ | 0.1+ | 2006 10 23 | G96 | 0.7+ | 0.7+ |
| 2005 06 11 | 703 | 0.3− | 0.2+ | 2005 10 02 | 699 | 0.7+ | 0.5− | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2005 07 03 | 703 | 0.8− | 0.2+ | 2005 10 02 | 699 | 0.3+ | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.3− |
| 2005 07 03 | 703 | 0.1− | 0.2− | 2005 10 02 | 699 | 0.1+ | 0.0 | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2005 07 03 | 703 | 0.0 | 0.3+ | 2005 10 07 | 703 | 0.1+ | 0.2− | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2005 07 03 | 703 | 0.1+ | 0.2+ | 2005 10 07 | 703 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.4− |
| 2005 07 04 | 704 | 0.3+ | 0.2+ | 2005 10 07 | 703 | 0.1− | 0.1− | | | | |
| 2005 07 04 | 704 | 0.2− | 0.1+ | 2005 10 07 | 703 | 0.1− | 0.0 | | | | |

**(138872)∗ 2000 XU$_{31}$ = 2002 GN$_{50}$**

Discovered 2000 Dec. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29617)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.35677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19031380 | $\omega$ | 136.44795 | | −0.02623182 | −0.99155520 | |
| $a$ | 2.9933387 | $\Omega$ | 314.60428 | | +0.86131720 | +0.04206671 | |
| $e$ | 0.0929018 | $i$ | 10.27564 | | +0.50738996 | −0.12267305 | |
| $P$ | 5.18 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 04 | 704 | 0.4+ | 0.2− | 2004 08 27 | 703 | 1.0− | 0.6+ | 2005 11 26 | 704 | 0.2+ | 0.9+ |
| 2000 12 04 | 704 | 0.6− | 0.5+ | 2004 08 27 | 703 | 0.1− | 0.3+ | 2005 12 04 | 703 | 0.3− | 0.1− |
| 2000 12 04 | 704 | 0.1+ | 0.0 | 2004 08 27 | 703 | 0.3− | 0.5− | 2005 12 04 | 703 | 0.6+ | 0.1+ |
| 2000 12 04 | 704 | 1.3+ | 0.3− | 2004 08 27 | 703 | 0.4− | 1.0+ | 2005 12 04 | 703 | 0.2− | 0.1− |
| 2000 12 06 | 704 | 1.1− | 0.7+ | 2004 09 08 | 704 | 0.5− | 0.9+ | 2005 12 04 | 703 | 0.3+ | 0.3+ |
| 2000 12 06 | 704 | 0.1+ | 0.2− | 2004 09 08 | 704 | 0.7− | 0.4+ | 2005 12 23 | 644 | 0.2− | 0.1+ |
| 2000 12 06 | 704 | 0.4+ | 0.1+ | 2004 09 08 | 704 | 0.2+ | 0.6+ | 2005 12 23 | 644 | 0.1− | 0.0 |
| 2000 12 06 | 704 | 0.5+ | 0.3+ | 2004 09 08 | 704 | 0.1+ | 0.8+ | 2005 12 23 | 644 | 0.1− | 0.1+ |
| 2000 12 19 | 704 | 0.4− | 0.3− | 2004 09 08 | 704 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.8+ | 0.0 |
| 2000 12 19 | 704 | 0.1− | 0.4+ | 2004 09 10 | 704 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.4+ |
| 2000 12 19 | 704 | 0.2− | 0.8+ | 2004 09 10 | 704 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.6+ |
| 2000 12 19 | 704 | 0.0 | 0.3+ | 2004 09 10 | 704 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.6− | 0.5− |
| 2002 04 05 | 644 | 0.5+ | 0.8+ | 2005 11 20 | 703 | 0.7− | 0.8− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2002 04 05 | 644 | 0.4+ | 0.9+ | 2005 11 20 | 703 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 04 05 | 644 | 0.5+ | 0.9+ | 2005 11 20 | 703 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 2002 04 08 | 644 | 0.8+ | 0.5+ | 2005 11 20 | 703 | (1.1− | 2.4+) | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2002 04 08 | 644 | 0.1+ | 0.8+ | 2005 11 26 | 704 | 0.6+ | 0.4− | | | | |
| 2002 04 08 | 644 | 0.3+ | 0.9+ | 2005 11 26 | 704 | 0.4− | 0.9+ | | | | |

**(138873)∗ 2000 XV$_{34}$**

Discovered 2000 Dec. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.17758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27724711 | $\omega$ | 156.20555 | | −0.82864927 | −0.55862488 | |
| $a$ | 2.3292961 | $\Omega$ | 349.60715 | | +0.47649744 | −0.67041657 | |
| $e$ | 0.1816021 | $i$ | 11.43285 | | +0.29375259 | −0.48834401 | |
| $P$ | 3.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 06 | 704 | 1.4+ | 0.5− | 2003 09 21 | 246 | 0.2+ | 0.2+ | 2003 12 29 | 704 | 0.6− | 0.7+ | |
| 2000 11 06 | 704 | 0.3+ | 0.5+ | 2003 09 21 | 246 | 0.3− | 0.3+ | 2005 03 20 | E12 | 0.4+ | 1.3+ | |
| 2000 11 06 | 704 | 0.3+ | 0.0 | 2003 09 21 | 246 | 0.8− | 0.6+ | 2005 03 20 | E12 | 0.3+ | 0.5− | |
| 2000 12 04 | 704 | 0.1+ | 0.1+ | 2003 09 21 | 246 | 0.6− | 0.2+ | 2005 03 20 | E12 | 0.0 | 0.7+ | |
| 2000 12 04 | 704 | 0.1+ | 0.5+ | 2003 09 21 | 246 | 0.6− | 0.4+ | 2005 03 20 | E12 | 0.8− | 1.2− | |
| 2000 12 04 | 704 | 0.3− | 0.2+ | 2003 09 21 | 246 | 0.1− | 0.4+ | 2005 04 02 | E12 | 0.1− | 0.7+ | |
| 2000 12 04 | 704 | 0.6+ | 0.3+ | 2003 09 21 | 246 | 0.3− | 0.4+ | 2005 04 02 | E12 | 0.6− | 1.4+ | |
| 2000 12 04 | 704 | 0.3− | 0.5+ | 2003 09 21 | 620 | 0.1− | 0.2+ | 2005 04 02 | E12 | 0.8+ | 0.4+ | |
| 2000 12 06 | 704 | 0.4+ | 0.3− | 2003 09 22 | 620 | 0.5− | 0.1− | 2005 04 02 | E12 | 0.3− | 0.6− | |
| 2000 12 06 | 704 | 1.3+ | 0.5− | 2003 09 30 | 704 | 0.7+ | 0.5+ | 2005 04 07 | 644 | 0.1+ | 0.6+ | |
| 2000 12 06 | 704 | 0.5+ | 0.2+ | 2003 09 30 | 704 | 1.3− | 0.1− | 2005 04 07 | 644 | 0.0 | 0.4+ | |
| 2000 12 06 | 704 | 0.1+ | 0.3+ | 2003 09 30 | 704 | 0.5− | 0.3+ | 2005 04 07 | 644 | 0.2+ | 0.5+ | |
| 2000 12 17 | 704 | 0.4+ | 0.1+ | 2003 09 30 | 704 | 1.2− | 0.0 | 2005 04 07 | 644 | 0.1+ | 0.5+ | |
| 2000 12 17 | 704 | 0.8+ | 0.2+ | 2003 09 30 | 704 | 0.3− | 0.1+ | 2005 04 07 | 644 | 0.2+ | 0.8+ | |
| 2000 12 17 | 704 | 0.3+ | 0.8+ | 2003 10 03 | 691 | 0.1− | 0.1− | 2005 04 07 | 644 | 0.4+ | 1.1+ | |
| 2000 12 17 | 704 | 0.8− | 0.8+ | 2003 10 03 | 691 | 0.0 | 0.2− | 2005 04 10 | E12 | 0.7+ | 0.1+ | |
| 2000 12 18 | 699 | 0.0 | 0.0 | 2003 10 03 | 691 | 0.2+ | 0.0 | 2005 04 10 | E12 | 0.6+ | 0.1+ | |
| 2000 12 18 | 699 | 1.4+ | 0.3+ | 2003 10 15 | 699 | 0.1− | 0.6+ | 2005 04 10 | E12 | 0.1+ | 0.1+ | |
| 2000 12 18 | 699 | 0.2− | 0.4− | 2003 10 15 | 699 | 0.3+ | 0.1+ | 2005 04 10 | E12 | 0.2+ | 0.0 | |
| 2000 12 18 | 699 | 0.5− | 0.7+ | 2003 10 15 | 699 | (2.1− | 0.0 ) | 2005 04 20 | E12 | 0.4+ | 0.4+ | |
| 2000 12 29 | 699 | 0.2+ | 0.6+ | 2003 10 15 | 699 | 0.5− | 0.4+ | 2005 04 20 | E12 | 0.3− | 0.3+ | |
| 2000 12 29 | 699 | 0.2+ | 0.1+ | 2003 10 16 | 644 | 0.5− | 0.2+ | 2005 04 20 | E12 | 0.5+ | 0.7+ | |
| 2000 12 29 | 699 | 0.1+ | 0.6+ | 2003 10 16 | 644 | 0.2− | 0.3+ | 2005 04 20 | E12 | 0.4+ | 0.3+ | |
| 2000 12 29 | 699 | (1.4+ | 2.5+) | 2003 10 16 | 644 | 0.2− | 0.1+ | 2005 04 28 | E12 | 0.3+ | 0.1+ | |
| 2001 01 06 | 704 | 0.4− | 0.3− | 2003 10 17 | 699 | 0.9+ | 0.5− | 2005 04 28 | E12 | 0.3− | 0.3+ | |
| 2001 01 06 | 704 | 0.6+ | 0.3− | 2003 10 17 | 699 | 0.9+ | 0.4− | 2005 04 28 | E12 | 0.1+ | 0.6+ | |
| 2001 01 06 | 704 | 0.5− | 0.7− | 2003 10 17 | 699 | 0.1+ | 1.2+ | 2005 04 28 | E12 | 0.2− | 0.3+ | |
| 2001 01 07 | 704 | 0.2+ | 0.4+ | 2003 10 17 | 699 | 0.5+ | 0.1− | 2005 05 11 | 644 | 0.4+ | 0.4+ | |
| 2001 01 07 | 704 | 0.1− | 0.1− | 2003 10 20 | 644 | 0.1− | 0.3+ | 2005 05 11 | 644 | 0.5+ | 0.5+ | |
| 2001 01 07 | 704 | 0.2− | 0.4− | 2003 10 20 | 644 | 0.4− | 0.2+ | 2005 05 11 | 644 | 0.2+ | 0.4+ | |
| 2001 01 07 | 704 | 0.1− | 0.1+ | 2003 10 20 | 644 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | |
| 2001 01 07 | 704 | 0.3− | 0.4− | 2003 10 22 | 704 | 0.6− | 0.3− | 2006 08 16 | 644 | 0.2− | 0.1+ | |
| 2001 01 18 | 704 | 0.5+ | 0.6+ | 2003 10 22 | 704 | 0.3− | 0.2− | 2006 08 16 | 644 | 0.3+ | 0.2+ | |
| 2001 01 18 | 704 | 0.1+ | 0.1− | 2003 10 22 | 704 | 0.3+ | 0.4− | 2006 08 17 | 644 | 0.4− | 0.3+ | |
| 2001 01 18 | 704 | 0.0 | 0.2+ | 2003 10 22 | 704 | 0.5− | 0.7+ | 2006 08 17 | 644 | 0.4− | 0.3+ | |
| 2001 01 18 | 704 | 0.3+ | 0.2+ | 2003 10 22 | 704 | 0.3− | 0.5− | 2006 08 17 | 644 | 0.3− | 0.3+ | |
| 2001 01 18 | 704 | 0.4+ | 0.1+ | 2003 11 02 | 704 | (2.7− | 0.4−) | 2006 08 18 | 644 | 0.4− | 0.5+ | |
| 2001 01 26 | 645 | 0.1− | 0.1− | 2003 11 02 | 704 | (2.7− | 1.2−) | 2006 08 18 | 644 | 0.0 | 0.2+ | |
| 2001 01 26 | 645 | 0.1− | 0.1− | 2003 11 02 | 704 | (3.6− | 1.0−) | 2006 08 18 | 644 | 0.2− | 0.1+ | |
| 2001 02 13 | 704 | 0.4− | 0.4+ | 2003 11 02 | 704 | (3.9− | 0.4−) | 2006 08 23 | 704 | 0.0 | 0.6+ | |
| 2001 02 13 | 704 | 0.0 | 0.7+ | 2003 11 19 | 704 | 0.8− | 0.0 | 2006 08 23 | 704 | 1.5+ | 0.1− | |
| 2001 02 13 | 704 | 0.2+ | 0.2+ | 2003 11 19 | 704 | 0.7− | 0.0 | 2006 08 23 | 704 | (0.5+ | 2.1+) | |
| 2001 02 16 | 704 | 0.2+ | 0.4+ | 2003 11 19 | 704 | 0.1+ | 0.1+ | 2006 08 23 | 704 | 0.0 | 0.7+ | |
| 2001 02 16 | 704 | 0.0 | 0.7+ | 2003 11 19 | 704 | 0.4− | 0.5− | 2006 08 28 | 699 | 0.0 | 0.5+ | |
| 2001 02 16 | 704 | 0.2− | 0.6+ | 2003 11 19 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 699 | 0.1+ | 0.2+ | |
| 2001 02 16 | 704 | 0.5− | 0.6+ | 2003 12 10 | 644 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.0 | |
| 2001 02 16 | 704 | 0.1− | 1.0+ | 2003 12 10 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.8+ | 0.9+ | |
| 2003 09 21 | 699 | 0.2+ | 0.3+ | 2003 12 10 | 644 | 0.4− | 0.1+ | 2006 09 13 | 644 | 0.4− | 0.4+ | |
| 2003 09 21 | 699 | 0.2− | 0.0 | 2003 12 29 | 704 | 0.4+ | 1.2+ | 2006 09 13 | 644 | 0.3− | 0.1+ | |
| 2003 09 21 | 699 | 0.3− | 0.4+ | 2003 12 29 | 704 | (0.3+ | 2.0+) | 2006 09 13 | 644 | 0.4− | 0.7+ | |
| 2003 09 21 | 699 | 0.1+ | 0.4+ | 2003 12 29 | 704 | 1.1+ | 0.8− | | | | | |

**(138874)∗ 2000 XN$_{35}$**

Discovered 2000 Dec. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.13633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18203909 | $\omega$ | 101.29076 | | +0.16263960 | −0.98468433 | |
| $a$ | 3.0833745 | $\Omega$ | 339.03259 | | +0.82291472 | +0.17049177 | |
| $e$ | 0.1807172 | $i$ | 10.10938 | | +0.54438932 | +0.03646008 | |
| $P$ | 5.41 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.0 | 0.0 | 2001 02 13 | 704 | 1.0− | 0.2− | 2005 10 29 | 644 | 0.1+ | 0.1+ | |
| 1999 10 13 | 704 | 0.2− | 0.4− | 2001 02 13 | 704 | 0.9− | 0.3+ | 2005 11 01 | 699 | 0.4+ | 0.2+ | |
| 1999 10 13 | 704 | 0.0 | 0.1+ | 2004 08 08 | 704 | 1.1+ | 0.4+ | 2005 11 01 | 699 | 0.5+ | 0.3+ | |
| 1999 10 13 | 704 | 0.4− | 0.1− | 2004 08 08 | 704 | 0.7− | 0.6+ | 2005 11 01 | 699 | 0.2− | 0.4+ | |
| 1999 10 13 | 704 | 0.3− | 0.5− | 2004 08 08 | 704 | 0.6− | 0.9− | 2005 11 01 | 699 | 0.2+ | 0.3− | |
| 2000 12 04 | 704 | 0.1− | 1.5+ | 2004 08 11 | 704 | 0.6+ | 1.0+ | 2005 11 02 | 703 | 0.0 | 0.2− | |
| 2000 12 04 | 704 | 1.2− | 0.8+ | 2004 08 11 | 704 | 0.2+ | 0.1+ | 2005 11 02 | 703 | 0.5− | 0.3+ | |
| 2000 12 04 | 704 | 1.6− | 0.0 | 2004 08 11 | 704 | 0.6− | 1.4+ | 2005 11 02 | 703 | 0.5− | 0.1− | |
| 2000 12 06 | 704 | 1.4+ | 0.6+ | 2005 09 12 | 699 | 1.3− | 1.4− | 2005 11 02 | 703 | 0.2− | 1.1+ | |
| 2000 12 06 | 704 | 0.1+ | 0.2− | 2005 09 12 | 699 | (0.5+ | 2.9−) | 2005 11 03 | 704 | 0.1− | 0.1+ | |
| 2000 12 06 | 704 | 0.4+ | 0.0 | 2005 09 12 | 699 | 0.9− | 1.4+ | 2005 11 03 | 704 | 0.3+ | 0.0 | |
| 2000 12 06 | 704 | 0.4− | 0.5− | 2005 09 12 | 699 | 0.1+ | 0.4+ | 2005 11 03 | 704 | 0.5+ | 0.2− | |
| 2000 12 06 | 704 | 0.3− | 0.6− | 2005 09 14 | 704 | 0.5− | 0.5− | 2005 11 03 | 704 | 0.3+ | 0.2+ | |
| 2000 12 19 | 704 | 0.6+ | 0.2+ | 2005 09 14 | 704 | 0.1+ | 0.6+ | 2005 11 03 | 704 | 0.1− | 0.2− | |
| 2000 12 19 | 704 | 0.5+ | 0.1+ | 2005 09 14 | 704 | 0.5+ | 0.2− | 2005 12 01 | 699 | 0.6+ | 0.0 | |
| 2000 12 19 | 704 | 0.3+ | 0.1− | 2005 09 14 | 704 | 0.7+ | 0.6− | 2005 12 01 | 644 | 0.1+ | 0.0 | |
| 2000 12 19 | 704 | 0.5+ | 0.6− | 2005 09 14 | 704 | 0.2+ | 0.6+ | 2005 12 01 | 699 | 0.6− | 0.6− | |
| 2000 12 19 | 704 | 0.3− | 0.8− | 2005 09 29 | 703 | 1.0− | 0.3− | 2005 12 01 | 644 | 0.3+ | 0.1− | |
| 2001 01 05 | 704 | 0.1+ | 0.3− | 2005 09 29 | 703 | 0.4+ | 0.8− | 2005 12 01 | 699 | 0.8+ | 0.4− | |
| 2001 01 05 | 704 | 0.0 | 0.3+ | 2005 09 29 | 703 | 1.0− | 0.7− | 2005 12 01 | 644 | 0.2+ | 0.1− | |
| 2001 01 05 | 704 | 0.4− | 0.1+ | 2005 09 29 | 703 | (1.8− | 0.7+) | 2005 12 01 | 699 | 0.3+ | 0.1+ | |
| 2001 01 05 | 704 | 0.3+ | 0.4+ | 2005 10 10 | 703 | 0.6+ | 0.5− | 2005 12 03 | 703 | 0.3+ | 0.4− | |
| 2001 01 06 | 704 | 0.9+ | 0.2+ | 2005 10 10 | 703 | 0.1+ | 1.1− | 2005 12 03 | 703 | 0.7+ | 0.1− | |
| 2001 01 06 | 704 | 0.5− | 0.2− | 2005 10 10 | 703 | 0.1+ | 0.5− | 2005 12 03 | 703 | 0.1− | 0.2− | |
| 2001 01 06 | 704 | 0.0 | 0.0 | 2005 10 10 | 703 | 0.2+ | 0.1− | 2006 01 06 | 704 | 0.6+ | 0.0 | |
| 2001 01 06 | 704 | 0.3+ | 0.9− | 2005 10 12 | 699 | 0.2+ | 0.1− | 2006 01 06 | 704 | 0.7− | 0.3− | |
| 2001 01 06 | 704 | 0.4+ | 0.0 | 2005 10 12 | 699 | 0.2+ | 0.2+ | 2006 01 06 | 704 | 0.2− | 1.0+ | |
| 2001 01 15 | 704 | 0.7+ | 0.3+ | 2005 10 12 | 699 | 0.5− | 0.2+ | 2006 01 06 | 704 | 0.5− | 0.3+ | |
| 2001 01 15 | 704 | 0.3+ | 0.1+ | 2005 10 12 | 699 | 0.9− | 1.5+ | 2006 01 27 | 703 | 0.4− | 0.1− | |
| 2001 01 15 | 704 | 0.1+ | 0.5+ | 2005 10 24 | 644 | 0.0 | 0.1+ | 2006 01 27 | 703 | 1.0+ | 0.4+ | |
| 2001 01 15 | 704 | 0.4− | 0.1+ | 2005 10 24 | 644 | 0.0 | 0.0 | 2006 01 27 | 703 | (1.7− | 0.0 ) | |
| 2001 01 15 | 704 | 0.7+ | 0.2+ | 2005 10 24 | 644 | 0.1− | 0.0 | 2006 01 27 | 703 | 0.2− | 0.2+ | |
| 2001 01 15 | 704 | 0.6+ | 0.2+ | 2005 10 25 | 703 | 0.2+ | 0.4+ | 2006 11 17 | 691 | 0.2− | 0.2+ | |
| 2001 01 15 | 704 | 0.2− | 0.7+ | 2005 10 25 | 703 | 0.3+ | 0.3− | 2006 11 17 | 691 | 0.1− | 0.0 | |
| 2001 01 15 | 704 | (0.9+ | 1.6+) | 2005 10 25 | 703 | 0.6− | 0.2+ | 2006 11 17 | 691 | 0.5− | 0.1+ | |
| 2001 01 15 | 704 | 0.1− | 0.1+ | 2005 10 25 | 703 | 0.2− | 0.4− | 2006 11 25 | 691 | 0.2− | 0.0 | |
| 2001 02 13 | 704 | 1.0− | 0.6− | 2005 10 29 | 644 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.4+ | 0.0 | |
| 2001 02 13 | 704 | 0.7+ | 0.0 | 2005 10 29 | 644 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.4+ | 0.0 | |

**(138875)∗ 2000 XF$_{37}$**

Discovered 2000 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.37222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17449052 | $\omega$ | 86.87069 | | +0.77055489 | −0.60574124 | |
| $a$ | 3.1716712 | $\Omega$ | 310.30845 | | +0.43077104 | +0.72424252 | |
| $e$ | 0.1056589 | $i$ | 15.07244 | | +0.46976746 | +0.32946976 | |
| $P$ | 5.65 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 12 | 691 | 0.4− | 0.2− | 2000 12 19 | 704 | 0.7− | 0.6+ | 2005 08 04 | 704 | 0.2− | 0.9+ | |
| 1996 01 12 | 691 | 0.7− | 0.7− | 2002 02 05 | 699 | 0.4− | 0.4+ | 2005 08 04 | 704 | 0.4− | 1.3+ | |
| 1996 01 12 | 691 | 0.1− | 0.3− | 2002 02 05 | 699 | 1.2+ | 0.4+ | 2005 08 04 | 704 | (0.3− | 1.7+) | |
| 1996 01 18 | 691 | 0.2+ | 0.3− | 2002 02 05 | 699 | 0.5+ | 0.9+ | 2005 09 08 | A50 | 0.9+ | 0.1+ | |
| 1996 01 18 | 691 | 0.0 | 0.5− | 2002 02 05 | 699 | 0.2− | 0.6+ | 2005 09 08 | A50 | 0.1+ | 0.2− | |
| 1996 01 18 | 691 | 0.1− | 0.5− | 2002 02 06 | 644 | 0.3+ | 0.5+ | 2005 09 12 | 704 | 0.2+ | 0.0 | |
| 2000 12 05 | 704 | 0.9− | 0.1+ | 2002 02 06 | 644 | 0.4+ | 0.5+ | 2005 09 12 | 704 | 0.5+ | 0.3+ | |
| 2000 12 05 | 704 | 0.1+ | 0.4− | 2002 02 06 | 644 | 0.3+ | 0.4+ | 2005 09 12 | 704 | 0.3− | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 05 | 704 | 0.3+ | 0.2+ | 2002 02 13 | 645 | 0.0 | 0.0 | 2005 09 12 | 704 | 0.0 | 0.2+ |
| 2000 12 06 | 704 | 0.6− | 0.8+ | 2002 02 13 | 645 | 0.0 | 0.0 | 2005 09 12 | 704 | 0.3− | 0.6+ |
| 2000 12 06 | 704 | 1.3− | 0.3+ | 2002 02 16 | 644 | 0.4+ | 0.4+ | 2005 10 06 | 703 | 0.4− | 0.1+ |
| 2000 12 06 | 704 | 0.3+ | 0.1− | 2002 02 16 | 644 | 0.4+ | 0.3+ | 2005 10 06 | 703 | 0.6− | 0.3− |
| 2000 12 06 | 704 | 0.5+ | 0.1+ | 2002 02 16 | 644 | 0.6+ | 0.4+ | 2005 10 06 | 703 | 0.2− | 0.5+ |
| 2000 12 06 | 704 | 0.1+ | 0.1+ | 2002 03 05 | 645 | 0.1+ | 0.1+ | 2005 10 06 | 703 | 0.4− | 0.3+ |
| 2000 12 17 | 704 | 0.7+ | 0.6+ | 2002 03 05 | 645 | 0.0 | 0.1+ | 2005 10 22 | 644 | 0.2− | 0.2+ |
| 2000 12 17 | 704 | 0.4− | 0.1+ | 2002 03 12 | 645 | 0.1+ | 0.0 | 2005 10 22 | 644 | 0.0 | 0.0 |
| 2000 12 17 | 704 | 0.6− | 0.5− | 2002 03 12 | 645 | 0.0 | 0.0 | 2005 10 22 | 644 | 0.2− | 0.2− |
| 2000 12 17 | 704 | 0.7+ | 0.4− | 2005 07 09 | 703 | (1.6− | 0.3−) | 2005 10 28 | 703 | 0.2− | 0.2− |
| 2000 12 17 | 704 | 0.7+ | 0.6+ | 2005 07 09 | 703 | (1.0+ | 1.7−) | 2005 10 28 | 703 | 0.9− | 0.4− |
| 2000 12 19 | 704 | 0.4− | 0.5− | 2005 07 09 | 703 | 0.8− | 1.4− | 2005 10 28 | 703 | 0.5+ | 0.2+ |
| 2000 12 19 | 704 | 0.2− | 0.9+ | 2005 07 09 | 703 | 0.7+ | 0.5− | 2005 10 28 | 703 | (0.2− | 2.9−) |
| 2000 12 19 | 704 | 0.1− | 0.9+ | 2005 08 04 | 704 | 0.9+ | 1.5+ | | | | |

**(138876)∗ 2000 XA$_{45}$**

Discovered 2000 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.29296 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17240703 | $\omega$ | 78.84889 | | −0.04845783 | | −0.99242357 |
| $a$ | 3.1971725 | $\Omega$ | 15.35243 | | +0.66570241 | | −0.11636034 |
| $e$ | 0.1934456 | $i$ | 25.24221 | | +0.74464229 | | +0.03944265 |
| $P$ | 5.72 | $H$ | 13.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 08 | 704 | 1.2+ | 0.0 | 2002 03 12 | 704 | (1.3+ | 1.6+) | 2005 09 13 | 703 | 0.0 | 0.0 |
| 2000 09 08 | 704 | 0.1+ | 0.6− | 2002 03 12 | 704 | 0.1− | 0.6+ | 2005 09 13 | 703 | 0.6− | 0.2− |
| 2000 09 08 | 704 | 1.0− | 1.2− | 2002 03 12 | 704 | (0.7+ | 1.5+) | 2005 10 05 | 703 | 0.2− | 0.8+ |
| 2000 09 25 | 704 | 0.5+ | 0.1+ | 2002 03 22 | 644 | 0.4+ | 0.1+ | 2005 10 05 | 703 | 0.8− | 0.4+ |
| 2000 09 25 | 704 | 0.2− | 0.5− | 2002 03 22 | 644 | 0.4+ | 0.1+ | 2005 10 05 | 703 | 0.9− | 0.7− |
| 2000 09 25 | 704 | 0.2− | 0.8+ | 2002 03 22 | 644 | 0.7+ | 0.1+ | 2005 10 05 | 703 | 0.9− | 0.2− |
| 2000 09 25 | 704 | 0.3+ | 0.8− | 2002 04 02 | 644 | 0.3+ | 0.3+ | 2005 10 07 | 699 | 0.0 | 0.8+ |
| 2000 10 07 | 704 | 0.6+ | 0.6− | 2002 04 02 | 644 | 0.2+ | 0.2+ | 2005 10 07 | 699 | 0.3− | 1.0+ |
| 2000 10 07 | 704 | 0.7− | 0.4+ | 2002 04 02 | 644 | 0.3+ | 0.2+ | 2005 10 07 | 699 | (0.1+ | 1.8+) |
| 2000 10 07 | 704 | 0.1− | 0.2− | 2002 04 06 | 704 | 0.6+ | 0.3+ | 2005 10 07 | 699 | 0.5+ | 0.2+ |
| 2000 10 07 | 704 | 0.5− | 0.4− | 2002 04 06 | 704 | 0.7− | 0.1+ | 2005 10 22 | 703 | (0.5− | 1.7+) |
| 2000 12 05 | 704 | 1.2+ | 0.1− | 2002 04 06 | 704 | 1.0+ | 0.0 | 2005 10 22 | 703 | 0.7− | 0.7+ |
| 2000 12 05 | 704 | 0.0 | 0.1− | 2002 04 06 | 704 | 1.1+ | 0.8− | 2005 10 22 | 703 | 0.9− | 0.3+ |
| 2000 12 05 | 704 | 0.5+ | 0.4− | 2002 04 11 | 699 | 0.2+ | 0.7+ | 2005 10 22 | 703 | 0.9− | 0.4+ |
| 2000 12 05 | 704 | 0.7+ | 0.3− | 2002 04 11 | 699 | 0.7− | 0.3− | 2005 10 26 | 704 | 0.3− | 1.0+ |
| 2000 12 05 | 704 | 0.8+ | 1.1− | 2002 04 11 | 699 | 0.1− | 0.7+ | 2005 10 26 | 704 | 0.0 | 1.0+ |
| 2000 12 16 | 704 | 0.2− | 0.5+ | 2002 04 11 | 699 | 0.7+ | 0.3+ | 2005 10 26 | 704 | 1.3− | 0.8+ |
| 2000 12 16 | 704 | 0.4− | 0.0 | 2002 04 12 | 644 | 0.0 | 0.3+ | 2005 10 26 | 704 | 0.4− | 0.9+ |
| 2000 12 16 | 704 | 0.1− | 0.1+ | 2002 04 12 | 644 | 0.1− | 0.4+ | 2005 10 26 | 704 | 0.6− | 0.9+ |
| 2000 12 16 | 704 | 0.1+ | 0.5+ | 2002 04 12 | 644 | 0.0 | 0.5+ | 2005 10 31 | 699 | 0.8− | 0.3− |
| 2000 12 16 | 704 | 0.1+ | 0.1− | 2002 04 12 | 608 | 0.0 | 1.2+ | 2005 10 31 | 699 | 0.3− | 0.6+ |
| 2001 01 17 | 704 | 0.3− | 0.1+ | 2002 04 12 | 608 | 0.2− | 0.7+ | 2005 10 31 | 699 | 0.2− | 0.7+ |
| 2001 01 17 | 704 | 0.5+ | 0.0 | 2002 04 12 | 608 | 0.7− | 0.8+ | 2005 10 31 | 699 | 0.6+ | 0.1+ |
| 2001 01 17 | 704 | 0.3− | 0.1+ | 2002 04 13 | 644 | 0.2+ | 0.4+ | 2005 11 03 | 703 | (1.7− | 1.5−) |
| 2001 01 17 | 704 | 0.1− | 0.6− | 2002 04 13 | 644 | 0.5+ | 0.0 | 2005 11 03 | 703 | 0.7− | 1.0− |
| 2001 01 17 | 704 | 0.2− | 0.2+ | 2002 04 13 | 644 | 0.3+ | 0.3+ | 2005 11 03 | 703 | 0.2− | 1.5+ |
| 2002 01 11 | 704 | 0.6+ | 0.5+ | 2002 04 16 | 704 | 0.5+ | 0.2− | 2005 11 03 | 703 | 0.8− | 0.9+ |
| 2002 01 11 | 704 | 1.0+ | 0.3− | 2002 04 16 | 704 | 0.2+ | 0.3+ | 2005 12 21 | 703 | (1.7− | 0.2−) |
| 2002 01 11 | 704 | 0.7+ | 0.5− | 2002 04 16 | 704 | 0.9+ | 0.7+ | 2005 12 21 | 703 | 0.8+ | 0.1+ |
| 2002 01 11 | 608 | 0.2+ | 0.9− | 2002 04 16 | 704 | (0.5+ | 1.6+) | 2005 12 21 | 703 | 1.3− | 1.1+ |
| 2002 01 11 | 608 | 0.3+ | 0.6− | 2002 04 16 | 704 | 0.6+ | 0.9+ | 2005 12 21 | 703 | 0.9− | 0.2− |
| 2002 01 11 | 608 | 0.6+ | 1.1− | 2002 05 16 | 704 | 0.3+ | 0.7− | 2006 10 21 | 703 | 0.4+ | 1.1+ |
| 2002 02 10 | 704 | 0.0 | 0.8− | 2002 05 16 | 704 | 0.9− | 0.6− | 2006 10 21 | 703 | 0.1− | 1.2+ |
| 2002 02 10 | 704 | (0.4+ | 1.6−) | 2002 05 16 | 704 | 0.9+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 2002 02 10 | 704 | 1.0+ | 1.4+ | 2002 05 16 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 703 | (0.1− | 2.5+) |
| 2002 02 10 | 704 | 1.3+ | 0.2+ | 2005 08 26 | 644 | 0.6− | 0.3+ | 2006 11 11 | 703 | (1.7+ | 3.1+) |
| 2002 03 09 | 703 | 0.1+ | 0.4+ | 2005 08 26 | 644 | 0.7− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2002 03 09 | 703 | 0.2+ | 0.4− | 2005 08 26 | 644 | 0.2+ | 0.6+ | 2006 11 11 | 703 | (1.5− | 1.7−) |
| 2002 03 09 | 703 | 0.0 | 0.4+ | 2005 08 27 | 699 | 0.0 | 0.5+ | 2006 11 20 | 703 | 0.3+ | 0.5+ |
| 2002 03 09 | 703 | 0.4− | 0.4+ | 2005 08 27 | 699 | 0.2− | 0.4+ | 2006 11 20 | 703 | 0.2+ | 0.1+ |
| 2002 03 09 | 699 | 0.5+ | 1.2+ | 2005 08 27 | 699 | 0.7− | 0.6+ | 2006 11 20 | 703 | 0.4+ | 0.4− |
| 2002 03 09 | 699 | (1.6+ | 1.0+) | 2005 08 27 | 699 | (2.5− | 0.8+) | 2006 11 20 | 703 | 0.1− | 0.5+ |
| 2002 03 09 | 699 | 0.7− | 0.3− | 2005 09 03 | 703 | 0.9− | 0.2+ | 2006 12 01 | 703 | 0.3+ | 0.9− |
| 2002 03 09 | 699 | 0.8+ | 0.9+ | 2005 09 03 | 703 | (1.6− | 0.6+) | 2006 12 01 | 703 | 0.0 | 0.0 |
| 2002 03 11 | 644 | 0.4+ | 0.3+ | 2005 09 03 | 703 | (2.3− | 2.2+) | 2006 12 01 | 703 | 0.9− | 0.8+ |
| 2002 03 11 | 644 | 0.0 | 0.5+ | 2005 09 03 | 703 | (1.4− | 1.7+) | 2006 12 01 | 703 | 0.3+ | 0.3+ |
| 2002 03 11 | 644 | 0.3− | 0.1+ | 2005 09 13 | 703 | 1.0+ | 0.2− | | | | |
| 2002 03 12 | 704 | 0.6− | 1.0+ | 2005 09 13 | 703 | 0.8− | 0.4− | | | | |

**(138877)∗ 2000 XG$_{47}$**

Discovered 2000 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.60025 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31435548 | $\omega$ | 127.48011 | | −0.93631729 | | −0.18751977 |
| $a$ | 2.1421770 | $\Omega$ | 44.06552 | | −0.04992811 | | −0.76579812 |
| $e$ | 0.5417164 | $i$ | 25.27042 | | +0.34758757 | | −0.61513379 |
| $P$ | 3.14 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 06 | 704 | 0.8− | 0.7+ | 2001 04 21 | 642 | 0.5+ | 0.0 | 2001 05 05 | 939 | 0.1− | 0.2− |
| 2000 11 06 | 704 | 0.0 | 0.4− | 2001 04 21 | 642 | 0.3+ | 0.2+ | 2001 05 05 | 939 | 0.4+ | 0.5− |
| 2000 11 06 | 704 | 0.2− | 0.2− | 2001 04 21 | 939 | 0.8+ | 1.0− | 2001 05 05 | 939 | 0.1− | 0.5− |
| 2000 11 06 | 704 | 0.9+ | 0.2− | 2001 04 21 | 939 | 0.3− | 0.2− | 2001 05 10 | 360 | 0.2+ | 0.3+ |
| 2000 12 15 | 704 | 0.0 | 0.3+ | 2001 04 21 | 939 | (2.5− | 1.6−) | 2001 05 10 | 360 | 0.3+ | 0.4+ |
| 2000 12 15 | 704 | 0.4− | 1.6+ | 2001 04 23 | 113 | 0.5+ | 0.0 | 2001 05 10 | 360 | 0.4+ | 0.3+ |
| 2000 12 15 | 704 | 0.7− | 1.2+ | 2001 04 23 | 113 | 0.3+ | 0.7+ | 2001 05 12 | 342 | 1.2− | 1.4− |
| 2000 12 15 | 704 | (0.2+ | 2.2+) | 2001 04 23 | 113 | 0.4+ | 0.1+ | 2001 05 12 | 342 | (0.4− | 1.5−) |
| 2000 12 15 | 704 | (1.1− | 2.4+) | 2001 04 23 | 113 | 0.5+ | 0.0 | 2001 05 12 | 349 | 0.2+ | 0.5+ |
| 2000 12 16 | 704 | 0.1+ | 0.4+ | 2001 04 23 | 113 | 0.5+ | 0.0 | 2001 05 12 | 349 | 0.1− | 0.7+ |
| 2000 12 16 | 670 | 1.1− | 1.0− | 2001 04 23 | 113 | 0.3+ | 0.0 | 2001 05 12 | 349 | 0.0 | 0.0 |
| 2000 12 16 | 704 | 0.2− | 0.1− | 2001 04 23 | 113 | 0.9+ | 0.2− | 2001 05 12 | 349 | 0.4− | 0.7+ |
| 2000 12 16 | 704 | 0.1+ | 0.1− | 2001 04 23 | 113 | 0.5+ | 0.1− | 2001 05 12 | 342 | 0.1− | 1.1− |
| 2000 12 16 | 704 | 0.4− | 0.1− | 2001 04 23 | 113 | 0.5+ | 0.2− | 2001 05 14 | 322 | 0.4− | 0.1− |
| 2000 12 16 | 704 | 0.3+ | 0.2− | 2001 04 23 | 113 | (1.4+ | 1.8−) | 2001 05 14 | 322 | 0.2− | 0.2− |
| 2000 12 16 | 704 | 0.0 | 0.2+ | 2001 04 23 | 557 | 0.4+ | 0.1+ | 2001 05 14 | 322 | 0.2− | 0.1− |
| 2000 12 16 | 704 | 0.3− | 0.0 | 2001 04 23 | 557 | 0.5+ | 0.0 | 2001 05 14 | 322 | 0.3− | 0.0 |
| 2000 12 16 | 704 | 0.1+ | 0.2+ | 2001 04 23 | 176 | 0.3− | 0.3− | 2001 05 14 | 322 | 0.2− | 0.0 |
| 2000 12 16 | 704 | 1.0+ | 0.4− | 2001 04 23 | 176 | 0.4+ | 0.3− | 2001 05 19 | 360 | 0.1+ | 0.5+ |
| 2000 12 16 | 704 | 0.1+ | 0.1− | 2001 04 23 | 176 | 0.3− | 0.1+ | 2001 05 19 | 360 | 0.1+ | 0.3+ |
| 2000 12 16 | 670 | 0.1− | 0.2+ | 2001 04 23 | 176 | 0.3− | 0.3− | 2001 05 19 | 360 | 0.1+ | 0.3+ |
| 2000 12 16 | 046 | 0.1+ | 0.5+ | 2001 04 23 | 557 | 0.0 | 0.4+ | 2001 05 20 | 808 | (1.3− | 2.7+) |
| 2000 12 16 | 046 | 0.3+ | 0.1+ | 2001 04 23 | 557 | 0.3− | 0.1+ | 2001 05 20 | 808 | (0.9− | 1.7+) |
| 2000 12 16 | 046 | 0.1+ | 0.2+ | 2001 04 23 | 557 | 0.2+ | 0.1+ | 2001 05 29 | 844 | 0.4+ | 0.3− |
| 2000 12 16 | 046 | 0.0 | 0.1+ | 2001 04 23 | 557 | 0.2+ | 0.3+ | 2001 05 29 | 844 | 0.4+ | 0.4+ |
| 2000 12 16 | 046 | 0.1− | 0.1− | 2001 04 24 | 557 | 0.3+ | 0.1+ | 2001 06 04 | 322 | 0.5− | 0.4− |
| 2000 12 16 | 046 | 0.3+ | 0.2+ | 2001 04 24 | 557 | 0.3+ | 0.1− | 2001 06 04 | 322 | 0.2+ | 0.6− |
| 2000 12 16 | 946 | 0.4− | 0.6+ | 2001 04 24 | 557 | 0.4+ | 0.2+ | 2001 06 04 | 322 | 0.4− | 0.4− |
| 2000 12 16 | 946 | 0.6− | 0.3− | 2001 04 24 | 557 | 0.3+ | 0.2+ | 2001 06 13 | 322 | 0.0 | 0.1− |
| 2000 12 16 | 946 | 0.0 | 0.3− | 2001 04 24 | 557 | 0.1+ | 0.0 | 2001 06 13 | 322 | 0.0 | 0.2− |
| 2000 12 16 | 946 | 0.1+ | 0.2+ | 2001 04 24 | 557 | 0.3− | 0.5− | 2001 06 13 | 322 | 0.2− | 0.4− |
| 2000 12 17 | 704 | 0.0 | 0.0 | 2001 04 24 | 557 | 0.1− | 0.4− | 2001 06 15 | 808 | (1.0− | 1.6+) |
| 2000 12 17 | 704 | 0.3+ | 0.2+ | 2001 04 24 | 557 | 0.4− | 0.7− | 2001 06 15 | 808 | (0.8− | 2.6+) |
| 2000 12 17 | 704 | 0.1+ | 0.3+ | 2001 04 25 | 557 | 0.0 | 1.1− | 2001 07 25 | 474 | 0.4+ | 0.1+ |
| 2000 12 17 | 704 | 0.2+ | 0.1− | 2001 04 25 | 557 | 0.0 | 1.1− | 2001 07 25 | 474 | 0.1+ | 0.0 |
| 2000 12 17 | 704 | 0.2− | 0.3+ | 2001 04 25 | 557 | 0.0 | 1.0− | 2003 08 30 | 291 | 0.8− | 0.1− |
| 2000 12 17 | 704 | 0.0 | 0.2+ | 2001 04 25 | 151 | 0.1+ | 0.3+ | 2003 08 30 | 291 | 1.0− | 0.2− |
| 2000 12 17 | 704 | 0.3− | 0.5+ | 2001 04 25 | 151 | 0.1+ | 0.4+ | 2003 08 30 | 291 | 0.7− | 0.3− |
| 2000 12 17 | 704 | 0.2− | 0.2+ | 2001 04 25 | 151 | 0.2+ | 0.2− | 2003 10 20 | 691 | 0.2− | 0.2+ |
| 2000 12 17 | 704 | 0.3− | 0.1− | 2001 04 25 | 151 | 0.0 | 0.1− | 2003 10 20 | 691 | 0.0 | 0.2+ |
| 2000 12 17 | 704 | 0.2+ | 0.0 | 2001 04 25 | 151 | 0.3+ | 0.1− | 2003 10 20 | 691 | 0.0 | 0.3+ |
| 2000 12 17 | 704 | 0.0 | 0.2+ | 2001 04 25 | 151 | 0.6− | 0.1− | 2003 10 24 | 704 | 0.2− | 0.2+ |
| 2000 12 17 | 704 | 0.1− | 0.1+ | 2001 04 26 | 349 | 0.3+ | 0.3− | 2003 10 24 | 704 | 0.3+ | 0.3+ |
| 2000 12 17 | 704 | 0.2+ | 0.1+ | 2001 04 26 | 349 | 0.1− | 0.2+ | 2003 10 24 | 704 | 0.7− | 0.8− |
| 2000 12 17 | 704 | 0.7+ | 0.3− | 2001 04 26 | 349 | 0.1− | 0.1+ | 2003 10 24 | 704 | 0.2− | 0.1− |
| 2000 12 17 | 704 | 0.0 | 0.4+ | 2001 04 26 | 349 | 0.2− | 0.2+ | 2003 10 24 | 704 | 0.3− | 0.2+ |
| 2000 12 17 | 557 | 0.4− | 0.2− | 2001 04 26 | 349 | 0.3− | 0.1− | 2003 10 29 | 704 | 0.7− | 1.0+ |
| 2000 12 17 | 557 | 0.3− | 0.2+ | 2001 04 26 | 151 | 0.3+ | 0.1− | 2003 10 29 | 704 | (1.9− | 0.3−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 17 | 557 | 0.5− | 0.1− | 2001 04 26 | 151 | 0.1+ | 0.1− | 2003 10 29 | 704 | 0.5+ | 0.8+ |
| 2000 12 17 | 587 | 0.1+ | 0.2− | 2001 04 26 | 151 | 0.1− | 0.3− | 2003 10 29 | 704 | 0.8− | 0.2− |
| 2000 12 17 | 587 | 0.2− | 0.0 | 2001 04 26 | 151 | 0.0 | 0.0 | 2003 11 14 | 644 | 0.3+ | 0.4+ |
| 2000 12 17 | 611 | 0.1− | 0.2+ | 2001 04 26 | 151 | 0.1+ | 0.0 | 2003 11 14 | 644 | 0.4+ | 0.3+ |
| 2000 12 17 | 611 | 0.1− | 0.2+ | 2001 04 26 | 151 | 0.1− | 0.1+ | 2003 11 14 | 644 | 0.3+ | 0.4+ |
| 2000 12 17 | 611 | 0.1− | 0.2− | 2001 04 26 | 151 | 0.1+ | 0.1+ | 2003 11 17 | 170 | 0.5− | 0.1− |
| 2000 12 18 | 104 | 1.4− | 1.3+ | 2001 04 26 | 151 | 0.1+ | 0.2− | 2003 11 17 | 170 | 0.7− | 0.1− |
| 2000 12 18 | 104 | (2.2− | 0.7+) | 2001 04 26 | 151 | 0.0 | 0.1− | 2003 11 17 | 170 | 0.2− | 0.0 |
| 2000 12 18 | 104 | (2.2− | 1.1+) | 2001 04 26 | 151 | 0.0 | 0.2+ | 2003 11 19 | 703 | 0.3+ | 0.1+ |
| 2000 12 19 | 912 | 0.6− | 0.4+ | 2001 04 27 | 071 | 0.2− | 0.8− | 2003 11 19 | 703 | 0.1+ | 0.6+ |
| 2000 12 19 | 912 | 0.2− | 0.1+ | 2001 04 27 | 071 | 0.0 | 1.1+ | 2003 11 19 | 703 | 0.7− | 0.4− |
| 2000 12 19 | 912 | (2.1− | 2.4−) | 2001 04 27 | 071 | 0.3+ | 1.1+ | 2003 11 19 | 703 | 1.0− | 0.1− |
| 2000 12 19 | 704 | 0.2− | 0.2− | 2001 04 27 | 939 | 0.2− | 0.5+ | 2003 11 21 | 644 | 0.2− | 0.5+ |
| 2000 12 19 | 704 | 0.1− | 0.1+ | 2001 04 27 | 939 | 0.5− | 0.4+ | 2003 11 21 | 644 | 0.2− | 0.5+ |
| 2000 12 19 | 704 | 0.1+ | 0.3− | 2001 04 28 | 939 | 0.5− | 0.1+ | 2003 11 21 | 644 | 0.1− | 0.4+ |
| 2000 12 19 | 704 | 0.0 | 0.4− | 2001 04 28 | 921 | (3.1− | 2.5−) | 2003 12 04 | 704 | 0.1+ | 1.0+ |
| 2000 12 19 | 704 | 0.5− | 0.4+ | 2001 04 28 | 921 | (0.2+ | 3.2−) | 2003 12 04 | 704 | 0.1− | 0.1+ |
| 2000 12 19 | 118 | 0.3− | 0.3− | 2001 04 28 | 921 | (2.0− | 6.5−) | 2003 12 04 | 704 | 0.2− | 0.0 |
| 2000 12 19 | 118 | 0.0 | 0.3− | 2001 04 28 | 921 | 0.5+ | 0.6− | 2003 12 04 | 704 | 0.4− | 0.7+ |
| 2000 12 19 | 118 | 0.1− | 0.3− | 2001 04 28 | 921 | (0.9+ | 3.0−) | 2003 12 17 | 644 | 0.2− | 0.2− |
| 2000 12 20 | 704 | 0.2− | 0.1− | 2001 04 28 | 921 | (1.9+ | 2.1−) | 2003 12 17 | 644 | 0.1+ | 0.3+ |
| 2000 12 20 | 704 | 0.1+ | 0.1+ | 2001 04 28 | 921 | (2.1+ | 6.1−) | 2003 12 17 | 644 | 0.1− | 0.1+ |
| 2000 12 20 | 704 | 0.2+ | 0.1+ | 2001 04 28 | 627 | 0.0 | 0.2− | 2003 12 29 | 703 | (2.2+ | 5.6−) |
| 2000 12 20 | 704 | 0.2+ | 0.1+ | 2001 04 28 | 627 | 1.2− | 0.0 | 2003 12 29 | 703 | 0.2− | 0.2− |
| 2000 12 20 | 704 | 0.2+ | 0.0 | 2001 04 28 | 627 | 0.1− | 0.1− | 2003 12 29 | 703 | (1.6− | 0.8+) |
| 2000 12 21 | 912 | 1.8+ | 1.9− | 2001 04 28 | 627 | 0.2− | 0.1− | 2003 12 29 | 703 | 0.1− | 0.4− |
| 2000 12 21 | 912 | 1.5+ | 0.9− | 2001 04 28 | 627 | 1.4− | 0.1− | 2003 12 29 | 704 | 0.4− | 0.5+ |
| 2000 12 21 | 912 | 0.7+ | 0.6− | 2001 04 28 | 627 | 0.4− | 0.9− | 2003 12 29 | 704 | 0.1− | 0.4+ |
| 2000 12 22 | 104 | 0.5+ | 0.7− | 2001 04 28 | 627 | 0.3− | 0.2− | 2003 12 29 | 704 | 0.0 | 0.3+ |
| 2000 12 22 | 104 | 1.1+ | 0.5− | 2001 04 28 | 627 | 0.0 | 0.5− | 2003 12 29 | 704 | 0.0 | 0.3+ |
| 2000 12 22 | 104 | 1.2+ | 0.1+ | 2001 04 28 | 627 | 0.4− | 0.1− | 2003 12 29 | 704 | 0.1+ | 0.5− |
| 2000 12 22 | 104 | 0.8+ | 0.5+ | 2001 04 28 | 627 | 0.2− | 0.2− | 2003 12 30 | 704 | 0.2+ | 0.1− |
| 2000 12 23 | 587 | 0.2+ | 0.1+ | 2001 04 28 | 627 | 0.4− | 0.3− | 2003 12 30 | 704 | 0.5− | 0.7+ |
| 2000 12 23 | 587 | 0.7+ | 0.2+ | 2001 04 28 | 627 | 0.3− | 0.2− | 2003 12 30 | 704 | 0.3+ | 0.4+ |
| 2000 12 27 | 360 | 0.2− | 0.0 | 2001 04 28 | 627 | 0.4− | 0.2− | 2003 12 30 | 704 | 0.1+ | 0.5+ |
| 2000 12 27 | 360 | 0.0 | 0.0 | 2001 04 28 | 627 | 0.2− | 0.4− | 2004 05 09 | 704 | 0.7+ | 1.2+ |
| 2000 12 27 | 360 | 0.1− | 0.0 | 2001 04 28 | 627 | 0.4− | 0.2− | 2004 05 09 | 704 | 0.1− | 0.4+ |
| 2001 01 01 | 726 | (0.1− | 3.0+) | 2001 04 28 | 627 | 0.2− | 0.5− | 2004 05 09 | 704 | 0.0 | 0.4+ |
| 2001 01 01 | 726 | 0.3− | 0.1+ | 2001 04 28 | 627 | 0.3− | 0.2− | 2004 05 24 | 704 | 1.3+ | 0.6− |
| 2001 01 01 | 726 | 1.5+ | 1.4− | 2001 04 28 | 627 | 0.3− | 0.3− | 2004 05 24 | 704 | 0.6+ | 0.6+ |
| 2001 01 01 | 726 | 1.5+ | 0.1− | 2001 04 28 | 627 | 0.7− | 0.1+ | 2004 05 24 | 704 | 0.9− | 0.3− |
| 2001 01 01 | 726 | 0.1− | 0.8− | 2001 04 28 | 627 | 0.1− | 0.3− | 2004 06 18 | 703 | 0.1− | 1.0+ |
| 2001 01 01 | 726 | 0.6+ | 0.4− | 2001 04 28 | 627 | 0.1− | 0.4+ | 2004 06 18 | 703 | 0.5− | 0.4+ |
| 2001 01 01 | 726 | (0.8− | 1.6+) | 2001 04 28 | 071 | (0.6− | 1.6−) | 2004 06 18 | 703 | 0.1+ | 0.1+ |
| 2001 01 14 | 118 | 0.2+ | 0.4+ | 2001 04 28 | 071 | 0.7+ | 0.4+ | 2004 06 18 | 703 | 0.9+ | 0.3+ |
| 2001 01 14 | 118 | 0.3+ | 0.0 | 2001 04 28 | 071 | 0.5+ | 0.1+ | 2004 07 21 | E12 | 0.2− | 0.4+ |
| 2001 01 15 | 704 | 0.2+ | 0.2+ | 2001 04 28 | 071 | 0.2+ | 0.1− | 2004 07 21 | E12 | 0.3− | 0.0 |
| 2001 01 15 | 704 | 0.1− | 0.0 | 2001 04 30 | 349 | 0.1+ | 0.2+ | 2004 07 21 | E12 | 0.0 | 1.0− |
| 2001 01 15 | 704 | 0.3+ | 0.3− | 2001 04 30 | 349 | 0.0 | 0.5+ | 2004 07 21 | E12 | 0.1− | 0.5+ |
| 2001 01 15 | 704 | 0.4− | 0.4− | 2001 04 30 | 349 | 0.1+ | 0.4+ | 2006 10 15 | D35 | 0.0 | 0.1+ |
| 2001 01 15 | 704 | 0.2− | 0.7− | 2001 04 30 | 349 | 0.1− | 0.5+ | 2006 10 15 | D35 | 0.2+ | 0.1− |
| 2001 02 16 | 118 | 0.3+ | 0.1+ | 2001 04 30 | 557 | 0.4+ | 0.1+ | 2006 10 15 | D35 | 0.0 | 0.0 |
| 2001 02 16 | 118 | 0.4+ | 0.1+ | 2001 04 30 | 557 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 02 16 | 118 | 0.1+ | 0.3+ | 2001 04 30 | 557 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2001 02 17 | 540 | 0.1+ | 0.6+ | 2001 04 30 | 557 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.0 |
| 2001 02 17 | 540 | 0.2+ | 0.2+ | 2001 04 30 | 557 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 02 17 | 540 | 0.3+ | 0.5+ | 2001 04 30 | 952 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2001 02 17 | 540 | 0.1+ | 0.2+ | 2001 04 30 | 952 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2001 03 19 | 587 | 0.4+ | 0.1+ | 2001 04 30 | 952 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2001 03 19 | 587 | 0.2− | 0.3+ | 2001 04 30 | 952 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2001 04 04 | 118 | 0.3+ | 0.0 | 2001 04 30 | 952 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.7+ |
| 2001 04 04 | 118 | 0.2+ | 0.1+ | 2001 04 30 | 952 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2001 04 12 | 704 | 0.4+ | 0.2+ | 2001 04 30 | 952 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2001 04 12 | 704 | 0.3+ | 0.1+ | 2001 04 30 | 952 | 0.5+ | 0.1+ | 2006 11 17 | G92 | 0.4+ | 0.7+ |
| 2001 04 12 | 704 | 0.3+ | 0.0 | 2001 05 01 | 557 | 0.2− | 0.6− | 2006 11 17 | G92 | 0.1− | 0.2− |
| 2001 04 12 | 704 | 0.5+ | 0.4− | 2001 05 01 | 557 | 0.0 | 0.4− | 2006 11 17 | G92 | 0.4+ | 0.1− |
| 2001 04 12 | 349 | 0.3+ | 0.2− | 2001 05 01 | 557 | 0.2+ | 0.8− | 2006 11 17 | 703 | 0.3+ | 0.9− |
| 2001 04 12 | 349 | 0.1− | 0.1− | 2001 05 01 | 457 | (0.9+ | 2.7+) | 2006 11 17 | 703 | 0.2− | 0.9− |
| 2001 04 12 | 349 | 0.2− | 0.4− | 2001 05 01 | 457 | (0.0 | 2.5+) | 2006 11 17 | 703 | 0.7− | 0.8+ |
| 2001 04 12 | 349 | 0.2− | 0.1− | 2001 05 01 | 457 | (0.1+ | 2.2+) | 2006 11 17 | 703 | 0.1− | 0.8− |
| 2001 04 13 | 726 | 0.2− | 0.4− | 2001 05 01 | 457 | (0.2+ | 2.5+) | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2001 04 13 | 726 | 0.7− | 0.3− | 2001 05 01 | 457 | (0.5+ | 2.1+) | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2001 04 13 | 726 | 0.7− | 0.5− | 2001 05 01 | 457 | (0.7+ | 2.8+) | 2006 11 22 | 691 | 0.4− | 0.1+ |
| 2001 04 13 | 726 | 0.3− | 0.6− | 2001 05 01 | 629 | 0.4− | 0.6+ | 2006 11 24 | 703 | 0.1− | 0.1− |
| 2001 04 13 | 726 | 0.3− | 0.3− | 2001 05 01 | 457 | (0.7+ | 2.6+) | 2006 11 24 | 703 | 1.4− | 2.2+ |
| 2001 04 19 | 349 | 0.0 | 0.3+ | 2001 05 01 | 457 | (1.3+ | 2.6+) | 2006 11 24 | 703 | 0.5− | 0.0 |
| 2001 04 19 | 349 | 0.2− | 0.3+ | 2001 05 01 | 629 | 0.3+ | 0.5+ | 2006 11 24 | 703 | 0.0 | 0.3+ |
| 2001 04 19 | 349 | 0.1+ | 0.7+ | 2001 05 01 | 629 | 0.1+ | 0.6+ | 2006 11 25 | 703 | 0.8− | 0.3+ |
| 2001 04 19 | 349 | 0.3− | 0.7+ | 2001 05 02 | 860 | 0.5+ | 0.5+ | 2006 11 25 | 703 | 0.5+ | 0.2− |
| 2001 04 19 | 349 | 0.1− | 0.5+ | 2001 05 02 | 860 | 0.5+ | 0.7+ | 2006 11 25 | 703 | 1.0− | 0.1+ |
| 2001 04 19 | 349 | 0.1− | 0.5+ | 2001 05 02 | 860 | 0.0 | 0.9+ | 2006 11 25 | 703 | 0.2+ | 1.1− |
| 2001 04 19 | 349 | 0.1+ | 0.4+ | 2001 05 02 | 118 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2001 04 21 | 939 | 1.3+ | 0.1+ | 2001 05 02 | 118 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.5+ | 0.0 |
| 2001 04 21 | 939 | 0.9− | 1.0+ | 2001 05 04 | 644 | 0.4+ | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 04 21 | 939 | 0.0 | 0.0 | 2001 05 04 | 644 | 0.2+ | 0.6+ | | | | |
| 2001 04 21 | 642 | (2.1− | 4.4−) | 2001 05 04 | 644 | 0.3+ | 0.4+ | | | | |

**(138878)∗ 2000 YE$_1$ = 2005 UE$_{498}$**

Discovered 2000 Dec. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 93898)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 161.33072 | | (2000.0) | | | |
| $n$ | 0.18867130 | $\omega$ | 234.25822 | | +0.44981532 | +0.85609380 |
| $a$ | 3.0106861 | $\Omega$ | 64.39890 | | −0.70090430 | +0.51497816 |
| $e$ | 0.0356438 | $i$ | 16.39181 | | −0.55353350 | +0.04359934 |
| $P$ | 5.22 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 699 | 0.6− | 0.2+ | 2004 07 16 | E12 | 0.5− | 0.7+ | 2005 11 03 | 703 | 0.5− | 0.9+ |
| 2000 11 20 | 699 | 0.5+ | 1.7+ | 2004 07 16 | E12 | 0.1− | 1.2− | 2005 11 03 | 703 | 0.6− | 1.4+ |
| 2000 11 20 | 699 | 0.1− | 0.0 | 2004 07 16 | E12 | 0.3+ | 0.2+ | 2005 11 03 | 703 | 0.1− | 0.1+ |
| 2000 11 20 | 699 | 1.3− | 0.1− | 2004 07 16 | E12 | 0.4+ | 0.4+ | 2005 11 03 | 703 | 1.2+ | 0.9+ |
| 2000 12 18 | 691 | 0.5+ | 1.0− | 2004 09 10 | E12 | 0.8− | 1.1+ | 2005 11 03 | 703 | 0.5− | 0.1+ |
| 2000 12 18 | 691 | 0.6+ | 1.1− | 2004 09 10 | E12 | 0.1+ | 0.1+ | 2005 11 03 | 703 | 0.5− | 0.9+ |
| 2000 12 18 | 691 | 0.4+ | 1.1− | 2004 09 10 | E12 | 0.6− | 0.5+ | 2005 11 03 | 703 | 0.6− | 0.3+ |
| 2000 12 19 | 691 | 0.3+ | 0.2− | 2004 09 10 | E12 | 0.5− | 0.2− | 2005 11 04 | 703 | 0.6− | 0.2+ |
| 2000 12 19 | 691 | 0.2+ | 0.4− | 2005 10 01 | 703 | (2.5+ | 0.7+) | 2005 11 04 | 703 | 0.3− | 0.6+ |
| 2000 12 19 | 691 | 0.6+ | 0.2− | 2005 10 01 | 703 | 1.2+ | 0.2+ | 2005 11 04 | 703 | (2.4− | 0.7−) |
| 2002 02 21 | 704 | 1.2− | 0.8+ | 2005 10 01 | 703 | 1.1− | 0.9+ | 2005 11 04 | 703 | 1.1− | 1.3− |
| 2002 02 21 | 704 | 0.3+ | 1.3+ | 2005 10 01 | 703 | 1.3− | 1.2+ | 2005 11 10 | 703 | 0.5− | 1.3+ |
| 2002 02 21 | 704 | 1.1+ | 1.7+ | 2005 10 27 | 699 | 0.2+ | 0.9+ | 2005 11 10 | 703 | 0.7+ | 0.4+ |
| 2002 02 21 | 704 | 1.0+ | 2.4+ | 2005 10 27 | 699 | 0.4− | 0.8− | 2005 11 10 | 703 | 0.8− | 1.0+ |
| 2002 02 21 | 704 | 1.0+ | 2.1+ | 2005 10 27 | 699 | 1.1− | 0.0 | 2005 11 10 | 703 | 0.0 | 1.4+ |
| 2003 03 31 | 691 | 0.1− | 0.2+ | 2005 10 27 | 699 | 0.8− | 0.5+ | 2005 11 30 | 704 | 0.2− | 0.1− |
| 2003 03 31 | 691 | 0.4+ | 0.1+ | 2005 10 28 | 703 | 0.3+ | 0.2− | 2005 11 30 | 704 | 0.9+ | 1.1+ |
| 2003 03 31 | 691 | 0.5+ | 0.1+ | 2005 10 28 | 703 | 0.3− | 1.4+ | 2005 11 30 | 704 | 0.1+ | 0.8+ |
| 2003 06 01 | 691 | 0.0 | 0.1+ | 2005 10 28 | 703 | 0.1− | 1.1+ | 2005 11 30 | 704 | 1.1− | 0.9+ |
| 2003 06 01 | 691 | 0.0 | 0.4+ | 2005 10 28 | 703 | 0.7− | 0.7+ | | | | |
| 2003 06 01 | 691 | 0.2− | 0.0 | 2005 11 03 | 703 | 0.9− | 0.8+ | | | | |

**(138879)∗ 2000 YQ$_2$**

Discovered 2000 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.59945 | | (2000.0) | | | |
| $n$ | 0.30556695 | $\omega$ | 352.96891 | | +0.34879837 | −0.85811332 |
| $a$ | 2.1830573 | $\Omega$ | 76.04644 | | +0.87766069 | +0.15806122 |
| $e$ | 0.2030523 | $i$ | 22.84633 | | +0.32871175 | +0.48852654 |
| $P$ | 3.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.5+ | 0.1+ | 2003 09 26 | 644 | 0.1− | 0.3− | 2003 12 14 | 644 | 0.2+ | 0.1+ |
| 2000 11 01 | 704 | 0.2− | 0.4+ | 2003 09 26 | 644 | 0.3− | 0.3− | 2003 12 19 | 703 | 1.4− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.1− | 0.6+ | 2003 09 26 | 644 | 0.1− | 0.2− | 2003 12 19 | 703 | 0.2+ | 0.5+ | | |
| 2000 11 01 | 704 | 0.0 | 0.1+ | 2003 09 27 | 699 | 0.3− | 1.2+ | 2003 12 19 | 703 | 0.1− | 0.3+ | | |
| 2000 11 29 | 704 | 0.1+ | 0.2+ | 2003 09 27 | 699 | 0.4+ | 0.2+ | 2003 12 19 | 703 | 1.8− | 0.9− | | |
| 2000 11 29 | 704 | 0.3− | 0.3− | 2003 09 27 | 699 | 0.7− | 0.2− | 2005 04 13 | 703 | 0.3− | 0.2− | | |
| 2000 11 29 | 704 | 0.0 | 0.2− | 2003 09 27 | 699 | 0.0 | 0.4− | 2005 04 13 | 703 | 1.0+ | 0.6+ | | |
| 2000 11 29 | 704 | 0.2+ | 0.2− | 2003 10 17 | 704 | 0.5+ | 1.0− | 2005 04 13 | 703 | 0.0 | 0.3− | | |
| 2000 12 19 | 704 | 0.3− | 0.1+ | 2003 10 17 | 704 | 1.0+ | 1.2− | 2005 04 13 | 703 | 0.9+ | 0.6+ | | |
| 2000 12 19 | 704 | 0.0 | 0.0 | 2003 10 17 | 704 | 0.8− | 0.5− | 2005 05 11 | 703 | 0.4+ | 0.9+ | | |
| 2000 12 19 | 704 | 1.2+ | 0.5− | 2003 10 17 | 704 | 0.6+ | 0.2− | 2005 05 11 | 703 | 1.7− | 0.7+ | | |
| 2000 12 19 | 704 | 0.4+ | 0.0 | 2003 10 22 | 644 | 0.3+ | 0.6− | 2005 05 11 | 703 | 0.2+ | 0.1+ | | |
| 2000 12 19 | 704 | 0.9− | 0.3− | 2003 10 22 | 644 | 0.2+ | 0.6− | 2005 05 11 | 703 | 0.7+ | 1.3+ | | |
| 2000 12 21 | 704 | 0.0 | 0.5+ | 2003 10 22 | 644 | 0.3+ | 0.4− | 2006 08 22 | E12 | 0.7− | 0.9+ | | |
| 2000 12 21 | 704 | 0.2− | 0.4+ | 2003 10 26 | 699 | 0.4− | 0.2− | 2006 08 22 | E12 | 0.2− | 0.6− | | |
| 2000 12 21 | 704 | 0.1− | 0.6− | 2003 10 26 | 699 | 0.9+ | 0.3+ | 2006 08 22 | E12 | 1.0+ | 0.6− | | |
| 2000 12 21 | 704 | 0.4+ | 0.0 | 2003 10 26 | 699 | 0.4− | 0.4+ | 2006 08 22 | E12 | 0.7+ | 0.5+ | | |
| 2000 12 22 | 704 | 0.1+ | 0.1+ | 2003 10 26 | 699 | 0.2+ | 0.3+ | 2006 08 31 | E12 | 0.8+ | 0.4+ | | |
| 2000 12 22 | 704 | 0.2− | 0.2+ | 2003 11 26 | 704 | 0.0 | 0.6+ | 2006 08 31 | E12 | 0.2+ | 0.3+ | | |
| 2000 12 22 | 704 | 0.6− | 0.3+ | 2003 11 26 | 704 | 0.4− | 0.5+ | 2006 08 31 | E12 | 0.3+ | 0.4+ | | |
| 2000 12 22 | 704 | 0.2− | 0.2+ | 2003 11 26 | 704 | 0.1− | 0.6+ | 2006 09 15 | E12 | 0.7− | 0.5− | | |
| 2000 12 22 | 704 | 0.1− | 0.2+ | 2003 11 26 | 704 | 0.1− | 0.2+ | 2006 09 15 | E12 | 0.3+ | 0.1+ | | |
| 2001 01 05 | 704 | 0.1− | 0.1− | 2003 11 26 | 704 | 0.0 | 0.0 | 2006 09 15 | E12 | 0.5+ | 0.9− | | |
| 2001 01 05 | 704 | 0.3+ | 0.4− | 2003 12 13 | 704 | 0.4+ | 0.4+ | 2006 09 15 | E12 | 0.5+ | 0.3+ | | |
| 2001 01 05 | 704 | 0.6+ | 0.6− | 2003 12 13 | 704 | 0.9− | 0.5+ | 2006 09 21 | E12 | 0.1− | 0.3− | | |
| 2001 01 05 | 704 | 1.4+ | 0.3− | 2003 12 13 | 704 | 1.2− | 0.8+ | 2006 09 21 | E12 | 0.1− | 0.1− | | |
| 2003 09 26 | 644 | 0.2+ | 0.4− | 2003 12 13 | 704 | 1.5− | 0.6+ | 2006 09 21 | E12 | 0.4+ | 1.0+ | | |
| 2003 09 26 | 644 | 0.2− | 0.3− | 2003 12 14 | 644 | 0.3+ | 0.4+ | 2006 09 21 | E12 | 0.6− | 1.0+ | | |
| 2003 09 26 | 644 | 0.3− | 0.1+ | 2003 12 14 | 644 | 0.2+ | 0.3+ | | | | | | |

**(138880)∗ 2000 YK$_6$**

Discovered 2000 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.46207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.32406895 | $\omega$ | 355.03888 | | +0.79144928 | −0.60987483 | |
| $a$ | 2.0991547 | $\Omega$ | 42.63002 | | +0.56284658 | +0.70117398 | |
| $e$ | 0.1777127 | $i$ | 3.44968 | | +0.23835219 | +0.36933419 | |
| $P$ | 3.04 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 04 | 704 | 0.1+ | 0.5− | 2003 12 22 | 704 | 0.3− | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.1− | | |
| 2000 09 04 | 704 | 0.2+ | 1.1− | 2003 12 27 | 704 | 0.2+ | 0.7− | 2006 10 29 | G96 | 0.2− | 0.0 | | |
| 2000 09 04 | 704 | 0.4+ | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.4− | 2006 10 29 | G96 | 0.2− | 0.1− | | |
| 2000 11 20 | 704 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.9− | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 2000 11 20 | 704 | 0.6− | 0.2+ | 2003 12 27 | 704 | 0.3+ | 0.7− | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 2000 11 20 | 704 | 0.2− | 0.5+ | 2003 12 27 | 704 | 0.2+ | 0.7− | 2006 11 10 | 644 | 0.1− | 0.2+ | | |
| 2000 11 20 | 704 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.1+ | 0.3− | 2006 11 11 | 703 | (2.2− | 1.0+) | | |
| 2000 11 20 | 704 | 0.6− | 0.4+ | 2004 01 22 | 704 | 0.6− | 0.9+ | 2006 11 11 | 703 | 0.6+ | 1.0+ | | |
| 2000 12 20 | 704 | 0.3+ | 0.0 | 2004 01 22 | 704 | 0.0 | 0.9+ | 2006 11 11 | 703 | (2.2+ | 0.5+) | | |
| 2000 12 20 | 704 | 0.2+ | 0.9− | 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.5− | | |
| 2000 12 20 | 704 | 0.3+ | 0.3− | 2004 01 22 | 704 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 2000 12 20 | 704 | 0.1− | 0.5− | 2005 03 10 | G96 | 0.4+ | 0.4− | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 2000 12 20 | 704 | 0.9− | 1.4− | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 2000 12 22 | 704 | 0.3− | 0.3− | 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.3− | | |
| 2000 12 22 | 704 | 0.0 | 0.2+ | 2005 03 10 | G96 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.5− | | |
| 2000 12 22 | 704 | 0.1− | 0.3+ | 2005 04 11 | G96 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.6− | | |
| 2000 12 22 | 704 | 0.5− | 0.4+ | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.4− | 0.5− | | |
| 2001 01 04 | 704 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.7− | 0.3+ | | |
| 2001 01 04 | 704 | 0.2+ | 0.1− | 2005 04 11 | G96 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.1− | | |
| 2001 01 04 | 704 | 0.6+ | 0.5− | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.1+ | | |
| 2001 01 04 | 704 | 0.1+ | 0.3− | 2005 04 17 | 691 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.4− | 1.0− | | |
| 2001 01 04 | 704 | 0.4+ | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.4− | | |
| 2001 01 06 | 704 | 0.6− | 0.6+ | 2005 05 09 | 699 | (0.7− | 1.7+) | 2006 11 16 | 704 | 0.9− | 0.1+ | | |
| 2001 01 06 | 704 | 0.6− | 0.0 | 2005 05 09 | 699 | 0.8+ | 1.1+ | 2006 11 16 | 704 | 0.5− | 0.4− | | |
| 2001 01 06 | 704 | 0.8− | 0.4+ | 2005 05 09 | G96 | 0.5+ | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.2+ | | |
| 2001 01 06 | 704 | 0.6+ | 0.3+ | 2005 05 09 | G96 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.1− | | |
| 2002 05 11 | 704 | 0.6− | 0.4− | 2005 05 09 | G96 | 0.9+ | 0.7+ | 2006 11 16 | 704 | 0.5− | 0.1+ | | |
| 2002 05 11 | 704 | 0.7− | 0.1+ | 2005 05 09 | 699 | 0.4− | 0.1+ | 2006 11 16 | 704 | (1.6+ | 0.4+) | | |
| 2002 05 11 | 704 | (1.7− | 0.0 ) | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 11 16 | 704 | (3.3− | 0.2+) | | |
| 2002 05 11 | 704 | 0.1− | 0.2− | 2005 05 09 | 699 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.0 | | |
| 2002 05 17 | 644 | 0.2+ | 0.2+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2002 05 17 | 644 | 0.5+ | 0.3+ | 2005 05 11 | 691 | 0.6+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2002 05 17 | 644 | 0.5+ | 0.3+ | 2005 05 11 | 691 | 0.2+ | 0.0 | 2006 11 18 | 691 | (2.3+ | 1.6−) | | |
| 2003 09 26 | 704 | 0.5+ | 0.9+ | 2005 06 14 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.3+ | | |
| 2003 09 26 | 704 | 1.1+ | 1.4+ | 2005 06 14 | G96 | 0.9− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.0 | | |
| 2003 09 26 | 704 | (0.2− | 1.8+) | 2005 06 14 | G96 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.4− | 0.1+ | 2005 06 14 | G96 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.3+ | | |
| 2003 11 20 | 704 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.3+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.9− | 0.8− | 2006 11 21 | 704 | 0.9− | 0.5+ | | |
| 2003 11 20 | 704 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.3+ | 1.3− | 2006 11 21 | 704 | 1.1− | 0.6+ | | |
| 2003 11 20 | 704 | 0.6+ | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.7− | 0.5+ | | |
| 2003 11 24 | 704 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.6− | 2006 11 21 | 704 | 0.9− | 0.6+ | | |
| 2003 11 24 | 704 | 0.0 | 0.2− | 2006 09 16 | 703 | 1.1− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.2+ | | |
| 2003 11 24 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.4− | 0.5+ | 2006 11 22 | 691 | 0.1− | 0.2+ | | |
| 2003 11 24 | 704 | 0.2− | 0.9+ | 2006 09 16 | 703 | 0.2− | 0.6− | 2006 11 22 | 691 | 0.0 | 0.1+ | | |
| 2003 11 24 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 704 | (0.7+ | 1.7+) | 2006 11 27 | 704 | 0.1+ | 0.1+ | | |
| 2003 12 04 | 704 | 1.0+ | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.6+ | 2006 11 27 | 704 | 0.2+ | 0.0 | | |
| 2003 12 04 | 704 | 0.9+ | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 11 27 | 704 | 0.4+ | 0.2− | | |
| 2003 12 04 | 704 | 0.5− | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 11 28 | 704 | 0.3+ | 0.1+ | | |
| 2003 12 04 | 704 | 0.2− | 0.5− | 2006 09 27 | 704 | (2.0+ | 1.8+) | 2006 11 28 | 704 | 0.1+ | 0.5+ | | |
| 2003 12 04 | 704 | 0.0 | 0.0 | 2006 09 27 | 704 | 1.4+ | 0.0 | 2006 11 28 | 704 | 0.6+ | 0.2− | | |
| 2003 12 18 | 704 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.0 | | |
| 2003 12 18 | 704 | 0.8+ | 0.1− | 2006 09 27 | 704 | (0.8+ | 1.8+) | 2006 11 28 | 704 | 0.1+ | 0.3+ | | |
| 2003 12 18 | 704 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.3+ | | |
| 2003 12 18 | 704 | 0.8+ | 0.2+ | 2006 09 27 | 704 | 0.2− | 1.3+ | 2006 12 01 | 704 | 0.5+ | 0.3+ | | |
| 2003 12 22 | 704 | 0.6− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.6+ | 0.1− | | |
| 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.1+ | 0.1+ | | |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.5− | 2006 12 01 | 704 | 0.1+ | 0.3− | | |
| 2003 12 22 | 704 | 0.2+ | 0.2− | 2006 10 29 | G96 | 0.0 | 0.1− | | | | | | |

**(138881)∗ 2000 YD$_9$ = 2002 JS$_{49}$**

Discovered 2000 Dec. 21 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 29626)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.51504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23503002 | $\omega$ | 270.94936 | | −0.95132808 | −0.29782278 | |
| $a$ | 2.6004818 | $\Omega$ | 251.72705 | | +0.30537647 | −0.87639676 | |
| $e$ | 0.0921183 | $i$ | 4.78583 | | +0.04147417 | −0.37845782 | |
| $P$ | 4.19 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 21 | 691 | 0.2− | 0.1− | 2002 05 09 | 704 | 0.6+ | 0.3+ | 2004 11 20 | 691 | 0.0 | 0.1+ | | |
| 2000 12 21 | 691 | 0.3− | 0.1− | 2002 05 11 | 704 | 0.4− | 0.8+ | 2004 11 20 | 691 | 0.1− | 0.1+ | | |
| 2000 12 21 | 691 | 0.1− | 0.1− | 2002 05 11 | 704 | 0.2+ | 0.6+ | 2004 12 10 | 704 | 0.5+ | 0.1+ | | |
| 2000 12 23 | 691 | 0.2+ | 0.3+ | 2002 05 11 | 704 | 0.1+ | 0.7+ | 2004 12 10 | 704 | 0.9+ | 0.3− | | |
| 2000 12 23 | 691 | 0.2+ | 0.5+ | 2002 05 11 | 704 | 0.6+ | 0.5+ | 2004 12 10 | 704 | 0.3− | 0.8− | | |
| 2000 12 23 | 691 | 0.1+ | 0.3+ | 2003 07 30 | 599 | 0.2− | 0.3+ | 2006 03 24 | 703 | 1.7− | 1.2− | | |
| 2000 12 30 | 704 | 0.4+ | 1.2+ | 2003 07 30 | 599 | 0.1− | 0.1− | 2006 03 24 | 703 | 0.4− | 0.1+ | | |
| 2000 12 30 | 704 | 0.8− | 0.4+ | 2003 07 30 | 599 | 0.3+ | 0.0 | 2006 03 24 | 703 | 0.3+ | 1.4+ | | |
| 2000 12 30 | 704 | 0.3+ | 0.8+ | 2003 07 30 | 599 | 0.5+ | 0.3+ | 2006 03 24 | 703 | 0.4+ | 0.4+ | | |
| 2002 05 08 | 699 | 0.4+ | 0.2+ | 2003 09 30 | 291 | 0.5− | 1.2+ | 2006 04 18 | 699 | 0.3− | 0.3+ | | |
| 2002 05 08 | 699 | 1.6− | 0.5+ | 2003 09 30 | 291 | 0.0 | 0.1− | 2006 04 18 | 699 | 0.4+ | 0.9+ | | |
| 2002 05 08 | 699 | 1.0+ | 0.2− | 2003 09 30 | 291 | 0.2− | 0.1+ | 2006 04 18 | 699 | 0.2+ | 0.2+ | | |
| 2002 05 08 | 699 | 0.5− | 0.1+ | 2004 11 04 | 691 | 0.1− | 0.1+ | 2006 04 18 | 699 | 1.1+ | 0.8− | | |
| 2002 05 09 | 704 | 0.5+ | 0.7+ | 2004 11 04 | 691 | 0.0 | 0.1+ | 2006 04 21 | 704 | (4.8+ | 1.5+) | | |
| 2002 05 09 | 704 | 1.2+ | 0.1− | 2004 11 04 | 691 | 0.0 | 0.1+ | 2006 04 21 | 704 | (3.6+ | 1.0+) | | |
| 2002 05 09 | 704 | 0.4− | 0.6+ | 2004 11 20 | 691 | 0.0 | 0.1+ | 2006 04 21 | 704 | (2.6+ | 2.8+) | | |

**(138882)∗ 2000 YZ$_9$**

Discovered 2000 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.53811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30025371 | $\omega$ | 86.97920 | | +0.30833373 | −0.95111318 | |
| $a$ | 2.2087359 | $\Omega$ | 345.02537 | | +0.84327351 | +0.28190047 | |
| $e$ | 0.0943962 | $i$ | 3.93254 | | +0.44025004 | +0.12615803 | |
| $P$ | 3.28 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 20 | 566 | 0.7− | 1.1+ | 2003 10 30 | 704 | 0.7+ | 0.2+ | 2006 08 27 | 699 | 0.8− | 0.1+ | |
| 1996 08 20 | 566 | 1.0− | 0.2+ | 2003 10 30 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.7− | 1.2+ | |
| 1996 08 20 | 566 | 0.1+ | 0.9+ | 2003 11 02 | 704 | 0.1− | 0.7+ | 2006 08 27 | 699 | 0.7− | 0.7− | |
| 1998 02 23 | 691 | 0.0 | 0.1− | 2003 11 02 | 704 | (1.6+ | 0.6−) | 2006 08 27 | 699 | 1.0− | 0.8+ | |
| 1998 02 23 | 691 | 0.0 | 0.1− | 2003 11 02 | 704 | 0.2− | 0.7+ | 2006 09 12 | 703 | 0.4+ | 0.4+ | |
| 1998 02 23 | 691 | 0.1+ | 0.0 | 2003 11 02 | 704 | 0.5+ | 1.3− | 2006 09 12 | 703 | 1.3+ | 0.5+ | |
| 2000 12 20 | 704 | 0.6+ | 1.2+ | 2003 11 18 | 644 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.6+ | 0.5+ | |
| 2000 12 20 | 704 | 0.6+ | 1.9+ | 2003 11 18 | 644 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.7− | 1.1+ | |
| 2000 12 20 | 704 | 0.1− | 0.2− | 2003 11 18 | 644 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.3− | 0.1+ | |
| 2000 12 20 | 704 | 0.2+ | 0.9+ | 2003 11 19 | 699 | 0.1+ | 1.5− | 2006 09 13 | 644 | 0.3− | 0.1− | |
| 2000 12 23 | 704 | 0.1− | 1.2+ | 2003 11 19 | 703 | 1.2− | 1.2− | 2006 09 13 | 644 | 0.1− | 0.1− | |
| 2000 12 23 | 704 | 0.2+ | 0.6− | 2003 11 19 | 699 | 1.2+ | 0.4+ | 2006 09 16 | 699 | 0.4+ | 0.8+ | |
| 2000 12 23 | 704 | 1.3+ | 0.3− | 2003 11 19 | 703 | (2.2+ | 0.3+) | 2006 09 16 | 699 | 0.7+ | 0.0 | |
| 2000 12 23 | 704 | 0.1+ | 0.7+ | 2003 11 19 | 703 | (1.6+ | 0.4−) | 2006 09 16 | 699 | 0.0 | 0.9+ | |
| 2000 12 23 | 704 | 0.3+ | 0.6− | 2003 11 19 | 699 | 0.9− | 1.3+ | 2006 09 16 | 699 | 0.1− | 0.0 | |
| 2001 01 04 | 704 | 0.7+ | 0.1+ | 2003 11 19 | 703 | 0.3+ | 0.8− | 2006 09 17 | 704 | 0.7+ | 0.2− | |
| 2001 01 04 | 704 | 0.1− | 0.6+ | 2003 11 19 | 699 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.2− | |
| 2001 01 04 | 704 | 0.8+ | 0.1− | 2003 11 20 | 704 | 0.1+ | 0.6− | 2006 09 17 | 704 | 0.6+ | 0.2+ | |
| 2001 01 04 | 704 | 0.2+ | 0.5− | 2003 11 20 | 704 | (2.3− | 1.3−) | 2006 09 19 | 699 | 0.1− | 1.0+ | |
| 2001 01 04 | 704 | 0.2− | 0.1− | 2003 11 20 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.1+ | |
| 2001 01 06 | 704 | 0.1+ | 0.3+ | 2003 11 20 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.4+ | |
| 2001 01 06 | 704 | 0.1+ | 0.3− | 2003 11 20 | 704 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.0 | |
| 2001 01 06 | 704 | 0.3− | 0.1− | 2003 11 24 | 691 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.3+ | |
| 2001 01 19 | 704 | 0.0 | 0.4+ | 2003 11 24 | 704 | 0.0 | 0.9− | 2006 09 19 | 699 | 0.2− | 0.0 | |
| 2001 01 19 | 704 | 0.5+ | 0.6+ | 2003 11 24 | 704 | 0.1+ | 1.2− | 2006 09 19 | 703 | 0.1− | 0.4+ | |
| 2001 01 19 | 704 | 0.3+ | 0.4+ | 2003 11 24 | 691 | 0.5− | 0.2− | 2006 09 19 | 699 | 0.6+ | 0.5+ | |
| 2001 01 19 | 704 | 0.4− | 0.6+ | 2003 11 24 | 699 | 0.8+ | 0.8− | 2006 09 20 | 704 | (0.2− | 1.5+) | |
| 2001 01 19 | 704 | 0.8− | 1.2+ | 2003 11 24 | 704 | 0.1+ | 1.1− | 2006 09 20 | 704 | 1.0+ | 0.8− | |
| 2003 10 18 | 699 | 0.5− | 0.2+ | 2003 11 24 | 704 | 0.1− | 0.9− | 2006 09 20 | 704 | 0.6+ | 0.7− | |
| 2003 10 18 | 699 | 0.3− | 0.1− | 2003 11 24 | 699 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.3− | |
| 2003 10 18 | 699 | 1.2+ | 0.1+ | 2003 11 24 | 691 | 0.5− | 0.3− | 2006 09 28 | G96 | 0.1− | 0.1+ | |
| 2003 10 18 | 699 | 0.1+ | 0.2+ | 2003 11 24 | 704 | 0.3+ | 1.1− | 2006 09 28 | G96 | 0.0 | 0.3− | |
| 2003 10 22 | 704 | 0.3+ | 0.8+ | 2003 11 24 | 699 | 1.0− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2− | |
| 2003 10 22 | 704 | 0.3+ | 1.1+ | 2003 11 24 | 699 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.7+ | 1.4+ | |
| 2003 10 22 | 704 | 0.3+ | 0.0 | 2005 05 01 | 644 | 0.1− | 0.8+ | 2006 09 29 | 704 | 0.3+ | 0.7− | |
| 2003 10 22 | 704 | 0.2− | 1.0+ | 2005 05 01 | 644 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.8− | 0.4+ | |
| 2003 10 23 | 699 | 0.1− | 0.3+ | 2005 05 01 | 644 | 0.5− | 0.4+ | 2006 09 29 | 704 | (0.9+ | 1.6−) | |
| 2003 10 25 | 704 | 0.2+ | 0.5+ | 2005 05 01 | 644 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ | |
| 2003 10 25 | 704 | 0.1− | 0.1− | 2005 05 01 | 644 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1− | |
| 2003 10 25 | 704 | 0.2− | 0.3− | 2005 05 01 | 644 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2− | |
| 2003 10 25 | 704 | 0.0 | 0.0 | 2006 07 25 | G96 | 0.0 | 0.4− | 2006 10 19 | G96 | 0.4+ | 0.1− | |
| 2003 10 25 | 704 | 0.0 | 0.1− | 2006 07 25 | G96 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.3− | |
| 2003 10 30 | 704 | 0.2+ | 0.3− | 2006 07 25 | G96 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.2− | |
| 2003 10 30 | 704 | 0.1− | 0.6+ | 2006 07 25 | G96 | 0.0 | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.1− | |

**(138883)∗ 2000 YL$_{29}$**

Discovered 2000 Dec. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.05037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.51767087 | $\omega$ | 115.76642 | | +0.47581392 | +0.87934973 | |
| $a$ | 1.5361498 | $\Omega$ | 182.85689 | | −0.87941146 | +0.47526559 | |
| $e$ | 0.3440868 | $i$ | 21.88589 | | −0.01538188 | +0.02943940 | |
| $P$ | 1.90 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 03 05 | 260 | 0.8− | 0.2+ | 2003 03 05 | 240 | 0.5+ | 1.0+ | 2005 04 01 | 113 | 0.5+ | 0.5+ | |
| 1984 03 05 | 260 | 1.0+ | 1.5− | 2003 03 05 | 240 | 0.9+ | 0.9+ | 2005 04 04 | 703 | 0.2− | 0.3− | |
| 1988 10 02 | 260 | 0.9+ | 1.3+ | 2003 03 26 | 670 | 1.1− | 0.5+ | 2005 04 04 | 703 | 0.4− | 0.2− | |
| 1988 10 02 | 260 | 0.9− | 0.3− | 2003 03 26 | 670 | 0.5− | 0.6+ | 2005 04 04 | 703 | 1.2− | 0.3− | |
| 2000 12 01 | 608 | 0.1+ | 0.0 | 2005 02 04 | 474 | 0.1− | 0.2+ | 2005 04 06 | 703 | 0.4+ | 0.5− | |
| 2000 12 26 | 608 | 0.8− | 0.9− | 2005 02 04 | 474 | 0.1+ | 0.4+ | 2005 04 06 | 703 | 1.3− | 0.1− | |
| 2000 12 26 | 608 | 0.1− | 0.7− | 2005 02 04 | 474 | 0.4+ | 0.1− | 2005 04 06 | 703 | 0.1+ | 1.2− | |
| 2000 12 26 | 608 | 0.6− | 0.4− | 2005 02 04 | 474 | 0.2+ | 0.2+ | 2005 04 06 | 704 | 0.0 | 0.5+ | |
| 2000 12 28 | 608 | 0.2− | 1.4− | 2005 03 07 | 704 | 0.1+ | 1.2+ | 2005 04 06 | 704 | 0.7+ | 1.2− | |
| 2000 12 28 | 608 | 0.2− | 0.5− | 2005 03 07 | 704 | 0.1+ | 0.6+ | 2005 04 06 | 704 | 1.1+ | 0.6− | |
| 2000 12 28 | 608 | 0.5− | 1.3− | 2005 03 07 | 704 | 0.1− | 0.8+ | 2005 04 06 | 704 | (1.1− | 2.0+) | |
| 2000 12 30 | 608 | 0.5− | 1.2− | 2005 03 07 | 704 | 0.6− | 0.6+ | 2005 04 06 | 704 | 1.0− | 1.2+ | |
| 2000 12 30 | 608 | 0.6− | 0.8− | 2005 03 07 | H06 | 0.2− | 0.0 | 2005 05 03 | 703 | 0.3− | 0.1+ | |
| 2000 12 30 | 608 | 0.6− | 0.7− | 2005 03 07 | H06 | 0.2+ | 0.2+ | 2005 05 03 | 703 | (2.3− | 1.3+) | |
| 2001 01 01 | 046 | 0.1+ | 0.9+ | 2005 03 07 | H06 | 0.2+ | 0.2+ | 2005 05 03 | 703 | 0.2− | 0.8+ | |
| 2001 01 01 | 046 | (2.1+ | 0.7+) | 2005 03 09 | 104 | 0.4+ | 0.1− | 2005 05 03 | 703 | 1.3− | 0.7+ | |
| 2001 01 01 | 046 | 1.2+ | 0.2− | 2005 03 09 | 104 | 0.2+ | 1.1+ | 2005 05 11 | 704 | 0.2− | 1.1− | |
| 2001 01 05 | 608 | 0.1− | 0.6− | 2005 03 09 | 104 | 0.0 | 0.4+ | 2005 05 11 | 704 | 0.3+ | 0.9+ | |
| 2001 01 05 | 608 | 0.2− | 0.6− | 2005 03 10 | 699 | 0.7+ | 0.1− | 2005 05 11 | 704 | 0.3+ | 0.2− | |
| 2001 01 05 | 608 | 0.3− | 0.6− | 2005 03 10 | 699 | 0.2+ | 0.5+ | 2005 05 11 | 704 | 0.1+ | 0.4+ | |
| 2001 02 22 | 926 | 0.6+ | 1.0+ | 2005 03 10 | 699 | 0.3− | 0.0 | 2005 05 11 | 704 | 0.0 | 0.4− | |
| 2001 02 22 | 926 | 0.6+ | 0.6+ | 2005 03 10 | 699 | 0.4+ | 0.2+ | 2005 06 06 | 703 | 1.5− | 0.2− | |
| 2002 12 28 | 413 | 0.6+ | 0.2+ | 2005 03 13 | 703 | 0.6− | 0.2+ | 2005 06 06 | 703 | 0.3+ | 1.4− | |
| 2002 12 28 | 413 | 0.5+ | 0.5+ | 2005 03 13 | 703 | 0.9− | 0.3− | 2005 06 06 | 703 | 0.6− | 1.5− | |
| 2002 12 28 | 413 | 0.3+ | 0.0 | 2005 03 13 | 703 | 0.2+ | 0.2− | 2005 06 06 | 703 | 0.6− | 1.1− | |
| 2003 01 13 | 644 | 0.1+ | 0.5+ | 2005 03 13 | 703 | 0.8− | 0.1+ | 2005 09 24 | 461 | 0.3− | 0.1+ | |
| 2003 01 13 | 644 | 0.2+ | 0.8+ | 2005 03 22 | 448 | 0.3+ | 0.2− | 2005 09 24 | 461 | 0.1− | 0.2− | |
| 2003 01 13 | 644 | 0.0 | 0.5+ | 2005 03 22 | 448 | 0.2+ | 0.0 | 2005 10 12 | E12 | 0.4− | 0.8− | |
| 2003 02 18 | 711 | 1.1+ | 0.8− | 2005 03 22 | 448 | 0.2+ | 0.1− | 2005 10 12 | E12 | 0.9+ | 0.1+ | |
| 2003 02 18 | 711 | 1.2− | 0.1− | 2005 04 01 | I10 | 0.3+ | 0.6+ | 2005 10 12 | E12 | 0.1− | 0.3− | |
| 2003 02 18 | 711 | 0.9+ | 0.5− | 2005 04 01 | I10 | 0.2+ | 0.2+ | 2005 10 12 | E12 | 0.6+ | 0.2− | |
| 2003 03 04 | 474 | 0.3+ | 0.2− | 2005 04 01 | I10 | 0.3+ | 0.4+ | 2005 11 30 | 703 | 0.5+ | 0.8+ | |
| 2003 03 04 | 474 | 0.4+ | 0.1− | 2005 04 01 | 113 | 0.4+ | 0.2+ | 2005 11 30 | 703 | 0.2− | 1.2+ | |
| 2003 03 04 | 474 | 0.6+ | 0.2− | 2005 04 01 | 113 | 0.5+ | 0.3+ | 2005 11 30 | 703 | 0.7+ | 0.8+ | |
| 2003 03 04 | 474 | 0.8− | 0.3− | 2005 04 01 | 113 | 0.4+ | 0.2− | | | | | |
| 2003 03 05 | 240 | 0.4+ | 1.0+ | 2005 04 01 | 113 | 0.1+ | 0.0 | | | | | |

**(138884)∗ 2000 YQ$_{37}$ = 2003 SK$_{196}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 52720)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.21706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28738898 | $\omega$ | 218.81019 | | −0.61957627 | −0.77787952 | |
| $a$ | 2.2741685 | $\Omega$ | 269.72842 | | +0.74381034 | −0.53909711 | |
| $e$ | 0.1087103 | $i$ | 6.02825 | | +0.25074173 | −0.32292067 | |
| $P$ | 3.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.0 | 0.6− | 2003 09 21 | 699 | 0.6+ | 1.8+ | 2005 05 09 | 703 | 0.2+ | 0.8− | |
| 1996 11 07 | 691 | 0.4+ | 0.1− | 2003 09 30 | 704 | 0.3+ | 0.2+ | 2005 05 09 | 703 | 0.7− | 0.1− | |
| 1996 11 07 | 691 | 0.3+ | 0.6− | 2003 09 30 | 704 | 0.5+ | 0.1+ | 2005 05 09 | 703 | 0.3− | 0.1− | |
| 2000 12 21 | 704 | 0.1− | 0.2− | 2003 09 30 | 704 | 0.5− | 0.0 | 2005 05 10 | 699 | 1.1+ | 0.3+ | |
| 2000 12 21 | 704 | 0.2+ | 0.4+ | 2003 10 17 | 691 | 0.1+ | 0.1+ | 2005 05 10 | 699 | 0.1+ | 0.3+ | |
| 2000 12 21 | 704 | 0.4− | 0.3− | 2003 10 17 | 691 | 0.0 | 0.0 | 2005 05 10 | 699 | 0.5+ | 1.6+ | |
| 2000 12 30 | 704 | 0.4− | 0.5+ | 2003 10 17 | 691 | 0.1− | 0.1− | 2005 05 10 | 699 | 0.3+ | 0.2− | |
| 2000 12 30 | 704 | 0.0 | 0.4+ | 2003 10 17 | 644 | 0.1− | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.5+ | |
| 2000 12 30 | 704 | 0.8− | 0.4+ | 2003 10 17 | 644 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.3+ | |
| 2000 12 30 | 704 | 0.5+ | 0.1+ | 2003 10 17 | 644 | 0.4+ | 0.2+ | 2006 08 22 | 644 | 0.2+ | 0.2+ | |
| 2000 12 30 | 704 | 0.1− | 0.2− | 2003 10 20 | 644 | 0.2− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.1+ | |
| 2001 01 02 | 704 | 0.3+ | 0.4− | 2003 10 20 | 644 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 | |
| 2001 01 02 | 704 | 0.8+ | 0.1− | 2003 10 20 | 644 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.1+ | |
| 2001 01 02 | 704 | 0.0 | 0.1− | 2003 10 22 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.3− | |
| 2001 01 02 | 704 | 0.3− | 0.5+ | 2003 10 22 | 704 | 0.7+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.3− | |
| 2001 01 02 | 704 | 0.7+ | 0.5+ | 2003 10 22 | 704 | 0.5− | 1.6− | 2006 09 19 | 691 | 0.2− | 0.2− | |
| 2001 01 03 | 704 | 0.1− | 0.3+ | 2003 10 22 | 704 | 1.0− | 0.3− | 2006 09 22 | 691 | 0.1− | 0.1− | |
| 2001 01 03 | 704 | 0.4+ | 0.2+ | 2003 10 29 | 699 | 0.8− | 1.3+ | 2006 09 22 | 691 | 0.1− | 0.0 | |
| 2001 01 03 | 704 | 0.1+ | 0.4+ | 2003 10 29 | 699 | 0.1− | 0.1− | 2006 09 22 | 691 | 0.2− | 0.1− | |
| 2001 01 03 | 704 | 0.6− | 0.1+ | 2003 10 29 | 699 | 0.6+ | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.2+ | 0.2+ | 2003 10 29 | 699 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 2001 01 04 | 704 | 0.2+ | 0.5− | 2005 04 06 | 699 | 1.1+ | 1.4+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 01 04 | 704 | 0.2+ | 0.5+ | 2005 04 06 | 699 | 1.6+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2001 01 04 | 704 | 0.1− | 0.7+ | 2005 04 06 | 699 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2003 09 20 | 644 | 0.7− | 0.4+ | 2005 04 06 | 699 | 0.4− | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2003 09 20 | 644 | 0.4+ | 0.6+ | 2005 04 15 | 703 | 1.3− | 0.4− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2003 09 20 | 644 | 0.3− | 0.1− | 2005 04 15 | 703 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2003 09 21 | 699 | 0.7− | 0.0 | 2005 04 15 | 703 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2003 09 21 | 699 | 0.8− | 0.2+ | 2005 04 15 | 703 | 0.1+ | 0.2+ | | | | |
| 2003 09 21 | 699 | (0.6+ | 2.4+) | 2005 05 09 | 703 | 0.7− | 0.6− | | | | |

**(138885)∗ 2000 YR$_{41}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.74834 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29887950 | $\omega$ | 190.72270 | | −0.68162655 | −0.73146822 | |
| $a$ | 2.2155011 | $\Omega$ | 302.25111 | | +0.67292394 | −0.61678536 | |
| $e$ | 0.0752126 | $i$ | 1.24837 | | +0.28733016 | −0.29074054 | |
| $P$ | 3.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | 0.9− | 1.9+ | 2003 10 30 | 704 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 0.5+ | 0.3− |
| 1998 03 03 | 704 | 0.8− | 0.3− | 2003 11 01 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.4+ |
| 1998 03 03 | 704 | 1.0+ | 0.9+ | 2003 11 01 | 704 | 0.8− | 0.9+ | 2006 08 28 | 703 | 0.1− | 1.1− |
| 1998 03 03 | 704 | 0.3− | 0.1− | 2003 11 01 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.4+ | 1.2+ |
| 1998 03 03 | 704 | (2.5− | 1.4−) | 2003 11 01 | 704 | 0.9− | 0.5+ | 2006 09 17 | 704 | 0.0 | 1.1+ |
| 1999 07 20 | 691 | 0.1+ | 0.2+ | 2003 11 01 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 704 | (0.5− | 2.0+) |
| 1999 07 20 | 691 | 0.1− | 0.3+ | 2003 11 16 | 691 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.4− | 0.1+ |
| 1999 07 20 | 691 | 0.0 | 0.0 | 2003 11 16 | 691 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.9+ | 0.4− |
| 2000 12 21 | 704 | 0.9+ | 0.3− | 2003 11 16 | 691 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.2+ | 0.0 |
| 2000 12 21 | 704 | 0.8+ | 0.3− | 2003 11 17 | 703 | (2.0− | 1.1−) | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2000 12 21 | 704 | 1.2+ | 1.0+ | 2003 11 17 | 703 | 0.6− | 0.0 | 2006 09 17 | 691 | 0.3+ | 0.1+ |
| 2000 12 21 | 704 | 0.5− | 0.5− | 2003 11 17 | 703 | (1.6− | 0.6+) | 2006 09 19 | 699 | 0.3− | 0.1− |
| 2000 12 21 | 704 | 0.6+ | 0.4+ | 2003 11 17 | 703 | 1.2− | 0.2+ | 2006 09 19 | 699 | 0.7− | 0.2− |
| 2000 12 30 | 704 | 1.1+ | 1.1+ | 2003 11 20 | 704 | 0.7− | 0.6+ | 2006 09 19 | 699 | 0.2− | 0.5+ |
| 2000 12 30 | 704 | 0.4− | 0.3+ | 2003 11 20 | 704 | 0.7− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2000 12 30 | 704 | 0.1− | 0.5− | 2003 11 20 | 704 | 0.5− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2000 12 30 | 704 | 0.2+ | 0.7− | 2003 11 20 | 704 | 0.6− | 0.2+ | 2006 09 25 | 691 | 0.3+ | 1.3+ |
| 2001 01 02 | 704 | 0.5+ | 0.0 | 2003 11 20 | 704 | 0.7− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 01 02 | 704 | 0.9+ | 0.3− | 2003 11 21 | 704 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.2− |
| 2001 01 02 | 704 | 0.9− | 0.9+ | 2003 11 21 | 704 | 1.0− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 01 02 | 704 | 0.2+ | 0.3+ | 2003 11 21 | 704 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 01 02 | 704 | 0.5+ | 0.5− | 2003 11 21 | 704 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.8− | 0.4− |
| 2001 01 03 | 704 | 0.3− | 0.3− | 2003 11 21 | 704 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.6− | 0.3− |
| 2001 01 03 | 704 | 1.1− | 0.7− | 2003 11 24 | 704 | (2.1+ | 2.8+) | 2006 09 27 | 704 | 1.2− | 0.6− |
| 2001 01 03 | 704 | 0.1− | 0.3+ | 2003 11 24 | 704 | 0.5− | 0.2+ | 2006 09 27 | 704 | 1.2− | 1.2− |
| 2001 01 03 | 704 | 0.4+ | 0.3+ | 2003 11 24 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.4+ |
| 2001 01 03 | 704 | 0.3− | 0.2+ | 2003 11 24 | 704 | 0.2+ | 1.4− | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2001 01 21 | 704 | 0.4+ | 1.1+ | 2003 12 01 | 703 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2001 01 21 | 704 | 0.0 | 0.9+ | 2003 12 01 | 703 | 0.2− | 0.9− | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2001 01 21 | 704 | 0.4+ | 1.1+ | 2003 12 01 | 703 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 01 21 | 704 | 0.2+ | 0.4− | 2003 12 01 | 703 | 0.1− | 1.2− | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2003 10 23 | 691 | 0.3+ | 0.2− | 2003 12 10 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2003 10 23 | 691 | 0.2+ | 0.2+ | 2003 12 10 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2003 10 23 | 691 | 0.3+ | 0.1− | 2003 12 10 | 644 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2003 10 24 | 843 | 0.7− | 0.2− | 2005 05 07 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 10 24 | 843 | (1.9− | 0.6−) | 2005 05 07 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2003 10 24 | 843 | 0.5− | 0.2− | 2005 05 07 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2003 10 24 | 704 | 0.4+ | 0.8+ | 2005 05 08 | 699 | 0.4− | 1.0− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 10 24 | 704 | 0.8− | 1.1+ | 2005 05 08 | 699 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 10 24 | 704 | 0.4− | 0.6+ | 2005 05 08 | 699 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2003 10 24 | 704 | 0.7+ | 0.4− | 2005 05 08 | 699 | 0.3− | 0.3+ | 2006 10 23 | G96 | 0.1− | 1.1− |
| 2003 10 24 | 704 | 0.1+ | 0.4− | 2005 05 10 | G96 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.6+ | 0.8− |
| 2003 10 29 | 704 | 0.8+ | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2003 10 29 | 704 | 0.8− | 0.0 | 2005 05 10 | G96 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.5− | 0.6− |
| 2003 10 29 | 704 | (2.0− | 2.1+) | 2005 05 10 | G96 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.2+ |
| 2003 10 30 | 704 | 0.2− | 1.1+ | 2005 05 11 | 644 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2003 10 30 | 704 | 0.7− | 0.1+ | 2005 05 11 | 644 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2003 10 30 | 704 | 0.3+ | 0.9+ | 2005 05 11 | 644 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2003 10 30 | 704 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.4+ | 0.6− | | | | |

**(138886)∗ 2000 YJ$_{46}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.36367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27863359 | $\omega$ | 241.70915 | | −0.94003614 | −0.33376208 | |
| $a$ | 2.3215626 | $\Omega$ | 278.72155 | | +0.33251091 | −0.85092022 | |
| $e$ | 0.0534974 | $i$ | 4.07549 | | +0.07595095 | −0.40563241 | |
| $P$ | 3.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 21 | 704 | 0.0 | 0.7+ | 2003 10 27 | 691 | 0.1− | 0.1+ | 2005 03 31 | 699 | 1.7+ | 0.3+ |
| 2000 12 21 | 704 | 0.4− | 0.4+ | 2003 10 29 | 699 | 0.3+ | 0.2− | 2005 03 31 | G92 | 0.8+ | 0.4+ |
| 2000 12 21 | 704 | 0.5+ | 0.3+ | 2003 10 29 | 699 | 0.7− | 0.1+ | 2005 03 31 | 699 | 0.0 | 1.2+ |
| 2000 12 30 | 704 | 0.2+ | 0.3− | 2003 10 29 | 699 | 0.1+ | 1.3+ | 2005 03 31 | G92 | 0.6+ | 0.2− |
| 2000 12 30 | 704 | 1.0+ | 0.7+ | 2003 10 29 | 699 | 0.6− | 0.3+ | 2005 03 31 | 699 | 0.9− | 1.0+ |
| 2000 12 30 | 704 | 0.8− | 0.3+ | 2003 11 02 | 704 | 0.0 | 1.2+ | 2005 03 31 | 699 | 0.4− | 0.4+ |
| 2000 12 30 | 704 | 0.4− | 0.0 | 2003 11 02 | 704 | 0.3+ | 0.3− | 2005 04 01 | G92 | 0.1+ | 0.4+ |
| 2000 12 30 | 704 | 0.0 | 0.2+ | 2003 11 02 | 704 | 0.3+ | 0.2+ | 2005 04 01 | G92 | 0.7+ | 0.6+ |
| 2001 01 02 | 704 | 0.1− | 0.0 | 2003 11 02 | 704 | 0.4− | 0.2+ | 2005 04 01 | G92 | 0.1+ | 0.4+ |
| 2001 01 02 | 704 | 0.1+ | 0.5+ | 2003 11 02 | 704 | 0.3− | 0.8+ | 2005 04 04 | G92 | 0.0 | 0.5+ |
| 2001 01 02 | 704 | 0.1− | 0.0 | 2003 11 18 | 644 | 0.1− | 0.1− | 2005 04 04 | G92 | 0.1+ | 0.3+ |
| 2001 01 02 | 704 | 0.1− | 0.1− | 2003 11 18 | 644 | 0.1+ | 0.2+ | 2005 04 04 | G92 | 0.0 | 0.1+ |
| 2001 01 03 | 704 | 0.0 | 0.3− | 2003 11 18 | 644 | 0.1− | 0.0 | 2005 04 06 | 704 | 0.1+ | 0.8+ |
| 2001 01 03 | 704 | 0.6+ | 0.2− | 2003 11 20 | 704 | 0.2+ | 1.6+ | 2005 04 06 | 704 | 0.5− | 0.3+ |
| 2001 01 03 | 704 | 0.5− | 0.1− | 2003 11 20 | 704 | 0.1− | 1.1+ | 2005 04 06 | 704 | 0.1− | 0.5+ |
| 2001 01 03 | 704 | 0.1+ | 0.1+ | 2003 11 20 | 704 | 0.1− | 1.0+ | 2005 04 06 | 704 | 0.2− | 1.0+ |
| 2001 01 03 | 704 | 0.7+ | 0.2+ | 2003 11 20 | 704 | 0.7− | 0.5+ | 2005 04 06 | 704 | 0.8+ | 0.2− |
| 2001 01 20 | 704 | 0.3− | 0.4+ | 2003 11 23 | 691 | 0.3− | 0.6− | 2005 04 07 | 704 | 0.6− | 0.1− |
| 2001 01 20 | 704 | 0.0 | 0.6− | 2003 11 23 | 691 | 0.4− | 0.2− | 2005 04 07 | 704 | 0.2− | 0.9+ |
| 2001 01 20 | 704 | 0.2+ | 0.4− | 2003 11 23 | 691 | 0.3− | 0.1− | 2005 04 07 | 704 | 0.7+ | 0.5+ |
| 2001 01 20 | 704 | 0.2+ | 0.2− | 2003 11 24 | 704 | 1.0+ | 0.7− | 2005 04 07 | 704 | 0.9+ | 0.6+ |
| 2001 01 21 | 704 | 0.1+ | 0.4+ | 2003 11 24 | 704 | 0.8− | 0.4+ | 2005 04 07 | 704 | 0.5+ | 0.3+ |
| 2001 01 21 | 704 | 0.1− | 0.3+ | 2003 11 24 | 704 | 0.2− | 0.3− | 2005 04 13 | 699 | 0.4− | 0.4+ |
| 2001 01 21 | 704 | 0.3+ | 0.3+ | 2003 11 24 | 704 | 0.6− | 0.0 | 2005 04 13 | 699 | 0.4− | 1.0+ |
| 2001 01 21 | 704 | 0.5+ | 0.4− | 2003 11 24 | 704 | 0.5− | 0.2+ | 2005 04 13 | 699 | 0.1+ | 0.5+ |
| 2001 01 21 | 704 | 0.2+ | 0.1− | 2003 12 22 | 704 | 0.6− | 0.1+ | 2005 04 13 | 699 | 0.1+ | 1.0+ |
| 2003 10 21 | 691 | 0.1+ | 0.2+ | 2003 12 22 | 704 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.1+ |
| 2003 10 21 | 691 | 0.1− | 0.3+ | 2003 12 22 | 704 | 0.5+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.8+ |
| 2003 10 21 | 691 | 0.1+ | 0.3+ | 2005 03 03 | 691 | 0.0 | 0.8+ | 2006 08 29 | 703 | 0.3+ | 0.0 |
| 2003 10 22 | 704 | 1.1+ | 0.0 | 2005 03 03 | 691 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.3+ |
| 2003 10 22 | 704 | 0.1+ | 0.4− | 2005 03 03 | 691 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.7+ |
| 2003 10 22 | 704 | 0.2− | 0.4− | 2005 03 11 | 699 | 0.8+ | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 2003 10 22 | 704 | 0.8+ | 1.0+ | 2005 03 11 | 699 | 0.9+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.8+ |
| 2003 10 25 | 704 | 0.4− | 0.4+ | 2005 03 11 | 699 | 1.3+ | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.6+ |
| 2003 10 25 | 704 | 0.1− | 0.4+ | 2005 03 11 | 699 | 1.5+ | 0.3− | 2006 09 18 | 691 | 0.2− | 0.7+ |
| 2003 10 25 | 704 | 0.2− | 0.4+ | 2005 03 13 | 703 | 0.4− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.7+ |
| 2003 10 25 | 704 | 0.1− | 0.6+ | 2005 03 13 | 703 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.6− | 0.0 |
| 2003 10 25 | 704 | 0.1− | 0.4+ | 2005 03 13 | 703 | 0.7− | 1.0+ | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 2003 10 27 | 691 | 0.0 | 0.1+ | 2005 03 13 | 703 | 1.1− | 0.6+ | 2006 09 28 | G96 | 0.4− | 0.2+ |
| 2003 10 27 | 691 | 0.1− | 0.0 | 2005 03 31 | G92 | 0.7+ | 0.0 | 2006 09 28 | G96 | 0.7− | 0.2+ |

**(138887)∗ 2000 YE$_{50}$ = 2003 WX$_{86}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56179)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.40414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30166980 | $\omega$ | 222.39486 | | −0.27874658 | −0.95986829 | |
| $a$ | 2.2018184 | $\Omega$ | 243.81193 | | +0.89008779 | −0.24614346 | |
| $e$ | 0.0301399 | $i$ | 1.97170 | | +0.36061625 | −0.13441080 | |
| $P$ | 3.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 26 | 691 | 0.1+ | 0.3+ | 2003 12 04 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 291 | 0.2− | 0.2+ | |
| 2000 12 26 | 691 | 0.1− | 0.5+ | 2003 12 04 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.6− | |
| 2000 12 26 | 691 | 0.3− | 0.4+ | 2003 12 17 | 699 | 0.1+ | 0.8− | 2006 09 18 | 699 | 0.3+ | 1.3− | |
| 2000 12 30 | 704 | 0.1+ | 0.3+ | 2003 12 17 | 699 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | |
| 2000 12 30 | 704 | 0.3− | 0.3+ | 2003 12 17 | 699 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.4+ | 1.0+ | |
| 2000 12 30 | 704 | 0.2+ | 1.2+ | 2003 12 17 | 699 | 0.9− | 1.1− | 2006 09 18 | 691 | 0.1− | 0.1− | |
| 2000 12 30 | 704 | 0.8+ | 0.0 | 2003 12 19 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 1.0+ | 0.6+ | |
| 2000 12 30 | 704 | 0.5+ | 0.9+ | 2003 12 19 | 704 | 0.3+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.1+ | |
| 2001 01 02 | 704 | 0.4+ | 0.3+ | 2003 12 19 | 704 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.3+ | 0.3+ | |
| 2001 01 02 | 704 | 0.0 | 0.9+ | 2003 12 19 | 704 | 0.5− | 0.6− | 2006 10 02 | 691 | 0.2+ | 0.2+ | |
| 2001 01 02 | 704 | 0.9+ | 0.2+ | 2003 12 19 | 704 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.4+ | |
| 2001 01 02 | 704 | 0.4− | 0.2− | 2003 12 21 | 704 | 0.3+ | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.3+ | |
| 2001 01 03 | 704 | 0.0 | 0.2− | 2003 12 21 | 704 | 0.5− | 1.2− | 2006 10 10 | 644 | 0.4− | 0.1+ | |
| 2001 01 03 | 704 | 0.6− | 0.0 | 2003 12 21 | 704 | 0.2+ | 0.7− | 2006 10 10 | 644 | 0.2− | 0.0 | |
| 2001 01 03 | 704 | 0.1− | 0.2− | 2003 12 21 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | |
| 2001 01 03 | 704 | 0.4+ | 0.6+ | 2003 12 22 | 291 | 0.1+ | 0.7− | 2006 10 11 | 691 | 0.2− | 0.1+ | |
| 2001 01 21 | 704 | 0.5− | 0.3+ | 2003 12 22 | 291 | 0.4+ | 0.7− | 2006 10 11 | 691 | 0.1− | 0.5+ | |
| 2001 01 21 | 704 | 0.9+ | 0.9− | 2003 12 22 | 291 | 0.4+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2001 01 21 | 704 | 0.2− | 0.8− | 2003 12 24 | 704 | 0.1− | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | |
| 2001 01 21 | 704 | 0.2− | 0.2− | 2003 12 24 | 704 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2001 01 21 | 704 | 1.3+ | 0.3− | 2003 12 24 | 704 | 0.7− | 1.5+ | 2006 10 12 | 644 | 0.3− | 0.0 | |
| 2003 11 21 | 704 | (0.0 | 1.5+) | 2003 12 27 | 691 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.2+ | |
| 2003 11 21 | 704 | 0.2− | 1.3+ | 2003 12 27 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.4+ | |
| 2003 11 21 | 704 | 0.5− | 0.2+ | 2003 12 27 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.0 | |
| 2003 11 21 | 704 | 1.1+ | 0.6+ | 2005 03 11 | G96 | 0.9− | 0.4− | 2006 10 15 | 691 | 0.1− | 0.2+ | |
| 2003 11 23 | 704 | 1.0− | 0.7− | 2005 03 11 | G96 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.0 | 0.1− | |
| 2003 11 23 | 704 | 1.2+ | 0.2+ | 2005 03 11 | G96 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.2− | |
| 2003 11 23 | 704 | 0.0 | 0.3− | 2005 03 11 | G96 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.1− | |
| 2003 11 23 | 704 | 0.1− | 0.7+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.4− | |
| 2003 11 23 | 704 | 0.5+ | 0.3− | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 10 20 | H07 | 0.9− | 0.8+ | |
| 2003 11 23 | 704 | 0.1+ | 0.4− | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 10 20 | H07 | 1.0− | 0.2+ | |
| 2003 11 23 | 704 | 0.1− | 1.1+ | 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 10 20 | H07 | 0.7− | 0.6+ | |
| 2003 11 23 | 704 | 0.1− | 0.4+ | 2005 05 10 | 703 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2− | |
| 2003 11 23 | 704 | 0.4+ | 1.4+ | 2005 05 10 | 703 | 0.5− | 1.2+ | 2006 10 27 | 691 | 0.2+ | 0.0 | |
| 2003 11 24 | 704 | 0.0 | 1.0− | 2005 05 10 | 703 | 0.6− | 1.2+ | 2006 10 27 | 691 | 0.0 | 0.2− | |
| 2003 11 24 | 704 | 0.1+ | 0.1+ | 2005 05 10 | 703 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.1− | |
| 2003 11 24 | 704 | 0.2+ | 0.1+ | 2005 05 11 | 644 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.1− | |
| 2003 11 24 | 704 | 0.0 | 0.3− | 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.0 | |
| 2003 12 01 | 704 | 0.3+ | 0.2+ | 2005 05 11 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.4− | 1.2− | |
| 2003 12 01 | 704 | 0.9+ | 0.0 | 2005 05 19 | 644 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 1.0+ | 0.2− | |
| 2003 12 01 | 704 | 0.9+ | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 1.0− | |
| 2003 12 01 | 704 | 1.1+ | 0.2− | 2005 05 19 | 644 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.1− | 0.1− | |
| 2003 12 01 | 291 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.4+ | 0.2+ | 2006 11 20 | G96 | 0.4+ | 0.1− | |
| 2003 12 01 | 291 | 1.2− | 0.1+ | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.1− | 0.2− | |
| 2003 12 01 | 291 | 0.9− | 0.0 | 2005 06 11 | 691 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.4− | |
| 2003 12 03 | 704 | 0.7− | 0.2+ | 2005 06 14 | G96 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.2− | |
| 2003 12 03 | 704 | 0.5− | 0.3− | 2005 06 14 | G96 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.3+ | |
| 2003 12 03 | 704 | 1.1− | 1.0+ | 2005 06 14 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.2− | |
| 2003 12 03 | 704 | 0.4+ | 0.2+ | 2005 06 14 | G96 | 0.6− | 0.1− | 2006 11 27 | G96 | 0.1− | 0.1+ | |
| 2003 12 03 | 704 | 0.1− | 0.2− | 2006 09 14 | 291 | 0.1− | 0.3+ | | | | | |
| 2003 12 04 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 291 | 0.1− | 0.0 | | | | | |

**(138888)∗ 2000 YQ$_{52}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.60714 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30308487 | $\omega$ | 159.87198 | | −0.30891967 | −0.94753351 | |
| $a$ | 2.1949597 | $\Omega$ | 308.03312 | | +0.85770802 | −0.24022327 | |
| $e$ | 0.0716274 | $i$ | 5.98678 | | +0.41098124 | −0.21088630 | |
| $P$ | 3.25 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 06 | 910 | 1.2− | 0.5+ | 2001 02 03 | 704 | 0.5+ | 0.4+ | 2003 12 23 | 704 | 0.8− | 0.5+ | |
| 1997 12 06 | 910 | 1.1− | 0.7+ | 2001 02 19 | 704 | 0.2− | 0.5+ | 2003 12 23 | 704 | 1.0− | 0.8− | |
| 1997 12 06 | 910 | 1.1− | 0.7+ | 2001 02 19 | 704 | 0.2− | 0.0 | 2003 12 23 | 704 | 0.4− | 0.4− | |
| 1998 03 24 | 566 | 0.0 | 0.1− | 2001 02 19 | 704 | 0.6− | 0.2+ | 2003 12 28 | 704 | 0.4+ | 0.2− | |
| 1998 03 24 | 566 | 0.2− | 0.2− | 2001 02 19 | 704 | 0.2+ | 1.3+ | 2003 12 28 | 704 | 0.2+ | 0.2− | |
| 1998 03 24 | 566 | 0.1− | 0.4− | 2001 02 19 | 704 | 0.2− | 0.8− | 2003 12 28 | 704 | 0.1− | 0.4− | |
| 1999 07 14 | 704 | 0.9+ | 0.3+ | 2001 02 22 | 704 | 0.6− | 0.5− | 2003 12 28 | 699 | 0.7+ | 0.0 | |
| 1999 07 14 | 704 | 0.3− | 0.2+ | 2001 02 22 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 699 | 0.6+ | 0.5− | |
| 1999 07 14 | 704 | 1.2− | 0.6+ | 2001 02 22 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 699 | 0.6+ | 0.1− | |
| 1999 07 20 | 699 | 0.3+ | 0.2+ | 2001 02 22 | 704 | 0.7+ | 0.6+ | 2003 12 28 | 699 | 0.4+ | 0.4− | |
| 1999 07 20 | 699 | 0.4− | 0.1− | 2001 02 22 | 704 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 0.1+ | 0.2+ | |
| 1999 07 20 | 699 | 0.1+ | 0.7+ | 2001 03 18 | 704 | 0.1+ | 0.2+ | 2003 12 29 | 704 | 0.3− | 0.3+ | |
| 2000 09 27 | 704 | 0.1− | 0.8− | 2001 03 18 | 704 | 0.7− | 1.3+ | 2003 12 29 | 704 | 0.2− | 0.2− | |
| 2000 09 27 | 704 | 0.0 | 0.4− | 2001 03 18 | 704 | 0.6− | 0.3+ | 2003 12 29 | 704 | 0.1− | 0.1+ | |
| 2000 09 27 | 704 | 0.4+ | 0.7− | 2001 03 18 | 704 | (2.3− | 2.6−) | 2003 12 30 | 704 | 0.7− | 0.3+ | |
| 2000 09 27 | 704 | 0.6+ | 0.4− | 2003 09 07 | 704 | 1.4+ | 0.6− | 2003 12 30 | 704 | 0.1− | 1.0+ | |
| 2000 11 20 | 704 | 0.9− | 0.9+ | 2003 09 07 | 704 | 1.5+ | 1.1+ | 2003 12 30 | 704 | 0.1− | 0.4+ | |
| 2000 11 20 | 704 | 0.3+ | 0.8+ | 2003 09 07 | 704 | 1.2+ | 0.6− | 2003 12 30 | 704 | 1.3− | 0.5− | |
| 2000 11 20 | 704 | 0.4− | 0.0 | 2003 09 27 | 704 | 0.4− | 0.1+ | 2003 12 30 | 704 | (1.6− | 0.7+) | |
| 2000 11 20 | 704 | 0.0 | 1.2− | 2003 09 27 | 704 | 0.1− | 0.5− | 2004 01 13 | 703 | 0.2− | 0.8− | |
| 2000 11 20 | 704 | 1.0+ | 0.6− | 2003 09 27 | 704 | 0.2+ | 0.2− | 2004 01 13 | 703 | 0.9+ | 0.7− | |
| 2000 12 20 | 704 | 0.2+ | 0.0 | 2003 09 27 | 704 | 0.0 | 0.0 | 2004 01 13 | 703 | 1.0− | 1.1− | |
| 2000 12 20 | 704 | 0.4+ | 0.4+ | 2003 10 06 | 704 | 0.7− | 0.2+ | 2004 01 13 | 703 | 0.8+ | 0.9− | |
| 2000 12 20 | 704 | 0.3+ | 0.1− | 2003 10 06 | 704 | 0.2− | 0.2− | 2004 01 20 | 704 | 0.3− | 0.3+ | |
| 2000 12 20 | 704 | 0.6+ | 1.1− | 2003 10 06 | 704 | 0.1+ | 0.1+ | 2004 01 20 | 704 | 0.5− | 0.5+ | |
| 2000 12 30 | 704 | 0.1− | 0.2− | 2003 10 06 | 704 | 0.2+ | 0.6+ | 2004 01 20 | 704 | 0.7− | 0.7+ | |
| 2000 12 30 | 704 | 0.1− | 0.6+ | 2003 10 23 | 704 | 0.6− | 0.1− | 2004 01 20 | 704 | 0.9− | 0.0 | |
| 2000 12 30 | 704 | 0.2− | 0.1+ | 2003 10 23 | 704 | 0.8+ | 0.4+ | 2004 03 19 | 704 | 0.1− | 0.5+ | |
| 2000 12 30 | 704 | 0.4+ | 0.3+ | 2003 10 23 | 704 | 0.0 | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.1− | |
| 2000 12 30 | 704 | 0.1− | 0.6+ | 2003 10 23 | 704 | (2.0+ | 2.6+) | 2004 03 19 | 704 | 0.3− | 0.0 | |
| 2001 01 02 | 704 | 0.2+ | 0.4+ | 2003 10 23 | 704 | 0.5+ | 0.2− | 2004 03 19 | 704 | 0.1− | 1.4− | |
| 2001 01 02 | 704 | 0.2− | 0.3+ | 2003 10 30 | 704 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 1.1+ | |
| 2001 01 02 | 704 | 0.0 | 0.2+ | 2003 10 30 | 704 | 0.7− | 0.3+ | 2004 03 22 | 704 | (0.7+ | 2.1+) | |
| 2001 01 02 | 704 | 0.5− | 0.1+ | 2003 10 30 | 704 | 0.6− | 0.5− | 2004 03 22 | 704 | 0.0 | 1.3+ | |
| 2001 01 02 | 704 | 0.1− | 0.2+ | 2003 10 30 | 704 | 0.3− | 0.6− | 2005 05 18 | E12 | 0.0 | 0.3+ | |
| 2001 01 02 | 704 | 0.4+ | 0.2+ | 2003 11 03 | 704 | 0.6− | 1.3+ | 2005 05 18 | E12 | 0.0 | 0.2+ | |
| 2001 01 02 | 704 | 0.3+ | 0.1− | 2003 11 03 | 704 | 0.6+ | 0.3+ | 2005 05 18 | E12 | 0.1− | 0.1+ | |
| 2001 01 02 | 704 | 0.2+ | 0.0 | 2003 11 03 | 704 | 0.2− | 1.1+ | 2005 05 18 | E12 | 0.4+ | 0.9+ | |
| 2001 01 02 | 704 | 0.7− | 0.4+ | 2003 11 19 | 704 | 0.2− | 0.2+ | 2006 08 29 | 699 | 0.1+ | 0.6+ | |
| 2001 01 02 | 704 | 0.3− | 0.2− | 2003 11 19 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 699 | 0.0 | 0.1− | |
| 2001 01 02 | 704 | 0.4− | 0.1+ | 2003 11 19 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 699 | 0.2− | 0.1− | |
| 2001 01 02 | 704 | 0.6− | 0.4− | 2003 11 19 | 704 | 0.0 | 0.0 | 2006 08 29 | 699 | 0.5+ | 0.4− | |
| 2001 01 02 | 704 | 1.1− | 0.3+ | 2003 11 19 | 704 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.3+ | 0.3+ | |
| 2001 01 02 | 704 | 0.7− | 1.0− | 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.0 | 0.1− | |
| 2001 01 03 | 704 | 0.4− | 0.2+ | 2003 11 20 | 691 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.2+ | 0.1− | |
| 2001 01 03 | 704 | 0.2+ | 0.3− | 2003 11 20 | 691 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.5+ | 0.1− | |
| 2001 01 03 | 704 | 0.1+ | 0.3+ | 2003 11 26 | 704 | 0.3+ | 0.1− | 2006 09 22 | 704 | 0.7+ | 0.1+ | |
| 2001 01 03 | 704 | 0.3− | 0.0 | 2003 11 26 | 704 | 0.4+ | 0.0 | 2006 09 22 | 704 | (1.6+ | 0.3+) | |
| 2001 01 03 | 704 | 0.1+ | 0.3+ | 2003 11 26 | 704 | 0.2+ | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.1+ | |
| 2001 01 04 | 704 | 0.1− | 0.2− | 2003 11 26 | 704 | 0.6+ | 0.1− | 2006 09 22 | 704 | 0.6+ | 0.1− | |
| 2001 01 04 | 704 | 0.2− | 0.3− | 2003 11 26 | 704 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.5− | 0.2+ | |
| 2001 01 04 | 704 | 0.3+ | 0.4+ | 2003 11 26 | 704 | 0.4+ | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1+ | |
| 2001 01 04 | 704 | 0.3+ | 0.3+ | 2003 11 26 | 704 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2+ | |
| 2001 01 04 | 704 | 0.2+ | 0.0 | 2003 11 26 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2001 01 19 | 704 | 0.0 | 0.3+ | 2003 11 26 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | |
| 2001 01 19 | 704 | 0.3+ | 0.2− | 2003 11 26 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2001 01 19 | 704 | 0.3− | 0.1+ | 2003 12 04 | 704 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.2− | 0.0 | |
| 2001 01 19 | 704 | 0.0 | 0.2− | 2003 12 04 | 704 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2001 01 19 | 704 | 0.0 | 0.3− | 2003 12 04 | 704 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.0 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 20 | 704 | 0.1+ | 1.0− | 2003 12 04 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.5− | 0.0 | |
| 2001 01 20 | 704 | 0.1+ | 0.3+ | 2003 12 04 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1− | |
| 2001 01 20 | 704 | 0.6+ | 0.7+ | 2003 12 17 | 691 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2001 01 20 | 704 | 0.8+ | 0.5− | 2003 12 17 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.6− | |
| 2001 01 21 | 704 | 0.5+ | 0.2− | 2003 12 17 | 691 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.2+ | |
| 2001 01 21 | 704 | 1.2+ | 0.2− | 2003 12 18 | 704 | 0.6− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.4+ | |
| 2001 01 21 | 704 | 1.4+ | 0.5− | 2003 12 18 | 704 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.2+ | |
| 2001 01 21 | 704 | (1.7+ | 0.7−) | 2003 12 18 | 704 | 0.5− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.7+ | |
| 2001 01 21 | 704 | 1.4+ | 0.8− | 2003 12 18 | 704 | 0.2− | 0.0 | 2006 11 19 | 704 | 1.9+ | 0.5− | |
| 2001 02 03 | 704 | 1.1+ | 0.2− | 2003 12 18 | 704 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.7+ | 0.3− | |
| 2001 02 03 | 704 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.5− | |
| 2001 02 03 | 704 | 0.4+ | 0.3+ | 2003 12 23 | 704 | 0.7− | 0.1− | | | | | |

**(138889)∗ 2000 YY$_{55}$ = 2003 UF$_{267}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56180)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 238.43208 | | (2000.0) | | | |
| $n$ | 0.29704266 | $\omega$ | 258.24234 | | −0.62296324 | −0.78021566 |
| $a$ | 2.2246251 | $\Omega$ | 230.43877 | | +0.74317418 | −0.56780256 |
| $e$ | 0.0740616 | $i$ | 4.19492 | | +0.24414944 | −0.26241909 |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.1+ | 0.5− | 2003 11 19 | 699 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.6− | 0.7+ | |
| 2000 12 30 | 704 | 0.8+ | 0.2− | 2003 11 19 | 699 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.9+ | 0.1+ | |
| 2000 12 30 | 704 | 0.5− | 0.4+ | 2003 11 19 | 699 | 0.6+ | 0.3+ | 2006 09 21 | 104 | 0.4− | 0.3+ | |
| 2001 01 02 | 704 | 0.5− | 0.3+ | 2003 11 21 | 704 | 0.6− | 0.2+ | 2006 09 21 | 104 | 0.4+ | 0.5+ | |
| 2001 01 02 | 704 | 0.1− | 0.5− | 2003 11 21 | 704 | 0.3− | 0.7+ | 2006 09 21 | 104 | 0.1+ | 0.7+ | |
| 2001 01 02 | 704 | 0.1− | 0.3− | 2003 11 21 | 704 | 0.2− | 0.2− | 2006 09 21 | 104 | 0.7+ | 0.8+ | |
| 2001 01 02 | 704 | 0.3− | 0.0 | 2003 11 21 | 704 | 0.4+ | 1.1+ | 2006 10 01 | 703 | 0.6+ | 0.1+ | |
| 2001 01 03 | 704 | 0.2+ | 0.2+ | 2003 11 21 | 704 | 0.3− | 0.1+ | 2006 10 01 | 703 | (0.2+ | 1.6−) | |
| 2001 01 03 | 704 | 0.8+ | 0.1+ | 2003 11 24 | 699 | 0.5− | 0.4− | 2006 10 01 | 703 | 0.2+ | 0.6− | |
| 2001 01 03 | 704 | 0.3− | 0.4+ | 2003 11 24 | 699 | 0.2− | 0.2+ | 2006 10 01 | 703 | 1.5− | 0.0 | |
| 2001 01 04 | 704 | 0.2− | 0.5+ | 2003 11 24 | 699 | 0.5+ | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.1− | |
| 2001 01 04 | 704 | 0.8+ | 0.3+ | 2003 11 24 | 699 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.0 | |
| 2001 01 04 | 704 | 0.3− | 0.0 | 2003 12 01 | 704 | (2.4+ | 0.8+) | 2006 10 11 | 691 | 0.0 | 0.0 | |
| 2001 01 04 | 704 | 0.5− | 1.1+ | 2003 12 01 | 704 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.1+ | |
| 2003 10 23 | 691 | 0.3+ | 0.1− | 2003 12 01 | 704 | 0.6− | 1.2+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | |
| 2003 10 23 | 691 | 0.4+ | 0.2− | 2003 12 01 | 704 | 0.8+ | 1.0− | 2006 10 11 | 644 | 0.2+ | 0.2+ | |
| 2003 10 23 | 691 | 0.3+ | 0.3− | 2005 05 08 | 699 | (2.3+ | 1.1+) | 2006 10 19 | 691 | 0.1− | 0.2+ | |
| 2003 10 28 | 704 | 1.0− | 0.1− | 2005 05 08 | 699 | (0.6+ | 1.7+) | 2006 10 19 | 691 | 0.3− | 0.3− | |
| 2003 10 28 | 704 | 1.0+ | 0.6+ | 2005 05 08 | 699 | 0.4+ | 1.5+ | 2006 10 19 | 691 | 0.1− | 0.0 | |
| 2003 10 28 | 704 | 0.5+ | 0.5− | 2005 05 08 | 699 | 0.7+ | 0.1− | 2006 10 21 | 691 | 0.3+ | 0.4+ | |
| 2003 10 28 | 704 | 0.9+ | 0.2− | 2005 06 12 | G96 | 0.4− | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.0 | |
| 2003 10 29 | 703 | 1.1− | 1.0− | 2005 06 12 | G96 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2+ | |
| 2003 10 29 | 703 | 0.3+ | 0.3+ | 2005 06 12 | G96 | 0.0 | 0.7+ | 2006 10 23 | 691 | 0.5− | 0.1− | |
| 2003 10 29 | 703 | 0.1+ | 0.4− | 2005 06 12 | G96 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.0 | |
| 2003 10 29 | 703 | 0.4− | 0.8+ | 2006 09 06 | 644 | 0.5+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.4− | |
| 2003 11 02 | 704 | 0.8− | 1.1+ | 2006 09 06 | 644 | 0.4+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2+ | |
| 2003 11 02 | 704 | 0.4+ | 0.0 | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.5+ | |
| 2003 11 02 | 704 | 0.9− | 0.7+ | 2006 09 14 | A50 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.0 | |
| 2003 11 02 | 704 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.1− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.4− | |
| 2003 11 17 | 703 | 1.3− | 0.4+ | 2006 09 17 | 703 | 0.7+ | 0.4− | 2006 11 15 | G96 | 0.2− | 0.2− | |
| 2003 11 17 | 703 | 0.8− | 0.2− | 2006 09 17 | 703 | (0.9+ | 2.3−) | 2006 11 15 | G96 | 0.3− | 0.3− | |
| 2003 11 17 | 703 | (0.5− | 2.2−) | 2006 09 17 | 703 | 0.4− | 0.3− | 2006 11 15 | G96 | 0.6+ | 0.7− | |
| 2003 11 17 | 703 | (0.0 | 2.5−) | 2006 09 19 | 699 | 1.1+ | 0.1− | | | | | |
| 2003 11 19 | 699 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.8− | 0.7− | | | | | |

**(138890)∗ 2000 YD$_{61}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 259.46431 | | (2000.0) | | | |
| $n$ | 0.17041281 | $\omega$ | 299.18741 | | −0.54472647 | +0.75132522 |
| $a$ | 3.2220669 | $\Omega$ | 292.97213 | | −0.55730720 | −0.65626686 |
| $e$ | 0.1760380 | $i$ | 23.86766 | | −0.62664325 | −0.06945658 |
| $P$ | 5.78 | $H$ | 13.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 699 | 0.1+ | 0.9+ | 2003 06 22 | 699 | 0.0 | 0.7− | 2004 09 15 | 704 | 0.1− | 1.1− | |
| 2000 12 22 | 699 | 0.7− | 0.7+ | 2003 06 23 | 699 | 0.5− | 0.3− | 2004 09 15 | 704 | 0.3− | 0.5− | |
| 2000 12 22 | 699 | (0.6− | 2.1+) | 2003 06 23 | 699 | 0.3+ | 0.1− | 2004 09 15 | 704 | 0.6− | 0.1− | |
| 2000 12 22 | 699 | 0.7− | 0.9+ | 2003 06 23 | 699 | 0.4− | 0.3− | 2004 10 24 | 704 | 0.0 | 0.1− | |
| 2000 12 26 | 691 | 0.3+ | 0.5+ | 2003 06 23 | 699 | 0.7− | 0.5+ | 2004 10 24 | 704 | 0.9+ | 0.4− | |
| 2000 12 26 | 691 | 0.4+ | 0.5+ | 2003 06 26 | 704 | 0.9− | 0.0 | 2004 10 24 | 704 | 0.2+ | 0.4+ | |
| 2000 12 26 | 691 | 0.3+ | 0.3+ | 2003 06 26 | 704 | 0.1+ | 0.4+ | 2004 10 24 | 704 | 0.6+ | 1.2− | |
| 2000 12 30 | 704 | 0.7+ | 0.1− | 2003 06 26 | 704 | 0.1+ | 0.3− | 2004 10 24 | 704 | 0.3+ | 0.2− | |
| 2000 12 30 | 704 | 0.3+ | 0.1− | 2003 06 26 | 704 | 0.5+ | 0.6− | 2004 11 03 | 703 | 0.5+ | 0.0 | |
| 2000 12 30 | 704 | 0.0 | 0.4+ | 2003 06 28 | 704 | 0.0 | 0.2− | 2004 11 03 | 703 | 0.5− | 0.9+ | |
| 2000 12 30 | 704 | 0.3+ | 0.1+ | 2003 06 28 | 704 | 0.5+ | 0.5+ | 2004 11 03 | 703 | 0.2+ | 0.4+ | |
| 2000 12 30 | 704 | 1.8− | 0.0 | 2003 06 28 | 704 | 0.1− | 0.2− | 2004 11 03 | 703 | 0.2− | 0.1+ | |
| 2001 01 02 | 704 | 0.3+ | 0.7− | 2003 06 28 | 704 | 1.1− | 0.9+ | 2004 11 04 | 704 | 0.1+ | 0.8− | |
| 2001 01 02 | 704 | 0.6+ | 0.4+ | 2003 06 28 | 704 | 0.0 | 0.0 | 2004 11 04 | 704 | 0.4+ | 0.4− | |
| 2001 01 02 | 704 | 0.0 | 0.2− | 2003 07 01 | 704 | 0.1+ | 1.1+ | 2004 11 04 | 704 | (0.1− | 1.7−) | |
| 2001 01 02 | 704 | 0.4+ | 0.1+ | 2003 07 01 | 704 | 0.9+ | 0.7+ | 2004 11 04 | 704 | 0.5+ | 0.1− | |
| 2001 01 02 | 704 | 0.6− | 0.2− | 2003 07 01 | 704 | 0.4− | 1.4+ | 2004 11 10 | 704 | 0.4+ | 0.7− | |
| 2001 01 03 | 704 | 0.9+ | 0.2+ | 2003 07 01 | 608 | 0.8− | 0.1+ | 2004 11 10 | 704 | 0.1+ | 0.3− | |
| 2001 01 03 | 704 | 0.0 | 0.6− | 2003 07 01 | 608 | 0.6− | 0.0 | 2004 11 10 | 704 | 0.0 | 0.4− | |
| 2001 01 03 | 704 | 1.1+ | 0.9+ | 2003 07 01 | 608 | 0.1+ | 0.7− | 2004 11 10 | 704 | 0.2− | 0.4+ | |
| 2001 01 03 | 704 | 0.4− | 0.7− | 2003 07 09 | 691 | 0.1− | 0.3+ | 2004 11 10 | 704 | 0.6+ | 0.8+ | |
| 2001 01 03 | 704 | 0.1− | 0.3+ | 2003 07 09 | 691 | 0.2− | 0.2+ | 2004 12 02 | 704 | 0.9+ | 0.1− | |
| 2001 01 20 | 704 | 1.1− | 0.0 | 2003 07 09 | 691 | 0.2− | 0.3+ | 2004 12 02 | 704 | 0.3+ | 0.3− | |
| 2001 01 20 | 704 | 1.0+ | 0.1+ | 2003 07 11 | 608 | 0.4+ | 0.2+ | 2004 12 02 | 704 | 0.9+ | 0.8+ | |
| 2001 01 20 | 704 | 0.1− | 0.2− | 2003 07 11 | 608 | 0.3+ | 0.2+ | 2004 12 02 | 704 | 0.3+ | 0.5− | |
| 2001 01 20 | 704 | 0.6+ | 0.3+ | 2003 07 11 | 608 | 0.3+ | 0.2+ | 2004 12 10 | 704 | (1.8− | 0.1+) | |
| 2001 01 20 | 704 | 0.3+ | 0.6+ | 2003 07 24 | 599 | 0.2+ | 0.5+ | 2004 12 10 | 704 | 0.3+ | 0.6+ | |
| 2001 01 22 | 704 | 0.3− | 0.0 | 2003 07 24 | 599 | 0.0 | 0.1+ | 2004 12 10 | 704 | 0.6+ | 0.2− | |
| 2001 01 22 | 704 | 0.4− | 0.0 | 2003 07 24 | 599 | 0.2− | 0.6+ | 2006 01 22 | 704 | 0.4− | 0.7+ | |
| 2001 01 22 | 704 | 0.5− | 0.3− | 2003 07 24 | 599 | 0.1− | 0.2+ | 2006 01 22 | 704 | 0.1− | 0.8+ | |
| 2001 01 22 | 704 | 0.1+ | 0.7+ | 2003 07 28 | 608 | 0.1− | 0.5− | 2006 01 22 | 704 | 0.3− | 0.2+ | |
| 2001 01 22 | 704 | 0.3− | 0.4+ | 2003 07 28 | 608 | 0.4− | 0.1+ | 2006 01 22 | 704 | 1.0+ | 1.4+ | |
| 2001 02 02 | 704 | 0.1+ | 0.6+ | 2003 07 28 | 608 | 0.2− | 0.1− | 2006 01 22 | 704 | 0.6− | 0.2− | |
| 2001 02 02 | 704 | 0.0 | 0.7+ | 2003 07 30 | 644 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.7− | 1.3+ | |
| 2001 02 02 | 704 | 0.6+ | 0.5+ | 2003 07 30 | 644 | 0.6− | 0.0 | 2006 10 01 | 703 | 1.3− | 0.8+ | |
| 2001 02 02 | 704 | 0.6+ | 0.2+ | 2003 07 30 | 644 | 0.5− | 0.3+ | 2006 10 01 | 703 | (1.9+ | 3.3−) | |
| 2001 02 02 | 704 | 1.1+ | 0.2+ | 2003 08 01 | 704 | 0.8− | 0.5− | 2006 10 01 | 703 | 1.5− | 0.6− | |
| 2001 02 03 | 704 | 0.9+ | 1.0+ | 2003 08 01 | 704 | 1.3− | 0.1+ | 2006 10 19 | 703 | 0.2− | 1.0+ | |
| 2001 02 03 | 704 | 0.7+ | 0.6+ | 2003 08 01 | 704 | 0.7− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.7+ | |
| 2001 02 03 | 704 | 1.2+ | 0.2+ | 2003 08 01 | 704 | 0.8− | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.1+ | |
| 2001 02 03 | 704 | 0.4− | 0.8− | 2003 08 01 | 704 | 1.0− | 0.6+ | 2006 10 19 | 703 | 1.1+ | 1.1− | |
| 2001 02 03 | 704 | 0.3− | 0.2− | 2003 09 02 | 704 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.5+ | |
| 2001 02 19 | 704 | 0.6+ | 0.2− | 2003 09 02 | 704 | 0.6+ | 0.7− | 2006 11 15 | 703 | 0.7− | 0.1− | |
| 2001 02 19 | 704 | (2.6+ | 0.8+) | 2003 09 02 | 704 | 0.2− | 0.8+ | 2006 11 15 | 703 | 0.6− | 0.1− | |
| 2001 02 19 | 704 | 0.5+ | 0.1+ | 2003 09 02 | 704 | 0.9+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.6− | |
| 2001 02 19 | 704 | 0.8+ | 0.2− | 2003 09 18 | 704 | 1.4+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1+ | |
| 2001 02 19 | 704 | 1.3+ | 0.4+ | 2003 09 18 | 704 | (1.7+ | 0.5+) | 2006 11 23 | G96 | 0.3− | 0.2− | |
| 2001 04 16 | 704 | 0.6− | 1.2+ | 2003 09 18 | 704 | (0.3− | 1.8−) | 2006 11 23 | G96 | 0.5− | 0.3− | |
| 2001 04 16 | 704 | 0.2− | 0.2+ | 2003 09 18 | 704 | 0.8+ | 0.7− | 2006 11 23 | G96 | 0.2− | 0.1− | |
| 2001 04 16 | 704 | 1.1− | 0.6+ | 2004 07 28 | H06 | 0.2− | 0.4− | 2006 11 28 | 704 | 1.0+ | 2.1− | |
| 2003 06 11 | 704 | 0.9− | 0.2− | 2004 07 28 | H06 | 0.6− | 0.3− | 2006 11 28 | 704 | 0.0 | 1.2− | |
| 2003 06 11 | 704 | 0.9− | 0.3+ | 2004 07 28 | H06 | 0.5− | 0.0 | 2006 11 28 | 704 | 1.4+ | 0.3− | |
| 2003 06 11 | 704 | 0.5− | 1.4+ | 2004 07 29 | A13 | (1.6− | 0.3+) | 2006 11 28 | 704 | 0.1+ | 0.1+ | |
| 2003 06 22 | 699 | 0.2+ | 0.4+ | 2004 07 29 | A13 | 0.1− | 0.7+ | 2006 11 28 | 704 | 0.5+ | 0.7− | |
| 2003 06 22 | 699 | 0.3− | 1.4+ | 2004 09 15 | 704 | 0.8− | 0.3− | | | | | |
| 2003 06 22 | 699 | 0.8− | 1.1+ | 2004 09 15 | 704 | 0.5− | 0.2+ | | | | | |

**(138891)*** **2000 YY$_{61}$ = 1998 FG$_{100}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 9508)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 196.84342 | | (2000.0) | | | |
| $n$ | 0.29389255 | $\omega$ | 239.95071 | | −0.99396791 | −0.03980809 |
| $a$ | 2.2404934 | $\Omega$ | 297.59810 | | +0.08139687 | −0.89225444 |
| $e$ | 0.0721990 | $i$ | 6.62161 | | −0.07350070 | −0.44977476 |
| $P$ | 3.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 31 | 704 | 0.1− | 0.4+ | 2001 01 20 | 704 | 0.1− | 0.0 | 2003 12 18 | 704 | 0.1− | 0.6− |
| 1998 03 31 | 704 | (2.1− | 1.6+) | 2001 01 21 | 704 | 0.6+ | 0.3+ | 2003 12 23 | 704 | 0.5+ | 0.1− |
| 1998 03 31 | 704 | 0.7+ | 0.2− | 2001 01 21 | 704 | 0.2− | 0.1+ | 2003 12 23 | 704 | 0.7+ | 0.2+ |
| 1998 03 31 | 704 | 0.2+ | 0.4− | 2001 01 21 | 704 | 0.3− | 0.2− | 2003 12 23 | 704 | 0.4+ | 0.1− |
| 1998 03 31 | 704 | 0.3− | 0.2+ | 2001 01 21 | 704 | 0.1− | 0.3+ | 2003 12 23 | 704 | 0.6+ | 1.0+ |
| 1998 04 01 | 704 | 1.0+ | 2.0+ | 2001 01 21 | 704 | 0.0 | 0.2− | 2003 12 23 | 704 | 0.4− | 0.0 |
| 1998 04 01 | 704 | 1.1− | 0.2+ | 2001 01 21 | 704 | 0.1+ | 0.0 | 2003 12 28 | 691 | 0.2+ | 0.2− |
| 1998 04 01 | 704 | 1.5+ | 1.5− | 2001 01 21 | 704 | 0.1+ | 0.5− | 2003 12 28 | 691 | 0.3− | 0.2− |
| 1998 04 01 | 704 | 0.1+ | 1.1+ | 2001 01 21 | 704 | 0.5+ | 0.7+ | 2003 12 28 | 691 | 0.0 | 0.0 |
| 2000 12 30 | 704 | 0.6+ | 1.5− | 2001 01 21 | 704 | 0.1+ | 0.1− | 2003 12 28 | 704 | 0.5− | 0.0 |
| 2000 12 30 | 704 | 0.6+ | 0.0 | 2001 01 22 | 704 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.5+ |
| 2000 12 30 | 704 | 0.2− | 0.4− | 2001 01 22 | 704 | 0.7− | 0.3− | 2003 12 28 | 704 | 0.3+ | 0.4+ |
| 2000 12 30 | 704 | 0.2+ | 0.2− | 2001 01 22 | 704 | 0.5− | 0.2− | 2004 01 11 | 644 | 0.1− | 0.2+ |
| 2000 12 30 | 704 | 0.1− | 0.7+ | 2001 01 22 | 704 | 0.4+ | 0.2+ | 2004 01 11 | 644 | 0.1− | 0.1+ |
| 2001 01 02 | 704 | 0.1+ | 0.2− | 2001 02 19 | 704 | 0.2+ | 0.8+ | 2004 01 11 | 644 | 0.1− | 0.1+ |
| 2001 01 02 | 704 | (0.3− | 1.8−) | 2001 02 19 | 704 | 0.0 | 0.1+ | 2005 06 07 | 428 | 0.7+ | 0.7+ |
| 2001 01 02 | 704 | 0.1− | 0.1+ | 2001 02 19 | 704 | 0.3+ | 0.4+ | 2005 06 07 | 428 | 0.8− | 0.6− |
| 2001 01 02 | 704 | 0.2+ | 0.8− | 2001 02 19 | 704 | 0.0 | 0.5+ | 2006 09 16 | 703 | 0.5+ | 0.1− |
| 2001 01 02 | 704 | 0.4− | 0.2− | 2001 02 19 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.1− | 0.7− |
| 2001 01 03 | 699 | 0.6− | 0.6+ | 2001 02 22 | 704 | (0.0 | 1.7+) | 2006 09 16 | 703 | 0.2− | 0.5+ |
| 2001 01 03 | 699 | 0.2+ | 0.3+ | 2001 02 22 | 704 | 1.1− | 0.5+ | 2006 09 16 | 703 | 0.1+ | 0.5− |
| 2001 01 03 | 704 | 0.2+ | 0.4+ | 2001 02 22 | 704 | (1.6− | 0.5+) | 2006 09 20 | 699 | 0.1+ | 0.5+ |
| 2001 01 03 | 699 | 0.8− | 0.4− | 2002 06 12 | 644 | 0.8− | 0.8+ | 2006 09 20 | 699 | 0.9+ | 0.9− |
| 2001 01 03 | 704 | 0.7+ | 0.3− | 2002 06 12 | 644 | 0.9− | 0.8+ | 2006 09 20 | 699 | 0.2+ | 0.7+ |
| 2001 01 03 | 704 | 0.2− | 0.2− | 2002 06 12 | 644 | (2.6− | 0.6+) | 2006 09 20 | 699 | 0.5+ | 0.1− |
| 2001 01 03 | 699 | 0.1− | 0.2+ | 2003 11 19 | 704 | 0.8+ | 0.3− | 2006 10 10 | 644 | 0.3− | 0.4+ |
| 2001 01 03 | 704 | 0.7+ | 0.5− | 2003 11 19 | 704 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.7+ |
| 2001 01 03 | 704 | 0.5+ | 0.6+ | 2003 11 19 | 704 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 01 15 | 691 | 0.1− | 0.1+ | 2003 11 19 | 704 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 01 15 | 691 | 0.3− | 0.1+ | 2003 12 04 | 704 | 0.5− | 1.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 01 15 | 691 | 0.1− | 0.2+ | 2003 12 04 | 704 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 01 19 | 699 | 0.0 | 0.4+ | 2003 12 04 | 704 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 01 19 | 699 | 0.5+ | 0.2− | 2003 12 04 | 704 | 1.0− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 01 19 | 699 | 0.2+ | 0.2− | 2003 12 04 | 704 | 1.4− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 01 19 | 699 | 0.5+ | 0.6− | 2003 12 17 | 644 | 0.6+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2001 01 20 | 704 | 0.5− | 0.8− | 2003 12 17 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 01 20 | 704 | 0.3− | 0.0 | 2003 12 17 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 01 20 | 704 | 0.5− | 0.2− | 2003 12 18 | 704 | 0.4− | 0.2− | | | | |
| 2001 01 20 | 704 | 0.1+ | 0.6− | 2003 12 18 | 704 | 0.7− | 0.6− | | | | |

**(138892)*** **2000 YM$_{64}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.84338 | | (2000.0) | | | |
| $n$ | 0.29987649 | $\omega$ | 79.46562 | | +0.85598832 | −0.51355660 |
| $a$ | 2.2105878 | $\Omega$ | 311.40652 | | +0.43786172 | +0.78136627 |
| $e$ | 0.1949107 | $i$ | 4.55220 | | +0.27488382 | +0.35457915 |
| $P$ | 3.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 691 | 0.6− | 0.1+ | 2003 09 30 | 704 | 0.4− | 1.1− | 2006 08 24 | 704 | 0.1+ | 1.2+ |
| 2000 12 29 | 691 | 0.8− | 0.2+ | 2003 10 05 | 704 | 0.1+ | 0.1+ | 2006 08 24 | 704 | 0.2− | 0.2+ |
| 2000 12 29 | 691 | 0.9− | 0.1+ | 2003 10 05 | 704 | 0.3+ | 0.5− | 2006 08 24 | 704 | 0.1− | 1.2+ |
| 2000 12 30 | 704 | 0.1+ | 0.2+ | 2003 10 05 | 704 | 0.2+ | 0.4− | 2006 08 24 | 704 | 0.2+ | 0.4+ |
| 2000 12 30 | 704 | 0.4+ | 0.1+ | 2003 10 05 | 704 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.4− | 0.0 |
| 2000 12 30 | 704 | 0.4+ | 0.4+ | 2003 10 05 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.3− | 0.4− |
| 2001 01 02 | 704 | 0.0 | 0.8− | 2003 10 22 | 704 | 0.3+ | 0.3− | 2006 08 28 | 699 | 0.1− | 0.2+ |
| 2001 01 02 | 704 | 0.6− | 0.3+ | 2003 10 22 | 704 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.1− |
| 2001 01 02 | 704 | 0.9+ | 0.1+ | 2003 10 22 | 704 | (0.9+ | 1.6+) | 2006 08 28 | 703 | 0.3− | 0.0 |
| 2001 01 02 | 704 | 0.3+ | 0.9− | 2003 10 22 | 704 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.1− | 1.0+ |
| 2001 01 03 | 704 | 0.2+ | 0.4+ | 2003 10 22 | 704 | 0.9− | 0.4+ | 2006 08 28 | 699 | 0.5− | 0.8+ |
| 2001 01 03 | 704 | 0.5− | 0.3− | 2003 11 03 | 704 | 0.0 | 0.8− | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2001 01 03 | 704 | 0.6+ | 0.4+ | 2003 11 03 | 704 | 0.1+ | 0.6− | 2006 08 29 | 691 | 0.0 | 0.4+ |
| 2001 01 03 | 704 | 0.8+ | 0.2+ | 2003 11 03 | 704 | 0.3+ | 0.7− | 2006 08 29 | 691 | 0.1− | 0.3+ |
| 2001 01 03 | 704 | (1.8+ | 1.7+) | 2003 11 03 | 704 | 0.1+ | 0.9− | 2006 08 30 | 704 | 0.1+ | 0.0 |
| 2001 01 03 | 704 | 0.5+ | 1.0+ | 2003 11 03 | 704 | 0.1− | 1.2− | 2006 08 30 | 704 | 0.2− | 0.1+ |
| 2001 01 03 | 704 | 0.1+ | 1.1+ | 2003 11 19 | 704 | 1.1− | 0.3+ | 2006 08 30 | 704 | 0.3− | 0.1+ |
| 2001 01 03 | 704 | 0.3+ | 0.3+ | 2003 11 19 | 704 | 1.0− | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.1+ |
| 2001 01 03 | 704 | 1.4+ | 0.6+ | 2003 11 19 | 704 | 1.1− | 0.0 | 2006 08 30 | 704 | 0.2− | 0.0 |
| 2001 01 03 | 704 | 0.9+ | 0.3− | 2003 11 19 | 704 | 1.2− | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.4− |
| 2001 01 04 | 704 | 0.1− | 0.1+ | 2003 11 19 | 704 | 1.3− | 0.2+ | 2006 08 30 | 704 | 0.5− | 0.1− |
| 2001 01 04 | 704 | 0.7+ | 0.1+ | 2003 11 22 | 300 | 0.6− | 0.3− | 2006 08 30 | 704 | 0.3− | 0.0 |
| 2001 01 04 | 704 | 0.4+ | 0.6+ | 2003 11 22 | 300 | 1.0− | 0.0 | 2006 08 30 | 704 | 0.1− | 0.1+ |
| 2001 01 04 | 704 | 0.4+ | 0.4+ | 2003 12 04 | 704 | 0.2+ | 0.1− | 2006 08 30 | 704 | 0.4− | 0.2+ |
| 2001 01 04 | 704 | (1.6+ | 1.3+) | 2003 12 04 | 704 | 0.5+ | 0.5− | 2006 09 01 | 704 | 0.1− | 0.0 |
| 2001 01 05 | 704 | 0.1+ | 0.1+ | 2003 12 04 | 704 | 0.7+ | 0.3+ | 2006 09 01 | 704 | 0.3− | 0.1+ |
| 2001 01 05 | 704 | 0.1+ | 0.6+ | 2003 12 04 | 704 | 0.2+ | 0.6+ | 2006 09 01 | 704 | 0.5− | 0.2+ |
| 2001 01 05 | 704 | 0.8+ | 0.4+ | 2003 12 04 | 704 | 0.9+ | 0.6+ | 2006 09 13 | 644 | 0.3− | 0.1− |
| 2001 01 05 | 704 | 0.2− | 0.4+ | 2003 12 16 | 691 | 0.0 | 0.3− | 2006 09 13 | 644 | 0.2− | 0.1− |
| 2001 01 19 | 699 | 1.4+ | 0.2+ | 2003 12 16 | 691 | 0.1− | 0.2− | 2006 09 13 | 644 | 0.1− | 0.1− |
| 2001 01 19 | 699 | 0.4+ | 0.3+ | 2003 12 16 | 691 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.1− | 0.3+ |
| 2001 01 19 | 699 | 0.8+ | 1.1+ | 2003 12 17 | 644 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.6− | 0.4+ |
| 2001 01 19 | 699 | 0.5+ | 0.1+ | 2003 12 17 | 644 | 0.0 | 0.3+ | 2006 09 18 | 704 | 0.6− | 0.3+ |
| 2001 01 20 | 704 | 0.7+ | 0.3+ | 2003 12 17 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 704 | 0.7− | 0.4+ |
| 2001 01 20 | 704 | 0.9+ | 0.0 | 2003 12 18 | 704 | (1.7− | 1.3+) | 2006 09 18 | 704 | 0.3− | 0.2− |
| 2001 01 20 | 704 | 0.7+ | 0.3+ | 2003 12 18 | 704 | 0.9− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.9+ |
| 2001 01 20 | 704 | 0.4+ | 1.3− | 2003 12 18 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | 1.2+ | 0.2+ |
| 2001 01 20 | 704 | (2.7+ | 0.3−) | 2003 12 18 | 704 | 1.0− | 0.1− | 2006 09 19 | 699 | 0.7+ | 0.0 |
| 2001 01 21 | 704 | 0.3− | 0.1+ | 2003 12 23 | 704 | 0.6+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2001 01 21 | 704 | 0.7+ | 0.9+ | 2003 12 23 | 704 | 1.2+ | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 2001 01 21 | 704 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 1.1+ | 0.8− | 2006 09 19 | 703 | 0.4− | 0.1− |
| 2001 01 21 | 704 | 0.3− | 0.5+ | 2003 12 23 | 704 | 1.4+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2001 01 21 | 704 | 0.9+ | 0.6+ | 2003 12 23 | 704 | 1.0+ | 0.7− | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 2001 01 21 | 704 | 0.4+ | 0.0 | 2003 12 28 | 691 | (0.9− | 1.7−) | 2006 09 25 | 704 | 0.4− | 0.6+ |
| 2001 01 21 | 704 | 0.3+ | 0.3+ | 2003 12 28 | 691 | 1.0− | 0.6+ | 2006 09 25 | 704 | 1.0+ | 0.8+ |
| 2001 01 21 | 704 | 0.1+ | 0.7+ | 2003 12 28 | 691 | 0.0 | 0.3− | 2006 09 25 | 704 | (1.7+ | 0.3−) |
| 2001 01 21 | 704 | 0.0 | 1.0+ | 2003 12 28 | 704 | 0.4− | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.9+ |
| 2001 01 21 | 704 | 1.1+ | 0.9+ | 2003 12 28 | 704 | 1.1+ | 1.0− | 2006 09 29 | 699 | 1.0− | 0.7+ |
| 2001 01 21 | 704 | 0.1− | 0.1− | 2003 12 28 | 699 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 1.0+ |
| 2001 01 21 | 704 | 0.1+ | 0.1+ | 2003 12 28 | 699 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.6− | 0.5+ |
| 2001 01 21 | 704 | 0.4+ | 0.2+ | 2003 12 28 | 704 | 1.0+ | 1.0− | 2006 09 29 | 704 | 0.7+ | 0.5+ |
| 2001 01 21 | 704 | 0.8+ | 0.9+ | 2003 12 28 | 699 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.7+ | 0.7+ |
| 2001 01 21 | 704 | 1.0+ | 0.3− | 2003 12 28 | 699 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.2− | 0.1+ |
| 2001 01 22 | 704 | 0.5+ | 0.6+ | 2004 01 20 | 704 | 1.1+ | 0.8+ | 2006 09 29 | 704 | 0.3+ | 0.3+ |
| 2001 01 22 | 704 | 0.1− | 0.2+ | 2004 01 20 | 704 | 1.0+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.9+ |
| 2001 01 22 | 704 | 0.0 | 0.9+ | 2004 01 20 | 704 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.2− | 0.3+ |
| 2001 01 22 | 704 | 0.4+ | 1.4+ | 2005 04 06 | 691 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.4− | 0.3− |
| 2001 02 03 | 704 | 0.2− | 0.4+ | 2005 04 06 | 691 | 0.7+ | 1.0+ | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2001 02 03 | 704 | 0.2− | 0.2+ | 2005 04 06 | 691 | 0.0 | 1.2+ | 2006 10 02 | G96 | 0.5− | 0.5− |
| 2001 02 03 | 704 | 0.5+ | 0.2− | 2006 08 18 | 699 | (0.1− | 1.7−) | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2001 02 03 | 704 | 0.7+ | 0.4+ | 2006 08 18 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 02 20 | 691 | 1.0− | 0.1− | 2006 08 18 | 699 | (0.1+ | 1.5+) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 02 20 | 691 | 0.3− | 0.1+ | 2006 08 18 | 704 | 0.1− | 1.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 02 20 | 691 | 0.1− | 0.1+ | 2006 08 18 | 699 | 0.0 | 0.1− | 2006 10 22 | 703 | 1.3− | 1.0− |
| 2003 09 29 | 704 | 0.3+ | 0.2− | 2006 08 18 | 699 | 0.7− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 1.2− |
| 2003 09 29 | 704 | 0.1+ | 0.4− | 2006 08 18 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.8− |
| 2003 09 29 | 704 | 0.0 | 0.1− | 2006 08 18 | 699 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 704 | 0.0 | 1.0− | 2006 08 18 | 704 | 0.1− | 0.0 | 2006 11 10 | 704 | 0.4− | 0.2− |
| 2003 09 29 | 704 | 0.1− | 0.4− | 2006 08 18 | 699 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.7− | 1.9+ |
| 2003 09 30 | 704 | 1.0+ | 1.0− | 2006 08 18 | 704 | 0.1− | 0.7+ | 2006 11 10 | 704 | 0.3+ | 0.2− |
| 2003 09 30 | 704 | 1.1+ | 0.7+ | 2006 08 18 | 699 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.3− | 0.4+ |
| 2003 09 30 | 704 | 1.2+ | 0.9+ | 2006 08 18 | 699 | 0.6− | 0.7+ | | | | |
| 2003 09 30 | 704 | (1.5+ | 0.2+) | 2006 08 24 | 704 | 0.6+ | 0.5+ | | | | |

**(138893)∗ 2000 YH$_{66}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 106.08255 | | (2000.0) | | −0.38084773 | +0.86988635 |
| $n$ | 0.77582563 | $\omega$ | 341.26851 | | −0.80308946 | −0.47920872 |
| $a$ | 1.1729873 | $\Omega$ | 265.33521 | | −0.45826010 | +0.11686208 |
| $e$ | 0.7436938 | $i$ | 18.33031 | | | |
| $P$ | 1.27 | $H$ | 17.8 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.6− | 0.5+ | 2001 01 04 | 704 | 0.5− | 0.1− | 2002 01 06 | 644 | 0.2− | 0.2+ |
| 2000 12 30 | 704 | 0.5+ | 0.3+ | 2001 01 04 | 704 | (1.7− | 0.9+) | 2002 09 07 | 540 | 0.2− | 0.1+ |
| 2000 12 30 | 704 | 0.1− | 0.4− | 2001 01 04 | 704 | 0.0 | 0.5− | 2002 09 07 | 540 | 0.2− | 0.2+ |
| 2000 12 30 | 704 | 0.3+ | 1.0+ | 2001 01 04 | 704 | 0.2+ | 0.6+ | 2002 09 09 | 848 | 1.2+ | 0.8+ |
| 2000 12 30 | 704 | 0.1− | 0.0 | 2001 01 04 | 704 | 0.1+ | 0.0 | 2002 09 09 | 848 | 0.8− | 0.8− |
| 2000 12 31 | 608 | 0.8+ | 1.3+ | 2001 01 04 | 704 | 0.2+ | 0.4− | 2002 09 09 | 848 | 0.1− | 0.4− |
| 2000 12 31 | 608 | (0.9+ | 2.3+) | 2001 01 04 | 704 | 0.0 | 0.4− | 2002 09 09 | 848 | 1.2+ | 0.2− |
| 2000 12 31 | 608 | 0.7+ | 1.4+ | 2001 01 04 | 670 | (1.8+ | 2.0−) | 2002 11 25 | 649 | (0.9− | 1.5+) |
| 2000 12 31 | 046 | 0.6− | 1.3− | 2001 01 04 | 670 | 1.0+ | 1.1− | 2002 11 25 | 649 | 1.0+ | 0.7− |
| 2000 12 31 | 046 | 1.5+ | 0.2− | 2001 01 09 | 540 | 0.1− | 0.6− | 2002 11 25 | 649 | 0.7− | 0.3+ |
| 2000 12 31 | 046 | 0.0 | 0.2+ | 2001 01 09 | 540 | 1.3− | 0.2− | 2003 12 26 | 461 | 0.1+ | 0.8+ |
| 2000 12 31 | 046 | 0.2− | 0.2− | 2001 01 09 | 540 | 0.2− | 1.0− | 2003 12 26 | 461 | 1.0− | 0.9+ |
| 2001 01 01 | 557 | 0.1− | 0.3+ | 2001 01 13 | 118 | 0.1+ | 0.1− | 2004 11 10 | 696 | 0.6− | 0.9− |
| 2001 01 01 | 557 | 0.1− | 0.2+ | 2001 01 13 | 118 | 0.5+ | 0.2− | 2004 11 10 | 696 | 0.2− | 0.2− |
| 2001 01 01 | 557 | 0.2− | 0.4+ | 2001 01 14 | 118 | 0.5− | 0.3− | 2005 12 07 | 850 | (1.9+ | 1.2−) |
| 2001 01 01 | 557 | 0.2− | 0.1+ | 2001 01 14 | 118 | 0.1− | 0.2− | 2005 12 07 | 850 | 0.4+ | 0.1− |
| 2001 01 01 | 557 | 0.4− | 0.3+ | 2001 01 17 | 608 | 0.3+ | 1.4− | 2005 12 07 | 850 | (3.0+ | 0.6−) |
| 2001 01 01 | 557 | 1.2− | 0.6+ | 2001 01 17 | 608 | 0.1+ | 1.1− | 2005 12 18 | A13 | 0.8− | 0.6− |
| 2001 01 02 | 165 | (1.9+ | 1.5+) | 2001 01 17 | 608 | 0.2+ | 1.0− | 2005 12 18 | A13 | 0.5+ | 1.1+ |
| 2001 01 02 | 165 | 0.6+ | 0.3+ | 2001 01 22 | 608 | 1.0+ | 0.9+ | 2005 12 25 | G96 | 0.2+ | 0.1− |
| 2001 01 02 | 165 | 0.9+ | 0.0 | 2001 01 22 | 608 | 1.0+ | 0.9+ | 2005 12 25 | G96 | 0.2+ | 0.1− |
| 2001 01 02 | 165 | 0.2+ | 0.9+ | 2001 01 22 | 608 | 1.0+ | 1.0+ | 2005 12 25 | G96 | 0.1+ | 0.1− |
| 2001 01 02 | 557 | 0.3+ | 0.5+ | 2001 01 29 | 360 | 0.6− | 0.5− | 2005 12 25 | G96 | 0.3+ | 0.1− |
| 2001 01 02 | 557 | 0.5+ | 0.2+ | 2001 01 29 | 360 | 0.2+ | 0.2− | 2005 12 28 | 691 | 0.4+ | 0.5+ |
| 2001 01 02 | 557 | 1.0− | 0.0 | 2001 01 29 | 360 | 0.4− | 0.5− | 2005 12 28 | 691 | 0.2− | 0.4+ |
| 2001 01 02 | 557 | 0.9+ | 0.4+ | 2001 02 02 | 711 | (1.8− | 0.7+) | 2005 12 28 | 691 | 0.0 | 0.3+ |
| 2001 01 02 | 557 | 0.3− | 0.8+ | 2001 02 02 | 711 | (1.1− | 2.1−) | 2006 01 06 | G96 | 0.2+ | 0.1− |
| 2001 01 03 | 704 | 0.0 | 0.1− | 2001 02 15 | 557 | 0.2− | 0.4− | 2006 01 06 | G96 | 0.2− | 0.3− |
| 2001 01 03 | 704 | 0.1− | 0.4+ | 2001 02 15 | 557 | 0.0 | 1.0− | 2006 01 06 | G96 | 0.3+ | 0.3− |
| 2001 01 03 | 704 | 0.5+ | 0.0 | 2001 02 15 | 557 | 0.3+ | 0.1+ | 2006 01 06 | G96 | 0.2− | 0.3− |
| 2001 01 03 | 704 | 0.4+ | 0.3+ | 2001 11 16 | 046 | 0.3+ | 0.4− | 2006 01 13 | 941 | 1.2− | 0.7− |
| 2001 01 03 | 704 | 0.1− | 0.5+ | 2001 11 16 | 046 | 0.7− | 0.3− | 2006 01 13 | 941 | 0.8− | 0.7− |
| 2001 01 03 | 104 | (0.7− | 3.0−) | 2001 11 16 | 046 | 0.6− | 0.0 | 2006 01 13 | 941 | 0.5− | 0.9− |
| 2001 01 03 | 104 | (0.7− | 3.2−) | 2001 11 16 | 046 | 0.4− | 0.0 | 2006 01 13 | 941 | 0.3+ | 0.9− |
| 2001 01 03 | 104 | (1.7− | 2.6−) | 2001 11 16 | 046 | 0.7− | 0.6− | 2006 01 24 | G96 | 0.3+ | 0.0 |
| 2001 01 03 | 557 | 0.6− | 0.1− | 2001 11 17 | 046 | 0.4− | 0.9− | 2006 01 24 | G96 | 0.0 | 0.1+ |
| 2001 01 03 | 557 | 0.5− | 0.3− | 2001 11 17 | 046 | 0.7− | 1.1− | 2006 01 24 | G96 | 0.9− | 0.2− |
| 2001 01 03 | 557 | 0.0 | 0.1− | 2001 11 17 | 046 | 0.6+ | 0.1− | 2006 01 24 | G96 | 0.2− | 0.2− |
| 2001 01 03 | 557 | 0.0 | 0.2− | 2001 11 17 | 046 | 0.1− | 0.7− | 2006 01 28 | G96 | 0.0 | 0.2− |
| 2001 01 03 | 557 | 0.2− | 0.1− | 2001 11 17 | 046 | 0.2− | 0.1+ | 2006 01 28 | G96 | 0.7+ | 0.0 |
| 2001 01 03 | 046 | 1.4− | 0.4+ | 2001 11 17 | 046 | 0.2+ | 0.0 | 2006 01 28 | G96 | 0.6− | 0.0 |
| 2001 01 03 | 046 | 0.7− | 0.2+ | 2001 11 18 | 715 | 1.1+ | 0.5+ | 2006 01 28 | G96 | 0.5+ | 0.1+ |
| 2001 01 04 | 704 | 0.2+ | 0.2+ | 2001 11 18 | 715 | 0.1+ | 0.3− | | | | |
| 2001 01 04 | 704 | 0.4− | 0.9+ | 2001 11 18 | 715 | 0.1+ | 0.1− | | | | |

**(138894)∗ 2000 YW$_{67}$**

Discovered 2000 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.95547 | | (2000.0) | | −0.32612468 | −0.94075123 |
| $n$ | 0.28519036 | $\omega$ | 177.48485 | | +0.86556772 | −0.25765665 |
| $a$ | 2.2858417 | $\Omega$ | 291.53651 | | +0.38004633 | −0.22045448 |
| $e$ | 0.1915124 | $i$ | 5.73164 | | | |
| $P$ | 3.46 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.6− | 0.1− | 2001 03 15 | 608 | 0.0 | 0.3+ | 2003 11 19 | 704 | 0.1+ | 0.3+ |
| 1994 01 10 | 691 | 0.2− | 0.2− | 2001 03 15 | 608 | 0.2+ | 0.6− | 2003 11 19 | 704 | 0.3+ | 0.0 |
| 1994 01 10 | 691 | 0.3− | 0.2− | 2001 03 18 | 704 | 0.5+ | 0.2+ | 2003 11 19 | 704 | 0.7+ | 0.5− |
| 1994 04 05 | 691 | 0.4+ | 0.5− | 2001 03 18 | 704 | 1.5+ | 0.7+ | 2003 11 19 | 704 | 0.4+ | 0.1+ |
| 1994 04 05 | 691 | 0.1+ | 0.7− | 2001 03 18 | 704 | 1.2− | 0.6− | 2003 11 24 | 703 | 0.2− | 1.0− |
| 1994 04 05 | 691 | 0.6+ | 0.4− | 2001 03 18 | 704 | 0.3+ | 0.5+ | 2003 11 24 | 703 | 0.7− | 0.3− |
| 2000 11 27 | 704 | 0.6+ | 0.8+ | 2001 03 18 | 704 | 0.3− | 0.4+ | 2003 11 24 | 703 | 1.0+ | 1.7− |
| 2000 11 27 | 704 | 1.8+ | 0.5+ | 2001 04 17 | 704 | 0.3+ | 1.3+ | 2003 11 24 | 703 | 0.2− | 0.4− |
| 2000 11 27 | 704 | 0.1+ | 0.8+ | 2001 04 17 | 704 | 0.9+ | 0.4+ | 2003 12 10 | 644 | 0.1− | 0.2+ |
| 2000 11 27 | 704 | 0.1− | 0.0 | 2001 04 17 | 704 | 0.6− | 0.3+ | 2003 12 10 | 644 | 0.4+ | 0.0 |
| 2000 11 27 | 704 | 0.0 | 0.7+ | 2003 09 30 | 704 | 0.1+ | 0.8+ | 2003 12 10 | 644 | 0.3+ | 0.0 |
| 2000 12 28 | 704 | 0.2+ | 0.5+ | 2003 09 30 | 704 | 0.2+ | 0.5+ | 2003 12 19 | 704 | 0.8− | 0.4+ |
| 2000 12 28 | 704 | 0.3− | 1.0+ | 2003 09 30 | 704 | 0.1− | 0.2+ | 2003 12 19 | 704 | 0.2− | 1.7− |
| 2000 12 28 | 704 | 0.2+ | 0.6+ | 2003 09 30 | 704 | 0.2+ | 0.4+ | 2003 12 19 | 704 | 0.2− | 0.1− |
| 2000 12 28 | 704 | 0.3+ | 0.9+ | 2003 09 30 | 704 | 0.4+ | 0.1+ | 2003 12 19 | 704 | 0.6− | 0.2− |
| 2000 12 28 | 704 | 0.3− | 1.1− | 2003 10 05 | 704 | 0.3+ | 0.1− | 2003 12 23 | 704 | 0.4+ | 0.6− |
| 2001 01 03 | 704 | 0.1+ | 0.0 | 2003 10 05 | 704 | 1.1− | 0.2− | 2003 12 23 | 704 | 0.5+ | 1.6+ |
| 2001 01 03 | 704 | 0.2− | 0.1+ | 2003 10 05 | 704 | 0.0 | 0.2− | 2003 12 23 | 704 | 1.0+ | 0.8+ |
| 2001 01 03 | 704 | 0.1− | 0.4− | 2003 10 05 | 704 | 0.6− | 0.2− | 2003 12 23 | 704 | 0.1− | 0.2− |
| 2001 01 03 | 704 | 0.1− | 0.1− | 2003 10 05 | 704 | 0.1− | 0.2+ | 2003 12 23 | 704 | 1.1+ | 0.0 |
| 2001 01 03 | 704 | 0.6+ | 0.2− | 2003 10 17 | 699 | 0.3− | 0.1− | 2003 12 26 | 608 | 0.2+ | 1.0+ |
| 2001 01 20 | 704 | 0.3+ | 0.2+ | 2003 10 17 | 699 | 0.2+ | 0.3− | 2003 12 26 | 608 | 0.2+ | 1.1+ |
| 2001 01 20 | 704 | 0.0 | 1.1+ | 2003 10 17 | 699 | 0.4+ | 0.4− | 2003 12 26 | 608 | 0.4− | 0.7+ |
| 2001 01 20 | 704 | 0.7+ | 0.0 | 2003 10 17 | 699 | 0.1− | 0.4+ | 2003 12 28 | 704 | 0.0 | 0.1+ |
| 2001 01 26 | 704 | 0.4+ | 0.4+ | 2003 10 21 | 691 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.3− | 0.5− |
| 2001 01 26 | 704 | 0.1+ | 0.1− | 2003 10 21 | 691 | 0.0 | 0.0 | 2003 12 28 | 704 | 0.1− | 0.2− |
| 2001 01 26 | 704 | 0.3+ | 0.0 | 2003 10 21 | 691 | 0.2+ | 0.1− | 2003 12 28 | 704 | 0.2+ | 0.2+ |
| 2001 01 26 | 704 | 0.1+ | 0.1− | 2003 10 22 | 704 | 0.2+ | 0.2+ | 2006 08 21 | 644 | 0.1+ | 0.0 |
| 2001 01 26 | 704 | 0.3− | 0.2− | 2003 10 22 | 704 | 0.2+ | 0.4+ | 2006 08 21 | 644 | 0.4− | 0.1+ |
| 2001 02 01 | 106 | 0.6− | 0.5− | 2003 10 22 | 704 | 0.0 | 0.2+ | 2006 08 21 | 644 | 0.1− | 0.2+ |
| 2001 02 01 | 106 | 1.5+ | 0.1− | 2003 10 22 | 704 | 0.0 | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.1− |
| 2001 02 02 | 106 | 0.3− | 0.1− | 2003 10 22 | 704 | 0.0 | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.1+ |
| 2001 02 17 | 608 | 0.0 | 0.9+ | 2003 10 29 | 699 | 0.7+ | 0.1− | 2006 09 14 | 691 | 0.3− | 0.2+ |
| 2001 02 17 | 608 | 0.2+ | 0.8+ | 2003 10 29 | 699 | 0.2− | 0.5− | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2001 02 17 | 608 | 0.1+ | 1.0+ | 2003 10 29 | 699 | 0.4− | 0.5+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2001 02 19 | 704 | 0.2− | 0.6+ | 2003 10 29 | 699 | 0.2− | 0.6− | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2001 02 19 | 704 | 0.1− | 0.2− | 2003 11 02 | 704 | 1.3− | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2001 02 19 | 704 | 0.1− | 0.5+ | 2003 11 02 | 704 | 1.3− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2001 02 19 | 704 | 0.0 | 0.6+ | 2003 11 02 | 704 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 02 19 | 704 | 0.1+ | 1.1+ | 2003 11 02 | 704 | 0.5− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2001 03 15 | 699 | 0.2− | 0.4+ | 2003 11 02 | 704 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.3− | 0.4+ |
| 2001 03 15 | 699 | 0.8+ | 0.5+ | 2003 11 18 | 644 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.4+ |
| 2001 03 15 | 699 | 0.0 | 0.8+ | 2003 11 18 | 644 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 03 15 | 699 | 0.4+ | 0.8+ | 2003 11 18 | 644 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2001 03 15 | 608 | 0.3+ | 2.0+ | 2003 11 19 | 704 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.2+ |

**(138895)∗ 2000 YL$_{74}$ = 1994 PS$_{9}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17516)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.46799 | | (2000.0) | | +0.50489363 | −0.86318021 |
| $n$ | 0.18926132 | $\omega$ | 53.25668 | | +0.78752310 | +0.45991216 |
| $a$ | 3.0044257 | $\Omega$ | 6.41958 | | +0.35339750 | +0.20832843 |
| $e$ | 0.2115316 | $i$ | 0.78491 | | | |
| $P$ | 5.21 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | 0.7+ | 1.2− | 2005 10 27 | G96 | 0.2+ | 0.5− | 2005 11 29 | 699 | 0.7− | 0.1− |
| 1994 08 10 | 809 | 1.2+ | 1.9− | 2005 10 27 | G96 | 0.4+ | 0.5− | 2005 11 29 | 699 | 0.4+ | 0.2+ |
| 1994 08 10 | 809 | (1.0+ | 4.2−) | 2005 10 27 | G96 | 0.1+ | 0.4− | 2005 11 29 | 699 | 0.1+ | 0.3− |
| 1994 08 11 | 809 | (3.9+ | 0.9−) | 2005 10 27 | G96 | 0.2− | 0.5− | 2005 12 01 | 704 | 0.5+ | 0.1− |
| 1994 08 11 | 809 | (3.3+ | 1.1−) | 2005 11 01 | 704 | 0.4+ | 0.3+ | 2005 12 01 | 704 | 0.3− | 0.9+ |
| 1994 08 11 | 809 | (3.6+ | 1.1−) | 2005 11 01 | 704 | 0.4+ | 0.7+ | 2005 12 01 | 704 | 0.7− | 0.1− |
| 1999 08 08 | 691 | 0.1− | 0.2+ | 2005 11 01 | 704 | 0.5+ | 1.1+ | 2005 12 01 | 704 | 0.3+ | 0.5+ |
| 1999 08 08 | 691 | 0.3− | 0.2+ | 2005 11 01 | 704 | 0.6+ | 0.9+ | 2005 12 04 | 704 | 0.3+ | 0.4+ |
| 1999 08 08 | 691 | 0.5− | 0.4+ | 2005 11 01 | 704 | 0.3+ | 1.1+ | 2005 12 04 | 704 | 0.2+ | 0.0 |
| 1999 09 05 | 691 | 0.3+ | 0.0 | 2005 11 02 | 695 | 0.0 | 0.1+ | 2005 12 04 | 704 | 0.1− | 1.0+ |
| 1999 09 05 | 691 | 0.4+ | 0.2− | 2005 11 02 | 695 | 0.2− | 0.1+ | 2005 12 04 | 704 | 0.1+ | 0.2− |
| 1999 09 05 | 691 | 0.2+ | 0.3− | 2005 11 02 | 695 | 0.1− | 0.0 | 2005 12 04 | 704 | 0.9+ | 0.3− |
| 2000 11 29 | 704 | (2.5− | 0.5+) | 2005 11 04 | 704 | 0.1+ | 1.1− | 2005 12 05 | 691 | 0.1− | 0.1− |
| 2000 11 29 | 704 | 0.5− | 0.4+ | 2005 11 04 | 704 | 0.4+ | 0.3− | 2005 12 05 | 691 | 0.1− | 0.0 |
| 2000 11 29 | 704 | 0.1+ | 0.1− | 2005 11 04 | 704 | 0.1+ | 0.1+ | 2005 12 05 | 691 | 0.2− | 0.2− |
| 2000 11 29 | 704 | 0.2− | 0.1+ | 2005 11 04 | 704 | 0.4− | 0.5− | 2005 12 05 | G96 | 0.1+ | 0.1− |
| 2000 12 21 | 704 | 0.7+ | 1.6− | 2005 11 04 | 704 | 0.1− | 0.4+ | 2005 12 05 | G96 | 0.2− | 0.2− |
| 2000 12 21 | 704 | 0.4− | 0.1+ | 2005 11 05 | 691 | 0.2+ | 0.0 | 2005 12 05 | G96 | 0.0 | 0.2− |
| 2000 12 21 | 704 | (2.4− | 0.5+) | 2005 11 05 | 691 | 0.2+ | 0.0 | 2005 12 05 | G96 | 0.2− | 0.1− |
| 2000 12 30 | 704 | 0.2+ | 0.3+ | 2005 11 05 | 691 | 0.0 | 0.0 | 2005 12 05 | 699 | 0.4+ | 0.1+ |
| 2000 12 30 | 704 | 1.1− | 0.2+ | 2005 11 06 | 291 | 0.3− | 0.2− | 2005 12 05 | 699 | 0.1− | 0.8− |
| 2000 12 30 | 704 | 0.2+ | 0.5− | 2005 11 06 | 291 | 0.4− | 0.1− | 2005 12 05 | 699 | 0.1+ | 0.4+ |
| 2000 12 30 | 704 | 0.3+ | 0.1+ | 2005 11 06 | 291 | 0.4− | 0.2− | 2005 12 05 | 699 | (2.0+ | 0.0 ) |
| 2001 01 03 | 704 | 0.3− | 0.3− | 2005 11 07 | 704 | 0.1+ | 0.2+ | 2005 12 07 | 691 | 0.1− | 0.0 |
| 2001 01 03 | 704 | 0.5− | 0.4+ | 2005 11 07 | 704 | 0.1− | 0.3+ | 2005 12 07 | 691 | 0.7+ | 0.0 |
| 2001 01 03 | 704 | 0.2+ | 0.9− | 2005 11 07 | 704 | 0.1+ | 0.0 | 2005 12 07 | 691 | 0.2− | 0.0 |
| 2001 01 03 | 704 | 0.5+ | 0.1− | 2005 11 07 | 704 | 0.3+ | 0.1+ | 2005 12 09 | 704 | 0.6− | 0.6+ |
| 2001 01 03 | 704 | 0.0 | 0.1− | 2005 11 07 | 704 | 0.1− | 0.1+ | 2005 12 09 | 704 | 1.4− | 0.6+ |
| 2004 07 21 | E12 | 0.9− | 0.2+ | 2005 11 11 | 691 | 0.0 | 0.0 | 2005 12 09 | 704 | 0.3− | 0.0 |
| 2004 07 21 | E12 | 0.1− | 0.0 | 2005 11 11 | 691 | 0.0 | 0.1− | 2006 03 03 | G96 | 0.3+ | 0.3+ |
| 2004 07 21 | E12 | 0.1+ | 1.4+ | 2005 11 11 | 691 | 0.2− | 0.0 | 2006 03 03 | G96 | 0.4+ | 0.1+ |
| 2004 07 21 | E12 | 0.5− | 0.5+ | 2005 11 20 | 699 | 0.4+ | 0.7− | 2006 03 03 | G96 | 0.4+ | 0.2+ |
| 2005 10 23 | 644 | 0.1− | 0.1+ | 2005 11 20 | 699 | 0.7+ | 0.6− | 2006 03 03 | G96 | 0.2− | 0.2+ |
| 2005 10 23 | 644 | 0.0 | 0.1+ | 2005 11 20 | 699 | 0.6+ | 0.2− | 2006 03 25 | G96 | 0.1− | 0.5+ |
| 2005 10 23 | 644 | 0.0 | 0.2+ | 2005 11 26 | G96 | 0.1− | 0.2− | 2006 03 25 | G96 | 0.3− | 0.3+ |
| 2005 10 23 | 703 | 0.6+ | 0.2+ | 2005 11 26 | G96 | 0.1− | 0.3− | 2006 03 25 | G96 | 0.3− | 0.5+ |
| 2005 10 23 | 703 | 0.1+ | 0.0 | 2005 11 26 | G96 | 0.1− | 0.4− | 2006 03 25 | G96 | 0.3− | 0.5+ |
| 2005 10 23 | 703 | 0.0 | 0.8+ | 2005 11 26 | G96 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2005 10 23 | 703 | (0.3+ | 1.9+) | 2005 11 28 | 703 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2005 10 25 | 699 | 1.0+ | 0.2+ | 2005 11 28 | 703 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2005 10 25 | 699 | 0.3+ | 0.1− | 2005 11 28 | 703 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2005 10 25 | 699 | 1.1− | 0.8− | 2005 11 28 | 703 | 0.6− | 1.2− | 2006 12 01 | G96 | 1.0+ | 0.4+ |
| 2005 10 25 | 699 | 0.2+ | 1.3+ | 2005 11 29 | 699 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2005 10 26 | 699 | 0.2+ | 1.0+ | 2005 11 29 | 699 | 0.9+ | 0.3− | 2006 12 01 | G96 | 0.4+ | 0.2− |
| 2005 10 26 | 699 | 0.5− | 0.6+ | 2005 11 29 | 699 | 0.8− | 0.5+ | 2006 12 01 | G96 | 0.5− | 0.4+ |
| 2005 10 26 | 699 | 0.1− | 0.6+ | 2005 11 29 | 699 | 0.0 | 0.8+ | | | | |
| 2005 10 26 | 699 | 0.8+ | 0.1+ | 2005 11 29 | 699 | 0.5+ | 0.2− | | | | |

**(138896)∗ 2000 YN$_{74}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.54479 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.30697340 | $\omega$ | 184.65952 | | −0.15233040 | −0.98621676 |
| $a$ | 2.1763841 | $\Omega$ | 274.11234 | | +0.90885437 | −0.11410496 |
| $e$ | 0.1634328 | $i$ | 3.71292 | | +0.38830295 | −0.11981883 |
| $P$ | 3.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 28 | 566 | 0.2+ | 0.2+ | 2003 10 30 | 704 | 0.5− | 0.2− | 2006 08 24 | 704 | 0.9+ | 1.3+ |
| 1998 01 28 | 566 | 0.2− | 0.1− | 2003 10 30 | 704 | 0.1− | 0.3− | 2006 08 24 | 704 | 1.1− | 0.2+ |
| 1998 01 28 | 566 | 0.4+ | 0.1+ | 2003 11 02 | 704 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.0 |
| 2000 11 21 | 704 | 0.0 | 0.2− | 2003 11 02 | 704 | 0.4− | 0.2− | 2006 08 27 | 699 | 0.8+ | 0.1− |
| 2000 11 21 | 704 | 0.2− | 0.7− | 2003 11 02 | 704 | 0.5− | 0.0 | 2006 08 27 | 699 | 1.0+ | 0.0 |
| 2000 11 21 | 704 | 0.6− | 0.1− | 2003 11 02 | 704 | 0.6− | 0.2+ | 2006 08 27 | 699 | 0.6+ | 0.4+ |
| 2000 11 21 | 704 | 0.3+ | 0.1− | 2003 11 02 | 704 | 0.7− | 0.1+ | 2006 08 29 | 703 | 0.3+ | 0.3+ |
| 2000 11 21 | 704 | 0.5− | 0.1− | 2003 11 19 | 446 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.3− | 0.8+ |
| 2000 12 21 | 704 | 0.1+ | 0.3+ | 2003 11 19 | 446 | 0.0 | 0.6− | 2006 08 29 | 703 | 0.7− | 0.7+ |
| 2000 12 21 | 704 | 0.6+ | 0.1− | 2003 11 20 | 704 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.7+ |
| 2000 12 21 | 704 | 1.0+ | 0.3+ | 2003 11 20 | 704 | 0.2+ | 0.0 | 2006 09 01 | 704 | 0.2+ | 0.2− |
| 2000 12 21 | 704 | 0.0 | 0.9+ | 2003 11 20 | 704 | 0.1− | 0.1− | 2006 09 01 | 704 | 0.4+ | 0.1− |
| 2000 12 21 | 704 | 0.4+ | 0.6+ | 2003 11 20 | 704 | 0.0 | 0.2+ | 2006 09 01 | 704 | 1.3+ | 1.4− |
| 2000 12 30 | 704 | 0.2− | 0.1− | 2003 11 20 | 704 | 0.3+ | 0.4− | 2006 09 01 | 704 | 0.4− | 0.2− |
| 2000 12 30 | 704 | 0.1− | 0.2− | 2003 11 21 | 704 | 0.6− | 0.4+ | 2006 09 12 | 703 | 0.1− | 0.6− |
| 2000 12 30 | 704 | 0.2− | 0.3− | 2003 11 21 | 704 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.6− | 0.8+ |
| 2000 12 30 | 704 | 0.6− | 0.3− | 2003 11 21 | 704 | 0.5− | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.7− |
| 2000 12 30 | 704 | 0.3− | 0.2− | 2003 11 21 | 704 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.3− | 0.3− |
| 2001 01 03 | 704 | 0.1+ | 0.4+ | 2003 11 21 | 704 | 0.6− | 0.1+ | 2006 09 16 | 699 | 0.7+ | 0.5+ |
| 2001 01 03 | 704 | 0.1− | 0.0 | 2003 11 22 | 691 | 0.1− | 0.3− | 2006 09 16 | 699 | 0.3− | 0.6− |
| 2001 01 03 | 704 | 0.1+ | 0.0 | 2003 11 22 | 691 | 1.2− | 0.4− | 2006 09 16 | 699 | 0.1− | 0.8+ |
| 2001 01 03 | 704 | 0.5− | 0.1− | 2003 11 22 | 691 | 0.0 | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.3− |
| 2001 01 03 | 704 | 0.2− | 0.2− | 2003 11 23 | 291 | 0.2+ | 0.3− | 2006 09 16 | 644 | 0.3− | 0.1− |
| 2001 02 19 | 704 | 0.5− | 0.2− | 2003 11 23 | 291 | 0.2+ | 0.1− | 2006 09 16 | 644 | 0.4− | 0.1+ |
| 2001 02 19 | 704 | 0.1− | 0.2+ | 2003 11 23 | 291 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.9− | 0.1− |
| 2001 02 19 | 704 | 0.4+ | 1.2+ | 2003 11 24 | 704 | (0.1+ | 1.6+) | 2006 09 18 | 704 | 0.1+ | 0.0 |
| 2001 02 19 | 704 | 0.3+ | 0.7+ | 2003 11 24 | 704 | 0.1+ | 1.4+ | 2006 09 18 | 704 | 0.5− | 0.4− |
| 2003 09 20 | 644 | 0.1+ | 0.2+ | 2003 11 24 | 704 | (0.2− | 2.2+) | 2006 09 18 | 704 | 0.2− | 0.7+ |
| 2003 09 20 | 644 | 0.3+ | 0.2+ | 2003 11 24 | 704 | 1.4+ | 0.1+ | 2006 09 18 | 704 | 0.4− | 0.7+ |
| 2003 09 20 | 644 | 0.2+ | 0.1+ | 2003 11 24 | 704 | 0.7+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.2− |
| 2003 09 25 | 608 | 0.1− | 1.2− | 2003 11 26 | 699 | 0.9+ | 0.7− | 2006 09 19 | 703 | 0.4+ | 0.1− |
| 2003 09 25 | 608 | 0.4+ | 1.0− | 2003 11 26 | 699 | 0.7− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.2− |
| 2003 09 25 | 608 | 0.1− | 0.8− | 2003 11 26 | 699 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.9− | 0.4− |
| 2003 09 27 | 704 | 0.4− | 0.1+ | 2003 11 26 | 699 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.8− | 1.1− |
| 2003 09 27 | 704 | 0.7+ | 0.4+ | 2003 12 01 | 704 | 0.2− | 1.2+ | 2006 09 19 | 699 | 0.1− | 0.1− |
| 2003 09 27 | 704 | 0.4+ | 0.6+ | 2003 12 01 | 704 | 0.7+ | 0.9+ | 2006 09 19 | 703 | 0.8− | 0.1− |
| 2003 09 27 | 704 | 0.1− | 0.2+ | 2003 12 01 | 704 | (2.6+ | 2.5−) | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 2003 09 27 | 704 | 0.2+ | 0.1+ | 2003 12 10 | 644 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.5− | 0.2+ |
| 2003 10 06 | 608 | 0.2− | 0.3− | 2003 12 10 | 644 | 0.4− | 0.4+ | 2006 09 25 | 704 | 0.6+ | 0.2+ |
| 2003 10 06 | 608 | 0.2− | 0.6− | 2003 12 10 | 644 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.0 |
| 2003 10 06 | 608 | 0.1− | 0.3− | 2003 12 20 | 704 | 0.8− | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.2+ |
| 2003 10 15 | 699 | 0.4− | 0.3− | 2003 12 20 | 704 | 0.2− | 1.3− | 2006 09 25 | 704 | 0.6− | 0.2− |
| 2003 10 15 | 699 | 0.6+ | 0.3− | 2003 12 20 | 704 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.8+ |
| 2003 10 15 | 699 | 1.0+ | 0.4+ | 2003 12 20 | 704 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.0 |
| 2003 10 15 | 699 | 0.1− | 0.5− | 2003 12 20 | 704 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2003 10 17 | 691 | 0.3+ | 0.0 | 2003 12 22 | 704 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.3+ | 1.1− |
| 2003 10 17 | 691 | 0.1+ | 0.1+ | 2003 12 22 | 704 | 0.6+ | 0.6+ | 2006 10 01 | 704 | 0.8+ | 1.0+ |
| 2003 10 17 | 691 | 0.2+ | 0.0 | 2003 12 22 | 704 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.2+ | 1.0+ |
| 2003 10 20 | 644 | 0.1+ | 0.1+ | 2003 12 22 | 704 | 0.5+ | 0.4− | 2006 10 01 | 704 | 0.4+ | 1.0+ |
| 2003 10 20 | 644 | 0.2+ | 0.1+ | 2003 12 22 | 704 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.5− |
| 2003 10 20 | 644 | 0.1+ | 0.2+ | 2003 12 27 | 704 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.4+ |
| 2003 10 22 | 704 | 0.3+ | 0.5+ | 2003 12 27 | 704 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2003 10 22 | 704 | 0.2+ | 0.7+ | 2003 12 27 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.4− |
| 2003 10 22 | 704 | 0.6− | 0.6− | 2003 12 27 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.8+ | 0.5− |
| 2003 10 22 | 704 | 0.1+ | 0.0 | 2003 12 27 | 704 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.6+ |
| 2003 10 22 | 704 | 0.1+ | 0.6− | 2006 08 24 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2003 10 30 | 704 | 0.0 | 0.1+ | 2006 08 24 | 704 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.3− |

**(138897)∗ 2000 YV$_{77}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.38558 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.30269555 | $\omega$ | 200.77076 | | −0.38795266 | −0.92019986 |
| $a$ | 2.1968413 | $\Omega$ | 272.08649 | | +0.85282197 | −0.33691314 |
| $e$ | 0.1096952 | $i$ | 2.99425 | | +0.34955317 | −0.19930317 |
| $P$ | 3.26 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 704 | 0.1+ | 1.2+ | 2003 11 03 | 704 | 0.2− | 0.7+ | 2005 05 12 | 644 | 0.3+ | 0.4+ |
| 2000 11 29 | 704 | 0.4− | 0.1− | 2003 11 03 | 704 | 0.2− | 0.2+ | 2005 05 12 | 644 | 0.6+ | 0.7+ |
| 2000 11 29 | 704 | 0.5− | 0.8+ | 2003 11 03 | 704 | 0.2+ | 0.3− | 2005 05 16 | 691 | 0.1− | 0.4+ |
| 2000 11 29 | 704 | 0.4− | 0.3− | 2003 11 03 | 704 | 0.4− | 0.4+ | 2005 05 16 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 704 | 0.3+ | 0.1− | 2003 11 03 | 704 | 0.3− | 0.4+ | 2005 05 16 | 691 | 0.5+ | 0.9+ |
| 2000 12 21 | 704 | 0.2− | 0.1+ | 2003 11 03 | 704 | 0.5− | 0.3+ | 2005 05 18 | 644 | 0.2+ | 0.5+ |
| 2000 12 21 | 704 | 0.1+ | 0.1+ | 2003 11 03 | 704 | 0.8− | 0.1+ | 2005 05 18 | 644 | 0.2+ | 0.4+ |
| 2000 12 21 | 704 | 0.2+ | 0.2− | 2003 11 03 | 704 | 0.4− | 0.2− | 2005 05 18 | 644 | 0.1− | 0.3+ |
| 2000 12 21 | 704 | 0.4− | 0.5+ | 2003 11 18 | 644 | 0.5− | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.2− |
| 2000 12 21 | 704 | 0.6− | 0.7− | 2003 11 18 | 644 | 0.3− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.1− |
| 2000 12 30 | 704 | 0.2+ | 0.3− | 2003 11 18 | 644 | 0.3− | 0.2− | 2006 08 24 | 644 | 0.6+ | 0.0 |
| 2000 12 30 | 704 | 1.8+ | 0.5− | 2003 11 20 | 704 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.5− | 0.4+ |
| 2000 12 30 | 704 | 0.5− | 0.6+ | 2003 11 20 | 704 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.7− | 0.4− |
| 2000 12 30 | 704 | 0.0 | 0.4+ | 2003 11 20 | 704 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.5− | 0.4− |
| 2000 12 30 | 704 | 0.1− | 0.7+ | 2003 11 20 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.4− |
| 2001 01 03 | 704 | 0.6+ | 0.0 | 2003 11 20 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.1+ | 0.0 |
| 2001 01 03 | 704 | 0.6+ | 0.2− | 2003 11 23 | 691 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.7− | 0.3+ |
| 2001 01 03 | 704 | 0.1− | 0.1+ | 2003 11 23 | 691 | 0.0 | 0.2− | 2006 09 12 | 703 | 1.1− | 0.7− |
| 2001 01 03 | 704 | 0.6+ | 0.2− | 2003 11 23 | 691 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.2+ | 0.0 |
| 2001 01 03 | 704 | 0.5+ | 0.2− | 2003 11 24 | 704 | 1.3+ | 0.1+ | 2006 09 16 | 699 | 1.1+ | 0.3+ |
| 2001 01 20 | 704 | 0.2− | 0.5+ | 2003 11 24 | 704 | 0.7+ | 0.5+ | 2006 09 16 | 699 | 0.2+ | 0.1− |
| 2001 01 20 | 704 | 0.7+ | 1.2+ | 2003 11 24 | 704 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.7+ | 0.2+ |
| 2001 01 20 | 704 | 0.7− | 0.5+ | 2003 11 24 | 704 | 0.7+ | 0.6+ | 2006 09 16 | 699 | 0.3+ | 0.2− |
| 2001 01 20 | 704 | 0.2− | 0.3+ | 2003 11 26 | 699 | 1.3− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2003 10 15 | 699 | 0.1− | 0.1− | 2003 11 26 | 699 | 0.4+ | 0.7+ | 2006 09 19 | 703 | (2.6+ | 0.4−) |
| 2003 10 15 | 699 | 0.7− | 1.3− | 2003 11 26 | 699 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.5− |
| 2003 10 15 | 699 | 0.1+ | 0.5+ | 2003 11 26 | 699 | 0.6− | 0.9+ | 2006 09 19 | 703 | 0.3− | 1.1− |
| 2003 10 15 | 699 | 0.3− | 1.1− | 2003 12 01 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 0.2+ | 0.8− |
| 2003 10 21 | 691 | 0.0 | 0.2− | 2003 12 01 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.5+ | 0.0 |
| 2003 10 21 | 691 | 0.0 | 0.2− | 2003 12 01 | 704 | 1.3− | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.0 |
| 2003 10 21 | 691 | 0.1− | 0.1− | 2003 12 01 | 704 | 0.5− | 0.6+ | 2006 09 25 | 699 | (2.8− | 0.2+) |
| 2003 10 22 | 704 | 0.6+ | 0.6− | 2003 12 01 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 1.0− | 0.8− |
| 2003 10 22 | 704 | 0.5+ | 0.6+ | 2003 12 10 | 644 | 0.2+ | 0.0 | 2006 09 25 | 704 | 1.4− | 0.8+ |
| 2003 10 22 | 704 | 0.3+ | 0.5+ | 2003 12 10 | 644 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.2+ |
| 2003 10 22 | 704 | 1.3+ | 0.2+ | 2003 12 10 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | 1.2− | 1.0+ |
| 2003 10 22 | 704 | 0.4+ | 0.2+ | 2003 12 22 | 704 | 0.9− | 1.1− | 2006 09 25 | 699 | 0.3+ | 0.7+ |
| 2003 10 25 | 704 | 0.2− | 0.1+ | 2003 12 22 | 704 | 1.1− | 0.4− | 2006 09 25 | 699 | 0.4+ | 0.0 |
| 2003 10 25 | 704 | 0.2+ | 0.1+ | 2003 12 22 | 704 | 0.8− | 0.1+ | 2006 09 29 | 704 | 0.4− | 1.1+ |
| 2003 10 25 | 704 | 0.1+ | 0.3+ | 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.3− | 0.8+ |
| 2003 10 25 | 704 | 0.4+ | 0.1+ | 2003 12 22 | 704 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.1+ |
| 2003 10 25 | 704 | 0.1+ | 0.2− | 2005 01 18 | 809 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.2+ |
| 2003 10 29 | 699 | 0.0 | 0.2+ | 2005 01 18 | 809 | 0.3− | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.0 |
| 2003 10 29 | 699 | 0.3− | 0.2+ | 2005 01 18 | 809 | 0.2− | 0.4+ | 2006 10 01 | 704 | 0.7+ | 0.6+ |
| 2003 10 29 | 699 | 0.2− | 0.1+ | 2005 05 04 | 644 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.4+ |
| 2003 10 29 | 699 | 1.1+ | 0.9− | 2005 05 04 | 644 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2003 10 30 | 704 | 0.6+ | 0.1− | 2005 05 04 | 644 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.4+ | 0.2+ |
| 2003 10 30 | 704 | 0.1+ | 0.0 | 2005 05 04 | E12 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.6+ | 0.0 |
| 2003 10 30 | 704 | 0.7− | 0.0 | 2005 05 04 | E12 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2003 10 30 | 704 | 0.3+ | 0.4− | 2005 05 04 | E12 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2003 11 02 | 704 | 0.2− | 0.8+ | 2005 05 04 | E12 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2003 11 02 | 704 | 0.1+ | 1.0+ | 2005 05 11 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2003 11 02 | 704 | 0.7− | 0.4+ | 2005 05 11 | 644 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2003 11 02 | 704 | 0.7− | 0.6+ | 2005 05 11 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2003 11 02 | 704 | 0.0 | 0.2+ | 2005 05 12 | 644 | 0.2+ | 0.6+ | | | | |

**(138898)∗ 2000 YU$_{87}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.85081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17590994 | $\omega$ | 340.23204 | | +0.19514718 | −0.94075602 | |
| $a$ | 3.1545867 | $\Omega$ | 97.73130 | | +0.93329107 | +0.09121433 | |
| $e$ | 0.1872857 | $i$ | 16.25093 | | +0.30147200 | +0.32658544 | |
| $P$ | 5.60 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 28 | 704 | 0.5− | 0.1− | 2002 03 21 | 704 | 1.3+ | 0.4+ | 2005 10 25 | 704 | 0.1− | 0.2+ |
| 2000 11 28 | 704 | 0.9− | 0.5+ | 2002 03 21 | 704 | 0.5+ | 0.6+ | 2005 10 25 | 704 | 0.0 | 0.0 |
| 2000 11 28 | 704 | 0.2+ | 0.0 | 2002 03 21 | 704 | (1.6+ | 1.4+) | 2005 10 25 | 704 | 0.0 | 0.2− |
| 2000 11 28 | 704 | 0.7− | 0.0 | 2002 03 21 | 704 | 1.1+ | 0.8+ | 2005 10 25 | 704 | 0.2− | 0.4+ |
| 2000 12 21 | 704 | 0.0 | 0.4+ | 2002 04 22 | 644 | 0.3− | 0.5+ | 2005 10 25 | 704 | 0.5− | 0.1− |
| 2000 12 21 | 704 | 0.1+ | 0.4− | 2002 04 22 | 644 | 0.3− | 0.3+ | 2005 10 31 | 703 | 0.9+ | 1.3+ |
| 2000 12 21 | 704 | 0.2− | 0.1+ | 2002 04 22 | 644 | 0.3+ | 0.7+ | 2005 10 31 | 703 | 0.5+ | 0.3+ |
| 2000 12 21 | 704 | 0.1+ | 0.4− | 2002 05 05 | 644 | 0.3+ | 0.7+ | 2005 10 31 | 703 | 0.8+ | 0.1+ |
| 2000 12 21 | 704 | 1.0− | 1.0− | 2002 05 05 | 644 | 0.2+ | 0.9+ | 2005 10 31 | 703 | 0.4+ | 0.5+ |
| 2000 12 30 | 704 | 0.1− | 0.3+ | 2002 05 05 | 644 | 0.1+ | 1.0+ | 2005 12 07 | 703 | (1.2+ | 1.7−) |
| 2000 12 30 | 704 | 0.1+ | 0.2+ | 2002 05 13 | 644 | (0.3− | 1.6+) | 2005 12 07 | 703 | 0.8− | 0.2+ |
| 2000 12 30 | 704 | 0.2− | 0.5+ | 2002 05 13 | 644 | (0.5− | 1.9+) | 2005 12 07 | 703 | 0.8− | 0.1+ |
| 2000 12 30 | 704 | 0.5+ | 0.3+ | 2002 05 13 | 644 | 0.1− | 1.3+ | 2005 12 07 | 703 | 0.1− | 0.6+ |
| 2000 12 30 | 704 | 0.1− | 1.1− | 2005 09 13 | 703 | (2.0+ | 0.2−) | 2005 12 30 | 699 | 0.8+ | 0.2+ |
| 2001 01 03 | 704 | 0.1− | 0.3+ | 2005 09 13 | 703 | 0.1+ | 1.0+ | 2005 12 30 | 699 | 0.8− | 0.5+ |
| 2001 01 03 | 704 | 0.6+ | 0.1+ | 2005 09 13 | 703 | 0.3+ | 0.4+ | 2005 12 30 | 699 | 0.2− | 0.8+ |
| 2001 01 03 | 704 | 0.5+ | 0.2+ | 2005 09 13 | 703 | 0.5− | 0.3− | 2005 12 30 | 699 | 0.8+ | 0.8+ |
| 2001 01 03 | 704 | 0.4+ | 0.1+ | 2005 09 27 | 704 | 0.7− | 0.2+ | 2006 10 21 | 703 | (2.5− | 2.5+) |
| 2001 01 03 | 704 | 0.4+ | 0.4− | 2005 09 27 | 704 | 0.5− | 0.2− | 2006 10 21 | 703 | 0.5+ | 0.1− |
| 2001 01 20 | 704 | 0.1− | 0.0 | 2005 09 27 | 704 | 1.0− | 0.5− | 2006 10 21 | 703 | 0.2− | 0.2+ |
| 2001 01 20 | 704 | 0.2− | 0.1− | 2005 09 27 | 704 | 1.2− | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.9+ |
| 2001 01 20 | 704 | 0.3+ | 0.1+ | 2005 09 27 | 704 | 0.9− | 0.4+ | 2006 11 23 | 703 | 0.8− | 0.3+ |
| 2001 01 20 | 704 | 0.2− | 0.3+ | 2005 09 27 | 644 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.2+ | 0.4− |
| 2001 01 20 | 704 | 0.5+ | 0.2+ | 2005 09 27 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.5+ | 0.0 |
| 2001 01 21 | 704 | 0.3+ | 0.6− | 2005 09 27 | 644 | 0.3− | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.7− |
| 2001 01 21 | 704 | 0.2+ | 0.6− | 2005 10 07 | G96 | 0.6− | 0.0 | 2006 12 01 | 704 | 1.2− | 1.0+ |
| 2001 01 21 | 704 | 0.2− | 0.2− | 2005 10 07 | G96 | 0.0 | 0.1+ | 2006 12 01 | 704 | 1.1+ | 0.3− |
| 2001 01 21 | 704 | 0.6+ | 0.5+ | 2005 10 07 | G96 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.9+ | 1.0− |
| 2002 03 21 | 704 | 0.0 | 1.1+ | 2005 10 07 | G96 | 0.3+ | 0.4+ | 2006 12 01 | 704 | 0.1− | 0.6− |

**(138899)∗ 2000 YD$_{95}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.13244 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17468941 | $\omega$ | 255.03138 | | +0.93594531 | −0.27644723 | |
| $a$ | 3.1692633 | $\Omega$ | 120.58473 | | +0.32963131 | +0.90571348 | |
| $e$ | 0.0982354 | $i$ | 14.67808 | | −0.12389342 | +0.32134097 | |
| $P$ | 5.64 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | (2.3− | 0.5+) | 2004 08 11 | 704 | (1.7− | 0.6−) | 2005 11 29 | 644 | 0.1− | 0.4+ |
| 1999 10 08 | 704 | 0.3+ | 0.1+ | 2004 08 12 | 704 | 0.1+ | 0.2− | 2005 12 06 | 704 | 0.3− | 0.8+ |
| 1999 10 08 | 704 | 0.5+ | 0.4− | 2004 08 12 | 704 | 0.9− | 0.0 | 2005 12 06 | 704 | 0.0 | 0.6+ |
| 2000 12 26 | 691 | 0.2− | 0.9− | 2004 08 12 | 704 | 0.1+ | 0.1+ | 2005 12 06 | 704 | 0.3+ | 0.7+ |
| 2000 12 26 | 691 | 0.6− | 0.3− | 2004 08 12 | 704 | 0.3+ | 0.2+ | 2005 12 06 | 704 | 0.3+ | 1.4+ |
| 2000 12 26 | 691 | 0.1− | 0.4− | 2004 08 23 | 699 | 0.6− | 0.4− | 2005 12 06 | 704 | 0.6− | 0.1+ |
| 2000 12 30 | 704 | 1.0+ | 0.4+ | 2004 08 23 | 699 | (0.5+ | 1.9+) | 2005 12 29 | 644 | 0.2− | 0.1+ |
| 2000 12 30 | 704 | 0.4+ | 1.2− | 2004 08 23 | 699 | 1.0+ | 0.4− | 2005 12 29 | 644 | 0.1− | 0.1− |
| 2000 12 30 | 704 | 0.6+ | 1.6− | 2004 08 23 | 699 | 0.2+ | 0.3+ | 2005 12 29 | 644 | 0.3− | 0.2+ |
| 2001 01 03 | 704 | 0.5− | 0.5− | 2005 10 27 | 699 | 0.5+ | 1.3− | 2006 01 05 | 703 | 0.1+ | 0.1+ |
| 2001 01 03 | 704 | 0.0 | 0.4+ | 2005 10 27 | 699 | 0.2− | 0.6+ | 2006 01 05 | 703 | 0.3− | 0.6+ |
| 2001 01 03 | 704 | 0.8+ | 0.5− | 2005 10 27 | 699 | 0.2− | 1.3+ | 2006 01 05 | 703 | 0.9+ | 0.0 |
| 2001 01 21 | 704 | 0.3+ | 0.1+ | 2005 10 27 | 699 | 0.5− | 0.5+ | 2006 01 05 | 703 | 0.1− | 0.5− |
| 2001 01 21 | 704 | 0.0 | 0.4+ | 2005 10 31 | 703 | 0.4− | 1.1− | 2006 01 21 | 699 | 0.9− | 1.1+ |
| 2001 01 21 | 704 | (0.4+ | 1.8+) | 2005 10 31 | 703 | 0.0 | 0.7− | 2006 01 21 | 699 | 0.6+ | 0.4+ |
| 2001 02 16 | 691 | 0.0 | 0.5+ | 2005 10 31 | 703 | 0.0 | 0.9− | 2006 01 21 | 699 | 0.5− | 0.2− |
| 2001 02 16 | 691 | 0.0 | 1.0+ | 2005 10 31 | 703 | 0.4+ | 1.1− | 2006 01 21 | 699 | (0.3− | 1.9+) |
| 2001 02 16 | 691 | 0.0 | 0.9+ | 2005 11 12 | 703 | 0.4+ | 0.2− | 2006 01 27 | 699 | (3.1− | 0.9+) |
| 2003 07 08 | 644 | 0.4+ | 0.7+ | 2005 11 12 | 703 | 0.4− | 0.4+ | 2006 01 27 | 699 | (1.1− | 1.8+) |
| 2003 07 08 | 644 | 0.1+ | 0.6+ | 2005 11 12 | 703 | 0.0 | 0.9− | 2006 01 27 | 699 | 0.8− | 0.0 |
| 2003 07 08 | 644 | 0.6+ | 0.6+ | 2005 11 12 | 703 | (0.1− | 1.6−) | 2006 01 27 | 699 | 1.0+ | 1.1− |
| 2004 08 11 | 704 | 0.4+ | 0.2− | 2005 11 19 | 644 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.1+ |
| 2004 08 11 | 704 | 0.2+ | 0.1+ | 2005 11 19 | 644 | 1.0− | 0.5+ | 2006 10 12 | 691 | 0.2+ | 0.2− |
| 2004 08 11 | 704 | 0.4− | 0.4+ | 2005 11 19 | 644 | 0.2+ | 0.5+ | 2006 10 12 | 691 | 0.3− | 0.1+ |
| 2004 08 11 | 704 | 0.9− | 0.0 | 2005 11 19 | 644 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.7− |
| 2004 08 11 | 704 | 0.2+ | 0.1+ | 2005 11 19 | 644 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2004 08 11 | 704 | 0.0 | 0.2+ | 2005 11 19 | 644 | 0.9+ | 0.9+ | 2006 11 24 | G96 | 0.6− | 0.4− |
| 2004 08 11 | 704 | 0.1− | 0.2− | 2005 11 29 | 644 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.6− |
| 2004 08 11 | 704 | 0.4− | 0.1− | 2005 11 29 | 644 | 0.3+ | 0.0 | | | | |

**(138900)∗ 2000 YW$_{97}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 255.75818 | | (2000.0) | | | |
| $n$ | 0.29229675 | $\omega$ | 351.17030 | | −0.38238694 | −0.91735066 |
| $a$ | 2.2486406 | $\Omega$ | 121.24287 | | +0.85546304 | −0.39674330 |
| $e$ | 0.0626398 | $i$ | 7.43740 | | +0.34923233 | −0.03259630 |
| $P$ | 3.37 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.8+ | 0.3− | 2001 07 07 | 250 | 0.1− | 0.2− | 2005 05 11 | 703 | 0.8− | 0.2− |
| 2000 12 30 | 704 | 0.5− | 0.5+ | 2001 07 07 | 250 | 0.2+ | 0.3− | 2005 05 11 | 703 | 0.1− | 0.4+ |
| 2000 12 30 | 704 | 0.2− | 0.0 | 2001 07 07 | 250 | 0.2+ | 0.2− | 2005 05 11 | 703 | 0.9− | 0.1− |
| 2000 12 30 | 704 | 0.2+ | 0.3+ | 2003 10 29 | 699 | 1.0+ | 0.1+ | 2005 05 11 | 699 | 0.1− | 0.9− |
| 2000 12 30 | 704 | 0.2− | 1.3+ | 2003 10 29 | 699 | 0.3− | 0.8+ | 2005 05 11 | 703 | 0.2− | 0.4+ |
| 2001 01 03 | 704 | 0.6+ | 0.5+ | 2003 10 29 | 699 | 0.3+ | 0.4+ | 2005 05 15 | 644 | 0.6+ | 0.5+ |
| 2001 01 03 | 704 | 0.3− | 0.6− | 2003 10 29 | 699 | 1.4+ | 0.4+ | 2005 05 15 | 644 | 0.4+ | 0.7+ |
| 2001 01 03 | 704 | 0.6+ | 0.4+ | 2003 11 23 | 699 | 0.3+ | 0.3− | 2005 05 15 | 644 | 0.2+ | 0.6+ |
| 2001 01 03 | 704 | 0.1− | 0.7− | 2003 11 23 | 699 | 0.2+ | 1.1− | 2006 09 17 | 699 | 0.4− | 0.9− |
| 2001 01 03 | 704 | 0.5+ | 0.6+ | 2003 11 23 | 699 | 0.1− | 0.5− | 2006 09 17 | 699 | 0.8− | 1.2+ |
| 2001 01 20 | 704 | 0.7− | 0.3− | 2003 11 23 | 699 | 1.1− | 0.9− | 2006 09 17 | 699 | 0.6+ | 0.3+ |
| 2001 01 20 | 704 | 0.2− | 0.3+ | 2003 11 26 | 691 | 0.2+ | 0.3− | 2006 09 17 | 699 | (1.7+ | 0.9+) |
| 2001 01 20 | 704 | 0.2+ | 0.4− | 2003 11 26 | 691 | 0.0 | 0.2− | 2006 09 25 | 703 | 0.5+ | 0.2− |
| 2001 01 20 | 704 | 0.2− | 0.1+ | 2003 11 26 | 691 | 0.3+ | 0.2− | 2006 09 25 | 703 | 0.9− | 0.5+ |
| 2001 01 21 | 704 | 0.4+ | 0.2+ | 2003 11 30 | 704 | 0.5− | 0.2− | 2006 09 25 | 703 | 0.1− | 0.4+ |
| 2001 01 21 | 704 | 0.6− | 0.7− | 2003 11 30 | 704 | 1.1− | 0.3− | 2006 09 25 | 703 | 0.9− | 0.5− |
| 2001 01 21 | 704 | 0.2+ | 0.4− | 2003 11 30 | 704 | 1.3− | 0.5+ | 2006 10 01 | F84 | 0.1+ | 0.0 |
| 2001 01 21 | 704 | 0.4− | 0.2+ | 2003 11 30 | 704 | 1.3− | 0.2+ | 2006 10 01 | F84 | 1.0+ | 0.1+ |
| 2001 01 21 | 704 | 0.1+ | 0.0 | 2003 11 30 | 704 | 0.5− | 0.8+ | 2006 10 01 | F84 | 1.0+ | 0.2− |
| 2001 01 21 | 704 | 0.8− | 0.4− | 2003 12 01 | 704 | (2.4− | 1.6−) | 2006 10 02 | F84 | 0.7− | 0.0 |
| 2001 01 21 | 704 | 0.0 | 0.2− | 2003 12 01 | 704 | 0.2+ | 0.2+ | 2006 10 02 | F84 | 0.8+ | 0.8+ |
| 2001 01 21 | 704 | 0.2+ | 0.5+ | 2003 12 01 | 704 | 0.1+ | 0.1− | 2006 10 02 | F84 | 0.7− | 0.6− |
| 2001 01 21 | 704 | 0.3+ | 0.0 | 2003 12 01 | 704 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2001 01 21 | 704 | 0.9+ | 0.2+ | 2003 12 01 | 704 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.1− |
| 2001 02 01 | 209 | 0.4− | 0.2− | 2003 12 20 | 704 | 0.8+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2001 02 01 | 209 | 0.1+ | 0.2+ | 2003 12 20 | 704 | 0.6+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.5− |
| 2001 02 01 | 209 | 0.3+ | 0.2− | 2003 12 20 | 704 | 0.3+ | 1.3+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2001 02 01 | 209 | 0.2+ | 0.1+ | 2003 12 20 | 704 | 0.5− | 1.2+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2001 02 01 | 209 | 0.1− | 0.2− | 2005 05 06 | 703 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 02 01 | 209 | 1.1− | 0.1+ | 2005 05 06 | 703 | (0.4− | 3.0+) | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2001 07 07 | 250 | 0.2+ | 0.3− | 2005 05 06 | 703 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2001 07 07 | 250 | 0.1+ | 0.3− | 2005 05 06 | 703 | 0.8+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2001 07 07 | 250 | 0.2+ | 0.3− | 2005 05 11 | 699 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 07 07 | 250 | 0.2+ | 0.2− | 2005 05 11 | 699 | 0.1− | 0.5− | 2006 10 23 | 644 | 0.6− | 0.4− |
| 2001 07 07 | 250 | 0.4+ | 0.4− | 2005 05 11 | 699 | 0.6+ | 0.4+ | | | | |

**(138901)∗ 2000 YU$_{98}$ = 2003 TT$_{45}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64899)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.81551 | | (2000.0) | | | |
| $n$ | 0.25966528 | $\omega$ | 242.49256 | | −0.99653135 | −0.03527802 |
| $a$ | 2.4332877 | $\Omega$ | 295.40233 | | +0.06435645 | −0.90089997 |
| $e$ | 0.1385273 | $i$ | 4.78618 | | −0.05275905 | −0.43259070 |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 691 | 0.3− | 0.1+ | 2003 10 03 | 691 | 0.1− | 0.1+ | 2005 03 30 | 644 | 0.4+ | 0.2+ |
| 2000 12 23 | 691 | 0.2− | 0.0 | 2003 10 16 | 644 | 0.4− | 0.1− | 2005 03 30 | 644 | 0.0 | 0.2+ |
| 2000 12 23 | 691 | 0.3− | 0.0 | 2003 10 16 | 644 | 0.1− | 0.1+ | 2005 05 10 | 703 | (0.5− | 2.0−) |
| 2000 12 30 | 704 | 0.4− | 0.6+ | 2003 10 16 | 644 | 0.0 | 0.4+ | 2005 05 10 | 703 | 0.1+ | 1.2− |
| 2000 12 30 | 704 | 0.3− | 0.9− | 2003 10 17 | 691 | 0.2+ | 0.1− | 2005 05 10 | 703 | 0.7− | 0.1+ |
| 2000 12 30 | 704 | 0.1− | 0.3− | 2003 10 17 | 691 | 0.1− | 0.4− | 2005 05 10 | 703 | 1.1− | 1.0− |
| 2000 12 30 | 704 | 0.4− | 0.3+ | 2003 10 17 | 691 | 0.1− | 0.3− | 2006 06 19 | G96 | 0.0 | 0.4+ |
| 2001 01 03 | 704 | 0.2− | 0.0 | 2005 02 02 | 704 | 0.1+ | 0.5+ | 2006 06 19 | G96 | 0.4− | 0.1+ |
| 2001 01 03 | 704 | 1.0− | 0.1− | 2005 02 02 | 704 | 0.4− | 0.6+ | 2006 06 19 | G96 | 0.3− | 0.3+ |
| 2001 01 03 | 704 | 0.3− | 0.2+ | 2005 02 02 | 704 | 0.5+ | 0.6+ | 2006 06 19 | G96 | 0.4+ | 0.2− |
| 2001 01 03 | 704 | 0.6+ | 0.8+ | 2005 02 02 | 704 | 0.3− | 0.6+ | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 2001 01 03 | 704 | 0.7+ | 0.6− | 2005 02 02 | 704 | 0.4− | 0.7+ | 2006 08 17 | 644 | 0.5+ | 0.2+ |
| 2001 01 15 | 691 | 0.2+ | 0.2+ | 2005 02 09 | 699 | 0.3+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.2+ |
| 2001 01 15 | 691 | 0.2+ | 0.3+ | 2005 02 09 | 699 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.0 | 0.5− |
| 2001 01 15 | 691 | 0.1+ | 0.2+ | 2005 02 09 | 699 | 0.2+ | 0.7− | 2006 08 18 | 644 | 0.4− | 0.4+ |
| 2001 01 21 | 704 | 0.3+ | 0.5+ | 2005 02 09 | 699 | 0.8+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.1− |
| 2001 01 21 | 704 | 0.5+ | 0.0 | 2005 03 10 | 703 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.7+ |
| 2001 01 21 | 704 | 0.4+ | 0.5− | 2005 03 10 | 703 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.3− | 0.3+ |
| 2001 01 21 | 704 | 0.6+ | 0.6− | 2005 03 10 | 703 | 0.1− | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.9+ |
| 2001 01 21 | 704 | 0.7+ | 1.3− | 2005 03 10 | 703 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.4− | 1.1+ |
| 2003 09 20 | 644 | 0.3− | 0.1− | 2005 03 17 | 703 | 0.1+ | 0.8+ | 2006 10 23 | G96 | 1.2+ | 1.2+ |
| 2003 09 20 | 644 | 0.4− | 0.3+ | 2005 03 17 | 703 | 0.2+ | 0.1− | 2006 10 23 | G96 | 1.8− | 0.2+ |
| 2003 09 20 | 644 | 0.2+ | 0.1− | 2005 03 17 | 703 | 0.0 | 0.1− | 2006 10 23 | G96 | 1.0− | 0.4− |
| 2003 10 03 | 691 | 0.4+ | 0.2+ | 2005 03 17 | 703 | 0.7+ | 0.2− | 2006 10 23 | G96 | 0.4+ | 0.7+ |
| 2003 10 03 | 691 | 0.1+ | 0.1+ | 2005 03 30 | 644 | 0.2+ | 0.2− | | | | |

**(138902)∗ 2000 YO$_{102}$**

Discovered 2000 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.96841 | | (2000.0) | | | |
| $n$ | 0.29614236 | $\omega$ | 163.47046 | | +0.68487117 | −0.72226184 |
| $a$ | 2.2291315 | $\Omega$ | 243.18719 | | +0.65572013 | +0.66858059 |
| $e$ | 0.1074980 | $i$ | 6.19957 | | +0.31777756 | +0.17702495 |
| $P$ | 3.33 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.2− | 0.2− | 2003 11 03 | 704 | 0.6− | 0.4− | 2003 12 23 | 699 | 0.1+ | 0.6+ |
| 2000 11 27 | 704 | 0.6− | 0.4+ | 2003 11 03 | 704 | 0.1+ | 0.7+ | 2003 12 23 | 699 | 0.2− | 0.5− |
| 2000 11 27 | 704 | 0.1− | 0.6+ | 2003 11 04 | 704 | 0.2+ | 1.0− | 2003 12 23 | 699 | 0.1− | 0.3− |
| 2000 12 28 | 704 | 0.4− | 0.3+ | 2003 11 04 | 704 | 0.1− | 0.7+ | 2003 12 23 | 699 | 0.0 | 0.6+ |
| 2000 12 28 | 704 | 0.0 | 1.0+ | 2003 11 04 | 704 | 0.7+ | 0.9− | 2003 12 24 | 704 | 0.9+ | 0.5+ |
| 2000 12 28 | 704 | 0.3− | 0.0 | 2003 11 04 | 704 | 0.5+ | 0.5− | 2003 12 24 | 704 | 0.4+ | 0.1− |
| 2001 01 03 | 699 | 0.5− | 0.4− | 2003 11 04 | 704 | 0.1− | 0.6− | 2003 12 24 | 704 | 0.3− | 0.6− |
| 2001 01 03 | 699 | 0.5− | 0.2− | 2003 11 05 | 699 | (0.4+ | 1.7−) | 2004 01 24 | 704 | 0.6− | 0.8+ |
| 2001 01 03 | 699 | 0.8+ | 0.5+ | 2003 11 05 | 699 | 0.3− | 0.4− | 2004 01 24 | 704 | 0.4− | 0.7+ |
| 2001 01 03 | 699 | 0.0 | 0.4− | 2003 11 05 | 699 | 0.7− | 0.3− | 2004 01 24 | 704 | 1.0− | 0.1+ |
| 2001 01 04 | 704 | 0.6− | 0.7+ | 2003 11 05 | 699 | 1.1− | 0.4+ | 2004 01 24 | 704 | 0.8− | 0.4+ |
| 2001 01 04 | 704 | 0.3+ | 0.7+ | 2003 11 05 | 704 | 0.4− | 0.9+ | 2005 05 01 | 644 | 0.7+ | 0.3+ |
| 2001 01 04 | 704 | 0.0 | 0.2− | 2003 11 05 | 704 | 0.8+ | 0.3+ | 2005 05 01 | 644 | 0.3+ | 0.3+ |
| 2001 01 04 | 704 | 0.1+ | 0.7+ | 2003 11 05 | 704 | 0.0 | 0.1− | 2005 05 01 | 644 | 0.5+ | 0.4+ |
| 2001 01 04 | 704 | (0.1− | 1.6+) | 2003 11 05 | 704 | 0.8− | 1.0+ | 2006 08 23 | 621 | 0.1− | 0.3− |
| 2001 01 19 | 704 | 0.2− | 0.1− | 2003 11 05 | 704 | 0.1− | 0.8+ | 2006 08 23 | 621 | 0.0 | 0.2− |
| 2001 01 19 | 704 | 1.1+ | 0.3− | 2003 11 05 | 704 | 0.2− | 1.2− | 2006 08 23 | 621 | 0.0 | 0.1− |
| 2001 01 19 | 704 | 0.5− | 0.6− | 2003 11 05 | 704 | 0.3+ | 0.2− | 2006 08 27 | 699 | 0.0 | 1.1− |
| 2001 01 19 | 704 | 0.2− | 0.7− | 2003 11 05 | 704 | 0.6− | 0.2− | 2006 08 27 | 699 | 0.1+ | 0.7+ |
| 2002 06 16 | 644 | 0.2+ | 0.5+ | 2003 11 05 | 704 | 0.4− | 0.1+ | 2006 08 27 | 699 | 0.7− | 0.6+ |
| 2002 06 16 | 644 | 0.0 | 0.0 | 2003 11 16 | 703 | 0.5− | 0.1− | 2006 08 27 | 699 | 0.4− | 0.2+ |
| 2002 06 16 | 644 | 0.1− | 0.0 | 2003 11 16 | 703 | 0.7− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.1− |
| 2003 09 27 | 704 | (1.7+ | 0.7−) | 2003 11 16 | 703 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.4− |
| 2003 09 27 | 704 | (2.7+ | 0.5+) | 2003 11 16 | 703 | 1.2− | 0.4− | 2006 09 14 | 703 | 1.0− | 0.3− |
| 2003 09 27 | 704 | (1.6+ | 0.9+) | 2003 11 21 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.3− |
| 2003 10 22 | 704 | 0.9+ | 0.1+ | 2003 11 21 | 704 | 0.1+ | 0.1− | 2006 09 15 | 704 | 0.2− | 1.0+ |
| 2003 10 22 | 704 | 0.8+ | 0.7− | 2003 11 21 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.4+ | 1.1− |
| 2003 10 22 | 704 | 0.3+ | 0.2− | 2003 11 21 | 704 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.4− | 0.8+ |
| 2003 10 22 | 704 | 0.9+ | 0.2− | 2003 11 21 | 704 | 0.1+ | 0.1− | 2006 09 15 | 704 | 1.2+ | 0.7− |
| 2003 10 23 | 691 | 0.3+ | 0.1− | 2003 11 30 | 691 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.3+ |
| 2003 10 23 | 691 | 0.2+ | 0.1− | 2003 11 30 | 691 | 0.3− | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.4− |
| 2003 10 23 | 691 | 0.3+ | 0.2− | 2003 11 30 | 691 | 0.3− | 0.1− | 2006 09 20 | 699 | 0.1− | 0.8+ |
| 2003 10 24 | 704 | 0.5− | 0.4+ | 2003 12 01 | 704 | 0.3− | 0.7+ | 2006 09 20 | 699 | 0.1+ | 0.3+ |
| 2003 10 24 | 704 | 0.3− | 0.4+ | 2003 12 01 | 704 | 0.1+ | 0.3− | 2006 10 01 | 703 | 0.4+ | 0.0 |
| 2003 10 24 | 704 | 0.1+ | 0.4+ | 2003 12 01 | 704 | 0.0 | 0.4+ | 2006 10 01 | 703 | 0.4+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 704 | 0.1− | 0.3+ | 2003 12 01 | 704 | 0.2− | 0.1− | 2006 10 01 | 703 | 1.2+ | 0.4− |
| 2003 10 24 | 704 | 0.5− | 0.1− | 2003 12 01 | 704 | 0.4− | 0.2+ | 2006 10 01 | 703 | 0.5+ | 0.0 |
| 2003 10 25 | 704 | (1.5+ | 0.7+) | 2003 12 04 | 703 | 0.0 | 1.1− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2003 10 25 | 704 | 0.3+ | 0.1+ | 2003 12 04 | 703 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2003 10 25 | 704 | 1.3+ | 0.3+ | 2003 12 04 | 703 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2003 10 25 | 704 | 0.2+ | 0.2+ | 2003 12 04 | 703 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2003 10 25 | 704 | 0.9+ | 0.6+ | 2003 12 10 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2003 10 25 | 704 | 0.6+ | 0.2+ | 2003 12 10 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2003 10 25 | 704 | 1.2+ | 0.0 | 2003 12 10 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2003 10 25 | 704 | 0.3+ | 0.1+ | 2003 12 17 | 703 | 0.6− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2003 10 25 | 704 | 0.8+ | 0.9+ | 2003 12 17 | 703 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2003 10 25 | 704 | 0.2+ | 0.1− | 2003 12 17 | 703 | 0.5− | 0.5− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2003 10 29 | 704 | 0.4+ | 0.6− | 2003 12 17 | 703 | 0.2+ | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2003 10 29 | 704 | 0.3+ | 0.1+ | 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.3+ |
| 2003 10 29 | 704 | 0.2+ | 0.4− | 2003 12 18 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 10 29 | 704 | 0.6+ | 0.7− | 2003 12 18 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.6− | 0.4− |
| 2003 10 29 | 704 | 0.4+ | 0.8− | 2003 12 19 | 704 | 0.3− | 0.6− | 2006 11 13 | 703 | 1.8− | 0.1+ |
| 2003 11 02 | 704 | 1.3+ | 0.2+ | 2003 12 19 | 704 | 0.6+ | 0.7− | 2006 11 13 | 703 | 0.4− | 0.9+ |
| 2003 11 02 | 704 | 0.3+ | 0.4− | 2003 12 19 | 704 | 0.8− | 1.3− | 2006 11 13 | 703 | 1.2− | 0.6+ |
| 2003 11 02 | 704 | 0.1+ | 0.5+ | 2003 12 21 | 704 | (2.8+ | 0.9+) | 2006 11 15 | 704 | 1.0+ | 0.5− |
| 2003 11 02 | 704 | 0.4+ | 0.1− | 2003 12 21 | 704 | (1.9+ | 2.3−) | 2006 11 15 | 704 | 0.2− | 0.1− |
| 2003 11 02 | 704 | 0.1− | 0.0 | 2003 12 21 | 704 | (1.4+ | 1.9−) | 2006 11 15 | 704 | 0.3− | 0.7+ |
| 2003 11 03 | 704 | 0.1+ | 0.2+ | 2003 12 21 | 704 | 0.3− | 1.1+ | | | | |

**(138903)∗ 2000 YA$_{107}$ = 2005 SR$_{30}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84664)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 13.86294 | | (2000.0) | | **P** | **Q** |
| *n* | 0.17600726 | ω | 331.01232 | | +0.14068277 | −0.98918969 |
| *a* | 3.1534237 | Ω | 110.87461 | | +0.91668080 | +0.11435345 |
| *e* | 0.1670985 | *i* | 2.53814 | | +0.37403834 | +0.09179895 |
| *P* | 5.60 | *H* | 15.3 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 18 | 691 | 0.6− | 0.1+ | 2005 10 01 | 704 | 0.3+ | 0.0 | 2005 10 31 | G96 | 0.2+ | 0.4− |
| 2000 12 18 | 691 | 0.8− | 0.0 | 2005 10 01 | 691 | 0.1+ | 0.1+ | 2005 10 31 | G96 | 0.2+ | 0.5− |
| 2000 12 18 | 691 | 0.3− | 0.7− | 2005 10 01 | 704 | 0.1+ | 0.4+ | 2005 10 31 | G96 | 0.1+ | 0.4− |
| 2000 12 27 | 688 | 0.6+ | 0.5+ | 2005 10 01 | 704 | 0.0 | 0.5− | 2005 11 01 | G96 | 0.4+ | 0.3− |
| 2000 12 27 | 688 | 1.6+ | 0.7+ | 2005 10 01 | 691 | 0.1+ | 0.1+ | 2005 11 01 | G96 | 0.0 | 0.2− |
| 2000 12 30 | 704 | 0.6+ | 0.6+ | 2005 10 01 | 691 | 0.0 | 0.0 | 2005 11 01 | G96 | 0.3+ | 0.2− |
| 2000 12 30 | 704 | 0.9+ | 0.9+ | 2005 10 06 | 699 | 1.2− | 0.6+ | 2005 11 01 | G96 | 0.5+ | 0.1− |
| 2000 12 30 | 704 | 1.0+ | 1.1+ | 2005 10 06 | 699 | 0.8− | 0.6+ | 2005 11 01 | G96 | 0.4+ | 0.0 |
| 2001 01 04 | 704 | 0.5+ | 0.1+ | 2005 10 06 | 699 | (1.9− | 0.2+) | 2005 11 01 | G96 | 0.3+ | 0.1+ |
| 2001 01 04 | 704 | 0.2+ | 0.5− | 2005 10 06 | 699 | (1.2+ | 1.6+) | 2005 11 01 | G96 | 0.2+ | 0.3− |
| 2001 01 04 | 704 | 0.9+ | 0.2+ | 2005 10 07 | 703 | 1.0− | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2001 01 04 | 704 | 0.2− | 0.7+ | 2005 10 07 | 703 | 1.0− | 0.0 | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2001 01 04 | 704 | 0.4+ | 0.1+ | 2005 10 07 | 703 | 1.0− | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 2001 01 05 | 704 | 0.7− | 0.5− | 2005 10 07 | 703 | 0.4− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2001 01 05 | 704 | 0.6+ | 0.1− | 2005 10 10 | A50 | 1.0− | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.2+ |
| 2001 01 05 | 704 | 0.3+ | 0.9+ | 2005 10 10 | A50 | 0.6− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2001 01 05 | 704 | 0.5+ | 0.1− | 2005 10 12 | 691 | 0.5+ | 0.1− | 2006 10 23 | G96 | 0.3− | 0.1+ |
| 2002 03 16 | 704 | 0.4+ | 0.3− | 2005 10 12 | 691 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2002 03 16 | 704 | 0.4+ | 0.2+ | 2005 10 12 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2002 03 16 | 704 | 0.9+ | 0.2− | 2005 10 27 | 699 | (1.5+ | 0.2+) | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2002 04 15 | 644 | 0.3− | 1.0+ | 2005 10 27 | 699 | 0.4+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2002 04 15 | 644 | 0.2− | 1.3+ | 2005 10 27 | 699 | 0.5− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2002 04 15 | 644 | 0.2− | 1.1+ | 2005 10 27 | 699 | 0.3− | 1.0+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2005 09 23 | 691 | 0.1+ | 0.4+ | 2005 10 28 | 704 | 0.7− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2005 09 23 | 691 | 0.0 | 0.4+ | 2005 10 28 | 704 | 0.5− | 0.8− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2005 09 23 | 691 | 0.0 | 0.2+ | 2005 10 28 | 704 | (1.9− | 0.4+) | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2005 09 29 | 699 | 0.7+ | 0.4+ | 2005 10 28 | 704 | (2.2− | 0.3+) | 2006 11 27 | G96 | 0.1+ | 0.3+ |
| 2005 09 29 | 699 | 0.2+ | 0.0 | 2005 10 30 | G96 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2005 09 29 | 699 | 0.1+ | 0.1− | 2005 10 30 | G96 | 0.6+ | 0.1− | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2005 09 29 | 699 | 0.3− | 0.2+ | 2005 10 30 | G96 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2005 10 01 | 704 | 0.1+ | 0.4− | 2005 10 30 | G96 | 0.0 | 0.2− | | | | |
| 2005 10 01 | 704 | 0.4− | 0.4− | 2005 10 31 | G96 | 0.1+ | 0.5− | | | | |

**(138904)∗ 2000 YO$_{108}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 45.51281 | | (2000.0) | | **P** | **Q** |
| *n* | 0.17280458 | ω | 321.15692 | | +0.70538307 | −0.70011206 |
| *a* | 3.1922671 | Ω | 83.66761 | | +0.67497709 | +0.61571039 |
| *e* | 0.1704978 | *i* | 6.40096 | | +0.21642701 | +0.36158514 |
| *P* | 5.70 | *H* | 14.7 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.6− | 0.4− | 2003 04 05 | 691 | (0.5+ | 1.7+) | 2005 10 28 | 703 | 0.1+ | 0.2+ |
| 1999 10 16 | 704 | 0.2− | 0.0 | 2003 04 05 | 691 | (0.6+ | 2.2+) | 2005 10 31 | 699 | 0.6− | 0.2+ |
| 1999 10 16 | 704 | 1.2+ | 0.8− | 2003 04 05 | 691 | (1.0+ | 1.9+) | 2005 10 31 | 699 | 0.6− | 0.4+ |
| 2000 11 29 | 704 | 0.1− | 0.1− | 2004 07 15 | E12 | 0.1− | 0.4+ | 2005 10 31 | 699 | 0.8− | 0.0 |
| 2000 11 29 | 704 | 0.2+ | 0.2+ | 2004 07 15 | E12 | 0.4− | 0.7− | 2005 11 03 | 703 | 0.1− | 0.0 |
| 2000 11 29 | 704 | 0.1− | 0.4+ | 2004 07 15 | E12 | 0.4+ | 0.5+ | 2005 11 03 | 703 | 0.0 | 0.3+ |
| 2000 11 29 | 704 | 0.1+ | 1.1+ | 2004 07 15 | E12 | 0.1− | 0.0 | 2005 11 03 | 703 | 0.3+ | 0.1− |
| 2000 12 20 | 704 | 0.6− | 0.1+ | 2005 09 27 | 644 | 0.3− | 0.2+ | 2005 11 03 | 703 | 0.0 | 0.1+ |
| 2000 12 20 | 704 | 0.0 | 0.8+ | 2005 09 27 | 644 | 0.2− | 0.1+ | 2005 11 17 | 644 | 0.1− | 0.1− |
| 2000 12 20 | 704 | 0.3+ | 0.2− | 2005 09 27 | 644 | 0.2− | 0.1+ | 2005 11 17 | 644 | 0.2− | 0.2− |
| 2000 12 20 | 704 | 0.5− | 0.7− | 2005 10 01 | 699 | 0.0 | 0.3+ | 2005 11 17 | 644 | 0.3+ | 0.1− |
| 2000 12 30 | 704 | 1.9+ | 0.9− | 2005 10 01 | 699 | 0.3− | 0.2− | 2005 11 28 | 644 | 0.3+ | 0.1+ |
| 2000 12 30 | 704 | 0.4+ | 0.4+ | 2005 10 01 | 699 | 0.3− | 0.0 | 2005 11 28 | 644 | 0.1− | 0.2− |
| 2000 12 30 | 704 | 0.0 | 0.0 | 2005 10 01 | 703 | 0.2+ | 0.6+ | 2005 11 28 | 644 | 0.2+ | 0.0 |
| 2000 12 30 | 704 | 0.7− | 0.3− | 2005 10 01 | 703 | 0.5− | 0.6− | 2005 11 30 | 704 | 1.1+ | 0.6+ |
| 2001 01 04 | 704 | 0.5+ | 0.5+ | 2005 10 01 | 699 | 1.0+ | 0.2+ | 2005 11 30 | 704 | 0.0 | 1.1+ |
| 2001 01 04 | 704 | 0.3− | 0.0 | 2005 10 01 | 703 | 0.6− | 0.3− | 2005 11 30 | 704 | 0.4+ | 0.9+ |
| 2001 01 04 | 704 | 0.0 | 1.0− | 2005 10 01 | 703 | 0.4− | 0.5− | 2005 11 30 | 704 | 1.1− | 0.6+ |
| 2001 01 04 | 704 | 0.4− | 0.4− | 2005 10 21 | 644 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.9− | 0.6− |
| 2001 01 04 | 704 | 0.1+ | 0.4− | 2005 10 21 | 644 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.4+ | 0.4+ |
| 2001 01 19 | 704 | 0.2+ | 0.3+ | 2005 10 21 | 644 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.7+ | 0.3− |
| 2001 01 19 | 704 | 0.0 | 0.1− | 2005 10 22 | 703 | 0.6+ | 0.1− | 2006 11 02 | G96 | 0.1− | 0.4− |
| 2001 01 19 | 704 | 0.5− | 0.5+ | 2005 10 22 | 703 | 1.0+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2001 01 19 | 704 | 0.6− | 0.1+ | 2005 10 22 | 703 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.7− | 0.5− |
| 2001 01 19 | 704 | (1.6− | 0.7+) | 2005 10 22 | 703 | 0.1+ | 0.5+ | 2006 11 24 | G96 | 0.4− | 0.4− |
| 2002 04 12 | 644 | 0.4+ | 0.8+ | 2005 10 28 | 703 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 04 12 | 644 | 0.4+ | 0.7+ | 2005 10 28 | 703 | 0.4+ | 0.4− | | | | |
| 2002 04 12 | 644 | 0.8+ | 1.0+ | 2005 10 28 | 703 | 0.0 | 0.2− | | | | |

**(138905)∗ 2000 YK$_{110}$ = 1998 EM$_{22}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 93905)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 244.75264 | | (2000.0) | | **P** | **Q** |
| *n* | 0.30111047 | ω | 174.91709 | | −0.73946361 | −0.67153609 |
| *a* | 2.2045442 | Ω | 322.75472 | | +0.61486163 | −0.64513954 |
| *e* | 0.0917461 | *i* | 4.47791 | | +0.27411448 | −0.36446434 |
| *P* | 3.27 | *H* | 16.8 | *G* | 0.15 | *U* 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 809 | 1.0− | 0.3− | 2001 01 19 | 704 | 0.2+ | 0.5+ | 2003 12 28 | 691 | 0.1− | 0.1+ |
| 1998 03 20 | 704 | 1.3− | 1.2+ | 2001 01 19 | 704 | (2.3− | 1.2+) | 2003 12 29 | 691 | 0.1+ | 0.3+ |
| 1998 03 20 | 704 | 1.3+ | 0.5+ | 2001 01 19 | 704 | 0.1+ | 0.3− | 2003 12 29 | 691 | 0.0 | 0.0 |
| 1998 03 20 | 704 | 0.7− | 1.0+ | 2001 01 19 | 704 | (1.9− | 1.4+) | 2003 12 29 | 691 | 0.0 | 0.0 |
| 1998 03 20 | 704 | (2.5− | 1.4−) | 2001 01 19 | 704 | 0.3− | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 1998 03 20 | 704 | 1.6+ | 1.1− | 2001 01 19 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.5+ |
| 1999 09 06 | 691 | 0.3− | 0.6+ | 2001 01 20 | 704 | 0.5− | 0.4+ | 2006 09 18 | 703 | 1.0− | 0.7− |
| 1999 09 06 | 691 | 0.8− | 0.5+ | 2001 01 20 | 704 | 0.4− | 1.0− | 2006 09 18 | 703 | 0.3+ | 1.0+ |
| 1999 09 06 | 691 | 0.4+ | 0.7+ | 2001 01 20 | 704 | 0.7+ | 1.2+ | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2000 12 30 | 704 | 0.9− | 0.7+ | 2001 01 20 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 703 | 1.2− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 1.3+ | 0.1− | 2001 01 20 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.6+ | 0.7+ |
| 2000 12 30 | 704 | 0.5+ | 0.2+ | 2001 01 21 | 704 | 0.1− | 0.5− | 2006 09 19 | 703 | 0.3+ | 0.5− |
| 2000 12 30 | 704 | 0.4− | 1.0− | 2001 01 21 | 704 | 1.2+ | 0.5+ | 2006 10 03 | G96 | 0.3− | 0.6− |
| 2000 12 30 | 704 | 1.1− | 1.4− | 2001 01 21 | 704 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2001 01 03 | 699 | 0.3+ | 0.9+ | 2001 01 21 | 704 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.6− |
| 2001 01 03 | 699 | 0.7+ | 0.4− | 2001 01 21 | 704 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.4− | 0.5− |
| 2001 01 03 | 699 | 0.4− | 1.0+ | 2003 11 20 | 704 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2001 01 03 | 699 | 0.1+ | 0.5+ | 2003 11 20 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.4+ | 1.0+ |
| 2001 01 04 | 704 | 1.4+ | 0.7− | 2003 11 20 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 1.4+ | 1.4− |
| 2001 01 04 | 704 | 0.2+ | 0.1− | 2003 11 20 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.0 |
| 2001 01 04 | 704 | 0.2− | 1.4+ | 2003 11 20 | 691 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 01 19 | 704 | 0.4− | 0.3+ | 2003 11 20 | 691 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2001 01 19 | 704 | 1.1− | 0.4+ | 2003 11 20 | 691 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2001 01 19 | 704 | 0.3+ | 0.3− | 2003 12 28 | 691 | 0.1+ | 0.4+ | | | | |
| 2001 01 19 | 704 | (0.0 | 1.6+) | 2003 12 28 | 691 | 0.1− | 0.2+ | | | | |

**(138906)∗ 2000 YO$_{118}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.14133 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29678757 | $\omega$ | 111.38711 | | +0.31422810 | −0.94518506 | |
| $a$ | 2.2258996 | $\Omega$ | 319.95229 | | +0.81187312 | +0.31603009 | |
| $e$ | 0.1391493 | $i$ | 7.93302 | | +0.49205969 | +0.08215948 | |
| $P$ | 3.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 13 | 691 | 0.0 | 0.3− | 2001 02 20 | 704 | 0.5− | 0.3+ | 2003 12 29 | 704 | 0.5− | 0.4− |
| 1994 01 13 | 691 | 0.2+ | 0.7− | 2001 02 21 | 704 | (0.9+ | 1.7+) | 2003 12 29 | 704 | 0.7− | 0.4+ |
| 1994 01 13 | 691 | 0.1+ | 0.2− | 2001 02 21 | 704 | 1.0+ | 0.4+ | 2006 08 18 | 699 | 0.4+ | 1.3+ |
| 2000 12 30 | 704 | 1.5+ | 0.3− | 2001 02 21 | 704 | 0.5− | 0.2+ | 2006 08 18 | 699 | (2.1− | 0.4−) |
| 2000 12 30 | 704 | 0.4+ | 0.6+ | 2001 02 22 | 699 | 0.1− | 1.2+ | 2006 08 18 | 699 | 1.1− | 0.5− |
| 2000 12 30 | 704 | 0.2+ | 1.1+ | 2001 02 22 | 699 | 0.2− | 0.6+ | 2006 08 18 | 699 | (2.0+ | 1.1+) |
| 2001 01 04 | 704 | 0.1+ | 0.0 | 2001 02 22 | 699 | 0.3+ | 0.9+ | 2006 08 18 | 644 | 0.1+ | 0.3+ |
| 2001 01 04 | 704 | 0.4+ | 0.6− | 2001 02 22 | 699 | 0.6− | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.3+ |
| 2001 01 04 | 704 | 0.2+ | 0.3− | 2001 03 13 | 699 | 0.6− | 0.9+ | 2006 08 18 | 644 | 0.2− | 0.1+ |
| 2001 01 04 | 704 | 0.0 | 0.5+ | 2001 03 13 | 699 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.7− | 0.7+ |
| 2001 01 04 | 704 | 0.4− | 0.8− | 2001 03 13 | 699 | 1.2− | 0.3− | 2006 08 29 | 703 | 0.3− | 0.0 |
| 2001 01 04 | 608 | 0.6+ | 0.8− | 2001 03 13 | 699 | 0.7+ | 1.0+ | 2006 08 29 | 703 | 0.2+ | 0.0 |
| 2001 01 04 | 608 | 0.5+ | 0.9− | 2003 09 30 | 704 | 0.2+ | 0.5− | 2006 08 29 | 703 | 0.5− | 0.1− |
| 2001 01 04 | 608 | 0.6+ | 0.9− | 2003 09 30 | 704 | 0.3− | 1.0+ | 2006 08 30 | 704 | 0.3+ | 0.0 |
| 2001 01 20 | 704 | 0.2+ | 0.6+ | 2003 09 30 | 704 | 0.7− | 1.1+ | 2006 08 30 | 704 | 1.0+ | 1.1+ |
| 2001 01 20 | 704 | 0.5+ | 1.1+ | 2003 09 30 | 704 | 0.6− | 1.0− | 2006 08 30 | 704 | 0.6− | 0.7+ |
| 2001 01 20 | 704 | 0.8+ | 0.0 | 2003 09 30 | 704 | 0.2− | 0.5+ | 2006 08 30 | 704 | 0.6− | 0.2+ |
| 2001 01 21 | 704 | 0.5+ | 0.5− | 2003 11 04 | 704 | 0.6+ | 0.6+ | 2006 09 06 | 644 | 0.4− | 0.2+ |
| 2001 01 21 | 704 | 0.4+ | 0.3+ | 2003 11 04 | 704 | 0.4+ | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.3+ |
| 2001 01 21 | 704 | 0.2+ | 0.4+ | 2003 11 04 | 704 | 0.9− | 0.6− | 2006 09 06 | 644 | 0.4− | 0.3+ |
| 2001 01 21 | 704 | 0.8+ | 0.4+ | 2003 11 04 | 704 | 0.2− | 0.9− | 2006 09 15 | 704 | 0.2− | 1.3+ |
| 2001 01 21 | 704 | 0.4+ | 0.2+ | 2003 11 20 | 704 | 0.3+ | 0.0 | 2006 09 15 | 704 | 0.7− | 0.5+ |
| 2001 02 02 | 691 | 0.2+ | 0.3− | 2003 11 20 | 704 | 0.0 | 0.2− | 2006 09 15 | 704 | 1.3+ | 0.0 |
| 2001 02 02 | 691 | 0.1− | 0.3− | 2003 11 20 | 704 | 1.4+ | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.9+ |
| 2001 02 02 | 704 | 0.3+ | 0.3− | 2003 11 20 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 1.2− | 0.1+ |
| 2001 02 02 | 691 | 0.1+ | 0.1− | 2003 11 20 | 704 | 0.7+ | 0.5+ | 2006 09 16 | 704 | 0.0 | 0.8− |
| 2001 02 02 | 704 | 0.1+ | 0.2+ | 2003 11 21 | 704 | 0.5+ | 0.3− | 2006 09 16 | 704 | 0.6+ | 0.4+ |
| 2001 02 02 | 704 | 0.1− | 0.6+ | 2003 11 21 | 704 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.3+ |
| 2001 02 02 | 704 | 0.5+ | 1.0+ | 2003 11 21 | 704 | 0.3+ | 0.3− | 2006 09 17 | 703 | 0.7+ | 0.4− |
| 2001 02 13 | 691 | 0.1− | 0.0 | 2003 11 21 | 704 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.2+ | 0.4− |
| 2001 02 13 | 691 | 0.2− | 0.1+ | 2003 12 12 | 644 | 0.3− | 0.5− | 2006 09 17 | 703 | 0.2+ | 0.0 |
| 2001 02 13 | 691 | 0.5− | 0.1+ | 2003 12 12 | 644 | 0.4− | 0.4− | 2006 09 20 | 699 | 0.2− | 0.5+ |
| 2001 02 16 | 699 | 0.0 | 0.1− | 2003 12 12 | 644 | 0.4− | 0.1− | 2006 09 20 | 699 | 0.5− | 0.5+ |
| 2001 02 16 | 699 | 0.0 | 0.5+ | 2003 12 17 | 704 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.6− | 0.7+ |
| 2001 02 16 | 699 | 0.1− | 1.1+ | 2003 12 17 | 704 | 0.2+ | 0.5− | 2006 09 20 | 699 | 0.1− | 0.4+ |
| 2001 02 16 | 699 | 0.6+ | 0.4+ | 2003 12 17 | 704 | 0.3+ | 0.3− | 2006 10 01 | 703 | 0.1− | 1.0+ |
| 2001 02 19 | 704 | 0.2+ | 0.9+ | 2003 12 17 | 704 | 0.4+ | 0.2− | 2006 10 01 | 703 | 0.5+ | 0.2− |
| 2001 02 19 | 704 | 0.5+ | 0.1+ | 2003 12 17 | 704 | 0.5+ | 0.5− | 2006 10 01 | 703 | 0.2+ | 0.1− |
| 2001 02 19 | 704 | (0.7+ | 1.7+) | 2003 12 28 | 704 | 0.6− | 0.2+ | 2006 10 01 | 703 | 0.8− | 0.3+ |
| 2001 02 19 | 704 | 0.0 | 1.3+ | 2003 12 28 | 704 | 0.3− | 0.1− | 2006 10 23 | 703 | 0.1− | 0.3− |
| 2001 02 20 | 704 | 0.1− | 0.7− | 2003 12 28 | 704 | 0.3− | 0.2− | 2006 10 23 | 703 | 0.5− | 0.3− |
| 2001 02 20 | 704 | 0.1+ | 0.9+ | 2003 12 29 | 704 | 0.3− | 0.0 | 2006 10 23 | 703 | 0.4− | 0.4− |
| 2001 02 20 | 704 | 0.2− | 0.1+ | 2003 12 29 | 704 | 0.2− | 0.4+ | 2006 10 23 | 703 | 0.7− | 0.4+ |
| 2001 02 20 | 704 | 0.1+ | 0.5+ | 2003 12 29 | 704 | 1.2− | 0.2+ | | | | |

**(138907)∗ 2000 YB$_{129}$**

Discovered 2000 Dec. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.95710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30000362 | $\omega$ | 106.11846 | | +0.03242217 | −0.99895337 | |
| $a$ | 2.2099632 | $\Omega$ | 341.93090 | | +0.87265327 | +0.04403104 | |
| $e$ | 0.0727182 | $i$ | 5.97085 | | +0.48726283 | −0.01238675 | |
| $P$ | 3.29 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.4− | 1.2− | 2003 12 03 | 704 | 0.1+ | 0.8− | 2006 09 29 | 704 | 0.5+ | 0.4+ |
| 1998 03 20 | 704 | 0.6− | 0.2− | 2003 12 03 | 704 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.7+ |
| 1998 03 20 | 704 | 0.9− | 1.2− | 2003 12 03 | 704 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.1− | 0.3− |
| 1998 03 20 | 704 | 0.4− | 0.5+ | 2003 12 03 | 704 | 0.4+ | 0.9− | 2006 09 29 | 704 | 0.2+ | 0.7+ |
| 1998 03 29 | 704 | 0.6+ | 0.4+ | 2003 12 17 | 704 | 0.7+ | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.6− |
| 1998 03 29 | 704 | 0.1+ | 0.6− | 2003 12 17 | 704 | 0.9+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.6− |
| 1998 03 29 | 704 | (0.4+ | 2.9+) | 2003 12 17 | 704 | 0.6+ | 0.1− | 2006 09 29 | 704 | 0.5− | 1.2+ |
| 1998 03 29 | 704 | 0.6+ | 0.4− | 2003 12 17 | 704 | 0.9+ | 0.3− | 2006 09 29 | 704 | 0.5− | 0.1+ |
| 2000 12 29 | 608 | 0.7− | 1.4− | 2003 12 17 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.1− |
| 2000 12 29 | 608 | 0.6− | 0.1− | 2003 12 27 | 704 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2000 12 29 | 608 | 0.6− | 0.3− | 2003 12 27 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.5− |
| 2001 01 04 | 704 | 0.3+ | 0.1+ | 2003 12 27 | 704 | 1.3+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.5− |
| 2001 01 04 | 704 | 0.3+ | 0.3− | 2003 12 27 | 704 | (0.6− | 1.8−) | 2006 10 03 | 704 | (2.5− | 2.0+) |
| 2001 01 04 | 704 | 0.4− | 0.2+ | 2004 01 11 | 644 | 0.1− | 0.1− | 2006 10 03 | 704 | (2.3− | 0.6+) |
| 2001 01 04 | 704 | 0.4+ | 0.1+ | 2004 01 11 | 644 | 0.1− | 0.1+ | 2006 10 03 | 704 | (1.8− | 2.5+) |
| 2001 01 04 | 704 | 1.2+ | 0.1+ | 2004 01 11 | 644 | 0.8− | 1.2− | 2006 10 03 | 704 | (1.7− | 2.3+) |
| 2001 01 19 | 704 | 0.5+ | 0.5+ | 2004 02 17 | 644 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.2− |
| 2001 01 19 | 704 | 0.3− | 0.4+ | 2004 02 17 | 644 | 0.3− | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2001 01 19 | 704 | 0.0 | 0.3+ | 2004 02 17 | 644 | 0.3− | 0.3+ | 2006 10 03 | 704 | 0.9− | 0.3− |
| 2001 01 19 | 704 | 0.4− | 0.5+ | 2005 05 30 | E12 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.4− | 0.3− |
| 2001 01 19 | 704 | 0.1+ | 0.1− | 2005 05 30 | E12 | 0.3+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2001 02 01 | 699 | 0.4+ | 0.3+ | 2005 05 30 | E12 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 02 01 | 699 | 0.6+ | 0.3− | 2005 05 30 | E12 | 0.5+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2001 02 01 | 699 | 0.2− | 0.6+ | 2005 06 26 | 644 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 02 01 | 699 | 0.1− | 0.6+ | 2005 06 26 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.8+ |
| 2001 02 03 | 704 | 0.9− | 0.8+ | 2005 06 26 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2001 02 03 | 704 | 0.3− | 0.5+ | 2005 06 26 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2001 02 03 | 704 | 0.2− | 1.4+ | 2005 06 26 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 02 03 | 704 | 0.6− | 0.7+ | 2005 06 26 | 644 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 02 17 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2001 02 17 | 704 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 02 17 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 02 17 | 704 | 0.9+ | 1.1+ | 2006 09 18 | 699 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 02 17 | 704 | (0.0 | 1.8+) | 2006 09 18 | 699 | 0.7+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 03 20 | 699 | 0.3− | 0.7+ | 2006 09 18 | 699 | 0.5+ | 0.2− | 2006 10 29 | 704 | 1.2+ | 0.5− |
| 2001 03 20 | 699 | (1.3+ | 1.7+) | 2006 09 18 | 699 | 0.5− | 0.0 | 2006 10 29 | 704 | 0.7+ | 0.0 |
| 2001 03 20 | 699 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.5− | 1.0+ | 2006 10 29 | 704 | 0.9− | 0.7+ |
| 2001 03 20 | 699 | 0.4− | 0.9− | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.4+ | 0.2− |
| 2003 11 19 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.5− | 0.5+ | 2006 11 10 | 683 | 0.8+ | 1.0− |
| 2003 11 19 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.1+ | 2006 11 10 | 683 | 0.8− | 0.3+ |
| 2003 11 19 | 704 | 0.0 | 0.2− | 2006 09 22 | 224 | 0.2+ | 0.2− | 2006 11 10 | 683 | 0.4− | 2.3− |
| 2003 11 19 | 704 | 0.6− | 0.3+ | 2006 09 22 | 224 | 0.2+ | 0.0 | 2006 11 11 | 683 | 0.4− | 0.0 |
| 2003 11 19 | 704 | 0.1− | 0.0 | 2006 09 22 | 224 | 0.9+ | 0.2+ | 2006 11 11 | 683 | 0.9− | 1.7+ |
| 2003 12 03 | 704 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 683 | 1.5− | 1.1− |

**(138908)∗ 2000 YG$_{130}$ = 1999 RB$_{146}$**

Discovered 2000 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17524)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.87573 | | (2000.0) | | | |
| $n$ | 0.17414241 | $\omega$ | 96.64950 | | +0.99499509 | −0.07324206 |
| $a$ | 3.1758966 | $\Omega$ | 267.56612 | | +0.04065330 | +0.91812306 |
| $e$ | 0.1876895 | $i$ | 3.90111 | | +0.09128022 | +0.38946842 |
| $P$ | 5.66 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.0 | 0.2− | 2005 09 30 | 691 | 0.1+ | 0.2+ | 2005 10 24 | 699 | 0.4− | 0.5− | |
| 1996 02 10 | 691 | 0.1− | 0.4− | 2005 10 01 | 703 | 0.1+ | 0.2− | 2005 10 24 | 683 | 0.7+ | 0.0 | |
| 1996 02 10 | 691 | 0.5− | 0.5− | 2005 10 01 | 703 | 0.4− | 0.5− | 2005 10 24 | 683 | 0.9+ | 1.4− | |
| 1999 09 05 | 699 | 0.1+ | 0.0 | 2005 10 01 | 703 | 0.2+ | 0.2− | 2005 10 24 | 683 | 0.5+ | 0.6+ | |
| 1999 09 05 | 699 | 0.7− | 0.4+ | 2005 10 01 | 703 | 0.2− | 0.3− | 2005 10 26 | 683 | 0.2+ | 1.1− | |
| 1999 09 05 | 699 | 0.9− | 1.1+ | 2005 10 03 | 704 | 0.8+ | 0.9+ | 2005 10 26 | 683 | 0.5− | 0.5− | |
| 1999 09 09 | 704 | 0.3− | 0.3+ | 2005 10 03 | 704 | 0.5+ | 0.3+ | 2005 10 26 | 683 | 0.6+ | 0.1+ | |
| 1999 09 09 | 704 | 0.6+ | 0.8− | 2005 10 03 | 704 | 0.4− | 0.6+ | 2005 10 28 | 703 | 0.3− | 0.7− | |
| 1999 09 09 | 704 | 0.7+ | 1.8− | 2005 10 03 | 704 | 0.3− | 0.4+ | 2005 10 28 | 683 | 0.6− | 0.3− | |
| 1999 09 09 | 704 | 0.1+ | 0.8− | 2005 10 04 | 703 | 1.0− | 0.2+ | 2005 10 28 | 703 | 1.4− | 1.0− | |
| 1999 09 14 | 704 | 0.2+ | 1.5+ | 2005 10 04 | 703 | 0.3− | 0.1− | 2005 10 28 | 703 | 0.8− | 0.5− | |
| 1999 09 14 | 704 | 0.1+ | 0.1+ | 2005 10 04 | 703 | 0.0 | 0.1− | 2005 10 28 | 703 | 0.1− | 0.8− | |
| 1999 09 14 | 704 | 0.1+ | 0.1− | 2005 10 04 | 703 | 0.4− | 0.3− | 2005 10 28 | 683 | 0.8− | 1.4+ | |
| 1999 09 14 | 704 | 0.0 | 0.1+ | 2005 10 06 | 699 | 0.5− | 0.6+ | 2005 10 28 | 683 | 0.0 | 0.9+ | |
| 2000 11 29 | 704 | 0.9− | 0.7+ | 2005 10 06 | 699 | 0.6+ | 0.7+ | 2005 10 29 | 683 | 0.8− | 0.1+ | |
| 2000 11 29 | 704 | 1.3+ | 0.1− | 2005 10 06 | 699 | 0.1− | 0.4+ | 2005 10 29 | 683 | 0.6+ | 1.1+ | |
| 2000 11 29 | 704 | 0.9− | 1.2+ | 2005 10 06 | 699 | 0.3− | 0.1− | 2005 10 29 | 683 | 0.2− | 0.6+ | |
| 2000 11 29 | 704 | 1.2+ | 0.3− | 2005 10 07 | 704 | (2.0− | 1.3+) | 2005 10 30 | 683 | 0.3− | 0.6+ | |
| 2000 12 30 | 704 | 0.1+ | 0.5+ | 2005 10 07 | 704 | (2.0− | 0.2−) | 2005 10 30 | 704 | 0.6+ | 0.7+ | |
| 2000 12 30 | 704 | 0.7− | 0.5+ | 2005 10 07 | 704 | 1.0− | 0.6+ | 2005 10 30 | 683 | (1.3− | 1.6+) | |
| 2000 12 30 | 704 | 0.3− | 0.5− | 2005 10 07 | 704 | 1.1− | 0.0 | 2005 10 30 | 704 | 1.0+ | 0.8+ | |
| 2000 12 30 | 704 | 0.1− | 0.4+ | 2005 10 07 | 704 | 1.2− | 0.4+ | 2005 10 30 | 683 | 0.2+ | 0.7+ | |
| 2000 12 30 | 704 | 0.1− | 0.7+ | 2005 10 08 | 704 | 0.1− | 0.5+ | 2005 10 30 | 704 | 0.5+ | 0.5+ | |
| 2001 01 04 | 691 | 0.1+ | 0.1+ | 2005 10 08 | 704 | 1.1− | 0.0 | 2005 10 30 | 704 | 0.1− | 1.3+ | |
| 2001 01 04 | 691 | 0.0 | 0.2+ | 2005 10 08 | 704 | 0.3+ | 0.8− | 2005 10 30 | 704 | (0.8− | 1.5+) | |
| 2001 01 04 | 691 | 0.3+ | 0.3+ | 2005 10 08 | 704 | (2.4− | 0.1+) | 2005 11 02 | 704 | 0.4+ | 0.5+ | |
| 2002 03 13 | 704 | 0.3+ | 1.4+ | 2005 10 08 | 704 | 0.5+ | 0.6− | 2005 11 02 | 704 | 0.5+ | 0.3+ | |
| 2002 03 13 | 704 | 0.1− | 0.6+ | 2005 10 08 | 704 | (1.9− | 1.0+) | 2005 11 02 | 704 | 0.3− | 0.6+ | |
| 2002 03 13 | 704 | 0.8+ | 0.8+ | 2005 10 08 | 704 | 0.9+ | 0.4− | 2005 11 02 | 704 | 0.0 | 0.0 | |
| 2003 04 25 | 691 | 0.6+ | 1.2+ | 2005 10 08 | 704 | (2.3− | 1.0+) | 2005 11 02 | 704 | 0.1− | 0.4− | |
| 2003 04 25 | 691 | (0.0 | 1.7+) | 2005 10 08 | 704 | 0.1− | 0.1− | 2005 11 05 | 704 | 0.4+ | 0.4+ | |
| 2003 04 25 | 691 | 0.4+ | 1.3+ | 2005 10 08 | 704 | 1.0− | 0.3− | 2005 11 05 | 704 | 0.4+ | 0.6+ | |
| 2005 08 30 | 644 | 0.0 | 0.1− | 2005 10 10 | 691 | 0.0 | 0.0 | 2005 11 05 | 704 | 0.8+ | 0.7+ | |
| 2005 08 30 | 644 | 0.0 | 0.1+ | 2005 10 10 | 691 | 0.0 | 0.0 | 2005 11 05 | 704 | 0.2+ | 0.5− | |
| 2005 08 30 | 644 | 0.3− | 0.0 | 2005 10 10 | 691 | 0.0 | 0.0 | 2005 11 05 | 704 | 0.3− | 0.1− | |
| 2005 09 12 | 704 | 0.0 | 0.3+ | 2005 10 12 | 704 | 0.1+ | 0.2+ | 2005 11 19 | 699 | 0.2− | 0.5− | |
| 2005 09 12 | 704 | 0.0 | 0.2− | 2005 10 12 | 704 | 0.2− | 0.3− | 2005 11 19 | 699 | 1.2+ | 0.2− | |
| 2005 09 12 | 704 | 0.3+ | 0.7− | 2005 10 12 | 704 | 0.5+ | 0.1+ | 2005 11 19 | 699 | (1.7+ | 1.7−) | |
| 2005 09 12 | 704 | 0.1− | 0.4+ | 2005 10 12 | 704 | 0.6− | 0.7+ | 2005 11 19 | 699 | (2.4+ | 0.8−) | |
| 2005 09 12 | 704 | 0.1+ | 0.6+ | 2005 10 12 | 704 | 0.2+ | 0.1+ | 2005 12 28 | 703 | 0.3− | 0.7+ | |
| 2005 09 23 | 703 | 1.2− | 0.5− | 2005 10 22 | 703 | 0.1+ | 0.3− | 2005 12 28 | 703 | 0.1+ | 0.2+ | |
| 2005 09 23 | 703 | 0.7− | 0.6+ | 2005 10 22 | 703 | 0.2− | 0.2− | 2005 12 28 | 703 | 1.5− | 1.1− | |
| 2005 09 23 | 703 | 0.3− | 1.0− | 2005 10 22 | 703 | 0.1− | 0.2+ | 2005 12 28 | 703 | 0.5− | 0.4− | |
| 2005 09 23 | 703 | 0.4− | 1.0− | 2005 10 22 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.6− | 0.6− | |
| 2005 09 25 | 691 | 0.1+ | 0.1+ | 2005 10 22 | 703 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2− | 0.0 | |
| 2005 09 25 | 691 | 0.2+ | 0.0 | 2005 10 22 | 644 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.4− | |
| 2005 09 25 | 691 | 0.1+ | 0.0 | 2005 10 22 | 644 | 0.1+ | 0.0 | 2006 09 25 | G96 | (1.1− | 1.8+) | |
| 2005 09 29 | 699 | 0.3− | 0.1+ | 2005 10 23 | 683 | 1.0+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.6− | |
| 2005 09 29 | 699 | 0.2− | 0.2+ | 2005 10 23 | 683 | (1.8+ | 1.5−) | 2006 10 21 | G96 | 0.0 | 0.7− | |
| 2005 09 29 | 699 | 0.1+ | 0.1− | 2005 10 23 | 683 | 1.2+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.0 | |
| 2005 09 29 | 699 | 0.1+ | 0.6+ | 2005 10 24 | 699 | 0.5+ | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.2− | |
| 2005 09 30 | 691 | 0.1+ | 0.1+ | 2005 10 24 | 699 | 1.1− | 0.8− | | | | | |
| 2005 09 30 | 691 | 0.0 | 0.1+ | 2005 10 24 | 699 | 0.6+ | 0.5+ | | | | | |

**(138909)∗ 2000 YO$_{135}$ = 2003 SQ$_{204}$**

Discovered 2000 Dec. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 52741)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.03819 | | (2000.0) | | | |
| $n$ | 0.29866884 | $\omega$ | 16.80900 | | +0.71524872 | −0.69626054 |
| $a$ | 2.2165427 | $\Omega$ | 27.62081 | | +0.62529986 | +0.59900712 |
| $e$ | 0.0809468 | $i$ | 7.47788 | | +0.31212073 | +0.39548924 |
| $P$ | 3.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 04 | 704 | 0.4+ | 0.3− | 2003 11 24 | 704 | 0.1− | 0.0 | 2006 08 30 | 704 | 1.4− | 0.2+ | |
| 2000 12 04 | 704 | 0.3+ | 0.0 | 2003 11 24 | 704 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.4+ | 0.7+ | |
| 2000 12 04 | 704 | 0.4− | 0.6+ | 2003 11 24 | 704 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.4− | 0.6+ | |
| 2000 12 04 | 704 | 0.5− | 0.5+ | 2003 11 24 | 704 | 0.4+ | 0.0 | 2006 08 31 | 704 | 0.6+ | 0.0 | |
| 2000 12 18 | 699 | 0.4+ | 0.5+ | 2003 11 24 | 704 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.7− | 0.1− | |
| 2000 12 18 | 699 | 0.2+ | 0.8+ | 2003 11 24 | 704 | 0.1+ | 0.1+ | 2006 08 31 | 704 | 0.5− | 1.3+ | |
| 2000 12 18 | 699 | 0.1+ | 1.3+ | 2003 11 24 | 704 | 0.2+ | 0.1− | 2006 09 01 | 106 | 0.1− | 0.5− | |
| 2000 12 18 | 699 | 0.3− | 0.9+ | 2003 11 24 | 704 | 0.2− | 0.1+ | 2006 09 01 | 106 | 0.2+ | 0.2+ | |
| 2000 12 19 | 704 | 0.1− | 0.5+ | 2003 12 15 | 703 | (0.8− | 2.3+) | 2006 09 01 | 106 | 0.8+ | 0.1− | |
| 2000 12 19 | 704 | 1.2+ | 1.1+ | 2003 12 15 | 703 | (0.1+ | 3.0+) | 2006 09 01 | 106 | 0.2+ | 0.1+ | |
| 2000 12 19 | 704 | (0.7− | 2.3+) | 2003 12 15 | 703 | (0.8+ | 2.9+) | 2006 09 14 | 703 | 0.6− | 0.7+ | |
| 2001 01 05 | 704 | 0.2+ | 0.2− | 2003 12 15 | 703 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.2+ | |
| 2001 01 05 | 704 | 0.1+ | 0.1− | 2003 12 17 | 644 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.2− | 0.6+ | |
| 2001 01 05 | 704 | 0.2+ | 0.1− | 2003 12 17 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.3− | 0.7+ | |
| 2001 01 05 | 704 | 0.4+ | 0.8− | 2003 12 17 | 644 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.1+ | 0.1+ | |
| 2001 01 05 | 704 | 0.7− | 1.0− | 2003 12 18 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 704 | 0.3− | 0.6+ | |
| 2003 09 22 | 704 | 0.2− | 0.4− | 2003 12 18 | 704 | 0.1− | 0.0 | 2006 09 16 | 704 | 0.1− | 0.5+ | |
| 2003 09 22 | 704 | 0.0 | 0.9− | 2003 12 18 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.9+ | |
| 2003 09 22 | 704 | 1.3− | 0.1− | 2003 12 18 | 704 | 1.1− | 0.3− | 2006 09 19 | 704 | 0.8− | 1.1+ | |
| 2003 09 22 | 704 | 0.7+ | 0.8+ | 2004 01 11 | 644 | 0.0 | 0.3+ | 2006 09 19 | 699 | (2.5− | 0.7+) | |
| 2003 09 26 | 704 | 0.9− | 0.4+ | 2004 01 11 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 0.1− | 0.4− | |
| 2003 09 26 | 704 | 0.0 | 1.1− | 2004 01 11 | 644 | 0.0 | 0.2+ | 2006 09 19 | 704 | 1.2− | 0.1+ | |
| 2003 09 26 | 704 | 0.4− | 0.2+ | 2005 03 13 | G96 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.5− | |
| 2003 09 26 | 704 | 0.2− | 0.9+ | 2005 03 13 | G96 | 0.2− | 0.4+ | 2006 09 19 | 704 | 1.3+ | 1.4− | |
| 2003 09 26 | 704 | 1.3− | 1.3+ | 2005 03 13 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.1− | 0.1+ | |
| 2003 09 29 | 704 | 0.0 | 0.3+ | 2005 03 13 | G96 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.8− | 0.3+ | |
| 2003 09 29 | 704 | 1.0− | 0.9+ | 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.1− | |
| 2003 09 29 | 704 | 0.3− | 0.7+ | 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.2− | |
| 2003 09 29 | 704 | 0.4− | 0.5+ | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.2− | |
| 2003 09 29 | 704 | 0.4− | 0.3+ | 2005 04 02 | 699 | 0.2+ | 0.9+ | 2006 09 20 | 608 | 0.5− | 1.3− | |
| 2003 10 22 | 704 | 0.6− | 0.5+ | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 20 | 608 | 0.5− | 1.4− | |
| 2003 10 22 | 704 | 0.3− | 0.2− | 2005 04 02 | 699 | (1.4+ | 1.8+) | 2006 09 20 | 608 | 0.8− | 1.1− | |
| 2003 10 22 | 704 | 0.2− | 0.6+ | 2005 04 02 | 699 | 1.1+ | 0.4+ | 2006 09 22 | 704 | 0.6− | 0.3+ | |
| 2003 10 22 | 704 | 0.0 | 0.0 | 2005 04 02 | 699 | (0.3− | 1.7+) | 2006 09 22 | 704 | 0.4+ | 1.2+ | |
| 2003 10 22 | 704 | 0.2− | 0.5+ | 2005 04 12 | 691 | 0.5+ | 0.5+ | 2006 09 22 | 704 | 0.2+ | 0.3+ | |
| 2003 10 25 | 704 | 0.4+ | 0.4+ | 2005 04 12 | 691 | 0.3+ | 0.7+ | 2006 09 22 | 704 | 0.3− | 1.2+ | |
| 2003 10 25 | 704 | 0.1+ | 0.6+ | 2005 04 12 | 704 | 1.3+ | 0.6+ | 2006 09 22 | 704 | 0.2+ | 0.7+ | |
| 2003 10 25 | 704 | 0.1− | 0.6+ | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.4+ | |
| 2003 10 25 | 704 | 0.3+ | 0.6+ | 2005 04 12 | 704 | 1.1+ | 0.2− | 2006 09 25 | 699 | 0.4− | 0.1− | |
| 2003 10 25 | 704 | 0.1− | 0.5+ | 2005 04 12 | 704 | 1.2+ | 0.8+ | 2006 09 25 | 699 | 0.2+ | 0.3+ | |
| 2003 10 27 | 691 | 0.2− | 0.2+ | 2005 04 12 | 704 | 0.8+ | 0.7+ | 2006 09 25 | 699 | 0.5− | 1.2+ | |
| 2003 10 27 | 691 | 0.1+ | 0.2+ | 2005 04 15 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 1.1+ | 0.2− | |
| 2003 10 27 | 691 | 0.3− | 0.2+ | 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 1.0+ | 0.0 | |
| 2003 10 30 | 704 | 0.2+ | 0.1+ | 2005 04 15 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 1.1+ | 0.3+ | |
| 2003 10 30 | 704 | 0.3− | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.8+ | 0.0 | |
| 2003 10 30 | 704 | 0.1− | 0.1− | 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.4+ | 0.2+ | |
| 2003 10 30 | 704 | 0.6− | 0.0 | 2005 04 17 | 691 | 0.4+ | 0.6+ | 2006 09 28 | 704 | 0.2− | 0.0 | |
| 2003 10 30 | 704 | 0.1− | 0.2− | 2005 04 18 | 703 | 1.0− | 0.9+ | 2006 09 28 | 704 | 1.1+ | 0.1− | |
| 2003 11 02 | 704 | 0.1− | 0.1+ | 2005 04 18 | 703 | 0.6− | 0.9+ | 2006 09 28 | 704 | 0.1+ | 0.1+ | |
| 2003 11 02 | 704 | 1.0− | 1.0+ | 2005 04 18 | 703 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.2+ | |
| 2003 11 02 | 704 | (0.3− | 1.8+) | 2005 04 18 | 703 | 0.9− | 0.9+ | 2006 09 30 | 703 | 0.6− | 0.1+ | |
| 2003 11 02 | 704 | 0.3− | 0.1+ | 2005 04 19 | 699 | 1.0+ | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.8− | |
| 2003 11 02 | 704 | 0.0 | 0.5+ | 2005 04 19 | 699 | 1.1+ | 1.2+ | 2006 09 30 | 703 | (1.8+ | 1.3−) | |
| 2003 11 14 | 644 | 0.1+ | 0.2+ | 2005 04 19 | 699 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.2+ | |
| 2003 11 14 | 644 | 0.1+ | 0.2+ | 2005 04 19 | 699 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.3+ | 0.4+ | |
| 2003 11 14 | 644 | 0.1+ | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2+ | |
| 2003 11 16 | 691 | 0.1− | 0.2+ | 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.4+ | |
| 2003 11 16 | 691 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.4+ | |
| 2003 11 16 | 691 | 0.1+ | 0.3+ | 2005 05 08 | 703 | 0.1− | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 703 | 0.2− | 0.1− | 2005 05 08 | 703 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.6+ | | |
| 2003 11 19 | 703 | 0.3− | 0.5− | 2005 05 08 | 703 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.3+ | | |
| 2003 11 19 | 703 | 0.5− | 0.6− | 2005 05 08 | 703 | 0.9− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.5− | | |
| 2003 11 19 | 703 | 0.0 | 0.4− | 2005 05 09 | 699 | 0.7+ | 1.0+ | 2006 10 19 | 703 | 0.4+ | 0.8+ | | |
| 2003 11 20 | 704 | (0.4− | 2.0+) | 2005 05 09 | 699 | 0.1− | 1.0+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2003 11 20 | 704 | (0.7− | 2.1+) | 2005 05 09 | 699 | 1.1+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2003 11 20 | 704 | 0.0 | 0.3+ | 2005 05 09 | 699 | 1.3+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2003 11 20 | 704 | (0.9− | 2.0+) | 2005 05 14 | E14 | 1.0− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.5+ | | |
| 2003 11 20 | 704 | (0.8− | 1.9+) | 2005 05 14 | E14 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2003 11 21 | 644 | 0.2− | 0.2+ | 2005 05 14 | E14 | 0.6+ | 0.3− | 2006 11 09 | 644 | 0.4+ | 0.2+ | | |
| 2003 11 21 | 644 | 0.2− | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.1− | | |
| 2003 11 21 | 644 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.6+ | | |
| 2003 11 22 | 704 | 0.5− | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.2+ | | |
| 2003 11 22 | 704 | 0.6+ | 0.1+ | 2006 08 23 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 1.2− | | |
| 2003 11 22 | 704 | 0.3− | 0.2+ | 2006 08 23 | 704 | 0.7− | 0.7+ | 2006 11 17 | G96 | 0.2− | 0.1+ | | |
| 2003 11 23 | 704 | 0.5+ | 0.7+ | 2006 08 23 | 704 | 0.8− | 1.2− | 2006 11 17 | G96 | 0.2+ | 0.1+ | | |
| 2003 11 23 | 704 | 0.2+ | 0.5+ | 2006 08 23 | 704 | 0.1− | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.0 | | |
| 2003 11 23 | 704 | 0.5+ | 0.2+ | 2006 08 23 | 704 | 0.8− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2003 11 23 | 704 | 0.4+ | 0.7+ | 2006 08 30 | 699 | 0.5+ | 0.8+ | 2006 11 21 | 704 | (0.5+ | 1.9+) | | |
| 2003 11 23 | 704 | 0.5+ | 0.5+ | 2006 08 30 | 704 | 1.1− | 0.5+ | 2006 11 21 | 704 | 0.1− | 1.4+ | | |
| 2003 11 24 | 704 | 0.4− | 0.6+ | 2006 08 30 | 704 | 1.1− | 0.2− | 2006 11 21 | 704 | 0.4+ | 1.3+ | | |
| 2003 11 24 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.4− | 0.6− | 2006 11 21 | 704 | (0.6+ | 2.0+) | | |

**(138910)∗ 2000 YE$_{136}$**

Discovered 2000 Dec. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 194.51689 | | (2000.0) | | | |
| $n$ | 0.29908778 | $\omega$ | 161.36241 | | −0.96665163 | +0.25503577 |
| $a$ | 2.2144724 | $\Omega$ | 33.44088 | | −0.24000353 | −0.87046842 |
| $e$ | 0.0503876 | $i$ | 2.41987 | | −0.08934726 | −0.42100058 |
| $P$ | 3.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.5− | 0.0 | 2003 11 21 | 704 | (2.9+ | 0.1−) | 2005 06 04 | 704 | 0.2− | 0.1+ | | |
| 1998 03 20 | 704 | 0.1− | 0.9− | 2003 11 21 | 704 | (2.1+ | 0.8+) | 2005 06 04 | 704 | 0.2− | 1.0+ | | |
| 1998 03 20 | 704 | 0.2− | 1.5+ | 2003 11 23 | 704 | 0.3− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.1− | | |
| 1998 03 20 | 704 | 0.4+ | 0.8− | 2003 11 23 | 704 | 0.9+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.2− | | |
| 1998 03 20 | 704 | 0.4+ | 0.1− | 2003 11 23 | 704 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 1998 03 29 | 704 | 1.0+ | 0.7+ | 2003 11 23 | 704 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.2− | 0.4− | | |
| 1998 03 29 | 704 | 0.6+ | 0.2+ | 2003 11 23 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | (0.1+ | 1.5+) | | |
| 1998 03 29 | 704 | 0.5+ | 0.2− | 2003 11 23 | 704 | 0.7+ | 1.0− | 2006 09 30 | 703 | 0.4− | 0.3+ | | |
| 1998 03 29 | 704 | 0.5+ | 0.9+ | 2003 11 23 | 704 | (1.9+ | 0.5+) | 2006 09 30 | 703 | 0.7+ | 0.5− | | |
| 1998 03 29 | 704 | 0.6− | 1.2− | 2003 11 24 | 704 | 1.2+ | 0.3− | 2006 09 30 | 703 | 0.2− | 0.2+ | | |
| 1998 04 19 | 704 | 1.3+ | 0.7+ | 2003 11 24 | 704 | 0.4+ | 0.7− | 2006 10 12 | 691 | 0.1+ | 0.4+ | | |
| 1998 04 19 | 704 | (0.1− | 2.9−) | 2003 11 24 | 704 | 0.8+ | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.3+ | | |
| 1998 04 19 | 704 | 1.4+ | 1.3− | 2003 12 04 | 704 | 0.9− | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.4+ | | |
| 1998 04 19 | 704 | 1.6− | 1.7− | 2003 12 04 | 704 | 0.1− | 0.7− | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 1999 09 07 | 704 | 0.3− | 0.0 | 2003 12 04 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.2+ | | |
| 1999 09 07 | 704 | 0.6− | 1.5+ | 2003 12 04 | 704 | (1.6− | 1.2−) | 2006 10 16 | 691 | 0.1− | 0.1− | | |
| 1999 09 07 | 704 | 0.8− | 0.1− | 2003 12 04 | 704 | 0.7+ | 0.9− | 2006 10 19 | 644 | 0.1− | 0.1− | | |
| 1999 09 07 | 704 | (0.2+ | 2.2+) | 2003 12 18 | 704 | 0.9− | 0.1+ | 2006 10 19 | 644 | 0.7− | 0.3− | | |
| 2000 12 22 | 691 | 0.5− | 0.1+ | 2003 12 18 | 704 | 0.1+ | 0.7− | 2006 10 19 | 644 | 0.7− | 0.1− | | |
| 2000 12 22 | 691 | 0.7− | 0.1− | 2003 12 18 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.3− | | |
| 2000 12 22 | 691 | 1.1− | 0.5− | 2003 12 18 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.2− | | |
| 2000 12 29 | 608 | 0.0 | 1.9+ | 2003 12 19 | 704 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.4− | 0.2− | | |
| 2000 12 29 | 608 | 0.1− | 1.6+ | 2003 12 19 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.1− | | |
| 2000 12 29 | 608 | 0.4+ | 1.9+ | 2003 12 19 | 704 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.2− | | |
| 2001 01 04 | 704 | 0.3+ | 0.6− | 2003 12 19 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.3− | | |
| 2001 01 04 | 704 | 0.3+ | 0.6+ | 2003 12 20 | 704 | 1.0+ | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.0 | | |
| 2001 01 04 | 704 | 0.1− | 0.3+ | 2003 12 20 | 704 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.0 | | |
| 2001 01 04 | 704 | 0.4+ | 0.1+ | 2003 12 20 | 704 | 0.9+ | 1.0+ | 2006 10 29 | 691 | 0.2+ | 0.0 | | |
| 2001 01 04 | 704 | 0.3− | 0.2+ | 2003 12 20 | 704 | 0.5+ | 0.9+ | 2006 11 11 | G96 | 0.6+ | 0.4− | | |
| 2001 01 19 | 704 | 0.5− | 0.5+ | 2003 12 21 | 704 | 0.2+ | 1.4+ | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2001 01 19 | 704 | 0.7− | 0.6− | 2003 12 21 | 704 | 0.9− | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.3− | | |
| 2001 01 19 | 704 | 0.4− | 0.1− | 2003 12 21 | 704 | 1.4+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.4+ | | |
| 2001 01 19 | 704 | 0.4+ | 0.2+ | 2003 12 21 | 704 | 1.0− | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.5− | | |
| 2001 01 19 | 704 | 0.1− | 0.5− | 2003 12 21 | 704 | 0.7− | 0.9− | 2006 11 11 | 703 | 0.1− | 0.9− | | |
| 2001 02 01 | 699 | 1.4+ | 0.3+ | 2003 12 21 | 704 | (1.8− | 0.7−) | 2006 11 11 | 703 | 1.3− | 0.8− | | |
| 2001 02 01 | 699 | 0.4+ | 0.6+ | 2003 12 21 | 704 | 0.3+ | 1.2+ | 2006 11 11 | 703 | (0.0 | 1.6−) | | |
| 2001 02 01 | 699 | 0.3− | 0.4+ | 2003 12 21 | 704 | 0.2− | 0.5+ | 2006 11 14 | G96 | 0.6+ | 0.1− | | |
| 2001 02 01 | 699 | 1.0+ | 0.5+ | 2003 12 21 | 704 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.7+ | 0.2− | | |
| 2001 02 03 | 704 | 0.8+ | 0.7+ | 2003 12 21 | 704 | 0.5− | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2001 02 03 | 704 | 0.7− | 0.1− | 2003 12 22 | 704 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.3− | | |
| 2001 02 03 | 704 | 0.5+ | 0.3− | 2003 12 22 | 704 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.8− | 0.4+ | | |
| 2001 02 03 | 704 | 0.4− | 0.7− | 2003 12 22 | 704 | 0.3− | 0.1− | 2006 11 17 | 703 | 1.0+ | 0.2+ | | |
| 2001 02 12 | 699 | 0.2− | 1.2+ | 2003 12 22 | 704 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.0 | 1.1− | | |
| 2001 02 12 | 699 | 0.6− | 0.1+ | 2003 12 22 | 704 | 0.0 | 0.4+ | 2006 11 17 | 703 | 1.0+ | 0.8+ | | |
| 2001 02 12 | 699 | 0.7− | 0.1− | 2003 12 25 | 691 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.5+ | | |
| 2001 02 12 | 699 | 0.0 | 0.0 | 2003 12 25 | 691 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.9+ | | |
| 2001 02 17 | 704 | 0.4− | 0.1− | 2003 12 25 | 691 | 0.1+ | 0.4− | 2006 11 18 | 704 | 1.3+ | 0.8+ | | |
| 2001 02 17 | 704 | 0.0 | 0.0 | 2003 12 27 | 704 | 0.3− | 0.4− | 2006 11 18 | 704 | 1.9+ | 0.9+ | | |
| 2001 02 17 | 704 | 0.3+ | 0.8+ | 2003 12 27 | 704 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 2001 02 17 | 704 | 0.5− | 0.5− | 2003 12 27 | 704 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3− | 1.2− | | |
| 2001 02 17 | 704 | 0.2+ | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.0 | | |
| 2003 11 21 | 704 | 0.3+ | 0.5− | 2003 12 27 | 704 | 0.1− | 0.2− | 2006 11 21 | 704 | 1.6− | 1.3+ | | |
| 2003 11 21 | 704 | 1.0+ | 1.0+ | 2005 06 04 | 704 | 0.7+ | 0.1− | | | | | | |
| 2003 11 21 | 704 | (2.1+ | 0.3+) | 2005 06 04 | 704 | 0.2− | 0.3+ | | | | | | |

**(138911)∗ 2001 AE$_2$**

Discovered 2001 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.86986 | | (2000.0) | | | |
| $n$ | 0.62860435 | $\omega$ | 42.93153 | | −0.82453275 | +0.56579811 |
| $a$ | 1.3496395 | $\Omega$ | 171.52305 | | −0.52665989 | −0.76469349 |
| $e$ | 0.0816586 | $i$ | 1.66061 | | −0.20682145 | −0.30840940 |
| $P$ | 1.57 | $H$ | 19.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 08 02 | 260 | 0.2− | 0.2+ | 2001 01 05 | 704 | 0.5+ | 0.7+ | 2006 08 27 | 691 | 0.2− | 0.3+ | | |
| 1984 08 02 | 260 | 1.5+ | 0.2+ | 2001 01 05 | 704 | 0.7+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.2+ | | |
| 1992 10 03 | 261 | (2.1− | 0.4−) | 2001 01 05 | 704 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.3− | 0.5+ | | |
| 1992 10 03 | 261 | (2.7− | 1.0−) | 2001 01 05 | 704 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.9− | 1.0+ | | |
| 1992 10 20 | 691 | 0.3− | 0.3− | 2001 01 13 | 046 | 0.3− | 0.5+ | 2006 08 27 | 699 | 0.1− | 0.3+ | | |
| 1992 10 20 | 691 | 0.2− | 0.2− | 2001 01 14 | 046 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.4− | 1.2+ | | |
| 1992 10 20 | 691 | 0.0 | 0.0 | 2001 01 14 | 046 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.0 | | |
| 1998 04 21 | 704 | 0.2− | 1.1+ | 2001 01 14 | 046 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.6− | | |
| 1998 04 21 | 704 | 0.4− | 0.8+ | 2001 01 14 | 046 | 0.2+ | 0.4− | 2006 08 28 | 703 | 0.4− | 0.3− | | |
| 1998 04 21 | 704 | 0.2− | 0.2− | 2001 01 14 | 046 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.3+ | | |
| 1998 04 21 | 704 | 0.7+ | 0.4− | 2001 01 15 | 118 | 0.5+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.3+ | | |
| 1998 04 21 | 704 | 0.4+ | 0.4+ | 2001 01 15 | 118 | 0.8+ | 0.4− | 2006 08 30 | 704 | (0.3− | 1.6+) | | |
| 1998 04 22 | 704 | 1.0− | 0.8+ | 2001 01 15 | 118 | 0.5+ | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.6+ | | |
| 1998 04 22 | 704 | 0.2+ | 0.5+ | 2001 02 10 | 715 | (2.4+ | 0.3+) | 2006 08 30 | 704 | 0.5+ | 0.5− | | |
| 1998 04 22 | 704 | 1.1− | 0.7+ | 2001 02 10 | 715 | (4.6+ | 0.9+) | 2006 08 30 | 704 | 0.0 | 0.2− | | |
| 1998 04 22 | 704 | 1.0+ | 0.2+ | 2001 02 10 | 715 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.7+ | | |
| 1998 04 22 | 704 | 0.0 | 0.1− | 2001 03 04 | 711 | 0.1− | 1.0− | 2006 08 30 | 704 | 0.3+ | 0.3+ | | |
| 1998 04 30 | 566 | 0.3+ | 0.8+ | 2001 03 04 | 711 | 0.1− | 1.1− | 2006 08 30 | 704 | 0.3+ | 0.3+ | | |
| 1998 04 30 | 566 | 0.5+ | 1.1+ | 2001 03 04 | 711 | (1.6− | 1.4−) | 2006 08 30 | 704 | 0.3+ | 0.3+ | | |
| 1998 04 30 | 566 | 0.8+ | 1.1+ | 2003 09 26 | 711 | 0.1+ | 0.1− | 2006 09 01 | 704 | 0.1− | 0.3+ | | |
| 1998 05 01 | 704 | 0.2− | 0.4+ | 2003 09 26 | 711 | 0.1− | 0.3+ | 2006 09 01 | 704 | 0.0 | 0.1+ | | |
| 1998 05 01 | 704 | 1.0+ | 1.4+ | 2003 09 26 | 711 | 0.5− | 0.7+ | 2006 09 01 | 704 | 0.5+ | 0.5− | | |
| 1998 05 01 | 704 | (0.2− | 2.3+) | 2003 10 19 | 691 | 0.0 | 0.2+ | 2006 09 01 | 704 | 1.1− | 0.5+ | | |
| 1998 05 01 | 704 | 0.0 | 1.1+ | 2003 10 19 | 691 | 0.1+ | 0.1+ | 2006 09 01 | 704 | 0.0 | 0.1+ | | |
| 1998 05 01 | 704 | 0.1− | 1.0+ | 2003 10 19 | 691 | 0.1+ | 0.2+ | 2006 09 02 | 693 | 0.8+ | 0.8− | | |
| 2001 01 02 | 704 | 1.2+ | 0.8+ | 2003 10 21 | 704 | 0.7− | 0.1+ | 2006 09 02 | 693 | 0.2+ | 0.3− | | |
| 2001 01 02 | 704 | 0.3− | 0.8+ | 2003 10 21 | 704 | 0.2− | 0.1− | 2006 09 02 | 693 | 0.5+ | 0.7− | | |
| 2001 01 02 | 704 | 0.6− | 0.3+ | 2003 10 21 | 704 | 0.6− | 0.4− | 2006 09 02 | 693 | 0.7+ | 0.8− | | |
| 2001 01 03 | 704 | 1.1+ | 1.1+ | 2003 10 21 | 704 | (3.3− | 0.7−) | 2006 09 17 | 704 | 1.2− | 0.4+ | | |
| 2001 01 03 | 704 | 0.5+ | 0.7+ | 2003 10 23 | 699 | 1.1− | 0.1+ | 2006 09 17 | 704 | 1.0− | 0.5+ | | |
| 2001 01 03 | 704 | 0.0 | 0.4+ | 2003 10 23 | 699 | 0.0 | 1.3− | 2006 09 17 | 704 | 0.8− | 0.2+ | | |
| 2001 01 03 | 704 | 0.2− | 0.3+ | 2003 10 23 | 699 | 0.2+ | 0.2− | 2006 09 17 | 704 | (1.9+ | 0.4+) | | |
| 2001 01 03 | 704 | 0.4+ | 0.5+ | 2003 10 23 | 699 | 1.0− | 1.5− | 2006 09 17 | 704 | 0.4+ | 0.7+ | | |
| 2001 01 03 | 704 | 0.0 | 0.6+ | 2003 10 24 | 704 | 0.8− | 0.8+ | 2006 09 18 | 699 | 0.9+ | 0.1− | | |
| 2001 01 03 | 704 | 0.6+ | 0.1+ | 2003 10 24 | 704 | (1.6− | 0.4−) | 2006 09 18 | 699 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.7+ | 0.3+ | 2003 10 24 | 704 | 1.1− | 1.3+ | 2006 09 18 | 699 | 0.0 | 0.5− |
| 2001 01 03 | 704 | 0.1+ | 0.9+ | 2003 10 24 | 704 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.7+ |
| 2001 01 03 | 704 | 0.2+ | 0.0 | 2003 10 24 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 693 | 0.2+ | 0.0 |
| 2001 01 03 | 704 | 0.4− | 0.6+ | 2003 10 28 | 704 | 1.0+ | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.2+ |
| 2001 01 03 | 704 | 0.0 | 0.1− | 2003 10 28 | 704 | (2.0+ | 0.2+) | 2006 09 20 | 693 | 0.0 | 0.1+ |
| 2001 01 03 | 704 | 0.1+ | 0.3+ | 2003 10 28 | 704 | (1.6+ | 0.0 ) | 2006 09 20 | 693 | 0.7+ | 0.2+ |
| 2001 01 03 | 704 | 0.3+ | 0.4+ | 2003 10 28 | 704 | 0.7+ | 0.1− | 2006 09 20 | 693 | 0.2− | 0.1− |
| 2001 01 03 | 704 | 0.2+ | 0.1− | 2003 10 28 | 704 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.2+ | 0.1+ |
| 2001 01 03 | 684 | 0.0 | 0.1− | 2003 11 04 | 151 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.5+ | 1.2+ |
| 2001 01 03 | 684 | 0.4− | 0.0 | 2003 11 04 | 151 | 0.3− | 1.0+ | 2006 09 25 | 699 | 0.2− | 0.6+ |
| 2001 01 03 | 684 | 0.0 | 0.1+ | 2003 11 04 | 151 | 0.9− | 0.7+ | 2006 09 25 | 699 | 0.7− | 0.9− |
| 2001 01 03 | 684 | 0.1− | 0.2+ | 2003 11 04 | 151 | 0.4− | 0.6+ | 2006 09 25 | 699 | 1.4− | 1.4− |
| 2001 01 03 | 684 | 0.4− | 0.0 | 2003 11 21 | 691 | 0.2− | 0.2− | 2006 09 25 | 699 | (0.9+ | 1.7+) |
| 2001 01 03 | 151 | 0.8− | 0.3+ | 2003 11 21 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2001 01 03 | 151 | 0.6− | 0.5− | 2003 11 21 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2001 01 03 | 151 | 0.1− | 0.5− | 2006 07 06 | H55 | 0.7+ | 0.6− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2001 01 03 | 151 | 0.1− | 0.6− | 2006 07 06 | H55 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2001 01 03 | 151 | 0.0 | 0.1+ | 2006 07 06 | H55 | 0.8+ | 0.4+ | 2006 09 26 | 693 | 0.3− | 0.1− |
| 2001 01 03 | 151 | 0.4− | 0.3− | 2006 07 06 | H55 | 0.0 | 0.3− | 2006 09 26 | 693 | 0.3− | 0.1− |
| 2001 01 04 | 118 | 0.7+ | 0.4+ | 2006 08 18 | 704 | 0.3+ | 1.3+ | 2006 09 26 | 693 | 0.3− | 0.1− |
| 2001 01 04 | 118 | 0.3+ | 0.9+ | 2006 08 18 | 704 | (0.2+ | 1.7+) | 2006 09 26 | 693 | 0.3− | 0.0 |
| 2001 01 04 | 118 | 0.3− | 0.6+ | 2006 08 18 | 704 | (0.2− | 2.8+) | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2001 01 04 | 046 | 0.0 | 0.9+ | 2006 08 18 | 704 | 1.1+ | 0.7+ | 2006 09 26 | G96 | 0.4− | 0.5− |
| 2001 01 04 | 046 | 0.0 | 0.3+ | 2006 08 19 | 691 | (1.6− | 1.0−) | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2001 01 04 | 046 | 0.3+ | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2001 01 04 | 046 | 0.2+ | 0.6+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.6− |
| 2001 01 04 | 046 | 0.2− | 0.5+ | 2006 08 21 | 704 | 0.3+ | 1.1+ | 2006 09 27 | 704 | 0.0 | 0.7+ |
| 2001 01 04 | 557 | 0.2+ | 0.4+ | 2006 08 21 | 704 | 0.9+ | 0.9+ | 2006 09 27 | 704 | 0.3+ | 0.9+ |
| 2001 01 04 | 557 | 0.1+ | 0.3− | 2006 08 21 | 704 | 0.5− | 0.6+ | 2006 09 27 | 704 | 1.1− | 1.2+ |
| 2001 01 04 | 557 | 0.4+ | 0.1− | 2006 08 21 | 704 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 01 04 | 704 | 0.5+ | 0.2+ | 2006 08 21 | 704 | 0.2− | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2001 01 04 | 704 | 0.3− | 0.4+ | 2006 08 25 | 704 | 1.0+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2001 01 04 | 704 | 0.9+ | 0.8+ | 2006 08 25 | 704 | 0.7+ | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2001 01 04 | 704 | 0.1− | 0.2+ | 2006 08 25 | 704 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2001 01 04 | 684 | 0.1− | 0.1− | 2006 08 25 | 704 | 0.7+ | 0.3− | 2006 11 17 | G96 | 0.8− | 0.4− |
| 2001 01 04 | 684 | 0.0 | 0.3− | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.5− | 0.1+ |

**(138912)∗ 2001 AD$_4$**

Discovered 2001 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.62527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17491313 | $\omega$ | 326.10021 | | −0.14174615 | −0.97725673 | |
| $a$ | 3.1665604 | $\Omega$ | 131.50677 | | +0.94852746 | −0.17967046 | |
| $e$ | 0.2042957 | $i$ | 12.15844 | | +0.28320256 | +0.11264016 | |
| $P$ | 5.63 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 20 | 704 | 0.9+ | 0.3+ | 2001 02 19 | 704 | 0.4+ | 0.3+ | 2005 11 01 | 703 | 0.5− | 0.2− |
| 2000 12 20 | 704 | 1.5− | 0.8− | 2001 02 19 | 704 | 1.1− | 0.6+ | 2005 11 03 | 703 | 0.2− | 0.4+ |
| 2000 12 20 | 704 | 0.3− | 0.2+ | 2001 02 19 | 704 | 1.1− | 0.3− | 2005 11 03 | 703 | 0.5− | 0.3+ |
| 2001 01 02 | 704 | 0.3− | 0.2+ | 2001 02 19 | 704 | 0.2− | 0.1− | 2005 11 03 | 703 | 0.3+ | 0.2+ |
| 2001 01 02 | 704 | 0.4− | 0.1+ | 2001 02 19 | 704 | 0.2− | 0.2+ | 2005 11 03 | 703 | 0.1+ | 0.0 |
| 2001 01 02 | 704 | 0.2− | 1.0+ | 2001 02 20 | 704 | 0.4+ | 0.9− | 2005 11 17 | 644 | 0.0 | 0.0 |
| 2001 01 02 | 704 | 0.1+ | 0.3+ | 2001 02 20 | 704 | 0.4+ | 0.2+ | 2005 11 17 | 644 | 0.1− | 0.2+ |
| 2001 01 02 | 704 | 0.1− | 0.7+ | 2001 02 20 | 704 | 0.7− | 0.6+ | 2005 11 17 | 644 | 0.2+ | 0.2+ |
| 2001 01 03 | 704 | 0.6+ | 0.2− | 2001 02 20 | 704 | 1.1− | 1.0+ | 2005 11 30 | 703 | 0.5+ | 0.6+ |
| 2001 01 03 | 704 | 0.7+ | 0.1+ | 2004 08 12 | 807 | 0.0 | 0.7+ | 2005 11 30 | 703 | 0.7+ | 0.9− |
| 2001 01 03 | 704 | 0.3+ | 0.6+ | 2004 08 12 | 807 | 0.0 | 0.6+ | 2005 11 30 | 703 | 0.4− | 1.0+ |
| 2001 01 03 | 704 | 0.8+ | 0.1− | 2005 09 30 | 704 | 1.3− | 0.5+ | 2005 11 30 | 703 | (0.8− | 2.1+) |
| 2001 01 03 | 704 | 0.1− | 0.4+ | 2005 09 30 | 704 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2001 01 20 | 704 | 0.5− | 0.4− | 2005 09 30 | 704 | 0.7− | 0.9+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2001 01 20 | 704 | 0.2+ | 0.6− | 2005 10 27 | 703 | 0.6− | 1.1− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2001 01 20 | 704 | 0.1− | 0.3+ | 2005 10 27 | 703 | 1.2+ | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 01 20 | 704 | 0.1− | 0.4+ | 2005 10 27 | 703 | 1.0+ | 0.8− | 2006 11 11 | G96 | 0.1+ | 1.6− |
| 2001 02 02 | 704 | 0.6+ | 0.0 | 2005 10 27 | 703 | 0.6+ | 0.6− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2001 02 02 | 704 | 1.0+ | 0.4+ | 2005 10 30 | 699 | 1.1+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2001 02 02 | 704 | 0.2− | 0.1− | 2005 10 30 | 699 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.6+ | 0.2+ |
| 2001 02 02 | 704 | 1.4+ | 0.9− | 2005 10 30 | 699 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2001 02 19 | 704 | 0.3− | 1.4− | 2005 10 30 | 699 | 1.1− | 0.5+ | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2001 02 19 | 704 | 0.3− | 0.8+ | 2005 11 01 | 703 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 02 19 | 704 | 0.6− | 0.3+ | 2005 11 01 | 703 | 1.1+ | 1.4− | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2001 02 19 | 704 | 1.3+ | 0.3+ | 2005 11 01 | 703 | 0.2− | 1.4− | | | | |

**(138913)∗ 2001 AJ$_{11}$ = 2003 UP$_{227}$**

Discovered 2001 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56184)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.68167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27890881 | $\omega$ | 275.74834 | | −0.98674352 | +0.14479009 | |
| $a$ | 2.3200351 | $\Omega$ | 272.59241 | | −0.10393784 | −0.91071234 | |
| $e$ | 0.0835195 | $i$ | 4.20793 | | −0.12463611 | −0.38683182 | |
| $P$ | 3.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 02 | 704 | 1.0+ | 0.6+ | 2003 11 24 | 704 | 0.3+ | 0.5+ | 2005 04 11 | G92 | 0.2+ | 0.2− |
| 2001 01 02 | 704 | 0.9+ | 0.5+ | 2003 11 24 | 704 | 0.1+ | 1.0+ | 2005 04 11 | G92 | 0.3− | 0.1+ |
| 2001 01 02 | 704 | 0.2+ | 0.4+ | 2003 11 24 | 704 | 0.8− | 0.2− | 2005 04 11 | G92 | 0.2+ | 0.1+ |
| 2001 01 03 | 704 | 0.9− | 0.3− | 2003 11 24 | 691 | 0.1+ | 0.0 | 2005 04 13 | 699 | 0.2− | 0.2+ |
| 2001 01 03 | 704 | 0.4− | 0.3− | 2003 11 24 | 704 | 0.1+ | 0.9+ | 2005 04 13 | 699 | 0.4− | 0.4− |
| 2001 01 03 | 704 | 0.4− | 0.8+ | 2003 11 24 | 704 | 0.1+ | 1.1+ | 2005 04 13 | 699 | 0.0 | 0.4+ |
| 2001 01 03 | 704 | 0.5+ | 0.0 | 2003 11 24 | 704 | 0.4+ | 0.8+ | 2005 04 13 | 699 | 0.5− | 0.1+ |
| 2001 01 21 | 704 | 0.2+ | 0.0 | 2003 11 24 | 704 | 0.4− | 0.3+ | 2006 08 19 | 644 | 0.2− | 0.8+ |
| 2001 01 21 | 704 | 0.9+ | 1.1− | 2003 11 24 | 691 | 0.2+ | 0.1− | 2006 08 19 | 644 | 0.6− | 0.4+ |
| 2001 01 21 | 704 | 0.3− | 0.6+ | 2005 03 17 | 704 | 1.4+ | 0.2− | 2006 08 19 | 644 | 0.2− | 0.5+ |
| 2001 01 21 | 704 | 0.4− | 0.1+ | 2005 03 17 | 704 | 1.4+ | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.6+ |
| 2001 01 21 | 704 | 0.2− | 0.8+ | 2005 03 17 | 704 | 0.3+ | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.7+ |
| 2003 10 23 | 691 | 0.5− | 0.1− | 2005 03 17 | 704 | 0.8+ | 0.2− | 2006 08 22 | 644 | 0.6− | 0.4+ |
| 2003 10 23 | 691 | 0.3− | 0.3− | 2005 03 17 | 704 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.4− | 0.2+ |
| 2003 10 23 | 691 | 0.3− | 0.1− | 2005 04 06 | G92 | 0.0 | 0.3+ | 2006 08 29 | 703 | 1.3+ | 0.5+ |
| 2003 10 25 | 704 | 0.6+ | 0.3− | 2005 04 06 | 699 | 0.0 | 0.9+ | 2006 08 29 | 703 | 0.1+ | 0.7− |
| 2003 10 25 | 704 | 0.2+ | 0.2+ | 2005 04 06 | G92 | 0.5− | 0.4+ | 2006 08 29 | 703 | 1.0+ | 0.5+ |
| 2003 10 25 | 704 | 1.0− | 0.2− | 2005 04 06 | 699 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.4+ | 0.0 |
| 2003 10 25 | 704 | 0.3− | 0.4+ | 2005 04 06 | 699 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.9+ | 0.4+ |
| 2003 11 20 | 704 | 0.4+ | 0.4− | 2005 04 06 | G92 | 0.0 | 0.5+ | 2006 09 20 | 699 | 1.1− | 1.1+ |
| 2003 11 20 | 704 | 0.8+ | 0.0 | 2005 04 06 | 699 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 1.2− | 0.9+ |
| 2003 11 20 | 704 | 0.6− | 0.3− | 2005 04 06 | 704 | 0.4− | 1.2− | 2006 10 02 | G96 | 0.4− | 0.4− |
| 2003 11 21 | 704 | 1.1− | 0.1+ | 2005 04 06 | 704 | 0.3+ | 0.6− | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2003 11 21 | 704 | 0.3+ | 0.6− | 2005 04 06 | 704 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2003 11 21 | 704 | 0.8+ | 0.8− | 2005 04 10 | G92 | 0.2+ | 0.7+ | 2006 10 02 | G96 | 0.3− | 0.2+ |
| 2003 11 21 | 704 | 0.8+ | 0.1+ | 2005 04 10 | G92 | 0.2− | 0.5+ | | | | |
| 2003 11 24 | 691 | 0.3+ | 0.1+ | 2005 04 10 | G92 | 0.6− | 0.6+ | | | | |

**(138914)∗ 2001 AB$_{12}$**

Discovered 2001 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.15768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28455102 | $\omega$ | 102.31968 | | +0.92141574 | −0.36426200 | |
| $a$ | 2.2892644 | $\Omega$ | 279.16483 | | +0.28142026 | +0.86565827 | |
| $e$ | 0.1454282 | $i$ | 7.87718 | | +0.26794715 | +0.34343697 | |
| $P$ | 3.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.0 | 0.6+ | 2003 09 30 | 704 | 1.0− | 0.1− | 2003 11 24 | 703 | 0.1− | 0.9− |
| 1999 07 16 | 704 | 0.2+ | 0.2+ | 2003 10 03 | 691 | 0.2+ | 0.1− | 2003 11 24 | 703 | 1.2+ | 0.7+ |
| 1999 07 16 | 704 | 0.4− | 0.0 | 2003 10 03 | 691 | 0.1+ | 0.1− | 2003 11 24 | 703 | 0.1− | 1.1− |
| 1999 07 16 | 704 | 0.5− | 0.5+ | 2003 10 03 | 691 | 0.1+ | 0.1− | 2003 11 24 | 703 | (0.3− | 1.7−) |
| 1999 07 16 | 704 | 0.4− | 0.8+ | 2003 10 05 | 704 | 0.4+ | 0.7− | 2003 12 15 | 703 | 0.0 | 0.7+ |
| 2000 11 27 | 704 | 1.6− | 0.1+ | 2003 10 05 | 704 | (2.0+ | 1.6−) | 2003 12 15 | 703 | 0.0 | 0.5− |
| 2000 11 27 | 704 | 0.3+ | 0.2− | 2003 10 05 | 704 | 0.6− | 0.7− | 2003 12 15 | 703 | 0.2+ | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.4− | 0.2+ | 2003 10 05 | 704 | 0.4− | 0.3− | 2003 12 15 | 703 | 1.0+ | 0.9− |
| 2000 11 27 | 704 | 0.2+ | 0.0 | 2003 10 16 | 644 | 0.9− | 0.1+ | 2003 12 19 | 704 | 0.2+ | 0.9+ |
| 2001 01 02 | 704 | 0.0 | 0.3− | 2003 10 16 | 644 | 0.7− | 0.0 | 2003 12 19 | 704 | 0.7− | 0.7+ |
| 2001 01 02 | 704 | 0.2+ | 0.8+ | 2003 10 16 | 644 | 0.9− | 0.0 | 2003 12 19 | 704 | (1.9− | 0.9+) |
| 2001 01 02 | 704 | 0.1− | 0.9− | 2003 10 16 | 106 | 0.2+ | 0.4− | 2003 12 19 | 704 | 0.2− | 0.2+ |
| 2001 01 02 | 704 | 0.0 | 0.3+ | 2003 10 16 | 106 | 0.1+ | 0.1− | 2003 12 19 | 704 | 0.1+ | 0.6+ |
| 2001 01 03 | 704 | 0.1+ | 0.1− | 2003 10 16 | 106 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.4− | 0.8+ |
| 2001 01 03 | 704 | 0.9+ | 0.1− | 2003 10 19 | 644 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.5− | 1.5+ |
| 2001 01 03 | 704 | 0.5+ | 0.5+ | 2003 10 19 | 644 | 0.0 | 0.1+ | 2003 12 23 | 704 | 0.7− | 0.4+ |
| 2001 01 03 | 704 | 0.6− | 0.4− | 2003 10 19 | 644 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.3− | 0.7+ |
| 2001 01 03 | 704 | 0.8− | 0.6+ | 2003 10 21 | 644 | 0.5− | 0.5+ | 2003 12 23 | 704 | 0.2− | 1.0+ |
| 2001 01 19 | 699 | (1.8+ | 0.8+) | 2003 10 21 | 644 | 0.4− | 0.3+ | 2003 12 28 | 704 | 0.6− | 0.1+ |
| 2001 01 19 | 699 | 1.1+ | 0.0 | 2003 10 21 | 644 | 0.1− | 0.6+ | 2003 12 28 | 704 | 0.8− | 0.4+ |
| 2001 01 19 | 699 | 0.7+ | 0.8+ | 2003 10 22 | 704 | 0.1+ | 0.4+ | 2003 12 28 | 704 | 0.6− | 0.2+ |
| 2001 01 19 | 699 | 1.4+ | 0.4+ | 2003 10 22 | 704 | 0.4+ | 0.4+ | 2003 12 28 | 704 | 0.8− | 0.3+ |
| 2001 01 20 | 704 | 0.1− | 0.4+ | 2003 10 22 | 704 | 0.3+ | 0.4+ | 2003 12 28 | 704 | 0.6− | 0.3− |
| 2001 01 20 | 704 | 1.1− | 0.7+ | 2003 10 22 | 704 | (1.5+ | 2.2−) | 2004 01 26 | 699 | 0.5− | 0.0 |
| 2001 01 20 | 704 | 1.3+ | 0.1+ | 2003 10 22 | 704 | 0.1+ | 0.1+ | 2004 01 26 | 699 | 0.4+ | 0.6− |
| 2001 02 02 | 704 | 0.2+ | 0.1+ | 2003 11 03 | 704 | 0.4+ | 0.0 | 2004 01 26 | 699 | 1.3− | 0.8+ |
| 2001 02 02 | 704 | 0.4+ | 1.1+ | 2003 11 03 | 704 | 0.8+ | 0.1− | 2004 01 26 | 699 | 0.4+ | 0.9+ |
| 2001 02 02 | 704 | 0.0 | 1.0+ | 2003 11 03 | 704 | 0.5+ | 0.0 | 2006 05 24 | G96 | 0.4− | 0.0 |
| 2001 02 02 | 704 | 0.0 | 1.4+ | 2003 11 03 | 704 | 0.2+ | 0.0 | 2006 05 24 | G96 | 0.6− | 0.1+ |
| 2001 02 02 | 704 | 0.0 | 0.7+ | 2003 11 03 | 704 | 0.6+ | 0.2+ | 2006 05 24 | G96 | 0.0 | 0.1− |
| 2001 02 19 | 704 | 0.5− | 1.2+ | 2003 11 03 | 106 | 0.1+ | 0.1− | 2006 05 24 | G96 | 0.2− | 0.0 |
| 2001 02 19 | 704 | 0.8+ | 0.1− | 2003 11 03 | 106 | 0.5+ | 0.3+ | 2006 05 24 | G96 | 0.2+ | 0.0 |
| 2001 02 19 | 704 | 0.1+ | 0.7+ | 2003 11 03 | 106 | 0.2+ | 0.4− | 2006 05 24 | G96 | 0.4− | 0.1− |
| 2003 07 27 | 704 | 0.0 | 0.9+ | 2003 11 14 | 644 | 0.3+ | 0.1− | 2006 05 24 | G96 | 0.0 | 1.3+ |
| 2003 07 27 | 704 | 0.1− | 0.8+ | 2003 11 14 | 644 | 0.1+ | 0.1− | 2006 05 24 | G96 | 0.4+ | 1.3+ |
| 2003 07 27 | 704 | 0.6+ | 0.7+ | 2003 11 14 | 644 | 0.4+ | 0.1− | 2006 06 22 | 691 | 0.2− | 0.7+ |
| 2003 08 26 | 704 | (1.6+ | 0.5+) | 2003 11 19 | 704 | 0.1+ | 0.1− | 2006 06 22 | 691 | 0.2− | 0.7+ |
| 2003 08 26 | 704 | 1.4+ | 1.3− | 2003 11 19 | 704 | 0.1− | 0.1+ | 2006 06 22 | 691 | 0.2− | 0.6+ |
| 2003 08 26 | 704 | 0.8+ | 0.3− | 2003 11 19 | 704 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2003 08 26 | 704 | 0.9+ | 1.1− | 2003 11 19 | 704 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.5− | 0.5− |
| 2003 09 30 | 704 | 0.3+ | 0.2− | 2003 11 19 | 704 | 0.5+ | 0.2− | 2006 11 02 | G96 | 0.2− | 0.0 |
| 2003 09 30 | 704 | 0.6− | 0.5+ | 2003 11 21 | 691 | 0.1+ | 0.1− | 2006 11 02 | G96 | 0.2− | 0.1+ |
| 2003 09 30 | 704 | 0.5− | 0.1+ | 2003 11 21 | 691 | 0.9− | 0.3+ | | | | |
| 2003 09 30 | 704 | 0.5− | 0.4+ | 2003 11 21 | 691 | 0.2+ | 0.2− | | | | |

**(138915)∗ 2001 AW$_{13}$ = 1998 FU$_{82}$**

Discovered 2001 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 9579)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 193.87477 | | (2000.0) | | | |
| $n$ | 0.30439439 | $\omega$ | 107.92757 | | −0.86887529 | +0.48615015 |
| $a$ | 2.1886599 | $\Omega$ | 101.25018 | | −0.48253916 | −0.78966067 |
| $e$ | 0.1204672 | $i$ | 5.46148 | | −0.11050654 | −0.37429142 |
| $P$ | 3.24 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.6+ | 0.8− | 2001 02 17 | 704 | (1.3+ | 2.0−) | 2006 10 16 | 703 | 0.4− | 0.5− |
| 1998 03 24 | 704 | (2.7− | 0.5−) | 2001 02 21 | 645 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.0 |
| 1998 03 24 | 704 | 1.5+ | 0.0 | 2001 02 21 | 645 | 0.1− | 0.0 | 2006 10 17 | G96 | 1.0+ | 0.1+ |
| 1998 03 24 | 704 | 0.2+ | 0.2+ | 2002 08 13 | 704 | 0.8+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.2− |
| 1998 03 25 | 704 | 0.1− | 0.7− | 2002 08 13 | 704 | 0.6− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.1− |
| 1998 03 25 | 704 | 0.4− | 0.1+ | 2002 08 13 | 704 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 1998 03 25 | 704 | 0.5− | 0.6− | 2002 08 18 | 644 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.8− |
| 1998 03 25 | 704 | 0.7− | 0.0 | 2002 08 18 | 644 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.4− | 0.1− |
| 1998 03 25 | 704 | 0.9− | 0.0 | 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 1.3− |
| 2001 01 02 | 704 | 0.1− | 0.1− | 2002 08 19 | 644 | 0.2+ | 0.6− | 2006 10 17 | G96 | 0.1− | 0.2− |
| 2001 01 02 | 704 | 0.3+ | 0.4+ | 2002 08 19 | 644 | 0.2− | 0.6− | 2006 10 18 | A44 | 0.0 | 0.1− |
| 2001 01 02 | 704 | 0.8+ | 1.1+ | 2002 08 19 | 644 | 0.3− | 0.2− | 2006 10 18 | A44 | 0.3+ | 0.1+ |
| 2001 01 02 | 704 | 0.3− | 1.1+ | 2002 08 29 | 644 | 0.2− | 0.4+ | 2006 10 19 | A44 | 0.8+ | 0.7+ |
| 2001 01 03 | 704 | 0.6+ | 1.0− | 2002 08 29 | 644 | 0.2− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 01 03 | 704 | 0.3+ | 0.6+ | 2002 08 29 | 644 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 01 03 | 704 | 0.6+ | 0.6+ | 2002 08 30 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 01 03 | 704 | 0.6+ | 0.4+ | 2002 08 30 | 644 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2001 01 03 | 704 | 0.6+ | 0.7+ | 2002 08 30 | 644 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.6+ |
| 2001 01 05 | 704 | 0.3− | 0.1+ | 2003 12 19 | 704 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2001 01 05 | 704 | 1.1+ | 0.3− | 2003 12 19 | 704 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.0 | 0.6− |
| 2001 01 05 | 704 | 0.3− | 0.2+ | 2003 12 19 | 704 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.6+ |
| 2001 01 05 | 704 | 0.3− | 0.9+ | 2003 12 19 | 704 | 0.3− | 0.5− | 2006 11 14 | 704 | 0.6+ | 0.1− |
| 2001 01 19 | 704 | 0.5+ | 0.3+ | 2003 12 23 | 704 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.0 | 1.1− |
| 2001 01 19 | 704 | 0.2− | 0.5+ | 2003 12 23 | 704 | 0.6− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.8+ |
| 2001 01 19 | 704 | 0.2+ | 0.3− | 2003 12 23 | 704 | 0.6+ | 0.2− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2001 01 19 | 704 | 0.2− | 1.1+ | 2003 12 23 | 704 | 0.5− | 0.5− | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2001 01 19 | 704 | 0.6− | 0.5+ | 2003 12 23 | 704 | 0.3+ | 1.1− | 2006 11 28 | 704 | 1.0+ | 0.4+ |
| 2001 02 17 | 704 | 0.9+ | 0.8− | 2006 10 16 | 703 | 0.1+ | 1.0− | | | | |
| 2001 02 17 | 704 | 1.0+ | 0.9− | 2006 10 16 | 703 | 0.4− | 0.5+ | | | | |

**(138916)∗ 2001 AS$_{14}$**

Discovered 2001 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 255.45686 | | (2000.0) | | | |
| $n$ | 0.29070351 | $\omega$ | 293.63382 | | −0.23938415 | −0.97081330 |
| $a$ | 2.2568491 | $\Omega$ | 170.18195 | | +0.91930897 | −0.23151035 |
| $e$ | 0.1188966 | $i$ | 4.95313 | | +0.31235596 | −0.06264575 |
| $P$ | 3.39 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 691 | 0.7− | 0.3− | 2001 01 05 | 704 | (1.9− | 0.7+) | 2003 11 01 | 704 | 1.1+ | 0.4− |
| 1998 04 24 | 691 | 1.0− | 0.6− | 2001 01 05 | 704 | 0.7+ | 0.0 | 2003 11 01 | 704 | 0.5+ | 0.7+ |
| 1998 04 24 | 691 | 0.8− | 0.4− | 2001 01 05 | 704 | 0.2+ | 0.1+ | 2003 11 01 | 704 | 0.0 | 0.2− |
| 1998 04 27 | 691 | 0.2+ | 0.3− | 2001 01 05 | 704 | 0.1− | 1.3− | 2003 11 01 | 704 | 1.1+ | 0.5+ |
| 1998 04 27 | 691 | 0.1− | 0.3− | 2001 01 05 | 704 | 0.4+ | 0.2+ | 2005 04 15 | 691 | 0.3+ | 0.8+ |
| 1998 04 27 | 691 | 0.1− | 0.5− | 2001 01 18 | 704 | 0.1+ | 0.9+ | 2005 04 15 | 691 | 0.0 | 0.7+ |
| 1998 05 03 | 691 | 0.4+ | 0.2− | 2001 01 18 | 704 | 0.7+ | 1.6+ | 2005 04 15 | 691 | 0.3+ | 0.7+ |
| 1998 05 03 | 691 | 0.5+ | 0.3− | 2001 01 18 | 704 | 0.4+ | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 1998 05 03 | 691 | 0.7+ | 0.2− | 2001 01 18 | 704 | (0.5+ | 2.0+) | 2006 08 24 | 644 | 0.1+ | 0.0 |
| 2001 01 02 | 704 | 0.6− | 0.7− | 2003 10 21 | 704 | 0.5+ | 0.2− | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 2001 01 02 | 704 | 0.3− | 0.1− | 2003 10 21 | 704 | 0.2− | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 2001 01 02 | 704 | 0.5− | 0.2+ | 2003 10 21 | 704 | 0.8+ | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 2001 01 03 | 704 | 0.1− | 0.1+ | 2003 10 21 | 704 | 1.0− | 0.9− | 2006 08 27 | 691 | 0.1+ | 0.1− |
| 2001 01 03 | 704 | (1.8− | 1.6+) | 2003 10 22 | 704 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 2001 01 03 | 704 | 1.1+ | 0.6+ | 2003 10 22 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | (1.6− | 0.4+) |
| 2001 01 03 | 704 | 0.8− | 0.9+ | 2003 10 22 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 1.0+ |
| 2001 01 04 | 557 | 0.6− | 0.0 | 2003 10 24 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.6− | 0.7− |
| 2001 01 04 | 557 | 0.1+ | 0.2− | 2003 10 24 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2001 01 04 | 557 | 0.3− | 0.1+ | 2003 10 24 | 691 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2001 01 04 | 557 | 0.1+ | 0.4− | 2003 10 25 | 704 | 0.1− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2001 01 04 | 704 | 0.1+ | 0.5+ | 2003 10 25 | 704 | 0.8− | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2001 01 04 | 704 | 1.2− | 0.3+ | 2003 10 25 | 704 | 0.5− | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 01 04 | 704 | 0.2+ | 0.3− | 2003 10 25 | 704 | 1.1− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2001 01 04 | 704 | 0.5+ | 0.1− | 2003 10 25 | 704 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.1+ |
| 2001 01 04 | 704 | 0.0 | 0.8+ | 2003 11 01 | 704 | 1.0+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.5− |

**(138917)∗ 2001 AZ$_{19}$ = 2003 UE$_{57}$**

Discovered 2001 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56185)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.89856 | | (2000.0) | | | |
| $n$ | 0.29911076 | $\omega$ | 314.57316 | | +0.94782995 | −0.30817239 |
| $a$ | 2.2143590 | $\Omega$ | 63.53332 | | +0.31215831 | +0.84542883 |
| $e$ | 0.1943830 | $i$ | 5.22587 | | +0.06461872 | +0.43621082 |
| $P$ | 3.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 21 | 809 | 0.1− | 1.0− | 2003 11 21 | 704 | (0.1+ | 2.5−) | 2003 12 23 | 704 | 0.4+ | 0.1+ |
| 1993 10 21 | 809 | 0.2+ | 0.3− | 2003 11 21 | 704 | 1.1− | 0.1− | 2003 12 23 | 704 | 0.4− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 21 | 809 | 0.7+ | 0.3− | 2003 11 21 | 704 | 0.1− | 0.3+ | 2003 12 23 | 704 | 0.4+ | 0.3+ | |
| 2001 01 04 | 704 | 0.0 | 0.5− | 2003 11 23 | 704 | 0.0 | 0.4− | 2003 12 23 | 704 | 0.2− | 0.5− | |
| 2001 01 04 | 704 | 0.2− | 0.4+ | 2003 11 23 | 704 | 0.4− | 0.0 | 2003 12 23 | 704 | 0.1+ | 0.7+ | |
| 2001 01 04 | 704 | 0.4− | 1.3+ | 2003 11 23 | 704 | 0.2− | 0.4− | 2003 12 23 | 704 | 0.3+ | 1.3+ | |
| 2001 01 05 | 704 | 0.6− | 0.6− | 2003 11 23 | 704 | 0.1− | 0.6− | 2003 12 23 | 704 | 0.6− | 0.2+ | |
| 2001 01 05 | 704 | 0.4+ | 0.3+ | 2003 11 23 | 704 | 0.1+ | 0.3− | 2003 12 27 | 704 | 1.0+ | 0.5− | |
| 2001 01 05 | 704 | 0.6+ | 1.3+ | 2003 11 24 | 699 | 0.3− | 0.5− | 2003 12 27 | 704 | 0.1+ | 0.4− | |
| 2001 01 05 | 704 | 0.1− | 1.4+ | 2003 11 24 | 699 | 0.4− | 0.6− | 2003 12 27 | 704 | 0.2+ | 0.6+ | |
| 2001 01 06 | 734 | 1.4− | 1.4− | 2003 11 24 | 699 | 0.0 | 0.7− | 2003 12 27 | 704 | 0.4+ | 0.0 | |
| 2001 01 06 | 734 | 0.6+ | 0.6− | 2003 11 24 | 699 | 0.2+ | 0.2− | 2003 12 27 | 704 | 0.4− | 0.2− | |
| 2001 01 19 | 704 | 0.0 | 0.7+ | 2003 12 01 | 704 | 0.0 | 0.4− | 2004 01 17 | 644 | 0.2− | 0.0 | |
| 2001 01 19 | 704 | 0.2− | 1.3+ | 2003 12 01 | 704 | 0.3− | 0.1− | 2004 01 17 | 644 | 0.0 | 0.3+ | |
| 2001 01 19 | 704 | 1.5+ | 0.6+ | 2003 12 01 | 704 | 0.3+ | 0.5+ | 2004 01 17 | 644 | 0.0 | 0.1+ | |
| 2003 09 28 | 704 | 0.0 | 0.3− | 2003 12 01 | 704 | 0.1− | 0.5− | 2004 01 22 | 704 | 0.3− | 0.6+ | |
| 2003 09 28 | 704 | 1.0− | 0.1− | 2003 12 15 | 703 | 0.8+ | 0.1+ | 2004 01 22 | 704 | 0.4+ | 0.8− | |
| 2003 09 28 | 704 | 1.0+ | 0.6− | 2003 12 15 | 703 | 0.5+ | 0.7+ | 2004 01 22 | 704 | 0.9+ | 1.1+ | |
| 2003 09 28 | 704 | 0.1− | 1.3+ | 2003 12 15 | 703 | 0.2− | 1.4− | 2006 08 28 | E12 | 0.2+ | 0.1− | |
| 2003 10 24 | 704 | 0.9+ | 0.1− | 2003 12 15 | 703 | 0.6+ | 1.3+ | 2006 08 28 | E12 | 0.4+ | 0.2+ | |
| 2003 10 24 | 704 | 0.7+ | 1.3− | 2003 12 17 | 644 | 0.5− | 1.1+ | 2006 08 28 | E12 | 0.2− | 0.2+ | |
| 2003 10 24 | 704 | 1.1+ | 1.0− | 2003 12 17 | 644 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.4− | 0.5+ | |
| 2003 10 24 | 704 | 0.8+ | 0.2− | 2003 12 17 | 699 | 0.5− | 0.8− | 2006 09 20 | 703 | 0.1− | 0.2+ | |
| 2003 10 24 | 704 | 0.2− | 0.5− | 2003 12 17 | 644 | 0.0 | 0.3+ | 2006 09 20 | 703 | 0.0 | 1.2+ | |
| 2003 10 24 | 704 | 0.1− | 0.1− | 2003 12 17 | 644 | 0.2+ | 0.1− | 2006 09 20 | 703 | 1.3+ | 0.3+ | |
| 2003 10 24 | 704 | 0.1+ | 0.0 | 2003 12 17 | 699 | 0.5− | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.9+ | |
| 2003 10 24 | 704 | 0.6+ | 0.3− | 2003 12 17 | 644 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.7− | 0.0 | |
| 2003 10 24 | 704 | 0.6− | 0.7− | 2003 12 17 | 644 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.6− | 0.7+ | |
| 2003 10 27 | 049 | 0.3+ | 1.1− | 2003 12 17 | 699 | 0.4− | 0.6+ | 2006 09 20 | 703 | 1.3− | 0.4+ | |
| 2003 10 27 | 049 | (0.9+ | 1.7−) | 2003 12 17 | 699 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.0 | |
| 2003 10 27 | 049 | 0.5+ | 0.4− | 2003 12 19 | 691 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.3− | |
| 2003 11 02 | 704 | 0.5+ | 0.3+ | 2003 12 19 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.7+ | |
| 2003 11 02 | 704 | 0.1− | 0.3− | 2003 12 19 | 704 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.8+ | |
| 2003 11 02 | 704 | 0.7− | 0.4+ | 2003 12 19 | 704 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.3− | |
| 2003 11 02 | 704 | 0.4+ | 0.5+ | 2003 12 19 | 691 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ | |
| 2003 11 02 | 704 | 0.2+ | 0.2− | 2003 12 19 | 704 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.2− | |
| 2003 11 15 | 644 | 0.3+ | 0.3− | 2003 12 19 | 704 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.9− | 0.0 | |
| 2003 11 15 | 644 | 0.1+ | 0.0 | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.5− | 1.2+ | |
| 2003 11 15 | 644 | 0.3+ | 0.1+ | 2003 12 22 | 704 | 0.2− | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.3− | |
| 2003 11 19 | 699 | 0.3+ | 0.6− | 2003 12 22 | 704 | 0.9− | 0.2− | 2006 10 21 | 703 | 1.0− | 0.9+ | |
| 2003 11 19 | 699 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.8− | 0.7+ | 2006 11 27 | G96 | 0.1+ | 0.0 | |
| 2003 11 19 | 699 | 0.6+ | 0.5− | 2003 12 22 | 704 | 0.2− | 0.6+ | 2006 11 27 | G96 | 0.7+ | 0.0 | |
| 2003 11 19 | 699 | 0.6− | 0.7− | 2003 12 22 | 704 | 0.4− | 0.9+ | 2006 11 27 | G96 | 0.3+ | 0.3− | |
| 2003 11 21 | 704 | 0.3− | 0.1+ | 2003 12 23 | 704 | 0.5+ | 0.1− | 2006 11 27 | G96 | 0.5+ | 0.3− | |
| 2003 11 21 | 704 | 0.2− | 0.2+ | 2003 12 23 | 704 | 0.8− | 1.4+ | | | | | |

**(138918)∗ 2001 AJ$_{22}$**

Discovered 2001 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.45588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28346136 | $\omega$ | 304.44793 | | −0.75733913 | −0.65293349 | |
| $a$ | 2.2951274 | $\Omega$ | 194.79860 | | +0.61208131 | −0.70403179 | |
| $e$ | 0.0979309 | $i$ | 2.40949 | | +0.22758276 | −0.27931541 | |
| $P$ | 3.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.4+ | 0.4− | 2001 02 02 | 704 | 0.3− | 0.3− | 2005 04 02 | G96 | 0.2− | 0.3+ | |
| 2001 01 03 | 704 | 0.0 | 0.2− | 2001 02 02 | 704 | 0.0 | 0.2− | 2005 04 02 | G96 | 0.3− | 0.4+ | |
| 2001 01 03 | 704 | 0.5+ | 0.9+ | 2001 02 02 | 704 | 0.2+ | 0.5− | 2005 04 18 | 703 | 1.2− | 0.2− | |
| 2001 01 03 | 704 | 0.9+ | 0.3− | 2001 02 17 | 608 | 0.4− | 0.9− | 2005 04 18 | 703 | 0.3− | 0.4− | |
| 2001 01 03 | 704 | 0.8− | 1.0+ | 2001 02 17 | 608 | 0.5− | 0.4− | 2005 04 18 | 703 | 0.2+ | 0.8− | |
| 2001 01 03 | 704 | 0.5+ | 1.0+ | 2001 02 17 | 608 | 1.0− | 0.5− | 2005 04 18 | 703 | 1.2+ | 0.3− | |
| 2001 01 03 | 704 | 0.3− | 0.0 | 2001 02 19 | 704 | 0.3+ | 0.7+ | 2005 05 01 | 644 | 0.3+ | 0.3+ | |
| 2001 01 03 | 704 | 0.9− | 0.3+ | 2001 02 19 | 704 | 0.1+ | 0.7− | 2005 05 01 | 644 | 0.1+ | 0.5+ | |
| 2001 01 03 | 704 | 0.3− | 0.9+ | 2001 02 19 | 704 | 0.9+ | 1.2+ | 2005 05 01 | 644 | 0.3+ | 0.2+ | |
| 2001 01 03 | 704 | 0.1− | 0.4+ | 2001 02 19 | 704 | 0.1+ | 0.2− | 2005 05 11 | G96 | 0.1− | 0.4+ | |
| 2001 01 03 | 704 | 2.0+ | 0.4+ | 2001 02 22 | 704 | 1.1+ | 0.4− | 2005 05 11 | G96 | 0.1− | 0.3+ | |
| 2001 01 03 | 704 | 1.4− | 1.3+ | 2001 02 22 | 704 | 0.2+ | 0.4− | 2005 05 11 | G96 | 0.1− | 0.3+ | |
| 2001 01 03 | 704 | 1.0+ | 1.4+ | 2001 02 22 | 704 | 1.2+ | 0.5+ | 2005 05 11 | G96 | 0.2− | 0.1+ | |
| 2001 01 04 | 704 | 0.3+ | 0.4− | 2001 02 22 | 704 | 0.1− | 1.2+ | 2005 05 13 | 704 | 0.2+ | 0.3+ | |
| 2001 01 04 | 704 | 0.8− | 0.4+ | 2003 10 22 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 704 | 0.8+ | 1.1+ | |
| 2001 01 04 | 704 | 0.5− | 0.4+ | 2003 10 22 | 691 | 0.0 | 0.1+ | 2005 05 13 | 704 | (0.1− | 2.1+) | |
| 2001 01 04 | 704 | 0.1− | 0.2− | 2003 10 22 | 691 | 0.2− | 0.2+ | 2005 05 13 | 704 | 0.1+ | 1.6+ | |
| 2001 01 04 | 704 | 1.1+ | 0.5− | 2003 10 23 | 704 | 0.4+ | 0.8− | 2005 05 14 | 644 | 0.5+ | 0.3+ | |
| 2001 01 04 | 608 | 0.2+ | 0.2+ | 2003 10 23 | 704 | 0.2+ | 0.1− | 2005 05 14 | 644 | 0.5+ | 0.6+ | |
| 2001 01 04 | 608 | 0.2+ | 0.1− | 2003 10 23 | 704 | 0.1+ | 1.0+ | 2005 05 14 | 644 | 0.5+ | 0.6+ | |
| 2001 01 04 | 608 | 0.0 | 0.1+ | 2003 10 23 | 704 | 0.4+ | 0.6− | 2005 05 14 | G96 | 0.3+ | 0.4+ | |
| 2001 01 05 | 704 | 0.4− | 0.2+ | 2003 10 23 | 704 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.1− | 0.4+ | |
| 2001 01 05 | 704 | 0.5+ | 1.1+ | 2003 10 28 | 704 | 0.1− | 0.4− | 2005 05 14 | G96 | 0.2+ | 0.4+ | |
| 2001 01 05 | 704 | 0.0 | 0.7+ | 2003 10 28 | 704 | 1.0+ | 0.3− | 2005 05 14 | G96 | 0.1− | 0.2+ | |
| 2001 01 05 | 704 | 0.9+ | 1.1+ | 2003 10 28 | 704 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.3− | 0.6+ | |
| 2001 01 05 | 704 | 0.2− | 0.0 | 2003 10 28 | 704 | 0.3− | 0.5− | 2006 08 19 | 691 | 0.3− | 0.4+ | |
| 2001 01 19 | 699 | 0.1+ | 0.4+ | 2003 10 29 | 703 | 0.2+ | 0.8+ | 2006 08 19 | 691 | 0.6− | 0.6+ | |
| 2001 01 19 | 699 | 0.5− | 0.5+ | 2003 10 29 | 703 | 1.4− | 0.4− | 2006 08 28 | 699 | 1.7− | 0.1+ | |
| 2001 01 19 | 699 | 0.2− | 0.3+ | 2003 10 29 | 703 | 0.6− | 0.2− | 2006 08 28 | 703 | 1.1+ | 2.0+ | |
| 2001 01 19 | 699 | 0.1+ | 0.6+ | 2003 10 29 | 703 | 0.8− | 0.1− | 2006 08 28 | 699 | (2.8− | 0.8+) | |
| 2001 01 20 | 704 | 0.1− | 0.0 | 2003 11 21 | 704 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.5− | 0.6+ | |
| 2001 01 20 | 704 | 0.4+ | 0.3+ | 2003 11 21 | 704 | 1.4− | 0.1− | 2006 08 28 | 703 | 0.4− | 1.9+ | |
| 2001 01 20 | 704 | 1.0− | 0.5− | 2003 11 21 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 1.3+ | 0.6+ | |
| 2001 01 20 | 704 | 1.2− | 1.7+ | 2003 11 21 | 691 | 0.3+ | 0.1− | 2006 08 28 | 699 | 0.9− | 1.8+ | |
| 2001 02 01 | 699 | 1.4+ | 0.1− | 2003 11 21 | 704 | 0.8− | 0.6− | 2006 08 28 | 699 | 1.1+ | 0.3− | |
| 2001 02 01 | 699 | 0.1− | 0.3+ | 2003 11 21 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.2− | |
| 2001 02 01 | 699 | 0.9− | 0.7− | 2003 11 21 | 691 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.0 | |
| 2001 02 01 | 699 | (2.7+ | 1.4−) | 2005 04 02 | G96 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.0 | |
| 2001 02 02 | 704 | 0.5+ | 0.1− | 2005 04 02 | G96 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.0 | |

**(138919)∗ 2001 AU$_{23}$**

Discovered 2001 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.28925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26750131 | $\omega$ | 1.23411 | | −0.83486537 | −0.54974186 | |
| $a$ | 2.3855331 | $\Omega$ | 145.36926 | | +0.50460888 | −0.78466196 | |
| $e$ | 0.0756330 | $i$ | 2.82364 | | +0.21993113 | −0.28651264 | |
| $P$ | 3.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.1+ | 0.2− | 2003 10 21 | 699 | 0.5+ | 0.2− | 2005 03 16 | G96 | 0.4− | 0.0 | |
| 2001 01 03 | 704 | 0.2− | 0.5+ | 2003 10 21 | 699 | 0.4+ | 0.9− | 2005 03 16 | G96 | 0.4− | 0.0 | |
| 2001 01 03 | 704 | 0.6+ | 0.2+ | 2003 10 21 | 699 | 0.6− | 0.1− | 2005 03 17 | 704 | 0.2+ | 0.1+ | |
| 2001 01 03 | 704 | 1.0+ | 1.1+ | 2003 10 21 | 704 | 0.3− | 0.9+ | 2005 03 17 | 704 | 0.2+ | 0.6+ | |
| 2001 01 04 | 704 | 1.8+ | 0.6− | 2003 10 21 | 704 | 0.3− | 0.3+ | 2005 03 17 | 704 | 0.0 | 0.6− | |
| 2001 01 04 | 704 | 0.4− | 0.7− | 2003 10 21 | 704 | 0.8− | 0.2+ | 2005 03 18 | 704 | 2.0+ | 0.9− | |
| 2001 01 04 | 704 | 0.4− | 0.2+ | 2003 10 21 | 704 | 1.5− | 0.4+ | 2005 03 18 | 704 | 0.6+ | 0.9+ | |
| 2001 01 04 | 704 | 0.1− | 0.3− | 2003 10 24 | 704 | 1.1− | 0.8+ | 2005 03 18 | 704 | 1.2+ | 0.0 | |
| 2001 01 19 | 699 | 0.2− | 0.1− | 2003 10 24 | 704 | 0.7+ | 0.7+ | 2005 03 18 | 704 | 0.5+ | 0.2+ | |
| 2001 01 19 | 699 | 0.2+ | 0.3− | 2003 10 24 | 704 | 0.0 | 0.6+ | 2005 04 01 | 699 | 0.7+ | 0.7+ | |
| 2001 01 19 | 699 | 0.1− | 0.1− | 2003 10 24 | 704 | 0.5+ | 0.5+ | 2005 04 01 | 699 | 0.6+ | 1.0− | |
| 2001 01 19 | 699 | 0.0 | 0.1+ | 2003 10 28 | 704 | 0.4− | 0.8+ | 2005 04 01 | 699 | 0.1− | 0.3+ | |
| 2001 01 20 | 704 | 0.3+ | 0.8− | 2003 10 28 | 704 | 0.0 | 0.8+ | 2005 04 01 | 699 | 0.9− | 0.1+ | |
| 2001 01 20 | 704 | 0.9− | 0.2− | 2003 10 28 | 704 | 0.3− | 0.4+ | 2005 04 04 | 704 | 0.6+ | 1.1+ | |
| 2001 01 20 | 704 | 0.3+ | 0.0 | 2003 11 24 | 691 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.3− | 0.0 | |
| 2001 01 21 | 704 | 0.2+ | 0.2+ | 2003 11 24 | 691 | 0.1− | 0.1− | 2005 04 04 | 704 | 0.0 | 0.4+ | |
| 2001 01 21 | 704 | 0.5− | 0.5+ | 2003 11 24 | 691 | 0.0 | 0.3+ | 2005 04 04 | 703 | 0.3− | 0.7+ | |
| 2001 01 21 | 704 | 0.4+ | 0.1+ | 2005 03 03 | 683 | 1.2+ | 0.4+ | 2005 04 04 | 704 | 0.5+ | 0.1+ | |
| 2001 01 21 | 704 | 0.2− | 0.2+ | 2005 03 03 | 683 | 0.8+ | 0.7+ | 2005 04 04 | 703 | 0.9− | 0.2+ | |
| 2001 01 21 | 704 | 0.4− | 0.5+ | 2005 03 03 | 683 | 1.1− | 0.0 | 2005 04 04 | 704 | 0.5+ | 0.0 | |
| 2001 02 01 | 699 | 0.5− | 0.3+ | 2005 03 07 | 683 | 1.5+ | 0.9+ | 2005 04 04 | 703 | 0.9− | 1.4− | |
| 2001 02 01 | 699 | 0.6− | 0.0 | 2005 03 07 | 683 | (2.3+ | 0.3+) | 2005 04 04 | 704 | 0.3+ | 0.0 | |
| 2001 02 01 | 699 | 0.7− | 0.8+ | 2005 03 07 | 683 | 1.0− | 0.2+ | 2005 04 09 | 699 | 0.2− | 0.6+ | |
| 2001 02 01 | 699 | 0.1− | 1.0− | 2005 03 08 | 699 | 0.6+ | 0.1+ | 2005 04 09 | 699 | 1.2+ | 0.2+ | |
| 2001 02 02 | 704 | 0.8+ | 0.8− | 2005 03 08 | 699 | 0.7+ | 0.1− | 2005 04 09 | 699 | 0.1− | 0.2+ | |
| 2001 02 02 | 704 | 0.7− | 0.6− | 2005 03 08 | 699 | 1.0− | 0.2+ | 2005 04 09 | 699 | 0.0 | 0.0 | |
| 2001 02 02 | 704 | 0.2+ | 0.2+ | 2005 03 08 | 699 | 0.2+ | 0.0 | 2005 04 18 | 691 | 0.2+ | 0.1+ | |
| 2001 02 02 | 704 | 0.9− | 0.2+ | 2005 03 09 | 699 | 0.1+ | 0.1− | 2005 04 18 | 691 | 0.0 | 0.7+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 704 | 0.5− | 0.1+ | 2005 03 09 | 699 | 0.1+ | 1.0+ | 2005 04 18 | 691 | 0.3− | 0.5+ |
| 2001 02 19 | 704 | 0.2− | 0.6− | 2005 03 09 | 699 | 0.8− | 0.3+ | 2006 05 24 | G96 | 0.3+ | 0.0 |
| 2001 02 19 | 704 | 1.6− | 0.4+ | 2005 03 09 | 699 | 0.3+ | 0.5+ | 2006 05 24 | G96 | 0.1− | 0.2+ |
| 2001 02 19 | 704 | 0.1+ | 1.5− | 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 05 24 | G96 | 0.6− | 0.5− |
| 2001 02 19 | 704 | 1.0+ | 0.1− | 2005 03 11 | 691 | 0.1− | 0.2+ | 2006 05 24 | G96 | 0.3− | 0.2+ |
| 2001 02 20 | 704 | 0.1+ | 0.2− | 2005 03 11 | 691 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.9+ |
| 2001 02 20 | 704 | 0.2+ | 0.1+ | 2005 03 14 | 704 | 0.5+ | 0.8− | 2006 08 18 | 644 | 0.1− | 0.5+ |
| 2001 02 20 | 704 | 1.3+ | 0.2+ | 2005 03 14 | 704 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.3+ |
| 2001 02 20 | 704 | 0.3+ | 0.5− | 2005 03 14 | 704 | 0.7− | 0.8− | 2006 09 26 | G96 | 0.3− | 0.2+ |
| 2003 09 28 | 704 | 0.4+ | 0.8+ | 2005 03 14 | 704 | 0.0 | 0.6− | 2006 09 26 | G96 | 0.3+ | 0.7+ |
| 2003 09 28 | 704 | 0.2− | 0.2+ | 2005 03 14 | 704 | 0.6− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.6+ |
| 2003 09 28 | 704 | 0.7+ | 0.8+ | 2005 03 16 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.4+ |
| 2003 10 21 | 699 | 0.1− | 0.3− | 2005 03 16 | G96 | 0.4− | 0.2− | | | | |

**(138920)∗ 2001 AE$_{24}$ = 2000 YO$_{61}$ = 2003 UE$_{250}$**

Discovered 2001 Jan. 15 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (d, *MPO* 11072), G. V. Williams (*MPO* 56185)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.81928 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28627919 | $\omega$ | 246.59075 | | −0.09309755 | −0.99559317 |
| $a$ | 2.2800421 | $\Omega$ | 208.75806 | | +0.92183776 | −0.08191126 |
| $e$ | 0.1108462 | $i$ | 1.34266 | | +0.37622863 | −0.04565945 |
| $P$ | 3.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.4− | 0.6− | 2001 01 21 | 704 | 0.8+ | 0.2− | 2005 03 11 | G96 | 0.0 | 0.0 |
| 2000 12 30 | 704 | 0.4− | 0.7+ | 2003 09 28 | 691 | 0.1− | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.2+ |
| 2000 12 30 | 704 | 1.2− | 0.0 | 2003 09 28 | 691 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.0 | 0.3+ |
| 2000 12 30 | 704 | 0.5+ | 0.7− | 2003 09 28 | 691 | 0.1− | 0.0 | 2005 04 17 | 691 | 0.5+ | 0.4+ |
| 2001 01 02 | 704 | 0.5− | 0.6− | 2003 10 25 | 291 | 0.2+ | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.7+ |
| 2001 01 02 | 704 | 0.1+ | 0.9− | 2003 10 25 | 291 | 0.1− | 0.2+ | 2005 04 17 | 691 | 0.3+ | 0.5+ |
| 2001 01 02 | 704 | 0.1− | 0.0 | 2003 10 25 | 291 | 0.0 | 0.3+ | 2005 05 04 | 568 | 0.3+ | 0.8+ |
| 2001 01 02 | 704 | 0.3− | 0.4+ | 2003 10 26 | 703 | 0.6− | 0.9+ | 2005 05 04 | 568 | 0.4+ | 0.9+ |
| 2001 01 15 | 691 | 1.0− | 0.1+ | 2003 10 26 | 703 | 0.2− | 0.3+ | 2005 05 04 | 568 | 0.3+ | 0.9+ |
| 2001 01 15 | 691 | 0.6− | 0.1+ | 2003 10 26 | 703 | 0.9− | 0.6+ | 2005 05 05 | 568 | 0.3+ | 1.2+ |
| 2001 01 15 | 691 | 0.4− | 0.1− | 2003 10 26 | 703 | 1.2− | 0.1+ | 2005 05 08 | G96 | 0.5− | 0.1+ |
| 2001 01 19 | 699 | 0.6− | 1.0+ | 2003 10 28 | 704 | 0.1− | 0.5+ | 2005 05 08 | G96 | 0.5− | 0.4+ |
| 2001 01 19 | 699 | 0.0 | 0.7+ | 2003 10 28 | 704 | 0.2− | 0.5+ | 2005 05 08 | G96 | 0.3− | 0.0 |
| 2001 01 19 | 691 | 0.3+ | 0.0 | 2003 10 28 | 704 | 0.1− | 1.1+ | 2005 05 08 | G96 | 0.4− | 0.1+ |
| 2001 01 19 | 699 | 0.3− | 0.3+ | 2003 10 28 | 704 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.1+ | 0.3+ |
| 2001 01 19 | 691 | 0.4+ | 0.1+ | 2003 10 28 | 704 | 0.0 | 0.4+ | 2005 06 13 | G96 | 0.7− | 0.1+ |
| 2001 01 19 | 691 | 0.4+ | 0.1+ | 2003 11 01 | 704 | 1.0+ | 1.3− | 2005 06 13 | G96 | 0.3+ | 0.2+ |
| 2001 01 19 | 699 | 0.3+ | 0.5+ | 2003 11 01 | 704 | 1.4+ | 1.0+ | 2005 06 13 | G96 | 0.1+ | 0.3+ |
| 2001 01 20 | 704 | 1.0+ | 0.7− | 2003 11 01 | 704 | 0.7+ | 0.0 | 2006 08 18 | 850 | (0.0 | 2.1+) |
| 2001 01 20 | 704 | 0.3− | 1.1− | 2003 11 01 | 704 | 0.6− | 1.8+ | 2006 08 18 | 850 | 0.7+ | 0.1+ |
| 2001 01 20 | 691 | 0.3+ | 0.2+ | 2003 11 21 | 704 | 0.2− | 1.0+ | 2006 08 28 | 691 | 0.0 | 0.3+ |
| 2001 01 20 | 704 | 0.3− | 0.3− | 2003 11 21 | 704 | 0.3+ | 0.1− | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2001 01 20 | 691 | 0.3+ | 0.4+ | 2003 11 21 | 704 | 0.3− | 1.1+ | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 2001 01 20 | 691 | 0.3+ | 0.4+ | 2003 11 21 | 704 | 1.3− | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.4+ |
| 2001 01 20 | 704 | 0.5+ | 0.4+ | 2003 11 28 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.4− | 0.1+ |
| 2001 01 21 | 704 | 0.2+ | 0.0 | 2003 11 28 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 01 21 | 704 | 0.8+ | 0.8+ | 2003 11 28 | 691 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.4− | 0.4− |
| 2001 01 21 | 704 | 0.5+ | 0.7− | 2005 03 11 | G96 | 0.4− | 0.2− | | | | |

**(138921)∗ 2001 AR$_{24}$ = 2003 WS$_{69}$**

Discovered 2001 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56186)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.19437 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.30390554 | $\omega$ | 326.63708 | | +0.78213523 | −0.61531232 |
| $a$ | 2.1910064 | $\Omega$ | 71.64780 | | +0.59194652 | +0.68447778 |
| $e$ | 0.1704281 | $i$ | 5.94228 | | +0.19458623 | +0.39099991 |
| $P$ | 3.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 31 | 691 | 0.4+ | 0.1− | 2003 11 24 | 704 | 0.6− | 0.1+ | 2005 04 14 | 691 | 0.3+ | 0.3+ |
| 1995 03 31 | 691 | 0.2+ | 0.4− | 2003 11 24 | 704 | 0.2− | 0.3+ | 2006 08 29 | D35 | 0.2− | 0.4+ |
| 1995 03 31 | 691 | 0.3− | 0.2− | 2003 11 24 | 704 | 0.4− | 0.4+ | 2006 08 29 | D35 | 0.3− | 0.3+ |
| 2001 01 04 | 704 | 0.8+ | 1.1+ | 2003 11 24 | 699 | 0.1− | 0.1+ | 2006 08 29 | D35 | 0.4− | 0.5+ |
| 2001 01 04 | 704 | 0.5+ | 0.4+ | 2003 11 24 | 704 | 0.2− | 0.0 | 2006 08 30 | D35 | 1.0+ | 0.8+ |
| 2001 01 04 | 704 | 0.1− | 0.7+ | 2003 11 24 | 699 | 0.4− | 0.4− | 2006 08 30 | D35 | 0.5+ | 0.4+ |
| 2001 01 04 | 704 | 0.1+ | 0.6+ | 2003 11 30 | 291 | 0.1− | 0.1− | 2006 08 30 | D35 | 0.6+ | 0.6+ |
| 2001 01 04 | 704 | 0.4+ | 1.1+ | 2003 11 30 | 291 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2001 01 05 | 704 | 0.5+ | 0.4+ | 2003 11 30 | 291 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2001 01 05 | 704 | 0.4− | 1.1+ | 2003 12 01 | 704 | 0.5+ | 0.4− | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2001 01 05 | 704 | 0.7− | 0.2+ | 2003 12 01 | 704 | 0.6− | 0.2+ | 2006 09 17 | 699 | 0.2+ | 0.1+ |
| 2001 01 05 | 704 | 0.2+ | 0.0 | 2003 12 01 | 704 | 0.2+ | 0.1− | 2006 09 17 | 699 | 0.8− | 0.3+ |
| 2001 01 05 | 704 | 0.0 | 0.2+ | 2003 12 01 | 704 | (1.6+ | 0.9+) | 2006 09 17 | 699 | 0.1− | 0.5+ |
| 2001 01 05 | 704 | 0.5+ | 0.1− | 2003 12 01 | 704 | 0.0 | 0.2+ | 2006 09 17 | 699 | 0.2+ | 0.7+ |
| 2001 01 05 | 704 | 0.4+ | 0.6+ | 2003 12 01 | 691 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 2001 01 05 | 704 | 0.9+ | 0.2− | 2003 12 01 | 691 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.1− |
| 2001 01 05 | 704 | 0.2+ | 0.2+ | 2003 12 01 | 691 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.3− | 0.8− |
| 2001 01 06 | 704 | 0.4− | 1.1+ | 2003 12 04 | 703 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.6− | 0.0 |
| 2001 01 06 | 704 | 0.7− | 1.5+ | 2003 12 04 | 703 | 0.8− | 0.5− | 2006 09 25 | 703 | 0.4+ | 0.3− |
| 2001 01 06 | 704 | 0.4− | 1.1+ | 2003 12 04 | 703 | 0.3− | 0.6− | 2006 09 25 | 703 | 0.4+ | 0.1+ |
| 2001 01 18 | 704 | 0.4+ | 0.4− | 2003 12 04 | 703 | 0.4− | 0.2+ | 2006 09 25 | 703 | 0.0 | 0.4− |
| 2001 01 18 | 704 | 0.2+ | 0.2+ | 2003 12 14 | 691 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.1− |
| 2001 01 18 | 704 | 0.2+ | 0.6− | 2003 12 14 | 691 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.8+ | 0.4+ |
| 2001 01 18 | 704 | 0.9− | 0.2− | 2003 12 14 | 691 | 0.1+ | 0.1+ | 2006 10 04 | 703 | 0.3− | 0.8− |
| 2001 01 18 | 704 | 0.8− | 0.4− | 2003 12 17 | 644 | 0.1− | 0.3+ | 2006 10 04 | 703 | 1.1+ | 0.3+ |
| 2002 06 07 | 291 | 0.5− | 0.6+ | 2003 12 17 | 699 | 0.5+ | 0.2+ | 2006 10 04 | 703 | 1.0+ | 0.6+ |
| 2002 06 07 | 291 | 0.3− | 0.1− | 2003 12 17 | 699 | 0.5− | 1.4+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 06 07 | 291 | 0.1− | 0.6+ | 2003 12 17 | 644 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2003 09 28 | 704 | 0.6+ | 1.0+ | 2003 12 17 | 699 | 0.9+ | 0.3− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2003 09 28 | 704 | 0.4+ | 0.1− | 2003 12 17 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2003 09 28 | 704 | 0.2+ | 0.7+ | 2003 12 17 | 699 | 1.0+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 11 02 | 704 | 0.0 | 0.5− | 2003 12 19 | 704 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 11 02 | 704 | 0.2− | 0.2− | 2003 12 19 | 704 | 0.1+ | 0.6− | 2006 10 19 | 703 | 0.1+ | 0.8+ |
| 2003 11 02 | 704 | 0.5+ | 0.1− | 2003 12 19 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | (0.1− | 1.7+) |
| 2003 11 02 | 704 | 0.1− | 0.2− | 2003 12 19 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2003 11 02 | 704 | 0.1− | 0.3− | 2003 12 19 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 1.3− | 0.8+ |
| 2003 11 19 | 691 | 0.1− | 0.2− | 2003 12 21 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2003 12 21 | 704 | 0.3+ | 0.5− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2003 11 19 | 691 | 0.1− | 0.2− | 2003 12 21 | 704 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2003 11 20 | 695 | 0.2+ | 0.3− | 2003 12 21 | 704 | 0.2+ | 0.2− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2003 11 20 | 695 | 0.5− | 0.1− | 2003 12 24 | 704 | 0.4+ | 0.0 | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2003 11 21 | 704 | 0.1− | 0.2+ | 2003 12 24 | 704 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 0.3− | 0.3+ | 2003 12 24 | 704 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.2− |
| 2003 11 21 | 704 | 0.1− | 0.2+ | 2003 12 27 | 691 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.3− | 0.3+ |
| 2003 11 21 | 704 | 0.2− | 0.1− | 2003 12 27 | 691 | 0.2− | 0.2− | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2003 11 21 | 704 | 0.1− | 0.3+ | 2003 12 27 | 691 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2003 11 23 | 704 | 0.5− | 0.1− | 2004 01 17 | 644 | 0.2+ | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.4+ |
| 2003 11 23 | 704 | 0.2− | 0.4− | 2004 01 17 | 644 | 0.3+ | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2003 11 23 | 704 | 0.1− | 0.2+ | 2004 01 17 | 644 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.3− |
| 2003 11 23 | 704 | 0.1+ | 0.2− | 2004 01 22 | 704 | 0.0 | 1.1+ | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2003 11 23 | 704 | 0.1− | 0.4+ | 2004 01 22 | 704 | 1.0− | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2003 11 23 | 704 | 1.1+ | 0.0 | 2004 01 22 | 704 | 0.4− | 1.2+ | 2006 10 28 | 703 | 0.5+ | 0.1− |
| 2003 11 23 | 704 | 1.3+ | 0.2− | 2004 01 22 | 704 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2003 11 23 | 704 | 1.3+ | 0.7− | 2004 01 22 | 704 | 0.7− | 0.2− | 2006 11 17 | 704 | 0.8− | 0.4+ |
| 2003 11 23 | 704 | (1.6+ | 2.9−) | 2004 02 17 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.5+ |
| 2003 11 23 | 704 | (0.1− | 1.5−) | 2004 02 17 | 644 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.7− | 0.6+ |
| 2003 11 24 | 699 | 0.1+ | 0.2+ | 2004 02 17 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.6− | 0.5+ |
| 2003 11 24 | 704 | 0.4− | 0.1− | 2005 04 14 | 691 | 0.6+ | 0.5+ | | | | |
| 2003 11 24 | 699 | 1.5+ | 1.1+ | 2005 04 14 | 691 | 0.3+ | 0.5+ | | | | |

**(138922)∗ 2001 AY$_{39}$**

Discovered 2001 Jan. 3 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.34808 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29548105 | $\omega$ | 339.05975 | | +0.47937439 | −0.87022932 | |
| $a$ | 2.2324563 | $\Omega$ | 82.14315 | | +0.82061400 | +0.39859055 | |
| $e$ | 0.1325055 | $i$ | 6.58398 | | +0.31111550 | +0.28952806 | |
| $P$ | 3.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 699 | 0.4− | 0.2+ | 2003 10 27 | 704 | 0.3+ | 0.3+ | 2004 01 17 | 703 | (0.1+ | 2.4+) |
| 2001 01 03 | 699 | 0.6− | 0.1− | 2003 11 01 | 704 | 0.3+ | 0.5+ | 2004 01 17 | 703 | 1.3+ | 1.4+ |
| 2001 01 03 | 699 | 0.7− | 0.0 | 2003 11 01 | 704 | 0.6+ | 0.3+ | 2004 01 21 | 704 | 0.5− | 0.6+ |
| 2001 01 03 | 699 | 0.5− | 0.1+ | 2003 11 01 | 704 | 0.4− | 0.2+ | 2004 01 21 | 704 | 1.0− | 0.4+ |
| 2001 01 04 | 704 | 0.9− | 0.2− | 2003 11 01 | 704 | 0.4− | 0.1− | 2004 01 21 | 704 | 0.7+ | 0.5− |
| 2001 01 04 | 704 | 0.2+ | 0.2− | 2003 11 01 | 704 | 0.4− | 0.1+ | 2004 01 21 | 704 | 0.6− | 0.6+ |
| 2001 01 04 | 704 | 0.2+ | 0.3+ | 2003 11 18 | 703 | 0.1+ | 0.1− | 2005 04 07 | 691 | 0.3+ | 0.3+ |
| 2001 01 04 | 704 | 0.8+ | 0.4+ | 2003 11 18 | 703 | 0.4− | 0.8+ | 2005 04 07 | 691 | 0.2+ | 0.3+ |
| 2001 01 04 | 704 | 0.0 | 0.5+ | 2003 11 18 | 703 | 0.8− | 0.6+ | 2005 04 07 | 691 | 0.0 | 0.4+ |
| 2001 01 19 | 704 | 0.2+ | 0.0 | 2003 11 18 | 703 | 0.6− | 0.3− | 2005 04 09 | 704 | 0.9+ | 1.5+ |
| 2001 01 19 | 704 | 0.2− | 0.5+ | 2003 11 21 | 699 | 0.1+ | 0.5+ | 2005 04 09 | 704 | 0.3+ | 1.1+ |
| 2001 01 19 | 704 | 0.1− | 0.2+ | 2003 11 21 | 699 | 0.4+ | 0.2+ | 2005 04 09 | 704 | 0.9− | 0.1+ |
| 2001 01 19 | 704 | 0.2− | 0.4− | 2003 11 21 | 699 | 0.2− | 0.2− | 2005 04 15 | 691 | 0.4+ | 0.2+ |
| 2001 01 19 | 704 | 0.5− | 0.2− | 2003 11 21 | 699 | 0.6+ | 0.0 | 2005 04 15 | 691 | 0.2+ | 0.4+ |
| 2001 02 17 | 704 | 0.2− | 0.7+ | 2003 11 22 | 704 | 0.5+ | 0.6+ | 2005 04 15 | 691 | 0.2+ | 0.4+ |
| 2001 02 17 | 704 | 0.1+ | 0.1+ | 2003 11 22 | 704 | 0.2− | 0.6+ | 2005 04 17 | 691 | 0.4+ | 0.5+ |
| 2001 02 17 | 704 | 0.2+ | 0.9− | 2003 11 22 | 704 | 0.1− | 0.7+ | 2005 04 17 | 691 | 0.4+ | 0.4+ |
| 2003 10 09 | 699 | 1.7+ | 0.4+ | 2003 11 30 | 704 | 0.2− | 0.7+ | 2005 04 17 | 691 | 0.3+ | 0.3+ |
| 2003 10 09 | 699 | 1.3+ | 0.9− | 2003 11 30 | 704 | 0.6− | 1.0+ | 2005 04 18 | 691 | 0.0 | 0.4+ |
| 2003 10 09 | 699 | 0.7+ | 0.5+ | 2003 11 30 | 704 | 0.0 | 0.5+ | 2005 04 18 | 691 | 0.1+ | 0.5+ |
| 2003 10 09 | 699 | 0.6− | 0.6+ | 2003 11 30 | 704 | 0.5− | 0.3+ | 2005 04 18 | 691 | 0.5+ | 0.6+ |
| 2003 10 16 | 699 | 0.6− | 1.0− | 2003 11 30 | 704 | 0.1+ | 1.1+ | 2006 08 15 | 644 | 0.1− | 0.4+ |
| 2003 10 16 | 699 | 0.2+ | 1.0− | 2003 12 01 | 703 | 1.7− | 0.7+ | 2006 08 15 | 644 | 0.4− | 0.3+ |
| 2003 10 16 | 699 | 0.5+ | 0.5+ | 2003 12 01 | 703 | 0.8− | 0.5+ | 2006 08 15 | 644 | 0.4− | 0.4+ |
| 2003 10 16 | 699 | 0.6+ | 0.2+ | 2003 12 01 | 703 | 1.4− | 0.8+ | 2006 08 20 | 644 | 0.4− | 0.3+ |
| 2003 10 16 | 608 | 0.1+ | 1.3+ | 2003 12 01 | 703 | 1.0− | 0.7+ | 2006 08 20 | 644 | 0.2− | 0.0 |
| 2003 10 16 | 608 | 0.7+ | 0.2+ | 2003 12 12 | 644 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2003 10 16 | 608 | 0.5+ | 0.9+ | 2003 12 12 | 644 | 0.2+ | 0.1− | 2006 08 28 | E12 | 0.7− | 0.9+ |
| 2003 10 21 | 704 | 0.5− | 0.4+ | 2003 12 12 | 644 | 0.5+ | 0.3− | 2006 08 28 | E12 | 0.3+ | 0.8+ |
| 2003 10 21 | 704 | 0.2− | 0.5+ | 2003 12 13 | 703 | 0.6− | 0.2− | 2006 08 28 | E12 | 0.2− | 0.4+ |
| 2003 10 21 | 704 | 0.1− | 0.2− | 2003 12 13 | 703 | 0.6− | 0.7− | 2006 08 28 | E12 | 0.3− | 0.0 |
| 2003 10 21 | 704 | 0.4− | 0.2− | 2003 12 13 | 703 | 0.2− | 0.9+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2003 10 21 | 704 | 0.1− | 0.1+ | 2003 12 13 | 703 | 0.6+ | 0.5− | 2006 09 14 | 644 | 0.1− | 0.3+ |
| 2003 10 23 | 699 | 0.1− | 0.3+ | 2003 12 17 | 699 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.5+ |
| 2003 10 23 | 699 | 0.4+ | 1.0+ | 2003 12 17 | 699 | 0.4+ | 0.6+ | 2006 09 20 | 703 | 0.1− | 0.0 |
| 2003 10 23 | 699 | 0.3+ | 0.6+ | 2003 12 17 | 699 | 1.6− | 0.3+ | 2006 09 20 | 703 | 0.6− | 0.2− |
| 2003 10 23 | 699 | 0.0 | 0.0 | 2003 12 17 | 699 | 0.2+ | 0.2− | 2006 09 20 | 703 | 0.5− | 0.4− |
| 2003 10 26 | 608 | 0.7− | 0.1+ | 2003 12 23 | 704 | 0.0 | 0.5− | 2006 09 20 | 703 | 0.8− | 1.0+ |
| 2003 10 26 | 608 | 0.7− | 0.1+ | 2003 12 23 | 704 | 0.3+ | 1.5+ | 2006 09 26 | 703 | 1.0− | 0.1− |
| 2003 10 26 | 608 | 0.4− | 0.1+ | 2003 12 23 | 704 | 0.2+ | 0.7− | 2006 09 26 | 703 | 0.1+ | 1.2+ |
| 2003 10 27 | 704 | 0.5+ | 0.2+ | 2003 12 23 | 704 | 1.5+ | 0.1− | 2006 09 26 | 703 | 0.5− | 0.0 |
| 2003 10 27 | 704 | 0.6+ | 0.2+ | 2004 01 15 | 204 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.9− | 0.3+ |
| 2003 10 27 | 704 | 0.1− | 0.1+ | 2004 01 17 | 703 | (2.3+ | 0.4+) | | | | |
| 2003 10 27 | 704 | 0.6+ | 0.3+ | 2004 01 17 | 703 | 0.4− | 0.2+ | | | | |

**(138923)∗ 2001 AS$_{40}$ = 2002 JA$_{110}$**

Discovered 2001 Jan. 3 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 29668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.06038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17886333 | $\omega$ | 252.51487 | | −0.90683612 | +0.41688434 | |
| $a$ | 3.1197647 | $\Omega$ | 312.07390 | | −0.34797342 | −0.82363731 | |
| $e$ | 0.1783339 | $i$ | 4.79860 | | −0.23782926 | −0.38448541 | |
| $P$ | 5.51 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 699 | 0.9− | 0.0 | 2001 02 19 | 704 | 0.5− | 0.1+ | 2005 12 10 | 691 | 0.1+ | 0.1+ |
| 2001 01 03 | 699 | 0.8− | 0.2− | 2002 05 10 | 644 | 0.1− | 0.4+ | 2005 12 10 | 691 | 0.0 | 0.1+ |
| 2001 01 03 | 699 | 0.6+ | 0.0 | 2002 05 10 | 644 | 0.1− | 0.3+ | 2005 12 10 | 691 | 0.6− | 0.2− |
| 2001 01 03 | 699 | (1.5− | 1.7+) | 2002 05 10 | 644 | 0.0 | 0.2+ | 2005 12 30 | G96 | (2.1+ | 0.3+) |
| 2001 01 05 | 704 | 0.1− | 0.2+ | 2002 05 11 | 704 | 1.0− | 0.1− | 2005 12 30 | G96 | 0.6+ | 0.3− |
| 2001 01 05 | 704 | 0.7− | 0.3− | 2002 05 11 | 704 | 0.6− | 0.3+ | 2005 12 30 | G96 | 0.4+ | 0.3− |
| 2001 01 05 | 704 | 0.1+ | 1.2+ | 2002 05 11 | 704 | 0.5− | 0.2− | 2005 12 30 | G96 | 0.2+ | 0.1− |
| 2001 01 20 | 704 | 0.5+ | 0.7+ | 2002 05 17 | 704 | 1.2+ | 0.3− | 2006 03 04 | G96 | 0.2− | 0.1+ |
| 2001 01 20 | 704 | 0.3+ | 0.5− | 2002 05 17 | 704 | 0.7+ | 0.4− | 2006 03 04 | G96 | 0.2+ | 0.1+ |
| 2001 01 20 | 704 | 0.4− | 0.8+ | 2002 05 17 | 704 | 0.5− | 0.5+ | 2006 03 04 | G96 | 0.1+ | 0.0 |
| 2001 01 20 | 704 | 0.1− | 0.8− | 2002 05 17 | 704 | 0.7+ | 0.0 | 2006 03 04 | G96 | 0.0 | 0.0 |
| 2001 01 21 | 704 | 0.1+ | 0.2+ | 2002 06 13 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 1.0− |
| 2001 01 21 | 704 | 0.3+ | 0.4− | 2002 06 13 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 01 21 | 704 | 0.0 | 0.2+ | 2002 06 13 | 644 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.8+ | 0.1− |
| 2001 01 21 | 704 | 0.3− | 0.6− | 2003 07 24 | 644 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.5− | 0.1+ |
| 2001 01 21 | 704 | 0.1− | 0.1− | 2003 07 24 | 644 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.3− | 0.2− |
| 2001 02 02 | 691 | 0.2+ | 0.3+ | 2003 07 24 | 644 | 0.0 | 0.5+ | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2001 02 02 | 691 | 0.3+ | 0.2+ | 2004 11 04 | 703 | (0.6− | 2.0+) | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2001 02 02 | 691 | 0.4+ | 0.1+ | 2004 11 04 | 703 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2001 02 19 | 704 | 0.4− | 0.4+ | 2004 11 04 | 703 | 1.3− | 0.1− | | | | |
| 2001 02 19 | 704 | 0.1+ | 0.3− | 2004 11 04 | 703 | 0.5+ | 0.8+ | | | | |

**(138924)∗ 2001 AV$_{40}$ = 2005 EM$_{69}$**

Discovered 2001 Jan. 3 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 74892)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.92530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27553426 | $\omega$ | 190.11360 | | −0.98826372 | +0.15275547 | |
| $a$ | 2.3389395 | $\Omega$ | 358.67232 | | −0.13773859 | −0.89325933 | |
| $e$ | 0.1172373 | $i$ | 1.89688 | | −0.06605227 | −0.42279255 | |
| $P$ | 3.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.0 | 0.7+ | 2003 11 30 | 691 | 0.1− | 0.3+ | 2005 04 05 | G96 | 0.4− | 0.2+ |
| 1999 10 10 | 691 | 0.6− | 0.6+ | 2003 11 30 | 691 | 0.3+ | 0.2− | 2005 04 05 | G96 | 0.3− | 0.1+ |
| 1999 10 10 | 691 | 0.2− | 1.1+ | 2003 11 30 | 691 | 0.0 | 0.3+ | 2005 04 07 | 704 | 0.5− | 0.1− |
| 2001 01 03 | 699 | 0.5− | 0.0 | 2005 03 07 | 704 | 0.2+ | 0.2− | 2005 04 07 | 704 | 1.0+ | 0.5− |
| 2001 01 03 | 699 | 0.0 | 1.1+ | 2005 03 07 | 704 | 0.8+ | 0.0 | 2005 04 07 | 704 | 1.5+ | 0.9+ |
| 2001 01 03 | 699 | 0.6+ | 0.1+ | 2005 03 07 | 704 | 0.0 | 1.2+ | 2005 04 09 | 704 | 0.7+ | 0.6+ |
| 2001 01 03 | 699 | 0.5− | 0.5− | 2005 03 08 | 699 | 0.5+ | 0.1− | 2005 04 09 | 704 | 1.5+ | 0.0 |
| 2001 01 04 | 704 | 1.6+ | 0.2− | 2005 03 08 | 699 | 0.0 | 0.1+ | 2005 04 09 | 704 | 0.5+ | 0.7+ |
| 2001 01 04 | 704 | 0.3− | 0.2+ | 2005 03 08 | 699 | 0.1− | 0.3− | 2005 04 09 | 704 | 0.8+ | 0.2+ |
| 2001 01 04 | 704 | 0.6+ | 0.4+ | 2005 03 08 | 699 | 0.7+ | 0.6+ | 2005 04 09 | 704 | 0.1+ | 0.4+ |
| 2001 01 04 | 704 | 0.0 | 0.1+ | 2005 03 12 | 691 | 0.1+ | 0.4+ | 2005 04 12 | 704 | 0.2+ | 0.5+ |
| 2001 01 04 | 704 | 0.0 | 0.5− | 2005 03 12 | 691 | 0.0 | 0.3+ | 2005 04 12 | 704 | 0.3− | 0.0 |
| 2001 01 19 | 699 | 0.1+ | 0.4+ | 2005 03 12 | 691 | 0.0 | 0.5+ | 2005 04 12 | 704 | 0.7− | 1.5+ |
| 2001 01 19 | 699 | 0.7− | 0.1− | 2005 03 13 | 703 | 0.3− | 0.8− | 2005 04 30 | 691 | 0.2− | 0.5+ |
| 2001 01 19 | 699 | 0.1− | 1.0+ | 2005 03 13 | 703 | 0.2+ | 0.0 | 2005 04 30 | 691 | 0.3+ | 0.3+ |
| 2001 01 19 | 704 | 0.4− | 0.3+ | 2005 03 13 | 703 | 1.1− | 0.2+ | 2005 04 30 | 691 | 0.0 | 0.5+ |
| 2001 01 19 | 699 | 0.6− | 0.9+ | 2005 03 13 | 703 | 0.0 | 1.3+ | 2006 08 21 | 691 | 0.5− | 0.5+ |
| 2001 01 19 | 704 | 0.2+ | 0.5+ | 2005 04 02 | 644 | 0.5+ | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.4+ |
| 2001 01 19 | 704 | 0.6+ | 0.3+ | 2005 04 02 | 644 | 0.4+ | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.5+ |
| 2001 01 19 | 704 | 0.0 | 0.7+ | 2005 04 02 | 644 | 1.7+ | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.7+ |
| 2001 01 19 | 704 | 0.8+ | 0.9+ | 2005 04 04 | 704 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.7+ |
| 2001 01 21 | 691 | 0.0 | 0.1+ | 2005 04 04 | 704 | 0.9+ | 0.4+ | 2006 08 28 | 691 | 0.3− | 0.6+ |
| 2001 01 21 | 691 | 0.2− | 0.3+ | 2005 04 04 | 704 | 0.7+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2001 01 21 | 691 | 0.1− | 0.2+ | 2005 04 04 | 704 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2003 11 18 | 644 | 0.2+ | 0.9+ | 2005 04 04 | 704 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.6− | 0.1− |
| 2003 11 18 | 644 | 0.3+ | 1.2+ | 2005 04 05 | G96 | 0.7− | 0.0 | 2006 09 26 | G96 | 0.8− | 0.4+ |
| 2003 11 18 | 644 | 0.9− | 0.6+ | 2005 04 05 | G96 | 0.6− | 0.0 | | | | |

**(138925)∗ 2001 AU$_{43}$**

Discovered 2001 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.74877 | | (2000.0) | | | |
| $n$ | 0.37731680 | $\omega$ | 149.23034 | | +0.42320326 | +0.52810637 |
| $a$ | 1.8966999 | $\Omega$ | 129.33120 | | −0.89470794 | +0.11550856 |
| $e$ | 0.3774140 | $i$ | 72.13730 | | +0.14281704 | −0.84128559 |
| $P$ | 2.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 20 | 261 | (3.4− | 4.9+) | 2001 05 10 | 926 | 0.1+ | 1.0− | 2004 07 14 | H41 | 0.4+ | 0.2− | | | | | |
| 1992 12 20 | 261 | (1.8− | 4.0+) | 2001 05 10 | 926 | 0.6+ | 0.7+ | 2004 07 14 | H41 | 0.0 | 0.3− | | | | | |
| 2001 01 04 | 704 | 0.2+ | 0.1+ | 2002 12 28 | 413 | 0.1− | 0.0 | 2004 07 14 | 379 | 0.4− | 0.4+ | | | | | |
| 2001 01 04 | 704 | 0.5+ | 0.5− | 2002 12 29 | 413 | 0.4− | 0.1− | 2004 07 14 | 379 | 0.9− | 0.8+ | | | | | |
| 2001 01 04 | 704 | 0.6+ | 0.1− | 2002 12 29 | 413 | 0.3− | 0.2− | 2004 07 15 | H41 | 0.0 | 0.3+ | | | | | |
| 2001 01 05 | 704 | 0.7− | 0.4− | 2002 12 29 | 413 | 0.2− | 0.2− | 2004 07 15 | H41 | 0.4+ | 0.4− | | | | | |
| 2001 01 05 | 704 | 0.2− | 1.0+ | 2003 03 10 | 474 | (1.7− | 0.2−) | 2004 07 15 | H41 | 0.5+ | 0.1+ | | | | | |
| 2001 01 05 | 704 | 0.4+ | 0.3+ | 2003 03 10 | 474 | (1.8− | 0.7−) | 2004 07 15 | H41 | 0.4+ | 0.0 | | | | | |
| 2001 01 09 | 046 | 0.5− | 0.6+ | 2003 03 10 | 474 | 0.4− | 1.0− | 2004 07 15 | 704 | 0.0 | 0.0 | | | | | |
| 2001 01 09 | 046 | 1.3− | 0.7+ | 2003 12 17 | 704 | 0.5− | 0.2− | 2004 07 15 | 704 | 0.1+ | 0.1+ | | | | | |
| 2001 01 09 | 046 | 0.5− | 0.7+ | 2003 12 17 | 704 | 0.6+ | 0.3− | 2004 07 15 | 704 | 0.0 | 0.1− | | | | | |
| 2001 01 09 | 046 | 0.8− | 0.0 | 2003 12 17 | 704 | 0.3+ | 0.3+ | 2004 07 15 | 704 | 0.1− | 0.2+ | | | | | |
| 2001 01 15 | 611 | (2.3+ | 0.4−) | 2003 12 17 | 704 | 0.1− | 0.3+ | 2004 07 15 | 704 | 0.1− | 0.1+ | | | | | |
| 2001 01 15 | 611 | 0.2+ | 1.0+ | 2004 01 25 | 118 | 0.2+ | 0.0 | 2004 07 16 | 704 | 0.3− | 0.0 | | | | | |
| 2001 01 15 | 611 | 0.9+ | 0.9− | 2004 01 25 | 118 | 0.2− | 0.0 | 2004 07 16 | 704 | 0.3− | 1.0+ | | | | | |
| 2001 01 17 | 493 | 0.0 | 0.2− | 2004 01 25 | 118 | 0.1+ | 0.8− | 2004 07 16 | 704 | 0.4− | 0.0 | | | | | |
| 2001 01 17 | 493 | 0.1+ | 0.1− | 2004 02 26 | 830 | 0.3+ | 0.3+ | 2004 07 16 | 704 | 0.1+ | 0.3− | | | | | |
| 2001 01 17 | 493 | 0.0 | 0.4− | 2004 02 26 | 830 | 0.2− | 0.4+ | 2004 07 16 | 704 | 0.4− | 0.1+ | | | | | |
| 2001 01 18 | 704 | 0.0 | 0.1+ | 2004 02 26 | 830 | 0.1− | 0.3+ | 2004 07 20 | 379 | 0.7+ | 0.9+ | | | | | |
| 2001 01 18 | 704 | 0.6− | 0.8+ | 2004 05 17 | 012 | 0.6− | 0.6− | 2004 07 20 | 379 | 1.1+ | 0.2+ | | | | | |
| 2001 01 18 | 704 | 0.0 | 1.0+ | 2004 05 17 | 012 | 0.0 | 0.3− | 2004 07 20 | 379 | 0.7+ | 0.2− | | | | | |
| 2001 01 18 | 704 | 0.7− | 1.2+ | 2004 05 17 | 012 | 0.3− | 0.3− | 2004 07 20 | 379 | 0.0 | 0.0 | | | | | |
| 2001 02 02 | 360 | 0.1− | 0.1− | 2004 05 17 | 012 | 0.0 | 0.1− | 2004 07 30 | 859 | (0.9− | 2.2−) | | | | | |
| 2001 02 02 | 360 | 0.0 | 0.1− | 2004 05 17 | 012 | 0.4− | 0.6+ | 2004 07 30 | 859 | 0.1− | 0.1− | | | | | |
| 2001 02 02 | 360 | 0.0 | 0.3− | 2004 05 17 | 012 | 0.3− | 0.2− | 2004 08 01 | 859 | 0.1+ | 0.2− | | | | | |
| 2001 02 11 | 118 | 0.0 | 0.1− | 2004 06 27 | 670 | 0.6+ | 0.1− | 2004 08 01 | 859 | 0.2+ | 0.5+ | | | | | |
| 2001 02 11 | 118 | 0.5− | 0.2− | 2004 06 27 | 670 | 0.1+ | 0.5+ | 2004 08 01 | 859 | 0.2− | 0.8− | | | | | |
| 2001 02 13 | 704 | 0.2− | 0.8+ | 2004 07 04 | 170 | 0.6− | 0.4− | 2004 08 01 | 859 | 0.2+ | 0.1− | | | | | |
| 2001 02 13 | 704 | 0.7− | 0.4+ | 2004 07 04 | 170 | 0.7+ | 0.7+ | 2005 12 24 | E17 | 0.3− | 0.5− | | | | | |
| 2001 02 13 | 704 | 0.5+ | 0.5+ | 2004 07 04 | 170 | 0.2+ | 0.2− | 2005 12 24 | E17 | (2.9+ | 0.3+) | | | | | |
| 2001 02 13 | 704 | (1.8+ | 0.6+) | 2004 07 06 | H41 | 0.0 | 0.0 | 2005 12 24 | E17 | (1.7+ | 0.7+) | | | | | |
| 2001 02 13 | 704 | 0.2+ | 0.7+ | 2004 07 06 | H41 | 0.2− | 0.3− | 2006 01 21 | 699 | 0.4+ | 0.2− | | | | | |
| 2001 02 15 | 704 | 0.1− | 0.6− | 2004 07 06 | H41 | 0.8− | 0.2− | 2006 01 21 | 699 | 0.0 | 0.3− | | | | | |
| 2001 02 15 | 704 | 0.4− | 0.0 | 2004 07 06 | H41 | 1.0− | 0.2+ | 2006 01 21 | 699 | 0.0 | 0.8− | | | | | |
| 2001 02 15 | 704 | 0.4− | 0.2+ | 2004 07 06 | H41 | 0.3− | 0.6+ | 2006 01 21 | 699 | 1.0+ | 0.1+ | | | | | |
| 2001 02 15 | 704 | 0.3+ | 0.3− | 2004 07 08 | H41 | 1.2− | 0.4+ | 2006 01 28 | G92 | 0.0 | 0.3+ | | | | | |
| 2001 02 15 | 704 | 0.2+ | 0.5+ | 2004 07 08 | H41 | 0.4+ | 0.5+ | 2006 01 28 | G92 | 0.1− | 0.1− | | | | | |
| 2001 02 15 | 118 | 0.3+ | 0.1− | 2004 07 08 | H41 | 0.2− | 0.5− | 2006 01 28 | G92 | 0.4+ | 0.1− | | | | | |
| 2001 02 15 | 118 | 0.2+ | 0.3− | 2004 07 08 | H41 | 1.3− | 0.8− | 2006 01 28 | 699 | 1.4+ | 0.6− | | | | | |
| 2001 02 15 | 118 | 1.1+ | 0.6− | 2004 07 11 | 704 | 0.5+ | 1.2+ | 2006 01 28 | 699 | (1.6+ | 0.6+) | | | | | |
| 2001 02 16 | 704 | 0.6+ | 0.3− | 2004 07 11 | 704 | (1.6− | 0.5+) | 2006 01 28 | 699 | 0.2− | 1.1− | | | | | |
| 2001 02 16 | 704 | 0.5+ | 0.2+ | 2004 07 11 | 704 | 0.2+ | 1.2+ | 2006 01 28 | 699 | 0.1− | 0.5− | | | | | |
| 2001 02 16 | 704 | 0.2− | 0.2− | 2004 07 11 | 704 | 0.2+ | 0.8+ | 2006 02 01 | A13 | 0.3− | 0.3− | | | | | |
| 2001 02 16 | 704 | 0.3− | 0.1− | 2004 07 12 | H41 | 0.2+ | 0.2− | 2006 02 01 | A13 | 0.8− | 0.4+ | | | | | |
| 2001 02 16 | 704 | 0.2+ | 0.2− | 2004 07 12 | H41 | 0.4+ | 0.5− | 2006 02 06 | 704 | 0.7+ | 0.5− | | | | | |
| 2001 02 17 | 704 | 0.1+ | 0.3+ | 2004 07 12 | H41 | 0.5− | 0.1− | 2006 02 06 | 704 | (0.0 | 2.0+) | | | | | |
| 2001 02 17 | 704 | 0.3− | 0.2− | 2004 07 12 | H41 | 0.2+ | 0.4− | 2006 02 06 | 704 | 0.2+ | 0.3+ | | | | | |
| 2001 02 17 | 704 | 0.1+ | 0.3+ | 2004 07 12 | H41 | 0.2− | 0.1− | 2006 02 06 | 704 | (0.0 | 2.5+) | | | | | |
| 2001 02 17 | 704 | 0.1+ | 1.2+ | 2004 07 13 | H41 | 0.0 | 1.3− | 2006 02 20 | 703 | 1.0+ | 0.3+ | | | | | |
| 2001 02 17 | 704 | 0.0 | 0.3− | 2004 07 13 | H41 | 0.2− | 0.1+ | 2006 02 20 | 703 | 0.8+ | 0.4− | | | | | |
| 2001 02 20 | 360 | 0.1− | 0.4− | 2004 07 13 | H41 | 0.3− | 0.5− | 2006 02 20 | 703 | (2.5− | 0.1+) | | | | | |
| 2001 02 20 | 360 | 0.4− | 0.3− | 2004 07 13 | H41 | 0.4+ | 0.7− | 2006 02 20 | 703 | 0.2− | 0.2+ | | | | | |
| 2001 02 20 | 360 | 0.2− | 0.0 | 2004 07 13 | H41 | 0.3+ | 0.3− | 2006 02 24 | H55 | 0.5+ | 0.2− | | | | | |
| 2001 02 26 | 587 | 0.7− | 1.1− | 2004 07 13 | 379 | 0.4− | 0.4− | 2006 02 24 | H55 | 1.2+ | 1.0+ | | | | | |
| 2001 02 26 | 587 | 0.1− | 0.6− | 2004 07 13 | 379 | 0.7+ | 0.6− | 2006 02 24 | H55 | (2.0− | 0.5+) | | | | | |
| 2001 03 15 | 204 | 0.2− | 0.1− | 2004 07 14 | H41 | 0.3− | 0.2− | 2006 02 28 | G96 | 0.6− | 0.0 | | | | | |
| 2001 03 15 | 204 | 0.2− | 0.4+ | 2004 07 14 | H41 | 0.2+ | 0.4− | 2006 02 28 | G96 | 0.1− | 0.1− | | | | | |
| 2001 05 10 | 926 | 0.4+ | 0.7− | 2004 07 14 | H41 | 0.1− | 0.1− | 2006 02 28 | G96 | 0.1+ | 0.1− | | | | | |

**(138926)∗ 2001 BA**

Discovered 2001 Jan. 16 by T. Kobayashi at Oizumi.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 206.03121 | | (2000.0) | | | |
| $n$ | 0.29050071 | $\omega$ | 195.46923 | | −0.99943507 | −0.02046487 |
| $a$ | 2.2578994 | $\Omega$ | 343.28972 | | +0.03071795 | −0.87807357 |
| $e$ | 0.1269582 | $i$ | 5.32001 | | −0.01363623 | −0.47808785 |
| $P$ | 3.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1− | 0.7+ | 2001 02 20 | 704 | 0.4+ | 0.2− | 2003 12 17 | 704 | (0.0 | 1.5−) | | | | | |
| 1999 10 13 | 704 | 0.4+ | 0.4+ | 2001 02 20 | 704 | 1.3+ | 0.3− | 2003 12 23 | 704 | 0.1− | 0.9+ | | | | | |
| 1999 10 13 | 704 | 0.3+ | 0.2+ | 2001 02 20 | 704 | 1.4− | 0.1+ | 2003 12 23 | 704 | 0.3+ | 0.2− | | | | | |
| 1999 10 13 | 704 | 0.5− | 0.0 | 2001 02 20 | 704 | 0.5+ | 0.1− | 2003 12 23 | 704 | 0.1+ | 0.1− | | | | | |
| 1999 10 13 | 704 | 0.9− | 0.7+ | 2001 02 20 | 704 | 0.6+ | 1.1+ | 2003 12 23 | 704 | 0.1+ | 0.4+ | | | | | |
| 2000 11 28 | 704 | 0.8+ | 0.0 | 2001 02 21 | 699 | 1.1+ | 0.4− | 2003 12 23 | 704 | 0.5− | 0.4+ | | | | | |
| 2000 11 28 | 704 | 0.6− | 0.5+ | 2001 02 21 | 699 | (1.5+ | 0.3−) | 2004 01 11 | 644 | 0.0 | 0.3− | | | | | |
| 2000 11 28 | 704 | 0.2+ | 0.9− | 2001 02 21 | 704 | 0.3+ | 0.3+ | 2004 01 11 | 644 | 0.1− | 0.2− | | | | | |
| 2000 11 28 | 704 | 0.6− | 0.4− | 2001 02 21 | 704 | 0.1− | 0.5+ | 2004 01 11 | 644 | 0.1− | 0.3− | | | | | |
| 2000 12 22 | 699 | 1.9+ | 0.6+ | 2001 02 21 | 704 | 0.6+ | 0.0 | 2004 02 15 | 704 | 0.1+ | 0.5− | | | | | |
| 2000 12 22 | 699 | 0.8+ | 1.2+ | 2001 02 21 | 704 | 0.1+ | 0.3− | 2004 02 15 | 704 | 0.4− | 0.2+ | | | | | |
| 2000 12 22 | 699 | (2.1+ | 0.3−) | 2001 02 21 | 704 | 0.4− | 0.3− | 2004 02 15 | 704 | 0.3+ | 0.0 | | | | | |
| 2000 12 22 | 699 | 0.0 | 0.5+ | 2001 02 21 | 704 | 0.1− | 0.0 | 2004 02 15 | 704 | 0.3+ | 1.0− | | | | | |
| 2001 01 16 | 411 | 0.3− | 0.3− | 2001 02 21 | 699 | 1.1+ | 0.1+ | 2006 09 20 | 699 | (2.6− | 2.3+) | | | | | |
| 2001 01 16 | 411 | 0.4+ | 1.2− | 2001 02 21 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.8+ | 1.2+ | | | | | |
| 2001 01 17 | 608 | (1.7+ | 0.5+) | 2001 02 21 | 704 | 0.1− | 0.6+ | 2006 09 20 | 699 | 0.2− | 0.3+ | | | | | |
| 2001 01 17 | 608 | (1.8+ | 0.4+) | 2001 02 21 | 704 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.6− | 0.1+ | | | | | |
| 2001 01 17 | 608 | (1.7+ | 0.4+) | 2001 02 21 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1− | | | | | |
| 2001 01 17 | 411 | 0.3+ | 0.5− | 2001 02 21 | 699 | 1.0+ | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | | | | | |
| 2001 01 17 | 411 | (1.5− | 1.0−) | 2001 02 22 | 699 | 0.0 | 0.4− | 2006 09 28 | 691 | 0.2− | 0.0 | | | | | |
| 2001 01 19 | 704 | 0.8− | 0.0 | 2001 02 22 | 699 | 0.4+ | 0.3− | 2006 10 10 | 644 | 0.6− | 0.0 | | | | | |
| 2001 01 19 | 704 | 1.2+ | 0.3+ | 2001 02 22 | 699 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.2− | 0.0 | | | | | |
| 2001 01 19 | 704 | 0.1− | 0.6+ | 2001 02 22 | 699 | 0.3+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.2+ | | | | | |
| 2001 01 19 | 704 | 0.4− | 0.6+ | 2001 02 26 | 106 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.5− | 0.6+ | | | | | |
| 2001 01 19 | 704 | 0.0 | 0.6+ | 2001 02 26 | 106 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.3+ | | | | | |
| 2001 01 21 | 691 | 0.0 | 0.4− | 2001 02 26 | 106 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3+ | | | | | |
| 2001 01 21 | 691 | 0.6− | 0.1− | 2001 03 03 | 704 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.2+ | | | | | |
| 2001 01 21 | 691 | 0.7− | 0.2− | 2001 03 03 | 704 | 1.4+ | 1.4+ | 2006 10 17 | 691 | 0.0 | 0.3+ | | | | | |
| 2001 01 29 | 411 | 0.3+ | 0.0 | 2001 03 03 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | | | | |
| 2001 01 29 | 411 | 0.4+ | 0.5+ | 2001 03 14 | 699 | 0.5− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.7− | | | | | |
| 2001 02 01 | 704 | (2.1− | 0.2−) | 2001 03 14 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.1− | | | | | |
| 2001 02 01 | 704 | 0.4− | 0.6− | 2001 03 14 | 699 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.4− | | | | | |
| 2001 02 01 | 704 | 0.0 | 0.5+ | 2001 03 14 | 699 | 0.2+ | 0.5− | 2006 10 17 | 703 | 0.5− | 0.6− | | | | | |
| 2001 02 01 | 704 | 0.3+ | 0.0 | 2002 09 15 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | | | | |
| 2001 02 01 | 704 | (0.2+ | 1.6−) | 2002 09 15 | 644 | 1.0− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | | | | | |
| 2001 02 02 | 699 | 0.2− | 0.5+ | 2002 09 15 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ | | | | | |
| 2001 02 02 | 699 | 0.6− | 0.3+ | 2003 11 19 | 704 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | | | | | |
| 2001 02 02 | 704 | 0.7− | 0.6+ | 2003 11 19 | 704 | 0.9− | 0.7− | 2006 10 21 | 644 | 0.0 | 0.3+ | | | | | |
| 2001 02 02 | 704 | (1.5− | 0.1+) | 2003 11 19 | 704 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | | | | | |
| 2001 02 02 | 699 | 0.3− | 0.1+ | 2003 11 19 | 704 | 1.1+ | 1.2+ | 2006 11 19 | 704 | 0.6+ | 0.3+ | | | | | |
| 2001 02 02 | 704 | 0.3− | 0.3− | 2003 11 19 | 704 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.3+ | | | | | |
| 2001 02 02 | 704 | 0.9+ | 0.2− | 2003 12 03 | 704 | 0.4− | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.0 | | | | | |
| 2001 02 02 | 699 | 0.0 | 0.5+ | 2003 12 03 | 704 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.3+ | | | | | |
| 2001 02 02 | 704 | 0.6+ | 0.4+ | 2003 12 03 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 1.0+ | 0.3− | | | | | |
| 2001 02 16 | 699 | 0.1− | 0.2+ | 2003 12 03 | 704 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.7+ | 0.6+ | | | | | |
| 2001 02 16 | 699 | 0.1− | 0.5+ | 2003 12 03 | 704 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.0 | | | | | |
| 2001 02 16 | 699 | 0.3− | 0.2+ | 2003 12 15 | 644 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.3− | 0.3− | | | | | |
| 2001 02 16 | 699 | 0.0 | 0.6+ | 2003 12 15 | 644 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.5− | | | | | |
| 2001 02 17 | 704 | 0.0 | 0.5+ | 2003 12 15 | 644 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.5− | | | | | |
| 2001 02 17 | 704 | 0.2− | 0.4+ | 2003 12 17 | 704 | 0.4− | 0.6− | 2006 11 25 | G96 | 0.2+ | 0.5− | | | | | |
| 2001 02 17 | 704 | 0.1+ | 0.2+ | 2003 12 17 | 704 | 0.4− | 0.7− | 2006 11 25 | G96 | 0.5− | 0.6− | | | | | |
| 2001 02 17 | 704 | 0.2− | 0.0 | 2003 12 17 | 704 | 0.1− | 1.4− | | | | | | | | | |
| 2001 02 17 | 704 | 0.2− | 0.1− | 2003 12 17 | 704 | 0.2− | 1.0− | | | | | | | | | |

**(138927)∗ 2001 BR**

Discovered 2001 Jan. 17 by T. Kobayashi at Oizumi.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.64630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29534418 | $\omega$ | 131.43102 | | −0.74090127 | −0.67151613 | |
| $a$ | 2.2331459 | $\Omega$ | 6.41495 | | +0.58154136 | −0.64998074 | |
| $e$ | 0.1059867 | $i$ | 5.88866 | | +0.33596869 | −0.35579646 | |
| $P$ | 3.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.2− | 1.3+ | 2001 02 21 | 699 | 0.2− | 0.9+ | 2006 09 26 | 691 | 0.0 | 0.2+ | |
| 1998 04 21 | 704 | 0.4+ | 0.6− | 2001 02 21 | 699 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.0 | |
| 1998 04 21 | 704 | 1.0+ | 0.2− | 2001 02 21 | 699 | 0.2− | 1.3+ | 2006 09 26 | 691 | 0.2+ | 0.4+ | |
| 1998 04 21 | 704 | 0.6− | 0.0 | 2003 12 03 | 704 | (1.7− | 0.3+) | 2006 09 30 | 691 | 0.1− | 0.1+ | |
| 1998 04 21 | 704 | 0.6+ | 0.2+ | 2003 12 03 | 704 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.1− | 0.1+ | |
| 2001 01 17 | 411 | 1.0+ | 0.2− | 2003 12 03 | 704 | 0.2− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.1+ | |
| 2001 01 17 | 411 | 0.3− | 0.5− | 2003 12 03 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | |
| 2001 01 18 | 704 | 0.3+ | 0.3+ | 2003 12 17 | 704 | 0.6+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.1− | |
| 2001 01 18 | 704 | 0.5− | 0.3− | 2003 12 17 | 704 | 0.8+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.0 | |
| 2001 01 18 | 704 | 0.3− | 0.3− | 2003 12 17 | 704 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 2001 01 18 | 704 | 0.6+ | 0.8+ | 2003 12 17 | 704 | 1.0+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.4+ | |
| 2001 01 18 | 411 | 0.0 | 0.6− | 2003 12 25 | 691 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 2001 01 18 | 411 | 0.6− | 0.5+ | 2003 12 25 | 691 | 0.1− | 0.4− | 2006 10 15 | 691 | 0.5+ | 0.3+ | |
| 2001 01 28 | 411 | (1.8+ | 1.6−) | 2003 12 25 | 691 | 0.1− | 0.4− | 2006 10 15 | 691 | 0.2− | 0.0 | |
| 2001 01 28 | 411 | 0.2+ | 0.2+ | 2003 12 27 | 704 | 1.0+ | 0.9− | 2006 10 15 | 691 | 0.2− | 0.2+ | |
| 2001 02 02 | 699 | 0.6+ | 0.6+ | 2003 12 27 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2001 02 02 | 699 | 1.2+ | 0.4+ | 2003 12 27 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ | |
| 2001 02 02 | 699 | 0.7+ | 0.3+ | 2003 12 27 | 704 | 1.1− | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2001 02 02 | 699 | 0.5+ | 0.2+ | 2003 12 29 | 704 | 0.1+ | 0.1− | 2006 11 06 | 644 | 0.3− | 0.4+ | |
| 2001 02 03 | 704 | 0.4+ | 0.0 | 2003 12 29 | 704 | 0.2+ | 0.2− | 2006 11 06 | 644 | 0.1+ | 0.3+ | |
| 2001 02 03 | 704 | 0.2+ | 0.1+ | 2003 12 29 | 704 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.2+ | 0.4+ | |
| 2001 02 03 | 704 | 0.6− | 0.3+ | 2003 12 29 | 704 | 0.3− | 0.1− | 2006 11 06 | 644 | 0.3+ | 0.3+ | |
| 2001 02 03 | 704 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 0.1+ | 0.2− | 2006 11 06 | 644 | 0.0 | 0.3+ | |
| 2001 02 17 | 704 | 0.5+ | 0.1− | 2006 09 15 | 691 | 1.0− | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.2− | |
| 2001 02 17 | 704 | (1.5− | 0.0 ) | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.4− | |
| 2001 02 17 | 704 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.5− | |
| 2001 02 17 | 704 | 0.1− | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.4− | |
| 2001 02 17 | 704 | 0.1− | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.2− | |
| 2001 02 21 | 699 | 0.5− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.1− | | | | | |

**(138928)∗ 2001 BP$_1$ = 2003 UZ$_{56}$ = 2003 UL$_{57}$**

Discovered 2001 Jan. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 68893), G. V. Williams (d, *MPO* 58141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.38427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29410850 | $\omega$ | 186.09589 | | +0.79892343 | −0.60111861 | |
| $a$ | 2.2393965 | $\Omega$ | 210.88041 | | +0.55339106 | +0.74737880 | |
| $e$ | 0.1089251 | $i$ | 2.17027 | | +0.23554125 | +0.28298648 | |
| $P$ | 3.35 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 16 | 691 | (2.3+ | 1.4−) | 2003 10 28 | 704 | 1.0+ | 0.5− | 2006 08 28 | 703 | (0.3− | 1.8+) | |
| 2001 01 16 | 691 | 0.1+ | 0.3− | 2003 10 28 | 704 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.0 | 1.1+ | |
| 2001 01 16 | 691 | 0.1+ | 0.4− | 2003 10 29 | 703 | (2.5− | 1.8+) | 2006 08 28 | 703 | 0.3+ | 1.1+ | |
| 2001 01 19 | 691 | 0.0 | 0.1− | 2003 10 29 | 703 | 0.6− | 0.8+ | 2006 08 28 | 699 | (1.6+ | 1.0+) | |
| 2001 01 19 | 691 | 0.2− | 0.0 | 2003 10 29 | 703 | 0.6− | 1.0− | 2006 08 28 | 699 | (1.7− | 0.0 ) | |
| 2001 01 19 | 691 | 0.1− | 0.1− | 2003 10 29 | 703 | (1.6− | 0.9+) | 2006 08 28 | 699 | 0.6+ | 0.7+ | |
| 2001 01 20 | 691 | 1.2− | 1.0+ | 2003 11 16 | 691 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.7− | |
| 2001 01 20 | 691 | 0.2− | 0.4+ | 2003 11 16 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.1+ | |
| 2001 01 20 | 691 | 1.3− | 0.1− | 2003 11 16 | 691 | 0.2− | 0.4+ | 2006 09 14 | 703 | (2.2− | 0.7+) | |
| 2001 01 22 | 691 | 0.8+ | 0.1− | 2003 11 21 | 704 | 1.2− | 1.3+ | 2006 09 14 | 703 | 0.1− | 0.5+ | |
| 2001 01 22 | 691 | 0.3− | 0.7− | 2003 11 21 | 699 | 0.2+ | 0.8− | 2006 09 14 | 703 | (1.8− | 0.6−) | |
| 2001 01 23 | 691 | (2.7+ | 0.2−) | 2003 11 21 | 704 | (0.1+ | 1.6+) | 2006 09 27 | G96 | 0.4− | 0.2− | |
| 2001 01 23 | 691 | 1.0+ | 1.1+ | 2003 11 21 | 699 | 1.4+ | 0.4− | 2006 09 27 | G96 | 0.4− | 0.3+ | |
| 2001 01 24 | 691 | 0.3+ | 0.1+ | 2003 11 21 | 699 | 0.6− | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.0 | |
| 2001 01 24 | 691 | (1.6+ | 0.7−) | 2003 11 21 | 704 | 0.1− | 1.0+ | 2006 09 27 | G96 | 0.3− | 0.0 | |
| 2001 01 24 | 691 | 1.3+ | 0.0 | 2003 11 21 | 699 | 1.1+ | 0.8− | 2006 10 21 | G96 | 0.6− | 0.0 | |
| 2003 10 23 | 691 | 0.1+ | 0.0 | 2003 11 21 | 704 | 0.8+ | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.5− | |
| 2003 10 23 | 691 | 0.0 | 0.2− | 2005 04 09 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.0 | |
| 2003 10 23 | 691 | 0.2− | 0.4− | 2005 04 09 | 691 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.6− | 0.1+ | |
| 2003 10 26 | 049 | 0.9− | 0.0 | 2005 04 09 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.3− | 1.4+ | |
| 2003 10 26 | 049 | 0.6− | 0.4− | 2005 04 11 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2− | |
| 2003 10 26 | 049 | 0.8− | 0.7− | 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.7+ | 0.5− | |
| 2003 10 28 | 704 | 0.1+ | 0.5− | 2005 04 11 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.4+ | |
| 2003 10 28 | 704 | 1.1+ | 0.6− | 2006 08 28 | 703 | 0.1+ | 1.1+ | | | | | |

**(138929)∗ 2001 BU$_1$**

Discovered 2001 Jan. 16 by W. Bickel at Bergisch Gladbach.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.46007 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29948118 | $\omega$ | 161.05094 | | −0.07175408 | −0.99675171 | |
| $a$ | 2.2125327 | $\Omega$ | 293.05024 | | +0.90990692 | −0.05039586 | |
| $e$ | 0.1118903 | $i$ | 2.27771 | | +0.40855935 | −0.06281942 | |
| $P$ | 3.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.6− | 1.5+ | 2001 02 22 | 704 | 0.0 | 0.6+ | 2006 08 30 | 699 | (1.6+ | 0.1−) | |
| 1998 03 29 | 704 | 0.9+ | 0.0 | 2001 03 18 | 704 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.0 | |
| 1998 03 29 | 704 | (1.3+ | 3.1+) | 2001 03 18 | 704 | 0.6− | 0.5− | 2006 09 25 | 691 | 0.1+ | 0.1+ | |
| 1998 04 01 | 704 | 0.1− | 1.0− | 2001 03 18 | 704 | 0.4+ | 0.7− | 2006 09 25 | 691 | 0.2+ | 0.1+ | |
| 1998 04 01 | 704 | 0.8− | 0.1− | 2001 03 18 | 704 | 0.0 | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.2+ | |
| 1998 04 01 | 704 | 0.9+ | 0.4+ | 2001 03 18 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 691 | 0.2− | 0.5+ | |
| 2000 12 28 | 704 | 1.0− | 0.1+ | 2001 04 13 | 621 | 0.1+ | 0.4+ | 2006 09 29 | 691 | 0.2− | 0.2+ | |
| 2000 12 28 | 704 | 1.0+ | 0.1+ | 2001 04 13 | 621 | 0.2+ | 0.4+ | 2006 10 03 | 691 | 0.2+ | 0.1+ | |
| 2000 12 28 | 704 | 0.2− | 0.2− | 2001 04 13 | 621 | 0.0 | 0.5+ | 2006 10 03 | 691 | 0.2+ | 0.1+ | |
| 2000 12 28 | 704 | 0.2+ | 0.9+ | 2001 04 13 | 621 | 0.2+ | 0.5+ | 2006 10 03 | 691 | 0.2+ | 0.0 | |
| 2001 01 16 | 621 | 0.4+ | 0.5− | 2001 04 20 | 621 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.1− | |
| 2001 01 16 | 621 | 0.3+ | 0.3− | 2001 04 20 | 621 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.0 | |
| 2001 01 16 | 621 | 0.1+ | 0.2+ | 2001 04 20 | 621 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.1+ | |
| 2001 01 17 | 621 | 1.0− | 0.1+ | 2003 12 04 | 704 | (0.2+ | 2.9−) | 2006 10 19 | 644 | 0.2+ | 0.1+ | |
| 2001 01 17 | 621 | 0.2+ | 0.2+ | 2003 12 04 | 704 | (2.0+ | 1.0−) | 2006 10 19 | 644 | 0.1+ | 0.1− | |
| 2001 01 17 | 621 | 0.1+ | 0.1+ | 2003 12 04 | 704 | 0.7− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.0 | |
| 2001 01 17 | 621 | 0.2− | 0.3+ | 2003 12 04 | 704 | (1.0+ | 2.0−) | 2006 10 20 | 691 | 0.4− | 0.2− | |
| 2001 01 17 | 621 | 0.5− | 0.1− | 2003 12 04 | 704 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.5− | 0.2− | |
| 2001 01 17 | 621 | 0.0 | 0.3+ | 2003 12 18 | 704 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2− | |
| 2001 01 21 | 704 | 0.4− | 0.4− | 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3− | |
| 2001 01 21 | 704 | 0.0 | 0.2+ | 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | |
| 2001 01 21 | 704 | 0.2+ | 0.4− | 2003 12 18 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3− | |
| 2001 01 21 | 704 | 0.5+ | 0.6− | 2003 12 18 | 704 | 0.2− | 1.0− | 2006 11 01 | 691 | 0.2+ | 0.1+ | |
| 2001 01 30 | 621 | 0.1− | 0.1− | 2003 12 21 | 704 | 0.1− | 0.7+ | 2006 11 01 | 691 | 0.3+ | 0.1+ | |
| 2001 01 30 | 621 | 0.0 | 0.2+ | 2003 12 21 | 704 | 0.8+ | 0.4− | 2006 11 01 | 691 | 0.4+ | 0.0 | |
| 2001 01 30 | 621 | 0.3+ | 0.5+ | 2003 12 21 | 704 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.4− | |
| 2001 01 31 | 704 | 0.3− | 1.2+ | 2003 12 24 | 704 | 0.4− | 0.8− | 2006 11 09 | 644 | 0.1− | 0.3+ | |
| 2001 01 31 | 704 | 0.1− | 0.4+ | 2003 12 24 | 704 | 0.4− | 0.9− | 2006 11 09 | 644 | 0.2− | 0.2+ | |
| 2001 01 31 | 704 | 0.4+ | 0.7+ | 2003 12 24 | 704 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 | |
| 2001 01 31 | 704 | 0.5− | 1.3− | 2004 01 21 | 704 | 0.2+ | 1.4− | 2006 11 10 | 691 | 0.1+ | 0.2+ | |
| 2001 01 31 | 704 | 0.2+ | 0.4+ | 2004 01 21 | 704 | 0.0 | 0.7− | 2006 11 10 | 691 | 0.0 | 0.2− | |
| 2001 02 15 | 621 | 0.2+ | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.9− | 2006 11 11 | 703 | 0.5− | 0.9− | |
| 2001 02 15 | 621 | 0.2− | 0.4+ | 2004 01 21 | 704 | 0.1− | 0.6− | 2006 11 11 | 703 | 0.7− | 0.2− | |
| 2001 02 15 | 621 | 0.4− | 0.8+ | 2004 01 21 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.9+ | |
| 2001 02 16 | 621 | 0.3+ | 0.1− | 2004 01 24 | 704 | 0.6− | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.0 | |
| 2001 02 16 | 621 | 0.3+ | 0.2− | 2004 01 24 | 704 | 0.3+ | 1.0− | 2006 11 19 | 704 | 0.1+ | 0.5+ | |
| 2001 02 16 | 621 | 0.2+ | 0.1− | 2004 01 24 | 704 | 0.6− | 0.2− | 2006 11 19 | 704 | (1.1− | 1.5+) | |
| 2001 02 16 | 621 | 0.1+ | 0.4− | 2004 01 24 | 704 | 1.1− | 0.7− | 2006 11 19 | 704 | 0.2− | 0.2+ | |
| 2001 02 19 | 699 | 0.1− | 0.8+ | 2004 02 26 | 704 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.6+ | |
| 2001 02 19 | 699 | 0.3+ | 1.0+ | 2004 02 26 | 704 | 0.5+ | 0.2− | 2006 11 19 | 704 | 0.0 | 0.2+ | |
| 2001 02 19 | 699 | 0.1+ | 1.3+ | 2004 02 26 | 704 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.4+ | |
| 2001 02 19 | 704 | 0.0 | 0.4− | 2004 02 26 | 704 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.1+ | 0.3+ | |
| 2001 02 19 | 704 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.4+ | |
| 2001 02 19 | 704 | 1.1+ | 0.1+ | 2005 02 15 | 809 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.7+ | |
| 2001 02 19 | 699 | 0.7+ | 0.4− | 2005 02 15 | 809 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.3− | 1.3+ | |
| 2001 02 19 | 704 | 1.2+ | 0.2+ | 2005 02 15 | 809 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.6+ | |
| 2001 02 22 | 704 | 0.8+ | 0.6− | 2006 08 30 | 699 | (1.6+ | 0.3+) | 2006 11 22 | 704 | (0.2− | 1.5+) | |
| 2001 02 22 | 704 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.0 | 1.1− | 2006 11 22 | 704 | (0.0 | 1.9+) | |
| 2001 02 22 | 704 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.7+ | 1.0+ | 2006 11 22 | 704 | 0.0 | 0.2+ | |

**(138930)∗ 2001 BQ$_3$ = 2003 WS$_{93}$**

Discovered 2001 Jan. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56187)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 219.96895 | | (2000.0) | | | |
| $n$ | 0.29127954 | $\omega$ | 112.16406 | | −0.81684555 | −0.57401435 |
| $a$ | 2.2538727 | $\Omega$ | 32.88500 | | +0.48282954 | −0.73458364 |
| $e$ | 0.0588786 | $i$ | 6.04641 | | +0.31565643 | −0.36179332 |
| $P$ | 3.38 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 691 | 0.1− | 0.3− | 2003 11 15 | 691 | 0.1− | 0.2− | 2005 04 17 | 691 | 0.2+ | 0.0 |
| 1998 03 22 | 691 | 0.2− | 0.4− | 2003 11 15 | 691 | 0.1− | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.5+ |
| 1998 03 22 | 691 | 0.2− | 0.3− | 2003 11 15 | 691 | 0.1+ | 0.2− | 2005 04 17 | 691 | 0.2+ | 0.1+ |
| 2001 01 18 | 704 | 0.1+ | 0.1+ | 2003 11 19 | 699 | 0.6+ | 0.8+ | 2005 05 16 | G96 | 0.3− | 0.4+ |
| 2001 01 18 | 704 | 0.4+ | 0.9+ | 2003 11 19 | 699 | 1.2+ | 1.2+ | 2005 05 16 | G96 | 0.1+ | 0.4+ |
| 2001 01 18 | 704 | 0.2+ | 0.4+ | 2003 11 19 | 699 | 0.8− | 0.5− | 2005 05 16 | G96 | 0.0 | 0.3+ |
| 2001 01 19 | 704 | 0.6+ | 0.3+ | 2003 11 19 | 699 | 0.7+ | 0.4+ | 2005 05 16 | G96 | 0.2− | 0.5+ |
| 2001 01 19 | 704 | 0.5− | 0.1− | 2003 11 20 | 704 | 0.0 | 0.2+ | 2005 05 19 | 644 | 0.1+ | 0.0 |
| 2001 01 19 | 704 | 0.2+ | 0.4+ | 2003 11 20 | 704 | 0.7− | 0.5+ | 2005 05 19 | 644 | 0.1+ | 0.5+ |
| 2001 01 21 | 704 | 0.6+ | 0.1+ | 2003 11 20 | 704 | 0.2+ | 0.1+ | 2005 05 19 | 644 | 0.7+ | 0.4+ |
| 2001 01 21 | 704 | 0.5− | 0.5+ | 2003 11 20 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | (2.9− | 0.9−) |
| 2001 01 21 | 704 | 0.8+ | 0.0 | 2003 11 20 | 704 | 0.3− | 0.2+ | 2006 09 30 | 703 | 1.0+ | 0.9− |
| 2001 01 21 | 704 | 0.2− | 0.4− | 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | (0.1+ | 2.0−) |
| 2001 01 21 | 704 | 0.9+ | 0.5− | 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 2001 01 24 | 704 | 0.3− | 0.4− | 2003 12 19 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2001 01 24 | 704 | 0.4− | 0.2+ | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2001 01 24 | 704 | (0.4− | 1.5+) | 2005 04 02 | G96 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.5− | 0.3− |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2001 02 22 | 645 | 0.1− | 0.0 | 2005 04 02 | G96 | 0.3− | 0.2+ | | | | |

**(138931)∗ 2001 BJ$_4$ = 2003 SD$_{22}$**

Discovered 2001 Jan. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 56187)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.81323 | | (2000.0) | | | |
| $n$ | 0.23231364 | $\omega$ | 203.75890 | | −0.95718541 | +0.28801341 |
| $a$ | 2.6207137 | $\Omega$ | 352.79342 | | −0.21428669 | −0.77247404 |
| $e$ | 0.0597388 | $i$ | 13.39330 | | −0.19462091 | −0.56597891 |
| $P$ | 4.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.3− | 0.5− | 2003 09 16 | 691 | 0.2− | 0.1+ | 2006 04 07 | E12 | 1.5− | 0.2+ |
| 2001 01 18 | 704 | 0.2+ | 0.6+ | 2003 09 16 | 691 | 0.3− | 0.0 | 2006 04 07 | E12 | 0.3+ | 0.2+ |
| 2001 01 18 | 704 | 0.3− | 0.3+ | 2003 09 16 | 608 | 0.4− | 0.4+ | 2006 04 07 | E12 | 0.1+ | 0.3+ |
| 2001 01 18 | 704 | 0.0 | 0.1− | 2003 09 16 | 608 | 0.7− | 0.3+ | 2006 04 21 | 428 | 0.5+ | 0.7− |
| 2001 01 19 | 704 | 0.1+ | 1.0+ | 2003 09 16 | 608 | 0.3− | 0.2+ | 2006 04 21 | 428 | 1.1+ | 0.7− |
| 2001 01 19 | 704 | 0.1+ | 0.2− | 2003 09 18 | 644 | 0.4− | 0.2+ | 2006 04 22 | E12 | 0.8− | 0.6+ |
| 2001 01 19 | 704 | 0.3− | 0.2+ | 2003 09 18 | 644 | 0.4− | 0.2− | 2006 04 22 | E12 | 0.5+ | 0.4+ |
| 2001 01 19 | 704 | 0.8+ | 0.4+ | 2003 09 18 | 644 | 0.2− | 0.4+ | 2006 04 22 | E12 | 0.2− | 0.1+ |
| 2001 01 19 | 704 | 0.7+ | 0.4− | 2003 09 28 | 691 | 0.1− | 0.3+ | 2006 04 22 | E12 | 0.4− | 0.2+ |
| 2001 01 20 | 704 | 0.2+ | 0.4+ | 2003 09 28 | 691 | 0.2+ | 0.0 | 2006 05 05 | 699 | 0.9+ | 0.6+ |
| 2001 01 20 | 704 | 1.0+ | 0.2+ | 2003 09 28 | 691 | 0.0 | 0.2+ | 2006 05 05 | 699 | 0.9+ | 0.1− |
| 2001 01 20 | 704 | 1.6− | 0.5+ | 2003 11 19 | 291 | 0.1− | 0.2+ | 2006 05 05 | 699 | 1.5+ | 1.8+ |
| 2001 01 20 | 704 | 0.0 | 0.2− | 2003 11 19 | 291 | 0.0 | 0.3+ | 2006 05 05 | 699 | 0.5+ | 0.1+ |
| 2001 01 20 | 704 | 1.1+ | 1.3− | 2003 11 19 | 291 | 0.0 | 0.2+ | 2006 05 16 | E12 | 0.4+ | 0.3− |
| 2001 01 21 | 704 | 0.6+ | 0.1− | 2004 12 16 | 703 | 0.2+ | 0.3− | 2006 05 16 | E12 | 1.6− | 0.1+ |
| 2001 01 21 | 704 | 0.1+ | 0.7+ | 2004 12 16 | 703 | 0.2+ | 0.3− | 2006 05 16 | E12 | 0.2− | 0.1− |
| 2001 01 21 | 704 | 0.1+ | 0.3+ | 2004 12 16 | 703 | 0.3− | 0.1+ | 2006 05 25 | E12 | 0.3+ | 0.3+ |
| 2001 01 21 | 704 | 1.4− | 0.9+ | 2004 12 16 | 703 | 0.3− | 0.1+ | 2006 05 25 | E12 | 0.1− | 0.6+ |
| 2001 02 16 | 704 | 0.5− | 1.3+ | 2006 03 25 | 644 | 0.4+ | 0.8+ | 2006 05 25 | E12 | 0.5+ | 0.3− |
| 2001 02 16 | 704 | 0.4+ | 0.8+ | 2006 03 25 | 644 | 0.7+ | 0.4+ | 2006 05 25 | E12 | 0.7+ | 0.1+ |
| 2001 02 16 | 704 | 0.7+ | 0.1+ | 2006 03 25 | 644 | 0.6+ | 0.5+ | | | | |
| 2003 09 16 | 691 | 0.2− | 0.2+ | 2006 04 07 | E12 | 1.7− | 0.4+ | | | | |

**(138932)∗ 2001 BB$_8$ = 1997 NN$_9$**

Discovered 2001 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 10688)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 301.21119 | | (2000.0) | | | |
| $n$ | 0.17976543 | $\omega$ | 267.82032 | | −0.66774275 | +0.70384959 |
| $a$ | 3.1093189 | $\Omega$ | 316.78061 | | −0.46034757 | −0.64626223 |
| $e$ | 0.2870252 | $i$ | 20.72282 | | −0.58497840 | −0.29485741 |
| $P$ | 5.48 | $H$ | 13.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 13 | 910 | 0.3+ | 0.4− | 2001 01 21 | 704 | 0.3+ | 0.1+ | 2003 09 16 | 644 | 0.3+ | 0.4+ |
| 1997 07 13 | 910 | 0.4+ | 0.4− | 2001 01 21 | 704 | 0.1− | 0.0 | 2003 09 20 | 644 | 0.3− | 0.1+ |
| 1997 07 13 | 910 | 0.5+ | 0.6− | 2001 01 21 | 704 | 0.1− | 0.3− | 2003 09 20 | 644 | 0.1− | 0.2+ |
| 1997 07 14 | 910 | 0.9+ | 0.4− | 2001 02 03 | 704 | 0.4+ | 0.4− | 2003 09 20 | 644 | 0.1− | 0.1+ |
| 1997 07 14 | 910 | 0.9+ | 0.4− | 2001 02 03 | 704 | 1.1− | 1.2− | 2003 09 21 | 704 | 0.4− | 1.3+ |
| 1997 07 14 | 910 | 0.6+ | 0.5− | 2001 02 03 | 704 | 0.5+ | 0.7− | 2003 09 21 | 704 | 1.1− | 1.1+ |
| 1997 07 16 | 910 | 0.0 | 0.1− | 2001 02 03 | 704 | 0.7+ | 0.1− | 2003 09 21 | 704 | 0.4− | 0.3+ |
| 1997 07 16 | 910 | 0.1+ | 0.2− | 2001 02 12 | 699 | 0.5− | 0.6+ | 2003 10 05 | 691 | 0.1+ | 0.4− |
| 1997 07 16 | 910 | 0.3− | 0.3− | 2001 02 12 | 699 | 0.6− | 0.7+ | 2003 10 05 | 691 | 0.0 | 0.1− |
| 2001 01 19 | 699 | (1.9− | 0.3+) | 2001 02 12 | 699 | 0.4− | 0.5+ | 2003 10 05 | 691 | 0.0 | 0.0 |
| 2001 01 19 | 699 | 1.0+ | 0.3− | 2001 02 12 | 699 | 0.5− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2001 01 19 | 699 | 0.1+ | 0.1+ | 2001 02 17 | 704 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 01 19 | 699 | 0.5− | 0.3+ | 2001 02 17 | 704 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 01 19 | 704 | 0.4− | 0.2+ | 2001 02 17 | 704 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 01 19 | 704 | 0.5− | 0.1+ | 2001 02 17 | 704 | 0.2− | 0.4+ | 2006 11 10 | 291 | 0.1+ | 0.3+ |
| 2001 01 19 | 704 | 0.2− | 0.4− | 2001 02 17 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 291 | 0.0 | 0.4+ |
| 2001 01 19 | 704 | 0.3+ | 1.3− | 2001 03 12 | 608 | 0.1+ | 1.4− | 2006 11 10 | 291 | 0.0 | 0.5+ |
| 2001 01 19 | 704 | 0.6− | 1.3− | 2001 03 12 | 608 | (0.2− | 1.7−) | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2001 01 20 | 704 | 0.8+ | 0.0 | 2001 03 12 | 608 | (0.2+ | 1.8−) | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 01 20 | 704 | 0.4+ | 0.4+ | 2003 07 29 | 704 | 0.5+ | 1.2− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2001 01 20 | 704 | 0.8− | 0.0 | 2003 07 29 | 704 | 0.6+ | 0.4− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 01 20 | 704 | 0.1− | 0.2+ | 2003 07 29 | 704 | 0.1− | 0.5− | 2006 11 12 | 703 | 1.1+ | 1.2− |
| 2001 01 20 | 704 | 0.2− | 0.3− | 2003 07 29 | 704 | 0.8− | 0.9− | 2006 11 12 | 703 | 1.8− | 0.3+ |
| 2001 01 21 | 704 | 0.2− | 0.2+ | 2003 09 16 | 644 | 0.6+ | 0.8+ | 2006 11 12 | 703 | 0.1+ | 1.1− |
| 2001 01 21 | 704 | 0.1+ | 0.2− | 2003 09 16 | 644 | 0.3+ | 0.5+ | 2006 11 12 | 703 | 0.6− | 1.6− |

**(138933)∗ 2001 BT$_8$**

Discovered 2001 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 131.15117 | | (2000.0) | | | |
| $n$ | 0.17937677 | $\omega$ | 30.37840 | | +0.99781281 | +0.01821186 |
| $a$ | 3.1138087 | $\Omega$ | 328.38696 | | −0.04706901 | +0.87069706 |
| $e$ | 0.0787742 | $i$ | 6.96291 | | +0.04641229 | +0.49148240 |
| $P$ | 5.49 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 691 | 0.2− | 0.1− | 2004 09 10 | 704 | 0.1+ | 0.2+ | 2004 10 16 | 704 | 0.2− | 1.3+ |
| 1993 09 16 | 691 | 0.0 | 0.0 | 2004 09 11 | 704 | 0.1− | 0.0 | 2004 10 16 | 704 | 0.3− | 0.5+ |
| 1993 09 16 | 691 | 0.0 | 0.1+ | 2004 09 11 | 704 | 0.6− | 0.0 | 2004 10 16 | 704 | 0.2− | 0.0 |
| 1999 11 03 | 704 | 0.2+ | 2.0− | 2004 09 11 | 704 | 0.5− | 0.0 | 2004 10 16 | 704 | 0.4− | 0.0 |
| 1999 11 03 | 704 | 0.1− | 1.0− | 2004 09 11 | 704 | 0.5− | 0.2+ | 2004 10 16 | 704 | 0.2+ | 0.0 |
| 1999 11 03 | 704 | 0.0 | 1.3− | 2004 09 11 | 704 | 0.1+ | 0.4+ | 2004 10 16 | 704 | 0.9− | 0.3+ |
| 1999 11 03 | 704 | 0.5− | 1.5− | 2004 09 13 | 704 | 0.3− | 0.4+ | 2004 10 16 | 704 | 0.5− | 0.4− |
| 2000 12 22 | 691 | 0.1+ | 0.2+ | 2004 09 13 | 704 | 0.3+ | 0.1+ | 2004 10 16 | 704 | 0.0 | 0.6+ |
| 2000 12 22 | 691 | 0.0 | 0.0 | 2004 09 13 | 704 | 0.4+ | 0.1+ | 2004 10 16 | 704 | 0.6− | 0.4+ |
| 2000 12 22 | 691 | 0.1+ | 0.2+ | 2004 09 13 | 704 | 0.1+ | 0.4+ | 2004 10 16 | 704 | 0.6− | 0.2+ |
| 2001 01 19 | 699 | (1.9− | 1.0+) | 2004 09 13 | 704 | 0.5+ | 0.3− | 2004 10 16 | 704 | 0.3+ | 0.3− |
| 2001 01 19 | 699 | 0.8− | 0.5+ | 2004 09 18 | 704 | 0.1+ | 0.3+ | 2005 12 05 | 704 | 1.2+ | 0.1+ |
| 2001 01 19 | 699 | 0.4+ | 0.4− | 2004 09 18 | 704 | 0.1+ | 0.5+ | 2005 12 05 | 704 | 0.1+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 699 | 0.6+ | 0.4+ | 2004 09 18 | 704 | 0.1+ | 0.0 | 2005 12 05 | 704 | 0.3− | 0.0 | | |
| 2001 01 19 | 704 | 0.4+ | 0.6+ | 2004 09 18 | 704 | 0.0 | 0.1− | 2005 12 05 | 704 | 0.4+ | 0.4+ | | |
| 2001 01 19 | 704 | 0.6+ | 1.0+ | 2004 09 18 | 704 | 0.0 | 0.6+ | 2005 12 24 | 704 | 0.5− | 0.7− | | |
| 2001 01 19 | 704 | 0.1− | 0.5− | 2004 09 22 | 704 | 0.3+ | 0.2− | 2005 12 24 | 704 | 0.0 | 1.0− | | |
| 2001 01 19 | 704 | 0.8+ | 0.6− | 2004 09 22 | 704 | 0.2+ | 0.1− | 2005 12 24 | 704 | 0.0 | 0.9− | | |
| 2001 01 19 | 704 | 0.9− | 0.6+ | 2004 09 22 | 704 | 0.3+ | 0.3− | 2006 01 07 | 704 | 1.4− | 0.8− | | |
| 2001 01 20 | 704 | 0.0 | 1.0+ | 2004 09 22 | 704 | 0.5+ | 0.1+ | 2006 01 07 | 704 | 0.9+ | 0.1− | | |
| 2001 01 20 | 704 | 0.1+ | 0.3− | 2004 09 22 | 704 | 0.4+ | 0.3− | 2006 01 07 | 704 | 0.5− | 0.2− | | |
| 2001 01 20 | 704 | 0.7+ | 0.1− | 2004 09 24 | 704 | 0.4+ | 0.0 | 2006 01 07 | 704 | 0.2− | 0.0 | | |
| 2001 02 01 | 699 | 0.8− | 0.2− | 2004 09 24 | 704 | 0.4+ | 0.1− | 2006 10 30 | G96 | 0.0 | 0.6− | | |
| 2001 02 01 | 699 | 0.1+ | 0.8− | 2004 09 24 | 704 | 0.2− | 0.4+ | 2006 10 30 | G96 | 0.5− | 0.0 | | |
| 2001 02 01 | 699 | 0.8− | 0.3− | 2004 09 24 | 704 | 0.1+ | 0.1− | 2006 10 30 | G96 | 0.1+ | 0.4− | | |
| 2001 02 01 | 699 | 0.0 | 0.0 | 2004 09 24 | 704 | 0.1+ | 0.4+ | 2006 10 30 | G96 | 0.9− | 0.2− | | |
| 2001 02 11 | 209 | 0.9+ | 0.0 | 2004 10 07 | 704 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2001 02 11 | 209 | 0.4+ | 0.1− | 2004 10 07 | 704 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.3− | | |
| 2001 02 11 | 209 | 1.3+ | 0.3− | 2004 10 07 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.5− | 0.3− | | |
| 2001 02 17 | 704 | 0.5+ | 1.1− | 2004 10 07 | 704 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.1− | | |
| 2001 02 17 | 704 | 0.4− | 0.8− | 2004 10 07 | 704 | 0.2− | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.6+ | | |
| 2001 02 17 | 704 | 1.3+ | 0.4− | 2004 10 10 | 704 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.3− | 0.0 | | |
| 2001 02 17 | 704 | 0.2− | 0.6+ | 2004 10 10 | 704 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.3+ | 0.2+ | | |
| 2001 02 17 | 704 | 0.3+ | 0.4+ | 2004 10 10 | 704 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.4+ | 0.4+ | | |
| 2004 09 09 | 644 | 0.3− | 0.2+ | 2004 10 10 | 704 | 0.7− | 0.0 | 2006 11 21 | 691 | 0.4+ | 0.1+ | | |
| 2004 09 09 | 644 | 0.1− | 0.3+ | 2004 10 10 | 704 | 0.1+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.5+ | | |
| 2004 09 09 | 644 | 0.1+ | 0.4+ | 2004 10 16 | 704 | 0.6− | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.4+ | | |
| 2004 09 10 | 704 | 1.3− | 0.3− | 2004 10 16 | 704 | 0.5− | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.7+ | | |
| 2004 09 10 | 704 | 0.3+ | 0.4+ | 2004 10 16 | 704 | 0.3+ | 0.4− | 2006 11 25 | 691 | 0.2− | 0.4+ | | |
| 2004 09 10 | 704 | 0.0 | 0.1+ | 2004 10 16 | 704 | 0.2− | 0.4+ | | | | | | |

**(138934)∗ 2001 BW$_8$**

Discovered 2001 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.09153 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29175640 | $\omega$ | 22.03999 | | −0.67237090 | −0.73416883 | |
| $a$ | 2.2514162 | $\Omega$ | 110.34890 | | +0.66321745 | −0.65415312 | |
| $e$ | 0.0854565 | $i$ | 5.77922 | | +0.32872477 | −0.18187858 | |
| $P$ | 3.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.2− | 0.4+ | 2001 02 03 | 704 | 0.6− | 0.3+ | 2005 05 03 | 691 | 0.6+ | 0.4+ | | |
| 2000 12 30 | 704 | 0.5+ | 0.3+ | 2001 02 11 | 209 | 0.0 | 0.7+ | 2005 05 03 | 691 | 0.0 | 0.4+ | | |
| 2000 12 30 | 704 | 0.9+ | 0.0 | 2001 02 11 | 209 | 0.7− | 0.6+ | 2005 05 10 | 691 | 0.2+ | 0.4+ | | |
| 2000 12 30 | 704 | 0.2− | 0.4+ | 2003 11 19 | 699 | 0.8+ | 0.4− | 2005 05 10 | 691 | 0.3+ | 0.4+ | | |
| 2001 01 03 | 704 | 0.8+ | 0.7− | 2003 11 19 | 699 | 0.9− | 0.7+ | 2005 05 10 | 691 | 0.4+ | 0.4+ | | |
| 2001 01 03 | 704 | 0.6+ | 0.8− | 2003 11 19 | 699 | 0.1+ | 1.5+ | 2005 05 14 | 644 | 0.1− | 0.3+ | | |
| 2001 01 03 | 704 | 1.1+ | 0.5− | 2003 11 19 | 699 | 0.0 | 0.6− | 2005 05 14 | 644 | 0.2− | 0.1+ | | |
| 2001 01 03 | 704 | 1.3− | 0.4+ | 2003 11 24 | 699 | 0.5− | 1.0+ | 2005 05 14 | 644 | 0.3− | 0.3+ | | |
| 2001 01 19 | 704 | 0.0 | 0.4+ | 2003 11 24 | 699 | 0.0 | 0.2− | 2005 05 17 | G96 | 0.2− | 0.6+ | | |
| 2001 01 19 | 704 | 0.5+ | 0.2+ | 2003 11 24 | 699 | 0.7− | 0.2+ | 2005 05 17 | G96 | 0.7− | 0.2+ | | |
| 2001 01 19 | 704 | 0.4+ | 1.2− | 2003 11 24 | 699 | 0.8+ | 0.0 | 2005 05 17 | G96 | 0.2− | 0.8− | | |
| 2001 01 19 | 704 | 0.3− | 0.2+ | 2003 11 30 | 704 | 0.0 | 0.2+ | 2005 05 17 | G96 | 0.7− | 0.1− | | |
| 2001 01 19 | 704 | 0.1+ | 0.1+ | 2003 11 30 | 704 | 0.5− | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.2+ | | |
| 2001 01 20 | 704 | 0.4− | 0.4+ | 2003 11 30 | 704 | 1.2− | 0.4+ | 2006 09 19 | 703 | (1.4− | 1.8+) | | |
| 2001 01 20 | 704 | 0.4− | 0.1+ | 2003 12 01 | 703 | 0.5+ | 0.5− | 2006 09 19 | 703 | 0.4+ | 0.9+ | | |
| 2001 01 20 | 704 | 0.5− | 0.2− | 2003 12 01 | 703 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.3+ | | |
| 2001 01 20 | 704 | (1.8− | 0.8−) | 2003 12 01 | 703 | 0.7− | 0.7− | 2006 09 26 | 703 | 1.3− | 0.8− | | |
| 2001 01 21 | 704 | 0.2+ | 0.4+ | 2003 12 01 | 703 | 0.3− | 0.4− | 2006 09 26 | 703 | 0.2+ | 0.5+ | | |
| 2001 01 21 | 704 | 0.7+ | 0.5− | 2003 12 21 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.1− | | |
| 2001 01 21 | 704 | 0.4− | 0.3− | 2003 12 21 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 1.2− | 0.1+ | | |
| 2001 01 21 | 704 | 0.2+ | 0.6− | 2003 12 21 | 691 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.6+ | | |
| 2001 02 03 | 704 | 0.2− | 0.3+ | 2003 12 22 | 291 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.4+ | | |
| 2001 02 03 | 704 | 1.0− | 0.3− | 2003 12 22 | 291 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.6− | 0.0 | | |
| 2001 02 03 | 704 | 1.1− | 0.4− | 2003 12 22 | 291 | 0.2− | 0.5+ | | | | | | |
| 2001 02 03 | 704 | 0.1+ | 0.3+ | 2005 05 03 | 691 | 0.1+ | 0.4+ | | | | | | |

**(138935)∗ 2001 BH$_{12}$ = 2001 AP$_{49}$**

Discovered 2001 Jan. 20 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 11072)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.51308 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21418417 | $\omega$ | 265.48566 | | −0.98349369 | −0.16628187 | |
| $a$ | 2.7665879 | $\Omega$ | 264.93093 | | +0.18094137 | −0.90245177 | |
| $e$ | 0.0970008 | $i$ | 4.10749 | | +0.00061979 | −0.39740552 | |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 26 | 691 | 0.5− | 0.2+ | 2001 01 24 | 691 | 0.2− | 0.3− | 2006 02 02 | 691 | 0.1+ | 0.1+ | | |
| 2000 12 26 | 691 | 0.1− | 0.3+ | 2001 01 24 | 691 | 0.1+ | 0.2− | 2006 02 06 | 691 | 0.0 | 0.1− | | |
| 2000 12 26 | 691 | 0.1− | 0.0 | 2001 01 24 | 691 | 0.2+ | 0.2− | 2006 02 06 | 691 | 0.2+ | 0.2− | | |
| 2000 12 30 | 704 | 0.3− | 0.1− | 2001 01 26 | 691 | 0.2+ | 0.4+ | 2006 02 06 | 691 | 0.2+ | 0.1+ | | |
| 2000 12 30 | 704 | 0.5− | 0.2+ | 2001 01 26 | 691 | 0.4+ | 0.3+ | 2006 02 25 | 704 | 0.8− | 1.9+ | | |
| 2000 12 30 | 704 | 0.6− | 0.3+ | 2001 01 26 | 691 | 0.2+ | 0.3+ | 2006 02 25 | 704 | 0.0 | 0.3+ | | |
| 2001 01 15 | 691 | 0.5− | 0.1+ | 2002 05 11 | 704 | 0.1+ | 0.4+ | 2006 02 25 | 704 | 0.0 | 0.3− | | |
| 2001 01 15 | 691 | 0.8− | 0.1+ | 2002 05 11 | 704 | 0.1+ | 0.8+ | 2006 02 25 | 704 | 0.1− | 0.1− | | |
| 2001 01 15 | 691 | 0.6− | 0.1− | 2002 05 11 | 704 | 0.0 | 0.4+ | 2006 02 26 | 704 | 0.3+ | 0.6− | | |
| 2001 01 20 | 691 | 0.1− | 0.1− | 2002 05 11 | 704 | 0.5− | 0.9+ | 2006 02 26 | 704 | 0.5− | 0.8− | | |
| 2001 01 20 | 691 | 0.1− | 0.2− | 2002 05 30 | 644 | 0.3+ | 0.4− | 2006 02 26 | 704 | 0.2+ | 0.8+ | | |
| 2001 01 20 | 691 | 0.1− | 0.2− | 2002 05 30 | 644 | 0.4+ | 0.1− | 2006 03 09 | G96 | 0.4− | 0.1+ | | |
| 2001 01 21 | 691 | 0.1+ | 0.3− | 2002 05 30 | 644 | 0.0 | 0.0 | 2006 03 09 | G96 | 0.4− | 0.0 | | |
| 2001 01 21 | 691 | 0.0 | 0.3− | 2004 10 23 | 691 | 0.2− | 0.2+ | 2006 03 09 | G96 | 0.7− | 0.1+ | | |
| 2001 01 21 | 691 | 0.1+ | 0.3− | 2004 10 23 | 691 | 0.0 | 0.3+ | 2006 03 09 | G96 | 0.1+ | 0.2+ | | |
| 2001 01 23 | 691 | 0.4+ | 0.0 | 2004 10 23 | 691 | 0.1+ | 0.4+ | 2006 03 25 | 644 | 0.0 | 0.1− | | |
| 2001 01 23 | 691 | 1.5+ | 0.3+ | 2006 02 02 | 691 | 0.1− | 0.1+ | 2006 03 25 | 644 | 0.1+ | 0.3+ | | |
| 2001 01 23 | 691 | 0.3+ | 0.2− | 2006 02 02 | 691 | 0.3+ | 0.0 | 2006 03 25 | 644 | 0.0 | 0.1+ | | |

**(138936)∗ 2001 BK$_{13}$ = 2003 WS$_{60}$**

Discovered 2001 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56190)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.37503 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29928268 | $\omega$ | 165.16763 | | +0.43956059 | −0.89700909 | |
| $a$ | 2.2135109 | $\Omega$ | 258.73852 | | +0.81919230 | +0.42158003 | |
| $e$ | 0.0974913 | $i$ | 2.71691 | | +0.36838901 | +0.13283438 | |
| $P$ | 3.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.4+ | 0.5+ | 2003 11 21 | 704 | 0.9− | 0.9+ | 2006 09 18 | 704 | 0.8+ | 0.3− | | |
| 2001 01 03 | 704 | 0.4+ | 0.4+ | 2003 11 21 | 704 | 0.5− | 1.0+ | 2006 09 25 | 691 | 0.3− | 0.6+ | | |
| 2001 01 03 | 704 | 0.3+ | 0.0 | 2003 11 21 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 691 | 0.3+ | 0.1− | | |
| 2001 01 16 | 691 | 0.4− | 0.5+ | 2003 11 21 | 704 | 0.6− | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.2− | | |
| 2001 01 16 | 691 | 0.7− | 0.4− | 2003 11 30 | 691 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.4− | 0.2+ | | |
| 2001 01 16 | 691 | 0.3+ | 0.1+ | 2003 11 30 | 691 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.6− | | |
| 2001 01 21 | 704 | 1.0+ | 0.3+ | 2003 11 30 | 691 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.5− | | |
| 2001 01 21 | 704 | 0.6+ | 0.1− | 2003 12 19 | 704 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.6+ | 0.9+ | | |
| 2001 01 21 | 704 | 1.0+ | 0.1− | 2003 12 19 | 704 | 0.6+ | 0.2+ | 2006 09 25 | 704 | 0.6+ | 1.2+ | | |
| 2001 01 21 | 704 | 0.3+ | 0.7− | 2003 12 19 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 2001 01 22 | 704 | 0.1− | 0.3+ | 2003 12 19 | 704 | 0.3+ | 0.3− | 2006 09 27 | 699 | 0.0 | 0.1+ | | |
| 2001 01 22 | 704 | 0.4+ | 1.1− | 2003 12 19 | 704 | 0.7− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2− | | |
| 2001 01 22 | 704 | 0.6− | 0.6− | 2003 12 21 | 704 | 1.3+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 2001 01 22 | 704 | 1.1+ | 0.0 | 2003 12 21 | 704 | 1.0+ | 0.1+ | 2006 09 27 | 699 | 0.3+ | 0.3+ | | |
| 2001 01 22 | 704 | 0.9− | 1.2+ | 2003 12 21 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 699 | 0.3+ | 1.3− | | |
| 2003 10 24 | 704 | 0.6− | 0.6+ | 2003 12 21 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 699 | 0.9− | 0.4− | | |
| 2003 10 24 | 704 | 0.6− | 1.2+ | 2003 12 21 | 704 | 0.7+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.2+ | | |
| 2003 10 24 | 704 | 0.7− | 0.7+ | 2005 05 16 | G96 | 0.1− | 0.5+ | 2006 10 01 | 703 | 0.1− | 0.4− | | |
| 2003 10 29 | 704 | 0.4− | 0.2− | 2005 05 16 | G96 | 0.2+ | 0.4+ | 2006 10 01 | 703 | 0.0 | 0.3− | | |
| 2003 10 29 | 704 | 0.1+ | 0.6+ | 2005 05 16 | G96 | 0.1− | 0.4+ | 2006 10 01 | 703 | 0.9− | 0.3− | | |
| 2003 10 29 | 704 | 0.3− | 0.3+ | 2005 05 16 | G96 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.2+ | | |
| 2003 10 29 | 704 | 0.1− | 1.5− | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.1− | 0.8− | | |
| 2003 10 29 | 704 | 0.2− | 0.5− | 2006 08 18 | 644 | 0.2− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 15 | 644 | 0.1+ | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.5+ | 0.1+ | | |
| 2003 11 15 | 644 | 0.3+ | 0.4− | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.5− | 0.2− | | |
| 2003 11 15 | 644 | 0.2+ | 0.6− | 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.2− | 0.3− | | |
| 2003 11 19 | 699 | 0.7− | 0.2− | 2006 09 13 | 644 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.3+ | | |
| 2003 11 19 | 699 | 0.4+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.5+ | | |
| 2003 11 19 | 691 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.8− | 1.0− | 2006 10 11 | 691 | 0.0 | 0.5+ | | |
| 2003 11 19 | 699 | 0.4+ | 0.2− | 2006 09 17 | 703 | 1.1− | 0.4− | 2006 11 15 | G96 | 0.0 | 0.5− | | |
| 2003 11 19 | 691 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.3+ | 1.3− | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2003 11 19 | 699 | 0.5− | 0.8− | 2006 09 18 | 704 | (2.3− | 2.8+) | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2003 11 19 | 691 | 0.2+ | 0.3− | 2006 09 18 | 704 | 0.9− | 1.3+ | 2006 11 15 | G96 | 0.2+ | 0.9− | | |
| 2003 11 21 | 704 | 0.8− | 0.4+ | 2006 09 18 | 704 | 0.7− | 0.1− | | | | | | |

**(138937)∗ 2001 BK$_{16}$**

Discovered 2001 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.04966 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.33030430 | $\omega$ | 252.23847 | | +0.84712539 | +0.10510222 | |
| $a$ | 2.0726528 | $\Omega$ | 99.10987 | | +0.04101419 | +0.96438921 | |
| $e$ | 0.6777765 | $i$ | 31.84005 | | −0.52980791 | +0.24270759 | |
| $P$ | 2.98 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 27 | 566 | 0.2− | 0.1+ | 2001 02 04 | 413 | 0.1+ | 0.3− | 2004 01 10 | 699 | 0.0 | 0.6− | | |
| 1998 01 27 | 566 | 0.1+ | 0.9+ | 2001 02 04 | 413 | 0.1+ | 0.4+ | 2004 01 11 | 670 | 0.2+ | 0.4− | | |
| 1998 01 27 | 566 | 0.1− | 0.1+ | 2001 02 04 | 413 | 0.0 | 0.0 | 2004 01 11 | 670 | 0.0 | 0.4− | | |
| 2001 01 19 | 704 | 0.8− | 0.4+ | 2001 02 04 | 413 | 0.8− | 0.4− | 2004 01 13 | 644 | 0.1+ | 0.4+ | | |
| 2001 01 19 | 704 | 0.9− | 0.1− | 2001 02 15 | 557 | 0.6+ | 0.3+ | 2004 01 13 | 644 | 0.1− | 0.1+ | | |
| 2001 01 19 | 704 | 0.4+ | 0.7+ | 2001 02 15 | 557 | 0.1− | 0.6− | 2004 01 13 | 644 | 0.0 | 0.3+ | | |
| 2001 01 19 | 704 | 0.1+ | 0.7+ | 2001 04 19 | 568 | 0.0 | 0.1− | 2004 01 17 | 941 | 0.6− | 0.8− | | |
| 2001 01 19 | 704 | 0.5− | 1.0+ | 2001 04 19 | 568 | 0.6+ | 0.2− | 2004 01 17 | 941 | 0.1− | 0.1+ | | |
| 2001 01 20 | 704 | 0.1+ | 0.1+ | 2002 04 09 | 493 | 0.2+ | 1.0+ | 2004 01 17 | 941 | 0.1− | 0.2+ | | |
| 2001 01 20 | 704 | 0.5− | 0.4− | 2002 04 09 | 493 | 0.2− | 1.1+ | 2004 01 17 | 941 | 0.0 | 0.1+ | | |
| 2001 01 20 | 704 | 0.2+ | 0.3+ | 2002 04 09 | 493 | 0.2+ | 0.9+ | 2004 01 17 | 941 | 0.1− | 0.4− | | |
| 2001 01 20 | 704 | 0.5+ | 0.7− | 2003 11 16 | 413 | 0.3− | 0.0 | 2004 01 23 | 113 | 0.2+ | 0.4+ | | |
| 2001 01 21 | 704 | 1.4+ | 0.2+ | 2003 11 16 | 413 | 0.1− | 0.4− | 2004 01 23 | 113 | 0.2− | 0.2+ | | |
| 2001 01 21 | 704 | 0.4− | 0.4− | 2003 12 27 | 474 | 0.6+ | 0.1− | 2004 01 23 | 113 | 0.2− | 0.2+ | | |
| 2001 01 21 | 704 | 0.5+ | 0.7+ | 2003 12 27 | 474 | 0.4+ | 0.2− | 2004 01 24 | 830 | 0.0 | 0.2+ | | |
| 2001 01 21 | 704 | 0.0 | 0.3− | 2003 12 27 | 474 | 0.5+ | 0.4− | 2004 01 24 | 830 | 0.1+ | 0.3+ | | |
| 2001 01 21 | 704 | 0.5− | 0.0 | 2004 01 01 | E14 | 0.7+ | 0.2− | 2004 01 24 | 830 | 0.0 | 0.0 | | |
| 2001 01 21 | 704 | 0.3− | 0.4− | 2004 01 01 | E14 | 0.4+ | 0.3+ | 2004 01 25 | 830 | 0.6+ | 0.4+ | | |
| 2001 01 21 | 704 | (1.8+ | 0.2−) | 2004 01 01 | E14 | 0.1+ | 0.2− | 2004 01 25 | 830 | 0.2+ | 1.4− | | |
| 2001 01 21 | 704 | 0.5− | 0.6+ | 2004 01 03 | 704 | 0.3− | 0.2+ | 2004 01 25 | 830 | 0.1+ | 0.0 | | |
| 2001 01 21 | 704 | (0.3− | 1.7+) | 2004 01 03 | 704 | 0.3− | 0.3+ | 2004 01 26 | 699 | 1.1− | 0.1− | | |
| 2001 01 21 | 704 | 0.2− | 0.3− | 2004 01 03 | 704 | 1.1− | 0.0 | 2004 01 26 | 699 | 0.3+ | 0.3− | | |
| 2001 01 21 | 587 | 0.9+ | 0.7+ | 2004 01 03 | 704 | 0.2+ | 0.2+ | 2004 01 26 | 699 | 0.2− | 0.0 | | |
| 2001 01 21 | 587 | 0.1+ | 0.9− | 2004 01 05 | 926 | 0.2− | 0.1− | 2004 01 26 | 699 | 0.5− | 0.4− | | |
| 2001 01 22 | 046 | 0.1+ | 0.8− | 2004 01 05 | 926 | 0.3+ | 0.0 | 2006 05 21 | 291 | 0.2− | 0.2+ | | |
| 2001 01 22 | 046 | 1.4− | 0.7− | 2004 01 05 | 926 | 0.7+ | 0.1+ | 2006 05 21 | 291 | 0.0 | 0.2− | | |
| 2001 01 30 | 587 | 1.0− | 0.1+ | 2004 01 10 | 699 | 0.7− | 0.1+ | 2006 05 21 | 291 | 0.0 | 0.0 | | |
| 2001 01 30 | 587 | 0.5− | 0.8+ | 2004 01 10 | 699 | 0.4− | 0.2− | | | | | | |
| 2001 02 04 | 413 | 0.3− | 0.4− | 2004 01 10 | 699 | 0.1− | 0.8+ | | | | | | |

**(138938)∗ 2001 BJ$_{18}$**

Discovered 2001 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.51323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30644552 | $\omega$ | 204.40041 | | +0.23404672 | −0.96917320 | |
| $a$ | 2.1788828 | $\Omega$ | 232.15569 | | +0.90725208 | +0.24617838 | |
| $e$ | 0.1111266 | $i$ | 5.59399 | | +0.34945070 | +0.00997556 | |
| $P$ | 3.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 31 | 704 | 0.5+ | 0.8+ | 2004 02 26 | 704 | 0.9+ | 1.1+ | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 1998 03 31 | 704 | 0.5+ | 0.7− | 2004 02 26 | 704 | 0.7+ | 0.3− | 2006 11 11 | G96 | 0.6− | 0.8− | | |
| 1998 03 31 | 704 | 0.7− | 0.8+ | 2004 02 26 | 704 | (1.8+ | 0.6−) | 2006 11 11 | G96 | 0.1− | 0.6− | | |
| 1998 03 31 | 704 | 1.2− | 1.5− | 2004 02 26 | 704 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.5+ | 0.3− | | |
| 2001 01 19 | 704 | (1.8+ | 0.5+) | 2005 01 23 | 809 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2001 01 19 | 704 | 0.1+ | 0.9+ | 2005 01 23 | 809 | 0.4+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2001 01 19 | 704 | (0.6+ | 1.6−) | 2005 01 23 | 809 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2001 01 21 | 704 | (1.3+ | 2.1+) | 2005 02 09 | 809 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2001 01 21 | 704 | 0.2+ | 0.4+ | 2005 02 09 | 809 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2001 01 21 | 704 | 1.2− | 0.5− | 2005 02 09 | 809 | 0.0 | 0.4+ | 2006 11 12 | 703 | 0.6+ | 0.0 | | |
| 2001 01 21 | 704 | 0.3− | 0.4− | 2006 08 29 | 703 | 1.2+ | 0.5+ | 2006 11 12 | 703 | 0.0 | 0.0 | | |
| 2001 01 21 | 704 | 0.2+ | 0.3− | 2006 08 29 | 703 | 0.0 | 0.3+ | 2006 11 12 | 703 | 0.6− | 0.4− | | |
| 2001 01 21 | 704 | 1.0− | 0.7− | 2006 08 29 | 703 | 0.3− | 1.1− | 2006 11 12 | 703 | 0.0 | 0.2− | | |
| 2001 01 21 | 704 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.1− | 0.6− | 2006 11 12 | G96 | 0.0 | 0.4− | | |
| 2001 01 21 | 704 | 0.2− | 0.2+ | 2006 09 16 | 703 | (1.6− | 0.6−) | 2006 11 12 | G96 | 0.1− | 0.3− | | |
| 2001 01 26 | 704 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.2− | 0.4− | | |
| 2001 01 26 | 704 | 0.5− | 0.5− | 2006 09 16 | 703 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.4− | | |
| 2001 01 26 | 704 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.3− | | |
| 2001 01 26 | 704 | 0.2− | 0.2+ | 2006 09 17 | 699 | 0.9+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.1− | | |
| 2001 01 26 | 704 | 0.1− | 0.3+ | 2006 09 17 | 699 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.2− | | |
| 2001 02 17 | 704 | 0.8+ | 0.5− | 2006 09 17 | 699 | 0.1− | 0.8+ | 2006 11 17 | 703 | 0.4+ | 0.1+ | | |
| 2001 02 17 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.4− | | |
| 2001 02 17 | 704 | 0.6+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.1− | | |
| 2001 02 17 | 704 | 0.6+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.1− | | |
| 2001 02 17 | 704 | (0.3+ | 1.7+) | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.6− | 1.0+ | | |
| 2001 03 03 | 704 | 1.1+ | 0.3+ | 2006 10 21 | 704 | 0.9+ | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.2+ | | |
| 2001 03 03 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 704 | 1.0− | 1.5+ | 2006 11 18 | 704 | 0.3− | 0.2+ | | |
| 2001 03 03 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 704 | 0.1− | 0.6+ | 2006 11 18 | 704 | 0.4+ | 0.1+ | | |
| 2001 03 14 | 608 | 0.3− | 1.3− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.2+ | | |
| 2001 03 14 | 608 | (0.1− | 1.6−) | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4− | 0.1+ | | |
| 2001 03 14 | 608 | 0.1− | 1.5− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.2+ | | |
| 2003 10 24 | 704 | 0.5+ | 0.5+ | 2006 10 23 | 704 | (1.7− | 0.3−) | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2003 10 24 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 704 | 0.5− | 0.6− | 2006 11 18 | 704 | 0.9− | 0.4+ | | |
| 2003 10 24 | 704 | 1.1+ | 1.1+ | 2006 10 23 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.3+ | | |
| 2003 10 24 | 704 | (1.6− | 1.0+) | 2006 10 23 | 704 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2003 12 01 | 704 | 0.2+ | 0.0 | 2006 10 26 | A13 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2003 12 01 | 704 | 0.3− | 0.1+ | 2006 10 26 | A13 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.1− | 0.4+ | | |
| 2003 12 01 | 704 | 0.5− | 0.4+ | 2006 10 27 | 703 | 0.2+ | 0.6− | 2006 11 21 | G96 | 0.2− | 0.3− | | |
| 2003 12 01 | 704 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.3− | | |
| 2003 12 20 | 704 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.3+ | | |
| 2003 12 20 | 704 | 0.6− | 0.2− | 2006 10 27 | 703 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 2003 12 20 | 704 | 0.5+ | 0.3− | 2006 10 28 | 704 | 0.8+ | 0.9+ | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 2003 12 20 | 704 | 0.6+ | 0.5− | 2006 10 28 | 704 | 0.3− | 1.5+ | 2006 11 21 | 704 | 0.1− | 0.2+ | | |
| 2003 12 22 | 704 | 0.5− | 0.3+ | 2006 10 28 | 704 | 1.5+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.3+ | | |
| 2003 12 22 | 704 | 0.4− | 0.2+ | 2006 10 28 | 704 | 1.2+ | 0.1− | 2006 11 27 | 703 | 0.3− | 0.3− | | |
| 2003 12 22 | 704 | 0.2− | 0.0 | 2006 10 28 | 704 | 0.7+ | 0.1+ | 2006 11 27 | 703 | 0.2− | 0.2− | | |
| 2003 12 22 | 704 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 27 | 703 | 0.1− | 0.3− | | |
| 2003 12 22 | 704 | 0.8− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.4+ | 0.7+ | | |
| 2004 02 17 | 704 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.1− | 0.4+ | | |
| 2004 02 17 | 704 | 0.5+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.0 | 0.1+ | | |
| 2004 02 17 | 704 | 0.4− | 0.5− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.4+ | 1.1+ | | |
| 2004 02 17 | 704 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.3− | 0.7+ | | |

**(138939)∗ 2001 BE$_{20}$**

Discovered 2001 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.97416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28411991 | $\omega$ | 82.41136 | | +0.66736870 | −0.74388672 | |
| $a$ | 2.2915795 | $\Omega$ | 325.63964 | | +0.65617698 | +0.60981879 | |
| $e$ | 0.1259005 | $i$ | 3.59375 | | +0.35220844 | +0.27341103 | |
| $P$ | 3.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 02 | 691 | 1.1− | 0.2+ | 2003 10 22 | 704 | 0.1− | 0.8+ | 2003 11 20 | 704 | 0.6+ | 1.2+ |
| 2001 01 02 | 691 | 1.1− | 0.1− | 2003 10 22 | 704 | 0.1+ | 0.2+ | 2003 11 20 | 704 | 0.5− | 0.7+ |
| 2001 01 02 | 691 | 1.8− | 0.2+ | 2003 10 22 | 644 | 0.2− | 0.1− | 2003 11 20 | 704 | 0.1− | 0.9+ |
| 2001 01 02 | 691 | 0.4+ | 0.3− | 2003 10 22 | 704 | 0.9− | 0.6− | 2003 11 20 | 704 | 0.3− | 1.2+ |
| 2001 01 02 | 691 | 0.6+ | 0.2− | 2003 10 22 | 704 | 0.1− | 0.4+ | 2003 11 20 | 704 | 0.3+ | 0.1+ |
| 2001 01 02 | 691 | 0.5+ | 0.0 | 2003 10 22 | 704 | 0.4− | 0.1− | 2003 11 24 | 704 | 0.2+ | 0.4+ |
| 2001 01 19 | 704 | 0.7+ | 0.2+ | 2003 10 22 | 644 | 0.2− | 0.1− | 2003 11 24 | 704 | 0.2− | 0.3+ |
| 2001 01 19 | 704 | 0.7+ | 1.3+ | 2003 10 22 | 644 | 0.0 | 0.1+ | 2003 11 24 | 704 | 0.0 | 0.0 |
| 2001 01 19 | 704 | 0.6+ | 0.1− | 2003 10 23 | 699 | 0.8+ | 0.2+ | 2003 11 24 | 704 | 0.2− | 0.1− |
| 2001 01 19 | 704 | 0.0 | 1.0− | 2003 10 23 | 699 | 0.2− | 0.6+ | 2003 11 24 | 704 | 0.2+ | 0.2− |
| 2001 01 19 | 704 | 0.8+ | 0.4− | 2003 10 23 | 699 | 0.2+ | 0.8+ | 2003 11 26 | 699 | 1.5+ | 1.2− |
| 2001 01 21 | 704 | 0.4+ | 0.0 | 2003 10 23 | 699 | 0.0 | 0.2− | 2003 11 26 | 699 | 0.4+ | 0.5− |
| 2001 01 21 | 704 | 0.4+ | 0.8+ | 2003 10 23 | 608 | 0.3− | 0.8− | 2003 11 26 | 699 | 0.6− | 0.4+ |
| 2001 01 21 | 704 | 0.1− | 0.0 | 2003 10 23 | 608 | 0.2− | 1.5− | 2003 11 26 | 699 | 0.8+ | 0.5+ |
| 2001 01 21 | 704 | 0.4+ | 0.1+ | 2003 10 23 | 608 | 0.1+ | 0.9− | 2005 03 13 | 691 | 0.2+ | 0.0 |
| 2001 01 21 | 704 | 0.7+ | 1.1+ | 2003 10 30 | 704 | 1.6+ | 0.1+ | 2005 03 13 | 691 | 0.2+ | 0.5+ |
| 2001 02 03 | 691 | 0.3+ | 0.0 | 2003 10 30 | 704 | 1.0+ | 0.1+ | 2005 03 13 | 691 | 0.4+ | 0.6+ |
| 2001 02 03 | 691 | 0.4+ | 0.1− | 2003 10 30 | 704 | 0.9+ | 0.7+ | 2005 03 17 | G96 | 0.4− | 0.1− |
| 2001 02 03 | 691 | 0.5+ | 0.2+ | 2003 10 30 | 704 | 0.9+ | 1.0+ | 2005 03 17 | G96 | 0.4− | 0.0 |
| 2003 09 27 | 704 | 0.5− | 0.2+ | 2003 10 30 | 704 | 1.1+ | 0.3+ | 2005 03 17 | G96 | 0.2− | 0.0 |
| 2003 09 27 | 704 | 1.2− | 0.8− | 2003 11 02 | 704 | 0.4+ | 0.1− | 2005 03 17 | G96 | 0.6− | 0.2+ |
| 2003 09 27 | 704 | 0.2− | 0.7− | 2003 11 02 | 704 | 0.1+ | 0.1− | 2006 08 12 | 644 | 0.0 | 0.4+ |
| 2003 09 27 | 704 | 0.3+ | 0.8+ | 2003 11 02 | 704 | 0.1− | 0.1− | 2006 08 12 | 644 | 0.5− | 0.5+ |
| 2003 09 27 | 704 | 0.5− | 0.5− | 2003 11 02 | 704 | 0.9− | 0.8+ | 2006 08 12 | 644 | 0.2− | 0.7+ |
| 2003 10 15 | 699 | 0.1+ | 0.3+ | 2003 11 02 | 704 | 0.3− | 0.5− | 2006 08 20 | 644 | 0.2− | 0.2+ |
| 2003 10 15 | 699 | 1.0− | 1.5+ | 2003 11 18 | 644 | 0.7− | 0.1− | 2006 08 20 | 644 | 0.2− | 0.7+ |
| 2003 10 15 | 699 | 1.4− | 1.4− | 2003 11 18 | 644 | 0.4− | 0.0 | 2006 08 20 | 644 | 0.2− | 0.3+ |
| 2003 10 15 | 699 | 0.8− | 0.6− | 2003 11 18 | 644 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2003 10 20 | 644 | 0.1− | 0.0 | 2003 11 18 | 644 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2003 10 20 | 644 | 0.0 | 0.0 | 2003 11 18 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2+ |
| 2003 10 20 | 644 | 0.3+ | 0.1+ | 2003 11 18 | 644 | 0.5− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.5+ |

**(138940)∗ 2001 BO$_{23}$**

Discovered 2001 Jan. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.76619 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30465236 | $\omega$ | 324.60696 | | −0.25355423 | +0.96550636 | |
| $a$ | 2.1874242 | $\Omega$ | 290.64074 | | −0.87228164 | −0.25467931 | |
| $e$ | 0.1378474 | $i$ | 3.62859 | | −0.41813275 | −0.05418408 | |
| $P$ | 3.24 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.2+ | 0.8− | 2002 07 14 | 704 | 0.2− | 0.8+ | 2002 10 03 | 704 | 0.4− | 0.3− |
| 1999 09 07 | 704 | 0.4− | 0.4+ | 2002 07 14 | 704 | 0.4− | 0.2− | 2002 10 05 | 704 | 0.2+ | 0.7+ |
| 1999 09 07 | 704 | 0.1+ | 1.1− | 2002 07 14 | 704 | 0.1− | 0.1+ | 2002 10 05 | 704 | 0.4+ | 0.5+ |
| 1999 09 07 | 704 | 0.6− | 0.3− | 2002 07 14 | 704 | 0.4+ | 0.5+ | 2002 10 05 | 704 | 0.7+ | 0.3+ |
| 1999 09 07 | 704 | 0.8− | 0.0 | 2002 07 14 | 704 | 0.4− | 0.1+ | 2004 01 21 | 704 | 0.5+ | 0.1+ |
| 1999 10 04 | 704 | 0.3− | 1.9+ | 2002 07 22 | 644 | 0.2− | 1.0+ | 2004 01 21 | 704 | (1.5+ | 0.2−) |
| 1999 10 04 | 704 | 0.6− | 0.4− | 2002 07 22 | 644 | 0.3− | 0.4+ | 2004 01 21 | 704 | 0.6+ | 0.3− |
| 1999 10 04 | 704 | 1.1+ | 0.7+ | 2002 07 22 | 644 | 0.2− | 1.0+ | 2004 01 21 | 704 | 1.1+ | 0.1− |
| 1999 10 04 | 704 | 0.0 | 0.0 | 2002 07 22 | 644 | 0.2− | 0.3+ | 2004 01 21 | 704 | 0.6+ | 0.9− |
| 1999 10 04 | 704 | 0.7− | 1.0+ | 2002 07 22 | 644 | 0.3− | 0.9+ | 2004 01 24 | 704 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.3+ | 0.8+ | 2002 07 22 | 644 | 0.4− | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.1− |
| 1999 10 09 | 704 | 0.5+ | 0.2− | 2002 08 06 | 644 | 0.1+ | 0.5+ | 2004 01 24 | 704 | 0.7+ | 0.5+ |
| 1999 10 09 | 704 | 0.7+ | 0.9− | 2002 08 06 | 644 | 0.7− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 1999 10 09 | 704 | (1.5+ | 2.2−) | 2002 08 06 | 644 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 01 02 | 704 | 0.0 | 1.2− | 2002 08 07 | 644 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2001 01 02 | 704 | 0.7− | 0.3− | 2002 08 07 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.7− |
| 2001 01 02 | 704 | 0.9+ | 0.9+ | 2002 08 07 | 644 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2001 01 02 | 704 | (0.4+ | 1.6+) | 2002 08 08 | 644 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 01 03 | 699 | 1.0− | 0.6+ | 2002 08 08 | 644 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.1− |
| 2001 01 03 | 699 | 0.9+ | 0.5+ | 2002 08 08 | 644 | 0.2− | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2001 01 03 | 699 | 1.0+ | 0.3+ | 2002 08 14 | 704 | 0.7+ | 0.6+ | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2001 01 03 | 699 | 0.2− | 0.2− | 2002 08 14 | 704 | 1.4+ | 0.9+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2001 01 03 | 704 | 0.5+ | 1.1+ | 2002 08 14 | 704 | 1.0+ | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2001 01 03 | 704 | 0.1− | 0.9+ | 2002 08 14 | 704 | 0.6+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2001 01 03 | 704 | 0.7+ | 0.5+ | 2002 08 14 | 704 | 1.0+ | 1.2+ | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2001 01 03 | 704 | 0.5+ | 0.9− | 2002 08 15 | 699 | 0.0 | 0.6+ | 2006 11 16 | 704 | 1.0− | 1.0+ |
| 2001 01 20 | 704 | 0.8− | 0.4+ | 2002 08 15 | 699 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.7− | 0.0 |
| 2001 01 20 | 704 | 0.7+ | 0.1− | 2002 08 15 | 699 | 0.6+ | 0.8+ | 2006 11 16 | 704 | (1.1+ | 1.6+) |
| 2001 01 20 | 704 | 0.4− | 1.0+ | 2002 08 15 | 699 | 0.1− | 0.7+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 01 20 | 704 | 0.2− | 0.5− | 2002 08 24 | 644 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 01 21 | 704 | 0.4− | 0.4+ | 2002 08 24 | 644 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 01 21 | 704 | 0.4− | 0.1− | 2002 08 24 | 644 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.6− |
| 2001 01 21 | 704 | 0.4− | 0.4− | 2002 08 27 | 644 | 0.0 | 0.9− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2001 01 21 | 704 | 0.1− | 0.2− | 2002 08 27 | 644 | 0.1+ | 0.9− | 2006 11 19 | 704 | 0.5+ | 1.0− |
| 2001 02 03 | 704 | 0.1+ | 1.2+ | 2002 08 27 | 644 | 0.2− | 1.0− | 2006 11 19 | 704 | 0.6+ | 0.7− |
| 2001 02 03 | 704 | 0.6− | 1.2+ | 2002 09 01 | 608 | 0.2+ | 1.1− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 02 03 | 704 | (0.7+ | 1.5+) | 2002 09 01 | 608 | 0.4− | 0.6− | 2006 11 22 | 691 | 0.8− | 0.2− |
| 2001 02 03 | 704 | 0.4+ | 0.3+ | 2002 09 01 | 608 | 0.5+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2001 02 03 | 704 | 0.6− | 0.7+ | 2002 09 05 | 704 | 0.3− | 1.2− | 2006 11 22 | 704 | 0.7+ | 0.9+ |
| 2002 06 07 | 608 | 0.5+ | 0.2− | 2002 09 05 | 704 | 0.6− | 0.6− | 2006 11 22 | 704 | 0.7− | 0.8+ |
| 2002 06 07 | 608 | 0.0 | 0.0 | 2002 09 05 | 704 | 0.1− | 1.2− | 2006 11 22 | 704 | (1.7− | 0.3+) |
| 2002 06 07 | 608 | 0.6+ | 0.2+ | 2002 09 05 | 704 | 0.7− | 0.6− | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2002 07 09 | 704 | 0.0 | 0.8− | 2002 09 05 | 704 | 0.4− | 1.4− | 2006 11 27 | 704 | 0.5+ | 0.3+ |
| 2002 07 09 | 704 | 0.5− | 0.5+ | 2002 10 03 | 704 | 0.5− | 1.1− | 2006 11 27 | 704 | 0.0 | 0.1− |
| 2002 07 09 | 704 | 0.1− | 0.8− | 2002 10 03 | 704 | 0.7− | 0.9− | 2006 11 27 | 704 | 0.0 | 0.2+ |

**(138941)∗ 2001 BU$_{28}$**

Discovered 2001 Jan. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.93915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27092523 | $\omega$ | 58.50966 | | −0.99911756 | +0.00594933 | |
| $a$ | 2.3653918 | $\Omega$ | 121.80076 | | −0.02107101 | −0.92733115 | |
| $e$ | 0.1702644 | $i$ | 2.80411 | | +0.03633330 | −0.37419454 | |
| $P$ | 3.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 20 | 704 | 0.2− | 0.3− | 2001 02 22 | 699 | 0.9+ | 0.6+ | 2005 04 16 | 691 | 0.0 | 0.0 |
| 2001 01 20 | 704 | 0.0 | 0.1+ | 2001 02 22 | 704 | 0.1+ | 1.1+ | 2005 05 03 | 704 | 0.3+ | 0.6− |
| 2001 01 20 | 704 | 1.1− | 0.2− | 2001 02 22 | 704 | 0.1− | 0.2− | 2005 05 03 | 704 | 0.2− | 0.1− |
| 2001 01 20 | 704 | 0.1− | 0.4− | 2003 11 20 | 691 | 0.2− | 0.4+ | 2005 05 03 | 704 | 0.1− | 0.7− |
| 2001 01 21 | 704 | 0.1− | 0.8+ | 2003 11 20 | 691 | 0.0 | 0.6+ | 2005 05 03 | 704 | 0.4− | 0.4− |
| 2001 01 21 | 704 | 0.3+ | 0.0 | 2003 11 20 | 691 | 0.2− | 0.4+ | 2005 05 03 | 704 | 0.4− | 0.7− |
| 2001 01 21 | 704 | 0.2+ | 0.7+ | 2003 11 21 | 699 | 0.5+ | 0.3+ | 2005 05 07 | 703 | 0.5− | 0.3+ |
| 2001 01 21 | 704 | 0.4+ | 0.1+ | 2003 11 21 | 699 | 0.6+ | 1.0− | 2005 05 07 | 703 | 1.2− | 0.1+ |
| 2001 01 29 | 704 | 1.0− | 0.6+ | 2003 11 21 | 699 | (0.2− | 1.8−) | 2005 05 07 | 703 | 0.8− | 1.0− |
| 2001 01 29 | 704 | 0.1+ | 0.2− | 2003 11 21 | 699 | 0.4− | 1.0+ | 2005 05 07 | 703 | 0.4− | 0.8− |
| 2001 01 29 | 704 | 0.2− | 0.3+ | 2005 04 02 | 699 | 0.5+ | 0.4+ | 2005 05 12 | 704 | 0.0 | 0.5+ |
| 2001 02 02 | 704 | 0.0 | 0.6+ | 2005 04 02 | 691 | 0.1+ | 0.4+ | 2005 05 12 | 704 | 0.5+ | 0.1+ |
| 2001 02 02 | 704 | 0.2+ | 0.6+ | 2005 04 02 | 699 | 0.3− | 0.4+ | 2005 05 12 | 704 | 0.4+ | 0.4+ |
| 2001 02 02 | 704 | 0.6+ | 0.1+ | 2005 04 02 | 691 | 0.1+ | 0.4+ | 2005 05 12 | 704 | 0.9+ | 0.8+ |
| 2001 02 02 | 704 | 1.0+ | 1.4+ | 2005 04 02 | 699 | 0.6− | 0.0 | 2005 05 12 | 704 | 0.2+ | 0.3+ |
| 2001 02 02 | 704 | 1.5+ | 1.1+ | 2005 04 02 | 691 | 0.2+ | 0.3+ | 2005 05 14 | 644 | 0.0 | 0.1+ |
| 2001 02 16 | 699 | 0.4− | 0.2− | 2005 04 02 | 699 | 0.7+ | 0.1+ | 2005 05 14 | 644 | 0.1− | 0.1− |
| 2001 02 16 | 699 | 0.1+ | 0.3+ | 2005 04 05 | 703 | 0.1− | 0.5− | 2005 05 14 | 644 | 0.0 | 0.1+ |
| 2001 02 16 | 699 | 0.3− | 0.8+ | 2005 04 05 | 703 | 0.1− | 0.7+ | 2005 05 16 | 704 | 0.1+ | 0.0 |
| 2001 02 16 | 699 | (0.2+ | 1.6−) | 2005 04 05 | 704 | 0.8+ | 0.4+ | 2005 05 16 | 704 | 0.2+ | 0.3+ |
| 2001 02 19 | 704 | 0.1− | 0.4− | 2005 04 05 | 703 | (1.5+ | 0.1−) | 2005 05 16 | 704 | 0.9+ | 0.1− |
| 2001 02 19 | 704 | 0.0 | 0.3+ | 2005 04 05 | 703 | 0.4+ | 0.6− | 2005 06 15 | G96 | 0.2− | 0.0 |
| 2001 02 19 | 704 | 0.6+ | 0.3− | 2005 04 05 | 704 | 0.0 | 1.1+ | 2005 06 15 | G96 | 0.2− | 0.0 |
| 2001 02 19 | 704 | 0.0 | 0.4− | 2005 04 05 | 704 | 0.7+ | 1.1+ | 2005 06 15 | G96 | 0.5− | 0.1+ |
| 2001 02 19 | 704 | 0.3+ | 0.2− | 2005 04 05 | 704 | 1.0+ | 1.2+ | 2005 06 15 | G96 | 0.4− | 0.1− |
| 2001 02 20 | 704 | 0.5− | 0.6+ | 2005 04 05 | 704 | 0.1− | 1.0+ | 2006 08 18 | 691 | 0.5− | 0.6+ |
| 2001 02 20 | 704 | 0.2− | 0.5+ | 2005 04 13 | 699 | 0.2− | 0.0 | 2006 08 18 | 691 | 0.5− | 0.9+ |
| 2001 02 20 | 704 | 0.3− | 0.1− | 2005 04 13 | 699 | 0.0 | 0.4+ | 2006 08 18 | 691 | 0.4− | 0.5+ |
| 2001 02 20 | 704 | 1.4− | 1.0+ | 2005 04 13 | 699 | 0.3− | 0.5− | 2006 08 27 | 691 | 0.3− | 0.7+ |
| 2001 02 20 | 704 | 0.0 | 0.2+ | 2005 04 13 | 704 | 0.4+ | 0.6+ | 2006 08 27 | 691 | 0.1− | 0.8+ |
| 2001 02 22 | 704 | 0.5+ | 0.3+ | 2005 04 13 | 699 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.4− | 0.9+ |
| 2001 02 22 | 699 | 0.3− | 0.3− | 2005 04 13 | 704 | 0.5+ | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 699 | 0.8+ | 0.6+ | 2005 04 13 | 704 | 0.2− | 0.7+ | 2006 10 22 | G96 | 0.4+ | 0.0 | |
| 2001 02 22 | 704 | 0.2+ | 0.4+ | 2005 04 13 | 704 | 1.4+ | 0.8+ | 2006 10 22 | G96 | 0.4+ | 0.2+ | |
| 2001 02 22 | 699 | 1.0+ | 0.3+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.6+ | |
| 2001 02 22 | 704 | 0.1− | 0.3+ | 2005 04 16 | 691 | 0.1− | 0.1+ | | | | | |

**(138942)∗ 2001 BP$_{29}$ = 2002 GK$_{83}$**

Discovered 2001 Jan. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29673)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.51391 | | (2000.0) | | | |
| $n$ | 0.17107431 | $\omega$ | 28.45212 | | −0.71608608 | −0.68750910 |
| $a$ | 3.2137556 | $\Omega$ | 107.58066 | | +0.61403925 | −0.70264293 |
| $e$ | 0.0704199 | $i$ | 7.26981 | | +0.33192848 | −0.18336888 |
| $P$ | 5.76 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 699 | 0.1− | 0.5+ | 2002 04 11 | 704 | 0.4+ | 0.7+ | 2005 11 05 | 704 | 0.3− | 0.0 | |
| 2001 01 03 | 699 | 1.0− | 1.1+ | 2002 04 11 | 704 | 0.0 | 0.3+ | 2005 11 10 | 703 | 0.0 | 0.1− | |
| 2001 01 03 | 699 | (1.8− | 0.9+) | 2002 04 11 | 704 | 0.1+ | 0.9+ | 2005 11 10 | 703 | (0.1+ | 2.0+) | |
| 2001 01 03 | 699 | 1.1+ | 1.1− | 2002 04 13 | 644 | 0.0 | 0.1− | 2005 11 10 | 703 | 0.2− | 1.2+ | |
| 2001 01 03 | 704 | 0.9− | 0.8− | 2002 04 13 | 644 | 0.3+ | 0.3− | 2005 11 10 | 703 | 0.0 | 0.2− | |
| 2001 01 03 | 704 | 0.2+ | 0.1− | 2002 04 13 | 644 | 0.2+ | 0.3− | 2005 11 26 | 703 | 0.1+ | 0.7+ | |
| 2001 01 03 | 704 | 0.3+ | 0.0 | 2002 04 15 | 699 | 0.3− | 0.1− | 2005 11 26 | 703 | (1.7− | 0.1−) | |
| 2001 01 03 | 704 | 0.5+ | 0.5+ | 2002 04 15 | 699 | 0.2+ | 0.0 | 2005 11 26 | 703 | 0.2− | 0.1− | |
| 2001 01 03 | 704 | 0.4+ | 0.1+ | 2002 04 15 | 699 | 0.4− | 0.4+ | 2005 11 26 | 703 | 1.4− | 0.9+ | |
| 2001 01 20 | 704 | 0.0 | 0.3+ | 2002 04 15 | 699 | 0.5− | 1.3− | 2005 11 29 | 699 | 1.3− | 0.5+ | |
| 2001 01 20 | 704 | 1.3− | 0.5+ | 2002 04 16 | 704 | 0.7+ | 0.6+ | 2005 11 29 | 699 | 1.0− | 1.2+ | |
| 2001 01 20 | 704 | 0.5+ | 1.0+ | 2002 04 16 | 704 | 0.7+ | 0.8+ | 2005 11 29 | 699 | 0.4+ | 0.0 | |
| 2001 01 20 | 704 | 0.2+ | 1.0+ | 2002 04 16 | 704 | 0.5+ | 0.4+ | 2005 11 29 | 699 | (1.6− | 0.3+) | |
| 2001 01 21 | 704 | 0.6− | 0.1− | 2002 04 16 | 704 | 0.1− | 0.9+ | 2005 11 30 | 704 | 0.0 | 0.0 | |
| 2001 01 21 | 704 | 0.0 | 0.1+ | 2002 05 07 | 644 | 0.2+ | 0.7+ | 2005 11 30 | 704 | (0.9+ | 2.3+) | |
| 2001 01 21 | 704 | 0.0 | 0.2+ | 2002 05 07 | 644 | 0.1+ | 0.8+ | 2005 11 30 | 704 | 0.3− | 0.6+ | |
| 2001 01 21 | 704 | 0.2− | 0.6+ | 2002 05 07 | 644 | 0.2+ | 0.9+ | 2005 11 30 | 704 | 0.6+ | 1.0+ | |
| 2001 01 21 | 704 | 0.0 | 0.0 | 2004 09 21 | 704 | (0.9− | 2.1+) | 2005 11 30 | 704 | 0.2− | 1.3+ | |
| 2001 01 31 | 691 | 0.2+ | 0.7− | 2004 09 21 | 704 | 0.2− | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | |
| 2001 01 31 | 691 | 0.0 | 0.6− | 2004 09 21 | 704 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ | |
| 2001 01 31 | 691 | 0.1− | 0.5− | 2004 09 21 | 704 | 0.1+ | 1.1+ | 2006 11 01 | 691 | 0.2+ | 0.1− | |
| 2002 04 10 | 704 | 0.2− | 0.5+ | 2004 09 21 | 704 | (0.2+ | 2.2+) | 2006 11 24 | G96 | 0.4+ | 0.4− | |
| 2002 04 10 | 704 | 0.9− | 0.5+ | 2005 10 25 | 703 | 1.2+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.4− | |
| 2002 04 10 | 704 | 0.7+ | 0.4+ | 2005 10 25 | 703 | 0.0 | 1.2− | 2006 11 24 | G96 | 0.5− | 0.7− | |
| 2002 04 10 | 704 | 0.5− | 0.1− | 2005 10 25 | 703 | (1.7− | 0.8+) | 2006 11 24 | G96 | 0.2+ | 0.5− | |
| 2002 04 10 | 704 | 1.3+ | 0.5+ | 2005 10 25 | 703 | 0.3− | 0.0 | 2006 11 27 | 291 | 0.2− | 0.2+ | |
| 2002 04 11 | 704 | 0.1− | 0.0 | 2005 11 05 | 704 | 1.0+ | 0.5+ | 2006 11 27 | 291 | 0.1+ | 0.4+ | |
| 2002 04 11 | 704 | 0.2+ | 0.5+ | 2005 11 05 | 704 | 0.9− | 0.1− | 2006 11 27 | 291 | 0.0 | 0.0 | |

**(138943)∗ 2001 BT$_{30}$**

Discovered 2001 Jan. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 191.79655 | | (2000.0) | | | |
| $n$ | 0.27156266 | $\omega$ | 352.55903 | | −0.82589435 | −0.56238031 |
| $a$ | 2.3616888 | $\Omega$ | 153.09654 | | +0.52178276 | −0.78945884 |
| $e$ | 0.1786540 | $i$ | 5.11414 | | +0.21363818 | −0.24593318 |
| $P$ | 3.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 20 | 704 | 0.2+ | 0.5+ | 2001 03 20 | 699 | 1.2+ | 0.3− | 2005 04 13 | 704 | 1.2− | 0.4+ | |
| 2001 01 20 | 704 | 0.3− | 0.7+ | 2001 05 22 | 691 | 0.1+ | 0.1− | 2005 04 13 | 704 | 0.7− | 0.2+ | |
| 2001 01 20 | 704 | 0.3+ | 0.3+ | 2001 05 22 | 691 | 0.2− | 0.2− | 2005 04 15 | 691 | 0.1+ | 0.2+ | |
| 2001 01 20 | 704 | 0.9+ | 1.0− | 2001 05 22 | 691 | 0.3+ | 0.3− | 2005 04 15 | 691 | 0.2+ | 0.1+ | |
| 2001 01 21 | 704 | 0.2+ | 0.5− | 2003 09 20 | 699 | 0.8− | 0.7+ | 2005 04 15 | 691 | 0.2+ | 0.3+ | |
| 2001 01 21 | 704 | 0.1− | 0.1+ | 2003 09 20 | 699 | 1.0− | 0.0 | 2005 04 19 | 704 | 0.6+ | 0.2+ | |
| 2001 01 21 | 704 | 0.0 | 0.1+ | 2003 09 20 | 699 | 0.5− | 1.1+ | 2005 04 19 | 704 | 1.2+ | 0.8− | |
| 2001 01 21 | 704 | 0.9− | 0.2− | 2003 09 20 | 699 | (1.9− | 0.6−) | 2005 04 19 | 704 | 0.3+ | 0.2+ | |
| 2001 01 29 | 704 | 0.4+ | 0.7− | 2003 09 28 | 704 | 0.7+ | 1.2+ | 2005 04 19 | 704 | 0.7+ | 0.1+ | |
| 2001 01 29 | 704 | 0.1− | 0.8+ | 2003 09 28 | 704 | 0.4+ | 0.1− | 2005 05 03 | 704 | 1.1+ | 0.6+ | |
| 2001 01 29 | 704 | 0.8− | 0.2+ | 2003 09 28 | 704 | 0.5− | 0.8+ | 2005 05 03 | 704 | 0.9+ | 1.0+ | |
| 2001 01 29 | 704 | 0.1+ | 0.0 | 2003 09 28 | 704 | 0.9− | 0.7+ | 2005 05 03 | 704 | 0.2− | 0.3+ | |
| 2001 01 29 | 704 | 0.1− | 0.3− | 2003 10 17 | 644 | 0.1− | 0.4+ | 2005 05 03 | 704 | 0.7+ | 0.5+ | |
| 2001 02 02 | 704 | 0.0 | 0.3+ | 2003 10 17 | 644 | 0.2− | 0.4+ | 2005 05 03 | 704 | 0.1− | 0.6+ | |
| 2001 02 02 | 704 | 0.0 | 0.2− | 2003 10 17 | 644 | 0.3+ | 0.5+ | 2005 05 07 | 703 | 0.8− | 0.5+ | |
| 2001 02 02 | 704 | 0.1− | 0.5− | 2003 10 20 | 704 | 0.5+ | 0.2+ | 2005 05 07 | 703 | 0.9− | 0.1− | |
| 2001 02 02 | 704 | 0.1− | 0.4+ | 2003 10 20 | 704 | (0.2+ | 1.8+) | 2005 05 07 | 703 | (2.6− | 1.2−) | |
| 2001 02 14 | 106 | 0.4− | 0.1+ | 2003 10 20 | 704 | 0.8− | 1.1+ | 2005 05 07 | 703 | 0.6− | 1.3− | |
| 2001 02 14 | 106 | 0.6− | 0.0 | 2003 10 20 | 704 | 0.1− | 1.0+ | 2005 05 08 | 704 | 0.5+ | 0.5+ | |
| 2001 02 14 | 106 | 0.2+ | 0.1− | 2003 10 20 | 691 | 0.0 | 0.3+ | 2005 05 08 | 704 | 0.6+ | 0.1− | |
| 2001 02 16 | 699 | 0.5− | 0.2+ | 2003 10 20 | 691 | 0.2− | 0.4+ | 2005 05 08 | 704 | 0.8+ | 0.5+ | |
| 2001 02 16 | 699 | 0.1− | 0.2+ | 2003 10 20 | 691 | 0.1− | 0.4+ | 2005 05 11 | 699 | 0.2+ | 0.6− | |
| 2001 02 16 | 699 | 0.5− | 0.2+ | 2003 10 25 | 704 | 0.3− | 0.7+ | 2005 05 11 | 699 | 0.5+ | 0.2+ | |
| 2001 02 16 | 699 | 0.3− | 0.6+ | 2003 10 25 | 704 | 0.6+ | 0.6+ | 2005 05 11 | 699 | 0.2+ | 0.9+ | |
| 2001 02 19 | 704 | 0.2− | 0.2− | 2003 10 25 | 704 | 0.6+ | 0.9+ | 2005 05 11 | 699 | 0.2− | 0.5+ | |
| 2001 02 19 | 704 | 0.1+ | 0.1+ | 2003 10 25 | 704 | 0.2+ | 0.3+ | 2005 05 12 | 704 | 0.3+ | 0.5+ | |
| 2001 02 19 | 704 | 0.3− | 0.1+ | 2003 10 25 | 704 | 1.3+ | 1.1+ | 2005 05 12 | 704 | 0.1+ | 0.3+ | |
| 2001 02 19 | 704 | 0.2− | 0.1+ | 2003 11 16 | 703 | 0.6− | 0.3− | 2005 05 12 | 704 | 0.2+ | 0.2− | |
| 2001 02 19 | 704 | 0.2− | 0.6+ | 2003 11 16 | 703 | 0.5− | 0.1+ | 2005 05 12 | 704 | 0.4+ | 0.3+ | |
| 2001 02 20 | 704 | 0.4+ | 0.5+ | 2003 11 16 | 703 | (3.8− | 0.2+) | 2005 06 03 | 699 | (0.3− | 3.1+) | |
| 2001 02 20 | 704 | 0.3− | 0.4+ | 2003 11 16 | 703 | 0.0 | 0.3+ | 2005 06 03 | 699 | (0.5+ | 1.8+) | |
| 2001 02 20 | 704 | 0.1− | 0.6+ | 2003 11 26 | 699 | 0.8− | 0.3− | 2005 06 03 | 699 | 0.2+ | 0.4+ | |
| 2001 02 20 | 704 | 0.2+ | 0.5+ | 2003 11 26 | 699 | 0.5− | 0.2− | 2005 06 03 | 699 | 1.3− | 0.2+ | |
| 2001 02 20 | 704 | 0.7− | 0.8+ | 2003 11 26 | 699 | 1.3+ | 1.3+ | 2006 08 13 | D35 | 0.0 | 0.7+ | |
| 2001 02 21 | 699 | 0.3− | 0.1− | 2003 11 26 | 699 | 0.1+ | 0.1− | 2006 08 13 | D35 | 0.1− | 1.5+ | |
| 2001 02 21 | 699 | 0.5+ | 0.0 | 2005 04 02 | 691 | 0.2− | 0.2+ | 2006 08 13 | D35 | 0.3− | 1.1+ | |
| 2001 02 21 | 699 | 0.5+ | 0.6+ | 2005 04 02 | 691 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.6− | 0.8+ | |
| 2001 02 21 | 699 | 0.1+ | 0.2+ | 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2+ | |
| 2001 02 22 | 704 | 0.6+ | 0.3+ | 2005 04 05 | 703 | 0.6− | 0.4− | 2006 08 18 | 644 | 0.3− | 0.6+ | |
| 2001 02 22 | 699 | 0.7+ | 0.5+ | 2005 04 05 | 703 | 1.3− | 1.3− | 2006 08 19 | 644 | 0.2− | 0.6+ | |
| 2001 02 22 | 704 | 0.3+ | 0.0 | 2005 04 05 | 703 | 0.3− | 0.3− | 2006 08 19 | 644 | 0.3− | 0.5+ | |
| 2001 02 22 | 699 | 0.5+ | 0.2+ | 2005 04 05 | 704 | 0.1+ | 0.1− | 2006 08 19 | 644 | 0.6− | 0.5+ | |
| 2001 02 22 | 704 | 0.1+ | 0.4+ | 2005 04 05 | 703 | 0.3− | 0.3− | 2006 08 20 | 644 | (0.7+ | 1.7+) | |
| 2001 02 22 | 699 | 0.4+ | 0.3+ | 2005 04 05 | 704 | 0.6− | 0.0 | 2006 08 20 | 644 | 0.3− | 0.6+ | |
| 2001 02 22 | 699 | 0.8+ | 0.6+ | 2005 04 05 | 704 | 0.1− | 0.3+ | 2006 08 20 | 644 | 0.3− | 0.5+ | |
| 2001 02 22 | 704 | 0.3− | 0.8+ | 2005 04 05 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 1.0− | 0.5− | |
| 2001 02 22 | 704 | 0.2+ | 0.6+ | 2005 04 05 | 704 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.9+ | 0.1+ | |
| 2001 03 13 | 732 | 0.2− | 0.0 | 2005 04 07 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.2+ | |
| 2001 03 13 | 732 | 0.0 | 0.3+ | 2005 04 07 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.6+ | |
| 2001 03 13 | 699 | 0.1+ | 0.2+ | 2005 04 07 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.1+ | |
| 2001 03 13 | 732 | 0.5− | 0.6+ | 2005 04 07 | 704 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.3+ | |
| 2001 03 13 | 699 | 0.7+ | 0.0 | 2005 04 07 | 704 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | |
| 2001 03 13 | 699 | 0.2− | 0.4+ | 2005 04 07 | 704 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3+ | |
| 2001 03 13 | 699 | 0.5− | 0.1− | 2005 04 07 | 704 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.3+ | |
| 2001 03 20 | 699 | (1.9+ | 0.1−) | 2005 04 13 | 704 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.6+ | |
| 2001 03 20 | 699 | 0.6+ | 0.4+ | 2005 04 13 | 704 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.2+ | |
| 2001 03 20 | 699 | (1.6+ | 0.1+) | 2005 04 13 | 704 | 0.4+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.0 | |

**(138944)∗ 2001 BF$_{31}$**

Discovered 2001 Jan. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 170.77748 | | (2000.0) | | | |
| $n$ | 0.26351425 | $\omega$ | 6.83724 | | −0.86896937 | −0.49051194 |
| $a$ | 2.4095354 | $\Omega$ | 143.55181 | | +0.44864984 | −0.83673599 |
| $e$ | 0.0540968 | $i$ | 6.32983 | | +0.20881942 | −0.24345620 |
| $P$ | 3.74 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 20 | 704 | 0.6+ | 0.5+ | 2003 09 22 | 644 | 0.1− | 0.6+ | 2005 03 10 | 699 | 0.3+ | 0.6+ | |
| 2001 01 20 | 704 | 0.1+ | 0.8− | 2003 09 22 | 644 | 0.0 | 0.6+ | 2005 03 10 | 699 | 0.2+ | 0.3+ | |
| 2001 01 20 | 704 | 1.1− | 0.4− | 2003 09 22 | 644 | 0.0 | 0.7+ | 2005 03 12 | 704 | 0.7+ | 0.4+ | |
| 2001 01 20 | 704 | 0.3− | 0.4+ | 2003 09 28 | 704 | 0.3+ | 0.5+ | 2005 03 12 | 704 | 1.3+ | 0.5+ | |
| 2001 01 21 | 704 | 0.1− | 0.4− | 2003 09 28 | 704 | 0.3+ | 1.1+ | 2005 03 12 | 704 | 0.2+ | 0.0 | |
| 2001 01 21 | 704 | 0.0 | 0.5− | 2003 09 28 | 704 | 0.1− | 0.8+ | 2005 03 12 | 704 | 0.3+ | 0.6+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.3− | 0.1+ | 2003 09 28 | 704 | 0.1+ | 0.5+ | 2005 03 12 | 704 | 0.7+ | 0.3+ | | |
| 2001 01 21 | 704 | 0.7− | 0.2− | 2003 09 28 | 704 | 0.7+ | 0.7+ | 2005 03 16 | 704 | 1.5+ | 1.1− | | |
| 2001 01 21 | 704 | 0.4+ | 0.1+ | 2003 10 20 | 704 | 0.5− | 0.4+ | 2005 03 16 | 704 | 1.4+ | 0.6+ | | |
| 2001 01 21 | 704 | 0.6+ | 0.5− | 2003 10 20 | 704 | 1.5− | 0.7+ | 2005 03 16 | 704 | 1.4+ | 0.7+ | | |
| 2001 01 21 | 704 | 0.4+ | 0.1+ | 2003 10 20 | 704 | 0.3− | 0.8+ | 2005 03 16 | 704 | 0.9+ | 0.4+ | | |
| 2001 01 21 | 704 | 0.1+ | 0.3− | 2003 10 20 | 704 | 0.8− | 0.3+ | 2005 03 16 | 704 | 0.0 | 1.5+ | | |
| 2001 01 21 | 704 | 0.3− | 0.5− | 2003 10 20 | 704 | 0.6− | 0.2− | 2005 03 18 | 704 | 0.6+ | 0.3+ | | |
| 2001 02 02 | 704 | 0.2+ | 0.5+ | 2003 10 23 | 699 | 0.3− | 0.3− | 2005 03 18 | 704 | 0.4+ | 0.2+ | | |
| 2001 02 02 | 704 | 0.0 | 0.0 | 2003 10 23 | 699 | 0.2− | 0.1+ | 2005 03 18 | 704 | 0.8+ | 1.1+ | | |
| 2001 02 02 | 704 | 0.3+ | 1.9+ | 2003 10 23 | 699 | 0.0 | 0.1+ | 2005 03 18 | 704 | 0.6+ | 0.4+ | | |
| 2001 02 02 | 704 | 0.5+ | 0.2+ | 2003 10 23 | 699 | 0.1− | 0.5+ | 2005 03 30 | 703 | 0.9− | 0.5− | | |
| 2001 02 02 | 704 | 0.4+ | 1.0+ | 2003 10 23 | 691 | 0.1+ | 0.2+ | 2005 03 30 | 703 | 0.8− | 0.1+ | | |
| 2001 02 16 | 691 | 0.2− | 0.2− | 2003 10 23 | 691 | 0.1+ | 0.1+ | 2005 03 30 | 703 | 1.1− | 0.3+ | | |
| 2001 02 16 | 691 | 0.1− | 0.1− | 2003 10 23 | 691 | 0.2+ | 0.1+ | 2005 03 30 | 703 | 0.6− | 0.6+ | | |
| 2001 02 16 | 691 | 0.3− | 0.2− | 2003 11 23 | 699 | 0.5+ | 0.3+ | 2005 04 05 | 704 | 1.6− | 0.5+ | | |
| 2001 02 16 | 699 | 0.0 | 0.1− | 2003 11 23 | 699 | 0.1− | 0.7− | 2005 04 05 | 704 | 0.7− | 1.0+ | | |
| 2001 02 16 | 699 | 0.1+ | 0.0 | 2003 11 23 | 699 | 0.3− | 0.8+ | 2005 04 05 | 704 | 0.8+ | 1.1+ | | |
| 2001 02 16 | 699 | 0.0 | 0.3+ | 2003 11 23 | 699 | 0.6− | 0.3+ | 2005 04 05 | 704 | 1.0+ | 0.1− | | |
| 2001 02 16 | 699 | 0.8− | 1.6+ | 2003 12 22 | 704 | 0.0 | 0.5− | 2005 04 11 | 699 | 0.5+ | 0.1− | | |
| 2001 02 19 | 704 | 0.7− | 0.3− | 2003 12 22 | 704 | 0.3− | 0.2− | 2005 04 11 | 699 | 0.2− | 0.1− | | |
| 2001 02 19 | 704 | 0.1+ | 0.3+ | 2003 12 22 | 704 | 0.9+ | 0.1− | 2005 04 11 | 699 | 0.6− | 0.3+ | | |
| 2001 02 19 | 704 | 0.4+ | 0.2+ | 2003 12 22 | 704 | 0.8− | 0.0 | 2005 04 11 | 699 | 0.3− | 0.5+ | | |
| 2001 02 19 | 704 | 0.2− | 0.9+ | 2004 12 13 | 599 | 0.4− | 0.4+ | 2005 04 17 | 703 | 0.1− | 0.7− | | |
| 2001 02 19 | 704 | 0.7+ | 0.3+ | 2004 12 13 | 599 | 0.2− | 0.4+ | 2005 04 17 | 703 | 0.4− | 0.9+ | | |
| 2001 02 20 | 704 | 0.7+ | 0.7− | 2004 12 13 | 599 | 0.8+ | 0.2− | 2005 04 17 | 703 | 1.2− | 0.6− | | |
| 2001 02 20 | 704 | 0.1− | 0.3− | 2004 12 13 | 599 | 0.1− | 1.6+ | 2005 04 17 | 703 | 0.5− | 0.3− | | |
| 2001 02 20 | 704 | 0.4+ | 0.4+ | 2005 01 18 | 703 | 0.5− | 1.0− | 2005 05 22 | 644 | 0.0 | 0.3+ | | |
| 2001 02 20 | 704 | 0.0 | 0.3+ | 2005 01 18 | 703 | 0.3+ | 0.9− | 2005 05 22 | 644 | 0.1− | 0.4+ | | |
| 2001 02 20 | 704 | 1.8+ | 0.6− | 2005 01 18 | 703 | 1.3+ | 0.5− | 2005 05 22 | 644 | 0.1− | 0.3+ | | |
| 2001 02 22 | 704 | 0.1− | 0.3+ | 2005 01 18 | 703 | 0.8− | 0.7− | 2006 06 19 | G96 | 0.1+ | 0.4+ | | |
| 2001 02 22 | 699 | 0.7+ | 0.1− | 2005 03 03 | 703 | 0.5− | 0.1− | 2006 06 19 | G96 | 0.0 | 0.6+ | | |
| 2001 02 22 | 704 | 0.3+ | 0.3− | 2005 03 03 | 703 | 0.9− | 0.2− | 2006 06 19 | G96 | 0.1− | 0.3+ | | |
| 2001 02 22 | 699 | 0.7+ | 0.3+ | 2005 03 03 | 703 | 0.7− | 0.0 | 2006 06 19 | G96 | 0.1− | 0.3+ | | |
| 2001 02 22 | 699 | 0.6+ | 0.2− | 2005 03 03 | 703 | 1.3− | 0.5− | 2006 08 12 | 644 | 0.0 | 1.0+ | | |
| 2001 02 22 | 704 | 0.1+ | 0.9− | 2005 03 04 | 704 | 0.3+ | 0.5+ | 2006 08 12 | 644 | 0.2− | 0.7+ | | |
| 2001 02 22 | 699 | 0.7+ | 0.1− | 2005 03 04 | 704 | 0.1+ | 0.7+ | 2006 08 12 | 644 | 0.1+ | 0.5+ | | |
| 2001 02 22 | 704 | 0.3− | 0.3+ | 2005 03 04 | 704 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.3+ | | |
| 2001 02 22 | 704 | 0.1+ | 0.0 | 2005 03 04 | 704 | 0.7+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.3+ | | |
| 2001 03 02 | 691 | 0.3− | 0.4− | 2005 03 04 | 704 | 0.6+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.3+ | | |
| 2001 03 02 | 691 | 0.3− | 0.3− | 2005 03 10 | 699 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.2+ | | |
| 2001 03 02 | 691 | 0.5− | 0.3− | 2005 03 10 | 699 | 0.1− | 0.6+ | | | | | | |

**(138945)∗ 2001 BZ$_{37}$ = 1999 TZ$_{328}$**

Discovered 2001 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 72324)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.93596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28842985 | $\omega$ | 334.84358 | | −0.80104246 | +0.57829150 | |
| $a$ | 2.2686939 | $\Omega$ | 241.36438 | | −0.51510639 | −0.79750357 | |
| $e$ | 0.1816876 | $i$ | 10.14719 | | −0.30495310 | −0.17195058 | |
| $P$ | 3.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 01 | 704 | 1.5− | 0.5− | 2001 01 26 | 704 | 0.2− | 0.4+ | 2005 06 29 | 691 | 0.1− | 0.3+ | | |
| 1998 04 01 | 704 | 0.4+ | 0.7− | 2001 01 26 | 704 | 0.9+ | 1.0− | 2005 06 29 | 691 | 0.0 | 0.3+ | | |
| 1998 04 01 | 704 | 0.3+ | 0.0 | 2002 08 04 | 644 | 0.1− | 0.4+ | 2005 07 27 | 644 | 0.5− | 0.1− | | |
| 1998 04 01 | 704 | 0.1+ | 0.9+ | 2002 08 04 | 644 | 0.3− | 0.4+ | 2005 07 27 | 644 | 0.4− | 0.1− | | |
| 1998 04 01 | 704 | (3.1− | 1.6+) | 2002 08 04 | 644 | 0.3+ | 0.4+ | 2005 07 27 | 644 | 0.4+ | 0.1+ | | |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2002 09 03 | 049 | 0.6+ | 0.2+ | 2005 07 27 | 644 | 0.2+ | 0.1+ | | |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2002 09 03 | 049 | 0.3+ | 0.2− | 2005 07 27 | 644 | 0.3+ | 0.5+ | | |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2002 09 03 | 049 | 0.2− | 0.3− | 2005 07 27 | 644 | 0.4+ | 0.2+ | | |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2002 09 04 | 644 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2001 01 19 | 608 | (2.9+ | 1.7+) | 2002 09 04 | 644 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2001 01 19 | 608 | (2.9+ | 0.7+) | 2002 09 04 | 644 | 0.5+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.0 | | |
| 2001 01 19 | 608 | (3.1+ | 0.6+) | 2003 12 21 | 704 | 1.0− | 0.2− | 2006 10 20 | 291 | 0.2− | 0.4+ | | |
| 2001 01 21 | 704 | 0.4+ | 0.7+ | 2003 12 21 | 704 | 0.4− | 0.6+ | 2006 10 20 | 291 | 0.2− | 0.6+ | | |
| 2001 01 21 | 704 | 0.3+ | 0.5+ | 2003 12 21 | 704 | 0.0 | 0.5+ | 2006 10 20 | 291 | 0.0 | 0.6+ | | |
| 2001 01 21 | 704 | 0.3− | 0.6+ | 2005 06 05 | 704 | 0.5+ | 0.5+ | 2006 10 29 | 691 | 0.2− | 0.2+ | | |
| 2001 01 21 | 704 | 0.6− | 1.4+ | 2005 06 05 | 704 | 0.5+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.4+ | | |
| 2001 01 24 | 704 | 0.3+ | 0.4+ | 2005 06 05 | 704 | 0.0 | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.4+ | | |
| 2001 01 24 | 704 | 0.6+ | 0.4+ | 2005 06 05 | 704 | 0.1− | 1.0+ | 2006 11 25 | G96 | 0.3+ | 0.4− | | |
| 2001 01 24 | 704 | 1.0+ | 0.1− | 2005 06 11 | 703 | 1.1− | 1.0− | 2006 11 25 | G96 | 0.5+ | 0.5− | | |
| 2001 01 24 | 704 | 0.3+ | 1.2+ | 2005 06 11 | 703 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2001 01 24 | 704 | 0.8+ | 0.6− | 2005 06 11 | 703 | 0.3+ | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.4− | | |
| 2001 01 26 | 704 | 0.2− | 0.2+ | 2005 06 11 | 703 | (2.0− | 1.0+) | | | | | | |
| 2001 01 26 | 704 | 0.1+ | 0.3+ | 2005 06 29 | 691 | 0.1− | 0.2+ | | | | | | |

**(138946)∗ 2001 BA$_{39}$**

Discovered 2001 Jan. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.77742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28394681 | $\omega$ | 246.10599 | | −0.89874695 | +0.43757632 | |
| $a$ | 2.2925108 | $\Omega$ | 319.82772 | | −0.38488739 | −0.81784623 | |
| $e$ | 0.1070351 | $i$ | 2.48274 | | −0.21003715 | −0.37370378 | |
| $P$ | 3.47 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 29 | 691 | 0.3− | 0.1+ | 2001 01 31 | 701 | 1.2− | 0.1− | 2005 05 12 | 703 | 0.3− | 0.1+ | | |
| 1992 09 29 | 691 | 0.9+ | 0.7− | 2001 03 25 | 695 | 0.0 | 0.2+ | 2005 05 12 | 703 | 0.4+ | 0.2+ | | |
| 1992 09 29 | 691 | 1.0− | 0.2− | 2001 03 25 | 695 | 0.2− | 0.5+ | 2005 05 12 | 703 | 0.9− | 0.5+ | | |
| 1994 01 07 | 691 | 1.0+ | 0.2+ | 2002 07 18 | 644 | 0.2+ | 0.3+ | 2005 05 12 | 644 | 0.4+ | 0.6+ | | |
| 1994 01 07 | 691 | 0.3+ | 0.7− | 2002 07 18 | 644 | 0.0 | 0.7+ | 2005 05 12 | 644 | 0.5+ | 0.5+ | | |
| 1994 01 07 | 691 | 0.4− | 0.6+ | 2002 07 18 | 644 | 0.2+ | 0.4+ | 2005 05 12 | 644 | 0.5+ | 0.2+ | | |
| 2001 01 19 | 691 | 0.3+ | 0.5+ | 2003 11 19 | 691 | 0.2+ | 0.4+ | 2005 05 19 | 644 | 0.5+ | 0.4+ | | |
| 2001 01 19 | 691 | 0.3+ | 0.3+ | 2003 11 19 | 691 | 0.0 | 0.1+ | 2005 05 19 | 644 | 0.2+ | 0.4+ | | |
| 2001 01 19 | 691 | 0.2+ | 0.3+ | 2003 11 19 | 691 | 0.1+ | 0.2+ | 2005 05 19 | 644 | 0.3+ | 0.2+ | | |
| 2001 01 25 | 691 | 0.2− | 0.1− | 2003 12 14 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.0 | | |
| 2001 01 25 | 691 | 0.1− | 0.1+ | 2003 12 14 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.3− | | |
| 2001 01 25 | 691 | 0.5+ | 0.1− | 2003 12 14 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2001 01 30 | 701 | 1.9− | 0.1+ | 2005 05 11 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.5− | 0.7+ | | |
| 2001 01 30 | 701 | 1.5− | 0.2+ | 2005 05 11 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.6+ | | |
| 2001 01 30 | 701 | 0.7− | 1.3− | 2005 05 11 | 644 | 0.5+ | 0.4+ | 2006 09 30 | 691 | 0.6− | 0.6+ | | |
| 2001 01 31 | 701 | 1.5− | 0.3− | 2005 05 12 | 703 | 1.0− | 0.8+ | | | | | | |

**(138947)∗ 2001 BA$_{40}$**

Discovered 2001 Jan. 23 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.92327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.83267925 | $\omega$ | 359.94415 | | +0.01588026 | +0.97485180 | |
| $a$ | 1.1189677 | $\Omega$ | 270.96437 | | −0.91728014 | −0.07427239 | |
| $e$ | 0.2537403 | $i$ | 12.84528 | | −0.39792582 | +0.21011326 | |
| $P$ | 1.18 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 23 | 608 | 0.8− | 0.7− | 2001 02 01 | 413 | 0.1+ | 0.4+ | 2001 12 02 | 118 | 0.4− | 0.0 | | |
| 2001 01 23 | 608 | 0.8− | 0.8− | 2001 02 01 | 413 | 0.3+ | 0.4+ | 2001 12 02 | 118 | 0.2+ | 0.1+ | | |
| 2001 01 23 | 608 | 0.5− | 0.7− | 2001 02 17 | 608 | 0.1+ | 0.1− | 2001 12 08 | 198 | 0.4− | 0.9+ | | |
| 2001 01 24 | 808 | (2.6− | 0.7+) | 2001 02 17 | 608 | 0.0 | 0.3+ | 2001 12 08 | 198 | 0.0 | 0.4+ | | |
| 2001 01 24 | 808 | (1.6− | 0.4+) | 2001 02 17 | 608 | 0.3+ | 0.0 | 2001 12 08 | 198 | 0.3+ | 0.1+ | | |
| 2001 01 24 | 808 | 0.7− | 0.4+ | 2001 02 19 | 360 | 0.5+ | 0.4− | 2001 12 08 | 198 | 0.4+ | 0.4+ | | |
| 2001 01 24 | 918 | 0.7+ | 0.3− | 2001 02 19 | 360 | 0.7+ | 0.1− | 2001 12 08 | 198 | 0.9+ | 0.1+ | | |
| 2001 01 24 | 808 | 0.4− | 0.7+ | 2001 02 19 | 360 | 0.5+ | 0.3− | 2001 12 09 | 704 | 0.0 | 0.5− | | |
| 2001 01 24 | 918 | 1.3− | 0.1+ | 2001 02 20 | 808 | (0.7+ | 1.6+) | 2001 12 09 | 704 | 0.3− | 0.4− | | |
| 2001 01 24 | 918 | 0.5− | 0.3+ | 2001 02 20 | 808 | 0.1− | 1.4+ | 2001 12 09 | 704 | (1.6− | 0.5−) | | |
| 2001 01 24 | 808 | 0.9− | 0.2+ | 2001 02 22 | 926 | 0.2+ | 0.5− | 2001 12 09 | 704 | 0.4− | 0.4− | | |
| 2001 01 24 | 918 | 0.4− | 0.2− | 2001 02 22 | 926 | 0.4+ | 0.3+ | 2001 12 09 | 704 | 0.4− | 1.0− | | |
| 2001 01 24 | 608 | 0.2− | 0.8− | 2001 02 22 | 926 | 0.2+ | 0.4− | 2001 12 14 | 704 | 0.2− | 0.5+ | | |
| 2001 01 24 | 608 | 0.5− | 0.7− | 2001 02 27 | 118 | 0.6+ | 1.3+ | 2001 12 14 | 704 | 0.7− | 0.4+ | | |
| 2001 01 24 | 608 | 0.6− | 0.2− | 2001 02 27 | 118 | 1.2+ | 0.6+ | 2001 12 14 | 704 | 0.3− | 0.5+ | | |
| 2001 01 25 | 608 | 0.7− | 1.1− | 2001 03 13 | 422 | 0.3− | 0.1+ | 2001 12 14 | 704 | 0.4+ | 0.3+ | | |
| 2001 01 25 | 608 | 0.8− | 1.0− | 2001 03 13 | 422 | 0.4+ | 0.2+ | 2001 12 14 | 704 | 0.8− | 0.9+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 25 | 608 | 0.5− | 1.1− | 2001 03 13 | 422 | 0.3+ | 0.4+ | 2001 12 14 | 198 | 0.2− | 0.3+ | | |
| 2001 01 29 | 608 | 0.4− | 1.3− | 2001 04 05 | 413 | 0.1− | 0.2+ | 2001 12 14 | 198 | 0.2+ | 0.5+ | | |
| 2001 01 29 | 608 | 0.2− | 1.3− | 2001 04 05 | 413 | 0.1− | 0.3+ | 2001 12 14 | 198 | 0.4+ | 0.4+ | | |
| 2001 01 29 | 608 | 0.4− | 1.4− | 2001 04 05 | 413 | 0.1− | 0.2+ | 2001 12 15 | 118 | 1.2+ | 0.0 | | |
| 2001 01 31 | 106 | 1.2+ | 0.3− | 2001 08 08 | 493 | 0.0 | 0.2− | 2001 12 15 | 118 | (0.7+ | 1.9+) | | |
| 2001 01 31 | 106 | 0.8+ | 0.3+ | 2001 08 08 | 493 | 0.2− | 0.5− | 2002 01 09 | 704 | 0.2− | 0.0 | | |
| 2001 01 31 | 106 | 0.0 | 1.2+ | 2001 08 08 | 493 | 0.0 | 0.2− | 2002 01 09 | 704 | 0.9− | 0.7+ | | |
| 2001 02 01 | 595 | (1.9− | 0.4−) | 2001 08 09 | 493 | 0.3− | 0.3− | 2002 01 09 | 704 | 0.9− | 1.0+ | | |
| 2001 02 01 | 595 | 1.2− | 0.3− | 2001 08 09 | 493 | 0.1+ | 1.1− | 2002 01 09 | 704 | (0.2− | 1.6+) | | |
| 2001 02 01 | 595 | 0.3− | 0.6+ | 2001 08 09 | 493 | 0.1+ | 0.3− | 2002 01 11 | 608 | 0.1− | 0.3+ | | |
| 2001 02 01 | 732 | (1.6+ | 0.6−) | 2001 11 06 | 118 | 0.4− | 0.3− | 2002 12 31 | 696 | 0.6− | 0.3− | | |
| 2001 02 01 | 732 | 1.0+ | 0.1− | 2001 11 06 | 118 | 0.0 | 0.1+ | 2002 12 31 | 696 | 0.1− | 0.6− | | |
| 2001 02 01 | 732 | (1.5+ | 0.3+) | 2001 11 06 | 118 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2− | | |
| 2001 02 01 | 732 | 1.2+ | 0.7+ | 2001 11 12 | 198 | 0.4+ | 0.4− | 2006 10 20 | 691 | 0.8− | 0.4− | | |
| 2001 02 01 | 732 | 1.3+ | 0.5− | 2001 11 12 | 198 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.4+ | 0.3+ | | |
| 2001 02 01 | 732 | (1.7+ | 1.0−) | 2001 11 12 | 198 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 1.4+ | 0.7+ | | |
| 2001 02 01 | 732 | 0.7+ | 0.0 | 2001 11 16 | 670 | 1.2− | 0.8− | 2006 10 23 | 691 | 0.5− | 0.2+ | | |
| 2001 02 01 | 732 | (2.1+ | 0.5+) | 2001 11 24 | 670 | 0.1+ | 0.2+ | | | | | | |
| 2001 02 01 | 413 | 0.1+ | 0.3+ | 2001 11 24 | 670 | 0.7+ | 0.2− | | | | | | |

**(138948)∗ 2001 BR$_{47}$**

Discovered 2001 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 246.89680 | | (2000.0) | | | |
| $n$ | 0.26969995 | $\omega$ | 286.24729 | | +0.02221023 | −0.99914043 |
| $a$ | 2.3725506 | $\Omega$ | 162.36841 | | +0.95572062 | +0.01094323 |
| $e$ | 0.0880651 | $i$ | 6.63572 | | +0.29343620 | +0.03998306 |
| $P$ | 3.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.7− | 0.6+ | 2001 03 19 | 608 | 0.0 | 1.1− | 2003 11 29 | 691 | 0.1− | 0.1− | | |
| 2001 01 21 | 704 | 0.6− | 0.7− | 2001 03 31 | 691 | 0.2− | 0.1+ | 2003 11 29 | 691 | 0.3− | 0.2− | | |
| 2001 01 21 | 704 | 0.4+ | 0.5− | 2001 03 31 | 691 | 0.0 | 0.4− | 2003 12 12 | 644 | 0.3− | 0.3+ | | |
| 2001 01 21 | 704 | 0.1+ | 0.3+ | 2001 03 31 | 691 | 0.0 | 0.4− | 2003 12 12 | 644 | 0.1+ | 0.5+ | | |
| 2001 01 21 | 704 | 0.4+ | 0.1− | 2001 05 21 | 807 | 0.5− | 0.6+ | 2003 12 12 | 644 | 0.1− | 0.4+ | | |
| 2001 01 26 | 704 | 0.1− | 0.6+ | 2001 05 22 | 807 | 0.3+ | 0.4+ | 2004 01 13 | 644 | 0.0 | 0.3+ | | |
| 2001 01 26 | 704 | 0.7− | 0.3− | 2003 10 21 | 704 | 0.2− | 0.5+ | 2004 01 13 | 644 | 0.2− | 0.3+ | | |
| 2001 01 26 | 704 | 1.0+ | 0.5+ | 2003 10 21 | 704 | 0.1+ | 0.3− | 2004 01 13 | 644 | 0.3+ | 0.2+ | | |
| 2001 01 26 | 704 | 0.3− | 0.6− | 2003 10 21 | 704 | 0.4− | 0.4+ | 2005 03 13 | 703 | 0.5− | 1.1+ | | |
| 2001 01 26 | 704 | (1.4+ | 2.0−) | 2003 10 21 | 704 | 0.6− | 0.0 | 2005 03 13 | 703 | (1.8+ | 0.2+) | | |
| 2001 02 19 | 699 | 0.6+ | 0.0 | 2003 10 21 | 704 | 1.3− | 0.3+ | 2005 03 13 | 703 | 1.1− | 0.8− | | |
| 2001 02 19 | 699 | (1.8+ | 0.9+) | 2003 10 21 | 644 | 0.1− | 0.3+ | 2005 03 13 | 703 | 1.0− | 1.4+ | | |
| 2001 02 19 | 699 | 0.2+ | 0.4+ | 2003 10 21 | 644 | 0.2− | 0.4+ | 2005 04 01 | 699 | 0.5+ | 1.0+ | | |
| 2001 02 19 | 704 | 0.7− | 0.2+ | 2003 10 21 | 644 | 0.1− | 0.3+ | 2005 04 01 | 699 | 0.4+ | 0.2+ | | |
| 2001 02 19 | 699 | 0.2+ | 0.1− | 2003 10 27 | 704 | 0.3+ | 0.6+ | 2005 04 01 | 699 | 0.3+ | 1.1+ | | |
| 2001 02 19 | 704 | 0.1+ | 0.6+ | 2003 10 27 | 704 | 1.2+ | 0.2+ | 2005 04 01 | 699 | 1.2+ | 0.3+ | | |
| 2001 02 19 | 704 | 0.5− | 0.6+ | 2003 10 27 | 704 | 1.2+ | 0.8+ | 2005 04 09 | 704 | 0.5+ | 0.6+ | | |
| 2001 02 19 | 704 | 0.7− | 0.2+ | 2003 10 27 | 704 | 0.1− | 0.0 | 2005 04 09 | 704 | 0.2+ | 1.4+ | | |
| 2001 02 19 | 704 | 0.2+ | 0.6+ | 2003 10 27 | 704 | 0.2+ | 0.0 | 2005 04 09 | 704 | 0.6− | 0.2− | | |
| 2001 02 20 | 704 | 0.4− | 0.2+ | 2003 10 29 | 691 | 0.1− | 0.2+ | 2005 04 15 | 699 | 1.3− | 0.3− | | |
| 2001 02 20 | 704 | 0.3− | 0.0 | 2003 10 29 | 691 | 0.1− | 0.2+ | 2005 04 15 | 699 | 0.1+ | 0.2− | | |
| 2001 02 20 | 704 | 0.5− | 0.1− | 2003 10 29 | 691 | 0.1− | 0.1+ | 2005 04 15 | 699 | 0.1+ | 0.4+ | | |
| 2001 02 20 | 704 | 0.3+ | 0.1− | 2003 11 01 | 704 | 0.1+ | 1.3+ | 2005 04 15 | 699 | 0.3+ | 0.1+ | | |
| 2001 02 20 | 704 | 0.2− | 0.2− | 2003 11 01 | 704 | 0.3− | 0.5+ | 2005 05 04 | 691 | 0.2+ | 0.3+ | | |
| 2001 02 21 | 704 | 0.2− | 0.4+ | 2003 11 01 | 704 | (0.4− | 2.1+) | 2005 05 04 | 691 | 0.4+ | 0.1+ | | |
| 2001 02 21 | 704 | 0.2+ | 0.0 | 2003 11 01 | 704 | 0.5+ | 0.7+ | 2005 05 04 | 691 | 0.3+ | 0.2+ | | |
| 2001 02 21 | 704 | 0.1+ | 0.6− | 2003 11 17 | 703 | (0.2+ | 2.4−) | 2005 05 15 | 644 | 0.3+ | 0.6+ | | |
| 2001 02 21 | 704 | 0.6+ | 0.1− | 2003 11 17 | 703 | (1.2− | 1.8−) | 2005 05 15 | 644 | 0.3+ | 0.3+ | | |
| 2001 02 21 | 704 | 0.2+ | 0.7− | 2003 11 17 | 703 | 1.1+ | 0.1− | 2005 05 15 | 644 | 0.3+ | 0.4+ | | |
| 2001 02 22 | 704 | (1.7− | 1.1+) | 2003 11 17 | 703 | (1.7− | 1.7−) | 2006 07 20 | A50 | 0.2+ | 0.2− | | |
| 2001 02 22 | 704 | 0.8+ | 1.0+ | 2003 11 21 | 699 | 1.1+ | 0.1− | 2006 07 25 | 644 | 0.7− | 0.4+ | | |
| 2001 02 22 | 704 | 0.3+ | 0.9− | 2003 11 21 | 699 | 0.2− | 0.2− | 2006 07 25 | 644 | 0.1− | 0.7+ | | |
| 2001 03 14 | 699 | 0.2+ | 0.0 | 2003 11 21 | 699 | 0.1− | 0.3− | 2006 07 25 | 644 | 0.4− | 0.7+ | | |
| 2001 03 14 | 699 | 0.1+ | 0.6+ | 2003 11 21 | 699 | 0.1+ | 0.4− | 2006 08 29 | 703 | (0.8− | 1.8−) | | |
| 2001 03 14 | 699 | 0.0 | 0.6+ | 2003 11 22 | 644 | 0.7− | 0.1− | 2006 08 29 | 703 | 0.8− | 0.0 | | |
| 2001 03 14 | 699 | 0.1− | 0.5+ | 2003 11 22 | 644 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.7+ | 0.3− | | |
| 2001 03 19 | 608 | 0.1− | 1.2− | 2003 11 22 | 644 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.2+ | | |
| 2001 03 19 | 608 | 0.3− | 1.1− | 2003 11 29 | 691 | 0.2− | 0.0 | | | | | | |

**(138949)∗ 2001 BS$_{58}$ = 1998 HG$_{43}$ = 2003 UT$_{179}$**

Discovered 2001 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 9641), A. Doppler (*MPO* 84668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.49052 | | (2000.0) | | | |
| $n$ | 0.27757986 | $\omega$ | 335.25416 | | −0.42473874 | −0.90401250 |
| $a$ | 2.3274342 | $\Omega$ | 139.83147 | | +0.84264365 | −0.41437768 |
| $e$ | 0.1211064 | $i$ | 4.31774 | | +0.33098140 | −0.10513101 |
| $P$ | 3.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 691 | 0.1+ | 0.6+ | 2001 02 19 | 704 | 0.3+ | 0.4+ | 2003 09 28 | 704 | 1.5− | 0.7+ | | |
| 1998 04 22 | 691 | 0.4+ | 0.4+ | 2001 02 19 | 704 | 0.4+ | 1.3+ | 2003 09 28 | 704 | 1.2− | 1.7+ | | |
| 1998 04 22 | 691 | 0.4+ | 0.2+ | 2001 02 19 | 691 | 0.6+ | 0.3+ | 2003 10 21 | 704 | 1.9− | 0.2− | | |
| 1998 04 30 | 691 | 0.3+ | 0.4+ | 2001 02 19 | 691 | 0.0 | 0.4+ | 2003 10 21 | 704 | 0.1+ | 0.3− | | |
| 1998 04 30 | 691 | 0.1− | 0.3+ | 2001 02 19 | 691 | 0.7+ | 0.0 | 2003 10 21 | 704 | 0.7− | 0.0 | | |
| 1998 05 02 | 691 | 0.4− | 0.2− | 2001 02 20 | 704 | 0.2+ | 0.1+ | 2003 10 21 | 704 | 0.1+ | 0.4+ | | |
| 1998 05 02 | 691 | 0.1− | 0.0 | 2001 02 20 | 704 | 0.0 | 0.1+ | 2003 10 21 | 704 | 0.6− | 0.3+ | | |
| 1998 05 02 | 691 | 0.3− | 0.2+ | 2001 02 20 | 704 | 0.4− | 0.1+ | 2003 10 21 | 644 | 0.0 | 0.4+ | | |
| 2001 01 21 | 704 | 0.3+ | 0.6− | 2001 02 20 | 704 | 0.1+ | 0.3+ | 2003 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2001 01 21 | 704 | 0.6+ | 0.3− | 2001 02 20 | 704 | 0.4− | 0.6+ | 2003 10 21 | 644 | 0.3+ | 0.1− | | |
| 2001 01 21 | 704 | 0.1− | 0.5+ | 2001 02 22 | 691 | 0.1− | 0.4− | 2003 10 23 | 699 | 1.3− | 0.8+ | | |
| 2001 01 21 | 704 | 1.1+ | 0.1− | 2001 02 22 | 691 | 0.0 | 0.0 | 2003 10 23 | 699 | 0.7− | 0.0 | | |
| 2001 01 21 | 704 | 0.2+ | 0.3− | 2001 02 22 | 691 | 0.2− | 0.1+ | 2003 10 23 | 699 | 0.2+ | 1.0+ | | |
| 2001 01 21 | 704 | 0.9+ | 0.2+ | 2001 02 22 | 704 | 0.5+ | 0.4+ | 2003 10 23 | 699 | 0.4+ | 0.9− | | |
| 2001 01 21 | 704 | 0.3+ | 0.2+ | 2001 02 22 | 699 | 0.4− | 0.0 | 2003 10 29 | 704 | 0.4− | 0.6+ | | |
| 2001 01 21 | 704 | 1.1+ | 0.7+ | 2001 02 22 | 699 | 1.1− | 0.4+ | 2003 10 29 | 704 | 0.0 | 0.2+ | | |
| 2001 01 21 | 704 | 0.9− | 0.2− | 2001 02 22 | 704 | 1.0+ | 0.2+ | 2003 10 29 | 704 | 0.9+ | 0.2+ | | |
| 2001 01 21 | 704 | 1.5+ | 1.5+ | 2001 02 22 | 699 | 0.0 | 0.1+ | 2003 10 29 | 704 | 0.1− | 0.6+ | | |
| 2001 01 29 | 704 | 0.5+ | 0.4− | 2001 02 22 | 704 | 0.1+ | 0.6+ | 2003 11 21 | 699 | 0.6+ | 1.1+ | | |
| 2001 01 29 | 704 | 0.1− | 0.3+ | 2001 02 22 | 699 | 0.3− | 0.3+ | 2003 11 21 | 699 | 0.5− | 0.6+ | | |
| 2001 01 29 | 704 | 1.4+ | 0.9+ | 2001 02 22 | 704 | 0.6− | 0.7− | 2003 11 21 | 699 | 0.4+ | 0.2+ | | |
| 2001 01 29 | 704 | 0.5+ | 0.3+ | 2001 02 22 | 704 | 0.1− | 1.1− | 2003 11 21 | 699 | 0.3+ | 0.1+ | | |
| 2001 01 29 | 704 | 0.0 | 0.3+ | 2001 02 23 | 691 | 0.2− | 0.0 | 2005 04 02 | 699 | 0.5− | 1.9+ | | |
| 2001 01 29 | 376 | 0.8− | 0.5+ | 2001 02 23 | 691 | 0.4− | 0.1− | 2005 04 02 | 699 | 1.1+ | 0.7+ | | |
| 2001 01 29 | 376 | 0.0 | 0.0 | 2001 02 23 | 691 | 0.1− | 0.1− | 2005 04 02 | 699 | 1.6− | 1.1+ | | |
| 2001 02 02 | 704 | 0.2− | 0.6+ | 2001 02 27 | 691 | 0.1+ | 0.1− | 2005 04 02 | 699 | 0.5+ | 0.9+ | | |
| 2001 02 02 | 704 | 0.2− | 0.2+ | 2001 02 27 | 691 | 0.0 | 0.1− | 2006 08 19 | 699 | 0.2− | 2.0+ | | |
| 2001 02 02 | 704 | 0.1− | 0.4− | 2001 02 27 | 691 | 0.1− | 0.1− | 2006 08 19 | 699 | 1.1+ | 0.1+ | | |
| 2001 02 02 | 704 | 0.0 | 0.1− | 2001 03 02 | 691 | 0.0 | 0.1+ | 2006 08 19 | 699 | 1.1+ | 0.4+ | | |
| 2001 02 02 | 704 | 0.2− | 0.1+ | 2001 03 02 | 691 | 0.3− | 0.1− | 2006 08 19 | 699 | 1.3+ | 1.3+ | | |
| 2001 02 17 | 691 | 0.0 | 0.1+ | 2001 03 02 | 691 | 0.3− | 1.3− | 2006 09 13 | 644 | 0.1− | 0.4+ | | |
| 2001 02 17 | 691 | 0.1− | 0.1+ | 2003 09 28 | 704 | (0.1+ | 2.7+) | 2006 09 13 | 644 | 0.9− | 0.4+ | | |
| 2001 02 17 | 691 | 0.0 | 0.3+ | 2003 09 28 | 704 | (0.5− | 2.7+) | 2006 09 13 | 644 | 0.3− | 0.5+ | | |
| 2001 02 19 | 704 | 0.6− | 0.4+ | 2003 09 28 | 704 | 0.6− | 0.6+ | | | | | | |

**(138950)∗ 2001 BR$_{61}$**

Discovered 2001 Jan. 31 by W. K. Y. Yeung at Desert Beaver Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 151.90746 | | (2000.0) | | | |
| $n$ | 0.27592706 | $\omega$ | 267.70360 | | −0.78725671 | +0.61317103 |
| $a$ | 2.3367192 | $\Omega$ | 310.10746 | | −0.52645225 | −0.72340010 |
| $e$ | 0.1950523 | $i$ | 4.88856 | | −0.32105280 | −0.31735403 |
| $P$ | 3.57 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.3− | 0.2+ | 2001 02 22 | 704 | 0.0 | 0.2− | 2003 11 24 | 704 | 0.4+ | 0.7+ | | |
| 2001 01 21 | 704 | 0.5+ | 0.1− | 2001 02 22 | 704 | 0.8+ | 0.1− | 2003 12 04 | 704 | 0.1+ | 0.5− | | |
| 2001 01 21 | 704 | 0.3+ | 0.5+ | 2001 02 22 | 704 | 0.3+ | 0.1− | 2003 12 04 | 704 | 0.9− | 0.5− | | |
| 2001 01 21 | 704 | 0.2+ | 0.4+ | 2001 02 22 | 704 | 0.6+ | 1.1+ | 2003 12 04 | 704 | (1.6− | 0.8+) | | |
| 2001 01 21 | 704 | 0.4+ | 0.2+ | 2001 02 22 | 106 | 0.6− | 0.0 | 2003 12 18 | 704 | 0.7+ | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 31 | 919 | 0.8− | 0.1− | 2001 03 18 | 704 | 0.6+ | 0.6+ | 2003 12 18 | 704 | 0.7− | 0.3− | | |
| 2001 01 31 | 919 | (2.2− | 0.5−) | 2001 03 18 | 704 | 0.5+ | 0.9+ | 2003 12 18 | 704 | 0.1+ | 0.3− | | |
| 2001 01 31 | 704 | (1.9+ | 0.4+) | 2001 03 18 | 704 | 1.0− | 0.7+ | 2003 12 18 | 704 | 0.4+ | 1.0+ | | |
| 2001 01 31 | 704 | 0.3− | 0.6+ | 2001 03 18 | 704 | 0.2− | 1.0− | 2003 12 23 | 704 | 0.3+ | 0.2+ | | |
| 2001 01 31 | 704 | 0.4+ | 0.5+ | 2001 03 23 | 699 | 0.5− | 1.1+ | 2003 12 23 | 704 | 0.0 | 0.2− | | |
| 2001 01 31 | 704 | 0.3+ | 0.7+ | 2001 03 23 | 699 | 0.2+ | 0.5+ | 2003 12 23 | 704 | 0.3+ | 0.2+ | | |
| 2001 01 31 | 704 | 0.2− | 0.2+ | 2001 03 23 | 699 | 0.4+ | 0.0 | 2003 12 23 | 704 | 0.3− | 0.6− | | |
| 2001 02 01 | 919 | (2.1− | 1.8−) | 2001 03 23 | 699 | 0.1+ | 0.3+ | 2003 12 23 | 704 | 0.7+ | 0.6+ | | |
| 2001 02 01 | 919 | (3.1− | 1.4−) | 2001 04 22 | 704 | 0.3− | 0.0 | 2003 12 25 | 691 | 0.4− | 0.6− | | |
| 2001 02 01 | 106 | 0.1+ | 1.2+ | 2001 04 22 | 704 | 0.7+ | 1.2+ | 2003 12 25 | 691 | 0.1− | 0.5− | | |
| 2001 02 01 | 106 | 0.2− | 0.6+ | 2001 04 22 | 704 | 0.0 | 1.3+ | 2003 12 25 | 691 | 0.1− | 0.6− | | |
| 2001 02 02 | 106 | 0.3− | 0.8+ | 2001 04 22 | 704 | 0.3+ | 0.7− | 2005 05 18 | E12 | 0.2+ | 1.0+ | | |
| 2001 02 03 | 919 | (0.4+ | 2.4−) | 2002 08 12 | 704 | 1.1− | 0.3+ | 2005 05 18 | E12 | 0.1+ | 0.4+ | | |
| 2001 02 03 | 919 | (0.4− | 4.3−) | 2002 08 12 | 704 | 1.0− | 0.7+ | 2005 05 18 | E12 | 0.1− | 0.7+ | | |
| 2001 02 16 | 919 | (1.3− | 1.6−) | 2002 08 12 | 704 | 0.9− | 0.8+ | 2005 05 18 | E12 | 0.2+ | 0.6+ | | |
| 2001 02 16 | 919 | 0.1+ | 0.2− | 2002 08 12 | 704 | 0.8− | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.4+ | | |
| 2001 02 16 | 106 | 0.3+ | 0.5+ | 2002 08 12 | 704 | 0.4− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | | |
| 2001 02 16 | 106 | 0.3− | 0.1+ | 2002 08 29 | 843 | 1.2+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.3+ | | |
| 2001 02 16 | 106 | 0.1− | 0.2+ | 2002 08 29 | 843 | (0.2+ | 2.1+) | 2006 10 11 | 644 | 0.4− | 0.1+ | | |
| 2001 02 19 | 704 | 0.5+ | 0.0 | 2002 09 01 | 608 | 0.1+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2001 02 19 | 704 | 0.2+ | 0.0 | 2002 09 01 | 608 | (0.2− | 1.6+) | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2001 02 19 | 704 | 0.1− | 0.3+ | 2002 09 01 | 608 | 0.2− | 1.1+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | | |
| 2001 02 19 | 704 | 0.2− | 0.2− | 2002 09 06 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.5− | 1.5+ | | |
| 2001 02 19 | 704 | 0.5+ | 0.1− | 2002 09 06 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 691 | 0.3− | 0.0 | | |
| 2001 02 20 | 704 | 0.1+ | 0.0 | 2002 09 06 | 704 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.4+ | 1.2− | | |
| 2001 02 20 | 704 | 0.3+ | 0.1+ | 2002 09 06 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.8− | 0.2+ | | |
| 2001 02 20 | 704 | 0.5+ | 0.2+ | 2002 09 06 | 704 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.6− | | |
| 2001 02 20 | 704 | 1.0+ | 0.2+ | 2003 11 24 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.4+ | 0.5+ | | |
| 2001 02 20 | 704 | 0.4+ | 0.3+ | 2003 11 24 | 704 | 0.6+ | 0.7− | | | | | | |
| 2001 02 22 | 704 | 0.3+ | 0.2+ | 2003 11 24 | 704 | 0.7+ | 0.5+ | | | | | | |

**(138951)∗ 2001 BV$_{62}$**

Discovered 2001 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.94666 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30698001 | $\omega$ | 297.56616 | | −0.26986602 | −0.96283450 | |
| $a$ | 2.1763529 | $\Omega$ | 168.07454 | | +0.90122411 | −0.25660482 | |
| $e$ | 0.0725149 | $i$ | 3.06488 | | +0.33906848 | −0.08428345 | |
| $P$ | 3.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | (1.0− | 2.2−) | 2001 02 20 | 704 | 0.5− | 0.1− | 2004 01 31 | 691 | 0.3− | 0.1− | | |
| 1998 03 20 | 704 | 0.8− | 0.3+ | 2001 02 22 | 704 | 0.5+ | 0.8+ | 2006 10 22 | G96 | (3.3+ | 1.9+) | | |
| 1998 03 20 | 704 | (1.9− | 2.3−) | 2001 02 22 | 704 | 0.5− | 0.6− | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 1998 03 20 | 704 | 0.6− | 0.6+ | 2001 02 22 | 704 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 1999 08 17 | 691 | 0.0 | 0.1+ | 2001 02 22 | 704 | 0.6+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.4− | | |
| 1999 08 17 | 691 | 0.1− | 0.5+ | 2001 02 22 | 704 | 0.5+ | 0.8+ | 2006 11 02 | 703 | (1.5+ | 1.0+) | | |
| 1999 08 17 | 691 | 0.2− | 0.2+ | 2001 02 22 | 704 | 1.0+ | 1.4− | 2006 11 02 | 703 | 0.9+ | 0.2+ | | |
| 2001 01 29 | 704 | 0.1+ | 0.3+ | 2001 02 22 | 704 | 0.3− | 0.8+ | 2006 11 02 | 703 | (0.1− | 1.8+) | | |
| 2001 01 29 | 704 | 0.5+ | 0.3+ | 2001 02 22 | 704 | 0.8+ | 0.0 | 2006 11 02 | 703 | 0.3+ | 0.8+ | | |
| 2001 01 29 | 704 | (0.2− | 1.6+) | 2001 02 22 | 704 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6− | 0.1− | | |
| 2001 01 29 | 704 | 0.0 | 0.4+ | 2001 02 22 | 704 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.3− | 0.3+ | | |
| 2001 01 31 | 704 | 0.3− | 0.1+ | 2002 08 06 | 644 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.6− | 0.7− | | |
| 2001 01 31 | 704 | 0.6+ | 1.0+ | 2002 08 06 | 644 | 0.3− | 0.4+ | 2006 11 17 | 704 | (2.2− | 0.7+) | | |
| 2001 01 31 | 704 | 0.1+ | 0.8+ | 2002 08 06 | 644 | 0.0 | 0.9+ | 2006 11 18 | 704 | 0.3+ | 0.2+ | | |
| 2001 01 31 | 704 | 0.4− | 0.4+ | 2002 08 07 | 644 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.2+ | | |
| 2001 02 16 | 699 | 0.5− | 0.3+ | 2002 08 07 | 644 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.4− | 0.2+ | | |
| 2001 02 16 | 699 | 0.3− | 0.2+ | 2002 08 07 | 644 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.5+ | | |
| 2001 02 16 | 699 | 0.1− | 0.1− | 2002 08 13 | 644 | 0.5− | 1.2+ | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2001 02 16 | 699 | 0.5− | 0.1+ | 2002 08 13 | 644 | 0.0 | 1.3+ | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 2001 02 16 | 106 | 0.2− | 0.3+ | 2002 08 13 | 644 | (0.6− | 1.6+) | 2006 11 18 | G96 | 0.3− | 0.3− | | |
| 2001 02 17 | 106 | 0.7+ | 0.2+ | 2003 12 19 | 704 | 0.5+ | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2001 02 17 | 106 | 0.2− | 0.5+ | 2003 12 19 | 704 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.5− | | |
| 2001 02 19 | 704 | 0.5+ | 0.1+ | 2003 12 19 | 704 | 0.5+ | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.5− | | |
| 2001 02 19 | 704 | 0.2+ | 1.0+ | 2003 12 19 | 704 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.3+ | | |
| 2001 02 19 | 704 | 0.6+ | 0.5+ | 2003 12 19 | 704 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.3− | 0.7− | | |
| 2001 02 19 | 704 | 0.4− | 0.0 | 2003 12 23 | 704 | 0.7− | 0.6+ | 2006 11 20 | 704 | 0.6+ | 0.9+ | | |
| 2001 02 19 | 704 | 0.2− | 0.1− | 2003 12 23 | 704 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.7+ | | |
| 2001 02 20 | 704 | 1.1+ | 1.5+ | 2003 12 23 | 704 | 0.3− | 0.2+ | 2006 11 29 | 704 | 1.0− | 1.7+ | | |
| 2001 02 20 | 704 | 0.1+ | 0.3+ | 2003 12 23 | 704 | 0.1− | 0.5+ | 2006 11 29 | 704 | 0.2− | 0.4+ | | |
| 2001 02 20 | 704 | 0.3+ | 0.3− | 2004 01 31 | 691 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.3+ | | |
| 2001 02 20 | 704 | 0.0 | 0.4+ | 2004 01 31 | 691 | 0.6+ | 0.4− | 2006 11 29 | 704 | 0.0 | 0.1− | | |

**(138952)∗ 2001 BP$_{63}$ = 2002 NP$_5$**

Discovered 2001 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33362)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.78660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29046395 | $\omega$ | 220.59850 | | −0.82601694 | −0.55652007 | |
| $a$ | 2.2580899 | $\Omega$ | 285.36857 | | +0.53815065 | −0.73155447 | |
| $e$ | 0.1000665 | $i$ | 5.31619 | | +0.16760039 | −0.39384447 | |
| $P$ | 3.39 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 29 | 704 | 0.5+ | 0.2+ | 2003 11 20 | 704 | 0.4− | 1.4+ | 2003 12 22 | 704 | 0.2− | 0.1− | | |
| 2001 01 29 | 704 | 0.6− | 0.3− | 2003 11 20 | 704 | (1.0− | 1.9+) | 2003 12 22 | 704 | 0.4− | 0.2+ | | |
| 2001 01 29 | 704 | 0.2− | 0.4+ | 2003 11 20 | 704 | (2.5− | 2.8+) | 2003 12 22 | 704 | 0.1+ | 0.4− | | |
| 2001 01 31 | 704 | 0.5+ | 0.4− | 2003 11 20 | 704 | 0.4+ | 1.0+ | 2003 12 27 | 691 | 0.0 | 0.4− | | |
| 2001 01 31 | 704 | 0.3+ | 0.3+ | 2003 11 20 | 704 | (1.5− | 2.2+) | 2003 12 27 | 691 | 0.0 | 0.7− | | |
| 2001 01 31 | 704 | 0.4+ | 0.3+ | 2003 11 21 | 704 | 1.0− | 1.3+ | 2003 12 27 | 691 | 0.1− | 0.4− | | |
| 2001 01 31 | 704 | 1.3+ | 1.1+ | 2003 11 21 | 704 | 1.3− | 1.1+ | 2003 12 27 | 704 | 0.2− | 0.4− | | |
| 2001 02 19 | 704 | 0.1+ | 0.6+ | 2003 11 21 | 704 | (0.5− | 1.7+) | 2003 12 27 | 704 | 0.4− | 0.1− | | |
| 2001 02 19 | 704 | 0.1− | 0.1− | 2003 11 21 | 704 | 0.1− | 1.0+ | 2003 12 27 | 704 | 0.3+ | 0.2− | | |
| 2001 02 19 | 704 | 0.2+ | 0.4+ | 2003 11 21 | 704 | 0.1− | 0.2+ | 2003 12 27 | 704 | 0.7+ | 0.1− | | |
| 2001 02 19 | 704 | 0.0 | 0.0 | 2003 11 24 | 704 | 0.2− | 0.7+ | 2004 01 17 | 644 | 0.0 | 0.5+ | | |
| 2001 03 02 | 699 | 0.8− | 0.6− | 2003 11 24 | 704 | 0.1− | 0.7+ | 2004 01 17 | 644 | 0.1+ | 0.1+ | | |
| 2001 03 02 | 699 | 0.5+ | 0.5+ | 2003 11 24 | 704 | 0.0 | 1.0+ | 2004 01 17 | 644 | 0.3+ | 0.4+ | | |
| 2001 03 02 | 699 | 0.4− | 0.4+ | 2003 11 24 | 704 | 0.6+ | 0.1− | 2004 01 22 | 704 | 0.2− | 0.5+ | | |
| 2001 03 02 | 699 | 0.5− | 0.3− | 2003 12 04 | 704 | 0.5+ | 0.5− | 2004 01 22 | 704 | (0.4+ | 1.7+) | | |
| 2002 07 08 | 644 | 0.0 | 0.3+ | 2003 12 04 | 704 | 0.4+ | 0.6− | 2004 01 22 | 704 | 0.3− | 1.1+ | | |
| 2002 07 08 | 644 | 0.2− | 0.3+ | 2003 12 04 | 704 | 1.4+ | 0.5− | 2004 01 22 | 704 | 0.5− | 0.0 | | |
| 2002 07 08 | 644 | 0.1+ | 0.2+ | 2003 12 04 | 704 | 1.2+ | 0.3− | 2005 02 15 | 809 | 1.0− | 0.1+ | | |
| 2002 07 10 | 599 | 0.5+ | 0.0 | 2003 12 04 | 704 | 1.1+ | 1.2− | 2005 02 15 | 809 | 0.2+ | 0.1+ | | |
| 2002 07 10 | 599 | 0.0 | 0.2+ | 2003 12 15 | 703 | 0.9− | 0.4− | 2005 02 15 | 809 | 0.5+ | 0.1+ | | |
| 2002 07 11 | 599 | 0.1− | 0.6− | 2003 12 15 | 703 | (2.8− | 1.9−) | 2006 10 12 | 644 | 0.1+ | 0.6+ | | |
| 2002 07 11 | 599 | 0.1− | 0.3+ | 2003 12 15 | 703 | (2.0+ | 2.0−) | 2006 10 12 | 644 | 0.5− | 0.2+ | | |
| 2002 07 11 | 599 | 0.2− | 0.3+ | 2003 12 15 | 703 | 0.7− | 1.2− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 07 11 | 599 | 0.1− | 0.0 | 2003 12 17 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.4+ | | |
| 2002 07 12 | 599 | 0.4+ | 0.1− | 2003 12 17 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 08 01 | 599 | 0.5− | 1.1+ | 2003 12 17 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 08 01 | 599 | 0.3− | 0.6+ | 2003 12 22 | 704 | 0.4− | 0.2− | | | | | | |
| 2002 08 01 | 599 | 0.1+ | 1.5− | 2003 12 22 | 704 | 0.3− | 0.5− | | | | | | |

**(138953)∗ 2001 BW$_{68}$ = 1994 CE$_{12}$**

Discovered 2001 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 10728)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.31618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28216289 | $\omega$ | 134.63952 | | −0.88291728 | −0.46899957 | |
| $a$ | 2.3021633 | $\Omega$ | 17.42893 | | +0.40698244 | −0.78810622 | |
| $e$ | 0.1795271 | $i$ | 4.26625 | | +0.23414178 | −0.39865773 | |
| $P$ | 3.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 07 | 809 | 1.7+ | 0.3− | 2001 03 19 | 704 | 0.0 | 0.4+ | 2003 11 21 | 644 | 0.0 | 0.1− | | |
| 1994 02 07 | 809 | 0.7+ | 1.2+ | 2001 03 19 | 704 | 0.2− | 0.6− | 2003 11 21 | 644 | 0.0 | 0.0 | | |
| 1994 02 07 | 809 | 0.7− | 1.1+ | 2001 03 19 | 704 | 0.3+ | 0.4− | 2003 11 24 | 699 | 0.6− | 0.1+ | | |
| 1994 02 09 | 809 | (0.2+ | 2.3+) | 2001 03 20 | 608 | 0.4+ | 0.5− | 2003 11 24 | 699 | 0.3− | 0.6− | | |
| 1994 02 09 | 809 | 0.4+ | 1.7+ | 2001 03 20 | 608 | 0.1+ | 0.1− | 2003 11 24 | 699 | 0.2+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 09 | 809 | 0.1− | 1.7+ | 2001 03 20 | 608 | 0.3+ | 0.1+ | 2003 11 24 | 704 | 0.5+ | 0.3− |
| 1994 02 12 | 809 | 0.3+ | 0.0 | 2001 03 20 | 049 | 1.2+ | 0.3+ | 2003 11 24 | 699 | 0.3+ | 0.0 |
| 1994 02 12 | 809 | 0.6+ | 0.1− | 2001 03 20 | 049 | 1.4+ | 0.4+ | 2003 11 24 | 704 | 0.2− | 0.3− |
| 1994 02 12 | 809 | 0.1− | 0.0 | 2001 03 20 | 049 | 1.3+ | 0.2+ | 2003 11 24 | 704 | 0.0 | 0.3− |
| 2001 01 31 | 704 | 0.0 | 0.6− | 2001 03 21 | 049 | 0.8+ | 0.5+ | 2003 11 24 | 704 | 0.3+ | 0.1− |
| 2001 01 31 | 704 | 0.0 | 0.0 | 2001 03 21 | 049 | 0.3+ | 0.2+ | 2003 11 24 | 704 | 0.2+ | 1.1− |
| 2001 01 31 | 704 | 0.3+ | 0.1+ | 2001 03 21 | 049 | 0.4+ | 0.2+ | 2003 12 01 | 691 | 0.4− | 0.1− |
| 2001 01 31 | 704 | 0.6− | 1.1+ | 2001 03 26 | 704 | 0.5− | 0.6+ | 2003 12 01 | 691 | 0.3− | 0.2− |
| 2001 02 01 | 704 | 0.0 | 0.1− | 2001 03 26 | 704 | 0.2− | 0.2+ | 2003 12 01 | 691 | 0.2− | 0.2− |
| 2001 02 01 | 704 | 0.1− | 0.0 | 2001 03 26 | 704 | 0.8− | 1.0+ | 2003 12 01 | 691 | 0.1− | 0.0 |
| 2001 02 01 | 704 | 0.1− | 0.6− | 2001 03 26 | 704 | 0.6− | 0.4+ | 2003 12 01 | 691 | 0.2− | 0.2− |
| 2001 02 01 | 704 | 0.1+ | 0.5− | 2001 03 26 | 704 | 0.7− | 0.8+ | 2003 12 01 | 691 | 0.0 | 0.2− |
| 2001 02 01 | 704 | 0.5− | 0.0 | 2001 03 31 | 704 | 0.3+ | 0.3+ | 2003 12 17 | 644 | 0.2− | 0.5+ |
| 2001 02 17 | 704 | 0.1− | 0.0 | 2001 03 31 | 704 | 0.1− | 0.4− | 2003 12 17 | 644 | 0.2+ | 0.0 |
| 2001 02 17 | 704 | 0.2− | 0.2+ | 2001 03 31 | 704 | 0.2− | 0.3+ | 2003 12 17 | 644 | 0.2− | 1.3+ |
| 2001 02 17 | 704 | 0.6− | 0.4+ | 2001 03 31 | 704 | 0.9− | 1.3+ | 2003 12 18 | 704 | 0.9+ | 0.3+ |
| 2001 02 17 | 704 | 0.1− | 0.1− | 2001 03 31 | 704 | 0.5− | 0.3− | 2003 12 18 | 704 | 0.3+ | 1.4+ |
| 2001 02 17 | 704 | 0.8− | 0.2+ | 2001 04 16 | 699 | 0.3− | 0.3+ | 2003 12 18 | 704 | 0.6+ | 1.2+ |
| 2001 02 20 | 704 | 1.0− | 0.2− | 2001 04 16 | 699 | (2.1− | 0.4−) | 2003 12 18 | 704 | 0.0 | 0.1− |
| 2001 02 20 | 704 | 0.7+ | 0.4+ | 2001 04 16 | 699 | 0.5− | 0.6+ | 2003 12 18 | 704 | 0.9+ | 0.3+ |
| 2001 02 20 | 704 | 0.7− | 0.1− | 2001 04 16 | 699 | 0.1− | 0.8− | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 2001 02 20 | 704 | 0.2+ | 0.1+ | 2002 08 13 | 644 | 0.4+ | 0.3− | 2006 09 15 | 691 | 0.3− | 0.4+ |
| 2001 02 20 | 704 | 0.4+ | 0.4+ | 2002 08 13 | 644 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.5+ |
| 2001 03 03 | 704 | (2.1− | 1.4+) | 2002 08 13 | 644 | 0.7− | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 2001 03 03 | 704 | (1.7− | 1.0+) | 2003 10 23 | 691 | 0.5+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.6+ |
| 2001 03 03 | 704 | (1.8+ | 2.6+) | 2003 10 23 | 691 | 0.4+ | 0.5− | 2006 09 30 | 691 | 0.1− | 1.1+ |
| 2001 03 03 | 704 | 0.0 | 0.6+ | 2003 10 23 | 691 | 0.5+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2001 03 17 | 049 | 1.4+ | 0.3− | 2003 10 24 | 704 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.7− | 0.1− |
| 2001 03 17 | 049 | (1.8+ | 0.5−) | 2003 10 24 | 704 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.5− | 0.3+ |
| 2001 03 18 | 049 | (1.9+ | 0.7−) | 2003 10 24 | 704 | 1.2+ | 0.8+ | 2006 09 30 | G96 | 0.7− | 0.1− |
| 2001 03 19 | 049 | (1.9+ | 2.1−) | 2003 11 19 | 699 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2001 03 19 | 049 | 1.0+ | 0.6− | 2003 11 19 | 699 | 0.5+ | 0.1− | 2006 10 20 | G96 | 0.5− | 0.3− |
| 2001 03 19 | 049 | 1.4+ | 0.9− | 2003 11 19 | 699 | 0.8− | 0.4+ | 2006 10 20 | G96 | 1.0− | 0.2− |
| 2001 03 19 | 704 | 0.3+ | 0.4− | 2003 11 19 | 699 | 0.5− | 0.5− | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2001 03 19 | 704 | 0.1+ | 0.6− | 2003 11 20 | 704 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2001 03 19 | 704 | 0.2− | 0.1+ | 2003 11 20 | 704 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2001 03 19 | 704 | 1.1− | 0.9+ | 2003 11 20 | 704 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2001 03 19 | 704 | 0.0 | 0.2+ | 2003 11 20 | 704 | 0.7− | 0.0 | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2001 03 19 | 704 | 0.3+ | 0.6− | 2003 11 20 | 704 | 0.1− | 0.1− | | | | |
| 2001 03 19 | 704 | 0.4− | 0.6− | 2003 11 21 | 644 | 0.1+ | 0.0 | | | | |

**(138954)∗ 2001 BD$_{73}$ = 1993 TZ$_4$**

Discovered 2001 Jan. 28 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 17542)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.27854 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.29530381 | $\omega$ | 216.79064 | | −0.27479815 | −0.95673498 |
| $a$ | 2.2333494 | $\Omega$ | 249.33427 | | +0.90471851 | −0.22361585 |
| $e$ | 0.1438698 | $i$ | 5.86594 | | +0.32553094 | −0.18615620 |
| $P$ | 3.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 08 | 691 | 0.0 | 0.4+ | 2003 10 22 | 704 | 0.2− | 0.1− | 2003 11 26 | 699 | 0.3− | 0.3− |
| 1993 10 08 | 691 | 0.6+ | 0.4− | 2003 10 23 | 699 | 0.2− | 0.2+ | 2003 11 26 | 704 | 0.1− | 0.2+ |
| 1993 10 08 | 691 | 0.2+ | 0.6− | 2003 10 23 | 699 | 0.1+ | 0.2+ | 2003 11 26 | 704 | 0.0 | 0.9− |
| 1993 10 21 | 691 | 0.2− | 0.4+ | 2003 10 23 | 699 | 0.0 | 1.3+ | 2003 11 26 | 699 | 0.1+ | 0.3− |
| 1993 10 21 | 691 | 0.3+ | 0.3− | 2003 10 23 | 699 | 0.1− | 0.5− | 2003 11 26 | 704 | 0.3+ | 0.1+ |
| 1993 10 21 | 691 | 0.3+ | 0.2+ | 2003 10 25 | 704 | 0.5+ | 0.1− | 2003 11 26 | 699 | 0.5− | 0.5+ |
| 1993 11 21 | 691 | 0.4− | 1.0− | 2003 10 25 | 704 | 0.5+ | 0.1− | 2003 12 01 | 704 | 0.1− | 1.1+ |
| 1993 11 21 | 691 | 0.2− | 0.4− | 2003 10 25 | 704 | 0.6+ | 0.1+ | 2003 12 01 | 704 | 0.7+ | 0.8+ |
| 1993 11 21 | 691 | 0.1+ | 0.8− | 2003 10 25 | 704 | 0.0 | 0.7+ | 2003 12 01 | 704 | 0.2+ | 0.9+ |
| 2000 11 27 | 704 | 0.4− | 0.4+ | 2003 10 25 | 704 | 0.6+ | 0.0 | 2003 12 01 | 704 | 0.5+ | 0.7+ |
| 2000 11 27 | 704 | 0.1− | 0.7− | 2003 10 30 | 704 | 1.4− | 0.8+ | 2003 12 01 | 704 | 0.9+ | 0.7+ |
| 2000 11 27 | 704 | 0.7− | 1.2+ | 2003 10 30 | 704 | 0.4+ | 0.8+ | 2003 12 10 | 644 | 0.1− | 0.2− |
| 2000 11 27 | 704 | 0.1− | 0.8+ | 2003 10 30 | 704 | 0.7+ | 0.3+ | 2003 12 10 | 644 | 0.2− | 0.1− |
| 2001 01 04 | 704 | 0.1− | 0.0 | 2003 10 30 | 704 | (2.7+ | 1.6+) | 2003 12 10 | 644 | 0.1− | 0.4− |
| 2001 01 04 | 704 | 0.3+ | 0.3+ | 2003 10 30 | 704 | 0.4+ | 0.4+ | 2003 12 22 | 704 | 1.6− | 0.1− |
| 2001 01 04 | 704 | 0.0 | 0.3− | 2003 11 02 | 704 | 0.1+ | 0.4+ | 2003 12 22 | 704 | 0.5+ | 0.7+ |
| 2001 01 04 | 704 | 0.0 | 0.1− | 2003 11 02 | 704 | 0.3+ | 0.3+ | 2003 12 22 | 704 | 0.0 | 1.9+ |
| 2001 01 04 | 704 | 0.0 | 0.2+ | 2003 11 02 | 704 | 0.2− | 0.1+ | 2003 12 22 | 704 | 0.5+ | 1.9+ |
| 2001 01 19 | 704 | 0.8− | 0.1− | 2003 11 02 | 704 | 0.4− | 0.3+ | 2003 12 22 | 704 | 0.2+ | 1.3+ |
| 2001 01 19 | 704 | 0.6− | 0.1− | 2003 11 19 | 691 | 0.1+ | 0.2− | 2005 05 12 | G96 | 0.1+ | 0.6+ |
| 2001 01 19 | 704 | 0.0 | 0.1− | 2003 11 19 | 691 | 0.0 | 0.1− | 2005 05 12 | G96 | 0.1+ | 0.7+ |
| 2001 01 19 | 704 | 0.3− | 0.3− | 2003 11 19 | 691 | 0.0 | 0.1− | 2005 05 12 | G96 | 0.1+ | 0.6+ |
| 2001 01 19 | 704 | 1.3− | 0.6− | 2003 11 19 | 644 | 0.2+ | 0.0 | 2005 05 12 | G96 | 0.3+ | 0.2+ |
| 2001 01 28 | 608 | 0.5+ | 0.2+ | 2003 11 19 | 644 | 0.1+ | 0.0 | 2005 05 16 | 644 | 0.3+ | 0.0 |
| 2001 01 28 | 608 | 0.8+ | 0.2+ | 2003 11 19 | 644 | 0.1+ | 0.2− | 2005 05 16 | 644 | 0.5+ | 0.0 |
| 2001 01 28 | 608 | 1.4+ | 0.4+ | 2003 11 20 | 704 | 0.1+ | 0.1− | 2005 05 16 | 644 | 0.4+ | 0.3+ |
| 2001 02 02 | 704 | 0.4− | 0.1− | 2003 11 20 | 704 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.6− | 1.5+ |
| 2001 02 02 | 704 | 0.3+ | 0.0 | 2003 11 20 | 704 | 0.3− | 0.0 | 2006 08 27 | 699 | 1.7− | 0.3+ |
| 2001 02 02 | 704 | 0.5− | 0.3− | 2003 11 20 | 704 | 0.4− | 0.3− | 2006 08 27 | 699 | 1.1+ | 0.4+ |
| 2001 02 02 | 704 | 0.4+ | 0.9− | 2003 11 20 | 704 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.4− |
| 2001 02 02 | 704 | 0.7− | 0.8− | 2003 11 24 | 704 | 0.4− | 0.6− | 2006 09 12 | 703 | 0.1− | 0.8− |
| 2003 10 17 | 699 | 0.1+ | 0.8− | 2003 11 24 | 704 | 0.1− | 0.4+ | 2006 09 12 | 703 | 1.2− | 1.3− |
| 2003 10 17 | 699 | 1.0+ | 0.4+ | 2003 11 24 | 704 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.0 | 1.7− |
| 2003 10 17 | 699 | 0.5− | 0.4− | 2003 11 24 | 704 | 0.6− | 0.3+ | 2006 09 12 | 703 | 0.1− | 1.1− |
| 2003 10 17 | 699 | 0.6− | 0.9+ | 2003 11 24 | 704 | 0.5− | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.2+ |
| 2003 10 22 | 704 | 0.4+ | 0.3+ | 2003 11 26 | 704 | 0.6− | 0.8+ | 2006 09 18 | 703 | 1.1− | 0.8+ |
| 2003 10 22 | 704 | 0.4+ | 0.1+ | 2003 11 26 | 699 | 0.7− | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.3− |
| 2003 10 22 | 704 | 0.1− | 0.1+ | 2003 11 26 | 704 | 0.7− | 0.7+ | 2006 09 18 | 703 | 1.3+ | 0.5− |

**(138955)∗ 2001 BX$_{73}$ = 1998 DA$_{12}$**

Discovered 2001 Jan. 29 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Id. A. Doppler (*MPO* 11836)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.78777 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.30495586 | $\omega$ | 304.00901 | | +0.19210159 | −0.98044103 |
| $a$ | 2.1859727 | $\Omega$ | 134.85293 | | +0.91913236 | +0.16445977 |
| $e$ | 0.1105032 | $i$ | 3.46175 | | +0.34393703 | +0.10811275 |
| $P$ | 3.23 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.3− | 0.0 | 2003 12 03 | 704 | 0.1+ | 1.4+ | 2006 09 29 | 699 | 0.7+ | 1.5+ |
| 1998 02 23 | 691 | 0.4− | 0.1− | 2003 12 03 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.2− | 1.2+ |
| 1998 02 26 | 691 | 0.2− | 0.8− | 2003 12 03 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.1+ | 1.2− |
| 1998 02 26 | 691 | 0.0 | 0.1− | 2003 12 19 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.6− | 0.6− |
| 1998 02 26 | 691 | 0.0 | 0.2− | 2003 12 19 | 704 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.4+ | 1.0− |
| 2001 01 21 | 704 | 0.4− | 0.4+ | 2003 12 19 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.8+ | 0.2+ |
| 2001 01 21 | 704 | (0.2− | 1.7−) | 2003 12 19 | 704 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.7− |
| 2001 01 21 | 704 | 0.1− | 0.4+ | 2003 12 19 | 704 | 0.9− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.7− |
| 2001 01 21 | 704 | 0.3+ | 0.1+ | 2003 12 22 | 704 | 0.1− | 1.1+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2001 01 29 | 049 | (2.7+ | 2.1−) | 2003 12 22 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.6− |
| 2001 01 29 | 049 | (2.3+ | 0.4−) | 2003 12 22 | 704 | 0.7+ | 0.1+ | 2006 11 13 | 703 | 0.8− | 0.6− |
| 2001 01 30 | 049 | (2.1+ | 1.6−) | 2003 12 22 | 704 | 0.0 | 0.8+ | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2001 02 02 | 704 | 0.5− | 0.9+ | 2003 12 22 | 704 | 0.3+ | 0.8+ | 2006 11 13 | 703 | (1.6+ | 1.0+) |
| 2001 02 02 | 704 | 0.3+ | 1.0+ | 2005 05 20 | G96 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.1+ | 1.3+ |
| 2001 02 02 | 704 | 0.2− | 0.0 | 2005 05 20 | G96 | 0.3− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 1.0+ |
| 2001 02 02 | 704 | 0.3+ | 1.0+ | 2005 05 20 | G96 | (0.1+ | 1.7+) | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 2001 02 02 | 704 | 0.3− | 0.3+ | 2005 05 20 | G96 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.1− | 1.3+ |
| 2001 02 19 | 704 | 0.9+ | 0.7+ | 2005 06 27 | 691 | 0.2+ | 0.7+ | 2006 11 14 | 704 | (0.0 | 1.8+) |
| 2001 02 19 | 704 | 0.7+ | 0.9+ | 2005 06 27 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 1.7− | 1.0+ |
| 2001 02 19 | 704 | 1.0+ | 0.6− | 2005 06 27 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 2001 02 22 | 704 | (2.5+ | 0.7+) | 2005 06 30 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.3− | 1.0+ |
| 2001 02 22 | 704 | 0.8+ | 0.1− | 2005 06 30 | 691 | 0.1+ | 0.6+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2001 02 22 | 704 | 0.2+ | 0.3+ | 2005 06 30 | 691 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.6− |
| 2001 02 22 | 704 | (1.2− | 1.6+) | 2006 09 29 | 699 | 0.6+ | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2003 12 03 | 704 | 0.9− | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.6− | 2006 11 22 | G96 | 0.0 | 0.2− |

**(138956)∗ 2001 BK$_{78}$ = 2003 UT$_{251}$**

Discovered 2001 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56196)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.25763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28603899 | $\omega$ | 191.31492 | | +0.69576782 | −0.71611397 | |
| $a$ | 2.2813184 | $\Omega$ | 214.63924 | | +0.66639169 | +0.67245065 | |
| $e$ | 0.1040544 | $i$ | 5.61036 | | +0.26800980 | +0.18705856 | |
| $P$ | 3.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 327 | 0.7+ | 0.4− | 2003 10 28 | 704 | 0.9+ | 0.1+ | 2003 12 01 | 704 | 0.5+ | 0.1+ | |
| 1996 11 07 | 327 | 0.5+ | 0.0 | 2003 10 28 | 704 | 0.7+ | 0.1− | 2005 03 14 | G96 | 0.3− | 0.0 | |
| 1996 11 07 | 327 | 0.6− | 0.7− | 2003 10 28 | 704 | 1.1+ | 0.6+ | 2005 03 14 | G96 | 0.8− | 1.2+ | |
| 2001 01 17 | 608 | 0.1− | 0.1+ | 2003 10 29 | 703 | 0.2− | 0.2− | 2005 03 14 | G96 | 1.4+ | 0.6+ | |
| 2001 01 17 | 608 | 0.2+ | 0.3+ | 2003 10 29 | 703 | 0.1+ | 1.3+ | 2005 03 14 | G96 | 0.7− | 0.2+ | |
| 2001 01 17 | 608 | 0.1+ | 0.4+ | 2003 10 29 | 703 | 0.2− | 0.4− | 2005 04 09 | 691 | 0.7+ | 0.1+ | |
| 2001 01 24 | 704 | 0.6− | 0.9+ | 2003 10 29 | 703 | 0.8− | 0.4+ | 2005 04 09 | 691 | 0.0 | 0.6+ | |
| 2001 01 24 | 704 | 0.0 | 0.8+ | 2003 11 16 | 691 | 0.1+ | 0.0 | 2005 04 09 | 691 | 0.3+ | 0.1+ | |
| 2001 01 24 | 704 | 0.1+ | 0.8− | 2003 11 16 | 691 | 0.1+ | 0.0 | 2005 05 12 | G96 | 0.1+ | 0.1− | |
| 2001 01 24 | 704 | 0.5− | 0.1− | 2003 11 16 | 691 | 0.1+ | 0.1+ | 2005 05 12 | G96 | 0.1+ | 0.0 | |
| 2001 01 30 | 608 | 0.1− | 0.4− | 2003 11 19 | 699 | 0.4+ | 0.1− | 2005 05 12 | G96 | 0.1+ | 0.4+ | |
| 2001 01 30 | 608 | 0.1+ | 0.5− | 2003 11 19 | 699 | 0.7+ | 0.2− | 2005 05 12 | G96 | 1.4− | 0.2+ | |
| 2001 01 30 | 608 | 0.0 | 0.3− | 2003 11 19 | 699 | 0.0 | 0.4− | 2006 08 28 | 699 | 0.6+ | 1.0+ | |
| 2003 10 24 | 695 | 0.2− | 0.1+ | 2003 11 19 | 699 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.2− | |
| 2003 10 24 | 695 | 0.1− | 0.0 | 2003 11 21 | 704 | 0.4− | 0.0 | 2006 08 28 | 699 | 1.5− | 1.5+ | |
| 2003 10 25 | 106 | 0.2+ | 0.3− | 2003 11 21 | 704 | 1.2− | 0.1+ | 2006 08 28 | 699 | 0.5− | 1.4+ | |
| 2003 10 26 | 106 | 0.1− | 0.4− | 2003 11 21 | 704 | 1.3+ | 0.5+ | 2006 08 29 | 703 | 0.9− | 0.7+ | |
| 2003 10 26 | 106 | 0.1+ | 0.3+ | 2003 11 21 | 704 | 0.5− | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.4− | |
| 2003 10 27 | 049 | 0.4− | 0.5+ | 2003 11 21 | 704 | 0.2− | 0.9+ | 2006 08 29 | 703 | 0.1− | 0.8− | |
| 2003 10 27 | 049 | 0.7− | 0.0 | 2003 11 29 | 691 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.5− | |
| 2003 10 27 | 049 | 0.8− | 0.1+ | 2003 11 29 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 1.2+ | 0.6− | |
| 2003 10 27 | 608 | 0.1− | 1.1− | 2003 11 29 | 691 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.7− | |
| 2003 10 27 | 608 | 0.1+ | 1.7− | 2003 12 01 | 704 | 0.4+ | 0.9+ | 2006 09 14 | 703 | 0.1− | 0.4+ | |
| 2003 10 27 | 608 | 0.3− | 0.4− | 2003 12 01 | 704 | 0.4− | 0.7+ | 2006 09 14 | 703 | 0.3− | 2.1+ | |
| 2003 10 28 | 704 | 0.2− | 0.0 | 2003 12 01 | 704 | 0.5+ | 0.5+ | | | | | |
| 2003 10 28 | 704 | 0.4+ | 0.0 | 2003 12 01 | 704 | 0.3+ | 0.1+ | | | | | |

**(138957)∗ 2001 BT$_{79}$ = 1995 OP$_{11}$**

Discovered 2001 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 14922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.92662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27744736 | $\omega$ | 239.22692 | | −0.90099455 | +0.43282552 | |
| $a$ | 2.3281751 | $\Omega$ | 326.39449 | | −0.37758315 | −0.81585935 | |
| $e$ | 0.1473877 | $i$ | 3.05643 | | −0.21363469 | −0.38345219 | |
| $P$ | 3.55 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.4+ | 0.5− | 2001 02 22 | 704 | 1.1+ | 0.6+ | 2005 05 08 | E12 | 0.3− | 0.3+ | |
| 1995 07 22 | 691 | 0.2+ | 0.2− | 2001 02 22 | 704 | 0.6− | 0.0 | 2005 05 19 | 644 | 0.5+ | 0.3+ | |
| 1995 07 22 | 691 | 0.0 | 0.2− | 2001 02 22 | 704 | 1.1− | 0.0 | 2005 05 19 | 644 | 0.2+ | 0.3+ | |
| 1995 07 27 | 691 | 0.5− | 0.0 | 2001 02 22 | 704 | 0.1− | 0.9− | 2005 05 19 | 644 | 0.3+ | 0.1+ | |
| 1995 07 27 | 691 | 0.3− | 0.2+ | 2002 08 08 | 644 | 0.0 | 0.9+ | 2006 09 17 | 691 | 0.2+ | 0.0 | |
| 2001 01 21 | 704 | 0.9− | 1.0+ | 2002 08 08 | 644 | 0.2+ | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.2+ | |
| 2001 01 21 | 704 | 0.3+ | 0.5− | 2002 08 08 | 644 | 0.2− | 0.9+ | 2006 09 17 | 691 | 0.4− | 0.3+ | |
| 2001 01 21 | 704 | 0.5+ | 0.1+ | 2002 08 17 | 644 | 0.4+ | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.3− | |
| 2001 01 25 | 691 | 0.0 | 0.2+ | 2002 08 17 | 644 | 0.2+ | 1.2+ | 2006 09 25 | 691 | 0.1− | 0.3+ | |
| 2001 01 25 | 691 | 0.2− | 0.1+ | 2002 08 17 | 644 | 0.4+ | 1.1+ | 2006 09 25 | 691 | 0.2− | 0.0 | |
| 2001 01 25 | 691 | 0.0 | 0.1+ | 2005 05 04 | 644 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.2− | |
| 2001 02 02 | 704 | 0.1+ | 0.4+ | 2005 05 04 | 644 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.4− | |
| 2001 02 02 | 704 | 1.0+ | 0.6− | 2005 05 04 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− | |
| 2001 02 02 | 704 | 0.6+ | 0.9+ | 2005 05 08 | E12 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.4+ | 0.1+ | |
| 2001 02 02 | 704 | 1.2+ | 0.1+ | 2005 05 08 | E12 | 0.2− | 0.5+ | | | | | |
| 2001 02 02 | 704 | 1.1+ | 1.5+ | 2005 05 08 | E12 | 0.7− | 0.5− | | | | | |

**(138958)∗ 2001 BZ$_{79}$**

Discovered 2001 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.85280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29430309 | $\omega$ | 199.39265 | | −0.99967148 | +0.02091488 | |
| $a$ | 2.2384093 | $\Omega$ | 341.78678 | | −0.01229910 | −0.89857841 | |
| $e$ | 0.1053223 | $i$ | 2.71688 | | −0.02248683 | −0.43831428 | |
| $P$ | 3.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.3+ | 0.1− | 2001 02 20 | 704 | 0.2+ | 0.1+ | 2003 12 18 | 704 | 0.4− | 0.1+ | |
| 1998 04 21 | 704 | (2.3+ | 3.1+) | 2001 02 20 | 704 | 0.8+ | 0.2− | 2003 12 22 | 735 | 0.5− | 0.6− | |
| 1998 04 21 | 704 | (2.4+ | 0.1−) | 2001 02 20 | 704 | 0.1− | 0.6+ | 2003 12 22 | 735 | 0.5+ | 0.6− | |
| 1998 04 21 | 704 | 1.8− | 1.0+ | 2001 02 20 | 704 | 0.3+ | 0.7− | 2003 12 22 | 735 | 1.1+ | 0.3− | |
| 1998 04 21 | 704 | (3.4− | 0.5+) | 2001 02 20 | 704 | 0.6+ | 0.2+ | 2003 12 22 | 704 | 0.5− | 0.5− | |
| 1998 05 22 | 704 | 0.9− | 0.8− | 2001 02 20 | 704 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.3− | 0.7− | |
| 1998 05 22 | 704 | 1.0− | 0.4− | 2001 02 20 | 704 | 0.6+ | 0.3+ | 2003 12 22 | 704 | 0.2− | 0.5− | |
| 1998 05 22 | 704 | 0.4+ | 1.4+ | 2001 02 20 | 704 | 0.1+ | 0.1+ | 2003 12 22 | 704 | 0.3− | 0.1+ | |
| 1998 05 22 | 704 | 0.9+ | 0.2+ | 2001 02 22 | 691 | 0.3+ | 0.2+ | 2003 12 22 | 704 | 0.2− | 0.2− | |
| 1999 10 06 | 704 | 0.7− | 0.2+ | 2001 02 22 | 691 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.2+ | 0.4+ | |
| 1999 10 06 | 704 | 0.3− | 0.2− | 2001 02 22 | 704 | 0.4+ | 0.0 | 2003 12 27 | 704 | 0.5− | 0.1+ | |
| 1999 10 06 | 704 | 0.1− | 0.3+ | 2001 02 22 | 704 | 0.0 | 0.2+ | 2003 12 27 | 704 | 0.2+ | 0.0 | |
| 1999 10 06 | 704 | 0.2+ | 0.2+ | 2001 02 22 | 704 | 0.2− | 0.1+ | 2003 12 27 | 704 | 0.8+ | 0.2+ | |
| 1999 10 06 | 704 | 0.0 | 0.5+ | 2001 02 22 | 691 | 0.3+ | 0.3+ | 2003 12 30 | 620 | 0.2+ | 0.4− | |
| 2001 01 21 | 704 | 0.8+ | 0.1− | 2001 02 22 | 704 | 0.2+ | 0.1+ | 2003 12 30 | 620 | 0.1− | 0.3− | |
| 2001 01 21 | 704 | 0.7+ | 0.6+ | 2001 02 22 | 704 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.3− | |
| 2001 01 21 | 704 | 1.3− | 0.5+ | 2001 02 22 | 704 | 0.4+ | 0.9+ | 2006 09 30 | G96 | 0.3− | 0.1− | |
| 2001 01 21 | 704 | 0.0 | 0.2+ | 2001 02 22 | 704 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.3− | |
| 2001 01 24 | 691 | 0.8− | 0.1− | 2001 02 22 | 704 | 0.2+ | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.2− | |
| 2001 01 24 | 691 | 0.7− | 0.0 | 2001 02 22 | 704 | 0.5+ | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.1− | |
| 2001 01 24 | 691 | 0.5− | 0.1− | 2001 02 22 | 704 | 0.1+ | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.3− | |
| 2001 02 02 | 699 | 0.2+ | 0.1+ | 2001 02 27 | 691 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.2− | |
| 2001 02 02 | 699 | 0.0 | 0.4+ | 2001 02 27 | 691 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1− | |
| 2001 02 02 | 704 | 0.5− | 0.8+ | 2001 02 27 | 691 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.2− | |
| 2001 02 02 | 704 | 0.5+ | 0.2+ | 2002 07 29 | 644 | 0.3+ | 0.8+ | 2006 10 03 | G96 | 0.3+ | 0.2− | |
| 2001 02 02 | 699 | 0.7+ | 0.3+ | 2002 07 29 | 644 | 0.5+ | 1.0+ | 2006 10 03 | G96 | 0.0 | 0.4− | |
| 2001 02 02 | 704 | 0.0 | 0.1− | 2002 07 29 | 644 | 0.6+ | 1.4+ | 2006 10 03 | G96 | 0.2− | 0.5− | |
| 2001 02 02 | 704 | 0.1+ | 0.0 | 2002 08 08 | 644 | 0.3− | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.2− | |
| 2001 02 02 | 699 | 0.1+ | 0.0 | 2002 08 08 | 644 | 0.4− | 0.8+ | 2006 10 11 | 691 | 0.0 | 0.1− | |
| 2001 02 16 | 699 | 0.7− | 0.2− | 2002 08 08 | 644 | 0.3− | 1.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | |
| 2001 02 16 | 699 | 0.5+ | 0.1− | 2002 08 18 | 644 | (0.6+ | 1.9+) | 2006 10 15 | 691 | 0.0 | 0.5+ | |
| 2001 02 16 | 699 | 0.3+ | 1.0+ | 2002 08 18 | 644 | (0.6+ | 1.8+) | 2006 10 15 | 691 | 0.3− | 0.6+ | |
| 2001 02 16 | 699 | 1.0+ | 0.8+ | 2002 08 18 | 644 | (0.8+ | 1.6+) | 2006 10 15 | 691 | 0.3− | 0.6+ | |
| 2001 02 19 | 704 | 0.3− | 0.5− | 2002 09 04 | 644 | 0.3− | 1.1+ | 2006 11 20 | A44 | 0.0 | 0.5− | |
| 2001 02 19 | 704 | 0.0 | 0.1− | 2002 09 04 | 644 | 0.1− | 0.8+ | 2006 11 20 | A44 | 0.1+ | 0.4− | |
| 2001 02 19 | 704 | 0.1− | 0.2+ | 2002 09 04 | 644 | 0.0 | 0.7+ | 2006 11 20 | A44 | 0.2+ | 0.4− | |
| 2001 02 19 | 704 | 0.3+ | 0.4+ | 2003 12 18 | 704 | 0.4+ | 0.5− | 2006 11 22 | 104 | 0.5− | 0.5+ | |
| 2001 02 19 | 704 | 0.4+ | 0.3+ | 2003 12 18 | 704 | 0.5+ | 0.3+ | 2006 11 22 | 104 | (3.2− | 0.5+) | |
| 2001 02 20 | 704 | 0.6− | 0.1+ | 2003 12 18 | 704 | 0.6+ | 0.0 | 2006 11 22 | 104 | 0.6− | 0.6+ | |

**(138959)∗ 2001 CZ$_{2}$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.28858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28644414 | $\omega$ | 75.14810 | | +0.19936679 | −0.97990684 | |
| $a$ | 2.2791667 | $\Omega$ | 3.36907 | | +0.85559443 | +0.17110548 | |
| $e$ | 0.1015380 | $i$ | 5.81658 | | +0.47771441 | +0.10249634 | |
| $P$ | 3.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 1.1− | 0.9− | 2003 10 30 | 704 | 0.2− | 0.2− | 2006 08 23 | 704 | 0.4− | 0.9+ | |
| 1998 04 22 | 704 | 0.4− | 0.9− | 2003 10 30 | 704 | 0.4+ | 0.0 | 2006 08 23 | 704 | 0.0 | 0.5+ | |
| 1998 04 22 | 704 | 0.3− | 0.6− | 2003 11 03 | 704 | 0.9+ | 0.7− | 2006 08 23 | 704 | 0.7− | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 0.1− | 0.0 | 2003 11 03 | 704 | (1.9+ | 1.4−) | 2006 08 23 | 644 | 0.0 | 0.3+ |
| 2001 01 19 | 704 | 0.3− | 0.8− | 2003 11 03 | 704 | 0.6+ | 0.6− | 2006 08 23 | 644 | 0.3+ | 0.1+ |
| 2001 01 19 | 704 | 0.4− | 0.2+ | 2003 11 19 | 704 | 0.6− | 0.5− | 2006 08 23 | 644 | 0.2+ | 0.0 |
| 2001 01 19 | 704 | 0.5+ | 0.9+ | 2003 11 19 | 704 | 1.1− | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.2+ |
| 2001 01 19 | 704 | 1.3+ | 0.7+ | 2003 11 19 | 704 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.2+ |
| 2001 02 01 | 704 | 0.2+ | 0.1+ | 2003 11 19 | 704 | 0.5+ | 0.3− | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2001 02 01 | 704 | 0.7+ | 0.7+ | 2003 11 19 | 704 | 1.1− | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.3− |
| 2001 02 01 | 704 | 0.3+ | 0.2− | 2003 11 21 | 644 | 0.3− | 0.3− | 2006 09 14 | 703 | 0.6− | 0.2− |
| 2001 02 01 | 704 | 0.7+ | 0.1+ | 2003 11 21 | 644 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2001 02 02 | 704 | 0.8− | 0.0 | 2003 11 21 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.1+ |
| 2001 02 02 | 704 | 0.1+ | 0.0 | 2003 11 23 | 704 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2001 02 02 | 704 | 0.2− | 0.9+ | 2003 11 23 | 704 | 0.6+ | 0.4− | 2006 09 14 | 703 | 0.7− | 0.6− |
| 2001 02 02 | 704 | 0.1+ | 0.0 | 2003 11 23 | 704 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2001 02 02 | 704 | (0.2− | 1.8+) | 2003 11 23 | 704 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.7− | 0.5− |
| 2001 02 17 | 704 | 0.5+ | 0.8+ | 2003 11 24 | 704 | 1.0− | 0.0 | 2006 09 19 | 699 | 0.2− | 1.5+ |
| 2001 02 17 | 704 | 0.4+ | 0.6+ | 2003 11 24 | 704 | 0.5− | 0.3− | 2006 09 19 | 699 | 1.1+ | 0.6+ |
| 2001 02 17 | 704 | 0.3+ | 1.3+ | 2003 11 24 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.3+ |
| 2001 02 17 | 704 | 0.6+ | 0.4+ | 2003 11 24 | 704 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.8+ | 1.2+ |
| 2001 02 17 | 704 | 0.4+ | 0.7+ | 2003 11 24 | 704 | 0.8− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 1.2+ |
| 2001 02 19 | 699 | 0.7+ | 1.1+ | 2003 12 04 | 704 | 0.1+ | 0.8− | 2006 09 27 | 704 | 0.0 | 0.1+ |
| 2001 02 19 | 699 | 0.6− | 0.6+ | 2003 12 04 | 704 | 0.4+ | 0.5− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2001 02 19 | 699 | 0.3+ | 0.8+ | 2003 12 04 | 704 | 0.3+ | 0.6− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2001 02 19 | 699 | (0.2+ | 2.0+) | 2003 12 04 | 704 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2001 02 20 | 704 | 0.0 | 0.8+ | 2003 12 04 | 704 | (2.8+ | 1.2−) | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2001 02 20 | 704 | 1.0+ | 0.1− | 2003 12 12 | 644 | 0.5− | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.4+ |
| 2001 02 20 | 704 | 1.4+ | 0.1+ | 2003 12 12 | 644 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2001 02 20 | 704 | (0.2+ | 1.6−) | 2003 12 12 | 644 | 0.4− | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2001 03 14 | 699 | 1.2− | 0.7+ | 2003 12 18 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 03 14 | 699 | (0.1− | 1.7+) | 2003 12 18 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2001 03 14 | 699 | 0.0 | 0.7+ | 2003 12 18 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 03 14 | 699 | 0.3− | 0.8+ | 2003 12 18 | 704 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2001 03 19 | 704 | 0.5+ | 0.6+ | 2003 12 18 | 704 | 0.8+ | 1.0− | 2006 10 20 | G96 | 0.5+ | 0.0 |
| 2001 03 19 | 704 | 0.7+ | 0.2+ | 2003 12 18 | 704 | 1.4+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.1+ | 0.5+ | 2003 12 18 | 704 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2003 10 05 | 704 | 0.3+ | 0.6− | 2003 12 27 | 704 | 0.3+ | 0.9− | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2003 10 05 | 704 | 1.0+ | 0.2+ | 2003 12 27 | 704 | 0.2− | 0.5− | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2003 10 05 | 704 | 0.4+ | 0.3+ | 2003 12 27 | 704 | 0.3+ | 1.1− | 2006 11 11 | G96 | 0.5− | 0.3− |
| 2003 10 05 | 704 | 0.7+ | 0.2− | 2006 08 17 | 644 | 0.5− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2003 10 22 | 704 | 0.1+ | 0.8+ | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2003 10 22 | 704 | 1.1+ | 0.6+ | 2006 08 17 | 644 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.5− | 0.4− |
| 2003 10 22 | 704 | 0.1+ | 0.1+ | 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2003 10 22 | 704 | 0.1− | 0.5+ | 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2003 10 22 | 704 | 0.0 | 0.2− | 2006 08 18 | 691 | 0.3− | 0.4+ | | | | |
| 2003 10 30 | 704 | 0.9+ | 0.4+ | 2006 08 23 | 704 | (0.4− | 1.9+) | | | | |

**(138960)∗ 2001 CQ$_3$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 230.05552 | | (2000.0) | | | |
| $n$ | 0.28328931 | $\omega$ | 134.41369 | | −0.70813837 | −0.70607269 |
| $a$ | 2.2960566 | $\Omega$ | 0.67343 | | +0.61577684 | −0.61839798 |
| $e$ | 0.1235887 | $i$ | 5.78774 | | +0.34548362 | −0.34502941 |
| $P$ | 3.48 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 09 | 691 | 0.1− | 0.3− | 2001 02 19 | 699 | (1.3+ | 2.0+) | 2003 12 01 | 691 | 0.0 | 0.2− |
| 1996 12 09 | 691 | 0.5+ | 0.5− | 2001 02 19 | 699 | 1.0− | 0.4+ | 2003 12 01 | 691 | 0.0 | 0.2− |
| 1996 12 09 | 691 | 0.2+ | 0.7− | 2001 02 20 | 704 | 0.0 | 0.9+ | 2003 12 04 | 704 | 0.0 | 0.9+ |
| 2001 01 19 | 704 | 0.5+ | 0.1− | 2001 02 20 | 704 | 0.0 | 0.5+ | 2003 12 04 | 704 | 0.5− | 0.6− |
| 2001 01 19 | 704 | 0.3+ | 1.4+ | 2001 02 20 | 704 | 0.2+ | 0.1− | 2003 12 04 | 704 | 0.3+ | 0.1− |
| 2001 01 19 | 704 | 0.4− | 0.4− | 2001 02 20 | 704 | 0.6− | 0.6+ | 2003 12 04 | 704 | 0.4− | 0.4− |
| 2001 01 19 | 704 | 0.2− | 0.1+ | 2001 02 20 | 704 | 0.2+ | 1.0+ | 2003 12 17 | 691 | 0.1− | 0.1+ |
| 2001 01 19 | 704 | 0.2+ | 0.1+ | 2001 03 03 | 691 | 0.4+ | 0.2+ | 2003 12 17 | 691 | 0.3+ | 0.0 |
| 2001 02 01 | 704 | 0.5+ | 0.6− | 2001 03 03 | 691 | 0.8− | 0.3− | 2003 12 17 | 691 | 0.1− | 0.2+ |
| 2001 02 01 | 704 | 0.5+ | 0.1+ | 2001 03 03 | 691 | 0.1− | 0.1+ | 2003 12 23 | 704 | 0.6− | 0.7+ |
| 2001 02 01 | 704 | 0.6+ | 0.3− | 2001 03 14 | 699 | 0.2− | 0.3− | 2003 12 23 | 704 | 1.0− | 0.5+ |
| 2001 02 01 | 704 | 1.1+ | 0.7+ | 2001 03 14 | 699 | 0.1− | 0.3+ | 2003 12 23 | 704 | 0.3− | 0.5+ |
| 2001 02 01 | 704 | 0.1+ | 0.3− | 2001 03 14 | 699 | 0.5− | 0.2+ | 2003 12 23 | 704 | 0.2− | 0.9+ |
| 2001 02 02 | 704 | 0.9+ | 0.0 | 2001 03 14 | 699 | (1.5− | 0.5+) | 2003 12 23 | 704 | 0.5− | 0.0 |
| 2001 02 02 | 704 | 1.3+ | 0.3− | 2001 03 19 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | 1.0− | 1.0+ |
| 2001 02 02 | 704 | 0.2− | 0.1− | 2001 03 19 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.6+ | 1.5− |
| 2001 02 02 | 704 | 0.1− | 0.2− | 2001 03 19 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 703 | 1.6− | 0.5+ |
| 2001 02 02 | 704 | 0.1+ | 0.0 | 2003 10 18 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.7+ |
| 2001 02 02 | 704 | 0.1− | 0.2− | 2003 10 18 | 644 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2+ |
| 2001 02 02 | 704 | 0.3+ | 0.6− | 2003 10 18 | 644 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 02 02 | 704 | 0.1− | 0.4− | 2003 11 01 | 704 | 0.5+ | 0.6+ | 2006 09 25 | G96 | 0.4− | 0.3+ |
| 2001 02 02 | 704 | 0.1+ | 0.0 | 2003 11 01 | 704 | (0.3− | 1.9+) | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 02 02 | 704 | 0.1+ | 0.5− | 2003 11 01 | 704 | (0.7− | 2.6+) | 2006 10 11 | 540 | 0.5− | 1.1+ |
| 2001 02 17 | 704 | 0.3− | 0.4− | 2003 11 01 | 704 | (0.5+ | 3.3+) | 2006 10 11 | 540 | 0.3− | 0.3+ |
| 2001 02 17 | 704 | 0.5− | 0.2− | 2003 11 19 | 704 | 0.5− | 1.3+ | 2006 10 27 | G96 | 0.3+ | 0.7+ |
| 2001 02 17 | 704 | 0.6+ | 0.0 | 2003 11 19 | 704 | 0.5+ | 1.2+ | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2001 02 17 | 704 | 0.0 | 0.3− | 2003 11 19 | 704 | 0.1+ | 1.0− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2001 02 17 | 704 | 0.1− | 0.2+ | 2003 11 19 | 704 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.8+ |
| 2001 02 19 | 699 | 0.8− | 0.0 | 2003 11 19 | 704 | 0.6+ | 0.1− | | | | |
| 2001 02 19 | 699 | 0.5− | 0.1− | 2003 12 01 | 691 | 0.1+ | 0.0 | | | | |

**(138961)∗ 2001 CJ$_5$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 175.41383 | | (2000.0) | | | |
| $n$ | 0.29218354 | $\omega$ | 161.33404 | | −0.64658611 | +0.75982373 |
| $a$ | 2.2492214 | $\Omega$ | 68.32173 | | −0.70885106 | −0.56561493 |
| $e$ | 0.1131385 | $i$ | 4.18288 | | −0.28188044 | −0.32054275 |
| $P$ | 3.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 704 | 0.2+ | 0.3− | 2002 09 06 | 704 | 0.7+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2001 02 01 | 704 | 0.3− | 0.1− | 2002 09 06 | 704 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2001 02 01 | 704 | 0.6+ | 0.5+ | 2002 09 16 | 644 | 1.2− | 0.7+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2001 02 01 | 704 | 0.1+ | 0.0 | 2002 09 16 | 644 | 1.0− | 0.9+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 02 01 | 704 | 0.2− | 0.0 | 2002 09 16 | 644 | 1.1− | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 02 02 | 704 | 0.4− | 1.0+ | 2003 12 19 | 704 | 0.5− | 0.9− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2001 02 02 | 704 | 0.4+ | 0.1− | 2003 12 19 | 704 | 0.1− | 0.8− | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2001 02 02 | 704 | 0.1− | 0.5+ | 2003 12 19 | 704 | 0.2+ | 0.7− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2001 02 17 | 704 | 0.0 | 0.2− | 2003 12 22 | 704 | 1.2− | 0.8+ | 2006 11 11 | G96 | 0.5+ | 0.5− |
| 2001 02 17 | 704 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.5+ | 0.9− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2001 02 17 | 704 | 0.1+ | 0.8+ | 2003 12 22 | 704 | 0.7− | 1.1+ | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2001 02 17 | 704 | 0.1+ | 0.4+ | 2003 12 27 | 704 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 02 17 | 704 | 0.3+ | 0.6+ | 2003 12 27 | 704 | (0.5+ | 1.6+) | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2001 03 19 | 704 | (1.2+ | 2.0+) | 2003 12 27 | 704 | 1.0+ | 0.8− | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2001 03 19 | 704 | (2.1+ | 0.2+) | 2003 12 27 | 704 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 03 19 | 704 | 0.5+ | 0.1− | 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 03 19 | 704 | 0.9− | 0.8+ | 2004 01 22 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2001 03 23 | 699 | 0.3+ | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 11 21 | 704 | 1.4− | 0.3+ |
| 2001 03 23 | 699 | 0.2+ | 0.0 | 2004 01 22 | 704 | 0.5+ | 0.1+ | 2006 11 21 | 704 | (0.6− | 2.0+) |
| 2001 03 23 | 699 | 0.5+ | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.8− | 1.1+ |
| 2001 03 23 | 699 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 1.5− | 1.0+ |
| 2001 03 26 | 704 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2001 03 26 | 704 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2001 03 26 | 704 | 0.2+ | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2001 03 26 | 704 | 0.8− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.3− | 0.3+ |
| 2001 03 26 | 704 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 27 | 703 | (2.0− | 0.8+) |
| 2002 09 06 | 704 | 0.6+ | 0.4− | 2006 10 19 | G96 | 0.4+ | 0.0 | 2006 11 27 | 703 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.4+ | 0.2− |

**(138962)∗ 2001 CP$_7$ = 1999 TM$_{75}$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 10751)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.12384 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27602747 | $\omega$ | 205.17859 | | −0.76006230 | +0.64976702 | |
| $a$ | 2.3361525 | $\Omega$ | 15.35938 | | −0.58938543 | −0.68251467 | |
| $e$ | 0.1836503 | $i$ | 2.24986 | | −0.27373368 | −0.33462897 | |
| $P$ | 3.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.1− | 0.4− | 2001 02 19 | 704 | 0.2− | 1.1− | 2003 11 29 | 691 | 0.2+ | 0.1− |
| 1999 10 02 | 691 | 0.0 | 0.2+ | 2001 02 19 | 704 | 0.9+ | 0.5+ | 2005 03 11 | G96 | 0.5+ | 0.5+ |
| 1999 10 02 | 691 | 0.3+ | 0.0 | 2001 02 19 | 704 | 0.1− | 0.1+ | 2005 03 11 | G96 | 0.4+ | 0.0 |
| 1999 10 10 | 691 | 0.3− | 0.1− | 2001 02 20 | 704 | 0.4− | 1.0+ | 2005 03 11 | G96 | 0.3+ | 0.9+ |
| 1999 10 10 | 691 | 0.7− | 0.1− | 2001 02 20 | 704 | 0.3+ | 0.2+ | 2005 03 11 | G96 | 0.6+ | 0.4+ |
| 1999 10 10 | 691 | 0.4− | 0.1− | 2001 02 20 | 704 | 0.8+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.5+ |
| 1999 10 13 | 691 | 0.3+ | 0.2+ | 2001 02 20 | 704 | 0.7+ | 0.2+ | 2006 10 11 | 691 | 0.5− | 0.8− |
| 1999 10 13 | 691 | 1.0+ | 0.1+ | 2001 03 03 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.5+ | 0.2+ |
| 1999 10 13 | 691 | 0.6+ | 0.1+ | 2001 03 03 | 704 | 0.7+ | 0.7+ | 2006 10 12 | 644 | 0.6+ | 0.2+ |
| 2001 02 01 | 704 | 0.4− | 0.4+ | 2001 03 03 | 704 | 0.3− | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2001 02 01 | 704 | 0.6− | 0.2+ | 2001 03 03 | 704 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.5+ | 0.6+ |
| 2001 02 01 | 704 | 0.9− | 0.2− | 2001 03 14 | 699 | 0.1− | 1.2+ | 2006 10 19 | 691 | 0.0 | 0.4− |
| 2001 02 01 | 704 | 0.0 | 0.2− | 2001 03 14 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2001 02 02 | 209 | 0.2+ | 0.3+ | 2001 03 14 | 699 | (0.7− | 1.7+) | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 02 02 | 209 | 0.2+ | 0.1− | 2001 03 14 | 699 | 0.0 | 0.7+ | 2006 10 20 | 703 | 1.2+ | 0.5+ |
| 2001 02 02 | 209 | 0.0 | 0.5− | 2001 03 18 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 703 | 1.4− | 0.4+ |
| 2001 02 02 | 704 | 0.8− | 1.0+ | 2001 03 18 | 704 | 0.5− | 0.1+ | 2006 10 20 | 703 | 0.2− | 0.4+ |
| 2001 02 02 | 704 | 0.7− | 0.3+ | 2001 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 703 | 0.1− | 1.3+ |
| 2001 02 02 | 704 | 0.2− | 1.0+ | 2001 03 18 | 704 | 0.5+ | 0.8+ | 2006 10 21 | 703 | 1.3− | 0.8+ |
| 2001 02 17 | 704 | 0.7+ | 0.1+ | 2002 08 14 | 291 | 0.3− | 0.8+ | 2006 10 21 | 703 | 1.0− | 1.2− |
| 2001 02 17 | 704 | 0.6+ | 0.6+ | 2002 08 14 | 291 | 0.5− | 0.8+ | 2006 10 21 | 703 | 1.2− | 0.4+ |
| 2001 02 17 | 704 | 0.4+ | 0.8− | 2002 08 14 | 291 | 0.4− | 0.9+ | 2006 10 21 | 703 | 0.3− | 1.1− |
| 2001 02 17 | 704 | 0.8+ | 0.3− | 2002 08 20 | 644 | (0.1+ | 1.7+) | 2006 10 28 | G96 | 0.5+ | 0.1− |
| 2001 02 17 | 704 | 0.8+ | 0.1+ | 2002 08 20 | 644 | (0.0 | 1.8+) | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 02 19 | 699 | 0.5− | 0.1− | 2002 08 20 | 644 | (0.3+ | 1.8+) | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2001 02 19 | 699 | 0.8− | 0.1− | 2002 09 15 | 644 | 0.7− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2001 02 19 | 699 | (1.7− | 0.4+) | 2002 09 15 | 644 | 0.5− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2001 02 19 | 704 | 0.7+ | 0.8+ | 2002 09 15 | 644 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.2− |
| 2001 02 19 | 699 | 0.9− | 0.7+ | 2003 11 29 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2001 02 19 | 704 | 0.6+ | 0.3+ | 2003 11 29 | 691 | 0.1− | 0.0 | | | | |

**(138963)∗ 2001 CA$_9$ = 1998 HV$_{66}$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 10752)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.65021 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29745055 | $\omega$ | 74.66770 | | −0.96043527 | −0.27191161 | |
| $a$ | 2.2225909 | $\Omega$ | 89.52567 | | +0.22679340 | −0.88912804 | |
| $e$ | 0.0894548 | $i$ | 3.45338 | | +0.16164417 | −0.36812418 | |
| $P$ | 3.31 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 08 | 691 | 1.0− | 0.2+ | 2001 02 02 | 704 | 0.8− | 0.7− | 2004 01 21 | 704 | 0.3− | 0.3+ |
| 1991 02 08 | 691 | 0.2+ | 0.3− | 2001 02 02 | 704 | 0.0 | 0.6− | 2004 01 21 | 704 | 1.0− | 1.2− |
| 1991 02 08 | 691 | 0.7+ | 0.3− | 2001 02 02 | 704 | 0.3− | 0.9− | 2004 01 21 | 704 | 0.8− | 0.0 |
| 1998 04 21 | 704 | 0.5− | 0.6+ | 2001 02 02 | 699 | 0.9+ | 0.6+ | 2004 01 28 | 691 | 0.2− | 0.1− |
| 1998 04 21 | 704 | 0.7+ | 0.3− | 2001 02 02 | 704 | 0.3+ | 0.2− | 2004 01 28 | 691 | 0.6− | 0.1+ |
| 1998 04 21 | 704 | 0.4− | 1.2+ | 2001 02 17 | 704 | 0.9+ | 1.0− | 2004 01 28 | 691 | 0.6+ | 0.4− |
| 1998 04 21 | 704 | (4.0− | 2.1−) | 2001 02 17 | 704 | 0.3+ | 0.6+ | 2005 01 24 | 809 | 0.5− | 0.1− |
| 1998 04 21 | 910 | 1.6+ | 0.4− | 2001 02 17 | 704 | 0.3+ | 0.3− | 2005 01 24 | 809 | 0.5− | 0.1− |
| 1998 04 22 | 910 | 1.5+ | 0.4− | 2001 02 17 | 704 | 0.1− | 0.5− | 2005 01 24 | 809 | 0.6− | 0.4+ |
| 1998 04 22 | 910 | 1.6+ | 0.1− | 2001 02 20 | 704 | 0.6− | 1.0+ | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 1998 04 22 | 704 | 1.1− | 0.7+ | 2001 02 20 | 704 | 0.0 | 1.1+ | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 1998 04 22 | 704 | 0.1+ | 0.9+ | 2001 02 20 | 704 | 0.3+ | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 1998 04 22 | 704 | 1.3− | 1.0+ | 2001 02 20 | 704 | 0.0 | 0.9+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 1998 04 22 | 704 | 0.8− | 1.1+ | 2002 08 08 | 644 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2001 01 19 | 704 | 0.2+ | 0.3+ | 2002 08 08 | 644 | 0.1− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 01 19 | 704 | 0.3+ | 0.8− | 2002 08 08 | 644 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2001 01 19 | 704 | 0.5+ | 0.5+ | 2003 12 18 | 704 | 0.4+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2001 01 19 | 704 | 0.1− | 0.4+ | 2003 12 18 | 704 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2001 02 01 | 704 | 0.7+ | 0.0 | 2003 12 18 | 704 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2001 02 01 | 704 | 0.6+ | 0.2− | 2003 12 18 | 704 | 0.3− | 0.8− | 2006 11 08 | 644 | 0.6− | 0.4+ |
| 2001 02 01 | 704 | 0.7+ | 1.2+ | 2004 01 13 | 691 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.5+ |
| 2001 02 02 | 699 | 0.3− | 0.7+ | 2004 01 13 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2001 02 02 | 699 | 0.4− | 1.2+ | 2004 01 13 | 691 | 0.2+ | 0.0 | | | | |
| 2001 02 02 | 704 | 0.2− | 1.0− | 2004 01 21 | 704 | 0.3− | 0.2− | | | | |

**(138964)∗ 2001 CL$_9$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.98679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22426587 | $\omega$ | 48.30300 | | −0.18847000 | −0.98061634 | |
| $a$ | 2.6830407 | $\Omega$ | 52.63928 | | +0.87983469 | −0.19283491 | |
| $e$ | 0.2111955 | $i$ | 3.86516 | | +0.43631408 | −0.03473167 | |
| $P$ | 4.39 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.2+ | 0.2− | 2001 03 19 | 704 | 1.0− | 0.1− | 2004 12 10 | 704 | 0.4− | 0.2+ |
| 1995 12 27 | 691 | 0.0 | 0.3− | 2001 03 19 | 704 | 0.6+ | 0.2− | 2004 12 10 | 704 | 0.0 | 0.1− |
| 1995 12 27 | 691 | 0.0 | 0.2− | 2001 03 19 | 608 | 0.3+ | 1.3− | 2004 12 10 | 704 | 0.3+ | 0.5+ |
| 2001 01 19 | 704 | 0.1+ | 0.6− | 2001 03 19 | 608 | 0.2+ | 0.7− | 2004 12 10 | 704 | 0.1+ | 0.1− |
| 2001 01 19 | 704 | 0.6+ | 0.8+ | 2001 03 19 | 608 | (0.4− | 2.4−) | 2004 12 17 | 704 | 0.2− | 0.2+ |
| 2001 01 19 | 704 | 0.7+ | 0.6+ | 2001 03 23 | 699 | 0.2+ | 0.0 | 2004 12 17 | 704 | 0.2− | 0.6− |
| 2001 01 19 | 704 | 0.6+ | 1.3+ | 2001 03 23 | 699 | 0.4+ | 0.3− | 2004 12 17 | 704 | 0.1− | 0.2− |
| 2001 01 19 | 704 | 0.5+ | 1.2+ | 2001 03 23 | 699 | 0.4− | 0.4+ | 2004 12 17 | 704 | 0.2− | 0.1− |
| 2001 02 01 | 704 | 1.2− | 1.2+ | 2001 03 23 | 699 | 0.1+ | 0.1+ | 2004 12 17 | 704 | 0.3+ | 0.2+ |
| 2001 02 01 | 704 | 0.6− | 0.2− | 2001 03 31 | 704 | 0.3+ | 0.3− | 2004 12 18 | 704 | 0.1− | 0.4+ |
| 2001 02 01 | 704 | 0.4− | 0.4+ | 2001 03 31 | 704 | 0.2− | 0.8+ | 2004 12 18 | 704 | 0.3+ | 0.3− |
| 2001 02 02 | 704 | 0.1+ | 0.5− | 2001 03 31 | 704 | 0.5+ | 0.6− | 2004 12 18 | 704 | 0.1− | 0.4− |
| 2001 02 02 | 704 | 0.0 | 0.3+ | 2001 03 31 | 704 | 1.7+ | 1.0+ | 2004 12 18 | 704 | 0.1+ | 0.5+ |
| 2001 02 02 | 704 | 0.5+ | 0.0 | 2004 09 16 | 691 | 0.0 | 0.2+ | 2004 12 18 | 704 | 0.3+ | 0.1+ |
| 2001 02 02 | 704 | 1.8− | 0.1− | 2004 09 16 | 691 | 0.0 | 0.2+ | 2005 01 07 | 704 | 1.6− | 0.3− |
| 2001 02 05 | 049 | (1.7+ | 2.8−) | 2004 09 16 | 691 | 0.0 | 0.1+ | 2005 01 07 | 704 | 1.0− | 0.2− |
| 2001 02 05 | 049 | 0.7+ | 1.7− | 2004 10 09 | 704 | 0.7+ | 0.5+ | 2005 01 07 | 704 | 0.3− | 0.1− |
| 2001 02 05 | 049 | 0.7+ | 1.9− | 2004 10 09 | 704 | 0.2+ | 0.0 | 2005 01 07 | 704 | 0.3− | 0.2− |
| 2001 02 17 | 704 | 0.0 | 0.4+ | 2004 10 09 | 704 | 0.8+ | 0.4+ | 2005 01 07 | 704 | 0.4− | 0.2− |
| 2001 02 17 | 704 | 0.6− | 0.2+ | 2004 10 09 | 704 | 0.0 | 0.5+ | 2005 01 12 | 704 | 1.1− | 0.1− |
| 2001 02 17 | 704 | 0.5− | 0.5+ | 2004 10 09 | 704 | 0.6+ | 0.2+ | 2005 01 12 | 704 | 0.9− | 0.2− |
| 2001 02 17 | 704 | 0.2+ | 0.8+ | 2004 10 20 | 704 | 0.8+ | 0.8+ | 2005 01 12 | 704 | 2.0− | 0.7− |
| 2001 02 17 | 704 | 0.3+ | 0.6+ | 2004 10 20 | 704 | 0.5+ | 0.4+ | 2005 01 12 | 704 | 1.3− | 0.4− |
| 2001 02 19 | 699 | 0.6− | 0.4− | 2004 10 20 | 704 | 0.4+ | 0.4− | 2005 03 10 | 704 | 0.2+ | 0.4− |
| 2001 02 19 | 699 | 0.1+ | 0.5+ | 2004 10 20 | 704 | 0.5+ | 0.3− | 2005 03 10 | 704 | 0.4+ | 1.0− |
| 2001 02 19 | 699 | 0.1+ | 0.6+ | 2004 11 18 | 704 | 0.2− | 0.3+ | 2005 03 10 | 704 | 0.4+ | 0.8− |
| 2001 02 19 | 699 | 0.5− | 1.2− | 2004 11 18 | 704 | 0.8− | 0.3− | 2006 03 24 | G96 | 0.3− | 0.1+ |
| 2001 02 20 | 704 | 0.7+ | 0.7− | 2004 11 18 | 704 | 0.4− | 0.1+ | 2006 03 24 | G96 | 0.7− | 0.1+ |
| 2001 02 20 | 704 | 0.6+ | 0.5− | 2004 11 18 | 704 | 0.4− | 0.2− | 2006 03 24 | G96 | 0.1− | 0.2+ |
| 2001 02 20 | 704 | 0.9+ | 0.0 | 2004 11 22 | 704 | 0.3+ | 0.1− | 2006 03 24 | G96 | 0.2− | 0.1+ |
| 2001 02 20 | 704 | 0.2+ | 0.6− | 2004 11 22 | 704 | 0.6+ | 0.1− | 2006 04 09 | 691 | 0.1+ | 0.0 |
| 2001 02 20 | 704 | 1.5+ | 1.4− | 2004 11 22 | 704 | 0.4+ | 0.7+ | 2006 04 09 | 691 | 0.1+ | 0.0 |
| 2001 03 14 | 699 | 0.3− | 0.1+ | 2004 11 22 | 704 | 0.2+ | 0.4+ | 2006 04 09 | 691 | 0.0 | 0.1+ |
| 2001 03 14 | 699 | 0.3− | 0.4+ | 2004 11 22 | 704 | 1.0+ | 0.2− | 2006 04 24 | 691 | 0.1− | 0.0 |
| 2001 03 14 | 699 | 0.1− | 0.2+ | 2004 12 02 | 704 | 0.3+ | 0.0 | 2006 04 24 | 691 | 0.1− | 0.0 |
| 2001 03 14 | 699 | 0.5− | 0.0 | 2004 12 02 | 704 | 0.6− | 0.1+ | 2006 04 24 | 691 | 0.1− | 0.1+ |
| 2001 03 19 | 704 | 0.4+ | 0.5+ | 2004 12 02 | 704 | 0.3+ | 0.1− | 2006 05 06 | 691 | 0.0 | 0.1− |
| 2001 03 19 | 704 | 0.8− | 1.0+ | 2004 12 02 | 704 | 1.6+ | 0.2− | 2006 05 06 | 691 | 0.1+ | 0.1− |
| 2001 03 19 | 704 | 0.8− | 0.2+ | 2004 12 08 | 704 | 0.3+ | 0.1+ | 2006 05 06 | 691 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.1+ | 0.2+ | 2004 12 08 | 704 | 0.5+ | 0.4+ | 2006 05 25 | 644 | 0.1+ | 0.3+ |
| 2001 03 19 | 704 | 0.7− | 0.2+ | 2004 12 08 | 704 | 0.2+ | 0.1+ | 2006 05 25 | 644 | 0.3− | 0.6− |
| 2001 03 19 | 704 | 0.2− | 0.8+ | 2004 12 08 | 704 | 0.4+ | 0.0 | 2006 05 25 | 644 | 0.6− | 0.4− |
| 2001 03 19 | 704 | 0.5− | 0.1+ | 2004 12 08 | 704 | 0.4+ | 0.0 | | | | |
| 2001 03 19 | 704 | 0.4− | 0.8− | 2004 12 10 | 704 | 0.2+ | 0.2− | | | | |

**(138965)∗ 2001 $CD_{17}$ = 1998 $HF_{105}$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 10762)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.34432 | | | (2000.0) | | |
| $n$ | 0.29991754 | $\omega$ | 23.56258 | | −0.60014149 | −0.79555519 |
| $a$ | 2.2103861 | $\Omega$ | 103.41959 | | +0.71961644 | −0.58239821 |
| $e$ | 0.1415331 | $i$ | 4.90678 | | +0.34925975 | −0.16704573 |
| $P$ | 3.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | (0.1+ | 2.1−) | 2001 03 03 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.0 | 1.3− |
| 1998 03 24 | 704 | 0.3− | 0.1+ | 2001 03 03 | 704 | 0.1− | 0.7+ | 2006 09 16 | 699 | 0.4− | 1.0+ |
| 1998 03 24 | 704 | (2.6− | 2.3+) | 2001 03 03 | 704 | 0.8− | 0.3+ | 2006 09 16 | 699 | 0.3− | 0.0 |
| 1998 03 24 | 704 | 1.4+ | 1.2− | 2002 07 08 | 644 | 0.8− | 0.3+ | 2006 09 20 | 699 | 0.6− | 0.6+ |
| 1998 03 24 | 704 | (5.4− | 0.1+) | 2002 07 08 | 644 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.3− | 0.6+ |
| 1998 04 21 | 704 | 0.7− | 0.2+ | 2002 07 08 | 644 | 0.6− | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.8− |
| 1998 04 21 | 704 | 0.2− | 1.1+ | 2003 12 01 | 704 | 0.5− | 0.5+ | 2006 09 20 | 699 | 0.2− | 0.1− |
| 1998 04 21 | 704 | 0.4+ | 0.2− | 2003 12 01 | 704 | 0.3− | 0.8+ | 2006 09 25 | 699 | (1.8+ | 0.6−) |
| 1998 04 21 | 704 | 0.9+ | 1.0− | 2003 12 01 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.3− |
| 1998 04 21 | 704 | 0.7− | 0.1+ | 2003 12 01 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.5+ |
| 1998 04 23 | 704 | 0.0 | 1.8− | 2003 12 01 | 704 | 0.6− | 0.3+ | 2006 09 25 | 699 | 0.9+ | 0.3+ |
| 1998 04 23 | 704 | 0.2+ | 1.0− | 2003 12 11 | 735 | 0.2− | 0.3− | 2006 09 29 | 699 | 0.3+ | 0.9+ |
| 1998 04 23 | 704 | 0.5− | 0.2− | 2003 12 11 | 735 | 0.1+ | 0.1− | 2006 09 29 | 699 | 1.3+ | 0.0 |
| 1998 04 23 | 704 | 0.1− | 0.3− | 2003 12 11 | 735 | 0.2− | 0.4− | 2006 09 29 | 699 | 0.0 | 1.2− |
| 1998 04 23 | 704 | 1.5+ | 1.4+ | 2003 12 15 | 735 | (1.8− | 0.6+) | 2006 09 29 | 699 | 1.3− | 0.6− |
| 1998 04 24 | 704 | 0.4+ | 1.5− | 2003 12 15 | 735 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 1998 04 24 | 704 | 0.8− | 1.0− | 2003 12 15 | 735 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.8+ |
| 1998 04 24 | 704 | 1.5− | 0.1− | 2003 12 17 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.2− |
| 1998 04 24 | 704 | 0.3− | 0.5+ | 2003 12 17 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.0+ | 0.1− |
| 1998 04 24 | 704 | 0.4+ | 0.5+ | 2003 12 17 | 691 | 0.1+ | 0.3− | 2006 10 01 | 704 | 0.1− | 0.4− |
| 2000 12 22 | 699 | 0.1− | 0.2+ | 2003 12 19 | 704 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.1+ | 0.5+ |
| 2000 12 22 | 699 | 0.9− | 1.6+ | 2003 12 19 | 704 | 0.5+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.5+ |
| 2000 12 22 | 699 | 1.0− | 1.1+ | 2003 12 19 | 704 | 0.0 | 0.9− | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 2000 12 22 | 699 | 0.5− | 1.2+ | 2003 12 19 | 704 | 0.9+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2001 01 04 | 704 | 0.0 | 0.5− | 2003 12 19 | 704 | 0.3+ | 0.6− | 2006 10 04 | G96 | 0.2− | 0.1+ |
| 2001 01 04 | 704 | 0.4+ | 0.5− | 2003 12 21 | 704 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 2001 01 04 | 704 | 0.2+ | 0.2− | 2003 12 21 | 704 | 0.9+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.0 |
| 2001 01 04 | 704 | 0.1+ | 0.5− | 2003 12 21 | 704 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2001 01 04 | 704 | 0.1− | 0.1+ | 2003 12 21 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 01 19 | 704 | 0.2− | 0.2− | 2003 12 23 | 704 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2001 01 19 | 704 | 0.8+ | 0.4− | 2003 12 23 | 704 | 0.1+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2001 01 19 | 704 | 0.3− | 0.7+ | 2003 12 23 | 704 | 0.3+ | 1.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 01 19 | 704 | 0.7+ | 0.2+ | 2003 12 23 | 704 | 0.2− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 01 19 | 704 | 0.2+ | 0.4+ | 2003 12 24 | 106 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2001 02 01 | 704 | 0.2+ | 0.4+ | 2003 12 24 | 106 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2001 02 01 | 704 | 0.6+ | 0.3+ | 2003 12 24 | 106 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2001 02 01 | 704 | 0.2− | 0.1+ | 2003 12 25 | 106 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2001 02 01 | 704 | 0.5− | 0.8+ | 2003 12 25 | 106 | 0.7+ | 0.9− | 2006 10 22 | 703 | 1.1− | 0.5+ |
| 2001 02 02 | 699 | 0.3+ | 0.4− | 2003 12 25 | 106 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.2− | 0.1− |
| 2001 02 02 | 699 | 0.6+ | 0.0 | 2003 12 29 | 691 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2001 02 02 | 699 | 0.8+ | 0.3− | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.5− |
| 2001 02 02 | 699 | 1.3+ | 0.5− | 2003 12 29 | 691 | 0.0 | 0.8− | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2001 02 03 | 704 | 0.3+ | 0.3+ | 2004 01 21 | 704 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 02 03 | 704 | 0.2− | 0.2+ | 2004 01 21 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2001 02 03 | 704 | 0.1+ | 0.4+ | 2004 01 21 | 704 | 0.9+ | 0.5− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2001 02 03 | 704 | 0.2− | 0.2− | 2004 01 21 | 704 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 02 03 | 704 | 0.4+ | 0.1− | 2004 01 21 | 704 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 02 16 | 699 | 0.1− | 0.5+ | 2004 01 24 | 704 | 0.3− | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.9+ |
| 2001 02 16 | 699 | 0.0 | 0.3+ | 2004 01 24 | 704 | 1.3− | 0.3+ | 2006 11 14 | 704 | 0.7+ | 0.4+ |
| 2001 02 16 | 699 | 0.2− | 0.8+ | 2004 01 24 | 704 | 0.1+ | 0.4− | 2006 11 14 | 704 | 0.1+ | 0.3+ |
| 2001 02 16 | 699 | 0.1+ | 0.7+ | 2004 01 24 | 704 | (1.6− | 1.6+) | 2006 11 14 | 704 | 0.1− | 0.8+ |
| 2001 02 17 | 704 | 0.4+ | 0.8+ | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.4+ |
| 2001 02 17 | 704 | 0.0 | 0.6+ | 2004 02 10 | 644 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2001 02 17 | 704 | 0.1− | 0.0 | 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.0 | 0.3− |
| 2001 02 17 | 704 | 0.3− | 0.3+ | 2004 02 15 | 704 | 0.1+ | 0.6− | 2006 11 16 | 703 | 0.5− | 1.0− |
| 2001 02 17 | 704 | 0.1− | 0.4+ | 2004 02 15 | 704 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.4− | 0.1+ |
| 2001 03 01 | 704 | 0.3− | 0.2+ | 2004 02 15 | 704 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2001 03 01 | 704 | 0.5− | 0.6+ | 2004 02 22 | 704 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2001 03 01 | 704 | 0.2− | 1.0+ | 2004 02 22 | 704 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2001 03 03 | 704 | 0.1− | 0.4+ | 2004 02 22 | 704 | 0.7− | 0.0 | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2001 03 03 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 699 | 0.3− | 0.9+ | | | | |

**(138966)∗ 2001 $CS_{17}$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.29562 | | | (2000.0) | | |
| $n$ | 0.29086399 | $\omega$ | 323.04119 | | +0.28961181 | −0.95017409 |
| $a$ | 2.2560189 | $\Omega$ | 109.86858 | | +0.90487524 | +0.23253884 |
| $e$ | 0.0601612 | $i$ | 7.04208 | | +0.31197085 | +0.20759310 |
| $P$ | 3.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | (2.4− | 0.8−) | 2001 03 13 | 699 | 0.5+ | 0.8+ | 2005 05 11 | 699 | 1.0+ | 0.6+ |
| 1998 03 24 | 704 | 0.1+ | 0.1− | 2003 11 24 | 691 | 0.1− | 0.1+ | 2005 05 11 | 699 | 1.0+ | 0.1− |
| 1998 03 24 | 704 | 1.6+ | 2.0+ | 2003 11 24 | 691 | 0.0 | 0.1− | 2005 05 11 | 703 | 0.2+ | 0.8− |
| 1998 03 24 | 704 | 0.7− | 0.0 | 2003 11 24 | 691 | 0.1+ | 0.0 | 2005 05 11 | 703 | 0.4+ | 0.3− |
| 2000 12 27 | 691 | 0.1− | 0.1+ | 2003 12 01 | 704 | 0.2+ | 0.3− | 2005 05 11 | 699 | 0.7− | 0.8+ |
| 2000 12 27 | 691 | 0.3+ | 0.2− | 2003 12 01 | 704 | 0.3+ | 0.3+ | 2005 05 11 | 703 | 0.3− | 0.2− |
| 2000 12 27 | 691 | 0.2− | 0.2− | 2003 12 01 | 704 | 0.2+ | 0.4− | 2005 05 11 | 703 | 0.3− | 0.4− |
| 2001 02 01 | 704 | 0.6− | 0.7− | 2003 12 01 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.6+ |
| 2001 02 01 | 704 | 0.9− | 1.0− | 2003 12 01 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 1.1+ |
| 2001 02 01 | 704 | 0.3+ | 1.3− | 2003 12 17 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2001 02 03 | 704 | 0.3+ | 1.3+ | 2003 12 17 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.7− | 0.2+ |
| 2001 02 03 | 704 | 0.3+ | 0.4+ | 2003 12 17 | 691 | 0.1− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.4+ |
| 2001 02 03 | 704 | 0.1− | 0.4+ | 2003 12 17 | 699 | 0.1− | 0.6− | 2006 09 25 | 703 | 0.7+ | 0.2− |
| 2001 02 03 | 704 | 0.4− | 0.6+ | 2003 12 17 | 699 | 0.2− | 0.3− | 2006 09 25 | 703 | 0.2− | 0.3− |
| 2001 02 03 | 704 | 0.4+ | 0.2+ | 2003 12 17 | 699 | 0.3− | 0.1+ | 2006 09 25 | 703 | 0.0 | 0.2+ |
| 2001 02 17 | 704 | 0.2+ | 0.0 | 2003 12 17 | 699 | 0.6− | 0.9+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2001 02 17 | 704 | (2.0+ | 0.1+) | 2003 12 22 | 704 | 0.9+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2001 02 17 | 704 | 0.0 | 1.3+ | 2003 12 22 | 704 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.6− | 0.7+ |
| 2001 02 17 | 704 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.5+ | 0.3− | 2006 10 10 | 644 | 0.3− | 0.1− |
| 2001 02 22 | 699 | 0.2+ | 0.8+ | 2003 12 22 | 704 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2001 02 22 | 699 | 0.4− | 0.5+ | 2003 12 22 | 704 | 0.6+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 02 22 | 699 | 0.8+ | 0.7+ | 2005 05 07 | 703 | 0.8− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 2001 02 22 | 699 | 0.1+ | 0.4+ | 2005 05 07 | 703 | (2.5− | 1.2+) | 2006 10 21 | 703 | 0.1− | 1.0+ |
| 2001 03 13 | 699 | 0.6− | 0.3+ | 2005 05 07 | 703 | 0.2+ | 1.2+ | 2006 10 21 | 703 | 0.5+ | 0.8+ |
| 2001 03 13 | 699 | 1.4− | 1.3− | 2005 05 07 | 703 | (2.6+ | 0.0 ) | 2006 10 21 | 703 | 0.1− | 0.8− |
| 2001 03 13 | 699 | (1.7− | 0.3−) | 2005 05 11 | 699 | (1.7+ | 0.0 ) | | | | |

**(138967)∗ 2001 $CN_{18}$**

Discovered 2001 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 240.29807 | | | (2000.0) | | |
| $n$ | 0.29597842 | $\omega$ | 353.80662 | | −0.81391929 | −0.57883298 |
| $a$ | 2.2299546 | $\Omega$ | 150.64696 | | +0.53730828 | −0.78261651 |
| $e$ | 0.0970984 | $i$ | 5.84006 | | +0.22098691 | −0.22904976 |
| $P$ | 3.33 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.4− | 0.0 | 2001 02 16 | 699 | 0.1+ | 0.3+ | 2005 06 03 | 703 | 0.1− | 0.1− |
| 1998 03 24 | 704 | 1.4− | 0.4+ | 2001 02 16 | 699 | 0.1+ | 0.5+ | 2005 06 03 | 703 | 0.0 | 0.0 |
| 1998 03 24 | 704 | 0.9− | 1.1− | 2001 02 16 | 699 | 0.5+ | 0.8+ | 2005 06 10 | 691 | 0.3+ | 0.9+ |
| 1998 03 24 | 704 | (0.9− | 3.4−) | 2001 02 16 | 699 | 0.7+ | 0.8+ | 2005 06 10 | 691 | 0.1+ | 0.6+ |
| 1998 04 20 | 704 | 0.2− | 0.9− | 2001 02 20 | 704 | 0.3− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.5+ |
| 1998 04 20 | 704 | 1.2+ | 0.9− | 2001 02 20 | 704 | 0.1+ | 0.6− | 2006 09 17 | 691 | 0.0 | 0.6+ |
| 1998 04 20 | 704 | 0.8+ | 0.2− | 2001 02 20 | 704 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 1998 04 20 | 704 | 0.8− | 0.8− | 2001 02 20 | 704 | 0.6− | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.1− | 0.8− | 2001 02 22 | 704 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.4+ | | |
| 2001 01 03 | 704 | 0.2+ | 0.8+ | 2001 02 22 | 704 | 0.4− | 0.0 | 2006 09 29 | 699 | (1.7− | 1.0−) | | |
| 2001 01 03 | 704 | 0.3− | 0.6− | 2001 02 22 | 704 | 0.2− | 0.8+ | 2006 09 29 | 699 | 0.6+ | 0.5+ | | |
| 2001 01 03 | 704 | 0.5+ | 0.5+ | 2001 02 22 | 704 | 0.1− | 1.2+ | 2006 09 29 | 699 | 0.5− | 0.1− | | |
| 2001 02 01 | 106 | 0.6+ | 0.5− | 2001 02 22 | 704 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.5− | | |
| 2001 02 01 | 106 | 0.4+ | 0.0 | 2001 03 20 | 699 | (4.7+ | 1.0+) | 2006 10 16 | 703 | 0.1− | 0.7+ | | |
| 2001 02 01 | 106 | (2.0− | 0.0 ) | 2001 03 20 | 699 | (2.4+ | 0.9−) | 2006 10 16 | 703 | 0.0 | 0.4− | | |
| 2001 02 02 | 704 | 0.1− | 0.1− | 2001 03 20 | 699 | (1.6+ | 1.9−) | 2006 10 16 | 703 | (2.7− | 2.4−) | | |
| 2001 02 02 | 704 | 0.0 | 0.9+ | 2001 03 20 | 699 | 0.6+ | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2001 02 02 | 704 | 0.1− | 0.7+ | 2003 11 30 | 704 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2001 02 02 | 704 | 0.0 | 0.4− | 2003 11 30 | 704 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.3+ | | |
| 2001 02 02 | 704 | 0.2− | 0.5+ | 2003 11 30 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.2− | | |
| 2001 02 03 | 704 | 0.2+ | 0.7+ | 2003 11 30 | 704 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2001 02 03 | 704 | 0.2− | 0.2+ | 2003 12 16 | 691 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.0 | | |
| 2001 02 03 | 704 | 0.2+ | 1.0+ | 2003 12 16 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2001 02 03 | 704 | 0.1+ | 0.3+ | 2003 12 16 | 691 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2001 02 03 | 704 | 0.1+ | 1.0+ | 2003 12 20 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2001 02 14 | 046 | 0.1− | 0.6− | 2003 12 20 | 704 | 1.4+ | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2001 02 14 | 046 | 0.1+ | 0.2− | 2003 12 20 | 704 | 0.5− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2001 02 14 | 046 | 0.1+ | 0.2+ | 2003 12 20 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 02 14 | 046 | 0.3+ | 0.3− | 2003 12 20 | 704 | 0.4− | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.9+ | | |
| 2001 02 14 | 046 | 0.2+ | 0.1+ | 2004 01 18 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 1.0− | | |
| 2001 02 14 | 046 | 0.1+ | 0.0 | 2004 01 18 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.5− | 1.3− | | |
| 2001 02 14 | 046 | 0.5+ | 0.2− | 2004 01 18 | 644 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.8− | 0.6− | | |
| 2001 02 15 | 046 | 0.0 | 0.2− | 2004 01 18 | 644 | 0.1+ | 0.1− | 2006 10 28 | 703 | 1.3− | 0.3+ | | |
| 2001 02 15 | 046 | 0.0 | 0.1− | 2004 01 18 | 644 | 0.2− | 0.2− | 2006 10 28 | 703 | 0.9− | 0.1− | | |
| 2001 02 15 | 046 | 0.2+ | 0.3− | 2004 01 18 | 644 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.1− | | |
| 2001 02 15 | 046 | 0.1+ | 0.4− | 2005 06 03 | 703 | 0.5− | 1.2+ | 2006 10 28 | 703 | 0.3− | 0.5+ | | |
| 2001 02 15 | 046 | 0.2+ | 0.1− | 2005 06 03 | 703 | (1.1+ | 1.6+) | | | | | | |

**(138968)∗ 2001 CT$_{18}$ = 1999 TG$_{297}$**

Discovered 2001 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 10765)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.08628 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17183752 | $\omega$ | 306.96439 | | +0.25231580 | −0.96672386 | |
| $a$ | 3.2042327 | $\Omega$ | 128.36722 | | +0.90402990 | +0.21994822 | |
| $e$ | 0.1893517 | $i$ | 3.08609 | | +0.34506039 | +0.13064360 | |
| $P$ | 5.74 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.4+ | 0.6− | 2005 10 27 | 691 | 0.2− | 0.1+ | 2005 11 10 | 703 | 0.2− | 0.4− | | |
| 1996 04 18 | 691 | (3.0− | 1.2−) | 2005 10 27 | 691 | 0.4− | 0.1+ | 2005 11 10 | 703 | 0.2− | 0.4− | | |
| 1996 04 18 | 691 | (5.7+ | 4.1−) | 2005 10 28 | 703 | 0.2+ | 0.8− | 2005 11 10 | 703 | 0.1− | 0.8− | | |
| 1999 10 02 | 703 | 0.1+ | 0.0 | 2005 10 28 | 703 | 0.1+ | 0.9− | 2005 11 12 | 703 | 0.2− | 0.5− | | |
| 1999 10 02 | 703 | 0.6+ | 1.3− | 2005 10 28 | 703 | 0.7− | 0.6− | 2005 11 12 | 703 | 0.3− | 0.5− | | |
| 1999 10 02 | 703 | 1.4− | 0.4− | 2005 10 28 | 704 | 0.3− | 0.5+ | 2005 11 12 | 703 | 0.1+ | 0.8− | | |
| 1999 10 02 | 703 | 1.1− | 0.4+ | 2005 10 28 | 703 | 0.2− | 0.1− | 2005 11 12 | 703 | 0.1+ | 0.7− | | |
| 1999 10 09 | 704 | 0.0 | 0.9− | 2005 10 28 | 704 | 0.1− | 1.1+ | 2005 11 20 | 699 | 1.0+ | 0.1− | | |
| 1999 10 09 | 704 | 0.9+ | 1.1− | 2005 10 28 | 704 | 0.1− | 0.6+ | 2005 11 20 | 699 | 0.9+ | 0.1− | | |
| 1999 10 09 | 704 | 1.2− | 0.7− | 2005 10 28 | 704 | 0.2− | 0.2+ | 2005 11 20 | 699 | 0.2+ | 0.5+ | | |
| 1999 10 09 | 704 | 1.7+ | 0.9− | 2005 10 28 | 704 | 0.1+ | 0.7+ | 2005 11 20 | 699 | 0.7+ | 0.1+ | | |
| 1999 10 09 | 704 | (0.5+ | 2.2−) | 2005 10 31 | 691 | 0.2− | 0.1+ | 2005 11 20 | 699 | 0.2+ | 0.2− | | |
| 2001 01 21 | 704 | 0.3+ | 0.3− | 2005 10 31 | 683 | (1.9+ | 0.5−) | 2005 11 20 | 699 | 1.1+ | 0.2+ | | |
| 2001 01 21 | 704 | 0.4+ | 0.3− | 2005 10 31 | 704 | 0.2+ | 0.6+ | 2005 11 20 | 699 | 0.0 | 0.5+ | | |
| 2001 01 21 | 704 | 0.3− | 0.7+ | 2005 10 31 | 691 | 0.3− | 0.0 | 2005 11 20 | 699 | 0.4− | 1.0+ | | |
| 2001 01 24 | 691 | 0.1− | 0.2+ | 2005 10 31 | 683 | 0.5+ | 1.4− | 2005 11 25 | 703 | 1.3+ | 0.4− | | |
| 2001 01 24 | 691 | 0.1− | 0.0 | 2005 10 31 | 704 | 0.3+ | 0.2+ | 2005 11 25 | 703 | 0.2− | 0.2− | | |
| 2001 01 24 | 691 | 0.2− | 0.0 | 2005 10 31 | 683 | 0.0 | 0.2+ | 2005 11 25 | 703 | 0.2− | 1.2− | | |
| 2001 02 01 | 699 | 0.1+ | 0.6+ | 2005 10 31 | 704 | 0.3+ | 0.5+ | 2005 11 25 | 703 | 0.2− | 0.9− | | |
| 2001 02 01 | 699 | 0.3− | 0.4− | 2005 10 31 | 691 | 0.1− | 0.1+ | 2005 11 29 | 699 | 0.3− | 0.0 | | |
| 2001 02 01 | 699 | 0.5− | 0.3+ | 2005 10 31 | 704 | 0.1− | 0.2+ | 2005 11 29 | 699 | 0.2+ | 0.2+ | | |
| 2001 02 01 | 699 | 0.5− | 0.5− | 2005 10 31 | 704 | 0.2+ | 0.4+ | 2005 11 29 | 699 | 0.5− | 0.1+ | | |
| 2001 02 02 | 704 | 0.6+ | 0.7− | 2005 11 01 | 683 | 0.9+ | 0.6+ | 2005 11 29 | 699 | 0.4+ | 0.3+ | | |
| 2001 02 02 | 704 | 1.0+ | 0.6− | 2005 11 01 | 683 | 0.0 | 0.3− | 2005 11 30 | 704 | 0.3− | 0.4+ | | |
| 2001 02 02 | 704 | 0.0 | 0.0 | 2005 11 01 | 683 | 0.1− | 1.0+ | 2005 11 30 | 704 | 0.2− | 0.7+ | | |
| 2001 02 02 | 704 | 0.5+ | 0.1− | 2005 11 03 | 704 | 0.5+ | 0.4+ | 2005 11 30 | 704 | 0.1+ | 0.2+ | | |
| 2001 02 02 | 704 | 0.1− | 1.0− | 2005 11 03 | 704 | 0.5+ | 0.6+ | 2005 11 30 | 704 | 0.0 | 0.3+ | | |
| 2001 02 03 | 704 | 0.4− | 0.1+ | 2005 11 03 | 704 | 0.5+ | 0.2+ | 2005 11 30 | 704 | 0.5+ | 0.2+ | | |
| 2001 02 03 | 704 | 0.5− | 0.5− | 2005 11 03 | 704 | 0.1− | 0.4+ | 2005 12 03 | 704 | 0.9− | 0.0 | | |
| 2001 02 03 | 704 | 0.0 | 0.0 | 2005 11 04 | 683 | 1.3+ | 0.9− | 2005 12 03 | 704 | 0.7− | 0.8+ | | |
| 2001 02 03 | 704 | 0.4− | 0.3− | 2005 11 04 | 683 | 0.4+ | 0.6− | 2005 12 03 | 704 | 0.7− | 0.8+ | | |
| 2001 02 20 | 701 | (2.1− | 1.7+) | 2005 11 04 | 683 | 0.7+ | 1.3− | 2005 12 07 | 704 | 0.4− | 1.0+ | | |
| 2001 02 20 | 701 | 0.2− | 0.1+ | 2005 11 05 | 691 | 0.0 | 0.0 | 2005 12 07 | 704 | (0.9− | 2.5+) | | |
| 2001 02 20 | 704 | 0.1+ | 0.3+ | 2005 11 05 | 691 | 0.2+ | 0.1− | 2005 12 07 | 704 | (0.1+ | 2.3−) | | |
| 2001 02 20 | 704 | 1.2+ | 0.9+ | 2005 11 05 | 704 | (0.4− | 1.7+) | 2005 12 07 | 704 | (2.1− | 2.0+) | | |
| 2001 02 20 | 704 | (0.7+ | 2.2+) | 2005 11 05 | 683 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.4− | | |
| 2001 02 20 | 704 | (0.8− | 1.9+) | 2005 11 05 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1+ | | |
| 2002 04 09 | 644 | 0.2+ | 0.3+ | 2005 11 05 | 704 | 0.2− | 0.6− | 2006 10 27 | G96 | 0.4− | 0.2− | | |
| 2002 04 09 | 644 | 0.5− | 0.4+ | 2005 11 05 | 683 | 0.8+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 2002 04 09 | 644 | 0.1+ | 0.6+ | 2005 11 05 | 683 | 1.0+ | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.6+ | | |
| 2005 10 12 | 704 | 0.2+ | 0.2+ | 2005 11 05 | 704 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.0 | | |
| 2005 10 12 | 704 | 0.7− | 1.1− | 2005 11 05 | 704 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2+ | | |
| 2005 10 12 | 704 | 0.2− | 0.2− | 2005 11 06 | 683 | (1.7+ | 0.5−) | 2006 11 16 | G96 | 0.5− | 0.0 | | |
| 2005 10 12 | 704 | 0.4− | 0.3+ | 2005 11 06 | 683 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.5− | 0.1− | | |
| 2005 10 25 | 703 | 0.3− | 0.1− | 2005 11 06 | 683 | 1.1− | 0.0 | 2006 11 24 | G96 | 0.2− | 0.2− | | |
| 2005 10 25 | 703 | 0.3+ | 0.3− | 2005 11 10 | 683 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.4− | 0.2− | | |
| 2005 10 25 | 703 | 0.2− | 0.3+ | 2005 11 10 | 683 | 1.1+ | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.0 | | |
| 2005 10 25 | 703 | 1.1− | 0.3+ | 2005 11 10 | 683 | 0.4+ | 0.8+ | | | | | | |
| 2005 10 27 | 691 | 0.3− | 0.2+ | 2005 11 10 | 703 | 0.8+ | 0.1+ | | | | | | |

**(138969)∗ 2001 CZ$_{18}$**

Discovered 2001 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.14713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28636341 | $\omega$ | 73.43020 | | −0.90421181 | +0.42293619 | |
| $a$ | 2.2795950 | $\Omega$ | 131.54736 | | −0.41583012 | −0.84012632 | |
| $e$ | 0.1261025 | $i$ | 4.55074 | | −0.09739776 | −0.33957731 | |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.3+ | 0.7+ | 2001 02 22 | 704 | 0.2− | 0.7+ | 2005 06 05 | 704 | 0.4+ | 1.1+ | | |
| 2001 01 21 | 704 | 0.2− | 0.6− | 2001 02 22 | 704 | 0.3+ | 0.6+ | 2005 06 05 | 704 | 0.1− | 0.4+ | | |
| 2001 01 21 | 704 | 0.1− | 0.6+ | 2001 02 22 | 704 | 0.4+ | 0.8+ | 2005 06 05 | 704 | 0.0 | 0.4+ | | |
| 2001 01 21 | 704 | 0.7+ | 0.4+ | 2001 02 22 | 704 | 0.4+ | 0.7+ | 2005 07 11 | G96 | 0.4+ | 0.5− | | |
| 2001 01 21 | 704 | 0.2+ | 0.3+ | 2002 08 18 | 644 | 0.1− | 1.4+ | 2005 07 11 | G96 | 0.2+ | 0.1− | | |
| 2001 02 02 | 699 | 0.1+ | 0.1− | 2002 08 18 | 644 | 0.5− | 0.9+ | 2005 07 11 | G96 | 0.4+ | 0.2− | | |
| 2001 02 02 | 704 | (0.2+ | 1.6+) | 2002 08 18 | 644 | 0.2− | 1.3+ | 2005 07 11 | G96 | 0.1+ | 0.4− | | |
| 2001 02 02 | 699 | 0.4− | 1.1+ | 2002 08 29 | 291 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.2+ | | |
| 2001 02 02 | 704 | 0.8− | 0.3+ | 2002 08 29 | 291 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.5+ | 0.3+ | | |
| 2001 02 02 | 704 | 0.1− | 0.9+ | 2002 08 29 | 291 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.4+ | | |
| 2001 02 02 | 699 | 0.5− | 0.2+ | 2005 06 02 | E12 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2+ | | |
| 2001 02 02 | 704 | 0.0 | 0.6+ | 2005 06 02 | E12 | 0.8− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.5+ | | |
| 2001 02 02 | 704 | 0.4+ | 0.2+ | 2005 06 02 | E12 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.5+ | 0.1+ | | |
| 2001 02 02 | 699 | 0.3− | 0.2+ | 2005 06 02 | E12 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.0 | 0.2+ | | |
| 2001 02 03 | 704 | 0.9+ | 0.7+ | 2005 06 03 | 703 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2001 02 03 | 704 | 0.4+ | 0.9+ | 2005 06 03 | 703 | 0.8+ | 1.3+ | 2006 11 24 | G96 | 0.2− | 0.1− | | |
| 2001 02 03 | 704 | (1.8+ | 0.6+) | 2005 06 03 | 703 | (3.2− | 3.3+) | 2006 11 24 | G96 | 0.3− | 0.0 | | |
| 2001 02 03 | 704 | 0.1+ | 0.3+ | 2005 06 03 | 703 | (0.8+ | 2.4+) | 2006 11 24 | G96 | 0.4− | 0.7− | | |
| 2001 02 22 | 704 | 0.9+ | 1.3+ | 2005 06 05 | 704 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.4− | | |

**(138970)∗ 2001 CV$_{19}$ = 2002 XX$_{44}$**

Discovered 2001 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40127)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.72148 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.47299820 | $\omega$ | 264.20706 | | −0.91936942 | −0.16172998 | |
| $a$ | 1.6314098 | $\Omega$ | 266.09463 | | +0.29265402 | −0.89035987 | |
| $e$ | 0.0523668 | $i$ | 21.06628 | | −0.26289446 | −0.42556166 | |
| $P$ | 2.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 0.0 | 0.2+ | 2003 01 07 | 704 | 0.3+ | 0.5− | 2004 11 21 | A30 | 0.1− | 0.2− |
| 2000 11 21 | 704 | 0.9+ | 0.2+ | 2003 01 07 | 704 | 0.3− | 0.5− | 2004 11 21 | 084 | 0.8+ | 0.7+ |
| 2000 11 21 | 704 | 0.1− | 0.5+ | 2003 01 07 | 704 | 1.0+ | 0.6− | 2004 11 22 | 084 | 0.4− | 0.1+ |
| 2000 11 21 | 704 | 0.7+ | 1.2+ | 2003 01 07 | 704 | 0.0 | 0.3− | 2004 11 26 | 084 | 0.7− | 0.3− |
| 2000 12 24 | 608 | 0.1+ | 0.4− | 2003 01 07 | 704 | 0.2− | 0.2− | 2004 12 01 | 704 | 0.5− | 1.2+ |
| 2000 12 24 | 608 | 0.3+ | 0.5− | 2003 01 08 | 704 | 0.1− | 0.4+ | 2004 12 01 | 704 | (0.5− | 1.7+) |
| 2000 12 24 | 608 | 0.2− | 0.3− | 2003 01 08 | 704 | (2.2+ | 1.1+) | 2004 12 01 | 704 | 0.4+ | 0.9+ |
| 2001 02 02 | 704 | 0.1+ | 0.4− | 2003 01 08 | 704 | 0.0 | 0.1− | 2004 12 01 | 704 | 0.1+ | 0.3− |
| 2001 02 02 | 704 | 0.3+ | 0.5− | 2003 01 08 | 704 | 0.4− | 0.1+ | 2004 12 01 | 704 | 0.1+ | 0.4+ |
| 2001 02 02 | 704 | 1.0− | 1.4− | 2003 01 09 | 704 | 0.1− | 0.3− | 2004 12 10 | 046 | 0.3− | 0.0 |
| 2001 02 02 | 704 | 0.5− | 1.2− | 2003 01 09 | 704 | 0.3− | 0.5− | 2004 12 10 | 046 | 0.2− | 0.9− |
| 2001 02 03 | 704 | 1.1+ | 0.9− | 2003 01 09 | 704 | 0.2+ | 0.2+ | 2004 12 10 | 046 | 0.1− | 0.2+ |
| 2001 02 03 | 673 | (1.2− | 1.9+) | 2003 01 09 | 704 | 0.6+ | 0.5+ | 2004 12 10 | 046 | 0.2− | 0.7− |
| 2001 02 03 | 704 | 0.4− | 0.4+ | 2003 01 09 | 704 | 0.4− | 0.1+ | 2004 12 10 | 046 | 0.6− | 0.1+ |
| 2001 02 03 | 673 | (1.6− | 1.6+) | 2003 01 10 | 704 | 0.4− | 0.4+ | 2004 12 12 | 046 | 0.7− | 0.1+ |
| 2001 02 03 | 673 | 0.9− | 1.4+ | 2003 01 10 | 704 | 0.5− | 0.8+ | 2004 12 12 | 046 | 0.5− | 0.2− |
| 2001 02 03 | 704 | 0.7+ | 1.1+ | 2003 01 10 | 704 | 0.5− | 0.0 | 2004 12 12 | 046 | 0.0 | 0.3− |
| 2001 02 04 | 673 | 0.3− | 0.5+ | 2003 01 18 | 644 | 0.2− | 0.1− | 2004 12 12 | 046 | 0.0 | 0.5+ |
| 2001 02 04 | 673 | 0.0 | 0.5+ | 2003 01 18 | 644 | 0.3+ | 0.0 | 2004 12 12 | 046 | 0.4− | 0.1− |
| 2001 02 04 | 474 | 1.2− | 1.1− | 2003 01 18 | 644 | 0.3+ | 0.6+ | 2004 12 12 | 046 | 0.6− | 0.1+ |
| 2001 02 04 | 474 | 0.4− | 0.0 | 2003 01 26 | 699 | 0.7+ | 0.1+ | 2004 12 13 | 084 | 0.1− | 0.1− |
| 2001 02 04 | 413 | 0.0 | 0.2− | 2003 01 26 | 699 | 0.2+ | 0.4+ | 2004 12 13 | 071 | 0.7− | 1.0− |
| 2001 02 04 | 413 | 0.0 | 0.1− | 2003 01 26 | 699 | 0.1+ | 0.7− | 2004 12 13 | 071 | 0.5− | 0.9− |
| 2001 02 04 | 474 | 0.4+ | 0.5+ | 2003 01 26 | 699 | 0.9+ | 0.0 | 2004 12 13 | 071 | 0.2+ | 0.5+ |
| 2001 02 04 | 413 | 0.1+ | 0.2− | 2003 01 27 | 704 | 0.0 | 0.7+ | 2004 12 17 | 699 | 0.1− | 0.0 |
| 2002 10 06 | 704 | 0.4− | 0.2+ | 2003 01 27 | 704 | (0.0 | 1.5+) | 2004 12 17 | 699 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.2− | 0.8− | 2003 01 27 | 704 | 0.6+ | 0.6+ | 2004 12 17 | 699 | 0.5+ | 0.2− |
| 2002 10 06 | 704 | 0.7+ | 1.1− | 2003 02 01 | 704 | 1.2+ | 0.7− | 2004 12 17 | 699 | 0.4+ | 0.1− |
| 2002 10 30 | 704 | 0.5+ | 1.0− | 2003 02 01 | 704 | 1.3+ | 0.7− | 2004 12 17 | 699 | 0.1− | 0.3+ |
| 2002 10 30 | 704 | 0.3+ | 0.0 | 2003 02 01 | 704 | 1.1+ | 0.5− | 2004 12 17 | 699 | 0.2− | 0.0 |
| 2002 10 30 | 704 | 0.4+ | 0.4− | 2003 02 01 | 704 | 0.8+ | 0.7− | 2004 12 17 | 699 | 0.1− | 0.1− |
| 2002 10 30 | 704 | 0.6+ | 1.3− | 2003 02 04 | 644 | 0.4+ | 0.8+ | 2004 12 17 | 699 | 0.2+ | 0.3+ |
| 2002 11 06 | 704 | 1.0− | 0.1− | 2003 02 04 | 644 | 0.1+ | 1.0+ | 2004 12 31 | 084 | 0.6+ | 0.1− |
| 2002 11 06 | 704 | 0.2+ | 0.3− | 2003 02 04 | 644 | 0.2+ | 1.1+ | 2005 01 07 | 704 | 0.2+ | 0.1− |
| 2002 11 06 | 704 | 0.3+ | 1.1− | 2004 09 15 | 704 | 0.7+ | 0.0 | 2005 01 07 | 704 | 0.2− | 0.0 |
| 2002 11 15 | 704 | (1.0− | 1.5+) | 2004 09 15 | 704 | (2.0+ | 0.1+) | 2005 01 07 | 704 | 0.2− | 0.1+ |
| 2002 11 15 | 704 | 0.8− | 0.9+ | 2004 09 15 | 704 | 1.3+ | 0.1+ | 2005 01 07 | 704 | 0.3− | 0.3+ |
| 2002 11 15 | 704 | 0.4+ | 1.1+ | 2004 09 18 | 461 | 0.4+ | 0.0 | 2005 01 11 | 704 | 0.1+ | 0.4+ |
| 2002 11 15 | 704 | 1.1− | 0.6+ | 2004 09 18 | 461 | 0.5− | 0.1+ | 2005 01 11 | 704 | 0.0 | 0.5+ |
| 2002 12 07 | 704 | 0.6− | 0.0 | 2004 10 16 | 084 | 1.0+ | 1.1− | 2005 01 11 | 704 | 1.0+ | 0.3− |
| 2002 12 07 | 704 | 0.7− | 0.0 | 2004 10 23 | 704 | 0.6+ | 0.9+ | 2005 01 11 | 704 | 0.1− | 0.5− |
| 2002 12 07 | 704 | 0.7− | 0.3− | 2004 10 23 | 704 | 1.0+ | 0.1− | 2005 01 11 | 704 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 1.4+ | 0.2− | 2004 10 23 | 704 | 1.3+ | 0.6+ | 2005 01 17 | 703 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.1− | 0.8− | 2004 10 23 | 704 | 0.9+ | 0.0 | 2005 01 17 | 703 | 0.3− | 0.5+ |
| 2002 12 11 | 704 | 0.0 | 0.6− | 2004 10 25 | 704 | 0.5− | 0.1+ | 2005 01 17 | 703 | 0.3+ | 0.0 |
| 2002 12 11 | 704 | 0.1− | 0.5− | 2004 10 25 | 704 | 0.9− | 0.3+ | 2005 01 17 | 703 | 0.4− | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.5− | 2004 10 25 | 704 | 0.2+ | 0.3+ | 2005 02 02 | 704 | 0.2+ | 0.1− |
| 2002 12 12 | 704 | 0.2+ | 0.1+ | 2004 10 25 | 704 | 0.7+ | 0.2+ | 2005 02 02 | 704 | 0.7− | 1.1− |
| 2002 12 12 | 704 | 0.4+ | 0.0 | 2004 10 25 | 704 | 0.4− | 0.0 | 2005 02 02 | 704 | 0.3+ | 1.1− |
| 2002 12 12 | 704 | 0.1+ | 0.2− | 2004 10 30 | 084 | 0.6− | 0.4+ | 2005 02 02 | 704 | 1.1+ | 0.6− |
| 2002 12 12 | 704 | 0.1− | 0.2− | 2004 10 30 | 084 | 0.1+ | 0.1− | 2006 09 05 | A17 | 0.2+ | 0.1− |
| 2002 12 14 | 704 | 0.3+ | 0.4+ | 2004 11 03 | 704 | 0.1− | 0.4+ | 2006 09 05 | A17 | 0.2+ | 0.6− |
| 2002 12 14 | 704 | 0.1− | 0.3+ | 2004 11 03 | 704 | 0.2− | 0.5+ | 2006 09 05 | A17 | 0.3+ | 0.0 |
| 2002 12 14 | 704 | 0.1− | 0.3+ | 2004 11 03 | 704 | 0.6+ | 0.8+ | 2006 09 21 | A74 | 0.7− | 0.7− |
| 2002 12 14 | 704 | 0.9+ | 0.0 | 2004 11 03 | 704 | 0.2− | 0.6+ | 2006 09 21 | A74 | 0.3− | 0.3− |
| 2002 12 14 | 704 | 0.2− | 0.0 | 2004 11 03 | 704 | 0.6+ | 0.4+ | 2006 09 21 | A74 | 0.6− | 0.2+ |
| 2002 12 14 | 704 | 0.1− | 0.1+ | 2004 11 04 | 104 | 0.3− | 0.0 | 2006 09 29 | A41 | 0.1− | 0.3+ |
| 2002 12 14 | 704 | 0.3+ | 0.3+ | 2004 11 04 | 104 | 0.2− | 0.3− | 2006 09 30 | A41 | (1.9− | 0.2+) |
| 2002 12 14 | 704 | 0.2− | 0.0 | 2004 11 04 | 104 | 0.2− | 0.2− | 2006 11 11 | 447 | 0.4+ | 0.5+ |
| 2002 12 14 | 704 | 0.3− | 0.1+ | 2004 11 10 | 704 | 0.5− | 0.9+ | 2006 11 11 | 447 | 0.3+ | 0.8− |
| 2002 12 14 | 704 | 0.3+ | 0.4+ | 2004 11 10 | 704 | 0.2+ | 0.4− | 2006 11 11 | 447 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.3− | 0.0 | 2004 11 10 | 704 | 0.5+ | 0.1− | 2006 11 13 | 704 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.2− | 0.2+ | 2004 11 10 | 704 | 1.0+ | 0.9− | 2006 11 13 | 704 | 0.2+ | 0.1+ |
| 2002 12 14 | 704 | 0.2+ | 0.4+ | 2004 11 10 | 704 | 0.0 | 0.5+ | 2006 11 13 | 704 | 0.1− | 0.6− |
| 2002 12 14 | 704 | 0.6− | 0.3− | 2004 11 21 | 130 | 0.4− | 0.7− | 2006 11 13 | 704 | 0.1− | 0.5− |
| 2002 12 14 | 704 | 0.1− | 0.3+ | 2004 11 21 | 130 | 0.0 | 0.2− | 2006 11 13 | 704 | 0.5− | 0.3+ |
| 2002 12 31 | 704 | (2.6− | 1.1+) | 2004 11 21 | 130 | 0.3− | 0.3− | 2006 11 20 | 703 | 0.2+ | 0.0 |
| 2002 12 31 | 704 | 1.3− | 0.8+ | 2004 11 21 | 130 | 0.2+ | 0.5− | 2006 11 20 | 703 | 0.1+ | 0.7+ |
| 2002 12 31 | 704 | 1.3− | 1.1+ | 2004 11 21 | A30 | 0.3+ | 0.1+ | 2006 11 20 | 703 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | 0.8− | 0.6+ | 2004 11 21 | A30 | 0.3+ | 0.4− | | | | |
| 2002 12 31 | 704 | 1.4− | 0.4+ | 2004 11 21 | A30 | 0.3+ | 0.7− | | | | |

## (138971)∗ 2001 CB$_{21}$

Discovered 2001 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.29630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.93696145 | $\omega$ | 271.56054 | | −0.07823521 | +0.99682728 | |
| $a$ | 1.0343200 | $\Omega$ | 353.89408 | | −0.85113776 | −0.07443799 | |
| $e$ | 0.3336461 | $i$ | 7.91676 | | −0.51907973 | −0.02818451 | |
| $P$ | 1.05 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 704 | 0.0 | 0.9− | 2003 01 21 | 704 | 1.1+ | 0.4− | 2006 10 08 | 379 | 0.4− | 0.1− |
| 2001 02 02 | 704 | 0.8+ | 0.8+ | 2003 01 27 | 170 | 0.9+ | 0.1− | 2006 10 08 | 113 | 0.1+ | 0.2− |
| 2001 02 02 | 704 | 1.2− | 0.6+ | 2003 01 27 | 170 | 0.7+ | 0.0 | 2006 10 08 | 113 | 0.2+ | 0.2− |
| 2001 02 02 | 704 | 0.6+ | 0.6− | 2003 01 27 | 170 | 0.1+ | 0.2+ | 2006 10 08 | 113 | 0.2+ | 0.2− |
| 2001 02 03 | 704 | 0.0 | 0.3+ | 2003 01 27 | 170 | 0.5+ | 0.1+ | 2006 10 08 | 113 | 0.3+ | 0.3− |
| 2001 02 03 | 704 | 0.3− | 0.1+ | 2003 01 27 | 170 | 0.0 | 0.0 | 2006 10 08 | 113 | 0.1+ | 0.2− |
| 2001 02 03 | 704 | 0.4+ | 0.6+ | 2003 01 29 | 726 | 0.9− | 0.4+ | 2006 10 08 | 143 | 0.3+ | 0.2− |
| 2001 02 03 | 704 | 0.7− | 0.4+ | 2003 01 29 | 726 | 0.6+ | 0.6+ | 2006 10 08 | 143 | 0.2+ | 0.2− |
| 2001 02 03 | 474 | 1.3+ | 0.6− | 2003 01 29 | 670 | 0.1− | 0.6− | 2006 10 08 | 143 | 0.2+ | 0.3− |
| 2001 02 03 | 474 | 0.2− | 0.0 | 2003 01 29 | 670 | 0.4− | 0.3− | 2006 10 08 | 143 | 0.3+ | 0.2− |
| 2001 02 04 | 918 | 0.8− | 0.9+ | 2003 01 31 | 644 | 0.4+ | 0.6+ | 2006 10 08 | 240 | 0.2− | 0.3− |
| 2001 02 04 | 918 | 0.8− | 0.4+ | 2003 01 31 | 644 | 0.3− | 0.5+ | 2006 10 08 | 240 | 0.2+ | 0.2− |
| 2001 02 04 | 918 | 0.2+ | 0.4− | 2003 01 31 | 644 | 0.3+ | 0.6+ | 2006 10 08 | 143 | 0.2+ | 0.2− |
| 2001 02 04 | 912 | (2.0+ | 4.4−) | 2003 01 31 | 644 | 0.3− | 0.4+ | 2006 10 08 | 240 | 0.0 | 0.3− |
| 2001 02 05 | 704 | 0.8+ | 0.9− | 2003 01 31 | 644 | 0.1+ | 0.6+ | 2006 10 08 | 240 | 0.1− | 0.2− |
| 2001 02 05 | 704 | 1.5− | 0.1+ | 2003 01 31 | 644 | 0.1− | 0.2+ | 2006 10 08 | 639 | 0.3+ | 0.0 |
| 2001 02 05 | 704 | 0.6+ | 0.6− | 2003 02 01 | 113 | 0.4+ | 0.3+ | 2006 10 08 | 240 | 0.1+ | 0.2− |
| 2001 02 05 | 704 | 0.2+ | 0.2− | 2003 02 01 | 113 | 0.1− | 0.1− | 2006 10 08 | 143 | 0.0 | 0.3− |
| 2001 02 06 | 474 | 0.3− | 0.2+ | 2003 02 01 | 113 | 0.1+ | 0.3− | 2006 10 08 | 240 | 0.3− | 0.2− |
| 2001 02 06 | 474 | (2.7+ | 1.0+) | 2003 02 01 | 113 | 0.7+ | 0.1+ | 2006 10 08 | 240 | 0.1+ | 0.2− |
| 2001 02 06 | 474 | 0.6+ | 0.3− | 2003 02 01 | 113 | 0.8+ | 0.0 | 2006 10 08 | 639 | 0.4+ | 0.2+ |
| 2001 02 15 | 950 | 0.5− | 0.1+ | 2003 02 01 | 130 | 0.2− | 0.7− | 2006 10 08 | 240 | 0.1+ | 0.1− |
| 2001 02 15 | 950 | 0.5− | 0.1+ | 2003 02 01 | 130 | 0.0 | 0.1+ | 2006 10 08 | 143 | 0.0 | 0.2− |
| 2001 02 15 | 950 | 0.5− | 0.0 | 2003 02 01 | 130 | 0.2− | 0.0 | 2006 10 08 | 240 | 0.2+ | 0.2− |
| 2002 01 05 | 611 | 0.6− | 0.2+ | 2003 02 01 | 130 | 0.1− | 0.1− | 2006 10 08 | 639 | 0.2+ | 0.1+ |
| 2002 01 05 | 611 | 0.6+ | 0.6− | 2003 02 07 | 170 | (1.6+ | 0.1+) | 2006 10 08 | 639 | 0.2+ | 0.2+ |
| 2002 01 05 | 611 | 0.3+ | 0.1− | 2003 02 07 | 170 | 1.0+ | 0.5+ | 2006 10 08 | A48 | (1.5+ | 0.3+) |
| 2002 01 05 | 611 | 0.3+ | 0.4+ | 2003 02 07 | 170 | 0.6− | 0.3+ | 2006 10 08 | A48 | 1.1+ | 0.4+ |
| 2002 01 05 | 611 | 0.2− | 0.2+ | 2003 02 07 | 170 | 0.2+ | 0.8+ | 2006 10 08 | A48 | 1.1+ | 0.3+ |
| 2002 01 05 | 611 | 0.4− | 0.2− | 2003 02 09 | 198 | 0.2+ | 0.3− | 2006 10 08 | A48 | 1.4+ | 0.4+ |
| 2002 01 05 | 611 | 0.2+ | 0.1+ | 2003 02 09 | 198 | 0.1+ | 0.2− | 2006 10 08 | A53 | 0.2− | 0.6+ |
| 2002 01 05 | 046 | 0.4+ | 0.0 | 2003 02 09 | 198 | 0.0 | 0.1− | 2006 10 08 | A53 | 0.2+ | 0.1+ |
| 2002 01 05 | 611 | (0.5+ | 1.9−) | 2003 02 09 | 198 | 1.1− | 0.4− | 2006 10 08 | A53 | 0.3− | 0.7+ |
| 2002 01 05 | 046 | 0.4+ | 0.2+ | 2003 02 12 | 113 | 0.0 | 0.0 | 2006 10 08 | A53 | 0.4− | 0.5+ |
| 2002 01 05 | 046 | 0.9+ | 0.7+ | 2003 02 12 | 113 | 0.0 | 0.3− | 2006 10 08 | A53 | 0.2− | 0.5+ |
| 2002 01 05 | 046 | 0.1+ | 0.1+ | 2003 02 12 | 113 | 0.1− | 0.0 | 2006 10 09 | 379 | 0.1+ | 0.2− |
| 2002 01 05 | 611 | 1.4− | 0.1− | 2003 02 12 | 113 | 0.3− | 0.2− | 2006 10 09 | 379 | 0.1− | 0.2− |
| 2002 01 05 | 611 | 1.3− | 0.7− | 2003 02 12 | 113 | 0.1− | 0.4− | 2006 10 09 | 379 | 0.1+ | 0.2− |
| 2002 01 05 | 611 | 1.0− | 0.4− | 2003 02 19 | 240 | 0.5+ | 0.3− | 2006 10 09 | 379 | 0.5− | 0.2− |
| 2002 01 05 | 611 | 1.1− | 0.8+ | 2003 02 19 | 240 | 0.6+ | 0.0 | 2006 10 09 | 379 | 0.1− | 0.1− |
| 2002 01 05 | 113 | (2.4− | 1.6−) | 2003 02 19 | 240 | 0.4+ | 0.1+ | 2006 10 09 | 379 | 0.1− | 0.1− |
| 2002 01 05 | 113 | 1.4− | 1.0− | 2003 02 19 | 240 | 0.7+ | 0.3− | 2006 10 09 | 300 | 0.5+ | 0.6+ |
| 2002 01 05 | 113 | 0.9− | 0.7− | 2003 02 19 | 240 | 0.6+ | 0.5− | 2006 10 09 | 379 | 0.2− | 0.3− |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 113 | 1.0− | 0.7− | 2003 02 19 | 240 | 0.2− | 0.1− | 2006 10 09 | 379 | 0.1− | 0.1+ | 2002 02 10 | 379 | 0.9+ | 0.2+ | 2003 12 16 | J92 | 0.7+ | 0.2− | 2006 10 12 | 379 | 0.1− | 0.0 |
| 2002 01 06 | 104 | 0.3+ | 0.3+ | 2003 02 19 | 240 | 0.4+ | 0.6− | 2006 10 09 | 300 | 0.5+ | 0.5+ | 2002 02 10 | 379 | 0.5+ | 0.5+ | 2003 12 16 | J92 | 0.4− | 0.0 | 2006 10 12 | 379 | 0.1+ | 0.0 |
| 2002 01 06 | 104 | 0.9+ | 0.1− | 2003 02 21 | 151 | 0.5+ | 0.5− | 2006 10 09 | 379 | 0.4− | 0.1− | 2002 02 10 | 379 | 0.1+ | 0.1+ | 2003 12 16 | J92 | 0.0 | 0.0 | 2006 10 12 | 379 | 0.3− | 0.2− |
| 2002 01 06 | 104 | 0.3+ | 0.1+ | 2003 02 21 | 151 | 0.7+ | 0.1+ | 2006 10 09 | 300 | 0.2− | 0.7+ | 2002 02 10 | 379 | 0.5+ | 0.2+ | 2003 12 16 | J92 | 0.3− | 0.2+ | 2006 10 12 | 379 | 0.1+ | 0.4− |
| 2002 01 06 | 104 | 0.2+ | 0.0 | 2003 02 21 | 151 | 0.5+ | 0.0 | 2006 10 09 | 300 | 1.0− | 0.8+ | 2002 02 10 | 379 | 0.3+ | 0.1+ | 2003 12 16 | J92 | 0.1+ | 0.1+ | 2006 10 12 | 379 | 0.0 | 0.3− |
| 2002 01 08 | 704 | 0.7+ | 1.2+ | 2003 02 21 | 151 | 1.1+ | 0.2− | 2006 10 09 | 113 | 0.0 | 0.2− | 2002 02 10 | 379 | 0.2+ | 0.3+ | 2003 12 16 | J92 | 0.9+ | 0.1− | 2006 10 12 | 379 | 0.2− | 0.3− |
| 2002 01 08 | 704 | 0.1+ | 0.3+ | 2003 02 23 | 240 | 1.2+ | 0.4+ | 2006 10 09 | 113 | 0.0 | 0.2− | 2002 02 12 | 866 | 0.4− | 0.1+ | 2003 12 29 | 151 | 0.2− | 0.0 | 2006 10 12 | 198 | 0.1− | 0.1+ |
| 2002 01 08 | 704 | 0.5+ | 1.0+ | 2003 02 23 | 240 | 0.6+ | 0.0 | 2006 10 09 | 113 | 0.2+ | 0.2− | 2002 02 12 | 866 | 0.5− | 0.1+ | 2003 12 29 | 151 | 0.0 | 1.0− | 2006 10 12 | 198 | 0.0 | 0.1+ |
| 2002 01 08 | 704 | 0.8+ | 0.7+ | 2003 02 23 | 240 | 0.7+ | 0.5− | 2006 10 09 | 113 | 0.1− | 0.1− | 2002 02 12 | 866 | 0.3− | 0.2+ | 2003 12 29 | 151 | 0.3+ | 1.3− | 2006 10 12 | 198 | 0.0 | 0.2+ |
| 2002 01 08 | 704 | 0.1+ | 0.8+ | 2003 02 23 | 240 | 0.5+ | 0.2− | 2006 10 09 | A53 | 0.2+ | 0.2+ | 2002 02 12 | 866 | 0.3− | 0.1+ | 2004 01 02 | 704 | 0.3− | 0.0 | 2006 10 12 | 198 | 0.1+ | 0.1− |
| 2002 01 08 | 670 | 0.1+ | 1.4+ | 2003 02 23 | 240 | 0.7+ | 1.2− | 2006 10 09 | A53 | 0.2+ | 0.1− | 2002 02 12 | 642 | 0.0 | 1.1+ | 2004 01 02 | 704 | 0.3− | 0.3− | 2006 10 12 | 198 | 0.0 | 0.0 |
| 2002 01 08 | 670 | 1.0+ | 0.7+ | 2003 02 23 | 240 | 0.4+ | 0.5− | 2006 10 09 | A53 | 0.2+ | 0.1− | 2002 02 12 | 642 | 0.2+ | 0.3+ | 2004 01 02 | 704 | 0.8− | 0.6− | 2006 10 12 | 151 | 0.1+ | 0.0 |
| 2002 01 12 | 670 | 0.1− | 0.2− | 2003 02 26 | 198 | 0.0 | 0.3− | 2006 10 09 | A53 | 0.0 | 0.3+ | 2002 02 12 | 642 | 0.3+ | 0.5+ | 2004 01 02 | 704 | 0.6+ | 0.6+ | 2006 10 12 | 151 | 0.1− | 0.1− |
| 2002 01 12 | 670 | 0.6− | 0.8+ | 2003 02 26 | 198 | 0.1− | 0.3− | 2006 10 09 | 143 | 0.6+ | 0.3+ | 2002 02 12 | 379 | 0.3+ | 0.2+ | 2004 01 24 | 830 | 0.5+ | 0.1− | 2006 10 12 | 151 | 0.1− | 0.0 |
| 2002 01 13 | 711 | 0.7+ | 0.2+ | 2003 02 26 | 198 | 0.0 | 0.2− | 2006 10 09 | 143 | 0.6+ | 0.3+ | 2002 02 12 | 379 | 0.3− | 0.1+ | 2004 01 24 | 830 | 1.5+ | 0.2− | 2006 10 12 | 151 | 0.0 | 0.0 |
| 2002 01 13 | 711 | 0.8+ | 0.5+ | 2003 02 26 | 198 | 0.0 | 0.7+ | 2006 10 09 | 143 | 0.6+ | 0.3+ | 2002 02 12 | 379 | 0.4− | 0.5+ | 2004 01 24 | 830 | 0.1+ | 0.3+ | 2006 10 12 | 151 | 0.0 | 0.0 |
| 2002 01 13 | 711 | 1.1+ | 0.6+ | 2003 02 26 | 198 | 0.2+ | 0.3− | 2006 10 09 | 143 | 0.6+ | 0.4+ | 2002 02 12 | 379 | 0.3− | 0.4+ | 2004 02 11 | 704 | 0.9+ | 0.8+ | 2006 10 12 | 151 | 0.1− | 0.0 |
| 2002 01 13 | 711 | 0.9+ | 0.5+ | 2003 03 05 | 704 | 1.2+ | 0.4− | 2006 10 09 | 143 | 0.6+ | 0.3+ | 2002 02 14 | 379 | 0.4+ | 0.5− | 2004 02 11 | 704 | 0.2+ | 0.5+ | 2006 10 12 | 151 | 0.2− | 0.0 |
| 2002 01 18 | 108 | (0.5+ | 3.0−) | 2003 03 05 | 704 | 0.6+ | 0.4− | 2006 10 09 | 143 | 0.6+ | 0.3+ | 2002 02 14 | 379 | 0.0 | 0.2− | 2004 02 11 | 704 | 0.1+ | 0.1− | 2006 10 13 | H68 | 1.0+ | 0.4+ |
| 2002 01 18 | 108 | (0.6− | 2.5−) | 2003 03 05 | 704 | 0.5+ | 0.8+ | 2006 10 09 | 143 | 0.5+ | 0.3+ | 2002 02 14 | 379 | 0.2+ | 0.5− | 2004 10 15 | 704 | 0.6+ | 0.3+ | 2006 10 13 | H68 | (1.5+ | 0.5+) |
| 2002 01 18 | 108 | (1.6+ | 2.1−) | 2003 03 05 | 704 | 0.6− | 0.6− | 2006 10 09 | 143 | 0.5+ | 0.3+ | 2002 02 14 | 379 | 0.3+ | 0.8− | 2004 10 15 | 704 | 0.3+ | 0.2+ | 2006 10 13 | H68 | 1.4+ | 0.2+ |
| 2002 01 19 | 108 | (0.4− | 4.0−) | 2003 03 06 | 704 | 0.1+ | 0.1− | 2006 10 09 | 143 | 0.4+ | 0.3+ | 2002 02 14 | 379 | 0.2− | 0.2− | 2004 10 15 | 704 | 0.5+ | 0.8+ | 2006 10 13 | H68 | (2.2+ | 0.5+) |
| 2002 01 22 | 046 | 0.3+ | 0.3+ | 2003 03 06 | 704 | 1.0− | 1.3+ | 2006 10 09 | 143 | 0.4+ | 0.2+ | 2002 02 14 | 379 | 0.3+ | 0.3− | 2004 10 15 | 704 | 0.8+ | 0.5+ | 2006 10 13 | H68 | (1.8+ | 0.4+) |
| 2002 01 22 | 046 | 0.3+ | 0.5+ | 2003 03 06 | 704 | 0.2+ | 0.7+ | 2006 10 09 | 143 | 0.3+ | 0.3+ | 2002 02 14 | 379 | 0.8+ | 0.4− | 2004 11 10 | 704 | 0.3+ | 0.6+ | 2006 10 13 | H68 | (1.7+ | 0.8+) |
| 2002 01 22 | 046 | 0.5+ | 0.5+ | 2003 03 06 | 704 | 0.2+ | 0.3+ | 2006 10 09 | 143 | 0.2− | 0.2+ | 2002 02 14 | 379 | 0.7+ | 0.1− | 2004 11 10 | 704 | 0.7− | 1.0+ | 2006 10 13 | J94 | 0.1+ | 0.1− |
| 2002 02 02 | 151 | 0.1+ | 0.5+ | 2003 03 06 | 704 | 0.3+ | 0.4+ | 2006 10 09 | 143 | 0.2− | 0.2+ | 2002 02 14 | 379 | 0.2+ | 0.4− | 2004 11 10 | 704 | 0.1− | 0.8+ | 2006 10 13 | J94 | 0.0 | 0.2− |
| 2002 02 02 | 151 | 0.3+ | 0.4+ | 2003 03 22 | 113 | 0.1− | 0.1+ | 2006 10 09 | 143 | 0.2− | 0.2+ | 2002 02 14 | 379 | 0.2+ | 0.3− | 2004 11 20 | 704 | 0.0 | 0.2− | 2006 10 13 | 170 | 0.1+ | 0.2− |
| 2002 02 02 | 151 | 0.5− | 0.2+ | 2003 03 22 | 113 | 0.2+ | 0.1− | 2006 10 09 | 143 | 0.2− | 0.1+ | 2002 02 14 | 127 | 0.0 | 0.5+ | 2004 11 20 | 704 | 0.3+ | 0.4− | 2006 10 13 | 170 | 0.2+ | 0.1− |
| 2002 02 02 | 151 | 0.3− | 0.6+ | 2003 03 22 | 113 | 0.8+ | 0.1+ | 2006 10 10 | 379 | 0.0 | 0.2− | 2002 02 14 | 127 | 0.3+ | 0.2+ | 2004 11 20 | 704 | 0.7− | 0.2+ | 2006 10 13 | 170 | 0.0 | 0.2− |
| 2002 02 02 | 151 | 0.4+ | 0.4+ | 2003 03 22 | 113 | 0.3+ | 0.2+ | 2006 10 10 | 379 | 0.1+ | 0.2− | 2002 02 14 | 127 | 0.2+ | 0.1+ | 2004 11 21 | 084 | 0.5+ | 0.1+ | 2006 10 13 | J94 | 0.3− | 0.0 |
| 2002 02 02 | 215 | 0.1+ | 0.5+ | 2003 04 01 | 704 | 0.2− | 0.1+ | 2006 10 10 | 379 | 0.1− | 0.1− | 2002 02 14 | 557 | 0.1− | 0.2− | 2004 11 25 | H41 | 0.1+ | 0.1− | 2006 10 15 | 379 | 0.1+ | 0.1− |
| 2002 02 02 | 151 | 0.2− | 0.4+ | 2003 04 01 | 704 | 0.5+ | 0.4+ | 2006 10 10 | 379 | 0.2+ | 0.2− | 2002 02 14 | 557 | 0.1− | 0.3− | 2004 11 25 | H41 | 0.9− | 0.5+ | 2006 10 15 | 379 | 0.2− | 0.0 |
| 2002 02 02 | 215 | 0.1− | 0.5+ | 2003 04 01 | 704 | 0.1+ | 0.0 | 2006 10 10 | 379 | 0.2+ | 0.0 | 2002 02 15 | 557 | 0.1− | 0.4− | 2004 11 25 | H41 | 0.4+ | 0.0 | 2006 10 15 | 379 | 0.0 | 0.3+ |
| 2002 02 02 | 215 | 0.0 | 0.3+ | 2003 04 01 | 704 | (0.5+ | 1.7+) | 2006 10 10 | 379 | 0.2+ | 0.3+ | 2002 02 15 | 557 | 0.2− | 0.2− | 2004 11 25 | H41 | 0.2+ | 0.7+ | 2006 10 15 | 379 | 0.3− | 0.0 |
| 2002 02 02 | 113 | 0.2− | 0.4+ | 2003 04 01 | 704 | 0.6− | 0.4+ | 2006 10 10 | 379 | 0.1− | 0.2− | 2002 02 15 | 557 | 0.1− | 0.2− | 2004 11 25 | H41 | 0.0 | 0.3+ | 2006 10 15 | 379 | 0.0 | 0.2+ |
| 2002 02 02 | 113 | 0.0 | 0.4+ | 2003 10 24 | 711 | 0.2− | 0.8+ | 2006 10 10 | 379 | 0.1− | 0.1− | 2002 02 15 | 557 | 0.1− | 0.1− | 2004 12 01 | 704 | 0.4+ | 0.6− | 2006 10 15 | 379 | 0.1− | 0.2− |
| 2002 02 02 | 113 | 0.0 | 0.5+ | 2003 10 24 | 711 | 0.1+ | 0.6+ | 2006 10 10 | 151 | 0.0 | 0.0 | 2002 02 15 | 557 | 0.0 | 0.3− | 2004 12 01 | 704 | 0.3+ | 0.4− | 2006 10 15 | 379 | 0.2+ | 0.1+ |
| 2002 02 02 | 113 | 0.1− | 0.5+ | 2003 10 24 | 711 | 0.1+ | 0.7+ | 2006 10 10 | 151 | 0.2− | 0.0 | 2002 02 15 | 557 | 0.0 | 0.2− | 2004 12 01 | 704 | 0.6+ | 0.3− | 2006 10 15 | 113 | 0.6+ | 0.2− |
| 2002 02 02 | 113 | 0.0 | 0.3+ | 2003 11 23 | 704 | 0.6− | 0.1− | 2006 10 10 | 151 | 0.1− | 0.1+ | 2002 02 15 | 379 | 0.7+ | 0.1− | 2004 12 01 | 704 | 0.2+ | 0.6− | 2006 10 15 | 113 | 0.3+ | 0.1− |
| 2002 02 03 | 639 | 0.3+ | 1.4+ | 2003 11 23 | 704 | 0.5− | 0.2− | 2006 10 10 | 151 | 0.2− | 0.1− | 2002 02 15 | 379 | 0.5+ | 0.1− | 2004 12 01 | 704 | 0.2− | 0.1− | 2006 10 15 | 113 | 0.4+ | 0.0 |
| 2002 02 03 | 639 | (1.0+ | 1.5+) | 2003 11 23 | 704 | 0.7+ | 0.4− | 2006 10 10 | 151 | 0.1− | 0.1− | 2002 02 15 | 379 | 0.3+ | 0.4− | 2004 12 02 | H41 | 0.8+ | 0.1+ | 2006 10 15 | 113 | 0.0 | 0.5− |
| 2002 02 03 | 639 | 0.4+ | 0.6+ | 2003 11 23 | 704 | 0.1+ | 0.1− | 2006 10 10 | 151 | 0.1− | 0.1+ | 2002 02 15 | 379 | 0.3+ | 0.2− | 2004 12 02 | H41 | 0.5− | 0.2+ | 2006 10 15 | 113 | 0.0 | 0.2− |
| 2002 02 03 | 639 | 0.6+ | 0.9+ | 2003 11 24 | 704 | 0.5+ | 0.7+ | 2006 10 10 | 046 | 0.2+ | 0.2+ | 2002 02 15 | 557 | 0.0 | 0.0 | 2004 12 02 | H41 | 0.3+ | 0.6− | 2006 10 15 | 240 | 0.0 | 0.1− |
| 2002 02 03 | 639 | 0.6+ | 0.7+ | 2003 11 24 | 704 | 0.6+ | 0.0 | 2006 10 10 | 046 | 0.2+ | 0.2+ | 2002 02 15 | 557 | 0.0 | 0.0 | 2004 12 02 | H41 | 0.3+ | 0.3− | 2006 10 15 | 240 | 0.1+ | 0.1− |
| 2002 02 04 | 113 | 0.3− | 0.1+ | 2003 11 24 | 704 | 0.8+ | 0.1+ | 2006 10 10 | 046 | 0.0 | 0.2+ | 2002 02 15 | 557 | 0.1+ | 0.1− | 2004 12 04 | H41 | 0.3+ | 0.4+ | 2006 10 15 | 240 | 0.1+ | 0.1− |
| 2002 02 04 | 113 | 0.2+ | 0.1+ | 2003 11 24 | 704 | 1.4+ | 0.1+ | 2006 10 10 | 046 | 0.0 | 0.2+ | 2002 02 15 | 557 | 0.2+ | 0.1− | 2004 12 04 | H41 | 1.1− | 1.0+ | 2006 10 15 | 240 | 0.1+ | 0.1− |
| 2002 02 04 | 113 | 0.1− | 0.2+ | 2003 11 24 | 704 | 0.1+ | 0.2+ | 2006 10 10 | A53 | 0.1+ | 0.1+ | 2002 02 15 | 557 | 0.0 | 0.0 | 2004 12 04 | H41 | 0.5+ | 0.4+ | 2006 10 15 | 240 | 0.2+ | 0.1− |
| 2002 02 04 | 113 | 0.0 | 0.1+ | 2003 11 26 | 704 | 0.7− | 0.4+ | 2006 10 10 | A53 | 0.1+ | 0.3+ | 2002 02 15 | 557 | 0.0 | 0.0 | 2004 12 04 | H41 | 0.2+ | 0.6− | 2006 10 15 | 240 | 0.1+ | 0.1− |
| 2002 02 04 | 113 | 0.0 | 0.1+ | 2003 11 26 | 704 | 0.1− | 0.7− | 2006 10 10 | A53 | 0.0 | 0.2+ | 2002 02 15 | 557 | 0.1+ | 0.0 | 2004 12 10 | 704 | 0.2+ | 0.0 | 2006 10 15 | 240 | 0.0 | 0.2− |
| 2002 02 06 | 379 | 0.2− | 0.5− | 2003 11 26 | 704 | 0.1− | 0.9+ | 2006 10 10 | A53 | 0.3− | 0.1+ | 2002 02 15 | 557 | 0.0 | 0.0 | 2004 12 10 | 704 | (0.4− | 1.8−) | 2006 10 15 | 240 | 0.2+ | 0.1− |
| 2002 02 06 | 379 | 0.0 | 0.8− | 2003 11 26 | 704 | 0.3+ | 0.2+ | 2006 10 10 | A48 | 1.0+ | 0.2+ | 2002 02 15 | 198 | 0.2+ | 0.3+ | 2004 12 10 | 704 | 0.3+ | 0.1+ | 2006 10 15 | 240 | 0.1+ | 0.1− |
| 2002 02 06 | 379 | 1.2+ | 0.5+ | 2003 11 26 | 704 | 0.6− | 0.0 | 2006 10 10 | A48 | 1.1+ | 0.0 | 2002 02 15 | 198 | 0.3+ | 0.1+ | 2004 12 10 | 704 | 0.4+ | 0.2− | 2006 10 15 | 143 | 0.1− | 0.2+ |
| 2002 02 06 | 379 | 0.8+ | 0.4− | 2003 12 04 | 704 | 0.3− | 1.0− | 2006 10 10 | A48 | 0.9+ | 0.1+ | 2002 02 15 | 198 | 0.2+ | 0.0 | 2004 12 10 | 704 | 0.0 | 0.3+ | 2006 10 15 | 143 | 0.2− | 0.2+ |
| 2002 02 06 | 379 | 0.1+ | 0.0 | 2003 12 04 | 704 | 0.6− | 1.1+ | 2006 10 10 | A48 | 0.8+ | 0.1+ | 2002 02 16 | 642 | 0.1− | 0.2+ | 2004 12 10 | A57 | 0.3+ | 0.6− | 2006 10 15 | 127 | 0.1+ | 0.2+ |
| 2002 02 06 | 379 | 1.2+ | 0.8− | 2003 12 04 | 704 | 0.6+ | 0.7− | 2006 10 11 | 113 | 0.1+ | 0.2− | 2002 02 16 | 642 | 0.2+ | 0.1− | 2004 12 10 | A57 | 0.1− | 0.2+ | 2006 10 15 | 127 | 0.3+ | 0.2+ |
| 2002 02 07 | 379 | 0.3− | 0.0 | 2003 12 04 | 704 | 0.7− | 0.5+ | 2006 10 11 | 113 | 0.2+ | 0.2− | 2002 02 16 | 642 | 0.9+ | 0.5− | 2004 12 10 | A57 | 0.4+ | 0.3+ | 2006 10 15 | 127 | 0.2+ | 0.2+ |
| 2002 02 07 | 379 | 0.1− | 0.2− | 2003 12 05 | 704 | 0.0 | 0.5+ | 2006 10 11 | 113 | 0.1+ | 0.2− | 2002 02 16 | 379 | 0.2+ | 0.4− | 2004 12 11 | 046 | 0.1− | 0.2− | 2006 10 15 | 127 | 0.3+ | 0.1+ |
| 2002 02 07 | 379 | 0.1+ | 0.0 | 2003 12 05 | 704 | 1.0+ | 0.7+ | 2006 10 11 | A97 | 1.1− | 0.1+ | 2002 02 16 | 379 | 0.3+ | 0.6− | 2004 12 11 | 046 | 0.5+ | 0.3+ | 2006 10 16 | 379 | 0.0 | 0.3− |
| 2002 02 07 | 379 | 0.3+ | 0.0 | 2003 12 05 | 704 | 0.3+ | 0.3− | 2006 10 11 | A97 | 1.2− | 0.1+ | 2002 02 16 | 379 | 0.6+ | 0.1− | 2004 12 11 | 046 | 0.0 | 0.4+ | 2006 10 16 | 379 | 0.1+ | 0.1− |
| 2002 02 07 | 379 | 0.4+ | 0.5− | 2003 12 05 | 704 | 0.3+ | 0.3+ | 2006 10 11 | A97 | 0.9− | 0.5− | 2002 02 16 | 379 | 0.1+ | 0.3− | 2004 12 11 | 046 | 0.7+ | 0.3+ | 2006 10 16 | 379 | 0.2− | 0.0 |
| 2002 02 07 | 379 | 0.6+ | 0.6− | 2003 12 05 | 704 | 0.5− | 0.2− | 2006 10 11 | A97 | 1.3− | 0.1− | 2002 02 16 | 557 | 0.0 | 0.2− | 2004 12 11 | 046 | 0.5− | 0.3+ | 2006 10 16 | 379 | 0.3+ | 0.2− |
| 2002 02 07 | 379 | 0.2− | 0.9− | 2003 12 15 | 704 | 0.1− | 0.0 | 2006 10 11 | A97 | 1.3− | 0.5+ | 2002 02 16 | 557 | 0.1− | 0.2− | 2004 12 11 | 046 | 0.1− | 0.8+ | 2006 10 16 | 379 | 0.1+ | 0.0 |
| 2002 02 09 | 379 | 0.4− | 0.1+ | 2003 12 15 | 704 | 0.2+ | 0.1− | 2006 10 11 | A97 | (1.6− | 0.0 ) | 2002 02 16 | 557 | 0.1− | 0.2− | 2004 12 12 | 565 | 0.6+ | 0.4− | 2006 10 16 | 379 | 0.3− | 0.2− |
| 2002 02 09 | 379 | 0.3− | 0.3− | 2003 12 15 | 704 | 0.4+ | 0.3− | 2006 10 11 | A97 | 0.4+ | 0.1− | 2002 02 16 | 557 | 0.0 | 0.3− | 2004 12 13 | 084 | 0.5− | 0.1− | 2006 10 16 | 379 | 0.2+ | 0.1− |
| 2002 02 10 | 379 | 0.9+ | 0.2− | 2003 12 15 | 704 | 0.6+ | 0.0 | 2006 10 12 | 379 | 0.5− | 0.2− | 2002 02 16 | 151 | 0.1− | 0.1− | 2004 12 13 | A30 | 0.5+ | 0.5+ | 2006 10 16 | 379 | 0.2− | 0.1+ |
| 2002 02 10 | 379 | 0.6+ | 0.2− | 2003 12 15 | J92 | 1.0+ | 0.3− | 2006 10 12 | 379 | 0.6− | 0.0 | 2002 02 16 | 151 | 0.3+ | 0.2− | 2004 12 13 | A30 | 0.5+ | 0.4+ | 2006 10 16 | 379 | 0.0 | 0.4− |
| 2002 02 10 | 379 | 1.1+ | 0.0 | 2003 12 15 | J92 | 0.6− | 0.3+ | 2006 10 12 | 379 | 0.0 | 0.0 | 2002 02 16 | 151 | 0.1+ | 0.0 | 2004 12 13 | 240 | 0.3− | 0.4− | 2006 10 16 | 379 | 0.0 | 0.2− |
| 2002 02 10 | 379 | 0.5+ | 0.4+ | 2003 12 15 | J92 | 0.0 | 0.2+ | 2006 10 12 | 379 | 0.1+ | 0.3+ | 2002 02 16 | 151 | 0.2+ | 0.1− | 2004 12 13 | 240 | 0.2− | 0.2− | 2006 10 16 | 379 | 0.0 | 0.2− |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 16 | 151 | 0.0 | 0.0 | 2004 12 13 | 240 | 0.5− | 0.0 | 2006 10 16 | 113 | 0.1+ | 0.1− | 2002 02 22 | 355 | 0.1+ | 0.1− | 2005 11 08 | A30 | 0.2+ | 0.1− | 2006 10 21 | 704 | 0.0 | 0.0 |
| 2002 02 16 | 151 | 0.2+ | 0.1− | 2004 12 15 | A16 | 0.6− | 0.3+ | 2006 10 16 | 113 | 0.1+ | 0.2− | 2002 02 23 | 704 | 0.0 | 0.2+ | 2005 11 08 | A30 | 0.1+ | 0.1− | 2006 10 21 | H45 | 0.1+ | 0.3− |
| 2002 02 16 | 198 | 0.0 | 0.0 | 2004 12 15 | A16 | 1.3− | 0.8+ | 2006 10 16 | 113 | 0.0 | 0.2− | 2002 02 23 | 704 | 0.3+ | 0.5+ | 2005 11 08 | A30 | 0.2+ | 0.1− | 2006 10 21 | H45 | 0.0 | 0.3− |
| 2002 02 16 | 198 | 0.2− | 0.2+ | 2004 12 15 | A16 | 0.3+ | 0.4+ | 2006 10 16 | 113 | 0.0 | 0.1− | 2002 02 23 | 704 | 0.1+ | 0.7+ | 2005 11 09 | 104 | 0.2+ | 0.2− | 2006 10 21 | H45 | 0.1+ | 0.2− |
| 2002 02 16 | 198 | 0.0 | 0.1+ | 2004 12 15 | A16 | 0.4+ | 0.9+ | 2006 10 16 | 113 | 0.1− | 0.2− | 2002 02 23 | 112 | 0.7− | 0.4− | 2005 11 09 | 104 | 1.4+ | 1.4− | 2006 10 21 | H45 | 0.2+ | 0.2− |
| 2002 02 17 | 151 | 0.1+ | 0.1+ | 2004 12 15 | A16 | 0.7− | 0.0 | 2006 10 16 | 151 | 0.0 | 0.1+ | 2002 02 23 | 112 | 0.6− | 0.3− | 2005 11 09 | 104 | 0.2− | 0.2− | 2006 10 21 | H45 | 0.1+ | 0.3− |
| 2002 02 17 | 151 | 0.4− | 0.5+ | 2004 12 16 | 704 | 0.1− | 0.5+ | 2006 10 16 | 151 | 0.0 | 0.1+ | 2002 02 23 | 112 | 0.6− | 0.5− | 2005 11 10 | A48 | 0.1+ | 0.1+ | 2006 10 21 | H45 | 0.2+ | 0.3− |
| 2002 02 17 | 151 | 0.8+ | 0.3+ | 2004 12 16 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 151 | 0.1− | 0.0 | 2002 02 23 | 112 | 0.2− | 0.6− | 2005 11 10 | A48 | 0.0 | 0.0 | 2006 10 21 | H45 | 0.2+ | 0.2− |
| 2002 02 17 | 151 | 0.4− | 0.4+ | 2004 12 16 | 704 | 0.2− | 0.5+ | 2006 10 16 | 151 | 0.0 | 0.1+ | 2002 02 23 | 112 | 0.1− | 0.8− | 2005 11 10 | A48 | 0.0 | 0.1− | 2006 10 21 | 704 | 0.1− | 0.1+ |
| 2002 02 17 | 151 | 0.1− | 0.2+ | 2004 12 16 | 704 | 0.3− | 0.4+ | 2006 10 16 | 151 | 0.2− | 0.1+ | 2002 02 24 | 349 | 0.1− | 0.0 | 2005 11 10 | A48 | 0.1+ | 0.1+ | 2006 10 21 | 704 | 0.0 | 0.1− |
| 2002 02 17 | 151 | 0.3+ | 0.0 | 2004 12 19 | H41 | 0.1+ | 0.1+ | 2006 10 16 | 151 | 0.2− | 0.2+ | 2002 02 24 | 349 | 0.0 | 0.0 | 2005 11 11 | 434 | 0.4+ | 0.8− | 2006 10 21 | 704 | 0.2− | 0.0 |
| 2002 02 17 | 198 | 0.2+ | 0.5+ | 2004 12 19 | H41 | 1.1+ | 0.7− | 2006 10 16 | 151 | 0.1− | 0.0 | 2002 02 24 | 349 | 0.2+ | 0.4− | 2005 11 11 | 434 | 1.1+ | 0.2− | 2006 10 21 | 711 | 0.3+ | 0.7+ |
| 2002 02 17 | 198 | 0.5− | 0.3+ | 2004 12 19 | H41 | 0.5− | 0.3− | 2006 10 16 | 127 | 0.0 | 0.2+ | 2002 02 24 | 349 | 0.1+ | 0.2− | 2005 11 11 | 434 | 0.5− | 0.1− | 2006 10 21 | 711 | 0.1+ | 0.8+ |
| 2002 02 17 | 198 | 0.4− | 0.3+ | 2004 12 21 | A53 | 0.1+ | 0.8+ | 2006 10 16 | 127 | 0.1+ | 0.3+ | 2002 02 24 | 349 | 0.1− | 0.3− | 2005 11 11 | A53 | 0.2+ | 0.2− | 2006 10 21 | 711 | 0.2− | 0.7+ |
| 2002 02 18 | 198 | 0.1+ | 0.1− | 2004 12 21 | A53 | 0.2+ | 0.5+ | 2006 10 16 | 127 | 0.2+ | 0.2+ | 2002 02 25 | 084 | 1.1+ | 0.2− | 2005 11 11 | A53 | 0.5+ | 0.4+ | 2006 10 24 | H45 | 0.1− | 0.2− |
| 2002 02 18 | 198 | 0.3+ | 0.2+ | 2004 12 21 | A53 | 0.3+ | 1.1+ | 2006 10 16 | 127 | 0.4+ | 0.1+ | 2002 02 27 | 726 | 0.8− | 0.0 | 2005 11 11 | A53 | 0.3+ | 0.0 | 2006 10 24 | H45 | 0.2+ | 0.0 |
| 2002 02 18 | 198 | 0.3+ | 0.6+ | 2005 01 07 | A30 | 0.6− | 0.3− | 2006 10 16 | A97 | 0.9− | 0.1+ | 2002 02 27 | 726 | 0.8− | 0.0 | 2005 11 11 | A53 | 0.0 | 0.0 | 2006 10 24 | H45 | 0.0 | 0.2− |
| 2002 02 18 | 198 | 0.5+ | 0.6+ | 2005 01 07 | A30 | 0.4− | 0.6− | 2006 10 16 | A97 | 0.4+ | 0.7− | 2002 02 27 | 726 | 0.9− | 0.1− | 2005 11 12 | 704 | 0.1+ | 0.2− | 2006 10 24 | H45 | 0.0 | 0.3− |
| 2002 02 18 | 379 | 0.3− | 0.5+ | 2005 01 07 | A30 | 0.4− | 0.8− | 2006 10 16 | A97 | 0.2− | 1.4− | 2002 02 27 | 726 | 0.7− | 0.1− | 2005 11 12 | 704 | 0.1− | 0.6+ | 2006 10 24 | H45 | 0.0 | 0.3− |
| 2002 02 18 | 379 | 0.3− | 0.5+ | 2005 01 17 | 704 | (1.9+ | 0.2+) | 2006 10 16 | 145 | 0.1+ | 0.2− | 2002 02 27 | 726 | 0.8− | 0.4− | 2005 11 12 | 704 | 0.1+ | 0.5+ | 2006 10 24 | 151 | 0.1− | 0.1− |
| 2002 02 18 | 379 | 0.1− | 0.3+ | 2005 01 17 | 704 | 0.4+ | 0.1− | 2006 10 16 | 639 | 0.2+ | 0.1+ | 2002 02 27 | 726 | 0.8− | 0.2− | 2005 11 12 | 704 | 0.2− | 1.3+ | 2006 10 24 | 151 | 0.1+ | 0.1− |
| 2002 02 18 | 379 | 0.4− | 0.4+ | 2005 01 17 | 704 | 0.2+ | 0.0 | 2006 10 16 | 639 | 0.3+ | 0.1+ | 2002 03 01 | 198 | 0.3− | 0.1− | 2005 11 19 | 565 | 0.3− | 0.3+ | 2006 10 24 | 151 | 0.3+ | 0.2− |
| 2002 02 18 | 379 | 0.2− | 0.3+ | 2005 01 17 | 704 | 0.0 | 0.4− | 2006 10 16 | 145 | 0.1+ | 0.2− | 2002 03 01 | 198 | 0.0 | 0.2− | 2005 11 19 | 565 | 0.1+ | 0.1+ | 2006 10 25 | 379 | 0.4+ | 0.4− |
| 2002 02 18 | 379 | 0.1− | 0.0 | 2005 01 17 | 704 | 0.3− | 0.6+ | 2006 10 16 | 145 | 0.0 | 0.2− | 2002 03 01 | 198 | 0.0 | 0.1− | 2005 11 19 | 565 | 0.3+ | 0.1− | 2006 10 25 | 379 | 0.2+ | 0.3− |
| 2002 02 19 | 704 | 0.1− | 0.1+ | 2005 09 14 | 704 | 0.2+ | 0.7+ | 2006 10 16 | A97 | 0.5+ | 0.7− | 2002 03 01 | 198 | 0.3+ | 0.5− | 2005 11 22 | 084 | 0.2+ | 0.2− | 2006 10 25 | 379 | 0.2+ | 0.4− |
| 2002 02 19 | 704 | 1.0+ | 0.3− | 2005 09 14 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 145 | 0.0 | 0.2− | 2002 03 01 | 198 | 0.4+ | 0.0 | 2005 11 22 | 084 | 0.3+ | 0.0 | 2006 10 25 | 379 | 0.2+ | 0.4− |
| 2002 02 19 | 704 | 0.4− | 0.6+ | 2005 09 14 | 704 | 0.2− | 0.6+ | 2006 10 16 | 639 | 0.2+ | 0.1+ | 2002 03 01 | 198 | (1.6+ | 0.0 ) | 2005 11 22 | 084 | 0.3+ | 0.1+ | 2006 10 25 | 113 | 0.2+ | 0.1− |
| 2002 02 19 | 704 | 0.6− | 0.0 | 2005 09 14 | 704 | 1.3− | 0.3+ | 2006 10 16 | A97 | 0.4+ | 0.5− | 2002 03 04 | 726 | 0.3− | 0.2− | 2005 11 23 | 704 | (0.2+ | 1.7+) | 2006 10 25 | 113 | 0.2+ | 0.1− |
| 2002 02 19 | 379 | 0.0 | 0.3+ | 2005 09 14 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 145 | 0.1+ | 0.2− | 2002 03 04 | 726 | 0.2− | 0.1− | 2005 11 23 | 704 | (0.2+ | 1.8+) | 2006 10 25 | 113 | 0.1+ | 0.0 |
| 2002 02 19 | 379 | 0.2− | 0.4− | 2005 10 11 | H06 | 0.4− | 0.7+ | 2006 10 16 | A97 | 0.6+ | 0.0 | 2002 03 04 | 726 | 0.4− | 0.0 | 2005 11 23 | 704 | 0.1+ | 1.3+ | 2006 10 25 | 113 | (5.9− | 1.4+) |
| 2002 02 19 | 379 | 0.3+ | 0.0 | 2005 10 11 | H06 | 0.4+ | 0.7− | 2006 10 16 | 639 | 0.1− | 0.2+ | 2002 03 04 | 726 | 0.1− | 0.4− | 2005 11 23 | 704 | (0.7+ | 1.6+) | 2006 10 25 | 113 | 0.2+ | 0.1− |
| 2002 02 19 | 379 | 0.1+ | 0.2− | 2005 10 11 | H06 | 0.9− | 0.1− | 2006 10 17 | 379 | 0.1+ | 0.1+ | 2002 03 04 | 726 | 0.0 | 0.1− | 2005 11 23 | 704 | (0.1+ | 1.8+) | 2006 10 25 | 113 | 0.2+ | 0.2− |
| 2002 02 19 | 560 | 0.2− | 0.1− | 2005 10 11 | H06 | 0.1− | 0.4− | 2006 10 17 | 379 | 0.1+ | 0.2+ | 2002 03 04 | 726 | 0.3− | 0.1− | 2005 11 24 | A53 | 0.8+ | 0.8+ | 2006 10 25 | 639 | 0.1+ | 0.1+ |
| 2002 02 19 | 560 | 0.2− | 0.4− | 2005 10 13 | 198 | 0.1− | 0.1− | 2006 10 17 | 379 | 0.4− | 0.2− | 2002 03 04 | 379 | 0.0 | 0.3− | 2005 11 24 | A53 | 0.1+ | 1.2+ | 2006 10 25 | 639 | 0.1+ | 0.1+ |
| 2002 02 19 | 560 | 0.1− | 0.2− | 2005 10 13 | 198 | 0.1− | 0.1− | 2006 10 17 | 379 | 0.1− | 0.2− | 2002 03 04 | 379 | 0.2+ | 0.1− | 2005 11 24 | A53 | 0.2− | 0.5+ | 2006 10 25 | 639 | 0.2+ | 0.1+ |
| 2002 02 19 | 112 | 0.2− | 0.2− | 2005 10 13 | 198 | 0.1− | 0.0 | 2006 10 17 | 379 | 0.3− | 0.4− | 2002 03 04 | 379 | 0.1+ | 0.1− | 2005 11 26 | 704 | 0.0 | 0.0 | 2006 10 25 | 639 | 0.1+ | 0.1− |
| 2002 02 19 | 112 | 0.9− | 0.1+ | 2005 10 13 | 198 | 0.2− | 0.2+ | 2006 10 17 | 379 | 0.1− | 0.1+ | 2002 03 04 | 379 | 0.3+ | 0.3− | 2005 11 26 | 704 | 0.4+ | 0.1+ | 2006 10 25 | 639 | 0.1+ | 0.0 |
| 2002 02 19 | 112 | 0.6+ | 0.6− | 2005 10 24 | 379 | 0.3+ | 0.9− | 2006 10 17 | 379 | 0.1− | 0.1+ | 2002 03 04 | 379 | 0.3+ | 0.3− | 2005 11 26 | 704 | 0.1− | 0.0 | 2006 10 25 | 639 | 0.1+ | 0.1− |
| 2002 02 19 | 112 | 0.1− | 0.1+ | 2005 10 24 | 379 | 0.9+ | 0.5− | 2006 10 17 | 379 | 0.2− | 0.0 | 2002 03 04 | 379 | 0.3− | 0.6− | 2005 11 26 | 704 | 0.1− | 0.3+ | 2006 10 25 | 639 | 0.1+ | 0.3+ |
| 2002 02 19 | 112 | 0.4− | 0.0 | 2005 10 24 | 379 | (2.2+ | 0.9+) | 2006 10 17 | 379 | 0.2− | 0.4− | 2002 03 04 | 379 | 0.1− | 0.3− | 2005 11 26 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.1− |
| 2002 02 19 | 112 | 0.1+ | 0.5− | 2005 10 24 | 379 | 1.4+ | 0.2− | 2006 10 17 | 113 | 0.1+ | 0.1− | 2002 03 04 | 084 | 0.5+ | 0.4− | 2005 12 01 | 113 | (2.4+ | 2.6+) | 2006 10 27 | 703 | 0.4+ | 0.1− |
| 2002 02 19 | 112 | 0.4+ | 0.3+ | 2005 10 27 | 084 | 0.1− | 0.0 | 2006 10 17 | 113 | 0.1+ | 0.1− | 2002 03 05 | 639 | 0.2− | 0.7− | 2005 12 01 | 113 | (2.1+ | 2.6+) | 2006 10 27 | 703 | 0.7− | 0.2− |
| 2002 02 20 | 379 | 0.5+ | 0.2+ | 2005 10 29 | 084 | 0.1+ | 0.4− | 2006 10 17 | 113 | 0.1+ | 0.2− | 2002 03 05 | 639 | 0.0 | 0.6− | 2005 12 01 | 113 | (2.3+ | 2.8+) | 2006 10 27 | 379 | 0.3+ | 0.2+ |
| 2002 02 20 | 379 | 0.3− | 0.1− | 2005 10 29 | 084 | 0.4+ | 0.1− | 2006 10 17 | 113 | 0.2+ | 0.2− | 2002 03 05 | 639 | 0.5− | 0.2− | 2005 12 01 | 113 | (2.8+ | 2.5+) | 2006 10 27 | 379 | 0.5+ | 0.2− |
| 2002 02 20 | 379 | 0.6− | 0.3− | 2005 10 30 | A50 | 0.5+ | 0.3+ | 2006 10 17 | 151 | 0.2− | 0.1+ | 2002 03 05 | 639 | (0.1− | 4.9−) | 2005 12 01 | 113 | (2.8+ | 3.1+) | 2006 10 27 | 379 | 0.1+ | 0.3+ |
| 2002 02 20 | 379 | 0.4− | 0.2− | 2005 10 30 | A50 | 0.2+ | 0.1+ | 2006 10 17 | 151 | 0.2− | 0.2+ | 2002 03 05 | 639 | (0.3+ | 2.4−) | 2005 12 01 | 113 | (3.0+ | 2.9+) | 2006 10 27 | 379 | 0.0 | 0.1+ |
| 2002 02 20 | 379 | 0.1+ | 0.2+ | 2005 10 30 | A50 | 0.4+ | 0.1+ | 2006 10 17 | 151 | 0.2− | 0.1+ | 2002 03 05 | 639 | 0.5− | 0.6− | 2005 12 02 | 703 | 0.5− | 0.0 | 2006 10 29 | H51 | 0.2+ | 0.2− |
| 2002 02 20 | 379 | 0.1− | 0.0 | 2005 10 30 | A50 | 0.0 | 0.2+ | 2006 10 17 | 151 | 0.3− | 0.2+ | 2002 03 05 | 639 | 0.2+ | 0.2+ | 2005 12 02 | 703 | 0.2+ | 0.3+ | 2006 10 29 | H51 | 0.2+ | 0.3− |
| 2002 02 20 | 084 | 0.6+ | 0.1− | 2005 10 30 | A50 | 0.0 | 0.2+ | 2006 10 17 | 151 | 0.2− | 0.2+ | 2002 03 07 | 379 | 0.6+ | 0.3− | 2005 12 02 | 703 | 0.1− | 0.5+ | 2006 10 29 | H51 | 0.2+ | 0.1− |
| 2002 02 21 | 198 | 0.1+ | 0.0 | 2005 10 31 | 084 | 0.1+ | 0.2− | 2006 10 17 | 151 | 0.2− | 0.1+ | 2002 03 07 | 379 | 0.4− | 1.4− | 2005 12 02 | 703 | 0.4− | 0.4+ | 2006 10 29 | H51 | 0.4+ | 0.1− |
| 2002 02 21 | 198 | 0.3+ | 0.2− | 2005 10 31 | 084 | 0.0 | 0.2− | 2006 10 17 | 434 | 0.6+ | 0.1− | 2002 03 07 | 379 | 1.2− | 0.9− | 2005 12 08 | 703 | 0.5− | 0.3+ | 2006 10 29 | H51 | 0.1+ | 0.1− |
| 2002 02 21 | 084 | 0.9+ | 0.0 | 2005 11 01 | 379 | 0.0 | 0.5+ | 2006 10 17 | 434 | 0.1− | 0.0 | 2002 03 07 | 938 | 0.7− | 1.1− | 2005 12 08 | 703 | 0.6− | 0.4− | 2006 10 29 | H51 | 0.1− | 0.2− |
| 2002 02 21 | 198 | 0.3+ | 0.3− | 2005 11 01 | 379 | 0.5− | 1.1+ | 2006 10 17 | 434 | 0.4+ | 0.0 | 2002 03 07 | 938 | 0.3− | 1.0+ | 2005 12 08 | 703 | 0.2+ | 0.3− | 2006 10 29 | H51 | 0.0 | 0.2− |
| 2002 02 21 | 198 | 0.4+ | 0.2− | 2005 11 01 | 084 | 0.4− | 0.4+ | 2006 10 17 | 434 | 0.4+ | 0.0 | 2002 03 07 | 938 | 0.5− | 1.0− | 2005 12 08 | 703 | 0.0 | 0.2+ | 2006 10 29 | H51 | 0.2− | 0.2− |
| 2002 02 21 | 198 | 0.6+ | 0.0 | 2005 11 03 | 071 | (2.4− | 0.4−) | 2006 10 18 | 379 | 0.2+ | 0.0 | 2002 03 07 | 938 | 0.6+ | 0.4+ | 2005 12 10 | J87 | 0.2+ | 0.4− | 2006 10 29 | 379 | 0.6+ | 0.3− |
| 2002 02 21 | 560 | 0.0 | 0.3+ | 2005 11 03 | 071 | (2.2− | 0.3−) | 2006 10 18 | 379 | 0.0 | 0.3− | 2002 03 07 | 938 | 0.9− | 0.2− | 2005 12 10 | J87 | 0.2+ | 0.3− | 2006 10 29 | 379 | 0.1− | 0.2− |
| 2002 02 21 | 560 | 0.4+ | 0.1− | 2005 11 03 | 071 | (1.9− | 0.4−) | 2006 10 18 | 379 | 0.1+ | 0.1+ | 2002 03 07 | 938 | 0.2+ | 0.1− | 2005 12 10 | J87 | 0.2+ | 0.1− | 2006 10 29 | 300 | 0.6− | 0.2+ |
| 2002 02 21 | 560 | 0.1+ | 0.1− | 2005 11 03 | A30 | 0.1− | 0.3− | 2006 10 18 | 379 | 0.0 | 0.0 | 2002 03 07 | 938 | 0.6+ | 0.9− | 2005 12 24 | 704 | 0.2− | 0.8+ | 2006 10 29 | 300 | 0.4− | 0.2+ |
| 2002 02 21 | 560 | 0.3+ | 0.1− | 2005 11 03 | A30 | 0.1− | 0.2− | 2006 10 18 | 379 | 0.3+ | 0.2+ | 2002 03 07 | 938 | 0.5+ | 0.1− | 2005 12 24 | 704 | 0.3+ | 0.4− | 2006 10 29 | 300 | 0.5− | 0.3− |
| 2002 02 22 | 084 | 0.7+ | 0.5− | 2005 11 03 | A30 | 0.1− | 0.1− | 2006 10 18 | 379 | 0.0 | 0.4− | 2002 03 07 | 938 | 0.3− | 0.5− | 2005 12 24 | 704 | (0.5− | 1.7+) | 2006 10 29 | 300 | 0.6− | 0.1+ |
| 2002 02 22 | 750 | 0.1+ | 1.3+ | 2005 11 03 | A30 | 0.2− | 0.0 | 2006 10 18 | 379 | 0.3− | 0.4− | 2002 03 07 | 938 | 0.4− | 0.6− | 2005 12 24 | 704 | 0.2− | 0.3+ | 2006 10 29 | 300 | 0.5− | 0.0 |
| 2002 02 22 | 750 | 0.0 | 0.2+ | 2005 11 08 | 379 | 0.2+ | 0.2+ | 2006 10 18 | 379 | 0.0 | 0.1+ | 2002 03 08 | 938 | 0.6+ | 0.5+ | 2006 10 01 | 703 | 0.1+ | 0.6− | 2006 10 30 | 151 | 0.2− | 0.0 |
| 2002 02 22 | 750 | 0.2− | 0.4− | 2005 11 08 | 379 | 0.4− | 0.5− | 2006 10 20 | A89 | 0.0 | 0.4− | 2002 03 08 | 938 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.5− | 0.1− | 2006 10 30 | 151 | 0.2− | 0.1+ |
| 2002 02 22 | 750 | 0.3+ | 0.7+ | 2005 11 08 | 379 | 0.2+ | 0.5− | 2006 10 20 | A89 | 0.1+ | 0.4− | 2002 03 08 | 938 | 0.1+ | 0.9− | 2006 10 01 | 703 | 0.1− | 0.2− | 2006 10 30 | 151 | 0.1− | 0.2+ |
| 2002 02 22 | 750 | 0.5+ | 1.0+ | 2005 11 08 | 379 | 0.2− | 0.4− | 2006 10 20 | A89 | 0.0 | 0.5− | 2002 03 08 | 938 | 0.3+ | 0.1− | 2006 10 04 | 198 | 0.3− | 0.2− | 2006 10 30 | 151 | 0.2− | 0.1+ |
| 2002 02 22 | 355 | 0.3+ | 0.1− | 2005 11 08 | A30 | 0.2+ | 0.1− | 2006 10 20 | A89 | 0.0 | 0.2− | 2002 03 08 | 938 | 0.1+ | 0.5+ | 2006 10 04 | 198 | 0.2− | 0.1− | 2006 10 30 | 151 | 0.0 | 0.1+ |
| 2002 02 22 | 355 | 0.0 | 0.0 | 2005 11 08 | A30 | 0.2+ | 0.0 | 2006 10 20 | A89 | 0.3+ | 0.4− | 2002 03 10 | 118 | (0.2− | 1.6−) | 2006 10 04 | 198 | 0.1− | 0.2− | 2006 10 30 | 151 | 0.1− | 0.2+ |
| 2002 02 22 | 355 | 0.2+ | 0.1− | 2005 11 08 | A30 | 0.1+ | 0.0 | 2006 10 21 | 704 | 0.1− | 0.1+ | 2002 03 10 | 118 | 1.1+ | 0.3− | 2006 10 04 | 198 | 0.0 | 0.1− | 2006 10 30 | 151 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 118 | 0.3+ | 0.5+ | 2006 10 04 | 198 | 0.1− | 0.2− | 2006 11 08 | 113 | 0.0 | 0.2− | | |
| 2002 10 31 | 696 | 0.5− | 0.1+ | 2006 10 05 | 143 | 0.5+ | 0.4− | 2006 11 08 | 113 | 0.1+ | 0.1− | | |
| 2002 10 31 | 696 | 0.6− | 0.3− | 2006 10 05 | 143 | 0.3+ | 0.4− | 2006 11 08 | 113 | 0.1+ | 0.3− | | |
| 2002 12 15 | 704 | 0.0 | 0.0 | 2006 10 05 | 143 | 0.4+ | 0.5− | 2006 11 08 | 113 | 0.3+ | 0.1− | | |
| 2002 12 15 | 704 | 0.1− | 0.3− | 2006 10 05 | 143 | 0.3+ | 0.4− | 2006 11 08 | 113 | 0.2+ | 0.1− | | |
| 2002 12 15 | 704 | 0.3+ | 0.1− | 2006 10 05 | 143 | 0.2− | 0.2− | 2006 11 09 | 240 | 0.1+ | 0.1+ | | |
| 2002 12 15 | 711 | 0.1− | 0.0 | 2006 10 05 | 143 | 0.4− | 0.3− | 2006 11 09 | 240 | 0.0 | 0.2− | | |
| 2002 12 15 | 711 | 0.1+ | 0.3+ | 2006 10 05 | 143 | 0.4− | 0.2− | 2006 11 09 | 240 | 0.1+ | 0.2− | | |
| 2002 12 28 | 704 | 0.4− | 0.9+ | 2006 10 05 | 143 | 0.4− | 0.3− | 2006 11 09 | 240 | 0.3+ | 0.0 | | |
| 2002 12 28 | 704 | 0.2+ | 0.1+ | 2006 10 05 | 143 | 0.6− | 0.3− | 2006 11 09 | 240 | 0.1+ | 0.0 | | |
| 2002 12 28 | 704 | 0.1+ | 0.0 | 2006 10 05 | 143 | 0.7− | 0.3− | 2006 11 09 | 434 | 0.9+ | 0.1+ | | |
| 2002 12 28 | 704 | 0.0 | 0.1+ | 2006 10 05 | 143 | 0.7− | 0.4− | 2006 11 09 | 434 | 0.0 | 0.5+ | | |
| 2002 12 28 | 704 | 0.3+ | 0.3+ | 2006 10 05 | 204 | 0.2+ | 0.2− | 2006 11 09 | 434 | 0.3+ | 0.4+ | | |
| 2003 01 11 | 704 | 0.9+ | 0.5+ | 2006 10 05 | 204 | 0.1+ | 0.2− | 2006 11 09 | 434 | 0.4+ | 0.0 | | |
| 2003 01 11 | 704 | 0.6+ | 0.5+ | 2006 10 05 | 204 | 0.2− | 0.2− | 2006 11 14 | A94 | 0.7+ | 0.6+ | | |
| 2003 01 11 | 704 | 0.2+ | 0.6+ | 2006 10 05 | 204 | 0.0 | 0.3− | 2006 11 14 | A94 | 0.5+ | 1.0− | | |
| 2003 01 11 | 704 | 0.5+ | 0.4+ | 2006 10 05 | 204 | 0.0 | 0.3− | 2006 11 14 | A94 | 0.3+ | 0.1+ | | |
| 2003 01 11 | 704 | 0.4+ | 0.4+ | 2006 10 07 | 143 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.1− | 0.0 | | |
| 2003 01 12 | 699 | 0.1− | 0.4+ | 2006 10 07 | 143 | 0.3+ | 0.2− | 2006 11 15 | 703 | 0.0 | 0.0 | | |
| 2003 01 12 | 699 | 0.3− | 0.4+ | 2006 10 07 | 143 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.5− | 0.3− | | |
| 2003 01 12 | 699 | 0.4− | 0.2+ | 2006 10 07 | 143 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.4− | 0.3− | | |
| 2003 01 12 | 699 | 0.0 | 0.2− | 2006 10 07 | 143 | 0.1+ | 0.0 | 2006 11 15 | 113 | 0.1+ | 0.2− | | |
| 2003 01 12 | 151 | 1.0− | 0.7+ | 2006 10 07 | 143 | 0.1− | 0.0 | 2006 11 15 | 113 | 0.5− | 0.3− | | |
| 2003 01 12 | 151 | 0.1− | 0.4+ | 2006 10 07 | 143 | 0.1− | 0.1− | 2006 11 15 | 113 | 0.2+ | 0.2− | | |
| 2003 01 12 | 151 | 0.5− | 0.2− | 2006 10 07 | 143 | 0.2− | 0.1− | 2006 11 15 | 113 | 0.2+ | 0.0 | | |
| 2003 01 12 | 151 | 0.6+ | 0.6+ | 2006 10 07 | 143 | 0.5− | 0.2− | 2006 11 15 | 113 | 0.1− | 0.1− | | |
| 2003 01 12 | 240 | 0.1− | 0.1− | 2006 10 07 | 198 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.0 | 1.4+ | | |
| 2003 01 13 | 240 | 0.1+ | 0.0 | 2006 10 07 | 198 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.3+ | 1.0+ | | |
| 2003 01 13 | 240 | 0.0 | 0.1− | 2006 10 07 | 198 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.1− | | |
| 2003 01 14 | 704 | 1.0+ | 0.3− | 2006 10 07 | 198 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.8+ | | |
| 2003 01 14 | 704 | 0.6+ | 0.3− | 2006 10 07 | 198 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.7+ | | |
| 2003 01 14 | 704 | 0.4− | 0.6− | 2006 10 08 | 379 | 0.1+ | 0.3− | 2006 11 18 | 113 | 0.0 | 0.3− | | |
| 2003 01 14 | 704 | 0.4+ | 0.1+ | 2006 10 08 | 379 | 0.3− | 0.2+ | 2006 11 18 | 113 | 0.7+ | 0.0 | | |
| 2003 01 14 | 704 | 0.4+ | 0.2− | 2006 10 08 | 379 | 0.6− | 0.1− | 2006 11 18 | 113 | 0.1+ | 0.1+ | | |
| 2003 01 15 | 151 | 1.2+ | 1.0− | 2006 10 08 | 379 | 0.3− | 0.0 | 2006 11 18 | 113 | 0.0 | 0.1− | | |
| 2003 01 15 | 151 | 0.1− | 1.2− | 2006 10 08 | 379 | 0.4− | 0.2− | 2006 11 18 | 113 | 0.3+ | 0.4+ | | |
| 2003 01 15 | 151 | (1.6+ | 1.0+) | 2006 10 08 | 379 | 0.3− | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.6− | | |
| 2003 01 21 | 704 | 0.6+ | 0.5+ | 2006 10 08 | 379 | 0.2− | 0.2+ | 2006 11 23 | 703 | 0.5− | 0.1− | | |
| 2003 01 21 | 704 | 0.7+ | 0.7+ | 2006 10 08 | 379 | 0.2− | 0.2+ | 2006 11 23 | 703 | 0.1+ | 0.6− | | |
| 2003 01 21 | 704 | 0.1+ | 0.0 | 2006 10 08 | 379 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.3− | 0.2− | | |

**(138972)∗ 2001 $CO_{21}$**

Discovered 2001 Feb. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.48895 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30362424 | $\omega$ | 350.19375 | | +0.68756837 | | −0.72119477 |
| $a$ | 2.1923594 | $\Omega$ | 56.31057 | | +0.67288727 | | +0.58914280 |
| $e$ | 0.0865682 | $i$ | 5.82367 | | +0.27289644 | | +0.36440205 |
| $P$ | 3.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.2+ | 0.1+ | 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 10 27 | 704 | 1.4+ | 0.1+ | | |
| 1998 03 25 | 704 | 0.8− | 0.1− | 2005 04 11 | G96 | 0.4− | 0.5+ | 2006 10 27 | 704 | 1.0+ | 0.2− | | |
| 1998 03 25 | 704 | 0.7+ | 0.4− | 2005 04 11 | G96 | 0.3− | 0.4+ | 2006 10 27 | 704 | 1.2+ | 0.9+ | | |
| 1998 03 25 | 704 | 1.0− | 0.1− | 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 10 27 | 704 | 1.1+ | 0.3− | | |
| 1998 03 25 | 704 | 1.3+ | 0.7− | 2005 05 04 | G96 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.4− | | |
| 2000 12 19 | 704 | 0.5− | 0.1+ | 2005 05 04 | G96 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2000 12 19 | 704 | 0.3+ | 0.8− | 2005 05 04 | G96 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2000 12 19 | 704 | 0.5+ | 0.8− | 2005 05 04 | G96 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− | | |
| 2001 01 18 | 704 | 0.3− | 0.7+ | 2005 05 13 | G96 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− | | |
| 2001 01 18 | 704 | 0.2+ | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2001 01 18 | 704 | 0.2− | 0.6+ | 2005 05 13 | G96 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2001 01 18 | 704 | 0.5+ | 0.9+ | 2005 05 13 | G96 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 2001 01 18 | 704 | 0.5− | 1.2+ | 2005 05 18 | E12 | 0.4+ | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2001 02 01 | 699 | 0.5− | 0.6− | 2005 05 18 | E12 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2001 02 01 | 699 | 0.6− | 0.4+ | 2005 05 18 | E12 | (0.5+ | 1.5+) | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 2001 02 01 | 699 | 0.4− | 0.4+ | 2005 05 18 | E12 | 0.0 | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.2+ | | |
| 2001 02 01 | 699 | 0.6+ | 0.5+ | 2005 05 30 | 699 | 0.7+ | 1.2+ | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2001 02 03 | 704 | 0.3+ | 0.7+ | 2005 05 30 | 699 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.2+ | | |
| 2001 02 03 | 704 | 0.6+ | 0.1− | 2005 05 30 | 699 | 0.6− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 2001 02 03 | 704 | (1.7− | 0.3−) | 2005 05 30 | 699 | 1.2+ | 0.9+ | 2006 11 10 | 644 | 0.1− | 0.2+ | | |
| 2001 02 03 | 704 | (1.6+ | 0.1+) | 2005 06 04 | 703 | (3.1− | 0.1−) | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 2001 02 03 | 704 | 0.4− | 1.0+ | 2005 06 04 | 703 | 0.2− | 0.5− | 2006 11 11 | 691 | 0.1− | 0.3+ | | |
| 2001 02 16 | 704 | 0.0 | 1.2+ | 2005 06 04 | 703 | (1.6+ | 0.6−) | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2001 02 16 | 704 | 0.2− | 1.3− | 2005 06 04 | 703 | 0.7− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2001 02 16 | 704 | 0.4− | 0.6− | 2005 06 11 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.3− | | |
| 2001 02 16 | 704 | 0.1− | 0.7− | 2005 06 11 | 691 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.6− | | |
| 2001 02 21 | 699 | 0.2− | 0.6+ | 2005 06 11 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.2− | | |
| 2001 02 21 | 699 | 0.3− | 1.2+ | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.5− | | |
| 2001 02 21 | 699 | (0.2− | 1.8+) | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | | |
| 2001 02 21 | 699 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2+ | | |
| 2003 10 24 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.9+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | | |
| 2003 10 24 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.8+ | 0.9+ | 2006 11 15 | G92 | 0.3− | 0.0 | | |
| 2003 10 24 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 1.4+ | 2006 11 15 | G92 | 0.2+ | 0.2− | | |
| 2003 10 24 | 704 | 0.7+ | 0.7+ | 2006 09 26 | 704 | 0.2− | 0.2− | 2006 11 15 | G92 | 0.2− | 0.2+ | | |
| 2003 10 24 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.3− | 2006 11 17 | G92 | 0.3− | 0.2+ | | |
| 2003 11 20 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 11 17 | G92 | 0.4− | 0.1+ | | |
| 2003 11 20 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 17 | G92 | 0.1− | 0.0 | | |
| 2003 11 20 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.5− | | |
| 2003 11 20 | 704 | 0.9+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.4− | 0.6− | | |
| 2003 11 20 | 704 | 0.2+ | 0.3− | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.8− | 0.3+ | | |
| 2003 11 24 | 704 | 0.7+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 18 | G92 | 0.3+ | 0.8+ | | |
| 2003 11 24 | 704 | 0.2+ | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.5− | 2006 11 18 | G92 | 0.4− | 0.3+ | | |
| 2003 11 24 | 704 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 18 | G92 | 0.0 | 0.4− | | |
| 2003 11 24 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.6− | 1.1− | | |
| 2003 12 18 | 704 | 0.1+ | 0.7− | 2006 10 16 | 703 | 1.0− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 1.0+ | | |
| 2003 12 18 | 704 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2− | | |
| 2003 12 18 | 704 | 0.2− | 0.8− | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.3+ | | |
| 2003 12 18 | 704 | 0.5− | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 19 | G92 | 0.4+ | 0.2− | | |
| 2003 12 18 | 704 | 0.3− | 0.9− | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 19 | G92 | 0.1− | 0.3+ | | |
| 2003 12 21 | 735 | 0.4+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 19 | G92 | 0.3− | 0.3+ | | |
| 2003 12 21 | 735 | 0.4+ | 0.5− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 19 | G92 | 0.4− | 0.1− | | |
| 2003 12 21 | 735 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.6+ | | |
| 2003 12 22 | 704 | 0.9− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 19 | G92 | 0.0 | 0.1− | | |
| 2003 12 22 | 704 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 19 | G92 | 0.1+ | 0.0 | | |
| 2003 12 22 | 704 | 0.8− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.2− | 0.0 | | |
| 2003 12 22 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.1+ | | |
| 2003 12 22 | 704 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.0 | | |
| 2003 12 27 | 704 | 1.3+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.8− | 1.3+ | | |
| 2003 12 27 | 704 | (1.7+ | 0.7+) | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 2003 12 27 | 704 | (0.9+ | 1.6+) | 2006 10 22 | 704 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.6− | 0.7+ | | |
| 2003 12 27 | 704 | 1.2+ | 1.2+ | 2006 10 22 | 704 | 1.3+ | 0.3− | 2006 11 21 | 704 | 0.7− | 0.3+ | | |
| 2003 12 27 | 704 | 0.9+ | 1.3+ | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.8− | 0.2+ | | |
| 2003 12 28 | 704 | 0.6− | 0.9− | 2006 10 22 | 704 | 0.8+ | 0.0 | 2006 11 21 | 704 | 0.6− | 0.2+ | | |
| 2003 12 28 | 704 | 0.1+ | 1.0− | 2006 10 22 | 704 | 0.1+ | 0.2− | 2006 11 26 | 704 | 0.3− | 0.9+ | | |
| 2003 12 28 | 704 | 0.3+ | 0.7− | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 26 | 704 | 0.2− | 0.7+ | | |
| 2003 12 28 | 704 | 0.9− | 1.2− | 2006 10 22 | 704 | 1.2+ | 0.1− | 2006 11 26 | 704 | 0.4− | 1.0+ | | |
| 2003 12 28 | 704 | 0.3− | 1.1− | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 26 | 704 | 0.3− | 1.0+ | | |
| 2004 02 04 | A16 | 0.5+ | 0.9− | 2006 10 27 | 704 | 0.5+ | 0.3− | | | | | | |

**(138973)∗ 2001 $CZ_{22}$**

Discovered 2001 Feb. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.66457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27118930 | $\omega$ | 13.97513 | | −0.94075331 | | −0.33834800 |
| $a$ | 2.3638560 | $\Omega$ | 146.22182 | | +0.30710363 | | −0.87820528 |
| $e$ | 0.0685496 | $i$ | 2.31380 | | +0.14377262 | | −0.33804749 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.2+ | 0.5− | 2001 02 26 | 185 | 0.6+ | 0.0 | 2005 03 10 | G96 | 0.5− | 0.1+ | | |
| 2001 01 03 | 704 | 0.9+ | 0.0 | 2003 10 24 | 704 | 0.3− | 1.0+ | 2005 03 10 | G96 | 0.2− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.5+ | 0.7+ | 2003 10 24 | 704 | 0.2+ | 0.2− | 2005 03 10 | G96 | 0.4− | 0.1+ |
| 2001 01 03 | 704 | 0.1− | 0.9− | 2003 10 24 | 704 | 1.0+ | 0.1+ | 2005 03 10 | G96 | 0.2− | 0.1+ |
| 2001 01 03 | 704 | 0.2+ | 0.4+ | 2003 11 01 | 704 | 0.9+ | 0.2− | 2005 04 04 | 704 | 1.3+ | 0.1+ |
| 2001 01 20 | 704 | 0.8+ | 0.0 | 2003 11 01 | 704 | 0.4− | 0.3+ | 2005 04 04 | 704 | 0.2+ | 0.0 |
| 2001 01 20 | 704 | 0.0 | 0.1− | 2003 11 01 | 704 | 0.4+ | 0.1− | 2005 04 04 | 704 | 0.8− | 1.2− |
| 2001 01 20 | 704 | 0.7+ | 0.6+ | 2003 11 18 | 644 | 0.4+ | 0.2− | 2005 04 04 | 704 | 0.7+ | 0.3+ |
| 2001 01 20 | 704 | (1.7+ | 1.5−) | 2003 11 18 | 644 | 0.2− | 0.1+ | 2005 04 07 | 704 | 0.7+ | 0.5+ |
| 2001 02 01 | 699 | 0.5+ | 0.1− | 2003 11 18 | 644 | 0.1− | 0.4+ | 2005 04 07 | 704 | 1.0+ | 0.7+ |
| 2001 02 01 | 699 | 0.5− | 1.1+ | 2003 11 21 | 704 | 0.7− | 1.2+ | 2005 04 07 | 704 | (1.2+ | 2.1+) |
| 2001 02 01 | 699 | 0.1+ | 0.0 | 2003 11 21 | 704 | 1.4− | 0.1+ | 2005 04 07 | 704 | 0.1− | 1.0+ |
| 2001 02 01 | 699 | 0.7− | 0.5+ | 2003 11 21 | 704 | 0.5− | 0.5+ | 2005 04 09 | G96 | 0.2− | 0.1+ |
| 2001 02 01 | 209 | 0.5+ | 0.3− | 2003 11 21 | 704 | 0.6− | 1.2− | 2005 04 09 | G96 | 0.1− | 0.4+ |
| 2001 02 01 | 209 | 0.4+ | 0.6− | 2003 11 26 | 699 | 0.7+ | 0.8+ | 2005 04 09 | G96 | 0.3− | 0.1+ |
| 2001 02 01 | 209 | 0.2+ | 0.0 | 2003 11 26 | 699 | 0.5+ | 0.6− | 2005 04 09 | G96 | 0.1− | 0.0 |
| 2001 02 02 | 704 | 0.1− | 0.1− | 2003 11 26 | 699 | 0.5− | 0.3− | 2005 04 18 | 683 | (0.1+ | 2.6+) |
| 2001 02 02 | 704 | 0.4− | 0.1− | 2003 11 26 | 699 | (2.1− | 0.5+) | 2005 04 18 | 683 | (0.6+ | 2.9+) |
| 2001 02 02 | 704 | 0.2− | 0.0 | 2005 03 01 | 691 | 0.1− | 0.3− | 2005 04 18 | 683 | (1.9+ | 1.2+) |
| 2001 02 02 | 704 | 0.2− | 0.2+ | 2005 03 01 | 691 | 0.3+ | 0.4− | 2006 07 25 | 122 | 0.2+ | 0.9+ |
| 2001 02 02 | 704 | 0.2− | 0.0 | 2005 03 01 | 691 | 0.2+ | 0.5+ | 2006 07 25 | 122 | 0.1− | 0.9+ |
| 2001 02 14 | 185 | 0.8− | 0.1− | 2005 03 09 | 699 | 0.2+ | 0.2− | 2006 07 25 | 122 | (1.4− | 3.1+) |
| 2001 02 14 | 185 | 0.7− | 0.4− | 2005 03 09 | 699 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.1− | 0.6+ |
| 2001 02 14 | 185 | 0.3− | 0.4− | 2005 03 09 | 699 | 0.8− | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.8+ |
| 2001 02 14 | 185 | 0.2+ | 0.1+ | 2005 03 09 | 699 | 0.2+ | 0.8+ | 2006 08 17 | 644 | 0.1− | 0.7+ |
| 2001 02 15 | 185 | 0.9+ | 0.2+ | 2005 03 10 | G96 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.9− | 0.1+ |
| 2001 02 15 | 185 | 0.9− | 0.9+ | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 2001 02 26 | 185 | 0.2− | 1.1+ | 2005 03 10 | G96 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3+ |
| 2001 02 26 | 185 | 0.7− | 0.6+ | 2005 03 10 | G96 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.6− | 0.2+ |

**(138974)∗ 2001 CX$_{24}$ = 1999 WT$_{12}$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 10772)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.10949 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28137291 | $\omega$ | 146.95757 | | −0.93317242 | +0.35627462 | |
| $a$ | 2.3064703 | $\Omega$ | 53.98582 | | −0.34119832 | −0.83649981 | |
| $e$ | 0.1698235 | $i$ | 3.36759 | | −0.11301741 | −0.41633695 | |
| $P$ | 3.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 29 | 691 | 1.1+ | 0.3+ | 2001 03 19 | 704 | 0.9+ | 0.1+ | 2005 06 04 | 704 | 0.2− | 1.0+ |
| 1999 11 29 | 691 | 0.0 | 0.1− | 2001 03 19 | 704 | 0.3+ | 1.4+ | 2005 06 04 | 704 | 0.3− | 0.0 |
| 1999 11 29 | 691 | 0.1− | 0.1+ | 2001 03 19 | 704 | 0.2+ | 0.0 | 2005 06 04 | 704 | 0.5+ | 0.8+ |
| 1999 12 03 | 691 | 0.4− | 0.1+ | 2002 08 18 | 644 | 0.2+ | 0.8+ | 2005 06 04 | 704 | 0.2− | 0.6+ |
| 1999 12 03 | 691 | 0.3+ | 0.2− | 2002 08 18 | 644 | 0.0 | 0.9+ | 2006 09 23 | 691 | 0.3− | 0.6+ |
| 1999 12 03 | 691 | 1.3− | 0.1+ | 2002 08 18 | 644 | 0.3− | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2001 01 19 | 704 | 0.7+ | 0.2+ | 2002 08 29 | 644 | 0.3− | 0.7+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 2001 01 19 | 704 | 0.2+ | 0.5+ | 2002 08 29 | 644 | 0.6− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2001 01 19 | 704 | 0.1− | 0.2− | 2002 08 29 | 644 | 0.4− | 1.0+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2001 01 19 | 704 | 0.6+ | 0.3+ | 2003 11 21 | 704 | 0.8− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2001 01 19 | 704 | 0.6− | 0.6+ | 2003 11 21 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.2+ |
| 2001 02 01 | 704 | 0.4− | 0.2− | 2003 11 21 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 2001 02 01 | 704 | 1.0+ | 0.2− | 2003 11 21 | 704 | 1.0− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2001 02 01 | 704 | 1.4− | 0.1+ | 2003 11 21 | 704 | 0.1− | 0.8− | 2006 09 30 | 703 | 0.8− | 0.0 |
| 2001 02 01 | 704 | 0.3+ | 1.3− | 2003 11 26 | 704 | 0.8+ | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2001 02 01 | 704 | 1.4− | 0.1− | 2003 11 26 | 704 | 0.9+ | 0.5− | 2006 10 01 | 691 | 0.4− | 0.5− |
| 2001 02 02 | 704 | 0.3+ | 0.5+ | 2003 11 26 | 704 | 0.0 | 0.9− | 2006 10 01 | 691 | 0.5+ | 0.1+ |
| 2001 02 02 | 704 | 0.1+ | 0.2− | 2003 11 26 | 704 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2001 02 02 | 704 | 0.6− | 0.0 | 2003 11 26 | 704 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2001 02 02 | 704 | 0.2− | 0.9− | 2003 11 26 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2001 02 02 | 704 | 0.0 | 0.4− | 2003 11 26 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.4− | 0.0 |
| 2001 02 17 | 704 | 0.2+ | 0.4+ | 2003 11 26 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 2001 02 17 | 704 | 0.5+ | 0.7+ | 2003 12 14 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2001 02 17 | 704 | 0.2+ | 1.1+ | 2003 12 14 | 691 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2001 02 17 | 704 | 1.1+ | 1.1+ | 2003 12 14 | 691 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.7− | 0.3− |
| 2001 02 17 | 704 | 0.4+ | 1.4+ | 2003 12 17 | 644 | 0.3− | 0.1+ | 2006 10 21 | 703 | 1.2+ | 0.5+ |
| 2001 02 19 | 699 | 0.1− | 0.0 | 2003 12 17 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.7+ |
| 2001 02 19 | 699 | 0.3+ | 0.3+ | 2003 12 17 | 644 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.3− | 1.0− |
| 2001 02 19 | 699 | 0.6+ | 0.6+ | 2003 12 18 | 704 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.6− | 0.6+ |
| 2001 02 19 | 699 | 0.7+ | 0.1+ | 2003 12 18 | 704 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2001 02 20 | 704 | 0.2− | 0.3+ | 2003 12 18 | 704 | 0.8+ | 0.6+ | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2001 02 20 | 704 | 0.3+ | 0.0 | 2003 12 19 | 691 | 0.0 | 0.1− | 2006 10 29 | 291 | 0.0 | 0.2+ |
| 2001 02 20 | 704 | 0.0 | 0.3+ | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2001 02 20 | 704 | 0.3− | 0.0 | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2001 02 20 | 704 | 0.1+ | 0.4+ | 2003 12 27 | 691 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2001 03 03 | 704 | 0.2− | 0.6+ | 2003 12 27 | 691 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 03 03 | 704 | 0.3+ | 0.3+ | 2003 12 27 | 691 | 0.4− | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 03 03 | 704 | 0.1− | 0.5+ | 2003 12 27 | 704 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 03 14 | 699 | 0.1− | 0.5+ | 2003 12 27 | 704 | 0.4+ | 0.0 | 2006 11 20 | G96 | 0.3+ | 1.0− |
| 2001 03 14 | 699 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.3+ | 0.5− | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2001 03 14 | 699 | 0.3+ | 0.6+ | 2003 12 27 | 704 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.8− |
| 2001 03 14 | 699 | 0.1+ | 0.2+ | 2005 06 04 | 704 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.4− | 0.6− |

**(138975)∗ 2001 CT$_{25}$ = 2005 JP$_{14}$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74910)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.88491 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27756148 | $\omega$ | 97.16114 | | −0.99675626 | −0.05864355 | |
| $a$ | 2.3275370 | $\Omega$ | 79.48797 | | +0.03124182 | −0.91310088 | |
| $e$ | 0.1051590 | $i$ | 3.21356 | | +0.07416805 | −0.40349438 | |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 13 | 809 | (1.9+ | 3.5−) | 2001 02 20 | 704 | 1.4+ | 0.1− | 2005 05 04 | 699 | 0.1− | 0.4+ |
| 1994 02 13 | 809 | (0.1− | 2.8−) | 2001 02 20 | 704 | 0.6+ | 0.5+ | 2005 05 08 | 691 | 0.2+ | 0.3+ |
| 1994 02 13 | 809 | (0.4− | 3.2−) | 2001 02 21 | 699 | 0.5− | 0.1+ | 2005 05 08 | 691 | 0.3+ | 0.3+ |
| 1994 03 09 | 010 | (2.1+ | 1.9+) | 2001 02 21 | 699 | 0.4− | 0.6+ | 2005 05 08 | 691 | 0.1+ | 0.3+ |
| 1994 03 09 | 010 | 0.7+ | 1.6+ | 2001 02 21 | 699 | 0.8− | 0.0 | 2005 05 08 | G96 | 0.1− | 0.1+ |
| 1994 03 09 | 010 | 0.0 | 0.9+ | 2001 02 21 | 699 | 1.1− | 0.5+ | 2005 05 08 | G96 | 0.4− | 0.0 |
| 2001 02 01 | 704 | 0.7+ | 0.0 | 2003 11 19 | 691 | 0.2− | 0.3+ | 2005 05 08 | G96 | 0.3− | 0.0 |
| 2001 02 01 | 704 | 0.5+ | 0.2− | 2003 11 19 | 691 | 0.3− | 0.4+ | 2005 05 08 | G96 | 0.1− | 0.1− |
| 2001 02 01 | 704 | 0.3− | 0.2− | 2003 11 19 | 691 | 0.2− | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.3+ |
| 2001 02 01 | 704 | 0.1− | 0.6+ | 2003 12 19 | 333 | (0.0 | 3.3−) | 2005 06 13 | G96 | 0.2− | 0.4+ |
| 2001 02 02 | 704 | 0.7− | 0.3+ | 2003 12 19 | 333 | (0.5− | 4.5−) | 2005 06 13 | G96 | 0.1+ | 0.6+ |
| 2001 02 02 | 704 | 1.7+ | 0.8+ | 2003 12 19 | 333 | 0.3+ | 0.9+ | 2005 06 13 | G96 | 0.6− | 0.5+ |
| 2001 02 02 | 704 | 0.0 | 0.5− | 2003 12 21 | 691 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.1− | 1.1+ |
| 2001 02 02 | 704 | 0.3+ | 0.7− | 2003 12 21 | 691 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.6− | 1.1+ |
| 2001 02 17 | 704 | 0.4+ | 1.5+ | 2003 12 21 | 691 | 0.4+ | 0.2− | 2006 08 27 | 691 | 0.2− | 0.6+ |
| 2001 02 17 | 704 | 0.7+ | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2001 02 17 | 704 | 0.2+ | 0.3+ | 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2001 02 17 | 704 | 0.5+ | 0.4− | 2005 05 01 | 644 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.4− | 0.7+ |
| 2001 02 17 | 704 | 0.3− | 0.5+ | 2005 05 04 | 699 | 0.4+ | 0.3+ | 2006 10 03 | G96 | 0.6− | 0.4+ |
| 2001 02 20 | 704 | 0.9+ | 0.5+ | 2005 05 04 | 699 | 0.4− | 0.7+ | | | | |
| 2001 02 20 | 704 | 0.9− | 1.0+ | 2005 05 04 | 699 | 1.0+ | 1.1+ | | | | |

**(138976)∗ 2001 CJ$_{26}$**

Discovered 2001 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.23227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28694309 | $\omega$ | 101.37882 | | −0.78790114 | +0.60965776 | |
| $a$ | 2.2765238 | $\Omega$ | 116.24596 | | −0.59597239 | −0.71945232 | |
| $e$ | 0.1052163 | $i$ | 5.55177 | | −0.15501196 | −0.33272479 | |
| $P$ | 3.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 05 08 | 691 | 0.0 | 0.2+ | 2001 03 19 | 704 | (1.9+ | 1.8−) | 2003 12 19 | 704 | 0.5+ | 0.1+ |
| 1991 05 08 | 691 | 0.0 | 0.2+ | 2001 03 19 | 704 | 1.3+ | 0.1− | 2003 12 19 | 704 | (1.8− | 0.6+) |
| 1991 05 08 | 691 | 0.2+ | 0.1+ | 2001 03 19 | 704 | 0.3+ | 0.0 | 2003 12 19 | 704 | 0.7− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 24 | 704 | 0.4− | 0.0 | 2001 03 19 | 704 | 0.0 | 0.2+ | 2003 12 19 | 704 | 0.2− | 1.5+ | | |
| 1998 06 24 | 704 | 0.6− | 1.0− | 2001 03 19 | 704 | 0.9− | 0.0 | 2003 12 23 | 704 | 0.0 | 0.8− | | |
| 1998 06 24 | 704 | 1.5+ | 0.1+ | 2001 03 26 | 704 | (1.7+ | 0.6−) | 2003 12 23 | 704 | 0.1− | 0.9+ | | |
| 1998 06 24 | 704 | 1.0− | 1.2+ | 2001 03 26 | 704 | 0.0 | 0.1+ | 2003 12 23 | 704 | 0.3− | 0.3+ | | |
| 2001 02 01 | 704 | 0.5+ | 0.5− | 2001 03 26 | 704 | 1.3+ | 0.8+ | 2003 12 23 | 704 | 0.2− | 0.0 | | |
| 2001 02 01 | 704 | 0.3− | 0.1− | 2001 03 26 | 704 | 0.2− | 0.2− | 2005 02 13 | 809 | 0.6− | 0.1+ | | |
| 2001 02 01 | 704 | 0.7− | 0.1+ | 2001 03 26 | 704 | 0.2+ | 0.3+ | 2005 02 13 | 809 | 0.3− | 0.0 | | |
| 2001 02 01 | 704 | 0.6+ | 0.0 | 2001 03 26 | 608 | 0.0 | 0.4− | 2005 02 13 | 809 | 1.0+ | 0.3+ | | |
| 2001 02 01 | 704 | 0.4− | 0.4+ | 2001 03 26 | 608 | 0.5− | 0.9− | 2006 10 22 | 703 | 0.4− | 0.1+ | | |
| 2001 02 02 | 699 | (2.5+ | 0.4−) | 2001 03 26 | 608 | 0.1− | 0.5− | 2006 10 22 | 703 | 0.3+ | 0.5− | | |
| 2001 02 02 | 699 | 0.7+ | 1.3+ | 2001 03 31 | 704 | 0.6+ | 1.1+ | 2006 10 22 | 703 | 0.2− | 0.4+ | | |
| 2001 02 02 | 699 | (1.9+ | 2.8+) | 2001 03 31 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.1+ | | |
| 2001 02 02 | 699 | 0.9+ | 0.7+ | 2001 03 31 | 704 | 0.4+ | 0.8+ | 2006 11 01 | 703 | (1.1− | 2.4+) | | |
| 2001 02 17 | 704 | 0.7− | 0.1− | 2001 03 31 | 704 | 0.2− | 0.3+ | 2006 11 01 | 703 | 0.4− | 0.1− | | |
| 2001 02 17 | 704 | 0.8+ | 0.3+ | 2002 08 20 | 644 | 0.7− | 0.6+ | 2006 11 01 | 703 | 0.3− | 0.7− | | |
| 2001 02 17 | 704 | 1.3+ | 0.2− | 2002 08 20 | 644 | 0.2− | 0.9+ | 2006 11 01 | 703 | 0.2+ | 0.0 | | |
| 2001 02 17 | 704 | 0.6+ | 0.8− | 2002 08 20 | 644 | 0.7− | 0.8+ | 2006 11 14 | 704 | 0.9+ | 0.9+ | | |
| 2001 02 17 | 704 | 0.1+ | 0.3− | 2002 08 30 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.2+ | | |
| 2001 03 15 | 608 | 0.2+ | 0.1− | 2002 08 30 | 644 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.2+ | 0.5+ | | |
| 2001 03 15 | 608 | 0.3− | 1.1− | 2002 08 30 | 644 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2001 03 15 | 608 | 0.3− | 0.4− | 2002 09 13 | 704 | (0.7− | 1.9+) | 2006 11 18 | G96 | 0.2− | 0.4− | | |
| 2001 03 18 | 699 | 0.2− | 0.0 | 2002 09 13 | 699 | 0.7+ | 1.1+ | 2006 11 18 | G96 | 0.3− | 0.4− | | |
| 2001 03 18 | 699 | 0.6− | 0.3+ | 2002 09 13 | 704 | (0.2+ | 1.9+) | 2006 11 18 | G96 | 0.4− | 0.5− | | |
| 2001 03 18 | 699 | 0.5− | 0.8+ | 2002 09 13 | 699 | 1.0− | 0.1− | 2006 11 20 | 704 | 0.6+ | 1.7+ | | |
| 2001 03 18 | 608 | 0.3− | 0.3+ | 2002 09 13 | 704 | (0.4− | 2.4+) | 2006 11 20 | 704 | 0.6+ | 0.6+ | | |
| 2001 03 18 | 699 | 0.2− | 0.2+ | 2002 09 13 | 699 | 0.7− | 1.3+ | 2006 11 20 | 704 | 0.5+ | 0.2− | | |
| 2001 03 18 | 608 | 0.6− | 0.4+ | 2002 09 13 | 699 | (1.0− | 1.8+) | 2006 11 20 | 704 | 0.5− | 0.7− | | |
| 2001 03 18 | 608 | 0.6− | 0.1+ | 2003 12 19 | 704 | 0.5+ | 0.2+ | | | | | | |

**(138977)∗ 2001 CY$_{31}$ = 1999 HR$_1$**

Discovered 2001 Feb. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 11847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.96647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.44415061 | $\omega$ | 139.89478 | | −0.95757741 | −0.16477794 | |
| $a$ | 1.7013064 | $\Omega$ | 33.01120 | | −0.04698952 | −0.72013540 | |
| $e$ | 0.0411422 | $i$ | 25.71865 | | +0.28431936 | −0.67398312 | |
| $P$ | 2.22 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 14 | 699 | (1.7+ | 2.4+) | 2001 02 14 | 209 | 0.9+ | 0.3− | 2004 10 10 | 049 | 1.0− | 0.4+ | | |
| 1999 04 14 | 699 | (2.1+ | 1.2+) | 2001 02 14 | 209 | 0.5+ | 0.4− | 2004 10 10 | 049 | 1.8− | 0.2+ | | |
| 1999 04 14 | 699 | 0.8+ | 1.0+ | 2001 02 14 | 209 | 0.8+ | 0.4− | 2004 10 11 | 644 | 0.3− | 0.2− | | |
| 1999 04 19 | 704 | 1.0+ | 0.4+ | 2001 03 13 | 704 | 0.9+ | 0.6− | 2004 10 11 | 644 | 0.7− | 0.1+ | | |
| 1999 04 19 | 704 | (3.1+ | 0.4+) | 2001 03 13 | 704 | 1.5− | 0.1− | 2004 10 11 | 644 | 0.6− | 0.0 | | |
| 1999 04 19 | 704 | 2.0+ | 0.6+ | 2001 03 13 | 704 | 0.7+ | 0.4− | 2004 10 18 | 704 | 0.2− | 0.2+ | | |
| 1999 04 19 | 704 | (3.5− | 0.1+) | 2001 03 13 | 704 | 0.6+ | 0.7+ | 2004 10 18 | 704 | 0.7+ | 0.6+ | | |
| 1999 04 19 | 704 | (2.5− | 0.8−) | 2001 03 26 | 699 | 0.7+ | 1.0+ | 2004 10 18 | 704 | 0.2+ | 0.6+ | | |
| 1999 04 19 | 704 | (2.3− | 0.7−) | 2001 03 26 | 699 | 0.7+ | 1.2+ | 2004 10 18 | 704 | 0.1− | 0.5+ | | |
| 1999 04 19 | 704 | 1.1+ | 0.1− | 2001 03 26 | 699 | 0.8+ | 1.7+ | 2004 10 18 | 704 | 0.1− | 0.9+ | | |
| 1999 04 19 | 704 | 0.4− | 1.6+ | 2001 03 26 | 699 | 0.3− | 0.4+ | 2004 11 03 | 683 | (1.1− | 2.9+) | | |
| 1999 04 19 | 704 | (2.1+ | 0.1−) | 2001 04 13 | 704 | 0.5− | 0.4+ | 2004 11 03 | 699 | 0.2− | 0.1+ | | |
| 1999 04 19 | 704 | 0.4+ | 1.7− | 2001 04 13 | 704 | 0.2+ | 0.4+ | 2004 11 03 | 683 | 0.8− | 1.9+ | | |
| 1999 04 19 | 704 | 1.1− | 0.3+ | 2001 04 13 | 704 | 0.5+ | 0.3+ | 2004 11 03 | 699 | 0.5+ | 0.4+ | | |
| 1999 04 19 | 704 | 0.8+ | 0.9+ | 2002 11 11 | 704 | 0.4+ | 0.5− | 2004 11 03 | 683 | (0.3+ | 2.1+) | | |
| 1999 04 19 | 704 | 0.3− | 1.4− | 2002 11 11 | 704 | 0.1+ | 0.9− | 2004 11 03 | 699 | 0.0 | 0.6+ | | |
| 1999 04 19 | 704 | 0.5− | 0.6− | 2002 11 11 | 704 | 0.3+ | 1.1− | 2004 11 03 | 699 | 0.1− | 0.7+ | | |
| 1999 04 19 | 704 | 0.1+ | 1.5+ | 2002 11 11 | 704 | 0.3+ | 0.6− | 2004 11 07 | 704 | 0.5− | 0.2+ | | |
| 1999 04 20 | 704 | 0.1− | 0.4+ | 2002 12 28 | 704 | 1.3− | 0.0 | 2004 11 07 | 704 | 0.4+ | 0.2− | | |
| 1999 04 20 | 704 | 0.0 | 0.0 | 2002 12 28 | 704 | 0.2+ | 0.2− | 2004 11 07 | 704 | 0.2− | 0.2− | | |
| 1999 04 20 | 704 | 0.2− | 0.1+ | 2002 12 28 | 704 | 1.3+ | 0.3+ | 2004 11 10 | 691 | 0.1− | 0.1− | | |
| 1999 04 20 | 704 | 0.2− | 0.9+ | 2002 12 28 | 704 | 0.3− | 0.6+ | 2004 11 10 | 691 | 0.1− | 0.1+ | | |
| 1999 04 20 | 704 | 0.5+ | 1.2+ | 2004 09 08 | 704 | (2.6− | 0.5−) | 2004 11 10 | 691 | 0.1− | 0.2− | | |
| 2001 02 05 | 704 | 0.2− | 0.9+ | 2004 09 08 | 704 | 0.6− | 0.6+ | 2006 08 21 | E12 | 0.5− | 0.1− | | |
| 2001 02 05 | 704 | 0.2− | 0.8+ | 2004 09 08 | 704 | 0.9+ | 1.1+ | 2006 08 21 | E12 | 0.8− | 0.2+ | | |
| 2001 02 05 | 704 | 0.0 | 0.1+ | 2004 10 07 | 704 | 0.3− | 1.1+ | 2006 08 21 | E12 | 0.3− | 0.7+ | | |
| 2001 02 12 | 106 | 0.4− | 0.0 | 2004 10 07 | 704 | 0.8− | 1.1+ | 2006 08 21 | E12 | 0.0 | 0.6+ | | |
| 2001 02 12 | 106 | 0.1− | 0.4+ | 2004 10 07 | 704 | 0.5− | 0.4+ | 2006 09 16 | E12 | 0.1− | 0.3+ | | |
| 2001 02 12 | 106 | 0.6+ | 0.7+ | 2004 10 07 | 704 | 0.4− | 0.2− | 2006 09 16 | E12 | 0.2− | 0.2+ | | |
| 2001 02 14 | 557 | (0.1− | 2.0−) | 2004 10 07 | 704 | 0.0 | 0.4+ | 2006 09 16 | E12 | 0.2− | 0.7+ | | |
| 2001 02 14 | 557 | 0.8+ | 0.5− | 2004 10 10 | 049 | 1.5− | 0.1+ | 2006 09 16 | E12 | 0.5− | 2.5− | | |

**(138978)∗ 2001 CD$_{32}$**

Discovered 2001 Feb. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.01417 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.40497817 | $\omega$ | 125.63320 | | −0.15005827 | −0.87226346 | |
| $a$ | 1.8093183 | $\Omega$ | 322.78454 | | +0.45369554 | +0.35752801 | |
| $e$ | 0.2552997 | $i$ | 50.31503 | | +0.87843205 | −0.33366179 | |
| $P$ | 2.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 12 | 704 | 0.1− | 0.8+ | 2001 02 14 | 621 | 0.0 | 0.0 | 2006 01 05 | 704 | 0.3+ | 0.5− | | |
| 2001 02 12 | 704 | 0.1− | 0.1+ | 2001 02 14 | 106 | 0.4+ | 0.2− | 2006 01 12 | 084 | 0.2+ | 0.5+ | | |
| 2001 02 12 | 704 | 0.4− | 0.2+ | 2001 02 14 | 106 | 0.1− | 0.1− | 2006 01 12 | 084 | 0.1− | 0.1+ | | |
| 2001 02 12 | 704 | 0.0 | 0.0 | 2001 02 14 | 106 | 0.1− | 1.0− | 2006 01 13 | 084 | 0.0 | 0.2+ | | |
| 2001 02 12 | 704 | 0.3− | 0.2+ | 2001 02 15 | 621 | 0.1− | 0.1+ | 2006 01 13 | 084 | 0.5− | 0.2− | | |
| 2001 02 12 | 557 | 0.2+ | 0.3− | 2001 02 15 | 621 | 0.0 | 0.1+ | 2006 01 13 | 699 | 0.0 | 0.3+ | | |
| 2001 02 12 | 557 | 0.1+ | 0.0 | 2001 02 15 | 621 | 0.1− | 0.1+ | 2006 01 13 | 699 | 0.3+ | 0.2− | | |
| 2001 02 12 | 557 | 0.3+ | 0.6+ | 2001 02 15 | 621 | 0.1+ | 0.1+ | 2006 01 13 | 699 | 0.4+ | 0.1+ | | |
| 2001 02 13 | 704 | 0.1− | 0.4− | 2001 02 17 | 118 | 0.1+ | 0.1− | 2006 01 21 | 084 | 0.0 | 0.1+ | | |
| 2001 02 13 | 704 | 0.1+ | 0.2+ | 2001 02 17 | 118 | 0.1− | 0.3+ | 2006 01 21 | 084 | 0.0 | 0.1+ | | |
| 2001 02 13 | 704 | 0.0 | 0.2− | 2001 02 17 | 118 | 0.2+ | 0.6+ | 2006 01 22 | H89 | 1.0+ | 0.4+ | | |
| 2001 02 13 | 704 | 0.1− | 0.2− | 2001 02 18 | 912 | 0.1− | 0.3− | 2006 01 22 | H89 | (1.8+ | 1.7+) | | |
| 2001 02 13 | 704 | 0.2+ | 0.1+ | 2001 02 18 | 912 | 0.0 | 0.5− | 2006 01 22 | H89 | 0.3+ | 1.1+ | | |
| 2001 02 13 | 704 | 0.4+ | 0.2+ | 2001 02 24 | 118 | 0.1+ | 0.1+ | 2006 01 23 | 683 | 0.6+ | 1.0+ | | |
| 2001 02 13 | 704 | 0.3− | 0.6− | 2001 02 24 | 118 | 0.0 | 0.2+ | 2006 01 23 | 683 | 0.3− | 1.1+ | | |
| 2001 02 13 | 704 | 0.1− | 0.3+ | 2001 02 25 | 118 | 0.2+ | 0.3+ | 2006 01 23 | 683 | 0.5+ | 0.8+ | | |
| 2001 02 13 | 704 | 0.1− | 0.0 | 2001 02 25 | 118 | 0.0 | 0.2+ | 2006 02 02 | 691 | 0.1− | 0.1− | | |
| 2001 02 13 | 704 | 0.1− | 0.1+ | 2001 03 04 | 704 | 0.8+ | 0.2+ | 2006 02 02 | 691 | 0.3− | 0.2− | | |
| 2001 02 13 | 104 | 0.5+ | 0.0 | 2001 03 04 | 704 | 0.4− | 0.2+ | 2006 02 02 | 691 | 0.3− | 0.2− | | |
| 2001 02 13 | 104 | 0.5+ | 0.1− | 2001 03 04 | 704 | 0.6− | 0.6+ | 2006 02 02 | 355 | 0.6− | 0.2− | | |
| 2001 02 13 | 104 | 0.3+ | 0.0 | 2001 03 04 | 704 | 1.0− | 0.8+ | 2006 02 02 | 355 | 0.3+ | 0.4− | | |
| 2001 02 13 | 104 | 0.0 | 0.3+ | 2001 03 04 | 704 | 0.8− | 0.7+ | 2006 02 02 | 355 | 0.1+ | 0.5− | | |
| 2001 02 13 | 621 | 0.1− | 0.1− | 2001 04 11 | 413 | 0.4− | 0.3+ | 2006 02 02 | 355 | 0.2+ | 0.3+ | | |
| 2001 02 13 | 621 | 0.2− | 0.2− | 2001 04 11 | 413 | 0.2− | 0.2+ | 2006 02 06 | 084 | 0.2+ | 0.8+ | | |
| 2001 02 13 | 621 | 0.1− | 0.2− | 2001 04 11 | 413 | 0.2− | 0.0 | 2006 02 07 | 703 | 0.1+ | 0.1− | | |
| 2001 02 13 | 118 | 0.3+ | 0.0 | 2001 04 12 | 413 | 0.1+ | 0.1+ | 2006 02 07 | 703 | 0.5− | 0.3− | | |
| 2001 02 13 | 118 | 0.4+ | 0.8− | 2001 04 12 | 413 | 0.1+ | 0.0 | 2006 02 07 | 703 | 0.5− | 0.0 | | |
| 2001 02 13 | 118 | 0.5+ | 0.6− | 2001 04 12 | 413 | 0.1+ | 0.2+ | 2006 02 07 | 703 | 0.0 | 0.3+ | | |
| 2001 02 13 | 557 | 0.2+ | 0.4− | 2001 04 13 | 413 | 0.2+ | 0.6+ | 2006 02 08 | 084 | 0.1+ | 0.1+ | | |
| 2001 02 14 | 912 | (1.3+ | 2.8+) | 2001 04 13 | 413 | 0.2+ | 0.5+ | 2006 02 08 | 084 | 0.2− | 0.2+ | | |
| 2001 02 14 | 912 | 0.9+ | 1.3− | 2001 04 13 | 413 | 0.0 | 0.6+ | 2006 02 09 | 084 | 0.3+ | 0.0 | | |
| 2001 02 14 | 557 | 0.3+ | 0.4+ | 2001 06 03 | 413 | 0.6+ | 0.2+ | 2006 02 10 | 703 | 0.2− | 0.2+ | | |
| 2001 02 14 | 557 | 0.1− | 0.3− | 2001 06 03 | 413 | 0.5+ | 0.2+ | 2006 02 10 | 703 | 0.2− | 0.2+ | | |
| 2001 02 14 | 557 | 0.3− | 0.1+ | 2001 06 03 | 413 | 0.0 | 0.4+ | 2006 02 10 | 703 | 0.3− | 0.1+ | | |
| 2001 02 14 | 557 | 0.1+ | 0.2− | 2002 06 05 | 413 | 0.2− | 0.1− | 2006 02 10 | 703 | 0.0 | 0.0 | | |
| 2001 02 14 | 046 | 0.0 | 0.2− | 2002 06 05 | 413 | 0.1− | 0.0 | 2006 02 20 | 322 | 0.7+ | 0.3− | | |
| 2001 02 14 | 046 | 0.0 | 0.1− | 2002 06 05 | 413 | 0.0 | 0.0 | 2006 02 20 | 322 | 0.5+ | 0.2− | | |
| 2001 02 14 | 046 | 0.2+ | 0.1− | 2002 06 22 | 413 | 0.2− | 0.2− | 2006 02 20 | 322 | 0.3− | 0.2− | | |
| 2001 02 14 | 046 | 0.1− | 0.4− | 2002 06 22 | 413 | 0.2+ | 0.0 | 2006 02 24 | 644 | 0.2+ | 0.1− | | |
| 2001 02 14 | 046 | 0.2+ | 0.1+ | 2002 06 22 | 413 | 0.0 | 0.1+ | 2006 02 24 | 644 | 0.1+ | 0.1− | | |
| 2001 02 14 | 118 | 0.3+ | 0.7+ | 2002 09 25 | 608 | (0.7− | 3.2+) | 2006 02 24 | 644 | 0.1+ | 0.0 | | |
| 2001 02 14 | 118 | 0.1+ | 0.1+ | 2005 11 26 | 704 | 0.3− | 0.4+ | 2006 02 25 | 703 | 0.2− | 0.4− | | |
| 2001 02 14 | 118 | 0.0 | 0.3+ | 2005 11 26 | 704 | 0.5+ | 0.1+ | 2006 02 25 | 703 | 0.0 | 0.1− | | |
| 2001 02 14 | 151 | 0.1− | 0.0 | 2005 11 26 | 704 | 0.6+ | 0.4+ | 2006 02 25 | 703 | 0.1− | 0.2+ | | |
| 2001 02 14 | 151 | 0.0 | 0.0 | 2005 11 26 | 704 | 1.0+ | 0.2− | 2006 02 25 | 703 | 0.3− | 0.0 | | |
| 2001 02 14 | 151 | 0.3− | 0.1− | 2005 11 26 | 704 | 0.9+ | 0.0 | 2006 03 03 | 071 | (2.7+ | 1.3−) | | |
| 2001 02 14 | 151 | 0.2− | 0.1− | 2006 01 04 | 703 | 0.7− | 0.4− | 2006 03 03 | 071 | 0.4− | 1.0− | | |
| 2001 02 14 | 151 | 0.0 | 0.1− | 2006 01 04 | 703 | 0.1− | 0.1− | 2006 03 03 | 071 | 1.5+ | 0.4− | | |
| 2001 02 14 | 151 | 0.2− | 0.0 | 2006 01 04 | 703 | 0.1− | 0.0 | 2006 03 03 | 071 | 0.2+ | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 14 | 621 | 0.1+ | 0.0 | 2006 01 04 | 703 | 0.1+ | 0.4− | 2006 03 12 | 808 | 1.4− | 0.7− | | |
| 2001 02 14 | 587 | 0.2− | 0.4− | 2006 01 05 | 704 | 0.1+ | 0.2− | 2006 03 12 | 808 | 1.0+ | 0.3+ | | |
| 2001 02 14 | 621 | 0.1− | 0.1− | 2006 01 05 | 704 | 0.0 | 0.7− | 2006 03 12 | 808 | 0.1− | 0.0 | | |
| 2001 02 14 | 587 | 0.1− | 0.5− | 2006 01 05 | 704 | 0.2+ | 0.6− | | | | | | |
| 2001 02 14 | 621 | 0.0 | 0.1− | 2006 01 05 | 704 | 0.2+ | 0.5− | | | | | | |

**(138979)∗ 2001 CM$_{32}$**

Discovered 2001 Feb. 14 at Kleť.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.38583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30579147 | $\omega$ | 119.31872 | | +0.39491927 | −0.91427398 | |
| $a$ | 2.1819886 | $\Omega$ | 307.14146 | | +0.79876880 | +0.39022097 | |
| $e$ | 0.0823788 | $i$ | 6.49947 | | +0.45388013 | +0.10876898 | |
| $P$ | 3.22 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 691 | 0.8− | 1.9+ | 2001 02 19 | 704 | 0.1+ | 0.2− | 2003 12 23 | 704 | 0.4+ | 0.7+ | | |
| 1999 08 12 | 691 | (4.5+ | 3.6−) | 2001 02 19 | 704 | 0.7+ | 0.3+ | 2003 12 23 | 704 | 0.0 | 0.8+ | | |
| 1999 08 12 | 691 | 0.4− | 1.2+ | 2001 02 19 | 704 | 0.7+ | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.1+ | | |
| 2001 01 21 | 704 | 0.2− | 0.6+ | 2001 02 19 | 704 | (1.7+ | 0.1−) | 2003 12 27 | 704 | 0.5− | 0.1− | | |
| 2001 01 21 | 704 | 0.4+ | 0.6− | 2001 02 22 | 704 | 0.3+ | 0.6+ | 2003 12 27 | 704 | 0.4− | 0.5− | | |
| 2001 01 21 | 704 | 0.3− | 0.4− | 2001 02 22 | 704 | 0.1+ | 0.8+ | 2003 12 27 | 704 | 0.4+ | 0.0 | | |
| 2001 01 21 | 704 | 1.1+ | 0.1− | 2001 02 22 | 704 | 0.8+ | 0.4− | 2003 12 28 | 704 | 0.1− | 0.8+ | | |
| 2001 01 21 | 704 | 0.1+ | 0.3− | 2001 02 22 | 704 | 1.0− | 1.0+ | 2003 12 28 | 704 | 0.0 | 1.0+ | | |
| 2001 02 01 | 699 | 0.2− | 0.0 | 2001 02 25 | 046 | 0.0 | 1.1+ | 2003 12 28 | 704 | 0.2− | 0.7+ | | |
| 2001 02 01 | 699 | 0.0 | 0.8+ | 2001 02 26 | 046 | 0.6− | 1.2+ | 2003 12 28 | 704 | 0.4+ | 0.4+ | | |
| 2001 02 01 | 699 | 0.1+ | 0.5+ | 2001 02 26 | 046 | 0.3+ | 0.0 | 2003 12 28 | 704 | 0.7− | 0.2+ | | |
| 2001 02 01 | 699 | 0.5+ | 0.9+ | 2001 02 26 | 046 | 0.2− | 0.9+ | 2004 01 22 | 704 | 0.2− | 0.7− | | |
| 2001 02 02 | 704 | 0.3− | 0.5+ | 2001 02 26 | 046 | 0.2− | 0.2− | 2004 01 22 | 704 | (0.4− | 1.7−) | | |
| 2001 02 02 | 704 | 0.5− | 0.7+ | 2001 02 26 | 046 | 0.3+ | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.7− | | |
| 2001 02 02 | 704 | 0.3− | 0.7+ | 2001 03 01 | 046 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.1+ | | |
| 2001 02 02 | 704 | 0.2− | 0.3− | 2001 03 01 | 046 | 0.7− | 0.4+ | 2006 10 19 | 703 | 0.9− | 0.1+ | | |
| 2001 02 02 | 704 | 0.4+ | 0.3+ | 2003 11 24 | 704 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.1− | 1.3+ | | |
| 2001 02 14 | 046 | 0.4+ | 0.3+ | 2003 11 24 | 704 | 0.3+ | 0.0 | 2006 10 19 | 703 | (1.6+ | 0.7−) | | |
| 2001 02 14 | 046 | 0.5+ | 0.2+ | 2003 11 24 | 704 | (0.1+ | 1.6+) | 2006 10 27 | 703 | 0.1− | 0.0 | | |
| 2001 02 14 | 046 | 0.4+ | 0.2− | 2003 11 24 | 704 | (0.3+ | 3.0+) | 2006 10 27 | 703 | 0.1− | 0.4− | | |
| 2001 02 14 | 046 | 0.5+ | 0.2+ | 2003 11 24 | 704 | 0.4+ | 1.5+ | 2006 10 27 | 703 | 0.3− | 0.4− | | |
| 2001 02 14 | 046 | 0.0 | 0.3+ | 2003 11 24 | 691 | 0.2− | 0.4− | 2006 10 27 | 703 | 0.8− | 0.1+ | | |
| 2001 02 14 | 046 | 0.1− | 0.1+ | 2003 11 24 | 691 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 02 15 | 046 | 0.6+ | 0.3+ | 2003 11 24 | 691 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2001 02 15 | 046 | 0.5+ | 0.1− | 2003 12 17 | 704 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2001 02 15 | 046 | 0.0 | 0.8+ | 2003 12 17 | 704 | 0.2− | 0.1+ | 2006 11 15 | 704 | (1.5+ | 1.1+) | | |
| 2001 02 15 | 046 | 0.3+ | 0.1+ | 2003 12 17 | 704 | 0.1− | 0.0 | 2006 11 15 | 704 | 1.0+ | 0.0 | | |
| 2001 02 15 | 046 | 0.0 | 0.0 | 2003 12 17 | 704 | 0.1− | 0.4+ | 2006 11 15 | 704 | 0.8− | 0.2+ | | |
| 2001 02 15 | 046 | 0.3− | 0.1− | 2003 12 17 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.1− | | |
| 2001 02 16 | 046 | 0.6+ | 0.4− | 2003 12 18 | 704 | 0.7+ | 0.0 | 2006 11 17 | 644 | 0.0 | 0.1− | | |
| 2001 02 16 | 046 | 0.2+ | 0.0 | 2003 12 18 | 704 | 0.2− | 0.4+ | 2006 11 17 | 644 | 0.2+ | 0.0 | | |
| 2001 02 16 | 046 | 0.9+ | 0.1+ | 2003 12 18 | 704 | 0.3− | 0.0 | 2006 11 22 | 703 | 1.0+ | 0.1+ | | |
| 2001 02 16 | 046 | 0.4− | 0.5+ | 2003 12 18 | 704 | 0.5− | 0.1+ | 2006 11 22 | 703 | 0.2+ | 0.1+ | | |
| 2001 02 16 | 046 | 0.1+ | 0.1− | 2003 12 18 | 704 | 0.2− | 0.2− | 2006 11 22 | 703 | 0.3+ | 0.2+ | | |
| 2001 02 16 | 046 | 0.5− | 0.2− | 2003 12 23 | 704 | (1.7+ | 1.1+) | 2006 11 22 | 703 | 0.5+ | 0.1+ | | |

**(138980)∗ 2001 CY$_{36}$ = 2003 WK$_{158}$**

Discovered 2001 Feb. 14 by L. Šarounová at Ondřejov.

Id. G. V. Williams (*MPO* 56201)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.92791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28176519 | $\omega$ | 139.11842 | | −0.84655282 | −0.53228541 | |
| $a$ | 2.3043290 | $\Omega$ | 8.72505 | | +0.48026607 | −0.76743945 | |
| $e$ | 0.1369425 | $i$ | 1.71330 | | +0.22954920 | −0.35736387 | |
| $P$ | 3.50 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.8− | 1.2+ | 2003 11 28 | 691 | 0.5+ | 0.2+ | 2005 05 14 | 644 | 0.3+ | 0.3+ | | |
| 2001 01 19 | 704 | 0.5− | 0.8+ | 2003 11 28 | 691 | 0.6+ | 0.1+ | 2005 05 14 | 644 | 0.4+ | 0.5+ | | |
| 2001 01 19 | 704 | 0.3+ | 1.0+ | 2003 12 01 | 291 | 0.2− | 0.2+ | 2005 05 14 | G96 | 0.6− | 0.3− | | |
| 2001 01 19 | 704 | 0.3− | 0.4+ | 2003 12 01 | 291 | 0.0 | 0.2+ | 2005 05 14 | G96 | 0.2+ | 0.4− | | |
| 2001 01 19 | 704 | 1.3− | 0.2+ | 2003 12 01 | 291 | 0.1+ | 0.4+ | 2005 05 14 | G96 | 0.7− | 0.4− | | |
| 2001 02 14 | 557 | 1.1+ | 0.8+ | 2005 04 07 | 691 | 0.1+ | 0.4+ | 2005 05 14 | G96 | 0.2+ | 0.1− | | |
| 2001 02 14 | 557 | 1.3− | 0.3− | 2005 04 07 | 691 | 0.2+ | 0.3+ | 2005 05 14 | G96 | 0.7− | 0.3− | | |
| 2001 02 15 | 557 | 0.2+ | 0.3+ | 2005 04 07 | 691 | 0.2+ | 0.4+ | 2005 05 14 | G96 | 0.1+ | 0.3− | | |
| 2001 02 15 | 557 | 0.5+ | 0.6+ | 2005 04 07 | 413 | 0.1+ | 0.2+ | 2005 05 14 | G96 | 0.5− | 0.1+ | | |
| 2001 02 15 | 557 | 0.5+ | 0.1+ | 2005 04 07 | 413 | 0.5− | 0.1+ | 2005 05 14 | G96 | 0.2+ | 0.1− | | |
| 2001 02 15 | 557 | 0.3+ | 1.3+ | 2005 04 07 | 413 | 0.0 | 0.5+ | 2006 08 21 | 691 | 0.0 | 0.1+ | | |
| 2001 02 15 | 557 | 0.5− | 0.5+ | 2005 04 07 | 413 | 0.1− | 0.1− | 2006 08 21 | 691 | 0.0 | 0.4+ | | |
| 2001 02 15 | 557 | 1.5+ | 0.0 | 2005 04 09 | 691 | 0.2+ | 0.1+ | 2006 08 21 | 691 | 0.3− | 0.1+ | | |
| 2001 02 16 | 557 | 0.3+ | 0.4+ | 2005 04 09 | 691 | 0.4+ | 0.1+ | 2006 08 27 | 291 | 0.2+ | 0.4+ | | |
| 2001 02 16 | 557 | 1.0+ | 0.0 | 2005 04 09 | 691 | 0.0 | 0.3+ | 2006 08 27 | 291 | 0.2− | 0.2+ | | |
| 2001 02 16 | 557 | 0.4+ | 0.8− | 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 08 27 | 291 | 0.7− | 0.2+ | | |
| 2003 10 02 | 691 | 0.4− | 0.1+ | 2005 04 11 | G96 | 0.4− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.2+ | | |
| 2003 10 02 | 691 | 0.7− | 0.1+ | 2005 04 11 | G96 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ | | |
| 2003 10 02 | 691 | 0.3− | 0.0 | 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.3+ | | |
| 2003 10 21 | 691 | 0.2− | 0.0 | 2005 05 14 | 644 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.3− | | |
| 2003 10 21 | 691 | 0.7+ | 0.0 | 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.2+ | | |
| 2003 10 21 | 691 | 0.0 | 0.0 | 2005 05 14 | 644 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.0 | | |
| 2003 11 28 | 691 | 0.4− | 0.6− | 2005 05 14 | 644 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.2− | | |

**(138981)∗ 2001 CE$_{47}$**

Discovered 2001 Feb. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.95247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.08577189 | $\omega$ | 285.20141 | | +0.31489463 | −0.94532556 | |
| $a$ | 5.0922073 | $\Omega$ | 146.06580 | | +0.91869390 | +0.28111851 | |
| $e$ | 0.0649455 | $i$ | 8.74346 | | +0.23841747 | +0.16532382 | |
| $P$ | 11.49 | $H$ | 13.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 13 | 691 | 0.3+ | 0.4+ | 2002 04 12 | 608 | 1.1− | 0.7− | 2004 06 22 | 691 | 0.2+ | 0.0 | | |
| 2001 02 13 | 691 | 0.1+ | 0.4+ | 2002 04 12 | 608 | 1.2− | 0.4− | 2004 06 22 | 691 | 0.0 | 0.1+ | | |
| 2001 02 13 | 691 | 0.1+ | 0.2+ | 2002 04 12 | 608 | 1.1− | 0.5− | 2006 06 19 | G96 | 0.1− | 0.5− | | |
| 2001 02 19 | 704 | 0.5− | 0.4+ | 2002 04 16 | 704 | 0.6− | 0.1− | 2006 06 19 | G96 | 0.4+ | 0.3− | | |
| 2001 02 19 | 704 | 0.4+ | 1.0+ | 2002 04 16 | 704 | 0.2− | 0.7+ | 2006 06 19 | G96 | 0.0 | 0.4− | | |
| 2001 02 19 | 704 | (0.2+ | 1.9+) | 2002 04 16 | 704 | 0.9+ | 0.1− | 2006 06 19 | G96 | 0.0 | 0.0 | | |
| 2001 03 28 | 691 | 0.0 | 0.0 | 2004 04 30 | 691 | 0.3− | 0.0 | 2006 06 19 | 691 | 0.1− | 0.5+ | | |
| 2001 03 28 | 691 | 0.0 | 0.0 | 2004 04 30 | 691 | 0.1+ | 0.2+ | 2006 06 19 | 691 | 0.0 | 0.1+ | | |
| 2001 03 28 | 691 | 0.1− | 0.1+ | 2004 04 30 | 691 | 0.1+ | 0.1+ | 2006 06 19 | 691 | 0.0 | 0.3+ | | |
| 2002 03 10 | 291 | 0.0 | 0.0 | 2004 06 10 | 599 | 0.1− | 0.2− | 2006 08 18 | 644 | 0.0 | 0.5+ | | |
| 2002 03 10 | 291 | 0.1− | 0.0 | 2004 06 10 | 599 | 0.2+ | 0.1− | 2006 08 18 | 644 | 0.3+ | 0.5+ | | |
| 2002 03 10 | 291 | 0.2+ | 0.0 | 2004 06 10 | 599 | 0.3− | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.2+ | | |
| 2002 03 19 | 699 | 0.2− | 0.5− | 2004 06 15 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2002 03 19 | 699 | 1.5+ | 1.4− | 2004 06 15 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2002 03 19 | 699 | 0.2+ | 0.5− | 2004 06 15 | 691 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.6− | 0.2+ | | |
| 2002 03 19 | 699 | 0.0 | 0.3− | 2004 06 22 | 691 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.0 | | |

**(138982)∗ 2001 CS$_{49}$ = 2005 EQ$_{270}$**

Discovered 2001 Feb. 2 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 74912)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.33033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26623764 | $\omega$ | 194.56145 | | −0.28473332 | +0.94799170 | |
| $a$ | 2.3930756 | $\Omega$ | 59.07406 | | −0.86208680 | −0.18832979 | |
| $e$ | 0.1025798 | $i$ | 9.54602 | | −0.41920555 | −0.25660012 | |
| $P$ | 3.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 691 | 0.2+ | 0.5− | 2005 03 18 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 644 | 0.5+ | 0.8+ | | |
| 1999 10 15 | 691 | 0.7+ | 0.4+ | 2005 03 18 | 704 | 0.6+ | 0.9+ | 2006 09 14 | 644 | (0.3+ | 1.8+) | | |
| 1999 10 15 | 691 | 0.2− | 0.4− | 2005 03 18 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.4+ | 0.1+ | | |
| 2001 02 02 | 608 | 0.9+ | 0.5+ | 2005 03 18 | 704 | 0.4+ | 1.2+ | 2006 09 19 | 703 | 0.3+ | 0.6+ | | |
| 2001 02 02 | 608 | 0.6+ | 1.4+ | 2005 03 18 | 703 | (1.1− | 1.6−) | 2006 09 19 | 703 | 1.2+ | 0.2+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 608 | 1.0+ | 0.2+ | 2005 03 18 | 703 | 0.2− | 1.3− | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2001 02 03 | 704 | 1.3+ | 1.0+ | 2005 03 18 | 703 | 1.1− | 0.8− | 2006 09 25 | 703 | 1.2− | 0.1+ |
| 2001 02 03 | 704 | 0.9− | 1.1+ | 2005 03 18 | 703 | 0.2+ | 0.4− | 2006 09 25 | 703 | 0.5− | 0.7− |
| 2001 02 03 | 704 | 1.3+ | 0.2− | 2005 04 01 | 699 | 0.3− | 0.6+ | 2006 09 25 | 703 | 0.4− | 0.9− |
| 2001 02 03 | 704 | 0.2− | 0.4+ | 2005 04 01 | 699 | 0.6− | 0.2+ | 2006 09 25 | 703 | 0.1− | 1.0− |
| 2001 02 16 | 704 | 0.0 | 0.6− | 2005 04 01 | 699 | 0.4− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.7+ |
| 2001 02 16 | 704 | 0.7− | 0.8+ | 2005 04 04 | 703 | 0.6− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2001 02 16 | 704 | (1.1+ | 1.7+) | 2005 04 04 | 703 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.2+ | 1.0+ |
| 2001 02 16 | 704 | 0.7− | 1.3+ | 2005 04 04 | 703 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.9+ |
| 2001 02 19 | 699 | 0.4− | 0.0 | 2005 04 05 | 699 | 0.8+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.8+ |
| 2001 02 19 | 699 | (0.4− | 2.9−) | 2005 04 05 | 699 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.6+ |
| 2001 02 19 | 699 | 0.4− | 0.2+ | 2005 04 05 | 699 | 1.1+ | 0.6− | 2006 10 19 | 703 | (2.0− | 0.9−) |
| 2001 02 19 | 699 | 1.1− | 1.2+ | 2005 04 05 | 699 | 0.3+ | 0.0 | 2006 10 19 | 703 | (1.9+ | 0.7−) |
| 2002 07 16 | 644 | 0.3− | 0.7+ | 2005 04 08 | 704 | 0.5+ | 0.4− | 2006 10 19 | 703 | (1.8+ | 0.5+) |
| 2002 07 16 | 644 | 0.6− | 0.8+ | 2005 04 08 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.5+ |
| 2002 07 16 | 644 | 0.3− | 1.1+ | 2005 04 08 | 704 | 0.6+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2003 12 14 | 644 | 0.1+ | 0.1− | 2005 04 08 | 704 | 0.3+ | 0.5+ | 2006 10 23 | 644 | 0.3+ | 0.7+ |
| 2003 12 14 | 644 | 0.5+ | 0.2+ | 2005 04 08 | 704 | 0.3+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.7+ |
| 2003 12 14 | 644 | 0.4+ | 0.3+ | 2005 04 18 | 703 | 0.9− | 0.2− | 2006 10 28 | 703 | 0.8− | 0.9+ |
| 2005 03 12 | 704 | 0.3+ | 0.1+ | 2005 04 18 | 703 | 1.0− | 0.1− | 2006 10 28 | 703 | 0.7− | 0.8− |
| 2005 03 12 | 704 | 0.4+ | 0.0 | 2005 04 18 | 703 | 0.8− | 0.1+ | 2006 10 28 | 703 | (3.4− | 0.4−) |
| 2005 03 12 | 704 | 0.3+ | 0.2− | 2005 04 18 | 703 | (1.7− | 0.3+) | 2006 10 28 | 703 | 2.3− | 0.6− |
| 2005 03 12 | 704 | 0.6+ | 0.7− | 2006 09 14 | 644 | 0.1+ | 1.0+ | | | | |

**(138983)∗ 2001 DX$_4$ = 2003 WF$_{118}$**

Discovered 2001 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56202)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.27410 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28656692 | $\omega$ | 163.76678 | | −0.99593191 | −0.08774343 | |
| $a$ | 2.2785156 | $\Omega$ | 11.25908 | | +0.06647742 | −0.86912343 | |
| $e$ | 0.0991175 | $i$ | 6.03035 | | +0.06083082 | −0.48674999 | |
| $P$ | 3.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.0 | 0.0 | 2003 11 20 | 704 | 0.3− | 0.7− | 2006 09 15 | 691 | 0.3− | 0.1− |
| 1992 09 27 | 691 | 0.3− | 0.3+ | 2003 11 20 | 704 | 0.0 | 0.3− | 2006 09 20 | 644 | 0.3− | 1.0+ |
| 1992 09 27 | 691 | (3.4+ | 5.8−) | 2003 11 24 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.4+ |
| 2001 01 18 | 704 | 0.8− | 0.6+ | 2003 11 24 | 704 | 0.7− | 0.5− | 2006 09 20 | 644 | 0.0 | 0.1− |
| 2001 01 18 | 704 | 0.4− | 0.3− | 2003 11 24 | 704 | (0.3− | 1.6−) | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2001 01 18 | 704 | 0.4− | 0.2+ | 2003 11 24 | 704 | 0.0 | 1.4− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2001 01 18 | 704 | 0.2+ | 0.8+ | 2003 12 03 | 704 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2+ |
| 2001 01 18 | 704 | 0.7− | 0.8+ | 2003 12 03 | 704 | 0.4+ | 1.1− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 02 16 | 704 | 0.3− | 0.1− | 2003 12 03 | 704 | 0.1− | 1.3− | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 02 16 | 704 | 0.2− | 0.5+ | 2003 12 04 | 704 | 0.3+ | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2001 02 16 | 704 | 0.6− | 0.4+ | 2003 12 04 | 704 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 02 16 | 704 | 0.2− | 1.0+ | 2003 12 04 | 704 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.6+ | 0.1+ |
| 2001 02 16 | 704 | 0.2− | 1.2+ | 2003 12 04 | 704 | 0.0 | 0.7+ | 2006 10 03 | 691 | 0.0 | 0.1− |
| 2001 02 17 | 704 | 0.3− | 0.2+ | 2003 12 04 | 704 | 0.5+ | 0.4+ | 2006 10 03 | 691 | 0.2− | 0.3+ |
| 2001 02 17 | 704 | 0.4+ | 0.5− | 2003 12 04 | 704 | 1.3+ | 0.3+ | 2006 10 15 | 703 | 1.0− | 0.0 |
| 2001 02 17 | 704 | 0.4+ | 0.1+ | 2003 12 04 | 704 | 0.4− | 0.1+ | 2006 10 15 | 703 | 0.4+ | 0.8+ |
| 2001 02 17 | 704 | 0.1− | 0.4− | 2003 12 04 | 704 | 1.0− | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.7+ |
| 2001 02 17 | 704 | 0.3+ | 0.8+ | 2003 12 04 | 704 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.8− | 0.7+ |
| 2001 02 17 | 704 | 1.1+ | 1.0− | 2003 12 15 | 644 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 02 17 | 704 | 0.1− | 0.4+ | 2003 12 15 | 644 | 0.2− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2001 02 17 | 704 | 0.2− | 0.2− | 2003 12 15 | 644 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.5− |
| 2001 02 17 | 704 | 0.6+ | 0.7+ | 2003 12 17 | 704 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2001 02 17 | 704 | 0.8+ | 0.3+ | 2003 12 17 | 704 | 0.5+ | 0.5+ | 2006 10 19 | G96 | 0.4− | 0.3− |
| 2001 02 19 | 699 | 0.1+ | 0.6+ | 2003 12 17 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.5+ |
| 2001 02 19 | 699 | 0.5+ | 0.9+ | 2003 12 17 | 704 | 0.7+ | 0.9− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2001 02 19 | 699 | 1.0+ | 0.4+ | 2003 12 23 | 704 | 0.7+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 02 19 | 699 | 1.0+ | 0.3+ | 2003 12 23 | 704 | 0.1+ | 0.4− | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2001 03 26 | 704 | 0.2− | 0.0 | 2003 12 23 | 704 | 1.0− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2001 03 26 | 704 | 0.7− | 0.1+ | 2003 12 23 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2001 03 26 | 704 | 0.2+ | 0.3− | 2003 12 23 | 704 | (0.9+ | 1.6+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 11 | 644 | 0.1− | 0.9+ | 2003 12 29 | 704 | 0.4+ | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 08 11 | 644 | 0.1+ | 1.0+ | 2003 12 29 | 704 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 11 | 644 | 0.1+ | 0.8+ | 2003 12 29 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.8− | 0.4− |
| 2002 08 30 | 644 | 0.0 | 0.6+ | 2003 12 29 | 704 | 1.0+ | 0.2− | 2006 11 15 | G96 | 0.6− | 0.4− |
| 2002 08 30 | 644 | 0.2+ | 0.6+ | 2003 12 29 | 704 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 08 30 | 644 | 0.1+ | 0.8+ | 2006 09 15 | 691 | 0.5− | 0.4− | 2006 11 15 | G96 | 1.0+ | 0.1+ |
| 2003 11 20 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.2− | | | | |

**(138984)∗ 2001 DY$_6$ = 1998 FZ$_{108}$**

Discovered 2001 Feb. 16 at Crni Vrh.

Id. M. E. Sansaturio (*MPO* 11856)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.78999 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30462354 | $\omega$ | 223.42129 | | −0.99818248 | −0.03842109 | |
| $a$ | 2.1875622 | $\Omega$ | 314.31400 | | +0.05492499 | −0.89703769 | |
| $e$ | 0.0755118 | $i$ | 3.72036 | | −0.02479901 | −0.44028083 | |
| $P$ | 3.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 13 | 691 | 0.8− | 0.0 | 2001 02 16 | 106 | 0.4+ | 0.6− | 2003 12 23 | 704 | 0.2+ | 0.9+ |
| 1993 12 13 | 691 | 0.9− | 0.1− | 2001 02 17 | 106 | 0.2− | 0.0 | 2003 12 23 | 704 | 0.1+ | 0.3+ |
| 1993 12 13 | 691 | 1.9+ | 0.3− | 2001 02 17 | 106 | 0.2− | 0.5+ | 2003 12 23 | 704 | 0.5+ | 0.3+ |
| 1998 03 31 | 704 | 0.4− | 0.2+ | 2001 02 17 | 106 | 0.3+ | 0.6− | 2003 12 23 | 704 | 0.1− | 0.6+ |
| 1998 03 31 | 704 | 0.9+ | 0.4− | 2001 02 19 | 704 | 0.4− | 0.2− | 2003 12 27 | 704 | 0.3− | 0.8+ |
| 1998 03 31 | 704 | (0.6+ | 2.4+) | 2001 02 19 | 704 | (1.7+ | 0.9−) | 2003 12 27 | 704 | 0.1+ | 1.0+ |
| 1998 03 31 | 704 | 0.5+ | 0.8+ | 2001 02 19 | 704 | 0.4− | 0.5− | 2003 12 27 | 704 | 0.9− | 0.9+ |
| 1998 04 01 | 704 | 1.0− | 1.2+ | 2001 02 19 | 704 | 0.4+ | 0.5− | 2003 12 27 | 704 | 0.7− | 1.0+ |
| 1998 04 01 | 704 | 0.5− | 0.6+ | 2001 02 19 | 704 | 0.3− | 0.6− | 2006 11 16 | 704 | (0.5+ | 2.2+) |
| 1998 04 01 | 704 | 1.2+ | 0.8− | 2002 08 06 | 644 | 0.3− | 1.2+ | 2006 11 16 | 704 | (0.4+ | 2.4+) |
| 1998 04 01 | 704 | 1.9− | 0.5+ | 2002 08 06 | 644 | 0.0 | 1.1+ | 2006 11 16 | 704 | (0.4− | 2.7+) |
| 1998 04 19 | 704 | (1.8+ | 2.2+) | 2002 08 06 | 644 | 0.4− | 1.0+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 1998 04 19 | 704 | 0.7− | 0.3+ | 2002 08 08 | 644 | 0.2− | 1.4+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 1998 04 19 | 704 | 0.1− | 1.8+ | 2002 08 08 | 644 | 0.1− | 0.9+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 1998 04 19 | 704 | 1.2+ | 1.1+ | 2002 08 08 | 644 | 0.0 | 1.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 1998 04 19 | 704 | (2.7− | 1.4+) | 2002 08 17 | 644 | 0.7− | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2001 01 18 | 691 | 0.4+ | 0.1+ | 2002 08 17 | 644 | 0.4− | 1.1+ | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2001 01 18 | 691 | 0.6+ | 0.2− | 2002 08 17 | 644 | 0.4− | 1.0+ | 2006 11 19 | 704 | 0.1− | 0.6− |
| 2001 01 18 | 691 | 0.3+ | 0.1+ | 2003 12 18 | 704 | (0.8+ | 2.1−) | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2001 02 16 | 699 | 0.0 | 0.9+ | 2003 12 18 | 704 | 1.4+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 02 16 | 699 | 0.8+ | 1.1+ | 2003 12 18 | 704 | 0.9+ | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2001 02 16 | 699 | 0.2− | 0.1− | 2003 12 22 | 704 | 0.8− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 02 16 | 699 | 0.1− | 0.7+ | 2003 12 22 | 704 | 0.9− | 0.9+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2001 02 16 | 106 | 0.4+ | 0.4− | 2003 12 22 | 704 | 1.0− | 0.2+ | | | | |
| 2001 02 16 | 106 | 0.0 | 0.3− | 2003 12 23 | 704 | 0.0 | 0.3+ | | | | |

**(138985)∗ 2001 DP$_7$ = 1998 HO$_{95}$**

Discovered 2001 Feb. 16 by T. Kobayashi at Oizumi.

Id. G. V. Williams (*MPO* 10792)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.39168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29554663 | $\omega$ | 32.85674 | | −0.05046135 | −0.99557685 | |
| $a$ | 2.2321260 | $\Omega$ | 60.14864 | | +0.89546467 | −0.08023967 | |
| $e$ | 0.1139009 | $i$ | 5.24255 | | +0.44226314 | +0.04887054 | |
| $P$ | 3.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.3− | 1.1+ | 2002 07 12 | 644 | 1.0− | 0.6+ | 2006 10 16 | 703 | 1.1− | 0.7+ |
| 1998 04 21 | 704 | (0.4− | 3.7+) | 2002 07 12 | 644 | (1.8− | 1.4−) | 2006 10 16 | 703 | 0.5− | 0.8+ |
| 1998 04 21 | 704 | 1.6− | 0.7+ | 2003 10 29 | 704 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1998 04 21 | 704 | 0.7− | 0.0 | 2003 10 29 | 704 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 1998 04 22 | 704 | 0.8+ | 0.1− | 2003 10 29 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 1998 04 22 | 704 | 1.0+ | 0.3+ | 2003 10 29 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1998 04 22 | 704 | 1.3+ | 1.2− | 2003 11 20 | 704 | 0.3− | 1.4− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1998 04 22 | 704 | 0.4+ | 0.2+ | 2003 11 20 | 704 | (1.8+ | 1.4−) | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1998 04 22 | 704 | 1.5+ | 1.5+ | 2003 11 20 | 704 | 1.2+ | 1.0− | 2006 10 21 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.6− | 0.5− | 2003 11 20 | 704 | (2.2+ | 1.6−) | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 01 04 | 704 | 1.5+ | 0.5+ | 2003 11 20 | 704 | 0.6− | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 01 04 | 704 | 0.6+ | 0.0 | 2003 11 24 | 704 | 0.9− | 0.6− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2001 02 02 | 699 | 0.1− | 0.3+ | 2003 11 24 | 704 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 02 02 | 699 | 0.9− | 0.8+ | 2003 11 24 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 02 02 | 699 | 0.9− | 0.6+ | 2003 11 24 | 704 | 1.5− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 02 02 | 699 | 1.0− | 0.3+ | 2003 11 24 | 704 | 0.4− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.4+ |
| 2001 02 16 | 704 | 0.9− | 0.0 | 2003 12 04 | 704 | 0.6+ | 1.3− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 02 16 | 704 | 0.0 | 0.2− | 2003 12 04 | 704 | 0.6+ | 0.6− | 2006 10 22 | 691 | 0.4− | 0.4+ |
| 2001 02 16 | 704 | 0.2+ | 0.5+ | 2003 12 04 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 704 | 1.3+ | 0.1+ |
| 2001 02 16 | 704 | 0.4− | 0.1+ | 2003 12 04 | 704 | 1.1+ | 0.0 | 2006 10 22 | 704 | 0.3+ | 0.4+ |
| 2001 02 16 | 704 | 0.1− | 0.5− | 2003 12 04 | 704 | 0.1− | 0.4+ | 2006 10 22 | 704 | 0.1+ | 1.1+ |
| 2001 02 16 | 411 | (0.9− | 1.6−) | 2003 12 18 | 704 | 0.5− | 0.5− | 2006 10 22 | 704 | 0.6+ | 0.6+ |
| 2001 02 16 | 411 | 0.8− | 0.3− | 2003 12 18 | 704 | 0.0 | 0.5− | 2006 10 22 | 704 | 0.3+ | 1.0+ |
| 2001 02 18 | 411 | 1.3+ | 0.8+ | 2003 12 18 | 704 | 0.1+ | 0.5− | 2006 10 23 | 704 | 0.1− | 0.6− |
| 2001 02 18 | 411 | 0.0 | 0.4− | 2003 12 18 | 704 | 0.5− | 0.1+ | 2006 10 23 | 704 | 0.4− | 0.1+ |
| 2001 02 20 | 704 | 0.5+ | 0.4+ | 2003 12 18 | 704 | 0.2− | 0.2− | 2006 10 23 | 704 | 0.4+ | 0.5− |
| 2001 02 20 | 704 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.5+ | 0.6− | 2006 10 27 | 704 | 0.6− | 1.3+ |
| 2001 02 20 | 704 | 0.1+ | 0.2− | 2003 12 23 | 704 | 0.5+ | 0.7− | 2006 10 27 | 704 | 0.8− | 1.2+ |
| 2001 02 20 | 704 | 0.5+ | 0.3+ | 2003 12 23 | 704 | 0.3+ | 0.4− | 2006 10 27 | 704 | 0.8− | 0.7+ |
| 2001 03 04 | 704 | 0.2− | 0.1− | 2003 12 23 | 704 | 0.3+ | 0.4− | 2006 10 27 | 704 | 0.5− | 0.1− |
| 2001 03 04 | 704 | 0.6+ | 0.4+ | 2003 12 23 | 704 | 0.1+ | 0.3− | 2006 10 27 | 704 | 1.2− | 0.4+ |
| 2001 03 04 | 704 | 0.8+ | 1.0+ | 2003 12 28 | 704 | 0.5+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 03 04 | 704 | 0.3+ | 1.3+ | 2003 12 28 | 704 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.5+ | 0.1− |
| 2001 03 15 | 608 | 0.2− | 0.6+ | 2003 12 28 | 704 | 1.0− | 0.8− | 2006 11 01 | G96 | 0.4+ | 0.1+ |
| 2001 03 15 | 608 | 0.3− | 0.8+ | 2003 12 28 | 704 | 0.3− | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2001 03 15 | 608 | 0.1+ | 0.4+ | 2003 12 28 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2001 03 18 | 699 | 1.0+ | 0.6+ | 2004 01 19 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.5+ |
| 2001 03 18 | 699 | 0.8+ | 0.7+ | 2004 01 19 | 704 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2001 03 18 | 699 | 1.2+ | 0.3+ | 2004 01 19 | 704 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2001 03 18 | 608 | 0.4− | 0.1− | 2004 01 19 | 704 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 03 18 | 699 | 0.7+ | 0.3+ | 2004 01 19 | 704 | 0.5− | 0.1− | 2006 11 14 | G96 | 0.0 | 1.0+ |
| 2001 03 18 | 608 | 0.6− | 0.1+ | 2004 01 31 | 704 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 03 18 | 608 | 0.2− | 0.0 | 2004 01 31 | 704 | 0.5+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 03 19 | 704 | 0.8+ | 0.2− | 2004 01 31 | 704 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2001 03 19 | 704 | 0.1− | 0.5+ | 2004 01 31 | 704 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 03 19 | 704 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2001 03 19 | 704 | 0.5+ | 0.9+ | 2004 03 20 | 704 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.1− | 0.5+ |
| 2001 03 19 | 704 | 0.0 | 0.7+ | 2004 03 20 | 704 | 0.1+ | 0.8− | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2001 03 26 | 704 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.4+ | 2006 11 17 | 703 | 1.0− | 0.0 |
| 2001 03 26 | 704 | 0.9+ | 0.7+ | 2006 09 26 | 704 | 0.9− | 1.1+ | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2001 03 26 | 704 | 1.2+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2001 03 26 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 704 | (2.2− | 1.2+) | 2006 11 18 | 704 | 0.9+ | 0.3+ |
| 2001 03 26 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2001 03 26 | 608 | 0.2− | 1.0+ | 2006 09 29 | 699 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 1.0+ |
| 2001 03 26 | 608 | 0.7− | 1.1+ | 2006 09 29 | 699 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 03 26 | 608 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.0 | 1.3+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2001 03 29 | 699 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 20 | 704 | 1.3− | 1.1+ |
| 2001 03 29 | 699 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.7+ | 0.5− | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2001 03 29 | 699 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.2− | 2006 11 21 | 704 | 1.1+ | 1.3+ |
| 2001 03 29 | 699 | 1.0+ | 0.1− | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 1.2− |
| 2001 03 31 | 704 | 0.2+ | 1.0+ | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | (1.1+ | 1.7−) |
| 2001 03 31 | 704 | 0.5+ | 1.0+ | 2006 10 03 | G96 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.8− | 0.9+ |
| 2001 03 31 | 704 | 0.0 | 0.7+ | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 11 26 | 704 | 0.5− | 0.4− |
| 2001 03 31 | 704 | 0.3− | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.1+ | 2006 11 26 | 704 | 0.2− | 0.1− |
| 2001 03 31 | 704 | (0.9− | 1.6+) | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 26 | 704 | 0.5− | 0.2+ |
| 2002 07 12 | 644 | 0.9− | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.1+ | | | | |

**(138986)∗ 2001 DB$_{12}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 181.07107 | | (2000.0) | | | |
| $n$ | 0.26961874 | $\omega$ | 158.89123 | | −0.98387315 | −0.17821080 |
| $a$ | 2.3730270 | $\Omega$ | 10.87702 | | +0.15027553 | −0.87000190 |
| $e$ | 0.1827335 | $i$ | 4.65519 | | +0.09700979 | −0.45971470 |
| $P$ | 3.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 704 | 0.2+ | 0.1+ | 2001 03 19 | 704 | 0.4+ | 0.1+ | 2003 10 23 | 691 | 0.1− | 0.2− |
| 2001 02 01 | 704 | 1.0+ | 0.2+ | 2001 03 19 | 704 | 0.1+ | 0.0 | 2003 10 23 | 691 | 0.0 | 0.0 |
| 2001 02 01 | 704 | 0.1+ | 0.8− | 2001 03 19 | 704 | 0.5+ | 0.4− | 2003 11 19 | 691 | 0.5− | 0.2+ |
| 2001 02 01 | 704 | 0.2+ | 0.3+ | 2001 03 19 | 704 | 0.2+ | 0.1− | 2003 11 19 | 691 | 0.3− | 0.3+ |
| 2001 02 01 | 704 | 0.0 | 0.5− | 2001 03 20 | 704 | 0.5− | 0.9− | 2003 11 19 | 691 | 0.3− | 0.5+ |
| 2001 02 17 | 704 | 0.1− | 0.1+ | 2001 03 20 | 704 | 0.0 | 0.7+ | 2003 11 20 | 704 | 0.9+ | 1.3+ |
| 2001 02 17 | 704 | 0.3+ | 0.3+ | 2001 03 20 | 704 | 0.0 | 0.1− | 2003 11 20 | 704 | 0.1+ | 0.7+ |
| 2001 02 17 | 704 | 0.2+ | 0.6− | 2001 03 20 | 704 | 0.1+ | 0.1− | 2003 11 20 | 704 | (1.8− | 1.2+) |
| 2001 02 17 | 704 | 1.0+ | 0.4+ | 2001 03 20 | 704 | 0.3− | 0.8+ | 2003 11 21 | 704 | 0.7+ | 0.2+ |
| 2001 02 17 | 704 | 0.2+ | 0.1+ | 2001 03 20 | 608 | 0.2+ | 0.2+ | 2003 11 21 | 704 | 0.1+ | 0.5+ |
| 2001 02 19 | 704 | 0.0 | 0.0 | 2001 03 20 | 608 | 0.3+ | 0.5+ | 2003 11 21 | 704 | 0.7+ | 0.1+ |
| 2001 02 19 | 704 | 0.2− | 0.1+ | 2001 03 20 | 608 | 0.5+ | 0.2+ | 2003 11 21 | 704 | 0.0 | 0.1− |
| 2001 02 19 | 704 | 0.7− | 1.3+ | 2001 03 20 | 049 | 1.4+ | 1.4− | 2003 11 24 | 704 | (1.8− | 3.2+) |
| 2001 02 19 | 704 | 1.2− | 0.9+ | 2001 03 20 | 049 | 0.2+ | 0.6− | 2003 11 24 | 704 | (2.0− | 3.1+) |
| 2001 02 19 | 704 | 0.1+ | 0.1+ | 2001 03 20 | 049 | 0.3+ | 0.7− | 2003 11 24 | 704 | (2.0− | 0.2+) |
| 2001 02 20 | 704 | 0.2− | 0.6+ | 2001 03 21 | 704 | 0.6+ | 0.5+ | 2003 11 24 | 704 | (2.2− | 1.1+) |
| 2001 02 20 | 704 | 0.4+ | 0.2+ | 2001 03 21 | 704 | 0.1+ | 0.6+ | 2003 12 01 | 691 | 0.0 | 0.2− |
| 2001 02 20 | 704 | 0.2+ | 0.8+ | 2001 03 21 | 704 | 0.1− | 0.0 | 2003 12 01 | 691 | 0.3+ | 0.1− |
| 2001 02 20 | 704 | 0.4+ | 0.5+ | 2001 03 21 | 704 | 0.9− | 0.8+ | 2003 12 01 | 691 | 0.3+ | 0.2− |
| 2001 02 20 | 704 | 0.3+ | 0.0 | 2001 03 26 | 704 | 1.3+ | 1.2+ | 2005 05 19 | 644 | 0.0 | 1.1+ |
| 2001 02 20 | 704 | 0.1+ | 0.8+ | 2001 03 26 | 704 | 1.1+ | 0.5+ | 2005 05 19 | 644 | 0.5+ | 0.8+ |
| 2001 02 20 | 704 | 0.1− | 0.1+ | 2001 03 26 | 704 | 0.5− | 0.4− | 2005 05 19 | 644 | (0.1+ | 1.8+) |
| 2001 02 20 | 704 | 1.0+ | 0.1− | 2001 03 26 | 704 | 0.5− | 0.6− | 2006 08 18 | 691 | 0.9− | 0.7+ |
| 2001 02 20 | 704 | 0.1− | 1.0+ | 2001 03 26 | 704 | 0.1+ | 0.1− | 2006 08 18 | 691 | 0.4− | 1.0+ |
| 2001 02 20 | 704 | 0.5− | 0.6− | 2001 03 29 | 699 | 0.9+ | 1.1+ | 2006 08 18 | 691 | 0.3− | 0.5+ |
| 2001 03 03 | 704 | (2.5− | 0.7+) | 2001 03 29 | 699 | 0.5+ | 0.6+ | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 2001 03 03 | 704 | 1.5− | 0.3− | 2001 03 29 | 699 | 1.0+ | 1.0+ | 2006 08 27 | 691 | 0.7− | 1.1+ |
| 2001 03 03 | 704 | 0.9− | 0.4− | 2001 03 29 | 699 | 0.1+ | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.9+ |
| 2001 03 03 | 704 | (1.1− | 1.6−) | 2001 03 31 | 704 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2001 03 15 | 699 | 0.1− | 0.6+ | 2001 03 31 | 704 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.6+ | 0.1+ |
| 2001 03 15 | 699 | 0.2− | 0.4+ | 2001 03 31 | 704 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.3+ |
| 2001 03 15 | 699 | 0.1− | 1.1+ | 2001 03 31 | 704 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2001 03 15 | 699 | 0.1− | 0.7+ | 2001 03 31 | 704 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.6− | 0.3− |
| 2001 03 19 | 704 | 0.2− | 0.6+ | 2001 04 16 | 699 | 0.9− | 0.1− | 2006 10 20 | G96 | 0.5− | 0.3− |
| 2001 03 19 | 704 | 0.6+ | 0.4+ | 2001 04 16 | 699 | 0.3+ | 1.2+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2001 03 19 | 704 | 0.3+ | 0.4+ | 2001 04 16 | 699 | 0.3+ | 1.1− | 2006 10 20 | G96 | 0.0 | 0.5+ |
| 2001 03 19 | 704 | 0.1− | 0.6+ | 2001 04 16 | 699 | 0.9+ | 0.9+ | | | | |
| 2001 03 19 | 704 | 0.1+ | 0.4+ | 2003 10 23 | 691 | 0.1− | 0.4− | | | | |

**(138987)∗ 2001 DN$_{12}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.02679 | | (2000.0) | | | |
| $n$ | 0.26020236 | $\omega$ | 44.27404 | | −0.80972879 | +0.58571408 |
| $a$ | 2.4299382 | $\Omega$ | 171.36120 | | −0.58244323 | −0.79480332 |
| $e$ | 0.1789835 | $i$ | 13.77030 | | −0.07140847 | −0.15882915 |
| $P$ | 3.79 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.8+ | 0.4− | 2005 03 08 | 699 | 0.3+ | 0.4+ | 2005 03 18 | 703 | 0.8− | 0.1− |
| 2001 01 21 | 704 | 0.0 | 0.9+ | 2005 03 08 | 699 | 1.0+ | 0.7− | 2005 04 05 | 704 | 0.1+ | 0.5+ |
| 2001 01 21 | 704 | (1.6− | 1.7+) | 2005 03 08 | 699 | 0.7+ | 0.5− | 2005 04 05 | 704 | 0.4+ | 0.3− |
| 2001 02 17 | 704 | (1.9+ | 0.7+) | 2005 03 08 | 699 | 0.1+ | 0.4− | 2005 04 05 | 704 | 0.2− | 0.6+ |
| 2001 02 17 | 704 | 0.8+ | 0.6+ | 2005 03 09 | 699 | 0.4− | 0.2+ | 2005 04 05 | 704 | 0.8− | 0.3− |
| 2001 02 17 | 704 | 0.1− | 0.6+ | 2005 03 09 | 699 | 0.4− | 0.1− | 2005 04 05 | 704 | 0.2− | 0.4− |
| 2001 02 19 | 704 | 0.5+ | 0.9+ | 2005 03 09 | 699 | 0.2+ | 0.6+ | 2005 04 11 | 699 | 0.2+ | 0.3− |
| 2001 02 19 | 704 | 0.5+ | 1.2+ | 2005 03 09 | 699 | 0.7− | 0.2+ | 2005 04 11 | 699 | 0.2− | 0.7+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.1− | 0.1− | 2005 03 11 | 691 | 0.1− | 0.1+ | 2005 04 11 | 699 | 0.2− | 0.9+ |
| 2001 02 19 | 704 | 1.0+ | 0.6+ | 2005 03 11 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.3+ | 0.2+ |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2005 03 11 | 691 | 0.0 | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.6+ |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2005 03 12 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.6+ |
| 2001 02 20 | 704 | 0.1− | 0.8+ | 2005 03 12 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.6+ |
| 2001 02 20 | 704 | 1.3− | 0.1− | 2005 03 12 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.5+ |
| 2001 02 20 | 704 | 1.1+ | 0.1− | 2005 03 17 | 683 | 0.2− | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.5+ |
| 2001 02 20 | 704 | 0.7− | 0.4− | 2005 03 17 | 683 | 1.1+ | 0.2− | 2006 08 28 | 691 | 0.1− | 0.7+ |
| 2001 02 21 | 704 | 0.9+ | 1.0+ | 2005 03 17 | 683 | 1.3− | 0.4+ | 2006 09 26 | G96 | 0.5− | 0.2+ |
| 2001 02 21 | 704 | 0.8+ | 0.1+ | 2005 03 18 | 704 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2001 02 21 | 704 | 0.7+ | 0.5+ | 2005 03 18 | 704 | 0.6+ | 0.3− | 2006 09 26 | G96 | 0.6− | 0.0 |
| 2002 08 05 | 644 | 0.5+ | 1.4+ | 2005 03 18 | 704 | 1.3+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2002 08 05 | 644 | (0.2+ | 1.9+) | 2005 03 18 | 704 | 0.7− | 0.9+ | 2006 10 21 | G96 | 0.5− | 0.3+ |
| 2002 08 05 | 644 | (0.1+ | 2.1+) | 2005 03 18 | 704 | 1.3+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.5+ |
| 2005 03 01 | 691 | 0.1+ | 0.2− | 2005 03 18 | 703 | 1.3− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2005 03 01 | 691 | 0.2+ | 0.1+ | 2005 03 18 | 703 | 0.6− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2005 03 01 | 691 | 0.2+ | 0.2− | 2005 03 18 | 703 | 0.6+ | 0.9+ | | | | |

**(138988)∗ 2001 DQ$_{12}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 169.38005 | | (2000.0) | | −0.92405993 | | +0.37696403 |
| $n$ | 0.27683462 | $\omega$ | 125.63684 | | −0.36837807 | | −0.83399372 |
| $a$ | 2.3316093 | $\Omega$ | 76.58333 | | −0.10203350 | | −0.40293000 |
| $e$ | 0.1461582 | $i$ | 3.73330 | | | | |
| $P$ | 3.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 704 | 0.5+ | 0.6+ | 2001 03 19 | 704 | 0.2+ | 0.6+ | 2005 06 06 | 704 | 0.3+ | 0.9+ |
| 2001 02 02 | 704 | 0.5+ | 1.0+ | 2001 03 26 | 704 | 0.4− | 0.9+ | 2005 06 06 | 704 | (1.1+ | 2.1+) |
| 2001 02 02 | 704 | 0.1− | 0.3− | 2001 03 26 | 704 | 0.1+ | 0.9+ | 2005 06 06 | 704 | 0.1+ | 0.3+ |
| 2001 02 02 | 704 | 0.4− | 0.7+ | 2001 03 26 | 704 | 0.0 | 0.5− | 2005 06 06 | 704 | 0.3+ | 0.1− |
| 2001 02 17 | 704 | 0.5− | 0.4+ | 2001 03 26 | 704 | 0.5+ | 0.8+ | 2005 06 06 | 704 | 0.0 | 0.7+ |
| 2001 02 17 | 704 | 0.8− | 0.5− | 2001 03 26 | 704 | 0.1− | 0.7+ | 2005 06 13 | G96 | 0.2− | 0.1+ |
| 2001 02 17 | 704 | (1.5+ | 0.5+) | 2002 08 18 | 644 | 0.1− | 0.5+ | 2005 06 13 | G96 | 0.1− | 0.3+ |
| 2001 02 17 | 704 | (1.8+ | 0.1+) | 2002 08 18 | 644 | 0.2+ | 0.6+ | 2005 06 13 | G96 | 0.2− | 0.3+ |
| 2001 02 19 | 704 | 0.1− | 1.1+ | 2002 08 18 | 644 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.4+ |
| 2001 02 19 | 704 | (0.1− | 1.8+) | 2002 08 29 | 644 | 0.2− | 0.6+ | 2006 09 17 | 691 | 0.3− | 0.4− |
| 2001 02 19 | 704 | 0.1− | 0.6+ | 2002 08 29 | 644 | 0.1− | 1.1+ | 2006 09 17 | 691 | 0.4− | 0.1+ |
| 2001 02 19 | 704 | 0.4+ | 0.3+ | 2002 08 29 | 644 | 0.2− | 0.7+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2001 02 20 | 704 | 1.2+ | 0.6+ | 2002 09 11 | 608 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.7+ |
| 2001 02 20 | 704 | 0.1+ | 0.2− | 2002 09 11 | 608 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 02 20 | 704 | (0.7+ | 1.6−) | 2002 09 11 | 608 | 0.6− | 0.0 | 2006 09 27 | 691 | 0.6− | 0.6+ |
| 2001 02 20 | 704 | 0.6+ | 0.6− | 2003 11 26 | 691 | 1.0− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2001 02 20 | 704 | 0.4− | 0.3− | 2003 12 17 | 691 | 0.6+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.2− |
| 2001 02 20 | 704 | 0.4+ | 0.4+ | 2003 12 17 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2001 02 20 | 704 | 0.2+ | 0.2+ | 2003 12 17 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2001 02 20 | 704 | (2.0+ | 1.3−) | 2003 12 29 | 691 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 02 20 | 704 | 0.7− | 0.7− | 2003 12 29 | 691 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 03 19 | 704 | 0.0 | 1.1+ | 2003 12 29 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.8− | 1.2+ |
| 2001 03 19 | 704 | 0.3+ | 0.9+ | 2005 06 04 | 704 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.5+ | 1.6+ |
| 2001 03 19 | 704 | 0.7+ | 1.0+ | 2005 06 04 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2001 03 19 | 704 | 0.6+ | 1.4+ | 2005 06 04 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.8+ | 0.2− |

**(138989)∗ 2001 DK$_{14}$ = 2003 UL$_{144}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56205)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 301.37422 | | (2000.0) | | +0.68369741 | | −0.72960245 |
| $n$ | 0.28508254 | $\omega$ | 64.41151 | | +0.64987298 | | +0.61833193 |
| $a$ | 2.2864181 | $\Omega$ | 342.42729 | | +0.33199844 | | +0.29214020 |
| $e$ | 0.1865168 | $i$ | 2.92972 | | | | |
| $P$ | 3.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.2− | 0.2+ | 2003 10 29 | 699 | 0.5− | 0.1+ | 2003 12 15 | 703 | 0.1− | 0.6− |
| 2001 02 19 | 704 | 0.1+ | 0.4+ | 2003 10 30 | 704 | 0.1− | 0.3− | 2003 12 17 | 644 | 0.0 | 0.0 |
| 2001 02 19 | 704 | 0.6+ | 0.2+ | 2003 10 30 | 704 | 0.1− | 0.1+ | 2003 12 17 | 644 | 0.0 | 0.1− |
| 2001 02 19 | 704 | 0.3− | 0.8+ | 2003 10 30 | 704 | 0.3+ | 0.3+ | 2003 12 17 | 644 | 0.1+ | 0.3+ |
| 2001 02 20 | 704 | 0.9+ | 0.2+ | 2003 10 30 | 704 | 0.4− | 0.5+ | 2003 12 19 | 691 | 0.0 | 0.1− |
| 2001 02 20 | 704 | 0.7+ | 0.8− | 2003 10 30 | 704 | 0.2+ | 0.1+ | 2003 12 19 | 691 | 0.1− | 0.0 |
| 2001 02 20 | 704 | 0.2− | 1.0+ | 2003 11 02 | 704 | 0.3− | 0.3+ | 2003 12 19 | 691 | 0.0 | 0.0 |
| 2001 02 20 | 704 | 0.0 | 0.0 | 2003 11 02 | 704 | 0.1− | 0.1− | 2004 01 11 | 644 | 0.1− | 0.2+ |
| 2001 02 20 | 704 | 1.4+ | 0.2− | 2003 11 02 | 704 | 0.1− | 1.0+ | 2004 01 11 | 644 | 0.2− | 0.1+ |
| 2001 02 20 | 704 | (2.1+ | 1.1−) | 2003 11 18 | 691 | 0.2+ | 0.1− | 2004 01 11 | 644 | 0.2− | 0.1− |
| 2001 02 20 | 704 | 0.2− | 0.3+ | 2003 11 18 | 691 | 0.1+ | 0.0 | 2005 03 17 | G96 | 0.5+ | 0.1− |
| 2001 02 22 | 691 | 0.2+ | 0.2+ | 2003 11 18 | 691 | 0.1+ | 0.0 | 2005 03 17 | G96 | 0.4− | 0.1+ |
| 2001 02 22 | 691 | 0.2− | 0.7+ | 2003 11 20 | 704 | 0.0 | 0.1− | 2005 03 17 | G96 | 0.3− | 0.4+ |
| 2001 02 22 | 704 | 0.0 | 0.1− | 2003 11 20 | 704 | 0.1+ | 0.4− | 2005 03 17 | G96 | 0.7− | 0.2+ |
| 2001 02 22 | 704 | (1.0− | 1.9+) | 2003 11 20 | 704 | 0.3− | 0.0 | 2005 04 04 | 691 | 0.5− | 0.3− |
| 2001 02 22 | 691 | 0.2+ | 0.3+ | 2003 11 20 | 704 | 0.0 | 0.3− | 2005 04 04 | 691 | 0.4+ | 0.1− |
| 2001 02 22 | 704 | 0.8− | 0.2+ | 2003 11 20 | 704 | 0.3+ | 1.1− | 2005 04 04 | 691 | 0.2+ | 0.5+ |
| 2001 02 22 | 704 | 0.4− | 0.3− | 2003 11 21 | 644 | 0.1+ | 0.2+ | 2005 04 11 | 691 | 0.2+ | 0.0 |
| 2001 02 22 | 704 | 1.4− | 0.3− | 2003 11 21 | 644 | 0.0 | 0.2+ | 2005 04 11 | 691 | 0.2+ | 0.3+ |
| 2001 02 22 | 704 | 1.3− | 0.3+ | 2003 11 21 | 644 | 0.1+ | 0.2+ | 2005 04 11 | 691 | 0.1+ | 0.6+ |
| 2001 02 22 | 704 | 0.5+ | 0.5− | 2003 11 22 | 704 | 0.1− | 1.0+ | 2006 07 20 | 644 | 0.4+ | 0.5+ |
| 2001 02 22 | 704 | 0.1− | 0.6+ | 2003 11 22 | 704 | 0.4− | 0.2+ | 2006 07 20 | 644 | 0.4− | 0.6+ |
| 2001 02 27 | 691 | 0.2+ | 0.1− | 2003 11 22 | 704 | 0.1− | 0.1− | 2006 07 20 | 644 | 0.4− | 0.7+ |
| 2001 02 27 | 691 | 0.2+ | 0.1− | 2003 11 24 | 699 | 0.5+ | 0.4− | 2006 08 12 | 644 | 0.3− | 0.3+ |
| 2001 02 27 | 691 | 0.3+ | 0.0 | 2003 11 24 | 699 | 0.6+ | 0.5− | 2006 08 12 | 644 | 0.2− | 0.5+ |
| 2003 10 18 | 699 | 0.4+ | 0.2− | 2003 11 24 | 699 | 0.7+ | 0.3− | 2006 08 12 | 644 | 0.2+ | 0.6+ |
| 2003 10 18 | 699 | 0.7− | 0.5− | 2003 11 24 | 704 | 0.5+ | 1.2+ | 2006 08 14 | 644 | 0.4− | 0.5+ |
| 2003 10 18 | 699 | 0.1+ | 0.7− | 2003 11 24 | 704 | 0.0 | 0.8+ | 2006 08 14 | 644 | 0.1− | 0.4+ |
| 2003 10 18 | 699 | 0.4− | 0.3+ | 2003 11 24 | 699 | 1.1− | 0.4− | 2006 08 14 | 644 | 0.5− | 0.8+ |
| 2003 10 22 | 704 | 0.0 | 0.4+ | 2003 11 24 | 704 | 0.1+ | 0.1− | 2006 08 14 | 644 | 0.3− | 0.4+ |
| 2003 10 22 | 704 | 0.4+ | 0.1− | 2003 11 24 | 704 | 0.1+ | 0.7+ | 2006 08 14 | 644 | 0.1− | 0.4+ |
| 2003 10 22 | 704 | 0.6− | 0.6+ | 2003 11 24 | 704 | (0.1− | 1.5+) | 2006 08 14 | 644 | 0.2− | 0.5+ |
| 2003 10 22 | 704 | 0.2+ | 0.5+ | 2003 11 24 | 704 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2003 10 25 | 704 | 0.2− | 0.8+ | 2003 11 24 | 704 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2+ |
| 2003 10 25 | 704 | 0.6− | 1.0+ | 2003 11 24 | 704 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2003 10 25 | 704 | 0.4− | 0.4+ | 2003 12 01 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1− | 0.7+ |
| 2003 10 25 | 704 | 0.6− | 0.7+ | 2003 12 01 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2003 10 25 | 704 | 1.0− | 0.2+ | 2003 12 01 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.4− | 0.1+ |
| 2003 10 29 | 699 | 0.5− | 0.3− | 2003 12 15 | 703 | 0.1− | 0.7− | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2003 10 29 | 699 | 0.1+ | 0.1− | 2003 12 15 | 703 | 1.2+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2+ |
| 2003 10 29 | 699 | 0.0 | 0.3− | 2003 12 15 | 703 | 0.5+ | 0.1+ | | | | |

**(138990)∗ 2001 DV$_{14}$**

Discovered 2001 Feb. 16 at Crni Vrh.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 115.52931 | | (2000.0) | | −0.75863293 | | +0.64787398 |
| $n$ | 0.26104351 | $\omega$ | 66.06492 | | −0.64030092 | | −0.72188587 |
| $a$ | 2.4247155 | $\Omega$ | 154.15003 | | −0.12037774 | | −0.24318736 |
| $e$ | 0.1526275 | $i$ | 9.08066 | | | | |
| $P$ | 3.78 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | (1.4− | 2.1+) | 2005 03 01 | 683 | 1.5+ | 1.7− | 2005 04 05 | 704 | 0.2+ | 0.3+ |
| 2001 01 21 | 704 | 0.5− | 0.6+ | 2005 03 04 | 704 | 0.4+ | 0.2+ | 2005 04 06 | 703 | 0.2+ | 0.3− |
| 2001 01 21 | 704 | 0.6+ | 0.9+ | 2005 03 04 | 704 | 0.3+ | 0.7+ | 2005 04 06 | 703 | 0.9+ | 1.1− |
| 2001 01 31 | 704 | 1.7− | 1.7+ | 2005 03 04 | 704 | 0.2+ | 0.6+ | 2005 04 06 | 703 | 0.4− | 0.3+ |
| 2001 01 31 | 704 | 0.6− | 0.8+ | 2005 03 04 | 704 | 0.5+ | 0.1+ | 2005 04 06 | 703 | 0.1− | 0.0 |
| 2001 01 31 | 704 | 0.8− | 1.4− | 2005 03 04 | 704 | 0.1− | 0.1− | 2005 04 11 | 699 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 31 | 704 | 0.3+ | 1.9− | 2005 03 08 | 699 | 0.6+ | 0.6+ | 2005 04 11 | 699 | 0.6+ | 1.1+ | 2001 01 18 | 704 | 0.3− | 0.0 |
| 2001 02 16 | 699 | 0.6+ | 0.3+ | 2005 03 08 | 699 | 0.2+ | 0.4+ | 2005 04 11 | 699 | 0.5− | 0.6+ | 2001 01 18 | 704 | 0.9+ | 0.9+ |
| 2001 02 16 | 699 | 0.6− | 0.6+ | 2005 03 08 | 699 | 1.0+ | 0.2+ | 2005 04 11 | 699 | 0.6+ | 0.4+ | 2001 01 18 | 704 | 0.5+ | 0.8+ |
| 2001 02 16 | 699 | 0.3− | 0.8+ | 2005 03 08 | 699 | 0.3− | 0.2+ | 2005 04 16 | 703 | 1.0− | 0.1+ | 2001 01 18 | 704 | 0.7+ | 0.9+ |
| 2001 02 16 | 699 | 0.1+ | 0.5+ | 2005 03 09 | 699 | 0.2+ | 0.2+ | 2005 04 16 | 703 | 1.0− | 0.5− | 2001 02 02 | 704 | 0.9+ | 0.3+ |
| 2001 02 16 | 106 | 0.5− | 1.1+ | 2005 03 09 | 699 | 0.0 | 0.6+ | 2005 04 16 | 703 | 1.1− | 0.2+ | 2001 02 02 | 704 | 0.1+ | 0.6− |
| 2001 02 16 | 106 | 0.2− | 0.4+ | 2005 03 09 | 699 | 0.6+ | 0.1− | 2005 04 16 | 703 | 0.4− | 0.3+ | 2001 02 02 | 704 | 0.0 | 0.2+ |
| 2001 02 16 | 106 | 0.2− | 0.2+ | 2005 03 09 | 699 | 0.2+ | 0.2− | 2005 05 22 | 644 | 0.0 | 0.0 | 2001 02 02 | 704 | 0.0 | 0.1+ |
| 2001 02 19 | 704 | 0.6− | 0.5+ | 2005 03 12 | G96 | 0.3− | 0.3− | 2005 05 22 | 644 | 0.1− | 0.1+ | 2001 02 02 | 704 | 0.0 | 0.4+ |
| 2001 02 19 | 704 | 0.4− | 0.3+ | 2005 03 12 | G96 | 0.2− | 0.2− | 2005 05 22 | 644 | 0.3− | 0.1+ | 2001 02 02 | 608 | 0.6+ | 0.1+ |
| 2001 02 19 | 704 | 0.2− | 0.4− | 2005 03 12 | G96 | 0.4− | 0.2− | 2005 05 30 | 703 | 0.5− | 1.5− | 2001 02 02 | 608 | 0.5+ | 0.6+ |
| 2001 02 20 | 106 | 0.2+ | 1.3+ | 2005 03 12 | G96 | 0.3− | 0.1− | 2005 05 30 | 703 | 0.1− | 0.1+ | 2001 02 02 | 608 | 0.3+ | 0.3+ |
| 2001 02 20 | 106 | 0.2− | 0.9+ | 2005 03 12 | G96 | 0.3− | 0.2− | 2005 05 30 | 703 | 1.3− | 0.3− | 2001 02 16 | 704 | 0.6− | 0.7+ |
| 2001 02 20 | 106 | 1.0+ | 0.2− | 2005 03 12 | G96 | 0.2− | 0.3− | 2005 05 30 | 703 | 0.2+ | 0.3+ | 2001 02 16 | 704 | 0.5− | 0.1− |
| 2001 02 21 | 106 | 0.1− | 0.7+ | 2005 03 12 | G96 | 0.5− | 0.2− | 2006 08 18 | 691 | 0.1− | 0.4+ | 2001 02 16 | 704 | 0.1+ | 1.1− |
| 2001 02 21 | 106 | 0.1+ | 0.5+ | 2005 03 12 | G96 | 0.3− | 0.2− | 2006 08 18 | 691 | 0.2− | 0.9+ | 2001 02 16 | 704 | 0.2− | 0.0 |
| 2001 02 21 | 106 | 1.0+ | 0.3+ | 2005 03 15 | 185 | 0.9+ | 0.2+ | 2006 08 18 | 691 | 0.2− | 0.6+ | 2001 02 16 | 704 | 0.4− | 0.5− |
| 2001 02 22 | 704 | 0.2+ | 0.8+ | 2005 03 16 | 185 | 0.1+ | 0.7− | 2006 08 20 | 941 | 0.2+ | 0.7+ | 2001 02 20 | 704 | 0.2− | 0.8+ |
| 2001 02 22 | 704 | 1.0+ | 0.7+ | 2005 03 16 | 185 | 0.6+ | 0.1− | 2006 08 20 | 941 | 0.4+ | 0.7+ | 2001 02 20 | 704 | 0.1− | 0.4+ |
| 2001 02 22 | 704 | 0.1− | 0.1+ | 2005 03 16 | 185 | 0.6+ | 0.1− | 2006 08 20 | 941 | 0.0 | 0.0 | 2001 02 20 | 704 | 0.1− | 0.7+ |
| 2001 02 22 | 704 | 0.5+ | 0.7+ | 2005 03 18 | 704 | 0.4+ | 0.2+ | 2006 08 20 | 941 | 0.2+ | 0.3+ | 2001 02 20 | 704 | 0.1− | 0.3+ |
| 2001 02 22 | 704 | 1.0+ | 0.1− | 2005 03 18 | 704 | 0.3+ | 0.2+ | 2006 08 22 | 644 | 0.6− | 0.2+ | 2001 02 20 | 704 | 0.5+ | 0.8+ |
| 2001 03 04 | 691 | 0.1+ | 0.3+ | 2005 03 18 | 704 | 0.2+ | 0.2+ | 2006 08 22 | 644 | 0.4− | 0.6+ | 2001 03 01 | 704 | 0.1− | 0.2+ |
| 2001 03 04 | 691 | 0.3+ | 0.3+ | 2005 03 18 | 704 | 0.3+ | 0.1+ | 2006 08 22 | 644 | 0.6− | 0.4+ | 2001 03 01 | 704 | 0.4+ | 0.2+ |
| 2001 03 04 | 691 | 0.0 | 0.3+ | 2005 03 18 | 703 | 0.7− | 0.5+ | 2006 08 27 | 699 | 0.1+ | 0.0 | 2001 03 01 | 704 | 0.6− | 0.3+ |
| 2001 03 18 | 704 | 0.0 | 0.3− | 2005 03 18 | 704 | 0.5+ | 0.3+ | 2006 08 27 | 699 | 0.3− | 0.7+ | 2001 03 01 | 704 | 0.8− | 0.3+ |
| 2001 03 18 | 704 | 0.2+ | 0.2+ | 2005 03 18 | 703 | 0.4− | 0.4+ | 2006 08 27 | 699 | 2.0− | 1.2− | 2001 03 01 | 704 | 0.1− | 0.5+ |
| 2001 03 18 | 704 | 0.9+ | 1.0+ | 2005 03 18 | 703 | 0.8− | 0.1+ | 2006 08 27 | 699 | 0.8+ | 1.4+ | 2001 03 04 | 704 | 0.1− | 0.2+ |
| 2001 03 18 | 704 | 0.3+ | 0.8+ | 2005 03 18 | 703 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.0 | 2001 03 04 | 704 | 0.0 | 0.5− |
| 2002 08 16 | 608 | 0.1− | 1.1+ | 2005 03 30 | 703 | 0.1− | 0.5+ | 2006 09 14 | 703 | 1.0− | 0.3+ | 2001 03 04 | 704 | 0.3+ | 0.0 |
| 2002 08 16 | 608 | 0.9− | 1.4+ | 2005 03 30 | 703 | 0.7− | 0.8+ | 2006 09 14 | 703 | 0.1+ | 0.2+ | 2001 03 04 | 704 | 1.0+ | 0.2− |
| 2002 08 16 | 608 | 0.9− | 1.2+ | 2005 03 30 | 703 | 0.1− | 0.6− | 2006 09 14 | 703 | 0.2− | 1.1+ | 2001 03 04 | 704 | 0.1− | 0.1− |
| 2002 08 17 | 644 | 0.2− | 0.6+ | 2005 03 30 | 703 | 0.7− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.3− | 2001 03 16 | 704 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.8+ | 2005 03 31 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.7+ | 0.5+ | 2001 03 16 | 704 | 1.0− | 0.5− |
| 2002 08 17 | 644 | 0.4+ | 0.3+ | 2005 03 31 | 644 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 1.3− | 2001 03 16 | 704 | 0.6− | 0.8+ |
| 2002 08 27 | 644 | 0.3− | 0.4+ | 2005 03 31 | 644 | 0.9+ | 0.8+ | 2006 09 14 | 703 | 0.3+ | 0.5+ | 2001 03 16 | 704 | 0.7− | 1.2+ |
| 2002 08 27 | 644 | 0.1+ | 0.4+ | 2005 04 05 | 704 | 0.0 | 0.6+ | 2006 09 30 | 291 | 0.2+ | 0.2+ | 2001 03 23 | 699 | 0.5+ | 0.3− |
| 2002 08 27 | 644 | 0.6+ | 0.6+ | 2005 04 05 | 704 | 0.2+ | 1.3+ | 2006 09 30 | 291 | 0.0 | 0.3+ | 2001 03 23 | 699 | 0.5+ | 0.5+ |
| 2005 03 01 | 683 | (1.5− | 3.1+) | 2005 04 05 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 291 | 0.1+ | 0.6+ | 2001 03 23 | 699 | 0.2+ | 0.9+ |
| 2005 03 01 | 683 | 0.4+ | 1.6− | 2005 04 05 | 704 | 0.5+ | 0.7+ | | | | | 2001 03 23 | 699 | 0.2+ | 0.4+ |
| | | | | | | | | | | | | 2001 03 29 | 608 | 0.4− | 0.3+ |
| | | | | | | | | | | | | 2001 03 29 | 608 | 0.3− | 0.1+ |
| | | | | | | | | | | | | 2001 03 29 | 608 | 0.6− | 0.0 |
| | | | | | | | | | | | | 2003 09 29 | 704 | 0.8− | 0.3+ |
| | | | | | | | | | | | | 2003 09 29 | 704 | 0.3− | 0.7− |

**(138991)∗ 2001 DF$_{16}$ = 1989 TE$_{10}$**

Discovered 2001 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 88788)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.27087 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28894612 | $\omega$ | 59.53450 | | −0.51891220 | −0.84992238 |
| $a$ | 2.2659908 | $\Omega$ | 61.99952 | | +0.74449177 | −0.50190950 |
| $e$ | 0.1087282 | $i$ | 5.94465 | | +0.42007397 | −0.16037081 |
| $P$ | 3.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 08 | 809 | 1.9+ | 0.4− | 2003 09 29 | 704 | 0.9+ | 0.3+ | 2004 02 17 | 644 | 0.2+ | 0.3− | 2001 01 18 | 704 | 0.3− | 0.0 |
| 1989 10 08 | 809 | 0.3+ | 2.1− | 2003 11 18 | 185 | 0.1− | 0.1+ | 2004 02 17 | 644 | 0.1+ | 0.1+ | 2001 01 18 | 704 | 0.9+ | 0.9+ |
| 1989 10 08 | 809 | 0.9− | 1.3− | 2003 11 18 | 185 | 0.2− | 0.2− | 2005 06 26 | 644 | 0.2+ | 0.8+ | 2001 01 18 | 704 | 0.5+ | 0.8+ |
| 1998 05 01 | 704 | 0.5+ | 0.1+ | 2003 11 18 | 185 | 0.2+ | 0.1+ | 2005 06 26 | 644 | 0.4+ | 1.0+ | 2001 01 18 | 704 | 0.7+ | 0.9+ |
| 1998 05 01 | 704 | 1.1+ | 1.4− | 2003 11 21 | 704 | 0.0 | 1.0− | 2005 06 26 | 644 | 0.3+ | 1.1+ | 2001 02 02 | 704 | 0.9+ | 0.3+ |
| 1998 05 01 | 704 | 1.4+ | 1.4+ | 2003 11 21 | 704 | 0.2− | 0.7− | 2006 08 31 | 704 | (0.1− | 1.6+) | 2001 02 02 | 704 | 0.1+ | 0.6− |
| 1998 05 01 | 704 | 0.4− | 0.3− | 2003 11 21 | 704 | 0.3+ | 0.4− | 2006 08 31 | 704 | 0.3+ | 1.3+ | 2001 02 02 | 704 | 0.0 | 0.2+ |
| 1998 05 01 | 704 | 1.1− | 1.8− | 2003 11 21 | 704 | 0.0 | 1.1− | 2006 08 31 | 704 | 0.2− | 0.9+ | 2001 02 02 | 704 | 0.0 | 0.4+ |
| 1998 05 22 | 704 | 0.6+ | 2.0+ | 2003 11 21 | 704 | 0.1− | 0.9− | 2006 08 31 | 704 | 0.2+ | 0.9+ | 2001 02 02 | 608 | 0.6+ | 0.1+ |
| 1998 05 22 | 704 | 0.8+ | 1.7− | 2003 11 23 | 704 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.1− | 0.8− | 2001 02 02 | 608 | 0.5+ | 0.6+ |
| 1998 05 22 | 704 | 0.9− | 0.1− | 2003 11 23 | 704 | 0.3− | 0.4− | 2006 09 12 | 703 | 0.3+ | 0.2+ | 2001 02 02 | 608 | 0.3+ | 0.3+ |
| 1998 05 22 | 704 | (2.7− | 0.7−) | 2003 11 23 | 704 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.2− | 0.2− | 2001 02 16 | 704 | 0.6− | 0.7+ |
| 2001 01 18 | 704 | 0.1− | 0.5− | 2003 11 23 | 704 | 0.7+ | 0.1+ | 2006 09 12 | 703 | 0.2+ | 0.4− | 2001 02 16 | 704 | 0.5− | 0.1− |
| | | | | | | | | | | | | 2001 02 16 | 704 | 0.1+ | 1.1− |
| | | | | | | | | | | | | 2001 02 16 | 704 | 0.2− | 0.0 |
| | | | | | | | | | | | | 2001 02 16 | 704 | 0.4− | 0.5− |
| | | | | | | | | | | | | 2001 02 20 | 704 | 0.2− | 0.8+ |
| | | | | | | | | | | | | 2001 02 20 | 704 | 0.1− | 0.4+ |
| | | | | | | | | | | | | 2001 02 20 | 704 | 0.1− | 0.7+ |
| | | | | | | | | | | | | 2001 02 20 | 704 | 0.1− | 0.3+ |
| | | | | | | | | | | | | 2001 02 20 | 704 | 0.5+ | 0.8+ |
| | | | | | | | | | | | | 2001 03 01 | 704 | 0.1− | 0.2+ |
| | | | | | | | | | | | | 2001 03 01 | 704 | 0.4+ | 0.2+ |
| | | | | | | | | | | | | 2001 03 01 | 704 | 0.6− | 0.3+ |
| | | | | | | | | | | | | 2001 03 01 | 704 | 0.8− | 0.3+ |
| | | | | | | | | | | | | 2001 03 01 | 704 | 0.1− | 0.5+ |
| | | | | | | | | | | | | 2001 03 04 | 704 | 0.1− | 0.2+ |
| | | | | | | | | | | | | 2001 03 04 | 704 | 0.0 | 0.5− |
| | | | | | | | | | | | | 2001 03 04 | 704 | 0.3+ | 0.0 |
| | | | | | | | | | | | | 2001 03 04 | 704 | 1.0+ | 0.2− |
| | | | | | | | | | | | | 2001 03 04 | 704 | 0.1− | 0.1− |
| | | | | | | | | | | | | 2001 03 16 | 704 | 0.1+ | 0.0 |
| | | | | | | | | | | | | 2001 03 16 | 704 | 1.0− | 0.5− |
| | | | | | | | | | | | | 2001 03 16 | 704 | 0.6− | 0.8+ |
| | | | | | | | | | | | | 2001 03 16 | 704 | 0.7− | 1.2+ |
| | | | | | | | | | | | | 2001 03 23 | 699 | 0.5+ | 0.3− |
| | | | | | | | | | | | | 2001 03 23 | 699 | 0.5+ | 0.5+ |
| | | | | | | | | | | | | 2001 03 23 | 699 | 0.2+ | 0.9+ |
| | | | | | | | | | | | | 2001 03 23 | 699 | 0.2+ | 0.4+ |
| | | | | | | | | | | | | 2001 03 29 | 608 | 0.4− | 0.3+ |
| | | | | | | | | | | | | 2001 03 29 | 608 | 0.3− | 0.1+ |
| | | | | | | | | | | | | 2001 03 29 | 608 | 0.6− | 0.0 |
| | | | | | | | | | | | | 2003 09 29 | 704 | 0.8− | 0.3+ |
| | | | | | | | | | | | | 2003 09 29 | 704 | 0.3− | 0.7− |
| | | | | | | | | | | | | 2003 11 23 | 704 | 0.2− | 0.8+ |
| | | | | | | | | | | | | 2003 11 24 | 704 | 0.2+ | 1.4+ |
| | | | | | | | | | | | | 2003 11 24 | 704 | 0.0 | 1.0+ |
| | | | | | | | | | | | | 2003 11 24 | 704 | 0.2+ | 0.2+ |
| | | | | | | | | | | | | 2003 11 24 | 704 | 0.2− | 0.0 |
| | | | | | | | | | | | | 2003 11 24 | 704 | 0.2− | 0.1− |
| | | | | | | | | | | | | 2003 11 26 | 704 | 0.2− | 0.0 |
| | | | | | | | | | | | | 2003 11 26 | 704 | 0.7− | 0.5+ |
| | | | | | | | | | | | | 2003 11 26 | 704 | 0.4+ | 0.7+ |
| | | | | | | | | | | | | 2003 11 26 | 704 | 0.0 | 0.3+ |
| | | | | | | | | | | | | 2003 11 26 | 704 | 0.2+ | 0.4− |
| | | | | | | | | | | | | 2003 12 18 | 704 | 0.6− | 0.0 |
| | | | | | | | | | | | | 2003 12 18 | 704 | 1.3+ | 0.4+ |
| | | | | | | | | | | | | 2003 12 18 | 704 | 0.5− | 0.1− |
| | | | | | | | | | | | | 2003 12 18 | 704 | 0.1− | 0.2− |
| | | | | | | | | | | | | 2003 12 18 | 704 | 0.1− | 0.9+ |
| | | | | | | | | | | | | 2003 12 19 | 691 | 0.3− | 0.0 |
| | | | | | | | | | | | | 2003 12 19 | 691 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2003 12 19 | 691 | 0.1− | 0.2− |
| | | | | | | | | | | | | 2003 12 22 | 704 | 0.6+ | 0.4− |
| | | | | | | | | | | | | 2003 12 22 | 704 | 0.7+ | 0.0 |
| | | | | | | | | | | | | 2003 12 22 | 704 | 0.9+ | 0.4+ |
| | | | | | | | | | | | | 2003 12 22 | 704 | 0.6+ | 0.1+ |
| | | | | | | | | | | | | 2003 12 22 | 704 | 0.8+ | 0.3+ |
| | | | | | | | | | | | | 2003 12 27 | 704 | 0.3− | 0.4+ |
| | | | | | | | | | | | | 2003 12 27 | 704 | 0.4− | 0.7− |
| | | | | | | | | | | | | 2003 12 27 | 704 | 0.0 | 0.8− |
| | | | | | | | | | | | | 2003 12 27 | 704 | 0.0 | 0.7− |
| | | | | | | | | | | | | 2003 12 27 | 704 | 0.0 | 0.1− |
| | | | | | | | | | | | | 2003 12 29 | 691 | 1.1+ | 1.2+ |
| | | | | | | | | | | | | 2003 12 29 | 691 | 0.1+ | 0.4− |
| | | | | | | | | | | | | 2003 12 29 | 691 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2004 01 11 | 644 | 0.1− | 0.1− |
| | | | | | | | | | | | | 2004 01 11 | 644 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2004 01 11 | 644 | 0.2− | 0.1− |
| | | | | | | | | | | | | 2004 01 16 | 644 | 0.8− | 0.5+ |
| | | | | | | | | | | | | 2004 01 16 | 644 | 0.9− | 0.2+ |
| | | | | | | | | | | | | 2004 01 16 | 644 | 0.9− | 0.7− |
| | | | | | | | | | | | | 2004 02 09 | 644 | 0.8+ | 0.2− |
| | | | | | | | | | | | | 2004 02 09 | 644 | 0.1+ | 0.2+ |
| | | | | | | | | | | | | 2004 02 09 | 644 | 0.2+ | 0.2+ |
| | | | | | | | | | | | | 2004 02 15 | 704 | 0.4+ | 0.0 |
| | | | | | | | | | | | | 2004 02 15 | 704 | 0.0 | 0.0 |
| | | | | | | | | | | | | 2004 02 15 | 704 | 0.4+ | 0.3− |
| | | | | | | | | | | | | 2004 02 17 | 644 | 0.2− | 0.3− |
| | | | | | | | | | | | | 2006 09 16 | F84 | 0.5+ | 0.1− |
| | | | | | | | | | | | | 2006 09 16 | F84 | 0.3+ | 0.2+ |
| | | | | | | | | | | | | 2006 09 18 | 703 | 0.0 | 0.1− |
| | | | | | | | | | | | | 2006 09 18 | 703 | 0.6+ | 0.4− |
| | | | | | | | | | | | | 2006 09 18 | 703 | 0.4+ | 0.1+ |
| | | | | | | | | | | | | 2006 09 18 | 703 | 0.5− | 0.4− |
| | | | | | | | | | | | | 2006 09 18 | 699 | 1.0− | 0.7+ |
| | | | | | | | | | | | | 2006 09 18 | 699 | 0.9− | 0.2+ |
| | | | | | | | | | | | | 2006 09 18 | 699 | 0.7+ | 0.2+ |
| | | | | | | | | | | | | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| | | | | | | | | | | | | 2006 09 26 | 704 | 0.6− | 0.5+ |
| | | | | | | | | | | | | 2006 09 26 | 704 | 1.4− | 1.1+ |
| | | | | | | | | | | | | 2006 09 26 | 704 | 0.9− | 0.8+ |
| | | | | | | | | | | | | 2006 09 26 | 704 | 0.2− | 0.5+ |
| | | | | | | | | | | | | 2006 09 26 | 703 | 0.3− | 1.5+ |
| | | | | | | | | | | | | 2006 09 26 | 703 | 0.2− | 0.1+ |
| | | | | | | | | | | | | 2006 09 26 | 703 | 0.3− | 0.4+ |
| | | | | | | | | | | | | 2006 09 26 | 703 | (0.8− | 1.5+) |
| | | | | | | | | | | | | 2006 09 30 | 704 | 1.2+ | 0.5+ |
| | | | | | | | | | | | | 2006 09 30 | 704 | (1.6+ | 0.2+) |
| | | | | | | | | | | | | 2006 09 30 | 704 | 0.7− | 0.6+ |
| | | | | | | | | | | | | 2006 09 30 | 704 | 0.9− | 0.4+ |
| | | | | | | | | | | | | 2006 09 30 | 704 | 0.2− | 0.0 |
| | | | | | | | | | | | | 2006 10 02 | G96 | 0.4− | 0.1+ |
| | | | | | | | | | | | | 2006 10 02 | G96 | 0.0 | 0.1+ |
| | | | | | | | | | | | | 2006 10 02 | G96 | 0.2− | 0.1+ |
| | | | | | | | | | | | | 2006 10 02 | G96 | 0.4− | 0.1+ |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.0 | 0.8− |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.8− | 0.2+ |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.2− | 0.3− |
| | | | | | | | | | | | | 2006 10 19 | 644 | 0.2− | 0.6+ |
| | | | | | | | | | | | | 2006 10 19 | 644 | 0.1− | 0.2+ |
| | | | | | | | | | | | | 2006 10 19 | 644 | 0.2− | 0.0 |
| | | | | | | | | | | | | 2006 10 20 | 644 | 0.1− | 0.4+ |
| | | | | | | | | | | | | 2006 10 20 | 644 | 0.2− | 0.2+ |
| | | | | | | | | | | | | 2006 10 20 | 644 | 0.3− | 0.4+ |
| | | | | | | | | | | | | 2006 10 21 | 644 | 0.2− | 0.4+ |
| | | | | | | | | | | | | 2006 10 21 | 644 | 0.2− | 0.4+ |
| | | | | | | | | | | | | 2006 10 21 | 644 | 0.2− | 0.5+ |
| | | | | | | | | | | | | 2006 10 22 | 703 | 0.0 | 0.1− |
| | | | | | | | | | | | | 2006 10 22 | 703 | 0.3− | 0.3− |
| | | | | | | | | | | | | 2006 10 22 | 703 | 0.1− | 0.2− |
| | | | | | | | | | | | | 2006 10 22 | 703 | 0.4− | 0.5− |

**(138992)∗ 2001 DS$_{16}$**

Discovered 2001 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.04709 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28703251 | $\omega$ | 9.03178 | | −0.40496242 | −0.90855456 |
| $a$ | 2.2760510 | $\Omega$ | 104.91077 | | +0.83211264 | −0.41273905 |
| $e$ | 0.1037646 | $i$ | 6.09700 | | +0.37893797 | −0.06461498 |
| $P$ | 3.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 704 | 0.1+ | 0.4+ | 2003 12 01 | 704 | 0.7− | 0.2− | 2005 06 03 | 703 | (1.0− | 3.3−) | 2001 02 02 | 704 | 0.1+ | 0.4+ |
| 2001 02 02 | 704 | 1.3− | 0.4+ | 2003 12 15 | 691 | 0.3− | 0.2− | 2005 06 03 | 703 | 0.5− | 0.5− | 2001 02 02 | 704 | 1.3− | 0.4+ |
| 2001 02 02 | 704 | 0.5+ | 1.3+ | 2003 12 15 | 691 | 0.1− | 0.2− | 2005 06 03 | 703 | 0.2+ | 0.2+ | 2001 02 02 | 704 | 0.5+ | 1.3+ |
| 2001 02 16 | 704 | 0.4− | 0.2− | 2003 12 15 | 691 | 0.4− | 0.2− | 2005 06 06 | 691 | 0.2+ | 0.3+ | 2001 02 16 | 704 | 0.4− | 0.2− |
| 2001 02 16 | 704 | 0.0 | 0.2− | 2003 12 16 | 703 | 0.2− | 0.4− | 2005 06 06 | 691 | 0.0 | 0.1+ | 2001 02 16 | 704 | 0.0 | 0.2− |
| 2001 02 16 | 704 | 0.3+ | 0.5− | 2003 12 16 | 703 | 0.1− | 0.0 | 2005 06 06 | 691 | 0.1− | 0.0 | 2001 02 16 | 704 | 0.3+ | 0.5− |
| 2001 02 16 | 704 | 0.1− | 0.4+ | 2003 12 16 | 703 | 0.3− | 0.4+ | 2005 06 06 | 691 | 0.3+ | 0.1+ | 2001 02 16 | 704 | 0.1− | 0.4+ |
| 2001 02 16 | 704 | 0.1− | 0.1+ | 2003 12 16 | 703 | 0.0 | 0.2− | 2005 06 06 | 691 | 0.1+ | 0.2+ | 2001 02 16 | 704 | 0.1− | 0.1+ |
| 2001 02 20 | 704 | 0.6+ | 0.3− | 2003 12 17 | 691 | 0.2+ | 0.1− | 2005 06 06 | 691 | 0.1− | 0.2+ | 2001 02 20 | 704 | 0.6+ | 0.3− |
| 2001 02 20 | 704 | 0.4+ | 0.2− | 2003 12 17 | 691 | 0.2+ | 0.0 | 2005 07 05 | 644 | 0.2− | 0.3+ | 2001 02 20 | 704 | 0.4+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 704 | 0.1− | 0.4+ | 2003 12 17 | 691 | 0.2+ | 0.2+ | 2005 07 05 | 644 | 0.3+ | 0.2+ | | |
| 2001 02 20 | 704 | 0.3− | 0.3− | 2003 12 21 | 704 | 0.1+ | 0.4+ | 2005 07 05 | 644 | 0.0 | 0.6+ | | |
| 2001 03 04 | 704 | 0.0 | 0.3+ | 2003 12 21 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.7− | 0.6+ | | |
| 2001 03 04 | 704 | 0.5− | 0.7− | 2003 12 21 | 704 | 0.7+ | 0.3− | 2006 09 18 | 699 | 0.7+ | 0.3− | | |
| 2001 03 04 | 704 | 0.8+ | 0.4− | 2003 12 21 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 699 | 0.6− | 0.8+ | | |
| 2001 03 04 | 704 | 0.0 | 1.1− | 2003 12 23 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.4+ | | |
| 2001 03 04 | 704 | 0.3+ | 0.4− | 2003 12 23 | 704 | 0.1− | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.9+ | | |
| 2001 03 16 | 704 | 0.3+ | 0.9+ | 2003 12 23 | 704 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.4+ | | |
| 2001 03 16 | 704 | 0.3+ | 0.8+ | 2003 12 23 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 1.1− | 0.3− | | |
| 2001 03 16 | 704 | 0.9− | 1.0+ | 2003 12 28 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.1− | | |
| 2001 03 16 | 704 | 0.1+ | 1.2+ | 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.2+ | 1.3+ | | |
| 2001 03 16 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.3+ | | |
| 2003 12 01 | 704 | 0.1− | 0.1+ | 2004 01 17 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 1.7+ | 0.1+ | | |
| 2003 12 01 | 704 | 0.5− | 0.4+ | 2004 01 17 | 644 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.5− | | |
| 2003 12 01 | 704 | 0.2− | 0.2+ | 2004 01 17 | 644 | 0.3+ | 0.4+ | | | | | | |
| 2003 12 01 | 704 | 0.4− | 0.3+ | 2005 06 03 | 703 | 0.2− | 0.1+ | | | | | | |

**(138993)∗ 2001 DQ$_{19}$ = 1998 KM**

Discovered 2001 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11865)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.19213 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28606669 | $\omega$ | 75.79837 | | −0.50650796 | −0.85815600 | |
| $a$ | 2.2811711 | $\Omega$ | 44.95473 | | +0.73830273 | −0.48183933 | |
| $e$ | 0.0636402 | $i$ | 6.80941 | | +0.44537486 | −0.17719803 | |
| $P$ | 3.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 19 | 104 | 0.3− | 0.3− | 2001 03 26 | 608 | (1.7+ | 0.3−) | 2003 12 28 | 704 | 0.0 | 0.2+ | | |
| 1998 05 19 | 104 | 0.4+ | 0.1+ | 2001 03 26 | 608 | 1.3+ | 0.3− | 2003 12 28 | 704 | 0.0 | 0.1+ | | |
| 1998 05 19 | 104 | 0.7+ | 0.5+ | 2001 03 27 | 699 | 0.5+ | 0.2+ | 2003 12 28 | 704 | 0.4+ | 0.2+ | | |
| 1998 05 19 | 104 | 0.7+ | 0.7+ | 2001 03 27 | 699 | 0.3+ | 0.2+ | 2003 12 28 | 704 | 0.1− | 0.1+ | | |
| 1998 05 20 | 104 | 1.2− | 0.4+ | 2001 03 27 | 699 | 0.1+ | 0.4+ | 2005 05 22 | 644 | 0.5− | 1.0+ | | |
| 1998 05 20 | 104 | 1.2− | 0.9+ | 2001 03 27 | 699 | (1.1− | 2.1+) | 2005 05 22 | 644 | 0.4− | 0.7+ | | |
| 1998 05 20 | 104 | 1.1− | 1.0+ | 2001 03 29 | 699 | 0.9+ | 0.8− | 2005 05 22 | 644 | 0.2− | 0.9+ | | |
| 1998 05 20 | 104 | 1.1− | 1.2+ | 2001 03 29 | 699 | 1.1+ | 0.2− | 2006 09 06 | 644 | 0.0 | 0.6+ | | |
| 1998 05 21 | 104 | 0.1− | 0.7− | 2001 03 29 | 699 | 0.1+ | 0.7+ | 2006 09 06 | 644 | 0.2+ | 0.4+ | | |
| 1998 05 21 | 104 | 0.4+ | 0.3− | 2001 03 29 | 699 | 1.0+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.1+ | | |
| 1998 05 21 | 104 | 0.8+ | 0.4+ | 2002 07 16 | 644 | 0.5+ | 1.3+ | 2006 09 17 | 691 | 0.2− | 0.3+ | | |
| 1998 05 24 | 704 | 0.2− | 1.6+ | 2002 07 16 | 644 | 0.1− | 1.3+ | 2006 09 17 | 691 | 0.4− | 0.4+ | | |
| 1998 05 24 | 704 | 0.2+ | 0.9+ | 2002 07 16 | 644 | 0.5+ | 1.4+ | 2006 09 17 | 691 | 0.3− | 0.3+ | | |
| 1998 05 24 | 704 | 0.5+ | 0.1+ | 2002 07 16 | 644 | 0.4− | 0.6+ | 2006 09 25 | 699 | 0.8+ | 0.3+ | | |
| 1998 05 24 | 704 | 0.8+ | 0.6− | 2002 07 16 | 644 | 0.7+ | 1.1+ | 2006 09 25 | 699 | 1.3+ | 0.5+ | | |
| 1998 05 25 | 104 | (10.1− | 9.1+) | 2002 07 16 | 644 | 0.7− | 0.3+ | 2006 09 25 | 699 | 0.0 | 1.1+ | | |
| 1998 05 25 | 104 | (7.3− | 9.7+) | 2002 08 13 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 1.2+ | | |
| 1998 05 25 | 104 | (4.9− | 10.1+) | 2002 08 13 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ | | |
| 1998 06 01 | 809 | (3.4+ | 6.4+) | 2002 08 13 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.3+ | | |
| 1998 06 01 | 809 | (4.1+ | 4.6+) | 2003 10 24 | 704 | 0.4− | 0.6− | 2006 09 27 | 691 | 0.2− | 0.4+ | | |
| 1998 06 01 | 809 | (4.5+ | 4.2+) | 2003 10 24 | 704 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.6+ | | |
| 2001 02 02 | 699 | 0.4+ | 0.2+ | 2003 10 24 | 704 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.3+ | | |
| 2001 02 02 | 699 | 0.3− | 0.5− | 2003 10 24 | 704 | 0.0 | 0.5− | 2006 09 29 | 699 | 0.2− | 0.2− | | |
| 2001 02 02 | 699 | 0.1+ | 0.5− | 2003 10 29 | 704 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.7+ | 0.3+ | | |
| 2001 02 02 | 699 | 0.5− | 0.4− | 2003 10 29 | 704 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2001 02 16 | 704 | 0.7+ | 0.1+ | 2003 10 29 | 704 | 0.2− | 0.3− | 2006 10 01 | 691 | 0.2− | 0.2+ | | |
| 2001 02 16 | 704 | 0.5+ | 1.1+ | 2003 10 29 | 704 | 0.3+ | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.2+ | | |
| 2001 02 16 | 704 | 0.3− | 1.1+ | 2003 11 20 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 703 | 0.7− | 1.0− | | |
| 2001 02 16 | 704 | 0.0 | 0.8+ | 2003 11 20 | 704 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.1− | | |
| 2001 02 16 | 704 | 0.3+ | 0.4+ | 2003 11 20 | 704 | 0.0 | 0.2− | 2006 10 15 | 703 | 1.0− | 0.7− | | |
| 2001 02 20 | 704 | 0.5− | 1.3+ | 2003 11 20 | 704 | 0.3− | 0.1− | 2006 10 15 | 703 | 0.7− | 0.7− | | |
| 2001 02 20 | 704 | 1.2+ | 1.0+ | 2003 11 20 | 704 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.9+ | | |
| 2001 02 20 | 704 | 0.4− | 0.4+ | 2003 11 24 | 704 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.0 | | |
| 2001 02 20 | 704 | 0.9+ | 0.9+ | 2003 11 24 | 704 | 0.1− | 0.7− | 2006 10 19 | 644 | 0.1+ | 0.2− | | |
| 2001 03 04 | 704 | 0.1+ | 0.7+ | 2003 11 24 | 704 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.4+ | | |
| 2001 03 04 | 704 | 0.2+ | 0.1+ | 2003 11 24 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.2− | 1.2+ | | |
| 2001 03 04 | 704 | 0.2+ | 0.2+ | 2003 11 24 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.5+ | | |
| 2001 03 04 | 704 | 0.3+ | 0.1+ | 2003 12 04 | 704 | 0.1− | 0.8+ | 2006 10 22 | 703 | 0.0 | 0.6+ | | |
| 2001 03 04 | 704 | 0.4+ | 0.4+ | 2003 12 04 | 704 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.3+ | 0.1− | | |
| 2001 03 15 | 608 | 0.1+ | 0.1− | 2003 12 04 | 704 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2001 03 15 | 608 | 0.0 | 0.0 | 2003 12 04 | 704 | 0.8− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.0 | | |
| 2001 03 15 | 608 | 0.2− | 0.5+ | 2003 12 17 | 704 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1+ | | |
| 2001 03 16 | 704 | 0.3+ | 0.7+ | 2003 12 17 | 704 | 0.4+ | 0.9+ | 2006 10 27 | 704 | 1.1− | 0.0 | | |
| 2001 03 16 | 704 | 0.2− | 0.3+ | 2003 12 17 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 704 | 0.7+ | 0.2+ | | |
| 2001 03 16 | 704 | 0.4− | 0.4+ | 2003 12 17 | 704 | 0.2+ | 0.5+ | 2006 10 27 | 704 | 1.2− | 0.3+ | | |
| 2001 03 16 | 704 | 0.3− | 0.6+ | 2003 12 17 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 704 | 0.4− | 0.8− | | |
| 2001 03 16 | 704 | 0.3− | 0.9+ | 2003 12 23 | 704 | 0.8− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.2− | | |
| 2001 03 18 | 699 | (1.8+ | 0.6−) | 2003 12 23 | 704 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2001 03 18 | 699 | 0.1+ | 0.4+ | 2003 12 23 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.1− | | |
| 2001 03 18 | 699 | 0.7+ | 0.1− | 2003 12 23 | 704 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.2− | 0.0 | | |
| 2001 03 18 | 699 | 0.8+ | 0.9+ | 2003 12 23 | 704 | 0.1− | 0.2+ | | | | | | |
| 2001 03 26 | 608 | 1.1+ | 0.3− | 2003 12 28 | 704 | 0.0 | 0.1+ | | | | | | |

**(138994)∗ 2001 DY$_{20}$**

Discovered 2001 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.05713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28930765 | $\omega$ | 177.11116 | | −0.66617451 | +0.73965165 | |
| $a$ | 2.2641026 | $\Omega$ | 51.09355 | | −0.68669199 | −0.55834947 | |
| $e$ | 0.0936185 | $i$ | 7.05191 | | −0.29097358 | −0.37571440 | |
| $P$ | 3.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.1+ | 0.2− | 2002 08 30 | 644 | 0.3− | 0.8+ | 2006 10 29 | G96 | 0.5− | 0.5+ | | |
| 2001 02 16 | 704 | 1.3+ | 1.2+ | 2002 08 30 | 644 | 0.2− | 1.1+ | 2006 10 29 | G96 | 0.2+ | 0.3+ | | |
| 2001 02 16 | 704 | 0.1− | 0.9− | 2002 08 30 | 644 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.0 | | |
| 2001 02 16 | 704 | 1.0+ | 1.0− | 2002 09 16 | 644 | 0.9− | 1.0+ | 2006 11 10 | 691 | 0.2− | 0.5− | | |
| 2001 02 20 | 704 | 0.4− | 1.1− | 2002 09 16 | 644 | 0.8− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.4− | | |
| 2001 02 20 | 704 | 0.0 | 0.1− | 2002 09 16 | 644 | 0.5− | 1.1+ | 2006 11 10 | 691 | 0.1− | 0.2− | | |
| 2001 02 20 | 704 | 0.2+ | 1.2− | 2003 12 18 | 704 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2+ | | |
| 2001 02 20 | 704 | 0.3+ | 0.2+ | 2003 12 18 | 704 | 1.0+ | 0.4+ | 2006 11 14 | 691 | 0.2+ | 0.0 | | |
| 2001 03 04 | 704 | 0.6+ | 1.0+ | 2003 12 18 | 704 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.1+ | | |
| 2001 03 04 | 704 | 0.5− | 0.8+ | 2003 12 18 | 704 | 1.0+ | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.0 | | |
| 2001 03 04 | 704 | 0.5+ | 0.5+ | 2003 12 18 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.5− | 0.1− | | |
| 2001 03 04 | 704 | 0.1− | 0.3+ | 2003 12 18 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2− | 0.1− | | |
| 2001 03 04 | 704 | 0.1− | 0.0 | 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.4− | | |
| 2001 03 16 | 704 | 0.5− | 0.8+ | 2003 12 27 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.1− | | |
| 2001 03 16 | 704 | 0.2− | 1.0− | 2003 12 27 | 691 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.6+ | 1.3− | | |
| 2001 03 16 | 704 | 0.0 | 0.6− | 2003 12 27 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.5− | 0.5+ | | |
| 2001 03 16 | 704 | 0.1+ | 1.3+ | 2003 12 28 | 704 | 0.3− | 0.4+ | 2006 11 20 | G96 | 0.2+ | 0.3− | | |
| 2001 03 16 | 704 | 0.1− | 1.2+ | 2003 12 28 | 704 | 0.2− | 0.5+ | 2006 11 20 | G96 | 0.2− | 0.5− | | |
| 2001 03 18 | 699 | 0.2− | 0.2+ | 2003 12 28 | 704 | 0.2− | 0.1− | 2006 11 20 | 704 | (0.2+ | 1.5−) | | |
| 2001 03 18 | 699 | 0.8+ | 1.0+ | 2003 12 28 | 704 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.9− | 0.0 | | |
| 2001 03 18 | 699 | 0.6− | 0.8+ | 2003 12 28 | 704 | (2.5+ | 1.2−) | 2006 11 20 | G96 | 0.2− | 0.5− | | |
| 2001 03 18 | 699 | 0.7− | 0.5+ | 2004 01 19 | 704 | (6.2+ | 0.5−) | 2006 11 20 | 704 | 0.5+ | 0.2+ | | |
| 2001 03 27 | 699 | (0.8− | 1.8+) | 2004 01 19 | 704 | (7.0+ | 0.4−) | 2006 11 20 | 704 | 0.3− | 0.4+ | | |
| 2001 03 27 | 699 | 0.2+ | 0.6+ | 2004 01 19 | 704 | (6.3+ | 0.6−) | 2006 11 20 | G96 | 0.1− | 0.2− | | |
| 2001 03 27 | 699 | 0.5− | 1.1+ | 2005 05 16 | 644 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.4+ | 0.8− | | |
| 2001 03 27 | 699 | 0.1+ | 0.9+ | 2005 05 16 | 644 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.3+ | 0.1+ | | |
| 2001 03 31 | 704 | (1.6+ | 0.0 ) | 2005 05 16 | 644 | 0.0 | 0.7+ | 2006 11 21 | 704 | 0.0 | 0.0 | | |
| 2001 03 31 | 704 | 0.5− | 0.8− | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.6− | 1.3+ | | |
| 2001 03 31 | 704 | 0.9+ | 0.9+ | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.0− | 1.4+ | | |
| 2001 03 31 | 704 | 0.9+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 22 | 691 | 0.1+ | 1.2+ | | |
| 2001 03 31 | 704 | 0.6− | 0.6− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.3+ | 0.3+ | | |
| 2002 08 14 | 704 | (3.7− | 0.9+) | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.1− | 0.1+ | | |
| 2002 08 14 | 704 | 0.6− | 1.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.2− | | |
| 2002 08 14 | 704 | (2.0− | 1.7+) | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.5− | | |
| 2002 08 14 | 704 | 0.1+ | 1.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.4− | | |
| 2002 08 14 | 704 | (1.5+ | 2.0+) | 2006 10 29 | G96 | 0.6− | 0.4− | 2006 12 01 | G96 | 0.3− | 0.6− | | |

**(138995)∗ 2001 DR$_{22}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 240.62308 | | $\omega$ | (2000.0) | −0.68750365 | −0.72554378 |
| $n$ | 0.29080994 | | $\Omega$ | 156.38190 | +0.65323144 | −0.59960208 |
| $a$ | 2.2562985 | | $i$ | 337.01345 | +0.31721824 | −0.33773300 |
| $e$ | 0.0572555 | | $H$ | 4.46669 | $G$ 0.15 | $U$ 1 |
| $P$ | 3.39 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 691 | 0.1− | 0.1+ | 2001 02 22 | 699 | 0.4+ | 1.3− | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 1999 08 07 | 691 | 0.0 | 0.3+ | 2001 02 22 | 699 | (3.0+ | 1.3−) | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 1999 08 07 | 691 | 0.2− | 0.0 | 2001 03 25 | 695 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.0 |
| 1999 08 12 | 691 | 0.0 | 0.7+ | 2001 03 25 | 695 | 0.2+ | 0.3+ | 2006 10 15 | 461 | 0.1+ | 0.2+ |
| 1999 08 12 | 691 | 0.3− | 0.3+ | 2003 11 20 | 704 | 0.8+ | 0.1− | 2006 10 15 | 461 | 0.2+ | 0.0 |
| 1999 08 12 | 691 | 0.3− | 0.4+ | 2003 11 20 | 704 | 1.0+ | 0.6− | 2006 10 15 | 461 | 0.3− | 0.1+ |
| 2001 01 21 | 691 | 0.3− | 0.2+ | 2003 11 20 | 704 | 0.9+ | 0.7− | 2006 10 16 | 461 | 0.3− | 0.5+ |
| 2001 01 21 | 691 | 0.2− | 0.0 | 2003 11 20 | 704 | 0.1+ | 0.9− | 2006 10 16 | 461 | 0.1− | 0.2+ |
| 2001 01 21 | 691 | 0.2− | 0.1− | 2003 11 20 | 704 | (1.8+ | 0.0 ) | 2006 10 16 | 461 | 0.1+ | 0.0 |
| 2001 02 03 | 704 | 0.2+ | 0.3+ | 2003 11 24 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 461 | 0.2− | 0.1+ |
| 2001 02 03 | 704 | 0.0 | 0.3− | 2003 11 24 | 704 | 0.9− | 0.8+ | 2006 10 17 | 461 | 0.3− | 0.1+ |
| 2001 02 03 | 704 | 1.0+ | 0.5+ | 2003 11 24 | 704 | 0.7− | 0.3− | 2006 10 17 | 461 | 0.0 | 0.3+ |
| 2001 02 03 | 704 | (0.3+ | 1.7−) | 2003 11 24 | 704 | 0.4+ | 0.2+ | 2006 10 18 | 461 | 0.2− | 0.2+ |
| 2001 02 03 | 704 | 0.4− | 0.2− | 2003 12 18 | 704 | 0.0 | 1.4+ | 2006 10 18 | 461 | 0.3− | 0.3− |
| 2001 02 17 | 704 | 0.0 | 0.6+ | 2003 12 18 | 704 | 0.5− | 0.4+ | 2006 10 18 | 461 | 0.3+ | 0.3+ |
| 2001 02 17 | 704 | 0.5+ | 0.8+ | 2003 12 18 | 704 | (0.2+ | 1.7+) | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2001 02 17 | 704 | 0.4+ | 1.1+ | 2003 12 23 | 704 | 0.3− | 0.5+ | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2001 02 17 | 704 | 0.5− | 0.4+ | 2003 12 23 | 704 | 0.8− | 0.3− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2001 02 20 | 704 | 0.2+ | 0.1+ | 2003 12 23 | 704 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2001 02 20 | 704 | 0.5+ | 1.0+ | 2003 12 23 | 704 | 0.0 | 1.1− | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2001 02 20 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 691 | 0.2+ | 0.4− | 2006 10 23 | G96 | 0.4+ | 0.6− |
| 2001 02 22 | 699 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2001 02 22 | 699 | 1.1+ | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.4− | | | | |

**(138996)∗ 2001 DT$_{22}$ = 2003 XJ$_{30}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64906)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 157.61931 | | $\omega$ | (2000.0) | −0.90602323 | +0.42264552 |
| $n$ | 0.27601500 | | $\Omega$ | 147.71965 | −0.39369248 | −0.82238700 |
| $a$ | 2.3362228 | | $i$ | 57.29772 | −0.15533237 | −0.38085481 |
| $e$ | 0.1583725 | | $H$ | 1.51149 | $G$ 0.15 | $U$ 1 |
| $P$ | 3.57 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 704 | 0.2− | 0.0 | 2005 05 04 | G96 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.1− |
| 2001 02 02 | 704 | 0.5+ | 0.7+ | 2005 05 08 | E12 | 1.5− | 1.2+ | 2006 09 24 | 691 | 0.5− | 0.1− |
| 2001 02 02 | 704 | 0.2+ | 0.9+ | 2005 05 08 | E12 | 0.9+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2001 02 17 | 704 | 1.1− | 0.8+ | 2005 05 08 | E12 | 0.5+ | 0.8+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2001 02 17 | 704 | 0.4− | 0.1+ | 2005 05 08 | E12 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2001 02 17 | 704 | 0.3− | 0.6+ | 2005 05 10 | 703 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 02 17 | 704 | 0.5− | 1.1+ | 2005 05 10 | 703 | 0.5− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 02 17 | 704 | 0.2+ | 0.3+ | 2005 05 10 | 703 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2001 02 20 | 704 | 0.5+ | 0.7+ | 2005 05 10 | 703 | 1.0− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 02 20 | 704 | 1.1+ | 0.4+ | 2005 06 11 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.3− | 0.0 |
| 2001 02 20 | 704 | 0.2− | 0.3+ | 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.4+ |
| 2001 02 20 | 704 | 0.8+ | 0.6+ | 2005 06 11 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2001 02 20 | 704 | 1.4+ | 0.4+ | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2003 12 01 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2003 12 01 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2003 12 01 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 16 | 291 | 0.1+ | 0.5+ |
| 2003 12 14 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 16 | 291 | 0.3+ | 0.7+ |
| 2003 12 14 | 691 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 16 | 291 | 0.3+ | 0.5+ |
| 2003 12 14 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2005 05 04 | G96 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2005 05 04 | G96 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.7+ | 0.1+ |
| 2005 05 04 | G96 | 1.3+ | 0.6+ | 2006 09 24 | 691 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1− |

**(138997)∗ 2001 DA$_{24}$ = 2002 OK$_{22}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33372)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 121.24165 | | $\omega$ | (2000.0) | −0.41270437 | +0.90932577 |
| $n$ | 0.27743481 | | $\Omega$ | 130.80415 | −0.85227066 | −0.36499744 |
| $a$ | 2.3282454 | | $i$ | 114.74749 | −0.32141847 | −0.19975863 |
| $e$ | 0.1116738 | | $H$ | 3.34133 | $G$ 0.15 | $U$ 1 |
| $P$ | 3.55 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 704 | 0.3− | 0.9+ | 2002 08 18 | 644 | 0.0 | 0.4+ | 2005 05 11 | 699 | (1.6− | 1.0+) |
| 2001 02 01 | 704 | 0.6+ | 0.9+ | 2002 08 18 | 644 | 0.1− | 0.5+ | 2005 05 11 | 699 | 0.4− | 0.2− |
| 2001 02 01 | 704 | 0.3+ | 0.3− | 2002 08 29 | 644 | 0.5− | 0.3+ | 2005 05 11 | 699 | 0.5+ | 1.0+ |
| 2001 02 17 | 704 | 0.9+ | 0.8+ | 2002 08 29 | 644 | 0.2− | 0.1+ | 2005 05 11 | 699 | 0.6− | 0.4− |
| 2001 02 17 | 704 | 0.0 | 1.2+ | 2002 08 29 | 644 | 0.3− | 0.2+ | 2005 05 12 | 704 | 0.7− | 0.0 |
| 2001 02 17 | 704 | 0.2− | 0.4− | 2005 04 02 | 691 | 0.0 | 0.1+ | 2005 05 12 | 704 | 0.5− | 0.6+ |
| 2001 02 17 | 704 | 0.9+ | 0.4+ | 2005 04 02 | 691 | 0.0 | 0.2+ | 2005 05 12 | 704 | 0.2− | 0.8+ |
| 2001 02 17 | 704 | 0.4+ | 1.5− | 2005 04 02 | 691 | 0.1− | 0.1+ | 2005 05 16 | 704 | 0.2+ | 0.8+ |
| 2001 02 20 | 704 | 0.4− | 1.3+ | 2005 04 05 | 703 | 0.7− | 1.0− | 2005 05 16 | 704 | 0.3+ | 0.4− |
| 2001 02 20 | 704 | 0.4− | 1.0+ | 2005 04 05 | 703 | 0.4+ | 1.5− | 2005 05 16 | 704 | 0.4+ | 0.2+ |
| 2001 02 20 | 704 | 0.2− | 0.2+ | 2005 04 05 | 703 | (1.9− | 2.2−) | 2006 09 30 | 703 | 0.3− | 1.4+ |
| 2002 07 30 | 474 | 0.3+ | 0.4+ | 2005 04 05 | 703 | (0.5+ | 1.6−) | 2006 09 30 | 703 | 0.6− | 1.2+ |
| 2002 07 30 | 474 | 0.1+ | 0.1+ | 2005 04 13 | 699 | 1.4+ | 1.4− | 2006 09 30 | 703 | 0.8− | 1.2+ |
| 2002 07 30 | 474 | 0.1− | 0.2− | 2005 04 13 | 699 | 1.1+ | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2002 07 30 | 474 | 0.1+ | 0.1− | 2005 04 13 | 699 | 0.6− | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2002 07 31 | 474 | 0.8+ | 0.2− | 2005 04 13 | 699 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2002 07 31 | 474 | 0.5+ | 0.3+ | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.3+ |
| 2002 07 31 | 474 | 0.2+ | 0.5− | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.5− | 0.4− |
| 2002 08 04 | 474 | 0.4− | 0.1− | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2002 08 04 | 474 | 0.7+ | 0.3+ | 2005 04 18 | 703 | 1.0− | 0.9+ | 2006 10 22 | G96 | 0.0 | 0.3+ |
| 2002 08 04 | 474 | 0.8− | 0.3+ | 2005 04 18 | 703 | (1.8− | 0.3−) | 2006 10 22 | G96 | 0.3+ | 0.7+ |
| 2002 08 04 | 474 | 0.6− | 0.1− | 2005 04 18 | 703 | 0.2− | 0.8− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2002 08 14 | 704 | 0.2+ | 0.1− | 2005 04 18 | 703 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2002 08 14 | 704 | 0.8− | 0.4− | 2005 05 03 | 704 | 0.2+ | 0.3− | 2006 11 23 | G96 | 0.3− | 0.2+ |
| 2002 08 14 | 704 | 0.5+ | 0.9+ | 2005 05 03 | 704 | 0.3+ | 1.2− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2002 08 14 | 704 | 0.3− | 0.1+ | 2005 05 03 | 704 | 0.4+ | 0.7+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2005 05 03 | 704 | 0.3+ | 0.0 | | | | |

**(138998)∗ 2001 DX$_{26}$ = 1998 HP$_{99}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 13794)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 204.51017 | | $\omega$ | (2000.0) | −0.76986006 | +0.63685662 |
| $n$ | 0.30133602 | | $\Omega$ | 95.90693 | −0.60353777 | −0.70530156 |
| $a$ | 2.2034440 | | $i$ | 123.65884 | −0.20750336 | −0.31138940 |
| $e$ | 0.1646948 | | $H$ | 2.86359 | $G$ 0.15 | $U$ 1 |
| $P$ | 3.27 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 13 | 691 | 0.1− | 0.3+ | 2001 02 17 | 704 | 0.5− | 0.2+ | 2005 07 12 | G96 | 0.3− | 0.3+ |
| 1991 01 13 | 691 | 0.0 | 0.4− | 2001 02 17 | 704 | 0.0 | 0.0 | 2005 07 28 | 644 | 0.3− | 0.2+ |
| 1991 01 13 | 691 | 0.1+ | 0.4+ | 2001 02 20 | 704 | 0.4− | 0.4+ | 2005 07 28 | 644 | 0.3− | 0.3+ |
| 1998 04 21 | 704 | (0.2− | 2.1+) | 2001 02 20 | 704 | 1.1+ | 0.5− | 2005 07 28 | 644 | 0.1− | 0.3+ |
| 1998 04 21 | 704 | 0.6− | 1.4+ | 2001 02 20 | 704 | 1.2+ | 0.1+ | 2005 08 06 | 644 | 0.2+ | 0.2+ |
| 1998 04 21 | 704 | 1.0+ | 0.6+ | 2001 02 20 | 704 | 0.9+ | 0.0 | 2005 08 06 | 644 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 0.4− | 0.3− | 2001 03 14 | 699 | 1.0− | 1.0+ | 2005 08 06 | 644 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.1+ | 1.2+ | 2001 03 14 | 699 | 0.9− | 0.1+ | 2005 08 25 | 644 | 0.6− | 0.1+ |
| 1998 04 22 | 704 | 0.7+ | 0.3+ | 2001 03 14 | 699 | 0.3− | 0.1− | 2005 08 25 | 644 | 0.3− | 0.2+ |
| 1998 04 22 | 704 | 1.0− | 0.3− | 2001 03 14 | 699 | 0.6+ | 0.1− | 2005 08 25 | 644 | 0.5− | 0.0 |
| 1998 04 22 | 704 | (0.6− | 2.9+) | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 1998 04 22 | 704 | 1.8− | 1.5− | 2003 12 29 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 1.0+ | 0.3− |
| 1998 05 01 | 704 | 0.4+ | 0.9− | 2003 12 29 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 1998 05 01 | 704 | 0.0 | 0.9− | 2005 07 05 | 291 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.6+ | 0.3− |
| 1998 05 01 | 704 | 0.6+ | 0.7− | 2005 07 05 | 291 | 0.6+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 1998 05 01 | 704 | 0.4+ | 0.6− | 2005 07 05 | 291 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.4− | 0.2− |
| 1998 05 01 | 704 | 0.5− | 0.5− | 2005 07 12 | G96 | 0.4− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.3− |
| 2001 02 17 | 704 | 0.6+ | 0.4+ | 2005 07 12 | G96 | 0.1− | 0.1+ | | | | |
| 2001 02 17 | 704 | 0.4− | 1.1+ | 2005 07 12 | G96 | 0.2− | 0.0 | | | | |

**(138999)∗ 2001 DU$_{27}$ = 1995 UN$_{37}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13794)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.57700 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26667026 | $\omega$ | 208.45767 | | −0.85871727 | +0.51243131 | |
| $a$ | 2.3904867 | $\Omega$ | 2.38155 | | −0.44816775 | −0.74686968 | |
| $e$ | 0.1555950 | $i$ | 5.98924 | | −0.24849609 | −0.42379222 | |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 1.1+ | 0.2− | 2001 02 20 | 704 | 0.7− | 0.0 | 2005 04 14 | 703 | 0.3− | 0.5− |
| 1995 10 17 | 691 | 0.0 | 0.6+ | 2001 02 20 | 704 | 0.1− | 0.0 | 2005 05 01 | 644 | 0.1+ | 0.2+ |
| 1995 10 17 | 691 | 0.2+ | 0.0 | 2001 02 20 | 704 | 0.3+ | 0.8− | 2005 05 01 | 644 | 0.5+ | 0.3+ |
| 1995 10 22 | 691 | 0.6− | 0.5− | 2001 02 20 | 704 | (1.5− | 0.6+) | 2005 05 01 | 644 | 0.3+ | 0.3+ |
| 1995 10 22 | 691 | 0.6− | 0.1+ | 2001 03 19 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 691 | 0.2− | 0.3+ |
| 1995 10 22 | 691 | 0.1+ | 0.0 | 2001 03 19 | 704 | 0.1− | 0.2+ | 2006 09 16 | 691 | 0.4− | 0.3− |
| 1995 10 27 | 691 | 0.4− | 0.4− | 2001 03 19 | 704 | 0.3− | 0.3− | 2006 09 16 | 691 | 0.1+ | 0.4+ |
| 1995 10 27 | 691 | 0.0 | 0.3+ | 2001 03 19 | 704 | 0.6+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 1995 10 27 | 691 | 0.1+ | 0.1+ | 2001 03 19 | 704 | (1.6+ | 0.0 ) | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2001 02 01 | 704 | 0.2+ | 0.8− | 2002 08 18 | 644 | 0.4− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2001 02 01 | 704 | 0.3− | 1.4+ | 2002 08 18 | 644 | 0.4− | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2001 02 01 | 704 | 0.4− | 0.3+ | 2002 08 18 | 644 | 0.1− | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.1− |
| 2001 02 01 | 704 | 0.4+ | 0.5+ | 2002 08 30 | 644 | 0.2− | 0.4+ | 2006 09 28 | 691 | (0.3+ | 1.8+) |
| 2001 02 17 | 704 | 0.5− | 0.4+ | 2002 08 30 | 644 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2001 02 17 | 704 | 0.6+ | 0.1+ | 2002 08 30 | 644 | 0.3− | 1.1+ | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 2001 02 17 | 704 | 0.5+ | 0.1+ | 2005 03 17 | G96 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2001 02 17 | 704 | 0.9+ | 1.0+ | 2005 03 17 | G96 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2001 02 17 | 704 | 0.1− | 0.0 | 2005 03 17 | G96 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2001 02 19 | 699 | 0.1− | 0.9+ | 2005 03 17 | G96 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2001 02 19 | 699 | 1.0+ | 0.4+ | 2005 04 14 | 703 | 0.7− | 0.9− | 2006 10 20 | G96 | 0.3− | 0.3+ |
| 2001 02 19 | 699 | 0.2+ | 0.3+ | 2005 04 14 | 703 | (2.3+ | 1.1−) | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2001 02 19 | 699 | 0.0 | 0.8− | 2005 04 14 | 703 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.2− |

**(139000)∗ 2001 DA$_{28}$ = 2003 YV$_{90}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56207)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.59033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29102907 | $\omega$ | 295.82817 | | +0.31065235 | −0.94762954 | |
| $a$ | 2.2551658 | $\Omega$ | 135.85856 | | +0.90575266 | +0.27146989 | |
| $e$ | 0.1396987 | $i$ | 6.10923 | | +0.28828325 | +0.16823303 | |
| $P$ | 3.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 31 | 704 | 0.2+ | 1.1+ | 2004 01 12 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.3− | 1.1− |
| 2001 01 31 | 704 | 0.2− | 1.5+ | 2004 01 12 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 1.1− | 0.3− |
| 2001 01 31 | 704 | 0.5− | 0.6+ | 2004 01 12 | 644 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.8− | 0.4− |
| 2001 01 31 | 704 | 0.6− | 0.2− | 2004 01 13 | 644 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.6− |
| 2001 02 17 | 704 | 0.2+ | 1.2+ | 2004 01 13 | 644 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.6+ |
| 2001 02 17 | 704 | 0.2+ | 1.2+ | 2004 01 13 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 1.5+ | 0.8+ |
| 2001 02 17 | 704 | (1.0+ | 1.6+) | 2004 01 18 | 644 | 0.3− | 0.2+ | 2006 09 19 | 699 | 1.1+ | 0.2+ |
| 2001 02 17 | 704 | (0.5+ | 1.6+) | 2004 01 18 | 644 | 0.3− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2001 02 17 | 704 | 0.6+ | 0.5− | 2004 01 18 | 644 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.1+ |
| 2001 02 19 | 699 | (0.2− | 2.1+) | 2005 05 03 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 644 | 0.2+ | 0.1− |
| 2001 02 19 | 699 | 0.7− | 0.6+ | 2005 05 03 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.0 |
| 2001 02 19 | 699 | (0.0 | 2.4+) | 2005 05 03 | 691 | 0.1+ | 0.7+ | 2006 09 25 | 699 | 0.5+ | 1.1+ |
| 2001 02 19 | 699 | 0.1− | 1.2+ | 2005 05 14 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.7− | 0.3+ |
| 2001 02 20 | 704 | 0.2+ | 0.0 | 2005 05 14 | 644 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.9+ |
| 2001 02 20 | 704 | 0.5− | 0.5+ | 2005 05 14 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.2+ |
| 2001 02 20 | 704 | 0.6+ | 1.5+ | 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.6− |
| 2001 02 20 | 704 | 0.5+ | 0.3− | 2005 05 16 | 691 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.3− |
| 2003 10 21 | 704 | (0.2+ | 1.6+) | 2005 05 16 | 691 | 0.4+ | 0.1− | 2006 09 26 | 704 | 1.1− | 0.4− |
| 2003 10 21 | 704 | 0.9+ | 1.0+ | 2005 06 01 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.5+ | 0.2− |
| 2003 10 21 | 704 | 0.5+ | 0.6+ | 2005 06 01 | 691 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2003 12 01 | 704 | 0.4+ | 0.3+ | 2005 06 01 | 691 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2003 12 01 | 704 | 0.3+ | 0.8+ | 2005 06 13 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.4+ |
| 2003 12 01 | 704 | 0.3+ | 0.5+ | 2005 06 13 | 691 | 0.0 | 0.2+ | 2006 10 19 | 703 | 1.1+ | 0.7+ |
| 2003 12 01 | 704 | 0.3+ | 0.4+ | 2005 06 13 | 691 | 0.1− | 0.2+ | 2006 10 19 | 703 | (2.9+ | 1.5+) |
| 2003 12 01 | 704 | (0.6+ | 1.7+) | 2006 08 28 | 699 | 0.1+ | 0.7+ | 2006 10 19 | 703 | (1.0+ | 2.0+) |
| 2003 12 20 | 704 | 0.1− | 0.2+ | 2006 08 28 | 699 | 1.2− | 0.1− | 2006 10 19 | 703 | 0.6+ | 1.5+ |
| 2003 12 20 | 704 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.7+ | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2003 12 20 | 704 | 0.1− | 0.6+ | 2006 08 28 | 699 | 1.1− | 0.9+ | 2006 10 23 | 644 | 0.8− | 0.2+ |
| 2003 12 20 | 704 | 0.0 | 0.7+ | 2006 08 29 | 691 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 1.1+ | 0.3− | 2006 08 29 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.6− | 0.1+ |
| 2003 12 22 | 704 | 1.3− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2003 12 22 | 704 | 0.8+ | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2003 12 22 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.2+ | 2006 10 24 | 644 | 0.4− | 0.2− |
| 2003 12 23 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2003 12 23 | 704 | 1.1− | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2003 12 23 | 704 | 0.5− | 0.6+ | 2006 09 16 | 704 | 0.1+ | 0.9+ | 2006 11 27 | 703 | 2.9− | 0.6+ |
| 2003 12 24 | 704 | 0.5+ | 0.6+ | 2006 09 16 | 704 | 0.2+ | 1.1+ | 2006 11 27 | 703 | 0.9− | 0.2+ |
| 2003 12 24 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 704 | 1.0+ | 0.4− | 2006 11 27 | 703 | 0.5− | 1.1− |
| 2003 12 24 | 704 | 0.0 | 0.6+ | 2006 09 16 | 704 | 0.1+ | 0.8+ | 2006 11 27 | 703 | 1.2− | 0.6− |

**(139001)∗ 2001 DS$_{30}$ = 2003 YL$_{92}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56208)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.39432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27791937 | $\omega$ | 145.10218 | | −0.92140849 | +0.38310326 | |
| $a$ | 2.3255383 | $\Omega$ | 57.55186 | | −0.37177872 | −0.82032387 | |
| $e$ | 0.0559801 | $i$ | 4.42456 | | −0.11307955 | −0.42461823 | |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 704 | 0.7− | 0.4− | 2003 12 22 | 704 | 0.8+ | 0.9+ | 2005 06 11 | 691 | 0.3+ | 0.3+ |
| 1999 10 11 | 704 | 0.3− | 0.6− | 2003 12 22 | 704 | 1.3+ | 0.2− | 2005 06 11 | 691 | 0.1− | 0.3+ |
| 1999 10 11 | 704 | 0.9− | 0.5+ | 2003 12 22 | 704 | 0.8+ | 1.2+ | 2005 06 11 | 691 | 0.1+ | 0.3+ |
| 1999 10 11 | 704 | 1.2+ | 0.3+ | 2003 12 25 | 691 | 0.4+ | 0.3− | 2005 06 15 | 691 | 0.4− | 0.5+ |
| 1999 10 11 | 704 | 0.3+ | 0.1+ | 2003 12 25 | 691 | 0.4+ | 0.2− | 2005 06 15 | 691 | 0.3+ | 0.2− |
| 2001 02 17 | 704 | 0.2− | 0.8+ | 2003 12 25 | 691 | 1.2− | 1.1+ | 2005 06 15 | 691 | 0.2+ | 0.2+ |
| 2001 02 17 | 704 | 0.6+ | 0.2+ | 2005 03 12 | G96 | 0.4− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2001 02 17 | 704 | 0.6+ | 0.1− | 2005 03 12 | G96 | 0.6− | 0.4− | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2001 02 17 | 704 | 0.4− | 1.2+ | 2005 03 12 | G96 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2001 02 17 | 704 | 1.2− | 1.3+ | 2005 03 12 | G96 | 0.6− | 0.2− | 2006 09 30 | 703 | 1.0+ | 0.2+ |
| 2001 02 20 | 704 | (0.2+ | 2.1+) | 2005 04 07 | G96 | 0.1− | 0.4+ | 2006 09 30 | 703 | (1.1− | 2.9−) |
| 2001 02 20 | 704 | 0.4+ | 1.0+ | 2005 04 07 | G96 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.3+ |
| 2001 02 20 | 704 | 0.1− | 1.0+ | 2005 04 07 | G96 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.6− |
| 2001 03 04 | 704 | 0.5+ | 0.8+ | 2005 04 07 | G96 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.4+ |
| 2001 03 04 | 704 | 0.6+ | 0.1+ | 2005 05 09 | G96 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.4+ |
| 2001 03 04 | 704 | 0.8+ | 0.5+ | 2005 05 09 | G96 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2002 08 13 | 704 | 0.1+ | 0.6+ | 2005 05 09 | G96 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.5− | 0.0 |
| 2002 08 13 | 704 | 0.1− | 1.0+ | 2005 05 09 | G96 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.2+ | 1.3+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2003 12 21 | 704 | (0.1− | 1.7+) | 2005 05 19 | 644 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.8− | 0.2− |
| 2003 12 21 | 704 | 0.2− | 0.3+ | 2005 06 06 | 691 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.5− | 0.1− |
| 2003 12 21 | 704 | 0.1+ | 1.0+ | 2005 06 06 | 691 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2003 12 21 | 704 | 0.3+ | 1.4+ | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.0 |

**(139002)∗ 2001 DL$_{31}$ = 1995 SX$_{89}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 93927)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.36610 | | (2000.0) | | | |
| $n$ | 0.27106820 | $\omega$ | 165.16067 | | −0.88242440 | +0.46881872 |
| $a$ | 2.3645600 | $\Omega$ | 42.86785 | | −0.43729021 | −0.78664182 |
| $e$ | 0.1782465 | $i$ | 3.30278 | | −0.17350636 | −0.40175074 |
| $P$ | 3.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.6− | 0.5+ | 2001 03 19 | 704 | 0.7+ | 0.4+ | 2005 05 09 | 704 | 0.0 | 0.1+ |
| 1995 09 24 | 691 | 0.1+ | 0.4+ | 2001 03 19 | 704 | 0.9+ | 0.2+ | 2005 05 28 | 599 | 0.2+ | 0.2+ |
| 1995 09 24 | 691 | 0.4− | 0.3+ | 2001 03 26 | 704 | 0.1+ | 0.4− | 2005 05 28 | 599 | 0.4+ | 0.8+ |
| 2001 02 17 | 704 | 0.2− | 0.5+ | 2001 03 26 | 704 | 0.0 | 0.5+ | 2005 05 28 | 599 | 0.2+ | 0.3+ |
| 2001 02 17 | 704 | 0.5− | 0.0 | 2001 03 26 | 704 | 0.4− | 0.2− | 2005 05 28 | 599 | 0.3+ | 0.3+ |
| 2001 02 17 | 704 | 0.0 | 0.3+ | 2001 03 26 | 704 | 0.1− | 0.7− | 2005 05 29 | E12 | 0.3+ | 0.3+ |
| 2001 02 17 | 704 | 0.1− | 0.5+ | 2001 03 26 | 704 | 0.3− | 0.4+ | 2005 05 29 | E12 | 0.2+ | 0.2+ |
| 2001 02 17 | 704 | 0.1− | 1.0+ | 2001 03 29 | 699 | 0.2− | 0.7+ | 2005 05 29 | E12 | 0.3+ | 0.1+ |
| 2001 02 20 | 704 | 1.0− | 0.1+ | 2001 03 29 | 699 | 0.2+ | 0.1+ | 2005 05 29 | E12 | 0.3+ | 0.3+ |
| 2001 02 20 | 704 | 0.5+ | 0.5+ | 2001 03 29 | 699 | 0.1+ | 0.1+ | 2005 06 04 | 704 | 0.1+ | 0.5+ |
| 2001 02 20 | 704 | 0.2− | 0.9+ | 2001 03 29 | 699 | 0.6− | 0.2− | 2005 06 04 | 704 | 1.0− | 1.0+ |
| 2001 02 20 | 704 | 0.8+ | 0.4+ | 2001 04 25 | 608 | 0.1+ | 1.1+ | 2005 06 04 | 704 | 0.3+ | 0.6+ |
| 2001 02 20 | 704 | 0.4+ | 0.9+ | 2001 04 25 | 608 | 0.2+ | 1.1+ | 2005 06 26 | 644 | 0.3+ | 0.5+ |
| 2001 03 03 | 704 | 0.6+ | 0.2+ | 2001 04 25 | 608 | 0.1− | 1.1+ | 2005 06 26 | 644 | 0.2+ | 0.3+ |
| 2001 03 03 | 704 | 0.2+ | 0.6+ | 2002 08 30 | 644 | 0.6+ | 0.7+ | 2005 06 26 | 644 | 0.1− | 0.6+ |
| 2001 03 03 | 704 | 0.1+ | 0.3− | 2002 08 30 | 644 | 0.0 | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2001 03 03 | 704 | 0.2+ | 0.3+ | 2002 08 30 | 644 | 0.5+ | 0.3+ | 2006 09 18 | 691 | 0.6− | 1.3+ |
| 2001 03 03 | 704 | 0.1+ | 1.1+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2001 03 18 | 699 | 1.2+ | 0.4− | 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2001 03 18 | 699 | 1.3+ | 0.3+ | 2003 12 19 | 691 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2001 03 18 | 699 | 0.5+ | 0.2− | 2003 12 21 | 704 | (1.6− | 0.4−) | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2001 03 18 | 699 | (1.5+ | 0.1+) | 2003 12 21 | 704 | (0.4− | 3.0+) | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2001 03 19 | 704 | 0.8+ | 0.3− | 2003 12 21 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 03 19 | 704 | 0.4+ | 0.0 | 2003 12 21 | 704 | (0.9+ | 2.7+) | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 03 19 | 704 | 0.1+ | 0.1− | 2003 12 21 | 704 | 0.0 | 1.3+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2001 03 19 | 704 | 0.4+ | 1.1+ | 2005 05 02 | 428 | 0.5− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 03 19 | 704 | 0.6+ | 0.4+ | 2005 05 02 | 428 | 1.3− | 0.6+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 03 19 | 704 | 0.2− | 0.7+ | 2005 05 09 | 704 | 0.4− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2001 03 19 | 704 | 0.1+ | 0.6− | 2005 05 09 | 704 | 0.1− | 0.2− | | | | |
| 2001 03 19 | 704 | 0.0 | 0.7+ | 2005 05 09 | 704 | 0.6+ | 0.7+ | | | | |

**(139003)∗ 2001 DE$_{34}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 237.12662 | | (2000.0) | | | |
| $n$ | 0.27399639 | $\omega$ | 100.83457 | | −0.36118153 | −0.93230133 |
| $a$ | 2.3476832 | $\Omega$ | 10.39893 | | +0.80906700 | −0.32345560 |
| $e$ | 0.1304186 | $i$ | 6.05188 | | +0.46363617 | −0.16183545 |
| $P$ | 3.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.0 | 0.9− | 2001 04 25 | 608 | 0.2+ | 0.1+ | 2003 11 24 | 704 | 0.6+ | 0.3+ |
| 2001 01 04 | 704 | 0.4+ | 0.0 | 2001 04 25 | 608 | 0.1− | 0.2− | 2003 11 25 | 446 | 0.0 | 0.0 |
| 2001 01 04 | 704 | 0.1+ | 1.4+ | 2003 09 27 | 704 | 0.5+ | 0.0 | 2003 11 25 | 446 | 0.2+ | 0.1− |
| 2001 01 04 | 704 | 0.6+ | 0.8+ | 2003 09 27 | 704 | 1.0+ | 1.1− | 2003 11 25 | 446 | 0.2− | 0.4− |
| 2001 02 01 | 704 | 0.1− | 0.2− | 2003 09 27 | 704 | 1.0− | 0.5+ | 2003 12 01 | 691 | 0.0 | 0.3− |
| 2001 02 01 | 704 | 0.9+ | 0.7+ | 2003 09 27 | 704 | 0.1+ | 0.4− | 2003 12 01 | 691 | 0.1+ | 0.2− |
| 2001 02 01 | 704 | 0.0 | 0.1+ | 2003 10 18 | 699 | 0.6− | 0.3+ | 2003 12 01 | 691 | 0.0 | 0.1− |
| 2001 02 17 | 704 | 0.3+ | 1.0+ | 2003 10 18 | 699 | 0.4− | 0.1+ | 2003 12 19 | 704 | 0.8+ | 0.8+ |
| 2001 02 17 | 704 | 0.0 | 0.4+ | 2003 10 18 | 699 | 0.2− | 0.8+ | 2003 12 19 | 704 | 0.6+ | 0.1+ |
| 2001 02 17 | 704 | 0.4+ | 1.0− | 2003 10 18 | 699 | 0.5− | 0.2+ | 2003 12 19 | 704 | 0.5+ | 0.3+ |
| 2001 02 17 | 704 | 0.3+ | 0.3+ | 2003 10 22 | 704 | 0.4+ | 0.4+ | 2003 12 19 | 704 | 0.3− | 0.6+ |
| 2001 02 20 | 704 | 0.4+ | 0.6+ | 2003 10 22 | 704 | 0.1+ | 0.7+ | 2003 12 19 | 704 | 0.1− | 0.1+ |
| 2001 02 20 | 704 | 0.4+ | 0.7+ | 2003 10 22 | 704 | 0.1− | 0.1− | 2004 03 20 | 704 | 1.1+ | 0.6− |
| 2001 02 20 | 704 | 0.3+ | 0.3+ | 2003 10 22 | 704 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.6+ |
| 2001 02 20 | 704 | 0.5− | 0.2− | 2003 10 22 | 704 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.8+ |
| 2001 02 20 | 704 | 0.5+ | 0.3− | 2003 10 23 | 699 | 0.2− | 0.4− | 2005 05 04 | 644 | 0.0 | 0.3+ |
| 2001 03 03 | 704 | 0.3− | 0.1− | 2003 10 23 | 699 | 0.0 | 0.7+ | 2005 05 04 | 644 | 0.2+ | 0.4+ |
| 2001 03 03 | 704 | 0.2+ | 1.0+ | 2003 10 23 | 699 | 0.1− | 0.1− | 2005 05 04 | 644 | 0.1− | 0.3+ |
| 2001 03 03 | 704 | 0.3+ | 0.1+ | 2003 10 23 | 699 | 0.5− | 0.8+ | 2005 05 04 | 644 | 0.1+ | 0.4+ |
| 2001 03 03 | 704 | 0.3− | 0.0 | 2003 10 30 | 704 | 1.5+ | 1.2− | 2005 05 04 | 644 | 0.2+ | 0.2+ |
| 2001 03 03 | 704 | 0.1+ | 0.1+ | 2003 10 30 | 704 | 0.1+ | 0.1− | 2005 05 04 | 644 | 0.0 | 0.2+ |
| 2001 03 15 | 699 | 0.0 | 0.1+ | 2003 10 30 | 704 | 0.3+ | 0.4+ | 2005 05 08 | E12 | 0.2− | 0.5+ |
| 2001 03 15 | 699 | 0.3− | 0.0 | 2003 10 30 | 704 | 0.2+ | 0.3+ | 2005 05 08 | E12 | 0.2− | 0.7+ |
| 2001 03 15 | 699 | 0.0 | 0.3− | 2003 11 02 | 704 | 0.7− | 0.1− | 2005 05 08 | E12 | 0.0 | 0.0 |
| 2001 03 15 | 699 | 0.3+ | 0.6+ | 2003 11 02 | 704 | 0.6− | 0.3+ | 2005 05 08 | E12 | 0.0 | 0.5+ |
| 2001 03 19 | 704 | (2.2+ | 1.1−) | 2003 11 02 | 704 | 0.7− | 0.5+ | 2005 05 19 | 644 | 0.3+ | 0.3+ |
| 2001 03 19 | 704 | 0.1+ | 0.5− | 2003 11 02 | 704 | 0.6− | 0.2+ | 2005 05 19 | 644 | 0.2+ | 0.3+ |
| 2001 03 19 | 704 | 0.4− | 0.4+ | 2003 11 02 | 704 | 0.8− | 0.3− | 2005 05 19 | 644 | 0.2+ | 0.2+ |
| 2001 03 19 | 704 | 0.4+ | 0.3+ | 2003 11 14 | 644 | 0.3− | 0.3+ | 2006 08 15 | 644 | 0.7− | 0.7+ |
| 2001 03 19 | 704 | 0.2− | 0.5+ | 2003 11 14 | 644 | 0.3− | 0.2+ | 2006 08 15 | 644 | 0.4− | 0.6+ |
| 2001 03 19 | 704 | 0.1+ | 0.6− | 2003 11 14 | 644 | 0.4− | 0.1+ | 2006 08 15 | 644 | 0.4− | 0.4+ |
| 2001 03 19 | 704 | 0.5− | 0.5+ | 2003 11 19 | 699 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 2001 03 19 | 704 | 0.1+ | 1.2− | 2003 11 19 | 699 | 0.4− | 0.0 | 2006 08 18 | 644 | 0.2− | 0.5+ |
| 2001 03 19 | 704 | 0.2− | 1.3+ | 2003 11 19 | 699 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.1− | 0.8+ |
| 2001 03 20 | 049 | 0.1+ | 0.8+ | 2003 11 19 | 699 | 0.1− | 0.0 | 2006 08 23 | 704 | 0.0 | 0.7+ |
| 2001 03 20 | 049 | 1.3+ | 0.3− | 2003 11 19 | 703 | 0.8− | 0.2+ | 2006 08 23 | 704 | 0.5+ | 0.0 |
| 2001 03 21 | 049 | 1.0+ | 1.1− | 2003 11 19 | 703 | 1.1− | 0.2− | 2006 08 23 | 704 | 0.9− | 0.3+ |
| 2001 03 21 | 049 | (2.0+ | 0.5−) | 2003 11 19 | 703 | 0.3− | 1.2− | 2006 08 23 | 644 | 0.4− | 0.7+ |
| 2001 03 21 | 608 | 0.2+ | 0.3− | 2003 11 19 | 703 | 0.4+ | 0.1+ | 2006 08 23 | 644 | 0.1− | 0.6+ |
| 2001 03 21 | 608 | 0.1+ | 0.6− | 2003 11 19 | 691 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.0 | 0.4+ |
| 2001 03 21 | 608 | 0.2+ | 0.6− | 2003 11 19 | 691 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.4− | 0.2− |
| 2001 03 26 | 704 | 0.6− | 0.6+ | 2003 11 19 | 691 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.2+ | 1.2+ |
| 2001 03 26 | 704 | 0.4+ | 0.2+ | 2003 11 20 | 704 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.7+ | 1.0+ |
| 2001 03 26 | 704 | 0.2+ | 0.0 | 2003 11 20 | 704 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.5− |
| 2001 03 26 | 704 | 0.6− | 0.6+ | 2003 11 20 | 704 | 0.1− | 0.1+ | 2006 08 28 | 568 | 0.1− | 0.4+ |
| 2001 03 26 | 704 | 0.4− | 0.8+ | 2003 11 20 | 704 | 0.2− | 0.3+ | 2006 08 28 | 568 | 0.0 | 0.3+ |
| 2001 03 29 | 699 | 0.2− | 1.3+ | 2003 11 20 | 704 | 0.2− | 0.3+ | 2006 08 28 | 568 | 0.1− | 0.2+ |
| 2001 03 29 | 699 | 0.6+ | 0.1− | 2003 11 24 | 699 | 0.2− | 0.0 | 2006 08 28 | 568 | 0.0 | 0.3+ |
| 2001 03 29 | 699 | 0.6+ | 0.6+ | 2003 11 24 | 699 | 1.0− | 0.6− | 2006 08 28 | 568 | 0.0 | 0.4+ |
| 2001 03 29 | 699 | 0.3− | 0.2+ | 2003 11 24 | 699 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2001 04 16 | 699 | 0.4+ | 0.2+ | 2003 11 24 | 704 | 0.3− | 0.9+ | 2006 11 23 | G96 | 0.8− | 0.0 |
| 2001 04 16 | 699 | 0.8− | 0.1+ | 2003 11 24 | 699 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2001 04 16 | 699 | (1.8− | 0.3−) | 2003 11 24 | 704 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2001 04 16 | 699 | 0.8− | 0.5− | 2003 11 24 | 704 | 0.8+ | 0.4+ | | | | |
| 2001 04 25 | 608 | 0.0 | 0.3+ | 2003 11 24 | 704 | 0.6+ | 0.4+ | | | | |

**(139004)∗ 2001 DN$_{35}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.91375 | | (2000.0) | | | |
| $n$ | 0.27240998 | $\omega$ | 221.57504 | | −0.98458339 | +0.16619790 |
| $a$ | 2.3567890 | $\Omega$ | 327.86997 | | −0.12077637 | −0.87146912 |
| $e$ | 0.0608118 | $i$ | 5.88519 | | −0.12652518 | −0.46143236 |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 691 | 0.7+ | 0.5+ | 2003 11 16 | 691 | 0.1+ | 0.1− | 2006 07 25 | G96 | 0.4− | 0.6+ |
| 2001 02 01 | 691 | 0.9+ | 0.9+ | 2003 11 16 | 691 | 0.2− | 0.0 | 2006 08 15 | D35 | 0.1+ | 1.1+ |
| 2001 02 01 | 691 | 0.2− | 0.7+ | 2003 11 16 | 691 | 0.0 | 0.0 | 2006 08 15 | D35 | 0.6− | 0.8+ |
| 2001 02 16 | 699 | 0.1− | 0.1− | 2005 04 05 | 699 | 0.6+ | 0.4+ | 2006 08 15 | D35 | 0.5− | 0.8+ |
| 2001 02 16 | 699 | 0.4− | 0.8+ | 2005 04 05 | 699 | 0.4+ | 0.8+ | 2006 08 19 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 699 | 0.6− | 0.6+ | 2005 04 05 | 644 | 0.3+ | 0.6+ | 2006 08 19 | 691 | 0.5− | 0.5+ |
| 2001 02 16 | 699 | 0.3+ | 0.6+ | 2005 04 05 | 699 | 0.1+ | 0.9+ | 2006 08 19 | 691 | 0.1+ | 0.3+ |
| 2001 02 19 | 704 | 0.9+ | 0.4+ | 2005 04 05 | 644 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2001 02 19 | 704 | 0.4− | 1.0+ | 2005 04 05 | 699 | 0.4+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2001 02 19 | 704 | 0.6+ | 1.1+ | 2005 04 05 | 644 | 0.4+ | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.6+ |
| 2001 02 19 | 704 | 0.1− | 0.6+ | 2005 05 01 | 644 | 0.1+ | 0.6+ | 2006 08 29 | 691 | 0.3− | 0.4+ |
| 2001 02 20 | 704 | 0.7− | 0.4− | 2005 05 01 | 644 | 0.0 | 0.6+ | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2001 02 20 | 704 | 0.6+ | 0.5+ | 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 08 29 | 691 | 0.3− | 0.6+ |
| 2001 02 20 | 704 | 0.3+ | 0.2− | 2005 05 14 | 644 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.4− | 0.1+ |
| 2001 02 20 | 704 | 0.8+ | 1.3+ | 2005 05 14 | 644 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2001 02 20 | 704 | 1.1+ | 0.3+ | 2005 05 14 | 644 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.0 |
| 2001 02 21 | 691 | 0.3− | 0.0 | 2006 07 25 | G96 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.0 |
| 2001 02 21 | 691 | 0.1− | 0.0 | 2006 07 25 | G96 | 0.3− | 0.1+ | | | | |
| 2001 02 21 | 691 | 0.0 | 0.2− | 2006 07 25 | G96 | 0.6− | 0.1− | | | | |

**(139005)∗ 2001 DF$_{36}$ = 2005 GE$_{139}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74917)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.96253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28170181 | $\omega$ | 15.49487 | | −0.97663563 | −0.20723396 | |
| $a$ | 2.3046746 | $\Omega$ | 152.34719 | | +0.18183887 | −0.93798686 | |
| $e$ | 0.0411807 | $i$ | 7.04140 | | +0.11453150 | −0.27791138 | |
| $P$ | 3.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 31 | 704 | 1.4+ | 1.3+ | 2005 03 31 | 691 | 0.4+ | 0.3− | 2006 08 18 | 691 | 0.3− | 0.1+ |
| 2001 01 31 | 704 | 1.1− | 0.2− | 2005 03 31 | 691 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.0 |
| 2001 01 31 | 704 | 0.6+ | 0.8+ | 2005 04 02 | 699 | 0.7− | 1.0+ | 2006 09 12 | 703 | 1.1− | 1.4+ |
| 2001 01 31 | 704 | 0.1− | 1.1− | 2005 04 02 | 699 | 0.1+ | 0.9+ | 2006 09 12 | 703 | 0.7− | 0.2− |
| 2001 02 19 | 704 | 0.8+ | 0.1− | 2005 04 02 | 644 | 0.6+ | 0.7+ | 2006 09 12 | 703 | 0.7− | 0.6+ |
| 2001 02 19 | 704 | 1.2− | 0.8+ | 2005 04 02 | 699 | 0.2− | 0.6− | 2006 09 18 | 703 | 0.1+ | 0.3+ |
| 2001 02 19 | 704 | 0.2− | 0.2− | 2005 04 02 | 644 | 0.8+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.6+ |
| 2001 02 19 | 704 | 0.0 | 0.1− | 2005 04 02 | 644 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.6− |
| 2001 02 20 | 704 | 0.5− | 0.1− | 2005 04 02 | 699 | (0.9− | 1.7−) | 2006 09 18 | 703 | (2.2− | 1.1+) |
| 2001 02 20 | 704 | 0.4+ | 0.0 | 2005 04 12 | 699 | 1.3+ | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.6+ |
| 2001 02 20 | 704 | 0.3− | 0.3+ | 2005 04 12 | 699 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.8+ |
| 2001 02 20 | 704 | 0.3+ | 0.1+ | 2005 04 12 | 699 | 1.5+ | 0.2− | 2006 09 18 | 699 | 0.2− | 0.5− |
| 2001 02 20 | 704 | 0.0 | 1.0+ | 2005 04 12 | 699 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.3+ |
| 2001 02 22 | 704 | 0.3+ | 0.8+ | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.5+ | 1.0+ |
| 2001 02 22 | 704 | 0.1+ | 0.1+ | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.3+ |
| 2001 02 22 | 704 | 0.9+ | 0.2− | 2005 04 14 | 691 | 1.3− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.8+ |
| 2001 02 22 | 704 | 1.1− | 0.8+ | 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.0 |
| 2001 02 22 | 704 | 0.8+ | 0.2+ | 2005 04 18 | 691 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.1+ |
| 2002 07 01 | 644 | 0.2− | 0.6+ | 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.5+ | 0.2+ |
| 2002 07 01 | 644 | 0.0 | 0.9+ | 2005 05 07 | 703 | 0.2+ | 1.0+ | 2006 10 03 | G96 | 0.2− | 0.3+ |
| 2002 07 01 | 644 | 0.4− | 0.8+ | 2005 05 07 | 703 | 0.5− | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.3+ |
| 2003 11 30 | 704 | 0.2− | 0.5+ | 2005 05 07 | 703 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2003 11 30 | 704 | 0.3− | 0.5+ | 2005 05 07 | 703 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2003 11 30 | 704 | 0.7+ | 1.3+ | 2005 05 11 | 699 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.5− | 0.2− |
| 2003 11 30 | 704 | 0.7− | 0.2+ | 2005 05 11 | 699 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.0 |
| 2003 12 16 | 691 | 0.2+ | 0.5+ | 2005 05 11 | 699 | 0.9− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2003 12 16 | 691 | 0.3− | 0.6+ | 2005 05 11 | 699 | 0.6+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.6+ |
| 2003 12 16 | 691 | 0.1− | 0.4+ | 2006 08 18 | 691 | 0.0 | 0.4+ | | | | |
| 2005 03 31 | 691 | 0.1+ | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.2+ | | | | |

**(139006)∗ 2001 DF$_{37}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.70323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27682136 | $\omega$ | 225.34480 | | −0.89710049 | +0.44111414 | |
| $a$ | 2.3316838 | $\Omega$ | 340.78725 | | −0.38073916 | −0.80061978 | |
| $e$ | 0.1021244 | $i$ | 4.37099 | | −0.22416154 | −0.40549511 | |
| $P$ | 3.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.5− | 0.3+ | 2001 02 20 | 704 | 0.6+ | 0.3+ | 2005 04 14 | 703 | 0.7− | 1.2+ |
| 1999 10 15 | 704 | 0.2+ | 0.4− | 2001 02 20 | 704 | 0.1− | 0.1+ | 2005 05 04 | 644 | 0.3+ | 0.2+ |
| 1999 10 15 | 704 | 0.5+ | 0.2− | 2001 02 20 | 704 | 0.5+ | 0.4− | 2005 05 04 | 644 | 0.5+ | 0.4+ |
| 1999 10 15 | 704 | 0.4− | 0.6− | 2001 02 22 | 704 | 0.3− | 0.1+ | 2005 05 04 | 644 | 0.4+ | 0.1+ |
| 2001 02 02 | 691 | 0.2− | 0.2+ | 2001 02 22 | 704 | 0.2− | 0.2+ | 2006 07 22 | G96 | 0.1+ | 0.3+ |
| 2001 02 02 | 691 | 0.4+ | 0.2− | 2001 02 22 | 704 | 0.8− | 1.1+ | 2006 07 22 | G96 | 0.1+ | 0.4− |
| 2001 02 02 | 691 | 0.2+ | 0.0 | 2001 02 22 | 704 | 0.3+ | 0.5+ | 2006 07 22 | G96 | 0.1+ | 0.1+ |
| 2001 02 19 | 704 | 0.4+ | 0.1+ | 2001 02 22 | 704 | 0.4+ | 0.9+ | 2006 07 22 | G96 | 0.5− | 0.1− |
| 2001 02 19 | 704 | 0.2− | 1.1+ | 2001 03 02 | 691 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2001 02 19 | 704 | 0.6− | 0.7+ | 2001 03 02 | 691 | 0.3+ | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2001 02 19 | 704 | 1.3+ | 0.1− | 2001 03 02 | 691 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.3+ |
| 2001 02 19 | 704 | 0.6+ | 0.5− | 2003 11 20 | 704 | 0.8+ | 0.4− | 2006 09 17 | 703 | 1.2+ | 0.3− |
| 2001 02 19 | 704 | 0.1− | 0.3+ | 2003 11 20 | 704 | 1.2+ | 0.4+ | 2006 09 17 | 703 | 0.6− | 1.3− |
| 2001 02 19 | 704 | 0.5+ | 1.0+ | 2003 11 20 | 704 | 1.8+ | 0.6+ | 2006 09 17 | 703 | 0.5+ | 0.1+ |
| 2001 02 19 | 704 | 0.4+ | 0.6+ | 2003 11 20 | 704 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.3+ | 1.5+ |
| 2001 02 19 | 704 | 0.1+ | 0.1− | 2003 12 18 | 691 | 0.7− | 0.5− | 2006 09 25 | 691 | 0.1− | 0.6+ |
| 2001 02 19 | 704 | 0.8+ | 1.4+ | 2003 12 18 | 691 | 0.4− | 0.7− | 2006 09 25 | 691 | 0.1− | 0.5+ |
| 2001 02 20 | 704 | 0.2− | 1.6+ | 2003 12 18 | 691 | 0.3− | 0.3− | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2001 02 20 | 704 | 0.3− | 0.2+ | 2005 04 14 | 703 | 0.4− | 1.2+ | 2006 10 02 | 691 | 0.3− | 0.6+ |
| 2001 02 20 | 704 | 0.3− | 0.3+ | 2005 04 14 | 703 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2001 02 20 | 704 | 0.7− | 0.2− | 2005 04 14 | 703 | 0.3+ | 0.9+ | 2006 10 02 | 691 | 0.4− | 0.5+ |

**(139007)∗ 2001 DD$_{41}$ = 2002 RK$_{192}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37543)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.58362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28030781 | $\omega$ | 106.96925 | | −0.80639000 | +0.59057329 | |
| $a$ | 2.3123092 | $\Omega$ | 109.23897 | | −0.55429555 | −0.73653472 | |
| $e$ | 0.1616091 | $i$ | 1.87898 | | −0.20613494 | −0.32975719 | |
| $P$ | 3.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.0 | 0.2+ | 2001 03 19 | 704 | 0.5+ | 0.7+ | 2005 01 24 | 809 | 0.4+ | 0.2− |
| 2001 02 19 | 704 | 0.2− | 0.2− | 2001 03 19 | 704 | 1.1+ | 0.8+ | 2005 01 24 | 809 | 0.3+ | 0.1+ |
| 2001 02 19 | 704 | 0.6− | 0.4+ | 2001 03 19 | 704 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2001 02 19 | 704 | 0.1+ | 1.0+ | 2001 03 19 | 704 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 02 19 | 704 | 0.4− | 0.3+ | 2001 03 19 | 704 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2001 02 20 | 704 | 0.4+ | 0.4− | 2001 03 19 | 704 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 02 20 | 704 | 0.5+ | 0.2+ | 2001 03 20 | 608 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2001 02 20 | 704 | 0.8+ | 0.5− | 2001 03 20 | 608 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2001 02 20 | 704 | 0.4+ | 0.2+ | 2001 03 20 | 608 | 0.2− | 0.6+ | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 2001 02 20 | 704 | 0.2+ | 0.2− | 2002 09 05 | 704 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2001 02 20 | 704 | 0.0 | 0.4+ | 2002 09 05 | 704 | 0.5− | 0.6+ | 2006 10 13 | D35 | 0.2− | 0.6+ |
| 2001 02 20 | 704 | 0.7+ | 1.0+ | 2002 09 05 | 704 | 0.4+ | 0.7+ | 2006 10 13 | D35 | 0.1− | 0.7+ |
| 2001 02 20 | 704 | 0.0 | 0.6+ | 2002 09 12 | 644 | 0.2− | 0.7+ | 2006 10 13 | D35 | 0.3+ | 0.8+ |
| 2001 02 20 | 704 | 1.4− | 0.3− | 2002 09 12 | 644 | 0.5− | 1.0+ | 2006 10 18 | 691 | 0.3− | 0.2+ |
| 2001 02 20 | 704 | 0.3+ | 0.9+ | 2002 09 12 | 644 | 0.2− | 0.9+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2001 03 03 | 704 | 0.3+ | 1.0+ | 2002 09 15 | 644 | 0.6− | 0.7+ | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2001 03 03 | 704 | 0.4+ | 0.1− | 2002 09 15 | 644 | 0.2− | 1.0+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 03 03 | 704 | 0.1+ | 0.6+ | 2002 09 15 | 644 | 0.7− | 1.1+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2001 03 03 | 704 | 0.8+ | 0.3+ | 2003 12 19 | 704 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2001 03 03 | 704 | 0.6− | 0.4− | 2003 12 19 | 704 | 0.5+ | 0.5− | 2006 11 09 | 691 | 0.3− | 0.1− |
| 2001 03 04 | 691 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.1− |
| 2001 03 04 | 691 | 0.0 | 0.2− | 2003 12 19 | 704 | 0.7+ | 0.5− | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2001 03 04 | 691 | 0.0 | 0.1− | 2003 12 19 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.7+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.3+ | 0.2+ | 2004 01 13 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.9+ | 0.4− |
| 2001 03 19 | 704 | 0.6− | 0.1+ | 2004 01 13 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.5+ | 2.0+ |
| 2001 03 19 | 704 | 0.1− | 0.4− | 2004 01 13 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.9− | 0.3− |
| 2001 03 19 | 704 | 0.1+ | 0.3+ | 2005 01 24 | 809 | 0.1+ | 0.5− | | | | |

**(139008)∗ 2001 DZ$_{41}$ = 2005 ET$_{34}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74919)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.75902 | | (2000.0) | | | |
| $n$ | 0.26571067 | $\omega$ | 304.38381 | | −0.15953039 | +0.98531531 |
| $a$ | 2.3962385 | $\Omega$ | 316.30787 | | −0.87435062 | −0.16964777 |
| $e$ | 0.1106495 | $i$ | 5.05438 | | −0.45832418 | −0.01932279 |
| $P$ | 3.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 08 | 691 | 0.1+ | 0.0 | 2005 03 07 | 704 | 0.0 | 1.4+ | 2006 09 12 | 703 | 0.2− | 1.3+ |
| 1996 12 08 | 691 | 0.1− | 0.1− | 2005 03 07 | 704 | 0.2+ | 0.5− | 2006 09 12 | 703 | (1.1− | 2.6+) |
| 1996 12 08 | 691 | 0.1− | 0.0 | 2005 03 11 | 699 | 0.6+ | 0.6+ | 2006 09 16 | 699 | 0.2+ | 1.2+ |
| 2001 02 16 | 699 | 0.2− | 0.2+ | 2005 03 11 | 699 | 0.4+ | 0.4− | 2006 09 16 | 699 | 0.3− | 0.3+ |
| 2001 02 16 | 699 | 1.3− | 1.1+ | 2005 03 11 | 699 | 0.3+ | 0.8+ | 2006 09 16 | 699 | 0.7− | 0.1+ |
| 2001 02 16 | 699 | (1.0+ | 1.6+) | 2005 03 11 | 699 | 0.5− | 1.2+ | 2006 09 16 | 699 | 0.4− | 0.3+ |
| 2001 02 16 | 699 | 0.7+ | 0.7+ | 2005 04 02 | 644 | 0.4+ | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.1+ |
| 2001 02 19 | 704 | 0.7+ | 0.0 | 2005 04 02 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 703 | (1.6− | 1.5−) |
| 2001 02 19 | 704 | 0.3− | 0.0 | 2005 04 02 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 699 | (1.9− | 1.2+) |
| 2001 02 19 | 704 | 1.4+ | 0.3+ | 2005 04 07 | 704 | 1.5+ | 1.4+ | 2006 09 19 | 703 | 0.9+ | 0.3+ |
| 2001 02 20 | 704 | 1.2+ | 1.5+ | 2005 04 07 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.4− | 0.4− |
| 2001 02 20 | 704 | 0.9− | 0.1− | 2005 04 07 | 704 | 0.3− | 0.8+ | 2006 09 19 | 699 | 0.3− | 0.8+ |
| 2001 02 20 | 704 | 0.0 | 0.2+ | 2005 04 07 | 704 | 0.6− | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2001 02 20 | 704 | 0.2+ | 0.9+ | 2005 04 07 | 704 | 0.7− | 1.0+ | 2006 09 19 | 699 | 0.5− | 0.8+ |
| 2001 02 20 | 704 | 0.8+ | 0.2− | 2005 04 13 | 699 | 1.2+ | 0.3+ | 2006 09 20 | 691 | 0.2− | 0.2+ |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2005 04 13 | 699 | 1.2+ | 0.4+ | 2006 09 20 | 691 | 0.3− | 0.2+ |
| 2002 07 14 | 644 | 0.2− | 0.6+ | 2005 04 13 | 699 | 0.1+ | 1.0+ | 2006 09 20 | 691 | 0.1− | 0.2+ |
| 2002 07 14 | 644 | 0.3− | 0.5+ | 2005 04 13 | 699 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.1+ | 0.2− |
| 2002 08 08 | 644 | 0.2+ | 0.1− | 2005 04 18 | 703 | 0.6+ | 1.1+ | 2006 09 25 | 699 | 1.3+ | 1.2+ |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2005 04 18 | 703 | 0.3− | 1.1+ | 2006 09 25 | 699 | 0.6− | 0.8+ |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2005 04 18 | 703 | 1.1− | 0.3+ | 2006 09 25 | 699 | 0.8+ | 0.1− |
| 2002 08 27 | 644 | 0.2− | 0.1+ | 2005 04 18 | 703 | 0.7− | 0.6+ | 2006 09 27 | 704 | 0.4− | 0.7+ |
| 2002 08 27 | 644 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.4− | 0.5− | 2006 09 27 | 704 | 0.4− | 0.7− |
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | 1.0+ | 0.1− | 2006 09 27 | 704 | 0.3− | 0.6+ |
| 2003 12 25 | 691 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.5− |
| 2003 12 25 | 691 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 2003 12 25 | 691 | 0.2− | 0.3+ | 2006 08 30 | 704 | 1.4− | 0.5− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2005 03 03 | 691 | 0.2+ | 0.2− | 2006 08 30 | 704 | 1.3+ | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2005 03 03 | 691 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2005 03 03 | 691 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 1.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2005 03 07 | 704 | 0.6+ | 0.3− | 2006 09 12 | 703 | 0.6− | 0.1− | 2006 10 23 | 644 | 0.6− | 0.4+ |
| 2005 03 07 | 704 | 0.6+ | 0.7+ | 2006 09 12 | 703 | (2.5− | 0.9+) | | | | |

**(139009)∗ 2001 DH$_{42}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.05343 | | (2000.0) | | | |
| $n$ | 0.08253172 | $\omega$ | 257.49673 | | +0.39617736 | −0.91799794 |
| $a$ | 5.2246288 | $\Omega$ | 169.11159 | | +0.87504657 | +0.37156514 |
| $e$ | 0.0118018 | $i$ | 5.46188 | | +0.27809531 | +0.13863305 |
| $P$ | 11.94 | $H$ | 12.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 699 | 0.2+ | 0.8+ | 2002 03 21 | 599 | 0.9− | 0.1− | 2003 05 05 | 699 | (2.3+ | 1.4+) |
| 2001 02 19 | 699 | 0.2− | 0.9+ | 2002 03 21 | 599 | 0.3− | 0.1− | 2003 05 29 | 691 | 0.1− | 0.1+ |
| 2001 02 19 | 699 | 0.2− | 0.4+ | 2002 04 15 | 644 | 0.3+ | 0.3+ | 2003 05 29 | 691 | 0.6− | 0.1+ |
| 2001 02 19 | 704 | 0.1− | 0.2− | 2002 04 15 | 644 | 0.3+ | 0.0 | 2003 05 29 | 691 | 0.2+ | 0.1+ |
| 2001 02 19 | 699 | 0.5− | 1.2+ | 2002 04 15 | 644 | 0.0 | 0.1− | 2004 06 16 | 704 | 0.3+ | 0.1+ |
| 2001 02 19 | 704 | 0.2+ | 0.4− | 2002 04 21 | 691 | 0.1− | 0.3+ | 2004 06 16 | 704 | 1.0+ | 0.9+ |
| 2001 02 19 | 704 | 0.1− | 0.3− | 2002 04 21 | 691 | 0.6+ | 0.0 | 2004 06 16 | 704 | 0.8+ | 0.1− |
| 2001 02 19 | 704 | 0.6− | 0.2+ | 2002 04 21 | 691 | 0.2+ | 0.0 | 2004 06 18 | 704 | 0.0 | 0.5+ |
| 2001 02 19 | 704 | 1.0− | 0.2− | 2002 05 10 | 644 | 0.4− | 0.3+ | 2004 06 18 | 704 | 0.2+ | 0.6+ |
| 2001 02 20 | 704 | 0.6+ | 0.9− | 2002 05 10 | 644 | 0.2− | 0.1− | 2004 06 18 | 704 | 0.1+ | 0.6− |
| 2001 02 20 | 704 | 0.2+ | 0.5+ | 2002 05 10 | 644 | 0.5− | 0.2+ | 2004 06 18 | 704 | 0.2− | 1.0+ |
| 2001 02 20 | 704 | (0.2+ | 1.8+) | 2003 04 27 | 699 | 0.0 | 0.5− | 2006 08 14 | E12 | 0.6+ | 0.1+ |
| 2001 02 20 | 704 | 0.5− | 1.0+ | 2003 04 27 | 699 | 0.1+ | 0.0 | 2006 08 14 | E12 | 0.2− | 0.5+ |
| 2001 02 22 | 704 | 1.1+ | 0.1− | 2003 04 27 | 699 | 0.8− | 0.7− | 2006 08 14 | E12 | 0.2− | 0.8+ |
| 2001 02 22 | 704 | 0.5+ | 0.3+ | 2003 04 27 | 699 | 1.1+ | 1.0− | 2006 08 14 | E12 | 0.0 | 0.2+ |
| 2001 02 22 | 704 | 1.0+ | 0.0 | 2003 05 05 | 704 | 0.8+ | 0.4− | 2006 08 15 | 644 | 0.3− | 0.4+ |
| 2001 02 22 | 704 | 0.6− | 0.5+ | 2003 05 05 | 704 | 0.3− | 0.2− | 2006 08 15 | 644 | 0.3− | 0.4+ |
| 2001 02 22 | 704 | 0.2+ | 0.0 | 2003 05 05 | 291 | 0.6− | 0.4− | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2002 03 16 | 704 | 1.0+ | 0.5+ | 2003 05 05 | 291 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.5+ |
| 2002 03 16 | 704 | 0.5+ | 1.2+ | 2003 05 05 | 699 | 0.2+ | 0.5− | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2002 03 16 | 704 | 0.4+ | 0.6+ | 2003 05 05 | 291 | 0.1− | 0.5− | 2006 08 18 | 644 | 0.1− | 0.4+ |
| 2002 03 16 | 704 | 1.0+ | 1.0+ | 2003 05 05 | 704 | (1.6+ | 1.0+) | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2002 03 16 | 704 | (0.9+ | 1.7+) | 2003 05 05 | 704 | 0.4− | 0.3− | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2002 03 21 | 644 | 0.1+ | 0.0 | 2003 05 05 | 699 | 1.1− | 0.7− | 2006 11 23 | G96 | 0.6− | 0.1+ |
| 2002 03 21 | 644 | 0.1+ | 0.1− | 2003 05 05 | 704 | 0.2+ | 0.8− | 2006 11 23 | G96 | 0.1− | 0.6+ |
| 2002 03 21 | 644 | 0.1+ | 0.0 | 2003 05 05 | 699 | 0.5− | 0.4+ | | | | |

**(139010)∗ 2001 DA$_{45}$ = 1999 TD$_{157}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11884)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 244.55824 | | (2000.0) | | | |
| $n$ | 0.28139505 | $\omega$ | 133.40460 | | −0.53990735 | −0.84160070 |
| $a$ | 2.3063493 | $\Omega$ | 349.24509 | | +0.74819305 | −0.47198746 |
| $e$ | 0.0357244 | $i$ | 4.43581 | | +0.38562574 | −0.26255683 |
| $P$ | 3.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2+ | 0.6− | 2003 11 20 | 704 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.4− |
| 1999 10 09 | 704 | 1.3+ | 0.3− | 2003 12 17 | 704 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.5− |
| 1999 10 09 | 704 | 0.1− | 0.1+ | 2003 12 17 | 704 | 0.2− | 1.2+ | 2006 09 26 | G96 | 0.4− | 0.6− |
| 1999 10 09 | 704 | 0.7+ | 0.8− | 2003 12 17 | 704 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.5+ | 0.3− |
| 1999 10 09 | 704 | 0.6+ | 0.8+ | 2003 12 17 | 704 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.6− |
| 1999 10 10 | 704 | 0.4+ | 0.4− | 2003 12 23 | 704 | (2.1− | 0.2−) | 2006 10 01 | 704 | (0.9+ | 1.7+) |
| 1999 10 10 | 704 | 0.5− | 1.0+ | 2003 12 23 | 704 | 0.4+ | 0.7− | 2006 10 01 | 704 | 0.9+ | 0.8+ |
| 1999 10 10 | 704 | 0.5− | 0.2− | 2003 12 23 | 704 | 0.3− | 0.8− | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2001 02 19 | 704 | 0.6+ | 0.7+ | 2003 12 23 | 704 | 0.7− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2001 02 19 | 704 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.4+ | 0.3− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2001 02 19 | 704 | 0.9+ | 0.8+ | 2003 12 28 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | (2.0+ | 1.2+) |
| 2001 02 19 | 704 | 1.0− | 0.2− | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 703 | (3.9+ | 3.0+) |
| 2001 02 19 | 704 | 0.8− | 0.1− | 2005 05 19 | 644 | 0.6+ | 0.5+ | 2006 10 17 | 703 | (3.0+ | 1.4+) |
| 2001 02 20 | 704 | 1.4+ | 0.7+ | 2005 05 19 | 644 | 0.7+ | 0.6+ | 2006 10 17 | 703 | 1.0+ | 0.3+ |
| 2001 02 20 | 704 | 0.4+ | 0.5− | 2005 05 19 | 644 | 0.8+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 02 20 | 704 | 0.5+ | 0.8− | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2001 03 14 | 699 | 1.3− | 0.8+ | 2006 07 21 | G96 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 03 14 | 699 | 0.1+ | 0.7+ | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 03 14 | 699 | 0.3− | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 03 14 | 699 | 0.6+ | 0.9+ | 2006 09 19 | 699 | 1.0+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 07 09 | 644 | 0.9− | 0.3+ | 2006 09 19 | 699 | 1.1− | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 07 09 | 644 | 0.9− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2002 07 09 | 644 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2003 11 20 | 704 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2003 11 20 | 704 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2003 11 20 | 704 | 0.0 | 0.7+ | 2006 09 25 | 691 | 0.2+ | 1.1+ | 2006 10 23 | 644 | 0.6− | 0.3− |
| 2003 11 20 | 704 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.6− | 0.5− | 2006 10 23 | G96 | 0.4− | 0.3− |

**(139011)∗ 2001 DC$_{45}$ = 2003 XK$_{26}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68907)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.13438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27875561 | $\omega$ | 10.96321 | | −0.91478441 | −0.39979612 | |
| $a$ | 2.3208851 | $\Omega$ | 145.29119 | | +0.36251800 | −0.87558689 | |
| $e$ | 0.0394324 | $i$ | 5.81883 | | +0.17818582 | −0.27112850 | |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.1+ | 0.4+ | 2003 12 01 | 704 | 0.7+ | 1.1+ | 2006 09 30 | 703 | 0.4− | 0.4+ | |
| 2001 02 19 | 704 | 0.8+ | 0.4+ | 2003 12 01 | 704 | 0.8+ | 1.1+ | 2006 09 30 | 703 | 0.4− | 0.3− | |
| 2001 02 19 | 704 | 0.3− | 0.5− | 2003 12 17 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.5+ | |
| 2001 02 19 | 704 | 0.1− | 0.5+ | 2003 12 17 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1+ | |
| 2001 02 19 | 704 | 0.5+ | 0.2+ | 2003 12 17 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | (2.0− | 0.7−) | |
| 2001 02 20 | 704 | 0.5+ | 0.7+ | 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.8+ | |
| 2001 02 20 | 704 | 0.1+ | 0.4+ | 2005 05 04 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.0 | |
| 2001 02 20 | 704 | 1.3+ | 0.9− | 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.6+ | |
| 2001 02 22 | 704 | 0.1− | 0.0 | 2005 05 07 | 703 | 0.7− | 0.2− | 2006 10 09 | 644 | 0.2− | 0.6+ | |
| 2001 02 22 | 704 | 0.2− | 0.4+ | 2005 05 07 | 703 | 0.7− | 0.3− | 2006 10 09 | 644 | 0.3− | 0.2+ | |
| 2001 02 22 | 704 | 0.2− | 0.4+ | 2005 05 07 | 703 | 0.6− | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.8+ | |
| 2001 03 19 | 704 | 0.9− | 1.1+ | 2005 05 07 | 703 | (1.6− | 0.2+) | 2006 10 09 | 644 | 0.2− | 0.1+ | |
| 2001 03 19 | 704 | 0.8− | 1.0+ | 2005 05 08 | 699 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.8− | 0.8+ | |
| 2001 03 19 | 704 | 0.3− | 0.4+ | 2005 05 08 | 699 | 0.7+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.1+ | |
| 2001 03 19 | 704 | 0.2+ | 1.1+ | 2005 05 08 | 699 | (0.8+ | 1.5+) | 2006 10 10 | 644 | 0.1− | 0.4+ | |
| 2001 03 19 | 704 | 0.3+ | 0.9+ | 2005 05 08 | 699 | (0.9+ | 2.6+) | 2006 10 10 | 644 | 0.3+ | 0.6+ | |
| 2001 03 19 | 704 | 0.6− | 0.3− | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.8+ | |
| 2001 03 19 | 704 | 0.1+ | 0.8+ | 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.5+ | |
| 2001 03 19 | 608 | 0.3+ | 0.3+ | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.4+ | |
| 2001 03 19 | 608 | 0.4+ | 0.2+ | 2005 06 04 | 703 | (1.2− | 1.8+) | 2006 10 16 | 703 | 0.8− | 1.4+ | |
| 2001 03 19 | 608 | 0.1− | 0.5+ | 2005 06 04 | 703 | 0.7− | 1.2+ | 2006 10 16 | 703 | 0.5− | 1.1+ | |
| 2002 08 06 | 644 | 0.1− | 0.7+ | 2005 06 04 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | (0.5+ | 2.0+) | |
| 2002 08 06 | 644 | 0.1− | 0.6+ | 2005 06 04 | 703 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.2+ | |
| 2002 08 06 | 644 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2003 12 01 | 704 | 0.2+ | 1.1+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ | |
| 2003 12 01 | 704 | 0.5+ | 1.3+ | 2006 09 18 | 703 | (7.1− | 2.2+) | 2006 10 22 | 644 | 0.0 | 0.7+ | |
| 2003 12 01 | 704 | 0.2− | 1.0+ | 2006 09 30 | 703 | 0.2+ | 0.2− | | | | | |

**(139012)∗ 2001 DH$_{45}$ = 2002 PG$_{82}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 33374)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.12908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26423881 | $\omega$ | 134.19949 | | +0.22823640 | +0.97156822 | |
| $a$ | 2.4051287 | $\Omega$ | 148.83168 | | −0.92436375 | +0.23654321 | |
| $e$ | 0.1614050 | $i$ | 6.98674 | | −0.30571195 | +0.01012478 | |
| $P$ | 3.73 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.9− | 0.1+ | 2002 09 05 | 704 | 0.5− | 0.4− | 2005 04 13 | 704 | 0.1+ | 1.1+ | |
| 2001 02 19 | 704 | (1.6+ | 0.3+) | 2002 09 05 | 704 | 0.4− | 0.1+ | 2005 04 13 | 704 | 0.3+ | 0.7+ | |
| 2001 02 19 | 704 | 0.7+ | 0.0 | 2002 09 10 | 608 | (0.8− | 1.7−) | 2005 04 13 | 704 | 0.1+ | 0.9+ | |
| 2001 02 19 | 704 | 0.7+ | 0.2− | 2002 09 10 | 608 | 0.2+ | 0.7− | 2005 04 14 | 704 | 0.1− | 0.9+ | |
| 2001 02 19 | 704 | 0.1+ | 0.5+ | 2002 09 10 | 608 | 0.4− | 0.7− | 2005 04 14 | 704 | 0.6+ | 0.8+ | |
| 2001 02 20 | 704 | 0.1+ | 0.4+ | 2002 09 15 | 644 | 0.0 | 0.1− | 2005 04 14 | 704 | 0.4+ | 1.2+ | |
| 2001 02 20 | 704 | 0.7− | 0.4+ | 2002 09 15 | 644 | 0.2− | 0.0 | 2005 05 03 | 703 | (1.6− | 0.1+) | |
| 2001 02 20 | 704 | 0.3+ | 0.8+ | 2002 09 15 | 644 | 0.4− | 0.2− | 2005 05 03 | 703 | 0.6− | 0.4− | |
| 2001 02 20 | 704 | 0.9+ | 0.1− | 2002 11 02 | 608 | 0.0 | 0.1+ | 2005 05 03 | 703 | 1.4− | 0.5− | |
| 2001 02 20 | 704 | (1.5− | 0.9+) | 2002 11 02 | 608 | 0.0 | 0.3+ | 2005 05 03 | 703 | (2.1− | 0.5+) | |
| 2001 02 22 | 704 | 0.8+ | 1.3+ | 2002 11 02 | 608 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.4− | 0.3+ | |
| 2001 02 22 | 704 | 0.6+ | 0.1+ | 2005 03 04 | 703 | 0.7+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.5+ | |
| 2001 02 22 | 704 | 1.4+ | 0.7+ | 2005 03 04 | 703 | (0.5− | 1.8+) | 2006 08 18 | 644 | 0.0 | 0.4+ | |
| 2001 03 26 | 704 | 0.0 | 0.1+ | 2005 03 04 | 703 | 1.4− | 1.1+ | 2006 09 18 | 703 | 0.2+ | 0.8+ | |
| 2001 03 26 | 704 | 0.2− | 1.2+ | 2005 03 04 | 703 | 1.3− | 0.8+ | 2006 09 18 | 703 | 0.6− | 0.2− | |
| 2001 03 26 | 704 | 0.5+ | 1.2+ | 2005 03 10 | 703 | 0.6− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.4− | |
| 2001 03 26 | 704 | 0.2+ | 1.4+ | 2005 03 10 | 703 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.6− | 0.5+ | |
| 2001 03 26 | 704 | 0.4− | 0.2+ | 2005 03 10 | 703 | 1.1− | 0.3+ | 2006 09 21 | 699 | 0.6− | 0.6+ | |
| 2001 03 29 | 699 | 0.1− | 1.1+ | 2005 03 10 | 703 | 0.6− | 0.6− | 2006 09 21 | 699 | (0.0 | 1.9+) | |
| 2001 03 29 | 699 | 0.0 | 0.9+ | 2005 03 18 | 703 | 0.2− | 0.6+ | 2006 09 21 | 699 | 0.1− | 0.0 | |
| 2001 03 29 | 699 | 0.6− | 0.1− | 2005 03 18 | 703 | 0.1+ | 0.5− | 2006 09 22 | 704 | 0.2− | 1.1+ | |
| 2001 03 29 | 699 | 0.1− | 0.6− | 2005 03 18 | 703 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.3+ | |
| 2002 07 14 | 704 | 0.5+ | 0.9+ | 2005 03 18 | 703 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.0 | 0.8+ | |
| 2002 07 14 | 704 | 0.3+ | 0.8+ | 2005 03 22 | 683 | (0.2− | 2.7+) | 2006 09 22 | 704 | 0.1− | 0.2+ | |
| 2002 07 14 | 704 | 0.5− | 0.3− | 2005 03 22 | 683 | (0.5+ | 1.9+) | 2006 09 22 | 704 | 1.2+ | 0.9+ | |
| 2002 07 30 | 608 | 0.2+ | 0.8+ | 2005 03 22 | 683 | (1.2+ | 3.4+) | 2006 09 25 | 699 | 0.5− | 0.1− | |
| 2002 07 30 | 608 | 0.1+ | 0.6+ | 2005 04 04 | 703 | 0.8− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.6+ | |
| 2002 07 30 | 608 | 0.6+ | 0.9+ | 2005 04 04 | 703 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.2+ | |
| 2002 08 09 | 704 | 0.8− | 0.4+ | 2005 04 04 | 703 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.6− | 0.6+ | |
| 2002 08 09 | 704 | 0.2− | 0.6+ | 2005 04 04 | 703 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.2+ | 0.6+ | |
| 2002 08 09 | 704 | 0.1− | 0.2− | 2005 04 05 | 699 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.1− | |
| 2002 08 09 | 704 | 0.4− | 0.4− | 2005 04 05 | 699 | 0.7+ | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.0 | |
| 2002 08 13 | 699 | 0.3+ | 0.1− | 2005 04 05 | 699 | 0.7− | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.2− | |
| 2002 08 13 | 699 | 0.1+ | 0.1− | 2005 04 05 | 699 | (1.7+ | 0.0 ) | 2006 09 26 | 704 | 0.0 | 0.3− | |
| 2002 08 13 | 699 | 0.5+ | 0.1− | 2005 04 05 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.2+ | |
| 2002 08 13 | 699 | 0.4+ | 0.1− | 2005 04 05 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 704 | 0.3− | 0.2− | |
| 2002 08 14 | 704 | 0.4− | 0.3+ | 2005 04 05 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.2+ | |
| 2002 08 14 | 704 | 0.5+ | 0.2+ | 2005 04 05 | 704 | 0.1+ | 0.2− | 2006 09 30 | 704 | 0.2+ | 1.3+ | |
| 2002 08 14 | 704 | 0.6− | 0.7+ | 2005 04 05 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.6+ | |
| 2002 08 14 | 704 | 0.2− | 0.3+ | 2005 04 08 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.4− | |
| 2002 08 14 | 704 | 0.2− | 0.5+ | 2005 04 08 | 704 | 0.7+ | 0.8+ | 2006 09 30 | 703 | 0.5− | 0.7+ | |
| 2002 08 17 | 704 | 0.0 | 0.9+ | 2005 04 08 | 704 | 0.9+ | 0.6+ | 2006 09 30 | 704 | 0.9+ | 1.1+ | |
| 2002 08 17 | 704 | (0.8+ | 1.7+) | 2005 04 08 | 704 | 0.6+ | 0.5+ | 2006 09 30 | 704 | (0.3+ | 1.7+) | |
| 2002 08 17 | 704 | 0.5+ | 0.9+ | 2005 04 08 | 704 | 0.8− | 1.0+ | 2006 10 16 | 703 | 0.3− | 1.2+ | |
| 2002 08 17 | 704 | 0.3+ | 0.4+ | 2005 04 09 | 699 | 1.0+ | 0.7− | 2006 10 16 | 703 | 0.9− | 0.7+ | |
| 2002 08 17 | 704 | 0.2+ | 0.9+ | 2005 04 09 | 699 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.2− | |
| 2002 08 28 | 644 | 0.6− | 0.4− | 2005 04 09 | 699 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.7+ | |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2005 04 09 | 699 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.4+ | |
| 2002 08 28 | 644 | 0.4− | 0.3− | 2005 04 11 | 704 | (0.3− | 1.6+) | 2006 10 20 | 644 | 0.1− | 0.5+ | |
| 2002 08 28 | 644 | 0.1+ | 0.1− | 2005 04 11 | 704 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 2002 08 28 | 644 | 0.4− | 0.3− | 2005 04 11 | 704 | 0.9+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2002 08 28 | 644 | 0.2+ | 0.1+ | 2005 04 12 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2002 09 02 | 291 | 0.2+ | 0.1+ | 2005 04 12 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2002 09 02 | 291 | 0.2− | 0.1+ | 2005 04 12 | 704 | 0.7+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.4+ | |
| 2002 09 02 | 291 | 0.3− | 0.0 | 2005 04 12 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.3+ | |
| 2002 09 05 | 704 | 1.1+ | 0.7− | 2005 04 12 | 704 | 1.0+ | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.6+ | |
| 2002 09 05 | 704 | 0.6− | 0.3− | 2005 04 13 | 704 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.2− | 0.7+ | |
| 2002 09 05 | 704 | 0.5+ | 0.3− | 2005 04 13 | 704 | 0.3+ | 0.8+ | | | | | |

**(139013)∗ 2001 DD$_{46}$ = 2001 DW$_{31}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. M. E. Sansaturio (d, *MPO* 13879)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.69314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27023084 | $\omega$ | 136.94952 | | −0.92545960 | −0.37842150 | |
| $a$ | 2.3694422 | $\Omega$ | 20.83500 | | +0.33245367 | −0.83392059 | |
| $e$ | 0.1306523 | $i$ | 2.89052 | | +0.18165653 | −0.40171334 | |
| $P$ | 3.65 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.3+ | 0.5− | 2001 04 16 | 699 | 0.4− | 0.3+ | 2003 11 24 | 699 | 1.1− | 0.4− | |
| 2001 02 17 | 704 | 0.1+ | 0.1− | 2001 04 16 | 699 | 0.7+ | 0.5+ | 2003 11 24 | 704 | 0.7− | 0.3+ | |
| 2001 02 17 | 704 | 0.1− | 0.9+ | 2001 04 16 | 699 | 1.0− | 0.6+ | 2003 11 24 | 704 | 0.7− | 0.3+ | |
| 2001 02 17 | 704 | 0.0 | 0.7+ | 2001 04 16 | 699 | 0.4− | 0.4+ | 2003 11 24 | 699 | 0.1+ | 0.0 | |
| 2001 02 17 | 704 | 0.7+ | 0.4+ | 2003 10 23 | 695 | 0.1+ | 0.2+ | 2003 11 24 | 704 | 0.7− | 1.1+ | |
| 2001 02 19 | 704 | (1.0+ | 2.1+) | 2003 10 23 | 695 | 0.1+ | 0.1+ | 2003 11 24 | 699 | 0.0 | 0.3+ | |
| 2001 02 19 | 704 | 0.6+ | 0.3+ | 2003 10 24 | 704 | 0.3+ | 0.4+ | 2003 11 24 | 699 | 0.1+ | 0.2− | |
| 2001 02 19 | 704 | (2.3+ | 1.4−) | 2003 10 24 | 704 | 0.1+ | 0.8+ | 2005 03 11 | G96 | 0.3− | 0.2− | |
| 2001 02 20 | 704 | 0.8+ | 0.8+ | 2003 10 24 | 704 | (2.8+ | 0.1−) | 2005 03 11 | G96 | 0.0 | 0.2+ | |
| 2001 02 20 | 704 | 0.3+ | 1.1+ | 2003 10 29 | 704 | 1.3− | 1.2− | 2005 03 11 | G96 | 0.1+ | 0.0 | |
| 2001 02 20 | 704 | 0.3+ | 1.3+ | 2003 10 29 | 704 | 0.8− | 0.5− | 2005 03 11 | G96 | 0.1+ | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 704 | 0.5− | 0.7− | 2003 10 29 | 704 | 1.2− | 0.9− | 2005 05 04 | E12 | 0.5− | 0.1+ |
| 2001 02 20 | 704 | 0.0 | 0.1+ | 2003 10 29 | 704 | (2.0− | 0.8−) | 2005 05 04 | E12 | 0.2− | 0.4+ |
| 2001 02 20 | 704 | 0.9+ | 0.8− | 2003 10 29 | 699 | (2.0+ | 1.0−) | 2005 05 04 | E12 | 0.3+ | 0.2+ |
| 2001 02 20 | 704 | 0.5+ | 0.4+ | 2003 10 29 | 704 | 1.6− | 0.3− | 2005 05 04 | E12 | 0.2− | 0.2+ |
| 2001 02 20 | 704 | (1.4− | 2.0−) | 2003 10 29 | 699 | 0.5− | 0.1− | 2005 05 07 | 691 | 0.0 | 0.2+ |
| 2001 02 20 | 704 | (2.2+ | 0.4+) | 2003 10 29 | 699 | 0.0 | 1.1− | 2005 05 07 | 691 | 0.1+ | 0.2+ |
| 2001 02 20 | 704 | 0.7+ | 1.2+ | 2003 10 29 | 699 | 0.5− | 0.0 | 2005 05 07 | 691 | 0.2+ | 0.2+ |
| 2001 03 04 | 691 | 0.0 | 0.3+ | 2003 11 15 | 691 | 0.4+ | 0.5+ | 2005 05 08 | 699 | 0.2− | 0.6− |
| 2001 03 04 | 691 | 0.0 | 0.3+ | 2003 11 15 | 691 | 0.3+ | 0.6+ | 2005 05 08 | 699 | 0.7− | 0.7+ |
| 2001 03 04 | 691 | 0.1− | 0.1+ | 2003 11 15 | 691 | 0.4+ | 0.1+ | 2005 05 08 | 699 | 1.1+ | 0.1+ |
| 2001 03 19 | 704 | 0.7+ | 0.0 | 2003 11 19 | 699 | 0.4− | 0.0 | 2005 05 08 | 699 | 0.1− | 0.1− |
| 2001 03 19 | 704 | 0.9+ | 1.0+ | 2003 11 19 | 703 | 0.1− | 1.2− | 2005 05 11 | 691 | 0.1− | 0.0 |
| 2001 03 19 | 704 | 0.2+ | 0.1+ | 2003 11 19 | 699 | 1.0+ | 0.6+ | 2005 05 11 | 691 | 0.2+ | 0.1+ |
| 2001 03 19 | 704 | 0.4+ | 0.5− | 2003 11 19 | 703 | 0.9+ | 0.0 | 2005 05 11 | 691 | 0.0 | 0.1+ |
| 2001 03 19 | 704 | 0.0 | 1.0+ | 2003 11 19 | 703 | 0.8− | 0.9− | 2006 08 21 | 691 | 0.1− | 0.6+ |
| 2001 03 19 | 704 | 0.1− | 0.4+ | 2003 11 19 | 699 | 1.4− | 0.0 | 2006 08 21 | 691 | 0.2− | 0.7+ |
| 2001 03 19 | 704 | 1.2− | 1.0+ | 2003 11 19 | 703 | 1.5+ | 0.4− | 2006 08 21 | 691 | 0.4− | 0.6+ |
| 2001 03 19 | 704 | 0.8− | 0.1+ | 2003 11 19 | 699 | 1.3− | 0.2− | 2006 08 28 | 691 | 0.4− | 0.6+ |
| 2001 03 19 | 704 | 0.1+ | 0.3− | 2003 11 20 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.7+ |
| 2001 03 26 | 704 | 0.1+ | 0.2+ | 2003 11 20 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 691 | 0.5− | 0.6+ |
| 2001 03 26 | 704 | 0.4+ | 0.1− | 2003 11 20 | 704 | 1.0+ | 1.0+ | 2006 09 30 | G96 | 0.7− | 0.1+ |
| 2001 03 26 | 704 | 0.4+ | 0.0 | 2003 11 20 | 704 | 0.6+ | 0.7+ | 2006 09 30 | G96 | 0.4− | 0.1+ |
| 2001 03 26 | 704 | 0.2+ | 0.3+ | 2003 11 20 | 704 | 0.6+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2001 03 26 | 704 | 0.6+ | 0.4+ | 2003 11 24 | 704 | 0.9− | 1.5+ | 2006 09 30 | G96 | 0.0 | 0.1+ |

### (139014)∗ 2001 DG$_{46}$ = 1994 AR$_8$

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11885)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.04456 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28986267 | $\omega$ | 267.92453 | | +0.82854019 | | −0.55840008 |
| $a$ | 2.2612115 | $\Omega$ | 126.01805 | | +0.53190792 | | +0.76185196 |
| $e$ | 0.0986510 | $i$ | 2.93100 | | +0.17491460 | | +0.32828485 |
| $P$ | 3.40 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 12 | 691 | (1.3− | 2.6+) | 2003 12 20 | 704 | 0.6− | 0.1− | 2006 09 26 | 704 | (2.2+ | 0.1+) |
| 1991 03 12 | 691 | (1.4− | 2.4+) | 2003 12 20 | 704 | 0.5− | 0.3− | 2006 09 26 | 704 | 0.7+ | 0.8− |
| 1991 03 12 | 691 | 0.9− | 1.0+ | 2003 12 23 | 704 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.8+ | 0.1− |
| 1994 01 08 | 691 | 0.8− | 0.3− | 2003 12 23 | 704 | 0.6− | 0.5− | 2006 09 26 | 704 | 0.4+ | 0.6− |
| 1994 01 08 | 691 | 0.4+ | 0.2− | 2003 12 23 | 704 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.2+ | 0.6+ |
| 1994 01 08 | 691 | 0.3+ | 0.3+ | 2003 12 23 | 704 | 0.2− | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 1994 01 13 | 691 | 0.4− | 0.4− | 2003 12 23 | 704 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.4+ |
| 1994 01 13 | 691 | 0.7− | 0.5− | 2003 12 25 | 691 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.5− | 0.8+ |
| 1994 01 19 | 691 | 0.3+ | 0.3− | 2003 12 25 | 691 | 0.6+ | 1.4+ | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 1994 01 19 | 691 | 0.1+ | 0.4− | 2003 12 25 | 691 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.2− | 1.0+ |
| 1994 01 19 | 691 | 0.5+ | 0.2− | 2005 04 30 | 691 | 0.1− | 0.9+ | 2006 09 28 | 704 | 0.3+ | 1.1+ |
| 1998 05 02 | 691 | 0.4+ | 0.1+ | 2005 04 30 | 691 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.7+ | 1.0+ |
| 1998 05 02 | 691 | 0.3+ | 0.2+ | 2005 04 30 | 691 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.4+ | 0.7+ |
| 1998 05 02 | 691 | 0.7+ | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.1− | 2006 09 30 | 703 | 1.2+ | 1.1+ |
| 1998 05 19 | 691 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.5+ | 0.1+ | 2006 09 30 | 704 | 0.8− | 0.0 |
| 1998 05 19 | 691 | 0.3+ | 0.6− | 2006 08 28 | 703 | 1.2+ | 0.5+ | 2006 09 30 | 704 | 0.5− | 0.8+ |
| 1998 05 19 | 691 | 0.3+ | 0.5− | 2006 08 28 | 703 | 0.8− | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.1+ |
| 2001 02 16 | 699 | 0.5− | 0.6− | 2006 09 12 | 703 | 0.4− | 0.7+ | 2006 09 30 | 704 | 0.3− | 0.3+ |
| 2001 02 16 | 699 | 0.4− | 0.3+ | 2006 09 12 | 703 | 0.5− | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.5+ |
| 2001 02 16 | 699 | 0.0 | 1.3+ | 2006 09 12 | 703 | 0.6− | 1.4+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 02 16 | 699 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 0.4+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2001 02 19 | 704 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2001 02 19 | 704 | 0.0 | 1.1+ | 2006 09 13 | 644 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2001 02 19 | 704 | 0.3+ | 0.7− | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2001 02 19 | 704 | 0.8+ | 1.4+ | 2006 09 16 | 704 | (1.7− | 0.2+) | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2001 02 20 | 704 | 1.3− | 0.2+ | 2006 09 16 | 704 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2001 02 20 | 704 | 0.8− | 0.6+ | 2006 09 16 | 704 | 0.4− | 0.9− | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2001 02 20 | 704 | 0.7+ | 0.2− | 2006 09 16 | 704 | 0.5− | 1.3+ | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2001 03 15 | 691 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.8− | 1.2− |
| 2001 03 15 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2001 03 15 | 691 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2001 03 20 | 691 | 0.9+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2001 03 20 | 691 | 0.7+ | 0.3+ | 2006 09 19 | 703 | (1.7+ | 1.3−) | 2006 10 22 | 703 | 0.7− | 0.2+ |
| 2001 03 20 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2003 12 19 | 704 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2003 12 19 | 704 | 1.2+ | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.4− |
| 2003 12 19 | 704 | 0.2− | 0.8+ | 2006 09 22 | 704 | 0.4+ | 1.3− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2003 12 19 | 704 | 0.4+ | 1.2+ | 2006 09 22 | 704 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2003 12 19 | 704 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2003 12 20 | 704 | 0.9− | 0.4− | 2006 09 22 | 704 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2003 12 20 | 704 | 0.3− | 0.7− | 2006 09 22 | 704 | 0.2− | 1.1− | | | | |
| 2003 12 20 | 704 | 0.7− | 0.1− | 2006 09 26 | 704 | 1.2+ | 0.2+ | | | | |

### (139015)∗ 2001 DR$_{57}$

Discovered 2001 Feb. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.21044 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27263711 | $\omega$ | 168.58656 | | +0.46512571 | | +0.88412527 |
| $a$ | 2.3554799 | $\Omega$ | 129.11544 | | −0.81664435 | | +0.44794348 |
| $e$ | 0.2109643 | $i$ | 3.28825 | | −0.34168710 | | +0.13292536 |
| $P$ | 3.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.0 | 0.1+ | 2002 07 22 | 644 | 0.0 | 0.4+ | 2005 04 04 | 703 | 0.8− | 0.9+ |
| 1995 09 18 | 691 | 0.0 | 0.1+ | 2002 07 22 | 644 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.9+ | 0.1+ |
| 1995 09 18 | 691 | 0.5− | 0.1+ | 2002 07 22 | 644 | 0.2− | 0.3+ | 2005 04 04 | 703 | 0.3− | 0.2+ |
| 1998 05 01 | 704 | 1.2+ | 1.8− | 2002 07 23 | 644 | 0.1− | 0.5+ | 2005 04 04 | 703 | 0.2− | 0.3+ |
| 1998 05 01 | 704 | 0.7− | 0.9+ | 2002 07 23 | 644 | 0.4+ | 0.8+ | 2005 04 05 | 699 | 0.2− | 1.3+ |
| 1998 05 01 | 704 | 0.4+ | 0.0 | 2002 07 23 | 644 | 0.3+ | 0.6+ | 2005 04 05 | 699 | 0.2− | 1.2+ |
| 1998 05 01 | 704 | 0.1− | 0.8− | 2002 08 08 | 644 | 0.0 | 0.4+ | 2005 04 05 | 699 | 0.7− | 1.2+ |
| 2001 02 17 | 691 | 0.3+ | 0.4+ | 2002 08 08 | 644 | 0.1− | 0.5+ | 2005 04 05 | 699 | 0.3− | 0.4− |
| 2001 02 17 | 691 | 0.3+ | 0.4+ | 2002 08 08 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | (1.0+ | 1.8+) |
| 2001 02 17 | 691 | 0.2+ | 0.4+ | 2002 08 12 | 608 | 0.1+ | 0.3− | 2006 10 16 | 703 | (1.5+ | 1.2+) |
| 2001 02 22 | 691 | 0.0 | 0.7+ | 2002 08 12 | 608 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2001 02 22 | 691 | 0.3+ | 0.8+ | 2002 08 12 | 608 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.0 | 0.9+ |
| 2001 02 22 | 691 | 0.2+ | 0.6+ | 2002 08 14 | 704 | 0.6− | 0.2+ | 2006 10 16 | 703 | 1.1+ | 0.9+ |
| 2001 03 19 | 691 | 0.6+ | 1.3+ | 2002 08 14 | 704 | 0.8− | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.8+ |
| 2001 03 19 | 691 | 0.4+ | 0.8+ | 2002 08 14 | 704 | 0.3− | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.5+ |
| 2001 03 19 | 691 | 0.3+ | 1.1+ | 2002 08 14 | 704 | 1.1− | 1.0+ | 2006 10 16 | 703 | 0.9+ | 0.7+ |
| 2002 06 25 | 644 | 0.0 | 0.5+ | 2002 08 14 | 704 | 0.7− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.2+ |
| 2002 06 25 | 644 | 0.1+ | 0.6+ | 2002 08 15 | 699 | 0.7+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.3+ |
| 2002 06 25 | 644 | 0.4+ | 0.6+ | 2002 08 15 | 699 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 2002 07 07 | 291 | 0.7− | 0.0 | 2002 08 15 | 699 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.2+ |
| 2002 07 07 | 291 | 0.1− | 0.0 | 2002 08 15 | 699 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 07 07 | 291 | 0.2− | 0.2+ | 2002 08 18 | 644 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 07 14 | 704 | 0.4+ | 1.4+ | 2002 08 18 | 644 | 0.4− | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 07 14 | 704 | 0.1+ | 1.2+ | 2002 08 18 | 644 | 0.2− | 1.1+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2002 07 14 | 704 | 0.0 | 0.8+ | 2002 08 29 | 644 | 0.3+ | 0.7+ | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2002 07 14 | 704 | 0.5+ | 1.0+ | 2002 08 29 | 644 | 0.3+ | 1.0+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2002 07 14 | 704 | 0.1+ | 0.8+ | 2002 08 29 | 644 | 0.2+ | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.6+ |
| 2002 07 14 | 644 | 0.2+ | 0.1− | 2002 09 02 | 608 | 0.5− | 0.8− | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2002 07 14 | 644 | 0.5+ | 0.0 | 2002 09 02 | 608 | 0.2− | 0.6− | 2006 11 11 | 691 | 0.3+ | 1.1− |
| 2002 07 14 | 644 | 0.3+ | 0.1+ | 2002 09 02 | 608 | 0.1− | 0.4− | | | | |

### (139016)∗ 2001 DU$_{58}$

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.27162 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29950164 | $\omega$ | 57.11801 | | +0.96184340 | | −0.26793640 |
| $a$ | 2.2124319 | $\Omega$ | 318.34887 | | +0.21483481 | | +0.86496382 |
| $e$ | 0.1764059 | $i$ | 4.78028 | | +0.16942044 | | +0.42432026 |
| $P$ | 3.29 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.4− | 1.2+ | 2004 01 22 | 704 | 0.6+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.1− | |
| 1999 07 16 | 704 | 0.9− | 1.0+ | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.4− | |
| 1999 07 16 | 704 | 1.3− | 1.2+ | 2004 01 22 | 704 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.2− | |
| 1999 09 11 | 704 | 0.7− | 0.6− | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.2− | |
| 1999 09 11 | 704 | 0.6+ | 0.2− | 2004 01 27 | 704 | (2.2− | 1.2+) | 2006 11 02 | 703 | 0.1+ | 0.1+ | |
| 1999 09 11 | 704 | 1.0+ | 1.4+ | 2004 01 27 | 704 | 0.9− | 0.8+ | 2006 11 02 | 703 | 0.0 | 0.1− | |
| 1999 09 11 | 704 | 0.1− | 0.9+ | 2004 01 27 | 704 | 0.5+ | 0.4− | 2006 11 02 | 703 | 0.3+ | 0.3− | |
| 2001 01 21 | 704 | 0.1− | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 2001 01 21 | 704 | 0.3− | 0.6+ | 2004 01 30 | 704 | (1.6+ | 0.7+) | 2006 11 09 | 644 | 0.0 | 0.1+ | |
| 2001 01 21 | 704 | 0.8+ | 0.5− | 2004 01 30 | 704 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ | |
| 2001 02 19 | 704 | 0.3+ | 0.4− | 2004 01 30 | 704 | 1.1+ | 0.8− | 2006 11 11 | 644 | 0.0 | 0.2+ | |
| 2001 02 19 | 704 | 0.6− | 0.2− | 2004 01 30 | 704 | 0.0 | 1.3+ | 2006 11 11 | 644 | 0.0 | 0.1+ | |
| 2001 02 19 | 704 | 0.4+ | 0.2− | 2004 02 15 | 704 | 0.0 | 0.2+ | 2006 11 11 | 644 | 0.1+ | 0.2+ | |
| 2001 02 19 | 704 | 0.8− | 0.1+ | 2004 02 15 | 704 | 0.4+ | 0.7− | 2006 11 15 | 703 | 0.2+ | 0.3− | |
| 2001 02 19 | 704 | 0.1+ | 0.3+ | 2004 02 15 | 704 | 0.6+ | 0.4− | 2006 11 15 | 703 | 0.4− | 0.3− | |
| 2001 02 22 | 704 | 1.4+ | 0.0 | 2004 02 15 | 704 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.1− | |
| 2001 02 22 | 704 | 0.4− | 0.8− | 2004 02 15 | 704 | 0.1+ | 0.9− | 2006 11 15 | 703 | 0.3− | 0.1− | |
| 2001 02 22 | 704 | 0.3+ | 1.1+ | 2006 08 29 | 703 | 0.6− | 0.1+ | 2006 11 15 | 704 | 0.3− | 0.1+ | |
| 2001 02 22 | 704 | 0.4− | 0.9+ | 2006 08 29 | 703 | 0.3+ | 0.2+ | 2006 11 15 | 704 | 0.7− | 0.0 | |
| 2001 02 22 | 704 | (0.1− | 1.8+) | 2006 08 29 | 703 | 0.6+ | 0.1− | 2006 11 15 | 704 | 0.2− | 0.5+ | |
| 2003 12 18 | 704 | 0.1− | 0.7+ | 2006 09 18 | 704 | 0.1− | 0.6+ | 2006 11 15 | 704 | 0.3− | 0.7− | |
| 2003 12 18 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.0 | 0.2+ | |
| 2003 12 18 | 704 | 0.5− | 0.2− | 2006 09 18 | 704 | 0.3+ | 0.4− | 2006 11 22 | 703 | 0.0 | 0.1+ | |
| 2003 12 18 | 704 | 0.5− | 0.2+ | 2006 09 21 | 704 | 0.7+ | 0.0 | 2006 11 22 | 703 | 0.3+ | 0.5− | |
| 2003 12 18 | 704 | 0.1− | 0.1− | 2006 09 21 | 704 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.7− | 0.1+ | |
| 2003 12 22 | 704 | 0.2+ | 0.0 | 2006 09 21 | 704 | 0.7+ | 1.3+ | 2006 11 22 | 703 | 0.1+ | 0.3+ | |
| 2003 12 22 | 704 | 0.2− | 0.5− | 2006 09 25 | 704 | 0.6+ | 1.0+ | 2006 11 22 | 703 | 0.4− | 0.1+ | |
| 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.7− | 0.1+ | |
| 2003 12 22 | 704 | 0.1+ | 0.8− | 2006 09 25 | 704 | 0.4+ | 0.3+ | 2006 11 22 | 703 | 0.3− | 0.0 | |
| 2003 12 22 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 703 | (2.5− | 0.0 | ) |
| 2003 12 27 | 704 | 0.4− | 0.9+ | 2006 09 25 | 704 | 0.7+ | 1.0+ | 2006 11 23 | 703 | 0.2+ | 0.5− | |
| 2003 12 27 | 704 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.4+ | 0.1− | |
| 2003 12 27 | 704 | 0.8− | 1.0+ | 2006 10 19 | 703 | 0.3− | 0.1− | 2006 11 23 | 703 | 1.4+ | 0.0 | |
| 2003 12 27 | 704 | 0.8− | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.3− | |
| 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 703 | (1.8− | 4.8+) | 2006 11 28 | 704 | 0.4− | 0.3− | |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.1+ | |
| 2004 01 22 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.5− | 2006 11 28 | 704 | 0.8+ | 0.5− | |
| 2004 01 22 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.5− | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.6− | |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.4− | | | | | |
| 2004 01 22 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.2− | | | | | |

**(139017)∗ 2001 DQ$_{59}$ = 2002 RR$_{42}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35018)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.08240 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27616713 | $\omega$ | 252.47181 | | −0.21588376 | +0.97636621 | |
| $a$ | 2.3353648 | $\Omega$ | 5.09344 | | −0.84682706 | −0.18204116 | |
| $e$ | 0.0830069 | $i$ | 6.57126 | | −0.48608450 | −0.11649050 | |
| $P$ | 3.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 699 | 0.8− | 0.3+ | 2002 09 05 | 704 | 0.5− | 0.7+ | 2003 12 27 | 704 | 0.2+ | 0.3+ | |
| 2001 02 01 | 699 | 0.8− | 0.4+ | 2002 09 05 | 704 | 0.4− | 0.4+ | 2003 12 27 | 704 | 0.1+ | 1.1+ | |
| 2001 02 01 | 699 | 0.4− | 0.1− | 2002 09 05 | 704 | 0.5− | 0.2+ | 2003 12 27 | 704 | 0.3+ | 0.5− | |
| 2001 02 01 | 699 | (1.7− | 0.9+) | 2002 09 06 | 704 | 1.0− | 0.2+ | 2003 12 28 | 691 | 0.0 | 0.1+ | |
| 2001 02 17 | 704 | 0.3+ | 0.6+ | 2002 09 06 | 704 | 0.3− | 0.8− | 2003 12 28 | 691 | 0.0 | 0.1− | |
| 2001 02 17 | 704 | 0.6+ | 0.4+ | 2002 09 06 | 704 | 0.6− | 0.3+ | 2003 12 28 | 691 | 0.0 | 0.1− | |
| 2001 02 17 | 704 | 1.5+ | 0.6+ | 2002 09 06 | 704 | 0.2− | 1.0+ | 2003 12 29 | 704 | 0.2− | 0.9+ | |
| 2001 02 17 | 704 | 0.4+ | 1.5+ | 2002 09 06 | 704 | 0.8− | 0.1− | 2003 12 29 | 704 | 0.2− | 0.4+ | |
| 2001 02 17 | 704 | 0.2+ | 0.8+ | 2002 09 13 | 704 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 1.4− | 0.7+ | |
| 2001 02 22 | 704 | 0.2− | 0.1+ | 2002 09 13 | 704 | 0.2− | 0.1+ | 2003 12 29 | 704 | 0.5+ | 0.3− | |
| 2001 02 22 | 704 | 0.4+ | 0.9− | 2002 09 13 | 704 | 0.2+ | 0.4− | 2003 12 29 | 704 | 0.0 | 0.4+ | |
| 2001 02 22 | 704 | (0.2− | 2.4−) | 2002 09 13 | 704 | 0.9− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2− | |
| 2001 02 27 | 691 | 0.2− | 0.2+ | 2002 09 15 | 644 | 0.6− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.5+ | |
| 2001 02 27 | 691 | 0.3− | 0.4+ | 2002 09 15 | 644 | 0.6− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ | |
| 2001 02 27 | 691 | 0.1− | 0.5+ | 2002 09 15 | 644 | 0.6− | 0.6+ | 2006 10 13 | 691 | 0.1− | 0.4+ | |
| 2001 03 02 | 699 | 0.0 | 0.8+ | 2002 09 29 | 291 | 0.1+ | 0.9+ | 2006 10 13 | 691 | 0.0 | 0.4+ | |
| 2001 03 02 | 699 | 0.2+ | 0.4+ | 2002 09 29 | 291 | 0.0 | 0.8+ | 2006 10 13 | 691 | 0.0 | 0.3+ | |
| 2001 03 02 | 699 | 0.2− | 0.7+ | 2002 09 29 | 291 | 0.4+ | 0.8+ | 2006 10 17 | 691 | 0.4− | 0.3− | |
| 2001 03 02 | 699 | 0.2+ | 1.2+ | 2002 10 03 | 704 | 0.5− | 0.2+ | 2006 10 17 | 691 | 0.4+ | 0.3+ | |
| 2001 03 18 | 704 | 0.4+ | 0.5+ | 2002 10 03 | 704 | 1.2− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.0 | |
| 2001 03 18 | 704 | 0.2+ | 0.8+ | 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ | |
| 2001 03 18 | 704 | 0.3+ | 0.5+ | 2002 10 03 | 704 | 0.9+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ | |
| 2001 03 18 | 704 | 0.4+ | 0.5+ | 2002 10 05 | 704 | 0.6− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | |
| 2001 03 18 | 704 | 0.1+ | 0.7+ | 2002 10 05 | 704 | 0.7+ | 0.3+ | 2006 10 27 | 703 | 1.2− | 0.0 | |
| 2001 03 24 | 704 | 0.7+ | 0.1+ | 2002 10 05 | 704 | 0.9− | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.6− | |
| 2001 03 24 | 704 | 0.2+ | 0.5+ | 2002 10 05 | 704 | 0.0 | 0.4− | 2006 10 27 | 703 | 0.1+ | 0.4− | |
| 2001 03 24 | 704 | 0.2+ | 1.0+ | 2002 10 05 | 704 | (0.4+ | 1.7+) | 2006 10 27 | 703 | 0.1+ | 0.2− | |
| 2001 04 15 | 608 | 1.3+ | 1.0− | 2002 10 07 | 704 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1− | |
| 2001 04 15 | 608 | 0.5+ | 1.1− | 2002 10 07 | 704 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.2− | |
| 2001 04 15 | 608 | 0.0 | 1.3− | 2002 10 07 | 704 | 0.1− | 0.8+ | 2006 10 31 | 691 | 0.5+ | 0.2− | |
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2002 10 07 | 704 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.4− | 0.1+ | |
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2002 10 07 | 704 | 0.6− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ | |
| 2001 04 24 | 608 | (1.6+ | 1.0+) | 2003 12 14 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | |
| 2001 04 24 | 608 | 1.4+ | 0.9+ | 2003 12 14 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.0 | 0.2− | |
| 2001 04 24 | 608 | 1.2+ | 0.6+ | 2003 12 14 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | (0.5+ | 1.7−) | |
| 2002 08 20 | 644 | 0.3− | 0.1+ | 2003 12 17 | 699 | 0.3− | 0.4+ | 2006 11 14 | 703 | (2.5+ | 0.4−) | |
| 2002 08 20 | 644 | 0.2− | 0.3− | 2003 12 17 | 699 | 0.4+ | 0.4− | 2006 11 14 | 703 | (1.6− | 0.0 | ) |
| 2002 08 20 | 644 | 0.2− | 0.3+ | 2003 12 17 | 704 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.1+ | |
| 2002 08 29 | 644 | 0.5− | 0.4+ | 2003 12 17 | 699 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.4− | |
| 2002 08 29 | 644 | 0.5− | 0.1+ | 2003 12 17 | 704 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.3− | |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2003 12 17 | 699 | 0.2− | 1.0− | 2006 11 23 | G96 | 0.2− | 0.4− | |
| 2002 09 05 | 704 | 0.2− | 1.0+ | 2003 12 17 | 704 | 0.2+ | 1.0− | | | | | |
| 2002 09 05 | 704 | (1.5− | 0.6+) | 2003 12 17 | 704 | 0.4+ | 0.8+ | | | | | |

**(139018)∗ 2001 DF$_{60}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.60157 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29025768 | $\omega$ | 245.79215 | | −0.90291045 | +0.42107435 | |
| $a$ | 2.2591595 | $\Omega$ | 318.96279 | | −0.33101456 | −0.80926761 | |
| $e$ | 0.0426079 | $i$ | 7.55382 | | −0.27419351 | −0.40961240 | |
| $P$ | 3.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 608 | 0.3− | 0.9− | 2002 07 22 | 644 | 0.0 | 0.4+ | 2005 05 30 | E12 | 0.0 | 0.6− | |
| 2001 01 04 | 608 | 0.2+ | 1.3− | 2002 07 22 | 644 | 0.3+ | 0.1+ | 2005 06 26 | 644 | 0.1+ | 0.7+ | |
| 2001 01 04 | 608 | 0.1+ | 1.2− | 2002 08 08 | 644 | 0.4− | 0.4+ | 2005 06 26 | 644 | 0.1+ | 0.4+ | |
| 2001 01 21 | 704 | 0.7+ | 1.1+ | 2002 08 08 | 644 | 0.1− | 0.3+ | 2005 06 26 | 644 | 0.0 | 0.8+ | |
| 2001 01 21 | 704 | 0.3+ | 0.9+ | 2002 08 08 | 644 | 0.4− | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.4− | |
| 2001 01 21 | 704 | 1.1+ | 0.7− | 2002 08 30 | 644 | 0.0 | 0.8− | 2006 09 16 | 703 | 0.1+ | 0.8− | |
| 2001 01 21 | 704 | 0.4− | 0.7− | 2002 08 30 | 644 | 0.1+ | 0.9− | 2006 09 16 | 703 | 0.9− | 0.0 | |
| 2001 01 21 | 704 | 0.4− | 0.4+ | 2002 08 30 | 644 | 0.1− | 0.9− | 2006 09 16 | 703 | 0.4− | 0.0 | |
| 2001 02 13 | 691 | 0.1+ | 0.0 | 2003 12 03 | 704 | 0.7+ | 0.5+ | 2006 10 17 | A50 | 0.1+ | 0.0 | |
| 2001 02 13 | 691 | 0.1− | 0.1− | 2003 12 03 | 704 | 0.2+ | 0.2+ | 2006 10 17 | A50 | 0.0 | 0.7− | |
| 2001 02 13 | 691 | 0.1− | 0.1− | 2003 12 03 | 704 | 0.2− | 0.2− | 2006 10 18 | A50 | 0.9+ | 0.8+ | |
| 2001 02 16 | 699 | 0.9− | 0.7− | 2003 12 03 | 704 | 0.1− | 0.5+ | 2006 10 18 | A50 | 0.2+ | 0.1+ | |
| 2001 02 16 | 699 | (1.7− | 1.8−) | 2003 12 04 | 704 | 0.9− | 0.6− | 2006 10 19 | 703 | 0.9− | 0.4− | |
| 2001 02 16 | 699 | 0.5− | 0.3+ | 2003 12 04 | 704 | 0.8− | 0.3− | 2006 10 19 | 703 | 0.8− | 0.1+ | |
| 2001 02 16 | 699 | 0.8− | 0.7− | 2003 12 04 | 704 | 1.3− | 0.1+ | 2006 10 19 | 703 | 1.3+ | 0.3+ | |
| 2001 02 19 | 704 | 0.5+ | 1.0+ | 2003 12 04 | 704 | 0.4− | 1.1− | 2006 10 19 | 703 | 0.4+ | 0.6+ | |
| 2001 02 19 | 704 | 0.8− | 0.2+ | 2003 12 17 | 704 | (0.8− | 2.7+) | 2006 10 27 | 703 | 0.4+ | 0.1+ | |
| 2001 02 19 | 704 | 0.7− | 0.7+ | 2003 12 17 | 704 | (0.8− | 1.9+) | 2006 10 27 | 703 | 0.3− | 0.3− | |
| 2001 02 19 | 704 | 0.2+ | 1.0+ | 2003 12 17 | 704 | 1.1+ | 1.3+ | 2006 10 27 | 703 | 0.0 | 0.0 | |
| 2001 02 19 | 704 | 0.2− | 0.7+ | 2003 12 17 | 704 | (2.6+ | 1.3+) | 2006 10 27 | 703 | 1.3− | 0.0 | |
| 2001 02 22 | 704 | 1.2+ | 0.8+ | 2003 12 17 | 704 | (1.2− | 1.9+) | 2006 11 14 | 703 | 1.1+ | 0.2+ | |
| 2001 02 22 | 704 | (0.7+ | 1.5+) | 2003 12 27 | 704 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.8− | 0.3− | |
| 2001 02 22 | 704 | 0.5+ | 0.5+ | 2003 12 27 | 704 | 0.9+ | 0.6+ | 2006 11 14 | 703 | 0.5+ | 0.7+ | |
| 2001 02 22 | 704 | 0.5+ | 1.0− | 2003 12 27 | 704 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.7+ | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.1− | 0.2+ | 2003 12 29 | 704 | 0.3− | 0.3+ | 2006 11 23 | 703 | 0.1− | 0.7+ |
| 2002 07 05 | 644 | 0.0 | 0.2+ | 2003 12 29 | 704 | 0.1+ | 0.5+ | 2006 11 23 | 703 | 0.2− | 0.5+ |
| 2002 07 05 | 644 | 0.1+ | 0.5+ | 2003 12 29 | 704 | 0.5+ | 1.0− | 2006 11 23 | 703 | 0.2− | 0.3+ |
| 2002 07 22 | 644 | 0.5+ | 0.2+ | 2003 12 29 | 704 | 0.2− | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.5− |

**(139019)∗ 2001 DK$_{61}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.93977 | | (2000.0) | | | |
| $n$ | 0.28499384 | $\omega$ | 125.69286 | | +0.21454411 | −0.97353393 |
| $a$ | 2.2868924 | $\Omega$ | 311.71978 | | +0.85857536 | +0.22642097 |
| $e$ | 0.0892078 | $i$ | 6.05674 | | +0.46563846 | +0.03106811 |
| $P$ | 3.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.4+ | 0.1− | 2003 11 23 | 704 | 0.5+ | 0.6− | 2006 08 24 | 704 | 0.6− | 0.7+ |
| 1994 01 10 | 691 | 0.5− | 0.5− | 2003 12 04 | 704 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 0.3− | 0.5+ |
| 1994 01 10 | 691 | 0.1− | 0.1+ | 2003 12 04 | 704 | 0.7− | 0.2+ | 2006 08 24 | 704 | 0.4+ | 0.9+ |
| 2001 01 21 | 704 | 0.3+ | 0.8+ | 2003 12 04 | 704 | 0.2+ | 0.2− | 2006 08 29 | 703 | 1.0− | 0.8− |
| 2001 01 21 | 704 | 0.3+ | 0.8+ | 2003 12 04 | 704 | (0.2+ | 2.4−) | 2006 08 29 | 703 | 0.8− | 0.4− |
| 2001 01 21 | 704 | 0.1+ | 0.6+ | 2003 12 04 | 704 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 0.1− | 1.0− |
| 2001 01 31 | 704 | 0.9+ | 0.7+ | 2003 12 12 | 644 | 0.0 | 0.3− | 2006 08 29 | 703 | 0.9− | 0.5− |
| 2001 01 31 | 704 | 0.3− | 0.4− | 2003 12 12 | 644 | 0.2− | 0.1− | 2006 08 29 | 691 | 0.4+ | 0.1− |
| 2001 01 31 | 704 | 0.2+ | 0.1− | 2003 12 12 | 644 | 0.3+ | 0.1+ | 2006 08 29 | 691 | 0.2+ | 0.0 |
| 2001 01 31 | 704 | 1.0+ | 0.1+ | 2003 12 18 | 704 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.0 |
| 2001 02 19 | 704 | 0.6− | 0.9+ | 2003 12 18 | 704 | 1.0+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 1.1+ |
| 2001 02 19 | 704 | 0.2− | 0.7+ | 2003 12 18 | 704 | 0.5+ | 0.3− | 2006 08 30 | 704 | 0.7+ | 0.0 |
| 2001 02 19 | 704 | 0.9− | 1.0+ | 2003 12 18 | 704 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.2+ | 0.9+ |
| 2001 02 22 | 704 | 0.2− | 0.8− | 2003 12 18 | 704 | 0.1+ | 0.4− | 2006 08 30 | 704 | 1.0+ | 0.5+ |
| 2001 02 22 | 704 | 1.3+ | 0.3− | 2003 12 23 | 704 | (1.8+ | 1.3−) | 2006 08 30 | 704 | (0.6+ | 1.8+) |
| 2001 02 22 | 704 | 0.2+ | 0.6+ | 2003 12 23 | 704 | 0.5− | 0.6+ | 2006 09 11 | 703 | 0.2− | 0.6+ |
| 2003 11 19 | 704 | 0.1− | 0.0 | 2003 12 23 | 704 | (0.6− | 2.7−) | 2006 09 11 | 703 | 0.5+ | 0.4+ |
| 2003 11 19 | 704 | 0.2− | 0.1+ | 2003 12 23 | 704 | 1.4− | 0.7+ | 2006 09 11 | 703 | 0.0 | 0.8+ |
| 2003 11 19 | 704 | 0.3− | 0.0 | 2003 12 23 | 704 | 0.2+ | 0.7+ | 2006 09 11 | 703 | (0.7+ | 2.0+) |
| 2003 11 19 | 704 | 0.1− | 0.4− | 2003 12 28 | 699 | 0.5− | 0.3− | 2006 09 13 | 644 | 0.2+ | 0.5+ |
| 2003 11 19 | 704 | 0.2+ | 0.3+ | 2003 12 28 | 699 | 0.6− | 0.3− | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 2003 11 20 | 704 | 0.3− | 0.0 | 2003 12 28 | 699 | 0.9+ | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 2003 11 20 | 704 | 0.3+ | 0.6+ | 2003 12 28 | 699 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.8− | 0.4− |
| 2003 11 20 | 704 | 0.1+ | 0.5− | 2005 05 16 | 644 | 0.2+ | 1.1+ | 2006 09 17 | 703 | 0.6− | 0.6− |
| 2003 11 20 | 704 | 0.3− | 0.8+ | 2005 05 16 | 644 | 0.3+ | 0.7+ | 2006 09 17 | 703 | 0.3− | 0.4− |
| 2003 11 20 | 704 | 0.0 | 0.3+ | 2005 05 16 | 644 | 0.8+ | 1.2+ | 2006 09 17 | 703 | 1.0− | 0.3− |
| 2003 11 23 | 704 | 0.2+ | 0.4+ | 2006 08 19 | 644 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2003 11 23 | 704 | 0.4− | 0.2− | 2006 08 19 | 644 | 0.2− | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2003 11 23 | 704 | 0.6+ | 0.3− | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2003 11 23 | 704 | (0.4+ | 1.6−) | 2006 08 24 | 704 | 0.5− | 0.1− | | | | |

**(139020)∗ 2001 DD$_{64}$ = 2002 PR$_{56}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35019)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.44169 | | (2000.0) | | | |
| $n$ | 0.27663398 | $\omega$ | 284.25088 | | −0.40152205 | +0.91536557 |
| $a$ | 2.3327366 | $\Omega$ | 322.03207 | | −0.82052093 | −0.37397582 |
| $e$ | 0.1381703 | $i$ | 2.77307 | | −0.40684819 | −0.14915753 |
| $P$ | 3.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.1+ | 0.3− | 2002 08 17 | 644 | 0.7− | 0.4+ | 2005 05 30 | 699 | 0.7+ | 0.1− |
| 1995 10 19 | 691 | 0.3+ | 0.2− | 2002 08 17 | 644 | 0.6− | 0.4+ | 2005 05 30 | 699 | 0.2− | 0.0 |
| 1995 10 19 | 691 | 0.1− | 0.1− | 2002 08 17 | 644 | 0.6− | 0.2+ | 2005 05 30 | 699 | 0.5+ | 0.1− |
| 2001 02 02 | 691 | 0.0 | 0.2+ | 2002 08 27 | 644 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.2+ |
| 2001 02 02 | 691 | 0.0 | 0.2+ | 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2001 02 02 | 691 | 0.5− | 0.3+ | 2002 08 27 | 644 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.8+ |
| 2001 02 19 | 699 | 0.3− | 0.7+ | 2002 09 04 | 644 | 0.3− | 0.2− | 2006 10 03 | 691 | 0.1− | 0.0 |
| 2001 02 19 | 699 | 0.1+ | 0.0 | 2002 09 04 | 644 | 0.2− | 0.2− | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 2001 02 19 | 699 | 0.1− | 1.3+ | 2002 09 04 | 644 | 0.4− | 0.2− | 2006 10 03 | 691 | 0.3− | 0.0 |
| 2001 02 19 | 704 | 1.0+ | 0.7− | 2002 09 05 | 699 | (2.0− | 1.1−) | 2006 10 20 | 691 | 0.6− | 0.3+ |
| 2001 02 19 | 704 | 0.5+ | 0.7+ | 2002 09 05 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.5− | 0.4− |
| 2001 02 19 | 704 | 0.8+ | 0.0 | 2002 09 05 | 699 | 0.7− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2001 02 19 | 699 | 0.4− | 0.5+ | 2002 09 05 | 704 | 0.6+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 02 19 | 704 | 0.6+ | 0.0 | 2002 09 05 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.8− |
| 2001 02 19 | 704 | 0.7+ | 0.7+ | 2002 09 05 | 704 | 0.9+ | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2001 02 22 | 704 | 0.6− | 0.3+ | 2002 09 05 | 699 | 0.4+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2001 02 22 | 704 | 1.3+ | 0.6+ | 2002 09 05 | 704 | 0.4+ | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 02 22 | 704 | 0.3+ | 1.0+ | 2002 09 14 | 644 | 0.7− | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2001 02 22 | 704 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.7− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2001 02 22 | 704 | 0.2+ | 0.4− | 2002 09 14 | 644 | 0.8− | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2002 08 09 | 704 | 0.8+ | 0.1+ | 2003 12 22 | 704 | (1.9+ | 0.3−) | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2002 08 09 | 704 | 0.1+ | 0.9+ | 2003 12 22 | 704 | 1.5+ | 1.0− | 2006 11 10 | 691 | 0.6+ | 0.1+ |
| 2002 08 09 | 704 | (0.5+ | 2.0+) | 2003 12 22 | 704 | (1.7+ | 0.3+) | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.4− | 0.5+ | 2003 12 22 | 704 | 0.0 | 0.5− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 08 12 | 704 | 0.5+ | 0.5+ | 2005 05 27 | 941 | 0.3+ | 0.9+ | 2006 11 11 | 703 | 0.2− | 1.0+ |
| 2002 08 12 | 704 | (0.5+ | 1.7+) | 2005 05 27 | 941 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.5− | 1.2+ |
| 2002 08 12 | 704 | (0.5+ | 1.6+) | 2005 05 27 | 941 | 0.4− | 0.8+ | 2006 11 11 | 703 | 0.8− | 0.8− |
| 2002 08 12 | 704 | 0.9− | 0.5+ | 2005 05 30 | 699 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 1.0+ |

**(139021)∗ 2001 DE$_{64}$ = 2002 NP$_{27}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.88013 | | (2000.0) | | | |
| $n$ | 0.23230655 | $\omega$ | 122.89436 | | +0.04221015 | +0.99079219 |
| $a$ | 2.6207670 | $\Omega$ | 148.74491 | | −0.97935547 | +0.06650807 |
| $e$ | 0.3155393 | $i$ | 14.35565 | | −0.19768956 | −0.11793014 |
| $P$ | 4.24 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.2− | 0.3+ | 2002 09 05 | 699 | 0.9+ | 0.7+ | 2005 03 13 | G96 | 0.1− | 0.1− |
| 2001 02 02 | 691 | 0.2− | 0.4+ | 2002 09 05 | 699 | 0.0 | 1.2+ | 2005 03 13 | G96 | 0.1+ | 0.2− |
| 2001 02 02 | 691 | 0.3− | 0.6+ | 2002 09 05 | 699 | 0.1+ | 0.8+ | 2006 05 29 | 704 | 0.9− | 0.4+ |
| 2001 02 19 | 704 | 0.2+ | 0.2− | 2002 09 10 | 608 | (0.5− | 1.7+) | 2006 05 29 | 704 | 0.3+ | 0.5+ |
| 2001 02 19 | 704 | 0.1− | 1.3+ | 2002 09 10 | 608 | 0.3− | 0.5− | 2006 05 29 | 704 | 0.9+ | 0.7+ |
| 2001 02 19 | 704 | (0.9− | 2.6+) | 2002 09 10 | 608 | 0.3− | 0.1− | 2006 05 29 | 704 | 0.0 | 0.8+ |
| 2001 02 22 | 704 | 0.0 | 0.2+ | 2002 09 13 | 704 | 0.2+ | 0.8+ | 2006 05 29 | 704 | 0.7+ | 1.1+ |
| 2001 02 22 | 704 | 0.9− | 0.5+ | 2002 09 13 | 704 | 0.2+ | 1.1+ | 2006 08 30 | 704 | 0.3− | 0.6+ |
| 2001 02 22 | 704 | 0.1− | 0.7+ | 2002 09 13 | 699 | 0.3− | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.7+ |
| 2001 02 22 | 704 | 0.0 | 0.1+ | 2002 09 13 | 704 | 0.3− | 0.8+ | 2006 08 30 | 704 | 0.3− | 0.6+ |
| 2001 03 19 | 691 | 0.6+ | 0.7+ | 2002 09 13 | 699 | 0.4− | 0.2+ | 2006 08 30 | 704 | 1.3− | 0.6+ |
| 2001 03 19 | 691 | 0.3+ | 0.6+ | 2002 09 13 | 704 | 0.3− | 0.5+ | 2006 09 18 | 704 | 0.5+ | 0.2− |
| 2001 03 19 | 691 | 0.5+ | 0.6+ | 2002 09 13 | 699 | 0.4− | 0.6+ | 2006 09 18 | 704 | 0.5+ | 0.3+ |
| 2002 06 25 | 608 | 0.3− | 0.3+ | 2002 09 13 | 699 | 0.4− | 1.1+ | 2006 09 18 | 704 | 0.2+ | 0.4− |
| 2002 06 25 | 608 | 0.5− | 0.6+ | 2002 09 14 | 608 | 1.0− | 0.4− | 2006 09 18 | 704 | 0.8− | 0.1+ |
| 2002 06 25 | 608 | 0.4− | 0.4+ | 2002 09 14 | 608 | 0.9− | 0.4− | 2006 09 20 | 704 | 0.5− | 0.8− |
| 2002 07 09 | 704 | 0.1+ | 0.1− | 2002 09 14 | 608 | 1.2− | 0.4− | 2006 09 20 | 704 | (1.7− | 0.0 ) |
| 2002 07 09 | 704 | 0.4− | 0.0 | 2002 09 16 | 644 | 0.4− | 0.5+ | 2006 09 20 | 704 | 0.2− | 1.0− |
| 2002 07 09 | 704 | 0.3− | 0.9+ | 2002 09 16 | 644 | 0.4− | 0.4+ | 2006 09 20 | 704 | 0.5− | 1.0− |
| 2002 07 09 | 704 | 0.3− | 0.2+ | 2002 09 16 | 644 | 0.5− | 0.5+ | 2006 09 20 | 704 | 0.9− | 0.8− |
| 2002 07 09 | 704 | 0.3− | 0.5− | 2002 10 04 | 704 | 0.3− | 0.7+ | 2006 09 27 | 704 | 0.8+ | 0.3− |
| 2002 07 14 | 704 | 0.3+ | 0.8+ | 2002 10 04 | 704 | 0.4− | 1.0+ | 2006 09 27 | 704 | 0.4+ | 0.4+ |
| 2002 07 14 | 704 | 0.7+ | 0.9− | 2002 10 04 | 704 | 0.5− | 0.4+ | 2006 09 27 | 704 | 0.6+ | 0.0 |
| 2002 07 14 | 704 | 0.8+ | 0.2− | 2002 10 04 | 704 | (0.0 | 1.8+) | 2006 09 27 | 704 | 0.1+ | 0.1+ |
| 2002 07 14 | 704 | 0.9+ | 0.4+ | 2002 10 09 | 699 | (0.7+ | 1.5+) | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2002 07 14 | 704 | 1.3+ | 0.1− | 2002 10 09 | 699 | 0.6+ | 0.0 | 2006 09 29 | 704 | 1.0+ | 0.2+ |
| 2002 08 10 | 704 | (1.9+ | 0.3+) | 2002 10 09 | 699 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.1+ |
| 2002 08 10 | 704 | 0.7+ | 0.5− | 2002 10 09 | 699 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.6+ | 0.5+ |
| 2002 08 10 | 704 | 0.1+ | 1.0+ | 2005 02 02 | 703 | (0.9− | 1.6−) | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 2002 08 10 | 704 | 0.8+ | 0.7− | 2005 02 02 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 703 | 1.4− | 0.1+ |
| 2002 08 10 | 704 | (1.9+ | 0.3+) | 2005 02 02 | 703 | 0.2− | 0.7− | 2006 10 19 | 703 | 0.1+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.2+ | 0.8+ | 2005 02 02 | 703 | 0.6− | 0.5− | 2006 10 19 | 703 | (3.1+ | 2.9−) |
| 2002 08 12 | 704 | 0.1− | 0.5+ | 2005 02 02 | 704 | 0.2+ | 0.5− | 2006 10 19 | 703 | (3.5− | 2.6−) |
| 2002 08 12 | 704 | 0.0 | 0.3+ | 2005 02 02 | 703 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2002 08 12 | 704 | 0.1− | 0.7+ | 2005 02 02 | 704 | 0.9+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2002 08 12 | 704 | 0.1+ | 0.5+ | 2005 03 13 | G96 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2002 09 05 | 699 | 0.3+ | 0.3+ | 2005 03 13 | G96 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.2− |

**(139022)∗ 2001 DL$_{64}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.25809 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27455406 | $\omega$ | 141.90782 | | −0.19999445 | | −0.97706034 |
| $a$ | 2.3445030 | $\Omega$ | 319.47970 | | +0.86904237 | | −0.14239734 |
| $e$ | 0.0506075 | $i$ | 6.46716 | | +0.45251251 | | −0.15835435 |
| $P$ | 3.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.8− | 0.7+ | 2003 11 21 | A35 | 0.4+ | 0.0 | 2006 08 21 | 704 | 0.1− | 0.3− |
| 2001 01 21 | 704 | 0.8+ | 0.2+ | 2003 12 04 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.1− |
| 2001 01 21 | 704 | 0.5+ | 0.6+ | 2003 12 04 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.2+ |
| 2001 01 21 | 704 | 0.4+ | 0.6+ | 2003 12 04 | 704 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.8− | 0.1+ |
| 2001 01 21 | 704 | (0.5− | 1.6+) | 2003 12 04 | 704 | 0.5+ | 0.9− | 2006 08 28 | 703 | 0.7− | 0.5+ |
| 2001 02 19 | 704 | 0.4+ | 0.1+ | 2003 12 04 | 704 | 0.5+ | 0.2− | 2006 08 28 | 699 | 0.2+ | 0.3+ |
| 2001 02 19 | 704 | 0.1+ | 0.0 | 2003 12 17 | 691 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.4+ | 0.2+ |
| 2001 02 19 | 704 | 0.2+ | 0.3+ | 2003 12 17 | 691 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.1+ | 0.4− |
| 2001 02 19 | 704 | 0.4+ | 0.6+ | 2003 12 17 | 691 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.6+ | 0.5+ |
| 2001 02 19 | 704 | 0.9+ | 0.5+ | 2003 12 18 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 704 | 0.2− | 0.8+ |
| 2001 02 22 | 704 | 0.4− | 0.5+ | 2003 12 18 | 704 | 0.6− | 0.1− | 2006 08 29 | 704 | 0.5− | 0.3+ |
| 2001 02 22 | 704 | 0.6+ | 0.1+ | 2003 12 18 | 704 | 0.0 | 0.2− | 2006 08 29 | 704 | 0.3− | 0.3+ |
| 2001 02 22 | 704 | 0.4+ | 0.4+ | 2003 12 18 | 704 | 0.7− | 0.4− | 2006 08 29 | 704 | 0.1+ | 0.4+ |
| 2001 02 22 | 704 | 0.3+ | 0.2− | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 08 30 | 844 | 0.4− | 0.0 |
| 2001 02 22 | 704 | 1.2− | 0.4+ | 2003 12 29 | 691 | 0.0 | 0.1− | 2006 08 30 | 844 | 0.4− | 0.3+ |
| 2001 02 27 | 106 | 0.5+ | 0.5+ | 2003 12 29 | 704 | 0.2− | 0.7+ | 2006 08 30 | 844 | 0.2− | 0.1+ |
| 2001 02 27 | 106 | 0.1+ | 0.8+ | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 08 30 | 844 | 0.5− | 0.7− |
| 2001 02 27 | 106 | 0.7+ | 1.3+ | 2003 12 29 | 704 | 0.3− | 0.2− | 2006 08 30 | 844 | 1.1+ | 0.5+ |
| 2001 03 18 | 704 | (0.1− | 1.9+) | 2003 12 29 | 704 | 0.9− | 0.2+ | 2006 08 30 | 704 | 0.8− | 0.3+ |
| 2001 03 18 | 704 | 0.0 | 0.9+ | 2003 12 29 | 704 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.1+ | 1.3+ |
| 2001 03 18 | 704 | 0.7+ | 1.1+ | 2004 02 09 | 644 | 0.3− | 0.7+ | 2006 08 30 | 704 | 0.9+ | 1.1+ |
| 2001 03 24 | 608 | 0.3− | 1.0+ | 2004 02 09 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2001 03 24 | 608 | 0.3+ | 0.6+ | 2004 02 09 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | (1.8− | 0.1−) |
| 2001 03 24 | 608 | 0.1+ | 0.7+ | 2005 04 02 | E12 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.3+ |
| 2001 03 29 | 699 | 0.9+ | 0.1+ | 2005 04 02 | E12 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.3+ |
| 2001 03 29 | 699 | 1.0+ | 1.2+ | 2005 04 02 | E12 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.2− |
| 2001 03 29 | 699 | 0.1+ | 0.5− | 2005 04 02 | E12 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.6− | 0.3− |
| 2001 03 29 | 699 | 0.2+ | 0.3+ | 2005 04 15 | 703 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.6− | 0.4− |
| 2003 10 23 | 704 | 1.2+ | 0.4− | 2005 04 15 | 703 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.4− |
| 2003 10 23 | 704 | 0.5+ | 0.3+ | 2005 04 15 | 703 | 0.3+ | 0.2− | 2006 09 18 | 291 | 0.3− | 0.6+ |
| 2003 10 23 | 704 | 0.2+ | 0.8+ | 2005 04 15 | 703 | 0.7− | 0.5+ | 2006 09 18 | 291 | 0.1− | 0.8+ |
| 2003 10 23 | 704 | 0.9+ | 1.4− | 2005 05 09 | 703 | 0.2− | 0.3− | 2006 09 18 | 291 | 0.2− | 0.6+ |
| 2003 10 30 | 704 | (0.3+ | 6.5−) | 2005 05 09 | 703 | 0.2+ | 1.1− | 2006 09 24 | 699 | 0.0 | 0.5+ |
| 2003 10 30 | 704 | 0.3+ | 0.8− | 2005 05 09 | 703 | 0.0 | 0.9− | 2006 09 24 | 699 | 0.3− | 0.2+ |
| 2003 10 30 | 704 | 0.8+ | 0.9− | 2005 05 09 | 703 | 0.0 | 0.3+ | 2006 09 24 | 699 | 0.6− | 0.2+ |
| 2003 10 30 | 704 | 0.0 | 1.1− | 2005 05 09 | E12 | 0.7+ | 0.0 | 2006 09 24 | 699 | 0.1+ | 0.5+ |
| 2003 11 14 | 644 | 0.2− | 0.1+ | 2005 05 09 | E12 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.2− |
| 2003 11 14 | 644 | 0.0 | 0.1+ | 2005 05 09 | E12 | 0.1− | 0.9+ | 2006 09 25 | 699 | (1.7+ | 0.6−) |
| 2003 11 14 | 644 | 0.2+ | 0.0 | 2005 05 09 | E12 | 0.2+ | 0.1− | 2006 09 25 | 704 | 1.4− | 0.1+ |
| 2003 11 19 | 644 | 0.3+ | 0.4+ | 2006 08 01 | A50 | 0.6+ | 0.7+ | 2006 09 25 | 699 | 0.8+ | 0.3+ |
| 2003 11 19 | 704 | 0.7− | 0.6+ | 2006 08 01 | A50 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.2+ |
| 2003 11 19 | 644 | 0.2+ | 0.5+ | 2006 08 14 | 644 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.7− | 0.5− |
| 2003 11 19 | 704 | 0.7− | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.1+ |
| 2003 11 19 | 704 | 0.4− | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2003 11 19 | 704 | 0.5− | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2003 11 19 | 704 | 0.6− | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2003 11 19 | 644 | 0.5− | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.4− |
| 2003 11 20 | 691 | 0.1− | 0.1− | 2006 08 21 | 704 | 0.3+ | 0.8+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2003 11 20 | 691 | 0.1+ | 0.1− | 2006 08 21 | 704 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2003 11 20 | 691 | 0.0 | 0.1− | 2006 08 21 | 704 | 0.1− | 0.7− | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2003 11 21 | A35 | 0.4+ | 0.3+ | 2006 08 21 | 704 | 0.8+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.1− |

**(139023)∗ 2001 DU$_{65}$ = 1998 KG$_{27}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17561)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.17004 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28792805 | $\omega$ | 78.42445 | | −0.20396891 | | +0.97897734 |
| $a$ | 2.2713291 | $\Omega$ | 179.80605 | | −0.92024402 | | −0.19166008 |
| $e$ | 0.1580977 | $i$ | 3.48932 | | −0.33398747 | | −0.06978376 |
| $P$ | 3.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 704 | 0.7+ | 0.8− | 2002 09 05 | 704 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.1− | 1.2+ |
| 1998 05 22 | 704 | 1.2− | 1.0+ | 2002 09 05 | 704 | (0.5+ | 1.6+) | 2002 10 03 | 704 | 0.7− | 1.0+ |
| 1998 05 22 | 704 | 0.9+ | 1.5− | 2002 09 05 | 645 | 0.2+ | 0.0 | 2002 10 03 | 704 | 0.3− | 0.7+ |
| 1998 05 22 | 704 | 1.4− | 1.3+ | 2002 09 05 | 645 | 0.2+ | 0.0 | 2002 10 03 | 704 | 0.2+ | 0.9+ |
| 1998 05 22 | 699 | 0.8+ | 0.1+ | 2002 09 05 | 704 | 0.2+ | 0.2− | 2003 12 27 | 704 | 0.6+ | 0.3+ |
| 1998 05 22 | 699 | 0.9− | 0.3+ | 2002 09 05 | 608 | 0.0 | 0.3+ | 2003 12 27 | 704 | 0.3− | 0.5+ |
| 1998 05 22 | 699 | 0.3+ | 1.3+ | 2002 09 05 | 608 | 0.3− | 0.2+ | 2003 12 27 | 704 | (0.8+ | 1.6+) |
| 1998 05 24 | 704 | 1.4+ | 1.8− | 2002 09 05 | 608 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− |
| 1998 05 24 | 704 | 0.6− | 0.7+ | 2002 09 07 | 704 | 0.6+ | 0.5+ | 2006 09 28 | G96 | 0.7− | 0.1+ |
| 1998 05 24 | 704 | 0.2+ | 0.2+ | 2002 09 07 | 704 | 0.5− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 1998 05 24 | 704 | (2.7− | 1.8+) | 2002 09 07 | 704 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.5− | 0.2− |
| 1998 05 24 | 704 | 0.3+ | 1.2+ | 2002 09 07 | 704 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 2001 02 19 | 704 | 0.2− | 0.1+ | 2002 09 07 | 704 | 0.5− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.7− |
| 2001 02 19 | 704 | 0.3− | 0.7+ | 2002 09 11 | 608 | 0.2− | 1.0− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2001 02 19 | 704 | 0.3− | 0.2− | 2002 09 11 | 608 | 0.2− | 1.0− | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 02 19 | 704 | 0.1+ | 0.4− | 2002 09 11 | 608 | 0.5+ | 0.8− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 02 19 | 704 | 0.4+ | 1.0+ | 2002 09 13 | 644 | 0.4− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2001 02 22 | 704 | 0.2+ | 0.5+ | 2002 09 13 | 644 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 02 22 | 704 | 0.2− | 0.4− | 2002 09 13 | 644 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.3+ |
| 2001 02 22 | 704 | 0.6− | 0.0 | 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2001 02 22 | 704 | 1.2+ | 0.7+ | 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 03 14 | 699 | 0.3+ | 1.4+ | 2002 09 14 | 644 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 03 14 | 699 | (1.4+ | 1.8+) | 2002 09 17 | 608 | (2.0− | 1.3−) | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2001 03 14 | 699 | (1.9− | 1.4+) | 2002 09 17 | 608 | (1.6− | 1.2−) | 2006 11 20 | 691 | 0.5+ | 0.3+ |
| 2001 03 14 | 699 | 0.6+ | 0.9+ | 2002 09 17 | 608 | 1.3− | 1.2− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2002 08 14 | 699 | 0.0 | 0.7+ | 2002 09 27 | 699 | 0.1− | 0.0 | 2006 11 24 | 691 | 1.7− | 1.1− |
| 2002 08 14 | 699 | 0.1+ | 0.6+ | 2002 09 27 | 699 | 1.1− | 0.9+ | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2002 08 14 | 699 | 0.1− | 0.5− | 2002 09 27 | 699 | 0.9− | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.3+ |
| 2002 08 14 | 699 | 0.4+ | 0.3− | 2002 09 27 | 699 | 0.7− | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2002 09 04 | 699 | 0.4− | 0.2+ | 2002 10 01 | 699 | 0.8− | 0.2+ | 2006 11 29 | 704 | 0.9+ | 0.3+ |
| 2002 09 04 | 699 | 0.3− | 0.0 | 2002 10 01 | 699 | 0.4− | 0.3− | 2006 11 29 | 704 | 0.7+ | 0.9+ |
| 2002 09 04 | 699 | (1.5+ | 0.8+) | 2002 10 01 | 699 | 0.7− | 0.6+ | 2006 11 29 | 704 | 0.4+ | 2.2− |
| 2002 09 04 | 699 | 0.9− | 0.1+ | 2002 10 01 | 699 | 1.1− | 0.1− | | | | |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2002 10 03 | 704 | 0.6+ | 0.3− | | | | |

**(139024)∗ 2001 DF$_{71}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.21449 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28364288 | $\omega$ | 230.52589 | | −0.75834384 | | −0.65132733 |
| $a$ | 2.2941481 | $\Omega$ | 268.81585 | | +0.60582821 | | −0.68938340 |
| $e$ | 0.1693670 | $i$ | 1.50261 | | +0.24059676 | | −0.31705398 |
| $P$ | 3.47 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.3+ | 0.6− | 2001 03 29 | 691 | 0.3+ | 0.5+ | 2003 12 19 | 704 | 0.7− | 0.7+ |
| 1999 10 10 | 691 | 0.1− | 0.2− | 2001 04 01 | 704 | 0.6− | 0.6− | 2003 12 19 | 691 | 0.1− | 0.3+ |
| 1999 10 10 | 691 | 0.1+ | 0.0 | 2001 04 01 | 704 | 0.5+ | 0.4− | 2003 12 21 | 704 | 0.9+ | 1.0− |
| 2001 02 19 | 704 | 0.1+ | 0.7− | 2001 04 01 | 704 | 0.3− | 0.5+ | 2003 12 21 | 704 | 0.9+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.3+ | 0.5+ | 2003 10 26 | 691 | (1.7+ | 0.5−) | 2003 12 21 | 704 | 1.2+ | 0.7− |
| 2001 02 19 | 704 | 0.6+ | 0.1+ | 2003 10 26 | 691 | 0.5+ | 0.4− | 2003 12 21 | 704 | 0.7+ | 0.4+ |
| 2001 02 19 | 704 | 0.8− | 0.4+ | 2003 10 26 | 691 | 0.4− | 0.8− | 2003 12 21 | 704 | 0.4+ | 0.5− |
| 2001 02 19 | 704 | 0.6+ | 0.3− | 2003 10 27 | 691 | 0.0 | 0.3− | 2003 12 23 | 704 | 0.1− | 0.0 |
| 2001 02 22 | 704 | 0.4+ | 0.1+ | 2003 10 27 | 691 | 0.1+ | 0.1− | 2003 12 23 | 704 | 0.6+ | 1.0+ |
| 2001 02 22 | 704 | 0.0 | 0.4+ | 2003 10 27 | 691 | 0.2− | 0.1− | 2003 12 23 | 704 | 0.3− | 0.9+ |
| 2001 02 22 | 704 | 0.3+ | 0.2+ | 2003 11 21 | 704 | 0.0 | 0.4+ | 2003 12 23 | 704 | 0.1+ | 0.7+ |
| 2001 02 22 | 704 | (0.1+ | 1.7+) | 2003 11 21 | 704 | 0.1+ | 0.7+ | 2003 12 23 | 704 | 0.5− | 0.1+ |
| 2001 02 22 | 704 | 0.2− | 0.8+ | 2003 11 21 | 704 | 0.3+ | 0.6+ | 2003 12 23 | 704 | 0.2+ | 0.6− |
| 2001 03 18 | 704 | (1.8− | 0.0 ) | 2003 11 21 | 704 | 0.6− | 0.0 | 2003 12 23 | 704 | 0.3+ | 0.3+ |
| 2001 03 18 | 704 | 0.7+ | 0.3− | 2003 11 23 | 704 | (1.6− | 0.1−) | 2003 12 23 | 704 | 0.7− | 0.3+ |
| 2001 03 18 | 699 | 1.0+ | 0.0 | 2003 11 23 | 704 | 0.2+ | 0.0 | 2006 08 21 | 691 | 0.0 | 0.6+ |
| 2001 03 18 | 704 | 0.3+ | 0.1− | 2003 11 23 | 704 | 0.7− | 0.9− | 2006 08 21 | 691 | 0.0 | 0.9+ |
| 2001 03 18 | 704 | 0.2− | 0.4− | 2003 11 23 | 704 | 0.1+ | 0.1+ | 2006 08 21 | 691 | 0.2− | 0.4+ |
| 2001 03 18 | 699 | 1.2+ | 0.6+ | 2003 11 24 | 699 | 0.9+ | 0.3+ | 2006 09 17 | 703 | 0.8− | 0.2− |
| 2001 03 18 | 699 | 0.3+ | 0.6+ | 2003 11 24 | 699 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.0 | 0.1+ |
| 2001 03 18 | 699 | 0.2− | 0.9+ | 2003 11 24 | 699 | 0.4+ | 0.9+ | 2006 09 17 | 703 | 0.6− | 0.2− |
| 2001 03 19 | 704 | 1.0+ | 0.0 | 2003 11 24 | 699 | 0.5− | 0.6+ | 2006 09 17 | 703 | 0.8− | 0.4− |
| 2001 03 19 | 704 | 0.7− | 0.7+ | 2003 12 17 | 699 | 1.2− | 1.2− | 2006 09 28 | 691 | 0.3− | 0.9+ |
| 2001 03 19 | 704 | 0.7− | 0.6+ | 2003 12 17 | 699 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2001 03 19 | 704 | 0.1+ | 0.6− | 2003 12 17 | 699 | 0.1− | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.6+ |
| 2001 03 19 | 704 | 1.0+ | 0.3− | 2003 12 17 | 699 | 0.5− | 0.2− | 2006 10 23 | G96 | 0.4− | 0.0 |
| 2001 03 21 | 608 | 0.6− | 0.3− | 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2001 03 21 | 608 | 1.1− | 0.0 | 2003 12 19 | 704 | (1.8− | 0.2−) | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2001 03 21 | 608 | 1.0− | 0.1− | 2003 12 19 | 704 | 1.5− | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2001 03 29 | 691 | 0.0 | 0.2+ | 2003 12 19 | 704 | 0.5− | 0.0 | | | | |
| 2001 03 29 | 691 | 0.0 | 0.5+ | 2003 12 19 | 691 | 0.1+ | 0.2+ | | | | |

**(139025)∗ 2001 DR$_{71}$ = 2002 RN$_{72}$**

Discovered 2001 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35020)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.92577 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27280284 | $\omega$ | 59.09194 | | −0.80338040 | +0.59401527 |
| $a$ | 2.3545258 | $\Omega$ | 157.26863 | | −0.57642656 | −0.75829738 |
| $e$ | 0.1365769 | $i$ | 6.17175 | | −0.14937323 | −0.26857203 |
| $P$ | 3.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.2− | 0.0 | 2001 03 29 | 699 | 0.7+ | 1.0+ | 2005 06 09 | 703 | 0.7− | 0.6− |
| 2000 12 23 | 645 | 0.2− | 0.0 | 2001 04 16 | 699 | 0.4+ | 0.5+ | 2005 06 09 | 703 | 0.9− | 0.5− |
| 2001 02 19 | 704 | 0.3− | 0.5+ | 2001 04 16 | 699 | 1.4+ | 0.4+ | 2005 06 09 | 703 | 0.6− | 0.1− |
| 2001 02 19 | 704 | 0.4+ | 0.1− | 2001 04 16 | 699 | 0.3+ | 0.7+ | 2005 06 10 | 704 | 0.2+ | 0.4+ |
| 2001 02 19 | 704 | 0.1− | 0.5+ | 2001 04 16 | 699 | 0.2+ | 0.6+ | 2005 06 10 | 704 | 0.0 | 0.7− |
| 2001 02 19 | 704 | 0.5− | 0.4+ | 2002 09 05 | 704 | (0.8− | 1.9+) | 2005 06 10 | 704 | 0.3− | 0.2− |
| 2001 02 19 | 704 | 0.2+ | 0.7− | 2002 09 05 | 704 | 0.1− | 1.1+ | 2005 06 10 | 704 | 0.7+ | 0.1+ |
| 2001 02 22 | 704 | 0.1+ | 0.1− | 2002 09 05 | 704 | 0.0 | 0.3− | 2005 06 13 | 691 | 0.0 | 0.2+ |
| 2001 02 22 | 704 | 0.2− | 0.1− | 2002 09 07 | 704 | 0.1− | 0.4+ | 2005 06 13 | 691 | 0.8− | 0.3+ |
| 2001 02 22 | 704 | 0.1+ | 0.8+ | 2002 09 07 | 704 | 0.5− | 0.2+ | 2005 06 13 | 691 | 0.1+ | 0.1+ |
| 2001 02 22 | 704 | 0.6+ | 0.3+ | 2002 09 07 | 704 | (0.2− | 1.7+) | 2005 06 17 | 691 | 0.1− | 0.1+ |
| 2001 02 22 | 691 | 0.3− | 0.1+ | 2002 09 08 | 608 | 0.2+ | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.1+ |
| 2001 02 22 | 704 | 0.1+ | 0.4+ | 2002 09 08 | 608 | 0.6− | 1.1+ | 2005 06 17 | 691 | 0.1− | 0.0 |
| 2001 02 22 | 691 | 0.3− | 0.2+ | 2002 09 08 | 608 | 0.5− | 0.6+ | 2005 06 28 | 644 | 0.2+ | 0.0 |
| 2001 02 22 | 691 | 0.3− | 0.2+ | 2002 09 16 | 644 | 0.5− | 0.1− | 2005 06 28 | 644 | 0.2+ | 0.1+ |
| 2001 02 27 | 691 | 0.2+ | 0.3+ | 2002 09 16 | 644 | 0.7− | 0.2+ | 2005 06 28 | 644 | 0.1+ | 0.2+ |
| 2001 02 27 | 691 | 0.2+ | 0.3+ | 2002 09 16 | 644 | 0.7+ | 0.1+ | 2005 06 28 | 644 | 0.0 | 0.2+ |
| 2001 02 27 | 691 | 0.2+ | 0.2+ | 2005 05 09 | 703 | 0.0 | 0.5− | 2005 06 28 | 644 | 0.1+ | 0.2− |
| 2001 03 02 | 699 | 0.7+ | 0.2+ | 2005 05 09 | 703 | 0.3− | 0.4− | 2005 06 28 | 644 | 0.0 | 0.1− |
| 2001 03 02 | 699 | 0.6+ | 0.9− | 2005 05 09 | 703 | 0.7− | 0.8− | 2005 07 01 | 691 | 0.2+ | 0.2+ |
| 2001 03 02 | 699 | 0.9+ | 0.2− | 2005 05 09 | 703 | 0.1+ | 0.5− | 2005 07 01 | 691 | 0.7+ | 0.0 |
| 2001 03 02 | 699 | 0.6+ | 0.3+ | 2005 05 16 | 704 | 0.2− | 0.3− | 2005 07 01 | 691 | 0.9+ | 0.2+ |
| 2001 03 15 | 608 | 0.8+ | 0.2− | 2005 05 16 | 704 | 0.4+ | 0.2− | 2006 09 17 | 691 | 0.0 | 0.6+ |
| 2001 03 15 | 608 | 0.9+ | 0.1− | 2005 05 16 | 704 | 0.7− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.5+ |
| 2001 03 15 | 608 | 0.6+ | 0.2+ | 2005 05 16 | 704 | 0.8+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.4+ |
| 2001 03 18 | 704 | 0.5+ | 0.1− | 2005 06 01 | G96 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.9− |
| 2001 03 18 | 704 | 0.2− | 0.4+ | 2005 06 01 | G96 | 0.3− | 0.0 | 2006 09 30 | 703 | (2.9− | 0.1+) |
| 2001 03 18 | 699 | 0.0 | 0.3+ | 2005 06 01 | G96 | 0.5− | 0.1− | 2006 09 30 | 703 | (2.4− | 1.4+) |
| 2001 03 18 | 704 | 0.7+ | 0.3+ | 2005 06 01 | G96 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.3− | 1.2+ |
| 2001 03 18 | 704 | 0.3− | 0.6+ | 2005 06 02 | 703 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.8+ |
| 2001 03 18 | 699 | 0.2− | 0.1+ | 2005 06 02 | 703 | (1.2− | 2.7−) | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 2001 03 18 | 699 | 0.3− | 0.2− | 2005 06 02 | 703 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.4− | 0.9+ |
| 2001 03 18 | 699 | 0.3+ | 0.1+ | 2005 06 02 | 703 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.8+ | 0.2+ |
| 2001 03 26 | 704 | 0.7+ | 0.3− | 2005 06 03 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.4+ |
| 2001 03 26 | 704 | 0.1− | 0.2+ | 2005 06 03 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.9+ |
| 2001 03 26 | 704 | 0.0 | 0.1+ | 2005 06 03 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | (1.9− | 0.2−) |
| 2001 03 26 | 704 | 1.1+ | 0.6+ | 2005 06 03 | E12 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 03 26 | 704 | 0.1− | 0.5− | 2005 06 03 | E12 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.8+ |
| 2001 03 26 | 608 | 0.4− | 0.6+ | 2005 06 03 | E12 | 0.7− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2001 03 26 | 608 | 0.6− | 0.5+ | 2005 06 03 | E12 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.7+ |
| 2001 03 26 | 608 | 0.1− | 0.4+ | 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 1.8− | 0.3+ |
| 2001 03 29 | 699 | 0.1− | 0.2− | 2005 06 08 | 691 | 0.4+ | 0.6− | 2006 10 22 | 703 | 1.2− | 0.7+ |
| 2001 03 29 | 699 | 0.6+ | 0.9+ | 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2001 03 29 | 699 | 1.2+ | 0.0 | 2005 06 09 | 703 | 0.4− | 0.0 | | | | |

**(139026)∗ 2001 DB$_{75}$ = 1998 KT$_{27}$**

Discovered 2001 Feb. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 10813)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.29284 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28626314 | $\omega$ | 350.22602 | | −0.65278935 | +0.75726328 |
| $a$ | 2.2801273 | $\Omega$ | 239.01861 | | −0.69340788 | −0.60818047 |
| $e$ | 0.1861298 | $i$ | 1.36709 | | −0.30504356 | −0.23805217 |
| $P$ | 3.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 16 | 691 | 0.2− | 0.3− | 2001 02 16 | 699 | 0.4− | 1.4+ | 2003 12 19 | 704 | 0.2− | 1.0+ |
| 1994 01 16 | 691 | 0.3+ | 0.7− | 2001 02 16 | 699 | 0.2+ | 1.0+ | 2003 12 19 | 704 | 0.5+ | 0.5+ |
| 1994 01 16 | 691 | 0.0 | 0.3− | 2001 02 16 | 106 | (0.5+ | 2.2+) | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 1994 02 06 | 691 | 0.1− | 0.3− | 2001 02 16 | 106 | 0.3+ | 1.2+ | 2006 09 27 | G96 | 0.7+ | 0.2− |
| 1994 02 06 | 691 | 0.1− | 0.4− | 2001 02 16 | 106 | 0.0 | 0.4− | 2006 09 27 | G96 | 0.4+ | 0.5− |
| 1994 02 06 | 691 | 0.1+ | 0.5− | 2001 02 20 | 704 | 0.0 | 0.3+ | 2006 09 27 | G96 | (1.9− | 0.2−) |
| 1998 05 05 | 699 | 0.1− | 0.8− | 2001 02 20 | 704 | 0.2+ | 0.1− | 2006 10 12 | 691 | 0.4+ | 0.2− |
| 1998 05 05 | 699 | 0.7− | 0.3+ | 2001 02 20 | 704 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.0 |
| 1998 05 05 | 699 | 0.8− | 0.4+ | 2001 02 20 | 704 | 0.6+ | 0.4− | 2006 10 12 | 691 | 0.3+ | 0.0 |
| 1998 05 22 | 704 | 0.8+ | 0.4− | 2001 02 22 | 704 | (0.2+ | 1.7+) | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 1998 05 22 | 704 | 0.6− | 0.3+ | 2001 02 22 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 1998 05 22 | 704 | 0.2+ | 0.8− | 2001 02 22 | 704 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 1998 05 24 | 704 | 0.2− | 0.9− | 2001 02 22 | 704 | 0.6+ | 0.9+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 1998 05 24 | 704 | 0.4− | 0.3+ | 2001 03 20 | 699 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1− |
| 1998 05 24 | 704 | 0.3+ | 0.9− | 2001 03 20 | 699 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1998 05 24 | 704 | 0.0 | 0.9− | 2001 03 20 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 1999 10 13 | 645 | 0.0 | 0.3− | 2001 03 20 | 699 | 1.1− | 1.1+ | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 1999 10 13 | 645 | 0.0 | 0.2− | 2002 08 28 | 644 | 0.0 | 1.0+ | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 1999 10 20 | 691 | 0.0 | 0.2− | 2002 08 28 | 644 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 1999 10 20 | 691 | 0.2+ | 0.4− | 2002 08 28 | 644 | 0.1− | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 1999 10 20 | 691 | 0.2+ | 0.5− | 2002 09 05 | 704 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.9+ |
| 2001 01 21 | 704 | 0.7− | 1.0+ | 2002 09 05 | 704 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2001 01 21 | 704 | 0.2+ | 0.5+ | 2002 09 05 | 704 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2001 01 21 | 704 | 0.4+ | 0.2+ | 2002 09 05 | 704 | 0.4+ | 0.8+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 01 21 | 704 | 0.1+ | 0.1+ | 2002 09 05 | 704 | (0.5+ | 1.9+) | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2001 02 02 | 704 | (2.0− | 0.1−) | 2002 09 14 | 644 | 0.6− | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 02 02 | 704 | 0.4+ | 0.5− | 2002 09 14 | 644 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2001 02 02 | 704 | 0.2+ | 0.9+ | 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.2+ |
| 2001 02 02 | 704 | (0.7+ | 1.5+) | 2003 12 19 | 704 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2001 02 16 | 699 | (0.1+ | 2.6+) | 2003 12 19 | 704 | 1.4− | 0.3− | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2001 02 16 | 699 | 0.7+ | 0.7+ | 2003 12 19 | 704 | 0.3+ | 0.6+ | 2006 11 27 | G96 | 0.6+ | 0.4− |

**(139027)∗ 2001 DS$_{83}$ = 1994 LC$_{6}$**

Discovered 2001 Feb. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 11910)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.53548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26719878 | $\omega$ | 160.92297 | | −0.39394116 | +0.91863834 | |
| $a$ | 2.3873334 | $\Omega$ | 85.86774 | | −0.84718215 | −0.35014796 | |
| $e$ | 0.1780753 | $i$ | 1.73694 | | −0.35650072 | −0.18303007 | |
| $P$ | 3.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 03 | 809 | 1.3+ | 0.4+ | 2005 05 04 | 704 | 1.4+ | 0.4− | 2005 06 27 | 644 | 0.1+ | 0.5+ |
| 1994 06 03 | 809 | 1.0+ | 1.7+ | 2005 05 04 | 704 | 0.6+ | 0.5+ | 2005 06 27 | 644 | 0.2− | 0.1+ |
| 1994 06 03 | 809 | (1.8+ | 2.2+) | 2005 05 04 | 704 | (1.7+ | 0.3−) | 2005 06 27 | 644 | 0.3− | 0.2+ |
| 1994 06 04 | 809 | 1.1− | 0.1+ | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.5+ |
| 1994 06 04 | 809 | 1.0− | 0.9− | 2005 05 08 | G96 | 0.9− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.1+ |
| 1994 06 04 | 809 | 0.0 | 0.2+ | 2005 05 08 | G96 | 0.7+ | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2001 02 20 | 645 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 09 30 | G96 | 0.8+ | 0.2+ |
| 2001 02 20 | 645 | 0.1− | 0.1− | 2005 05 09 | 704 | 1.0+ | 0.5+ | 2006 10 11 | 691 | 0.4+ | 0.2+ |
| 2001 02 23 | 691 | 0.4+ | 0.3+ | 2005 05 09 | 704 | 0.1− | 0.7+ | 2006 10 11 | 691 | 0.3− | 0.6+ |
| 2001 02 23 | 691 | 0.2+ | 0.4+ | 2005 05 09 | 704 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.7− | 0.6+ |
| 2001 02 23 | 691 | 0.2+ | 0.1+ | 2005 05 09 | 704 | 0.6− | 0.9− | 2006 10 19 | 691 | 0.0 | 0.6+ |
| 2001 02 27 | 691 | 0.0 | 0.8+ | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.4+ |
| 2001 02 27 | 691 | 0.1− | 0.7+ | 2005 05 19 | 644 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 02 27 | 691 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.5− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2001 03 03 | 704 | 1.2+ | 1.3+ | 2005 05 30 | 699 | 1.4+ | 1.0+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2001 03 03 | 704 | 0.7+ | 0.2+ | 2005 05 30 | 699 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.7− | 0.1+ |
| 2001 03 03 | 704 | 0.4+ | 0.0 | 2005 05 30 | 699 | 1.4+ | 0.9+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2001 03 03 | 704 | 0.2− | 0.6+ | 2005 05 30 | 699 | 1.3+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2001 03 18 | 608 | 0.2− | 1.4− | 2005 06 10 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2001 03 18 | 608 | 0.3+ | 1.0− | 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2001 03 18 | 608 | 0.3+ | 1.1− | 2005 06 10 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.6+ |
| 2001 03 19 | 704 | 1.0+ | 0.9+ | 2005 06 23 | 644 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2001 03 19 | 704 | 1.0+ | 0.9+ | 2005 06 23 | 644 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2001 03 19 | 704 | (1.9+ | 0.3+) | 2005 06 23 | 644 | 0.7− | 0.1+ | | | | |

**(139028)∗ 2001 DL$_{89}$**

Discovered 2001 Feb. 28 at University of Szeged, Piszkéstető Stn. (Konkoly).

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.91457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28972315 | $\omega$ | 103.17717 | | −0.84158022 | −0.53461859 | |
| $a$ | 2.2619374 | $\Omega$ | 44.57021 | | +0.44329379 | −0.76507209 | |
| $e$ | 0.0727158 | $i$ | 6.29745 | | +0.30859902 | −0.35895357 | |
| $P$ | 3.40 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 03 | 704 | 0.9+ | 0.1+ | 2002 06 20 | 644 | 0.2− | 0.8+ | 2006 09 17 | 691 | 0.2− | 0.6+ |
| 2001 02 03 | 704 | 0.9+ | 0.9+ | 2002 07 15 | 644 | (1.8− | 0.1−) | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2001 02 03 | 704 | 0.2+ | 1.0+ | 2002 07 15 | 644 | (2.3− | 1.3−) | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2001 02 16 | 704 | 0.2+ | 0.3− | 2002 07 15 | 644 | (2.3− | 0.2−) | 2006 09 23 | 461 | 0.2− | 0.1+ |
| 2001 02 16 | 704 | 0.0 | 0.3+ | 2002 07 16 | 644 | 0.2− | 0.6+ | 2006 09 23 | 461 | 0.1− | 0.2+ |
| 2001 02 16 | 704 | 0.5+ | 0.2− | 2002 07 16 | 644 | 0.5+ | 0.5+ | 2006 09 23 | 461 | 0.1+ | 0.1+ |
| 2001 02 16 | 704 | 0.2+ | 0.3+ | 2002 07 16 | 644 | 0.4− | 1.4+ | 2006 09 24 | 461 | 0.0 | 0.3+ |
| 2001 02 16 | 704 | 1.1+ | 0.4+ | 2002 07 28 | 644 | 0.8− | 0.4− | 2006 09 24 | 461 | 0.0 | 0.5+ |
| 2001 02 28 | 461 | 0.4+ | 0.2− | 2002 07 28 | 644 | 0.4+ | 0.7+ | 2006 09 24 | 461 | 0.2+ | 0.4+ |
| 2001 02 28 | 461 | 0.2− | 0.2+ | 2003 11 03 | 461 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2001 02 28 | 461 | 0.8− | 0.2+ | 2003 11 03 | 461 | 0.4− | 0.2+ | 2006 09 27 | 691 | 1.2− | 0.5− |
| 2001 03 04 | 704 | 1.2+ | 0.6+ | 2003 11 03 | 461 | 0.6+ | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 03 04 | 704 | 0.4+ | 0.5+ | 2003 11 05 | 461 | 0.7+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2001 03 04 | 704 | 0.2− | 0.4− | 2003 11 05 | 461 | 0.9+ | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 03 04 | 704 | 0.1+ | 0.2− | 2003 11 05 | 461 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 03 14 | 699 | 0.5− | 1.1+ | 2003 11 24 | 704 | 0.1− | 0.5− | 2006 10 12 | 461 | 0.6+ | 0.0 |
| 2001 03 14 | 699 | 0.5− | 0.2− | 2003 11 24 | 704 | 0.1− | 0.5+ | 2006 10 12 | 461 | 0.5+ | 0.2+ |
| 2001 03 14 | 699 | 0.6+ | 1.0+ | 2003 11 24 | 704 | 0.5+ | 0.1− | 2006 10 12 | 461 | 0.0 | 0.4+ |
| 2001 03 14 | 699 | 0.4− | 0.6+ | 2003 12 18 | 704 | (1.5− | 0.1+) | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 03 18 | 608 | 0.2− | 0.3+ | 2003 12 18 | 704 | 1.5− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 03 18 | 608 | 0.0 | 0.1+ | 2003 12 18 | 704 | 0.9− | 0.9+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 03 18 | 608 | 1.4− | 0.8+ | 2003 12 23 | 704 | (3.1+ | 0.4+) | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 06 06 | 608 | (0.8− | 2.1+) | 2003 12 23 | 704 | 0.1+ | 0.7− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2002 06 14 | 608 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.6+ | 0.5− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2002 06 20 | 644 | 0.7− | 0.6+ | 2003 12 23 | 704 | (1.5+ | 1.5−) | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 06 20 | 644 | 0.3− | 0.5+ | 2003 12 23 | 704 | 0.8+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.3− |

**(139029)∗ 2001 DO$_{91}$ = 2003 WT$_{81}$**

Discovered 2001 Feb. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 56217)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.75144 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27846491 | $\omega$ | 249.36470 | | +0.27340854 | −0.96189116 | |
| $a$ | 2.3225001 | $\Omega$ | 184.77251 | | +0.89796085 | +0.25658535 | |
| $e$ | 0.1478893 | $i$ | 2.49900 | | +0.34483920 | +0.09449523 | |
| $P$ | 3.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.0 | 0.1− | 2003 12 04 | 703 | 0.4− | 0.1+ | 2006 08 16 | A50 | 0.2+ | 1.0+ |
| 2000 12 23 | 645 | 0.1− | 0.1− | 2003 12 04 | 703 | 1.0− | 0.4− | 2006 08 16 | A50 | 0.2− | 0.4− |
| 2001 02 03 | 691 | 0.2+ | 0.1+ | 2003 12 04 | 703 | 0.5− | 0.3− | 2006 08 19 | 699 | (1.8− | 0.1+) |
| 2001 02 03 | 691 | 0.3+ | 0.3+ | 2003 12 10 | 644 | 0.3− | 0.5+ | 2006 08 19 | 699 | 0.8+ | 0.0 |
| 2001 02 03 | 691 | 0.1− | 0.2+ | 2003 12 10 | 644 | 0.2− | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.7+ |
| 2001 02 20 | 691 | 0.4+ | 0.4+ | 2003 12 10 | 644 | 0.3− | 0.0 | 2006 08 19 | 699 | (2.1− | 0.3−) |
| 2001 02 20 | 691 | 0.0 | 0.3+ | 2003 12 11 | 703 | 0.2− | 0.3− | 2006 08 19 | 644 | 0.1− | 0.5+ |
| 2001 02 20 | 691 | 0.2+ | 0.4+ | 2003 12 11 | 703 | 0.1− | 0.5− | 2006 08 19 | 644 | 0.3− | 0.2+ |
| 2001 02 22 | 704 | 0.1+ | 0.7+ | 2003 12 11 | 703 | 0.3− | 1.0+ | 2006 08 19 | 699 | 1.1− | 0.7+ |
| 2001 02 22 | 704 | 0.4− | 0.8+ | 2003 12 11 | 703 | 0.5+ | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.5+ |
| 2001 02 22 | 704 | 1.0+ | 0.8+ | 2003 12 17 | 703 | 0.1+ | 0.8+ | 2006 08 28 | 691 | 0.2− | 0.6+ |
| 2001 02 22 | 704 | 0.6− | 0.6+ | 2003 12 17 | 703 | 0.3− | 0.5+ | 2006 08 28 | 699 | 1.4+ | 0.2+ |
| 2001 02 22 | 704 | 0.9+ | 1.2+ | 2003 12 17 | 703 | 1.0− | 0.3− | 2006 08 28 | 691 | 0.1− | 0.5+ |
| 2003 09 29 | 699 | 0.4+ | 0.9+ | 2003 12 17 | 703 | 0.7− | 0.2+ | 2006 08 28 | 699 | 0.1− | 0.3+ |
| 2003 09 29 | 699 | (1.9− | 0.2+) | 2003 12 21 | 704 | 0.5− | 0.4+ | 2006 08 28 | 703 | (1.7− | 0.4+) |
| 2003 09 29 | 699 | 0.4+ | 0.5− | 2003 12 21 | 704 | 1.4+ | 0.1+ | 2006 08 28 | 703 | (0.6+ | 1.8+) |
| 2003 09 29 | 699 | 0.2+ | 0.7− | 2003 12 21 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 699 | 0.8+ | 1.0+ |
| 2003 10 25 | 704 | 0.2+ | 0.5+ | 2003 12 21 | 704 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.4− | 0.4− |
| 2003 10 25 | 704 | 0.6+ | 0.2− | 2003 12 21 | 704 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.7− |
| 2003 10 25 | 704 | 0.2− | 0.0 | 2003 12 23 | 704 | 1.1+ | 0.8− | 2006 08 28 | 699 | (1.6+ | 0.7+) |
| 2003 10 25 | 704 | 0.2+ | 1.0+ | 2003 12 23 | 704 | 0.8+ | 0.8+ | 2006 08 29 | 704 | 0.0 | 1.4+ |
| 2003 11 18 | 644 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.2− | 0.6+ | 2006 08 29 | 704 | 0.4− | 1.1+ |
| 2003 11 18 | 644 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.3+ | 0.7+ | 2006 08 29 | 704 | (0.4+ | 1.9+) |
| 2003 11 18 | 644 | 0.2+ | 0.1− | 2003 12 23 | 704 | 0.3+ | 0.7+ | 2006 08 29 | 704 | 0.1− | 0.2+ |
| 2003 11 22 | 704 | 0.9− | 0.1+ | 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.9− |
| 2003 11 22 | 704 | 0.5− | 0.6− | 2005 04 07 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.6+ |
| 2003 11 22 | 704 | (2.0− | 0.5+) | 2005 04 07 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 1.2− | 0.9+ |
| 2003 11 24 | 699 | 0.7− | 0.0 | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.8− |
| 2003 11 24 | 699 | 0.0 | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2003 11 24 | 699 | 1.0− | 0.2− | 2005 04 16 | 691 | 0.1+ | 0.7+ | 2006 09 26 | G96 | 0.5− | 0.0 |
| 2003 11 24 | 699 | 0.5− | 0.1+ | 2005 05 17 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2003 12 01 | 704 | 0.1+ | 0.5+ | 2005 05 17 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2003 12 01 | 704 | 0.5+ | 0.3+ | 2005 05 17 | G96 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2003 12 01 | 704 | 0.2+ | 0.7+ | 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2003 12 01 | 704 | 0.2+ | 0.5+ | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2003 12 01 | 704 | 0.3+ | 0.3+ | 2005 05 19 | G96 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2003 12 04 | 703 | 0.5+ | 0.5+ | 2005 05 19 | G96 | 0.5− | 0.4+ | | | | |

**(139030)∗ 2001 DE$_{98}$ = 2003 YO$_{8}$**

Discovered 2001 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68909)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.73350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29834143 | $\omega$ | 272.85374 | | −0.95727692 | −0.28093073 | |
| $a$ | 2.2181641 | $\Omega$ | 250.83790 | | +0.28567247 | −0.88196417 | |
| $e$ | 0.1413360 | $i$ | 4.16154 | | +0.04485679 | −0.37844038 | |
| $P$ | 3.30 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 691 | 0.2+ | 1.2+ | 2002 08 13 | 644 | 0.0 | 0.9+ | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 1998 05 24 | 691 | 0.7+ | 0.8+ | 2003 11 20 | 695 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2003 11 20 | 695 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 1999 10 13 | 645 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 1999 10 16 | 645 | 0.1+ | 0.1− | 2003 12 19 | 704 | 0.9+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1999 10 16 | 645 | 0.1+ | 0.1+ | 2003 12 19 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2001 01 26 | 704 | 0.2− | 0.2+ | 2003 12 19 | 704 | 0.4+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 01 26 | 704 | 0.1+ | 0.5+ | 2003 12 21 | 704 | 0.4+ | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 01 26 | 704 | 0.9+ | 0.5+ | 2003 12 21 | 704 | 0.2− | 0.6− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 01 26 | 704 | 0.1− | 0.7+ | 2003 12 21 | 704 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2001 01 26 | 704 | 0.1− | 0.2+ | 2003 12 21 | 704 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2001 02 17 | 704 | 0.7− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 21 | 691 | 0.2+ | 0.3+ |
| 2001 02 17 | 704 | (1.7− | 0.8−) | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2001 02 17 | 704 | 0.8− | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2001 02 17 | 704 | 0.4− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.7+ |
| 2001 02 20 | 608 | 0.0 | 0.8− | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2001 02 20 | 608 | 0.0 | 0.6− | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2001 02 20 | 608 | 0.0 | 0.8− | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 08 13 | 644 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 08 13 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.6− | 0.2− | | | | |

**(139031)∗ 2001 DL$_{102}$ = 1999 TP$_{334}$**

Discovered 2001 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74926)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.39969 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27253718 | $\omega$ | 190.37237 | | −0.78170619 | | +0.62138791 |
| $a$ | 2.3560556 | $\Omega$ | 28.25982 | | −0.56386376 | | −0.66788038 |
| $e$ | 0.1722167 | $i$ | 6.43114 | | −0.26644530 | | −0.40964969 |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.3− | 0.3+ | 2005 03 11 | G96 | 0.6− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 1999 10 10 | 691 | 0.1+ | 0.2+ | 2005 03 11 | G96 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.3− | 0.1+ |
| 1999 10 10 | 691 | 0.2− | 0.4+ | 2005 03 11 | G96 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2001 02 16 | 704 | 0.3+ | 0.2+ | 2005 03 11 | G96 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.6+ |
| 2001 02 16 | 704 | 0.3+ | 0.7+ | 2005 05 11 | 644 | 0.1+ | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 02 16 | 704 | 0.0 | 0.4− | 2005 05 11 | 644 | 0.4+ | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2001 02 16 | 704 | 0.6+ | 0.4− | 2005 05 11 | 644 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2001 02 16 | 704 | 0.3+ | 0.2+ | 2005 05 12 | 644 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 02 19 | 699 | 0.5+ | 0.8+ | 2005 05 12 | 644 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2001 02 19 | 699 | 0.8− | 0.5+ | 2005 05 12 | 644 | 0.4+ | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 02 19 | 699 | 0.7− | 1.0+ | 2005 05 19 | 644 | 0.4+ | 0.7+ | 2006 10 27 | G96 | 0.6− | 0.6+ |
| 2001 02 19 | 699 | 0.6+ | 0.1+ | 2005 05 19 | 644 | 0.3+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 2001 03 14 | 699 | 0.4− | 0.6− | 2005 05 19 | 644 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2001 03 14 | 699 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2001 03 14 | 699 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2001 03 14 | 699 | 0.7+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 03 27 | 608 | 0.1− | 0.4+ | 2006 09 26 | G96 | (2.8− | 0.5−) | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2001 03 27 | 608 | 0.4+ | 0.7+ | 2006 09 27 | G96 | 1.2− | 1.0− | | | | |
| 2001 03 27 | 608 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.6− | 0.3+ | | | | |

**(139032)∗ 2001 DY$_{102}$ = 1998 HC$_{48}$**

Discovered 2001 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.21128 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29766659 | $\omega$ | 41.89491 | | −0.43612345 | | −0.89598387 |
| $a$ | 2.2215154 | $\Omega$ | 74.11721 | | +0.80078505 | | −0.42885472 |
| $e$ | 0.0879670 | $i$ | 4.99359 | | +0.41053580 | | −0.11531059 |
| $P$ | 3.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 15 | 691 | 0.2− | 0.4+ | 2003 12 18 | 704 | 0.9+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.6+ |
| 1991 02 15 | 691 | 0.3+ | 0.1+ | 2003 12 18 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 1991 02 15 | 691 | 0.0 | 0.2− | 2003 12 20 | 704 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 1998 04 20 | 704 | 0.6+ | 1.4− | 2003 12 20 | 704 | 0.7− | 1.0− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 1998 04 20 | 704 | 1.3+ | 0.6− | 2003 12 20 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− |
| 1998 04 20 | 704 | 0.6+ | 0.3+ | 2003 12 20 | 704 | 0.1+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 1998 04 20 | 704 | 1.3− | 0.7+ | 2003 12 20 | 704 | 0.2− | 0.7− | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 1998 04 21 | 704 | 1.5+ | 1.9− | 2003 12 21 | 704 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.1+ | 1.0− |
| 1998 04 21 | 704 | 1.9− | 0.8− | 2003 12 21 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 1998 04 21 | 704 | 1.2− | 0.1+ | 2003 12 21 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.6− | 0.7− |
| 1998 04 21 | 704 | 0.5− | 0.2+ | 2003 12 21 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2001 01 19 | 704 | 0.4+ | 0.5− | 2003 12 21 | 704 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.5− |
| 2001 01 19 | 704 | 0.4− | 0.7− | 2003 12 21 | 704 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2001 01 19 | 704 | 0.4+ | 0.1+ | 2003 12 21 | 704 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 01 19 | 704 | (1.2+ | 1.6−) | 2003 12 21 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 02 16 | 704 | 0.0 | 0.0 | 2003 12 24 | 704 | 1.3− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 02 16 | 704 | 0.1+ | 0.0 | 2003 12 24 | 704 | 0.8− | 0.5+ | 2006 11 07 | 644 | 0.3+ | 0.1+ |
| 2001 02 16 | 704 | 0.5− | 0.0 | 2003 12 24 | 704 | 0.4− | 0.5− | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2001 02 16 | 704 | 0.1+ | 0.6− | 2003 12 24 | 704 | 0.3− | 0.3− | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 02 19 | 699 | 0.4− | 0.6+ | 2003 12 24 | 704 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.5+ | 1.2+ |
| 2001 02 19 | 699 | 0.3+ | 0.2− | 2003 12 24 | 704 | 0.4+ | 0.2− | 2006 11 13 | 703 | 0.4+ | 1.2+ |
| 2001 02 19 | 699 | 0.8+ | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.3+ |
| 2001 02 19 | 699 | 0.2+ | 0.7+ | 2004 02 23 | 704 | 1.0+ | 0.9+ | 2006 11 13 | 703 | 0.7− | 1.3− |
| 2001 03 14 | 699 | 0.3− | 0.3+ | 2004 02 23 | 704 | 1.0+ | 1.4+ | 2006 11 18 | G96 | 0.5+ | 0.6− |
| 2001 03 14 | 699 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.9+ | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2001 03 14 | 699 | 1.3− | 1.1+ | 2006 09 26 | 704 | 0.1− | 0.7− | 2006 11 18 | G96 | 0.3+ | 0.6− |
| 2001 03 14 | 699 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.5+ | 0.2− |
| 2003 11 23 | 704 | (1.5− | 1.6−) | 2006 09 26 | 704 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.3− | 0.8+ |
| 2003 11 23 | 704 | 0.7− | 0.1− | 2006 09 28 | 704 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.6+ | 1.3+ |
| 2003 11 23 | 704 | 0.3+ | 1.0+ | 2006 09 28 | 704 | 0.4+ | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2003 12 18 | 704 | 0.2+ | 0.2− | 2006 09 28 | 704 | 1.1− | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.1− |
| 2003 12 18 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.2+ | 0.1− | | | | |
| 2003 12 18 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.2+ | | | | |

**(139033)∗ 2001 DO$_{103}$**

Discovered 2001 Feb. 16 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.17323 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28308361 | $\omega$ | 266.87217 | | −0.80158337 | | −0.59531171 |
| $a$ | 2.2971688 | $\Omega$ | 236.58582 | | +0.57152451 | | −0.73574436 |
| $e$ | 0.0835193 | $i$ | 3.80486 | | +0.17556720 | | −0.32293065 |
| $P$ | 3.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | (0.3− | 1.9+) | 2003 11 21 | 704 | 0.5+ | 0.3− | 2005 05 09 | G96 | 0.1− | 0.1+ |
| 2001 01 26 | 704 | 1.5− | 0.8+ | 2003 11 21 | 704 | 0.9+ | 0.7− | 2005 05 16 | 691 | 0.2+ | 0.3+ |
| 2001 01 26 | 704 | 0.6− | 1.1+ | 2003 11 21 | 704 | 0.1− | 1.4− | 2005 05 16 | 691 | 0.2+ | 0.2+ |
| 2001 01 26 | 704 | 1.0− | 0.0 | 2003 11 21 | 704 | 0.7− | 0.6− | 2005 05 16 | 691 | 0.1− | 0.3+ |
| 2001 01 26 | 704 | 0.5− | 0.6+ | 2003 11 23 | 704 | 0.0 | 0.7− | 2006 08 21 | 691 | 0.2− | 0.3+ |
| 2001 02 16 | 608 | (0.5+ | 1.9+) | 2003 11 23 | 704 | (1.6+ | 0.2−) | 2006 08 21 | 691 | 0.1− | 0.2+ |
| 2001 02 16 | 608 | 0.6+ | 0.5+ | 2003 11 23 | 704 | 0.0 | 0.3+ | 2006 08 21 | 691 | 0.4− | 0.1+ |
| 2001 02 16 | 608 | 0.5+ | 1.1+ | 2003 11 23 | 704 | 0.2− | 0.5− | 2006 09 20 | 691 | 0.1+ | 0.1− |
| 2001 02 19 | 704 | 0.9+ | 0.1+ | 2003 11 26 | 704 | 0.3− | 0.6− | 2006 09 20 | 691 | 0.1+ | 0.2+ |
| 2001 02 19 | 704 | 1.3+ | 0.6+ | 2003 11 26 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 691 | 0.2+ | 0.0 |
| 2001 02 19 | 704 | 0.8+ | 0.9− | 2003 11 26 | 704 | 0.3− | 0.1− | 2006 09 20 | 703 | (1.6− | 0.2+) |
| 2001 02 19 | 704 | 1.1+ | 0.0 | 2003 11 26 | 704 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.4− | 1.2+ |
| 2001 02 19 | 704 | 0.0 | 0.0 | 2003 11 26 | 704 | 0.6− | 0.4+ | 2006 09 20 | 703 | 0.3− | 0.2− |
| 2001 03 14 | 699 | 0.3− | 0.0 | 2003 12 21 | 704 | 1.4− | 0.8+ | 2006 09 20 | 703 | 0.8+ | 0.5− |
| 2001 03 14 | 699 | (3.7− | 1.6+) | 2003 12 21 | 704 | 0.5− | 0.2+ | 2006 09 22 | 703 | 0.2− | 1.1− |
| 2001 03 14 | 699 | 0.4− | 0.5+ | 2003 12 21 | 704 | (1.2− | 1.7+) | 2006 09 22 | 703 | (0.3− | 1.5+) |
| 2001 03 14 | 699 | 0.1− | 0.7− | 2003 12 21 | 704 | 0.0 | 0.2+ | 2006 09 22 | 703 | 0.3− | 0.3+ |
| 2003 10 27 | 691 | 0.3+ | 0.2+ | 2003 12 21 | 704 | 1.3− | 1.2+ | 2006 09 22 | 703 | (0.2+ | 1.7+) |
| 2003 10 27 | 691 | 0.2+ | 0.3+ | 2005 05 09 | G96 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2003 10 27 | 691 | 0.7+ | 0.0 | 2005 05 09 | G96 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.6+ |
| 2003 11 21 | 704 | 1.0− | 1.3+ | 2005 05 09 | G96 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.0 |

**(139034)∗ 2001 DZ$_{103}$**

Discovered 2001 Feb. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.07498 | | (2000.0) | | | |
| $n$ | 0.22601138 | $\omega$ | 241.57603 | | −0.80121286 | +0.58981186 |
| $a$ | 2.6692086 | $\Omega$ | 334.16869 | | −0.43522587 | −0.69012733 |
| $e$ | 0.0574476 | $i$ | 13.38887 | | −0.41065361 | −0.41934024 |
| $P$ | 4.36 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 704 | 0.4+ | 0.5+ | 2003 09 21 | 704 | 0.2+ | 1.5+ | 2006 03 25 | E12 | 0.4+ | 0.1+ |
| 2001 02 01 | 704 | 0.3− | 0.1+ | 2003 09 21 | 704 | 1.1+ | 1.0+ | 2006 03 25 | E12 | 0.3+ | 0.3+ |
| 2001 02 01 | 704 | 0.7− | 0.8+ | 2003 09 21 | 704 | (0.2− | 2.0+) | 2006 03 25 | E12 | 0.4+ | 0.1+ |
| 2001 02 01 | 704 | 0.0 | 0.6+ | 2003 09 21 | 704 | 0.0 | 0.5+ | 2006 03 25 | E12 | 0.1− | 0.1+ |
| 2001 02 16 | 699 | 1.6+ | 0.5+ | 2003 09 22 | 699 | 0.4+ | 0.8+ | 2006 04 05 | E12 | 0.1+ | 1.6+ |
| 2001 02 16 | 699 | 0.3+ | 0.6+ | 2003 09 22 | 699 | 0.1− | 0.7+ | 2006 04 05 | E12 | 0.1+ | 0.2− |
| 2001 02 16 | 699 | 0.5− | 0.2− | 2003 09 22 | 699 | 0.4+ | 0.2− | 2006 04 05 | E12 | 0.0 | 0.4+ |
| 2001 02 16 | 699 | 0.4+ | 0.8− | 2003 09 22 | 699 | 0.4− | 1.1+ | 2006 04 05 | E12 | 0.3+ | 0.3+ |
| 2001 02 20 | 704 | 1.7+ | 1.9+ | 2003 09 30 | 704 | 0.2− | 1.3+ | 2006 05 04 | E12 | 0.7− | 0.3+ |
| 2001 02 20 | 704 | 0.4+ | 0.0 | 2003 09 30 | 704 | 1.0+ | 0.0 | 2006 05 04 | E12 | 0.2− | 0.2+ |
| 2001 02 20 | 704 | 0.8+ | 0.4− | 2003 09 30 | 704 | 0.3+ | 0.5+ | 2006 05 04 | E12 | 0.2+ | 0.0 |
| 2001 03 15 | 691 | 0.1+ | 0.2+ | 2003 09 30 | 704 | 0.3− | 0.8− | 2006 05 04 | E12 | 0.1+ | 0.4+ |
| 2001 03 15 | 691 | 0.2− | 0.2+ | 2004 12 22 | 703 | 0.7+ | 0.2+ | 2006 05 17 | E12 | 0.4+ | 0.5− |
| 2001 03 15 | 691 | 0.1+ | 0.3+ | 2004 12 22 | 703 | 0.6− | 1.3− | 2006 05 17 | E12 | 0.4+ | 0.0 |
| 2003 09 19 | 691 | 0.6− | 0.2+ | 2004 12 22 | 703 | 1.2− | 0.6+ | 2006 05 17 | E12 | 0.3+ | 0.1+ |
| 2003 09 19 | 691 | 0.7− | 0.0 | 2004 12 22 | 703 | 0.9− | 0.6+ | 2006 05 17 | E12 | 1.1− | 0.5− |
| 2003 09 19 | 691 | 0.6− | 0.1+ | 2005 01 07 | 703 | 0.1+ | 0.2− | 2006 05 22 | E12 | 0.3+ | 0.4+ |
| 2003 09 20 | 644 | 0.4− | 0.3+ | 2005 01 07 | 703 | 0.2+ | 0.8− | 2006 05 22 | E12 | 0.9+ | 1.0+ |
| 2003 09 20 | 644 | 0.2− | 0.4+ | 2005 01 07 | 703 | 0.4+ | 0.7− | 2006 05 22 | E12 | 0.7+ | 0.1− |
| 2003 09 20 | 644 | 0.2− | 0.5+ | 2005 01 07 | 703 | 0.0 | 0.6− | 2006 05 22 | E12 | 0.1− | 0.4+ |

**(139035)∗ 2001 DF$_{105}$**

Discovered 2001 Feb. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 177.73475 | | (2000.0) | | | |
| $n$ | 0.17465766 | $\omega$ | 176.75415 | | +0.75716915 | +0.64398456 |
| $a$ | 3.1696474 | $\Omega$ | 142.41198 | | −0.60328524 | +0.75365285 |
| $e$ | 0.0871097 | $i$ | 10.33646 | | −0.25048313 | +0.13149626 |
| $P$ | 5.64 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 699 | (0.2+ | 3.0+) | 2002 04 10 | 704 | 1.0− | 0.7+ | 2006 01 03 | 704 | 1.0+ | 0.2+ |
| 1998 08 30 | 699 | 0.7+ | 1.5+ | 2002 04 10 | 704 | 0.5+ | 0.1+ | 2006 01 03 | 704 | (1.5+ | 0.5+) |
| 1998 08 30 | 699 | 0.2+ | 0.7+ | 2002 04 10 | 704 | 0.2− | 0.9+ | 2006 01 03 | 704 | 0.1+ | 0.2− |
| 1998 09 27 | 699 | 0.1− | 1.0+ | 2002 04 10 | 704 | 1.1+ | 1.1+ | 2006 01 03 | 704 | 0.3− | 0.8− |
| 1998 09 27 | 699 | 0.2− | 1.5+ | 2002 04 10 | 704 | 1.1+ | 0.9+ | 2006 10 30 | G96 | 0.1+ | 0.6− |
| 1998 09 27 | 699 | (0.3− | 2.2+) | 2002 04 16 | 704 | 0.2+ | 0.3+ | 2006 10 30 | G96 | 0.4− | 0.1− |
| 2001 01 26 | 691 | 0.0 | 0.0 | 2002 04 16 | 704 | (1.0+ | 1.6+) | 2006 10 30 | G96 | 0.1+ | 0.1− |
| 2001 01 26 | 691 | 0.0 | 0.0 | 2002 04 16 | 704 | 0.3+ | 0.5+ | 2006 10 30 | G96 | 0.3− | 0.1− |
| 2001 01 26 | 691 | 0.2− | 0.1− | 2002 04 16 | 704 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.5+ | 0.7+ |
| 2001 02 16 | 699 | 0.3+ | 0.3− | 2002 04 16 | 704 | 0.3− | 0.7+ | 2006 11 16 | 691 | 0.5− | 0.3− |
| 2001 02 16 | 699 | 0.5+ | 0.9+ | 2004 10 07 | 704 | 0.2+ | 0.7+ | 2006 11 16 | 691 | 0.4+ | 0.3− |
| 2001 02 16 | 699 | 0.2+ | 0.7+ | 2004 10 07 | 704 | 0.1+ | 0.6+ | 2006 11 20 | G96 | 0.4− | 0.3− |
| 2001 02 16 | 699 | 1.0− | 0.1− | 2004 10 07 | 704 | 0.1− | 0.9+ | 2006 11 20 | G96 | 0.5− | 0.4− |
| 2001 02 19 | 704 | 0.5− | 0.4− | 2004 10 07 | 704 | 0.3− | 0.9+ | 2006 11 20 | G96 | 0.2+ | 0.1− |
| 2001 02 19 | 704 | 0.1+ | 0.5+ | 2004 10 11 | 644 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.4− | 0.3− |
| 2001 02 19 | 704 | 0.0 | 0.5+ | 2004 10 11 | 644 | 0.3− | 0.7+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2002 04 09 | 704 | (0.0 | 2.0+) | 2004 10 11 | 644 | 0.2− | 0.1+ | 2006 11 21 | 691 | 0.5+ | 0.0 |
| 2002 04 09 | 704 | (0.2+ | 1.6+) | 2004 10 18 | 704 | 0.8− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2002 04 09 | 704 | 0.2+ | 0.9+ | 2004 10 18 | 704 | 0.4− | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.4+ |
| 2002 04 10 | 704 | 0.2− | 0.3+ | 2004 10 18 | 704 | 0.8− | 0.4+ | 2006 11 25 | 691 | 0.3+ | 0.3+ |
| 2002 04 10 | 704 | 1.0− | 0.7+ | 2004 10 18 | 704 | 0.1− | 0.6+ | 2006 11 25 | 691 | 0.0 | 0.4+ |
| 2002 04 10 | 704 | 0.2− | 0.8+ | 2004 10 18 | 704 | 0.8− | 0.3− | | | | |

**(139036)∗ 2001 DG$_{105}$ = 2002 OA$_{11}$**

Discovered 2001 Feb. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 33379)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 210.85099 | | (2000.0) | | | |
| $n$ | 0.29473682 | $\omega$ | 258.23362 | | −0.99654249 | +0.02651177 |
| $a$ | 2.2362127 | $\Omega$ | 283.24829 | | +0.00844912 | −0.91047291 |
| $e$ | 0.1191495 | $i$ | 4.63997 | | −0.08265401 | −0.41271806 |
| $P$ | 3.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 1.0+ | 0.7+ | 2002 08 08 | 699 | (0.5+ | 2.5+) | 2004 01 17 | 644 | 0.0 | 0.3+ |
| 2001 01 03 | 704 | 0.6+ | 0.2− | 2002 08 08 | 699 | (0.0 | 2.1+) | 2004 01 17 | 644 | 0.0 | 0.2+ |
| 2001 01 03 | 704 | 0.4+ | 0.3− | 2002 08 08 | 699 | 0.2+ | 0.8− | 2006 10 04 | G96 | 0.3+ | 0.6− |
| 2001 01 03 | 704 | 0.4+ | 1.2+ | 2002 08 12 | 608 | (1.4− | 1.6+) | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 2001 01 20 | 704 | 0.5+ | 0.5+ | 2002 08 12 | 608 | (1.6− | 1.4+) | 2006 10 04 | G96 | 0.4+ | 0.6− |
| 2001 01 20 | 704 | (2.3+ | 0.9+) | 2002 08 12 | 608 | 1.4− | 0.6+ | 2006 10 04 | G96 | 0.3+ | 0.5− |
| 2001 01 20 | 704 | 0.6+ | 0.8+ | 2002 08 16 | 644 | 0.5− | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2001 01 20 | 704 | 1.2− | 1.0+ | 2002 08 16 | 644 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 01 20 | 704 | 0.9+ | 1.0+ | 2002 08 16 | 644 | 0.6− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 01 31 | 704 | 0.3+ | 0.3− | 2002 08 17 | 644 | 0.2− | 0.8+ | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2001 01 31 | 704 | 0.0 | 0.4+ | 2002 08 17 | 644 | 0.3− | 0.4+ | 2006 10 19 | 703 | 1.0+ | 0.0 |
| 2001 01 31 | 704 | 0.4+ | 0.5+ | 2002 08 17 | 644 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2001 01 31 | 704 | 0.2+ | 0.3+ | 2002 08 27 | 644 | 0.5− | 1.4+ | 2006 10 19 | 703 | 0.6+ | 0.4− |
| 2001 01 31 | 704 | 1.1+ | 1.1+ | 2002 08 27 | 644 | 0.1− | 1.1+ | 2006 10 19 | A50 | 0.1+ | 0.1+ |
| 2001 02 16 | 699 | 0.6+ | 0.5+ | 2002 08 27 | 644 | 0.3− | 1.2+ | 2006 10 19 | A50 | 0.8− | 0.4− |
| 2001 02 16 | 699 | 0.1− | 0.9+ | 2003 11 24 | 704 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2001 02 16 | 699 | 0.2− | 0.3+ | 2003 11 24 | 704 | 0.5− | 0.4− | 2006 10 20 | G96 | 0.6+ | 0.3− |
| 2001 02 16 | 699 | 0.1− | 0.6+ | 2003 11 24 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 02 19 | 704 | 0.4+ | 0.4+ | 2003 11 24 | 704 | 0.6− | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2001 02 19 | 704 | 0.3− | 0.2+ | 2003 12 04 | 704 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 02 19 | 704 | 0.1+ | 0.3+ | 2003 12 04 | 704 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 02 19 | 704 | 0.5+ | 0.4+ | 2003 12 04 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 02 19 | 704 | 0.1+ | 0.6+ | 2003 12 04 | 704 | 0.2− | 0.7− | 2006 10 29 | 104 | 0.2+ | 0.6+ |
| 2001 03 02 | 699 | 0.2− | 0.3+ | 2003 12 04 | 704 | 0.1− | 0.9− | 2006 10 29 | 104 | 0.1− | 0.3+ |
| 2001 03 02 | 699 | 0.4− | 0.7− | 2003 12 18 | 704 | 0.7+ | 0.4− | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2001 03 02 | 699 | 0.0 | 0.1− | 2003 12 18 | 704 | 0.7+ | 0.0 | 2006 11 14 | 703 | 0.2+ | 0.4− |
| 2001 03 02 | 699 | 0.5− | 0.5− | 2003 12 18 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 703 | (1.9+ | 0.7−) |
| 2002 07 14 | 704 | 0.6+ | 0.8+ | 2003 12 18 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 703 | (1.9− | 0.0 ) |
| 2002 07 14 | 704 | 1.0+ | 0.1+ | 2003 12 18 | 704 | 1.0+ | 0.6+ | 2006 11 22 | 704 | 1.3+ | 0.3+ |
| 2002 07 14 | 704 | 0.7+ | 1.0+ | 2003 12 22 | 704 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.9− | 0.2− |
| 2002 07 22 | 644 | 0.5− | 0.5+ | 2003 12 22 | 704 | 0.0 | 0.7+ | 2006 11 22 | 704 | (1.6+ | 0.9+) |
| 2002 07 22 | 644 | 0.6− | 0.5+ | 2003 12 22 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.3− | 1.4− |
| 2002 07 22 | 644 | 0.6− | 0.4+ | 2003 12 22 | 704 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2002 07 23 | 644 | 0.6− | 0.4+ | 2003 12 22 | 704 | 0.4+ | 0.0 | 2006 11 23 | 703 | 1.4− | 0.8+ |
| 2002 07 23 | 644 | 0.2− | 0.4+ | 2003 12 25 | 691 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.4+ |
| 2002 07 23 | 644 | 0.6− | 0.6+ | 2003 12 25 | 691 | 0.1− | 0.1+ | 2006 11 23 | 703 | 1.1− | 0.6− |
| 2002 08 06 | 644 | 0.5− | 0.6+ | 2003 12 25 | 691 | 0.0 | 0.1+ | 2006 11 23 | 703 | 1.1− | 0.1− |
| 2002 08 06 | 644 | 0.4− | 0.6+ | 2003 12 27 | 704 | 0.5− | 0.7+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2002 08 06 | 644 | 0.5− | 0.3+ | 2003 12 27 | 704 | 1.0− | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2002 08 07 | 644 | 0.5− | 0.6+ | 2003 12 27 | 704 | 0.6− | 0.6+ | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2002 08 07 | 644 | 0.6− | 0.7+ | 2003 12 27 | 704 | 0.8− | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2003 12 27 | 704 | 0.6− | 0.1− | | | | |
| 2002 08 08 | 699 | 1.3+ | 1.2+ | 2004 01 17 | 644 | 0.2− | 0.2+ | | | | |

**(139037)∗ 2001 DK$_{105}$ = 1998 HJ$_{65}$**

Discovered 2001 Feb. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 13798)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.71407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29871253 | $\omega$ | 283.38125 | | −0.98279873 | +0.17581132 | |
| $a$ | 2.2163266 | $\Omega$ | 266.76621 | | −0.13980920 | −0.90832465 | |
| $e$ | 0.1289003 | $i$ | 3.24655 | | −0.12066504 | −0.37952169 | |
| $P$ | 3.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.2− | 0.7+ | 2001 02 19 | 704 | 0.3+ | 0.3− | 2003 12 21 | 704 | 0.5+ | 0.1+ | |
| 1998 04 21 | 704 | 0.6+ | 0.3+ | 2001 02 19 | 704 | 0.3+ | 0.4− | 2003 12 21 | 704 | 0.9+ | 0.2− | |
| 1998 04 21 | 704 | 0.9− | 1.3− | 2002 08 17 | 644 | 0.3− | 1.3+ | 2003 12 21 | 704 | 0.6− | 0.1+ | |
| 1998 04 21 | 704 | 0.4− | 0.6− | 2002 08 17 | 644 | 0.3− | 1.2+ | 2004 01 21 | 704 | 0.1− | 0.6− | |
| 1998 04 22 | 704 | 0.2− | 0.0 | 2002 08 17 | 644 | 0.4− | 1.2+ | 2004 01 21 | 704 | 0.3− | 0.0 | |
| 1998 04 22 | 704 | 1.0+ | 0.9+ | 2002 08 26 | 644 | 0.6− | 0.7+ | 2004 01 21 | 704 | 0.9− | 0.0 | |
| 1998 04 22 | 704 | (1.2− | 2.2+) | 2002 08 26 | 644 | 0.2− | 0.4+ | 2004 01 21 | 704 | 0.8− | 0.2− | |
| 1998 04 22 | 704 | 0.8+ | 0.7+ | 2002 08 26 | 644 | 0.1− | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.1+ | |
| 1998 04 22 | 704 | 1.4− | 0.5+ | 2002 08 27 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1+ | |
| 2001 01 31 | 704 | 0.0 | 0.7+ | 2002 08 27 | 644 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.3+ | |
| 2001 01 31 | 704 | 1.0+ | 0.9+ | 2002 08 27 | 644 | 0.0 | 0.5+ | 2006 11 01 | G96 | 0.4+ | 0.5− | |
| 2001 01 31 | 704 | 1.1+ | 1.3+ | 2003 11 24 | 695 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.2− | |
| 2001 02 16 | 699 | 0.8+ | 0.8+ | 2003 11 24 | 695 | 0.5− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.6− | |
| 2001 02 16 | 699 | 0.3− | 0.6+ | 2003 12 18 | 704 | 0.9− | 0.2+ | 2006 11 01 | G96 | 0.5+ | 0.2− | |
| 2001 02 16 | 699 | 0.5+ | 0.5+ | 2003 12 18 | 704 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.1+ | |
| 2001 02 16 | 699 | 0.2+ | 0.0 | 2003 12 18 | 704 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.1− | |
| 2001 02 19 | 704 | 0.5− | 0.2− | 2003 12 18 | 704 | 0.8+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.2− | |
| 2001 02 19 | 704 | 0.7+ | 0.5+ | 2003 12 18 | 704 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.6+ | 0.3− | |

**(139038)∗ 2001 ED$_2$**

Discovered 2001 Mar. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.11253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28043767 | $\omega$ | 42.50133 | | −0.86859142 | −0.46374621 | |
| $a$ | 2.3115954 | $\Omega$ | 109.09096 | | +0.39032034 | −0.85738089 | |
| $e$ | 0.1820912 | $i$ | 10.64782 | | +0.30528507 | −0.22324306 | |
| $P$ | 3.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.2+ | 0.8− | 2001 03 04 | 704 | 0.3+ | 0.5+ | 2003 10 21 | 644 | 0.2+ | 0.3+ | |
| 2001 01 18 | 704 | 0.6+ | 0.2− | 2001 03 04 | 704 | 0.6− | 0.8+ | 2003 10 29 | 608 | 0.1− | 1.0+ | |
| 2001 01 18 | 704 | 0.8+ | 0.7+ | 2001 03 16 | 704 | 0.1− | 0.0 | 2003 10 29 | 608 | 0.4− | 1.4+ | |
| 2001 02 02 | 704 | 0.0 | 0.1− | 2001 03 16 | 704 | 1.4+ | 0.2− | 2003 10 29 | 608 | 0.3− | 0.4+ | |
| 2001 02 02 | 704 | 0.4− | 0.3− | 2001 03 16 | 704 | 0.3+ | 0.1+ | 2003 11 23 | 699 | 0.3− | 0.1+ | |
| 2001 02 02 | 704 | 0.0 | 0.6− | 2001 03 16 | 704 | 0.4− | 0.7− | 2003 11 23 | 699 | 0.8− | 0.5+ | |
| 2001 02 02 | 704 | 0.3− | 0.3+ | 2001 03 16 | 704 | 0.1− | 0.3+ | 2003 11 23 | 699 | 0.4− | 0.1+ | |
| 2001 02 02 | 704 | 0.2− | 0.4+ | 2001 03 24 | 699 | 0.6− | 0.4− | 2003 11 23 | 699 | 0.3− | 0.3− | |
| 2001 02 16 | 704 | 0.0 | 0.0 | 2001 03 24 | 699 | 0.2− | 1.3+ | 2005 06 10 | 151 | 0.0 | 0.9+ | |
| 2001 02 16 | 704 | 0.2− | 0.1+ | 2001 03 24 | 699 | 1.9+ | 1.2+ | 2005 06 10 | 151 | 0.0 | 0.8+ | |
| 2001 02 16 | 704 | 0.1+ | 0.1+ | 2001 03 24 | 699 | 0.3− | 0.2− | 2005 06 10 | 151 | 0.3+ | 0.8+ | |
| 2001 02 16 | 704 | 0.1+ | 0.1− | 2001 04 15 | 704 | 0.3+ | 0.9+ | 2005 06 10 | 151 | 0.2+ | 1.2+ | |
| 2001 02 16 | 704 | 0.3− | 0.1− | 2001 04 15 | 704 | 0.4+ | 0.3+ | 2005 07 12 | G96 | 0.2+ | 0.1+ | |
| 2001 02 23 | 704 | (3.0+ | 1.4−) | 2001 04 15 | 704 | 0.5+ | 0.6+ | 2005 07 12 | G96 | 0.0 | 0.3+ | |
| 2001 02 23 | 704 | 0.2− | 0.7− | 2001 04 15 | 704 | 0.1− | 0.7+ | 2005 07 12 | G96 | 0.0 | 0.2+ | |
| 2001 02 23 | 704 | 0.8− | 1.7− | 2001 04 15 | 704 | 0.1+ | 1.4+ | 2005 07 12 | G96 | 0.1− | 0.2+ | |
| 2001 03 01 | 704 | 0.2+ | 0.3+ | 2002 08 11 | 644 | (2.3− | 2.4+) | 2006 09 20 | 703 | 1.8+ | 1.3+ | |
| 2001 03 01 | 704 | 0.2− | 0.6+ | 2002 08 11 | 644 | 0.8− | 0.4+ | 2006 09 20 | 703 | 0.5+ | 1.0+ | |
| 2001 03 01 | 704 | 0.4− | 0.4+ | 2002 08 11 | 644 | 0.4− | 0.4+ | 2006 09 20 | 703 | 0.1+ | 1.5+ | |
| 2001 03 01 | 704 | 0.1+ | 0.6− | 2003 10 21 | 644 | 0.1− | 0.6+ | 2006 09 20 | 703 | 1.4− | 0.0 | |
| 2001 03 01 | 704 | 0.0 | 0.4+ | 2003 10 21 | 644 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.3+ | |
| 2001 03 04 | 704 | 0.4− | 0.0 | 2003 10 21 | 644 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.4+ | |
| 2001 03 04 | 704 | 0.5+ | 0.4+ | 2003 10 21 | 644 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.8+ | |
| 2001 03 04 | 704 | 0.2+ | 1.4+ | 2003 10 21 | 644 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.8− | |

**(139039)∗ 2001 EP$_3$ = 2003 WW$_{74}$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 56219)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.21120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28632530 | $\omega$ | 56.38972 | | +0.65202726 | −0.75783731 | |
| $a$ | 2.2797973 | $\Omega$ | 352.77838 | | +0.61964365 | +0.55033679 | |
| $e$ | 0.1291890 | $i$ | 10.68335 | | +0.43692357 | +0.35044547 | |
| $P$ | 3.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.6+ | 0.7+ | 2003 12 15 | 704 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.5+ | |
| 1999 09 04 | 699 | 0.3+ | 0.9− | 2003 12 15 | 704 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.0 | 0.6+ | |
| 1999 09 04 | 699 | 1.2+ | 0.1− | 2003 12 15 | 704 | (1.9− | 0.4−) | 2006 09 17 | 704 | 0.1− | 0.4+ | |
| 1999 09 09 | 704 | 0.5− | 0.2+ | 2003 12 28 | 704 | 0.2− | 0.7− | 2006 09 19 | 699 | 0.1− | 0.3− | |
| 1999 09 09 | 704 | 0.1+ | 0.7− | 2003 12 28 | 704 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2− | |
| 1999 09 09 | 704 | 0.3− | 1.7− | 2003 12 28 | 704 | 0.8− | 1.3− | 2006 09 19 | 699 | 0.3− | 0.3+ | |
| 2001 02 20 | 704 | 0.5+ | 0.8+ | 2003 12 28 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 0.3− | 0.3− | |
| 2001 02 20 | 704 | 0.8+ | 0.2− | 2003 12 28 | 704 | 0.0 | 0.7− | 2006 09 20 | 704 | 0.0 | 0.0 | |
| 2001 02 20 | 704 | 0.4− | 1.3+ | 2003 12 28 | 704 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.2− | |
| 2001 02 20 | 704 | 0.4+ | 0.7+ | 2003 12 28 | 704 | 0.6− | 0.5− | 2006 09 20 | 704 | 0.1+ | 0.6+ | |
| 2001 02 20 | 704 | 0.5+ | 0.3− | 2003 12 28 | 704 | 0.4+ | 0.9+ | 2006 09 20 | 704 | 0.3+ | 0.0 | |
| 2001 02 20 | 704 | 0.3− | 0.2+ | 2003 12 28 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.1− | |
| 2001 02 20 | 704 | (1.9+ | 0.3+) | 2003 12 28 | 704 | 0.5− | 0.1+ | 2006 09 25 | 704 | 0.0 | 1.0+ | |
| 2001 03 02 | 699 | (0.4+ | 2.3+) | 2003 12 28 | 704 | 0.7− | 1.0− | 2006 09 25 | 704 | 0.4− | 0.4+ | |
| 2001 03 02 | 699 | 1.0+ | 0.4− | 2003 12 28 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.7+ | |
| 2001 03 02 | 699 | 0.8+ | 1.0+ | 2003 12 28 | 704 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.3− | 0.6+ | |
| 2001 03 02 | 699 | 0.8− | 1.4+ | 2003 12 28 | 704 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.0 | 0.6+ | |
| 2001 03 03 | 704 | 0.5− | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.9− | 2006 09 25 | 699 | 0.4+ | 0.5+ | |
| 2001 03 03 | 704 | 0.0 | 0.9+ | 2003 12 28 | 704 | (2.1+ | 1.2+) | 2006 09 25 | 704 | 0.6− | 0.8+ | |
| 2001 03 03 | 704 | 1.3+ | 0.7+ | 2003 12 28 | 704 | 0.9+ | 0.2+ | 2006 09 25 | 699 | 0.9+ | 0.1+ | |
| 2001 03 03 | 704 | 0.2+ | 1.0+ | 2004 01 02 | 704 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.3+ | |
| 2001 03 03 | 704 | 1.2+ | 0.5+ | 2004 01 02 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.1− | |
| 2001 03 15 | 699 | (1.2+ | 1.7+) | 2004 01 02 | 704 | 1.1− | 0.7+ | 2006 09 26 | 704 | 0.1+ | 1.1+ | |
| 2001 03 15 | 699 | (0.7+ | 2.2+) | 2006 08 18 | 699 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 1.0+ | 0.0 | |
| 2001 03 15 | 699 | 0.8− | 0.6− | 2006 08 18 | 699 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.1− | |
| 2001 03 15 | 699 | 0.7+ | 0.4+ | 2006 08 18 | 691 | 0.4− | 0.5+ | 2006 09 29 | 704 | (1.6− | 2.2+) | |
| 2001 03 18 | 704 | 0.8+ | 1.1+ | 2006 08 18 | 699 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.5− | 1.1+ | |
| 2001 03 18 | 704 | 0.9+ | 0.3+ | 2006 08 18 | 691 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.7+ | 0.2− | |
| 2001 03 18 | 704 | 0.1− | 0.5+ | 2006 08 18 | 699 | 0.5− | 0.4− | 2006 09 29 | 704 | (0.5+ | 3.4+) | |
| 2003 11 20 | 704 | 0.4+ | 0.8− | 2006 08 18 | 691 | 0.3− | 0.3− | 2006 09 29 | 704 | (0.1− | 1.6+) | |
| 2003 11 20 | 704 | 0.3+ | 0.9− | 2006 08 21 | 704 | 0.5− | 0.3+ | 2006 09 29 | 608 | (0.6+ | 1.7−) | |
| 2003 11 20 | 704 | 0.8+ | 0.5− | 2006 08 21 | 704 | 0.4− | 0.7− | 2006 09 29 | 608 | (0.6+ | 1.8−) | |
| 2003 11 20 | 704 | 0.2+ | 0.6− | 2006 08 21 | 704 | (0.3+ | 1.7−) | 2006 09 29 | 608 | (0.2+ | 1.8−) | |
| 2003 11 21 | 704 | 0.1− | 0.6+ | 2006 08 21 | 704 | 0.9− | 0.0 | 2006 10 01 | 703 | 0.0 | 0.2− | |
| 2003 11 21 | 704 | 0.9+ | 0.8+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 10 01 | 703 | 0.5− | 0.7− | |
| 2003 11 21 | 704 | 0.3− | 0.6+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 10 01 | 703 | 0.9− | 0.2− | |
| 2003 11 21 | 704 | 1.0+ | 0.5+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 10 01 | 703 | 1.4− | 0.5− | |
| 2003 11 21 | 704 | 0.5+ | 0.2− | 2006 08 28 | 703 | 0.2− | 1.1+ | 2006 10 01 | 704 | 0.5+ | 0.3+ | |
| 2003 11 23 | 704 | 0.4− | 0.0 | 2006 08 28 | 703 | 1.3− | 1.2+ | 2006 10 01 | 704 | 0.3+ | 0.3+ | |
| 2003 11 23 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.6− | 0.6+ | 2006 10 01 | 704 | 0.6− | 0.1+ | |
| 2003 11 23 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 1.1− | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.1− | |
| 2003 11 23 | 704 | 0.9+ | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.4− | |
| 2003 11 23 | 704 | (1.6+ | 0.3−) | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− | |
| 2003 11 23 | 704 | 0.7+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.4+ | 0.2− | |
| 2003 11 23 | 704 | (2.4+ | 0.1−) | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.0 | |
| 2003 12 04 | 704 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.0 | 1.2− | |
| 2003 12 04 | 704 | 0.3− | 0.3− | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.1+ | |
| 2003 12 04 | 704 | 0.2+ | 1.0+ | 2006 09 16 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.6− | |
| 2003 12 04 | 704 | 0.3+ | 1.0+ | 2006 09 16 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.1− | 0.2− | |
| 2003 12 04 | 704 | 0.4− | 1.2− | 2006 09 16 | 691 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.5− | |
| 2003 12 05 | 704 | 1.5− | 1.4− | 2006 09 16 | 699 | 0.5− | 1.2+ | 2006 10 23 | G96 | 0.3+ | 0.5− | |
| 2003 12 05 | 704 | 0.3+ | 0.2− | 2006 09 16 | 699 | 0.3+ | 1.0+ | 2006 10 23 | G96 | 0.6+ | 0.4− | |
| 2003 12 05 | 704 | 1.2− | 1.0+ | 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.5− | |
| 2003 12 05 | 704 | (1.4− | 1.6−) | 2006 09 16 | 699 | 0.2− | 0.8+ | 2006 11 14 | 644 | 0.1+ | 0.3− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 15 | 704 | 0.2+ | 0.2− | 2006 09 17 | 704 | 0.1− | 0.5+ | 2006 11 14 | 644 | 0.2+ | 0.1− |
| 2003 12 15 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 644 | 0.1+ | 0.0 |

**(139040)∗ 2001 EV$_5$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.62092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27553400 | $\omega$ | 125.98548 | | −0.89034459 | | +0.45051791 |
| $a$ | 2.3389409 | $\Omega$ | 80.87406 | | −0.43621083 | | −0.80275230 |
| $e$ | 0.0996790 | $i$ | 3.81702 | | −0.13040943 | | −0.39066911 |
| $P$ | 3.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 16 | 691 | 0.5− | 0.8− | 2001 03 26 | 704 | 0.1− | 1.3+ | 2005 06 04 | 704 | 0.3+ | 0.2+ |
| 1994 05 16 | 691 | 0.4− | 0.9− | 2001 03 26 | 704 | 0.4+ | 0.9+ | 2005 06 04 | 704 | 0.2− | 0.9+ |
| 1994 05 16 | 691 | 0.6− | 0.9− | 2001 03 26 | 704 | 1.5+ | 0.5− | 2005 06 11 | 703 | (2.1− | 4.5+) |
| 1995 08 29 | 809 | 0.9+ | 0.7+ | 2001 03 27 | 699 | 0.2+ | 0.4+ | 2005 06 11 | 703 | (1.4+ | 3.4+) |
| 2001 02 17 | 704 | 0.5+ | 0.8+ | 2001 03 27 | 699 | 1.1+ | 0.3+ | 2005 06 11 | 703 | 0.3+ | 0.4+ |
| 2001 02 17 | 704 | (0.5+ | 1.7+) | 2001 03 27 | 699 | 0.9+ | 0.1− | 2005 06 11 | 703 | 0.7− | 0.5+ |
| 2001 02 17 | 704 | 1.1+ | 1.1+ | 2001 03 27 | 699 | 0.7+ | 0.8− | 2005 06 13 | G96 | 0.6+ | 1.0+ |
| 2001 02 17 | 704 | (1.9+ | 1.5+) | 2001 03 27 | 608 | 0.3− | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.5+ |
| 2001 03 02 | 699 | 0.3+ | 0.0 | 2001 03 27 | 608 | 0.1− | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.9+ |
| 2001 03 02 | 699 | 0.3− | 0.1− | 2001 03 27 | 608 | 0.6− | 0.6+ | 2005 06 13 | G96 | 0.3+ | 0.2+ |
| 2001 03 02 | 699 | 0.0 | 0.6+ | 2002 08 11 | 608 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.9+ | 1.1− |
| 2001 03 02 | 699 | 0.5+ | 0.7+ | 2002 08 11 | 608 | 0.6+ | 0.9− | 2006 09 30 | 703 | 0.6+ | 1.0+ |
| 2001 03 03 | 704 | 0.0 | 0.3+ | 2002 08 18 | 644 | 0.4− | 0.7+ | 2006 09 30 | 703 | 1.2+ | 1.3+ |
| 2001 03 03 | 704 | 0.3− | 0.9+ | 2002 08 18 | 644 | 0.4− | 0.3+ | 2006 09 30 | 703 | (0.9+ | 2.1+) |
| 2001 03 03 | 704 | (1.4− | 2.1+) | 2002 08 18 | 644 | 0.1+ | 0.6+ | 2006 10 02 | G96 | 0.4− | 0.3− |
| 2001 03 03 | 704 | 0.1− | 0.1+ | 2002 08 19 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.5− | 0.3− |
| 2001 03 18 | 699 | 0.0 | 0.5− | 2002 08 19 | 644 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.6− | 0.2− |
| 2001 03 18 | 699 | 0.1+ | 0.3+ | 2002 08 19 | 644 | 0.6− | 0.6+ | 2006 10 02 | G96 | 0.4− | 0.1− |
| 2001 03 18 | 699 | 0.2− | 0.5+ | 2002 08 29 | 644 | 0.2+ | 1.2+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2001 03 18 | 699 | 0.5+ | 0.3+ | 2002 08 29 | 644 | 0.0 | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2001 03 19 | 704 | 0.7− | 0.1− | 2002 08 30 | 644 | 0.1+ | 0.8+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2001 03 19 | 704 | 0.2− | 0.9+ | 2002 08 30 | 644 | 0.6− | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 03 19 | 704 | 0.1− | 1.0+ | 2002 08 30 | 644 | 0.7− | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2001 03 19 | 704 | 0.2+ | 0.8+ | 2002 09 16 | 644 | 0.7− | 0.0 | 2006 11 18 | G96 | 0.6− | 0.5− |
| 2001 03 19 | 704 | 0.6+ | 0.4+ | 2002 09 16 | 644 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.4− | 0.0 |
| 2001 03 26 | 704 | 0.3+ | 0.8+ | 2002 09 16 | 644 | 0.3+ | 1.0+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2001 03 26 | 704 | 0.9+ | 0.2+ | 2005 06 04 | 704 | 0.3+ | 0.3+ | | | | |

**(139041)∗ 2001 EG$_6$ = 2003 XB$_{18}$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 56219)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.60554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29025715 | $\omega$ | 46.84167 | | +0.11978692 | | −0.98963167 |
| $a$ | 2.2591623 | $\Omega$ | 36.50170 | | +0.86784430 | | +0.06560813 |
| $e$ | 0.1039933 | $i$ | 7.65596 | | +0.48217980 | | +0.12776828 |
| $P$ | 3.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.4− | 0.2+ | 2003 12 27 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 1999 10 16 | 704 | 1.4− | 0.4+ | 2003 12 28 | 704 | 0.4+ | 0.5− | 2006 10 21 | 703 | 0.4− | 0.3− |
| 1999 10 16 | 704 | 0.7+ | 1.7+ | 2003 12 28 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.5− |
| 2001 03 02 | 699 | (0.8+ | 1.7+) | 2003 12 28 | 704 | 0.2− | 0.7− | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2001 03 02 | 699 | 1.1+ | 0.5+ | 2003 12 28 | 704 | 0.7− | 0.6− | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2001 03 02 | 699 | 0.0 | 0.0 | 2003 12 28 | 704 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 03 02 | 699 | (0.5+ | 1.7+) | 2003 12 30 | 704 | (1.6+ | 0.2−) | 2006 10 21 | 644 | 0.1+ | 0.4− |
| 2001 03 04 | 704 | 0.5+ | 0.4+ | 2003 12 30 | 704 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2001 03 04 | 704 | 0.8− | 0.1+ | 2003 12 30 | 704 | 0.9+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2001 03 04 | 704 | (1.0+ | 2.0+) | 2003 12 30 | 704 | 0.6+ | 0.8− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2001 03 04 | 704 | 0.0 | 0.7+ | 2003 12 30 | 704 | 1.0+ | 0.2− | 2006 10 23 | 704 | 1.2+ | 0.4− |
| 2001 03 04 | 704 | 0.4+ | 0.3+ | 2004 01 19 | 704 | 0.2+ | 1.0− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 03 19 | 704 | 0.6− | 0.0 | 2004 01 19 | 704 | 0.7+ | 1.0− | 2006 10 23 | 704 | 0.8+ | 0.6+ |
| 2001 03 19 | 704 | 0.3− | 0.1+ | 2004 01 19 | 704 | 0.1+ | 0.5− | 2006 10 23 | 704 | 0.0 | 0.4+ |
| 2001 03 19 | 704 | 0.4+ | 1.2− | 2004 01 19 | 704 | 0.1+ | 0.6− | 2006 10 23 | 704 | (0.3+ | 1.9+) |
| 2001 03 19 | 704 | 0.1+ | 0.4+ | 2004 01 19 | 704 | 0.1+ | 0.7− | 2006 10 23 | 704 | 0.9+ | 0.3+ |
| 2001 03 19 | 704 | 0.4+ | 1.0+ | 2004 02 02 | 704 | 1.0− | 0.3+ | 2006 10 28 | 704 | 0.6+ | 0.2− |
| 2001 03 26 | 704 | 1.2+ | 0.1+ | 2004 02 02 | 704 | 0.7− | 0.3− | 2006 10 28 | 704 | (2.3− | 0.0 ) |
| 2001 03 26 | 704 | 0.3− | 0.3+ | 2004 02 02 | 704 | 1.2− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 03 26 | 704 | 0.0 | 0.2− | 2004 02 02 | 704 | 0.3− | 0.4− | 2006 10 28 | 704 | 0.1+ | 0.4− |
| 2001 03 26 | 704 | 0.1+ | 0.3+ | 2004 02 11 | 704 | 0.6− | 0.4+ | 2006 10 28 | 704 | 0.2+ | 0.7+ |
| 2001 03 26 | 704 | 0.6+ | 0.9+ | 2004 02 11 | 704 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 03 27 | 699 | 1.0+ | 0.8+ | 2004 02 11 | 704 | 0.5− | 0.7− | 2006 10 28 | 704 | 0.3− | 0.8+ |
| 2001 03 27 | 699 | 0.3+ | 0.9+ | 2004 02 11 | 704 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 03 27 | 699 | 1.3+ | 0.4+ | 2004 02 11 | 704 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2001 03 27 | 699 | 1.0− | 1.1+ | 2005 02 15 | 809 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 2001 03 30 | 608 | 0.4+ | 1.4+ | 2005 02 15 | 809 | 0.2+ | 0.7− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 03 30 | 608 | 0.1− | 1.2+ | 2005 02 15 | 809 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.2− |
| 2001 03 30 | 608 | 0.0 | 1.0+ | 2006 09 20 | 699 | 1.4+ | 0.5+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2003 11 19 | 704 | 0.0 | 1.0+ | 2006 09 20 | 699 | 0.5− | 1.3+ | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2003 11 19 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2003 11 19 | 704 | 0.9− | 0.1+ | 2006 09 20 | 699 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2003 11 19 | 704 | 0.1− | 0.4− | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2003 12 03 | 704 | 0.7− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.8− |
| 2003 12 03 | 704 | 0.3− | 0.6− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2003 12 03 | 704 | 0.4+ | 0.4− | 2006 09 26 | 704 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2003 12 03 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.8+ | 0.5+ | 2006 11 11 | G96 | 0.7− | 0.6− |
| 2003 12 14 | 691 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.9− |
| 2003 12 14 | 691 | 0.1− | 0.3− | 2006 09 26 | 704 | 1.2+ | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2003 12 14 | 691 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2003 12 17 | 699 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2003 12 17 | 699 | 0.6− | 0.5+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2003 12 17 | 704 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.5− |
| 2003 12 17 | 699 | 0.4+ | 0.0 | 2006 10 01 | 691 | 0.6+ | 1.2+ | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2003 12 17 | 704 | (0.4− | 1.5+) | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2003 12 17 | 699 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.6− | 0.3− |
| 2003 12 17 | 704 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2003 12 17 | 704 | 0.5+ | 1.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.6+ | 0.1− |
| 2003 12 27 | 691 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2003 12 27 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2003 12 27 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.5− | 1.3+ |
| 2003 12 27 | 704 | 1.2+ | 1.1+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2003 12 27 | 704 | 0.1+ | 1.2+ | 2006 10 19 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 1.4− | 0.0 |
| 2003 12 27 | 704 | 0.7+ | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2003 12 27 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.9− | 1.0+ |

**(139042)∗ 2001 EK$_6$ = 2002 QR$_{31}$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.75978 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26469578 | $\omega$ | 112.47452 | | −0.46613557 | | +0.87694605 |
| $a$ | 2.4023597 | $\Omega$ | 129.20899 | | −0.85704454 | | −0.41478522 |
| $e$ | 0.0741775 | $i$ | 8.68292 | | −0.21952742 | | −0.24273206 |
| $P$ | 3.72 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | 1.0+ | 0.7+ | 2002 08 30 | 644 | 0.0 | 1.0+ | 2005 05 11 | 703 | 0.4− | 0.5− |
| 2001 03 02 | 699 | 0.5+ | 1.3+ | 2002 08 30 | 644 | 0.0 | 1.3+ | 2005 05 11 | 699 | 0.1+ | 0.5− |
| 2001 03 02 | 699 | 0.7− | 0.9+ | 2002 08 30 | 644 | 0.2+ | 1.2+ | 2005 05 20 | 644 | 0.2+ | 0.3− |
| 2001 03 02 | 699 | 0.3+ | 0.1+ | 2005 02 09 | 691 | 0.4+ | 0.1+ | 2005 05 20 | 644 | 0.0 | 0.2− |
| 2001 03 04 | 704 | 1.0− | 1.5+ | 2005 02 09 | 691 | 0.2+ | 0.2− | 2005 05 20 | 644 | 0.4+ | 0.5− |
| 2001 03 04 | 704 | 0.5− | 0.1+ | 2005 02 09 | 691 | 0.1− | 0.1+ | 2005 06 08 | 699 | 0.3− | 1.4+ |
| 2001 03 04 | 704 | 1.4+ | 0.5+ | 2005 04 07 | 699 | 0.6+ | 0.6+ | 2005 06 08 | 699 | 0.1− | 0.2− |
| 2001 03 04 | 704 | 0.1− | 0.4+ | 2005 04 07 | 699 | 0.3+ | 0.2− | 2005 06 08 | 699 | 0.6− | 0.2− |
| 2001 03 04 | 704 | 0.8+ | 0.6+ | 2005 04 07 | 699 | 0.4+ | 0.0 | 2005 06 08 | 699 | 0.6− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 699 | 0.5+ | 0.5+ | 2005 04 07 | 699 | 0.9− | 0.2+ | 2005 06 23 | 644 | 0.3− | 0.2− |
| 2001 03 18 | 699 | 0.3+ | 0.0 | 2005 04 09 | 704 | 0.1+ | 0.8+ | 2005 06 23 | 644 | 0.1− | 0.3− |
| 2001 03 18 | 699 | 0.3− | 0.1− | 2005 04 09 | 704 | 0.3+ | 0.2+ | 2005 06 23 | 644 | 0.1+ | 0.4− |
| 2001 03 18 | 699 | 0.1− | 0.2+ | 2005 04 09 | 704 | 0.3+ | 1.2+ | 2006 09 19 | 703 | (1.9+ | 1.0+) |
| 2001 03 20 | 608 | 0.1− | 0.1− | 2005 04 09 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.7− |
| 2001 03 20 | 608 | 0.1− | 0.1− | 2005 04 12 | 699 | (1.7+ | 0.6+) | 2006 09 19 | 703 | 0.5+ | 0.4+ |
| 2001 03 20 | 608 | 0.1− | 0.3− | 2005 04 12 | 699 | 0.2− | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.5+ |
| 2001 04 16 | 699 | 0.2+ | 0.5− | 2005 04 12 | 699 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 0.5+ | 0.3− |
| 2001 04 16 | 699 | 0.0 | 0.6− | 2005 04 12 | 699 | (2.1+ | 0.8+) | 2006 09 26 | 703 | 0.3+ | 0.1+ |
| 2001 04 16 | 699 | (3.0+ | 1.1+) | 2005 04 18 | 703 | 0.3+ | 0.6− | 2006 09 26 | 703 | 0.1− | 0.1− |
| 2001 04 16 | 699 | (2.0+ | 0.4−) | 2005 04 18 | 703 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.6+ | 0.1− |
| 2002 08 15 | 699 | 0.5− | 0.7+ | 2005 04 18 | 703 | 1.0− | 0.6− | 2006 10 02 | 703 | 0.8− | 0.4− |
| 2002 08 15 | 699 | 0.5− | 1.4− | 2005 04 18 | 703 | 1.0− | 0.0 | 2006 10 02 | 703 | 0.3− | 0.7− |
| 2002 08 15 | 699 | 0.2+ | 0.4− | 2005 05 06 | 704 | 0.4+ | 0.5+ | 2006 10 02 | 703 | 0.4− | 0.0 |
| 2002 08 15 | 699 | 0.3− | 0.9− | 2005 05 06 | 704 | 0.1− | 0.3+ | 2006 10 02 | 703 | 1.0− | 1.1− |
| 2002 08 18 | 644 | 0.1− | 0.4+ | 2005 05 06 | 704 | 0.2+ | 0.4− | 2006 10 02 | 703 | 0.1+ | 0.1+ |
| 2002 08 18 | 644 | 0.5+ | 0.7+ | 2005 05 06 | 704 | 0.0 | 0.0 | 2006 10 02 | 703 | 1.1+ | 0.8+ |
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2005 05 06 | 704 | 0.7+ | 0.3− | 2006 10 02 | 703 | 0.6+ | 0.1− |
| 2002 08 18 | 644 | 0.6+ | 0.6+ | 2005 05 11 | 699 | 0.7− | 0.6− | 2006 10 02 | 703 | 0.7+ | 0.3− |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2005 05 11 | 699 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 1.8− | 0.7+ |
| 2002 08 18 | 644 | 0.4+ | 0.5+ | 2005 05 11 | 703 | 0.5− | 0.8− | 2006 10 21 | 703 | 0.7− | 0.9+ |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2005 05 11 | 703 | 0.1− | 0.7− | 2006 10 21 | 703 | 0.9+ | 0.1+ |
| 2002 08 29 | 644 | 0.9− | 0.1− | 2005 05 11 | 703 | 0.4− | 0.8− | 2006 10 21 | 703 | 0.3− | 1.2+ |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2005 05 11 | 699 | 0.4− | 0.4+ | | | | |

**(139043)∗ 2001 ER$_6$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 190.57365 | | (2000.0) | | | |
| $n$ | 0.28917025 | $\omega$ | 107.87243 | | −0.82558088 | +0.56014705 |
| $a$ | 2.2648197 | $\Omega$ | 106.24504 | | −0.54088439 | −0.75110050 |
| $e$ | 0.0607977 | $i$ | 4.07361 | | −0.16081133 | −0.34940423 |
| $P$ | 3.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | (1.6− | 0.5−) | 2002 09 06 | 704 | (1.7+ | 0.4+) | 2004 01 21 | 704 | 0.3− | 0.2+ |
| 2001 03 02 | 699 | 0.3− | 0.1+ | 2002 09 06 | 704 | 0.0 | 0.9+ | 2004 01 24 | 704 | 0.4+ | 0.9+ |
| 2001 03 02 | 699 | 0.4+ | 0.6+ | 2002 09 06 | 704 | 0.2− | 0.4+ | 2004 01 24 | 704 | 0.4+ | 1.1+ |
| 2001 03 02 | 699 | 0.3− | 0.3+ | 2002 09 16 | 644 | 0.7− | 0.7+ | 2004 01 24 | 704 | 0.9+ | 1.3+ |
| 2001 03 03 | 704 | 0.0 | 0.8+ | 2002 09 16 | 644 | 0.4− | 0.6+ | 2004 01 24 | 704 | 0.3+ | 1.2+ |
| 2001 03 03 | 704 | 0.4+ | 0.8+ | 2002 09 16 | 644 | 0.9− | 0.5+ | 2004 01 24 | 704 | 0.0 | 1.0+ |
| 2001 03 03 | 704 | 1.4+ | 0.0 | 2003 12 19 | 691 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2001 03 03 | 704 | 0.2− | 0.6− | 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2001 03 19 | 704 | 0.5+ | 0.3+ | 2003 12 19 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2001 03 19 | 704 | 0.1+ | 0.2+ | 2003 12 21 | 645 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2001 03 19 | 704 | 0.8− | 0.2+ | 2003 12 21 | 645 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2001 03 19 | 704 | 0.4− | 0.8+ | 2003 12 21 | 291 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2001 03 19 | 704 | 0.3+ | 1.1+ | 2003 12 21 | 291 | 0.4− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2001 03 19 | 704 | (0.2+ | 1.9+) | 2003 12 21 | 691 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.6− |
| 2001 03 19 | 704 | 0.2+ | 1.3+ | 2003 12 21 | 291 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2001 03 19 | 704 | 0.2− | 0.9+ | 2003 12 21 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.3+ |
| 2001 03 26 | 704 | 0.8+ | 0.5− | 2003 12 21 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.6+ |
| 2001 03 26 | 704 | 0.6+ | 0.9+ | 2003 12 29 | 699 | 0.8+ | 0.6+ | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2001 03 26 | 704 | 0.3− | 0.3+ | 2003 12 29 | 699 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2001 03 26 | 704 | (1.6+ | 0.1+) | 2003 12 29 | 699 | 0.9+ | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2002 08 20 | 644 | 0.2+ | 1.4+ | 2003 12 29 | 699 | 0.4+ | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 08 20 | 644 | 0.1− | 1.0+ | 2004 01 21 | 704 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2002 08 20 | 644 | 0.4+ | 1.0+ | 2004 01 21 | 704 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.3− | 0.1− |
| 2002 09 06 | 704 | 0.4− | 0.3+ | 2004 01 21 | 704 | 0.3+ | 0.1− | | | | |

**(139044)∗ 2001 EK$_7$ = 2002 RT$_{58}$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 141.47304 | | (2000.0) | | | |
| $n$ | 0.27901734 | $\omega$ | 129.48723 | | −0.34232846 | +0.93734608 |
| $a$ | 2.3194335 | $\Omega$ | 120.37938 | | −0.88345201 | −0.29764865 |
| $e$ | 0.1125284 | $i$ | 4.30491 | | −0.31988087 | −0.18107348 |
| $P$ | 3.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.2− | 1.1+ | 2001 04 16 | 704 | 0.3− | 0.7+ | 2003 12 30 | 704 | 0.3+ | 0.4− |
| 2001 02 17 | 704 | 0.6+ | 0.5+ | 2001 04 16 | 699 | 0.1+ | 1.0+ | 2003 12 30 | 704 | 0.7+ | 0.5+ |
| 2001 02 17 | 704 | 0.6+ | 0.4+ | 2001 04 16 | 704 | 0.9− | 0.2− | 2003 12 30 | 704 | 0.6+ | 1.2+ |
| 2001 02 17 | 704 | 0.8+ | 1.3+ | 2001 04 16 | 704 | 0.9− | 0.2− | 2003 12 30 | 704 | 0.0 | 0.8+ |
| 2001 02 20 | 645 | 0.2− | 0.2− | 2001 04 16 | 699 | 0.5− | 0.0 | 2003 12 30 | 704 | 0.2+ | 1.1+ |
| 2001 02 20 | 645 | 0.3− | 0.1− | 2001 04 22 | 704 | 1.0+ | 0.3+ | 2003 12 30 | 704 | 0.3− | 0.2+ |
| 2001 03 02 | 699 | 0.9+ | 0.3+ | 2001 04 22 | 704 | 0.7− | 0.5− | 2003 12 30 | 704 | 0.3+ | 0.2− |
| 2001 03 02 | 699 | 0.7+ | 0.0 | 2001 04 22 | 704 | 0.4+ | 0.1+ | 2003 12 30 | 704 | 0.4− | 0.2− |
| 2001 03 02 | 699 | 0.8+ | 0.3+ | 2002 09 05 | 704 | 1.2+ | 1.3+ | 2004 01 21 | 704 | 0.6− | 0.5− |
| 2001 03 02 | 699 | 1.2+ | 0.5+ | 2002 09 05 | 704 | 0.4− | 1.0+ | 2004 01 21 | 704 | 0.5− | 0.3+ |
| 2001 03 03 | 704 | 0.1+ | 0.9+ | 2002 09 05 | 704 | 1.4− | 1.0+ | 2004 01 21 | 704 | 0.2+ | 0.2− |
| 2001 03 03 | 704 | 0.8+ | 0.6+ | 2002 09 05 | 704 | 0.2+ | 0.1+ | 2004 01 21 | 704 | 0.2− | 0.0 |
| 2001 03 03 | 704 | 0.4+ | 0.8+ | 2002 09 05 | 704 | 0.1− | 0.9+ | 2004 01 21 | 704 | 0.4− | 0.9− |
| 2001 03 03 | 704 | 0.6+ | 0.3+ | 2002 09 05 | 704 | 0.5+ | 0.9+ | 2006 10 03 | G96 | 0.9+ | 0.9− |
| 2001 03 03 | 704 | 0.5− | 0.2− | 2002 09 05 | 704 | 0.5− | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2001 03 18 | 699 | 1.0+ | 0.2− | 2002 09 05 | 704 | (1.6+ | 1.0+) | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2001 03 18 | 699 | 0.4+ | 0.3+ | 2002 09 05 | 704 | 0.9− | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2001 03 18 | 699 | 0.1+ | 0.4− | 2002 09 05 | 704 | 1.0+ | 1.2+ | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2001 03 18 | 699 | 0.7+ | 0.0 | 2002 09 05 | 704 | 0.8− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2001 03 19 | 704 | 0.5+ | 1.0+ | 2002 09 05 | 704 | 0.8+ | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.2− |
| 2001 03 19 | 704 | 0.4+ | 0.0 | 2002 09 05 | 704 | 0.5+ | 1.1+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 03 19 | 704 | (0.1+ | 1.5+) | 2002 09 06 | 704 | 0.4− | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2001 03 19 | 704 | 0.3− | 0.0 | 2002 09 06 | 704 | 0.6+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 03 19 | 704 | 0.6+ | 0.3+ | 2002 09 06 | 704 | 0.1+ | 0.5+ | 2006 11 02 | 703 | 0.8− | 0.3− |
| 2001 03 19 | 704 | 0.2+ | 0.2+ | 2002 09 06 | 704 | 0.5− | 1.1− | 2006 11 02 | 703 | (1.7− | 0.2−) |
| 2001 03 19 | 704 | 0.2− | 0.1+ | 2002 09 16 | 644 | 0.7− | 0.6+ | 2006 11 02 | 703 | (0.6− | 2.1+) |
| 2001 03 19 | 704 | 0.5+ | 0.5− | 2002 09 16 | 644 | 0.7− | 0.8+ | 2006 11 02 | 703 | 0.1+ | 0.2+ |
| 2001 03 19 | 704 | 0.7+ | 0.0 | 2002 09 16 | 644 | 0.6− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2001 03 19 | 704 | 0.0 | 0.5+ | 2002 09 17 | 644 | 0.9− | 1.1+ | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2001 03 26 | 704 | 0.5+ | 1.2+ | 2002 09 17 | 644 | 1.0− | 1.1+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 03 26 | 704 | 0.0 | 0.6+ | 2002 09 17 | 644 | 1.2− | 0.8+ | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 2001 03 26 | 704 | 1.1+ | 1.1+ | 2003 12 21 | 704 | 0.7+ | 0.8+ | 2006 11 11 | 703 | 1.2+ | 0.1− |
| 2001 03 26 | 704 | 0.1+ | 0.2+ | 2003 12 21 | 704 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 03 26 | 704 | 0.4+ | 0.9+ | 2003 12 21 | 704 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2001 04 15 | 608 | 1.5+ | 1.3+ | 2003 12 21 | 704 | 0.3− | 0.9+ | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2001 04 15 | 608 | (1.5+ | 1.7+) | 2003 12 30 | 704 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2001 04 15 | 608 | 1.3+ | 1.3+ | 2003 12 30 | 704 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2001 04 16 | 699 | 0.0 | 0.9+ | 2003 12 30 | 704 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.6− |
| 2001 04 16 | 699 | 0.1+ | 0.7+ | 2003 12 30 | 704 | 0.6+ | 0.7+ | 2006 11 20 | 704 | 0.5+ | 1.1+ |
| 2001 04 16 | 704 | 1.1− | 0.7+ | 2003 12 30 | 704 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.9− | 1.4+ |
| 2001 04 16 | 704 | 1.1− | 0.2+ | 2003 12 30 | 704 | 0.8+ | 0.8− | 2006 11 20 | 704 | 0.2− | 0.8+ |

**(139045)∗ 2001 EQ$_9$ = 2002 RD$_{86}$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35027)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.80794 | | (2000.0) | | | |
| $n$ | 0.28084795 | $\omega$ | 255.59629 | | +0.06058263 | +0.99787083 |
| $a$ | 2.3093435 | $\Omega$ | 17.92975 | | −0.88290580 | +0.06486103 |
| $e$ | 0.1406260 | $i$ | 4.50062 | | −0.46562548 | +0.00684554 |
| $P$ | 3.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 1.3+ | 0.3+ | 2002 09 07 | 704 | 0.2+ | 0.5+ | 2002 11 19 | 644 | 0.2− | 0.7+ |
| 2001 02 17 | 704 | (1.6+ | 0.6−) | 2002 09 07 | 704 | 0.6− | 0.1− | 2002 11 19 | 644 | 0.0 | 0.4+ |
| 2001 02 17 | 704 | 0.0 | 0.2+ | 2002 09 14 | 608 | 0.7− | 0.1+ | 2003 12 18 | 704 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 1.3+ | 0.4− | 2002 09 14 | 608 | 1.0− | 0.5− | 2003 12 18 | 704 | 0.1+ | 0.9+ | | |
| 2001 02 17 | 704 | 0.3− | 1.0− | 2002 09 14 | 608 | 1.5− | 0.0 | 2003 12 18 | 704 | 0.4+ | 0.2+ | | |
| 2001 03 02 | 699 | 0.8+ | 0.0 | 2002 09 17 | 608 | 1.5− | 0.4+ | 2003 12 28 | 704 | 0.4− | 0.9+ | | |
| 2001 03 02 | 699 | 0.0 | 0.7+ | 2002 09 17 | 608 | 1.1− | 0.9+ | 2003 12 28 | 704 | 0.2− | 0.5+ | | |
| 2001 03 02 | 699 | 0.0 | 0.2+ | 2002 09 17 | 608 | (1.6− | 0.6+) | 2003 12 28 | 704 | 0.4− | 1.3+ | | |
| 2001 03 02 | 699 | 0.5− | 0.4+ | 2002 09 27 | 699 | 0.3− | 1.1+ | 2003 12 28 | 704 | 0.5− | 0.1+ | | |
| 2001 03 03 | 704 | 0.4+ | 0.5+ | 2002 09 27 | 699 | (0.6− | 1.7+) | 2003 12 28 | 704 | 0.7− | 0.2+ | | |
| 2001 03 03 | 704 | 0.2− | 0.1+ | 2002 09 27 | 699 | (0.8− | 2.4+) | 2004 01 18 | 691 | 0.3+ | 0.2− | | |
| 2001 03 03 | 704 | 0.4+ | 0.6+ | 2002 09 27 | 699 | 0.4+ | 1.2+ | 2004 01 18 | 691 | 0.0 | 0.3− | | |
| 2001 03 03 | 704 | 1.3+ | 0.4− | 2002 09 30 | 704 | 0.3− | 0.2+ | 2004 01 18 | 691 | 0.3+ | 0.1− | | |
| 2001 03 03 | 704 | 0.1+ | 0.7− | 2002 09 30 | 704 | 0.3− | 1.0+ | 2004 02 11 | 699 | 0.3+ | 0.4+ | | |
| 2001 03 18 | 704 | 0.5+ | 0.0 | 2002 09 30 | 704 | 0.5− | 0.5+ | 2004 02 11 | 699 | 0.7+ | 0.5− | | |
| 2001 03 18 | 704 | 0.8+ | 0.4+ | 2002 09 30 | 704 | 0.3− | 0.5+ | 2004 02 11 | 699 | 0.3− | 0.2+ | | |
| 2001 03 18 | 704 | (1.8+ | 0.5+) | 2002 09 30 | 704 | 0.6− | 0.7+ | 2004 02 11 | 699 | 0.2− | 0.6+ | | |
| 2001 03 18 | 704 | 0.6+ | 0.6+ | 2002 10 02 | 704 | 0.9− | 0.5+ | 2005 02 15 | 809 | 0.1− | 0.2− | | |
| 2001 03 18 | 704 | 0.8+ | 0.1− | 2002 10 02 | 704 | 0.8− | 1.0+ | 2005 02 15 | 809 | 0.1+ | 0.0 | | |
| 2001 03 23 | 209 | 1.0+ | 0.2− | 2002 10 02 | 704 | 0.2+ | 0.8+ | 2005 02 15 | 809 | 0.2+ | 0.2+ | | |
| 2001 03 23 | 209 | 0.2− | 1.1+ | 2002 10 02 | 704 | 0.1− | 0.8+ | 2006 10 20 | G96 | 0.3+ | 0.4− | | |
| 2001 03 23 | 209 | 0.3+ | 0.6+ | 2002 10 03 | 704 | 0.5− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.5− | | |
| 2001 03 24 | 691 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.6− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.4− | | |
| 2001 03 24 | 691 | 0.1− | 0.0 | 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.3− | | |
| 2001 03 24 | 691 | 0.2− | 0.3+ | 2002 10 03 | 704 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.2− | | |
| 2001 03 26 | 704 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.4− | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2001 03 26 | 704 | 0.7+ | 1.4+ | 2002 10 07 | 704 | 0.6+ | 0.7+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 2001 03 26 | 704 | 0.1+ | 0.4+ | 2002 10 07 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 691 | 0.0 | 0.2− | | |
| 2001 03 26 | 704 | 0.0 | 0.4+ | 2002 10 07 | 704 | 0.2− | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.1− | | |
| 2001 03 26 | 704 | 0.7− | 0.3+ | 2002 10 07 | 704 | 0.0 | 0.8+ | 2006 11 17 | 691 | 0.2+ | 0.0 | | |
| 2001 04 01 | 704 | 0.2+ | 1.2+ | 2002 10 08 | 699 | (1.2+ | 1.6+) | 2006 11 19 | 704 | 0.7− | 0.3− | | |
| 2001 04 01 | 704 | 0.1+ | 0.0 | 2002 10 08 | 699 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.0 | | |
| 2001 04 01 | 704 | 0.9+ | 1.2+ | 2002 10 08 | 699 | 0.5− | 1.0+ | 2006 11 19 | 704 | 0.5− | 0.9− | | |
| 2001 04 01 | 704 | 0.7+ | 1.1+ | 2002 10 08 | 699 | (2.0+ | 0.1−) | 2006 11 19 | 704 | 0.3+ | 0.5− | | |
| 2001 04 01 | 704 | 0.0 | 0.7+ | 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.5− | | |
| 2001 04 16 | 645 | 0.1− | 0.0 | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2001 04 16 | 645 | 0.1− | 0.1− | 2002 10 11 | 704 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.3− | | |
| 2001 04 27 | 691 | 0.2+ | 0.5+ | 2002 10 11 | 704 | 0.6− | 0.7+ | 2006 11 21 | G96 | 0.2+ | 0.4− | | |
| 2001 04 27 | 691 | 0.1+ | 0.7+ | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 11 22 | 704 | (0.0 | 1.8+) | | |
| 2001 04 27 | 691 | 0.4+ | 0.5+ | 2002 10 11 | 704 | 0.5+ | 1.0+ | 2006 11 22 | 704 | 0.4+ | 1.4+ | | |
| 2002 09 05 | 704 | 0.0 | 0.2+ | 2002 10 11 | 704 | 0.6− | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.2− | | |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2002 10 28 | 608 | 1.1− | 0.1− | 2006 11 22 | 704 | 0.6− | 0.3+ | | |
| 2002 09 05 | 704 | 0.5+ | 1.5+ | 2002 10 28 | 608 | 0.9− | 0.8− | 2006 11 27 | 704 | 1.1− | 0.5− | | |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2002 10 28 | 608 | 1.5− | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.3+ | 0.2+ | | |
| 2002 09 07 | 704 | 0.1+ | 0.5+ | 2002 10 30 | 645 | 0.1+ | 0.1− | | | | | | |
| 2002 09 07 | 704 | 1.1+ | 0.2− | 2002 11 19 | 644 | 0.1− | 0.8+ | | | | | | |

**(139046)∗ 2001 EE$_{13}$**

Discovered 2001 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.04823 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28535119 | $\omega$ | 173.60964 | | −0.14116890 | +0.90024040 | |
| $a$ | 2.2849827 | $\Omega$ | 87.70220 | | −0.92556767 | +0.02760483 | |
| $e$ | 0.1367483 | $i$ | 24.34333 | | −0.35127743 | −0.43451720 | |
| $P$ | 3.45 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 24 | 704 | 0.2+ | 2.0+ | 2001 04 21 | 704 | 0.3− | 0.1+ | 2004 01 28 | 703 | 0.5+ | 0.5− | | |
| 1998 06 24 | 704 | (2.3− | 1.8−) | 2001 04 21 | 704 | (2.0+ | 0.1+) | 2004 01 28 | 703 | 0.1− | 0.4− | | |
| 1998 06 24 | 704 | 0.6+ | 0.4− | 2001 04 21 | 704 | 0.8− | 0.9− | 2004 01 28 | 703 | 0.4− | 1.0− | | |
| 1998 06 24 | 704 | 1.6− | 0.4− | 2003 10 25 | 704 | 0.1+ | 0.8+ | 2004 01 28 | 703 | 0.0 | 0.2+ | | |
| 1998 06 24 | 704 | 0.8+ | 1.5+ | 2003 10 25 | 704 | 0.6+ | 0.2+ | 2004 02 03 | 704 | 0.1− | 0.6− | | |
| 1999 12 03 | 704 | 0.6− | 0.3− | 2003 10 25 | 704 | 0.2− | 0.5+ | 2004 02 03 | 704 | 0.6− | 0.5− | | |
| 1999 12 03 | 704 | 0.4+ | 0.4+ | 2003 11 20 | 704 | 0.9+ | 1.2+ | 2004 02 03 | 704 | 0.0 | 0.7− | | |
| 1999 12 03 | 704 | 0.4+ | 0.3+ | 2003 11 20 | 704 | 1.0+ | 0.5+ | 2004 02 03 | 704 | 0.5+ | 0.1− | | |
| 1999 12 03 | 704 | 0.9+ | 0.0 | 2003 11 20 | 704 | 0.9+ | 0.1+ | 2004 02 10 | 704 | 0.4+ | 0.1− | | |
| 1999 12 03 | 704 | 1.0+ | 0.8+ | 2003 11 20 | 704 | 0.8+ | 0.2− | 2004 02 10 | 704 | 0.1+ | 0.4− | | |
| 2001 03 14 | 704 | 0.2+ | 0.1− | 2003 11 20 | 704 | 0.2+ | 0.3− | 2004 02 10 | 704 | 0.6+ | 0.4− | | |
| 2001 03 14 | 704 | 0.5+ | 0.8+ | 2003 12 04 | 704 | 0.4+ | 1.2+ | 2004 02 10 | 704 | 0.3+ | 0.3+ | | |
| 2001 03 14 | 704 | 0.4− | 0.5+ | 2003 12 04 | 704 | 0.2− | 0.6+ | 2004 02 10 | 704 | 1.3+ | 0.4− | | |
| 2001 03 14 | 704 | 0.2+ | 0.3+ | 2003 12 04 | 704 | 0.2− | 0.5+ | 2004 03 25 | 704 | 0.7+ | 0.4+ | | |
| 2001 03 15 | 704 | 1.5− | 0.0 | 2003 12 04 | 704 | 0.4+ | 0.2− | 2004 03 25 | 704 | 1.4+ | 1.0+ | | |
| 2001 03 15 | 704 | (0.7+ | 1.5−) | 2003 12 17 | 704 | 0.8+ | 1.1+ | 2004 03 25 | 704 | 0.7+ | 0.5− | | |
| 2001 03 15 | 704 | 0.3+ | 0.8+ | 2003 12 17 | 704 | 0.1+ | 0.1− | 2004 03 25 | 704 | 0.3+ | 0.8− | | |
| 2001 03 15 | 704 | 0.2+ | 0.7+ | 2003 12 17 | 704 | 0.1+ | 0.2− | 2004 03 25 | 704 | 0.1+ | 0.7− | | |
| 2001 03 15 | 704 | 0.3+ | 0.8+ | 2003 12 17 | 699 | 0.8− | 0.4+ | 2005 06 11 | 704 | 0.0 | 0.9+ | | |
| 2001 03 28 | 699 | 0.7+ | 0.2+ | 2003 12 17 | 704 | 0.2+ | 0.1+ | 2005 06 11 | 704 | 0.9+ | 0.6+ | | |
| 2001 03 28 | 699 | 1.0− | 0.6− | 2003 12 17 | 699 | 1.3− | 0.8+ | 2005 06 11 | 704 | 0.2+ | 1.2+ | | |
| 2001 03 28 | 699 | 0.1+ | 0.2+ | 2003 12 17 | 699 | 1.2− | 0.4+ | 2005 06 11 | 704 | 0.4+ | 0.6+ | | |
| 2001 03 28 | 699 | 0.5+ | 0.4+ | 2003 12 17 | 699 | 0.7− | 1.1− | 2005 06 11 | 704 | 0.3+ | 0.7+ | | |
| 2001 04 13 | 704 | 0.3− | 0.1+ | 2003 12 18 | 185 | 0.3+ | 0.5+ | 2005 06 20 | 644 | 0.1− | 0.5+ | | |
| 2001 04 13 | 704 | 0.6− | 0.6+ | 2003 12 18 | 185 | 0.4− | 0.6− | 2005 06 20 | 644 | 0.3+ | 0.5+ | | |
| 2001 04 13 | 704 | 0.6+ | 0.4+ | 2003 12 18 | 185 | 0.7− | 0.2− | 2005 06 20 | 644 | 0.5+ | 0.4+ | | |
| 2001 04 13 | 704 | 0.7+ | 0.6− | 2003 12 28 | 704 | 0.5+ | 0.0 | 2005 06 20 | 644 | 0.5+ | 0.4+ | | |
| 2001 04 13 | 704 | 0.1− | 1.2+ | 2003 12 28 | 704 | 0.1+ | 0.2− | 2005 06 20 | 644 | 0.5+ | 0.4+ | | |
| 2001 04 14 | 704 | 1.1− | 0.7− | 2003 12 28 | 704 | 0.2+ | 0.1− | 2005 06 20 | 644 | 0.5+ | 0.4+ | | |
| 2001 04 14 | 704 | 0.6− | 0.9+ | 2003 12 28 | 704 | 0.6+ | 0.3− | 2006 11 15 | 703 | 0.4− | 0.3+ | | |
| 2001 04 14 | 704 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 11 15 | 703 | 1.0− | 0.2+ | | |
| 2001 04 14 | 704 | 0.0 | 0.4+ | 2003 12 29 | 703 | 0.6− | 0.8− | 2006 11 15 | 703 | 1.1− | 0.5− | | |
| 2001 04 14 | 704 | 0.4− | 0.8+ | 2003 12 29 | 703 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.1+ | | |
| 2001 04 14 | 704 | 0.4+ | 0.4+ | 2003 12 29 | 703 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.1− | 0.6+ | | |
| 2001 04 14 | 704 | 0.5+ | 0.3+ | 2003 12 29 | 703 | 0.5+ | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.3+ | | |
| 2001 04 14 | 704 | 0.1+ | 0.1− | 2003 12 29 | 704 | 0.7+ | 1.1+ | 2006 11 17 | 703 | 0.0 | 0.3− | | |
| 2001 04 15 | 704 | 0.1− | 0.2+ | 2003 12 29 | 704 | 1.1+ | 0.6+ | 2006 11 19 | 704 | 0.9− | 0.7− | | |
| 2001 04 15 | 704 | 0.1+ | 0.2+ | 2003 12 29 | 704 | (0.7+ | 2.1+) | 2006 11 19 | 704 | 0.3− | 0.0 | | |
| 2001 04 15 | 704 | 0.3+ | 0.0 | 2003 12 29 | 704 | 0.8+ | 0.1− | 2006 11 19 | 704 | 0.8− | 0.1− | | |
| 2001 04 15 | 704 | 0.2− | 0.0 | 2003 12 29 | 704 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.8− | 1.2+ | | |
| 2001 04 15 | 704 | 0.5− | 0.3− | 2003 12 30 | 704 | 0.2+ | 0.6+ | 2006 11 25 | 703 | 0.7− | 0.4+ | | |
| 2001 04 16 | 704 | 0.2− | 0.3+ | 2003 12 30 | 704 | 0.1− | 0.6+ | 2006 11 25 | 703 | 0.1+ | 0.2+ | | |
| 2001 04 16 | 704 | 0.0 | 0.3− | 2003 12 30 | 704 | 0.7− | 0.7+ | 2006 11 25 | 703 | 0.3− | 0.7+ | | |
| 2001 04 16 | 704 | 0.0 | 0.1+ | 2003 12 30 | 704 | 0.6+ | 1.0+ | 2006 11 25 | 703 | 0.7− | 0.6+ | | |
| 2001 04 16 | 704 | 0.0 | 0.1+ | 2004 01 19 | 704 | 0.7+ | 0.1+ | 2006 11 28 | 704 | 0.9− | 0.1+ | | |
| 2001 04 16 | 704 | 0.1+ | 0.3+ | 2004 01 19 | 704 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 1.5− | 1.1+ | | |
| 2001 04 21 | 704 | 0.7+ | 0.6+ | 2004 01 19 | 704 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 1.4− | 0.3− | | |
| 2001 04 21 | 704 | 0.1− | 0.0 | 2004 01 19 | 704 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.0− | 0.5+ | | |
| 2001 04 21 | 704 | 0.2+ | 0.0 | 2004 01 19 | 704 | 0.2+ | 0.0 | 2006 11 28 | 704 | 1.0− | 0.3+ | | |

**(139047)∗ 2001 EB$_{16}$**

Discovered 2001 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.51445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38802761 | $\omega$ | 346.12303 | | −0.75450819 | −0.54195219 | |
| $a$ | 1.8616340 | $\Omega$ | 149.59471 | | +0.65000259 | −0.69497379 | |
| $e$ | 0.3866557 | $i$ | 46.99905 | | +0.09063126 | +0.47254551 | |
| $P$ | 2.54 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 608 | 0.1− | 0.6+ | 2001 03 16 | 046 | 0.2+ | 0.3+ | 2001 04 09 | 540 | 0.0 | 1.0− | | |
| 2001 02 21 | 608 | 0.3− | 0.9+ | 2001 03 16 | 118 | 0.2+ | 0.2+ | 2001 04 09 | 540 | 0.1+ | 1.2− | | |
| 2001 03 14 | 704 | 0.7+ | 0.6+ | 2001 03 16 | 118 | 0.1+ | 0.2− | 2001 04 09 | 540 | (1.0− | 1.8−) | | |
| 2001 03 14 | 704 | 0.7− | 0.2− | 2001 03 16 | 118 | 0.2+ | 0.4− | 2001 04 12 | 540 | 0.2+ | 0.3− | | |
| 2001 03 14 | 704 | 0.4− | 0.4+ | 2001 03 17 | 704 | 0.1+ | 0.2+ | 2001 04 14 | 649 | (0.4+ | 1.7+) | | |
| 2001 03 14 | 704 | 0.0 | 0.4+ | 2001 03 17 | 704 | 0.3− | 0.1+ | 2001 04 14 | 649 | 1.2− | 0.8− | | |
| 2001 03 14 | 704 | 0.1− | 0.2− | 2001 03 17 | 704 | 0.1+ | 0.1− | 2001 04 14 | 649 | (0.7− | 2.3+) | | |
| 2001 03 15 | 704 | 0.2+ | 0.1− | 2001 03 17 | 704 | 0.1− | 0.3+ | 2001 04 14 | 649 | 0.0 | 0.5− | | |
| 2001 03 15 | 704 | 0.2− | 0.4− | 2001 03 17 | 704 | 0.1+ | 0.8+ | 2001 05 16 | 926 | 0.4− | 0.5+ | | |
| 2001 03 15 | 704 | 0.8− | 0.1− | 2001 03 17 | 704 | 0.0 | 0.3+ | 2001 05 16 | 926 | 0.2− | 1.4− | | |
| 2001 03 15 | 704 | 0.7− | 0.1− | 2001 03 17 | 704 | 0.1− | 0.6+ | 2001 05 16 | 926 | 0.2− | 0.8− | | |
| 2001 03 15 | 704 | 0.3− | 0.3− | 2001 03 17 | 704 | 0.3− | 0.9+ | 2001 09 19 | 568 | 0.3+ | 0.0 | | |
| 2001 03 15 | 557 | 0.2− | 0.0 | 2001 03 17 | 704 | 0.1+ | 0.1+ | 2001 09 19 | 568 | 0.1− | 0.2+ | | |
| 2001 03 15 | 557 | 0.0 | 0.0 | 2001 03 17 | 704 | 0.3− | 0.5+ | 2001 09 20 | 568 | 0.1+ | 0.1+ | | |
| 2001 03 15 | 557 | 0.5+ | 0.4+ | 2001 03 17 | 670 | 0.3− | 0.9− | 2001 09 20 | 568 | 0.4+ | 0.2+ | | |
| 2001 03 15 | 176 | (1.7− | 3.0+) | 2001 03 17 | 670 | 0.6− | 0.5+ | 2002 06 07 | 696 | 0.2+ | 0.7+ | | |
| 2001 03 15 | 176 | (0.4− | 2.1+) | 2001 03 18 | 859 | (0.5+ | 2.1+) | 2002 06 07 | 696 | 0.4− | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 176 | (0.2− | 2.0+) | 2001 03 18 | 859 | (1.3+ | 1.9+) | 2002 06 08 | 696 | 0.7+ | 0.2− |
| 2001 03 16 | 704 | 0.2+ | 0.3− | 2001 03 18 | 859 | (0.7+ | 1.5−) | 2002 06 08 | 696 | 0.1− | 0.1+ |
| 2001 03 16 | 704 | 0.0 | 0.3+ | 2001 03 18 | 854 | 0.4− | 0.9− | 2002 08 18 | 644 | 0.3− | 0.9+ |
| 2001 03 16 | 704 | 0.3+ | 0.1+ | 2001 03 18 | 854 | 0.1+ | 0.8− | 2002 08 30 | 644 | 0.1+ | 0.2+ |
| 2001 03 16 | 704 | 0.2− | 0.2− | 2001 03 18 | 854 | 0.0 | 0.2− | 2002 08 30 | 644 | 0.6− | 0.3+ |
| 2001 03 16 | 704 | (2.9− | 0.1+) | 2001 03 18 | 704 | 0.3+ | 0.0 | 2005 09 12 | 474 | 0.1− | 0.4+ |
| 2001 03 16 | 704 | 0.4− | 0.2− | 2001 03 18 | 704 | 0.3+ | 0.1+ | 2005 09 12 | 474 | 0.4− | 0.1− |
| 2001 03 16 | 704 | 0.1− | 0.6+ | 2001 03 18 | 704 | 0.3+ | 0.2− | 2005 09 12 | 474 | 0.1+ | 0.9+ |
| 2001 03 16 | 704 | 0.2+ | 0.0 | 2001 03 18 | 704 | 0.5+ | 0.2+ | 2006 01 29 | E12 | 0.1− | 0.5+ |
| 2001 03 16 | 675 | 0.5− | 0.1− | 2001 03 18 | 704 | 0.3− | 1.0+ | 2006 01 29 | E12 | 0.2− | 1.2+ |
| 2001 03 16 | 675 | 0.5− | 0.5− | 2001 03 18 | 704 | 0.3− | 0.7+ | 2006 01 29 | E12 | 0.0 | 0.8+ |
| 2001 03 16 | 854 | 0.3+ | 0.3− | 2001 03 18 | 704 | 0.1+ | 0.1+ | 2006 03 25 | 448 | 0.1+ | 1.2+ |
| 2001 03 16 | 854 | 0.2+ | 1.2− | 2001 03 18 | 673 | (1.5− | 0.6+) | 2006 03 25 | 448 | 0.3− | 0.4− |
| 2001 03 16 | 854 | 0.7+ | 0.1− | 2001 03 18 | 673 | (2.0− | 1.1+) | 2006 03 25 | 448 | 0.1− | 0.3+ |
| 2001 03 16 | 046 | 0.6+ | 0.3+ | 2001 03 18 | 557 | 0.1− | 0.4− | 2006 04 18 | 704 | 0.1+ | 0.4− |
| 2001 03 16 | 046 | 0.2+ | 0.5+ | 2001 03 18 | 557 | 0.3+ | 0.2− | 2006 04 18 | 704 | 0.5− | 0.4− |
| 2001 03 16 | 046 | 1.0+ | 0.5+ | 2001 03 18 | 557 | 0.3+ | 0.0 | 2006 04 18 | 704 | 0.5+ | 0.6− |
| 2001 03 16 | 046 | 0.2+ | 0.8− | 2001 03 19 | 587 | 0.2− | 0.0 | 2006 04 18 | 704 | 1.0+ | 0.9+ |
| 2001 03 16 | 046 | 0.2+ | 0.3− | 2001 03 19 | 587 | 0.0 | 0.2− | | | | |

**(139048)∗ 2001 EO$_{20}$ = 1998 KB$_{29}$**

Discovered 2001 Mar. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 11952)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.54415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28723090 | $\omega$ | 86.32637 | | +0.23021011 | +0.97264269 | |
| $a$ | 2.2750028 | $\Omega$ | 197.08033 | | −0.92962975 | +0.21034380 | |
| $e$ | 0.1366807 | $i$ | 6.08542 | | −0.28773570 | +0.09859855 | |
| $P$ | 3.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 704 | 1.2+ | 0.7+ | 2002 09 05 | 608 | 0.2+ | 0.5+ | 2002 10 07 | 704 | 0.1− | 0.8+ |
| 1998 05 22 | 704 | 0.2− | 1.2+ | 2002 09 05 | 608 | 0.3+ | 0.7+ | 2002 10 07 | 704 | 0.0 | 0.7+ |
| 1998 05 22 | 704 | 0.8+ | 0.8− | 2002 09 13 | 683 | (3.2− | 0.2+) | 2002 10 10 | 645 | 0.1+ | 0.2− |
| 1998 05 22 | 704 | (1.2+ | 3.8−) | 2002 09 13 | 683 | 1.2− | 0.3− | 2002 10 10 | 645 | 0.1+ | 0.2− |
| 1998 05 24 | 704 | 0.8+ | 0.4− | 2002 09 13 | 683 | 0.9− | 0.1+ | 2002 10 11 | 704 | 1.2+ | 0.1− |
| 1998 05 24 | 704 | (1.5+ | 2.4+) | 2002 09 14 | 683 | 0.4− | 1.5+ | 2002 10 11 | 704 | 0.7− | 0.4+ |
| 1998 05 24 | 704 | 1.1− | 1.3− | 2002 09 14 | 683 | (1.9+ | 0.4+) | 2002 10 11 | 704 | 0.2− | 0.0 |
| 1998 05 24 | 704 | 0.0 | 1.0− | 2002 09 14 | 683 | (2.1− | 0.0 ) | 2004 01 28 | 291 | 0.1+ | 0.0 |
| 2001 02 22 | 645 | 0.1− | 0.0 | 2002 09 14 | 644 | 0.1− | 0.2− | 2004 01 28 | 291 | 0.2+ | 0.1+ |
| 2001 02 22 | 645 | 0.2− | 0.0 | 2002 09 14 | 644 | 0.2− | 0.2− | 2004 01 28 | 291 | 0.2+ | 0.0 |
| 2001 03 02 | 699 | 0.3+ | 0.3+ | 2002 09 14 | 644 | 0.1+ | 0.3− | 2005 07 05 | 704 | 0.2+ | 1.1+ |
| 2001 03 02 | 699 | 0.0 | 0.7+ | 2002 09 17 | 644 | 0.5− | 0.6+ | 2005 07 05 | 704 | 0.1− | 0.7+ |
| 2001 03 02 | 699 | 0.6− | 0.0 | 2002 09 17 | 644 | 0.4− | 0.4+ | 2005 07 05 | 704 | 0.2− | 0.4+ |
| 2001 03 02 | 699 | 0.4+ | 0.6+ | 2002 09 17 | 644 | 0.7− | 0.5+ | 2005 07 05 | 704 | 0.1− | 0.5+ |
| 2001 03 15 | 699 | 1.0+ | 0.9− | 2002 09 18 | 644 | 0.4− | 0.6+ | 2005 07 05 | 704 | 0.3+ | 0.5+ |
| 2001 03 15 | 699 | 1.0+ | 0.5+ | 2002 09 18 | 644 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2001 03 15 | 699 | 0.5+ | 0.1+ | 2002 09 18 | 644 | 0.7− | 0.3+ | 2006 11 17 | G96 | 0.5+ | 0.6− |
| 2001 03 15 | 699 | 0.1− | 0.0 | 2002 09 30 | 704 | 0.6− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2001 03 20 | 608 | 0.5+ | 0.1+ | 2002 09 30 | 704 | 0.5− | 0.5+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2001 03 20 | 608 | 0.6+ | 0.2− | 2002 09 30 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.3− |
| 2001 03 20 | 608 | 0.5+ | 0.1+ | 2002 09 30 | 704 | 0.4− | 0.5+ | 2006 11 28 | 704 | 0.4+ | 1.4+ |
| 2002 08 28 | 644 | 0.0 | 0.5+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.1+ | 1.9+ |
| 2002 08 28 | 644 | 0.0 | 0.5+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.9+ |
| 2002 08 28 | 644 | 0.0 | 0.5+ | 2002 10 07 | 704 | 0.6− | 0.3+ | 2006 11 28 | 704 | 1.1− | 0.8+ |
| 2002 09 05 | 608 | 0.5+ | 0.1− | 2002 10 07 | 704 | 0.1+ | 0.6+ | | | | |

**(139049)∗ 2001 EH$_{21}$ = 2002 NW$_{40}$**

Discovered 2001 Mar. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 33382)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.11393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28598614 | $\omega$ | 201.05197 | | −0.82611274 | −0.55832334 | |
| $a$ | 2.2815994 | $\Omega$ | 304.77924 | | +0.52936311 | −0.72254475 | |
| $e$ | 0.0761085 | $i$ | 5.32610 | | +0.19316429 | −0.40768142 | |
| $P$ | 3.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | 0.5+ | 0.4+ | 2002 08 27 | 644 | 0.1− | 0.8+ | 2004 01 22 | 704 | 0.4+ | 0.1+ |
| 2001 03 02 | 699 | 0.6+ | 1.0+ | 2002 08 27 | 644 | 0.4− | 0.6+ | 2004 01 22 | 704 | 0.4+ | 0.4− |
| 2001 03 02 | 699 | 0.3+ | 0.5+ | 2002 08 27 | 644 | 0.3− | 0.7+ | 2006 09 16 | 703 | 0.2− | 1.3− |
| 2001 03 02 | 699 | 0.4− | 0.3+ | 2003 11 24 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.3+ | 0.3− |
| 2001 03 15 | 699 | 1.3+ | 1.2+ | 2003 11 24 | 704 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.6− |
| 2001 03 15 | 699 | 0.2+ | 1.2+ | 2003 11 24 | 704 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.6− |
| 2001 03 15 | 699 | 1.2+ | 0.4+ | 2003 11 24 | 704 | 0.1− | 0.0 | 2006 09 20 | 699 | (2.0+ | 2.5−) |
| 2001 03 15 | 699 | 1.0+ | 0.7+ | 2003 11 24 | 704 | 0.1− | 1.0+ | 2006 09 20 | 699 | 0.3+ | 0.6+ |
| 2001 03 18 | 704 | 0.9− | 0.6− | 2003 12 04 | 704 | 1.1− | 0.6+ | 2006 09 20 | 699 | 0.7+ | 1.0+ |
| 2001 03 18 | 704 | 0.0 | 0.0 | 2003 12 04 | 704 | 0.8− | 0.3− | 2006 09 20 | 699 | 0.0 | 0.8+ |
| 2001 03 18 | 704 | 0.0 | 1.1+ | 2003 12 04 | 704 | 1.3− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 03 18 | 704 | 0.9+ | 0.4+ | 2003 12 04 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2001 03 18 | 704 | 1.1− | 0.3+ | 2003 12 04 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.7− | 0.9+ |
| 2002 07 14 | 644 | (0.1− | 1.7+) | 2003 12 18 | 704 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.8+ | 1.3− |
| 2002 07 14 | 644 | 0.0 | 1.4+ | 2003 12 18 | 704 | 0.6+ | 0.7− | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 07 14 | 644 | 0.0 | 1.4+ | 2003 12 18 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.5+ |
| 2002 07 18 | 644 | 0.1− | 0.3+ | 2003 12 18 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2002 07 18 | 644 | 0.4− | 0.5+ | 2003 12 18 | 704 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.8− | 0.2+ |
| 2002 07 18 | 644 | 0.7− | 0.6+ | 2003 12 30 | 735 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.6− | 0.2+ |
| 2002 08 06 | 644 | 0.1− | 0.6+ | 2003 12 30 | 735 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2002 08 06 | 644 | 0.6− | 0.7+ | 2003 12 30 | 735 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 08 06 | 644 | 0.2− | 0.5+ | 2004 01 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 08 07 | 644 | 0.2− | 0.2+ | 2004 01 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 07 | 644 | 0.0 | 0.2+ | 2004 01 18 | 691 | 0.1+ | 0.0 | | | | |
| 2002 08 07 | 644 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.5+ | 0.6+ | | | | |

**(139050)∗ 2001 EA$_{22}$ = 1998 KV$_{61}$**

Discovered 2001 Mar. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 17570)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.16643 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28582594 | $\omega$ | 312.46153 | | −0.95267454 | +0.29472566 | |
| $a$ | 2.2824518 | $\Omega$ | 244.80390 | | −0.24912940 | −0.89735063 | |
| $e$ | 0.0938551 | $i$ | 4.72175 | | −0.17420036 | −0.32847927 | |
| $P$ | 3.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 704 | 1.4+ | 1.6− | 2001 03 15 | 699 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.2+ | 0.4− |
| 1998 05 22 | 704 | 1.5+ | 0.4+ | 2001 03 18 | 704 | 0.4− | 0.3+ | 2003 12 23 | 704 | 0.2− | 1.0− |
| 1998 05 22 | 704 | 0.9+ | 0.7+ | 2001 03 18 | 704 | 0.5+ | 0.7+ | 2005 02 15 | 809 | 0.4+ | 0.1+ |
| 1998 05 22 | 704 | (2.9+ | 4.6+) | 2001 03 18 | 704 | 0.1− | 0.4+ | 2005 02 15 | 809 | 0.6+ | 0.1+ |
| 1998 05 24 | 704 | 0.2+ | 0.4+ | 2001 03 18 | 704 | 0.6+ | 1.0+ | 2005 02 15 | 809 | 0.3+ | 0.5+ |
| 1998 05 24 | 704 | 0.1+ | 0.3− | 2001 03 18 | 704 | 0.6+ | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 1998 05 24 | 704 | (2.1− | 0.1−) | 2001 03 27 | 608 | 1.1+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 1998 05 24 | 704 | 0.2+ | 0.1− | 2001 03 27 | 608 | 0.6+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1998 05 24 | 704 | (3.1− | 2.1+) | 2001 03 27 | 608 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1998 05 27 | 704 | 0.4− | 0.4+ | 2001 03 27 | 608 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1− |
| 1998 05 27 | 704 | 1.5− | 0.4+ | 2001 03 27 | 608 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 1998 05 27 | 704 | (2.3− | 0.8−) | 2001 03 27 | 608 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1998 05 27 | 704 | (3.7− | 0.3+) | 2002 07 21 | 644 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 1999 10 01 | 703 | 0.5− | 1.5+ | 2002 07 21 | 644 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 1999 10 01 | 703 | 0.9− | 1.4+ | 2002 07 21 | 644 | 0.3− | 0.4+ | 2006 10 29 | 704 | 0.8− | 0.5+ |
| 1999 10 01 | 703 | (2.9− | 0.9−) | 2002 08 05 | 644 | 0.3− | 0.4+ | 2006 10 29 | 704 | 0.4+ | 0.8+ |
| 1999 10 01 | 703 | 0.5+ | 1.0+ | 2002 08 05 | 644 | 0.5− | 0.6+ | 2006 10 29 | 704 | 0.8+ | 0.2+ |
| 2001 02 17 | 704 | 0.4− | 0.1+ | 2002 08 05 | 644 | 0.8− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2001 02 17 | 704 | 0.3+ | 1.2+ | 2002 08 17 | 644 | 0.4− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.1+ | 0.1− | 2002 08 17 | 644 | 0.2− | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 02 17 | 704 | 0.1− | 0.9+ | 2002 08 17 | 644 | 0.3− | 0.5− | 2006 11 07 | 644 | 0.2− | 0.1− |
| 2001 02 17 | 704 | 0.6+ | 0.2+ | 2002 08 26 | 644 | 0.4− | 0.4+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2001 02 22 | 645 | 0.1− | 0.0 | 2002 08 26 | 644 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.2− |
| 2001 02 22 | 645 | 0.1− | 0.1+ | 2002 08 26 | 644 | 0.3− | 0.4+ | 2006 11 11 | 691 | 1.2− | 0.1− |
| 2001 03 03 | 704 | 0.6− | 0.4+ | 2003 12 19 | 704 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 03 03 | 704 | 0.2− | 0.1+ | 2003 12 19 | 704 | 0.1− | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 03 03 | 704 | 0.2− | 0.4+ | 2003 12 19 | 704 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2001 03 03 | 704 | 0.4− | 0.4+ | 2003 12 19 | 704 | 0.4− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2001 03 03 | 704 | 0.3− | 0.5+ | 2003 12 21 | 704 | 0.6+ | 0.2− | 2006 11 15 | 691 | 0.7+ | 0.0 |
| 2001 03 15 | 699 | 0.2+ | 0.4+ | 2003 12 21 | 704 | 0.4+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 03 15 | 699 | 0.3+ | 0.2+ | 2003 12 21 | 704 | 0.5+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2001 03 15 | 699 | 0.1− | 0.4+ | 2003 12 23 | 704 | 0.2+ | 0.7− | 2006 11 18 | 691 | 0.1+ | 0.2− |

**(139051)∗ 2001 EJ$_{23}$**

Discovered 2001 Mar. 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 142.09947 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.28317576 | $\omega$ | 48.80902 | | −0.21792936 | +0.97500209 |
| $a$ | 2.2966703 | $\Omega$ | 208.69009 | | −0.92027749 | −0.22007528 |
| $e$ | 0.1439030 | $i$ | 5.17873 | | −0.32495560 | −0.03062345 |
| $P$ | 3.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 691 | 0.3− | 0.4− | 2002 09 14 | 644 | 0.3− | 0.3− | 2005 07 05 | 704 | 0.5− | 1.1− |
| 1999 11 15 | 691 | 0.3− | 0.3− | 2002 09 14 | 644 | 0.5− | 0.5− | 2005 07 05 | 704 | 0.5− | 1.1+ |
| 1999 11 15 | 691 | 0.0 | 0.4− | 2002 09 16 | 608 | 1.1− | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2001 02 20 | 608 | 1.4+ | 0.7− | 2002 09 16 | 608 | 1.2− | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2001 02 20 | 608 | 1.0+ | 0.4− | 2002 09 16 | 608 | 0.9− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2001 02 20 | 608 | (1.5+ | 0.6−) | 2002 10 04 | 704 | 0.2+ | 0.9+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 03 15 | 608 | 0.3+ | 0.1+ | 2002 10 04 | 704 | 1.1+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 03 15 | 608 | 0.5+ | 0.7+ | 2002 10 04 | 704 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 03 15 | 608 | 0.6+ | 0.2− | 2002 10 04 | 704 | 0.7+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 03 18 | 704 | 0.4− | 0.1+ | 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.4− | 0.4− |
| 2001 03 18 | 704 | (0.4+ | 1.8+) | 2002 10 04 | 704 | 0.9+ | 0.1+ | 2006 11 12 | 703 | 0.1− | 1.1− |
| 2001 03 18 | 704 | 0.2− | 0.0 | 2002 10 04 | 704 | 0.2+ | 0.4+ | 2006 11 12 | 703 | 0.9− | 0.8− |
| 2001 03 18 | 704 | 1.3− | 1.1+ | 2002 10 04 | 704 | (2.1+ | 1.6+) | 2006 11 12 | 703 | (0.2− | 2.2−) |
| 2001 03 24 | 704 | (0.5− | 1.9+) | 2002 10 04 | 704 | 0.3+ | 0.3+ | 2006 11 12 | 703 | 0.8− | 1.0− |
| 2001 03 24 | 704 | 0.8− | 1.2+ | 2002 10 04 | 704 | (1.6+ | 1.0+) | 2006 11 19 | 691 | 0.2− | 0.3− |
| 2001 03 24 | 704 | 1.4− | 0.9− | 2002 10 07 | 704 | 0.7+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 04 01 | 704 | 0.0 | 0.2− | 2002 10 07 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 04 01 | 704 | 0.1+ | 0.2+ | 2002 10 07 | 704 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2001 04 01 | 704 | 0.1− | 0.4− | 2002 10 12 | 704 | 0.5− | 1.2+ | 2006 11 20 | 704 | 0.8− | 0.7+ |
| 2001 04 01 | 704 | 0.0 | 0.7+ | 2002 10 12 | 704 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.5− | 1.0+ |
| 2001 04 01 | 704 | 0.5+ | 0.4+ | 2002 10 12 | 704 | 0.7− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2001 04 17 | 699 | 0.2− | 0.1+ | 2002 10 12 | 704 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 04 17 | 699 | 0.1+ | 0.5+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 2001 04 17 | 699 | 1.0+ | 1.4+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 29 | 704 | 1.2+ | 0.0 |
| 2001 04 17 | 699 | 0.7+ | 0.7+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2002 09 06 | 704 | 0.5+ | 0.3+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.2− |
| 2002 09 06 | 704 | 0.1+ | 0.5− | 2003 12 22 | 704 | 1.1+ | 1.0− | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2002 09 06 | 704 | 1.0+ | 1.1+ | 2003 12 22 | 704 | 0.6+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 1.1+ |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2003 12 22 | 704 | 0.8+ | 0.5+ | 2006 12 01 | 691 | 0.5+ | 0.4+ |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2005 07 05 | 704 | (0.4− | 2.1−) | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2002 09 14 | 239 | 1.0− | 0.9+ | 2005 07 05 | 704 | (2.7− | 1.4+) | 2006 12 01 | 691 | 0.4− | 0.3+ |
| 2002 09 14 | 239 | 0.7− | 1.0+ | 2005 07 05 | 704 | 0.2− | 0.9+ | | | | |
| 2002 09 14 | 644 | 0.2− | 0.4− | 2005 07 05 | 704 | 0.4+ | 1.4− | | | | |

**(139052)∗ 2001 EG$_{26}$ = 1998 KH$_{36}$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 19924)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 112.84912 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.28691210 | $\omega$ | 295.54916 | | +0.50840801 | +0.86109681 |
| $a$ | 2.2766877 | $\Omega$ | 5.02021 | | −0.76439090 | +0.45438910 |
| $e$ | 0.1893930 | $i$ | 3.79676 | | −0.39651967 | +0.22812897 |
| $P$ | 3.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.3− | 0.1− | 2002 09 21 | 608 | 1.1− | 0.8− | 2002 11 11 | 644 | 0.4− | 0.7+ |
| 1994 03 05 | 691 | 0.1− | 0.0 | 2002 09 21 | 608 | 1.3− | 0.5− | 2002 11 12 | 704 | 0.1− | 0.0 |
| 1994 03 05 | 691 | 0.0 | 0.1+ | 2002 09 29 | 608 | 0.4− | 0.1− | 2002 11 12 | 704 | 0.0 | 1.0+ |
| 1995 09 19 | 809 | 0.1− | 0.6+ | 2002 09 29 | 608 | 0.5− | 0.1+ | 2002 11 12 | 704 | 0.3+ | 0.7+ |
| 1995 09 20 | 809 | 0.3+ | 0.4+ | 2002 09 29 | 608 | 0.2− | 0.0 | 2002 11 12 | 704 | 1.3− | 0.4− |
| 1998 05 22 | 704 | 0.8− | 0.9+ | 2002 10 01 | 699 | 0.3+ | 0.1+ | 2002 11 12 | 704 | 0.2− | 0.1− |
| 1998 05 22 | 704 | (1.4+ | 2.3−) | 2002 10 01 | 699 | 0.6− | 0.3− | 2002 11 22 | 644 | 0.0 | 0.3+ |
| 1998 05 22 | 704 | 0.5+ | 1.7+ | 2002 10 01 | 699 | 0.2− | 0.1− | 2002 11 22 | 644 | 0.1− | 0.5+ |
| 1998 05 22 | 704 | 1.4+ | 1.2+ | 2002 10 01 | 699 | 0.5+ | 0.2− | 2002 11 22 | 644 | 0.2+ | 0.7+ |
| 1998 05 24 | 704 | 0.0 | 1.4+ | 2002 10 02 | 704 | 0.2− | 0.1+ | 2004 01 30 | 704 | 1.3− | 0.9+ |
| 1998 05 24 | 704 | 0.1+ | 0.6+ | 2002 10 02 | 704 | 0.2− | 0.1− | 2004 01 30 | 704 | 0.1− | 0.7+ |
| 1998 05 24 | 704 | 0.0 | 0.3− | 2002 10 02 | 704 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.3+ |
| 1998 05 24 | 704 | 0.5− | 1.1+ | 2002 10 02 | 704 | 0.2+ | 0.7+ | 2004 01 30 | 704 | 0.1+ | 0.6+ |
| 2001 03 02 | 699 | 0.5− | 0.7+ | 2002 10 02 | 704 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.2− | 0.2+ |
| 2001 03 02 | 699 | 1.0+ | 0.4+ | 2002 10 02 | 608 | 1.4+ | 0.2− | 2004 02 11 | 691 | 0.3+ | 0.2+ |
| 2001 03 02 | 699 | 0.5+ | 0.3− | 2002 10 02 | 608 | (1.7+ | 0.6+) | 2004 02 11 | 691 | 0.2+ | 0.2+ |
| 2001 03 02 | 699 | 0.2+ | 0.6− | 2002 10 02 | 608 | 1.0+ | 0.3− | 2004 02 11 | 691 | 0.1+ | 0.1+ |
| 2001 03 02 | 691 | 0.2+ | 0.6+ | 2002 10 03 | 704 | 0.1+ | 0.1− | 2004 02 13 | 699 | 0.7+ | 0.5− |
| 2001 03 02 | 691 | 0.3+ | 0.7+ | 2002 10 03 | 704 | 0.1− | 0.0 | 2004 02 13 | 699 | 0.0 | 0.2+ |
| 2001 03 02 | 691 | 0.1− | 0.7+ | 2002 10 03 | 704 | 0.2+ | 0.2+ | 2004 02 13 | 699 | 1.1− | 1.0+ |
| 2001 03 15 | 735 | (1.8+ | 0.1+) | 2002 10 03 | 704 | 0.2− | 0.5+ | 2004 02 13 | 699 | 0.2− | 0.4− |
| 2001 03 15 | 735 | 1.4+ | 0.2− | 2002 10 03 | 704 | 0.1+ | 0.1− | 2004 02 14 | 691 | 0.0 | 0.0 |
| 2001 03 15 | 735 | (2.4− | 0.1+) | 2002 10 07 | 704 | (1.6− | 0.5+) | 2004 02 14 | 691 | 0.0 | 0.0 |
| 2001 03 18 | 704 | 0.3+ | 0.5+ | 2002 10 07 | 704 | (1.7− | 0.6+) | 2004 02 14 | 691 | 0.0 | 0.1+ |
| 2001 03 18 | 704 | 0.0 | 0.5+ | 2002 10 07 | 704 | 1.0− | 0.9+ | 2004 02 15 | 704 | 0.6+ | 0.4+ |
| 2001 03 18 | 704 | 0.3+ | 0.3+ | 2002 10 07 | 704 | (2.0− | 0.6+) | 2004 02 15 | 704 | 0.8+ | 1.0+ |
| 2001 03 18 | 699 | 0.1− | 0.1− | 2002 10 07 | 704 | (1.7− | 0.7+) | 2004 02 15 | 704 | 0.8+ | 0.0 |
| 2001 03 18 | 704 | 0.3− | 0.1+ | 2002 10 09 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.4+ | 0.3+ |
| 2001 03 18 | 704 | 0.7+ | 0.5+ | 2002 10 09 | 704 | 0.0 | 0.2+ | 2004 02 17 | 644 | 0.3+ | 0.2+ |
| 2001 03 18 | 699 | 0.2− | 0.9+ | 2002 10 09 | 704 | 0.2− | 0.5+ | 2004 02 17 | 644 | 0.2+ | 0.5+ |
| 2001 03 18 | 699 | 0.4+ | 0.4+ | 2002 10 09 | 704 | 0.5+ | 0.8+ | 2004 02 17 | 644 | 0.3+ | 0.3+ |
| 2001 03 18 | 699 | 0.8+ | 0.3+ | 2002 10 09 | 704 | 0.5+ | 0.6+ | 2004 02 23 | 704 | 0.6+ | 0.5+ |
| 2001 03 27 | 608 | 0.6+ | 1.4+ | 2002 10 11 | 704 | 0.3− | 1.0+ | 2004 02 23 | 704 | 0.0 | 0.6+ |
| 2001 03 27 | 608 | 0.5+ | 1.4+ | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2004 02 23 | 704 | 0.3+ | 0.3− |
| 2001 03 27 | 608 | 0.9+ | 0.7+ | 2002 10 11 | 704 | 0.0 | 0.7+ | 2004 02 23 | 704 | 0.2+ | 0.1− |
| 2001 04 15 | 699 | 1.4+ | 0.8+ | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2004 03 17 | 645 | 0.1− | 0.1− |
| 2001 04 15 | 699 | 1.3+ | 1.2+ | 2002 10 31 | 699 | 0.4− | 0.2+ | 2004 03 17 | 645 | 0.1− | 0.1− |
| 2001 04 15 | 699 | 1.3+ | 0.0 | 2002 10 31 | 699 | 0.4− | 0.9+ | 2004 03 18 | 645 | 0.0 | 0.1− |
| 2001 04 15 | 699 | 0.6+ | 0.0 | 2002 10 31 | 699 | 0.9− | 0.6+ | 2004 03 18 | 645 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 1.3+ | 0.1− | 2002 10 31 | 699 | 0.1− | 0.0 | 2004 04 14 | 645 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.3+ | 0.3+ | 2002 11 01 | 704 | 0.1− | 0.1+ | 2004 04 14 | 645 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.6− | 0.3− | 2002 11 01 | 704 | 0.2+ | 0.5+ | 2004 04 16 | 645 | 0.0 | 0.1− |
| 2002 09 05 | 704 | (0.3+ | 1.6+) | 2002 11 01 | 704 | 0.4+ | 0.2− | 2004 04 16 | 645 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.7− | 0.7+ | 2002 11 05 | 699 | 0.0 | 0.5+ | 2005 01 18 | 809 | 0.2− | 0.2− |
| 2002 09 06 | 049 | 0.4+ | 0.6− | 2002 11 05 | 699 | 0.6− | 0.9+ | 2005 01 18 | 809 | 0.2− | 0.3+ |
| 2002 09 06 | 049 | 0.3+ | 0.6− | 2002 11 05 | 699 | 0.2+ | 0.0 | 2005 01 18 | 809 | 0.0 | 0.3+ |
| 2002 09 06 | 049 | 0.8+ | 0.7− | 2002 11 05 | 699 | 1.2− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 0.6+ | 0.6+ | 2002 11 06 | 704 | 0.5− | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.5+ | 0.5+ | 2002 11 06 | 704 | 0.0 | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.3− | 0.5+ | 2002 11 06 | 704 | 0.3− | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2002 09 16 | 608 | 1.1− | 0.4+ | 2002 11 06 | 704 | 0.5− | 0.8+ | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2002 09 16 | 608 | 1.1− | 1.0+ | 2002 11 06 | 704 | 1.0− | 0.8+ | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2002 09 16 | 608 | 0.3− | 0.5+ | 2002 11 11 | 644 | 0.3+ | 0.3+ | | | | |
| 2002 09 21 | 608 | 1.2− | 0.1− | 2002 11 11 | 644 | 0.1+ | 0.6+ | | | | |

**(139053)∗ 2001 EP$_{26}$ = 1999 TZ$_{131}$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. T. B. Spahr (*MPO* 22769)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.65920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28587634 | $\omega$ | 230.73873 | | −0.75220977 | −0.65877185 | |
| $a$ | 2.2821836 | $\Omega$ | 268.05017 | | +0.60882639 | −0.68664892 | |
| $e$ | 0.0886685 | $i$ | 0.81101 | | +0.25201367 | −0.30746204 | |
| $P$ | 3.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3− | 0.7+ | 2002 08 08 | 644 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 1999 10 06 | 704 | 0.5+ | 0.3− | 2002 08 08 | 644 | 0.1− | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.7+ | 0.4− | 2002 08 08 | 644 | 0.1+ | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.4− |
| 1999 10 06 | 704 | 0.3+ | 0.5− | 2003 12 17 | 291 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.1+ |
| 1999 10 06 | 704 | 0.8+ | 0.0 | 2003 12 17 | 291 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.3− |
| 1999 10 09 | 704 | 0.2+ | 0.4+ | 2003 12 17 | 291 | 0.9− | 1.2+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 10 09 | 704 | 1.3− | 1.0+ | 2003 12 21 | 704 | 0.1+ | 0.6− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.4− | 0.2+ | 2003 12 21 | 704 | (1.6+ | 1.2+) | 2006 10 19 | 644 | 0.1+ | 0.8+ |
| 2001 03 02 | 699 | 0.3+ | 0.9+ | 2003 12 21 | 704 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2001 03 02 | 699 | 0.5− | 1.1+ | 2003 12 21 | 704 | 0.2− | 0.7− | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2001 03 02 | 699 | (1.7+ | 0.4+) | 2004 01 21 | 704 | (1.0− | 2.6+) | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 03 02 | 699 | 1.0+ | 0.1+ | 2004 01 21 | 704 | (0.3− | 2.2+) | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2001 03 18 | 704 | 0.0 | 1.2+ | 2004 01 21 | 704 | (0.6− | 1.8+) | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2001 03 18 | 704 | 0.5+ | 0.2+ | 2004 01 21 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.5− | 0.4+ |
| 2001 03 18 | 704 | 0.3+ | 0.6+ | 2004 01 21 | 704 | (0.7− | 1.9+) | 2006 10 21 | 703 | 1.0− | 0.8− |
| 2001 03 18 | 699 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 1.4+ | 1.5+ | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2001 03 18 | 704 | 0.6− | 0.4− | 2004 02 26 | 704 | (2.1+ | 1.4+) | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 03 18 | 704 | 0.0 | 0.8+ | 2004 02 26 | 704 | 1.1+ | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 03 18 | 699 | 0.2− | 1.3+ | 2005 01 23 | 809 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 03 18 | 699 | 0.6+ | 0.2+ | 2005 01 23 | 809 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2001 03 18 | 699 | 0.9+ | 0.7− | 2005 01 23 | 809 | 0.7− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2001 03 18 | 608 | 0.3+ | 0.5− | 2006 09 15 | 691 | 0.4+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2001 03 18 | 608 | 0.3+ | 0.7− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 03 18 | 608 | 0.4+ | 0.8− | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 04 01 | 704 | 1.4+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2001 04 01 | 704 | 0.5+ | 1.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 04 01 | 704 | (0.2+ | 1.6+) | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 04 01 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2002 07 07 | 291 | 1.2− | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 2.3− | 0.2− |
| 2002 07 07 | 291 | 0.5− | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.1− |
| 2002 07 07 | 291 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.0− |
| 2002 07 14 | 644 | 0.0 | 0.9+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.7+ | 0.8− |
| 2002 07 14 | 644 | 0.0 | 1.0+ | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 07 14 | 644 | 0.2+ | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 08 06 | 644 | 0.1− | 0.8+ | 2006 10 10 | 644 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 08 06 | 644 | 0.5+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2002 08 06 | 644 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.1− | | | | |

**(139054)∗ 2001 EJ$_{27}$**

Discovered 2001 Mar. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.00177 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29862130 | $\omega$ | 261.30436 | | +0.02512406 | −0.99957022 | |
| $a$ | 2.2167780 | $\Omega$ | 187.30698 | | +0.95754453 | +0.02840300 | |
| $e$ | 0.1361169 | $i$ | 6.82078 | | +0.28718853 | −0.00725612 | |
| $P$ | 3.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 566 | 0.1− | 0.5− | 2004 01 29 | 704 | 0.1− | 0.8+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 1996 10 12 | 566 | 0.1− | 0.5− | 2004 02 17 | 704 | 0.4− | 0.8− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 1996 10 12 | 566 | 0.4+ | 0.2− | 2004 02 17 | 704 | 0.7+ | 1.2− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 03 02 | 699 | 0.3+ | 0.1+ | 2004 02 17 | 704 | 1.3− | 0.1+ | 2006 11 13 | 703 | 0.5+ | 0.1− |
| 2001 03 02 | 699 | 0.8+ | 0.2− | 2004 02 17 | 704 | 0.3− | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.2+ |
| 2001 03 02 | 699 | 1.0+ | 0.5− | 2006 09 28 | 683 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.6+ | 0.2+ |
| 2001 03 02 | 699 | 0.7+ | 0.1− | 2006 09 28 | 683 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.3+ |
| 2001 03 18 | 704 | 0.4+ | 0.6+ | 2006 09 28 | 683 | 0.6+ | 0.4− | 2006 11 14 | 704 | 0.8+ | 0.6+ |
| 2001 03 18 | 704 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.1− | 1.0+ |
| 2001 03 18 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 11 14 | 704 | 0.0 | 0.9+ |
| 2001 03 18 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.5− | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2001 03 18 | 704 | 1.2− | 0.3− | 2006 09 30 | 703 | 0.5− | 0.7− | 2006 11 17 | 704 | 0.5− | 0.7+ |
| 2001 03 21 | 608 | 0.0 | 1.1− | 2006 10 01 | 683 | 0.7+ | 0.1− | 2006 11 17 | 704 | 0.1− | 1.1+ |
| 2001 03 21 | 608 | (0.3+ | 1.6−) | 2006 10 01 | 683 | 1.1− | 0.8+ | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2001 03 21 | 608 | 0.2+ | 1.2− | 2006 10 01 | 683 | (1.7+ | 0.4+) | 2006 11 17 | 704 | 0.9+ | 0.7+ |
| 2001 04 01 | 704 | 0.5− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.7− | 0.4+ |
| 2001 04 01 | 704 | 1.2− | 0.4− | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 11 17 | 644 | 0.1+ | 0.2− |
| 2001 04 01 | 704 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.9− | 0.1− |
| 2001 04 01 | 704 | 0.8− | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.5+ | 0.1− |
| 2003 11 30 | 704 | 0.3+ | 0.3+ | 2006 10 14 | D35 | 0.2− | 0.6+ | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2003 11 30 | 704 | 0.1+ | 0.2+ | 2006 10 14 | D35 | 0.1− | 0.2− | 2006 11 19 | 703 | 0.7− | 0.2+ |
| 2003 11 30 | 704 | 0.2+ | 0.3− | 2006 10 14 | D35 | 0.4− | 0.4+ | 2006 11 20 | 704 | 0.8− | 1.0− |
| 2003 11 30 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.4− | 2006 11 20 | 704 | 1.3+ | 0.2− |
| 2003 11 30 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2003 12 20 | 704 | (3.0+ | 1.4+) | 2006 10 16 | 703 | (1.9+ | 1.3−) | 2006 11 20 | 704 | 0.4− | 0.2− |
| 2003 12 20 | 704 | (2.9+ | 1.7+) | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 20 | 704 | (0.7− | 1.8+) |
| 2003 12 20 | 704 | (3.7+ | 0.7+) | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2003 12 20 | 704 | (2.5+ | 1.8+) | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 01 29 | 704 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 01 29 | 704 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.2− |

**(139055)∗ 2001 FT**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.74034 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26213641 | $\omega$ | 117.94673 | | −0.83387487 | +0.52918109 | |
| $a$ | 2.4179713 | $\Omega$ | 94.39742 | | −0.54538040 | −0.74620849 | |
| $e$ | 0.1728804 | $i$ | 9.05434 | | −0.08492893 | −0.40390625 | |
| $P$ | 3.76 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 01 | 691 | 0.6+ | 0.3− | 2001 04 04 | 106 | 0.6− | 0.5− | 2003 12 19 | 704 | 0.2+ | 0.4+ |
| 1993 01 01 | 691 | 0.8− | 0.6+ | 2001 04 15 | 704 | 0.6− | 0.1− | 2003 12 19 | 704 | 0.4+ | 0.0 |
| 1993 01 01 | 691 | 0.4+ | 0.4− | 2001 04 15 | 704 | 0.4− | 0.0 | 2003 12 19 | 704 | 0.3+ | 0.1+ |
| 2001 01 26 | 704 | 1.4+ | 0.5− | 2001 04 15 | 704 | 0.4− | 0.4+ | 2003 12 19 | 704 | 1.1+ | 0.4+ |
| 2001 01 26 | 704 | 1.0+ | 0.3− | 2001 04 15 | 704 | 0.3+ | 0.0 | 2003 12 21 | 704 | 0.3− | 0.3+ |
| 2001 01 26 | 704 | 0.1+ | 0.3− | 2001 04 15 | 704 | 0.4− | 0.2+ | 2003 12 21 | 704 | 0.2+ | 0.8+ |
| 2001 01 26 | 704 | 0.2+ | 0.3− | 2001 04 25 | 699 | 0.3+ | 0.4+ | 2003 12 21 | 704 | 0.7+ | 0.7− |
| 2001 02 16 | 704 | 0.6+ | 1.2+ | 2001 04 25 | 699 | 0.2+ | 1.1+ | 2003 12 21 | 704 | 0.7− | 0.1− |
| 2001 02 16 | 704 | 0.7+ | 0.8− | 2001 04 25 | 699 | 0.2+ | 0.2+ | 2005 06 02 | 608 | 0.3− | 0.9− |
| 2001 02 16 | 704 | 0.2− | 0.7+ | 2001 04 25 | 699 | 0.4+ | 0.5+ | 2005 06 02 | 608 | 0.1− | 0.5− |
| 2001 02 16 | 704 | 0.4+ | 0.1− | 2001 04 26 | 704 | 0.6+ | 0.9+ | 2005 06 02 | 608 | 0.4+ | 0.1− |
| 2001 02 16 | 704 | 0.0 | 0.3− | 2001 04 26 | 704 | 0.6+ | 0.5+ | 2005 06 03 | 703 | 0.8− | 0.3+ |
| 2001 03 04 | 704 | 0.3+ | 0.5− | 2001 04 26 | 704 | 0.4+ | 0.4+ | 2005 06 03 | 703 | 0.2+ | 0.7+ |
| 2001 03 04 | 704 | 0.4+ | 0.5+ | 2001 04 26 | 704 | 0.4+ | 0.7− | 2005 06 03 | 703 | 0.1+ | 0.2− |
| 2001 03 04 | 704 | 0.2− | 0.4+ | 2001 04 26 | 704 | 0.2− | 0.4+ | 2005 06 05 | 704 | 0.0 | 0.6+ |
| 2001 03 04 | 704 | 0.1+ | 0.3+ | 2001 05 19 | 608 | (1.8+ | 0.7−) | 2005 06 05 | 704 | 0.5+ | 0.3+ |
| 2001 03 04 | 704 | (0.7− | 1.8+) | 2001 05 19 | 608 | 1.0+ | 0.9− | 2005 06 05 | 704 | 0.0 | 0.2+ |
| 2001 03 16 | 704 | 0.7+ | 0.8− | 2001 05 19 | 608 | 1.2+ | 0.7− | 2005 06 05 | 704 | 0.7+ | 0.2+ |
| 2001 03 16 | 704 | 1.2+ | 0.9+ | 2001 05 23 | 699 | 0.3+ | 0.2+ | 2005 06 11 | 703 | 0.3− | 0.7− |
| 2001 03 16 | 704 | 0.4+ | 0.7+ | 2001 05 23 | 699 | 0.2− | 0.1+ | 2005 06 11 | 703 | 0.2− | 0.4− |
| 2001 03 16 | 704 | 0.3+ | 0.6+ | 2001 05 23 | 699 | 0.6+ | 0.2− | 2005 06 11 | 703 | 0.8− | 0.6− |
| 2001 03 16 | 704 | 0.2− | 0.1− | 2001 05 23 | 699 | 0.4+ | 0.3− | 2005 06 11 | 703 | 0.1− | 0.8− |
| 2001 03 18 | 704 | (1.9+ | 0.1+) | 2001 05 26 | 704 | 0.5+ | 0.8+ | 2005 06 17 | G96 | 0.5+ | 0.3− |
| 2001 03 18 | 704 | (1.9+ | 0.6+) | 2001 05 26 | 704 | 0.4+ | 0.3− | 2005 06 17 | G96 | 0.2+ | 0.1+ |
| 2001 03 18 | 704 | 0.1− | 1.0+ | 2001 05 26 | 704 | 0.1+ | 0.1− | 2005 06 17 | G96 | 0.3+ | 0.3− |
| 2001 03 18 | 704 | 0.4+ | 0.0 | 2001 05 29 | 704 | 0.2+ | 1.1+ | 2005 06 17 | G96 | 0.4+ | 0.4− |
| 2001 03 18 | 704 | 0.3+ | 0.0 | 2001 05 29 | 704 | 0.4+ | 0.3+ | 2005 07 03 | 704 | 0.0 | 1.3+ |
| 2001 03 19 | 704 | 0.4+ | 0.2+ | 2001 05 29 | 704 | 0.8− | 0.4+ | 2005 07 03 | 704 | 0.3+ | 0.3− |
| 2001 03 19 | 704 | 0.1+ | 0.7+ | 2001 05 29 | 704 | 0.9− | 0.0 | 2005 07 03 | 704 | 1.0+ | 0.0 |
| 2001 03 19 | 645 | 0.3− | 0.0 | 2001 05 29 | 704 | 0.2− | 0.4+ | 2005 07 26 | 644 | 0.0 | 0.1+ |
| 2001 03 19 | 704 | 0.7− | 0.1+ | 2001 06 15 | 704 | 0.2+ | 0.6+ | 2005 07 26 | 644 | 0.2− | 0.2− |
| 2001 03 19 | 645 | 0.4− | 0.0 | 2001 06 15 | 704 | 0.0 | 0.7+ | 2005 07 26 | 644 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.3+ | 0.2− | 2001 06 15 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2001 03 19 | 704 | 0.2− | 0.2− | 2001 06 15 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.2− |
| 2001 03 19 | 704 | 0.7+ | 0.2+ | 2001 06 22 | 644 | (2.2+ | 1.0−) | 2006 09 26 | 703 | 1.3− | 0.7+ |
| 2001 03 19 | 704 | 0.3− | 0.3− | 2001 06 22 | 644 | (1.9+ | 1.1−) | 2006 09 26 | 703 | 0.5+ | 1.1+ |
| 2001 03 19 | 704 | 0.0 | 0.2− | 2001 06 22 | 644 | (2.3+ | 1.3−) | 2006 10 17 | 703 | (0.3+ | 1.8+) |
| 2001 03 19 | 704 | 0.7+ | 0.2+ | 2001 06 23 | 644 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 1.0+ |
| 2001 03 19 | 704 | 0.2+ | 0.3+ | 2001 06 23 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.4+ |
| 2001 03 30 | 704 | 0.1+ | 0.3− | 2001 06 23 | 644 | 0.0 | 0.2− | 2006 10 17 | 703 | (0.3+ | 2.1+) |
| 2001 03 30 | 704 | 0.8+ | 0.3− | 2001 06 24 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.6− | 0.3+ |
| 2001 03 30 | 704 | 0.0 | 0.1+ | 2001 06 24 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2001 03 30 | 704 | 0.2− | 0.2− | 2001 06 24 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 03 30 | 704 | 0.6− | 0.8− | 2001 06 25 | 644 | 0.0 | 0.7− | 2006 10 23 | 644 | 0.5− | 0.4+ |
| 2001 04 03 | 682 | 1.0+ | 0.5+ | 2001 06 25 | 644 | 0.3+ | 0.8− | 2006 10 23 | 644 | 0.7− | 0.2+ |
| 2001 04 03 | 106 | 0.0 | 0.4+ | 2001 06 25 | 644 | 0.2+ | 1.0− | 2006 10 23 | 644 | 0.1− | 0.4+ |

**(139056)∗ 2001 FY**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.15545 | | (2000.0) | | −0.74413998 | +0.66358926 |
| $n$ | 0.38056210 | $\omega$ | 110.32984 | | −0.63954693 | −0.67446133 |
| $a$ | 1.8859016 | $\Omega$ | 111.32889 | | −0.19296483 | −0.32365291 |
| $e$ | 0.3278128 | $i$ | 4.73194 | | | |
| $P$ | 2.59 | $H$ | 19.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 704 | 0.6+ | 0.1+ | 2001 03 31 | 711 | 0.1+ | 0.1− | 2001 05 19 | 118 | 0.2− | 0.1− |
| 2001 03 16 | 704 | 1.0+ | 0.3− | 2001 03 31 | 711 | 0.1+ | 0.0 | 2001 05 20 | 046 | 0.1+ | 0.0 |
| 2001 03 16 | 704 | 0.3+ | 0.2+ | 2001 03 31 | 704 | 0.3− | 0.4+ | 2001 05 20 | 046 | 0.1+ | 0.2+ |
| 2001 03 16 | 704 | 1.1− | 0.4+ | 2001 03 31 | 704 | 0.3+ | 0.6+ | 2001 05 20 | 046 | 0.0 | 0.3+ |
| 2001 03 16 | 704 | 1.2+ | 0.6+ | 2001 03 31 | 704 | 0.3− | 0.4+ | 2001 05 20 | 046 | 0.1+ | 0.0 |
| 2001 03 16 | 046 | 0.2+ | 0.1+ | 2001 03 31 | 704 | 0.2+ | 0.4− | 2001 05 21 | 683 | 0.4− | 0.8+ |
| 2001 03 16 | 046 | 0.0 | 0.1− | 2001 03 31 | 704 | 0.2+ | 0.2+ | 2001 05 21 | 683 | 0.0 | 0.6− |
| 2001 03 16 | 046 | 0.6+ | 0.1− | 2001 04 01 | 157 | 0.7− | 1.3− | 2001 05 21 | 683 | 0.3− | 0.7− |
| 2001 03 16 | 046 | 0.0 | 0.1− | 2001 04 01 | 046 | 0.6+ | 0.1+ | 2001 05 21 | 118 | 0.2+ | 0.2− |
| 2001 03 16 | 046 | 0.3− | 0.2+ | 2001 04 01 | 157 | 0.0 | 0.0 | 2001 05 21 | 118 | 0.2+ | 0.0 |
| 2001 03 17 | 118 | (2.0− | 1.1+) | 2001 04 01 | 046 | 0.6+ | 0.1+ | 2001 05 22 | 699 | 0.3− | 0.0 |
| 2001 03 17 | 118 | 1.5− | 1.4+ | 2001 04 01 | 046 | 0.6+ | 0.4+ | 2001 05 22 | 699 | 0.0 | 0.1− |
| 2001 03 17 | 118 | 0.6− | 0.5+ | 2001 04 01 | 046 | 0.0 | 0.2+ | 2001 05 22 | 699 | 0.1+ | 0.1− |
| 2001 03 17 | 118 | 1.0+ | 1.3+ | 2001 04 02 | 046 | 0.3+ | 0.1− | 2001 05 22 | 699 | 0.1+ | 0.2+ |
| 2001 03 17 | 859 | (1.7− | 0.3+) | 2001 04 02 | 046 | 0.2− | 0.2+ | 2001 05 23 | 704 | 0.1+ | 1.1− |
| 2001 03 17 | 859 | 0.1− | 0.1+ | 2001 04 02 | 046 | 0.2+ | 0.1− | 2001 05 23 | 704 | 0.3− | 0.4+ |
| 2001 03 17 | 859 | (1.8+ | 0.2−) | 2001 04 02 | 046 | 0.3+ | 0.0 | 2001 05 23 | 704 | 0.3+ | 0.1+ |
| 2001 03 17 | 649 | 1.3+ | 0.4− | 2001 04 05 | 413 | 0.3− | 0.0 | 2001 05 23 | 704 | 0.0 | 0.0 |
| 2001 03 17 | 649 | (1.3+ | 1.6−) | 2001 04 05 | 413 | 0.1− | 0.0 | 2001 05 23 | 704 | 0.4− | 0.1+ |
| 2001 03 17 | 649 | (1.5+ | 1.4−) | 2001 04 05 | 413 | 0.9+ | 0.3− | 2001 05 24 | 511 | 0.8+ | 0.2− |
| 2001 03 17 | 649 | 0.0 | 0.6− | 2001 04 05 | 413 | 0.2− | 0.1+ | 2001 05 28 | 711 | 0.0 | 0.1+ |
| 2001 03 17 | 649 | 1.4+ | 0.1− | 2001 04 06 | 413 | 0.3− | 0.1+ | 2001 05 28 | 711 | 0.3+ | 0.2+ |
| 2001 03 17 | 673 | 0.6− | 1.2+ | 2001 04 06 | 413 | 0.2− | 0.0 | 2001 05 28 | 711 | 0.0 | 0.2+ |
| 2001 03 17 | 673 | (0.6− | 1.5+) | 2001 04 06 | 413 | 0.3− | 0.4+ | 2001 05 29 | 704 | 0.1− | 0.1− |
| 2001 03 18 | 946 | (1.5− | 0.0 ) | 2001 04 13 | 413 | 0.1− | 0.2− | 2001 05 29 | 704 | 0.4+ | 0.8+ |
| 2001 03 18 | 946 | 1.4− | 0.3+ | 2001 04 13 | 413 | 0.2− | 0.2− | 2001 05 29 | 704 | 0.0 | 0.9+ |
| 2001 03 18 | 946 | (0.4− | 2.1−) | 2001 04 13 | 413 | 0.1+ | 0.1− | 2001 05 29 | 704 | 0.4+ | 0.6+ |
| 2001 03 18 | 704 | 0.1− | 0.0 | 2001 04 13 | 413 | 0.3− | 0.0 | 2001 05 29 | 704 | 0.5+ | 0.2+ |
| 2001 03 18 | 704 | 0.3− | 0.6− | 2001 04 14 | 610 | 0.2− | 0.3+ | 2001 05 30 | 670 | 1.0+ | 0.3− |
| 2001 03 18 | 704 | 0.4− | 0.6+ | 2001 04 14 | 610 | 0.1+ | 0.2+ | 2001 05 30 | 670 | 0.2− | 0.4+ |
| 2001 03 18 | 704 | 0.2+ | 0.2+ | 2001 04 14 | 610 | 0.3+ | 0.2+ | 2001 06 12 | 699 | 0.1+ | 0.8+ |
| 2001 03 18 | 704 | 0.3− | 0.2− | 2001 04 16 | 670 | 0.4− | 0.2+ | 2001 06 12 | 699 | 0.2− | 0.0 |
| 2001 03 18 | 704 | 0.9+ | 0.4+ | 2001 04 16 | 670 | 0.3− | 0.2+ | 2001 06 12 | 699 | 0.7− | 0.2+ |
| 2001 03 18 | 926 | 0.1+ | 0.8− | 2001 04 23 | 670 | (0.5+ | 2.5−) | 2001 06 12 | 699 | 0.5+ | 0.5− |
| 2001 03 18 | 704 | 0.0 | 0.8− | 2001 04 23 | 670 | 0.1+ | 0.8+ | 2001 06 20 | 608 | 0.1+ | 0.3+ |
| 2001 03 18 | 926 | 0.3+ | 0.2+ | 2001 04 26 | 704 | 0.1− | 1.1+ | 2001 06 20 | 608 | 0.1− | 0.1+ |
| 2001 03 18 | 704 | 0.4− | 0.6− | 2001 04 26 | 704 | (1.5+ | 1.7+) | 2001 06 20 | 608 | 0.2− | 0.4+ |
| 2001 03 18 | 422 | 0.6+ | 0.1+ | 2001 04 26 | 704 | 0.1+ | 0.6+ | 2001 06 20 | 493 | 0.1− | 0.0 |
| 2001 03 18 | 422 | 0.4+ | 0.4+ | 2001 04 26 | 704 | 0.1− | 0.9+ | 2001 06 20 | 493 | 0.1+ | 0.1+ |
| 2001 03 18 | 422 | 0.1+ | 0.1− | 2001 04 26 | 704 | 0.3+ | 0.0 | 2004 09 16 | F65 | 0.7− | 0.3+ |
| 2001 03 18 | 422 | 1.0+ | 0.5+ | 2001 05 01 | 118 | 0.6+ | 0.5+ | 2004 09 16 | F65 | 0.6− | 0.3+ |
| 2001 03 19 | 850 | 0.5− | 1.0− | 2001 05 01 | 118 | 0.1+ | 0.1+ | 2004 09 16 | F65 | 0.8− | 0.3+ |
| 2001 03 19 | 850 | 0.4+ | 0.3+ | 2001 05 01 | 046 | 0.3− | 0.0 | 2004 09 17 | 291 | 0.5− | 0.5+ |
| 2001 03 19 | 850 | 0.4− | 0.7− | 2001 05 01 | 046 | 0.0 | 0.2+ | 2004 09 17 | 291 | 0.4− | 0.5− |
| 2001 03 19 | 918 | 1.0− | 0.4− | 2001 05 01 | 046 | 0.0 | 0.1− | 2004 09 17 | 291 | 0.6+ | 1.0+ |
| 2001 03 19 | 918 | 0.1+ | 0.6− | 2001 05 01 | 046 | 0.3− | 0.1+ | 2005 12 22 | 691 | 0.9+ | 0.1− |
| 2001 03 19 | 918 | 0.2+ | 0.2− | 2001 05 02 | 198 | (12.4+ | 45.0−) | 2005 12 22 | 691 | 0.4+ | 0.7+ |
| 2001 03 19 | 704 | 0.0 | 0.2− | 2001 05 02 | 118 | 0.1+ | 0.3− | 2005 12 22 | 691 | 0.1+ | 0.2− |
| 2001 03 19 | 645 | 0.2− | 0.3− | 2001 05 02 | 118 | 0.3+ | 0.3+ | 2005 12 25 | G96 | 0.6− | 0.3− |
| 2001 03 19 | 704 | 0.3+ | 0.5+ | 2001 05 11 | 118 | 0.1− | 0.4− | 2005 12 25 | G96 | 0.5+ | 0.5− |
| 2001 03 19 | 704 | 0.2+ | 0.3− | 2001 05 11 | 118 | 0.2+ | 0.3− | 2005 12 25 | G96 | 0.3− | 0.2− |
| 2001 03 19 | 645 | 0.2− | 0.3− | 2001 05 11 | 118 | 0.4+ | 0.2− | 2005 12 25 | G96 | 0.2+ | 0.1+ |
| 2001 03 19 | 704 | 0.4+ | 0.2+ | 2001 05 11 | 151 | 0.0 | 0.3+ | 2006 01 04 | G96 | 0.0 | 0.3+ |
| 2001 03 19 | 704 | 0.6− | 0.4+ | 2001 05 11 | 151 | 0.1− | 0.1+ | 2006 01 04 | G96 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.4+ | 0.2− | 2001 05 11 | 151 | 0.1− | 0.0 | 2006 01 04 | G96 | 0.5− | 0.2− |
| 2001 03 19 | 704 | 0.3− | 0.4− | 2001 05 11 | 151 | 0.1+ | 0.0 | 2006 01 04 | G96 | 0.3− | 0.2− |
| 2001 03 19 | 704 | 0.2− | 0.4+ | 2001 05 12 | 360 | 0.0 | 0.3− | 2006 01 04 | 691 | 0.4− | 0.2+ |
| 2001 03 19 | 704 | 0.8+ | 0.5+ | 2001 05 12 | 360 | 0.0 | 0.1− | 2006 01 04 | 691 | 0.2− | 0.2+ |
| 2001 03 19 | 704 | 1.0− | 0.1+ | 2001 05 12 | 360 | 0.1− | 0.1− | 2006 01 04 | 691 | 0.1− | 0.0 |
| 2001 03 21 | 699 | 0.4+ | 0.1+ | 2001 05 12 | 113 | 0.0 | 0.1+ | 2006 01 08 | 691 | 0.5+ | 1.3+ |
| 2001 03 21 | 699 | 0.3+ | 0.1+ | 2001 05 12 | 113 | 0.2− | 0.1+ | 2006 01 08 | 691 | 0.2− | 0.1− |
| 2001 03 21 | 699 | 0.0 | 0.4+ | 2001 05 12 | 113 | 0.1− | 0.1+ | 2006 01 08 | 691 | 0.3− | 0.0 |
| 2001 03 21 | 699 | 0.9+ | 0.1− | 2001 05 12 | 113 | 0.0 | 0.0 | 2006 01 11 | 291 | 0.1+ | 0.5+ |
| 2001 03 21 | 402 | 0.1+ | 0.0 | 2001 05 12 | 113 | 0.4− | 0.0 | 2006 01 11 | 291 | 0.0 | 0.5+ |
| 2001 03 21 | 402 | 0.1− | 0.1− | 2001 05 12 | 113 | 0.4− | 0.1+ | 2006 01 11 | 291 | 0.1− | 0.4+ |
| 2001 03 21 | 402 | 0.0 | 0.3− | 2001 05 12 | 113 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.3+ | 0.0 |
| 2001 03 30 | 704 | 0.1+ | 0.4+ | 2001 05 12 | 113 | 0.2− | 0.0 | 2006 01 23 | G96 | 0.3+ | 0.4− |
| 2001 03 30 | 704 | 0.7+ | 0.2− | 2001 05 12 | 113 | 0.5− | 0.1+ | 2006 01 23 | G96 | 0.2− | 0.2− |
| 2001 03 30 | 704 | 0.0 | 1.2+ | 2001 05 12 | 113 | 0.1− | 0.1+ | 2006 01 23 | G96 | 0.1− | 0.0 |
| 2001 03 30 | 704 | 0.2− | 0.1+ | 2001 05 19 | 118 | 0.2+ | 0.2+ | | | | |

**(139057)∗ 2001 FB$_1$**

Discovered 2001 Mar. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 182.01211 | | (2000.0) | | −0.94451491 | +0.32686121 |
| $n$ | 0.28760242 | $\omega$ | 219.58495 | | −0.27308223 | −0.83631618 |
| $a$ | 2.2730432 | $\Omega$ | 339.42328 | | −0.18253132 | −0.44015564 |
| $e$ | 0.0900534 | $i$ | 5.29845 | | | |
| $P$ | 3.43 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.6− | 0.5− | 2002 08 08 | 644 | 0.1+ | 0.6+ | 2003 12 23 | 704 | 0.1+ | 0.7+ |
| 2001 01 19 | 704 | 0.6+ | 1.2+ | 2002 08 08 | 644 | 0.4− | 0.5+ | 2003 12 23 | 704 | 0.1+ | 0.1+ |
| 2001 01 19 | 704 | 0.5+ | 1.2+ | 2002 08 08 | 644 | 0.0 | 0.5+ | 2003 12 23 | 704 | 1.1− | 0.4+ |
| 2001 02 01 | 704 | 0.7+ | 0.4− | 2002 08 18 | 644 | 0.5− | 0.6+ | 2003 12 23 | 704 | 0.0 | 0.4+ |
| 2001 02 01 | 704 | 0.9+ | 0.1− | 2002 08 18 | 644 | 0.2− | 0.8+ | 2006 09 28 | 691 | (3.7− | 0.1−) |
| 2001 02 01 | 704 | (0.9+ | 1.6+) | 2002 08 18 | 644 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2001 02 01 | 704 | (1.0+ | 1.7+) | 2002 08 29 | 644 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2001 02 16 | 699 | (1.8− | 4.4−) | 2002 08 29 | 644 | 0.3− | 0.4+ | 2006 10 17 | 703 | 1.3− | 0.4− |
| 2001 02 16 | 699 | 0.3− | 0.9+ | 2002 08 29 | 644 | 0.2− | 0.8+ | 2006 10 17 | 703 | (2.0− | 0.5−) |
| 2001 02 16 | 699 | 0.8− | 0.1− | 2003 11 20 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.7− | 1.2+ |
| 2001 02 16 | 699 | 0.3+ | 0.6+ | 2003 11 20 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.8+ | 0.7− |
| 2001 02 20 | 704 | 0.2+ | 0.7+ | 2003 11 20 | 704 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2001 02 20 | 704 | 1.2+ | 1.1+ | 2003 11 24 | 704 | 0.6+ | 0.9+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2001 02 20 | 704 | 0.4− | 0.1+ | 2003 11 24 | 704 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2001 02 20 | 704 | 0.2− | 0.1− | 2003 11 24 | 704 | 1.0− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 03 16 | 691 | 0.3− | 0.1+ | 2003 12 17 | 704 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2001 03 16 | 691 | 0.0 | 0.1+ | 2003 12 17 | 704 | 0.1+ | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 03 16 | 691 | 0.6− | 0.9+ | 2003 12 17 | 704 | 0.3+ | 0.7− | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2001 03 19 | 691 | 0.1+ | 0.3− | 2003 12 17 | 704 | 0.8+ | 0.7− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2001 03 19 | 691 | 0.5+ | 0.5− | 2003 12 17 | 704 | 0.5+ | 0.6− | | | | |
| 2001 03 19 | 691 | 0.5+ | 0.2− | 2003 12 23 | 704 | 0.4− | 0.1− | | | | |

**(139058)∗ 2001 FB$_2$ = 2002 TJ$_{214}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37551)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 188.31033 | | (2000.0) | | | |
| $n$ | 0.27877189 | $\omega$ | 189.21890 | | −0.86524667 | +0.47335784 |
| $a$ | 2.3207947 | $\Omega$ | 21.57986 | | −0.42659760 | −0.52207299 |
| $e$ | 0.1973027 | $i$ | 26.68426 | | −0.26336797 | −0.70948724 |
| $P$ | 3.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 699 | 0.3+ | 0.9+ | 2001 03 28 | 704 | 0.8− | 0.4+ | 2001 05 18 | 704 | 0.8+ | 0.5− |
| 2000 12 29 | 699 | (0.8+ | 2.8−) | 2001 03 28 | 704 | 0.4+ | 0.5+ | 2001 05 21 | 704 | 0.2+ | 0.8+ |
| 2000 12 29 | 699 | 0.3− | 0.5+ | 2001 03 28 | 704 | 0.1+ | 0.3+ | 2001 05 21 | 704 | 1.0+ | 0.4+ |
| 2000 12 29 | 699 | 0.2− | 0.9+ | 2001 03 28 | 704 | 0.0 | 0.1− | 2001 05 21 | 704 | 0.0 | 0.1− |
| 2001 01 31 | 704 | 0.2− | 0.0 | 2001 03 28 | 704 | 0.4− | 0.4− | 2001 05 21 | 704 | 0.1+ | 0.9− |
| 2001 01 31 | 704 | 0.1+ | 0.1+ | 2001 03 30 | 608 | 0.4+ | 1.1− | 2001 05 21 | 704 | 0.7+ | 0.9− |
| 2001 01 31 | 704 | 0.1− | 0.2+ | 2001 03 30 | 608 | 0.5+ | 1.2− | 2002 10 01 | 699 | 1.0− | 1.3+ |
| 2001 01 31 | 704 | 0.1+ | 0.4+ | 2001 03 30 | 608 | 0.3+ | 0.4+ | 2002 10 01 | 699 | 0.4− | 1.3+ |
| 2001 02 16 | 704 | 0.8− | 0.3+ | 2001 04 01 | 739 | 0.6− | 0.8− | 2002 10 01 | 699 | (1.5+ | 3.1+) |
| 2001 02 16 | 704 | 0.9+ | 0.4+ | 2001 04 01 | 739 | (0.4− | 1.7−) | 2002 10 01 | 699 | 0.1− | 0.9+ |
| 2001 02 16 | 704 | 0.1− | 0.8+ | 2001 04 01 | 739 | 0.4− | 1.1− | 2002 10 01 | 608 | (1.2− | 1.7+) |
| 2001 02 16 | 704 | 0.3− | 0.3+ | 2001 04 03 | 106 | 0.6− | 0.2+ | 2002 10 01 | 608 | (1.8− | 2.5+) |
| 2001 02 16 | 704 | 0.2+ | 0.3+ | 2001 04 03 | 106 | 0.1+ | 0.1+ | 2002 10 01 | 608 | (1.3− | 1.9+) |
| 2001 03 04 | 704 | 0.0 | 0.1+ | 2001 04 04 | 106 | 0.2− | 0.2+ | 2002 10 04 | 704 | (1.5− | 1.3+) |
| 2001 03 04 | 704 | 0.1− | 0.2+ | 2001 04 16 | 699 | 0.2+ | 0.1+ | 2002 10 04 | 704 | (1.7− | 1.7+) |
| 2001 03 04 | 704 | 0.5+ | 0.2+ | 2001 04 16 | 699 | 0.1− | 0.1+ | 2002 10 04 | 704 | (0.3− | 2.1+) |
| 2001 03 04 | 704 | 0.2+ | 0.5+ | 2001 04 16 | 699 | 0.1+ | 0.3− | 2002 10 04 | 704 | 0.2− | 1.1+ |
| 2001 03 04 | 704 | 0.1+ | 0.3+ | 2001 04 16 | 699 | 0.1− | 0.1+ | 2002 10 07 | 608 | 0.6− | 0.3+ |
| 2001 03 16 | 704 | 0.4+ | 0.5− | 2001 04 18 | 739 | 1.3− | 0.4− | 2002 10 07 | 608 | 0.9− | 0.4+ |
| 2001 03 16 | 704 | 0.2+ | 0.0 | 2001 04 18 | 739 | 0.6− | 1.1− | 2002 10 07 | 608 | 0.9− | 0.0 |
| 2001 03 16 | 704 | 0.6+ | 0.1+ | 2001 04 18 | 739 | 1.2− | 0.9− | 2002 10 29 | 704 | (1.8− | 0.3+) |
| 2001 03 16 | 704 | 0.2− | 0.7+ | 2001 04 18 | 704 | 0.5− | 0.3+ | 2002 10 29 | 704 | 0.9− | 0.4+ |
| 2001 03 16 | 704 | 0.4+ | 0.1+ | 2001 04 18 | 704 | 0.3− | 0.6+ | 2002 10 29 | 704 | (2.0− | 0.2+) |
| 2001 03 19 | 704 | 0.4− | 0.0 | 2001 04 18 | 704 | 0.3− | 0.4+ | 2002 10 29 | 704 | 1.2− | 0.1− |
| 2001 03 19 | 704 | 0.3− | 0.1− | 2001 04 18 | 704 | 0.5− | 0.0 | 2005 07 28 | E12 | 0.6− | 0.2+ |
| 2001 03 19 | 704 | 0.0 | 0.1− | 2001 04 18 | 704 | 1.4+ | 0.3+ | 2005 07 28 | E12 | 0.0 | 0.2− |
| 2001 03 19 | 704 | 0.7− | 0.2+ | 2001 04 23 | 704 | 0.2+ | 0.2− | 2005 07 28 | E12 | 0.3− | 0.1− |
| 2001 03 19 | 704 | 0.3− | 0.0 | 2001 04 23 | 704 | 0.3+ | 0.0 | 2005 07 28 | E12 | 0.1+ | 0.4+ |
| 2001 03 20 | 699 | 0.3− | 0.2+ | 2001 04 23 | 704 | 0.2+ | 0.8+ | 2005 08 25 | E12 | 0.1+ | 0.1− |
| 2001 03 20 | 699 | 0.2− | 0.6+ | 2001 04 23 | 704 | 0.1+ | 0.3− | 2005 08 25 | E12 | 1.1− | 0.5− |
| 2001 03 20 | 699 | 0.3− | 0.3+ | 2001 04 23 | 704 | 0.7+ | 0.0 | 2005 08 25 | E12 | 0.6+ | 0.0 |
| 2001 03 20 | 699 | (0.8+ | 2.2+) | 2001 04 24 | 608 | 1.0+ | 0.9+ | 2005 08 25 | E12 | 0.2+ | 0.2− |
| 2001 03 20 | 608 | 0.5− | 0.1+ | 2001 04 24 | 608 | 0.8+ | 0.7+ | 2006 09 28 | 703 | 0.9− | 0.5+ |
| 2001 03 20 | 608 | 0.5− | 0.1+ | 2001 04 24 | 608 | 0.6+ | 0.7+ | 2006 09 28 | 703 | 0.9− | 0.0 |
| 2001 03 20 | 608 | 0.7− | 0.1− | 2001 05 10 | 608 | 0.5+ | 0.7− | 2006 09 28 | 703 | 1.0− | 0.7+ |
| 2001 03 24 | 699 | 1.1+ | 0.1− | 2001 05 10 | 608 | 0.3+ | 0.9− | 2006 09 28 | 703 | 1.1− | 0.6+ |
| 2001 03 24 | 699 | 1.3+ | 0.2+ | 2001 05 10 | 608 | 0.8+ | 0.9− | 2006 10 19 | 703 | 1.0+ | 0.6+ |
| 2001 03 24 | 699 | 1.1+ | 0.1+ | 2001 05 17 | 608 | 0.5+ | 0.7+ | 2006 10 19 | 703 | 0.2− | 0.7+ |
| 2001 03 24 | 699 | 1.2+ | 0.2− | 2001 05 17 | 608 | 0.8+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 1.2+ |
| 2001 03 26 | 704 | 0.2+ | 0.1− | 2001 05 17 | 608 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2001 03 26 | 704 | 0.0 | 0.4+ | 2001 05 18 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 703 | 0.8− | 0.3+ |
| 2001 03 26 | 704 | 0.5+ | 0.4+ | 2001 05 18 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 703 | 0.1− | 0.3+ |
| 2001 03 26 | 704 | 0.4− | 0.3+ | 2001 05 18 | 704 | 0.1+ | 0.4+ | 2006 11 21 | 703 | 1.1+ | 0.4+ |
| 2001 03 26 | 704 | 0.2+ | 0.6+ | 2001 05 18 | 704 | 0.8+ | 0.7+ | 2006 11 21 | 703 | 1.1− | 0.8+ |

**(139059)∗ 2001 FQ$_2$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 217.31895 | | (2000.0) | | | |
| $n$ | 0.27900961 | $\omega$ | 309.96962 | | −0.84881298 | −0.52848002 |
| $a$ | 2.3194763 | $\Omega$ | 198.14327 | | +0.49857809 | −0.79069348 |
| $e$ | 0.1441106 | $i$ | 2.76344 | | +0.17588750 | −0.30905127 |
| $P$ | 3.53 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 16 | 691 | 0.5− | 0.9− | 2001 03 20 | 704 | 0.4− | 1.0+ | 2003 12 01 | 704 | 0.0 | 0.4+ |
| 1994 03 16 | 691 | 0.2− | 0.6− | 2001 03 20 | 704 | 0.9+ | 0.1+ | 2003 12 01 | 704 | 0.1− | 0.2+ |
| 1994 03 16 | 691 | 0.3− | 0.6− | 2001 03 20 | 704 | 0.5− | 0.5− | 2003 12 21 | 691 | 0.3+ | 0.1− |
| 1999 10 16 | 645 | 0.1+ | 0.0 | 2001 03 20 | 704 | (0.1+ | 1.7+) | 2003 12 21 | 691 | 0.2+ | 0.1− |
| 1999 10 16 | 645 | 0.0 | 0.1+ | 2001 03 20 | 704 | (1.8+ | 0.3−) | 2003 12 21 | 691 | 0.3+ | 0.1− |
| 2000 12 23 | 645 | 0.1− | 0.0 | 2001 03 20 | 608 | 0.9+ | 0.5+ | 2005 06 27 | 691 | 0.1+ | 0.4+ |
| 2000 12 23 | 645 | 0.1− | 0.0 | 2001 03 20 | 608 | 0.8+ | 0.7+ | 2005 06 27 | 691 | 0.1− | 0.4+ |
| 2001 02 03 | 691 | 0.1− | 0.4+ | 2001 03 20 | 608 | 0.8+ | 0.6+ | 2005 06 27 | 691 | 0.2− | 0.7+ |
| 2001 02 03 | 691 | 0.3− | 0.1+ | 2001 03 24 | 704 | 0.3− | 1.1+ | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 2001 02 03 | 691 | 0.0 | 0.3+ | 2001 03 24 | 704 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.5+ |
| 2001 03 15 | 699 | 0.3− | 0.0 | 2001 03 24 | 704 | 0.6+ | 0.3− | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2001 03 15 | 699 | 0.7+ | 0.9+ | 2001 04 01 | 704 | 0.1+ | 1.3+ | 2006 09 23 | 691 | 0.1+ | 0.3+ |
| 2001 03 15 | 699 | 0.1+ | 0.6+ | 2001 04 01 | 704 | 0.5+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.3+ |
| 2001 03 15 | 699 | 0.9+ | 0.4− | 2001 04 01 | 704 | 0.8+ | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2001 03 18 | 704 | 0.1− | 0.1+ | 2001 04 01 | 704 | 0.3+ | 0.8+ | 2006 10 19 | G96 | 0.7− | 0.4− |
| 2001 03 18 | 704 | (0.8+ | 1.8+) | 2003 11 19 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3+ |
| 2001 03 18 | 704 | 0.6+ | 0.2− | 2003 11 19 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.7+ | 0.2− |
| 2001 03 18 | 704 | 0.4− | 0.0 | 2003 11 19 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.2− |
| 2001 03 18 | 704 | 1.1+ | 0.1+ | 2003 11 21 | 704 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2001 03 19 | 704 | 0.8+ | 0.1+ | 2003 11 21 | 704 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 03 19 | 704 | 0.0 | 0.5+ | 2003 11 21 | 704 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2001 03 19 | 704 | 0.7+ | 0.9+ | 2003 11 24 | 699 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.9− | 0.1+ |
| 2001 03 19 | 704 | 0.0 | 0.6+ | 2003 11 24 | 699 | 0.4− | 1.2− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.7+ | 0.3− | 2003 11 24 | 699 | 0.6− | 0.9+ | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2001 03 19 | 704 | 1.0+ | 0.8+ | 2003 11 24 | 699 | 1.2− | 0.8+ | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2001 03 19 | 704 | 1.1+ | 0.3+ | 2003 12 01 | 704 | 0.3+ | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2001 03 19 | 704 | (1.7+ | 1.4+) | 2003 12 01 | 704 | 0.3+ | 0.2+ | | | | |

**(139060)∗ 2001 FD$_3$ = 1999 VQ$_{155}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74932)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 149.93695 | | (2000.0) | | | |
| $n$ | 0.27636220 | $\omega$ | 190.97377 | | −0.58058843 | +0.81362304 |
| $a$ | 2.3342657 | $\Omega$ | 43.54338 | | −0.74361085 | −0.51458831 |
| $e$ | 0.1621468 | $i$ | 2.54346 | | −0.33160215 | −0.27058532 |
| $P$ | 3.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.0 | 0.1+ | 2001 03 19 | 704 | 0.1− | 0.6+ | 2003 12 22 | 704 | 0.3+ | 0.3− |
| 1995 10 20 | 691 | 0.3+ | 0.2+ | 2001 03 19 | 704 | (2.2+ | 0.2−) | 2003 12 22 | 704 | 0.2+ | 0.0 |
| 1995 10 20 | 691 | 0.3− | 0.0 | 2001 03 19 | 704 | 0.6+ | 0.4+ | 2003 12 22 | 704 | 0.0 | 0.3− |
| 1999 11 09 | 704 | 0.6− | 1.3+ | 2001 03 19 | 704 | 0.8+ | 0.5+ | 2003 12 22 | 704 | 0.3+ | 0.8− |
| 1999 11 09 | 704 | 1.2− | 1.8+ | 2001 03 19 | 704 | 0.3− | 0.7+ | 2006 09 25 | G96 | 0.5+ | 0.2− |
| 1999 11 09 | 704 | (0.0 | 2.5+) | 2001 03 20 | 691 | 0.4− | 0.3− | 2006 09 25 | G96 | 0.3− | 0.0 |
| 2001 02 17 | 704 | 0.2− | 0.1− | 2001 03 20 | 691 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.4+ | 0.4− |
| 2001 02 17 | 704 | 0.7+ | 0.3+ | 2001 03 20 | 691 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2001 02 17 | 704 | 0.4+ | 0.6+ | 2001 03 26 | 704 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2001 02 20 | 645 | 0.2− | 0.1− | 2001 03 26 | 704 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2001 02 20 | 645 | 0.2− | 0.1− | 2001 03 26 | 704 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.8+ | 0.1− |
| 2001 03 03 | 704 | 0.5+ | 0.4+ | 2001 03 26 | 704 | 0.8+ | 0.7− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2001 03 03 | 704 | 0.4+ | 1.0+ | 2001 03 26 | 704 | 0.8+ | 0.8+ | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2001 03 03 | 704 | 0.5+ | 0.5+ | 2001 03 26 | 608 | (2.1+ | 1.1+) | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2001 03 03 | 704 | 0.1− | 0.5+ | 2001 03 26 | 608 | (2.0+ | 1.0+) | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2001 03 03 | 704 | 0.1+ | 0.8+ | 2001 03 26 | 608 | 1.3+ | 0.7+ | 2006 11 14 | G96 | 0.4− | 0.2+ |
| 2001 03 15 | 608 | 0.8+ | 0.1+ | 2001 04 16 | 699 | 1.3+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 03 15 | 608 | 1.2+ | 0.4− | 2001 04 16 | 699 | 1.1− | 0.6+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2001 03 15 | 608 | 0.8+ | 0.2− | 2001 04 16 | 699 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2001 03 18 | 704 | 1.1+ | 1.5+ | 2001 04 16 | 699 | 0.8+ | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2001 03 18 | 704 | 1.5+ | 1.0− | 2002 09 13 | 644 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2001 03 18 | 704 | 0.8+ | 0.5− | 2002 09 13 | 644 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 03 19 | 691 | 0.2− | 0.9+ | 2002 09 13 | 644 | 0.4+ | 0.9+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2001 03 19 | 691 | 0.1+ | 0.8+ | 2002 09 15 | 608 | 0.5− | 0.8+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2001 03 19 | 691 | 0.1+ | 0.6+ | 2002 09 15 | 608 | 1.2− | 1.2+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2001 03 19 | 704 | 0.7+ | 0.1+ | 2002 09 15 | 608 | 1.0− | 1.1+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2001 03 19 | 704 | 0.0 | 0.1− | 2002 09 28 | 608 | (1.8− | 1.6+) | 2006 11 22 | G96 | 0.3+ | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.2+ | 0.1− | 2002 09 28 | 608 | (1.6− | 1.7+) | |
| 2001 03 19 | 704 | 0.9+ | 0.2+ | 2002 09 28 | 608 | 1.4− | 1.4+ | |

**(139061)∗ 2001 FF$_3$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.80691 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27850495 | $\omega$ | 89.25607 | | −0.31563757 | +0.94837980 | |
| $a$ | 2.3222775 | $\Omega$ | 162.25041 | | −0.90581728 | −0.29148665 | |
| $e$ | 0.1557977 | $i$ | 5.79866 | | −0.28260922 | −0.12494516 | |
| $P$ | 3.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 24 | 704 | 0.6− | 1.2+ | 2001 04 02 | 704 | 0.1+ | 0.6+ | 2002 10 30 | 704 | 0.4+ | 1.5+ | |
| 1998 06 24 | 704 | (0.4− | 3.0+) | 2001 04 02 | 704 | 0.1− | 0.9+ | 2002 10 30 | 704 | (1.0− | 1.8+) | |
| 1998 06 24 | 704 | 0.3− | 0.9+ | 2001 04 02 | 704 | 0.6+ | 0.7+ | 2002 10 30 | 704 | 0.4− | 0.5− | |
| 1998 06 24 | 704 | 0.1− | 1.2− | 2001 04 16 | 704 | 0.2− | 1.0+ | 2002 10 30 | 704 | 0.8− | 0.1+ | |
| 1998 07 06 | 910 | 0.6+ | 1.2+ | 2001 04 16 | 704 | 0.8+ | 0.1+ | 2002 10 30 | 704 | 0.5+ | 0.0 | |
| 1998 07 06 | 910 | 0.7+ | 1.2+ | 2001 04 16 | 704 | 0.2+ | 0.4+ | 2002 11 06 | 644 | (0.6− | 1.5+) | |
| 1998 07 06 | 910 | 0.7+ | 1.2+ | 2001 04 16 | 704 | 0.4− | 0.2+ | 2002 11 06 | 644 | (0.7− | 1.7+) | |
| 2001 02 22 | 704 | 0.7− | 0.6+ | 2001 04 16 | 704 | 0.1+ | 0.5− | 2002 11 06 | 644 | 0.7− | 1.3+ | |
| 2001 02 22 | 704 | 0.4− | 0.7+ | 2002 09 05 | 704 | 1.2+ | 0.2+ | 2003 12 22 | 704 | 0.4− | 0.0 | |
| 2001 02 22 | 704 | 0.3+ | 0.1+ | 2002 09 05 | 704 | 0.7+ | 0.4+ | 2003 12 22 | 704 | 0.1+ | 0.1+ | |
| 2001 02 22 | 704 | 0.7+ | 0.6+ | 2002 09 05 | 704 | 0.8+ | 0.1+ | 2003 12 22 | 704 | 0.2+ | 0.4− | |
| 2001 02 22 | 704 | 0.1− | 1.0+ | 2002 09 05 | 704 | 0.5+ | 0.0 | 2003 12 22 | 704 | 1.1+ | 0.3− | |
| 2001 03 15 | 691 | 0.1− | 0.7+ | 2002 09 05 | 704 | 0.2+ | 0.6− | 2003 12 22 | 704 | 0.2− | 0.8− | |
| 2001 03 15 | 691 | 0.1− | 0.7+ | 2002 09 06 | 704 | 0.1+ | 0.7+ | 2004 01 23 | 704 | 0.8+ | 0.7+ | |
| 2001 03 15 | 691 | 0.0 | 0.8+ | 2002 09 06 | 704 | 0.3+ | 0.7+ | 2004 01 23 | 704 | (2.2+ | 0.4−) | |
| 2001 03 18 | 704 | 1.0+ | 1.1+ | 2002 09 06 | 704 | 0.1+ | 0.1+ | 2004 01 23 | 704 | 0.5− | 0.3− | |
| 2001 03 18 | 704 | 0.5+ | 0.7+ | 2002 09 06 | 704 | 0.5+ | 0.4− | 2004 01 23 | 704 | 0.5+ | 0.2− | |
| 2001 03 18 | 704 | 0.5+ | 0.2+ | 2002 09 10 | 608 | 0.6− | 0.9+ | 2005 11 25 | G96 | 0.3− | 0.1+ | |
| 2001 03 18 | 704 | 0.7+ | 0.2+ | 2002 09 10 | 608 | 0.3− | 0.6+ | 2005 11 25 | G96 | 0.0 | 0.1+ | |
| 2001 03 18 | 704 | 0.5+ | 0.2+ | 2002 09 10 | 608 | 0.5− | 1.1+ | 2005 11 25 | G96 | 0.1+ | 0.4− | |
| 2001 03 19 | 699 | 0.4+ | 0.2+ | 2002 09 30 | 704 | (0.2+ | 2.3+) | 2005 11 25 | G96 | 0.1− | 0.0 | |
| 2001 03 19 | 699 | 0.8+ | 0.4+ | 2002 09 30 | 704 | (0.9− | 2.8+) | 2006 10 20 | 644 | 0.4− | 0.4+ | |
| 2001 03 19 | 704 | 0.3− | 0.3+ | 2002 09 30 | 704 | (0.4− | 2.6+) | 2006 10 20 | 644 | 0.1− | 0.3+ | |
| 2001 03 19 | 704 | 0.4+ | 0.0 | 2002 09 30 | 704 | (0.7+ | 3.0+) | 2006 10 20 | 644 | 0.2+ | 0.2+ | |
| 2001 03 19 | 699 | (1.2+ | 1.5+) | 2002 09 30 | 704 | (0.5+ | 2.1+) | 2006 10 22 | 703 | 0.0 | 0.0 | |
| 2001 03 19 | 704 | 0.4− | 0.3− | 2002 10 01 | 608 | 0.3+ | 0.0 | 2006 10 22 | 703 | 1.0+ | 0.7+ | |
| 2001 03 19 | 704 | 0.1+ | 0.1+ | 2002 10 01 | 608 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.4− | |
| 2001 03 19 | 704 | 0.1− | 0.3+ | 2002 10 01 | 608 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.9+ | |
| 2001 03 19 | 704 | 0.6+ | 0.7+ | 2002 10 02 | 704 | 0.2− | 1.1+ | 2006 10 30 | 703 | 0.3+ | 0.1− | |
| 2001 03 19 | 704 | 0.4+ | 0.0 | 2002 10 02 | 704 | 0.7− | 0.4− | 2006 10 30 | 703 | 0.3− | 1.1− | |
| 2001 03 19 | 699 | 0.8+ | 0.2+ | 2002 10 02 | 704 | 0.2− | 0.2− | 2006 10 30 | 703 | 0.6− | 0.4− | |
| 2001 03 19 | 704 | 0.6+ | 0.5+ | 2002 10 02 | 704 | 0.5− | 0.3+ | 2006 10 30 | 703 | 1.4+ | 0.4+ | |
| 2001 03 19 | 704 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.8+ | 0.8+ | |
| 2001 03 19 | 704 | 0.6+ | 0.4+ | 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 11 19 | 703 | 1.4− | 0.6+ | |
| 2001 03 26 | 704 | 0.7− | 0.6+ | 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 11 19 | 703 | 0.7+ | 0.7+ | |
| 2001 03 26 | 704 | 0.8+ | 0.3− | 2002 10 03 | 704 | 0.3− | 0.5+ | 2006 11 19 | 703 | 1.1− | 0.8+ | |
| 2001 03 26 | 704 | 0.2− | 0.0 | 2002 10 03 | 704 | 0.2− | 0.9+ | 2006 11 20 | 704 | 0.3− | 0.7− | |
| 2001 03 26 | 704 | 0.3+ | 0.2+ | 2002 10 08 | 699 | 0.5− | 1.0+ | 2006 11 20 | 704 | 0.4+ | 1.0− | |
| 2001 03 26 | 704 | 0.5+ | 0.6+ | 2002 10 08 | 699 | 0.5− | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.6− | |
| 2001 03 30 | 704 | 0.7− | 0.0 | 2002 10 08 | 699 | 0.3− | 0.4+ | 2006 11 20 | 704 | 0.8+ | 0.2− | |
| 2001 03 30 | 704 | 0.6+ | 0.6+ | 2002 10 08 | 699 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.6− | |
| 2001 03 30 | 704 | 0.1− | 0.4− | 2002 10 11 | 704 | (0.4+ | 2.2+) | 2006 11 23 | G96 | 0.2+ | 0.2+ | |
| 2001 03 30 | 704 | 0.7− | 0.3− | 2002 10 11 | 704 | (0.8+ | 2.2+) | 2006 11 23 | G96 | 0.3+ | 0.2+ | |
| 2001 03 31 | 704 | 0.6− | 0.3+ | 2002 10 11 | 704 | (0.3+ | 1.9+) | 2006 11 23 | G96 | 0.3+ | 0.1+ | |
| 2001 03 31 | 704 | 0.1− | 0.7+ | 2002 10 11 | 704 | (0.5+ | 1.9+) | 2006 11 23 | G96 | 0.3+ | 0.1+ | |
| 2001 03 31 | 704 | 0.1− | 0.1+ | 2002 10 11 | 704 | (0.4+ | 1.9+) | 2006 11 28 | 704 | 0.2− | 0.5+ | |
| 2001 03 31 | 704 | 0.1− | 0.1− | 2002 10 11 | 645 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.3− | |
| 2001 03 31 | 704 | 0.4+ | 0.7− | 2002 10 11 | 645 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.0 | |
| 2001 03 31 | 704 | 0.5− | 0.7− | 2002 10 22 | 644 | 0.6− | 1.1+ | 2006 11 28 | 704 | 0.1+ | 0.8+ | |
| 2001 03 31 | 704 | 0.7− | 0.7+ | 2002 10 22 | 644 | 0.4− | 1.2+ | 2006 11 28 | 704 | 0.5− | 0.2− | |
| 2001 03 31 | 704 | 0.3− | 0.7− | 2002 10 22 | 644 | 0.2− | 1.3+ | | | | | |

**(139062)∗ 2001 FD$_4$**

Discovered 2001 Mar. 19 by T. Kobayashi at Oizumi.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.89169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27650892 | $\omega$ | 147.48045 | | −0.76116449 | +0.64195508 | |
| $a$ | 2.3334399 | $\Omega$ | 72.73971 | | −0.61379962 | −0.66706183 | |
| $e$ | 0.1990199 | $i$ | 5.54743 | | −0.20947231 | −0.37805052 | |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 691 | 0.3− | 0.4− | 2001 03 21 | 704 | 0.0 | 0.8+ | 2005 06 07 | E12 | 0.6+ | 0.8+ | |
| 1999 11 16 | 691 | 0.0 | 0.1− | 2001 03 21 | 704 | 0.4− | 0.3− | 2005 06 07 | E12 | 0.7− | 1.1+ | |
| 1999 11 16 | 691 | 0.0 | 0.3− | 2001 03 21 | 608 | 0.1+ | 0.4+ | 2005 06 07 | E12 | 0.4− | 0.1+ | |
| 1999 12 13 | 691 | 0.1+ | 0.3+ | 2001 03 21 | 608 | 0.1+ | 0.5+ | 2005 07 10 | E12 | 0.5+ | 1.0+ | |
| 1999 12 13 | 691 | 0.3+ | 0.1+ | 2001 03 21 | 608 | 0.2+ | 0.5+ | 2005 07 10 | E12 | 0.5− | 0.0 | |
| 1999 12 13 | 691 | 0.2− | 0.4+ | 2001 03 26 | 411 | 0.7− | 0.3− | 2005 07 10 | E12 | 0.5− | 0.7+ | |
| 2001 03 04 | 704 | 1.1− | 0.8+ | 2001 03 26 | 411 | 0.2− | 0.6+ | 2005 07 10 | E12 | 0.5− | 1.0+ | |
| 2001 03 04 | 704 | 0.6+ | 0.4+ | 2001 03 26 | 411 | 0.1− | 0.6− | 2006 10 02 | G96 | 0.3+ | 0.1− | |
| 2001 03 04 | 704 | 0.6− | 0.3− | 2001 03 31 | 704 | 0.5+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.1+ | |
| 2001 03 04 | 704 | 0.5− | 0.5− | 2001 03 31 | 704 | (1.6− | 0.1−) | 2006 10 02 | G96 | 0.3+ | 0.1+ | |
| 2001 03 04 | 704 | 0.7− | 0.7+ | 2001 03 31 | 704 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.5− | 0.7− | |
| 2001 03 16 | 704 | 0.1+ | 0.1− | 2001 03 31 | 704 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.1+ | |
| 2001 03 16 | 704 | 0.5+ | 0.4− | 2001 03 31 | 704 | 0.4+ | 1.2− | 2006 10 17 | G96 | 0.2− | 0.7+ | |
| 2001 03 16 | 704 | 0.2+ | 0.4− | 2001 04 15 | 704 | 0.7+ | 0.3− | 2006 10 17 | G96 | 0.9+ | 0.2+ | |
| 2001 03 16 | 704 | 0.1+ | 0.8− | 2001 04 15 | 704 | (1.6− | 0.4+) | 2006 10 17 | G96 | 0.4+ | 0.0 | |
| 2001 03 16 | 704 | 0.8+ | 0.9− | 2001 04 15 | 704 | 0.9+ | 1.1+ | 2006 10 18 | A44 | 0.8− | 1.1+ | |
| 2001 03 19 | 699 | 0.4+ | 0.5+ | 2001 04 15 | 704 | 0.1+ | 1.0+ | 2006 10 19 | A44 | 0.1− | 0.3+ | |
| 2001 03 19 | 699 | 0.5+ | 0.9+ | 2001 04 15 | 704 | 0.8− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.9+ | |
| 2001 03 19 | 699 | 0.4+ | 0.3+ | 2001 04 24 | 699 | 0.6+ | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.3+ | |
| 2001 03 19 | 699 | 0.6+ | 0.4+ | 2001 04 24 | 699 | 0.6− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.8+ | |
| 2001 03 19 | 411 | 1.1+ | 0.4− | 2001 04 24 | 699 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.0 | |
| 2001 03 19 | 411 | 0.3+ | 0.4− | 2001 04 24 | 699 | 0.8− | 1.5+ | 2006 11 16 | G96 | 0.0 | 0.0 | |
| 2001 03 20 | 411 | 0.1+ | 0.5+ | 2003 12 22 | 704 | 0.8+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− | |
| 2001 03 20 | 411 | 1.2+ | 0.3+ | 2003 12 22 | 704 | 0.7− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.4+ | |
| 2001 03 21 | 704 | 0.7− | 0.0 | 2003 12 22 | 704 | 0.6− | 0.2− | | | | | |
| 2001 03 21 | 704 | 0.6− | 0.7+ | 2005 06 07 | E12 | 0.4+ | 0.1+ | | | | | |

**(139063)∗ 2001 FJ$_5$ = 2004 BZ$_{45}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56225)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.70342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28671079 | $\omega$ | 214.70987 | | −0.80882577 | −0.58607068 | |
| $a$ | 2.2777533 | $\Omega$ | 289.33987 | | +0.55043104 | −0.72570128 | |
| $e$ | 0.1233583 | $i$ | 2.92732 | | +0.20694575 | −0.36038702 | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.2+ | 0.0 | 2001 03 27 | 608 | 0.4+ | 0.5+ | 2004 01 24 | 704 | 0.9− | 0.4+ | |
| 1999 10 10 | 704 | 0.3− | 0.7+ | 2001 03 27 | 608 | 0.2− | 0.9+ | 2004 01 24 | 704 | 1.4− | 0.6+ | |
| 1999 10 10 | 704 | 0.3− | 0.0 | 2001 04 01 | 704 | 0.1− | 0.9− | 2004 01 24 | 704 | (0.1− | 1.6+) | |
| 2001 03 18 | 704 | 0.1+ | 0.3− | 2001 04 01 | 704 | 1.2− | 0.3+ | 2004 01 28 | 691 | 0.1+ | 0.0 | |
| 2001 03 18 | 704 | 0.4− | 0.3+ | 2001 04 01 | 704 | 0.8− | 0.3+ | 2004 01 28 | 691 | 0.0 | 0.2− | |
| 2001 03 18 | 704 | 0.2− | 0.3+ | 2001 04 01 | 704 | 1.2− | 0.5+ | 2004 01 28 | 691 | 0.0 | 0.0 | |
| 2001 03 18 | 699 | 0.4+ | 0.4+ | 2002 08 06 | 644 | 0.6− | 0.9+ | 2006 09 30 | 703 | 1.0− | 1.3+ | |
| 2001 03 18 | 704 | 0.2+ | 0.2+ | 2002 08 06 | 644 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.7+ | 0.5+ | |
| 2001 03 18 | 704 | 0.0 | 0.5+ | 2002 08 06 | 644 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.7− | 0.2− | |
| 2001 03 18 | 699 | 0.8+ | 1.0+ | 2002 08 17 | 644 | 0.3− | 1.1+ | 2006 09 30 | 703 | 0.0 | 1.1− | |
| 2001 03 18 | 699 | 0.7+ | 0.2− | 2002 08 17 | 644 | 0.4− | 0.8+ | 2006 10 03 | G96 | 0.4− | 0.1+ | |
| 2001 03 18 | 699 | 0.6+ | 0.0 | 2002 08 17 | 644 | 0.3− | 1.3+ | 2006 10 03 | G96 | 0.2+ | 0.3+ | |
| 2001 03 18 | 608 | 0.1− | 1.3− | 2003 12 04 | 704 | 0.1+ | 1.0− | 2006 10 03 | G96 | 0.2− | 0.2+ | |
| 2001 03 18 | 608 | (0.6− | 1.7−) | 2003 12 04 | 704 | 0.0 | 0.5− | 2006 10 03 | G96 | 0.0 | 0.3+ | |
| 2001 03 18 | 608 | (0.1− | 1.6−) | 2003 12 04 | 704 | 0.2+ | 1.3− | 2006 10 17 | 703 | 0.4+ | 0.4+ | |
| 2001 03 20 | 704 | 0.5+ | 0.7− | 2003 12 04 | 704 | 1.0− | 0.0 | 2006 10 17 | 703 | (1.8+ | 0.4−) | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 704 | 0.6− | 0.8− | 2003 12 18 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.5+ | | |
| 2001 03 20 | 704 | 0.8+ | 0.2+ | 2003 12 18 | 704 | 0.4+ | 0.8+ | 2006 10 17 | 703 | 0.2− | 0.6+ | | |
| 2001 03 20 | 704 | 0.3− | 1.5+ | 2003 12 18 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.8+ | | |
| 2001 03 20 | 704 | 0.1+ | 0.9+ | 2003 12 18 | 704 | 0.6+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.6+ | | |
| 2001 03 21 | 704 | 1.3+ | 1.1+ | 2003 12 18 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 644 | 0.4− | 0.7+ | | |
| 2001 03 21 | 704 | 0.3+ | 0.1− | 2003 12 24 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 683 | 0.1− | 0.3− | | |
| 2001 03 21 | 704 | 0.7+ | 0.2+ | 2003 12 24 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 683 | 1.0+ | 0.2− | | |
| 2001 03 21 | 704 | 0.9+ | 0.2+ | 2003 12 24 | 704 | 0.8+ | 0.7− | 2006 10 22 | 683 | (3.1− | 3.5−) | | |
| 2001 03 24 | 704 | 0.0 | 0.7+ | 2004 01 21 | 704 | 0.3− | 1.0− | 2006 11 18 | G96 | 0.2− | 0.1+ | | |
| 2001 03 24 | 704 | 0.3+ | 0.8− | 2004 01 21 | 704 | 0.4− | 0.5− | 2006 11 18 | G96 | 0.0 | 0.0 | | |
| 2001 03 24 | 704 | 1.1+ | 0.9+ | 2004 01 21 | 704 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.3− | 0.0 | | |
| 2001 03 24 | 704 | 0.8− | 0.9+ | 2004 01 21 | 704 | 0.1+ | 1.0+ | 2006 11 18 | G96 | 0.2− | 0.2+ | | |
| 2001 03 27 | 608 | 0.4+ | 0.8+ | 2004 01 24 | 704 | 0.9− | 0.7+ | | | | | | |

**(139064)∗ 2001 FK$_5$ = 2003 WX$_{148}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56225)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 249.03840 | | (2000.0) | | | |
| $n$ | 0.27842110 | $\omega$ | 150.35590 | | −0.38189025 | −0.92153433 |
| $a$ | 2.3227437 | $\Omega$ | 321.97177 | | +0.82392999 | −0.30503773 |
| $e$ | 0.1037584 | $i$ | 6.54736 | | +0.41868748 | −0.24026333 |
| $P$ | 3.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.7− | 0.6− | 2003 11 24 | 704 | 1.2− | 0.3− | 2006 08 22 | 644 | 0.0 | 0.4+ | | |
| 1999 10 09 | 704 | 0.3+ | 0.7+ | 2003 11 24 | 704 | 0.3− | 0.5− | 2006 08 27 | 699 | 1.8+ | 0.7+ | | |
| 1999 10 09 | 704 | 1.8+ | 0.4+ | 2003 11 24 | 704 | 0.9− | 0.7− | 2006 08 27 | 699 | (2.5+ | 0.9+) | | |
| 2001 03 02 | 699 | 0.9+ | 0.7+ | 2003 11 26 | 704 | 0.1+ | 0.1− | 2006 08 27 | 699 | 1.6+ | 1.1+ | | |
| 2001 03 02 | 699 | 0.5+ | 0.3+ | 2003 11 26 | 704 | 0.6− | 0.4+ | 2006 08 27 | 699 | 0.0 | 0.9− | | |
| 2001 03 02 | 699 | 0.1+ | 0.7+ | 2003 11 26 | 704 | 1.6+ | 0.5− | 2006 08 29 | 703 | 0.8− | 0.8− | | |
| 2001 03 02 | 699 | 0.2+ | 0.0 | 2003 11 26 | 704 | 1.3− | 0.6− | 2006 08 29 | 703 | 0.2− | 1.0− | | |
| 2001 03 18 | 704 | (0.8− | 2.5+) | 2003 12 03 | 704 | (2.3+ | 0.8−) | 2006 08 29 | 703 | 0.3− | 0.0 | | |
| 2001 03 18 | 704 | 0.5+ | 1.5+ | 2003 12 03 | 704 | (3.0+ | 2.0−) | 2006 08 29 | 703 | 0.5− | 1.1− | | |
| 2001 03 18 | 704 | 1.0+ | 1.2+ | 2003 12 03 | 704 | (3.2+ | 1.9−) | 2006 08 29 | 691 | 0.0 | 0.2+ | | |
| 2001 03 18 | 704 | 0.5− | 1.1+ | 2003 12 03 | 704 | (2.8+ | 0.9−) | 2006 08 29 | 691 | 0.3− | 0.2+ | | |
| 2001 03 20 | 704 | 1.7− | 0.0 | 2003 12 03 | 704 | (2.8+ | 1.5−) | 2006 08 29 | 691 | 0.1− | 0.1+ | | |
| 2001 03 20 | 704 | 0.7− | 0.6+ | 2003 12 12 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.3+ | | |
| 2001 03 20 | 704 | 0.2− | 0.7+ | 2003 12 12 | 644 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.1+ | | |
| 2001 03 20 | 704 | 0.2+ | 0.0 | 2003 12 12 | 644 | 0.6+ | 0.4− | 2006 08 29 | 691 | 0.2− | 0.2+ | | |
| 2001 03 20 | 704 | 0.6+ | 0.6− | 2003 12 17 | 704 | 0.1+ | 0.5+ | 2006 08 30 | 704 | (0.3− | 2.3+) | | |
| 2001 03 21 | 608 | 0.0 | 1.2− | 2003 12 17 | 704 | 0.6+ | 0.0 | 2006 08 30 | 704 | 0.4+ | 1.4+ | | |
| 2001 03 21 | 608 | 0.4+ | 1.1− | 2003 12 17 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.2+ | | |
| 2001 03 21 | 608 | 0.3+ | 1.1− | 2003 12 17 | 704 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.1− | | |
| 2002 07 12 | 644 | 0.7− | 1.1− | 2003 12 17 | 704 | 0.4+ | 0.7+ | 2006 09 13 | 644 | 0.6− | 0.4+ | | |
| 2002 07 12 | 644 | 0.7− | 0.3− | 2003 12 18 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.3− | 0.1− | | |
| 2002 07 12 | 644 | 0.4− | 0.8− | 2003 12 18 | 691 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.1+ | | |
| 2003 11 19 | 704 | 0.1+ | 1.2+ | 2003 12 18 | 691 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.9+ | 0.7+ | | |
| 2003 11 19 | 704 | 0.4− | 1.2+ | 2005 06 05 | E12 | 0.6− | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.4− | | |
| 2003 11 19 | 704 | 0.1+ | 0.8+ | 2005 06 05 | E12 | 0.7+ | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.8+ | | |
| 2003 11 19 | 704 | 0.0 | 0.5+ | 2005 06 05 | E12 | 1.2+ | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.3− | | |
| 2003 11 19 | 704 | 0.8− | 0.7− | 2005 06 05 | E12 | 0.5+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.4− | | |
| 2003 11 24 | 704 | 0.0 | 0.5+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.1+ | | |
| 2003 11 24 | 704 | (2.1− | 0.7+) | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.6− | | |

**(139065)∗ 2001 FJ$_7$ = 2005 GL$_{55}$**

Discovered 2001 Mar. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 93934)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.15099 | | (2000.0) | | | |
| $n$ | 0.26734320 | $\omega$ | 254.96386 | | +0.50411592 | +0.86278370 |
| $a$ | 2.3864736 | $\Omega$ | 45.37512 | | −0.77022540 | +0.46923875 |
| $e$ | 0.2257110 | $i$ | 3.08953 | | −0.39066606 | +0.18820011 |
| $P$ | 3.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1− | 0.0 | 2005 04 05 | G96 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.2− | | |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2005 04 05 | G96 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.1− | | |
| 2001 03 19 | 691 | 0.5+ | 0.0 | 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ | | |
| 2001 03 19 | 691 | 0.1+ | 0.4+ | 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.1+ | | |
| 2001 03 19 | 691 | 0.7+ | 0.8+ | 2005 04 07 | G96 | 0.0 | 0.3− | 2006 10 21 | 691 | 1.2− | 0.2+ | | |
| 2001 03 21 | 691 | 0.0 | 0.1− | 2005 04 07 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 1.4+ | 0.3− | | |
| 2001 03 21 | 691 | 0.3− | 0.4− | 2005 05 06 | G96 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.7− | | |
| 2001 03 21 | 691 | 0.1− | 0.2− | 2005 05 06 | G96 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.3− | | |
| 2002 09 17 | 608 | 0.1− | 0.4− | 2005 05 06 | G96 | 0.1+ | 0.9− | 2006 10 31 | G96 | 0.4+ | 0.1− | | |
| 2002 09 17 | 608 | 0.4− | 0.2+ | 2005 05 06 | G96 | 0.7+ | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.4− | | |
| 2002 09 17 | 608 | 0.6− | 0.4+ | 2005 06 13 | G96 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | 1.1+ | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.7+ | 2006 11 12 | G96 | 0.3+ | 0.3− | | |
| 2002 10 03 | 704 | (2.0+ | 1.0−) | 2005 06 13 | G96 | 0.1− | 0.8+ | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2002 10 03 | 704 | (2.3+ | 0.4−) | 2005 06 13 | G96 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.2− | 0.1− | | |
| 2005 04 05 | G96 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.3+ | | |
| 2005 04 05 | G96 | 0.3+ | 0.4− | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.2+ | | |

**(139066)∗ 2001 FY$_8$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.22621 | | (2000.0) | | | |
| $n$ | 0.23944136 | $\omega$ | 160.80094 | | −0.52267860 | +0.84925344 |
| $a$ | 2.5684430 | $\Omega$ | 77.62377 | | −0.79184064 | −0.45114964 |
| $e$ | 0.1646846 | $i$ | 4.38437 | | −0.31590421 | −0.27428562 |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.1+ | 0.4− | 2002 09 16 | 644 | 0.6− | 0.1+ | 2005 03 13 | 704 | 0.1+ | 0.0 | | |
| 2001 03 03 | 704 | 0.8− | 1.4+ | 2002 09 16 | 644 | 0.9− | 0.1+ | 2005 03 13 | 704 | 0.3− | 0.6+ | | |
| 2001 03 03 | 704 | 0.6+ | 1.1+ | 2002 09 16 | 644 | 0.6− | 0.1− | 2005 03 13 | 704 | 0.4− | 0.5+ | | |
| 2001 03 03 | 704 | 0.4+ | 1.1+ | 2003 11 30 | 691 | 0.4+ | 0.0 | 2005 03 14 | 704 | 1.0+ | 2.0+ | | |
| 2001 03 03 | 704 | 0.3− | 1.1+ | 2003 11 30 | 691 | 0.0 | 0.1− | 2005 03 14 | 704 | 1.4+ | 0.4+ | | |
| 2001 03 19 | 645 | 0.3− | 0.3− | 2003 11 30 | 691 | 0.2+ | 0.1+ | 2005 03 14 | 704 | 0.8− | 1.7+ | | |
| 2001 03 19 | 704 | 0.2− | 0.2− | 2003 12 01 | 291 | 0.2− | 0.2+ | 2005 03 14 | 704 | 0.6+ | 0.3+ | | |
| 2001 03 19 | 645 | 0.4− | 0.3− | 2003 12 01 | 291 | 0.1+ | 0.1+ | 2005 03 30 | 703 | 0.6+ | 0.3+ | | |
| 2001 03 19 | 704 | 0.2+ | 1.3+ | 2003 12 01 | 291 | 0.2− | 0.2− | 2005 03 30 | 703 | 1.3+ | 1.6+ | | |
| 2001 03 19 | 704 | 0.2+ | 1.3− | 2005 02 03 | 704 | 1.6+ | 0.3+ | 2005 03 30 | 703 | 0.3+ | 0.7+ | | |
| 2001 03 19 | 704 | 0.1− | 1.1+ | 2005 02 03 | 704 | 1.3+ | 0.6+ | 2005 03 30 | 703 | 1.6+ | 1.0+ | | |
| 2001 03 21 | 704 | 0.4+ | 0.3− | 2005 02 03 | 704 | 0.2− | 1.1+ | 2005 04 09 | 703 | 0.3− | 0.7+ | | |
| 2001 03 21 | 704 | 0.9+ | 0.7− | 2005 02 09 | 704 | 0.2+ | 0.3+ | 2005 04 09 | 703 | 0.1+ | 0.1− | | |
| 2001 03 21 | 704 | 0.3+ | 0.3− | 2005 02 09 | 704 | 0.2+ | 0.5− | 2005 04 09 | 703 | 0.7− | 0.0 | | |
| 2001 03 21 | 608 | 0.0 | 1.5− | 2005 02 09 | 704 | 0.3− | 0.7+ | 2005 04 09 | 703 | 1.0− | 0.2− | | |
| 2001 03 21 | 608 | 0.2− | 1.4− | 2005 02 14 | 704 | 0.5+ | 0.8+ | 2005 04 10 | 691 | 0.2− | 0.2+ | | |
| 2001 03 21 | 608 | 0.2− | 1.5− | 2005 02 14 | 704 | 0.8+ | 0.1+ | 2005 04 10 | 691 | 0.4− | 0.2+ | | |
| 2001 03 24 | 691 | 0.3+ | 0.0 | 2005 02 14 | 704 | 0.4+ | 0.2+ | 2005 04 10 | 691 | 0.4− | 0.3+ | | |
| 2001 03 24 | 691 | 0.3+ | 0.0 | 2005 02 14 | 704 | 0.2− | 0.3− | 2006 08 16 | 644 | 0.6+ | 0.5+ | | |
| 2001 03 24 | 691 | 0.3+ | 0.0 | 2005 02 14 | 704 | 0.5− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.3+ | | |
| 2001 03 26 | 704 | 0.7+ | 0.2+ | 2005 03 04 | 704 | 0.3+ | 1.0+ | 2006 08 16 | 644 | 0.5− | 0.7+ | | |
| 2001 03 26 | 704 | 0.3+ | 0.1+ | 2005 03 04 | 704 | 0.0 | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.7+ | | |
| 2001 03 26 | 704 | 0.0 | 0.4+ | 2005 03 04 | 704 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.2− | 0.9+ | | |
| 2001 03 26 | 704 | 0.2− | 0.6+ | 2005 03 04 | 704 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.1− | 0.9+ | | |
| 2001 03 26 | 704 | 0.1+ | 0.4+ | 2005 03 04 | 704 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.5− | 0.8− | | |
| 2001 03 30 | 704 | 0.2− | 0.9+ | 2005 03 12 | 704 | 0.3+ | 0.7+ | 2006 08 23 | 704 | 0.3+ | 0.4− | | |
| 2001 03 30 | 704 | 1.1+ | 0.2− | 2005 03 12 | 704 | 0.5+ | 0.5+ | 2006 08 23 | 704 | 0.8+ | 1.1+ | | |
| 2001 03 30 | 704 | 0.2+ | 0.8− | 2005 03 12 | 704 | 0.3+ | 0.0 | 2006 09 26 | 291 | 0.2− | 0.4+ | | |
| 2001 03 30 | 704 | (2.2+ | 0.7+) | 2005 03 12 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 291 | 0.1− | 0.8+ | | |
| 2001 04 13 | 691 | 0.3+ | 0.4+ | 2005 03 12 | 704 | 0.7+ | 0.2+ | 2006 09 26 | 291 | 0.3− | 0.5+ | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 04 13 | 691 | 0.1+ | 0.2+ | 2005 03 13 | 704 | 0.2+ | 0.2+ | |
| 2001 04 13 | 691 | 0.4+ | 0.2+ | 2005 03 13 | 704 | 0.0 | 0.4+ | |

**(139067)∗ 2001 FC$_9$ = 2002 RA$_{67}$**

Discovered 2001 Mar. 20 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 35033)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.05530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27270648 | $\omega$ | 345.40714 | | −0.35597327 | +0.92670415 | |
| $a$ | 2.3550804 | $\Omega$ | 263.62659 | | −0.84478167 | −0.37421136 | |
| $e$ | 0.1311671 | $i$ | 6.95992 | | −0.39953342 | −0.03442766 | |
| $P$ | 3.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 25 | 910 | 0.6+ | 0.1+ | 2002 09 03 | 644 | 0.1+ | 0.3+ | 2003 12 23 | 704 | 0.8− | 0.2− | |
| 1998 08 25 | 910 | 0.5+ | 0.4+ | 2002 09 07 | 704 | (2.7− | 1.7+) | 2003 12 23 | 704 | 0.9− | 1.2− | |
| 1998 08 25 | 910 | 0.7+ | 0.2+ | 2002 09 07 | 704 | 1.1− | 0.9+ | 2005 06 04 | 704 | 0.3+ | 0.5+ | |
| 2001 02 22 | 704 | 0.3− | 0.3+ | 2002 09 07 | 704 | 1.4− | 0.0 | 2005 06 04 | 704 | 0.8− | 0.5+ | |
| 2001 02 22 | 704 | 0.6+ | 0.1− | 2002 09 12 | 644 | 0.1+ | 0.3+ | 2005 06 04 | 704 | 0.3+ | 0.3− | |
| 2001 02 22 | 704 | 0.7+ | 0.7+ | 2002 09 12 | 644 | 0.3− | 0.4+ | 2005 06 04 | 704 | 0.1− | 0.8+ | |
| 2001 03 20 | 608 | 0.1− | 0.7+ | 2002 09 12 | 644 | 0.1− | 0.2+ | 2006 10 20 | A50 | 0.2− | 0.1+ | |
| 2001 03 20 | 608 | 0.3− | 0.6+ | 2002 09 14 | 699 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.2+ | 1.4+ | |
| 2001 03 20 | 608 | 0.0 | 0.6+ | 2002 09 14 | 699 | 0.6− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.1− | |
| 2001 03 21 | 608 | 0.9+ | 0.9+ | 2002 09 14 | 699 | 1.1− | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.1− | |
| 2001 03 21 | 608 | 0.6+ | 0.8+ | 2002 09 14 | 699 | (1.8− | 0.7+) | 2006 10 27 | 703 | 0.1+ | 0.4+ | |
| 2001 03 21 | 608 | 0.6+ | 0.6+ | 2002 09 20 | 644 | 0.5− | 0.5− | 2006 11 08 | 644 | 0.0 | 0.6+ | |
| 2001 03 24 | 699 | 0.1− | 0.7+ | 2002 09 20 | 644 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.2− | 0.3+ | |
| 2001 03 24 | 699 | 0.0 | 0.2+ | 2002 09 20 | 644 | 0.6− | 0.4− | 2006 11 08 | 644 | 0.2− | 0.3+ | |
| 2001 03 24 | 699 | 0.2− | 0.7+ | 2002 10 04 | 644 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | |
| 2001 03 24 | 699 | 0.4+ | 0.2− | 2002 10 04 | 644 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.4+ | 0.4− | |
| 2001 03 26 | 704 | 0.4+ | 0.4− | 2002 10 04 | 644 | 0.3− | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.1+ | |
| 2001 03 26 | 704 | 0.5− | 0.9+ | 2002 10 05 | 704 | 1.0− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.3+ | |
| 2001 03 26 | 704 | 0.3+ | 0.8− | 2002 10 05 | 704 | 0.3− | 0.8+ | 2006 11 16 | 704 | 0.5+ | 0.3+ | |
| 2001 03 26 | 704 | 0.2+ | 0.7+ | 2002 10 05 | 704 | 0.2+ | 1.0+ | 2006 11 16 | 704 | 0.3− | 0.9+ | |
| 2001 03 26 | 704 | 0.1+ | 0.8+ | 2002 10 05 | 704 | (0.9+ | 1.6+) | 2006 11 16 | 704 | 0.5+ | 1.0+ | |
| 2001 03 29 | 608 | 0.5+ | 0.1+ | 2002 10 05 | 704 | 0.0 | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.1− | |
| 2001 03 29 | 608 | 0.8+ | 0.0 | 2002 10 07 | 699 | 0.9+ | 0.8+ | 2006 11 18 | G96 | 0.1+ | 0.2− | |
| 2001 03 29 | 608 | 0.7+ | 0.2− | 2002 10 07 | 699 | 0.3+ | 0.7− | 2006 11 18 | G96 | 0.1+ | 0.2− | |
| 2001 04 14 | 608 | 0.2+ | 0.1+ | 2002 10 07 | 699 | 0.7− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2001 04 14 | 608 | 0.0 | 0.7+ | 2002 10 07 | 699 | (0.6+ | 1.6+) | 2006 11 18 | G96 | 0.3+ | 0.2− | |
| 2001 04 14 | 608 | 0.4+ | 0.3− | 2002 10 09 | 704 | 0.5+ | 0.9+ | 2006 11 18 | G96 | 0.0 | 0.3− | |
| 2001 04 16 | 704 | 0.3+ | 0.6+ | 2002 10 09 | 704 | 0.4+ | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.0 | |
| 2001 04 16 | 704 | 1.0+ | 0.4+ | 2002 10 09 | 704 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− | |
| 2001 04 16 | 704 | 0.7− | 1.0+ | 2002 10 09 | 704 | 1.1− | 0.6+ | 2006 11 19 | 704 | 0.3− | 0.3− | |
| 2001 04 16 | 704 | 0.6+ | 1.0− | 2002 10 09 | 704 | 0.1− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.2+ | |
| 2001 04 26 | 699 | (0.9− | 2.0+) | 2003 12 19 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.2+ | |
| 2001 04 26 | 699 | 0.5− | 0.8+ | 2003 12 19 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.9− | |
| 2001 04 26 | 699 | 1.2− | 0.0 | 2003 12 19 | 704 | 0.4− | 1.2+ | 2006 11 19 | 704 | 0.1+ | 1.0− | |
| 2001 04 26 | 699 | 0.0 | 1.2+ | 2003 12 23 | 704 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.7+ | 0.5+ | |
| 2002 09 03 | 644 | 0.1− | 0.5+ | 2003 12 23 | 704 | 1.2− | 0.2− | 2006 11 22 | 704 | 0.9+ | 1.2+ | |
| 2002 09 03 | 644 | 0.1+ | 0.3+ | 2003 12 23 | 704 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.8+ | |

**(139068)∗ 2001 FG$_{10}$ = 2002 RE$_{156}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37554)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.05282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26322669 | $\omega$ | 334.54177 | | −0.09310433 | +0.99470638 | |
| $a$ | 2.4112899 | $\Omega$ | 290.09109 | | −0.90539753 | −0.10275305 | |
| $e$ | 0.1214884 | $i$ | 2.65380 | | −0.41423048 | +0.00101607 | |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.9+ | 0.1− | 2002 09 11 | 644 | 0.3− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ | |
| 1993 01 23 | 691 | 1.2− | 0.0 | 2002 09 11 | 644 | 0.2− | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | |
| 1993 01 23 | 691 | 0.1+ | 0.0 | 2002 09 14 | 644 | 0.1− | 0.6+ | 2006 10 02 | 691 | 0.3+ | 0.1+ | |
| 2001 03 19 | 699 | 0.6+ | 0.6+ | 2002 09 14 | 644 | 0.7− | 0.5+ | 2006 10 02 | 691 | 0.3− | 0.1+ | |
| 2001 03 19 | 699 | 0.1+ | 0.2− | 2002 09 14 | 644 | (2.7− | 0.2+) | 2006 10 02 | 691 | 0.0 | 0.3+ | |
| 2001 03 19 | 699 | 1.1+ | 0.3− | 2002 09 17 | 644 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ | |
| 2001 03 19 | 699 | 0.5+ | 0.2+ | 2002 09 17 | 644 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.1+ | |
| 2001 03 23 | 699 | 0.1+ | 0.5+ | 2002 09 17 | 644 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.3+ | |
| 2001 03 23 | 699 | 0.1− | 0.5+ | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 10 30 | 408 | 0.7− | 1.1− | |
| 2001 03 23 | 699 | (1.6− | 1.5−) | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 10 30 | 408 | 0.4− | 0.4− | |
| 2001 03 23 | 699 | 0.7+ | 1.1+ | 2005 05 19 | 644 | 0.4+ | 0.0 | 2006 10 31 | 408 | 0.4− | 1.1+ | |
| 2001 03 29 | 608 | 0.5+ | 0.1− | 2005 05 19 | 644 | 0.1+ | 0.4+ | 2006 10 31 | 408 | (1.8− | 1.5+) | |
| 2001 03 29 | 608 | 0.3− | 0.3− | 2005 05 19 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.7− | 0.4− | |
| 2001 03 29 | 608 | 0.2− | 0.3+ | 2005 06 03 | 703 | 1.0+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.5− | |
| 2002 09 06 | 704 | (0.3+ | 1.6+) | 2005 06 03 | 703 | 0.4− | 1.2+ | 2006 11 17 | G96 | 0.1+ | 0.2+ | |
| 2002 09 06 | 704 | 1.0− | 0.1+ | 2005 06 03 | 703 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.5− | |
| 2002 09 06 | 704 | (1.7− | 1.7−) | 2005 06 03 | 703 | 1.4− | 0.2− | | | | | |
| 2002 09 11 | 644 | 0.2− | 0.7+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | | | | | |

**(139069)∗ 2001 FJ$_{11}$ = 2002 RM$_{168}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37555)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.04839 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25890774 | $\omega$ | 68.41704 | | −0.52555840 | +0.85069876 | |
| $a$ | 2.4380317 | $\Omega$ | 169.85931 | | −0.80005730 | −0.49020703 | |
| $e$ | 0.1653347 | $i$ | 3.25590 | | −0.28930379 | −0.18975956 | |
| $P$ | 3.81 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.2− | 0.3− | 2002 09 13 | 644 | 0.6− | 1.0+ | 2005 05 03 | 704 | 0.1− | 0.2+ | |
| 1995 11 17 | 691 | 0.4+ | 0.3+ | 2002 09 13 | 644 | 0.9− | 1.0+ | 2005 05 03 | 704 | 0.4+ | 0.8+ | |
| 1995 11 17 | 691 | 0.2+ | 0.3+ | 2002 09 13 | 644 | 0.9− | 1.0+ | 2005 05 03 | 704 | 1.1+ | 0.3+ | |
| 2000 01 12 | 691 | 0.1− | 0.1− | 2002 09 14 | 644 | 0.8− | 0.9+ | 2005 05 11 | 699 | 0.4− | 0.8+ | |
| 2000 01 12 | 691 | 1.0− | 0.8+ | 2002 09 14 | 644 | 0.7− | 0.9+ | 2005 05 11 | 699 | 0.0 | 0.6+ | |
| 2000 01 12 | 691 | 0.4− | 0.5+ | 2002 09 14 | 644 | 0.9− | 0.5+ | 2005 05 11 | 699 | 0.4− | 0.0 | |
| 2001 03 18 | 704 | 1.0+ | 0.2+ | 2005 03 14 | G96 | (2.4− | 0.0 ) | 2005 05 11 | 699 | (0.6− | 2.1+) | |
| 2001 03 18 | 704 | 0.1+ | 0.3+ | 2005 03 14 | G96 | 0.5− | 0.1− | 2005 05 12 | 704 | 0.4+ | 0.1− | |
| 2001 03 18 | 704 | 0.4+ | 0.8+ | 2005 03 14 | G96 | 0.5− | 0.0 | 2005 05 12 | 704 | 0.3+ | 0.5− | |
| 2001 03 18 | 704 | 0.5+ | 0.5+ | 2005 03 14 | G96 | 0.4− | 0.1− | 2005 05 12 | 704 | 0.6+ | 0.2+ | |
| 2001 03 18 | 704 | 0.4+ | 0.2+ | 2005 04 04 | 704 | 0.6+ | 0.6+ | 2005 05 12 | 704 | 0.1− | 0.5+ | |
| 2001 03 19 | 699 | 1.2+ | 0.8+ | 2005 04 04 | 704 | 0.6+ | 0.4+ | 2005 05 16 | 704 | 0.0 | 0.7+ | |
| 2001 03 19 | 699 | 1.2+ | 0.0 | 2005 04 04 | 704 | 0.1+ | 0.3− | 2005 05 16 | 704 | 0.6+ | 0.2− | |
| 2001 03 19 | 699 | 1.2+ | 0.7+ | 2005 04 04 | 704 | (1.7+ | 1.4+) | 2005 05 16 | 704 | 1.1+ | 0.4+ | |
| 2001 03 19 | 699 | 1.4+ | 0.8+ | 2005 04 04 | 704 | (0.0 | 2.2+) | 2006 07 21 | G96 | 0.1− | 0.1− | |
| 2001 03 20 | 691 | 0.2− | 0.2+ | 2005 04 05 | 691 | 0.3+ | 0.1+ | 2006 07 21 | G96 | 0.6− | 0.1+ | |
| 2001 03 20 | 691 | 0.4− | 0.2+ | 2005 04 05 | 691 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.5+ | |
| 2001 03 20 | 691 | 0.3− | 0.2+ | 2005 04 05 | 691 | 0.4+ | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.1− | |
| 2001 03 22 | 209 | (1.7− | 1.3−) | 2005 04 13 | 704 | 0.8+ | 0.5+ | 2006 09 14 | 691 | 0.1+ | 0.6+ | |
| 2001 03 22 | 209 | (1.6− | 0.7−) | 2005 04 13 | 704 | 0.4− | 0.1− | 2006 09 14 | 691 | 0.0 | 0.3+ | |
| 2001 03 22 | 209 | 1.1− | 0.4− | 2005 04 13 | 704 | 0.6− | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | |
| 2001 03 23 | 699 | 0.0 | 1.1+ | 2005 04 13 | 704 | (0.8+ | 2.1+) | 2006 09 18 | 691 | 0.0 | 0.4+ | |
| 2001 03 23 | 699 | 0.6− | 1.0+ | 2005 04 13 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.4+ | |
| 2001 03 23 | 699 | 0.0 | 0.2+ | 2005 04 18 | 703 | 1.0− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.4+ | |
| 2001 03 23 | 699 | 0.7+ | 0.6+ | 2005 04 18 | 703 | 0.6− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | |
| 2001 03 24 | 704 | 0.2− | 0.4+ | 2005 04 18 | 703 | 0.4− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.4+ | |
| 2001 03 24 | 704 | 0.3+ | 0.9+ | 2005 04 18 | 703 | 0.5− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ | |
| 2001 03 24 | 704 | 0.8+ | 0.3− | 2005 04 30 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 | |
| 2001 03 24 | 704 | 0.4+ | 1.2− | 2005 04 30 | 691 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1+ | |
| 2001 03 24 | 704 | 0.6+ | 0.2− | 2005 04 30 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 | |
| 2001 03 29 | 704 | (2.0− | 1.3+) | 2005 04 30 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | |
| 2001 03 29 | 704 | 0.2+ | 0.4+ | 2005 04 30 | 644 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.1− | |
| 2001 03 29 | 704 | 0.8+ | 0.7+ | 2005 04 30 | 644 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 691 | 0.0 | 0.3− | 2005 05 03 | 704 | 0.1− | 0.6− | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2001 06 15 | 691 | 0.2+ | 0.2− | 2005 05 03 | 704 | 1.2+ | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.1+ |

**(139070)∗ 2001 FL$_{11}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.72584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27712867 | $\omega$ | 206.15998 | | −0.65693347 | +0.75371598 | |
| $a$ | 2.3299597 | $\Omega$ | 22.78877 | | −0.68297965 | −0.58439345 | |
| $e$ | 0.1886062 | $i$ | 2.77098 | | −0.31933871 | −0.30066013 | |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.3− | 0.2+ | 2001 03 29 | 704 | 0.3− | 0.5+ | 2004 01 22 | 704 | 0.4− | 0.0 |
| 1995 09 17 | 691 | 0.2− | 0.3+ | 2001 03 29 | 704 | 0.2+ | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.4+ |
| 1995 09 17 | 691 | 0.2− | 0.2+ | 2001 04 01 | 704 | 0.6+ | 0.2+ | 2005 06 06 | E12 | 0.6− | 1.0+ |
| 2001 02 22 | 704 | 0.0 | 0.8− | 2001 04 01 | 704 | 0.5+ | 0.0 | 2005 06 06 | E12 | 0.4− | 0.4+ |
| 2001 02 22 | 704 | 0.2+ | 0.6− | 2001 04 01 | 704 | 0.2+ | 0.3+ | 2005 06 06 | E12 | 0.7− | 0.1− |
| 2001 02 22 | 704 | 0.8− | 0.4+ | 2001 04 01 | 704 | 0.4+ | 0.3+ | 2005 06 06 | E12 | 0.4− | 0.4− |
| 2001 02 22 | 704 | 0.0 | 0.8+ | 2001 04 01 | 704 | 0.2− | 0.2+ | 2005 07 10 | E12 | 0.1+ | 1.2+ |
| 2001 02 22 | 704 | 0.1+ | 0.1+ | 2001 04 04 | 608 | 0.3− | 0.5− | 2005 07 10 | E12 | 0.2− | 0.5+ |
| 2001 03 18 | 704 | 1.1− | 1.1+ | 2001 04 04 | 608 | 0.8+ | 0.3− | 2005 07 10 | E12 | 0.5− | 0.7+ |
| 2001 03 18 | 704 | 0.0 | 0.1− | 2001 04 04 | 608 | 0.3− | 0.2+ | 2005 08 06 | 704 | (0.5+ | 1.9+) |
| 2001 03 18 | 704 | 0.2+ | 0.0 | 2001 04 04 | 608 | 0.1− | 0.1+ | 2005 08 06 | 704 | 0.5+ | 1.1+ |
| 2001 03 18 | 704 | 0.5− | 0.2+ | 2001 04 04 | 608 | 0.4− | 0.0 | 2005 08 06 | 704 | 0.4+ | 1.1+ |
| 2001 03 18 | 704 | 0.2+ | 0.3− | 2001 04 04 | 608 | 0.7− | 0.3− | 2005 08 06 | 704 | 0.5− | 0.3+ |
| 2001 03 19 | 699 | 1.2+ | 0.2+ | 2001 04 14 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2001 03 19 | 699 | 0.4+ | 0.3+ | 2001 04 14 | 691 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2001 03 19 | 691 | 0.2− | 0.2+ | 2001 04 14 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.6− | 0.3− |
| 2001 03 19 | 691 | 0.3− | 0.2+ | 2001 04 15 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2001 03 19 | 699 | 0.7+ | 0.6+ | 2001 04 15 | 691 | 0.1− | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.5+ |
| 2001 03 19 | 691 | 0.3− | 0.2+ | 2001 04 15 | 691 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.3+ |
| 2001 03 19 | 699 | 0.6+ | 0.3+ | 2001 04 18 | 691 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.6+ | 0.5+ |
| 2001 03 20 | 608 | (0.1− | 2.2−) | 2001 04 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | 691 | (0.6+ | 2.0+) |
| 2001 03 20 | 608 | (0.3− | 2.5−) | 2001 04 18 | 691 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 2001 03 20 | 608 | (0.3− | 1.6−) | 2001 04 24 | 699 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2001 03 23 | 699 | 1.2+ | 0.1+ | 2001 04 24 | 699 | 0.6+ | 0.3+ | 2006 11 02 | 691 | 0.2+ | 0.4− |
| 2001 03 23 | 699 | 1.0+ | 0.1− | 2001 04 24 | 699 | 1.2+ | 1.0+ | 2006 11 02 | 691 | 0.4− | 0.1− |
| 2001 03 23 | 699 | 0.7+ | 0.1− | 2001 04 24 | 699 | 1.0+ | 0.6+ | 2006 11 02 | 691 | 0.0 | 0.4+ |
| 2001 03 23 | 699 | 1.0+ | 0.5+ | 2002 10 30 | 645 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2001 03 24 | 704 | 0.1+ | 0.6− | 2002 10 30 | 645 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2001 03 24 | 704 | 0.6+ | 0.2+ | 2003 12 18 | 704 | 1.3− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2001 03 24 | 704 | 1.1+ | 0.6− | 2003 12 18 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (2.0+ | 0.3+) |
| 2001 03 24 | 704 | (2.3− | 0.5+) | 2003 12 18 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.2− |
| 2001 03 24 | 704 | 0.3+ | 0.2+ | 2003 12 22 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.1+ |
| 2001 03 29 | 699 | 0.4+ | 0.2+ | 2003 12 22 | 704 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.8+ | 0.3− |
| 2001 03 29 | 699 | 0.1− | 0.4+ | 2003 12 22 | 704 | 0.8+ | 0.4+ | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2001 03 29 | 699 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 2001 03 29 | 704 | 0.4+ | 0.5+ | 2003 12 22 | 704 | 0.3− | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2001 03 29 | 704 | 0.2− | 0.8+ | 2004 01 22 | 704 | 0.2− | 0.5− | 2006 11 13 | G96 | 1.2− | 0.5+ |
| 2001 03 29 | 699 | 0.1+ | 0.4+ | 2004 01 22 | 704 | 0.9− | 1.2+ | | | | |
| 2001 03 29 | 704 | 1.3+ | 0.1+ | 2004 01 22 | 704 | 1.3− | 0.1+ | | | | |

**(139071)∗ 2001 FA$_{12}$ = 2003 YV$_{132}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 56227)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.19656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28860226 | $\omega$ | 91.56279 | | −0.57875690 | −0.81320620 | |
| $a$ | 2.2677903 | $\Omega$ | 34.03582 | | +0.69804917 | −0.53276054 | |
| $e$ | 0.0588080 | $i$ | 6.26956 | | +0.42162520 | −0.23422615 | |
| $P$ | 3.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.3− | 0.3+ | 2003 12 28 | 704 | 0.4− | 0.7− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 1999 10 09 | 704 | 0.7− | 0.1− | 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.4+ |
| 1999 10 09 | 704 | 0.7+ | 0.6− | 2003 12 28 | 704 | 0.4+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 1999 10 09 | 704 | 0.5− | 0.9+ | 2003 12 28 | 704 | 0.6+ | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 1999 11 09 | 704 | 0.3− | 0.5+ | 2003 12 28 | 704 | 0.5− | 0.4− | 2006 11 01 | G96 | 0.1− | 0.1− |
| 1999 11 09 | 704 | 0.1+ | 0.4+ | 2003 12 28 | 704 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 1999 11 09 | 704 | 0.9− | 0.1− | 2003 12 28 | 704 | 0.7+ | 0.0 | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 0.6+ | 0.9+ | 2003 12 28 | 704 | 0.3− | 0.0 | 2006 11 09 | 691 | 0.1− | 0.4+ |
| 2001 03 19 | 699 | 0.9− | 1.3+ | 2003 12 28 | 704 | 0.7− | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2001 03 19 | 699 | 0.7− | 0.7+ | 2003 12 28 | 704 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 03 19 | 699 | 1.2+ | 0.1+ | 2003 12 28 | 704 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 03 19 | 699 | 0.1+ | 0.2− | 2003 12 29 | 704 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 03 23 | 699 | 0.1+ | 0.4+ | 2003 12 29 | 704 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2001 03 23 | 699 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2001 03 23 | 699 | 1.0+ | 0.4− | 2003 12 29 | 704 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.1− | 0.7− |
| 2001 03 23 | 699 | 0.5− | 0.7− | 2003 12 29 | 704 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.7− | 0.8− |
| 2001 03 26 | 608 | 0.0 | 0.8− | 2004 01 19 | 704 | 0.9+ | 0.6− | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2001 03 26 | 608 | 0.3+ | 0.4− | 2004 01 19 | 704 | 0.3+ | 1.0− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2001 03 26 | 608 | 0.2+ | 0.3− | 2004 01 19 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2001 04 16 | 691 | 0.3+ | 0.7+ | 2004 01 27 | 703 | 0.3− | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.7+ |
| 2001 04 16 | 691 | 0.3+ | 0.8+ | 2004 01 27 | 703 | 0.7− | 0.8− | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2001 04 16 | 691 | 0.3+ | 0.7+ | 2004 01 27 | 703 | (1.7− | 1.1−) | 2006 11 16 | 704 | 0.4+ | 0.7+ |
| 2003 11 20 | 704 | 0.3− | 0.7− | 2004 01 27 | 703 | 0.4− | 0.7+ | 2006 11 16 | 704 | 0.3− | 0.1− |
| 2003 11 20 | 704 | 0.3+ | 0.2− | 2004 01 31 | 704 | 0.8+ | 0.2− | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 2003 11 20 | 704 | 0.1− | 1.2− | 2004 01 31 | 704 | 0.1− | 0.3− | 2006 11 19 | 704 | (1.0+ | 2.0+) |
| 2003 12 27 | 704 | (1.5+ | 1.9−) | 2004 01 31 | 704 | 0.7+ | 1.5+ | 2006 11 19 | 704 | 1.1− | 0.4+ |
| 2003 12 27 | 704 | (1.0+ | 1.8−) | 2004 02 14 | 704 | (0.6− | 2.9+) | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2003 12 27 | 704 | 0.5+ | 1.4− | 2004 02 14 | 704 | 1.3− | 0.6− | 2006 11 19 | 704 | 0.9− | 0.8+ |
| 2003 12 27 | 704 | 0.9+ | 0.8− | 2004 02 14 | 704 | 0.9− | 0.4− | 2006 11 19 | 704 | (1.7− | 1.0−) |
| 2003 12 27 | 704 | 0.1+ | 0.7+ | 2004 02 14 | 704 | (1.6− | 1.0+) | 2006 11 22 | 704 | (2.3− | 0.2+) |
| 2003 12 28 | 704 | 0.3− | 0.6− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | (1.5− | 1.7+) |
| 2003 12 28 | 704 | 0.2+ | 0.6+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.6+ |
| 2003 12 28 | 704 | 0.2− | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.1+ | | | | |
| 2003 12 28 | 704 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.3+ | | | | |

**(139072)∗ 2001 FL$_{12}$ = 1992 SA$_{9}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 11971)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.62207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28550519 | $\omega$ | 297.27105 | | +0.04950980 | −0.99835090 | |
| $a$ | 2.2841610 | $\Omega$ | 149.84819 | | +0.93559437 | +0.03617573 | |
| $e$ | 0.1232921 | $i$ | 3.31623 | | +0.34958827 | +0.04457344 | |
| $P$ | 3.45 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.1+ | 0.3− | 2003 12 23 | 704 | 1.1+ | 0.7− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 1992 09 27 | 691 | 0.3+ | 0.1− | 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.4− | 0.3+ |
| 1992 09 27 | 691 | 0.6+ | 0.2− | 2003 12 28 | 691 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.3− | 0.4+ |
| 1992 09 28 | 691 | 0.8− | 0.0 | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 1992 09 28 | 691 | 0.1− | 0.1+ | 2004 01 21 | 704 | 0.4+ | 0.1− | 2006 10 02 | 291 | 0.6− | 0.3+ |
| 1992 09 28 | 691 | 0.2− | 0.2− | 2004 01 21 | 704 | 0.5− | 0.3+ | 2006 10 02 | 291 | 0.4− | 0.3+ |
| 1999 10 15 | 704 | 0.8+ | 0.4− | 2004 01 21 | 704 | 0.7− | 0.5− | 2006 10 02 | 291 | 0.3− | 0.2+ |
| 1999 10 15 | 704 | 1.1+ | 0.6− | 2004 01 21 | 704 | 0.9− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 1999 10 15 | 704 | 0.9+ | 0.4− | 2004 01 24 | 704 | (1.8− | 0.1+) | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 1999 10 15 | 704 | 0.8+ | 0.3− | 2004 01 24 | 704 | 1.1− | 0.5− | 2006 10 16 | 703 | (1.6− | 0.5+) |
| 2001 03 19 | 699 | 0.1+ | 1.1+ | 2004 01 24 | 704 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2001 03 19 | 699 | 0.5− | 0.9+ | 2004 01 24 | 704 | (1.6− | 0.5−) | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2001 03 19 | 699 | (0.8− | 1.7+) | 2004 01 30 | 704 | 1.2+ | 1.1− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 03 19 | 699 | (1.1− | 2.6+) | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.5+ | 0.7− |
| 2001 03 23 | 699 | 0.7+ | 1.3+ | 2004 01 30 | 704 | 1.4+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2001 03 23 | 699 | 1.1+ | 0.8+ | 2005 06 17 | G96 | 0.0 | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2001 03 23 | 699 | 1.1+ | 1.2+ | 2005 06 17 | G96 | 0.5+ | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2001 03 23 | 699 | 0.2− | 0.2+ | 2005 06 17 | G96 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 699 | (1.6+ | 0.2+) | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2001 03 29 | 699 | 0.5− | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.5+ | 0.1− | | |
| 2001 03 29 | 699 | 0.2− | 0.9+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.1− | | |
| 2001 03 29 | 699 | (0.3− | 1.7+) | 2006 09 18 | 699 | 1.5+ | 0.7+ | 2006 10 22 | 703 | 0.4+ | 0.2+ | | |
| 2003 12 19 | 704 | 0.4− | 0.5− | 2006 09 18 | 699 | 1.1− | 0.3− | 2006 10 22 | 703 | 0.4+ | 0.3+ | | |
| 2003 12 19 | 704 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.7− | 0.4− | 2006 10 22 | 703 | 0.6− | 0.7− | | |
| 2003 12 19 | 704 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.2− | 1.2+ | 2006 11 11 | 703 | 0.5− | 0.3− | | |
| 2003 12 19 | 704 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.8+ | 0.4− | | |
| 2003 12 19 | 704 | 0.1− | 0.7+ | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.2+ | | |
| 2003 12 23 | 704 | 0.7+ | 1.2+ | 2006 09 20 | 644 | 0.2+ | 0.6+ | 2006 11 11 | 703 | (1.7+ | 0.4−) | | |
| 2003 12 23 | 704 | 1.2+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.4+ | | | | | | |
| 2003 12 23 | 704 | (1.5+ | 0.0 ) | 2006 09 27 | 691 | 0.1− | 0.3+ | | | | | | |

**(139073)∗ 2001 FP$_{13}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 122.33121 | | (2000.0) | | | |
| $n$ | 0.25692711 | $\omega$ | 201.25954 | | −0.73991323 | +0.67219632 |
| $a$ | 2.4505454 | $\Omega$ | 21.04573 | | −0.60624174 | −0.64950419 |
| $e$ | 0.0810374 | $i$ | 4.16576 | | −0.29154651 | −0.35538207 |
| $P$ | 3.84 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 1.3+ | 0.2− | 2002 08 11 | 644 | 0.6+ | 0.6+ | 2005 04 17 | 691 | 0.3+ | 0.0 | | |
| 1993 01 26 | 691 | 0.6− | 0.3− | 2002 08 17 | 608 | 0.0 | 0.6+ | 2005 04 17 | 691 | 0.1+ | 0.1− | | |
| 1993 01 26 | 691 | 0.5− | 0.0 | 2002 08 17 | 608 | 0.2− | 0.6+ | 2005 04 17 | 691 | 0.2− | 0.1+ | | |
| 2001 03 18 | 704 | 0.8− | 0.4− | 2002 08 17 | 608 | 0.3− | 0.9+ | 2005 04 18 | 703 | 1.1− | 0.4− | | |
| 2001 03 18 | 704 | 0.9− | 0.6+ | 2002 08 18 | 644 | 0.0 | 0.1+ | 2005 04 18 | 703 | (1.7− | 0.7−) | | |
| 2001 03 18 | 704 | 0.2+ | 0.3− | 2002 08 18 | 644 | 0.3− | 0.5+ | 2005 04 18 | 703 | 1.1− | 1.0+ | | |
| 2001 03 18 | 704 | 0.4− | 0.3− | 2002 08 18 | 644 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.9− | 0.3− | | |
| 2001 03 18 | 704 | 0.0 | 0.2+ | 2002 08 30 | 644 | 0.2− | 1.0− | 2005 05 01 | 644 | 0.1− | 0.3− | | |
| 2001 03 19 | 699 | 0.6+ | 0.1− | 2002 08 30 | 644 | 0.1+ | 0.9− | 2005 05 01 | 644 | 0.1+ | 0.5− | | |
| 2001 03 19 | 691 | 0.1+ | 0.6+ | 2002 08 30 | 644 | 0.2− | 0.9− | 2005 05 01 | 644 | 0.1− | 0.2− | | |
| 2001 03 19 | 699 | 0.9+ | 0.0 | 2002 09 15 | 644 | 0.2− | 0.0 | 2006 09 01 | A79 | (0.3+ | 1.7+) | | |
| 2001 03 19 | 691 | 0.1− | 0.5+ | 2002 09 15 | 644 | 0.1− | 0.0 | 2006 09 01 | A79 | (1.3− | 1.5+) | | |
| 2001 03 19 | 691 | 0.1− | 0.6+ | 2002 09 15 | 644 | 0.3− | 0.5− | 2006 09 02 | A79 | 1.2− | 1.0− | | |
| 2001 03 19 | 699 | 0.5+ | 0.8+ | 2005 03 10 | G96 | 0.3− | 0.3− | 2006 09 02 | A79 | 0.5+ | 1.0+ | | |
| 2001 03 19 | 699 | 0.6− | 0.1+ | 2005 03 10 | G96 | 0.6− | 0.3− | 2006 09 02 | A79 | 0.6+ | 0.7+ | | |
| 2001 03 21 | 608 | 1.4+ | 0.4− | 2005 03 10 | G96 | 0.6− | 0.3− | 2006 09 02 | A79 | 0.3+ | 0.1+ | | |
| 2001 03 21 | 608 | (2.0+ | 0.2+) | 2005 03 10 | G96 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.1− | 0.8− | | |
| 2001 03 21 | 608 | (1.5+ | 0.5+) | 2005 04 05 | G96 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.9− | 0.7− | | |
| 2001 03 22 | 143 | 0.1− | 0.7− | 2005 04 05 | G96 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.0 | 1.0+ | | |
| 2001 03 23 | 143 | 0.3+ | 0.6− | 2005 04 05 | G96 | 0.5− | 0.6− | 2006 09 14 | 703 | 0.6− | 0.5+ | | |
| 2001 03 23 | 143 | (1.9− | 1.0+) | 2005 04 05 | G96 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.1+ | | |
| 2001 03 23 | 699 | 1.4+ | 0.8+ | 2005 04 11 | 691 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.4− | 0.0 | | |
| 2001 03 23 | 699 | 0.4+ | 0.6+ | 2005 04 11 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.4− | 0.5+ | | |
| 2001 03 23 | 699 | 0.5+ | 0.8+ | 2005 04 11 | 691 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.3+ | | |
| 2001 03 23 | 699 | 0.8+ | 0.3+ | 2005 04 12 | 704 | 0.4+ | 0.4− | 2006 10 19 | 695 | 0.0 | 0.6+ | | |
| 2001 03 23 | 143 | 1.2− | 0.7+ | 2005 04 12 | 704 | 0.3+ | 1.2− | 2006 10 20 | 695 | 0.2+ | 0.4+ | | |
| 2001 03 23 | 143 | 0.7+ | 0.3− | 2005 04 12 | 704 | 0.2− | 0.9+ | 2006 10 20 | 695 | 0.2+ | 0.4+ | | |
| 2001 03 24 | 704 | 0.3− | 0.3+ | 2005 04 12 | 704 | 0.1− | 0.0 | 2006 10 20 | 695 | 0.0 | 0.4+ | | |
| 2001 03 24 | 704 | 0.6− | 0.5+ | 2005 04 12 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 695 | 0.1+ | 0.5+ | | |
| 2001 03 24 | 704 | 0.4+ | 0.4+ | 2005 04 12 | 704 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.7− | 0.4+ | | |
| 2001 03 29 | 699 | 0.4+ | 0.7+ | 2005 04 12 | 704 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 1.1+ | | |
| 2001 03 29 | 699 | 0.3+ | 0.6+ | 2005 04 12 | 704 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.9− | 1.0+ | | |
| 2001 03 29 | 699 | 0.1− | 1.3+ | 2005 04 15 | 691 | 0.3+ | 0.2− | 2006 11 17 | G96 | (1.9− | 0.6+) | | |
| 2001 03 29 | 699 | 0.3− | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.2− | | | | | | |
| 2002 08 11 | 644 | 0.2+ | 0.3+ | 2005 04 15 | 691 | 0.5+ | 0.1− | | | | | | |

**(139074)∗ 2001 FR$_{13}$ = 2002 RB$_{13}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 35034)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.49065 | | (2000.0) | | | |
| $n$ | 0.27899035 | $\omega$ | 140.49264 | | +0.73743465 | +0.67540415 |
| $a$ | 2.3195831 | $\Omega$ | 177.01066 | | −0.63907871 | +0.69985182 |
| $e$ | 0.1542110 | $i$ | 4.84085 | | −0.21856016 | +0.23245787 |
| $P$ | 3.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.5− | 0.3− | 2002 09 29 | 608 | 1.4+ | 0.7+ | 2005 05 26 | 599 | 0.1− | 0.2+ | | |
| 1995 10 20 | 691 | 0.1+ | 0.0 | 2002 09 30 | 704 | 0.6+ | 1.0+ | 2005 05 26 | 599 | 0.0 | 0.2+ | | |
| 1995 10 20 | 691 | 0.2+ | 0.1− | 2002 09 30 | 704 | 0.8+ | 0.5+ | 2005 06 01 | 691 | 0.0 | 0.2+ | | |
| 1999 12 14 | 704 | 0.6− | 0.8+ | 2002 09 30 | 704 | 0.6+ | 0.5+ | 2005 06 01 | 691 | 0.0 | 0.1− | | |
| 1999 12 14 | 704 | 0.9+ | 0.9+ | 2002 09 30 | 704 | 0.6+ | 0.7+ | 2005 06 01 | 691 | 0.1− | 0.4+ | | |
| 1999 12 14 | 704 | 0.5− | 0.7+ | 2002 09 30 | 704 | 0.5+ | 0.4+ | 2005 06 02 | E12 | 0.2− | 0.1− | | |
| 1999 12 14 | 704 | 0.4− | 0.7− | 2002 10 01 | 699 | 0.9− | 0.1+ | 2005 06 02 | E12 | 0.2− | 0.2+ | | |
| 2001 03 18 | 704 | 0.1+ | 0.0 | 2002 10 01 | 699 | 0.9− | 0.2− | 2005 06 02 | E12 | 1.4− | 1.1− | | |
| 2001 03 18 | 704 | 0.7+ | 1.2+ | 2002 10 01 | 699 | 0.2+ | 1.3+ | 2005 06 02 | E12 | 0.2− | 0.2+ | | |
| 2001 03 18 | 704 | 0.5+ | 0.3+ | 2002 10 01 | 699 | 0.5− | 0.1+ | 2005 06 05 | 704 | 0.1+ | 0.1+ | | |
| 2001 03 18 | 704 | 0.3+ | 1.2+ | 2002 10 02 | 704 | 0.4+ | 0.5+ | 2005 06 05 | 704 | 0.2+ | 0.6+ | | |
| 2001 03 19 | 699 | 1.1+ | 0.6+ | 2002 10 02 | 704 | 0.5− | 0.1+ | 2005 06 05 | 704 | 0.5− | 0.9+ | | |
| 2001 03 19 | 699 | 0.1+ | 0.3+ | 2002 10 02 | 704 | 0.2− | 0.2+ | 2005 06 05 | 704 | 0.1+ | 0.1− | | |
| 2001 03 19 | 699 | (2.4− | 1.3+) | 2002 10 02 | 704 | 0.1− | 0.1+ | 2005 06 05 | 704 | 1.1+ | 0.2+ | | |
| 2001 03 19 | 699 | 0.4− | 0.2+ | 2002 10 02 | 704 | 0.2− | 0.8+ | 2005 06 11 | 691 | 0.1− | 0.1+ | | |
| 2001 03 21 | 691 | 0.1+ | 0.7+ | 2002 10 03 | 704 | 0.8− | 0.3+ | 2005 06 11 | 691 | 0.2− | 0.1+ | | |
| 2001 03 21 | 691 | 0.3+ | 0.3− | 2002 10 03 | 704 | 0.1− | 0.3+ | 2005 06 11 | 691 | 0.1− | 0.2+ | | |
| 2001 03 21 | 691 | 0.1+ | 0.5+ | 2002 10 03 | 704 | 0.2+ | 0.2+ | 2005 06 15 | 691 | (1.6− | 1.3+) | | |
| 2001 03 23 | 699 | 0.5+ | 0.6+ | 2002 10 03 | 704 | 0.3− | 0.0 | 2005 06 15 | 691 | 0.1− | 0.1+ | | |
| 2001 03 23 | 699 | (1.6+ | 0.3+) | 2002 10 03 | 704 | 0.3+ | 0.1− | 2005 06 15 | 691 | 0.1− | 0.0 | | |
| 2001 03 23 | 699 | 0.7+ | 0.3+ | 2002 10 04 | 644 | 0.2− | 0.1+ | 2005 06 24 | 644 | 0.2− | 0.1+ | | |
| 2001 03 23 | 699 | 0.0 | 0.2+ | 2002 10 04 | 644 | 0.2− | 0.1+ | 2005 06 24 | 644 | 0.4− | 0.1+ | | |
| 2002 08 05 | 704 | 0.5+ | 0.4+ | 2002 10 04 | 644 | 0.1− | 0.2+ | 2005 06 24 | 644 | 0.2− | 0.2− | | |
| 2002 08 05 | 704 | 0.1− | 0.5+ | 2002 10 05 | 645 | 0.1+ | 0.3− | 2005 06 24 | 644 | 0.2− | 0.1+ | | |
| 2002 08 05 | 704 | 0.1+ | 0.6+ | 2002 10 05 | 645 | 0.1+ | 0.2− | 2005 06 24 | 644 | 0.4− | 0.0 | | |
| 2002 09 04 | 699 | 0.3+ | 0.3+ | 2002 10 07 | 704 | 1.0+ | 1.3+ | 2005 06 24 | 644 | 0.2− | 0.1+ | | |
| 2002 09 04 | 699 | 0.7− | 0.1+ | 2002 10 07 | 704 | 0.4+ | 0.0 | 2005 06 28 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 04 | 699 | 0.2+ | 0.3+ | 2002 10 07 | 704 | 0.2− | 0.6+ | 2005 06 28 | 691 | 0.0 | 0.2+ | | |
| 2002 09 04 | 699 | 0.1− | 0.2+ | 2002 10 07 | 704 | 0.3− | 1.2+ | 2005 06 28 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.2− | 0.6+ | 2002 10 07 | 704 | 0.1− | 0.7+ | 2005 06 28 | 644 | 0.1− | 0.1+ | | |
| 2002 09 05 | 704 | 0.1+ | 1.0+ | 2002 10 11 | 704 | 0.6− | 0.3+ | 2005 06 28 | 644 | 0.4− | 0.1+ | | |
| 2002 09 05 | 704 | 0.2− | 0.3+ | 2002 10 11 | 704 | 0.8− | 0.3+ | 2005 06 28 | 644 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.9+ | 0.5+ | 2002 10 11 | 704 | 0.4− | 0.0 | 2005 07 04 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.7+ | 2002 10 11 | 704 | 0.4− | 0.0 | 2005 07 04 | 691 | 0.7+ | 0.8− | | |
| 2002 09 07 | 704 | 0.1− | 0.5+ | 2002 10 11 | 704 | 0.2− | 0.2− | 2005 07 04 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.3− | 0.7+ | 2004 02 11 | 644 | 0.3+ | 0.7+ | 2005 07 05 | 644 | 0.1− | 0.1+ | | |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2004 02 11 | 644 | 0.1+ | 1.0+ | 2005 07 05 | 644 | 0.0 | 0.1+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.3+ | 2004 02 11 | 644 | 0.1+ | 0.9+ | 2005 07 05 | 644 | 0.0 | 0.2+ | | |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2005 05 03 | 704 | 1.0− | 0.8+ | 2005 08 05 | 644 | 0.3− | 0.1− | | |
| 2002 09 14 | 644 | 0.6− | 0.2+ | 2005 05 03 | 704 | 0.8+ | 0.4− | 2005 08 05 | 644 | 0.3− | 0.2− | | |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2005 05 03 | 704 | 0.6+ | 1.0− | 2005 08 05 | 644 | 0.5− | 0.0 | | |
| 2002 09 17 | 608 | 1.1− | 0.1− | 2005 05 03 | 704 | (1.5+ | 0.4+) | 2006 11 20 | 704 | 0.0 | 1.1+ | | |
| 2002 09 17 | 608 | 1.4− | 0.1− | 2005 05 12 | 704 | 0.9+ | 0.2− | 2006 11 20 | 704 | 0.2− | 0.1+ | | |
| 2002 09 17 | 608 | 1.2− | 0.3− | 2005 05 12 | 704 | 0.7+ | 0.0 | 2006 11 20 | 704 | 1.0− | 0.1− | | |
| 2002 09 26 | 644 | 0.4− | 0.0 | 2005 05 12 | 704 | 0.3− | 0.2+ | 2006 11 20 | 704 | 1.4− | 0.1− | | |
| 2002 09 26 | 644 | 0.4− | 0.0 | 2005 05 12 | 704 | 0.5+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.9+ | | |
| 2002 09 26 | 644 | 0.4− | 0.0 | 2005 05 12 | 704 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.5+ | | |
| 2002 09 29 | 608 | 1.3+ | 0.5+ | 2005 05 26 | 599 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.2+ | | |
| 2002 09 29 | 608 | 1.0+ | 0.9+ | 2005 05 26 | 599 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.1− | 1.2+ | | |

**(139075)∗ 2001 FT$_{13}$ = 2002 RY$_{146}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.75769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28718235 | $\omega$ | 211.56392 | | −0.54940734 | +0.83502235 | |
| $a$ | 2.2752592 | $\Omega$ | 25.14731 | | −0.75125388 | −0.47803974 | |
| $e$ | 0.0846039 | $i$ | 4.02398 | | −0.36574469 | −0.27242555 | |
| $P$ | 3.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | (1.5+ | 2.5−) | 2002 09 06 | 704 | 0.5− | 1.1+ | 2004 02 11 | 699 | 1.1+ | 0.4+ |
| 1999 10 06 | 704 | 0.4+ | 1.3− | 2002 09 06 | 704 | 0.7− | 0.6+ | 2004 02 11 | 699 | 0.7+ | 0.9+ |
| 1999 10 06 | 704 | 1.2+ | 1.0− | 2002 09 06 | 704 | 1.0− | 1.5+ | 2004 02 11 | 699 | 1.2− | 0.9+ |
| 1999 10 06 | 704 | 0.6+ | 1.4− | 2002 09 06 | 704 | 0.0 | 0.6+ | 2004 04 19 | 704 | 0.7+ | 0.5− |
| 1999 10 06 | 704 | 0.8+ | 1.3− | 2002 09 06 | 704 | 0.1+ | 0.9+ | 2004 04 19 | 704 | 0.0 | 0.4− |
| 2001 03 03 | 704 | 0.2− | 0.5+ | 2002 09 06 | 704 | 0.2− | 0.9+ | 2004 04 19 | 704 | 0.4+ | 0.1+ |
| 2001 03 03 | 704 | 0.2+ | 0.1− | 2002 09 06 | 704 | 0.1− | 0.7+ | 2004 04 19 | 704 | (2.3+ | 0.3−) |
| 2001 03 03 | 704 | 0.2− | 0.3+ | 2002 09 11 | 644 | 0.3− | 0.9+ | 2005 06 06 | E12 | 0.1− | 0.0 |
| 2001 03 03 | 704 | 0.8+ | 0.6+ | 2002 09 11 | 644 | 0.2− | 0.8+ | 2005 06 06 | E12 | 0.3+ | 0.3+ |
| 2001 03 03 | 704 | 1.1− | 1.0− | 2002 09 11 | 644 | 0.2+ | 0.9+ | 2005 06 06 | E12 | (0.4+ | 1.6+) |
| 2001 03 16 | 691 | 0.0 | 0.3+ | 2002 09 13 | 644 | 0.1− | 0.3+ | 2005 06 06 | E12 | 0.2+ | 0.2+ |
| 2001 03 16 | 691 | 0.2− | 0.4+ | 2002 09 13 | 644 | 0.2− | 0.7+ | 2005 06 07 | E12 | 0.1− | 0.1+ |
| 2001 03 16 | 691 | 0.1+ | 0.0 | 2002 09 13 | 644 | 0.1− | 0.8+ | 2005 06 07 | E12 | 0.1− | 0.2+ |
| 2001 03 18 | 704 | 0.7+ | 0.2− | 2002 09 17 | 644 | 0.7− | 0.3− | 2005 06 07 | E12 | 0.4+ | 0.0 |
| 2001 03 18 | 704 | 0.5+ | 0.6+ | 2002 09 17 | 644 | 0.4− | 0.5− | 2005 06 07 | E12 | 0.1+ | 0.4+ |
| 2001 03 18 | 704 | 0.1+ | 0.6+ | 2002 09 17 | 644 | 0.4− | 0.3− | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2001 03 18 | 704 | 0.6+ | 0.4+ | 2002 09 18 | 644 | 0.6− | 0.6+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2001 03 18 | 704 | 0.2− | 0.2− | 2002 09 18 | 644 | 0.9− | 0.9+ | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2001 03 19 | 699 | 0.0 | 0.2+ | 2002 09 18 | 644 | 0.8− | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2001 03 19 | 699 | 0.3− | 0.6− | 2003 12 18 | 704 | 0.3+ | 0.5+ | 2006 10 20 | G96 | 0.9− | 0.1+ |
| 2001 03 19 | 699 | 0.3+ | 1.4+ | 2003 12 18 | 704 | 0.8+ | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2001 03 19 | 699 | 1.1+ | 0.3+ | 2003 12 18 | 704 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2001 03 21 | 608 | (0.4+ | 1.8−) | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.2+ |
| 2001 03 21 | 608 | (0.4+ | 2.1−) | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 03 21 | 608 | (0.4+ | 1.8−) | 2003 12 28 | 704 | 0.1− | 0.8+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2001 03 23 | 699 | 0.5+ | 0.2+ | 2003 12 28 | 704 | 0.4+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 03 23 | 699 | (1.6+ | 0.0 ) | 2003 12 28 | 704 | 0.2+ | 1.0+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2001 03 23 | 699 | 0.7+ | 0.8+ | 2003 12 28 | 704 | 0.3− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 03 23 | 699 | (2.3+ | 0.6+) | 2003 12 28 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2001 04 01 | 704 | 0.1+ | 0.3+ | 2004 01 19 | 699 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.3+ | 0.0 |
| 2001 04 01 | 704 | 0.9+ | 0.5+ | 2004 01 19 | 699 | 0.6+ | 0.6+ | 2006 11 27 | 704 | 0.0 | 0.6+ |
| 2001 04 01 | 704 | 0.8− | 1.5+ | 2004 01 19 | 699 | 0.2− | 0.5+ | 2006 11 27 | 704 | 0.9+ | 0.3− |
| 2001 04 01 | 704 | 0.0 | 0.8+ | 2004 01 19 | 699 | 0.2− | 0.1− | | | | |
| 2002 09 06 | 704 | 0.5− | 0.3+ | 2004 02 11 | 699 | 1.4− | 1.3+ | | | | |

**(139076)∗ 2001 FX$_{13}$ = 2002 RE$_{95}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.30811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27144722 | $\omega$ | 255.61158 | | −0.00821077 | +0.99963886 | |
| $a$ | 2.3623584 | $\Omega$ | 13.99332 | | −0.87184700 | +0.00537496 | |
| $e$ | 0.1617134 | $i$ | 6.07430 | | −0.48970949 | −0.02632980 | |
| $P$ | 3.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.2+ | 0.1− | 2002 10 07 | 699 | 0.5− | 0.4+ | 2005 02 09 | 809 | 0.1− | 0.2+ |
| 2001 03 18 | 704 | 0.4+ | 0.5− | 2002 10 07 | 699 | 1.1− | 0.3− | 2005 02 09 | 809 | 0.1− | 0.2+ |
| 2001 03 18 | 704 | 0.4− | 0.2− | 2002 10 07 | 699 | 0.4− | 0.4+ | 2005 02 10 | 809 | 0.4− | 0.0 |
| 2001 03 18 | 704 | 0.6− | 0.5+ | 2002 10 07 | 699 | 1.1− | 1.3− | 2005 02 10 | 809 | 0.3− | 0.1− |
| 2001 03 18 | 704 | (0.2− | 1.7+) | 2002 10 07 | 704 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.2− | 0.4− |
| 2001 03 19 | 699 | 0.5+ | 0.4+ | 2002 10 07 | 704 | 0.6+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.4− |
| 2001 03 19 | 699 | 0.2− | 0.5+ | 2002 10 07 | 704 | 0.0 | 0.9+ | 2006 10 04 | G96 | 0.3+ | 0.4− |
| 2001 03 19 | 699 | 0.5+ | 0.2+ | 2002 10 07 | 704 | 0.6+ | 0.1+ | 2006 10 04 | G96 | 0.4− | 0.3− |
| 2001 03 19 | 699 | 0.0 | 0.2+ | 2002 10 07 | 704 | 0.2+ | 0.2+ | 2006 10 19 | A50 | 0.9− | 0.1− |
| 2001 03 20 | 691 | 0.3+ | 0.7+ | 2002 10 10 | 704 | 0.6− | 0.3+ | 2006 10 19 | A50 | 0.1+ | 0.4− |
| 2001 03 20 | 691 | 0.3+ | 0.9+ | 2002 10 10 | 704 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 03 20 | 691 | 0.4+ | 0.9+ | 2002 10 10 | 704 | 0.1+ | 1.3+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 03 21 | 608 | 0.1− | 1.2− | 2002 10 10 | 704 | 0.2− | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 03 21 | 608 | 0.2− | 1.4− | 2002 10 10 | 704 | 0.5− | 0.7+ | 2006 11 10 | 644 | 0.3− | 0.8− |
| 2001 03 21 | 608 | 0.4− | 1.3− | 2002 10 11 | 704 | 0.9− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2001 03 22 | 209 | 0.2+ | 0.6+ | 2002 10 11 | 704 | 0.1+ | 0.7+ | 2006 11 10 | 644 | 0.4− | 0.3+ |
| 2001 03 22 | 209 | 0.2+ | 0.6+ | 2002 10 11 | 704 | 0.5+ | 1.1+ | 2006 11 11 | 703 | 0.3− | 0.7+ |
| 2001 03 22 | 209 | 0.0 | 0.7+ | 2002 10 11 | 704 | 0.8− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2001 03 23 | 699 | 0.4+ | 1.0+ | 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 11 11 | 703 | 1.4+ | 0.9+ |
| 2001 03 23 | 699 | 1.1+ | 0.7+ | 2002 10 11 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | (0.6+ | 1.5+) |
| 2001 03 23 | 699 | 0.6+ | 0.6+ | 2002 10 11 | 704 | 0.7+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2001 03 23 | 699 | 1.2+ | 0.3+ | 2002 10 11 | 704 | 0.5− | 1.1+ | 2006 11 13 | 644 | 0.1+ | 0.4− |
| 2001 03 24 | 704 | 0.2+ | 1.1+ | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2001 03 24 | 704 | 0.3+ | 0.3− | 2002 10 11 | 704 | 0.3− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 03 24 | 704 | 0.4− | 0.6+ | 2002 10 11 | 704 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2001 03 24 | 704 | (1.2− | 1.8+) | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2001 03 24 | 704 | 0.7+ | 0.5+ | 2002 10 11 | 704 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2001 04 01 | 704 | 0.3+ | 0.2+ | 2002 10 11 | 704 | 0.4− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 04 01 | 704 | 0.2+ | 0.9+ | 2002 10 31 | 644 | 0.3− | 0.8+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 04 01 | 704 | 1.4+ | 1.1+ | 2002 10 31 | 644 | 0.1+ | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 04 01 | 704 | (1.5+ | 2.2+) | 2002 10 31 | 644 | 0.0 | 0.9+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2002 10 31 | 704 | 0.7+ | 0.5− | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.5− | 0.8+ | 2002 10 31 | 704 | (1.9+ | 0.9−) | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2002 10 31 | 704 | 1.4+ | 0.9− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.7− | 2002 10 31 | 704 | 0.7+ | 1.2− | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2002 09 05 | 704 | 1.0− | 0.2+ | 2002 10 31 | 704 | (1.1+ | 1.8−) | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.2− | 0.5+ | 2002 11 06 | 608 | 0.5+ | 1.2− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.4− | 0.1+ | 2002 11 06 | 608 | 0.5− | 0.1+ | 2006 11 16 | 704 | 1.1+ | 0.3− |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2002 11 06 | 608 | 0.0 | 0.9− | 2006 11 16 | 704 | 0.1+ | 0.6− |
| 2002 09 07 | 704 | 0.4− | 0.3+ | 2003 12 17 | 699 | (2.2− | 0.1−) | 2006 11 16 | 704 | 0.9− | 0.6− |
| 2002 09 27 | 644 | 0.8− | 1.2+ | 2003 12 17 | 699 | 0.5− | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.6− |
| 2002 09 27 | 644 | 0.8− | 1.0+ | 2003 12 17 | 699 | 0.6+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2002 09 27 | 644 | 0.9− | 1.2+ | 2003 12 17 | 699 | 0.9− | 0.7− | 2006 11 17 | 704 | 0.1− | 1.2+ |
| 2002 10 01 | 608 | 0.8− | 1.0− | 2003 12 28 | 704 | 0.2− | 0.6+ | 2006 11 17 | 704 | 0.3+ | 0.5− |
| 2002 10 01 | 608 | 0.2+ | 0.2− | 2003 12 28 | 704 | 0.4− | 0.4− | 2006 11 17 | 704 | 1.4− | 0.5− |
| 2002 10 01 | 608 | 0.2− | 0.4− | 2003 12 28 | 704 | 0.2− | 0.4+ | 2006 11 19 | 704 | 1.1− | 0.1− |
| 2002 10 02 | 704 | (1.8+ | 1.2−) | 2003 12 28 | 704 | (1.6− | 0.1+) | 2006 11 19 | 704 | 0.5+ | 0.6− |
| 2002 10 02 | 704 | (2.2+ | 1.2−) | 2003 12 28 | 704 | 0.5− | 1.0− | 2006 11 19 | 704 | 0.4+ | 0.7− |
| 2002 10 02 | 704 | (1.4+ | 1.7−) | 2003 12 28 | 704 | 0.5− | 0.6+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2002 10 02 | 704 | (2.0+ | 1.8−) | 2003 12 28 | 704 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.7− | 0.5− | 2003 12 28 | 704 | 0.7+ | 0.0 | 2006 11 22 | 704 | (0.7+ | 1.8+) |
| 2002 10 03 | 704 | 0.4− | 0.6+ | 2003 12 28 | 704 | (1.7− | 0.5+) | 2006 11 22 | 704 | 0.6− | 0.9+ |
| 2002 10 03 | 704 | 0.7− | 0.1+ | 2004 01 16 | 699 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.6− | 0.8+ |
| 2002 10 03 | 704 | 0.7− | 0.2+ | 2004 01 16 | 699 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.3− | 0.8+ |
| 2002 10 03 | 704 | 0.2− | 0.5− | 2004 01 16 | 699 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.5− | 0.1+ |
| 2002 10 04 | 291 | 0.1− | 0.1+ | 2004 01 16 | 699 | 0.6− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.1+ |
| 2002 10 04 | 291 | 0.1+ | 0.3+ | 2005 02 09 | 809 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.7− |
| 2002 10 04 | 291 | 0.2+ | 0.3+ | 2005 02 09 | 809 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2− |

**(139077)∗ 2001 FM$_{14}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.54088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27544424 | $\omega$ | 346.86654 | | −0.98838136 | −0.15172119 | |
| $a$ | 2.3394490 | $\Omega$ | 184.43715 | | +0.14791676 | −0.94634793 | |
| $e$ | 0.1815195 | $i$ | 6.76176 | | +0.03497040 | −0.28531785 | |
| $P$ | 3.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | (2.4− | 0.0 ) | 2001 04 04 | 608 | 0.9+ | 1.1+ | 2003 12 17 | 699 | 0.3− | 0.1− |
| 2001 03 18 | 704 | 0.2− | 0.4+ | 2001 04 23 | 699 | 0.1− | 0.1+ | 2003 12 20 | 704 | 0.1− | 0.6+ |
| 2001 03 18 | 704 | 0.2− | 0.0 | 2001 04 23 | 699 | 0.5+ | 0.6+ | 2003 12 20 | 704 | 0.5− | 0.8− |
| 2001 03 18 | 704 | 0.1− | 0.3+ | 2001 04 23 | 699 | 0.0 | 0.1+ | 2003 12 20 | 704 | 0.0 | 0.9+ |
| 2001 03 18 | 704 | 0.1+ | 0.0 | 2001 04 23 | 699 | 0.4− | 0.0 | 2003 12 20 | 704 | 0.5+ | 1.0+ |
| 2001 03 19 | 699 | 0.6− | 0.8+ | 2001 04 24 | 699 | 1.1+ | 0.2+ | 2003 12 20 | 704 | 0.6+ | 1.0+ |
| 2001 03 19 | 699 | 0.5− | 0.9+ | 2001 04 24 | 699 | 0.3− | 0.1− | 2004 01 18 | 644 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.9− | 0.7+ | 2001 04 24 | 699 | 0.0 | 1.0+ | 2004 01 18 | 644 | 0.0 | 0.1+ | | |
| 2001 03 19 | 699 | 0.5− | 0.8+ | 2001 04 24 | 699 | 0.3− | 0.5+ | 2004 01 18 | 644 | 0.2+ | 0.2+ | | |
| 2001 03 23 | 699 | 0.9+ | 0.0 | 2001 05 18 | 704 | 0.6− | 0.2− | 2006 07 22 | G96 | 0.7− | 0.4+ | | |
| 2001 03 23 | 699 | 1.1+ | 0.2− | 2001 05 18 | 704 | 0.4− | 0.4+ | 2006 07 22 | G96 | 0.2+ | 0.0 | | |
| 2001 03 23 | 699 | 1.1+ | 0.2+ | 2001 05 18 | 704 | 0.2+ | 0.4+ | 2006 07 22 | G96 | 0.5− | 0.9+ | | |
| 2001 03 23 | 699 | 0.9+ | 0.5+ | 2002 08 27 | 644 | 1.2− | 0.8+ | 2006 07 22 | G96 | 1.2− | 0.6+ | | |
| 2001 03 24 | 704 | 0.1+ | 0.2+ | 2002 08 27 | 644 | 0.2+ | 0.8+ | 2006 08 28 | 703 | 1.2+ | 0.2− | | |
| 2001 03 24 | 704 | 0.4− | 0.5+ | 2002 08 27 | 644 | 0.2+ | 1.1+ | 2006 08 28 | 703 | 0.4+ | 1.0− | | |
| 2001 03 24 | 704 | 0.1+ | 0.7+ | 2003 11 24 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | (1.9− | 0.4+) | | |
| 2001 03 24 | 704 | 0.2+ | 0.4+ | 2003 11 24 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.6− | 1.2− | | |
| 2001 03 24 | 704 | 0.0 | 0.7+ | 2003 11 24 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.4− | 1.2+ | | |
| 2001 03 29 | 699 | 0.1− | 0.8+ | 2003 11 30 | 704 | 0.8+ | 0.0 | 2006 09 17 | 691 | 0.4− | 0.3+ | | |
| 2001 03 29 | 699 | 0.7+ | 0.0 | 2003 11 30 | 704 | (0.2− | 1.6−) | 2006 09 17 | 691 | 0.4− | 0.3+ | | |
| 2001 03 29 | 699 | 0.1+ | 0.3− | 2003 11 30 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 703 | 0.2− | 1.0+ | | |
| 2001 03 29 | 704 | 0.2+ | 0.3+ | 2003 11 30 | 704 | 0.4+ | 0.6− | 2006 09 19 | 703 | 0.4− | 1.0+ | | |
| 2001 03 29 | 704 | 0.8+ | 0.5+ | 2003 11 30 | 704 | 0.8+ | 0.3− | 2006 09 19 | 703 | 0.7− | 0.4+ | | |
| 2001 03 29 | 699 | 0.0 | 0.1− | 2003 12 16 | 703 | 0.8− | 0.3− | 2006 09 19 | 703 | 1.0− | 1.1+ | | |
| 2001 03 29 | 704 | 0.4− | 0.9+ | 2003 12 16 | 703 | 0.4+ | 0.4+ | 2006 10 01 | 691 | 0.3+ | 0.4+ | | |
| 2001 03 29 | 704 | 0.5− | 0.8− | 2003 12 16 | 703 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.9+ | | |
| 2001 04 01 | 704 | 0.3− | 0.5+ | 2003 12 16 | 703 | 0.7− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.9+ | | |
| 2001 04 01 | 704 | 0.4+ | 0.3+ | 2003 12 17 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.4+ | | |
| 2001 04 01 | 704 | 0.2+ | 1.5+ | 2003 12 17 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3+ | | |
| 2001 04 01 | 704 | 0.3+ | 0.3+ | 2003 12 17 | 691 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− | | |
| 2001 04 01 | 704 | 0.5+ | 0.6+ | 2003 12 17 | 699 | 1.0+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.3+ | | |
| 2001 04 04 | 608 | 0.8+ | 1.2+ | 2003 12 17 | 699 | (1.8+ | 0.3−) | | | | | | |
| 2001 04 04 | 608 | 0.6+ | 1.1+ | 2003 12 17 | 699 | 0.2− | 0.1+ | | | | | | |

**(139078)∗ 2001 FN$_{14}$ = 1980 FG$_5$ = 1980 FY$_7$ = 2002 RK$_{75}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 198.20666 | | (2000.0) | | −0.96850508 | +0.24892446 |
| $n$ | 0.28193465 | $\omega$ | 10.61128 | | −0.23442410 | −0.91953325 |
| $a$ | 2.3034056 | $\Omega$ | 183.81770 | | −0.08392406 | −0.30413027 |
| $e$ | 0.1414326 | $i$ | 5.06261 | | | |
| $P$ | 3.50 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1980 03 16 | 809 | 0.5− | 0.9− | 2001 03 29 | 704 | 0.1+ | 0.1− | 2002 09 07 | 704 | 1.1− | 0.2+ | | |
| 1980 03 16 | 809 | 0.7− | 1.1− | 2001 03 29 | 704 | 0.2+ | 0.8+ | 2002 09 14 | 644 | 0.3− | 1.3+ | | |
| 1980 03 16 | 809 | 0.1+ | 1.0− | 2001 03 29 | 699 | 0.1+ | 0.1− | 2002 09 14 | 644 | 0.6− | 0.9+ | | |
| 1980 03 16 | 809 | 1.4− | 1.7− | 2001 03 29 | 704 | 0.7+ | 0.0 | 2002 09 14 | 644 | 0.2− | 1.0+ | | |
| 1980 03 23 | 809 | 0.3+ | 1.9− | 2001 03 29 | 704 | (2.0+ | 0.6−) | 2006 07 21 | G96 | (1.2− | 1.5+) | | |
| 2001 02 01 | 699 | 0.8+ | 1.1+ | 2001 03 29 | 704 | 0.2+ | 0.7+ | 2006 07 21 | G96 | 0.6+ | 0.1+ | | |
| 2001 02 01 | 699 | 0.4+ | 1.1+ | 2001 04 01 | 704 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.1+ | | |
| 2001 02 01 | 699 | 0.3+ | 1.4− | 2001 04 01 | 704 | 0.4+ | 0.9+ | 2006 07 21 | G96 | 0.7− | 0.4+ | | |
| 2001 02 01 | 699 | 1.4− | 1.1+ | 2001 04 01 | 704 | 0.7+ | 1.2+ | 2006 09 30 | G96 | 0.1+ | 0.8+ | | |
| 2001 02 22 | 704 | 0.6− | 0.2− | 2001 04 01 | 704 | 0.3+ | 1.1+ | 2006 09 30 | G96 | 0.1− | 0.3− | | |
| 2001 02 22 | 704 | 0.5+ | 0.3+ | 2001 04 01 | 704 | 0.7+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.3− | | |
| 2001 02 22 | 704 | 0.3+ | 1.0+ | 2001 04 04 | 608 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.6− | 0.6+ | | |
| 2001 02 22 | 704 | 0.0 | 0.1− | 2001 04 04 | 608 | 0.2+ | 1.0+ | 2006 09 30 | G96 | 0.3+ | 0.1− | | |
| 2001 02 22 | 704 | 0.0 | 0.6+ | 2001 04 04 | 608 | 0.4+ | 0.8+ | 2006 09 30 | 703 | 0.2+ | 1.4− | | |
| 2001 03 18 | 704 | 0.3+ | 1.4+ | 2001 04 04 | 608 | 0.2− | 1.1+ | 2006 09 30 | 703 | 0.6+ | 0.6− | | |
| 2001 03 18 | 704 | 0.1− | 0.3+ | 2001 04 04 | 608 | 0.0 | 1.4+ | 2006 09 30 | 703 | 0.5− | 0.2+ | | |
| 2001 03 18 | 704 | 0.6− | 0.3− | 2001 04 04 | 608 | 0.3− | 1.2+ | 2006 10 16 | 703 | 0.2− | 0.7+ | | |
| 2001 03 18 | 704 | 0.0 | 0.8− | 2001 04 18 | 704 | 0.9+ | 0.1− | 2006 10 16 | 703 | (0.3− | 2.4+) | | |
| 2001 03 18 | 704 | 1.1+ | 0.4− | 2001 04 18 | 704 | 0.2− | 1.0+ | 2006 10 16 | 703 | (1.7+ | 1.7+) | | |
| 2001 03 19 | 699 | 0.6− | 0.3− | 2001 04 18 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.9+ | | |
| 2001 03 19 | 699 | 0.7− | 0.0 | 2001 04 18 | 704 | 1.1+ | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.0 | | |
| 2001 03 19 | 699 | 0.4− | 0.2+ | 2001 04 18 | 704 | 0.4− | 0.6− | 2006 10 18 | 691 | 0.2+ | 0.5+ | | |
| 2001 03 19 | 699 | 0.8− | 0.0 | 2001 04 24 | 699 | 0.4+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.2+ | | |
| 2001 03 23 | 699 | 0.2+ | 0.1− | 2001 04 24 | 699 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2001 03 23 | 699 | (0.1+ | 2.2+) | 2001 04 24 | 699 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2001 03 23 | 699 | 0.9+ | 0.3− | 2001 04 24 | 699 | 0.6− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2001 03 23 | 699 | 0.2+ | 0.1− | 2001 05 27 | 608 | 0.0 | 0.9− | 2006 11 01 | G96 | 0.0 | 0.1− | | |
| 2001 03 24 | 704 | 0.1+ | 0.0 | 2001 05 27 | 608 | 0.4+ | 0.7− | 2006 11 01 | G96 | 0.4+ | 0.1− | | |
| 2001 03 24 | 704 | 0.6− | 0.7+ | 2001 05 27 | 608 | 0.4− | 0.5− | 2006 11 01 | G96 | 0.2+ | 0.1− | | |
| 2001 03 24 | 704 | 0.1− | 0.7+ | 2002 09 05 | 704 | (0.4+ | 1.6+) | 2006 11 01 | G96 | 0.1+ | 0.1− | | |
| 2001 03 24 | 704 | 0.2+ | 0.5+ | 2002 09 05 | 704 | 0.4+ | 1.5+ | 2006 11 13 | 703 | 0.2+ | 0.1− | | |
| 2001 03 24 | 704 | 0.6+ | 0.8+ | 2002 09 05 | 704 | 0.6+ | 0.6+ | 2006 11 13 | 703 | 0.7− | 2.2+ | | |
| 2001 03 29 | 699 | 0.2+ | 0.0 | 2002 09 05 | 704 | 0.8− | 1.0+ | 2006 11 13 | 703 | 0.1+ | 1.2− | | |
| 2001 03 29 | 699 | 0.3− | 0.1− | 2002 09 07 | 704 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.2− | 1.6+ | | |
| 2001 03 29 | 699 | 0.6+ | 0.3+ | 2002 09 07 | 704 | 0.5− | 0.6+ | | | | | | |

**(139079)∗ 2001 FR$_{15}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.37792 | | (2000.0) | | −0.43181320 | +0.90170503 |
| $n$ | 0.27883458 | $\omega$ | 232.94527 | | −0.78949457 | −0.36629494 |
| $a$ | 2.3204469 | $\Omega$ | 11.53121 | | −0.43616017 | −0.22968688 |
| $e$ | 0.1432735 | $i$ | 6.19539 | | | |
| $P$ | 3.53 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 12 | 691 | 0.0 | 0.3− | 2001 04 27 | 608 | 0.3+ | 0.4+ | 2003 12 28 | 691 | 0.1+ | 0.1+ | | |
| 1994 04 12 | 691 | 0.2− | 0.5+ | 2001 04 27 | 608 | 0.1− | 0.4+ | 2003 12 28 | 704 | (1.8− | 0.3−) | | |
| 1994 04 12 | 691 | 1.3− | 1.5− | 2002 09 05 | 704 | (0.1− | 1.7+) | 2003 12 28 | 704 | 0.6− | 0.6+ | | |
| 2001 03 18 | 691 | 0.2− | 0.7+ | 2002 09 05 | 704 | 0.1− | 1.1+ | 2003 12 28 | 691 | 0.1− | 0.0 | | |
| 2001 03 18 | 704 | 0.3+ | 1.0+ | 2002 09 05 | 704 | 0.4− | 0.9+ | 2003 12 28 | 704 | 0.5− | 0.6+ | | |
| 2001 03 18 | 691 | 0.2+ | 0.7+ | 2002 09 26 | 644 | 0.7− | 0.5+ | 2003 12 28 | 704 | 0.0 | 0.1+ | | |
| 2001 03 18 | 704 | 0.1+ | 0.0 | 2002 09 26 | 644 | 0.8− | 0.6+ | 2003 12 28 | 691 | 0.4− | 0.2− | | |
| 2001 03 18 | 691 | 0.1− | 0.7+ | 2002 09 26 | 644 | 0.8− | 0.4+ | 2004 01 16 | 691 | 0.1+ | 0.2− | | |
| 2001 03 18 | 704 | 0.0 | 0.2+ | 2002 09 30 | 704 | 0.8− | 0.6+ | 2004 01 16 | 691 | 0.2+ | 0.0 | | |
| 2001 03 18 | 704 | 0.6+ | 0.6+ | 2002 09 30 | 704 | (0.5− | 1.9+) | 2004 01 16 | 691 | 0.5+ | 0.4− | | |
| 2001 03 18 | 704 | 0.4+ | 0.6+ | 2002 09 30 | 704 | 0.2+ | 0.6+ | 2004 02 14 | 704 | 0.1− | 0.0 | | |
| 2001 03 19 | 699 | 0.2− | 0.3+ | 2002 09 30 | 704 | (0.6− | 2.4+) | 2004 02 14 | 704 | 1.2+ | 0.7+ | | |
| 2001 03 19 | 699 | 0.6+ | 0.8+ | 2002 09 30 | 704 | 0.6− | 1.0+ | 2004 02 14 | 704 | 0.2− | 0.2+ | | |
| 2001 03 19 | 699 | 0.6+ | 0.1+ | 2002 10 02 | 704 | 0.9+ | 0.5+ | 2005 05 30 | E12 | 0.6− | 0.8+ | | |
| 2001 03 19 | 699 | 0.2+ | 0.3+ | 2002 10 02 | 704 | 0.2+ | 0.8+ | 2005 05 30 | E12 | 0.1− | 0.2− | | |
| 2001 03 21 | 608 | 0.8+ | 0.5− | 2002 10 02 | 704 | 0.3+ | 1.5+ | 2005 05 30 | E12 | 0.4− | 0.1− | | |
| 2001 03 21 | 608 | 0.9+ | 0.7− | 2002 10 03 | 704 | 0.3+ | 0.0 | 2005 06 07 | E12 | 0.5− | 0.9+ | | |
| 2001 03 21 | 608 | 0.6+ | 0.3− | 2002 10 03 | 704 | 0.0 | 1.4+ | 2005 06 07 | E12 | 0.7− | 0.8+ | | |
| 2001 03 23 | 699 | 0.5+ | 0.3+ | 2002 10 03 | 704 | 0.7− | 0.6+ | 2005 06 07 | E12 | 0.5− | 1.2+ | | |
| 2001 03 23 | 699 | 0.4+ | 0.3+ | 2002 10 03 | 704 | 0.1− | 0.2+ | 2005 06 07 | E12 | 0.8− | 1.1+ | | |
| 2001 03 23 | 699 | 0.2− | 0.1− | 2002 10 03 | 704 | 0.8− | 0.6+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | | |
| 2001 03 23 | 699 | 0.2+ | 0.5+ | 2002 10 05 | 644 | 0.1+ | 1.4+ | 2006 10 19 | 691 | 0.2+ | 0.1− | | |
| 2001 03 23 | 608 | 1.1+ | 0.7− | 2002 10 05 | 644 | 0.3− | 1.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2001 03 23 | 608 | 0.8+ | 0.8− | 2002 10 05 | 644 | 0.3− | 1.4+ | 2006 11 11 | 691 | 0.3− | 0.1− | | |
| 2001 03 23 | 608 | 0.4+ | 0.7− | 2002 10 06 | 644 | 0.1+ | 1.3+ | 2006 11 11 | 691 | 0.0 | 0.2− | | |
| 2001 03 24 | 704 | 0.6+ | 0.2+ | 2002 10 06 | 644 | (0.2+ | 1.7+) | 2006 11 11 | 691 | 0.1− | 0.1− | | |
| 2001 03 24 | 704 | 0.4+ | 0.0 | 2002 10 06 | 644 | (0.1+ | 1.6+) | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2001 03 24 | 704 | 0.3+ | 0.3− | 2002 10 07 | 704 | 0.5+ | 0.3+ | 2006 11 17 | 691 | 0.2− | 0.2− | | |
| 2001 03 24 | 704 | 0.1− | 0.2+ | 2002 10 07 | 704 | 0.7− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.0 | | |
| 2001 03 24 | 704 | 0.5+ | 0.0 | 2002 10 07 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2001 03 26 | 691 | 0.3+ | 0.3+ | 2002 10 11 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 691 | 0.2− | 0.3− | | |
| 2001 03 26 | 691 | 0.4+ | 0.2+ | 2002 10 11 | 704 | 0.6+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2001 03 26 | 691 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.9− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2001 03 29 | 704 | 0.1− | 1.0+ | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 11 19 | 704 | 1.5− | 1.4− | | |
| 2001 03 29 | 704 | (0.8− | 1.5+) | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 11 19 | 704 | 1.1− | 1.4− | | |
| 2001 03 29 | 704 | 0.8+ | 0.6+ | 2002 10 11 | 704 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.9− | 0.7− | | |
| 2001 03 29 | 704 | (0.6+ | 1.8+) | 2002 10 11 | 704 | 0.9+ | 0.1+ | 2006 11 20 | 704 | 1.9+ | 0.4+ | | |
| 2001 03 29 | 704 | 0.3+ | 0.5+ | 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 11 20 | 704 | 1.0+ | 0.2− | | |
| 2001 04 01 | 704 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 1.4+ | 1.0+ | 2006 11 20 | 704 | 0.7+ | 0.2+ | | |
| 2001 04 01 | 704 | 0.2− | 0.2− | 2003 12 23 | 704 | 0.6− | 1.0+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2001 04 01 | 704 | 0.3+ | 0.2+ | 2003 12 23 | 704 | (0.4− | 1.7+) | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2001 04 01 | 704 | 0.1+ | 0.9+ | 2003 12 23 | 704 | 0.8− | 1.5+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2001 04 18 | 704 | 0.7+ | 1.1+ | 2003 12 23 | 704 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.1− | | |
| 2001 04 18 | 704 | 0.6− | 0.0 | 2003 12 27 | 704 | 1.1+ | 0.1+ | 2006 11 22 | 691 | 1.1− | 0.1+ | | |
| 2001 04 18 | 704 | 0.6+ | 0.1− | 2003 12 27 | 704 | 0.1+ | 1.3+ | 2006 11 22 | 691 | 0.1− | 0.0 | | |
| 2001 04 18 | 704 | (2.1+ | 0.2−) | 2003 12 27 | 704 | (0.7− | 1.6+) | 2006 11 22 | 691 | 0.1− | 0.0 | | |
| 2001 04 27 | 608 | 0.4− | 0.0 | 2003 12 27 | 704 | 0.2+ | 0.2+ | | | | | | |

**(139080)∗ 2001 FP$_{16}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.29190 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27471462 | $\omega$ | 137.89803 | | −0.98510652 | +0.16765003 |
| $a$ | 2.3435895 | $\Omega$ | 51.79323 | | −0.16785975 | −0.88954684 |
| $e$ | 0.1425466 | $i$ | 2.78586 | | −0.03725912 | −0.42497046 |
| $P$ | 3.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 03 | 691 | 0.1− | 0.2+ | 2001 03 24 | 704 | 0.3+ | 0.3− | 2003 12 18 | 704 | 0.6− | 0.4− |
| 1994 05 03 | 691 | 0.0 | 0.0 | 2001 03 26 | 704 | 0.4+ | 0.3+ | 2003 12 21 | 704 | 0.0 | 0.1− |
| 1994 05 03 | 691 | 0.1+ | 0.1− | 2001 03 26 | 704 | 0.2− | 0.0 | 2003 12 21 | 704 | 0.5+ | 0.8+ |
| 2001 03 03 | 704 | (0.2− | 1.5−) | 2001 03 26 | 704 | 0.1+ | 0.1+ | 2003 12 21 | 704 | 0.3+ | 0.5− |
| 2001 03 03 | 704 | 1.1+ | 0.0 | 2001 03 26 | 704 | 0.7+ | 0.3+ | 2003 12 22 | 704 | (2.1+ | 1.3+) |
| 2001 03 03 | 704 | 0.3+ | 0.5− | 2001 03 26 | 704 | 0.4− | 0.1− | 2003 12 22 | 704 | 0.8+ | 0.6+ |
| 2001 03 03 | 704 | 0.6+ | 0.3− | 2001 03 29 | 699 | 0.5− | 0.0 | 2003 12 22 | 704 | 0.9+ | 0.8+ |
| 2001 03 18 | 691 | 0.2+ | 0.1+ | 2001 03 29 | 699 | 0.2− | 0.4+ | 2003 12 22 | 704 | 0.1− | 0.1− |
| 2001 03 18 | 691 | 0.1+ | 0.0 | 2001 03 29 | 699 | 0.2− | 0.1− | 2004 01 13 | 691 | 0.1− | 0.1− |
| 2001 03 18 | 691 | 0.1− | 0.4+ | 2001 03 29 | 704 | 0.1+ | 0.0 | 2004 01 13 | 691 | 0.1+ | 0.3− |
| 2001 03 19 | 699 | 0.2− | 0.6+ | 2001 03 29 | 704 | 0.3− | 0.1+ | 2004 01 13 | 691 | 0.2+ | 0.1+ |
| 2001 03 19 | 699 | 0.4− | 0.1+ | 2001 03 29 | 699 | 0.2− | 0.0 | 2004 01 28 | 691 | 0.4+ | 0.4− |
| 2001 03 19 | 704 | 1.1− | 0.5+ | 2001 03 29 | 704 | 0.6− | 0.1+ | 2004 01 28 | 691 | 0.1− | 0.4− |
| 2001 03 19 | 704 | 1.0+ | 0.4− | 2001 03 29 | 704 | 0.7− | 0.1− | 2004 01 28 | 691 | 0.1− | 0.0 |
| 2001 03 19 | 704 | 0.6+ | 0.1− | 2001 04 16 | 704 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.2+ |
| 2001 03 19 | 704 | 0.2− | 0.9+ | 2001 04 16 | 704 | 0.5+ | 0.6+ | 2006 09 14 | 691 | 0.2− | 0.3+ |
| 2001 03 19 | 699 | 0.6+ | 0.9+ | 2001 04 16 | 704 | 0.2− | 1.1− | 2006 09 14 | 691 | 0.2− | 0.4+ |
| 2001 03 19 | 704 | 0.6− | 0.5+ | 2001 04 16 | 704 | 1.0+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2001 03 19 | 704 | 0.2− | 0.3+ | 2001 04 18 | 691 | 0.0 | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.4+ |
| 2001 03 19 | 704 | 0.0 | 0.9+ | 2001 04 18 | 691 | 0.0 | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.5+ |
| 2001 03 19 | 699 | 0.0 | 0.2+ | 2001 04 18 | 691 | 0.1+ | 0.9+ | 2006 10 16 | 691 | 0.0 | 1.4+ |
| 2001 03 19 | 704 | 0.5− | 0.6+ | 2001 04 24 | 699 | 0.9− | 0.2+ | 2006 10 16 | 691 | 0.5− | 0.3+ |
| 2001 03 23 | 699 | 1.5+ | 0.5+ | 2001 04 24 | 699 | 1.5+ | 0.8+ | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2001 03 23 | 699 | 0.9+ | 0.3+ | 2001 04 24 | 699 | 1.0+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2001 03 23 | 699 | 0.8+ | 0.1− | 2001 04 24 | 699 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.4+ |
| 2001 03 23 | 699 | 0.9+ | 0.1+ | 2003 12 18 | 704 | 0.4− | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2001 03 24 | 704 | (1.5+ | 0.6−) | 2003 12 18 | 704 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2001 03 24 | 704 | 0.0 | 0.1+ | 2003 12 18 | 704 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2001 03 24 | 704 | 0.1− | 0.9− | 2003 12 18 | 704 | 1.5− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |

**(139081)∗ 2001 FU$_{16}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.67313 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25732397 | $\omega$ | 13.26886 | | −0.98560106 | −0.16795168 |
| $a$ | 2.4480252 | $\Omega$ | 157.03463 | | +0.15019687 | −0.92275376 |
| $e$ | 0.1346894 | $i$ | 2.87421 | | +0.07766237 | −0.34686847 |
| $P$ | 3.83 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.7+ | 0.2− | 2001 04 01 | 704 | 0.8+ | 0.1− | 2005 04 30 | 599 | 0.2+ | 0.1+ |
| 2001 03 18 | 704 | 0.7+ | 0.5− | 2001 04 01 | 704 | 0.0 | 0.7− | 2005 04 30 | 599 | 0.5+ | 0.3+ |
| 2001 03 18 | 704 | 1.9+ | 0.5− | 2001 04 01 | 704 | 0.2+ | 0.5+ | 2005 04 30 | 599 | 0.5+ | 0.3+ |
| 2001 03 18 | 704 | 0.3− | 0.0 | 2002 08 09 | 807 | 0.1+ | 1.0+ | 2005 04 30 | 599 | 0.1− | 0.1− |
| 2001 03 18 | 608 | 0.0 | 1.5+ | 2002 08 09 | 807 | 0.2− | 0.9+ | 2005 05 09 | 699 | 0.4+ | 0.5+ |
| 2001 03 18 | 608 | 0.1+ | 0.7+ | 2003 10 26 | 691 | 0.1+ | 0.8+ | 2005 05 09 | 699 | 0.0 | 0.4+ |
| 2001 03 18 | 608 | 0.0 | 0.8+ | 2003 10 26 | 691 | 0.2− | 0.7+ | 2005 05 09 | 699 | 0.1− | 0.6+ |
| 2001 03 19 | 699 | 1.4− | 0.0 | 2003 10 26 | 691 | 0.2− | 0.3+ | 2005 05 09 | 699 | 0.1− | 0.2+ |
| 2001 03 19 | 699 | 1.2− | 0.0 | 2003 11 30 | 691 | 0.0 | 0.3+ | 2005 05 11 | 807 | 0.2− | 0.1− |
| 2001 03 19 | 699 | 0.4− | 0.1+ | 2003 11 30 | 691 | 0.0 | 0.3+ | 2005 05 11 | 807 | 0.3− | 0.2− |
| 2001 03 19 | 699 | 0.1− | 0.1+ | 2003 11 30 | 691 | 0.4− | 0.4+ | 2005 06 01 | 699 | 0.6+ | 0.3+ |
| 2001 03 23 | 699 | 0.2+ | 0.6− | 2003 12 01 | 704 | 0.0 | 0.4+ | 2005 06 01 | 699 | 0.4− | 0.2+ |
| 2001 03 23 | 699 | 0.1− | 0.1− | 2003 12 01 | 704 | 0.3+ | 0.1+ | 2005 06 01 | 699 | 1.0+ | 0.1− |
| 2001 03 23 | 699 | 0.1+ | 0.6− | 2003 12 01 | 704 | 0.0 | 0.5+ | 2005 06 01 | 699 | 0.6− | 0.1+ |
| 2001 03 23 | 699 | 0.0 | 0.2+ | 2003 12 21 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.2− | 0.5− |
| 2001 03 26 | 608 | 0.4+ | 0.5+ | 2003 12 21 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | 1.0− | 0.5+ |
| 2001 03 26 | 608 | 0.0 | 0.5+ | 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.6+ |
| 2001 03 26 | 608 | 0.3+ | 0.3+ | 2005 04 12 | 704 | 0.5+ | 1.3+ | 2006 08 28 | 703 | 0.2− | 1.6+ |
| 2001 03 29 | 699 | 0.6− | 0.3+ | 2005 04 12 | 704 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.7− | 0.4+ |
| 2001 03 29 | 699 | 0.1− | 0.9+ | 2005 04 12 | 704 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.5− | 0.5+ |
| 2001 03 29 | 699 | 0.5+ | 0.2+ | 2005 04 12 | 704 | 0.3+ | 0.8+ | 2006 09 26 | G96 | 0.4+ | 0.5+ |
| 2001 03 29 | 699 | 0.3+ | 0.5+ | 2005 04 30 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.5+ |
| 2001 04 01 | 704 | 0.8− | 0.2− | 2005 04 30 | 691 | 0.1+ | 0.4+ | | | | |
| 2001 04 01 | 704 | 0.2− | 0.2− | 2005 04 30 | 691 | 0.2+ | 0.3+ | | | | |

**(139082)∗ 2001 FD$_{18}$ = 2002 RS$_{173}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37556)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.56010 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27203855 | $\omega$ | 36.19983 | | −0.36586500 | +0.93046833 |
| $a$ | 2.3589338 | $\Omega$ | 212.35197 | | −0.86210969 | −0.34664204 |
| $e$ | 0.1384296 | $i$ | 2.06412 | | −0.35058476 | −0.11860850 |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.2+ | 0.5− | 2001 04 01 | 704 | (1.0+ | 2.1+) | 2006 10 16 | 691 | 0.0 | 0.2− |
| 1995 10 02 | 691 | 0.0 | 0.4− | 2001 04 26 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 1995 10 02 | 691 | 0.3+ | 0.3− | 2001 04 26 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 1997 01 31 | 691 | 0.4− | 0.2− | 2001 04 26 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.3+ |
| 1997 01 31 | 691 | 0.1+ | 0.5− | 2002 09 13 | 291 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 1997 01 31 | 691 | 0.3− | 0.0 | 2002 09 13 | 291 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2001 03 19 | 699 | 0.2+ | 0.8+ | 2002 09 13 | 291 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.0 |
| 2001 03 19 | 699 | 0.7+ | 0.5− | 2002 09 14 | 644 | 0.3− | 0.6+ | 2006 11 17 | 703 | 2.1− | 1.1+ |
| 2001 03 19 | 699 | 0.3+ | 0.7+ | 2002 09 14 | 644 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.8+ | 0.1+ |
| 2001 03 19 | 699 | 0.1− | 0.7+ | 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.4− | 1.7+ |
| 2001 03 23 | 699 | 0.0 | 0.6+ | 2002 10 04 | 644 | 0.2− | 0.6+ | 2006 11 17 | 703 | 1.1+ | 0.0 |
| 2001 03 23 | 699 | 0.3+ | 0.9+ | 2002 10 04 | 644 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2001 03 23 | 699 | 0.4+ | 0.6+ | 2002 10 04 | 644 | 0.4− | 0.7+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2001 03 23 | 699 | 1.0+ | 0.6+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2001 03 24 | 704 | 0.3− | 0.2+ | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2001 03 24 | 704 | 0.5+ | 1.0+ | 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2001 03 24 | 704 | 0.4− | 0.4+ | 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2001 03 24 | 704 | (3.0+ | 1.4+) | 2003 12 17 | 691 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2001 03 29 | 699 | 0.1− | 0.6+ | 2003 12 17 | 691 | 0.5+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2001 03 29 | 699 | 0.5+ | 0.1− | 2003 12 17 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2001 03 29 | 699 | 0.2+ | 0.3− | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2001 03 29 | 699 | 0.2+ | 0.6+ | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2001 04 01 | 704 | (0.1+ | 1.8+) | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2001 04 01 | 704 | (0.8+ | 1.7+) | 2006 10 16 | 691 | 0.0 | 0.1+ | | | | |
| 2001 04 01 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.2− | | | | |

**(139083)∗ 2001 FZ$_{19}$ = 1997 CN$_{3}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 11979)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.21295 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26717353 | $\omega$ | 217.01924 | | −0.98605692 | +0.16579329 |
| $a$ | 2.3874838 | $\Omega$ | 332.51381 | | −0.14429733 | −0.89466330 |
| $e$ | 0.1530491 | $i$ | 1.77487 | | −0.08288568 | −0.41483752 |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.3− | 0.5+ | 2001 03 18 | 704 | 0.1− | 0.1− | 2005 02 09 | 809 | 0.4− | 0.0 |
| 1995 10 23 | 691 | 0.4− | 0.1− | 2001 03 18 | 704 | 1.0+ | 1.1+ | 2005 02 10 | 809 | 0.4− | 0.0 |
| 1995 10 23 | 691 | 0.4− | 0.3+ | 2001 03 18 | 704 | 0.0 | 0.7+ | 2005 02 10 | 809 | 1.1− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.2− | 0.2+ | 2001 03 19 | 699 | 0.0 | 0.6+ | 2005 02 10 | 809 | 0.4− | 0.1− |
| 1997 02 02 | 691 | 0.0 | 0.0 | 2001 03 19 | 699 | 0.5+ | 1.2+ | 2005 02 10 | 809 | 0.2− | 0.0 |
| 1997 02 02 | 691 | 0.0 | 0.1− | 2001 03 19 | 699 | 0.1− | 1.2+ | 2005 05 22 | 644 | 0.0 | 0.0 |
| 1997 02 03 | 691 | 0.6+ | 0.4− | 2001 03 19 | 699 | 0.5+ | 0.7+ | 2005 05 22 | 644 | 0.2− | 0.5+ |
| 1997 02 03 | 691 | 0.3+ | 0.3+ | 2001 03 23 | 699 | 0.7+ | 1.2+ | 2005 05 22 | 644 | 0.2− | 0.2+ |
| 1997 02 03 | 691 | 1.5+ | 0.2+ | 2001 03 23 | 699 | 0.3− | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.5+ |
| 1997 02 04 | 691 | 0.5− | 0.1− | 2001 03 23 | 699 | 0.0 | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 1997 02 04 | 691 | 0.1− | 0.1− | 2001 03 23 | 699 | 1.0+ | 1.4+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 1997 02 04 | 691 | 0.1− | 0.1− | 2001 03 29 | 699 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.5− |
| 1997 02 04 | 691 | 0.4− | 0.2− | 2001 03 29 | 699 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 1997 02 04 | 691 | 0.3− | 0.3− | 2001 03 29 | 699 | 1.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.5− |
| 1997 02 04 | 691 | 0.1− | 0.1+ | 2001 03 29 | 699 | (1.6+ | 0.6−) | 2006 09 26 | G96 | 0.8+ | 1.0− |
| 1997 02 14 | 691 | 0.8− | 0.1+ | 2003 12 14 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.6− | 0.2+ |
| 1997 02 14 | 691 | 0.1− | 0.1− | 2003 12 14 | 691 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.9− | 0.6+ |
| 1997 02 14 | 691 | 0.4− | 0.0 | 2003 12 14 | 691 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.4+ | 0.5+ |
| 1998 07 02 | 691 | 0.0 | 0.4+ | 2003 12 19 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 1998 07 02 | 691 | 0.0 | 0.8+ | 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 1998 07 02 | 691 | 0.4+ | 0.3+ | 2003 12 19 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 03 18 | 704 | 1.4+ | 1.2+ | 2005 02 09 | 809 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2001 03 18 | 704 | 0.2+ | 0.1+ | 2005 02 09 | 809 | 0.3− | 0.2+ | | | | |

**(139084)∗ 2001 FY$_{22}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.76303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25601290 | $\omega$ | 111.41130 | | −0.59847234 | +0.79996920 | |
| $a$ | 2.4563759 | $\Omega$ | 121.75444 | | −0.75262726 | −0.54285698 | |
| $e$ | 0.1276657 | $i$ | 2.92299 | | −0.27455978 | −0.25564736 | |
| $P$ | 3.85 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 699 | 0.0 | 1.4+ | 2002 10 04 | 644 | 0.4+ | 0.8+ | 2005 06 23 | 644 | 0.2− | 0.5− |
| 2001 03 21 | 699 | 1.2+ | 1.4+ | 2002 10 04 | 644 | 0.3+ | 0.0 | 2005 06 23 | 644 | 0.6− | 0.3− |
| 2001 03 21 | 699 | 0.2+ | 0.0 | 2005 05 08 | 704 | 0.2− | 0.4− | 2006 09 17 | 691 | 0.4+ | 0.2− |
| 2001 03 21 | 699 | 0.6+ | 0.7+ | 2005 05 08 | 704 | (1.7− | 0.0 ) | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2001 03 23 | 699 | 1.2+ | 0.7+ | 2005 05 08 | 704 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2001 03 23 | 699 | 1.3+ | 0.1+ | 2005 05 08 | 704 | 0.2− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2001 03 23 | 699 | 0.4+ | 0.9− | 2005 05 08 | 704 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 03 23 | 699 | 0.0 | 0.4+ | 2005 05 12 | 704 | 0.3− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 04 16 | 699 | 0.1+ | 0.6+ | 2005 05 12 | 704 | 0.5+ | 1.3− | 2006 09 28 | 691 | 0.8− | 0.4− |
| 2001 04 16 | 699 | 0.8+ | 0.5+ | 2005 05 12 | 704 | 0.5+ | 0.7+ | 2006 09 28 | 691 | 0.2+ | 0.1− |
| 2001 04 16 | 699 | 0.1+ | 0.6− | 2005 05 12 | 704 | 0.7− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2001 04 16 | 699 | 0.9+ | 0.5+ | 2005 05 14 | G96 | 0.3− | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 2001 04 27 | 608 | (1.7− | 0.5+) | 2005 05 14 | G96 | 0.6− | 0.2− | 2006 10 02 | 691 | 0.2− | 0.6+ |
| 2001 04 27 | 608 | 1.2− | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.7+ |
| 2001 04 27 | 608 | 1.4− | 0.4+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 16 | 703 | (0.1− | 1.7+) |
| 2001 05 18 | 699 | 0.1− | 0.4− | 2005 05 17 | 704 | 0.4+ | 1.0+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2001 05 18 | 699 | 0.2− | 0.1+ | 2005 05 17 | 704 | 0.6+ | 0.4− | 2006 10 16 | 703 | (1.8+ | 2.2+) |
| 2001 05 18 | 699 | 0.2− | 1.1+ | 2005 05 17 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 1.3− | 0.3− |
| 2001 05 18 | 699 | 1.2− | 0.1+ | 2005 06 04 | 704 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.8+ | 0.2− |
| 2002 09 29 | 608 | 0.0 | 0.3− | 2005 06 04 | 704 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.5+ |
| 2002 09 29 | 608 | 0.6− | 0.0 | 2005 06 04 | 704 | 1.1+ | 1.5+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2002 09 29 | 608 | 0.3− | 0.2− | 2005 06 04 | 704 | (2.9− | 0.6−) | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 10 04 | 644 | 0.2+ | 0.0 | 2005 06 23 | 644 | 0.2− | 0.7− | | | | |

**(139085)∗ 2001 FE$_{25}$ = 2002 RU$_{13}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.78865 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27083077 | $\omega$ | 249.57683 | | −0.34895267 | +0.93714035 | |
| $a$ | 2.3659418 | $\Omega$ | 359.99990 | | −0.82687681 | −0.30789511 | |
| $e$ | 0.0973705 | $i$ | 4.63472 | | −0.44102922 | −0.16422108 | |
| $P$ | 3.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 691 | 0.3− | 0.5+ | 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2001 03 04 | 691 | 0.3− | 0.4+ | 2002 09 14 | 644 | 0.4− | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2001 03 04 | 691 | 0.3− | 0.5+ | 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.4+ |
| 2001 03 14 | 691 | 0.6+ | 1.1+ | 2002 09 15 | 644 | 0.1+ | 1.1+ | 2006 10 27 | 703 | 0.2+ | 0.3+ |
| 2001 03 14 | 691 | 0.2− | 0.3+ | 2002 09 15 | 644 | 0.2− | 1.2+ | 2006 10 27 | 703 | 1.0+ | 0.1+ |
| 2001 03 14 | 691 | 0.4− | 0.1+ | 2002 09 15 | 644 | 0.1− | 1.0+ | 2006 10 27 | 703 | 0.2− | 1.4− |
| 2001 03 18 | 704 | 1.1+ | 0.5− | 2002 09 16 | 608 | (1.7− | 0.6+) | 2006 10 27 | 408 | 0.6+ | 0.9+ |
| 2001 03 18 | 704 | 0.7− | 0.8+ | 2002 09 16 | 608 | 1.1− | 0.2+ | 2006 10 27 | 408 | 0.4+ | 1.0+ |
| 2001 03 18 | 704 | 0.5+ | 0.3− | 2002 09 16 | 608 | 1.0− | 0.3− | 2006 10 30 | 408 | 0.5+ | 0.5− |
| 2001 03 18 | 704 | 1.1+ | 0.6+ | 2002 09 28 | 608 | (2.6− | 0.6−) | 2006 10 30 | 408 | 0.1− | 0.3− |
| 2001 03 18 | 608 | (0.6− | 2.6+) | 2002 09 28 | 608 | (2.9− | 0.8−) | 2006 10 31 | 408 | 0.2+ | 0.9+ |
| 2001 03 18 | 608 | (0.9− | 2.4+) | 2002 09 28 | 608 | (3.0− | 0.7−) | 2006 10 31 | 408 | (0.6− | 1.6+) |
| 2001 03 18 | 608 | (1.0− | 1.6+) | 2002 09 30 | 704 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2001 03 23 | 704 | 0.5+ | 1.3+ | 2002 09 30 | 704 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2001 03 23 | 704 | 0.8+ | 0.4+ | 2002 09 30 | 704 | 0.8+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2001 03 23 | 704 | (1.8− | 0.6+) | 2002 09 30 | 704 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2001 03 23 | 704 | 0.3− | 0.3+ | 2002 09 30 | 704 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 03 24 | 704 | 0.9+ | 1.0+ | 2002 10 01 | 699 | 0.8− | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 03 24 | 704 | 0.7+ | 1.4+ | 2002 10 01 | 699 | 0.6− | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 03 24 | 704 | (0.7+ | 1.5+) | 2002 10 01 | 699 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2001 03 24 | 704 | 0.7+ | 1.2+ | 2002 10 01 | 699 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2001 03 24 | 704 | 1.2+ | 0.3+ | 2002 10 02 | 704 | 0.5− | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2001 03 29 | 699 | 0.2+ | 0.9+ | 2002 10 02 | 704 | 0.0 | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2001 03 29 | 699 | 0.5+ | 0.9+ | 2002 10 02 | 704 | 0.3− | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.6− |
| 2001 03 29 | 699 | 0.8+ | 1.0+ | 2002 10 02 | 608 | 0.1− | 0.4− | 2006 11 16 | 704 | (0.1− | 1.6+) |
| 2001 03 29 | 699 | 0.6+ | 0.6+ | 2002 10 02 | 608 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.9+ | 0.3− |
| 2001 04 01 | 704 | 0.1+ | 1.0+ | 2002 10 02 | 608 | 0.1− | 0.0 | 2006 11 16 | 704 | 1.0+ | 1.0+ |
| 2001 04 01 | 704 | 0.1+ | 0.8+ | 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.1− |
| 2001 04 01 | 704 | 0.3+ | 0.8+ | 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 11 16 | 408 | (1.9+ | 0.3−) |
| 2001 04 01 | 704 | 0.5− | 0.4+ | 2002 10 03 | 704 | 0.6− | 1.3+ | 2006 11 16 | 408 | 1.5+ | 0.0 |
| 2001 04 01 | 704 | 0.6− | 1.4+ | 2002 10 03 | 704 | 0.6− | 0.8+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2001 04 01 | 106 | 0.0 | 0.4+ | 2002 10 03 | 704 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2001 04 01 | 106 | 0.7+ | 0.6− | 2002 10 04 | 291 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2001 04 01 | 106 | 1.4+ | 0.8− | 2002 10 04 | 291 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 04 14 | 608 | 0.9+ | 0.1− | 2002 10 04 | 291 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2001 04 14 | 608 | 0.6+ | 0.4− | 2002 10 07 | 704 | 0.2+ | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2001 04 14 | 608 | 0.7+ | 0.1− | 2002 10 07 | 704 | 0.7+ | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2001 04 18 | 704 | 0.3− | 0.6+ | 2002 10 07 | 704 | 0.3− | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2001 04 18 | 704 | 0.7+ | 0.4+ | 2002 10 07 | 704 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 04 18 | 704 | (1.6+ | 1.2+) | 2002 10 07 | 704 | 0.3+ | 1.0+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2001 04 18 | 704 | (1.8+ | 1.4+) | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2001 04 23 | 699 | 1.0+ | 0.6+ | 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 04 23 | 699 | 0.6+ | 0.4+ | 2002 10 11 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 408 | 0.3+ | 0.5+ |
| 2001 04 23 | 699 | 1.1+ | 0.4− | 2002 10 11 | 704 | 0.2− | 1.4+ | 2006 11 17 | 408 | 0.5+ | 0.7+ |
| 2001 04 23 | 699 | 1.0+ | 0.5+ | 2002 10 11 | 704 | 0.2− | 1.1+ | 2006 11 19 | 291 | 0.2+ | 0.1− |
| 2002 08 31 | 699 | 0.8+ | 0.8+ | 2003 12 23 | 704 | 0.3− | 0.3− | 2006 11 19 | 291 | 0.0 | 0.0 |
| 2002 08 31 | 699 | 0.4− | 0.7+ | 2003 12 23 | 704 | 0.6+ | 0.5− | 2006 11 19 | 291 | 0.0 | 0.0 |
| 2002 08 31 | 699 | (0.7+ | 1.7+) | 2003 12 23 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2002 08 31 | 699 | 0.3− | 1.1+ | 2003 12 23 | 704 | 0.0 | 0.0 | 2006 11 19 | 704 | (0.2+ | 1.7+) |
| 2002 09 04 | 699 | 1.0− | 0.3− | 2003 12 23 | 704 | 0.8− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.9+ |
| 2002 09 04 | 699 | 0.2− | 1.2+ | 2003 12 28 | 704 | 0.6+ | 0.5+ | 2006 11 19 | 704 | (1.0+ | 1.8+) |
| 2002 09 04 | 699 | 0.9+ | 0.4+ | 2003 12 28 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2002 09 04 | 699 | 0.1+ | 0.2− | 2003 12 28 | 704 | 1.5+ | 0.6+ | 2006 11 22 | 291 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2003 12 28 | 691 | 0.2− | 0.0 | 2006 11 22 | 291 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.3+ | 2003 12 28 | 704 | 0.3− | 0.4+ | 2006 11 22 | 291 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.3− | 0.3+ | 2003 12 28 | 704 | 0.1+ | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2+ | 1.0− |
| 2002 09 05 | 645 | 0.1− | 0.2− | 2003 12 28 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.4− |
| 2002 09 05 | 645 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 1.3+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.5− | 0.1+ | 2006 11 23 | 291 | 0.7− | 0.8+ |
| 2002 09 07 | 704 | 1.1− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 23 | 291 | 0.2+ | 1.1+ |
| 2002 09 07 | 704 | (1.7− | 0.8+) | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 23 | 291 | 0.3− | 0.2+ |
| 2002 09 07 | 704 | 1.3− | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 24 | 408 | 0.1+ | 0.4+ |
| 2002 09 07 | 704 | 1.2− | 0.2+ | 2006 10 13 | 691 | 0.9− | 1.5+ | 2006 11 24 | 408 | 0.2+ | 0.2+ |
| 2002 09 14 | 239 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 25 | 408 | 0.3+ | 2.7− |
| 2002 09 14 | 239 | 0.5+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 25 | 408 | 0.3+ | 2.4− |
| 2002 09 14 | 239 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− | | | | |
| 2002 09 14 | 239 | 0.3+ | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.0 | | | | |

**(139086)∗ 2001 FL$_{25}$ = 1999 TP$_{204}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11983)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.21355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27381360 | $\omega$ | 172.64255 | | −0.97989052 | −0.19946392 | |
| $a$ | 2.3487279 | $\Omega$ | 355.84034 | | +0.17910121 | −0.86738171 | |
| $e$ | 0.1283628 | $i$ | 4.23700 | | +0.08796211 | −0.45592008 | |
| $P$ | 3.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.2− | 0.3+ | 2001 04 01 | 704 | 0.4− | 0.3+ | 2003 12 28 | 704 | 0.6− | 0.3+ |
| 1995 09 17 | 691 | 0.3− | 0.4+ | 2001 04 01 | 704 | 0.5− | 0.0 | 2003 12 28 | 704 | 0.4− | 0.7+ |
| 1995 09 17 | 691 | 0.2− | 0.2+ | 2001 04 01 | 704 | 0.0 | 1.0+ | 2003 12 28 | 704 | 0.3− | 0.5+ |
| 1995 09 20 | 809 | 0.7− | 0.6− | 2001 04 01 | 704 | 0.4− | 1.0+ | 2003 12 28 | 704 | 0.2− | 0.5+ |
| 1995 09 22 | 809 | 0.2+ | 0.1− | 2001 04 13 | 608 | 0.3− | 0.1− | 2003 12 28 | 704 | 0.4− | 0.3+ |
| 1995 09 22 | 809 | (4.6+ | 1.7+) | 2001 04 13 | 608 | 0.1+ | 0.2− | 2006 07 21 | G96 | 0.5+ | 0.0 |
| 1995 09 22 | 691 | 0.1+ | 0.2+ | 2001 04 13 | 608 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.4+ | 0.2− |
| 1995 09 22 | 691 | 0.1+ | 0.1+ | 2001 04 17 | 704 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.2− | 0.2− |
| 1995 09 22 | 691 | 0.0 | 0.1+ | 2001 04 17 | 704 | 0.3− | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.2− |
| 1999 10 13 | 704 | 0.1− | 0.3− | 2001 04 17 | 704 | 0.6− | 0.5+ | 2006 09 17 | 691 | 0.4− | 0.1+ |
| 1999 10 13 | 704 | 0.3+ | 0.6− | 2001 04 18 | 704 | 0.9+ | 0.8+ | 2006 09 17 | 691 | 0.3− | 0.4+ |
| 1999 10 13 | 704 | 0.4+ | 0.7− | 2001 04 18 | 704 | 0.4+ | 1.3+ | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.1+ | 0.2− | 2001 04 18 | 704 | (1.8+ | 0.5+) | 2006 09 18 | 699 | 0.9− | 0.6+ |
| 1999 10 13 | 704 | 0.6+ | 0.2− | 2001 04 24 | 699 | 0.5+ | 0.6+ | 2006 09 18 | 699 | 0.9+ | 0.9+ |
| 1999 10 15 | 704 | 0.0 | 0.3+ | 2001 04 24 | 699 | 1.0+ | 0.1− | 2006 09 18 | 699 | 0.4+ | 1.0+ |
| 1999 10 15 | 704 | 0.1+ | 0.7+ | 2001 04 24 | 699 | 0.3+ | 0.8+ | 2006 09 18 | 699 | 1.0− | 0.7+ |
| 1999 10 15 | 704 | 0.0 | 0.1− | 2001 04 24 | 704 | 0.5+ | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1999 10 15 | 704 | 0.0 | 0.3+ | 2001 04 24 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 1999 10 15 | 704 | 0.3− | 0.7+ | 2001 04 24 | 699 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 1999 11 04 | 704 | 0.5− | 0.9+ | 2001 04 24 | 704 | 0.7− | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.9+ |
| 1999 11 04 | 704 | 0.6− | 0.7+ | 2001 04 24 | 704 | 0.7+ | 1.0+ | 2006 09 20 | 704 | 0.3+ | 0.9+ |
| 1999 11 04 | 704 | 1.1− | 1.4+ | 2001 04 24 | 704 | (0.8+ | 2.7+) | 2006 09 20 | 704 | 0.3− | 0.1+ |
| 1999 11 04 | 704 | 0.1− | 0.0 | 2001 04 28 | 608 | (0.5− | 1.7+) | 2006 09 20 | 704 | 0.2+ | 0.2+ |
| 2001 03 18 | 704 | 0.4− | 0.6+ | 2001 04 28 | 608 | 0.1− | 0.9+ | 2006 09 20 | 704 | 0.6+ | 0.5− |
| 2001 03 18 | 704 | 0.5− | 0.3− | 2001 04 28 | 608 | 1.4− | 0.4+ | 2006 09 22 | A50 | 0.1+ | 0.7+ |
| 2001 03 18 | 704 | 0.1+ | 0.5+ | 2001 04 30 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2001 03 18 | 704 | 0.1− | 0.1+ | 2001 04 30 | 704 | 0.8+ | 0.9+ | 2006 09 25 | 691 | 0.4− | 0.3+ |
| 2001 03 18 | 704 | 0.1+ | 0.5+ | 2001 04 30 | 704 | 0.7+ | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2001 03 18 | 608 | 1.0+ | 0.2− | 2002 08 18 | 644 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 03 18 | 608 | 0.9+ | 0.7− | 2002 08 18 | 644 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2001 03 18 | 608 | 0.9+ | 0.7− | 2002 08 18 | 644 | 0.1− | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 03 20 | 699 | 0.4+ | 0.6+ | 2002 08 29 | 644 | 0.3− | 0.8+ | 2006 09 27 | 699 | 1.2+ | 0.3+ |
| 2001 03 20 | 699 | 0.7− | 0.2+ | 2002 08 29 | 644 | 0.1− | 0.7+ | 2006 09 27 | 699 | 1.1− | 0.1+ |
| 2001 03 20 | 699 | 0.3+ | 0.7+ | 2002 08 29 | 644 | 0.3− | 0.9+ | 2006 09 27 | 699 | 0.2− | 0.5− |
| 2001 03 20 | 699 | 0.7+ | 0.5+ | 2002 09 28 | 608 | (1.5− | 0.2+) | 2006 09 27 | 704 | 0.5+ | 0.4+ |
| 2001 03 23 | 699 | 0.3− | 1.2+ | 2002 09 28 | 608 | 0.8− | 0.7− | 2006 09 27 | 699 | 0.3+ | 0.2+ |
| 2001 03 23 | 699 | 0.1+ | 1.1+ | 2002 09 28 | 608 | 1.0− | 0.5− | 2006 09 27 | 704 | 0.1+ | 0.2− |
| 2001 03 23 | 704 | 0.2− | 0.3+ | 2003 11 20 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 704 | 0.6+ | 0.3+ |
| 2001 03 23 | 699 | 0.2+ | 0.4+ | 2003 11 20 | 704 | 1.1+ | 1.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 03 23 | 704 | 0.1+ | 0.8+ | 2003 11 20 | 704 | 0.0 | 1.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 03 23 | 699 | 0.4+ | 1.1+ | 2003 11 20 | 704 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 03 23 | 704 | 0.2− | 0.6+ | 2003 11 20 | 704 | 0.5+ | 0.2+ | 2006 10 15 | 106 | 0.1+ | 0.1+ |
| 2001 03 23 | 704 | 0.1+ | 0.6+ | 2003 12 04 | 704 | 0.4− | 0.4− | 2006 10 15 | 106 | 0.5+ | 0.2− |
| 2001 03 23 | 704 | 0.5+ | 1.3− | 2003 12 04 | 704 | 1.4+ | 0.2+ | 2006 10 15 | 106 | 0.6− | 0.6− |
| 2001 03 24 | 704 | 0.5+ | 1.2+ | 2003 12 04 | 704 | (2.4+ | 0.1−) | 2006 10 15 | 106 | 0.0 | 0.8+ |
| 2001 03 24 | 704 | 0.2+ | 0.6+ | 2003 12 04 | 704 | 0.7− | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.3+ |
| 2001 03 24 | 704 | 0.2− | 1.3+ | 2003 12 04 | 704 | 1.0+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 03 24 | 704 | 0.6+ | 0.7+ | 2003 12 17 | 704 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2001 03 24 | 704 | 0.1+ | 0.7+ | 2003 12 17 | 704 | 0.5− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 03 26 | 608 | 1.0+ | 0.7− | 2003 12 17 | 704 | 0.5− | 0.4− | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2001 03 26 | 608 | 1.1+ | 1.0− | 2003 12 17 | 704 | 0.3− | 0.8− | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2001 03 26 | 608 | 1.1+ | 0.8− | 2003 12 17 | 704 | 0.5− | 0.5− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2001 03 29 | 699 | 0.5+ | 0.3+ | 2003 12 23 | 704 | 0.6− | 1.4+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2001 03 29 | 699 | 0.3+ | 0.7+ | 2003 12 23 | 704 | (0.1− | 1.7+) | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 03 29 | 699 | 1.0+ | 0.6+ | 2003 12 23 | 704 | (1.5− | 1.9+) | 2006 10 31 | G96 | 0.4− | 0.5− |
| 2001 03 29 | 699 | 0.8+ | 0.6+ | 2003 12 23 | 704 | (0.7− | 2.3+) | 2006 10 31 | G96 | 0.0 | 0.4− |

**(139087)∗ 2001 FW$_{26}$ = 2002 RF$_{21}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35039)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.43716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27735242 | $\omega$ | 207.31051 | | −0.90993377 | +0.41463042 | |
| $a$ | 2.3287064 | $\Omega$ | 357.12793 | | −0.33412117 | −0.74725326 | |
| $e$ | 0.1127331 | $i$ | 11.63706 | | −0.24573072 | −0.51932089 | |
| $P$ | 3.55 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 704 | 0.4+ | 0.7+ | 2001 04 23 | 704 | 0.0 | 0.4+ | 2003 12 03 | 699 | 0.2− | 0.6+ |
| 2001 02 22 | 704 | 0.2+ | 0.2+ | 2001 04 23 | 704 | (0.9+ | 1.6+) | 2003 12 03 | 699 | 0.4+ | 0.6− |
| 2001 02 22 | 704 | 0.0 | 0.0 | 2001 04 23 | 704 | (0.4− | 1.7+) | 2003 12 03 | 699 | 0.8− | 1.3+ |
| 2001 02 22 | 704 | 0.1+ | 0.7+ | 2001 04 24 | 699 | 0.7+ | 0.3+ | 2003 12 15 | 704 | 0.8− | 0.8+ |
| 2001 02 22 | 704 | 0.4− | 0.5+ | 2001 04 24 | 699 | 0.9+ | 0.5+ | 2003 12 15 | 704 | 0.5− | 0.1− |
| 2001 03 18 | 704 | 0.0 | 0.4+ | 2001 04 24 | 699 | (1.6+ | 0.7+) | 2003 12 15 | 704 | 0.7+ | 1.1− |
| 2001 03 18 | 704 | 0.2+ | 0.6+ | 2001 04 24 | 699 | 0.9+ | 0.6+ | 2003 12 15 | 704 | (2.7− | 1.2+) |
| 2001 03 18 | 704 | 0.9+ | 0.4− | 2001 04 27 | 608 | 0.3− | 1.3+ | 2003 12 29 | 704 | 0.8+ | 0.3+ |
| 2001 03 18 | 704 | 0.4+ | 0.2− | 2001 04 27 | 608 | 0.2− | 1.0+ | 2003 12 29 | 704 | 0.5+ | 0.6+ |
| 2001 03 18 | 704 | 0.1+ | 0.4+ | 2001 04 27 | 608 | 0.6− | 0.9+ | 2003 12 29 | 704 | 0.1+ | 0.1+ |
| 2001 03 18 | 608 | 1.1+ | 0.1+ | 2002 09 04 | 699 | 0.6+ | 0.8+ | 2003 12 29 | 704 | 0.0 | 0.2+ |
| 2001 03 18 | 608 | 0.8+ | 0.1+ | 2002 09 04 | 699 | 0.5− | 0.5+ | 2004 01 16 | 644 | 0.2− | 0.5+ |
| 2001 03 18 | 608 | 0.8+ | 0.2+ | 2002 09 04 | 699 | 0.8− | 0.7+ | 2004 01 16 | 644 | 0.1+ | 0.6+ |
| 2001 03 20 | 699 | 0.0 | 0.3+ | 2002 09 04 | 699 | 0.0 | 0.0 | 2004 01 16 | 644 | 0.1− | 0.4+ |
| 2001 03 20 | 699 | 0.3− | 0.4+ | 2002 09 05 | 704 | 0.5− | 0.1+ | 2004 01 16 | 644 | 0.2+ | 0.6+ |
| 2001 03 20 | 699 | 0.3+ | 0.8+ | 2002 09 05 | 704 | 0.2+ | 0.5+ | 2004 01 16 | 644 | 0.0 | 0.4+ |
| 2001 03 20 | 699 | 0.5+ | 0.6+ | 2002 09 05 | 704 | 0.1+ | 0.6+ | 2004 01 16 | 644 | 0.3+ | 0.3+ |
| 2001 03 23 | 704 | (1.5+ | 0.1−) | 2002 09 05 | 704 | 0.7+ | 0.2+ | 2004 02 11 | 704 | 0.6+ | 1.4+ |
| 2001 03 23 | 704 | 0.7+ | 0.1+ | 2002 09 06 | 704 | 0.1− | 0.5+ | 2004 02 11 | 704 | 0.1− | 1.4+ |
| 2001 03 23 | 704 | 0.7+ | 0.9+ | 2002 09 06 | 704 | 0.1− | 0.0 | 2004 02 11 | 704 | (0.3+ | 2.5+) |
| 2001 03 23 | 704 | 0.7+ | 0.3− | 2002 09 06 | 704 | 0.6− | 0.1+ | 2004 02 11 | 704 | 1.4+ | 0.7+ |
| 2001 03 24 | 704 | 0.3+ | 0.1− | 2002 09 10 | 608 | 0.0 | 0.4− | 2005 06 17 | E12 | 0.0 | 0.6+ |
| 2001 03 24 | 704 | 0.3− | 0.1+ | 2002 09 10 | 608 | 0.2+ | 0.2+ | 2005 06 17 | E12 | 0.3+ | 0.7+ |
| 2001 03 24 | 704 | 0.2− | 0.4+ | 2002 09 10 | 608 | 0.0 | 0.4+ | 2005 06 17 | E12 | 0.1+ | 0.1+ |
| 2001 03 24 | 704 | 0.2+ | 0.4+ | 2002 09 12 | 644 | 1.1− | 1.4+ | 2005 06 17 | E12 | 0.1− | 0.0 |
| 2001 03 24 | 704 | 0.9+ | 0.4+ | 2002 09 12 | 644 | 0.6− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 03 24 | 699 | 0.3+ | 0.0 | 2002 09 12 | 644 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 03 24 | 699 | 0.1+ | 0.2+ | 2002 09 17 | 608 | 1.3− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 03 24 | 699 | 0.2− | 0.4+ | 2002 09 17 | 608 | 1.4− | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2001 03 24 | 699 | 0.0 | 0.3+ | 2002 09 17 | 608 | 1.4− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 03 26 | 608 | 0.1− | 0.2+ | 2002 09 28 | 291 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2001 03 26 | 608 | 0.1− | 0.3+ | 2002 09 28 | 291 | 0.4− | 0.7+ | 2006 10 19 | 703 | 0.9− | 1.3− |
| 2001 03 26 | 608 | 0.1+ | 0.1+ | 2002 09 28 | 291 | 0.2− | 0.4+ | 2006 10 19 | 703 | 1.0− | 1.1− |
| 2001 04 16 | 704 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.2− | 1.3− |
| 2001 04 16 | 704 | 0.2+ | 0.0 | 2002 10 03 | 704 | 0.0 | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.3+ |
| 2001 04 16 | 704 | 0.4+ | 0.3+ | 2002 10 03 | 704 | 0.3− | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2001 04 16 | 704 | 0.5− | 0.3+ | 2002 10 03 | 704 | 0.1+ | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 04 16 | 704 | 1.4− | 0.4− | 2002 10 03 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 04 23 | 704 | 0.7+ | 0.5+ | 2003 12 03 | 699 | 0.2+ | 0.6+ | | | | |

**(139088)∗ 2001 FD$_{28}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 203.01318 | | (2000.0) | | | |
| $n$ | 0.27794682 | $\omega$ | 115.75210 | | −0.98606182 | −0.15863369 |
| $a$ | 2.3253852 | $\Omega$ | 55.15900 | | +0.12214663 | −0.89497134 |
| $e$ | 0.1598386 | $i$ | 3.50482 | | +0.11297026 | −0.41696721 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.3− | 0.4− | 2001 03 19 | 704 | 0.2− | 1.0+ | 2003 12 18 | 704 | 0.8+ | 0.4− |
| 1994 04 03 | 691 | 0.2− | 0.5− | 2001 03 23 | 704 | 0.4− | 0.3+ | 2003 12 19 | 049 | (2.3− | 0.1+) |
| 1994 04 03 | 691 | 0.2− | 0.7− | 2001 03 23 | 704 | 0.6− | 0.0 | 2003 12 19 | 049 | (2.5− | 0.2−) |
| 1999 11 12 | 691 | 0.1− | 0.1+ | 2001 03 23 | 704 | (1.6− | 0.3−) | 2003 12 19 | 049 | (2.4− | 1.5−) |
| 1999 11 12 | 691 | 0.2+ | 0.4− | 2001 03 23 | 704 | 0.0 | 0.7+ | 2003 12 22 | 704 | 0.9− | 0.7− |
| 1999 11 12 | 691 | 0.1+ | 0.0 | 2001 03 23 | 704 | 0.7− | 0.6+ | 2003 12 22 | 704 | 0.8− | 0.7− |
| 2001 01 26 | 704 | 0.2− | 0.8+ | 2001 03 26 | 704 | 0.6+ | 0.2+ | 2003 12 22 | 704 | 0.2− | 0.7+ |
| 2001 01 26 | 704 | 0.5+ | 0.9+ | 2001 03 26 | 704 | 0.2− | 1.2+ | 2003 12 22 | 704 | 0.6− | 0.9+ |
| 2001 01 26 | 704 | 0.9− | 0.5+ | 2001 03 26 | 704 | 0.3+ | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.3+ |
| 2001 01 26 | 704 | 0.3+ | 0.6+ | 2001 03 26 | 704 | 0.8+ | 0.8+ | 2003 12 22 | 704 | 0.7− | 0.3+ |
| 2001 02 17 | 704 | 0.7+ | 0.2− | 2001 03 26 | 704 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.2+ | 0.5+ |
| 2001 02 17 | 704 | 0.6− | 1.1+ | 2001 04 16 | 699 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.6− | 0.5+ |
| 2001 02 17 | 704 | 0.5− | 0.7+ | 2001 04 16 | 699 | 1.4+ | 0.7+ | 2003 12 27 | 691 | 0.1+ | 0.7− |
| 2001 02 17 | 704 | 1.3+ | 0.6+ | 2001 04 16 | 699 | (0.6+ | 2.3+) | 2003 12 27 | 691 | 0.3+ | 0.4− |
| 2001 02 17 | 704 | (1.9+ | 0.1+) | 2001 04 16 | 699 | 0.9+ | 0.7+ | 2003 12 27 | 691 | 0.3+ | 0.3− |
| 2001 03 03 | 704 | 1.3− | 0.1− | 2002 08 30 | 644 | 0.4− | 0.3+ | 2006 09 18 | 691 | 0.4− | 0.2+ |
| 2001 03 03 | 704 | 0.6+ | 0.1+ | 2002 08 30 | 644 | 0.8− | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.7+ |
| 2001 03 03 | 704 | 0.7+ | 0.2+ | 2002 08 30 | 644 | 0.4− | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.7+ |
| 2001 03 03 | 704 | 0.9+ | 0.2− | 2003 11 21 | 704 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.7+ |
| 2001 03 03 | 704 | 1.2+ | 0.4− | 2003 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.6+ |
| 2001 03 19 | 704 | 0.2+ | 0.3− | 2003 11 21 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.4− | 0.3+ |
| 2001 03 19 | 704 | 0.9+ | 1.0+ | 2003 11 24 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2001 03 19 | 704 | 0.4− | 1.0+ | 2003 11 24 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 03 19 | 704 | 0.1− | 1.0+ | 2003 11 24 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 03 19 | 704 | 0.8+ | 0.1+ | 2003 12 14 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2001 03 19 | 704 | (0.2+ | 2.0+) | 2003 12 14 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2001 03 19 | 704 | 1.0+ | 1.2+ | 2003 12 14 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2001 03 19 | 704 | 0.3+ | 1.0+ | 2003 12 18 | 704 | 1.2+ | 0.0 | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2001 03 19 | 704 | 0.3+ | 1.0+ | 2003 12 18 | 704 | 0.8+ | 0.5− | | | | |

**(139089)∗ 2001 FS$_{28}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.00983 | | (2000.0) | | | |
| $n$ | 0.28331673 | $\omega$ | 105.49609 | | −0.92705445 | −0.36489271 |
| $a$ | 2.2959085 | $\Omega$ | 53.17936 | | +0.28930854 | −0.84237546 |
| $e$ | 0.0940897 | $i$ | 6.17867 | | +0.23847559 | −0.39655630 |
| $P$ | 3.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.4− | 0.5+ | 2001 04 26 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.9− |
| 1999 10 09 | 704 | 0.4+ | 0.6− | 2001 04 26 | 644 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.9− |
| 1999 10 09 | 704 | 0.1+ | 0.6+ | 2001 04 26 | 644 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 1999 10 09 | 704 | 0.3+ | 0.8+ | 2002 08 13 | 644 | 0.1+ | 1.3+ | 2006 09 30 | 703 | 0.2− | 1.1+ |
| 1999 11 11 | 691 | 0.0 | 0.1− | 2002 08 13 | 644 | 0.1+ | 0.9+ | 2006 09 30 | 703 | (1.4+ | 3.0−) |
| 1999 11 11 | 691 | 0.3− | 0.2− | 2002 08 13 | 644 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 1999 11 11 | 691 | 0.1− | 0.0 | 2003 11 24 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.6+ |
| 2001 03 04 | 704 | 0.4+ | 0.7− | 2003 11 24 | 704 | 1.1+ | 0.5+ | 2006 10 15 | 703 | 0.3− | 0.2− |
| 2001 03 04 | 704 | 0.0 | 0.8+ | 2003 11 24 | 704 | 0.5+ | 0.2+ | 2006 10 15 | 703 | 0.4+ | 0.2+ |
| 2001 03 04 | 704 | 1.3− | 0.2− | 2003 11 24 | 704 | 0.2+ | 0.6+ | 2006 10 15 | 703 | (1.6− | 1.2−) |
| 2001 03 04 | 704 | 0.2− | 0.4− | 2003 11 24 | 704 | 0.8+ | 0.1+ | 2006 10 15 | 703 | 0.3+ | 0.3+ |
| 2001 03 04 | 704 | 0.2+ | 0.1− | 2003 11 24 | 691 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2001 03 19 | 699 | 0.1+ | 0.3+ | 2003 11 24 | 691 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2001 03 19 | 699 | 0.3+ | 0.4+ | 2003 11 24 | 691 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 03 19 | 704 | 0.7− | 0.9− | 2003 12 18 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.3− |
| 2001 03 19 | 699 | 0.5+ | 0.7+ | 2003 12 18 | 704 | 0.2− | 1.1+ | 2006 10 21 | 703 | 1.2− | 0.1+ |
| 2001 03 19 | 704 | 0.5− | 0.2+ | 2003 12 18 | 704 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 03 19 | 704 | 0.3+ | 0.3− | 2003 12 18 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 703 | (0.2+ | 2.1−) |
| 2001 03 19 | 704 | 0.1− | 0.4− | 2003 12 23 | 704 | 0.9− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 03 19 | 699 | 0.0 | 0.4+ | 2003 12 23 | 704 | 0.5− | 0.2− | 2006 10 21 | 703 | (0.5+ | 4.3−) |
| 2001 03 21 | 608 | 0.1− | 1.2− | 2003 12 23 | 704 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 03 21 | 608 | 0.2+ | 1.2− | 2003 12 23 | 704 | 0.5− | 0.5− | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2001 03 21 | 608 | 0.0 | 0.8− | 2003 12 23 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 03 23 | 704 | 0.5− | 0.9+ | 2003 12 28 | 704 | 0.7− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2001 03 23 | 704 | 0.2− | 1.4+ | 2003 12 28 | 704 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 03 23 | 704 | 0.3+ | 1.2+ | 2003 12 28 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2001 03 23 | 704 | 0.6+ | 0.1− | 2003 12 28 | 704 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 03 26 | 704 | 0.0 | 0.2+ | 2003 12 30 | 704 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2001 03 26 | 704 | 0.7+ | 0.3+ | 2003 12 30 | 704 | 1.0+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2001 03 26 | 704 | 0.3+ | 0.5+ | 2003 12 30 | 704 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 03 26 | 704 | 0.4+ | 1.0+ | 2003 12 30 | 704 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2001 03 26 | 704 | 1.1+ | 0.7+ | 2003 12 30 | 704 | 0.6+ | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2001 04 24 | 699 | 0.2+ | 0.2+ | 2003 12 30 | 704 | 0.6+ | 0.3+ | 2006 11 20 | G96 | 0.7− | 0.1+ |
| 2001 04 24 | 699 | 0.8+ | 1.2+ | 2003 12 30 | 704 | 0.3+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2001 04 24 | 699 | 0.2− | 0.2+ | 2003 12 30 | 704 | 0.6+ | 0.4+ | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2001 04 24 | 699 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 11 20 | G96 | 0.7− | 0.4− |

**(139090)∗ 2001 FE$_{29}$ = 1997 EG$_{39}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13248)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 186.24592 | | (2000.0) | | | |
| $n$ | 0.26825459 | $\omega$ | 43.94979 | | −0.94852670 | +0.31394026 |
| $a$ | 2.3810651 | $\Omega$ | 154.25991 | | −0.31056523 | −0.89628066 |
| $e$ | 0.2451315 | $i$ | 5.50953 | | −0.06201886 | −0.31324509 |
| $P$ | 3.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 098 | 1.3− | 0.2+ | 2001 04 24 | 704 | 0.2− | 0.3+ | 2001 07 17 | 608 | 0.3+ | 0.2− |
| 1997 03 03 | 098 | 1.6− | 0.6− | 2001 04 25 | 699 | 0.2− | 0.1+ | 2001 07 17 | 608 | 0.2+ | 0.3+ |
| 1997 03 05 | 704 | 0.6+ | 0.7+ | 2001 04 25 | 699 | 0.3− | 0.0 | 2001 07 17 | 608 | 0.5+ | 0.0 |
| 1997 03 05 | 704 | 1.1+ | 0.3+ | 2001 04 25 | 699 | 0.1− | 0.1− | 2002 09 05 | 645 | 0.0 | 0.0 |
| 1997 03 06 | 704 | 1.2+ | 0.0 | 2001 04 25 | 699 | 0.4− | 0.1+ | 2002 09 05 | 645 | 0.0 | 0.1+ |
| 1997 03 06 | 704 | 0.7+ | 0.4+ | 2001 04 26 | 608 | (2.8− | 1.0+) | 2003 12 22 | 704 | 0.3− | 1.0+ |
| 2001 03 19 | 704 | 0.6+ | 0.3− | 2001 04 26 | 608 | (2.6− | 0.6+) | 2003 12 22 | 704 | 0.1+ | 0.6+ |
| 2001 03 19 | 704 | 0.7− | 0.4+ | 2001 04 26 | 608 | (2.7− | 1.1+) | 2003 12 22 | 704 | 0.4− | 0.3+ |
| 2001 03 19 | 704 | 0.1− | 0.5+ | 2001 04 29 | 106 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.4+ | 0.8+ |
| 2001 03 19 | 704 | 0.5+ | 0.8+ | 2001 04 30 | 106 | (0.9− | 1.6−) | 2005 06 28 | 691 | 0.1+ | 0.1+ |
| 2001 03 19 | 704 | 0.0 | 0.0 | 2001 04 30 | 106 | 0.0 | 0.0 | 2005 06 28 | 691 | 0.0 | 0.0 |
| 2001 03 23 | 704 | 0.3+ | 0.8+ | 2001 05 22 | 704 | 0.0 | 0.4+ | 2005 06 28 | 691 | 0.1+ | 0.1+ |
| 2001 03 23 | 704 | 0.4+ | 0.4+ | 2001 05 22 | 704 | 0.0 | 0.3+ | 2005 07 07 | 704 | 0.8+ | 0.5+ |
| 2001 03 23 | 704 | 0.2− | 0.9− | 2001 05 22 | 704 | 0.5+ | 0.7− | 2005 07 07 | 704 | 0.0 | 0.1+ |
| 2001 03 23 | 704 | 0.7+ | 0.7− | 2001 05 22 | 704 | 0.0 | 0.2− | 2005 07 07 | 704 | 1.0− | 0.5− |
| 2001 03 23 | 704 | 0.1− | 1.0− | 2001 05 22 | 704 | 0.3+ | 0.3+ | 2005 07 07 | 704 | 0.0 | 0.1+ |
| 2001 03 26 | 704 | 0.8+ | 0.3− | 2001 05 26 | 704 | 0.5− | 0.1+ | 2005 07 07 | 704 | 0.8+ | 0.3− |
| 2001 03 26 | 704 | 1.3+ | 1.0+ | 2001 05 26 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.2− | 1.5+ |
| 2001 03 26 | 704 | 0.7+ | 0.6− | 2001 05 26 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.1− |
| 2001 03 26 | 704 | 0.0 | 1.0+ | 2001 05 26 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 1.1− | 0.9− |
| 2001 03 26 | 704 | 1.0+ | 0.9− | 2001 05 26 | 704 | 0.5− | 0.3+ | 2006 09 30 | 703 | (2.0+ | 0.7+) |
| 2001 04 15 | 704 | 0.6+ | 0.4− | 2001 05 29 | 704 | 0.6− | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2001 04 15 | 704 | 0.2+ | 0.2+ | 2001 05 29 | 704 | (1.0+ | 1.7−) | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 2001 04 15 | 704 | 0.1+ | 0.5+ | 2001 05 29 | 704 | 0.8− | 1.3+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2001 04 15 | 704 | 0.3− | 0.0 | 2001 05 29 | 704 | 0.3+ | 1.3− | 2006 10 02 | G96 | 0.3+ | 0.2+ |
| 2001 04 15 | 704 | 0.8− | 0.9+ | 2001 05 29 | 704 | 1.1− | 0.6− | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2001 04 24 | 704 | 0.1+ | 0.2− | 2001 06 12 | 699 | 0.5+ | 0.1+ | 2006 11 24 | G96 | 0.7− | 0.3+ |
| 2001 04 24 | 704 | 0.1− | 0.2+ | 2001 06 12 | 699 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2001 04 24 | 704 | 0.4+ | 0.2− | 2001 06 12 | 699 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.4+ |
| 2001 04 24 | 704 | 0.5− | 0.3+ | 2001 06 12 | 699 | 0.3− | 0.4+ | | | | |

**(139091)∗ 2001 FT$_{30}$ = 1999 RO$_{85}$**

Discovered 2001 Mar. 21 by NEAT at Haleakala.

Id. M. E. Sansaturio (*MPO* 13810)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 306.54638 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29026457 | $\omega$ | 324.16206 | +0.06387076 | −0.99698321 |
| $a$ | 2.2591238 | $\Omega$ | 122.13729 | +0.92731098 | +0.04295969 |
| $e$ | 0.1236170 | $i$ | 2.98545 | +0.36880194 | +0.06464469 |
| $P$ | 3.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.3− | 0.3+ | 2003 12 21 | 704 | (2.0+ | 0.7−) | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 1999 09 07 | 704 | 0.2− | 0.7+ | 2003 12 21 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 1999 09 07 | 704 | 0.7− | 0.3− | 2003 12 21 | 704 | (1.9+ | 0.3+) | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 1999 09 07 | 704 | 1.4+ | 0.0 | 2003 12 21 | 704 | 1.5+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 1.1+ | 0.2− | 2003 12 25 | 608 | 0.6− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 0.2+ | 1.2− | 2003 12 25 | 608 | 0.6− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 1999 09 07 | 704 | 1.4+ | 0.1+ | 2003 12 25 | 608 | 0.7− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 1999 09 14 | 704 | 0.3+ | 1.0− | 2003 12 29 | 699 | 0.8− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 1999 09 14 | 704 | 0.6− | 1.2− | 2003 12 29 | 699 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1999 09 14 | 704 | 0.7− | 0.7− | 2003 12 29 | 699 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 1999 09 14 | 704 | 0.4+ | 0.1+ | 2003 12 29 | 699 | 0.9− | 0.7− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 1999 09 14 | 704 | 1.1− | 0.3+ | 2004 01 21 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 03 19 | 699 | 0.0 | 0.6+ | 2004 01 21 | 704 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 03 19 | 699 | 0.2− | 0.3+ | 2004 01 21 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.5+ | 0.1− | 2004 01 21 | 704 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 03 19 | 704 | 0.5+ | 0.3+ | 2004 01 21 | 704 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 03 19 | 699 | 0.5− | 0.1+ | 2004 01 24 | 704 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2001 03 19 | 704 | 0.7+ | 1.2+ | 2004 01 24 | 704 | (0.6− | 1.9−) | 2006 10 22 | 691 | 0.3− | 0.3− |
| 2001 03 19 | 699 | 0.5− | 1.1+ | 2004 01 24 | 704 | 0.6− | 0.0 | 2006 10 22 | 704 | 0.4− | 1.2+ |
| 2001 03 19 | 704 | 0.4+ | 1.0+ | 2004 01 24 | 704 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2001 03 21 | 608 | 0.1+ | 1.3− | 2004 01 24 | 704 | 0.7− | 0.3+ | 2006 10 22 | 704 | 0.7− | 0.7+ |
| 2001 03 21 | 608 | 0.2− | 1.3− | 2004 01 27 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 704 | 0.2+ | 0.7+ |
| 2001 03 21 | 608 | 0.2+ | 1.0− | 2004 01 27 | 704 | 0.0 | 0.9+ | 2006 10 22 | 704 | 0.1+ | 0.4+ |
| 2001 03 23 | 608 | 0.5+ | 0.1− | 2004 01 27 | 704 | 0.1+ | 0.8+ | 2006 10 22 | 704 | 0.6+ | 0.5+ |
| 2001 03 23 | 608 | 0.4+ | 0.0 | 2004 01 27 | 704 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2001 03 23 | 608 | 0.4+ | 0.3+ | 2004 01 27 | 704 | 0.2− | 1.0+ | 2006 10 31 | G96 | 0.3− | 0.6− |
| 2001 03 26 | 704 | (0.6− | 1.6+) | 2004 01 30 | 704 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2001 03 26 | 704 | 0.2− | 0.6+ | 2004 01 30 | 704 | 1.1+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2001 03 26 | 704 | 0.4− | 0.4+ | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.4− |
| 2001 03 26 | 704 | 0.3− | 0.9+ | 2004 01 30 | 704 | 0.8+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2001 03 26 | 704 | 0.0 | 1.3+ | 2004 01 30 | 704 | 0.1− | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2004 02 15 | 704 | 0.5+ | 0.8+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2004 02 15 | 704 | 0.6+ | 0.5+ | 2006 11 07 | 644 | 0.4+ | 0.0 |
| 2002 07 04 | 291 | 0.2− | 0.5+ | 2004 02 15 | 704 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.5+ | 0.0 |
| 2002 07 04 | 291 | 0.1+ | 0.8+ | 2004 02 15 | 704 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.5− | 1.1+ |
| 2002 07 04 | 291 | 0.3− | 0.5+ | 2004 02 15 | 704 | 0.3+ | 0.7+ | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 1.3+ | 2004 03 18 | 704 | 1.0+ | 0.1− | 2006 11 13 | 703 | 0.4− | 0.0 |
| 2002 08 08 | 644 | 0.0 | 0.9+ | 2004 03 18 | 704 | 1.0+ | 0.4+ | 2006 11 13 | 703 | 0.3+ | 0.7+ |
| 2002 08 08 | 644 | 0.3+ | 1.3+ | 2004 03 18 | 704 | 0.5− | 0.9− | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2003 11 21 | 704 | 0.4− | 0.3− | 2006 09 20 | 699 | 1.0+ | 0.5− | 2006 11 14 | 704 | 0.2− | 1.2+ |
| 2003 11 21 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.7− | 0.5+ | 2006 11 14 | 704 | 0.6+ | 0.1+ |
| 2003 11 21 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 699 | 0.5− | 1.0+ | 2006 11 14 | 704 | 0.5+ | 1.4+ |
| 2003 11 21 | 704 | 0.2− | 0.9+ | 2006 09 20 | 699 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.4− | 0.7+ |
| 2003 11 21 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | (1.5− | 1.9+) | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 1.0+ | 0.3+ |
| 2003 12 19 | 704 | 0.8+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2003 12 19 | 704 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.6− | 2006 11 20 | G96 | 0.8+ | 0.4− |
| 2003 12 19 | 704 | 0.5+ | 0.6− | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2003 12 19 | 704 | 1.0+ | 0.4− | 2006 10 02 | G96 | 0.5+ | 0.5− | 2006 11 20 | 704 | 1.3+ | 0.1− |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 20 | G96 | 0.6+ | 0.8− |
| 2003 12 19 | 704 | 0.4+ | 0.8− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | (3.6− | 1.5+) |
| 2003 12 21 | 691 | 0.6+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.2− | 2.3+ |
| 2003 12 21 | 691 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | (3.6− | 2.9+) |
| 2003 12 21 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.1+ | | | | |

**(139092)∗ 2001 FU$_{32}$ = 1999 TF$_{265}$**

Discovered 2001 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 13248)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 275.68583 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28262797 | $\omega$ | 243.80683 | −0.26453991 | −0.92811252 |
| $a$ | 2.2996370 | $\Omega$ | 224.27167 | +0.96305113 | −0.24001609 |
| $e$ | 0.3028577 | $i$ | 22.04133 | +0.05050892 | −0.28460400 |
| $P$ | 3.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.1− | 0.1− | 2001 06 12 | 644 | 0.9+ | 0.8+ | 2003 12 26 | 608 | 0.2− | 1.4+ |
| 1999 10 03 | 704 | 0.6+ | 0.1− | 2003 08 28 | 704 | 0.2+ | 0.1− | 2003 12 26 | 608 | (0.2− | 1.6+) |
| 1999 10 03 | 704 | 0.4+ | 0.4+ | 2003 08 28 | 704 | 0.2− | 0.3− | 2003 12 26 | 608 | 0.3− | 1.4+ |
| 1999 10 10 | 704 | 0.6− | 1.1+ | 2003 08 28 | 704 | 0.4− | 0.8+ | 2004 01 05 | 699 | 0.3− | 0.3− |
| 1999 10 10 | 704 | 0.7− | 0.7+ | 2003 08 28 | 704 | 0.7− | 1.0+ | 2004 01 05 | 699 | 0.3+ | 0.4+ |
| 1999 10 10 | 704 | 0.3− | 1.4+ | 2003 09 22 | 704 | 0.5+ | 0.6+ | 2004 01 05 | 699 | 0.1− | 0.3+ |
| 2001 03 20 | 704 | 0.9+ | 0.8− | 2003 09 22 | 704 | 0.0 | 0.0 | 2004 01 05 | 699 | 0.9− | 0.1− |
| 2001 03 20 | 704 | 1.2+ | 0.3+ | 2003 09 22 | 704 | 0.8+ | 0.5+ | 2004 01 30 | 699 | 0.1− | 0.0 |
| 2001 03 20 | 704 | 0.8− | 1.3+ | 2003 09 22 | 704 | 0.1− | 0.7+ | 2004 01 30 | 699 | 0.2− | 0.3+ |
| 2001 03 24 | 704 | 0.7+ | 0.0 | 2003 09 22 | 704 | 0.1+ | 0.7+ | 2004 01 30 | 699 | 0.0 | 0.4+ |
| 2001 03 24 | 704 | 0.1+ | 0.5− | 2003 09 26 | 704 | 0.6+ | 0.5+ | 2004 01 30 | 699 | 0.1− | 0.2+ |
| 2001 03 24 | 704 | 1.3+ | 0.3+ | 2003 09 26 | 704 | 0.2+ | 0.3+ | 2004 02 02 | 608 | 0.6+ | 0.6− |
| 2001 03 24 | 704 | 0.6+ | 0.8+ | 2003 09 26 | 704 | 0.0 | 0.4+ | 2004 02 02 | 608 | 0.5+ | 0.6− |
| 2001 03 24 | 704 | 0.6− | 0.2− | 2003 09 26 | 704 | 0.1− | 0.7+ | 2004 02 02 | 608 | 0.2+ | 0.6− |
| 2001 03 24 | 704 | (1.9− | 0.6+) | 2003 09 26 | 704 | 0.2+ | 1.1+ | 2004 02 27 | 608 | (2.2+ | 0.0 ) |
| 2001 03 24 | 704 | 0.0 | 0.0 | 2003 09 28 | 704 | 0.2− | 0.8+ | 2004 02 27 | 608 | (1.9+ | 0.2−) |
| 2001 03 24 | 704 | 0.8+ | 1.5− | 2003 09 28 | 704 | 0.2− | 0.9+ | 2004 02 27 | 608 | 0.9+ | 0.3− |
| 2001 03 24 | 704 | 0.1+ | 0.1+ | 2003 09 28 | 704 | (1.6− | 0.9+) | 2004 03 17 | 704 | 0.5− | 0.1− |
| 2001 03 26 | 704 | 0.0 | 0.3+ | 2003 09 28 | 704 | 0.1− | 0.7+ | 2004 03 17 | 704 | 0.3− | 0.3+ |
| 2001 03 26 | 704 | 1.4+ | 0.3− | 2003 09 28 | 704 | 0.1− | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.8+ |
| 2001 03 26 | 704 | 0.3+ | 0.8− | 2003 10 21 | 704 | (0.5− | 2.3−) | 2004 03 17 | 704 | 0.1+ | 0.3+ |
| 2001 03 26 | 704 | 0.1− | 0.9− | 2003 10 21 | 704 | (1.3+ | 4.1−) | 2004 03 31 | 704 | 0.7− | 0.2− |
| 2001 04 23 | 691 | 0.5− | 0.4+ | 2003 10 21 | 704 | (0.7− | 3.6−) | 2004 03 31 | 704 | 0.7+ | 0.2− |
| 2001 04 23 | 691 | 0.7− | 0.4+ | 2003 10 21 | 704 | 0.1− | 1.0− | 2004 03 31 | 704 | 1.0+ | 0.8+ |
| 2001 04 23 | 691 | 0.6− | 0.3+ | 2003 11 01 | 704 | 0.1+ | 0.1− | 2004 03 31 | 704 | 0.3+ | 0.1+ |
| 2001 04 30 | 704 | 0.8+ | 0.1− | 2003 11 01 | 704 | 0.4+ | 0.0 | 2006 08 13 | 644 | 0.3− | 0.1+ |
| 2001 04 30 | 704 | 0.2+ | 0.1− | 2003 11 01 | 704 | 0.2+ | 0.1− | 2006 08 13 | 644 | 0.1+ | 0.0 |
| 2001 04 30 | 704 | 0.3+ | 0.9+ | 2003 11 01 | 704 | 0.2+ | 0.4+ | 2006 08 13 | 644 | 0.2+ | 0.5+ |
| 2001 04 30 | 704 | 0.5− | 0.3+ | 2003 11 01 | 704 | 0.2+ | 0.0 | 2006 09 21 | 699 | 0.7+ | 0.6+ |
| 2001 04 30 | 704 | 0.4− | 1.1+ | 2003 11 29 | 704 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.3+ | 0.2− |
| 2001 05 14 | 691 | 0.1− | 0.3+ | 2003 11 29 | 704 | 1.2+ | 0.9+ | 2006 09 21 | 699 | 0.4+ | 0.1− |
| 2001 05 14 | 691 | 0.3− | 0.6+ | 2003 11 29 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.1+ | 0.0 |
| 2001 05 14 | 691 | 0.1− | 0.3+ | 2003 11 29 | 704 | 0.2− | 0.9− | 2006 10 20 | 703 | 0.5− | 0.5− |
| 2001 05 15 | 699 | 0.3− | 1.2+ | 2003 11 29 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 703 | 0.2+ | 1.1+ |
| 2001 05 15 | 699 | 0.5− | 0.5+ | 2003 12 13 | 704 | 0.1− | 0.4+ | 2006 10 20 | 703 | 0.2+ | 0.2− |
| 2001 05 15 | 699 | 0.2+ | 0.1+ | 2003 12 13 | 704 | 0.0 | 0.6+ | 2006 10 23 | 703 | 0.3+ | 0.9+ |
| 2001 05 15 | 699 | 1.3− | 0.5+ | 2003 12 13 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 703 | 0.4− | 0.9+ |
| 2001 05 22 | 704 | 0.2+ | 0.8+ | 2003 12 13 | 704 | 0.0 | 0.3+ | 2006 10 23 | 703 | (4.1− | 1.0−) |
| 2001 05 22 | 704 | 1.4+ | 0.7+ | 2003 12 13 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 1.5− | 1.6+ |
| 2001 05 22 | 704 | 1.1+ | 0.1− | 2003 12 21 | 608 | (1.6+ | 3.1+) | 2006 11 14 | 703 | 0.2− | 0.1− |
| 2001 06 12 | 644 | 0.5+ | 0.7+ | 2003 12 21 | 608 | (1.2+ | 3.3+) | 2006 11 14 | 703 | 0.4− | 0.4+ |
| 2001 06 12 | 644 | 0.8+ | 1.1+ | 2003 12 21 | 608 | (1.4+ | 3.1+) | 2006 11 14 | 703 | 0.6− | 0.1− |

**(139093)∗ 2001 FC$_{34}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 201.57891 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27277648 | $\omega$ | 17.50795 | −0.91402695 | −0.40539694 |
| $a$ | 2.3546775 | $\Omega$ | 138.56665 | +0.36952279 | −0.84675953 |
| $e$ | 0.1359124 | $i$ | 1.24897 | +0.16735484 | −0.34445844 |
| $P$ | 3.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.3− | 0.2+ | 2001 03 26 | 608 | 0.1− | 0.7− | 2003 12 18 | 644 | 0.3+ | 0.6− |
| 2001 01 21 | 704 | 0.6− | 0.9+ | 2001 03 27 | 691 | 0.2+ | 0.2− | 2003 12 18 | 644 | 0.0 | 0.4+ |
| 2001 01 21 | 704 | 0.4− | 1.5+ | 2001 03 27 | 691 | 0.3+ | 0.2− | 2003 12 21 | 691 | 0.2+ | 0.1+ |
| 2001 02 02 | 699 | 0.2+ | 0.6+ | 2001 03 27 | 691 | 0.2+ | 0.3− | 2003 12 21 | 691 | 0.2+ | 0.0 |
| 2001 02 02 | 699 | 0.1+ | 1.0+ | 2001 03 29 | 699 | 0.1+ | 0.3+ | 2003 12 21 | 691 | 0.2+ | 0.1− |
| 2001 02 02 | 699 | 0.4− | 0.1− | 2001 03 29 | 699 | 0.4+ | 1.0+ | 2003 12 21 | 704 | 0.1+ | 1.0+ |
| 2001 02 02 | 699 | 0.0 | 0.0 | 2001 03 29 | 699 | 0.1− | 0.5+ | 2003 12 21 | 704 | 0.0 | 0.0 |
| 2001 02 22 | 704 | 0.1− | 1.5+ | 2001 03 29 | 699 | 0.2− | 1.0+ | 2003 12 21 | 704 | 0.7− | 0.9+ |
| 2001 02 22 | 704 | 0.4− | 0.7− | 2001 04 01 | 704 | 0.4− | 0.6− | 2005 03 17 | G96 | 0.2+ | 0.3+ |
| 2001 02 22 | 704 | 0.2+ | 0.6− | 2001 04 01 | 704 | 0.1+ | 0.2− | 2005 03 17 | G96 | 0.4+ | 0.5+ |
| 2001 02 22 | 704 | 0.3− | 0.6− | 2001 04 01 | 704 | 0.6− | 0.1+ | 2005 03 17 | G96 | 0.4+ | 0.2− |
| 2001 03 02 | 699 | 0.4− | 0.0 | 2001 04 01 | 704 | 0.5− | 0.0 | 2005 03 17 | G96 | 0.1− | 0.1− |
| 2001 03 02 | 699 | 0.5+ | 0.4+ | 2001 04 01 | 704 | 0.5− | 0.3− | 2005 05 04 | 644 | 0.2+ | 0.1+ |
| 2001 03 02 | 699 | 0.2+ | 0.2+ | 2003 11 19 | 699 | 0.9− | 0.7− | 2005 05 04 | 644 | 0.4+ | 0.0 |
| 2001 03 02 | 699 | 0.5− | 0.9+ | 2003 11 19 | 699 | 0.6− | 1.2+ | 2005 05 04 | 644 | 0.8+ | 0.1− |
| 2001 03 15 | 608 | 0.6− | 1.1− | 2003 11 19 | 699 | 0.1− | 1.2+ | 2005 05 14 | 704 | (1.9+ | 1.6−) |
| 2001 03 15 | 608 | 0.1− | 0.8− | 2003 11 19 | 699 | 0.5− | 0.2− | 2005 05 14 | 704 | 1.0− | 0.3− |
| 2001 03 15 | 608 | 0.0 | 0.1− | 2003 11 21 | 704 | 1.5− | 0.0 | 2005 05 14 | 704 | 0.0 | 0.8+ |
| 2001 03 18 | 704 | 0.1+ | 0.0 | 2003 11 21 | 704 | 1.1− | 0.4− | 2005 05 14 | 704 | 0.4+ | 1.2+ |
| 2001 03 18 | 704 | 0.1− | 0.0 | 2003 11 21 | 704 | 0.9− | 0.0 | 2005 05 20 | G96 | 0.4− | 0.1− |
| 2001 03 18 | 704 | 0.5− | 0.2+ | 2003 11 21 | 704 | (2.6− | 0.7+) | 2005 05 20 | G96 | (1.6− | 1.8−) |
| 2001 03 18 | 699 | 0.2+ | 0.6+ | 2003 11 21 | 704 | 0.9− | 0.3− | 2005 05 20 | G96 | 0.1− | 0.1+ |
| 2001 03 18 | 704 | 0.0 | 0.1+ | 2003 11 30 | 691 | 0.0 | 0.1− | 2005 05 20 | G96 | 0.2− | 0.1− |
| 2001 03 18 | 704 | 0.2− | 0.1+ | 2003 11 30 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 695 | 0.2− | 0.4+ |
| 2001 03 18 | 699 | 0.7+ | 0.2+ | 2003 11 30 | 691 | 0.0 | 0.1− | 2006 10 19 | 695 | 0.2− | 0.4+ |
| 2001 03 18 | 699 | 1.2+ | 0.8+ | 2003 12 01 | 291 | 0.3+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.4+ |
| 2001 03 18 | 699 | 0.3+ | 0.4− | 2003 12 01 | 291 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2001 03 24 | 704 | 0.7+ | 0.5+ | 2003 12 01 | 291 | 0.5+ | 0.3− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2001 03 24 | 704 | 0.4+ | 0.5− | 2003 12 01 | 704 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2001 03 24 | 704 | 0.3− | 0.5+ | 2003 12 01 | 704 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2001 03 24 | 704 | 0.1− | 0.5− | 2003 12 01 | 704 | 0.6− | 1.3+ | 2006 11 15 | G96 | 0.4− | 0.5+ |
| 2001 03 26 | 608 | 0.1+ | 1.4− | 2003 12 01 | 704 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.4− | 0.2+ |
| 2001 03 26 | 608 | 0.4− | 0.9− | 2003 12 18 | 644 | 0.7+ | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.3− |

**(139094)∗ 2001 FK$_{34}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 218.94978 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28714974 | $\omega$ | 189.67733 | | −0.99081848 | | −0.13372414 | |
| $a$ | 2.2754315 | $\Omega$ | 342.59998 | | +0.12806956 | | −0.88113161 | |
| $e$ | 0.1145345 | $i$ | 3.81845 | | +0.04332351 | | −0.45356911 | |
| $P$ | 3.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 704 | 0.2+ | 1.4+ | 2001 04 01 | 704 | 0.3+ | 0.3− | 2003 12 18 | 704 | 0.1+ | 0.4+ |
| 2001 02 22 | 704 | (0.2+ | 1.5+) | 2001 04 01 | 704 | 0.7+ | 0.4+ | 2003 12 18 | 704 | (1.7+ | 1.3+) |
| 2001 02 22 | 704 | 0.0 | 1.0+ | 2001 04 01 | 704 | 0.2+ | 0.4− | 2003 12 18 | 704 | 1.3+ | 0.6− |
| 2001 02 22 | 704 | 0.1+ | 1.2+ | 2001 04 01 | 704 | 0.1+ | 0.4− | 2004 01 19 | 691 | 0.2− | 0.1+ |
| 2001 02 22 | 704 | (0.2+ | 1.9+) | 2001 04 15 | 699 | 0.2+ | 1.2+ | 2004 01 19 | 691 | 0.2− | 0.2+ |
| 2001 03 02 | 699 | 0.1+ | 0.1+ | 2001 04 15 | 699 | 0.8− | 1.0+ | 2004 01 19 | 691 | 0.2− | 0.0 |
| 2001 03 02 | 699 | 0.5− | 1.1+ | 2001 04 15 | 699 | (1.8+ | 0.5+) | 2006 10 21 | 691 | 0.1+ | 0.1+ |
| 2001 03 02 | 699 | 0.2− | 0.7+ | 2001 04 15 | 699 | 0.0 | 0.8+ | 2006 10 21 | 691 | 0.2− | 1.3+ |
| 2001 03 02 | 699 | 0.4+ | 0.4+ | 2002 08 08 | 644 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2001 03 15 | 608 | 0.1+ | 0.2+ | 2002 08 08 | 644 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 03 15 | 608 | 0.4+ | 0.5+ | 2002 08 08 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 03 15 | 608 | 0.3+ | 0.9− | 2002 08 18 | 644 | 0.4− | 1.1+ | 2006 10 31 | 691 | 0.1+ | 0.4− |
| 2001 03 18 | 704 | 0.6+ | 0.4+ | 2002 08 18 | 644 | 0.3− | 0.9+ | 2006 11 14 | 703 | 1.0− | 1.1+ |
| 2001 03 18 | 704 | 0.5+ | 0.2− | 2002 08 18 | 644 | 0.1− | 1.1+ | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2001 03 18 | 704 | (1.8+ | 0.8+) | 2002 08 29 | 644 | (0.3− | 1.6+) | 2006 11 14 | 703 | 0.3− | 0.7− |
| 2001 03 18 | 704 | 1.2+ | 0.7− | 2002 08 29 | 644 | 0.5− | 1.0+ | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2001 03 18 | 704 | 0.8− | 0.0 | 2002 08 29 | 644 | 0.6− | 1.4+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2001 03 24 | 704 | (0.0 | 1.8+) | 2002 10 10 | 291 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2001 03 24 | 704 | (0.3+ | 1.8+) | 2002 10 10 | 291 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2001 03 24 | 704 | 0.4+ | 1.3+ | 2002 10 10 | 291 | 0.6− | 0.1+ | | | | |
| 2001 04 01 | 704 | 0.6+ | 0.2+ | 2003 12 18 | 704 | 0.6+ | 0.0 | | | | |

**(139095)∗ 2001 FR$_{34}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 159.79122 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27017071 | $\omega$ | 230.70244 | | −0.90794326 | | +0.41904447 | |
| $a$ | 2.3697937 | $\Omega$ | 334.06998 | | −0.37987547 | | −0.82932013 | |
| $e$ | 0.1299844 | $i$ | 0.83671 | | −0.17701319 | | −0.36963476 | |
| $P$ | 3.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.3+ | 0.2+ | 2001 03 18 | 699 | 0.2− | 0.3+ | 2005 06 04 | 704 | 1.2− | 0.1− |
| 1999 10 03 | 691 | 0.2+ | 0.1− | 2001 03 18 | 699 | 0.5− | 0.3+ | 2005 06 11 | 703 | 0.1− | 0.2+ |
| 1999 10 03 | 691 | 0.1+ | 0.1+ | 2001 03 24 | 704 | 0.5+ | 0.3+ | 2005 06 11 | 703 | 0.1+ | 0.5− |
| 2001 02 03 | 691 | 0.2− | 0.4+ | 2001 03 24 | 704 | 0.0 | 0.3− | 2005 06 11 | 703 | 0.1− | 0.5+ |
| 2001 02 03 | 691 | 0.1− | 0.3+ | 2001 03 24 | 704 | 0.3+ | 0.1− | 2005 06 11 | 703 | 0.5+ | 0.2+ |
| 2001 02 03 | 691 | 0.3− | 0.1+ | 2002 08 27 | 644 | 0.4− | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.1− |
| 2001 02 22 | 704 | 0.8+ | 0.4− | 2002 08 27 | 644 | 0.3− | 0.7+ | 2006 07 21 | G96 | 0.3− | 0.0 |
| 2001 02 22 | 704 | 1.0+ | 0.6− | 2002 08 27 | 644 | 0.2− | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.3− |
| 2001 02 22 | 704 | 0.5− | 0.5− | 2002 09 04 | 644 | 0.3− | 0.7+ | 2006 07 21 | G96 | 0.1+ | 0.2+ |
| 2001 03 02 | 699 | 0.1+ | 0.1− | 2002 09 04 | 644 | 0.5− | 0.6+ | 2006 09 15 | 691 | 0.3+ | 0.1+ |
| 2001 03 02 | 699 | 0.6− | 0.8+ | 2002 09 04 | 644 | 1.4− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.0 |
| 2001 03 02 | 699 | 0.8− | 0.8+ | 2005 05 04 | 704 | 1.1+ | 0.0 | 2006 09 15 | 691 | 0.4+ | 0.4− |
| 2001 03 02 | 699 | 0.7− | 0.4+ | 2005 05 04 | 704 | (3.0+ | 0.0 ) | 2006 09 24 | 691 | 0.0 | 0.1+ |
| 2001 03 15 | 608 | 0.7+ | 0.2− | 2005 05 04 | 704 | (2.1+ | 0.7−) | 2006 09 24 | 691 | 0.2− | 0.1− |
| 2001 03 15 | 608 | 0.7+ | 0.6− | 2005 05 04 | 704 | 0.9+ | 1.0+ | 2006 09 24 | 691 | 0.2− | 0.2+ |
| 2001 03 15 | 608 | 0.4+ | 0.1− | 2005 05 09 | 704 | 0.5− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2001 03 18 | 704 | 0.6+ | 0.6+ | 2005 05 09 | 704 | 0.6+ | 1.1− | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2001 03 18 | 704 | 0.2+ | 0.5+ | 2005 05 09 | 704 | 0.0 | 0.6− | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2001 03 18 | 704 | 0.7+ | 0.9+ | 2005 06 04 | 704 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2001 03 18 | 699 | 0.3+ | 1.2− | 2005 06 04 | 704 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2001 03 18 | 704 | 0.9+ | 0.4+ | 2005 06 04 | 704 | 0.2− | 0.5− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2001 03 18 | 699 | 0.9− | 0.6+ | 2005 06 04 | 704 | (1.1+ | 1.8−) | 2006 10 28 | G96 | 0.0 | 0.1− |

**(139096)∗ 2001 FS$_{34}$ = 1994 GC$_5$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 11996)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 248.81792 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27359822 | $\omega$ | 82.31362 | | −0.12505764 | | −0.99209743 | |
| $a$ | 2.3499604 | $\Omega$ | 14.88197 | | +0.89397055 | | −0.11711898 | |
| $e$ | 0.1620329 | $i$ | 2.26764 | | +0.43032225 | | −0.04500916 | |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.2+ | 0.1+ | 2003 10 24 | 704 | 0.3+ | 0.2+ | 2003 11 24 | 704 | 0.2+ | 0.3+ |
| 1994 04 06 | 691 | 0.2− | 0.2+ | 2003 10 24 | 704 | 0.3− | 0.5+ | 2003 11 24 | 699 | 0.1− | 0.4+ |
| 1994 04 06 | 691 | 0.0 | 0.3− | 2003 10 24 | 704 | 0.6+ | 0.4− | 2003 11 24 | 704 | 0.1− | 0.1+ |
| 1994 04 11 | 691 | 0.1− | 0.0 | 2003 10 24 | 704 | 0.1+ | 0.0 | 2003 11 24 | 704 | 0.3+ | 0.4+ |
| 1994 04 11 | 691 | 0.1+ | 0.3+ | 2003 10 26 | 608 | 1.0+ | 1.3+ | 2003 11 24 | 699 | 0.5− | 0.0 |
| 1994 04 11 | 691 | 0.2+ | 0.6+ | 2003 10 26 | 608 | 0.6+ | 0.9+ | 2003 11 24 | 699 | 0.7− | 0.2+ |
| 1994 04 19 | 691 | 0.4− | 1.6− | 2003 10 26 | 608 | 0.5+ | 0.9+ | 2003 11 24 | 699 | 0.1− | 0.1− |
| 1994 04 19 | 691 | 0.6− | 0.7− | 2003 10 29 | 704 | 0.1+ | 0.3+ | 2003 12 01 | 703 | (1.3− | 1.7−) |
| 1994 04 19 | 691 | 0.4− | 0.8− | 2003 10 29 | 703 | 0.2− | 0.6+ | 2003 12 01 | 703 | 0.6+ | 0.6− |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2003 10 29 | 704 | 0.2− | 0.1+ | 2003 12 01 | 703 | 0.9− | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2003 10 29 | 703 | 1.3− | 0.1− | 2003 12 01 | 703 | 0.7− | 1.0− |
| 2001 03 15 | 608 | 0.2− | 0.2+ | 2003 10 29 | 703 | 0.2− | 0.4+ | 2003 12 10 | 644 | 0.1− | 0.1+ |
| 2001 03 15 | 608 | 0.3− | 0.4+ | 2003 10 29 | 704 | 0.2− | 0.1+ | 2003 12 10 | 644 | 0.2− | 0.1+ |
| 2001 03 15 | 608 | 0.2+ | 0.5+ | 2003 10 29 | 703 | 1.2− | 0.6+ | 2003 12 10 | 644 | 0.2− | 0.5+ |
| 2001 03 18 | 704 | 0.7+ | 0.2+ | 2003 10 29 | 704 | 0.1− | 0.4+ | 2003 12 13 | 703 | 0.7− | 0.3+ |
| 2001 03 18 | 704 | 0.6+ | 0.7+ | 2003 10 29 | 704 | 0.2− | 0.1+ | 2003 12 13 | 703 | 0.0 | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.3+ | 0.6+ | 2003 11 01 | 704 | 0.2− | 0.1− | 2003 12 13 | 703 | 0.7− | 0.8− | | |
| 2001 03 18 | 699 | 0.8− | 0.3+ | 2003 11 01 | 704 | 0.6+ | 0.5+ | 2003 12 13 | 703 | 0.1+ | 0.7− | | |
| 2001 03 18 | 704 | 1.3+ | 1.2+ | 2003 11 01 | 704 | 0.1+ | 0.2+ | 2004 01 13 | 699 | (0.7− | 1.9+) | | |
| 2001 03 18 | 704 | 1.3+ | 1.2+ | 2003 11 01 | 704 | 0.1− | 0.9+ | 2004 01 13 | 699 | 1.0− | 1.1+ | | |
| 2001 03 18 | 699 | 0.6− | 0.2− | 2003 11 01 | 704 | (1.5− | 1.9+) | 2004 01 13 | 699 | 0.6+ | 1.0+ | | |
| 2001 03 18 | 699 | 0.2− | 1.0+ | 2003 11 02 | 704 | 0.6+ | 0.4− | 2004 01 13 | 699 | 1.2+ | 0.3+ | | |
| 2001 03 18 | 699 | 0.1− | 0.0 | 2003 11 02 | 704 | 0.2− | 0.1+ | 2005 05 14 | 291 | 0.1− | 1.0+ | | |
| 2001 03 24 | 704 | 1.0+ | 1.0+ | 2003 11 02 | 704 | 0.4+ | 0.8+ | 2005 05 14 | 291 | 0.2+ | 0.5+ | | |
| 2001 03 24 | 704 | 0.7+ | 1.1+ | 2003 11 02 | 704 | 0.5+ | 0.0 | 2005 05 14 | 291 | 0.2+ | 0.7+ | | |
| 2001 03 24 | 704 | 0.6+ | 0.7+ | 2003 11 02 | 704 | 0.4+ | 0.4− | 2005 05 14 | 291 | 0.1+ | 0.5+ | | |
| 2001 03 26 | 608 | 0.5+ | 0.0 | 2003 11 18 | 644 | 0.1− | 0.1+ | 2005 05 14 | 291 | 0.1+ | 0.7+ | | |
| 2001 03 26 | 608 | 0.2− | 0.4− | 2003 11 18 | 644 | 0.2− | 0.3+ | 2005 05 14 | 291 | 0.0 | 0.5+ | | |
| 2001 03 26 | 608 | 1.1+ | 0.2+ | 2003 11 18 | 644 | 0.1− | 0.2+ | 2005 05 16 | G96 | 0.2+ | 0.0 | | |
| 2001 04 01 | 704 | 0.1+ | 0.7+ | 2003 11 19 | 703 | 0.5+ | 0.2− | 2005 05 16 | G96 | 0.2+ | 0.1+ | | |
| 2001 04 01 | 704 | 0.9+ | 1.2+ | 2003 11 19 | 703 | 0.1− | 0.3+ | 2005 05 16 | G96 | 0.1+ | 0.0 | | |
| 2001 04 01 | 704 | 0.4+ | 0.1− | 2003 11 19 | 703 | 0.0 | 0.5+ | 2005 05 16 | G96 | 0.2+ | 0.1− | | |
| 2001 04 01 | 704 | (1.6+ | 1.3+) | 2003 11 19 | 703 | 0.3− | 0.2+ | 2005 05 16 | G96 | 0.3+ | 0.2+ | | |
| 2003 10 16 | 699 | 0.6+ | 0.4− | 2003 11 19 | 699 | 0.9− | 0.2+ | 2005 05 16 | G96 | 0.1− | 0.2− | | |
| 2003 10 16 | 699 | 0.8− | 1.0+ | 2003 11 19 | 699 | 0.3+ | 0.2+ | 2005 05 16 | G96 | 0.2− | 0.2+ | | |
| 2003 10 16 | 699 | 0.6+ | 0.3+ | 2003 11 19 | 699 | (2.4− | 0.2+) | 2005 05 16 | G96 | 0.4+ | 0.2+ | | |
| 2003 10 16 | 699 | 0.4− | 1.1+ | 2003 11 19 | 699 | 0.7− | 0.7+ | 2006 08 14 | 644 | 0.1+ | 0.6+ | | |
| 2003 10 22 | 704 | 0.1− | 0.5− | 2003 11 20 | 691 | 0.3− | 0.1− | 2006 08 14 | 644 | 0.2+ | 0.6+ | | |
| 2003 10 22 | 704 | (1.4+ | 2.4−) | 2003 11 20 | 691 | 0.8− | 0.6− | 2006 08 14 | 644 | 0.3+ | 0.8+ | | |
| 2003 10 22 | 704 | 0.2+ | 0.3− | 2003 11 20 | 691 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.1+ | 0.6+ | | |
| 2003 10 22 | 704 | 0.9+ | 0.0 | 2003 11 20 | 704 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.4+ | 0.5+ | | |
| 2003 10 22 | 704 | (1.6− | 1.7+) | 2003 11 20 | 704 | 0.1+ | 0.7+ | 2006 08 15 | 644 | 0.5+ | 0.5+ | | |
| 2003 10 23 | 699 | (1.7+ | 0.3+) | 2003 11 20 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3− | 0.2− | | |
| 2003 10 23 | 699 | 0.4+ | 0.3− | 2003 11 20 | 704 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2003 10 23 | 699 | 0.8+ | 0.3− | 2003 11 20 | 704 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.4+ | | |
| 2003 10 23 | 699 | 0.6+ | 0.0 | 2003 11 24 | 704 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.2− | 0.1− | | |
| 2003 10 24 | 704 | 0.2− | 0.8+ | 2003 11 24 | 704 | 0.5+ | 0.2+ | | | | | | |

**(139097)∗ 2001 FZ$_{34}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 245.48560 | | (2000.0) | | | | |
| $n$ | 0.27940592 | $\omega$ | 162.84540 | | −0.48609159 | | −0.87019690 |
| $a$ | 2.3172825 | $\Omega$ | 316.14802 | | +0.78755448 | | −0.39629829 |
| $e$ | 0.0599466 | $i$ | 6.66848 | | +0.37877818 | | −0.29275419 |
| $P$ | 3.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | 0.7− | 0.8+ | 2003 12 03 | 704 | 1.2− | 0.6− | 2006 09 06 | 644 | 0.2+ | 0.3+ | | |
| 2001 01 26 | 704 | 0.3− | 0.2+ | 2003 12 03 | 704 | 0.2− | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.0 | | |
| 2001 01 26 | 704 | 0.7− | 0.2+ | 2003 12 03 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.5− | 0.3− | | |
| 2001 01 26 | 704 | (1.7+ | 0.6+) | 2003 12 17 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.3− | | |
| 2001 01 26 | 704 | 0.0 | 1.1+ | 2003 12 17 | 704 | 0.2+ | 0.5− | 2006 09 17 | 703 | 0.3− | 0.4− | | |
| 2001 02 19 | 699 | 1.1+ | 0.8+ | 2003 12 17 | 704 | 0.2− | 1.0+ | 2006 09 18 | 704 | 0.4+ | 0.3+ | | |
| 2001 02 19 | 699 | 0.5+ | 0.7+ | 2003 12 17 | 704 | 0.6+ | 0.1− | 2006 09 18 | 704 | 0.2+ | 0.8+ | | |
| 2001 02 19 | 699 | 0.7+ | 1.0+ | 2003 12 28 | 704 | 0.2− | 0.0 | 2006 09 18 | 704 | 1.5+ | 0.6+ | | |
| 2001 02 19 | 699 | 0.6+ | 0.9+ | 2003 12 28 | 704 | 0.6+ | 0.5− | 2006 09 20 | 699 | 0.1− | 0.5− | | |
| 2001 02 19 | 704 | 0.0 | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.2+ | 2006 09 20 | 699 | 0.9+ | 1.1+ | | |
| 2001 02 19 | 704 | (0.4− | 1.7+) | 2005 05 13 | E12 | 0.7− | 0.6+ | 2006 09 20 | 699 | 0.4+ | 0.5+ | | |
| 2001 02 19 | 704 | 0.9+ | 0.9+ | 2005 05 13 | E12 | 0.4− | 0.3+ | 2006 09 20 | 703 | 1.2− | 0.5+ | | |
| 2001 03 15 | 699 | 0.2+ | 0.5+ | 2005 05 13 | E12 | 0.5+ | 0.3− | 2006 09 20 | 699 | 0.5− | 0.5+ | | |
| 2001 03 15 | 699 | 0.3− | 0.7+ | 2005 05 13 | E12 | 0.3+ | 0.4+ | 2006 09 20 | 703 | 0.5− | 0.5+ | | |
| 2001 03 15 | 699 | 0.0 | 0.1+ | 2006 08 18 | 699 | 0.2+ | 0.4− | 2006 09 20 | 703 | 1.0− | 0.9− | | |
| 2001 03 15 | 699 | 0.6− | 0.4+ | 2006 08 18 | 699 | 1.0+ | 0.5− | 2006 09 20 | 703 | 0.3+ | 0.9− | | |
| 2001 03 18 | 704 | 0.9+ | 0.1+ | 2006 08 18 | 699 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.6− | 0.5+ | | |
| 2001 03 18 | 704 | 0.9+ | 0.5− | 2006 08 18 | 699 | (0.8+ | 2.7+) | 2006 09 25 | 704 | 0.1+ | 0.3+ | | |
| 2001 03 18 | 704 | 0.4− | 0.7+ | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.5+ | 0.7+ | | |
| 2001 03 18 | 704 | 0.6+ | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.4− | | |
| 2001 03 18 | 704 | 1.0+ | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.6+ | | |
| 2001 03 20 | 608 | 0.4− | 0.5− | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.3+ | | |
| 2001 03 20 | 608 | 0.2− | 0.8− | 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 09 29 | 699 | 0.5+ | 0.1− | | |
| 2001 03 20 | 608 | 0.4− | 0.3− | 2006 08 21 | 691 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.2− | | |
| 2001 03 24 | 704 | 0.4− | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.1− | 0.1+ | | |
| 2001 03 24 | 704 | 0.9+ | 0.2− | 2006 08 29 | 703 | 0.7− | 0.5+ | 2006 10 01 | 704 | (1.6− | 0.4+) | | |
| 2001 03 24 | 704 | (1.8+ | 1.2+) | 2006 08 29 | 703 | 0.8− | 0.4+ | 2006 10 01 | 704 | 0.3− | 0.5+ | | |
| 2001 03 29 | 608 | 0.0 | 0.3− | 2006 08 29 | 703 | 1.0− | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.3+ | | |
| 2001 03 29 | 608 | 0.8+ | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2001 03 29 | 608 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.5− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.1− | | |
| 2002 07 09 | 644 | 0.5− | 0.6+ | 2006 08 30 | 704 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.2− | | |
| 2002 07 09 | 644 | 0.4− | 0.7+ | 2006 08 30 | 704 | 0.9+ | 0.6+ | 2006 10 23 | 703 | 0.2+ | 0.9− | | |
| 2002 07 09 | 644 | 0.4− | 0.6+ | 2006 08 30 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 703 | 0.4+ | 0.3+ | | |
| 2003 12 03 | 704 | 0.6− | 0.1+ | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 10 23 | 703 | 0.2+ | 0.7− | | |
| 2003 12 03 | 704 | 0.3− | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 10 23 | 703 | 0.2− | 1.4− | | |

**(139098)∗ 2001 FP$_{36}$ = 2003 YH$_{101}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56231)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 218.13949 | | (2000.0) | | | | |
| $n$ | 0.28578497 | $\omega$ | 317.13861 | | −0.99458038 | | −0.10104661 |
| $a$ | 2.2826700 | $\Omega$ | 217.08294 | | +0.10295034 | | −0.92421688 |
| $e$ | 0.0453333 | $i$ | 2.32715 | | +0.01452938 | | −0.36825634 |
| $P$ | 3.45 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3+ | 0.4− | 2002 08 18 | 644 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.4+ | | |
| 1999 10 06 | 704 | 0.1− | 0.7− | 2002 08 18 | 644 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.3+ | | |
| 1999 10 06 | 704 | 0.6+ | 0.8− | 2002 08 27 | 644 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.5+ | | |
| 1999 11 09 | 704 | 0.8+ | 0.0 | 2002 08 27 | 644 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 1999 11 09 | 704 | 0.1− | 0.3+ | 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.2− | | |
| 1999 11 09 | 704 | 0.9− | 0.2+ | 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2001 03 18 | 704 | 0.1+ | 0.1+ | 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2001 03 18 | 704 | (0.1+ | 2.4+) | 2002 09 14 | 644 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.8+ | | |
| 2001 03 18 | 704 | 0.0 | 0.7− | 2003 12 19 | 704 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2001 03 18 | 704 | 0.2− | 0.1− | 2003 12 19 | 704 | 0.3+ | 0.3− | 2006 11 11 | 703 | (1.6+ | 1.3+) | | |
| 2001 03 18 | 704 | 0.1+ | 0.7+ | 2003 12 19 | 704 | (0.6− | 1.6+) | 2006 11 11 | G96 | 0.1− | 0.6− | | |
| 2001 03 18 | 608 | (0.9− | 1.6−) | 2003 12 23 | 704 | 0.7− | 0.7− | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2001 03 18 | 608 | (0.0 | 2.0−) | 2003 12 23 | 704 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− | | |
| 2001 03 18 | 608 | (0.7− | 1.8−) | 2003 12 23 | 704 | (1.6− | 0.3+) | 2006 11 11 | 703 | 0.2− | 0.3+ | | |
| 2001 03 24 | 704 | 0.4+ | 0.6+ | 2003 12 23 | 704 | 1.1− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.5+ | | |
| 2001 03 24 | 704 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 1.0− | 0.6− | | |
| 2001 03 24 | 704 | (0.9− | 1.7+) | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.0 | | |
| 2001 03 31 | 691 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 17 | 703 | 2.2− | 0.2− | | |
| 2001 03 31 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.7+ | | |
| 2001 03 31 | 691 | 0.9+ | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1− | | |
| 2002 08 08 | 644 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.4− | | |
| 2002 08 08 | 644 | 0.5+ | 0.5+ | 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.6+ | 0.2− | | |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.6− | | |
| 2002 08 17 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | | | | | | |
| 2002 08 17 | 644 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.3+ | | | | | | |

**(139099)∗ 2001 FK$_{38}$ = 2003 YM$_{63}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56231)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 302.97867 | | (2000.0) | | | | |
| $n$ | 0.28878867 | $\omega$ | 210.00715 | | +0.08970080 | | −0.99469680 |
| $a$ | 2.2668143 | $\Omega$ | 234.89102 | | +0.92558394 | | +0.10191087 |
| $e$ | 0.0818281 | $i$ | 3.52654 | | +0.36776098 | | −0.01387304 |
| $P$ | 3.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 0.2− | 1.4− | 2003 12 27 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 704 | 1.0+ | 0.3+ | | |
| 1999 10 04 | 704 | 0.1− | 0.6− | 2003 12 27 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 1999 10 04 | 704 | 0.1− | 0.5+ | 2003 12 27 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 0.4+ | 1.0+ | 2003 12 28 | 704 | 0.3− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.3− | | |
| 2001 03 18 | 704 | 0.0 | 0.4+ | 2003 12 28 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2001 03 18 | 704 | 0.1− | 0.6+ | 2003 12 28 | 704 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2001 03 18 | 699 | 0.7+ | 1.2+ | 2003 12 28 | 704 | 0.3+ | 0.8− | 2006 10 20 | 644 | 0.3− | 0.2− | | |
| 2001 03 18 | 704 | 0.2− | 0.9+ | 2004 01 21 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2001 03 18 | 704 | 0.0 | 1.1+ | 2004 01 21 | 704 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2001 03 18 | 699 | 1.0+ | 1.2+ | 2004 01 21 | 704 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 03 18 | 699 | 0.7+ | 1.0+ | 2004 01 21 | 704 | 0.7− | 0.4− | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2001 03 18 | 699 | (1.4+ | 2.4+) | 2004 01 24 | 704 | 0.4− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2001 03 24 | 704 | 0.0 | 0.3+ | 2004 01 24 | 704 | 0.4− | 0.5− | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2001 03 24 | 704 | 0.1+ | 0.4+ | 2004 01 24 | 704 | 0.2− | 0.8− | 2006 10 28 | 704 | 0.1− | 0.1− | | |
| 2001 03 24 | 704 | 1.2+ | 1.0+ | 2004 03 18 | 704 | 0.6− | 1.1+ | 2006 10 28 | 704 | 1.0− | 0.6+ | | |
| 2001 03 29 | 704 | (2.5+ | 1.9+) | 2004 03 18 | 704 | (0.4− | 1.7+) | 2006 10 28 | 704 | 0.5− | 0.6+ | | |
| 2001 03 29 | 704 | 1.3+ | 0.0 | 2004 03 18 | 704 | 0.4− | 0.8− | 2006 10 28 | 704 | 0.5− | 0.4− | | |
| 2001 03 29 | 704 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.9− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2001 03 29 | 704 | 0.7+ | 0.2+ | 2005 06 04 | 704 | (4.4− | 1.1−) | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2001 03 29 | 704 | 0.3+ | 0.5+ | 2005 06 04 | 704 | (3.4− | 1.2−) | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2002 07 09 | 644 | 0.4− | 0.2+ | 2005 06 04 | 704 | (3.7− | 0.9−) | 2006 11 07 | 644 | 1.0− | 0.1− | | |
| 2002 07 09 | 644 | 0.1− | 0.2+ | 2005 06 11 | 703 | 0.2− | 1.3+ | 2006 11 07 | 644 | 0.2− | 0.0 | | |
| 2002 07 09 | 644 | 0.5− | 0.3+ | 2005 06 11 | 703 | 0.4+ | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.0 | | |
| 2002 08 06 | 644 | 0.1− | 1.2+ | 2005 06 11 | 703 | (2.0− | 1.1+) | 2006 11 10 | 691 | 0.2+ | 0.2+ | | |
| 2002 08 06 | 644 | 0.3+ | 1.1+ | 2005 06 11 | 703 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 06 | 644 | 0.0 | 1.1+ | 2005 06 16 | G96 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.3+ | | |
| 2002 08 24 | 644 | 1.0− | 1.3+ | 2005 06 16 | G96 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.5− | | |
| 2002 08 24 | 644 | 0.2− | 0.3+ | 2005 06 16 | G96 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.8− | | |
| 2002 08 24 | 644 | 0.1− | 0.1+ | 2005 06 16 | G96 | 0.4− | 0.6+ | 2006 11 11 | 703 | 1.0+ | 0.6− | | |
| 2003 11 02 | 704 | 0.5+ | 1.3+ | 2006 08 30 | 699 | 0.0 | 0.3− | 2006 11 11 | 703 | 1.0− | 0.8− | | |
| 2003 11 02 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.8− | 0.1+ | | |
| 2003 11 02 | 704 | 0.2+ | 1.2+ | 2006 08 30 | 699 | 0.7− | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.5+ | | |
| 2003 11 02 | 704 | 0.1+ | 1.4+ | 2006 08 30 | 699 | 0.6+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.1+ | | |
| 2003 11 02 | 704 | 0.3− | 1.0+ | 2006 09 20 | 699 | 0.6+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.3+ | | |
| 2003 11 21 | 704 | (0.2− | 1.8+) | 2006 09 20 | 699 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.6+ | 1.0+ | | |
| 2003 11 21 | 704 | 1.3+ | 1.1+ | 2006 09 20 | 699 | 0.4+ | 1.1+ | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 2003 11 21 | 704 | 0.4+ | 0.2− | 2006 09 20 | 699 | 0.5+ | 0.6+ | 2006 11 18 | 704 | 0.6− | 0.0 | | |
| 2003 12 19 | 704 | 0.9− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | (0.6+ | 1.5+) | | |
| 2003 12 19 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.0 | | |
| 2003 12 19 | 704 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.3− | | |
| 2003 12 19 | 704 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.1− | | |
| 2003 12 21 | 704 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.2− | | |
| 2003 12 21 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.2+ | 1.5+ | 2006 11 20 | G96 | 0.2− | 0.1− | | |
| 2003 12 21 | 704 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 1.1+ | | |
| 2003 12 21 | 704 | 0.4− | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.7− | | |
| 2003 12 21 | 704 | 0.7− | 0.3− | 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.2+ | | |
| 2003 12 23 | 704 | 0.6− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 1.1+ | | |
| 2003 12 23 | 704 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.2+ | | |
| 2003 12 23 | 704 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 26 | 704 | 0.0 | 0.2+ | | |
| 2003 12 23 | 704 | 0.3− | 0.1+ | 2006 10 19 | 704 | 0.1+ | 0.4− | 2006 11 26 | 704 | 0.4− | 0.2− | | |
| 2003 12 27 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 704 | 1.3− | 1.0+ | 2006 11 26 | 704 | 0.4+ | 0.2− | | |
| 2003 12 27 | 704 | 0.8+ | 0.1− | 2006 10 19 | 704 | 1.0+ | 0.9− | | | | | | |

**(139100)∗ 2001 FW$_{39}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.47870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23707142 | $\omega$ | 55.04741 | | −0.28087801 | +0.95934238 | |
| $a$ | 2.5855320 | $\Omega$ | 198.69882 | | −0.90635392 | −0.27464950 | |
| $e$ | 0.2777572 | $i$ | 4.96460 | | −0.31564240 | −0.06503729 | |
| $P$ | 4.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.2− | 0.1+ | 2001 04 01 | 704 | 0.2+ | 0.0 | 2005 03 10 | 703 | 0.2− | 0.4+ | | |
| 1994 10 31 | 691 | 0.2− | 0.3+ | 2001 04 01 | 704 | 0.4+ | 0.9+ | 2005 03 17 | 703 | 0.3− | 0.7+ | | |
| 1994 10 31 | 691 | 0.4− | 0.7− | 2001 04 01 | 704 | 0.9+ | 0.7+ | 2005 03 17 | 703 | 0.8+ | 1.5+ | | |
| 2001 03 18 | 699 | 0.3+ | 0.3+ | 2002 09 27 | 644 | 0.4− | 0.7+ | 2005 03 17 | 703 | 0.3+ | 1.3+ | | |
| 2001 03 18 | 699 | 0.8+ | 0.1− | 2002 09 27 | 644 | 0.0 | 0.3+ | 2005 03 17 | 703 | (2.6+ | 0.7+) | | |
| 2001 03 18 | 704 | 0.3− | 0.2− | 2002 09 27 | 644 | 0.6− | 0.2+ | 2005 04 12 | G96 | 0.3− | 0.0 | | |
| 2001 03 18 | 704 | 0.6+ | 0.9+ | 2002 09 28 | 644 | 0.0 | 0.6+ | 2005 04 12 | G96 | 0.2− | 0.0 | | |
| 2001 03 18 | 699 | 0.5+ | 0.4+ | 2002 09 28 | 644 | 0.5− | 1.0+ | 2005 04 12 | G96 | 0.2− | 0.1− | | |
| 2001 03 18 | 704 | 0.5− | 0.3+ | 2002 09 28 | 644 | 0.3− | 1.2+ | 2005 04 12 | G96 | 0.2− | 0.1− | | |
| 2001 03 18 | 704 | 0.2+ | 0.2− | 2002 11 06 | 291 | 1.7+ | 0.5+ | 2006 08 21 | 691 | 0.5− | 0.3+ | | |
| 2001 03 18 | 704 | 0.1− | 0.1+ | 2002 11 06 | 291 | 0.0 | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.1+ | | |
| 2001 03 18 | 699 | 0.6+ | 0.1+ | 2002 11 06 | 291 | 0.1− | 0.4+ | 2006 08 21 | 691 | 0.5− | 0.2+ | | |
| 2001 03 24 | 704 | 0.3− | 1.1+ | 2005 03 03 | 703 | 1.2− | 0.2+ | 2006 08 28 | 703 | 0.5+ | 0.8+ | | |
| 2001 03 24 | 704 | 0.5+ | 0.6+ | 2005 03 03 | 703 | 0.1− | 0.4+ | 2006 08 28 | 703 | (3.5− | 1.9+) | | |
| 2001 03 24 | 704 | 1.2+ | 0.9+ | 2005 03 03 | 703 | 0.4+ | 1.3− | 2006 08 28 | 703 | 0.9+ | 0.0 | | |
| 2001 03 24 | 704 | 0.3− | 1.0+ | 2005 03 03 | 703 | 0.7− | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.8+ | | |
| 2001 03 29 | 699 | 0.7− | 0.3+ | 2005 03 08 | 699 | 0.7+ | 1.6− | 2006 09 20 | 691 | 0.0 | 0.3+ | | |
| 2001 03 29 | 699 | 0.6− | 0.7+ | 2005 03 08 | 699 | 0.7− | 1.3− | 2006 09 20 | 691 | 0.4− | 0.3+ | | |
| 2001 03 29 | 699 | 0.4− | 0.6+ | 2005 03 08 | 699 | 1.8+ | 0.3+ | 2006 09 20 | 691 | 0.3− | 0.3+ | | |
| 2001 03 29 | 704 | 0.3− | 0.3+ | 2005 03 08 | 699 | 0.6− | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.1− | | |
| 2001 03 29 | 704 | 0.9+ | 1.2+ | 2005 03 10 | 703 | 0.4+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2001 03 29 | 699 | 0.6− | 1.3+ | 2005 03 10 | 703 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.2− | | |
| 2001 03 29 | 704 | 1.6+ | 0.1+ | 2005 03 10 | 703 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.5− | 0.3− | | |

**(139101)∗ 2001 FH$_{41}$ = 2002 RY$_{82}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35042)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.09491 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27534146 | $\omega$ | 85.64974 | | +0.05077946 | +0.99861839 | |
| $a$ | 2.3400312 | $\Omega$ | 187.30220 | | −0.95330407 | +0.04443117 | |
| $e$ | 0.1155479 | $i$ | 6.10570 | | −0.29771260 | +0.02805690 | |
| $P$ | 3.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | (0.1− | 2.4+) | 2002 09 14 | 644 | 0.4− | 0.3+ | 2005 06 02 | E12 | 0.0 | 0.7− | | |
| 2001 03 18 | 704 | 0.1− | 0.5− | 2002 09 14 | 644 | 0.5− | 0.3+ | 2005 06 02 | E12 | 0.1− | 0.0 | | |
| 2001 03 18 | 704 | 0.3− | 0.1+ | 2002 09 15 | 683 | (1.3+ | 1.9+) | 2005 07 04 | 703 | 1.1+ | 1.2+ | | |
| 2001 03 18 | 704 | 0.9+ | 1.0+ | 2002 09 15 | 683 | 1.5− | 0.2+ | 2005 07 04 | 703 | 0.9+ | 1.4+ | | |
| 2001 03 18 | 704 | 0.5+ | 0.0 | 2002 09 15 | 683 | 0.7+ | 0.4+ | 2005 07 04 | 703 | 0.2− | 0.6+ | | |
| 2001 03 19 | 699 | 0.8− | 1.1+ | 2002 09 16 | 608 | (1.5− | 0.7−) | 2005 07 04 | 703 | 0.8− | 1.1+ | | |
| 2001 03 19 | 699 | 0.8− | 0.7+ | 2002 09 16 | 608 | (1.6− | 0.7−) | 2005 07 05 | 704 | (0.3+ | 1.7+) | | |
| 2001 03 19 | 699 | 0.3+ | 1.4+ | 2002 09 16 | 608 | 1.3− | 0.1− | 2005 07 05 | 704 | 0.3− | 0.8+ | | |
| 2001 03 19 | 699 | 0.4− | 1.2+ | 2002 09 27 | 699 | 0.9− | 0.6+ | 2005 07 05 | 704 | 0.8+ | 0.4+ | | |
| 2001 03 24 | 704 | 0.3+ | 0.5+ | 2002 09 27 | 699 | 0.5+ | 0.5+ | 2005 07 05 | 704 | 0.5+ | 0.7− | | |
| 2001 03 24 | 704 | 0.8− | 0.7+ | 2002 09 27 | 699 | 1.4− | 1.0+ | 2006 10 02 | G96 | 0.1+ | 0.3− | | |
| 2001 03 24 | 704 | 0.3+ | 1.0+ | 2002 09 27 | 699 | (0.8− | 2.3+) | 2006 10 02 | G96 | 0.7+ | 0.0 | | |
| 2001 03 24 | 704 | 0.6+ | 0.7+ | 2002 09 29 | 608 | 0.4− | 1.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− | | |
| 2001 03 24 | 704 | (0.2+ | 1.6+) | 2002 09 29 | 608 | 0.3− | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.2− | | |
| 2001 03 26 | 691 | 0.3+ | 0.3+ | 2002 09 29 | 608 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.0 | 1.0− | | |
| 2001 03 26 | 691 | 0.2+ | 0.3+ | 2002 09 30 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.5+ | | |
| 2001 03 26 | 691 | 0.2+ | 0.3+ | 2002 09 30 | 704 | 0.4− | 1.0+ | 2006 10 16 | 703 | (0.4+ | 3.0−) | | |
| 2001 03 29 | 699 | 0.6− | 0.2+ | 2002 09 30 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.5+ | 1.0− | | |
| 2001 03 29 | 699 | 0.2+ | 0.5+ | 2002 09 30 | 704 | 0.4+ | 1.2+ | 2006 10 16 | 703 | 0.4− | 0.4+ | | |
| 2001 03 29 | 699 | 0.2− | 0.2+ | 2002 09 30 | 704 | 0.5− | 1.3+ | 2006 10 16 | 703 | 0.5− | 0.8+ | | |
| 2001 03 29 | 704 | 0.8+ | 0.7+ | 2002 10 01 | 699 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 1.0+ | | |
| 2001 03 29 | 704 | (2.2+ | 1.3+) | 2002 10 01 | 699 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.7+ | 0.3+ | | |
| 2001 03 29 | 699 | 0.4+ | 0.4+ | 2002 10 01 | 699 | 0.2− | 0.9− | 2006 10 18 | 691 | 0.1− | 0.3− | | |
| 2001 03 29 | 704 | 0.5− | 0.8+ | 2002 10 01 | 699 | 0.5− | 0.4− | 2006 10 18 | 691 | 0.1− | 0.0 | | |
| 2001 03 29 | 704 | (2.1+ | 1.2+) | 2002 10 02 | 704 | 0.5+ | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1− | | |
| 2001 04 01 | 704 | 1.0+ | 1.1− | 2002 10 02 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2001 04 01 | 704 | 0.7− | 0.6+ | 2002 10 02 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.0 | | |
| 2001 04 01 | 704 | 0.2+ | 1.3+ | 2002 10 02 | 704 | 0.4− | 0.8− | 2006 10 20 | 644 | 0.3+ | 0.1+ | | |
| 2001 04 01 | 704 | (0.9+ | 2.7+) | 2002 10 03 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 2001 04 04 | 608 | 0.6+ | 0.2− | 2002 10 03 | 704 | 0.9+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ | | |
| 2001 04 04 | 608 | 0.4+ | 0.5− | 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2001 04 04 | 608 | 0.1+ | 0.4+ | 2002 10 03 | 704 | 0.4+ | 0.0 | 2006 10 30 | 703 | (0.4+ | 2.0−) | | |
| 2002 09 05 | 704 | 0.2+ | 0.8+ | 2002 10 03 | 704 | 0.4+ | 0.2+ | 2006 10 30 | 703 | 0.9− | 0.3+ | | |
| 2002 09 05 | 704 | 0.7+ | 1.0+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 30 | 703 | 0.8+ | 0.9+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.7+ | 2002 10 10 | 645 | 0.1− | 0.1− | 2006 10 30 | 703 | 0.8− | 0.5− | | |
| 2002 09 05 | 704 | 0.1− | 0.9+ | 2002 10 11 | 704 | 0.2− | 1.0+ | 2006 11 02 | 703 | 0.2+ | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.6− | 0.9+ | 2006 11 02 | 703 | 1.5+ | 0.5+ |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2002 10 11 | 704 | 0.4− | 0.3+ | 2006 11 02 | 703 | (1.7+ | 0.9+) |
| 2002 09 07 | 704 | 0.3+ | 0.8+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 02 | 703 | (1.9+ | 0.3−) |
| 2002 09 07 | 704 | 0.1− | 0.5+ | 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2002 09 07 | 704 | 0.8+ | 0.2+ | 2003 12 22 | 704 | 0.5+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 09 12 | 683 | 0.2− | 1.5− | 2003 12 22 | 704 | 0.1− | 1.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 09 12 | 683 | (3.0− | 1.7−) | 2003 12 22 | 704 | 0.0 | 1.5+ | 2006 11 17 | 704 | 1.2− | 0.0 |
| 2002 09 13 | 683 | 0.1+ | 0.7+ | 2003 12 22 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.8− | 0.3− |
| 2002 09 13 | 683 | 0.4+ | 0.1+ | 2003 12 22 | 704 | 0.6+ | 1.2+ | 2006 11 17 | 704 | 1.3− | 0.1+ |
| 2002 09 13 | 683 | 0.6− | 0.2− | 2003 12 22 | 704 | 0.2+ | 0.6− | 2006 11 28 | 704 | 0.3+ | 0.5+ |
| 2002 09 14 | 683 | (0.1+ | 2.2+) | 2003 12 22 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 1.0+ | 0.9+ |
| 2002 09 14 | 683 | (1.9+ | 0.2+) | 2003 12 22 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2002 09 14 | 683 | (1.8− | 0.5+) | 2005 06 02 | E12 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.7+ | 0.5+ |
| 2002 09 14 | 644 | 0.5− | 0.1+ | 2005 06 02 | E12 | 1.2− | 0.7− | 2006 11 28 | 704 | (1.7+ | 1.2+) |

**(139102)∗ 2001 FT$_{42}$ = 1999 TT$_{326}$ = 1999 TM$_{243}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12009)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.26463 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28015196 | $\omega$ | 17.88962 | | −0.66538643 | −0.74623572 | |
| $a$ | 2.3131667 | $\Omega$ | 113.82743 | | +0.68222372 | −0.61866301 | |
| $e$ | 0.1268793 | $i$ | 1.24202 | | +0.30303745 | −0.24574039 | |
| $P$ | 3.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 16 | 691 | 0.5− | 0.3− | 2001 03 29 | 699 | 0.8+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.6− |
| 1999 09 16 | 691 | 0.2− | 0.0 | 2001 03 29 | 699 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.5+ |
| 1999 09 16 | 691 | 0.5− | 0.0 | 2001 03 29 | 699 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.9− | 0.9− |
| 1999 10 04 | 691 | 0.1+ | 0.2− | 2001 03 29 | 699 | 0.4+ | 0.5+ | 2006 08 28 | 703 | (0.3− | 2.0−) |
| 1999 10 04 | 691 | 0.2+ | 0.2− | 2001 04 01 | 704 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.6+ |
| 1999 10 04 | 691 | 0.3+ | 0.1− | 2001 04 01 | 704 | 0.1+ | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.3+ |
| 1999 10 06 | 691 | 0.1+ | 0.2+ | 2001 04 01 | 704 | 1.0+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.6+ |
| 1999 10 06 | 691 | 0.2+ | 0.1+ | 2001 04 01 | 704 | 0.7− | 1.2+ | 2006 09 17 | 704 | (0.3+ | 2.2+) |
| 1999 10 06 | 691 | 0.0 | 0.3+ | 2001 04 01 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.3+ |
| 1999 10 09 | 704 | 0.3+ | 0.0 | 2001 04 24 | 699 | 0.6− | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.3+ |
| 1999 10 09 | 704 | 0.3+ | 0.6+ | 2001 04 24 | 699 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.1+ | 0.3+ | 2001 04 24 | 699 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 1999 10 09 | 704 | 0.1+ | 0.4+ | 2001 04 24 | 699 | 0.5− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.5+ |
| 2001 02 22 | 704 | 0.2− | 0.2+ | 2003 11 21 | 704 | 0.6+ | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.2+ |
| 2001 02 22 | 704 | 1.0− | 0.8+ | 2003 11 21 | 704 | 0.3− | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.4+ |
| 2001 02 22 | 704 | 0.6+ | 0.8+ | 2003 11 21 | 704 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 2001 02 22 | 704 | 1.2+ | 0.7− | 2003 12 16 | 106 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.4+ |
| 2001 02 22 | 704 | 0.1− | 1.4+ | 2003 12 16 | 106 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2001 03 18 | 704 | 0.6− | 0.3− | 2003 12 16 | 106 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2001 03 18 | 704 | 0.1− | 0.3+ | 2003 12 19 | 704 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2001 03 18 | 704 | 0.0 | 0.0 | 2003 12 19 | 704 | 0.1− | 0.4+ | 2006 09 28 | G92 | 0.9− | 0.2+ |
| 2001 03 18 | 704 | 0.3+ | 0.3+ | 2003 12 19 | 704 | 0.4− | 0.2+ | 2006 09 28 | G92 | 0.4+ | 0.4+ |
| 2001 03 18 | 704 | 0.1− | 0.6+ | 2003 12 19 | 704 | 0.6− | 0.2+ | 2006 09 28 | G92 | 0.3− | 0.4− |
| 2001 03 19 | 699 | 0.1− | 0.0 | 2003 12 19 | 704 | (2.0− | 0.2+) | 2006 09 28 | G92 | 0.0 | 0.3+ |
| 2001 03 19 | 699 | 0.7+ | 0.6+ | 2003 12 21 | 704 | 1.2+ | 0.4+ | 2006 09 28 | G92 | 0.2− | 0.4+ |
| 2001 03 19 | 699 | 0.2+ | 0.4+ | 2003 12 21 | 704 | 0.8− | 1.0− | 2006 09 28 | G92 | 1.0− | 0.1+ |
| 2001 03 19 | 699 | 0.1− | 0.4+ | 2003 12 21 | 704 | 0.4+ | 0.7+ | 2006 10 09 | 644 | 0.6− | 0.6+ |
| 2001 03 21 | 691 | 0.2+ | 0.4+ | 2003 12 21 | 704 | 0.2+ | 0.4− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2001 03 21 | 691 | 0.2+ | 0.6+ | 2003 12 21 | 704 | 0.3− | 1.4+ | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 2001 03 21 | 691 | 0.7+ | 0.5+ | 2003 12 21 | 704 | 0.5− | 0.7− | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2001 03 21 | 608 | 0.0 | 0.3− | 2003 12 21 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2001 03 21 | 608 | 0.1− | 0.1− | 2003 12 21 | 704 | 0.7− | 1.0− | 2006 10 20 | 644 | 0.5− | 0.4+ |
| 2001 03 21 | 608 | 0.1− | 0.8− | 2003 12 24 | 704 | 1.2+ | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.2+ |
| 2001 03 24 | 704 | 0.2+ | 0.8+ | 2003 12 24 | 704 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2001 03 24 | 704 | 0.1− | 0.5+ | 2003 12 24 | 704 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 2001 03 24 | 704 | (0.7− | 1.7−) | 2004 01 21 | 704 | 1.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 03 24 | 704 | 0.5+ | 0.3+ | 2004 01 21 | 704 | 0.3+ | 0.6− | | | | |
| 2001 03 24 | 704 | 0.3− | 0.1− | 2004 01 21 | 704 | 1.3− | 1.1− | | | | |

**(139103)∗ 2001 FW$_{42}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.79029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27952429 | $\omega$ | 63.68578 | | −0.55028125 | +0.83493692 | |
| $a$ | 2.3166282 | $\Omega$ | 172.91022 | | −0.78834476 | −0.51619822 | |
| $e$ | 0.0718693 | $i$ | 3.91156 | | −0.27514195 | −0.19083957 | |
| $P$ | 3.53 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.1− | 0.3+ | 2001 04 15 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 1995 09 29 | 691 | 0.2− | 0.4+ | 2002 08 16 | 291 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 1995 09 29 | 691 | 0.3− | 0.1+ | 2002 08 16 | 291 | 0.2− | 0.4− | 2006 11 02 | 703 | 1.0+ | 0.1− |
| 1999 10 15 | 691 | 0.1+ | 0.1− | 2002 08 16 | 291 | 0.4− | 0.6+ | 2006 11 02 | 703 | 0.1+ | 0.9− |
| 1999 10 15 | 691 | 0.2− | 0.3+ | 2002 09 05 | 704 | 0.5+ | 1.0+ | 2006 11 02 | 703 | 0.1+ | 0.2+ |
| 1999 10 15 | 691 | 0.4+ | 0.0 | 2002 09 05 | 704 | 0.2+ | 0.4+ | 2006 11 02 | 703 | 0.8+ | 0.1+ |
| 2001 03 18 | 704 | (0.7+ | 1.7+) | 2002 09 05 | 704 | 0.6+ | 0.8+ | 2006 11 08 | 644 | 0.3− | 0.4+ |
| 2001 03 18 | 704 | 0.8+ | 0.4+ | 2002 09 05 | 704 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.6+ |
| 2001 03 18 | 704 | 0.1− | 0.5+ | 2002 09 12 | 644 | 0.3− | 0.8− | 2006 11 08 | 644 | 0.5− | 0.5+ |
| 2001 03 18 | 704 | 0.7+ | 0.4+ | 2002 09 12 | 644 | 0.5− | 0.6− | 2006 11 10 | 644 | 0.1+ | 0.5+ |
| 2001 03 18 | 704 | 0.3+ | 0.5+ | 2002 09 12 | 644 | 0.3− | 0.5− | 2006 11 10 | 644 | 0.1− | 0.7+ |
| 2001 03 21 | 608 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.0 |
| 2001 03 21 | 608 | 0.1− | 0.6− | 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 03 21 | 608 | 0.2− | 0.6− | 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2001 03 23 | 699 | 0.5+ | 0.8+ | 2002 09 28 | 291 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 03 23 | 699 | 0.0 | 0.2+ | 2002 09 28 | 291 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2001 03 23 | 699 | 0.4− | 1.3+ | 2002 09 28 | 291 | 0.2+ | 0.6+ | 2006 11 11 | 644 | 0.2+ | 0.4+ |
| 2001 03 23 | 699 | 0.3− | 0.4+ | 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2001 03 24 | 704 | 0.6+ | 0.4+ | 2002 10 03 | 704 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2001 03 24 | 704 | 0.2− | 0.4+ | 2002 10 03 | 704 | 0.3− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.5+ |
| 2001 03 24 | 704 | 1.3− | 1.2+ | 2002 10 03 | 704 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.5+ | 1.3+ |
| 2001 03 24 | 704 | (1.7+ | 0.5+) | 2006 09 30 | G96 | 0.1− | 1.3+ | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2001 03 24 | 704 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 11 | 644 | 0.0 | 0.6+ |
| 2001 03 29 | 699 | 0.7+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2001 03 29 | 699 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2001 03 29 | 699 | 0.3+ | 1.0+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.7− |
| 2001 03 29 | 699 | 0.6+ | 1.0+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2001 04 15 | 691 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.0 | | | | |
| 2001 04 15 | 691 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.2+ | | | | |

**(139104)∗ 2001 FH$_{44}$ = 2002 TL$_{132}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37563)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.38979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28160996 | $\omega$ | 64.09784 | | +0.01041940 | +0.99711985 | |
| $a$ | 2.3051757 | $\Omega$ | 206.82373 | | −0.96665423 | −0.00917996 | |
| $e$ | 0.1493079 | $i$ | 9.58312 | | −0.25587309 | +0.07528433 | |
| $P$ | 3.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.8+ | 0.4+ | 2002 09 28 | 608 | (2.6− | 1.2−) | 2002 10 31 | 704 | 0.7− | 0.1− |
| 2001 03 03 | 704 | 1.0− | 0.7+ | 2002 09 28 | 608 | (2.8− | 1.5−) | 2002 10 31 | 704 | (1.7− | 0.0 ) |
| 2001 03 03 | 704 | 1.0+ | 1.5+ | 2002 10 04 | 704 | 0.0 | 0.7+ | 2002 11 02 | 608 | 0.4− | 1.2+ |
| 2001 03 03 | 704 | 0.6− | 0.4+ | 2002 10 04 | 704 | 0.3+ | 0.1− | 2002 11 02 | 608 | 0.8− | 0.7+ |
| 2001 03 03 | 704 | 0.7− | 0.6+ | 2002 10 04 | 704 | 0.3− | 0.3− | 2002 11 02 | 608 | 0.6− | 0.9+ |
| 2001 03 18 | 704 | 1.3+ | 0.5+ | 2002 10 04 | 644 | 0.2+ | 0.5+ | 2002 11 06 | 704 | 0.4+ | 1.0+ |
| 2001 03 18 | 704 | 0.2+ | 0.6+ | 2002 10 04 | 704 | 0.7− | 0.5+ | 2002 11 06 | 704 | 0.6+ | 1.0+ |
| 2001 03 18 | 704 | 0.0 | 0.1− | 2002 10 04 | 644 | 0.2+ | 0.4+ | 2002 11 06 | 704 | 0.3− | 0.8+ |
| 2001 03 18 | 704 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.1+ | 0.3− | 2003 12 26 | 608 | 0.8+ | 0.2+ |
| 2001 03 18 | 704 | 0.4− | 0.2+ | 2002 10 04 | 644 | 0.1+ | 0.4+ | 2003 12 26 | 608 | 0.7+ | 0.0 |
| 2001 03 19 | 699 | 0.3− | 1.4+ | 2002 10 05 | 704 | 0.1+ | 0.7+ | 2003 12 26 | 608 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.4− | 0.2− | 2002 10 05 | 704 | 0.2+ | 0.3+ | 2004 01 18 | 644 | 0.3− | 0.4+ |
| 2001 03 19 | 699 | 0.6+ | 0.2+ | 2002 10 05 | 704 | 0.0 | 0.3+ | 2004 01 18 | 644 | 0.1− | 0.3+ |
| 2001 03 19 | 699 | 0.1− | 0.5+ | 2002 10 05 | 704 | 0.0 | 0.4+ | 2004 01 18 | 644 | 0.2+ | 0.2+ |
| 2001 03 24 | 704 | 0.2+ | 0.2+ | 2002 10 05 | 704 | 0.1+ | 0.6+ | 2004 01 29 | 704 | 1.0− | 0.7− |
| 2001 03 24 | 704 | 1.0− | 0.7− | 2002 10 06 | 644 | 0.1− | 0.2+ | 2004 01 29 | 704 | 0.6+ | 0.2+ |
| 2001 03 24 | 704 | 0.2− | 0.4+ | 2002 10 06 | 644 | 0.2− | 0.2+ | 2004 01 29 | 704 | 0.3− | 0.0 |
| 2001 03 28 | 704 | 0.0 | 0.6+ | 2002 10 06 | 644 | 0.1+ | 0.3+ | 2004 01 29 | 704 | 0.4− | 1.0− |
| 2001 03 28 | 704 | 0.6+ | 0.9− | 2002 10 07 | 699 | 1.0+ | 0.1+ | 2005 07 27 | A50 | 0.7+ | 0.2+ |
| 2001 03 28 | 704 | 0.7+ | 0.4+ | 2002 10 07 | 699 | 0.1+ | 0.1+ | 2005 07 27 | A50 | 0.6+ | 0.2+ |
| 2001 03 28 | 704 | 0.7+ | 0.0 | 2002 10 07 | 699 | 0.1+ | 0.2− | 2005 07 27 | A50 | 1.0− | 1.4+ |
| 2001 03 28 | 704 | 0.3+ | 0.2− | 2002 10 07 | 699 | 0.0 | 0.4+ | 2005 07 27 | A50 | 0.5− | 1.2+ |
| 2001 03 30 | 608 | 0.2− | 1.0+ | 2002 10 11 | 704 | (1.8− | 0.6+) | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2001 03 30 | 608 | 0.4+ | 1.2+ | 2002 10 11 | 704 | (1.8− | 0.5+) | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2001 03 30 | 608 | 0.0 | 0.5+ | 2002 10 11 | 704 | (1.6− | 0.4+) | 2006 11 25 | G96 | 0.4− | 0.4− |
| 2001 04 15 | 699 | 0.3+ | 0.3+ | 2002 10 11 | 704 | (1.6− | 1.0+) | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2001 04 15 | 699 | 0.3+ | 0.6+ | 2002 10 11 | 704 | (1.6− | 0.9+) | 2006 11 25 | 703 | 0.3− | 0.2− |
| 2001 04 15 | 699 | 0.0 | 0.0 | 2002 10 12 | 704 | 0.3− | 0.1− | 2006 11 25 | 703 | 0.1+ | 0.5− |
| 2001 04 15 | 699 | 0.0 | 0.1+ | 2002 10 12 | 704 | 1.0− | 0.3+ | 2006 11 25 | 703 | 0.5− | 0.7− |
| 2002 09 06 | 704 | 0.3− | 0.2− | 2002 10 12 | 704 | 0.3− | 0.9+ | 2006 11 25 | 703 | 0.1+ | 0.4− |
| 2002 09 06 | 704 | 1.3+ | 0.6− | 2002 10 12 | 704 | 0.5+ | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.9+ |
| 2002 09 06 | 704 | 0.1− | 0.7− | 2002 10 12 | 704 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.4+ | 1.0+ |
| 2002 09 06 | 704 | (0.0 | 1.6−) | 2002 10 31 | 704 | 0.5− | 0.4+ | 2006 11 28 | 704 | 1.7+ | 0.2+ |
| 2002 09 06 | 704 | 0.3− | 0.9− | 2002 10 31 | 704 | 0.6− | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2002 09 28 | 608 | (2.4− | 1.6−) | 2002 10 31 | 704 | 0.6− | 0.3− | 2006 11 28 | 704 | 0.9− | 0.2− |

**(139105)∗ 2001 FX$_{46}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 105.74124 | | (2000.0) | | | |
| $n$ | 0.26053195 | $\omega$ | 314.47615 | | −0.17970433 | +0.98322331 |
| $a$ | 2.4278884 | $\Omega$ | 305.14644 | | −0.89134171 | −0.17619823 |
| $e$ | 0.1685437 | $i$ | 2.19217 | | −0.41619264 | −0.04718163 |
| $P$ | 3.78 | $H$ | 15.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | (3.9− | 0.8+) | 2002 10 03 | 704 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2− |
| 1997 03 05 | 691 | (4.0− | 0.6+) | 2002 10 03 | 704 | 0.5− | 0.0 | 2006 09 25 | 691 | 0.4− | 0.2+ |
| 1997 03 05 | 691 | (3.0− | 1.2+) | 2002 10 03 | 704 | (2.0+ | 0.6−) | 2006 10 03 | 691 | 0.1+ | 0.2+ |
| 2001 03 18 | 704 | 0.1− | 1.1+ | 2002 10 07 | 704 | 0.4+ | 0.5+ | 2006 10 03 | 691 | 0.1− | 0.5+ |
| 2001 03 18 | 704 | 0.2+ | 0.9+ | 2002 10 07 | 704 | 0.1− | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.4+ |
| 2001 03 18 | 704 | 0.3− | 0.0 | 2002 10 07 | 704 | (0.6+ | 1.5+) | 2006 10 16 | 691 | 0.3− | 0.2+ |
| 2001 03 18 | 704 | 0.8+ | 0.0 | 2004 02 26 | 695 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.5+ |
| 2001 03 19 | 699 | 0.1− | 0.4+ | 2004 02 26 | 695 | 0.1− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2001 03 19 | 699 | 0.4− | 0.9+ | 2004 02 27 | 695 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2001 03 19 | 699 | (1.7+ | 0.2−) | 2004 02 27 | 695 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 2001 03 19 | 699 | 1.3+ | 0.3+ | 2005 04 19 | 703 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.4+ |
| 2001 03 23 | 699 | 0.2+ | 0.2+ | 2005 04 19 | 703 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 03 23 | 699 | 1.3+ | 0.1− | 2005 04 19 | 703 | 1.0− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 03 23 | 699 | 0.0 | 0.7+ | 2005 04 19 | 703 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 03 23 | 699 | 0.5+ | 0.2+ | 2005 05 04 | 644 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 03 24 | 704 | 0.5+ | 0.7+ | 2005 05 04 | 644 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 03 24 | 704 | 0.4− | 0.0 | 2005 05 04 | 644 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 03 24 | 704 | 0.8+ | 0.7+ | 2005 05 08 | E12 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 03 24 | 704 | 0.1+ | 0.9+ | 2005 05 08 | E12 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 03 28 | 704 | (0.7− | 2.8+) | 2005 05 08 | E12 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 03 28 | 704 | 0.3+ | 0.4+ | 2005 05 08 | E12 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2001 03 28 | 704 | 0.1+ | 0.6+ | 2005 05 19 | 644 | 0.4+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2001 04 01 | 704 | 0.1+ | 0.2− | 2005 05 19 | 644 | 0.4+ | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2001 04 01 | 704 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2001 04 01 | 704 | 1.1+ | 0.4+ | 2005 05 30 | 699 | 1.2+ | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 04 24 | 699 | 0.2− | 0.1− | 2005 05 30 | 699 | 0.8+ | 1.0+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2001 04 24 | 699 | 0.4+ | 0.3+ | 2005 05 30 | 699 | 0.8+ | 0.3+ | 2006 11 19 | 704 | 0.5− | 1.3+ |
| 2001 04 24 | 699 | 0.1− | 0.4+ | 2005 06 22 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 1.2+ |
| 2001 04 24 | 699 | 0.9− | 1.1+ | 2005 06 22 | 644 | 0.1+ | 0.8+ | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2002 10 03 | 704 | 0.6− | 0.1+ | 2005 06 22 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.8+ |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.3+ | | | | |

**(139106)∗ 2001 FC$_{47}$ = 1999 XY$_{262}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13251)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 159.34280 | | (2000.0) | | | |
| $n$ | 0.26730294 | $\omega$ | 184.68027 | | −0.80636947 | +0.59079516 |
| $a$ | 2.3867131 | $\Omega$ | 31.58252 | | −0.54092259 | −0.71829748 |
| $e$ | 0.1474669 | $i$ | 2.95584 | | −0.23910464 | −0.36743682 |
| $P$ | 3.69 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.2− | 0.2+ | 2001 04 13 | 691 | 0.5+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.5+ |
| 1995 11 24 | 691 | 0.3− | 0.2− | 2001 04 14 | 691 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1995 11 24 | 691 | 0.1− | 0.3− | 2001 04 14 | 691 | 0.2+ | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 1995 11 30 | 691 | 0.1+ | 0.5− | 2001 04 14 | 691 | 0.1+ | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 1995 11 30 | 691 | 0.5+ | 0.3− | 2001 04 16 | 691 | 0.4+ | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.3+ |
| 1995 11 30 | 691 | 0.4+ | 0.0 | 2001 04 16 | 691 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 1997 03 06 | 704 | (1.5+ | 2.7+) | 2001 04 16 | 691 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 1997 03 06 | 704 | 0.7+ | 0.2+ | 2001 04 18 | 704 | 1.0+ | 1.0+ | 2006 10 15 | 691 | 0.3− | 0.4+ |
| 1999 12 14 | 691 | 0.1− | 0.1− | 2001 04 18 | 704 | 0.7− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.4+ |
| 1999 12 14 | 691 | 0.0 | 0.5− | 2001 04 18 | 704 | (0.2− | 1.7+) | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 1999 12 14 | 691 | 0.2+ | 0.3− | 2001 04 18 | 704 | 1.0− | 1.0− | 2006 10 19 | 691 | 0.5− | 0.2+ |
| 2001 03 17 | 691 | 0.2− | 0.3+ | 2001 04 18 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 03 17 | 691 | 0.3+ | 0.1+ | 2001 04 23 | 691 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2001 03 17 | 691 | 0.1+ | 0.3+ | 2001 04 23 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2001 03 18 | 704 | 0.0 | 0.3+ | 2001 04 23 | 691 | 0.5+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.6+ |
| 2001 03 18 | 704 | 0.1+ | 0.3+ | 2001 04 24 | 608 | 0.1− | 0.8− | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2001 03 18 | 704 | 0.2− | 0.1− | 2001 04 24 | 608 | 0.3− | 0.5− | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2001 03 18 | 704 | 0.1− | 0.0 | 2001 04 24 | 608 | 0.7+ | 0.3− | 2006 10 27 | 691 | 0.4− | 0.3+ |
| 2001 03 18 | 704 | 0.0 | 0.6+ | 2001 05 18 | 699 | 1.3− | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.6+ |
| 2001 03 24 | 704 | 0.1− | 0.2+ | 2001 05 18 | 699 | 0.9− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2001 03 24 | 704 | 1.4+ | 0.7− | 2001 05 18 | 699 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 03 24 | 704 | 0.8+ | 0.7+ | 2001 05 18 | 699 | 0.9− | 0.6− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2001 03 24 | 704 | 0.6+ | 0.3− | 2003 12 22 | 704 | 0.4+ | 0.6− | 2006 10 27 | G96 | 0.5− | 0.0 |
| 2001 03 29 | 699 | 1.5− | 0.1+ | 2003 12 22 | 704 | 0.4− | 0.5− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2001 03 29 | 699 | 0.7− | 0.3+ | 2003 12 22 | 704 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 03 29 | 699 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.2− | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2001 03 29 | 699 | 0.6− | 0.1− | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2001 04 01 | 704 | 0.4+ | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.6+ | 2006 11 10 | 691 | 0.3+ | 0.4+ |
| 2001 04 01 | 704 | 0.5+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 04 01 | 704 | (0.5+ | 2.0−) | 2006 09 25 | G96 | 0.4− | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.2+ |
| 2001 04 01 | 704 | (0.1+ | 2.7−) | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.6+ |
| 2001 04 13 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2001 04 13 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.9+ | 2006 11 19 | 691 | 0.1− | 0.4+ |

**(139107)∗ 2001 FL$_{47}$ = 1997 EG$_{42}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12017)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 133.80774 | | (2000.0) | | | |
| $n$ | 0.26466242 | $\omega$ | 69.77903 | | −0.36026118 | +0.93285038 |
| $a$ | 2.4025616 | $\Omega$ | 179.10097 | | −0.88629589 | −0.34180296 |
| $e$ | 0.1996489 | $i$ | 5.23053 | | −0.29101800 | −0.11384595 |
| $P$ | 3.72 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 29 | 691 | 0.0 | 0.1− | 2001 04 15 | 608 | 0.3+ | 0.2+ | 2002 10 12 | 704 | 0.6− | 0.3+ |
| 1995 11 29 | 691 | 0.1− | 0.0 | 2001 04 15 | 608 | 0.3+ | 0.2+ | 2002 10 12 | 704 | 0.2− | 0.1− |
| 1995 11 29 | 691 | 0.0 | 0.0 | 2001 04 16 | 704 | 0.1− | 0.1+ | 2002 10 15 | 704 | 0.2+ | 0.0 |
| 1997 03 03 | 691 | 1.1− | 0.5− | 2001 04 16 | 704 | 0.1+ | 0.3+ | 2002 10 15 | 704 | 0.1− | 1.3+ |
| 1997 03 03 | 691 | 1.0− | 0.3− | 2001 04 16 | 704 | 0.5+ | 0.0 | 2002 10 15 | 704 | 0.9− | 1.1+ |
| 1997 03 03 | 691 | 0.3+ | 0.3− | 2001 04 16 | 704 | 0.4− | 0.0 | 2002 10 31 | 704 | 0.3− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 704 | 0.5+ | 0.0 | 2001 04 16 | 704 | 0.5− | 0.7+ | 2002 10 31 | 704 | 0.4+ | 0.7+ | | |
| 1997 03 10 | 704 | 0.9+ | 0.4+ | 2001 04 17 | 699 | 0.1− | 0.2+ | 2002 10 31 | 704 | 0.2+ | 0.4+ | | |
| 1997 03 11 | 704 | 1.9+ | 0.2+ | 2001 04 17 | 699 | 0.2− | 0.8+ | 2002 10 31 | 704 | 0.3− | 0.9+ | | |
| 1997 03 11 | 704 | 0.5+ | 0.8− | 2001 04 17 | 699 | 0.2+ | 0.8+ | 2005 07 05 | 704 | 0.3− | 0.4+ | | |
| 1997 03 12 | 704 | 1.4+ | 0.0 | 2001 04 17 | 699 | 0.6+ | 0.7+ | 2005 07 05 | 704 | 0.4+ | 0.3+ | | |
| 1997 03 12 | 704 | 0.6+ | 0.2+ | 2001 05 23 | 699 | 0.9+ | 0.2− | 2005 07 05 | 704 | 0.7− | 0.3− | | |
| 2001 02 22 | 704 | 0.4+ | 0.7+ | 2001 05 23 | 699 | 0.3+ | 0.2− | 2005 07 05 | 704 | 0.2+ | 0.8+ | | |
| 2001 02 22 | 704 | 0.8+ | 0.7− | 2001 05 23 | 699 | 0.2+ | 0.5− | 2006 09 30 | G96 | 0.0 | 0.3+ | | |
| 2001 02 22 | 704 | 0.5+ | 0.1+ | 2001 05 23 | 699 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.3+ | | |
| 2001 02 22 | 704 | 0.7+ | 0.1+ | 2001 06 15 | 704 | 0.3− | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.2+ | | |
| 2001 02 22 | 704 | 0.3− | 1.1+ | 2001 06 15 | 704 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 2001 03 18 | 704 | 0.1− | 0.1+ | 2001 06 15 | 704 | 0.2+ | 1.1+ | 2006 10 03 | G96 | 0.2− | 0.2− | | |
| 2001 03 18 | 704 | 0.2+ | 0.5+ | 2001 06 15 | 704 | (0.4+ | 1.6+) | 2006 10 03 | G96 | 0.2− | 0.0 | | |
| 2001 03 18 | 704 | 0.2− | 0.1+ | 2001 06 15 | 704 | 0.9− | 0.4+ | 2006 10 03 | G96 | 0.5+ | 0.3− | | |
| 2001 03 18 | 704 | 0.4+ | 0.6+ | 2002 09 29 | 608 | 0.1+ | 0.7+ | 2006 10 03 | G96 | 0.5+ | 0.2− | | |
| 2001 03 18 | 704 | 0.1− | 1.1+ | 2002 09 29 | 608 | 0.1− | 1.3+ | 2006 10 15 | A44 | 0.0 | 1.1+ | | |
| 2001 03 24 | 704 | 0.1+ | 0.4− | 2002 09 29 | 608 | 0.1+ | 0.9+ | 2006 10 15 | A44 | 0.6+ | 0.1+ | | |
| 2001 03 24 | 704 | 0.0 | 1.1+ | 2002 10 02 | 704 | 0.0 | 0.7+ | 2006 10 16 | 703 | 1.1− | 0.2+ | | |
| 2001 03 24 | 704 | 0.1+ | 0.5+ | 2002 10 02 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | (0.9+ | 1.6+) | | |
| 2001 03 24 | 704 | 0.2+ | 0.8+ | 2002 10 02 | 704 | 0.9− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.2+ | | |
| 2001 03 28 | 704 | 0.5+ | 1.3+ | 2002 10 02 | 704 | 0.8− | 1.1+ | 2006 10 16 | 703 | 0.2− | 1.0+ | | |
| 2001 03 28 | 704 | 0.5+ | 1.2+ | 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.3+ | | |
| 2001 03 28 | 704 | 0.7+ | 1.4+ | 2002 10 03 | 704 | (1.8− | 0.9+) | 2006 10 18 | 691 | 0.2− | 0.4+ | | |
| 2001 03 28 | 704 | 0.1− | 0.0 | 2002 10 03 | 704 | 0.2− | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.4+ | | |
| 2001 03 28 | 704 | 0.5+ | 0.5+ | 2002 10 03 | 704 | 0.1− | 1.4+ | 2006 10 22 | 691 | 0.0 | 0.2+ | | |
| 2001 03 29 | 699 | 0.9+ | 0.8+ | 2002 10 07 | 644 | 0.6− | 0.3+ | 2006 10 22 | 691 | 0.2+ | 0.0 | | |
| 2001 03 29 | 699 | 0.3+ | 0.8+ | 2002 10 07 | 644 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.2+ | | |
| 2001 03 29 | 699 | 0.2+ | 1.0+ | 2002 10 07 | 704 | 0.4+ | 0.6− | 2006 11 09 | 644 | 0.5− | 0.2+ | | |
| 2001 03 29 | 699 | 0.1+ | 1.1+ | 2002 10 07 | 704 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.8+ | | |
| 2001 04 01 | 704 | 0.5+ | 0.2+ | 2002 10 07 | 704 | 0.1− | 1.2− | 2006 11 09 | 644 | 0.0 | 0.7+ | | |
| 2001 04 01 | 704 | 0.1− | 0.1+ | 2002 10 07 | 644 | 0.6− | 0.5+ | 2006 11 11 | 703 | 1.5+ | 0.4− | | |
| 2001 04 01 | 704 | 0.0 | 0.3− | 2002 10 07 | 704 | 1.4+ | 0.2− | 2006 11 11 | 703 | 0.7− | 0.1− | | |
| 2001 04 01 | 704 | 0.1+ | 0.4− | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.2− | 1.0+ | | |
| 2001 04 01 | 704 | 0.2− | 0.7+ | 2002 10 11 | 704 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.5− | | |
| 2001 04 14 | 106 | (1.8+ | 1.2−) | 2002 10 11 | 704 | 0.9− | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.1+ | | |
| 2001 04 14 | 106 | 0.0 | 1.5+ | 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4+ | | |
| 2001 04 14 | 106 | 0.4− | 0.6+ | 2002 10 11 | 704 | 0.3+ | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.3+ | | |
| 2001 04 15 | 608 | 0.4+ | 0.3+ | 2002 10 12 | 704 | (0.1− | 1.6+) | 2006 11 16 | G96 | 0.1− | 0.3+ | | |

**(139108)∗ 2001 FA$_{50}$ = 2002 TT$_{373}$ = 2005 JA$_{44}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74940)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.45747 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26488714 | $\omega$ | 212.76402 | | −0.17415824 | +0.98460102 | |
| $a$ | 2.4012026 | $\Omega$ | 47.21124 | | −0.89895634 | −0.15268876 | |
| $e$ | 0.1638305 | $i$ | 1.18349 | | −0.40192836 | −0.08512922 | |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 1.1− | 1.4+ | 2005 05 09 | 704 | 0.9+ | 0.6+ | 2005 07 04 | 644 | 0.1− | 0.1+ | | |
| 2001 03 18 | 704 | 0.9− | 0.9+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2005 07 04 | 644 | 0.1+ | 0.3+ | | |
| 2001 03 18 | 704 | 0.7− | 0.6+ | 2005 05 10 | G96 | 0.1− | 0.2− | 2005 07 04 | 644 | 0.3+ | 0.1− | | |
| 2001 03 20 | 691 | 0.4+ | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.1− | | |
| 2001 03 20 | 691 | 0.4+ | 0.6+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 2001 03 20 | 691 | 0.4+ | 0.6+ | 2005 05 10 | G96 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− | | |
| 2001 03 24 | 704 | 0.3+ | 0.1+ | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 2001 03 24 | 704 | 0.8+ | 0.6+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.4− | 0.1+ | | |
| 2001 03 24 | 704 | 0.6+ | 0.1− | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.3− | 0.1− | | |
| 2001 03 24 | 704 | 0.9+ | 0.1− | 2005 05 10 | 703 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.0 | | |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2005 05 10 | 703 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.4− | 0.1+ | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 05 10 | 703 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.1+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2005 05 10 | 703 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 | | |
| 2002 10 11 | 645 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.0 | | |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.0 | | |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 10 29 | G96 | 0.3+ | 0.0 | | |
| 2005 03 10 | G96 | 0.1+ | 0.2− | 2005 06 04 | 703 | 0.5− | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.4− | | |
| 2005 03 10 | G96 | 0.3− | 0.1− | 2005 06 04 | 704 | 0.4− | 0.4− | 2006 10 29 | G96 | 0.0 | 0.4− | | |
| 2005 03 10 | G96 | 0.3− | 0.1− | 2005 06 04 | 703 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.2− | | |
| 2005 03 10 | G96 | 0.0 | 0.2+ | 2005 06 04 | 703 | 0.1+ | 0.3− | 2006 10 29 | G96 | 0.1+ | 0.0 | | |
| 2005 04 11 | G96 | 0.3− | 0.2+ | 2005 06 04 | 704 | 0.2− | 0.8+ | 2006 10 29 | G96 | 0.4+ | 0.1− | | |
| 2005 04 11 | G96 | 0.3− | 0.1+ | 2005 06 04 | 703 | 1.1− | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.2− | | |
| 2005 04 11 | G96 | 0.1− | 0.1− | 2005 06 04 | 704 | 0.4− | 0.4− | 2006 10 29 | G96 | 0.4+ | 0.3+ | | |
| 2005 04 11 | G96 | 0.4− | 0.1− | 2005 06 04 | 704 | 0.6+ | 1.2− | 2006 11 09 | 691 | 0.0 | 0.4+ | | |
| 2005 05 04 | 704 | 0.2− | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.3− | 0.5+ | | |
| 2005 05 04 | 704 | 0.5− | 0.2− | 2005 06 11 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.4+ | | |
| 2005 05 04 | G96 | 0.1+ | 0.2+ | 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.4+ | 0.1+ | | |
| 2005 05 04 | 704 | 0.1− | 1.1+ | 2005 06 11 | 703 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.9+ | | |
| 2005 05 04 | G96 | 0.1+ | 0.2− | 2005 06 11 | 703 | 0.4+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.6+ | | |
| 2005 05 04 | G96 | 0.1− | 0.1− | 2005 06 11 | 703 | (2.6− | 0.0 ) | 2006 11 22 | G96 | 0.1+ | 0.5− | | |
| 2005 05 04 | G96 | 0.0 | 0.2+ | 2005 06 11 | 703 | 1.4− | 0.4− | 2006 11 22 | G96 | 0.5+ | 0.1+ | | |
| 2005 05 04 | 644 | 0.5+ | 0.1+ | 2005 06 14 | 699 | 0.6+ | 1.0+ | 2006 11 22 | G96 | 0.0 | 0.4− | | |
| 2005 05 04 | 644 | 0.2+ | 0.0 | 2005 06 14 | 699 | 0.4+ | 0.8+ | 2006 11 22 | G96 | 0.1− | 0.1− | | |
| 2005 05 04 | 644 | 0.3+ | 0.1+ | 2005 06 14 | 699 | 0.2+ | 0.5+ | 2006 11 27 | 691 | 0.2− | 0.5+ | | |
| 2005 05 09 | 704 | 0.0 | 0.5+ | 2005 06 14 | 699 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.6+ | | |
| 2005 05 09 | 704 | 0.3+ | 0.5− | 2005 06 15 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.8− | 0.0 | | |
| 2005 05 09 | 704 | 0.9+ | 0.0 | 2005 06 15 | 691 | 0.5+ | 0.5+ | | | | | | |
| 2005 05 09 | 704 | 0.2+ | 0.1− | 2005 06 15 | 691 | 0.1+ | 0.2+ | | | | | | |

**(139109)∗ 2001 FV$_{50}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.18769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26121791 | $\omega$ | 217.16031 | | −0.99889964 | −0.02110598 | |
| $a$ | 2.4236361 | $\Omega$ | 321.56581 | | +0.03757220 | −0.89459543 | |
| $e$ | 0.0937428 | $i$ | 3.86323 | | −0.02806848 | −0.44637826 | |
| $P$ | 3.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 08 | 385 | 0.4− | 0.1+ | 2002 08 27 | 644 | 0.2− | 0.2− | 2006 08 21 | 691 | 0.3− | 0.1− | | |
| 1997 03 08 | 385 | (3.1+ | 0.3−) | 2002 08 27 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.1− | | |
| 2001 03 18 | 704 | 0.2− | 0.3+ | 2002 09 03 | 843 | 0.2+ | 0.8+ | 2006 08 28 | 703 | 1.2+ | 0.1+ | | |
| 2001 03 18 | 704 | 0.1+ | 1.2+ | 2002 09 03 | 843 | (2.0+ | 1.5+) | 2006 08 28 | 703 | 0.2+ | 0.1− | | |
| 2001 03 18 | 704 | (1.6+ | 0.2+) | 2002 09 04 | 843 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.5− | 1.1+ | | |
| 2001 03 18 | 704 | 1.0+ | 1.3+ | 2002 09 04 | 644 | 0.4− | 0.6+ | 2006 09 19 | 699 | (1.6+ | 0.2+) | | |
| 2001 03 24 | 704 | 0.1+ | 0.5+ | 2002 09 04 | 843 | (3.6+ | 3.1+) | 2006 09 19 | 699 | 0.1− | 0.4+ | | |
| 2001 03 24 | 704 | 0.7+ | 0.6+ | 2002 09 04 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.5− | 0.3− | | |
| 2001 03 24 | 699 | 0.8+ | 0.7+ | 2002 09 04 | 644 | 0.0 | 0.8+ | 2006 09 19 | 703 | 0.1+ | 0.1+ | | |
| 2001 03 24 | 704 | 0.4− | 0.2+ | 2002 09 05 | 843 | 0.8+ | 1.2− | 2006 09 19 | 699 | 0.1+ | 0.1+ | | |
| 2001 03 24 | 704 | 0.3+ | 0.2− | 2002 09 05 | 843 | (1.2− | 2.1−) | 2006 09 19 | 703 | 0.4− | 0.6− | | |
| 2001 03 24 | 704 | 0.3− | 1.2− | 2002 09 05 | 843 | (1.9+ | 0.3+) | 2006 09 19 | 703 | 0.8− | 0.1+ | | |
| 2001 03 24 | 699 | 0.8− | 0.6+ | 2002 09 05 | 704 | 0.5+ | 1.5+ | 2006 09 19 | 699 | 0.0 | 0.7− | | |
| 2001 03 24 | 699 | (2.0+ | 2.1+) | 2002 09 05 | 704 | 0.9+ | 1.0− | 2006 09 20 | 691 | 0.1+ | 0.2+ | | |
| 2001 03 24 | 699 | 1.2+ | 0.7+ | 2002 09 05 | 704 | (1.4+ | 1.6−) | 2006 09 20 | 691 | 0.1− | 0.1+ | | |
| 2001 04 16 | 699 | 0.1+ | 0.0 | 2002 09 05 | 704 | (1.6− | 1.5−) | 2006 09 20 | 691 | 0.3− | 0.2+ | | |
| 2001 04 16 | 699 | 0.3+ | 0.5+ | 2003 12 18 | 704 | 0.4− | 0.8+ | 2006 09 25 | 699 | 0.4+ | 0.6+ | | |
| 2001 04 16 | 699 | 0.1+ | 0.4− | 2003 12 18 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.7+ | 0.8+ | | |
| 2001 04 16 | 699 | 0.3− | 0.5+ | 2003 12 18 | 704 | 0.1− | 0.8+ | 2006 09 25 | 699 | (2.1+ | 1.6+) | | |
| 2001 04 23 | 704 | 0.3+ | 0.2− | 2003 12 27 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.2+ | | |
| 2001 04 23 | 704 | 0.1+ | 0.4− | 2003 12 27 | 704 | 0.3− | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2001 04 23 | 704 | 0.5− | 0.7− | 2003 12 27 | 704 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2001 04 23 | 704 | 0.0 | 0.0 | 2005 07 03 | 644 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.5− | | |
| 2002 08 16 | 291 | 0.2− | 0.0 | 2005 07 03 | 644 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.4− | | |
| 2002 08 16 | 291 | 0.5− | 0.1+ | 2005 07 03 | 644 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1− | | |
| 2002 08 16 | 291 | 0.2− | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 27 | 644 | 0.0 | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.3+ | | |

**(139110)∗ 2001 FJ$_{51}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.31759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28345593 | $\omega$ | 184.45440 | | −0.91367768 | +0.40599224 | |
| $a$ | 2.2951568 | $\Omega$ | 19.53292 | | −0.37111744 | −0.81423080 | |
| $e$ | 0.1756801 | $i$ | 3.26852 | | −0.16572552 | −0.41496808 | |
| $P$ | 3.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.6− | 1.2− | 2001 03 29 | 699 | 0.1+ | 0.5+ | 2006 10 13 | 691 | 0.0 | 0.2+ |
| 1994 04 03 | 691 | 0.4− | 1.0− | 2001 04 01 | 704 | 0.2+ | 0.8+ | 2006 10 13 | 691 | 0.1+ | 0.3+ |
| 1994 04 03 | 691 | 0.5− | 0.9− | 2001 04 01 | 704 | 0.8+ | 0.6+ | 2006 10 13 | 691 | 0.2− | 0.4+ |
| 2001 03 18 | 704 | (2.0+ | 1.6+) | 2001 04 01 | 704 | (0.6− | 2.5+) | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2001 03 18 | 704 | 1.1+ | 1.0+ | 2001 04 01 | 704 | (1.7+ | 0.1−) | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2001 03 18 | 704 | 0.5− | 1.2+ | 2001 04 18 | 704 | (0.2− | 2.1+) | 2006 10 21 | 691 | 0.5− | 0.1+ |
| 2001 03 18 | 704 | 1.4+ | 0.8+ | 2001 04 18 | 704 | (1.2+ | 2.0+) | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2001 03 18 | 608 | 0.3− | 0.7+ | 2001 04 18 | 704 | (2.0+ | 0.8−) | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2001 03 18 | 608 | 0.1− | 1.0+ | 2001 04 18 | 704 | 0.3+ | 1.1− | 2006 11 01 | G96 | 0.3+ | 0.5− |
| 2001 03 18 | 608 | 0.5− | 0.7+ | 2003 12 18 | 704 | (1.9+ | 0.4−) | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2001 03 23 | 699 | (1.6+ | 0.2+) | 2003 12 18 | 704 | (1.8+ | 1.3−) | 2006 11 02 | 691 | 0.3+ | 0.8− |
| 2001 03 23 | 699 | 0.8+ | 0.3+ | 2003 12 18 | 691 | 0.1− | 0.1+ | 2006 11 02 | 691 | 0.5+ | 0.5− |
| 2001 03 23 | 699 | 0.5+ | 0.8+ | 2003 12 18 | 704 | (1.8+ | 0.7−) | 2006 11 02 | 691 | 0.3+ | 0.1− |
| 2001 03 23 | 699 | 1.0+ | 0.2+ | 2003 12 18 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 03 24 | 704 | 0.1+ | 0.2+ | 2003 12 18 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 03 24 | 704 | 0.2− | 0.6+ | 2003 12 23 | 704 | 0.5+ | 0.9+ | 2006 11 09 | 644 | 0.4− | 0.0 |
| 2001 03 24 | 704 | (0.4+ | 1.5+) | 2003 12 23 | 704 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2001 03 24 | 704 | 0.4+ | 0.9+ | 2003 12 23 | 704 | 0.6− | 0.3− | 2006 11 13 | G96 | 0.9+ | 0.5− |
| 2001 03 28 | 704 | 0.2− | 0.2− | 2004 01 22 | 704 | 0.2+ | 0.5+ | 2006 11 13 | G96 | 0.7+ | 0.7− |
| 2001 03 28 | 704 | 0.3+ | 0.4− | 2004 01 22 | 704 | 0.1+ | 1.1+ | 2006 11 13 | G96 | 0.7− | 0.6− |
| 2001 03 28 | 704 | 0.2+ | 0.8+ | 2004 01 22 | 704 | 0.7+ | 0.2+ | 2006 11 17 | 703 | (1.8− | 0.5−) |
| 2001 03 28 | 704 | 0.6− | 0.6+ | 2004 01 22 | 704 | 0.4+ | 0.4− | 2006 11 17 | 703 | 0.9− | 0.7+ |
| 2001 03 28 | 704 | (1.7− | 1.5+) | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.8+ |
| 2001 03 29 | 699 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.8+ |
| 2001 03 29 | 699 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.4− | | | | |
| 2001 03 29 | 699 | 0.4+ | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.3− | | | | |

**(139111)∗ 2001 FP$_{53}$ = 1999 VU$_{135}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12022)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.11168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27870775 | $\omega$ | 134.48417 | | −0.94508654 | −0.32252350 | |
| $a$ | 2.3211508 | $\Omega$ | 26.83171 | | +0.25669254 | −0.83257100 | |
| $e$ | 0.1822278 | $i$ | 6.72030 | | +0.20228783 | −0.45033779 | |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.7+ | 0.1+ | 2001 04 23 | 704 | 0.8+ | 1.2+ | 2006 09 17 | 691 | 0.1− | 0.3+ |
| 1999 11 09 | 704 | 0.7− | 0.3− | 2001 04 23 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 1999 11 09 | 704 | 0.4− | 0.3+ | 2001 04 23 | 704 | 0.6+ | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 0.8+ | 0.3+ | 2001 04 27 | 704 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.6+ |
| 1999 11 14 | 704 | 0.0 | 0.4− | 2001 04 27 | 704 | 0.6− | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 1999 11 14 | 704 | 0.3− | 0.3− | 2001 04 27 | 704 | 0.1− | 0.8+ | 2006 09 25 | 691 | (0.8+ | 1.6+) |
| 1999 11 14 | 704 | 0.6− | 1.3+ | 2001 04 27 | 704 | 1.0+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2001 02 22 | 691 | 0.2− | 0.1+ | 2001 04 27 | 704 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2001 02 22 | 691 | 0.1− | 0.3+ | 2001 04 30 | 704 | 0.4+ | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.7− |
| 2001 02 22 | 691 | 0.3− | 0.0 | 2001 04 30 | 704 | (1.9+ | 1.5+) | 2006 09 29 | 691 | 0.0 | 0.4+ |
| 2001 03 18 | 704 | 0.1− | 0.5+ | 2001 04 30 | 704 | 0.6− | 1.4+ | 2006 09 29 | 691 | 0.5− | 0.1+ |
| 2001 03 18 | 704 | 0.0 | 0.1− | 2001 04 30 | 704 | 1.0+ | 0.1+ | 2006 09 29 | 691 | 0.3− | 0.5+ |
| 2001 03 18 | 704 | 0.1+ | 0.7+ | 2001 05 11 | 608 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.3− | 0.1+ |
| 2001 03 18 | 704 | 0.2+ | 0.0 | 2001 05 11 | 608 | 0.4+ | 0.3− | 2006 10 03 | 691 | 0.1+ | 0.9+ |
| 2001 03 18 | 704 | 0.0 | 0.0 | 2001 05 11 | 608 | 0.2+ | 0.1+ | 2006 10 03 | 691 | 0.6− | 0.7+ |
| 2001 03 24 | 704 | 1.2+ | 0.5− | 2003 11 20 | 704 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.6+ |
| 2001 03 24 | 704 | (0.3− | 2.2−) | 2003 11 20 | 704 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.8+ |
| 2001 03 24 | 699 | 1.3+ | 0.4+ | 2003 11 20 | 704 | 0.3+ | 0.8+ | 2006 10 10 | 644 | 0.4− | 0.7+ |
| 2001 03 24 | 704 | 0.2+ | 0.6− | 2003 11 20 | 704 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.5− |
| 2001 03 24 | 699 | 0.8+ | 0.4+ | 2003 11 20 | 704 | 0.6+ | 0.8+ | 2006 10 15 | 703 | 0.4+ | 0.2− |
| 2001 03 24 | 704 | 0.8+ | 1.2− | 2003 11 24 | 704 | 1.4− | 0.5+ | 2006 10 15 | 703 | 1.2− | 1.4− |
| 2001 03 24 | 699 | 0.5+ | 0.0 | 2003 11 24 | 704 | 0.4+ | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.0 |
| 2001 03 24 | 699 | 0.2− | 0.5+ | 2003 11 24 | 704 | 0.4+ | 0.6+ | 2006 10 17 | G96 | 0.9+ | 0.5− |
| 2001 04 01 | 704 | 0.3− | 0.9+ | 2003 11 24 | 704 | 0.4+ | 1.0+ | 2006 10 17 | G96 | 1.1+ | 0.0 |
| 2001 04 01 | 704 | 1.5+ | 1.0+ | 2003 11 24 | 704 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.2+ |
| 2001 04 01 | 704 | 0.4+ | 0.1+ | 2003 12 03 | 704 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.2− |
| 2001 04 01 | 704 | 0.2− | 0.4− | 2003 12 03 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 703 | (1.0+ | 2.1+) |
| 2001 04 17 | 704 | 0.4− | 0.8+ | 2003 12 03 | 704 | 0.6+ | 0.5− | 2006 10 21 | 703 | (0.7− | 2.1+) |
| 2001 04 17 | 704 | 0.6+ | 0.7+ | 2003 12 03 | 704 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.2− | 1.1+ |
| 2001 04 17 | 704 | 0.5− | 0.4+ | 2003 12 17 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.9+ |
| 2001 04 17 | 704 | 0.2+ | 0.6+ | 2003 12 17 | 704 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2001 04 17 | 704 | 0.6+ | 0.3+ | 2003 12 17 | 704 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2001 04 18 | 704 | 0.1− | 0.0 | 2003 12 17 | 704 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2001 04 18 | 704 | 0.1+ | 0.4− | 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 04 18 | 704 | 0.1− | 0.4+ | 2003 12 24 | 106 | 0.0 | 0.8− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2001 04 18 | 704 | 0.0 | 0.4+ | 2003 12 24 | 106 | 0.2− | 0.7− | 2006 11 27 | G96 | 0.4− | 0.2+ |
| 2001 04 18 | 704 | 0.1+ | 0.7+ | 2003 12 24 | 106 | 0.6− | 0.5− | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2001 04 18 | 608 | 0.2− | 0.7+ | 2003 12 27 | 704 | 0.2+ | 0.8+ | 2006 11 27 | G96 | 0.2− | 0.2+ |
| 2001 04 18 | 608 | 0.1+ | 0.8+ | 2003 12 27 | 704 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2001 04 18 | 608 | 0.3− | 0.8+ | 2003 12 27 | 704 | 0.5− | 0.1− | 2006 11 27 | G96 | 0.0 | 0.4+ |
| 2001 04 23 | 704 | 0.6+ | 0.8+ | 2003 12 27 | 704 | 0.6− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2001 04 23 | 704 | 0.6+ | 0.8+ | 2003 12 27 | 704 | 0.5− | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.2− |

**(139112)∗ 2001 FZ$_{53}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.44744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23354023 | $\omega$ | 52.15953 | | −0.30882803 | +0.93009714 | |
| $a$ | 2.6115294 | $\Omega$ | 202.48596 | | −0.95045618 | −0.29399483 | |
| $e$ | 0.2514048 | $i$ | 31.32882 | | +0.03547232 | +0.22019616 | |
| $P$ | 4.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.2− | 0.1+ | 2001 06 19 | 704 | 0.7− | 0.2+ | 2005 04 15 | 703 | 0.4− | 0.8+ |
| 2001 03 18 | 704 | 0.9− | 0.5+ | 2001 06 19 | 704 | 0.0 | 0.7− | 2005 04 15 | 703 | 0.7− | 1.0+ |
| 2001 03 18 | 704 | 0.1+ | 0.2+ | 2001 06 19 | 704 | 0.1− | 0.5− | 2005 04 15 | 703 | 0.6− | 0.3+ |
| 2001 03 18 | 704 | 0.8− | 1.5− | 2002 10 03 | 704 | 0.2+ | 0.7+ | 2005 04 15 | 703 | 0.3− | 0.1+ |
| 2001 03 18 | 704 | 0.6− | 0.2− | 2002 10 03 | 704 | (1.8+ | 0.2−) | 2005 05 06 | 703 | 0.6− | 0.4+ |
| 2001 03 24 | 704 | 1.4+ | 1.1+ | 2002 10 03 | 704 | 0.6+ | 0.8+ | 2005 05 06 | 703 | 0.5− | 0.4− |
| 2001 03 24 | 704 | 1.0+ | 0.1+ | 2002 10 03 | 704 | 0.1− | 0.8+ | 2005 05 06 | 703 | 1.0− | 0.6+ |
| 2001 03 24 | 704 | 1.1+ | 0.4− | 2002 10 07 | 704 | 0.4− | 0.4− | 2005 05 06 | 703 | 0.3− | 0.2+ |
| 2001 03 26 | 608 | 0.1+ | 0.9− | 2002 10 07 | 704 | 0.0 | 0.2+ | 2005 05 11 | 703 | 0.5− | 0.9− |
| 2001 03 26 | 608 | 0.9+ | 0.2+ | 2002 10 07 | 704 | (3.0+ | 0.4+) | 2005 05 11 | 703 | 1.0− | 0.5+ |
| 2001 03 26 | 608 | 0.4+ | 1.0− | 2002 10 07 | 704 | 0.4+ | 0.2+ | 2005 05 11 | 703 | (0.1− | 1.7−) |
| 2001 04 16 | 704 | 0.6− | 0.1+ | 2002 10 31 | 704 | 0.5− | 1.0+ | 2005 05 11 | 703 | (1.5− | 1.7−) |
| 2001 04 16 | 704 | 0.6+ | 0.8+ | 2002 10 31 | 704 | 0.1+ | 1.1+ | 2006 09 24 | 113 | 0.2− | 0.1+ |
| 2001 04 16 | 704 | 0.1− | 0.7+ | 2002 10 31 | 704 | (1.7+ | 1.0+) | 2006 09 24 | 113 | 0.1+ | 0.2+ |
| 2001 04 16 | 704 | 0.2− | 0.5+ | 2005 03 02 | 704 | 0.2+ | 0.5+ | 2006 09 24 | 113 | 0.4+ | 0.1+ |
| 2001 04 16 | 704 | 0.1+ | 0.8+ | 2005 03 02 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2001 04 17 | 699 | 0.5− | 0.1− | 2005 03 02 | 704 | 0.9+ | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.5+ |
| 2001 04 17 | 699 | 0.1− | 0.2+ | 2005 03 02 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.5− |
| 2001 04 17 | 699 | 0.7− | 0.4+ | 2005 04 03 | 704 | 0.7− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.4− |
| 2001 04 17 | 699 | 0.2− | 0.2+ | 2005 04 03 | 704 | (2.0+ | 1.1+) | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 05 23 | 704 | 0.2− | 0.3+ | 2005 04 03 | 704 | 0.8+ | 0.4− | 2006 10 22 | 644 | 0.5+ | 0.6+ |
| 2001 05 23 | 704 | 0.2− | 0.2− | 2005 04 03 | 704 | 0.9+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2001 05 23 | 704 | 0.1− | 0.0 | 2005 04 15 | 699 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.6− | 0.5+ |
| 2001 05 23 | 704 | 0.4− | 0.2+ | 2005 04 15 | 699 | 1.2+ | 0.1+ | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2001 05 23 | 704 | 0.1+ | 0.3+ | 2005 04 15 | 699 | 0.5+ | 0.6+ | 2006 10 23 | 703 | 1.3− | 0.6− |
| 2001 06 19 | 704 | 0.5+ | 0.2+ | 2005 04 15 | 699 | 0.4+ | 0.5+ | 2006 10 23 | 703 | 0.3− | 0.8+ |

**(139113)∗ 2001 FA$_{55}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.76811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27044559 | $\omega$ | 184.40733 | | −0.46059631 | +0.88629874 | |
| $a$ | 2.3681876 | $\Omega$ | 58.17387 | | −0.81262122 | −0.39920454 | |
| $e$ | 0.1624943 | $i$ | 3.25372 | | −0.35706833 | −0.23475577 | |
| $P$ | 3.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.4− | 1.1+ | 2001 04 18 | 704 | (1.0+ | 1.6+) | 2006 10 16 | 691 | 0.2− | 0.1+ | |
| 2001 03 19 | 704 | 0.3− | 1.2+ | 2002 09 27 | 644 | 0.5− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ | |
| 2001 03 19 | 704 | 0.0 | 0.2+ | 2002 09 27 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.6− | 0.1− | |
| 2001 03 19 | 704 | 0.2− | 0.0 | 2002 09 27 | 644 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.0 | |
| 2001 03 20 | 699 | 0.3− | 0.6+ | 2002 09 28 | 644 | 0.8− | 0.6+ | 2006 10 27 | G96 | 0.5+ | 0.2− | |
| 2001 03 20 | 699 | 0.5− | 0.5+ | 2002 09 28 | 644 | 0.7− | 0.7+ | 2006 10 27 | G96 | 0.4+ | 0.1− | |
| 2001 03 20 | 699 | 0.1+ | 0.6+ | 2002 09 28 | 644 | 0.5− | 0.9+ | 2006 10 27 | G96 | 0.4+ | 0.1− | |
| 2001 03 20 | 699 | (1.5+ | 0.1+) | 2002 10 11 | 704 | 0.9− | 1.4+ | 2006 10 27 | G96 | 0.2− | 0.3− | |
| 2001 03 20 | 608 | 0.4+ | 0.0 | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.4− | 0.3+ | |
| 2001 03 20 | 608 | 0.9+ | 0.6− | 2002 10 11 | 704 | 0.7+ | 1.2+ | 2006 10 28 | 691 | 0.0 | 0.1− | |
| 2001 03 20 | 608 | 0.4+ | 0.5− | 2002 10 11 | 704 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.5+ | 0.2+ | |
| 2001 03 24 | 704 | 0.2+ | 1.0+ | 2003 12 28 | 704 | 0.1+ | 1.5− | 2006 11 01 | 691 | 0.1− | 0.0 | |
| 2001 03 24 | 704 | 0.6+ | 0.2− | 2003 12 28 | 704 | 0.9− | 0.9+ | 2006 11 01 | 691 | 0.3+ | 0.1+ | |
| 2001 03 24 | 704 | 0.7− | 1.3+ | 2003 12 28 | 704 | 0.9− | 0.1− | 2006 11 01 | 691 | 0.5+ | 0.0 | |
| 2001 03 28 | 704 | 0.9+ | 0.6− | 2003 12 30 | 704 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.5+ | |
| 2001 03 28 | 704 | (1.7− | 0.7+) | 2003 12 30 | 704 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.5+ | |
| 2001 03 28 | 704 | 0.7− | 0.6+ | 2003 12 30 | 704 | 0.8+ | 0.7− | 2006 11 08 | 644 | 0.2+ | 0.6+ | |
| 2001 04 16 | 699 | 0.5+ | 0.4+ | 2003 12 30 | 704 | 0.4+ | 0.6− | 2006 11 11 | G96 | 0.2+ | 0.5− | |
| 2001 04 16 | 699 | 0.8+ | 0.2+ | 2003 12 30 | 704 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.3− | |
| 2001 04 16 | 699 | 0.0 | 0.4+ | 2004 01 22 | 704 | (0.9+ | 1.7−) | 2006 11 11 | G96 | 0.4+ | 0.2− | |
| 2001 04 16 | 699 | 0.1+ | 0.7+ | 2004 01 22 | 704 | 0.6+ | 0.3− | 2006 11 11 | G96 | 0.2− | 0.4− | |
| 2001 04 18 | 704 | 0.1+ | 0.7− | 2004 01 22 | 704 | 0.7+ | 0.8+ | 2006 11 21 | G96 | 0.1+ | 0.2− | |
| 2001 04 18 | 704 | 0.4+ | 0.5+ | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.1− | |
| 2001 04 18 | 704 | 0.6+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.4− | |
| 2001 04 18 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.1− | |

**(139114)∗ 2001 $FH_{57}$ = 2002 $QY_{12}$**

Discovered 2001 Mar. 21 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 40130)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.02460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27979025 | $\omega$ | 192.62292 | | +0.98935513 | −0.14516358 | |
| $a$ | 2.3151599 | $\Omega$ | 175.68461 | | +0.14249884 | +0.95221911 | |
| $e$ | 0.0147344 | $i$ | 7.78797 | | +0.02950447 | +0.26871231 | |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | (0.5− | 1.7+) | 2002 08 26 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.5− | |
| 2001 03 18 | 704 | (0.1− | 1.9+) | 2002 08 26 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.6+ | |
| 2001 03 18 | 704 | 1.3+ | 1.0+ | 2002 08 26 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1− | |
| 2001 03 21 | 608 | 0.2+ | 1.1− | 2002 08 27 | 644 | 0.2− | 0.0 | 2006 10 22 | 703 | (0.4− | 1.8−) | |
| 2001 03 21 | 608 | 0.0 | 0.7− | 2002 08 27 | 644 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.1− | |
| 2001 03 21 | 608 | 0.1− | 0.6− | 2002 08 27 | 644 | 0.2− | 0.3− | 2006 10 22 | 703 | 1.3− | 0.8+ | |
| 2001 03 23 | 699 | 0.7+ | 0.2+ | 2002 10 12 | 291 | 0.3+ | 0.2+ | 2006 10 22 | 703 | (0.7+ | 2.7−) | |
| 2001 03 23 | 699 | (1.0− | 1.7+) | 2002 10 12 | 291 | 1.0+ | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.1+ | |
| 2001 03 23 | 699 | 1.2− | 0.1− | 2002 10 12 | 291 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2+ | |
| 2001 03 23 | 699 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1− | |
| 2001 03 24 | 608 | 0.4− | 0.5+ | 2005 06 11 | 691 | 0.3− | 0.7− | 2006 11 13 | 703 | 0.3+ | 1.4− | |
| 2001 03 24 | 608 | 0.3− | 0.5+ | 2005 06 11 | 691 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.4− | |
| 2001 03 24 | 608 | 0.1− | 0.7+ | 2005 06 15 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.0 | |
| 2002 07 21 | 644 | 0.1− | 0.3− | 2005 06 15 | 691 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.5− | |
| 2002 07 21 | 644 | 0.4− | 0.1+ | 2005 06 15 | 691 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.8− | 0.1− | |
| 2002 07 21 | 644 | 0.1− | 0.0 | 2005 06 30 | 691 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.7+ | 0.1− | |
| 2002 08 16 | 644 | 0.7− | 0.1+ | 2005 06 30 | 691 | 0.3+ | 0.0 | 2006 11 19 | 703 | (0.3− | 2.4−) | |
| 2002 08 16 | 644 | 0.5− | 0.1+ | 2005 06 30 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.4− | 0.2+ | |
| 2002 08 16 | 644 | 1.0− | 0.2+ | 2006 10 15 | D35 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.1− | |
| 2002 08 18 | 644 | 0.7− | 0.0 | 2006 10 15 | D35 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.3− | |
| 2002 08 18 | 644 | 0.4− | 0.0 | 2006 10 15 | D35 | 0.3+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.1− | |
| 2002 08 18 | 644 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.2− | |

**(139115)∗ 2001 $FU_{59}$ = 2002 $RZ_{220}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37567)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.07516 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23952278 | $\omega$ | 209.75542 | | −0.19148467 | +0.98003659 | |
| $a$ | 2.5678609 | $\Omega$ | 49.25992 | | −0.88599171 | −0.14914287 | |
| $e$ | 0.1984076 | $i$ | 4.04880 | | −0.42231779 | −0.13147122 | |
| $P$ | 4.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 608 | 0.4+ | 0.3− | 2002 09 14 | 608 | 0.4− | 0.2+ | 2005 03 12 | 704 | 0.0 | 0.7+ | |
| 2001 03 18 | 608 | 0.6+ | 0.2− | 2002 09 14 | 608 | 0.5− | 0.8+ | 2005 03 12 | 704 | 0.1+ | 1.3+ | |
| 2001 03 18 | 608 | 0.6+ | 0.3+ | 2002 09 15 | 644 | 1.1− | 0.8+ | 2005 03 12 | 704 | 0.9− | 0.6− | |
| 2001 03 19 | 704 | 0.5+ | 0.3− | 2002 09 15 | 644 | 0.6− | 0.7+ | 2005 03 12 | 704 | 0.7− | 0.5− | |
| 2001 03 19 | 704 | 0.5− | 2.0+ | 2002 09 15 | 644 | 0.5− | 0.9+ | 2005 03 16 | 703 | 0.5+ | 0.2− | |
| 2001 03 19 | 704 | 0.3+ | 0.9+ | 2002 09 16 | 644 | 0.2− | 1.7+ | 2005 03 16 | 703 | 0.7+ | 0.2+ | |
| 2001 03 19 | 704 | 0.8− | 1.3+ | 2002 09 16 | 644 | 0.2− | 1.6+ | 2005 03 16 | 703 | 0.8− | 0.3− | |
| 2001 03 19 | 704 | 0.5+ | 0.2+ | 2002 09 16 | 644 | 0.5− | 1.5+ | 2005 03 16 | 703 | 0.8− | 0.1+ | |
| 2001 03 19 | 704 | 0.5+ | 0.8+ | 2005 02 09 | 691 | 0.5+ | 1.1− | 2006 08 23 | 704 | 1.5− | 0.7+ | |
| 2001 03 19 | 704 | 0.4− | 1.3+ | 2005 02 09 | 691 | 0.1+ | 0.1+ | 2006 08 23 | 704 | 0.3+ | 0.7+ | |
| 2001 03 19 | 704 | 0.5− | 0.5+ | 2005 02 09 | 691 | 0.1+ | 0.1+ | 2006 08 23 | 704 | 0.1− | 0.7+ | |
| 2001 03 26 | 704 | 0.4− | 0.5− | 2005 03 04 | 704 | 0.4+ | 0.8+ | 2006 08 28 | 704 | 0.5+ | 0.3− | |
| 2001 03 26 | 704 | 0.3− | 0.2− | 2005 03 04 | 704 | 0.0 | 0.5+ | 2006 08 28 | 704 | 1.0+ | 0.1− | |
| 2001 03 26 | 704 | 0.0 | 1.0+ | 2005 03 04 | 704 | 0.5+ | 0.9+ | 2006 08 28 | 704 | 0.4+ | 1.6− | |
| 2001 03 27 | 608 | 0.4+ | 0.2+ | 2005 03 04 | 704 | 0.2− | 1.3+ | 2006 08 28 | 704 | 0.1− | 1.4− | |
| 2001 03 27 | 608 | 0.6+ | 0.2− | 2005 03 04 | 704 | 1.1+ | 1.0+ | 2006 08 28 | 699 | 0.1+ | 0.0 | |
| 2001 03 27 | 608 | 0.6+ | 0.3+ | 2005 03 09 | 699 | 0.6+ | 0.2+ | 2006 08 28 | 699 | 1.2− | 0.6+ | |
| 2002 08 30 | 644 | 0.0 | 0.9+ | 2005 03 09 | 699 | 0.9+ | 1.9+ | 2006 08 28 | 699 | 0.4− | 0.3+ | |
| 2002 08 30 | 644 | 0.5+ | 1.1+ | 2005 03 09 | 699 | 0.0 | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.2− | |
| 2002 08 30 | 644 | 0.1+ | 0.7+ | 2005 03 09 | 699 | 0.0 | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.7+ | |
| 2002 09 05 | 704 | 0.4− | 0.7+ | 2005 03 09 | 704 | 0.4− | 1.2+ | 2006 09 18 | 699 | 0.4− | 0.1− | |
| 2002 09 05 | 704 | 0.0 | 0.2+ | 2005 03 09 | 704 | 0.5− | 1.4+ | 2006 09 18 | 699 | 0.3− | 0.1− | |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2005 03 09 | 704 | 0.7+ | 0.1− | 2006 09 18 | 699 | 0.8+ | 0.8+ | |
| 2002 09 14 | 608 | 1.2− | 1.0+ | 2005 03 12 | 704 | 0.6+ | 0.4− | | | | | |

**(139116)∗ 2001 $FB_{60}$ = 2002 $RV_{77}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35046)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.86176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27695423 | $\omega$ | 116.48635 | | +0.02704984 | +0.99848185 | |
| $a$ | 2.3309380 | $\Omega$ | 154.92389 | | −0.95272908 | +0.04028163 | |
| $e$ | 0.1058515 | $i$ | 6.50057 | | −0.30261461 | −0.03756828 | |
| $P$ | 3.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 26 | 209 | 0.5− | 0.2+ | 2002 09 07 | 704 | 1.1− | 0.0 | 2005 06 03 | E12 | 0.9− | 0.5+ | |
| 2001 02 27 | 209 | (1.7− | 1.4−) | 2002 09 07 | 704 | 0.5− | 0.2+ | 2005 06 03 | E12 | 0.2− | 0.5+ | |
| 2001 02 27 | 209 | 1.5− | 0.7− | 2002 09 12 | 644 | 0.0 | 0.9+ | 2005 06 03 | E12 | 0.0 | 0.3+ | |
| 2001 03 02 | 699 | (1.0− | 1.6+) | 2002 09 12 | 644 | 0.0 | 0.7+ | 2005 06 03 | E12 | 0.4− | 0.3− | |
| 2001 03 02 | 699 | 0.1+ | 1.0+ | 2002 09 12 | 644 | 0.1− | 0.6+ | 2005 06 08 | 691 | 0.2+ | 0.1− | |
| 2001 03 02 | 699 | 1.1+ | 0.7+ | 2002 09 15 | 644 | 0.1+ | 0.6+ | 2005 06 08 | 691 | 0.2+ | 0.1− | |
| 2001 03 02 | 699 | (2.2− | 1.5+) | 2002 09 15 | 644 | 0.2− | 0.6+ | 2005 06 08 | 691 | 0.2+ | 0.0 | |
| 2001 03 03 | 704 | 0.1+ | 0.2− | 2002 09 15 | 644 | 0.0 | 0.4+ | 2005 06 09 | 703 | 0.7− | 0.3− | |
| 2001 03 03 | 704 | (0.9− | 1.9+) | 2002 10 01 | 699 | 0.4+ | 1.0+ | 2005 06 09 | 703 | 0.2− | 0.3− | |
| 2001 03 03 | 704 | 0.2− | 0.5+ | 2002 10 01 | 699 | 0.4+ | 0.3+ | 2005 06 09 | 703 | 0.8− | 0.2− | |
| 2001 03 18 | 699 | 0.5+ | 1.0+ | 2002 10 01 | 699 | 0.2− | 0.7+ | 2005 06 09 | 703 | 0.2− | 0.3− | |
| 2001 03 18 | 699 | 0.1+ | 0.7+ | 2002 10 01 | 699 | 0.8+ | 0.6+ | 2005 06 13 | 691 | 0.2− | 0.0 | |
| 2001 03 18 | 699 | 0.4+ | 0.6+ | 2002 10 03 | 704 | (0.7+ | 1.8+) | 2005 06 13 | 691 | 0.1− | 0.2+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 699 | 0.4+ | 0.7+ | 2002 10 03 | 704 | 0.6+ | 1.0+ | 2005 06 13 | 691 | 0.1− | 0.1+ |
| 2001 03 19 | 704 | 0.2+ | 0.7+ | 2002 10 03 | 704 | 0.3− | 1.0+ | 2005 06 28 | 644 | 0.4+ | 0.1− |
| 2001 03 19 | 704 | 0.5− | 1.5+ | 2002 10 03 | 704 | 0.5− | 0.8+ | 2005 06 28 | 644 | 0.1+ | 0.4− |
| 2001 03 19 | 704 | 0.1− | 0.9+ | 2002 10 05 | 704 | 0.7− | 0.4− | 2005 06 28 | 644 | 0.2+ | 0.1+ |
| 2001 03 19 | 704 | 0.3− | 0.1+ | 2002 10 05 | 704 | 0.0 | 0.0 | 2005 07 05 | 644 | 0.2+ | 0.2− |
| 2001 03 19 | 704 | (2.0+ | 1.0+) | 2002 10 05 | 704 | 0.5− | 0.1− | 2005 07 05 | 644 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.0 | 0.7− | 2002 10 05 | 704 | 1.0− | 0.5− | 2005 07 05 | 644 | 0.4+ | 0.3− |
| 2001 03 19 | 704 | 0.1+ | 0.8+ | 2005 05 09 | 703 | 0.7− | 0.1+ | 2005 07 11 | 691 | 0.5+ | 0.3+ |
| 2001 03 19 | 704 | 0.4− | 0.5+ | 2005 05 09 | 703 | 1.0+ | 0.4− | 2005 07 11 | 691 | 0.5− | 0.5− |
| 2001 03 19 | 608 | 0.4+ | 1.1+ | 2005 05 09 | 703 | 0.5− | 0.5− | 2005 07 11 | 691 | 0.0 | 1.1+ |
| 2001 03 19 | 608 | 0.7+ | 0.6+ | 2005 05 09 | 703 | 0.4− | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2001 03 19 | 608 | 0.7+ | 0.9+ | 2005 05 16 | 704 | 1.1− | 0.2+ | 2006 10 16 | 703 | 1.0+ | 0.4+ |
| 2001 03 26 | 704 | 0.9+ | 0.4+ | 2005 05 16 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.4− | 1.1− |
| 2001 03 26 | 704 | 0.7+ | 1.0+ | 2005 05 16 | 704 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2001 03 26 | 704 | 1.0+ | 0.7+ | 2005 05 16 | 704 | 0.6+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.6+ |
| 2001 03 26 | 704 | 0.2+ | 0.0 | 2005 05 16 | 704 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2002 08 13 | 704 | 0.5− | 0.5− | 2005 06 01 | G96 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2002 08 13 | 704 | 0.4− | 0.2− | 2005 06 01 | G96 | 0.1− | 0.3− | 2006 11 19 | 703 | 0.2− | 0.0 |
| 2002 08 13 | 704 | 0.4− | 1.0+ | 2005 06 01 | G96 | 0.1− | 0.6− | 2006 11 19 | 703 | 0.3+ | 0.1− |
| 2002 08 13 | 704 | 0.2− | 0.6− | 2005 06 01 | G96 | 0.2− | 0.5− | 2006 11 19 | 703 | 0.8− | 0.5+ |
| 2002 09 05 | 704 | 0.1+ | 0.9+ | 2005 06 02 | 703 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.3− | 0.2− |
| 2002 09 05 | 704 | 0.5− | 0.1− | 2005 06 02 | 703 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.8+ | 0.7+ | 2005 06 02 | 703 | 0.6− | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.1− | 0.7+ | 2005 06 02 | 703 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.9+ | 0.4+ | 2005 06 03 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2002 09 07 | 704 | 0.5+ | 0.3+ | 2005 06 03 | 691 | 0.4+ | 0.1− | | | | |
| 2002 09 07 | 704 | 1.1− | 0.2+ | 2005 06 03 | 691 | 0.1+ | 0.1− | | | | |

**(139117)∗ 2001 FD$_{60}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.25031 | | (2000.0) | | | |
| $n$ | 0.28022852 | $\omega$ | 111.43551 | | −0.98535998 | −0.15614174 |
| $a$ | 2.3127454 | $\Omega$ | 59.63912 | | +0.11161216 | −0.89430628 |
| $e$ | 0.1568747 | $i$ | 4.55005 | | +0.12887372 | −0.41932808 |
| $P$ | 3.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.2+ | 0.3− | 2001 03 26 | 704 | 0.1− | 0.4+ | 2003 11 26 | 691 | 0.2+ | 0.1− |
| 1999 10 30 | 691 | 0.1− | 0.2+ | 2001 03 26 | 704 | 0.0 | 0.4− | 2003 12 18 | 704 | 0.8− | 0.4− |
| 1999 10 30 | 691 | 0.2− | 0.1+ | 2001 03 26 | 704 | 1.0− | 0.1+ | 2003 12 18 | 704 | 0.3− | 0.2+ |
| 2001 02 17 | 704 | 0.7+ | 0.4+ | 2001 03 27 | 699 | 0.1− | 1.0+ | 2003 12 18 | 704 | 0.3− | 0.3− |
| 2001 02 17 | 704 | 0.5+ | 0.7+ | 2001 03 27 | 699 | 0.4+ | 0.4+ | 2003 12 18 | 704 | 0.7− | 0.2+ |
| 2001 02 17 | 704 | 0.5+ | 0.0 | 2001 03 27 | 699 | 0.2− | 0.2+ | 2003 12 22 | 704 | 1.0+ | 0.5− |
| 2001 02 17 | 704 | 0.8+ | 0.7+ | 2001 03 27 | 699 | 0.1− | 0.6+ | 2003 12 22 | 704 | (0.4− | 2.9−) |
| 2001 02 17 | 704 | 0.4+ | 0.7+ | 2001 03 31 | 704 | 0.2+ | 0.3+ | 2003 12 22 | 704 | (0.2− | 2.8−) |
| 2001 03 03 | 704 | 0.1+ | 0.1+ | 2001 03 31 | 704 | 1.5+ | 0.7+ | 2003 12 22 | 704 | (0.1− | 3.4−) |
| 2001 03 03 | 704 | 0.0 | 0.2+ | 2001 03 31 | 704 | 0.0 | 1.3+ | 2003 12 22 | 704 | (0.2+ | 2.9−) |
| 2001 03 03 | 704 | 0.0 | 0.4− | 2001 03 31 | 704 | (0.2+ | 2.0+) | 2003 12 27 | 704 | (0.1− | 1.8+) |
| 2001 03 03 | 704 | 0.2− | 0.2+ | 2001 04 16 | 699 | 0.6− | 0.2+ | 2003 12 27 | 704 | 0.7− | 0.2− |
| 2001 03 03 | 704 | 0.1− | 0.2+ | 2001 04 16 | 699 | 0.5− | 0.3− | 2003 12 27 | 704 | 0.9− | 0.1+ |
| 2001 03 18 | 699 | 0.4− | 0.1+ | 2001 04 16 | 704 | 1.5+ | 0.6+ | 2003 12 27 | 704 | (2.5− | 0.4+) |
| 2001 03 18 | 699 | 0.4− | 0.2+ | 2001 04 16 | 699 | 1.1− | 0.3− | 2006 09 28 | 691 | 0.1− | 0.7+ |
| 2001 03 18 | 699 | 0.2− | 0.5+ | 2001 04 16 | 704 | 0.9+ | 0.8+ | 2006 09 28 | 691 | 0.5− | 0.7+ |
| 2001 03 18 | 699 | 0.3− | 0.1+ | 2001 04 16 | 704 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.8+ |
| 2001 03 19 | 704 | (0.3+ | 1.6+) | 2001 04 16 | 699 | 1.0+ | 0.4+ | 2006 10 02 | 691 | 1.1− | 0.6+ |
| 2001 03 19 | 704 | 0.6+ | 0.6+ | 2003 11 21 | 704 | (0.0 | 1.6−) | 2006 10 02 | 691 | (0.5− | 1.5+) |
| 2001 03 19 | 704 | 0.2+ | 0.2+ | 2003 11 21 | 704 | 0.5+ | 0.9− | 2006 10 02 | 691 | 0.2− | 0.7+ |
| 2001 03 19 | 704 | 0.1+ | 0.7− | 2003 11 21 | 704 | 1.5+ | 0.8− | 2006 11 17 | G96 | 0.0 | 0.5+ |
| 2001 03 19 | 704 | 0.3+ | 0.2+ | 2003 11 21 | 704 | (1.6+ | 1.1−) | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2001 03 26 | 704 | 0.1+ | 0.5+ | 2003 11 26 | 691 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2001 03 26 | 704 | 0.5+ | 0.1− | 2003 11 26 | 691 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.0 |

**(139118)∗ 2001 FZ$_{60}$ = 1998 MM$_{18}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12030)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.35064 | | (2000.0) | | | |
| $n$ | 0.27270995 | $\omega$ | 150.99837 | | −0.66352858 | +0.74638300 |
| $a$ | 2.3550604 | $\Omega$ | 77.38177 | | −0.69617370 | −0.59080935 |
| $e$ | 0.1690208 | $i$ | 3.01945 | | −0.27399270 | −0.30636046 |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 05 | 691 | 0.4− | 0.2+ | 2001 03 19 | 704 | 1.2+ | 0.3− | 2005 02 16 | 809 | 0.9− | 0.2+ |
| 1994 05 05 | 691 | 0.7− | 0.2+ | 2001 03 19 | 704 | 0.8+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1994 05 05 | 691 | 0.6− | 0.2+ | 2001 03 19 | 704 | 0.7+ | 0.8+ | 2006 09 30 | G96 | 0.3− | 0.0 |
| 1998 06 26 | 691 | 0.1− | 1.2+ | 2001 03 19 | 704 | 0.1− | 0.6− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1998 06 26 | 691 | 0.1− | 0.4+ | 2001 03 19 | 704 | 0.8+ | 0.6+ | 2006 09 30 | G96 | 0.3− | 0.1+ |
| 1998 06 26 | 691 | 0.1− | 0.7+ | 2001 03 19 | 704 | 0.6+ | 0.1+ | 2006 09 30 | G96 | 0.6− | 0.2− |
| 1998 06 29 | 691 | 0.4+ | 0.6+ | 2001 03 19 | 704 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.3− | 0.1+ |
| 1998 06 29 | 691 | 0.5+ | 0.8+ | 2001 03 19 | 704 | 0.6− | 0.8+ | 2006 09 30 | G96 | 0.3− | 0.1+ |
| 1998 06 29 | 691 | 0.4+ | 0.4+ | 2001 03 19 | 704 | 0.1− | 1.1+ | 2006 09 30 | G96 | 1.0− | 0.2− |
| 1999 12 18 | 691 | 0.5+ | 0.3+ | 2001 03 20 | 608 | 0.8+ | 0.9− | 2006 10 22 | 691 | 0.4− | 1.0+ |
| 1999 12 18 | 691 | 0.5+ | 0.7+ | 2001 03 20 | 608 | 0.9+ | 0.5− | 2006 10 22 | 691 | 0.8− | 0.0 |
| 1999 12 18 | 691 | 0.4+ | 0.3+ | 2001 03 20 | 608 | 0.9+ | 0.5− | 2006 10 22 | 691 | 0.8− | 0.1− |
| 2001 03 02 | 699 | 0.9+ | 0.7+ | 2001 03 26 | 704 | 0.9+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2001 03 02 | 699 | (2.8+ | 0.9+) | 2001 03 26 | 704 | 1.0+ | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 03 02 | 699 | 0.2+ | 0.5+ | 2001 03 26 | 704 | 0.4+ | 0.5+ | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2001 03 02 | 699 | 0.1− | 1.2+ | 2001 03 26 | 704 | 0.3− | 1.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 03 03 | 704 | 1.1+ | 1.0+ | 2001 04 15 | 699 | (2.0+ | 0.6+) | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2001 03 03 | 704 | 0.7+ | 1.1+ | 2001 04 15 | 699 | (2.3+ | 0.1−) | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2001 03 03 | 704 | 1.2+ | 0.4− | 2001 04 15 | 699 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.5− | 0.0 |
| 2001 03 03 | 704 | 0.4− | 0.6+ | 2001 04 15 | 699 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2001 03 03 | 704 | 0.1− | 0.2+ | 2001 04 16 | 699 | 0.7+ | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.6+ |
| 2001 03 18 | 699 | 0.6− | 1.0+ | 2001 04 16 | 699 | 1.1+ | 0.2− | 2006 11 09 | 691 | 0.6− | 0.4+ |
| 2001 03 18 | 699 | 0.1− | 1.2+ | 2001 04 16 | 699 | 0.9− | 0.7+ | 2006 11 09 | 691 | 0.5− | 0.1+ |
| 2001 03 18 | 699 | 0.0 | 0.6+ | 2001 04 16 | 699 | 0.1− | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.5+ |
| 2001 03 18 | 699 | 0.3− | 0.8+ | 2005 02 16 | 809 | 1.0− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.5+ |
| 2001 03 19 | 704 | 0.9+ | 0.7+ | 2005 02 16 | 809 | 0.9− | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.5+ |

**(139119)∗ 2001 FJ$_{61}$ = 2003 XO$_{16}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56236)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 185.22177 | | (2000.0) | | | |
| $n$ | 0.26634276 | $\omega$ | 15.83953 | | −0.97639900 | −0.20866776 |
| $a$ | 2.3924459 | $\Omega$ | 151.92964 | | +0.18307065 | −0.93648044 |
| $e$ | 0.0620873 | $i$ | 6.79838 | | +0.11458681 | −0.28189030 |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 13 | 691 | 0.2+ | 0.3+ | 2001 03 29 | 608 | 0.1+ | 0.6− | 2005 05 11 | 703 | 1.0− | 0.4+ |
| 1994 06 13 | 691 | 0.1+ | 0.3+ | 2001 03 29 | 608 | 0.1+ | 0.0 | 2005 05 11 | 703 | 1.3− | 0.4− |
| 1994 06 13 | 691 | 0.4− | 0.5+ | 2003 11 18 | 691 | 0.4+ | 0.2+ | 2005 05 11 | 703 | 0.7− | 0.1+ |
| 2001 03 02 | 699 | 0.5+ | 0.4+ | 2003 11 18 | 691 | 0.2+ | 0.1+ | 2005 05 11 | 703 | 0.7− | 0.7+ |
| 2001 03 02 | 699 | 1.5+ | 0.2− | 2003 11 18 | 691 | 0.1+ | 0.0 | 2006 07 25 | G96 | 0.2+ | 0.5+ |
| 2001 03 02 | 699 | 0.6− | 1.3− | 2003 11 23 | 691 | 0.1+ | 0.0 | 2006 07 25 | G96 | 0.1+ | 0.3+ |
| 2001 03 02 | 699 | 0.5+ | 0.6− | 2003 11 23 | 691 | 0.1+ | 0.0 | 2006 07 25 | G96 | 0.4− | 0.0 |
| 2001 03 19 | 704 | 0.7− | 1.5+ | 2003 11 23 | 691 | 0.6− | 0.2− | 2006 07 25 | G96 | 0.3− | 0.0 |
| 2001 03 19 | 704 | 0.1− | 0.1+ | 2003 12 14 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.4− | 1.0− |
| 2001 03 19 | 704 | 0.4+ | 0.7+ | 2003 12 14 | 644 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.2− |
| 2001 03 19 | 704 | 0.7+ | 0.3+ | 2003 12 14 | 644 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.8+ |
| 2001 03 19 | 704 | 0.5+ | 1.0+ | 2003 12 17 | 691 | 0.1− | 0.0 | 2006 08 28 | 703 | 1.2+ | 0.4+ |
| 2001 03 20 | 608 | 1.2+ | 0.2+ | 2003 12 17 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 1.8+ | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 608 | 1.4+ | 0.2− | 2003 12 17 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.2+ | | |
| 2001 03 20 | 608 | 1.1+ | 0.5+ | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.0 | | |
| 2001 03 26 | 704 | 0.1− | 0.9+ | 2003 12 28 | 691 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.1+ | 1.1+ | | |
| 2001 03 26 | 704 | 0.2+ | 0.3+ | 2003 12 28 | 691 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.5+ | | |
| 2001 03 26 | 704 | 0.6− | 0.8− | 2005 05 06 | 703 | 0.1+ | 1.1− | 2006 10 02 | G96 | 0.3+ | 0.6+ | | |
| 2001 03 26 | 704 | 0.2− | 1.1+ | 2005 05 06 | 703 | 0.3+ | 0.5− | 2006 10 02 | G96 | 0.0 | 0.1+ | | |
| 2001 03 26 | 704 | 0.4− | 0.2+ | 2005 05 06 | 703 | 0.6− | 1.3− | 2006 10 02 | G96 | 0.1− | 0.4+ | | |
| 2001 03 29 | 608 | 0.8+ | 0.6− | 2005 05 06 | 703 | (2.5− | 0.1−) | | | | | | |

**(139120)∗ 2001 FY$_{61}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.36874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27345920 | $\omega$ | 149.58145 | | −0.66475643 | +0.74460962 | |
| $a$ | 2.3507567 | $\Omega$ | 78.68242 | | −0.69723366 | −0.58932292 | |
| $e$ | 0.1156095 | $i$ | 3.53504 | | −0.26826127 | −0.31345655 | |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.1− | 0.6+ | 2001 03 26 | 704 | 0.1− | 1.1+ | 2005 06 17 | 691 | 0.2+ | 0.2+ | | |
| 2001 03 03 | 704 | 1.1+ | 0.6+ | 2002 08 12 | 807 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.3+ | | |
| 2001 03 03 | 704 | 0.3+ | 0.5− | 2002 08 12 | 807 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.4− | 0.3+ | | |
| 2001 03 03 | 704 | 0.0 | 0.6+ | 2002 08 30 | 644 | 0.7− | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.3+ | | |
| 2001 03 18 | 699 | 0.3+ | 0.8+ | 2002 08 30 | 644 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | | |
| 2001 03 18 | 699 | 1.4− | 0.6+ | 2002 08 30 | 644 | 0.4− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.5+ | | |
| 2001 03 18 | 699 | 0.9− | 0.6+ | 2005 05 19 | G96 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2+ | | |
| 2001 03 18 | 699 | 0.5+ | 0.0 | 2005 05 19 | G96 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.4+ | | |
| 2001 03 18 | 608 | 0.1− | 0.4+ | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.3+ | | |
| 2001 03 18 | 608 | 0.1− | 0.4+ | 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2001 03 18 | 608 | 0.1+ | 0.3+ | 2005 05 21 | 644 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2001 03 19 | 704 | (1.5+ | 1.5+) | 2005 05 21 | 644 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | | |
| 2001 03 19 | 704 | 1.4+ | 0.4+ | 2005 05 21 | 644 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 2001 03 19 | 704 | 0.1− | 0.6+ | 2005 05 27 | 599 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2001 03 19 | 704 | 1.0+ | 0.1− | 2005 05 27 | 599 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.2− | | |
| 2001 03 26 | 704 | 1.0+ | 0.3+ | 2005 05 27 | 599 | 0.7+ | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.2− | | |
| 2001 03 26 | 704 | 0.1+ | 0.5+ | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.6− | | |
| 2001 03 26 | 704 | 0.1+ | 0.1+ | 2005 06 17 | 691 | 0.1+ | 0.2+ | | | | | | |

**(139121)∗ 2001 FU$_{62}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.13294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26817506 | $\omega$ | 133.51341 | | −0.22038979 | +0.97435644 | |
| $a$ | 2.3815358 | $\Omega$ | 123.70193 | | −0.90991699 | −0.18861465 | |
| $e$ | 0.1838255 | $i$ | 3.12577 | | −0.35139637 | −0.12269489 | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 04 | 691 | 0.1− | 0.1+ | 2005 05 03 | 703 | (2.2+ | 0.2+) | 2005 06 23 | 644 | 0.3− | 0.1+ | | |
| 1991 10 04 | 691 | 0.9− | 0.7+ | 2005 05 03 | 704 | 0.3+ | 0.1− | 2005 06 27 | 644 | 0.0 | 0.1+ | | |
| 1991 10 04 | 691 | 0.3− | 0.1− | 2005 05 03 | 703 | 0.3− | 0.8− | 2005 06 27 | 644 | 0.0 | 0.2+ | | |
| 1997 02 06 | 910 | 2.0+ | 0.9− | 2005 05 03 | 704 | 0.4+ | 0.6+ | 2005 06 27 | 644 | 0.2+ | 0.3+ | | |
| 1997 02 06 | 910 | (2.2+ | 1.6−) | 2005 05 03 | 704 | 1.0− | 0.0 | 2005 06 27 | 644 | 0.2+ | 0.2+ | | |
| 1997 02 07 | 910 | 1.5+ | 0.9− | 2005 05 04 | 644 | 0.2− | 0.1+ | 2005 06 27 | 644 | 0.3− | 0.3+ | | |
| 2001 03 18 | 699 | 1.1+ | 0.8+ | 2005 05 04 | 644 | 0.0 | 0.2+ | 2005 06 27 | 644 | 0.0 | 0.3+ | | |
| 2001 03 18 | 699 | 0.4+ | 0.7+ | 2005 05 04 | 644 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.2− | 0.3+ | | |
| 2001 03 18 | 699 | 0.6+ | 0.7+ | 2005 05 12 | 704 | 0.7+ | 0.4+ | 2005 07 05 | 644 | 0.4− | 0.5+ | | |
| 2001 03 18 | 699 | 0.1+ | 0.3+ | 2005 05 12 | 704 | 0.9+ | 0.1+ | 2005 07 05 | 644 | 0.3− | 0.4+ | | |
| 2001 03 19 | 704 | 0.1− | 0.6− | 2005 05 12 | 704 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.2− | | |
| 2001 03 19 | 704 | 0.2− | 0.3+ | 2005 05 12 | 704 | 0.9+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.3− | | |
| 2001 03 19 | 704 | 0.6− | 0.3+ | 2005 05 12 | 704 | 0.5+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.4− | | |
| 2001 03 19 | 704 | 0.5− | 1.0+ | 2005 05 15 | G96 | (2.4− | 1.2−) | 2006 10 02 | G96 | 0.4+ | 0.2− | | |
| 2001 03 19 | 704 | 0.4− | 0.8+ | 2005 05 15 | G96 | (0.3+ | 1.5−) | 2006 10 15 | 691 | 0.3− | 0.8+ | | |
| 2001 03 19 | 704 | 0.1+ | 0.4+ | 2005 05 15 | G96 | 0.7− | 1.4− | 2006 10 15 | 691 | 0.1+ | 0.3+ | | |
| 2001 03 19 | 704 | 0.5− | 0.7+ | 2005 05 15 | G96 | 0.5− | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.5+ | | |
| 2001 03 19 | 704 | 0.7− | 1.0+ | 2005 05 17 | 704 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.1− | | |
| 2001 03 26 | 704 | 0.8+ | 0.4− | 2005 05 17 | 704 | 1.0+ | 0.6+ | 2006 10 17 | G96 | 0.3− | 0.5− | | |
| 2001 03 26 | 704 | 0.0 | 0.3+ | 2005 05 17 | 704 | 0.8+ | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.4− | | |
| 2001 03 26 | 704 | 0.5− | 0.0 | 2005 06 01 | 428 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2− | | |
| 2001 03 26 | 704 | 0.5− | 0.9+ | 2005 06 01 | 428 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.4− | 0.2+ | | |
| 2001 03 26 | 704 | 0.5+ | 1.3+ | 2005 06 03 | 703 | 0.5− | 0.1− | 2006 10 18 | 691 | 0.2− | 0.3+ | | |
| 2001 04 16 | 699 | 0.5+ | 1.0+ | 2005 06 03 | 703 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.3− | 0.3+ | | |
| 2001 04 16 | 699 | 1.4+ | 0.5+ | 2005 06 03 | 703 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.3+ | | |
| 2001 04 16 | 699 | 1.5+ | 1.3+ | 2005 06 03 | 703 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.7− | 0.3+ | | |
| 2001 04 16 | 699 | 0.4+ | 1.3+ | 2005 06 03 | 428 | 0.2+ | 0.4− | 2006 10 19 | 691 | 0.3− | 0.2+ | | |
| 2002 09 28 | 608 | (2.2− | 0.6+) | 2005 06 03 | 428 | 0.8− | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 28 | 608 | (2.3− | 0.2+) | 2005 06 05 | 704 | 0.7+ | 1.5+ | 2006 10 23 | 691 | 0.4− | 0.4+ | | |
| 2002 09 28 | 608 | (2.5− | 0.1+) | 2005 06 05 | 704 | 1.0+ | 0.8+ | 2006 10 23 | 691 | 0.0 | 0.1+ | | |
| 2002 10 05 | 645 | 0.2+ | 0.1+ | 2005 06 05 | 704 | 0.7+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.5+ | | |
| 2002 10 05 | 645 | 0.2+ | 0.0 | 2005 06 05 | 704 | (1.8+ | 0.9+) | 2006 10 27 | 691 | 0.3− | 0.1− | | |
| 2002 10 11 | 704 | (1.4+ | 2.8+) | 2005 06 10 | 704 | 0.9− | 1.0+ | 2006 10 27 | 691 | 0.1− | 0.3+ | | |
| 2002 10 11 | 704 | (0.1+ | 2.6+) | 2005 06 10 | 704 | 0.5− | 0.7+ | 2006 11 16 | G96 | 0.2− | 0.2− | | |
| 2002 10 11 | 704 | (0.7+ | 1.9+) | 2005 06 10 | 704 | 0.1− | 0.8+ | 2006 11 16 | G96 | 0.3+ | 0.1− | | |
| 2005 05 03 | 703 | 0.5− | 0.4+ | 2005 06 23 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.3− | | |
| 2005 05 03 | 703 | 1.3+ | 0.4+ | 2005 06 23 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.5− | | |

**(139122)∗ 2001 FT$_{63}$ = 2002 PB$_{36}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33391)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.17572 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29664500 | $\omega$ | 339.71819 | | −0.70170842 | −0.71181275 | |
| $a$ | 2.2266128 | $\Omega$ | 154.81562 | | +0.66314702 | −0.66816903 | |
| $e$ | 0.0709147 | $i$ | 4.10502 | | +0.26046367 | −0.21650117 | |
| $P$ | 3.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 699 | 1.0+ | 0.1− | 2004 01 17 | 608 | 0.2− | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.1+ | | |
| 2001 03 18 | 699 | 0.1+ | 0.5+ | 2004 01 17 | 608 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.1+ | | |
| 2001 03 18 | 699 | 0.8+ | 0.3+ | 2004 01 17 | 608 | 0.1+ | 0.0 | 2006 11 02 | 703 | 1.3+ | 0.4+ | | |
| 2001 03 18 | 699 | 0.3+ | 0.3− | 2004 01 18 | 691 | 0.3− | 0.1− | 2006 11 02 | 703 | 0.7+ | 0.9− | | |
| 2001 03 19 | 704 | 0.1+ | 0.4− | 2004 01 18 | 691 | 0.4− | 0.1− | 2006 11 02 | 703 | 0.6+ | 0.0 | | |
| 2001 03 19 | 704 | 1.0+ | 0.4− | 2004 01 18 | 691 | 0.4− | 0.1− | 2006 11 02 | 703 | 0.0 | 0.2− | | |
| 2001 03 19 | 704 | 0.5+ | 0.1+ | 2004 01 19 | 699 | 1.0− | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.0 | | |
| 2001 03 19 | 704 | 0.6− | 0.1+ | 2004 01 19 | 699 | 0.8− | 1.4− | 2006 11 14 | 704 | 0.1− | 0.3+ | | |
| 2001 03 19 | 704 | 0.1+ | 0.2− | 2004 01 19 | 699 | 0.0 | 0.4− | 2006 11 14 | 704 | (1.5+ | 0.2−) | | |
| 2001 03 20 | 608 | 0.0 | 0.9− | 2004 01 19 | 699 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 1.4+ | 0.7+ | | |
| 2001 03 20 | 608 | 0.0 | 1.0− | 2004 01 21 | 704 | 0.6+ | 1.2+ | 2006 11 14 | 704 | 0.7− | 0.1+ | | |
| 2001 03 20 | 608 | 0.1+ | 0.6− | 2004 01 21 | 704 | 0.5+ | 0.1− | 2006 11 15 | 703 | 0.8− | 0.6+ | | |
| 2001 03 26 | 691 | 0.1− | 0.2+ | 2004 01 21 | 704 | 0.7+ | 1.0− | 2006 11 15 | 703 | 0.7− | 0.2+ | | |
| 2001 03 26 | 691 | 0.4− | 1.1+ | 2004 01 21 | 704 | 1.1− | 0.5− | 2006 11 15 | 703 | 0.4+ | 0.4− | | |
| 2001 03 26 | 704 | 0.7− | 0.3− | 2004 01 21 | 704 | 1.0− | 0.3− | 2006 11 16 | 691 | 0.0 | 0.2+ | | |
| 2001 03 26 | 704 | 0.2+ | 0.2+ | 2004 01 24 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 2001 03 26 | 691 | 0.2+ | 0.7+ | 2004 01 24 | 704 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 2001 03 26 | 704 | 0.4− | 1.0+ | 2004 01 24 | 704 | 0.1− | 0.6+ | 2006 11 17 | 704 | 1.1− | 0.6− | | |
| 2001 03 26 | 704 | 0.7− | 0.6+ | 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.8− | 0.4+ | | |
| 2001 03 26 | 704 | 0.3+ | 0.1+ | 2004 01 24 | 704 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.2+ | | |
| 2001 03 27 | 691 | 0.4+ | 0.2+ | 2004 01 27 | 691 | 0.4+ | 0.4− | 2006 11 17 | 704 | 0.7− | 1.2+ | | |
| 2001 03 27 | 691 | 0.3+ | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.7− | 0.4− | | |
| 2001 03 27 | 691 | 0.2+ | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 1.1− | 0.2− | | |
| 2001 03 28 | 691 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.9+ | 0.9+ | 2006 11 18 | 704 | 0.0 | 0.8− | | |
| 2001 03 28 | 691 | 0.2− | 0.0 | 2004 01 30 | 704 | 0.2− | 0.6+ | 2006 11 18 | 704 | 1.0− | 0.2− | | |
| 2001 03 28 | 691 | 0.0 | 0.3− | 2004 01 30 | 704 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.1+ | 0.1− | | |
| 2002 08 06 | 644 | 0.4− | 1.0+ | 2004 01 30 | 704 | 0.7+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.2− | | |
| 2002 08 06 | 644 | 0.4− | 0.9+ | 2004 01 30 | 704 | (2.4− | 1.0+) | 2006 11 19 | 704 | 0.2− | 0.3− | | |
| 2002 08 06 | 644 | 0.6− | 0.9+ | 2004 02 16 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.0 | | |
| 2002 08 08 | 644 | 0.1− | 0.8+ | 2004 02 16 | 691 | 0.2+ | 0.1− | 2006 11 24 | 691 | 0.0 | 0.3+ | | |
| 2002 08 08 | 644 | 0.1+ | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.0 | 0.9+ | 2004 02 16 | 704 | 0.1+ | 0.7− | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2003 12 23 | 704 | 0.5+ | 0.1+ | 2004 02 16 | 704 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 12 23 | 704 | 0.1+ | 0.5+ | 2004 02 16 | 704 | 0.7+ | 1.1− | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.2+ | 0.2− | 2004 02 16 | 704 | (0.1+ | 1.6+) | 2006 11 24 | G96 | 0.7− | 0.5− |
| 2003 12 23 | 704 | 0.3+ | 0.2+ | 2004 02 22 | 704 | 1.3+ | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 12 23 | 704 | 0.2− | 0.2+ | 2004 02 22 | 704 | 0.3+ | 0.9+ | 2006 11 28 | 704 | 1.2+ | 0.4− |
| 2004 01 13 | 699 | 0.4− | 0.0 | 2004 02 22 | 704 | 0.8+ | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2004 01 13 | 699 | 0.9− | 0.8− | 2004 02 22 | 704 | (1.6+ | 0.7+) | 2006 11 28 | 704 | 0.6− | 0.1+ |
| 2004 01 13 | 699 | 0.7− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2004 01 13 | 699 | 0.7− | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.7+ |

**(139123)∗ 2001 FD$_{64}$ = 2003 YE$_{155}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56237)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.63755 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29332921 | $\omega$ | 59.92576 | | +0.00862680 | −0.99758772 | |
| $a$ | 2.2433610 | $\Omega$ | 29.81765 | | +0.86314872 | −0.02734913 | |
| $e$ | 0.0775837 | $i$ | 7.96234 | | +0.50487610 | +0.06380249 | |
| $P$ | 3.36 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.5+ | 0.5+ | 2004 01 03 | 704 | 0.4− | 0.5− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2001 03 03 | 704 | 0.3− | 0.2+ | 2004 01 19 | 704 | 1.2+ | 0.3− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2001 03 03 | 704 | 1.2+ | 0.8+ | 2004 01 19 | 704 | 1.3+ | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2001 03 19 | 704 | 0.2+ | 0.1− | 2004 01 19 | 704 | 0.6+ | 0.6− | 2006 11 14 | 703 | 0.1+ | 0.1− |
| 2001 03 19 | 704 | 0.7− | 0.5+ | 2004 01 19 | 704 | 1.1+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2001 03 19 | 704 | (2.5+ | 0.2−) | 2004 01 27 | 703 | 1.1− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2001 03 19 | 704 | 0.3+ | 0.4+ | 2004 01 27 | 703 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.2+ |
| 2001 03 19 | 704 | 1.0+ | 0.2− | 2004 01 27 | 703 | 0.1+ | 0.6− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2001 03 26 | 704 | 0.1− | 0.2+ | 2004 01 27 | 703 | (1.6− | 0.3−) | 2006 11 14 | 703 | 0.4+ | 0.1− |
| 2001 03 26 | 704 | 0.1− | 0.1− | 2004 02 02 | 704 | 0.2+ | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 03 26 | 704 | 0.3− | 0.8+ | 2004 02 02 | 704 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2001 03 26 | 704 | 0.9+ | 1.4+ | 2004 02 02 | 704 | 0.7+ | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 03 26 | 704 | 0.1− | 0.6+ | 2004 02 02 | 704 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 07 29 | 644 | 0.3− | 0.3+ | 2004 02 11 | 704 | 0.9− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 07 29 | 644 | 0.1+ | 0.4+ | 2004 02 11 | 704 | 0.6+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2002 07 29 | 644 | 0.4− | 1.2+ | 2004 02 11 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 704 | 0.9− | 0.7+ |
| 2003 12 17 | 699 | 0.3− | 0.8+ | 2004 02 11 | 704 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.6− | 0.4+ |
| 2003 12 17 | 699 | 0.6+ | 0.5− | 2004 02 11 | 704 | 1.1− | 0.2− | 2006 11 15 | 704 | 1.4− | 0.7+ |
| 2003 12 17 | 699 | 0.6− | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 15 | 704 | 1.3− | 1.1+ |
| 2003 12 17 | 699 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2003 12 28 | 704 | 0.8− | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2003 12 28 | 704 | 0.4+ | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.2− |
| 2003 12 28 | 704 | 0.3− | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2003 12 28 | 704 | 0.5− | 0.1− | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2003 12 30 | 704 | 0.6+ | 0.8+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2003 12 30 | 704 | 0.3+ | 1.2− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.0 | 0.0 |
| 2003 12 30 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2003 12 30 | 704 | (0.8+ | 1.7+) | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 1.0− | 0.2+ |
| 2003 12 30 | 704 | 1.2− | 1.3+ | 2006 10 19 | 703 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.9− | 0.5+ |
| 2004 01 02 | 704 | 0.7− | 1.0− | 2006 10 19 | 703 | 0.8+ | 0.4− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2004 01 02 | 704 | 0.5− | 0.3− | 2006 10 19 | 703 | (1.8+ | 0.9−) | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2004 01 02 | 704 | 0.2+ | 0.8− | 2006 10 19 | 703 | 0.7+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2004 01 02 | 704 | 0.2− | 0.6− | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.8− | 0.1− |
| 2004 01 02 | 704 | 0.2+ | 0.9− | 2006 10 31 | 691 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2004 01 03 | 704 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.3− |
| 2004 01 03 | 704 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.6+ | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2004 01 03 | 704 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.2− |
| 2004 01 03 | 704 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.3+ |

**(139124)∗ 2001 FY$_{64}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.80903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27296374 | $\omega$ | 46.23828 | | −0.51807447 | −0.85282699 | |
| $a$ | 2.3536005 | $\Omega$ | 75.07235 | | +0.76400771 | −0.49580926 | |
| $e$ | 0.1435125 | $i$ | 3.88453 | | +0.38456607 | −0.16388808 | |
| $P$ | 3.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 28 | 327 | 0.3− | 0.2− | 2003 10 29 | 699 | 0.3− | 0.2− | 2003 12 24 | 704 | 0.5− | 0.1− |
| 1996 12 28 | 327 | 0.5− | 0.6− | 2003 10 29 | 699 | (2.1− | 0.4−) | 2003 12 24 | 704 | 0.5− | 0.1+ |
| 1996 12 28 | 327 | 0.6− | 1.2− | 2003 10 29 | 699 | 0.9− | 0.5− | 2003 12 31 | 703 | 0.5− | 0.1+ |
| 2001 02 01 | 699 | 0.3− | 0.4+ | 2003 10 29 | 699 | 0.1+ | 0.2+ | 2003 12 31 | 703 | (2.4− | 0.7+) |
| 2001 02 01 | 699 | 0.4− | 0.6+ | 2003 11 02 | 704 | 0.5− | 0.0 | 2003 12 31 | 703 | (3.5− | 2.0+) |
| 2001 02 01 | 699 | 0.1+ | 0.4− | 2003 11 02 | 704 | 0.1+ | 0.8+ | 2003 12 31 | 703 | (3.2− | 1.2+) |
| 2001 02 01 | 699 | 0.1− | 0.2+ | 2003 11 02 | 704 | 0.4+ | 0.0 | 2004 01 12 | 644 | 0.2+ | 0.2+ |
| 2001 03 03 | 704 | 0.2+ | 0.0 | 2003 11 02 | 704 | 0.0 | 1.0+ | 2004 01 12 | 644 | 0.0 | 0.2+ |
| 2001 03 03 | 704 | 0.2+ | 0.4+ | 2003 11 02 | 704 | 0.0 | 0.1+ | 2004 01 12 | 644 | 0.1+ | 0.2+ |
| 2001 03 03 | 704 | 0.6+ | 0.2+ | 2003 11 05 | 699 | 0.8− | 0.0 | 2004 01 21 | 704 | 0.5− | 0.3− |
| 2001 03 03 | 704 | 0.7+ | 0.3+ | 2003 11 05 | 699 | 1.1− | 0.4+ | 2004 01 21 | 704 | 0.4− | 0.4− |
| 2001 03 03 | 704 | 0.4+ | 0.1+ | 2003 11 05 | 699 | 1.0− | 0.3− | 2004 01 21 | 704 | 0.6+ | 0.4− |
| 2001 03 19 | 699 | 0.3− | 0.0 | 2003 11 05 | 699 | 0.4− | 0.8− | 2004 01 21 | 704 | 0.3− | 1.0+ |
| 2001 03 19 | 699 | 0.4+ | 0.5− | 2003 11 19 | 699 | 0.1+ | 0.2+ | 2004 01 21 | 704 | 0.4− | 0.0 |
| 2001 03 19 | 704 | 0.4+ | 0.2+ | 2003 11 19 | 699 | 0.5− | 0.2− | 2004 01 24 | 704 | 0.6+ | 0.4+ |
| 2001 03 19 | 704 | 0.3+ | 0.1+ | 2003 11 19 | 699 | 0.0 | 0.0 | 2004 01 24 | 704 | 0.4− | 0.4− |
| 2001 03 19 | 699 | 0.8+ | 0.0 | 2003 11 19 | 691 | 0.0 | 0.1+ | 2004 01 24 | 704 | 0.7− | 0.1+ |
| 2001 03 19 | 704 | 0.3− | 0.4+ | 2003 11 19 | 699 | 0.1+ | 0.2− | 2004 01 24 | 704 | 0.2+ | 0.3+ |
| 2001 03 19 | 704 | 0.0 | 0.5+ | 2003 11 19 | 691 | 0.1− | 0.1+ | 2004 02 10 | 644 | 0.3− | 0.1− |
| 2001 03 19 | 704 | 0.4+ | 0.2+ | 2003 11 19 | 691 | 0.2− | 0.1+ | 2004 02 10 | 644 | 0.0 | 0.1+ |
| 2001 03 19 | 704 | 0.6+ | 0.4− | 2003 11 21 | 704 | 0.3− | 0.5+ | 2004 02 10 | 644 | 0.0 | 0.2+ |
| 2001 03 19 | 704 | 0.2+ | 0.4+ | 2003 11 21 | 704 | 0.3− | 1.0+ | 2005 03 17 | G96 | 0.3− | 0.1+ |
| 2001 03 19 | 699 | 0.2+ | 0.4+ | 2003 11 21 | 704 | 0.0 | 0.6+ | 2005 03 17 | G96 | 0.6− | 0.1− |
| 2001 03 19 | 704 | 0.0 | 0.6+ | 2003 11 21 | 704 | 0.2− | 0.5+ | 2005 03 17 | G96 | 0.5+ | 0.0 |
| 2001 03 19 | 704 | 0.1− | 1.0+ | 2003 11 21 | 704 | 0.2+ | 0.5+ | 2005 03 17 | G96 | 0.1− | 0.0 |
| 2001 03 21 | 608 | 1.8+ | 0.7− | 2003 11 23 | 704 | 0.2− | 0.4+ | 2005 05 03 | 703 | 0.3+ | 0.2− |
| 2001 03 21 | 608 | 1.4+ | 0.7− | 2003 11 23 | 704 | 0.1+ | 0.3+ | 2005 05 03 | 703 | 0.0 | 1.0+ |
| 2001 03 21 | 608 | 1.3+ | 0.8− | 2003 11 23 | 704 | 0.1+ | 1.0+ | 2005 05 03 | 703 | 1.5− | 0.6+ |
| 2001 03 24 | 691 | 0.0 | 0.1+ | 2003 11 23 | 704 | 0.0 | 0.4+ | 2005 05 03 | 703 | 1.0+ | 0.1+ |
| 2001 03 24 | 691 | 0.0 | 0.2+ | 2003 11 23 | 704 | 0.3+ | 0.7+ | 2005 05 18 | 644 | 0.3+ | 0.3+ |
| 2001 03 24 | 691 | 0.0 | 0.3+ | 2003 11 26 | 704 | 0.1− | 0.7+ | 2005 05 18 | 644 | 0.1+ | 0.2+ |
| 2001 03 26 | 704 | 0.3− | 0.1− | 2003 11 26 | 704 | 0.1− | 0.1+ | 2005 05 18 | 644 | 0.1+ | 0.3+ |
| 2001 03 26 | 704 | 0.4+ | 0.1− | 2003 11 26 | 704 | 0.1− | 0.8+ | 2005 05 20 | G96 | 0.3+ | 0.3+ |
| 2001 03 26 | 704 | 0.5+ | 0.1+ | 2003 11 26 | 704 | 0.1+ | 0.1+ | 2005 05 20 | G96 | 0.0 | 0.3+ |
| 2001 03 26 | 704 | 0.4+ | 0.1+ | 2003 11 26 | 704 | 0.1+ | 0.5− | 2005 05 20 | G96 | 0.0 | 0.3+ |
| 2001 03 26 | 704 | 0.3+ | 0.1+ | 2003 11 29 | 704 | 0.5− | 0.2+ | 2005 05 20 | G96 | 0.6+ | 0.3+ |
| 2001 03 30 | 704 | 0.3− | 0.7− | 2003 11 29 | 704 | 0.5− | 0.4+ | 2005 06 13 | G96 | 0.3− | 0.3+ |
| 2001 03 30 | 704 | 0.7+ | 1.2+ | 2003 11 29 | 704 | 0.5− | 0.1+ | 2005 06 13 | G96 | 0.3− | 0.1+ |
| 2001 03 30 | 704 | 1.0+ | 0.5+ | 2003 11 29 | 704 | 0.5− | 0.6+ | 2005 06 13 | G96 | 0.3− | 0.2+ |
| 2001 03 30 | 704 | 0.3+ | 0.5+ | 2003 11 29 | 704 | 0.5− | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.3+ |
| 2001 03 30 | 704 | 1.2− | 0.3+ | 2003 12 01 | 704 | 0.5− | 0.4− | 2005 06 15 | 691 | 0.2− | 0.6+ |
| 2001 04 16 | 704 | 0.2− | 1.3+ | 2003 12 01 | 704 | 0.3− | 0.3+ | 2005 06 15 | 691 | 0.1− | 0.2+ |
| 2001 04 16 | 704 | 0.2+ | 0.2− | 2003 12 01 | 704 | 0.6− | 0.5− | 2005 06 15 | 691 | 0.1− | 0.4+ |
| 2001 04 16 | 704 | 0.8− | 0.0 | 2003 12 01 | 704 | 0.4− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.6+ |
| 2001 04 16 | 704 | 0.1− | 0.7+ | 2003 12 04 | 703 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.6− | 0.9+ |
| 2001 04 16 | 704 | 0.1− | 0.6+ | 2003 12 04 | 703 | 0.6+ | 0.6− | 2006 08 18 | 644 | 0.1− | 0.3+ |
| 2001 04 24 | 699 | 0.1− | 0.4+ | 2003 12 04 | 703 | 0.3+ | 0.1− | 2006 08 20 | 644 | 0.3− | 0.9+ |
| 2001 04 24 | 699 | 0.8− | 0.1+ | 2003 12 04 | 703 | 0.0 | 0.7+ | 2006 08 20 | 644 | 0.0 | 0.5+ |
| 2001 04 24 | 699 | 0.6+ | 1.2+ | 2003 12 19 | 704 | 0.3− | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.7+ |
| 2001 04 24 | 699 | 0.4+ | 1.7+ | 2003 12 19 | 704 | 0.0 | 0.2− | 2006 08 22 | 644 | 0.1− | 0.7+ |
| 2003 09 26 | 704 | 0.7− | 0.3+ | 2003 12 19 | 704 | 0.0 | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.4+ |
| 2003 09 26 | 704 | 0.4− | 0.1+ | 2003 12 19 | 704 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.7+ |
| 2003 09 26 | 704 | 1.0+ | 0.5+ | 2003 12 19 | 704 | 0.8+ | 0.8+ | 2006 08 30 | 699 | 1.3− | 0.3− |
| 2003 09 26 | 704 | 0.2− | 0.1− | 2003 12 20 | 699 | 0.7+ | 0.0 | 2006 08 30 | 699 | 0.7+ | 0.9+ |
| 2003 10 24 | 704 | 1.0+ | 0.7+ | 2003 12 20 | 699 | 0.2+ | 0.6− | 2006 08 30 | 699 | 0.3+ | 0.6+ |
| 2003 10 24 | 704 | 1.2+ | 0.2− | 2003 12 20 | 699 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.9− | 1.3+ |
| 2003 10 24 | 704 | 1.7+ | 0.1− | 2003 12 20 | 699 | 0.3− | 0.5− | 2006 09 14 | 644 | 0.1+ | 0.8+ |
| 2003 10 24 | 704 | (2.6+ | 1.1−) | 2003 12 21 | 704 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.9+ |
| 2003 10 24 | 704 | 1.9+ | 0.2− | 2003 12 21 | 704 | 0.5+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.8+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 704 | 0.5+ | 0.0 | 2003 12 21 | 704 | 0.6− | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.1+ |
| 2003 10 24 | 704 | 0.3+ | 0.1+ | 2003 12 21 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 1.5− | 0.7− |
| 2003 10 24 | 704 | 0.0 | 0.0 | 2003 12 21 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.5+ |
| 2003 10 24 | 704 | 0.3+ | 0.3− | 2003 12 24 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 699 | 1.1+ | 2.4+ |
| 2003 10 24 | 704 | 0.4− | 0.1+ | 2003 12 24 | 704 | 0.0 | 0.2+ | | | | |

**(139125)∗ 2001 FE$_{65}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.02101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27135835 | $\omega$ | 107.69848 | | −0.96357099 | +0.25435033 | |
| $a$ | 2.3628742 | $\Omega$ | 87.09837 | | −0.26584396 | −0.87699575 | |
| $e$ | 0.1354030 | $i$ | 4.74904 | | −0.02929075 | −0.40765716 | |
| $P$ | 3.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.6+ | 1.8− | 2001 03 21 | 608 | (0.3− | 2.0−) | 2002 08 19 | 644 | 0.2− | 1.0+ |
| 1977 10 11 | 675 | 1.4+ | 0.3+ | 2001 03 26 | 704 | 0.2+ | 0.1+ | 2002 09 16 | 644 | (0.6− | 2.3+) |
| 1977 10 16 | 675 | 0.0 | 0.4+ | 2001 03 26 | 704 | 0.3+ | 0.2− | 2002 09 16 | 644 | (0.2− | 1.7+) |
| 1977 10 16 | 675 | 0.2− | 0.2+ | 2001 03 26 | 704 | 0.7− | 1.0+ | 2002 09 16 | 644 | (0.1+ | 2.1+) |
| 1996 12 14 | 691 | 0.7− | 0.4− | 2001 03 26 | 704 | 0.2+ | 0.5+ | 2003 12 19 | 704 | 0.7− | 0.6+ |
| 1996 12 14 | 691 | 0.3− | 0.8− | 2001 03 26 | 704 | 0.6+ | 0.0 | 2003 12 19 | 704 | 0.0 | 1.3+ |
| 1996 12 14 | 691 | 0.5− | 0.4− | 2001 03 31 | 704 | 0.0 | 1.1+ | 2003 12 19 | 704 | 0.2− | 1.1+ |
| 2001 02 01 | 704 | (0.4− | 1.5+) | 2001 03 31 | 704 | 0.0 | 0.1− | 2003 12 19 | 704 | 0.1+ | 0.5+ |
| 2001 02 01 | 704 | 0.9+ | 0.2− | 2001 03 31 | 704 | 0.4+ | 0.5+ | 2003 12 19 | 704 | 0.2+ | 0.5+ |
| 2001 02 01 | 704 | 1.0+ | 0.2+ | 2001 03 31 | 704 | 0.0 | 0.3+ | 2003 12 25 | 691 | 0.4+ | 0.5+ |
| 2001 02 01 | 704 | 0.2− | 0.0 | 2001 03 31 | 704 | 0.1− | 0.8+ | 2003 12 25 | 691 | 0.2+ | 0.5+ |
| 2001 02 01 | 704 | 0.6+ | 0.7+ | 2001 04 15 | 704 | 0.4− | 0.1+ | 2003 12 25 | 691 | 0.2+ | 0.4+ |
| 2001 02 17 | 704 | 0.5+ | 1.0− | 2001 04 15 | 704 | 0.5− | 0.6− | 2005 06 16 | G96 | 0.2+ | 0.5+ |
| 2001 02 17 | 704 | 0.2+ | 0.3− | 2001 04 15 | 704 | 0.3− | 0.1− | 2005 06 16 | G96 | 0.3− | 0.2+ |
| 2001 02 17 | 704 | 0.9− | 0.6− | 2001 04 15 | 704 | 0.6+ | 0.5− | 2005 06 16 | G96 | 0.1+ | 0.3+ |
| 2001 02 17 | 704 | 0.2+ | 0.5+ | 2001 04 15 | 704 | 0.8− | 0.6− | 2005 06 16 | G96 | 0.1+ | 0.3+ |
| 2001 02 17 | 704 | 0.4+ | 0.3+ | 2001 04 22 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.3− |
| 2001 03 04 | 704 | 0.4+ | 0.1+ | 2001 04 22 | 704 | 0.1+ | 1.3− | 2006 09 18 | 703 | 0.9− | 0.2+ |
| 2001 03 04 | 704 | 1.0+ | 0.6+ | 2001 04 22 | 704 | (2.5+ | 1.0−) | 2006 09 18 | 703 | 0.4− | 1.1− |
| 2001 03 04 | 704 | 0.5+ | 0.3− | 2001 04 23 | 699 | 0.5− | 1.0+ | 2006 09 18 | 703 | 0.5− | 0.3+ |
| 2001 03 04 | 704 | 0.1− | 0.1+ | 2001 04 23 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 1.3+ | 0.3+ |
| 2001 03 04 | 704 | 0.5− | 0.1+ | 2001 04 23 | 699 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.9− | 0.8+ |
| 2001 03 19 | 704 | 0.5− | 0.7− | 2001 04 23 | 699 | (0.5+ | 1.8+) | 2006 10 16 | 703 | 1.0− | 0.7+ |
| 2001 03 19 | 704 | 0.4+ | 0.3− | 2001 04 26 | 704 | 0.3− | 0.7+ | 2006 10 16 | 703 | 1.0− | 0.4− |
| 2001 03 19 | 704 | 0.6+ | 0.3+ | 2001 04 26 | 704 | 1.0− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 03 19 | 704 | 0.5+ | 0.9+ | 2001 04 26 | 704 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 03 19 | 704 | 0.3+ | 0.5+ | 2001 04 26 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 03 21 | 608 | (0.0 | 2.2−) | 2002 08 19 | 644 | 0.4− | 1.0+ | | | | |
| 2001 03 21 | 608 | (0.2+ | 1.8−) | 2002 08 19 | 644 | 1.0− | 1.1+ | | | | |

**(139126)∗ 2001 FX$_{68}$ = 2003 WD$_{136}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56237)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.58406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27510223 | $\omega$ | 36.97499 | | −0.38177153 | −0.92265020 | |
| $a$ | 2.3413876 | $\Omega$ | 75.52565 | | +0.83396111 | −0.36928232 | |
| $e$ | 0.1495109 | $i$ | 3.22498 | | +0.39844619 | −0.11111785 | |
| $P$ | 3.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.2− | 0.2+ | 2003 11 21 | 704 | 0.4+ | 0.3− | 2004 01 24 | 704 | 0.8+ | 0.1− |
| 2001 03 03 | 704 | 0.4− | 0.8− | 2003 11 21 | 704 | 0.5+ | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.3+ |
| 2001 03 03 | 704 | 0.2− | 0.2− | 2003 11 21 | 704 | 0.5+ | 0.2+ | 2004 02 26 | 704 | 0.2− | 0.0 |
| 2001 03 03 | 704 | 0.0 | 0.7− | 2003 11 23 | 704 | 0.5− | 0.4+ | 2004 02 26 | 704 | 1.0− | 0.4+ |
| 2001 03 03 | 704 | 0.3+ | 0.2+ | 2003 11 23 | 704 | 0.1− | 0.2− | 2005 04 10 | 695 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.8+ | 0.4+ | 2003 11 23 | 704 | 0.3− | 0.1+ | 2005 04 10 | 695 | 0.1− | 0.1+ |
| 2001 03 19 | 704 | 0.9+ | 0.2+ | 2003 11 23 | 704 | 0.4+ | 0.3+ | 2005 04 11 | 695 | 0.2− | 0.1+ |
| 2001 03 19 | 704 | 0.9+ | 0.9+ | 2003 11 23 | 704 | 0.4+ | 0.3+ | 2005 05 21 | 644 | 0.0 | 0.1+ |
| 2001 03 19 | 704 | (0.5+ | 1.5+) | 2003 11 26 | 691 | 0.3− | 0.2+ | 2005 05 21 | 644 | 0.1− | 0.5+ |
| 2001 03 19 | 704 | 0.8+ | 0.3+ | 2003 11 26 | 691 | 0.2+ | 0.0 | 2005 05 21 | 644 | 0.0 | 0.4+ |
| 2001 03 19 | 704 | 1.4+ | 0.4+ | 2003 11 26 | 691 | 0.2+ | 0.0 | 2005 05 27 | 599 | (7.9− | 1.9+) |
| 2001 03 19 | 704 | 0.0 | 1.0+ | 2003 12 14 | 691 | 0.2− | 0.1+ | 2005 05 27 | 599 | 0.2+ | 0.0 |
| 2001 03 19 | 704 | 0.5+ | 0.4+ | 2003 12 14 | 691 | 0.2− | 0.2+ | 2005 05 27 | 599 | (7.7− | 2.5+) |
| 2001 03 19 | 704 | 0.5− | 0.5− | 2003 12 14 | 691 | 0.2− | 0.1+ | 2005 05 27 | 599 | 0.1+ | 0.0 |
| 2001 03 19 | 704 | 0.1+ | 0.2− | 2003 12 16 | 106 | 0.8+ | 0.1− | 2005 05 27 | 599 | (7.7− | 2.0+) |
| 2001 03 23 | 209 | (3.6− | 0.5−) | 2003 12 16 | 106 | 0.2+ | 0.2+ | 2005 05 27 | 599 | 0.3+ | 0.1− |
| 2001 03 23 | 699 | 0.8+ | 0.9+ | 2003 12 16 | 106 | 0.3+ | 0.1− | 2005 05 27 | 599 | (7.9− | 2.2+) |
| 2001 03 23 | 699 | 0.6+ | 0.1+ | 2003 12 19 | 704 | 0.2+ | 0.3− | 2005 06 10 | 691 | 0.1− | 0.2+ |
| 2001 03 23 | 699 | 1.4+ | 0.2− | 2003 12 19 | 704 | 0.5+ | 0.2− | 2005 06 10 | 691 | 0.1+ | 0.1+ |
| 2001 03 23 | 699 | 0.4+ | 0.3+ | 2003 12 19 | 704 | 0.1− | 0.3− | 2005 06 10 | 691 | 0.1− | 0.1+ |
| 2001 03 26 | 704 | 0.3− | 0.7+ | 2003 12 19 | 704 | 0.0 | 0.1+ | 2005 06 13 | G96 | 0.2+ | 0.1+ |
| 2001 03 26 | 704 | 0.8− | 0.1+ | 2003 12 19 | 704 | 0.5+ | 0.1+ | 2005 06 13 | G96 | 0.5− | 0.1+ |
| 2001 03 26 | 704 | 0.3+ | 0.4+ | 2003 12 19 | 691 | 0.0 | 0.0 | 2005 06 13 | G96 | 0.0 | 0.0 |
| 2001 03 26 | 704 | 0.5− | 0.4+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.7− | 0.0 |
| 2001 03 26 | 704 | 0.5− | 0.5+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2005 06 17 | 691 | 0.0 | 0.1+ |
| 2001 03 29 | 699 | 0.1− | 1.5+ | 2003 12 24 | 704 | 0.3+ | 0.4+ | 2005 06 17 | 691 | 0.2+ | 0.2+ |
| 2001 03 29 | 699 | (1.8+ | 1.6+) | 2003 12 24 | 704 | 0.0 | 0.0 | 2005 06 17 | 691 | 0.3+ | 0.2+ |
| 2001 03 29 | 699 | 1.1− | 0.0 | 2003 12 24 | 704 | 0.1+ | 0.6+ | 2006 08 17 | 644 | 0.3+ | 0.5+ |
| 2001 03 29 | 704 | 0.4+ | 0.2− | 2003 12 24 | 704 | 0.4+ | 0.5+ | 2006 08 17 | 644 | 0.8+ | 0.6+ |
| 2001 03 29 | 704 | 0.1+ | 0.6+ | 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.6+ |
| 2001 03 29 | 699 | (2.4− | 1.2+) | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 08 21 | 291 | 0.4− | 0.6+ |
| 2001 03 29 | 704 | (1.7+ | 0.6+) | 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 291 | 0.4− | 0.5+ |
| 2001 04 24 | 699 | 0.6+ | 1.0+ | 2004 01 12 | 644 | 0.0 | 0.3+ | 2006 08 21 | 291 | 0.4− | 0.5+ |
| 2001 04 24 | 699 | 0.8− | 0.0 | 2004 01 12 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 1.4+ | 0.7+ |
| 2001 04 24 | 699 | 1.0− | 1.4+ | 2004 01 12 | 644 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.4+ |
| 2001 04 24 | 699 | (0.8+ | 1.9+) | 2004 01 17 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.3− |
| 2003 11 15 | 291 | 0.4− | 0.1− | 2004 01 17 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.9+ |
| 2003 11 15 | 291 | 0.6− | 0.2+ | 2004 01 17 | 644 | 0.3+ | 0.6+ | 2006 11 27 | G96 | 0.1− | 0.3+ |
| 2003 11 15 | 291 | 0.7− | 0.0 | 2004 01 24 | 704 | 0.2− | 0.9− | 2006 11 27 | G96 | 0.0 | 0.3+ |
| 2003 11 21 | 704 | 0.6+ | 0.2+ | 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.2+ |
| 2003 11 21 | 704 | 0.8+ | 0.1+ | 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.1− |

**(139127)∗ 2001 FK$_{69}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.60222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27674980 | $\omega$ | 24.06239 | | −0.76820219 | −0.63696015 | |
| $a$ | 2.3320857 | $\Omega$ | 116.21486 | | +0.57512262 | −0.73079473 | |
| $e$ | 0.1173258 | $i$ | 4.11633 | | +0.28124610 | −0.24539933 | |
| $P$ | 3.56 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.5− | 0.3− | 2002 07 29 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.3+ |
| 2001 03 03 | 704 | 0.5− | 0.1− | 2002 08 12 | 807 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.4− |
| 2001 03 03 | 704 | 0.7− | 0.2+ | 2002 08 12 | 807 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.1− | 0.4+ |
| 2001 03 03 | 704 | 0.5− | 0.1+ | 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.6+ |
| 2001 03 18 | 608 | 0.5+ | 0.0 | 2002 08 29 | 644 | 0.3− | 0.0 | 2006 09 20 | 691 | 0.0 | 0.5+ |
| 2001 03 18 | 608 | 0.4− | 0.4+ | 2002 08 29 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.3+ |
| 2001 03 18 | 608 | 0.3+ | 0.2+ | 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 09 20 | 691 | 0.2− | 0.9+ |
| 2001 03 19 | 704 | (1.7+ | 0.5+) | 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2001 03 19 | 704 | 1.2+ | 1.3+ | 2002 08 29 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 2001 03 19 | 704 | (2.3+ | 0.8−) | 2003 12 18 | 106 | 0.9− | 0.7+ | 2006 09 20 | 644 | 0.7− | 0.3+ |
| 2001 03 19 | 704 | 0.5+ | 0.3− | 2003 12 18 | 106 | 0.7− | 0.4+ | 2006 09 25 | 291 | 0.2− | 0.6+ |
| 2001 03 19 | 704 | 0.9+ | 0.7+ | 2003 12 18 | 106 | 0.3− | 0.8+ | 2006 09 25 | 291 | 0.2− | 0.5+ |
| 2001 03 19 | 704 | (1.9+ | 1.1−) | 2003 12 19 | 704 | 0.0 | 0.8+ | 2006 09 25 | 291 | 0.5− | 0.6+ |
| 2001 03 19 | 704 | (2.9+ | 1.0−) | 2003 12 19 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.8+ |
| 2001 03 19 | 704 | 1.4+ | 1.2+ | 2003 12 19 | 704 | 0.3− | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.1− |
| 2001 03 19 | 704 | 0.0 | 1.2+ | 2003 12 19 | 704 | 0.4− | 0.9+ | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2001 03 26 | 704 | 0.0 | 0.9+ | 2003 12 19 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.8+ |
| 2001 03 26 | 704 | 0.9+ | 1.1+ | 2003 12 21 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 704 | 1.1− | 1.3+ |
| 2001 03 26 | 704 | 0.8+ | 0.9+ | 2003 12 21 | 704 | 0.5+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.3− |
| 2001 03 26 | 704 | 0.2+ | 0.1+ | 2003 12 21 | 704 | 0.5+ | 0.6− | 2006 09 30 | 704 | 0.9+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.0 | 0.2− | 2003 12 21 | 704 | 0.3+ | 0.2− | 2006 09 30 | 704 | 0.7+ | 1.4+ |
| 2001 03 27 | 608 | 0.8+ | 0.1+ | 2003 12 21 | 704 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2001 03 27 | 608 | 0.6+ | 0.1+ | 2003 12 23 | 704 | 0.8+ | 0.7− | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2001 03 27 | 608 | 0.2+ | 0.1+ | 2003 12 23 | 704 | 1.5+ | 0.5− | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2001 03 29 | 704 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.6+ | 0.4− | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2001 03 29 | 704 | 0.6+ | 0.6+ | 2003 12 23 | 704 | 1.0+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2001 03 29 | 704 | 1.0+ | 1.0+ | 2003 12 23 | 704 | (3.5+ | 2.2−) | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 03 29 | 704 | 0.2+ | 0.4+ | 2005 07 05 | G96 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2001 03 29 | 704 | 0.2+ | 1.0+ | 2005 07 05 | G96 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.7− | 1.1− |
| 2001 04 16 | 645 | 0.2− | 0.1+ | 2005 07 05 | G96 | (0.1+ | 1.6−) | 2006 10 16 | 703 | (2.2− | 0.6−) |
| 2001 04 16 | 645 | 0.2− | 0.2+ | 2005 07 05 | G96 | 1.4+ | 1.1− | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2001 04 16 | 704 | 1.2+ | 0.3+ | 2006 08 23 | 850 | (1.7− | 6.0−) | 2006 10 16 | 703 | 0.4− | 0.9− |
| 2001 04 16 | 704 | 0.7+ | 0.2− | 2006 08 23 | 850 | (2.1+ | 1.2−) | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2001 04 16 | 704 | 1.0+ | 0.1+ | 2006 08 23 | 850 | (1.8+ | 0.1+) | 2006 10 20 | 644 | 0.6− | 0.0 |
| 2001 04 16 | 704 | 1.5+ | 0.4− | 2006 08 23 | 850 | (2.0+ | 2.3+) | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2001 04 17 | 644 | 0.6+ | 1.2+ | 2006 08 23 | 850 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 04 17 | 644 | 0.8+ | 0.9+ | 2006 09 12 | 703 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 04 17 | 644 | 0.8+ | 1.2+ | 2006 09 12 | 703 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 07 29 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.5+ | | | | |
| 2002 07 29 | 644 | 0.5+ | 0.3+ | 2006 09 12 | 703 | (0.0 | 3.2+) | | | | |

**(139128)∗ 2001 FZ$_{69}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.22498 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29545551 | $\omega$ | 87.13818 | | −0.71990891 | | −0.69002355 |
| $a$ | 2.2325849 | $\Omega$ | 49.21519 | | +0.59106441 | | −0.66600866 |
| $e$ | 0.1059387 | $i$ | 5.67128 | | +0.36383241 | | −0.28337247 |
| $P$ | 3.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.4+ | 0.1− | 2003 12 27 | 704 | 0.1+ | 0.3− | 2006 11 10 | 691 | (2.8− | 0.9−) |
| 2001 03 03 | 704 | 1.0+ | 0.4− | 2003 12 27 | 704 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2001 03 03 | 704 | 0.7− | 0.7− | 2003 12 27 | 704 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2001 03 19 | 704 | (0.3+ | 1.5+) | 2003 12 29 | 704 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 2001 03 19 | 704 | 0.5− | 0.5+ | 2003 12 29 | 704 | 0.2+ | 0.7− | 2006 11 11 | 703 | 0.8− | 0.9− |
| 2001 03 19 | 704 | 0.1− | 0.5+ | 2003 12 29 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1+ | 1.3+ |
| 2001 03 19 | 704 | (2.2− | 0.5+) | 2003 12 29 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.6+ | 0.8+ |
| 2001 03 23 | 699 | 1.2+ | 0.3+ | 2003 12 29 | 704 | 0.5+ | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2001 03 23 | 699 | 0.5+ | 0.6+ | 2004 01 20 | 704 | (2.5− | 1.0+) | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2001 03 23 | 699 | (1.8+ | 1.1+) | 2004 01 20 | 704 | (2.6− | 1.2+) | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2001 03 23 | 699 | 0.4+ | 0.5+ | 2004 01 20 | 704 | (2.7− | 0.9+) | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2001 03 26 | 704 | 0.6+ | 0.0 | 2004 01 30 | 703 | 0.9− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.5− |
| 2001 03 26 | 704 | 0.2− | 0.3− | 2004 01 30 | 703 | 0.5− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 03 26 | 704 | 0.9− | 0.6− | 2004 01 30 | 703 | 0.6− | 1.1− | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2001 03 26 | 704 | 0.9+ | 0.7+ | 2004 01 30 | 703 | (0.5− | 1.9−) | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2001 03 29 | 704 | 0.1− | 0.5+ | 2004 01 31 | 704 | 0.8− | 1.2+ | 2006 11 18 | 704 | 0.7+ | 1.1+ |
| 2001 03 29 | 704 | 0.2− | 0.9+ | 2004 01 31 | 704 | 1.1+ | 0.9− | 2006 11 18 | 704 | 0.2+ | 0.9+ |
| 2001 03 29 | 704 | 0.6+ | 1.5+ | 2004 01 31 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 2001 03 29 | 704 | 0.4− | 1.1− | 2004 01 31 | 704 | 0.7+ | 0.3+ | 2006 11 20 | 703 | 0.5+ | 0.1− |
| 2001 03 29 | 704 | 0.6+ | 1.1+ | 2004 01 31 | 704 | 0.6− | 0.1− | 2006 11 20 | 703 | 0.6+ | 0.5+ |
| 2001 04 24 | 699 | (1.8− | 0.3−) | 2004 02 02 | 704 | 0.4+ | 0.0 | 2006 11 20 | 703 | 0.4− | 0.2+ |
| 2001 04 24 | 699 | 0.8− | 0.6+ | 2004 02 02 | 704 | 0.8+ | 0.6− | 2006 11 20 | 704 | 0.3+ | 1.0+ |
| 2001 04 24 | 699 | 0.3− | 1.1+ | 2004 02 02 | 704 | 0.0 | 0.4− | 2006 11 20 | 703 | 0.2− | 0.4+ |
| 2001 04 24 | 699 | 0.1+ | 0.0 | 2004 02 09 | 644 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2001 06 12 | 691 | 0.1+ | 0.3+ | 2004 02 09 | 644 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.5− | 1.0+ |
| 2001 06 12 | 691 | 0.2+ | 0.1+ | 2004 02 09 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.6− | 0.7+ |
| 2001 06 12 | 691 | 0.1+ | 0.0 | 2004 02 14 | 704 | 0.6+ | 0.4− | 2006 11 20 | 704 | 0.1− | 1.1+ |
| 2002 08 17 | 608 | 0.5− | 0.1+ | 2004 02 14 | 704 | 0.6+ | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2002 08 17 | 608 | 0.4+ | 0.0 | 2004 02 14 | 704 | 0.6+ | 1.1− | 2006 11 20 | 704 | 0.7− | 1.1+ |
| 2002 08 17 | 608 | 0.4+ | 0.7− | 2004 02 14 | 704 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2003 12 17 | 699 | 0.6− | 0.1+ | 2004 02 14 | 704 | 0.6+ | 0.5− | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2003 12 17 | 699 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2003 12 17 | 699 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2003 12 17 | 699 | 0.4− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.8+ |
| 2003 12 18 | 704 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2003 12 18 | 704 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | 0.9− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2003 12 23 | 704 | 0.0 | 0.9− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 12 01 | 704 | 1.7− | 0.5+ |
| 2003 12 23 | 704 | 0.8− | 0.9+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 12 01 | 704 | 0.1+ | 0.1+ |
| 2003 12 23 | 704 | 0.7− | 0.6− | 2006 10 27 | G96 | 0.5+ | 0.0 | 2006 12 01 | 704 | 2.5− | 2.5− |
| 2003 12 23 | 704 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 12 01 | 704 | 2.1− | 1.6− |
| 2003 12 23 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2003 12 27 | 704 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.6− | | | | |
| 2003 12 27 | 704 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.1− | | | | |

**(139129)∗ 2001 FA$_{71}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.19310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29778773 | $\omega$ | 60.73403 | | −0.74537155 | | −0.66370655 |
| $a$ | 2.2209128 | $\Omega$ | 77.60763 | | +0.58725620 | | −0.69812579 |
| $e$ | 0.1264519 | $i$ | 3.67297 | | +0.31551768 | | −0.26854050 |
| $P$ | 3.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.4− | 0.2− | 2003 12 19 | 704 | 0.2+ | 0.5+ | 2004 03 19 | 704 | 0.3− | 0.1− |
| 2001 03 03 | 704 | 0.9+ | 0.0 | 2003 12 19 | 704 | 0.4− | 1.4+ | 2004 04 19 | 704 | 0.8− | 0.7+ |
| 2001 03 03 | 704 | 0.4− | 1.3+ | 2003 12 22 | 704 | 0.3− | 0.3+ | 2004 04 19 | 704 | 0.9− | 0.2− |
| 2001 03 03 | 704 | 1.3− | 0.7+ | 2003 12 22 | 704 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.8− | 0.3+ |
| 2001 03 19 | 704 | 0.8+ | 0.2+ | 2003 12 22 | 704 | 1.3− | 0.3+ | 2004 04 19 | 704 | 0.5+ | 0.8+ |
| 2001 03 19 | 704 | 0.7+ | 0.1+ | 2003 12 22 | 704 | 0.1− | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.1+ |
| 2001 03 19 | 704 | 0.4+ | 1.1+ | 2003 12 22 | 704 | (0.3+ | 1.8+) | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2001 03 19 | 704 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2001 03 19 | 704 | (1.8− | 1.1−) | 2003 12 27 | 704 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.6− | 0.3− |
| 2001 03 19 | 704 | (1.2− | 1.9+) | 2003 12 27 | 704 | 0.6+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2001 03 19 | 704 | 1.1+ | 0.5+ | 2003 12 27 | 704 | 0.7+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 03 19 | 704 | 1.4− | 0.8+ | 2003 12 27 | 704 | 0.1+ | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 03 19 | 704 | 1.0− | 0.3− | 2003 12 29 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2001 03 21 | 699 | 0.1+ | 0.6+ | 2003 12 29 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2001 03 21 | 699 | 0.9+ | 0.1− | 2003 12 29 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2001 03 21 | 699 | 0.1− | 0.8+ | 2004 01 05 | 703 | (0.3+ | 2.4−) | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2001 03 21 | 699 | 0.9+ | 0.3+ | 2004 01 05 | 703 | 0.5+ | 0.6− | 2006 11 12 | 703 | 0.8− | 0.2− |
| 2001 03 26 | 704 | 0.4− | 0.4− | 2004 01 05 | 703 | 0.2+ | 0.3− | 2006 11 12 | 703 | 0.5− | 0.3− |
| 2001 03 26 | 704 | 0.4− | 0.2+ | 2004 01 05 | 703 | 0.4− | 0.6− | 2006 11 12 | 703 | (1.6− | 1.8−) |
| 2001 03 26 | 704 | 0.1+ | 0.4− | 2004 01 13 | 699 | 0.4+ | 0.3− | 2006 11 12 | 703 | 0.7− | 1.2− |
| 2001 03 26 | 704 | 0.7+ | 0.1− | 2004 01 13 | 699 | 0.4− | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2001 03 26 | 704 | 0.2+ | 0.4+ | 2004 01 13 | 699 | 0.7+ | 0.7− | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2001 03 27 | 608 | 0.6− | 0.1− | 2004 01 13 | 699 | (0.9− | 1.6−) | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 03 27 | 608 | 0.3− | 0.3+ | 2004 01 20 | 704 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.9+ | 0.6+ |
| 2001 03 27 | 608 | 0.5− | 0.1− | 2004 01 20 | 704 | 0.3− | 0.2− | 2006 11 17 | 704 | 1.1+ | 0.7+ |
| 2001 03 29 | 699 | (1.7+ | 0.6−) | 2004 01 20 | 704 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.8+ | 0.4+ |
| 2001 03 29 | 699 | 0.0 | 0.0 | 2004 01 23 | 628 | 0.2− | 0.2− | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2001 03 29 | 699 | 0.1+ | 0.4+ | 2004 01 23 | 628 | 0.3− | 0.2− | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2001 03 29 | 704 | 0.1− | 0.8+ | 2004 01 23 | 628 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.1+ | 0.1− |
| 2001 03 29 | 704 | 0.9− | 0.2+ | 2004 01 26 | 699 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2001 03 29 | 699 | 0.1− | 0.1+ | 2004 01 26 | 699 | 1.0+ | 0.6− | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2001 03 29 | 704 | 1.1+ | 0.2− | 2004 01 26 | 699 | 0.9− | 0.4− | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2001 04 23 | 699 | 0.6+ | 0.3+ | 2004 01 26 | 699 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.7− | 0.7+ |
| 2001 04 23 | 699 | 0.4+ | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.5+ |
| 2001 04 23 | 699 | 0.2− | 1.1− | 2004 01 30 | 704 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 04 23 | 699 | (0.3− | 2.4+) | 2004 01 30 | 704 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 04 24 | 699 | 0.0 | 0.3− | 2004 01 30 | 704 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2001 04 24 | 699 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.8− | 0.1− | 2006 11 21 | 704 | 0.7− | 0.6+ |
| 2001 04 24 | 699 | (0.9− | 1.6+) | 2004 01 31 | 704 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2001 04 24 | 699 | 0.8+ | 0.6+ | 2004 01 31 | 704 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2001 04 24 | 608 | (2.0+ | 1.8+) | 2004 01 31 | 704 | 0.4− | 0.6− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2001 04 24 | 608 | (1.8+ | 0.9+) | 2004 01 31 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2001 04 24 | 608 | 1.2+ | 1.2+ | 2004 01 31 | 704 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.0 | 1.2+ | 2004 02 02 | 704 | (0.8+ | 2.9+) | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.1− | 1.1+ | 2004 02 02 | 704 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.6− | 0.7+ | 2004 02 02 | 704 | 1.1+ | 0.6+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 08 30 | 644 | 0.1− | 0.6+ | 2004 02 02 | 704 | 0.9+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2002 08 30 | 644 | 0.1− | 0.8+ | 2004 02 11 | 699 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 08 30 | 644 | 0.1− | 0.7+ | 2004 02 11 | 699 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2004 02 11 | 699 | 0.1− | 0.6− | 2006 11 27 | 703 | 0.5+ | 0.0 |
| 2002 09 15 | 644 | 0.5− | 0.8+ | 2004 02 11 | 699 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.2+ |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2004 02 15 | 704 | 0.4+ | 0.4+ | 2006 11 27 | 703 | 0.7+ | 0.3+ |
| 2003 11 21 | 704 | 0.7− | 1.1+ | 2004 02 15 | 704 | 0.7+ | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.6+ |
| 2003 11 21 | 704 | 0.1+ | 0.7+ | 2004 02 15 | 704 | 0.4+ | 0.2− | 2006 11 27 | 704 | 1.4− | 1.0+ |
| 2003 11 21 | 704 | 0.0 | 0.8+ | 2004 02 15 | 704 | 0.4+ | 0.1− | 2006 11 27 | 704 | 0.3+ | 1.4+ |
| 2003 12 18 | 185 | 1.1+ | 1.1+ | 2004 02 15 | 704 | 0.4+ | 0.1− | 2006 11 27 | 704 | 0.5− | 0.4− |
| 2003 12 18 | 185 | 0.6− | 1.0− | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 12 01 | 691 | 0.3+ | 0.0 |
| 2003 12 19 | 704 | 0.8+ | 0.5− | 2004 03 19 | 704 | 0.2+ | 0.7+ | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.5− | 0.0 | 2006 12 01 | 691 | 0.1− | 0.2− |

**(139130)∗ 2001 FF$_{71}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.27445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27442762 | $\omega$ | 49.20897 | | −0.99680937 | −0.01112358 | |
| $a$ | 2.3452232 | $\Omega$ | 130.00063 | | −0.01603393 | −0.94215173 | |
| $e$ | 0.1176317 | $i$ | 5.92235 | | +0.07819200 | −0.33500208 | |
| $P$ | 3.59 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.8− | 0.7+ | 2001 04 14 | 608 | 0.3− | 0.9+ | 2006 09 18 | 703 | (0.3+ | 2.5+) |
| 2001 01 19 | 704 | 0.4+ | 0.5+ | 2001 04 14 | 608 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.3+ |
| 2001 01 19 | 704 | 1.3+ | 0.3+ | 2001 04 15 | 704 | (2.3− | 1.0+) | 2006 09 18 | 703 | 0.5+ | 0.5+ |
| 2001 02 01 | 704 | 0.1+ | 0.0 | 2001 04 15 | 704 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 2001 02 01 | 704 | (1.7− | 1.3−) | 2001 04 15 | 704 | 0.6− | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2001 02 01 | 704 | 0.2− | 0.9+ | 2001 04 15 | 704 | 0.1− | 0.3− | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 2001 02 01 | 704 | 0.4− | 0.4+ | 2001 04 15 | 704 | 0.2+ | 0.7− | 2006 09 20 | 644 | 0.9− | 0.4+ |
| 2001 02 01 | 704 | 0.7+ | 0.2+ | 2001 04 24 | 699 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.0 |
| 2001 02 17 | 704 | 0.1+ | 0.1− | 2001 04 24 | 699 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.2+ |
| 2001 02 17 | 704 | 0.8+ | 0.4− | 2001 04 24 | 699 | 0.3− | 0.8+ | 2006 09 26 | 704 | 0.4+ | 0.2+ |
| 2001 02 17 | 704 | 1.2+ | 0.3− | 2001 04 24 | 699 | 0.6− | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.8− |
| 2001 02 17 | 704 | 1.4+ | 1.2− | 2002 08 15 | 699 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.1+ | 1.3− |
| 2001 02 17 | 704 | 0.2+ | 0.5+ | 2002 08 15 | 699 | 0.6+ | 0.8− | 2006 09 29 | 699 | 0.0 | 1.0+ |
| 2001 03 03 | 704 | 0.1− | 0.3+ | 2002 08 15 | 699 | 1.0− | 0.1− | 2006 09 29 | 699 | (0.8− | 1.6+) |
| 2001 03 03 | 704 | 0.5+ | 1.0+ | 2002 08 15 | 699 | 1.0+ | 0.5+ | 2006 09 29 | 699 | 0.0 | 0.1+ |
| 2001 03 03 | 704 | 0.3+ | 0.5+ | 2002 08 18 | 644 | 0.2+ | 0.8+ | 2006 09 29 | 699 | 0.5− | 1.0+ |
| 2001 03 03 | 704 | 0.1+ | 0.2− | 2002 08 18 | 644 | 0.2− | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2001 03 03 | 704 | 0.8+ | 0.2− | 2002 08 18 | 644 | 1.1+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2001 03 18 | 608 | 0.9− | 0.3− | 2002 09 05 | 704 | 0.6− | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2001 03 18 | 608 | 1.0− | 0.1+ | 2002 09 05 | 704 | 0.6− | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.2+ |
| 2001 03 18 | 608 | 1.0− | 0.6− | 2002 09 05 | 704 | 0.2+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 03 19 | 704 | 0.1− | 0.7+ | 2002 09 05 | 704 | 0.7− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 03 19 | 704 | 0.2− | 0.8+ | 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 03 19 | 704 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2001 03 19 | 704 | 0.2+ | 0.5+ | 2002 09 15 | 644 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.6+ |
| 2001 03 19 | 704 | 0.3+ | 0.8+ | 2003 12 01 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 1.1− | 0.2+ |
| 2001 03 26 | 704 | 0.1+ | 0.8+ | 2003 12 01 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2001 03 26 | 704 | 0.1− | 0.5+ | 2003 12 01 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2001 03 26 | 704 | 0.4+ | 0.4+ | 2003 12 01 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 03 26 | 704 | 0.2− | 0.5+ | 2003 12 01 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2001 03 26 | 704 | 0.2+ | 0.1+ | 2003 12 19 | 704 | (2.3− | 0.6+) | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2001 03 27 | 699 | 0.2+ | 0.7+ | 2003 12 19 | 704 | (1.6− | 2.3+) | 2006 10 22 | 703 | 0.2− | 0.9− |
| 2001 03 27 | 699 | 0.2+ | 0.9+ | 2003 12 19 | 704 | (1.0− | 1.9+) | 2006 10 22 | 703 | 0.4+ | 0.1− |
| 2001 03 27 | 699 | 0.1+ | 0.5+ | 2003 12 22 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.3+ |
| 2001 03 27 | 699 | 0.3+ | 0.9+ | 2003 12 22 | 704 | 0.7− | 0.3− | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2001 03 27 | 608 | 1.0+ | 0.7− | 2003 12 22 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.0 | 0.5− |
| 2001 03 27 | 608 | 0.9+ | 0.7− | 2003 12 22 | 704 | 0.9− | 0.3− | 2006 10 22 | 703 | 0.7− | 0.4+ |
| 2001 03 27 | 608 | 1.2+ | 0.4− | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2001 03 30 | 704 | 0.4− | 0.7+ | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 1.1− | 0.5− |
| 2001 03 30 | 704 | 0.1− | 1.1+ | 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.8+ | 0.1+ |
| 2001 03 30 | 704 | 0.1− | 0.5+ | 2006 09 14 | 291 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.2− | 0.2+ |
| 2001 03 30 | 704 | (2.2− | 0.2−) | 2006 09 14 | 291 | 0.1+ | 0.7+ | 2006 11 16 | 703 | 0.1+ | 0.6+ |
| 2001 03 30 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 291 | 0.1+ | 0.6+ | | | | |
| 2001 04 14 | 608 | 0.1− | 0.6+ | 2006 09 18 | 703 | 1.0− | 1.1+ | | | | |

**(139131)∗ 2001 FB$_{72}$ = 2003 YE$_{100}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56238)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.48734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28269488 | $\omega$ | 9.98382 | | −0.70818558 | −0.70267673 | |
| $a$ | 2.2992741 | $\Omega$ | 125.14434 | | +0.64183539 | −0.68127837 | |
| $e$ | 0.1063109 | $i$ | 4.81886 | | +0.29414369 | −0.20519549 | |
| $P$ | 3.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.4− | 0.9+ | 2001 04 15 | 608 | 1.2+ | 0.6+ | 2004 01 30 | 704 | 0.3− | 0.2+ |
| 1999 10 09 | 704 | 0.3− | 0.4− | 2001 04 15 | 608 | 0.7+ | 0.4+ | 2004 01 30 | 704 | 0.2+ | 0.1+ |
| 1999 10 09 | 704 | 0.2+ | 0.9+ | 2001 04 16 | 704 | 0.3− | 0.0 | 2005 02 13 | 809 | 0.2− | 0.3+ |
| 1999 10 09 | 704 | 1.4− | 1.0+ | 2001 04 16 | 704 | 0.2− | 0.5+ | 2005 02 13 | 809 | 0.4− | 0.3+ |
| 1999 10 09 | 704 | 0.1+ | 1.0+ | 2001 04 16 | 704 | 0.1+ | 0.4− | 2005 02 13 | 809 | 0.9− | 0.3+ |
| 2001 03 19 | 704 | 1.2+ | 1.2+ | 2001 04 17 | 699 | (2.2+ | 0.2+) | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 2001 03 19 | 704 | 0.2+ | 0.4+ | 2001 04 17 | 699 | (1.7+ | 0.8+) | 2006 09 30 | 703 | 0.4− | 0.9+ |
| 2001 03 19 | 704 | 0.2− | 0.7+ | 2001 04 17 | 699 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.8+ |
| 2001 03 19 | 704 | 1.1− | 0.3+ | 2001 04 17 | 699 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.8+ | 0.0 |
| 2001 03 19 | 704 | 0.1− | 0.2+ | 2002 08 29 | 644 | 0.0 | 1.2+ | 2006 10 03 | G96 | 0.2+ | 0.2+ |
| 2001 03 19 | 704 | 1.2+ | 0.6+ | 2002 08 29 | 644 | 0.0 | 0.8+ | 2006 10 03 | G96 | 0.3+ | 0.1+ |
| 2001 03 19 | 704 | 0.2+ | 0.8+ | 2002 08 29 | 644 | 0.3− | 1.0+ | 2006 10 03 | G96 | 0.0 | 0.2+ |
| 2001 03 19 | 704 | 1.3+ | 1.3+ | 2003 11 02 | 704 | 0.5− | 1.5+ | 2006 10 16 | 703 | 0.8− | 0.6+ |
| 2001 03 19 | 704 | 0.4− | 1.3+ | 2003 11 02 | 704 | 0.1+ | 1.0+ | 2006 10 16 | 703 | 0.1+ | 1.2+ |
| 2001 03 21 | 699 | 0.1+ | 0.5+ | 2003 11 02 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 1.1− | 1.0+ |
| 2001 03 21 | 699 | 1.0+ | 0.4+ | 2003 12 19 | 704 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.5+ | 1.1+ |
| 2001 03 21 | 699 | 0.8− | 0.7+ | 2003 12 19 | 704 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.7− | 0.8+ |
| 2001 03 21 | 699 | 0.3+ | 0.5+ | 2003 12 19 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 1.4− | 0.9+ |
| 2001 03 26 | 704 | 0.1− | 0.5+ | 2003 12 19 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.4− | 1.0+ |
| 2001 03 26 | 704 | 0.3+ | 0.9+ | 2003 12 19 | 704 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2001 03 26 | 704 | 0.1− | 0.7+ | 2003 12 21 | 704 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 03 26 | 704 | 0.2+ | 0.1− | 2003 12 21 | 704 | (0.7− | 3.0−) | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 03 27 | 699 | 0.2+ | 0.8+ | 2003 12 21 | 704 | (0.9− | 2.8−) | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2001 03 27 | 699 | 0.4− | 0.2+ | 2003 12 23 | 704 | 0.7− | 0.1− | 2006 11 16 | 703 | 1.4− | 0.1− |
| 2001 03 27 | 699 | 0.3− | 1.0+ | 2003 12 23 | 704 | 0.4− | 0.4+ | 2006 11 16 | 703 | (1.1− | 1.6+) |
| 2001 03 27 | 699 | 0.6− | 0.9+ | 2003 12 23 | 704 | 0.5− | 0.2− | 2006 11 16 | 703 | 0.7+ | 0.3+ |
| 2001 03 29 | 704 | 0.4+ | 0.6− | 2003 12 23 | 704 | 0.5− | 0.1+ | 2006 11 16 | 703 | 0.6+ | 0.5− |
| 2001 03 29 | 704 | 0.3− | 0.6+ | 2004 01 24 | 704 | 0.5+ | 0.8− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2001 03 29 | 704 | 1.0+ | 1.0+ | 2004 01 24 | 704 | 0.2+ | 0.6− | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2001 03 29 | 608 | 0.2+ | 0.5− | 2004 01 24 | 704 | 0.5+ | 0.6− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2001 03 29 | 608 | 0.2− | 0.7− | 2004 01 24 | 704 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2001 03 29 | 608 | 0.1− | 0.2− | 2004 01 30 | 704 | 0.8+ | 0.4− | | | | |
| 2001 04 15 | 608 | 0.9+ | 0.9+ | 2004 01 30 | 704 | 0.1− | 0.6− | | | | |

**(139132)∗ 2001 FQ$_{72}$ = 2002 PX$_{100}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33393)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.31469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27736739 | $\omega$ | 83.42881 | | −0.59987388 | −0.79748264 | |
| $a$ | 2.3286227 | $\Omega$ | 43.64787 | | +0.69211672 | −0.55772834 | |
| $e$ | 0.0590530 | $i$ | 5.37007 | | +0.40140475 | −0.23013156 | |
| $P$ | 3.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 1.6+ | 0.0 | 2002 08 15 | 644 | 0.4− | 0.0 | 2003 12 28 | 704 | 1.4− | 0.8+ |
| 1999 11 05 | 704 | 0.3− | 0.7− | 2002 08 15 | 644 | 0.6− | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 1999 11 05 | 704 | (3.7− | 4.7−) | 2002 08 15 | 644 | 0.5− | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.3+ | 1.3+ | 2003 11 20 | 704 | 1.0− | 0.6− | 2006 09 25 | 699 | 0.1+ | 0.5+ | |
| 2001 03 19 | 699 | 0.6+ | 1.0+ | 2003 11 20 | 704 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.5− | 0.2+ | |
| 2001 03 19 | 704 | 0.3− | 0.8+ | 2003 11 20 | 704 | 0.7+ | 1.3+ | 2006 09 26 | 704 | (0.1+ | 1.8+) | |
| 2001 03 19 | 704 | 0.1− | 0.7− | 2003 11 24 | 704 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.1− | 0.4+ | |
| 2001 03 19 | 699 | 0.2+ | 0.5+ | 2003 11 24 | 704 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.4− | 0.8+ | |
| 2001 03 19 | 704 | 0.4− | 0.5+ | 2003 11 24 | 704 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.1− | 0.3+ | |
| 2001 03 19 | 704 | 0.6− | 0.4+ | 2003 11 24 | 704 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.6+ | 0.9+ | |
| 2001 03 19 | 704 | 1.3+ | 0.4+ | 2003 12 04 | 704 | 0.7− | 0.6− | 2006 09 28 | 691 | 0.2− | 0.3+ | |
| 2001 03 19 | 704 | 0.1+ | 0.7+ | 2003 12 04 | 704 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.4+ | |
| 2001 03 19 | 704 | 0.9+ | 0.0 | 2003 12 04 | 704 | 0.7− | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.5+ | |
| 2001 03 19 | 699 | 1.0+ | 0.7+ | 2003 12 18 | 704 | 0.7+ | 0.2− | 2006 10 02 | 691 | 0.3− | 0.2+ | |
| 2001 03 19 | 704 | 0.2− | 1.1− | 2003 12 18 | 704 | 1.0+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2001 03 26 | 704 | 0.9+ | 0.5− | 2003 12 18 | 704 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ | |
| 2001 03 26 | 704 | 0.7+ | 1.2+ | 2003 12 18 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2001 03 26 | 704 | 0.6− | 0.7+ | 2003 12 23 | 704 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.0 | |
| 2001 03 26 | 704 | 0.1− | 0.6+ | 2003 12 23 | 704 | 0.6+ | 1.4− | 2006 10 12 | 644 | 0.1− | 0.2+ | |
| 2001 03 26 | 704 | 0.4+ | 0.8+ | 2003 12 23 | 704 | 0.4+ | 0.7− | 2006 10 12 | 644 | 0.2− | 0.3− | |
| 2001 03 30 | 704 | 0.4+ | 0.9+ | 2003 12 23 | 704 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.4− | 0.3− | |
| 2001 03 30 | 704 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.0 | 0.4− | |
| 2001 03 30 | 704 | 1.2+ | 0.5− | 2003 12 27 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 1.3− | 0.7+ | |
| 2001 04 23 | 699 | 0.3+ | 1.2− | 2003 12 27 | 704 | (2.5+ | 0.8−) | 2006 10 16 | 703 | 0.1+ | 0.9− | |
| 2001 04 23 | 699 | 0.2+ | 0.2+ | 2003 12 27 | 704 | 0.8− | 0.5+ | 2006 10 21 | 644 | 1.0+ | 0.5+ | |
| 2001 04 23 | 699 | 0.1+ | 1.3+ | 2003 12 27 | 704 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.3+ | |
| 2001 04 23 | 699 | 0.2− | 0.2− | 2003 12 28 | 704 | 1.0− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2001 04 28 | 691 | 0.1+ | 0.2+ | 2003 12 28 | 704 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.1− | |
| 2001 04 28 | 691 | 0.1+ | 0.7+ | 2003 12 28 | 704 | 0.6− | 0.5+ | 2006 11 16 | G96 | 0.8− | 0.4− | |
| 2001 04 28 | 691 | 0.1+ | 0.2+ | 2003 12 28 | 704 | 0.7+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.0 | |
| 2002 08 11 | 644 | 0.2− | 0.6+ | 2003 12 28 | 704 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.0 | |
| 2002 08 11 | 644 | 0.7− | 0.4+ | 2003 12 28 | 704 | 0.2+ | 0.2− | | | | | |
| 2002 08 11 | 644 | 0.3− | 0.3+ | 2003 12 28 | 704 | 0.5− | 1.1+ | | | | | |

**(139133)∗ 2001 FR$_{74}$ = 2002 RK$_{112}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35048)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 181.11629 | | (2000.0) | | | |
| $n$ | 0.28172211 | $\omega$ | 181.79264 | | −0.70155683 | +0.70707225 |
| $a$ | 2.3045639 | $\Omega$ | 43.66971 | | −0.65220135 | −0.58693689 |
| $e$ | 0.0597564 | $i$ | 7.38007 | | −0.28714352 | −0.39440324 |
| $P$ | 3.50 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.5+ | 0.5+ | 2002 10 04 | 704 | 0.6− | 0.1+ | 2004 02 02 | 704 | 0.6− | 0.3+ | |
| 2001 03 19 | 704 | 0.2+ | 0.4+ | 2002 10 04 | 704 | 1.1− | 0.5+ | 2004 02 02 | 704 | 0.9+ | 0.6− | |
| 2001 03 19 | 704 | 0.7+ | 0.4− | 2002 10 06 | 704 | 0.7− | 0.7+ | 2004 02 02 | 704 | 0.3+ | 0.1− | |
| 2001 03 19 | 704 | 0.3+ | 1.0− | 2002 10 06 | 704 | (2.1− | 0.9+) | 2004 02 02 | 704 | 0.3+ | 0.1− | |
| 2001 03 19 | 704 | 0.5+ | 0.0 | 2002 10 06 | 704 | 0.5− | 0.5+ | 2004 02 14 | 704 | 0.3− | 0.6+ | |
| 2001 03 19 | 704 | 1.0+ | 0.1− | 2002 10 06 | 704 | (0.1+ | 1.6+) | 2004 02 14 | 704 | 0.1− | 0.1− | |
| 2001 03 19 | 704 | 0.2− | 0.0 | 2002 10 06 | 704 | 1.5− | 0.6+ | 2004 02 14 | 704 | 0.1− | 0.2− | |
| 2001 03 19 | 704 | 0.4− | 0.7+ | 2002 10 06 | 608 | 0.1+ | 0.7+ | 2004 02 14 | 704 | 0.2+ | 1.2+ | |
| 2001 03 19 | 704 | 0.4− | 0.7+ | 2002 10 06 | 608 | 0.3+ | 0.6+ | 2004 02 14 | 704 | 0.6+ | 0.9+ | |
| 2001 03 26 | 704 | 0.2+ | 1.0+ | 2002 10 06 | 608 | 0.1− | 1.0+ | 2004 02 17 | 691 | 0.1− | 0.1+ | |
| 2001 03 26 | 704 | 0.2+ | 0.6+ | 2002 10 11 | 704 | 0.3− | 1.1+ | 2004 02 17 | 691 | 0.1− | 0.0 | |
| 2001 03 26 | 704 | 0.2+ | 0.8+ | 2002 10 11 | 704 | (0.5− | 1.6+) | 2004 02 17 | 691 | 0.0 | 0.0 | |
| 2001 03 26 | 704 | 0.2+ | 0.3+ | 2002 10 11 | 704 | (1.2− | 1.9+) | 2004 03 23 | 704 | 0.1+ | 0.8+ | |
| 2001 03 26 | 704 | 0.1− | 0.4+ | 2002 10 11 | 704 | 0.7− | 0.1− | 2004 03 23 | 704 | 0.0 | 0.1− | |
| 2001 03 28 | 704 | 0.5+ | 0.6− | 2002 10 11 | 704 | 0.3− | 0.7+ | 2004 03 23 | 704 | 0.2+ | 0.3+ | |
| 2001 03 28 | 704 | 0.7+ | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.3+ | 2005 06 06 | E12 | 0.3− | 1.3+ | |
| 2001 03 28 | 704 | 0.1+ | 1.2+ | 2002 10 31 | 608 | 0.3− | 0.4− | 2005 06 06 | E12 | 0.0 | 0.6+ | |
| 2001 04 16 | 704 | 0.0 | 0.7+ | 2002 10 31 | 608 | 0.4− | 0.8− | 2005 06 06 | E12 | 1.2− | 0.7+ | |
| 2001 04 16 | 704 | 0.0 | 0.2+ | 2002 10 31 | 608 | 0.6− | 1.1− | 2005 06 06 | E12 | 0.2− | 1.3+ | |
| 2001 04 16 | 704 | 1.0+ | 0.5+ | 2003 11 19 | 699 | 0.0 | 0.4+ | 2005 06 07 | E12 | (1.1− | 2.1+) | |
| 2001 04 16 | 704 | 0.4+ | 0.2− | 2003 11 19 | 699 | 1.2− | 0.4+ | 2005 06 07 | E12 | 0.6− | 0.7+ | |
| 2001 04 16 | 704 | 0.8+ | 0.2+ | 2003 11 19 | 699 | 0.8+ | 0.2− | 2005 06 07 | E12 | 0.6− | 0.6+ | |
| 2001 04 24 | 704 | 0.2− | 0.4+ | 2003 11 19 | 699 | (0.5+ | 4.5−) | 2005 06 07 | E12 | 0.9− | 1.1+ | |
| 2001 04 24 | 704 | 1.1+ | 0.5+ | 2003 11 21 | 644 | 0.6+ | 0.8+ | 2006 09 27 | G96 | 0.9+ | 0.1− | |
| 2001 04 24 | 704 | 0.6+ | 0.7+ | 2003 11 21 | 644 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.4+ | 0.9− | |
| 2001 04 24 | 704 | 0.5− | 0.1+ | 2003 11 21 | 644 | 0.3+ | 0.8+ | 2006 09 27 | G96 | 0.1− | 1.2− | |
| 2001 04 24 | 704 | 0.0 | 0.5− | 2003 12 18 | 704 | 0.6+ | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.2− | |
| 2001 04 30 | 704 | 0.1+ | 0.7+ | 2003 12 18 | 704 | 0.3+ | 0.7− | 2006 10 17 | G96 | 0.2− | 0.0 | |
| 2001 04 30 | 704 | 0.6+ | 0.8+ | 2003 12 18 | 704 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.2− | |
| 2001 04 30 | 704 | 1.0+ | 1.1+ | 2003 12 18 | 704 | (0.6− | 1.7+) | 2006 10 17 | G96 | 0.5− | 0.1+ | |
| 2001 04 30 | 704 | 0.6+ | 0.4+ | 2003 12 27 | 704 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.1− | |
| 2002 09 05 | 599 | 0.2+ | 0.6+ | 2003 12 27 | 704 | 0.9− | 0.5− | 2006 11 01 | G96 | 0.1− | 0.3− | |
| 2002 09 06 | 599 | 0.1+ | 0.5+ | 2003 12 27 | 704 | 0.8− | 0.0 | 2006 11 01 | G96 | 0.4− | 0.4− | |
| 2002 09 06 | 599 | 0.7+ | 1.3+ | 2003 12 27 | 704 | 0.6− | 0.4+ | 2006 11 01 | G96 | 0.3− | 0.4− | |
| 2002 09 08 | 599 | 0.2+ | 0.5+ | 2003 12 27 | 704 | 0.7− | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.2+ | |
| 2002 09 08 | 599 | 0.1+ | 0.7+ | 2003 12 29 | 704 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.5+ | 0.5− | |
| 2002 09 08 | 599 | 0.0 | 0.7+ | 2003 12 29 | 704 | 0.4− | 0.7+ | 2006 11 13 | 691 | 0.2+ | 0.0 | |
| 2002 09 08 | 608 | 0.2− | 0.4+ | 2003 12 29 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 704 | (2.7+ | 0.2+) | |
| 2002 09 08 | 608 | 0.1− | 0.5+ | 2003 12 29 | 704 | 0.0 | 0.6+ | 2006 11 16 | 704 | (1.0− | 1.9+) | |
| 2002 09 08 | 608 | 0.3+ | 0.8+ | 2003 12 29 | 704 | 0.2− | 0.7+ | 2006 11 16 | 704 | 1.1+ | 0.1+ | |
| 2002 09 13 | 608 | 0.9− | 0.5+ | 2004 01 13 | 699 | 0.2+ | 0.7− | 2006 11 16 | 704 | (0.1+ | 1.6+) | |
| 2002 09 13 | 608 | 0.7− | 0.3+ | 2004 01 13 | 699 | 0.8− | 0.9+ | 2006 11 16 | 704 | (2.0+ | 0.0 ) | |
| 2002 09 13 | 608 | 0.5− | 0.1+ | 2004 01 13 | 699 | 0.7− | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.0 | |
| 2002 09 17 | 608 | 0.2− | 0.1− | 2004 01 13 | 699 | 0.5+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.1+ | |
| 2002 09 17 | 608 | 0.0 | 0.2+ | 2004 01 17 | 644 | 0.6− | 0.6+ | 2006 11 17 | 691 | 0.4+ | 0.0 | |
| 2002 09 17 | 608 | 0.8− | 0.3− | 2004 01 17 | 644 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.7− | 0.1+ | |
| 2002 09 29 | 608 | 0.5− | 0.9+ | 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.5+ | |
| 2002 09 29 | 608 | 0.5− | 0.3+ | 2004 01 30 | 699 | 0.3− | 0.7+ | 2006 11 19 | 704 | 0.4− | 0.1+ | |
| 2002 09 29 | 608 | 0.4− | 0.3+ | 2004 01 30 | 699 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.4+ | |
| 2002 10 01 | 699 | 0.6+ | 0.5+ | 2004 01 30 | 699 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.7+ | |
| 2002 10 01 | 699 | 0.3+ | 0.5+ | 2004 01 30 | 699 | 0.7− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 1.4+ | |
| 2002 10 01 | 699 | 0.3− | 1.2+ | 2004 01 31 | 704 | (0.6+ | 1.5+) | 2006 11 22 | 704 | 0.4− | 0.4+ | |
| 2002 10 01 | 699 | 0.2+ | 0.5+ | 2004 01 31 | 704 | 0.0 | 1.2+ | 2006 11 22 | 704 | 1.2− | 1.4+ | |
| 2002 10 04 | 704 | 0.9− | 0.7+ | 2004 01 31 | 704 | 0.1+ | 1.4+ | 2006 11 22 | 704 | 0.1+ | 0.9+ | |
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 01 31 | 704 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 0.4+ | 0.2+ | |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2004 02 02 | 704 | 0.8+ | 0.7+ | | | | | |

**(139134)∗ 2001 FJ$_{76}$ = 2002 PM$_{135}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33393)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.03096 | | (2000.0) | | | |
| $n$ | 0.28714302 | $\omega$ | 337.08638 | | −0.57462500 | −0.81715191 |
| $a$ | 2.2754670 | $\Omega$ | 147.93381 | | +0.76352748 | −0.55526812 |
| $e$ | 0.0964688 | $i$ | 4.91485 | | +0.29467252 | −0.15472581 |
| $P$ | 3.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 1.2+ | 1.0− | 2002 07 29 | 644 | 0.2+ | 1.0+ | 2004 02 22 | 704 | (3.1+ | 2.5+) | |
| 1999 10 09 | 704 | 0.3+ | 0.7− | 2002 07 29 | 644 | 0.0 | 1.2+ | 2004 02 22 | 704 | (2.6+ | 2.5+) | |
| 1999 10 09 | 704 | 0.8− | 0.8− | 2002 07 29 | 644 | 0.3− | 1.2+ | 2004 02 22 | 704 | (2.4+ | 1.9+) | |
| 2001 03 18 | 608 | 0.4− | 0.1+ | 2002 08 06 | 644 | 0.7− | 0.8+ | 2004 02 22 | 704 | (2.9+ | 1.0+) | |
| 2001 03 18 | 608 | 0.6− | 0.1+ | 2002 08 06 | 644 | 0.4+ | 0.3+ | 2004 02 22 | 704 | (3.1+ | 0.4+) | |
| 2001 03 18 | 608 | 0.2− | 0.1− | 2002 08 06 | 644 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.3+ | |
| 2001 03 19 | 704 | 0.6+ | 0.0 | 2002 08 12 | 699 | (1.2− | 2.1+) | 2006 10 16 | 703 | 0.1+ | 0.4− | |
| 2001 03 19 | 704 | 1.0− | 1.1+ | 2002 08 12 | 699 | 1.4− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.3+ | |
| 2001 03 19 | 704 | 0.4+ | 1.2+ | 2002 08 12 | 699 | 1.4− | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.1− | |
| 2001 03 19 | 704 | 0.3− | 0.7+ | 2002 08 12 | 699 | (1.9− | 1.5−) | 2006 10 22 | 703 | 0.1− | 0.0 | |
| 2001 03 23 | 699 | (1.6+ | 0.6+) | 2002 08 14 | 704 | 0.8+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.3+ | |
| 2001 03 23 | 699 | (1.7+ | 0.2+) | 2002 08 14 | 704 | 1.4+ | 0.9+ | 2006 10 22 | 703 | 0.1− | 0.1− | |
| 2001 03 23 | 699 | (2.1+ | 0.4−) | 2002 08 14 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.3− | |
| 2001 03 23 | 699 | 1.4+ | 0.6+ | 2002 08 17 | 644 | 0.4− | 0.5+ | 2006 11 13 | 703 | 0.7+ | 1.0+ | |
| 2001 03 26 | 704 | 0.3+ | 0.9+ | 2002 08 17 | 644 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.6− | 0.7+ | |
| 2001 03 26 | 704 | 0.5+ | 0.0 | 2002 08 17 | 644 | 0.1− | 0.6+ | 2006 11 13 | 703 | 0.2− | 0.4+ | |
| 2001 03 26 | 704 | 0.0 | 0.5+ | 2002 08 27 | 644 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.5+ | 0.1− | |
| 2001 03 26 | 704 | 0.7+ | 1.0+ | 2002 08 27 | 644 | 0.7− | 1.2+ | 2006 11 17 | 704 | 0.6− | 0.6+ | |
| 2001 03 27 | 608 | 0.1+ | 0.2− | 2002 08 27 | 644 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.0 | |
| 2001 03 27 | 608 | 0.3+ | 0.6− | 2003 12 22 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.4− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 27 | 608 | 0.2+ | 0.3− | 2003 12 22 | 704 | 1.0+ | 0.3+ | 2006 11 17 | 704 | 0.0 | 1.3+ | | |
| 2001 03 29 | 699 | 1.1+ | 0.2+ | 2003 12 22 | 704 | (1.8+ | 0.9+) | 2006 11 19 | 703 | 0.2+ | 0.5+ | | |
| 2001 03 29 | 699 | 0.5+ | 0.9+ | 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.1+ | | |
| 2001 03 29 | 699 | 0.8+ | 0.3− | 2003 12 22 | 704 | 0.4+ | 0.8+ | 2006 11 19 | 703 | 0.0 | 0.3+ | | |
| 2001 03 29 | 704 | 0.2+ | 0.2+ | 2004 01 21 | 704 | (0.8− | 2.3+) | 2006 11 19 | 703 | 0.7− | 0.2+ | | |
| 2001 03 29 | 704 | 0.7+ | 0.6+ | 2004 01 21 | 704 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.1− | | |
| 2001 03 29 | 699 | 0.3+ | 0.3− | 2004 01 21 | 704 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.1+ | 1.4+ | | |
| 2001 03 29 | 704 | 0.5+ | 0.5+ | 2004 01 21 | 704 | 0.1− | 0.8+ | 2006 11 20 | 704 | 1.0− | 0.9+ | | |
| 2001 03 29 | 704 | 1.3− | 1.2+ | 2004 01 21 | 704 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.1+ | 1.9+ | | |
| 2001 03 29 | 704 | 0.0 | 0.3− | 2004 01 23 | 113 | 0.5+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2001 04 23 | 699 | 0.2+ | 0.8+ | 2004 01 23 | 113 | 1.3− | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2001 04 23 | 699 | 0.2+ | 0.1+ | 2004 01 24 | 704 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2001 04 23 | 699 | 0.6− | 0.8+ | 2004 01 24 | 704 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2001 04 23 | 699 | 1.4− | 0.7+ | 2004 01 24 | 704 | 0.4+ | 0.1− | | | | | | |

**(139135)∗ 2001 FK$_{76}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.31450 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25748706 | $\omega$ | 189.88673 | | | −0.54172536 | +0.83836312 |
| $a$ | 2.4469914 | $\Omega$ | 47.34144 | | | −0.76545052 | −0.46221146 |
| $e$ | 0.1278219 | $i$ | 4.73225 | | | −0.34730267 | −0.28897723 |
| $P$ | 3.83 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.2− | 0.6− | 2002 09 17 | 608 | 0.2− | 0.5+ | 2005 05 09 | 704 | 0.6+ | 0.0 | | |
| 2001 03 03 | 704 | 0.0 | 0.1− | 2002 10 03 | 704 | 0.0 | 1.4+ | 2005 05 09 | 704 | 0.3+ | 0.4− | | |
| 2001 03 03 | 704 | 0.2+ | 0.2+ | 2002 10 03 | 704 | 0.5+ | 0.5+ | 2005 05 09 | 699 | 0.9− | 0.0 | | |
| 2001 03 03 | 704 | 0.5+ | 0.3− | 2002 10 03 | 704 | 1.0+ | 0.1− | 2005 05 09 | 704 | (1.4− | 1.7−) | | |
| 2001 03 03 | 704 | 0.2− | 0.1+ | 2002 10 03 | 704 | 0.1− | 1.1+ | 2005 05 09 | 699 | 0.4+ | 0.6− | | |
| 2001 03 18 | 608 | 0.7− | 1.4− | 2002 10 05 | 704 | (0.6− | 2.0+) | 2005 05 09 | 699 | 0.6− | 0.7− | | |
| 2001 03 18 | 608 | 0.3− | 0.8− | 2002 10 05 | 704 | 0.6− | 0.5+ | 2005 05 09 | 699 | 0.2− | 0.0 | | |
| 2001 03 18 | 608 | 0.6− | 0.8− | 2002 10 05 | 704 | 0.7− | 1.0+ | 2005 05 13 | 704 | 0.3+ | 0.3+ | | |
| 2001 03 19 | 704 | 1.2+ | 1.0+ | 2002 10 05 | 704 | 0.5+ | 0.7+ | 2005 05 13 | 704 | 0.4+ | 0.8+ | | |
| 2001 03 19 | 704 | 0.4+ | 0.0 | 2005 04 07 | 704 | 0.0 | 0.3+ | 2005 05 13 | 704 | 0.5+ | 0.4+ | | |
| 2001 03 19 | 704 | 0.9+ | 0.2+ | 2005 04 07 | 704 | (0.9+ | 1.6+) | 2005 05 13 | G96 | 0.3− | 0.3− | | |
| 2001 03 19 | 704 | 1.2+ | 0.7+ | 2005 04 07 | 704 | 0.0 | 1.3+ | 2005 05 13 | 704 | 0.5+ | 0.4+ | | |
| 2001 03 23 | 699 | 1.3+ | 0.4+ | 2005 04 07 | 704 | 0.3+ | 0.6+ | 2005 05 13 | G96 | 0.4− | 0.4− | | |
| 2001 03 23 | 699 | 0.7+ | 0.4+ | 2005 04 12 | 704 | 0.2+ | 0.4− | 2005 05 13 | 704 | 0.4+ | 0.8+ | | |
| 2001 03 23 | 699 | 0.9+ | 0.6+ | 2005 04 12 | 704 | 0.0 | 0.8+ | 2005 05 13 | G96 | 0.3− | 0.3− | | |
| 2001 03 23 | 699 | 0.5+ | 0.9+ | 2005 04 12 | 704 | 0.8+ | 0.1+ | 2005 05 13 | G96 | 0.3− | 0.4− | | |
| 2001 03 26 | 704 | 0.2+ | 0.9+ | 2005 04 12 | 704 | 1.0+ | 0.5− | 2005 05 26 | 699 | 0.6+ | 0.7− | | |
| 2001 03 26 | 704 | 0.2− | 1.0+ | 2005 04 16 | 691 | 0.1+ | 0.4− | 2005 05 26 | 699 | 0.5+ | 0.6− | | |
| 2001 03 26 | 704 | 0.2− | 0.8+ | 2005 04 16 | 691 | 0.1+ | 0.3− | 2005 05 26 | 699 | 0.3− | 0.2− | | |
| 2001 03 26 | 704 | 0.3+ | 1.3+ | 2005 04 16 | 691 | 0.1− | 0.4− | 2005 05 26 | 699 | (0.2− | 1.6+) | | |
| 2001 03 26 | 704 | 0.6+ | 0.7+ | 2005 04 18 | 704 | 0.4+ | 0.8+ | 2005 05 30 | 699 | 0.3+ | 0.4+ | | |
| 2001 03 27 | 608 | 0.3− | 0.8+ | 2005 04 18 | 704 | 0.1− | 0.6− | 2005 05 30 | 699 | (2.0+ | 2.0+) | | |
| 2001 03 27 | 608 | 0.5− | 1.1+ | 2005 04 18 | 704 | 0.2− | 0.6+ | 2005 05 30 | 699 | 0.1+ | 0.3− | | |
| 2001 03 27 | 608 | 0.5− | 0.6+ | 2005 04 18 | 704 | 0.4+ | 0.7− | 2005 06 01 | G96 | 0.5− | 0.5− | | |
| 2001 03 29 | 699 | 0.0 | 0.6− | 2005 04 18 | 704 | 0.2+ | 0.5+ | 2005 06 01 | G96 | 0.4− | 0.4− | | |
| 2001 03 29 | 699 | 0.6+ | 0.4+ | 2005 04 19 | I10 | 0.9− | 0.2+ | 2005 06 01 | G96 | 0.5− | 0.4− | | |
| 2001 03 29 | 699 | 0.2− | 0.3+ | 2005 04 19 | I10 | 0.4− | 0.3+ | 2005 06 01 | G96 | 0.4− | 0.4− | | |
| 2001 03 29 | 704 | 0.5− | 0.2+ | 2005 04 19 | I10 | 0.2− | 0.6+ | 2005 06 22 | 644 | 0.2+ | 0.1− | | |
| 2001 03 29 | 704 | 0.8+ | 0.8+ | 2005 04 30 | 701 | 0.4− | 0.1+ | 2005 06 22 | 644 | 0.2− | 0.2− | | |
| 2001 03 29 | 699 | 0.5+ | 1.0+ | 2005 04 30 | 701 | 0.1− | 0.5+ | 2005 06 22 | 644 | 0.1+ | 0.2+ | | |
| 2001 03 29 | 704 | 0.7+ | 0.9+ | 2005 04 30 | 701 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.4− | | |
| 2001 03 29 | 704 | 1.2− | 1.0+ | 2005 05 04 | 699 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.0 | | |
| 2001 03 29 | 704 | 0.4+ | 0.6+ | 2005 05 04 | 699 | 0.4− | 0.6+ | 2006 09 18 | 703 | 1.3+ | 0.1+ | | |
| 2001 04 14 | 608 | 0.1+ | 0.3− | 2005 05 04 | 704 | 0.4+ | 0.6− | 2006 09 18 | 703 | 0.1− | 0.3+ | | |
| 2001 04 14 | 608 | 0.4+ | 0.7− | 2005 05 04 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.0 | | |
| 2001 04 14 | 608 | 0.3− | 0.3− | 2005 05 04 | 699 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1+ | | |
| 2001 04 17 | 704 | 0.7+ | 0.3+ | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.4− | 0.0 | | |
| 2001 04 17 | 704 | 0.6+ | 1.5+ | 2005 05 04 | 704 | 0.8+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.0 | | |
| 2001 04 17 | 704 | 0.1− | 0.2+ | 2005 05 04 | G96 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.0 | | |
| 2001 04 18 | 704 | (1.5− | 0.8+) | 2005 05 04 | 699 | 0.5− | 0.3− | 2006 09 26 | G96 | 0.5− | 0.4+ | | |
| 2001 04 18 | 704 | 0.0 | 1.4+ | 2005 05 04 | G96 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2001 04 18 | 704 | (0.7+ | 1.8+) | 2005 05 04 | 704 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.1+ | | |
| 2001 04 18 | 704 | 0.7+ | 0.2− | 2005 05 04 | 704 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.0 | | |
| 2001 04 18 | 704 | 0.1− | 0.6+ | 2005 05 04 | E12 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2002 09 05 | 704 | 0.7− | 0.2+ | 2005 05 04 | E12 | 0.8− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2002 09 05 | 704 | 1.0− | 0.2+ | 2005 05 04 | E12 | 0.8− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.7− | 0.8− | 2005 05 04 | E12 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.4+ | | |
| 2002 09 11 | 608 | 0.7− | 0.2+ | 2005 05 08 | 699 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.5+ | | |
| 2002 09 11 | 608 | 0.4− | 0.2− | 2005 05 08 | 699 | 0.9+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.5+ | | |
| 2002 09 11 | 608 | 1.4− | 0.3+ | 2005 05 08 | 699 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.4+ | | |
| 2002 09 17 | 608 | 0.2+ | 0.9+ | 2005 05 08 | 699 | 0.7+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2002 09 17 | 608 | 0.3− | 1.1+ | 2005 05 09 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.6+ | | |

**(139136)∗ 2001 FZ$_{78}$ = 1997 LX$_2$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13816)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.04475 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23592527 | $\omega$ | 153.46783 | | | −0.34325316 | +0.93463659 |
| $a$ | 2.5938991 | $\Omega$ | 96.33833 | | | −0.87749641 | −0.28384147 |
| $e$ | 0.1464551 | $i$ | 5.36375 | | | −0.33492883 | −0.21421594 |
| $P$ | 4.18 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 05 | 691 | 0.6+ | 0.6− | 2001 05 24 | 645 | 0.2− | 0.0 | 2005 04 06 | 703 | 0.6− | 0.8− | | |
| 1997 06 05 | 691 | 0.2− | 0.8− | 2001 05 24 | 645 | 0.2− | 0.1+ | 2005 04 06 | 703 | 0.7− | 0.8− | | |
| 1997 06 05 | 691 | 0.4− | 0.0 | 2005 03 04 | 704 | 1.2+ | 0.9+ | 2006 08 14 | 644 | 0.0 | 0.1+ | | |
| 1997 06 08 | 809 | 1.9+ | 0.5+ | 2005 03 04 | 704 | 0.2+ | 1.2+ | 2006 08 14 | 644 | 0.2− | 0.3+ | | |
| 1997 06 08 | 809 | 1.9+ | 0.6− | 2005 03 04 | 704 | 0.8+ | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.2+ | | |
| 1997 06 08 | 809 | 1.2+ | 0.4+ | 2005 03 04 | 704 | 0.7+ | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.2+ | | |
| 1997 06 10 | 691 | 0.2− | 0.1− | 2005 03 04 | 704 | 0.4+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.4+ | | |
| 1997 06 10 | 691 | 0.4− | 0.1+ | 2005 03 10 | 703 | 1.0+ | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.2+ | | |
| 1997 06 10 | 691 | 0.3− | 0.2− | 2005 03 10 | 703 | 0.1+ | 0.1− | 2006 08 28 | 704 | 0.9+ | 1.7+ | | |
| 2001 03 19 | 704 | 0.1− | 0.2+ | 2005 03 10 | 703 | 0.1+ | 0.2− | 2006 08 28 | 704 | 0.8+ | 1.0+ | | |
| 2001 03 19 | 704 | 0.5+ | 1.2+ | 2005 03 10 | 703 | 0.3− | 0.7+ | 2006 08 28 | 704 | 0.3− | 1.9+ | | |
| 2001 03 19 | 704 | 0.4+ | 0.8− | 2005 03 18 | 703 | 0.3+ | 0.4+ | 2006 08 28 | 704 | (1.1+ | 2.5+) | | |
| 2001 03 19 | 704 | 1.2+ | 0.5+ | 2005 03 18 | 703 | 0.9+ | 0.1− | 2006 08 28 | 704 | 0.8− | 0.8+ | | |
| 2001 03 26 | 704 | 0.2+ | 0.4+ | 2005 03 18 | 703 | 0.4− | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.5− | | |
| 2001 03 26 | 704 | 0.3+ | 0.7− | 2005 03 18 | 703 | 0.1− | 0.6+ | 2006 08 28 | 699 | 0.9+ | 0.4+ | | |
| 2001 03 26 | 704 | 0.4+ | 0.3− | 2005 03 30 | 703 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.5+ | 0.8+ | | |
| 2001 03 26 | 704 | 1.0+ | 0.3+ | 2005 03 30 | 703 | 0.1+ | 0.5− | 2006 08 28 | 699 | 0.7− | 0.7+ | | |
| 2001 03 26 | 704 | 0.5− | 0.1− | 2005 03 30 | 703 | 0.4− | 0.5− | 2006 09 20 | 703 | 0.5− | 0.3− | | |
| 2001 04 16 | 704 | 1.4− | 0.5+ | 2005 03 30 | 703 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.2+ | | |
| 2001 04 16 | 704 | 0.5− | 0.6+ | 2005 04 05 | 704 | 1.5+ | 0.4+ | 2006 09 20 | 703 | 0.5− | 0.4+ | | |
| 2001 04 16 | 704 | 1.4− | 1.0+ | 2005 04 05 | 704 | 1.0+ | 0.9+ | 2006 09 20 | 703 | 0.1− | 1.7+ | | |
| 2001 04 16 | 704 | 0.0 | 1.8+ | 2005 04 05 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 703 | 0.1+ | 0.3− | | |
| 2001 04 17 | 699 | 1.0+ | 0.5+ | 2005 04 05 | 704 | 1.3+ | 0.1− | 2006 09 26 | 703 | 0.9− | 0.9+ | | |
| 2001 04 17 | 699 | 0.7+ | 0.1+ | 2005 04 05 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.5− | 0.6+ | | |
| 2001 04 17 | 699 | 0.3+ | 0.5+ | 2005 04 06 | 703 | 1.2− | 0.4− | 2006 09 26 | 703 | (4.1− | 2.3−) | | |
| 2001 04 17 | 699 | 0.6+ | 0.3− | 2005 04 06 | 703 | 0.3− | 1.3+ | | | | | | |

**(139137)∗ 2001 FP$_{81}$ = 2002 PE$_{118}$**

Discovered 2001 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.58310 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27730415 | $\omega$ | 298.52857 | | | −0.92133433 | +0.37093779 |
| $a$ | 2.3289767 | $\Omega$ | 263.44666 | | | −0.30301480 | −0.87273684 |
| $e$ | 0.0654719 | $i$ | 6.72836 | | | −0.24356743 | −0.31738867 |
| $P$ | 3.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.8+ | 0.2− | 2001 04 15 | 699 | 0.5− | 1.1+ | 2002 08 18 | 644 | 0.2− | 0.3+ | | |
| 1999 10 12 | 704 | 0.8− | 0.7+ | 2001 04 24 | 608 | 1.2+ | 1.2− | 2002 08 26 | 644 | 0.1+ | 1.2+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 0.8− | 2001 04 24 | 608 | 0.1+ | 0.2− | 2002 08 26 | 644 | 0.1− | 0.9+ |
| 2001 02 22 | 704 | 0.6− | 1.2+ | 2001 04 24 | 608 | 0.3+ | 0.1+ | 2002 08 26 | 644 | 0.0 | 1.0+ |
| 2001 02 22 | 704 | 0.3+ | 0.6+ | 2002 07 21 | 644 | 0.1− | 0.1+ | 2002 08 26 | 644 | 0.2− | 0.0 |
| 2001 02 22 | 704 | 0.5− | 0.4+ | 2002 07 21 | 644 | 0.2− | 0.1+ | 2002 08 26 | 644 | 0.5− | 0.0 |
| 2001 02 22 | 704 | 0.6− | 0.8+ | 2002 07 21 | 644 | 0.2− | 0.3+ | 2002 08 26 | 644 | 0.6− | 0.0 |
| 2001 03 18 | 608 | 0.1− | 0.2+ | 2002 08 08 | 699 | 0.6+ | 0.8+ | 2006 09 28 | 703 | 0.2− | 0.0 |
| 2001 03 18 | 608 | 0.3+ | 0.1− | 2002 08 08 | 699 | 1.0+ | 0.9+ | 2006 09 28 | 703 | (0.8+ | 1.7+) |
| 2001 03 18 | 608 | 0.0 | 0.1+ | 2002 08 08 | 699 | 0.4+ | 0.1− | 2006 09 28 | 703 | 0.6− | 0.2+ |
| 2001 03 23 | 704 | 0.8+ | 1.0+ | 2002 08 08 | 699 | 0.5+ | 0.2+ | 2006 09 28 | 703 | 0.8+ | 0.5+ |
| 2001 03 23 | 704 | 0.8+ | 0.7+ | 2002 08 12 | 704 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.8+ |
| 2001 03 23 | 704 | 0.3+ | 0.6− | 2002 08 12 | 704 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2001 03 23 | 704 | 0.1− | 0.2− | 2002 08 12 | 704 | 0.8+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2001 03 26 | 704 | 0.0 | 0.8+ | 2002 08 12 | 704 | 0.6+ | 0.2− | 2006 10 17 | 703 | 0.5− | 0.9− |
| 2001 03 26 | 704 | 0.5− | 0.5+ | 2002 08 12 | 704 | 1.0− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.5+ |
| 2001 03 26 | 704 | 0.0 | 0.1+ | 2002 08 13 | 699 | 0.9− | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.6+ |
| 2001 03 26 | 704 | 0.3+ | 0.4+ | 2002 08 13 | 699 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.4+ | 0.4+ |
| 2001 03 26 | 704 | 0.4+ | 0.1− | 2002 08 13 | 699 | 0.2− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.7+ |
| 2001 03 26 | 608 | 0.3+ | 0.8+ | 2002 08 13 | 699 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 03 26 | 608 | 0.6+ | 0.2+ | 2002 08 16 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.6+ |
| 2001 03 26 | 608 | 0.3+ | 0.4+ | 2002 08 16 | 644 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.0 |
| 2001 04 15 | 699 | 0.2− | 0.6+ | 2002 08 16 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.6− |
| 2001 04 15 | 699 | 0.4− | 0.3+ | 2002 08 18 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.3− |
| 2001 04 15 | 699 | 1.3+ | 0.8+ | 2002 08 18 | 644 | 0.6− | 0.0 | 2006 11 14 | 703 | 0.2− | 1.6+ |

**(139138)∗ 2001 FM$_{83}$ = 1994 ER$_4$ = 1995 SK$_{37}$**

Discovered 2001 Mar. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 13264)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.67236 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28266050 | $\omega$ | 252.17419 | | −0.48511710 | | +0.87438424 |
| $a$ | 2.2994606 | $\Omega$ | 348.78743 | | −0.78010501 | | −0.43825282 |
| $e$ | 0.1349588 | $i$ | 3.14214 | | −0.39509185 | | −0.20829466 |
| $P$ | 3.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.4− | 0.1− | 2001 03 26 | 691 | 0.2+ | 0.4+ | 2002 10 05 | 645 | 0.1+ | 0.0 |
| 1994 03 05 | 691 | 0.7+ | 0.0 | 2001 03 27 | 691 | 0.5+ | 0.8+ | 2002 10 05 | 645 | 0.1+ | 0.1+ |
| 1994 03 05 | 691 | 0.5+ | 0.2− | 2001 03 27 | 691 | 0.6+ | 1.0+ | 2003 12 22 | 704 | 0.3+ | 0.1+ |
| 1994 03 06 | 691 | 0.1− | 0.1+ | 2001 03 27 | 691 | 1.0+ | 0.7+ | 2003 12 22 | 704 | 0.1+ | 0.1− |
| 1994 03 06 | 691 | 0.0 | 0.1− | 2001 04 13 | 691 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.3− | 0.5− |
| 1994 03 06 | 691 | 0.2− | 0.0 | 2001 04 13 | 691 | 0.2+ | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.4+ |
| 1995 09 24 | 691 | 1.2− | 0.6+ | 2001 04 13 | 691 | 0.1+ | 0.1− | 2004 01 22 | 704 | 0.1− | 0.9+ |
| 1995 09 24 | 691 | 0.1− | 0.8+ | 2001 04 16 | 645 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.6+ | 0.4+ |
| 1995 09 24 | 691 | 0.5− | 0.2+ | 2001 04 16 | 645 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.4+ | 0.2− |
| 1995 09 29 | 691 | 0.4− | 0.8+ | 2002 09 11 | 644 | 0.0 | 0.9+ | 2006 10 04 | G96 | 0.4+ | 0.2− |
| 1995 09 29 | 691 | 0.4− | 1.0+ | 2002 09 11 | 644 | 0.0 | 1.4+ | 2006 10 04 | G96 | 0.3+ | 0.4− |
| 1995 09 29 | 691 | 0.3− | 0.7+ | 2002 09 11 | 644 | 0.1+ | 1.4+ | 2006 10 04 | G96 | 0.3+ | 1.0− |
| 2001 03 18 | 699 | (1.7+ | 0.2−) | 2002 09 14 | 644 | 0.6− | 0.5+ | 2006 10 23 | 691 | 0.1+ | 0.3− |
| 2001 03 18 | 699 | 1.0+ | 0.7+ | 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2001 03 18 | 699 | 0.1− | 0.0 | 2002 09 14 | 644 | 0.3− | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 03 18 | 699 | 0.5+ | 1.5+ | 2002 10 04 | 291 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2001 03 26 | 691 | 0.1+ | 0.5+ | 2002 10 04 | 291 | 0.2− | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2001 03 26 | 691 | 0.2+ | 0.5+ | 2002 10 04 | 291 | 0.6− | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.0 |

**(139139)∗ 2001 FF$_{84}$**

Discovered 2001 Mar. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.13962 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23873602 | $\omega$ | 138.29889 | | +0.16100064 | | +0.98670920 |
| $a$ | 2.5734995 | $\Omega$ | 140.95126 | | −0.91450065 | | +0.15752519 |
| $e$ | 0.1498354 | $i$ | 2.00075 | | −0.37117024 | | +0.03988447 |
| $P$ | 4.13 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 691 | 0.7− | 0.0 | 2002 08 17 | 644 | 0.2+ | 0.3+ | 2005 04 04 | G96 | 0.1− | 0.2− |
| 1998 08 30 | 691 | 0.6− | 0.4+ | 2002 08 17 | 644 | 0.2+ | 0.4+ | 2005 04 04 | G96 | 0.1− | 0.1+ |
| 1998 08 30 | 691 | 0.1− | 0.1− | 2002 08 17 | 644 | 0.5− | 0.1+ | 2005 04 04 | G96 | 0.4− | 0.0 |
| 2001 03 02 | 691 | 0.4+ | 0.8+ | 2002 08 18 | 644 | 0.4+ | 0.8+ | 2005 04 11 | G96 | 0.3− | 0.1+ |
| 2001 03 02 | 691 | 0.3+ | 0.5+ | 2002 08 18 | 644 | 0.7+ | 1.0+ | 2005 04 11 | G96 | 0.2+ | 0.1+ |
| 2001 03 02 | 691 | 0.2+ | 0.2+ | 2002 08 18 | 644 | 0.5+ | 1.1+ | 2005 04 11 | G96 | 0.3+ | 0.4− |
| 2001 03 26 | 691 | 0.2− | 0.5+ | 2002 08 28 | 644 | 0.1− | 0.4+ | 2005 04 11 | G96 | 0.6− | 0.3+ |
| 2001 03 26 | 691 | 0.1− | 0.2+ | 2002 08 28 | 644 | 0.4+ | 0.3+ | 2006 05 24 | G96 | 0.6− | 1.2− |
| 2001 03 26 | 691 | 0.1+ | 0.1− | 2002 08 28 | 644 | 0.2+ | 0.4+ | 2006 05 24 | G96 | 0.5− | 0.8− |
| 2001 03 27 | 691 | 0.1+ | 0.3− | 2002 09 05 | 704 | 0.3+ | 0.1− | 2006 05 24 | G96 | 0.8− | 0.7− |
| 2001 03 27 | 691 | 0.2− | 0.0 | 2002 09 05 | 704 | 0.6+ | 0.5− | 2006 05 24 | G96 | 0.7− | 1.4− |
| 2001 03 27 | 691 | 0.1+ | 0.2− | 2002 09 05 | 704 | 1.6+ | 1.7+ | 2006 09 26 | G96 | 0.6− | 0.3− |
| 2002 08 08 | 644 | 0.2+ | 0.7+ | 2005 03 12 | 695 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.5− |
| 2002 08 08 | 644 | 0.6+ | 0.8+ | 2005 03 12 | 695 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.5− |
| 2002 08 08 | 644 | 0.4+ | 0.8+ | 2005 04 04 | G96 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.4− | 0.2− |

**(139140)∗ 2001 FC$_{87}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.42465 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28541086 | $\omega$ | 19.16183 | | −0.71866879 | | −0.68928118 |
| $a$ | 2.2846643 | $\Omega$ | 116.91083 | | +0.62379658 | | −0.69734424 |
| $e$ | 0.0648363 | $i$ | 5.90170 | | +0.30723442 | | −0.19647511 |
| $P$ | 3.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 608 | 1.3+ | 0.0 | 2003 11 21 | 704 | 1.3+ | 0.2− | 2004 01 30 | 704 | 0.7+ | 0.6+ |
| 2001 03 04 | 608 | 1.5+ | 0.1− | 2003 12 16 | 699 | 1.4− | 0.3+ | 2004 01 30 | 704 | 0.4− | 1.4+ |
| 2001 03 04 | 608 | 0.5+ | 0.5− | 2003 12 16 | 699 | 0.7+ | 1.0+ | 2004 01 30 | 704 | 0.7− | 1.1+ |
| 2001 03 16 | 704 | 0.0 | 1.2+ | 2003 12 16 | 699 | 0.7− | 0.7− | 2004 01 30 | 704 | (0.3− | 1.6+) |
| 2001 03 16 | 704 | (2.1− | 0.0 ) | 2003 12 16 | 699 | 1.0− | 0.7+ | 2004 01 30 | 704 | 0.2+ | 1.1+ |
| 2001 03 16 | 704 | 1.0− | 0.0 | 2003 12 19 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.2− |
| 2001 03 16 | 704 | 0.2− | 0.3− | 2003 12 19 | 704 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.4+ | 0.3− |
| 2001 03 21 | 699 | 0.1+ | 0.0 | 2003 12 19 | 704 | 0.7− | 0.3+ | 2004 02 15 | 704 | 0.3+ | 0.4− |
| 2001 03 21 | 699 | 0.0 | 0.8+ | 2003 12 19 | 704 | 0.3− | 0.4+ | 2004 02 15 | 704 | 0.2− | 0.7− |
| 2001 03 21 | 699 | 0.0 | 0.7+ | 2003 12 19 | 704 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.5− | 0.0 |
| 2001 03 21 | 699 | 0.1− | 1.0+ | 2003 12 21 | 704 | 0.4+ | 0.3+ | 2004 03 19 | 704 | 0.6− | 1.3+ |
| 2001 03 27 | 699 | 0.1− | 0.2− | 2003 12 21 | 704 | 0.5− | 0.3+ | 2004 03 19 | 704 | (1.9− | 1.1+) |
| 2001 03 27 | 699 | 0.1+ | 0.7+ | 2003 12 21 | 704 | 0.3− | 0.5+ | 2004 03 19 | 704 | 0.1+ | 1.5+ |
| 2001 03 27 | 699 | 0.3+ | 0.1− | 2003 12 21 | 704 | 0.7+ | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.9+ |
| 2001 03 27 | 699 | 0.3− | 0.4+ | 2003 12 22 | 691 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.7+ |
| 2001 03 29 | 608 | 1.2+ | 0.9+ | 2003 12 22 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.7+ |
| 2001 03 29 | 608 | 1.2+ | 0.5+ | 2003 12 22 | 691 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.1− | 1.2+ |
| 2001 03 29 | 608 | 1.1+ | 0.4+ | 2003 12 26 | 608 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2001 04 15 | 608 | 0.8+ | 0.3− | 2003 12 26 | 608 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2001 04 15 | 608 | 0.5+ | 0.2− | 2003 12 26 | 608 | 0.3− | 1.0− | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2001 04 15 | 608 | 0.8+ | 0.8− | 2003 12 28 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.3− | 0.9− |
| 2001 04 16 | 645 | 0.2− | 0.0 | 2003 12 28 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3− | 0.7− |
| 2001 04 16 | 645 | 0.2− | 0.0 | 2003 12 28 | 691 | 0.2− | 0.2− | 2006 11 01 | 703 | 0.2− | 1.0+ |
| 2001 04 17 | 699 | 0.6+ | 0.2+ | 2004 01 15 | 691 | 0.2− | 0.2− | 2006 11 01 | 703 | 1.0− | 0.0 |
| 2001 04 17 | 699 | 0.5+ | 0.8− | 2004 01 15 | 691 | 0.2− | 0.3− | 2006 11 01 | 703 | 0.7− | 0.2+ |
| 2001 04 17 | 699 | 0.5+ | 0.0 | 2004 01 15 | 691 | 0.1− | 0.3− | 2006 11 01 | 703 | 0.3− | 0.7+ |
| 2001 04 17 | 699 | 0.2− | 0.3+ | 2004 01 21 | 704 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.8+ |
| 2002 08 18 | 644 | 0.2− | 1.2+ | 2004 01 21 | 704 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2002 08 18 | 644 | 0.0 | 1.3+ | 2004 01 21 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2002 08 18 | 644 | 0.1− | 1.3+ | 2004 01 21 | 704 | 1.2− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.5+ |
| 2002 08 30 | 644 | 0.8− | 0.0 | 2004 01 21 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 644 | 0.0 | 0.2+ |
| 2002 08 30 | 644 | 0.4− | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 11 14 | 704 | (1.5+ | 1.5+) |
| 2002 08 30 | 644 | 0.5− | 0.3+ | 2004 01 22 | 704 | 0.5+ | 0.2− | 2006 11 14 | 704 | 0.5+ | 0.4+ |
| 2002 08 30 | 644 | 0.4− | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.3− | 2006 11 14 | 644 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.6− | 0.1+ | 2004 01 22 | 704 | 0.4+ | 0.0 | 2006 11 14 | 704 | 0.2+ | 0.1− |
| 2002 08 30 | 644 | 0.2− | 0.7+ | 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 11 14 | 644 | 0.5+ | 1.1− |
| 2002 08 30 | 644 | 0.1− | 1.1+ | 2004 01 24 | 704 | 0.1+ | 0.8+ | 2006 11 14 | 704 | 0.2− | 0.1+ |
| 2002 08 30 | 644 | 0.7+ | 0.8+ | 2004 01 24 | 704 | 0.5+ | 1.1+ | 2006 11 14 | 704 | 0.1+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.5+ | 0.7+ | 2004 01 24 | 704 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.4+ | 0.2+ |
| 2003 11 04 | 557 | 0.3− | 1.2− | 2004 01 24 | 704 | 0.1− | 1.0+ | 2006 11 19 | 703 | 0.5+ | 0.2− |
| 2003 11 04 | 557 | 0.6− | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.0 | 0.5− |
| 2003 11 04 | 557 | 0.8+ | 0.5+ | 2004 01 27 | 691 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.7+ | 0.1− |
| 2003 11 04 | 557 | 0.3− | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2003 11 21 | 704 | 0.8+ | 0.7+ | 2004 01 28 | 291 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2003 11 21 | 704 | 0.4+ | 1.0− | 2004 01 28 | 291 | 0.6+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2003 11 21 | 704 | 0.3+ | 1.1− | 2004 01 28 | 291 | 0.9+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.2− |

**(139141)∗ 2001 FF$_{87}$ = 2002 RA$_{223}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37575)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.50297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26194714 | $\omega$ | 142.08649 | | −0.48007005 | +0.86898146 | |
| $a$ | 2.4191360 | $\Omega$ | 98.92944 | | −0.83161801 | −0.40728730 | |
| $e$ | 0.1090900 | $i$ | 6.97804 | | −0.27918495 | −0.28104852 | |
| $P$ | 3.76 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 704 | (0.4+ | 1.8+) | 2001 05 23 | 699 | (1.8− | 1.5+) | 2005 05 19 | 703 | 0.7− | 0.6+ |
| 2001 03 04 | 704 | 0.1+ | 0.3+ | 2002 09 15 | 608 | 0.9− | 0.6− | 2005 05 19 | 703 | 0.6− | 0.2+ |
| 2001 03 04 | 704 | (1.3+ | 2.2+) | 2002 09 15 | 608 | 1.4− | 0.6− | 2005 05 19 | 703 | 1.0− | 0.2− |
| 2001 03 04 | 704 | 0.1+ | 0.0 | 2002 09 15 | 608 | 0.9− | 0.7− | 2005 06 02 | 703 | (1.5+ | 3.1−) |
| 2001 03 04 | 704 | 0.0 | 0.5+ | 2002 09 16 | 644 | 0.4+ | 0.8+ | 2005 06 02 | 703 | 0.8− | 0.3− |
| 2001 03 19 | 645 | 0.2− | 0.0 | 2002 09 16 | 644 | 0.2+ | 1.4+ | 2005 06 02 | 703 | (1.6− | 1.0−) |
| 2001 03 19 | 645 | 0.2− | 0.0 | 2002 09 16 | 644 | 0.0 | 0.7+ | 2005 06 02 | 703 | (0.2− | 1.9−) |
| 2001 03 21 | 699 | 1.1+ | 0.8+ | 2002 09 17 | 644 | 0.0 | 1.1+ | 2005 06 02 | E12 | 0.6− | 1.0− |
| 2001 03 21 | 699 | 0.6+ | 1.4+ | 2002 09 17 | 644 | 0.4+ | 0.3+ | 2005 06 02 | E12 | 1.3− | 0.2+ |
| 2001 03 21 | 699 | 1.0+ | 1.0+ | 2002 09 17 | 644 | 0.3+ | 0.9+ | 2005 06 02 | E12 | 1.1− | 0.4− |
| 2001 03 21 | 699 | 0.2+ | 0.8+ | 2005 05 03 | 691 | 0.0 | 0.0 | 2005 06 02 | E12 | 0.3− | 0.5− |
| 2001 03 27 | 699 | 0.0 | 0.0 | 2005 05 03 | 691 | 0.1+ | 0.1+ | 2005 06 04 | 691 | 0.0 | 0.1− |
| 2001 03 27 | 699 | 0.1− | 0.7+ | 2005 05 03 | 691 | 0.0 | 0.0 | 2005 06 04 | 691 | 0.0 | 0.2− |
| 2001 03 27 | 699 | 0.9+ | 0.4+ | 2005 05 03 | 704 | 0.4+ | 0.6+ | 2005 06 04 | 691 | 0.0 | 0.2− |
| 2001 03 27 | 699 | 0.6+ | 0.1− | 2005 05 03 | 704 | 0.2+ | 0.5+ | 2005 06 05 | 704 | 0.4− | 0.7+ |
| 2001 03 29 | 608 | 0.5+ | 0.2+ | 2005 05 03 | 704 | 0.8+ | 0.6+ | 2005 06 05 | 704 | 0.5+ | 0.0 |
| 2001 03 29 | 608 | 0.3+ | 0.3− | 2005 05 03 | 704 | 0.5+ | 0.0 | 2005 06 05 | 704 | (2.1+ | 0.5+) |
| 2001 03 29 | 608 | 0.1+ | 0.1− | 2005 05 03 | 704 | 0.2+ | 0.5+ | 2005 06 12 | 691 | 0.0 | 0.0 |
| 2001 03 29 | 608 | 0.6+ | 0.5− | 2005 05 08 | 704 | 0.0 | 0.1− | 2005 06 12 | 691 | 1.0− | 0.1− |
| 2001 03 29 | 608 | 0.0 | 0.2− | 2005 05 08 | 704 | (1.6+ | 0.1−) | 2005 06 12 | 691 | 0.6+ | 0.4+ |
| 2001 03 29 | 608 | 0.1− | 0.9− | 2005 05 08 | 704 | 1.3+ | 0.2+ | 2005 06 16 | 691 | 0.2+ | 0.0 |
| 2001 04 15 | 704 | 0.4− | 0.8+ | 2005 05 08 | 704 | 0.3− | 0.2+ | 2005 06 16 | 691 | 0.3+ | 0.0 |
| 2001 04 15 | 704 | 0.8+ | 0.5+ | 2005 05 10 | 691 | 0.2+ | 0.2− | 2005 06 16 | 691 | 0.2+ | 0.0 |
| 2001 04 15 | 704 | 1.3+ | 0.8+ | 2005 05 10 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | (0.2+ | 2.2−) |
| 2001 04 15 | 704 | 0.8− | 0.7− | 2005 05 10 | 691 | 0.5− | 0.8− | 2006 09 18 | 703 | 0.7+ | 1.2− |
| 2001 04 15 | 704 | 1.1− | 0.0 | 2005 05 12 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.9− |
| 2001 04 15 | 608 | 0.7− | 0.7− | 2005 05 12 | 704 | 1.0+ | 1.3+ | 2006 09 18 | 703 | 1.1− | 0.1− |
| 2001 04 15 | 608 | 0.1− | 0.9− | 2005 05 12 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.6+ |
| 2001 04 15 | 608 | 0.4− | 0.8− | 2005 05 12 | 704 | (1.9+ | 2.2−) | 2006 09 20 | 644 | 0.5− | 0.7+ |
| 2001 04 17 | 699 | 0.4− | 0.7+ | 2005 05 12 | 704 | 0.7+ | 0.1− | 2006 09 20 | 644 | 0.3− | 0.4+ |
| 2001 04 17 | 699 | 0.4+ | 0.1− | 2005 05 14 | 644 | 0.1− | 0.4− | 2006 09 26 | 703 | (0.7− | 1.8+) |
| 2001 04 17 | 699 | 0.1+ | 0.9+ | 2005 05 14 | 644 | 0.2− | 0.4− | 2006 09 26 | 703 | 1.2+ | 0.5+ |
| 2001 04 17 | 699 | 0.2+ | 0.0 | 2005 05 14 | 644 | 0.2− | 0.3− | 2006 09 26 | 703 | 1.3+ | 0.7+ |
| 2001 04 24 | 608 | 1.1+ | 1.2+ | 2005 05 16 | 704 | 0.7− | 0.2+ | 2006 09 26 | 703 | (0.1− | 2.0+) |
| 2001 04 24 | 608 | 1.1+ | 1.5+ | 2005 05 16 | 704 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.5− |
| 2001 04 24 | 608 | 1.0+ | 1.1+ | 2005 05 16 | 704 | 0.7+ | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.7− |
| 2001 04 25 | 608 | 1.1+ | 0.8− | 2005 05 16 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2001 04 25 | 608 | (0.9+ | 1.8−) | 2005 05 17 | G96 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2001 04 25 | 608 | 0.4+ | 0.9− | 2005 05 17 | G96 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.6+ |
| 2001 05 23 | 699 | 1.3+ | 0.0 | 2005 05 17 | G96 | 0.7− | 0.0 | 2006 10 22 | 644 | 0.3− | 0.6+ |
| 2001 05 23 | 699 | 0.1− | 0.3− | 2005 05 17 | G96 | 0.6− | 0.2− | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2001 05 23 | 699 | 0.1+ | 0.4− | 2005 05 19 | 703 | (1.9− | 0.9−) | | | | |

**(139142)∗ 2001 FP$_{88}$ = 2002 RT$_{49}$**

Discovered 2001 Mar. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 35050)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.24334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27777259 | $\omega$ | 291.48792 | | +0.77020880 | +0.63675972 | |
| $a$ | 2.3263575 | $\Omega$ | 28.99842 | | −0.55397503 | +0.69608768 | |
| $e$ | 0.0970728 | $i$ | 4.29061 | | −0.31605392 | +0.33166096 | |
| $P$ | 3.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 15 | 691 | 0.3+ | 0.7+ | 2002 09 16 | 608 | 1.4− | 0.9− | 2006 10 20 | G96 | 0.4− | 0.1+ |
| 1994 04 15 | 691 | 0.2+ | 0.0 | 2002 09 16 | 608 | 1.5− | 0.4− | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 1994 04 15 | 691 | 0.2+ | 0.4+ | 2002 09 16 | 608 | (1.6− | 0.0 ) | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2001 03 16 | 691 | 0.5+ | 0.1+ | 2002 09 27 | 699 | 0.6+ | 0.4+ | 2006 10 20 | G96 | 0.9+ | 0.6− |
| 2001 03 16 | 691 | 0.1+ | 0.1+ | 2002 09 27 | 699 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.9+ |
| 2001 03 16 | 691 | 0.2+ | 0.3+ | 2002 09 27 | 699 | 0.3− | 0.8+ | 2006 10 27 | 703 | (0.5+ | 1.9+) |
| 2001 03 18 | 704 | 0.3− | 0.4+ | 2002 09 27 | 699 | (0.4− | 2.3+) | 2006 10 27 | 703 | 0.9+ | 0.3+ |
| 2001 03 18 | 704 | 0.1− | 1.0+ | 2002 09 28 | 608 | (1.8− | 0.4+) | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 2001 03 18 | 704 | 0.1+ | 1.0+ | 2002 09 28 | 608 | (1.7− | 0.2−) | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 03 20 | 699 | 0.2− | 1.1+ | 2002 09 28 | 608 | (2.0− | 0.0 ) | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2001 03 20 | 699 | 0.2− | 0.3− | 2002 10 01 | 699 | 1.4− | 1.5+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2001 03 20 | 699 | 0.9+ | 0.9+ | 2002 10 01 | 699 | 0.6− | 1.0+ | 2006 11 14 | 691 | 0.6− | 0.0 |
| 2001 03 20 | 699 | 0.6+ | 1.1− | 2002 10 01 | 699 | 0.4− | 1.0+ | 2006 11 14 | 691 | 0.4− | 0.2− |
| 2001 03 26 | 691 | 0.3+ | 0.7+ | 2002 10 01 | 699 | 0.4− | 1.2+ | 2006 11 14 | 691 | 0.5− | 0.2+ |
| 2001 03 26 | 691 | 0.6+ | 0.6+ | 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2001 03 26 | 691 | 0.5+ | 0.5+ | 2002 10 03 | 704 | 1.0− | 1.3+ | 2006 11 14 | 703 | 0.5− | 0.4+ |
| 2001 03 28 | 691 | 0.3+ | 0.5+ | 2002 10 03 | 704 | 0.1− | 1.1+ | 2006 11 14 | 703 | 0.2− | 1.0+ |
| 2001 03 28 | 691 | 0.0 | 0.3+ | 2002 10 03 | 704 | 0.3− | 0.7+ | 2006 11 14 | 703 | 0.8+ | 0.8+ |
| 2001 03 28 | 691 | 0.3+ | 0.5+ | 2002 10 06 | 704 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.6+ |
| 2001 03 28 | 691 | 0.5+ | 0.3− | 2002 10 06 | 704 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2001 03 28 | 691 | 0.1+ | 0.4− | 2002 10 06 | 704 | 0.2+ | 1.0+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2001 03 28 | 691 | 0.3+ | 0.0 | 2002 10 06 | 704 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 2001 03 29 | 691 | 0.2+ | 0.4+ | 2002 10 08 | 246 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2001 03 29 | 691 | 0.1− | 0.3+ | 2002 10 08 | 246 | 0.3− | 0.8+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2001 03 29 | 691 | 0.2+ | 0.4+ | 2002 10 08 | 246 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2001 03 31 | 691 | 0.0 | 0.3+ | 2002 10 08 | 246 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.9+ |
| 2001 03 31 | 691 | 0.0 | 0.4+ | 2002 10 08 | 246 | 0.4− | 0.3+ | 2006 11 22 | H07 | 0.3+ | 1.0+ |
| 2001 03 31 | 691 | 0.0 | 0.5+ | 2002 10 11 | 704 | 0.9+ | 1.4+ | 2006 11 22 | H07 | 0.3− | 1.1+ |
| 2001 04 15 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.0 | 1.5+ | 2006 11 22 | H07 | 0.3− | 0.0 |
| 2001 04 15 | 691 | 0.1− | 0.1+ | 2002 10 11 | 704 | (0.4+ | 1.8+) | 2006 11 22 | H07 | 0.5+ | 0.7+ |
| 2001 04 15 | 691 | 0.2− | 0.1− | 2002 10 11 | 704 | (0.7+ | 2.1+) | 2006 11 22 | 691 | 0.3− | 1.3− |
| 2001 04 26 | 691 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.4− | 0.8− | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2001 04 26 | 691 | 0.1− | 0.6+ | 2004 01 30 | 704 | 0.9+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2001 04 26 | 691 | 0.0 | 0.5+ | 2004 01 30 | 704 | 0.3− | 0.9− | 2006 11 22 | 704 | 0.2+ | 0.6+ |
| 2002 08 31 | 699 | 0.2+ | 1.1+ | 2004 01 30 | 704 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.6− | 1.2+ |
| 2002 08 31 | 699 | 0.4+ | 1.0+ | 2004 02 10 | 644 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.6− | 0.7+ |
| 2002 08 31 | 699 | 0.7+ | 1.3+ | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.6− | 0.8+ |
| 2002 08 31 | 699 | 1.1+ | 0.9+ | 2004 02 10 | 644 | 0.1− | 0.9+ | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 0.6− | 2004 04 15 | 645 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 0.7− | 0.9− | 2004 04 15 | 645 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 1.0− | 1.3− | 2004 04 16 | 645 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.6− | 0.7+ |
| 2002 09 06 | 704 | 0.3− | 0.8− | 2004 04 16 | 645 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.2+ |
| 2002 09 06 | 704 | 0.6− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.5+ | 1.9− |
| 2002 09 06 | 704 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.1− | | | | |
| 2002 09 06 | 704 | 0.2+ | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.3− | | | | |

**(139143)∗ 2001 FM$_{91}$**

Discovered 2001 Mar. 27 by W. K. Y. Yeung at Desert Beaver Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.93156 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23745135 | $\omega$ | 105.90021 | | +0.39553482 | +0.91811909 | |
| $a$ | 2.5827733 | $\Omega$ | 187.53981 | | −0.89812564 | +0.38101798 | |
| $e$ | 0.3027310 | $i$ | 10.84521 | | −0.19215238 | +0.10900750 | |
| $P$ | 4.15 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 21 | 260 | 0.2+ | 0.5+ | 2004 01 28 | 645 | 0.1+ | 0.0 | 2005 04 12 | 704 | 0.1+ | 0.5− |
| 1989 10 21 | 260 | 0.8− | 0.2+ | 2004 01 28 | 645 | 0.0 | 0.0 | 2005 04 15 | 699 | 0.0 | 0.6+ |
| 2001 03 23 | 608 | (1.0+ | 1.5+) | 2005 03 08 | G96 | 0.1− | 0.2+ | 2005 04 15 | 699 | 0.2+ | 0.3+ |
| 2001 03 23 | 608 | 1.4+ | 1.5+ | 2005 03 08 | G96 | 0.4− | 0.2+ | 2005 04 15 | 699 | 0.6+ | 0.4+ |
| 2001 03 23 | 608 | 1.3+ | 0.8+ | 2005 03 08 | G96 | 0.3− | 0.1+ | 2005 04 15 | 699 | 1.2+ | 0.0 |
| 2001 03 27 | 919 | 0.3+ | 1.4− | 2005 03 08 | G96 | 0.1− | 0.2+ | 2005 04 18 | 703 | 0.7− | 0.6+ |
| 2001 03 27 | 919 | 0.3− | 0.8+ | 2005 03 10 | 699 | 0.3+ | 0.6+ | 2005 04 18 | 703 | 0.3− | 0.1− |
| 2001 03 27 | 919 | 0.3− | 1.1− | 2005 03 10 | 699 | 1.4+ | 0.3− | 2005 04 18 | 703 | 0.1+ | 0.1− |
| 2001 03 29 | 919 | 0.4+ | 0.3+ | 2005 03 10 | 699 | 1.2− | 0.7+ | 2005 04 18 | 703 | 0.8− | 0.7+ |
| 2001 03 29 | 919 | 0.0 | 0.5− | 2005 03 10 | 699 | 0.6+ | 1.2+ | 2005 04 19 | 691 | 0.0 | 0.2+ |
| 2001 03 31 | 919 | 1.1+ | 0.1− | 2005 03 13 | 703 | 0.3− | 0.5− | 2005 04 19 | 691 | 0.2+ | 0.3+ |
| 2001 03 31 | 919 | (1.8+ | 2.1+) | 2005 03 13 | 703 | 0.4+ | 1.3− | 2005 04 19 | 691 | 0.0 | 0.3+ |
| 2001 03 31 | 919 | 0.0 | 0.0 | 2005 03 13 | 703 | 0.6− | 0.4− | 2005 05 02 | 608 | 0.3+ | 0.7− |
| 2001 04 16 | 919 | 0.6− | 0.3− | 2005 03 13 | 703 | 0.6− | 0.4− | 2005 05 02 | 608 | 0.5+ | 0.7− |
| 2001 04 16 | 919 | (1.7− | 0.2+) | 2005 04 01 | 699 | 0.1+ | 0.3+ | 2005 05 02 | 608 | 0.3+ | 0.5− |
| 2001 04 16 | 919 | 0.8− | 0.2+ | 2005 04 01 | 699 | 0.4+ | 0.1− | 2005 05 08 | 703 | 0.2− | 0.5− |
| 2001 04 24 | 704 | 0.2+ | 0.2− | 2005 04 01 | 699 | 0.4+ | 0.9+ | 2005 05 08 | 703 | 0.6+ | 0.9− |
| 2001 04 24 | 704 | 0.5− | 0.5+ | 2005 04 01 | 699 | 0.1+ | 0.2+ | 2005 05 08 | 703 | 0.6− | 0.4− |
| 2001 04 24 | 704 | 0.5− | 0.3+ | 2005 04 02 | 691 | 0.2+ | 0.1+ | 2005 05 08 | 703 | 0.8− | 0.0 |
| 2001 04 24 | 704 | 0.1+ | 0.3+ | 2005 04 02 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 703 | 1.2− | 0.1− |
| 2001 04 24 | 704 | 0.2+ | 0.2+ | 2005 04 02 | 691 | 0.1+ | 0.0 | 2005 05 13 | 703 | 0.9− | 0.2− |
| 2001 04 25 | 699 | 0.8+ | 0.0 | 2005 04 03 | 185 | 0.4− | 0.2− | 2005 05 13 | 703 | 1.2− | 0.3− |
| 2001 04 25 | 699 | 0.3+ | 0.2+ | 2005 04 03 | 185 | 0.2− | 0.6− | 2005 05 13 | 703 | 0.8− | 0.8+ |
| 2001 04 25 | 699 | 0.5+ | 0.6+ | 2005 04 04 | 185 | 0.4− | 0.6− | 2006 09 30 | 699 | 0.2− | 0.9+ |
| 2001 04 25 | 699 | 0.4+ | 0.5+ | 2005 04 04 | 185 | 0.4− | 0.5− | 2006 09 30 | 699 | 0.2− | 1.3− |
| 2001 05 02 | 644 | 0.2− | 0.3+ | 2005 04 04 | 704 | 0.6+ | 0.7− | 2006 09 30 | 699 | 0.1− | 0.4− |
| 2001 05 02 | 644 | 0.3− | 0.1+ | 2005 04 04 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 1.1− | 0.0 |
| 2001 05 02 | 644 | 0.3− | 0.2+ | 2005 04 04 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.9+ |
| 2001 05 03 | 608 | 0.4+ | 0.3− | 2005 04 04 | 704 | 0.3+ | 0.1− | 2006 09 30 | 699 | 1.3+ | 0.9+ |
| 2001 05 03 | 608 | 0.1+ | 0.3− | 2005 04 04 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 2001 05 03 | 608 | 0.1+ | 0.2+ | 2005 04 07 | 704 | 0.2+ | 1.0− | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2001 05 23 | 704 | 0.5+ | 0.2+ | 2005 04 07 | 704 | 0.7+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2001 05 23 | 704 | 0.1− | 0.0 | 2005 04 07 | 704 | 0.6+ | 0.3− | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2001 05 23 | 704 | 0.4+ | 0.2+ | 2005 04 09 | 704 | 0.9− | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2001 05 23 | 704 | 0.4+ | 0.4+ | 2005 04 09 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2001 05 23 | 704 | 0.1+ | 0.4+ | 2005 04 09 | 704 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.9+ |
| 2001 05 29 | 704 | 0.5− | 0.7+ | 2005 04 09 | 704 | 0.9− | 1.0+ | 2006 11 13 | 703 | 0.6+ | 0.3+ |
| 2001 05 29 | 704 | 0.1− | 0.5+ | 2005 04 09 | 704 | 0.4− | 0.5+ | 2006 11 13 | 703 | 0.3+ | 0.6+ |
| 2001 05 29 | 704 | 0.2− | 0.3+ | 2005 04 12 | 691 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.4+ | 1.4+ |
| 2001 05 29 | 704 | 0.3+ | 0.4+ | 2005 04 12 | 691 | 0.4− | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.2+ |
| 2001 05 29 | 704 | 0.4− | 0.0 | 2005 04 12 | 691 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.0 | 0.4+ |
| 2001 06 13 | 699 | 0.0 | 0.4+ | 2005 04 12 | 704 | 1.0+ | 0.5− | 2006 11 19 | 703 | 0.0 | 0.5+ |
| 2001 06 13 | 699 | 0.3− | 0.3+ | 2005 04 12 | 704 | 0.7+ | 0.8− | 2006 11 19 | 703 | 0.7− | 0.1+ |
| 2001 06 13 | 699 | 0.7− | 0.3+ | 2005 04 12 | 704 | 0.5+ | 0.9− | | | | |
| 2001 06 13 | 699 | 0.3− | 0.1− | 2005 04 12 | 704 | 0.7+ | 0.3− | | | | |

**(139144)∗ 2001 FD$_{92}$ = 2002 TS$_{74}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37576)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.14008 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26639981 | $\omega$ | 173.42522 | | −0.15300025 | +0.98244086 |
| $a$ | 2.3921043 | $\Omega$ | 87.73596 | | −0.91147718 | −0.09854360 |
| $e$ | 0.2000207 | $i$ | 6.13424 | | −0.38183802 | −0.15842701 |
| $P$ | 3.70 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 704 | (1.1+ | 2.4+) | 2002 10 22 | 644 | 0.5− | 0.8+ | 2005 05 11 | 699 | 0.4+ | 0.3− |
| 2001 03 04 | 704 | 1.1+ | 0.6+ | 2005 02 09 | 691 | 0.2+ | 0.4+ | 2005 05 11 | 699 | 0.2+ | 0.0 |
| 2001 03 04 | 704 | 0.5+ | 1.0+ | 2005 02 09 | 691 | 0.6+ | 0.0 | 2005 05 11 | 699 | 0.1+ | 0.2− |
| 2001 03 04 | 704 | 0.6+ | 0.1+ | 2005 02 09 | 691 | 0.3+ | 0.2+ | 2005 05 11 | 699 | 0.6+ | 0.1+ |
| 2001 03 16 | 704 | 0.0 | 0.7+ | 2005 04 11 | 691 | 0.1− | 0.2+ | 2005 05 12 | 704 | 0.7+ | 0.4+ |
| 2001 03 16 | 704 | 1.2+ | 0.8− | 2005 04 11 | 691 | 0.2− | 0.3+ | 2005 05 12 | 704 | 0.7+ | 0.9+ |
| 2001 03 16 | 704 | 0.4+ | 0.0 | 2005 04 11 | 691 | 0.0 | 0.0 | 2005 05 12 | 704 | 0.8+ | 0.7+ |
| 2001 03 16 | 704 | 0.5− | 0.9+ | 2005 05 03 | 704 | 0.9+ | 0.4+ | 2005 05 12 | 704 | 1.1+ | 1.2+ |
| 2001 03 18 | 699 | 1.2− | 1.2+ | 2005 05 03 | 704 | 0.3+ | 0.3+ | 2005 05 12 | 704 | 1.1+ | 0.7+ |
| 2001 03 18 | 699 | 0.1− | 1.1+ | 2005 05 03 | 704 | 0.3+ | 0.5+ | 2005 05 16 | 704 | 0.2+ | 0.1+ |
| 2001 03 18 | 699 | 0.1− | 1.0+ | 2005 05 03 | 704 | 0.4+ | 0.4+ | 2005 05 16 | 704 | 0.6+ | 0.3− |
| 2001 03 18 | 699 | (0.7− | 1.7+) | 2005 05 03 | 704 | (1.6+ | 0.4+) | 2005 05 16 | 704 | 0.1− | 0.2− |
| 2001 03 18 | 608 | 0.6+ | 0.7− | 2005 05 06 | 170 | 0.6− | 0.0 | 2005 05 16 | 704 | 0.3− | 0.1+ |
| 2001 03 18 | 608 | 0.3− | 0.4− | 2005 05 06 | 170 | 0.6− | 0.1+ | 2005 06 04 | 703 | 1.1− | 0.2− |
| 2001 03 18 | 608 | 0.8+ | 0.8− | 2005 05 06 | 170 | 0.5− | 0.1+ | 2005 06 04 | 703 | 0.5− | 0.3+ |
| 2001 03 27 | 699 | 1.0+ | 0.9+ | 2005 05 06 | 170 | 0.4− | 0.0 | 2005 06 04 | 703 | 0.7− | 0.4+ |
| 2001 03 27 | 699 | 0.8− | 0.6+ | 2005 05 06 | 170 | 0.6− | 0.0 | 2005 06 04 | 703 | 1.2− | 0.1+ |
| 2001 03 27 | 699 | (0.8− | 1.9+) | 2005 05 06 | 170 | 0.5− | 0.2− | 2005 06 22 | 644 | 0.0 | 0.1− |
| 2001 03 27 | 699 | 0.2− | 1.3+ | 2005 05 07 | 703 | 1.0− | 0.3− | 2005 06 22 | 644 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 0.5+ | 0.4+ | 2005 05 07 | 703 | 0.8− | 0.3− | 2005 06 22 | 644 | 0.0 | 0.1− |
| 2002 10 01 | 699 | 0.2+ | 1.0+ | 2005 05 07 | 703 | 0.6− | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.3− |
| 2002 10 01 | 699 | (0.5+ | 1.6+) | 2005 05 07 | 703 | 1.0− | 0.5− | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2002 10 01 | 699 | 0.6+ | 1.0+ | 2005 05 08 | 699 | 1.0+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2002 10 01 | 608 | 0.6− | 0.5+ | 2005 05 08 | 704 | 0.8+ | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2002 10 01 | 608 | 0.9− | 0.5+ | 2005 05 08 | 699 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.5+ | 0.9+ |
| 2002 10 01 | 608 | 0.5− | 0.5+ | 2005 05 08 | 704 | 0.6+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.6+ |
| 2002 10 04 | 704 | 0.3− | 0.7+ | 2005 05 08 | 704 | 1.2+ | 0.5− | 2006 11 08 | 644 | 0.1− | 0.7+ |
| 2002 10 04 | 704 | 1.2− | 0.3+ | 2005 05 08 | 699 | 0.8+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2005 05 08 | 699 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.7− | 0.3+ |
| 2002 10 04 | 704 | 1.2− | 1.4+ | 2005 05 08 | 704 | 0.6+ | 0.4− | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 0.4− | 1.4+ | 2005 05 10 | H93 | 1.0− | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 2002 10 07 | 608 | (0.1+ | 1.6+) | 2005 05 10 | H93 | 1.3− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.4+ |
| 2002 10 07 | 608 | 0.1− | 0.6+ | 2005 05 10 | H93 | 1.0− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.6+ |
| 2002 10 07 | 608 | 0.1+ | 0.6+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.5+ |
| 2002 10 22 | 644 | 0.5− | 1.0+ | 2005 05 11 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1− | 0.6+ |
| 2002 10 22 | 644 | 0.5− | 1.0+ | 2005 05 11 | 691 | 0.1+ | 0.0 | | | | |

**(139145)∗ 2001 FG$_{92}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.92133 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28005025 | $\omega$ | 77.77221 | | −0.33640161 | −0.93823188 |
| $a$ | 2.3137268 | $\Omega$ | 32.25331 | | +0.79425601 | −0.32886491 |
| $e$ | 0.1023686 | $i$ | 8.72606 | | +0.50595588 | −0.10755836 |
| $P$ | 3.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.1+ | 0.2+ | 2003 10 25 | 704 | 0.3+ | 0.0 | 2005 05 16 | 644 | 0.2+ | 0.7+ |
| 1999 10 08 | 704 | 0.0 | 0.5− | 2003 10 25 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.0 |
| 1999 10 08 | 704 | 0.5− | 0.6+ | 2003 10 25 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 1.1− | 0.1− |
| 2001 03 04 | 704 | 0.0 | 1.4+ | 2003 10 25 | 704 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.3− | 1.0+ |
| 2001 03 04 | 704 | 0.3− | 0.1+ | 2003 10 25 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.9+ |
| 2001 03 04 | 704 | 0.5+ | 0.7+ | 2003 11 03 | 704 | 1.2− | 0.0 | 2006 09 20 | 608 | 0.5+ | 1.3− |
| 2001 03 04 | 704 | 0.5− | 0.7+ | 2003 11 03 | 704 | 0.2− | 1.0+ | 2006 09 20 | 608 | 0.6+ | 1.0− |
| 2001 03 04 | 704 | 0.2− | 0.4+ | 2003 11 03 | 704 | 0.6− | 0.1− | 2006 09 20 | 608 | 0.4+ | 1.0− |
| 2001 03 16 | 704 | 0.2− | 1.0+ | 2003 11 03 | 704 | 1.5− | 0.4− | 2006 09 22 | 704 | 0.3+ | 0.6+ |
| 2001 03 16 | 704 | 0.6+ | 0.9+ | 2003 11 03 | 704 | 1.1− | 0.2− | 2006 09 22 | 704 | 0.6− | 0.4− |
| 2001 03 16 | 704 | 0.5+ | 0.5+ | 2003 11 19 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.4− | 0.9+ |
| 2001 03 16 | 704 | 0.3+ | 1.0+ | 2003 11 19 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.3+ |
| 2001 03 16 | 704 | 0.6+ | 1.2+ | 2003 11 19 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.6− | 0.6+ |
| 2001 03 18 | 699 | 0.1+ | 0.3+ | 2003 11 19 | 704 | 0.9− | 0.5− | 2006 09 26 | 704 | 0.4− | 1.2+ |
| 2001 03 18 | 699 | 0.0 | 0.9+ | 2003 11 19 | 704 | 0.9− | 0.1+ | 2006 09 26 | 704 | 0.5− | 1.1+ |
| 2001 03 18 | 699 | 0.1− | 0.4+ | 2003 12 03 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1− | 1.3+ |
| 2001 03 18 | 699 | 0.9− | 0.4+ | 2003 12 03 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.0 | 0.2+ |
| 2001 03 26 | 704 | 0.5− | 0.6+ | 2003 12 03 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.4− | 0.2− |
| 2001 03 26 | 704 | 0.1− | 0.4+ | 2003 12 03 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.4− | 1.2+ |
| 2001 03 26 | 704 | 0.4+ | 0.3+ | 2003 12 03 | 704 | 0.3− | 0.5− | 2006 09 30 | 703 | 0.6+ | 1.4+ |
| 2001 03 26 | 704 | 1.3+ | 0.4− | 2003 12 17 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | (1.7+ | 1.0+) |
| 2001 03 26 | 704 | 0.7+ | 0.1− | 2003 12 17 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2001 03 27 | 699 | 0.2− | 0.2+ | 2003 12 17 | 704 | 0.0 | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 03 27 | 699 | 0.3+ | 0.6+ | 2003 12 17 | 704 | (2.2− | 1.5+) | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2001 03 27 | 699 | 0.3+ | 0.4− | 2003 12 17 | 704 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 03 27 | 699 | 0.4− | 0.1− | 2003 12 21 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 27 | 608 | (0.2+ | 1.6−) | 2003 12 21 | 704 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 03 27 | 608 | 0.9+ | 1.1− | 2003 12 21 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2001 03 27 | 608 | (0.3+ | 1.7−) | 2003 12 21 | 704 | 0.6+ | 0.1− | 2006 10 19 | 703 | 1.0− | 0.1− |
| 2001 03 29 | 608 | 0.4+ | 0.8+ | 2003 12 21 | 704 | 1.2+ | 0.9+ | 2006 10 19 | 703 | 0.0 | 0.1+ |
| 2001 03 29 | 608 | 0.3+ | 0.6+ | 2003 12 22 | 704 | 0.0 | 0.2− | 2006 10 19 | 703 | (1.7− | 0.9+) |
| 2001 03 29 | 608 | 0.3+ | 0.5+ | 2003 12 22 | 704 | 0.1− | 0.8+ | 2006 10 19 | 703 | 1.0+ | 0.4− |
| 2001 04 16 | 699 | 1.2+ | 0.8+ | 2003 12 22 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.6− | 0.8+ |
| 2001 04 16 | 699 | 0.9+ | 0.1+ | 2003 12 27 | 704 | (1.9+ | 0.6−) | 2006 10 22 | 644 | 0.5− | 0.6+ |
| 2001 04 16 | 704 | 0.9+ | 0.3− | 2003 12 27 | 704 | (1.8+ | 0.1+) | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2001 04 16 | 699 | 1.0+ | 0.5− | 2003 12 27 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2001 04 16 | 704 | 0.1− | 0.6− | 2003 12 29 | 704 | 0.5+ | 0.5− | 2006 10 23 | 644 | 0.4− | 0.3+ |
| 2001 04 16 | 704 | 0.8− | 1.0+ | 2003 12 29 | 704 | 0.4+ | 0.5− | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 2001 04 16 | 699 | 0.5+ | 0.2+ | 2003 12 29 | 704 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.6+ |
| 2002 07 16 | 644 | 0.1+ | 0.4+ | 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.7+ |
| 2002 07 16 | 644 | 0.1+ | 0.3+ | 2003 12 29 | 704 | 0.5+ | 0.3+ | 2006 10 24 | 644 | 0.3− | 0.7+ |
| 2002 07 16 | 644 | 0.1− | 0.0 | 2004 01 16 | 644 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.5− | 0.1− |
| 2003 10 22 | 704 | 0.2+ | 0.3+ | 2004 01 16 | 644 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2003 10 22 | 704 | 1.1+ | 0.4− | 2004 01 16 | 644 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2+ |
| 2003 10 22 | 704 | 0.7− | 0.5+ | 2005 05 16 | 644 | 0.1− | 0.7+ | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2003 10 22 | 704 | 1.5+ | 1.1− | 2005 05 16 | 644 | 0.0 | 0.6+ | | | | |

**(139146)∗ 2001 FW$_{92}$ = 1999 TV$_{239}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 12061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.10487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28020495 | $\omega$ | 53.14707 | | −0.97575277 | −0.19937858 | |
| $a$ | 2.3128751 | $\Omega$ | 115.19385 | | +0.15520753 | −0.92119139 | |
| $e$ | 0.0812164 | $i$ | 5.72747 | | +0.15432809 | −0.33414758 | |
| $P$ | 3.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.1+ | 1.0+ | 2002 08 03 | 644 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.9− | 0.9− |
| 1999 10 04 | 703 | 0.9+ | 0.7+ | 2002 08 03 | 644 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.3+ |
| 1999 10 04 | 703 | 0.6− | 0.1− | 2002 08 03 | 644 | 0.4− | 0.4+ | 2006 09 26 | 704 | 0.9− | 0.0 |
| 1999 10 04 | 703 | 0.2+ | 0.9− | 2002 08 11 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.7+ | 1.3− |
| 1999 10 09 | 704 | 1.1− | 0.2+ | 2002 08 11 | 644 | 0.2− | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.9− | 0.1+ | 2002 08 11 | 644 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.5− | 0.5+ | 2002 08 12 | 699 | 1.0+ | 0.4− | 2006 09 26 | 704 | 1.0− | 0.6+ |
| 1999 10 09 | 704 | 0.1+ | 0.1− | 2002 08 12 | 699 | 0.8+ | 0.9+ | 2006 09 26 | 703 | 0.8− | 0.9+ |
| 1999 10 09 | 704 | 0.1+ | 0.0 | 2002 08 12 | 699 | 0.7− | 0.8+ | 2006 09 26 | 703 | 1.1− | 0.6− |
| 2001 01 04 | 704 | 0.2+ | 1.0+ | 2002 08 12 | 699 | 1.1+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.4− |
| 2001 01 04 | 704 | 0.5+ | 0.5+ | 2002 08 18 | 644 | 0.4− | 1.0+ | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2001 01 04 | 704 | 0.2+ | 0.9+ | 2002 08 18 | 644 | 0.3− | 1.1+ | 2006 09 29 | 699 | 0.0 | 0.5− |
| 2001 02 01 | 704 | 0.6+ | 0.3+ | 2002 08 18 | 644 | 0.1+ | 1.2+ | 2006 09 29 | 699 | 0.7+ | 0.0 |
| 2001 02 01 | 699 | 0.0 | 0.4+ | 2002 08 29 | 644 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 1.0+ | 0.2− |
| 2001 02 01 | 704 | 0.5+ | 0.1+ | 2002 08 29 | 644 | 0.4− | 0.1+ | 2006 09 29 | 699 | 1.0+ | 0.4+ |
| 2001 02 01 | 704 | 0.1+ | 1.0+ | 2002 08 29 | 644 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2001 02 01 | 699 | 0.2+ | 0.5+ | 2003 12 19 | 704 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2001 02 01 | 704 | 0.2+ | 0.3+ | 2003 12 19 | 704 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 2001 02 01 | 704 | 0.4− | 1.1+ | 2003 12 19 | 704 | 0.1+ | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2001 02 01 | 699 | 0.2− | 0.1+ | 2003 12 19 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.9+ |
| 2001 02 01 | 699 | 0.3− | 0.4+ | 2003 12 19 | 704 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.1+ | 1.3+ |
| 2001 03 02 | 608 | 0.3+ | 0.8+ | 2003 12 21 | 704 | 0.1− | 1.0+ | 2006 10 16 | 703 | 1.2+ | 1.3+ |
| 2001 03 02 | 608 | 0.4+ | 0.5+ | 2003 12 21 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 1.2+ |
| 2001 03 02 | 608 | 0.4+ | 0.6+ | 2003 12 21 | 704 | 0.2+ | 0.5− | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2001 03 16 | 704 | (1.6+ | 1.2+) | 2003 12 21 | 704 | 1.0+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2001 03 16 | 704 | 0.0 | 0.4+ | 2003 12 23 | 704 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.8− | 0.7+ |
| 2001 03 16 | 704 | 1.1+ | 0.4− | 2003 12 23 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 1.4− | 1.3+ |
| 2001 03 16 | 704 | 1.0+ | 0.1+ | 2003 12 23 | 704 | 0.7+ | 0.3− | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2001 03 16 | 704 | 0.3+ | 0.1− | 2003 12 23 | 704 | 0.6+ | 0.3− | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2001 03 20 | 608 | 0.6− | 1.0+ | 2006 09 18 | 703 | 1.0− | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2001 03 20 | 608 | 0.7− | 1.0+ | 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 03 20 | 608 | 0.8− | 1.0+ | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2001 03 27 | 699 | 1.3− | 0.2− | 2006 09 18 | 703 | 0.6− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2001 03 27 | 699 | 0.1+ | 0.6+ | 2006 09 22 | 704 | 0.2+ | 0.4− | 2006 10 28 | 703 | 2.3+ | 0.5− |
| 2001 03 27 | 699 | 0.7+ | 0.1+ | 2006 09 22 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 0.8+ | 0.2+ |
| 2001 03 27 | 699 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.8+ | 2006 10 28 | 703 | 1.2− | 1.5− |
| 2001 05 23 | 704 | (2.2+ | 0.6+) | 2006 09 22 | 704 | 0.1− | 0.8− | 2006 10 28 | 703 | 0.1− | 1.7− |
| 2001 05 23 | 704 | 1.0+ | 0.6+ | 2006 09 25 | 699 | 0.3− | 0.2− | | | | |
| 2001 05 23 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.3− | | | | |

**(139147)∗ 2001 FF$_{94}$ = 2003 WM$_{45}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.84379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26392503 | $\omega$ | 128.07026 | | −0.98794483 | +0.01549606 | |
| $a$ | 2.4070346 | $\Omega$ | 53.34506 | | −0.09080798 | −0.86382544 | |
| $e$ | 0.0902359 | $i$ | 11.06936 | | +0.12537511 | −0.50355286 | |
| $P$ | 3.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 704 | 0.3− | 0.1− | 2003 11 20 | 704 | 0.0 | 0.2+ | 2005 04 30 | 644 | 0.2− | 0.2− |
| 2001 03 04 | 704 | 0.7+ | 1.0+ | 2003 11 21 | 704 | 0.3− | 0.4− | 2005 05 03 | 704 | 0.7+ | 0.7+ |
| 2001 03 04 | 704 | 0.6+ | 0.3+ | 2003 11 21 | 704 | 0.5− | 1.0+ | 2005 05 03 | 704 | 0.1+ | 0.6− |
| 2001 03 04 | 704 | 0.2+ | 0.1+ | 2003 11 21 | 704 | 0.3+ | 0.1− | 2005 05 03 | 704 | 0.1− | 0.0 |
| 2001 03 16 | 704 | 0.2+ | 0.2− | 2003 11 21 | 704 | 0.2+ | 0.1+ | 2005 05 03 | 704 | 0.3+ | 0.4+ |
| 2001 03 16 | 704 | 0.3− | 0.1− | 2003 11 21 | 704 | 0.4+ | 0.9+ | 2005 05 03 | 704 | 0.1− | 0.3+ |
| 2001 03 16 | 704 | 0.2− | 0.6+ | 2003 11 21 | 691 | 0.3− | 0.4+ | 2005 05 11 | 699 | 0.2+ | 0.3+ |
| 2001 03 16 | 704 | 0.2+ | 0.3− | 2003 11 21 | 691 | 0.0 | 0.5+ | 2005 05 11 | 699 | 0.0 | 0.4+ |
| 2001 03 16 | 704 | 0.2− | 0.2− | 2003 11 21 | 691 | 0.4− | 0.5+ | 2005 05 11 | 699 | 0.1− | 1.0− |
| 2001 03 16 | 704 | 0.3+ | 0.8+ | 2003 11 24 | 704 | 0.3− | 0.8+ | 2005 05 11 | 699 | 0.2− | 0.0 |
| 2001 03 16 | 704 | 0.4− | 0.4+ | 2003 11 24 | 704 | 0.2− | 0.1+ | 2005 05 12 | 704 | 1.1+ | 0.5− |
| 2001 03 16 | 704 | 0.1− | 0.3− | 2003 11 24 | 704 | 0.1− | 0.9+ | 2005 05 12 | 704 | 0.4− | 1.2+ |
| 2001 03 16 | 704 | 0.1+ | 0.3+ | 2003 11 24 | 704 | 0.3− | 0.4+ | 2005 05 12 | 704 | (1.7+ | 2.0+) |
| 2001 03 16 | 704 | 0.5+ | 0.2+ | 2003 11 24 | 704 | 0.4− | 0.8+ | 2005 05 13 | 704 | 1.3+ | 0.7+ |
| 2001 03 16 | 704 | 0.1+ | 0.1+ | 2003 12 18 | 691 | 0.3+ | 0.4− | 2005 05 13 | 704 | 0.6+ | 1.4+ |
| 2001 03 16 | 704 | 0.2− | 0.2+ | 2003 12 18 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 704 | 0.8+ | 0.7+ |
| 2001 03 16 | 704 | 0.3− | 0.2+ | 2003 12 18 | 691 | 0.2+ | 0.1− | 2005 05 13 | 704 | 0.6+ | 1.1+ |
| 2001 03 16 | 704 | 0.8− | 1.1+ | 2003 12 18 | 691 | 0.1+ | 0.2− | 2005 05 13 | 704 | 0.7+ | 1.0+ |
| 2001 03 16 | 704 | 1.5− | 0.8− | 2003 12 18 | 691 | 0.2− | 0.1+ | 2005 05 30 | 699 | 0.3+ | 0.4− |
| 2001 03 18 | 699 | 1.8+ | 0.8+ | 2003 12 18 | 691 | 0.0 | 0.0 | 2005 05 30 | 699 | 0.4− | 0.0 |
| 2001 03 18 | 699 | 0.8+ | 1.0+ | 2005 02 09 | 691 | 0.1+ | 0.0 | 2005 05 30 | 699 | 0.6+ | 0.3+ |
| 2001 03 18 | 699 | 0.3+ | 0.2− | 2005 02 09 | 691 | 0.4− | 0.1− | 2005 05 30 | 699 | 0.3+ | 0.4+ |
| 2001 03 18 | 699 | 0.4+ | 0.4− | 2005 02 09 | 691 | 0.2− | 0.3+ | 2005 06 12 | G96 | 0.2− | 0.7+ |
| 2001 03 23 | 608 | 0.3− | 0.5− | 2005 04 02 | 699 | 0.3+ | 0.1+ | 2005 06 12 | G96 | 0.5− | 0.3+ |
| 2001 03 23 | 608 | 0.1+ | 0.0 | 2005 04 02 | 691 | 0.0 | 0.0 | 2005 06 12 | G96 | 0.3− | 0.7+ |
| 2001 03 23 | 608 | 0.3− | 0.3− | 2005 04 02 | 699 | 0.5+ | 0.1− | 2005 06 12 | G96 | 0.2− | 0.8+ |
| 2001 04 15 | 608 | 1.0+ | 0.9+ | 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 08 28 | E12 | 0.6+ | 1.1+ |
| 2001 04 15 | 608 | 0.7+ | 2.1+ | 2005 04 02 | 699 | 0.1− | 0.1− | 2006 08 28 | E12 | 0.6− | 0.1+ |
| 2001 04 15 | 608 | 0.9+ | 1.1+ | 2005 04 02 | 691 | 0.2+ | 0.0 | 2006 08 28 | E12 | 0.2+ | 0.9+ |
| 2003 10 21 | 701 | 0.5+ | 0.6+ | 2005 04 02 | 699 | 1.0− | 0.3− | 2006 08 28 | E12 | 0.2− | 1.2+ |
| 2003 10 21 | 701 | 0.1− | 0.2+ | 2005 04 13 | 704 | 0.0 | 0.5− | 2006 09 20 | 703 | 0.6− | 0.5+ |
| 2003 10 21 | 701 | 0.3+ | 0.1+ | 2005 04 13 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 703 | 1.7− | 0.4− |
| 2003 11 19 | 644 | 0.1+ | 0.2+ | 2005 04 13 | 704 | 1.1+ | 0.2+ | 2006 09 20 | 703 | 0.8+ | 0.7+ |
| 2003 11 19 | 644 | 0.1− | 0.2+ | 2005 04 18 | 703 | 0.6− | 0.4+ | 2006 09 20 | 703 | 1.3− | 0.2+ |
| 2003 11 19 | 644 | 0.2+ | 0.4+ | 2005 04 18 | 703 | 0.3− | 0.6− | 2006 09 26 | 703 | 0.2− | 2.0+ |
| 2003 11 20 | 704 | 0.4− | 0.4+ | 2005 04 18 | 703 | 0.3− | 0.3− | 2006 09 26 | 703 | 1.7− | 2.2+ |
| 2003 11 20 | 704 | 0.2− | 0.2− | 2005 04 18 | 703 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.7+ |
| 2003 11 20 | 704 | 0.1+ | 0.4− | 2005 04 30 | 644 | 0.3− | 0.5− | 2006 09 26 | 703 | 2.2− | 1.1+ |
| 2003 11 20 | 704 | 0.1− | 0.4+ | 2005 04 30 | 644 | 0.4+ | 0.3− | | | | |

**(139148)∗ 2001 FL$_{94}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.72267 | | (2000.0) | | | |
| $n$ | 0.28010704 | $\omega$ | 17.24886 | | −0.01402212 | −0.99165102 |
| $a$ | 2.3134140 | $\Omega$ | 73.70067 | | +0.90091942 | −0.06814265 |
| $e$ | 0.0648985 | $i$ | 7.67499 | | +0.43375981 | +0.10947530 |
| $P$ | 3.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 608 | 0.9+ | 0.4+ | 2003 12 27 | 704 | 0.5+ | 0.3− | 2006 09 25 | 699 | 0.6− | 0.7+ |
| 2001 03 02 | 608 | 0.7+ | 0.2+ | 2003 12 27 | 704 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.2+ |
| 2001 03 02 | 608 | 0.5+ | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.5− | 2006 09 25 | 699 | 0.4− | 0.2+ |
| 2001 03 16 | 704 | 0.2− | 0.7+ | 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.0 |
| 2001 03 16 | 704 | 0.3+ | 0.4+ | 2003 12 28 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 1.1+ | 0.9+ |
| 2001 03 16 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 704 | 0.5+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.2− |
| 2001 03 21 | 608 | 0.4+ | 0.5+ | 2003 12 28 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.5+ | 0.5+ |
| 2001 03 21 | 608 | 0.5+ | 0.1− | 2003 12 28 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.2+ |
| 2001 03 21 | 608 | 0.2+ | 0.3+ | 2005 05 19 | G96 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.0 |
| 2001 04 04 | 608 | 0.3− | 1.2+ | 2005 05 19 | G96 | 0.4− | 0.1− | 2006 09 29 | 699 | 0.6+ | 0.0 |
| 2001 04 04 | 608 | 0.4− | 1.2+ | 2005 05 19 | G96 | 0.2− | 0.1− | 2006 09 29 | 699 | 0.5− | 0.4+ |
| 2001 04 04 | 608 | 0.1− | 1.2+ | 2005 05 19 | G96 | 0.6− | 0.0 | 2006 09 30 | 704 | 1.3+ | 0.0 |
| 2002 08 13 | 644 | 0.3− | 0.3+ | 2005 05 21 | 644 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 2002 08 13 | 644 | 0.3+ | 0.6+ | 2005 05 21 | 644 | 0.4+ | 0.5+ | 2006 09 30 | 704 | 0.3+ | 0.9+ |
| 2002 08 13 | 644 | 0.1− | 0.2+ | 2005 05 21 | 644 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.5− | 0.4+ |
| 2003 12 18 | 704 | 0.6− | 1.3+ | 2005 06 10 | 691 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.6+ |
| 2003 12 18 | 704 | 0.7− | 0.9− | 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 703 | 0.7− | 0.8+ |
| 2003 12 18 | 704 | 0.2+ | 0.3+ | 2005 06 10 | 691 | 1.5+ | 0.7+ | 2006 10 02 | 703 | 0.8− | 0.1+ |
| 2003 12 18 | 704 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 2003 12 18 | 704 | 0.0 | 0.4− | 2005 06 13 | G96 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.7+ |
| 2003 12 21 | 704 | 0.5− | 0.6+ | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 2003 12 21 | 704 | 0.5− | 1.3+ | 2005 06 13 | G96 | 0.3− | 0.2+ | 2006 10 17 | 703 | (0.2+ | 1.6−) |
| 2003 12 21 | 704 | 0.2− | 1.2+ | 2005 06 17 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.6− | 0.1+ |
| 2003 12 21 | 704 | (1.2+ | 2.4+) | 2005 06 17 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2003 12 21 | 704 | 0.2+ | 0.6+ | 2005 06 17 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2003 12 21 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.8− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2003 12 21 | 704 | 0.6− | 1.2+ | 2006 09 18 | 703 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.5− | 0.0 |
| 2003 12 21 | 704 | 0.5− | 0.6+ | 2006 09 18 | 703 | (0.8+ | 2.0+) | 2006 10 23 | 644 | 0.5− | 0.1+ |
| 2003 12 21 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.9+ | 2006 10 28 | 703 | 0.4+ | 0.2+ |
| 2003 12 21 | 704 | 0.5+ | 1.2+ | 2006 09 21 | 699 | (2.0+ | 0.7+) | 2006 10 28 | 703 | 0.3− | 0.8+ |
| 2003 12 22 | 704 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.4+ | 2006 10 28 | 703 | 2.6− | 0.4− |
| 2003 12 22 | 704 | 0.2− | 0.4+ | 2006 09 21 | 699 | (1.4+ | 2.3+) | 2006 10 28 | 703 | 0.9+ | 0.0 |
| 2003 12 22 | 704 | 0.3+ | 0.2− | 2006 09 21 | 699 | (2.7− | 1.5+) | | | | |
| 2003 12 22 | 704 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.1− | 0.1+ | | | | |

**(139149)∗ 2001 FQ$_{94}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.71780 | | (2000.0) | | | |
| $n$ | 0.26262505 | $\omega$ | 281.97128 | | +0.43312618 | +0.89393369 |
| $a$ | 2.4149712 | $\Omega$ | 15.34892 | | −0.55934419 | +0.36685265 |
| $e$ | 0.1747747 | $i$ | 25.81279 | | −0.70677845 | +0.25749114 |
| $P$ | 3.75 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 704 | 0.5+ | 0.3− | 2002 10 11 | 704 | 0.1− | 0.8+ | 2005 05 10 | 699 | 1.1+ | 0.2− |
| 2001 03 04 | 704 | 0.5+ | 1.2+ | 2002 10 11 | 704 | 0.1− | 0.5+ | 2005 05 10 | 699 | 0.4− | 0.4− |
| 2001 03 04 | 704 | 0.9+ | 0.5+ | 2002 10 11 | 704 | 0.4+ | 0.4+ | 2005 05 10 | 699 | 0.4+ | 0.9− |
| 2001 03 04 | 704 | 0.1+ | 1.2+ | 2002 10 11 | 704 | 0.9+ | 0.5+ | 2005 05 11 | 644 | 0.4+ | 0.1+ |
| 2001 03 16 | 704 | 0.1+ | 0.9+ | 2002 10 11 | 704 | 0.3− | 0.6+ | 2005 05 11 | 644 | 0.6+ | 0.2+ |
| 2001 03 16 | 704 | 0.0 | 0.0 | 2002 10 16 | 644 | 0.3− | 0.7+ | 2005 05 11 | 644 | 0.4+ | 0.3+ |
| 2001 03 16 | 704 | 0.4+ | 0.5− | 2002 10 16 | 644 | 0.6− | 0.6+ | 2005 05 12 | 703 | 0.1+ | 0.8+ |
| 2001 03 16 | 704 | 0.2+ | 0.8+ | 2002 10 16 | 644 | 0.6− | 0.7+ | 2005 05 12 | 703 | 0.6+ | 0.8+ |
| 2001 03 19 | 699 | 1.1+ | 0.4+ | 2002 11 06 | 704 | 1.0+ | 1.2− | 2005 05 12 | 703 | 1.0− | 0.0 |
| 2001 03 19 | 699 | (1.7− | 1.7+) | 2002 11 06 | 704 | 0.8+ | 1.4− | 2005 05 12 | 703 | 0.1− | 0.3− |
| 2001 03 19 | 699 | 0.7+ | 0.2+ | 2002 11 06 | 704 | 0.8− | 0.5− | 2005 05 12 | 644 | 0.4+ | 0.3+ |
| 2001 03 19 | 699 | (2.0+ | 0.1+) | 2002 11 06 | 704 | (2.3− | 0.7+) | 2005 05 12 | 644 | 0.3+ | 0.1+ |
| 2001 03 21 | 608 | 0.9+ | 0.9+ | 2005 03 08 | 699 | (1.6+ | 0.7+) | 2005 05 12 | 644 | 0.4+ | 0.2+ |
| 2001 03 21 | 608 | 0.5+ | 0.8+ | 2005 03 08 | 699 | 0.3+ | 1.0+ | 2005 05 16 | 644 | 0.1+ | 0.5+ |
| 2001 03 21 | 608 | 0.8+ | 0.5+ | 2005 03 08 | 699 | (1.8+ | 1.2+) | 2005 05 16 | 644 | 0.3+ | 0.2+ |
| 2001 04 13 | 691 | 0.3+ | 0.1+ | 2005 03 08 | 699 | 1.2+ | 0.1+ | 2005 05 16 | 644 | 0.6+ | 0.3+ |
| 2001 04 13 | 691 | 0.2+ | 0.1+ | 2005 03 22 | G92 | 0.1+ | 0.4− | 2005 05 16 | 644 | 0.3+ | 0.3+ |
| 2001 04 13 | 691 | 0.2+ | 0.2+ | 2005 03 22 | G92 | 0.4+ | 0.9+ | 2005 05 16 | 644 | 0.2+ | 0.1+ |
| 2002 09 13 | 704 | 0.5− | 0.4− | 2005 03 22 | G92 | 0.2− | 1.0+ | 2005 05 16 | 644 | 0.2+ | 0.2+ |
| 2002 09 13 | 704 | 0.7− | 0.1+ | 2005 04 03 | E12 | 1.0− | 0.3− | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2002 09 13 | 704 | 0.4− | 0.6− | 2005 04 03 | E12 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.6+ |
| 2002 09 13 | 704 | 0.6− | 0.0 | 2005 04 03 | E12 | (1.1+ | 2.0−) | 2006 08 28 | 703 | 0.8− | 0.1+ |
| 2002 09 14 | 608 | (0.3− | 1.8+) | 2005 04 03 | E12 | 0.9− | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.5+ |
| 2002 09 14 | 608 | (0.7− | 1.8+) | 2005 04 06 | 699 | 0.3+ | 1.0− | 2006 09 15 | 703 | 0.3− | 0.3+ |
| 2002 09 14 | 608 | (0.8− | 1.8+) | 2005 04 06 | 699 | 0.1+ | 0.2+ | 2006 09 15 | 703 | 0.1− | 0.5+ |
| 2002 09 30 | 608 | 0.8− | 0.1− | 2005 04 06 | 699 | 0.1+ | 0.0 | 2006 09 15 | 703 | 0.2+ | 1.1+ |
| 2002 09 30 | 608 | 1.1− | 0.2− | 2005 04 06 | 699 | 0.1− | 0.6+ | 2006 09 15 | 703 | 0.1− | 0.1+ |
| 2002 09 30 | 608 | 0.6− | 0.1+ | 2005 04 06 | 704 | 0.2− | 0.8− | 2006 09 24 | 113 | 0.2− | 0.3+ |
| 2002 10 04 | 704 | 0.7− | 0.3+ | 2005 04 06 | 704 | 1.3+ | 0.0 | 2006 09 24 | 113 | 0.6− | 0.5+ |
| 2002 10 04 | 704 | 1.1− | 0.3+ | 2005 04 06 | 704 | 0.2+ | 0.4+ | 2006 09 24 | 113 | 0.2− | 0.2− |
| 2002 10 04 | 704 | 0.6− | 0.8+ | 2005 04 10 | 608 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.8− | 1.2+ |
| 2002 10 04 | 704 | 1.4− | 0.5+ | 2005 04 10 | 608 | 0.1− | 0.1− | 2006 09 28 | 703 | 1.0− | 0.2+ |
| 2002 10 04 | 704 | 1.1− | 0.5+ | 2005 04 10 | 608 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.2− | 0.5− |
| 2002 10 06 | 704 | 0.3− | 0.3− | 2005 04 15 | 703 | 0.4− | 0.6+ | 2006 10 19 | 703 | 0.5− | 0.0 |
| 2002 10 06 | 704 | 1.1− | 0.1+ | 2005 04 15 | 703 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.5+ |
| 2002 10 06 | 704 | 0.1− | 0.0 | 2005 04 15 | 703 | 0.6− | 0.2− | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2002 10 06 | 704 | (1.8− | 1.1−) | 2005 04 15 | 703 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.0 |
| 2002 10 06 | 704 | 0.9− | 0.1+ | 2005 05 04 | 644 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.0 |
| 2002 10 06 | 608 | 1.1+ | 0.1+ | 2005 05 04 | 644 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2002 10 06 | 608 | 1.0+ | 0.1− | 2005 05 04 | 644 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.6+ |
| 2002 10 06 | 608 | 0.8+ | 0.3+ | 2005 05 09 | E12 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.1+ |
| 2002 10 11 | 704 | 0.7+ | 0.6+ | 2005 05 09 | E12 | 0.2+ | 0.3− | 2006 11 15 | 703 | 1.7+ | 0.8+ |
| 2002 10 11 | 704 | 0.0 | 0.8+ | 2005 05 09 | E12 | 0.2− | 0.3+ | 2006 11 15 | 703 | 1.0− | 0.6− |
| 2002 10 11 | 704 | 0.4+ | 0.7+ | 2005 05 09 | E12 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 0.8+ | 2005 05 10 | 699 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.4+ |

**(139150)∗ 2001 FN$_{95}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 260.85970 | | (2000.0) | | | |
| $n$ | 0.28953326 | $\omega$ | 90.74759 | | −0.69336317 | −0.71299974 |
| $a$ | 2.2629263 | $\Omega$ | 43.78133 | | +0.58654288 | −0.64252076 |
| $e$ | 0.1248015 | $i$ | 8.67013 | | +0.41858688 | −0.28071061 |
| $P$ | 3.40 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.3+ | 1.7− | 2003 12 17 | 704 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.6− | 0.5− |
| 1999 10 08 | 704 | 0.1− | 1.4− | 2003 12 27 | 106 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 1.1− |
| 1999 10 08 | 704 | 0.5+ | 0.0 | 2003 12 27 | 106 | 0.2− | 0.6− | 2006 10 21 | 703 | 0.5− | 0.5+ |
| 1999 10 08 | 704 | 0.2+ | 0.3+ | 2003 12 27 | 106 | 0.2− | 0.8− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 01 26 | 704 | 0.1+ | 0.1− | 2003 12 28 | 704 | 0.3+ | 0.8− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 01 26 | 704 | 0.2+ | 1.0+ | 2003 12 28 | 704 | 0.4+ | 0.4− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 01 26 | 704 | (0.5+ | 1.6+) | 2003 12 28 | 704 | 0.3+ | 0.6− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 03 04 | 704 | (1.6− | 0.8−) | 2003 12 28 | 704 | 0.4+ | 0.4− | 2006 10 28 | 691 | 0.4− | 0.2+ |
| 2001 03 04 | 704 | 0.4− | 0.3+ | 2003 12 28 | 704 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 03 04 | 704 | 1.1− | 0.9− | 2003 12 30 | 704 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 03 04 | 704 | 0.8+ | 0.1− | 2003 12 30 | 704 | 0.1+ | 0.4− | 2006 10 28 | 704 | 0.9− | 0.1− |
| 2001 03 16 | 704 | 0.6− | 0.8+ | 2003 12 30 | 704 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.2− | 1.3+ |
| 2001 03 16 | 704 | 0.1+ | 0.3+ | 2003 12 30 | 704 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.6− | 0.9+ |
| 2001 03 16 | 704 | 0.1− | 0.7+ | 2003 12 30 | 704 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.1− | 0.3+ |
| 2001 03 16 | 704 | 0.7+ | 0.9+ | 2004 01 19 | 704 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 03 16 | 704 | 0.1+ | 0.9+ | 2004 01 19 | 704 | 0.0 | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 03 19 | 699 | 0.1+ | 0.1+ | 2004 01 19 | 704 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 03 19 | 699 | 0.1+ | 0.4+ | 2004 01 19 | 704 | 0.3− | 0.7+ | 2006 11 07 | 644 | 0.0 | 0.4+ |
| 2001 03 19 | 699 | 0.2+ | 0.1− | 2004 01 19 | 704 | 0.4− | 1.0+ | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2001 03 19 | 699 | 0.2+ | 0.0 | 2004 01 19 | 704 | 0.6− | 1.2+ | 2006 11 07 | 644 | 0.1− | 0.6+ |
| 2001 03 31 | 704 | 0.7− | 0.8+ | 2004 01 19 | 704 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2001 03 31 | 704 | 0.2− | 1.0+ | 2004 01 19 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 704 | 0.5+ | 0.8+ | 2004 01 19 | 704 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.7− | 0.3+ | | |
| 2001 03 31 | 704 | 0.1− | 0.3− | 2004 01 19 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.9− | 0.2+ | | |
| 2001 04 15 | 704 | (0.8+ | 1.6+) | 2004 01 31 | 704 | 0.7+ | 0.4− | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2001 04 15 | 704 | 0.8+ | 1.5+ | 2004 01 31 | 704 | 0.8+ | 0.5− | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2001 04 15 | 704 | 0.3+ | 0.3+ | 2004 01 31 | 704 | 0.8− | 1.1− | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2001 04 15 | 704 | 0.4+ | 0.8+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.4− | | |
| 2001 04 15 | 704 | (0.5− | 1.6+) | 2004 03 23 | 704 | 0.8− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.9+ | | |
| 2001 04 18 | 608 | 0.7+ | 0.4− | 2004 03 23 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.8+ | | |
| 2001 04 18 | 608 | 1.1+ | 0.3− | 2004 03 23 | 704 | 0.6− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.3+ | | |
| 2001 04 18 | 608 | 0.9+ | 0.2− | 2006 09 30 | 703 | 0.8+ | 0.3+ | 2006 11 17 | 703 | 1.1− | 0.9+ | | |
| 2002 08 13 | 644 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.2+ | | |
| 2002 08 13 | 644 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.4+ | | |
| 2002 08 13 | 644 | 0.2+ | 1.3+ | 2006 09 30 | 703 | (1.2− | 2.4+) | 2006 11 18 | 704 | 0.5+ | 0.7− | | |
| 2003 10 25 | 704 | 1.4+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.5− | | |
| 2003 10 25 | 704 | 1.0+ | 0.5− | 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.9+ | 0.5+ | | |
| 2003 10 25 | 704 | 0.5− | 0.6+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.2− | | |
| 2003 12 03 | 704 | 0.7+ | 0.6− | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.2− | 0.1+ | | |
| 2003 12 03 | 704 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.0 | 0.2+ | | |
| 2003 12 03 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.6− | 1.4+ | | |
| 2003 12 03 | 704 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.4− | | |
| 2003 12 03 | 704 | 0.4+ | 0.5− | 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.2− | | |
| 2003 12 17 | 704 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.5+ | | |
| 2003 12 17 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.5+ | | |
| 2003 12 17 | 704 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | | | | | | |
| 2003 12 17 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.2+ | | | | | | |

**(139151)∗ 2001 FO$_{98}$ = 2002 RR$_{165}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37577)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 101.64936 | | (2000.0) | | | |
| $n$ | 0.23898787 | $\omega$ | 53.34061 | | −0.70451887 | +0.70862696 |
| $a$ | 2.5716911 | $\Omega$ | 171.53174 | | −0.70561577 | −0.69359659 |
| $e$ | 0.1740653 | $i$ | 15.25334 | | −0.07589171 | −0.12950521 |
| $P$ | 4.12 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 704 | (1.5+ | 0.3+) | 2002 09 13 | 644 | 0.7− | 0.5+ | 2005 03 18 | 703 | 1.3− | 0.4− | | |
| 2001 03 16 | 704 | 0.5+ | 0.3+ | 2002 09 13 | 644 | 0.8− | 0.5+ | 2005 03 31 | 699 | 0.3− | 0.6+ | | |
| 2001 03 16 | 704 | 0.2+ | 1.0+ | 2002 09 14 | 644 | 0.3− | 0.3+ | 2005 03 31 | 699 | 0.6+ | 0.5+ | | |
| 2001 03 21 | 699 | 0.9+ | 0.0 | 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 03 31 | 699 | 0.5− | 0.0 | | |
| 2001 03 21 | 699 | 0.6+ | 0.6− | 2002 09 14 | 644 | 0.5− | 0.7+ | 2005 03 31 | 699 | 0.0 | 0.1+ | | |
| 2001 03 21 | 699 | 0.2+ | 0.1− | 2002 09 15 | 699 | 0.1− | 0.2− | 2005 04 05 | 704 | 1.1+ | 0.3+ | | |
| 2001 03 21 | 699 | 0.2+ | 0.3− | 2002 09 15 | 699 | 0.3− | 0.8+ | 2005 04 05 | 704 | 0.3+ | 0.6+ | | |
| 2001 04 15 | 704 | 0.3− | 0.3− | 2002 09 15 | 699 | 1.5− | 1.3+ | 2005 04 05 | 704 | 1.4+ | 0.8+ | | |
| 2001 04 15 | 704 | 0.1+ | 0.2− | 2002 09 15 | 699 | 0.5+ | 0.5+ | 2005 04 05 | 704 | 0.0 | 0.3+ | | |
| 2001 04 15 | 704 | 0.5− | 0.0 | 2002 09 15 | 644 | 0.2− | 0.8− | 2005 04 05 | 704 | 0.2+ | 0.3+ | | |
| 2001 04 15 | 704 | 0.0 | 0.3− | 2002 09 15 | 644 | 0.4− | 0.4− | 2005 04 11 | 699 | 0.4+ | 0.2− | | |
| 2001 04 15 | 704 | (0.3+ | 1.6+) | 2002 09 15 | 644 | 0.4− | 0.7− | 2005 04 11 | 699 | 0.6+ | 0.5+ | | |
| 2001 04 16 | 645 | 0.3− | 0.1− | 2002 10 09 | 291 | 0.1+ | 0.7+ | 2005 04 11 | 699 | 0.1− | 0.2+ | | |
| 2001 04 16 | 645 | 0.3− | 0.1− | 2002 10 09 | 291 | 0.1+ | 0.7+ | 2005 04 11 | 699 | 0.4− | 0.5+ | | |
| 2001 04 17 | 699 | 0.8+ | 0.1+ | 2002 10 09 | 291 | 1.1+ | 0.6+ | 2005 04 16 | 703 | 0.9− | 0.4+ | | |
| 2001 04 17 | 699 | 1.4+ | 0.4− | 2005 03 01 | 691 | 0.2+ | 0.3+ | 2005 04 16 | 703 | 0.8− | 0.8− | | |
| 2001 04 17 | 699 | 0.5+ | 0.1+ | 2005 03 01 | 691 | 0.2+ | 0.0 | 2005 04 16 | 703 | 1.4− | 0.7+ | | |
| 2001 04 17 | 699 | 0.5+ | 0.6− | 2005 03 01 | 691 | 0.2+ | 0.4+ | 2005 04 16 | 703 | 0.1+ | 0.6− | | |
| 2001 04 21 | 608 | 1.3+ | 1.2− | 2005 03 08 | 699 | 0.3− | 0.4− | 2006 08 29 | 703 | 0.0 | 0.4− | | |
| 2001 04 21 | 608 | 1.2+ | 0.8− | 2005 03 08 | 699 | 0.5− | 0.5+ | 2006 08 29 | 703 | 0.6− | 0.8− | | |
| 2001 04 21 | 608 | (1.8+ | 0.6−) | 2005 03 08 | 699 | 0.4+ | 0.0 | 2006 08 29 | 703 | 0.6− | 0.8− | | |
| 2001 04 25 | 699 | 0.6− | 0.4+ | 2005 03 08 | 699 | 0.4− | 0.1− | 2006 08 29 | 703 | (0.4+ | 1.7−) | | |
| 2001 04 25 | 699 | 0.6− | 0.1+ | 2005 03 09 | 699 | 0.8+ | 0.3− | 2006 09 13 | 644 | 0.1− | 0.5+ | | |
| 2001 04 25 | 699 | 0.3− | 0.3+ | 2005 03 09 | 699 | 0.3+ | 0.0 | 2006 09 13 | 644 | 0.5+ | 0.5+ | | |
| 2001 04 25 | 699 | (1.6− | 0.3−) | 2005 03 09 | 699 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.0 | 0.0 | | |
| 2001 04 26 | 704 | (0.6+ | 1.7−) | 2005 03 09 | 699 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.5+ | | |
| 2001 04 26 | 704 | 1.3+ | 0.6− | 2005 03 11 | 691 | 0.3+ | 0.5+ | 2006 09 17 | 703 | 0.2+ | 0.4+ | | |
| 2001 04 26 | 704 | 0.0 | 0.4− | 2005 03 11 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.2− | | |
| 2001 05 13 | 644 | 0.3+ | 1.0+ | 2005 03 11 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 1.5+ | 0.6+ | | |
| 2001 05 13 | 644 | 0.2+ | 0.9+ | 2005 03 16 | 683 | 0.4+ | 1.0+ | 2006 09 27 | G96 | 0.1− | 0.2− | | |
| 2001 05 13 | 644 | 0.0 | 0.9+ | 2005 03 16 | 683 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.0 | | |
| 2001 05 13 | 644 | 0.3+ | 0.2− | 2005 03 16 | 683 | 0.3− | 0.8+ | 2006 09 27 | G96 | 0.2− | 0.2+ | | |
| 2001 05 13 | 644 | 0.6+ | 0.4+ | 2005 03 17 | 683 | 0.8+ | 0.3− | 2006 09 27 | G96 | 0.0 | 0.1+ | | |
| 2001 05 13 | 644 | 0.6+ | 0.1− | 2005 03 17 | 683 | (1.6+ | 1.0+) | 2006 10 16 | G96 | 0.0 | 0.1+ | | |
| 2001 05 23 | 699 | 0.6+ | 0.3+ | 2005 03 17 | 683 | 0.3+ | 0.7+ | 2006 10 16 | G96 | 0.0 | 0.4− | | |
| 2001 05 23 | 699 | 0.6+ | 0.4+ | 2005 03 18 | 704 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.1+ | | |
| 2001 05 23 | 699 | 0.1+ | 0.8+ | 2005 03 18 | 704 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1+ | | |
| 2001 05 23 | 699 | 0.0 | 0.5+ | 2005 03 18 | 704 | 0.8− | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.1− | | |
| 2001 06 18 | 699 | 0.5+ | 0.6− | 2005 03 18 | 704 | 0.5− | 1.1− | 2006 10 28 | G96 | 0.3− | 0.4− | | |
| 2001 06 18 | 699 | 0.1+ | 0.6+ | 2005 03 18 | 704 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.1− | | |
| 2001 06 18 | 699 | 1.3+ | 1.0+ | 2005 03 18 | 703 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2001 06 18 | 699 | 0.6+ | 0.2− | 2005 03 18 | 703 | 0.1− | 0.2+ | | | | | | |
| 2002 09 13 | 644 | 0.8− | 0.5+ | 2005 03 18 | 703 | 0.1− | 0.0 | | | | | | |

**(139152)∗ 2001 FA$_{99}$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.84345 | | (2000.0) | | | |
| $n$ | 0.24013123 | $\omega$ | 48.09962 | | −0.95783202 | +0.25350353 |
| $a$ | 2.5635215 | $\Omega$ | 145.93070 | | −0.27717793 | −0.93923443 |
| $e$ | 0.1048264 | $i$ | 13.97165 | | +0.07569820 | −0.23146195 |
| $P$ | 4.10 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.0 | 0.8+ | 2002 08 16 | 608 | 0.2+ | 0.2− | 2005 04 05 | 608 | 0.1− | 0.3− | | |
| 2001 02 16 | 704 | 0.6− | 0.7+ | 2002 08 16 | 608 | 0.7+ | 0.3+ | 2005 04 05 | 608 | 0.3− | 0.4− | | |
| 2001 02 16 | 704 | 0.6− | 0.2− | 2002 08 16 | 608 | 0.8+ | 0.3+ | 2005 04 05 | 608 | 0.2− | 0.2− | | |
| 2001 02 16 | 704 | 0.4− | 0.9+ | 2002 08 18 | 644 | 0.3− | 0.7− | 2005 04 06 | 703 | 0.5− | 0.1− | | |
| 2001 03 04 | 704 | 0.8+ | 0.3− | 2002 08 18 | 644 | 0.5− | 0.5− | 2005 04 06 | 703 | 0.7− | 0.1+ | | |
| 2001 03 04 | 704 | 0.5+ | 0.1− | 2002 08 18 | 644 | 0.1− | 0.6− | 2005 04 06 | 703 | 0.8− | 0.3− | | |
| 2001 03 04 | 704 | 0.5+ | 0.0 | 2002 09 05 | 704 | 0.9+ | 1.0+ | 2005 04 06 | 703 | 0.4− | 0.0 | | |
| 2001 03 04 | 704 | 0.0 | 0.1+ | 2002 09 05 | 704 | 0.5+ | 0.2+ | 2005 04 09 | 703 | 0.2− | 0.4− | | |
| 2001 03 04 | 704 | 0.1+ | 0.4− | 2002 09 05 | 704 | 0.5+ | 0.9+ | 2005 04 09 | 703 | 0.6− | 0.9− | | |
| 2001 03 05 | 608 | 0.1− | 0.6− | 2002 09 15 | 644 | 0.2− | 0.1− | 2005 04 09 | 703 | 0.5− | 0.9− | | |
| 2001 03 05 | 608 | 0.0 | 0.6− | 2002 09 15 | 644 | 0.7− | 0.4+ | 2005 04 09 | 703 | 1.1− | 0.9− | | |
| 2001 03 05 | 608 | 0.1+ | 0.3− | 2002 09 15 | 644 | 0.5− | 0.2+ | 2005 04 11 | 699 | 0.3− | 0.1− | | |
| 2001 03 16 | 704 | 0.1− | 0.2− | 2004 12 12 | 703 | 0.4+ | 0.2− | 2005 04 11 | 699 | 0.3+ | 0.6− | | |
| 2001 03 16 | 704 | 0.4− | 1.1+ | 2004 12 12 | 703 | 0.0 | 0.2− | 2005 04 11 | 699 | 0.8− | 0.3− | | |
| 2001 03 16 | 704 | 1.8− | 1.4+ | 2004 12 12 | 703 | 0.5− | 0.2− | 2005 04 11 | 699 | 0.5− | 0.5− | | |
| 2001 03 16 | 704 | 0.7+ | 1.2+ | 2004 12 12 | 703 | 1.1− | 0.4− | 2005 04 11 | 704 | 0.2+ | 0.6+ | | |
| 2001 03 21 | 699 | 0.3− | 0.8+ | 2004 12 14 | 703 | 0.1− | 0.6− | 2005 04 11 | 704 | 0.3+ | 0.1+ | | |
| 2001 03 21 | 699 | 0.6− | 0.3+ | 2004 12 14 | 703 | 0.6− | 0.7+ | 2005 04 11 | 704 | 0.4+ | 1.1+ | | |
| 2001 03 21 | 699 | 0.2− | 0.0 | 2004 12 14 | 703 | 0.3+ | 0.2− | 2005 04 11 | 704 | 0.8+ | 1.3+ | | |
| 2001 03 21 | 699 | 0.0 | 0.2− | 2004 12 14 | 703 | 0.8+ | 1.4− | 2005 04 11 | 704 | 0.8+ | 0.9+ | | |
| 2001 03 31 | 704 | 0.3+ | 0.4− | 2004 12 15 | 703 | 0.7+ | 0.1+ | 2005 04 11 | 608 | 0.1− | 0.7+ | | |
| 2001 03 31 | 704 | 0.6+ | 0.1− | 2004 12 15 | 703 | 0.8− | 0.1+ | 2005 04 11 | 608 | 0.4− | 1.1+ | | |
| 2001 03 31 | 704 | 0.0 | 0.4− | 2004 12 15 | 703 | 0.5+ | 0.5− | 2005 04 11 | 608 | 0.1+ | 0.8+ | | |
| 2001 03 31 | 704 | 0.8+ | 0.4− | 2004 12 15 | 703 | 0.8+ | 0.1+ | 2005 04 16 | 703 | 0.1− | 0.0 | | |
| 2001 03 31 | 704 | 0.2− | 0.4− | 2004 12 16 | 703 | 1.2+ | 0.2− | 2005 04 16 | 703 | 0.5− | 0.0 | | |
| 2001 04 25 | 699 | 0.2+ | 0.4+ | 2004 12 16 | 703 | 0.0 | 0.3+ | 2005 04 16 | 703 | 0.2− | 0.2− | | |
| 2001 04 25 | 699 | 0.1− | 0.2− | 2004 12 16 | 703 | 1.0+ | 0.1+ | 2005 04 16 | 703 | 0.6− | 0.3− | | |
| 2001 04 25 | 699 | 0.2+ | 0.4+ | 2004 12 16 | 703 | 1.6− | 0.6+ | 2005 04 26 | 644 | 0.0 | 0.1− | | |
| 2001 04 25 | 699 | 0.0 | 0.1− | 2005 02 03 | 704 | 0.9+ | 0.4− | 2005 04 26 | 644 | 0.1+ | 0.1− | | |
| 2001 04 26 | 704 | 0.1+ | 0.4+ | 2005 02 03 | 704 | 1.0+ | 0.2− | 2005 04 26 | 644 | 0.2− | 0.0 | | |
| 2001 04 26 | 704 | 0.5+ | 0.3− | 2005 02 03 | 704 | 1.5+ | 0.3− | 2005 06 02 | 704 | 0.2+ | 0.3+ | | |
| 2001 04 26 | 704 | 0.5− | 0.0 | 2005 02 03 | 704 | 1.5+ | 0.4− | 2005 06 02 | 704 | 0.6− | 0.5+ | | |
| 2001 04 26 | 704 | 0.1− | 0.2+ | 2005 02 03 | 704 | 0.0 | 0.1− | 2005 06 02 | 704 | 0.2− | 0.6+ | | |
| 2001 04 26 | 704 | 0.4+ | 0.3− | 2005 02 04 | 644 | 0.7+ | 0.2+ | 2005 06 02 | 704 | 0.2− | 0.7+ | | |
| 2001 05 21 | 699 | 0.2+ | 0.0 | 2005 02 04 | 644 | 0.8+ | 0.3+ | 2005 06 02 | 704 | 0.5− | 1.1+ | | |
| 2001 05 21 | 699 | 0.5− | 0.2− | 2005 02 04 | 644 | 0.7+ | 0.4+ | 2005 06 08 | 703 | 0.2+ | 1.0+ | | |
| 2001 05 21 | 699 | 0.5+ | 0.8− | 2005 03 03 | 703 | 0.0 | 0.6− | 2005 06 08 | 703 | 1.3+ | 0.1+ | | |
| 2001 05 21 | 699 | 0.6+ | 0.4+ | 2005 03 03 | 703 | 0.2− | 0.1− | 2005 06 08 | 703 | 0.2+ | 0.5− | | |
| 2001 06 18 | 699 | 0.7+ | 0.3− | 2005 03 03 | 703 | 1.0− | 0.2+ | 2005 06 08 | 703 | 0.7+ | 0.2− | | |
| 2001 06 18 | 699 | 0.2− | 0.7− | 2005 03 03 | 703 | 0.5− | 0.8− | 2006 07 21 | A50 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 18 | 699 | 0.5+ | 0.2− | 2005 03 09 | 704 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.4− | 0.2− |
| 2001 06 18 | 699 | 0.7− | 1.4− | 2005 03 09 | 704 | 0.1− | 0.1− | 2006 08 14 | 644 | 0.2− | 0.1+ |
| 2002 07 23 | 644 | 0.7− | 0.3− | 2005 03 09 | 704 | 0.0 | 0.3+ | 2006 08 14 | 644 | 0.6− | 0.2− |
| 2002 07 23 | 644 | 0.2− | 0.4+ | 2005 03 09 | 704 | 0.4+ | 0.1− | 2006 08 18 | 644 | 0.0 | 0.2− |
| 2002 07 23 | 644 | 0.5− | 0.2+ | 2005 03 16 | 703 | 0.7− | 0.2− | 2006 08 18 | 644 | 0.1+ | 0.2− |
| 2002 07 30 | 608 | 0.3+ | 0.6− | 2005 03 16 | 703 | 0.1− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.2− |
| 2002 07 30 | 608 | 0.2+ | 0.7− | 2005 03 16 | 703 | 0.8− | 0.1− | 2006 08 28 | 699 | 1.2+ | 0.2− |
| 2002 07 30 | 608 | 0.2+ | 0.5− | 2005 03 16 | 703 | 0.3− | 0.3− | 2006 08 28 | 699 | 1.4+ | 0.7− |
| 2002 08 08 | 644 | 0.6− | 0.2+ | 2005 03 30 | 703 | 0.8+ | 0.4− | 2006 08 28 | 699 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.5− | 0.1+ | 2005 03 30 | 703 | 0.3− | 0.6− | 2006 08 28 | 699 | 0.1+ | 1.2+ |
| 2002 08 08 | 644 | 0.3− | 0.0 | 2005 03 30 | 703 | 0.5− | 0.4− | 2006 09 30 | G96 | 0.0 | 0.5− |
| 2002 08 09 | 599 | 0.1− | 0.2+ | 2005 03 30 | 703 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2002 08 09 | 599 | 0.0 | 0.2+ | 2005 04 04 | A35 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2002 08 09 | 599 | 0.4− | 0.3+ | 2005 04 04 | A35 | 0.5+ | 0.0 | | | | |
| 2002 08 09 | 599 | 0.2− | 0.2+ | 2005 04 04 | A35 | 0.4+ | 0.1+ | | | | |

**(139153)∗ 2001 FW$_{101}$**

Discovered 2001 Mar. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 156.56121 | | (2000.0) | | −0.53498319 | +0.84003144 |
| $n$ | 0.28165018 | $\omega$ | 348.90089 | | −0.76754228 | −0.52787331 |
| $a$ | 2.3049563 | $\Omega$ | 248.69915 | | −0.35308898 | −0.12528745 |
| $e$ | 0.1532801 | $i$ | 5.55713 | | | |
| $P$ | 3.50 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 703 | 1.0− | 0.4+ | 2002 09 05 | 699 | 1.2+ | 1.2+ | 2003 12 23 | 704 | 0.2+ | 0.4+ |
| 1999 11 09 | 703 | 1.3+ | 1.1+ | 2002 09 05 | 699 | 0.5+ | 0.4+ | 2003 12 23 | 704 | 0.5− | 0.8+ |
| 1999 11 09 | 703 | 0.3− | 0.5− | 2002 09 05 | 699 | (1.9+ | 0.7+) | 2006 10 21 | G96 | 0.2− | 0.4− |
| 1999 11 09 | 703 | 0.3− | 0.4− | 2002 09 13 | 644 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2001 03 03 | 704 | 0.6− | 0.4+ | 2002 09 13 | 644 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2001 03 03 | 704 | 0.8− | 0.5+ | 2002 09 13 | 644 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2001 03 03 | 704 | 0.6− | 0.2+ | 2002 09 15 | 608 | 1.3− | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.4− |
| 2001 03 03 | 704 | 0.3+ | 0.5+ | 2002 09 15 | 608 | 1.2− | 0.4− | 2006 10 21 | 691 | 0.3− | 0.3− |
| 2001 03 03 | 704 | 0.5− | 0.4+ | 2002 09 15 | 608 | 1.0− | 0.4− | 2006 10 21 | 691 | 0.2− | 0.4− |
| 2001 03 17 | 704 | 0.2+ | 0.6+ | 2002 10 04 | 704 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2001 03 17 | 704 | 0.1+ | 1.0+ | 2002 10 04 | 704 | 0.5− | 0.7+ | 2006 11 09 | 691 | 0.2+ | 0.2− |
| 2001 03 17 | 704 | 0.3+ | 0.4+ | 2002 10 04 | 704 | 0.3− | 0.1− | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2001 03 21 | 608 | (0.1− | 1.9−) | 2002 10 04 | 704 | 0.0 | 0.8+ | 2006 11 09 | 644 | 0.5− | 0.3− |
| 2001 03 21 | 608 | 0.1+ | 1.3− | 2002 10 04 | 704 | 0.6+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 03 21 | 608 | (0.0 | 1.9−) | 2002 10 07 | 699 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 03 26 | 704 | 0.3+ | 0.1+ | 2002 10 07 | 699 | 0.7+ | 0.7− | 2006 11 19 | 704 | 0.6− | 0.9+ |
| 2001 03 26 | 704 | 0.1− | 0.1+ | 2002 10 07 | 699 | 0.4− | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2001 03 26 | 704 | 0.3+ | 0.6+ | 2002 10 07 | 699 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.0− | 0.5+ |
| 2001 03 26 | 704 | 0.6+ | 0.2+ | 2002 10 12 | 704 | 0.4− | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2001 03 26 | 704 | 0.5+ | 0.2+ | 2002 10 12 | 704 | 0.2− | 0.7+ | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2001 04 15 | 608 | 1.1+ | 0.1− | 2002 10 12 | 704 | 0.5− | 1.2+ | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2001 04 15 | 608 | 0.8+ | 0.0 | 2002 10 12 | 704 | (0.9+ | 1.6+) | 2006 11 22 | 704 | 1.3+ | 0.1+ |
| 2001 04 15 | 608 | 1.3+ | 0.0 | 2003 12 19 | 704 | 0.3− | 0.2− | 2006 11 22 | 704 | 1.0+ | 0.0 |
| 2001 04 17 | 699 | 0.1− | 1.0+ | 2003 12 19 | 704 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.4+ | 1.4+ |
| 2001 04 17 | 699 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.5− | 1.0− | 2006 11 29 | 704 | 1.2+ | 0.4− |
| 2001 04 17 | 699 | 0.1− | 0.4+ | 2003 12 19 | 704 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.2+ |
| 2001 04 17 | 699 | 0.1− | 0.5+ | 2003 12 23 | 704 | 0.6+ | 0.1+ | 2006 11 29 | 704 | 0.9+ | 0.8+ |
| 2002 09 05 | 699 | 0.8+ | 0.5+ | 2003 12 23 | 704 | 0.2+ | 0.2+ | | | | |

**(139154)∗ 2001 FB$_{105}$ = 2003 UF$_{188}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56246)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 245.57797 | | (2000.0) | | −0.02102180 | −0.99751736 |
| $n$ | 0.26647658 | $\omega$ | 199.18563 | | +0.92626659 | +0.00586911 |
| $a$ | 2.3916448 | $\Omega$ | 252.06369 | | +0.37628220 | −0.07017597 |
| $e$ | 0.1527920 | $i$ | 4.05094 | | | |
| $P$ | 3.70 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 29 | 703 | 1.1− | 1.2− | 2003 10 30 | 704 | 0.2+ | 0.7+ | 2003 12 01 | 703 | 1.1− | 0.8− |
| 1999 09 29 | 703 | 0.8− | 1.0+ | 2003 11 02 | 704 | 0.1+ | 0.6+ | 2003 12 01 | 703 | (2.3− | 0.8−) |
| 1999 09 29 | 703 | 1.4+ | 1.7+ | 2003 11 02 | 704 | 0.1+ | 1.4− | 2003 12 10 | 644 | 0.2− | 0.1− |
| 1999 09 29 | 703 | 0.2+ | 0.5+ | 2003 11 02 | 704 | 0.1+ | 0.2+ | 2003 12 10 | 644 | 0.1− | 0.1− |
| 2001 03 18 | 704 | 0.3+ | 1.0+ | 2003 11 02 | 704 | 0.1+ | 1.4− | 2003 12 10 | 644 | 0.2+ | 0.0 |
| 2001 03 18 | 704 | 0.6+ | 1.1+ | 2003 11 02 | 704 | 0.3+ | 0.4+ | 2003 12 11 | 703 | 0.5+ | 1.0+ |
| 2001 03 18 | 704 | 0.4− | 1.0+ | 2003 11 02 | 704 | 0.2− | 0.7+ | 2003 12 11 | 703 | 0.9− | 0.7+ |
| 2001 03 18 | 704 | 0.4+ | 0.4+ | 2003 11 02 | 704 | 0.4+ | 0.1− | 2003 12 11 | 703 | 0.6− | 0.4+ |
| 2001 03 18 | 704 | (0.7− | 2.3+) | 2003 11 02 | 704 | 0.0 | 0.2+ | 2003 12 11 | 703 | 0.1+ | 0.6+ |
| 2001 03 18 | 608 | 0.9− | 0.9− | 2003 11 02 | 704 | 0.5+ | 0.1+ | 2003 12 18 | 703 | 1.1+ | 1.4+ |
| 2001 03 18 | 608 | 0.7− | 1.0− | 2003 11 02 | 704 | (0.3− | 2.6−) | 2003 12 18 | 703 | 0.7− | 0.0 |
| 2001 03 18 | 608 | 0.8− | 0.8− | 2003 11 03 | 704 | 0.6− | 0.8+ | 2003 12 18 | 703 | 0.2− | 0.4+ |
| 2001 03 19 | 699 | 0.1+ | 0.2+ | 2003 11 03 | 704 | 0.1+ | 0.4+ | 2003 12 18 | 703 | 0.2+ | 0.5+ |
| 2001 03 19 | 699 | 0.5+ | 0.6+ | 2003 11 03 | 704 | 0.0 | 0.9+ | 2004 01 12 | 644 | 0.2+ | 0.2− |
| 2001 03 19 | 699 | 0.3− | 0.1+ | 2003 11 03 | 704 | 0.1+ | 0.1+ | 2004 01 12 | 644 | 0.0 | 0.1− |
| 2001 03 19 | 699 | 0.8− | 0.2+ | 2003 11 03 | 704 | 0.6− | 0.2− | 2004 01 12 | 644 | 0.2− | 0.3− |
| 2001 03 27 | 608 | 0.9+ | 1.2+ | 2003 11 17 | 703 | 1.1− | 0.2+ | 2004 01 13 | 699 | 0.9− | 0.6− |
| 2001 03 27 | 608 | 1.0+ | 1.0+ | 2003 11 17 | 703 | 0.8− | 0.2− | 2004 01 13 | 699 | 0.6− | 0.3− |
| 2001 03 27 | 608 | 0.8+ | 0.3+ | 2003 11 17 | 703 | 0.0 | 1.1+ | 2004 01 13 | 699 | 1.2+ | 1.1− |
| 2003 10 22 | 704 | 0.7+ | 0.1− | 2003 11 17 | 703 | 0.5− | 0.4+ | 2004 01 13 | 699 | 1.1+ | 0.1− |
| 2003 10 22 | 704 | 0.0 | 0.6+ | 2003 11 18 | 703 | 0.5− | 0.3− | 2005 04 14 | 691 | 0.0 | 0.5+ |
| 2003 10 22 | 704 | 0.5+ | 0.4+ | 2003 11 18 | 703 | (0.5− | 1.7+) | 2005 04 14 | 691 | 0.4+ | 0.2+ |
| 2003 10 22 | 704 | 0.7+ | 0.5− | 2003 11 18 | 703 | 0.7− | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.4+ |
| 2003 10 22 | 704 | 0.6+ | 0.4+ | 2003 11 18 | 703 | 0.4− | 0.3− | 2005 05 01 | 644 | 0.5+ | 0.2+ |
| 2003 10 23 | 699 | 0.2− | 0.3− | 2003 11 19 | 703 | 0.0 | 0.5− | 2005 05 01 | 644 | 0.4+ | 0.7+ |
| 2003 10 23 | 699 | 0.7− | 0.4+ | 2003 11 19 | 703 | 0.7− | 0.7− | 2005 05 01 | 644 | 0.5+ | 0.6+ |
| 2003 10 23 | 699 | 0.9− | 0.2− | 2003 11 19 | 703 | 0.5− | 0.5− | 2005 05 14 | 644 | 0.0 | 0.3+ |
| 2003 10 23 | 699 | 1.3− | 0.3+ | 2003 11 19 | 703 | 0.1+ | 0.1+ | 2005 05 14 | 644 | 0.1− | 0.4+ |
| 2003 10 25 | 704 | 0.1− | 0.2− | 2003 11 20 | 704 | 0.3+ | 0.8+ | 2005 05 14 | 644 | 0.0 | 0.6+ |
| 2003 10 25 | 704 | 1.1+ | 0.2− | 2003 11 20 | 704 | 0.3+ | 0.3− | 2006 08 18 | 644 | 0.1+ | 0.7+ |
| 2003 10 25 | 704 | 0.7+ | 0.3+ | 2003 11 20 | 704 | 0.7+ | 0.8+ | 2006 08 18 | 644 | 0.4− | 0.9+ |
| 2003 10 25 | 704 | 1.1+ | 0.3− | 2003 11 24 | 704 | 0.4+ | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.7+ |
| 2003 10 25 | 704 | 0.1− | 0.3− | 2003 11 24 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.7− | 0.4+ |
| 2003 10 30 | 704 | 0.0 | 0.2+ | 2003 11 24 | 704 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 2003 10 30 | 704 | 0.1+ | 0.8+ | 2003 11 24 | 704 | 0.9+ | 0.3+ | 2006 10 22 | G96 | 1.0− | 0.3+ |
| 2003 10 30 | 704 | 0.2− | 0.3+ | 2003 12 01 | 703 | 0.6− | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.4+ |
| 2003 10 30 | 704 | 0.1+ | 0.7+ | 2003 12 01 | 703 | 0.0 | 0.8− | | | | |

**(139155)∗ 2001 FO$_{105}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 234.66105 | | (2000.0) | | −0.30881754 | −0.94645223 |
| $n$ | 0.27027209 | $\omega$ | 173.22832 | | +0.86770429 | −0.23982104 |
| $a$ | 2.3692010 | $\Omega$ | 294.72493 | | +0.38951380 | −0.21613433 |
| $e$ | 0.0720627 | $i$ | 5.94807 | | | |
| $P$ | 3.65 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 1.0− | 0.4+ | 2001 03 18 | 704 | 0.7+ | 1.0+ | 2003 12 15 | 703 | 1.2+ | 0.2+ |
| 1999 10 10 | 704 | 0.6+ | 0.2+ | 2001 03 18 | 704 | 0.7+ | 0.2+ | 2003 12 17 | 644 | 0.1+ | 0.4− |
| 1999 10 10 | 704 | 0.0 | 0.7+ | 2001 03 19 | 608 | 0.4− | 0.1− | 2003 12 17 | 644 | 0.4− | 0.3− |
| 1999 10 10 | 704 | 0.6+ | 0.4− | 2001 03 19 | 608 | 0.8− | 0.6− | 2003 12 17 | 644 | 0.2+ | 0.4− |
| 1999 10 10 | 704 | 0.4− | 0.4− | 2001 03 19 | 608 | 0.1− | 0.3− | 2003 12 19 | 691 | 0.1− | 0.4− |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2003 10 22 | 704 | 0.7− | 0.6− | 2003 12 19 | 691 | 0.0 | 0.3− |
| 2000 12 23 | 645 | 0.0 | 0.1− | 2003 10 22 | 704 | 0.4− | 0.8+ | 2003 12 19 | 691 | 0.1+ | 0.1− |
| 2001 01 26 | 704 | 1.1+ | 0.3+ | 2003 10 22 | 704 | 1.1+ | 0.7− | 2003 12 24 | 608 | 0.8− | 0.5+ |
| 2001 01 26 | 704 | 0.3− | 0.2− | 2003 10 22 | 704 | 0.7− | 1.0+ | 2003 12 24 | 608 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | 0.1+ | 0.3− | 2003 11 19 | 704 | 0.7+ | 0.2+ | 2003 12 24 | 608 | 0.9− | 0.2+ | | |
| 2001 02 19 | 699 | (1.0+ | 4.0+) | 2003 11 19 | 704 | 1.2− | 0.5+ | 2006 08 22 | 644 | 0.5− | 0.3+ | | |
| 2001 02 19 | 699 | 0.1+ | 0.0 | 2003 11 19 | 704 | 0.8− | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.4+ | | |
| 2001 02 19 | 699 | 0.4+ | 0.1+ | 2003 11 19 | 704 | 0.3+ | 0.0 | 2006 08 22 | 644 | 0.6− | 0.3+ | | |
| 2001 02 19 | 699 | 0.4+ | 0.9+ | 2003 11 19 | 704 | 0.5− | 0.2+ | 2006 08 24 | 704 | 0.7+ | 1.3+ | | |
| 2001 02 19 | 704 | 1.4+ | 0.0 | 2003 11 26 | 704 | 0.2− | 0.2− | 2006 08 24 | 704 | 0.6+ | 1.3+ | | |
| 2001 02 19 | 704 | 0.8+ | 1.4− | 2003 11 26 | 704 | 0.5− | 0.3+ | 2006 08 24 | 704 | 0.3+ | 1.6+ | | |
| 2001 02 19 | 704 | 0.0 | 0.2+ | 2003 11 26 | 704 | 0.7+ | 0.0 | 2006 08 24 | 704 | 0.4+ | 2.0+ | | |
| 2001 02 22 | 645 | 0.0 | 0.1+ | 2003 11 26 | 704 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.3− | 0.8+ | | |
| 2001 02 22 | 645 | 0.0 | 0.1+ | 2003 12 04 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 703 | 1.4− | 0.1+ | | |
| 2001 03 03 | 704 | 0.2− | 1.0+ | 2003 12 04 | 704 | 0.4+ | 0.8+ | 2006 08 29 | 703 | 0.8− | 0.2+ | | |
| 2001 03 03 | 704 | 0.6− | 0.2+ | 2003 12 04 | 704 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.3+ | 1.8+ | | |
| 2001 03 03 | 704 | 0.1+ | 1.0+ | 2003 12 04 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.9− | | |
| 2001 03 03 | 704 | 0.7− | 1.3+ | 2003 12 15 | 703 | 0.8+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.5− | | |
| 2001 03 18 | 704 | 0.2+ | 0.6+ | 2003 12 15 | 703 | 1.1+ | 1.0+ | 2006 09 14 | 703 | 0.2− | 0.8− | | |
| 2001 03 18 | 704 | 0.1+ | 0.3− | 2003 12 15 | 703 | 0.5− | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.9− | | |

**(139156)∗ 2001 FP$_{106}$ = 2003 YT$_{52}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56247)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.03530 | | (2000.0) | | −0.08672475 | −0.99281983 |
| $n$ | 0.28415658 | $\omega$ | 191.27876 | | +0.92035233 | −0.04818814 |
| $a$ | 2.2913824 | $\Omega$ | 263.73493 | | +0.38135338 | −0.10948370 |
| $e$ | 0.1353804 | $i$ | 4.75423 | | | |
| $P$ | 3.47 | $H$ | 16.5 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1− | 1.0− | 2003 12 21 | 704 | 0.3− | 0.7+ | 2006 09 17 | 703 | 0.4− | 0.2− | | |
| 1999 10 09 | 704 | 0.3− | 1.0+ | 2003 12 21 | 704 | 0.5− | 0.8+ | 2006 09 17 | 703 | 0.1+ | 0.0 | | |
| 1999 10 09 | 704 | 0.3− | 0.1− | 2003 12 21 | 704 | 1.1− | 0.3+ | 2006 09 18 | 704 | 0.5− | 0.4− | | |
| 1999 10 09 | 704 | 0.1+ | 0.2− | 2003 12 21 | 704 | 0.9− | 0.9+ | 2006 09 18 | 704 | 0.2+ | 1.2+ | | |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 12 24 | 704 | 0.0 | 0.3+ | 2006 09 18 | 704 | 0.5+ | 0.1+ | | |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 12 24 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 704 | 0.1+ | 1.1− | | |
| 1999 10 16 | 645 | 0.0 | 0.1+ | 2003 12 24 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.9− | 0.5+ | | |
| 1999 10 16 | 645 | 0.0 | 0.0 | 2003 12 24 | 704 | 0.6− | 0.7+ | 2006 09 29 | 699 | 0.3+ | 0.1+ | | |
| 2001 03 18 | 704 | 0.1+ | 0.9+ | 2003 12 24 | 704 | 0.4− | 0.6+ | 2006 09 29 | 699 | 0.3+ | 1.1+ | | |
| 2001 03 18 | 704 | 0.5+ | 0.4+ | 2003 12 24 | 704 | 0.1− | 0.6− | 2006 09 29 | 699 | 0.4− | 0.1− | | |
| 2001 03 18 | 704 | 0.3+ | 1.0+ | 2003 12 24 | 704 | 0.3− | 0.4+ | 2006 10 01 | 703 | 0.9− | 0.8− | | |
| 2001 03 18 | 704 | (1.2− | 1.7+) | 2004 01 13 | 691 | 0.1+ | 0.3− | 2006 10 01 | 703 | 0.4− | 0.2− | | |
| 2001 03 18 | 608 | 0.6− | 1.0− | 2004 01 13 | 691 | 0.3+ | 0.1+ | 2006 10 01 | 703 | 0.8− | 1.5− | | |
| 2001 03 18 | 608 | 0.2− | 1.1− | 2004 01 13 | 691 | 0.1+ | 0.4− | 2006 10 01 | 703 | 0.3+ | 0.3+ | | |
| 2001 03 18 | 608 | 1.1− | 0.8− | 2004 01 21 | 704 | (1.6+ | 0.5−) | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2001 03 19 | 699 | 0.9+ | 0.4+ | 2004 01 21 | 704 | (1.7+ | 1.1−) | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2001 03 19 | 699 | 0.2+ | 0.0 | 2004 01 21 | 704 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1− | | |
| 2001 03 19 | 699 | 0.8+ | 0.2+ | 2004 02 22 | 704 | 0.3− | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.1− | | |
| 2001 03 19 | 699 | 0.3+ | 0.3+ | 2004 02 22 | 704 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.7+ | | |
| 2001 03 26 | 704 | 0.1+ | 0.0 | 2004 02 22 | 704 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.9+ | | |
| 2001 03 26 | 704 | 0.5+ | 0.7+ | 2005 02 14 | 809 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.7− | | |
| 2001 03 26 | 704 | 0.3+ | 1.0+ | 2005 02 14 | 809 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2001 03 26 | 704 | 0.1+ | 0.6+ | 2005 02 14 | 809 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | | |
| 2001 03 26 | 704 | 0.2+ | 0.9+ | 2005 05 12 | 644 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2001 03 27 | 608 | 0.2+ | 1.2+ | 2005 05 12 | 644 | 0.1+ | 1.0+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 03 27 | 608 | 0.1+ | 1.1+ | 2005 05 12 | 644 | 0.9+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 03 27 | 608 | 0.4+ | 1.0+ | 2006 08 29 | 703 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.4+ | 0.3+ | | |
| 2003 11 21 | 704 | 0.5+ | 0.1− | 2006 08 29 | 703 | 1.1− | 1.1+ | 2006 10 23 | 703 | 0.5− | 0.6− | | |
| 2003 11 21 | 704 | 0.4− | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.1− | 2006 10 23 | 703 | 0.8− | 0.8+ | | |
| 2003 11 21 | 704 | 0.7− | 0.1+ | 2006 08 29 | 703 | 0.6+ | 0.5+ | 2006 10 23 | 703 | 1.0+ | 0.7+ | | |
| 2003 11 21 | 704 | 0.5− | 0.3− | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.9− | 0.2+ | | |
| 2003 12 19 | 291 | 0.1− | 0.4− | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.0 | | |
| 2003 12 19 | 291 | 0.1+ | 0.4− | 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.0 | | |
| 2003 12 19 | 291 | 0.3+ | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.0 | | |
| 2003 12 19 | 704 | (0.5+ | 2.0+) | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1− | | |
| 2003 12 19 | 704 | (0.3+ | 1.7+) | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2003 12 19 | 704 | 0.2+ | 0.6+ | 2006 09 13 | 118 | 1.0+ | 0.7− | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 2003 12 19 | 704 | 0.5+ | 1.2+ | 2006 09 13 | 118 | 0.0 | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.3+ | | |
| 2003 12 19 | 704 | 0.7+ | 0.2+ | 2006 09 13 | 118 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2003 12 21 | 704 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.5+ | | |

**(139157)∗ 2001 FS$_{107}$**

Discovered 2001 Mar. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 150.66248 | | (2000.0) | | −0.39488015 | +0.91872236 |
| $n$ | 0.28123518 | $\omega$ | 244.27296 | | −0.80284587 | −0.34276722 |
| $a$ | 2.3072232 | $\Omega$ | 2.48083 | | −0.44666337 | −0.19611185 |
| $e$ | 0.1454660 | $i$ | 5.76248 | | | |
| $P$ | 3.50 | $H$ | 17.0 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | 0.7− | 0.9− | 2002 09 27 | 644 | 0.7− | 0.4+ | 2005 05 16 | 644 | 0.2+ | 0.3+ | | |
| 2001 03 02 | 699 | 0.2+ | 0.6+ | 2002 09 27 | 644 | 0.2− | 0.4+ | 2005 05 20 | 644 | 0.4− | 1.3+ | | |
| 2001 03 02 | 699 | 0.2+ | 0.2− | 2002 09 27 | 644 | 0.4− | 0.2+ | 2005 05 20 | 644 | (0.2− | 1.7+) | | |
| 2001 03 02 | 699 | 0.0 | 0.2− | 2002 09 29 | 608 | 0.8− | 0.4− | 2005 05 20 | 644 | 0.5− | 0.8+ | | |
| 2001 03 18 | 699 | 1.0+ | 0.9+ | 2002 09 29 | 608 | 0.1+ | 0.1+ | 2005 05 20 | 644 | 0.3− | 0.8+ | | |
| 2001 03 18 | 699 | 0.7+ | 0.6+ | 2002 09 29 | 608 | 0.5− | 0.1− | 2005 05 20 | 644 | 0.3− | 0.5+ | | |
| 2001 03 18 | 699 | 0.7+ | 0.4+ | 2002 10 03 | 704 | 1.3− | 1.2− | 2005 05 20 | 644 | 0.1− | 0.5+ | | |
| 2001 03 18 | 699 | 0.8+ | 0.8+ | 2002 10 03 | 704 | 0.3− | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.5− | | |
| 2001 03 19 | 608 | 0.6+ | 0.1+ | 2002 10 03 | 704 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.2− | | |
| 2001 03 19 | 608 | 0.6+ | 0.4+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3− | | |
| 2001 03 19 | 608 | 0.7+ | 0.4+ | 2002 10 05 | 645 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 | | |
| 2001 03 24 | 704 | 0.3+ | 0.3− | 2002 10 11 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2001 03 24 | 704 | 0.1− | 1.2− | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.1− | | |
| 2001 03 24 | 704 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2001 03 26 | 691 | 0.3− | 0.1− | 2002 10 30 | 645 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 2001 03 26 | 691 | 0.3− | 0.1+ | 2002 10 30 | 645 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.3+ | | |
| 2001 03 26 | 691 | 0.5− | 0.1+ | 2003 12 18 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.0 | | |
| 2001 04 01 | 704 | 0.3+ | 0.8+ | 2003 12 18 | 691 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.7− | 0.9+ | | |
| 2001 04 01 | 704 | 0.5− | 1.5+ | 2003 12 18 | 691 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 04 01 | 704 | 1.0+ | 0.7+ | 2003 12 28 | 704 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.2+ | | |
| 2001 04 01 | 704 | 0.6+ | 0.2− | 2003 12 28 | 704 | 0.6− | 0.9+ | 2006 11 22 | 691 | 0.5+ | 0.1+ | | |
| 2001 04 01 | 704 | 0.3+ | 0.5+ | 2003 12 28 | 704 | 0.9+ | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.2− | | |
| 2001 04 23 | 691 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.3+ | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.2− | | |
| 2001 04 23 | 691 | 0.3+ | 0.1+ | 2005 05 16 | 644 | 0.1+ | 0.6+ | | | | | | |
| 2001 04 23 | 691 | 0.2+ | 0.2+ | 2005 05 16 | 644 | 0.0 | 0.5+ | | | | | | |

**(139158)∗ 2001 FE$_{108}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 119.98553 | | (2000.0) | | −0.40159143 | +0.91545564 |
| $n$ | 0.26481909 | $\omega$ | 198.37056 | | −0.83583353 | −0.35486081 |
| $a$ | 2.4016139 | $\Omega$ | 47.96057 | | −0.37430822 | −0.18977562 |
| $e$ | 0.1436756 | $i$ | 1.99029 | | | |
| $P$ | 3.72 | $H$ | 16.7 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 691 | 0.2+ | 0.4+ | 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.4− | 0.6+ | | |
| 2001 03 02 | 691 | 0.4+ | 0.3+ | 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.8− | 0.7+ | | |
| 2001 03 02 | 691 | 0.2+ | 0.2+ | 2005 05 08 | 699 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.0 | | |
| 2001 03 18 | 699 | 0.7+ | 0.0 | 2005 05 08 | 699 | 0.6+ | 0.4+ | 2006 09 27 | 691 | 0.6− | 0.1+ | | |
| 2001 03 18 | 699 | 0.8+ | 0.3+ | 2005 05 08 | 699 | 0.8+ | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.1+ | | |
| 2001 03 18 | 704 | 0.7+ | 0.2+ | 2005 05 08 | 699 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2001 03 18 | 704 | 0.1+ | 0.2+ | 2005 05 08 | E12 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.2+ | | |
| 2001 03 18 | 699 | 0.5+ | 0.5+ | 2005 05 08 | E12 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.3− | 0.1− | | |
| 2001 03 18 | 704 | 0.4+ | 0.3+ | 2005 05 08 | E12 | 0.2− | 0.1+ | 2006 10 13 | D35 | 0.4+ | 0.2+ | | |
| 2001 03 18 | 704 | 0.7+ | 0.9− | 2005 05 08 | E12 | 0.1− | 0.3+ | 2006 10 13 | D35 | 0.0 | 0.2+ | | |
| 2001 03 18 | 699 | 0.9+ | 0.5+ | 2005 05 09 | 699 | 0.9+ | 0.5+ | 2006 10 13 | D35 | 0.5− | 0.4+ | | |
| 2001 03 20 | 608 | 1.4+ | 0.7+ | 2005 05 09 | G96 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.4− | 0.4+ | | |
| 2001 03 20 | 608 | 1.4+ | 1.2+ | 2005 05 09 | 704 | 1.3+ | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 608 | 1.3+ | 0.9+ | 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.0 | | |
| 2001 03 26 | 704 | 0.2− | 0.9+ | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.7+ | | |
| 2001 03 26 | 704 | 0.6+ | 0.3+ | 2005 05 09 | 699 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.6+ | | |
| 2001 03 26 | 704 | 0.0 | 0.2+ | 2005 05 09 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.1+ | | |
| 2001 03 26 | 704 | 1.1+ | 0.3+ | 2005 05 09 | G96 | 0.3− | 0.0 | 2006 10 21 | 703 | 1.3− | 0.3+ | | |
| 2001 04 15 | 699 | 0.3+ | 0.3− | 2005 05 09 | 704 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.3− | | |
| 2001 04 15 | 699 | 0.7− | 0.4+ | 2005 05 09 | 699 | 0.4+ | 0.9+ | 2006 10 21 | 703 | (1.6− | 1.9+) | | |
| 2001 04 15 | 699 | 1.0− | 0.3+ | 2005 05 09 | 704 | 0.0 | 0.8+ | 2006 10 21 | 703 | (2.4− | 0.1+) | | |
| 2001 04 15 | 699 | 0.1− | 0.3+ | 2005 05 09 | 704 | (2.0+ | 0.8+) | 2006 10 27 | G96 | 0.4+ | 0.1− | | |
| 2001 04 16 | 645 | 0.2− | 0.1+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2001 04 16 | 645 | 0.2− | 0.1+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− | | |
| 2002 08 30 | 291 | 0.4− | 0.3+ | 2005 05 11 | 691 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2002 08 30 | 291 | 0.5+ | 0.1− | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.3+ | | |
| 2002 08 30 | 291 | 0.6+ | 1.0− | 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.4+ | | |
| 2002 09 15 | 644 | 0.7− | 0.6+ | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.6+ | | |
| 2002 09 15 | 644 | 0.7− | 0.6+ | 2005 05 19 | 644 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.4− | 0.4+ | | |
| 2002 09 15 | 644 | 0.8− | 0.6+ | 2005 05 19 | 644 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.7+ | 0.7+ | | |
| 2005 04 11 | G96 | 0.8− | 0.2− | 2005 05 19 | 644 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.7+ | | |
| 2005 04 11 | G96 | 0.3− | 0.2− | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.5− | | |
| 2005 04 11 | G96 | 0.5+ | 0.3− | 2005 05 19 | 644 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2005 04 11 | G96 | 1.0+ | 0.3− | 2005 05 19 | 644 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.6− | | |
| 2005 04 17 | 703 | 0.8− | 0.4− | 2005 05 26 | 699 | 0.6− | 0.9− | 2006 11 11 | G96 | 0.2− | 0.8− | | |
| 2005 04 17 | 703 | 0.8− | 0.1− | 2005 05 26 | 699 | 0.2+ | 0.8+ | 2006 11 16 | 691 | 0.2− | 0.3+ | | |
| 2005 04 17 | 703 | 0.2+ | 0.8− | 2005 05 26 | 699 | 0.4− | 0.1+ | 2006 11 16 | 691 | 0.5− | 0.3+ | | |
| 2005 04 17 | 703 | 0.1+ | 0.1+ | 2005 05 26 | 699 | 0.3+ | 0.9− | 2006 11 16 | 691 | 0.2− | 0.2+ | | |
| 2005 05 04 | 699 | 0.9− | 0.2− | 2005 05 30 | 699 | (1.9+ | 0.4+) | 2006 11 19 | 691 | 0.1+ | 0.5+ | | |
| 2005 05 04 | 699 | 0.2+ | 0.6− | 2005 05 30 | 699 | (2.0+ | 1.8+) | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2005 05 04 | 704 | 0.4+ | 0.1+ | 2005 05 30 | 699 | 0.6+ | 0.7− | 2006 11 19 | 691 | 0.3+ | 0.1+ | | |
| 2005 05 04 | 699 | 1.2+ | 1.1+ | 2005 05 30 | 699 | 0.7+ | 0.9+ | 2006 11 22 | G96 | 0.3+ | 0.1− | | |
| 2005 05 04 | 704 | 0.1− | 0.0 | 2005 06 04 | 703 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 1.1+ | 0.4− | | |
| 2005 05 04 | 699 | 0.2+ | 0.7− | 2005 06 04 | 703 | (1.8+ | 0.5+) | 2006 11 22 | G96 | 0.2+ | 0.5− | | |
| 2005 05 04 | 704 | 0.7− | 1.4− | 2005 06 04 | 703 | 0.2− | 1.2+ | 2006 11 22 | G96 | 0.1− | 0.2− | | |
| 2005 05 04 | 704 | 1.1+ | 1.2+ | 2005 06 04 | 703 | 0.8+ | 1.1+ | | | | | | |
| 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.3+ | | | | | | |

**(139159)∗ 2001 FM$_{109}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.80529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26601911 | $\omega$ | 17.60464 | | −0.83580653 | +0.54777965 | |
| $a$ | 2.3943860 | $\Omega$ | 195.77497 | | −0.51865537 | −0.80985499 | |
| $e$ | 0.0734137 | $i$ | 7.81041 | | −0.18006680 | −0.20993414 | |
| $P$ | 3.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.3+ | 0.9− | 2001 04 28 | 691 | 0.1+ | 0.0 | 2005 05 20 | G96 | 0.3− | 0.6− | | |
| 2001 03 18 | 704 | 0.8+ | 0.1− | 2001 04 29 | 691 | 0.1+ | 0.3+ | 2005 05 31 | 699 | 0.7+ | 0.3− | | |
| 2001 03 18 | 704 | 0.1+ | 0.8+ | 2001 04 29 | 691 | 0.2+ | 0.1+ | 2005 05 31 | 699 | 1.0+ | 0.5− | | |
| 2001 03 18 | 704 | 1.2+ | 1.4+ | 2001 04 29 | 691 | 0.1− | 0.7+ | 2005 05 31 | 699 | 0.0 | 0.5− | | |
| 2001 03 21 | 608 | 0.4− | 0.9− | 2001 04 30 | 691 | 0.1+ | 0.1+ | 2005 05 31 | 699 | 0.3+ | 1.0− | | |
| 2001 03 21 | 608 | 0.5− | 1.0− | 2001 04 30 | 691 | 0.2− | 0.2+ | 2005 06 05 | 691 | 0.1+ | 0.0 | | |
| 2001 03 21 | 608 | 0.6− | 0.9− | 2001 04 30 | 691 | 0.2− | 0.4+ | 2005 06 05 | 691 | 0.0 | 0.1− | | |
| 2001 03 23 | 699 | (1.1− | 1.6+) | 2001 05 01 | 691 | 0.1+ | 0.2+ | 2005 06 05 | 691 | 0.0 | 0.1− | | |
| 2001 03 23 | 699 | 0.3+ | 0.9+ | 2001 05 01 | 691 | 0.0 | 0.1+ | 2005 06 05 | 704 | 0.2+ | 0.3− | | |
| 2001 03 23 | 699 | 0.0 | 0.9+ | 2001 05 01 | 691 | 0.5+ | 0.2+ | 2005 06 05 | 704 | 0.3− | 0.9+ | | |
| 2001 03 23 | 699 | 0.3− | 1.1− | 2001 05 02 | 691 | (2.1+ | 0.1−) | 2005 06 05 | 704 | 0.3+ | 0.7+ | | |
| 2001 03 26 | 704 | 1.1− | 0.1− | 2002 09 13 | 644 | 0.5− | 0.5+ | 2005 06 05 | 704 | 0.4− | 0.4− | | |
| 2001 03 26 | 704 | 0.2− | 0.3− | 2002 09 13 | 644 | 0.1− | 0.5+ | 2005 06 09 | 691 | 0.3− | 0.1− | | |
| 2001 03 26 | 704 | 1.3− | 0.2− | 2002 09 13 | 644 | 0.1+ | 0.3+ | 2005 06 09 | 691 | 0.1+ | 0.1− | | |
| 2001 03 26 | 704 | 0.2− | 0.8+ | 2005 05 02 | 734 | 0.8− | 0.6− | 2005 06 09 | 691 | 0.1+ | 0.2− | | |
| 2001 03 26 | 704 | (2.0+ | 2.1+) | 2005 05 02 | 734 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.3+ | 0.1− | | |
| 2001 03 28 | 704 | 0.2− | 0.4− | 2005 05 02 | H36 | 1.1− | 0.1− | 2005 06 13 | 691 | 0.2+ | 0.2− | | |
| 2001 03 28 | 704 | 0.3− | 1.0− | 2005 05 02 | 734 | 0.0 | 0.3− | 2005 06 13 | 691 | 0.3− | 0.9+ | | |
| 2001 03 28 | 704 | 0.3− | 0.0 | 2005 05 02 | H36 | 0.8− | 0.2+ | 2005 06 23 | 644 | 0.4− | 0.1+ | | |
| 2001 04 01 | 704 | 1.0+ | 0.9+ | 2005 05 02 | H36 | 1.0− | 0.4+ | 2005 06 23 | 644 | 0.0 | 0.0 | | |
| 2001 04 01 | 704 | 0.2− | 0.0 | 2005 05 02 | H36 | 0.6− | 0.4+ | 2005 06 23 | 644 | 0.2+ | 0.1+ | | |
| 2001 04 01 | 704 | 0.1+ | 0.6− | 2005 05 02 | H36 | 1.0− | 0.7− | 2006 09 24 | 691 | 0.1+ | 0.1− | | |
| 2001 04 01 | 704 | 0.6+ | 1.3+ | 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.4+ | | |
| 2001 04 23 | 691 | 0.2− | 0.1− | 2005 05 03 | 691 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.5+ | | |
| 2001 04 23 | 691 | 0.2+ | 0.0 | 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.4+ | | |
| 2001 04 23 | 691 | 0.6+ | 0.2− | 2005 05 12 | 599 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.5+ | | |
| 2001 04 24 | 691 | 0.1− | 0.2+ | 2005 05 13 | 599 | 0.6+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.5+ | | |
| 2001 04 24 | 691 | 0.1+ | 0.3+ | 2005 05 13 | 599 | 0.3+ | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.1− | | |
| 2001 04 24 | 691 | 0.3− | 0.4+ | 2005 05 20 | G96 | 0.3− | 0.7− | 2006 11 14 | G96 | 0.4− | 0.4− | | |
| 2001 04 28 | 691 | 0.1+ | 0.1+ | 2005 05 20 | G96 | 0.1− | 0.8− | 2006 11 14 | G96 | 0.3+ | 0.1+ | | |
| 2001 04 28 | 691 | 0.2+ | 0.1+ | 2005 05 20 | G96 | 0.5− | 0.8− | 2006 11 14 | G96 | 0.0 | 0.1+ | | |

**(139160)∗ 2001 FX$_{111}$ = 2002 PT$_{38}$**

Discovered 2001 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33398)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.46180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29809136 | $\omega$ | 207.29094 | | −0.12391983 | −0.99046371 | |
| $a$ | 2.2194045 | $\Omega$ | 249.87861 | | +0.92170617 | −0.09241592 | |
| $e$ | 0.0838945 | $i$ | 3.67668 | | +0.36756171 | −0.10218086 | |
| $P$ | 3.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.3+ | 0.1− | 2004 01 13 | 699 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.3− | | |
| 2001 03 18 | 704 | 1.1+ | 0.1+ | 2004 01 13 | 699 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.2− | | |
| 2001 03 18 | 704 | 0.2+ | 0.3− | 2004 01 13 | 699 | (2.1− | 1.1+) | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2001 03 19 | 699 | (1.1− | 1.7+) | 2004 01 24 | 704 | 0.4+ | 1.0+ | 2006 11 10 | 691 | 0.3− | 0.1+ | | |
| 2001 03 19 | 699 | 1.2+ | 1.1+ | 2004 01 24 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 691 | 1.1+ | 0.2+ | | |
| 2001 03 19 | 699 | 0.1− | 0.4+ | 2004 01 24 | 704 | 0.8+ | 1.0+ | 2006 11 15 | 703 | 0.4− | 0.5− | | |
| 2001 03 19 | 699 | 1.4+ | 1.3+ | 2004 01 24 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.8− | 0.2+ | | |
| 2001 03 20 | 608 | 0.7− | 0.8+ | 2004 01 25 | 608 | 0.2− | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.7− | | |
| 2001 03 20 | 608 | 0.8− | 0.7+ | 2004 01 25 | 608 | 0.5− | 0.4− | 2006 11 15 | 703 | 0.4− | 0.4− | | |
| 2001 03 20 | 608 | 0.5− | 0.2− | 2004 01 25 | 608 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.4− | 0.3− | | |
| 2001 03 29 | 699 | 0.3+ | 0.1+ | 2004 01 29 | 704 | 0.7+ | 0.3− | 2006 11 18 | 704 | 1.2+ | 0.3− | | |
| 2001 03 29 | 699 | 1.3+ | 0.5+ | 2004 01 29 | 704 | 0.9+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.4− | | |
| 2001 03 29 | 699 | 0.2− | 0.1+ | 2004 01 29 | 704 | 1.4− | 1.3− | 2006 11 18 | 704 | 0.1+ | 0.1+ | | |
| 2001 03 29 | 699 | 0.9− | 0.9+ | 2004 01 29 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.2+ | | |
| 2002 07 22 | 644 | 0.4− | 0.3+ | 2004 01 29 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | | |
| 2002 07 22 | 644 | 0.1− | 0.4+ | 2004 02 17 | 704 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.6+ | | |
| 2002 07 22 | 644 | 0.1− | 0.6+ | 2004 02 17 | 704 | 0.7− | 0.4− | 2006 11 21 | 704 | 0.2+ | 1.3− | | |
| 2002 08 06 | 644 | 0.1− | 0.8+ | 2004 02 17 | 704 | 0.7− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.1+ | | |
| 2002 08 06 | 644 | 0.1+ | 0.4+ | 2004 02 17 | 704 | 1.2+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 1.1+ | | |
| 2002 08 06 | 644 | (0.9+ | 1.6+) | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.3− | 0.2− | | |
| 2002 08 08 | 644 | 0.3− | 0.9+ | 2004 02 23 | 704 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.2− | | |
| 2002 08 08 | 644 | 0.2− | 0.8+ | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1− | | |
| 2002 08 08 | 644 | 0.2− | 1.1+ | 2004 02 23 | 704 | (1.8− | 0.6+) | 2006 11 27 | 691 | 0.4− | 0.2+ | | |
| 2002 08 13 | 644 | 0.9− | 0.8+ | 2004 02 23 | 704 | (2.0− | 1.2−) | 2006 11 27 | 691 | 0.0 | 0.8+ | | |
| 2002 08 13 | 644 | 0.4− | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.5+ | 2006 11 27 | 691 | 0.2− | 0.0 | | |
| 2002 08 13 | 644 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.2− | 1.4− | 2006 12 01 | 704 | 0.0 | 0.0 | | |
| 2003 10 24 | 691 | 0.2− | 0.1− | 2004 02 23 | 704 | 1.2− | 0.1− | 2006 12 01 | 704 | 0.7+ | 0.3+ | | |
| 2003 10 24 | 691 | 0.4− | 0.3+ | 2004 02 23 | 704 | 0.5− | 1.3− | 2006 12 01 | 704 | 1.3+ | 1.3+ | | |
| 2003 10 24 | 691 | 0.6+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 12 01 | 704 | 0.8+ | 0.4− | | |
| 2004 01 13 | 699 | (2.2− | 0.0 ) | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.6+ | 0.5+ | | |

**(139161)∗ 2001 FW$_{112}$ = 2005 JA$_{75}$**

Discovered 2001 Mar. 18 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 74950)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.11454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26170218 | $\omega$ | 290.99616 | | −0.47910513 | +0.87377503 | |
| $a$ | 2.4206453 | $\Omega$ | 310.09780 | | −0.75933098 | −0.46031480 | |
| $e$ | 0.0823123 | $i$ | 6.26823 | | −0.44031210 | −0.15693144 | |
| $P$ | 3.77 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 608 | 0.3− | 0.0 | 2002 09 06 | 704 | 0.9− | 0.7+ | 2006 09 25 | 704 | 0.6− | 1.2− |
| 2001 03 18 | 608 | 0.3− | 0.3+ | 2002 09 14 | 644 | 0.4− | 0.9+ | 2006 09 25 | 704 | 1.5− | 0.1+ |
| 2001 03 18 | 608 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.2− | 1.1+ | 2006 09 25 | 704 | 0.9− | 0.3− |
| 2001 03 19 | 699 | 0.7+ | 0.5+ | 2002 09 14 | 644 | 0.1+ | 1.2+ | 2006 09 25 | 704 | (1.6− | 0.2+) |
| 2001 03 19 | 699 | 0.3+ | 1.2+ | 2003 12 28 | 704 | (0.0 | 1.7+) | 2006 10 01 | 703 | 0.5+ | 1.0− |
| 2001 03 19 | 699 | 0.1− | 1.3+ | 2003 12 28 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 703 | 0.1− | 0.4− |
| 2001 03 19 | 699 | 0.4− | 1.4+ | 2003 12 28 | 704 | 1.1+ | 0.5+ | 2006 10 01 | 703 | 0.5+ | 1.2+ |
| 2001 03 26 | 704 | 0.4+ | 0.3+ | 2005 05 08 | E12 | 0.1− | 0.2− | 2006 10 01 | 703 | 0.9+ | 0.2− |
| 2001 03 26 | 704 | 1.2+ | 0.5+ | 2005 05 08 | E12 | 0.8− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2001 03 26 | 704 | 0.4− | 0.3+ | 2005 05 08 | E12 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2001 03 26 | 704 | 0.5+ | 0.7+ | 2005 05 08 | E12 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.2+ | 1.0+ |
| 2001 03 26 | 704 | 0.3+ | 0.8+ | 2005 05 10 | 699 | 0.6+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2002 08 08 | 699 | 0.7+ | 1.3− | 2005 05 10 | 699 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.7+ | 0.5+ |
| 2002 08 08 | 699 | 0.9+ | 0.2− | 2005 05 10 | 699 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.8+ |
| 2002 08 08 | 699 | 0.4− | 1.0+ | 2005 05 10 | 699 | 0.8− | 0.8− | 2006 10 17 | 703 | 1.4− | 0.4− |
| 2002 08 08 | 699 | 0.7+ | 0.0 | 2005 05 12 | 644 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2002 08 13 | 699 | (1.6− | 0.8−) | 2005 05 12 | 644 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 08 13 | 699 | 0.5+ | 0.3− | 2005 05 12 | 644 | 0.4+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2002 08 13 | 699 | 0.8− | 0.7+ | 2005 05 16 | 644 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2002 08 13 | 699 | 0.1− | 0.1− | 2005 05 16 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.2+ | 0.5+ | 2005 05 16 | 644 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.8+ | 2006 08 30 | 704 | 0.4− | 0.6+ | 2006 10 24 | 644 | 0.0 | 0.5− |
| 2002 08 17 | 644 | 0.2+ | 0.7+ | 2006 08 30 | 704 | 0.3+ | 1.4− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.0 | 2006 08 30 | 704 | 1.1− | 0.3− | 2006 10 24 | 644 | 0.0 | 0.2− |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 08 19 | 644 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 1.4− | 0.5+ | 2006 09 18 | 704 | (0.2+ | 1.6−) | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.4− | 0.3− | 2006 09 18 | 704 | 1.3+ | 1.2− | | | | |

**(139162)∗ 2001 FU$_{113}$ = 2002 TR$_{87}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37580)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.69660 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27183494 | $\omega$ | 38.96672 | | −0.08031767 | | +0.99649947 |
| $a$ | 2.3601116 | $\Omega$ | 226.43987 | | −0.92233746 | | −0.08312228 |
| $e$ | 0.1659820 | $i$ | 1.83404 | | −0.37794533 | | −0.00891591 |
| $P$ | 3.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.0 | 0.1− | 2002 10 03 | 704 | 1.4− | 0.2− | 2005 06 23 | 644 | 0.1− | 0.3+ |
| 1997 01 31 | 691 | 0.3+ | 0.3− | 2002 10 03 | 704 | 0.4+ | 0.7+ | 2005 06 23 | 644 | 0.2− | 0.2+ |
| 1997 01 31 | 691 | 0.1+ | 0.4− | 2002 10 03 | 704 | 0.4− | 0.1+ | 2005 07 04 | 644 | 1.0+ | 0.2− |
| 1997 03 09 | 691 | 0.7− | 0.3+ | 2002 10 03 | 704 | 0.7− | 0.3− | 2005 07 04 | 644 | 0.3− | 0.3+ |
| 1997 03 09 | 691 | 0.3− | 0.3− | 2002 10 04 | 704 | 0.4− | 0.2− | 2005 07 04 | 644 | 0.4− | 0.3+ |
| 1997 03 09 | 691 | 1.3− | 1.2+ | 2002 10 04 | 704 | 1.4− | 0.2− | 2006 10 17 | G96 | 0.5− | 0.5− |
| 1998 07 29 | 910 | 1.7+ | 0.4+ | 2002 10 04 | 704 | 0.8− | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.2+ |
| 1998 07 29 | 910 | 1.7+ | 0.8+ | 2002 10 04 | 704 | 1.0− | 0.9− | 2006 10 17 | G96 | 0.5+ | 0.6− |
| 1998 07 29 | 910 | 1.9+ | 0.6+ | 2002 10 04 | 704 | 0.9− | 0.0 | 2006 10 17 | G96 | 0.8+ | 0.2− |
| 2001 03 19 | 699 | 0.3+ | 0.4+ | 2002 10 09 | 291 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 03 19 | 699 | 0.8+ | 0.1− | 2002 10 09 | 291 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 03 19 | 699 | 0.0 | 1.1+ | 2002 10 09 | 291 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 03 19 | 699 | 1.0− | 1.1+ | 2002 10 11 | 704 | 0.6− | 0.3− | 2006 11 11 | G96 | 0.6+ | 0.5− |
| 2001 03 20 | 608 | 0.9+ | 0.3+ | 2002 10 11 | 704 | 0.3+ | 1.0+ | 2006 11 12 | 703 | 0.7+ | 0.4+ |
| 2001 03 20 | 608 | 1.0+ | 0.1− | 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 11 12 | 703 | 0.2− | 0.9+ |
| 2001 03 20 | 608 | 0.5+ | 0.2− | 2003 12 28 | 691 | 0.7+ | 0.1− | 2006 11 12 | 703 | 0.5+ | 1.2+ |
| 2001 03 24 | 704 | 0.4+ | 0.1− | 2003 12 28 | 691 | 0.5+ | 0.1+ | 2006 11 12 | 703 | 0.5− | 0.3+ |
| 2001 03 24 | 704 | 0.0 | 0.0 | 2003 12 28 | 691 | 0.5+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2001 03 24 | 704 | 0.6+ | 0.9+ | 2005 06 16 | G96 | 0.8− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 03 24 | 704 | 0.6+ | 0.3+ | 2005 06 16 | G96 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2001 03 29 | 608 | (0.1− | 2.0+) | 2005 06 16 | G96 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2001 03 29 | 608 | 0.1+ | 1.4+ | 2005 06 16 | G96 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2001 03 29 | 608 | 0.0 | 0.9+ | 2005 06 23 | 644 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.0 |

**(139163)∗ 2001 FW$_{113}$ = 2005 JE$_{112}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 84675)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.10823 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26380899 | $\omega$ | 332.12624 | | −0.55719776 | | +0.83036226 |
| $a$ | 2.4077404 | $\Omega$ | 264.01106 | | −0.76084521 | | −0.51313334 |
| $e$ | 0.1418652 | $i$ | 0.31112 | | −0.33263377 | | −0.21723877 |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.1− | 0.1+ | 2005 01 17 | 809 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.3− | 0.4− |
| 1991 10 08 | 691 | 0.1+ | 0.5− | 2005 01 17 | 809 | 0.1− | 0.3+ | 2005 06 27 | 644 | 0.2+ | 0.2+ |
| 1995 11 18 | 691 | 0.1− | 0.1− | 2005 03 10 | G96 | 0.3− | 0.3+ | 2005 06 27 | 644 | 0.2− | 0.2+ |
| 1995 11 18 | 691 | 0.5− | 0.2+ | 2005 03 10 | G96 | 0.3− | 0.1+ | 2005 06 27 | 644 | 0.0 | 0.1+ |
| 1995 11 18 | 691 | 0.3− | 0.1+ | 2005 03 10 | G96 | 0.2− | 0.0 | 2006 09 14 | 691 | 0.1− | 0.2− |
| 2001 03 19 | 699 | 0.3+ | 1.0+ | 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.0 |
| 2001 03 19 | 699 | 0.3− | 0.5+ | 2005 05 09 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 691 | 0.3+ | 0.2− |
| 2001 03 19 | 699 | 0.5+ | 1.0+ | 2005 05 09 | 704 | (0.1− | 2.2+) | 2006 09 18 | 691 | 0.1− | 0.3− |
| 2001 03 19 | 699 | 0.0 | 0.6− | 2005 05 09 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 691 | 0.2+ | 0.0 |
| 2001 03 20 | 608 | (1.9+ | 0.5+) | 2005 05 09 | 704 | 0.1+ | 1.4+ | 2006 09 18 | 691 | 0.4+ | 0.2+ |
| 2001 03 20 | 608 | 1.5+ | 0.3+ | 2005 05 14 | 704 | (0.4+ | 1.6−) | 2006 09 25 | 691 | 0.3− | 0.1− |
| 2001 03 20 | 608 | (2.4+ | 0.5−) | 2005 05 14 | 704 | 0.6− | 1.1− | 2006 09 25 | 691 | 0.2− | 0.2− |
| 2001 03 21 | 691 | 0.3+ | 0.1+ | 2005 05 14 | 704 | 0.4− | 1.1− | 2006 09 25 | 691 | 1.1− | 0.0 |
| 2001 03 21 | 691 | 0.5− | 0.9− | 2005 05 14 | 704 | 0.4− | 1.3− | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2001 03 21 | 691 | 0.3+ | 0.1+ | 2005 05 14 | 704 | (0.5− | 1.7−) | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2002 08 16 | 291 | 0.2+ | 0.5− | 2005 05 16 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2002 08 16 | 291 | 0.7+ | 0.3+ | 2005 05 16 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2002 08 16 | 291 | 0.3− | 0.6+ | 2005 05 16 | 691 | 0.1− | 0.1− | 2006 10 13 | A50 | 0.3− | 0.4− |
| 2002 08 29 | 291 | 0.2+ | 0.4+ | 2005 06 06 | 691 | 0.5+ | 0.2+ | 2006 10 13 | A50 | 0.6+ | 0.0 |
| 2002 08 29 | 291 | 0.1+ | 0.2+ | 2005 06 06 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.0 |
| 2002 08 29 | 291 | 0.1+ | 0.3+ | 2005 06 06 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2002 09 14 | 644 | 0.5− | 0.5+ | 2005 06 14 | G96 | 0.7− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2005 06 14 | G96 | 0.5− | 0.0 | 2006 11 27 | G96 | 1.0+ | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2005 06 14 | G96 | 0.6− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 01 28 | 691 | 0.1− | 0.1− | 2005 06 14 | G96 | 0.4− | 0.4− | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2004 01 28 | 691 | 0.1+ | 0.3+ | 2005 06 14 | G96 | 0.6− | 0.5+ | 2006 11 27 | G96 | 0.4− | 0.2− |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2005 06 14 | G96 | 0.4− | 0.4− | | | | |
| 2005 01 17 | 809 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.5− | 0.0 | | | | |

**(139164)∗ 2001 FL$_{114}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.83777 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28972113 | $\omega$ | 16.22161 | | −0.66892721 | | −0.73941705 |
| $a$ | 2.2619479 | $\Omega$ | 115.83223 | | +0.67224396 | | −0.64549333 |
| $e$ | 0.0590425 | $i$ | 4.85326 | | +0.31721356 | | −0.19131333 |
| $P$ | 3.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.2+ | 0.2− | 2003 12 16 | 699 | (0.0 | 2.2−) | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 03 03 | 704 | (0.2+ | 1.6+) | 2003 12 16 | 699 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 03 03 | 704 | 0.8+ | 0.4+ | 2003 12 16 | 699 | 0.8− | 1.5− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 03 03 | 704 | 0.8+ | 0.8+ | 2003 12 17 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 03 03 | 704 | 1.1+ | 0.9+ | 2003 12 17 | 691 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 03 19 | 699 | 0.5− | 0.3− | 2003 12 17 | 691 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 03 19 | 699 | 0.4− | 0.6+ | 2003 12 19 | 704 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2001 03 19 | 699 | 0.1+ | 0.3+ | 2003 12 19 | 704 | 0.4− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2001 03 19 | 699 | 0.8− | 0.5+ | 2003 12 19 | 704 | 0.2+ | 0.6− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 03 20 | 608 | 0.2− | 1.1+ | 2003 12 19 | 704 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 03 20 | 608 | 0.1+ | 1.0+ | 2003 12 21 | 704 | 0.5− | 0.4+ | 2006 11 01 | 703 | 0.2+ | 0.8+ |
| 2001 03 20 | 608 | 0.2+ | 1.2+ | 2003 12 21 | 704 | (1.1+ | 1.6+) | 2006 11 01 | 703 | 0.2+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.4+ | 1.0+ | 2003 12 21 | 704 | 0.9− | 1.2+ | 2006 11 01 | 703 | (1.7+ | 1.7−) | | |
| 2001 03 26 | 704 | 0.6+ | 0.1+ | 2003 12 21 | 704 | 0.4+ | 0.8+ | 2006 11 01 | 703 | 0.6− | 0.1+ | | |
| 2001 03 26 | 704 | 0.4− | 0.1− | 2003 12 21 | 704 | 0.3− | 1.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2001 03 26 | 704 | 0.5+ | 0.1− | 2003 12 21 | 704 | (1.5+ | 0.1−) | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 2001 03 26 | 704 | 0.2+ | 0.6+ | 2003 12 21 | 704 | 0.9+ | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2002 07 23 | 644 | 0.8− | 1.1+ | 2003 12 21 | 704 | 1.1+ | 1.5+ | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 2002 07 23 | 644 | 0.4− | 0.8+ | 2003 12 21 | 704 | 0.9− | 1.3+ | 2006 11 10 | 644 | 0.0 | 0.1− | | |
| 2002 07 29 | 644 | 0.1+ | 0.7+ | 2003 12 21 | 704 | 1.4+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.0 | | |
| 2002 07 29 | 644 | 0.2− | 0.9+ | 2003 12 29 | 691 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2002 07 29 | 644 | 0.5+ | 0.8+ | 2003 12 29 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.3− | 0.3+ | | |
| 2002 08 08 | 644 | 0.1+ | 0.6+ | 2003 12 29 | 691 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.4+ | 0.3+ | | |
| 2002 08 08 | 644 | 0.8− | 0.6+ | 2004 01 21 | 704 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.0 | 0.8+ | | |
| 2002 08 08 | 644 | 0.3+ | 0.9+ | 2004 01 21 | 704 | 0.4+ | 0.6− | 2006 11 17 | 704 | 0.2+ | 1.0+ | | |
| 2002 08 16 | 644 | 0.2− | 0.5+ | 2004 01 21 | 704 | 0.6+ | 0.5− | 2006 11 17 | 704 | 0.1+ | 1.1+ | | |
| 2002 08 16 | 644 | 0.0 | 0.5+ | 2004 01 21 | 704 | 0.4+ | 0.7− | 2006 11 17 | 704 | 0.6− | 0.6− | | |
| 2002 08 16 | 644 | 0.1+ | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.5+ | | |
| 2002 08 18 | 644 | 0.1− | 0.4+ | 2004 01 24 | 704 | 1.0+ | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.7− | | |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2004 01 24 | 704 | (2.0+ | 0.7+) | 2006 11 20 | 704 | 0.3− | 0.3+ | | |
| 2002 08 18 | 644 | 0.1+ | 0.4+ | 2004 01 30 | 291 | 0.7− | 0.6+ | 2006 11 20 | 704 | 0.9+ | 0.6− | | |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2004 01 30 | 291 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.3− | | |
| 2002 08 29 | 644 | 0.0 | 0.3+ | 2004 01 30 | 291 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.2+ | | |
| 2002 08 29 | 644 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2002 09 15 | 644 | 0.8− | 0.1− | 2004 01 30 | 704 | 0.9− | 1.2− | 2006 11 23 | G96 | 0.0 | 0.5− | | |
| 2002 09 15 | 644 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.0 | 1.1− | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2002 09 15 | 644 | 0.7− | 0.4+ | 2004 01 30 | 704 | 1.1− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.5− | | |
| 2003 12 16 | 699 | (0.0 | 1.6−) | 2004 01 30 | 704 | (0.5− | 1.8−) | | | | | | |

**(139165)∗ 2001 FC$_{115}$ = 2002 RR$_{214}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37580)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.82996 | | (2000.0) | | | |
| $n$ | 0.26927709 | $\omega$ | 231.75053 | | +0.13547573 | +0.98607912 |
| $a$ | 2.3750337 | $\Omega$ | 46.32879 | | −0.86230045 | +0.16526848 |
| $e$ | 0.1001310 | $i$ | 7.65946 | | −0.48793878 | −0.01828362 |
| $P$ | 3.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.5− | 0.0 | 2005 05 14 | 704 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.1+ | | |
| 2001 03 19 | 699 | (0.9− | 2.3+) | 2005 05 14 | 704 | 0.8− | 1.0+ | 2006 10 29 | 691 | 0.1+ | 0.1− | | |
| 2001 03 19 | 699 | 0.4+ | 1.3+ | 2005 05 16 | 644 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.1− | | |
| 2001 03 19 | 699 | (0.3+ | 2.1+) | 2005 05 16 | 644 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.1− | | |
| 2001 03 21 | 608 | 0.2+ | 0.5− | 2005 05 16 | 644 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.1+ | | |
| 2001 03 21 | 608 | 0.2− | 0.3− | 2005 05 18 | E12 | 0.1+ | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.0 | | |
| 2001 03 21 | 608 | 0.2+ | 0.2− | 2005 05 18 | E12 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2001 03 26 | 704 | (0.3+ | 2.5+) | 2005 05 18 | E12 | 0.4+ | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.0 | | |
| 2001 03 26 | 704 | (0.6+ | 2.2+) | 2005 05 18 | E12 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.3− | | |
| 2001 03 26 | 704 | (0.6+ | 2.5+) | 2005 05 19 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3+ | | |
| 2002 09 01 | 644 | 0.1− | 0.1− | 2005 05 19 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.1+ | | |
| 2002 09 01 | 644 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2002 09 01 | 644 | 0.3+ | 0.0 | 2005 05 30 | E12 | 0.3+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 13 | 704 | 0.5+ | 1.0+ | 2005 05 30 | E12 | 0.4+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.4+ | | |
| 2002 09 13 | 704 | 0.2− | 0.7− | 2005 05 30 | E12 | 0.1− | 0.9− | 2006 11 13 | 691 | 0.1− | 0.1− | | |
| 2002 09 13 | 699 | 1.4− | 0.1− | 2005 05 30 | E12 | 0.7+ | 0.2− | 2006 11 22 | 691 | 0.2− | 0.0 | | |
| 2002 09 13 | 704 | 0.9+ | 0.8+ | 2005 06 26 | 644 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.0 | 0.2− | | |
| 2002 09 13 | 699 | 0.6− | 0.3+ | 2005 06 26 | 644 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.1− | | |
| 2002 09 13 | 704 | 0.3+ | 0.6− | 2005 06 26 | 644 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.2− | | |
| 2002 09 13 | 699 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.9− | | |
| 2002 09 13 | 699 | (1.7− | 1.1+) | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.6− | | |
| 2002 09 16 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 11 22 | G96 | 0.4− | 0.4− | | |
| 2002 09 16 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.7− | 1.2+ | 2006 11 22 | G96 | 0.3− | 0.5− | | |
| 2002 09 16 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.7+ | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.5− | | |
| 2002 09 17 | 644 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 22 | G96 | 0.1+ | 0.4− | | |
| 2002 09 17 | 644 | 0.2+ | 0.6− | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.4+ | | |
| 2002 09 17 | 644 | 0.2+ | 0.7− | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.2− | 0.3+ | | |
| 2005 05 14 | 704 | 0.3− | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.3+ | | |
| 2005 05 14 | 704 | 0.5− | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2005 05 14 | 704 | 0.9− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.1+ | | | | | | |

**(139166)∗ 2001 FH$_{118}$ = 2003 YK$_{79}$**

Discovered 2001 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56248)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 244.76212 | | (2000.0) | | | |
| $n$ | 0.29562498 | $\omega$ | 208.27567 | | −0.93614881 | −0.34596262 |
| $a$ | 2.2317316 | $\Omega$ | 311.34251 | | +0.33628447 | −0.82890354 |
| $e$ | 0.0733183 | $i$ | 4.79300 | | +0.10265553 | −0.43957796 |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 02 | 691 | 0.1− | 0.1− | 2003 12 18 | 704 | 0.5− | 0.2− | 2004 01 31 | 704 | 0.6+ | 1.2+ | | |
| 1996 12 02 | 691 | 0.0 | 0.1− | 2003 12 18 | 704 | 0.2− | 0.6+ | 2006 10 18 | A50 | 0.6− | 0.1− | | |
| 1996 12 02 | 691 | 0.0 | 0.2+ | 2003 12 18 | 704 | 0.1− | 0.1− | 2006 10 18 | A50 | 0.6+ | 0.9− | | |
| 2001 03 02 | 699 | 1.1+ | 1.0+ | 2003 12 18 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.3− | | |
| 2001 03 02 | 699 | 0.1+ | 0.7+ | 2003 12 22 | 704 | 0.5− | 0.6− | 2006 10 27 | 703 | 0.8+ | 0.0 | | |
| 2001 03 02 | 699 | 1.0+ | 0.5+ | 2003 12 22 | 704 | 0.2− | 0.2+ | 2006 10 27 | 703 | (0.3− | 1.7+) | | |
| 2001 03 02 | 699 | 1.3− | 0.6+ | 2003 12 22 | 704 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.2+ | | |
| 2001 03 15 | 699 | 0.7− | 0.3+ | 2003 12 22 | 704 | 0.0 | 0.2+ | 2006 11 02 | 703 | 1.1− | 0.3− | | |
| 2001 03 15 | 699 | 0.1+ | 0.5+ | 2003 12 27 | 704 | 0.3+ | 0.4− | 2006 11 02 | 703 | 0.3+ | 0.5+ | | |
| 2001 03 15 | 699 | 0.8+ | 0.5+ | 2003 12 27 | 704 | 0.6− | 0.5+ | 2006 11 02 | 703 | 0.7+ | 0.4+ | | |
| 2001 03 15 | 699 | 0.1− | 0.2+ | 2003 12 27 | 704 | 0.5+ | 0.1+ | 2006 11 02 | 703 | 0.2− | 0.8+ | | |
| 2001 03 20 | 704 | 0.3+ | 0.4+ | 2003 12 27 | 704 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.2+ | | |
| 2001 03 20 | 704 | 0.5+ | 1.1+ | 2003 12 27 | 704 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 2001 03 20 | 704 | (0.1+ | 2.2+) | 2003 12 27 | 704 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2001 03 20 | 704 | (0.3− | 1.8+) | 2003 12 27 | 704 | 0.6+ | 1.4− | 2006 11 11 | 703 | 0.7+ | 0.7− | | |
| 2001 03 20 | 704 | 0.7− | 0.8+ | 2003 12 27 | 704 | 0.6+ | 0.4− | 2006 11 11 | 703 | 1.0− | 0.2+ | | |
| 2001 03 21 | 608 | 0.1+ | 1.1− | 2004 01 17 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.4− | | |
| 2001 03 21 | 608 | 0.0 | 1.2− | 2004 01 17 | 644 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.5+ | 0.2+ | | |
| 2001 03 21 | 608 | 0.1+ | 0.9− | 2004 01 17 | 644 | 0.1+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 1.8+ | | |
| 2002 08 06 | 644 | 0.1− | 0.4+ | 2004 01 22 | 704 | 0.6+ | 0.3+ | 2006 11 14 | 703 | 1.3− | 0.6+ | | |
| 2002 08 06 | 644 | 0.1− | 0.3+ | 2004 01 22 | 704 | 0.4− | 0.4+ | 2006 11 14 | 703 | 0.7− | 0.5− | | |
| 2002 08 06 | 644 | 0.7− | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.7− | 0.7− | | |
| 2002 08 15 | 644 | 0.4− | 1.2+ | 2004 01 22 | 704 | 0.8− | 0.9− | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2002 08 15 | 644 | 0.3− | 1.0+ | 2004 01 22 | 704 | 0.7− | 0.6+ | 2006 11 15 | 691 | 0.2− | 0.1− | | |
| 2002 08 15 | 644 | 0.1− | 1.1+ | 2004 01 31 | 704 | 0.5+ | 0.7− | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 2003 12 18 | 704 | 0.4− | 0.7− | 2004 01 31 | 704 | 0.1+ | 0.9+ | | | | | | |

**(139167)∗ 2001 FQ$_{122}$ = 2005 GL$_{149}$**

Discovered 2001 Mar. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 74952)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.15333 | | (2000.0) | | | |
| $n$ | 0.26010001 | $\omega$ | 83.39764 | | −0.45627382 | +0.88909804 |
| $a$ | 2.4305756 | $\Omega$ | 159.33553 | | −0.85167002 | −0.42451327 |
| $e$ | 0.0595822 | $i$ | 5.90676 | | −0.25782239 | −0.17115245 |
| $P$ | 3.79 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 16 | 691 | 0.4+ | 0.4+ | 2002 09 15 | 644 | 0.0 | 0.1+ | 2005 05 11 | 699 | 0.7+ | 0.3+ | | |
| 1993 02 16 | 691 | 0.2− | 0.3+ | 2002 09 15 | 644 | 0.3+ | 0.2− | 2005 05 11 | 699 | 0.7− | 0.3+ | | |
| 1993 02 16 | 691 | 0.3− | 0.8− | 2002 09 15 | 644 | 0.1+ | 0.0 | 2005 06 03 | 703 | 1.1− | 0.0 | | |
| 2001 03 18 | 608 | (0.4+ | 2.0−) | 2002 09 16 | 644 | 0.1− | 0.2− | 2005 06 03 | 703 | 1.4− | 0.3+ | | |
| 2001 03 18 | 608 | 0.5− | 1.1− | 2002 09 16 | 644 | 0.1− | 0.3− | 2005 06 03 | 703 | 0.6− | 0.5+ | | |
| 2001 03 18 | 608 | 0.3+ | 0.4− | 2005 04 11 | 691 | 0.1+ | 0.1− | 2005 06 03 | 703 | 0.2− | 0.7− | | |
| 2001 03 23 | 699 | (0.3+ | 1.9+) | 2005 04 11 | 691 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.7+ | 0.8− | | |
| 2001 03 23 | 699 | 0.2− | 0.3− | 2005 04 11 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.2− | | |
| 2001 03 23 | 699 | 0.0 | 0.8+ | 2005 04 13 | 699 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.7+ | 0.6+ | | |
| 2001 03 23 | 699 | 0.3+ | 0.9+ | 2005 04 13 | 699 | 0.7+ | 1.2+ | 2006 08 28 | 703 | 0.6+ | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 1.1+ | 0.3+ | 2005 04 13 | 699 | 0.9+ | 0.8+ | 2006 09 28 | 691 | 0.2+ | 0.6+ | | |
| 2001 03 26 | 704 | 0.5− | 1.0+ | 2005 04 13 | 699 | 0.0 | 0.7+ | 2006 09 28 | 691 | 0.9− | 0.4− | | |
| 2001 03 26 | 704 | 0.9+ | 0.7− | 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.4+ | | |
| 2001 03 26 | 704 | (1.9− | 0.1−) | 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 30 | 704 | (1.6− | 2.2+) | | |
| 2001 03 29 | 699 | 0.1− | 0.4− | 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.4− | 0.4+ | | |
| 2001 03 29 | 699 | 0.7− | 1.0+ | 2005 04 30 | 691 | 0.1+ | 0.1− | 2006 09 30 | 704 | (2.0− | 0.9+) | | |
| 2001 03 29 | 699 | (0.4+ | 1.5−) | 2005 04 30 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.1+ | 0.3+ | | |
| 2001 03 29 | 699 | 0.4+ | 0.3− | 2005 04 30 | 691 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.7+ | | |
| 2002 09 05 | 704 | 0.1− | 0.7− | 2005 05 07 | 703 | 0.7− | 0.0 | 2006 10 09 | 644 | 0.5+ | 0.7+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.9− | 2005 05 07 | 703 | (0.9− | 3.1+) | 2006 10 09 | 644 | 0.4+ | 0.6+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.4+ | 2005 05 07 | 703 | 1.4+ | 1.5+ | 2006 10 22 | 703 | 0.3+ | 0.1− | | |
| 2002 09 14 | 644 | 0.3+ | 0.3− | 2005 05 07 | 703 | (1.6− | 0.9+) | 2006 10 22 | 703 | 1.0+ | 0.7+ | | |
| 2002 09 14 | 644 | 0.1+ | 0.1− | 2005 05 11 | 699 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.4− | 1.0− | | |
| 2002 09 14 | 644 | 0.1− | 0.3− | 2005 05 11 | 699 | 0.8+ | 1.0− | 2006 10 22 | 703 | 1.3− | 0.4− | | |

**(139168)**∗ **2001 FN$_{123}$ = 2002 RR$_{169}$**

Discovered 2001 Mar. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37582)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 123.49707 | | (2000.0) | | −0.15826695 | +0.98736793 |
| $n$ | 0.27154861 | $\omega$ | 76.89256 | | −0.94224909 | −0.15329457 |
| $a$ | 2.3617703 | $\Omega$ | 184.02380 | | −0.29515798 | −0.04006682 |
| $e$ | 0.0928239 | $i$ | 6.13003 | | | |
| $P$ | 3.63 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.6+ | 0.9+ | 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 15 | A44 | 0.0 | 0.3+ | | |
| 2001 03 18 | 704 | 0.4+ | 0.1+ | 2002 09 14 | 644 | 0.1− | 0.6+ | 2006 10 15 | A44 | 0.1+ | 0.1− | | |
| 2001 03 18 | 704 | 0.6− | 1.3+ | 2002 09 14 | 644 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.7− | 1.2− | | |
| 2001 03 18 | 704 | (0.2+ | 1.7+) | 2002 09 15 | 608 | 1.2− | 0.0 | 2006 10 16 | 703 | 1.0+ | 0.8− | | |
| 2001 03 23 | 699 | 0.8+ | 0.9+ | 2002 09 15 | 608 | 1.0− | 0.5+ | 2006 10 16 | 703 | 0.8+ | 0.2+ | | |
| 2001 03 23 | 699 | 1.0+ | 0.4− | 2002 09 15 | 608 | 1.4− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.4− | | |
| 2001 03 23 | 699 | 0.7+ | 0.1− | 2002 09 28 | 608 | (1.3− | 1.8−) | 2006 10 18 | 691 | 0.1+ | 0.5+ | | |
| 2001 03 23 | 699 | (1.2+ | 1.8+) | 2002 09 28 | 608 | (1.0− | 1.7−) | 2006 10 18 | 691 | 0.2− | 0.1+ | | |
| 2001 03 29 | 699 | 0.8− | 0.4+ | 2002 09 28 | 608 | (1.5− | 1.7−) | 2006 10 18 | 691 | 0.0 | 0.3+ | | |
| 2001 03 29 | 699 | 0.5+ | 0.1+ | 2002 10 03 | 704 | 0.1+ | 0.9+ | 2006 10 22 | 691 | 0.3− | 0.5+ | | |
| 2001 03 29 | 699 | 1.3− | 0.2− | 2002 10 03 | 704 | 0.8+ | 1.1+ | 2006 10 22 | 691 | 0.3− | 0.4+ | | |
| 2001 03 29 | 699 | 0.5− | 0.4+ | 2002 10 03 | 704 | 0.7+ | 1.4+ | 2006 10 22 | 691 | 0.5− | 0.4+ | | |
| 2001 04 01 | 704 | 0.6− | 0.8+ | 2002 10 03 | 704 | (1.0+ | 1.8+) | 2006 11 01 | 703 | 0.7− | 0.3− | | |
| 2001 04 01 | 704 | 0.1+ | 0.8+ | 2005 06 02 | E12 | 0.2+ | 0.2+ | 2006 11 01 | 703 | 1.0+ | 0.4+ | | |
| 2001 04 01 | 704 | 0.0 | 1.2− | 2005 06 02 | E12 | 0.8+ | 0.6− | 2006 11 01 | 703 | (1.6− | 0.2+) | | |
| 2001 04 01 | 704 | 0.5+ | 0.1+ | 2005 06 02 | E12 | 0.0 | 0.1+ | 2006 11 01 | 703 | (1.1− | 1.8+) | | |
| 2001 04 01 | 704 | 0.1+ | 0.1+ | 2005 06 02 | E12 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.4+ | | |
| 2001 04 13 | 691 | 0.0 | 0.6+ | 2005 06 03 | 703 | (1.8− | 1.2+) | 2006 11 08 | 644 | 0.1+ | 0.4+ | | |
| 2001 04 13 | 691 | 0.2+ | 0.7+ | 2005 06 03 | 703 | 0.3+ | 1.4+ | 2006 11 08 | 644 | 0.0 | 0.3+ | | |
| 2001 04 13 | 691 | 0.0 | 0.6+ | 2005 06 03 | 703 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2001 04 21 | 691 | 0.1− | 0.4+ | 2005 06 03 | 703 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.0 | | |
| 2001 04 21 | 691 | 0.2+ | 0.4+ | 2005 06 11 | 703 | 0.7− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.0 | | |
| 2001 04 21 | 691 | 0.5+ | 0.8− | 2005 06 11 | 703 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.2− | | |
| 2002 09 07 | 704 | 0.2+ | 0.0 | 2005 06 11 | 703 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2002 09 07 | 704 | 0.0 | 0.5− | 2005 06 11 | 703 | (0.9− | 1.7+) | 2006 11 23 | G96 | 0.5+ | 0.1− | | |
| 2002 09 07 | 704 | 0.9− | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2+ | | |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2002 09 13 | 644 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.1+ | | | | | | |
| 2002 09 13 | 644 | 0.1+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.0 | | | | | | |

**(139169)**∗ **2001 FH$_{124}$ = 2002 RF$_{30}$**

Discovered 2001 Mar. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35055)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.22557 | | (2000.0) | | −0.22070004 | +0.97161910 |
| $n$ | 0.25708970 | $\omega$ | 319.54374 | | −0.86824704 | −0.23548229 |
| $a$ | 2.4495121 | $\Omega$ | 297.54989 | | −0.44434060 | −0.02245930 |
| $e$ | 0.1136284 | $i$ | 5.51016 | | | |
| $P$ | 3.83 | $H$ | 16.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.2− | 0.5+ | 2002 09 04 | 699 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.3+ | 0.3+ | | |
| 1993 03 19 | 691 | 0.1+ | 0.5+ | 2002 09 06 | 704 | 0.7− | 0.3− | 2006 08 29 | 703 | 0.5+ | 0.2+ | | |
| 1993 03 19 | 691 | 0.0 | 0.3+ | 2002 09 06 | 704 | 0.8− | 0.2− | 2006 08 29 | 703 | 0.1+ | 0.3− | | |
| 2001 03 20 | 608 | 0.1+ | 0.7− | 2002 09 06 | 704 | 0.3+ | 0.9+ | 2006 08 29 | 703 | 0.2− | 1.0+ | | |
| 2001 03 20 | 608 | 0.1− | 0.9− | 2002 09 06 | 704 | 0.5− | 0.3− | 2006 09 16 | 703 | 0.7− | 0.6− | | |
| 2001 03 20 | 608 | 0.1+ | 0.9− | 2002 09 06 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.1− | 0.1− | | |
| 2001 03 24 | 699 | 1.0+ | 0.5+ | 2002 09 13 | 644 | 0.1− | 0.6+ | 2006 09 16 | 703 | 0.8− | 0.4+ | | |
| 2001 03 24 | 699 | 0.5+ | 0.1− | 2002 09 13 | 644 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.1+ | 0.2− | | |
| 2001 03 24 | 699 | 0.9+ | 0.1+ | 2002 09 13 | 644 | 0.0 | 0.7+ | 2006 09 16 | 644 | 0.1− | 0.5+ | | |
| 2001 03 24 | 699 | 0.8+ | 0.3− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.1− | 0.5+ | | |
| 2001 03 26 | 704 | (0.4− | 1.7+) | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.0 | 0.2+ | | |
| 2001 03 26 | 704 | 0.6+ | 0.2+ | 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 09 19 | 683 | (2.0+ | 0.4+) | | |
| 2001 03 26 | 704 | 0.8+ | 1.0+ | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 09 19 | 683 | 0.9− | 1.5+ | | |
| 2001 03 26 | 704 | 0.3+ | 0.7+ | 2005 04 15 | 703 | 0.7− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.1− | | |
| 2001 03 26 | 704 | 0.8+ | 0.6+ | 2005 04 15 | 703 | 0.4− | 0.1− | 2006 09 19 | 683 | 0.1− | 0.8+ | | |
| 2001 03 29 | 699 | 0.1+ | 0.0 | 2005 04 15 | 703 | 1.4− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.0 | | |
| 2001 03 29 | 699 | 0.1− | 0.0 | 2005 04 15 | 703 | 0.5− | 1.0− | 2006 09 19 | 699 | 0.1+ | 0.1− | | |
| 2001 03 29 | 699 | 0.3+ | 0.6− | 2005 05 04 | 644 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.3− | 0.3− | | |
| 2001 03 29 | 699 | 1.1+ | 0.7− | 2005 05 04 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.6+ | | |
| 2001 03 29 | 608 | 0.5− | 1.1+ | 2005 05 04 | 644 | 0.4+ | 0.2− | 2006 09 27 | 703 | 0.1− | 0.1− | | |
| 2001 03 29 | 608 | 0.4− | 1.3+ | 2005 05 08 | E12 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.7+ | | |
| 2001 03 29 | 608 | 0.0 | 0.7+ | 2005 05 08 | E12 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.0 | | |
| 2002 08 12 | 704 | 0.4− | 0.6+ | 2005 05 08 | E12 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.3− | | |
| 2002 08 12 | 704 | 0.7+ | 0.8+ | 2005 05 08 | E12 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.3+ | 0.2+ | | |
| 2002 08 12 | 704 | 0.1− | 0.3− | 2005 05 09 | 703 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.9− | 1.1+ | | |
| 2002 08 12 | 704 | 1.3+ | 0.9+ | 2005 05 09 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | (2.0− | 0.5+) | | |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2005 05 09 | 703 | 0.4+ | 0.2+ | 2006 10 23 | 703 | 1.2+ | 0.3− | | |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2005 05 09 | 703 | 0.1− | 0.6+ | 2006 10 23 | 703 | 0.5− | 0.0 | | |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2005 05 10 | 699 | 0.5− | 0.9− | 2006 10 23 | 703 | 1.1− | 1.0− | | |
| 2002 09 04 | 699 | 0.4+ | 0.8− | 2005 05 10 | 699 | 0.6+ | 0.5+ | 2006 10 23 | 703 | 0.4+ | 0.1− | | |
| 2002 09 04 | 699 | 0.1− | 0.3+ | 2005 05 10 | 699 | 0.6+ | 0.6+ | | | | | | |
| 2002 09 04 | 699 | 0.2− | 0.4− | 2005 05 10 | 699 | 1.3− | 0.5+ | | | | | | |

**(139170)**∗ **2001 FU$_{126}$**

Discovered 2001 Mar. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.08006 | | (2000.0) | | −0.15345800 | +0.98315446 |
| $n$ | 0.27294581 | $\omega$ | 208.36682 | | −0.88148984 | −0.09079219 |
| $a$ | 2.3537035 | $\Omega$ | 52.97650 | | −0.44657172 | −0.15863192 |
| $e$ | 0.1471648 | $i$ | 7.14377 | | | |
| $P$ | 3.61 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | 0.5+ | 0.5− | 2002 10 02 | 704 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.0 | | |
| 2001 01 26 | 704 | 0.7+ | 0.7+ | 2002 10 02 | 704 | 0.7− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.1− | | |
| 2001 01 26 | 704 | 0.7+ | 0.8+ | 2002 10 02 | 704 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.2− | | |
| 2001 01 26 | 704 | (0.9+ | 2.0+) | 2002 10 02 | 704 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3− | 0.4− | | |
| 2001 03 04 | 704 | 0.9+ | 0.5+ | 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.7− | 0.7− | | |
| 2001 03 04 | 704 | 1.2+ | 0.5+ | 2002 10 03 | 704 | 0.8− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3− | | |
| 2001 03 04 | 704 | 0.3+ | 0.1+ | 2002 10 03 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2001 03 04 | 704 | 0.4+ | 0.1+ | 2002 10 03 | 704 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2001 03 04 | 704 | 0.2+ | 0.3− | 2002 10 03 | 704 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.1− | | |
| 2001 03 18 | 608 | 0.1+ | 0.4− | 2002 10 08 | 699 | 0.6− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2001 03 18 | 608 | 0.1+ | 0.5− | 2002 10 08 | 699 | 0.6− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2001 03 18 | 608 | 0.3+ | 0.5− | 2002 10 08 | 699 | 1.0− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 2001 03 19 | 699 | 1.3+ | 0.4+ | 2002 10 08 | 699 | 0.7− | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.1+ | | |
| 2001 03 19 | 699 | 1.0+ | 0.3+ | 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.3− | 0.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.9+ | 0.5− | 2002 10 11 | 704 | 0.9+ | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2001 03 19 | 699 | (1.6+ | 0.4+) | 2002 10 11 | 704 | 1.2+ | 0.2+ | 2006 11 17 | 704 | (1.3− | 2.5+) |
| 2001 03 26 | 704 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.5+ | 0.4+ | 2006 11 17 | 704 | (0.1− | 2.7+) |
| 2001 03 26 | 704 | 0.2+ | 0.2+ | 2002 10 11 | 704 | 0.4+ | 0.8+ | 2006 11 17 | 704 | 1.3+ | 0.5+ |
| 2001 03 26 | 704 | 0.7+ | 0.6+ | 2002 10 22 | 644 | 0.5+ | 0.3+ | 2006 11 17 | 704 | (1.6− | 0.9+) |
| 2001 03 26 | 704 | 0.7+ | 0.6+ | 2002 10 22 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.6− |
| 2001 03 26 | 704 | 0.3+ | 0.9+ | 2002 10 22 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.2− |
| 2001 03 30 | 704 | 0.2+ | 0.8+ | 2002 11 06 | 644 | (0.5− | 1.8+) | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2001 03 30 | 704 | 0.3− | 0.2+ | 2002 11 06 | 644 | (0.3+ | 1.8+) | 2006 11 17 | 703 | 0.4+ | 0.3− |
| 2001 03 30 | 704 | 0.0 | 0.2+ | 2002 11 06 | 644 | 0.1+ | 1.4+ | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2001 03 30 | 704 | 0.6+ | 0.1− | 2002 11 19 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 03 30 | 704 | 0.5+ | 0.1− | 2002 11 19 | 644 | 0.3− | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 04 16 | 645 | 0.2− | 0.1+ | 2002 11 19 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | 1.0+ | 1.1+ |
| 2001 04 16 | 645 | 0.3− | 0.1+ | 2003 12 18 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2001 04 16 | 704 | 0.0 | 0.4+ | 2003 12 18 | 704 | (0.9− | 1.6+) | 2006 11 18 | 704 | (0.6+ | 1.8+) |
| 2001 04 16 | 704 | 0.4+ | 0.1+ | 2003 12 18 | 704 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.8+ |
| 2001 04 16 | 704 | 0.2− | 0.1− | 2003 12 18 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | 1.4+ | 1.2+ |
| 2001 04 16 | 704 | 0.7+ | 0.7+ | 2003 12 18 | 704 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2001 04 16 | 704 | 0.6+ | 0.0 | 2003 12 27 | 704 | 0.3− | 0.7+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2001 04 23 | 699 | 0.7+ | 0.5+ | 2003 12 27 | 704 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.7+ | 0.6+ |
| 2001 04 23 | 699 | 0.6+ | 0.4+ | 2003 12 27 | 704 | 0.3+ | 0.6+ | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2001 04 23 | 699 | 0.5+ | 0.7+ | 2003 12 27 | 704 | (0.9+ | 1.7+) | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2001 04 23 | 699 | 0.3− | 0.4+ | 2003 12 27 | 704 | 0.9+ | 0.7+ | 2006 11 22 | 704 | 0.8+ | 0.4+ |
| 2001 05 10 | 608 | 0.7+ | 0.2+ | 2004 01 14 | 644 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2001 05 10 | 608 | 0.7+ | 0.3+ | 2004 01 14 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 1.2+ | 1.2+ |
| 2001 05 10 | 608 | 0.4+ | 0.1− | 2004 01 14 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | (0.3+ | 1.6+) |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2004 01 16 | 699 | 0.0 | 0.1+ | 2006 11 22 | 704 | (0.3+ | 1.6+) |
| 2002 09 05 | 704 | 0.4+ | 1.0+ | 2004 01 16 | 699 | 0.5− | 0.5− | 2006 11 26 | 704 | 0.6− | 0.6+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 01 16 | 699 | 0.6− | 0.7− | 2006 11 26 | 704 | 0.5+ | 0.7+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 01 16 | 699 | 0.7− | 0.2− | 2006 11 26 | 704 | 0.2− | 0.9+ |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2004 01 16 | 691 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2002 09 05 | 704 | 0.7− | 0.2+ | 2004 01 16 | 691 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2002 09 11 | 608 | 0.4− | 0.1− | 2004 01 16 | 691 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2002 09 11 | 608 | 0.4− | 0.0 | 2005 07 02 | 428 | 0.1− | 1.2+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2002 09 11 | 608 | 0.6− | 0.2+ | 2005 07 02 | 428 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.9− |
| 2002 09 15 | 608 | 0.5− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.2− |
| 2002 09 15 | 608 | 1.0− | 0.7− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.8− |
| 2002 09 15 | 608 | 0.8− | 0.8− | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.8− |

**(139171)∗ 2001 FY$_{126}$ = 1999 WB$_{21}$**

Discovered 2001 Mar. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 12082)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 189.65028 | | (2000.0) | | | |
| $n$ | 0.27489328 | $\omega$ | 137.48689 | | −0.96403703 | +0.26215794 |
| $a$ | 2.3425739 | $\Omega$ | 57.76060 | | −0.25560210 | −0.86957131 |
| $e$ | 0.1617239 | $i$ | 2.95852 | | −0.07280225 | −0.41847216 |
| $P$ | 3.59 | $H$ | 17.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 24 | 691 | 0.3+ | 0.3− | 2001 03 26 | 704 | 0.6+ | 1.3+ | 2006 09 23 | 691 | 0.3− | 0.2+ |
| 1992 11 24 | 691 | 0.2− | 0.3− | 2001 03 26 | 704 | 0.3− | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.4+ |
| 1996 12 08 | 691 | 0.1− | 0.2− | 2001 03 26 | 704 | 0.4+ | 0.5+ | 2006 09 23 | 691 | 0.3+ | 0.7+ |
| 1996 12 08 | 691 | 0.2− | 0.2− | 2001 03 29 | 699 | 0.5+ | 0.3− | 2006 09 27 | 691 | 0.4+ | 0.0 |
| 1996 12 08 | 691 | 0.3− | 0.4+ | 2001 03 29 | 699 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 1996 12 14 | 691 | 0.2+ | 0.5− | 2001 03 29 | 699 | 0.8+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 1996 12 14 | 691 | 0.1− | 0.3− | 2001 03 29 | 699 | 0.8+ | 0.5− | 2006 10 11 | 691 | 0.5− | 0.4+ |
| 1996 12 14 | 691 | 0.8+ | 1.2+ | 2001 03 30 | 704 | (0.2+ | 1.7+) | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 1999 11 16 | 691 | 0.1+ | 0.1− | 2001 03 30 | 704 | (0.2+ | 2.6+) | 2006 10 11 | 691 | 0.2− | 0.4+ |
| 1999 11 16 | 691 | 0.0 | 0.2− | 2001 03 30 | 704 | 1.0+ | 0.0 | 2006 10 17 | G96 | 0.5− | 0.9− |
| 1999 11 16 | 691 | 0.0 | 0.0 | 2001 03 30 | 704 | (1.9+ | 1.0+) | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 1999 11 28 | 691 | 0.2+ | 0.3− | 2001 03 30 | 704 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.2− | 0.1− |
| 1999 11 28 | 691 | 0.2− | 0.4− | 2001 04 15 | 608 | 0.7+ | 0.4− | 2006 10 17 | G96 | 0.0 | 0.1+ |
| 1999 11 28 | 691 | 0.2+ | 0.5− | 2001 04 15 | 608 | 0.1+ | 1.2− | 2006 10 19 | 691 | 0.3− | 0.6+ |
| 2001 03 15 | 691 | 0.2− | 0.6+ | 2001 04 15 | 608 | 0.5+ | 0.8− | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2001 03 15 | 691 | 0.3− | 0.5+ | 2001 04 24 | 608 | 0.7+ | 1.1+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2001 03 15 | 691 | 0.2− | 0.4+ | 2001 04 24 | 608 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2001 03 20 | 699 | 0.1− | 0.4+ | 2001 04 24 | 608 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 03 20 | 699 | 1.0+ | 0.2+ | 2001 05 02 | 561 | 0.0 | 1.1+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 03 20 | 699 | 0.3− | 0.4− | 2001 05 02 | 561 | (0.3+ | 1.8+) | 2006 11 20 | 691 | 0.5+ | 0.1+ |
| 2001 03 20 | 699 | 0.5− | 0.1+ | 2006 09 19 | 691 | 0.7− | 0.6+ | 2006 11 20 | 691 | 0.4+ | 0.4− |
| 2001 03 26 | 704 | (0.1+ | 1.9+) | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.6+ | 0.3− |
| 2001 03 26 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.4+ | | | | |

**(139172)∗ 2001 FQ$_{129}$**

Discovered 2001 Mar. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.89530 | | (2000.0) | | | |
| $n$ | 0.27052349 | $\omega$ | 160.28245 | | −0.66033675 | +0.74962852 |
| $a$ | 2.3677330 | $\Omega$ | 68.36411 | | −0.69531592 | −0.58773997 |
| $e$ | 0.1823559 | $i$ | 2.76620 | | −0.28370960 | −0.30433340 |
| $P$ | 3.64 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 699 | 1.0+ | 0.6+ | 2001 05 24 | 704 | 0.0 | 0.8+ | 2004 01 21 | 691 | 0.3+ | 0.0 |
| 2001 03 24 | 699 | 0.4+ | 0.5+ | 2001 05 24 | 704 | 0.8+ | 0.6+ | 2004 01 21 | 691 | 0.4+ | 0.0 |
| 2001 03 24 | 699 | 0.7+ | 0.4+ | 2001 05 24 | 704 | 0.8− | 0.3+ | 2004 01 21 | 691 | 0.1+ | 0.0 |
| 2001 03 24 | 699 | 0.4+ | 0.2− | 2001 05 27 | 704 | 0.6+ | 0.9+ | 2004 01 22 | 704 | 1.1− | 0.1+ |
| 2001 03 26 | 704 | (0.1− | 1.6+) | 2001 05 27 | 704 | 0.2+ | 1.4+ | 2004 01 22 | 704 | 0.3+ | 0.4− |
| 2001 03 26 | 704 | 0.0 | 0.3+ | 2001 05 27 | 704 | 0.6+ | 0.0 | 2004 01 22 | 704 | 0.5− | 0.4− |
| 2001 03 26 | 704 | 0.6+ | 0.8+ | 2001 06 16 | 704 | 0.5+ | 0.2− | 2005 07 17 | E12 | 0.1− | 0.2+ |
| 2001 03 26 | 704 | 0.1− | 0.6+ | 2001 06 16 | 704 | 0.0 | 0.8+ | 2005 07 17 | E12 | 0.5+ | 1.0− |
| 2001 04 01 | 704 | 1.2− | 0.9+ | 2001 06 16 | 704 | 0.8− | 0.5+ | 2005 07 17 | E12 | 0.4− | 0.2+ |
| 2001 04 01 | 704 | 0.2+ | 0.6+ | 2001 06 16 | 704 | 0.8+ | 1.3+ | 2005 07 17 | E12 | 0.2+ | 0.3+ |
| 2001 04 01 | 704 | 0.0 | 0.8− | 2001 06 16 | 704 | (0.4− | 1.7+) | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2001 04 01 | 704 | 0.1− | 0.4− | 2002 09 27 | 644 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2001 04 16 | 699 | 0.0 | 0.4+ | 2002 09 27 | 644 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2001 04 16 | 699 | 0.1+ | 0.6+ | 2002 09 27 | 644 | 0.7− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2001 04 16 | 699 | 0.1+ | 0.5+ | 2002 09 28 | 644 | 0.4− | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2001 04 16 | 699 | 0.0 | 0.5+ | 2002 09 28 | 644 | 0.9− | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.3+ |
| 2001 04 17 | 704 | 0.0 | 0.4+ | 2002 09 28 | 644 | 0.7− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2001 04 17 | 704 | 0.3+ | 0.7− | 2002 10 03 | 704 | (1.5− | 0.8+) | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2001 04 17 | 704 | 0.4+ | 0.5− | 2002 10 03 | 704 | (2.3− | 0.5+) | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2001 04 18 | 704 | 0.1− | 0.4− | 2002 10 03 | 704 | (0.6− | 1.8+) | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2001 04 18 | 704 | 0.8+ | 0.4+ | 2002 10 09 | 608 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 04 18 | 704 | 0.1+ | 0.6+ | 2002 10 09 | 608 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2001 04 18 | 704 | 0.3− | 0.8+ | 2002 10 09 | 608 | 0.6− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 2001 04 18 | 704 | 0.2+ | 0.8+ | 2002 10 11 | 704 | 1.0− | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.6− |
| 2001 04 23 | 704 | 0.1− | 0.6+ | 2002 10 11 | 704 | 0.8− | 1.2+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2001 04 23 | 704 | 0.3+ | 0.3+ | 2002 10 11 | 704 | 0.1− | 0.9+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 04 23 | 704 | 0.1+ | 0.6+ | 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2001 04 23 | 704 | 0.2− | 0.0 | 2002 11 08 | 645 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2001 04 23 | 704 | 0.0 | 0.5+ | 2003 12 18 | 704 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 04 24 | 704 | (1.6− | 0.6+) | 2003 12 18 | 704 | 0.8− | 0.5− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2001 04 24 | 704 | 0.0 | 0.5+ | 2003 12 18 | 704 | 0.1− | 1.2+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2001 04 24 | 704 | 0.0 | 0.6+ | 2003 12 18 | 704 | 1.0+ | 1.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2001 04 24 | 704 | 0.6+ | 0.1− | 2003 12 22 | 704 | 0.2+ | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2001 04 24 | 704 | (1.8+ | 0.1+) | 2003 12 22 | 704 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2001 04 30 | 704 | 0.4− | 0.3− | 2003 12 22 | 704 | (1.6− | 0.6−) | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 04 30 | 704 | 0.2− | 0.3+ | 2003 12 22 | 704 | 0.6− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2001 04 30 | 704 | 0.2+ | 0.1+ | 2003 12 22 | 704 | 0.8− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.4+ |
| 2001 04 30 | 704 | 0.5− | 0.9− | 2003 12 27 | 704 | 0.3− | 1.4− | 2006 11 11 | 703 | 0.2+ | 0.9− |
| 2001 04 30 | 704 | 0.2+ | 0.4− | 2003 12 27 | 704 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 2001 05 17 | 691 | 0.0 | 0.1− | 2003 12 27 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.6+ |
| 2001 05 17 | 691 | 0.0 | 0.1− | 2003 12 27 | 704 | 1.0− | 0.8+ | 2006 11 17 | 703 | (1.4− | 1.9−) |
| 2001 05 17 | 691 | 0.1+ | 0.0 | 2004 01 17 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.7+ | 0.7− |
| 2001 05 24 | 704 | 0.7+ | 0.1− | 2004 01 17 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2001 05 24 | 704 | 0.5− | 1.3+ | 2004 01 17 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (2.4− | 1.2−) |

**(139173)∗ 2001 FW$_{129}$ = 2005 KJ$_4$**

Discovered 2001 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74954)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | P | Q |
|---|---|---|---|---|
| $M$ | 176.00604 | (2000.0) | | |
| $n$ | 0.26883700 | $\omega$ | 346.06068 | −0.99968861 +0.00032112 |
| $a$ | 2.3776250 | $\Omega$ | 194.02932 | +0.00728284 −0.95262937 |
| $e$ | 0.1164973 | $i$ | 5.90782 | −0.02386737 −0.30413348 |
| $P$ | 3.67 | $H$ | 16.8 $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 11 | 691 | (0.2+ | 2.3−) | 2003 11 23 | 691 | 0.1+ | 0.0 | 2005 05 19 | G96 | 0.4− | 0.2− |
| 1994 06 11 | 691 | (1.3+ | 8.5−) | 2003 11 23 | 691 | 0.1− | 0.1+ | 2005 05 19 | G96 | 0.4− | 0.0 |
| 1994 06 11 | 691 | 0.2− | 1.2− | 2003 11 23 | 691 | 0.1− | 0.0 | 2005 05 19 | G96 | 0.1− | 0.3− |
| 2001 03 18 | 704 | 1.5+ | 0.3+ | 2003 12 01 | 704 | 0.6+ | 1.2+ | 2005 05 19 | G96 | 0.1− | 0.0 |
| 2001 03 18 | 704 | 0.7+ | 0.5+ | 2003 12 01 | 704 | (0.6+ | 1.9+) | 2005 06 03 | 691 | 0.2− | 0.7+ |
| 2001 03 18 | 699 | 0.6+ | 0.2+ | 2003 12 01 | 704 | 0.2− | 1.2+ | 2005 06 03 | 691 | 0.2− | 0.4+ |
| 2001 03 18 | 704 | (1.7+ | 0.8+) | 2003 12 01 | 704 | 0.1− | 0.8+ | 2005 06 03 | 691 | 1.1+ | 0.4− |
| 2001 03 18 | 704 | (1.7+ | 0.5+) | 2003 12 16 | 691 | 0.2+ | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.7+ |
| 2001 03 18 | 699 | 0.1− | 0.3+ | 2003 12 16 | 691 | 0.3+ | 0.0 | 2005 06 08 | 691 | 0.1+ | 0.2+ |
| 2001 03 18 | 699 | 0.5+ | 1.1+ | 2003 12 16 | 691 | 0.5− | 0.5+ | 2005 06 08 | 691 | 0.1+ | 0.2+ |
| 2001 03 18 | 699 | 1.5+ | 0.4+ | 2005 03 13 | G96 | 0.3− | 0.1− | 2006 09 20 | 691 | 0.2+ | 0.7+ |
| 2001 03 26 | 608 | 0.2− | 0.5+ | 2005 03 13 | G96 | 0.1+ | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.2+ |
| 2001 03 26 | 608 | 0.2− | 0.2+ | 2005 03 13 | G96 | 0.3− | 0.0 | 2006 09 20 | 691 | 0.0 | 0.5+ |
| 2001 03 26 | 608 | 0.3− | 1.1+ | 2005 03 13 | G96 | 0.2+ | 0.1− | 2006 09 30 | 291 | 0.2− | 0.3+ |
| 2001 03 29 | 704 | 1.1− | 1.7+ | 2005 05 08 | 691 | 0.0 | 0.5+ | 2006 09 30 | 291 | 0.4− | 0.3+ |
| 2001 03 29 | 704 | (0.7+ | 2.0+) | 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 291 | 0.2− | 0.6+ |
| 2001 03 29 | 704 | (1.5− | 2.1+) | 2005 05 08 | 691 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.8− | 0.1− |
| 2001 03 29 | 704 | 1.3− | 0.4+ | 2005 05 17 | G96 | 0.7− | 0.1− | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2001 04 01 | 704 | 0.3+ | 0.7+ | 2005 05 17 | G96 | 0.3− | 0.2+ | 2006 10 19 | G96 | 1.1− | 0.3+ |
| 2001 04 01 | 704 | (0.0 | 1.8+) | 2005 05 17 | G96 | 0.6− | 0.5− | 2006 10 19 | G96 | 0.4− | 0.1+ |
| 2001 04 01 | 704 | (1.5+ | 1.8+) | 2005 05 17 | G96 | 0.4− | 0.1+ | | | | |

**(139174)∗ 2001 FS$_{131}$ = 1999 RE$_{227}$**

Discovered 2001 Mar. 20 by NEAT at Haleakala.

Id. T. B. Spahr (*MPO* 12085)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | P | Q |
|---|---|---|---|---|
| $M$ | 270.43892 | (2000.0) | | |
| $n$ | 0.27322361 | $\omega$ | 166.56717 | +0.18380932 −0.98035390 |
| $a$ | 2.3521078 | $\Omega$ | 272.80636 | +0.89510046 +0.19701925 |
| $e$ | 0.1961088 | $i$ | 4.10834 | +0.40621338 +0.00946834 |
| $P$ | 3.61 | $H$ | 16.1 $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 703 | 1.1+ | 0.3+ | 2003 11 20 | 704 | 0.5+ | 0.0 | 2003 12 27 | 704 | 0.4+ | 0.1− |
| 1999 09 05 | 703 | 0.1− | 0.5+ | 2003 11 20 | 704 | 0.4+ | 0.2+ | 2003 12 27 | 704 | 0.6− | 0.3− |
| 1999 09 05 | 703 | 0.4+ | 1.4+ | 2003 11 20 | 704 | 0.6+ | 0.2+ | 2004 01 13 | 699 | 0.3− | 0.2+ |
| 1999 09 05 | 703 | 0.7− | 0.7+ | 2003 11 20 | 704 | 0.1+ | 0.0 | 2004 01 13 | 699 | 1.3− | 0.4− |
| 1999 09 09 | 704 | 0.2− | 0.3+ | 2003 11 20 | 704 | 0.5+ | 0.1+ | 2004 01 13 | 699 | 0.7− | 0.2− |
| 1999 09 09 | 704 | 0.9− | 1.3− | 2003 11 21 | 644 | 0.1+ | 0.0 | 2004 01 13 | 699 | 0.0 | 0.3+ |
| 1999 09 09 | 704 | 0.1− | 1.0− | 2003 11 21 | 644 | 0.2+ | 0.1+ | 2004 01 17 | 644 | 0.0 | 0.3+ |
| 2001 03 20 | 608 | 0.4− | 0.2− | 2003 11 21 | 644 | 0.3+ | 0.1+ | 2004 01 17 | 644 | 0.0 | 0.5+ |
| 2001 03 20 | 608 | 0.7− | 0.5− | 2003 11 24 | 699 | 0.3+ | 0.3− | 2004 01 17 | 644 | 0.2+ | 0.5+ |
| 2001 03 20 | 608 | 0.8− | 0.6− | 2003 11 24 | 699 | 0.2+ | 0.0 | 2004 01 21 | 704 | (2.2− | 0.9−) |
| 2001 03 26 | 704 | 0.0 | 0.3+ | 2003 11 24 | 699 | 0.1+ | 0.3+ | 2004 01 21 | 704 | (2.6− | 0.7−) |
| 2001 03 26 | 704 | 0.2− | 0.2+ | 2003 11 24 | 699 | 0.2+ | 0.3+ | 2004 01 21 | 704 | 0.0 | 0.2− |
| 2001 03 26 | 704 | 1.2+ | 1.5+ | 2003 11 24 | 704 | 0.1− | 0.2+ | 2004 01 21 | 704 | (2.1− | 1.7+) |
| 2001 03 26 | 704 | 0.1+ | 0.5+ | 2003 11 24 | 704 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.2+ | 0.3− |
| 2001 03 26 | 704 | (0.2− | 2.7+) | 2003 11 24 | 704 | 0.1− | 0.3+ | 2004 01 24 | 704 | 0.2+ | 0.2− |
| 2001 03 26 | 704 | 0.8+ | 0.3+ | 2003 11 24 | 695 | 0.4+ | 0.3+ | 2004 01 24 | 704 | 0.4− | 0.1+ |
| 2001 03 26 | 704 | 0.1− | 0.6+ | 2003 11 24 | 704 | 0.2+ | 0.1+ | 2004 01 24 | 704 | 0.5+ | 0.1+ |
| 2001 03 26 | 704 | 0.9+ | 0.4+ | 2003 11 24 | 704 | 0.5− | 0.0 | 2004 02 10 | 644 | 0.1+ | 0.4+ |
| 2001 03 26 | 704 | 0.7+ | 1.0+ | 2003 11 24 | 695 | 0.5− | 0.3− | 2004 02 10 | 644 | 0.4+ | 0.3+ |
| 2001 03 29 | 608 | 0.1+ | 0.0 | 2003 12 15 | 703 | 0.7− | 1.6− | 2004 02 10 | 644 | 0.0 | 0.6+ |
| 2001 03 29 | 608 | 0.3− | 0.1− | 2003 12 15 | 703 | 0.5− | 1.6− | 2006 07 20 | A50 | 1.3+ | 0.3+ |
| 2001 03 29 | 608 | 0.4+ | 0.1− | 2003 12 15 | 703 | 1.0− | 1.2− | 2006 08 14 | 644 | 0.2− | 0.2+ |
| 2003 09 27 | 704 | 0.6+ | 0.4− | 2003 12 15 | 703 | 0.6− | 0.8− | 2006 08 14 | 644 | 0.2+ | 0.1+ |
| 2003 09 27 | 704 | 0.4+ | 0.7− | 2003 12 17 | 644 | 0.1+ | 0.2− | 2006 08 14 | 644 | 0.1− | 0.3+ |
| 2003 09 27 | 704 | 0.4− | 0.2− | 2003 12 17 | 644 | 0.5+ | 0.3− | 2006 08 14 | E12 | 0.6+ | 0.3− |
| 2003 09 27 | 704 | 0.5+ | 0.4+ | 2003 12 17 | 644 | 0.3+ | 0.1− | 2006 08 14 | E12 | 0.1− | 0.0 |
| 2003 09 27 | 704 | 0.5+ | 0.2+ | 2003 12 19 | 704 | 0.1+ | 1.1+ | 2006 08 14 | E12 | 1.0− | 0.1+ |
| 2003 10 25 | 704 | 0.6+ | 0.1+ | 2003 12 19 | 704 | 0.4− | 0.5+ | 2006 08 14 | E12 | (2.6− | 0.5−) |
| 2003 10 25 | 704 | 1.1+ | 0.5− | 2003 12 19 | 704 | 0.5− | 0.2− | 2006 08 14 | E12 | 0.0 | 0.6+ |
| 2003 10 25 | 704 | 0.6− | 0.6+ | 2003 12 19 | 704 | 0.6− | 0.1+ | 2006 08 15 | 644 | 0.4− | 0.2− |
| 2003 10 25 | 704 | 0.3− | 0.8− | 2003 12 19 | 704 | 0.7− | 0.5+ | 2006 08 15 | 644 | 0.3− | 0.1+ |
| 2003 10 25 | 704 | 1.0− | 0.2− | 2003 12 22 | 704 | 0.1+ | 0.7+ | 2006 08 15 | 644 | 0.3− | 0.3+ |
| 2003 11 02 | 704 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.3− | 0.3+ | 2006 08 15 | 644 | 0.2− | 0.3+ |
| 2003 11 02 | 704 | 0.3+ | 0.2− | 2003 12 22 | 704 | 0.7+ | 0.4− | 2006 08 15 | 644 | 0.3− | 0.3+ |
| 2003 11 02 | 704 | 0.5+ | 1.5+ | 2003 12 22 | 704 | 0.3− | 0.5+ | 2006 08 15 | 644 | 0.2− | 0.1+ |
| 2003 11 02 | 704 | 0.1− | 0.0 | 2003 12 22 | 704 | 0.5− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2003 11 14 | 644 | 0.3+ | 0.3+ | 2003 12 27 | 704 | 0.1+ | 1.0+ | 2006 08 18 | 644 | 0.2+ | 0.2+ |
| 2003 11 14 | 644 | 0.3+ | 0.3+ | 2003 12 27 | 704 | 0.6− | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.3+ |
| 2003 11 14 | 644 | 0.3+ | 0.4+ | 2003 12 27 | 704 | 0.1+ | 0.7− | | | | |

**(139175)∗ 2001 FN$_{132}$ = 2003 YZ$_{85}$**

Discovered 2001 Mar. 20 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 68914)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | P | Q |
|---|---|---|---|---|
| $M$ | 269.43437 | (2000.0) | | |
| $n$ | 0.27792573 | $\omega$ | 333.68945 | −0.17448110 −0.98070419 |
| $a$ | 2.3255029 | $\Omega$ | 126.23435 | +0.92158827 −0.19418440 |
| $e$ | 0.0833822 | $i$ | 6.27622 | +0.34674400 +0.02262108 |
| $P$ | 3.55 | $H$ | 16.5 $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 608 | (0.5− | 2.9+) | 2004 02 27 | 695 | 0.4− | 0.7+ | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2001 03 02 | 608 | (1.0− | 3.2+) | 2004 02 27 | 695 | 0.3− | 0.8+ | 2006 08 29 | 691 | 0.0 | 0.5+ |
| 2001 03 02 | 608 | (0.7− | 2.4+) | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.6− | 0.5+ |
| 2001 03 20 | 608 | 0.0 | 0.4− | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.2− |
| 2001 03 20 | 608 | 0.0 | 0.7− | 2005 04 30 | 691 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.1− |
| 2001 03 20 | 608 | 0.4+ | 0.1+ | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | (1.6− | 1.2+) |
| 2001 03 26 | 704 | (0.0 | 1.8+) | 2005 05 04 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.7+ |
| 2001 03 26 | 704 | 0.3− | 0.6+ | 2005 05 04 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 03 26 | 704 | 0.4− | 1.1+ | 2005 05 08 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2001 03 26 | 704 | 0.4+ | 0.9+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2003 12 19 | 704 | 0.1− | 0.9+ | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2003 12 19 | 704 | 0.4+ | 0.5+ | 2005 05 17 | G96 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 12 19 | 704 | 0.5+ | 0.7+ | 2005 05 17 | G96 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 0.4+ | 0.7+ | 2005 05 17 | G96 | 0.5− | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | (1.1− | 2.2+) | 2005 05 17 | G96 | 1.2− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.4− | 1.0+ | 2005 06 14 | 691 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.5− |
| 2003 12 22 | 704 | 0.5− | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.1− | | | | |
| 2003 12 22 | 704 | 0.0 | 0.5+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | | | | |

**(139176)∗ 2001 FG$_{133}$ = 2002 TD$_{13}$**

Discovered 2001 Mar. 20 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 37584)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | P | Q |
|---|---|---|---|---|
| $M$ | 110.96979 | (2000.0) | | |
| $n$ | 0.26032209 | $\omega$ | 90.86321 | −0.19733605 +0.98003777 |
| $a$ | 2.4291931 | $\Omega$ | 167.67529 | −0.93846591 −0.18172043 |
| $e$ | 0.1058867 | $i$ | 6.50321 | −0.28344352 −0.08064519 |
| $P$ | 3.79 | $H$ | 16.1 $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 1.0+ | 0.3+ | 2002 10 06 | 608 | 1.0+ | 1.1+ | 2005 06 23 | 644 | 0.2− | 0.3− |
| 2001 03 20 | 699 | 0.1− | 0.6+ | 2002 10 06 | 608 | 0.4+ | 0.4− | 2005 06 23 | 644 | 0.2− | 0.1− |
| 2001 03 20 | 699 | 0.1+ | 0.1+ | 2002 10 06 | 608 | 0.5+ | 0.1− | 2006 09 30 | 703 | (0.8− | 2.2−) |
| 2001 03 20 | 699 | 0.0 | 1.0+ | 2002 10 07 | 704 | 1.0+ | 0.1+ | 2006 09 30 | 703 | 0.9+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 608 | 0.6− | 0.3− | 2002 10 07 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.5− | 1.0− |
| 2001 03 20 | 608 | 0.4− | 0.6− | 2002 10 07 | 704 | (1.0+ | 1.6+) | 2006 09 30 | 703 | 0.8− | 0.3− |
| 2001 03 20 | 608 | 0.8− | 0.3− | 2002 10 08 | 699 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.3+ |
| 2001 03 26 | 704 | 0.3+ | 0.3+ | 2002 10 08 | 699 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.2− | 1.4+ |
| 2001 03 26 | 704 | 0.4+ | 0.3− | 2002 10 08 | 699 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2001 03 26 | 704 | 0.0 | 0.3+ | 2002 10 08 | 699 | (1.7− | 0.5+) | 2006 09 30 | 703 | 0.4+ | 1.0+ |
| 2001 03 26 | 704 | 0.3+ | 1.2+ | 2005 05 03 | 704 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 03 26 | 704 | 0.5+ | 0.4+ | 2005 05 03 | 704 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2001 04 17 | 699 | (2.1+ | 1.4+) | 2005 05 03 | 704 | 0.1− | 1.0− | 2006 10 02 | G96 | 0.4− | 0.3− |
| 2001 04 17 | 699 | 0.0 | 0.7+ | 2005 05 09 | 691 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 04 17 | 699 | 0.1+ | 0.6+ | 2005 05 09 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.5+ |
| 2001 04 17 | 699 | 0.4+ | 0.2− | 2005 05 09 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2002 09 07 | 704 | 0.2+ | 0.5− | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2002 09 07 | 704 | 0.9+ | 1.1+ | 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2002 09 07 | 704 | 0.1− | 0.7+ | 2005 05 13 | 691 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.6+ |
| 2002 09 07 | 704 | 0.4+ | 1.0+ | 2005 05 16 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 09 16 | 608 | 0.8− | 0.6− | 2005 05 16 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.5− |
| 2002 09 16 | 608 | 1.0− | 0.4− | 2005 05 16 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.5− | 0.6+ |
| 2002 09 16 | 608 | 0.8− | 0.6− | 2005 05 20 | G96 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2002 10 01 | 699 | 0.2− | 0.2− | 2005 05 20 | G96 | (1.7− | 0.6+) | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2002 10 01 | 699 | 0.3− | 0.9+ | 2005 05 20 | G96 | 0.7+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 10 01 | 699 | 0.7+ | 0.1+ | 2005 05 20 | G96 | 0.7− | 0.0 | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2002 10 01 | 699 | 0.2+ | 0.2− | 2005 06 02 | 703 | 1.4− | 0.0 | 2006 10 21 | 703 | 0.7+ | 0.7− |
| 2002 10 03 | 704 | 0.7− | 0.4+ | 2005 06 02 | 703 | 0.8− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2005 06 02 | 703 | 0.3− | 0.6− | 2006 10 21 | 703 | 0.6+ | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.4− | 2005 06 02 | 703 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2005 06 05 | 691 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.5− |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2005 06 05 | 691 | (0.5− | 1.8−) | 2006 11 16 | 703 | 0.9− | 0.0 |
| 2002 10 03 | 704 | 1.2− | 0.5− | 2005 06 05 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.1− | 1.0− |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2005 06 17 | 691 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2005 06 17 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.2+ | 0.7+ | 2005 06 17 | 691 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.3+ | 0.1− | 2005 06 23 | 644 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1+ |

**(139177)∗ 2001 FQ$_{137}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 140.46286 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26262706 | $\omega$ | 122.69557 | | | −0.51639448 | | +0.85455541 | |
| $a$ | 2.4149589 | $\Omega$ | 116.11727 | | | −0.80490258 | | −0.46225760 | |
| $e$ | 0.1438319 | $i$ | 3.53891 | | | −0.29235008 | | −0.23675506 | |
| $P$ | 3.75 | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.9+ | 0.1− | 2001 05 18 | 699 | 0.1+ | 0.1− | 2003 12 30 | 704 | 0.3− | 0.8+ |
| 1993 01 29 | 691 | 0.5+ | 0.0 | 2001 05 18 | 704 | 0.1− | 0.7+ | 2003 12 30 | 704 | 0.8− | 0.4− |
| 1993 01 29 | 691 | 0.6+ | 0.1+ | 2001 05 18 | 704 | 0.8+ | 0.8+ | 2003 12 30 | 704 | 1.4+ | 0.6+ |
| 1993 01 29 | 691 | 0.8− | 0.6− | 2001 05 18 | 699 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.4− |
| 1993 01 29 | 691 | 0.7− | 0.9− | 2001 05 18 | 704 | (0.3+ | 1.7+) | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 1993 01 29 | 691 | 1.0− | 0.9− | 2001 05 18 | 699 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 1993 01 29 | 691 | 0.4+ | 0.1− | 2002 10 02 | 704 | (1.5+ | 2.4−) | 2006 09 27 | G96 | 0.2+ | 0.7− |
| 1993 01 29 | 691 | 0.5− | 0.3− | 2002 10 02 | 704 | (1.1+ | 1.7−) | 2006 10 03 | G96 | 0.2− | 0.0 |
| 1993 01 29 | 691 | 0.6+ | 0.1− | 2002 10 02 | 704 | (1.2+ | 3.0−) | 2006 10 03 | G96 | 0.2− | 0.0 |
| 1997 02 06 | 691 | 0.4− | 0.1+ | 2002 10 02 | 704 | (1.2+ | 1.8−) | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 1997 02 06 | 691 | 0.9− | 0.0 | 2002 10 03 | 704 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.3− | 0.2− |
| 1997 02 06 | 691 | 0.3− | 0.0 | 2002 10 03 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2001 03 21 | 699 | 0.4− | 0.6+ | 2002 10 03 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 03 21 | 699 | 0.8+ | 0.5+ | 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2001 03 21 | 699 | 0.3+ | 0.1− | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 03 21 | 699 | 0.2+ | 0.6− | 2002 10 28 | 644 | 1.4− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2001 03 26 | 704 | 0.3+ | 0.8+ | 2002 10 28 | 644 | 1.0− | 1.0+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 03 26 | 704 | 1.0+ | 1.2+ | 2002 10 28 | 644 | 0.7− | 0.9+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 03 26 | 704 | 0.7+ | 0.6+ | 2003 12 17 | 291 | 0.3− | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2001 03 26 | 704 | 0.1− | 1.1+ | 2003 12 17 | 291 | 0.1+ | 0.8+ | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2001 03 26 | 704 | 1.1+ | 0.4+ | 2003 12 17 | 291 | 0.1+ | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 05 18 | 699 | 0.1+ | 0.5− | 2003 12 29 | 691 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2001 05 18 | 704 | 0.2− | 0.7+ | 2003 12 29 | 691 | 0.3+ | 0.2+ | | | | |
| 2001 05 18 | 704 | 0.6+ | 0.1+ | 2003 12 29 | 691 | 0.2+ | 0.4+ | | | | |

**(139178)∗ 2001 FR$_{137}$ = 2002 RH$_{162}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37586)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 178.99772 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26646387 | $\omega$ | 29.23818 | | | −0.96650537 | | +0.25620301 | |
| $a$ | 2.3917209 | $\Omega$ | 165.58306 | | | −0.24566631 | | −0.90655501 | |
| $e$ | 0.1337701 | $i$ | 3.47228 | | | −0.07426597 | | −0.33543707 | |
| $P$ | 3.70 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 01 | 910 | 0.0 | 0.4− | 2001 04 24 | 704 | 0.7− | 0.8+ | 2003 12 22 | 704 | 0.2− | 1.3+ |
| 1998 08 02 | 910 | 0.2− | 0.5− | 2001 04 24 | 704 | 1.0− | 0.6+ | 2003 12 22 | 704 | 0.2+ | 0.7+ |
| 1998 08 02 | 910 | 0.2− | 0.6− | 2001 04 24 | 704 | 1.1− | 0.6+ | 2003 12 22 | 704 | 0.3+ | 1.3+ |
| 2001 03 21 | 699 | 0.9− | 1.0+ | 2001 04 24 | 704 | 1.3− | 0.7+ | 2006 07 21 | G96 | 0.0 | 0.4− |
| 2001 03 21 | 699 | (3.5− | 0.5−) | 2001 05 18 | 699 | 1.0+ | 0.9+ | 2006 07 21 | G96 | 0.1− | 0.1− |
| 2001 03 21 | 699 | 1.1− | 0.1− | 2001 05 18 | 704 | 0.6− | 0.6− | 2006 07 21 | G96 | 0.0 | 0.0 |
| 2001 03 21 | 699 | 0.5− | 0.3+ | 2001 05 18 | 704 | 0.2+ | 0.6− | 2006 07 21 | G96 | 0.4+ | 0.6− |
| 2001 03 23 | 699 | 0.3+ | 0.6+ | 2001 05 18 | 699 | 1.3+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.2+ |
| 2001 03 23 | 699 | 0.5+ | 0.1+ | 2001 05 18 | 704 | 1.3+ | 1.0+ | 2006 09 27 | H55 | 0.2− | 1.0+ |
| 2001 03 23 | 699 | 0.4+ | 0.6+ | 2001 05 18 | 704 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2001 03 23 | 699 | 0.9+ | 0.6+ | 2001 05 18 | 699 | 0.3+ | 0.1+ | 2006 09 27 | H55 | 0.5− | 0.8+ |
| 2001 04 01 | 704 | 0.1+ | 0.0 | 2001 05 18 | 704 | 1.0− | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2001 04 01 | 704 | 0.0 | 0.1+ | 2001 05 18 | 699 | 0.8+ | 0.4− | 2006 09 27 | H55 | 0.3− | 0.7+ |
| 2001 04 01 | 704 | 0.4+ | 0.4+ | 2002 09 12 | 644 | 0.4− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 2001 04 01 | 704 | 0.3− | 0.9+ | 2002 09 12 | 644 | 0.0 | 0.3+ | 2006 10 15 | 703 | (2.3− | 1.2−) |
| 2001 04 01 | 704 | 0.8+ | 0.6+ | 2002 09 12 | 644 | 0.3− | 0.0 | 2006 10 15 | 703 | 0.3− | 1.1− |
| 2001 04 16 | 704 | 0.5+ | 0.6+ | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 10 15 | 703 | 0.4− | 1.1+ |
| 2001 04 16 | 699 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 10 15 | 703 | 0.1+ | 0.3− |
| 2001 04 16 | 704 | 0.2+ | 0.7− | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2001 04 16 | 704 | 1.0+ | 0.0 | 2002 09 15 | 644 | 0.5− | 0.8+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2001 04 16 | 704 | 0.3− | 0.3+ | 2002 09 15 | 644 | 0.1− | 0.9+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2001 04 16 | 699 | 0.2+ | 0.3− | 2002 09 15 | 644 | 0.4− | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2001 04 16 | 704 | 0.5+ | 0.1− | 2002 10 09 | 291 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2001 04 16 | 699 | 0.1+ | 0.0 | 2002 10 09 | 291 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2001 04 16 | 699 | 0.1− | 0.2− | 2002 10 09 | 291 | 0.7+ | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2001 04 24 | 704 | 1.1+ | 0.0 | 2003 12 22 | 704 | 0.0 | 1.1+ | 2006 11 16 | G96 | 0.1+ | 0.1− |

**(139179)∗ 2001 FT$_{137}$ = 1995 UU$_{28}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 17589)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 190.22892 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26882185 | $\omega$ | 103.85024 | | | −0.99531706 | | +0.08108991 | |
| $a$ | 2.3777143 | $\Omega$ | 80.82029 | | | −0.09549301 | | −0.90931054 | |
| $e$ | 0.1486650 | $i$ | 3.05520 | | | +0.01500127 | | −0.40814061 | |
| $P$ | 3.67 | $H$ | 16.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.0 | 0.1− | 2001 03 26 | 704 | 0.3+ | 0.4− | 2004 01 13 | 691 | 0.0 | 0.1+ |
| 1995 10 20 | 691 | 0.1− | 0.1− | 2001 03 26 | 704 | (0.1+ | 1.6+) | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 1995 10 20 | 691 | 0.2− | 0.1+ | 2001 03 26 | 704 | 1.3+ | 1.6+ | 2006 09 28 | 691 | 0.3− | 0.4+ |
| 1995 10 25 | 691 | 0.2− | 0.0 | 2001 04 24 | 704 | 0.5− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 1995 10 25 | 691 | 0.1− | 0.4+ | 2001 04 24 | 704 | 0.5− | 0.7+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1995 10 25 | 691 | 0.5+ | 0.1+ | 2001 04 24 | 704 | 0.9+ | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 2001 03 21 | 699 | 1.0− | 0.9+ | 2003 12 18 | 704 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2001 03 21 | 699 | (0.2+ | 1.7+) | 2003 12 18 | 704 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2001 03 21 | 699 | 1.2+ | 1.4+ | 2003 12 18 | 704 | 0.7− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2001 03 21 | 699 | 1.0+ | 0.9+ | 2004 01 13 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2001 03 26 | 704 | 0.2+ | 1.0+ | 2004 01 13 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− |

**(139180)∗ 2001 FU$_{137}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.31341 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.24242412 | $\omega$ | 238.18219 | | −0.16519473 | +0.96614757 | |
| $a$ | 2.5473317 | $\Omega$ | 24.76173 | | −0.66637013 | +0.03878857 | |
| $e$ | 0.2379995 | $i$ | 28.23721 | | −0.72709115 | −0.25505748 | |
| $P$ | 4.07 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 691 | 0.4− | 0.0 | 2005 04 04 | 703 | 0.3+ | 0.1− | 2005 05 06 | G96 | 0.1− | 0.3− |
| 1998 09 25 | 691 | 0.2− | 0.4+ | 2005 04 04 | 703 | 0.3− | 0.3+ | 2005 05 06 | G96 | 0.1− | 0.3− |
| 1998 09 25 | 691 | 0.1− | 0.1+ | 2005 04 08 | 704 | (1.7+ | 1.2+) | 2005 05 08 | G96 | 0.0 | 0.1− |
| 2001 03 21 | 699 | 0.1− | 0.7+ | 2005 04 08 | 704 | (1.5+ | 1.7+) | 2005 05 08 | G96 | 0.1− | 0.2− |
| 2001 03 21 | 699 | 0.9− | 0.5− | 2005 04 08 | 704 | (1.0+ | 2.1+) | 2005 05 08 | G96 | 0.1+ | 0.2− |
| 2001 03 21 | 699 | 0.2+ | 0.1− | 2005 04 09 | 683 | 0.0 | 0.8+ | 2005 05 08 | G96 | 0.3− | 0.1− |
| 2001 03 21 | 699 | 0.0 | 0.1+ | 2005 04 09 | 683 | 1.2+ | 0.2+ | 2005 05 10 | 691 | 0.1+ | 0.1− |
| 2001 03 26 | 704 | 0.5− | 0.5+ | 2005 04 09 | 683 | 0.6− | 0.4+ | 2005 05 10 | 691 | 0.1+ | 0.1− |
| 2001 03 26 | 704 | 0.3+ | 0.1+ | 2005 04 09 | 699 | 0.2+ | 0.3+ | 2005 05 10 | 691 | 0.6+ | 0.8+ |
| 2001 03 26 | 704 | 0.2+ | 1.2− | 2005 04 09 | 699 | 0.5+ | 0.4+ | 2006 09 14 | 291 | 0.0 | 0.4+ |
| 2001 04 16 | 699 | 0.2+ | 0.2− | 2005 04 09 | 699 | 0.8− | 1.0+ | 2006 09 14 | 291 | 0.4+ | 0.1− |
| 2001 04 16 | 699 | 0.1− | 0.3+ | 2005 04 09 | 699 | 0.1+ | 0.2+ | 2006 09 14 | 291 | 0.1+ | 0.3+ |
| 2001 04 16 | 699 | 0.7− | 0.2+ | 2005 04 10 | 683 | 1.1+ | 0.8− | 2006 10 04 | G96 | 0.4− | 0.1+ |
| 2001 04 16 | 699 | 0.7− | 0.2− | 2005 04 10 | 683 | 0.2− | 0.8− | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2001 04 16 | 608 | 1.3+ | 1.0+ | 2005 04 10 | 683 | 0.1− | 0.3− | 2006 10 04 | G96 | 0.5− | 0.2+ |
| 2001 04 16 | 608 | 0.8+ | 0.1− | 2005 04 11 | 683 | 0.5+ | 1.1+ | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2001 04 16 | 608 | 1.5+ | 0.9+ | 2005 04 11 | 683 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2001 04 23 | 704 | 0.6+ | 0.1− | 2005 04 11 | 683 | 0.7− | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2001 04 23 | 704 | 0.9− | 0.0 | 2005 04 13 | 704 | 0.9+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 04 23 | 704 | 0.1+ | 0.2+ | 2005 04 13 | 704 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.2+ |
| 2001 04 23 | 704 | 0.4+ | 0.1+ | 2005 04 13 | 704 | 0.6+ | 1.1+ | 2006 10 22 | G96 | 0.4− | 0.2+ |
| 2001 04 23 | 704 | 0.1+ | 0.5− | 2005 04 13 | 704 | 0.6+ | 1.1+ | 2006 10 22 | G96 | 0.6− | 0.2+ |
| 2005 03 10 | 703 | 0.4+ | 0.7+ | 2005 04 13 | 704 | 0.8+ | 1.2+ | 2006 10 22 | G96 | 0.5− | 0.0 |
| 2005 03 10 | 703 | 0.5+ | 0.7− | 2005 04 18 | 703 | 0.6− | 0.5− | 2006 10 31 | G96 | 0.6− | 0.2+ |
| 2005 03 10 | 703 | 0.4− | 0.4+ | 2005 04 18 | 703 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.5− | 0.7+ |
| 2005 03 10 | 703 | 0.1+ | 0.4− | 2005 04 18 | 703 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.5− | 0.2+ |
| 2005 03 18 | 703 | 0.0 | 0.9− | 2005 04 18 | 703 | 0.3+ | 1.0− | 2006 10 31 | G96 | 0.9− | 0.5+ |
| 2005 03 18 | 703 | 0.9− | 0.3+ | 2005 05 02 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2005 03 18 | 703 | 0.2− | 0.0 | 2005 05 02 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2005 03 18 | 703 | 0.2− | 0.0 | 2005 05 02 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2005 04 04 | 703 | 0.2− | 0.5− | 2005 05 06 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2005 04 04 | 703 | 0.2− | 0.2− | 2005 05 06 | G96 | 0.1− | 0.2− | | | | |

**(139181)∗ 2001 FB$_{138}$ = 2002 NS$_{41}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 33402)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.92894 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.29197778 | $\omega$ | 356.76162 | | +0.15411239 | −0.98511446 | |
| $a$ | 2.2502780 | $\Omega$ | 84.36350 | | +0.90823198 | +0.11089338 | |
| $e$ | 0.1359739 | $i$ | 4.38858 | | +0.38905532 | +0.13134745 | |
| $P$ | 3.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.3+ | 0.1− | 2003 12 27 | 704 | (1.9+ | 0.1−) | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 1999 09 14 | 704 | 0.1+ | 0.2+ | 2003 12 27 | 704 | 0.5+ | 1.3+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 1999 09 14 | 704 | 0.3− | 0.1+ | 2004 01 13 | 699 | 0.6+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 03 21 | 699 | 0.8− | 0.4+ | 2004 01 13 | 699 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 03 21 | 699 | 0.8− | 0.9+ | 2004 01 13 | 699 | 0.3+ | 1.0− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 03 21 | 699 | 0.0 | 0.7+ | 2004 01 13 | 699 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2001 03 21 | 699 | 0.6− | 0.5+ | 2004 01 30 | 704 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2001 03 26 | 704 | 0.9+ | 1.3+ | 2004 01 30 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.9+ |
| 2001 03 26 | 704 | (0.1− | 2.1+) | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 11 11 | 644 | 0.3− | 0.1− |
| 2001 03 26 | 704 | 0.2+ | 1.0+ | 2004 01 30 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.0+ |
| 2001 03 26 | 704 | 0.8+ | 1.3+ | 2004 01 30 | 704 | 0.4− | 0.1+ | 2006 11 11 | 644 | 0.2− | 0.0 |
| 2001 03 26 | 704 | (0.3+ | 1.5+) | 2004 02 13 | 699 | 0.3− | 0.1− | 2006 11 11 | 644 | 0.2− | 0.2− |
| 2001 03 26 | 704 | 0.0 | 0.4+ | 2004 02 13 | 699 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2001 03 26 | 704 | 0.7+ | 0.4+ | 2004 02 13 | 699 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.2+ |
| 2001 03 26 | 704 | 0.4+ | 0.7+ | 2004 02 13 | 699 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.2+ |
| 2001 03 26 | 704 | 0.4+ | 0.1+ | 2004 02 15 | 704 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.2− | 1.0+ |
| 2001 04 16 | 704 | 1.5+ | 0.9− | 2004 02 15 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.2− | 0.6+ |
| 2001 04 16 | 704 | 1.0+ | 1.1+ | 2004 02 15 | 704 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 04 16 | 704 | 1.3+ | 0.2+ | 2004 02 15 | 704 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2001 04 16 | 704 | (0.5+ | 1.9+) | 2004 02 15 | 704 | 0.6+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2002 07 14 | 644 | 0.6− | 0.2+ | 2004 02 18 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2002 07 14 | 644 | 0.3− | 0.2+ | 2004 02 18 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.7+ | 0.7+ |
| 2002 07 14 | 644 | 0.4− | 0.3+ | 2004 02 18 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.4− | 1.2+ |
| 2002 07 15 | 644 | 0.1− | 0.1+ | 2004 03 26 | 703 | 1.2− | 0.1+ | 2006 11 17 | 704 | 0.3− | 1.2+ |
| 2002 07 15 | 644 | 0.4− | 0.0 | 2004 03 26 | 703 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.7− | 0.7+ |
| 2002 07 15 | 644 | 0.2+ | 0.2+ | 2004 03 26 | 703 | 0.9− | 1.0− | 2006 11 17 | 704 | 0.4− | 1.2+ |
| 2003 10 25 | 691 | 0.0 | 0.1+ | 2004 03 26 | 703 | (0.0 | 1.8+) | 2006 11 18 | 704 | (1.6+ | 1.8−) |
| 2003 10 25 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.5− |
| 2003 10 25 | 691 | 0.3− | 0.6− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.9+ | 0.8+ |
| 2003 11 21 | 704 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | 1.0+ | 1.4+ |
| 2003 11 21 | 704 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | (0.2− | 1.8+) |
| 2003 11 21 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 20 | 704 | (0.4+ | 2.4+) |
| 2003 11 21 | 704 | 1.0+ | 0.7− | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2003 12 18 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.7+ | 0.6+ |
| 2003 12 18 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.6− |
| 2003 12 18 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.4+ | 1.2− |
| 2003 12 27 | 704 | 0.6+ | 1.2− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.5− |
| 2003 12 27 | 704 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.3− | 1.1− |
| 2003 12 27 | 704 | (2.3+ | 0.3+) | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.3+ | 1.4− |

**(139182)∗ 2001 FC$_{138}$ = 2006 DB$_{73}$**

Discovered 2001 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 100018)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.64222 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.19299977 | $\omega$ | 123.21186 | | +0.07671527 | +0.99278522 | |
| $a$ | 2.9655017 | $\Omega$ | 150.76624 | | −0.96603598 | +0.09688478 | |
| $e$ | 0.0790493 | $i$ | 10.87661 | | −0.24675748 | −0.07064587 | |
| $P$ | 5.11 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 11 | 910 | 0.3− | 0.0 | 2002 06 13 | 704 | 0.2− | 0.0 | 2006 02 22 | 703 | 0.8− | 0.0 |
| 1997 07 11 | 910 | 0.3+ | 0.4+ | 2002 07 03 | 644 | 0.4+ | 0.1− | 2006 02 22 | 703 | 1.3− | 0.4+ |
| 1997 07 11 | 910 | 0.2− | 0.6+ | 2002 07 03 | 644 | 0.3+ | 0.0 | 2006 02 22 | 703 | 0.1+ | 0.1+ |
| 2001 03 21 | 699 | 1.3+ | 1.9+ | 2002 07 03 | 644 | 0.2+ | 0.2− | 2006 02 22 | 703 | 0.2− | 0.5− |
| 2001 03 21 | 699 | 1.0+ | 0.4+ | 2002 07 09 | 704 | 0.1+ | 0.0 | 2006 02 28 | 704 | 0.4+ | 0.5+ |
| 2001 03 21 | 699 | (0.6+ | 2.8+) | 2002 07 09 | 704 | 0.6− | 0.4− | 2006 02 28 | 704 | 1.1+ | 0.3+ |
| 2001 03 21 | 699 | 0.2− | 0.0 | 2002 07 09 | 704 | 0.4− | 0.5− | 2006 02 28 | 704 | (3.3+ | 1.3+) |
| 2001 03 27 | 699 | 1.5+ | 0.4+ | 2002 07 09 | 704 | 0.1+ | 0.9− | 2006 02 28 | 704 | 0.4− | 0.8+ |
| 2001 03 27 | 699 | 1.0− | 0.8+ | 2002 07 26 | 644 | 0.4+ | 1.6+ | 2006 03 22 | 703 | 1.5− | 0.0 |
| 2001 03 27 | 699 | 0.9− | 0.5− | 2002 07 26 | 644 | 0.1− | 0.6+ | 2006 03 22 | 703 | 0.3− | 0.4+ |
| 2001 03 27 | 699 | 0.9− | 0.2+ | 2002 07 26 | 644 | 0.1+ | 0.7+ | 2006 03 22 | 703 | 0.3− | 0.4+ |
| 2001 03 30 | 704 | 0.0 | 0.3− | 2003 09 28 | 699 | 1.0+ | 0.8+ | 2006 03 22 | 703 | 0.1− | 0.7− |
| 2001 03 30 | 704 | 1.0+ | 0.3+ | 2003 09 28 | 699 | 0.2+ | 0.1− | 2006 03 24 | 704 | 1.5+ | 0.3− |
| 2001 03 30 | 704 | 0.9− | 0.6− | 2003 09 28 | 699 | 0.3+ | 1.7+ | 2006 03 24 | 704 | 1.4+ | 0.2+ |
| 2001 03 30 | 704 | 0.2+ | 1.4+ | 2003 09 28 | 699 | 0.8− | 0.9+ | 2006 03 24 | 704 | 0.0 | 0.3− |
| 2002 06 13 | 704 | 0.2− | 0.3+ | 2003 10 22 | 644 | 0.7− | 0.2+ | 2006 03 24 | 704 | 0.5+ | 0.4− |
| 2002 06 13 | 704 | 0.0 | 0.3− | 2003 10 22 | 644 | 0.5− | 0.3+ | | | | |
| 2002 06 13 | 704 | 0.3− | 0.1− | 2003 10 22 | 644 | 0.5− | 0.7+ | | | | |

**(139183)∗ 2001 FY$_{140}$ = 1999 TL$_{62}$**

Discovered 2001 Mar. 22 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 17590)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.73209 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27900981 | $\omega$ | 59.37030 | | +0.02447090 | −0.99813777 | |
| $a$ | 2.3194752 | $\Omega$ | 29.38489 | | +0.87381308 | −0.00579641 | |
| $e$ | 0.1006238 | $i$ | 6.53884 | | +0.48564583 | +0.06072392 | |
| $P$ | 3.53 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.1− | 0.1− | 2004 01 30 | 699 | 0.4− | 0.5− | 2006 10 21 | 703 | 0.8− | 0.5+ |
| 1999 10 07 | 691 | 0.1− | 0.2− | 2004 01 30 | 699 | 0.3− | 1.0− | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 1999 10 07 | 691 | 0.1+ | 0.0 | 2004 01 30 | 699 | 0.9+ | 0.9+ | 2006 10 21 | 703 | 0.9+ | 0.3− |
| 1999 10 13 | 691 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 1999 10 13 | 691 | 0.2+ | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 1999 10 13 | 691 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2001 03 22 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2001 03 22 | 691 | 0.5+ | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2001 03 22 | 691 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2001 03 26 | 807 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2001 03 26 | 807 | 0.7+ | 0.2+ | 2006 10 02 | 691 | 0.4− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 03 26 | 807 | 0.8+ | 0.4+ | 2006 10 02 | 691 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 03 26 | 807 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.4− | 0.1− |
| 2001 04 24 | 291 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.6+ | 0.2− | 2006 11 10 | 691 | 0.3− | 0.4+ |
| 2001 04 24 | 291 | 0.2− | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2001 04 24 | 291 | 0.5− | 0.3+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.9+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2004 01 17 | 644 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2004 01 17 | 644 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.4− |
| 2004 01 28 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.2+ | | | | |
| 2004 01 30 | 699 | (1.8+ | 0.4+) | 2006 10 21 | 703 | 1.2+ | 0.5− | | | | |

**(139184)∗ 2001 FU$_{143}$ = 1996 GS$_{11}$**

Discovered 2001 Mar. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 13824)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.02102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19810610 | $\omega$ | 151.77380 | | −0.86416567 | +0.48569434 | |
| $a$ | 2.9143217 | $\Omega$ | 57.87999 | | −0.48596622 | −0.73764127 | |
| $e$ | 0.1547233 | $i$ | 8.93908 | | −0.13059298 | −0.46902705 | |
| $P$ | 4.98 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.0 | 0.1+ | 2003 10 21 | 691 | 0.3− | 0.6+ | 2006 04 27 | 704 | 0.2+ | 0.1+ |
| 1996 04 14 | 691 | 0.4− | 0.2+ | 2004 12 13 | 291 | 0.1− | 0.3+ | 2006 04 27 | 704 | 0.7− | 0.1+ |
| 1996 04 14 | 691 | 0.3− | 0.2+ | 2004 12 13 | 291 | 0.2+ | 0.2+ | 2006 04 27 | 704 | 0.3+ | 0.5+ |
| 1996 04 21 | 691 | 0.7− | 0.3+ | 2004 12 13 | 291 | 0.1+ | 0.4− | 2006 04 27 | 704 | 0.0 | 1.7+ |
| 1996 04 21 | 691 | 0.6− | 0.0 | 2006 04 06 | 703 | 0.2+ | 1.4− | 2006 04 30 | 704 | 1.0+ | 1.5+ |
| 1996 04 21 | 691 | 0.6− | 0.2+ | 2006 04 06 | 703 | 1.4− | 0.1− | 2006 04 30 | 704 | 0.1− | 0.5+ |
| 1996 05 09 | 691 | 1.2+ | 1.2− | 2006 04 06 | 703 | 1.3− | 0.7− | 2006 04 30 | 704 | 0.3+ | 0.2+ |
| 1996 05 09 | 691 | 0.6+ | 0.6− | 2006 04 06 | 703 | 0.1− | 0.9+ | 2006 04 30 | 704 | 0.5+ | 0.5+ |
| 1996 05 09 | 691 | 0.6+ | 0.7− | 2006 04 09 | 704 | 0.2− | 0.8+ | 2006 04 30 | 704 | 1.1− | 0.1− |
| 2001 03 23 | 699 | 0.5− | 0.9+ | 2006 04 09 | 704 | 0.3+ | 0.6− | 2006 05 01 | 691 | 0.1+ | 0.1− |
| 2001 03 23 | 699 | 0.1− | 0.3+ | 2006 04 09 | 704 | 0.0 | 1.1+ | 2006 05 01 | 691 | 0.1− | 0.2− |
| 2001 03 23 | 699 | 1.0− | 0.2+ | 2006 04 09 | 704 | 0.7− | 0.4− | 2006 05 01 | 691 | 0.0 | 0.1− |
| 2001 03 23 | 699 | 0.6+ | 0.4− | 2006 04 19 | 703 | 0.9− | 0.1+ | 2006 05 01 | 703 | 0.9− | 0.1− |
| 2001 03 26 | 704 | 0.4+ | 0.9− | 2006 04 19 | 703 | 0.7− | 0.6+ | 2006 05 01 | 703 | 0.2− | 0.2− |
| 2001 03 26 | 704 | 0.5− | 0.4+ | 2006 04 19 | 703 | 1.1− | 0.1− | 2006 05 01 | 703 | 0.0 | 0.0 |
| 2001 03 26 | 704 | 0.8− | 0.5+ | 2006 04 19 | 703 | 0.3− | 0.6+ | 2006 05 01 | 703 | 0.8− | 0.2+ |
| 2001 03 29 | 608 | 0.1+ | 1.1− | 2006 04 20 | 691 | 0.0 | 0.2+ | 2006 05 06 | 691 | 0.1+ | 0.1− |
| 2001 03 29 | 608 | 0.3− | 0.5− | 2006 04 20 | 691 | 0.1+ | 0.3+ | 2006 05 06 | 691 | 0.1+ | 0.2− |
| 2001 03 29 | 608 | 0.3− | 0.6− | 2006 04 20 | 691 | 0.1+ | 0.1− | 2006 05 06 | 691 | 0.0 | 0.1+ |
| 2001 04 16 | 704 | 0.2− | 0.7+ | 2006 04 23 | 704 | 0.2− | 0.7+ | 2006 05 16 | 644 | 0.2− | 0.1− |
| 2001 04 16 | 704 | 0.0 | 0.1− | 2006 04 23 | 704 | 0.7+ | 0.7+ | 2006 05 16 | 644 | 0.5− | 0.0 |
| 2001 04 16 | 704 | 0.3− | 0.0 | 2006 04 23 | 704 | 1.3+ | 0.7− | 2006 05 16 | 644 | 0.5− | 0.2− |
| 2001 04 16 | 704 | 0.6− | 0.3− | 2006 04 23 | 704 | 0.1− | 0.1+ | 2006 05 19 | 703 | 1.8− | 0.1+ |
| 2001 04 17 | 699 | 0.0 | 0.2+ | 2006 04 24 | 691 | 0.3+ | 0.2+ | 2006 05 19 | 703 | 1.0− | 0.0 |
| 2001 04 17 | 699 | 0.3+ | 0.0 | 2006 04 24 | 691 | 0.2+ | 0.0 | 2006 05 19 | 703 | 0.6− | 0.6+ |
| 2001 04 17 | 699 | 0.4− | 0.4+ | 2006 04 24 | 691 | 0.3+ | 0.2+ | 2006 05 19 | 703 | 0.8− | 0.2+ |
| 2001 04 17 | 699 | 0.0 | 0.2+ | 2006 04 24 | 691 | 0.4+ | 0.1+ | 2006 05 21 | 644 | 0.1− | 0.1− |
| 2001 04 18 | 608 | 0.3+ | 0.7+ | 2006 04 24 | 691 | 0.3+ | 0.2+ | 2006 05 21 | 644 | 0.1+ | 0.2− |
| 2001 04 18 | 608 | 0.9+ | 0.8+ | 2006 04 24 | 691 | 0.5+ | 0.2+ | 2006 05 21 | 644 | 0.2− | 0.2+ |
| 2001 04 18 | 608 | 0.8+ | 0.6+ | 2006 04 24 | 704 | 0.9+ | 0.6− | 2006 05 25 | 699 | 0.4+ | 0.5− |
| 2001 04 27 | 608 | 1.8− | 0.5− | 2006 04 24 | 704 | 1.4+ | 0.4+ | 2006 05 25 | 699 | 1.1+ | 0.0 |
| 2001 04 27 | 608 | 1.2− | 0.1− | 2006 04 24 | 704 | 1.0+ | 0.1+ | 2006 05 25 | 699 | 1.3+ | 0.8− |
| 2001 04 27 | 608 | (2.0− | 0.3−) | 2006 04 24 | 704 | 1.0+ | 0.7+ | 2006 05 25 | 699 | 0.5+ | 0.0 |
| 2003 10 21 | 691 | 0.2− | 0.4+ | 2006 04 24 | 704 | 0.6+ | 0.6+ | | | | |
| 2003 10 21 | 691 | 0.3− | 0.4+ | 2006 04 27 | 704 | 0.2+ | 0.3+ | | | | |

**(139185)∗ 2001 FH$_{144}$**

Discovered 2001 Mar. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.54424 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26591027 | $\omega$ | 200.34724 | | −0.22356873 | +0.97073816 | |
| $a$ | 2.3950393 | $\Omega$ | 56.82809 | | −0.87914955 | −0.16200444 | |
| $e$ | 0.2072214 | $i$ | 6.01151 | | −0.42084806 | −0.17726247 | |
| $P$ | 3.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 699 | 0.2− | 1.1+ | 2001 05 18 | 699 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.4+ |
| 1998 09 24 | 699 | 0.3− | 1.3+ | 2001 05 18 | 699 | 1.0+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.2+ |
| 1998 09 24 | 699 | 1.6− | 1.2+ | 2001 05 22 | 704 | 1.0+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2001 03 23 | 699 | 0.6− | 0.6+ | 2001 05 22 | 704 | 0.5+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.5+ |
| 2001 03 23 | 699 | 0.2− | 0.4+ | 2001 05 22 | 704 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 03 23 | 699 | 0.5− | 0.1+ | 2001 05 22 | 704 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 03 23 | 699 | 0.6− | 0.9+ | 2001 05 22 | 704 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 2001 03 26 | 704 | 0.5+ | 0.1− | 2001 05 27 | 704 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 03 26 | 704 | 0.4+ | 0.2− | 2001 05 27 | 704 | 0.5+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 03 26 | 704 | 0.9− | 1.3− | 2001 05 27 | 704 | 0.6+ | 0.8+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2001 03 26 | 704 | 0.0 | 0.3− | 2001 06 19 | 699 | 1.3− | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2001 04 16 | 699 | 0.2+ | 0.4+ | 2001 06 19 | 699 | 0.7− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2001 04 16 | 699 | 0.3− | 0.3+ | 2001 06 19 | 699 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2001 04 16 | 699 | 0.1− | 0.7+ | 2001 06 19 | 699 | 0.5+ | 1.1+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2001 04 16 | 699 | 0.1+ | 0.2+ | 2003 12 28 | 704 | 0.5− | 0.8− | 2006 11 18 | 691 | 0.8− | 0.1+ |
| 2001 04 24 | 704 | 0.6− | 0.6+ | 2003 12 28 | 704 | 0.4+ | 1.2+ | 2006 11 18 | 691 | 0.1− | 0.4+ |
| 2001 04 24 | 704 | 0.1+ | 0.3+ | 2003 12 28 | 704 | 0.5− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 04 24 | 704 | 1.4− | 0.1− | 2003 12 28 | 704 | 0.4+ | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.8− |
| 2001 04 24 | 704 | 0.3− | 0.6+ | 2005 06 06 | E12 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.4− | 0.4− |
| 2001 04 24 | 704 | 0.2− | 0.1− | 2005 06 06 | E12 | 0.1+ | 0.4+ | 2006 11 18 | 704 | (0.7+ | 1.7+) |
| 2001 04 30 | 704 | 1.3+ | 0.3+ | 2005 06 06 | E12 | 0.4− | 0.0 | 2006 11 18 | 704 | (1.4− | 1.9+) |
| 2001 04 30 | 704 | 0.1+ | 0.4− | 2005 06 06 | E12 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.5− | 1.2+ |
| 2001 04 30 | 704 | 1.0− | 0.0 | 2005 06 07 | E12 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2001 04 30 | 704 | 0.6+ | 0.7− | 2005 06 07 | E12 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2001 04 30 | 704 | 0.3− | 0.3+ | 2005 06 07 | E12 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2001 05 16 | 608 | 0.6+ | 0.8+ | 2005 06 07 | E12 | 0.5− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.3+ |
| 2001 05 16 | 608 | 0.7+ | 0.1+ | 2005 06 11 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2001 05 16 | 608 | 0.7+ | 1.1+ | 2005 06 11 | 704 | 0.2− | 0.6− | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 2001 05 17 | 691 | 0.1+ | 0.0 | 2005 06 11 | 704 | 1.2− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 05 17 | 691 | 0.0 | 0.4− | 2005 07 17 | E12 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2001 05 17 | 691 | 0.0 | 0.1+ | 2005 07 17 | E12 | 0.1− | 0.8− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2001 05 18 | 699 | 1.1+ | 0.4+ | 2005 07 17 | E12 | 1.0+ | 1.0− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2001 05 18 | 699 | 0.9+ | 1.0+ | 2005 07 17 | E12 | 0.2+ | 0.4+ | | | | |

**(139186)∗ 2001 FR$_{144}$ = 1999 XZ$_{237}$**

Discovered 2001 Mar. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 13824)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.26918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26579251 | $\omega$ | 149.32867 | | −0.56299135 | +0.82430111 | |
| $a$ | 2.3957466 | $\Omega$ | 86.34510 | | −0.76989297 | −0.49680244 | |
| $e$ | 0.0904702 | $i$ | 3.43167 | | −0.30050884 | −0.27150510 | |
| $P$ | 3.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.1− | 1.0− | 2001 04 26 | 608 | (2.5− | 0.2−) | 2006 10 16 | 703 | 0.3− | 0.2+ | |
| 1999 12 05 | 691 | 0.1− | 0.4− | 2001 04 26 | 608 | (2.5− | 0.4−) | 2006 10 16 | 703 | 0.4+ | 0.1− | |
| 1999 12 05 | 691 | 0.0 | 0.6− | 2001 04 26 | 608 | (2.6− | 0.2+) | 2006 10 16 | 703 | 1.1− | 1.0+ | |
| 1999 12 07 | 704 | 0.4+ | 1.1+ | 2001 05 23 | 699 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.1+ | |
| 1999 12 07 | 704 | 0.7+ | 0.5− | 2001 05 23 | 699 | 0.2+ | 0.6− | 2006 10 17 | G96 | 0.2− | 0.4− | |
| 1999 12 07 | 704 | 0.4− | 0.4+ | 2001 05 23 | 699 | 0.9− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.1+ | |
| 1999 12 07 | 704 | 0.8+ | 0.2− | 2001 05 23 | 699 | 0.6+ | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.3− | |
| 2001 03 23 | 699 | 0.5+ | 0.1− | 2002 09 15 | 644 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.8+ | |
| 2001 03 23 | 699 | 0.1+ | 0.8+ | 2002 09 15 | 644 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.6+ | |
| 2001 03 23 | 699 | 0.3+ | 1.4+ | 2002 09 15 | 644 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.4+ | |
| 2001 03 23 | 699 | 0.1− | 0.5+ | 2003 12 17 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ | |
| 2001 03 26 | 704 | 0.9+ | 0.3+ | 2003 12 17 | 691 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 2001 03 26 | 704 | 0.7− | 1.3+ | 2003 12 17 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | |
| 2001 03 26 | 704 | (0.0 | 1.6+) | 2003 12 22 | 704 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.1+ | |
| 2001 04 16 | 704 | 0.0 | 0.4+ | 2003 12 22 | 704 | 0.7+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | |
| 2001 04 16 | 699 | 0.5− | 0.4+ | 2003 12 22 | 704 | 0.2+ | 1.4− | 2006 10 21 | G96 | 0.1− | 0.0 | |
| 2001 04 16 | 704 | 0.9− | 1.4+ | 2003 12 22 | 704 | 0.4+ | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.1+ | |
| 2001 04 16 | 704 | 0.4+ | 0.7+ | 2003 12 22 | 704 | (2.1+ | 0.8−) | 2006 10 22 | 691 | 0.5− | 0.5+ | |
| 2001 04 16 | 704 | 0.7− | 0.3− | 2004 01 22 | 704 | 0.3− | 1.3+ | 2006 10 22 | 691 | 0.1− | 0.3+ | |
| 2001 04 16 | 699 | 0.1+ | 0.4+ | 2004 01 22 | 704 | 0.2− | 1.3+ | 2006 10 22 | 691 | 0.4− | 0.5+ | |
| 2001 04 16 | 704 | 0.7+ | 0.7+ | 2004 01 22 | 704 | 0.5− | 1.1+ | 2006 11 16 | G96 | 0.3+ | 0.2− | |
| 2001 04 16 | 699 | 0.5− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.0 | |
| 2001 04 16 | 699 | 0.4− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1− | |
| 2001 04 18 | 608 | 1.3+ | 1.0− | 2006 10 02 | G96 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.0 | |
| 2001 04 18 | 608 | 0.7+ | 0.5− | 2006 10 02 | G96 | 0.2+ | 0.3+ | | | | | |
| 2001 04 18 | 608 | 1.2+ | 0.7− | 2006 10 16 | 703 | (0.1+ | 1.5+) | | | | | |

**(139187)∗ 2001 FE$_{147}$**

Discovered 2001 Mar. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.49298 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25746749 | $\omega$ | 243.45137 | | −0.85592369 | +0.51225587 | |
| $a$ | 2.4471154 | $\Omega$ | 327.22496 | | −0.41576303 | −0.76294875 | |
| $e$ | 0.0725419 | $i$ | 7.49685 | | −0.30746665 | −0.39433886 | |
| $P$ | 3.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 05 | 608 | 0.9− | 0.0 | 2002 08 28 | 644 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.4+ | |
| 2001 03 05 | 608 | 0.4− | 0.3− | 2002 08 28 | 644 | 0.4− | 0.1+ | 2006 08 28 | 703 | 1.0+ | 0.3+ | |
| 2001 03 05 | 608 | 0.8− | 0.0 | 2002 08 28 | 644 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.2+ | |
| 2001 03 24 | 699 | 0.1+ | 0.8+ | 2002 09 05 | 704 | 0.3+ | 0.8+ | 2006 08 29 | 691 | 0.0 | 0.3+ | |
| 2001 03 24 | 699 | 0.6+ | 0.1− | 2002 09 05 | 704 | 1.1− | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.4− | |
| 2001 03 24 | 699 | 0.5+ | 0.7+ | 2002 09 05 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.3+ | 0.9+ | |
| 2001 03 24 | 699 | 0.0 | 1.0+ | 2003 12 17 | 704 | 0.7− | 1.3+ | 2006 09 12 | 703 | 0.2− | 0.0 | |
| 2001 03 26 | 704 | 0.8+ | 0.8+ | 2003 12 17 | 704 | 0.5+ | 1.3+ | 2006 09 12 | 703 | 0.6− | 0.4+ | |
| 2001 03 26 | 704 | 0.7+ | 0.6+ | 2003 12 17 | 704 | 0.2− | 0.8+ | 2006 09 12 | 703 | 0.2− | 0.2+ | |
| 2001 03 26 | 704 | 1.2+ | 0.7+ | 2005 04 10 | E12 | 0.3− | 0.6− | 2006 09 18 | 704 | 0.0 | 0.8+ | |
| 2001 03 26 | 704 | 1.3+ | 1.1+ | 2005 04 10 | E12 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.0 | 1.1+ | |
| 2002 08 08 | 644 | 1.7− | 0.4+ | 2005 04 10 | E12 | 0.2− | 0.3+ | 2006 09 18 | 704 | 1.3− | 0.4− | |
| 2002 08 08 | 644 | 0.0 | 0.3+ | 2005 06 05 | E12 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.7− | 0.1+ | |
| 2002 08 08 | 644 | 0.3+ | 0.4+ | 2005 06 05 | E12 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 1.2+ | 0.3− | |
| 2002 08 13 | 699 | 0.1+ | 0.5+ | 2005 06 05 | E12 | 0.6− | 0.4− | 2006 09 19 | 703 | 0.2− | 0.1− | |
| 2002 08 13 | 699 | 0.0 | 0.7+ | 2005 06 05 | E12 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.0 | 0.2− | |
| 2002 08 13 | 699 | 1.3+ | 0.8+ | 2006 08 28 | 703 | 0.1− | 1.5− | | | | | |
| 2002 08 13 | 699 | 1.0− | 0.1+ | 2006 08 28 | 703 | 0.6+ | 1.2− | | | | | |

**(139188)∗ 2001 FO$_{149}$ = 2003 YZ$_{26}$**

Discovered 2001 Mar. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 56252)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.02945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28724420 | $\omega$ | 42.14937 | | −0.84001155 | −0.53867599 | |
| $a$ | 2.2749326 | $\Omega$ | 105.14696 | | +0.47813330 | −0.79145841 | |
| $e$ | 0.1033534 | $i$ | 3.85375 | | +0.25645495 | −0.28882825 | |
| $P$ | 3.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 704 | 0.0 | 0.5− | 2003 12 22 | 691 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.2− | 0.1− | |
| 1999 10 11 | 704 | 0.0 | 0.2− | 2003 12 22 | 691 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.1− | |
| 1999 10 11 | 704 | 0.1+ | 0.5− | 2003 12 26 | 608 | 0.5+ | 1.2− | 2006 10 03 | G96 | 0.1+ | 0.2− | |
| 1999 10 11 | 704 | 0.3+ | 1.0− | 2003 12 26 | 608 | 0.1+ | 0.8− | 2006 10 22 | 683 | 0.9+ | 0.7− | |
| 1999 10 11 | 704 | 0.2− | 0.2− | 2003 12 26 | 608 | 0.6+ | 0.4+ | 2006 10 22 | 683 | 0.6− | 0.4+ | |
| 2001 03 19 | 704 | 0.4+ | 1.0+ | 2003 12 28 | 691 | 0.1− | 0.4− | 2006 10 22 | 683 | (2.2− | 0.8−) | |
| 2001 03 19 | 704 | 0.6+ | 0.3− | 2003 12 28 | 691 | 0.0 | 0.3− | 2006 10 23 | 683 | 0.4− | 0.7− | |
| 2001 03 19 | 704 | 0.7− | 0.6− | 2003 12 28 | 691 | 0.2+ | 0.4− | 2006 10 23 | 683 | (0.6− | 1.9+) | |
| 2001 03 20 | 699 | 0.0 | 0.7− | 2003 12 29 | 699 | 0.1− | 0.1− | 2006 10 23 | 683 | (1.9+ | 0.3+) | |
| 2001 03 20 | 699 | 1.4− | 0.1+ | 2003 12 29 | 699 | 0.6− | 0.4+ | 2006 10 28 | 224 | (0.1+ | 1.5+) | |
| 2001 03 20 | 699 | 0.1+ | 0.8− | 2003 12 29 | 699 | (1.7− | 0.8−) | 2006 10 28 | 224 | (1.6− | 1.8+) | |
| 2001 03 20 | 699 | 0.5− | 0.1+ | 2003 12 29 | 699 | 0.7− | 0.6− | 2006 10 28 | 224 | (0.9− | 1.8+) | |
| 2001 03 24 | 699 | 0.2+ | 0.5+ | 2004 01 15 | 691 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.1− | 0.1+ | |
| 2001 03 24 | 699 | 0.0 | 1.0+ | 2004 01 15 | 691 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.2− | 0.2+ | |
| 2001 03 24 | 699 | 0.2− | 0.9+ | 2004 01 15 | 691 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.4+ | |
| 2001 03 24 | 699 | 0.1− | 1.0+ | 2004 01 22 | 704 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.3− | |
| 2001 03 26 | 704 | 0.7+ | 0.9+ | 2004 01 22 | 704 | 0.5− | 0.2+ | 2006 11 11 | 703 | (0.6+ | 1.7+) | |
| 2001 03 26 | 704 | 0.4+ | 0.6+ | 2004 01 22 | 704 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.8+ | |
| 2001 03 26 | 704 | 0.6+ | 0.7+ | 2004 01 22 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.9+ | |
| 2001 03 26 | 704 | 0.2− | 0.3− | 2004 01 22 | 704 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.2+ | 1.0+ | |
| 2001 03 26 | 704 | 0.3− | 0.5+ | 2004 01 27 | 691 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.6+ | 0.7+ | |
| 2001 04 17 | 699 | (2.1+ | 1.6−) | 2004 01 27 | 691 | 0.0 | 0.2− | 2006 11 14 | 704 | 1.0+ | 1.3+ | |
| 2001 04 17 | 699 | (0.1− | 1.8+) | 2004 01 27 | 691 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.6+ | 0.6+ | |
| 2001 04 17 | 699 | 1.2+ | 0.7+ | 2004 01 30 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.5− | 0.2− | |
| 2001 04 17 | 699 | (0.7+ | 3.8+) | 2004 01 30 | 704 | 0.9+ | 1.0+ | 2006 11 17 | 704 | 1.0− | 0.2− | |
| 2002 08 18 | 644 | 0.1+ | 1.1+ | 2004 01 30 | 704 | 0.9− | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.4− | |
| 2002 08 18 | 644 | 0.2+ | 0.8+ | 2004 01 30 | 704 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.1− | 0.3− | |
| 2002 08 18 | 644 | 0.2+ | 1.2+ | 2004 01 30 | 704 | 1.4+ | 0.6+ | 2006 11 17 | G96 | 0.3− | 0.4− | |
| 2003 12 16 | 699 | 0.5− | 0.2+ | 2004 02 15 | 704 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.4− | |
| 2003 12 16 | 699 | 0.1+ | 0.4+ | 2004 02 15 | 704 | 0.5+ | 0.9+ | 2006 11 17 | 704 | 0.7− | 0.0 | |
| 2003 12 16 | 699 | 0.3+ | 1.0+ | 2004 02 15 | 704 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.5− | |
| 2003 12 16 | 699 | 0.7+ | 1.1+ | 2004 02 15 | 704 | (1.1+ | 1.6+) | 2006 11 17 | G96 | 0.2− | 0.2− | |
| 2003 12 19 | 704 | 0.6+ | 0.5− | 2004 02 15 | 704 | 0.7− | 1.0+ | 2006 11 20 | 704 | 1.3− | 0.7+ | |
| 2003 12 19 | 704 | 0.7+ | 0.7+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 1.0+ | 1.3+ | |
| 2003 12 19 | 704 | 0.5+ | 0.0 | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | (0.7+ | 1.6+) | |
| 2003 12 19 | 704 | 0.9+ | 0.5+ | 2004 02 16 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 1.1− | 0.5+ | |
| 2003 12 19 | 704 | 0.1− | 0.3+ | 2004 02 23 | 704 | 1.0+ | 0.5+ | 2006 11 28 | 704 | 1.7+ | 1.2+ | |
| 2003 12 21 | 704 | 0.5+ | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.5− | 0.3− | |
| 2003 12 21 | 704 | (1.5+ | 0.1−) | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.5− | 0.1+ | |
| 2003 12 21 | 704 | 0.3+ | 0.4+ | 2004 02 23 | 704 | 0.4− | 0.3− | 2006 11 28 | 704 | 1.2− | 1.3+ | |
| 2003 12 21 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.3+ | 0.2+ | | | | | |
| 2003 12 22 | 691 | 0.1− | 0.2− | 2006 10 03 | G96 | 0.3− | 0.0 | | | | | |

**(139189)∗ 2001 FW$_{149}$ = 2003 YV$_{119}$**

Discovered 2001 Mar. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 56253)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.57759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29437442 | $\omega$ | 152.09045 | | −0.31623769 | −0.94655432 | |
| $a$ | 2.2380477 | $\Omega$ | 316.26258 | | +0.85240973 | −0.25414319 | |
| $e$ | 0.1224941 | $i$ | 5.26761 | | +0.41640290 | −0.19861059 | |
| $P$ | 3.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 1.1− | 0.4− | 2003 12 29 | 699 | 0.6− | 0.7− | 2004 02 11 | 699 | 0.5− | 0.5− |
| 2001 03 18 | 704 | 1.1+ | 0.6+ | 2003 12 29 | 699 | 0.4+ | 0.7+ | 2004 02 11 | 049 | (1.7− | 0.2+) |
| 2001 03 18 | 704 | 0.2− | 1.4+ | 2003 12 29 | 699 | 0.9+ | 0.2− | 2004 02 11 | 049 | (1.8− | 0.4−) |
| 2001 03 18 | 704 | 0.5− | 0.3+ | 2003 12 29 | 691 | 0.1− | 0.2+ | 2004 02 11 | 049 | 0.8− | 0.2− |
| 2001 03 24 | 699 | 0.6+ | 0.1− | 2003 12 29 | 691 | 0.1− | 0.2+ | 2004 02 16 | 704 | 0.0 | 1.2+ |
| 2001 03 24 | 699 | 0.3+ | 0.2+ | 2003 12 29 | 691 | 0.2− | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.6+ |
| 2001 03 24 | 699 | 0.0 | 0.7+ | 2003 12 30 | 704 | 0.2+ | 0.0 | 2004 02 16 | 704 | 0.5− | 0.9+ |
| 2001 03 24 | 699 | 0.4+ | 0.7+ | 2003 12 30 | 704 | 0.5+ | 0.7− | 2004 02 16 | 704 | 0.2− | 1.4+ |
| 2001 03 26 | 704 | 0.9+ | 0.3− | 2003 12 30 | 704 | 0.4+ | 1.2− | 2004 02 16 | 704 | 0.5− | 1.2+ |
| 2001 03 26 | 704 | 0.0 | 0.1+ | 2004 01 12 | 644 | 0.2+ | 0.2+ | 2004 02 17 | 645 | 0.0 | 0.3− |
| 2001 03 26 | 704 | 0.2+ | 0.1+ | 2004 01 12 | 644 | 0.3+ | 0.0 | 2004 02 17 | 645 | 0.1+ | 0.3− |
| 2001 03 26 | 704 | 0.7− | 1.5+ | 2004 01 12 | 644 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.5+ |
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2004 01 16 | 644 | 0.2+ | 0.4− | 2004 02 26 | 704 | 0.7+ | 0.5+ |
| 2002 07 22 | 644 | 0.1− | 0.5+ | 2004 01 16 | 644 | 0.2− | 0.4− | 2004 02 26 | 704 | 0.5+ | 0.8+ |
| 2002 07 22 | 644 | 0.1− | 0.4+ | 2004 01 16 | 644 | 0.1+ | 0.5− | 2004 02 26 | 704 | 0.2− | 0.5+ |
| 2002 08 17 | 644 | 0.1+ | 0.9+ | 2004 01 22 | 704 | 0.7− | 0.0 | 2004 02 26 | 704 | (0.6+ | 2.1−) |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2004 01 22 | 704 | 0.6− | 0.0 | 2004 03 17 | 645 | 0.1− | 0.2− |
| 2002 08 17 | 644 | 0.0 | 1.2+ | 2004 01 22 | 704 | 1.0− | 0.3+ | 2004 03 17 | 645 | 0.1− | 0.1− |
| 2002 08 27 | 644 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.7− | 0.2+ | 2004 03 27 | 704 | 0.4− | 0.1− |
| 2002 08 27 | 644 | 0.7− | 0.9+ | 2004 01 22 | 704 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.7+ | 0.3+ |
| 2002 08 27 | 644 | 0.3− | 0.9+ | 2004 01 26 | 699 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.0 | 0.2+ |
| 2003 11 20 | 704 | 0.5+ | 0.3+ | 2004 01 26 | 699 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.8+ | 1.3+ |
| 2003 11 20 | 704 | 0.2+ | 1.0+ | 2004 01 26 | 699 | 0.7+ | 0.0 | 2006 09 18 | 703 | 1.3+ | 0.4− |
| 2003 11 20 | 704 | 0.8+ | 0.9− | 2004 01 26 | 699 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.3+ |
| 2003 11 20 | 704 | 0.2+ | 0.9+ | 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 09 18 | 703 | 1.2+ | 1.1− |
| 2003 12 03 | 704 | 0.8+ | 0.7+ | 2004 01 28 | 691 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.6− | 0.1− |
| 2003 12 03 | 704 | 0.5+ | 0.7+ | 2004 01 28 | 691 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.7+ | 0.7− |
| 2003 12 03 | 704 | 1.4− | 0.6+ | 2004 01 30 | 704 | 0.4− | 0.8+ | 2006 10 19 | 703 | 0.8+ | 1.1− |
| 2003 12 03 | 704 | 0.8− | 1.0+ | 2004 01 30 | 704 | 0.5+ | 0.3− | 2006 10 19 | 703 | 0.8+ | 0.1+ |
| 2003 12 22 | 704 | 0.3− | 1.0+ | 2004 01 30 | 704 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.6− | 0.5− |
| 2003 12 22 | 704 | (0.2− | 1.6+) | 2004 01 30 | 704 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2003 12 22 | 704 | (0.7− | 2.5+) | 2004 01 30 | 704 | 0.5− | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2004 02 10 | 703 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.8− |
| 2003 12 22 | 704 | (2.2− | 1.4+) | 2004 02 10 | 703 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.7+ |
| 2003 12 27 | 704 | 0.3− | 0.8+ | 2004 02 10 | 703 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.1+ |
| 2003 12 27 | 704 | 0.3− | 0.3+ | 2004 02 10 | 703 | 0.5− | 0.5− | 2006 11 14 | 703 | 0.4− | 0.3− |
| 2003 12 27 | 704 | 0.0 | 0.4+ | 2004 02 10 | 106 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.1+ | 1.0− |
| 2003 12 27 | 704 | 0.3− | 1.0+ | 2004 02 10 | 106 | 0.2+ | 0.5− | 2006 11 14 | 703 | 0.4− | 1.3+ |
| 2003 12 27 | 704 | 0.7− | 1.0+ | 2004 02 10 | 106 | 0.2+ | 0.8− | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2003 12 28 | 704 | 0.3+ | 0.1− | 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.4− | 0.2+ |
| 2003 12 28 | 704 | 0.5+ | 0.0 | 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 11 22 | 703 | 0.8− | 0.2+ |
| 2003 12 28 | 704 | 0.8+ | 0.2+ | 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.4− | 0.1+ |
| 2003 12 28 | 704 | 0.1+ | 0.4− | 2004 02 11 | 699 | 0.6+ | 0.5+ | 2006 11 28 | 704 | 0.1+ | 1.0+ |
| 2003 12 28 | 704 | 0.6+ | 0.1− | 2004 02 11 | 699 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 0.5− | 0.8+ |
| 2003 12 29 | 699 | 0.6− | 0.2+ | 2004 02 11 | 699 | 1.3+ | 0.2+ | 2006 11 28 | 704 | 0.9− | 0.3+ |

**(139190)∗ 2001 FM$_{151}$ = 1999 TJ$_{252}$**

Discovered 2001 Mar. 24 by NEAT at Haleakala.

Id. T. B. Spahr (*MPO* 12088)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.61454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27272120 | $\omega$ | 86.73390 | | −0.93379583 | −0.29704521 | |
| $a$ | 2.3549957 | $\Omega$ | 75.91499 | | +0.18718006 | −0.88066482 | |
| $e$ | 0.1555951 | $i$ | 11.86790 | | +0.30494094 | −0.36904420 | |
| $P$ | 3.61 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.9− | 0.0 | 2001 05 29 | 704 | 0.7+ | 0.0 | 2003 12 21 | 704 | 0.0 | 0.0 |
| 1999 10 08 | 704 | 1.1+ | 0.9− | 2001 05 29 | 704 | 0.4− | 1.2+ | 2003 12 27 | 691 | 0.1+ | 0.0 |
| 1999 10 08 | 704 | 1.0+ | 0.4− | 2001 05 29 | 704 | 0.2+ | 0.7+ | 2003 12 27 | 691 | 0.0 | 0.1− |
| 1999 10 08 | 704 | 0.1− | 0.6− | 2001 05 29 | 704 | (0.2+ | 1.8+) | 2003 12 27 | 691 | 0.1− | 0.0 |
| 1999 10 08 | 704 | 0.4− | 0.1− | 2001 06 15 | 704 | 0.3+ | 0.3− | 2003 12 29 | 291 | 0.2+ | 0.3− |
| 1999 10 13 | 699 | 1.6− | 0.4− | 2001 06 15 | 704 | 0.3+ | 0.4+ | 2003 12 29 | 291 | 0.2− | 0.1− |
| 1999 10 13 | 699 | 0.2+ | 0.4+ | 2001 06 15 | 704 | 0.4− | 0.3+ | 2003 12 29 | 291 | 0.0 | 0.2− |
| 1999 10 13 | 699 | 0.8+ | 0.2+ | 2001 06 15 | 704 | 0.5− | 0.5+ | 2004 01 17 | 644 | 0.4+ | 0.3+ |
| 2001 01 31 | 704 | 0.2− | 0.0 | 2001 06 15 | 704 | 0.3− | 0.1− | 2004 01 17 | 644 | 0.1+ | 0.3+ |
| 2001 01 31 | 704 | 0.8+ | 0.5+ | 2003 09 28 | 704 | 0.7+ | 0.2+ | 2004 01 17 | 644 | 0.1+ | 0.2+ |
| 2001 01 31 | 704 | 0.3+ | 0.5+ | 2003 09 28 | 704 | 0.8+ | 0.1− | 2004 01 22 | 704 | 0.5+ | 0.7− |
| 2001 01 31 | 704 | 0.0 | 0.4+ | 2003 09 28 | 704 | 1.2− | 0.5+ | 2004 01 22 | 704 | 0.1− | 0.0 |
| 2001 01 31 | 704 | 0.0 | 0.6+ | 2003 09 28 | 704 | 1.4− | 0.2− | 2004 01 22 | 704 | 0.8+ | 0.8+ |
| 2001 02 16 | 704 | 0.4+ | 0.3− | 2003 09 28 | 704 | 0.5− | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.0 |
| 2001 02 16 | 704 | 0.4− | 0.2+ | 2003 11 02 | 704 | 0.2− | 1.2+ | 2004 01 22 | 704 | 1.0+ | 1.1+ |
| 2001 02 16 | 704 | (1.9+ | 0.0 ) | 2003 11 02 | 704 | 0.0 | 1.1+ | 2004 01 30 | 704 | 0.7+ | 0.1+ |
| 2001 02 16 | 704 | 0.4− | 0.5+ | 2003 11 02 | 704 | 0.3− | 1.1+ | 2004 01 30 | 704 | 0.7+ | 0.1− |
| 2001 02 16 | 704 | 1.3+ | 0.1+ | 2003 11 02 | 704 | 0.4− | 1.1+ | 2004 01 30 | 704 | 1.1+ | 0.4+ |
| 2001 02 16 | 704 | 1.1+ | 0.3− | 2003 11 02 | 704 | 0.8− | 1.5+ | 2004 01 30 | 704 | (1.9+ | 0.6+) |
| 2001 02 16 | 704 | 0.7− | 0.4+ | 2003 11 21 | 704 | 0.0 | 0.6+ | 2004 02 15 | 704 | 0.2− | 0.0 |
| 2001 02 16 | 704 | 0.3− | 1.4+ | 2003 11 21 | 704 | 0.4− | 0.6+ | 2004 02 15 | 704 | 0.1+ | 0.1+ |
| 2001 02 16 | 704 | 1.0+ | 0.1+ | 2003 11 21 | 704 | 0.0 | 0.4+ | 2004 02 15 | 704 | 0.1+ | 0.4+ |
| 2001 03 05 | 704 | 0.7+ | 0.3+ | 2003 11 21 | 704 | 0.1− | 0.4− | 2004 02 23 | 704 | 0.2− | 0.8+ |
| 2001 03 05 | 704 | 0.4− | 0.8+ | 2003 11 21 | 704 | 0.1− | 0.0 | 2004 02 23 | 704 | (1.5− | 2.2+) |
| 2001 03 05 | 704 | 0.5+ | 0.4+ | 2003 11 23 | 704 | 0.4− | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.1− |
| 2001 03 05 | 704 | 0.9+ | 0.5+ | 2003 11 23 | 704 | 0.0 | 0.8+ | 2004 02 23 | 704 | 0.5+ | 0.4− |
| 2001 03 16 | 704 | 0.2− | 0.3− | 2003 11 23 | 704 | 0.3− | 0.7+ | 2004 03 19 | 704 | 0.4+ | 0.9− |
| 2001 03 16 | 704 | 0.5− | 0.5+ | 2003 11 23 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.1+ | 0.2− |
| 2001 03 16 | 704 | 0.3− | 0.8+ | 2003 11 26 | 704 | 0.4− | 0.2− | 2004 03 19 | 704 | 0.4+ | 1.0− |
| 2001 03 16 | 704 | 0.2− | 0.5+ | 2003 11 26 | 704 | 0.7− | 0.2− | 2004 03 19 | 704 | 0.3+ | 0.7− |
| 2001 03 24 | 608 | 0.4+ | 0.4− | 2003 11 26 | 704 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.8− |
| 2001 03 24 | 608 | 0.1− | 0.2− | 2003 11 26 | 704 | 0.7+ | 0.8+ | 2004 03 22 | 704 | 0.3+ | 0.3+ |
| 2001 03 24 | 608 | 0.4+ | 0.6− | 2003 11 26 | 704 | 0.6− | 0.3+ | 2004 03 22 | 704 | 0.6− | 0.0 |
| 2001 03 25 | 699 | 0.5− | 0.4+ | 2003 11 29 | 704 | 0.3− | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.6+ |
| 2001 03 25 | 699 | 0.2+ | 0.5+ | 2003 11 29 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.1− | 0.1+ |
| 2001 03 25 | 699 | 0.1− | 0.3+ | 2003 11 29 | 704 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.2+ | 0.1− |
| 2001 03 25 | 699 | 0.5− | 0.3+ | 2003 11 29 | 704 | 0.2− | 0.1+ | 2005 06 04 | 704 | 0.0 | 0.8+ |
| 2001 03 31 | 704 | 0.1+ | 0.7+ | 2003 11 29 | 704 | 0.0 | 0.0 | 2005 06 04 | 704 | 0.2− | 1.2+ |
| 2001 03 31 | 704 | 0.8+ | 0.1+ | 2003 11 29 | 704 | 0.1+ | 0.2+ | 2005 06 04 | 704 | 0.1+ | 0.5+ |
| 2001 03 31 | 704 | 0.3+ | 0.1+ | 2003 11 29 | 704 | 0.1− | 0.2− | 2005 06 04 | 704 | 0.2+ | 0.7+ |
| 2001 03 31 | 704 | 0.3+ | 0.1− | 2003 11 29 | 704 | 0.1+ | 0.0 | 2005 06 04 | 704 | 0.3+ | 1.2+ |
| 2001 03 31 | 704 | 0.2− | 1.0− | 2003 11 29 | 704 | 0.5− | 0.5+ | 2006 09 17 | 699 | 0.4− | 1.3+ |
| 2001 04 21 | 704 | 0.1+ | 0.2+ | 2003 11 29 | 704 | 0.5− | 0.5+ | 2006 09 17 | 699 | 0.6+ | 1.3+ |
| 2001 04 21 | 704 | 0.1− | 0.7+ | 2003 12 01 | 704 | 0.2+ | 1.3+ | 2006 09 17 | 699 | (0.5− | 1.5+) |
| 2001 04 21 | 704 | 0.3+ | 1.1+ | 2003 12 01 | 704 | 0.5− | 0.0 | 2006 09 17 | 699 | 0.1+ | 0.8+ |
| 2001 04 21 | 704 | 0.4− | 0.2+ | 2003 12 01 | 704 | (0.2+ | 1.7+) | 2006 09 19 | 703 | 0.4+ | 0.3+ |
| 2001 04 21 | 704 | 0.5− | 0.1− | 2003 12 01 | 704 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2001 04 22 | 608 | 0.3− | 0.1+ | 2003 12 01 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.5+ |
| 2001 04 22 | 608 | 0.3− | 0.4+ | 2003 12 01 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2001 04 22 | 608 | 0.4− | 0.3+ | 2003 12 01 | 704 | (0.3+ | 1.8+) | 2006 09 20 | 703 | 0.3− | 0.8+ |
| 2001 04 24 | 106 | 0.5+ | 0.2+ | 2003 12 01 | 704 | 0.7− | 0.3− | 2006 09 20 | 703 | 0.3− | 0.3+ |
| 2001 04 24 | 106 | 0.4+ | 0.5+ | 2003 12 01 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 1.2− | 0.8+ |
| 2001 04 26 | 704 | 0.2+ | 0.7− | 2003 12 01 | 704 | 0.2+ | 0.4− | 2006 09 20 | 703 | 0.6− | 1.0+ |
| 2001 04 26 | 704 | 0.5− | 0.6− | 2003 12 17 | 644 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.7− | 0.7+ |
| 2001 04 26 | 704 | 0.3+ | 0.5− | 2003 12 17 | 644 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.8+ |
| 2001 04 26 | 704 | 0.9+ | 0.0 | 2003 12 17 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.1+ | 0.7+ |
| 2001 04 26 | 704 | 0.3+ | 0.4− | 2003 12 19 | 704 | 0.5− | 1.1− | 2006 09 27 | 703 | 0.0 | 1.0+ |
| 2001 05 23 | 704 | 0.1+ | 0.3− | 2003 12 19 | 704 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.3− | 0.5+ |
| 2001 05 23 | 699 | 0.9+ | 0.7+ | 2003 12 19 | 704 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.7+ |
| 2001 05 23 | 704 | 0.8+ | 0.8+ | 2003 12 19 | 704 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2001 05 23 | 704 | 0.8+ | 1.1+ | 2003 12 19 | 704 | 0.5− | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.5+ |
| 2001 05 23 | 704 | 0.7+ | 0.9+ | 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.5+ |
| 2001 05 23 | 699 | 0.4+ | 1.2+ | 2003 12 19 | 691 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2001 05 23 | 699 | 0.8+ | 0.9+ | 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.0 | 1.5+ |
| 2001 05 23 | 699 | 1.3+ | 0.9+ | 2003 12 21 | 704 | 1.1+ | 0.5− | 2006 10 28 | 703 | 0.3− | 1.2+ |
| 2001 05 26 | 704 | (0.4+ | 2.0+) | 2003 12 21 | 704 | (1.7− | 0.5−) | 2006 10 28 | 703 | 0.2− | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 704 | 0.3+ | 0.5+ | 2003 12 21 | 704 | 0.0 | 0.1+ | 2006 10 28 | 703 | 2.2− | 2.7− | | |
| 2001 05 26 | 704 | (2.2+ | 0.2−) | 2003 12 21 | 704 | 0.0 | 0.1+ | | | | | | |

**(139191)∗ 2001 FG$_{152}$**

Discovered 2001 Mar. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.11263 | | (2000.0) | | | |
| $n$ | 0.29678542 | $\omega$ | 19.29098 | | −0.57041070 | −0.81652805 |
| $a$ | 2.2259104 | $\Omega$ | 105.58281 | | +0.74092636 | −0.55826844 |
| $e$ | 0.0863761 | $i$ | 5.29898 | | +0.35448521 | −0.14703162 |
| $P$ | 3.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.7− | 0.0 | 2002 08 13 | 704 | 0.3− | 0.8+ | 2004 03 19 | 704 | 0.3+ | 0.2+ | | |
| 2001 01 19 | 704 | 0.3− | 0.3+ | 2003 12 19 | 704 | 0.3− | 1.1+ | 2004 03 19 | 704 | 0.2− | 0.5− | | |
| 2001 01 19 | 704 | 0.1− | 0.9+ | 2003 12 19 | 704 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | | |
| 2001 01 19 | 704 | 0.4− | 1.2+ | 2003 12 19 | 704 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.3− | | |
| 2001 01 19 | 704 | 0.1+ | 0.1− | 2003 12 19 | 704 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.1− | 0.2− | | |
| 2001 02 01 | 704 | 0.9+ | 1.1+ | 2003 12 19 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.4− | | |
| 2001 02 01 | 704 | 0.1− | 0.2− | 2003 12 21 | 704 | 0.1+ | 0.6− | 2006 10 31 | A50 | 0.1− | 0.7+ | | |
| 2001 02 01 | 704 | 0.2− | 0.6+ | 2003 12 21 | 704 | 0.0 | 0.7− | 2006 10 31 | A50 | 0.8+ | 0.3+ | | |
| 2001 02 01 | 704 | 0.6− | 0.4+ | 2003 12 21 | 704 | 0.2+ | 0.5− | 2006 11 01 | 703 | 1.1− | 1.0− | | |
| 2001 02 02 | 699 | 0.3− | 0.1+ | 2003 12 21 | 704 | 0.3+ | 0.5− | 2006 11 01 | 703 | 1.4+ | 0.2− | | |
| 2001 02 02 | 699 | (0.2+ | 1.7−) | 2003 12 22 | 678 | 0.6− | 1.0− | 2006 11 01 | 703 | 0.0 | 0.3+ | | |
| 2001 02 02 | 699 | 0.0 | 0.1+ | 2003 12 22 | 678 | 0.1+ | 0.9− | 2006 11 01 | 703 | 0.3− | 0.2− | | |
| 2001 02 02 | 699 | 0.3+ | 1.5+ | 2003 12 22 | 678 | (2.4− | 0.2−) | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 02 17 | 704 | 0.4+ | 0.1− | 2003 12 24 | 608 | 0.2+ | 1.1− | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 2001 02 17 | 704 | 0.5+ | 1.1− | 2003 12 24 | 608 | 0.6+ | 1.4− | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2001 02 17 | 704 | 0.9+ | 0.0 | 2003 12 24 | 608 | 0.8+ | 1.0− | 2006 11 11 | 703 | 0.9− | 0.4− | | |
| 2001 02 17 | 704 | 0.8+ | 0.6+ | 2003 12 30 | 704 | (0.5+ | 1.6+) | 2006 11 11 | 703 | (0.4− | 1.6+) | | |
| 2001 02 17 | 704 | 0.4+ | 1.2+ | 2003 12 30 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 1.1− | 0.4− | | |
| 2001 03 04 | 704 | 0.2− | 0.2+ | 2003 12 30 | 704 | 0.3+ | 1.3+ | 2006 11 11 | 644 | 0.1+ | 0.3+ | | |
| 2001 03 04 | 704 | 0.6− | 0.2+ | 2003 12 30 | 704 | 1.1− | 0.7+ | 2006 11 11 | 703 | 0.4+ | 0.1− | | |
| 2001 03 04 | 704 | 0.3+ | 0.4+ | 2003 12 30 | 704 | 0.0 | 1.1+ | 2006 11 11 | 644 | 0.1− | 0.2+ | | |
| 2001 03 04 | 704 | 0.8+ | 0.2− | 2004 01 21 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 644 | 0.1− | 0.4+ | | |
| 2001 03 04 | 704 | 0.2+ | 0.0 | 2004 01 21 | 704 | 0.3− | 1.1− | 2006 11 14 | 704 | 0.1+ | 0.3− | | |
| 2001 03 18 | 699 | 0.6− | 0.0 | 2004 01 21 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 704 | (1.6+ | 0.1+) | | |
| 2001 03 18 | 699 | 0.4− | 0.2+ | 2004 01 21 | 704 | 1.1+ | 0.2+ | 2006 11 14 | 704 | 0.3+ | 0.1+ | | |
| 2001 03 18 | 699 | 0.8− | 0.0 | 2004 01 21 | 704 | 0.0 | 0.6− | 2006 11 14 | 704 | (1.7+ | 0.2+) | | |
| 2001 03 18 | 699 | 0.4− | 0.4+ | 2004 01 24 | 704 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.7+ | 0.4+ | | |
| 2001 03 18 | 608 | 0.4− | 1.3− | 2004 01 24 | 704 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.4+ | | |
| 2001 03 18 | 608 | 0.5− | 1.4− | 2004 01 24 | 704 | 0.7+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 1.1+ | | |
| 2001 03 18 | 608 | 0.5− | 1.1− | 2004 01 24 | 704 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.1− | 0.3+ | | |
| 2001 03 26 | 704 | 0.0 | 0.6+ | 2004 01 24 | 704 | 0.4− | 0.3− | 2006 11 17 | 704 | 0.6− | 0.8+ | | |
| 2001 03 26 | 704 | 0.1+ | 0.2− | 2004 01 27 | 691 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.1− | 1.2+ | | |
| 2001 03 26 | 704 | 0.4+ | 0.0 | 2004 01 27 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.3+ | | |
| 2001 03 26 | 704 | 0.4− | 0.9+ | 2004 01 27 | 691 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.2− | | |
| 2001 03 26 | 704 | 0.3− | 0.1− | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.2− | | |
| 2001 03 27 | 699 | 1.0+ | 0.6+ | 2004 01 30 | 704 | 0.0 | 0.7+ | 2006 11 18 | G96 | 0.4+ | 0.1− | | |
| 2001 03 27 | 699 | 0.9+ | 0.1+ | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.4+ | | |
| 2001 03 27 | 699 | 0.6+ | 0.1+ | 2004 01 30 | 704 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.8− | 0.0 | | |
| 2001 03 27 | 699 | 0.1− | 0.4+ | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.9− | 0.5+ | | |
| 2002 08 13 | 704 | 0.7− | 0.8+ | 2004 03 19 | 704 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.2− | 0.1− | | |
| 2002 08 13 | 704 | 0.6+ | 0.9+ | 2004 03 19 | 704 | 0.6+ | 0.6+ | 2006 11 20 | 704 | 0.8− | 0.1+ | | |
| 2002 08 13 | 704 | 0.5+ | 0.7− | 2004 03 19 | 704 | 1.1+ | 0.1+ | | | | | | |

**(139192)∗ 2001 FC$_{153}$ = 2002 RA$_{148}$**

Discovered 2001 Mar. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 122.20785 | | (2000.0) | | | |
| $n$ | 0.26642629 | $\omega$ | 132.57941 | | −0.29282350 | +0.95536358 |
| $a$ | 2.3919458 | $\Omega$ | 120.35425 | | −0.89002707 | −0.25736577 |
| $e$ | 0.1005052 | $i$ | 2.60216 | | −0.34943700 | −0.14506307 |
| $P$ | 3.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.1+ | 0.7+ | 2002 10 01 | 699 | 0.4− | 0.1− | 2005 07 05 | 644 | 0.1+ | 0.0 | | |
| 1997 01 31 | 691 | 0.5+ | 0.3− | 2002 10 01 | 699 | 0.3+ | 0.5+ | 2005 07 05 | 644 | 0.1+ | 0.2+ | | |
| 1997 01 31 | 691 | 0.1− | 0.1+ | 2002 10 01 | 699 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.3+ | | |
| 2001 03 20 | 699 | 1.1− | 0.1− | 2005 05 12 | 704 | 0.7+ | 0.6− | 2006 10 02 | G96 | 0.2+ | 0.0 | | |
| 2001 03 20 | 699 | 0.6− | 0.1− | 2005 05 12 | 704 | 0.7+ | 0.6− | 2006 10 02 | G96 | 0.2− | 0.1+ | | |
| 2001 03 20 | 699 | 0.2− | 0.8+ | 2005 05 12 | 704 | 0.8+ | 1.3− | 2006 10 02 | G96 | 0.3− | 0.1+ | | |
| 2001 03 20 | 699 | 0.2+ | 0.4+ | 2005 05 12 | 704 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.7− | | |
| 2001 03 26 | 704 | 0.2+ | 0.5− | 2005 05 15 | G96 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.0 | | |
| 2001 03 26 | 704 | 0.6+ | 0.1− | 2005 05 15 | G96 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.3+ | | |
| 2001 03 26 | 704 | 0.2+ | 0.2+ | 2005 05 15 | G96 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.7− | | |
| 2001 03 26 | 704 | 0.4+ | 0.2+ | 2005 05 15 | G96 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.3− | | |
| 2001 03 26 | 704 | 0.3+ | 0.3+ | 2005 06 03 | 703 | 0.6+ | 1.0− | 2006 10 17 | G96 | 0.0 | 0.5− | | |
| 2001 03 27 | 608 | 0.4− | 1.3+ | 2005 06 03 | 703 | 0.1− | 0.5− | 2006 10 17 | G96 | 0.0 | 0.0 | | |
| 2001 03 27 | 608 | 0.2+ | 0.9+ | 2005 06 03 | 703 | 0.0 | 0.5− | 2006 10 17 | G96 | 0.4+ | 0.1− | | |
| 2001 03 27 | 608 | 0.1− | 0.7+ | 2005 06 03 | 703 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.0 | 0.2+ | | |
| 2002 09 11 | 644 | 0.1− | 0.6+ | 2005 06 06 | 691 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.1+ | | |
| 2002 09 11 | 644 | 0.3− | 0.6+ | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | | |
| 2002 09 11 | 644 | 0.6− | 0.6+ | 2005 06 06 | 691 | 0.4− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2002 09 13 | 644 | 0.3+ | 0.7+ | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.3+ | | |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.4+ | | |
| 2002 09 13 | 644 | 0.2+ | 0.9+ | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.1+ | | |
| 2002 09 15 | 608 | 0.9− | 0.5− | 2005 06 27 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.5+ | 0.1− | | |
| 2002 09 15 | 608 | 0.6− | 0.6− | 2005 06 27 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.3+ | | |
| 2002 09 15 | 608 | 0.6− | 0.3− | 2005 06 27 | 644 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.6− | 0.6+ | | |
| 2002 09 28 | 608 | (2.9− | 1.3−) | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2002 09 28 | 608 | (2.1− | 1.5−) | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.0 | | |
| 2002 09 28 | 608 | (2.2− | 1.5−) | 2005 07 05 | 644 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1+ | | |
| 2002 10 01 | 699 | 1.2+ | 0.3− | 2005 07 05 | 644 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.0 | | |

**(139193)∗ 2001 FV$_{156}$**

Discovered 2001 Mar. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.40539 | | (2000.0) | | | |
| $n$ | 0.28047242 | $\omega$ | 25.66300 | | −0.94621986 | −0.30193213 |
| $a$ | 2.3114044 | $\Omega$ | 136.22995 | | +0.26028550 | −0.92379075 |
| $e$ | 0.0687036 | $i$ | 9.67107 | | +0.19214429 | −0.23547323 |
| $P$ | 3.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.4− | 0.2− | 2001 04 15 | 704 | 1.0− | 0.0 | 2003 12 20 | 704 | 0.2+ | 0.6− | | |
| 1995 07 24 | 691 | 0.8+ | 0.8− | 2001 04 15 | 704 | 0.7− | 1.0+ | 2003 12 20 | 704 | 0.1+ | 0.5+ | | |
| 1995 07 24 | 691 | 0.2− | 0.0 | 2001 04 15 | 704 | 0.0 | 0.9+ | 2003 12 20 | 704 | 0.4+ | 0.1− | | |
| 2001 02 16 | 704 | 0.0 | 0.7− | 2001 04 26 | 704 | 0.2+ | 0.4− | 2006 09 26 | 703 | 1.3− | 1.5+ | | |
| 2001 02 16 | 704 | 0.2− | 0.7+ | 2001 04 26 | 704 | 0.6+ | 1.1+ | 2006 09 26 | 703 | 0.0 | 0.6− | | |
| 2001 02 16 | 704 | 0.8+ | 0.9+ | 2001 04 26 | 704 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.8− | 0.2+ | | |
| 2001 02 16 | 704 | 0.2+ | 0.5+ | 2001 04 26 | 704 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.9+ | | |
| 2001 02 16 | 704 | 0.5+ | 0.5+ | 2002 08 08 | 644 | 0.3− | 0.9+ | 2006 09 29 | 699 | 0.3− | 0.4+ | | |
| 2001 03 04 | 704 | 0.2+ | 0.4+ | 2002 08 08 | 644 | 0.2− | 1.0+ | 2006 09 29 | 699 | 0.7+ | 1.1− | | |
| 2001 03 04 | 704 | 1.5+ | 0.3+ | 2002 08 08 | 644 | 0.2− | 0.9+ | 2006 09 29 | 699 | 0.5+ | 0.7+ | | |
| 2001 03 04 | 704 | 0.2− | 1.2+ | 2002 08 14 | 704 | 0.2− | 1.4+ | 2006 09 29 | 699 | (0.8− | 1.8+) | | |
| 2001 03 04 | 704 | 0.0 | 0.1+ | 2002 08 14 | 704 | 1.3+ | 0.3− | 2006 10 10 | 644 | 0.1− | 0.5+ | | |
| 2001 03 04 | 704 | 0.2+ | 0.0 | 2002 08 14 | 704 | (2.4− | 2.6+) | 2006 10 10 | 644 | 0.0 | 0.6+ | | |
| 2001 03 16 | 704 | 0.3+ | 0.5+ | 2002 08 14 | 704 | 0.3− | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.6+ | | |
| 2001 03 16 | 704 | 0.3− | 0.2+ | 2002 08 28 | 644 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.5+ | | |
| 2001 03 16 | 704 | 0.3+ | 0.3+ | 2002 08 28 | 644 | 0.0 | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2001 03 16 | 704 | 0.7− | 0.4− | 2002 08 28 | 644 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.5+ | | |
| 2001 03 16 | 704 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.6− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2001 03 26 | 608 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 608 | 0.0 | 0.3− | 2002 09 15 | 644 | 0.7− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 03 26 | 608 | 0.4+ | 0.0 | 2003 11 30 | 704 | 0.3− | 1.0+ | 2006 10 28 | 703 | 0.9− | 0.4+ |
| 2001 03 31 | 704 | 0.4+ | 0.6+ | 2003 11 30 | 704 | 0.3+ | 0.3− | 2006 10 28 | 703 | 1.0+ | 1.1− |
| 2001 03 31 | 704 | 0.2− | 0.3+ | 2003 11 30 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.1− |
| 2001 03 31 | 704 | 0.4+ | 1.1+ | 2003 12 20 | 704 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.0 | 0.8+ |

**(139194)∗ 2001 FB$_{157}$ = 2005 JH$_{62}$**

Discovered 2001 Mar. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 74958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.00746 | | (2000.0) | | | |
| $n$ | 0.26912193 | $\omega$ | 165.54198 | | −0.83728740 | +0.53946880 |
| $a$ | 2.3759465 | $\Omega$ | 47.46179 | | −0.51287898 | −0.71850157 |
| $e$ | 0.0532317 | $i$ | 6.93857 | | −0.18948605 | −0.43900901 |
| $P$ | 3.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.4− | 0.6− | 2002 08 13 | 644 | 0.4− | 0.8+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 1999 11 12 | 704 | 0.2− | 0.3+ | 2002 08 13 | 644 | 0.6− | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 1999 11 12 | 704 | 0.5+ | 1.0+ | 2002 08 13 | 644 | 0.3− | 1.0+ | 2006 09 20 | 644 | 0.1+ | 0.4+ |
| 1999 11 12 | 704 | 0.3− | 0.4+ | 2003 11 21 | 695 | 0.5+ | 0.1+ | 2006 09 30 | 703 | (0.9+ | 2.8+) |
| 1999 11 12 | 704 | 0.5+ | 0.4+ | 2003 11 21 | 695 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.5+ |
| 2001 03 04 | 704 | 0.3− | 0.8+ | 2005 04 05 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.3+ |
| 2001 03 04 | 704 | 0.2+ | 1.4+ | 2005 04 05 | 691 | 0.1− | 0.4− | 2006 09 30 | 703 | 0.4− | 0.5+ |
| 2001 03 04 | 704 | 0.3+ | 1.0+ | 2005 04 05 | 691 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.9− | 0.6− |
| 2001 03 04 | 704 | 0.2− | 0.5+ | 2005 05 09 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.1− |
| 2001 03 04 | 704 | 0.2+ | 0.5+ | 2005 05 09 | 704 | 0.5+ | 0.7− | 2006 10 16 | 703 | (1.9+ | 1.2−) |
| 2001 03 18 | 699 | 0.4+ | 0.8− | 2005 05 09 | 704 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.3+ | 1.1− |
| 2001 03 18 | 699 | 0.9− | 0.2+ | 2005 05 10 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 03 18 | 699 | 0.4− | 1.1+ | 2005 05 10 | G96 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.9− | 0.2+ |
| 2001 03 18 | 699 | 0.1+ | 0.3+ | 2005 05 10 | G96 | 0.7− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2001 03 18 | 608 | 0.3+ | 0.9− | 2005 05 10 | G96 | 0.7− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2001 03 18 | 608 | 0.1− | 0.7− | 2005 05 13 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2001 03 18 | 608 | 0.4+ | 0.9− | 2005 05 13 | 704 | 0.6+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 03 27 | 699 | 0.4+ | 1.1+ | 2005 05 13 | 704 | 0.7+ | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 03 27 | 699 | 0.5+ | 0.1− | 2005 05 13 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2001 03 27 | 699 | 0.3− | 1.1+ | 2005 05 13 | 704 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2001 03 27 | 699 | 0.2− | 0.9+ | 2005 06 01 | G96 | 0.4− | 0.1− | 2006 11 25 | G96 | 0.4− | 0.2+ |
| 2001 03 31 | 704 | 0.2+ | 0.5− | 2005 06 01 | G96 | 0.3− | 0.2− | 2006 11 25 | G96 | 0.6− | 0.1− |
| 2001 03 31 | 704 | 0.8+ | 0.2+ | 2005 06 01 | G96 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.3− | 0.1+ |
| 2001 03 31 | 704 | 0.5+ | 0.7+ | 2005 06 01 | G96 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.3− | 0.4+ |

**(139195)∗ 2001 FT$_{158}$ = 2003 WA$_{128}$**

Discovered 2001 Mar. 27 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 56255)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.91600 | | (2000.0) | | | |
| $n$ | 0.28787882 | $\omega$ | 350.01356 | | +0.35214043 | −0.93317942 |
| $a$ | 2.2715880 | $\Omega$ | 79.34017 | | +0.86368438 | +0.29438195 |
| $e$ | 0.1641650 | $i$ | 4.19715 | | +0.36061949 | +0.20619270 |
| $P$ | 3.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.3+ | 0.5− | 2004 01 16 | 644 | 0.4− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 1999 09 14 | 704 | 0.4+ | 0.2− | 2004 01 16 | 644 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 1999 09 14 | 704 | 0.3+ | 0.4− | 2004 01 20 | 704 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 1999 09 14 | 704 | 0.2+ | 0.6− | 2004 01 20 | 704 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 1999 09 14 | 704 | 0.0 | 0.0 | 2004 01 20 | 704 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 1999 09 30 | 704 | 0.5− | 0.1+ | 2004 01 20 | 704 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1999 09 30 | 704 | 0.1+ | 0.5+ | 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 1999 09 30 | 704 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 1999 09 30 | 704 | 0.5− | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2001 03 19 | 704 | 0.3− | 0.6+ | 2004 01 30 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2001 03 19 | 704 | 0.9+ | 0.7+ | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2001 03 19 | 704 | 0.1+ | 1.1+ | 2004 02 11 | 699 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 2001 03 19 | 704 | 0.0 | 0.2− | 2004 02 11 | 699 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2001 03 19 | 704 | 0.0 | 1.3+ | 2004 02 11 | 699 | 0.8− | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2001 03 20 | 209 | 0.0 | 0.5+ | 2004 02 11 | 699 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.5+ | 0.0 |
| 2001 03 20 | 209 | 0.2+ | 0.5+ | 2004 02 15 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.3+ |
| 2001 03 20 | 209 | 0.3+ | 0.5+ | 2004 02 15 | 704 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 03 27 | 608 | 0.9+ | 0.1+ | 2004 02 15 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 03 27 | 608 | 0.8+ | 0.1− | 2004 02 15 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2001 03 27 | 608 | 0.8+ | 0.3+ | 2004 02 15 | 704 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6− |
| 2001 03 29 | 699 | 1.3+ | 0.3+ | 2004 03 20 | 704 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.4+ | 0.1− |
| 2001 03 29 | 699 | 0.7+ | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.2− |
| 2001 03 29 | 699 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 03 29 | 704 | 1.2− | 1.1+ | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 03 29 | 704 | 0.3+ | 0.5+ | 2005 06 28 | G96 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 03 29 | 699 | 0.6+ | 0.5+ | 2005 06 28 | G96 | 0.1+ | 0.2+ | 2006 10 22 | 704 | 0.0 | 0.7+ |
| 2001 03 29 | 704 | 0.3− | 0.5+ | 2005 06 28 | G96 | 0.8− | 1.1+ | 2006 10 22 | 704 | 0.5− | 0.2+ |
| 2003 11 20 | 704 | 0.9+ | 0.0 | 2005 06 28 | G96 | 0.4+ | 0.9+ | 2006 10 22 | 704 | 0.5+ | 0.3+ |
| 2003 11 20 | 704 | 0.3− | 0.1+ | 2006 08 28 | 704 | 0.1− | 1.4− | 2006 10 22 | 704 | 0.6+ | 0.6+ |
| 2003 11 20 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 704 | 0.3− | 0.4+ | 2006 10 22 | 704 | 0.3+ | 1.2+ |
| 2003 11 20 | 704 | 0.6+ | 0.9+ | 2006 08 28 | 704 | 0.6+ | 0.1− | 2006 10 27 | 704 | 1.2+ | 1.1− |
| 2003 11 24 | 704 | 0.5− | 0.3− | 2006 08 28 | 704 | 0.5− | 0.6+ | 2006 10 27 | 704 | 0.3+ | 0.9− |
| 2003 11 24 | 704 | 0.7− | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.3+ | 0.4− |
| 2003 11 24 | 704 | 1.4+ | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.1− | 2006 10 27 | 704 | 0.3− | 0.6− |
| 2003 11 24 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.3+ | 2006 10 27 | 704 | 0.6− | 0.4− |
| 2003 11 24 | 704 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.3+ | 0.3− | 2006 10 31 | 704 | 0.3+ | 0.0 |
| 2003 12 19 | 704 | (0.3− | 1.6−) | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 10 31 | 704 | 0.0 | 0.2+ |
| 2003 12 19 | 704 | (1.1− | 1.9−) | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 704 | 0.0 | 0.2+ |
| 2003 12 19 | 704 | 0.1− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 31 | 704 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.0 | 0.6+ | 2006 09 22 | 704 | 0.8+ | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 0.3− | 0.5+ | 2006 09 22 | 704 | (0.1+ | 2.0+) | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.3− | 0.5+ | 2006 11 13 | 703 | 0.6+ | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.7− |
| 2003 12 22 | 704 | 0.6− | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.6+ | 2006 11 13 | 703 | 0.2+ | 0.5− |
| 2003 12 22 | 704 | 0.7+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.1− | 0.7− |
| 2003 12 22 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.5− | 1.0− |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 1.1− | 1.2+ |
| 2003 12 22 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.0 | 1.0+ |
| 2003 12 22 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 1.4− | 0.8− |
| 2003 12 22 | 704 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.9− | 1.1+ |
| 2003 12 27 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.3− | 0.7− |
| 2003 12 27 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.1+ | 2006 11 17 | 704 | 1.1− | 0.5− |
| 2003 12 27 | 704 | 0.4− | 0.3+ | 2006 09 30 | 703 | 1.0+ | 1.2+ | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2003 12 27 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.1− |
| 2003 12 27 | 704 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 17 | 704 | 0.7− | 0.4− |
| 2003 12 29 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.4− | 0.3+ |
| 2003 12 29 | 691 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.8− | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2003 12 29 | 691 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.8− | 0.3+ | 2006 11 20 | 704 | 2.1− | 0.2− |
| 2004 01 13 | 699 | 0.1− | 1.1− | 2006 10 01 | 704 | 0.9− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2004 01 13 | 699 | 0.6− | 0.2− | 2006 10 01 | 704 | 0.3− | 0.4+ | 2006 11 20 | 704 | 0.6− | 0.3− |
| 2004 01 13 | 699 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.2− | 0.8+ | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2004 01 13 | 699 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.7− | 0.1+ |
| 2004 01 16 | 644 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.4− | 1.4+ |

**(139196)∗ 2001 FJ$_{161}$ = 2002 TH$_{78}$**

Discovered 2001 Mar. 29 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37590)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.24441 | | (2000.0) | | | |
| $n$ | 0.26230608 | $\omega$ | 315.42742 | | −0.30303922 | +0.95235179 |
| $a$ | 2.4169286 | $\Omega$ | 296.90410 | | −0.86317044 | −0.28966256 |
| $e$ | 0.1466516 | $i$ | 2.22002 | | −0.40386139 | −0.09550747 |
| $P$ | 3.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.1+ | 0.4− | 2002 10 01 | 699 | 0.1+ | 0.7+ | 2003 12 27 | 691 | 0.3+ | 0.0 |
| 1998 08 17 | 704 | 0.6− | 0.5+ | 2002 10 01 | 699 | 0.7− | 1.1+ | 2003 12 27 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.2− | 0.0 | 2002 10 01 | 699 | 0.5− | 0.3+ | 2004 01 13 | 691 | 0.3+ | 0.2− | | |
| 1998 08 17 | 704 | 1.1− | 1.4+ | 2002 10 04 | 704 | 0.5+ | 0.4− | 2004 01 13 | 691 | 0.1+ | 0.0 | | |
| 2001 03 24 | 699 | 1.1+ | 0.4− | 2002 10 04 | 704 | 0.2− | 0.4− | 2004 01 13 | 691 | 0.2+ | 0.2− | | |
| 2001 03 24 | 699 | 0.7− | 1.0+ | 2002 10 04 | 704 | 0.9− | 0.4+ | 2005 06 04 | 704 | 0.3− | 0.8+ | | |
| 2001 03 24 | 699 | 0.9+ | 0.4− | 2002 10 04 | 704 | 0.2+ | 0.1− | 2005 06 04 | 704 | 0.3− | 0.8+ | | |
| 2001 03 24 | 699 | 0.8− | 0.7+ | 2002 10 04 | 644 | 0.0 | 0.5+ | 2005 06 04 | 704 | 0.5+ | 0.1− | | |
| 2001 03 24 | 699 | 0.8+ | 0.5+ | 2002 10 04 | 644 | 0.2+ | 0.5+ | 2005 06 04 | 704 | 0.3− | 0.6+ | | |
| 2001 03 24 | 699 | 0.3− | 1.4+ | 2002 10 04 | 644 | 0.0 | 0.5+ | 2006 10 13 | 691 | 0.3+ | 0.3+ | | |
| 2001 03 24 | 699 | 0.9+ | 0.5+ | 2002 10 05 | 644 | 0.2− | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.5+ | | |
| 2001 03 24 | 699 | 0.4− | 0.3+ | 2002 10 05 | 644 | 0.0 | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | | |
| 2001 03 29 | 608 | 0.6+ | 0.7− | 2002 10 05 | 644 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.3+ | | |
| 2001 03 29 | 608 | 0.9+ | 0.6− | 2002 10 06 | 644 | 0.0 | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1− | | |
| 2001 03 29 | 608 | 1.0+ | 0.4− | 2002 10 06 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.2+ | | |
| 2001 04 01 | 704 | (1.3+ | 1.8+) | 2002 10 06 | 644 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1+ | | |
| 2001 04 01 | 704 | (0.5+ | 1.7+) | 2002 10 09 | 704 | 0.4+ | 0.7− | 2006 10 21 | G96 | 0.7− | 0.5− | | |
| 2001 04 01 | 704 | (0.3− | 1.7+) | 2002 10 09 | 704 | 0.9− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.8− | | |
| 2001 04 01 | 704 | 0.6+ | 0.2− | 2002 10 09 | 704 | 0.8+ | 0.0 | 2006 10 21 | G96 | (0.4− | 2.1−) | | |
| 2001 04 26 | 699 | 1.0+ | 1.1+ | 2002 10 09 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2001 04 26 | 699 | 0.3− | 1.2+ | 2002 10 12 | 704 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.0 | | |
| 2001 04 26 | 699 | 0.1+ | 0.6+ | 2002 10 12 | 704 | 0.6− | 0.9+ | 2006 11 17 | G96 | 0.1− | 0.2− | | |
| 2001 04 26 | 699 | 0.7+ | 1.4+ | 2002 10 12 | 704 | 0.6− | 0.4− | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2001 04 27 | 608 | 0.8− | 0.2+ | 2003 12 25 | 291 | 0.6− | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.2− | | |
| 2001 04 27 | 608 | 0.7− | 0.4+ | 2003 12 25 | 291 | 0.6− | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2001 04 27 | 608 | 0.9− | 0.5+ | 2003 12 25 | 291 | 0.3− | 0.5+ | | | | | | |
| 2002 10 01 | 699 | 0.3− | 0.1+ | 2003 12 27 | 691 | 0.4+ | 0.4+ | | | | | | |

**(139197)∗ 2001 FR$_{161}$**

Discovered 2001 Mar. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.12317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25431005 | $\omega$ | 121.02726 | | −0.74016458 | +0.65137540 | |
| $a$ | 2.4673288 | $\Omega$ | 100.17546 | | −0.66016701 | −0.65673523 | |
| $e$ | 0.2135299 | $i$ | 9.76457 | | −0.12781203 | −0.38001174 | |
| $P$ | 3.88 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | 0.5+ | 1.3+ | 2001 05 23 | 704 | 0.0 | 0.4− | 2005 06 04 | 691 | 0.0 | 0.1+ | | |
| 2001 01 26 | 704 | 0.7− | 0.3+ | 2001 05 23 | 704 | 0.1+ | 0.6− | 2005 06 04 | 691 | 0.1+ | 0.0 | | |
| 2001 01 26 | 704 | 0.4+ | 0.0 | 2001 05 23 | 699 | 0.0 | 0.6+ | 2005 06 04 | 691 | 0.2+ | 0.1+ | | |
| 2001 01 26 | 704 | 1.2+ | 0.3+ | 2001 05 23 | 704 | 0.0 | 0.2+ | 2005 06 05 | 704 | 0.2+ | 0.2− | | |
| 2001 02 16 | 704 | 0.8+ | 0.7+ | 2001 05 23 | 704 | 0.3+ | 0.2− | 2005 06 05 | 704 | 0.1− | 0.0 | | |
| 2001 02 16 | 704 | 0.4− | 0.7+ | 2001 05 23 | 704 | 0.0 | 0.1− | 2005 06 05 | 704 | 0.5− | 0.5− | | |
| 2001 02 16 | 704 | 0.0 | 1.0+ | 2001 05 23 | 699 | (2.3+ | 1.0−) | 2005 06 05 | 704 | 0.1− | 0.1+ | | |
| 2001 02 16 | 704 | 0.1− | 0.0 | 2001 05 23 | 699 | 0.0 | 0.1− | 2005 06 05 | 704 | 0.3− | 0.5− | | |
| 2001 03 04 | 704 | 0.4+ | 0.4+ | 2001 05 29 | 704 | 0.2− | 0.7+ | 2005 06 09 | 691 | 0.4+ | 0.2− | | |
| 2001 03 04 | 704 | 0.3− | 0.5− | 2001 05 29 | 704 | 0.0 | 0.7+ | 2005 06 09 | 691 | 0.0 | 0.1+ | | |
| 2001 03 04 | 704 | 0.6+ | 0.5− | 2001 05 29 | 704 | 0.7+ | 0.2− | 2005 06 09 | 691 | 0.2+ | 0.0 | | |
| 2001 03 04 | 704 | 0.0 | 0.7+ | 2001 05 29 | 704 | 0.5+ | 0.9+ | 2005 06 10 | 704 | 0.3+ | 0.1− | | |
| 2001 03 04 | 704 | 0.3− | 0.1+ | 2001 05 29 | 704 | 0.0 | 0.5+ | 2005 06 10 | 704 | 0.5− | 0.7+ | | |
| 2001 03 23 | 608 | 0.2+ | 0.3− | 2001 06 18 | 699 | 0.7+ | 0.4− | 2005 06 10 | 704 | 0.1− | 1.2+ | | |
| 2001 03 23 | 608 | 0.5+ | 0.0 | 2001 06 18 | 699 | 0.3+ | 0.1− | 2005 06 10 | 704 | 0.2+ | 0.3+ | | |
| 2001 03 23 | 608 | 0.4+ | 0.3− | 2001 06 18 | 699 | 0.2− | 0.5+ | 2005 06 14 | 691 | 0.0 | 0.1+ | | |
| 2001 03 30 | 704 | 0.4− | 0.4− | 2001 06 18 | 699 | 0.7+ | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.1+ | | |
| 2001 03 30 | 704 | 0.1− | 0.7+ | 2003 12 25 | 691 | 0.0 | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.0 | | |
| 2001 03 30 | 704 | 0.3+ | 0.2+ | 2003 12 25 | 691 | 0.1− | 0.3+ | 2005 06 23 | 644 | 0.1+ | 0.1− | | |
| 2001 03 30 | 704 | (1.9− | 0.3−) | 2003 12 25 | 691 | 0.1− | 0.4+ | 2005 06 23 | 644 | 0.0 | 0.1− | | |
| 2001 03 30 | 704 | 0.2− | 0.5+ | 2005 03 07 | 704 | 0.7− | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.0 | | |
| 2001 03 31 | 699 | 0.1+ | 0.4+ | 2005 03 07 | 704 | 0.2+ | 0.2+ | 2005 06 28 | 644 | 0.1− | 0.1− | | |
| 2001 03 31 | 699 | 0.1− | 0.1+ | 2005 03 07 | 704 | 0.1+ | 0.6+ | 2005 06 28 | 644 | 0.1− | 0.1− | | |
| 2001 03 31 | 699 | 0.0 | 0.4− | 2005 03 07 | 704 | 0.8+ | 0.3− | 2005 06 28 | 644 | 0.2− | 0.0 | | |
| 2001 03 31 | 699 | 0.5− | 0.2− | 2005 05 13 | 691 | 0.0 | 0.1+ | 2005 07 04 | 704 | 0.8− | 0.2+ | | |
| 2001 04 15 | 704 | 0.3+ | 0.2− | 2005 05 13 | 691 | 0.0 | 0.1+ | 2005 07 04 | 704 | 0.4+ | 0.2+ | | |
| 2001 04 15 | 704 | 0.3− | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.0 | 2005 07 04 | 704 | 0.6+ | 0.3+ | | |
| 2001 04 15 | 704 | 0.0 | 0.1− | 2005 05 16 | 704 | 0.0 | 0.8+ | 2005 07 30 | E12 | 1.2− | 0.2+ | | |
| 2001 04 15 | 704 | 0.4− | 0.3+ | 2005 05 16 | 704 | 0.3− | 0.1− | 2005 07 30 | E12 | 0.3− | 0.1− | | |
| 2001 04 15 | 704 | 0.1− | 0.2+ | 2005 05 16 | 704 | 0.0 | 0.7+ | 2005 07 30 | E12 | 0.1+ | 0.2+ | | |
| 2001 04 17 | 699 | 0.3− | 0.2+ | 2005 05 16 | 704 | 0.3+ | 0.1+ | 2005 07 30 | E12 | 1.0+ | 0.2+ | | |
| 2001 04 17 | 699 | 0.3− | 0.4− | 2005 05 16 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.0 | | |
| 2001 04 17 | 699 | 0.2− | 0.2− | 2005 05 28 | 599 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.0 | 0.2+ | | |
| 2001 04 17 | 699 | 0.5− | 0.1− | 2005 05 28 | 599 | 0.0 | 0.1− | 2006 09 18 | 703 | 1.3− | 0.2+ | | |
| 2001 04 25 | 106 | 0.1+ | 0.4+ | 2005 05 28 | 599 | 0.0 | 0.2− | 2006 09 18 | 703 | 1.2+ | 1.0− | | |
| 2001 04 25 | 106 | 0.2− | 0.3− | 2005 05 29 | 599 | 0.0 | 0.0 | 2006 09 25 | 699 | 1.0+ | 1.1− | | |
| 2001 04 25 | 106 | 0.6− | 0.1+ | 2005 06 02 | 703 | (4.6+ | 1.1+) | 2006 09 25 | 699 | 0.0 | 0.9+ | | |
| 2001 04 27 | 704 | 0.8+ | 1.1− | 2005 06 02 | 703 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.1− | 1.1− | | |
| 2001 04 27 | 704 | 0.4+ | 0.0 | 2005 06 02 | 703 | 0.0 | 0.3+ | 2006 09 25 | 699 | (0.1+ | 1.9+) | | |
| 2001 04 27 | 704 | 0.1+ | 0.0 | 2005 06 02 | 703 | 0.1+ | 0.6+ | 2006 10 02 | 703 | (1.8− | 2.3+) | | |
| 2001 04 27 | 704 | 0.0 | 0.1− | 2005 06 03 | 691 | 0.0 | 0.1− | 2006 10 02 | 703 | 1.1− | 1.5+ | | |
| 2001 04 27 | 704 | 0.2+ | 0.4− | 2005 06 03 | 691 | 0.0 | 0.1− | 2006 10 02 | 703 | (0.9− | 1.6+) | | |
| 2001 05 01 | 704 | 1.2− | 0.1− | 2005 06 03 | 691 | 0.0 | 0.0 | 2006 10 02 | 703 | 0.0 | 0.6+ | | |
| 2001 05 01 | 704 | 0.5− | 0.5− | 2005 06 03 | E12 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.8+ | 0.1− | | |
| 2001 05 01 | 704 | 0.2− | 0.5− | 2005 06 03 | E12 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.3+ | 2.5+ | | |
| 2001 05 01 | 704 | 0.6− | 1.0− | 2005 06 03 | E12 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 2001 05 23 | 699 | 0.2− | 0.2+ | 2005 06 03 | E12 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.9− | 1.6+ | | |

**(139198)∗ 2001 FP$_{162}$**

Discovered 2001 Mar. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.19975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24451783 | $\omega$ | 328.14843 | | −0.95699505 | +0.28853595 | |
| $a$ | 2.5327696 | $\Omega$ | 228.65263 | | −0.25703202 | −0.89146214 | |
| $e$ | 0.1499481 | $i$ | 2.29976 | | −0.13451772 | −0.34934548 | |
| $P$ | 4.03 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 25 | 691 | 0.4− | 0.3+ | 2001 05 18 | 699 | 0.7− | 0.7+ | 2005 04 11 | 699 | 0.3− | 0.6− | | |
| 1993 05 25 | 691 | 0.3− | 0.5+ | 2001 05 18 | 699 | 1.0+ | 1.2+ | 2005 04 11 | 699 | 0.1− | 0.0 | | |
| 1993 05 25 | 691 | 0.2− | 0.0 | 2001 05 18 | 699 | 0.1− | 0.4+ | 2005 04 12 | 704 | (2.3+ | 1.1+) | | |
| 1997 05 14 | 691 | 0.0 | 0.3− | 2001 05 18 | 699 | 0.2+ | 1.0+ | 2005 04 12 | 704 | 1.6+ | 0.8+ | | |
| 1997 05 14 | 691 | 0.5+ | 0.5− | 2003 11 19 | 691 | 0.3− | 0.1+ | 2005 04 12 | 704 | 1.5+ | 0.9+ | | |
| 1997 05 14 | 691 | 0.3+ | 0.4− | 2003 11 19 | 691 | 0.1− | 0.3+ | 2005 04 12 | 704 | 1.2+ | 0.6+ | | |
| 1999 11 12 | 704 | 0.3− | 0.1+ | 2003 11 19 | 691 | 0.3− | 0.2+ | 2005 04 12 | 704 | 1.6+ | 0.9+ | | |
| 1999 11 12 | 704 | 0.7− | 0.3+ | 2003 11 24 | 699 | 0.9− | 0.1− | 2005 04 17 | 691 | 0.0 | 0.0 | | |
| 1999 11 12 | 704 | 0.4− | 0.2+ | 2003 11 24 | 699 | 0.9− | 0.4+ | 2005 04 17 | 691 | 0.2− | 0.1+ | | |
| 2001 03 24 | 699 | 0.0 | 1.5+ | 2003 11 24 | 699 | 0.5+ | 1.1− | 2005 04 17 | 691 | 0.1− | 0.0 | | |
| 2001 03 24 | 699 | 0.3+ | 0.0 | 2003 11 24 | 699 | 1.0− | 0.7+ | 2005 04 30 | 644 | 0.3− | 0.2− | | |
| 2001 03 24 | 699 | 0.6+ | 0.2+ | 2003 11 26 | 678 | (2.8+ | 1.5+) | 2005 04 30 | 644 | 0.5− | 0.2− | | |
| 2001 03 24 | 699 | 0.1+ | 0.1+ | 2003 11 26 | 678 | 0.3− | 0.3+ | 2005 04 30 | 644 | 0.2− | 0.1− | | |
| 2001 03 31 | 691 | 0.3− | 0.0 | 2003 12 01 | 691 | 0.1+ | 0.4+ | 2005 05 08 | 703 | 1.4− | 0.4− | | |
| 2001 03 31 | 691 | 0.2− | 0.1+ | 2003 12 01 | 691 | 0.1+ | 0.2+ | 2005 05 08 | 703 | (2.0− | 0.9+) | | |
| 2001 03 31 | 691 | 0.1− | 0.1+ | 2003 12 01 | 691 | 0.0 | 0.3+ | 2005 05 08 | 703 | 1.5− | 1.0− | | |
| 2001 04 01 | 704 | 0.2+ | 1.2+ | 2003 12 19 | 691 | 0.3+ | 0.3+ | 2005 05 08 | 703 | 1.1− | 0.9− | | |
| 2001 04 01 | 704 | 0.5− | 0.2+ | 2003 12 19 | 691 | 0.0 | 0.1+ | 2005 05 09 | 699 | 0.9+ | 0.3− | | |
| 2001 04 01 | 704 | 1.5+ | 1.3+ | 2003 12 19 | 691 | 0.1+ | 0.2+ | 2005 05 09 | 699 | 0.2− | 0.5+ | | |
| 2001 04 01 | 704 | 0.4− | 0.6+ | 2003 12 22 | 291 | 0.4+ | 0.1+ | 2005 05 09 | 699 | 0.6− | 0.1+ | | |
| 2001 04 16 | 699 | 0.1+ | 0.4+ | 2003 12 22 | 291 | 0.3+ | 0.6+ | 2005 05 09 | 699 | 0.6+ | 0.7− | | |
| 2001 04 16 | 699 | 0.6+ | 0.0 | 2003 12 22 | 291 | 0.1− | 0.4+ | 2005 05 12 | 699 | 1.5+ | 0.6− | | |
| 2001 04 16 | 699 | 1.0+ | 0.5+ | 2005 03 11 | G96 | 0.6− | 0.2− | 2005 05 12 | 699 | 0.8+ | 0.2− | | |
| 2001 04 16 | 699 | 0.8+ | 0.1− | 2005 03 11 | G96 | 0.4− | 0.4− | 2005 05 12 | G96 | 0.5− | 0.2− | | |
| 2001 04 17 | 704 | 0.1+ | 0.7+ | 2005 03 11 | G96 | 0.4− | 0.3− | 2005 05 12 | G96 | 0.6− | 0.2− | | |
| 2001 04 17 | 704 | 1.3− | 0.1+ | 2005 03 11 | G96 | 0.5− | 0.2− | 2005 05 12 | 699 | 0.4+ | 1.1+ | | |
| 2001 04 17 | 704 | 1.0+ | 0.2− | 2005 04 04 | 691 | 0.3− | 0.0 | 2005 05 12 | G96 | 0.5− | 0.1+ | | |
| 2001 04 17 | 704 | 0.7+ | 0.1+ | 2005 04 04 | 691 | 0.2+ | 0.2+ | 2005 05 12 | G96 | 0.6− | 0.3− | | |
| 2001 04 17 | 704 | 0.0 | 0.3+ | 2005 04 04 | 691 | 0.1+ | 0.0 | 2005 05 12 | 699 | 0.1+ | 1.1+ | | |
| 2001 04 23 | 704 | 0.5+ | 0.2− | 2005 04 04 | 704 | 0.5− | 0.5− | 2005 05 23 | 644 | 0.1− | 0.1− | | |
| 2001 04 23 | 704 | 0.7+ | 0.0 | 2005 04 04 | 704 | 0.6− | 0.2+ | 2005 05 23 | 644 | 0.1− | 0.2− | | |
| 2001 04 23 | 704 | 0.7+ | 1.0+ | 2005 04 04 | 704 | 1.2− | 0.3+ | 2005 05 23 | 644 | 0.1+ | 0.2+ | | |
| 2001 04 23 | 704 | 0.7+ | 0.6+ | 2005 04 04 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.8+ | | |
| 2001 04 23 | 704 | 1.2+ | 0.6+ | 2005 04 09 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.5− | 0.9+ | | |
| 2001 04 30 | 704 | 0.1+ | 0.2+ | 2005 04 09 | 691 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.0 | 0.7+ | | |
| 2001 04 30 | 704 | 0.2− | 0.1+ | 2005 04 09 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.8+ | | |
| 2001 04 30 | 704 | 0.6+ | 0.3− | 2005 04 09 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.7− | 0.0 | | |
| 2001 04 30 | 704 | 1.1+ | 1.1+ | 2005 04 09 | 691 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.6− | 0.1+ | | |
| 2001 05 11 | 608 | 0.8+ | 0.6− | 2005 04 09 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.6− | 0.3+ | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 05 11 | 608 | 0.1− | 0.1− | 2005 04 11 | 699 | 0.5− | 0.1+ | |
| 2001 05 11 | 608 | 0.1− | 0.2− | 2005 04 11 | 699 | 0.5− | 0.3+ | |

**(139199)∗ 2001 FV$_{163}$**

Discovered 2001 Mar. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.79522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26178074 | $\omega$ | 43.45466 | | −0.84510418 | +0.53445159 | |
| $a$ | 2.4201610 | $\Omega$ | 168.83167 | | −0.50663895 | −0.79311343 | |
| $e$ | 0.1271001 | $i$ | 3.74941 | | −0.17063383 | −0.29211742 | |
| $P$ | 3.77 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.2− | 0.3+ | 2002 08 28 | 644 | 0.2+ | 0.1− | 2005 05 03 | 704 | 0.5+ | 0.4+ | |
| 1997 01 31 | 691 | 0.1− | 0.5− | 2005 04 02 | 185 | 1.2+ | 1.1− | 2005 05 03 | 704 | 0.3+ | 0.4− | |
| 1997 01 31 | 691 | 0.5− | 0.0 | 2005 04 02 | 185 | 0.3− | 0.6− | 2005 05 03 | 704 | 1.0+ | 0.8− | |
| 1997 03 09 | 691 | 0.1+ | 0.2+ | 2005 04 02 | 699 | 0.3+ | 0.7− | 2005 05 03 | 704 | 0.0 | 0.1− | |
| 1997 03 09 | 691 | 0.0 | 0.1+ | 2005 04 02 | 699 | 0.2− | 0.4+ | 2005 05 03 | 704 | 0.5+ | 0.1+ | |
| 1997 03 09 | 691 | 0.2+ | 0.3+ | 2005 04 02 | 699 | (2.0+ | 0.7−) | 2005 05 12 | 704 | 0.2− | 0.1+ | |
| 2000 12 23 | 645 | 0.1− | 0.1+ | 2005 04 02 | 699 | 0.7+ | 1.3+ | 2005 05 12 | 704 | 0.5+ | 0.7− | |
| 2000 12 23 | 645 | 0.1− | 0.0 | 2005 04 04 | 704 | 0.0 | 0.5+ | 2005 05 12 | 704 | 0.0 | 1.3+ | |
| 2001 02 22 | 704 | 0.0 | 0.3− | 2005 04 04 | 704 | 0.2− | 1.1+ | 2005 05 12 | 704 | 0.3+ | 1.2+ | |
| 2001 02 22 | 704 | 0.7+ | 0.6+ | 2005 04 04 | 704 | 0.7− | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.2+ | |
| 2001 02 22 | 704 | 0.4− | 0.3− | 2005 04 04 | 704 | 0.1− | 0.7− | 2006 08 28 | 691 | 0.1− | 0.3+ | |
| 2001 02 22 | 704 | 0.3+ | 0.6+ | 2005 04 05 | 703 | 1.2− | 1.1+ | 2006 08 28 | 691 | 0.3− | 0.8+ | |
| 2001 02 22 | 704 | 0.2+ | 0.7+ | 2005 04 05 | 703 | 0.6− | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.7+ | |
| 2001 03 18 | 699 | 0.2+ | 0.1− | 2005 04 05 | 703 | 0.7− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.7+ | |
| 2001 03 18 | 699 | 0.0 | 0.7+ | 2005 04 05 | 703 | 1.4− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.9+ | |
| 2001 03 18 | 699 | 0.7+ | 0.0 | 2005 04 13 | 699 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.0 | |
| 2001 03 18 | 699 | 0.2+ | 0.1+ | 2005 04 13 | 699 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.3− | 0.1+ | |
| 2001 03 24 | 691 | 0.6+ | 0.8+ | 2005 04 13 | 699 | (1.9− | 0.3−) | 2006 09 26 | G96 | 0.2− | 0.1+ | |
| 2001 03 24 | 691 | 0.7+ | 0.8+ | 2005 04 13 | 699 | 0.8− | 1.2+ | 2006 09 26 | G96 | 0.1− | 0.3+ | |
| 2001 03 24 | 691 | 1.1+ | 0.6+ | 2005 04 16 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.2− | 0.4+ | |
| 2001 04 16 | 699 | 1.5+ | 1.1+ | 2005 04 16 | 691 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.2− | 0.7+ | |
| 2001 04 16 | 699 | 0.8+ | 1.2+ | 2005 04 16 | 691 | 0.1− | 0.3− | 2006 09 30 | 691 | 0.4− | 0.6+ | |
| 2001 04 16 | 699 | 1.0− | 1.0+ | 2005 04 18 | 703 | (1.8+ | 0.2+) | 2006 10 20 | G96 | 0.4− | 0.1− | |
| 2001 04 16 | 699 | 0.1− | 0.6+ | 2005 04 18 | 703 | 0.1+ | 0.6− | 2006 10 20 | G96 | 0.3− | 0.1− | |
| 2002 08 28 | 644 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.2− | 1.3+ | 2006 10 20 | G96 | 0.4− | 0.0 | |
| 2002 08 28 | 644 | 0.4− | 0.3− | 2005 04 18 | 703 | 0.5+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.0 | |

**(139200)∗ 2001 FZ$_{164}$ = 2002 RZ$_{72}$**

Discovered 2001 Mar. 18 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 35061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.37671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26375668 | $\omega$ | 257.65896 | | −0.53742731 | +0.84306610 | |
| $a$ | 2.4080587 | $\Omega$ | 339.79280 | | −0.74911071 | −0.48830415 | |
| $e$ | 0.0558190 | $i$ | 3.36652 | | −0.38730482 | −0.22538547 | |
| $P$ | 3.74 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 608 | 1.1− | 0.4+ | 2002 09 08 | 608 | 0.2+ | 0.0 | 2005 05 19 | 644 | 0.4+ | 0.4+ | |
| 2001 03 18 | 608 | 0.6− | 0.6+ | 2002 09 08 | 608 | 0.0 | 0.2+ | 2005 05 19 | 644 | 0.6+ | 0.3+ | |
| 2001 03 18 | 608 | 0.5− | 0.2− | 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 05 19 | E12 | 0.7− | 0.0 | |
| 2001 03 20 | 699 | 0.2− | 0.7+ | 2002 09 14 | 644 | 0.5− | 0.3+ | 2005 05 19 | E12 | 0.4− | 0.1+ | |
| 2001 03 20 | 699 | (1.1+ | 1.6+) | 2002 09 14 | 644 | 0.1− | 0.8+ | 2005 05 19 | E12 | 0.5− | 0.5+ | |
| 2001 03 20 | 699 | 0.5+ | 0.4+ | 2002 10 03 | 704 | (1.6+ | 0.9+) | 2005 05 19 | E12 | 0.1+ | 0.1− | |
| 2001 03 20 | 699 | 0.3+ | 0.7+ | 2002 10 03 | 704 | 0.2− | 0.4+ | 2006 07 22 | G96 | 1.4+ | 0.9− | |
| 2001 03 23 | 699 | 1.4+ | 1.0+ | 2002 10 03 | 704 | 0.4− | 0.1− | 2006 07 22 | G96 | 0.1− | 1.4− | |
| 2001 03 23 | 699 | 0.7+ | 0.4+ | 2002 10 03 | 704 | 0.4− | 1.3+ | 2006 07 22 | G96 | 0.0 | 0.2+ | |
| 2001 03 23 | 704 | (0.5− | 2.1+) | 2002 10 03 | 704 | 0.1+ | 0.2− | 2006 07 22 | G96 | 0.2+ | 0.0 | |
| 2001 03 23 | 699 | 0.5+ | 0.8+ | 2002 10 10 | 291 | 0.1+ | 0.1+ | 2006 09 02 | 204 | 0.4− | 0.3+ | |
| 2001 03 23 | 699 | 1.4+ | 0.7+ | 2002 10 10 | 291 | 0.3+ | 0.1+ | 2006 09 02 | 204 | 0.1+ | 0.1+ | |
| 2001 03 23 | 704 | 0.7+ | 0.8+ | 2002 10 10 | 291 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2+ | |
| 2001 03 23 | 704 | 1.0+ | 1.2+ | 2003 12 18 | 704 | 0.6+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1− | |
| 2001 03 23 | 704 | 0.2− | 1.4+ | 2003 12 18 | 704 | 0.1+ | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | |
| 2002 08 28 | 644 | 0.3− | 0.3+ | 2003 12 18 | 704 | 1.0+ | 0.6+ | 2006 09 17 | 703 | 1.0+ | 0.2− | |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2003 12 22 | 704 | (0.2− | 2.7+) | 2006 09 17 | 703 | 0.5− | 0.2+ | |
| 2002 08 28 | 644 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.1− | 1.1+ | 2006 09 17 | 703 | 0.6+ | 0.1+ | |
| 2002 08 29 | 291 | 0.3− | 0.3+ | 2003 12 22 | 704 | 0.4− | 1.4+ | 2006 09 17 | 703 | 0.2+ | 1.0+ | |
| 2002 08 29 | 291 | 0.2− | 0.0 | 2003 12 22 | 704 | (0.3+ | 1.6+) | 2006 09 19 | 691 | 0.1− | 0.1+ | |
| 2002 08 29 | 291 | 0.3− | 0.2+ | 2003 12 27 | 704 | (0.2− | 1.9+) | 2006 09 19 | 691 | 0.3− | 0.1+ | |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2003 12 27 | 704 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1+ | |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2003 12 27 | 704 | 1.0− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.4− | |
| 2002 09 05 | 704 | 0.5− | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.0 | 0.1+ | |
| 2002 09 05 | 704 | 0.2− | 0.6+ | 2004 01 22 | 704 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.8− | 0.1+ | |
| 2002 09 07 | 704 | (0.1− | 1.6+) | 2004 01 22 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.8− | 0.5+ | |
| 2002 09 07 | 704 | 0.6− | 0.2− | 2005 05 12 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 2002 09 07 | 704 | 0.0 | 0.1− | 2005 05 12 | 644 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1+ | |
| 2002 09 07 | 704 | 0.0 | 0.1− | 2005 05 12 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.3+ | |
| 2002 09 08 | 608 | 0.1+ | 0.1+ | 2005 05 19 | 644 | 0.4+ | 0.3+ | | | | | |

**(139201)∗ 2001 FC$_{166}$ = 1995 UY$_{57}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 15827)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.02731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27475392 | $\omega$ | 251.44599 | | −0.03547076 | +0.99864221 | |
| $a$ | 2.3433659 | $\Omega$ | 16.65985 | | −0.85938558 | −0.01099443 | |
| $e$ | 0.1016789 | $i$ | 7.64744 | | −0.51009631 | −0.05092007 | |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1+ | 0.2− | 2002 09 13 | 608 | 1.3− | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.0 | |
| 1995 10 02 | 691 | 0.0 | 0.3− | 2002 09 13 | 608 | (2.0− | 1.0+) | 2006 10 19 | 691 | 0.2+ | 0.0 | |
| 1995 10 02 | 691 | 0.1+ | 0.1− | 2002 09 13 | 608 | 1.1− | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.1+ | |
| 1995 10 17 | 691 | 1.0− | 0.1+ | 2002 10 11 | 704 | 0.3+ | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.1− | |
| 1995 10 17 | 691 | 0.6− | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.8+ | 2006 10 23 | 691 | 0.6− | 0.0 | |
| 1995 10 17 | 691 | 0.6− | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.1− | |
| 1995 10 22 | 691 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.9+ | 2006 10 27 | 703 | 0.6+ | 0.5− | |
| 1995 10 22 | 691 | 1.5+ | 0.1− | 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.6+ | |
| 1995 10 22 | 691 | 0.1− | 0.6+ | 2003 12 28 | 704 | 0.3+ | 0.5− | 2006 10 27 | 703 | 0.5− | 0.4− | |
| 2001 03 19 | 699 | 1.1− | 0.7+ | 2003 12 28 | 704 | 0.5+ | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.2− | |
| 2001 03 19 | 699 | 0.8− | 0.2+ | 2003 12 28 | 704 | 0.7+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.0 | |
| 2001 03 19 | 699 | 0.4− | 0.4+ | 2003 12 28 | 704 | 0.5− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.0 | |
| 2001 03 19 | 699 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.1− | |
| 2001 03 24 | 704 | 0.4− | 0.2+ | 2003 12 29 | 704 | 0.5+ | 1.1+ | 2006 10 31 | 691 | 0.0 | 0.1− | |
| 2001 03 24 | 704 | 0.1+ | 0.8+ | 2003 12 29 | 704 | 0.2− | 0.6+ | 2006 10 31 | 691 | 0.3+ | 0.0 | |
| 2001 03 24 | 704 | 0.2+ | 1.2+ | 2003 12 29 | 704 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.0 | |
| 2001 03 24 | 704 | 0.2− | 1.4+ | 2003 12 29 | 704 | 0.8− | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.2+ | |
| 2001 03 24 | 704 | 0.8+ | 1.5+ | 2003 12 29 | 704 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2− | |
| 2001 04 01 | 704 | 0.5+ | 0.1− | 2003 12 29 | 704 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.5+ | |
| 2001 04 01 | 704 | 1.2+ | 0.3+ | 2003 12 29 | 704 | 0.5+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.5− | |
| 2001 04 01 | 704 | 0.5+ | 0.3+ | 2003 12 30 | 704 | 0.4+ | 0.7− | 2006 11 14 | G96 | 0.2+ | 0.4− | |
| 2001 04 18 | 691 | 0.1+ | 0.1− | 2003 12 30 | 704 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.4− | |
| 2001 04 18 | 691 | 0.2+ | 0.1− | 2003 12 30 | 704 | 0.2+ | 0.7− | 2006 11 14 | G96 | 0.5+ | 0.3− | |
| 2001 04 18 | 691 | 0.2+ | 0.0 | 2003 12 30 | 704 | 0.6+ | 0.6+ | 2006 11 16 | 704 | 0.4+ | 0.4+ | |
| 2002 09 06 | 704 | 0.6+ | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.0 | 0.8+ | |
| 2002 09 06 | 704 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.5− | 0.0 | |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.3− | | | | | |
| 2002 09 06 | 704 | 0.6+ | 0.3+ | 2006 10 04 | G96 | 0.4+ | 0.2− | | | | | |

**(139202)∗ 2001 FQ$_{166}$**

Discovered 2001 Mar. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 118.96196 | | (2000.0) | | | |
| $n$ | 0.27980509 | $\omega$ | 8.65844 | | +0.10315016 | +0.98937142 |
| $a$ | 2.3150781 | $\Omega$ | 267.30788 | | −0.91862217 | +0.05524324 |
| $e$ | 0.1206875 | $i$ | 5.88911 | | −0.38143591 | +0.13450792 |
| $P$ | 3.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.1− | 0.8+ | 2002 09 01 | 049 | 0.4+ | 0.4− | 2003 12 22 | 691 | 0.8− | 0.1+ |
| 1996 12 13 | 691 | 0.4+ | 0.3+ | 2002 09 11 | 608 | 0.0 | 0.0 | 2003 12 22 | 691 | 0.0 | 0.1− |
| 1996 12 13 | 691 | 0.1+ | 0.1− | 2002 09 11 | 608 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.1− | 0.3+ |
| 1996 12 17 | 691 | 0.1− | 0.0 | 2002 09 11 | 608 | 0.1− | 0.0 | 2004 01 27 | 691 | 0.0 | 0.2+ |
| 1996 12 17 | 691 | 0.0 | 0.0 | 2002 09 12 | 644 | 0.4− | 0.6+ | 2004 01 27 | 691 | 0.2− | 0.3+ |
| 1996 12 17 | 691 | 0.4+ | 0.1+ | 2002 09 12 | 644 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2001 03 03 | 704 | 0.7+ | 0.5+ | 2002 09 12 | 644 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.5− | 0.4− |
| 2001 03 03 | 704 | 0.1− | 1.0+ | 2002 09 13 | 644 | 0.1− | 0.6+ | 2006 10 20 | G96 | 0.5− | 0.6− |
| 2001 03 03 | 704 | 1.0+ | 0.6+ | 2002 09 13 | 644 | 0.0 | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 03 18 | 608 | 0.1− | 1.4− | 2002 09 13 | 644 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2001 03 18 | 608 | 0.1+ | 1.0− | 2002 09 15 | 608 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 03 18 | 608 | 0.2− | 0.8− | 2002 09 15 | 608 | 0.2− | 0.9− | 2006 11 19 | 704 | 0.5+ | 0.4− |
| 2001 03 19 | 699 | 0.7+ | 0.6+ | 2002 09 15 | 608 | 0.6− | 0.9− | 2006 11 20 | 704 | 0.1− | 0.4− |
| 2001 03 19 | 699 | 0.5+ | 0.1+ | 2002 09 20 | 644 | 0.4− | 0.5+ | 2006 11 20 | 704 | 1.7+ | 0.2− |
| 2001 03 19 | 699 | 0.5− | 0.9+ | 2002 09 20 | 644 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2001 03 19 | 699 | (1.7− | 0.7+) | 2002 09 20 | 644 | 0.6− | 0.7+ | 2006 11 20 | 704 | 1.5+ | 0.4+ |
| 2001 03 26 | 704 | (0.3− | 1.8+) | 2002 09 28 | 608 | 1.4− | 0.7− | 2006 11 21 | 691 | 0.0 | 0.3− |
| 2001 03 26 | 704 | 0.2+ | 0.3+ | 2002 09 28 | 608 | 1.1− | 1.0− | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2001 03 26 | 704 | 0.8+ | 0.5− | 2002 09 28 | 608 | 1.1− | 1.0− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2001 03 26 | 704 | 0.4− | 0.9+ | 2002 10 05 | 704 | 0.4+ | 1.0+ | 2006 11 21 | 704 | 0.2+ | 0.7− |
| 2002 08 18 | 608 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.5+ | 1.1+ | 2006 11 21 | 704 | 0.7+ | 0.2− |
| 2002 08 18 | 608 | 0.4− | 0.9+ | 2002 10 05 | 704 | 1.3+ | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2002 08 18 | 608 | 0.5− | 0.7+ | 2002 10 05 | 704 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2002 09 01 | 049 | 1.0+ | 0.1+ | 2002 10 05 | 704 | 0.1+ | 1.1+ | | | | |
| 2002 09 01 | 049 | 0.6+ | 0.1+ | 2003 12 22 | 691 | 0.3− | 0.0 | | | | |

**(139203)∗ 2001 FE$_{167}$**

Discovered 2001 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 102.02626 | | (2000.0) | | | |
| $n$ | 0.27526707 | $\omega$ | 244.83725 | | +0.62696335 | +0.77444000 |
| $a$ | 2.3404527 | $\Omega$ | 64.25482 | | −0.67667254 | +0.59517273 |
| $e$ | 0.1358970 | $i$ | 5.39029 | | −0.38604564 | +0.21450431 |
| $P$ | 3.58 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | (0.1+ | 1.7+) | 2002 10 02 | 704 | 0.3− | 0.9− | 2002 12 01 | 704 | 0.6− | 0.5+ |
| 2001 03 19 | 704 | 0.3+ | 0.2+ | 2002 10 02 | 704 | 0.0 | 1.4− | 2002 12 01 | 704 | 0.0 | 0.5+ |
| 2001 03 19 | 704 | 1.0+ | 0.3+ | 2002 10 02 | 704 | 1.3+ | 1.2− | 2002 12 01 | 704 | (0.3− | 2.0+) |
| 2001 03 19 | 704 | 0.0 | 0.3+ | 2002 10 02 | 704 | 0.5− | 1.1− | 2003 01 04 | 704 | 0.7− | 0.1+ |
| 2001 03 19 | 704 | 0.1+ | 0.2− | 2002 10 03 | 704 | 0.0 | 1.2− | 2003 01 04 | 704 | 1.3− | 0.0 |
| 2001 03 21 | 699 | (2.9+ | 0.3+) | 2002 10 03 | 704 | (0.0 | 1.6−) | 2003 01 04 | 704 | 0.6− | 0.3+ |
| 2001 03 21 | 699 | (1.6+ | 0.6+) | 2002 10 03 | 704 | (0.2+ | 1.7−) | 2003 01 04 | 704 | 1.3− | 0.7− |
| 2001 03 21 | 699 | 0.2+ | 0.8+ | 2002 10 03 | 704 | 0.9− | 0.3− | 2004 01 30 | 704 | 0.4+ | 0.2+ |
| 2001 03 21 | 699 | 0.6− | 0.9+ | 2002 10 03 | 704 | 0.4+ | 0.2− | 2004 01 30 | 704 | 0.5− | 0.9+ |
| 2001 03 23 | 699 | (0.1− | 1.5+) | 2002 10 11 | 704 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.4+ | 0.2+ |
| 2001 03 23 | 699 | 0.5− | 1.3+ | 2002 10 11 | 704 | 0.0 | 0.6+ | 2004 02 10 | 644 | 0.3+ | 0.5+ |
| 2001 03 23 | 699 | 0.5− | 0.5+ | 2002 10 11 | 704 | 0.3+ | 0.5+ | 2004 02 10 | 644 | 0.1+ | 0.5+ |
| 2001 03 23 | 699 | 0.9+ | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.9+ | 2004 02 10 | 644 | 0.2− | 0.0 |
| 2001 04 16 | 704 | 0.3+ | 0.8+ | 2002 10 11 | 704 | 0.4+ | 0.2+ | 2004 02 13 | 691 | 0.0 | 0.0 |
| 2001 04 16 | 704 | 0.5− | 0.8+ | 2002 10 16 | 644 | 0.4− | 0.7+ | 2004 02 13 | 691 | 0.3− | 0.0 |
| 2001 04 16 | 704 | 1.0+ | 0.9+ | 2002 10 16 | 644 | 0.2− | 0.7+ | 2004 02 13 | 691 | 0.2− | 0.1− |
| 2001 04 18 | 608 | 0.3+ | 0.2− | 2002 10 16 | 644 | 0.3− | 0.6+ | 2004 02 16 | 704 | 0.2+ | 0.6− |
| 2001 04 18 | 608 | 0.7+ | 0.3− | 2002 10 26 | 608 | 1.2− | 0.6+ | 2004 02 16 | 704 | 0.0 | 0.7− |
| 2001 04 18 | 608 | 0.3+ | 0.2− | 2002 10 26 | 608 | 0.9− | 0.3+ | 2004 02 16 | 704 | 0.3− | 0.3− |
| 2001 04 24 | 704 | (0.2+ | 2.7+) | 2002 10 26 | 608 | 0.8− | 0.4+ | 2004 02 16 | 704 | 0.7− | 0.4− |
| 2001 04 24 | 704 | 0.8+ | 0.4+ | 2002 10 30 | 644 | 0.4− | 0.6+ | 2004 02 16 | 704 | 0.3+ | 0.3+ |
| 2001 04 24 | 704 | (0.2+ | 1.9+) | 2002 10 30 | 644 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.9+ |
| 2001 04 24 | 704 | 0.2+ | 0.9+ | 2002 10 30 | 644 | 0.1− | 0.8+ | 2004 03 20 | 704 | 0.7− | 0.8+ |
| 2001 04 24 | 704 | 0.7+ | 0.3− | 2002 11 01 | 704 | 0.0 | 1.4+ | 2004 03 20 | 704 | 0.1+ | 1.0+ |
| 2001 05 18 | 699 | 1.1+ | 0.5+ | 2002 11 01 | 704 | 0.5+ | 0.6+ | 2004 03 20 | 704 | 0.1− | 0.4+ |
| 2001 05 18 | 704 | 0.4− | 0.1− | 2002 11 01 | 704 | (0.1+ | 1.6+) | 2004 03 20 | 704 | 1.2+ | 0.4+ |
| 2001 05 18 | 699 | (1.6+ | 0.5+) | 2002 11 01 | 704 | 0.7− | 1.4+ | 2004 03 20 | 704 | 0.1+ | 0.7+ |
| 2001 05 18 | 704 | 1.0+ | 1.2+ | 2002 11 07 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.1− | 0.0 |
| 2001 05 18 | 704 | 0.8+ | 0.5+ | 2002 11 07 | 704 | 0.3− | 0.7+ | 2004 03 20 | 704 | 0.7− | 1.3+ |
| 2001 05 18 | 699 | (2.3+ | 0.7+) | 2002 11 07 | 704 | 0.5− | 0.1+ | 2005 06 11 | 704 | 0.2− | 0.7+ |
| 2001 05 18 | 704 | 0.4+ | 1.5+ | 2002 11 07 | 704 | 0.1− | 0.4+ | 2005 06 11 | 704 | (0.0 | 1.7+) |
| 2001 05 18 | 699 | 0.4+ | 0.3+ | 2002 11 07 | 704 | 0.5− | 0.5+ | 2005 06 11 | 704 | 0.2− | 0.8+ |
| 2001 05 22 | 704 | 0.3− | 0.6+ | 2002 11 11 | 704 | 0.3+ | 0.9+ | 2005 06 11 | 704 | 0.8− | 0.3+ |
| 2001 05 22 | 704 | 0.3− | 0.4+ | 2002 11 11 | 704 | 0.1− | 0.5+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2001 05 22 | 704 | 0.7+ | 0.0 | 2002 11 11 | 704 | 1.2+ | 1.0+ | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2002 08 11 | 704 | 0.1+ | 0.2− | 2002 11 11 | 704 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.6+ | 0.4− |
| 2002 08 11 | 704 | 0.1+ | 0.4+ | 2002 11 11 | 704 | 0.3+ | 0.1+ | 2006 11 25 | 691 | 0.4− | 0.7+ |
| 2002 08 11 | 704 | 0.1− | 0.4− | 2002 11 22 | 644 | 0.3− | 0.4+ | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2002 08 11 | 704 | 0.1− | 1.1+ | 2002 11 22 | 644 | 0.3− | 0.3+ | 2006 11 25 | 691 | 0.1− | 0.2− |
| 2002 08 16 | 608 | 0.3− | 1.2+ | 2002 11 22 | 644 | 0.5− | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.4− |
| 2002 08 16 | 608 | 0.1+ | 1.5+ | 2002 12 01 | 704 | 0.6− | 0.9+ | 2006 12 01 | 691 | 0.4+ | 0.6− |
| 2002 08 16 | 608 | 0.2− | 1.5+ | 2002 12 01 | 704 | 0.3+ | 1.5+ | 2006 12 01 | 691 | 0.2+ | 0.2− |

**(139204)∗ 2001 FQ$_{169}$**

Discovered 2001 Mar. 23 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.56569 | | (2000.0) | | | |
| $n$ | 0.23494822 | $\omega$ | 112.63903 | | −0.60293592 | +0.76827373 |
| $a$ | 2.6010854 | $\Omega$ | 118.48915 | | −0.79184257 | −0.54345686 |
| $e$ | 0.2385065 | $i$ | 14.15930 | | −0.09722979 | −0.33824565 |
| $P$ | 4.19 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | 0.5+ | 0.1− | 2004 01 13 | 691 | 0.0 | 0.2+ | 2005 04 13 | 704 | 0.3− | 0.6+ |
| 2001 01 26 | 704 | 0.2+ | 0.5+ | 2004 12 12 | 599 | 0.3+ | 0.7+ | 2005 04 13 | 704 | 1.3− | 0.3− |
| 2001 01 26 | 704 | 0.6+ | 0.6+ | 2004 12 12 | 599 | 0.4− | 0.4+ | 2005 04 17 | 703 | 0.1+ | 0.5− |
| 2001 01 26 | 704 | 0.1− | 0.6+ | 2004 12 12 | 599 | 0.7+ | 0.1+ | 2005 04 17 | 703 | 0.6− | 0.3− |
| 2001 03 19 | 645 | 0.2− | 0.2− | 2004 12 12 | 599 | 0.3+ | 0.2+ | 2005 04 17 | 703 | 0.1− | 0.4− |
| 2001 03 19 | 645 | 0.2− | 0.1− | 2004 12 15 | 704 | 0.7+ | 1.0+ | 2005 04 17 | 703 | 0.1− | 0.7− |
| 2001 03 23 | 608 | 1.5+ | 0.8+ | 2004 12 15 | 704 | 0.3− | 0.0 | 2005 04 30 | 703 | 0.1− | 0.2− |
| 2001 03 23 | 608 | 0.8+ | 0.2+ | 2004 12 15 | 704 | 0.9+ | 0.4− | 2005 04 30 | 703 | 0.4− | 0.4− |
| 2001 03 23 | 608 | 1.1+ | 0.3+ | 2004 12 15 | 704 | 0.4− | 1.0+ | 2005 04 30 | 703 | 0.1− | 0.2− |
| 2001 03 30 | 704 | 0.3+ | 0.1− | 2004 12 15 | 704 | 0.7+ | 0.1+ | 2005 04 30 | 703 | 0.1− | 0.6− |
| 2001 03 30 | 704 | 0.8+ | 0.2+ | 2004 12 19 | 703 | 1.0− | 1.5− | 2005 05 01 | 608 | 1.0+ | 0.9+ |
| 2001 03 30 | 704 | 0.0 | 0.1+ | 2004 12 19 | 703 | 0.2− | 1.0− | 2005 05 01 | 608 | 1.3+ | 0.3+ |
| 2001 03 30 | 704 | 0.0 | 0.5− | 2004 12 19 | 703 | 0.2− | 1.0+ | 2005 05 01 | 608 | 1.2+ | 0.1− |
| 2001 03 30 | 704 | 0.9+ | 0.0 | 2004 12 19 | 703 | 0.6+ | 0.9− | 2005 05 10 | 704 | 0.7+ | 0.4+ |
| 2001 04 24 | 699 | 0.2− | 0.2+ | 2005 01 09 | 703 | 0.5− | 0.9− | 2005 05 10 | 704 | 1.2+ | 0.2+ |
| 2001 04 24 | 699 | 0.5+ | 0.1+ | 2005 01 09 | 703 | 0.5− | 0.2+ | 2005 05 10 | 704 | 0.6+ | 0.2+ |
| 2001 04 24 | 699 | 0.2+ | 0.2− | 2005 01 09 | 703 | 0.2+ | 0.6− | 2005 05 10 | 704 | (1.6+ | 0.0 ) |
| 2001 04 24 | 699 | 1.1+ | 0.6+ | 2005 01 09 | 703 | 0.5− | 0.4+ | 2005 05 10 | 704 | 0.5+ | 0.9− |
| 2001 04 26 | 704 | 0.3+ | 0.0 | 2005 01 17 | 703 | 0.2+ | 0.4− | 2005 05 16 | 703 | 0.3+ | 0.2− |
| 2001 04 26 | 704 | 0.5+ | 0.1− | 2005 01 17 | 703 | 0.0 | 0.1+ | 2005 05 16 | 703 | 0.3− | 0.0 |
| 2001 04 26 | 704 | 0.5+ | 0.3+ | 2005 01 17 | 703 | 0.9+ | 0.2− | 2005 05 16 | 703 | 0.4− | 0.6− |
| 2001 04 26 | 704 | 0.6+ | 0.0 | 2005 01 17 | 703 | 0.5+ | 0.0 | 2005 05 16 | 703 | 0.1+ | 0.5− |
| 2001 04 26 | 704 | 0.0 | 0.3+ | 2005 02 09 | 704 | 0.3− | 0.3+ | 2005 06 03 | 703 | 0.3− | 0.1− |
| 2001 05 22 | 699 | 0.9− | 0.7+ | 2005 02 09 | 704 | 0.4+ | 0.0 | 2005 06 03 | 703 | 0.2+ | 0.1− |
| 2001 05 22 | 699 | 0.1− | 0.0 | 2005 02 09 | 704 | 0.8+ | 0.1+ | 2005 06 03 | 703 | 0.1+ | 0.3− |
| 2001 05 22 | 699 | 0.1− | 0.1+ | 2005 02 09 | 704 | 0.8+ | 0.2+ | 2005 06 03 | 703 | 0.1+ | 0.4− |
| 2001 05 22 | 699 | 0.0 | 0.1− | 2005 03 04 | 703 | 0.1+ | 0.1− | 2005 06 08 | 704 | 0.7+ | 0.7− |
| 2001 05 23 | 704 | 0.2− | 0.2+ | 2005 03 04 | 703 | 0.5− | 0.1− | 2005 06 08 | 704 | 0.5+ | 0.2+ |
| 2001 05 23 | 704 | 0.3− | 0.3+ | 2005 03 04 | 703 | 0.5− | 0.5− | 2005 06 08 | 704 | 0.4+ | 0.2− |
| 2001 05 23 | 704 | 0.3+ | 0.5+ | 2005 03 04 | 703 | 0.7− | 0.1− | 2005 06 08 | 704 | 0.7+ | 0.7+ |
| 2001 05 23 | 704 | 0.1+ | 0.5+ | 2005 03 08 | 704 | 0.6− | 0.7+ | 2005 07 03 | 703 | 0.8− | 0.7+ |
| 2001 05 23 | 704 | 0.7+ | 0.8+ | 2005 03 08 | 704 | 0.4− | 0.3+ | 2005 07 03 | 703 | 1.2− | 1.4+ |
| 2001 05 23 | 608 | 0.4− | 0.5+ | 2005 03 08 | 704 | 0.7− | 0.7+ | 2005 07 03 | 703 | 0.5− | 0.0 |
| 2001 05 23 | 608 | 0.3− | 0.6+ | 2005 03 08 | 704 | 0.4− | 1.0+ | 2005 07 03 | 703 | 0.3+ | 0.6+ |
| 2001 05 23 | 608 | 0.1− | 0.4+ | 2005 03 08 | 704 | 1.0− | 0.3+ | 2005 07 04 | 608 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 30 | 608 | 0.1+ | 0.3− | 2005 03 15 | 703 | 0.3− | 0.2+ | 2005 07 04 | 608 | 0.2+ | 0.1− | | |
| 2001 05 30 | 608 | 0.2− | 0.7− | 2005 03 15 | 703 | 0.3+ | 0.3+ | 2005 07 04 | 608 | 0.1+ | 0.1− | | |
| 2001 05 30 | 608 | 0.4+ | 0.4− | 2005 03 15 | 703 | 0.1− | 0.8+ | 2006 09 20 | 703 | (0.2+ | 2.2+) | | |
| 2001 06 13 | 699 | 0.3− | 0.5+ | 2005 03 15 | 703 | 0.3+ | 0.5+ | 2006 09 20 | 703 | 1.5+ | 1.0+ | | |
| 2001 06 13 | 699 | 0.3− | 0.0 | 2005 03 20 | 704 | 0.1− | 0.2+ | 2006 09 20 | 703 | 1.1+ | 0.8+ | | |
| 2001 06 13 | 699 | 1.2+ | 0.5+ | 2005 03 20 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.4− | 1.1+ | | |
| 2001 06 13 | 699 | 0.1− | 0.3− | 2005 03 20 | 704 | 0.3− | 0.1− | 2006 09 21 | 699 | (2.2− | 0.6−) | | |
| 2001 06 22 | 644 | 0.0 | 0.2+ | 2005 03 20 | 704 | 0.3− | 0.3+ | 2006 09 21 | 699 | (1.2− | 1.7−) | | |
| 2001 06 22 | 644 | 0.2+ | 0.2+ | 2005 04 02 | 699 | 0.4+ | 0.3+ | 2006 09 21 | 699 | (1.7+ | 0.4−) | | |
| 2001 06 22 | 644 | 0.2+ | 0.2+ | 2005 04 02 | 703 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.7+ | | |
| 2001 07 12 | 608 | 0.5− | 0.2− | 2005 04 02 | 703 | 0.0 | 0.0 | 2006 09 26 | 703 | (1.5− | 0.3−) | | |
| 2001 07 12 | 608 | 0.6− | 0.4− | 2005 04 02 | 703 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.8+ | | |
| 2001 07 12 | 608 | 0.4− | 0.2− | 2005 04 02 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 1.3− | 0.2+ | | |
| 2003 12 20 | 704 | (0.4+ | 2.0+) | 2005 04 02 | 703 | 0.0 | 0.1+ | 2006 09 26 | 703 | 1.0− | 0.5+ | | |
| 2003 12 20 | 704 | 0.2− | 1.3+ | 2005 04 02 | 699 | 0.4+ | 0.4+ | 2006 10 12 | E12 | 0.3− | 0.1+ | | |
| 2003 12 20 | 704 | 0.4− | 0.1+ | 2005 04 02 | 699 | 0.2+ | 0.5+ | 2006 10 12 | E12 | 0.3− | 0.1+ | | |
| 2003 12 20 | 704 | 0.4− | 0.4+ | 2005 04 13 | 704 | 0.3− | 0.0 | 2006 10 12 | E12 | 0.7− | 0.0 | | |
| 2004 01 13 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 704 | 0.2− | 0.1+ | 2006 10 12 | E12 | 0.3− | 0.2+ | | |
| 2004 01 13 | 691 | 0.1+ | 0.0 | 2005 04 13 | 704 | 0.3+ | 1.2+ | | | | | | |

**(139205)∗ 2001 FA$_{175}$**

Discovered 2001 Mar. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.28776 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26223434 | $\omega$ | 187.70012 | | +0.16384420 | +0.97888056 | |
| $a$ | 2.4173693 | $\Omega$ | 91.78839 | | −0.89843908 | +0.19925160 | |
| $e$ | 0.1290481 | $i$ | 7.02609 | | −0.40738470 | −0.04573445 | |
| $P$ | 3.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.1+ | 0.2+ | 2002 09 13 | 704 | 0.6− | 0.4+ | 2005 06 13 | 699 | 0.3− | 0.9+ | | |
| 1998 08 17 | 704 | 1.1+ | 0.6− | 2002 09 17 | 644 | 0.7− | 0.5+ | 2005 06 13 | 699 | (1.8+ | 2.3+) | | |
| 1998 08 17 | 704 | (1.3− | 2.7+) | 2002 09 17 | 644 | 0.4− | 0.1+ | 2005 06 13 | 699 | 0.9− | 0.9+ | | |
| 1998 08 17 | 704 | (5.8− | 0.8−) | 2002 09 17 | 644 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.4+ | | |
| 1999 12 07 | 704 | 0.1+ | 0.1− | 2005 04 01 | 699 | 0.0 | 0.4+ | 2006 09 18 | 703 | (1.1+ | 1.6+) | | |
| 1999 12 07 | 704 | 0.5− | 0.4+ | 2005 04 01 | 699 | (1.9− | 0.2−) | 2006 09 18 | 703 | 0.1+ | 0.8+ | | |
| 1999 12 07 | 704 | 0.2− | 0.0 | 2005 04 01 | 699 | (0.5− | 1.7−) | 2006 09 18 | 703 | 0.7− | 0.0 | | |
| 1999 12 07 | 704 | 0.7+ | 1.1+ | 2005 04 01 | 699 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.4+ | | |
| 2001 03 16 | 704 | 0.4+ | 1.3+ | 2005 04 07 | 699 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.3+ | | |
| 2001 03 16 | 704 | 1.1+ | 0.1− | 2005 04 07 | 699 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 1.3− | 0.4+ | | |
| 2001 03 16 | 704 | 0.5− | 0.6+ | 2005 04 07 | 699 | 0.7+ | 0.7+ | 2006 09 26 | 703 | 0.8− | 1.0− | | |
| 2001 03 16 | 704 | 1.3+ | 1.2+ | 2005 04 07 | 699 | 0.6+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 1.3+ | | |
| 2001 03 16 | 704 | 0.1+ | 0.3− | 2005 04 09 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 699 | 0.3+ | 0.4+ | | |
| 2001 03 20 | 699 | 0.5+ | 1.0+ | 2005 04 09 | 704 | 0.9+ | 0.4+ | 2006 09 29 | 699 | 0.4− | 0.9+ | | |
| 2001 03 20 | 699 | 0.6+ | 0.4+ | 2005 04 09 | 704 | 0.9+ | 0.9+ | 2006 09 29 | 699 | 1.1+ | 1.3+ | | |
| 2001 03 20 | 699 | 0.8− | 1.0+ | 2005 04 09 | 704 | 0.3+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 1.0+ | | |
| 2001 03 20 | 699 | 0.3− | 0.9+ | 2005 04 12 | 699 | (1.9+ | 0.5+) | 2006 10 21 | 644 | 0.2+ | 0.8+ | | |
| 2001 03 27 | 699 | 0.5+ | 0.8− | 2005 04 12 | 699 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.5+ | | |
| 2001 03 27 | 699 | 0.3+ | 0.9+ | 2005 04 12 | 699 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.2− | | |
| 2001 03 27 | 699 | 0.6+ | 0.6+ | 2005 04 12 | 699 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.7+ | | |
| 2001 03 27 | 699 | 0.4− | 0.1+ | 2005 04 18 | 703 | 0.6− | 1.1+ | 2006 10 22 | 703 | 0.1− | 0.2+ | | |
| 2002 08 30 | 699 | 0.1− | 1.3+ | 2005 04 18 | 703 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.2− | | |
| 2002 08 30 | 699 | 0.3− | 0.5+ | 2005 04 18 | 703 | 0.1− | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.6+ | | |
| 2002 08 30 | 699 | 1.0− | 0.9− | 2005 04 18 | 703 | 0.7+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.5+ | | |
| 2002 08 30 | 699 | 0.9− | 1.2+ | 2005 05 04 | 703 | 0.1+ | 0.5− | 2006 10 22 | 644 | 0.1− | 0.6+ | | |
| 2002 09 13 | 704 | 0.1− | 0.3− | 2005 05 04 | 703 | 0.6− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2002 09 13 | 704 | (1.7− | 0.9+) | 2005 05 04 | 703 | 0.3− | 0.9− | 2006 10 23 | 644 | 0.3− | 0.3+ | | |
| 2002 09 13 | 704 | 0.4− | 0.2+ | 2005 05 04 | 703 | 0.6− | 0.8− | 2006 10 23 | 644 | 0.1− | 0.4+ | | |
| 2002 09 13 | 704 | (1.8− | 0.4+) | 2005 06 13 | 699 | 1.4+ | 1.4+ | | | | | | |

**(139206)∗ 2001 FE$_{176}$ = 2003 XD$_8$**

Discovered 2001 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56257)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.11838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27873406 | $\omega$ | 48.10317 | | −0.83140392 | −0.54140832 | |
| $a$ | 2.3210047 | $\Omega$ | 98.75490 | | +0.46496650 | −0.80109170 | |
| $e$ | 0.1303688 | $i$ | 7.27043 | | +0.30425922 | −0.25520408 | |
| $P$ | 3.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 704 | 0.4+ | 0.6+ | 2003 12 04 | 704 | 0.4− | 0.1+ | 2004 01 21 | 704 | (1.8+ | 0.9+) | | |
| 2001 03 04 | 704 | 1.0+ | 1.4+ | 2003 12 05 | 704 | 0.3+ | 0.1+ | 2004 01 24 | 704 | 0.2− | 0.2− | | |
| 2001 03 04 | 704 | 0.2+ | 0.1+ | 2003 12 05 | 704 | 0.7− | 0.1− | 2004 01 24 | 704 | 0.4+ | 0.5+ | | |
| 2001 03 04 | 704 | 0.5+ | 1.2+ | 2003 12 05 | 704 | 1.1− | 0.6− | 2004 01 24 | 704 | 0.3+ | 0.0 | | |
| 2001 03 16 | 704 | 0.2− | 1.0+ | 2003 12 19 | 704 | 0.9+ | 0.0 | 2004 01 24 | 704 | 0.5+ | 0.1− | | |
| 2001 03 16 | 704 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.4+ | 0.2− | 2004 02 10 | 644 | 0.0 | 0.2+ | | |
| 2001 03 16 | 704 | 0.3+ | 0.3+ | 2003 12 19 | 704 | 0.7+ | 0.7+ | 2004 02 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 03 16 | 704 | 0.1− | 0.0 | 2003 12 19 | 704 | 0.3+ | 0.2− | 2004 02 10 | 644 | 0.2− | 0.2+ | | |
| 2001 03 16 | 704 | 0.2+ | 0.4− | 2003 12 19 | 704 | 0.4+ | 1.2+ | 2006 09 19 | 703 | 0.6− | 0.1+ | | |
| 2001 03 20 | 699 | 0.2− | 0.7+ | 2003 12 21 | 704 | 0.8− | 0.0 | 2006 09 19 | 703 | 0.1− | 1.2+ | | |
| 2001 03 20 | 699 | 0.4+ | 0.1+ | 2003 12 21 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 703 | (0.4+ | 2.0+) | | |
| 2001 03 20 | 699 | 0.2− | 0.1+ | 2003 12 21 | 704 | 0.9− | 0.0 | 2006 09 19 | 703 | 0.1− | 1.0+ | | |
| 2001 03 20 | 699 | 0.1+ | 0.3+ | 2003 12 21 | 704 | 0.5+ | 0.6− | 2006 09 26 | 703 | 0.2− | 1.0+ | | |
| 2002 08 30 | 644 | 0.0 | 0.3− | 2003 12 21 | 704 | 0.5− | 0.4− | 2006 09 26 | 703 | 0.7− | 0.5+ | | |
| 2002 08 30 | 644 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.2− | 0.6− | 2006 09 26 | 703 | (0.5− | 1.7+) | | |
| 2002 08 30 | 644 | 0.2+ | 0.2− | 2003 12 23 | 704 | 0.8− | 0.3− | 2006 09 26 | 703 | 1.4− | 0.2+ | | |
| 2003 12 04 | 704 | 0.4− | 1.0+ | 2003 12 23 | 704 | 0.5− | 0.3− | 2006 10 02 | 703 | 0.5+ | 0.5+ | | |
| 2003 12 04 | 704 | 0.0 | 0.3− | 2003 12 24 | 106 | 0.6+ | 0.7− | 2006 10 02 | 703 | 0.9+ | 0.1+ | | |
| 2003 12 04 | 704 | 1.2− | 0.6+ | 2003 12 24 | 106 | 0.0 | 0.3− | 2006 10 02 | 703 | 1.3+ | 0.2+ | | |
| 2003 12 04 | 704 | 0.1+ | 0.4+ | 2003 12 24 | 106 | 0.4+ | 0.4− | 2006 10 02 | 703 | 0.3+ | 0.5+ | | |
| 2003 12 04 | 704 | 0.4+ | 0.1− | 2004 01 16 | 644 | 0.3− | 0.2− | 2006 10 02 | 703 | 0.7− | 0.2+ | | |
| 2003 12 04 | 704 | 0.3− | 0.5+ | 2004 01 16 | 644 | 0.0 | 0.4− | 2006 10 02 | 703 | 0.6+ | 0.4+ | | |
| 2003 12 04 | 704 | 0.2− | 0.4− | 2004 01 16 | 644 | 0.1+ | 0.1− | 2006 10 02 | 703 | 0.3+ | 1.1− | | |
| 2003 12 04 | 704 | 0.3− | 0.1+ | 2004 01 17 | 644 | 0.3+ | 0.2− | 2006 10 02 | 703 | 0.7− | 0.0 | | |
| 2003 12 04 | 704 | 0.6− | 0.2− | 2004 01 17 | 644 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.8− | 1.0+ | | |
| 2003 12 04 | 704 | 0.8+ | 1.2+ | 2004 01 17 | 644 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.8− | 0.8+ | | |
| 2003 12 04 | 704 | 0.4+ | 0.2− | 2004 01 21 | 704 | 1.5+ | 0.2− | 2006 10 21 | 703 | 0.5− | 0.6− | | |
| 2003 12 04 | 704 | 0.0 | 0.5− | 2004 01 21 | 704 | (2.1+ | 0.4+) | 2006 10 21 | 703 | 0.5− | 0.0 | | |
| 2003 12 04 | 704 | 0.2− | 0.2+ | 2004 01 21 | 704 | 1.1+ | 0.3− | | | | | | |

**(139207)∗ 2001 FW$_{179}$**

Discovered 2001 Mar. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.63086 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28734439 | $\omega$ | 204.59415 | | +0.07435538 | +0.98922654 | |
| $a$ | 2.2744038 | $\Omega$ | 69.87347 | | −0.89126970 | +0.12264554 | |
| $e$ | 0.0472088 | $i$ | 7.71843 | | −0.44733612 | −0.07993081 | |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.6− | 0.2+ | 2003 12 23 | 704 | (1.8+ | 0.4+) | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2001 02 16 | 704 | 0.5− | 0.1− | 2003 12 23 | 704 | 0.5+ | 0.9+ | 2006 10 21 | G96 | 0.0 | 0.3+ | | |
| 2001 02 16 | 704 | 0.6− | 0.2+ | 2003 12 27 | 704 | 0.2+ | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2001 02 16 | 704 | 0.4− | 0.3+ | 2003 12 27 | 704 | 1.1− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.0 | | |
| 2001 02 16 | 704 | 0.3+ | 0.8+ | 2003 12 27 | 704 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2001 03 04 | 704 | 0.5+ | 0.2+ | 2003 12 27 | 704 | 0.4− | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2001 03 04 | 704 | 0.4+ | 0.1+ | 2003 12 29 | 704 | 0.7+ | 0.8+ | 2006 11 11 | 691 | 0.3− | 0.1+ | | |
| 2001 03 04 | 704 | (1.5+ | 1.7−) | 2003 12 29 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2001 03 04 | 704 | 0.4+ | 0.9− | 2003 12 29 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2001 03 20 | 699 | 0.5+ | 0.3− | 2003 12 29 | 704 | 0.5+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2001 03 20 | 699 | 0.3+ | 0.0 | 2004 01 13 | 699 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.4+ | | |
| 2001 03 20 | 699 | 0.3− | 0.9+ | 2004 01 13 | 699 | 0.7− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2001 03 20 | 699 | 0.3+ | 0.0 | 2004 01 13 | 699 | 0.5+ | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2001 03 21 | 608 | 0.8+ | 0.7+ | 2004 01 13 | 699 | (1.6− | 0.1+) | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2001 03 21 | 608 | 0.7+ | 0.9+ | 2004 01 31 | 704 | 0.2− | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2001 03 21 | 608 | 0.5+ | 0.6+ | 2004 01 31 | 704 | 0.8− | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.3− | | |
| 2002 08 14 | 704 | 0.7+ | 1.1+ | 2004 01 31 | 704 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.3− | 0.4− | 2004 01 31 | 704 | 0.1− | 0.6+ | 2006 11 24 | G96 | 0.0 | 0.3− | | |
| 2002 08 14 | 704 | 0.1− | 0.3− | 2004 02 14 | 704 | 1.0+ | 0.5+ | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2002 08 14 | 704 | (0.1− | 1.8+) | 2004 02 14 | 704 | 0.7+ | 0.4− | 2006 11 27 | 703 | 0.7− | 0.4+ | | |
| 2002 09 09 | 644 | 0.5− | 0.3+ | 2004 02 14 | 704 | 0.6+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2002 09 09 | 644 | 0.3− | 0.3+ | 2004 02 14 | 704 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 0.1+ | 0.7− | | |
| 2002 09 09 | 644 | 0.4− | 0.3+ | 2005 02 10 | 809 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.7− | | |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2005 02 10 | 809 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.2− | 0.1+ | | |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2005 02 10 | 809 | 0.3− | 0.3+ | 2006 11 27 | 703 | 1.4+ | 0.8− | | |
| 2003 12 23 | 704 | 0.8− | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.4+ | | |
| 2003 12 23 | 704 | 0.6− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.3+ | | | | | | |

**(139208)∗ 2001 FW$_{191}$ = 2002 TR$_{374}$ = 2005 JT$_{42}$**

Discovered 2001 Mar. 22 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 74963), A. Doppler (*MPO* 93946)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.83289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25853220 | $\omega$ | 83.44395 | | +0.14836383 | | +0.98891996 |
| $a$ | 2.4403922 | $\Omega$ | 195.09099 | | −0.91481812 | | +0.13530419 |
| $e$ | 0.1705742 | $i$ | 1.11098 | | −0.37562744 | | +0.06107441 |
| $P$ | 3.81 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 691 | 0.2− | 0.1− | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.4+ | | |
| 1997 03 03 | 691 | 0.2− | 0.0 | 2005 04 17 | 691 | 0.1+ | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.1− | | |
| 1997 03 03 | 691 | 1.0+ | 0.3− | 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.1− | | |
| 1997 03 11 | 691 | 0.4− | 0.4− | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | | |
| 1997 03 11 | 691 | 0.3− | 0.2− | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 10 13 | G98 | 0.7− | 0.7+ | | |
| 1997 03 11 | 691 | 0.3− | 0.9− | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 13 | G98 | 0.1+ | 0.8+ | | |
| 2001 03 22 | 291 | 0.7+ | 0.3+ | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 13 | G98 | 0.5− | 0.6+ | | |
| 2001 03 22 | 291 | 0.3+ | 0.5+ | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 13 | G98 | 0.6− | 0.2+ | | |
| 2001 03 22 | 291 | 0.1+ | 0.6+ | 2005 05 09 | 699 | 1.4+ | 1.2+ | 2006 10 13 | G98 | 0.8− | 0.6+ | | |
| 2001 03 26 | 695 | 0.3− | 0.6+ | 2005 05 09 | 699 | 1.1+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1− | | |
| 2001 03 26 | 695 | 0.3− | 0.5+ | 2005 05 09 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | | |
| 2001 03 31 | 691 | 0.0 | 0.4+ | 2005 05 09 | 699 | 0.3+ | 0.6− | 2006 10 19 | 691 | 0.8− | 0.5+ | | |
| 2001 03 31 | 691 | 0.3− | 0.3+ | 2005 06 13 | G96 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2001 03 31 | 691 | 0.1− | 0.6+ | 2005 06 13 | G96 | 0.6+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2+ | | |
| 2002 10 04 | 644 | 0.2− | 0.4+ | 2005 06 13 | G96 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.0 | | |
| 2002 10 04 | 644 | 0.2− | 0.4+ | 2005 06 13 | G96 | 0.9− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | | |
| 2002 10 04 | 644 | 0.3− | 0.7+ | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.2− | | |
| 2002 10 05 | 645 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.1− | | |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2+ | | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 28 | G98 | 0.2− | 1.0+ | 2006 10 31 | 691 | 0.3− | 0.6− | | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 28 | G98 | 0.2− | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.2+ | | |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2006 09 28 | G98 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.4+ | | |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2006 09 28 | G98 | 0.2+ | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.7+ | | |
| 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.3+ | | |
| 2005 04 10 | 691 | 0.2+ | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.7+ | | |

**(139209)∗ 2001 FB$_{195}$ = 2002 RN$_{77}$**

Discovered 2001 Mar. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.29916 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27582307 | $\omega$ | 35.97764 | | −0.78743687 | | +0.61638209 |
| $a$ | 2.3373065 | $\Omega$ | 182.08798 | | −0.58826101 | | −0.75343556 |
| $e$ | 0.0563717 | $i$ | 6.36127 | | −0.18409823 | | −0.22892790 |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 327 | 0.4+ | 0.0 | 2002 09 05 | 704 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.3− | | |
| 1997 01 10 | 327 | 0.2+ | 0.0 | 2002 09 05 | 645 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.0 | | |
| 1997 01 10 | 327 | 0.3+ | 0.3− | 2002 09 05 | 645 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1− | | |
| 1997 01 10 | 327 | 0.4+ | 0.1− | 2002 09 05 | 704 | 0.1− | 0.8− | 2006 10 02 | G96 | 0.4+ | 0.1− | | |
| 1997 01 10 | 327 | 1.2− | 0.2− | 2002 09 05 | 704 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.3+ | | |
| 2001 03 20 | 699 | 1.1− | 0.8+ | 2002 09 07 | 704 | (0.6− | 1.7+) | 2006 10 18 | 691 | 0.1− | 0.2+ | | |
| 2001 03 20 | 699 | 0.1− | 0.8+ | 2002 09 07 | 704 | 1.1+ | 0.9+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | | |
| 2001 03 20 | 699 | (1.7− | 1.1−) | 2002 09 07 | 704 | 0.3+ | 0.6− | 2006 10 22 | 691 | 0.3− | 0.3+ | | |
| 2001 03 20 | 699 | 1.3+ | 1.2+ | 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.2+ | | |
| 2001 03 24 | 704 | 0.4+ | 0.9+ | 2002 09 14 | 644 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2001 03 24 | 704 | 0.1+ | 0.6− | 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2001 03 24 | 704 | 0.3− | 0.3+ | 2002 09 17 | 644 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.4+ | 0.2+ | | |
| 2001 04 16 | 691 | 0.0 | 0.6+ | 2002 09 17 | 644 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.3− | 0.3+ | | |
| 2001 04 16 | 691 | 0.1+ | 0.5+ | 2002 09 17 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.6+ | | |
| 2001 04 16 | 691 | 0.2+ | 0.4+ | 2002 09 18 | 644 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2001 04 17 | 699 | 0.2− | 0.2+ | 2002 09 18 | 644 | 0.7− | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.1+ | | |
| 2001 04 17 | 699 | 0.7+ | 0.9+ | 2002 09 18 | 644 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.6+ | 0.1+ | | |
| 2001 04 17 | 699 | 0.9+ | 0.3+ | 2002 10 04 | 291 | 0.2− | 0.9+ | 2006 11 23 | G96 | 0.6+ | 0.1− | | |
| 2001 04 17 | 699 | (1.7− | 0.6+) | 2002 10 04 | 291 | 0.1+ | 0.8+ | 2006 11 23 | G96 | 0.4+ | 0.1− | | |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2002 10 04 | 291 | 0.3+ | 0.8+ | 2006 11 23 | G96 | 0.2+ | 0.1+ | | |

**(139210)∗ 2001 GJ**

Discovered 2001 Apr. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.95412 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27783712 | $\omega$ | 20.45842 | | −0.86082097 | | +0.50872438 |
| $a$ | 2.3259973 | $\Omega$ | 190.15356 | | −0.47702956 | | −0.81596227 |
| $e$ | 0.1784202 | $i$ | 4.44604 | | −0.17728522 | | −0.27459984 |
| $P$ | 3.55 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 01 | 704 | 0.4− | 0.8+ | 2001 05 14 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.0 | | |
| 2001 04 01 | 704 | 1.2+ | 0.7+ | 2001 05 14 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2+ | | |
| 2001 04 01 | 704 | 0.5+ | 0.5+ | 2001 05 18 | 699 | 0.7+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1− | | |
| 2001 04 01 | 704 | 0.1+ | 0.9+ | 2001 05 18 | 699 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.4+ | 0.2+ | | |
| 2001 04 01 | 704 | 0.2+ | 1.1+ | 2001 05 18 | 699 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.8+ | 0.4+ | | |
| 2001 04 05 | 608 | 0.8+ | 0.6− | 2001 05 18 | 699 | (2.1+ | 0.2+) | 2006 10 17 | G96 | 0.4+ | 1.0+ | | |
| 2001 04 05 | 608 | 0.3+ | 0.4+ | 2002 10 31 | 645 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.7− | | |
| 2001 04 05 | 608 | 0.3+ | 0.0 | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.6− | 0.0 | | |
| 2001 04 16 | 699 | 0.3+ | 0.9+ | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.5+ | 0.5+ | | |
| 2001 04 16 | 699 | 0.1− | 0.4+ | 2002 11 08 | 645 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.4− | | |
| 2001 04 16 | 699 | 0.4+ | 1.1− | 2005 07 01 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.4+ | | |
| 2001 04 16 | 699 | 0.4− | 0.6− | 2005 07 01 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.5+ | | |
| 2001 04 18 | 704 | 0.2− | 1.5− | 2005 07 01 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.4− | 0.4+ | | |
| 2001 04 18 | 704 | 0.8− | 0.5+ | 2005 07 05 | 644 | 0.5− | 0.0 | 2006 10 25 | 850 | (0.3+ | 1.7+) | | |
| 2001 04 18 | 704 | 0.7+ | 0.1+ | 2005 07 05 | 644 | 0.4− | 0.0 | 2006 10 25 | 850 | (0.3− | 3.9+) | | |
| 2001 04 18 | 704 | 0.4− | 0.1+ | 2005 07 05 | 644 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2+ | | |
| 2001 04 24 | 704 | 0.2+ | 0.3+ | 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2001 04 24 | 704 | 0.2− | 0.8+ | 2005 07 10 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.4− | 0.0 | | |
| 2001 04 24 | 704 | 1.4− | 0.7+ | 2005 07 10 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2001 05 14 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− | | | | | | |

**(139211)∗ 2001 GN$_2$**

Discovered 2001 Apr. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.76326 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38859499 | $\omega$ | 3.26158 | | −0.99788555 | | −0.04300291 |
| $a$ | 1.8598214 | $\Omega$ | 173.62814 | | +0.04511226 | | −0.99805429 |
| $e$ | 0.4516549 | $i$ | 26.04886 | | +0.04679016 | | +0.04514856 |
| $P$ | 2.54 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 568 | 0.4− | 0.0 | 2001 04 14 | 151 | 0.2+ | 0.5− | 2001 05 03 | 658 | 0.5+ | 0.0 | | |
| 1999 09 07 | 568 | 0.9− | 0.4− | 2001 04 14 | 151 | 0.6− | 0.3− | 2001 05 03 | 658 | 0.4+ | 0.4− | | |
| 1999 09 07 | 568 | 0.3− | 0.1+ | 2001 04 14 | 151 | 0.8− | 0.5+ | 2001 05 03 | 926 | 0.6+ | 0.3− | | |
| 2001 04 12 | 704 | 0.0 | 0.2+ | 2001 04 14 | 046 | 0.0 | 0.1+ | 2001 05 03 | 658 | 0.5+ | 0.2− | | |
| 2001 04 12 | 704 | 0.0 | 0.5− | 2001 04 14 | 046 | 0.3− | 0.7+ | 2001 05 03 | 926 | 0.1+ | 0.3− | | |
| 2001 04 12 | 704 | 0.3+ | 0.0 | 2001 04 14 | 046 | 0.3− | 0.2+ | 2001 05 03 | 926 | 0.5+ | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 12 | 704 | 0.1− | 0.0 | 2001 04 14 | 046 | 0.1+ | 0.3+ | 2001 05 04 | 118 | 1.1+ | 0.4− |
| 2001 04 12 | 704 | 0.3− | 0.3+ | 2001 04 14 | 046 | 0.5− | 0.3− | 2001 05 04 | 118 | 0.9+ | 0.0 |
| 2001 04 13 | 726 | 1.0− | 0.5− | 2001 04 15 | 106 | 0.3+ | 0.8− | 2001 05 05 | 926 | 0.1+ | 0.6− |
| 2001 04 13 | 726 | (1.6− | 0.5−) | 2001 04 15 | 106 | 0.5+ | 0.7− | 2001 05 05 | 926 | 0.1+ | 0.1− |
| 2001 04 13 | 726 | 0.8− | 1.3− | 2001 04 15 | 106 | 0.3+ | 0.4− | 2001 05 05 | 926 | 0.1+ | 0.7− |
| 2001 04 13 | 726 | (0.6+ | 1.5+) | 2001 04 15 | 118 | 0.2+ | 0.4+ | 2001 05 09 | 649 | 0.6− | 1.2− |
| 2001 04 13 | 726 | 0.6− | 0.4+ | 2001 04 15 | 118 | 0.1− | 0.2+ | 2001 05 09 | 649 | 0.5− | 0.3− |
| 2001 04 13 | 726 | 0.7+ | 1.3+ | 2001 04 15 | 118 | 0.1+ | 0.3+ | 2001 05 09 | 649 | 0.1+ | 0.7+ |
| 2001 04 13 | 704 | 0.2+ | 0.3+ | 2001 04 15 | 704 | 0.2+ | 0.9+ | 2001 05 10 | 658 | 0.0 | 0.1− |
| 2001 04 13 | 704 | 0.3+ | 0.1− | 2001 04 15 | 704 | 0.1− | 0.2+ | 2001 05 10 | 658 | 0.0 | 0.2+ |
| 2001 04 13 | 704 | 0.0 | 0.2− | 2001 04 15 | 704 | 0.3+ | 0.4+ | 2001 05 10 | 658 | 0.1+ | 0.1− |
| 2001 04 13 | 704 | 0.3− | 0.2+ | 2001 04 15 | 704 | 0.3− | 0.2+ | 2001 05 12 | 151 | 0.2+ | 0.2+ |
| 2001 04 13 | 704 | 0.0 | 0.4− | 2001 04 15 | 704 | 0.1+ | 0.2+ | 2001 05 12 | 151 | 0.5− | 0.3+ |
| 2001 04 13 | 704 | 0.3+ | 0.3− | 2001 04 15 | 704 | 0.2+ | 0.2+ | 2001 05 12 | 151 | 1.0− | 0.5− |
| 2001 04 13 | 918 | 0.8− | 0.0 | 2001 04 15 | 704 | 0.2+ | 0.1+ | 2001 05 12 | 151 | 0.2− | 0.6+ |
| 2001 04 13 | 918 | 0.6− | 0.1− | 2001 04 15 | 704 | 0.4− | 0.4− | 2001 05 13 | 402 | 0.6+ | 0.5− |
| 2001 04 13 | 704 | 0.1− | 0.2− | 2001 04 15 | 704 | 0.3+ | 0.1+ | 2001 05 13 | 402 | 0.2− | 1.3+ |
| 2001 04 13 | 704 | 0.0 | 0.0 | 2001 04 15 | 704 | 0.9+ | 0.4+ | 2001 05 13 | 402 | (1.9− | 1.6+) |
| 2001 04 13 | 704 | 0.4+ | 0.3− | 2001 04 16 | 704 | 0.2− | 0.4+ | 2001 05 17 | 118 | 0.7− | 0.8+ |
| 2001 04 13 | 704 | 0.8+ | 0.3− | 2001 04 16 | 704 | 0.2+ | 0.1+ | 2001 05 17 | 118 | 1.1− | 0.6+ |
| 2001 04 13 | 918 | 0.6− | 0.0 | 2001 04 16 | 704 | 0.4+ | 0.1− | 2001 06 20 | 658 | 0.9− | 0.4+ |
| 2001 04 13 | 918 | 0.6− | 0.0 | 2001 04 16 | 704 | 0.4+ | 0.2+ | 2001 06 20 | 658 | 0.2− | 0.8+ |
| 2001 04 13 | 704 | 0.1+ | 0.1− | 2001 04 16 | 704 | 0.3+ | 0.2+ | 2001 06 20 | 658 | 0.3+ | 0.5− |
| 2001 04 13 | 704 | 0.2+ | 0.4+ | 2001 04 16 | 402 | 1.1+ | 0.8− | 2002 09 29 | 291 | 0.1− | 0.6− |
| 2001 04 13 | 918 | 0.3− | 0.2− | 2001 04 16 | 402 | 0.5+ | 0.2+ | 2002 09 29 | 291 | 0.4+ | 0.3− |
| 2001 04 13 | 704 | 0.1− | 0.5− | 2001 04 16 | 402 | 0.1− | 0.0 | 2002 09 29 | 291 | 0.3+ | 0.0 |
| 2001 04 13 | 704 | 0.7+ | 0.3+ | 2001 04 16 | 402 | 0.1+ | 0.7− | 2004 09 17 | 291 | 0.1− | 0.0 |
| 2001 04 13 | 704 | 0.6+ | 0.3− | 2001 04 17 | 587 | 0.5− | 0.3− | 2004 09 17 | 291 | 0.7+ | 0.5+ |
| 2001 04 13 | 704 | 0.3+ | 0.1+ | 2001 04 17 | 587 | 0.0 | 0.6− | 2004 09 17 | 291 | 0.4− | 0.4+ |
| 2001 04 13 | 704 | 0.1− | 0.3− | 2001 04 22 | 360 | 0.1− | 0.0 | 2005 09 23 | 291 | 0.5− | 0.7+ |
| 2001 04 13 | 704 | 0.5+ | 0.2+ | 2001 04 22 | 360 | 0.1− | 0.0 | 2005 09 23 | 291 | (0.7− | 2.1+) |
| 2001 04 13 | 704 | 0.5+ | 0.1+ | 2001 04 22 | 360 | 0.2− | 0.0 | 2006 01 30 | 711 | 0.3+ | 0.6− |
| 2001 04 13 | 704 | 0.3+ | 0.0 | 2001 04 26 | 658 | 0.2+ | 0.2+ | 2006 01 30 | 711 | 0.5+ | 0.1+ |
| 2001 04 13 | 636 | (3.6− | 4.5−) | 2001 04 26 | 658 | 0.2+ | 0.1− | 2006 01 30 | 711 | 0.2− | 0.1+ |
| 2001 04 13 | 636 | 0.1− | 0.6+ | 2001 04 26 | 658 | 0.1+ | 0.1− | 2006 04 29 | 703 | 0.6− | 1.0+ |
| 2001 04 13 | 636 | (0.4− | 1.6−) | 2001 04 27 | 118 | 0.1− | 0.1+ | 2006 04 29 | 703 | 0.0 | 0.4+ |
| 2001 04 13 | 946 | 0.5− | 0.4+ | 2001 04 27 | 118 | 0.6− | 0.0 | 2006 04 29 | 703 | 0.4− | 0.1− |
| 2001 04 13 | 946 | 1.0− | 0.2− | 2001 04 27 | 118 | 0.1− | 0.1− | 2006 04 29 | 703 | 0.8− | 0.9+ |
| 2001 04 14 | 946 | 1.0− | 0.4+ | 2001 04 27 | 046 | 0.3+ | 0.2− | 2006 05 18 | 586 | 0.3− | 0.1− |
| 2001 04 14 | 946 | 0.7− | 0.1+ | 2001 04 27 | 046 | 0.4+ | 0.2− | 2006 05 18 | 586 | 0.1− | 0.1− |
| 2001 04 14 | 636 | (2.5+ | 1.2−) | 2001 04 27 | 046 | 0.6+ | 0.6− | 2006 05 19 | 586 | 0.3− | 0.1− |
| 2001 04 14 | 636 | 0.9+ | 1.3− | 2001 04 27 | 046 | 0.1+ | 0.4− | 2006 05 19 | 586 | 0.3− | 0.1− |
| 2001 04 14 | 636 | (0.1− | 1.7+) | 2001 04 27 | 046 | 0.3+ | 0.6− | 2006 05 19 | 586 | 0.1− | 0.0 |
| 2001 04 14 | 704 | 0.0 | 0.1+ | 2001 04 29 | 071 | 0.8− | 0.2− | 2006 05 19 | 586 | 0.3− | 0.3− |
| 2001 04 14 | 704 | 0.0 | 0.3− | 2001 04 29 | 071 | 0.8− | 0.4− | 2006 05 19 | 586 | 0.3− | 0.1− |
| 2001 04 14 | 704 | 0.8− | 0.3+ | 2001 04 29 | 071 | 0.7− | 0.2− | 2006 05 19 | 586 | 0.5− | 0.2− |
| 2001 04 14 | 704 | 0.1− | 0.0 | 2001 05 01 | 071 | 0.7− | 0.2+ | 2006 05 19 | 586 | 1.0− | 1.4− |
| 2001 04 14 | 704 | 0.5− | 0.6+ | 2001 05 01 | 071 | 0.9− | 1.0− | 2006 05 19 | 586 | 0.1− | 0.1− |
| 2001 04 14 | 704 | 0.1+ | 0.1+ | 2001 05 01 | 071 | 1.0− | 0.9− | 2006 05 28 | 703 | 0.9+ | 0.9+ |
| 2001 04 14 | 704 | 0.1+ | 0.3+ | 2001 05 01 | 926 | 0.4+ | 0.3+ | 2006 05 28 | 703 | 0.2+ | 1.5+ |
| 2001 04 14 | 704 | 0.4+ | 0.8+ | 2001 05 01 | 926 | 0.1+ | 0.2− | 2006 05 28 | 703 | 0.6+ | 1.0+ |
| 2001 04 14 | 704 | 0.3+ | 0.1+ | 2001 05 01 | 926 | 0.2+ | 0.3+ | 2006 05 28 | 703 | (1.8− | 0.5−) |
| 2001 04 14 | 151 | 1.1+ | 0.8+ | 2001 05 02 | 118 | 0.1− | 0.4− | | | | |
| 2001 04 14 | 151 | 0.6− | 0.8+ | 2001 05 02 | 118 | 0.0 | 0.3− | | | | |

**(139212)∗ 2001 GE$_3$ = 2005 GF$_{113}$ = 2006 JD$_{42}$**

Discovered 2001 Apr. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 100020)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 39.70209 | | (2000.0) | | | | |
| $n$ | 0.23018000 | $\omega$ | 218.39544 | | | +0.29100505 | +0.81680930 |
| $a$ | 2.6368838 | $\Omega$ | 73.78543 | | | −0.69833534 | +0.53723973 |
| $e$ | 0.2586394 | $i$ | 31.24981 | | | −0.65394481 | −0.21022855 |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 14 | 691 | 0.7− | 0.1− | 2005 03 11 | 703 | 0.5− | 0.2+ | 2006 05 22 | E12 | 0.0 | 0.1− |
| 1999 02 14 | 691 | 0.1− | 0.2− | 2005 03 11 | 703 | 0.4− | 0.4− | 2006 05 22 | E12 | 1.1+ | 0.3− |
| 1999 02 14 | 691 | 0.1+ | 0.5− | 2005 03 11 | 703 | 0.1− | 0.1+ | 2006 05 22 | E12 | 0.1− | 0.3− |
| 2000 04 25 | 645 | 0.2+ | 0.0 | 2005 03 11 | 703 | 0.1+ | 0.1+ | 2006 05 22 | E12 | 0.2+ | 0.3+ |
| 2000 04 25 | 645 | 0.2+ | 0.1+ | 2005 04 07 | 703 | 0.3− | 0.7− | 2006 06 17 | E12 | 0.2+ | 0.3+ |
| 2001 04 14 | 704 | 0.5+ | 0.5+ | 2005 04 07 | 703 | 0.1+ | 0.7− | 2006 06 17 | E12 | 1.0− | 0.1+ |
| 2001 04 14 | 704 | 0.0 | 0.3− | 2005 04 07 | 703 | 0.9− | 1.2− | 2006 06 17 | E12 | 1.0+ | 0.8+ |
| 2001 04 14 | 704 | 0.1+ | 0.1+ | 2005 04 07 | 703 | 0.6− | 0.4− | 2006 06 17 | E12 | 0.3− | 0.1+ |
| 2001 04 14 | 704 | 0.7− | 0.0 | 2005 04 12 | 703 | 0.6− | 0.9+ | 2006 06 19 | 474 | 0.3− | 0.1+ |
| 2001 04 14 | 704 | 0.1+ | 0.5+ | 2005 04 12 | 703 | 0.9+ | 0.5− | 2006 06 19 | 474 | 0.2− | 0.0 |
| 2001 04 16 | 704 | 0.5+ | 0.4− | 2005 04 12 | 703 | 1.1− | 1.4+ | 2006 06 19 | 474 | 0.2− | 0.0 |
| 2001 04 16 | 704 | 0.5+ | 0.8+ | 2005 04 12 | 703 | 0.0 | 1.1+ | 2006 09 18 | E12 | 0.4− | 0.3− |
| 2001 04 16 | 704 | 0.5+ | 1.3− | 2006 05 09 | E12 | 0.4+ | 0.2+ | 2006 09 18 | E12 | 0.0 | 0.5− |
| 2001 04 16 | 704 | 0.0 | 0.2+ | 2006 05 09 | E12 | 0.0 | 0.2+ | 2006 09 18 | E12 | 0.7− | 0.1+ |
| 2001 04 16 | 704 | 0.6+ | 0.3− | 2006 05 09 | E12 | 0.2+ | 0.2+ | 2006 09 18 | E12 | 0.1+ | 0.7+ |
| 2001 04 16 | 327 | 0.2+ | 0.3+ | 2006 05 09 | E12 | 0.4+ | 0.2+ | 2006 10 04 | E12 | 0.1+ | 0.2+ |
| 2001 04 16 | 327 | 0.4− | 0.2− | 2006 05 10 | I77 | 0.2+ | 0.7− | 2006 10 04 | E12 | 0.4− | 0.2+ |
| 2001 04 16 | 327 | 0.2+ | 0.3+ | 2006 05 10 | I77 | 1.7− | 0.5− | 2006 10 04 | E12 | 0.1− | 0.8+ |
| 2001 04 17 | 327 | 0.9− | 0.0 | 2006 05 10 | I77 | 1.0− | 0.5− | 2006 10 04 | E12 | 0.9− | 0.2+ |
| 2001 04 17 | 327 | 0.3+ | 0.6+ | 2006 05 10 | E12 | 0.3− | 0.4− | 2006 10 18 | E12 | 0.0 | 0.2+ |
| 2001 04 17 | 327 | 0.0 | 0.7+ | 2006 05 10 | E12 | 1.0+ | 0.5+ | 2006 10 18 | E12 | 0.3+ | 0.2− |
| 2001 04 17 | 327 | 0.2+ | 0.4+ | 2006 05 10 | E12 | 0.6− | 0.5+ | 2006 10 18 | E12 | 0.0 | 0.4+ |
| 2001 06 16 | 699 | 0.6+ | 0.7+ | 2006 05 10 | E12 | 0.8− | 0.8+ | 2006 10 18 | E12 | 0.2− | 0.9+ |
| 2001 06 16 | 699 | 0.9+ | 0.8+ | 2006 05 16 | E12 | 0.0 | 0.3+ | 2006 10 25 | E12 | 0.2+ | 0.7+ |
| 2001 06 16 | 699 | 1.3+ | 0.6+ | 2006 05 16 | E12 | 1.0+ | 0.1+ | 2006 10 25 | E12 | 0.2+ | 0.1+ |
| 2001 06 16 | 699 | 0.5+ | 1.4+ | 2006 05 16 | E12 | 0.4− | 0.2+ | 2006 10 25 | E12 | 0.3+ | 0.3+ |
| 2002 11 05 | 644 | 0.1+ | 0.6+ | 2006 05 17 | E12 | 0.1− | 0.9− | 2006 10 25 | E12 | 0.7+ | 0.5+ |
| 2002 11 05 | 644 | 0.2− | 0.5+ | 2006 05 17 | E12 | 0.3− | 0.4+ | 2006 11 11 | E12 | 0.7− | 0.5− |
| 2002 11 05 | 644 | 0.5− | 0.4+ | 2006 05 17 | E12 | (2.4+ | 0.0 ) | 2006 11 11 | E12 | 0.1− | 0.1− |
| 2003 12 30 | 704 | 0.9− | 1.1+ | 2006 05 17 | E12 | 0.1+ | 0.0 | 2006 11 11 | E12 | 0.1− | 0.3− |
| 2003 12 30 | 704 | 0.5− | 1.7+ | 2006 05 18 | E12 | 1.1− | 0.6+ | 2006 11 11 | E12 | 1.3+ | 0.1+ |
| 2003 12 30 | 704 | 0.8− | 1.7+ | 2006 05 18 | E12 | 0.1− | 0.7− | | | | |

**(139213)∗ 2001 GH$_7$**

Discovered 2001 Apr. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 55.51143 | | (2000.0) | | | | |
| $n$ | 0.22909988 | $\omega$ | 194.15294 | | | −0.03442635 | +0.96665722 |
| $a$ | 2.6451652 | $\Omega$ | 74.35122 | | | −0.88940071 | +0.08617078 |
| $e$ | 0.2361847 | $i$ | 15.27885 | | | −0.45583023 | −0.24113984 |
| $P$ | 4.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 704 | 0.9− | 1.6+ | 2001 05 29 | 704 | 0.4+ | 0.2+ | 2005 04 01 | 703 | 0.2− | 0.5+ |
| 2001 04 15 | 704 | 0.1− | 0.5+ | 2001 05 29 | 704 | 0.2− | 0.2− | 2005 04 01 | 703 | 0.6− | 0.2+ |
| 2001 04 15 | 704 | 0.4+ | 0.3+ | 2001 05 29 | 704 | 0.1− | 0.2− | 2005 04 30 | 703 | 0.1− | 0.9+ |
| 2001 04 15 | 704 | 0.1+ | 0.3− | 2001 06 15 | 704 | 0.1+ | 0.2− | 2005 04 30 | 703 | 1.2− | 1.3− |
| 2001 04 15 | 704 | 0.6− | 0.3+ | 2001 06 15 | 704 | 0.2+ | 0.6− | 2005 04 30 | 703 | 0.5− | 0.7− |
| 2001 04 17 | 699 | 0.2+ | 0.1+ | 2001 06 15 | 704 | 0.6+ | 0.3+ | 2005 04 30 | 703 | 1.3+ | 0.3− |
| 2001 04 17 | 699 | 0.4− | 0.5− | 2001 06 15 | 704 | 0.4+ | 0.1+ | 2006 06 03 | E12 | 0.6− | 0.8− |
| 2001 04 17 | 699 | 0.7+ | 0.7− | 2001 06 15 | 704 | 0.1+ | 0.1+ | 2006 06 03 | E12 | 0.9− | 0.3+ |
| 2001 04 17 | 699 | 0.0 | 0.4+ | 2001 06 20 | 608 | 0.5− | 0.2− | 2006 06 03 | E12 | 0.3− | 0.1+ |
| 2001 04 27 | 704 | 0.5+ | 0.4− | 2001 06 20 | 608 | 0.1− | 0.3− | 2006 06 03 | E12 | 0.3− | 0.2− |
| 2001 04 27 | 704 | 0.4− | 0.2− | 2001 06 20 | 608 | 0.9− | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 2001 04 27 | 704 | 0.6+ | 0.2+ | 2002 10 16 | 644 | 0.5− | 0.8+ | 2006 08 22 | 644 | 0.3− | 0.2+ |
| 2001 04 27 | 704 | 0.6− | 0.5− | 2002 10 16 | 644 | 0.5− | 0.7+ | 2006 08 22 | 644 | 0.3− | 0.2+ |
| 2001 04 27 | 704 | 0.1− | 0.2− | 2002 10 16 | 644 | 0.5− | 0.6+ | 2006 09 12 | E12 | 0.4− | 0.1− |
| 2001 05 23 | 704 | 0.9− | 0.6+ | 2005 02 10 | 201 | 0.8+ | 0.6+ | 2006 09 12 | E12 | 0.5+ | 0.4− |
| 2001 05 23 | 704 | 0.3+ | 0.7+ | 2005 02 10 | 201 | 0.2+ | 0.3+ | 2006 09 12 | E12 | 0.5+ | 0.3+ |
| 2001 05 23 | 704 | 0.6+ | 0.3− | 2005 02 10 | 201 | 0.1− | 0.2+ | 2006 09 12 | E12 | 1.1+ | 0.2+ |
| 2001 05 23 | 704 | 0.7+ | 1.0+ | 2005 03 01 | 703 | 1.2+ | 0.7− | 2006 09 28 | E12 | 0.6− | 0.6− |
| 2001 05 23 | 704 | 0.3+ | 0.0 | 2005 03 01 | 703 | 1.2− | 1.3+ | 2006 09 28 | E12 | 0.5+ | 0.2+ |
| 2001 05 26 | 704 | 0.5+ | 0.3+ | 2005 03 01 | 703 | 0.4− | 0.6− | 2006 09 28 | E12 | 0.5+ | 0.3− |
| 2001 05 26 | 704 | 0.2− | 0.0 | 2005 03 01 | 703 | 0.4− | 0.4+ | 2006 09 28 | E12 | 0.1+ | 0.2+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 704 | 0.3+ | 0.3+ | 2005 04 01 | 703 | 1.0+ | 0.4− | |
| 2001 05 29 | 704 | 0.1+ | 0.7− | 2005 04 01 | 703 | 0.5+ | 0.2− | |

**(139214)∗ 2001 GS$_7$**

Discovered 2001 Apr. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.71127 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23129247 | $\omega$ | 239.14370 | | +0.32977052 | | +0.92716923 |
| $a$ | 2.6284218 | $\Omega$ | 51.18562 | | −0.76939502 | | +0.37307880 |
| $e$ | 0.3026657 | $i$ | 13.18955 | | −0.54706737 | | +0.03419709 |
| $P$ | 4.26 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 699 | 0.2+ | 0.8+ | 2002 11 03 | 950 | 0.2+ | 0.1+ | 2006 08 10 | 644 | 0.1+ | 0.1− |
| 2001 03 21 | 699 | 0.2+ | 1.4+ | 2002 11 03 | 950 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.4− |
| 2001 03 21 | 699 | 0.6+ | 0.6+ | 2002 11 03 | 950 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.0 |
| 2001 03 21 | 699 | 0.5+ | 0.4+ | 2002 11 06 | 704 | (0.9− | 1.9+) | 2006 09 18 | 703 | 0.3+ | 0.2+ |
| 2001 03 29 | 704 | (1.1+ | 1.8+) | 2002 11 06 | 704 | (0.3− | 1.5+) | 2006 09 18 | 703 | 0.6− | 0.6− |
| 2001 03 29 | 704 | (0.2+ | 1.6+) | 2002 11 06 | 704 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.2− | 0.5+ |
| 2001 03 29 | 704 | 0.6+ | 1.5+ | 2002 11 07 | 704 | 0.0 | 1.0+ | 2006 09 21 | 699 | 0.2− | 0.7+ |
| 2001 03 29 | 704 | 0.1− | 0.3+ | 2002 11 07 | 704 | 0.5+ | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.1− |
| 2001 04 15 | 704 | 0.4− | 0.6+ | 2002 11 07 | 704 | 0.2+ | 0.4+ | 2006 09 21 | 699 | 0.6− | 0.2+ |
| 2001 04 15 | 704 | 0.7+ | 1.0+ | 2002 11 07 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 0.9− | 0.3+ |
| 2001 04 15 | 704 | 0.2− | 0.9+ | 2002 11 07 | 704 | 0.2+ | 1.3+ | 2006 09 25 | 699 | 0.2− | 0.6+ |
| 2001 04 15 | 704 | 0.1+ | 0.9+ | 2002 11 11 | 291 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.3− | 0.2− |
| 2001 04 15 | 704 | 0.8+ | 0.6+ | 2002 11 11 | 291 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.8− | 0.3+ |
| 2001 04 18 | 608 | 0.8+ | 0.4+ | 2002 11 11 | 291 | 0.1− | 0.4− | 2006 09 26 | 703 | 0.1+ | 1.2+ |
| 2001 04 18 | 608 | 1.4+ | 0.5+ | 2002 11 12 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.1− |
| 2001 04 18 | 608 | 1.2+ | 0.0 | 2002 11 12 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.2− |
| 2001 04 26 | 608 | (3.7− | 1.9+) | 2002 11 12 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2001 04 26 | 608 | (3.8− | 2.2+) | 2002 11 23 | 644 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.3+ | 0.1− |
| 2001 04 26 | 608 | (3.7− | 2.0+) | 2002 11 23 | 644 | 0.5− | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.4+ |
| 2001 05 18 | 704 | 0.1− | 0.7+ | 2002 11 23 | 644 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.4+ |
| 2001 05 18 | 704 | 0.3− | 1.2+ | 2002 12 01 | 704 | 0.3+ | 0.0 | 2006 09 30 | 704 | 0.2− | 0.3+ |
| 2001 05 18 | 704 | (0.3− | 1.7+) | 2002 12 01 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 608 | (0.7+ | 1.9+) |
| 2001 05 18 | 704 | (0.1− | 1.5+) | 2002 12 01 | 704 | 0.1− | 0.4+ | 2006 09 30 | 608 | (1.2+ | 2.0+) |
| 2001 05 18 | 704 | 0.5+ | 1.4+ | 2002 12 05 | 704 | (1.9+ | 0.7−) | 2006 09 30 | 608 | (1.0+ | 2.2+) |
| 2001 05 22 | 704 | 0.8+ | 0.8+ | 2002 12 05 | 704 | 0.2− | 0.4− | 2006 10 02 | 703 | 0.2+ | 0.7+ |
| 2001 05 22 | 704 | (1.1+ | 1.7+) | 2002 12 05 | 704 | 1.5+ | 0.7− | 2006 10 02 | 703 | 0.4+ | 0.8+ |
| 2001 05 22 | 704 | 0.1+ | 0.4− | 2002 12 05 | 704 | 1.1+ | 0.6− | 2006 10 02 | 703 | 0.1− | 0.9+ |
| 2001 05 22 | 704 | 0.5+ | 1.0+ | 2002 12 05 | 704 | 0.1− | 0.8+ | 2006 10 02 | 703 | 0.7+ | 0.7+ |
| 2001 05 22 | 704 | 0.0 | 0.0 | 2002 12 09 | 291 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.6+ |
| 2001 05 29 | 608 | (0.9− | 2.5+) | 2002 12 09 | 291 | 0.7− | 0.1− | 2006 10 17 | 703 | 1.2− | 0.4+ |
| 2001 05 29 | 608 | (1.7− | 3.4+) | 2002 12 09 | 291 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2001 05 29 | 608 | (0.6− | 3.0+) | 2002 12 10 | 644 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2001 06 16 | 704 | 0.6+ | 0.5+ | 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 06 16 | 704 | 0.5+ | 0.2+ | 2002 12 10 | 644 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 06 16 | 704 | 0.1− | 0.9+ | 2005 03 04 | 703 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 06 16 | 704 | 0.0 | 0.1+ | 2005 03 04 | 703 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 09 09 | 599 | 0.0 | 0.1+ | 2005 03 04 | 703 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 09 09 | 599 | 0.2− | 0.0 | 2005 03 04 | 703 | 1.0+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 09 09 | 599 | 0.2− | 0.1+ | 2005 03 16 | 703 | (1.6+ | 0.6+) | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 10 08 | 291 | 0.1− | 0.3+ | 2005 03 16 | 703 | 0.6− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 10 08 | 291 | 0.1− | 0.3+ | 2005 03 16 | 703 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 10 08 | 291 | 0.1− | 0.1− | 2005 03 16 | 703 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.2− |
| 2002 10 09 | 291 | 0.2− | 0.1− | 2005 04 02 | 703 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.6− | 0.0 |
| 2002 10 09 | 291 | 0.2+ | 0.0 | 2005 04 02 | 703 | 0.1+ | 0.6− | 2006 10 28 | 703 | 0.4+ | 0.1+ |
| 2002 10 09 | 291 | 0.1+ | 0.0 | 2005 04 02 | 703 | 0.1− | 0.6− | 2006 10 28 | 703 | 0.7− | 0.1+ |
| 2002 10 09 | 704 | 0.4+ | 0.5− | 2005 04 02 | 703 | 0.3− | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.5− |
| 2002 10 09 | 704 | 0.2+ | 0.1− | 2005 04 02 | 699 | 0.7+ | 0.9+ | 2006 11 10 | 704 | 0.2− | 0.2− |
| 2002 10 09 | 704 | 1.1+ | 0.2+ | 2005 04 02 | 699 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.7− |
| 2002 10 09 | 704 | 1.0+ | 0.4+ | 2005 04 02 | 699 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.1− | 0.5+ |
| 2002 10 09 | 704 | 0.9+ | 0.1− | 2005 04 02 | 699 | 1.0+ | 0.5+ | 2006 11 10 | 704 | 0.5− | 0.2+ |
| 2002 10 09 | 291 | 0.1− | 0.0 | 2005 04 06 | 644 | 0.3+ | 0.6+ | 2006 11 10 | 644 | 0.1+ | 0.3− |
| 2002 10 09 | 291 | 0.3− | 0.2− | 2005 04 06 | 644 | 0.5+ | 0.3+ | 2006 11 10 | 704 | 0.7− | 0.5+ |
| 2002 10 09 | 291 | 0.0 | 0.1− | 2005 04 06 | 644 | 0.5+ | 0.6+ | 2006 11 10 | 704 | 0.3− | 0.4+ |
| 2002 10 11 | 704 | (1.5− | 1.7+) | 2005 04 09 | 703 | 1.1− | 0.3− | 2006 11 14 | 704 | 0.4+ | 0.9+ |
| 2002 10 11 | 704 | (0.2− | 1.9+) | 2005 04 09 | 703 | 0.7− | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.7− | 0.8+ | 2005 04 09 | 703 | 0.3− | 1.3− | 2006 11 14 | 704 | 0.4− | 0.6+ |
| 2002 10 11 | 704 | 0.5− | 0.7+ | 2005 04 09 | 703 | 0.5+ | 0.6− | 2006 11 14 | 704 | 0.4− | 0.8+ |
| 2002 11 01 | 950 | 0.2+ | 0.2+ | 2005 04 12 | 704 | (1.8+ | 0.2+) | 2006 11 16 | 246 | 0.9− | 1.2+ |
| 2002 11 01 | 950 | 0.2+ | 0.2+ | 2005 04 12 | 704 | (0.8+ | 1.6+) | 2006 11 16 | 246 | 1.0− | 0.9+ |
| 2002 11 01 | 950 | 0.1+ | 0.1+ | 2005 04 12 | 704 | 0.8+ | 1.1+ | 2006 11 16 | 246 | 0.9− | 0.0 |
| 2002 11 02 | 950 | 0.1− | 0.4+ | 2005 04 12 | 704 | 0.6+ | 0.7+ | 2006 11 16 | 246 | 0.3− | 0.6+ |
| 2002 11 02 | 950 | 0.1− | 0.3+ | 2006 08 10 | 644 | 0.1+ | 0.1+ | | | | |
| 2002 11 02 | 950 | 0.1− | 0.3+ | 2006 08 10 | 644 | 0.1− | 0.1+ | | | | |

**(139215)∗ 2001 GQ$_9$**

Discovered 2001 Apr. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.50398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27437788 | $\omega$ | 78.57375 | | −0.96839584 | | +0.21296834 |
| $a$ | 2.3455066 | $\Omega$ | 113.61524 | | −0.24532339 | | −0.90722956 |
| $e$ | 0.1490203 | $i$ | 8.14556 | | +0.04501037 | | −0.36273822 |
| $P$ | 3.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 15 | 566 | 1.0− | 0.4− | 2001 04 17 | 699 | 0.2− | 0.0 | 2004 01 21 | 704 | 0.3− | 0.6− |
| 1997 01 15 | 566 | 0.1− | 0.6− | 2001 05 22 | 699 | 1.0+ | 0.4+ | 2004 01 21 | 704 | 0.5− | 0.2− |
| 1997 01 15 | 566 | (2.9+ | 0.4−) | 2001 05 22 | 699 | 0.2+ | 0.4+ | 2004 01 21 | 704 | 0.0 | 0.8+ |
| 2001 03 04 | 704 | 0.4− | 0.1− | 2001 05 22 | 699 | 0.2+ | 1.1+ | 2004 01 21 | 704 | 0.2− | 0.1+ |
| 2001 03 04 | 704 | 0.5+ | 0.1+ | 2001 05 22 | 699 | 0.3− | 1.0+ | 2005 06 13 | G96 | 0.3− | 0.2+ |
| 2001 03 04 | 704 | 0.1− | 0.0 | 2001 05 23 | 704 | 0.1− | 0.6− | 2005 06 13 | G96 | 0.6− | 0.2+ |
| 2001 03 04 | 704 | 0.5+ | 0.8+ | 2001 05 23 | 704 | 0.1− | 0.2+ | 2005 06 13 | G96 | 0.2− | 0.4+ |
| 2001 03 04 | 704 | 0.5+ | 0.0 | 2001 05 23 | 704 | 0.2− | 0.1− | 2005 06 13 | G96 | 0.3− | 0.4+ |
| 2001 03 23 | 699 | 0.8+ | 0.0 | 2003 12 19 | 704 | 0.3− | 0.4+ | 2005 07 10 | E12 | 0.2− | 0.1+ |
| 2001 03 23 | 699 | 0.3+ | 0.3+ | 2003 12 19 | 704 | 0.1− | 0.9+ | 2005 07 10 | E12 | 0.6− | 0.2+ |
| 2001 03 23 | 699 | 0.7− | 0.4− | 2003 12 19 | 704 | 0.3− | 0.2+ | 2005 07 10 | E12 | 0.4− | 0.2+ |
| 2001 03 23 | 699 | 0.6− | 0.1− | 2003 12 19 | 704 | (0.8+ | 1.7+) | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2001 04 15 | 704 | 0.9+ | 0.5− | 2003 12 21 | 704 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.4− | 0.9+ |
| 2001 04 15 | 704 | 0.3− | 0.2+ | 2003 12 21 | 704 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 1.0− | 0.4+ |
| 2001 04 15 | 704 | 0.3− | 0.2− | 2003 12 21 | 704 | 0.4− | 0.2+ | 2006 10 22 | 703 | 1.6+ | 1.5+ |
| 2001 04 15 | 704 | 1.1+ | 0.1− | 2003 12 21 | 704 | 0.1+ | 0.9+ | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2001 04 15 | 704 | 0.5− | 0.3− | 2003 12 23 | 704 | 0.2− | 0.5− | 2006 10 22 | 703 | 0.5+ | 0.3+ |
| 2001 04 17 | 699 | 0.0 | 0.2− | 2003 12 23 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.9+ | 0.7− |
| 2001 04 17 | 699 | 0.5+ | 0.0 | 2003 12 23 | 704 | 0.4+ | 0.1+ | | | | |
| 2001 04 17 | 699 | 0.2+ | 0.2+ | 2003 12 23 | 704 | 0.3+ | 0.1− | | | | |

**(139216)∗ 2001 GB$_{10}$**

Discovered 2001 Apr. 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.51953 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23886086 | $\omega$ | 96.18502 | | +0.28640518 | | +0.95741243 |
| $a$ | 2.5726027 | $\Omega$ | 190.67410 | | −0.93842291 | | +0.27263034 |
| $e$ | 0.2504369 | $i$ | 11.37056 | | −0.19322141 | | +0.09504809 |
| $P$ | 4.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 09 | 809 | (3.4+ | 1.6+) | 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.1− |
| 1997 04 09 | 809 | (3.4+ | 1.8+) | 2005 03 13 | 703 | 1.4− | 0.5− | 2006 09 18 | 699 | 0.1− | 0.5+ |
| 1997 04 09 | 809 | (3.1+ | 1.5+) | 2005 03 13 | 703 | 1.0− | 0.2− | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| 1997 05 02 | 691 | 0.0 | 0.1− | 2005 03 13 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.4+ |
| 1997 05 02 | 691 | 0.0 | 0.0 | 2005 03 13 | 703 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.1+ | 0.9+ |
| 1997 05 02 | 691 | 0.2− | 0.4− | 2005 03 13 | 703 | 0.3+ | 0.2− | 2006 09 20 | 704 | 0.9+ | 0.4− |
| 2001 03 14 | 691 | 0.0 | 0.3+ | 2005 03 13 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.3− |
| 2001 03 14 | 691 | 0.1+ | 0.1+ | 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2001 03 14 | 691 | 0.1− | 0.6+ | 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2001 03 20 | 699 | 0.7+ | 0.6+ | 2005 03 17 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.4+ |
| 2001 03 20 | 699 | 0.5− | 0.8− | 2005 04 04 | 703 | 0.8− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2001 03 20 | 699 | 0.3− | 1.0+ | 2005 04 04 | 703 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 1.1+ | 0.1+ | 2005 04 04 | 703 | (2.4− | 2.1+) | 2006 09 25 | G96 | 0.1+ | 0.2+ | |
| 2001 04 15 | 608 | 0.8+ | 0.4+ | 2005 04 04 | 703 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.0 | |
| 2001 04 15 | 608 | 0.8+ | 0.8+ | 2005 04 05 | G96 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.5+ | |
| 2001 04 15 | 608 | 0.6+ | 1.1+ | 2005 04 05 | G96 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.5− | 0.6+ | |
| 2001 04 16 | 691 | 0.1− | 0.3+ | 2005 04 05 | G96 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.0 | 0.5+ | |
| 2001 04 16 | 691 | 0.1+ | 0.5+ | 2005 04 05 | G96 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.5− | 0.8+ | |
| 2001 04 16 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 703 | (1.9− | 1.0+) | 2006 10 19 | 644 | 0.1− | 0.6+ | |
| 2002 10 11 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.6+ | |
| 2002 10 11 | 644 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.2+ | |
| 2002 10 11 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.6− | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2002 10 31 | 704 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− | |
| 2002 10 31 | 704 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.2− | |
| 2002 10 31 | 704 | 0.4+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.1− | |
| 2002 10 31 | 704 | 0.0 | 0.7+ | 2006 09 18 | 699 | 0.3− | 0.8− | 2006 11 17 | G96 | 0.3− | 0.2− | |
| 2002 10 31 | 704 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.7− | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.4− | |
| 2002 10 31 | 608 | 0.3− | 0.6− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.5− | 0.1− | |
| 2002 10 31 | 608 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.0 | |
| 2002 10 31 | 608 | 0.2− | 0.5− | 2006 09 18 | 699 | 0.6+ | 0.2+ | | | | | |

**(139217)∗ 2001 GW$_{10}$ = 2002 RN$_{98}$**

Discovered 2001 Apr. 15 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 35064)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.96596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26859442 | $\omega$ | 277.26609 | | +0.53238904 | +0.84556692 | |
| $a$ | 2.3790563 | $\Omega$ | 25.02656 | | −0.73487275 | +0.48496946 | |
| $e$ | 0.1302094 | $i$ | 5.38896 | | −0.42014754 | +0.22320664 | |
| $P$ | 3.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 608 | 0.3− | 0.5− | 2002 10 11 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 1.1− | 1.4+ | |
| 2001 04 15 | 608 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.2− | 0.9+ | |
| 2001 04 15 | 608 | 0.0 | 0.6− | 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.9+ | 1.2+ | |
| 2001 04 16 | 699 | 0.4+ | 0.8− | 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.8+ | |
| 2001 04 16 | 699 | 0.4+ | 0.0 | 2002 10 11 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | (0.8+ | 1.8+) | |
| 2001 04 16 | 699 | 0.9+ | 0.4+ | 2002 10 31 | 704 | 0.5− | 0.9+ | 2006 11 16 | 704 | (0.2− | 1.6+) | |
| 2001 04 16 | 699 | 0.1− | 0.5+ | 2002 10 31 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.9− | 1.5+ | |
| 2001 04 28 | 691 | 0.6+ | 0.9+ | 2002 10 31 | 704 | 0.2+ | 0.9+ | 2006 11 16 | 704 | 0.1− | 0.8+ | |
| 2001 04 28 | 691 | 0.5+ | 0.9+ | 2002 10 31 | 704 | 0.4− | 0.6+ | 2006 11 17 | 691 | 0.1− | 0.2− | |
| 2001 04 28 | 691 | 0.3+ | 1.0+ | 2002 10 31 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.2− | |
| 2001 05 18 | 699 | (1.1+ | 1.6+) | 2002 11 06 | 704 | 0.1+ | 1.0+ | 2006 11 17 | 691 | 0.1+ | 0.1− | |
| 2001 05 18 | 699 | 0.6− | 1.1+ | 2002 11 06 | 704 | (0.4+ | 1.6+) | 2006 11 19 | 704 | 0.5+ | 0.7+ | |
| 2001 05 18 | 699 | 0.1− | 0.8+ | 2002 11 06 | 704 | 0.7− | 0.7+ | 2006 11 19 | 704 | 0.1− | 1.3+ | |
| 2001 05 18 | 699 | 0.7+ | 1.5+ | 2002 11 06 | 704 | 0.8− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.6+ | |
| 2002 09 05 | 704 | 0.1+ | 0.9+ | 2002 11 21 | 644 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.1− | |
| 2002 09 05 | 704 | (0.0 | 1.5+) | 2002 11 21 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 1.2+ | 0.7+ | |
| 2002 09 05 | 704 | 0.3− | 0.1− | 2002 11 21 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.3+ | |
| 2002 09 07 | 704 | 0.3− | 0.3+ | 2004 01 17 | 644 | 0.2− | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.7− | |
| 2002 09 07 | 704 | 0.1− | 0.4+ | 2004 01 17 | 644 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.4+ | 0.2+ | |
| 2002 09 07 | 704 | 1.1− | 0.7+ | 2004 01 17 | 644 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 1.0+ | 0.3− | |
| 2002 09 07 | 704 | 0.6− | 0.4+ | 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.7− | |
| 2002 09 07 | 704 | 1.0− | 0.4+ | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.2+ | |
| 2002 10 02 | 704 | 0.5− | 0.6+ | 2004 02 17 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.7− | |
| 2002 10 02 | 704 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.6− | 2006 11 21 | 704 | 0.2− | 0.0 | |
| 2002 10 02 | 704 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.5− | |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.2− | 0.8− | |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.3− | |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.0 | |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.2− | |
| 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 10 20 | G96 | 0.3− | 0.4− | 2006 11 25 | 691 | 0.1+ | 0.0 | |
| 2002 10 03 | 704 | 0.4− | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.4− | 2006 11 25 | 691 | 0.1+ | 0.2− | |
| 2002 10 07 | 704 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.7− | 0.6+ | |
| 2002 10 07 | 704 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.9− | 0.3+ | |
| 2002 10 07 | 704 | 0.6+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.5− | 0.1+ | |
| 2002 10 07 | 704 | 0.4+ | 0.0 | 2006 11 15 | 704 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2− | 0.4+ | |

**(139218)∗ 2001 GP$_{11}$**

Discovered 2001 Apr. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.13575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26929037 | $\omega$ | 94.40230 | | −0.42885080 | +0.90244501 | |
| $a$ | 2.3749556 | $\Omega$ | 150.09628 | | −0.85801814 | −0.39270324 | |
| $e$ | 0.0943782 | $i$ | 4.71589 | | −0.28265149 | −0.17713601 | |
| $P$ | 3.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 01 | 691 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.2+ | 0.9+ | 2004 02 13 | 691 | 0.1− | 0.2− | |
| 2001 04 01 | 691 | 0.1+ | 0.4+ | 2002 10 11 | 645 | 0.1− | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.0 | |
| 2001 04 01 | 691 | 0.0 | 0.9+ | 2002 10 11 | 645 | 0.1− | 0.2+ | 2004 02 13 | 691 | 0.1+ | 0.1+ | |
| 2001 04 14 | 691 | 0.0 | 0.3+ | 2003 12 29 | 691 | 0.1− | 0.2+ | 2004 02 16 | 704 | 0.8− | 0.6− | |
| 2001 04 14 | 691 | 0.0 | 0.5+ | 2003 12 29 | 691 | 0.1+ | 0.2+ | 2004 02 16 | 704 | 0.0 | 0.3− | |
| 2001 04 14 | 691 | 0.1+ | 0.6+ | 2003 12 29 | 691 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.5− | 0.0 | |
| 2001 04 24 | 704 | (1.9− | 0.3−) | 2004 01 13 | 699 | (0.2+ | 2.0+) | 2004 02 16 | 704 | 0.6− | 0.7− | |
| 2001 04 24 | 704 | 0.5+ | 0.0 | 2004 01 13 | 699 | 0.5− | 0.4− | 2006 10 03 | G96 | 0.5− | 0.3− | |
| 2001 04 24 | 704 | 1.2+ | 1.1− | 2004 01 13 | 699 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.0 | |
| 2001 04 24 | 608 | 0.2− | 0.6− | 2004 01 13 | 699 | (1.0+ | 2.5−) | 2006 10 03 | G96 | 0.1+ | 0.1− | |
| 2001 04 24 | 608 | 0.4− | 0.1− | 2004 01 16 | 691 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.2− | 0.1− | |
| 2001 04 24 | 608 | 0.7− | 0.3− | 2004 01 16 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.6− | |
| 2001 05 02 | 608 | 0.3− | 0.7− | 2004 01 16 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | 1.2+ | 0.6− | |
| 2001 05 02 | 608 | 0.2− | 1.0− | 2004 01 17 | 644 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.7+ | 0.6− | |
| 2001 05 02 | 608 | 0.4− | 1.1− | 2004 01 17 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.7+ | |
| 2001 05 18 | 704 | 0.8+ | 0.2+ | 2004 01 17 | 644 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ | |
| 2001 05 18 | 704 | 0.0 | 1.3+ | 2004 01 22 | 644 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ | |
| 2001 05 18 | 704 | 0.2− | 0.8+ | 2004 01 22 | 644 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.5+ | 0.0 | |
| 2001 05 18 | 704 | (2.3− | 0.4−) | 2004 01 22 | 644 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.2− | |
| 2001 05 27 | 608 | 0.3+ | 0.2− | 2004 01 24 | 704 | 0.1− | 0.7+ | 2006 11 18 | G96 | 0.3− | 0.1− | |
| 2001 05 27 | 608 | 0.3+ | 0.6− | 2004 01 24 | 704 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2001 05 27 | 608 | 0.2+ | 0.3− | 2004 01 24 | 704 | 0.4− | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.0 | |
| 2002 10 03 | 704 | 0.0 | 1.0+ | 2004 02 11 | 699 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.1− | |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2004 02 11 | 699 | 0.8+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1+ | |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2004 02 11 | 699 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.1+ | |
| 2002 10 03 | 704 | 0.6+ | 0.6+ | 2004 02 11 | 699 | 0.2− | 0.7− | 2006 11 18 | G96 | 0.3+ | 0.1+ | |

**(139219)∗ 2001 HF = 2002 RO$_{92}$**

Discovered 2001 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35064)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.19292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23256739 | $\omega$ | 253.00697 | | −0.12094982 | +0.99196105 | |
| $a$ | 2.6188070 | $\Omega$ | 10.26292 | | −0.81267777 | −0.07742639 | |
| $e$ | 0.1587114 | $i$ | 12.05432 | | −0.57002279 | −0.10009215 | |
| $P$ | 4.24 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 704 | 0.8+ | 0.8+ | 2002 10 02 | 704 | 0.6− | 1.0+ | 2005 03 31 | 699 | 0.3− | 0.3+ | |
| 2001 03 24 | 704 | 0.5+ | 0.3− | 2002 10 03 | 704 | 0.4− | 0.6+ | 2005 03 31 | 699 | 1.2+ | 0.6+ | |
| 2001 03 24 | 704 | 0.5− | 0.6+ | 2002 10 03 | 704 | 0.4− | 1.4+ | 2005 03 31 | 699 | (2.2+ | 1.4+) | |
| 2001 03 24 | 704 | 0.1+ | 1.1+ | 2002 10 03 | 704 | (1.3− | 1.7+) | 2005 04 04 | 704 | 0.3+ | 0.7+ | |
| 2001 04 01 | 704 | 0.2− | 0.2+ | 2002 10 03 | 704 | 0.0 | 0.4+ | 2005 04 04 | 704 | 1.0+ | 1.0+ | |
| 2001 04 01 | 704 | 0.1− | 0.3− | 2002 10 03 | 704 | 1.0− | 0.4+ | 2005 04 04 | 704 | 0.7+ | 0.7+ | |
| 2001 04 01 | 704 | 0.1+ | 0.8− | 2002 10 06 | 608 | 0.3− | 0.8+ | 2005 04 04 | 704 | 0.4+ | 0.1+ | |
| 2001 04 01 | 704 | 0.5+ | 0.5− | 2002 10 06 | 608 | 0.4− | 1.3+ | 2005 04 09 | E12 | 0.2+ | 0.6− | |
| 2001 04 16 | 704 | 0.0 | 0.3+ | 2002 10 06 | 608 | 0.3− | 1.2+ | 2005 04 09 | E12 | 0.1− | 0.1− | |
| 2001 04 16 | 704 | 0.3− | 1.0+ | 2002 10 07 | 704 | 0.1− | 0.1− | 2005 04 09 | E12 | 0.1− | 0.5− | |
| 2001 04 16 | 704 | 1.1− | 0.8+ | 2002 10 07 | 704 | 0.8− | 0.9+ | 2005 04 09 | E12 | 0.2− | 0.0 | |
| 2001 04 18 | 608 | (2.0+ | 2.6−) | 2002 10 07 | 704 | 0.6− | 0.7+ | 2005 04 11 | G96 | 0.0 | 0.1− | |
| 2001 04 18 | 608 | (1.3+ | 2.7−) | 2002 10 07 | 704 | 1.2− | 0.3+ | 2005 04 11 | G96 | 0.1− | 0.1+ | |
| 2001 04 18 | 608 | (1.4+ | 1.6−) | 2002 10 11 | 704 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.1− | 0.0 | |
| 2001 04 26 | 699 | 1.0+ | 0.1− | 2002 10 11 | 704 | 0.2− | 0.5+ | 2005 04 11 | G96 | 0.0 | 0.1+ | |
| 2001 04 26 | 699 | 0.4+ | 0.5+ | 2002 10 11 | 704 | 0.5+ | 0.1+ | 2005 04 17 | 703 | 0.6− | 0.9− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 699 | 0.5+ | 0.5+ | 2002 10 11 | 704 | 0.2+ | 0.6− | 2005 04 17 | 703 | 0.9− | 0.3− | | |
| 2001 04 26 | 699 | 0.9+ | 0.7− | 2002 10 11 | 704 | 0.5− | 0.0 | 2005 04 17 | 703 | 0.2− | 0.6− | | |
| 2001 04 26 | 608 | (3.1− | 0.7−) | 2002 10 11 | 645 | 0.0 | 0.0 | 2005 04 17 | 703 | 0.6+ | 0.1− | | |
| 2001 04 26 | 608 | (2.8− | 0.4−) | 2002 10 11 | 645 | 0.1+ | 0.0 | 2005 04 30 | 699 | 0.3− | 0.7− | | |
| 2001 04 26 | 608 | (3.0− | 0.8−) | 2002 10 30 | 645 | 0.1− | 0.1− | 2005 04 30 | 699 | 0.8− | 0.8− | | |
| 2001 05 18 | 704 | 0.2− | 0.1+ | 2002 10 30 | 645 | 0.1− | 0.1− | 2005 04 30 | 699 | 0.0 | 1.1+ | | |
| 2001 05 18 | 704 | 0.6− | 1.2+ | 2002 10 31 | 704 | 0.4− | 0.7+ | 2005 04 30 | 699 | 0.2− | 0.7+ | | |
| 2001 05 18 | 704 | 0.6− | 1.0+ | 2002 10 31 | 704 | 0.2− | 0.1− | 2005 05 04 | G96 | 0.1− | 0.2− | | |
| 2001 05 19 | 608 | 1.1+ | 0.7− | 2002 10 31 | 704 | 0.1+ | 0.7+ | 2005 05 04 | G96 | 0.1− | 0.1− | | |
| 2001 05 19 | 608 | 0.2+ | 0.4− | 2002 10 31 | 704 | 0.4+ | 0.6+ | 2005 05 04 | G96 | 0.1+ | 0.2− | | |
| 2001 05 19 | 608 | 0.1+ | 0.8− | 2002 10 31 | 704 | 0.8− | 0.3− | 2005 05 04 | G96 | 0.1− | 0.1+ | | |
| 2001 05 21 | 704 | 0.6+ | 0.0 | 2005 03 04 | 704 | 0.2+ | 0.9+ | 2005 05 04 | 703 | 0.7+ | 0.1+ | | |
| 2001 05 21 | 704 | 0.5− | 0.7+ | 2005 03 04 | 704 | 0.1− | 0.6+ | 2005 05 04 | 703 | 0.4− | 0.4− | | |
| 2001 05 21 | 704 | (0.0 | 1.5+) | 2005 03 04 | 704 | 0.0 | 0.5+ | 2005 05 04 | 703 | 0.6− | 0.9− | | |
| 2001 05 21 | 704 | 0.1+ | 0.4+ | 2005 03 04 | 704 | 1.2+ | 0.2+ | 2005 05 04 | 703 | 1.4− | 0.2− | | |
| 2002 09 05 | 704 | 0.6− | 0.1− | 2005 03 08 | 699 | 0.1+ | 0.4+ | 2006 08 07 | E12 | 0.4+ | 0.1− | | |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2005 03 08 | 699 | 0.1+ | 1.2+ | 2006 08 07 | E12 | 0.2− | 0.4+ | | |
| 2002 09 05 | 704 | 0.7+ | 1.1+ | 2005 03 08 | 699 | 0.7+ | 0.1+ | 2006 08 07 | E12 | 0.4− | 0.3+ | | |
| 2002 09 07 | 704 | (1.6− | 0.1−) | 2005 03 09 | 699 | 0.0 | 0.8+ | 2006 08 07 | E12 | 0.2− | 0.2+ | | |
| 2002 09 07 | 704 | 0.3+ | 0.2+ | 2005 03 09 | 699 | 0.9+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.3+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2005 03 09 | 699 | 1.3+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.3+ | | |
| 2002 09 07 | 704 | 0.5+ | 0.9− | 2005 03 09 | 699 | 1.0+ | 0.8+ | 2006 08 16 | 644 | 0.0 | 0.2+ | | |
| 2002 09 17 | 608 | (1.6− | 0.8−) | 2005 03 11 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.8+ | 1.0− | | |
| 2002 09 17 | 608 | (1.6− | 0.7−) | 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.5+ | 0.4− | | |
| 2002 09 17 | 608 | 1.3− | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.3− | | |
| 2002 09 30 | 704 | 0.3− | 0.4+ | 2005 03 18 | 704 | 0.9− | 0.5+ | 2006 09 20 | 703 | 0.2− | 0.3− | | |
| 2002 09 30 | 704 | 0.2− | 0.8+ | 2005 03 18 | 704 | 0.9− | 0.4+ | 2006 10 27 | 122 | 0.3− | 0.0 | | |
| 2002 09 30 | 704 | 0.2− | 0.6+ | 2005 03 18 | 704 | 1.2− | 0.6− | 2006 10 27 | 122 | 0.3+ | 0.1− | | |
| 2002 09 30 | 704 | 0.1+ | 0.3+ | 2005 03 18 | 703 | 0.5+ | 0.5− | 2006 10 27 | 122 | 0.2− | 0.2+ | | |
| 2002 09 30 | 704 | 0.4+ | 0.2− | 2005 03 18 | 703 | 0.0 | 0.2+ | 2006 10 27 | 122 | 0.1− | 0.1+ | | |
| 2002 10 01 | 699 | 0.0 | 1.3+ | 2005 03 18 | 703 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.2− | | |
| 2002 10 01 | 699 | (1.0− | 1.6+) | 2005 03 18 | 703 | 0.3− | 0.3− | 2006 11 23 | G96 | 0.3− | 0.1− | | |
| 2002 10 01 | 699 | 0.5− | 1.0+ | 2005 03 31 | 699 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.4+ | | |
| 2002 10 01 | 699 | 0.1+ | 0.9+ | 2005 03 31 | 699 | 0.5+ | 0.4+ | 2006 11 23 | G96 | 0.4− | 0.1+ | | |
| 2002 10 02 | 704 | 0.1− | 0.5+ | 2005 03 31 | 699 | 0.3+ | 0.3+ | | | | | | |
| 2002 10 02 | 704 | 0.1+ | 0.4+ | 2005 03 31 | 699 | 1.4+ | 0.7+ | | | | | | |

**(139220)∗ 2001 HA$_1$**

Discovered 2001 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 78.05744 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23230792 | $\omega$ | 330.33370 | | −0.48570004 | | +0.87117615 | | |
| $a$ | 2.6207567 | $\Omega$ | 270.52431 | | −0.78720641 | | −0.47160959 | | |
| $e$ | 0.1833482 | $i$ | 4.11449 | | −0.38000203 | | −0.13651560 | | |
| $P$ | 4.24 | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 704 | 0.6− | 0.6+ | 2003 12 17 | 691 | 0.1− | 0.3+ | 2005 04 06 | G92 | 0.2− | 0.1− | | |
| 2001 04 16 | 704 | 0.4− | 0.5+ | 2003 12 17 | 691 | 0.2− | 0.3− | 2005 04 09 | 699 | 0.3− | 0.4+ | | |
| 2001 04 16 | 704 | 0.4+ | 0.8− | 2003 12 17 | 691 | 0.3+ | 0.0 | 2005 04 09 | 699 | 0.3− | 0.7+ | | |
| 2001 04 16 | 704 | 0.5+ | 0.2+ | 2005 03 08 | 691 | 0.3+ | 0.3+ | 2005 04 09 | 699 | 0.4+ | 0.3+ | | |
| 2001 04 16 | 704 | 0.0 | 0.6− | 2005 03 08 | 691 | 0.3+ | 0.2+ | 2005 04 09 | 699 | 0.3+ | 0.5+ | | |
| 2001 04 16 | 608 | 1.1+ | 0.4− | 2005 03 08 | 691 | 0.2+ | 0.2+ | 2006 08 24 | 704 | 0.3+ | 0.4+ | | |
| 2001 04 16 | 608 | 0.0 | 0.2− | 2005 03 10 | 699 | 0.1− | 0.6− | 2006 08 24 | 704 | 0.2+ | 0.3+ | | |
| 2001 04 16 | 608 | 0.3+ | 0.3+ | 2005 03 10 | 699 | 0.8+ | 0.9+ | 2006 08 24 | 704 | 0.5+ | 0.2+ | | |
| 2001 04 18 | 704 | 0.6− | 0.8+ | 2005 03 10 | 699 | 0.7− | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.3− | | |
| 2001 04 18 | 704 | 0.3− | 0.4− | 2005 03 10 | 699 | 0.5+ | 1.5+ | 2006 08 28 | 703 | 0.3− | 0.5− | | |
| 2001 04 18 | 704 | 1.7+ | 0.8− | 2005 03 17 | 703 | 0.8− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.1+ | | |
| 2001 05 15 | 608 | 0.6− | 0.7− | 2005 03 17 | 703 | 0.6− | 1.5+ | 2006 08 29 | 691 | 0.4− | 0.4+ | | |
| 2001 05 15 | 608 | 0.8− | 1.7− | 2005 03 17 | 703 | 0.8− | 0.1− | 2006 08 29 | 691 | 0.3− | 0.3+ | | |
| 2001 05 15 | 608 | 0.5− | 1.4− | 2005 03 17 | 703 | 0.4− | 0.2− | 2006 08 29 | 691 | 0.1− | 0.4+ | | |
| 2001 05 18 | 699 | 0.2− | 0.3+ | 2005 04 01 | 699 | 0.5+ | 0.8+ | 2006 08 30 | 704 | 1.3+ | 0.5− | | |
| 2001 05 18 | 699 | 0.5− | 1.1+ | 2005 04 01 | 699 | 0.6+ | 0.3+ | 2006 08 30 | 704 | 0.6+ | 0.4+ | | |
| 2001 05 18 | 699 | 0.5− | 0.7+ | 2005 04 01 | 699 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.9+ | 0.3+ | | |
| 2001 05 18 | 699 | (1.5+ | 3.0+) | 2005 04 01 | 699 | 0.1+ | 0.8+ | 2006 08 30 | 704 | 0.9− | 0.2− | | |
| 2002 09 11 | 644 | 0.7− | 1.2+ | 2005 04 04 | 703 | (3.0+ | 3.0+) | 2006 09 14 | 703 | 0.2− | 0.6+ | | |
| 2002 09 11 | 644 | 0.5− | 1.3+ | 2005 04 04 | 703 | 0.8+ | 1.5+ | 2006 09 14 | 703 | 0.4− | 0.5+ | | |
| 2002 09 11 | 644 | 0.2− | 1.3+ | 2005 04 04 | 703 | 0.8+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.9+ | | |
| 2002 09 17 | 644 | 1.1− | 0.0 | 2005 04 04 | 703 | 0.7+ | 1.1+ | 2006 09 14 | 703 | 0.4− | 1.2+ | | |
| 2002 09 17 | 644 | 0.0 | 1.0+ | 2005 04 06 | G92 | 0.4+ | 0.1− | | | | | | |
| 2002 09 17 | 644 | 0.2− | 0.8+ | 2005 04 06 | G92 | 0.8+ | 0.1+ | | | | | | |

**(139221)∗ 2001 HL$_1$**

Discovered 2001 Apr. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 136.48489 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26028744 | $\omega$ | 195.82420 | | −0.55234135 | | +0.83276303 | | |
| $a$ | 2.4294086 | $\Omega$ | 40.66851 | | −0.75840970 | | −0.48319902 | | |
| $e$ | 0.1545320 | $i$ | 3.32049 | | −0.34602566 | | −0.27023034 | | |
| $P$ | 3.79 | $H$ | 16.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 699 | 0.1+ | 0.6+ | 2002 09 16 | 644 | 0.9− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.5+ | | |
| 2001 04 16 | 699 | 0.1+ | 0.2+ | 2002 09 16 | 644 | 0.4− | 1.2+ | 2006 09 24 | 691 | 0.0 | 0.0 | | |
| 2001 04 16 | 699 | 0.0 | 0.8+ | 2002 09 26 | 644 | 0.3− | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.2+ | | |
| 2001 04 16 | 699 | 0.3+ | 1.0+ | 2002 09 26 | 644 | 0.5+ | 0.5+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | | |
| 2001 04 17 | 704 | 0.8+ | 1.1+ | 2002 09 26 | 644 | 0.2+ | 0.9+ | 2006 09 28 | 691 | 0.2− | 0.4+ | | |
| 2001 04 17 | 704 | (1.6+ | 0.1−) | 2002 09 27 | 644 | 0.4− | 1.2− | 2006 09 28 | 691 | 0.2− | 0.4+ | | |
| 2001 04 17 | 704 | 1.3+ | 0.6+ | 2002 09 27 | 644 | 0.3− | 0.7+ | 2006 09 28 | 691 | 0.4− | 0.2+ | | |
| 2001 04 17 | 704 | 1.1+ | 0.3− | 2002 09 27 | 644 | 0.9− | 0.1− | 2006 10 15 | 691 | 0.5+ | 0.3− | | |
| 2001 04 17 | 704 | 0.3+ | 1.1+ | 2002 09 28 | 644 | 1.4− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2+ | | |
| 2001 04 18 | 704 | (1.2+ | 1.6−) | 2002 09 28 | 644 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.4+ | | |
| 2001 04 18 | 704 | (0.8+ | 2.2−) | 2002 09 28 | 644 | 0.5− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.9+ | | |
| 2001 04 18 | 704 | 0.4+ | 1.0+ | 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.7+ | | |
| 2001 04 18 | 608 | 0.1+ | 0.2+ | 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.3+ | | |
| 2001 04 18 | 608 | 0.1+ | 0.5+ | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.7− | 0.1+ | | |
| 2001 04 18 | 608 | 0.3+ | 0.4+ | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.5− | 0.3+ | | |
| 2001 04 23 | 704 | 1.0+ | 1.0+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ | | |
| 2001 04 23 | 704 | 0.2− | 1.0+ | 2002 10 30 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2001 04 23 | 704 | 0.1− | 0.6+ | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2001 04 23 | 704 | 0.5+ | 0.3+ | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2001 04 23 | 704 | 0.9+ | 0.0 | 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2001 04 27 | 704 | (0.2+ | 1.7+) | 2003 12 18 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2001 04 27 | 704 | 0.7+ | 0.5+ | 2003 12 18 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2− | 0.2+ | | |
| 2001 04 27 | 704 | 0.6+ | 0.8+ | 2003 12 22 | 704 | 1.3+ | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.0 | | |
| 2001 05 18 | 699 | 0.4+ | 0.7+ | 2003 12 22 | 704 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.6− | | |
| 2001 05 18 | 699 | (1.6+ | 1.5+) | 2003 12 22 | 704 | 1.4− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− | | |
| 2001 05 18 | 699 | 1.3− | 0.3+ | 2003 12 22 | 704 | (0.1− | 2.8+) | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2001 05 18 | 699 | 1.3− | 0.7+ | 2005 01 22 | 809 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.5− | | |
| 2002 09 16 | 644 | 0.8− | 0.1− | 2005 01 22 | 809 | 0.8− | 1.4− | 2006 11 11 | G96 | 0.1+ | 0.4− | | |
| 2002 09 16 | 644 | 0.6− | 1.1+ | 2005 01 22 | 809 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.7− | | |
| 2002 09 16 | 644 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2002 09 16 | 644 | 0.6− | 1.2+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.8+ | 0.3+ | | |

**(139222)∗ 2001 HL$_4$ = 2002 TH$_{255}$**

Discovered 2001 Apr. 17 by W. K. Y. Yeung at Desert Beaver Observatory.

Id. G. V. Williams (*MPO* 37602)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 130.08121 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26358411 | $\omega$ | 189.14230 | | −0.07056233 | | +0.99189047 | | |
| $a$ | 2.4091096 | $\Omega$ | 76.86393 | | −0.90819786 | | −0.02005474 | | |
| $e$ | 0.0971599 | $i$ | 6.23166 | | −0.41255012 | | −0.12550338 | | |
| $P$ | 3.74 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 17 | 919 | 0.2− | 1.0+ | 2002 10 03 | 704 | 0.7+ | 0.8− | 2004 02 15 | 704 | 0.9+ | 0.1− | | |
| 2001 04 17 | 919 | 0.1− | 0.3+ | 2002 10 09 | 699 | 0.6− | 0.5+ | 2004 02 15 | 704 | 0.2+ | 0.5+ | | |
| 2001 04 17 | 919 | 0.2− | 0.2+ | 2002 10 09 | 699 | 1.1− | 0.1+ | 2004 02 17 | 644 | 0.0 | 0.3+ | | |
| 2001 04 21 | 919 | (7.0− | 0.4−) | 2002 10 09 | 699 | (1.9− | 1.2−) | 2004 02 17 | 644 | 0.0 | 0.0 | | |
| 2001 04 21 | 919 | (7.4− | 0.2+) | 2002 10 09 | 699 | (2.0− | 0.2−) | 2004 02 17 | 644 | 0.2− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 21 | 919 | (6.1− | 0.2−) | 2002 10 11 | 704 | 0.5− | 0.2− | 2004 02 18 | 691 | 0.3− | 0.2− | | |
| 2001 04 30 | 919 | 0.8− | 0.9+ | 2002 10 11 | 704 | (1.0− | 1.5+) | 2004 02 18 | 691 | 0.2+ | 0.0 | | |
| 2001 04 30 | 919 | 0.6− | 0.9+ | 2002 10 11 | 704 | 0.6+ | 0.3− | 2004 02 18 | 691 | 0.1− | 0.2− | | |
| 2001 04 30 | 919 | (1.5− | 1.7−) | 2002 10 11 | 704 | 0.4− | 0.3+ | 2005 06 11 | 704 | 0.2+ | 1.3+ | | |
| 2001 05 01 | 919 | 0.4− | 0.8+ | 2002 10 11 | 704 | 1.3− | 0.1+ | 2005 06 11 | 704 | 0.1− | 0.3+ | | |
| 2001 05 01 | 919 | 0.7+ | 0.7+ | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2005 06 11 | 704 | 0.3− | 1.3+ | | |
| 2001 05 18 | 704 | 0.3+ | 0.1+ | 2002 10 11 | 704 | 0.5− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.4+ | | |
| 2001 05 18 | 704 | 0.5+ | 0.2+ | 2002 10 11 | 704 | 0.5− | 0.3− | 2006 11 10 | 691 | 0.3− | 0.4+ | | |
| 2001 05 18 | 704 | 0.5− | 1.3+ | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | | |
| 2001 05 18 | 704 | 0.0 | 1.3+ | 2002 10 31 | 704 | 0.2− | 1.0+ | 2006 11 13 | 703 | 0.4− | 0.9+ | | |
| 2001 05 21 | 704 | 0.3+ | 0.5+ | 2002 10 31 | 704 | 0.4+ | 1.1+ | 2006 11 13 | 703 | 0.5+ | 0.3+ | | |
| 2001 05 21 | 699 | 0.7+ | 0.3+ | 2002 10 31 | 704 | 0.3− | 0.7+ | 2006 11 13 | 703 | 0.0 | 0.1+ | | |
| 2001 05 21 | 699 | 0.4+ | 1.0+ | 2002 10 31 | 704 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.2− | | |
| 2001 05 21 | 704 | 0.1+ | 0.0 | 2002 10 31 | 704 | 0.0 | 0.7+ | 2006 11 14 | 691 | 0.1+ | 0.3+ | | |
| 2001 05 21 | 699 | 0.3− | 0.5+ | 2002 10 31 | 608 | 0.5+ | 1.0+ | 2006 11 14 | 691 | 0.0 | 0.3+ | | |
| 2001 05 21 | 699 | 0.1+ | 0.1− | 2002 10 31 | 608 | (1.1+ | 2.0+) | 2006 11 14 | 691 | 0.0 | 0.4+ | | |
| 2001 05 21 | 704 | 0.2− | 0.5+ | 2002 10 31 | 608 | (0.8+ | 2.2+) | 2006 11 18 | 704 | 1.0− | 1.2+ | | |
| 2001 05 21 | 704 | 0.4+ | 0.6+ | 2004 01 20 | 704 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.3+ | | |
| 2001 05 21 | 704 | 1.0+ | 0.4+ | 2004 01 20 | 704 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.2− | | |
| 2001 05 24 | 704 | 1.0+ | 0.6+ | 2004 01 20 | 704 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.3+ | | |
| 2001 05 24 | 704 | 0.0 | 0.7+ | 2004 01 28 | 703 | 0.9− | 0.2− | 2006 11 18 | 704 | 0.9− | 0.3+ | | |
| 2001 05 24 | 704 | 0.3− | 0.7+ | 2004 01 28 | 703 | 0.6− | 0.3− | 2006 11 21 | 691 | 0.0 | 0.2+ | | |
| 2001 05 24 | 704 | 0.0 | 0.6+ | 2004 01 28 | 703 | 1.0− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.4+ | | |
| 2001 05 24 | 704 | 0.9+ | 0.1+ | 2004 01 28 | 703 | 0.9− | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.4+ | | |
| 2001 05 27 | 704 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.0 | 0.6+ | 2006 11 21 | 704 | 0.4+ | 0.7+ | | |
| 2001 05 27 | 704 | 1.1+ | 0.7+ | 2004 01 30 | 704 | 0.8+ | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2001 05 27 | 704 | 0.7+ | 0.7+ | 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 11 21 | 704 | 0.5+ | 1.0+ | | |
| 2001 05 27 | 691 | 0.0 | 0.5+ | 2004 02 10 | 644 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.7+ | | |
| 2001 05 27 | 704 | (0.2− | 2.1+) | 2004 02 10 | 644 | 0.0 | 1.0+ | 2006 11 21 | 704 | 0.6− | 1.0+ | | |
| 2001 05 27 | 691 | 0.2+ | 0.2+ | 2004 02 10 | 644 | 0.8+ | 0.6+ | 2006 11 22 | 704 | 0.6− | 0.3+ | | |
| 2001 05 27 | 691 | 0.1+ | 0.0 | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.5− | | |
| 2001 05 29 | 608 | 0.5+ | 0.1− | 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.3− | 0.9+ | | |
| 2001 05 29 | 608 | 0.2+ | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | (0.2− | 1.6+) | | |
| 2001 05 29 | 608 | 0.4+ | 0.2+ | 2004 02 13 | 699 | 0.8− | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.4+ | | |
| 2001 06 11 | 699 | 0.7+ | 0.6+ | 2004 02 13 | 699 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.7− | 0.6+ | | |
| 2001 06 11 | 699 | 0.8− | 0.6+ | 2004 02 13 | 699 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.4− | 1.1+ | | |
| 2001 06 11 | 699 | 0.2+ | 1.0+ | 2004 02 13 | 699 | 0.2+ | 0.2− | 2006 11 29 | 704 | 1.4− | 0.2− | | |
| 2001 06 11 | 699 | 0.5+ | 0.3+ | 2004 02 15 | 704 | 0.3+ | 0.1− | 2006 12 01 | 291 | 0.2− | 0.2+ | | |
| 2002 10 03 | 704 | 0.9+ | 1.3− | 2004 02 15 | 704 | 1.0+ | 0.4− | 2006 12 01 | 291 | 0.2− | 0.5+ | | |
| 2002 10 03 | 704 | 0.3+ | 1.4− | 2004 02 15 | 704 | 0.3+ | 0.7+ | 2006 12 01 | 291 | 0.2+ | 0.2+ | | |

**(139223)∗ 2001 HB$_5$ = 1996 XA$_{37}$**

Discovered 2001 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13317)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.05237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28182393 | $\omega$ | 325.02204 | | −0.69326811 | +0.71440465 | |
| $a$ | 2.3040088 | $\Omega$ | 260.87990 | | −0.63735930 | −0.66923889 | |
| $e$ | 0.1814066 | $i$ | 5.51529 | | −0.33638142 | −0.20431667 | |
| $P$ | 3.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.8+ | 0.2− | 2004 01 17 | 691 | 0.1+ | 0.1− | 2004 04 16 | 645 | 0.1+ | 0.0 | | |
| 1996 12 07 | 691 | 0.9+ | 0.1− | 2004 01 17 | 691 | 0.2− | 0.0 | 2004 04 16 | 645 | 0.0 | 0.1− | | |
| 1996 12 07 | 691 | 0.8+ | 0.1− | 2004 01 17 | 691 | 0.1− | 0.2− | 2005 07 12 | 703 | 1.1+ | 0.2− | | |
| 1996 12 15 | 691 | 0.5− | 0.2− | 2004 01 18 | 644 | 0.1+ | 0.5+ | 2005 07 12 | 703 | (2.4+ | 0.3+) | | |
| 1996 12 15 | 691 | 0.1+ | 0.1+ | 2004 01 18 | 644 | 0.1+ | 0.4+ | 2005 07 12 | 703 | 0.8− | 1.4+ | | |
| 1996 12 15 | 691 | 0.2+ | 0.4− | 2004 01 18 | 644 | 0.1+ | 0.4+ | 2005 07 12 | 703 | 0.3+ | 0.1+ | | |
| 1996 12 17 | 691 | 0.6− | 0.5− | 2004 01 19 | 699 | 0.7+ | 0.2+ | 2005 08 06 | 644 | 0.5+ | 0.3+ | | |
| 1996 12 17 | 691 | 0.4− | 0.3− | 2004 01 19 | 699 | 0.1+ | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.6+ | | |
| 1996 12 17 | 691 | 1.5− | 0.2− | 2004 01 19 | 699 | 0.3− | 0.5+ | 2005 08 06 | 644 | 0.1+ | 0.1+ | | |
| 2001 04 16 | 704 | 1.0+ | 0.4+ | 2004 01 19 | 699 | 0.4− | 0.8+ | 2006 11 10 | 691 | 0.3− | 0.0 | | |
| 2001 04 16 | 704 | 0.3− | 1.4+ | 2004 01 23 | 704 | 1.0+ | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.1− | | |
| 2001 04 16 | 704 | 0.5− | 1.3− | 2004 01 23 | 704 | 1.1+ | 0.1− | 2006 11 10 | 691 | 0.2− | 0.3− | | |
| 2001 04 16 | 704 | 0.5− | 0.1+ | 2004 01 23 | 704 | 1.2+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.1+ | | |
| 2001 04 21 | 704 | 0.0 | 0.3+ | 2004 01 27 | 704 | (0.0 | 1.7+) | 2006 11 14 | 691 | 0.2+ | 0.1+ | | |
| 2001 04 21 | 704 | 0.3+ | 0.1− | 2004 01 27 | 704 | 0.9− | 1.0+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | | |
| 2001 04 21 | 704 | (0.1+ | 2.0+) | 2004 01 27 | 704 | 0.8− | 1.5+ | 2006 11 22 | 691 | 0.1− | 0.3+ | | |
| 2001 04 21 | 704 | 0.1+ | 0.8+ | 2004 01 28 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.3+ | | |
| 2001 05 21 | 704 | 0.8− | 0.9− | 2004 01 28 | 704 | (0.3− | 1.7+) | 2006 11 22 | 691 | 0.0 | 0.2+ | | |
| 2001 05 21 | 704 | 0.1− | 0.4+ | 2004 01 28 | 704 | 0.9− | 0.8+ | 2006 11 23 | H07 | 0.5− | 0.8− | | |
| 2001 05 21 | 704 | 0.5+ | 0.6+ | 2004 02 17 | 704 | 0.2+ | 1.0+ | 2006 11 23 | H07 | 1.0− | 1.0− | | |
| 2001 05 24 | 704 | 0.1+ | 0.3− | 2004 02 17 | 704 | 0.0 | 1.2+ | 2006 11 23 | H07 | (1.9− | 0.6+) | | |
| 2001 05 24 | 704 | 0.1+ | 0.5+ | 2004 02 17 | 704 | (1.6− | 0.9+) | 2006 11 23 | H07 | 0.7+ | 0.8+ | | |
| 2001 05 24 | 704 | 0.8− | 0.7+ | 2004 02 17 | 704 | 0.4+ | 0.1− | 2006 11 25 | H07 | 0.4+ | 1.0+ | | |
| 2004 01 13 | 699 | 0.5− | 0.8+ | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 11 25 | H07 | 0.6− | 0.2+ | | |
| 2004 01 13 | 699 | 0.6+ | 0.0 | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 11 25 | H07 | 0.3− | 0.7+ | | |
| 2004 01 13 | 699 | 0.4− | 0.3+ | 2004 04 14 | 645 | 0.2+ | 0.0 | | | | | | |
| 2004 01 13 | 699 | 0.1+ | 0.3− | 2004 04 14 | 645 | 0.1+ | 0.0 | | | | | | |

**(139224)∗ 2001 HN$_5$**

Discovered 2001 Apr. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.92525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27175201 | $\omega$ | 150.16170 | | −0.96007649 | +0.26706355 | |
| $a$ | 2.3605917 | $\Omega$ | 45.57913 | | −0.27414684 | −0.83906071 | |
| $e$ | 0.1727735 | $i$ | 6.69349 | | −0.05564740 | −0.47397700 | |
| $P$ | 3.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 704 | 0.8+ | 0.5+ | 2001 06 13 | 704 | 0.6+ | 0.4+ | 2005 07 09 | 428 | 0.7+ | 0.1+ | | |
| 2001 03 24 | 704 | 1.1+ | 0.3− | 2001 06 13 | 704 | 1.1+ | 0.9+ | 2005 07 10 | E12 | 0.2− | 0.1− | | |
| 2001 03 24 | 704 | 0.8+ | 0.3+ | 2001 06 13 | 704 | 0.1+ | 0.3+ | 2005 07 10 | E12 | 1.5− | 1.4+ | | |
| 2001 04 18 | 704 | 0.6+ | 0.5− | 2001 06 13 | 704 | 0.4+ | 0.5+ | 2005 07 10 | E12 | 0.1+ | 0.4+ | | |
| 2001 04 18 | 704 | (1.8+ | 1.3−) | 2001 07 12 | 644 | 0.4+ | 0.2+ | 2005 07 10 | E12 | 0.6+ | 0.4− | | |
| 2001 04 18 | 704 | 0.4+ | 0.8− | 2001 07 12 | 644 | 0.5+ | 0.2− | 2005 07 14 | 428 | 0.3+ | 0.1− | | |
| 2001 04 18 | 704 | 1.1− | 0.2− | 2001 07 12 | 644 | 0.2+ | 0.3− | 2005 07 14 | 428 | 0.7− | 0.6+ | | |
| 2001 04 18 | 704 | 1.0− | 1.3− | 2003 11 20 | 704 | 0.3− | 0.4+ | 2005 08 24 | E12 | 0.4− | 0.3− | | |
| 2001 04 21 | 704 | 0.1− | 0.6+ | 2003 11 20 | 704 | 1.0+ | 0.2− | 2005 08 24 | E12 | 0.6+ | 0.2− | | |
| 2001 04 21 | 704 | 0.4+ | 0.5+ | 2003 11 20 | 704 | 0.1+ | 0.0 | 2005 08 24 | E12 | (0.0 | 2.2+) | | |
| 2001 04 21 | 704 | 1.1− | 0.7+ | 2003 11 20 | 704 | 0.4− | 0.3+ | 2005 08 24 | E12 | 0.3− | 0.3+ | | |
| 2001 04 21 | 704 | 0.1+ | 0.8− | 2003 11 20 | 704 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 2001 04 21 | 704 | 1.0− | 0.9+ | 2003 12 17 | 699 | 1.2+ | 1.4+ | 2006 09 30 | G96 | 0.3+ | 0.3− | | |
| 2001 04 27 | 704 | 0.2+ | 0.8− | 2003 12 17 | 699 | 0.9− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.1− | | |
| 2001 04 27 | 704 | 0.3+ | 0.3+ | 2003 12 17 | 699 | 0.6− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.2− | | |
| 2001 04 27 | 704 | 0.9+ | 0.1+ | 2003 12 17 | 699 | 0.5− | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.2+ | | |
| 2001 04 27 | 704 | 0.4+ | 0.7+ | 2003 12 18 | 704 | 0.0 | 1.1+ | 2006 10 15 | 691 | 0.1− | 0.4+ | | |
| 2001 04 27 | 704 | 0.5+ | 0.8+ | 2003 12 18 | 704 | 0.7+ | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.4+ | | |
| 2001 04 29 | 704 | 0.6+ | 0.2+ | 2003 12 18 | 704 | 0.6− | 1.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2001 04 29 | 704 | 0.2− | 1.3+ | 2003 12 18 | 704 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.0 | | |
| 2001 04 29 | 704 | 0.5+ | 0.6− | 2003 12 18 | 704 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.0 | | |
| 2001 04 29 | 704 | 0.4− | 1.1+ | 2003 12 27 | 704 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 2001 04 30 | 704 | 0.5+ | 0.4+ | 2003 12 27 | 704 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2001 04 30 | 704 | 0.2+ | 1.1+ | 2003 12 27 | 704 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2001 04 30 | 704 | (2.0+ | 0.3−) | 2003 12 27 | 704 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2001 04 30 | 704 | 0.3+ | 0.4− | 2003 12 27 | 704 | 0.8+ | 0.1− | 2006 10 27 | 691 | 0.5− | 0.6+ | | |
| 2001 05 17 | 704 | 0.1+ | 0.2+ | 2003 12 29 | 704 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.9+ | | |
| 2001 05 17 | 704 | 0.0 | 0.5+ | 2003 12 29 | 704 | 0.2− | 1.1+ | 2006 10 31 | 691 | 0.0 | 0.6+ | | |
| 2001 05 17 | 704 | 0.1+ | 0.0 | 2003 12 29 | 704 | 0.3+ | 0.4+ | 2006 10 31 | 691 | 0.4+ | 0.1− | | |
| 2001 05 17 | 704 | 0.3− | 0.9+ | 2003 12 29 | 704 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.5+ | | |
| 2001 05 17 | 704 | 0.7− | 0.7+ | 2003 12 29 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.4+ | | |
| 2001 05 24 | 704 | 0.0 | 0.7+ | 2004 01 31 | 704 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.4+ | | |
| 2001 05 24 | 704 | 0.7− | 0.5+ | 2004 01 31 | 704 | 0.2− | 0.5− | 2006 11 08 | 644 | 0.2− | 0.4+ | | |
| 2001 05 24 | 704 | 0.5+ | 0.0 | 2004 01 31 | 704 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.4− | | |
| 2001 05 24 | 704 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.4+ | 0.1− | | |
| 2001 05 24 | 704 | 0.5+ | 0.5+ | 2004 01 31 | 704 | 0.8− | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2001 05 26 | 704 | 0.1− | 0.5+ | 2004 02 14 | 704 | 0.6+ | 0.2− | 2006 11 11 | 703 | 1.0− | 0.9− | | |
| 2001 05 26 | 704 | 0.1− | 0.4+ | 2004 02 14 | 704 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2001 05 26 | 704 | 0.1+ | 0.3+ | 2004 02 14 | 704 | 0.7− | 1.1+ | 2006 11 11 | 703 | 0.3− | 0.4− | | |
| 2001 05 26 | 704 | 0.2− | 1.1+ | 2004 02 14 | 704 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.6− | 0.4+ | | |
| 2001 05 26 | 704 | (1.6− | 0.7+) | 2004 02 14 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.9− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 27 | 704 | 0.6− | 0.7+ | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2001 05 27 | 704 | (0.4+ | 1.7+) | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2001 05 27 | 704 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2001 06 13 | 704 | 1.0+ | 1.3+ | 2005 07 09 | 428 | 0.5− | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.1− |

**(139225)∗ 2001 HE$_6$**

Discovered 2001 Apr. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.04935 | | (2000.0) | | −0.73128309 | +0.67920360 |
| $n$ | 0.24397645 | $\omega$ | 296.83250 | | −0.60043708 | −0.68452423 |
| $a$ | 2.5365150 | $\Omega$ | 286.02069 | | −0.32357435 | −0.26478114 |
| $e$ | 0.2013923 | $i$ | 3.72892 | | | |
| $P$ | 4.04 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 01 | 704 | 0.1− | 0.2+ | 2003 12 18 | 704 | 0.3+ | 0.7+ | 2006 08 18 | 644 | 0.5− | 0.2+ |
| 2001 04 01 | 704 | 0.2+ | 0.0 | 2003 12 18 | 704 | 0.8+ | 1.0+ | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2001 04 01 | 704 | 0.7− | 0.7+ | 2003 12 18 | 704 | 0.1− | 0.2+ | 2006 09 14 | A50 | 0.0 | 0.2− |
| 2001 04 01 | 704 | 0.8− | 0.4− | 2003 12 18 | 704 | 0.6− | 0.4+ | 2006 09 14 | A50 | 0.1− | 0.4− |
| 2001 04 14 | 608 | 0.4− | 0.2− | 2003 12 22 | 704 | 0.0 | 1.0+ | 2006 09 17 | 703 | 1.4− | 0.4− |
| 2001 04 14 | 608 | 0.7− | 0.3+ | 2003 12 22 | 704 | 0.4− | 1.1+ | 2006 09 17 | 703 | 1.1+ | 0.6− |
| 2001 04 14 | 608 | 0.6− | 0.2+ | 2003 12 22 | 704 | (1.2+ | 2.0+) | 2006 09 17 | 703 | 0.7+ | 0.1− |
| 2001 04 18 | 704 | 1.4− | 0.4+ | 2003 12 22 | 704 | 1.1− | 0.4+ | 2006 09 17 | 703 | 0.5− | 0.1+ |
| 2001 04 18 | 704 | 0.0 | 0.8− | 2003 12 27 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.1− |
| 2001 04 18 | 704 | 0.6+ | 0.0 | 2003 12 27 | 704 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 2001 04 18 | 704 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 0.3+ | 0.7+ |
| 2001 04 21 | 704 | 0.5− | 0.2+ | 2005 04 02 | E12 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.3+ |
| 2001 04 21 | 704 | 0.2+ | 0.2+ | 2005 04 02 | E12 | 0.5− | 0.2− | 2006 09 27 | 699 | 0.4+ | 0.2− |
| 2001 04 21 | 704 | 0.2− | 1.0+ | 2005 04 02 | E12 | 0.5+ | 0.4− | 2006 09 27 | 699 | 0.3− | 0.3− |
| 2001 04 21 | 704 | 0.3+ | 0.8+ | 2005 04 02 | E12 | 0.5+ | 0.7+ | 2006 09 27 | 699 | 0.5− | 0.3− |
| 2001 04 21 | 704 | 0.5+ | 1.2+ | 2005 04 06 | 704 | 0.3+ | 0.0 | 2006 09 27 | 699 | 0.7+ | 1.2+ |
| 2001 04 26 | 699 | 0.1+ | 0.2+ | 2005 04 06 | 704 | 0.5+ | 0.9+ | 2006 10 11 | 691 | 0.2− | 0.2− |
| 2001 04 26 | 699 | 0.4+ | 0.1+ | 2005 04 06 | 704 | 1.1− | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2001 04 26 | 699 | 0.2− | 0.0 | 2005 04 06 | 704 | 0.7− | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.0 |
| 2001 04 26 | 699 | 0.1+ | 0.1+ | 2005 04 14 | 703 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 05 04 | 644 | 0.7+ | 0.3+ | 2005 04 14 | 703 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2001 05 04 | 644 | 0.8+ | 0.0 | 2005 04 14 | 703 | 0.0 | 1.3+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 05 04 | 644 | 0.8+ | 0.0 | 2005 04 14 | 703 | 0.3+ | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2001 05 10 | 608 | (2.2+ | 0.5−) | 2005 04 18 | 608 | (0.4+ | 2.2−) | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2001 05 10 | 608 | (1.6+ | 0.5−) | 2005 04 18 | 608 | 0.4+ | 1.2− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 05 10 | 608 | (1.6+ | 1.5−) | 2005 04 18 | 608 | 0.4+ | 1.4− | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2001 05 24 | 704 | 0.4− | 0.3+ | 2005 04 18 | E12 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2001 05 24 | 704 | 0.1+ | 0.6− | 2005 04 18 | E12 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 05 24 | 704 | 0.7− | 0.4+ | 2005 04 18 | E12 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2001 05 24 | 704 | 0.1+ | 0.1+ | 2005 04 18 | E12 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2001 05 24 | 704 | 0.1− | 0.5+ | 2005 04 19 | 703 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 05 26 | 608 | 0.4+ | 0.4− | 2005 04 19 | 703 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2001 05 26 | 608 | 0.8+ | 0.4− | 2005 04 19 | 703 | 0.3− | 0.7+ | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2001 05 26 | 608 | 0.6+ | 0.0 | 2005 04 19 | 703 | 0.5+ | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2001 05 27 | 704 | 0.4− | 0.2+ | 2005 05 26 | E12 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2001 05 27 | 704 | 0.2− | 0.4− | 2005 05 26 | E12 | 0.8+ | 0.3+ | 2006 10 27 | 691 | 0.5+ | 0.0 |
| 2001 05 27 | 704 | 0.4+ | 0.4− | 2005 05 26 | E12 | 0.8− | 0.1− | 2006 10 27 | 691 | 0.2− | 0.3+ |
| 2001 05 27 | 704 | 0.7+ | 0.2+ | 2005 05 26 | E12 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 05 27 | 704 | 0.3− | 0.4+ | 2005 06 22 | 644 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.1+ |
| 2002 11 06 | 291 | 0.3− | 0.4+ | 2005 06 22 | 644 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 2002 11 06 | 291 | 0.1− | 0.5+ | 2005 06 22 | 644 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2002 11 06 | 291 | 0.1+ | 0.6+ | 2006 08 18 | 644 | 0.1− | 0.4+ | | | | |

**(139226)∗ 2001 HF$_6$**

Discovered 2001 Apr. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.30284 | | (2000.0) | | −0.36174326 | +0.93072245 |
| $n$ | 0.24039379 | $\omega$ | 330.42176 | | −0.84431149 | −0.35154754 |
| $a$ | 2.5616545 | $\Omega$ | 278.32649 | | −0.39532256 | −0.10084664 |
| $e$ | 0.2156571 | $i$ | 3.11855 | | | |
| $P$ | 4.10 | $H$ | 15.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 608 | 0.3− | 0.7− | 2005 04 05 | 699 | 0.1− | 0.1− | 2005 06 11 | 703 | 0.4− | 0.0 |
| 2001 04 16 | 608 | 0.2+ | 0.6− | 2005 04 05 | 644 | 0.2+ | 0.1+ | 2005 06 11 | 703 | (0.1− | 1.9−) |
| 2001 04 16 | 608 | 0.1− | 0.9− | 2005 04 05 | 644 | 0.7+ | 0.0 | 2005 06 11 | 703 | 0.9− | 0.1+ |
| 2001 04 18 | 704 | 1.4+ | 0.2− | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.9+ | 0.6− |
| 2001 04 18 | 704 | 0.5− | 0.1+ | 2005 04 06 | 691 | 0.3− | 0.2+ | 2006 08 29 | 703 | 0.0 | 0.6− |
| 2001 04 18 | 704 | 1.4− | 0.4+ | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.7− | 0.6− |
| 2001 04 21 | 704 | 0.5+ | 0.7+ | 2005 04 06 | 704 | 0.8+ | 0.5− | 2006 08 29 | 703 | 1.5− | 1.2+ |
| 2001 04 21 | 704 | 0.1+ | 0.9+ | 2005 04 06 | 704 | 1.0+ | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.0 |
| 2001 04 21 | 704 | 0.8+ | 0.0 | 2005 04 06 | 704 | 0.7+ | 0.0 | 2006 09 17 | 703 | (0.5+ | 3.3−) |
| 2001 04 21 | 704 | 0.7+ | 0.4+ | 2005 04 06 | 704 | 1.2+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 04 21 | 704 | 0.5− | 0.9− | 2005 04 11 | 699 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2001 05 12 | 699 | 0.1+ | 0.2+ | 2005 04 11 | 699 | 1.1− | 0.3− | 2006 09 17 | 703 | 0.1− | 0.3+ |
| 2001 05 12 | 699 | 0.6+ | 0.1+ | 2005 04 11 | 699 | (1.2+ | 2.0−) | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2001 05 12 | 699 | 0.1+ | 0.4− | 2005 04 11 | 699 | 0.6+ | 0.1− | 2006 09 17 | 703 | 0.9+ | 0.8− |
| 2001 05 12 | 699 | 0.2− | 0.5+ | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 1.1− |
| 2001 05 13 | 608 | 0.9+ | 0.8− | 2005 04 15 | 691 | 0.3+ | 0.0 | 2006 09 18 | 703 | 1.1− | 1.0− |
| 2001 05 13 | 608 | 1.4+ | 0.8− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 1.5+ | 1.3− |
| 2001 05 13 | 608 | (1.2+ | 2.3−) | 2005 04 18 | 703 | 0.5− | 0.6+ | 2006 09 18 | 703 | 1.3+ | 0.1+ |
| 2001 05 21 | 704 | 0.2+ | 1.1+ | 2005 04 18 | 703 | 0.8− | 1.0+ | 2006 09 19 | 699 | 0.3+ | 0.5+ |
| 2001 05 21 | 704 | 0.4− | 0.5+ | 2005 04 18 | 703 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.3+ |
| 2001 05 21 | 704 | 0.2− | 0.3+ | 2005 04 18 | 703 | (1.6− | 0.6+) | 2006 09 19 | 699 | 1.2− | 0.7+ |
| 2001 05 21 | 704 | 0.4+ | 1.2− | 2005 04 18 | E12 | 0.7− | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.3+ |
| 2001 05 21 | 704 | 0.2− | 0.1+ | 2005 04 18 | E12 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.7+ | 1.1+ |
| 2001 05 24 | 704 | 1.4− | 0.3+ | 2005 04 18 | E12 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.5+ | 0.9− |
| 2001 05 24 | 704 | 0.2+ | 0.6+ | 2005 04 18 | E12 | 0.7− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2001 05 24 | 704 | 0.2+ | 0.1− | 2005 04 19 | 699 | 0.1+ | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2001 05 24 | 704 | 0.1− | 0.2− | 2005 04 19 | 699 | 0.1+ | 0.2+ | 2006 09 25 | 704 | (1.6+ | 0.2−) |
| 2001 05 27 | 608 | 0.5− | 0.3− | 2005 04 19 | 699 | 0.2+ | 0.4− | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2001 05 27 | 608 | 0.4− | 0.5− | 2005 04 19 | 699 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.8− | 0.1+ |
| 2001 05 27 | 608 | 0.4− | 0.6− | 2005 04 20 | 699 | 0.1− | 0.8+ | 2006 09 27 | 699 | (3.1− | 2.2+) |
| 2001 06 11 | 699 | 0.0 | 0.1+ | 2005 04 20 | 699 | 0.7+ | 0.2+ | 2006 09 27 | 699 | 0.3− | 1.3+ |
| 2001 06 11 | 699 | 0.5− | 0.3− | 2005 04 20 | 699 | 0.3− | 0.9+ | 2006 09 27 | 699 | 0.9− | 0.4− |
| 2001 06 11 | 699 | 0.8− | 0.4+ | 2005 04 20 | 699 | 0.7− | 0.9+ | 2006 10 13 | 461 | 0.6− | 0.9+ |
| 2001 06 11 | 699 | 0.4− | 0.6+ | 2005 05 01 | 644 | 0.2− | 0.2+ | 2006 10 13 | 461 | 0.3− | 0.3+ |
| 2001 06 20 | 699 | 0.5− | 0.3+ | 2005 05 01 | 644 | 0.2− | 0.1+ | 2006 10 13 | 461 | 0.1+ | 0.1+ |
| 2001 06 20 | 699 | 1.0+ | 0.7− | 2005 05 01 | 644 | 0.4− | 0.2+ | 2006 10 16 | 461 | 0.2+ | 0.4+ |
| 2001 06 20 | 699 | 0.5+ | 1.0− | 2005 05 04 | E12 | 0.4+ | 0.1− | 2006 10 16 | 461 | 0.5+ | 0.2+ |
| 2001 06 20 | 699 | 0.2− | 0.3+ | 2005 05 04 | E12 | 0.2+ | 0.3− | 2006 10 17 | 703 | (0.4− | 1.6+) |
| 2002 10 09 | 704 | (0.2− | 1.5+) | 2005 05 04 | E12 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2002 10 09 | 704 | (1.6− | 1.5+) | 2005 05 04 | E12 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.6− | 1.0+ |
| 2002 10 09 | 704 | 0.8− | 0.8+ | 2005 05 09 | 699 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.4+ |
| 2002 10 30 | 644 | 0.7− | 0.5+ | 2005 05 09 | 699 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 10 30 | 644 | 0.5− | 0.2+ | 2005 05 09 | 699 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.7+ |
| 2002 10 30 | 644 | 0.9− | 0.3+ | 2005 05 09 | 699 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2005 04 05 | 699 | 0.2+ | 0.2− | 2005 05 23 | 644 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.3− | 0.2+ |
| 2005 04 05 | 699 | 0.5+ | 0.1+ | 2005 05 23 | 644 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2005 04 05 | 644 | 0.5+ | 0.2+ | 2005 05 23 | 644 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2005 04 05 | 699 | 0.4+ | 0.1+ | 2005 06 11 | 703 | (0.2− | 2.0−) | 2006 10 23 | G96 | 0.6− | 0.1+ |

**(139227)∗ 2001 HC$_7$**

Discovered 2001 Apr. 18 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.96878 | | (2000.0) | | +0.30017038 | +0.95387370 |
| $n$ | 0.22119963 | $\omega$ | 110.56132 | | −0.90466236 | +0.28626096 |
| $a$ | 2.7077784 | $\Omega$ | 176.89471 | | −0.30246282 | +0.09044126 |
| $e$ | 0.2234675 | $i$ | 5.04584 | | | |
| $P$ | 4.46 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 18 | 568 | 0.1+ | 0.3+ | 2005 04 02 | G96 | 0.4− | 0.7− | 2006 09 01 | 704 | 0.8+ | 0.0 |
| 2000 01 18 | 568 | 0.0 | 0.5+ | 2005 04 02 | G96 | 0.2− | 0.6− | 2006 09 01 | 704 | 0.2− | 0.1− |
| 2001 04 18 | 691 | 0.1+ | 0.4− | 2005 04 02 | G96 | (1.7− | 1.3−) | 2006 09 12 | 699 | 0.5+ | 0.6− |
| 2001 04 18 | 691 | 0.0 | 0.4− | 2005 04 11 | 695 | 0.1− | 0.1+ | 2006 09 12 | 699 | 0.0 | 0.2+ |
| 2001 04 18 | 691 | 0.3− | 0.2− | 2005 04 11 | 695 | 0.2− | 0.0 | 2006 09 12 | 699 | 0.3+ | 0.0 |
| 2001 04 22 | 691 | 1.1− | 1.0+ | 2005 04 16 | 691 | 0.1+ | 1.0+ | 2006 09 12 | 699 | 0.9+ | 0.4+ |
| 2001 04 22 | 691 | 0.0 | 0.5− | 2005 04 16 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.6+ |
| 2001 04 22 | 691 | 0.3+ | 0.4− | 2005 04 16 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.9− | 0.4− |
| 2001 04 25 | 699 | 0.6+ | 0.1− | 2006 08 13 | 644 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.6+ |
| 2001 04 25 | 699 | 0.5+ | 0.4− | 2006 08 13 | 644 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.7− | 0.5+ |
| 2001 04 25 | 699 | 0.1− | 0.1− | 2006 08 13 | 644 | 0.1− | 0.4− | 2006 09 17 | 704 | 0.2− | 0.3− |
| 2001 04 25 | 699 | 0.2− | 1.0+ | 2006 08 15 | 644 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.3− | 0.1− |
| 2001 05 18 | 704 | 0.5− | 0.6− | 2006 08 15 | 644 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.1− | 0.9− |
| 2001 05 18 | 704 | 0.5+ | 0.5+ | 2006 08 15 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.5+ | 0.1− |
| 2001 05 18 | 704 | 0.2− | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.5− | 0.4− |
| 2001 05 18 | 704 | 0.4− | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.8− | 1.4+ |
| 2001 05 18 | 704 | 0.0 | 0.6− | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.5− |
| 2001 05 24 | 699 | 0.4+ | 0.3− | 2006 08 24 | 704 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.2− | 0.2+ |
| 2001 05 24 | 699 | 1.5+ | 0.2− | 2006 08 24 | 704 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.0 | 0.1− |
| 2001 05 24 | 699 | 0.4+ | 0.3− | 2006 08 24 | 704 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.6− | 0.1− |
| 2001 05 24 | 699 | 0.7+ | 0.7− | 2006 08 24 | 704 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.1− | 1.1− |
| 2005 03 03 | 691 | 0.2+ | 0.7+ | 2006 08 24 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 699 | 0.9+ | 0.4+ |
| 2005 03 03 | 691 | 0.4+ | 0.0 | 2006 08 28 | 699 | (1.7− | 1.1+) | 2006 09 25 | 699 | 0.6− | 1.3+ |
| 2005 03 03 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 1.0− | 0.5+ | 2006 09 26 | 291 | 0.0 | 0.4+ |
| 2005 03 08 | G96 | 0.1+ | 0.4− | 2006 08 28 | 699 | 1.0+ | 0.8+ | 2006 09 26 | 291 | 0.1− | 0.4+ |
| 2005 03 08 | G96 | 0.1− | 0.5− | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 26 | 291 | 0.1− | 0.3+ |
| 2005 03 08 | G96 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.0 | 0.7− | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.0 | 0.4− | 2006 08 28 | 699 | 0.0 | 1.2+ | 2006 09 27 | G96 | 0.5+ | 1.4− |
| 2005 03 09 | 691 | 0.7+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 27 | G96 | 1.3+ | 0.7− |
| 2005 03 09 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.6− | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2005 03 09 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 704 | 0.7− | 1.3+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2005 03 13 | 691 | 0.8− | 0.1− | 2006 08 29 | 704 | 0.6+ | 0.3− | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 704 | 0.4− | 0.6+ | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 704 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2005 03 16 | G96 | 0.3− | 0.2− | 2006 08 30 | 704 | 0.5− | 0.9+ | 2006 10 27 | G96 | 0.5− | 0.4− |
| 2005 03 16 | G96 | 0.6− | 0.1− | 2006 08 30 | 704 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2005 03 16 | G96 | 0.5− | 0.0 | 2006 08 30 | 704 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2005 03 16 | G96 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.6+ | | | | |
| 2005 04 02 | G96 | 0.6− | 0.0 | 2006 09 01 | 704 | 0.2+ | 0.2+ | | | | |

**(139228)∗ 2001 HM$_{11}$**

Discovered 2001 Apr. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.52318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26498565 | $\omega$ | 54.54383 | | +0.09677262 | +0.99515017 | |
| $a$ | 2.4006074 | $\Omega$ | 221.02064 | | −0.92166376 | +0.08290751 | |
| $e$ | 0.1635255 | $i$ | 1.54018 | | −0.37572725 | +0.05293851 | |
| $P$ | 3.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 28 | 691 | 0.3− | 0.5+ | 2002 10 07 | 704 | 1.3+ | 1.5+ | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 1998 09 28 | 691 | 0.1− | 0.3+ | 2002 10 30 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 1998 09 28 | 691 | 0.4− | 0.2+ | 2002 10 30 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2001 03 29 | 608 | 0.4+ | 0.1− | 2002 10 30 | 644 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 03 29 | 608 | 0.2+ | 0.4− | 2002 11 06 | 704 | (0.9− | 1.6+) | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 03 29 | 608 | 0.2+ | 0.1− | 2002 11 06 | 704 | 1.0− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2001 04 18 | 704 | 0.3+ | 0.2+ | 2002 11 06 | 704 | 0.8− | 1.0+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 04 18 | 704 | 1.3+ | 0.6+ | 2002 12 07 | 291 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.6+ |
| 2001 04 18 | 704 | 0.4+ | 0.0 | 2002 12 07 | 291 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 04 18 | 608 | 0.4+ | 0.2− | 2002 12 07 | 291 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 04 18 | 608 | 1.1+ | 0.3− | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2001 04 18 | 608 | 1.0+ | 0.5− | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2001 04 23 | 704 | 1.0+ | 0.1− | 2003 12 29 | 691 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.4+ |
| 2001 04 23 | 704 | 0.2+ | 1.1+ | 2004 01 17 | 644 | 0.4− | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2001 04 23 | 704 | 0.3+ | 0.0 | 2004 01 17 | 644 | 0.5+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2001 04 23 | 704 | 0.1− | 0.5+ | 2004 01 17 | 644 | 0.0 | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2001 04 23 | 704 | 0.2− | 0.4+ | 2004 01 17 | 644 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2001 04 27 | 704 | 0.1+ | 1.5+ | 2004 01 17 | 644 | 0.4+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2001 04 27 | 704 | 0.2+ | 0.7+ | 2004 01 17 | 644 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2001 04 27 | 704 | 0.0 | 0.5+ | 2004 01 18 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2001 04 27 | 704 | 0.2− | 0.5+ | 2004 01 18 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2001 04 27 | 608 | 1.3− | 1.1+ | 2004 01 18 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.5+ | 1.3+ |
| 2001 04 27 | 608 | 1.4− | 1.5+ | 2004 01 28 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2001 04 27 | 608 | 1.3− | 1.1+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 05 18 | 699 | 0.3+ | 0.4− | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2001 05 18 | 699 | (0.3+ | 1.8+) | 2005 02 10 | 809 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.3− |
| 2001 05 18 | 699 | 0.6+ | 1.1+ | 2005 02 10 | 809 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.3+ | 1.3+ |
| 2001 05 18 | 699 | 0.7+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.6− | 0.4+ |
| 2002 10 07 | 704 | (2.2+ | 0.7+) | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.7− | 0.6+ |
| 2002 10 07 | 704 | 1.0+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.1− | | | | |

**(139229)∗ 2001 HU$_{13}$**

Discovered 2001 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.17683 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27717646 | $\omega$ | 267.96816 | | +0.65403026 | +0.75318895 | |
| $a$ | 2.3296919 | $\Omega$ | 43.15326 | | −0.64671036 | +0.60496518 | |
| $e$ | 0.1040340 | $i$ | 5.90480 | | −0.39244125 | +0.25830901 | |
| $P$ | 3.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 12 | 691 | 0.3− | 0.6− | 2001 05 01 | 691 | 0.2+ | 0.9+ | 2002 10 30 | 644 | 0.3− | 0.4+ |
| 1997 03 12 | 691 | 0.4− | 0.4− | 2001 05 01 | 691 | 0.1+ | 0.9+ | 2002 11 01 | 704 | 0.3− | 0.2− |
| 1997 03 12 | 691 | 0.3− | 0.4− | 2001 05 16 | 608 | 1.0+ | 0.7− | 2002 11 01 | 704 | 0.4− | 0.5− |
| 2000 01 04 | 704 | 0.1+ | 0.7− | 2001 05 16 | 608 | 0.2+ | 0.1+ | 2002 11 01 | 704 | 0.8+ | 0.1− |
| 2000 01 04 | 704 | 0.3+ | 0.3+ | 2001 05 16 | 608 | 0.5+ | 0.2− | 2002 11 06 | 704 | 1.3+ | 0.5+ |
| 2000 01 04 | 704 | 0.5+ | 0.3+ | 2002 10 02 | 704 | 0.6− | 1.3+ | 2002 11 06 | 704 | 0.3+ | 0.0 |
| 2001 04 16 | 699 | 0.8+ | 0.7+ | 2002 10 02 | 704 | 0.4− | 1.0+ | 2002 11 06 | 704 | 0.0 | 0.0 |
| 2001 04 16 | 699 | 0.1− | 0.8+ | 2002 10 02 | 704 | 0.8− | 1.1+ | 2002 11 06 | 704 | 0.2+ | 0.1+ |
| 2001 04 16 | 699 | 0.6− | 0.2+ | 2002 10 02 | 704 | 0.7− | 0.2+ | 2002 11 06 | 704 | 0.1− | 1.1+ |
| 2001 04 16 | 699 | 0.6+ | 0.2− | 2002 10 03 | 704 | 0.2− | 1.3+ | 2002 11 22 | 644 | 0.2− | 0.2+ |
| 2001 04 21 | 704 | 0.1+ | 1.4+ | 2002 10 03 | 704 | 0.3− | 0.7+ | 2002 11 22 | 644 | 0.5+ | 0.2+ |
| 2001 04 21 | 704 | 0.8+ | 0.4− | 2002 10 03 | 704 | 0.3− | 1.2+ | 2002 11 22 | 644 | 0.4− | 0.0 |
| 2001 04 21 | 704 | 0.7+ | 0.5+ | 2002 10 03 | 704 | 0.2− | 1.4+ | 2004 02 12 | 644 | 0.1+ | 0.1+ |
| 2001 04 21 | 704 | 0.9+ | 0.8+ | 2002 10 03 | 704 | 0.5− | 1.2+ | 2004 02 12 | 644 | 0.2+ | 0.1+ |
| 2001 04 21 | 704 | 0.6+ | 0.9+ | 2002 10 11 | 704 | 0.0 | 0.3+ | 2004 02 12 | 644 | 0.1− | 0.4+ |
| 2001 04 23 | 704 | 0.2+ | 0.7+ | 2002 10 11 | 704 | 0.3− | 0.1+ | 2004 03 16 | 691 | 0.5+ | 0.1+ |
| 2001 04 23 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.2− | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.2+ |
| 2001 04 23 | 704 | 0.3+ | 1.0+ | 2002 10 11 | 704 | 0.5− | 0.4+ | 2004 03 16 | 691 | 0.5+ | 0.1+ |
| 2001 04 23 | 704 | 0.5− | 0.9+ | 2002 10 11 | 704 | (1.5− | 1.8+) | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 04 23 | 704 | 0.5+ | 1.3+ | 2002 10 26 | 608 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.6− | 1.1+ |
| 2001 04 27 | 704 | (1.8− | 1.1+) | 2002 10 26 | 608 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 04 27 | 704 | 0.3− | 0.4+ | 2002 10 26 | 608 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 04 27 | 704 | 0.8− | 0.7− | 2002 10 30 | 644 | 0.4− | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.5+ |
| 2001 05 01 | 691 | 0.3+ | 0.7+ | 2002 10 30 | 644 | 0.3− | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.1− |

**(139230)∗ 2001 HR$_{16}$**

Discovered 2001 Apr. 25 by R. Dyvig at Badlands Observatory, Quinn.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.94384 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25272043 | $\omega$ | 6.45230 | | −0.87688960 | +0.47901081 | |
| $a$ | 2.4776644 | $\Omega$ | 202.30683 | | −0.44562136 | −0.84140109 | |
| $e$ | 0.0856913 | $i$ | 6.07439 | | −0.18023939 | −0.25018562 | |
| $P$ | 3.90 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 16 | 413 | (2.1+ | 1.8+) | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.5+ | 1.2+ |
| 1998 09 19 | 645 | 0.1+ | 0.2− | 2005 05 12 | 704 | 0.1+ | 0.6− | 2006 09 17 | 703 | (1.8+ | 0.2−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2005 05 12 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.9− | 0.3− |
| 2001 04 25 | 918 | 0.1+ | 1.2− | 2005 05 12 | 704 | 0.6− | 0.5− | 2006 09 17 | 703 | (2.3− | 0.3+) |
| 2001 04 25 | 918 | 0.5− | 0.7− | 2005 05 12 | 704 | 1.0+ | 1.3− | 2006 09 25 | 691 | 0.4− | 0.1+ |
| 2001 04 25 | 918 | 1.3− | 0.0 | 2005 06 01 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2001 04 26 | 918 | 0.7− | 0.4− | 2005 06 01 | 691 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 04 26 | 918 | 0.8− | 0.5− | 2005 06 01 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2001 04 26 | 918 | 0.0 | 0.3− | 2005 06 02 | 703 | (1.7− | 0.7−) | 2006 10 02 | 691 | 0.0 | 0.6+ |
| 2001 05 16 | 691 | 0.2+ | 0.0 | 2005 06 02 | 703 | 0.5+ | 1.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2001 05 16 | 691 | 0.3+ | 0.4+ | 2005 06 02 | 703 | (1.6+ | 1.7−) | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2001 05 16 | 691 | 0.3+ | 0.3+ | 2005 06 02 | 703 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 05 28 | 608 | 0.1+ | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 05 28 | 608 | 0.3+ | 1.4+ | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2001 05 28 | 608 | 0.7+ | 0.5+ | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 09 11 | 644 | 0.4− | 0.7+ | 2005 06 15 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 09 11 | 644 | 0.5− | 0.5+ | 2005 06 15 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2002 09 11 | 644 | 0.3− | 0.7+ | 2005 06 15 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 04 | A13 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.5− | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 04 | A13 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 04 | A13 | 0.6+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2+ |

**(139231)∗ 2001 HW$_{16}$**

Discovered 2001 Apr. 22 by L. Tesi and M. Tombelli at San Marcello Pistoiese.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.47614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27389576 | $\omega$ | 190.69105 | | −0.33871283 | | +0.93923556 |
| $a$ | 2.3482582 | $\Omega$ | 59.53088 | | −0.85840454 | | −0.28420636 |
| $e$ | 0.1517600 | $i$ | 3.70988 | | −0.38524703 | | −0.19251831 |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.8− | 0.4+ | 2001 04 28 | 104 | 1.2+ | 0.3− | 2005 07 10 | E12 | 1.1− | 0.5− |
| 2001 03 26 | 704 | 0.1+ | 0.4+ | 2001 04 28 | 104 | 0.9+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2001 03 26 | 704 | 0.5+ | 0.4+ | 2001 04 28 | 104 | 0.6+ | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 03 26 | 695 | 0.2+ | 0.7+ | 2001 04 29 | 104 | 0.6− | 0.3+ | 2006 10 27 | G96 | 0.8− | 0.2+ |
| 2001 03 26 | 695 | 0.4+ | 0.1+ | 2001 04 29 | 104 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2001 04 16 | 704 | 0.9+ | 0.0 | 2001 04 29 | 104 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.4+ |
| 2001 04 16 | 704 | 0.6− | 0.5+ | 2001 05 13 | 104 | 1.1+ | 1.2+ | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 2001 04 16 | 704 | (0.5− | 2.5+) | 2001 05 13 | 104 | 1.1+ | 1.4+ | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2001 04 22 | 104 | 0.4− | 0.6+ | 2001 05 13 | 104 | 0.5− | 0.8+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2001 04 22 | 104 | 0.9− | 0.3+ | 2001 05 13 | 104 | 0.8+ | 0.9+ | 2006 11 14 | 691 | 0.2+ | 0.4+ |
| 2001 04 22 | 104 | 1.0− | 0.0 | 2003 12 19 | 691 | 0.4+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2001 04 22 | 104 | 1.3+ | 1.1+ | 2003 12 19 | 691 | 0.2+ | 0.6− | 2006 11 18 | 691 | 0.3− | 0.3+ |
| 2001 04 25 | 104 | 0.6− | 0.8+ | 2003 12 19 | 691 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2001 04 25 | 104 | 0.2+ | 0.7+ | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 04 25 | 104 | (1.7+ | 1.1+) | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 2001 04 25 | 104 | (2.8+ | 1.1+) | 2004 01 22 | 704 | 0.7− | 0.9− | 2006 11 22 | 691 | 0.3− | 0.4+ |
| 2001 04 27 | 104 | 1.1− | 0.3− | 2004 01 22 | 704 | 0.4− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 2001 04 27 | 104 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2001 04 27 | 104 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.7− | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2001 04 27 | 104 | 0.4+ | 0.4− | 2004 01 22 | 704 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2001 04 28 | 561 | 0.3+ | 0.4− | 2005 07 10 | E12 | 0.8+ | 1.2+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2001 04 28 | 561 | 0.4+ | 0.3+ | 2005 07 10 | E12 | 0.4+ | 0.2+ | | | | |
| 2001 04 28 | 561 | 0.2+ | 0.7− | 2005 07 10 | E12 | 0.3− | 0.5+ | | | | |

**(139232)∗ 2001 HO$_{17}$ = 2002 RA$_{117}$**

Discovered 2001 Apr. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 35066)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.02253 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26838774 | $\omega$ | 324.86002 | | −0.99502333 | | −0.08551003 |
| $a$ | 2.3802775 | $\Omega$ | 210.35667 | | +0.09734008 | | −0.94388568 |
| $e$ | 0.0385093 | $i$ | 5.80922 | | −0.02129532 | | −0.31901074 |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.4+ | 0.4− | 2002 09 07 | 557 | 0.2+ | 0.5− | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 1995 09 29 | 691 | 0.0 | 0.3− | 2002 09 07 | 246 | 0.4+ | 0.8+ | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 1995 09 29 | 691 | 0.2+ | 0.6− | 2002 09 07 | 246 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 1995 11 14 | 691 | 0.6− | 0.0 | 2002 09 08 | 557 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.5+ |
| 1995 11 14 | 691 | 0.4− | 0.2− | 2002 09 08 | 557 | 0.9− | 1.1+ | 2006 10 15 | 691 | 1.3− | 0.3− |
| 1995 11 14 | 691 | 0.0 | 0.2− | 2002 09 08 | 246 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.9+ | 0.8+ |
| 1998 08 25 | 910 | 1.1+ | 0.4+ | 2002 09 08 | 246 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.3− | 0.0 |
| 1998 08 25 | 910 | 0.9+ | 0.5+ | 2002 09 08 | 246 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.0 |
| 1998 08 25 | 910 | 1.0+ | 0.7+ | 2002 09 08 | 246 | 0.4+ | 1.5− | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2001 04 24 | 691 | 0.4+ | 0.3+ | 2002 09 08 | 246 | 1.0+ | 0.8− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 04 24 | 691 | 0.3+ | 0.4+ | 2002 09 08 | 246 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 04 24 | 691 | 0.2+ | 0.6+ | 2002 09 08 | 246 | 0.9+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 04 26 | 691 | 0.1+ | 0.7+ | 2002 09 08 | 246 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 04 26 | 691 | 0.0 | 0.7+ | 2002 09 13 | 644 | 0.3− | 0.3+ | 2006 10 21 | 703 | (2.0− | 0.7−) |
| 2001 04 26 | 691 | 0.1− | 0.6+ | 2002 09 13 | 644 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 2001 05 01 | 691 | 0.1− | 0.4+ | 2002 09 13 | 644 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.1+ |
| 2001 05 01 | 691 | 0.2− | 0.6+ | 2003 12 22 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | (1.7− | 1.0+) |
| 2001 05 01 | 691 | 0.2− | 0.7+ | 2003 12 22 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.4+ | 0.2+ |
| 2001 05 18 | 691 | 0.0 | 0.4− | 2003 12 22 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.3+ |
| 2001 05 18 | 691 | 0.1− | 0.5− | 2004 04 14 | 645 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.4+ |
| 2001 05 18 | 691 | 0.1− | 0.2− | 2004 04 14 | 645 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2002 09 04 | 699 | 1.5+ | 0.2− | 2005 07 12 | G96 | 0.6− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2002 09 04 | 699 | 1.1+ | 0.4+ | 2005 07 12 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2002 09 04 | 699 | 0.7+ | 0.7+ | 2005 07 12 | G96 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2002 09 04 | 699 | (1.7+ | 0.8+) | 2005 07 12 | G96 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.4− | 0.7− |
| 2002 09 07 | 557 | 0.7+ | 0.9+ | 2006 09 18 | 691 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2002 09 07 | 557 | 0.9− | 0.1+ | 2006 09 18 | 691 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2002 09 07 | 246 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2002 09 07 | 246 | 0.5− | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2002 09 07 | 246 | 0.3− | 0.5+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 09 07 | 246 | 0.3+ | 1.0+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2002 09 07 | 246 | 0.1− | 0.7+ | 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 09 07 | 246 | 0.2+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.2+ | | | | |

**(139233)∗ 2001 HT$_{18}$**

Discovered 2001 Apr. 25 by P. Kušnirák and P. Pravec at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.46146 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23014123 | $\omega$ | 79.35309 | | +0.03750367 | | +0.99840911 |
| $a$ | 2.6371799 | $\Omega$ | 193.01990 | | −0.97427681 | | +0.02716310 |
| $e$ | 0.1626130 | $i$ | 10.77116 | | −0.22221202 | | +0.04941060 |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 18 | 691 | 0.1− | 0.1− | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.3− |
| 1993 09 18 | 691 | 0.2− | 0.3− | 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 1993 09 18 | 691 | 0.4+ | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.6+ |
| 2001 04 25 | 557 | 0.1− | 0.2− | 2005 03 13 | 703 | 1.3− | 0.9+ | 2006 09 19 | 699 | 0.4− | 0.3+ |
| 2001 04 25 | 557 | 0.7+ | 0.2+ | 2005 03 13 | 703 | 0.3− | 1.1+ | 2006 09 19 | 703 | 0.6− | 0.8+ |
| 2001 04 25 | 557 | 0.4+ | 0.3− | 2005 03 13 | 703 | (0.0 | 2.4+) | 2006 09 19 | 699 | 0.3+ | 0.3+ |
| 2001 04 25 | 557 | 0.5+ | 0.2− | 2005 03 13 | 703 | (1.6+ | 0.9+) | 2006 09 30 | 291 | 0.1+ | 0.3+ |
| 2001 04 27 | 557 | 0.2+ | 0.3− | 2005 05 03 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 291 | 0.2+ | 0.4+ |
| 2001 04 27 | 557 | 0.3+ | 0.6− | 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 291 | 0.1+ | 0.1+ |
| 2001 04 27 | 557 | 0.4+ | 1.0− | 2005 05 03 | 691 | 0.0 | 0.3+ | 2006 10 01 | 715 | 0.6+ | 0.0 |
| 2001 04 30 | 557 | 0.8− | 0.7− | 2005 05 11 | G96 | 0.3− | 0.0 | 2006 10 01 | 291 | 0.1+ | 0.0 |
| 2001 04 30 | 557 | 0.1− | 0.7− | 2005 05 11 | G96 | 0.6− | 0.2− | 2006 10 01 | 291 | 0.1+ | 0.2+ |
| 2001 05 11 | 557 | 0.0 | 0.0 | 2005 05 11 | G96 | 0.6− | 0.3− | 2006 10 01 | 291 | 0.2+ | 0.4+ |
| 2001 05 11 | 557 | 0.8− | 0.1+ | 2005 05 11 | G96 | 0.3− | 0.5− | 2006 10 01 | 715 | 0.0 | 0.3− |
| 2001 05 11 | 557 | 0.5− | 0.3− | 2005 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 715 | 0.0 | 0.5− |
| 2001 05 12 | 557 | 0.8− | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.5+ | 2006 10 01 | 715 | 0.1+ | 0.3− |
| 2001 05 13 | 557 | 0.0 | 0.3+ | 2005 05 13 | 691 | 0.5+ | 0.5+ | 2006 10 02 | 291 | 0.0 | 0.2+ |
| 2001 05 13 | 557 | 0.3− | 0.1+ | 2005 05 15 | 644 | 0.0 | 0.3+ | 2006 10 02 | 291 | 0.0 | 0.3+ |
| 2001 05 13 | 557 | 0.2− | 0.3+ | 2005 05 15 | 644 | 0.8+ | 0.3+ | 2006 10 02 | 291 | 0.0 | 0.2+ |
| 2001 05 25 | 557 | 0.0 | 0.2− | 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 05 25 | 557 | 0.3+ | 0.1− | 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.6− | 1.1+ |
| 2001 05 25 | 557 | 0.3+ | 0.5− | 2006 08 21 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | (1.7+ | 0.6+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 557 | 0.1+ | 0.7− | 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2001 05 26 | 557 | 0.1+ | 0.5− | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2001 05 26 | 704 | 0.6− | 0.8− | 2006 09 06 | 644 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2001 05 26 | 704 | 0.6+ | 0.3− | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2001 05 26 | 704 | 0.0 | 0.1+ | 2006 09 12 | 703 | 1.0+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2001 05 26 | 704 | 0.2+ | 0.7+ | 2006 09 12 | 703 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 05 26 | 704 | 0.7− | 0.1+ | 2006 09 12 | 703 | 1.4− | 1.3− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 05 29 | 557 | 1.1+ | 0.7+ | 2006 09 12 | 703 | (1.7− | 1.0−) | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2001 05 29 | 557 | (0.7+ | 1.8−) | 2006 09 16 | 699 | 0.6+ | 0.8+ | 2006 11 13 | G96 | 0.7− | 0.9− |
| 2001 06 12 | 699 | 0.2− | 1.1− | 2006 09 16 | 699 | 1.0+ | 0.4− | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2001 06 12 | 699 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.1+ | 0.6+ | 2006 11 13 | G96 | 0.1− | 0.4+ |
| 2001 06 12 | 699 | 1.0− | 0.0 | 2006 09 16 | 699 | 0.2− | 0.7+ | 2006 11 13 | G96 | 0.7− | 0.6− |
| 2001 06 12 | 699 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.9− | 0.0 | | | | |
| 2005 03 10 | G96 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.8− | 0.7− | | | | |

**(139234)∗ 2001 HT$_{19}$ = 1997 EE$_{48}$**

Discovered 2001 Apr. 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 13330)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.53702 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25969750 | $\omega$ | 349.74249 | | −0.91011114 | +0.40852019 | |
| $a$ | 2.4330864 | $\Omega$ | 214.63202 | | −0.37100531 | −0.87791582 | |
| $e$ | 0.0744387 | $i$ | 7.00893 | | −0.18453392 | −0.24975001 | |
| $P$ | 3.80 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 04 | 691 | 1.5− | 0.3− | 2001 05 03 | 608 | 0.3+ | 0.6− | 2006 09 14 | 703 | 0.2− | 0.3− |
| 1994 06 04 | 691 | 0.5+ | 0.9− | 2001 05 03 | 608 | 0.3+ | 0.7− | 2006 09 14 | 703 | 0.9+ | 0.7− |
| 1994 06 04 | 691 | 0.4+ | 0.4− | 2001 05 03 | 608 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.6− | 0.5+ |
| 1997 03 11 | 809 | (1.2+ | 3.5+) | 2001 05 15 | 699 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 1997 03 11 | 809 | (1.2+ | 3.0+) | 2001 05 15 | 699 | 0.7+ | 0.0 | 2006 09 17 | 691 | 0.3+ | 0.1+ |
| 1997 03 11 | 809 | (0.5+ | 3.4+) | 2001 05 15 | 699 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 1997 03 12 | 809 | (0.7+ | 3.9+) | 2001 05 15 | 699 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.5− | 0.2+ |
| 1997 03 12 | 809 | (0.1+ | 5.2+) | 2001 05 17 | 704 | 0.7− | 0.0 | 2006 09 18 | 703 | 1.0− | 0.9+ |
| 1997 03 12 | 809 | (0.5+ | 4.3+) | 2001 05 17 | 704 | 0.0 | 1.0− | 2006 09 18 | 703 | 0.2− | 0.4− |
| 1998 08 31 | 327 | 0.6+ | 0.5− | 2001 05 17 | 704 | (0.3+ | 1.6+) | 2006 09 18 | 703 | 0.1− | 0.2− |
| 1998 08 31 | 327 | 0.7+ | 0.8− | 2001 05 17 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 691 | 0.5− | 0.0 |
| 1998 08 31 | 327 | 0.7+ | 0.8− | 2001 05 29 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2001 04 18 | 704 | 0.2+ | 1.1+ | 2001 05 29 | 691 | 0.4− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2001 04 18 | 704 | 0.0 | 0.2+ | 2001 05 29 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.5+ | 0.4+ |
| 2001 04 18 | 704 | 0.8+ | 0.7+ | 2002 09 06 | 704 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 04 18 | 704 | 0.7− | 0.3+ | 2002 09 06 | 704 | 0.0 | 0.5− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2001 04 24 | 291 | 0.2+ | 0.1− | 2002 09 06 | 704 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 1.2− | 0.8+ |
| 2001 04 24 | 291 | 0.6+ | 0.2− | 2002 09 06 | 704 | 0.7− | 0.2+ | 2006 10 17 | 703 | 0.9− | 0.7− |
| 2001 04 24 | 291 | 0.7+ | 0.2− | 2002 09 06 | 704 | 0.5− | 1.0+ | 2006 10 17 | 703 | 1.2− | 0.3+ |
| 2001 04 24 | 608 | 0.0 | 1.1+ | 2002 09 13 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 04 24 | 608 | 0.0 | 0.7+ | 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2001 04 24 | 608 | 0.3+ | 1.2+ | 2002 09 13 | 644 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2001 04 26 | 699 | 0.7+ | 0.2− | 2002 09 19 | 644 | 0.3+ | 1.0+ | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2001 04 26 | 699 | 1.5+ | 0.7+ | 2002 09 19 | 644 | 0.2− | 0.9+ | 2006 10 17 | 703 | 0.2+ | 0.7+ |
| 2001 04 26 | 699 | 0.5+ | 0.0 | 2002 09 19 | 644 | 0.0 | 1.2+ | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2001 04 26 | 699 | 0.5+ | 0.2+ | 2002 10 05 | 704 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2001 04 27 | 704 | 0.9− | 0.5+ | 2002 10 05 | 704 | 0.7− | 1.3+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2001 04 27 | 704 | 1.4− | 0.2+ | 2002 10 05 | 704 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2001 04 27 | 704 | 0.4− | 0.0 | 2002 10 05 | 704 | 1.3+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 04 27 | 691 | 0.2− | 0.0 | 2002 11 08 | 645 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 04 27 | 691 | 0.3− | 0.1+ | 2002 11 08 | 645 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2001 04 27 | 691 | 0.3− | 0.1+ | 2005 06 05 | 704 | 0.1− | 1.0+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2001 04 30 | 704 | 0.1− | 0.4+ | 2005 06 05 | 704 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2001 04 30 | 704 | 0.6− | 0.2− | 2005 06 05 | 704 | 0.3− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 04 30 | 704 | 0.4− | 0.2+ | 2005 06 05 | 704 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2001 04 30 | 704 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.3− | 1.1+ | | | | |

**(139235)∗ 2001 HY$_{20}$ = 2002 TX$_{24}$**

Discovered 2001 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37608)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.27844 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25782163 | $\omega$ | 243.07961 | | −0.02149702 | +0.99939899 | |
| $a$ | 2.4448740 | $\Omega$ | 25.73217 | | −0.89362238 | −0.00701051 | |
| $e$ | 0.1563294 | $i$ | 3.59114 | | −0.44830450 | −0.03394869 | |
| $P$ | 3.82 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.2+ | 0.5− | 2002 10 07 | 704 | 0.8− | 1.0+ | 2005 05 19 | E12 | 0.2+ | 0.7+ |
| 1993 02 26 | 691 | 1.2− | 0.5− | 2002 10 07 | 704 | 0.9− | 0.4+ | 2005 05 19 | E12 | 0.4− | 0.4+ |
| 1993 02 26 | 691 | 0.4+ | 0.1+ | 2002 10 07 | 644 | 0.2− | 0.3− | 2005 05 19 | E12 | 0.3− | 0.2− |
| 1994 08 12 | 809 | (4.2− | 1.9+) | 2002 10 11 | 704 | 0.4+ | 0.8+ | 2005 05 21 | 644 | 0.2+ | 0.5+ |
| 1994 08 12 | 809 | (4.4− | 2.0+) | 2002 10 11 | 704 | 0.5+ | 1.1+ | 2005 05 21 | 644 | 0.2+ | 0.7+ |
| 1994 08 12 | 809 | (3.9− | 2.5+) | 2002 10 11 | 704 | 1.2− | 0.3+ | 2005 05 21 | 644 | 0.3+ | 0.5+ |
| 2001 04 16 | 699 | (1.5+ | 0.4+) | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 09 27 | G96 | 0.5− | 0.1− |
| 2001 04 16 | 699 | 1.2+ | 1.2+ | 2002 10 11 | 704 | 1.3+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2001 04 16 | 699 | 1.2+ | 0.3+ | 2004 01 16 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3− | 0.0 |
| 2001 04 16 | 699 | 0.8+ | 0.6+ | 2004 01 16 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2001 04 18 | 608 | 0.6+ | 0.4+ | 2004 01 16 | 691 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 2001 04 18 | 608 | 0.7− | 0.6+ | 2004 01 17 | 691 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2001 04 18 | 608 | 0.1− | 0.3+ | 2004 01 17 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.3− | 0.2+ |
| 2001 04 23 | 704 | 0.1+ | 0.4+ | 2004 01 17 | 691 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.4+ |
| 2001 04 23 | 704 | 0.9+ | 1.2+ | 2004 01 22 | 649 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.4+ |
| 2001 04 23 | 704 | 0.6+ | 0.8+ | 2004 01 22 | 649 | 0.7− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2001 04 23 | 704 | 1.2+ | 1.0+ | 2004 01 22 | 649 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.6+ |
| 2001 04 23 | 704 | 0.7+ | 0.1− | 2004 01 22 | 649 | 0.6− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 04 27 | 704 | 0.2+ | 0.2+ | 2004 01 28 | 291 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 04 27 | 704 | 0.6+ | 0.0 | 2004 01 28 | 291 | 0.1+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.5+ |
| 2001 04 27 | 704 | (1.8+ | 1.1−) | 2004 01 28 | 291 | 0.5+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 04 27 | 608 | 0.7− | 0.5+ | 2005 03 11 | G96 | 0.5− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 04 27 | 608 | 0.6− | 0.5+ | 2005 03 11 | G96 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 04 27 | 608 | 0.8− | 0.5+ | 2005 03 11 | G96 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | (1.2+ | 2.0+) | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | (0.4− | 2.0+) | 2005 05 02 | 428 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2002 10 02 | 704 | (0.0 | 1.7+) | 2005 05 02 | 428 | (1.6+ | 0.2+) | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.7− | 1.2+ | 2005 05 13 | E12 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2005 05 13 | E12 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2005 05 13 | E12 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 1.0− | 0.6− |
| 2002 10 03 | 704 | 0.6− | 0.8+ | 2005 05 13 | E12 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.7+ |
| 2002 10 07 | 644 | 0.1+ | 0.6− | 2005 05 19 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.6+ | 0.7− |
| 2002 10 07 | 644 | 0.1− | 0.3− | 2005 05 19 | 644 | 0.3+ | 0.7+ | 2006 11 17 | 703 | 0.9+ | 0.2− |
| 2002 10 07 | 704 | 0.1+ | 0.8− | 2005 05 19 | 644 | 0.2+ | 0.4+ | | | | |

**(139236)∗ 2001 HZ$_{20}$ = 2004 EY$_{67}$**

Discovered 2001 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60745)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.13508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29920199 | $\omega$ | 61.91997 | | −0.11291387 | +0.99321394 | |
| $a$ | 2.2139088 | $\Omega$ | 201.65033 | | −0.93606977 | −0.11573875 | |
| $e$ | 0.1629450 | $i$ | 4.33171 | | −0.33320241 | −0.01142874 | |
| $P$ | 3.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 327 | 0.3+ | 0.4− | 2004 02 26 | 704 | 1.2+ | 0.1− | 2005 10 02 | 644 | 0.2+ | 0.1+ |
| 1995 08 27 | 327 | 0.2+ | 1.2− | 2004 02 26 | 704 | 0.3− | 0.4+ | 2005 10 03 | 644 | 0.3− | 0.6+ |
| 1995 08 27 | 327 | 1.2+ | 0.4− | 2004 03 15 | 704 | 0.0 | 0.5+ | 2005 10 03 | 644 | 0.2− | 0.5+ |
| 1995 08 27 | 327 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.0 | 0.2+ | 2005 10 03 | 644 | 0.2− | 0.1+ |
| 1995 09 21 | 691 | 0.5− | 0.2+ | 2004 03 15 | 704 | 0.1− | 0.4+ | 2005 10 03 | 644 | 0.0 | 0.2+ |
| 1995 09 21 | 691 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.5+ | 2005 10 03 | 644 | 0.1+ | 0.4+ |
| 1995 09 21 | 691 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.9+ | 2005 10 03 | 644 | 0.1+ | 0.2+ |
| 2001 04 16 | 699 | 0.9+ | 0.5+ | 2004 03 18 | 704 | 0.1− | 0.3+ | 2005 10 05 | 691 | 0.1+ | 0.2+ |
| 2001 04 16 | 699 | 1.1+ | 1.3+ | 2004 03 18 | 704 | 1.3− | 1.4+ | 2005 10 05 | 691 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 699 | 1.3+ | 1.2+ | 2004 03 18 | 704 | 0.3+ | 0.3− | 2005 10 05 | 691 | 0.1+ | 0.0 |
| 2001 04 16 | 699 | 0.0 | 0.6+ | 2004 03 27 | 704 | (0.8+ | 2.4+) | 2005 10 06 | G96 | 0.2+ | 0.1+ |
| 2001 04 18 | 608 | 0.5− | 0.2− | 2004 03 27 | 704 | (0.3+ | 2.2+) | 2005 10 06 | G96 | 0.1+ | 0.2+ |
| 2001 04 18 | 608 | 0.7+ | 0.4+ | 2004 03 27 | 704 | 1.5+ | 1.0+ | 2005 10 06 | G96 | 0.0 | 0.0 |
| 2001 04 18 | 608 | 0.5+ | 0.3+ | 2005 09 26 | 691 | 0.2− | 0.1+ | 2005 10 06 | G96 | 0.1− | 0.3+ |
| 2001 04 23 | 704 | 0.9+ | 0.2+ | 2005 09 26 | 691 | 0.3− | 0.0 | 2005 10 07 | G96 | 0.2+ | 0.1+ |
| 2001 04 23 | 704 | 1.2− | 0.9+ | 2005 09 26 | 691 | 0.1− | 0.2+ | 2005 10 07 | G96 | 0.0 | 0.0 |
| 2001 04 23 | 704 | 0.8− | 1.3+ | 2005 09 27 | 691 | 0.2+ | 0.1− | 2005 10 07 | G96 | 0.4+ | 0.1+ |
| 2001 04 23 | 704 | 0.5− | 0.1+ | 2005 09 27 | 691 | 0.1+ | 0.0 | 2005 10 07 | G96 | 0.1+ | 0.0 |
| 2001 04 23 | 704 | 0.4+ | 1.0+ | 2005 09 27 | 691 | 0.1+ | 0.1− | 2005 10 07 | 703 | 0.8− | 0.4− |
| 2001 04 27 | 704 | 0.5+ | 0.2+ | 2005 09 29 | 699 | 1.7− | 0.6+ | 2005 10 07 | 703 | 1.3− | 0.2− |
| 2001 04 27 | 704 | 0.3− | 0.2+ | 2005 09 29 | 699 | 0.6+ | 0.4+ | 2005 10 07 | 703 | 0.2− | 0.1+ |
| 2001 04 27 | 704 | 0.5− | 0.6+ | 2005 09 29 | 699 | 1.0− | 1.5+ | 2005 10 07 | 703 | 0.6− | 0.2+ |
| 2004 02 15 | 703 | 0.3+ | 0.3+ | 2005 09 29 | 699 | 0.4+ | 0.7+ | 2005 10 10 | 691 | 0.0 | 0.2+ |
| 2004 02 15 | 703 | 1.6− | 0.5+ | 2005 10 01 | 691 | 0.2− | 0.1+ | 2005 10 10 | 691 | 0.1+ | 0.4+ |
| 2004 02 15 | 703 | (6.0− | 0.3+) | 2005 10 01 | 691 | 0.1− | 0.1+ | 2005 10 10 | 691 | 0.2+ | 0.3+ |
| 2004 02 15 | 703 | (5.7− | 1.2−) | 2005 10 01 | 691 | 0.0 | 0.0 | 2005 10 24 | 691 | 0.0 | 0.4+ |
| 2004 02 19 | 704 | 0.2+ | 0.8− | 2005 10 01 | G96 | 0.1− | 0.1+ | 2005 10 24 | 691 | 0.1− | 0.1+ |
| 2004 02 19 | 704 | 0.0 | 1.3+ | 2005 10 01 | G96 | 0.0 | 0.2− | 2005 10 24 | 691 | 0.2+ | 0.1+ |
| 2004 02 19 | 704 | 0.9+ | 1.1+ | 2005 10 01 | G96 | 0.2− | 0.2− | 2005 11 29 | G96 | 0.1+ | 0.5− |
| 2004 02 19 | 704 | 0.2+ | 0.7− | 2005 10 01 | G96 | 0.0 | 0.1− | 2005 11 29 | G96 | 1.1− | 0.2− |
| 2004 02 26 | 704 | 0.9+ | 0.6− | 2005 10 02 | 644 | 0.1+ | 0.2+ | 2005 11 29 | G96 | 0.2− | 0.4− |
| 2004 02 26 | 704 | 0.0 | 0.2+ | 2005 10 02 | 644 | 0.0 | 0.4+ | 2005 11 29 | G96 | 0.6+ | 1.4+ |

**(139237)∗ 2001 HH$_{22}$ = 1997 CR$_{18}$ = 1999 TB$_{86}$**

Discovered 2001 Apr. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13839)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 180.05471 | | (2000.0) | | | |
| $n$ | 0.26487589 | $\omega$ | 76.37669 | | −0.98800209 | +0.15170741 |
| $a$ | 2.4012705 | $\Omega$ | 112.34302 | | −0.15101548 | −0.90976758 |
| $e$ | 0.1517367 | $i$ | 1.79218 | | −0.03234507 | −0.38640370 |
| $P$ | 3.72 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 07 | 691 | 0.3+ | 0.0 | 2001 04 16 | 704 | 0.3− | 1.2+ | 2002 09 12 | 644 | 0.5− | 0.3+ |
| 1997 02 07 | 691 | 0.2+ | 0.2+ | 2001 04 16 | 699 | 0.6+ | 0.2+ | 2002 09 12 | 644 | 0.5− | 0.5+ |
| 1997 02 07 | 691 | 0.5+ | 0.1+ | 2001 04 16 | 704 | 0.3+ | 1.4+ | 2002 09 12 | 644 | 0.4− | 0.6+ |
| 1997 02 11 | 691 | 0.1− | 0.1− | 2001 04 16 | 704 | 0.1+ | 1.0+ | 2003 12 22 | 704 | 0.6− | 0.9+ |
| 1997 02 11 | 691 | 0.1− | 0.1− | 2001 04 16 | 704 | 0.0 | 1.0+ | 2003 12 22 | 704 | 0.2− | 1.2+ |
| 1997 02 11 | 691 | 0.1+ | 0.0 | 2001 04 16 | 699 | 0.0 | 0.5+ | 2003 12 22 | 704 | 0.7+ | 0.4+ |
| 1999 10 14 | 691 | 0.2− | 0.4− | 2001 04 16 | 704 | 0.3+ | 0.3− | 2004 01 21 | 704 | 0.5− | 1.0+ |
| 1999 10 14 | 691 | 0.2− | 0.4− | 2001 04 16 | 699 | 0.1− | 0.9+ | 2004 01 21 | 704 | 0.2− | 1.2+ |
| 1999 10 14 | 691 | 0.1+ | 0.2− | 2001 04 16 | 699 | 0.1+ | 0.3− | 2004 01 21 | 704 | 0.5− | 0.5+ |
| 1999 10 16 | 691 | 0.0 | 0.2− | 2001 04 18 | 608 | (1.8− | 0.1−) | 2005 02 11 | 809 | 0.4+ | 0.1− |
| 1999 10 16 | 691 | 0.0 | 0.5− | 2001 04 18 | 608 | 0.5− | 1.2− | 2005 02 11 | 809 | 0.1+ | 0.4− |
| 1999 10 16 | 691 | 0.1+ | 0.4− | 2001 04 18 | 608 | 0.7+ | 1.2− | 2005 02 11 | 809 | 0.6− | 0.2− |
| 1999 11 04 | 691 | 0.8− | 0.3+ | 2001 04 24 | 704 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.5+ |
| 1999 11 04 | 691 | 0.4− | 0.0 | 2001 04 24 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.6+ |
| 1999 11 04 | 691 | 0.5+ | 0.2+ | 2001 04 24 | 704 | 0.1− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.5+ |
| 2001 03 23 | 699 | 0.4+ | 0.0 | 2001 04 24 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2001 03 23 | 699 | 0.9− | 0.2− | 2001 04 27 | 704 | (1.7− | 0.1+) | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2001 03 23 | 699 | 1.2− | 0.4+ | 2001 04 27 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2001 03 23 | 699 | 0.1− | 0.8+ | 2001 04 27 | 704 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.6+ | 1.0+ |
| 2001 04 01 | 704 | (1.6− | 1.8+) | 2001 04 27 | 704 | 0.4− | 1.4+ | 2006 11 16 | G96 | 0.2+ | 0.3+ |
| 2001 04 01 | 704 | 0.1− | 0.3+ | 2001 05 18 | 699 | 0.6+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.2+ |
| 2001 04 01 | 704 | 0.1− | 0.6+ | 2001 05 18 | 699 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2001 04 01 | 704 | 0.1+ | 0.2− | 2001 05 18 | 699 | 0.1+ | 0.2+ | | | | |
| 2001 04 01 | 704 | 0.4− | 0.2+ | 2001 05 18 | 699 | 0.8+ | 0.7− | | | | |

**(139238)∗ 2001 HP$_{22}$ = 2002 RD$_{209}$**

Discovered 2001 Apr. 25 by W. K. Y. Yeung at Desert Beaver Observatory.

Id. G. V. Williams (*MPO* 37609)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 173.19028 | | (2000.0) | | | |
| $n$ | 0.26313685 | $\omega$ | 193.00793 | | −0.89691294 | +0.44207613 |
| $a$ | 2.4118388 | $\Omega$ | 13.24424 | | −0.40139425 | −0.80367786 |
| $e$ | 0.1326985 | $i$ | 2.69309 | | −0.18555279 | −0.39833478 |
| $P$ | 3.75 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 608 | 0.0 | 0.6− | 2002 09 16 | 291 | 0.4− | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.4+ |
| 2001 04 15 | 608 | 0.0 | 0.4− | 2002 09 16 | 291 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2001 04 15 | 608 | 0.0 | 0.4− | 2002 09 29 | 608 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.4− | 0.1+ |
| 2001 04 18 | 704 | 0.4+ | 0.8+ | 2002 09 29 | 608 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 04 18 | 704 | 0.4+ | 0.1+ | 2002 09 29 | 608 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.5+ | 0.3− |
| 2001 04 18 | 704 | 0.1+ | 1.0+ | 2002 10 02 | 704 | 0.5+ | 0.9− | 2006 10 10 | 644 | 0.2+ | 0.4+ |
| 2001 04 25 | 919 | (0.8+ | 1.5+) | 2002 10 02 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 2001 04 25 | 919 | 0.9− | 0.4− | 2002 10 02 | 704 | 0.3− | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 2001 04 25 | 919 | 0.4− | 0.9+ | 2002 10 02 | 704 | 0.9− | 1.2− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2001 04 26 | 699 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 04 26 | 699 | 0.4+ | 0.3+ | 2002 10 03 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2001 04 26 | 699 | 0.3− | 0.3+ | 2002 10 03 | 704 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2001 04 26 | 699 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.2− | 1.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2001 04 27 | 919 | 0.9+ | 0.8+ | 2002 10 03 | 704 | 0.6+ | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.3+ |
| 2001 04 27 | 919 | 0.4− | 0.5+ | 2002 10 05 | 645 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.0 |
| 2001 04 27 | 919 | 0.3+ | 0.0 | 2002 10 05 | 645 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.2− |
| 2001 04 29 | 919 | 0.3− | 0.2+ | 2002 10 11 | 704 | 1.2+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 04 29 | 919 | 0.7+ | 1.4+ | 2002 10 11 | 704 | (1.9+ | 0.1+) | 2006 10 19 | 691 | 0.1− | 0.2− |
| 2001 04 29 | 919 | 0.2+ | 0.8+ | 2002 10 11 | 704 | 0.6+ | 0.8+ | 2006 10 21 | 703 | 0.8− | 0.5+ |
| 2001 04 29 | 919 | 0.6− | 0.6+ | 2002 10 11 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 2001 04 29 | 919 | 0.3+ | 0.5+ | 2003 12 04 | 704 | 0.4− | 0.8+ | 2006 10 21 | 703 | 0.9− | 0.2+ |
| 2001 04 29 | 919 | 0.7− | 0.8+ | 2003 12 04 | 704 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.4+ | 0.6+ |
| 2001 04 30 | 704 | 0.1+ | 0.1− | 2003 12 04 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 04 30 | 704 | 0.1− | 0.7+ | 2003 12 04 | 704 | (0.9+ | 1.9+) | 2006 10 21 | 644 | 0.5+ | 0.0 |
| 2001 04 30 | 704 | 0.0 | 0.9− | 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 04 30 | 704 | 0.0 | 0.4+ | 2003 12 18 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2001 04 30 | 704 | 0.1+ | 0.3+ | 2003 12 18 | 704 | 0.6+ | 0.6+ | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2001 05 12 | 699 | 1.1+ | 1.1+ | 2003 12 18 | 704 | 0.2+ | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 05 12 | 699 | 1.4+ | 0.1+ | 2003 12 18 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2001 05 12 | 699 | 1.3+ | 0.8+ | 2003 12 21 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2001 05 12 | 699 | 0.4+ | 1.2+ | 2003 12 21 | 704 | 0.8+ | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2001 05 15 | 699 | 0.1+ | 0.5+ | 2003 12 21 | 704 | 0.2+ | 0.4+ | 2006 10 28 | G96 | (1.6− | 1.3+) |
| 2001 05 15 | 699 | 0.1+ | 0.8+ | 2003 12 21 | 704 | 1.1+ | 0.8+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 05 15 | 699 | 1.0+ | 0.8+ | 2003 12 22 | 704 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 05 15 | 699 | (0.7+ | 1.8+) | 2003 12 22 | 704 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2001 05 17 | 704 | 0.2− | 0.0 | 2003 12 22 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 05 17 | 704 | 0.2+ | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 05 17 | 704 | (0.2− | 1.7−) | 2003 12 22 | 704 | 0.6− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 05 17 | 704 | 0.6− | 0.2+ | 2003 12 27 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.0 | 0.4+ |
| 2001 05 17 | 704 | 0.1+ | 0.8− | 2003 12 27 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2001 05 21 | 704 | (0.1− | 1.5−) | 2003 12 27 | 704 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2001 05 21 | 704 | 0.1− | 0.9+ | 2003 12 27 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | (0.5− | 1.5−) |
| 2001 05 21 | 704 | (1.1− | 3.0+) | 2003 12 27 | 704 | 0.5− | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 2001 05 24 | 704 | 0.1− | 0.6− | 2003 12 27 | 704 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2001 05 24 | 704 | 0.0 | 0.6− | 2003 12 27 | 704 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.6− | 0.3− |
| 2001 05 24 | 704 | 0.3+ | 0.3+ | 2003 12 27 | 704 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2001 05 24 | 704 | 1.2+ | 0.1− | 2003 12 27 | 704 | (1.7+ | 1.5+) | 2006 11 16 | 691 | 0.3− | 0.6+ |
| 2001 05 27 | 608 | 0.0 | 0.8+ | 2003 12 27 | 704 | 0.2+ | 1.0+ | 2006 11 16 | 691 | 0.3− | 0.4+ |
| 2001 05 27 | 608 | 0.3− | 0.9+ | 2004 01 22 | 704 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2001 05 27 | 608 | 0.3− | 0.6+ | 2004 01 22 | 704 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2001 06 11 | 699 | 0.8− | 1.2− | 2004 01 22 | 704 | 0.6− | 0.4+ | 2006 11 17 | 703 | 0.5+ | 0.5+ |
| 2001 06 11 | 699 | 0.2− | 1.2+ | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.2+ | 0.9+ |
| 2001 06 11 | 699 | 0.2+ | 1.4+ | 2006 07 21 | G96 | 0.5+ | 0.2− | 2006 11 17 | 703 | 1.3+ | 0.8− |
| 2001 06 11 | 699 | 0.7+ | 0.2+ | 2006 07 21 | G96 | 0.7+ | 0.7− | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.3+ | 1.2+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 1.2+ | 1.1+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2002 09 07 | 704 | 0.5− | 0.5+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.5− |
| 2002 09 07 | 704 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.5− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.3+ | | | | |
| 2002 09 16 | 291 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.3+ | | | | |

**(139239)∗ 2001 HL$_{23}$**

Discovered 2001 Apr. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.85808 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25423844 | $\omega$ | 121.08989 | | +0.10426789 | +0.99451226 | |
| $a$ | 2.4677921 | $\Omega$ | 154.89082 | | −0.91922821 | +0.09966000 | |
| $e$ | 0.2050588 | $i$ | 1.15819 | | −0.37966788 | +0.03183154 | |
| $P$ | 3.88 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.1− | 0.1+ | 2005 04 12 | 704 | 0.2− | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.2− |
| 1998 09 25 | 645 | 0.1− | 0.1+ | 2005 04 12 | 704 | 1.2+ | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 04 23 | 691 | 0.4− | 0.2+ | 2005 04 18 | 703 | 0.9− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2001 04 23 | 691 | 0.2− | 0.3+ | 2005 04 18 | 703 | (2.1− | 0.7−) | 2006 10 27 | G96 | 0.5+ | 0.2+ |
| 2001 04 23 | 691 | 0.3− | 0.4+ | 2005 04 18 | 703 | 0.8+ | 1.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 04 28 | 691 | 0.4+ | 0.1+ | 2005 04 18 | 703 | (1.9− | 0.1+) | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2001 04 28 | 691 | 0.2+ | 0.1− | 2005 06 15 | G96 | 0.3− | 0.9+ | 2006 11 10 | 691 | 0.3+ | 0.6+ |
| 2001 04 28 | 691 | 0.6+ | 0.0 | 2005 06 15 | G96 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.6+ |
| 2001 06 12 | 691 | 0.3+ | 0.0 | 2005 06 15 | G96 | 0.4+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2001 06 12 | 691 | 0.3+ | 0.0 | 2005 06 15 | G96 | 0.1− | 0.8+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2001 06 12 | 691 | 0.0 | 0.1+ | 2005 06 27 | 291 | 0.3+ | 0.7+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2001 06 19 | 691 | 0.1+ | 0.1+ | 2005 06 27 | 291 | 0.1+ | 1.3+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 06 19 | 691 | 1.0+ | 0.4+ | 2005 06 27 | 291 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 06 19 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2003 12 17 | 291 | 0.6− | 0.8+ | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.7+ | 0.2− |
| 2003 12 17 | 291 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.5+ | 0.5+ |
| 2003 12 17 | 291 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2005 04 04 | G96 | 0.7− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2005 04 04 | G96 | 0.7− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2005 04 04 | G96 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.5− | 0.5+ |
| 2005 04 04 | G96 | 0.5− | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.8+ |
| 2005 04 12 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 27 | 691 | 0.3− | 0.3+ |

**(139240)∗ 2001 HQ$_{27}$**

Discovered 2001 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.40333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26699253 | $\omega$ | 213.65728 | | −0.12661572 | +0.99076262 | |
| $a$ | 2.3885627 | $\Omega$ | 49.11862 | | −0.89535310 | −0.09307748 | |
| $e$ | 0.1580214 | $i$ | 3.68233 | | −0.42697925 | −0.09862051 | |
| $P$ | 3.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 18 | 704 | 0.3− | 0.7− | 2001 05 21 | 704 | 0.3+ | 0.2+ | 2005 07 29 | E12 | 0.3− | 0.7+ |
| 2001 04 18 | 704 | 0.5+ | 1.1+ | 2001 05 21 | 704 | 0.1+ | 0.4+ | 2005 07 29 | E12 | 0.1+ | 0.0 |
| 2001 04 18 | 704 | 0.4+ | 0.7+ | 2001 05 21 | 704 | 0.5− | 0.1− | 2005 07 29 | E12 | 0.5− | 0.4+ |
| 2001 04 26 | 691 | 0.0 | 0.1− | 2001 05 21 | 704 | 0.6+ | 0.0 | 2005 07 29 | E12 | 0.2− | 1.1+ |
| 2001 04 26 | 691 | 0.1− | 0.0 | 2001 05 21 | 704 | 0.7+ | 0.2+ | 2005 08 04 | 644 | 0.4+ | 0.6+ |
| 2001 04 26 | 691 | 0.1− | 0.0 | 2001 05 24 | 699 | 0.2+ | 0.2+ | 2005 08 04 | 644 | 0.5+ | 0.4+ |
| 2001 04 27 | 704 | 0.6− | 0.3− | 2001 05 24 | 699 | 0.5− | 0.3+ | 2005 08 04 | 644 | 0.5+ | 0.6+ |
| 2001 04 27 | 704 | 0.0 | 0.4− | 2001 05 24 | 699 | 0.1+ | 0.8+ | 2006 09 28 | G96 | 0.1− | 0.3+ |
| 2001 04 27 | 704 | 0.9− | 0.4− | 2001 05 24 | 699 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.3+ |
| 2001 04 27 | 704 | 0.1− | 0.9+ | 2001 05 24 | 704 | 1.0+ | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.4+ |
| 2001 04 27 | 704 | 0.8− | 1.2+ | 2001 05 24 | 704 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.4+ |
| 2001 04 29 | 704 | 0.1+ | 1.0+ | 2001 05 24 | 704 | 0.3+ | 0.9+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2001 04 29 | 704 | 0.1− | 0.8+ | 2001 05 24 | 704 | 0.8+ | 0.9+ | 2006 11 11 | 691 | 0.2− | 0.5+ |
| 2001 04 29 | 704 | 0.8+ | 0.3+ | 2001 06 11 | 699 | 0.6+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2001 04 29 | 704 | 0.5− | 0.0 | 2001 06 11 | 699 | 0.2− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 04 29 | 704 | 0.9− | 0.4+ | 2001 06 11 | 699 | 0.6+ | 0.7− | 2006 11 11 | G96 | 1.5− | 1.5− |
| 2001 04 30 | 704 | 0.1− | 0.8+ | 2001 06 11 | 699 | 0.2+ | 0.8+ | 2006 11 11 | G96 | 1.0+ | 1.2− |
| 2001 04 30 | 704 | 0.4+ | 0.0 | 2004 01 16 | 644 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 04 30 | 704 | 0.3+ | 0.0 | 2004 01 16 | 644 | 0.1− | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 2001 04 30 | 704 | 0.3− | 0.5− | 2004 01 16 | 644 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2001 05 14 | 608 | (1.4+ | 1.7+) | 2004 02 17 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.6+ |
| 2001 05 14 | 608 | 0.5+ | 1.5+ | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.6+ |
| 2001 05 14 | 608 | (1.3+ | 2.1+) | 2004 02 17 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.4+ | 0.3+ |
| 2001 05 15 | 699 | 0.6+ | 0.5+ | 2005 07 17 | E12 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 2001 05 15 | 699 | 0.8+ | 0.4+ | 2005 07 17 | E12 | 0.4− | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.5+ |
| 2001 05 15 | 699 | 0.4+ | 0.8+ | 2005 07 17 | E12 | 0.3− | 0.5+ | 2006 11 27 | 691 | 0.7+ | 0.2+ |
| 2001 05 15 | 699 | (0.8+ | 2.3+) | 2005 07 17 | E12 | 0.5− | 0.3+ | 2006 11 27 | 691 | 1.5− | 0.8+ |

**(139241)∗ 2001 HT$_{27}$**

Discovered 2001 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.09739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26953658 | $\omega$ | 190.49115 | | −0.48931356 | +0.86839306 | |
| $a$ | 2.3735092 | $\Omega$ | 50.26379 | | −0.79237920 | −0.40417266 | |
| $e$ | 0.1627823 | $i$ | 6.00208 | | −0.36429033 | −0.28729418 | |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 20 | 691 | 0.2− | 0.1+ | 2001 05 24 | 704 | (0.0 | 1.6+) | 2005 07 29 | E12 | 0.1− | 0.2+ |
| 1995 11 20 | 691 | 0.4+ | 0.3+ | 2001 05 24 | 704 | 0.1+ | 0.3− | 2005 08 13 | E12 | 0.0 | 0.6+ |
| 1995 11 20 | 691 | 0.3− | 0.0 | 2001 05 24 | 704 | 0.7+ | 1.1+ | 2005 08 13 | E12 | 0.1+ | 0.6+ |
| 2001 04 25 | 608 | (0.3− | 1.7+) | 2001 05 24 | 704 | 0.8+ | 0.6+ | 2005 08 13 | E12 | 0.0 | 0.4+ |
| 2001 04 25 | 608 | (1.0− | 1.6+) | 2001 05 27 | 704 | 0.1+ | 0.7+ | 2005 08 13 | E12 | 0.2+ | 0.2+ |
| 2001 04 25 | 608 | (0.9− | 1.8+) | 2001 05 27 | 704 | 0.1+ | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.3+ |
| 2001 04 27 | 704 | 0.7+ | 0.3− | 2001 05 27 | 704 | 0.6− | 0.4− | 2006 10 17 | G96 | 0.1− | 0.2+ |
| 2001 04 27 | 704 | 1.3+ | 1.3+ | 2001 05 27 | 704 | 1.1− | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2001 04 27 | 704 | 0.1− | 0.2+ | 2001 05 27 | 608 | 0.6− | 0.5− | 2006 10 17 | G96 | 0.3− | 0.0 |
| 2001 04 27 | 704 | 0.2+ | 0.5+ | 2001 05 27 | 608 | 0.6− | 0.7− | 2006 10 27 | G96 | 0.6+ | 0.1+ |
| 2001 04 27 | 704 | (0.7+ | 1.6+) | 2001 05 27 | 608 | 0.3− | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 04 29 | 704 | 0.9− | 0.3+ | 2001 06 11 | 699 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2001 04 29 | 704 | 0.1+ | 0.1+ | 2001 06 11 | 699 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 04 29 | 704 | 0.4+ | 0.2+ | 2001 06 11 | 699 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 04 29 | 704 | 0.2− | 0.3+ | 2001 06 11 | 699 | 1.2− | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2001 04 29 | 704 | 0.5+ | 0.2+ | 2001 06 20 | 699 | 0.4− | 0.5− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 04 30 | 704 | 0.8− | 0.5+ | 2001 06 20 | 699 | 0.0 | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2001 04 30 | 704 | 0.1+ | 0.2− | 2001 06 20 | 699 | 0.6− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 04 30 | 704 | 0.4+ | 0.6− | 2001 06 20 | 699 | 0.3− | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 04 30 | 704 | 0.9+ | 0.1− | 2002 10 10 | 644 | 0.7− | 0.7+ | 2006 11 10 | 691 | 0.5− | 0.3+ |
| 2001 05 14 | 608 | (1.5+ | 1.1−) | 2002 10 10 | 644 | 0.9− | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2001 05 14 | 608 | (2.0+ | 2.0−) | 2002 10 10 | 644 | 0.5+ | 1.0+ | 2006 11 19 | 704 | 0.0 | 1.2+ |
| 2001 05 14 | 608 | (2.9+ | 1.7−) | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.6+ | 1.4+ |
| 2001 05 17 | 704 | 0.1+ | 0.4− | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.4− | 0.2− |
| 2001 05 17 | 704 | 0.1− | 0.9− | 2005 07 09 | 428 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.1− |
| 2001 05 17 | 704 | 0.2+ | 1.1− | 2005 07 09 | 428 | 1.3+ | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2001 05 17 | 704 | 0.3+ | 0.0 | 2005 07 10 | E12 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.0 |
| 2001 05 21 | 704 | 0.8+ | 0.9+ | 2005 07 10 | E12 | (2.6− | 0.8+) | 2006 12 01 | G96 | 0.9− | 0.3− |
| 2001 05 21 | 704 | 1.1− | 1.0+ | 2005 07 10 | E12 | 0.1+ | 0.7+ | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2001 05 21 | 704 | 1.0+ | 0.3+ | 2005 07 10 | E12 | 0.1− | 0.7− | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 05 24 | 699 | 0.6+ | 0.3+ | 2005 07 14 | 428 | 0.3− | 1.3− | 2006 12 01 | G96 | 0.5− | 0.8− |
| 2001 05 24 | 699 | 0.4+ | 1.1+ | 2005 07 14 | 428 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 2001 05 24 | 699 | 0.2+ | 0.2+ | 2005 07 29 | E12 | 0.3− | 0.4− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2001 05 24 | 699 | 0.4+ | 0.4− | 2005 07 29 | E12 | 0.5+ | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.2+ |
| 2001 05 24 | 704 | 0.2− | 0.1− | 2005 07 29 | E12 | 0.5− | 0.0 | 2006 12 01 | G96 | 0.6− | 0.2+ |

**(139242)∗ 2001 HA$_{29}$ = 1992 LP$_2$ = 1997 PL$_3$**

Discovered 2001 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13841)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.48643 | | (2000.0) | | | |
| $n$ | 0.21894724 | $\omega$ | 5.80154 | | −0.37052038 | +0.91755199 |
| $a$ | 2.7263173 | $\Omega$ | 242.52435 | | −0.85858446 | −0.39759625 |
| $e$ | 0.2271009 | $i$ | 9.35832 | | −0.35432665 | +0.00394623 |
| $P$ | 4.50 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 06 03 | 809 | (1.9− | 2.6−) | 2001 05 24 | 704 | 0.1+ | 0.7− | 2002 10 03 | 644 | 0.6− | 0.2+ |
| 1992 06 03 | 809 | (2.1− | 2.4−) | 2001 05 24 | 704 | 0.2+ | 0.3− | 2002 10 03 | 644 | 0.1+ | 0.1+ |
| 1992 06 03 | 809 | (2.7− | 2.0−) | 2001 05 24 | 704 | 0.6+ | 0.2+ | 2005 03 07 | 704 | 1.5+ | 0.4+ |
| 1997 08 05 | 327 | 2.0+ | 1.4+ | 2001 05 27 | 704 | 0.1+ | 0.2− | 2005 03 07 | 704 | 0.0 | 0.6− |
| 1997 08 05 | 327 | 0.2+ | 0.1− | 2001 05 27 | 704 | 0.5− | 0.1+ | 2005 03 07 | 704 | 0.4+ | 0.5− |
| 1997 08 05 | 327 | 0.1+ | 0.2− | 2001 05 27 | 704 | 0.4− | 0.1+ | 2005 03 07 | 704 | 0.7+ | 0.4+ |
| 1997 08 11 | 327 | 0.7− | 1.1− | 2001 05 27 | 704 | 0.9− | 0.4− | 2005 03 07 | 704 | 0.5+ | 0.9+ |
| 1997 08 11 | 327 | 0.0 | 0.7− | 2001 06 13 | 704 | 0.4− | 0.2− | 2005 03 10 | 699 | 0.2− | 0.0 |
| 1997 08 11 | 327 | 0.2− | 0.6− | 2001 06 13 | 704 | 0.4− | 0.9+ | 2005 03 10 | 699 | 0.4+ | 1.0+ |
| 2001 04 27 | 704 | 1.0+ | 1.9− | 2001 06 13 | 704 | 1.0− | 0.9+ | 2005 03 10 | 699 | 0.3+ | 0.2− |
| 2001 04 27 | 704 | 0.7+ | 0.9− | 2001 06 13 | 704 | 0.6− | 1.4+ | 2005 03 10 | 699 | 0.9+ | 0.1− |
| 2001 04 27 | 704 | 0.4+ | 1.0− | 2001 06 13 | 704 | 0.7− | 0.1− | 2005 03 13 | 703 | 0.9− | 0.6+ |
| 2001 04 27 | 704 | 0.9+ | 1.3− | 2001 06 16 | 704 | 0.1− | 0.1+ | 2005 03 13 | 703 | 0.4− | 0.7+ |
| 2001 04 29 | 704 | 0.1− | 0.5− | 2001 06 16 | 704 | 0.4− | 0.5+ | 2005 03 13 | 703 | 0.5− | 0.5+ |
| 2001 04 29 | 704 | 0.7+ | 0.1+ | 2001 06 16 | 704 | 0.1+ | 0.0 | 2005 03 13 | 703 | 0.6− | 0.3+ |
| 2001 04 29 | 704 | 0.6− | 0.0 | 2001 06 16 | 704 | 0.7− | 0.5+ | 2006 06 03 | 703 | 1.0− | 0.7+ |
| 2001 04 29 | 704 | 0.3− | 0.9+ | 2001 06 16 | 704 | 0.1− | 0.2− | 2006 06 03 | 703 | 0.7− | 0.8− |
| 2001 04 29 | 704 | 0.4− | 0.1+ | 2001 06 22 | 704 | 1.9+ | 1.1+ | 2006 06 03 | 703 | 0.3+ | 0.2− |
| 2001 04 30 | 704 | 0.5+ | 0.3+ | 2001 06 22 | 704 | 1.5+ | 0.2+ | 2006 06 03 | 703 | 1.4− | 0.3− |
| 2001 04 30 | 704 | 0.1− | 0.3+ | 2001 06 22 | 704 | 0.9+ | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2001 04 30 | 704 | 0.4+ | 0.2− | 2001 06 22 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.6+ |
| 2001 04 30 | 704 | 0.2+ | 0.1− | 2001 07 24 | 608 | 0.3+ | 0.6− | 2006 09 19 | 703 | 0.2+ | 0.7+ |
| 2001 05 17 | 704 | 0.8− | 0.4+ | 2001 07 24 | 608 | 0.6+ | 0.2− | 2006 09 19 | 703 | 0.7− | 0.1− |
| 2001 05 17 | 704 | 0.6− | 0.2− | 2001 07 24 | 608 | 0.3+ | 0.5− | 2006 09 29 | 699 | 0.2+ | 0.7+ |
| 2001 05 17 | 704 | 0.6− | 0.4+ | 2002 10 02 | 599 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.7+ |
| 2001 05 17 | 704 | 0.8− | 0.0 | 2002 10 02 | 599 | (2.6− | 1.8+) | 2006 09 29 | 699 | 1.3+ | 0.1+ |
| 2001 05 17 | 704 | 0.4− | 0.2+ | 2002 10 02 | 599 | 0.6− | 0.9+ | 2006 09 29 | 699 | 0.4+ | 0.8+ |
| 2001 05 24 | 704 | 0.1− | 0.0 | 2002 10 02 | 599 | 0.6− | 0.0 | | | | |
| 2001 05 24 | 704 | 0.4− | 0.2+ | 2002 10 03 | 644 | 0.7− | 0.4+ | | | | |

**(139243)∗ 2001 HH$_{29}$**

Discovered 2001 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.53321 | | (2000.0) | | | |
| $n$ | 0.26139069 | $\omega$ | 340.36378 | | −0.69219171 | +0.72121809 |
| $a$ | 2.4225680 | $\Omega$ | 245.82190 | | −0.65817936 | −0.64602420 |
| $e$ | 0.1292897 | $i$ | 1.67975 | | −0.29609216 | −0.24999442 |
| $P$ | 3.77 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 08 | 691 | 0.9− | 0.5+ | 2001 05 21 | 704 | 0.2+ | 1.2+ | 2003 12 21 | 704 | 1.2+ | 0.4+ |
| 1994 07 08 | 691 | 1.2− | 0.3+ | 2001 05 21 | 704 | (1.3− | 2.3+) | 2003 12 21 | 704 | 0.4+ | 1.3+ |
| 1994 07 08 | 691 | 1.0− | 0.3+ | 2001 05 24 | 704 | 0.3− | 0.8+ | 2006 10 16 | 691 | 0.2− | 0.4− |
| 1994 07 11 | 691 | 0.5+ | 0.3− | 2001 05 24 | 704 | 0.3+ | 0.9− | 2006 10 16 | 691 | 0.2− | 0.5− |
| 1994 07 11 | 691 | 0.5+ | 0.3− | 2001 05 24 | 704 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.4− | 0.1− |
| 1994 07 11 | 691 | 1.0+ | 0.2− | 2001 05 24 | 704 | 0.3+ | 1.0+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2000 01 05 | 691 | 0.1+ | 0.1+ | 2001 05 27 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.4− | 0.1+ |
| 2000 01 05 | 691 | 0.1− | 0.1+ | 2001 05 27 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 691 | 1.1− | 0.6+ |
| 2000 01 05 | 691 | 0.3− | 0.1+ | 2001 05 27 | 704 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.6− | 0.0 |
| 2001 04 15 | 608 | 0.6+ | 0.8− | 2001 05 27 | 608 | 0.4− | 1.0− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 04 15 | 608 | (0.3+ | 2.0−) | 2001 05 27 | 608 | 0.1+ | 1.0− | 2006 10 21 | 644 | 0.6− | 0.0 |
| 2001 04 15 | 608 | 0.0 | 0.8− | 2001 05 27 | 608 | 0.7− | 0.8− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 04 25 | 608 | 0.2− | 0.5− | 2002 10 02 | 704 | (1.8+ | 0.4+) | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 04 25 | 608 | 0.0 | 0.6− | 2002 10 02 | 704 | 1.3+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2001 04 25 | 608 | 0.1+ | 0.6− | 2002 10 02 | 704 | 1.4+ | 1.3+ | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2001 04 27 | 704 | 0.7+ | 1.3+ | 2002 10 03 | 704 | 1.1+ | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.5− |
| 2001 04 27 | 704 | 0.1+ | 0.6+ | 2002 10 03 | 704 | (1.7+ | 1.1+) | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2001 04 27 | 704 | 0.4+ | 0.0 | 2002 10 03 | 704 | 1.1+ | 1.1+ | 2006 10 29 | 691 | 0.0 | 0.5− |
| 2001 04 29 | 704 | 0.3− | 0.1+ | 2002 10 04 | 704 | 0.0 | 1.1+ | 2006 11 15 | 691 | 0.5+ | 0.2− |
| 2001 04 29 | 704 | 0.1+ | 1.1− | 2002 10 04 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.4+ | 0.3+ |
| 2001 04 29 | 704 | 0.0 | 0.3+ | 2002 10 04 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 04 29 | 704 | 0.1+ | 0.6+ | 2002 10 04 | 704 | 0.1− | 0.7+ | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2001 05 15 | 699 | 0.5+ | 0.8+ | 2002 10 05 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.3+ |
| 2001 05 15 | 699 | 0.3− | 0.2+ | 2002 10 05 | 644 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.2− | 0.2+ |
| 2001 05 15 | 699 | 0.5− | 0.2− | 2002 10 05 | 644 | 0.4+ | 0.4+ | 2006 11 21 | 691 | 0.5− | 0.0 |
| 2001 05 15 | 699 | 0.1− | 0.6+ | 2002 10 06 | 644 | 0.3+ | 0.3+ | 2006 11 21 | 691 | 0.3− | 0.0 |
| 2001 05 17 | 704 | 0.1− | 1.0+ | 2002 10 06 | 644 | 0.5+ | 0.1− | 2006 11 21 | 691 | 0.7− | 0.1+ |
| 2001 05 17 | 704 | 1.0+ | 0.6+ | 2002 10 06 | 644 | 0.4+ | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.2+ |
| 2001 05 17 | 704 | 0.1+ | 0.7− | 2002 10 09 | 291 | 0.4+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2001 05 21 | 704 | 0.1+ | 0.7+ | 2002 10 09 | 291 | 0.5+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 05 21 | 704 | 0.1− | 1.2+ | 2002 10 09 | 291 | 0.5+ | 0.2− | | | | |
| 2001 05 21 | 704 | 0.9− | 0.2+ | 2003 12 21 | 704 | 1.1+ | 0.4+ | | | | |

**(139244)∗ 2001 HM$_{30}$**

Discovered 2001 Apr. 24 by P. Pravec at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 206.94698 | | (2000.0) | | | |
| $n$ | 0.28378422 | $\omega$ | 336.21321 | | −0.85247703 | +0.51690666 |
| $a$ | 2.2933863 | $\Omega$ | 235.13986 | | −0.46307525 | −0.81595179 |
| $e$ | 0.1219008 | $i$ | 5.45756 | | −0.24257828 | −0.25890187 |
| $P$ | 3.47 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.9+ | 0.5− | 2002 10 05 | 644 | 0.7− | 0.6+ | 2004 02 26 | 704 | (1.8− | 0.1−) |
| 1999 11 10 | 691 | 0.8+ | 0.5− | 2002 10 05 | 644 | 0.5− | 0.6+ | 2004 02 26 | 704 | 1.2+ | 0.2+ |
| 1999 11 10 | 691 | 0.4+ | 0.4− | 2004 01 24 | 704 | 0.7+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.1+ |
| 1999 12 17 | 691 | 0.6− | 0.3+ | 2004 01 24 | 704 | 0.4+ | 0.1− | 2005 06 29 | 644 | 0.3+ | 0.5+ |
| 1999 12 17 | 691 | 0.7− | 0.2− | 2004 01 24 | 704 | 0.4+ | 0.1+ | 2005 06 29 | 644 | 0.5+ | 0.4+ |
| 1999 12 17 | 691 | 0.6− | 0.2− | 2004 01 24 | 704 | 1.1+ | 0.4+ | 2005 06 29 | 644 | 0.0 | 0.5+ |
| 2001 04 23 | 691 | 0.1− | 0.2+ | 2004 01 24 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 04 23 | 691 | 0.0 | 0.2+ | 2004 01 26 | 699 | (2.5+ | 0.1+) | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 2001 04 23 | 691 | 0.2− | 0.1+ | 2004 01 26 | 699 | 0.8− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2001 04 24 | 557 | 0.6− | 0.1+ | 2004 01 26 | 699 | 0.1+ | 0.8− | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 04 24 | 557 | 0.2+ | 0.0 | 2004 01 26 | 699 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2001 04 24 | 557 | 0.2− | 0.7+ | 2004 01 28 | 645 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 04 24 | 557 | 1.0− | 1.0+ | 2004 01 28 | 645 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.5+ |
| 2001 04 25 | 557 | 0.4− | 1.1+ | 2004 01 29 | 704 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2001 04 29 | 557 | 0.4+ | 0.5− | 2004 01 29 | 704 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2001 04 29 | 557 | 0.5+ | 0.4− | 2004 01 29 | 704 | 0.4+ | 0.9+ | 2006 11 24 | G96 | 0.7+ | 0.6+ |
| 2001 05 02 | 608 | (1.1+ | 1.8−) | 2004 02 18 | 704 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2001 05 02 | 608 | 0.5+ | 0.7− | 2004 02 18 | 704 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2001 05 02 | 608 | 0.2+ | 0.7− | 2004 02 18 | 704 | 0.5+ | 0.7− | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2001 05 11 | 557 | 0.7+ | 0.6− | 2004 02 23 | 704 | 0.0 | 0.8+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 05 11 | 557 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.7+ | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 05 21 | 704 | 0.6+ | 0.1− | 2004 02 23 | 704 | 0.8+ | 0.7+ | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2001 05 21 | 704 | 0.5− | 0.3− | 2004 02 23 | 704 | 1.4+ | 0.1+ | 2006 12 01 | 691 | 0.2+ | 0.4− |
| 2001 05 21 | 704 | 0.0 | 1.1+ | 2004 02 23 | 704 | 0.5+ | 0.3− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2001 05 21 | 704 | 0.7+ | 0.6− | 2004 02 26 | 704 | 0.7− | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.6− |
| 2002 10 05 | 644 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.0 | | | | |

**(139245)∗ 2001 HS$_{30}$**

Discovered 2001 Apr. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 132.10971 | | (2000.0) | | | |
| $n$ | 0.24431269 | $\omega$ | 84.36165 | | −0.80715730 | +0.58557805 |
| $a$ | 2.5341873 | $\Omega$ | 131.45620 | | −0.57341112 | −0.74757189 |
| $e$ | 0.1234724 | $i$ | 5.72814 | | −0.14034522 | −0.31342404 |
| $P$ | 4.03 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.0 | 0.1+ | 2001 05 24 | 704 | 1.0− | 0.7− | 2005 06 07 | 699 | 2.0− | 0.4− |
| 2001 03 26 | 704 | 0.0 | 1.0+ | 2001 05 24 | 704 | 0.0 | 0.3+ | 2005 06 07 | 699 | 0.7+ | 1.0+ |
| 2001 03 26 | 704 | 1.1+ | 0.5+ | 2001 05 25 | 704 | 0.8+ | 0.9− | 2005 06 07 | 699 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 704 | 0.2− | 0.4+ | 2001 05 25 | 704 | 1.0+ | 0.8− | 2005 06 28 | 644 | 0.1+ | 0.3− | | |
| 2001 04 23 | 704 | 0.5+ | 0.1+ | 2001 05 25 | 704 | 1.0− | 0.2+ | 2005 06 28 | 644 | 0.1+ | 0.1− | | |
| 2001 04 23 | 704 | 0.2+ | 0.9− | 2001 05 25 | 704 | 1.1− | 1.2+ | 2005 06 28 | 644 | 0.1− | 0.1+ | | |
| 2001 04 23 | 704 | 0.4+ | 0.1+ | 2001 05 25 | 704 | 0.3+ | 0.9+ | 2006 08 29 | 691 | 0.3+ | 0.0 | | |
| 2001 04 25 | 699 | 1.0+ | 0.4+ | 2003 12 22 | 704 | 0.4+ | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.2+ | | |
| 2001 04 25 | 699 | 0.2− | 0.7+ | 2003 12 22 | 704 | 0.8− | 1.1+ | 2006 08 29 | 691 | 0.1+ | 0.2+ | | |
| 2001 04 25 | 699 | 0.0 | 0.6− | 2003 12 22 | 704 | 0.6+ | 1.9+ | 2006 09 14 | 703 | 0.7− | 0.2− | | |
| 2001 04 25 | 699 | 0.3+ | 0.4− | 2003 12 22 | 704 | 0.2− | 0.7+ | 2006 09 14 | 703 | 1.6− | 0.4− | | |
| 2001 04 26 | 291 | 0.1− | 0.2− | 2005 05 03 | 704 | 1.1− | 1.1+ | 2006 09 14 | 703 | 0.4− | 0.7− | | |
| 2001 04 26 | 291 | 0.1+ | 0.0 | 2005 05 03 | 704 | 0.3− | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.1+ | | |
| 2001 04 26 | 291 | 0.4+ | 0.0 | 2005 05 03 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.3− | | |
| 2001 04 30 | 691 | 0.0 | 0.3+ | 2005 05 03 | 704 | 1.1+ | 0.5− | 2006 09 18 | 703 | 0.3+ | 0.9+ | | |
| 2001 04 30 | 691 | 0.0 | 0.3+ | 2005 05 03 | 704 | 0.6+ | 0.5− | 2006 09 18 | 703 | 1.3− | 0.4− | | |
| 2001 04 30 | 691 | 0.1+ | 0.3+ | 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | (0.7− | 2.4−) | | |
| 2001 05 02 | 704 | 0.3+ | 0.5− | 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 1.3+ | 0.4− | | |
| 2001 05 02 | 704 | 0.0 | 0.4− | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.2+ | | |
| 2001 05 02 | 704 | 0.8− | 1.1+ | 2005 05 07 | 703 | 0.4− | 0.7− | 2006 09 18 | 699 | (2.3− | 1.4+) | | |
| 2001 05 02 | 704 | 0.9− | 1.6+ | 2005 05 07 | 703 | 0.8− | 0.6− | 2006 09 18 | 699 | 0.7− | 1.1+ | | |
| 2001 05 18 | 704 | 0.6+ | 0.8− | 2005 05 07 | 703 | 0.7− | 1.0− | 2006 09 19 | 699 | 1.4+ | 0.0 | | |
| 2001 05 18 | 704 | 0.1− | 0.9+ | 2005 05 07 | 703 | 0.6− | 0.8− | 2006 09 19 | 699 | (0.8− | 2.6+) | | |
| 2001 05 18 | 704 | 0.2− | 0.8+ | 2005 05 10 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.4− | 0.6+ | | |
| 2001 05 21 | 699 | 0.3+ | 0.1− | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | (1.0+ | 2.1+) | | |
| 2001 05 21 | 699 | 0.1+ | 0.4− | 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.3− | 0.7+ | | |
| 2001 05 21 | 699 | 0.4− | 0.3− | 2005 05 14 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.5+ | 1.9+ | | |
| 2001 05 21 | 699 | 0.4+ | 0.8− | 2005 05 14 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 1.4− | 1.3− | | |
| 2001 05 22 | 704 | 0.2− | 0.1+ | 2005 05 14 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 1.0− | 1.5+ | | |
| 2001 05 22 | 704 | 0.7− | 1.0+ | 2005 05 31 | 699 | 1.2+ | 0.6− | 2006 10 03 | G96 | 0.5+ | 0.4− | | |
| 2001 05 22 | 704 | 0.2+ | 0.2+ | 2005 05 31 | 699 | 1.0+ | 0.4+ | 2006 10 03 | G96 | 0.5+ | 0.3− | | |
| 2001 05 22 | 704 | 0.1− | 0.8− | 2005 05 31 | 699 | 0.4− | 0.4− | 2006 10 03 | G96 | 0.0 | 0.3− | | |
| 2001 05 24 | 704 | 0.4− | 0.5+ | 2005 05 31 | 699 | 0.8+ | 0.4− | 2006 10 03 | G96 | 0.5+ | 0.4− | | |
| 2001 05 24 | 704 | 0.1+ | 0.9+ | 2005 06 07 | 699 | 0.4− | 0.1− | | | | | | |

**(139246)∗ 2001 HQ$_{32}$**

Discovered 2001 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 123.12889 | | (2000.0) | | | |
| $n$ | 0.26595849 | $\omega$ | 226.77999 | | −0.15711606 | +0.98469887 |
| $a$ | 2.3947498 | $\Omega$ | 34.39402 | | −0.86299977 | −0.09978406 |
| $e$ | 0.0811989 | $i$ | 7.66902 | | −0.48015199 | −0.14286806 |
| $P$ | 3.71 | $H$ | 16.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 691 | 0.1− | 0.6+ | 2002 10 01 | 699 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | | |
| 2001 02 21 | 691 | 0.1+ | 0.4+ | 2002 10 11 | 704 | 0.9+ | 0.5+ | 2006 10 20 | 695 | 0.1− | 0.0 | | |
| 2001 02 21 | 691 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.7+ | 0.9+ | 2006 10 20 | 691 | 0.5− | 0.0 | | |
| 2001 03 29 | 608 | 0.9+ | 0.5− | 2002 10 11 | 704 | (3.6+ | 0.7+) | 2006 10 20 | 695 | 0.1− | 0.1− | | |
| 2001 03 29 | 608 | 0.3+ | 0.3− | 2002 10 11 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 691 | 0.5− | 0.1+ | | |
| 2001 03 29 | 608 | 0.4+ | 0.2− | 2002 10 11 | 704 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.3− | 0.3+ | | |
| 2001 04 18 | 608 | 0.2+ | 0.3− | 2003 12 28 | 704 | 0.3− | 1.2− | 2006 10 28 | 691 | 0.3− | 0.1+ | | |
| 2001 04 18 | 608 | 0.3− | 0.2+ | 2003 12 28 | 704 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1− | 0.4+ | | |
| 2001 04 18 | 608 | 0.6+ | 0.1+ | 2003 12 28 | 704 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2001 04 23 | 704 | 1.0+ | 0.7+ | 2006 09 25 | G96 | 0.6− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2001 04 23 | 704 | 0.0 | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2001 04 23 | 704 | (1.3+ | 1.5+) | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 2001 04 23 | 704 | 1.0+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2001 04 27 | 608 | 0.8− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.3+ | | |
| 2001 04 27 | 608 | 0.8− | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.3− | | |
| 2001 04 27 | 608 | 1.3− | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2001 04 30 | 704 | 0.9+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2001 04 30 | 704 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2− | | |
| 2001 04 30 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 1.4+ | 0.0 | 2006 11 17 | 703 | 0.0 | 1.2+ | | |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2006 10 16 | 291 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.5− | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 10 16 | 291 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.4− | | |
| 2002 10 01 | 699 | 0.7− | 0.5+ | 2006 10 16 | 291 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.3− | 0.6+ | | |
| 2002 10 01 | 699 | 0.9− | 0.5+ | 2006 10 20 | 695 | 0.1− | 0.1− | | | | | | |
| 2002 10 01 | 699 | 1.2+ | 0.6+ | 2006 10 20 | 695 | 0.0 | 0.1+ | | | | | | |

**(139247)∗ 2001 HU$_{32}$ = 2002 TG$_{132}$**

Discovered 2001 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37613)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 112.05279 | | (2000.0) | | | |
| $n$ | 0.26290424 | $\omega$ | 60.50558 | | +0.05397612 | +0.99598017 |
| $a$ | 2.4132611 | $\Omega$ | 212.82499 | | −0.95572955 | +0.03079167 |
| $e$ | 0.0773435 | $i$ | 7.57782 | | −0.28925353 | +0.08411528 |
| $P$ | 3.75 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 704 | 0.7+ | 1.3+ | 2002 10 04 | 704 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.2− | | |
| 2001 04 23 | 704 | 0.1+ | 0.1+ | 2002 10 05 | 704 | 0.6+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2001 04 23 | 704 | (0.3+ | 1.6+) | 2002 10 05 | 704 | 0.8+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2001 04 23 | 704 | 0.1+ | 1.2+ | 2002 10 05 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2001 04 24 | 608 | 0.3+ | 0.7+ | 2002 10 05 | 704 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 04 24 | 608 | 0.4− | 0.7+ | 2002 10 05 | 704 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.2+ | | |
| 2001 04 24 | 608 | 0.1+ | 0.4+ | 2002 10 07 | 699 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2001 04 30 | 704 | 0.5+ | 0.9+ | 2002 10 07 | 699 | 0.8− | 1.3+ | 2006 11 10 | 644 | 0.3+ | 0.0 | | |
| 2001 04 30 | 704 | 0.0 | 0.3+ | 2002 10 07 | 699 | 0.1− | 1.3+ | 2006 11 10 | 644 | 0.3+ | 0.2− | | |
| 2001 04 30 | 704 | 0.6− | 0.2+ | 2002 10 07 | 699 | 0.5+ | 0.8+ | 2006 11 10 | 644 | 0.1+ | 0.1− | | |
| 2001 04 30 | 704 | 0.3− | 0.9− | 2002 10 12 | 704 | 0.5+ | 1.4+ | 2006 11 11 | 703 | 0.6− | 0.3− | | |
| 2001 05 04 | 644 | 0.4+ | 1.1+ | 2002 10 12 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 1.1− | 0.8+ | | |
| 2001 05 04 | 644 | 0.1+ | 1.1+ | 2002 10 12 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 2001 05 04 | 644 | 0.1+ | 0.8+ | 2002 10 12 | 704 | 1.0− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.2+ | | |
| 2001 05 15 | 699 | 0.8− | 0.8+ | 2002 10 12 | 704 | 1.0− | 0.7− | 2006 11 13 | 644 | 0.1+ | 0.4+ | | |
| 2001 05 15 | 699 | 1.0− | 0.6+ | 2004 01 18 | 644 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.0 | | |
| 2001 05 15 | 699 | 0.3+ | 0.7+ | 2004 01 18 | 644 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.3+ | | |
| 2001 05 15 | 699 | 1.1+ | 0.4− | 2004 01 18 | 644 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2001 06 11 | 644 | 0.1+ | 1.0− | 2004 02 09 | 644 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1+ | | |
| 2001 06 11 | 644 | 0.1+ | 1.0− | 2004 02 09 | 644 | 0.6+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.2+ | | |
| 2001 06 11 | 644 | 0.3+ | 1.2− | 2004 02 09 | 644 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.3+ | 0.1− | | |
| 2002 10 04 | 704 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.4− | | |
| 2002 10 04 | 704 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.7− | 0.3+ | | |
| 2002 10 04 | 704 | 0.9− | 0.9− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.3− | | |
| 2002 10 04 | 644 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 1.0+ | 1.1+ | | |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.9− | | |
| 2002 10 04 | 644 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.3+ | | |
| 2002 10 04 | 644 | 0.0 | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.4+ | 2006 11 18 | 704 | (0.0 | 1.6+) | | |

**(139248)∗ 2001 HA$_{33}$ = 2005 EB$_{35}$**

Discovered 2001 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74971)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.62205 | | (2000.0) | | | |
| $n$ | 0.23523628 | $\omega$ | 346.26929 | | −0.86855079 | +0.49226747 |
| $a$ | 2.5989615 | $\Omega$ | 223.37409 | | −0.44645170 | −0.82742182 |
| $e$ | 0.1347073 | $i$ | 4.79261 | | −0.21517527 | −0.27027000 |
| $P$ | 4.19 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 18 | 704 | 1.1+ | 0.1+ | 2005 03 03 | 691 | 0.1+ | 0.5+ | 2005 04 09 | 704 | 0.1− | 1.2− | | |
| 2001 04 18 | 704 | 0.3− | 0.3− | 2005 03 07 | 704 | 0.2+ | 0.0 | 2005 04 09 | 704 | 1.3+ | 0.2+ | | |
| 2001 04 18 | 704 | 0.4− | 0.4− | 2005 03 07 | 704 | 0.4− | 0.3+ | 2005 04 13 | 699 | 0.3+ | 0.7+ | | |
| 2001 04 27 | 704 | 1.1+ | 0.1− | 2005 03 07 | 704 | 0.3+ | 0.1+ | 2005 04 13 | 699 | 0.7− | 0.4+ | | |
| 2001 04 27 | 704 | 0.5+ | 0.1− | 2005 03 07 | 704 | 0.2− | 0.3− | 2005 04 13 | 699 | 0.2− | 0.1− | | |
| 2001 04 27 | 704 | 0.4+ | 1.1+ | 2005 03 07 | 704 | 0.3− | 0.4+ | 2005 04 13 | 699 | 0.3− | 0.5+ | | |
| 2001 04 30 | 704 | 0.7+ | 1.3+ | 2005 03 09 | 699 | 1.2− | 0.2− | 2005 05 12 | G96 | 0.3− | 0.2− | | |
| 2001 04 30 | 704 | 0.1+ | 0.2+ | 2005 03 09 | 699 | 0.4+ | 0.2+ | 2005 05 12 | G96 | 0.7− | 0.2− | | |
| 2001 04 30 | 704 | 1.3+ | 0.4− | 2005 03 09 | 699 | 0.2+ | 0.2− | 2005 05 12 | G96 | 0.3− | 0.1+ | | |
| 2001 05 15 | 699 | 0.8− | 0.8+ | 2005 03 09 | 699 | 0.9+ | 0.0 | 2005 05 12 | G96 | 0.3− | 0.1− | | |
| 2001 05 15 | 699 | 0.3+ | 0.3+ | 2005 03 13 | 703 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.1− | 1.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 699 | 0.1− | 0.6+ | 2005 03 13 | 703 | 1.6− | 0.5− | 2006 08 29 | 703 | 1.9− | 0.3− | | |
| 2001 05 15 | 699 | 1.0− | 0.2− | 2005 03 13 | 703 | 1.7− | 0.4− | 2006 08 29 | 703 | 0.1+ | 1.2+ | | |
| 2001 05 30 | 691 | 0.2− | 0.1+ | 2005 03 13 | 703 | 0.7− | 1.1+ | 2006 08 29 | 703 | 1.7− | 0.3+ | | |
| 2001 05 30 | 691 | 0.1+ | 0.6+ | 2005 03 31 | 699 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.3+ | | |
| 2001 05 30 | 691 | 0.1− | 0.3+ | 2005 03 31 | 699 | 0.7+ | 0.5− | 2006 09 15 | 691 | 0.3− | 0.1+ | | |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2005 03 31 | 699 | 0.7− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.2− | | |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2005 03 31 | 699 | 0.4+ | 0.5− | 2006 09 18 | 691 | 0.3+ | 0.6+ | | |
| 2003 11 30 | 691 | 0.3+ | 0.3+ | 2005 04 02 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.6+ | | |
| 2003 12 27 | 691 | 0.6− | 0.7+ | 2005 04 02 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.5+ | 0.5+ | | |
| 2003 12 27 | 691 | 0.3− | 0.7+ | 2005 04 02 | 644 | 0.5+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.0 | | |
| 2003 12 27 | 691 | 0.0 | 0.5+ | 2005 04 09 | 704 | 0.3− | 0.6− | 2006 09 28 | G96 | 0.3− | 0.2+ | | |
| 2005 03 03 | 691 | 0.4+ | 0.2+ | 2005 04 09 | 704 | 1.9+ | 0.2− | 2006 09 28 | G96 | 0.4− | 0.1− | | |
| 2005 03 03 | 691 | 0.4+ | 0.3+ | 2005 04 09 | 704 | 0.6+ | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.0 | | |

**(139249)∗ 2001 HR$_{33}$**

Discovered 2001 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.08373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25599635 | $\omega$ | 132.87423 | | −0.90118464 | +0.43100670 | |
| $a$ | 2.4564817 | $\Omega$ | 72.70477 | | −0.41034746 | −0.81435845 | |
| $e$ | 0.0603471 | $i$ | 2.75067 | | −0.13957507 | −0.38865608 | |
| $P$ | 3.85 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 608 | 0.3+ | 0.2+ | 2003 12 27 | 704 | 0.5+ | 1.1+ | 2006 09 18 | 691 | 0.2− | 0.1+ | | |
| 2001 04 27 | 704 | 0.4+ | 1.4+ | 2003 12 27 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 0.5− | 0.4+ | | |
| 2001 04 27 | 704 | 0.2− | 0.6+ | 2005 05 04 | 644 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.6− | 1.1− | | |
| 2001 04 27 | 704 | 1.1+ | 0.5+ | 2005 05 04 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.3+ | | |
| 2001 04 30 | 704 | 0.5+ | 0.1+ | 2005 05 04 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.8+ | | |
| 2001 04 30 | 704 | 0.8+ | 0.8+ | 2005 05 27 | 599 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.9− | 0.7+ | | |
| 2001 04 30 | 704 | 0.9+ | 0.6+ | 2005 05 27 | 599 | 0.3− | 0.1+ | 2006 09 26 | 704 | 1.3− | 0.7+ | | |
| 2001 05 24 | 699 | 0.1+ | 1.0+ | 2005 05 27 | 599 | 0.3+ | 0.5+ | 2006 09 26 | 704 | (1.5+ | 0.8+) | | |
| 2001 05 24 | 699 | 0.0 | 0.4+ | 2005 05 27 | 599 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.2+ | | |
| 2001 05 24 | 699 | 0.2+ | 0.5+ | 2005 05 28 | 428 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.2+ | | |
| 2001 05 24 | 699 | 0.4+ | 0.8+ | 2005 05 28 | 428 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.0 | | |
| 2002 09 05 | 704 | 0.3+ | 0.3− | 2005 05 28 | 599 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.3− | | |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2005 05 28 | 599 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2− | | |
| 2002 09 05 | 704 | 0.1− | 0.2− | 2005 05 28 | 599 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− | | |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2005 05 29 | 428 | 1.0− | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.8+ | | |
| 2002 09 15 | 644 | 0.0 | 0.0 | 2005 05 29 | E12 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.9+ | | |
| 2002 09 15 | 644 | 0.1+ | 0.4+ | 2005 05 29 | E12 | 0.4− | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.7+ | | |
| 2002 09 17 | 608 | 1.3− | 0.2+ | 2005 05 29 | E12 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.6− | 0.4+ | | |
| 2002 09 17 | 608 | 1.3− | 0.3+ | 2005 05 29 | E12 | 0.2− | 0.2+ | 2006 10 21 | 703 | (1.4− | 1.7+) | | |
| 2002 09 17 | 608 | (2.0− | 0.9+) | 2005 06 13 | G96 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.6− | 1.1+ | | |
| 2003 12 18 | 704 | 0.1− | 0.3+ | 2005 06 13 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | (2.5− | 0.5−) | | |
| 2003 12 18 | 704 | 0.2− | 1.5+ | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2003 12 18 | 704 | 0.1+ | 0.9+ | 2005 06 13 | G96 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.6+ | 0.1+ | | |
| 2003 12 27 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.8+ | 0.3− | 2006 11 16 | G96 | 0.3− | 0.0 | | |
| 2003 12 27 | 704 | 0.8− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.1− | | |
| 2003 12 27 | 704 | 0.0 | 1.2+ | 2006 09 18 | 703 | 0.4− | 0.4− | | | | | | |

**(139250)∗ 2001 HJ$_{36}$**

Discovered 2001 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.44251 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26801903 | $\omega$ | 161.36146 | | −0.35625090 | +0.93339360 | |
| $a$ | 2.3824601 | $\Omega$ | 87.75015 | | −0.86268233 | −0.31081985 | |
| $e$ | 0.1438657 | $i$ | 2.47483 | | −0.35897699 | −0.17935277 | |
| $P$ | 3.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 29 | 704 | 0.1+ | 0.8+ | 2001 05 29 | 691 | 0.1+ | 0.1+ | 2005 07 30 | E12 | 0.6+ | 0.6+ | | |
| 2001 04 29 | 704 | (1.5− | 0.2+) | 2001 05 29 | 691 | 0.0 | 0.0 | 2005 07 30 | E12 | 0.0 | 0.9+ | | |
| 2001 04 29 | 704 | 0.4− | 0.4+ | 2004 01 17 | 644 | 0.6+ | 0.1+ | 2005 07 30 | E12 | 0.4+ | 0.8+ | | |
| 2001 04 29 | 704 | 0.9− | 0.2+ | 2004 01 17 | 644 | 0.6+ | 0.1+ | 2005 08 01 | E12 | 0.3− | 0.9+ | | |
| 2001 04 29 | 704 | (1.6− | 0.3+) | 2004 01 17 | 644 | 1.0+ | 0.3− | 2005 08 01 | E12 | 0.0 | 0.8+ | | |
| 2001 04 30 | 704 | 1.0− | 0.0 | 2004 01 19 | 691 | 0.2− | 0.1+ | 2005 08 01 | E12 | 0.1− | 0.7+ | | |
| 2001 04 30 | 704 | 0.5− | 0.3+ | 2004 01 19 | 691 | 0.2− | 0.2+ | 2005 08 01 | E12 | 0.3− | 0.5+ | | |
| 2001 04 30 | 704 | 0.1− | 0.1− | 2004 01 19 | 691 | 0.3− | 0.2+ | 2005 08 06 | 704 | 0.2− | 0.2+ | | |
| 2001 05 18 | 704 | 0.6− | 0.7+ | 2004 01 22 | 704 | 0.3+ | 0.1− | 2005 08 06 | 704 | 0.8− | 0.5+ | | |
| 2001 05 18 | 704 | 1.3+ | 0.1− | 2004 01 22 | 704 | 0.2+ | 0.8+ | 2005 08 06 | 704 | 0.2+ | 1.1+ | | |
| 2001 05 18 | 704 | 1.0+ | 0.7+ | 2004 01 22 | 704 | 0.1+ | 0.8+ | 2005 08 06 | 704 | 0.5− | 0.8− | | |
| 2001 05 18 | 704 | 0.5+ | 0.4+ | 2004 01 22 | 704 | 0.8+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3+ | | |
| 2001 05 18 | 608 | 0.1+ | 0.3+ | 2004 01 24 | 704 | 0.7− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.1+ | | |
| 2001 05 18 | 608 | 0.0 | 0.3+ | 2004 01 24 | 704 | 0.5+ | 0.8+ | 2006 10 31 | G96 | 0.5− | 0.0 | | |
| 2001 05 18 | 608 | 0.0 | 0.2+ | 2004 01 24 | 704 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.2+ | | |
| 2001 05 21 | 704 | 0.1− | 0.8+ | 2004 01 24 | 704 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.2+ | | |
| 2001 05 21 | 704 | 0.2− | 0.5+ | 2004 01 24 | 704 | 0.0 | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2001 05 21 | 704 | 0.4+ | 0.7+ | 2004 01 30 | 704 | 0.9+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 2001 05 21 | 704 | 0.6+ | 0.5+ | 2004 01 30 | 704 | 0.5+ | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.4+ | | |
| 2001 05 21 | 704 | 0.6− | 0.0 | 2004 01 30 | 704 | 0.3− | 0.5− | 2006 11 15 | 691 | 0.2− | 0.2+ | | |
| 2001 05 22 | 704 | 0.1− | 1.3+ | 2004 01 30 | 704 | 0.6+ | 0.7− | 2006 11 15 | 691 | 0.2− | 0.2+ | | |
| 2001 05 22 | 704 | 1.1− | 0.9+ | 2004 02 01 | A16 | (1.5− | 4.4−) | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2001 05 22 | 704 | 0.3+ | 0.8+ | 2004 02 12 | 691 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.3+ | | |
| 2001 05 22 | 704 | 0.8+ | 1.4+ | 2004 02 12 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.3+ | | |
| 2001 05 22 | 704 | 1.3+ | 0.9− | 2004 02 12 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.0 | 0.5+ | | |
| 2001 05 22 | 704 | 0.5− | 1.5+ | 2004 02 14 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.4− | 0.5+ | | |
| 2001 05 22 | 704 | 0.4+ | 0.0 | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2− | | |
| 2001 05 24 | 704 | 1.3+ | 0.0 | 2004 02 14 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2001 05 24 | 704 | 1.0+ | 0.3− | 2005 07 02 | 691 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.3+ | | |
| 2001 05 24 | 704 | 1.4− | 0.1− | 2005 07 02 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.4+ | | |
| 2001 05 24 | 704 | 0.9+ | 0.1− | 2005 07 02 | 691 | 0.3− | 0.0 | | | | | | |
| 2001 05 29 | 691 | 0.1+ | 0.0 | 2005 07 30 | E12 | 0.3+ | 0.5+ | | | | | | |

**(139251)∗ 2001 HU$_{38}$ = 2000 AM$_{21}$ = 2002 RG$_{50}$**

Discovered 2001 Apr. 26 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 35069)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.33669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29161707 | $\omega$ | 341.87776 | | +0.91471535 | −0.40336889 | |
| $a$ | 2.2521333 | $\Omega$ | 41.93744 | | +0.37510284 | +0.82520012 | |
| $e$ | 0.1935759 | $i$ | 2.08174 | | +0.15031198 | +0.39539638 | |
| $P$ | 3.38 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.2− | 0.8+ | 2002 09 06 | 704 | 0.2+ | 0.1+ | 2002 10 07 | 704 | 0.3+ | 0.7+ | | |
| 2000 01 03 | 704 | 0.6+ | 0.4+ | 2002 09 06 | 704 | 0.4+ | 0.0 | 2002 10 07 | 704 | 0.1+ | 0.3+ | | |
| 2000 01 03 | 704 | 1.1+ | 0.3− | 2002 09 06 | 704 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.2− | 0.5+ | | |
| 2000 01 04 | 704 | 0.4− | 0.1+ | 2002 09 08 | 608 | 0.2− | 0.5+ | 2002 10 11 | 704 | 0.4− | 0.4+ | | |
| 2000 01 04 | 704 | 1.5− | 0.4+ | 2002 09 08 | 608 | (0.6− | 1.7+) | 2002 10 11 | 704 | 0.3− | 0.1− | | |
| 2000 01 04 | 704 | 0.5+ | 0.4− | 2002 09 08 | 608 | 0.4− | 0.7+ | 2002 10 11 | 704 | 0.4− | 0.0 | | |
| 2001 04 26 | 691 | 0.2+ | 0.1+ | 2002 09 29 | 608 | 0.0 | 0.3+ | 2002 10 11 | 704 | 0.6− | 0.5− | | |
| 2001 04 26 | 691 | 0.2+ | 0.0 | 2002 09 29 | 608 | 0.1− | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.2+ | | |
| 2001 04 26 | 691 | 0.1+ | 0.1+ | 2002 09 29 | 608 | 0.1− | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.0 | | |
| 2001 05 01 | 691 | 0.3− | 0.2+ | 2002 10 02 | 704 | 0.3+ | 0.4+ | 2004 03 23 | 691 | 0.3+ | 0.2+ | | |
| 2001 05 01 | 691 | 0.0 | 0.0 | 2002 10 02 | 704 | 0.2− | 0.4+ | 2004 04 21 | 691 | 0.0 | 0.4+ | | |
| 2001 05 01 | 691 | 0.1− | 0.2+ | 2002 10 02 | 704 | 0.5− | 0.4+ | 2004 04 21 | 691 | 0.4+ | 0.3+ | | |
| 2001 05 29 | 695 | 0.9+ | 0.7+ | 2002 10 02 | 704 | 0.3− | 0.2− | 2004 04 21 | 691 | 0.4− | 0.4+ | | |
| 2001 05 29 | 695 | 0.3+ | 0.1+ | 2002 10 03 | 704 | 0.0 | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.3− | | |
| 2002 09 05 | 704 | 0.4− | 0.2− | 2002 10 03 | 704 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.4+ | 0.1− | | |
| 2002 09 05 | 704 | 0.2+ | 0.7− | 2002 10 03 | 704 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 2002 09 05 | 704 | 0.4+ | 0.6− | 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | 0.2+ | 0.2− | 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2002 09 05 | 704 | 0.0 | 0.3− | 2002 10 07 | 704 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.3− | 0.1+ | 2002 10 07 | 704 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.2+ | | |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2002 10 07 | 704 | 0.5+ | 0.5+ | 2006 11 24 | G96 | 0.5+ | 0.6+ | | |

**(139252)∗ 2001 HY$_{38}$**

Discovered 2001 Apr. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.12130 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27284199 | $\omega$ | 303.31853 | | −0.90789706 | −0.41475847 | |
| $a$ | 2.3543006 | $\Omega$ | 212.29740 | | +0.41240444 | −0.85774155 | |
| $e$ | 0.0615687 | $i$ | 6.53538 | | +0.07513651 | −0.30373482 | |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.1+ | 0.2− | 2003 12 22 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 1995 10 28 | 691 | 0.0 | 0.3+ | 2004 02 17 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 1995 10 28 | 691 | 0.1− | 0.2− | 2004 02 17 | 704 | 0.9− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 04 23 | 704 | 0.4− | 1.0+ | 2004 02 17 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 04 23 | 704 | 0.2− | 0.5+ | 2004 02 17 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2001 04 23 | 704 | 0.5+ | 0.5+ | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2001 04 23 | 704 | 0.3+ | 0.1− | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2001 04 23 | 704 | 0.0 | 0.8+ | 2004 04 14 | 645 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 04 26 | 691 | 0.1− | 0.6+ | 2004 04 14 | 645 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.3− |
| 2001 04 26 | 691 | 0.0 | 0.5+ | 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2001 04 26 | 691 | 0.0 | 0.6+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2001 05 01 | 691 | 0.0 | 0.8+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2001 05 01 | 691 | 0.0 | 0.6+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2001 05 01 | 691 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.8− |
| 2001 05 18 | 691 | 0.4+ | 0.5− | 2006 10 16 | 691 | 0.4− | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 05 18 | 691 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2001 05 18 | 691 | 0.1+ | 0.7− | 2006 10 20 | 683 | (2.7+ | 0.8−) | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2003 12 22 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 683 | 1.4+ | 0.5+ | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2003 12 22 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.6+ | 2006 11 21 | 691 | 0.3+ | 0.2+ |

**(139253)∗ 2001 HR$_{39}$ = 2002 TA$_{209}$**

Discovered 2001 Apr. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37615)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.02839 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26116464 | $\omega$ | 305.17391 | | +0.98566659 | +0.14647301 | |
| $a$ | 2.4239656 | $\Omega$ | 46.56498 | | −0.09090903 | +0.87912473 | |
| $e$ | 0.1250936 | $i$ | 6.61953 | | −0.14211587 | +0.45352549 | |
| $P$ | 3.77 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 691 | 0.2+ | 0.2− | 2004 02 10 | 644 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2001 04 16 | 691 | 0.1+ | 0.4− | 2004 02 10 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.6+ |
| 2001 04 16 | 691 | 0.0 | 0.1− | 2004 02 10 | 644 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.5− |
| 2001 04 26 | I03 | 0.4+ | 0.2+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2001 04 26 | I03 | 0.7+ | 0.1+ | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2001 04 26 | I03 | 0.2+ | 0.3+ | 2004 02 11 | 644 | 0.7+ | 0.3+ | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2001 04 26 | 691 | 0.7+ | 1.0+ | 2004 02 13 | 691 | 0.2− | 0.3− | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2001 04 26 | 691 | 0.5+ | 0.8+ | 2004 02 13 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2001 04 26 | 691 | 0.4+ | 1.0+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.6− |
| 2001 05 01 | 691 | 0.2+ | 0.8+ | 2004 02 15 | 704 | 0.6− | 0.5+ | 2006 11 12 | G96 | 0.3− | 0.5− |
| 2001 05 01 | 691 | 0.1+ | 0.7+ | 2004 02 15 | 704 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2001 05 01 | 691 | 0.8− | 0.2+ | 2004 02 15 | 704 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 05 25 | 691 | 0.2+ | 0.4+ | 2004 02 15 | 704 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2001 05 25 | 691 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.5− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2001 05 25 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2002 09 09 | 599 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 09 09 | 599 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2002 09 09 | 599 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2002 09 09 | 608 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 1.0+ |
| 2002 09 09 | 608 | 0.7− | 1.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.2− | 0.3− |
| 2002 09 09 | 608 | 0.5− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.9− | 0.2+ |
| 2002 09 14 | 608 | 0.7− | 0.8− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.3− | 0.1+ |
| 2002 09 14 | 608 | 0.6− | 0.5− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2002 09 14 | 608 | 0.7− | 0.8− | 2006 10 22 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2002 10 06 | 704 | 0.4− | 1.0+ | 2006 10 22 | 644 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.9− | 0.3+ |
| 2002 10 06 | 704 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2002 10 06 | 704 | 0.5+ | 1.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2002 10 06 | 704 | 0.4+ | 0.9+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.9+ | 0.6+ |
| 2002 10 06 | 704 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.0 | 1.1+ |
| 2002 10 08 | 699 | (0.4+ | 1.8+) | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2002 10 08 | 699 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3− | 1.0+ |
| 2002 10 08 | 699 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2002 10 08 | 699 | 0.2+ | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.6− | 0.7+ |
| 2002 10 11 | 704 | 0.3− | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.3+ |
| 2002 10 11 | 704 | 0.0 | 1.2+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.2+ | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 27 | 703 | 1.4− | 0.9+ |
| 2002 10 11 | 704 | 0.0 | 1.0+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.5+ | 0.3+ |
| 2002 10 11 | 704 | 0.6+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 1.4− | 0.6+ |
| 2004 01 18 | 644 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2004 01 18 | 644 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.8− | 1.3− |
| 2004 01 18 | 644 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.4+ |
| 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2004 01 30 | 704 | 0.6+ | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.1+ | 2006 11 29 | 704 | 1.1− | 0.5+ |
| 2004 01 30 | 704 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.4+ | 0.4+ | | | | |

**(139254)∗ 2001 HG$_{40}$ = 2002 RJ$_{154}$**

Discovered 2001 Apr. 30 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 37615)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.45339 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24593155 | $\omega$ | 29.65154 | | −0.08268680 | +0.99509202 | |
| $a$ | 2.5230540 | $\Omega$ | 235.65639 | | −0.92680739 | −0.09683304 | |
| $e$ | 0.0243318 | $i$ | 3.77478 | | −0.36632083 | +0.02037721 | |
| $P$ | 4.01 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 699 | 0.5+ | 1.0− | 2002 09 28 | 185 | 0.5+ | 0.2− | 2006 08 28 | 699 | 0.1+ | 0.5− |
| 2001 04 16 | 699 | 0.8+ | 0.0 | 2002 09 28 | 185 | 1.4+ | 1.7− | 2006 08 28 | 699 | 0.9− | 1.6− |
| 2001 04 16 | 699 | 0.3+ | 0.3− | 2003 12 23 | 704 | 0.8+ | 0.4+ | 2006 08 28 | 699 | 0.8− | 1.3+ |
| 2001 04 16 | 699 | 1.0+ | 0.4+ | 2003 12 23 | 704 | 0.5− | 0.7+ | 2006 08 29 | 703 | 0.5− | 0.0 |
| 2001 04 27 | 608 | 1.2− | 0.1− | 2003 12 23 | 704 | 0.4+ | 0.5+ | 2006 08 29 | 703 | 0.1− | 1.0− |
| 2001 04 27 | 608 | 1.9− | 0.1− | 2003 12 23 | 704 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.8− | 0.8− |
| 2001 04 27 | 608 | 1.6− | 0.2+ | 2003 12 23 | 704 | 0.4− | 0.5+ | 2006 08 29 | 703 | 0.8+ | 0.3− |
| 2001 04 30 | 691 | 0.0 | 0.7+ | 2005 04 14 | 703 | (2.0− | 0.8−) | 2006 08 29 | 703 | 0.4− | 0.2− |
| 2001 04 30 | 691 | 0.1+ | 0.2+ | 2005 04 14 | 703 | 0.3− | 1.4− | 2006 08 29 | 703 | 0.5− | 0.5+ |
| 2001 04 30 | 691 | 0.2+ | 0.6+ | 2005 04 14 | 703 | 0.6− | 1.3− | 2006 08 29 | 703 | 0.6− | 0.0 |
| 2001 05 01 | 691 | 0.1+ | 0.0 | 2005 04 14 | 703 | 0.7− | 0.4− | 2006 08 29 | 703 | 1.1− | 0.5− |
| 2001 05 01 | 691 | 0.6− | 0.0 | 2005 04 17 | 691 | 0.4+ | 0.2+ | 2006 09 11 | 703 | 0.4+ | 0.4+ |
| 2001 05 01 | 691 | 0.1+ | 0.3+ | 2005 04 17 | 691 | 0.3+ | 0.0 | 2006 09 11 | 703 | 0.2+ | 0.1+ |
| 2002 09 05 | 699 | 0.2+ | 1.0+ | 2005 04 17 | 691 | 0.4+ | 0.0 | 2006 09 11 | 703 | 0.3+ | 0.5+ |
| 2002 09 05 | 699 | (0.8+ | 2.3+) | 2005 05 06 | 703 | 0.1+ | 1.9− | 2006 09 11 | 703 | 0.3+ | 0.2+ |
| 2002 09 05 | 699 | 0.0 | 0.9+ | 2005 05 06 | 703 | (1.8− | 2.5−) | 2006 09 13 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 699 | 0.3− | 0.7+ | 2005 05 06 | 703 | 1.2− | 0.4− | 2006 09 13 | 644 | 0.2+ | 0.3+ |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2005 05 06 | 703 | 0.5− | 0.7− | 2006 09 13 | 644 | 0.3+ | 0.3+ |
| 2002 09 13 | 644 | 0.4+ | 0.3+ | 2005 05 09 | 699 | 0.2+ | 1.3+ | 2006 09 17 | 703 | 0.4− | 0.3+ |
| 2002 09 13 | 644 | 0.3+ | 0.1− | 2005 05 09 | 699 | 0.7+ | 1.0+ | 2006 09 17 | 703 | 1.4+ | 0.6− |
| 2002 09 14 | 185 | 0.4+ | 0.5+ | 2005 05 09 | 699 | 1.2+ | 0.2− | 2006 09 17 | 703 | 0.2− | 0.9− |
| 2002 09 14 | 185 | 0.2+ | 0.3+ | 2005 05 09 | 699 | (2.5+ | 0.0 ) | 2006 09 17 | 703 | 0.6− | 0.1+ |
| 2002 09 14 | 185 | 0.3+ | 0.2+ | 2006 08 19 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.2− |
| 2002 09 14 | 185 | 0.3− | 0.0 | 2006 08 19 | 644 | 0.1− | 0.2− | 2006 09 20 | 699 | 0.3− | 0.7+ |
| 2002 09 14 | 185 | 0.1+ | 0.9+ | 2006 08 19 | 644 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.6− | 0.4+ |
| 2002 09 28 | 185 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.2+ |

**(139255)∗ 2001 HP$_{44}$ = 1999 TV$_{227}$**

Discovered 2001 Apr. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 13354)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.72422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28389836 | $\omega$ | 130.49201 | | −0.92365120 | −0.38134976 | |
| $a$ | 2.2927716 | $\Omega$ | 27.15430 | | +0.32162862 | −0.82521758 | |
| $e$ | 0.1215878 | $i$ | 4.77085 | | +0.20838305 | −0.41663930 | |
| $P$ | 3.47 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 691 | 0.1− | 0.5+ | 2003 12 27 | 704 | 0.6+ | 0.7− | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 1999 10 01 | 691 | 0.1+ | 0.4+ | 2003 12 27 | 704 | 0.4+ | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 1999 10 01 | 691 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 1.1− | 0.8+ | 2006 10 16 | 691 | 0.3− | 0.1+ |
| 1999 10 07 | 691 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 1.1− | 1.3+ | 2006 10 16 | 691 | 0.3− | 0.1+ |
| 1999 10 07 | 691 | 0.3− | 0.3+ | 2003 12 27 | 704 | 0.9− | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.3− |
| 1999 10 07 | 691 | 0.5− | 0.2+ | 2004 01 13 | 699 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3− |
| 2001 03 24 | 699 | 0.9+ | 0.2+ | 2004 01 13 | 699 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 03 24 | 699 | (2.5+ | 0.2−) | 2004 01 13 | 699 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2001 03 24 | 699 | 0.7+ | 0.0 | 2004 01 13 | 699 | 0.6+ | 0.9+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2001 03 24 | 699 | 0.1− | 0.0 | 2004 01 16 | 703 | 0.7− | 0.6− | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2001 04 16 | 699 | 0.6+ | 0.7+ | 2004 01 16 | 703 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.4+ | 0.1+ |
| 2001 04 16 | 699 | 0.4+ | 0.5+ | 2004 01 16 | 703 | 0.6− | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.0 |
| 2001 04 16 | 699 | 0.2+ | 0.4+ | 2004 01 16 | 703 | 0.4− | 0.3− | 2006 11 11 | 703 | 1.2− | 0.3− |
| 2001 04 16 | 699 | 0.4+ | 0.5− | 2004 01 31 | 704 | 0.2− | 1.0+ | 2006 11 11 | 703 | 0.2+ | 1.3+ |
| 2001 04 18 | 704 | (2.4+ | 1.0−) | 2004 01 31 | 704 | 1.2+ | 1.0+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2001 04 18 | 704 | 1.5+ | 1.1+ | 2004 01 31 | 704 | 0.4− | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.4− |
| 2001 04 18 | 704 | 0.9+ | 0.9+ | 2004 01 31 | 704 | 0.9− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2001 04 18 | 704 | (2.4+ | 0.8+) | 2004 02 11 | 699 | 0.6+ | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2001 05 18 | 699 | 0.0 | 0.8+ | 2004 02 11 | 699 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2001 05 18 | 699 | 1.0+ | 0.4+ | 2004 02 11 | 699 | 0.4− | 0.7− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 05 18 | 699 | 1.4+ | 0.2+ | 2004 02 11 | 699 | 0.7− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 05 18 | 699 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2001 05 26 | 291 | 0.5− | 0.0 | 2006 09 27 | G96 | 0.5+ | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2001 05 26 | 291 | 1.0− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 05 26 | 291 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2003 12 21 | 645 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2003 12 21 | 645 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.1− | | | | |

**(139256)∗ 2001 HE$_{46}$ = 2005 EG$_{266}$**

Discovered 2001 Apr. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 74975)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.85953 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24251319 | $\omega$ | 77.47391 | | −0.00093505 | +0.99781260 | |
| $a$ | 2.5467079 | $\Omega$ | 193.02678 | | −0.99295525 | −0.00875832 | |
| $e$ | 0.1913240 | $i$ | 17.05238 | | −0.11848630 | +0.06552335 | |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.3+ | 0.1+ | 2005 04 04 | 704 | 0.1− | 0.7+ | 2005 05 06 | 704 | 1.0+ | 1.2+ |
| 1993 04 17 | 691 | 0.1+ | 0.3− | 2005 04 07 | 704 | (1.7+ | 2.9−) | 2005 05 06 | 704 | 0.4+ | 1.4+ |
| 1993 04 17 | 691 | 0.1− | 0.5− | 2005 04 07 | 704 | 0.9+ | 0.9− | 2005 05 15 | 644 | 0.1+ | 0.1+ |
| 2001 03 20 | 691 | 0.3− | 0.4+ | 2005 04 07 | 704 | 0.5+ | 1.2− | 2005 05 15 | 644 | 0.1− | 0.3+ |
| 2001 03 20 | 691 | 0.3− | 0.3+ | 2005 04 07 | 704 | (0.5+ | 2.1−) | 2005 05 15 | 644 | 0.4+ | 0.2+ |
| 2001 03 20 | 691 | 0.1− | 0.2+ | 2005 04 09 | 704 | 0.1+ | 0.3− | 2006 09 17 | 703 | (1.8+ | 0.8−) |
| 2001 04 16 | 704 | 0.6+ | 0.8+ | 2005 04 09 | 704 | 0.8+ | 0.5+ | 2006 09 17 | 703 | 0.2− | 0.4− |
| 2001 04 16 | 704 | 0.5− | 0.6− | 2005 04 09 | 704 | 1.2+ | 0.2− | 2006 09 17 | 691 | 0.3− | 0.4+ |
| 2001 04 16 | 704 | 0.3+ | 1.0+ | 2005 04 09 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 703 | (1.4+ | 2.0−) |
| 2001 04 16 | 704 | 0.1− | 0.2− | 2005 04 09 | 704 | 1.4+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.4+ |
| 2001 04 16 | 704 | 0.1− | 0.4+ | 2005 04 11 | G96 | 0.8+ | 0.5− | 2006 09 17 | 703 | 1.2− | 1.1− |
| 2001 04 17 | 699 | 0.3− | 0.3− | 2005 04 11 | G96 | 0.6− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.4+ |
| 2001 04 17 | 699 | 0.1− | 1.0+ | 2005 04 11 | G96 | 0.5− | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.9+ |
| 2001 04 17 | 699 | 0.3− | 0.6+ | 2005 04 11 | G96 | 0.5− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.3+ |
| 2001 04 17 | 699 | 0.5− | 0.3− | 2005 04 12 | 691 | 0.5− | 0.1− | 2006 09 18 | 699 | 0.7+ | 0.0 |
| 2001 04 18 | 608 | 0.1− | 0.8− | 2005 04 12 | 691 | 0.5− | 0.1− | 2006 09 18 | 699 | 0.5− | 0.2+ |
| 2001 04 18 | 608 | 0.5− | 0.6− | 2005 04 12 | 691 | 0.7− | 0.1+ | 2006 09 20 | 704 | (1.8+ | 0.8+) |
| 2001 04 18 | 608 | 0.3+ | 1.0− | 2005 04 12 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 1.1+ | 0.6+ |
| 2001 05 23 | 699 | 0.9− | 0.1− | 2005 04 12 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.9+ |
| 2001 05 23 | 699 | 0.3+ | 0.0 | 2005 04 12 | 704 | 0.1+ | 0.7− | 2006 09 26 | 691 | (0.5− | 1.6+) |
| 2001 05 23 | 699 | 0.5+ | 0.7+ | 2005 04 12 | 704 | 1.2+ | 0.6− | 2006 09 26 | 691 | 0.3+ | 0.7− |
| 2001 05 23 | 699 | 0.2+ | 0.6− | 2005 04 12 | 704 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2005 03 13 | 691 | 0.1+ | 0.1+ | 2005 04 15 | 699 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.0 | 0.9− |
| 2005 03 13 | 691 | 0.1+ | 0.1+ | 2005 04 15 | 699 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.7+ |
| 2005 03 13 | 691 | 0.1− | 0.3+ | 2005 04 15 | 699 | 0.8− | 0.7+ | 2006 10 17 | 703 | 0.5+ | 0.5− |
| 2005 03 17 | 691 | 0.1− | 0.1+ | 2005 04 15 | 699 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.9+ | 0.4+ |
| 2005 03 17 | 691 | 0.2− | 0.1+ | 2005 04 19 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.4− | 0.1+ |
| 2005 03 17 | 691 | 0.1− | 0.0 | 2005 04 19 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2005 04 04 | 704 | 0.8+ | 1.4− | 2005 04 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2005 04 04 | 704 | 1.1+ | 0.3− | 2005 05 06 | 704 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2005 04 04 | 704 | 0.6+ | 0.2+ | 2005 05 06 | 704 | 0.5+ | 0.3+ | | | | |

**(139257)∗ 2001 HV$_{46}$**

Discovered 2001 Apr. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.16219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26077674 | $\omega$ | 195.57315 | | −0.58110795 | +0.80819727 | |
| $a$ | 2.4263688 | $\Omega$ | 39.03603 | | −0.72953309 | −0.46527772 | |
| $e$ | 0.1439158 | $i$ | 8.72664 | | −0.36068687 | −0.36101775 | |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.1+ | 0.4− | 2001 05 27 | 608 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.4+ |
| 1997 03 02 | 691 | 0.1+ | 0.4− | 2001 05 27 | 608 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.6+ |
| 1997 03 02 | 691 | 0.3+ | 0.0 | 2001 05 27 | 608 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2001 04 01 | 704 | 0.2− | 0.4+ | 2001 06 16 | 704 | 0.7− | 1.2+ | 2006 10 20 | 691 | 0.5− | 0.4+ |
| 2001 04 01 | 704 | (0.9+ | 1.9+) | 2001 06 16 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2001 04 01 | 704 | 0.2− | 0.9+ | 2001 06 16 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2001 04 01 | 704 | 0.7+ | 1.3+ | 2001 06 16 | 704 | 0.9− | 0.5− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2001 04 16 | 608 | 0.2− | 0.3+ | 2002 10 10 | 645 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2001 04 16 | 608 | 0.2− | 0.4+ | 2002 10 10 | 645 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 04 16 | 608 | 0.2+ | 0.6− | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 04 18 | 704 | 0.1− | 0.2+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.0 | 0.5− |
| 2001 04 18 | 704 | 0.3− | 0.5− | 2003 12 18 | 691 | 0.3− | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 2001 04 18 | 704 | 0.8+ | 1.3+ | 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.4− |
| 2001 04 18 | 704 | 0.7+ | 0.5+ | 2003 12 18 | 691 | 0.3− | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 04 18 | 704 | 0.3+ | 0.5+ | 2003 12 27 | 691 | 0.2− | 0.1− | 2006 10 29 | G96 | 0.2− | 0.3− |
| 2001 04 24 | 608 | 0.4+ | 0.3+ | 2003 12 27 | 691 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.6+ | 0.7+ |
| 2001 04 24 | 608 | 0.7+ | 0.3+ | 2003 12 27 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 04 24 | 608 | 0.4+ | 0.2+ | 2003 12 28 | 704 | 0.1+ | 0.9+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2001 04 27 | 704 | 0.5+ | 0.9+ | 2003 12 28 | 704 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2001 04 27 | 704 | 0.3+ | 0.5− | 2003 12 28 | 704 | 0.5+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2001 04 27 | 704 | 0.3+ | 1.0+ | 2003 12 28 | 704 | 0.2− | 1.2+ | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2001 04 27 | 704 | 0.2− | 1.1+ | 2003 12 28 | 704 | 0.0 | 0.6+ | 2006 11 14 | G96 | 1.1+ | 0.3+ |
| 2001 04 27 | 704 | 0.1− | 0.9+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2001 05 12 | 699 | (0.3− | 2.0+) | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3− | 0.0 |
| 2001 05 12 | 699 | 0.4+ | 1.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 05 12 | 699 | 0.1+ | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 05 12 | 699 | 1.1− | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2001 05 15 | 699 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 25 | 703 | 0.6+ | 1.2+ |
| 2001 05 15 | 699 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 25 | 703 | 0.1− | 1.2+ |
| 2001 05 15 | 699 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 25 | 703 | 0.8+ | 0.8+ |
| 2001 05 15 | 699 | 0.2− | 0.6+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 25 | 703 | 0.5+ | 1.2+ |
| 2001 05 21 | 704 | 0.3+ | 0.8+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 05 21 | 704 | 1.4+ | 0.9− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2001 05 21 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2001 05 21 | 704 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2− | 0.0 | | | | |
| 2001 05 21 | 704 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | | | | |

**(139258)∗ 2001 HH$_{47}$ = 1994 LB$_{9}$**

Discovered 2001 Apr. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 13844)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.00069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27232959 | $\omega$ | 267.41110 | | +0.99336443 | +0.05679867 | |
| $a$ | 2.3572528 | $\Omega$ | 89.31982 | | −0.01252302 | +0.91778850 | |
| $e$ | 0.1576015 | $i$ | 5.73987 | | −0.11432537 | +0.39298622 | |
| $P$ | 3.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 08 | 809 | (4.6+ | 2.5+) | 2002 11 07 | 704 | 0.2+ | 0.8+ | 2003 01 04 | 704 | 0.1− | 0.3+ | |
| 1994 06 08 | 809 | (2.2+ | 2.5+) | 2002 11 07 | 704 | 1.3− | 1.0+ | 2003 01 04 | 704 | 0.9− | 0.4+ | |
| 1994 06 08 | 809 | (1.5+ | 2.6+) | 2002 11 07 | 704 | 0.4− | 0.9+ | 2003 01 04 | 704 | 0.8− | 0.4+ | |
| 1994 06 09 | 809 | (3.6+ | 3.9+) | 2002 11 07 | 704 | 0.3− | 0.3+ | 2003 12 22 | 691 | 0.1− | 0.3+ | |
| 1994 06 09 | 809 | (4.5+ | 3.9+) | 2002 11 11 | 704 | 0.1− | 0.4+ | 2003 12 22 | 691 | 0.4+ | 0.4− | |
| 1994 06 09 | 809 | (3.3+ | 2.3+) | 2002 11 11 | 704 | 0.0 | 0.6+ | 2003 12 22 | 691 | 0.3+ | 0.2+ | |
| 2001 04 18 | 691 | 0.1+ | 0.5+ | 2002 11 11 | 704 | 0.1+ | 0.1+ | 2004 02 17 | 926 | 0.1− | 0.0 | |
| 2001 04 18 | 691 | 0.1+ | 0.7+ | 2002 11 11 | 704 | 0.1+ | 0.4+ | 2004 02 17 | 926 | 0.1+ | 0.4+ | |
| 2001 04 18 | 691 | 0.0 | 0.8+ | 2002 11 11 | 704 | 0.6+ | 0.8+ | 2004 02 17 | 926 | 0.3+ | 0.3− | |
| 2001 04 25 | 699 | (0.8− | 1.8+) | 2002 11 11 | 644 | 0.2− | 0.1+ | 2004 02 17 | 926 | 0.0 | 0.0 | |
| 2001 04 25 | 699 | (0.6+ | 2.0+) | 2002 11 11 | 644 | 0.2− | 0.3+ | 2004 03 10 | 644 | 0.4+ | 0.2+ | |
| 2001 04 25 | 699 | 0.4+ | 0.8+ | 2002 11 11 | 644 | 0.0 | 0.4+ | 2004 03 10 | 644 | 0.2+ | 0.4+ | |
| 2001 04 25 | 699 | (1.6− | 1.8+) | 2002 11 21 | 644 | 0.3− | 0.4− | 2004 03 10 | 644 | 0.0 | 0.4+ | |
| 2001 05 15 | 699 | (0.5− | 2.8+) | 2002 11 21 | 644 | 0.4− | 0.4− | 2004 03 23 | 704 | 0.6+ | 0.5− | |
| 2001 05 15 | 699 | 0.1+ | 0.2− | 2002 11 21 | 644 | 0.2− | 0.3− | 2004 03 23 | 704 | 0.8− | 0.6− | |
| 2001 05 15 | 699 | 0.4+ | 1.3+ | 2002 11 22 | 644 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.1− | |
| 2001 05 15 | 699 | (1.3+ | 1.8+) | 2002 11 22 | 644 | 0.2+ | 0.0 | 2004 03 23 | 704 | 0.0 | 0.6+ | |
| 2001 05 18 | 704 | 0.1+ | 0.2+ | 2002 11 22 | 644 | 0.3+ | 0.4+ | 2004 03 23 | 704 | 0.1− | 0.1+ | |
| 2001 05 18 | 704 | 0.3+ | 0.9+ | 2002 12 01 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | |
| 2001 05 18 | 704 | 0.4+ | 0.1− | 2002 12 01 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.0 | |
| 2002 08 11 | 704 | 0.4+ | 0.6− | 2002 12 01 | 704 | 0.5− | 0.6+ | 2006 09 26 | 691 | 0.2+ | 0.2− | |
| 2002 08 11 | 704 | 0.2+ | 0.1+ | 2002 12 01 | 704 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.1+ | |
| 2002 08 11 | 704 | 0.7+ | 1.0+ | 2002 12 01 | 704 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.6− | 0.3− | |
| 2002 08 11 | 704 | 0.1− | 0.1+ | 2002 12 07 | 704 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.4− | 0.3− | |
| 2002 10 04 | 704 | 0.3+ | 0.4− | 2002 12 07 | 704 | 0.1+ | 1.0+ | 2006 10 28 | G96 | 0.3− | 0.4− | |
| 2002 10 04 | 704 | 0.7+ | 0.0 | 2002 12 07 | 704 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.7− | |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2002 12 07 | 704 | 0.4+ | 1.1+ | 2006 11 14 | G96 | 0.4− | 0.4− | |
| 2002 10 04 | 704 | 0.2− | 0.2− | 2002 12 07 | 704 | 0.3+ | 1.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− | |
| 2002 10 04 | 704 | 0.7− | 0.3− | 2002 12 11 | 704 | 1.1+ | 0.8− | 2006 11 14 | G96 | 0.1+ | 0.2− | |
| 2002 11 06 | 699 | 0.5− | 0.4+ | 2002 12 11 | 704 | 0.9+ | 0.1− | 2006 11 27 | G96 | 0.5− | 0.3− | |
| 2002 11 06 | 699 | 0.8− | 0.2+ | 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.4− | 0.5− | |
| 2002 11 06 | 699 | 0.9− | 0.2− | 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.5− | |
| 2002 11 06 | 699 | 0.5− | 0.3+ | 2003 01 04 | 704 | 0.8− | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.6− | |

**(139259)∗ 2001 HR$_{47}$**

Discovered 2001 Apr. 18 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.80601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27222748 | $\omega$ | 326.97878 | | −0.67079790 | +0.73602120 | |
| $a$ | 2.3578422 | $\Omega$ | 260.71482 | | −0.65885950 | −0.64781695 | |
| $e$ | 0.1574096 | $i$ | 5.29769 | | −0.34049132 | −0.19648409 | |
| $P$ | 3.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 608 | 1.3+ | 0.4+ | 2002 10 04 | 644 | 0.1− | 0.9+ | 2005 07 07 | 704 | 0.3− | 0.7− | |
| 2001 03 29 | 608 | 0.4+ | 0.9− | 2002 10 04 | 704 | 0.3+ | 0.2− | 2005 07 07 | 704 | 0.0 | 0.8+ | |
| 2001 03 29 | 608 | 0.5+ | 0.9− | 2003 12 19 | 704 | 0.4+ | 0.4− | 2005 07 07 | 704 | 0.1+ | 0.2+ | |
| 2001 04 18 | 608 | 0.4+ | 0.5− | 2003 12 19 | 704 | 0.2+ | 0.7− | 2005 07 07 | 704 | (1.8+ | 1.2+) | |
| 2001 04 18 | 608 | 0.3+ | 0.5− | 2003 12 19 | 704 | 0.6+ | 1.1+ | 2006 10 04 | G96 | 0.2+ | 0.0 | |
| 2001 04 18 | 608 | 1.2+ | 0.3− | 2003 12 19 | 704 | 0.4+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.4− | |
| 2001 04 21 | 704 | 0.1− | 0.1− | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.2− | |
| 2001 04 21 | 704 | 0.7− | 0.1− | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.5− | |
| 2001 04 21 | 704 | 0.6+ | 0.8+ | 2003 12 23 | 704 | 1.4+ | 0.8+ | 2006 10 19 | G96 | 0.1− | 0.0 | |
| 2001 04 21 | 704 | 1.1− | 0.1− | 2003 12 23 | 704 | 1.5+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− | |
| 2001 04 27 | 608 | 1.4− | 1.4+ | 2003 12 23 | 704 | 1.0+ | 1.0+ | 2006 10 19 | G96 | 0.1− | 0.4− | |
| 2001 04 27 | 608 | 1.2− | 1.2+ | 2005 05 20 | G96 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.3− | |
| 2001 04 27 | 608 | 1.1− | 1.4+ | 2005 05 20 | G96 | 0.6− | 0.1− | 2006 10 19 | 691 | 0.4− | 0.6+ | |
| 2001 05 18 | 699 | 0.2− | 0.5+ | 2005 05 20 | G96 | 0.5− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.3+ | |
| 2001 05 18 | 699 | 0.3− | 0.6+ | 2005 05 20 | G96 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.3+ | |
| 2001 05 18 | 699 | 0.4+ | 1.2+ | 2005 06 05 | 691 | 0.9+ | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.3+ | |
| 2001 05 18 | 699 | 0.0 | 0.6+ | 2005 06 05 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.3+ | |
| 2001 05 21 | 704 | 0.0 | 0.7+ | 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.7− | 0.1+ | |
| 2001 05 21 | 704 | 0.8+ | 1.3+ | 2005 06 14 | 691 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.3+ | |
| 2001 05 21 | 704 | 0.7+ | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.2+ | |
| 2001 05 21 | 704 | 0.6+ | 0.8− | 2005 06 14 | 691 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.1− | |
| 2002 10 04 | 704 | 0.7− | 0.5− | 2005 06 15 | G96 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.2− | |
| 2002 10 04 | 704 | 0.7+ | 0.2+ | 2005 06 15 | G96 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.1− | |
| 2002 10 04 | 644 | 0.3+ | 0.9+ | 2005 06 15 | G96 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.0 | |
| 2002 10 04 | 644 | 0.2+ | 0.5+ | 2005 06 15 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.1− | |

**(139260)∗ 2001 HL$_{49}$ = 2002 TQ$_{95}$**

Discovered 2001 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37617)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.93823 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26912121 | $\omega$ | 356.44074 | | −0.51247258 | +0.84643710 | |
| $a$ | 2.3759507 | $\Omega$ | 242.68150 | | −0.78377086 | −0.52987906 | |
| $e$ | 0.0875965 | $i$ | 9.36823 | | −0.35082060 | −0.05265378 | |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 704 | 1.6− | 0.5+ | 2002 10 05 | 704 | (0.1− | 1.8+) | 2006 11 09 | 691 | 0.3+ | 0.2+ | |
| 1998 08 27 | 704 | (0.5− | 3.9−) | 2002 10 05 | 704 | 0.2+ | 0.3− | 2006 11 09 | 691 | 0.3+ | 0.1+ | |
| 1998 08 27 | 704 | 0.4− | 0.4− | 2002 10 05 | 704 | (0.9+ | 2.2+) | 2006 11 09 | 691 | 0.4+ | 0.1+ | |
| 1998 08 27 | 704 | 0.3+ | 0.9+ | 2002 10 05 | 704 | 0.5+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2+ | |
| 1998 08 27 | 704 | (4.3− | 1.1−) | 2002 10 05 | 704 | 0.1− | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ | |
| 2001 04 21 | 704 | 0.6+ | 0.9+ | 2002 10 09 | 704 | 0.7+ | 0.6+ | 2006 11 09 | 644 | 0.4+ | 0.0 | |
| 2001 04 21 | 704 | 0.6− | 0.7+ | 2002 10 09 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | (0.3− | 2.8−) | |
| 2001 04 21 | 704 | 0.2− | 0.6+ | 2002 10 09 | 704 | 0.2+ | 0.4− | 2006 11 11 | 703 | 1.0− | 0.8− | |
| 2001 04 21 | 704 | (1.7+ | 0.5+) | 2002 10 09 | 704 | 0.4+ | 0.7− | 2006 11 11 | 703 | 0.4+ | 0.3− | |
| 2001 04 22 | 608 | 0.0 | 0.5− | 2002 10 09 | 704 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.9− | 0.5− | |
| 2001 04 22 | 608 | 0.3+ | 0.4− | 2004 01 28 | 645 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.1+ | |
| 2001 04 22 | 608 | 0.1+ | 0.5− | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1+ | |
| 2001 05 15 | 699 | (0.7− | 1.6+) | 2004 01 31 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 691 | 0.2− | 0.0 | |
| 2001 05 15 | 699 | 0.3+ | 0.9+ | 2004 01 31 | 704 | 0.0 | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.1− | |
| 2001 05 15 | 699 | 0.2− | 1.3+ | 2004 01 31 | 704 | 0.7+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.5+ | |
| 2001 05 15 | 699 | 0.1+ | 0.6+ | 2004 01 31 | 704 | (1.9+ | 0.9+) | 2006 11 13 | 644 | 0.2+ | 0.4+ | |
| 2001 05 21 | 704 | (1.6+ | 0.5−) | 2004 02 18 | 704 | (0.9− | 1.9+) | 2006 11 14 | G96 | 0.4− | 0.4− | |
| 2001 05 21 | 704 | 0.1+ | 1.0+ | 2004 02 18 | 704 | 0.7+ | 1.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− | |
| 2001 05 21 | 704 | 1.0+ | 0.0 | 2004 02 18 | 704 | 0.8+ | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.3− | |
| 2001 05 21 | 704 | 0.4+ | 0.5+ | 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.4− | |
| 2001 05 21 | 704 | 0.3− | 1.1− | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 16 | 691 | 0.2+ | 0.1+ | |
| 2001 06 11 | 699 | (2.5+ | 0.5+) | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.2− | 0.2+ | |
| 2001 06 11 | 699 | 0.1− | 1.2+ | 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.2+ | |
| 2001 06 11 | 699 | 0.6+ | 0.8− | 2006 10 19 | G96 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.2+ | 0.7+ | |
| 2001 06 11 | 699 | 0.5− | 1.2+ | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.1+ | 1.4+ | |
| 2001 06 12 | 644 | (1.2+ | 1.9+) | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.9− | 1.0+ | |
| 2001 06 12 | 644 | (1.2+ | 2.0+) | 2006 10 19 | G96 | 0.2− | 0.7− | 2006 11 16 | 704 | 0.1− | 0.6+ | |
| 2001 06 12 | 644 | (1.1+ | 1.6+) | 2006 10 19 | 691 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.0 | |
| 2002 10 03 | 644 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.4− | 1.0+ | 2006 11 19 | 704 | 0.6+ | 0.8+ | |
| 2002 10 03 | 644 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.6+ | |
| 2002 10 03 | 644 | (2.1− | 1.3+) | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 22 | 704 | 1.0+ | 0.7+ | |
| 2002 10 04 | 644 | 0.4− | 0.3+ | 2006 10 27 | 703 | 1.0− | 0.1− | 2006 11 22 | 704 | 0.5− | 0.6− | |
| 2002 10 04 | 644 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.0 | 1.0− | 2006 11 22 | 704 | 0.5+ | 0.2− | |
| 2002 10 04 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.7+ | 1.5− | |

**(139261)∗ 2001 HQ$_{51}$ = 2004 CH$_{10}$**

Discovered 2001 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60748)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.47933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28251988 | $\omega$ | 155.75743 | | −0.80853385 | +0.58734232 | |
| $a$ | 2.3002235 | $\Omega$ | 60.25964 | | −0.54645243 | −0.72666658 | |
| $e$ | 0.0551580 | $i$ | 2.38174 | | −0.21831802 | −0.35634910 | |
| $P$ | 3.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 25 | 691 | 0.2− | 0.3+ | 2002 10 10 | 645 | 0.1− | 0.2+ | 2004 02 23 | 704 | (2.3+ | 1.9−) |
| 1992 11 25 | 691 | 0.1+ | 0.1+ | 2004 01 22 | 704 | (0.9+ | 1.7+) | 2004 02 23 | 704 | (1.9+ | 0.3−) |
| 1992 11 25 | 691 | 0.1+ | 0.8− | 2004 01 22 | 704 | 1.2+ | 0.1+ | 2004 02 29 | 691 | 0.1+ | 0.4+ |
| 2001 04 16 | 691 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.4− | 0.7+ | 2004 02 29 | 691 | 0.6+ | 0.3+ |
| 2001 04 16 | 691 | 0.0 | 0.2+ | 2004 01 22 | 704 | 1.1+ | 0.1− | 2004 02 29 | 691 | 0.0 | 0.0 |
| 2001 04 16 | 691 | 1.2+ | 0.3+ | 2004 01 22 | 704 | 1.2+ | 0.3+ | 2004 04 19 | 291 | 0.2+ | 0.0 |
| 2001 04 23 | 704 | 0.6+ | 0.3− | 2004 01 31 | 691 | 0.2− | 0.2− | 2004 04 19 | 291 | 0.3+ | 0.3+ |
| 2001 04 23 | 704 | 0.4− | 0.9+ | 2004 01 31 | 691 | 0.0 | 0.1− | 2004 04 19 | 291 | 0.2+ | 0.4+ |
| 2001 04 23 | 704 | 0.1− | 0.8+ | 2004 01 31 | 691 | 0.4− | 0.0 | 2005 07 07 | 691 | 0.0 | 0.3+ |
| 2001 04 23 | 704 | 0.6− | 1.2+ | 2004 02 11 | 699 | 0.3− | 0.1+ | 2005 07 07 | 691 | 0.2− | 0.1+ |
| 2001 04 23 | 704 | 0.9+ | 0.1− | 2004 02 11 | 699 | 0.6− | 0.1− | 2005 07 07 | 691 | 0.1− | 0.3+ |
| 2001 04 26 | 691 | 0.2− | 0.6+ | 2004 02 11 | 699 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 04 26 | 691 | 0.2− | 0.7+ | 2004 02 11 | 699 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2001 04 26 | 691 | 0.2− | 0.7+ | 2004 02 12 | 291 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2001 05 25 | 691 | 0.1+ | 0.4− | 2004 02 12 | 291 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2001 05 25 | 691 | 0.2+ | 0.0 | 2004 02 12 | 291 | 0.5− | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.5+ |
| 2001 05 25 | 691 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 1.1+ | 0.8+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2002 09 26 | 644 | 0.7− | 0.3+ | 2004 02 16 | 704 | 0.4+ | 0.4− | 2006 11 24 | 691 | 0.1− | 0.1− |
| 2002 09 26 | 644 | 0.5− | 0.6+ | 2004 02 16 | 704 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2002 09 26 | 644 | 0.4− | 0.7+ | 2004 02 23 | 704 | (1.8+ | 0.8−) | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2002 10 10 | 645 | 0.1− | 0.3+ | 2004 02 23 | 704 | (2.0+ | 0.6−) | | | | |

**(139262)∗ 2001 HC$_{52}$**

Discovered 2001 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.39838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28025334 | $\omega$ | 217.28721 | | −0.91202698 | −0.40702896 | |
| $a$ | 2.3126088 | $\Omega$ | 298.62233 | | +0.38875445 | −0.81884627 | |
| $e$ | 0.0934559 | $i$ | 3.28768 | | +0.13067810 | −0.40474463 | |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 12 | 566 | 0.3+ | 0.1+ | 2003 12 18 | 704 | 0.5− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 1997 01 12 | 566 | 0.2+ | 0.4+ | 2003 12 18 | 704 | 0.2+ | 1.0− | 2006 10 21 | 691 | 0.3− | 0.2− |
| 1997 01 12 | 566 | 0.4− | 0.4+ | 2003 12 18 | 704 | 0.6+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 03 24 | 699 | 0.8+ | 0.2− | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 03 24 | 699 | 0.4+ | 0.4+ | 2003 12 29 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 03 24 | 699 | 0.5+ | 1.0+ | 2003 12 29 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 03 24 | 699 | 0.9+ | 0.0 | 2004 01 24 | 704 | (0.4− | 2.3+) | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2001 04 16 | 699 | (1.7− | 1.7+) | 2004 01 24 | 704 | 0.3− | 0.4+ | 2006 10 29 | 691 | 0.3− | 0.0 |
| 2001 04 16 | 699 | 0.6− | 0.6− | 2004 01 24 | 704 | 0.5− | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 04 16 | 699 | (0.7− | 1.9+) | 2004 01 30 | 704 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2001 04 16 | 699 | (0.4− | 2.0+) | 2004 01 30 | 704 | 0.4− | 0.0 | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 2001 04 23 | 704 | 1.0− | 0.6+ | 2004 01 30 | 704 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2001 04 23 | 704 | (0.5− | 1.6+) | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 11 07 | 644 | 0.0 | 0.2− |
| 2001 04 23 | 704 | (0.8+ | 2.1+) | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.4+ |
| 2001 04 23 | 704 | (1.4− | 1.9+) | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | (1.4− | 1.7+) |
| 2001 04 24 | 699 | 0.1+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 1.0+ | 0.1− |
| 2001 04 24 | 699 | 0.6− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | (1.6+ | 0.2−) |
| 2001 04 24 | 699 | (1.9+ | 0.4+) | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2001 04 24 | 699 | 0.2+ | 0.2− | 2006 10 01 | 291 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2002 08 27 | 644 | (0.2− | 1.6+) | 2006 10 01 | 291 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2002 08 27 | 644 | 0.4− | 1.2+ | 2006 10 01 | 291 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.6− |
| 2002 08 27 | 644 | 0.1− | 1.3+ | 2006 10 17 | 691 | 0.1− | 0.2+ | | | | |
| 2003 12 18 | 704 | 0.7− | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2− | | | | |

**(139263)∗ 2001 HH$_{54}$ = 2002 TC$_{203}$**

Discovered 2001 Apr. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37618)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.54829 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22762779 | $\omega$ | 120.61991 | | −0.00862286 | +0.99395794 | |
| $a$ | 2.6565574 | $\Omega$ | 148.31771 | | −0.97389841 | +0.01647341 | |
| $e$ | 0.1760958 | $i$ | 12.02514 | | −0.22682050 | −0.10851837 | |
| $P$ | 4.33 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.3− | 0.9− | 2005 03 09 | 704 | 0.4+ | 0.0 | 2006 09 12 | 704 | 0.1+ | 1.1− |
| 2001 03 19 | 699 | 0.3+ | 0.2− | 2005 03 09 | 704 | 0.4+ | 1.0− | 2006 09 12 | 704 | 0.2+ | 1.5− |
| 2001 03 19 | 699 | 1.0+ | 0.1+ | 2005 03 10 | 699 | 0.5+ | 0.9+ | 2006 09 12 | 704 | 0.2+ | 0.8− |
| 2001 03 19 | 699 | 0.8− | 0.8+ | 2005 03 10 | 699 | 0.3+ | 0.9+ | 2006 09 12 | 704 | 0.1+ | 0.2− |
| 2001 03 29 | 704 | 0.9− | 0.5− | 2005 03 10 | 699 | 0.8+ | 0.9+ | 2006 09 12 | 704 | 0.9+ | 0.2− |
| 2001 03 29 | 704 | 0.5− | 0.5+ | 2005 03 10 | 699 | 0.4− | 0.8+ | 2006 09 14 | 644 | 0.0 | 0.2− |
| 2001 03 29 | 704 | 0.4+ | 0.8+ | 2005 03 16 | 703 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2001 04 15 | 704 | 0.6− | 0.1− | 2005 03 16 | 703 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 2001 04 15 | 704 | 0.5+ | 0.2− | 2005 03 16 | 703 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.2− |
| 2001 04 15 | 704 | 0.2+ | 0.1− | 2005 03 16 | 703 | (0.3− | 5.6+) | 2006 09 14 | 703 | 0.1+ | 0.5+ |
| 2001 04 15 | 704 | 1.0+ | 0.4− | 2005 04 02 | A35 | 0.0 | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.1+ |
| 2001 04 15 | 704 | 0.2+ | 0.3+ | 2005 04 02 | A35 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.4− | 0.2− |
| 2001 04 24 | 699 | 0.1− | 0.4+ | 2005 04 02 | A35 | 0.0 | 0.7+ | 2006 09 15 | 704 | (1.5+ | 1.7+) |
| 2001 04 24 | 699 | 0.2− | 0.0 | 2006 08 01 | A50 | 0.7− | 0.1+ | 2006 09 15 | 704 | 0.6+ | 0.5+ |
| 2001 04 24 | 699 | 0.0 | 0.2− | 2006 08 01 | A50 | 0.2− | 0.0 | 2006 09 15 | 704 | 1.3+ | 0.4+ |
| 2001 04 24 | 699 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.2− | 2006 09 15 | 704 | 0.8+ | 1.1+ |
| 2001 04 26 | 644 | 0.5− | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.2− | 2006 09 15 | 704 | 0.8+ | 0.7+ |
| 2001 04 26 | 644 | 0.5− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.8+ | 0.3− |
| 2001 04 26 | 644 | 0.4− | 0.1− | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.9− | 0.8+ |
| 2001 04 27 | 704 | (2.0− | 0.3−) | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 16 | 704 | 0.5+ | 0.1− |
| 2001 04 27 | 704 | 0.6− | 0.5− | 2006 08 16 | 644 | 0.4− | 0.0 | 2006 09 16 | 704 | (2.1+ | 0.5−) |
| 2001 04 27 | 704 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 09 16 | 704 | 0.2− | 0.3+ |
| 2001 04 27 | 704 | 0.2+ | 0.9+ | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 16 | 704 | 0.0 | 0.1+ |
| 2001 05 22 | 699 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 16 | 704 | 0.3+ | 0.2− |
| 2001 05 22 | 699 | 0.0 | 0.5− | 2006 08 21 | 704 | 0.7+ | 0.5+ | 2006 09 16 | 704 | 0.1+ | 0.3+ |
| 2001 05 22 | 699 | 0.4+ | 0.2− | 2006 08 21 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 699 | 0.1− | 0.2+ |
| 2001 05 22 | 699 | 0.3− | 0.0 | 2006 08 21 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.3− |
| 2001 05 23 | 704 | 0.1− | 1.3+ | 2006 08 21 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 699 | 0.2+ | 0.5+ |
| 2001 05 23 | 704 | 0.1− | 0.0 | 2006 08 21 | 704 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.5− | 0.2− |
| 2001 05 23 | 704 | 0.1− | 0.4− | 2006 08 28 | 704 | 0.0 | 0.3− | 2006 09 19 | 704 | 0.3+ | 0.4+ |
| 2001 05 23 | 704 | 0.7+ | 1.2− | 2006 08 28 | 704 | 1.1+ | 0.4− | 2006 09 19 | 704 | 0.8+ | 1.1− |
| 2001 05 23 | 704 | 1.0+ | 0.1− | 2006 08 28 | 704 | 0.8+ | 0.3+ | 2006 09 19 | 704 | 0.9+ | 0.2− |
| 2002 10 04 | 704 | 0.8− | 1.0+ | 2006 08 28 | 704 | 1.3+ | 0.0 | 2006 09 19 | 704 | 0.4− | 0.3− |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2006 08 28 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 704 | 0.1+ | 1.3− |
| 2002 10 04 | 704 | 1.0+ | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 1.1+ | 1.1− |
| 2002 10 04 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.2− |
| 2002 10 04 | 704 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.3+ | 0.4− |
| 2002 10 08 | 699 | (1.5− | 2.2+) | 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.1− | 0.1− |
| 2002 10 08 | 699 | 1.1− | 1.2+ | 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 09 25 | 699 | 0.0 | 1.4− |
| 2002 10 08 | 699 | 0.4+ | 1.1+ | 2006 08 28 | 703 | 0.8− | 0.2− | 2006 09 25 | 699 | 0.6− | 1.0− |
| 2002 10 08 | 699 | (0.2− | 1.6+) | 2006 08 28 | 699 | 0.3− | 0.3+ | 2006 09 25 | 699 | 1.2− | 0.4+ |
| 2005 02 04 | 644 | 0.5+ | 1.1+ | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.6− | 1.3+ |
| 2005 02 04 | 644 | 0.4+ | 0.9+ | 2006 08 28 | 699 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.7− | 1.0− |
| 2005 02 04 | 644 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.9− | 0.0 |
| 2005 03 03 | 703 | 0.2− | 0.3− | 2006 08 29 | 704 | 0.6− | 0.0 | 2006 09 30 | 703 | 1.0− | 1.2+ |
| 2005 03 03 | 703 | (1.6− | 0.1−) | 2006 08 29 | 704 | 0.6− | 1.4+ | 2006 09 30 | 703 | 1.1− | 0.8− |
| 2005 03 03 | 703 | 1.0− | 0.0 | 2006 08 29 | 704 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2005 03 03 | 703 | 0.5− | 0.3+ | 2006 08 29 | 704 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2005 03 04 | 704 | 1.2+ | 0.2+ | 2006 08 29 | 704 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.5− | 0.1− |
| 2005 03 04 | 704 | 1.4− | 0.2− | 2006 08 31 | 704 | 0.4− | 0.3+ | 2006 10 23 | 568 | 0.2+ | 0.2− |
| 2005 03 04 | 704 | (1.8+ | 0.6+) | 2006 08 31 | 704 | 1.0+ | 0.5− | 2006 10 23 | 568 | 0.2+ | 0.2− |
| 2005 03 04 | 704 | 0.7+ | 0.6+ | 2006 08 31 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 568 | 0.1+ | 0.2− |
| 2005 03 09 | 704 | 0.9+ | 0.6− | 2006 08 31 | 704 | 0.2+ | 0.5+ | | | | |
| 2005 03 09 | 704 | 0.4− | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.7+ | | | | |

**(139264)∗ 2001 HN$_{54}$**

Discovered 2001 Apr. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 212.19819 | | | (2000.0) | | |
| $n$ | 0.26467209 | $\omega$ | 9.84900 | | −0.86830846 | −0.49348804 |
| $a$ | 2.4025031 | $\Omega$ | 140.45269 | | +0.44957238 | −0.82564369 |
| $e$ | 0.1871507 | $i$ | 4.51295 | | +0.20958312 | −0.27346308 |
| $P$ | 3.72 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 15 | 327 | 0.1+ | 0.5− | 2002 08 18 | 644 | 0.3− | 0.7+ | 2004 01 18 | 644 | 0.1− | 0.7+ |
| 1997 03 15 | 327 | 0.0 | 0.3− | 2002 08 18 | 644 | 0.7− | 0.9+ | 2004 01 18 | 644 | 0.1− | 0.6+ |
| 1997 03 15 | 327 | 0.1− | 0.6+ | 2002 08 18 | 644 | 0.5− | 0.8+ | 2004 01 18 | 644 | 0.1− | 0.5+ |
| 2001 04 14 | 691 | 0.1+ | 0.4+ | 2003 11 24 | 691 | 0.8− | 0.7+ | 2006 09 14 | 703 | 0.2+ | 0.4+ |
| 2001 04 14 | 691 | 0.1− | 0.5+ | 2003 11 24 | 691 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.7+ | 1.5− |
| 2001 04 14 | 691 | 0.1+ | 0.5+ | 2003 11 24 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.6+ | 0.6+ |
| 2001 04 24 | 704 | 0.5+ | 0.1+ | 2003 12 01 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.6+ | 0.8+ |
| 2001 04 24 | 704 | 0.7− | 0.6+ | 2003 12 01 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.2− | 1.2+ |
| 2001 04 24 | 704 | (1.8+ | 0.0 ) | 2003 12 01 | 704 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.4− | 1.0+ |
| 2001 04 24 | 704 | 0.8+ | 0.6+ | 2003 12 01 | 704 | 0.0 | 0.2+ | 2006 09 16 | 699 | 1.1+ | 0.9+ |
| 2001 04 24 | 704 | 0.7− | 1.1+ | 2003 12 01 | 704 | 0.3− | 0.6+ | 2006 09 16 | 699 | (1.6− | 0.4−) |
| 2001 04 25 | 699 | 1.4+ | 0.6+ | 2003 12 17 | 699 | 1.0+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2001 04 25 | 699 | 0.7+ | 1.0+ | 2003 12 17 | 699 | 1.1+ | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.6+ |
| 2001 04 25 | 699 | 0.2+ | 0.8+ | 2003 12 17 | 699 | 0.3+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2001 04 25 | 699 | 0.4+ | 0.9+ | 2003 12 17 | 699 | 0.4− | 0.1− | 2006 10 02 | G96 | 0.4− | 0.0 |
| 2001 05 18 | 704 | 0.1− | 0.3− | 2003 12 22 | 704 | 0.0 | 0.5− | 2006 10 19 | 703 | 0.7− | 0.1+ |
| 2001 05 18 | 704 | 0.4+ | 0.2+ | 2003 12 22 | 704 | 0.5− | 0.0 | 2006 10 19 | 703 | (0.5+ | 1.9+) |
| 2001 05 18 | 704 | 0.1+ | 0.1+ | 2003 12 22 | 704 | 0.3− | 0.0 | 2006 10 19 | 703 | 1.4− | 0.2− |
| 2001 05 18 | 704 | 0.3+ | 0.1− | 2003 12 22 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.8− | 0.9+ |
| 2001 05 18 | 704 | 0.2+ | 0.8+ | 2003 12 22 | 704 | 0.3− | 0.5− | 2006 11 25 | G96 | 0.3− | 0.3+ |
| 2002 08 11 | 644 | 0.2− | 0.3+ | 2004 01 17 | 644 | 0.1− | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2002 08 11 | 644 | 0.1− | 0.5+ | 2004 01 17 | 644 | 0.3− | 0.7+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 08 11 | 644 | 0.2− | 0.5+ | 2004 01 17 | 644 | 0.3− | 0.6+ | 2006 11 25 | G96 | 0.5− | 0.5− |

**(139265)∗ 2001 HV$_{54}$ = 1995 UK$_{25}$**

Discovered 2001 Apr. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13362)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 204.12115 | | | (2000.0) | | |
| $n$ | 0.27706224 | $\omega$ | 18.90098 | | −0.95865496 | +0.28453836 |
| $a$ | 2.3303322 | $\Omega$ | 177.61760 | | −0.27262771 | −0.91397178 |
| $e$ | 0.1468709 | $i$ | 5.95365 | | −0.08157697 | −0.28929828 |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.2+ | 0.1− | 2001 05 02 | 644 | 0.2− | 0.2+ | 2005 07 01 | 644 | 0.2+ | 0.4− |
| 1995 10 20 | 691 | 0.2− | 0.1+ | 2001 05 02 | 644 | 0.0 | 0.2+ | 2005 07 01 | 644 | 0.4+ | 0.6− |
| 1995 10 20 | 691 | 0.1+ | 0.1+ | 2001 05 02 | 644 | 0.5− | 0.1+ | 2005 07 01 | 644 | 0.6+ | 0.5− |
| 1995 10 24 | 691 | 0.4− | 0.5+ | 2001 05 15 | 699 | 0.2− | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 1995 10 24 | 691 | 0.4− | 0.2− | 2001 05 15 | 699 | 0.4+ | 0.5+ | 2006 10 03 | G96 | 0.3+ | 0.1+ |
| 1995 10 24 | 691 | 0.1+ | 0.1+ | 2001 05 15 | 699 | 0.5+ | 0.4+ | 2006 10 03 | G96 | 0.5+ | 0.3− |
| 1997 03 13 | 691 | 0.0 | 0.6− | 2001 05 15 | 699 | 0.1+ | 0.1+ | 2006 10 03 | G96 | 0.2− | 0.0 |
| 1997 03 13 | 691 | 0.1+ | 0.3− | 2001 05 18 | 704 | 0.1− | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 1997 03 13 | 691 | 0.1+ | 0.2− | 2001 05 18 | 704 | 0.4+ | 0.9+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2001 04 16 | 704 | (0.2− | 1.5−) | 2001 05 18 | 704 | 0.1− | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2001 04 16 | 704 | 0.6+ | 0.3+ | 2001 05 18 | 704 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 04 16 | 704 | 0.7+ | 0.2+ | 2001 05 22 | 704 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 04 16 | 704 | 0.5− | 1.4+ | 2001 05 22 | 704 | 0.4+ | 1.2+ | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 2001 04 24 | 704 | 0.1+ | 0.0 | 2001 05 22 | 704 | 0.9+ | 0.6+ | 2006 11 19 | 703 | 0.3− | 1.0+ |
| 2001 04 24 | 704 | 0.2+ | 0.9+ | 2001 05 22 | 704 | 0.4− | 0.9+ | 2006 11 19 | 703 | 0.1− | 0.1− |
| 2001 04 24 | 704 | 0.3− | 1.1+ | 2004 01 14 | 644 | (0.2− | 1.5+) | 2006 11 19 | 703 | 1.3− | 1.5+ |
| 2001 04 24 | 704 | 0.7+ | 0.3− | 2004 01 14 | 644 | 0.1− | 1.2+ | 2006 11 19 | 703 | 0.1+ | 0.0 |
| 2001 04 25 | 699 | 0.0 | 0.1+ | 2004 01 14 | 644 | 0.3+ | 0.9+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2001 04 25 | 699 | 0.1− | 0.5+ | 2004 01 30 | 704 | (0.7− | 1.8+) | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2001 04 25 | 699 | 0.5− | 0.0 | 2004 01 30 | 704 | 0.2− | 1.4+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2001 04 25 | 699 | 0.7− | 0.2+ | 2004 01 30 | 704 | (1.0+ | 1.8+) | 2006 11 23 | G96 | 0.1+ | 0.2− |

**(139266)∗ 2001 HB$_{56}$**

Discovered 2001 Apr. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 156.53353 | | | (2000.0) | | |
| $n$ | 0.26543505 | $\omega$ | 156.97807 | | −0.52887948 | +0.81955678 |
| $a$ | 2.3978971 | $\Omega$ | 80.43062 | | −0.80930346 | −0.40878397 |
| $e$ | 0.1359432 | $i$ | 12.92029 | | −0.25556685 | −0.40152503 |
| $P$ | 3.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 704 | (1.4− | 2.0+) | 2001 05 24 | 704 | 0.0 | 0.7+ | 2004 02 11 | 704 | 0.5− | 0.1− |
| 2001 04 24 | 704 | 0.5− | 0.3+ | 2001 05 24 | 704 | 0.6− | 0.2+ | 2004 02 11 | 704 | 1.0− | 0.2− |
| 2001 04 24 | 704 | 0.4+ | 0.0 | 2001 05 25 | 704 | 0.5+ | 0.3− | 2004 02 11 | 704 | 0.3+ | 0.3+ |
| 2001 04 25 | 699 | 0.9− | 1.2+ | 2001 05 25 | 704 | 0.6− | 0.6− | 2005 06 07 | E12 | 0.4+ | 0.7+ |
| 2001 04 25 | 699 | 1.0− | 0.8+ | 2001 05 25 | 704 | 0.0 | 0.5− | 2005 06 07 | E12 | 0.1− | 0.3+ |
| 2001 04 25 | 699 | 0.7− | 0.4+ | 2001 05 25 | 704 | 0.3− | 0.2− | 2005 06 07 | E12 | 0.0 | 0.5+ |
| 2001 04 25 | 699 | 0.6− | 0.0 | 2001 06 11 | 699 | 0.3+ | 0.8+ | 2005 06 07 | E12 | 0.7+ | 0.4+ |
| 2001 05 21 | 699 | 0.6+ | 0.0 | 2001 06 11 | 699 | 0.2+ | 0.0 | 2005 07 10 | E12 | 0.2− | 0.4+ |
| 2001 05 21 | 699 | 1.1+ | 0.4+ | 2001 06 11 | 699 | 0.2− | 0.1− | 2005 07 10 | E12 | 0.5+ | 0.6+ |
| 2001 05 21 | 699 | 0.3+ | 0.2+ | 2001 06 11 | 699 | 0.3− | 0.2+ | 2005 07 10 | E12 | 0.1− | 0.1− |
| 2001 05 21 | 699 | 0.4− | 0.4+ | 2001 06 20 | 608 | 0.7− | 1.0− | 2005 07 10 | E12 | 0.6− | 0.2− |
| 2001 05 21 | 699 | 0.5+ | 0.2− | 2001 06 20 | 608 | 0.2− | 0.1+ | 2006 10 31 | A50 | 0.3− | 0.3− |
| 2001 05 21 | 699 | 0.5+ | 0.6+ | 2001 06 20 | 608 | 0.3− | 0.2+ | 2006 10 31 | A50 | 0.2+ | 0.0 |
| 2001 05 21 | 699 | 0.8+ | 0.1− | 2002 10 05 | 644 | 0.2− | 1.0+ | 2006 11 19 | 703 | 1.1− | 2.4− |
| 2001 05 21 | 699 | 0.3+ | 0.6+ | 2002 10 05 | 644 | 0.2− | 0.6+ | 2006 11 19 | 703 | 0.4− | 1.0+ |
| 2001 05 22 | 704 | 1.1+ | 0.0 | 2002 10 05 | 644 | 0.3− | 0.9+ | 2006 11 19 | 703 | 0.1+ | 0.7+ |
| 2001 05 22 | 704 | 0.9+ | 0.1− | 2003 12 27 | 704 | 0.5+ | 0.5+ | 2006 11 19 | 703 | 0.8− | 0.6+ |
| 2001 05 22 | 704 | 0.3+ | 0.0 | 2003 12 27 | 704 | 1.2+ | 0.9+ | 2006 11 23 | G96 | 0.2+ | 0.3+ |
| 2001 05 22 | 704 | 0.1− | 0.3− | 2003 12 27 | 704 | 1.0+ | 1.1+ | 2006 11 23 | G96 | 0.1− | 0.5+ |
| 2001 05 22 | 704 | 0.1− | 0.7− | 2003 12 29 | 704 | 1.3− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.5+ |
| 2001 05 24 | 704 | (1.6− | 1.7+) | 2003 12 29 | 704 | 1.2+ | 0.8+ | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 2001 05 24 | 704 | 0.4+ | 0.2+ | 2003 12 29 | 704 | 0.3− | 0.5+ | | | | |
| 2001 05 24 | 704 | 0.4− | 0.2+ | 2003 12 29 | 704 | 0.7+ | 0.5− | | | | |

**(139267)∗ 2001 HV$_{56}$ = 1978 WH$_{7}$**

Discovered 2001 Apr. 24 by NEAT at Haleakala.

Id. M. E. Sansaturio (*MPO* 19935)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 258.65015 | | | (2000.0) | | |
| $n$ | 0.27822515 | $\omega$ | 75.78851 | | −0.66734354 | −0.74273913 |
| $a$ | 2.3238341 | $\Omega$ | 56.20836 | | +0.65540711 | −0.62057619 |
| $e$ | 0.1656329 | $i$ | 3.77331 | | +0.35368646 | −0.25144339 |
| $P$ | 3.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 29 | 675 | 0.0 | 0.4− | 2003 12 22 | 704 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.4− |
| 1978 11 30 | 675 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.1− |
| 2001 04 24 | 608 | 0.3+ | 0.8− | 2003 12 22 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 04 24 | 608 | 0.2+ | 0.9− | 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2001 04 24 | 608 | 0.3+ | 0.5− | 2003 12 28 | 704 | 0.3+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2001 04 26 | 699 | 0.1− | 0.3+ | 2003 12 28 | 704 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.4− | 0.1+ |
| 2001 04 26 | 699 | 0.7+ | 0.2+ | 2003 12 28 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.3− | 0.4− |
| 2001 04 26 | 699 | 0.8− | 1.3+ | 2003 12 28 | 704 | 0.2+ | 0.2− | 2006 10 15 | 703 | 0.9− | 0.9− |
| 2001 04 26 | 699 | (1.6− | 0.8+) | 2003 12 28 | 704 | 0.1+ | 0.1− | 2006 10 15 | 703 | (0.3+ | 1.8−) |
| 2001 05 14 | 691 | 0.1+ | 0.5+ | 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 05 14 | 691 | 0.1+ | 0.5+ | 2003 12 28 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 05 14 | 691 | 0.3+ | 0.4+ | 2004 01 31 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.5+ |
| 2001 05 24 | 807 | 0.2− | 0.7+ | 2004 01 31 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 05 24 | 807 | 0.2− | 0.7+ | 2004 01 31 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.0 | 0.8+ | 2004 01 31 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.3+ | 0.7+ | 2004 03 19 | 704 | 1.0+ | 1.4+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2002 08 18 | 644 | 0.4+ | 0.8+ | 2004 03 19 | 704 | 0.0 | 1.0+ | 2006 10 22 | 703 | (1.6− | 1.3+) |
| 2003 12 17 | 699 | 0.2− | 0.5+ | 2004 03 19 | 704 | (0.5+ | 1.7+) | 2006 10 22 | 703 | (0.5− | 1.8+) |
| 2003 12 17 | 699 | 0.2− | 0.4− | 2004 03 19 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.7− | 1.2+ |
| 2003 12 17 | 699 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.3+ | 0.7+ | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2003 12 17 | 699 | 0.1− | 0.9+ | 2004 04 22 | 704 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2003 12 18 | 704 | 0.1− | 1.0− | 2004 04 22 | 704 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2003 12 18 | 704 | 0.1− | 0.7− | 2004 04 22 | 704 | 1.0− | 0.4+ | 2006 10 22 | G96 | 0.8+ | 0.1+ |
| 2003 12 18 | 704 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2003 12 18 | 704 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.5+ | 2006 11 16 | G96 | 1.2− | 1.0− |
| 2003 12 22 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | (2.3− | 0.4−) | 2006 11 16 | G96 | 0.2− | 0.8− |
| 2003 12 22 | 704 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.8− | 0.3+ | | | | |

**(139268)∗ 2001 HZ$_{56}$**

Discovered 2001 Apr. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.28712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29813618 | $\omega$ | 336.16830 | | +0.27856997 | +0.95952099 | |
| $a$ | 2.2191820 | $\Omega$ | 309.97953 | | −0.87224186 | +0.23469431 | |
| $e$ | 0.1881001 | $i$ | 3.10094 | | −0.40198621 | +0.15568577 | |
| $P$ | 3.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 14 | 691 | 0.0 | 0.5− | 2004 03 20 | 704 | 0.2− | 0.6+ | 2005 10 14 | 699 | 0.3+ | 0.1+ |
| 1997 02 14 | 691 | 0.1− | 0.4− | 2004 03 20 | 699 | 0.1− | 0.4+ | 2005 10 26 | 699 | 0.1− | 0.2− |
| 1997 02 14 | 691 | 0.5− | 0.8− | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2005 10 26 | 699 | 0.2− | 0.1− |
| 2001 04 24 | 608 | 1.8+ | 1.0+ | 2004 03 20 | 704 | 0.3+ | 0.0 | 2005 10 26 | 699 | 0.7+ | 0.2+ |
| 2001 04 24 | 608 | 1.6+ | 0.2+ | 2004 03 20 | 699 | 0.5+ | 0.2+ | 2005 10 26 | 699 | 1.2− | 0.7− |
| 2001 04 24 | 608 | 1.4+ | 0.3+ | 2004 03 20 | 704 | 0.5+ | 0.8+ | 2005 10 29 | 703 | 0.1− | 0.5+ |
| 2001 04 26 | 699 | 0.6− | 0.8+ | 2004 03 23 | 704 | 0.6+ | 0.3+ | 2005 10 29 | 703 | 0.3− | 0.5+ |
| 2001 04 26 | 699 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.6+ | 0.2+ | 2005 10 29 | 703 | 0.0 | 0.4+ |
| 2001 04 26 | 699 | 0.6− | 0.9+ | 2004 03 23 | 704 | 0.1− | 0.2+ | 2005 10 29 | 703 | 0.0 | 0.2+ |
| 2001 04 26 | 699 | 0.5− | 1.0+ | 2004 03 23 | 704 | 0.5+ | 0.8+ | 2005 11 02 | 704 | 1.2+ | 0.1− |
| 2001 05 03 | 608 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2005 11 02 | 704 | 0.6+ | 0.0 |
| 2001 05 03 | 608 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.6− | 0.4+ | 2005 11 02 | 704 | 0.1+ | 1.1+ |
| 2001 05 03 | 608 | 0.0 | 0.4− | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2005 11 02 | 704 | 0.8+ | 0.3+ |
| 2001 05 18 | 704 | 0.6− | 0.2+ | 2004 03 27 | 704 | 0.1− | 0.4− | 2005 11 02 | 704 | 0.2+ | 0.0 |
| 2001 05 18 | 704 | 0.4− | 0.4− | 2004 03 27 | 704 | 0.3− | 0.4+ | 2005 11 04 | 704 | 0.5− | 0.0 |
| 2001 05 18 | 704 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2005 11 04 | 704 | 0.4+ | 0.8+ |
| 2001 05 18 | 704 | 0.4+ | 0.4− | 2004 04 09 | 703 | 2.0+ | 0.5− | 2005 11 04 | 704 | 0.2+ | 0.7+ |
| 2001 05 18 | 704 | 0.1− | 0.5− | 2004 04 09 | 703 | 0.2+ | 0.1− | 2005 11 04 | 704 | 0.2− | 0.9+ |
| 2001 05 24 | 699 | 0.2− | 0.2+ | 2004 04 09 | 703 | 0.1+ | 1.2+ | 2005 11 05 | 703 | 1.0− | 0.0 |
| 2001 05 24 | 699 | 0.6− | 0.3− | 2004 04 09 | 703 | 0.9+ | 1.0+ | 2005 11 05 | 703 | 0.3− | 0.7+ |
| 2001 05 24 | 699 | 0.7− | 0.2+ | 2005 09 25 | 644 | 0.6− | 0.2+ | 2005 11 05 | 703 | 0.3− | 0.3+ |
| 2001 05 24 | 699 | 0.3− | 0.1+ | 2005 09 25 | 644 | 0.5− | 0.3+ | 2005 11 05 | 703 | 0.4+ | 0.0 |
| 2004 02 26 | 704 | 1.7− | 0.6+ | 2005 09 25 | 644 | 0.3− | 0.3+ | 2005 11 05 | 703 | 0.6− | 0.2+ |
| 2004 02 26 | 704 | (3.0− | 0.2+) | 2005 09 30 | 703 | 0.4+ | 0.0 | 2005 11 05 | 703 | (2.5− | 1.8−) |
| 2004 02 26 | 704 | 0.6− | 0.5+ | 2005 09 30 | 703 | (2.3− | 1.5+) | 2005 11 05 | 703 | (2.0− | 2.4−) |
| 2004 02 26 | 704 | 1.6− | 0.7+ | 2005 09 30 | 703 | 0.1− | 2.0+ | 2005 11 05 | 703 | 1.3− | 1.5− |
| 2004 03 18 | 704 | 0.1− | 1.2+ | 2005 09 30 | 703 | (1.3+ | 2.9+) | 2005 11 06 | 704 | 0.5− | 0.5+ |
| 2004 03 18 | 704 | 0.2+ | 0.2+ | 2005 10 03 | 704 | 1.8− | 1.5+ | 2005 11 06 | 704 | 0.3+ | 0.0 |
| 2004 03 18 | 704 | 1.1+ | 0.1+ | 2005 10 03 | 704 | 1.2− | 0.0 | 2005 11 06 | 704 | 0.1− | 0.1+ |
| 2004 03 18 | 704 | 0.2− | 0.5− | 2005 10 03 | 704 | 0.6− | 0.2− | 2005 11 06 | 704 | 1.0+ | 0.2+ |
| 2004 03 18 | 704 | 0.1+ | 0.2+ | 2005 10 14 | 699 | 0.4+ | 0.8+ | 2005 11 06 | 704 | 0.0 | 0.1+ |
| 2004 03 20 | 699 | 1.1+ | 0.4+ | 2005 10 14 | 699 | 0.4− | 1.1+ | | | | |
| 2004 03 20 | 699 | 0.5+ | 1.3+ | 2005 10 14 | 699 | 1.1+ | 0.1+ | | | | |

**(139269)∗ 2001 HW$_{59}$**

Discovered 2001 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.44052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27780551 | $\omega$ | 90.05033 | | −0.84425377 | −0.52990138 | |
| $a$ | 2.3261737 | $\Omega$ | 57.95110 | | +0.44632341 | −0.77804608 | |
| $e$ | 0.1202161 | $i$ | 5.43289 | | +0.29670016 | −0.33741491 | |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.2− | 0.2− | 2003 12 23 | 704 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.6+ | 0.2− |
| 1992 11 27 | 691 | 0.4+ | 0.4+ | 2003 12 23 | 704 | 0.3+ | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 1992 11 27 | 691 | 0.3− | 0.3+ | 2003 12 23 | 704 | 0.4− | 1.1+ | 2006 10 21 | G96 | 0.9+ | 0.4+ |
| 2001 04 23 | 704 | 1.3+ | 0.0 | 2003 12 28 | 704 | 1.0+ | 0.9− | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 04 23 | 704 | 0.3− | 0.5− | 2003 12 28 | 704 | 1.4− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 04 23 | 704 | 1.4+ | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.8− | 2006 10 22 | 691 | 0.5− | 0.3+ |
| 2001 04 23 | 704 | 0.7+ | 0.6+ | 2003 12 28 | 704 | 0.2+ | 0.5− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2001 04 27 | 691 | 0.1+ | 0.6+ | 2004 01 16 | 703 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2001 04 27 | 691 | 0.1− | 0.6+ | 2004 01 16 | 703 | 1.1+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2001 04 27 | 691 | 0.1+ | 0.6+ | 2004 01 16 | 703 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2001 05 15 | 699 | 0.1+ | 0.0 | 2004 01 16 | 703 | 0.5− | 0.6− | 2006 11 16 | G96 | (1.7− | 0.3+) |
| 2001 05 15 | 699 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2001 05 15 | 699 | 0.3− | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2001 05 15 | 699 | 1.1+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 05 24 | 807 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 05 24 | 807 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.5+ | 2006 11 21 | 691 | 0.2+ | 0.5+ |
| 2003 12 23 | 704 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.4+ | | | | |

**(139270)∗ 2001 HU$_{61}$**

Discovered 2001 Apr. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.13366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22648776 | $\omega$ | 94.05353 | | +0.43665866 | +0.89612021 | |
| $a$ | 2.6654644 | $\Omega$ | 202.37003 | | −0.88576428 | +0.41282750 | |
| $e$ | 0.2716928 | $i$ | 12.03543 | | −0.15732404 | +0.16291724 | |
| $P$ | 4.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 17 | 691 | 0.1− | 0.3− | 2006 08 26 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 704 | 0.3+ | 0.0 |
| 2001 04 17 | 691 | 0.0 | 0.0 | 2006 08 31 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2001 04 17 | 691 | 0.2− | 0.0 | 2006 08 31 | 704 | 0.8− | 0.3− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 04 24 | 608 | 0.5+ | 1.2− | 2006 08 31 | 704 | 0.9− | 0.4− | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2001 04 24 | 608 | 0.4+ | 1.4− | 2006 08 31 | 704 | 1.0− | 0.6+ | 2006 09 27 | 699 | 0.2+ | 0.1− |
| 2001 04 24 | 608 | 0.5+ | 0.4− | 2006 09 01 | 704 | 0.5− | 0.1+ | 2006 09 27 | 699 | 0.5+ | 0.1− |
| 2001 04 29 | 691 | 0.7+ | 0.1+ | 2006 09 01 | 704 | 1.1+ | 0.8+ | 2006 09 27 | 699 | 0.3− | 0.6+ |
| 2001 04 29 | 691 | 0.6+ | 0.0 | 2006 09 01 | 704 | 0.5− | 0.2− | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 2001 04 29 | 691 | 0.3+ | 0.5− | 2006 09 01 | 704 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 2001 05 15 | 699 | 0.9− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.0 | 0.0 |
| 2001 05 15 | 699 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.0 |
| 2001 05 15 | 699 | 0.3+ | 0.1− | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2001 05 15 | 699 | 0.3+ | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2001 05 25 | 704 | 0.3− | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2001 05 25 | 704 | 0.0 | 1.1+ | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2001 05 25 | 704 | 0.3− | 1.0+ | 2006 09 17 | 703 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2001 05 25 | 704 | 0.8+ | 1.0+ | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2001 06 15 | 645 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2001 06 15 | 645 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2002 10 30 | 644 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2002 10 30 | 644 | 0.1− | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 10 30 | 644 | 0.5− | 0.3+ | 2006 09 18 | 704 | 0.6+ | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2005 03 03 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.2+ | 0.3+ |
| 2005 03 03 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.5− | 0.2− |
| 2005 03 03 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.6+ | 0.3+ |
| 2005 03 13 | 703 | 0.5− | 0.7− | 2006 09 18 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2005 03 13 | 703 | 0.6− | 0.1− | 2006 09 18 | 704 | 1.3+ | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2005 03 13 | 703 | 1.2+ | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2005 03 13 | 703 | 0.7− | 0.9+ | 2006 09 19 | 699 | 0.6− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 31 | 699 | 0.1+ | 1.3+ | 2006 09 19 | 699 | 0.9− | 1.2+ | 2006 10 31 | G96 | 0.1− | 0.6− |
| 2005 03 31 | 699 | (0.5+ | 1.7+) | 2006 09 19 | 699 | 1.3− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2005 03 31 | 699 | 1.1− | 0.6+ | 2006 09 25 | 704 | 1.2+ | 0.5− | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2005 03 31 | 699 | 0.1+ | 1.1+ | 2006 09 25 | 704 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2006 08 26 | 704 | 0.4+ | 0.9+ | 2006 09 25 | 704 | (0.0 | 1.6+) | | | | |
| 2006 08 26 | 704 | 0.9+ | 0.5− | 2006 09 25 | 704 | 0.6+ | 0.4+ | | | | |

**(139271)∗ 2001 HM$_{63}$ = 2004 CQ$_{74}$**

Discovered 2001 Apr. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60750)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.74885 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27601972 | $\omega$ | 336.69872 | | −0.47415452 | +0.87706982 | |
| $a$ | 2.3361962 | $\Omega$ | 264.92025 | | −0.79514187 | −0.46412081 | |
| $e$ | 0.1391266 | $i$ | 4.43248 | | −0.37805673 | −0.12385636 | |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 27 | 691 | 0.1+ | 0.4− | 2004 02 11 | 703 | 1.3+ | 1.3+ | 2005 07 29 | 644 | 0.1+ | 0.1+ |
| 1999 12 27 | 691 | 0.3+ | 0.1− | 2004 02 11 | 703 | (0.3+ | 1.6+) | 2005 07 29 | 644 | 0.2+ | 0.1+ |
| 1999 12 27 | 691 | 0.4− | 0.5− | 2004 02 17 | 704 | 1.4+ | 0.9+ | 2005 07 29 | 644 | 0.1+ | 0.1+ |
| 2001 04 26 | 699 | 0.5− | 0.5+ | 2004 02 17 | 704 | 0.5+ | 0.9+ | 2005 07 29 | 644 | 0.0 | 0.1+ |
| 2001 04 26 | 699 | 0.3+ | 0.2− | 2004 02 17 | 704 | 0.5+ | 0.1− | 2005 07 29 | 644 | 0.1+ | 0.1+ |
| 2001 04 26 | 699 | 0.7+ | 0.1+ | 2005 05 19 | G96 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2001 04 26 | 699 | 0.5− | 0.4+ | 2005 05 19 | G96 | 0.6− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2001 04 30 | 704 | 0.6− | 0.0 | 2005 05 19 | G96 | 0.5− | 0.4− | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2001 04 30 | 704 | 0.8− | 0.1− | 2005 05 19 | G96 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.6+ |
| 2001 04 30 | 704 | 0.1− | 1.2+ | 2005 06 29 | 644 | 0.1+ | 0.4+ | 2006 11 24 | 691 | 0.2− | 0.2− |
| 2001 05 24 | 699 | 0.4+ | 0.1− | 2005 06 29 | 644 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.1− | 0.4− |
| 2001 05 24 | 699 | 0.3+ | 0.6+ | 2005 06 29 | 644 | 0.0 | 0.3+ | 2006 11 26 | H07 | 0.1+ | 0.1+ |
| 2001 05 24 | 699 | 0.5− | 0.4+ | 2005 07 01 | 691 | 0.1− | 0.2+ | 2006 11 26 | H07 | 0.8+ | 0.2+ |
| 2001 05 24 | 699 | 0.6− | 0.4− | 2005 07 01 | 691 | 0.0 | 0.1+ | 2006 11 26 | H07 | 0.9− | 0.9− |
| 2001 05 27 | 608 | 0.3+ | 1.4− | 2005 07 01 | 691 | 0.1− | 0.1− | 2006 11 27 | H07 | 0.2+ | 0.1+ |
| 2001 05 27 | 608 | 0.8+ | 1.0− | 2005 07 06 | 691 | 0.0 | 0.3+ | 2006 11 27 | H07 | 0.4− | 0.1+ |
| 2001 05 27 | 608 | 0.1+ | 0.5− | 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 11 27 | H07 | 0.8− | 0.7+ |
| 2004 01 22 | 704 | 0.1− | 0.6+ | 2005 07 06 | 691 | 0.2− | 0.2+ | 2006 11 28 | H07 | (1.9+ | 0.7+) |
| 2004 01 22 | 704 | 0.8− | 1.2+ | 2005 07 11 | 703 | 0.7+ | 0.6+ | 2006 11 28 | H07 | (3.1+ | 2.2−) |
| 2004 01 22 | 704 | 0.2+ | 0.9+ | 2005 07 11 | 703 | 0.2+ | 1.3+ | 2006 11 30 | 691 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | (0.0 | 2.0+) | 2005 07 11 | 703 | 0.4− | 0.3+ | 2006 11 30 | 691 | 0.2− | 0.0 |
| 2004 02 11 | 703 | 1.0+ | 0.1+ | 2005 07 11 | 703 | 0.2− | 0.3− | 2006 11 30 | 691 | 0.3− | 0.4+ |
| 2004 02 11 | 703 | 0.1− | 0.7+ | 2005 07 29 | 644 | 0.2+ | 0.1+ | | | | |

**(139272)∗ 2001 HO$_{63}$**

Discovered 2001 Apr. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.85500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25799646 | $\omega$ | 33.48534 | | +0.51616482 | +0.85082415 | |
| $a$ | 2.4437693 | $\Omega$ | 267.76923 | | −0.80583256 | +0.44352033 | |
| $e$ | 0.1398532 | $i$ | 5.64829 | | −0.29018574 | +0.28175875 | |
| $P$ | 3.82 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 17 | 699 | 0.1− | 0.3+ | 2002 10 16 | 644 | 0.1+ | 0.4+ | 2005 07 03 | 704 | 0.2− | 0.1+ |
| 1998 09 17 | 699 | 0.0 | 0.7− | 2002 10 16 | 644 | 0.8+ | 0.1+ | 2005 07 03 | 704 | 0.4+ | 0.8− |
| 1998 09 17 | 699 | 0.3− | 0.4+ | 2002 11 04 | 699 | 0.1− | 0.8+ | 2005 07 03 | 704 | 0.5+ | 0.6− |
| 1998 09 25 | 699 | 0.8+ | 0.3+ | 2002 11 04 | 699 | 0.7+ | 0.3+ | 2005 07 03 | 704 | 0.2− | 0.8− |
| 1998 09 25 | 699 | 1.2+ | 0.4− | 2002 11 04 | 699 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.3− | 0.8+ |
| 1998 09 25 | 699 | 0.9+ | 0.3+ | 2002 11 04 | 699 | 0.6− | 0.6+ | 2006 10 19 | 703 | (2.3− | 0.1+) |
| 1998 10 18 | 699 | 0.6+ | 0.4+ | 2002 11 05 | 704 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.6− |
| 1998 10 18 | 699 | 0.1− | 1.6+ | 2002 11 05 | 704 | 1.0− | 0.6− | 2006 10 19 | 703 | 1.4− | 0.4+ |
| 1998 10 18 | 699 | 0.0 | 0.6+ | 2002 11 05 | 704 | 1.0− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 04 26 | 699 | 1.3+ | 0.4+ | 2002 11 05 | 704 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2001 04 26 | 699 | 0.7+ | 1.3+ | 2002 11 05 | 704 | 1.3− | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2001 04 26 | 699 | 0.1+ | 0.0 | 2002 11 08 | 704 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2001 04 26 | 699 | 1.0+ | 0.1+ | 2002 11 08 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.6− | 1.1− |
| 2001 04 30 | 704 | 0.2− | 0.7+ | 2002 11 08 | 704 | (1.5− | 0.6−) | 2006 10 27 | 703 | 0.1+ | 0.9− |
| 2001 04 30 | 704 | 0.1+ | 0.5+ | 2002 11 12 | 704 | 0.9+ | 0.0 | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2001 04 30 | 704 | 1.3+ | 1.0+ | 2002 11 12 | 704 | 0.4− | 1.1+ | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2001 05 17 | 704 | 0.3− | 0.3+ | 2002 11 12 | 704 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 05 17 | 704 | 1.2− | 0.0 | 2002 11 12 | 704 | 0.2− | 0.8+ | 2006 11 09 | 644 | 0.4− | 0.3+ |
| 2001 05 17 | 704 | 0.2+ | 0.1+ | 2002 11 12 | 704 | 0.5+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 05 17 | 704 | 0.7− | 0.1+ | 2002 11 13 | 704 | 1.3− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2001 06 11 | 699 | 0.1− | 0.9+ | 2002 11 13 | 704 | 0.5+ | 0.5− | 2006 11 13 | 691 | 0.3+ | 0.1− |
| 2001 06 11 | 699 | 0.9+ | 0.4+ | 2002 11 13 | 704 | 0.3− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.4− |
| 2001 06 11 | 699 | 0.6− | 0.1+ | 2002 11 13 | 704 | 1.1+ | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.3− |
| 2001 06 11 | 699 | 0.1+ | 0.7+ | 2002 11 13 | 704 | 0.5+ | 0.4+ | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2001 07 17 | 699 | 0.3− | 0.9+ | 2002 11 13 | 644 | 0.0 | 0.6+ | 2006 11 13 | 691 | 0.8+ | 0.3− |
| 2001 07 17 | 699 | 0.2− | 1.1+ | 2002 11 13 | 644 | 0.1+ | 0.6+ | 2006 11 15 | 704 | 1.2+ | 0.4+ |
| 2001 07 17 | 699 | 0.8− | 0.4− | 2002 11 13 | 644 | 0.0 | 0.8+ | 2006 11 15 | 704 | (1.7+ | 1.3+) |
| 2001 07 17 | 699 | 0.8− | 0.8+ | 2002 11 14 | 704 | 0.0 | 0.8+ | 2006 11 15 | 704 | 0.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.4− | 0.0 | 2002 11 14 | 704 | 0.6− | 0.9+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.6− | 0.3+ | 2002 11 14 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.5+ | 0.7+ | 2002 11 14 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.8− | 0.5+ | 2002 11 14 | 704 | 0.7− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2002 10 04 | 699 | (1.5− | 0.1−) | 2002 12 06 | 704 | (2.1+ | 0.0 ) | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2002 10 04 | 699 | 0.9+ | 0.7− | 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2002 10 04 | 699 | 0.5+ | 0.2− | 2002 12 06 | 704 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 10 04 | 699 | 0.8− | 0.1+ | 2002 12 06 | 704 | 0.8+ | 0.7− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2002 10 10 | 704 | 0.1− | 0.5+ | 2002 12 06 | 704 | (0.4+ | 3.0−) | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 1.2− | 0.3+ | 2002 12 11 | 704 | 0.8− | 0.9+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 1.0− | 0.1− | 2002 12 11 | 704 | 0.5− | 0.6+ | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 1.3− | 0.4+ | 2002 12 11 | 704 | 0.5− | 0.6+ | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2002 10 10 | 704 | 0.1− | 0.4+ | 2002 12 11 | 704 | 1.4− | 0.5+ | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.3+ | 0.3− | 2004 01 21 | 704 | 0.5− | 0.3+ | 2006 11 28 | 704 | 0.4+ | 1.0+ |
| 2002 10 12 | 704 | 1.3− | 0.2− | 2004 01 21 | 704 | 0.7+ | 0.1− | 2006 11 28 | 704 | 2.5− | 1.2+ |
| 2002 10 12 | 704 | (0.3− | 1.5−) | 2004 01 21 | 704 | 0.3+ | 0.6+ | 2006 11 28 | 704 | 0.7− | 1.1+ |
| 2002 10 12 | 704 | 1.2− | 0.1− | 2004 02 17 | 704 | (0.6+ | 1.6+) | 2006 11 28 | 704 | 0.1− | 0.4+ |
| 2002 10 12 | 704 | 0.5− | 0.8− | 2004 02 17 | 704 | 0.2− | 1.0+ | | | | |
| 2002 10 16 | 644 | 0.2+ | 0.1+ | 2004 02 17 | 704 | 0.6+ | 0.6+ | | | | |

**(139273)∗ 2001 HQ$_{63}$**

Discovered 2001 Apr. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.15945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25197945 | $\omega$ | 169.53504 | | −0.96994236 | +0.23993311 | |
| $a$ | 2.4825193 | $\Omega$ | 24.46305 | | −0.22973229 | −0.84799181 | |
| $e$ | 0.0235176 | $i$ | 5.61885 | | −0.08021780 | −0.47259073 | |
| $P$ | 3.91 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 691 | 0.2− | 0.4+ | 2003 12 23 | 704 | 0.2+ | 1.4+ | 2006 09 22 | 704 | 0.2− | 0.3+ |
| 2001 04 23 | 691 | 0.2− | 0.4+ | 2003 12 27 | 691 | 0.2− | 0.3+ | 2006 09 26 | 704 | 1.4+ | 0.2− |
| 2001 04 23 | 691 | 0.3− | 0.4+ | 2003 12 27 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.6+ | 0.2− |
| 2001 04 26 | 699 | 0.6− | 0.0 | 2003 12 27 | 691 | 0.1− | 0.7+ | 2006 09 26 | 704 | (1.6+ | 0.6+) |
| 2001 04 26 | 699 | 0.2− | 1.2+ | 2003 12 28 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.1+ | 0.1− |
| 2001 04 26 | 699 | 1.4+ | 1.0+ | 2003 12 28 | 704 | 1.3+ | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2001 04 26 | 699 | 0.7+ | 0.8+ | 2003 12 28 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 2001 05 02 | 644 | 0.7+ | 0.2− | 2003 12 28 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2001 05 02 | 644 | 0.5+ | 0.1+ | 2003 12 28 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.4− |
| 2001 05 02 | 644 | 0.5+ | 0.7− | 2005 05 16 | 644 | 0.4+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2001 05 02 | 644 | 0.3+ | 0.0 | 2005 05 16 | 644 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.3+ |
| 2001 05 02 | 644 | 0.2+ | 1.1− | 2005 05 16 | 644 | 0.6+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2001 05 02 | 644 | 0.3+ | 0.9− | 2005 05 19 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.8+ | 1.1+ |
| 2001 05 24 | 699 | 0.5+ | 1.0+ | 2005 05 19 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.6− |
| 2001 05 24 | 699 | 0.1− | 0.7+ | 2005 05 19 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2001 05 24 | 699 | 0.9+ | 1.2+ | 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 05 24 | 699 | 0.2− | 0.2+ | 2006 08 18 | 691 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 0.6+ | 0.5+ | 2006 08 18 | 691 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.6+ | 0.4− | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 10 20 | G96 | 0.6+ | 0.0 |
| 2002 09 05 | 704 | 0.8− | 0.3− | 2006 09 18 | 703 | 0.7− | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 09 15 | 644 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2003 12 23 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.5+ | 1.0+ | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2003 12 23 | 704 | 0.0 | 0.5− | 2006 09 22 | 704 | 0.3− | 1.2+ | 2006 11 17 | G96 | 0.2+ | 0.0 |

**(139274)∗ 2001 HV$_{63}$ = 2002 RB$_{222}$**

Discovered 2001 Apr. 26 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37621)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.71247 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24009667 | $\omega$ | 214.27323 | | −0.62823526 | | +0.77670808 |
| $a$ | 2.5637675 | $\Omega$ | 16.95289 | | −0.67457000 | | −0.51481760 |
| $e$ | 0.1423372 | $i$ | 8.92200 | | −0.38765419 | | −0.36288757 |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 608 | 0.6− | 0.2− | 2005 03 04 | 703 | 1.8− | 1.2− | 2005 04 18 | 703 | 0.7+ | 0.5+ |
| 2001 03 21 | 608 | 0.6− | 0.3− | 2005 03 04 | 703 | 1.1− | 0.0 | 2005 04 18 | 703 | 0.2+ | 0.5+ |
| 2001 04 04 | 608 | 0.6− | 0.5+ | 2005 03 04 | 703 | 0.9+ | 0.1− | 2005 04 30 | 691 | 0.2− | 0.1+ |
| 2001 04 04 | 608 | 0.1− | 0.6+ | 2005 03 11 | 691 | 0.1− | 0.5+ | 2005 04 30 | 691 | 0.2− | 0.1+ |
| 2001 04 18 | 704 | 0.5− | 0.2+ | 2005 03 11 | 691 | 0.0 | 0.4+ | 2005 04 30 | 691 | 0.0 | 0.1+ |
| 2001 04 18 | 704 | 0.4− | 0.2+ | 2005 03 11 | 691 | 0.0 | 0.3+ | 2005 05 12 | G96 | 0.4− | 0.3− |
| 2001 04 18 | 704 | 0.3+ | 0.1− | 2005 04 02 | 644 | 0.2− | 0.1+ | 2005 05 12 | G96 | 0.6− | 0.4− |
| 2001 04 18 | 608 | 1.2+ | 0.6− | 2005 04 02 | 644 | 0.2− | 0.0 | 2005 05 12 | G96 | 0.4− | 0.5− |
| 2001 04 18 | 608 | 0.9+ | 0.8− | 2005 04 02 | 644 | 0.2− | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.5− |
| 2001 04 18 | 608 | 1.1+ | 0.5− | 2005 04 04 | 704 | 1.1+ | 0.3− | 2006 08 29 | 703 | 0.4− | 0.5+ |
| 2001 04 26 | 608 | (4.0− | 0.3+) | 2005 04 04 | 704 | 1.6+ | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.2− |
| 2001 04 26 | 608 | (3.1− | 0.0 ) | 2005 04 04 | 704 | 1.3+ | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.7+ |
| 2001 04 26 | 608 | (3.2− | 0.2+) | 2005 04 04 | 704 | 1.6+ | 0.4− | 2006 08 29 | 703 | 0.9− | 0.3− |
| 2001 04 30 | 704 | 0.7− | 0.5+ | 2005 04 07 | 704 | 0.3+ | 1.1+ | 2006 08 29 | 703 | 0.2− | 0.9− |
| 2001 04 30 | 704 | 0.0 | 0.2+ | 2005 04 07 | 704 | 0.1+ | 0.7+ | 2006 08 29 | 703 | 0.1+ | 0.7+ |
| 2001 04 30 | 704 | 1.3− | 0.8− | 2005 04 07 | 704 | 0.3+ | 1.1+ | 2006 08 29 | 703 | 1.1− | 0.6− |
| 2002 09 11 | 608 | 0.4− | 0.2− | 2005 04 09 | 704 | 0.8+ | 0.6+ | 2006 08 29 | 703 | 0.1+ | 0.3+ |
| 2002 09 15 | 644 | 0.7− | 0.7+ | 2005 04 09 | 704 | 1.3+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 1.0+ |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2005 04 09 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 644 | 0.3+ | 0.6+ |
| 2002 09 15 | 644 | 0.7− | 0.5+ | 2005 04 09 | 704 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.1− | 0.3− |
| 2002 09 16 | 644 | 0.2− | 1.6+ | 2005 04 09 | 704 | 0.5+ | 0.5− | 2006 09 14 | 644 | 0.3+ | 0.5+ |
| 2002 09 16 | 644 | 0.3− | 0.9+ | 2005 04 12 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.6− | 0.6+ |
| 2002 09 16 | 644 | 0.0 | 1.5+ | 2005 04 12 | 704 | 0.7+ | 0.8+ | 2006 09 14 | 703 | 0.8− | 1.0− |
| 2003 12 29 | 704 | 0.5− | 0.6+ | 2005 04 12 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 703 | 1.1+ | 0.5− |
| 2003 12 29 | 704 | 0.3− | 1.3+ | 2005 04 12 | 704 | 0.2− | 0.4− | 2006 09 26 | 703 | 0.1− | 1.3+ |
| 2003 12 29 | 704 | 0.9− | 1.5+ | 2005 04 12 | 704 | 0.2+ | 1.0+ | 2006 09 26 | 703 | 0.7+ | 1.0+ |
| 2003 12 29 | 704 | 0.7+ | 1.1+ | 2005 04 18 | 703 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.6+ | 1.4+ |
| 2005 03 04 | 703 | 0.2+ | 0.2+ | 2005 04 18 | 703 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.6− | 0.3+ |

**(139275)∗ 2001 HR$_{64}$ = 1997 GR$_{32}$**

Discovered 2001 Apr. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 13369)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.41399 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25818184 | $\omega$ | 144.75842 | | −0.99144457 | | −0.12830968 |
| $a$ | 2.4425994 | $\Omega$ | 27.89863 | | +0.10489221 | | −0.89244986 |
| $e$ | 0.1340289 | $i$ | 2.93573 | | +0.07768710 | | −0.43251575 |
| $P$ | 3.82 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 12 | 809 | 0.4− | 1.3− | 2001 05 15 | 699 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.4+ |
| 1997 03 12 | 809 | 0.8+ | 0.0 | 2001 05 15 | 699 | 1.1− | 0.6− | 2006 09 15 | 691 | 0.3− | 0.2+ |
| 1997 03 12 | 809 | 0.3+ | 0.2− | 2001 05 24 | 699 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.4+ |
| 1997 04 03 | 704 | 0.3+ | 0.8+ | 2001 05 24 | 699 | 0.9− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 1997 04 03 | 704 | 0.1− | 0.2+ | 2001 05 24 | 699 | 0.3+ | 0.5+ | 2006 09 30 | 691 | 0.3+ | 0.3+ |
| 1997 04 04 | 566 | 1.4− | 0.2+ | 2001 05 24 | 699 | 1.0+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 1997 04 04 | 566 | (2.6− | 0.3+) | 2003 11 20 | 704 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.5+ | 0.4− |
| 1997 04 04 | 566 | 1.9− | 0.5+ | 2003 11 20 | 704 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 1997 04 11 | 704 | 1.4+ | 0.1− | 2003 11 20 | 704 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 1997 04 11 | 704 | 1.2+ | 0.3− | 2003 11 20 | 704 | 0.9− | 0.7− | 2006 10 20 | G96 | 0.2+ | 0.6− |
| 2001 04 26 | 699 | (1.7− | 1.9−) | 2003 12 18 | 704 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.5− | 0.2+ |
| 2001 04 26 | 699 | 1.0+ | 0.5+ | 2003 12 18 | 704 | 0.4− | 0.7+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 04 26 | 699 | 1.1+ | 0.2+ | 2003 12 18 | 704 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2001 04 26 | 699 | 0.1+ | 0.2+ | 2003 12 18 | 704 | 0.8+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2001 04 27 | 691 | 0.0 | 0.5+ | 2003 12 19 | 704 | 0.8+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2001 04 27 | 691 | 0.0 | 0.5+ | 2003 12 19 | 704 | 0.8+ | 1.2+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2001 04 27 | 691 | 0.1− | 0.4+ | 2003 12 19 | 704 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2001 04 30 | 704 | 0.1+ | 1.3− | 2003 12 19 | 704 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.8− | 0.0 |
| 2001 04 30 | 704 | 0.3+ | 0.1− | 2003 12 22 | 704 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 04 30 | 704 | 0.5+ | 0.7− | 2003 12 22 | 704 | (0.4− | 1.9+) | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 05 15 | 699 | 0.4+ | 1.4+ | 2003 12 22 | 704 | 0.1− | 0.8+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 05 15 | 699 | 0.0 | 0.6+ | 2003 12 22 | 704 | 0.2− | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.0 |

**(139276)∗ 2001 HY$_{64}$**

Discovered 2001 Apr. 27 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.00207 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27343933 | $\omega$ | 171.53093 | | −0.97705865 | | −0.21295234 |
| $a$ | 2.3508706 | $\Omega$ | 356.17031 | | +0.19288358 | | −0.87930944 |
| $e$ | 0.1609952 | $i$ | 2.37963 | | +0.09029017 | | −0.42598851 |
| $P$ | 3.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 01 | 704 | 0.0 | 0.1− | 2002 09 15 | 644 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 04 01 | 704 | 0.8+ | 0.4+ | 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2001 04 01 | 704 | 0.3+ | 0.6+ | 2002 09 16 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.2+ |
| 2001 04 01 | 704 | (1.3+ | 2.0+) | 2002 09 16 | 644 | 0.9− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2001 04 18 | 704 | 1.2+ | 1.0+ | 2003 12 04 | 704 | 0.8− | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2001 04 18 | 704 | 0.1+ | 1.3+ | 2003 12 04 | 704 | 0.7+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 04 18 | 704 | 0.1− | 0.2− | 2003 12 04 | 704 | 0.7− | 0.4− | 2006 09 29 | 691 | 0.1− | 0.1− |
| 2001 04 27 | 608 | 0.2− | 1.1+ | 2003 12 04 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 691 | 0.3+ | 0.4+ |
| 2001 04 27 | 608 | 0.0 | 0.7+ | 2003 12 18 | 704 | 0.1− | 0.9+ | 2006 09 29 | 691 | 0.5− | 0.5+ |
| 2001 04 27 | 608 | 0.8− | 1.2+ | 2003 12 18 | 704 | 0.3+ | 0.8+ | 2006 10 03 | 691 | 0.0 | 0.0 |
| 2001 04 30 | 704 | 0.2+ | 0.1− | 2003 12 18 | 704 | 0.0 | 1.0+ | 2006 10 03 | 691 | 0.5+ | 0.0 |
| 2001 04 30 | 704 | 0.3+ | 0.4+ | 2003 12 18 | 704 | 0.8+ | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.2+ |
| 2001 04 30 | 704 | 0.6+ | 1.0+ | 2004 01 22 | 704 | 0.2+ | 0.7+ | 2006 10 15 | 703 | 0.3+ | 1.0+ |
| 2001 04 30 | 704 | 0.5+ | 0.1+ | 2004 01 22 | 704 | 0.3− | 0.5+ | 2006 10 15 | 703 | 1.2+ | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2004 01 22 | 704 | 0.3− | 0.0 | 2006 10 15 | 703 | 0.1− | 0.2− |
| 2002 08 20 | 644 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.3− | 0.1− | 2006 10 15 | 703 | 0.9− | 0.4− |
| 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2002 08 29 | 644 | 0.5− | 0.3− | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2002 08 29 | 644 | 0.6− | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2002 08 29 | 644 | 0.5− | 0.6− | 2006 09 15 | 691 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 09 08 | 608 | 1.1+ | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 09 08 | 608 | 1.3+ | 0.9+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2002 09 15 | 644 | 0.7− | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.1− | | | | |

**(139277)∗ 2001 JJ = 2004 BV$_2$**

Discovered 2001 May 2 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56272)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.10729 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28478773 | $\omega$ | 143.85983 | | −0.94834469 | | +0.31612040 |
| $a$ | 2.2879957 | $\Omega$ | 54.58989 | | −0.29819632 | | −0.85959149 |
| $e$ | 0.1553261 | $i$ | 1.87384 | | −0.10826497 | | −0.40146030 |
| $P$ | 3.46 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 03 | 691 | 0.3+ | 0.7+ | 2003 12 22 | 704 | 0.1+ | 0.4− | 2004 02 11 | 691 | 0.3− | 0.2− |
| 1994 05 03 | 691 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.1− | 0.4+ | 2004 02 11 | 691 | 0.5− | 0.3− |
| 1994 05 03 | 691 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.1− | 0.7− | 2004 02 11 | 691 | 0.2− | 0.2− |
| 2001 04 26 | 699 | 0.4− | 0.1− | 2004 01 16 | 644 | 0.1+ | 0.2− | 2004 02 13 | 691 | 0.0 | 0.2− |
| 2001 04 26 | 699 | 1.0+ | 0.2+ | 2004 01 16 | 644 | 0.0 | 0.4− | 2004 02 13 | 691 | 0.4+ | 0.6+ |
| 2001 04 26 | 699 | 0.7+ | 0.2− | 2004 01 16 | 644 | 0.1+ | 0.9− | 2004 02 13 | 691 | 0.5− | 0.2− |
| 2001 04 26 | 699 | 0.0 | 0.6+ | 2004 01 16 | 691 | 0.3− | 0.2− | 2004 02 23 | 704 | 0.7− | 0.4− |
| 2001 04 27 | 691 | 0.1+ | 0.2+ | 2004 01 16 | 691 | 0.1+ | 0.2− | 2004 02 23 | 704 | 0.0 | 0.2+ |
| 2001 04 27 | 691 | 0.0 | 0.0 | 2004 01 16 | 691 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.4− | 1.5+ |
| 2001 04 27 | 691 | 0.0 | 0.3+ | 2004 01 17 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2001 05 02 | 644 | 0.3− | 0.8+ | 2004 01 17 | 644 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.4+ |
| 2001 05 02 | 644 | 0.3− | 0.5+ | 2004 01 17 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 05 02 | 644 | 0.0 | 0.6+ | 2004 01 19 | 703 | (2.5− | 4.0−) | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2001 05 03 | 608 | 0.3+ | 0.6− | 2004 01 19 | 703 | (1.8− | 0.2+) | 2006 11 14 | 691 | 0.2− | 0.5+ |
| 2001 05 03 | 608 | 0.2− | 0.9− | 2004 01 19 | 703 | 0.7+ | 1.4+ | 2006 11 14 | 691 | (0.2+ | 1.7+) |
| 2001 05 03 | 608 | 0.3+ | 0.1− | 2004 01 19 | 703 | 1.1+ | 1.2+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 05 17 | 704 | 0.3+ | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2001 05 17 | 704 | (1.1+ | 1.6+) | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2001 05 17 | 704 | 0.2− | 1.4+ | 2004 01 22 | 704 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2001 05 17 | 704 | 0.3+ | 1.3+ | 2004 01 22 | 704 | 0.3+ | 0.3− | 2006 11 22 | 691 | 0.0 | 0.4− |
| 2003 12 21 | 691 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.4− | 0.2− | 2006 11 22 | 691 | 0.2− | 0.2− |
| 2003 12 21 | 691 | 0.1+ | 0.0 | 2004 01 27 | 691 | 1.2+ | 0.2+ | 2006 11 22 | 691 | 0.5− | 2.9+ |
| 2003 12 21 | 691 | 0.1+ | 0.0 | 2004 01 27 | 691 | 0.1− | 0.3− | | | | |
| 2003 12 22 | 704 | 0.1− | 1.0+ | 2004 01 27 | 691 | 0.3− | 0.2− | | | | |

## (139278)∗ 2001 JN$_2$

Discovered 2001 May 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.57416 | | (2000.0) | | +0.34598037 | +0.91157577 |
| $n$ | 0.24145841 | $\omega$ | 200.81855 | | −0.82636935 | +0.40816473 |
| $a$ | 2.5541192 | $\Omega$ | 89.96613 | | −0.44430989 | −0.04930682 |
| $e$ | 0.2464828 | $i$ | 12.83225 | | | |
| $P$ | 4.08 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 691 | 0.2− | 0.1− | 2004 01 17 | 644 | 0.2+ | 0.6+ | 2005 06 04 | 703 | 1.0− | 0.2+ |
| 2001 05 15 | 691 | 0.1− | 0.0 | 2004 01 17 | 644 | 0.5+ | 0.3+ | 2005 06 04 | 703 | 0.4− | 0.1− |
| 2001 05 15 | 691 | 0.1+ | 0.2+ | 2004 01 17 | 644 | 0.3+ | 0.7+ | 2005 06 04 | 703 | 0.3− | 0.1− |
| 2001 05 16 | 691 | 0.4− | 0.0 | 2005 05 04 | 703 | 0.3− | 0.5− | 2005 06 04 | 703 | 1.2− | 0.2+ |
| 2001 05 16 | 691 | 0.4− | 0.0 | 2005 05 04 | 703 | 0.4− | 0.3− | 2005 06 07 | 699 | 0.5+ | 0.4− |
| 2001 05 16 | 691 | 0.7− | 0.1− | 2005 05 04 | 703 | 0.1− | 0.1− | 2005 06 07 | 699 | 0.6+ | 0.7+ |
| 2001 05 16 | 608 | 0.2+ | 0.8+ | 2005 05 04 | 703 | 0.5− | 0.2− | 2005 06 07 | 699 | 0.3+ | 0.7− |
| 2001 05 16 | 608 | 0.2+ | 0.7+ | 2005 05 05 | 170 | 0.8− | 0.3− | 2005 06 07 | 699 | 0.5+ | 0.7− |
| 2001 05 16 | 608 | 0.1+ | 0.7+ | 2005 05 05 | 170 | 0.3− | 0.5− | 2005 06 09 | 704 | 0.0 | 0.5+ |
| 2001 05 17 | 691 | 0.1+ | 0.1+ | 2005 05 05 | 170 | 0.5− | 0.4− | 2005 06 09 | 704 | 0.6+ | 0.0 |
| 2001 05 17 | 691 | 0.4+ | 0.1− | 2005 05 05 | 170 | 0.5− | 0.4− | 2005 06 09 | 704 | 0.3− | 0.2− |
| 2001 05 17 | 691 | 0.2+ | 0.0 | 2005 05 05 | 170 | 0.4− | 0.4− | 2005 06 09 | 704 | 0.2− | 0.2+ |
| 2001 05 26 | 704 | 0.3+ | 0.3+ | 2005 05 11 | 699 | 0.0 | 0.6− | 2005 06 09 | 704 | 0.7− | 0.6− |
| 2001 05 26 | 704 | 0.1+ | 0.1− | 2005 05 11 | 699 | 0.9− | 0.3+ | 2005 06 28 | 699 | 0.6+ | 0.7+ |
| 2001 05 26 | 704 | 0.4+ | 0.1+ | 2005 05 11 | 699 | 0.3+ | 0.6+ | 2005 06 28 | 699 | 0.2+ | 0.3− |
| 2001 05 26 | 704 | 0.1+ | 0.2+ | 2005 05 15 | 704 | 0.2+ | 0.7+ | 2005 06 28 | 699 | 0.2+ | 0.1− |
| 2001 05 26 | 704 | 0.1+ | 0.2+ | 2005 05 15 | 704 | 0.6+ | 0.1+ | 2005 06 28 | 699 | 0.9+ | 0.1+ |
| 2001 06 15 | 704 | 0.5+ | 0.4− | 2005 05 15 | 704 | 0.2+ | 0.7+ | 2005 06 29 | 644 | 0.0 | 0.0 |
| 2001 06 15 | 704 | 0.2− | 0.2+ | 2005 05 15 | 644 | 0.1− | 0.3− | 2005 06 29 | 644 | 0.0 | 0.2− |
| 2001 06 15 | 704 | 0.4+ | 0.0 | 2005 05 15 | 704 | 0.1+ | 0.1− | 2005 06 29 | 644 | 0.1+ | 0.0 |
| 2001 06 15 | 704 | 0.8+ | 0.9+ | 2005 05 15 | 704 | 0.8+ | 0.1− | 2006 10 22 | 703 | (1.6+ | 0.1−) |
| 2001 06 16 | 608 | 0.4+ | 0.6+ | 2005 05 15 | 644 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.0 |
| 2001 06 16 | 608 | 0.8+ | 0.5+ | 2005 05 15 | 644 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2001 06 16 | 608 | 0.1− | 0.2+ | 2005 05 16 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2001 06 22 | 704 | 0.1− | 0.4+ | 2005 05 16 | 704 | 0.6+ | 0.8+ | 2006 11 13 | 703 | (1.6− | 0.3+) |
| 2001 06 22 | 704 | 0.5+ | 0.5+ | 2005 05 16 | 704 | 0.6+ | 0.2+ | 2006 11 13 | 703 | 0.9− | 0.8+ |
| 2001 06 22 | 704 | 0.3− | 0.6+ | 2005 05 16 | 704 | 0.7+ | 0.1− | 2006 11 13 | 703 | 0.7− | 0.9+ |
| 2001 06 22 | 704 | 0.2+ | 0.4+ | 2005 05 16 | 704 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2001 06 22 | 704 | 0.3+ | 0.1− | 2005 05 31 | 699 | 0.1− | 0.1+ | 2006 11 19 | 703 | 1.3− | 0.7− |
| 2001 07 24 | 608 | 0.1+ | 0.7− | 2005 05 31 | 699 | 0.1− | 0.6− | 2006 11 19 | 703 | 1.3+ | 0.8− |
| 2001 07 24 | 608 | 0.2+ | 1.3− | 2005 05 31 | 699 | 0.2+ | 0.4− | 2006 11 19 | 703 | 0.2+ | 1.1+ |
| 2001 07 24 | 608 | 0.1+ | 0.8− | 2005 05 31 | 699 | 0.3− | 0.0 | 2006 11 19 | 703 | 0.1+ | 1.3+ |

## (139279)∗ 2001 JM$_4$

Discovered 2001 May 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.11079 | | (2000.0) | | −0.07101796 | +0.99327384 |
| $n$ | 0.23682485 | $\omega$ | 121.77095 | | −0.95953237 | −0.04298208 |
| $a$ | 2.5873263 | $\Omega$ | 143.80858 | | −0.27249600 | −0.10751564 |
| $e$ | 0.2334062 | $i$ | 8.90964 | | | |
| $P$ | 4.16 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 29 | 691 | 0.3− | 0.5+ | 2001 06 12 | 699 | 0.7− | 0.2+ | 2005 04 08 | 704 | 0.3+ | 0.9+ |
| 1996 01 29 | 691 | 0.3+ | 0.3+ | 2001 06 12 | 699 | 0.5− | 0.9+ | 2005 04 18 | 703 | 0.7+ | 0.8+ |
| 1996 01 29 | 691 | 0.2+ | 0.1+ | 2001 06 12 | 699 | (2.0− | 0.6−) | 2005 04 18 | 703 | 0.3+ | 1.1+ |
| 2001 04 25 | 699 | 0.2− | 0.2+ | 2001 06 14 | 608 | 0.0 | 1.0− | 2005 04 18 | 703 | 0.4− | 1.2+ |
| 2001 04 25 | 699 | 0.2− | 1.0+ | 2001 06 14 | 608 | 0.2+ | 1.1− | 2005 04 18 | 703 | 0.1− | 1.0+ |
| 2001 04 25 | 699 | 0.5− | 0.5− | 2001 06 14 | 608 | 0.4− | 0.6− | 2005 04 30 | 699 | 0.1− | 0.8− |
| 2001 04 25 | 699 | 0.8− | 0.2+ | 2001 07 19 | 699 | 1.3+ | 0.6+ | 2005 04 30 | 699 | 0.1+ | 0.5+ |
| 2001 05 15 | 644 | (0.0 | 2.1+) | 2001 07 19 | 699 | 0.9+ | 1.1+ | 2005 04 30 | 699 | 0.0 | 0.1− |
| 2001 05 15 | 644 | (0.0 | 2.1+) | 2001 07 19 | 699 | 0.6+ | 0.4+ | 2005 04 30 | 699 | 0.6+ | 0.0 |
| 2001 05 15 | 644 | (0.3+ | 3.9+) | 2001 07 19 | 699 | 0.2+ | 1.1+ | 2005 05 08 | 703 | 1.0− | 0.1− |
| 2001 05 18 | 699 | 0.5+ | 0.3− | 2002 11 07 | 645 | 0.0 | 0.0 | 2005 05 08 | 703 | 1.0− | 0.1+ |
| 2001 05 18 | 699 | 0.4+ | 0.0 | 2002 11 07 | 645 | 0.0 | 0.0 | 2005 05 08 | 703 | 0.5− | 0.5− |
| 2001 05 18 | 699 | 0.6+ | 0.1+ | 2005 03 18 | 703 | (2.4− | 0.6−) | 2005 05 08 | 703 | 0.7− | 0.0 |
| 2001 05 18 | 699 | 0.2+ | 0.6+ | 2005 03 18 | 703 | 0.2+ | 0.5+ | 2005 05 13 | 704 | (3.5+ | 0.8+) |
| 2001 05 18 | 699 | 0.1+ | 0.0 | 2005 03 18 | 703 | (2.5− | 0.6+) | 2005 05 13 | 704 | 0.9+ | 1.1+ |
| 2001 05 18 | 699 | 0.4+ | 0.1+ | 2005 03 18 | 703 | 1.2− | 0.3− | 2005 05 13 | 704 | 1.0+ | 0.6− |
| 2001 05 18 | 699 | 0.2− | 0.2+ | 2005 04 04 | 703 | 1.1− | 0.8− | 2005 05 13 | 704 | 0.8+ | 0.2+ |
| 2001 05 18 | 699 | 0.2+ | 0.0 | 2005 04 04 | 703 | (0.3+ | 1.8−) | 2006 09 18 | 703 | 0.6− | 1.3+ |
| 2001 05 20 | 608 | 0.1+ | 0.7− | 2005 04 04 | 703 | 0.7+ | 0.4− | 2006 09 18 | 703 | 0.8− | 0.6− |
| 2001 05 20 | 608 | 0.1− | 0.8− | 2005 04 04 | 703 | (0.6− | 3.1−) | 2006 09 18 | 703 | 1.1− | 1.1+ |
| 2001 05 20 | 608 | 0.4+ | 0.7− | 2005 04 04 | 703 | 0.8+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 1.2+ |
| 2001 05 23 | 704 | 1.3− | 1.2+ | 2005 04 04 | 703 | (0.1− | 1.7−) | 2006 09 26 | 703 | 1.3− | 0.9+ |
| 2001 05 23 | 704 | 0.1+ | 0.9+ | 2005 04 04 | 703 | 0.3− | 0.6− | 2006 09 26 | 703 | 0.4+ | 1.3+ |
| 2001 05 23 | 704 | 0.1− | 0.4+ | 2005 04 04 | 703 | 1.0− | 0.1+ | 2006 09 26 | 703 | (2.3− | 0.4−) |
| 2001 05 23 | 704 | 0.1+ | 0.4+ | 2005 04 06 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 703 | (0.0 | 2.2+) |
| 2001 05 25 | 704 | 0.2− | 0.1− | 2005 04 06 | 704 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2001 05 25 | 704 | 0.3− | 0.7− | 2005 04 06 | 704 | 0.4+ | 0.7− | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 2001 05 25 | 704 | 0.5+ | 0.5+ | 2005 04 06 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.0 |
| 2001 05 25 | 704 | (0.6+ | 1.8+) | 2005 04 06 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.8+ | 0.0 |
| 2001 05 29 | 704 | 0.5− | 0.5+ | 2005 04 08 | 704 | 0.4+ | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 05 29 | 704 | 0.2+ | 0.5+ | 2005 04 08 | 704 | 0.0 | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2001 05 29 | 704 | 0.3+ | 0.6− | 2005 04 08 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 06 12 | 699 | 0.6− | 0.3− | 2005 04 08 | 704 | 0.7+ | 0.6+ | | | | |

## (139280)∗ 2001 JO$_5$

Discovered 2001 May 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 181.16787 | | (2000.0) | | −0.89584695 | +0.44425004 |
| $n$ | 0.26740164 | $\omega$ | 40.04260 | | −0.41775920 | −0.83432481 |
| $a$ | 2.3861258 | $\Omega$ | 166.32239 | | −0.15144467 | −0.32641082 |
| $e$ | 0.1534597 | $i$ | 2.42552 | | | |
| $P$ | 3.69 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 608 | 0.1− | 0.3+ | 2001 05 24 | 699 | 0.7− | 0.3− | 2003 12 29 | 691 | 0.1+ | 0.3+ |
| 2001 05 14 | 608 | 0.4+ | 0.6+ | 2001 05 24 | 699 | 0.5− | 0.2+ | 2004 01 31 | 691 | 0.1− | 0.3+ |
| 2001 05 14 | 608 | 0.8+ | 0.4+ | 2002 09 26 | 644 | 0.5− | 0.6+ | 2004 01 31 | 691 | 0.2− | 0.1+ |
| 2001 05 15 | 699 | (0.2− | 1.7+) | 2002 09 26 | 644 | 0.9− | 0.5+ | 2004 01 31 | 691 | 0.3+ | 0.2+ |
| 2001 05 15 | 699 | 1.1+ | 1.0+ | 2002 09 26 | 644 | 0.9− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2001 05 15 | 699 | 0.4+ | 0.9+ | 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.0 |
| 2001 05 15 | 699 | 0.5+ | 0.7+ | 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2001 05 18 | 704 | 0.2− | 0.9+ | 2002 10 11 | 645 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.5− | 0.6− |
| 2001 05 18 | 704 | 0.3− | 0.1+ | 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.4− | 0.1+ | 2003 12 23 | 704 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.2+ |
| 2001 05 18 | 704 | 0.9+ | 0.4+ | 2003 12 23 | 704 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.2+ |
| 2001 05 22 | 608 | (1.3+ | 1.7+) | 2003 12 23 | 704 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2001 05 22 | 608 | 0.8+ | 1.0+ | 2003 12 23 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 05 22 | 608 | 0.7+ | 1.4+ | 2003 12 23 | 704 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 05 24 | 699 | 0.7− | 1.2+ | 2003 12 29 | 691 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2001 05 24 | 699 | 0.4− | 0.2− | 2003 12 29 | 691 | 0.0 | 0.3+ | | | | |

**(139281)∗ 2001 JQ$_5$**

Discovered 2001 May 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 238.10199 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28185140 | $\omega$ | 82.30908 | | | −0.97133845 | | −0.21461207 | |
| $a$ | 2.3038591 | $\Omega$ | 85.25691 | | | +0.15672891 | | −0.90147451 | |
| $e$ | 0.0751216 | $i$ | 5.88566 | | | +0.17871112 | | −0.37587945 | |
| $P$ | 3.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.2− | 0.1− | 2003 12 27 | 704 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 1992 11 18 | 691 | 0.1+ | 0.0 | 2004 01 13 | 699 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 1992 11 18 | 691 | 0.1+ | 0.0 | 2004 01 13 | 699 | 0.7− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2001 04 16 | 699 | 0.1+ | 0.4− | 2004 01 13 | 699 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.4− | 1.0+ |
| 2001 04 16 | 699 | 0.9− | 1.0+ | 2004 01 13 | 699 | 0.2+ | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 04 16 | 699 | 0.4− | 0.1+ | 2004 01 17 | 644 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 04 16 | 699 | (1.3+ | 1.6+) | 2004 01 17 | 644 | 0.7− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 04 24 | 704 | 0.7− | 0.5− | 2004 01 17 | 644 | 0.4− | 0.1− | 2006 11 02 | 703 | 1.3− | 0.5− |
| 2001 04 24 | 704 | 1.4+ | 1.0− | 2004 01 26 | 699 | 0.6− | 0.2+ | 2006 11 02 | 703 | 0.8+ | 0.2+ |
| 2001 04 24 | 704 | 0.9+ | 0.5+ | 2004 01 26 | 699 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.3+ | 0.2− |
| 2001 04 24 | 704 | 0.5+ | 1.3+ | 2004 01 26 | 699 | 0.3+ | 0.6− | 2006 11 02 | 703 | 0.8− | 0.4− |
| 2001 05 15 | 699 | 0.2+ | 1.2+ | 2004 01 26 | 699 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 05 15 | 699 | (0.8+ | 1.6+) | 2004 01 31 | 704 | 1.2+ | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.2− |
| 2001 05 15 | 699 | 1.0− | 0.8+ | 2004 01 31 | 704 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.8− | 0.1+ |
| 2001 05 15 | 699 | (0.4− | 2.4+) | 2004 01 31 | 704 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 05 16 | 608 | 0.3+ | 0.9+ | 2004 01 31 | 704 | 0.6+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 05 16 | 608 | 0.5+ | 1.4+ | 2004 01 31 | 704 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 05 16 | 608 | (0.3+ | 2.2+) | 2004 02 15 | 704 | 0.6− | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 05 18 | 704 | 0.6− | 0.4− | 2004 02 15 | 704 | 0.4+ | 0.2− | 2006 11 20 | 704 | 1.0− | 0.1− |
| 2001 05 18 | 704 | 0.5+ | 0.4+ | 2004 02 15 | 704 | 0.5+ | 0.1+ | 2006 11 20 | 704 | 0.8− | 0.6+ |
| 2001 05 18 | 704 | 0.8+ | 0.4− | 2004 02 15 | 704 | 0.6− | 0.0 | 2006 11 20 | 704 | 1.0− | 0.1+ |
| 2003 12 22 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.9− | 0.3+ | 2006 11 20 | 704 | 0.4+ | 1.2+ |
| 2003 12 22 | 704 | 0.0 | 0.4− | 2005 03 31 | 809 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.3+ |
| 2003 12 22 | 704 | 0.7− | 0.2− | 2005 03 31 | 809 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 1.4+ | 0.2+ |
| 2003 12 22 | 704 | 0.4− | 0.3− | 2005 03 31 | 809 | 0.0 | 0.4+ | 2006 11 28 | 704 | 1.9+ | 0.9+ |
| 2003 12 22 | 704 | 0.4+ | 0.6+ | 2005 03 31 | 809 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.4+ |
| 2003 12 27 | 704 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.9+ | 1.1+ |
| 2003 12 27 | 704 | 0.5+ | 0.2− | 2006 10 16 | 703 | 1.1+ | 1.2− | 2006 11 28 | 704 | 0.5+ | 0.8+ |
| 2003 12 27 | 704 | 0.3+ | 0.6− | 2006 10 16 | 703 | (0.8− | 1.8−) | | | | |
| 2003 12 27 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | (1.6− | 0.6+) | | | | |

**(139282)∗ 2001 JT$_5$ = 2004 DS$_{77}$**

Discovered 2001 May 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 74979)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 148.70498 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26566178 | $\omega$ | 133.78783 | | | −0.43238799 | | +0.90065289 | |
| $a$ | 2.3965325 | $\Omega$ | 110.54725 | | | −0.83996176 | | −0.38491047 | |
| $e$ | 0.1514574 | $i$ | 2.64340 | | | −0.32787936 | | −0.20166386 | |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 691 | 0.2+ | 0.2− | 2001 05 30 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.4+ |
| 2000 01 11 | 691 | 0.0 | 0.4− | 2001 05 30 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2000 01 11 | 691 | 0.1− | 0.3− | 2003 12 21 | 691 | 0.3+ | 0.5− | 2006 09 30 | G96 | 0.3− | 0.2+ |
| 2001 04 25 | 699 | (1.6− | 1.3+) | 2003 12 21 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.2+ |
| 2001 04 25 | 699 | 0.4− | 0.1− | 2003 12 21 | 691 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.1− |
| 2001 04 25 | 699 | 1.5− | 0.4− | 2004 01 15 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.6− | 0.1− |
| 2001 04 25 | 699 | 1.0− | 0.3− | 2004 01 15 | 691 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.3+ |
| 2001 05 15 | 699 | 0.1+ | 0.6+ | 2004 01 15 | 691 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.5+ |
| 2001 05 15 | 699 | 0.8+ | 0.3− | 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2001 05 15 | 699 | 0.2+ | 0.2− | 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.7− | 0.2− |
| 2001 05 15 | 699 | 0.5+ | 0.6+ | 2004 01 27 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.4+ | 2.0+ |
| 2001 05 16 | 691 | 0.1+ | 0.0 | 2004 02 16 | 691 | 0.4+ | 0.4− | 2006 11 12 | G96 | 0.1− | 0.2+ |
| 2001 05 16 | 691 | 0.2+ | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2001 05 16 | 691 | 0.2+ | 0.4+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.2+ |
| 2001 05 30 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.4+ | | | | |

**(139283)∗ 2001 JZ$_5$**

Discovered 2001 May 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 151.18225 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27192813 | $\omega$ | 335.05766 | | | −0.30643026 | | +0.95106047 | |
| $a$ | 2.3595723 | $\Omega$ | 277.07784 | | | −0.86647849 | | −0.29600299 | |
| $e$ | 0.1979709 | $i$ | 2.29882 | | | −0.39410090 | | −0.08869171 | |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 699 | 0.4− | 0.9+ | 2004 01 24 | 704 | 0.7− | 0.6+ | 2005 07 07 | 691 | 0.1+ | 0.4+ |
| 2001 03 24 | 699 | 0.4− | 0.6+ | 2004 01 24 | 704 | 0.0 | 0.9+ | 2005 07 12 | 703 | 0.1− | 0.3− |
| 2001 03 24 | 699 | 0.4+ | 0.2+ | 2004 01 24 | 704 | 0.0 | 0.4+ | 2005 07 12 | 703 | 0.3+ | 0.0 |
| 2001 03 24 | 699 | 1.0+ | 0.4+ | 2004 01 24 | 704 | 0.8− | 0.1+ | 2005 07 12 | 703 | 0.5− | 0.6− |
| 2001 04 01 | 704 | 0.0 | 0.2+ | 2005 05 22 | 644 | 0.0 | 0.2+ | 2005 07 12 | 703 | 0.1− | 0.5− |
| 2001 04 01 | 704 | 0.6− | 0.4− | 2005 05 22 | 644 | 0.2− | 0.1+ | 2005 07 25 | 608 | 0.1− | 0.4− |
| 2001 04 01 | 704 | 0.4+ | 1.1+ | 2005 05 22 | 644 | 0.1− | 0.2+ | 2005 07 25 | 608 | 0.3− | 0.0 |
| 2001 04 01 | 704 | (1.6− | 1.4+) | 2005 06 13 | G96 | 0.3+ | 0.1− | 2005 07 25 | 608 | 0.2− | 0.2− |
| 2001 04 01 | 704 | 0.6− | 0.9+ | 2005 06 13 | G96 | 0.3+ | 0.1+ | 2005 07 30 | E12 | 0.5− | 0.2+ |
| 2001 04 18 | 608 | 1.3+ | 1.2− | 2005 06 13 | G96 | 0.1+ | 0.0 | 2005 07 30 | E12 | 0.3+ | 0.3+ |
| 2001 04 18 | 608 | 1.3+ | 1.1− | 2005 06 20 | 644 | 0.5− | 0.2+ | 2005 07 30 | E12 | 0.1+ | 0.3+ |
| 2001 04 18 | 608 | 1.3+ | 0.8− | 2005 06 20 | 644 | 0.3− | 0.1+ | 2005 10 27 | G96 | 0.3+ | 0.3− |
| 2001 04 27 | 608 | 0.7− | 0.5+ | 2005 06 20 | 644 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.1− | 0.2+ |
| 2001 04 27 | 608 | 0.8− | 0.5+ | 2005 06 27 | 644 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.3+ | 0.2− |
| 2001 04 27 | 608 | 0.8− | 0.6+ | 2005 06 27 | 644 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.0 | 0.4− |
| 2001 05 11 | 608 | 0.4− | 1.0− | 2005 06 27 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2001 05 11 | 608 | 0.3− | 0.8− | 2005 06 28 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.5+ |
| 2001 05 11 | 608 | 0.4− | 0.7− | 2005 06 28 | 644 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2001 05 18 | 699 | 0.3+ | 0.9+ | 2005 06 28 | 644 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2001 05 18 | 699 | 0.1− | 0.8+ | 2005 07 03 | 704 | 0.3+ | 0.8+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2001 05 18 | 699 | 0.5+ | 0.8+ | 2005 07 03 | 704 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2001 05 18 | 699 | 0.9+ | 0.7+ | 2005 07 03 | 704 | 0.5− | 1.4+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2001 06 13 | 608 | 0.0 | 0.8+ | 2005 07 03 | 704 | 0.6+ | 0.0 | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2001 06 13 | 608 | 0.2− | 0.4+ | 2005 07 04 | G96 | 0.6− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 06 13 | 608 | 0.2− | 0.4+ | 2005 07 04 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.4+ |
| 2004 01 15 | 691 | 0.2+ | 0.3+ | 2005 07 04 | G96 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.7− | 0.4+ |
| 2004 01 15 | 691 | 0.0 | 0.3+ | 2005 07 04 | G96 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2004 01 15 | 691 | 0.1+ | 0.4+ | 2005 07 04 | G96 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2004 01 21 | 704 | 0.8+ | 0.1+ | 2005 07 04 | 644 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2004 01 21 | 704 | 0.4+ | 0.0 | 2005 07 04 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.6− |
| 2004 01 21 | 704 | 0.9+ | 0.3− | 2005 07 07 | 691 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.2+ | 0.3+ |
| 2004 01 21 | 704 | 0.2− | 0.3+ | 2005 07 07 | 691 | 0.1− | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.8+ |

**(139284)∗ 2001 JM$_6$ = 2002 RB$_{207}$**

Discovered 2001 May 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37626)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 177.11393 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26408519 | $\omega$ | 232.05043 | | | −0.93052019 | | +0.36329489 | |
| $a$ | 2.4060613 | $\Omega$ | 329.17281 | | | −0.30120874 | | −0.83114033 | |
| $e$ | 0.1652347 | $i$ | 5.19019 | | | −0.20833981 | | −0.42097813 | |
| $P$ | 3.73 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 608 | 0.4+ | 0.1+ | 2002 09 14 | 644 | 0.3− | 0.2+ | 2003 12 28 | 704 | 0.1− | 0.8+ |
| 2001 02 02 | 608 | 0.2+ | 0.4− | 2002 09 14 | 644 | 0.0 | 0.2+ | 2003 12 28 | 704 | 0.2− | 0.5+ |
| 2001 02 02 | 608 | 0.6+ | 0.0 | 2002 09 15 | 644 | 0.4− | 0.6+ | 2003 12 28 | 704 | 0.3− | 1.0+ |
| 2001 04 26 | 699 | 0.7+ | 0.4+ | 2002 09 15 | 644 | 0.4− | 0.4+ | 2003 12 29 | 704 | 0.1+ | 0.7− |
| 2001 04 26 | 699 | 0.1− | 1.3+ | 2002 09 15 | 644 | 0.3− | 0.7+ | 2003 12 29 | 704 | 0.1+ | 0.6− |
| 2001 04 26 | 699 | 0.0 | 0.0 | 2002 09 28 | 608 | (1.8− | 0.5+) | 2003 12 29 | 704 | 0.4+ | 0.4− |
| 2001 04 26 | 699 | 0.0 | 1.0+ | 2002 09 28 | 608 | (1.9− | 0.6+) | 2003 12 29 | 704 | 0.2+ | 0.2− |
| 2001 04 26 | 699 | 0.3+ | 0.5+ | 2002 09 28 | 608 | (2.3− | 0.6+) | 2003 12 29 | 704 | 0.3+ | 0.3− |
| 2001 04 26 | 699 | (1.1− | 1.8+) | 2003 11 24 | 704 | 0.8− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2001 04 26 | 699 | 0.4+ | 0.7+ | 2003 11 24 | 704 | 0.4− | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2001 04 26 | 699 | 0.4− | 0.6+ | 2003 11 24 | 704 | 0.3− | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2001 05 14 | 644 | 0.2+ | 0.1− | 2003 11 24 | 704 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 05 14 | 644 | 0.2+ | 0.2− | 2003 12 04 | 704 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.5− |
| 2001 05 14 | 644 | 0.3+ | 0.1− | 2003 12 04 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 05 18 | 704 | 0.4− | 0.2− | 2003 12 04 | 704 | 0.2− | 1.1+ | 2006 10 17 | 691 | 0.4− | 0.3+ |
| 2001 05 18 | 704 | 0.2− | 0.6+ | 2003 12 18 | 704 | 0.6+ | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2001 05 18 | 704 | 0.3− | 0.3− | 2003 12 18 | 704 | 1.5+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2001 05 26 | 644 | (1.2− | 2.0−) | 2003 12 18 | 704 | 1.0+ | 0.5− | 2006 10 17 | 703 | 1.3− | 0.0 |
| 2001 05 26 | 644 | (1.0− | 2.0−) | 2003 12 18 | 704 | 0.7− | 0.0 | 2006 10 17 | 703 | 1.1+ | 1.2− |
| 2001 05 26 | 644 | (1.3− | 1.8−) | 2003 12 18 | 704 | 0.4+ | 0.8+ | 2006 10 17 | 703 | 0.8+ | 0.7− |
| 2002 09 06 | 704 | 0.1− | 0.1+ | 2003 12 23 | 704 | 0.6− | 0.5− | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2002 09 06 | 704 | 1.0+ | 0.3+ | 2003 12 23 | 704 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.6− | 0.0 | 2003 12 23 | 704 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2003 12 28 | 704 | 0.2− | 1.0+ | | | | |

**(139285)∗ 2001 JJ$_7$ = 2005 ED$_{291}$**

Discovered 2001 May 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 74979)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.20866 | | (2000.0) | | | |
| $n$ | 0.23113426 | $\omega$ | 170.07843 | | +0.20190732 | +0.97540679 |
| $a$ | 2.6296210 | $\Omega$ | 111.52765 | | −0.90497380 | +0.22031615 |
| $e$ | 0.1400470 | $i$ | 5.45317 | | −0.37450748 | −0.00651140 |
| $P$ | 4.26 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.2− | 0.1+ | 2005 03 10 | 703 | 0.6+ | 0.8+ | 2006 07 09 | 941 | 0.1− | 0.2− |
| 1994 12 01 | 691 | 0.3− | 0.2+ | 2005 03 10 | 703 | 0.1− | 0.9+ | 2006 07 09 | 941 | 0.0 | 0.3− |
| 1994 12 01 | 691 | 0.5+ | 1.1− | 2005 03 10 | 703 | 0.2+ | 0.1− | 2006 08 17 | 644 | 0.2+ | 0.2+ |
| 2000 01 29 | 691 | 0.5+ | 0.0 | 2005 03 10 | 703 | 0.8− | 0.2− | 2006 08 17 | 644 | 0.4+ | 0.3+ |
| 2000 01 29 | 691 | 0.3− | 0.2+ | 2005 03 18 | 703 | 0.1− | 1.1− | 2006 08 17 | 644 | 0.2+ | 0.4+ |
| 2000 01 29 | 691 | 0.0 | 0.1+ | 2005 03 18 | 703 | 0.5− | 1.1− | 2006 08 28 | 704 | 0.9− | 0.2+ |
| 2001 04 24 | 608 | 0.3− | 0.6− | 2005 03 18 | 703 | 0.1− | 0.2+ | 2006 08 28 | 704 | 0.1− | 0.1− |
| 2001 04 24 | 608 | 0.5− | 0.5− | 2005 03 18 | 703 | 0.3+ | 0.3− | 2006 08 28 | 704 | 0.2+ | 0.7+ |
| 2001 04 24 | 608 | 0.2+ | 1.0− | 2005 04 04 | 703 | 0.5− | 0.6+ | 2006 08 28 | 704 | 0.5− | 0.0 |
| 2001 04 25 | 699 | 0.3+ | 0.6+ | 2005 04 04 | 703 | 0.4− | 0.3+ | 2006 08 28 | 704 | 0.3+ | 0.5+ |
| 2001 04 25 | 699 | 0.3+ | 0.8+ | 2005 04 04 | 703 | 0.6+ | 0.9− | 2006 08 28 | 699 | 0.2+ | 0.2+ |
| 2001 04 25 | 699 | 0.4− | 0.3+ | 2005 04 04 | 703 | 0.4− | 0.7+ | 2006 08 28 | 699 | 0.1+ | 0.5− |
| 2001 04 25 | 699 | 0.4− | 0.4− | 2005 04 05 | 699 | 2.0− | 1.0+ | 2006 08 28 | 699 | 0.9+ | 0.3− |
| 2001 05 15 | 699 | 0.3− | 0.6− | 2005 04 05 | 699 | 0.0 | 0.5− | 2006 08 28 | 699 | 0.5− | 0.3+ |
| 2001 05 15 | 699 | 0.4+ | 0.3− | 2005 04 05 | 699 | 1.6+ | 0.5− | 2006 09 14 | 703 | 0.7+ | 0.2+ |
| 2001 05 15 | 699 | 0.4+ | 0.1+ | 2005 04 05 | 699 | 0.7+ | 0.7− | 2006 09 14 | 703 | 0.9+ | 1.0− |
| 2001 05 15 | 699 | 0.2− | 0.3− | 2005 05 04 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 1.0− | 0.5− |
| 2001 05 18 | 704 | 0.6+ | 0.2− | 2005 05 04 | 644 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.8− | 0.3− |
| 2001 05 18 | 704 | 0.2− | 0.7+ | 2005 05 04 | 644 | 0.3− | 0.1+ | | | | |
| 2001 05 18 | 704 | 0.0 | 0.1− | 2006 07 09 | 941 | 0.0 | 0.1− | | | | |

**(139286)∗ 2001 JE$_8$**

Discovered 2001 May 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.84911 | | (2000.0) | | | |
| $n$ | 0.23395264 | $\omega$ | 257.92139 | | +0.75788559 | +0.63363363 |
| $a$ | 2.6084594 | $\Omega$ | 62.54734 | | −0.50952122 | +0.72356585 |
| $e$ | 0.2168970 | $i$ | 10.07903 | | −0.40742798 | +0.27378984 |
| $P$ | 4.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 699 | (0.1+ | 1.5+) | 2002 11 11 | 704 | 0.2− | 0.4+ | 2006 09 21 | 151 | 0.1− | 0.1− |
| 2001 05 15 | 699 | 0.8+ | 1.1+ | 2002 11 11 | 704 | 0.1− | 0.6+ | 2006 09 25 | 699 | 0.1+ | 0.4− |
| 2001 05 15 | 699 | 0.2− | 0.7+ | 2002 11 12 | 644 | 0.7− | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.2− |
| 2001 05 15 | 699 | 0.4+ | 0.9+ | 2002 11 12 | 644 | 0.4− | 0.6+ | 2006 09 25 | 699 | 0.3− | 0.2+ |
| 2001 05 18 | 691 | 0.3+ | 0.3+ | 2002 11 12 | 644 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2001 05 18 | 704 | 0.9+ | 1.0+ | 2002 11 22 | 644 | 0.2− | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.1+ |
| 2001 05 18 | 704 | 0.5+ | 0.7+ | 2002 11 22 | 644 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| 2001 05 18 | 691 | 0.4+ | 0.3+ | 2002 11 22 | 644 | 0.0 | 0.7+ | 2006 09 29 | 699 | 0.1− | 0.1− |
| 2001 05 18 | 704 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.2+ | 1.0+ | 2006 09 29 | 699 | 0.3− | 0.4− |
| 2001 05 18 | 704 | 0.7− | 0.8+ | 2002 12 05 | 704 | 0.8+ | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.8+ |
| 2001 05 18 | 691 | 0.3+ | 0.2+ | 2002 12 05 | 704 | 0.9+ | 1.2+ | 2006 09 29 | 699 | 0.5+ | 0.5− |
| 2001 06 11 | 699 | 1.0− | 0.4− | 2002 12 05 | 704 | 0.4− | 0.8+ | 2006 09 30 | 608 | (0.1+ | 2.2+) |
| 2001 06 11 | 699 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 608 | (1.0+ | 1.8+) |
| 2001 06 11 | 699 | 0.2+ | 0.9+ | 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 09 30 | 608 | (0.5+ | 2.1+) |
| 2001 06 11 | 699 | 0.9+ | 0.8+ | 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 10 02 | 703 | 0.4− | 0.5− |
| 2001 06 20 | 699 | 0.4+ | 0.2− | 2002 12 10 | 644 | 0.1− | 0.7+ | 2006 10 02 | 703 | 0.6− | 0.3− |
| 2001 06 20 | 699 | 0.3+ | 1.0+ | 2002 12 10 | 704 | 0.1− | 0.6+ | 2006 10 02 | 703 | 0.2− | 0.5+ |
| 2001 06 20 | 699 | 1.1− | 0.8+ | 2002 12 10 | 704 | (1.3+ | 1.7+) | 2006 10 02 | 703 | 0.3− | 0.6− |
| 2001 06 20 | 699 | (0.8+ | 3.0+) | 2002 12 10 | 704 | (0.1− | 1.6+) | 2006 10 17 | 703 | 0.7+ | 0.1+ |
| 2002 10 09 | 704 | 0.1+ | 0.1− | 2002 12 10 | 704 | 1.1+ | 1.2+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 0.5− | 0.1− | 2005 04 04 | 703 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2002 10 09 | 704 | 1.0− | 0.9− | 2005 04 04 | 703 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 0.5− | 0.1− | 2005 04 04 | 703 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 11 04 | 644 | 0.8− | 0.1+ | 2005 04 04 | 703 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 04 | 644 | 0.4− | 0.5+ | 2005 05 08 | 703 | 0.5− | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 04 | 644 | 0.6− | 0.3+ | 2005 05 08 | 703 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 11 04 | 644 | 0.4+ | 0.5+ | 2005 05 08 | 703 | 1.0+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 11 04 | 644 | 0.5− | 0.4+ | 2005 05 08 | 703 | 0.1− | 1.4+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 11 04 | 644 | 0.2− | 0.7+ | 2005 05 14 | 691 | 0.2+ | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 699 | 0.0 | 0.2− | 2005 05 14 | 691 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 11 05 | 699 | (0.1+ | 1.6+) | 2005 05 14 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 11 05 | 699 | 1.1− | 1.0+ | 2005 05 18 | 644 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.3+ |
| 2002 11 05 | 699 | 0.2+ | 0.3+ | 2005 05 18 | 644 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.4− |
| 2002 11 07 | 704 | 0.1− | 0.2+ | 2005 05 18 | 644 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.6+ |
| 2002 11 07 | 704 | 0.4− | 0.1− | 2006 09 21 | 699 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.0 | 0.5+ |
| 2002 11 07 | 704 | 0.6− | 0.1− | 2006 09 21 | 699 | 0.5− | 0.7+ | 2006 11 10 | 704 | 0.6+ | 0.7+ |
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.5+ | 0.4+ | 2006 11 10 | 704 | 0.2− | 1.4+ |
| 2002 11 11 | 704 | 0.3− | 0.2+ | 2006 09 21 | 699 | 0.7+ | 0.6+ | 2006 11 10 | 704 | 2.6− | 1.1+ |
| 2002 11 11 | 704 | 0.5− | 0.3+ | 2006 09 21 | 151 | 0.3+ | 0.4− | | | | |
| 2002 11 11 | 704 | 0.3− | 1.0+ | 2006 09 21 | 151 | 0.2+ | 0.2− | | | | |

**(139287)∗ 2001 JT$_8$ = 2002 RS$_{144}$**

Discovered 2001 May 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35075)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.02161 | | (2000.0) | | | |
| $n$ | 0.26753994 | $\omega$ | 264.87281 | | −0.86778109 | +0.49267908 |
| $a$ | 2.3853035 | $\Omega$ | 304.62889 | | −0.41890154 | −0.79556928 |
| $e$ | 0.1698609 | $i$ | 4.52982 | | −0.26735272 | −0.35261430 |
| $P$ | 3.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 15 | 691 | 0.4+ | 0.1− | 2001 04 26 | 699 | 0.4+ | 0.4+ | 2003 12 18 | 704 | 1.2− | 0.7− |
| 1998 07 15 | 691 | 0.6+ | 0.5− | 2001 04 26 | 699 | 0.1+ | 0.0 | 2003 12 18 | 704 | 0.9+ | 0.5− |
| 1998 07 15 | 691 | 0.1+ | 0.5− | 2001 05 15 | 644 | 0.3+ | 0.7+ | 2003 12 18 | 704 | 0.4+ | 1.2− |
| 2001 03 21 | 704 | 0.6− | 0.8− | 2001 05 15 | 644 | 0.1+ | 0.8+ | 2004 01 22 | 704 | 0.5− | 0.3+ |
| 2001 03 21 | 704 | 0.1− | 0.4− | 2001 05 15 | 644 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.7+ | 0.9+ |
| 2001 03 21 | 704 | 0.9− | 0.4+ | 2001 05 18 | 699 | (2.2+ | 0.5+) | 2004 01 22 | 704 | 0.1− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 704 | 0.4+ | 0.4− | 2001 05 18 | 699 | (1.7+ | 0.6+) | 2006 10 17 | 703 | (2.1+ | 1.3−) |
| 2001 03 30 | 608 | 0.7− | 0.0 | 2001 05 18 | 699 | (1.6+ | 0.5+) | 2006 10 17 | 703 | (2.3+ | 0.1−) |
| 2001 03 30 | 608 | 1.2− | 0.3+ | 2001 05 18 | 699 | 1.2+ | 0.6+ | 2006 10 17 | 703 | 0.5+ | 0.7− |
| 2001 03 30 | 608 | 0.5− | 0.4+ | 2002 09 11 | 644 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.9+ | 0.4+ |
| 2001 04 16 | 704 | 0.0 | 0.2− | 2002 09 11 | 644 | 0.8− | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2001 04 16 | 704 | 0.8+ | 1.2− | 2002 09 11 | 644 | 1.1− | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.1− |
| 2001 04 16 | 704 | 0.5+ | 0.8− | 2002 09 13 | 644 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.0 |
| 2001 04 16 | 704 | 0.3− | 0.4− | 2002 09 13 | 644 | 0.9− | 0.7+ | 2006 10 19 | G96 | 0.3+ | 0.2+ |
| 2001 04 16 | 608 | 0.4+ | 0.4+ | 2002 09 13 | 644 | 1.1− | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2001 04 16 | 608 | 0.2+ | 0.9+ | 2002 09 17 | 644 | 0.8− | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2001 04 16 | 608 | 0.2+ | 0.9+ | 2002 09 17 | 644 | 1.0− | 1.3+ | 2006 11 25 | G96 | 0.3+ | 0.0 |
| 2001 04 26 | 699 | 0.2+ | 0.2− | 2002 09 17 | 644 | 0.9− | 1.3+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2001 04 26 | 699 | 0.3+ | 0.1− | 2003 12 18 | 704 | 0.5− | 0.0 | | | | |

**(139288)∗ 2001 JT$_{10}$ = 2000 CH$_{115}$**

Discovered 2001 May 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. T. B. Spahr (*MPO* 14285)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.72941 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22320566 | $\omega$ | 146.02123 | | +0.21426890 | +0.96125010 | |
| $a$ | 2.6915302 | $\Omega$ | 135.63585 | | −0.94224914 | +0.25020642 | |
| $e$ | 0.2420114 | $i$ | 14.36348 | | −0.25740123 | −0.11573676 | |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 01 | 691 | 0.2+ | 0.0 | 2001 06 13 | 699 | 0.4+ | 0.3− | 2005 03 17 | 704 | 1.8+ | 0.6+ |
| 2000 02 01 | 691 | 0.3+ | 0.3+ | 2001 06 13 | 699 | 0.8+ | 0.2+ | 2005 03 17 | 704 | 1.0+ | 0.2+ |
| 2000 02 01 | 691 | 0.1− | 0.3− | 2001 06 13 | 699 | 0.1+ | 0.1− | 2005 03 17 | 704 | 0.3+ | 0.5+ |
| 2000 02 04 | 691 | 0.3− | 0.2− | 2001 06 23 | 644 | 0.1− | 0.1− | 2005 03 17 | 704 | 1.1+ | 1.8+ |
| 2000 02 04 | 691 | 0.3− | 0.1+ | 2001 06 23 | 644 | 0.2− | 0.2− | 2005 03 17 | 704 | 1.7+ | 0.2+ |
| 2000 02 04 | 691 | 0.1− | 0.0 | 2001 06 23 | 644 | 0.0 | 0.0 | 2005 04 02 | 703 | 0.4− | 0.2+ |
| 2000 02 05 | 695 | 0.6+ | 0.3+ | 2001 07 16 | 699 | 0.2− | 0.1+ | 2005 04 02 | 703 | 0.4+ | 1.0+ |
| 2000 02 05 | 695 | 0.7+ | 0.3+ | 2001 07 16 | 699 | 0.4+ | 1.0+ | 2005 04 02 | 703 | 1.2− | 0.2+ |
| 2001 04 27 | 704 | 0.5+ | 0.3− | 2001 07 16 | 699 | 1.2− | 0.0 | 2005 04 02 | 703 | 0.2− | 0.5− |
| 2001 04 27 | 704 | 0.8+ | 0.5+ | 2001 07 16 | 699 | 0.7− | 0.3+ | 2005 04 09 | 703 | 0.8− | 0.1− |
| 2001 04 27 | 704 | (2.3+ | 0.9+) | 2001 07 24 | 644 | 0.0 | 0.3+ | 2005 04 09 | 703 | 0.7− | 0.7+ |
| 2001 05 15 | 699 | 0.7+ | 0.2+ | 2001 07 24 | 644 | 0.1+ | 0.2+ | 2005 04 09 | 703 | (2.2− | 0.4+) |
| 2001 05 15 | 699 | 0.1− | 0.2+ | 2001 07 24 | 644 | 0.1+ | 0.5+ | 2005 04 09 | 703 | 0.7− | 0.0 |
| 2001 05 15 | 699 | 0.6+ | 0.5− | 2002 10 10 | 644 | 0.1− | 0.6+ | 2005 04 17 | 703 | 0.3− | 0.3− |
| 2001 05 15 | 699 | 0.3+ | 0.3+ | 2002 10 10 | 644 | 0.2+ | 0.7+ | 2005 04 17 | 703 | 0.5− | 0.4+ |
| 2001 05 21 | 683 | 0.4− | 1.0+ | 2002 10 10 | 644 | 0.2− | 0.7+ | 2005 04 17 | 703 | 0.8− | 0.7− |
| 2001 05 21 | 683 | 0.1− | 0.3+ | 2005 03 03 | 703 | 1.5− | 0.6+ | 2005 04 17 | 703 | 0.5+ | 0.7− |
| 2001 05 21 | 683 | (2.6+ | 0.3−) | 2005 03 03 | 703 | 0.6− | 0.1− | 2006 09 17 | 699 | 0.2+ | 0.7+ |
| 2001 05 23 | 704 | 0.1+ | 0.1− | 2005 03 03 | 703 | 0.9− | 0.0 | 2006 09 17 | 699 | 0.3+ | 0.0 |
| 2001 05 23 | 683 | 0.4+ | 1.6+ | 2005 03 03 | 703 | 1.4− | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.8+ |
| 2001 05 23 | 704 | 0.2− | 0.2− | 2005 03 09 | 704 | 1.5+ | 0.5− | 2006 09 17 | 699 | 0.1+ | 1.0+ |
| 2001 05 23 | 683 | 0.2+ | 0.8− | 2005 03 09 | 704 | 0.9+ | 0.1− | 2006 09 20 | 703 | 0.1− | 0.1− |
| 2001 05 23 | 704 | 0.5− | 0.3− | 2005 03 09 | 704 | 1.0+ | 0.8+ | 2006 09 20 | 703 | 0.3− | 0.9− |
| 2001 05 23 | 683 | 1.2− | 1.3− | 2005 03 09 | 704 | 1.0+ | 0.3+ | 2006 09 20 | 703 | 0.5− | 0.1− |
| 2001 05 23 | 704 | 0.3− | 0.2+ | 2005 03 15 | 703 | 0.8− | 1.3− | 2006 09 20 | 703 | 0.1− | 0.1+ |
| 2001 05 23 | 704 | 0.0 | 0.2+ | 2005 03 15 | 703 | 1.1− | 1.2− | 2006 09 26 | 703 | 0.2− | 0.9+ |
| 2001 06 01 | 683 | 0.1+ | 0.8+ | 2005 03 15 | 703 | 1.1− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.7− |
| 2001 06 01 | 683 | 0.2− | 0.7− | 2005 03 15 | 703 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.3− | 0.2− |
| 2001 06 01 | 683 | 0.5− | 1.0− | 2005 03 17 | 704 | 1.5+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.5+ |
| 2001 06 13 | 699 | 0.5+ | 0.1− | 2005 03 17 | 704 | 1.0+ | 0.4+ | | | | |

**(139289)∗ 2001 KR$_1$**

Discovered 2001 May 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.46383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.69718877 | $\omega$ | 291.20355 | | +0.75331741 | −0.53389340 | |
| $a$ | 1.2596091 | $\Omega$ | 103.01981 | | +0.64658098 | +0.70796711 | |
| $e$ | 0.8413801 | $i$ | 23.21309 | | −0.12019119 | +0.46232068 | |
| $P$ | 1.41 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 699 | 0.4+ | 0.0 | 2001 05 29 | 711 | 0.7− | 0.2+ | 2001 06 18 | 493 | 0.0 | 0.2+ |
| 2001 05 18 | 699 | 0.5+ | 0.7+ | 2001 05 29 | 711 | 0.6+ | 0.3+ | 2001 06 18 | 493 | 0.2− | 0.2+ |
| 2001 05 18 | 699 | 0.7+ | 0.4+ | 2001 05 30 | 118 | 0.2+ | 0.2− | 2001 06 18 | 587 | 1.0− | 0.0 |
| 2001 05 18 | 699 | 0.2− | 0.1+ | 2001 05 30 | 118 | 0.4+ | 0.3− | 2001 06 18 | 587 | 0.8− | 0.1− |
| 2001 05 19 | 151 | 0.7− | 0.2+ | 2001 05 30 | 118 | 0.0 | 0.0 | 2001 06 18 | 587 | 1.0− | 0.4+ |
| 2001 05 19 | 151 | (1.9− | 0.4+) | 2001 05 30 | 682 | (2.3− | 0.4+) | 2001 06 19 | 699 | 0.7+ | 0.4+ |
| 2001 05 19 | 151 | 1.5+ | 1.0− | 2001 05 30 | 682 | (2.0− | 2.6+) | 2001 06 19 | 699 | 0.1+ | 0.4+ |
| 2001 05 19 | 151 | 0.1− | 0.3+ | 2001 05 30 | 682 | (3.6+ | 1.5−) | 2001 06 19 | 699 | 0.6+ | 0.1− |
| 2001 05 19 | 151 | 0.5+ | 0.1+ | 2001 05 30 | 682 | (1.9+ | 0.9−) | 2001 06 19 | 699 | 0.5+ | 0.2+ |
| 2001 05 19 | 649 | 0.3− | 0.4+ | 2001 05 30 | 670 | 0.0 | 0.3− | 2001 06 20 | 670 | 0.1− | 0.2+ |
| 2001 05 19 | 649 | 0.4+ | 0.1+ | 2001 05 30 | 670 | 0.1+ | 0.6− | 2001 06 20 | 670 | 0.6− | 0.4+ |
| 2001 05 19 | 649 | 0.2+ | 0.1+ | 2001 05 30 | 118 | 0.2− | 0.9− | 2001 06 22 | 118 | 0.5+ | 0.6+ |
| 2001 05 19 | 649 | 0.0 | 0.4+ | 2001 05 30 | 118 | 0.1+ | 0.3− | 2001 06 22 | 118 | 0.5+ | 0.1− |
| 2001 05 19 | 402 | 0.1− | 0.5+ | 2001 05 30 | 118 | 0.2+ | 0.4− | 2001 06 22 | 118 | 0.1+ | 0.0 |
| 2001 05 19 | 402 | 0.2− | 0.3− | 2001 05 31 | 704 | 1.0− | 0.7+ | 2002 01 21 | 291 | (0.7+ | 1.7+) |
| 2001 05 19 | 587 | 0.3+ | 0.4+ | 2001 05 31 | 704 | 0.5+ | 0.9+ | 2002 01 21 | 291 | (0.5+ | 1.7+) |
| 2001 05 19 | 587 | 0.3+ | 0.0 | 2001 05 31 | 704 | 0.9+ | 0.3+ | 2002 01 21 | 291 | (0.3+ | 2.1+) |
| 2001 05 19 | 587 | 0.1+ | 0.4− | 2001 05 31 | 704 | 0.2+ | 0.4+ | 2002 04 06 | 696 | 0.8+ | 0.1+ |
| 2001 05 21 | 046 | 0.8− | 0.3+ | 2001 05 31 | 704 | 0.1− | 0.0 | 2002 04 06 | 696 | 0.4+ | 0.3− |
| 2001 05 21 | 046 | 0.6− | 0.5+ | 2001 05 31 | 704 | 0.1+ | 0.7+ | 2002 05 07 | 696 | 0.6+ | 0.5− |
| 2001 05 21 | 046 | 0.7− | 0.9+ | 2001 05 31 | 704 | 0.2+ | 0.9− | 2002 05 07 | 696 | 0.5− | 0.5− |
| 2001 05 21 | 046 | 0.2+ | 0.3+ | 2001 06 03 | 704 | 0.8+ | 0.1+ | 2003 03 13 | 699 | 0.3− | 1.1+ |
| 2001 05 22 | 649 | 0.1− | 0.3+ | 2001 06 03 | 704 | 0.6− | 0.7− | 2003 03 13 | 699 | 0.2− | 0.4+ |
| 2001 05 22 | 649 | 0.2− | 0.2+ | 2001 06 03 | 704 | 0.4− | 0.6+ | 2003 03 13 | 699 | 0.7+ | 0.1+ |
| 2001 05 22 | 649 | 0.2− | 0.1+ | 2001 06 03 | 704 | 0.2− | 0.7+ | 2003 03 13 | 699 | 0.3+ | 0.6− |
| 2001 05 22 | 644 | 0.2+ | 0.2− | 2001 06 05 | 540 | 1.4− | 1.3− | 2003 03 19 | 941 | 0.3− | 0.5− |
| 2001 05 22 | 644 | 0.2+ | 0.4− | 2001 06 05 | 540 | 0.8− | 0.4− | 2003 03 19 | 941 | 0.1− | 0.2− |
| 2001 05 22 | 644 | 0.3+ | 0.3− | 2001 06 05 | 540 | 1.0− | 0.8− | 2003 03 19 | 941 | 1.4+ | 0.3+ |
| 2001 05 24 | 658 | 0.2+ | 0.0 | 2001 06 07 | 658 | 0.0 | 0.1− | 2003 03 24 | 240 | 0.2− | 0.5+ |
| 2001 05 24 | 658 | 0.0 | 0.1− | 2001 06 07 | 658 | 0.2− | 0.3− | 2003 03 24 | 240 | 0.2− | 0.5+ |
| 2001 05 24 | 658 | 0.8− | 0.3+ | 2001 06 07 | 658 | 0.7+ | 0.4− | 2003 03 24 | 240 | 0.3− | 0.1+ |
| 2001 05 24 | 644 | (0.5− | 1.5−) | 2001 06 07 | 360 | 0.2+ | 0.0 | 2003 03 24 | 240 | 0.5− | 0.1− |
| 2001 05 24 | 644 | 0.4− | 1.4− | 2001 06 07 | 360 | 0.1+ | 0.1+ | 2003 03 24 | 240 | 0.5− | 0.2− |
| 2001 05 24 | 644 | 0.4− | 1.2− | 2001 06 07 | 360 | 0.1+ | 0.1+ | 2003 04 24 | 926 | 0.4+ | 1.1+ |
| 2001 05 25 | 113 | 0.2− | 0.3+ | 2001 06 07 | 118 | 1.1+ | 0.7− | 2003 04 24 | 926 | 0.4− | 0.6− |
| 2001 05 25 | 113 | 0.9− | 0.5+ | 2001 06 07 | 118 | 0.9+ | 0.7− | 2003 04 24 | 926 | (0.2+ | 1.6+) |
| 2001 05 25 | 113 | 0.0 | 0.2+ | 2001 06 07 | 118 | 1.4+ | 0.7− | 2005 04 07 | 696 | 0.1− | 0.3+ |
| 2001 05 25 | 682 | 0.8+ | 0.7− | 2001 06 09 | 670 | 1.1− | 0.0 | 2005 04 07 | 696 | 0.0 | 0.2+ |
| 2001 05 25 | 682 | 0.2+ | 0.0 | 2001 06 09 | 670 | 1.2+ | 0.0 | 2005 05 07 | F65 | 0.2+ | 0.1− |
| 2001 05 25 | 682 | (1.7− | 1.5+) | 2001 06 10 | 649 | 0.2− | 0.4+ | 2005 05 07 | F65 | 0.4+ | 0.4− |
| 2001 05 25 | 658 | 0.4− | 0.1+ | 2001 06 10 | 649 | 1.0− | 0.9− | 2005 05 07 | F65 | 0.1+ | 0.2− |
| 2001 05 25 | 658 | 0.2− | 0.0 | 2001 06 10 | 649 | (1.6− | 0.5−) | 2005 05 08 | 448 | 0.7+ | 0.0 |
| 2001 05 25 | 658 | 0.3− | 0.2+ | 2001 06 10 | 649 | 0.6− | 1.1− | 2005 05 08 | 448 | 1.4− | 1.2− |
| 2001 05 25 | 402 | 0.0 | 0.2− | 2001 06 11 | 670 | 0.3+ | 0.6+ | 2005 05 08 | 448 | 0.7− | 0.7− |
| 2001 05 25 | 402 | 0.2+ | 0.2− | 2001 06 11 | 670 | 0.6+ | 0.4+ | 2005 05 11 | 198 | 0.3+ | 0.0 |
| 2001 05 25 | 402 | 0.3− | 0.2− | 2001 06 11 | 340 | (1.8− | 1.4+) | 2005 05 11 | 198 | 0.2+ | 0.0 |
| 2001 05 25 | 360 | 0.1+ | 0.3+ | 2001 06 11 | 340 | 0.6− | 0.6− | 2005 05 11 | 198 | 0.2+ | 0.0 |
| 2001 05 25 | 360 | 0.2− | 0.1+ | 2001 06 11 | 340 | 1.3− | 0.1+ | 2005 05 11 | 198 | 0.3+ | 0.0 |
| 2001 05 25 | 360 | 0.1+ | 0.1− | 2001 06 12 | 118 | 0.0 | 0.7+ | 2005 05 11 | 198 | 0.3+ | 0.0 |
| 2001 05 25 | 113 | 0.1− | 0.1+ | 2001 06 12 | 118 | 0.3− | 0.7+ | 2005 06 14 | 448 | 0.1+ | 0.4− |
| 2001 05 25 | 587 | 0.0 | 1.0+ | 2001 06 12 | 118 | 0.1− | 0.3+ | 2005 06 14 | 448 | 0.3+ | 0.2− |
| 2001 05 25 | 113 | 0.2− | 0.3+ | 2001 06 13 | 118 | 0.4+ | 0.1− | 2005 06 14 | 448 | 0.2+ | 0.5− |
| 2001 05 25 | 113 | 0.6− | 0.6+ | 2001 06 13 | 118 | 0.3− | 0.1− | 2006 04 19 | G96 | 0.1+ | 0.0 |
| 2001 05 25 | 113 | 0.2+ | 0.3+ | 2001 06 13 | 118 | 0.2+ | 0.1+ | 2006 04 19 | G96 | 0.3+ | 0.4− |
| 2001 05 25 | 113 | 0.1− | 0.0 | 2001 06 15 | 118 | 0.0 | 0.2+ | 2006 04 19 | G96 | 0.2− | 0.1− |
| 2001 05 25 | 118 | 0.2+ | 0.2+ | 2001 06 15 | 118 | 0.4+ | 0.0 | 2006 04 19 | G96 | 0.2+ | 0.3− |
| 2001 05 25 | 118 | 0.1− | 0.3+ | 2001 06 15 | 118 | 0.1− | 0.2− | | | | |
| 2001 05 25 | 118 | 0.4+ | 0.3+ | 2001 06 18 | 493 | 0.1− | 0.2+ | | | | |

**(139290)∗ 2001 KC$_2$**

Discovered 2001 May 20 by P. Pravec and P. Kušnirák at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.79814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21855051 | $\omega$ | 235.40212 | | −0.46168543 | +0.88703890 | |
| $a$ | 2.7296156 | $\Omega$ | 7.10380 | | −0.80590698 | −0.41807578 | |
| $e$ | 0.3050835 | $i$ | 1.35516 | | −0.37062178 | −0.19589443 | |
| $P$ | 4.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 14 | 691 | 0.1+ | 0.3+ | 2001 06 16 | 704 | 0.7+ | 0.8+ | 2006 08 14 | 644 | 0.1+ | 0.0 |
| 1996 02 14 | 691 | 0.1− | 0.2+ | 2001 06 16 | 704 | 0.1− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 1996 02 14 | 691 | 0.2+ | 0.0 | 2001 06 16 | 704 | 0.1− | 0.6+ | 2006 08 14 | 644 | 0.6− | 0.1+ |
| 1996 02 15 | 566 | 0.7+ | 0.1− | 2001 06 16 | 704 | 0.2− | 0.4− | 2006 08 21 | 691 | 0.1− | 0.3+ |
| 1996 02 15 | 566 | 0.4+ | 0.2+ | 2004 12 20 | G96 | 0.3+ | 0.3+ | 2006 08 21 | 691 | 0.2− | 0.1+ |
| 1996 02 15 | 566 | 1.0− | 0.1− | 2004 12 20 | G96 | 0.4+ | 0.1+ | 2006 08 21 | 691 | 0.3− | 0.3+ |
| 2001 05 17 | 704 | 0.4+ | 0.1+ | 2004 12 20 | G96 | 0.4− | 0.1+ | 2006 08 28 | 699 | 1.3+ | 1.4+ |
| 2001 05 17 | 704 | 0.0 | 0.4− | 2004 12 20 | G96 | 0.3− | 0.4+ | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2001 05 17 | 704 | 0.1+ | 0.7− | 2005 02 09 | 704 | (1.6+ | 1.2+) | 2006 08 28 | 703 | 0.3− | 0.1− |
| 2001 05 17 | 704 | 0.3− | 0.2− | 2005 02 09 | 704 | 1.0+ | 1.3+ | 2006 08 28 | 703 | 0.3+ | 0.0 |
| 2001 05 20 | 557 | 0.1− | 0.2− | 2005 02 09 | 704 | 0.7+ | 1.2+ | 2006 08 28 | 699 | 0.9+ | 0.8+ |
| 2001 05 20 | 557 | 1.0+ | 0.0 | 2005 02 09 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 691 | 0.2− | 0.3+ |
| 2001 05 20 | 557 | 0.0 | 0.3+ | 2005 02 09 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 1.1+ |
| 2001 05 20 | 557 | 0.2+ | 0.4− | 2005 03 04 | G96 | 0.3− | 0.0 | 2006 08 28 | 703 | 1.1− | 0.0 |
| 2001 05 22 | 557 | 0.1+ | 0.4− | 2005 03 04 | G96 | 0.5− | 0.1+ | 2006 08 28 | 699 | 1.4+ | 1.2+ |
| 2001 05 22 | 557 | 0.4+ | 0.9+ | 2005 03 04 | G96 | 0.4− | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2001 05 23 | 428 | (2.6+ | 0.1−) | 2005 03 04 | G96 | 0.4− | 0.0 | 2006 08 28 | 699 | (1.6+ | 2.5+) |
| 2001 05 23 | 428 | (3.1+ | 0.2+) | 2005 03 08 | 704 | 1.4+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.5+ |
| 2001 05 24 | 428 | 1.3− | 0.0 | 2005 03 08 | 704 | 1.1+ | 0.1− | 2006 09 14 | 703 | 0.2− | 1.1+ |
| 2001 05 24 | 428 | 0.0 | 0.6+ | 2005 03 08 | 704 | 0.5+ | 1.2+ | 2006 09 14 | 703 | (1.6− | 0.2−) |
| 2001 05 25 | 557 | 0.3+ | 0.0 | 2005 03 08 | 704 | 1.1+ | 0.7+ | 2006 09 14 | 703 | (3.2− | 1.5−) |
| 2001 05 25 | 557 | 0.4+ | 0.2− | 2005 03 08 | 704 | 0.9+ | 1.3+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2001 05 26 | 704 | 0.1+ | 0.1+ | 2005 03 14 | G96 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2001 05 26 | 704 | 0.2+ | 0.7− | 2005 03 14 | G96 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2001 05 26 | 704 | 0.0 | 0.6+ | 2005 03 14 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.8− | 0.3− |
| 2001 05 26 | 704 | 0.1− | 0.1+ | 2005 03 14 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 05 26 | 704 | 0.2− | 0.4+ | 2005 03 16 | 703 | 0.1+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2001 06 13 | 704 | 0.2− | 0.2− | 2005 03 16 | 703 | 1.1− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 06 13 | 704 | 0.1− | 0.4− | 2005 03 16 | 703 | 0.9+ | 0.7+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 06 13 | 704 | 0.3+ | 0.9+ | 2005 03 16 | 703 | 0.0 | 0.3− | 2006 11 16 | G96 | 1.1− | 0.2+ |
| 2001 06 13 | 704 | 0.2− | 0.9+ | 2005 04 12 | 568 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2001 06 13 | 704 | 0.6− | 0.5− | 2005 04 12 | 568 | 0.4− | 0.1+ | 2006 11 16 | G96 | 1.1− | 0.4+ |
| 2001 06 16 | 704 | 0.4− | 0.3+ | 2005 04 12 | 568 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3+ |

**(139291)∗ 2001 KL$_3$ = 1991 RD$_{26}$ = 1991 RQ$_{42}$ = 2002 RF$_{63}$ = 2004 CW$_{109}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35076), A. Doppler (*MPO* 74981, *MPO* 88793)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.58091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27249639 | $\omega$ | 313.05168 | | +0.99491918 | −0.04009083 | |
| $a$ | 2.3562908 | $\Omega$ | 49.46643 | | +0.07885755 | +0.88058471 | |
| $e$ | 0.1249082 | $i$ | 6.97922 | | −0.06258841 | +0.47218988 | |
| $P$ | 3.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 12 | 675 | 0.7− | 0.2+ | 2002 11 03 | 300 | 0.4− | 0.0 | 2004 02 17 | 703 | 0.5+ | 0.1+ |
| 1991 09 12 | 675 | 1.1+ | 1.4− | 2002 11 03 | 300 | 0.0 | 0.3− | 2004 02 17 | 703 | 1.3+ | 0.1− |
| 1991 09 15 | 675 | 0.0 | 0.7− | 2002 11 04 | 300 | 0.8− | 0.3− | 2004 02 17 | 703 | 0.3+ | 0.8+ |
| 1991 09 15 | 675 | 1.4+ | 1.5− | 2002 11 04 | 300 | 0.7− | 0.3− | 2004 02 17 | 703 | 0.5+ | 0.8+ |
| 2001 05 03 | 608 | 0.1− | 0.9+ | 2002 11 04 | 300 | 1.2− | 0.4− | 2004 03 10 | 644 | 0.2− | 0.2+ |
| 2001 05 03 | 608 | 0.4− | 0.9+ | 2002 11 04 | 300 | 0.2− | 0.4+ | 2004 03 10 | 644 | 0.2− | 0.4+ |
| 2001 05 03 | 608 | 0.0 | 0.5+ | 2002 11 06 | 704 | 0.3+ | 0.7+ | 2004 03 10 | 644 | 0.1+ | 0.2+ |
| 2001 05 17 | 704 | 0.0 | 0.3− | 2002 11 06 | 704 | 0.4+ | 0.6+ | 2004 03 15 | 704 | 0.2+ | 0.1+ |
| 2001 05 17 | 704 | 0.3− | 0.6+ | 2002 11 06 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.2− |
| 2001 05 17 | 704 | 0.4+ | 0.2+ | 2002 11 06 | 704 | 0.6+ | 0.6+ | 2004 03 15 | 704 | 0.3− | 0.1− |
| 2001 05 17 | 704 | 0.9+ | 0.7+ | 2002 11 06 | 704 | 0.8+ | 0.3+ | 2004 03 15 | 704 | 0.6+ | 0.1+ |
| 2001 05 17 | 704 | 0.3+ | 0.1− | 2002 11 07 | 699 | 0.2− | 0.2− | 2004 03 15 | 704 | 0.3+ | 0.3− |
| 2001 05 21 | 704 | 0.7− | 0.3+ | 2002 11 07 | 699 | 0.5− | 0.3− | 2004 03 17 | 691 | (0.9+ | 2.7−) |
| 2001 05 21 | 704 | 0.3− | 0.3+ | 2002 11 07 | 699 | 0.2− | 0.2− | 2004 03 17 | 691 | 0.1− | 0.0 |
| 2001 05 21 | 704 | 0.1+ | 1.0+ | 2002 11 07 | 699 | 0.3− | 0.0 | 2004 03 17 | 691 | 0.0 | 0.2− |
| 2001 05 21 | 704 | 0.2− | 0.4+ | 2002 11 10 | 704 | 0.8+ | 0.5− | 2004 03 19 | 644 | 0.5+ | 0.0 |
| 2001 05 21 | 704 | 0.9+ | 0.7+ | 2002 11 10 | 704 | 1.0+ | 0.6− | 2004 03 19 | 644 | 0.4+ | 0.1+ |
| 2001 05 24 | 704 | 0.4− | 0.2+ | 2002 11 10 | 704 | 1.0+ | 0.5− | 2004 03 19 | 644 | 0.4+ | 0.1+ |
| 2001 05 24 | 704 | 0.4+ | 1.2+ | 2002 11 10 | 704 | 1.4+ | 0.1+ | 2004 03 20 | 704 | 0.5+ | 0.2+ |
| 2001 05 24 | 704 | 0.3− | 0.2+ | 2002 11 22 | 644 | 0.4− | 0.9+ | 2004 03 20 | 704 | 0.7+ | 0.0 |
| 2001 05 24 | 704 | 0.4− | 1.4+ | 2002 11 22 | 644 | 0.3− | 0.9+ | 2004 03 20 | 704 | 0.3+ | 0.2− |
| 2001 05 24 | 704 | 0.6+ | 0.3+ | 2002 11 22 | 644 | 0.4− | 0.9+ | 2004 03 20 | 704 | 0.5+ | 0.7+ |
| 2001 06 16 | 704 | 0.0 | 0.3+ | 2002 12 01 | 704 | 0.6− | 0.2− | 2004 03 20 | 704 | 1.2+ | 0.3− |
| 2001 06 16 | 704 | (0.7+ | 1.9+) | 2002 12 01 | 704 | 0.6− | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.4+ |
| 2001 06 16 | 704 | 0.4+ | 0.5+ | 2002 12 01 | 704 | 0.5− | 0.4− | 2004 03 23 | 704 | 0.2+ | 0.1+ |
| 2001 06 16 | 704 | 1.4+ | 1.1+ | 2002 12 01 | 704 | 0.5− | 0.1− | 2004 03 23 | 704 | 0.2− | 0.4+ |
| 2002 09 05 | 704 | 0.5− | 0.3+ | 2002 12 01 | 704 | 0.3− | 1.1+ | 2004 03 23 | 704 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.7− | 0.5− | 2002 12 05 | 704 | 0.7+ | 0.9− | 2004 03 23 | 704 | 0.2− | 0.6+ |
| 2002 09 05 | 704 | 0.6− | 0.7− | 2002 12 05 | 704 | 0.1+ | 0.1+ | 2004 03 26 | 703 | (1.0− | 2.3+) |
| 2002 09 05 | 704 | 1.3− | 0.1− | 2002 12 05 | 704 | 0.3− | 0.4+ | 2004 03 26 | 703 | 0.0 | 1.5+ |
| 2002 09 05 | 704 | 0.5− | 0.9− | 2002 12 05 | 704 | 0.6+ | 0.9+ | 2004 03 26 | 703 | 0.9− | 0.2+ |
| 2002 09 06 | 704 | 0.5+ | 0.9+ | 2002 12 05 | 704 | 0.3− | 0.1− | 2004 03 26 | 703 | (0.5− | 1.5+) |
| 2002 09 06 | 704 | 0.5− | 0.4+ | 2002 12 10 | 704 | 1.1+ | 0.2− | 2004 04 13 | 703 | 0.4+ | 0.4− |
| 2002 09 06 | 704 | 0.5− | 0.7+ | 2002 12 10 | 704 | 0.3+ | 0.7+ | 2004 04 13 | 703 | 0.9+ | 0.1− |
| 2002 09 06 | 704 | 0.1− | 0.1− | 2002 12 10 | 704 | 0.5+ | 0.8+ | 2004 04 13 | 703 | 0.6+ | 0.1− |
| 2002 09 06 | 704 | 0.5− | 0.4+ | 2002 12 10 | 704 | 0.3+ | 0.9+ | 2004 04 13 | 703 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.4+ | 2002 12 10 | 704 | 0.9− | 0.7+ | 2004 04 15 | 704 | (1.8+ | 0.9+) |
| 2002 10 02 | 704 | 0.5+ | 0.8+ | 2002 12 19 | 644 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.2+ | 0.9+ | 2002 12 19 | 644 | 0.3− | 0.4+ | 2004 04 15 | 704 | 0.3+ | 0.1+ |
| 2002 10 02 | 704 | 0.3+ | 0.3+ | 2002 12 19 | 644 | 0.2− | 0.1+ | 2004 04 20 | 704 | 0.7+ | 0.3− |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 0.4− | 0.6+ | 2004 04 20 | 704 | 0.0 | 0.8+ |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2002 12 31 | 704 | 0.6− | 0.9+ | 2004 04 20 | 704 | 0.0 | 0.8− |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2002 12 31 | 704 | 0.2− | 0.3+ | 2004 04 20 | 704 | 1.2− | 1.3+ |
| 2002 10 03 | 704 | 1.0+ | 0.1+ | 2002 12 31 | 704 | 0.1+ | 0.2+ | 2004 04 22 | 704 | 0.7− | 0.0 |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.4− | 0.5+ | 2004 04 22 | 704 | 0.9− | 0.5+ |
| 2002 10 08 | 699 | 0.2− | 0.7+ | 2003 01 04 | 704 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.0 | 0.5− |
| 2002 10 08 | 699 | 0.4− | 0.2+ | 2003 01 04 | 704 | 0.0 | 0.3− | 2004 04 22 | 704 | 0.1− | 0.2+ |
| 2002 10 08 | 699 | 0.4− | 0.4+ | 2003 01 04 | 704 | 0.1− | 0.4− | 2005 06 17 | E12 | 0.2− | 0.9+ |
| 2002 10 08 | 699 | 0.6− | 0.5+ | 2003 01 04 | 704 | 0.1+ | 0.6− | 2005 06 17 | E12 | 0.1+ | 0.6+ |
| 2002 10 09 | 704 | 0.4− | 0.4+ | 2003 01 04 | 704 | 0.1− | 0.2+ | 2005 06 17 | E12 | 0.0 | 0.8+ |
| 2002 10 09 | 704 | 0.0 | 0.0 | 2003 01 05 | 699 | 0.5+ | 0.4− | 2005 06 17 | E12 | 0.4+ | 0.8+ |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2003 01 05 | 699 | 0.1− | 0.5− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2003 01 05 | 699 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2002 10 09 | 704 | 0.0 | 0.6− | 2003 01 05 | 699 | 1.0− | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 0.9+ | 2003 01 26 | 608 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.5− | 0.7− |
| 2002 10 11 | 704 | 0.4− | 0.9+ | 2003 01 26 | 608 | 0.2+ | 0.5− | 2006 10 21 | G96 | 0.8− | 0.7− |
| 2002 10 11 | 704 | 0.3+ | 0.5+ | 2003 01 26 | 608 | 0.2− | 0.7− | 2006 10 21 | G96 | 0.6− | 1.0− |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2003 01 27 | 704 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.9− | 1.0− |
| 2002 10 11 | 704 | 0.3+ | 0.6+ | 2003 01 27 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.8− | 0.1+ |
| 2002 10 11 | 704 | 0.6− | 0.2+ | 2003 01 27 | 704 | 0.7+ | 0.5+ | 2006 11 16 | 704 | 0.7+ | 0.5− |
| 2002 10 11 | 704 | 0.1+ | 1.1+ | 2003 01 31 | 699 | 1.1− | 1.4+ | 2006 11 16 | 704 | 1.1+ | 0.6+ |
| 2002 10 11 | 704 | 0.6− | 0.6+ | 2003 01 31 | 699 | 0.8+ | 0.4+ | 2006 11 17 | 644 | 0.5− | 0.1− |
| 2002 10 11 | 704 | 0.6+ | 0.7+ | 2003 01 31 | 699 | 0.7− | 0.4+ | 2006 11 17 | 644 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.7− | 0.7+ | 2003 01 31 | 699 | 0.9− | 0.3− | 2006 11 17 | 644 | 0.5− | 0.2− |
| 2002 10 26 | 608 | 0.3− | 0.2− | 2003 02 04 | 704 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.7− | 0.7− |
| 2002 10 26 | 608 | 0.0 | 0.3− | 2003 02 04 | 704 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2002 10 26 | 608 | 0.4− | 0.3− | 2003 02 04 | 704 | 0.1+ | 1.1+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2002 10 31 | 644 | 0.5− | 0.2− | 2003 02 04 | 704 | 0.5− | 0.8+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2002 10 31 | 644 | 0.4+ | 0.1+ | 2003 02 04 | 704 | 1.2− | 0.8+ | 2006 11 22 | 704 | 0.5+ | 0.7− |
| 2002 10 31 | 644 | 0.1+ | 0.5+ | 2004 02 13 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.3− |
| 2002 11 01 | 608 | 0.1− | 0.8− | 2004 02 13 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2002 11 01 | 608 | 0.2+ | 0.4− | 2004 02 13 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.7− |
| 2002 11 01 | 608 | 0.0 | 0.8− | 2004 02 17 | 704 | 0.0 | 0.6+ | 2006 11 27 | 704 | 0.0 | 0.9− |
| 2002 11 03 | 704 | 0.1− | 0.7+ | 2004 02 17 | 704 | 0.2− | 0.1+ | 2006 11 27 | 704 | 0.2+ | 0.6+ |
| 2002 11 03 | 704 | 0.1− | 1.0+ | 2004 02 17 | 704 | (0.0 | 1.6+) | 2006 11 27 | 704 | 0.2− | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 704 | 0.1+ | 1.2+ | 2004 02 17 | 704 | 0.3− | 0.8+ | |
| 2002 11 03 | 300 | 0.4− | 0.7− | 2004 02 17 | 704 | 0.2+ | 0.8+ | |

**(139292)∗ 2001 KS$_3$ = 2002 TK$_{115}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37630)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.92892 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23150015 | $\omega$ | 30.86741 | | −0.17548660 | | +0.97189025 |
| $a$ | 2.6268496 | $\Omega$ | 229.51406 | | −0.94012042 | | −0.21275340 |
| $e$ | 0.1328486 | $i$ | 11.90923 | | −0.29219523 | | +0.10082332 |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 21 | 704 | 0.2+ | 0.8− | 2001 06 13 | 704 | 1.1+ | 1.4+ | 2005 03 12 | 699 | 0.8+ | 0.9− |
| 2001 04 21 | 704 | 1.0− | 0.0 | 2001 06 13 | 704 | 0.4− | 0.8+ | 2005 03 12 | 699 | 0.9+ | 0.6− |
| 2001 04 21 | 704 | 1.0− | 0.3+ | 2001 06 13 | 704 | 0.6− | 0.2+ | 2005 03 12 | 699 | 0.4− | 0.5+ |
| 2001 04 21 | 704 | 0.4− | 0.3+ | 2001 06 13 | 704 | 0.2+ | 0.9+ | 2005 04 18 | E12 | 0.0 | 0.1− |
| 2001 05 17 | 704 | 1.3+ | 0.1− | 2001 06 15 | 704 | 0.6− | 0.4+ | 2005 04 18 | E12 | 0.6− | 0.1+ |
| 2001 05 17 | 704 | (2.4+ | 0.7+) | 2001 06 15 | 704 | 0.2+ | 0.5+ | 2005 04 18 | E12 | 0.2+ | 1.2+ |
| 2001 05 17 | 704 | 1.8+ | 0.2− | 2001 06 15 | 704 | 0.5+ | 0.7+ | 2005 04 18 | E12 | 0.1− | 0.2− |
| 2001 05 17 | 704 | (2.3+ | 0.7−) | 2001 06 15 | 704 | 0.7+ | 0.3+ | 2005 05 14 | 703 | 0.7− | 0.7− |
| 2001 05 21 | 704 | 0.1− | 0.2− | 2002 10 03 | 644 | 0.0 | 0.6+ | 2005 05 14 | 703 | 0.4− | 0.9+ |
| 2001 05 21 | 704 | 0.6− | 1.3+ | 2002 10 03 | 644 | 0.2+ | 0.6+ | 2005 05 14 | 703 | 0.5+ | 1.1− |
| 2001 05 21 | 704 | 1.0− | 0.1− | 2002 10 03 | 644 | 0.1+ | 0.7+ | 2005 05 14 | 703 | 0.3− | 0.9+ |
| 2001 05 24 | 704 | 0.4− | 0.0 | 2002 10 05 | 704 | 1.7− | 0.6− | 2006 08 28 | 683 | 0.1+ | 0.3− |
| 2001 05 24 | 704 | (0.1+ | 2.3+) | 2002 10 05 | 704 | 0.5− | 0.6− | 2006 08 28 | 683 | 0.8+ | 0.5+ |
| 2001 05 24 | 704 | 0.3+ | 0.4+ | 2002 10 05 | 704 | 0.5+ | 1.1− | 2006 08 28 | 683 | 1.3+ | 1.4+ |
| 2001 05 24 | 704 | (0.1− | 3.2+) | 2002 10 05 | 704 | 1.1+ | 0.1− | 2006 09 15 | 704 | 0.6+ | 0.6+ |
| 2001 05 27 | 704 | 0.3+ | 0.3+ | 2002 10 09 | 704 | 0.2− | 0.2+ | 2006 09 15 | 704 | 0.7− | 0.1+ |
| 2001 05 27 | 704 | 0.8− | 0.1− | 2002 10 09 | 704 | 0.4− | 0.5+ | 2006 09 15 | 704 | 0.4− | 0.5+ |
| 2001 05 27 | 704 | 0.5− | 0.6+ | 2002 10 09 | 704 | 0.6+ | 0.0 | 2006 09 15 | 704 | 0.4+ | 0.6− |
| 2001 05 27 | 691 | 0.2− | 0.1+ | 2002 10 09 | 704 | 0.4+ | 1.1− | 2006 09 15 | 704 | 0.3+ | 0.3+ |
| 2001 05 27 | 691 | 0.3− | 0.5− | 2005 03 09 | E12 | 1.0+ | 0.4+ | 2006 10 01 | 703 | 1.8− | 0.6− |
| 2001 05 27 | 691 | 0.6− | 0.3+ | 2005 03 09 | E12 | 0.3− | 1.2+ | 2006 10 01 | 703 | 0.4− | 0.1− |
| 2001 06 11 | 691 | 1.1+ | 0.7− | 2005 03 09 | E12 | 0.1− | 0.3+ | 2006 10 01 | 703 | 0.2− | 1.3+ |
| 2001 06 11 | 691 | 0.2+ | 0.7− | 2005 03 09 | E12 | 0.5+ | 0.6+ | 2006 10 01 | 703 | 0.9− | 0.1+ |
| 2001 06 11 | 691 | 0.1+ | 0.7− | 2005 03 12 | 699 | 0.3− | 0.8+ | | | | |

**(139293)∗ 2001 KF$_4$ = 2005 SW$_{167}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84684)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.28001 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28402915 | $\omega$ | 69.23416 | | +0.42750659 | | +0.90129067 |
| $a$ | 2.2920677 | $\Omega$ | 226.27736 | | −0.86130519 | | +0.38253394 |
| $e$ | 0.1330631 | $i$ | 5.56590 | | −0.27457510 | | +0.20332956 |
| $P$ | 3.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 10 | 691 | 0.3− | 0.6+ | 2001 05 24 | 704 | 0.3+ | 0.7+ | 2005 06 11 | 703 | 1.8− | 2.5− |
| 1994 05 10 | 691 | 0.5− | 0.1+ | 2001 05 24 | 704 | 0.6+ | 0.8+ | 2005 09 09 | 704 | 0.3− | 0.9+ |
| 1994 05 10 | 691 | 0.6− | 0.2+ | 2001 05 24 | 704 | 0.2− | 0.5+ | 2005 09 09 | 704 | 0.8− | 0.3− |
| 1998 08 24 | 704 | 2.0+ | 0.1− | 2001 05 24 | 704 | 0.1+ | 0.1+ | 2005 09 09 | 704 | 0.6− | 2.2− |
| 1998 08 24 | 704 | 0.2+ | 0.1− | 2001 05 29 | 608 | 1.8+ | 0.1+ | 2005 09 09 | 704 | 1.1− | 1.0+ |
| 1998 08 24 | 704 | 1.4+ | 0.4− | 2001 05 29 | 608 | 1.7+ | 0.0 | 2005 09 09 | 704 | 0.5− | 1.5+ |
| 1998 08 24 | 704 | 1.3+ | 0.2− | 2001 05 29 | 608 | 1.3+ | 0.3− | 2005 09 29 | 691 | 0.1− | 0.2− |
| 1998 08 24 | 704 | 0.9+ | 1.3+ | 2002 11 05 | 704 | 0.2− | 1.2+ | 2005 09 29 | 691 | 0.1− | 0.1− |
| 1998 09 20 | 557 | 0.0 | 0.7+ | 2002 11 05 | 704 | 0.7+ | 0.4+ | 2005 09 29 | 691 | 0.2− | 0.0 |
| 1998 09 20 | 557 | 0.9− | 0.0 | 2002 11 05 | 704 | 0.0 | 0.9+ | 2005 09 30 | 703 | 0.6+ | 0.7+ |
| 2001 05 15 | 608 | 0.2− | 0.2− | 2002 11 05 | 704 | 2.0− | 0.3+ | 2005 09 30 | 703 | 0.5− | 0.3− |
| 2001 05 15 | 608 | 0.2+ | 0.4− | 2002 11 05 | 704 | 0.4+ | 1.1− | 2005 09 30 | 703 | 0.4+ | 0.1− |
| 2001 05 15 | 608 | 0.4+ | 0.2− | 2002 11 23 | 644 | 0.1+ | 0.5+ | 2005 09 30 | 703 | 2.4− | 0.2− |
| 2001 05 17 | 704 | 0.4− | 0.0 | 2002 11 23 | 644 | 0.1− | 0.8+ | 2005 10 01 | 699 | 0.6+ | 0.2+ |
| 2001 05 17 | 704 | 1.0− | 0.3+ | 2002 11 23 | 644 | 0.3+ | 0.5+ | 2005 10 01 | 699 | 0.3− | 0.0 |
| 2001 05 17 | 704 | 0.3− | 0.0 | 2002 12 10 | 644 | 0.2+ | 1.0+ | 2005 10 01 | 699 | 0.2− | 0.5+ |
| 2001 05 17 | 704 | 0.4− | 0.8− | 2002 12 10 | 644 | 0.3+ | 0.7+ | 2005 10 08 | 704 | 0.9+ | 0.8+ |
| 2001 05 21 | 704 | 0.1− | 0.4+ | 2002 12 10 | 644 | 0.1+ | 0.9+ | 2005 10 08 | 704 | 0.8+ | 0.6+ |
| 2001 05 21 | 704 | 0.7+ | 1.3+ | 2002 12 27 | 644 | 0.2+ | 0.6+ | 2005 10 08 | 704 | 0.5+ | 0.7− |
| 2001 05 21 | 704 | 0.5+ | 1.6+ | 2002 12 27 | 644 | 0.1+ | 1.0+ | 2005 10 08 | 704 | 0.8+ | 0.4− |
| 2001 05 21 | 704 | 0.2− | 0.1+ | 2002 12 27 | 644 | 0.2+ | 0.5+ | 2005 10 27 | 644 | 0.1− | 0.0 |
| 2001 05 24 | 704 | 1.0+ | 0.0 | 2005 06 11 | 703 | 1.4− | 0.4+ | 2005 10 27 | 644 | 0.2− | 0.1+ |
| 2001 05 24 | 704 | 1.2+ | 0.4− | 2005 06 11 | 703 | 0.9− | 0.1− | 2005 10 27 | 644 | 0.0 | 0.1+ |
| 2001 05 24 | 704 | 0.1+ | 1.0+ | 2005 06 11 | 703 | 0.7− | 1.0− | | | | |

**(139294)∗ 2001 KM$_5$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.99084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24254814 | $\omega$ | 237.06189 | | +0.63719239 | | +0.76728549 |
| $a$ | 2.5464632 | $\Omega$ | 72.69318 | | −0.67932760 | | +0.60359333 |
| $e$ | 0.2740769 | $i$ | 4.35620 | | −0.36400532 | | +0.21667504 |
| $P$ | 4.06 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.0 | 0.1+ | 2002 11 14 | 704 | 0.5+ | 1.0− | 2005 06 12 | G96 | 0.3− | 0.0 |
| 2001 05 17 | 704 | 0.3+ | 0.4+ | 2002 11 14 | 704 | 0.3+ | 0.8+ | 2005 06 12 | G96 | 0.4− | 0.2− |
| 2001 05 17 | 704 | 0.7+ | 0.1+ | 2002 11 14 | 704 | 0.2+ | 0.3+ | 2005 06 14 | 699 | 0.5+ | 0.6+ |
| 2001 05 17 | 704 | 0.3− | 0.3+ | 2002 12 05 | 704 | 0.4− | 0.5+ | 2005 06 14 | 699 | 0.2− | 0.4+ |
| 2001 05 17 | 704 | 0.6+ | 1.1+ | 2002 12 05 | 704 | 0.3+ | 0.8− | 2005 06 14 | 699 | 0.0 | 0.5+ |
| 2001 05 21 | 704 | 0.5+ | 0.2− | 2002 12 05 | 704 | 0.4− | 0.2+ | 2005 06 14 | 699 | 0.7+ | 0.0 |
| 2001 05 21 | 704 | 0.1+ | 0.2− | 2002 12 05 | 704 | 0.1− | 1.0+ | 2005 06 27 | 644 | 0.2+ | 0.1+ |
| 2001 05 21 | 704 | 0.4− | 0.5+ | 2005 04 17 | 703 | 0.1+ | 1.1− | 2005 06 27 | 644 | 0.4+ | 0.5+ |
| 2001 05 21 | 704 | 0.3− | 0.4+ | 2005 04 17 | 703 | 0.6− | 0.4− | 2005 06 27 | 644 | 0.3+ | 0.0 |
| 2001 05 24 | 704 | 0.2− | 1.0+ | 2005 04 17 | 703 | 0.0 | 0.4− | 2006 09 28 | G96 | 0.0 | 0.2+ |
| 2001 05 24 | 704 | 0.1− | 0.5+ | 2005 04 17 | 703 | 0.0 | 0.9− | 2006 09 28 | G96 | 0.2+ | 0.4+ |
| 2001 05 24 | 704 | 0.2+ | 0.3+ | 2005 05 04 | 704 | 0.1− | 1.4+ | 2006 09 28 | G96 | 0.0 | 0.1+ |
| 2001 05 24 | 704 | 0.2+ | 0.4+ | 2005 05 04 | 704 | (0.3− | 1.7+) | 2006 09 28 | G96 | 0.3− | 0.1+ |
| 2001 05 26 | 704 | 0.2− | 0.2+ | 2005 05 04 | 704 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2001 05 26 | 704 | 0.7+ | 0.1+ | 2005 05 08 | G96 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2001 05 26 | 704 | 0.2− | 0.4+ | 2005 05 08 | G96 | 0.6− | 0.4− | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2001 05 26 | 704 | 0.7− | 0.6+ | 2005 05 08 | G96 | 0.5− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2001 05 26 | 704 | 0.0 | 0.4+ | 2005 05 08 | G96 | 0.3− | 0.4− | 2006 11 15 | 691 | 0.3− | 1.1− |
| 2001 05 27 | 704 | 0.9− | 1.0+ | 2005 05 19 | 644 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.5+ | 1.2− |
| 2001 05 27 | 704 | 0.1− | 0.8+ | 2005 05 19 | 644 | 0.3− | 0.1− | 2006 11 15 | 691 | 1.1− | 0.9+ |
| 2001 05 27 | 704 | (0.8− | 1.8+) | 2005 05 19 | 644 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.3− | 1.0+ |
| 2001 05 27 | 704 | 0.0 | 0.5+ | 2005 05 26 | 699 | 0.5+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 05 27 | 704 | 0.2+ | 0.2+ | 2005 05 26 | 699 | 1.1+ | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.6+ |
| 2001 05 28 | 704 | 0.5+ | 0.6+ | 2005 05 26 | 699 | 0.4− | 0.7+ | 2006 11 18 | 704 | 0.4− | 1.0+ |
| 2001 05 28 | 704 | 0.0 | 0.3+ | 2005 05 26 | 699 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2001 05 28 | 704 | 0.3− | 0.2− | 2005 05 27 | 699 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2001 05 29 | 704 | 0.2− | 0.4+ | 2005 05 27 | 699 | 0.1− | 0.8+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 05 29 | 704 | 0.3− | 0.0 | 2005 05 27 | 699 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 05 29 | 704 | 0.2− | 0.8+ | 2005 05 27 | 699 | 0.8+ | 0.9− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 05 29 | 704 | 0.1+ | 0.7+ | 2005 05 30 | 699 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2001 06 02 | 608 | 0.4+ | 0.3− | 2005 05 30 | 699 | 0.7− | 0.1− | 2006 11 21 | 704 | (1.3+ | 2.0+) |
| 2001 06 02 | 608 | 0.5+ | 0.8− | 2005 05 30 | 699 | 0.7− | 0.0 | 2006 11 21 | 704 | 0.5− | 1.0+ |
| 2001 06 02 | 608 | 0.3+ | 0.5− | 2005 05 30 | 699 | 0.6− | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.8− |
| 2001 06 02 | 608 | 0.1− | 0.6− | 2005 06 04 | 691 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 06 02 | 608 | 0.3+ | 1.1− | 2005 06 04 | 691 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2001 06 02 | 608 | 0.3− | 0.7− | 2005 06 04 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 06 08 | 644 | 0.2+ | 0.1+ | 2005 06 04 | 704 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2001 06 08 | 644 | 0.1+ | 0.4+ | 2005 06 04 | 704 | 0.8+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2001 06 08 | 644 | 0.0 | 0.3+ | 2005 06 04 | 704 | 1.4+ | 0.3+ | 2006 11 27 | 691 | 0.4− | 0.7+ |
| 2001 06 13 | 704 | 0.1− | 1.0+ | 2005 06 04 | 704 | 0.6+ | 0.5− | 2006 12 01 | 704 | 0.7+ | 1.2+ |
| 2001 06 13 | 704 | 1.0+ | 0.2+ | 2005 06 04 | 704 | 0.7+ | 0.3+ | 2006 12 01 | 704 | 0.1+ | 1.1+ |
| 2001 06 13 | 704 | 0.5+ | 0.6+ | 2005 06 04 | 703 | 1.3− | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2001 06 13 | 704 | 0.2− | 0.0 | 2005 06 04 | 703 | 0.6− | 0.2+ | 2006 12 01 | 704 | 0.9− | 0.4+ |
| 2001 06 13 | 704 | 0.5+ | 1.3+ | 2005 06 04 | 703 | 0.3− | 0.7+ | 2006 12 01 | 691 | 0.2+ | 0.3− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 704 | (2.0+ | 1.6+) | 2005 06 04 | 703 | 0.6− | 0.4+ | 2006 12 01 | 704 | 0.7+ | 0.4− |
| 2001 06 16 | 704 | (2.7+ | 1.0−) | 2005 06 12 | G96 | 0.1− | 0.1+ | 2006 12 01 | 704 | 1.0+ | 1.0+ |
| 2001 06 16 | 704 | 0.5+ | 0.6− | 2005 06 12 | G96 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.2+ |

**(139295)∗ 2001 KK$_6$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.13089 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23393831 | $\omega$ | 236.67573 | | +0.74814492 | +0.65938570 |
| $a$ | 2.6085659 | $\Omega$ | 81.95489 | | −0.58120196 | +0.70508777 |
| $e$ | 0.2349761 | $i$ | 4.29138 | | −0.32013037 | +0.26088645 |
| $P$ | 4.21 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.4− | 0.6− | 2002 11 25 | 644 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 05 17 | 704 | 0.9− | 0.4+ | 2002 12 10 | 704 | 0.7− | 1.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 05 17 | 704 | 0.3+ | 0.7− | 2002 12 10 | 704 | 0.6+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 05 21 | 704 | 1.2− | 0.0 | 2002 12 10 | 704 | 0.5− | 1.2+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 05 21 | 704 | 0.6− | 0.4− | 2002 12 10 | 704 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2001 05 21 | 704 | 0.5+ | 0.9− | 2005 04 12 | G96 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2001 05 23 | 291 | 0.0 | 0.1+ | 2005 04 12 | G96 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2001 05 23 | 291 | 0.1− | 0.2+ | 2005 04 12 | G96 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2001 05 23 | 291 | 0.2− | 0.2+ | 2005 04 12 | G96 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2001 05 24 | 704 | 0.2+ | 0.9+ | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2001 05 24 | 704 | 1.3+ | 1.1+ | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.1+ |
| 2001 05 24 | 704 | 0.4− | 0.0 | 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2001 05 24 | 704 | 1.3+ | 0.9+ | 2005 05 09 | 699 | 1.0+ | 1.5+ | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2001 05 24 | 704 | 0.3− | 0.5+ | 2005 05 09 | 699 | (0.1+ | 1.6+) | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2001 05 29 | 608 | 0.2+ | 0.1− | 2005 05 09 | 699 | 1.4+ | 0.2− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2001 05 29 | 608 | 0.4+ | 0.2− | 2005 05 09 | 699 | (0.0 | 1.6+) | 2006 11 13 | 644 | 0.4− | 0.6+ |
| 2001 05 29 | 608 | 0.8+ | 0.3− | 2006 09 29 | 699 | 0.5− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2001 06 01 | 691 | 0.1− | 0.6+ | 2006 09 29 | 699 | 0.0 | 1.0− | 2006 11 13 | 703 | 0.4− | 0.5− |
| 2001 06 01 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.4+ | 0.1− | 2006 11 13 | 703 | 1.0− | 0.2− |
| 2001 06 01 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.8+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2002 10 30 | 644 | (1.2+ | 2.8+) | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2002 10 30 | 644 | (1.0+ | 2.7+) | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 13 | 703 | 0.7− | 0.4− |
| 2002 10 30 | 644 | (1.2+ | 3.5+) | 2006 09 30 | 703 | 0.1− | 0.6+ | 2006 11 13 | 703 | 1.3− | 0.2+ |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4− | 1.0+ | 2006 11 14 | 704 | (0.3− | 2.5+) |
| 2002 11 13 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 14 | 704 | (1.5− | 0.3+) |
| 2002 11 13 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.9+ |
| 2002 11 16 | 644 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 14 | 704 | (0.4+ | 1.6+) |
| 2002 11 16 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.6− | 2006 11 14 | 704 | 0.6− | 1.5+ |
| 2002 11 24 | 644 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.6+ | 2006 11 20 | 704 | 0.8+ | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.4− |
| 2002 11 24 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.4+ | 0.2− | 2006 11 20 | 704 | 1.2+ | 0.4− |
| 2002 11 25 | 644 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.5+ | 0.1− |

**(139296)∗ 2001 KD$_7$ = 2002 WY$_{18}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40139)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.04593 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24036051 | $\omega$ | 9.31683 | | −0.38760985 | +0.90455073 |
| $a$ | 2.5618910 | $\Omega$ | 238.06630 | | −0.85866263 | −0.42437949 |
| $e$ | 0.1501279 | $i$ | 12.08057 | | −0.33534622 | +0.04110987 |
| $P$ | 4.10 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 704 | 0.5+ | 1.4− | 2002 11 28 | 695 | 0.1− | 0.2+ | 2005 05 30 | 699 | 0.0 | 0.4+ |
| 2001 04 27 | 704 | 0.9− | 0.8+ | 2002 11 28 | 695 | 1.1+ | 0.2− | 2005 05 30 | 699 | 0.2− | 0.1+ |
| 2001 04 27 | 704 | 0.5− | 0.7− | 2002 12 02 | 695 | 0.1+ | 0.2− | 2005 06 04 | 704 | (1.6+ | 0.8−) |
| 2001 05 17 | 704 | 1.0+ | 0.3− | 2002 12 02 | 695 | 0.0 | 1.1− | 2005 06 04 | 704 | (1.5+ | 0.5−) |
| 2001 05 17 | 704 | 1.2+ | 0.4+ | 2005 04 11 | E12 | 0.0 | 0.3+ | 2005 06 04 | 704 | 0.5+ | 0.3− |
| 2001 05 17 | 704 | 0.2− | 0.1+ | 2005 04 11 | E12 | 0.1− | 0.6+ | 2005 06 04 | 704 | 0.7+ | 0.4− |
| 2001 05 21 | 704 | 0.1+ | 0.2− | 2005 04 11 | E12 | 0.4+ | 0.1− | 2005 06 12 | G96 | 0.3− | 0.1+ |
| 2001 05 21 | 704 | 0.9− | 0.3+ | 2005 04 11 | E12 | 0.5+ | 0.9+ | 2005 06 12 | G96 | 0.2− | 0.1− |
| 2001 05 21 | 704 | 0.3− | 0.2− | 2005 04 18 | 703 | 1.0− | 1.2− | 2005 06 12 | G96 | 0.1− | 0.1− |
| 2001 05 21 | 704 | 0.4− | 0.5− | 2005 04 18 | 703 | (0.3− | 2.4−) | 2005 06 12 | G96 | 0.4− | 0.0 |
| 2001 05 21 | 704 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.7− | 0.2+ | 2005 06 14 | 699 | 0.4+ | 1.1− |
| 2001 05 22 | 704 | 0.5− | 0.2− | 2005 04 18 | 703 | 1.0− | 0.1+ | 2005 06 14 | 699 | (1.6+ | 1.8+) |
| 2001 05 22 | 704 | 0.4− | 0.5− | 2005 04 30 | E12 | 0.0 | 0.4+ | 2005 06 14 | 699 | 0.1+ | 0.1+ |
| 2001 05 22 | 704 | 0.1− | 0.0 | 2005 04 30 | E12 | 0.1+ | 0.2− | 2005 06 14 | 699 | 0.6+ | 0.4+ |
| 2001 05 22 | 704 | 0.3+ | 0.3+ | 2005 04 30 | E12 | 0.3+ | 0.1+ | 2005 06 23 | 644 | 0.0 | 0.0 |
| 2001 05 22 | 704 | 0.3+ | 0.2− | 2005 04 30 | E12 | 0.1− | 0.1+ | 2005 06 23 | 644 | 0.0 | 0.1+ |
| 2001 05 23 | 704 | 0.2+ | 0.4+ | 2005 05 04 | 644 | 0.2− | 0.0 | 2005 06 23 | 644 | 0.0 | 0.0 |
| 2001 05 23 | 704 | 0.6− | 0.1− | 2005 05 04 | 644 | 0.2− | 0.1+ | 2005 06 27 | 644 | 0.1+ | 0.1+ |
| 2001 05 23 | 704 | 0.4− | 0.1− | 2005 05 04 | 644 | 0.2− | 0.0 | 2005 06 27 | 644 | 0.2+ | 0.1+ |
| 2001 05 23 | 704 | 0.1− | 0.0 | 2005 05 09 | 704 | 0.7− | 0.1− | 2005 06 27 | 644 | 0.3+ | 0.3+ |
| 2001 05 23 | 704 | 0.3+ | 0.8− | 2005 05 09 | 704 | 0.9− | 0.5− | 2005 06 28 | 699 | (1.5+ | 0.9+) |
| 2001 05 24 | 704 | 0.0 | 0.1− | 2005 05 09 | 704 | 0.7− | 0.8+ | 2005 06 28 | 699 | 1.4+ | 0.5+ |
| 2001 05 24 | 704 | 0.2+ | 0.1− | 2005 05 09 | 704 | 0.5− | 0.6+ | 2005 06 28 | 699 | 0.8+ | 0.5+ |
| 2001 05 24 | 704 | 0.2+ | 0.2− | 2005 05 09 | 704 | 0.6− | 0.8+ | 2005 06 28 | 699 | 0.8+ | 0.8− |
| 2001 05 24 | 704 | 0.1− | 0.1+ | 2005 05 10 | 699 | 0.4− | 0.5+ | 2005 07 04 | 704 | 0.4+ | 1.0− |
| 2001 05 24 | 704 | 0.4+ | 0.7+ | 2005 05 10 | 699 | 0.2− | 0.4− | 2005 07 04 | 704 | 0.3+ | 0.2− |
| 2001 06 13 | 704 | 0.6− | 0.6+ | 2005 05 10 | 699 | 0.1− | 0.2− | 2005 07 04 | 704 | 0.9+ | 1.0− |
| 2001 06 13 | 704 | 0.3+ | 0.3+ | 2005 05 10 | 699 | 0.4+ | 0.2+ | 2005 07 04 | 704 | 0.6+ | 0.3+ |
| 2001 06 13 | 704 | 0.1− | 0.1+ | 2005 05 11 | 644 | 0.1− | 0.2− | 2005 07 04 | 704 | 0.6+ | 0.7+ |
| 2001 06 13 | 704 | 0.4+ | 0.6+ | 2005 05 11 | 644 | 0.0 | 0.3− | 2006 09 16 | 703 | 1.3− | 0.1− |
| 2001 06 13 | 704 | 0.4− | 0.1+ | 2005 05 11 | 644 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.4+ |
| 2001 06 15 | 704 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.4− | 0.2+ | 2006 09 16 | 703 | (0.4− | 1.7−) |
| 2001 06 15 | 704 | 0.2− | 0.8− | 2005 05 12 | G96 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.8− |
| 2001 06 15 | 704 | 0.4+ | 0.4− | 2005 05 12 | G96 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.5+ | 0.5+ |
| 2001 06 15 | 704 | 0.7+ | 0.4− | 2005 05 12 | G96 | 0.6− | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.5+ |
| 2001 06 22 | 704 | 0.1− | 0.3+ | 2005 05 12 | 644 | 0.1+ | 0.3− | 2006 09 28 | 703 | 0.4+ | 0.2− |
| 2001 06 22 | 704 | 0.2+ | 0.0 | 2005 05 12 | 644 | 0.0 | 0.3− | 2006 10 04 | 703 | 0.4− | 0.7− |
| 2001 06 22 | 704 | 0.2− | 1.0+ | 2005 05 12 | 644 | 0.1+ | 0.4− | 2006 10 04 | 703 | (1.7− | 0.6+) |
| 2001 06 22 | 704 | 0.2+ | 0.2− | 2005 05 15 | 428 | 0.1− | 0.1+ | 2006 10 04 | 703 | 0.4− | 0.1− |
| 2001 06 22 | 704 | 0.2− | 0.0 | 2005 05 15 | 428 | 0.2− | 0.2+ | 2006 10 04 | 703 | 0.4+ | 0.7− |
| 2001 06 26 | 644 | 0.1− | 0.0 | 2005 05 16 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2001 06 26 | 644 | 0.2− | 0.1+ | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.5+ | 0.2− |
| 2001 06 26 | 644 | 0.1+ | 0.1− | 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2002 10 03 | 644 | 0.1− | 0.5+ | 2005 05 26 | 699 | 0.6+ | 0.5− | 2006 10 17 | 703 | 1.3− | 0.6− |
| 2002 10 03 | 644 | 0.2+ | 0.4+ | 2005 05 26 | 699 | 0.2+ | 0.0 | 2006 10 17 | 703 | 1.0+ | 0.0 |
| 2002 10 03 | 644 | 0.2+ | 0.5+ | 2005 05 26 | 699 | 1.2+ | 0.9− | 2006 10 17 | 703 | 0.9− | 0.0 |
| 2002 10 31 | 644 | 0.0 | 1.1+ | 2005 05 27 | 699 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.4+ |
| 2002 10 31 | 644 | 0.5− | 1.1+ | 2005 05 27 | 699 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 644 | (1.1+ | 2.0+) | 2005 05 27 | 699 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 11 28 | 695 | 0.4+ | 0.5+ | 2005 05 27 | 699 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 11 28 | 695 | 0.1+ | 0.3− | 2005 05 30 | 699 | 0.1+ | 0.0 | | | | |
| 2002 11 28 | 695 | 0.2+ | 0.1+ | 2005 05 30 | 699 | 0.1+ | 0.1+ | | | | |

**(139297)∗ 2001 KH$_8$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.76424 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26874895 | $\omega$ | 181.82487 | | −0.14594052 | +0.98347449 |
| $a$ | 2.3781443 | $\Omega$ | 79.79417 | | −0.90627436 | −0.08947960 |
| $e$ | 0.2061018 | $i$ | 6.24983 | | −0.39669654 | −0.15738910 |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 03 | 608 | 0.7− | 1.3+ | 2002 11 04 | 644 | 0.4− | 1.2+ | 2005 08 22 | 644 | 0.0 | 0.4+ |
| 2001 05 03 | 608 | 0.5− | 1.2+ | 2002 11 04 | 644 | 0.6− | 1.1+ | 2005 08 27 | E12 | 0.2− | 0.9+ |
| 2001 05 03 | 608 | 0.5− | 1.4+ | 2004 02 17 | 645 | 0.0 | 0.1+ | 2005 08 27 | E12 | 1.1+ | 0.3− |
| 2001 05 15 | 608 | 0.7+ | 0.1− | 2004 02 17 | 645 | 0.0 | 0.1+ | 2005 08 27 | E12 | 0.0 | 1.3+ |
| 2001 05 15 | 608 | 0.6+ | 0.1− | 2005 06 09 | 703 | 0.2− | 0.1+ | 2005 08 27 | E12 | 0.1− | 0.1+ |
| 2001 05 15 | 608 | 0.7+ | 0.1− | 2005 06 09 | 703 | 0.8− | 0.3− | 2005 08 31 | 699 | 0.3+ | 1.1− |
| 2001 05 18 | 704 | 0.1+ | 0.0 | 2005 06 09 | 703 | 1.1+ | 0.9− | 2005 08 31 | 699 | (1.8+ | 0.2+) |
| 2001 05 18 | 704 | 0.4+ | 0.2+ | 2005 06 09 | 703 | 0.2− | 0.9− | 2005 08 31 | 699 | 0.9− | 0.8− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.6+ | 0.2+ | 2005 06 20 | 644 | 0.4− | 0.2− | 2005 08 31 | 699 | 0.1− | 0.5− |
| 2001 05 18 | 704 | 0.2− | 0.9+ | 2005 06 20 | 644 | 0.3− | 0.3− | 2005 09 01 | 644 | 0.1− | 0.5+ |
| 2001 05 18 | 704 | 0.6+ | 0.7+ | 2005 06 20 | 644 | 0.3+ | 0.1+ | 2005 09 01 | 644 | 0.0 | 0.9+ |
| 2001 05 21 | 704 | 0.2− | 0.3+ | 2005 07 10 | E12 | 0.1− | 0.0 | 2005 09 01 | 644 | 0.7− | 0.6+ |
| 2001 05 21 | 704 | 0.4+ | 0.1− | 2005 07 10 | E12 | 0.4− | 0.1+ | 2005 09 01 | E12 | 0.9+ | 0.8− |
| 2001 05 21 | 704 | 0.5+ | 0.2+ | 2005 07 10 | E12 | 0.4− | 0.2+ | 2005 09 01 | E12 | 0.1− | 0.2− |
| 2001 05 21 | 704 | 0.2− | 0.1− | 2005 07 26 | 644 | 0.2− | 0.5+ | 2005 09 01 | E12 | 0.1− | 0.5+ |
| 2001 05 25 | 704 | 0.4− | 0.2+ | 2005 07 26 | 644 | 0.1+ | 0.5+ | 2005 09 01 | E12 | 0.3+ | 0.2− |
| 2001 05 25 | 704 | 0.3+ | 0.7+ | 2005 07 26 | 644 | 0.1+ | 0.3+ | 2005 09 08 | E12 | 0.5− | 0.3− |
| 2001 05 25 | 704 | 0.2+ | 0.3+ | 2005 08 04 | 644 | 0.1+ | 0.4+ | 2005 09 08 | E12 | 0.2− | 0.2+ |
| 2001 05 25 | 704 | 0.1+ | 0.5+ | 2005 08 04 | 644 | 0.2+ | 0.3+ | 2005 09 08 | E12 | 0.1+ | 0.0 |
| 2001 05 25 | 704 | 0.4+ | 0.6+ | 2005 08 04 | 644 | 0.3+ | 0.4+ | 2005 09 08 | E12 | 0.7− | 0.1+ |
| 2001 05 25 | 691 | 0.0 | 0.1+ | 2005 08 09 | 428 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 05 25 | 691 | 0.1− | 0.1+ | 2005 08 09 | 428 | (2.1− | 0.1−) | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2001 05 25 | 691 | 0.1− | 0.1+ | 2005 08 22 | 644 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.3+ | 0.5+ |
| 2001 07 12 | 608 | 0.3+ | 0.8− | 2005 08 22 | 644 | 0.5+ | 0.1+ | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2001 07 12 | 608 | 0.1− | 0.8− | 2005 08 22 | 644 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.4− | 0.1+ |
| 2001 07 12 | 608 | 0.4− | 1.2− | 2005 08 22 | 644 | 0.2+ | 0.8+ | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2002 11 04 | 644 | 0.2− | 1.0+ | 2005 08 22 | 644 | 0.2− | 0.4+ | | | | |

**(139298)∗ 2001 KG$_{12}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 197.93482 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27142375 | $\omega$ | 104.95332 | | −0.89772385 | | +0.42735674 | | |
| $a$ | 2.3624946 | $\Omega$ | 100.44219 | | −0.43435085 | | −0.81790788 | | |
| $e$ | 0.1714457 | $i$ | 6.24875 | | −0.07369685 | | −0.38521802 | | |
| $P$ | 3.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 1.0− | 0.7− | 2003 12 26 | 608 | 0.5+ | 0.6− | 2004 01 30 | 704 | 0.3− | 0.9+ |
| 2001 05 18 | 704 | 0.6− | 0.7− | 2003 12 26 | 608 | 0.2+ | 0.9− | 2004 01 30 | 704 | 0.3− | 0.7+ |
| 2001 05 18 | 704 | 0.0 | 0.7+ | 2003 12 27 | 704 | 1.2+ | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.4+ |
| 2001 05 18 | 704 | 0.5− | 0.9+ | 2003 12 27 | 704 | 0.1− | 0.2+ | 2004 01 30 | 704 | 0.6+ | 0.7+ |
| 2001 05 21 | 704 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.5+ | 2004 01 30 | 704 | 0.4− | 1.2+ |
| 2001 05 21 | 704 | 0.9+ | 0.5− | 2003 12 28 | 691 | 0.2+ | 0.1− | 2004 02 11 | 703 | 0.4− | 0.5− |
| 2001 05 21 | 704 | (1.9− | 0.3+) | 2003 12 28 | 691 | 0.1+ | 0.2+ | 2004 02 11 | 703 | 0.7− | 0.2+ |
| 2001 05 21 | 704 | 0.5+ | 0.3− | 2003 12 28 | 691 | 0.3+ | 0.0 | 2004 02 11 | 703 | 0.6− | 0.7+ |
| 2001 05 25 | 704 | 0.4− | 0.2+ | 2003 12 29 | 699 | 0.5− | 0.5− | 2004 02 11 | 703 | 0.4+ | 1.4+ |
| 2001 05 25 | 704 | 0.1− | 0.4+ | 2003 12 29 | 699 | 0.6+ | 0.2− | 2004 02 15 | 704 | (2.1+ | 0.9−) |
| 2001 05 25 | 704 | 0.1+ | 0.5+ | 2003 12 29 | 699 | 1.0− | 0.4+ | 2004 02 15 | 704 | 0.2+ | 0.6− |
| 2001 05 25 | 704 | 0.2− | 0.1+ | 2003 12 29 | 699 | 0.2+ | 0.5+ | 2004 02 15 | 704 | 0.3+ | 0.1+ |
| 2001 05 25 | 704 | 0.2+ | 0.9+ | 2004 01 15 | 691 | 0.1− | 0.2− | 2004 02 15 | 704 | 0.5+ | 0.2− |
| 2001 06 15 | 704 | 0.5+ | 0.8+ | 2004 01 15 | 691 | 0.2− | 0.1− | 2004 02 15 | 704 | 0.9+ | 0.4− |
| 2001 06 15 | 704 | 0.2− | 0.4+ | 2004 01 15 | 691 | 0.4− | 0.0 | 2004 02 23 | 704 | 0.5− | 0.3− |
| 2001 06 15 | 704 | 0.6− | 0.2+ | 2004 01 19 | 699 | (0.5− | 2.0−) | 2004 02 23 | 704 | 0.5− | 0.2− |
| 2001 06 15 | 704 | 0.4+ | 0.0 | 2004 01 19 | 699 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.9− | 0.4+ |
| 2001 06 22 | 704 | 0.2+ | 0.1+ | 2004 01 19 | 699 | 0.4− | 0.1− | 2004 02 23 | 704 | 0.5− | 0.1− |
| 2001 06 22 | 704 | (1.7+ | 0.1+) | 2004 01 19 | 699 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.8− | 0.5− |
| 2001 06 22 | 704 | 1.2+ | 0.4+ | 2004 01 20 | 704 | 0.0 | 0.1+ | 2005 07 03 | 644 | 0.2+ | 0.6+ |
| 2001 06 22 | 704 | 0.7+ | 0.1+ | 2004 01 20 | 704 | 0.3+ | 0.4+ | 2005 07 03 | 644 | 0.0 | 0.3+ |
| 2001 06 22 | 704 | 0.0 | 1.5+ | 2004 01 20 | 704 | 0.1− | 0.2+ | 2005 07 03 | 644 | 0.1− | 0.6+ |
| 2002 10 08 | 699 | 0.9− | 0.6+ | 2004 01 22 | 704 | 0.5+ | 0.8− | 2005 07 31 | E12 | 1.0+ | 1.1+ |
| 2002 10 08 | 699 | 0.9+ | 0.6+ | 2004 01 22 | 704 | 0.5− | 1.2− | 2005 07 31 | E12 | 0.5+ | 0.7+ |
| 2002 10 08 | 699 | 0.2− | 0.8+ | 2004 01 22 | 704 | 0.2+ | 0.4− | 2005 07 31 | E12 | 0.8− | 0.6− |
| 2002 10 08 | 699 | 0.2− | 0.5− | 2004 01 22 | 704 | 0.1+ | 0.6− | 2005 07 31 | E12 | 1.3− | 0.9+ |
| 2003 12 19 | 704 | 0.5− | 0.2− | 2004 01 22 | 704 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2003 12 19 | 704 | 0.4− | 1.0+ | 2004 01 26 | 699 | 0.1− | 0.7+ | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 2003 12 19 | 704 | 0.0 | 0.5+ | 2004 01 26 | 699 | 0.9− | 1.0+ | 2006 11 17 | 704 | 0.3+ | 0.6+ |
| 2003 12 19 | 704 | 0.1+ | 0.2+ | 2004 01 26 | 699 | 1.0+ | 0.0 | 2006 11 17 | 704 | 1.7− | 0.5− |
| 2003 12 19 | 691 | 0.0 | 0.4+ | 2004 01 26 | 699 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2003 12 19 | 691 | 0.4+ | 0.1+ | 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.3− | 0.3+ |
| 2003 12 19 | 691 | 0.1+ | 0.4+ | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2003 12 26 | 608 | 0.6+ | 1.1− | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2+ |

**(139299)∗ 2001 KH$_{12}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 151.07475 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25207651 | $\omega$ | 14.77780 | | −0.76908440 | | +0.63746170 | | |
| $a$ | 2.4818820 | $\Omega$ | 205.00879 | | −0.59697653 | | −0.74237194 | | |
| $e$ | 0.1522248 | $i$ | 6.29948 | | −0.22831602 | | −0.20621951 | | |
| $P$ | 3.91 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.2+ | 0.2− | 2002 10 03 | 704 | 0.4− | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2− |
| 1994 09 29 | 691 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.3− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1− |
| 1994 09 29 | 691 | 0.2− | 0.2+ | 2002 10 04 | 704 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.2− |
| 1997 05 04 | 809 | (1.1+ | 2.4−) | 2002 10 04 | 704 | 0.6− | 0.9+ | 2006 10 21 | 703 | 0.0 | 0.8− |
| 1997 05 04 | 809 | (0.5+ | 2.9−) | 2002 10 04 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 703 | (2.0+ | 2.4−) |
| 1997 05 04 | 809 | (0.6+ | 2.3−) | 2002 10 04 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 703 | (1.3− | 2.4−) |
| 1997 05 05 | 691 | 0.2− | 0.1+ | 2002 10 04 | 704 | 0.7+ | 0.8+ | 2006 10 21 | 703 | 0.5− | 0.8− |
| 1997 05 05 | 691 | 0.1− | 0.1+ | 2002 10 05 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1997 05 05 | 691 | 0.1− | 0.0 | 2002 10 05 | 644 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 05 18 | 704 | (0.9+ | 1.6+) | 2002 10 05 | 704 | 0.2+ | 1.4+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 05 18 | 704 | 0.5+ | 0.5+ | 2002 10 05 | 704 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 05 18 | 704 | 1.0+ | 0.4− | 2002 10 05 | 704 | 0.5− | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 05 21 | 704 | (0.4− | 2.1+) | 2002 10 05 | 704 | 0.7− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 05 21 | 704 | 0.1+ | 0.4− | 2002 10 05 | 704 | 0.7− | 0.2− | 2006 10 28 | 691 | 0.6+ | 0.1− |
| 2001 05 21 | 704 | 0.6− | 0.1+ | 2002 10 05 | 644 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 05 21 | 704 | 0.7− | 0.4+ | 2002 10 06 | 644 | 0.6+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 05 25 | 704 | 0.0 | 0.2+ | 2002 10 06 | 644 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 05 25 | 704 | 0.3+ | 0.6+ | 2002 10 06 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.8+ | 0.4+ |
| 2001 05 25 | 704 | 0.3+ | 0.1− | 2002 10 07 | 699 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2001 05 25 | 704 | 0.1+ | 0.5+ | 2002 10 07 | 699 | 0.9− | 1.1− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 05 25 | 704 | 0.1− | 0.0 | 2002 10 07 | 699 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.5− | 0.3− |
| 2001 06 15 | 704 | 0.5+ | 0.0 | 2002 10 07 | 699 | 0.9+ | 0.7− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 06 15 | 704 | 0.3+ | 0.4− | 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 06 15 | 704 | 0.4+ | 0.2− | 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2001 06 15 | 704 | 0.7+ | 0.2+ | 2002 10 11 | 704 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.8− |
| 2001 06 17 | 644 | 0.5− | 0.2+ | 2002 10 11 | 704 | 1.4− | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.8− |
| 2001 06 17 | 644 | 0.9− | 0.1+ | 2005 07 05 | 704 | 0.9− | 1.3− | 2006 11 11 | G96 | 0.5− | 0.6− |
| 2001 06 17 | 644 | 0.8− | 0.1+ | 2005 07 05 | 704 | 0.2− | 0.9− | 2006 11 17 | 703 | 0.1− | 1.1+ |
| 2001 06 18 | 644 | 1.3+ | 0.2− | 2005 07 05 | 704 | 1.2− | 0.1+ | 2006 11 17 | 703 | 2.1− | 0.2− |
| 2001 06 18 | 644 | 1.0+ | 0.2− | 2005 07 05 | 704 | 0.7+ | 0.7− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2001 06 18 | 644 | 0.3+ | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.7− | 1.5+ |
| 2002 09 07 | 704 | 0.7+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | (1.7− | 0.8+) | 2006 09 15 | 691 | 0.1+ | 0.6− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.5+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2002 09 07 | 704 | 0.9− | 0.5− | 2006 09 30 | 691 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.7+ | 0.3− | 2006 09 30 | 691 | 0.4+ | 0.2− | | | | |

**(139300)∗ 2001 KC$_{13}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 39.12961 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23614774 | $\omega$ | 254.70099 | | +0.90152152 | | +0.38271040 | | |
| $a$ | 2.5922697 | $\Omega$ | 82.45668 | | −0.27555842 | | +0.86757953 | | |
| $e$ | 0.2668433 | $i$ | 11.75532 | | −0.33365628 | | +0.31755080 | | |
| $P$ | 4.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 1.4− | 0.6+ | 2005 05 04 | 691 | 0.3+ | 0.6+ | 2006 11 10 | 683 | 0.1+ | 0.6+ |
| 2001 05 18 | 704 | 0.3+ | 0.1− | 2005 05 11 | 699 | 0.1+ | 0.5− | 2006 11 10 | 683 | 0.2− | 0.7+ |
| 2001 05 18 | 704 | 0.6+ | 1.3− | 2005 05 11 | 699 | 0.4+ | 0.0 | 2006 11 13 | 683 | 0.3− | 0.3− |
| 2001 05 21 | 704 | (0.1− | 1.6+) | 2005 05 11 | 699 | (1.0+ | 1.8+) | 2006 11 13 | 683 | 0.3+ | 0.5− |
| 2001 05 21 | 704 | (0.1+ | 2.0+) | 2005 05 11 | 699 | 1.1− | 1.4− | 2006 11 13 | 683 | 0.8+ | 0.9+ |
| 2001 05 21 | 704 | 0.5− | 1.3+ | 2005 05 14 | 691 | 0.2− | 0.4+ | 2006 11 14 | 704 | 1.5+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 704 | 0.2+ | 0.8− | 2005 05 14 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 704 | (0.9+ | 2.5+) | | |
| 2001 05 21 | 704 | 0.5+ | 0.1+ | 2005 05 14 | 691 | 0.1− | 0.1+ | 2006 11 14 | 704 | 0.1+ | 1.0+ | | |
| 2001 05 24 | 807 | 0.4+ | 0.8+ | 2005 05 14 | 704 | 0.5+ | 0.3− | 2006 11 14 | 704 | (1.2− | 2.3+) | | |
| 2001 05 24 | 807 | 0.2− | 0.8+ | 2005 05 14 | 704 | 0.9+ | 0.5+ | 2006 11 14 | 683 | 0.7− | 0.9− | | |
| 2001 05 25 | 704 | (0.1+ | 1.9+) | 2005 05 14 | 704 | 1.2+ | 0.1− | 2006 11 14 | 704 | 1.0− | 0.5− | | |
| 2001 05 25 | 704 | 0.1− | 1.5+ | 2005 05 14 | 704 | 0.7+ | 0.2+ | 2006 11 14 | 683 | 0.1+ | 1.0− | | |
| 2001 05 25 | 704 | 0.4+ | 0.1+ | 2005 05 14 | 704 | 0.3− | 0.6+ | 2006 11 14 | 683 | 0.9− | 0.3+ | | |
| 2001 06 16 | 704 | 0.3+ | 0.4+ | 2005 06 04 | 703 | 1.2− | 0.9+ | 2006 11 15 | 683 | 0.9+ | 0.3+ | | |
| 2001 06 16 | 704 | 0.0 | 0.3+ | 2005 06 04 | 703 | 0.4+ | 1.1− | 2006 11 15 | 683 | 1.4+ | 0.2+ | | |
| 2001 06 16 | 704 | 1.4+ | 0.9+ | 2005 06 04 | 703 | (0.3+ | 1.7+) | 2006 11 15 | 683 | 1.1+ | 0.3+ | | |
| 2001 06 16 | 704 | 0.3+ | 0.7+ | 2005 06 04 | 703 | 0.2− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.6+ | | |
| 2001 06 22 | 704 | 0.0 | 0.1− | 2005 06 28 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.4+ | | |
| 2001 06 22 | 704 | 0.5+ | 0.6+ | 2005 06 28 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.0 | | |
| 2001 06 22 | 704 | (0.2+ | 1.6+) | 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.2+ | | |
| 2001 06 22 | 704 | (1.9+ | 1.4+) | 2006 09 18 | 703 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.9− | 1.4+ | | |
| 2001 06 22 | 704 | 0.5− | 1.3+ | 2006 09 18 | 703 | 1.1+ | 0.6+ | 2006 11 19 | 704 | 0.4− | 0.1− | | |
| 2001 07 13 | 644 | 0.1− | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 11 19 | 704 | 1.2+ | 0.7+ | | |
| 2001 07 13 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | (0.9+ | 1.6+) | 2006 11 19 | 704 | 0.1+ | 0.5+ | | |
| 2001 07 13 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 1.3− | 0.6+ | 2006 11 19 | 704 | 0.3− | 0.4+ | | |
| 2002 12 05 | 704 | 1.0+ | 0.1− | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.7− | 0.7+ | | |
| 2002 12 05 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.6+ | | |
| 2002 12 05 | 704 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.3− | 0.3+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.4− | 0.3+ | | |
| 2002 12 11 | 291 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.8− | 0.2+ | | |
| 2002 12 11 | 291 | 0.6− | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.4+ | 2006 11 24 | 691 | 0.7− | 0.6− | | |
| 2002 12 11 | 291 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.1+ | | |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.0 | 0.0 | | |
| 2002 12 11 | 704 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 25 | 704 | 0.6− | 2.4+ | | |
| 2002 12 11 | 704 | 0.5+ | 0.4− | 2006 10 22 | 703 | 0.4+ | 0.1− | 2006 11 25 | 704 | 0.3− | 0.9− | | |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.2− | 2006 11 25 | 704 | 0.9− | 0.5+ | | |
| 2002 12 31 | 704 | 0.3− | 0.6− | 2006 10 22 | 703 | 0.3+ | 0.1+ | 2006 11 25 | 704 | 1.2− | 1.0− | | |
| 2002 12 31 | 704 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.2− | 0.1+ | 2006 11 25 | 704 | 0.8+ | 0.8− | | |
| 2002 12 31 | 704 | 0.3+ | 0.5− | 2006 10 27 | 683 | 0.7+ | 0.6+ | 2006 11 25 | 704 | 0.3− | 1.0− | | |
| 2002 12 31 | 704 | 0.3− | 0.2− | 2006 10 27 | 683 | (2.0+ | 1.8+) | 2006 11 25 | 704 | 0.1− | 1.3+ | | |
| 2005 04 15 | 703 | 0.5− | 0.5− | 2006 10 27 | 683 | 0.3+ | 0.5+ | 2006 11 25 | 704 | 0.3− | 0.2− | | |
| 2005 04 15 | 703 | 1.5− | 0.2− | 2006 10 30 | 703 | 0.1+ | 0.5− | 2006 11 27 | 291 | 0.3− | 0.4+ | | |
| 2005 04 15 | 703 | (1.6− | 0.9−) | 2006 10 30 | 703 | 0.1+ | 0.0 | 2006 11 27 | 291 | 0.2− | 0.3+ | | |
| 2005 04 15 | 703 | 1.2+ | 0.1+ | 2006 10 30 | 703 | 0.2− | 0.4− | 2006 11 27 | 291 | 0.2− | 0.4+ | | |
| 2005 05 04 | 691 | 0.3+ | 0.5+ | 2006 10 30 | 703 | 0.5− | 0.5− | | | | | | |
| 2005 05 04 | 691 | 0.5+ | 0.5+ | 2006 11 10 | 683 | 0.4+ | 0.0 | | | | | | |

**(139301)∗ 2001 KN$_{14}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.90850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24077563 | $\omega$ | 119.06201 | | −0.82813022 | +0.55115678 | |
| $a$ | 2.5589455 | $\Omega$ | 94.55948 | | −0.54329402 | −0.74439351 | |
| $e$ | 0.1233385 | $i$ | 5.87938 | | −0.13795632 | −0.37696751 | |
| $P$ | 4.09 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 691 | 0.3− | 0.2+ | 2005 04 02 | 644 | 0.2+ | 0.3+ | 2005 05 03 | 704 | 0.4− | 0.3+ | | |
| 2001 04 15 | 691 | 0.3− | 0.1+ | 2005 04 02 | 644 | 0.3+ | 0.2+ | 2005 05 03 | 704 | 0.2+ | 0.7+ | | |
| 2001 04 15 | 691 | 0.2− | 0.3+ | 2005 04 02 | 644 | 0.4− | 0.2+ | 2005 05 03 | 704 | 0.4+ | 0.8+ | | |
| 2001 04 25 | 699 | 1.0+ | 0.5+ | 2005 04 05 | 703 | 0.1− | 0.6− | 2005 05 07 | 703 | 0.9− | 0.6− | | |
| 2001 04 25 | 699 | 0.3+ | 0.5+ | 2005 04 05 | 703 | 0.9− | 0.4− | 2005 05 07 | 703 | 0.5− | 0.5+ | | |
| 2001 04 25 | 699 | 0.7− | 0.3+ | 2005 04 05 | 703 | 1.3− | 0.7− | 2005 05 07 | 703 | 0.8− | 0.3+ | | |
| 2001 04 25 | 699 | 0.3− | 0.3− | 2005 04 05 | 704 | 0.7+ | 0.8− | 2005 05 07 | 703 | 0.5− | 0.3− | | |
| 2001 05 18 | 704 | 1.9+ | 0.1+ | 2005 04 05 | 703 | 1.4− | 0.4− | 2005 05 08 | 704 | 0.2+ | 0.5+ | | |
| 2001 05 18 | 704 | 0.6+ | 0.7+ | 2005 04 05 | 704 | 1.0+ | 0.0 | 2005 05 08 | 704 | 1.1+ | 0.7− | | |
| 2001 05 18 | 704 | 0.4− | 0.8+ | 2005 04 05 | 704 | 0.0 | 0.5− | 2005 05 08 | 704 | 0.7+ | 0.7− | | |
| 2001 05 18 | 704 | 0.6+ | 0.6+ | 2005 04 05 | 704 | 0.3+ | 0.1− | 2005 05 08 | 703 | 0.1− | 0.6+ | | |
| 2001 05 22 | 704 | 0.1+ | 0.9− | 2005 04 07 | 691 | 0.0 | 0.1− | 2005 05 08 | 703 | 0.4+ | 0.5+ | | |
| 2001 05 22 | 704 | 0.3− | 0.0 | 2005 04 07 | 691 | 0.0 | 0.0 | 2005 05 08 | 703 | 0.3− | 0.7+ | | |
| 2001 05 22 | 704 | 1.5− | 0.9+ | 2005 04 07 | 691 | 0.1− | 0.0 | 2005 05 08 | 703 | 0.6+ | 1.0+ | | |
| 2001 05 22 | 608 | 1.1+ | 1.3− | 2005 04 09 | 704 | 0.9+ | 0.6− | 2005 05 11 | 699 | 0.6+ | 0.2+ | | |
| 2001 05 22 | 608 | 0.8+ | 0.7− | 2005 04 09 | 704 | 0.1− | 0.1+ | 2005 05 11 | 699 | 1.3− | 0.4+ | | |
| 2001 05 22 | 608 | 1.1+ | 1.0− | 2005 04 09 | 704 | 0.7+ | 0.2+ | 2005 05 11 | 699 | 1.0+ | 0.1+ | | |
| 2001 05 28 | 608 | 0.4− | 0.5− | 2005 04 09 | 704 | 0.8+ | 0.5+ | 2005 05 11 | 699 | 0.2− | 0.2+ | | |
| 2001 05 28 | 608 | 0.3− | 0.4− | 2005 04 09 | 704 | 0.1− | 0.7+ | 2005 05 12 | 704 | 0.0 | 0.3− | | |
| 2001 05 28 | 608 | 0.1− | 0.7− | 2005 04 12 | 699 | 0.0 | 0.3+ | 2005 05 12 | 704 | 0.4+ | 0.5+ | | |
| 2001 06 11 | 699 | 1.1− | 0.3+ | 2005 04 12 | 699 | 0.6+ | 0.4+ | 2005 05 12 | 704 | 0.9+ | 0.3+ | | |
| 2001 06 11 | 699 | 0.2+ | 0.3− | 2005 04 12 | 699 | 0.1+ | 0.0 | 2005 05 12 | 704 | 0.3+ | 0.1− | | |
| 2001 06 11 | 699 | 1.0− | 0.1− | 2005 04 12 | 699 | 0.0 | 0.8+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | | |
| 2001 06 11 | 699 | 1.4+ | 1.2+ | 2005 04 13 | 704 | 0.2+ | 0.3− | 2006 08 16 | 644 | 0.1− | 0.2+ | | |
| 2001 06 12 | 608 | 0.3− | 0.1+ | 2005 04 13 | 704 | 0.6+ | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.2+ | | |
| 2001 06 12 | 608 | 0.4+ | 0.7− | 2005 04 13 | 704 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.5− | | |
| 2001 06 12 | 608 | 0.0 | 0.6− | 2005 04 13 | 704 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.2− | 1.2+ | | |
| 2002 09 03 | 599 | 0.2− | 0.4+ | 2005 04 13 | 704 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.1+ | 0.3+ | | |
| 2002 09 03 | 599 | 0.1− | 0.7+ | 2005 04 18 | 703 | 0.3− | 0.7− | 2006 09 14 | 703 | 0.1− | 0.3+ | | |
| 2002 09 03 | 599 | 0.1+ | 0.7+ | 2005 04 18 | 703 | 0.6− | 0.2+ | 2006 09 20 | 703 | 0.5+ | 1.1+ | | |
| 2002 09 03 | 599 | 0.2− | 0.5+ | 2005 04 18 | 703 | 1.1− | 0.0 | 2006 09 20 | 703 | 0.3+ | 0.7+ | | |
| 2003 12 21 | 704 | 0.0 | 1.1+ | 2005 04 18 | 703 | 0.6− | 0.2− | 2006 09 20 | 703 | 1.0+ | 0.5− | | |
| 2003 12 21 | 704 | 0.4− | 0.5+ | 2005 04 19 | 704 | (0.4− | 2.5+) | 2006 09 20 | 703 | 0.4− | 1.0+ | | |
| 2003 12 21 | 704 | 0.1+ | 1.3+ | 2005 04 19 | 704 | (2.2+ | 0.3−) | 2006 09 26 | 703 | 0.2− | 0.7+ | | |
| 2003 12 21 | 704 | 0.5− | 1.9+ | 2005 04 19 | 704 | (2.3+ | 2.4+) | 2006 09 26 | 703 | 0.1+ | 0.1− | | |
| 2005 02 09 | 691 | 0.1+ | 0.2+ | 2005 04 19 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.3+ | | |
| 2005 02 09 | 691 | 0.3+ | 0.3+ | 2005 05 03 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 703 | 2.8− | 1.7− | | |
| 2005 02 09 | 691 | 0.1+ | 0.0 | 2005 05 03 | 704 | 0.5− | 0.3+ | | | | | | |

**(139302)∗ 2001 KV$_{14}$ = 1994 PA$_{35}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13382)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.18719 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26339274 | $\omega$ | 94.13175 | | −0.40314313 | +0.91470201 | |
| $a$ | 2.4102764 | $\Omega$ | 152.04038 | | −0.86168649 | −0.36903528 | |
| $e$ | 0.1691199 | $i$ | 3.44959 | | −0.30817530 | −0.16472156 | |
| $P$ | 3.74 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 04 | 691 | 0.2− | 0.5+ | 2001 05 22 | 704 | 0.9+ | 0.0 | 2004 01 29 | 291 | 0.3+ | 0.8+ | | |
| 1991 11 04 | 691 | 0.3− | 0.1− | 2001 05 22 | 704 | (1.1− | 1.6+) | 2004 01 30 | 291 | 0.1+ | 0.4+ | | |
| 1991 11 04 | 691 | 0.5+ | 0.1+ | 2001 05 22 | 704 | (0.3− | 1.6+) | 2004 01 30 | 291 | 0.3+ | 0.6+ | | |
| 1993 02 23 | 691 | 0.2− | 1.0− | 2001 05 22 | 704 | 0.3+ | 0.8+ | 2004 01 30 | 291 | 0.0 | 0.4+ | | |
| 1993 02 23 | 691 | 0.5− | 1.2− | 2001 05 22 | 704 | 1.3− | 1.0+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | | |
| 1993 02 23 | 691 | 0.2− | 0.4− | 2001 05 24 | 699 | 0.6+ | 1.3+ | 2004 02 16 | 691 | 0.5+ | 0.2+ | | |
| 1994 08 10 | 809 | 1.2+ | 0.6− | 2001 05 24 | 699 | 0.3+ | 0.7+ | 2004 02 16 | 691 | 0.4+ | 0.6− | | |
| 1994 08 10 | 809 | 1.3− | 0.1− | 2001 05 24 | 699 | 0.5+ | 1.0+ | 2005 07 07 | 704 | 0.2+ | 0.4+ | | |
| 1994 08 10 | 809 | 1.7− | 0.6+ | 2001 05 24 | 699 | 0.4+ | 1.0+ | 2005 07 07 | 704 | 0.7+ | 1.0+ | | |
| 1994 08 11 | 809 | 1.3+ | 0.9− | 2001 05 28 | 608 | 0.0 | 0.6− | 2005 07 07 | 704 | 0.8+ | 0.7+ | | |
| 1994 08 11 | 809 | 0.7+ | 1.2+ | 2001 05 28 | 608 | 0.3− | 0.8− | 2006 09 30 | G96 | 0.2− | 0.3− | | |
| 1994 08 11 | 809 | 0.7+ | 1.1+ | 2001 05 28 | 608 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.4− | 0.3− | | |
| 2001 05 18 | 704 | 0.7+ | 0.4+ | 2003 12 22 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− | | |
| 2001 05 18 | 704 | 1.0+ | 0.3− | 2003 12 22 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2001 05 18 | 704 | 0.6− | 0.0 | 2003 12 22 | 691 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.5+ | 0.2+ | | |
| 2001 05 18 | 704 | (2.2+ | 0.9−) | 2003 12 27 | 691 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.3+ | | |
| 2001 05 18 | 704 | 0.3− | 0.6+ | 2003 12 27 | 691 | 0.4+ | 0.4+ | 2006 10 18 | 691 | 0.3+ | 0.2+ | | |
| 2001 05 18 | 608 | 0.2− | 0.3− | 2003 12 27 | 691 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.6− | 0.2+ | | |
| 2001 05 18 | 608 | 0.1− | 0.2− | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.5+ | | |
| 2001 05 18 | 608 | 0.0 | 0.1− | 2004 01 15 | 691 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.8− | 0.3+ | | |
| 2001 05 21 | 699 | 1.1− | 1.3+ | 2004 01 15 | 691 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.1+ | | |
| 2001 05 21 | 699 | 0.3+ | 1.0+ | 2004 01 22 | 704 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.5− | 0.2− | | |
| 2001 05 21 | 699 | 1.0− | 0.8+ | 2004 01 22 | 704 | 0.7− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2001 05 21 | 699 | 0.7− | 0.8+ | 2004 01 22 | 704 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.1− | | |
| 2001 05 21 | 699 | 0.0 | 0.7+ | 2004 01 22 | 704 | 0.1− | 1.4+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2001 05 21 | 699 | 0.6+ | 1.0+ | 2004 01 22 | 704 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.6− | | |
| 2001 05 21 | 699 | 0.2+ | 0.4+ | 2004 01 29 | 291 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.5− | 0.5− | | |
| 2001 05 21 | 699 | 0.0 | 0.8+ | 2004 01 29 | 291 | 0.3+ | 0.5+ | 2006 11 17 | G96 | 0.3− | 0.1− | | |

**(139303)∗ 2001 KA$_{15}$ = 1995 VH$_5$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 185.81972 | | (2000.0) | | | |
| $n$ | 0.27245953 | $\omega$ | 49.10201 | | −0.81392613 | +0.58058802 |
| $a$ | 2.3565033 | $\Omega$ | 166.34671 | | −0.55621271 | −0.76828486 |
| $e$ | 0.1736211 | $i$ | 5.10884 | | −0.16778463 | −0.26954764 |
| $P$ | 3.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.8− | 0.2+ | 2001 05 21 | 699 | 0.4− | 0.1− | 2005 07 02 | 703 | 1.0− | 0.3+ |
| 1995 11 14 | 691 | 0.4+ | 0.9+ | 2001 05 21 | 699 | 1.2− | 0.3− | 2005 07 10 | 691 | 0.0 | 0.2+ |
| 1995 11 14 | 691 | 0.5− | 0.3+ | 2001 05 21 | 699 | 0.2− | 0.4− | 2005 07 10 | 691 | 0.2− | 0.4+ |
| 1995 11 19 | 691 | 0.2− | 0.3− | 2001 05 21 | 699 | 0.1+ | 0.6+ | 2005 07 10 | 691 | 0.0 | 0.3+ |
| 1995 11 19 | 691 | 0.1+ | 0.2− | 2001 05 21 | 699 | 0.0 | 1.1+ | 2005 07 15 | 691 | 0.2− | 0.3+ |
| 1995 11 19 | 691 | 0.2− | 0.2− | 2001 05 21 | 699 | 0.3− | 0.0 | 2005 07 15 | 691 | 0.3− | 0.3+ |
| 1995 11 25 | 691 | 1.2− | 0.3− | 2001 05 21 | 699 | 0.2+ | 0.7+ | 2005 07 15 | 691 | 0.1− | 0.5+ |
| 1995 11 25 | 691 | 1.0− | 0.1+ | 2001 05 22 | 704 | 0.1− | 0.6+ | 2005 07 18 | 644 | 0.3− | 0.2+ |
| 1995 11 25 | 691 | 1.0− | 0.0 | 2001 05 22 | 704 | 0.7− | 0.6+ | 2005 07 18 | 644 | 0.1− | 0.3+ |
| 1998 09 02 | 691 | 0.2+ | 0.2− | 2001 05 22 | 704 | 0.4+ | 0.3+ | 2005 07 18 | 644 | 0.2− | 0.2+ |
| 1998 09 02 | 691 | 0.6+ | 0.2− | 2001 05 22 | 704 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.4− | 0.1+ |
| 1998 09 02 | 691 | 0.9+ | 0.4− | 2001 05 22 | 704 | 0.2− | 0.4− | 2005 07 18 | 644 | 0.3− | 0.1+ |
| 1998 09 02 | 691 | (2.1+ | 1.3−) | 2001 05 26 | 704 | 0.0 | 0.4− | 2005 07 18 | 644 | 0.4− | 0.0 |
| 1998 09 02 | 691 | 0.5+ | 0.0 | 2001 05 26 | 704 | 0.6− | 0.3+ | 2005 07 30 | E12 | 0.3− | 0.3+ |
| 1998 09 02 | 691 | 0.4+ | 0.2− | 2001 05 26 | 704 | 0.1+ | 0.6+ | 2005 07 30 | E12 | 0.4− | 0.2− |
| 1998 09 02 | 691 | 0.4+ | 0.3− | 2001 05 26 | 704 | 0.1+ | 0.9+ | 2005 07 30 | E12 | 1.0− | 0.0 |
| 1998 09 02 | 691 | 0.8+ | 0.0 | 2001 05 29 | 704 | 0.4− | 0.5+ | 2005 07 30 | E12 | 0.6− | 0.2+ |
| 1998 09 02 | 691 | 0.7+ | 0.2− | 2001 05 29 | 704 | 0.4+ | 0.9+ | 2005 10 01 | G96 | 0.1+ | 0.5+ |
| 1998 09 02 | 691 | 0.1+ | 0.5− | 2001 05 29 | 704 | 0.4− | 0.3+ | 2005 10 01 | G96 | 0.5− | 0.3+ |
| 1998 09 02 | 691 | 0.3+ | 0.2− | 2001 05 29 | 704 | 1.4+ | 1.1+ | 2005 10 01 | G96 | 0.5− | 0.0 |
| 1998 09 02 | 691 | 0.7+ | 0.4− | 2002 11 08 | 645 | 0.1− | 0.3+ | 2005 10 01 | G96 | 0.1− | 0.5− |
| 2001 04 25 | 699 | 0.7+ | 0.5+ | 2002 11 08 | 645 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.4− | 0.3− |
| 2001 04 25 | 699 | 1.2+ | 0.1− | 2003 12 22 | 691 | 0.8+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.1+ |
| 2001 04 25 | 699 | 0.5− | 0.2+ | 2003 12 22 | 691 | 0.4+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.5+ |
| 2001 04 25 | 699 | 0.5− | 0.0 | 2003 12 22 | 691 | 0.7+ | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.4+ |
| 2001 05 18 | 704 | 0.2+ | 0.4− | 2005 06 28 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2001 05 18 | 704 | 0.2+ | 0.1+ | 2005 06 28 | 644 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.4+ |
| 2001 05 18 | 704 | 0.1− | 0.1− | 2005 06 28 | 644 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2001 05 18 | 704 | 0.0 | 0.0 | 2005 07 02 | 703 | (1.6− | 0.7+) | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2001 05 18 | 704 | 0.2+ | 0.5+ | 2005 07 02 | 703 | (3.0− | 1.2+) | | | | |
| 2001 05 21 | 699 | 0.1+ | 0.2+ | 2005 07 02 | 703 | (1.8− | 0.5+) | | | | |

**(139304)∗ 2001 KR$_{17}$**

Discovered 2001 May 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 146.69673 | | (2000.0) | | | |
| $n$ | 0.26585263 | $\omega$ | 28.70880 | | −0.29713265 | +0.94987399 |
| $a$ | 2.3953855 | $\Omega$ | 224.20198 | | −0.90053125 | −0.31262503 |
| $e$ | 0.1894027 | $i$ | 8.01571 | | −0.31742030 | −0.00223668 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 704 | 0.1+ | 0.2− | 2001 05 26 | 691 | 0.2+ | 0.4+ | 2005 07 05 | 704 | 0.4− | 0.6+ |
| 2001 04 27 | 704 | 0.8+ | 0.0 | 2001 05 26 | 691 | 0.2+ | 0.4+ | 2005 07 05 | 704 | 0.3+ | 0.2+ |
| 2001 04 27 | 704 | 0.8− | 1.2− | 2001 05 26 | 691 | 0.0 | 0.5+ | 2005 07 05 | 704 | 0.8− | 0.8− |
| 2001 05 21 | 704 | 0.7− | 0.5+ | 2001 05 26 | 691 | 0.3− | 0.5+ | 2005 07 13 | A13 | 0.5− | 0.2− |
| 2001 05 21 | 704 | 0.7+ | 0.4+ | 2001 05 26 | 691 | 0.1− | 0.4+ | 2005 07 13 | A13 | 0.0 | 0.5− |
| 2001 05 21 | 704 | 0.8+ | 0.6+ | 2001 05 27 | 691 | 0.0 | 0.0 | 2005 07 14 | A13 | 0.3− | 0.4− |
| 2001 05 22 | 704 | 0.8− | 0.9− | 2001 05 27 | 691 | 0.1− | 0.1+ | 2005 07 14 | A13 | 0.0 | 0.2− |
| 2001 05 22 | 704 | (0.7+ | 1.5+) | 2001 05 27 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2001 05 22 | 704 | 0.1− | 0.5− | 2001 06 11 | 699 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.6+ | 0.1− |
| 2001 05 22 | 704 | 1.2+ | 1.3+ | 2001 06 11 | 699 | 0.3− | 0.6− | 2006 10 19 | G96 | 0.4+ | 0.2+ |
| 2001 05 22 | 704 | 0.7+ | 0.7+ | 2001 06 11 | 699 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.6− | 0.1+ |
| 2001 05 22 | 704 | (1.9+ | 0.8+) | 2001 06 11 | 699 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2001 05 22 | 704 | 0.3+ | 0.5+ | 2002 10 13 | 291 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.4− | 0.1+ |
| 2001 05 22 | 704 | 0.2− | 0.1+ | 2002 10 13 | 291 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2001 05 24 | 699 | 0.8− | 0.3− | 2002 10 13 | 291 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 05 24 | 699 | 0.1− | 0.5+ | 2002 10 28 | 644 | 0.2− | 0.8+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2001 05 24 | 699 | 0.2+ | 0.9+ | 2002 10 28 | 644 | 0.1+ | 0.9+ | 2006 11 19 | 691 | 0.2+ | 0.7+ |
| 2001 05 24 | 699 | 0.4− | 0.6+ | 2002 10 28 | 644 | 0.3+ | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.5+ |
| 2001 05 24 | 704 | 1.0+ | 1.1− | 2005 06 27 | 644 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.6+ |
| 2001 05 24 | 704 | 0.2+ | 0.0 | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.4− | 0.7+ |
| 2001 05 24 | 704 | 0.2+ | 0.8+ | 2005 06 27 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.4+ |
| 2001 05 24 | 704 | 0.0 | 0.5+ | 2005 07 05 | 704 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2001 05 26 | 691 | 0.1+ | 0.4+ | 2005 07 05 | 704 | 1.0+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.5+ |

**(139305)∗ 2001 KS$_{17}$**

Discovered 2001 May 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 167.71691 | | (2000.0) | | | |
| $n$ | 0.26608503 | $\omega$ | 55.96425 | | −0.70403848 | +0.70913404 |
| $a$ | 2.3939905 | $\Omega$ | 169.02449 | | −0.69958399 | −0.68330023 |
| $e$ | 0.1264166 | $i$ | 11.57243 | | −0.12211494 | −0.17386690 |
| $P$ | 3.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 28 | 704 | 0.8+ | 0.0 | 2001 06 13 | 699 | 0.5− | 0.4+ | 2005 06 26 | 644 | 0.4− | 0.0 |
| 2001 03 28 | 704 | 0.8− | 0.8+ | 2001 06 13 | 699 | 1.0− | 0.2+ | 2005 06 26 | 644 | 0.3− | 0.1− |
| 2001 03 28 | 704 | 0.5+ | 1.3+ | 2002 09 28 | 608 | 0.7− | 0.1− | 2006 09 30 | 703 | 1.3+ | 0.2− |
| 2001 05 16 | 608 | 1.5+ | 0.4+ | 2002 09 28 | 608 | 1.2− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2001 05 16 | 608 | 0.3+ | 0.5− | 2002 09 28 | 608 | 0.5− | 0.1− | 2006 09 30 | 703 | (1.4− | 1.8+) |
| 2001 05 16 | 608 | (0.4+ | 2.8−) | 2003 12 26 | 608 | 0.2+ | 0.4− | 2006 09 30 | 703 | (0.5+ | 1.6+) |
| 2001 05 17 | 608 | 0.4+ | 0.9− | 2003 12 26 | 608 | 0.2− | 0.3− | 2006 10 16 | 703 | 1.3+ | 1.0+ |
| 2001 05 17 | 608 | 0.5+ | 0.5− | 2003 12 26 | 608 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.5+ | 1.3− |
| 2001 05 17 | 608 | 0.0 | 0.6− | 2004 03 19 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | (0.3− | 1.6+) |
| 2001 05 18 | 699 | 0.4+ | 0.4+ | 2004 03 19 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2001 05 18 | 699 | 0.4− | 0.2− | 2004 03 19 | 704 | (1.6+ | 1.4−) | 2006 10 22 | 703 | 1.1+ | 0.3+ |
| 2001 05 18 | 699 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.0 | 1.0+ | 2006 10 22 | 703 | 1.0− | 0.5+ |
| 2001 05 18 | 699 | 0.3+ | 0.2+ | 2004 03 19 | 704 | 0.0 | 0.2− | 2006 10 22 | 703 | (3.6− | 2.1+) |
| 2001 05 22 | 699 | 0.0 | 0.1− | 2004 03 19 | 704 | 1.1+ | 0.8− | 2006 10 22 | 703 | (0.5+ | 1.7+) |
| 2001 05 22 | 699 | 0.4− | 0.0 | 2004 03 19 | 704 | 1.3− | 0.6− | 2006 11 13 | 703 | 0.4+ | 0.6+ |
| 2001 05 22 | 699 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.5− | 2006 11 13 | 703 | 0.9+ | 0.9+ |
| 2001 05 22 | 699 | 0.4− | 0.1+ | 2004 03 19 | 704 | (1.5+ | 0.4−) | 2006 11 13 | 703 | 1.0− | 0.3− |
| 2001 05 23 | 704 | 0.2+ | 0.0 | 2004 04 14 | 645 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.8+ | 0.0 |
| 2001 05 23 | 704 | 0.0 | 0.7+ | 2004 04 14 | 645 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.5+ | 0.0 |
| 2001 05 23 | 704 | 0.1− | 0.3+ | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.4− | 0.3+ |
| 2001 05 23 | 704 | 0.5+ | 0.3+ | 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.7+ | 0.3+ |
| 2001 06 01 | 608 | (0.1+ | 1.5−) | 2005 06 09 | 704 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.4− | 0.3+ |
| 2001 06 01 | 608 | 0.3+ | 1.1− | 2005 06 09 | 704 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.7+ |
| 2001 06 01 | 608 | 0.4+ | 0.7− | 2005 06 09 | 704 | 0.3− | 0.8− | 2006 11 19 | 703 | 0.3+ | 0.3− |
| 2001 06 13 | 699 | 0.4− | 0.5+ | 2005 06 09 | 704 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.7− | 0.1− |
| 2001 06 13 | 699 | 0.3− | 0.7+ | 2005 06 26 | 644 | 0.4− | 0.0 | 2006 11 19 | 703 | 0.5− | 0.5− |

**(139306)∗ 2001 KV$_{17}$**

Discovered 2001 May 22 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.44574 | | (2000.0) | | | |
| $n$ | 0.25548987 | $\omega$ | 138.88874 | | −0.53937665 | +0.82483357 |
| $a$ | 2.4597271 | $\Omega$ | 97.81428 | | −0.81039756 | −0.45379543 |
| $e$ | 0.1368467 | $i$ | 9.84977 | | −0.22875450 | −0.33722292 |
| $P$ | 3.86 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 704 | 1.1+ | 0.1− | 2001 05 29 | 704 | 1.2+ | 0.4− | 2004 01 17 | 644 | 0.1− | 0.5+ |
| 2001 04 24 | 704 | 0.2+ | 0.3+ | 2001 05 29 | 428 | 0.5+ | 0.9− | 2004 01 17 | 644 | 0.1+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 704 | 0.0 | 0.1+ | 2001 05 29 | 428 | (1.5− | 0.8+) | 2004 01 22 | 704 | 0.5+ | 0.6+ |
| 2001 04 24 | 704 | 0.4− | 0.5+ | 2001 06 15 | 704 | 0.7+ | 0.2− | 2004 01 22 | 704 | 0.3+ | 0.0 |
| 2001 04 24 | 704 | (1.5− | 0.4+) | 2001 06 15 | 704 | 0.4+ | 0.6− | 2004 01 22 | 704 | 0.5+ | 0.7+ |
| 2001 04 25 | 699 | 0.7− | 0.7+ | 2001 06 15 | 704 | 0.3+ | 0.4− | 2004 01 22 | 704 | 0.4+ | 1.1+ |
| 2001 04 25 | 699 | 0.6− | 0.4+ | 2001 06 15 | 704 | 0.4+ | 0.2− | 2004 01 27 | 691 | 0.2− | 0.2+ |
| 2001 04 25 | 699 | 0.2+ | 0.6+ | 2001 06 16 | 428 | (1.6− | 0.6−) | 2004 01 27 | 691 | 0.3− | 0.3+ |
| 2001 04 25 | 699 | 0.4− | 0.9+ | 2001 06 16 | 428 | 0.5+ | 0.2− | 2004 01 27 | 691 | 0.2− | 0.2+ |
| 2001 05 03 | 608 | 0.9+ | 0.2+ | 2001 06 20 | 608 | 0.3+ | 1.5+ | 2005 06 05 | 704 | 0.5+ | 0.6+ |
| 2001 05 03 | 608 | 0.6+ | 0.3+ | 2001 06 20 | 608 | 0.4+ | 1.1+ | 2005 06 05 | 704 | 0.2+ | 0.1+ |
| 2001 05 03 | 608 | 0.6+ | 0.0 | 2001 06 20 | 608 | 0.2+ | 1.1+ | 2005 06 05 | 704 | 0.0 | 0.6+ |
| 2001 05 15 | 699 | 0.1+ | 1.0+ | 2001 06 26 | 428 | 0.2− | 0.4+ | 2005 06 10 | 185 | 0.6− | 0.6− |
| 2001 05 15 | 699 | 0.1− | 1.2+ | 2001 07 12 | 608 | 0.4+ | 0.6− | 2005 06 10 | 185 | 0.2+ | 0.2+ |
| 2001 05 15 | 699 | 0.2+ | 0.6+ | 2001 07 12 | 608 | 0.3+ | 0.6− | 2005 06 10 | 185 | 0.2+ | 0.0 |
| 2001 05 15 | 699 | 0.1− | 0.8+ | 2001 07 12 | 608 | 0.1+ | 0.5− | 2005 06 10 | 185 | 0.2+ | 0.0 |
| 2001 05 22 | 704 | 0.9− | 1.2+ | 2002 09 19 | 644 | 0.2− | 0.7− | 2006 09 18 | 703 | 0.0 | 1.1+ |
| 2001 05 22 | 704 | 1.0+ | 0.5+ | 2002 09 19 | 644 | 0.3− | 0.6− | 2006 09 18 | 703 | 0.2+ | 0.3+ |
| 2001 05 22 | 704 | 0.8− | 0.4+ | 2002 09 19 | 644 | 0.6− | 0.5− | 2006 09 18 | 703 | 0.2− | 0.6+ |
| 2001 05 22 | 704 | 0.4+ | 0.1+ | 2002 10 08 | 699 | 0.3+ | 0.8− | 2006 09 18 | 703 | 0.5+ | 1.1+ |
| 2001 05 22 | 704 | 0.3+ | 0.3− | 2002 10 08 | 699 | 0.2− | 1.0+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2001 05 22 | 428 | 0.2− | 0.7− | 2002 10 08 | 699 | 0.3+ | 1.3+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 05 22 | 428 | 0.2− | 0.4− | 2002 10 08 | 699 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 05 23 | 428 | (1.6+ | 0.2−) | 2002 10 16 | 644 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2001 05 23 | 428 | 0.2+ | 0.2− | 2002 10 16 | 644 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2001 05 23 | 428 | 0.9− | 0.1+ | 2002 10 16 | 644 | 0.0 | 1.1+ | 2006 10 17 | 703 | 0.9− | 0.7− |
| 2001 05 26 | 704 | 0.2− | 0.7+ | 2003 12 22 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.8+ | 0.8− |
| 2001 05 26 | 704 | 0.6− | 0.5+ | 2003 12 22 | 704 | 0.7+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2001 05 26 | 704 | 0.5+ | 0.5+ | 2003 12 22 | 704 | 0.5+ | 0.7− | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2001 05 26 | 704 | 0.7− | 0.7+ | 2003 12 22 | 704 | 1.0+ | 1.2− | 2006 10 23 | 644 | 0.4− | 0.6+ |
| 2001 05 26 | 704 | 0.1− | 0.7+ | 2003 12 22 | 704 | 0.0 | 0.7− | 2006 10 28 | 703 | 0.6− | 0.6+ |
| 2001 05 26 | 428 | 0.3− | 0.1− | 2003 12 27 | 704 | 0.8+ | 0.7+ | 2006 10 28 | 703 | 1.4− | 0.5+ |
| 2001 05 26 | 428 | 0.8− | 0.2+ | 2003 12 27 | 704 | 0.2− | 0.5+ | 2006 10 28 | 703 | 1.1− | 0.3− |
| 2001 05 29 | 704 | (0.6− | 2.0+) | 2003 12 27 | 704 | 0.0 | 0.2+ | 2006 10 28 | 703 | 1.4− | 2.2+ |
| 2001 05 29 | 704 | 0.4− | 0.4− | 2003 12 27 | 704 | 0.1− | 0.8+ | | | | |
| 2001 05 29 | 704 | 0.1+ | 1.0− | 2004 01 17 | 644 | 0.3− | 0.4+ | | | | |

**(139307)∗ 2001 KD$_{19}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 206.60444 | | (2000.0) | | | |
| $n$ | 0.26128086 | $\omega$ | 33.19554 | | −0.94798510 | −0.31405777 |
| $a$ | 2.4232468 | $\Omega$ | 128.41365 | | +0.27572674 | −0.89161745 |
| $e$ | 0.1378020 | $i$ | 3.79675 | | +0.15905667 | −0.32616873 |
| $P$ | 3.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.6− | 0.2+ | 2001 05 18 | 704 | 0.6+ | 1.0+ | 2003 12 21 | 704 | 0.3− | 0.3+ |
| 1995 11 14 | 691 | 0.4− | 0.1+ | 2001 05 23 | 704 | (1.6+ | 0.9−) | 2003 12 21 | 704 | 0.1− | 0.0 |
| 1995 11 14 | 691 | 0.2− | 0.1+ | 2001 05 23 | 704 | 1.5+ | 0.2+ | 2003 12 21 | 704 | 1.2− | 0.5+ |
| 1995 11 19 | 691 | 0.4+ | 0.2+ | 2001 05 23 | 704 | 0.0 | 0.9+ | 2003 12 23 | 704 | 0.4+ | 1.4+ |
| 1995 11 19 | 691 | 0.4+ | 0.2− | 2001 05 23 | 704 | 0.1+ | 1.4+ | 2003 12 23 | 704 | 0.2− | 1.2+ |
| 1995 11 19 | 691 | 0.5+ | 0.2− | 2001 05 24 | 699 | 1.2+ | 1.5+ | 2003 12 23 | 704 | (2.7+ | 1.7+) |
| 1997 04 13 | 327 | 0.4− | 0.2− | 2001 05 24 | 699 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.7+ |
| 1997 04 13 | 327 | 0.3− | 0.6− | 2001 05 24 | 699 | 1.1+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.5+ |
| 1997 04 13 | 327 | 0.2− | 0.4− | 2001 05 24 | 699 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2001 04 25 | 699 | 0.3− | 0.0 | 2002 09 08 | 608 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2001 04 25 | 699 | 0.4− | 0.1− | 2002 09 08 | 608 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2001 04 25 | 699 | 0.9− | 0.4+ | 2002 09 08 | 608 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2001 04 25 | 699 | 0.7+ | 0.0 | 2002 09 15 | 644 | 0.3− | 0.6+ | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2001 05 18 | 704 | 0.0 | 0.2+ | 2002 09 15 | 644 | 0.4− | 0.6+ | 2006 10 02 | G96 | 0.7− | 0.4+ |
| 2001 05 18 | 704 | 0.2+ | 0.8+ | 2002 09 15 | 644 | 0.4− | 0.9+ | 2006 10 16 | 703 | 0.1− | 1.1− |
| 2001 05 18 | 704 | 0.3− | 0.0 | 2003 12 19 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 1.0+ | 0.9+ |
| 2001 05 18 | 704 | 1.1+ | 0.3+ | 2003 12 19 | 704 | 0.5+ | 0.8+ | 2006 10 16 | 703 | (0.1− | 1.8+) |
| 2001 05 18 | 704 | 0.9− | 0.4+ | 2003 12 19 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.7+ |
| 2001 05 18 | 704 | 0.9+ | 0.4+ | 2003 12 19 | 704 | 0.2+ | 0.5+ | 2006 11 25 | G96 | 0.3− | 0.2+ |
| 2001 05 18 | 704 | 0.0 | 0.8− | 2003 12 19 | 704 | 0.5+ | 1.2+ | 2006 11 25 | G96 | 0.1− | 0.2+ |
| 2001 05 18 | 704 | 0.3− | 1.1+ | 2003 12 21 | 704 | 0.5− | 0.4− | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2001 05 18 | 704 | 0.8− | 0.9+ | 2003 12 21 | 704 | 0.0 | 1.0+ | 2006 11 25 | G96 | 0.1− | 0.2+ |

**(139308)∗ 2001 KH$_{20}$**

Discovered 2001 May 22 at Wise Observatory, Mitzpeh Ramon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.59451 | | (2000.0) | | | |
| $n$ | 0.27480094 | $\omega$ | 151.09163 | | +0.73725721 | +0.67497376 |
| $a$ | 2.3430986 | $\Omega$ | 166.33163 | | −0.64130176 | +0.71282936 |
| $e$ | 0.1311572 | $i$ | 7.13827 | | −0.21256497 | +0.19048549 |
| $P$ | 3.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 704 | (0.2+ | 1.9+) | 2002 10 03 | 704 | 1.3− | 0.5+ | 2002 11 11 | 704 | 0.3− | 1.1+ |
| 2001 04 16 | 704 | 0.3+ | 0.6+ | 2002 10 03 | 704 | 1.2− | 0.4− | 2002 11 11 | 704 | 0.7− | 0.7+ |
| 2001 04 16 | 704 | (0.1+ | 1.8+) | 2002 10 03 | 704 | 1.4− | 0.2+ | 2002 11 11 | 704 | 1.1− | 0.3− |
| 2001 04 16 | 704 | 1.0− | 1.0+ | 2002 10 07 | 608 | 1.0− | 0.5− | 2002 11 11 | 704 | (1.0− | 2.4−) |
| 2001 04 16 | 704 | 1.1− | 0.9− | 2002 10 07 | 608 | 0.4− | 0.6− | 2004 01 30 | 704 | 0.3+ | 0.2+ |
| 2001 04 17 | 699 | 0.7+ | 0.9+ | 2002 10 07 | 608 | 0.6− | 0.5− | 2004 01 30 | 704 | 0.2+ | 0.5+ |
| 2001 04 17 | 699 | 0.2+ | 1.1+ | 2002 10 09 | 699 | 0.7− | 0.6+ | 2004 01 30 | 704 | 0.5+ | 0.1+ |
| 2001 04 17 | 699 | 0.8+ | 0.8+ | 2002 10 09 | 699 | 1.2+ | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.0 |
| 2001 04 17 | 699 | 0.2+ | 0.7+ | 2002 10 09 | 699 | 0.0 | 0.1− | 2004 01 30 | 691 | 0.2− | 0.0 |
| 2001 04 27 | 608 | 0.3− | 0.7+ | 2002 10 09 | 699 | 0.4− | 0.5+ | 2004 01 30 | 691 | 0.3− | 0.0 |
| 2001 04 27 | 608 | 0.5− | 0.9+ | 2002 10 11 | 644 | 0.5− | 0.1− | 2004 02 17 | 704 | (0.5+ | 2.0+) |
| 2001 04 27 | 608 | 0.6− | 0.9+ | 2002 10 11 | 704 | 0.8+ | 0.2− | 2004 02 17 | 704 | 0.9+ | 0.1− |
| 2001 05 22 | 097 | 0.5+ | 0.4+ | 2002 10 11 | 704 | 0.4− | 0.3+ | 2004 02 17 | 704 | 1.0+ | 0.4+ |
| 2001 05 22 | 097 | 0.3+ | 0.6+ | 2002 10 11 | 644 | 0.1− | 0.9+ | 2004 02 17 | 704 | 0.8+ | 0.2+ |
| 2001 05 22 | 097 | 0.7+ | 0.3+ | 2002 10 11 | 704 | 0.5− | 0.5+ | 2004 02 17 | 704 | 0.7+ | 0.4+ |
| 2001 05 22 | 097 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.4− | 0.1− | 2004 03 10 | 644 | 0.1+ | 0.4+ |
| 2001 05 23 | 699 | 1.3− | 1.0+ | 2002 10 11 | 704 | 1.1− | 0.5+ | 2004 03 10 | 644 | 0.5+ | 0.4+ |
| 2001 05 23 | 699 | 1.4+ | 0.5+ | 2002 10 11 | 644 | 0.5− | 0.2+ | 2004 03 10 | 644 | 1.1+ | 0.2− |
| 2001 05 23 | 699 | (1.7+ | 0.5+) | 2002 10 31 | 704 | 0.5+ | 0.5+ | 2004 03 18 | 704 | 1.2+ | 0.3− |
| 2001 05 23 | 699 | (2.1+ | 1.2+) | 2002 10 31 | 704 | 1.0+ | 0.6+ | 2004 03 18 | 704 | 0.1+ | 0.0 |
| 2001 05 23 | 097 | (2.6+ | 0.4+) | 2002 10 31 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.0 |
| 2001 05 23 | 097 | (2.2+ | 0.8+) | 2002 10 31 | 704 | 0.9+ | 0.7+ | 2004 03 18 | 704 | 1.1− | 0.7+ |
| 2002 09 30 | 608 | 0.3− | 1.2+ | 2002 10 31 | 704 | 0.7+ | 0.7+ | 2005 07 05 | 704 | 0.1− | 0.9+ |
| 2002 09 30 | 608 | 0.2+ | 0.4+ | 2002 11 01 | 704 | 1.1+ | 1.0+ | 2005 07 05 | 704 | (0.9+ | 2.1+) |
| 2002 09 30 | 608 | 0.4+ | 0.4+ | 2002 11 01 | 704 | 0.3+ | 0.8+ | 2005 07 05 | 704 | 0.5+ | 0.0 |
| 2002 10 01 | 704 | 0.7− | 0.2− | 2002 11 01 | 704 | 0.5+ | 0.3+ | 2005 07 05 | 704 | 0.3− | 0.5+ |
| 2002 10 01 | 704 | 0.3− | 0.1+ | 2002 11 01 | 704 | 1.0+ | 1.2+ | 2005 07 05 | 704 | 0.3+ | 0.5− |
| 2002 10 01 | 704 | 0.4− | 0.2− | 2002 11 07 | 645 | 0.1+ | 0.2− | 2006 11 17 | D35 | 0.6− | 0.1− |
| 2002 10 01 | 704 | 1.3− | 0.2+ | 2002 11 07 | 645 | 0.1+ | 0.1− | 2006 11 17 | D35 | 0.6− | 0.1− |
| 2002 10 02 | 704 | 0.6− | 0.8+ | 2002 11 07 | 704 | 0.8+ | 0.7+ | 2006 11 17 | D35 | 0.8− | 0.3− |
| 2002 10 02 | 704 | 0.7− | 0.2− | 2002 11 07 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.2− | 0.6+ | 2002 11 07 | 704 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2002 11 07 | 704 | 0.5+ | 1.4+ | 2006 11 28 | 704 | 0.6− | 0.5− |
| 2002 10 03 | 704 | (1.8− | 1.4−) | 2002 11 07 | 704 | 0.7+ | 1.4+ | 2006 11 28 | 704 | 0.1− | 0.1− |

**(139309)∗ 2001 KH$_{22}$ = 2002 TX$_{104}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37639)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.73021 | | (2000.0) | | | |
| $n$ | 0.23999028 | $\omega$ | 345.75519 | | −0.57590118 | +0.81570315 |
| $a$ | 2.5645251 | $\Omega$ | 249.05463 | | −0.74423580 | −0.55068045 |
| $e$ | 0.1824115 | $i$ | 3.34317 | | −0.33830592 | −0.17714234 |
| $P$ | 4.11 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 608 | 0.9+ | 1.3− | 2005 04 03 | E12 | 0.3− | 0.6+ | 2005 05 14 | 644 | 0.0 | 0.5− |
| 2001 05 15 | 608 | 0.4+ | 1.5− | 2005 04 03 | E12 | 0.3− | 0.5+ | 2005 06 01 | 699 | 1.0+ | 0.3+ |
| 2001 05 15 | 608 | 0.5+ | 1.3− | 2005 04 03 | E12 | 0.8− | 0.7+ | 2005 06 01 | 699 | 0.3+ | 0.2+ |
| 2001 05 17 | 704 | 1.1− | 0.5+ | 2005 04 14 | 703 | 0.4− | 0.4+ | 2005 06 01 | 699 | 0.1− | 1.0+ |
| 2001 05 17 | 704 | 0.9− | 0.6− | 2005 04 14 | 703 | 0.4− | 0.5+ | 2005 06 01 | 699 | (0.1+ | 1.7+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.1+ | 0.8− | 2005 04 14 | 703 | 1.0− | 0.6+ | 2005 06 14 | 291 | 0.4+ | 0.2+ |
| 2001 05 24 | 704 | 0.9− | 0.4− | 2005 04 14 | 703 | 0.8− | 0.2+ | 2005 06 14 | 291 | 0.3+ | 0.2+ |
| 2001 05 24 | 704 | 0.2− | 1.1− | 2005 05 01 | 644 | 0.8− | 0.8− | 2005 06 14 | 291 | 0.4+ | 0.2+ |
| 2001 05 24 | 704 | 0.3+ | 0.5− | 2005 05 01 | 644 | 0.2− | 0.1+ | 2006 08 29 | 703 | (2.0+ | 0.7+) |
| 2001 05 24 | 704 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.8+ |
| 2001 05 24 | 704 | 0.7+ | 0.4− | 2005 05 04 | 699 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.9− | 0.7− |
| 2001 05 27 | 704 | 0.1− | 0.2+ | 2005 05 04 | 699 | 1.2− | 0.3+ | 2006 08 29 | 703 | 0.8− | 0.1− |
| 2001 05 27 | 704 | 1.2− | 1.3+ | 2005 05 04 | 699 | 0.5− | 0.8+ | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2001 05 27 | 704 | 0.0 | 1.0+ | 2005 05 04 | 699 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2001 05 29 | 608 | 0.1− | 1.5− | 2005 05 09 | 704 | 0.5+ | 0.8+ | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2001 05 29 | 608 | (0.4− | 1.6−) | 2005 05 09 | 704 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 05 29 | 608 | (0.3− | 1.7−) | 2005 05 09 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2005 05 09 | 699 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2005 05 09 | 699 | 0.6− | 0.2− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2005 05 09 | 699 | 0.9+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 644 | 0.2+ | 0.4+ | 2005 05 09 | 699 | 0.9+ | 0.5− | 2006 10 01 | 691 | 0.1− | 0.2− |
| 2002 10 04 | 644 | 0.2+ | 0.7+ | 2005 05 13 | 704 | 1.1+ | 0.4− | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2002 10 04 | 704 | 0.2+ | 1.0+ | 2005 05 13 | 704 | 1.1+ | 1.0− | 2006 10 23 | G96 | 0.8− | 0.4− |
| 2002 10 05 | 644 | 0.2− | 0.5+ | 2005 05 13 | 704 | 1.2+ | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.7− |
| 2002 10 05 | 644 | 0.2− | 0.3+ | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2002 10 05 | 644 | 0.2− | 0.1+ | 2005 05 14 | 644 | 0.4− | 0.3− | | | | |
| 2005 04 03 | E12 | 0.0 | 0.8+ | 2005 05 14 | 644 | 0.2− | 0.1+ | | | | |

**(139310)∗ 2001 KQ$_{22}$ = 2004 DV$_{77}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 74984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 77.54888 | | (2000.0) | | | |
| $n$ | 0.25684834 | $\omega$ | 265.01458 | | +0.78019178 | +0.61698675 |
| $a$ | 2.4510465 | $\Omega$ | 56.84868 | | −0.51398319 | +0.72622388 |
| $e$ | 0.1680900 | $i$ | 7.07311 | | −0.35654181 | +0.30319338 |
| $P$ | 3.84 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 06 | 704 | 1.0+ | 1.1+ | 2002 10 30 | 608 | 0.1− | 0.9− | 2002 12 05 | 704 | 0.3+ | 0.3+ |
| 1997 04 06 | 704 | 0.9+ | 0.2+ | 2002 11 05 | 704 | 0.2+ | 0.1+ | 2002 12 05 | 704 | 0.4− | 0.7+ |
| 1997 04 30 | 704 | 0.8+ | 0.2− | 2002 11 05 | 704 | 0.5− | 0.1− | 2002 12 05 | 704 | 0.4+ | 0.1− |
| 1997 04 30 | 704 | 1.1+ | 0.3− | 2002 11 05 | 704 | 0.9− | 0.1− | 2002 12 05 | 704 | 0.2− | 0.5+ |
| 1997 04 30 | 704 | 0.5+ | 0.5− | 2002 11 05 | 699 | 0.2+ | 0.1− | 2002 12 10 | 704 | 0.4+ | 0.2− |
| 1997 04 30 | 704 | 0.6− | 0.1+ | 2002 11 05 | 704 | 0.6− | 0.1− | 2002 12 10 | 704 | (1.2+ | 2.8−) |
| 1998 10 20 | 699 | 0.3− | 0.1+ | 2002 11 05 | 699 | 0.8− | 0.8+ | 2002 12 10 | 704 | 0.7+ | 0.0 |
| 1998 10 20 | 699 | 0.3− | 0.4− | 2002 11 05 | 699 | 0.8− | 0.1− | 2002 12 10 | 704 | (1.7− | 1.0−) |
| 1998 10 20 | 699 | 1.0− | 1.3+ | 2002 11 05 | 699 | 1.2− | 0.1− | 2002 12 27 | 644 | 0.5+ | 0.1+ |
| 2001 04 27 | 704 | 0.4− | 1.1+ | 2002 11 06 | 704 | 0.6− | 0.3+ | 2002 12 27 | 644 | 0.3+ | 0.1+ |
| 2001 04 27 | 704 | 0.4− | 1.3+ | 2002 11 06 | 704 | 0.6− | 0.1+ | 2002 12 27 | 644 | 0.4+ | 0.2+ |
| 2001 04 27 | 704 | 0.2+ | 0.5+ | 2002 11 06 | 704 | 0.1+ | 0.3+ | 2004 02 17 | 691 | 0.3− | 0.3+ |
| 2001 05 17 | 704 | 0.1− | 0.5+ | 2002 11 06 | 704 | 0.3− | 0.4− | 2004 02 17 | 691 | 0.3− | 0.1+ |
| 2001 05 17 | 704 | 0.2+ | 0.2+ | 2002 11 13 | 644 | 0.3− | 0.2+ | 2004 02 17 | 691 | 0.1− | 0.0 |
| 2001 05 17 | 704 | 0.6+ | 0.0 | 2002 11 13 | 644 | 0.4− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2001 05 17 | 704 | 0.1+ | 0.1− | 2002 11 13 | 644 | 0.0 | 0.6− | 2006 11 10 | 691 | 0.4+ | 0.3− |
| 2001 05 17 | 704 | 0.4− | 0.3+ | 2002 11 14 | 704 | (0.6− | 2.1−) | 2006 11 10 | 691 | 0.2+ | 0.5− |
| 2001 05 24 | 704 | 1.1+ | 0.4+ | 2002 11 14 | 704 | (1.1+ | 1.8−) | 2006 11 16 | 691 | 0.9− | 0.4+ |
| 2001 05 24 | 704 | 1.2+ | 0.4− | 2002 11 14 | 704 | 0.1− | 1.2− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 05 24 | 704 | 1.0− | 0.1+ | 2002 11 23 | 644 | 0.0 | 1.0+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 05 24 | 704 | (0.6+ | 2.0+) | 2002 11 23 | 644 | 0.2+ | 1.4+ | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2001 05 24 | 704 | 0.1+ | 0.6+ | 2002 11 23 | 644 | 0.0 | 1.2+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 05 29 | 608 | 1.0− | 1.1− | 2002 12 02 | 704 | 0.5− | 1.1+ | 2006 11 20 | 691 | 0.5+ | 0.2− |
| 2001 05 29 | 608 | 0.9− | 1.1− | 2002 12 02 | 704 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.9+ | 1.0− |
| 2001 05 29 | 608 | 0.8− | 1.2− | 2002 12 02 | 704 | 0.9+ | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2002 10 30 | 608 | 0.2+ | 0.6− | 2002 12 02 | 704 | 0.6+ | 1.5+ | 2006 11 22 | 704 | 0.3+ | 0.3− |
| 2002 10 30 | 608 | (0.2− | 1.6−) | 2002 12 05 | 704 | 0.1− | 0.7+ | | | | |

**(139311)∗ 2001 KJ$_{23}$ = 1997 GL$_{2}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 13387)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.58539 | | (2000.0) | | | |
| $n$ | 0.26364990 | $\omega$ | 216.94073 | | −0.72420213 | +0.68957747 |
| $a$ | 2.4087089 | $\Omega$ | 6.65981 | | −0.62466691 | −0.65369913 |
| $e$ | 0.1486172 | $i$ | 1.86114 | | −0.29210019 | −0.31170557 |
| $P$ | 3.74 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 15 | 691 | 0.7+ | 0.4− | 2001 05 17 | 704 | 0.6+ | 0.5− | 2004 01 22 | 704 | 0.8+ | 0.0 |
| 1997 03 15 | 691 | 0.8+ | 0.2− | 2001 05 17 | 704 | 1.1+ | 1.2+ | 2004 01 22 | 704 | 1.2+ | 0.4+ |
| 1997 03 15 | 691 | 0.6+ | 0.4− | 2001 05 17 | 704 | 0.2− | 0.5− | 2004 01 31 | 691 | 0.2+ | 0.0 |
| 1997 04 02 | 691 | 0.1+ | 0.4+ | 2001 05 17 | 704 | 0.8− | 0.7+ | 2004 01 31 | 691 | 0.4+ | 0.2+ |
| 1997 04 02 | 691 | 0.8+ | 0.2− | 2001 05 17 | 704 | 0.3+ | 0.6+ | 2004 01 31 | 691 | 0.1+ | 0.3+ |
| 1997 04 02 | 691 | (3.5− | 0.5−) | 2001 05 24 | 704 | 0.2− | 0.9− | 2006 09 27 | G96 | (1.7+ | 1.2−) |
| 1997 04 07 | 691 | 0.4− | 0.0 | 2001 05 24 | 704 | (0.6− | 1.6+) | 2006 09 27 | G96 | 0.1− | 0.5− |
| 1997 04 07 | 691 | 0.9− | 0.2+ | 2001 05 24 | 704 | 0.3− | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 1997 04 07 | 691 | 0.6− | 0.0 | 2001 05 24 | 704 | 0.2+ | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.4− |
| 1997 04 08 | 691 | 0.2− | 0.2+ | 2001 05 26 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.0 |
| 1997 04 08 | 691 | 0.4− | 0.1+ | 2001 05 26 | 704 | 0.8+ | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.5− |
| 1997 04 08 | 691 | 0.6− | 0.2− | 2001 05 26 | 704 | 1.0+ | 0.8+ | 2006 10 12 | 691 | 0.1+ | 0.6− |
| 1997 04 15 | 691 | 0.3+ | 0.2− | 2001 05 28 | 608 | 0.7− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 1997 04 15 | 691 | 0.1+ | 0.2− | 2001 05 28 | 608 | 0.5− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.4− |
| 1997 04 15 | 691 | 0.3+ | 0.2− | 2001 05 28 | 608 | 0.3− | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.7− |
| 1997 04 16 | 691 | 1.1− | 0.7− | 2002 10 10 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3+ | 0.0 |
| 1997 04 16 | 691 | 0.6− | 0.4− | 2002 10 10 | 291 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2− |
| 1997 04 16 | 691 | 0.6− | 0.6− | 2002 10 10 | 291 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 1998 08 30 | 691 | 0.1+ | 0.1+ | 2004 01 13 | 699 | 0.0 | 0.7− | 2006 10 28 | 691 | 0.0 | 0.2− |
| 1998 08 30 | 691 | 0.3+ | 0.0 | 2004 01 13 | 699 | 1.1− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.4− |
| 1998 08 30 | 691 | 0.2+ | 0.0 | 2004 01 13 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.7+ |
| 2001 04 30 | 704 | 0.2+ | 0.7− | 2004 01 13 | 699 | 1.2− | 1.3+ | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2001 04 30 | 704 | 0.5+ | 0.7+ | 2004 01 13 | 699 | 0.2− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 04 30 | 704 | (2.0+ | 1.2+) | 2004 01 13 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 04 30 | 704 | (0.2+ | 1.5+) | 2004 01 13 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2001 05 15 | 608 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 05 15 | 608 | 0.3+ | 0.5− | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 05 15 | 608 | 0.5− | 0.0 | 2004 01 22 | 704 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |

**(139312)∗ 2001 KO$_{23}$ = 2002 UU**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 40141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 150.48382 | | (2000.0) | | | |
| $n$ | 0.26780676 | $\omega$ | 208.84124 | | −0.23602258 | +0.96707010 |
| $a$ | 2.3837188 | $\Omega$ | 47.68194 | | −0.86502453 | −0.16443963 |
| $e$ | 0.0905053 | $i$ | 7.39970 | | −0.44274812 | −0.19425507 |
| $P$ | 3.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 03 | 691 | 0.5− | 0.5− | 2004 01 18 | 644 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 1991 11 03 | 691 | 0.5− | 0.5− | 2004 01 18 | 644 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.7− |
| 1991 11 03 | 691 | 1.7+ | 0.4− | 2004 01 18 | 644 | 0.0 | 0.7+ | 2006 11 01 | G96 | 0.6+ | 0.6− |
| 2001 05 17 | 704 | 0.2+ | 0.7+ | 2004 02 14 | 703 | 0.4+ | 0.8− | 2006 11 01 | G96 | 0.4+ | 0.5− |
| 2001 05 17 | 704 | 0.6− | 0.7+ | 2004 02 14 | 703 | 0.3+ | 1.0+ | 2006 11 10 | 691 | 0.4− | 0.2+ |
| 2001 05 17 | 704 | 0.8+ | 1.3− | 2004 02 14 | 703 | 0.2− | 1.2− | 2006 11 10 | 691 | 0.7− | 0.6+ |
| 2001 05 24 | 704 | 0.4− | 0.1+ | 2004 02 14 | 703 | 0.1− | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2001 05 24 | 704 | 0.5− | 0.1− | 2004 04 08 | 673 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 05 24 | 704 | (0.7− | 1.6+) | 2004 04 08 | 673 | 0.0 | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2001 05 24 | 704 | (0.0 | 1.5+) | 2004 04 08 | 673 | 0.2+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 05 25 | 644 | 0.3+ | 0.5+ | 2005 07 06 | E12 | 0.0 | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2001 05 25 | 644 | 0.3+ | 0.6+ | 2005 07 06 | E12 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 05 25 | 644 | 0.1+ | 0.6+ | 2005 07 06 | E12 | 0.0 | 0.9+ | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2002 10 27 | 673 | 0.2− | 0.2+ | 2005 07 06 | E12 | 0.5+ | 0.4− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2002 10 27 | 673 | 0.6− | 0.6+ | 2005 07 16 | 428 | 0.7− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 27 | 673 | 0.4− | 0.3+ | 2005 07 16 | 428 | 0.2+ | 0.6+ | 2006 11 18 | 691 | 0.0 | 0.6+ |
| 2002 10 27 | 673 | 0.6− | 0.4+ | 2005 07 29 | E12 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2002 10 28 | 673 | 0.0 | 0.5+ | 2005 07 29 | E12 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2002 10 28 | 673 | 0.3− | 0.3+ | 2005 07 29 | E12 | 0.5+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2002 10 28 | 673 | 0.2− | 0.3+ | 2005 07 29 | E12 | 1.2− | 1.3+ | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2002 10 28 | 673 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.9− |
| 2002 11 01 | 673 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.3− | 0.4− |
| 2002 11 01 | 673 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.2− | | | | |
| 2002 11 01 | 673 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.6− | | | | |

**(139313)∗ 2001 KD$_{25}$ = 1999 XF$_{222}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 14298)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.66661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26218680 | $\omega$ | 168.33997 | | −0.96078739 | +0.27394671 | |
| $a$ | 2.4176615 | $\Omega$ | 27.67519 | | −0.26125400 | −0.84248460 | |
| $e$ | 0.1208818 | $i$ | 5.30026 | | −0.09291896 | −0.46386733 | |
| $P$ | 3.76 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.9+ | 0.7+ | 2002 09 29 | 608 | 0.8− | 0.5+ | 2005 01 26 | 809 | 0.3+ | 0.1+ |
| 1999 12 15 | 704 | 0.2+ | 1.1− | 2003 12 01 | 703 | 0.9− | 0.0 | 2005 01 26 | 809 | 0.3+ | 0.1− |
| 1999 12 15 | 704 | 1.0+ | 0.2− | 2003 12 01 | 703 | (1.8− | 0.3+) | 2006 09 18 | 691 | 0.1− | 0.1− |
| 1999 12 16 | 704 | 0.8− | 0.5− | 2003 12 01 | 703 | (2.7− | 2.1+) | 2006 09 18 | 691 | 0.2− | 0.0 |
| 1999 12 16 | 704 | 0.6− | 0.7+ | 2003 12 01 | 703 | 1.1− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 1999 12 16 | 704 | 0.2− | 0.4− | 2003 12 04 | 704 | 0.9− | 0.3+ | 2006 10 13 | A50 | 0.0 | 0.4− |
| 1999 12 16 | 704 | 0.6− | 0.4− | 2003 12 04 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2000 01 04 | 704 | 0.0 | 0.1− | 2003 12 04 | 704 | 0.3− | 0.9− | 2006 10 16 | 691 | 0.3− | 0.1− |
| 2000 01 04 | 704 | 1.9+ | 1.2+ | 2003 12 18 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 0.4− | 0.8+ | 2003 12 18 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 2001 04 21 | 704 | 0.4+ | 0.0 | 2003 12 18 | 704 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2001 04 21 | 704 | 0.3− | 0.4− | 2003 12 18 | 704 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.0 |
| 2001 04 21 | 704 | 1.4− | 0.3− | 2003 12 23 | 704 | 0.2− | 1.0+ | 2006 10 21 | 703 | (2.9− | 1.6+) |
| 2001 04 30 | 704 | 0.3+ | 1.4+ | 2003 12 23 | 704 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 04 30 | 704 | 0.3− | 0.7+ | 2003 12 23 | 704 | (0.4− | 2.1+) | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 04 30 | 704 | 0.0 | 0.3+ | 2003 12 23 | 704 | (2.1− | 1.5+) | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 05 12 | 699 | 0.1+ | 1.2+ | 2003 12 28 | 704 | (0.6+ | 1.7+) | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2001 05 12 | 699 | 1.0+ | 0.5+ | 2003 12 28 | 704 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 05 12 | 699 | 1.1+ | 0.7+ | 2003 12 28 | 704 | (0.6+ | 1.9+) | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2001 05 12 | 699 | 0.7+ | 0.8+ | 2003 12 28 | 704 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2001 05 17 | 704 | 0.5− | 0.5− | 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2001 05 17 | 704 | 0.3+ | 0.7+ | 2003 12 28 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2001 05 17 | 704 | 0.4+ | 1.2+ | 2003 12 28 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2001 05 17 | 704 | 0.2− | 0.4+ | 2003 12 29 | 704 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2001 05 24 | 699 | 0.1− | 0.7+ | 2003 12 29 | 704 | 0.4− | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.7+ |
| 2001 05 24 | 699 | 0.4+ | 0.5+ | 2003 12 29 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2001 05 24 | 699 | 0.6+ | 0.4+ | 2003 12 29 | 704 | 0.1+ | 0.8+ | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2001 05 24 | 699 | 0.6+ | 0.7+ | 2003 12 29 | 704 | 0.0 | 0.9+ | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 2001 05 24 | 704 | 0.0 | 0.4+ | 2004 01 19 | 704 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2001 05 24 | 704 | 0.3+ | 0.5− | 2004 01 19 | 704 | 0.8− | 0.4− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2001 05 24 | 704 | 0.8+ | 0.7+ | 2004 01 19 | 704 | 0.7+ | 1.3− | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2001 07 19 | 644 | 0.4− | 0.9+ | 2004 01 31 | 704 | 0.6+ | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2001 07 19 | 644 | 0.2− | 1.2+ | 2004 01 31 | 704 | 0.4+ | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2001 07 19 | 644 | 0.1− | 0.8+ | 2004 01 31 | 704 | 0.4+ | 0.4− | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2002 09 29 | 608 | 0.6− | 0.9+ | 2005 01 26 | 809 | 0.3+ | 0.1− | | | | |
| 2002 09 29 | 608 | 0.7− | 0.7+ | 2005 01 26 | 809 | 0.4+ | 0.1− | | | | |

**(139314)∗ 2001 KK$_{25}$ = 2005 JZ$_{31}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.08292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24164868 | $\omega$ | 209.74056 | | −0.19141294 | +0.98051546 | |
| $a$ | 2.5527783 | $\Omega$ | 49.26149 | | −0.88862479 | −0.15401603 | |
| $e$ | 0.1880961 | $i$ | 3.34156 | | −0.41678179 | −0.12193643 | |
| $P$ | 4.08 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 11 | 608 | 0.0 | 0.1− | 2005 04 17 | 691 | 0.1+ | 0.5+ | 2005 05 13 | 704 | 0.5+ | 0.2+ |
| 2001 05 11 | 608 | 0.2+ | 0.2− | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2005 05 13 | 704 | 0.7+ | 0.5+ |
| 2001 05 11 | 608 | 0.0 | 0.6− | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2005 05 13 | G96 | 0.1− | 0.2+ |
| 2001 05 15 | 608 | 0.7+ | 0.7− | 2005 05 04 | G96 | 0.3− | 0.3+ | 2005 05 13 | G96 | 0.2− | 0.2+ |
| 2001 05 15 | 608 | 0.9+ | 1.0− | 2005 05 04 | G96 | 0.1− | 0.3+ | 2005 05 19 | 644 | 0.3+ | 0.3+ |
| 2001 05 15 | 608 | 0.5+ | 0.9− | 2005 05 04 | G96 | 0.2− | 0.3+ | 2005 05 19 | 644 | 0.3+ | 0.4+ |
| 2001 05 17 | 704 | 1.0− | 1.3− | 2005 05 04 | G96 | 0.3− | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.3+ |
| 2001 05 17 | 704 | 0.2+ | 0.4+ | 2005 05 04 | E12 | 0.6− | 0.3+ | 2005 06 01 | G96 | 0.4− | 0.2+ |
| 2001 05 17 | 704 | 0.4+ | 1.0+ | 2005 05 04 | E12 | 0.7− | 0.2− | 2005 06 01 | G96 | 0.0 | 0.1+ |
| 2001 05 24 | 704 | 0.5− | 0.8− | 2005 05 04 | E12 | 0.6+ | 0.0 | 2005 06 01 | G96 | 0.2− | 0.2+ |
| 2001 05 24 | 704 | 0.6− | 1.3− | 2005 05 04 | E12 | 0.0 | 0.3− | 2005 06 01 | G96 | 0.4− | 0.1+ |
| 2001 05 24 | 704 | 0.9− | 0.2+ | 2005 05 09 | 704 | 1.1+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2001 05 26 | 704 | 0.6− | 0.6− | 2005 05 09 | 704 | 0.6+ | 0.0 | 2006 09 14 | 691 | 0.2− | 0.2+ |
| 2001 05 26 | 704 | 0.4+ | 0.9− | 2005 05 09 | 704 | 0.2+ | 0.1− | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2001 05 26 | 704 | 0.2+ | 0.1− | 2005 05 09 | 699 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 2001 05 26 | 704 | 0.1− | 1.1− | 2005 05 09 | 699 | 0.7+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2001 05 29 | 608 | 0.9− | 1.4+ | 2005 05 09 | 699 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2001 05 29 | 608 | (1.4− | 2.0+) | 2005 05 09 | 699 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 05 29 | 608 | (1.1− | 1.8+) | 2005 05 12 | 704 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2002 10 09 | 291 | 0.4+ | 0.2+ | 2005 05 12 | 704 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2002 10 09 | 291 | 0.1− | 0.3+ | 2005 05 12 | 704 | 0.4− | 0.6+ | 2006 10 16 | 691 | 0.3+ | 0.1− |
| 2002 10 09 | 291 | 0.5+ | 0.3+ | 2005 05 12 | 704 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2002 10 30 | 291 | 0.5− | 0.1+ | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2002 10 30 | 291 | 0.5− | 0.2+ | 2005 05 13 | 704 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.9− |
| 2002 10 30 | 291 | 0.8− | 0.2− | 2005 05 13 | 704 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.3− | 0.3− |
| 2003 12 29 | 691 | 0.2+ | 0.0 | 2005 05 13 | 704 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2003 12 29 | 691 | 0.3− | 0.1+ | 2005 05 13 | 704 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2003 12 29 | 691 | 0.4+ | 0.1− | 2005 05 13 | 704 | 0.8+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2005 03 12 | G96 | 0.3− | 0.2+ | 2005 05 13 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2005 03 12 | G96 | 0.3− | 0.1+ | 2005 05 13 | 704 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.6− | 0.3+ |
| 2005 03 12 | G96 | 0.1− | 0.1+ | 2005 05 13 | 704 | 0.3− | 0.7+ | | | | |
| 2005 03 12 | G96 | 0.3− | 0.1− | 2005 05 13 | G96 | 0.1− | 0.2+ | | | | |

**(139315)∗ 2001 KL$_{25}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.68042 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26597182 | $\omega$ | 264.43946 | | −0.36562685 | +0.93062189 | |
| $a$ | 2.3946698 | $\Omega$ | 344.08531 | | −0.82899052 | −0.33347518 | |
| $e$ | 0.1648497 | $i$ | 3.37062 | | −0.42319230 | −0.15078862 | |
| $P$ | 3.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.2− | 0.7− | 2004 01 19 | 691 | 0.1− | 0.0 | 2005 07 17 | E12 | 0.1+ | 0.0 |
| 1997 03 02 | 691 | 0.7− | 0.7− | 2004 01 19 | 691 | 0.1− | 0.0 | 2005 07 17 | E12 | 0.2+ | 0.3− |
| 1997 03 02 | 691 | 0.1− | 1.0− | 2004 01 19 | 703 | 0.3− | 0.7+ | 2005 08 06 | 704 | 0.6− | 0.1+ |
| 1998 10 01 | 691 | 0.1+ | 0.8− | 2004 01 19 | 703 | 0.4− | 0.1− | 2005 08 06 | 704 | 0.2− | 0.5+ |
| 1998 10 01 | 691 | 0.4− | 0.4− | 2004 01 19 | 691 | 0.0 | 0.0 | 2005 08 06 | 704 | 0.3+ | 0.6+ |
| 1998 10 01 | 691 | 0.9+ | 0.2− | 2004 01 19 | 703 | 0.3+ | 0.2− | 2005 08 06 | 704 | 0.1− | 0.2− |
| 2001 05 17 | 704 | 0.1+ | 0.8+ | 2004 01 19 | 703 | (0.4− | 3.1+) | 2005 10 28 | G96 | 0.3+ | 0.3− |
| 2001 05 17 | 704 | 0.0 | 0.9+ | 2004 01 22 | 704 | 0.4+ | 0.8+ | 2005 10 28 | G96 | 0.2+ | 0.0 |
| 2001 05 17 | 704 | 0.5− | 0.3+ | 2004 01 22 | 704 | 0.0 | 0.4+ | 2005 10 28 | G96 | 0.1− | 0.3− |
| 2001 05 17 | 704 | 0.1+ | 0.3+ | 2004 01 22 | 704 | 0.2+ | 1.2+ | 2005 10 28 | G96 | 0.3− | 0.3− |
| 2001 05 24 | 704 | 0.4+ | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2001 05 24 | 704 | 0.0 | 0.6+ | 2004 01 22 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 691 | 0.5+ | 0.0 |
| 2001 05 24 | 704 | 0.9− | 0.2− | 2004 01 26 | 699 | 0.2+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 05 24 | 704 | 0.4− | 0.8− | 2004 01 26 | 699 | 0.4− | 0.6− | 2006 10 23 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 27 | 704 | 0.5+ | 0.1− | 2004 01 26 | 699 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2001 05 27 | 704 | 0.8+ | 1.0+ | 2004 01 26 | 699 | 1.2− | 0.5− | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2001 05 27 | 704 | (2.0+ | 0.1−) | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2001 05 27 | 704 | 0.9+ | 1.3− | 2004 01 28 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.4+ |
| 2001 06 16 | 704 | 0.6− | 0.7+ | 2004 01 28 | 691 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2001 06 16 | 704 | 0.8+ | 0.5+ | 2004 01 30 | 704 | (2.1− | 0.4+) | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2001 06 16 | 704 | 0.9+ | 1.4+ | 2004 01 30 | 704 | (1.6− | 0.7+) | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2001 06 16 | 704 | 0.8− | 0.8+ | 2004 01 30 | 704 | 0.9− | 0.8+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2003 12 29 | 691 | 0.2+ | 0.3+ | 2004 01 30 | 704 | (2.0− | 0.8+) | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2003 12 29 | 691 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2003 12 29 | 691 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.5+ | 0.3− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.4− | 1.2− | 2006 11 23 | G96 | 0.1+ | 0.6− |
| 2004 01 17 | 644 | 0.1− | 0.1+ | 2005 07 17 | E12 | 0.5+ | 0.4+ | | | | |
| 2004 01 17 | 644 | 0.3− | 0.3+ | 2005 07 17 | E12 | 0.0 | 0.3− | | | | |

**(139316)∗ 2001 KN$_{25}$ = 2005 GD$_{126}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74985)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.64152 | | (2000.0) | | | |
| $n$ | 0.23605238 | $\omega$ | 39.61915 | | +0.08444513 | +0.99493153 |
| $a$ | 2.5929678 | $\Omega$ | 235.29151 | | −0.93022384 | +0.05907880 |
| $e$ | 0.1906543 | $i$ | 3.80774 | | −0.35714511 | +0.08136920 |
| $P$ | 4.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 691 | 0.1− | 0.3+ | 2005 04 13 | 691 | 0.3+ | 0.0 | 2005 07 06 | 291 | 0.9+ | 0.7+ |
| 1998 11 19 | 691 | 0.1− | 0.0 | 2005 04 13 | 691 | 0.4+ | 0.1+ | 2005 07 06 | 291 | 1.2+ | 0.0 |
| 1998 11 19 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 691 | 0.3+ | 0.4+ | 2005 07 06 | 291 | 0.7+ | 0.4+ |
| 1998 11 26 | 691 | 0.2+ | 0.1− | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.2+ | 0.4+ |
| 1998 11 26 | 691 | 0.0 | 0.1− | 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 1998 11 26 | 691 | 0.0 | 0.2+ | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2001 05 17 | 704 | 0.2+ | 0.7− | 2005 04 16 | 691 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.4− |
| 2001 05 17 | 704 | 0.1− | 0.5− | 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.3− | 1.0− |
| 2001 05 17 | 704 | 0.7+ | 0.6+ | 2005 04 16 | 691 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.6+ |
| 2001 05 17 | 704 | 1.1+ | 0.3− | 2005 04 17 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.4− | 1.5− |
| 2001 05 24 | 704 | 0.7+ | 0.5− | 2005 04 17 | 691 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.4− | 0.2+ |
| 2001 05 24 | 704 | 0.1− | 0.6− | 2005 04 17 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2001 05 24 | 704 | 0.1+ | 0.7− | 2005 05 01 | 644 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.4− | 0.2− |
| 2001 05 24 | 704 | 0.2+ | 0.2− | 2005 05 01 | 644 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2001 06 01 | 691 | 0.2− | 0.2− | 2005 05 01 | 644 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2001 06 01 | 691 | 0.4− | 0.3− | 2005 05 06 | 703 | 0.7− | 0.9− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2001 06 01 | 691 | 0.5− | 0.2− | 2005 05 06 | 703 | 1.3− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2002 10 13 | 291 | 0.3− | 0.5+ | 2005 05 06 | 703 | 0.8− | 0.6− | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2002 10 13 | 291 | 0.2+ | 0.3+ | 2005 05 06 | 703 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2002 10 13 | 291 | 0.2− | 0.6+ | 2005 05 12 | 699 | 0.9+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2005 03 17 | G96 | 0.5− | 0.1− | 2005 05 12 | 699 | 1.0− | 0.4− | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2005 03 17 | G96 | 0.7− | 0.1+ | 2005 05 12 | 699 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2005 03 17 | G96 | 0.6− | 0.2+ | 2005 05 12 | 699 | 0.9+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2005 03 17 | G96 | 0.6− | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2005 04 11 | 691 | 0.2+ | 0.3+ | 2005 05 14 | G96 | 0.4− | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2005 04 11 | 691 | 0.3+ | 0.0 | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.0 |

**(139317)∗ 2001 KY$_{25}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.71544 | | (2000.0) | | | |
| $n$ | 0.23276900 | $\omega$ | 84.72019 | | +0.93628688 | +0.31057515 |
| $a$ | 2.6172947 | $\Omega$ | 257.10879 | | −0.34986958 | +0.86583600 |
| $e$ | 0.2752026 | $i$ | 9.68807 | | +0.03095424 | +0.39226407 |
| $P$ | 4.23 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.3− | 0.2− | 2002 11 12 | 704 | 0.2− | 0.3− | 2005 06 02 | 699 | 0.7− | 0.4− |
| 2001 05 17 | 704 | 0.2− | 0.5+ | 2002 11 12 | 704 | 0.6− | 0.5+ | 2006 07 01 | J87 | 0.1− | 0.4− |
| 2001 05 17 | 704 | 0.4+ | 0.7− | 2002 11 12 | 704 | 0.6− | 0.2− | 2006 07 01 | J87 | 0.2− | 0.3− |
| 2001 05 24 | 704 | 0.6+ | 0.4− | 2002 11 28 | 599 | 0.1− | 0.2− | 2006 07 01 | J87 | 0.3− | 0.4− |
| 2001 05 24 | 704 | 1.1− | 1.0+ | 2002 11 28 | 599 | 0.9+ | 0.3+ | 2006 08 23 | 704 | 0.5+ | 0.2− |
| 2001 05 24 | 704 | 0.8− | 0.3− | 2002 11 28 | 599 | 0.3+ | 0.1− | 2006 08 23 | 704 | 0.1+ | 0.8− |
| 2001 05 24 | 704 | 0.6− | 0.4+ | 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 08 23 | 704 | 0.1− | 0.1+ |
| 2001 05 26 | 704 | 0.9+ | 0.6+ | 2002 12 05 | 704 | 0.0 | 0.3− | 2006 08 23 | 704 | 0.5+ | 0.6+ |
| 2001 05 26 | 704 | 0.7+ | 0.9+ | 2002 12 05 | 704 | 0.3− | 0.0 | 2006 08 23 | 704 | 1.2+ | 0.3− |
| 2001 05 26 | 704 | 0.2+ | 0.1− | 2002 12 05 | 704 | 0.4− | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.3− |
| 2001 05 26 | 704 | 0.2− | 0.3− | 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2001 06 20 | 699 | 0.3+ | 0.0 | 2002 12 05 | 608 | 0.2+ | 0.6− | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2001 06 20 | 699 | 0.0 | 0.0 | 2002 12 05 | 608 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.4− |
| 2001 06 20 | 699 | 0.0 | 0.7− | 2002 12 05 | 608 | 0.2+ | 0.5− | 2006 10 20 | 704 | 0.1+ | 0.1− |
| 2001 06 20 | 699 | 0.1− | 0.1− | 2002 12 10 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 704 | 0.9+ | 0.3+ |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2002 12 10 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 704 | 0.3+ | 0.1− |
| 2002 09 06 | 704 | 0.6+ | 0.7+ | 2002 12 10 | 704 | 0.4+ | 0.1− | 2006 10 20 | 704 | 0.5+ | 0.5+ |
| 2002 09 06 | 704 | (1.6+ | 0.3+) | 2002 12 10 | 704 | 0.6+ | 0.8+ | 2006 10 20 | 704 | 0.1− | 0.6+ |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2002 12 10 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2002 12 10 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.7− | 0.2+ | 2002 12 10 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2002 12 10 | 704 | 0.7+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2002 12 10 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.5+ | 0.2+ | 2002 12 10 | 704 | 0.6+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2002 11 06 | 704 | 0.3+ | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2002 11 06 | 704 | 0.9+ | 0.2− | 2002 12 31 | 704 | 0.9+ | 0.7− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.1− | 0.7− | 2002 12 31 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 11 11 | J95 | 0.5+ | 0.3+ | 2002 12 31 | 704 | 0.5+ | 0.7+ | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2002 11 11 | J95 | 0.1− | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 11 11 | J95 | 0.1+ | 0.1− | 2003 01 04 | 704 | 0.4− | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.5+ |
| 2002 11 11 | 704 | 1.1− | 0.6− | 2003 01 04 | 704 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.7+ | 0.0 |
| 2002 11 11 | 704 | 1.0− | 0.1− | 2003 01 04 | 704 | 0.3− | 0.6− | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2002 11 11 | 704 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.3− | 0.3− | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2002 11 11 | 704 | 0.7− | 0.1− | 2003 01 08 | 704 | 0.3− | 1.2+ | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 2002 11 11 | 704 | 0.4− | 0.2− | 2003 01 08 | 704 | 0.7+ | 0.4− | 2006 11 14 | 703 | 0.1− | 0.3− |
| 2002 11 11 | 704 | 0.8− | 0.1− | 2003 01 08 | 704 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.1− | 0.3− |
| 2002 11 11 | 704 | 0.5− | 0.1− | 2003 01 08 | 608 | 0.2− | 1.1− | 2006 11 14 | 703 | 0.5+ | 0.6+ |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2003 01 08 | 608 | 0.4+ | 1.2− | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2002 11 11 | 704 | 0.8− | 0.7+ | 2003 01 08 | 608 | 0.2− | 0.9− | 2006 11 17 | 704 | 1.3− | 0.4+ |
| 2002 11 12 | 704 | (2.1− | 0.6−) | 2005 04 10 | E12 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.5+ |
| 2002 11 12 | 704 | 0.1+ | 0.9− | 2005 04 10 | E12 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.4− | 2.4+ |
| 2002 11 12 | 704 | 0.6− | 0.3+ | 2005 04 10 | E12 | 0.2− | 0.8+ | 2006 11 17 | 704 | 1.3− | 0.0 |
| 2002 11 12 | 704 | 0.4− | 0.5− | 2005 04 10 | E12 | 0.4+ | 0.2− | 2006 11 23 | 703 | 0.1− | 0.3− |
| 2002 11 12 | 704 | 1.0− | 0.1− | 2005 06 02 | 699 | 0.1+ | 0.7− | 2006 11 23 | 703 | 0.3− | 0.1− |
| 2002 11 12 | 704 | 0.8− | 0.3− | 2005 06 02 | 699 | 0.0 | 1.0− | 2006 11 23 | 703 | 0.5− | 2.0− |
| 2002 11 12 | 704 | 1.1− | 0.6+ | 2005 06 02 | 699 | (0.2+ | 2.7−) | | | | |

**(139318)∗ 2001 KD$_{26}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.20290 | | (2000.0) | | | |
| $n$ | 0.24340973 | $\omega$ | 238.46249 | | −0.06917876 | +0.99678230 |
| $a$ | 2.5404506 | $\Omega$ | 27.65729 | | −0.88316715 | −0.04231839 |
| $e$ | 0.2119758 | $i$ | 5.00406 | | −0.46392896 | −0.06807498 |
| $P$ | 4.05 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 691 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 10 12 | 691 | 0.7− | 0.1− |
| 1998 11 18 | 691 | 0.4− | 0.0 | 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.2− |
| 1998 11 18 | 691 | 0.3− | 0.4− | 2005 05 04 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 1998 11 25 | 691 | 0.0 | 0.2− | 2005 05 04 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.3+ | 0.1− |
| 1998 11 25 | 691 | 0.4+ | 1.0+ | 2005 05 04 | 644 | 0.5+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1998 11 25 | 691 | 0.0 | 0.2− | 2005 05 08 | E12 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2001 05 17 | 704 | 0.3− | 0.3+ | 2005 05 08 | E12 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.5− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.2+ | 0.3− | 2005 05 08 | E12 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2− |
| 2001 05 17 | 704 | 0.3− | 0.2+ | 2005 05 08 | E12 | 0.2+ | 0.2+ | 2006 11 09 | 691 | 0.3− | 0.1+ |
| 2001 05 17 | 704 | 0.5− | 0.2− | 2005 05 11 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.1− |
| 2001 05 24 | 704 | 0.3+ | 0.3+ | 2005 05 11 | 644 | 0.3+ | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.1− |
| 2001 05 24 | 704 | 0.1+ | 0.2− | 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.3+ |
| 2001 05 24 | 704 | 0.1− | 0.3− | 2005 05 27 | 608 | 0.2− | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2001 05 24 | 704 | 0.5+ | 0.5− | 2005 05 27 | 608 | 0.3− | 1.2+ | 2006 11 10 | 691 | 0.4− | 0.4+ |
| 2001 05 24 | 704 | 0.1+ | 0.7+ | 2005 05 27 | 608 | 0.2+ | 0.6+ | 2006 11 11 | 691 | 0.4+ | 0.3+ |
| 2001 06 16 | 704 | 0.4+ | 0.1− | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2001 06 16 | 704 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.8+ | 0.4− | 2006 11 11 | 691 | 0.4+ | 0.1− |
| 2001 06 16 | 704 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.5− | 2006 11 13 | 691 | 0.3+ | 0.1+ |
| 2001 06 16 | 704 | 0.2− | 0.7− | 2006 07 21 | G96 | 0.4− | 0.5− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2002 10 15 | 644 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.5− | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2002 10 15 | 644 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2002 10 15 | 644 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.5+ | 0.3− | 2006 11 22 | 691 | 0.5+ | 0.3+ |
| 2002 11 04 | 699 | 0.7− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 22 | 691 | 0.2+ | 0.3+ |
| 2002 11 04 | 699 | 0.7+ | 0.8− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2002 11 04 | 699 | 0.8− | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 11 04 | 699 | (1.8+ | 0.8+) | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2005 03 11 | G96 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.1− | | | | |
| 2005 03 11 | G96 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.2− | 0.2− | | | | |

**(139319)∗ 2001 KL$_{26}$ = 2004 CX$_{70}$**

Discovered 2001 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68919)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 149.75182 | | (2000.0) | | | |
| $n$ | 0.26663610 | $\omega$ | 189.82446 | | −0.20756696 | +0.97749119 |
| $a$ | 2.3906909 | $\Omega$ | 68.20341 | | −0.89471616 | −0.17409515 |
| $e$ | 0.1573312 | $i$ | 2.33162 | | −0.39547307 | −0.11917151 |
| $P$ | 3.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.0 | 2004 02 14 | 291 | 0.0 | 0.1+ | 2005 08 06 | 704 | 0.9− | 1.0+ |
| 1998 09 25 | 645 | 0.1− | 0.0 | 2004 02 14 | 291 | 0.3+ | 0.1− | 2005 08 06 | 704 | 0.4− | 0.6+ |
| 2001 05 17 | 704 | 0.5+ | 0.0 | 2004 02 16 | 704 | 0.4− | 1.0+ | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 2001 05 17 | 704 | 0.2+ | 0.5− | 2004 02 16 | 704 | 0.9+ | 1.2+ | 2006 10 19 | G96 | 0.4− | 0.3− |
| 2001 05 17 | 704 | 0.5− | 0.3+ | 2004 02 16 | 704 | 0.6− | 0.8+ | 2006 10 19 | G96 | 0.1+ | 0.3+ |
| 2001 05 17 | 704 | 0.4− | 0.1+ | 2004 02 23 | 704 | (1.7− | 1.9+) | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 05 17 | 704 | 0.2− | 0.2+ | 2004 02 23 | 704 | 0.2+ | 1.4+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 05 24 | 704 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.3+ | 1.1+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 05 24 | 704 | 0.2+ | 0.6− | 2004 02 23 | 704 | (0.4− | 1.5+) | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2001 05 24 | 704 | 0.5+ | 0.1− | 2005 06 28 | 644 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2001 05 24 | 704 | 0.0 | 0.1+ | 2005 06 28 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.0 |
| 2001 05 24 | 704 | 0.4+ | 1.0+ | 2005 06 28 | 644 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 05 26 | 704 | 0.9+ | 0.0 | 2005 07 03 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.7− |
| 2001 05 26 | 704 | 0.1+ | 0.5+ | 2005 07 03 | 644 | 0.1− | 0.4+ | 2006 11 11 | G96 | 1.0+ | 0.9− |
| 2001 05 26 | 704 | 0.3+ | 0.2+ | 2005 07 03 | 644 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2001 05 26 | 704 | 0.5+ | 1.1+ | 2005 07 26 | 608 | 0.0 | 0.8− | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 06 16 | 704 | 0.5− | 0.0 | 2005 07 26 | 608 | 0.0 | 1.0− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 06 16 | 704 | 0.9− | 0.1− | 2005 07 26 | 608 | 0.1+ | 0.8− | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2001 06 16 | 704 | 0.1+ | 0.7− | 2005 07 31 | E12 | 0.7− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2001 06 16 | 704 | 0.6+ | 0.1+ | 2005 07 31 | E12 | 0.5+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 2001 06 16 | 704 | 0.0 | 1.1+ | 2005 07 31 | E12 | 0.4− | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2004 01 16 | 644 | 0.5+ | 0.1+ | 2005 07 31 | E12 | 1.1+ | 0.8− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2004 01 16 | 644 | 0.5+ | 0.3+ | 2005 08 02 | 704 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2004 01 16 | 644 | 0.5+ | 0.4+ | 2005 08 02 | 704 | 0.4− | 1.0+ | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2004 02 12 | 291 | 0.0 | 0.2+ | 2005 08 02 | 704 | 0.6+ | 1.1+ | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2004 02 12 | 291 | 0.1+ | 0.1+ | 2005 08 02 | 704 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.1+ | 0.2+ |
| 2004 02 12 | 291 | 1.0− | 0.3− | 2005 08 06 | 704 | 0.9− | 0.3+ | | | | |
| 2004 02 14 | 291 | 0.1− | 0.2− | 2005 08 06 | 704 | 0.9− | 0.5+ | | | | |

**(139320)∗ 2001 KL$_{29}$**

Discovered 2001 May 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 185.25016 | | (2000.0) | | | |
| $n$ | 0.27170425 | $\omega$ | 307.09318 | | −0.88972621 | +0.45160517 |
| $a$ | 2.3608683 | $\Omega$ | 259.84102 | | −0.39440633 | −0.83397672 |
| $e$ | 0.1807911 | $i$ | 3.88160 | | −0.22984975 | −0.31707349 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 691 | 0.0 | 0.0 | 2001 05 21 | 704 | 0.5+ | 0.5+ | 2005 07 10 | 691 | 0.2+ | 0.0 |
| 2000 01 08 | 691 | 0.3+ | 0.2− | 2001 05 21 | 704 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2000 01 08 | 691 | 0.2+ | 0.0 | 2001 05 24 | 704 | 0.5+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 04 21 | 704 | 0.9− | 0.8− | 2001 05 24 | 704 | 0.5− | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2001 04 21 | 704 | 0.4+ | 0.1+ | 2001 05 24 | 704 | 0.6+ | 1.2+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 04 21 | 704 | 0.4− | 0.0 | 2001 06 12 | 644 | 0.4− | 0.6+ | 2006 10 23 | 691 | 0.8− | 0.2+ |
| 2001 04 21 | 704 | 0.4− | 0.1− | 2001 06 12 | 644 | 0.2+ | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 04 21 | 704 | 0.3+ | 0.4+ | 2001 06 12 | 644 | 0.5− | 0.9+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2001 04 30 | 704 | (1.8+ | 0.1+) | 2002 10 05 | 704 | 0.3− | 1.0+ | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 2001 04 30 | 704 | 1.0+ | 0.1+ | 2002 10 05 | 704 | 0.3− | 0.8− | 2006 10 28 | 691 | 0.5− | 0.3+ |
| 2001 04 30 | 704 | 0.1+ | 0.1− | 2002 10 05 | 704 | 0.3− | 0.9− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2001 04 30 | 704 | 0.2+ | 0.5+ | 2005 05 20 | G96 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 05 04 | 644 | 0.6+ | 0.8− | 2005 05 20 | G96 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 05 04 | 644 | 0.2+ | 0.7− | 2005 05 20 | G96 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 05 04 | 644 | 0.5+ | 0.8− | 2005 05 20 | G96 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.6+ | 0.3− |
| 2001 05 17 | 704 | 0.2− | 0.6+ | 2005 06 15 | G96 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.4+ | 0.1+ |
| 2001 05 17 | 704 | 0.2− | 0.3+ | 2005 06 15 | G96 | 0.0 | 0.4− | 2006 11 10 | 691 | 0.4+ | 0.0 |
| 2001 05 17 | 704 | 0.8− | 0.6+ | 2005 06 15 | G96 | 0.1+ | 0.5− | 2006 11 13 | 691 | 0.3+ | 0.3− |
| 2001 05 17 | 704 | (2.1− | 0.1+) | 2005 06 15 | G96 | 0.2− | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2001 05 21 | 704 | 0.8− | 0.2+ | 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2001 05 21 | 704 | 0.6+ | 0.2+ | 2005 07 10 | 691 | 0.3+ | 0.2− | | | | |

**(139321)∗ 2001 KA$_{31}$**

Discovered 2001 May 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.45933 | | (2000.0) | | | |
| $n$ | 0.26677616 | $\omega$ | 110.59281 | | −0.49358156 | +0.86926155 |
| $a$ | 2.3898540 | $\Omega$ | 129.80035 | | −0.81071255 | −0.44838578 |
| $e$ | 0.1505543 | $i$ | 2.05855 | | −0.31483709 | −0.20816954 |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 704 | 0.2− | 0.5− | 2004 01 24 | 704 | 1.1+ | 0.8+ | 2005 07 12 | 703 | 0.3− | 0.6− |
| 2001 05 21 | 704 | 0.0 | 0.9+ | 2004 01 24 | 704 | 0.2− | 0.8+ | 2005 07 12 | 703 | 0.1− | 0.4− |
| 2001 05 21 | 704 | (2.0− | 1.1+) | 2004 01 26 | 699 | 0.7− | 0.5+ | 2005 07 18 | 644 | 0.1− | 0.2+ |
| 2001 05 21 | 704 | 0.2− | 0.0 | 2004 01 26 | 699 | 0.9− | 1.3− | 2005 07 18 | 644 | 0.1− | 0.1+ |
| 2001 05 24 | 704 | 0.7+ | 0.1− | 2004 01 26 | 699 | 0.1+ | 0.3− | 2005 07 18 | 644 | 0.3− | 0.1+ |
| 2001 05 24 | 704 | 0.1− | 0.2+ | 2004 01 26 | 699 | (2.0− | 0.9−) | 2005 08 02 | 704 | 0.1+ | 0.7− |
| 2001 05 24 | 704 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.9+ | 0.9− | 2005 08 02 | 704 | 0.3− | 0.6+ |
| 2001 05 24 | 704 | 0.3− | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.4+ | 2005 08 02 | 704 | 0.1− | 0.9+ |
| 2001 05 27 | 704 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.3− | 0.1+ | 2005 08 06 | 704 | 0.3+ | 0.5− |
| 2001 05 27 | 704 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.2+ | 2005 08 06 | 704 | (0.1− | 2.0+) |
| 2001 05 27 | 704 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.9+ | 2005 08 06 | 704 | 0.0 | 0.0 |
| 2001 06 15 | 704 | (1.8+ | 0.2+) | 2004 02 26 | 704 | 0.2− | 1.1+ | 2005 08 06 | 704 | 0.2+ | 0.2− |
| 2001 06 15 | 704 | 0.6+ | 0.3+ | 2004 02 26 | 704 | 1.1+ | 1.0+ | 2005 08 28 | 691 | 0.1− | 0.0 |
| 2001 06 15 | 704 | 0.8+ | 1.7+ | 2004 02 26 | 704 | (0.5− | 2.6+) | 2005 08 28 | 691 | 0.1− | 0.1− |
| 2004 01 16 | 644 | 0.2+ | 0.6+ | 2005 06 27 | 691 | 0.0 | 0.5+ | 2005 08 28 | 691 | 0.2+ | 0.2− |
| 2004 01 16 | 644 | 0.2+ | 0.4+ | 2005 06 27 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2004 01 16 | 644 | 0.1+ | 0.5+ | 2005 06 27 | 691 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.5− |
| 2004 01 17 | 644 | 0.2+ | 0.4+ | 2005 06 28 | 644 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2004 01 17 | 644 | 0.3− | 0.4+ | 2005 06 28 | 644 | 0.5− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2004 01 17 | 644 | 0.8+ | 0.6+ | 2005 06 28 | 644 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2004 01 19 | 691 | 0.0 | 0.4+ | 2005 07 03 | G96 | 0.7− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2004 01 19 | 691 | 0.3+ | 0.2+ | 2005 07 03 | G96 | 0.7− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2005 07 03 | G96 | 0.6− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.6− |
| 2004 01 21 | 704 | 0.2− | 0.8+ | 2005 07 03 | G96 | 0.5− | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 01 21 | 704 | 0.4+ | 1.0+ | 2005 07 07 | 691 | 0.1+ | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 704 | 0.8+ | 1.0+ | 2005 07 07 | 691 | 0.1+ | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 01 24 | 704 | 0.5− | 0.2− | 2005 07 07 | 691 | 0.1+ | 0.6+ | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2004 01 24 | 704 | 1.0− | 0.7+ | 2005 07 12 | 703 | 0.8− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.5+ |
| 2004 01 24 | 704 | 0.5+ | 0.4+ | 2005 07 12 | 703 | 0.6− | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.7+ |

**(139322)∗ 2001 KC$_{32}$**

Discovered 2001 May 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.18076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25398338 | $\omega$ | 71.81997 | | −0.21250680 | +0.97715410 | |
| $a$ | 2.4694440 | $\Omega$ | 185.91363 | | −0.90811103 | −0.19872692 | |
| $e$ | 0.1759108 | $i$ | 1.82156 | | −0.36079803 | −0.07534905 | |
| $P$ | 3.88 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 1.4− | 0.8− | 2001 06 22 | 704 | 1.4− | 1.2+ | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 1994 10 09 | 691 | 0.3+ | 0.2+ | 2002 10 31 | 644 | 0.9+ | 0.9+ | 2006 10 20 | 691 | 0.1+ | 0.2− |
| 1994 10 09 | 691 | 0.3+ | 0.1+ | 2002 10 31 | 644 | 0.5+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.1− |
| 1997 04 06 | 704 | 1.7+ | 0.1− | 2002 10 31 | 644 | 0.0 | 0.6+ | 2006 10 28 | G96 | (1.6− | 0.3+) |
| 1997 04 06 | 704 | 1.3+ | 0.3− | 2003 12 22 | 691 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.6− |
| 1998 09 18 | 910 | 0.5+ | 0.5+ | 2003 12 22 | 691 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.6+ | 0.4− |
| 1998 09 18 | 910 | 0.9+ | 0.2+ | 2003 12 22 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 1998 09 18 | 910 | 0.9+ | 0.5+ | 2004 01 24 | 704 | 1.0+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 05 23 | 704 | 0.5+ | 0.2+ | 2004 01 24 | 704 | 0.1− | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 05 23 | 704 | 0.5− | 0.7+ | 2004 01 24 | 704 | 0.8+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 05 23 | 704 | 0.3+ | 0.6+ | 2004 01 24 | 704 | 0.5+ | 1.2− | 2006 11 17 | 703 | 1.1− | 0.8+ |
| 2001 05 23 | 704 | 0.1− | 0.9− | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2001 05 24 | 704 | 0.6− | 0.6− | 2004 01 27 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.6− |
| 2001 05 24 | 704 | 0.1+ | 0.7+ | 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.6− |
| 2001 05 24 | 704 | 0.5− | 1.0+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.6− | 2.2+ |
| 2001 05 24 | 704 | (0.5+ | 1.7+) | 2004 02 13 | 691 | 0.6+ | 0.7+ | 2006 11 28 | 704 | 0.8− | 1.7+ |
| 2001 05 24 | 704 | 0.2+ | 1.1+ | 2004 02 13 | 691 | 0.5+ | 0.3+ | 2006 11 28 | 704 | 0.7− | 0.2+ |
| 2001 06 22 | 704 | 0.2− | 0.4+ | 2004 02 17 | 645 | 0.1− | 0.2− | | | | |
| 2001 06 22 | 704 | 0.8+ | 0.2− | 2004 02 17 | 645 | 0.1− | 0.1− | | | | |

**(139323)∗ 2001 KD$_{32}$ = 2004 CL$_{81}$**

Discovered 2001 May 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60756)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.92859 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23469796 | $\omega$ | 180.23750 | | +0.80868054 | +0.56864129 | |
| $a$ | 2.6029341 | $\Omega$ | 143.73759 | | −0.53928633 | +0.81892466 | |
| $e$ | 0.2537544 | $i$ | 14.75153 | | −0.23495965 | +0.07752085 | |
| $P$ | 4.20 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 683 | 0.4− | 0.5+ | 2005 04 13 | 703 | 0.2− | 1.1+ | 2006 09 19 | 703 | 0.3+ | 0.5− |
| 2001 05 21 | 683 | 0.4− | 0.9+ | 2005 04 13 | 703 | 0.6+ | 0.9+ | 2006 09 30 | 699 | 0.8− | 0.6+ |
| 2001 05 21 | 683 | 0.2− | 0.5− | 2005 04 20 | 703 | 0.7+ | 1.2+ | 2006 09 30 | 704 | (2.2− | 0.2+) |
| 2001 05 23 | 704 | 0.2− | 0.3+ | 2005 04 20 | 703 | 1.3− | 0.0 | 2006 09 30 | 699 | 0.5− | 0.2− |
| 2001 05 23 | 704 | 0.1+ | 0.3+ | 2005 04 20 | 703 | 0.3+ | 0.4− | 2006 09 30 | 699 | 0.3+ | 1.1+ |
| 2001 05 23 | 704 | 0.3− | 0.2+ | 2005 04 20 | 703 | 1.1− | 0.9− | 2006 09 30 | 704 | 1.2+ | 0.8+ |
| 2001 05 23 | 704 | 0.7− | 0.7+ | 2005 05 03 | 703 | 0.3− | 0.6+ | 2006 09 30 | 704 | 0.7+ | 0.2+ |
| 2001 05 23 | 704 | 0.6− | 1.1+ | 2005 05 03 | 703 | 1.3+ | 1.0+ | 2006 09 30 | 699 | 0.3− | 1.0+ |
| 2001 05 24 | 704 | 0.0 | 0.9− | 2005 05 03 | 703 | 0.2− | 0.6− | 2006 10 11 | 644 | 0.3− | 0.5+ |
| 2001 05 24 | 704 | 0.9+ | 0.8+ | 2005 05 03 | 703 | 0.6− | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.5+ |
| 2001 05 24 | 704 | 0.2− | 0.4− | 2005 05 09 | 703 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 05 24 | 704 | (1.8− | 1.2+) | 2005 05 09 | 703 | 1.1− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.7+ |
| 2001 06 02 | 682 | (1.6+ | 0.9+) | 2005 05 09 | 703 | 1.2− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 06 02 | 682 | 0.3+ | 0.2+ | 2005 05 09 | 703 | 0.7− | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 06 02 | 682 | 0.0 | 1.3+ | 2005 05 13 | 699 | 0.6+ | 0.1− | 2006 10 20 | 703 | 1.0− | 0.1− |
| 2001 07 08 | 644 | 1.0+ | 0.4− | 2005 05 13 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 703 | 0.9− | 0.4+ |
| 2001 07 08 | 644 | 1.0+ | 0.5− | 2005 05 13 | 699 | (2.0+ | 0.3−) | 2006 10 20 | 703 | 1.2− | 0.7+ |
| 2001 07 08 | 644 | 1.1+ | 0.5− | 2005 05 13 | 704 | 0.6+ | 0.3− | 2006 10 20 | 703 | 0.1+ | 0.2+ |
| 2001 07 16 | 699 | 0.6+ | 0.1+ | 2005 05 13 | 704 | 1.3+ | 1.2+ | 2006 10 28 | 703 | 0.5− | 0.0 |
| 2001 07 16 | 699 | 0.6− | 0.7+ | 2005 05 13 | 699 | 0.4+ | 0.7+ | 2006 10 28 | 703 | 0.2+ | 0.0 |
| 2001 07 16 | 699 | 0.6− | 1.0+ | 2005 05 13 | 704 | 0.8+ | 0.1− | 2006 10 28 | 703 | 0.2− | 0.0 |
| 2001 07 16 | 699 | 0.2− | 0.3+ | 2005 05 13 | 704 | 1.0+ | 0.5− | 2006 10 28 | 703 | 1.2+ | 0.6+ |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2005 05 13 | 699 | 0.4+ | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.3+ |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2005 05 19 | 703 | (1.5− | 2.7−) | 2006 11 07 | 644 | 0.1− | 0.5+ |
| 2004 02 12 | 691 | 0.3+ | 0.1+ | 2005 05 19 | 703 | 0.7+ | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.4+ |
| 2004 02 17 | 704 | 0.4− | 0.3− | 2005 05 19 | 703 | 0.2+ | 1.0+ | 2006 11 17 | 703 | 0.7+ | 1.1+ |
| 2004 02 17 | 704 | 0.1+ | 1.4+ | 2005 05 19 | 703 | (0.6+ | 1.5−) | 2006 11 17 | 703 | 1.2− | 0.2+ |
| 2004 02 17 | 704 | 0.2+ | 0.2+ | 2005 06 08 | 699 | 0.0 | 1.2+ | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2005 04 04 | 703 | 0.5+ | 0.1+ | 2005 06 08 | 699 | 0.3− | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.5+ |
| 2005 04 04 | 703 | 1.2− | 0.6− | 2005 06 08 | 699 | (1.6− | 1.9+) | 2006 11 23 | 703 | 0.1+ | 0.5+ |
| 2005 04 04 | 703 | 1.3+ | 0.2− | 2005 06 08 | 699 | 0.7− | 0.9+ | 2006 11 23 | 703 | 0.4− | 0.4+ |
| 2005 04 04 | 703 | 0.3+ | 1.0− | 2006 09 19 | 703 | 0.2− | 0.5+ | 2006 11 23 | 703 | 0.1+ | 0.7+ |
| 2005 04 13 | 703 | 0.2+ | 0.3− | 2006 09 19 | 703 | (1.5− | 0.2+) | | | | |
| 2005 04 13 | 703 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.6− | 1.2+ | | | | |

**(139324)∗ 2001 KO$_{32}$ = 2002 TJ$_{87}$**

Discovered 2001 May 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37643)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.72186 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26661146 | $\omega$ | 26.95620 | | −0.70056537 | +0.71319800 | |
| $a$ | 2.3908381 | $\Omega$ | 198.60322 | | −0.66731853 | −0.66649498 | |
| $e$ | 0.1481403 | $i$ | 4.24181 | | −0.25277293 | −0.21710146 | |
| $P$ | 3.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 03 | 608 | 0.3− | 0.6+ | 2001 06 11 | 699 | (2.0+ | 1.1+) | 2005 06 13 | 691 | 0.0 | 0.1− |
| 2001 05 03 | 608 | 1.2− | 0.5+ | 2001 06 11 | 699 | 1.2+ | 0.2− | 2005 06 13 | 691 | 0.0 | 0.1− |
| 2001 05 03 | 608 | 0.7− | 0.6+ | 2001 06 11 | 699 | 0.6+ | 0.5+ | 2005 06 13 | 691 | 0.4− | 0.3− |
| 2001 05 11 | 608 | 0.3+ | 0.6− | 2001 06 20 | 699 | 1.1+ | 0.5+ | 2005 06 17 | 691 | (1.5+ | 2.6+) |
| 2001 05 11 | 608 | 0.6+ | 0.4+ | 2001 06 20 | 699 | 0.5+ | 1.0+ | 2005 06 17 | 691 | 0.1+ | 0.0 |
| 2001 05 11 | 608 | 0.3+ | 0.3− | 2001 06 20 | 699 | 0.5+ | 0.6+ | 2005 06 17 | 691 | 0.1+ | 0.1− |
| 2001 05 18 | 704 | 0.1− | 0.3+ | 2001 06 20 | 699 | 1.1+ | 0.4+ | 2005 07 11 | G96 | 0.1+ | 0.5− |
| 2001 05 18 | 704 | 0.4+ | 0.4− | 2002 10 03 | 704 | 0.4− | 0.6+ | 2005 07 11 | G96 | 0.0 | 0.6− |
| 2001 05 18 | 704 | 0.3+ | 0.6+ | 2002 10 03 | 704 | 0.0 | 0.3+ | 2005 07 11 | G96 | 0.1+ | 0.6− |
| 2001 05 18 | 704 | 0.5+ | 0.4− | 2002 10 03 | 704 | 0.3− | 0.3+ | 2005 07 11 | G96 | 1.1+ | 0.4− |
| 2001 05 18 | 704 | 0.1+ | 0.3+ | 2002 10 04 | 704 | 1.3+ | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2001 05 21 | 704 | 0.1− | 1.4+ | 2002 10 04 | 704 | 0.4− | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2001 05 21 | 704 | 0.5+ | 0.7− | 2002 10 04 | 704 | 0.1+ | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2001 05 21 | 704 | 0.5+ | 1.0− | 2002 10 05 | 291 | 0.5+ | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2001 05 21 | 704 | 0.7+ | 0.8− | 2002 10 05 | 291 | 0.4− | 0.2+ | 2006 10 17 | G96 | 1.2− | 0.4− |
| 2001 05 21 | 704 | (1.3+ | 1.6−) | 2002 10 05 | 291 | 0.5− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 2001 05 24 | 691 | 0.2− | 0.4+ | 2002 10 07 | 644 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2001 05 24 | 691 | 0.4− | 0.4+ | 2002 10 07 | 644 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.8+ | 0.0 |
| 2001 05 24 | 691 | 0.4− | 0.3+ | 2002 10 07 | 644 | 0.2− | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2001 05 25 | 691 | 0.2− | 0.1− | 2002 10 08 | 291 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.5+ |
| 2001 05 25 | 691 | 0.0 | 0.0 | 2002 10 08 | 291 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2001 05 25 | 691 | 0.2− | 0.0 | 2002 10 08 | 291 | 0.4− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2001 05 25 | 704 | 0.5+ | 0.1− | 2002 10 11 | 704 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.3+ | 0.5+ |
| 2001 05 25 | 704 | 0.1− | 0.5+ | 2002 10 11 | 704 | 0.8+ | 0.6− | 2006 11 08 | 644 | 0.5+ | 0.3+ |
| 2001 05 25 | 704 | 0.2+ | 0.3+ | 2002 10 11 | 704 | (1.9+ | 0.6−) | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2001 05 25 | 704 | 0.0 | 0.3+ | 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2001 05 25 | 704 | 1.3− | 0.4− | 2004 01 23 | 704 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 05 29 | 608 | 0.2− | 0.5+ | 2004 01 23 | 704 | 0.4+ | 1.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2001 05 29 | 608 | 0.1− | 0.4+ | 2004 01 23 | 704 | 0.1− | 1.0+ | 2006 11 17 | 703 | (1.6− | 2.8+) |
| 2001 05 29 | 608 | 0.2− | 0.4+ | 2004 01 23 | 704 | 0.7− | 0.4+ | 2006 11 17 | 703 | (0.4− | 2.2+) |
| 2001 05 31 | 691 | 0.2+ | 0.3+ | 2005 05 15 | G96 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.3− |
| 2001 05 31 | 691 | 0.4+ | 0.1− | 2005 05 15 | G96 | 0.5− | 0.3− | 2006 11 17 | 703 | (2.5− | 0.7−) |
| 2001 05 31 | 691 | 0.3+ | 0.2+ | 2005 05 15 | G96 | 0.5− | 0.5− | | | | |
| 2001 06 11 | 699 | 0.6+ | 1.4+ | 2005 05 15 | G96 | 0.4− | 0.6− | | | | |

**(139325)∗ 2001 KT$_{32}$**

Discovered 2001 May 24 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 160.28265 | | (2000.0) | | | |
| $n$ | 0.28623957 | $\omega$ | 201.87015 | | +0.45285294 | +0.88767916 |
| $a$ | 2.2802525 | $\Omega$ | 95.14042 | | −0.80511053 | +0.44731012 |
| $e$ | 0.2288949 | $i$ | 4.80144 | | −0.38304211 | +0.10926743 |
| $P$ | 3.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 13 | 691 | 0.3− | 0.1− | 2001 05 29 | 608 | 0.5+ | 0.5− | 2005 10 01 | 699 | 1.8+ | 1.1+ |
| 2000 01 13 | 691 | 0.0 | 0.1− | 2001 05 29 | 608 | 0.3+ | 0.4− | 2005 10 01 | 703 | 1.1− | 0.2+ |
| 2000 01 13 | 691 | 0.0 | 0.2− | 2001 05 31 | 691 | 0.4− | 0.1+ | 2005 10 01 | 703 | 0.4+ | 0.2+ |
| 2000 01 26 | 691 | 0.2+ | 0.4− | 2001 05 31 | 691 | 0.2− | 0.0 | 2005 10 07 | 703 | 0.3− | 0.9+ |
| 2000 01 26 | 691 | 0.0 | 0.2+ | 2001 05 31 | 691 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.1+ | 0.1+ |
| 2000 01 26 | 691 | 0.0 | 0.5− | 2001 06 11 | 699 | 1.2+ | 0.2+ | 2005 10 07 | 703 | 1.4− | 0.6− |
| 2001 05 21 | 704 | 0.7− | 0.6− | 2001 06 11 | 699 | 0.1− | 0.0 | 2005 10 07 | 703 | 1.5− | 1.1+ |
| 2001 05 21 | 704 | 0.1+ | 0.7+ | 2001 06 11 | 699 | 1.2− | 0.1+ | 2005 10 21 | 644 | 0.5− | 0.4+ |
| 2001 05 21 | 704 | 0.2− | 0.0 | 2001 06 11 | 691 | 0.4− | 0.0 | 2005 10 21 | 644 | 0.1− | 0.4+ |
| 2001 05 21 | 704 | 0.3+ | 0.1− | 2001 06 11 | 691 | 1.1+ | 0.0 | 2005 10 21 | 644 | 0.3− | 0.3+ |
| 2001 05 21 | 704 | 0.1+ | 0.1+ | 2001 06 11 | 699 | 1.4+ | 0.0 | 2005 10 28 | 703 | 0.5− | 0.5+ |
| 2001 05 24 | 691 | 0.0 | 0.5+ | 2001 06 11 | 691 | 0.0 | 0.2+ | 2005 10 28 | 703 | 0.5− | 0.3+ |
| 2001 05 24 | 691 | 0.1− | 0.5+ | 2001 06 16 | 691 | 0.0 | 0.1− | 2005 10 28 | 703 | 0.2+ | 0.0 |
| 2001 05 24 | 691 | 0.2− | 0.4+ | 2001 06 16 | 691 | 0.1+ | 0.3− | 2005 10 28 | 703 | 0.6− | 0.2− |
| 2001 05 24 | 704 | 1.2+ | 1.1− | 2001 06 16 | 691 | 0.2− | 0.2− | 2005 10 31 | 699 | 0.2− | 1.2+ |
| 2001 05 24 | 704 | 0.4− | 0.3− | 2004 02 13 | 691 | 0.6+ | 0.3+ | 2005 10 31 | 699 | 0.3+ | 0.7+ |
| 2001 05 24 | 704 | 0.5+ | 1.3+ | 2004 02 13 | 691 | 0.3− | 0.3+ | 2005 10 31 | 699 | 0.5+ | 0.2− |
| 2001 05 24 | 704 | 1.1− | 0.7+ | 2004 02 13 | 691 | 0.3+ | 1.3+ | 2005 10 31 | 699 | 0.2− | 1.0+ |
| 2001 05 25 | 691 | 0.1− | 0.2+ | 2004 02 29 | 691 | 0.3+ | 0.3+ | 2005 11 01 | 644 | 0.3− | 0.1− |
| 2001 05 25 | 691 | 0.1− | 0.1+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2005 11 01 | 644 | 0.1+ | 0.3+ |
| 2001 05 25 | 691 | 0.3− | 0.2+ | 2004 02 29 | 691 | 0.2+ | 0.3+ | 2005 11 01 | 644 | 0.3− | 0.3+ |
| 2001 05 25 | 704 | 0.4+ | 0.3− | 2005 10 01 | 699 | 0.6− | 1.3+ | 2005 11 03 | 703 | 0.7− | 0.1+ |
| 2001 05 25 | 704 | 0.6+ | 0.0 | 2005 10 01 | 699 | 0.5+ | 1.9+ | 2005 11 03 | 703 | 0.3+ | 0.3+ |
| 2001 05 25 | 704 | 1.2+ | 1.1− | 2005 10 01 | 699 | 0.1+ | 0.6+ | 2005 11 03 | 703 | 1.2+ | 0.7+ |
| 2001 05 25 | 704 | 0.1− | 0.6− | 2005 10 01 | 703 | 1.1− | 1.1− | 2005 11 03 | 703 | 0.7+ | 0.5− |
| 2001 05 29 | 608 | 0.2+ | 0.7− | 2005 10 01 | 703 | 0.6− | 0.2− | | | | |

**(139326)∗ 2001 KQ$_{34}$ = 1993 OE$_{11}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 14305)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.36900 | | (2000.0) | | | |
| $n$ | 0.23726713 | $\omega$ | 183.14393 | | +0.38889413 | +0.91905077 |
| $a$ | 2.5841100 | $\Omega$ | 109.74923 | | −0.84376771 | +0.38323927 |
| $e$ | 0.1721577 | $i$ | 3.90437 | | −0.36988838 | +0.09205081 |
| $P$ | 4.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 13 | 809 | (2.8+ | 0.9−) | 2001 06 27 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.3+ |
| 1993 07 13 | 809 | 1.5+ | 0.7− | 2001 06 27 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.3+ |
| 1993 07 13 | 809 | 0.6+ | 0.3+ | 2001 06 27 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 1993 07 13 | 809 | 0.6− | 0.1− | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.6+ |
| 1993 07 13 | 809 | 0.7− | 0.0 | 2003 12 29 | 691 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 1.0+ |
| 1993 07 20 | 809 | 1.5+ | 0.0 | 2003 12 29 | 691 | 0.6− | 0.2− | 2006 10 10 | 644 | 0.8− | 0.7+ |
| 1993 07 20 | 809 | 1.1+ | 0.6− | 2004 01 16 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.6+ |
| 1993 07 20 | 809 | 1.1+ | 0.2+ | 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | (1.2+ | 2.1+) |
| 1993 07 20 | 809 | 1.2− | 1.1− | 2004 01 16 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.5+ |
| 1993 07 20 | 809 | 1.5− | 0.6− | 2004 01 17 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.6− | 1.1− |
| 1993 07 20 | 809 | (2.1− | 1.1−) | 2004 01 17 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1993 07 24 | 809 | 0.6− | 0.9− | 2004 01 17 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.7+ |
| 2001 05 18 | 704 | 1.3− | 0.3− | 2004 02 11 | 691 | 0.6− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 05 18 | 704 | 0.6+ | 0.2− | 2004 02 11 | 691 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2001 05 18 | 704 | 0.7− | 0.7+ | 2004 02 11 | 691 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2001 05 18 | 704 | 0.6− | 0.3+ | 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2001 05 21 | 691 | 0.1− | 0.1+ | 2005 04 02 | 691 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2001 05 21 | 691 | 0.1− | 0.2+ | 2005 04 02 | 691 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2001 05 21 | 691 | 0.0 | 0.2+ | 2005 05 03 | 704 | (0.3+ | 1.5−) | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2001 05 25 | 704 | 0.5− | 0.5+ | 2005 05 03 | 704 | 0.8− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2001 05 25 | 704 | 0.1− | 0.3− | 2005 05 03 | 704 | (0.3+ | 1.8+) | 2006 11 23 | G96 | 0.3− | 0.1+ |
| 2001 05 25 | 704 | 0.9+ | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.3+ | | | | |

**(139327)∗ 2001 KY$_{35}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 119.50151 | | (2000.0) | | | |
| $n$ | 0.25606563 | $\omega$ | 57.68853 | | +0.04351595 | +0.99723123 |
| $a$ | 2.4560386 | $\Omega$ | 214.95977 | | −0.94835244 | +0.02224849 |
| $e$ | 0.1704107 | $i$ | 6.04085 | | −0.31421967 | +0.07095690 |
| $P$ | 3.85 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (3.4− | 3.1+) | 2001 05 18 | 704 | 0.5− | 1.3+ | 2006 10 21 | G96 | 0.4+ | 0.2+ |
| 1993 03 22 | 809 | (3.9+ | 1.2+) | 2001 05 25 | 704 | 0.4− | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 1997 05 06 | 691 | 0.1+ | 0.5+ | 2001 05 25 | 704 | (2.0− | 0.9+) | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 1997 05 06 | 691 | 0.2+ | 0.4+ | 2001 05 25 | 704 | 0.5+ | 0.7+ | 2006 10 22 | G96 | 0.5+ | 0.3+ |
| 1997 05 06 | 691 | 0.1+ | 0.5− | 2001 05 25 | 704 | (0.3− | 2.1+) | 2006 10 22 | G96 | 0.5− | 0.1− |
| 1998 09 27 | 691 | 0.1+ | 0.4+ | 2001 05 25 | 704 | (0.4− | 2.0+) | 2006 10 22 | G96 | 0.0 | 0.1− |
| 1998 09 27 | 691 | 0.3− | 0.1+ | 2001 06 15 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 1998 09 27 | 691 | 0.3− | 0.1+ | 2001 06 15 | 704 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1998 09 30 | 691 | 0.6− | 0.1+ | 2001 06 15 | 704 | 0.5+ | 0.6+ | 2006 11 11 | 691 | 0.5+ | 0.0 |
| 1998 09 30 | 691 | 0.3+ | 0.2− | 2004 02 11 | 644 | 0.5− | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 1998 09 30 | 691 | 0.2− | 0.2+ | 2004 02 11 | 644 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 1998 10 13 | 691 | 0.5+ | 0.5− | 2004 02 11 | 644 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.4+ |
| 1998 10 13 | 691 | 0.4+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 1998 10 13 | 691 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 1998 10 15 | 691 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.5− | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.5+ |
| 1998 10 15 | 691 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 1998 10 15 | 691 | 0.1− | 0.1− | 2006 10 19 | 695 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2001 05 18 | 704 | (1.2− | 1.7+) | 2006 10 19 | 695 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.5+ |
| 2001 05 18 | 704 | 0.1+ | 1.4+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.2− | 0.1− |

**(139328)∗ 2001 KO$_{36}$ = 2002 TZ$_{195}$**

Discovered 2001 May 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37645)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.47889 | | (2000.0) | | | |
| $n$ | 0.22659666 | $\omega$ | 94.02215 | | +0.78479482 | +0.59052722 |
| $a$ | 2.6646104 | $\Omega$ | 229.90028 | | −0.61975418 | +0.74711554 |
| $e$ | 0.2313442 | $i$ | 14.23400 | | −0.00135923 | +0.30511633 |
| $P$ | 4.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 704 | (0.1− | 1.8+) | 2002 10 30 | 049 | 1.2+ | 0.3+ | 2006 09 20 | 106 | 0.1+ | 0.2− |
| 2001 05 21 | 704 | 0.6+ | 0.4+ | 2002 10 30 | 049 | 0.8+ | 0.7+ | 2006 09 20 | 106 | 0.2+ | 0.5− |
| 2001 05 21 | 704 | 0.0 | 0.7+ | 2002 10 30 | 608 | 0.4+ | 0.1+ | 2006 09 20 | 106 | 0.3+ | 0.0 |
| 2001 05 21 | 704 | (1.7+ | 0.6+) | 2002 10 30 | 608 | 0.2+ | 0.5+ | 2006 09 20 | 106 | 0.1− | 0.0 |
| 2001 05 21 | 704 | 0.1− | 0.1+ | 2002 10 30 | 608 | 0.8+ | 0.3+ | 2006 09 21 | 704 | 0.6− | 1.1− |
| 2001 05 22 | 691 | 0.3− | 0.5+ | 2002 11 05 | 704 | (0.8+ | 1.7+) | 2006 09 21 | 704 | 0.1+ | 1.1+ |
| 2001 05 22 | 691 | 0.5− | 0.5+ | 2002 11 05 | 704 | 0.0 | 0.7+ | 2006 09 21 | 704 | 0.7+ | 0.2+ |
| 2001 05 22 | 691 | 0.5− | 0.5+ | 2002 11 05 | 704 | 0.9− | 0.4− | 2006 09 21 | 704 | 0.1− | 0.2− |
| 2001 05 25 | 704 | 1.3+ | 0.8+ | 2002 11 05 | 704 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 0.7+ | 0.9+ |
| 2001 05 25 | 704 | 1.1+ | 0.3− | 2002 11 05 | 704 | 0.5− | 0.4+ | 2006 09 28 | 703 | 0.5+ | 0.6+ |
| 2001 05 25 | 704 | (0.9+ | 1.7+) | 2002 11 06 | 704 | 0.2− | 0.4+ | 2006 09 28 | 703 | 0.6− | 0.5− |
| 2001 05 25 | 704 | 1.2+ | 0.7+ | 2002 11 06 | 704 | 0.4− | 0.3+ | 2006 09 28 | 703 | 0.3+ | 0.6+ |
| 2001 06 20 | 699 | 0.1− | 0.1+ | 2002 11 06 | 704 | 0.3− | 0.6+ | 2006 10 04 | 703 | 0.2+ | 0.6− |
| 2001 06 20 | 699 | 0.6+ | 0.1+ | 2002 11 06 | 704 | 0.4− | 1.1+ | 2006 10 04 | 703 | 0.4− | 0.5− |
| 2001 06 20 | 699 | 0.4+ | 0.0 | 2002 11 13 | 644 | 0.1− | 0.4+ | 2006 10 04 | 703 | 0.1− | 0.3− |
| 2001 06 20 | 699 | 0.4− | 0.3+ | 2002 11 13 | 644 | 0.1− | 0.4+ | 2006 10 04 | 703 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.8+ | 1.0+ | 2002 11 13 | 644 | 0.1− | 0.3+ | 2006 10 20 | 703 | 0.1+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2+ | 1.2− | 2002 12 01 | 704 | 0.3− | 0.1− | 2006 10 20 | 703 | 0.1+ | 0.0 | |
| 2002 10 03 | 704 | 0.7+ | 0.3− | 2002 12 01 | 704 | 0.5+ | 0.2+ | 2006 10 20 | 703 | 0.5− | 0.1− | |
| 2002 10 03 | 704 | 0.4+ | 0.5− | 2002 12 01 | 704 | 1.0− | 0.3− | 2006 10 20 | 703 | 0.4+ | 0.5− | |
| 2002 10 07 | 704 | 1.5− | 0.5+ | 2002 12 01 | 704 | 0.2+ | 0.9+ | 2006 11 08 | 644 | 0.1− | 0.5+ | |
| 2002 10 07 | 704 | (1.6− | 0.8+) | 2002 12 10 | 644 | 0.1+ | 1.0+ | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 2002 10 07 | 704 | 0.3− | 0.2− | 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.5+ | |
| 2002 10 10 | 704 | 0.3+ | 1.0+ | 2002 12 10 | 644 | 0.1+ | 0.6+ | 2006 11 14 | 703 | 0.5− | 1.3+ | |
| 2002 10 10 | 704 | 0.2+ | 0.0 | 2002 12 27 | 644 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 0.3+ | 0.7− | |
| 2002 10 10 | 704 | 0.6− | 0.1+ | 2002 12 27 | 644 | 0.3+ | 0.5+ | 2006 11 14 | 703 | 0.0 | 0.1− | |
| 2002 10 11 | 704 | 0.3+ | 0.3− | 2002 12 27 | 644 | 0.5− | 0.9− | 2006 11 14 | 703 | 0.2+ | 0.1− | |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2005 05 09 | 703 | 0.8+ | 0.4+ | 2006 11 25 | 703 | 1.4− | 0.3− | |
| 2002 10 11 | 704 | 0.7− | 0.1+ | 2005 05 09 | 703 | 0.4− | 0.4− | 2006 11 25 | 703 | 0.0 | 0.6− | |
| 2002 10 11 | 704 | 0.3− | 0.5− | 2005 05 09 | 703 | (1.4+ | 2.0+) | 2006 11 25 | 703 | 0.5+ | 0.3− | |
| 2002 10 30 | 049 | 0.7+ | 0.5+ | 2005 05 09 | 703 | (2.2+ | 1.0+) | 2006 11 25 | 703 | 0.3− | 0.2− | |

**(139329)∗ 2001 KF$_{37}$**

Discovered 2001 May 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.66221 | | (2000.0) | | | |
| $n$ | 0.22259602 | $\omega$ | 250.11487 | | +0.93709993 | +0.30082595 |
| $a$ | 2.6964423 | $\Omega$ | 92.05457 | | −0.21515439 | +0.89720518 |
| $e$ | 0.3229650 | $i$ | 10.20473 | | −0.27486782 | +0.32330577 |
| $P$ | 4.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 704 | 0.8− | 0.6− | 2003 01 04 | 704 | 0.4+ | 1.2+ | 2006 10 11 | 644 | 0.0 | 0.1− | |
| 2001 05 21 | 704 | 0.2− | 0.3− | 2003 01 08 | 704 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.3− | 0.0 | |
| 2001 05 21 | 704 | 0.0 | 1.1+ | 2003 01 08 | 704 | 0.8− | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.2+ | |
| 2001 05 21 | 704 | 0.7− | 0.1+ | 2003 01 08 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.3− | |
| 2001 05 25 | 704 | 0.2− | 0.2− | 2003 01 08 | 704 | 1.1− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.3+ | |
| 2001 05 25 | 704 | 1.0+ | 1.2+ | 2003 01 08 | 704 | 0.7− | 0.6− | 2006 10 28 | 703 | 0.2+ | 0.2+ | |
| 2001 05 25 | 704 | 0.5− | 0.3− | 2004 02 18 | 291 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.2+ | |
| 2001 05 25 | 704 | 0.0 | 0.6− | 2004 02 18 | 291 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.1+ | |
| 2001 06 13 | 704 | 0.7+ | 0.3+ | 2004 02 18 | 291 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.3+ | |
| 2001 06 13 | 704 | 0.6+ | 1.0+ | 2005 04 04 | 703 | (1.8+ | 0.2−) | 2006 11 07 | 644 | 0.2− | 0.1+ | |
| 2001 06 13 | 704 | 0.3+ | 0.8+ | 2005 04 04 | 703 | 0.5− | 0.2− | 2006 11 07 | 644 | 0.2− | 0.2+ | |
| 2001 06 13 | 704 | 0.7+ | 0.2+ | 2005 04 04 | 703 | 0.9+ | 0.2− | 2006 11 07 | 644 | 0.3− | 0.3+ | |
| 2001 06 13 | 704 | 0.6+ | 1.4+ | 2005 04 04 | 703 | 1.0+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2+ | |
| 2001 06 15 | 704 | 0.3+ | 0.1+ | 2005 05 04 | 703 | 0.6− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.0 | |
| 2001 06 15 | 704 | 0.2+ | 1.1+ | 2005 05 04 | 703 | 0.7− | 0.9− | 2006 11 08 | 644 | 0.2− | 0.0 | |
| 2001 06 15 | 704 | 0.6+ | 0.7+ | 2005 05 04 | 703 | 0.9− | 0.2− | 2006 11 10 | 704 | 1.0− | 1.0+ | |
| 2001 06 15 | 704 | 0.9+ | 0.4+ | 2005 05 04 | 703 | (0.1+ | 1.6−) | 2006 11 10 | 704 | 0.6− | 0.8+ | |
| 2001 06 22 | 704 | 0.5− | 0.5+ | 2006 09 06 | F84 | 0.7+ | 0.7− | 2006 11 10 | 704 | 0.5− | 1.1+ | |
| 2001 06 22 | 704 | 0.6− | 0.0 | 2006 09 06 | F84 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.5− | 0.8+ | |
| 2001 06 22 | 704 | 0.4− | 0.5+ | 2006 09 29 | 699 | 0.5+ | 0.4− | 2006 11 10 | 704 | 0.4+ | 0.6− | |
| 2001 06 22 | 704 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.1+ | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.1+ | |
| 2001 06 22 | 704 | (2.0+ | 1.2−) | 2006 09 29 | 699 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.5+ | |
| 2002 12 05 | 704 | 0.9+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.4+ | 0.4+ | |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.5+ | 0.5+ | |
| 2002 12 05 | 704 | 0.4+ | 0.4− | 2006 09 30 | 704 | 0.2− | 0.5+ | 2006 11 22 | 704 | 0.0 | 0.5− | |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.8− | 1.1− | |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.4+ | 0.0 | 2006 11 22 | 704 | (0.2− | 1.9+) | |
| 2003 01 04 | 704 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.6− | 0.5+ | 2006 11 22 | 704 | (1.7− | 0.4+) | |
| 2003 01 04 | 704 | 0.6+ | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | (0.3− | 2.1+) | |
| 2003 01 04 | 704 | (0.2+ | 2.2+) | 2006 10 11 | 644 | 0.1+ | 0.0 | | | | | |

**(139330)∗ 2001 KW$_{38}$**

Discovered 2001 May 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.28186 | | (2000.0) | | | |
| $n$ | 0.22930356 | $\omega$ | 212.54900 | | +0.70209417 | +0.69805836 |
| $a$ | 2.6435986 | $\Omega$ | 102.48873 | | −0.61861654 | +0.69573844 |
| $e$ | 0.3282509 | $i$ | 8.28190 | | −0.35267173 | +0.16930021 |
| $P$ | 4.30 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 02 | 566 | 0.0 | 0.2+ | 2005 03 10 | 699 | (0.6+ | 1.6+) | 2005 05 12 | 691 | 0.2+ | 0.0 | |
| 1997 09 02 | 566 | 0.1+ | 0.5+ | 2005 03 10 | 703 | 0.7+ | 0.1− | 2005 05 12 | 691 | 0.1+ | 0.1+ | |
| 1997 09 02 | 566 | 0.1+ | 0.5+ | 2005 03 10 | 699 | (0.7+ | 2.3+) | 2005 05 12 | 691 | 0.3+ | 0.1+ | |
| 2001 05 22 | 704 | 0.2+ | 0.2+ | 2005 03 10 | 703 | 0.5+ | 0.8− | 2005 05 13 | 704 | 0.7− | 0.3− | |
| 2001 05 22 | 704 | 0.1− | 0.4+ | 2005 03 10 | 703 | 1.1− | 0.8− | 2005 05 13 | 704 | 0.2− | 0.1− | |
| 2001 05 22 | 704 | 0.1− | 0.3+ | 2005 03 10 | 699 | 0.9+ | 0.3+ | 2005 05 13 | 704 | 0.2− | 0.0 | |
| 2001 05 22 | 704 | 0.3+ | 1.0+ | 2005 04 01 | 699 | 0.6− | 0.2+ | 2005 05 13 | 704 | 0.0 | 0.5− | |
| 2001 05 22 | 704 | 0.1− | 1.0+ | 2005 04 01 | 699 | 0.3− | 0.5− | 2005 05 13 | 704 | 1.0− | 1.1− | |
| 2001 05 25 | 704 | 0.0 | 0.2+ | 2005 04 01 | 699 | 0.2− | 0.2+ | 2005 05 15 | 644 | 0.1− | 0.1− | |
| 2001 05 25 | 704 | 0.9− | 0.3+ | 2005 04 01 | 699 | 0.6− | 0.2+ | 2005 05 15 | 644 | 0.1− | 0.1− | |
| 2001 05 25 | 704 | 0.7− | 0.8+ | 2005 04 01 | 644 | 0.1+ | 0.6+ | 2005 05 15 | 644 | 0.1− | 0.1+ | |
| 2001 05 25 | 704 | 0.6− | 0.1− | 2005 04 01 | 644 | 1.2+ | 0.5+ | 2005 06 03 | 699 | 0.1− | 0.5+ | |
| 2001 05 25 | 704 | 0.7− | 0.3− | 2005 04 01 | 644 | 0.2+ | 0.2+ | 2005 06 03 | 699 | (1.1− | 1.9+) | |
| 2001 05 28 | 704 | 0.2− | 0.6+ | 2005 04 04 | 703 | 0.4− | 0.1− | 2005 06 03 | 699 | (0.2+ | 2.3+) | |
| 2001 05 28 | 704 | 0.2+ | 0.1+ | 2005 04 04 | 703 | 0.1− | 0.4+ | 2005 06 03 | 699 | 0.2+ | 0.4+ | |
| 2001 05 28 | 704 | 0.5− | 0.3+ | 2005 04 04 | 703 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.1− | 0.7+ | |
| 2001 05 28 | 704 | 0.8+ | 0.9+ | 2005 04 04 | 703 | 0.4+ | 0.5− | 2006 09 18 | 703 | 0.0 | 0.2− | |
| 2001 06 12 | 608 | 0.1+ | 0.6+ | 2005 04 07 | 699 | 0.1− | 0.7− | 2006 09 18 | 703 | 1.0− | 0.6+ | |
| 2001 06 12 | 608 | 0.3+ | 0.5+ | 2005 04 07 | 699 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.5− | |
| 2001 06 12 | 608 | 0.3+ | 0.4+ | 2005 04 07 | 699 | 1.5+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.7+ | |
| 2001 06 15 | 704 | 0.6+ | 0.1− | 2005 04 13 | 703 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.0 | |
| 2001 06 15 | 704 | 0.3− | 0.3+ | 2005 04 13 | 703 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.6+ | 1.3+ | |
| 2001 06 15 | 704 | 0.5+ | 0.8− | 2005 04 13 | 703 | 0.4− | 0.3− | 2006 10 16 | 703 | (0.1− | 3.0+) | |
| 2001 06 15 | 704 | 0.1+ | 0.2+ | 2005 04 13 | 703 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.6− | 0.4+ | |
| 2001 06 15 | 704 | (1.7− | 0.7−) | 2005 04 18 | 704 | 1.2+ | 0.8− | 2006 10 22 | 703 | 0.1+ | 0.3+ | |
| 2001 06 17 | 644 | 0.1− | 0.9+ | 2005 04 18 | 704 | 0.5− | 0.6− | 2006 10 22 | 703 | 0.4+ | 0.5+ | |
| 2001 06 17 | 644 | 0.3+ | 0.5+ | 2005 04 18 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.7+ | |
| 2001 06 17 | 644 | 0.0 | 0.4+ | 2005 04 18 | 704 | 0.0 | 0.5− | 2006 10 30 | 703 | 0.3+ | 0.0 | |
| 2001 06 22 | 704 | 0.5+ | 0.7+ | 2005 05 02 | 683 | 0.9+ | 1.0+ | 2006 10 30 | 703 | 0.1+ | 0.3− | |
| 2001 06 22 | 704 | 0.2− | 0.6+ | 2005 05 02 | 683 | 0.4− | 0.5− | 2006 10 30 | 703 | 0.8+ | 0.3+ | |
| 2001 06 22 | 704 | 0.3+ | 0.0 | 2005 05 02 | 683 | 0.9− | 1.3+ | 2006 10 30 | 703 | 0.1− | 0.6+ | |
| 2001 06 22 | 704 | 0.4+ | 0.6− | 2005 05 04 | 703 | 0.6− | 0.4+ | 2006 11 19 | 704 | 1.0− | 0.5+ | |
| 2001 06 22 | 704 | 0.3− | 0.2− | 2005 05 04 | 703 | 0.0 | 0.3+ | 2006 11 19 | 704 | 1.0− | 1.3+ | |
| 2001 06 30 | 608 | 0.4+ | 0.5+ | 2005 05 04 | 703 | 1.1− | 0.7− | 2006 11 19 | 704 | (0.8− | 2.1+) | |
| 2001 06 30 | 608 | 0.0 | 0.6+ | 2005 05 04 | 703 | 0.5− | 0.5− | 2006 11 19 | 704 | (0.6− | 2.1+) | |
| 2001 06 30 | 608 | 0.4+ | 0.5+ | 2005 05 06 | 704 | 0.3+ | 1.3− | 2006 11 21 | G96 | 1.2− | 0.3− | |
| 2003 01 08 | 704 | 0.1+ | 0.7+ | 2005 05 06 | 704 | 0.5+ | 0.3+ | 2006 11 21 | G96 | 0.6− | 0.2+ | |
| 2003 01 08 | 704 | 0.9− | 0.9+ | 2005 05 06 | 704 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.2+ | |
| 2003 01 08 | 704 | (0.8− | 1.8+) | 2005 05 06 | 704 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2+ | |
| 2004 02 16 | 691 | 0.4+ | 0.5+ | 2005 05 06 | 704 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.5+ | 0.7+ | |
| 2004 02 16 | 691 | 0.1− | 0.3+ | 2005 05 11 | 703 | 1.2+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.7+ | |
| 2004 02 16 | 691 | 0.1+ | 0.4+ | 2005 05 11 | 703 | 0.6− | 0.3+ | 2006 11 28 | 704 | 0.4− | 0.6+ | |
| 2005 03 10 | 699 | 1.4+ | 1.5+ | 2005 05 11 | 703 | 0.7− | 0.7+ | 2006 11 28 | 704 | 0.4− | 0.7+ | |
| 2005 03 10 | 703 | 0.5+ | 0.5− | 2005 05 11 | 703 | 0.2+ | 0.7+ | 2006 11 28 | 704 | 0.2+ | 0.6+ | |

**(139331)∗ 2001 KW$_{44}$**

Discovered 2001 May 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 197.24940 | | (2000.0) | | | |
| $n$ | 0.26277211 | $\omega$ | 45.99657 | | −0.98637559 | +0.13440257 |
| $a$ | 2.4140701 | $\Omega$ | 141.43598 | | −0.15621497 | −0.94602036 |
| $e$ | 0.1524407 | $i$ | 8.75296 | | +0.05157604 | −0.29492614 |
| $P$ | 3.75 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.2− | 0.7− | 2001 06 21 | 704 | 0.6+ | 0.6− | 2004 01 30 | 704 | 0.1− | 0.4+ | |
| 1999 12 05 | 704 | 0.5+ | 0.3− | 2001 06 21 | 704 | (1.8− | 0.7+) | 2004 02 16 | 704 | 0.1− | 0.5+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.8− | 0.4+ | 2001 06 21 | 704 | 0.3− | 0.8+ | 2004 02 16 | 704 | 0.3+ | 1.2+ | | |
| 1999 12 05 | 704 | 0.4− | 0.0 | 2001 06 21 | 704 | 0.5− | 0.2+ | 2004 02 16 | 704 | 0.4+ | 0.4− | | |
| 2000 01 07 | 704 | 1.0− | 0.1+ | 2001 07 13 | 608 | 0.6− | 0.8− | 2004 02 22 | 704 | 1.1+ | 0.3+ | | |
| 2000 01 07 | 704 | 0.3− | 0.8− | 2001 07 13 | 608 | 0.7− | 1.1− | 2004 02 22 | 704 | 0.5− | 0.3− | | |
| 2000 01 07 | 704 | 0.6+ | 0.4+ | 2001 07 13 | 608 | 0.2− | 0.9− | 2004 02 22 | 704 | 0.4+ | 0.8− | | |
| 2000 01 07 | 704 | 0.2− | 0.3+ | 2001 07 13 | 608 | 0.1+ | 0.3− | 2004 02 22 | 704 | 0.6+ | 0.2− | | |
| 2000 01 07 | 704 | 0.0 | 0.8+ | 2001 07 13 | 608 | 0.1− | 0.7− | 2004 02 22 | 704 | 0.5− | 0.3+ | | |
| 2001 05 22 | 704 | 0.1+ | 1.0+ | 2001 07 13 | 608 | (1.5− | 2.0−) | 2005 06 30 | A50 | 1.4− | 0.3− | | |
| 2001 05 22 | 704 | (0.1− | 2.1+) | 2001 07 16 | 699 | 0.7− | 0.5− | 2005 06 30 | A50 | 1.2− | 0.2− | | |
| 2001 05 22 | 704 | 1.2+ | 0.4− | 2001 07 16 | 699 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 1.0+ | | |
| 2001 05 22 | 704 | 0.2− | 0.8+ | 2001 07 16 | 699 | 0.8+ | 0.2− | 2006 09 26 | 703 | 0.3− | 0.6+ | | |
| 2001 05 22 | 704 | 0.0 | 1.2+ | 2001 07 16 | 699 | 0.6− | 0.6+ | 2006 09 26 | 703 | 1.2− | 1.0+ | | |
| 2001 05 26 | 704 | 0.5− | 0.2− | 2001 07 24 | 644 | 0.4+ | 0.8+ | 2006 09 26 | 703 | 0.5+ | 0.7+ | | |
| 2001 05 26 | 704 | 0.6− | 0.8+ | 2001 07 24 | 644 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2001 05 26 | 704 | 1.1+ | 0.8+ | 2001 07 24 | 644 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | | |
| 2001 05 26 | 704 | 0.2+ | 0.8+ | 2003 12 22 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.3+ | | |
| 2001 05 26 | 704 | 0.3+ | 0.7+ | 2003 12 22 | 704 | 0.4+ | 0.8+ | 2006 10 12 | 644 | 0.5+ | 0.1− | | |
| 2001 05 29 | 704 | 0.8+ | 1.1+ | 2003 12 22 | 704 | 0.6+ | 1.1+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2001 05 29 | 704 | 0.9+ | 0.5+ | 2003 12 22 | 704 | 0.2− | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2001 05 29 | 704 | 0.1− | 0.8+ | 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.4+ | | |
| 2001 06 12 | 608 | 0.1+ | 0.5− | 2004 01 30 | 704 | 0.9− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.1+ | | |
| 2001 06 12 | 608 | 0.0 | 0.4− | 2004 01 30 | 704 | 0.3− | 0.8− | 2006 10 22 | 644 | 0.4+ | 0.2+ | | |
| 2001 06 12 | 608 | 0.4+ | 0.4− | 2004 01 30 | 704 | 0.6− | 0.6− | | | | | | |
| 2001 06 21 | 704 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.2− | 0.5+ | | | | | | |

**(139332)∗ 2001 KH$_{46}$ = 2002 TU$_{38}$**

Discovered 2001 May 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37650)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.67251 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24149196 | $\omega$ | 127.92849 | | +0.94824417 | +0.28913855 | |
| $a$ | 2.5538826 | $\Omega$ | 215.81304 | | −0.31229800 | +0.92398574 | |
| $e$ | 0.1335442 | $i$ | 12.96402 | | +0.05747126 | +0.25029831 | |
| $P$ | 4.08 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 704 | 0.0 | 1.4+ | 2002 11 11 | 704 | 0.1− | 0.2− | 2006 10 03 | 691 | 0.0 | 0.1− | | |
| 1998 11 18 | 704 | 1.0+ | 0.5− | 2002 11 11 | 704 | 0.1− | 0.6− | 2006 10 03 | 691 | 0.2+ | 0.0 | | |
| 1998 11 18 | 704 | 1.7+ | 0.5+ | 2002 11 11 | 704 | 0.8+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.1− | | |
| 1998 11 18 | 704 | (4.2− | 0.0 ) | 2002 11 12 | 644 | 0.0 | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.0 | | |
| 2001 05 21 | 691 | 0.3− | 0.1− | 2002 11 12 | 644 | 0.0 | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | | |
| 2001 05 21 | 691 | 0.1− | 0.2+ | 2002 11 12 | 644 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.0 | 0.0 | | |
| 2001 05 21 | 691 | 0.3− | 0.4+ | 2002 11 14 | 704 | 0.4+ | 0.9+ | 2006 10 16 | 691 | 0.5− | 0.4− | | |
| 2001 05 22 | 704 | 1.1+ | 0.1− | 2002 11 14 | 704 | 0.7− | 0.0 | 2006 10 16 | 691 | 0.5− | 0.1− | | |
| 2001 05 22 | 704 | 0.2− | 0.6+ | 2002 11 14 | 704 | 1.5+ | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.2− | | |
| 2001 05 22 | 704 | 0.9− | 0.6+ | 2002 11 14 | 704 | 0.2− | 0.2+ | 2006 10 19 | 704 | 0.9+ | 1.2+ | | |
| 2001 05 26 | 704 | 0.4− | 0.3+ | 2002 11 14 | 704 | 0.0 | 0.0 | 2006 10 19 | 704 | 0.5− | 0.4+ | | |
| 2001 05 26 | 704 | 0.8+ | 0.0 | 2002 11 22 | 644 | 0.2− | 0.0 | 2006 10 19 | 704 | 0.3+ | 1.0− | | |
| 2001 05 26 | 704 | 0.0 | 0.1+ | 2002 11 22 | 644 | 0.2− | 0.2+ | 2006 10 19 | 704 | 0.4− | 1.3+ | | |
| 2001 05 26 | 704 | 0.1+ | 0.2− | 2002 11 22 | 644 | 0.3− | 0.3+ | 2006 10 19 | 704 | 0.7− | 0.1− | | |
| 2002 10 02 | 704 | (0.1− | 1.5+) | 2002 11 30 | 608 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2002 10 02 | 704 | 0.2− | 0.8+ | 2002 11 30 | 608 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.4− | 0.1− | | |
| 2002 10 02 | 704 | 0.2− | 0.7+ | 2002 11 30 | 608 | (0.7+ | 1.7−) | 2006 10 19 | 644 | 0.3− | 0.2− | | |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2002 12 01 | 704 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.7− | 0.1− | | |
| 2002 10 03 | 704 | 0.5− | 0.3− | 2002 12 01 | 704 | (0.0 | 2.2+) | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2002 12 01 | 704 | (0.9+ | 1.6+) | 2006 10 19 | 644 | 0.4− | 0.1− | | |
| 2002 10 03 | 704 | 0.8+ | 0.1− | 2002 12 01 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.3− | | |
| 2002 10 03 | 704 | (2.3+ | 0.0 ) | 2002 12 01 | 704 | 0.9+ | 1.1+ | 2006 10 20 | 644 | 0.3+ | 0.1− | | |
| 2002 10 07 | 699 | 0.6− | 0.4− | 2002 12 07 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.4− | | |
| 2002 10 07 | 704 | 0.0 | 0.2+ | 2002 12 07 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.2+ | 0.7+ | | |
| 2002 10 07 | 704 | 0.3− | 0.8− | 2002 12 07 | 704 | 0.7− | 1.5+ | 2006 10 23 | 704 | 0.6− | 1.2+ | | |
| 2002 10 07 | 699 | 0.5+ | 0.2+ | 2002 12 08 | 608 | 0.6+ | 0.6+ | 2006 10 23 | 704 | (0.2+ | 3.3+) | | |
| 2002 10 07 | 704 | 0.4+ | 1.0− | 2002 12 08 | 608 | 0.4+ | 0.5+ | 2006 10 23 | 704 | 0.0 | 0.3+ | | |
| 2002 10 07 | 699 | 0.1− | 0.5+ | 2002 12 08 | 608 | 0.2+ | 0.9+ | 2006 10 23 | 704 | 0.0 | 0.0 | | |
| 2002 10 07 | 704 | 0.9− | 0.4+ | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 1.5− | 0.3+ | | |
| 2002 10 07 | 699 | 1.5+ | 1.4+ | 2005 05 10 | 691 | 0.4+ | 0.2+ | 2006 10 28 | 704 | 0.1+ | 0.2− | | |
| 2002 10 09 | 704 | 0.3− | 0.7− | 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 704 | 0.7+ | 0.3+ | | |
| 2002 10 09 | 704 | 0.2− | 0.2+ | 2005 05 14 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 1.2− | 0.2− | | |
| 2002 10 09 | 704 | 1.3− | 0.6− | 2005 05 14 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.4− | | |
| 2002 10 09 | 704 | 0.3+ | 0.5+ | 2005 05 14 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.3− | | |
| 2002 10 11 | 704 | 0.3+ | 0.8+ | 2005 05 14 | 644 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.5− | | |
| 2002 10 11 | 704 | 0.3+ | 0.6+ | 2005 05 14 | 644 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.5− | | |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 | | |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2005 05 16 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.0 | | |
| 2002 10 11 | 704 | 0.3+ | 0.1− | 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.2+ | | |
| 2002 10 16 | 699 | 0.3− | 0.4− | 2005 05 16 | G96 | 0.0 | 0.1− | 2006 10 31 | 683 | 0.4+ | 0.0 | | |
| 2002 10 16 | 699 | 0.1+ | 0.0 | 2005 05 16 | G96 | 0.0 | 0.0 | 2006 10 31 | 683 | 0.8+ | 0.0 | | |
| 2002 10 16 | 699 | 0.9− | 0.3− | 2005 05 19 | 703 | 0.4− | 1.2+ | 2006 10 31 | 683 | 0.4− | 0.2+ | | |
| 2002 10 16 | 699 | 1.3− | 0.1+ | 2005 05 19 | 703 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.5+ | 0.1− | | |
| 2002 10 19 | 644 | 0.2− | 0.3+ | 2005 05 19 | 703 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.3+ | | |
| 2002 10 19 | 644 | 0.3− | 0.4+ | 2005 05 19 | 703 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.3+ | | |
| 2002 10 19 | 644 | 0.1− | 0.6+ | 2005 06 03 | E12 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.9− | 0.2− | | |
| 2002 10 28 | 608 | 0.2+ | 0.2− | 2005 06 03 | E12 | 0.6− | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.3− | | |
| 2002 10 28 | 608 | 0.4− | 0.4+ | 2005 06 03 | E12 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.3− | 0.2− | | |
| 2002 10 28 | 608 | 0.5− | 0.2+ | 2005 06 03 | E12 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.5− | | |
| 2002 10 31 | 699 | 0.2+ | 0.3+ | 2005 06 23 | 644 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.2− | | |
| 2002 10 31 | 699 | 0.0 | 0.8+ | 2005 06 23 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.3− | | |
| 2002 10 31 | 699 | 0.0 | 0.7+ | 2005 06 23 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.3− | | |
| 2002 10 31 | 699 | 0.5− | 0.2+ | 2006 08 30 | 699 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.2− | | |
| 2002 10 31 | 644 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.6− | 0.3− | | |
| 2002 10 31 | 644 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.1− | | |
| 2002 10 31 | 644 | 0.3+ | 0.4+ | 2006 08 30 | 699 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.7− | 0.4+ | | |
| 2002 11 01 | 950 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.2− | | |
| 2002 11 02 | 950 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.5− | | |
| 2002 11 02 | 950 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.8− | 0.2+ | | |
| 2002 11 02 | 608 | 0.4− | 0.4− | 2006 09 25 | 704 | 0.7+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 1.3+ | | |
| 2002 11 02 | 608 | 0.4− | 0.5− | 2006 09 25 | 704 | 0.8+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.5+ | | |
| 2002 11 02 | 608 | 0.4− | 0.4− | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.3+ | | |
| 2002 11 06 | 704 | 1.0− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.6− | | |
| 2002 11 06 | 704 | 1.2− | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.6− | 2006 11 21 | 691 | 0.0 | 0.2− | | |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.2− | | |
| 2002 11 06 | 704 | 0.9− | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.2− | | |
| 2002 11 06 | 704 | 0.6− | 0.5+ | 2006 09 29 | 704 | 0.2+ | 1.1− | 2006 11 21 | 704 | 0.0 | 0.1+ | | |
| 2002 11 10 | 704 | 0.8+ | 0.3− | 2006 09 29 | 704 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.6− | 0.4− | | |
| 2002 11 10 | 704 | (0.7+ | 1.8−) | 2006 09 29 | 704 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.0 | | |
| 2002 11 10 | 704 | 0.0 | 0.2− | 2006 09 30 | 291 | 0.9+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.3− | | |
| 2002 11 11 | 704 | 0.4+ | 0.0 | 2006 09 30 | 291 | 0.9+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.7+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.2− | 2006 09 30 | 291 | 1.0+ | 0.0 | | | | | | |

**(139333)∗ 2001 KD$_{47}$**

Discovered 2001 May 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.08343 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22448877 | $\omega$ | 225.78835 | | +0.66148045 | +0.70996800 | |
| $a$ | 2.6812644 | $\Omega$ | 87.27023 | | −0.60046076 | +0.69441238 | |
| $e$ | 0.1656894 | $i$ | 13.99946 | | −0.44932225 | +0.11720447 | |
| $P$ | 4.39 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 704 | 0.7+ | 0.3− | 2002 11 22 | 644 | 0.1+ | 0.3+ | 2006 05 30 | E12 | 0.0 | 0.4+ | | |
| 2001 05 23 | 704 | 1.1+ | 0.7+ | 2004 01 16 | 644 | 0.1− | 0.9+ | 2006 05 30 | E12 | 0.1− | 0.1− | | |
| 2001 05 23 | 704 | 1.3+ | 0.5+ | 2004 01 16 | 644 | 0.0 | 0.8+ | 2006 07 30 | E12 | 0.1+ | 0.1− | | |
| 2001 05 23 | 704 | 1.3+ | 0.0 | 2004 01 16 | 644 | 0.3+ | 1.0+ | 2006 07 30 | E12 | 0.2− | 0.2+ | | |
| 2001 05 24 | 691 | 0.2− | 0.3+ | 2005 03 18 | 703 | (1.9+ | 0.2+) | 2006 07 30 | E12 | 0.1+ | 0.2− | | |
| 2001 05 24 | 691 | 0.0 | 0.4+ | 2005 03 18 | 703 | 1.4− | 0.2+ | 2006 07 30 | E12 | 0.1− | 0.2+ | | |
| 2001 05 24 | 691 | 0.0 | 0.5+ | 2005 03 18 | 703 | 1.0+ | 1.5− | 2006 08 15 | E12 | 0.0 | 0.3− | | |
| 2001 05 26 | 704 | 0.9− | 1.0+ | 2005 03 18 | 703 | 0.2− | 0.6− | 2006 08 15 | E12 | 0.3+ | 0.6− | | |
| 2001 05 26 | 704 | 0.5+ | 1.4+ | 2005 04 06 | 703 | (0.1+ | 1.9+) | 2006 08 15 | E12 | 0.2+ | 0.4− | | |
| 2001 05 26 | 704 | (2.0+ | 0.8+) | 2005 04 06 | 703 | (2.1+ | 1.6+) | 2006 08 15 | E12 | 0.0 | 0.4− | | |
| 2001 05 26 | 704 | 0.6+ | 0.8+ | 2005 04 06 | 703 | 0.5+ | 0.4+ | 2006 08 25 | E12 | 0.5− | 0.3− | | |
| 2001 05 26 | 704 | (2.4+ | 1.1+) | 2005 04 06 | 703 | (1.6+ | 2.7+) | 2006 08 25 | E12 | 0.2+ | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.3− | 0.1+ | 2005 04 16 | 703 | 0.7− | 0.8+ | 2006 08 25 | E12 | 0.3− | 0.2+ | | |
| 2002 10 10 | 644 | 0.1+ | 0.5+ | 2005 04 16 | 703 | 0.1− | 0.2− | 2006 08 25 | E12 | 0.3+ | 0.0 | | |
| 2002 10 10 | 644 | 0.0 | 0.1+ | 2005 04 16 | 703 | 0.2+ | 0.9− | 2006 09 12 | E12 | 0.0 | 0.0 | | |
| 2002 10 15 | 644 | 0.3− | 0.1+ | 2005 04 16 | 703 | 0.0 | 0.5− | 2006 09 12 | E12 | 0.2+ | 0.6− | | |
| 2002 10 15 | 644 | 0.4− | 0.2− | 2005 05 08 | 703 | 0.1− | 0.1− | 2006 09 12 | E12 | 0.0 | 0.5− | | |
| 2002 10 15 | 644 | 0.2− | 0.1+ | 2005 05 08 | 703 | 0.3− | 0.7− | 2006 09 12 | E12 | 0.1− | 0.6− | | |
| 2002 10 30 | 704 | 0.3+ | 1.2+ | 2005 05 08 | 703 | 1.0+ | 0.3+ | 2006 09 27 | E12 | 0.1+ | 0.2− | | |
| 2002 10 30 | 704 | 0.9− | 0.0 | 2005 05 08 | 703 | 1.3− | 0.4− | 2006 09 27 | E12 | 0.3+ | 0.0 | | |
| 2002 10 30 | 704 | 1.2− | 0.5+ | 2006 05 29 | E12 | 0.2+ | 0.7+ | 2006 09 27 | E12 | 0.1− | 0.1− | | |
| 2002 11 06 | 644 | 0.1+ | 1.2+ | 2006 05 29 | E12 | 0.0 | 1.0− | 2006 09 27 | E12 | 0.2+ | 0.3− | | |
| 2002 11 06 | 644 | 0.3− | 0.8+ | 2006 05 29 | E12 | 0.0 | 0.4− | 2006 10 25 | E12 | 0.2+ | 0.3+ | | |
| 2002 11 06 | 644 | 0.4− | 1.0+ | 2006 05 29 | E12 | 0.4+ | 0.1− | 2006 10 25 | E12 | 0.5− | 0.3+ | | |
| 2002 11 22 | 644 | 0.1− | 0.5+ | 2006 05 30 | E12 | 0.6− | 0.6+ | 2006 10 25 | E12 | 0.3+ | 0.9+ | | |
| 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 05 30 | E12 | 1.0+ | 0.1− | 2006 10 25 | E12 | 0.4− | 0.4− | | |

**(139334)∗ 2001 KJ$_{50}$ = 1996 CN$_6$**

Discovered 2001 May 20 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 14316)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.08960 | | (2000.0) | | | |
| $n$ | 0.23907008 | $\omega$ | 136.63716 | | +0.33392369 | +0.94024336 |
| $a$ | 2.5711015 | $\Omega$ | 152.66732 | | −0.89959983 | +0.33899516 |
| $e$ | 0.2583693 | $i$ | 8.34183 | | −0.28145180 | +0.03201097 |
| $P$ | 4.12 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.1− | 0.2+ | 2005 04 09 | 704 | (1.6+ | 0.1−) | 2005 05 12 | 683 | 0.5+ | 0.7+ | | |
| 1996 02 10 | 691 | 0.5+ | 0.2− | 2005 04 12 | 699 | 0.3− | 0.9+ | 2005 05 13 | 683 | (0.8+ | 2.5−) | | |
| 1996 02 10 | 691 | 0.2+ | 0.1− | 2005 04 12 | 699 | 0.2− | 0.9+ | 2005 05 13 | 683 | (1.1− | 2.6−) | | |
| 1996 02 16 | 691 | 0.2− | 0.3− | 2005 04 12 | 699 | 1.1− | 0.9− | 2005 05 13 | 683 | 1.1+ | 0.4− | | |
| 1996 02 16 | 691 | 0.3− | 0.2− | 2005 04 12 | 699 | 0.6− | 0.5− | 2005 05 14 | 683 | 1.1− | 0.9+ | | |
| 1996 02 16 | 691 | 0.1− | 0.3− | 2005 04 18 | 703 | 0.6− | 0.2+ | 2005 05 14 | 683 | 0.7− | 0.4+ | | |
| 2001 04 16 | 691 | 0.3+ | 0.0 | 2005 04 18 | 703 | 0.0 | 0.3− | 2005 05 14 | 683 | (3.4+ | 1.1+) | | |
| 2001 04 16 | 691 | 0.3+ | 0.1+ | 2005 04 18 | 703 | 0.5− | 0.6+ | 2005 05 15 | 644 | 0.5+ | 0.0 | | |
| 2001 04 16 | 691 | 0.3+ | 0.0 | 2005 04 18 | 703 | 0.6− | 0.8+ | 2005 05 15 | 644 | 0.4+ | 0.1− | | |
| 2001 05 20 | 608 | (1.0+ | 1.5−) | 2005 05 04 | 703 | 1.0− | 0.4− | 2005 05 15 | 644 | 0.4+ | 0.1− | | |
| 2001 05 20 | 608 | 0.4+ | 1.2− | 2005 05 04 | 703 | 0.2+ | 0.3+ | 2005 05 18 | 644 | 0.4+ | 0.2− | | |
| 2001 05 20 | 608 | 0.6+ | 1.2− | 2005 05 04 | 703 | 0.4+ | 0.7− | 2005 05 18 | 644 | 0.3+ | 0.0 | | |
| 2001 05 22 | 704 | 1.0− | 1.3+ | 2005 05 04 | 703 | 0.1− | 0.3− | 2005 05 18 | 644 | 0.5+ | 0.5− | | |
| 2001 05 22 | 704 | 0.8+ | 1.5+ | 2005 05 06 | 704 | 0.3+ | 0.4+ | 2005 06 03 | 699 | 1.0+ | 1.1+ | | |
| 2001 05 22 | 704 | 0.2− | 0.2+ | 2005 05 06 | 704 | 0.7+ | 0.9+ | 2005 06 03 | 699 | 0.8+ | 0.8+ | | |
| 2001 05 22 | 704 | 0.9− | 0.5− | 2005 05 06 | 704 | 0.5+ | 1.1+ | 2005 06 03 | 699 | 1.2+ | 0.7− | | |
| 2001 05 22 | 704 | 0.8+ | 0.4+ | 2005 05 06 | 704 | 0.4+ | 0.1+ | 2005 06 03 | 699 | 0.3+ | 0.9+ | | |
| 2001 05 26 | 644 | 0.5+ | 0.5+ | 2005 05 10 | 683 | 0.7+ | 0.8+ | 2006 10 12 | 644 | 0.3+ | 1.2+ | | |
| 2001 05 26 | 644 | 0.6+ | 0.5+ | 2005 05 10 | 683 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 1.2+ | | |
| 2001 05 26 | 644 | 0.5+ | 0.3+ | 2005 05 10 | 683 | 1.0− | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.2+ | | |
| 2001 06 15 | 645 | 0.2− | 0.2− | 2005 05 11 | 683 | (1.8+ | 0.3+) | 2006 10 16 | 703 | 0.5− | 0.4− | | |
| 2001 06 15 | 645 | 0.2− | 0.2− | 2005 05 11 | 683 | (2.5+ | 0.1−) | 2006 10 16 | 703 | 0.9− | 0.4+ | | |
| 2005 04 04 | 703 | 0.4− | 0.1− | 2005 05 11 | 683 | 0.5− | 1.3+ | 2006 10 16 | 703 | (1.3+ | 1.7−) | | |
| 2005 04 04 | 703 | 0.7+ | 0.0 | 2005 05 11 | 703 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.6− | | |
| 2005 04 04 | 703 | 0.5− | 0.7− | 2005 05 11 | 703 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.2− | | |
| 2005 04 04 | 703 | 0.7− | 0.1− | 2005 05 11 | 703 | 0.4+ | 0.4− | 2006 11 19 | 703 | 1.1+ | 1.6+ | | |
| 2005 04 09 | 704 | 0.3+ | 0.9+ | 2005 05 11 | 703 | 0.5− | 0.2+ | 2006 11 19 | 703 | 0.6− | 1.2+ | | |
| 2005 04 09 | 704 | 0.2+ | 0.9+ | 2005 05 12 | 683 | (1.2+ | 2.5−) | 2006 11 19 | 703 | 0.3− | 0.3+ | | |
| 2005 04 09 | 704 | (0.7+ | 2.4+) | 2005 05 12 | 683 | 0.2+ | 1.0− | | | | | | |

**(139335)∗ 2001 KJ$_{52}$**

Discovered 2001 May 17 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.11371 | | (2000.0) | | | |
| $n$ | 0.22730013 | $\omega$ | 90.67786 | | +0.86955484 | +0.46170578 |
| $a$ | 2.6591097 | $\Omega$ | 241.83835 | | −0.49383003 | +0.81476942 |
| $e$ | 0.2596205 | $i$ | 11.46377 | | +0.00250686 | +0.35068300 |
| $P$ | 4.34 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 608 | 0.1+ | 0.8+ | 2005 05 29 | E12 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2001 05 17 | 608 | 0.1− | 0.2+ | 2005 05 30 | 701 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.1− | | |
| 2001 05 17 | 608 | 0.1− | 0.0 | 2005 05 30 | 701 | 0.5+ | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.1− | | |
| 2001 05 18 | 704 | 0.7+ | 0.4− | 2005 05 30 | 701 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 1.1− | 0.5− | | |
| 2001 05 18 | 704 | 0.0 | 0.2+ | 2005 06 01 | 691 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.3− | | |
| 2001 05 18 | 704 | 0.1+ | 0.5− | 2005 06 01 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.8+ | | |
| 2001 05 18 | 704 | 0.7+ | 0.5+ | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 1.2+ | | |
| 2001 05 29 | 704 | 0.4− | 0.6− | 2005 06 04 | 704 | 0.2− | 0.2+ | 2006 11 16 | 704 | 1.3+ | 0.1− | | |
| 2001 05 29 | 704 | 1.4− | 0.4+ | 2005 06 04 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.4+ | | |
| 2001 05 29 | 704 | 0.7− | 0.4− | 2005 06 04 | 704 | 0.1− | 0.1− | 2006 11 16 | 704 | 1.0+ | 0.2+ | | |
| 2001 05 29 | 704 | 1.0+ | 0.3+ | 2005 06 04 | 704 | 0.9+ | 0.8+ | 2006 11 16 | 704 | 1.4+ | 0.3+ | | |
| 2001 05 29 | 704 | 0.2+ | 0.1− | 2005 06 04 | 704 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.4− | 0.1+ | | |
| 2001 06 15 | 704 | 0.3− | 0.2+ | 2005 06 11 | 703 | 0.9− | 0.8+ | 2006 11 17 | 704 | 0.4− | 0.7+ | | |
| 2001 06 15 | 704 | 0.5− | 0.3+ | 2005 06 11 | 703 | 0.4− | 0.9+ | 2006 11 17 | 704 | 0.5+ | 0.8+ | | |
| 2001 06 15 | 704 | 0.1− | 0.4+ | 2005 06 11 | 703 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.4+ | 0.9− | | |
| 2001 06 15 | 704 | 0.2− | 0.1− | 2005 06 11 | 703 | (1.7− | 1.6+) | 2006 11 17 | 704 | 0.3− | 0.4+ | | |
| 2001 06 19 | 608 | 1.3+ | 0.1+ | 2005 06 14 | 291 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.6+ | | |
| 2001 06 19 | 608 | 0.8+ | 0.0 | 2005 06 14 | 291 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.1+ | | |
| 2001 06 19 | 608 | 1.0+ | 0.1+ | 2005 06 14 | 291 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2001 06 21 | 704 | 0.5− | 0.1− | 2005 06 27 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.5+ | | |
| 2001 06 21 | 704 | 0.3− | 0.2− | 2005 06 27 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.1+ | | |
| 2001 06 21 | 704 | 0.5− | 0.7− | 2005 06 27 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2005 09 06 | E12 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2005 09 06 | E12 | 0.1+ | 0.9+ | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | 1.2− | 0.5+ | 2005 09 06 | E12 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.0 | | |
| 2001 09 12 | 704 | 0.8+ | 0.4+ | 2005 09 06 | E12 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 2001 10 11 | 704 | 0.1− | 0.8− | 2006 10 20 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.4− | 0.8+ | | |
| 2001 10 11 | 704 | (0.9+ | 2.7−) | 2006 10 20 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.5− | 0.7+ | | |
| 2001 10 11 | 704 | 0.2− | 1.2− | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.3+ | 0.4− | | |
| 2001 10 11 | 704 | (0.2− | 1.9−) | 2006 10 23 | 704 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2001 10 11 | 704 | 0.5+ | 1.1− | 2006 10 23 | 704 | 0.1− | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2002 10 04 | 644 | 0.2− | 1.1+ | 2006 10 23 | 704 | 0.9+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.4− | | |
| 2002 10 04 | 644 | 0.4− | 0.6+ | 2006 10 23 | 704 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.0 | 0.1− | | |
| 2002 10 04 | 644 | 0.0 | 0.7+ | 2006 10 23 | 704 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2003 01 05 | 704 | 0.1− | 0.7− | 2006 10 28 | 704 | 0.6− | 0.1− | 2006 11 27 | 703 | 0.1− | 0.2+ | | |
| 2003 01 05 | 704 | (0.4+ | 1.7−) | 2006 10 28 | 704 | 0.8+ | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.2− | | |
| 2003 01 05 | 704 | 0.8+ | 0.7− | 2006 10 28 | 704 | 0.1+ | 1.0+ | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2005 05 06 | 608 | 0.2− | 0.5− | 2006 10 29 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.2+ | 0.2+ | | |
| 2005 05 06 | 608 | 0.2− | 0.5− | 2006 10 29 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2005 05 06 | 608 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.4− | 2006 11 27 | 704 | 0.1− | 0.0 | | |
| 2005 05 09 | 704 | 0.0 | 0.3+ | 2006 10 29 | G96 | 0.1+ | 0.4− | 2006 11 27 | 704 | 0.8− | 0.1+ | | |
| 2005 05 09 | 704 | 1.0− | 0.5− | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.3− | 0.1− | | |
| 2005 05 09 | 704 | 0.0 | 0.6+ | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.3− | 0.2+ | | |
| 2005 05 09 | 704 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.1− | 0.2+ | | |
| 2005 05 19 | E12 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 12 01 | 704 | 1.6− | 1.9+ | | |
| 2005 05 19 | E12 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.1+ | | |
| 2005 05 19 | E12 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.7− | 1.0+ | 2006 12 01 | 704 | 0.2+ | 1.0+ | | |
| 2005 05 29 | E12 | 0.3− | 0.4+ | 2006 11 11 | 703 | (1.7− | 2.3+) | 2006 12 01 | 704 | 0.4+ | 1.1+ | | |
| 2005 05 29 | E12 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 12 01 | 704 | 1.1+ | 0.2− | | |
| 2005 05 29 | E12 | 0.3− | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.3− | | | | | | |

**(139336)∗ 2001 KE$_{53}$ = 1994 RK$_6$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 14318)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.11709 | | (2000.0) | | | |
| $n$ | 0.25247049 | $\omega$ | 98.74729 | | +0.30238183 | +0.95306786 |
| $a$ | 2.4792993 | $\Omega$ | 188.89711 | | −0.90835075 | +0.28333280 |
| $e$ | 0.1094134 | $i$ | 5.58901 | | −0.28890161 | +0.10669667 |
| $P$ | 3.90 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.3+ | 0.1− | 2001 05 21 | 699 | (0.4+ | 1.5+) | 2006 07 21 | G96 | 0.7+ | 0.2− |
| 1994 09 11 | 691 | 0.2+ | 0.5+ | 2001 05 21 | 699 | 0.4+ | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.3− |
| 1994 09 11 | 691 | 0.4+ | 0.1+ | 2002 10 11 | 644 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1994 09 12 | 691 | 0.3− | 0.5− | 2002 10 11 | 704 | 1.2+ | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 1994 09 12 | 691 | 0.9− | 0.5− | 2002 10 11 | 704 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1− |
| 1994 09 12 | 691 | 0.8− | 0.7− | 2002 10 11 | 704 | 1.3+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 1994 09 13 | 691 | 0.7− | 0.5− | 2002 10 11 | 644 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.5+ | 1.0+ |
| 1994 09 13 | 691 | 0.3− | 0.0 | 2002 10 11 | 704 | 0.9+ | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 1994 09 13 | 691 | 0.1− | 1.1− | 2002 10 11 | 644 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 1994 09 28 | 691 | 0.8+ | 1.0+ | 2002 10 30 | 644 | 0.0 | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1994 09 28 | 691 | 0.7+ | 0.9+ | 2002 10 30 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 1994 09 28 | 691 | 0.6+ | 0.7+ | 2002 10 30 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 1997 04 02 | 704 | 1.4+ | 0.1+ | 2005 06 02 | E12 | 0.6− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 1997 04 02 | 704 | 1.1+ | 1.6+ | 2005 06 02 | E12 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 1998 10 12 | 691 | 0.1− | 0.3− | 2005 06 02 | E12 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 1998 10 12 | 691 | 0.1− | 0.1− | 2005 06 02 | E12 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1998 10 12 | 691 | 0.2− | 0.2− | 2005 06 24 | 644 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.6+ |
| 2001 05 15 | 608 | 0.1+ | 0.1− | 2005 06 24 | 644 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2001 05 15 | 608 | 0.2− | 0.5− | 2005 06 24 | 644 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 05 15 | 608 | 0.2− | 0.2− | 2005 06 24 | 644 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.3+ |
| 2001 05 18 | 704 | 0.8− | 0.3+ | 2005 06 24 | 644 | 0.1+ | 1.3− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2001 05 18 | 704 | (1.6− | 1.6+) | 2005 06 24 | 644 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 05 18 | 704 | (0.0 | 1.9+) | 2005 06 29 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2001 05 18 | 704 | 0.0 | 0.5+ | 2005 06 29 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2001 05 18 | 704 | 0.4− | 1.4+ | 2005 06 29 | 691 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2001 05 21 | 699 | 0.7− | 0.5− | 2006 07 21 | G96 | 0.4+ | 0.7− | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2001 05 21 | 699 | 1.0− | 0.0 | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1+ |

**(139337)∗ 2001 KF$_{53}$ = 2004 CH$_{114}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60760)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.69037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27520945 | $\omega$ | 309.47330 | | −0.96415882 | −0.25827247 | |
| $a$ | 2.3407794 | $\Omega$ | 215.67878 | | +0.26397075 | −0.91061624 | |
| $e$ | 0.0502932 | $i$ | 5.98081 | | +0.02678092 | −0.32260409 | |
| $P$ | 3.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 1.3− | 0.0 | 2004 02 13 | 699 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 1999 12 14 | 704 | 0.4+ | 0.6+ | 2004 02 18 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 1999 12 14 | 704 | 0.3+ | 0.4− | 2004 02 18 | 691 | 0.1− | 0.7+ | 2006 11 11 | 703 | (2.1− | 1.3−) |
| 2001 05 15 | 608 | 0.4+ | 0.6− | 2004 02 18 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.4− | 1.2− |
| 2001 05 15 | 608 | 0.1+ | 0.5− | 2005 05 15 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | (0.2+ | 5.1−) |
| 2001 05 15 | 608 | 0.0 | 0.5− | 2005 05 15 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | (0.1− | 2.3−) |
| 2001 05 18 | 704 | 0.4+ | 0.6+ | 2005 05 15 | G96 | 0.2− | 0.2+ | 2006 11 17 | 704 | (2.7+ | 0.1−) |
| 2001 05 18 | 704 | (1.9− | 1.9+) | 2005 05 15 | G96 | 0.7− | 0.2− | 2006 11 17 | 704 | (0.8− | 1.9−) |
| 2001 05 18 | 704 | 0.3− | 1.1+ | 2005 06 04 | 691 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2001 05 18 | 704 | (0.6+ | 2.1+) | 2005 06 04 | 691 | 0.0 | 0.6+ | 2006 11 17 | 704 | 1.1+ | 0.8− |
| 2001 05 18 | 704 | (0.2+ | 1.6+) | 2005 06 04 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.3− |
| 2001 05 21 | 699 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.3+ | 0.3+ |
| 2001 05 21 | 699 | 0.1+ | 0.9+ | 2005 06 13 | 691 | 0.2− | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2001 05 21 | 699 | 0.0 | 0.8+ | 2005 06 13 | 691 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.5+ | 1.0+ |
| 2001 05 21 | 699 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 1.1− | 0.6− |
| 2001 06 11 | 691 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.1+ |
| 2001 06 11 | 691 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 20 | 704 | 0.4− | 0.3+ |
| 2001 06 11 | 691 | 0.2+ | 0.3− | 2006 09 28 | G96 | 0.2− | 0.7− | 2006 11 24 | 691 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.8− | 0.7− | 2006 10 19 | 695 | 0.2− | 0.1− | 2006 11 24 | 691 | 0.4− | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 1.0+ | 2006 10 19 | 695 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.3− | 2006 11 29 | 704 | 0.9− | 0.8+ |
| 2002 10 04 | 704 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.3− | 0.9+ |
| 2004 02 13 | 699 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.5+ | 1.2+ |
| 2004 02 13 | 699 | 0.4+ | 1.0+ | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.4− | 0.8+ |
| 2004 02 13 | 699 | 0.4− | 1.0+ | 2006 11 11 | 691 | 0.1+ | 0.0 | | | | |

**(139338)∗ 2001 KV$_{53}$**

Discovered 2001 May 20 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.89517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23096237 | $\omega$ | 135.28286 | | +0.27355416 | +0.95065449 | |
| $a$ | 2.6309256 | $\Omega$ | 149.68598 | | −0.94356428 | +0.29476311 | |
| $e$ | 0.2249380 | $i$ | 16.85744 | | −0.18669379 | −0.09680266 | |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.0 | 0.0 | 2005 03 10 | 703 | 0.4+ | 0.3− | 2005 04 16 | 703 | 0.1− | 0.4− |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2005 03 10 | 703 | 0.6+ | 0.0 | 2005 05 02 | 703 | 0.4− | 0.6+ |
| 2001 05 20 | 608 | 0.3− | 0.6− | 2005 03 18 | 703 | 0.6+ | 0.7+ | 2005 05 02 | 703 | 0.2− | 0.2+ |
| 2001 05 20 | 608 | 0.3− | 0.8− | 2005 03 18 | 703 | 0.1+ | 0.4− | 2005 05 02 | 703 | 0.6− | 0.3− |
| 2001 05 20 | 608 | 0.5− | 0.8− | 2005 03 18 | 703 | 0.5− | 0.9− | 2005 05 02 | 703 | 0.0 | 0.4+ |
| 2001 05 21 | 699 | 0.2+ | 0.2+ | 2005 03 18 | 703 | 0.5− | 0.0 | 2006 09 20 | 703 | 0.5− | 0.4− |
| 2001 05 21 | 699 | 0.5+ | 0.0 | 2005 03 31 | 703 | 0.6− | 0.1− | 2006 09 20 | 703 | 0.2− | 0.3− |
| 2001 05 21 | 699 | 0.3+ | 0.5− | 2005 03 31 | 703 | 0.4− | 0.3+ | 2006 09 20 | 703 | 0.7− | 0.3− |
| 2001 05 21 | 699 | 0.7− | 0.0 | 2005 03 31 | 703 | 0.5+ | 0.5+ | 2006 09 20 | 703 | 0.6+ | 0.0 |
| 2001 06 19 | 704 | 0.5− | 0.6− | 2005 03 31 | 703 | 0.6− | 0.4+ | 2006 09 25 | 703 | 0.0 | 0.8+ |
| 2001 06 19 | 704 | 0.4+ | 0.2+ | 2005 04 06 | 703 | 1.2+ | 0.5+ | 2006 09 25 | 703 | 0.4+ | 0.5+ |
| 2001 06 19 | 704 | 0.2− | 0.3− | 2005 04 06 | 703 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.1+ | 0.8− |
| 2001 06 27 | 608 | 0.2+ | 1.0+ | 2005 04 06 | 703 | 0.4− | 0.5+ | 2006 09 25 | 703 | 0.3+ | 0.0 |
| 2001 06 27 | 608 | 0.5+ | 1.0+ | 2005 04 06 | 703 | 0.9+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2001 06 27 | 608 | 0.5+ | 0.8+ | 2005 04 09 | 703 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2002 10 06 | 644 | 0.2− | 0.6+ | 2005 04 09 | 703 | 0.1+ | 0.7− | 2006 10 09 | 644 | 0.4− | 0.1− |
| 2002 10 06 | 644 | 0.2+ | 1.0+ | 2005 04 09 | 703 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2002 10 06 | 644 | 0.1− | 0.1− | 2005 04 09 | 703 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2005 03 03 | 703 | 0.2− | 1.2+ | 2005 04 11 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 644 | 0.8+ | 0.1− |
| 2005 03 03 | 703 | 0.2− | 0.1+ | 2005 04 11 | 704 | 1.2+ | 0.4− | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2005 03 03 | 703 | 1.0− | 0.1− | 2005 04 11 | 704 | 1.1+ | 0.5+ | 2006 10 24 | 644 | 0.2− | 0.0 |
| 2005 03 03 | 703 | 0.6− | 0.7− | 2005 04 16 | 703 | 0.4− | 0.9+ | 2006 10 24 | 644 | 0.2− | 0.3+ |
| 2005 03 10 | 703 | 0.1+ | 0.9− | 2005 04 16 | 703 | 0.1− | 1.2− | | | | |
| 2005 03 10 | 703 | 0.2− | 0.2− | 2005 04 16 | 703 | 0.1− | 0.0 | | | | |

**(139339)∗ 2001 KA$_{57}$**

Discovered 2001 May 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.45320 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23620008 | $\omega$ | 109.43824 | | +0.47587841 | +0.87873062 | |
| $a$ | 2.5918868 | $\Omega$ | 189.24461 | | −0.86837946 | +0.46275858 | |
| $e$ | 0.1918712 | $i$ | 13.33165 | | −0.13948781 | +0.11699144 | |
| $P$ | 4.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 25 | 699 | 0.2+ | 0.1− | 2005 04 18 | 703 | 1.1− | 1.2+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2001 04 25 | 699 | 0.0 | 0.9− | 2005 04 18 | 703 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2001 04 25 | 699 | 0.0 | 0.6+ | 2005 05 06 | 704 | 1.0+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2001 04 25 | 699 | 0.5+ | 0.1+ | 2005 05 06 | 704 | 1.1+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.3− |
| 2001 05 18 | 699 | 0.2+ | 0.5− | 2005 05 06 | 704 | 0.8+ | 0.7+ | 2006 09 20 | 704 | 0.3+ | 0.2+ |
| 2001 05 18 | 699 | 0.5− | 0.0 | 2005 05 06 | 704 | 1.2+ | 0.2− | 2006 09 20 | 704 | (1.9− | 1.5+) |
| 2001 05 18 | 699 | 0.2− | 0.2+ | 2005 05 08 | 703 | (0.8+ | 1.6+) | 2006 09 20 | 704 | 0.5+ | 0.7+ |
| 2001 05 18 | 699 | 1.0− | 0.3+ | 2005 05 08 | 703 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 1.3− | 0.7+ |
| 2001 05 23 | 704 | 0.6− | 0.4+ | 2005 05 08 | 703 | 0.8− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.2− |
| 2001 05 23 | 704 | 0.3+ | 0.7+ | 2005 05 08 | 703 | 1.3− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.0 |
| 2001 05 23 | 704 | 0.1+ | 0.3− | 2005 05 11 | 699 | (1.7+ | 2.0+) | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 2001 05 29 | 704 | 0.3+ | 0.3+ | 2005 05 11 | 699 | 0.3− | 0.8+ | 2006 09 25 | 691 | 0.1− | 0.7+ |
| 2001 05 29 | 704 | 0.7+ | 0.5− | 2005 05 11 | 699 | 0.5+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2001 05 29 | 704 | 0.7− | 0.0 | 2005 05 11 | 699 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2001 05 29 | 704 | 0.0 | 0.8− | 2005 05 13 | 703 | 0.8− | 1.0− | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2002 10 31 | 704 | 0.1+ | 0.7+ | 2005 05 13 | 703 | 0.0 | 1.1− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2002 10 31 | 704 | 0.6− | 1.0+ | 2005 05 13 | 703 | 0.5− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2002 10 31 | 704 | 1.5+ | 1.2+ | 2005 05 13 | 703 | 0.7− | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 2002 10 31 | 704 | 0.5− | 0.8+ | 2005 05 14 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | (0.2− | 1.9+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.3− | 1.1+ | 2005 05 14 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.8− | 1.1+ |
| 2005 03 14 | G96 | 0.6− | 0.3+ | 2005 05 14 | 691 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.3− |
| 2005 03 14 | G96 | 0.5− | 0.1− | 2005 05 18 | 644 | 0.4+ | 0.2− | 2006 09 28 | 704 | 0.9− | 0.0 |
| 2005 03 14 | G96 | 0.5− | 0.0 | 2005 05 18 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.5+ |
| 2005 03 14 | G96 | 0.9− | 0.5+ | 2005 05 18 | 644 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.3− | 1.1+ |
| 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.3− | 0.9+ |
| 2005 03 17 | 691 | 0.0 | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.6− | 0.8+ |
| 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.2− | 0.7+ |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 1.3+ | 0.2− | 2006 10 01 | 704 | 0.3+ | 0.6+ |
| 2005 04 02 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.7+ | 0.1− | 2006 10 16 | 703 | (0.2− | 1.6+) |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 1.0+ | 1.3+ | 2006 10 16 | 703 | (0.5− | 1.7+) |
| 2005 04 05 | 703 | 0.4− | 0.5+ | 2006 08 30 | 699 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.9+ |
| 2005 04 05 | 704 | 1.3+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.6− | 2006 10 16 | 703 | 0.1+ | 1.0+ |
| 2005 04 05 | 703 | 0.6− | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2005 04 05 | 703 | 0.9− | 0.7+ | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2005 04 05 | 704 | 0.4− | 0.4− | 2006 09 14 | 703 | 0.7− | 1.2− | 2006 10 19 | 644 | 0.4− | 0.3+ |
| 2005 04 05 | 703 | 0.9− | 1.0+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2005 04 05 | 704 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2005 04 05 | 704 | 1.4+ | 0.7− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 04 13 | 704 | 1.0+ | 0.5− | 2006 09 17 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2005 04 13 | 704 | 0.6+ | 0.0 | 2006 09 17 | 704 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 04 13 | 704 | 0.9+ | 0.7+ | 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 04 15 | 699 | (1.6+ | 0.4+) | 2006 09 17 | 704 | 0.9+ | 0.2+ | 2006 10 22 | 703 | 1.1− | 0.1+ |
| 2005 04 15 | 699 | 0.4− | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 0.5+ | 0.1+ |
| 2005 04 15 | 699 | 0.9+ | 0.3− | 2006 09 18 | 699 | 0.7+ | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2005 04 15 | 699 | 0.7+ | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2005 04 18 | 703 | 1.1− | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.4+ | | | | |
| 2005 04 18 | 703 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.8− | | | | |

**(139340)∗ 2001 KB$_{58}$ = 2005 GH$_{126}$**

Discovered 2001 May 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 74990)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.34973 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23356573 | $\omega$ | 200.68910 | | +0.51257911 | | +0.84553631 |
| $a$ | 2.6113393 | $\Omega$ | 100.41626 | | −0.76489321 | | +0.52872232 |
| $e$ | 0.1852116 | $i$ | 8.73935 | | −0.39012950 | | +0.07430387 |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 699 | 1.0+ | 0.6+ | 2005 03 17 | 703 | (1.6− | 1.3−) | 2005 05 11 | 703 | 0.5− | 1.4− |
| 2001 05 21 | 699 | 1.0+ | 0.3− | 2005 04 04 | 683 | 0.4+ | 0.5− | 2005 05 11 | 703 | 0.6− | 0.6− |
| 2001 05 21 | 699 | 0.2− | 0.1− | 2005 04 04 | 683 | (1.9+ | 0.8+) | 2005 05 11 | 703 | (1.7− | 1.3−) |
| 2001 05 21 | 699 | 0.1− | 0.8+ | 2005 04 04 | 683 | 0.1− | 0.7− | 2005 05 18 | 644 | 0.0 | 0.0 |
| 2001 05 24 | 926 | 0.3− | 0.1− | 2005 04 04 | 703 | 0.2+ | 0.0 | 2005 05 18 | 644 | 0.1− | 0.1− |
| 2001 05 24 | 926 | 0.2− | 0.1+ | 2005 04 04 | 703 | 0.1− | 0.4+ | 2005 05 18 | 644 | 0.2+ | 0.1+ |
| 2001 05 24 | 926 | 0.5− | 0.3− | 2005 04 04 | 703 | 0.9− | 1.2+ | 2005 05 27 | J95 | 0.8+ | 0.3− |
| 2001 05 26 | 704 | 0.1− | 0.3− | 2005 04 04 | 703 | 0.6− | 0.7+ | 2005 05 27 | J95 | 0.2+ | 0.8− |
| 2001 05 26 | 704 | 0.1+ | 0.2+ | 2005 04 10 | 683 | 0.5− | 0.2+ | 2006 09 20 | 703 | (0.2− | 1.6−) |
| 2001 05 26 | 704 | 0.5+ | 0.6+ | 2005 04 10 | 683 | (0.9− | 2.3+) | 2006 09 20 | 703 | 0.3+ | 0.3− |
| 2001 05 26 | 704 | 0.3− | 0.1− | 2005 04 11 | 683 | 0.7+ | 1.2− | 2006 09 20 | 703 | 0.4+ | 0.2− |
| 2001 05 26 | 704 | 0.2+ | 0.5− | 2005 04 11 | 683 | (0.5− | 1.9−) | 2006 09 20 | 703 | 1.5+ | 0.0 |
| 2001 05 29 | 704 | (0.2− | 1.7+) | 2005 04 13 | 703 | 0.7− | 0.5+ | 2006 09 26 | 703 | 0.8+ | 1.3− |
| 2001 05 29 | 704 | 0.5− | 0.9+ | 2005 04 13 | 703 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.9+ | 0.0 |
| 2001 05 29 | 704 | 0.2+ | 0.2− | 2005 04 13 | 703 | 0.8− | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2001 06 12 | 699 | 0.2− | 0.6+ | 2005 04 13 | 703 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.0 |
| 2001 06 12 | 699 | 0.6+ | 1.0+ | 2005 04 15 | 699 | 0.5− | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.4− |
| 2001 06 12 | 699 | 0.2+ | 1.0+ | 2005 04 15 | 699 | 1.1+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2001 06 12 | 699 | 0.1+ | 0.0 | 2005 04 15 | 699 | 0.6+ | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.7− | 0.9+ | 2005 04 15 | 699 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2002 10 31 | 704 | 0.2− | 0.9+ | 2005 05 04 | 703 | 0.7− | 0.3+ | 2006 10 28 | 703 | 0.6− | 0.3− |
| 2002 10 31 | 704 | (1.5− | 2.3+) | 2005 05 04 | 703 | 0.5− | 0.2− | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2005 03 17 | 703 | (0.3− | 1.6−) | 2005 05 04 | 703 | 0.7+ | 0.6− | 2006 10 28 | 703 | 0.3− | 0.4− |
| 2005 03 17 | 703 | 0.3− | 0.1− | 2005 05 04 | 703 | 1.3− | 0.7+ | 2006 10 28 | 703 | 1.1− | 0.5− |
| 2005 03 17 | 703 | 0.8− | 0.9− | 2005 05 11 | 703 | 1.2− | 1.2− | | | | |

**(139341)∗ 2001 KQ$_{58}$**

Discovered 2001 May 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.69505 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22971571 | $\omega$ | 107.01949 | | +0.67131698 | | +0.73570999 |
| $a$ | 2.6404357 | $\Omega$ | 205.84427 | | −0.73390928 | | +0.64292463 |
| $e$ | 0.2894558 | $i$ | 11.88814 | | −0.10349244 | | +0.21302285 |
| $P$ | 4.29 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1− | 0.0 | 2005 04 10 | 691 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2000 03 04 | 645 | 0.0 | 0.1− | 2005 04 10 | G96 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2001 05 26 | 704 | 0.4− | 0.2− | 2005 04 10 | 691 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.4− | 0.4+ |
| 2001 05 26 | 704 | 0.2− | 0.8− | 2005 04 10 | G96 | 0.3− | 0.3+ | 2006 11 01 | 703 | 1.0− | 0.6+ |
| 2001 05 26 | 704 | 0.5+ | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.7− | 0.5+ |
| 2001 05 26 | 704 | 0.5+ | 1.0− | 2005 04 17 | 691 | 0.0 | 0.4+ | 2006 11 01 | 703 | 0.4− | 0.3+ |
| 2001 05 29 | 704 | (1.6− | 0.0 ) | 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2001 05 29 | 704 | 0.5− | 0.4− | 2005 05 14 | 691 | 0.6+ | 0.0 | 2006 11 10 | 644 | 0.3+ | 0.5+ |
| 2001 05 29 | 704 | 0.4− | 0.9+ | 2005 05 14 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.4+ | 0.3+ |
| 2001 06 12 | 691 | 0.0 | 0.0 | 2005 05 14 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 2001 06 12 | 691 | 0.1+ | 0.2+ | 2005 05 18 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.2− |
| 2001 06 12 | 691 | 0.1− | 0.1+ | 2005 05 18 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 2001 06 12 | 608 | 0.0 | 1.1− | 2005 05 18 | 644 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 06 12 | 608 | 0.1+ | 1.0− | 2005 06 25 | 644 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2001 06 12 | 608 | 0.1− | 0.7− | 2005 06 25 | 644 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2001 06 21 | 704 | 0.2− | 0.6+ | 2005 06 25 | 644 | 0.5− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.5+ |
| 2001 06 21 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 14 | 704 | 1.3+ | 0.8+ |
| 2001 06 21 | 704 | 0.1− | 1.1+ | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.7+ | 0.7+ |
| 2001 06 21 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.7+ | 2006 11 14 | 704 | (1.6+ | 0.4−) |
| 2001 08 04 | 644 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 08 04 | 644 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2001 08 04 | 644 | 0.2+ | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2001 08 04 | 644 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2001 08 04 | 644 | 0.4+ | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.6− | 1.6+ |
| 2001 08 04 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.3− | 2006 11 19 | 703 | 0.7+ | 1.1+ |
| 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.7+ | 2006 11 19 | 703 | 1.4+ | 0.7− |
| 2005 04 05 | G96 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.3+ | 1.0+ | 2006 11 19 | 703 | 0.5− | 0.6+ |
| 2005 04 05 | G96 | 0.5− | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.5− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 04 05 | G96 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2005 04 10 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 04 10 | G96 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ | | | | |

**(139342)∗ 2001 KF$_{60}$**

Discovered 2001 May 27 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.43454 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26486604 | $\omega$ | 178.99806 | | −0.06975472 | | +0.99296291 |
| $a$ | 2.4013301 | $\Omega$ | 86.99742 | | −0.91591252 | | −0.02573659 |
| $e$ | 0.0760239 | $i$ | 5.49932 | | −0.39527019 | | −0.11559532 |
| $P$ | 3.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.0 | 0.3− | 2002 09 15 | 608 | 0.7− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 1997 03 02 | 691 | 0.1− | 0.2− | 2002 09 28 | 608 | (1.8− | 0.0 ) | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1997 03 02 | 691 | 0.1− | 0.1− | 2002 09 28 | 608 | 1.1− | 0.6− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 04 25 | 699 | 0.6+ | 0.7+ | 2002 09 28 | 608 | 1.1− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 04 25 | 699 | 0.5+ | 0.3+ | 2002 10 04 | 704 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 04 25 | 699 | 0.2− | 0.2+ | 2002 10 04 | 704 | 0.6− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 04 25 | 699 | 0.0 | 0.6+ | 2002 10 04 | 704 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 05 03 | 608 | 0.1− | 0.0 | 2002 10 04 | 704 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.7− | 0.3+ |
| 2001 05 03 | 608 | 0.0 | 0.2+ | 2002 10 04 | 704 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.3+ |
| 2001 05 03 | 608 | 0.0 | 0.3+ | 2003 12 22 | 704 | (0.5− | 1.9+) | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 2001 05 18 | 704 | 1.2+ | 0.7− | 2003 12 22 | 704 | 0.8+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.4+ | 1.2+ | 2006 11 11 | 703 | 0.2+ | 0.3+ | | |
| 2001 05 18 | 704 | 0.0 | 0.5+ | 2004 02 13 | 699 | 0.8+ | 0.4+ | 2006 11 14 | 704 | 1.0+ | 0.2+ | | |
| 2001 05 24 | 699 | 1.2− | 0.8+ | 2004 02 13 | 699 | 0.3− | 0.8− | 2006 11 14 | 704 | 0.5+ | 0.0 | | |
| 2001 05 24 | 699 | 0.8− | 0.3+ | 2004 02 13 | 699 | 0.3− | 0.5+ | 2006 11 14 | 704 | 0.4+ | 0.1− | | |
| 2001 05 24 | 699 | 0.3− | 0.1+ | 2004 02 13 | 699 | 1.1− | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.3− | | |
| 2001 05 24 | 699 | 0.5− | 0.4− | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.4− | 0.1+ | | |
| 2001 05 27 | 608 | 0.9+ | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 17 | 704 | (1.6− | 1.5−) | | |
| 2001 05 27 | 608 | 0.7+ | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.1− | 0.5+ | | |
| 2001 05 27 | 608 | 1.0+ | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2001 05 29 | 644 | (0.3+ | 2.1+) | 2006 10 16 | 703 | 0.2+ | 0.9− | 2006 11 17 | G96 | 0.2− | 0.1− | | |
| 2001 05 29 | 644 | (0.4+ | 1.9+) | 2006 10 16 | 703 | 1.0− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2− | | |
| 2001 05 29 | 644 | (0.4+ | 1.7+) | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2001 06 12 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.9+ | 2006 11 20 | 704 | 0.8− | 0.7+ | | |
| 2001 06 12 | 644 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.9− | 0.1+ | | |
| 2001 06 12 | 644 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.6− | 0.5+ | | |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 20 | 704 | (1.6− | 0.1+) | | |
| 2002 09 05 | 645 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.3− | 1.0+ | | |
| 2002 09 15 | 608 | 1.4− | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | | | | | | |
| 2002 09 15 | 608 | 0.8− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ | | | | | | |

**(139343)∗ 2001 KC$_{62}$ = 2002 TB$_{245}$**

Discovered 2001 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40147)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *M* | 87.32327 | | | (2000.0) | | **P** | | **Q** | |
| *n* | 0.25805498 | $\omega$ | 213.25821 | | | +0.47439612 | | +0.87230941 | |
| *a* | 2.4433999 | $\Omega$ | 85.31416 | | | −0.77953342 | | +0.47877000 | |
| *e* | 0.0851243 | *i* | 6.82416 | | | −0.40899386 | | +0.09927528 | |
| *P* | 3.82 | *H* | 16.3 | *G* | 0.15 | | *U* | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.1− | 0.2− | 2002 11 07 | 704 | 0.9− | 0.9− | 2006 11 01 | 703 | 1.4+ | 0.4+ | | |
| 2001 05 18 | 704 | 0.3+ | 1.0+ | 2002 11 07 | 704 | 1.2− | 0.9− | 2006 11 01 | 703 | 0.0 | 0.8+ | | |
| 2001 05 18 | 704 | 0.3+ | 0.9+ | 2002 11 07 | 704 | 0.1− | 0.7− | 2006 11 01 | 703 | (2.0− | 2.5+) | | |
| 2001 05 18 | 704 | 0.5+ | 1.2+ | 2003 12 29 | 291 | 0.7− | 0.1+ | 2006 11 01 | 703 | (1.9+ | 2.0+) | | |
| 2001 05 18 | 704 | 0.6− | 1.4+ | 2003 12 29 | 291 | 0.5− | 0.1+ | 2006 11 08 | 644 | 0.5− | 0.1− | | |
| 2001 05 24 | 699 | 0.1+ | 1.4+ | 2003 12 29 | 291 | 1.0− | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.2+ | | |
| 2001 05 24 | 699 | 1.1+ | 0.1+ | 2004 01 16 | 644 | 0.5+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2001 05 24 | 699 | 0.0 | 0.2− | 2004 01 16 | 644 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.7− | 0.1+ | | |
| 2001 05 24 | 699 | 0.7+ | 1.3+ | 2004 01 16 | 644 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1− | | |
| 2002 10 07 | 608 | (0.1− | 1.5+) | 2004 01 30 | 704 | 0.5+ | 0.7− | 2006 11 08 | 644 | 0.4− | 0.0 | | |
| 2002 10 07 | 608 | (0.0 | 1.6+) | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 07 | 608 | (0.5− | 1.7+) | 2004 01 30 | 704 | (0.3− | 2.3+) | 2006 11 09 | 644 | 0.2− | 0.0 | | |
| 2002 10 11 | 644 | 0.1− | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1− | | |
| 2002 10 11 | 644 | 0.0 | 0.6+ | 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.6− | 1.1+ | | |
| 2002 10 11 | 644 | 0.1− | 0.7+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.9+ | 1.0+ | | |
| 2002 10 15 | 644 | 0.2− | 1.3+ | 2004 02 15 | 704 | 0.9+ | 0.8+ | 2006 11 11 | 703 | (1.7− | 0.4−) | | |
| 2002 10 15 | 644 | 0.1+ | 1.0+ | 2004 02 15 | 704 | 0.8+ | 1.1+ | 2006 11 11 | 703 | 1.5+ | 0.0 | | |
| 2002 10 15 | 644 | 0.3+ | 1.2+ | 2004 02 15 | 704 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.5+ | | |
| 2002 10 31 | 704 | 0.7− | 0.4+ | 2004 02 15 | 704 | (0.4+ | 1.9+) | 2006 11 17 | 704 | 0.3− | 0.7− | | |
| 2002 10 31 | 704 | 0.2− | 0.7+ | 2004 02 18 | 691 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.8− | 0.2− | | |
| 2002 10 31 | 704 | 0.4− | 0.2+ | 2004 02 18 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.4− | 0.4+ | | |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2004 02 18 | 691 | 0.5+ | 0.1− | 2006 11 17 | 704 | (1.8− | 0.0 ) | | |
| 2002 10 31 | 704 | 1.2− | 0.5+ | 2006 10 16 | 703 | 0.3− | 1.2− | 2006 11 20 | 704 | 0.4− | 1.2+ | | |
| 2002 11 07 | 704 | 0.6+ | 1.4+ | 2006 10 16 | 703 | 0.5− | 0.8+ | 2006 11 20 | 704 | (0.1− | 1.6+) | | |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.8− | 0.3− | 2006 11 20 | 704 | 1.0+ | 0.2+ | | |
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.9− | | | | | | |

**(139344)∗ 2001 KH$_{66}$ = 2002 RR$_{128}$**

Discovered 2001 May 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37657)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *M* | 214.47545 | | | (2000.0) | | **P** | | **Q** | |
| *n* | 0.26757407 | $\omega$ | 324.17451 | | | −0.92703335 | | −0.36065833 | |
| *a* | 2.3851006 | $\Omega$ | 195.68939 | | | +0.36552643 | | −0.93022444 | |
| *e* | 0.1219310 | *i* | 22.30584 | | | −0.08366358 | | −0.06788278 | |
| *P* | 3.68 | *H* | 15.9 | *G* | 0.15 | | *U* | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 23 | 699 | 0.1+ | 0.9+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.5+ | 0.0 | | |
| 2001 03 23 | 699 | 0.7− | 0.3+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 25 | 704 | (1.7+ | 0.0 ) | | |
| 2001 03 23 | 699 | 0.5+ | 0.2− | 2005 06 20 | 644 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.4+ | 1.0+ | | |
| 2001 03 23 | 699 | 0.3− | 0.5− | 2005 06 20 | 644 | 0.1− | 0.2+ | 2006 09 25 | 704 | 1.1+ | 0.6+ | | |
| 2001 04 15 | 704 | 0.6+ | 0.2+ | 2005 06 20 | 644 | 0.1− | 0.0 | 2006 09 25 | 704 | 1.4+ | 0.5− | | |
| 2001 04 15 | 704 | (1.7+ | 1.2−) | 2005 06 23 | 644 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.8+ | | |
| 2001 04 15 | 704 | (0.4− | 2.0−) | 2005 06 23 | 644 | 0.0 | 0.2− | 2006 09 27 | 699 | 0.3+ | 0.7− | | |
| 2001 04 15 | 704 | 0.8+ | 0.2− | 2005 06 23 | 644 | 0.1+ | 0.0 | 2006 09 27 | 699 | 0.7+ | 0.6− | | |
| 2001 04 24 | 704 | 0.3− | 0.6+ | 2005 07 17 | 644 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.6+ | | |
| 2001 04 24 | 704 | 1.3− | 0.8+ | 2005 07 17 | 644 | 0.1+ | 0.2− | 2006 09 27 | 699 | 0.1+ | 1.0+ | | |
| 2001 04 24 | 704 | 0.1− | 0.0 | 2005 07 17 | 644 | 0.2− | 0.1+ | 2006 09 29 | 704 | 1.2− | 0.1+ | | |
| 2001 04 24 | 704 | 0.7+ | 0.9+ | 2005 07 30 | 644 | 0.1− | 0.1− | 2006 09 29 | 704 | 1.0− | 1.2+ | | |
| 2001 05 20 | 608 | 0.5+ | 0.9− | 2005 07 30 | 644 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.5− | 0.2+ | | |
| 2001 05 20 | 608 | 0.1+ | 0.2− | 2005 07 30 | 644 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.6− | 0.0 | | |
| 2001 05 20 | 608 | 0.7+ | 0.5− | 2006 09 17 | 703 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2001 05 22 | 699 | 0.9− | 0.2− | 2006 09 17 | 703 | 0.8− | 0.4− | 2006 09 30 | 691 | 0.4− | 0.2+ | | |
| 2001 05 22 | 699 | 0.1+ | 1.1+ | 2006 09 17 | 703 | 0.8+ | 0.1− | 2006 09 30 | 691 | 0.5− | 0.2+ | | |
| 2001 05 22 | 699 | 0.6− | 0.2− | 2006 09 17 | 703 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.3− | 0.3− | | |
| 2001 05 22 | 699 | 0.5− | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.0 | 0.1− | | |
| 2001 05 23 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 703 | (1.8− | 0.4+) | 2006 10 17 | 703 | 0.5− | 0.3+ | | |
| 2001 05 23 | 704 | 0.7− | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.3+ | | |
| 2001 05 23 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.8− | 2006 10 17 | 703 | 0.8− | 0.5+ | | |
| 2001 05 23 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 10 17 | G96 | 0.8+ | 0.0 | | |
| 2001 05 23 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.8+ | | |
| 2002 08 14 | 644 | 0.0 | 0.4+ | 2006 09 18 | 703 | 1.1− | 0.8− | 2006 10 17 | 703 | 1.0+ | 0.2+ | | |
| 2002 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 291 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2002 08 14 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 291 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2002 09 10 | 644 | 0.1− | 0.1− | 2006 09 18 | 291 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2002 09 10 | 644 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2002 09 10 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.2− | | |
| 2002 09 11 | 644 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.2− | | |
| 2002 09 11 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.6− | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2002 09 11 | 644 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | (1.8+ | 0.3−) | | | | | | |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 09 19 | 699 | 1.3+ | 1.0+ | | | | | | |

**(139345)∗ 2001 KA$_{67}$**

Discovered 2001 May 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *M* | 90.49078 | | | (2000.0) | | **P** | | **Q** | |
| *n* | 0.40659640 | $\omega$ | 37.44655 | | | −0.78769448 | | −0.49885452 | |
| *a* | 1.8045145 | $\Omega$ | 108.78713 | | | +0.43120472 | | −0.86552540 | |
| *e* | 0.7018059 | *i* | 22.44789 | | | +0.43999989 | | −0.04483254 | |
| *P* | 2.42 | *H* | 16.7 | *G* | 0.15 | | *U* | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 30 | 699 | 1.0+ | 0.4+ | 2001 06 11 | 360 | 0.0 | 0.5+ | 2001 06 25 | 118 | 0.2+ | 0.2+ | | |
| 2001 05 30 | 699 | 0.5+ | 0.1− | 2001 06 11 | 360 | 0.0 | 0.5+ | 2001 06 25 | 127 | 0.3+ | 0.0 | | |
| 2001 05 30 | 699 | 0.8+ | 0.2+ | 2001 06 11 | 300 | (1.5− | 0.2+) | 2001 06 25 | 127 | 0.1+ | 0.1+ | | |
| 2001 05 30 | 699 | 0.6+ | 0.2+ | 2001 06 11 | 360 | 0.0 | 0.5+ | 2001 06 25 | 071 | (0.1− | 1.9+) | | |
| 2001 05 30 | 198 | 0.3+ | 0.3+ | 2001 06 11 | 300 | 0.6+ | 0.1+ | 2001 06 25 | 071 | 0.5− | 0.4− | | |
| 2001 05 30 | 163 | 0.3− | 0.3− | 2001 06 11 | 151 | (0.3− | 1.7−) | 2001 06 25 | 071 | 0.4− | 1.4− | | |
| 2001 05 30 | 165 | 0.5− | 0.5+ | 2001 06 11 | 151 | 0.1+ | 0.5− | 2001 06 25 | 557 | 0.1− | 0.2+ | | |
| 2001 05 30 | 163 | 0.1− | 1.3+ | 2001 06 11 | 151 | 1.0− | 0.3− | 2001 06 25 | 557 | 0.1− | 0.3+ | | |
| 2001 05 30 | 163 | 0.9− | 0.0 | 2001 06 11 | 151 | 0.4− | 0.8− | 2001 06 25 | 636 | 0.1− | 0.8− | | |
| 2001 05 30 | 163 | 0.1− | 0.2+ | 2001 06 11 | 151 | 0.1− | 0.5− | 2001 06 25 | 636 | 0.3+ | 0.1− | | |
| 2001 05 30 | 163 | 0.0 | 0.9+ | 2001 06 11 | 151 | 0.4− | 0.8− | 2001 06 25 | 636 | 0.6+ | 0.7− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 30 | 163 | 0.5− | 0.9+ | 2001 06 11 | 587 | 0.1− | 0.3+ | 2001 06 25 | 557 | 0.1+ | 0.1− |
| 2001 05 30 | 165 | 0.4− | 0.6+ | 2001 06 11 | 587 | 0.3+ | 0.1− | 2001 06 26 | 557 | 0.0 | 0.0 |
| 2001 05 30 | 165 | (0.5+ | 2.2+) | 2001 06 11 | 587 | 0.0 | 0.0 | 2001 06 26 | 557 | 0.3− | 1.0+ |
| 2001 05 30 | 165 | 0.3− | 0.5− | 2001 06 12 | 151 | 0.5− | 0.4+ | 2001 06 26 | 557 | 0.2+ | 0.2+ |
| 2001 05 30 | 046 | 0.3+ | 0.1− | 2001 06 12 | 151 | 0.6− | 0.3− | 2001 06 26 | 919 | 0.7− | 0.3+ |
| 2001 05 30 | 046 | 0.1− | 0.1− | 2001 06 12 | 151 | 0.0 | 0.3+ | 2001 06 26 | 919 | 0.2+ | 0.2− |
| 2001 05 30 | 046 | 0.3− | 0.1− | 2001 06 12 | 151 | 0.4+ | 0.1+ | 2001 06 26 | 919 | 0.2+ | 0.3− |
| 2001 05 30 | 046 | 0.5+ | 0.2+ | 2001 06 12 | 151 | 0.2− | 0.0 | 2001 06 26 | 151 | 0.3+ | 0.2+ |
| 2001 05 30 | 118 | 0.4− | 0.3− | 2001 06 12 | 151 | 0.1+ | 0.2− | 2001 06 26 | 557 | 0.0 | 0.1+ |
| 2001 05 30 | 118 | 0.1− | 0.7+ | 2001 06 13 | 118 | 0.3+ | 0.1+ | 2001 06 26 | 151 | 0.7+ | 0.0 |
| 2001 05 30 | 118 | 0.5− | 0.1− | 2001 06 13 | 118 | 0.1+ | 0.1+ | 2001 06 26 | 151 | 0.1− | 0.2+ |
| 2001 05 30 | 118 | 0.3− | 0.1+ | 2001 06 13 | 118 | 0.1+ | 0.0 | 2001 06 26 | 560 | (0.6+ | 3.0−) |
| 2001 05 30 | 198 | (2.5+ | 3.0+) | 2001 06 13 | 670 | 0.3− | 0.2+ | 2001 06 26 | 151 | 0.1+ | 0.0 |
| 2001 05 30 | 012 | 0.1− | 0.2− | 2001 06 13 | 670 | 0.1+ | 0.3− | 2001 06 26 | 560 | (0.3+ | 3.1−) |
| 2001 05 30 | 012 | 0.2− | 0.6− | 2001 06 13 | 670 | 0.1− | 0.4− | 2001 06 26 | 151 | 0.0 | 0.4+ |
| 2001 05 30 | 012 | 0.1− | 0.5− | 2001 06 14 | 699 | 0.8+ | 0.1+ | 2001 06 26 | 151 | 0.2+ | 0.2− |
| 2001 05 30 | 012 | 0.4− | 0.5− | 2001 06 14 | 699 | 0.9+ | 0.2+ | 2001 06 26 | 560 | (0.9+ | 2.1−) |
| 2001 05 30 | 012 | 0.3− | 0.5− | 2001 06 14 | 699 | 0.9+ | 0.3+ | 2001 06 26 | 557 | 0.0 | 0.1− |
| 2001 05 31 | 918 | 0.1− | 0.2− | 2001 06 14 | 699 | 0.7+ | 0.3+ | 2001 06 26 | 560 | (0.1+ | 2.6−) |
| 2001 05 31 | 918 | 0.1− | 0.2− | 2001 06 14 | 151 | 0.2− | 0.0 | 2001 06 26 | 557 | 0.0 | 0.0 |
| 2001 05 31 | 918 | 0.3− | 0.0 | 2001 06 14 | 151 | 0.1+ | 0.7+ | 2001 06 26 | 557 | 0.0 | 0.1+ |
| 2001 05 31 | 918 | 0.1− | 0.2+ | 2001 06 14 | 151 | 0.2− | 0.4+ | 2001 06 26 | 557 | 0.0 | 0.0 |
| 2001 05 31 | 711 | 0.1+ | 0.2+ | 2001 06 14 | 151 | 0.0 | 0.3+ | 2001 06 27 | 557 | 0.2− | 0.3+ |
| 2001 05 31 | 711 | 0.0 | 0.2− | 2001 06 14 | 151 | 0.2− | 0.4+ | 2001 06 27 | 608 | 0.1− | 1.1− |
| 2001 05 31 | 711 | 0.2+ | 0.1− | 2001 06 14 | 151 | 0.1− | 0.4+ | 2001 06 27 | 644 | 0.5+ | 0.2+ |
| 2001 05 31 | 699 | 0.2− | 0.1+ | 2001 06 15 | 157 | 0.1+ | 0.3− | 2001 06 27 | 608 | 0.1− | 0.7− |
| 2001 05 31 | 658 | 0.1+ | 0.2+ | 2001 06 15 | 157 | 0.6− | 0.6− | 2001 06 27 | 608 | 0.0 | 0.6− |
| 2001 05 31 | 658 | 0.0 | 0.2+ | 2001 06 15 | 157 | 0.2− | 0.1− | 2001 06 27 | 644 | 0.3+ | 0.1+ |
| 2001 05 31 | 699 | 0.0 | 0.1+ | 2001 06 15 | 118 | 0.3− | 0.5+ | 2001 06 27 | 644 | 0.4+ | 0.0 |
| 2001 05 31 | 658 | 0.1− | 0.1+ | 2001 06 15 | 118 | 0.1− | 0.4+ | 2001 06 27 | 608 | 0.2+ | 0.3− |
| 2001 05 31 | 699 | 0.2− | 0.1+ | 2001 06 15 | 118 | 0.2− | 0.3+ | 2001 06 27 | 608 | 0.1+ | 0.7− |
| 2001 05 31 | 699 | (1.7− | 2.5+) | 2001 06 16 | 670 | 0.1+ | 0.2− | 2001 06 27 | 608 | 0.1+ | 0.5− |
| 2001 05 31 | 151 | 0.4− | 0.4+ | 2001 06 16 | 670 | 0.3+ | 0.2− | 2001 06 27 | 118 | 0.1− | 0.0 |
| 2001 05 31 | 151 | 0.4− | 0.1+ | 2001 06 16 | 670 | 0.0 | 0.3+ | 2001 06 27 | 118 | 0.4+ | 0.1− |
| 2001 05 31 | 151 | 0.6+ | 0.5− | 2001 06 16 | 157 | 0.2− | 0.0 | 2001 06 27 | 118 | 0.6+ | 0.2− |
| 2001 05 31 | 151 | (0.4− | 3.9−) | 2001 06 16 | 157 | 0.3− | 0.0 | 2001 06 28 | 919 | 0.7+ | 0.2− |
| 2001 05 31 | 151 | 0.3− | 0.2− | 2001 06 16 | 157 | 0.3− | 0.4− | 2001 06 28 | 919 | 0.1+ | 0.2− |
| 2001 05 31 | 151 | 0.2+ | 0.9− | 2001 06 16 | 939 | 0.4− | 0.0 | 2001 06 29 | 608 | 0.0 | 0.6+ |
| 2001 05 31 | 587 | 0.3− | 0.4+ | 2001 06 16 | 939 | 0.5− | 0.3− | 2001 06 29 | 608 | 0.1+ | 0.8+ |
| 2001 05 31 | 151 | 0.5− | 0.5− | 2001 06 16 | 939 | 0.1+ | 1.2− | 2001 06 29 | 608 | 0.1− | 0.5+ |
| 2001 05 31 | 587 | 0.1− | 0.1− | 2001 06 16 | 939 | 0.1+ | 1.4+ | 2001 06 29 | 151 | 0.5+ | 0.6− |
| 2001 05 31 | 587 | 0.1+ | 0.1+ | 2001 06 17 | 642 | 0.6− | 1.4− | 2001 06 29 | 151 | 0.4+ | 0.8+ |
| 2001 05 31 | 938 | 0.7+ | 0.4+ | 2001 06 17 | 642 | 0.5− | 0.1− | 2001 06 29 | 151 | 0.0 | 0.1− |
| 2001 05 31 | 938 | 0.1+ | 0.2− | 2001 06 17 | 642 | 0.2− | 0.1− | 2001 06 29 | 151 | 0.2− | 0.3+ |
| 2001 05 31 | 938 | 0.3+ | 0.3− | 2001 06 17 | 642 | 0.1− | 0.2+ | 2001 06 29 | 151 | 0.4+ | 0.0 |
| 2001 06 01 | 294 | 0.1+ | 0.4− | 2001 06 17 | 642 | 0.1− | 0.6+ | 2001 06 29 | 151 | 0.1+ | 0.1+ |
| 2001 06 01 | 294 | (0.6− | 1.6+) | 2001 06 18 | 322 | 0.3− | 0.4− | 2001 06 29 | 952 | 0.3− | 0.1− |
| 2001 06 01 | 294 | (1.6− | 0.1−) | 2001 06 18 | 322 | 0.5− | 0.5+ | 2001 06 29 | 952 | 0.0 | 0.5+ |
| 2001 06 01 | 294 | (0.7+ | 2.1+) | 2001 06 19 | 493 | 0.0 | 0.1+ | 2001 06 29 | 952 | (0.4− | 1.5+) |
| 2001 06 01 | 294 | (1.9− | 1.1+) | 2001 06 19 | 493 | 0.0 | 0.2+ | 2001 06 29 | 636 | 1.2− | 0.3− |
| 2001 06 01 | 294 | 1.4− | 0.5+ | 2001 06 19 | 493 | 0.4+ | 0.1+ | 2001 06 29 | 636 | (1.1− | 1.6−) |
| 2001 06 01 | 294 | (1.6− | 0.5+) | 2001 06 19 | 493 | 0.3+ | 0.0 | 2001 06 29 | 636 | (0.1− | 2.5+) |
| 2001 06 01 | 294 | 0.6− | 0.3− | 2001 06 19 | 704 | 0.0 | 0.2+ | 2001 07 05 | 046 | 0.7+ | 0.7+ |
| 2001 06 01 | 294 | 0.6− | 0.3+ | 2001 06 19 | 704 | 0.5+ | 0.4+ | 2001 07 05 | 046 | 0.6+ | 0.4− |
| 2001 06 01 | 294 | 0.7− | 0.3+ | 2001 06 19 | 704 | 0.4+ | 0.7+ | 2001 07 05 | 046 | 0.4+ | 0.1+ |
| 2001 06 01 | 294 | 0.4+ | 0.8+ | 2001 06 19 | 704 | 0.7+ | 0.8+ | 2001 07 05 | 046 | 0.7+ | 0.2− |
| 2001 06 01 | 294 | (0.9+ | 4.9+) | 2001 06 19 | 704 | 0.1+ | 0.6+ | 2001 07 10 | 046 | 0.6+ | 0.4− |
| 2001 06 01 | 540 | 0.1+ | 0.6+ | 2001 06 19 | 608 | 0.5+ | 0.6− | 2001 07 10 | 046 | 0.6− | 0.1+ |
| 2001 06 01 | 540 | 0.1+ | 0.7+ | 2001 06 19 | 608 | 0.4+ | 0.6− | 2001 07 10 | 046 | 0.7+ | 0.6− |
| 2001 06 01 | 540 | 0.2− | 0.2+ | 2001 06 19 | 608 | 0.3+ | 0.5− | 2001 07 14 | 670 | 0.0 | 0.6− |
| 2001 06 01 | 540 | 0.1− | 0.0 | 2001 06 19 | 196 | 0.3− | 0.3+ | 2001 07 14 | 118 | 0.6+ | 0.0 |
| 2001 06 01 | 938 | 0.0 | 0.3+ | 2001 06 19 | 196 | 0.8+ | 0.4+ | 2001 07 14 | 118 | 0.5+ | 0.4− |
| 2001 06 01 | 938 | 1.0− | 0.3+ | 2001 06 19 | 127 | 0.3+ | 0.8+ | 2001 07 14 | 118 | 0.0 | 0.4+ |
| 2001 06 01 | 938 | 0.4− | 0.2+ | 2001 06 19 | 127 | 0.2+ | 0.3+ | 2001 07 16 | 699 | (1.6+ | 0.3+) |
| 2001 06 01 | 938 | 0.2+ | 0.3+ | 2001 06 19 | 127 | 0.1+ | 0.9+ | 2001 07 16 | 699 | 1.0+ | 0.3+ |
| 2001 06 01 | 938 | 0.2+ | 0.2+ | 2001 06 19 | 196 | 0.4+ | 0.4+ | 2001 07 16 | 699 | 0.8+ | 0.6+ |
| 2001 06 01 | 938 | 0.4+ | 0.2+ | 2001 06 19 | 196 | 0.8+ | 1.1− | 2001 07 16 | 699 | 0.5+ | 0.2− |
| 2001 06 02 | 704 | 0.0 | 0.5+ | 2001 06 20 | 670 | 0.3+ | 0.0 | 2001 07 25 | 608 | 0.2+ | 0.7− |
| 2001 06 02 | 704 | 0.8+ | 0.3+ | 2001 06 20 | 670 | 0.2+ | 0.3+ | 2001 07 25 | 608 | 0.0 | 0.6− |
| 2001 06 02 | 704 | 0.5+ | 0.6− | 2001 06 20 | 670 | 0.0 | 0.3+ | 2001 07 25 | 608 | 0.8+ | 0.5− |
| 2001 06 02 | 704 | 0.6+ | 0.1+ | 2001 06 20 | 176 | 0.4− | 0.3+ | 2001 08 08 | 413 | 0.2− | 0.3− |
| 2001 06 02 | 704 | 0.3+ | 0.0 | 2001 06 20 | 196 | 0.5+ | 0.7+ | 2001 08 08 | 413 | 0.2+ | 0.3− |
| 2001 06 03 | 151 | 0.0 | 0.9− | 2001 06 20 | 176 | 0.3− | 0.0 | 2001 08 08 | 413 | 0.0 | 0.0 |
| 2001 06 03 | 151 | 0.3+ | 0.2− | 2001 06 20 | 196 | 0.5+ | 0.4+ | 2001 08 09 | 413 | 0.0 | 0.1− |
| 2001 06 03 | 151 | 0.0 | 0.4− | 2001 06 20 | 176 | 0.3− | 0.2− | 2001 08 09 | 413 | 0.4− | 0.0 |
| 2001 06 03 | 151 | 0.1− | 0.7+ | 2001 06 20 | 470 | 0.2− | 0.3+ | 2001 08 09 | 413 | 0.3− | 0.2− |
| 2001 06 03 | 151 | 0.0 | 0.2− | 2001 06 20 | 196 | 0.0 | 0.5+ | 2004 07 24 | 474 | 0.1+ | 0.4− |
| 2001 06 03 | 151 | 0.1+ | 0.1+ | 2001 06 20 | 470 | 0.1− | 0.2+ | 2004 07 24 | 474 | 0.1− | 0.2− |
| 2001 06 04 | 670 | 0.0 | 0.0 | 2001 06 20 | 196 | 0.3+ | 0.3+ | 2004 07 24 | 474 | 0.0 | 0.4− |
| 2001 06 04 | 670 | 0.1+ | 0.5− | 2001 06 20 | 215 | 0.3+ | 0.1+ | 2005 08 02 | 474 | 0.0 | 0.0 |
| 2001 06 04 | 658 | 0.1+ | 0.1− | 2001 06 20 | 215 | 0.3+ | 0.2+ | 2005 08 02 | 474 | 0.5− | 0.4− |
| 2001 06 04 | 658 | 0.1+ | 0.2+ | 2001 06 20 | 215 | 0.0 | 0.2+ | 2005 08 02 | 474 | 0.1− | 0.5− |
| 2001 06 04 | 658 | 0.1+ | 0.0 | 2001 06 22 | 560 | (0.4− | 2.1−) | 2005 08 02 | 474 | 0.0 | 0.4− |
| 2001 06 04 | 670 | 0.0 | 0.0 | 2001 06 22 | 560 | (0.6− | 1.6−) | 2005 09 29 | E12 | 0.1+ | 0.1− |
| 2001 06 04 | 151 | 0.3− | 1.0− | 2001 06 22 | 560 | (0.6− | 1.7−) | 2005 09 29 | E12 | 0.1− | 0.0 |
| 2001 06 04 | 151 | 0.2+ | 1.3− | 2001 06 22 | 151 | 0.2+ | 0.2− | 2005 09 29 | E12 | 0.1+ | 0.1− |
| 2001 06 04 | 151 | 0.6− | 0.3+ | 2001 06 22 | 560 | (0.7− | 1.6−) | 2005 09 29 | E12 | 0.8+ | 0.4+ |
| 2001 06 04 | 151 | 0.1+ | 0.1− | 2001 06 22 | 151 | 0.0 | 0.2+ | 2005 10 10 | E12 | 0.8+ | 0.2− |
| 2001 06 04 | 151 | 0.4+ | 0.2− | 2001 06 22 | 151 | 0.0 | 0.0 | 2005 10 10 | E12 | 0.6− | 0.7+ |
| 2001 06 04 | 151 | 0.5− | 0.3+ | 2001 06 22 | 151 | 0.1− | 0.3− | 2005 10 10 | E12 | 0.3− | 0.6− |
| 2001 06 05 | 670 | 0.1+ | 0.4+ | 2001 06 22 | 151 | 0.1− | 0.0 | 2005 10 10 | E12 | 0.0 | 0.1+ |
| 2001 06 05 | 670 | 0.2− | 0.3− | 2001 06 22 | 151 | 0.0 | 0.1+ | 2005 10 22 | E12 | 0.1+ | 0.0 |
| 2001 06 05 | 670 | 0.2− | 0.3− | 2001 06 22 | 939 | 0.3− | 0.6− | 2005 10 22 | E12 | 0.2+ | 0.3− |
| 2001 06 07 | 649 | 0.1+ | 0.2− | 2001 06 22 | 470 | 0.2− | 0.3− | 2005 10 22 | E12 | 0.1− | 0.3+ |
| 2001 06 07 | 649 | 0.1+ | 0.1+ | 2001 06 22 | 939 | 0.1− | 0.2− | 2005 10 22 | E12 | 0.3+ | 0.6− |
| 2001 06 07 | 649 | 0.0 | 0.0 | 2001 06 22 | 470 | 0.3− | 0.1+ | 2005 11 02 | E12 | 0.2− | 0.0 |
| 2001 06 07 | 118 | 0.4− | 0.3− | 2001 06 22 | 939 | 0.1− | 0.0 | 2005 11 02 | E12 | 0.6− | 0.0 |
| 2001 06 07 | 118 | 0.0 | 0.2− | 2001 06 24 | 557 | 0.6− | 0.5+ | 2005 11 02 | E12 | 0.1+ | 0.1+ |
| 2001 06 07 | 118 | 0.3− | 0.1− | 2001 06 24 | 557 | 0.8− | 0.8+ | 2005 11 02 | E12 | 0.0 | 0.1− |
| 2001 06 08 | 176 | 1.0+ | 1.3− | 2001 06 24 | 739 | 0.0 | 0.1− | 2005 11 02 | E12 | 0.3+ | 0.5− |
| 2001 06 08 | 176 | (0.5+ | 1.6−) | 2001 06 24 | 739 | 0.2+ | 0.2+ | 2005 11 02 | E12 | 0.2− | 0.1+ |
| 2001 06 08 | 176 | 0.4+ | 0.1− | 2001 06 24 | 739 | 0.2+ | 0.1+ | 2005 11 02 | E12 | 0.3+ | 0.2− |
| 2001 06 08 | 176 | 0.7− | 1.1− | 2001 06 24 | 557 | 0.1− | 0.1− | 2005 11 02 | E12 | 0.2− | 0.0 |
| 2001 06 08 | 176 | 0.3+ | 0.5+ | 2001 06 24 | 557 | 0.1+ | 0.1+ | 2005 11 18 | E12 | 1.0− | 0.4− |
| 2001 06 10 | 306 | 0.1+ | 0.3− | 2001 06 24 | 557 | 0.2− | 0.1− | 2005 11 18 | E12 | 0.1+ | 0.6− |
| 2001 06 10 | 306 | 0.4− | 1.3− | 2001 06 24 | 557 | 0.0 | 0.1− | 2005 11 18 | E12 | 0.4+ | 0.3− |
| 2001 06 10 | 306 | 0.7− | 0.3− | 2001 06 24 | 557 | 0.0 | 0.0 | 2005 11 18 | E12 | 0.9− | 0.6+ |
| 2001 06 10 | 306 | 0.3+ | 0.4− | 2001 06 24 | 557 | 0.1+ | 0.1− | 2005 12 25 | E12 | 0.0 | 0.0 |
| 2001 06 10 | 306 | 0.1+ | 0.6− | 2001 06 24 | 557 | 0.1− | 0.1− | 2005 12 25 | E12 | 0.9− | 0.2+ |
| 2001 06 10 | 306 | 0.6− | 0.1− | 2001 06 25 | 557 | 0.0 | 0.2− | 2005 12 25 | E12 | 0.5− | 0.0 |
| 2001 06 10 | 306 | 1.5− | 0.6− | 2001 06 25 | 670 | 0.4− | 0.6− | 2006 05 25 | 691 | 0.0 | 0.3+ |
| 2001 06 11 | 726 | 0.4− | 0.1+ | 2001 06 25 | 670 | 0.1+ | 0.1− | 2006 05 25 | 691 | 0.1− | 0.2+ |
| 2001 06 11 | 726 | 0.0 | 0.0 | 2001 06 25 | 670 | 0.5+ | 0.0 | 2006 05 25 | 691 | 0.1− | 0.5+ |
| 2001 06 11 | 726 | 0.3− | 0.1− | 2001 06 25 | 608 | 0.8+ | 0.5− | 2006 06 04 | 691 | 0.5+ | 0.1+ |
| 2001 06 11 | 726 | 0.6− | 0.3+ | 2001 06 25 | 608 | 0.4+ | 0.3− | 2006 06 04 | 691 | 0.1+ | 0.1+ |
| 2001 06 11 | 670 | 0.3− | 0.0 | 2001 06 25 | 608 | 0.3+ | 0.4− | 2006 06 04 | 691 | 0.1+ | 0.1+ |
| 2001 06 11 | 670 | 0.0 | 0.2+ | 2001 06 25 | 557 | 0.0 | 0.1+ | 2006 06 18 | 644 | 0.1+ | 0.2− |
| 2001 06 11 | 670 | 0.2+ | 0.3− | 2001 06 25 | 557 | 0.1− | 0.2+ | 2006 06 18 | 644 | 0.1− | 0.2− |
| 2001 06 11 | 300 | 0.1− | 0.2− | 2001 06 25 | 118 | 0.2+ | 0.1+ | 2006 06 18 | 644 | 0.0 | 0.1− |
| 2001 06 11 | 300 | 0.1− | 0.3− | 2001 06 25 | 118 | 0.2+ | 0.3+ | | | | |

**(139346)∗ 2001 KO$_{70}$ = 2002 VV$_{45}$**

Discovered 2001 May 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37658)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.45708 | | (2000.0) | | | |
| $n$ | 0.23425623 | $\omega$ | 93.33890 | | +0.60265493 | +0.79080826 |
| $a$ | 2.6062053 | $\Omega$ | 214.45552 | | −0.78643868 | +0.56584464 |
| $e$ | 0.1743026 | $i$ | 10.89218 | | −0.13535595 | +0.23332838 |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1+ | 0.1+ | 2002 12 01 | 608 | 1.3− | 0.7− | 2006 10 17 | 703 | 0.6− | 1.3+ |
| 2000 03 04 | 645 | 0.1+ | 0.1+ | 2005 05 09 | 704 | 1.4− | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2001 05 23 | 291 | 0.2− | 0.8+ | 2005 05 09 | 704 | 1.0− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 291 | 0.8+ | 0.3− | 2005 05 09 | 699 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.2− |
| 2001 05 23 | 291 | 0.5+ | 1.0+ | 2005 05 09 | 704 | 0.9− | 0.6− | 2006 10 19 | 683 | 0.0 | 0.6+ |
| 2001 05 26 | 704 | 0.2+ | 0.1− | 2005 05 09 | 699 | 0.7+ | 0.7+ | 2006 10 19 | 683 | 0.1− | 1.0+ |
| 2001 05 26 | 704 | (0.0 | 1.5+) | 2005 05 09 | 699 | 0.3− | 1.2− | 2006 10 19 | 683 | (0.4− | 1.7+) |
| 2001 05 26 | 704 | 0.8+ | 0.2+ | 2005 05 09 | 699 | 0.7− | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2001 05 26 | 704 | 0.4+ | 1.0− | 2005 05 13 | 704 | 0.8+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 06 20 | 699 | 1.0− | 0.5+ | 2005 05 13 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 2001 06 20 | 699 | (0.7− | 1.6+) | 2005 05 13 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 06 20 | 699 | 0.6− | 0.9+ | 2005 05 13 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 06 20 | 699 | 1.0− | 0.6+ | 2005 05 13 | 704 | 0.7+ | 1.1+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2001 06 21 | 704 | 0.1− | 0.4− | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 06 21 | 704 | 1.1− | 0.6− | 2005 05 19 | G96 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 06 21 | 704 | 1.4− | 1.0+ | 2005 05 19 | G96 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 644 | 0.3− | 0.5+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2002 11 05 | 644 | 0.1− | 0.9+ | 2006 09 20 | 699 | 0.5− | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2002 11 05 | 644 | 0.7+ | 0.8+ | 2006 09 20 | 699 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.8− | 0.1− | 2006 09 20 | 699 | 0.5+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2002 11 07 | 704 | (1.6− | 0.6−) | 2006 09 20 | 699 | 0.6+ | 0.7− | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2002 11 07 | 704 | 0.8− | 1.1− | 2006 09 22 | 104 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.4− | 0.0 |
| 2002 11 07 | 704 | 0.4− | 0.5− | 2006 09 22 | 104 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 2002 11 07 | 704 | 0.8− | 0.7− | 2006 09 22 | 104 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.7− | 0.7− |
| 2002 11 11 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.7− |
| 2002 11 11 | 704 | 1.2+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2002 11 11 | 704 | 0.5+ | 0.8+ | 2006 09 28 | 691 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2002 11 11 | 704 | 0.2− | 0.7+ | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2002 11 11 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2002 11 22 | 644 | 0.0 | 0.9+ | 2006 10 02 | 691 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2002 11 22 | 644 | 0.1− | 0.5+ | 2006 10 03 | 704 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2002 11 22 | 644 | 0.1− | 0.3+ | 2006 10 03 | 704 | 1.0+ | 0.9+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2002 12 01 | 704 | 0.0 | 0.3− | 2006 10 03 | 704 | (1.9+ | 0.8+) | 2006 11 13 | G96 | 0.4− | 0.1+ |
| 2002 12 01 | 704 | 0.1+ | 0.3+ | 2006 10 03 | 704 | 0.0 | 1.0+ | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2002 12 01 | 704 | (1.3− | 1.5+) | 2006 10 17 | 683 | 1.0+ | 1.2− | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2002 12 01 | 608 | 0.8− | 0.6− | 2006 10 17 | 683 | (1.9+ | 1.3−) | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2002 12 01 | 608 | 1.0− | 0.5− | 2006 10 17 | 683 | 0.1− | 0.1+ | | | | |

**(139347)∗ 2001 KM$_{71}$**

Discovered 2001 May 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.20378 | | (2000.0) | | | |
| $n$ | 0.24126939 | $\omega$ | 212.87548 | | +0.31317817 | +0.93085312 |
| $a$ | 2.5554530 | $\Omega$ | 75.98017 | | −0.82406250 | +0.36487804 |
| $e$ | 0.1490505 | $i$ | 11.18707 | | −0.47205977 | −0.01940313 |
| $P$ | 4.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 25 | 699 | (2.1+ | 0.2+) | 2002 10 11 | 645 | 0.0 | 0.1− | 2005 06 03 | 703 | 0.3− | 0.0 |
| 2001 04 25 | 699 | 0.4− | 0.1− | 2002 10 11 | 645 | 0.1− | 0.1− | 2005 06 03 | 703 | 0.8− | 1.3− |
| 2001 04 25 | 699 | 0.5+ | 0.0 | 2002 10 15 | 644 | 0.3− | 0.6+ | 2005 06 03 | 703 | 0.4− | 0.8+ |
| 2001 04 25 | 699 | 1.3+ | 0.2+ | 2002 10 15 | 644 | 0.5− | 0.6+ | 2005 06 03 | 703 | 0.5− | 0.7+ |
| 2001 05 15 | 699 | 0.0 | 0.6+ | 2002 10 15 | 644 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.6+ |
| 2001 05 15 | 699 | 0.5+ | 0.5+ | 2002 10 28 | 644 | 0.6+ | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.3+ |
| 2001 05 15 | 699 | 1.1+ | 0.4− | 2002 10 28 | 644 | 0.6+ | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.8+ |
| 2001 05 15 | 699 | 0.5− | 0.0 | 2002 10 28 | 644 | 0.6+ | 0.5+ | 2006 09 26 | 703 | 0.6+ | 0.7+ |
| 2001 05 24 | 699 | 0.5− | 0.1+ | 2004 01 18 | 691 | 0.1− | 0.4+ | 2006 10 02 | 703 | 1.1− | 0.0 |
| 2001 05 24 | 699 | 0.4− | 0.7+ | 2004 01 18 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 2001 05 24 | 699 | 0.0 | 0.3+ | 2004 01 18 | 691 | 0.0 | 0.0 | 2006 10 02 | 703 | (2.9− | 1.8+) |
| 2001 05 24 | 699 | 0.6− | 0.7+ | 2005 04 17 | G92 | 0.8+ | 0.6− | 2006 10 02 | 703 | 0.2− | 1.1+ |
| 2001 05 28 | 608 | 0.3+ | 0.5+ | 2005 04 17 | G92 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 05 28 | 608 | 0.6+ | 0.1+ | 2005 04 17 | G92 | 1.3+ | 0.5+ | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2001 05 28 | 608 | 0.3+ | 0.7+ | 2005 04 18 | G92 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.5+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2005 04 18 | G92 | 0.0 | 0.8+ | | | | |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2005 04 18 | G92 | 0.4+ | 0.2+ | | | | |

**(139348)∗ 2001 KU$_{73}$**

Discovered 2001 May 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.63820 | | (2000.0) | | | |
| $n$ | 0.23970735 | $\omega$ | 165.12903 | | +0.39117375 | +0.91777089 |
| $a$ | 2.5665426 | $\Omega$ | 127.85110 | | −0.85297210 | +0.38945744 |
| $e$ | 0.2420093 | $i$ | 4.97009 | | −0.34557443 | +0.07758545 |
| $P$ | 4.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 25 | 699 | 0.3+ | 0.4+ | 2004 01 27 | 691 | 0.0 | 0.1− | 2005 05 15 | 644 | 0.1+ | 0.1− |
| 2001 04 25 | 699 | 0.1− | 0.7+ | 2004 01 27 | 691 | 0.3− | 0.2+ | 2005 06 28 | 644 | 0.0 | 0.1− |
| 2001 04 25 | 699 | 0.9− | 1.4+ | 2005 04 02 | 691 | 0.3+ | 0.1− | 2005 06 28 | 644 | 0.3+ | 0.2− |
| 2001 04 25 | 699 | 0.4− | 0.4+ | 2005 04 02 | 691 | 0.1+ | 0.1− | 2005 06 28 | 644 | 0.3+ | 0.0 |
| 2001 05 25 | 704 | 0.2− | 1.0+ | 2005 04 02 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.9+ |
| 2001 05 25 | 704 | 0.4+ | 1.0+ | 2005 04 13 | 704 | 1.2+ | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.5+ |
| 2001 05 25 | 704 | 0.0 | 1.0+ | 2005 04 13 | 704 | 1.2− | 0.3− | 2006 10 16 | 703 | 0.7+ | 1.3+ |
| 2001 05 27 | 608 | 0.3+ | 0.6− | 2005 04 13 | 704 | 1.4− | 0.6− | 2006 10 16 | 703 | 0.1− | 1.0+ |
| 2001 05 27 | 608 | 0.2+ | 0.4− | 2005 05 08 | 703 | 0.6− | 0.0 | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2001 05 27 | 608 | 0.3+ | 0.6− | 2005 05 08 | 703 | (0.8+ | 1.8−) | 2006 10 22 | 703 | 0.9− | 0.2+ |
| 2001 06 12 | 608 | 0.9+ | 0.3− | 2005 05 08 | 703 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.8− | 0.2− |
| 2001 06 12 | 608 | 0.9+ | 0.5− | 2005 05 08 | 703 | 0.2− | 0.6− | 2006 10 22 | 703 | 0.4− | 0.8+ |
| 2001 06 12 | 608 | 0.6− | 0.3+ | 2005 05 12 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2005 05 12 | 691 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.2+ |
| 2004 01 16 | 691 | 0.2+ | 0.2− | 2005 05 12 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 01 16 | 691 | 0.2− | 0.5+ | 2005 05 15 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 01 27 | 691 | 0.5+ | 0.1− | 2005 05 15 | 644 | 0.1+ | 0.1− | | | | |

**(139349)∗ 2001 KL$_{74}$**

Discovered 2001 May 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 158.51202 | | (2000.0) | | | |
| $n$ | 0.26423637 | $\omega$ | 193.09530 | | −0.54432998 | +0.83829447 |
| $a$ | 2.4051434 | $\Omega$ | 43.93660 | | −0.76555321 | −0.48125544 |
| $e$ | 0.1314143 | $i$ | 2.56902 | | −0.34297690 | −0.25623346 |
| $P$ | 3.73 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 704 | 0.6− | 0.2− | 2004 01 19 | 691 | 0.0 | 0.1− | 2005 08 06 | 704 | 0.0 | 0.0 |
| 2001 04 27 | 704 | 0.1− | 0.3+ | 2004 01 22 | 704 | 0.6− | 0.0 | 2005 08 06 | 704 | 0.3+ | 0.5+ |
| 2001 04 27 | 704 | 1.0+ | 0.1− | 2004 01 22 | 704 | 0.3− | 0.4− | 2005 08 06 | 704 | 0.1− | 0.7+ |
| 2001 04 27 | 704 | 0.1+ | 0.3+ | 2004 01 22 | 704 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 2001 05 23 | 807 | 0.3+ | 0.1+ | 2004 01 22 | 704 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 05 23 | 807 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2001 05 26 | 704 | 0.1+ | 0.4− | 2004 01 30 | 704 | (1.8+ | 0.3−) | 2006 10 27 | G96 | 0.3− | 0.3+ |
| 2001 05 26 | 704 | 0.8− | 0.3+ | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.4− |
| 2001 05 26 | 704 | 1.4+ | 0.3− | 2004 01 30 | 704 | 1.0+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 1.0− |
| 2001 05 26 | 704 | (2.2− | 0.0 ) | 2004 01 30 | 704 | 1.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 05 27 | 704 | 0.7− | 0.1− | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.4− | 0.3− |
| 2001 05 27 | 704 | 1.0+ | 0.4− | 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2001 05 27 | 704 | 0.5− | 0.1+ | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2001 05 27 | 704 | 1.1− | 0.8+ | 2004 02 15 | 704 | 0.5+ | 0.6+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2001 05 27 | 704 | 0.5− | 0.3+ | 2004 02 15 | 704 | 0.1+ | 0.9+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 05 27 | 704 | (0.1+ | 1.8+) | 2004 02 15 | 704 | 0.4+ | 1.3+ | 2006 11 14 | 691 | 0.0 | 0.4+ |
| 2001 06 17 | 691 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.3− | 1.1+ | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2001 06 17 | 691 | 0.1+ | 0.0 | 2005 06 07 | E12 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 06 17 | 691 | 0.1+ | 0.1− | 2005 06 07 | E12 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2003 12 27 | 704 | 0.8− | 0.4− | 2005 06 07 | E12 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2003 12 27 | 704 | 0.8− | 0.5− | 2005 06 07 | E12 | 0.8+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2003 12 27 | 704 | 1.1− | 0.1− | 2005 06 29 | 703 | 0.7− | 0.7+ | 2006 12 01 | G96 | 0.0 | 0.8− |
| 2003 12 27 | 704 | 0.2+ | 0.6+ | 2005 06 29 | 703 | 0.8− | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.1− |
| 2004 01 19 | 691 | 0.1+ | 0.2− | 2005 06 29 | 703 | (2.4− | 0.4−) | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2005 06 29 | 703 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.1− |

**(139350)∗ 2001 KM$_{75}$**

Discovered 2001 May 31 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.47980 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23281076 | $\omega$ | 119.69890 | | −0.03216093 | | +0.99122199 |
| $a$ | 2.6169817 | $\Omega$ | 147.68075 | | −0.97973896 | | −0.00588905 |
| $e$ | 0.1700707 | $i$ | 13.87814 | | −0.19767966 | | −0.13207679 |
| $P$ | 4.23 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 15 | 691 | 0.2+ | 0.9+ | 2002 10 16 | 644 | 0.0 | 0.0 | 2005 04 16 | 703 | 0.1− | 0.1− |
| 1993 08 15 | 691 | 0.3− | 0.3+ | 2005 04 06 | 703 | 0.9− | 0.1+ | 2005 04 16 | 703 | 0.2− | 0.6− |
| 2001 05 15 | 699 | 0.3− | 0.1− | 2005 04 06 | 703 | 0.7− | 0.3+ | 2005 04 30 | 699 | 0.3+ | 0.9+ |
| 2001 05 15 | 699 | 0.1− | 0.5+ | 2005 04 06 | 703 | 0.5− | 0.0 | 2005 04 30 | 699 | 0.4− | 0.4+ |
| 2001 05 15 | 699 | 0.0 | 0.0 | 2005 04 06 | 703 | 0.3+ | 0.2− | 2005 04 30 | 699 | 0.2− | 0.4+ |
| 2001 05 15 | 699 | 0.4+ | 0.2− | 2005 04 08 | 704 | 0.0 | 0.5+ | 2005 04 30 | 699 | 1.0− | 0.0 |
| 2001 05 21 | 683 | 0.6− | 0.5− | 2005 04 08 | 704 | 0.3+ | 0.2− | 2005 05 08 | 703 | 0.1+ | 0.1+ |
| 2001 05 21 | 683 | 0.3− | 0.4− | 2005 04 08 | 704 | 0.1− | 0.1− | 2005 05 08 | 703 | 0.5− | 0.3− |
| 2001 05 21 | 683 | 0.0 | 0.4− | 2005 04 08 | 704 | 0.3− | 0.4− | 2005 05 08 | 703 | (1.6− | 0.3+) |
| 2001 05 23 | 704 | 0.0 | 0.1− | 2005 04 08 | 704 | 0.4+ | 0.2− | 2005 05 08 | 703 | 1.1− | 0.1− |
| 2001 05 23 | 704 | 0.0 | 0.0 | 2005 04 12 | 699 | 0.4+ | 0.1− | 2005 05 12 | 704 | 0.2− | 0.0 |
| 2001 05 23 | 704 | 0.2+ | 0.4− | 2005 04 12 | 699 | 0.2+ | 0.6+ | 2005 05 12 | 704 | 0.2+ | 0.0 |
| 2001 05 23 | 704 | 0.1+ | 0.1+ | 2005 04 12 | 699 | 0.4+ | 0.4+ | 2005 05 12 | 704 | 0.1+ | 0.3+ |
| 2001 05 23 | 704 | 0.1− | 0.2+ | 2005 04 12 | 699 | 0.2− | 0.1+ | 2005 05 12 | 704 | 0.5− | 1.0+ |
| 2001 05 31 | 644 | 0.5− | 0.9− | 2005 04 14 | 704 | 0.3+ | 0.4+ | 2005 05 12 | 704 | 0.4− | 0.8+ |
| 2001 05 31 | 644 | 0.6− | 1.4− | 2005 04 14 | 704 | 0.1− | 0.5+ | 2006 09 17 | 699 | (3.8+ | 2.7−) |
| 2001 05 31 | 644 | 0.7− | 1.4− | 2005 04 14 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 699 | 0.8+ | 0.0 |
| 2001 06 01 | 608 | 0.7− | 0.5− | 2005 04 14 | 704 | 0.5+ | 0.3+ | 2006 09 17 | 699 | 1.1+ | 1.1+ |
| 2001 06 01 | 608 | 0.2− | 0.6− | 2005 04 14 | 704 | 1.1+ | 0.9+ | 2006 09 17 | 699 | 0.1− | 1.1+ |
| 2001 06 01 | 608 | 0.4− | 0.5− | 2005 04 14 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.8− |
| 2001 06 13 | 699 | 0.2+ | 0.9+ | 2005 04 14 | 704 | 0.9+ | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.7+ |
| 2001 06 13 | 699 | 0.2+ | 0.1− | 2005 04 14 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 1.1− | 0.4− |
| 2001 06 13 | 699 | 0.2+ | 0.2− | 2005 04 14 | 704 | 1.2+ | 0.5+ | 2006 09 19 | 703 | 1.1− | 0.4+ |
| 2001 06 13 | 699 | 0.1+ | 1.0+ | 2005 04 14 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 703 | 0.6− | 0.1+ |
| 2001 06 28 | 608 | 0.3+ | 0.8− | 2005 04 14 | 704 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.4+ | 0.9− |
| 2001 06 28 | 608 | 0.6+ | 1.0− | 2005 04 14 | 704 | 1.2+ | 0.4+ | 2006 09 25 | 703 | 0.2− | 0.3+ |
| 2001 06 28 | 608 | 0.1+ | 1.1− | 2005 04 14 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 703 | 0.9+ | 0.0 |
| 2002 10 06 | 644 | 0.6+ | 0.5+ | 2005 04 14 | 704 | 0.6+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 10 06 | 644 | 0.0 | 0.7+ | 2005 04 14 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 10 06 | 644 | 0.4− | 0.7+ | 2005 04 14 | 704 | 0.8+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 10 16 | 644 | 0.2− | 0.6− | 2005 04 16 | 703 | 0.4− | 0.2+ | | | | |
| 2002 10 16 | 644 | 0.1+ | 0.4− | 2005 04 16 | 703 | 0.7− | 0.1− | | | | |

**(139351)∗ 2001 LJ$_6$**

Discovered 2001 June 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.37686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20950211 | $\omega$ | 133.00487 | | +0.86391147 | | +0.50255960 |
| $a$ | 2.8076553 | $\Omega$ | 196.91064 | | −0.48878996 | | +0.82081892 |
| $e$ | 0.2491051 | $i$ | 6.51966 | | −0.12141396 | | +0.27145929 |
| $P$ | 4.70 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.2+ | 0.2+ | 2006 08 26 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 0.1+ | 0.2+ |
| 1992 10 03 | 691 | 0.1− | 0.1+ | 2006 08 26 | 704 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.6− | 1.4− |
| 1992 10 03 | 691 | 0.1− | 0.0 | 2006 08 26 | 704 | 0.9− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.4+ |
| 2000 04 05 | 704 | 0.6− | 0.8+ | 2006 08 28 | 704 | (1.6+ | 0.9−) | 2006 09 25 | 699 | 0.4+ | 0.1− |
| 2000 04 05 | 704 | 0.3− | 1.2+ | 2006 08 28 | 704 | 0.9− | 0.4− | 2006 09 25 | 699 | 0.3+ | 0.0 |
| 2000 04 05 | 704 | 0.9+ | 1.4+ | 2006 08 28 | 704 | (3.2+ | 1.8−) | 2006 09 26 | 704 | (0.3+ | 1.8+) |
| 2000 04 05 | 704 | 0.6− | 1.4+ | 2006 08 28 | 704 | 0.6+ | 0.6− | 2006 09 26 | 704 | 0.0 | 0.9− |
| 2000 04 05 | 704 | (2.2+ | 1.2+) | 2006 08 28 | 704 | 0.3+ | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.6− |
| 2001 06 14 | 644 | 0.4− | 0.9− | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.4− | 0.5+ |
| 2001 06 14 | 644 | 0.2− | 0.9− | 2006 08 29 | 703 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.8− | 0.6+ |
| 2001 06 14 | 644 | 0.5− | 0.4− | 2006 08 29 | 703 | 0.0 | 0.3− | 2006 09 29 | 704 | 1.1− | 0.6+ |
| 2001 06 19 | 644 | 0.4− | 0.3− | 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2001 06 19 | 644 | 1.5+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.2+ |
| 2001 06 19 | 644 | 0.5− | 0.4− | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.1− | 0.9+ |
| 2001 06 19 | 644 | 1.2+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.4+ |
| 2001 06 19 | 644 | 0.9− | 0.6− | 2006 08 30 | 704 | 0.5− | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.4+ |
| 2001 06 19 | 644 | 1.1+ | 0.2+ | 2006 08 30 | 704 | 0.5− | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.7+ |
| 2001 06 21 | 704 | 0.7+ | 0.2− | 2006 09 01 | 704 | 0.2+ | 0.7− | 2006 10 17 | 106 | 0.4+ | 0.3+ |
| 2001 06 21 | 704 | 0.2− | 0.2− | 2006 09 01 | 704 | 0.3− | 0.0 | 2006 10 17 | 106 | 1.2+ | 0.6+ |
| 2001 06 21 | 704 | 1.0− | 0.0 | 2006 09 01 | 704 | 0.3− | 0.4+ | 2006 10 17 | 106 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 0.4+ | 0.1− | 2006 09 01 | 704 | 0.4− | 0.6− | 2006 10 17 | 106 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 1.1− | 0.7− | 2006 09 01 | 704 | 0.3+ | 0.7− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2001 10 14 | 704 | 0.2+ | 0.3− | 2006 09 06 | 699 | 0.6− | 1.0+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2001 10 14 | 704 | (0.5+ | 1.8+) | 2006 09 06 | 699 | 0.2+ | 1.2+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2004 02 18 | 691 | 0.1+ | 0.7+ | 2006 09 06 | 699 | (1.5− | 0.5−) | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 02 18 | 691 | 0.0 | 0.3+ | 2006 09 06 | 699 | (0.1− | 1.6+) | 2006 11 10 | 704 | 0.1+ | 0.3+ |
| 2004 02 18 | 691 | 0.2+ | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 11 10 | 704 | 0.3+ | 0.0 |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.5− | 0.4+ |
| 2005 04 02 | G96 | 0.1− | 0.4+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.0 | 0.3+ |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 11 10 | 704 | 0.3− | 0.6+ |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4+ | 1.2+ |
| 2005 04 04 | G96 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.9+ | 1.4+ |
| 2005 04 04 | G96 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7− | 1.2+ |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.7+ |
| 2005 04 04 | G96 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2005 04 06 | 691 | 0.4+ | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.5+ |
| 2005 04 06 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2005 04 06 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 704 | 0.2− | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2005 04 12 | 704 | 0.8+ | 0.6− | 2006 09 18 | 704 | 0.1− | 0.8+ | 2006 11 18 | 703 | 0.1− | 0.5+ |
| 2005 04 12 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 703 | 0.6− | 0.3− |
| 2005 04 12 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.2+ | 0.2− | 2006 11 18 | 703 | 1.1− | 0.3+ |
| 2005 05 13 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.1+ | 0.6+ | 2006 11 18 | 703 | 1.0− | 0.3+ |
| 2005 05 13 | 691 | 0.9− | 1.0+ | 2006 09 19 | 699 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2005 05 13 | 691 | 1.2+ | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2005 05 14 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 11 21 | 704 | (0.7− | 1.8+) |
| 2005 05 14 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2006 07 01 | 703 | 0.2− | 0.8− | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 11 21 | 704 | (1.6− | 0.4+) |
| 2006 07 01 | 703 | 0.5− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2006 07 01 | 703 | 0.1− | 0.8− | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.8+ |
| 2006 07 01 | 703 | 0.1+ | 0.4+ | 2006 09 20 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2006 08 24 | 704 | 0.5− | 1.2+ | 2006 09 20 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 1.2+ | 0.5+ |
| 2006 08 24 | 704 | 0.9+ | 0.1− | 2006 09 20 | 691 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.9+ | 0.5− |
| 2006 08 24 | 704 | 0.0 | 0.6+ | 2006 09 25 | 704 | 0.7+ | 0.0 | 2006 11 27 | 703 | 0.7− | 1.0− |
| 2006 08 24 | 704 | (0.5− | 2.1+) | 2006 09 25 | 704 | 0.5+ | 0.3+ | 2006 11 27 | 703 | 1.0− | 0.4− |
| 2006 08 24 | 704 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.2+ | | | | |

**(139352)∗ 2001 LY$_7$**

Discovered 2001 June 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.83820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23840841 | $\omega$ | 239.33983 | | −0.91149007 | | −0.22489502 |
| $a$ | 2.5758565 | $\Omega$ | 285.74483 | | +0.37276729 | | −0.80558175 |
| $e$ | 0.0358442 | $i$ | 20.96642 | | −0.17386892 | | −0.54814256 |
| $P$ | 4.13 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 291 | 0.7− | 0.2+ | 2003 12 23 | 608 | 0.2− | 0.4+ | 2006 11 15 | 704 | 0.6+ | 0.1− |
| 2001 05 26 | 291 | 0.6− | 0.3+ | 2003 12 23 | 608 | 0.7+ | 0.1+ | 2006 11 15 | 704 | 0.8+ | 0.5− |
| 2001 05 26 | 291 | 0.8− | 0.3+ | 2003 12 23 | 608 | 0.7+ | 0.1+ | 2006 11 15 | 704 | 0.9+ | 0.1− |
| 2001 06 15 | 644 | 1.1− | 0.0 | 2004 01 18 | 608 | (2.1+ | 1.0+) | 2006 11 15 | 704 | 1.5+ | 0.3− |
| 2001 06 15 | 644 | 0.9− | 0.2+ | 2004 01 18 | 608 | (1.9+ | 1.4+) | 2006 11 15 | 704 | 0.5+ | 0.1+ |
| 2001 06 15 | 644 | 1.0− | 0.3− | 2004 01 18 | 608 | (2.1+ | 1.2+) | 2006 11 18 | 704 | 0.5+ | 0.1− |
| 2001 06 20 | 644 | 0.0 | 0.1− | 2004 03 17 | 704 | 0.2+ | 1.2+ | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2001 06 20 | 644 | 0.1+ | 0.6− | 2004 03 17 | 704 | 0.1+ | 0.8+ | 2006 11 18 | 704 | 0.7− | 0.6+ |
| 2001 06 20 | 644 | 0.2+ | 0.4− | 2004 03 17 | 704 | 0.2+ | 1.2+ | 2006 11 18 | 704 | 0.7− | 0.5− |
| 2001 06 21 | 644 | 0.8+ | 0.2+ | 2004 03 17 | 704 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.8+ | 0.5+ |
| 2001 06 21 | 644 | 1.5+ | 0.5+ | 2004 03 17 | 704 | (0.3− | 1.7+) | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2001 06 21 | 644 | (1.8+ | 0.3+) | 2004 03 26 | 704 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 29 | 608 | 0.9+ | 0.2+ | 2004 03 26 | 704 | 0.9− | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2001 06 29 | 608 | 0.5+ | 0.7− | 2004 03 26 | 704 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2001 06 29 | 608 | 1.3+ | 0.4− | 2004 03 26 | 704 | 0.2− | 1.0− | 2006 11 20 | 703 | 0.5+ | 0.6− |
| 2001 08 13 | 644 | 0.3+ | 0.6+ | 2004 03 26 | 704 | 0.5+ | 0.4+ | 2006 11 20 | 703 | 0.2+ | 1.7− |
| 2001 08 13 | 644 | 0.1+ | 0.4+ | 2004 04 17 | 704 | 1.0+ | 1.0− | 2006 11 20 | 703 | 1.1− | 1.4− |
| 2001 08 13 | 644 | 0.4+ | 0.7+ | 2004 04 17 | 704 | 0.5+ | 0.3− | 2006 11 20 | 703 | 0.3+ | 0.4+ |
| 2001 08 14 | 644 | 0.5+ | 0.2+ | 2004 04 17 | 704 | 0.9+ | 0.4− | 2006 11 20 | 703 | 0.7− | 0.4+ |
| 2001 08 14 | 644 | 0.5+ | 0.3+ | 2006 10 16 | 704 | (0.1+ | 1.8+) | 2006 11 20 | 703 | 0.2− | 0.2+ |
| 2001 08 14 | 644 | 0.5+ | 0.5+ | 2006 10 16 | 704 | 1.4+ | 0.9+ | 2006 11 20 | 703 | 0.5− | 0.2− |
| 2002 11 11 | 704 | 0.1+ | 0.7− | 2006 10 16 | 704 | 0.2− | 0.3− | 2006 11 20 | 703 | 0.2− | 0.6− |
| 2002 11 11 | 704 | 0.3+ | 0.7− | 2006 10 16 | 704 | 1.0+ | 0.7− | 2006 11 21 | 704 | 0.4− | 0.4− |
| 2002 11 11 | 704 | 0.7− | 0.1− | 2006 10 27 | 106 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.8− | 0.9+ |
| 2002 11 11 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 106 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2002 11 11 | 704 | 0.7− | 0.4+ | 2006 10 27 | 106 | 0.3− | 1.0− | 2006 11 21 | 704 | 0.1− | 0.9+ |
| 2002 12 15 | 704 | 0.3− | 0.9+ | 2006 10 27 | 106 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.2+ |
| 2002 12 15 | 704 | 0.1− | 0.3+ | 2006 11 13 | 704 | 0.8+ | 0.3+ | 2006 11 22 | 704 | 1.1− | 0.6+ |
| 2002 12 15 | 704 | 0.3− | 0.8+ | 2006 11 13 | 704 | 0.0 | 1.2+ | 2006 11 22 | 704 | 0.9− | 0.1− |
| 2003 01 22 | 644 | 0.2+ | 0.5+ | 2006 11 13 | 704 | 0.7− | 0.9+ | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2003 01 22 | 644 | 0.1+ | 0.6+ | 2006 11 13 | 704 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2003 01 22 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 704 | 1.0+ | 0.3− | 2006 11 22 | 704 | 1.6− | 1.4+ |

**(139353)∗ 2001 LW$_{11}$**

Discovered 2001 June 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.06123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22824567 | $\omega$ | 68.74378 | | +0.65586816 | +0.73614239 | |
| $a$ | 2.6517609 | $\Omega$ | 243.36639 | | −0.74319227 | +0.59089224 | |
| $e$ | 0.1895360 | $i$ | 10.77574 | | −0.13229591 | +0.33006172 | |
| $P$ | 4.32 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.5+ | 0.1+ | 2005 06 04 | 704 | 1.0+ | 1.1− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 06 15 | 704 | 0.8+ | 0.1+ | 2005 06 04 | 704 | 0.9− | 1.4− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 06 15 | 704 | 0.3+ | 0.1− | 2005 06 04 | 704 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 06 15 | 704 | 0.5− | 0.5+ | 2005 06 04 | 704 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2001 06 15 | 704 | 0.4− | 0.2− | 2005 06 11 | 703 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2001 06 21 | 704 | 0.9− | 0.6− | 2005 06 11 | 703 | (2.3− | 0.2+) | 2006 11 11 | 703 | 0.5− | 0.2− |
| 2001 06 21 | 704 | 0.5− | 0.2− | 2005 06 11 | 703 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2001 06 21 | 704 | 1.1+ | 0.8+ | 2005 06 17 | G96 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2001 07 18 | 608 | 0.2− | 0.6+ | 2005 06 17 | G96 | 0.4− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2001 07 18 | 608 | 0.2− | 0.2− | 2005 06 17 | G96 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2001 07 18 | 608 | 0.3− | 0.2+ | 2005 06 17 | G96 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.0 |
| 2001 07 28 | 608 | 0.6− | 0.3+ | 2005 06 24 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.5+ | 0.5− |
| 2001 07 28 | 608 | 1.2− | 0.4+ | 2005 06 24 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.3+ | 0.0 |
| 2001 07 28 | 608 | 0.5− | 0.4+ | 2005 06 24 | 644 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.0 | 1.0− |
| 2001 08 07 | 608 | (1.2+ | 1.5+) | 2005 07 04 | 704 | 0.4+ | 1.3+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2001 08 07 | 608 | 1.0+ | 0.9+ | 2005 07 04 | 704 | 1.2+ | 0.9+ | 2006 11 16 | 691 | 0.3+ | 0.4+ |
| 2001 08 07 | 608 | 1.2+ | 1.2+ | 2005 07 04 | 704 | (0.5− | 1.5+) | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2001 08 19 | 608 | 0.1− | 1.0− | 2005 07 04 | 704 | 0.1− | 1.0+ | 2006 11 16 | 704 | 0.3− | 0.5− |
| 2001 08 19 | 608 | 0.8− | 1.1− | 2005 07 05 | 644 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2001 08 19 | 608 | 0.6− | 0.9− | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.3+ |
| 2001 08 20 | 704 | 0.5+ | 0.0 | 2005 07 05 | 644 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.7− | 0.0 |
| 2001 08 20 | 704 | 0.3+ | 0.0 | 2005 07 11 | G96 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2001 08 20 | 704 | 0.3+ | 0.0 | 2005 07 11 | G96 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2001 08 20 | 704 | 0.1− | 0.1− | 2005 07 11 | G96 | (1.6− | 1.3+) | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2001 08 20 | 704 | 0.5+ | 0.1+ | 2005 08 01 | E12 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2001 09 21 | 644 | 0.5− | 0.2+ | 2005 08 01 | E12 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2001 09 21 | 644 | 0.4− | 0.2+ | 2005 08 01 | E12 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2001 09 21 | 644 | 0.4− | 0.2+ | 2005 08 01 | E12 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2001 10 11 | 704 | 0.7+ | 0.9− | 2005 08 30 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2001 10 11 | 704 | 0.7+ | 0.5− | 2005 08 30 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.8+ |
| 2001 10 11 | 704 | 0.2+ | 1.1+ | 2005 08 30 | 644 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2001 10 19 | 704 | 0.1+ | 0.5− | 2006 10 18 | A50 | (1.7+ | 0.6−) | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2001 10 19 | 704 | 0.0 | 0.4− | 2006 10 19 | A50 | 1.0− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2001 10 19 | 704 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2001 10 19 | 704 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2004 03 13 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2004 03 13 | 644 | 0.4+ | 0.8+ | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2004 03 13 | 644 | 0.4+ | 0.9+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2005 06 04 | 704 | 0.4+ | 0.4− | 2006 11 09 | 691 | 0.1− | 0.0 | | | | |

**(139354)∗ 2001 LD$_{12}$**

Discovered 2001 June 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.27317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23046456 | $\omega$ | 66.29217 | | +0.77423600 | +0.60907158 | |
| $a$ | 2.6347128 | $\Omega$ | 255.73712 | | −0.62584586 | +0.69633045 | |
| $e$ | 0.2041466 | $i$ | 10.22358 | | −0.09421028 | +0.37967844 | |
| $P$ | 4.28 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.5− | 0.3+ | 2004 03 19 | E12 | 0.3− | 0.8− | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2001 06 15 | 704 | 0.4− | 0.7+ | 2004 03 19 | E12 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.0 | 1.3− |
| 2001 06 15 | 704 | 0.7− | 0.4+ | 2005 06 04 | 704 | 0.3+ | 0.9+ | 2006 11 16 | 704 | 0.1− | 0.4− |
| 2001 06 15 | 704 | 0.5− | 0.8+ | 2005 06 04 | 704 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.5− |
| 2001 06 15 | 704 | 0.7− | 0.3+ | 2005 06 04 | 704 | (0.3− | 2.6−) | 2006 11 16 | 704 | 0.2− | 0.9+ |
| 2001 06 21 | 704 | 0.2− | 0.3+ | 2005 06 04 | 704 | 0.0 | 0.7− | 2006 11 16 | 704 | 0.5+ | 0.4+ |
| 2001 06 21 | 704 | 0.5+ | 0.1− | 2005 06 04 | 704 | 0.6+ | 0.6− | 2006 11 16 | 704 | (0.4− | 2.1−) |
| 2001 06 21 | 704 | 0.1− | 0.1+ | 2005 06 04 | 704 | 0.2− | 0.5+ | 2006 11 16 | 704 | 1.4− | 0.3− |
| 2001 06 21 | 704 | 0.0 | 0.6+ | 2005 06 04 | 704 | (1.0− | 3.3−) | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2001 06 21 | 704 | 0.5− | 0.9+ | 2005 06 04 | 704 | 1.1− | 1.0+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2001 06 24 | 704 | 0.1+ | 0.1− | 2005 06 04 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2001 06 24 | 704 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2001 06 24 | 704 | 0.4+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.1+ | 1.0+ |
| 2001 06 24 | 704 | 0.1+ | 0.2− | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.4− | 1.0+ |
| 2001 07 17 | 608 | 0.5+ | 0.1+ | 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2001 07 17 | 608 | 0.6+ | 0.0 | 2005 06 16 | G96 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 1.0− | 0.4+ |
| 2001 07 17 | 608 | 0.6+ | 0.1+ | 2005 06 16 | G96 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.7+ | 0.4+ |
| 2001 07 21 | 608 | 0.4+ | 0.7− | 2005 06 16 | G96 | 0.3+ | 1.0+ | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2001 07 21 | 608 | 0.3+ | 0.8− | 2005 06 16 | G96 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.4− | 0.3+ |
| 2001 07 21 | 608 | 0.4+ | 0.8− | 2005 06 23 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.6+ |
| 2001 09 29 | 644 | 0.5− | 0.1− | 2005 06 23 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | (0.7+ | 1.6+) |
| 2001 09 29 | 644 | 0.3− | 0.1+ | 2005 06 23 | 644 | 0.9− | 0.2− | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2001 09 29 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 1.1− | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.4− |
| 2001 10 11 | 704 | 0.3+ | 0.5− | 2006 09 18 | 703 | 1.2− | 0.0 | 2006 11 21 | 691 | 0.2− | 0.2− |
| 2001 10 11 | 704 | 0.8+ | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2001 10 11 | 704 | 0.1− | 0.4− | 2006 09 18 | 703 | 1.4+ | 0.8− | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2001 10 11 | 704 | 0.7− | 0.1+ | 2006 10 19 | 703 | 0.1− | 1.0− | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2001 10 11 | 704 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.5− | 0.9+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2001 10 11 | 704 | 0.6− | 0.9− | 2006 10 19 | 703 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2001 11 10 | 704 | 0.5+ | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.6− | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.1+ | 0.2− | 2006 10 27 | 703 | 1.1+ | 0.6+ | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.2+ | 0.9− | 2006 10 27 | 703 | 0.5− | 0.8− | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2001 11 10 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 1.1− | 1.0− | 2006 11 27 | 704 | 0.1− | 0.9+ |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 27 | 704 | 0.1− | 0.6+ |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 11 14 | 703 | (3.3+ | 2.8−) | 2006 11 27 | 704 | 0.3+ | 1.1+ |
| 2002 12 05 | 704 | 0.9+ | 0.8+ | 2006 11 14 | 703 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.0 | 0.3+ |
| 2002 12 14 | 704 | 0.1+ | 0.5− | 2006 11 14 | 703 | 0.7− | 0.2+ | 2006 12 01 | 704 | 0.6− | 0.1+ |
| 2002 12 14 | 704 | 0.4− | 0.7+ | 2006 11 14 | 703 | 0.1− | 0.8+ | 2006 12 01 | 704 | 0.8− | 0.4+ |
| 2002 12 14 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 704 | 0.3+ | 0.4− | 2006 12 01 | 704 | 0.4− | 1.0+ |
| 2002 12 14 | 704 | 0.6− | 0.9− | 2006 11 15 | 704 | 0.4+ | 0.3− | 2006 12 01 | 704 | 0.6+ | 0.7+ |
| 2004 03 19 | E12 | 0.3− | 0.5− | 2006 11 15 | 704 | 0.4− | 0.3− | | | | |
| 2004 03 19 | E12 | (0.5+ | 1.6−) | 2006 11 16 | 704 | 0.0 | 0.4+ | | | | |

**(139355)∗ 2001 LA$_{13}$**

Discovered 2001 June 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.83501 | | (2000.0) | | | |
| $n$ | 0.21523136 | $\omega$ | 178.40423 | | +0.64288946 | +0.72689223 |
| $a$ | 2.7576068 | $\Omega$ | 131.52008 | | −0.70627821 | +0.68457617 |
| $e$ | 0.2677061 | $i$ | 18.81691 | | −0.29641902 | −0.05461822 |
| $P$ | 4.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 704 | 0.6− | 0.5+ | 2001 08 23 | 699 | 0.4− | 0.0 | 2005 05 02 | 703 | 0.5+ | 0.8+ |
| 2001 05 29 | 704 | 0.6− | 0.6− | 2001 08 23 | 699 | 0.4− | 0.2+ | 2005 05 02 | 703 | 0.2+ | 0.9+ |
| 2001 05 29 | 704 | 0.0 | 0.3+ | 2001 08 23 | 699 | 0.2− | 0.1− | 2005 05 09 | 703 | 1.0− | 0.3+ |
| 2001 05 29 | 704 | 0.2+ | 0.3+ | 2001 08 23 | 699 | 0.5− | 0.1− | 2005 05 09 | 703 | 0.2− | 0.4− |
| 2001 05 29 | 704 | 0.4+ | 0.1− | 2001 08 25 | 644 | 0.5− | 1.1− | 2005 05 09 | 703 | 1.1− | 0.1+ |
| 2001 06 15 | 704 | (0.2− | 1.7+) | 2001 08 25 | 704 | 0.2+ | 0.1− | 2005 05 09 | 703 | 0.3− | 0.6+ |
| 2001 06 15 | 704 | 1.4+ | 1.4+ | 2001 08 25 | 644 | 0.3− | 1.3− | 2005 05 11 | 704 | 0.6+ | 0.7+ |
| 2001 06 15 | 704 | (2.2+ | 1.1+) | 2001 08 25 | 704 | 0.0 | 0.4+ | 2005 05 11 | 704 | 0.3+ | 0.6+ |
| 2001 06 21 | 704 | 0.2− | 0.1+ | 2001 08 25 | 644 | 0.3− | 1.2− | 2005 05 11 | 704 | 1.2+ | 0.8− |
| 2001 06 21 | 704 | 0.7+ | 0.2+ | 2001 08 25 | 704 | 0.1+ | 1.1+ | 2005 05 17 | 703 | 0.4− | 0.9+ |
| 2001 06 21 | 704 | 0.0 | 0.4− | 2001 08 25 | 704 | 0.4− | 0.8+ | 2005 05 17 | 703 | (1.5+ | 1.1+) |
| 2001 07 12 | 608 | 0.1+ | 0.3− | 2001 08 25 | 704 | 0.4− | 0.7+ | 2005 05 17 | 703 | 0.1+ | 0.7+ |
| 2001 07 12 | 608 | 0.0 | 0.6− | 2001 09 03 | 644 | 0.6− | 0.0 | 2005 05 17 | 703 | 0.5+ | 1.4+ |
| 2001 07 12 | 608 | 0.0 | 0.2− | 2001 09 03 | 644 | 0.8− | 0.1− | 2005 06 03 | 703 | 0.4+ | 1.3− |
| 2001 07 20 | 704 | 0.6+ | 1.1+ | 2001 09 03 | 644 | 0.8− | 0.1− | 2005 06 03 | 703 | 0.1− | 0.4− |
| 2001 07 20 | 704 | 1.1+ | 0.1+ | 2001 09 11 | 704 | 0.1+ | 0.5+ | 2005 06 03 | 703 | 0.8− | 0.4+ |
| 2001 07 20 | 704 | 0.9+ | 0.6+ | 2001 09 11 | 704 | 0.5− | 0.3− | 2005 06 03 | 703 | 0.3− | 0.6+ |
| 2001 07 20 | 704 | 0.9+ | 0.7+ | 2001 09 11 | 704 | 0.5− | 0.4− | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2001 07 22 | 704 | 0.8+ | 0.1+ | 2001 09 11 | 704 | 0.6− | 0.7− | 2006 09 19 | 703 | 0.3+ | 1.3+ |
| 2001 07 22 | 704 | 0.4+ | 0.8+ | 2001 09 11 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 1.0− | 0.7+ |
| 2001 07 22 | 704 | 0.3+ | 1.1+ | 2001 10 08 | 644 | 0.0 | 1.0+ | 2006 09 19 | 703 | 0.7− | 0.2+ |
| 2001 07 22 | 704 | 0.4+ | 0.4+ | 2001 10 08 | 644 | 0.3− | 0.7+ | 2006 09 25 | 703 | 0.2− | 0.6+ |
| 2001 07 22 | 704 | 0.1+ | 0.5+ | 2001 10 08 | 644 | 0.5− | 0.2+ | 2006 09 25 | 703 | 0.2− | 1.1+ |
| 2001 07 30 | 704 | 0.1− | 0.0 | 2003 12 25 | 645 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.7− | 0.4+ |
| 2001 07 30 | 704 | 0.1+ | 0.6+ | 2003 12 25 | 645 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.1− | 0.5+ |
| 2001 07 30 | 704 | 0.0 | 0.2− | 2004 01 18 | 644 | 0.1+ | 0.4+ | 2006 10 25 | E12 | 0.2+ | 0.7+ |
| 2001 07 30 | 704 | 0.4− | 0.5+ | 2004 01 18 | 644 | 0.1− | 0.5+ | 2006 10 25 | E12 | 0.0 | 0.9+ |
| 2001 07 30 | 704 | 0.2+ | 0.3+ | 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 10 25 | E12 | 0.4+ | 0.6+ |
| 2001 08 08 | 608 | (1.6+ | 1.0−) | 2005 04 02 | 703 | 0.4− | 0.2− | 2006 10 25 | E12 | (0.3− | 2.1+) |
| 2001 08 08 | 608 | 1.5+ | 0.0 | 2005 04 02 | 703 | (0.6− | 1.8+) | 2006 11 01 | 703 | (0.5+ | 1.6+) |
| 2001 08 08 | 608 | 1.2+ | 0.5− | 2005 04 02 | 703 | 0.4+ | 0.9+ | 2006 11 01 | 703 | 0.1− | 0.3+ |
| 2001 08 16 | 704 | 0.2− | 0.6− | 2005 04 02 | 703 | 0.3− | 0.2− | 2006 11 01 | 703 | 1.1− | 0.6+ |
| 2001 08 16 | 704 | 0.2− | 1.3− | 2005 04 06 | 703 | 0.8− | 0.4+ | 2006 11 01 | 703 | 0.2− | 0.7+ |
| 2001 08 16 | 704 | 0.2− | 0.2− | 2005 04 06 | 703 | 0.3− | 0.3− | 2006 11 19 | 703 | (0.4− | 1.7+) |
| 2001 08 16 | 704 | 0.4− | 0.3− | 2005 04 06 | 703 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 1.2− | 0.5+ |
| 2001 08 16 | 704 | 0.1− | 0.5− | 2005 04 06 | 703 | 1.0+ | 0.3+ | 2006 11 19 | 703 | 0.0 | 1.1+ |
| 2001 08 19 | 704 | 0.5− | 0.2+ | 2005 04 11 | 704 | (1.9+ | 0.5−) | 2006 11 19 | 703 | (0.4− | 3.1+) |
| 2001 08 19 | 704 | 0.5− | 0.6− | 2005 04 11 | 704 | 1.4+ | 0.2+ | 2006 11 24 | 703 | 1.4+ | 0.4− |
| 2001 08 19 | 704 | 0.5− | 0.6− | 2005 04 11 | 704 | 1.0+ | 0.0 | 2006 11 24 | 703 | 1.4+ | 0.8− |
| 2001 08 19 | 704 | (0.4− | 1.7+) | 2005 05 02 | 703 | 0.0 | 0.5+ | 2006 11 24 | 703 | 0.8− | 1.0− |
| 2001 08 19 | 704 | (1.0− | 2.5−) | 2005 05 02 | 703 | 0.8− | 0.4− | 2006 11 24 | 703 | 0.2− | 0.6− |

**(139356)∗ 2001 LL$_{14}$ = 2004 BE$_{142}$ = 2004 CY$_9$**

Discovered 2001 June 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68920, d, *MPO* 74995)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.87924 | | (2000.0) | | | |
| $n$ | 0.23904813 | $\omega$ | 134.22723 | | +0.26595652 | +0.96312877 |
| $a$ | 2.5712589 | $\Omega$ | 151.12368 | | −0.90668467 | +0.26423728 |
| $e$ | 0.2086971 | $i$ | 4.82520 | | −0.32739890 | +0.05061255 |
| $P$ | 4.12 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 704 | 0.1+ | 0.5+ | 2005 05 12 | 704 | 0.9+ | 0.1+ | 2005 06 28 | 644 | 0.4− | 0.0 |
| 2001 05 25 | 704 | (0.9+ | 1.8+) | 2005 05 12 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 699 | 0.2− | 0.7+ |
| 2001 05 25 | 704 | 0.5− | 1.5+ | 2005 05 12 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 699 | (1.1+ | 1.5+) |
| 2001 05 25 | 704 | 0.2− | 0.0 | 2005 05 12 | 599 | 0.3+ | 0.2+ | 2006 09 30 | 699 | 0.2+ | 0.4+ |
| 2001 06 15 | 704 | 0.0 | 0.1+ | 2005 05 13 | 599 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.4+ |
| 2001 06 15 | 704 | 0.5+ | 0.4+ | 2005 05 13 | 599 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.3− |
| 2001 06 15 | 704 | 0.2+ | 0.1− | 2005 05 14 | 644 | 0.3− | 0.1+ | 2006 09 30 | 699 | 0.2+ | 0.6+ |
| 2001 06 15 | 704 | 0.4+ | 0.7− | 2005 05 14 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 1.2+ | 1.0− |
| 2001 06 15 | 704 | 0.8− | 0.7+ | 2005 05 14 | 644 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.6− | 1.0+ |
| 2001 06 22 | 704 | 0.4− | 1.0+ | 2005 05 16 | 704 | 0.5+ | 0.6+ | 2006 10 03 | G96 | 0.3− | 0.1− |
| 2001 06 22 | 704 | 0.4+ | 0.2+ | 2005 05 16 | 704 | 0.1− | 1.3+ | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2001 06 22 | 704 | 0.0 | 0.5− | 2005 05 16 | 704 | 0.4+ | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 2001 06 22 | 704 | 0.4+ | 0.2+ | 2005 05 16 | 704 | 0.2− | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.2+ |
| 2004 01 19 | 691 | 0.3+ | 0.2+ | 2005 05 16 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.7+ |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2005 05 31 | 699 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.7+ |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2005 05 31 | 699 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.6+ |
| 2004 02 11 | 703 | 0.0 | 1.4+ | 2005 05 31 | 699 | 0.3+ | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2004 02 11 | 703 | (0.3+ | 2.0+) | 2005 05 31 | 699 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.1− | 0.5+ |
| 2004 02 11 | 703 | (0.6− | 1.8+) | 2005 06 03 | E12 | 0.3+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.6+ |
| 2004 02 11 | 703 | 0.9+ | 1.5+ | 2005 06 03 | E12 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.6+ |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2005 06 03 | E12 | 0.7− | 0.4− | 2006 10 22 | 691 | 0.6− | 0.5+ |
| 2004 02 12 | 691 | 0.3+ | 0.2+ | 2005 06 03 | E12 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.6− | 0.4+ |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2005 06 04 | 703 | 0.8+ | 0.7+ | 2006 11 01 | 703 | 0.4− | 0.5+ |
| 2004 02 14 | 691 | 0.2− | 0.2+ | 2005 06 04 | 703 | 0.0 | 0.3+ | 2006 11 01 | 703 | 0.5− | 0.3− |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2005 06 04 | 703 | 0.4− | 0.9+ | 2006 11 01 | 703 | 0.5+ | 0.1− |
| 2004 02 14 | 691 | 0.1− | 0.3+ | 2005 06 05 | 704 | 0.1+ | 0.1+ | 2006 11 01 | 703 | 0.2− | 0.5+ |
| 2004 04 14 | 645 | 0.0 | 0.0 | 2005 06 05 | 704 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.7+ |
| 2004 04 14 | 645 | 0.0 | 0.2− | 2005 06 05 | 704 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2004 04 15 | 645 | 0.0 | 0.1− | 2005 06 05 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2004 04 15 | 645 | 0.1− | 0.0 | 2005 06 05 | 704 | 0.3− | 0.3− | 2006 11 13 | 644 | 0.3+ | 0.7+ |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2005 06 07 | 699 | 0.1+ | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.3+ |
| 2004 04 16 | 645 | 0.1+ | 0.1+ | 2005 06 07 | 699 | 0.3− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2005 05 03 | 691 | 0.2+ | 0.4+ | 2005 06 07 | 699 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.1− | 1.2+ |
| 2005 05 03 | 691 | 0.2+ | 0.3+ | 2005 06 07 | 699 | 0.4− | 1.1+ | 2006 11 19 | 703 | 0.7− | 1.0− |
| 2005 05 03 | 691 | 0.2+ | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.3+ | 2006 11 19 | 703 | 1.3− | 0.7+ |
| 2005 05 03 | 704 | 0.3− | 0.4+ | 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 1.3+ | 0.9+ |
| 2005 05 03 | 704 | 0.5+ | 0.0 | 2005 06 08 | 691 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.3+ |
| 2005 05 03 | 704 | 0.8+ | 0.2+ | 2005 06 23 | 644 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2005 05 03 | 704 | 0.2− | 0.6+ | 2005 06 23 | 644 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2005 05 03 | 704 | 0.2+ | 0.2− | 2005 06 23 | 644 | 0.3− | 1.1− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2005 05 12 | 704 | 0.3+ | 0.1+ | 2005 06 28 | 644 | 0.4− | 0.1+ | | | | |
| 2005 05 12 | 704 | 0.2+ | 0.1− | 2005 06 28 | 644 | 0.2− | 0.1+ | | | | |

**(139357)∗ 2001 LY$_{15}$ = 2004 CP$_{101}$**

Discovered 2001 June 12 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 60765)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 220.92385 | | (2000.0) | | | |
| $n$ | 0.27091209 | $\omega$ | 337.67582 | | −0.99590971 | +0.05408817 |
| $a$ | 2.3654683 | $\Omega$ | 205.74705 | | −0.03399160 | −0.96646741 |
| $e$ | 0.1286238 | $i$ | 9.59091 | | −0.08371630 | −0.25102831 |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 704 | 0.5+ | 0.1+ | 2004 02 19 | 704 | 0.7+ | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2001 05 26 | 704 | 0.7− | 0.2+ | 2004 02 19 | 704 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2001 05 26 | 704 | 1.0+ | 1.5+ | 2004 02 19 | 704 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2001 05 26 | 704 | 0.4− | 0.9+ | 2004 02 19 | 704 | 0.2− | 0.4− | 2006 11 08 | 644 | 0.4+ | 0.1+ |
| 2001 06 12 | 608 | 0.1− | 1.2− | 2004 02 19 | 704 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2001 06 12 | 608 | 0.5+ | 0.9− | 2004 03 12 | 644 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2001 06 12 | 608 | 0.1+ | 0.5− | 2004 03 12 | 644 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 06 15 | 704 | 0.3− | 0.8+ | 2004 03 12 | 644 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.5− | 0.2+ |
| 2001 06 15 | 704 | 0.5− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 2001 06 15 | 704 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 06 15 | 704 | 0.5+ | 1.5+ | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.7+ |
| 2001 06 16 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2001 06 16 | 691 | 0.1− | 0.4+ | 2006 10 15 | D35 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2001 06 16 | 691 | 0.0 | 0.4+ | 2006 10 15 | D35 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.0+ | 0.2+ |
| 2002 10 05 | 644 | 0.0 | 0.8− | 2006 10 15 | D35 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 10 05 | 644 | 0.5− | 0.5+ | 2006 10 18 | 691 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2004 02 12 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.0 | | | | |
| 2004 02 12 | 644 | 0.4+ | 0.8+ | 2006 10 22 | 691 | 0.4− | 0.0 | | | | |

**(139358)∗ 2001 LJ$_{18}$**

Discovered 2001 June 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.61543 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22572069 | $\omega$ | 114.79043 | | +0.14956387 | +0.98599540 | |
| $a$ | 2.6714998 | $\Omega$ | 163.30463 | | −0.97432441 | +0.15967160 | |
| $e$ | 0.1013778 | $i$ | 14.88176 | | −0.16829316 | −0.04814607 | |
| $P$ | 4.37 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 704 | 0.1+ | 0.0 | 2005 04 08 | 704 | 1.1+ | 0.1+ | 2006 08 19 | 644 | 0.0 | 0.1+ |
| 2001 05 23 | 704 | 0.8− | 0.6+ | 2005 04 08 | 704 | 0.5+ | 0.2+ | 2006 08 24 | 704 | 0.6+ | 0.2− |
| 2001 05 23 | 704 | 0.7+ | 0.2− | 2005 04 08 | 704 | 1.2+ | 0.4+ | 2006 08 24 | 704 | 0.8+ | 0.8+ |
| 2001 05 23 | 704 | 0.6− | 0.7+ | 2005 04 08 | 704 | 0.8+ | 0.1− | 2006 08 24 | 704 | 0.7+ | 1.4+ |
| 2001 06 13 | 699 | 1.2+ | 0.4− | 2005 04 12 | 049 | 0.2+ | 0.5− | 2006 08 24 | 704 | 0.2+ | 0.1+ |
| 2001 06 13 | 699 | 0.1+ | 0.2+ | 2005 04 12 | 049 | 0.3− | 0.5+ | 2006 08 25 | 704 | 0.5− | 0.2+ |
| 2001 06 13 | 699 | 0.1− | 0.4+ | 2005 04 12 | 049 | 0.3− | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.0 |
| 2001 06 13 | 699 | 0.6+ | 0.1+ | 2005 04 14 | 049 | 0.1− | 0.2− | 2006 08 25 | 704 | 0.7− | 0.8+ |
| 2001 06 19 | 608 | 0.6+ | 0.9− | 2005 04 14 | 049 | 0.1− | 0.3− | 2006 08 25 | 704 | 0.9− | 0.0 |
| 2001 06 19 | 608 | 0.3+ | 0.5− | 2005 04 14 | 049 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.1+ | 0.6+ |
| 2001 06 19 | 608 | 0.5+ | 1.2− | 2005 04 14 | 704 | 0.0 | 0.6− | 2006 08 28 | 703 | 0.7+ | 0.8− |
| 2001 07 17 | 644 | 0.3− | 0.1− | 2005 04 14 | 704 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.2− | 0.9− |
| 2001 07 17 | 644 | 0.5− | 0.2− | 2005 04 14 | 704 | 0.7+ | 1.9+ | 2006 08 28 | 699 | 0.8− | 0.2− |
| 2001 07 17 | 644 | 0.5− | 0.0 | 2005 04 15 | 699 | 1.6+ | 1.1+ | 2006 08 28 | 703 | 1.0− | 0.0 |
| 2001 07 24 | 644 | 0.6− | 0.4+ | 2005 04 15 | 699 | 0.5+ | 0.6− | 2006 08 28 | 703 | 0.4+ | 0.1+ |
| 2001 07 24 | 644 | 0.7− | 0.6+ | 2005 04 15 | 699 | 0.5− | 0.8+ | 2006 08 28 | 699 | 0.5− | 0.1+ |
| 2001 07 24 | 644 | 0.6− | 0.5+ | 2005 04 15 | 699 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.0 |
| 2002 10 16 | 644 | 0.1− | 0.8+ | 2005 04 16 | 703 | 0.9− | 0.5− | 2006 08 29 | 691 | 0.0 | 1.3− |
| 2002 10 16 | 644 | 0.1− | 0.7+ | 2005 04 16 | 703 | 1.0− | 0.8− | 2006 08 29 | 691 | 0.0 | 0.0 |
| 2002 10 16 | 644 | 0.2+ | 0.6+ | 2005 04 16 | 703 | 0.8− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2005 03 18 | 703 | 0.2− | 0.2− | 2005 04 16 | 703 | 1.0− | 0.1+ | 2006 08 30 | 704 | (1.5− | 2.1+) |
| 2005 03 18 | 703 | 0.3− | 0.4+ | 2005 04 30 | 699 | 0.4− | 0.3+ | 2006 08 30 | 704 | 0.4− | 0.7+ |
| 2005 03 18 | 703 | 1.3− | 0.8− | 2005 04 30 | 699 | 0.1+ | 1.6+ | 2006 08 30 | 704 | 0.3+ | 0.2+ |
| 2005 03 18 | 703 | 0.3− | 0.3− | 2005 04 30 | 699 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.5+ |
| 2005 04 01 | 699 | 0.3− | 0.3− | 2005 04 30 | 699 | 0.7+ | 0.6+ | 2006 09 18 | 699 | 0.6+ | 1.3+ |
| 2005 04 01 | 699 | 0.5− | 0.4− | 2005 05 12 | 704 | 1.5+ | 0.8+ | 2006 09 18 | 699 | 0.4+ | 0.9+ |
| 2005 04 01 | 699 | 0.5− | 0.5− | 2005 05 12 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.5+ |
| 2005 04 01 | 699 | 0.4− | 0.2+ | 2005 05 12 | 704 | 1.1+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.3− |
| 2005 04 04 | 703 | 0.1− | 0.5− | 2006 08 18 | 699 | 0.7+ | 0.5− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2005 04 04 | 703 | 0.3− | 0.0 | 2006 08 18 | 699 | 0.7+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2005 04 04 | 703 | 0.1− | 0.5+ | 2006 08 18 | 699 | 0.4+ | 0.8− | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2005 04 04 | 703 | 0.3− | 0.9− | 2006 08 19 | 644 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2005 04 08 | 704 | 0.8+ | 0.2− | 2006 08 19 | 644 | 0.0 | 0.0 | | | | |

**(139359)∗ 2001 ME$_1$**

Discovered 2001 June 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.28247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22844300 | $\omega$ | 300.02462 | | +0.88820569 | −0.44828373 | |
| $a$ | 2.6502335 | $\Omega$ | 86.77228 | | +0.44857781 | +0.79875540 | |
| $e$ | 0.8657814 | $i$ | 5.78636 | | +0.09934083 | +0.40128731 | |
| $P$ | 4.31 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 704 | 0.1+ | 0.5− | 2001 06 20 | 195 | 0.9+ | 0.3+ | 2001 06 30 | 670 | 0.2+ | 0.9+ |
| 2001 05 25 | 704 | 0.5+ | 0.2− | 2001 06 20 | 151 | 0.7− | 1.4+ | 2001 07 03 | 413 | 0.0 | 0.4+ |
| 2001 05 25 | 704 | 0.1− | 1.2− | 2001 06 20 | 195 | 0.1− | 0.8− | 2001 07 03 | 413 | 0.5+ | 0.1+ |
| 2001 06 16 | 704 | 0.3− | 0.2+ | 2001 06 20 | 215 | 0.1+ | 0.7+ | 2001 07 03 | 413 | 0.3+ | 0.5+ |
| 2001 06 16 | 704 | 0.4+ | 0.1+ | 2001 06 20 | 215 | 0.0 | 0.1+ | 2001 07 04 | 413 | 0.4+ | 0.1+ |
| 2001 06 16 | 704 | 0.1− | 0.1+ | 2001 06 20 | 215 | 0.1− | 0.1+ | 2001 07 04 | 413 | 0.2+ | 0.0 |
| 2001 06 16 | 704 | 0.6+ | 0.6− | 2001 06 20 | 215 | 0.3+ | 0.4+ | 2001 07 04 | 413 | 0.1+ | 0.3+ |
| 2001 06 16 | 704 | 0.0 | 0.4+ | 2001 06 20 | 215 | 0.2+ | 0.4+ | 2001 07 04 | 413 | 0.3+ | 0.1+ |
| 2001 06 17 | 860 | (1.7+ | 1.2−) | 2001 06 21 | 918 | 1.3− | 0.6+ | 2001 07 04 | 413 | 0.2+ | 0.0 |
| 2001 06 17 | 860 | 1.1+ | 0.7+ | 2001 06 21 | 918 | 0.1+ | 0.7+ | 2002 01 19 | 291 | 0.3− | 0.6+ |
| 2001 06 17 | 860 | 0.6+ | 0.5+ | 2001 06 21 | 918 | 0.6− | 0.7+ | 2002 01 19 | 291 | 0.1− | 0.6+ |
| 2001 06 17 | 859 | (1.9− | 0.1+) | 2001 06 21 | 918 | 0.6− | 0.7+ | 2002 01 19 | 291 | 0.3− | 0.7+ |
| 2001 06 17 | 859 | 0.5− | 0.2− | 2001 06 21 | 151 | 0.4− | 1.2+ | 2002 01 19 | 691 | 0.2+ | 0.3− |
| 2001 06 17 | 859 | (1.7− | 0.6−) | 2001 06 21 | 151 | 0.1− | 1.0+ | 2002 01 19 | 691 | 0.2− | 0.0 |
| 2001 06 17 | 859 | 0.7− | 1.0− | 2001 06 21 | 151 | 0.1+ | 0.9+ | 2002 01 19 | 691 | 0.4− | 0.6+ |
| 2001 06 17 | 422 | 0.2+ | 0.1− | 2001 06 21 | 151 | 0.1− | 1.0+ | 2005 04 19 | F65 | 0.4+ | 0.5+ |
| 2001 06 17 | 422 | 0.3+ | 0.1− | 2001 06 21 | 151 | 0.0 | 1.0+ | 2005 04 19 | F65 | 0.1+ | 0.1+ |
| 2001 06 17 | 422 | 0.3+ | 0.1− | 2001 06 21 | 151 | 0.1+ | 0.8+ | 2005 04 19 | F65 | 0.0 | 0.0 |
| 2001 06 17 | 165 | 0.6+ | 0.3+ | 2001 06 21 | 470 | 0.2+ | 0.2+ | 2005 04 19 | F65 | 0.5+ | 0.2− |
| 2001 06 17 | 165 | 0.5+ | 0.1− | 2001 06 21 | 470 | 0.1+ | 0.1− | 2005 05 10 | 291 | 0.1+ | 0.1− |
| 2001 06 17 | 165 | 0.8+ | 0.8+ | 2001 06 22 | 739 | 1.1+ | 1.2− | 2005 05 10 | G96 | 0.0 | 0.2− |
| 2001 06 17 | 165 | 0.3+ | 0.6− | 2001 06 22 | 739 | 0.8+ | 0.7− | 2005 05 10 | 291 | 0.3+ | 1.3− |
| 2001 06 17 | 557 | 1.1+ | 0.0 | 2001 06 22 | 739 | (0.3− | 2.1−) | 2005 05 10 | G96 | 0.2+ | 0.1− |
| 2001 06 17 | 557 | 0.6− | 0.3+ | 2001 06 22 | 704 | 0.0 | 0.5− | 2005 05 10 | G96 | 1.0+ | 0.4+ |
| 2001 06 17 | 620 | 0.9− | 1.2+ | 2001 06 22 | 704 | 0.6+ | 0.5− | 2005 05 10 | 291 | 0.0 | 0.1− |
| 2001 06 17 | 620 | (0.2− | 1.7+) | 2001 06 22 | 704 | 0.5+ | 0.0 | 2005 05 10 | G96 | 0.1− | 0.2− |
| 2001 06 17 | 620 | 1.0+ | 1.4+ | 2001 06 22 | 046 | 0.3+ | 0.3− | 2005 06 11 | 291 | 0.6+ | 0.0 |
| 2001 06 18 | 294 | 0.4− | 0.5− | 2001 06 22 | 046 | 0.2− | 0.2− | 2005 06 11 | 291 | 0.1+ | 0.6− |
| 2001 06 18 | 294 | 0.8− | 0.4− | 2001 06 22 | 046 | 0.2− | 0.1− | 2005 06 11 | 291 | 1.2+ | 0.7− |
| 2001 06 18 | 294 | 0.5+ | 0.4− | 2001 06 22 | 046 | 0.3− | 0.1− | 2006 01 10 | 704 | 1.1− | 0.0 |
| 2001 06 18 | 294 | 0.3− | 0.6− | 2001 06 22 | 046 | 0.3− | 0.0 | 2006 01 10 | 704 | (1.7− | 0.1−) |
| 2001 06 18 | 294 | 0.6− | 0.5− | 2001 06 22 | 118 | 0.0 | 0.1− | 2006 01 10 | 704 | 0.2− | 0.4+ |
| 2001 06 18 | 919 | 0.3− | 0.1+ | 2001 06 22 | 118 | 0.1+ | 0.2− | 2006 01 11 | 461 | 0.2+ | 0.1− |
| 2001 06 18 | 919 | 0.1− | 0.0 | 2001 06 22 | 118 | 0.3− | 0.0 | 2006 01 11 | 461 | 0.3+ | 0.4− |
| 2001 06 18 | 919 | 0.1− | 0.2+ | 2001 06 22 | 470 | 0.1+ | 0.1− | 2006 01 11 | 461 | 0.3+ | 0.4− |
| 2001 06 18 | 704 | (3.2+ | 0.5−) | 2001 06 22 | 470 | 0.0 | 0.3− | 2006 01 11 | 461 | 0.4+ | 0.4− |
| 2001 06 18 | 704 | 0.0 | 0.2− | 2001 06 23 | 739 | 0.4+ | 0.1− | 2006 01 11 | 461 | 0.3+ | 0.4− |
| 2001 06 18 | 422 | 0.0 | 0.1− | 2001 06 23 | 739 | 0.5− | 0.1− | 2006 01 11 | 461 | 0.4+ | 0.3− |
| 2001 06 18 | 422 | 0.1+ | 0.1− | 2001 06 23 | 739 | 0.1+ | 0.2− | 2006 01 11 | 461 | 0.4+ | 0.5− |
| 2001 06 18 | 422 | 0.1+ | 0.0 | 2001 06 23 | 739 | 0.2− | 0.4− | 2006 01 11 | 461 | 0.4+ | 0.2− |
| 2001 06 18 | 704 | 0.2+ | 0.0 | 2001 06 23 | 428 | 0.0 | 0.2− | 2006 01 11 | 461 | 0.4+ | 0.3− |
| 2001 06 18 | 704 | 0.1+ | 0.4+ | 2001 06 23 | 428 | 0.0 | 0.2− | 2006 01 13 | 084 | 0.7− | 0.2− |
| 2001 06 18 | 704 | 0.3+ | 0.3+ | 2001 06 23 | 428 | 0.3− | 0.2− | 2006 01 21 | 084 | 0.8− | 0.1− |
| 2001 06 18 | 428 | 0.0 | 0.2+ | 2001 06 23 | 428 | 0.0 | 0.3− | 2006 01 22 | 670 | 0.7− | 0.1+ |
| 2001 06 18 | 428 | 0.0 | 0.2+ | 2001 06 23 | 428 | 0.1− | 0.2− | 2006 01 22 | 670 | 0.0 | 0.1+ |
| 2001 06 18 | 428 | 0.1− | 0.1+ | 2001 06 23 | 151 | 0.8+ | 0.3− | 2006 01 27 | 703 | 0.5− | 0.1− |
| 2001 06 18 | 428 | 0.1− | 0.2+ | 2001 06 23 | 151 | 0.4+ | 0.4− | 2006 01 27 | 703 | 0.2− | 0.4− |
| 2001 06 18 | 428 | 0.1− | 0.1+ | 2001 06 23 | 151 | 0.6+ | 0.5− | 2006 01 27 | 703 | 0.6− | 0.1+ |
| 2001 06 18 | 428 | 0.3− | 0.2+ | 2001 06 23 | 151 | 0.5+ | 0.2− | 2006 01 27 | 703 | 0.5− | 0.1+ |
| 2001 06 18 | 322 | 0.2− | 0.4− | 2001 06 23 | 151 | 0.5+ | 0.5− | 2006 01 31 | 844 | 0.1− | 0.5+ |
| 2001 06 18 | 322 | 0.1− | 0.5− | 2001 06 23 | 151 | 0.5+ | 0.5− | 2006 01 31 | 844 | 0.5+ | 0.3+ |
| 2001 06 18 | 322 | 0.2− | 0.4− | 2001 06 23 | 476 | 0.5− | 0.2+ | 2006 01 31 | 844 | 0.4+ | 0.5+ |
| 2001 06 18 | 322 | 0.3+ | 0.4− | 2001 06 23 | 476 | (2.2+ | 2.2−) | 2006 01 31 | 844 | 0.0 | 0.5+ |
| 2001 06 18 | 322 | 0.1− | 0.5− | 2001 06 23 | 176 | 0.1+ | 0.2− | 2006 01 31 | 844 | 0.0 | 0.8+ |
| 2001 06 18 | 322 | 0.1− | 0.3− | 2001 06 23 | 176 | 0.1+ | 0.1− | 2006 02 06 | 084 | 0.1− | 0.2− |
| 2001 06 18 | 322 | 0.2− | 0.4− | 2001 06 23 | 176 | 0.2+ | 0.2− | 2006 02 07 | 084 | 0.0 | 0.3− |
| 2001 06 18 | 322 | 0.0 | 0.3− | 2001 06 23 | 176 | 0.1+ | 0.2− | 2006 02 09 | 084 | 0.5− | 0.2− |
| 2001 06 18 | 322 | 0.0 | 0.3− | 2001 06 23 | 176 | 0.2+ | 0.2− | 2006 02 09 | 084 | 0.5+ | 0.5− |
| 2001 06 18 | 322 | 0.2− | 0.3− | 2001 06 24 | 739 | 0.7+ | 1.2− | 2006 02 09 | 644 | 0.1+ | 0.0 |
| 2001 06 18 | 422 | 0.3+ | 0.0 | 2001 06 24 | 739 | 0.4+ | 0.0 | 2006 02 09 | 644 | 0.1+ | 0.1+ |
| 2001 06 18 | 422 | 0.2+ | 0.0 | 2001 06 24 | 739 | 0.5+ | 0.9− | 2006 02 09 | 644 | 0.1+ | 0.0 |
| 2001 06 18 | 587 | 0.2− | 0.2− | 2001 06 24 | 919 | 0.3+ | 0.3+ | 2006 02 09 | 644 | 0.0 | 0.1+ |
| 2001 06 18 | 587 | 0.0 | 0.1− | 2001 06 24 | 919 | 0.9+ | 1.1− | 2006 02 09 | 644 | 0.0 | 0.0 |
| 2001 06 18 | 587 | 0.5− | 0.0 | 2001 06 24 | 428 | 0.6+ | 0.1− | 2006 02 09 | 644 | 0.0 | 0.1+ |
| 2001 06 18 | 587 | 0.3+ | 0.4− | 2001 06 24 | 428 | 0.2+ | 0.0 | 2006 02 21 | 703 | 0.1+ | 0.2− |
| 2001 06 18 | 938 | 0.2− | 0.2− | 2001 06 24 | 428 | 0.1− | 0.0 | 2006 02 21 | 703 | 0.2− | 0.3− |
| 2001 06 18 | 938 | 0.1+ | 0.0 | 2001 06 24 | 428 | 0.0 | 0.0 | 2006 02 21 | 703 | 0.0 | 0.2− |
| 2001 06 18 | 938 | 0.0 | 0.2− | 2001 06 24 | 428 | 0.1+ | 0.0 | 2006 02 21 | 703 | 0.3− | 0.5− |
| 2001 06 18 | 938 | 0.2+ | 0.1− | 2001 06 24 | 360 | 0.1+ | 0.3+ | 2006 02 21 | 379 | 0.5− | 0.1+ |
| 2001 06 18 | 938 | 0.1+ | 0.0 | 2001 06 24 | 360 | 0.9+ | 0.1− | 2006 02 21 | 379 | 0.3− | 0.4− |
| 2001 06 18 | 938 | 0.2+ | 0.1− | 2001 06 24 | 360 | 0.6+ | 0.1+ | 2006 02 21 | 379 | 0.5+ | 0.0 |
| 2001 06 18 | 176 | (2.8+ | 2.0−) | 2001 06 24 | 151 | 0.1− | 0.9− | 2006 02 21 | 379 | 0.4+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 18 | 938 | 0.2+ | 0.2− | 2001 06 24 | 151 | 0.3− | 0.8− | 2006 02 26 | 699 | 0.3+ | 0.0 |
| 2001 06 18 | 938 | 0.0 | 0.1+ | 2001 06 24 | 151 | 0.0 | 0.9− | 2006 02 26 | 699 | 0.6+ | 0.0 |
| 2001 06 18 | 938 | 0.2+ | 0.2− | 2001 06 24 | 151 | 0.0 | 0.5− | 2006 02 26 | 699 | 0.3+ | 0.0 |
| 2001 06 18 | 938 | 0.1− | 0.6− | 2001 06 24 | 151 | 0.0 | 0.8− | 2006 02 26 | 699 | 0.1+ | 0.1− |
| 2001 06 18 | 176 | (3.2+ | 2.0−) | 2001 06 24 | 151 | 0.2− | 1.0− | 2006 02 27 | 240 | 0.1+ | 0.2− |
| 2001 06 18 | 938 | 0.0 | 0.2+ | 2001 06 24 | 595 | 0.2+ | 0.3− | 2006 02 27 | 240 | 0.0 | 0.0 |
| 2001 06 18 | 176 | (3.4+ | 2.1−) | 2001 06 24 | 595 | 0.3+ | 0.0 | 2006 02 27 | 240 | 0.0 | 0.2− |
| 2001 06 18 | 938 | 0.3+ | 0.5− | 2001 06 24 | 595 | 0.1− | 0.2+ | 2006 02 27 | 240 | 0.1+ | 0.1− |
| 2001 06 18 | 938 | 0.2+ | 0.4− | 2001 06 25 | 711 | 0.1− | 0.1− | 2006 02 27 | 240 | 0.2+ | 0.0 |
| 2001 06 18 | 176 | (3.7+ | 2.2−) | 2001 06 25 | 711 | 0.5+ | 0.2+ | 2006 02 27 | 240 | 0.1− | 0.1− |
| 2001 06 18 | 938 | 0.0 | 0.2− | 2001 06 25 | 711 | 0.6+ | 0.0 | 2006 03 03 | 699 | 0.3+ | 0.1+ |
| 2001 06 18 | 938 | 0.3+ | 0.2− | 2001 06 25 | 670 | 0.1+ | 0.1− | 2006 03 03 | 699 | 0.2+ | 0.0 |
| 2001 06 18 | 938 | 0.3+ | 0.1− | 2001 06 25 | 919 | 0.3− | 0.2+ | 2006 03 03 | 699 | 0.3+ | 0.0 |
| 2001 06 18 | 938 | 0.4+ | 0.3− | 2001 06 25 | 919 | 0.1+ | 0.3− | 2006 03 03 | 699 | 0.3+ | 0.4+ |
| 2001 06 18 | 938 | 0.1− | 0.2− | 2001 06 25 | 735 | 0.2+ | 0.3+ | 2006 03 09 | 703 | 0.2− | 0.4− |
| 2001 06 18 | 938 | 0.1− | 0.1− | 2001 06 25 | 919 | 0.0 | 0.6+ | 2006 03 09 | 703 | 0.1− | 0.1− |
| 2001 06 18 | 938 | 0.1− | 0.3− | 2001 06 25 | 735 | 0.0 | 0.4+ | 2006 03 09 | 703 | 0.0 | 0.5+ |
| 2001 06 18 | 938 | 0.1− | 0.2− | 2001 06 25 | 670 | 0.7+ | 0.4− | 2006 03 09 | 703 | 0.8− | 0.0 |
| 2001 06 18 | 938 | 0.1+ | 0.7− | 2001 06 25 | 735 | 0.6+ | 0.2− | 2006 03 19 | 704 | (1.6− | 0.9+) |
| 2001 06 19 | 493 | 0.2− | 0.2− | 2001 06 25 | 322 | 0.5− | 0.3− | 2006 03 19 | 704 | 1.4− | 1.4+ |
| 2001 06 19 | 493 | 0.1+ | 0.2− | 2001 06 25 | 322 | 0.1− | 0.3− | 2006 03 19 | 704 | (1.6+ | 0.5+) |
| 2001 06 19 | 704 | 0.6− | 0.2+ | 2001 06 25 | 322 | 0.2− | 0.2− | 2006 03 19 | 704 | 1.3+ | 0.6+ |
| 2001 06 19 | 704 | 0.1+ | 0.2+ | 2001 06 25 | 322 | 0.0 | 0.3− | 2006 03 19 | 699 | 0.3+ | 0.1− |
| 2001 06 19 | 919 | 0.5− | 0.1+ | 2001 06 25 | 322 | 0.2− | 0.1− | 2006 03 19 | 704 | (2.0− | 0.7+) |
| 2001 06 19 | 704 | 0.0 | 0.4− | 2001 06 25 | 322 | 0.6− | 0.1− | 2006 03 19 | 699 | 0.7+ | 0.2− |
| 2001 06 19 | 919 | 0.7+ | 0.1− | 2001 06 25 | 322 | 0.1− | 0.2− | 2006 03 19 | 699 | 0.2− | 0.8− |
| 2001 06 19 | 704 | 0.1+ | 0.4− | 2001 06 25 | 322 | 0.5− | 0.1+ | 2006 03 19 | 699 | 0.2− | 0.1− |
| 2001 06 19 | 919 | 0.3+ | 0.2− | 2001 06 25 | 151 | 0.8− | 0.4+ | 2006 03 19 | 151 | 0.2− | 0.5+ |
| 2001 06 19 | 704 | 0.2− | 0.3− | 2001 06 25 | 046 | 0.2− | 0.1+ | 2006 03 19 | 151 | 0.3+ | 0.4+ |
| 2001 06 19 | 704 | 0.1+ | 0.2− | 2001 06 25 | 151 | 0.7− | 0.5+ | 2006 03 19 | 151 | 0.6+ | 0.1+ |
| 2001 06 19 | 704 | 0.0 | 0.2− | 2001 06 25 | 046 | 0.1− | 0.2− | 2006 03 19 | 151 | 0.3− | 0.2+ |
| 2001 06 19 | 704 | 0.1+ | 0.5− | 2001 06 25 | 151 | 0.7− | 0.4+ | 2006 03 19 | 151 | 0.2− | 0.1+ |
| 2001 06 19 | 704 | 0.2+ | 0.0 | 2001 06 25 | 046 | 0.5− | 0.0 | 2006 03 19 | 151 | 0.3− | 0.1+ |
| 2001 06 19 | 428 | 0.1+ | 0.1+ | 2001 06 25 | 046 | 0.1− | 0.2− | 2006 03 19 | A62 | 0.3+ | 0.0 |
| 2001 06 19 | 428 | 0.0 | 0.1+ | 2001 06 25 | 151 | 1.0− | 0.6+ | 2006 03 19 | A62 | 0.2+ | 0.3− |
| 2001 06 19 | 428 | 0.2− | 0.1+ | 2001 06 25 | 151 | 0.6− | 0.4+ | 2006 03 19 | A62 | 0.4− | 0.5− |
| 2001 06 19 | 428 | 0.2− | 0.1+ | 2001 06 25 | 151 | 0.9− | 0.3+ | 2006 03 19 | A62 | 0.0 | 0.0 |
| 2001 06 19 | 428 | 0.0 | 0.1+ | 2001 06 25 | 071 | (3.6− | 0.4+) | 2006 03 19 | A62 | 0.3+ | 0.1+ |
| 2001 06 19 | 952 | (0.9+ | 1.7−) | 2001 06 25 | 071 | (2.7− | 0.1−) | 2006 03 19 | A62 | 0.2− | 0.3− |
| 2001 06 19 | 952 | 0.5+ | 1.0− | 2001 06 25 | 071 | (1.6− | 0.2+) | 2006 03 19 | A62 | 0.2− | 0.1− |
| 2001 06 19 | 952 | 1.2+ | 0.3− | 2001 06 26 | 452 | 0.5− | 0.1+ | 2006 03 19 | A62 | 0.1− | 0.2− |
| 2001 06 19 | 952 | 1.0+ | 0.6− | 2001 06 26 | 452 | 0.8− | 0.5+ | 2006 03 19 | A62 | 0.0 | 0.3− |
| 2001 06 19 | 952 | 0.4− | 0.1+ | 2001 06 26 | 452 | (1.6+ | 0.5+) | 2006 03 19 | A62 | 0.1− | 0.2− |
| 2001 06 19 | 198 | 0.8− | 0.3− | 2001 06 26 | 452 | 0.9− | 0.3+ | 2006 03 19 | A62 | 0.4− | 0.0 |
| 2001 06 20 | 670 | 0.1+ | 0.0 | 2001 06 26 | 452 | 0.5− | 0.4+ | 2006 03 22 | 704 | 0.4+ | 0.3+ |
| 2001 06 20 | 670 | 0.2− | 0.3− | 2001 06 26 | 452 | 1.2− | 0.2+ | 2006 03 22 | 704 | 0.1+ | 0.6+ |
| 2001 06 20 | 428 | 0.4− | 0.1− | 2001 06 26 | 452 | 0.5− | 0.3+ | 2006 03 22 | 704 | 0.6+ | 0.5+ |
| 2001 06 20 | 428 | 0.6− | 0.2− | 2001 06 26 | 452 | 0.6− | 0.3+ | 2006 03 22 | 704 | 0.7+ | 0.4+ |
| 2001 06 20 | 428 | 0.6− | 0.0 | 2001 06 26 | 452 | 0.9− | 0.2+ | 2006 03 22 | 704 | 0.1+ | 0.2+ |
| 2001 06 20 | 428 | 0.6− | 0.0 | 2001 06 26 | 452 | 0.3− | 0.3+ | 2006 03 25 | 703 | 0.7− | 0.2− |
| 2001 06 20 | 428 | 0.6− | 0.0 | 2001 06 26 | 452 | 0.7− | 0.5+ | 2006 03 25 | 703 | 0.6− | 0.1+ |
| 2001 06 20 | 428 | 0.6− | 0.1+ | 2001 06 26 | 428 | 0.0 | 0.1− | 2006 03 25 | 703 | 0.7− | 0.1+ |
| 2001 06 20 | 046 | 0.1− | 0.2+ | 2001 06 26 | 428 | 0.3− | 0.0 | 2006 03 25 | 703 | 0.8− | 0.1+ |
| 2001 06 20 | 046 | 0.2+ | 0.2+ | 2001 06 26 | 428 | 0.4− | 0.0 | 2006 03 27 | H85 | 0.0 | 0.0 |
| 2001 06 20 | 046 | 0.2+ | 0.1+ | 2001 06 26 | 428 | 0.5− | 0.1+ | 2006 03 27 | H85 | 0.1− | 0.1+ |
| 2001 06 20 | 046 | 0.1+ | 0.3+ | 2001 06 27 | 118 | 1.0+ | 0.6+ | 2006 03 29 | 704 | 0.5+ | 0.6+ |
| 2001 06 20 | 195 | (2.6+ | 0.3+) | 2001 06 27 | 118 | 1.3+ | 0.4+ | 2006 03 29 | 704 | 0.5− | 0.5+ |
| 2001 06 20 | 151 | 0.7− | 0.9+ | 2001 06 27 | 118 | 0.8+ | 0.7+ | 2006 03 29 | 704 | 1.0+ | 0.0 |
| 2001 06 20 | 195 | 0.9+ | 0.1− | 2001 06 27 | 046 | 0.7+ | 0.5+ | 2006 03 29 | 704 | 0.2− | 0.6+ |
| 2001 06 20 | 151 | 0.6− | 0.9+ | 2001 06 27 | 046 | 0.6+ | 0.9+ | 2006 03 31 | 699 | 0.2+ | 0.8+ |
| 2001 06 20 | 151 | 0.5− | 0.9+ | 2001 06 27 | 046 | 0.3+ | 0.9+ | 2006 03 31 | 699 | 0.3+ | 1.1+ |
| 2001 06 20 | 151 | 0.5− | 1.0+ | 2001 06 27 | 046 | 0.4+ | 0.2− | 2006 03 31 | 699 | (0.9+ | 1.5+) |
| 2001 06 20 | 151 | 0.5− | 1.1+ | 2001 06 30 | 670 | 0.3− | 0.4+ | 2006 03 31 | 699 | (0.9− | 2.0+) |

**(139360)∗ 2001 MU$_2$**

Discovered 2001 June 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 82.84275 | | (2000.0) | | | |
| $n$ | 0.22412444 | $\omega$ | 228.26870 | | −0.06288045 | +0.99526730 |
| $a$ | 2.6841693 | $\Omega$ | 38.31645 | | −0.87653119 | −0.01957690 |
| $e$ | 0.2402995 | $i$ | 6.86302 | | −0.47722021 | −0.09518267 |
| $P$ | 4.40 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 644 | 0.2− | 0.1+ | 2005 04 19 | 608 | 0.5+ | 0.8+ | 2006 09 17 | 691 | 0.2− | 0.5+ |
| 2001 06 16 | 644 | 0.2+ | 0.0 | 2005 05 05 | 704 | (0.8+ | 3.1−) | 2006 09 17 | 691 | 0.1− | 0.4+ |
| 2001 06 16 | 644 | 0.2+ | 0.1+ | 2005 05 05 | 704 | (1.0+ | 2.3−) | 2006 09 17 | 691 | 0.3− | 0.2+ |
| 2001 06 21 | 644 | 0.1+ | 0.4− | 2005 05 05 | 704 | (0.2+ | 2.1+) | 2006 09 18 | 699 | 0.5+ | 0.9+ |
| 2001 06 21 | 644 | 0.1+ | 0.5− | 2005 05 05 | 704 | 0.5+ | 1.2+ | 2006 09 18 | 699 | 0.6+ | 0.5+ |
| 2001 06 21 | 644 | 0.2+ | 0.2− | 2005 05 05 | 608 | 0.4+ | 1.0+ | 2006 09 18 | 699 | 0.2− | 0.8+ |
| 2001 06 23 | 644 | 0.1+ | 0.8− | 2005 05 05 | 608 | 0.2+ | 1.2+ | 2006 09 18 | 699 | 0.7− | 0.9+ |
| 2001 06 23 | 644 | 0.2+ | 1.0− | 2005 05 05 | 608 | 0.2+ | 1.2+ | 2006 09 22 | 704 | 0.2+ | 0.6+ |
| 2001 06 23 | 644 | 0.5+ | 1.2− | 2005 05 08 | H06 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.9+ | 0.4− |
| 2001 07 19 | 644 | 0.1− | 0.3+ | 2005 05 08 | H06 | 0.0 | 0.4− | 2006 09 22 | 704 | 0.6+ | 0.6+ |
| 2001 07 19 | 644 | 0.1− | 0.1+ | 2005 05 08 | H06 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.6+ | 0.1+ |
| 2001 07 19 | 644 | 0.1+ | 0.0 | 2005 05 08 | H06 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.5+ | 0.8− |
| 2001 08 18 | 644 | 0.0 | 0.1+ | 2005 05 08 | H06 | 0.0 | 0.5− | 2006 09 27 | 704 | 0.4− | 0.3+ |
| 2001 08 18 | 644 | 0.1− | 0.2+ | 2005 05 09 | H06 | 0.7− | 0.8− | 2006 09 27 | 704 | 0.2− | 0.5+ |
| 2001 08 18 | 644 | 0.4− | 0.0 | 2005 05 09 | H06 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.3− | 1.0− |
| 2001 09 17 | 644 | 0.1− | 0.3− | 2005 05 09 | H06 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2001 09 17 | 644 | 0.1− | 0.6− | 2005 05 09 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2001 09 17 | 644 | 0.3+ | 0.7− | 2005 05 09 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 12 06 | 704 | 0.5+ | 0.0 | 2005 05 09 | 704 | 0.5+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.4+ |
| 2002 12 06 | 704 | 0.2+ | 0.4+ | 2005 05 09 | 699 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 2002 12 06 | 704 | 0.1− | 1.1+ | 2005 05 09 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2005 04 04 | 704 | 1.4− | 1.1+ | 2005 05 09 | 699 | 0.5− | 0.5+ | 2006 10 10 | 644 | 0.5− | 0.4+ |
| 2005 04 04 | 704 | 0.6+ | 0.8+ | 2005 05 09 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.3− | 0.4+ |
| 2005 04 04 | 704 | 0.2+ | 0.8+ | 2005 05 09 | 699 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.7− | 0.2+ |
| 2005 04 04 | 704 | 0.1+ | 1.0+ | 2005 05 09 | 699 | 0.8− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2005 04 04 | 704 | 0.3+ | 0.8+ | 2005 05 11 | G96 | 0.4− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2005 04 06 | 691 | 0.2+ | 0.3+ | 2005 05 11 | G96 | 0.1+ | 1.0− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 04 06 | 691 | 0.4+ | 0.3+ | 2005 05 11 | G96 | 0.3− | 0.2− | 2006 10 15 | 703 | 0.6− | 0.1− |
| 2005 04 06 | 691 | 0.0 | 0.4+ | 2005 05 11 | G96 | 0.4− | 0.2− | 2006 10 15 | 703 | 0.4− | 0.3+ |
| 2005 04 07 | 704 | 0.4+ | 0.0 | 2005 05 12 | 699 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.3+ | 0.1− |
| 2005 04 07 | 704 | 0.1− | 0.5+ | 2005 05 12 | 699 | 0.1− | 0.1+ | 2006 10 15 | 703 | (1.7− | 1.2+) |
| 2005 04 07 | 704 | 0.6+ | 0.1+ | 2005 05 12 | 699 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2005 04 07 | 704 | 0.5+ | 0.1+ | 2005 05 12 | 699 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.7+ |
| 2005 04 12 | 704 | 0.2+ | 0.1− | 2005 05 13 | 704 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.8− | 0.4+ |
| 2005 04 12 | 704 | 0.6− | 0.1− | 2005 05 13 | 704 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.7− | 0.3+ |
| 2005 04 12 | 704 | 0.3− | 0.1− | 2005 05 13 | 704 | 0.8+ | 0.6+ | 2006 10 21 | G96 | 0.3− | 0.4+ |
| 2005 04 12 | 704 | (1.7− | 0.4+) | 2005 05 13 | 704 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.2+ |
| 2005 04 12 | 704 | 0.8− | 0.2− | 2005 05 13 | 704 | 0.4+ | 1.1+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2005 04 16 | 691 | 0.2+ | 0.2+ | 2005 05 16 | 704 | 0.9+ | 0.6− | 2006 10 22 | 644 | 0.5+ | 0.6+ |
| 2005 04 16 | 691 | 0.2+ | 0.2+ | 2005 05 16 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2005 04 16 | 691 | 0.3+ | 0.2+ | 2005 05 16 | 704 | 0.7+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2005 04 17 | 691 | 0.2+ | 0.2+ | 2005 05 16 | 704 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2005 05 16 | 704 | 0.7+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2005 05 26 | E12 | 0.5− | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2005 04 18 | 703 | 0.3− | 0.0 | 2005 05 26 | E12 | 0.9− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2005 04 18 | 703 | 0.1− | 0.3+ | 2005 05 26 | E12 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2005 04 18 | 703 | 0.1+ | 0.1+ | 2005 05 26 | E12 | 0.2+ | 0.8− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2005 04 18 | 703 | 0.4− | 0.4+ | 2005 06 01 | 699 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2005 04 18 | 704 | 0.2− | 0.1+ | 2005 06 01 | 699 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.4+ |
| 2005 04 18 | 704 | 0.8+ | 0.4+ | 2005 06 01 | 699 | 0.7+ | 0.8− | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2005 04 18 | 704 | 0.4− | 0.2+ | 2005 06 01 | 699 | 0.5− | 0.1− | 2006 11 13 | 691 | 0.4− | 0.1+ |
| 2005 04 18 | 704 | 0.4− | 0.0 | 2005 06 28 | 699 | 0.6− | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2005 04 18 | 704 | 0.5− | 0.1− | 2005 06 28 | 699 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2005 04 19 | 608 | 0.5+ | 1.1+ | 2005 06 28 | 699 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.8− | 0.1+ |
| 2005 04 19 | 608 | 0.2+ | 1.1+ | 2005 06 28 | 699 | 1.4+ | 1.1− | 2006 11 20 | G96 | 0.1+ | 0.1− |

**(139361)∗ 2001 MV$_2$**

Discovered 2001 June 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.46295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23925223 | $\omega$ | 255.77902 | | +0.10221140 | +0.99411749 | |
| $a$ | 2.5697965 | $\Omega$ | 20.19159 | | −0.86797918 | +0.10671901 | |
| $e$ | 0.1874861 | $i$ | 5.95718 | | −0.48596808 | +0.01847913 | |
| $P$ | 4.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 644 | 0.9− | 1.3− | 2001 09 11 | 704 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 06 16 | 644 | 1.3− | 1.2− | 2001 09 11 | 704 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 2001 06 16 | 644 | 1.0− | 1.3− | 2001 09 11 | 704 | (0.3+ | 2.1+) | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 2001 06 21 | 644 | 0.5+ | 0.1− | 2001 09 11 | 704 | 1.2− | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 06 21 | 644 | 0.5+ | 0.3+ | 2001 09 11 | 704 | 0.9− | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 06 21 | 644 | 0.2+ | 0.0 | 2002 11 24 | 644 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2001 06 23 | 644 | (3.1− | 1.5−) | 2002 11 24 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 06 23 | 644 | (1.7− | 1.3−) | 2002 11 24 | 644 | 0.1− | 0.3+ | 2006 10 27 | 691 | 1.1+ | 0.0 |
| 2001 06 23 | 644 | (3.3− | 1.1−) | 2002 12 06 | 704 | 0.0 | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 06 23 | 644 | 1.2− | 1.2− | 2002 12 06 | 704 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 06 23 | 644 | (2.9− | 1.0−) | 2002 12 06 | 704 | 0.5− | 1.3+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 06 23 | 644 | 1.3− | 1.4− | 2002 12 06 | 704 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2001 06 30 | 644 | (1.2+ | 1.6+) | 2004 01 18 | 644 | 0.0 | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2001 06 30 | 644 | (1.1+ | 1.6+) | 2004 01 18 | 644 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2001 06 30 | 644 | (1.0+ | 1.8+) | 2004 01 18 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.1+ | 1.4− |
| 2001 07 12 | 644 | 0.1− | 0.5+ | 2004 01 30 | 704 | 0.6+ | 0.8− | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2001 07 12 | 644 | 0.2− | 0.4+ | 2004 01 30 | 704 | 0.7− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2001 07 12 | 644 | 0.3− | 0.5+ | 2004 01 30 | 704 | 0.5+ | 0.2− | 2006 11 13 | 644 | 0.4+ | 0.2+ |
| 2001 07 13 | 644 | 0.4+ | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 07 13 | 644 | 0.3+ | 0.2+ | 2004 02 14 | 608 | 0.2− | 0.6− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2001 07 13 | 644 | 0.5+ | 0.5+ | 2004 02 14 | 608 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2001 07 13 | 644 | 0.4+ | 0.6+ | 2004 02 14 | 608 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2001 07 13 | 644 | 0.4+ | 0.6+ | 2004 02 15 | 704 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2001 07 13 | 644 | 1.0+ | 0.2+ | 2004 02 15 | 704 | 0.2− | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2001 07 14 | 644 | 0.6+ | 0.4+ | 2004 02 15 | 704 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2001 07 14 | 644 | 0.8+ | 0.2+ | 2004 02 15 | 704 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2001 07 14 | 644 | 0.2+ | 0.3+ | 2004 02 15 | 704 | 0.5− | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 07 14 | 644 | 0.3+ | 0.3+ | 2004 02 19 | 608 | 0.8− | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2001 07 14 | 644 | 0.3+ | 0.2+ | 2004 02 19 | 608 | 0.4− | 0.8− | 2006 11 19 | 704 | 0.9− | 0.2− |
| 2001 07 14 | 644 | 0.3+ | 0.1+ | 2004 02 19 | 608 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.6+ | 0.9+ |
| 2001 07 19 | 644 | 0.3− | 0.2+ | 2004 03 18 | 291 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2001 07 19 | 644 | 0.5− | 0.3+ | 2004 03 18 | 291 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.4− |
| 2001 07 19 | 644 | 0.3− | 0.2+ | 2004 03 18 | 291 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2001 08 24 | 644 | 0.7+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 1.2+ | 0.4+ |
| 2001 08 24 | 644 | 0.6+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.9− | 0.6+ |
| 2001 08 24 | 644 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 1.9− | 0.3− |

**(139362)∗ 2001 MZ$_4$**

Discovered 2001 June 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.69733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21114466 | $\omega$ | 337.78762 | | +0.56315383 | +0.82048262 | |
| $a$ | 2.7930753 | $\Omega$ | 326.25700 | | −0.72905762 | +0.43730989 | |
| $e$ | 0.2237310 | $i$ | 10.19486 | | −0.38901510 | +0.36819605 | |
| $P$ | 4.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 04 | 691 | 0.1+ | 0.2− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.2− | 0.2+ |
| 1995 02 04 | 691 | 1.0+ | 0.1− | 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 09 15 | 704 | 1.1− | 0.2+ |
| 1995 02 04 | 691 | 0.0 | 0.5− | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 09 15 | 704 | 0.1− | 0.1+ |
| 2000 03 03 | 645 | 0.4+ | 0.0 | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 09 16 | 644 | 0.5− | 0.1− |
| 2000 03 03 | 645 | 0.4+ | 0.1+ | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.3− | 0.0 |
| 2001 06 21 | 644 | 0.4− | 0.2− | 2004 04 13 | 645 | 0.1− | 0.1+ | 2006 09 16 | 644 | 0.4− | 0.0 |
| 2001 06 21 | 644 | 0.4− | 0.4+ | 2004 04 13 | 645 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.4+ | 0.3+ |
| 2001 06 21 | 644 | 0.1+ | 0.2+ | 2005 04 06 | 644 | 0.1− | 0.3+ | 2006 09 18 | 704 | 0.5+ | 0.2− |
| 2001 06 22 | 644 | 0.5− | 0.1+ | 2005 04 06 | 699 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.1+ | 0.4+ |
| 2001 06 22 | 644 | 0.7− | 0.4+ | 2005 04 06 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.2+ | 0.5+ |
| 2001 06 22 | 644 | 0.5− | 0.5+ | 2005 04 06 | 699 | 0.8− | 0.7+ | 2006 09 18 | 704 | 0.4+ | 0.6+ |
| 2001 06 25 | 644 | 0.1− | 0.0 | 2005 04 06 | 699 | 0.3+ | 1.0− | 2006 09 19 | 703 | 0.3− | 1.1+ |
| 2001 06 25 | 644 | 0.3− | 0.2+ | 2005 04 06 | 699 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 2001 06 25 | 644 | 0.3− | 0.2+ | 2005 04 06 | 644 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.5+ |
| 2001 06 30 | 644 | 0.3− | 0.5+ | 2006 08 18 | 644 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.2+ |
| 2001 06 30 | 644 | 0.4− | 0.5+ | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.0 |
| 2001 06 30 | 644 | 0.3− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.5+ | 2006 09 20 | 699 | 0.0 | 0.3+ |
| 2001 07 30 | 644 | 0.1+ | 1.2− | 2006 08 24 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 699 | 0.2− | 0.1+ |
| 2001 07 30 | 644 | 0.1− | 1.2− | 2006 08 24 | 704 | 1.3+ | 0.3− | 2006 09 20 | 699 | 0.5− | 0.1+ |
| 2001 07 30 | 644 | 0.5− | 1.4− | 2006 08 24 | 704 | 0.1− | 0.1+ | 2006 09 23 | 106 | 0.3+ | 0.0 |
| 2001 08 06 | 644 | 0.4− | 0.2− | 2006 08 24 | 704 | (1.0− | 1.6+) | 2006 09 23 | 106 | 0.5+ | 0.0 |
| 2001 08 06 | 644 | 0.4− | 0.0 | 2006 08 26 | 704 | 0.6− | 0.0 | 2006 09 23 | 106 | 0.1+ | 0.8− |
| 2001 08 06 | 644 | 0.5− | 0.1+ | 2006 08 26 | 704 | 0.9+ | 1.1+ | 2006 09 23 | 106 | 0.5+ | 0.8− |
| 2001 09 11 | 704 | 0.5− | 1.0− | 2006 08 26 | 704 | 0.1− | 0.6+ | 2006 09 29 | 699 | (1.6− | 0.4+) |
| 2001 09 11 | 704 | (0.1− | 1.6−) | 2006 08 27 | 699 | 0.6+ | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.2+ |
| 2001 09 11 | 704 | 0.5− | 0.4− | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.2− |
| 2001 09 11 | 704 | 0.5− | 0.2− | 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 10 01 | 704 | 0.7− | 0.3+ |
| 2001 09 18 | 644 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.9+ |
| 2001 09 18 | 644 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.7+ | 0.6− | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 2001 09 18 | 644 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.7+ | 0.1− | 2006 10 01 | 704 | 0.2− | 0.0 |
| 2003 12 29 | 291 | 0.6− | 0.5+ | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 2003 12 29 | 291 | 0.5− | 0.5+ | 2006 08 30 | 704 | 0.8+ | 0.5− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2003 12 29 | 291 | 0.5− | 0.4+ | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2004 01 28 | 691 | 0.1− | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2004 02 11 | 291 | 0.3− | 0.2− | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 02 11 | 291 | 0.3− | 0.1+ | 2006 09 12 | 703 | 1.0− | 0.8+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2004 02 11 | 291 | 1.0− | 0.2− | 2006 09 12 | 703 | 0.4− | 0.5+ | 2006 11 11 | 291 | 0.2+ | 0.2+ |
| 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.3− | 0.7+ | 2006 11 11 | 291 | 0.1+ | 0.2+ |
| 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 09 15 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 291 | 0.2+ | 0.4+ |
| 2004 02 11 | 691 | 0.2+ | 0.2− | 2006 09 15 | 704 | (1.6− | 0.5+) | | | | |

**(139363)∗ 2001 ME$_8$ = 2004 AZ$_{25}$**

Discovered 2001 June 20 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 64916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.25757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21622258 | $\omega$ | 52.22437 | | −0.02409572 | +0.99573793 | |
| $a$ | 2.7491727 | $\Omega$ | 216.69697 | | −0.95766991 | −0.04854303 | |
| $e$ | 0.1050723 | $i$ | 8.56750 | | −0.28685840 | +0.07841911 | |
| $P$ | 4.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.5+ | 0.3− | 2005 04 07 | 691 | 0.2− | 0.2− | 2005 05 16 | 704 | 0.5+ | 0.5+ |
| 2001 06 15 | 704 | 0.9− | 0.3+ | 2005 04 07 | 691 | 0.1+ | 0.2− | 2005 05 16 | 704 | 0.3− | 1.2+ |
| 2001 06 15 | 704 | 0.1− | 0.1− | 2005 05 03 | 691 | 0.1+ | 0.2+ | 2005 05 30 | 699 | 0.4+ | 0.1+ |
| 2001 06 20 | 608 | 0.5− | 0.1− | 2005 05 03 | 691 | 0.0 | 0.4+ | 2005 05 30 | 699 | 0.4+ | 0.2− |
| 2001 06 20 | 608 | 0.3− | 0.0 | 2005 05 03 | 691 | 0.1+ | 0.3+ | 2005 05 30 | 699 | 0.0 | 0.3+ |
| 2001 06 20 | 608 | 0.0 | 0.2− | 2005 05 04 | 704 | 0.7+ | 0.4+ | 2005 05 30 | 699 | 0.1− | 0.5− |
| 2001 06 25 | 608 | (2.4− | 0.1−) | 2005 05 04 | 704 | 0.4+ | 0.4+ | 2005 06 04 | 703 | 0.4− | 0.5+ |
| 2001 06 25 | 608 | (2.0− | 0.4+) | 2005 05 04 | 704 | 0.4+ | 0.2+ | 2005 06 04 | 703 | 0.9− | 1.2− |
| 2001 06 25 | 608 | (2.0− | 0.5−) | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2005 06 04 | 703 | 0.4− | 0.0 |
| 2002 11 11 | 291 | (0.3− | 1.6+) | 2005 05 08 | 691 | 0.0 | 0.2+ | 2005 06 04 | 703 | 1.0− | 0.1− |
| 2002 11 11 | 291 | 0.2+ | 0.5+ | 2005 05 08 | 691 | 0.1+ | 0.2+ | 2005 06 22 | 644 | 0.1+ | 0.1− |
| 2002 11 11 | 291 | 0.5+ | 0.3+ | 2005 05 09 | 704 | 0.4+ | 0.2− | 2005 06 22 | 644 | 0.1+ | 0.0 |
| 2004 01 12 | 644 | 0.1− | 0.1+ | 2005 05 09 | 704 | 0.3+ | 0.6− | 2005 06 22 | 644 | 0.2+ | 0.3+ |
| 2004 01 12 | 644 | 0.0 | 0.3+ | 2005 05 09 | 704 | 0.5+ | 0.1+ | 2006 08 29 | 703 | 1.0− | 0.6+ |
| 2004 01 12 | 644 | 0.0 | 0.4+ | 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 08 29 | 703 | 1.1− | 1.0+ |
| 2004 01 18 | 644 | 0.0 | 0.3+ | 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.2− | 0.7+ |
| 2004 01 18 | 644 | 0.1+ | 0.3+ | 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.4+ |
| 2004 01 18 | 644 | 0.1+ | 0.4+ | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.3+ | 0.4+ |
| 2004 01 28 | 645 | 0.1− | 0.1+ | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 09 06 | 644 | 0.4+ | 0.5+ |
| 2004 01 28 | 645 | 0.0 | 0.2+ | 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.1+ | 0.4+ |
| 2004 02 11 | 644 | 0.2+ | 0.4+ | 2005 05 11 | G96 | 0.4− | 0.3+ | 2006 09 16 | 644 | 0.2− | 0.3+ |
| 2004 02 11 | 644 | 0.5+ | 0.6+ | 2005 05 11 | G96 | 0.6− | 0.2− | 2006 09 16 | 644 | 0.1+ | 0.4+ |
| 2004 02 11 | 644 | 0.5+ | 0.3+ | 2005 05 11 | G96 | 0.8− | 0.6− | 2006 09 16 | 644 | 0.2+ | 0.3+ |
| 2005 01 20 | 809 | 0.5− | 0.2− | 2005 05 11 | G96 | 0.6− | 0.2− | 2006 09 19 | 703 | (2.4+ | 0.9+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 20 | 809 | 0.7− | 0.2− | 2005 05 13 | 704 | 0.6+ | 0.6− | 2006 09 19 | 703 | 0.0 | 0.1− | | |
| 2005 01 20 | 809 | 0.1− | 0.1− | 2005 05 13 | 704 | 0.6+ | 0.5− | 2006 09 19 | 703 | 0.2− | 0.6+ | | |
| 2005 03 11 | G96 | 0.5− | 0.1+ | 2005 05 13 | 704 | 0.9+ | 0.7− | 2006 09 19 | 703 | 1.0− | 0.4− | | |
| 2005 03 11 | G96 | 0.4− | 0.1− | 2005 05 13 | 704 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.6− | 0.5+ | | |
| 2005 03 11 | G96 | 0.4− | 0.4+ | 2005 05 13 | 704 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2005 03 11 | G96 | 0.1− | 0.0 | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.6+ | | |
| 2005 04 02 | G96 | 0.5− | 0.2+ | 2005 05 16 | 691 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.2+ | | |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2005 05 16 | 691 | 0.0 | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2005 04 02 | G96 | 0.4− | 0.1+ | 2005 05 16 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.7+ | | |
| 2005 04 02 | G96 | 0.6− | 0.3− | 2005 05 16 | 704 | 0.5+ | 0.2− | | | | | | |
| 2005 04 07 | 691 | 0.1− | 0.4− | 2005 05 16 | 704 | (1.9+ | 0.3+) | | | | | | |

**(139364)∗ 2001 MO$_8$**

Discovered 2001 June 24 by W. K. Y. Yeung at Desert Beaver Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.30417 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21835383 | $\omega$ | 5.21235 | | +0.16459993 | +0.98004274 | |
| $a$ | 2.7312545 | $\Omega$ | 274.29463 | | −0.90895915 | +0.10683277 | |
| $e$ | 0.2753423 | $i$ | 6.41752 | | −0.38301452 | +0.16763946 | |
| $P$ | 4.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 24 | 919 | 0.4+ | 0.2+ | 2005 03 13 | 699 | 0.3+ | 1.4− | 2005 05 08 | 699 | 0.4+ | 0.3+ | | |
| 2001 06 24 | 919 | (1.6+ | 0.7−) | 2005 03 13 | 691 | 0.2+ | 0.0 | 2005 05 08 | 699 | 0.2+ | 1.2− | | |
| 2001 06 26 | 919 | 0.6+ | 0.1− | 2005 03 13 | 699 | (2.3+ | 0.8−) | 2005 05 14 | 703 | 0.9− | 0.2+ | | |
| 2001 06 26 | 919 | (3.1+ | 1.4−) | 2005 03 13 | 691 | 0.3+ | 0.1+ | 2005 05 14 | 703 | 0.4− | 1.0+ | | |
| 2001 06 26 | 691 | 0.2− | 0.1− | 2005 03 13 | 691 | 0.2+ | 0.1+ | 2005 05 14 | 703 | (2.1− | 0.0 ) | | |
| 2001 06 26 | 691 | 0.5− | 0.0 | 2005 04 05 | 644 | 0.0 | 0.5+ | 2005 05 14 | 703 | 0.1− | 0.0 | | |
| 2001 06 26 | 691 | 0.3− | 0.0 | 2005 04 05 | 644 | 0.5+ | 0.6+ | 2005 05 23 | 644 | 0.0 | 0.1+ | | |
| 2001 07 21 | 608 | 1.2− | 0.4+ | 2005 04 05 | 644 | 0.6+ | 0.7+ | 2005 05 23 | 644 | 0.1+ | 0.1− | | |
| 2001 07 21 | 608 | 0.6− | 0.2+ | 2005 04 05 | 644 | 0.6+ | 0.3+ | 2005 05 23 | 644 | 0.3+ | 0.2− | | |
| 2001 07 21 | 608 | 0.8− | 0.5+ | 2005 04 05 | 644 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 0.3+ | 0.4+ | | |
| 2001 08 11 | 608 | 0.8+ | 0.9+ | 2005 04 05 | 644 | 0.6+ | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.3+ | | |
| 2001 08 11 | 608 | 0.9+ | 1.1+ | 2005 04 06 | 699 | 1.4+ | 0.3+ | 2006 09 28 | 703 | 0.0 | 1.1+ | | |
| 2001 08 11 | 608 | 0.8+ | 1.4+ | 2005 04 06 | 699 | 0.7− | 0.5+ | 2006 09 28 | 703 | 0.8+ | 0.3− | | |
| 2001 09 08 | 704 | 0.2+ | 0.4+ | 2005 04 06 | 699 | 0.8+ | 1.1+ | 2006 09 28 | 703 | 0.9− | 0.2+ | | |
| 2001 09 08 | 704 | 0.5+ | 0.8+ | 2005 04 14 | 703 | 0.4+ | 0.4− | 2006 09 28 | 703 | 0.4− | 0.3+ | | |
| 2001 09 08 | 704 | 0.8+ | 0.6+ | 2005 04 14 | 703 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 1.0− | 0.4+ | | |
| 2001 09 08 | 704 | 0.2+ | 0.0 | 2005 04 14 | 703 | 0.5− | 0.2− | 2006 09 28 | 703 | 0.4− | 0.1− | | |
| 2001 09 12 | 704 | 0.0 | 0.6− | 2005 04 14 | 703 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 12 | 704 | 0.8+ | 0.0 | 2005 04 18 | E12 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.4+ | | |
| 2001 09 12 | 704 | 0.6− | 1.2− | 2005 04 18 | E12 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.7+ | | |
| 2001 09 12 | 704 | 0.5+ | 0.0 | 2005 04 18 | E12 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.5+ | | |
| 2003 12 22 | 691 | 0.0 | 0.1+ | 2005 04 18 | E12 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.7+ | | |
| 2003 12 22 | 691 | 0.1− | 0.3+ | 2005 04 19 | 703 | 0.4− | 1.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2003 12 22 | 691 | 0.4+ | 0.4− | 2005 04 19 | 703 | (0.6+ | 2.1+) | 2006 10 17 | 703 | 0.1− | 0.8+ | | |
| 2004 01 15 | 691 | 0.4− | 0.4+ | 2005 04 19 | 703 | 0.6− | 1.3+ | 2006 10 17 | 703 | 0.2− | 0.2+ | | |
| 2004 01 15 | 691 | 0.3− | 0.2+ | 2005 04 19 | 703 | 1.2− | 1.1− | 2006 10 17 | 703 | 0.2+ | 0.2+ | | |
| 2004 01 15 | 691 | 0.2− | 0.3+ | 2005 05 04 | E12 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.9− | 1.2+ | | |
| 2004 01 27 | 691 | 0.3+ | 0.5+ | 2005 05 04 | E12 | 0.6− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.6+ | | |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2005 05 04 | E12 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.8+ | | |
| 2004 01 27 | 691 | 0.5+ | 0.1+ | 2005 05 04 | E12 | 0.7− | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.4+ | | |
| 2005 03 13 | 699 | 0.4+ | 0.5+ | 2005 05 08 | 699 | 0.6+ | 0.7+ | | | | | | |
| 2005 03 13 | 699 | 0.3− | 0.4+ | 2005 05 08 | 699 | 1.4+ | 0.6+ | | | | | | |

**(139365)∗ 2001 MX$_8$ = 2002 XS$_{111}$**

Discovered 2001 June 19 by NEAT at Palomar.

Id. A. Doppler (*MPO* 74999)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.02093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22263753 | $\omega$ | 272.47847 | | +0.89375555 | +0.43183210 | |
| $a$ | 2.6961070 | $\Omega$ | 61.96066 | | −0.33714362 | +0.82514396 | |
| $e$ | 0.1583346 | $i$ | 7.90147 | | −0.29586347 | +0.36422311 | |
| $P$ | 4.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.2+ | 0.4+ | 2005 06 13 | G96 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 1996 04 13 | 691 | 0.1− | 0.2+ | 2005 06 13 | G96 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2001 06 19 | 644 | 0.6− | 0.1+ | 2006 09 15 | A50 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.6+ | | |
| 2001 06 19 | 644 | 0.3− | 0.1− | 2006 09 15 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.9+ | | |
| 2001 06 19 | 644 | 0.2− | 0.2+ | 2006 09 15 | 644 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.4+ | | |
| 2001 06 25 | 644 | (1.2− | 3.0−) | 2006 09 15 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.4+ | | |
| 2001 06 25 | 644 | (1.0− | 3.0−) | 2006 09 18 | 703 | 0.9− | 1.1− | 2006 10 19 | 644 | 0.1+ | 0.4+ | | |
| 2001 06 25 | 644 | (1.5− | 3.3−) | 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 10 19 | 644 | 0.1− | 0.3+ | | |
| 2001 07 18 | 644 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.2+ | 0.8− | 2006 10 19 | 644 | 0.3− | 0.1+ | | |
| 2001 07 18 | 644 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2001 07 18 | 644 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 07 30 | 644 | 0.5+ | 0.5+ | 2006 09 21 | 699 | 0.7+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 07 30 | 644 | 0.7+ | 0.2+ | 2006 09 21 | 699 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 07 30 | 644 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.6− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 12 06 | 704 | (2.0+ | 1.1+) | 2006 09 29 | 699 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 12 06 | 704 | (0.5− | 1.9+) | 2006 09 29 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.5− | | |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2006 09 29 | 699 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 1.3− | 0.0 | | |
| 2002 12 06 | 704 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.7+ | 0.7+ | | |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.4− | 1.5− | 2006 11 07 | 644 | 0.1+ | 0.3+ | | |
| 2002 12 11 | 704 | 0.2+ | 1.1+ | 2006 09 30 | 703 | 0.4− | 0.5− | 2006 11 07 | 644 | 0.1− | 0.2+ | | |
| 2002 12 11 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 1.0− | 0.6− | 2006 11 07 | 644 | 0.1− | 0.4+ | | |
| 2002 12 11 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.3+ | | |
| 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.9+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | |
| 2005 05 08 | G96 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.7− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.5− | 2006 11 16 | 703 | 0.6− | 0.3+ | | |
| 2005 05 08 | G96 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 11 16 | 703 | (0.4− | 2.5−) | | |
| 2005 05 10 | 807 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 11 16 | 703 | 1.0+ | 0.5− | | |
| 2005 05 10 | 807 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.7+ | 0.3+ | | |
| 2005 06 13 | G96 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.1− | | | | | | |
| 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | | | | | |

**(139366)∗ 2001 MP$_{10}$ = 2004 DY$_{77}$ = 2005 JU$_{33}$**

Discovered 2001 June 20 by NEAT at Palomar.

Id. A. Doppler (*MPO* 74999, *MPO* 88796)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.81345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22060347 | $\omega$ | 269.02490 | | +0.86369504 | +0.50110280 | |
| $a$ | 2.7126545 | $\Omega$ | 60.90022 | | −0.43429788 | +0.79439629 | |
| $e$ | 0.1862740 | $i$ | 3.54979 | | −0.25576597 | +0.34326450 | |
| $P$ | 4.47 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.5− | | |
| 2000 05 05 | 645 | 0.1+ | 0.2+ | 2005 06 06 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.5+ | | |
| 2001 06 20 | 644 | 0.6+ | 0.3− | 2005 06 06 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.9− | 1.0− | | |
| 2001 06 20 | 644 | 0.6+ | 0.8− | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 2001 06 20 | 644 | 0.0 | 0.3+ | 2005 06 11 | 691 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2001 06 20 | 644 | 0.5+ | 0.2− | 2005 06 11 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.7− | | |
| 2001 06 20 | 644 | 0.2+ | 0.1+ | 2005 06 11 | 691 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 | | |
| 2001 06 20 | 644 | 0.5+ | 0.4− | 2005 06 14 | G96 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2001 06 26 | 644 | (1.1− | 2.3−) | 2005 06 14 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 06 26 | 644 | (0.9− | 1.9−) | 2005 06 14 | G96 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 06 26 | 644 | (1.2− | 2.2−) | 2005 06 14 | G96 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 07 19 | 644 | 0.6− | 0.3− | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2001 07 19 | 644 | 0.7− | 0.4− | 2005 06 15 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2001 07 19 | 644 | 0.7− | 0.3− | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2002 12 05 | 704 | 0.9+ | 0.3− | 2005 06 27 | 644 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.0 | | |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.6− | 0.0 | | |
| 2002 12 05 | 704 | 0.1− | 0.8+ | 2005 06 27 | 644 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.1+ | | |
| 2004 02 23 | 704 | 1.0+ | 1.4+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2004 02 23 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2004 02 23 | 704 | 0.5− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2004 02 23 | 704 | 0.7+ | 1.0+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2004 02 23 | 704 | (2.3+ | 0.1−) | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.4+ | | |
| 2005 03 12 | G96 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | G96 | 1.4− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2005 03 12 | G96 | 0.3− | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2005 03 12 | G96 | 1.1− | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.8− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2005 05 04 | G96 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2005 05 04 | G96 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.9+ |
| 2005 05 04 | G96 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2005 05 04 | G96 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2005 05 08 | G96 | 0.4− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2005 05 08 | G96 | 0.4− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.4− |
| 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2005 05 09 | G96 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.0 | 0.7+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2005 05 09 | G96 | 0.0 | 0.2− | 2006 10 15 | 703 | (1.6+ | 1.6−) | 2006 11 18 | 704 | 0.8+ | 0.8+ |
| 2005 05 09 | G96 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.6− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2005 05 09 | G96 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | | | |

**(139367)∗ 2001 ME$_{12}$**

Discovered 2001 June 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.90060 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23496385 | $\omega$ | 43.17455 | | +0.98366370 | | −0.16126616 |
| $a$ | 2.6009700 | $\Omega$ | 325.86330 | | +0.10002124 | | +0.85908438 |
| $e$ | 0.1339500 | $i$ | 8.19530 | | +0.14967122 | | +0.48576461 |
| $P$ | 4.19 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 644 | 0.2− | 0.4+ | 2002 12 15 | 704 | 0.0 | 0.2− | 2004 04 25 | 703 | 0.3− | 0.8+ |
| 2001 06 21 | 644 | 0.1− | 0.5+ | 2002 12 15 | 704 | 0.2− | 0.1− | 2004 04 26 | 699 | 0.5− | 0.1− |
| 2001 06 21 | 644 | 0.3− | 0.3+ | 2004 02 16 | 703 | 0.6− | 0.9+ | 2004 04 26 | 699 | 0.5− | 0.3− |
| 2001 06 27 | 644 | 0.9+ | 0.1+ | 2004 02 16 | 703 | (1.6+ | 1.2+) | 2004 04 26 | 699 | 0.8− | 0.3+ |
| 2001 06 27 | 644 | 0.5+ | 0.2+ | 2004 02 16 | 703 | 0.2+ | 0.1− | 2004 04 26 | 699 | 0.7− | 0.2− |
| 2001 06 27 | 644 | 0.3+ | 0.3− | 2004 02 16 | 703 | 1.4− | 0.7+ | 2006 08 24 | 704 | (1.7+ | 0.7+) |
| 2001 06 30 | 644 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.9+ | 0.5+ | 2006 08 24 | 704 | 0.8+ | 1.0− |
| 2001 06 30 | 644 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 08 24 | 704 | 1.0− | 0.4+ |
| 2001 06 30 | 644 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 08 24 | 704 | 0.4− | 0.6+ |
| 2001 07 12 | 644 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.3− | 2006 10 02 | 704 | 0.5− | 1.1+ |
| 2001 07 12 | 644 | 0.0 | 0.3+ | 2004 03 16 | 703 | 0.3− | 0.2− | 2006 10 02 | 704 | 1.0+ | 1.4+ |
| 2001 07 12 | 644 | 0.1− | 0.3+ | 2004 03 16 | 703 | 0.4+ | 0.2+ | 2006 10 02 | 704 | (1.9+ | 0.9+) |
| 2001 07 20 | 644 | 0.6− | 0.3+ | 2004 03 16 | 703 | 0.4− | 0.7+ | 2006 10 02 | 704 | 1.0+ | 1.1+ |
| 2001 07 20 | 644 | 0.4− | 0.1− | 2004 03 16 | 703 | 0.7− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 07 20 | 644 | 0.6− | 0.2+ | 2004 03 17 | 704 | 1.2− | 1.4+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2001 08 19 | 704 | 0.5− | 0.8+ | 2004 03 17 | 704 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 08 19 | 704 | 0.6− | 0.6+ | 2004 03 17 | 704 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2001 08 19 | 704 | 0.1+ | 0.9+ | 2004 03 17 | 704 | 0.0 | 0.5− | 2006 10 27 | F84 | 0.1− | 0.3− |
| 2001 08 19 | 704 | 0.2+ | 1.3+ | 2004 03 17 | 704 | 0.4+ | 0.6+ | 2006 10 27 | F84 | 0.1+ | 0.2− |
| 2001 09 07 | 704 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.9+ | 0.0 | 2006 10 29 | 703 | 0.4− | 0.0 |
| 2001 09 07 | 704 | 0.1+ | 0.8+ | 2004 03 19 | 704 | 0.6+ | 0.4− | 2006 10 29 | 703 | 0.2− | 0.0 |
| 2001 09 07 | 704 | 1.0− | 1.2+ | 2004 03 19 | 704 | (1.7+ | 1.0−) | 2006 10 29 | 703 | 0.1− | 0.2− |
| 2001 09 11 | 704 | 0.1− | 0.5− | 2004 03 19 | 704 | 0.4− | 0.6− | 2006 10 29 | 703 | 0.4− | 0.1+ |
| 2001 09 11 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.8+ | 0.2+ | 2006 11 14 | 704 | 0.4− | 0.5+ |
| 2001 09 11 | 704 | 0.4+ | 0.3− | 2004 03 20 | 704 | 0.8+ | 0.7+ | 2006 11 14 | 704 | 0.4− | 0.7+ |
| 2001 09 11 | 704 | 0.0 | 0.2+ | 2004 03 20 | 704 | 1.0+ | 0.1+ | 2006 11 14 | 704 | 0.8− | 0.6+ |
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.7+ | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.9+ | 0.0 | 2006 11 14 | 704 | 0.1− | 0.4− |
| 2002 10 04 | 704 | 0.8+ | 0.8+ | 2004 03 26 | 699 | 0.5+ | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.3+ |
| 2002 11 15 | 704 | 1.2+ | 0.6+ | 2004 03 26 | 699 | 0.3− | 0.0 | 2006 11 17 | 644 | 0.3− | 0.3+ |
| 2002 11 15 | 704 | 1.4+ | 0.3+ | 2004 03 26 | 699 | 0.4− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2002 11 15 | 704 | 1.1+ | 0.0 | 2004 03 26 | 699 | 0.3− | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2002 11 15 | 704 | 0.9+ | 0.3− | 2004 03 31 | 704 | 0.0 | 0.5− | 2006 11 22 | 703 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 1.0− | 0.5+ | 2004 03 31 | 704 | 0.9+ | 0.2− | 2006 11 22 | 703 | 0.6− | 0.2− |
| 2002 12 05 | 704 | 1.3− | 0.2+ | 2004 03 31 | 704 | 0.5− | 1.3+ | 2006 11 22 | 703 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.7− | 0.0 | 2004 03 31 | 704 | 1.4+ | 1.0+ | 2006 11 22 | 703 | 0.5+ | 0.2+ |
| 2002 12 05 | 704 | 0.9− | 0.0 | 2004 04 25 | 703 | (0.6+ | 3.1+) | 2006 11 22 | 703 | 1.4+ | 1.1+ |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2004 04 25 | 703 | 1.1+ | 0.4+ | 2006 11 22 | 703 | 0.3+ | 0.0 |
| 2002 12 15 | 704 | 0.4+ | 0.6+ | 2004 04 25 | 703 | (0.3− | 1.6+) | 2006 11 22 | 703 | 0.1+ | 0.1− |

**(139368)∗ 2001 MH$_{12}$**

Discovered 2001 June 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.94493 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23468761 | $\omega$ | 249.48934 | | +0.42329638 | | +0.90541722 |
| $a$ | 2.6030106 | $\Omega$ | 45.59667 | | −0.81350945 | | +0.39551252 |
| $e$ | 0.1595577 | $i$ | 2.58698 | | −0.39877631 | | +0.15423849 |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 11 | 691 | 0.1+ | 0.5− | 2001 09 10 | 699 | (0.5+ | 2.2+) | 2006 11 11 | 703 | 1.0− | 0.4+ |
| 1991 01 11 | 691 | 1.2+ | 0.1+ | 2001 09 10 | 699 | (0.1− | 1.6+) | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 1991 01 11 | 691 | 0.5+ | 0.3− | 2001 09 10 | 699 | 0.9− | 1.0+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 1992 05 07 | 691 | 1.1− | 0.3− | 2002 11 24 | 644 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 1992 05 07 | 691 | 0.8− | 0.1+ | 2002 11 24 | 644 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.4− |
| 1992 05 07 | 691 | 0.8− | 0.1− | 2002 12 10 | 704 | 0.5+ | 0.4+ | 2006 11 12 | G96 | 0.3− | 0.2− |
| 2000 03 12 | 704 | 0.1− | 0.5+ | 2002 12 10 | 704 | 0.4+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2000 03 12 | 704 | 0.1− | 0.5+ | 2002 12 10 | 704 | 0.1+ | 1.1+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2000 03 12 | 704 | 0.5+ | 0.3+ | 2002 12 10 | 704 | 0.2− | 0.8+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2000 03 12 | 704 | 0.6+ | 1.1+ | 2002 12 10 | 704 | 0.3+ | 0.6+ | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2000 03 12 | 704 | 1.2+ | 1.0+ | 2002 12 11 | 333 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2001 06 21 | 644 | 0.4+ | 0.6+ | 2002 12 11 | 333 | 0.4− | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2001 06 21 | 644 | 0.5+ | 0.6+ | 2002 12 11 | 333 | 0.8− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.3− |
| 2001 06 21 | 644 | 0.4+ | 0.7+ | 2004 02 16 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2001 06 27 | 644 | (0.8− | 3.2−) | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 1.2− |
| 2001 06 27 | 644 | (0.8− | 3.3−) | 2004 02 16 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.6+ |
| 2001 06 27 | 644 | (0.8− | 3.3−) | 2004 02 19 | 704 | 0.3+ | 0.1− | 2006 11 17 | 703 | (1.0− | 2.0−) |
| 2001 06 28 | 644 | (0.3− | 1.7−) | 2004 02 19 | 704 | (1.7+ | 0.8+) | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2001 06 28 | 644 | (0.1− | 1.9−) | 2004 02 19 | 704 | 0.2− | 0.8− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 06 28 | 644 | (0.3− | 1.8−) | 2004 02 19 | 704 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2001 06 30 | 644 | (0.6− | 1.6−) | 2004 02 19 | 704 | (2.7+ | 0.3−) | 2006 11 21 | 704 | (1.6− | 0.7+) |
| 2001 06 30 | 644 | (0.5− | 2.0−) | 2004 02 23 | 704 | 0.8+ | 0.4+ | 2006 11 21 | 704 | (0.3+ | 2.0+) |
| 2001 06 30 | 644 | (0.3− | 1.7−) | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 11 21 | 704 | (2.6− | 1.7−) |
| 2001 06 30 | 608 | 0.4+ | 0.7− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.9+ |
| 2001 06 30 | 608 | 0.1+ | 0.4− | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 11 25 | 701 | 0.1− | 0.2− |
| 2001 06 30 | 608 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.5+ | 2006 11 25 | 701 | 0.9+ | 0.0 |
| 2001 07 28 | 699 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.5+ | 0.0 |
| 2001 07 28 | 699 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.7+ | 2.1− |
| 2001 07 28 | 699 | 0.9+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.8+ | 0.5− |
| 2001 07 28 | 699 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.5− | 2006 11 27 | 703 | (4.7− | 0.1+) |
| 2001 08 19 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.7− |
| 2001 08 19 | 704 | 0.8+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2001 08 19 | 704 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.3− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2001 08 19 | 704 | 0.6+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2001 08 19 | 704 | 0.5+ | 0.9+ | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2001 08 25 | 704 | (0.7− | 1.7+) | 2006 10 27 | G96 | 0.5− | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2001 08 25 | 704 | (0.2+ | 2.0+) | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2001 08 25 | 704 | 0.0 | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2001 08 25 | 704 | (0.7− | 2.1+) | 2006 11 09 | 644 | 0.0 | 0.5− | | | | |
| 2001 09 10 | 699 | (2.1− | 2.6+) | 2006 11 11 | 703 | 0.1− | 0.3+ | | | | |

**(139369)∗ 2001 MY$_{13}$ = 2000 CB$_{78}$**

Discovered 2001 June 24 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 14957)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.86396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23308814 | $\omega$ | 95.36969 | | −0.22957408 | | +0.97307793 |
| $a$ | 2.6149051 | $\Omega$ | 161.32029 | | −0.91627689 | | −0.20901942 |
| $e$ | 0.1358144 | $i$ | 3.64714 | | −0.32822614 | | −0.09710929 |
| $P$ | 4.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 12 | 691 | 0.1− | 0.8− | 2001 06 28 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 1997 08 12 | 691 | 0.0 | 0.3− | 2001 06 28 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.4+ | 0.1+ |
| 1997 08 12 | 691 | 0.7+ | 0.5− | 2001 06 28 | 691 | 0.5+ | 0.2− | 2006 10 01 | 691 | 0.5− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 691 | 0.5+ | 0.3− | 2001 07 13 | 644 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2000 02 07 | 691 | 0.1+ | 0.4− | 2001 07 13 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2000 02 07 | 691 | 0.0 | 0.3− | 2001 07 13 | 644 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2000 02 11 | 691 | 0.4− | 0.1+ | 2001 07 21 | 608 | 0.7− | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2000 02 11 | 691 | 0.3− | 0.2− | 2001 07 21 | 608 | 0.2− | 0.8− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2000 02 11 | 691 | 0.4− | 0.1+ | 2001 07 21 | 608 | 0.7− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2000 04 03 | 691 | 0.1− | 0.5− | 2006 09 23 | 691 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.1− | 0.5− |
| 2000 04 03 | 691 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2000 04 03 | 691 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.8− |
| 2001 06 24 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2001 06 24 | 691 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2001 06 24 | 691 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.4+ | | | | |

**(139370)∗ 2001 MJ$_{14}$ = 1992 OQ$_2$ = 1999 AV$_{26}$**

Discovered 2001 June 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 14958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.55161 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21966779 | $\omega$ | 18.04958 | | +0.70013044 | | +0.71128577 |
| $a$ | 2.7203522 | $\Omega$ | 296.44199 | | −0.66338152 | | +0.61568773 |
| $e$ | 0.1507903 | $i$ | 3.99424 | | −0.26408771 | | +0.33911823 |
| $P$ | 4.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 07 26 | 809 | 1.4+ | 0.0 | 2001 08 18 | 704 | (0.3+ | 1.5−) | 2006 10 19 | 703 | 0.2− | 0.7+ |
| 1992 07 26 | 809 | 0.2+ | 0.5+ | 2001 08 19 | 704 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 1992 07 26 | 809 | 0.4+ | 0.3+ | 2001 08 19 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.8+ | 0.3− |
| 1992 07 30 | 809 | 0.0 | 1.0− | 2001 08 19 | 704 | 0.7+ | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 1992 07 30 | 809 | 0.1− | 0.2− | 2001 08 19 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.5+ |
| 1992 07 30 | 809 | 1.0− | 1.7− | 2001 08 19 | 704 | 1.2+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 1998 12 24 | 691 | 0.3− | 0.3− | 2001 08 24 | 699 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 1998 12 24 | 691 | 0.1− | 0.0 | 2001 08 24 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 1998 12 24 | 691 | 0.1+ | 0.4− | 2001 08 24 | 704 | 1.0+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 1999 01 09 | 691 | 0.4− | 0.6− | 2001 08 24 | 699 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1999 01 09 | 691 | 0.4− | 0.2− | 2001 08 24 | 699 | 0.1− | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 1999 01 09 | 691 | 0.1− | 0.2− | 2001 08 24 | 704 | 1.4+ | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 1999 01 16 | 691 | 0.1− | 0.3− | 2001 08 24 | 699 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 1999 01 16 | 691 | 0.6+ | 0.3+ | 2001 09 07 | 704 | 0.3− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 1999 01 16 | 691 | 0.2+ | 0.4+ | 2001 09 07 | 704 | 0.5− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 06 19 | 699 | 1.2+ | 0.9− | 2001 09 07 | 704 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 06 19 | 699 | 0.4+ | 1.4− | 2001 09 07 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 06 19 | 699 | (1.6+ | 0.2+) | 2001 09 07 | 704 | 0.1− | 1.2− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2001 06 19 | 699 | 0.3+ | 0.2+ | 2001 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 06 28 | 699 | (0.8− | 1.5+) | 2001 09 20 | 704 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 06 28 | 699 | 0.2− | 1.0+ | 2001 09 20 | 704 | 0.8+ | 1.3+ | 2006 10 30 | 104 | 0.6+ | 0.3+ |
| 2001 06 28 | 699 | 0.1− | 0.7+ | 2001 09 20 | 704 | 0.0 | 1.2− | 2006 10 30 | 104 | 0.3− | 0.5+ |
| 2001 06 28 | 699 | 0.6− | 0.4+ | 2001 09 20 | 704 | 1.2− | 0.2+ | 2006 10 30 | 104 | 0.3+ | 0.8+ |
| 2001 07 16 | 608 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 1.1+ | 0.7+ | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2001 07 16 | 608 | 0.3− | 0.6+ | 2004 02 23 | 704 | (0.0 | 2.2+) | 2006 11 14 | 703 | 0.8− | 0.0 |
| 2001 07 16 | 608 | 0.1− | 0.2+ | 2004 02 23 | 704 | 1.3+ | 0.3+ | 2006 11 14 | 703 | (2.0− | 0.5−) |
| 2001 07 28 | 608 | 0.9− | 1.2+ | 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 703 | 0.6− | 0.2+ |
| 2001 07 28 | 608 | 1.3− | 0.8+ | 2004 03 15 | 704 | (1.1− | 1.7+) | 2006 11 16 | 704 | 0.4− | 0.3+ |
| 2001 07 28 | 608 | (0.8− | 2.3+) | 2004 03 15 | 704 | (0.2+ | 1.7+) | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2001 07 29 | 644 | 0.2+ | 0.2− | 2004 03 15 | 704 | 0.0 | 1.2+ | 2006 11 16 | 704 | 0.2+ | 1.0− |
| 2001 07 29 | 644 | 0.1+ | 0.1+ | 2004 03 15 | 704 | (1.1− | 2.1+) | 2006 11 16 | 704 | 0.3+ | 0.5− |
| 2001 07 29 | 644 | 0.4+ | 0.1− | 2004 03 15 | 704 | 0.6+ | 1.1+ | 2006 11 16 | 704 | 0.8− | 0.6− |
| 2001 07 30 | 644 | 0.2− | 0.4− | 2005 02 14 | 809 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.9− |
| 2001 07 30 | 644 | 0.5− | 0.3− | 2005 02 14 | 809 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2001 07 30 | 644 | 0.4− | 0.1− | 2005 02 14 | 809 | 0.7− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.4− |
| 2001 08 14 | 608 | 0.2+ | 0.9− | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.4− |
| 2001 08 14 | 608 | 0.3+ | 0.9− | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2001 08 14 | 608 | 0.0 | 0.6− | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 22 | 704 | (0.5− | 1.6+) |
| 2001 08 16 | 704 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2001 08 16 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2001 08 16 | 704 | 0.1+ | 0.4− | 2006 10 11 | 644 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2001 08 18 | 704 | (0.1− | 1.9−) | 2006 10 12 | 644 | 0.3− | 0.6+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2001 08 18 | 704 | 0.9− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2001 08 18 | 704 | 0.2+ | 0.9− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.1+ |

**(139371)∗ 2001 MH$_{16}$ = 1996 GC$_9$**

Discovered 2001 June 27 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 14960)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.34488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22860086 | $\omega$ | 260.56555 | | +0.46667320 | | +0.88388594 |
| $a$ | 2.6490133 | $\Omega$ | 37.30377 | | −0.79004591 | | +0.43237625 |
| $e$ | 0.1333312 | $i$ | 2.93323 | | −0.39754695 | | +0.17831553 |
| $P$ | 4.31 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.3− | 0.5+ | 2005 07 03 | 644 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 1996 04 13 | 691 | 0.1+ | 0.8+ | 2005 07 03 | E12 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.6− |
| 1996 04 13 | 691 | 0.1− | 0.4+ | 2005 07 03 | E12 | 1.0− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 1996 04 19 | 691 | 0.4+ | 0.3− | 2005 07 03 | E12 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 1996 04 19 | 691 | 0.4+ | 0.8+ | 2005 07 03 | E12 | 0.8− | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 1996 04 19 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2001 06 27 | 644 | 0.0 | 1.0+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 2001 06 27 | 644 | 0.2+ | 0.9+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2001 06 27 | 644 | 0.3+ | 1.2+ | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 2001 06 28 | 644 | 0.0 | 0.7+ | 2006 10 04 | G96 | 0.5+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2001 06 28 | 644 | 0.1− | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2001 06 28 | 644 | 0.3− | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2001 07 17 | 608 | 0.5+ | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 2001 07 17 | 608 | 0.5+ | 0.5− | 2006 10 04 | G96 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.2− | 1.3+ |
| 2001 07 17 | 608 | 0.1+ | 0.4− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4− | 1.0+ |
| 2001 07 17 | 608 | 0.3+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.6− |
| 2001 07 17 | 608 | 0.7+ | 0.8+ | 2006 10 04 | G96 | 0.5− | 0.1+ | 2006 11 14 | 701 | 0.0 | 0.5− |
| 2001 07 17 | 608 | 0.5+ | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 701 | 0.1− | 0.1− |
| 2001 07 20 | 644 | 0.7− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2001 07 20 | 644 | 0.8− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 07 20 | 644 | 0.6− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 14 | 701 | 0.1− | 0.1− |
| 2001 08 12 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2001 08 12 | 644 | 0.5+ | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 701 | 0.1− | 0.2− |
| 2001 08 12 | 644 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 12 06 | 291 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 14 | 701 | 0.3+ | 0.2+ |
| 2002 12 06 | 291 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 14 | 701 | 0.5+ | 0.0 |
| 2002 12 06 | 291 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 14 | 701 | 0.1− | 0.1+ |
| 2002 12 06 | 291 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 14 | 701 | 0.0 | 0.3− |
| 2002 12 06 | 291 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2002 12 06 | 291 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.8+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.4+ |
| 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2005 07 03 | 644 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2005 07 03 | 644 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2+ |

**(139372)∗ 2001 MD$_{17}$**

Discovered 2001 June 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.80397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24017558 | $\omega$ | 219.66436 | | +0.36254957 | | +0.92718854 |
| $a$ | 2.5632059 | $\Omega$ | 71.77648 | | −0.82789682 | | +0.36684370 |
| $e$ | 0.2213557 | $i$ | 5.69341 | | −0.42795404 | | +0.07580972 |
| $P$ | 4.10 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.4+ | 0.8+ | 2003 01 10 | 291 | 0.2+ | 0.6+ | 2005 07 03 | 644 | 0.3+ | 0.2+ | | |
| 2000 03 09 | 704 | 0.3+ | 0.7+ | 2003 01 10 | 291 | 0.2+ | 0.5+ | 2005 07 03 | 644 | 0.3+ | 0.5+ | | |
| 2000 03 09 | 704 | 0.2+ | 0.5+ | 2003 01 10 | 291 | 0.7+ | 0.5+ | 2006 10 19 | G96 | 0.4− | 0.3− | | |
| 2001 05 29 | 608 | 0.6− | 0.0 | 2004 02 16 | 691 | 0.2− | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.0 | | |
| 2001 05 29 | 608 | 0.7− | 0.7+ | 2004 02 16 | 704 | 0.3+ | 1.2− | 2006 10 19 | G96 | 0.1− | 0.0 | | |
| 2001 05 29 | 608 | 1.1− | 0.6+ | 2004 02 16 | 691 | 0.5− | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2001 06 27 | 644 | 0.3− | 0.5+ | 2004 02 16 | 704 | (3.3− | 1.3+) | 2006 10 28 | G96 | 0.0 | 0.4− | | |
| 2001 06 27 | 644 | 0.1− | 0.4+ | 2004 02 16 | 704 | 0.9+ | 0.4+ | 2006 10 28 | G96 | 0.5− | 0.2+ | | |
| 2001 06 27 | 644 | 0.2− | 0.6+ | 2004 02 16 | 691 | 0.5− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2001 06 28 | 644 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.5+ | 0.4− | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2001 06 28 | 644 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.9+ | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.6− | | |
| 2001 06 28 | 644 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.2+ | 2006 11 11 | G96 | 0.9+ | 0.6− | | |
| 2001 07 18 | 644 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 1.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2001 07 18 | 644 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2001 07 18 | 644 | 0.0 | 0.0 | 2005 05 31 | 428 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2001 07 28 | 699 | 0.2− | 0.1+ | 2005 05 31 | 428 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.0 | | |
| 2001 07 28 | 699 | 0.2− | 0.4+ | 2005 06 11 | 704 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.8− | 0.1+ | | |
| 2001 07 28 | 699 | 0.1+ | 0.4+ | 2005 06 11 | 704 | 0.1− | 0.1+ | 2006 11 26 | H07 | 0.1− | 0.1+ | | |
| 2001 07 28 | 699 | 0.0 | 0.4+ | 2005 06 11 | 704 | 0.1− | 0.1+ | 2006 11 26 | H07 | 0.0 | 0.2+ | | |
| 2001 08 16 | 704 | (2.7+ | 0.1+) | 2005 06 11 | 704 | 0.2+ | 0.8+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2001 08 16 | 704 | (2.3+ | 0.5−) | 2005 06 11 | 704 | 0.1− | 0.5− | 2006 11 27 | 691 | 0.2− | 0.2+ | | |
| 2001 08 16 | 704 | (2.5+ | 1.1+) | 2005 07 03 | 644 | 0.5+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2003 01 04 | 704 | 0.7+ | 1.3+ | 2005 07 03 | 644 | 0.3+ | 0.6+ | 2006 11 27 | H07 | 0.1− | 0.8+ | | |
| 2003 01 04 | 704 | 0.9+ | 0.5+ | 2005 07 03 | 644 | 0.4+ | 0.3+ | 2006 11 27 | H07 | 0.2− | 0.4+ | | |
| 2003 01 04 | 704 | 0.2+ | 1.4− | 2005 07 03 | 644 | 0.2+ | 0.5+ | 2006 11 27 | H07 | 0.5− | 0.6+ | | |

**(139373)∗ 2001 MA$_{18}$**

Discovered 2001 June 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.88520 | | (2000.0) | | | |
| $n$ | 0.22587256 | $\omega$ | 17.03719 | | +0.47543298 | +0.85957593 |
| $a$ | 2.6703021 | $\Omega$ | 281.69602 | | −0.82781227 | +0.36502227 |
| $e$ | 0.1769921 | $i$ | 11.02881 | | −0.29780922 | +0.35761428 |
| $P$ | 4.36 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | (2.5+ | 0.1−) | 2001 11 10 | 704 | 0.1+ | 0.3− | 2004 02 19 | 704 | 0.0 | 1.3+ | | |
| 2000 03 09 | 704 | 0.5+ | 0.2+ | 2001 11 10 | 704 | 0.0 | 0.3+ | 2005 07 03 | E12 | 0.2− | 0.3+ | | |
| 2000 03 09 | 704 | 0.1− | 0.4− | 2001 11 10 | 704 | 0.3+ | 1.2+ | 2005 07 03 | E12 | 0.0 | 0.0 | | |
| 2000 03 09 | 704 | 0.9− | 0.0 | 2002 12 06 | 704 | 0.1+ | 0.1+ | 2005 07 03 | E12 | 0.7+ | 0.1+ | | |
| 2001 06 21 | 704 | 0.8− | 0.8+ | 2002 12 06 | 704 | 0.3− | 0.2+ | 2005 07 03 | E12 | 0.3+ | 0.4+ | | |
| 2001 06 21 | 704 | 0.1− | 0.5+ | 2002 12 06 | 704 | 0.5− | 0.2+ | 2005 08 01 | E12 | 1.1− | 1.0+ | | |
| 2001 06 21 | 704 | 0.8− | 1.2− | 2002 12 06 | 704 | 0.2+ | 0.3+ | 2005 08 01 | E12 | 0.9+ | 0.9− | | |
| 2001 06 21 | 704 | 0.5+ | 0.8− | 2002 12 06 | 704 | 0.2− | 0.7+ | 2005 08 01 | E12 | 0.2− | 0.0 | | |
| 2001 06 21 | 704 | 0.0 | 0.9+ | 2002 12 11 | 704 | 0.4− | 0.5+ | 2005 08 01 | E12 | 0.1+ | 0.2+ | | |
| 2001 06 28 | 699 | 0.2− | 0.3+ | 2002 12 11 | 704 | 0.3− | 0.0 | 2006 10 23 | 703 | 0.0 | 0.2− | | |
| 2001 06 28 | 699 | 0.6− | 0.3+ | 2002 12 11 | 704 | 0.3− | 0.0 | 2006 10 23 | 703 | 0.1+ | 0.4+ | | |
| 2001 06 28 | 699 | 0.7− | 0.6+ | 2002 12 11 | 704 | 0.3− | 0.2− | 2006 10 23 | 703 | 0.1− | 0.1+ | | |
| 2001 06 28 | 699 | 0.5− | 0.6+ | 2002 12 13 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 703 | 0.0 | 0.2+ | | |
| 2001 06 29 | 699 | 0.3− | 0.2+ | 2002 12 13 | 704 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.2− | | |
| 2001 06 29 | 699 | 1.0− | 0.6+ | 2002 12 13 | 704 | 0.2+ | 0.9− | 2006 11 15 | 703 | 0.2+ | 0.6− | | |
| 2001 06 29 | 699 | 0.9− | 0.2− | 2002 12 13 | 704 | 0.2− | 0.8− | 2006 11 15 | 703 | 0.8− | 0.2− | | |
| 2001 06 29 | 699 | 0.6− | 0.8+ | 2002 12 13 | 704 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.4− | | |
| 2001 07 16 | 699 | 0.1− | 0.2+ | 2002 12 14 | 704 | 0.3+ | 0.2− | 2006 11 15 | 704 | 0.2+ | 0.4+ | | |
| 2001 07 16 | 699 | 0.6+ | 0.3+ | 2002 12 14 | 704 | 0.9+ | 0.5− | 2006 11 15 | 704 | 0.8+ | 0.5− | | |
| 2001 07 16 | 699 | 0.0 | 0.3+ | 2002 12 14 | 704 | 0.4+ | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.3+ | | |
| 2001 07 16 | 699 | 0.1+ | 0.1+ | 2002 12 14 | 704 | 0.3+ | 1.2+ | 2006 11 15 | 704 | 0.9− | 0.4+ | | |
| 2001 08 25 | 704 | 1.0+ | 0.5+ | 2002 12 14 | 704 | 0.1+ | 0.1− | 2006 11 17 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.3− | 0.8+ | 2002 12 14 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.1− | 0.6+ | 2002 12 14 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.1+ | | |
| 2001 08 25 | 704 | 0.0 | 0.6+ | 2002 12 14 | 704 | 0.1− | 0.5− | 2006 11 21 | 703 | 0.1+ | 0.5− | | |
| 2001 08 25 | 704 | 0.3+ | 0.2+ | 2002 12 14 | 704 | 0.5+ | 0.7− | 2006 11 21 | 703 | 0.1+ | 0.2+ | | |
| 2001 09 04 | 644 | 0.3− | 0.1+ | 2002 12 14 | 704 | 0.2− | 1.4− | 2006 11 21 | 703 | 0.4− | 0.5− | | |
| 2001 09 04 | 644 | 0.2− | 0.1− | 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 703 | 0.3− | 0.0 | | |
| 2001 09 04 | 644 | 0.6− | 0.2+ | 2003 01 05 | 704 | 0.5− | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.4+ | | |
| 2001 09 07 | 699 | (1.6+ | 0.7+) | 2003 01 05 | 704 | 0.2+ | 0.7+ | 2006 11 22 | 703 | 0.2− | 1.0+ | | |
| 2001 09 07 | 699 | 0.3− | 0.0 | 2003 01 05 | 704 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.6− | 0.1+ | | |
| 2001 09 07 | 699 | 0.7+ | 1.0− | 2004 02 18 | 691 | 0.4+ | 0.4+ | 2006 11 22 | 703 | 0.3+ | 0.3+ | | |
| 2001 09 07 | 699 | 0.5+ | 0.6− | 2004 02 18 | 691 | 0.0 | 0.4+ | 2006 11 22 | 703 | 0.6− | 0.1− | | |
| 2001 10 19 | 704 | 0.2− | 0.9− | 2004 02 18 | 691 | 0.4+ | 0.4+ | 2006 11 22 | 703 | 0.2+ | 0.8+ | | |
| 2001 10 19 | 704 | 0.2+ | 0.2− | 2004 02 19 | 704 | 0.1+ | 1.0+ | 2006 11 22 | 703 | (0.1− | 1.5−) | | |
| 2001 10 19 | 704 | 0.8+ | 0.3− | 2004 02 19 | 704 | 0.7+ | 0.1− | 2006 11 22 | 703 | 0.2+ | 1.4+ | | |
| 2001 11 10 | 704 | 0.0 | 0.7+ | 2004 02 19 | 704 | 0.1− | 0.4+ | | | | | | |

**(139374)∗ 2001 MW$_{18}$**

Discovered 2001 June 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.62119 | | (2000.0) | | | |
| $n$ | 0.21624496 | $\omega$ | 101.19141 | | +0.84346364 | +0.52746236 |
| $a$ | 2.7489830 | $\Omega$ | 227.06738 | | −0.53095135 | +0.78980897 |
| $e$ | 0.1766132 | $i$ | 7.98823 | | −0.08160726 | +0.31302596 |
| $P$ | 4.56 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 566 | 0.8− | 0.4+ | 2001 10 03 | 644 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.0 | | |
| 1997 10 29 | 566 | 0.6− | 0.3+ | 2001 10 03 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.3− | 0.3+ | | |
| 1997 10 29 | 566 | 0.7− | 0.1− | 2001 10 03 | 644 | 0.1+ | 0.0 | 2006 10 19 | 704 | 0.1+ | 0.5− | | |
| 1997 12 07 | 910 | 0.1+ | 0.0 | 2001 10 14 | 699 | 1.4+ | 0.1+ | 2006 10 19 | 704 | 0.4+ | 0.1− | | |
| 1997 12 07 | 910 | 0.4+ | 0.1− | 2001 10 14 | 704 | 0.6+ | 0.1− | 2006 10 19 | 704 | 1.2+ | 0.4− | | |
| 1997 12 07 | 910 | 0.3+ | 0.1+ | 2001 10 14 | 704 | 0.7+ | 0.3− | 2006 10 19 | 704 | 0.2+ | 0.1− | | |
| 1997 12 07 | 910 | 0.1+ | 0.2+ | 2001 10 14 | 699 | 0.4+ | 0.4+ | 2006 10 19 | 704 | 0.2− | 0.9− | | |
| 1997 12 07 | 910 | 0.1− | 0.3+ | 2001 10 14 | 704 | 0.5+ | 0.6− | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 1997 12 07 | 910 | 0.0 | 0.3+ | 2001 10 14 | 699 | 0.7+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1− | | |
| 2000 04 26 | 699 | 0.1− | 0.7+ | 2001 10 14 | 704 | 1.0+ | 0.4− | 2006 10 19 | 644 | 0.4− | 0.4− | | |
| 2000 04 26 | 699 | 0.6− | 0.1+ | 2001 10 14 | 704 | (1.2+ | 2.6−) | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2000 04 26 | 699 | 0.5+ | 0.7+ | 2001 10 14 | 699 | 0.6− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2000 04 26 | 699 | 1.0+ | 0.7+ | 2001 10 21 | 704 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2001 05 25 | 644 | 0.8− | 0.4− | 2001 10 21 | 704 | 0.5− | 0.6− | 2006 10 29 | 704 | 0.1− | 0.4+ | | |
| 2001 05 25 | 644 | 0.8− | 0.4− | 2001 10 21 | 704 | 0.7− | 0.9+ | 2006 10 29 | 704 | 0.3− | 0.1+ | | |
| 2001 05 25 | 644 | 0.8− | 0.0 | 2001 10 21 | 704 | 0.6− | 0.2+ | 2006 10 29 | 704 | 0.9− | 0.2+ | | |
| 2001 06 20 | 704 | 1.4− | 0.0 | 2001 10 21 | 704 | 0.7− | 0.3+ | 2006 10 29 | 704 | 0.6− | 1.2+ | | |
| 2001 06 20 | 704 | 0.5+ | 0.1+ | 2001 11 10 | 704 | 0.2− | 0.7+ | 2006 10 29 | 704 | 1.1− | 0.6+ | | |
| 2001 06 20 | 704 | 0.5+ | 0.1+ | 2001 11 10 | 704 | 0.2− | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2001 06 29 | 699 | 0.1− | 1.1+ | 2001 11 10 | 704 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2001 06 29 | 699 | 1.0+ | 0.8+ | 2001 11 10 | 704 | 1.3− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2001 06 29 | 699 | 0.3+ | 0.6− | 2001 11 10 | 704 | 0.3− | 0.1− | 2006 11 09 | 691 | 0.2− | 0.0 | | |
| 2001 06 29 | 699 | 0.1− | 0.0 | 2001 12 07 | 704 | 0.6+ | 0.4− | 2006 11 09 | 691 | 0.4− | 0.0 | | |
| 2001 06 30 | 699 | 0.3+ | 0.3+ | 2001 12 07 | 704 | 1.1+ | 0.4+ | 2006 11 09 | 691 | 0.1− | 0.2+ | | |
| 2001 06 30 | 699 | 0.5+ | 0.1− | 2001 12 07 | 704 | 0.7+ | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.1+ | | |
| 2001 06 30 | 699 | 0.3+ | 0.0 | 2003 01 28 | 704 | 0.3− | 0.7+ | 2006 11 11 | 691 | 0.3− | 0.1− | | |
| 2001 06 30 | 699 | 0.9+ | 0.1− | 2003 01 28 | 704 | 0.8+ | 0.1− | 2006 11 11 | 691 | 0.2− | 0.1+ | | |
| 2001 07 20 | 699 | 0.9+ | 0.6− | 2003 01 28 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.5− | | |
| 2001 07 20 | 699 | 0.1− | 0.1+ | 2003 01 28 | 704 | (0.1− | 1.7+) | 2006 11 11 | 703 | 0.1+ | 0.6− | | |
| 2001 07 20 | 699 | 0.0 | 0.3− | 2004 03 16 | 704 | 0.2− | 0.9+ | 2006 11 11 | 703 | (0.4− | 1.5−) | | |
| 2001 07 20 | 699 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.5− | | |
| 2001 08 20 | 704 | 0.1+ | 0.3+ | 2004 03 16 | 704 | 0.7+ | 1.4+ | 2006 11 13 | 691 | 0.2− | 0.1+ | | |
| 2001 08 20 | 704 | 0.4− | 0.1+ | 2004 03 16 | 704 | 1.0+ | 1.0+ | 2006 11 13 | 691 | 0.2− | 0.3+ | | |
| 2001 08 20 | 704 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.8+ | 1.0+ | 2006 11 13 | 644 | 0.3− | 0.1+ | | |
| 2001 08 20 | 704 | 0.1− | 1.0− | 2005 06 03 | 703 | (2.9− | 1.3+) | 2006 11 13 | 691 | 0.0 | 0.2+ | | |
| 2001 08 23 | 699 | 0.7+ | 0.4− | 2005 06 03 | 703 | (2.0+ | 0.6−) | 2006 11 13 | 644 | 0.2− | 0.2− | | |
| 2001 08 23 | 699 | 0.2− | 0.2− | 2005 06 03 | 703 | 1.3− | 0.7− | 2006 11 13 | 644 | 0.1− | 0.1+ | | |
| 2001 08 23 | 699 | 0.1− | 0.4− | 2005 06 05 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 703 | (1.3+ | 2.2+) | | |
| 2001 08 23 | 699 | 0.4− | 0.1− | 2005 06 05 | 704 | 0.7+ | 0.2+ | 2006 11 17 | 703 | 0.6+ | 1.5+ | | |
| 2001 08 25 | 704 | 0.2− | 0.2− | 2005 06 05 | 704 | 0.6+ | 0.7+ | 2006 11 17 | 703 | 1.0+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.0 | 2005 06 05 | 704 | 0.0 | 0.2+ | 2006 11 17 | 703 | 1.3+ | 0.7+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2005 06 06 | 691 | 1.0− | 0.8+ | 2006 11 18 | 704 | 0.0 | 0.0 | | |
| 2001 08 25 | 704 | 0.1− | 0.5+ | 2005 06 06 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 1.0+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.3+ | 2005 06 06 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.8+ | | |
| 2001 08 30 | 644 | 0.6− | 0.8− | 2005 06 10 | 691 | 0.5+ | 0.5+ | 2006 11 18 | 704 | 1.2+ | 0.2− | | |
| 2001 08 30 | 644 | 0.7− | 0.6− | 2005 06 10 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 30 | 644 | 0.4− | 0.5− | 2005 06 10 | 691 | 0.3+ | 0.6+ | 2006 11 18 | 704 | 0.2− | 1.0+ | | |
| 2001 09 09 | 699 | 0.1− | 0.6− | 2005 06 16 | 691 | 0.7− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.6+ | | |
| 2001 09 09 | 699 | 0.8+ | 0.3− | 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 09 | 699 | 0.1− | 0.5− | 2005 06 16 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.1− | | |
| 2001 09 09 | 699 | 0.1− | 0.9− | 2006 09 25 | 704 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.8+ | | |
| 2001 09 15 | 644 | 0.9− | 0.2− | 2006 09 25 | 704 | 0.2− | 1.4+ | 2006 11 21 | 704 | 0.3− | 1.3+ | | |
| 2001 09 15 | 644 | 0.8− | 0.4− | 2006 09 25 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 1.0+ | 1.5+ | | |
| 2001 09 15 | 644 | 0.7− | 0.4− | 2006 09 25 | 704 | 0.3+ | 0.7− | 2006 11 21 | 704 | 0.3− | 1.2+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.4− | 2006 09 25 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 1.4+ | | |
| 2001 09 16 | 704 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 1.2+ | | |
| 2001 09 16 | 704 | 0.2− | 0.6− | 2006 09 29 | 704 | 0.5+ | 0.8− | 2006 11 26 | 704 | 0.0 | 0.5− | | |
| 2001 09 18 | 644 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.2− | 0.1+ | 2006 11 26 | 704 | 0.4− | 0.4+ | | |
| 2001 09 18 | 644 | 0.2+ | 0.8+ | 2006 09 29 | 704 | 0.7+ | 0.1− | 2006 11 26 | 704 | 0.4− | 0.0 | | |
| 2001 09 18 | 644 | 0.8+ | 0.9+ | 2006 09 29 | 704 | 0.1− | 0.1− | 2006 11 26 | 704 | 0.2− | 0.1+ | | |
| 2001 09 25 | 704 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 28 | 704 | 0.5+ | 0.2+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 28 | 704 | 1.1+ | 0.1− | | |
| 2001 09 25 | 704 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 11 28 | 704 | 0.1+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.2+ | 2006 10 11 | 691 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.5− | | |

**(139375)∗ 2001 MY$_{19}$**

Discovered 2001 June 25 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.86399 | | (2000.0) | | | |
| $n$ | 0.23659394 | $\omega$ | 359.17819 | | +0.92987202 | +0.36604512 |
| $a$ | 2.5890094 | $\Omega$ | 339.23243 | | −0.33693249 | +0.80730211 |
| $e$ | 0.1301921 | $i$ | 5.94563 | | −0.14769744 | +0.46289770 |
| $P$ | 4.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 15 | 809 | 0.4− | 0.1− | 2001 07 30 | 644 | 0.5− | 0.2− | 2004 03 18 | 704 | 0.5+ | 0.4− | | |
| 1993 08 15 | 809 | 0.4+ | 1.3− | 2001 07 30 | 644 | 0.5− | 0.3+ | 2004 03 18 | 691 | 0.4− | 0.2+ | | |
| 1993 08 15 | 809 | 0.8+ | 1.6− | 2001 07 30 | 644 | 0.3− | 0.5+ | 2004 03 18 | 691 | 0.3− | 0.0 | | |
| 1993 08 24 | 809 | (5.1+ | 1.1+) | 2002 12 06 | 704 | 0.2+ | 0.2+ | 2004 03 18 | 691 | 0.4− | 0.1− | | |
| 1993 08 24 | 809 | (5.5+ | 0.4+) | 2002 12 06 | 704 | (0.8+ | 1.9+) | 2004 03 28 | 691 | 0.3− | 0.0 | | |
| 1993 08 24 | 809 | (5.4+ | 0.1−) | 2002 12 06 | 704 | 0.4+ | 1.0+ | 2004 03 28 | 691 | 0.1− | 0.0 | | |
| 2001 06 25 | 644 | (2.3+ | 0.4−) | 2002 12 06 | 704 | 0.4+ | 0.3+ | 2004 03 28 | 691 | 0.0 | 0.0 | | |
| 2001 06 25 | 644 | (2.1+ | 0.2−) | 2002 12 14 | 704 | 0.6+ | 1.0− | 2004 03 30 | 291 | 0.5+ | 0.3+ | | |
| 2001 06 25 | 644 | 0.2+ | 0.6+ | 2002 12 14 | 704 | 0.3+ | 0.6+ | 2004 03 30 | 291 | 0.4+ | 0.0 | | |
| 2001 06 25 | 644 | (2.4+ | 0.5+) | 2002 12 14 | 704 | 0.3− | 0.5− | 2004 03 30 | 291 | 0.4+ | 0.4+ | | |
| 2001 06 25 | 644 | 0.2+ | 0.4+ | 2002 12 14 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 703 | (1.8− | 0.6−) | | |
| 2001 06 25 | 644 | 0.5+ | 0.4+ | 2002 12 14 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.4+ | | |
| 2001 06 30 | 644 | 0.1+ | 0.5+ | 2004 02 13 | 291 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.4+ | | |
| 2001 06 30 | 644 | 0.0 | 0.7+ | 2004 02 13 | 291 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.6− | 0.5+ | | |
| 2001 06 30 | 644 | 0.2− | 0.7+ | 2004 02 13 | 291 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.4+ | | |
| 2001 07 10 | 644 | (1.6+ | 2.2−) | 2004 02 26 | 704 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.2+ | | |
| 2001 07 10 | 644 | (1.8+ | 2.3−) | 2004 02 26 | 704 | (1.6+ | 0.1−) | 2006 11 13 | 644 | 0.1+ | 0.6+ | | |
| 2001 07 10 | 644 | (1.9+ | 2.3−) | 2004 02 26 | 704 | 0.6+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.3+ | | |
| 2001 07 18 | 644 | 0.0 | 0.3+ | 2004 02 26 | 704 | 1.3+ | 0.3+ | 2006 11 13 | 644 | 0.4− | 0.5+ | | |
| 2001 07 18 | 644 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.7− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2+ | | |
| 2001 07 18 | 644 | 0.1− | 0.4+ | 2004 03 14 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.0 | 0.1− | | |
| 2001 07 18 | 644 | 0.2− | 0.1+ | 2004 03 14 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.3− | 0.3− | | |
| 2001 07 18 | 644 | 0.0 | 0.2+ | 2004 03 14 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.4− | 0.5+ | | |
| 2001 07 18 | 644 | 0.1− | 0.2+ | 2004 03 15 | 599 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.5− | 0.6+ | | |
| 2001 07 30 | 644 | 0.2+ | 0.4+ | 2004 03 15 | 599 | 0.6− | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.5+ | | |
| 2001 07 30 | 644 | 0.2+ | 0.3+ | 2004 03 15 | 599 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.0 | | |
| 2001 07 30 | 644 | 0.3− | 0.6+ | 2004 03 15 | 599 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.3− | 0.8− | | |
| 2001 07 30 | 644 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.0 | 0.1+ | | |
| 2001 07 30 | 644 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.1+ | 1.2− | | | | | | |
| 2001 07 30 | 644 | 0.1+ | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.4− | | | | | | |

**(139376)∗ 2001 MN$_{20}$ = 2005 JD$_{176}$**

Discovered 2001 June 25 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 75001)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.96643 | | (2000.0) | | | |
| $n$ | 0.22026002 | $\omega$ | 208.33693 | | +0.51130013 | +0.81559944 |
| $a$ | 2.7154737 | $\Omega$ | 93.60645 | | −0.72833375 | +0.57853825 |
| $e$ | 0.2045967 | $i$ | 15.74795 | | −0.45618211 | −0.00954189 |
| $P$ | 4.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 25 | 644 | 0.2+ | 0.8− | 2005 04 13 | 703 | 0.3− | 1.0+ | 2005 06 23 | 644 | 0.1− | 0.3+ | | |
| 2001 06 25 | 644 | 0.2+ | 0.6− | 2005 05 04 | 703 | 0.3− | 0.7+ | 2005 06 23 | 644 | 0.0 | 0.6+ | | |
| 2001 06 25 | 644 | 0.1+ | 0.7− | 2005 05 04 | 703 | 0.7+ | 1.2+ | 2006 10 15 | 291 | 0.3− | 0.4+ | | |
| 2001 06 30 | 644 | 0.2+ | 0.3− | 2005 05 04 | 703 | 0.9− | 0.3− | 2006 10 15 | 291 | 0.0 | 0.4+ | | |
| 2001 06 30 | 644 | 0.3− | 0.4+ | 2005 05 04 | 703 | (0.1− | 2.8+) | 2006 10 15 | 291 | 0.0 | 0.3+ | | |
| 2001 06 30 | 644 | 0.4+ | 0.0 | 2005 05 06 | 704 | 0.7+ | 1.0+ | 2006 10 21 | 703 | 1.0+ | 0.5+ | | |
| 2001 06 30 | 644 | 0.3− | 0.3+ | 2005 05 06 | 704 | 1.3+ | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.9− | | |
| 2001 06 30 | 644 | 0.0 | 0.2+ | 2005 05 06 | 704 | 0.9+ | 0.6+ | 2006 10 21 | 703 | 0.7+ | 0.3+ | | |
| 2001 06 30 | 644 | 0.1+ | 0.1− | 2005 05 06 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.1+ | | |
| 2001 07 19 | 644 | 0.3− | 0.1+ | 2005 05 06 | 704 | 1.3+ | 0.0 | 2006 10 31 | 703 | 0.1+ | 0.2+ | | |
| 2001 07 19 | 644 | 0.2− | 0.1+ | 2005 05 31 | 703 | 0.7+ | 0.1+ | 2006 10 31 | 703 | 0.8− | 0.9+ | | |
| 2001 07 19 | 644 | 0.6− | 0.1− | 2005 05 31 | 703 | 0.0 | 0.7− | 2006 10 31 | 703 | 0.8− | 0.3+ | | |
| 2002 12 03 | 644 | 0.2− | 0.5+ | 2005 05 31 | 703 | (0.1− | 2.0−) | 2006 10 31 | 703 | (1.9+ | 0.6+) | | |
| 2002 12 03 | 644 | 0.4+ | 0.6+ | 2005 05 31 | 703 | 0.4+ | 0.1+ | 2006 11 18 | 703 | 0.9− | 0.0 | | |
| 2002 12 03 | 644 | 0.3+ | 0.4+ | 2005 06 06 | 704 | 1.3+ | 0.1+ | 2006 11 18 | 703 | 0.1− | 0.5− | | |
| 2005 04 13 | 703 | 0.8− | 0.8+ | 2005 06 06 | 704 | 1.0+ | 0.4+ | 2006 11 18 | 703 | 1.2− | 1.0+ | | |
| 2005 04 13 | 703 | 0.8− | 0.3+ | 2005 06 06 | 704 | 0.6− | 0.6− | 2006 11 18 | 703 | 0.4− | 0.3− | | |
| 2005 04 13 | 703 | 1.0− | 0.2+ | 2005 06 23 | 644 | 0.3− | 0.3+ | | | | | | |

**(139377)∗ 2001 MW$_{20}$**

Discovered 2001 June 25 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.82621 | | (2000.0) | | | |
| $n$ | 0.23694172 | $\omega$ | 15.85753 | | +0.99525156 | +0.08075428 |
| $a$ | 2.5864754 | $\Omega$ | 339.27838 | | −0.09727073 | +0.84561696 |
| $e$ | 0.0965919 | $i$ | 8.83467 | | +0.00356859 | +0.52764637 |
| $P$ | 4.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 06 | 691 | 1.0+ | 0.4− | 2001 07 29 | 644 | 0.0 | 0.8− | 2004 03 18 | 704 | 1.1+ | 0.8+ | | |
| 1991 02 06 | 691 | 0.8− | 0.2+ | 2001 07 29 | 644 | 0.5− | 0.6− | 2004 03 18 | 704 | 0.4+ | 0.9+ | | |
| 1991 02 06 | 691 | 0.7− | 0.6+ | 2001 07 29 | 644 | 0.6− | 0.6− | 2004 03 18 | 704 | 1.5+ | 1.3+ | | |
| 1998 12 17 | 704 | 0.6+ | 0.2− | 2001 07 31 | 644 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.0 | 0.3− | | |
| 1998 12 17 | 704 | 1.2+ | 0.2− | 2001 07 31 | 644 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.2− | 0.2+ | | |
| 1998 12 17 | 704 | 0.2− | 1.5− | 2001 07 31 | 644 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.1+ | | |
| 1998 12 17 | 704 | (1.7− | 2.8−) | 2001 08 12 | 644 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.8− | 0.0 | | |
| 2000 04 05 | 699 | 0.7− | 0.9− | 2001 08 12 | 644 | 0.2− | 0.8+ | 2004 03 26 | 699 | 0.4+ | 0.0 | | |
| 2000 04 05 | 699 | 0.2+ | 0.6+ | 2001 08 12 | 644 | 0.1− | 0.6+ | 2004 03 26 | 699 | 1.1− | 0.6+ | | |
| 2000 04 05 | 699 | (0.7− | 2.3+) | 2002 12 05 | 704 | 0.9+ | 0.2+ | 2004 03 26 | 699 | 0.2+ | 0.2+ | | |
| 2000 04 05 | 699 | 0.8− | 0.2− | 2002 12 05 | 704 | 0.9+ | 0.9− | 2004 03 26 | 699 | 0.3− | 0.0 | | |
| 2000 04 07 | 704 | 0.5+ | 0.3− | 2002 12 05 | 704 | 0.7+ | 0.0 | 2004 03 27 | 704 | (0.2+ | 1.6−) | | |
| 2000 04 07 | 704 | 0.5− | 0.5− | 2002 12 05 | 704 | 0.5+ | 0.1− | 2004 03 27 | 704 | (0.3+ | 1.9−) | | |
| 2000 04 07 | 704 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.1+ | 0.4− | 2004 03 27 | 704 | 0.5− | 1.4− | | |
| 2000 04 07 | 704 | 0.6− | 0.3+ | 2002 12 06 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | (0.5− | 2.5−) | | |
| 2001 06 25 | 644 | 0.5+ | 0.5+ | 2002 12 06 | 704 | 0.8+ | 0.2+ | 2004 03 27 | 704 | 0.4− | 0.7− | | |
| 2001 06 25 | 644 | 0.4+ | 0.4+ | 2002 12 06 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 703 | 0.4− | 0.7+ | | |
| 2001 06 25 | 644 | 0.7+ | 0.7+ | 2002 12 06 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 703 | 0.5− | 0.1+ | | |
| 2001 06 30 | 644 | 0.7− | 0.9− | 2002 12 15 | 704 | 0.2− | 0.4+ | 2006 10 23 | 703 | 0.2− | 0.2+ | | |
| 2001 06 30 | 644 | 0.1− | 0.6+ | 2002 12 15 | 704 | 0.3− | 0.0 | 2006 10 23 | 703 | 1.0+ | 0.4− | | |
| 2001 06 30 | 644 | 0.7− | 0.9− | 2002 12 15 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 703 | 0.4− | 0.4+ | | |
| 2001 06 30 | 644 | 0.2− | 0.7+ | 2002 12 15 | 704 | 0.2− | 0.8+ | 2006 10 29 | 703 | 0.4− | 0.0 | | |
| 2001 06 30 | 644 | 0.8− | 0.7− | 2002 12 15 | 704 | 0.1− | 0.8+ | 2006 10 29 | 703 | 0.6− | 0.5+ | | |
| 2001 06 30 | 644 | 0.2− | 1.0+ | 2004 03 16 | 703 | 0.4− | 0.6+ | 2006 10 29 | 703 | 0.3+ | 0.0 | | |
| 2001 07 28 | 699 | 0.5+ | 0.8+ | 2004 03 16 | 703 | 1.5+ | 0.1+ | 2006 11 22 | 703 | 1.2− | 0.9− | | |
| 2001 07 28 | 699 | 0.8+ | 0.3+ | 2004 03 16 | 703 | 1.2+ | 0.8+ | 2006 11 22 | 703 | 0.8− | 0.5+ | | |
| 2001 07 28 | 699 | 0.9+ | 0.6− | 2004 03 16 | 703 | 1.3+ | 0.3+ | 2006 11 22 | 703 | 1.4− | 0.3− | | |
| 2001 07 28 | 699 | 0.7+ | 1.0+ | 2004 03 18 | 704 | 0.2+ | 1.1+ | | | | | | |

**(139378)∗ 2001 MH$_{21}$**

Discovered 2001 June 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.79206 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22465181 | $\omega$ | 32.20884 | | +0.98607261 | −0.13873513 | |
| $a$ | 2.6799669 | $\Omega$ | 335.26785 | | +0.06209685 | +0.81873989 | |
| $e$ | 0.1733399 | $i$ | 12.66432 | | +0.15428798 | +0.55715129 | |
| $P$ | 4.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.5− | 0.1+ | 2003 01 13 | 704 | (4.2− | 0.8+) | 2006 10 02 | 704 | 0.4− | 0.1+ |
| 2001 06 27 | 644 | 0.5− | 0.2+ | 2003 01 13 | 704 | 0.9− | 1.0+ | 2006 10 02 | 704 | 0.2+ | 0.5+ |
| 2001 06 27 | 644 | 0.4− | 0.0 | 2003 01 13 | 704 | (4.5− | 1.3+) | 2006 10 02 | 704 | 0.2− | 0.5+ |
| 2001 06 30 | 644 | 0.4− | 0.0 | 2004 03 13 | 644 | 1.2+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 06 30 | 644 | 0.4− | 0.5+ | 2004 03 13 | 644 | 0.9+ | 0.6+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2001 06 30 | 644 | 0.4− | 0.4+ | 2004 03 13 | 644 | 0.8+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 07 19 | 644 | 0.2+ | 0.2+ | 2004 03 19 | 704 | 1.3+ | 0.8+ | 2006 10 23 | 703 | 0.2− | 0.3− |
| 2001 07 19 | 644 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.7+ | 1.2+ | 2006 10 23 | 703 | 0.1+ | 0.0 |
| 2001 07 19 | 644 | 0.2+ | 0.5+ | 2004 03 19 | 704 | 0.5− | 0.6+ | 2006 10 23 | 703 | 0.2− | 0.0 |
| 2001 07 25 | 644 | 0.1+ | 0.7+ | 2004 03 19 | 704 | (2.0+ | 0.7+) | 2006 10 23 | 703 | 0.4− | 0.4− |
| 2001 07 25 | 644 | 0.2+ | 0.6+ | 2004 03 19 | 704 | (1.8+ | 0.4+) | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 07 25 | 644 | 0.1+ | 0.3+ | 2004 03 26 | 699 | 0.1− | 1.0+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 08 17 | 644 | 0.2− | 0.9+ | 2004 03 26 | 699 | (2.5− | 1.2+) | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 08 17 | 644 | 0.5− | 0.8+ | 2004 03 26 | 699 | 0.5+ | 0.7+ | 2006 10 30 | 106 | 0.0 | 0.1+ |
| 2001 08 17 | 644 | 0.0 | 0.8+ | 2004 03 26 | 699 | 0.2− | 0.8+ | 2006 10 30 | 106 | 0.7− | 0.5+ |
| 2002 12 06 | 704 | 1.2+ | 0.3− | 2006 09 17 | 703 | 0.6− | 0.4− | 2006 10 30 | 106 | 0.5− | 0.1− |
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.4+ | 0.2− | 2006 10 30 | 106 | 0.3+ | 0.5− |
| 2002 12 06 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.2+ | 2006 10 31 | 703 | 1.0+ | 0.1+ |
| 2002 12 06 | 704 | 0.6− | 0.2− | 2006 09 17 | 703 | 0.5− | 0.4− | 2006 10 31 | 703 | 0.1− | 0.0 |
| 2002 12 28 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.4+ | 0.5− |
| 2002 12 28 | 704 | 0.6+ | 0.6− | 2006 09 20 | 704 | 0.1− | 0.2+ | 2006 10 31 | 703 | 0.7+ | 0.1+ |
| 2002 12 28 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 703 | 0.3− | 0.9+ |
| 2002 12 28 | 704 | 0.4− | 0.3− | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 11 16 | 703 | 0.0 | 0.4+ |
| 2003 01 13 | 704 | (4.8− | 0.3+) | 2006 09 28 | 703 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2003 01 13 | 704 | 0.4+ | 0.8+ | 2006 09 28 | 703 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.7− | 0.4+ |
| 2003 01 13 | 704 | (5.0− | 0.2+) | 2006 09 28 | 703 | 0.3− | 0.0 | 2006 11 22 | 703 | 0.0 | 0.1+ |
| 2003 01 13 | 704 | 0.8− | 1.3+ | 2006 09 28 | 703 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.4− | 0.2+ |
| 2003 01 13 | 704 | (5.1− | 0.4+) | 2006 10 02 | 704 | (1.2− | 1.7+) | 2006 11 22 | 703 | 0.3− | 0.5+ |
| 2003 01 13 | 704 | (0.4+ | 1.7+) | 2006 10 02 | 704 | 0.3+ | 0.6+ | 2006 11 22 | 703 | 0.7− | 0.2+ |

**(139379)∗ 2001 MZ$_{22}$ = 2004 FH$_{129}$**

Discovered 2001 June 30 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 60773)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.40026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24738338 | $\omega$ | 276.76918 | | +0.99846005 | −0.03206612 | |
| $a$ | 2.5131729 | $\Omega$ | 85.07534 | | +0.04755991 | +0.91486673 | |
| $e$ | 0.1649805 | $i$ | 2.60424 | | −0.02855850 | +0.40248059 | |
| $P$ | 3.98 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 22 | 691 | 0.2− | 0.4− | 2003 01 08 | 704 | (0.5− | 2.3+) | 2004 04 23 | 291 | 0.1+ | 0.1+ |
| 1996 03 22 | 691 | 0.4− | 0.3− | 2003 01 08 | 704 | 0.6+ | 0.2+ | 2004 04 23 | 291 | 0.1+ | 0.0 |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2003 01 08 | 704 | 0.4− | 1.0+ | 2005 07 07 | 691 | 0.5− | 0.5+ |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.1+ |
| 2000 05 04 | 645 | 0.3− | 0.1− | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2005 07 07 | 691 | 0.2− | 0.1− |
| 2000 05 04 | 645 | 0.3− | 0.1− | 2004 03 21 | 691 | 0.4− | 0.1+ | 2005 07 17 | E12 | 0.5− | 0.2+ |
| 2001 06 30 | 644 | 0.2+ | 0.3− | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2005 07 17 | E12 | 0.0 | 0.1− |
| 2001 06 30 | 644 | 0.2− | 0.0 | 2004 03 28 | 691 | 0.4+ | 0.3+ | 2005 07 17 | E12 | 0.1+ | 0.0 |
| 2001 06 30 | 644 | 0.0 | 0.0 | 2004 03 28 | 691 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2001 07 01 | 644 | 1.0+ | 0.2+ | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 07 01 | 644 | (1.7+ | 0.5+) | 2004 03 29 | 691 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.4+ |
| 2001 07 01 | 644 | 1.6+ | 0.7+ | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 07 18 | 644 | 0.1+ | 0.2− | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2001 07 18 | 644 | 0.1− | 0.3− | 2004 04 20 | 691 | 0.3+ | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2001 07 18 | 644 | 0.2+ | 0.5− | 2004 04 20 | 691 | 0.0 | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2003 01 08 | 704 | (0.5− | 2.1+) | 2004 04 23 | 291 | 0.3+ | 0.3− | 2006 11 27 | G96 | 0.0 | 0.0 |

**(139380)∗ 2001 MT$_{23}$ = 2000 GW$_{166}$**

Discovered 2001 June 27 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 14963)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.37748 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21774026 | $\omega$ | 321.70972 | | +0.10511011 | +0.98026828 | |
| $a$ | 2.7363830 | $\Omega$ | 313.62363 | | −0.84587476 | −0.00039089 | |
| $e$ | 0.1898257 | $i$ | 13.37154 | | −0.52292232 | +0.19767132 | |
| $P$ | 4.53 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.2+ | 0.7+ | 2001 09 08 | 704 | 0.3− | 0.3+ | 2004 02 11 | 699 | 0.2+ | 0.4+ |
| 2000 03 09 | 704 | 1.0+ | 0.2+ | 2001 09 08 | 704 | 0.2− | 0.1+ | 2004 02 11 | 699 | 0.1− | 0.3+ |
| 2000 03 09 | 704 | 0.9+ | 0.0 | 2001 09 08 | 704 | 0.2− | 0.0 | 2004 02 11 | 699 | 0.0 | 0.0 |
| 2000 03 09 | 704 | 0.6+ | 0.3+ | 2001 09 12 | 704 | 0.3− | 0.3+ | 2004 02 11 | 699 | 0.2+ | 1.0+ |
| 2000 04 04 | 699 | 0.9+ | 0.7+ | 2001 09 12 | 704 | 0.6− | 0.5+ | 2004 02 11 | 291 | 0.3+ | 0.2+ |
| 2000 04 04 | 699 | 0.9+ | 0.3+ | 2001 09 12 | 704 | 1.0− | 0.2+ | 2004 02 11 | 291 | 0.5+ | 0.3+ |
| 2000 04 04 | 699 | 0.0 | 0.5+ | 2001 09 12 | 704 | 0.7− | 0.4+ | 2004 02 11 | 291 | 0.3+ | 0.2+ |
| 2000 04 04 | 699 | 0.4− | 0.4+ | 2001 09 12 | 704 | 0.8− | 0.5+ | 2004 02 16 | 704 | 0.5− | 0.5− |
| 2000 04 07 | 704 | 1.7+ | 0.0 | 2001 09 18 | 644 | 0.4− | 0.5+ | 2004 02 16 | 704 | 0.3− | 0.2− |
| 2000 04 07 | 704 | 0.7+ | 1.4+ | 2001 09 18 | 644 | 0.2− | 0.3+ | 2004 02 16 | 704 | 0.3+ | 0.5− |
| 2000 04 07 | 704 | 0.7+ | 0.5− | 2001 09 18 | 644 | 0.5− | 0.5+ | 2004 02 16 | 704 | 0.5+ | 0.2− |
| 2000 04 07 | 704 | 0.4+ | 0.1− | 2001 09 20 | 704 | 0.6− | 0.6+ | 2004 02 26 | 704 | 0.8+ | 0.1− |
| 2001 06 17 | 644 | 0.4− | 0.6+ | 2001 09 20 | 704 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.2+ | 0.7− |
| 2001 06 17 | 644 | 0.6− | 0.8+ | 2001 09 20 | 704 | 0.5− | 0.1+ | 2004 02 26 | 704 | 0.2− | 1.0− |
| 2001 06 17 | 644 | 0.6− | 0.5+ | 2001 09 20 | 704 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.6− | 0.9+ |
| 2001 06 20 | 699 | 0.1− | 0.2− | 2001 09 20 | 704 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.5+ |
| 2001 06 20 | 699 | 0.3+ | 0.7+ | 2001 09 25 | 644 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.1− | 1.0+ |
| 2001 06 20 | 699 | 1.0+ | 1.4+ | 2001 09 25 | 644 | 0.4− | 0.3+ | 2004 03 18 | 704 | 0.1− | 1.2+ |
| 2001 06 20 | 699 | 1.1+ | 0.4+ | 2001 09 25 | 644 | 0.6− | 0.6+ | 2004 03 18 | 704 | 1.0+ | 0.4+ |
| 2001 06 27 | 608 | 0.7− | 0.0 | 2001 10 14 | 699 | 0.7− | 0.2+ | 2004 03 18 | 704 | 0.9+ | 0.1+ |
| 2001 06 27 | 608 | 0.8− | 0.2+ | 2001 10 14 | 699 | 0.5− | 1.1+ | 2006 08 20 | 291 | 0.0 | 0.1− |
| 2001 06 27 | 608 | 0.5− | 0.1− | 2001 10 14 | 699 | 0.3+ | 0.2+ | 2006 08 20 | 291 | 0.0 | 0.1− |
| 2001 07 03 | 608 | 1.0− | 0.1+ | 2001 10 14 | 699 | 0.5− | 0.3− | 2006 08 20 | 291 | 0.0 | 0.1− |
| 2001 07 03 | 608 | 1.0− | 0.4− | 2001 10 21 | 704 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.4− | 0.8− |
| 2001 07 03 | 608 | 0.5− | 0.3+ | 2001 10 21 | 704 | 0.5+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.3− |
| 2001 07 16 | 608 | 0.5− | 0.1− | 2001 10 21 | 704 | 0.0 | 0.8+ | 2006 09 17 | 703 | 0.8+ | 0.3+ |
| 2001 07 16 | 608 | 0.4− | 0.4− | 2001 10 21 | 704 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.2+ |
| 2001 07 16 | 608 | 0.3− | 0.3− | 2001 10 21 | 704 | 0.4− | 0.7+ | 2006 09 28 | 703 | 1.4+ | 0.2− |
| 2001 07 22 | 704 | 0.2+ | 1.0+ | 2001 11 10 | 704 | 0.8− | 0.8+ | 2006 09 28 | 703 | 0.1+ | 1.0− |
| 2001 07 22 | 704 | 0.1+ | 1.0+ | 2001 11 10 | 704 | (1.6− | 0.0 ) | 2006 09 28 | 703 | 0.1− | 0.7− |
| 2001 07 22 | 704 | 0.1− | 0.5+ | 2001 11 10 | 704 | 0.8− | 0.0 | 2006 09 28 | 703 | 0.5+ | 0.1− |
| 2001 07 29 | 704 | 0.4+ | 0.4+ | 2001 11 10 | 704 | 0.3+ | 1.3+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 07 29 | 704 | 0.1+ | 0.4+ | 2003 12 25 | 291 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 07 29 | 704 | 0.8+ | 0.8+ | 2003 12 25 | 291 | 0.5− | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2001 07 29 | 704 | 0.4+ | 0.6+ | 2003 12 25 | 291 | 0.6− | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 08 11 | 608 | 0.9− | 0.1− | 2004 01 16 | 644 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 08 11 | 608 | 0.8− | 0.4− | 2004 01 16 | 644 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2001 08 11 | 608 | 0.9− | 0.6− | 2004 01 16 | 644 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2001 08 15 | 608 | 1.1+ | 0.2+ | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2006 10 24 | 644 | 0.3+ | 0.4+ |
| 2001 08 15 | 608 | 1.1+ | 1.1+ | 2004 01 18 | 644 | 0.2+ | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2001 08 15 | 608 | 1.1+ | 1.1+ | 2004 01 18 | 644 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.1− |
| 2001 08 24 | 699 | 0.0 | 0.6+ | 2004 01 22 | 704 | 0.8+ | 0.9+ | 2006 10 27 | 703 | 0.5+ | 0.2+ |
| 2001 08 24 | 644 | 0.1− | 0.7− | 2004 01 22 | 704 | 0.1+ | 1.3+ | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2001 08 24 | 699 | 0.7− | 0.5− | 2004 01 22 | 704 | 0.2+ | 0.7+ | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2001 08 24 | 644 | 0.2− | 0.8− | 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 11 10 | 106 | 0.1− | 0.6− |
| 2001 08 24 | 644 | 0.2− | 0.6− | 2004 01 24 | 704 | 0.1+ | 0.8+ | 2006 11 10 | 106 | 0.6+ | 0.1+ |
| 2001 08 24 | 699 | 0.1+ | 0.0 | 2004 01 24 | 704 | 0.8− | 0.9+ | 2006 11 10 | 106 | 0.1+ | 0.1+ |
| 2001 08 24 | 699 | 0.0 | 0.1+ | 2004 01 24 | 704 | 1.4+ | 1.2+ | 2006 11 10 | 106 | 0.3+ | 0.2− |
| 2001 08 30 | 644 | 0.7− | 0.4+ | 2004 01 24 | 704 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.7+ |
| 2001 08 30 | 644 | 0.8− | 0.4+ | 2004 01 24 | 704 | 0.5− | 1.0+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2001 08 30 | 644 | 0.5− | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.2+ |
| 2001 09 08 | 704 | 0.7− | 0.8+ | 2004 01 30 | 704 | 0.4− | 1.1+ | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2001 09 08 | 704 | 0.2− | 0.3+ | 2004 01 30 | 704 | 0.3+ | 0.2− | | | | |

**(139381)∗ 2001 MC$_{24}$**

Discovered 2001 June 27 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.32565 | | (2000.0) | | | |
| $n$ | 0.22473471 | $\omega$ | 81.20606 | | +0.26317111 | +0.96087917 |
| $a$ | 2.6793078 | $\Omega$ | 204.58437 | | −0.94648224 | +0.23982228 |
| $e$ | 0.1867018 | $i$ | 11.97578 | | −0.18684843 | +0.13855141 |
| $P$ | 4.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 608 | 0.1− | 0.1− | 2001 09 09 | 699 | 0.5+ | 0.2+ | 2005 06 09 | 704 | 0.2+ | 0.3− |
| 2001 06 27 | 608 | 0.7− | 0.4+ | 2001 09 16 | 704 | 0.4+ | 0.4− | 2005 06 09 | 704 | 0.3− | 0.1+ |
| 2001 06 27 | 608 | 0.1− | 0.2+ | 2001 09 16 | 704 | 0.6+ | 0.3− | 2005 06 09 | 704 | 0.1+ | 0.1− |
| 2001 07 03 | 608 | 0.2+ | 0.3+ | 2001 09 16 | 704 | 0.4+ | 0.2− | 2005 08 07 | E12 | 0.2+ | 0.2− |
| 2001 07 03 | 608 | 0.4+ | 0.1− | 2001 09 16 | 704 | 0.4+ | 0.3− | 2005 08 07 | E12 | 0.5− | 0.4+ |
| 2001 07 03 | 608 | 0.2− | 0.1− | 2001 09 16 | 704 | 0.7+ | 0.1− | 2005 08 07 | E12 | 0.9+ | 0.4− |
| 2001 08 21 | 704 | 0.4+ | 0.6+ | 2001 09 17 | 644 | 0.6+ | 0.3+ | 2005 08 07 | E12 | 0.4− | 0.1− |
| 2001 08 21 | 704 | 0.0 | 0.4+ | 2001 09 17 | 644 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2001 08 21 | 704 | 0.8− | 0.2+ | 2001 09 17 | 644 | 0.6+ | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2001 08 21 | 704 | 0.3+ | 0.3+ | 2001 09 25 | 704 | 0.6− | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2001 08 30 | 644 | 0.6− | 0.0 | 2001 09 25 | 704 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2001 08 30 | 644 | 0.8− | 0.3− | 2001 09 25 | 704 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.3− | 1.2− |
| 2001 08 30 | 644 | 0.4− | 0.1− | 2001 09 25 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 2001 09 08 | 699 | 0.1+ | 0.1− | 2001 09 25 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.2+ |
| 2001 09 08 | 699 | 0.7− | 0.7+ | 2001 10 14 | 704 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2001 09 08 | 699 | 0.6− | 0.6+ | 2001 10 14 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2001 09 08 | 699 | 1.0+ | 1.1+ | 2001 10 14 | 704 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2001 09 09 | 699 | 0.3− | 1.0+ | 2001 10 15 | 645 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2001 09 09 | 699 | 0.2− | 0.7+ | 2001 10 15 | 645 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2001 09 09 | 699 | 0.1+ | 0.9+ | 2004 02 19 | 704 | 0.4− | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2001 09 09 | 699 | 1.0− | 0.7+ | 2004 02 19 | 704 | 1.1+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 09 09 | 699 | 0.6− | 0.3+ | 2004 02 19 | 704 | 0.6− | 0.2− | 2006 11 18 | G96 | 0.7+ | 0.6+ |
| 2001 09 09 | 699 | 0.2+ | 0.4+ | 2005 06 09 | 704 | 0.3− | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2001 09 09 | 699 | 0.3+ | 0.5+ | 2005 06 09 | 704 | 0.5+ | 0.8− | | | | |

**(139382)∗ 2001 MP$_{26}$ = 2004 CE$_{107}$**

Discovered 2001 June 19 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 60774)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 217.56273 | | (2000.0) | | | |
| $n$ | 0.28900941 | $\omega$ | 16.63690 | | −0.43487138 | +0.89824543 |
| $a$ | 2.2656600 | $\Omega$ | 227.63590 | | −0.83567589 | −0.42886401 |
| $e$ | 0.2228903 | $i$ | 4.93614 | | −0.33545892 | −0.09607708 |
| $P$ | 3.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.1− | 0.2− | 2004 02 26 | 704 | 1.1+ | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.1+ |
| 1995 12 19 | 691 | 0.0 | 0.3− | 2004 02 26 | 704 | (2.4+ | 0.5−) | 2004 04 19 | 704 | 0.7+ | 0.2− |
| 1995 12 19 | 691 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.1+ | 0.9+ | 2004 05 14 | 704 | 0.5− | 0.4+ |
| 2001 05 25 | 704 | 1.6+ | 0.4− | 2004 03 16 | 704 | 0.4− | 0.9+ | 2004 05 14 | 704 | 0.3− | 1.0+ |
| 2001 05 25 | 704 | 0.3− | 0.2− | 2004 03 16 | 704 | 0.2− | 0.6+ | 2004 05 14 | 704 | 0.9− | 0.9+ |
| 2001 05 25 | 704 | 0.8+ | 0.2+ | 2004 03 16 | 704 | 0.5− | 0.3+ | 2004 05 14 | 704 | 1.0+ | 0.4+ |
| 2001 05 25 | 704 | 0.4− | 0.1− | 2004 03 16 | 704 | 0.2− | 0.6+ | 2005 09 24 | 691 | 0.1− | 0.6+ |
| 2001 06 15 | 704 | 1.4− | 1.2+ | 2004 03 19 | 704 | 0.7+ | 0.5− | 2005 09 24 | 691 | 0.1+ | 0.7+ |
| 2001 06 15 | 704 | 0.5− | 1.0+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2005 09 24 | 691 | 0.1− | 0.5+ |
| 2001 06 15 | 704 | 0.2− | 1.0+ | 2004 03 19 | 704 | 0.0 | 0.3+ | 2005 09 25 | 644 | 0.5− | 0.5+ |
| 2001 06 15 | 704 | 0.5+ | 1.5+ | 2004 03 19 | 704 | 0.1+ | 0.2− | 2005 09 25 | 644 | 0.3− | 0.7+ |
| 2001 06 15 | 704 | 0.6− | 1.0+ | 2004 03 20 | 699 | 0.6− | 0.3− | 2005 09 25 | 644 | 0.1− | 0.5+ |
| 2001 06 19 | 608 | 0.1+ | 0.3+ | 2004 03 20 | 699 | 0.6− | 0.4− | 2005 09 29 | 691 | 0.3+ | 0.4+ |
| 2001 06 19 | 608 | 0.3+ | 0.4− | 2004 03 20 | 699 | 0.4− | 0.1+ | 2005 09 29 | 691 | 0.4+ | 0.5+ |
| 2001 06 19 | 608 | 0.1+ | 0.1− | 2004 03 20 | 699 | 0.0 | 0.2− | 2005 09 29 | 691 | 0.3+ | 0.5+ |
| 2001 06 24 | 704 | 0.2− | 1.1+ | 2004 03 29 | 703 | 0.1− | 0.9− | 2005 10 03 | 703 | 0.3− | 1.4+ |
| 2001 06 24 | 704 | 0.2− | 0.7+ | 2004 03 29 | 703 | 0.4− | 1.6+ | 2005 10 03 | 703 | 2.0− | 0.2+ |
| 2001 06 24 | 704 | 0.1+ | 0.4+ | 2004 03 29 | 703 | 1.2− | 0.9+ | 2005 10 03 | 691 | 0.6− | 0.5+ |
| 2001 06 24 | 704 | 0.4− | 1.0+ | 2004 03 29 | 703 | 1.7− | 1.2+ | 2005 10 03 | 703 | 1.0− | 0.3+ |
| 2001 06 24 | 704 | 0.0 | 0.9+ | 2004 04 09 | 703 | 0.4+ | 1.3+ | 2005 10 03 | 703 | 0.4+ | 1.5+ |
| 2004 02 14 | 644 | 0.4+ | 0.2+ | 2004 04 09 | 703 | 0.2− | 0.5+ | 2005 10 03 | 691 | 0.3− | 0.4+ |
| 2004 02 14 | 644 | 0.3+ | 0.1+ | 2004 04 09 | 703 | 0.3+ | 0.7+ | 2005 10 03 | 691 | 0.4− | 0.5+ |
| 2004 02 14 | 644 | 0.4+ | 0.3+ | 2004 04 09 | 703 | 0.4+ | 2.0+ | 2005 10 09 | 691 | 0.1+ | 0.5+ |
| 2004 02 17 | 703 | 0.4− | 0.4+ | 2004 04 12 | 703 | 0.1− | 1.7+ | 2005 10 09 | 691 | 0.2− | 0.4+ |
| 2004 02 17 | 703 | 1.0+ | 0.1+ | 2004 04 12 | 703 | 0.0 | 1.1+ | 2005 10 09 | 691 | 0.1− | 0.5+ |
| 2004 02 17 | 703 | 0.6+ | 0.2+ | 2004 04 12 | 703 | 0.1+ | 0.7+ | 2005 10 22 | 703 | 1.2− | 0.1+ |
| 2004 02 17 | 703 | 0.2+ | 0.5+ | 2004 04 12 | 703 | 0.3+ | 0.4+ | 2005 10 22 | 703 | 0.9− | 0.0 |
| 2004 02 19 | 704 | 0.4+ | 0.6+ | 2004 04 14 | 699 | 0.0 | 0.4− | 2005 10 22 | 703 | 1.1+ | 0.1+ |
| 2004 02 19 | 704 | 0.8+ | 1.2+ | 2004 04 14 | 699 | 0.2+ | 0.3− | 2005 10 22 | 703 | (1.2− | 2.1+) |
| 2004 02 19 | 704 | 0.5+ | 0.7+ | 2004 04 14 | 699 | 0.7+ | 0.7+ | 2005 10 22 | 703 | 0.7− | 1.0+ |
| 2004 02 19 | 704 | 1.1+ | 0.3− | 2004 04 14 | 699 | 0.1− | 0.0 | 2005 10 22 | 703 | 0.2− | 0.5+ |
| 2004 02 19 | 704 | 1.2+ | 0.7+ | 2004 04 16 | 704 | 0.2+ | 0.8+ | 2005 10 22 | 703 | 1.1− | 1.6+ |
| 2004 02 20 | 608 | 0.4− | 0.1+ | 2004 04 16 | 704 | 0.1− | 0.2− | 2005 10 22 | 703 | 1.0− | 0.6− |
| 2004 02 20 | 608 | 0.3− | 0.1+ | 2004 04 16 | 704 | 1.8+ | 1.5+ | 2005 11 06 | G96 | 0.0 | 0.0 |
| 2004 02 20 | 608 | 0.0 | 0.3− | 2004 04 16 | 704 | 0.2+ | 1.6+ | 2005 11 06 | G96 | 0.4− | 0.0 |
| 2004 02 26 | 704 | 0.9+ | 0.2+ | 2004 04 16 | 704 | 0.6+ | 1.2+ | 2005 11 06 | G96 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 1.1+ | 0.7+ | 2004 04 19 | 704 | 0.5+ | 0.4− | 2005 11 06 | G96 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.6+ | 0.5+ | 2004 04 19 | 704 | 0.8+ | 0.2+ | | | | |

**(139383)∗ 2001 MA$_{27}$ = 2005 ER$_{117}$**

Discovered 2001 June 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 75001)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 126.40006 | | (2000.0) | | | |
| $n$ | 0.24338522 | $\omega$ | 110.85259 | | −0.64033140 | +0.72147809 |
| $a$ | 2.5406212 | $\Omega$ | 116.50560 | | −0.76739939 | −0.58628074 |
| $e$ | 0.1429942 | $i$ | 17.12615 | | −0.03276996 | −0.36843488 |
| $P$ | 4.05 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.5− | 0.8+ | 2005 04 04 | 703 | 0.1− | 0.8− | 2005 06 01 | 699 | 0.1− | 0.4+ |
| 2000 01 05 | 704 | 0.9+ | 0.9+ | 2005 04 04 | 703 | 0.7− | 0.1− | 2005 06 01 | 704 | 0.7− | 0.4+ |
| 2000 01 05 | 704 | 0.4− | 0.4+ | 2005 04 04 | 703 | 0.0 | 0.1+ | 2005 06 01 | 704 | 0.1+ | 0.2+ |
| 2001 04 27 | 704 | 0.2− | 0.6+ | 2005 04 04 | 703 | 0.0 | 0.3− | 2005 06 01 | 699 | 0.1+ | 0.1− |
| 2001 04 27 | 704 | 0.2+ | 0.5+ | 2005 04 19 | 704 | 0.7+ | 0.4+ | 2005 06 01 | 699 | 0.1+ | 0.1+ |
| 2001 04 27 | 704 | 0.2− | 0.3+ | 2005 04 19 | 704 | 0.8+ | 0.5+ | 2005 06 07 | 699 | 0.3− | 0.2+ |
| 2001 04 27 | 704 | 0.5− | 0.0 | 2005 04 19 | 704 | 0.8+ | 1.2+ | 2005 06 07 | 699 | 0.8− | 0.3+ |
| 2001 04 27 | 704 | 0.5− | 0.3+ | 2005 05 06 | 699 | 0.2− | 0.3− | 2005 06 07 | 699 | 0.2+ | 0.0 |
| 2001 05 16 | 683 | 0.3− | 0.9+ | 2005 05 06 | 699 | 0.3+ | 0.1− | 2005 06 07 | 699 | 0.8− | 0.0 |
| 2001 05 16 | 683 | 0.9+ | 1.1+ | 2005 05 06 | 699 | 0.3− | 0.1− | 2005 06 16 | 703 | 0.2− | 0.3− |
| 2001 05 16 | 683 | 0.2+ | 0.6+ | 2005 05 06 | 699 | 1.1+ | 0.2− | 2005 06 16 | 703 | 1.1− | 1.1− |
| 2001 05 18 | 683 | 1.4+ | 0.3− | 2005 05 11 | 703 | 0.0 | 0.0 | 2005 06 16 | 703 | 0.9− | 0.7− |
| 2001 05 18 | 683 | 0.3+ | 0.8+ | 2005 05 11 | 703 | 0.3− | 0.4− | 2005 06 16 | 703 | 0.4+ | 0.7+ |
| 2001 05 18 | 683 | 0.7− | 1.1+ | 2005 05 11 | 703 | 0.2+ | 0.4+ | 2005 06 27 | 699 | 0.2+ | 0.3+ |
| 2001 06 20 | 699 | 0.1+ | 0.2− | 2005 05 11 | 703 | 0.5− | 0.5− | 2005 06 27 | 699 | 0.8− | 0.3+ |
| 2001 06 20 | 699 | 0.5+ | 0.5− | 2005 05 13 | 704 | 0.1+ | 0.6− | 2005 06 27 | 699 | 0.1− | 0.3− |
| 2001 06 20 | 699 | 0.6+ | 0.3− | 2005 05 13 | 704 | 0.8+ | 0.5− | 2006 09 22 | 703 | 0.0 | 0.5− |
| 2001 06 20 | 699 | 0.4− | 0.1+ | 2005 05 13 | 704 | 0.6+ | 0.1− | 2006 09 22 | 703 | 1.3+ | 1.3− |
| 2001 06 23 | 644 | 0.1+ | 0.1− | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2006 09 22 | 703 | 0.1− | 0.4− |
| 2001 06 23 | 644 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.1− | 0.1− | 2006 09 22 | 703 | 1.1− | 0.2+ |
| 2001 06 23 | 644 | 0.0 | 0.0 | 2005 05 19 | 703 | 0.9− | 0.2− | 2006 09 22 | 703 | 0.5+ | 0.6− |
| 2002 10 08 | 644 | 0.0 | 0.1+ | 2005 05 19 | 703 | 0.0 | 0.6− | 2006 09 22 | 703 | 0.7− | 0.6− |
| 2002 10 08 | 644 | 0.2− | 0.4+ | 2005 05 19 | 703 | 0.0 | 0.6− | 2006 09 22 | 703 | (1.5+ | 2.9−) |
| 2002 10 08 | 644 | 0.3− | 0.2+ | 2005 05 19 | 703 | 0.1− | 0.5− | 2006 09 22 | 703 | 0.7− | 1.1+ |
| 2005 03 04 | 703 | 0.5− | 0.7− | 2005 05 30 | 703 | (1.6− | 1.4−) | 2006 09 27 | 703 | 0.1+ | 0.8+ |
| 2005 03 04 | 703 | 0.8+ | 1.2− | 2005 05 30 | 703 | 0.4+ | 0.2− | 2006 09 27 | 703 | 0.3− | 0.9+ |
| 2005 03 04 | 703 | 0.2+ | 0.3− | 2005 05 30 | 703 | (2.4− | 0.1−) | 2006 09 27 | 703 | 0.3+ | 0.4+ |
| 2005 03 04 | 703 | 0.6+ | 0.5+ | 2005 05 30 | 703 | 0.8− | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.8+ |
| 2005 03 11 | 703 | 0.1− | 0.4+ | 2005 06 01 | 704 | 0.1+ | 0.3− | 2006 10 12 | E12 | 0.9+ | 0.9+ |
| 2005 03 11 | 703 | 0.5+ | 0.4+ | 2005 06 01 | 699 | 0.4+ | 0.1+ | 2006 10 12 | E12 | 0.2− | 0.2+ |
| 2005 03 11 | 703 | 0.1− | 0.8+ | 2005 06 01 | 704 | 0.1+ | 0.1− | 2006 10 12 | E12 | 0.3− | 0.3+ |
| 2005 03 11 | 703 | 0.7+ | 0.8+ | 2005 06 01 | 704 | 0.1+ | 0.2+ | 2006 10 12 | E12 | 0.5− | 0.1− |

**(139384)∗ 2001 $MQ_{27}$**

Discovered 2001 June 20 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.69623 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21708813 | $\omega$ | 98.13904 | | +0.90199643 | | +0.39476408 |
| $a$ | 2.7418604 | $\Omega$ | 238.76907 | | −0.43040307 | | +0.85406197 |
| $e$ | 0.2215167 | $i$ | 11.79751 | | +0.03399472 | | +0.33873215 |
| $P$ | 4.54 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | 0.2+ | 1.2− | 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.3− | 0.1+ | |
| 1997 10 29 | 704 | 0.5+ | 0.4− | 2005 05 16 | 691 | 0.3+ | 0.1− | 2006 11 14 | 703 | 0.1− | 1.0− | |
| 1997 10 29 | 704 | 0.6− | 0.9− | 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.4− | |
| 1997 10 29 | 704 | 1.1+ | 0.9− | 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 1.2− | 0.1− | |
| 1997 11 06 | 704 | 1.1+ | 1.3− | 2005 05 16 | 644 | 0.2− | 0.2− | 2006 11 14 | 703 | 1.1− | 1.1− | |
| 1997 11 06 | 704 | (1.7− | 2.6−) | 2005 05 16 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.8+ | 0.4+ | |
| 1997 11 06 | 704 | 0.1− | 1.1− | 2005 06 14 | G96 | 0.4− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.1− | |
| 1997 11 06 | 704 | 0.1+ | 1.6− | 2005 06 14 | G96 | 0.7− | 0.5+ | 2006 11 14 | 703 | 0.0 | 0.5− | |
| 1997 11 06 | 704 | 1.3− | 0.9− | 2005 06 14 | G96 | 0.5− | 0.5+ | 2006 11 14 | 703 | (2.4− | 0.8+) | |
| 2001 06 20 | 608 | 0.1− | 0.9− | 2005 06 14 | G96 | 0.3+ | 0.0 | 2006 11 16 | 704 | 1.1+ | 0.7+ | |
| 2001 06 20 | 608 | 0.2− | 0.6− | 2006 09 28 | 703 | 0.7− | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.1+ | |
| 2001 06 20 | 608 | 0.5− | 0.6− | 2006 09 28 | 703 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.4+ | |
| 2001 06 21 | 704 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.4− | 0.7− | 2006 11 16 | 704 | 0.5+ | 0.5− | |
| 2001 06 21 | 704 | 0.2+ | 0.6+ | 2006 09 28 | 703 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.6− | |
| 2001 06 21 | 704 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.0 | 1.2+ | |
| 2001 07 10 | 644 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1− | 1.1+ | |
| 2001 07 10 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.8+ | |
| 2001 07 10 | 644 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.6− | 1.2+ | 2006 11 18 | 704 | 0.1+ | 0.6+ | |
| 2001 08 20 | 704 | 0.2− | 0.1− | 2006 10 21 | 704 | (0.1− | 2.2+) | 2006 11 18 | 704 | 0.6+ | 0.8+ | |
| 2001 08 20 | 704 | 0.2− | 0.6+ | 2006 10 21 | 704 | 1.0+ | 1.0− | 2006 11 19 | 704 | 0.3+ | 0.7+ | |
| 2001 08 20 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.7+ | |
| 2001 08 20 | 704 | 0.5− | 0.6+ | 2006 10 21 | 704 | 0.5+ | 0.8− | 2006 11 19 | 704 | 1.0− | 1.4+ | |
| 2001 10 19 | 704 | (0.1+ | 1.8+) | 2006 10 21 | 704 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.6− | 0.8+ | |
| 2001 10 19 | 704 | (1.8+ | 2.1+) | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.0 | |
| 2001 10 19 | 704 | (0.3+ | 1.6+) | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 1.2− | 0.8+ | |
| 2001 10 19 | 704 | 1.1+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.5− | 0.8+ | |
| 2005 05 11 | 644 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.5+ | |
| 2005 05 11 | 644 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.0 | 2.9+ | |
| 2005 05 11 | 644 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.8+ | 0.4− | |
| 2005 05 12 | 644 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.1+ | |
| 2005 05 12 | 644 | 0.1− | 0.4− | 2006 11 07 | 644 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.4− | |
| 2005 05 12 | 644 | 0.1+ | 0.5− | 2006 11 07 | 644 | 0.1− | 0.1− | | | | | |

**(139385)∗ 2001 $MT_{28}$ = 2005 $EL_8$**

Discovered 2001 June 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 103192)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.97198 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17481904 | $\omega$ | 169.84059 | | +0.98692685 | | +0.16116242 |
| $a$ | 3.1676965 | $\Omega$ | 180.88885 | | −0.15360576 | | +0.93787807 |
| $e$ | 0.1713891 | $i$ | 5.31372 | | −0.04879202 | | +0.30726438 |
| $P$ | 5.64 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 14 | 691 | 0.2− | 0.1− | 2002 11 11 | 704 | 0.0 | 0.2+ | 2005 03 04 | G96 | 0.7− | 0.3+ | |
| 1999 03 14 | 691 | 0.2− | 0.1− | 2002 11 11 | 704 | 0.6− | 0.1+ | 2005 03 04 | G96 | 1.1− | 0.0 | |
| 1999 03 14 | 691 | 0.1− | 0.2− | 2002 11 11 | 704 | 0.0 | 0.1+ | 2005 04 04 | G96 | 0.3− | 0.2− | |
| 1999 03 21 | 691 | 0.6+ | 0.0 | 2002 11 11 | 704 | 0.5+ | 0.5+ | 2005 04 04 | G96 | 0.4− | 0.1+ | |
| 1999 03 21 | 691 | 0.1− | 0.5+ | 2002 11 23 | 644 | 0.4− | 0.3+ | 2005 04 04 | G96 | 0.5− | 0.3+ | |
| 1999 03 21 | 691 | 0.9+ | 0.0 | 2002 11 23 | 644 | 0.4− | 0.7+ | 2005 04 04 | G96 | 0.3− | 0.0 | |
| 2001 06 27 | 699 | 0.2− | 0.2+ | 2002 11 23 | 644 | 0.4− | 0.4+ | 2005 05 09 | G96 | 0.5− | 0.2+ | |
| 2001 06 27 | 699 | 0.3+ | 1.2+ | 2002 12 01 | 704 | 0.0 | 0.4+ | 2005 05 09 | G96 | 0.1+ | 0.2− | |
| 2001 06 27 | 699 | 0.1+ | 0.8+ | 2002 12 01 | 704 | 0.3+ | 1.5+ | 2005 05 09 | G96 | 0.4− | 0.1+ | |
| 2001 06 27 | 699 | 0.1− | 1.2+ | 2002 12 01 | 704 | 0.3+ | 0.4+ | 2005 05 09 | G96 | 0.3− | 0.3+ | |
| 2001 06 30 | 608 | 0.3− | 0.2− | 2002 12 01 | 704 | 0.6+ | 0.5+ | 2006 05 06 | G96 | 0.0 | 0.2+ | |
| 2001 06 30 | 608 | 0.4− | 0.6− | 2002 12 01 | 704 | 1.0+ | 0.1− | 2006 05 06 | G96 | 0.1+ | 0.3+ | |
| 2001 06 30 | 608 | 0.3− | 0.5− | 2004 01 26 | 699 | 0.9+ | 0.2+ | 2006 05 06 | G96 | 0.3− | 0.3+ | |
| 2001 07 14 | 608 | 0.3− | 0.2+ | 2004 01 26 | 699 | 0.9− | 0.7− | 2006 05 26 | G96 | 0.7+ | 0.4+ | |
| 2001 07 14 | 608 | 0.7− | 0.3+ | 2004 01 26 | 699 | 0.2+ | 0.4− | 2006 05 26 | G96 | 0.6+ | 0.2+ | |
| 2001 07 14 | 608 | 0.5− | 0.0 | 2004 01 26 | 699 | 0.1− | 1.7− | 2006 05 26 | G96 | 0.6+ | 0.4+ | |
| 2002 09 04 | 599 | 1.2− | 1.6+ | 2005 03 01 | 691 | 0.2+ | 0.5+ | 2006 05 26 | G96 | 0.6+ | 0.3+ | |
| 2002 09 04 | 599 | 0.3− | 0.4+ | 2005 03 01 | 691 | 0.1− | 0.6+ | 2006 05 28 | 703 | 0.4+ | 0.7− | |
| 2002 09 04 | 599 | 0.1− | 0.3+ | 2005 03 01 | 691 | 0.2+ | 0.5+ | 2006 05 28 | 703 | 0.0 | 0.0 | |
| 2002 09 04 | 599 | 0.3− | 0.3+ | 2005 03 04 | G96 | 0.3− | 0.2− | 2006 05 28 | 703 | 1.2+ | 0.1− | |
| 2002 11 11 | 704 | 0.2− | 0.3+ | 2005 03 04 | G96 | 0.5− | 0.2+ | 2006 05 28 | 703 | 0.0 | 0.3+ | |

**(139386)∗ 2001 $NP_1$**

Discovered 2001 July 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.14834 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22371974 | $\omega$ | 120.31126 | | +0.89412535 | | +0.43040183 |
| $a$ | 2.6874054 | $\Omega$ | 214.63120 | | −0.44768971 | | +0.86568817 |
| $e$ | 0.1523504 | $i$ | 12.56904 | | +0.01066646 | | +0.25561350 |
| $P$ | 4.41 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 10 | 691 | 0.4+ | 0.0 | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 1993 12 10 | 691 | 0.0 | 0.1+ | 2005 06 15 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 1993 12 10 | 691 | 0.1− | 0.1+ | 2005 06 15 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 1997 10 30 | 704 | (1.3− | 2.1+) | 2005 06 15 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 1997 10 30 | 704 | (0.8− | 2.3+) | 2005 06 28 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 1997 10 30 | 704 | (3.0− | 1.8+) | 2005 06 28 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 1997 10 30 | 704 | 1.6− | 1.1+ | 2005 06 28 | 644 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.2+ | |
| 2001 06 15 | 645 | 0.1+ | 0.3− | 2005 06 29 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.3+ | |
| 2001 06 15 | 645 | 0.1+ | 0.4− | 2005 06 29 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.2+ | |
| 2001 07 10 | 644 | 0.4− | 0.3+ | 2005 06 29 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− | |
| 2001 07 10 | 644 | 0.0 | 0.3+ | 2005 07 02 | 703 | (1.5− | 1.3−) | 2006 11 09 | 644 | 0.1+ | 0.2+ | |
| 2001 07 10 | 644 | 0.1− | 0.5+ | 2005 07 02 | 703 | 0.6− | 0.5− | 2006 11 09 | 644 | 0.1− | 0.4+ | |
| 2001 07 13 | 608 | 0.2+ | 0.9− | 2005 07 02 | 703 | 1.0− | 1.2− | 2006 11 11 | 703 | 0.2+ | 0.2− | |
| 2001 07 13 | 608 | 0.3+ | 0.3− | 2005 07 02 | 703 | 1.3− | 0.5− | 2006 11 11 | 703 | 0.1− | 0.6− | |
| 2001 07 13 | 608 | 0.3− | 0.3− | 2005 07 03 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.8− | |
| 2001 07 18 | 644 | 0.1− | 0.3+ | 2005 07 03 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.5− | |
| 2001 07 18 | 644 | 0.2+ | 0.1− | 2005 07 03 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.6+ | 0.2+ | |
| 2001 07 18 | 644 | 0.1− | 0.1+ | 2005 07 03 | 691 | 0.0 | 0.4+ | 2006 11 13 | 644 | 0.4+ | 0.2+ | |
| 2001 07 18 | 644 | 0.2− | 0.1− | 2005 07 03 | 691 | 0.2− | 0.7+ | 2006 11 13 | 644 | 0.6+ | 0.1+ | |
| 2001 07 18 | 644 | 0.0 | 0.2+ | 2005 07 03 | 691 | 0.3− | 1.3+ | 2006 11 16 | G96 | 0.1+ | 0.3− | |
| 2001 07 18 | 644 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.2− | |
| 2001 08 20 | 704 | 0.2− | 0.1+ | 2006 09 25 | 704 | (1.6+ | 0.0 ) | 2006 11 16 | G96 | 0.1− | 0.3− | |
| 2001 08 20 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.1− | |
| 2001 08 20 | 704 | 0.4− | 0.9+ | 2006 09 25 | 704 | 0.5− | 1.1+ | 2006 11 17 | 703 | 0.4+ | 0.1+ | |
| 2001 08 25 | 644 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | (1.6+ | 0.1+) | |
| 2001 08 25 | 644 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.0 | 0.1+ | |
| 2001 08 25 | 644 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.7+ | 1.0+ | |
| 2005 06 02 | 703 | (1.7− | 0.5−) | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.8− | 0.1− | |
| 2005 06 02 | 703 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.3+ | |
| 2005 06 02 | 703 | 0.8− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | (1.3+ | 1.7+) | |
| 2005 06 02 | 703 | 0.5− | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.2+ | 1.3+ | |
| 2005 06 09 | 703 | 0.0 | 1.4+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4+ | 1.0+ | |
| 2005 06 09 | 703 | 0.6− | 1.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.6+ | |
| 2005 06 09 | 703 | 0.8− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | (0.1− | 1.7+) | |
| 2005 06 09 | 703 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.3− | 1.3+ | |
| 2005 06 11 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.4− | | | | | |
| 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.3− | | | | | |

**(139387)∗ 2001 $NH_3$ = 2004 $CV_{126}$**

Discovered 2001 July 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 68921)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.63378 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21241445 | $\omega$ | 201.62446 | | +0.84469398 | +0.52459484 | |
| $a$ | 2.7819331 | $\Omega$ | 126.29333 | | −0.46972756 | +0.82171663 | |
| $e$ | 0.0713738 | $i$ | 7.57613 | | −0.25660883 | +0.22267025 | |
| $P$ | 4.64 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.1+ | 0.8+ | 2004 02 23 | 704 | 0.2− | 0.5+ | 2006 08 29 | 703 | 0.3− | 0.7+ |
| 2001 07 13 | 644 | 0.0 | 0.9+ | 2004 02 23 | 704 | 0.3+ | 0.6+ | 2006 08 29 | 703 | 0.3− | 1.7+ |
| 2001 07 13 | 644 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.5+ |
| 2001 07 14 | 644 | 0.2− | 1.4− | 2004 02 23 | 704 | 0.5− | 0.1− | 2006 08 29 | 703 | 1.1− | 0.4+ |
| 2001 07 14 | 644 | 0.0 | 1.7− | 2004 03 10 | 644 | 0.7+ | 0.8+ | 2006 08 29 | 703 | 1.1− | 0.7+ |
| 2001 07 14 | 644 | 0.3− | 1.3− | 2004 03 10 | 644 | 0.4+ | 0.7+ | 2006 08 29 | 703 | 0.5− | 0.0 |
| 2001 07 17 | 644 | 0.0 | 1.2+ | 2004 03 10 | 644 | 1.0+ | 0.2+ | 2006 08 31 | 704 | 1.0+ | 0.8− |
| 2001 07 17 | 644 | 0.1+ | 1.2+ | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 08 31 | 704 | 0.2+ | 0.1+ |
| 2001 07 17 | 644 | 0.1+ | 1.3+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 0.8− | 0.6+ |
| 2001 07 21 | 608 | 0.5− | 1.1− | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 1.2+ |
| 2001 07 21 | 608 | 0.3− | 1.1− | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.6+ |
| 2001 07 21 | 608 | 0.6− | 1.0− | 2005 05 04 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.1− | 1.8+ |
| 2001 07 27 | 608 | 1.1+ | 1.5− | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.5− |
| 2001 07 27 | 608 | 0.8+ | 0.7− | 2005 05 14 | 644 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.6+ | 0.4+ |
| 2001 07 27 | 608 | 0.5+ | 0.9− | 2005 05 14 | 644 | 0.4− | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.3− |
| 2002 11 23 | 644 | 0.0 | 0.5+ | 2005 05 14 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.6+ |
| 2002 11 23 | 644 | 0.3− | 0.6+ | 2005 05 26 | 461 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.4+ |
| 2002 11 23 | 644 | 0.5− | 0.4+ | 2005 05 26 | 461 | 0.5+ | 0.2+ | 2006 09 19 | 291 | 0.0 | 0.4+ |
| 2004 01 30 | 691 | 0.1− | 0.4+ | 2005 05 26 | 461 | 0.1+ | 0.2+ | 2006 09 19 | 291 | 0.2− | 0.3+ |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.5− | 0.3+ | 2006 09 19 | 291 | 0.0 | 0.2+ |
| 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.6− | 0.3+ | 2006 09 25 | 699 | 1.0+ | 0.4− |
| 2004 02 13 | 691 | 0.3+ | 0.5+ | 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 09 25 | 699 | 1.8+ | 0.8+ |
| 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.8+ | 2006 09 25 | 699 | 1.2+ | 0.6+ |
| 2004 02 13 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 1.0− | 0.9+ | 2006 09 25 | 699 | 0.4− | 0.5+ |

**(139388)∗ 2001 NQ$_4$ = 2004 CG$_{83}$**

Discovered 2001 July 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 60777)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.38730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24117476 | $\omega$ | 119.66902 | | −0.18931852 | +0.98167068 | |
| $a$ | 2.5561214 | $\Omega$ | 139.39921 | | −0.91213923 | −0.16755038 | |
| $e$ | 0.1053316 | $i$ | 1.93162 | | −0.36353888 | −0.09082703 | |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.5− | 0.8+ | 2003 11 30 | 691 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 1996 02 15 | 691 | 0.4− | 0.2+ | 2003 11 30 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 1996 02 15 | 691 | 0.5− | 0.3+ | 2004 01 24 | 704 | (1.6+ | 2.6+) | 2006 10 17 | G96 | 0.7− | 0.5− |
| 1997 10 05 | 691 | 0.6− | 0.6+ | 2004 01 24 | 704 | (0.5+ | 2.9+) | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 1997 10 05 | 691 | 0.5− | 0.8+ | 2004 01 24 | 704 | 0.2+ | 0.9+ | 2006 10 18 | 691 | 0.0 | 0.2− |
| 1997 10 05 | 691 | 1.3+ | 1.8+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2− |
| 1998 12 22 | 691 | 1.2+ | 0.9+ | 2004 02 12 | 291 | 0.5+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.1− |
| 1998 12 22 | 691 | 0.0 | 0.7− | 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1998 12 22 | 691 | 0.2+ | 0.6− | 2004 02 12 | 291 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2000 03 09 | 704 | 0.9+ | 0.6+ | 2004 02 12 | 291 | 0.6+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2000 03 09 | 704 | 0.4− | 0.3+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.6− | 0.9+ |
| 2000 03 09 | 704 | 0.8− | 0.4+ | 2004 02 17 | 704 | 0.6+ | 0.2+ | 2006 11 02 | 703 | 0.0 | 0.4+ |
| 2000 03 09 | 704 | 0.6+ | 0.2− | 2004 02 17 | 704 | 0.2− | 0.5+ | 2006 11 02 | 703 | 0.5− | 0.1+ |
| 2000 03 09 | 704 | 1.3− | 0.1+ | 2004 02 17 | 704 | 0.1− | 0.5+ | 2006 11 02 | 703 | 0.7+ | 0.3− |
| 2001 07 13 | 644 | 0.4− | 0.9− | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.4+ | 0.0 |
| 2001 07 13 | 644 | 0.1− | 0.4− | 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.3− |
| 2001 07 13 | 644 | 0.3+ | 0.6− | 2004 02 26 | 704 | 0.1− | 1.3− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 07 14 | 644 | 1.1+ | 1.4+ | 2004 02 26 | 704 | 0.3− | 0.7− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2001 07 14 | 644 | 0.9+ | 1.1+ | 2004 02 26 | 704 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.5+ | 0.0 |
| 2001 07 14 | 644 | 1.0+ | 1.2+ | 2004 02 26 | 704 | 0.2− | 0.7− | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2001 07 14 | 644 | 1.0+ | 0.6+ | 2004 03 14 | 703 | 0.2− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 07 14 | 644 | 0.6+ | 0.4+ | 2004 03 14 | 703 | 1.0− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 07 14 | 644 | 0.7+ | 0.6+ | 2004 03 14 | 703 | 0.6− | 0.8− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 07 14 | 644 | 0.1− | 0.6+ | 2004 03 14 | 703 | 0.5− | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2001 07 14 | 644 | 0.7− | 0.9+ | 2004 03 18 | 704 | 1.2+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2001 07 14 | 644 | 0.7− | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 11 11 | 703 | (0.9+ | 2.0+) |
| 2001 07 22 | 704 | 0.1− | 1.3+ | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.8+ |
| 2001 07 22 | 704 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.7+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.6− |
| 2001 07 22 | 704 | 0.8− | 0.3+ | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 08 26 | 691 | 0.5− | 0.6− | 2004 03 20 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.7− | 0.7− |
| 2001 08 26 | 691 | 0.1− | 0.8− | 2004 03 20 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.2− |
| 2001 08 26 | 691 | 0.3− | 1.2− | 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2002 11 06 | 704 | 0.8+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.7− | 1.3+ |
| 2002 11 06 | 704 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.8− | 0.0 |
| 2002 11 06 | 704 | 0.8− | 1.0+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 1.2− | 0.9+ |
| 2002 11 15 | 704 | 0.5− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 11 28 | 704 | 0.2+ | 1.7− |
| 2002 11 15 | 704 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.7− |
| 2002 11 15 | 704 | 0.1+ | 0.4− | 2006 10 16 | 703 | 1.4− | 0.2− | 2006 11 28 | 704 | 0.6− | 1.4+ |
| 2002 11 15 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.2− | | | | |
| 2003 11 30 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.6+ | | | | |

**(139389)∗ 2001 NQ$_7$ = 1996 HF$_{23}$**

Discovered 2001 July 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 15849)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.40605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21794947 | $\omega$ | 225.85659 | | +0.27908392 | +0.95558297 | |
| $a$ | 2.7346317 | $\Omega$ | 60.57030 | | −0.84706695 | +0.29144974 | |
| $e$ | 0.1647276 | $i$ | 6.24399 | | −0.45231599 | +0.04379770 | |
| $P$ | 4.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 809 | (1.0+ | 3.7+) | 2005 04 11 | 695 | 0.2− | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 1996 04 20 | 809 | (0.5+ | 4.5+) | 2005 04 11 | 695 | 0.2− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 1996 04 20 | 809 | (0.2+ | 2.5+) | 2005 04 12 | 704 | 1.0+ | 0.6+ | 2006 08 17 | 644 | 0.3− | 0.2+ |
| 1996 04 20 | 691 | 0.1+ | 0.1− | 2005 04 12 | 704 | 1.3+ | 0.5+ | 2006 09 12 | 703 | (1.9− | 0.5−) |
| 1996 04 20 | 691 | 0.1+ | 0.2+ | 2005 04 12 | 704 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 1.1+ | 0.8− |
| 1996 04 20 | 691 | 0.1+ | 0.0 | 2005 05 08 | 699 | 0.6+ | 0.0 | 2006 09 12 | 703 | 0.9− | 0.5+ |
| 1996 04 21 | 809 | (0.2+ | 3.4+) | 2005 05 08 | 699 | 0.4− | 0.5+ | 2006 09 12 | 703 | (1.6− | 2.2−) |
| 1996 04 21 | 809 | (0.5− | 2.6+) | 2005 05 08 | 699 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.8+ |
| 1996 04 21 | 809 | (0.5+ | 3.0+) | 2005 05 08 | 699 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.1− |
| 2001 06 22 | 644 | 0.6− | 0.1+ | 2005 05 09 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.4+ |
| 2001 06 22 | 644 | 0.5− | 0.3+ | 2005 05 09 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.4+ |
| 2001 06 22 | 644 | 0.3− | 0.0 | 2005 05 09 | 704 | 0.9+ | 0.1+ | 2006 09 26 | 703 | 0.7− | 1.2+ |
| 2001 07 13 | 644 | 0.3+ | 0.2+ | 2005 05 12 | G96 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.7+ |
| 2001 07 13 | 644 | 0.1+ | 0.1− | 2005 05 12 | G96 | 0.5− | 0.2− | 2006 09 26 | 703 | 0.3− | 1.2+ |
| 2001 07 13 | 644 | 0.0 | 0.1+ | 2005 05 12 | G96 | 0.3− | 0.2− | 2006 09 26 | 703 | (0.6+ | 2.0+) |
| 2001 07 17 | 644 | 0.5+ | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 07 17 | 644 | 0.3+ | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2001 07 17 | 644 | 0.1− | 0.3+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 2001 07 31 | 644 | 0.2+ | 0.1+ | 2005 05 12 | G96 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.6− | 0.1− |
| 2001 07 31 | 644 | 0.4+ | 0.2− | 2005 05 12 | G96 | 0.9− | 0.1+ | 2006 10 16 | 703 | 1.2+ | 0.0 |
| 2001 07 31 | 644 | 0.0 | 0.2− | 2005 05 13 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.4− |
| 2001 08 11 | 644 | 0.2+ | 1.3− | 2005 05 13 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 1.1+ |
| 2001 08 11 | 644 | 0.3− | 1.4− | 2005 05 13 | 704 | (1.2− | 1.6+) | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2001 08 11 | 644 | (0.1+ | 1.7−) | 2005 05 13 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.7+ |
| 2001 08 24 | 644 | 0.7− | 0.4− | 2005 06 04 | 703 | 0.3− | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2001 08 24 | 644 | 0.9− | 0.3+ | 2005 06 04 | 703 | 1.1+ | 0.7− | 2006 10 21 | 644 | 0.4− | 0.8+ |
| 2001 08 24 | 644 | 0.6− | 0.2− | 2005 06 04 | 703 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.4+ | 1.3+ |
| 2004 02 17 | 645 | 0.1+ | 0.0 | 2005 06 04 | 703 | 0.4− | 0.9+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2004 02 17 | 645 | 0.1− | 0.1+ | 2005 06 12 | G96 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2005 04 05 | 691 | 0.3+ | 0.0 | 2005 06 12 | G96 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.2− | 1.2− |
| 2005 04 05 | 691 | 0.1+ | 0.2+ | 2005 06 12 | G96 | 0.7− | 0.1− | | | | |
| 2005 04 05 | 691 | 0.2+ | 0.1− | 2005 06 12 | G96 | 0.5− | 0.5− | | | | |

**(139390)∗ 2001 NU$_7$ = 1999 BH$_{18}$**

Discovered 2001 July 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 15849)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.06120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22731105 | $\omega$ | 116.99707 | | +0.30220901 | −0.93729523 | |
| $a$ | 2.6590246 | $\Omega$ | 314.26450 | | +0.76589101 | +0.34719361 | |
| $e$ | 0.0843332 | $i$ | 14.03163 | | +0.56752152 | +0.03056554 | |
| $P$ | 4.34 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 699 | 0.1+ | 0.3+ | 2001 08 11 | 644 | (2.6+ | 1.7+) | 2004 03 17 | 704 | 1.0+ | 0.4+ |
| 1998 12 17 | 699 | 0.1− | 0.4+ | 2001 08 24 | 608 | 0.1− | 0.7− | 2004 03 17 | 704 | 0.9− | 0.2+ |
| 1998 12 17 | 699 | 0.6+ | 1.0+ | 2001 08 24 | 608 | 0.3+ | 1.1− | 2004 03 26 | 699 | (0.2+ | 1.9+) |
| 1998 12 17 | 704 | 0.1− | 1.1− | 2001 08 24 | 608 | 0.5− | 1.0− | 2004 03 26 | 699 | 0.1− | 0.6+ |
| 1998 12 17 | 704 | 1.2− | 0.2+ | 2002 10 06 | 704 | 0.2− | 1.0+ | 2004 03 26 | 699 | 0.1− | 0.1+ |
| 1998 12 17 | 704 | (1.2− | 2.4−) | 2002 10 06 | 704 | 0.2− | 0.4− | 2004 03 26 | 699 | 0.7− | 0.8+ |
| 1998 12 17 | 704 | (2.6− | 1.7−) | 2002 10 06 | 704 | 0.3− | 0.5− | 2006 09 17 | 703 | 1.2− | 0.5− |
| 1998 12 17 | 704 | 0.1− | 0.5− | 2002 10 06 | 704 | 0.6+ | 0.9− | 2006 09 17 | 703 | 0.3− | 0.0 |
| 1999 01 16 | 704 | 0.0 | 0.1+ | 2002 10 06 | 704 | 0.5+ | 0.3− | 2006 09 17 | 703 | 0.4− | 0.1− |
| 1999 01 16 | 704 | 0.8+ | 1.5− | 2002 10 15 | 704 | 0.6− | 1.1+ | 2006 09 17 | 703 | 0.4− | 1.1+ |
| 1999 01 16 | 704 | 0.1+ | 0.4− | 2002 10 15 | 704 | 0.2− | 0.9+ | 2006 09 22 | 699 | 0.3+ | 1.0+ |
| 1999 01 16 | 704 | 1.4+ | 0.3− | 2002 10 15 | 704 | 0.5+ | 0.0 | 2006 09 22 | 699 | 0.3− | 0.3+ |
| 1999 01 19 | 704 | 1.5− | 0.4+ | 2002 12 07 | 704 | 0.8+ | 0.7− | 2006 09 22 | 699 | 0.0 | 0.7+ |
| 1999 01 19 | 704 | 0.9− | 0.6− | 2002 12 07 | 704 | 0.7+ | 0.3− | 2006 09 22 | 699 | 0.1+ | 0.0 |
| 1999 01 19 | 704 | 0.2+ | 1.7+ | 2002 12 07 | 704 | 0.6+ | 0.4+ | 2006 09 28 | 703 | 0.4+ | 1.4+ |
| 1999 01 19 | 704 | 1.2− | 1.7+ | 2002 12 07 | 704 | 0.7+ | 0.1− | 2006 09 28 | 703 | (2.0+ | 1.4+) |
| 2001 06 20 | 644 | 0.2+ | 0.3+ | 2002 12 07 | 704 | 1.0+ | 0.6− | 2006 09 28 | 703 | 0.4− | 0.0 |
| 2001 06 20 | 644 | 0.2− | 0.4+ | 2002 12 15 | 704 | 0.8− | 0.7+ | 2006 09 28 | 703 | 0.2+ | 0.3− |
| 2001 06 20 | 644 | 0.2− | 0.3+ | 2002 12 15 | 704 | 0.4+ | 0.3− | 2006 09 30 | 704 | 1.0− | 0.1+ |
| 2001 07 13 | 644 | 0.0 | 0.0 | 2002 12 15 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 704 | 1.3− | 0.7+ |
| 2001 07 13 | 644 | 0.4− | 0.5+ | 2002 12 15 | 704 | 0.0 | 0.1− | 2006 09 30 | 704 | (1.8− | 0.6+) |
| 2001 07 13 | 644 | 0.2− | 0.0 | 2003 02 01 | 644 | 0.6− | 0.0 | 2006 09 30 | 704 | 1.3− | 0.1− |
| 2001 07 17 | 644 | 0.4+ | 0.7+ | 2003 02 01 | 644 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2001 07 17 | 644 | 0.2− | 0.4+ | 2003 02 01 | 644 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2001 07 17 | 644 | 0.2+ | 0.9+ | 2004 03 17 | 703 | 0.9+ | 1.0+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 07 28 | 699 | 0.8+ | 0.9+ | 2004 03 17 | 703 | 0.9+ | 0.7+ | 2006 10 20 | 703 | 0.0 | 0.2+ |
| 2001 07 28 | 699 | 0.4− | 0.1+ | 2004 03 17 | 704 | 1.0+ | 1.2− | 2006 10 20 | 703 | 0.1− | 0.4− |
| 2001 07 28 | 699 | (2.5− | 1.0+) | 2004 03 17 | 703 | 0.6+ | 0.0 | 2006 10 20 | 703 | 0.2+ | 0.8− |
| 2001 07 28 | 699 | 0.0 | 0.3− | 2004 03 17 | 704 | 0.7+ | 0.7+ | 2006 10 20 | 703 | 0.2+ | 0.3− |
| 2001 08 11 | 644 | (3.0+ | 1.3+) | 2004 03 17 | 703 | (0.5− | 1.6+) | | | | |
| 2001 08 11 | 644 | (2.8+ | 1.7+) | 2004 03 17 | 704 | 0.3− | 0.7+ | | | | |

**(139391)**∗ **2001 NF$_9$**

Discovered 2001 July 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.28113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24125874 | $\omega$ | 57.82057 | | +0.66238014 | +0.73854035 | |
| $a$ | 2.5555282 | $\Omega$ | 254.19742 | | −0.72381205 | +0.58758657 | |
| $e$ | 0.0673842 | $i$ | 7.50886 | | −0.19325802 | +0.33060576 | |
| $P$ | 4.09 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 11 | 691 | 0.2− | 0.2+ | 2002 12 05 | 704 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 06 11 | 691 | 0.6− | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2001 06 11 | 691 | 0.1− | 0.9+ | 2002 12 05 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 06 29 | 608 | 0.3+ | 0.4− | 2002 12 05 | 704 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2001 06 29 | 608 | 0.3+ | 0.7+ | 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.1+ |
| 2001 06 29 | 608 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | (1.9− | 0.3−) |
| 2001 07 13 | 644 | 0.1− | 0.5+ | 2002 12 10 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2001 07 13 | 644 | 0.5+ | 0.1+ | 2002 12 10 | 704 | 0.7+ | 0.7+ | 2006 11 15 | 704 | 0.8+ | 0.2+ |
| 2001 07 13 | 644 | 0.2− | 0.4+ | 2002 12 10 | 704 | 0.6− | 0.7+ | 2006 11 15 | 704 | 0.9+ | 0.2− |
| 2001 07 17 | 608 | 0.2+ | 0.5− | 2002 12 10 | 704 | 0.2+ | 1.1+ | 2006 11 15 | 704 | 0.2+ | 0.7− |
| 2001 07 17 | 608 | 0.2+ | 0.5− | 2003 01 29 | 291 | 0.4+ | 0.2− | 2006 11 15 | 704 | 0.2− | 0.1+ |
| 2001 07 17 | 608 | 0.5− | 0.1− | 2003 01 29 | 291 | 0.5+ | 0.0 | 2006 11 16 | 704 | 0.0 | 1.1+ |
| 2001 07 17 | 608 | 0.1− | 0.6− | 2003 01 29 | 291 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.0 |
| 2001 07 17 | 608 | 0.3− | 0.1− | 2004 02 14 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 2001 07 17 | 608 | 0.2− | 0.6− | 2004 02 14 | 644 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.8+ | 0.4− |
| 2001 07 21 | 608 | 0.0 | 0.3− | 2004 02 14 | 644 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 1.4+ |
| 2001 07 21 | 608 | 0.0 | 0.7− | 2004 02 14 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2001 07 21 | 608 | 0.1+ | 0.4− | 2004 02 14 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | (0.8+ | 1.7+) |
| 2001 07 27 | 608 | (1.7+ | 0.6+) | 2004 02 14 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2001 07 27 | 608 | (2.2+ | 0.4+) | 2004 03 27 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 07 27 | 608 | 1.2+ | 0.9+ | 2004 03 27 | 691 | 0.3+ | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.3+ | 0.6+ | 2004 03 27 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2001 08 25 | 704 | 0.1+ | 0.8+ | 2006 10 19 | 703 | (1.0+ | 2.6−) | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.0 | 1.1− | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2002 11 06 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.6− | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 11 06 | 704 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.8− | 2006 11 22 | 704 | 0.8− | 0.3− |
| 2002 11 06 | 704 | 0.7− | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.5− | 2006 12 01 | 704 | 0.5+ | 0.1+ |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.5− | 2006 12 01 | 704 | 0.2− | 0.7− |
| 2002 11 24 | 644 | 0.7− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.5− | 0.1− |
| 2002 11 24 | 644 | 0.5− | 0.0 | 2006 10 20 | G96 | 0.3− | 0.6− | 2006 12 01 | 704 | 0.3− | 0.5+ |

**(139392)**∗ **2001 NB$_{10}$ = 1995 FU$_3$**

Discovered 2001 July 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 14972)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.07490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22467632 | $\omega$ | 356.06488 | | +0.93998089 | −0.34033616 | |
| $a$ | 2.6797720 | $\Omega$ | 23.87812 | | +0.31470805 | +0.83675288 | |
| $e$ | 0.1511750 | $i$ | 3.49006 | | +0.13188922 | +0.42897076 | |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 04 | 691 | 0.3− | 0.3+ | 2004 04 22 | 691 | 0.8+ | 0.4+ | 2006 10 28 | 704 | (1.8+ | 0.1−) |
| 1995 02 04 | 691 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.5− |
| 1995 02 04 | 691 | (2.1+ | 0.2−) | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 28 | 704 | 0.5+ | 0.9− |
| 1995 03 23 | 691 | 0.1− | 0.8− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.3− |
| 1995 03 23 | 691 | 0.4− | 0.9− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 28 | 704 | 0.7+ | 0.2+ |
| 1995 03 23 | 691 | 0.0 | 0.8− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.3− |
| 1995 03 29 | 691 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 1995 03 29 | 691 | 0.7− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1995 03 29 | 691 | 0.5− | 0.4− | 2006 10 16 | 691 | 0.8− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1997 09 04 | 910 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 1997 09 05 | 910 | 0.7+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 1997 09 05 | 910 | 0.5+ | 0.0 | 2006 10 17 | 104 | 0.1− | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.4+ |
| 2001 07 14 | 644 | 0.4+ | 0.2+ | 2006 10 17 | 104 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 07 14 | 644 | 0.6+ | 0.1+ | 2006 10 17 | 104 | 0.1+ | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 2001 07 14 | 644 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 07 18 | 608 | 0.7− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2001 07 18 | 608 | 0.6− | 0.4− | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.5+ |
| 2001 07 18 | 608 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2001 07 21 | 644 | 0.5+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.0− |
| 2001 07 21 | 644 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2001 07 21 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.8− |
| 2001 08 11 | 644 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.3+ |
| 2001 08 11 | 644 | 0.4− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2001 08 11 | 644 | 0.7− | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2001 08 24 | 608 | 0.5+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2001 08 24 | 608 | 0.0 | 1.2− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.7+ | 1.2+ |
| 2001 08 24 | 608 | 0.1+ | 1.1− | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 16 | 704 | (1.5+ | 1.6+) |
| 2002 12 14 | 704 | 1.5+ | 0.6− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | (0.5+ | 2.0+) |
| 2002 12 14 | 704 | (1.9+ | 0.1−) | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.2− |
| 2002 12 14 | 704 | 0.8+ | 1.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.6+ |
| 2004 03 26 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.5− | 0.2+ |
| 2004 03 26 | 691 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.7+ | 0.6− |
| 2004 03 26 | 691 | 0.6+ | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 28 | 704 | 1.8− | 0.5− |
| 2004 04 22 | 691 | 0.6+ | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.0 | | | | |
| 2004 04 22 | 691 | 0.1− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.1+ | | | | |

**(139393)**∗ **2001 ND$_{11}$**

Discovered 2001 July 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 86.62857 | | (2000.0) | | | |
| $n$ | 0.23614184 | $\omega$ | 102.77281 | | +0.54042602 | +0.84120155 |
| $a$ | 2.5923129 | $\Omega$ | 199.97094 | | −0.79084726 | +0.50059255 |
| $e$ | 0.1985975 | $i$ | 3.00076 | | −0.28722869 | +0.20441884 |
| $P$ | 4.17 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 09 | 691 | 0.1+ | 0.2− | 2001 07 24 | 608 | (0.8− | 1.8−) | 2005 02 11 | 809 | 0.1− | 0.2− |
| 1992 04 09 | 691 | 0.2+ | 0.7− | 2001 07 24 | 608 | 0.1− | 0.9− | 2005 02 11 | 809 | 0.1+ | 0.8+ |
| 1992 04 09 | 691 | 0.6− | 0.0 | 2001 07 24 | 608 | 0.6− | 0.4− | 2005 02 11 | 809 | 0.0 | 0.5− |
| 2000 03 03 | 704 | (0.9− | 2.2+) | 2001 08 07 | 608 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.5− |
| 2000 03 03 | 704 | 0.0 | 1.9+ | 2001 08 07 | 608 | 0.1− | 0.8− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2000 03 11 | 704 | 0.6+ | 0.3+ | 2001 08 07 | 608 | 0.1+ | 0.9− | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 2000 03 11 | 704 | 0.1− | 0.2+ | 2001 08 17 | 704 | 0.4− | 0.8− | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2000 03 11 | 704 | 0.4+ | 0.5+ | 2001 08 17 | 704 | 0.9− | 0.5− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2000 03 11 | 704 | (1.7+ | 2.2+) | 2001 08 17 | 704 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 06 27 | 699 | 0.1− | 0.1+ | 2001 08 19 | 704 | (0.2− | 1.7+) | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2001 06 27 | 699 | 0.4+ | 0.8+ | 2001 08 19 | 704 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 06 27 | 699 | 0.1+ | 0.7+ | 2001 08 19 | 704 | 1.4+ | 0.2− | 2006 11 12 | G96 | 0.5+ | 0.3− |
| 2001 06 27 | 699 | 0.2− | 0.4+ | 2001 09 20 | 704 | 0.0 | 1.4+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2001 07 14 | 608 | 0.0 | 0.1+ | 2001 09 20 | 704 | 1.3+ | 1.4+ | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 2001 07 14 | 608 | 0.6+ | 0.2+ | 2001 09 20 | 704 | (0.7+ | 1.7+) | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 2001 07 14 | 608 | 0.2+ | 0.2− | 2001 09 20 | 704 | 0.5+ | 0.9+ | 2006 11 21 | 704 | 0.9− | 0.4+ |
| 2001 07 18 | 608 | (1.1+ | 1.6+) | 2003 12 22 | 291 | 0.3− | 0.7+ | 2006 11 21 | 704 | 1.1− | 0.1− |
| 2001 07 18 | 608 | 0.9+ | 1.0+ | 2003 12 22 | 291 | 0.1− | 1.2+ | 2006 11 21 | 704 | 1.3− | 0.4+ |
| 2001 07 18 | 608 | (1.2+ | 1.8+) | 2003 12 22 | 291 | 0.3− | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2001 07 19 | 691 | 0.4− | 0.1+ | 2004 03 27 | 691 | 0.5− | 0.8− | 2006 12 01 | G96 | 0.2+ | 0.4+ |
| 2001 07 19 | 691 | 0.1− | 0.2+ | 2004 03 27 | 691 | 0.3+ | 0.1− | 2006 12 01 | G96 | 0.4+ | 0.0 |
| 2001 07 19 | 691 | 0.2− | 0.2+ | 2004 03 27 | 691 | 1.2+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.1+ |

**(139394)∗ 2001 NU$_{12}$ = 2002 VD$_{104}$**

Discovered 2001 July 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.32287 | | (2000.0) | | | |
| $n$ | 0.22241976 | $\omega$ | 57.71047 | | +0.98349896 | +0.16259764 |
| $a$ | 2.6978666 | $\Omega$ | 292.82574 | | −0.18091172 | +0.88600235 |
| $e$ | 0.0453132 | $i$ | 4.93700 | | +0.00086035 | +0.43423708 |
| $P$ | 4.43 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.3+ | 0.2− | 2002 11 24 | 644 | 0.1− | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.2+ |
| 2000 04 07 | 704 | 0.7+ | 0.4+ | 2002 11 24 | 644 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.3+ | 0.2− |
| 2000 04 07 | 704 | 0.4− | 0.4+ | 2002 12 02 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | 0.3+ | 0.6− |
| 2000 04 07 | 704 | (2.7+ | 0.7+) | 2002 12 02 | 704 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.4− | 0.5− |
| 2001 07 14 | 644 | (1.2− | 2.1−) | 2002 12 02 | 704 | 0.5+ | 0.2− | 2006 09 16 | 703 | 0.1− | 0.4− |
| 2001 07 14 | 644 | (0.7− | 2.0−) | 2002 12 02 | 704 | 0.1− | 0.2− | 2006 09 18 | 704 | 1.3+ | 1.1+ |
| 2001 07 14 | 644 | (0.9− | 1.9−) | 2002 12 02 | 704 | 0.3− | 0.3− | 2006 09 18 | 704 | 0.2− | 1.0+ |
| 2001 07 14 | 644 | 0.2− | 0.2− | 2002 12 06 | 704 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.5+ | 1.3+ |
| 2001 07 14 | 644 | 0.5− | 0.0 | 2002 12 06 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 704 | (0.2+ | 3.6+) |
| 2001 07 14 | 644 | 0.2− | 0.3− | 2002 12 06 | 704 | 0.3− | 0.7− | 2006 09 19 | 699 | 0.2− | 0.3+ |
| 2001 07 17 | 608 | 1.3+ | 0.3− | 2002 12 06 | 704 | 0.4− | 0.4− | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 2001 07 17 | 608 | 1.3+ | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.1− |
| 2001 07 17 | 608 | 0.9+ | 0.1− | 2002 12 27 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.1− | 0.2− |
| 2001 07 23 | 608 | 0.2− | 1.0− | 2002 12 27 | 644 | 0.3+ | 0.4− | 2006 09 27 | 699 | 0.8− | 0.2− |
| 2001 07 23 | 608 | 0.2− | 1.1− | 2002 12 27 | 644 | 0.0 | 0.2− | 2006 09 27 | 699 | 0.4− | 0.7+ |
| 2001 07 23 | 608 | 0.7− | 1.0− | 2004 02 12 | 644 | 0.1− | 0.5+ | 2006 09 27 | 699 | 0.3+ | 0.1+ |
| 2001 07 23 | 608 | 0.4− | 0.7− | 2004 02 12 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 699 | 0.9− | 1.0+ |
| 2001 07 23 | 608 | 0.4− | 1.1− | 2004 02 12 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.2− | 0.7+ |
| 2001 07 23 | 608 | 0.1+ | 0.9− | 2004 02 13 | 644 | 0.9− | 0.4− | 2006 09 27 | 699 | 0.3− | 0.1+ |
| 2001 08 19 | 704 | 0.2+ | 0.1+ | 2004 02 13 | 644 | 0.5− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 08 19 | 704 | 0.3− | 0.4+ | 2004 02 13 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 08 19 | 704 | 0.7+ | 0.7+ | 2004 02 19 | 704 | 0.4+ | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 08 19 | 704 | 0.3+ | 0.7+ | 2004 02 19 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 11 06 | 699 | 0.2+ | 0.2+ | 2004 02 19 | 704 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 11 06 | 699 | 0.2− | 0.5− | 2004 02 19 | 704 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 11 06 | 699 | 0.5− | 0.8− | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2002 11 06 | 699 | 0.8+ | 1.0− | 2005 01 26 | 809 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | 0.4− | 0.6+ | 2005 01 26 | 809 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.2+ | 0.3+ | 2005 01 26 | 809 | (0.9− | 1.7+) | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 0.4+ | 0.7− | 2005 08 04 | 644 | 0.2+ | 0.8+ | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2002 11 12 | 704 | (0.7+ | 1.5−) | 2005 08 04 | 644 | 0.1+ | 1.0+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.1+ | 1.1− | 2005 08 04 | 644 | 0.1− | 0.8+ | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2002 11 14 | 704 | (1.9+ | 1.4+) | 2006 08 29 | 699 | 0.3− | 0.7+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2002 11 14 | 704 | (1.6+ | 0.6+) | 2006 08 29 | 699 | 0.5− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2002 11 14 | 704 | (0.6+ | 1.6+) | 2006 08 29 | 699 | 0.7− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 11 14 | 704 | 0.3− | 1.4+ | 2006 08 29 | 699 | 0.2− | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | (0.9+ | 2.1+) | 2006 09 06 | 644 | 0.4− | 0.1+ | | | | |
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.3+ | | | | |

**(139395)∗ 2001 NB$_{17}$**

Discovered 2001 July 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.87646 | | (2000.0) | | | |
| $n$ | 0.21092643 | $\omega$ | 303.68446 | | +0.95922409 | −0.25597737 |
| $a$ | 2.7950015 | $\Omega$ | 71.39731 | | +0.28253895 | +0.85667765 |
| $e$ | 0.1777957 | $i$ | 7.26508 | | +0.00780345 | +0.44786046 |
| $P$ | 4.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 0.0 | 1.0− | 2002 12 14 | 704 | 0.1+ | 1.2+ | 2006 09 26 | 703 | 0.5+ | 0.2− |
| 1997 11 06 | 704 | (1.1− | 2.3−) | 2004 03 26 | 691 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.3+ | 0.1+ |
| 1997 11 06 | 704 | 0.5+ | 0.2− | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.8− |
| 1997 11 06 | 704 | 0.3− | 0.1− | 2004 03 26 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.8− |
| 2001 07 14 | 644 | 1.0− | 0.2+ | 2005 06 06 | 691 | 0.7+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 1.3− |
| 2001 07 14 | 644 | 0.1+ | 0.1− | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.4− |
| 2001 07 14 | 644 | 0.1− | 0.2− | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.5− |
| 2001 07 21 | 644 | 0.4− | 0.3+ | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.3− |
| 2001 07 21 | 644 | 0.5− | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.0 | 0.3− |
| 2001 07 21 | 644 | 0.4− | 0.0 | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.4− | 0.4− |
| 2001 07 27 | 644 | 0.6+ | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.3+ | 0.6+ |
| 2001 07 27 | 644 | 0.4− | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 07 27 | 644 | 0.4− | 0.5+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2001 08 12 | 644 | 0.6+ | 0.4− | 2006 09 14 | 703 | 0.2− | 0.5+ | 2006 10 09 | 644 | 0.5+ | 0.2+ |
| 2001 08 12 | 644 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.1− | 2006 10 24 | 644 | 0.5− | 0.4+ |
| 2001 08 12 | 644 | 0.9+ | 0.2− | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 10 24 | 644 | 0.5− | 0.4+ |
| 2001 08 24 | 644 | 0.1− | 1.0+ | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.2+ |
| 2001 08 24 | 644 | 0.1− | 0.7+ | 2006 09 20 | 703 | 0.1+ | 0.4− | 2006 11 19 | 703 | 0.4− | 0.1− |
| 2001 08 24 | 644 | 0.0 | 0.6+ | 2006 09 20 | 703 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.5− | 0.2− |
| 2002 12 05 | 704 | 0.1− | 0.7+ | 2006 09 20 | 703 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.4+ | 0.9+ | 2006 11 19 | 703 | 0.7+ | 1.2− |
| 2002 12 05 | 704 | 0.5− | 0.6+ | 2006 09 21 | 699 | 0.2− | 0.5+ | 2006 11 27 | 703 | 1.1− | 2.0+ |
| 2002 12 05 | 704 | 0.4− | 0.6+ | 2006 09 21 | 699 | 0.6+ | 0.1− | 2006 11 27 | 703 | 1.6− | 0.1+ |
| 2002 12 05 | 704 | 0.4− | 0.8+ | 2006 09 21 | 699 | 0.5− | 0.7+ | 2006 11 27 | 703 | 0.2+ | 0.8+ |
| 2002 12 14 | 704 | 1.2+ | 0.2− | 2006 09 21 | 699 | 0.6− | 0.1− | 2006 11 27 | 703 | 1.9− | 1.5+ |
| 2002 12 14 | 704 | 1.1+ | 0.9+ | 2006 09 26 | 703 | 0.1+ | 0.3− | | | | |

**(139396)∗ 2001 NJ$_{17}$ = 1993 TS$_{42}$ = 2000 GS$_{164}$**

Discovered 2001 July 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 14975)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 68.17983 | | (2000.0) | | | |
| $n$ | 0.23100215 | $\omega$ | 304.02320 | | +0.66249101 | +0.74874155 |
| $a$ | 2.6306235 | $\Omega$ | 7.58596 | | −0.61990414 | +0.56463292 |
| $e$ | 0.0936188 | $i$ | 9.67029 | | −0.42050508 | +0.34724019 |
| $P$ | 4.27 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 809 | 0.7− | 1.3+ | 2001 07 27 | 644 | 0.5+ | 0.9+ | 2006 10 17 | 691 | 0.4+ | 0.4+ |
| 1993 10 10 | 809 | 0.5− | 1.5+ | 2001 08 01 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 809 | (2.4− | 1.0+) | 2001 08 01 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.4+ | | |
| 1993 10 22 | 809 | (0.4− | 2.3+) | 2001 08 01 | 644 | 0.1+ | 0.7− | 2006 10 23 | 644 | 0.2+ | 0.4+ | | |
| 1993 10 22 | 809 | 0.7− | 0.8+ | 2001 08 11 | 644 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 1993 10 22 | 809 | 0.7+ | 0.4+ | 2001 08 11 | 644 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2000 03 10 | 704 | 0.2+ | 1.1+ | 2001 08 11 | 644 | 0.5− | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.1+ | | |
| 2000 03 10 | 704 | 1.1+ | 0.6+ | 2001 08 24 | 644 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.2− | 0.1− | | |
| 2000 03 10 | 704 | 0.4− | 0.4+ | 2001 08 24 | 644 | 0.6− | 0.6+ | 2006 10 27 | 703 | 1.1− | 0.1+ | | |
| 2000 03 10 | 704 | 0.7+ | 0.2− | 2001 08 24 | 644 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.1− | 1.0− | | |
| 2000 03 10 | 704 | 0.9+ | 0.3+ | 2002 12 06 | 704 | 0.5− | 1.3− | 2006 11 01 | G96 | 0.2− | 0.2− | | |
| 2000 03 11 | 704 | 1.7− | 0.6+ | 2002 12 06 | 704 | 0.2− | 0.4− | 2006 11 01 | G96 | 0.0 | 0.0 | | |
| 2000 03 11 | 704 | 0.3+ | 0.5+ | 2002 12 06 | 704 | 0.3− | 1.1− | 2006 11 01 | G96 | 0.2+ | 0.2− | | |
| 2000 03 11 | 704 | 0.4+ | 1.0+ | 2002 12 06 | 704 | 0.4− | 0.7− | 2006 11 01 | G96 | 0.1− | 0.0 | | |
| 2000 03 11 | 704 | 0.5− | 0.4+ | 2002 12 06 | 704 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.2− | 0.0 | | |
| 2000 03 11 | 704 | 1.5+ | 0.4+ | 2004 02 17 | 704 | (2.2+ | 0.0 ) | 2006 11 11 | G96 | 0.1+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.3+ | 0.4+ | 2004 02 17 | 704 | 0.9+ | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.1+ | | |
| 2000 04 05 | 704 | 0.1− | 0.4+ | 2004 02 17 | 704 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.1+ | | |
| 2000 04 05 | 704 | 1.8− | 0.5− | 2004 02 18 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.0 | 1.4+ | | |
| 2000 04 05 | 704 | 0.9+ | 0.0 | 2004 02 18 | 691 | 0.3+ | 0.7+ | 2006 11 14 | 703 | 0.5− | 0.4+ | | |
| 2000 04 06 | 704 | 0.3− | 0.9+ | 2004 02 18 | 608 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.2− | | |
| 2000 04 06 | 704 | 1.3+ | 0.5+ | 2004 02 18 | 608 | 0.5+ | 0.4− | 2006 11 14 | 703 | 1.3+ | 0.1+ | | |
| 2000 04 06 | 704 | 0.5+ | 0.4+ | 2004 02 18 | 608 | 0.4+ | 0.4− | 2006 11 17 | 644 | 0.2− | 0.0 | | |
| 2001 07 14 | 644 | 0.5− | 0.4+ | 2004 02 18 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 644 | 0.2− | 0.2+ | | |
| 2001 07 14 | 644 | 0.7− | 0.9+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 17 | 644 | 0.0 | 0.5+ | | |
| 2001 07 14 | 644 | 0.6− | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.1+ | 2006 11 23 | 703 | 0.3− | 0.4+ | | |
| 2001 07 21 | 644 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.6+ | 1.4+ | | |
| 2001 07 21 | 644 | 0.3− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.1− | 0.4+ | | |
| 2001 07 21 | 644 | 0.4− | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.8+ | 1.2− | | |
| 2001 07 27 | 644 | 0.1+ | 1.2+ | 2006 10 13 | 691 | 0.3− | 0.3+ | | | | | | |
| 2001 07 27 | 644 | 0.4+ | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.2+ | | | | | | |

**(139397)∗ 2001 NS$_{17}$ = 1996 JA$_{14}$**

Discovered 2001 July 14 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 14975)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.02833 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22428259 | $\omega$ | 240.12516 | | +0.82435303 | +0.55989741 | |
| $a$ | 2.6829074 | $\Omega$ | 85.70569 | | −0.48623387 | +0.77580178 | |
| $e$ | 0.1723448 | $i$ | 4.79802 | | −0.28985982 | +0.29094070 | |
| $P$ | 4.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.4− | 0.3+ | 2001 08 11 | 644 | 0.5+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.2+ | | |
| 1996 05 11 | 691 | 0.6− | 0.3+ | 2001 08 11 | 644 | 0.5+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.6+ | | |
| 1996 05 11 | 691 | 0.6− | 0.0 | 2001 08 11 | 644 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 1996 05 20 | 691 | 0.7+ | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− | | |
| 1996 05 20 | 691 | 0.8+ | 0.7+ | 2005 05 19 | G96 | 0.4− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 | | |
| 1996 05 20 | 691 | 0.9+ | 0.4+ | 2005 05 19 | G96 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2001 07 14 | 608 | 0.2+ | 0.1+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 07 14 | 608 | 0.6+ | 0.0 | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.3+ | | |
| 2001 07 14 | 608 | 0.5+ | 0.3+ | 2005 06 17 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.9+ | | |
| 2001 07 16 | 699 | 0.4+ | 0.4+ | 2005 06 17 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.2+ | | |
| 2001 07 16 | 699 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.5− | 0.8+ | 2006 11 13 | 703 | 0.6− | 0.3+ | | |
| 2001 07 16 | 699 | 0.1+ | 0.0 | 2006 09 30 | 703 | (1.1+ | 1.8−) | 2006 11 13 | 703 | 0.3+ | 0.1+ | | |
| 2001 07 16 | 699 | 0.1− | 0.4− | 2006 09 30 | 703 | 0.3− | 1.2− | 2006 11 16 | G96 | 0.1− | 0.0 | | |
| 2001 07 16 | 699 | 0.2+ | 0.1− | 2006 09 30 | 703 | (0.9− | 2.4−) | 2006 11 16 | G96 | 0.1+ | 0.3+ | | |
| 2001 07 16 | 699 | 1.2− | 0.6+ | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.0 | | |
| 2001 07 16 | 699 | 1.0− | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.4− | 0.1+ | | |
| 2001 07 16 | 699 | 0.2+ | 0.3− | 2006 10 03 | G96 | 0.5+ | 0.1− | 2006 11 20 | 704 | (0.4− | 1.8+) | | |
| 2001 07 21 | 644 | (0.3− | 2.1−) | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.3+ | | |
| 2001 07 21 | 644 | (0.5+ | 2.3−) | 2006 10 16 | 703 | 0.4+ | 0.3+ | 2006 11 20 | 704 | (0.2+ | 1.6+) | | |
| 2001 07 21 | 644 | (0.0 | 2.4−) | 2006 10 16 | 703 | 0.4− | 0.2+ | 2006 11 20 | 704 | (0.3− | 1.6+) | | |
| 2001 08 06 | 644 | 0.3− | 0.0 | 2006 10 16 | 703 | 1.1− | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.9+ | | |
| 2001 08 06 | 644 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.2+ | | | | | | |
| 2001 08 06 | 644 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.2+ | | | | | | |

**(139398)∗ 2001 NF$_{18}$**

Discovered 2001 July 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.59454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23003700 | $\omega$ | 155.66250 | | +0.33836667 | +0.92347007 | |
| $a$ | 2.6379765 | $\Omega$ | 133.54067 | | −0.89909496 | +0.37399218 | |
| $e$ | 0.2479066 | $i$ | 14.44817 | | −0.27773414 | −0.08563223 | |
| $P$ | 4.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 24 | 704 | 0.1− | 0.5+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2005 06 01 | 699 | 0.6+ | 0.1+ | | |
| 2001 06 24 | 704 | 0.0 | 0.7+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2005 06 01 | 704 | 0.2− | 0.3+ | | |
| 2001 06 24 | 704 | 0.3− | 1.1+ | 2004 02 11 | 691 | 0.0 | 0.3+ | 2005 06 01 | 704 | 0.2+ | 0.2+ | | |
| 2001 06 24 | 704 | 0.4− | 1.0+ | 2004 02 26 | 704 | 0.4− | 0.5+ | 2005 06 01 | 699 | 0.8+ | 0.5+ | | |
| 2001 06 24 | 704 | 0.6− | 1.3+ | 2004 02 26 | 704 | 0.3+ | 0.8+ | 2005 06 01 | 704 | 0.2+ | 0.1+ | | |
| 2001 07 10 | 704 | 0.2− | 0.8+ | 2004 02 26 | 704 | (0.9− | 1.9+) | 2005 06 01 | 704 | 0.1+ | 0.4+ | | |
| 2001 07 10 | 704 | 0.6+ | 0.2− | 2004 04 15 | 645 | 0.1− | 0.1− | 2005 06 01 | 699 | 0.3− | 0.0 | | |
| 2001 07 10 | 704 | 0.4− | 1.0+ | 2004 04 15 | 645 | 0.1− | 0.0 | 2005 06 01 | 699 | (2.0+ | 0.3+) | | |
| 2001 07 12 | 608 | 0.0 | 0.5− | 2005 03 11 | 703 | 0.3+ | 0.6+ | 2005 06 07 | 703 | 0.2− | 0.4− | | |
| 2001 07 12 | 608 | 0.1+ | 0.5− | 2005 03 11 | 703 | 0.0 | 0.3+ | 2005 06 07 | 703 | 0.0 | 0.1+ | | |
| 2001 07 12 | 608 | 0.1+ | 0.7− | 2005 03 11 | 703 | 1.4+ | 0.0 | 2005 06 07 | 703 | 0.3− | 0.4− | | |
| 2001 07 26 | 608 | 0.2− | 0.2− | 2005 03 11 | 703 | 0.5− | 1.4+ | 2005 06 07 | 703 | 0.5− | 0.8− | | |
| 2001 07 26 | 608 | 0.1+ | 0.1− | 2005 04 18 | 704 | 0.3+ | 0.3− | 2005 06 07 | 699 | 0.3− | 0.6+ | | |
| 2001 07 26 | 608 | 0.1− | 0.1− | 2005 04 18 | 704 | 1.0+ | 0.8+ | 2005 06 07 | 699 | 0.2+ | 0.3+ | | |
| 2001 08 15 | 608 | 0.3+ | 0.3+ | 2005 04 18 | 704 | 0.4+ | 0.2+ | 2005 06 07 | 699 | 0.3− | 0.5+ | | |
| 2001 08 15 | 608 | 0.5+ | 0.3+ | 2005 04 18 | 704 | 0.2− | 0.6− | 2005 06 07 | 699 | 0.3+ | 0.1− | | |
| 2001 08 15 | 608 | 0.2+ | 0.1+ | 2005 04 18 | 704 | 0.6+ | 0.3− | 2005 06 15 | 608 | 0.2+ | 0.1− | | |
| 2001 08 16 | 704 | 0.8+ | 0.7+ | 2005 05 03 | 703 | 0.3+ | 0.4− | 2005 06 15 | 608 | 0.3+ | 0.1− | | |
| 2001 08 16 | 704 | 0.8+ | 0.8+ | 2005 05 03 | 703 | 0.5− | 0.1+ | 2005 06 15 | 608 | 0.1+ | 0.0 | | |
| 2001 08 16 | 704 | (2.3+ | 1.3+) | 2005 05 03 | 703 | 0.0 | 0.3− | 2005 06 25 | 644 | 0.1+ | 0.0 | | |
| 2001 08 16 | 704 | 0.5+ | 1.3+ | 2005 05 03 | 703 | 0.2− | 0.1− | 2005 06 25 | 644 | 0.1− | 0.1+ | | |
| 2001 08 19 | 704 | (0.7− | 1.8−) | 2005 05 09 | 703 | 0.2− | 0.2− | 2005 06 25 | 644 | 0.1+ | 0.1− | | |
| 2001 08 19 | 704 | 0.9− | 0.3− | 2005 05 09 | 703 | 0.3− | 0.2− | 2005 07 01 | 644 | 0.0 | 0.0 | | |
| 2001 08 19 | 704 | 0.0 | 0.7− | 2005 05 09 | 703 | 0.6− | 0.2− | 2005 07 01 | 644 | 0.0 | 0.0 | | |
| 2001 08 19 | 704 | 0.1+ | 0.2− | 2005 05 09 | 703 | 0.6− | 0.0 | 2005 07 01 | 644 | 0.0 | 0.1+ | | |
| 2001 08 24 | 704 | 0.2− | 0.3− | 2005 05 12 | 699 | 0.1+ | 0.1− | 2005 07 05 | 703 | 0.1− | 0.3+ | | |
| 2001 08 24 | 704 | 0.8− | 0.4− | 2005 05 12 | 699 | 0.0 | 0.1+ | 2005 07 05 | 703 | 0.8− | 0.2− | | |
| 2001 08 24 | 704 | 0.2− | 1.0− | 2005 05 12 | 699 | 0.1+ | 1.3− | 2005 07 05 | 703 | 0.4− | 0.2+ | | |
| 2001 08 24 | 704 | 0.7− | 0.4− | 2005 05 13 | 704 | 0.4+ | 0.2+ | 2005 07 05 | 703 | 1.1− | 0.1− | | |
| 2001 09 02 | 644 | 0.3− | 0.2− | 2005 05 13 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.7+ | 0.8+ | | |
| 2001 09 02 | 644 | 0.5− | 0.1− | 2005 05 13 | 704 | 0.4+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.3+ | | |
| 2001 09 02 | 644 | 0.2− | 0.1+ | 2005 05 13 | 704 | 0.8+ | 0.9+ | 2006 09 19 | 703 | 0.2− | 0.3+ | | |
| 2001 09 07 | 704 | 0.2− | 0.3+ | 2005 05 13 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 703 | (1.6− | 0.7−) | | |
| 2001 09 07 | 704 | 0.2+ | 0.3+ | 2005 05 19 | 703 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.2− | | |
| 2001 09 07 | 704 | 0.4+ | 0.4+ | 2005 05 19 | 703 | (0.4− | 3.1−) | 2006 10 11 | 644 | 0.2− | 0.5+ | | |
| 2001 09 11 | 704 | 0.5+ | 0.2− | 2005 05 19 | 703 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2001 09 11 | 704 | 0.8+ | 1.0+ | 2005 05 19 | 703 | 0.0 | 0.7− | 2006 11 16 | 703 | 0.6− | 0.1+ | | |
| 2001 09 11 | 704 | 0.6+ | 0.7+ | 2005 05 30 | 703 | 0.9− | 0.1− | 2006 11 16 | 703 | 0.7− | 2.5+ | | |
| 2001 09 11 | 704 | 0.8+ | 0.3− | 2005 05 30 | 703 | 0.4− | 0.2− | 2006 11 16 | 703 | 0.3− | 0.2+ | | |
| 2004 01 28 | 291 | 0.1+ | 0.4+ | 2005 05 30 | 703 | 1.0− | 0.3+ | 2006 11 16 | 703 | 0.4− | 0.6− | | |
| 2004 01 28 | 291 | 0.5+ | 0.4+ | 2005 05 30 | 703 | 0.1+ | 0.8− | | | | | | |
| 2004 01 28 | 291 | 0.2+ | 0.5+ | 2005 06 01 | 704 | 0.1+ | 0.0 | | | | | | |

**(139399)∗ 2001 NH$_{19}$ = 2005 JA$_{162}$**

Discovered 2001 July 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 84699)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.18995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22157318 | $\omega$ | 177.06087 | | +0.27711052 | +0.93971605 | |
| $a$ | 2.7047342 | $\Omega$ | 108.96133 | | −0.88581632 | +0.33063592 | |
| $e$ | 0.1612046 | $i$ | 12.23103 | | −0.37220855 | −0.08725617 | |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.1− | 0.4− | 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.4+ |
| 2001 07 14 | 644 | 0.1− | 0.6− | 2005 05 08 | 699 | 1.0− | 1.2+ | 2006 09 26 | 703 | 0.4− | 0.5+ |
| 2001 07 14 | 644 | 0.2− | 0.5− | 2005 05 08 | 699 | 1.1+ | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2001 07 16 | 699 | 0.2− | 0.1+ | 2005 05 08 | 699 | 0.1− | 1.5+ | 2006 09 26 | 703 | 0.5− | 0.2− |
| 2001 07 16 | 699 | 0.2− | 0.3− | 2005 05 08 | 699 | 0.4− | 0.1+ | 2006 10 02 | 703 | 1.4+ | 1.1+ |
| 2001 07 16 | 699 | 0.8− | 1.2− | 2005 05 14 | 704 | (1.8− | 0.6+) | 2006 10 02 | 703 | 0.9− | 0.5− |
| 2001 07 16 | 699 | 0.4− | 0.5+ | 2005 05 14 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 703 | 0.1− | 0.4− |
| 2001 07 22 | 644 | 0.4− | 0.6+ | 2005 05 14 | 704 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 1.1− | 0.2− |
| 2001 07 22 | 644 | 0.4− | 0.8+ | 2005 05 14 | 704 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 07 22 | 644 | 0.6− | 0.7+ | 2005 06 02 | 703 | (0.0 | 2.8−) | 2006 10 10 | 644 | 0.3+ | 0.5+ |
| 2001 07 25 | 608 | 0.0 | 0.8+ | 2005 06 02 | 703 | 0.8− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2001 07 25 | 608 | 0.1− | 0.6+ | 2005 06 02 | 703 | 1.0− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 07 25 | 608 | 0.5− | 0.5+ | 2005 06 02 | 703 | 1.2− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2001 08 24 | 644 | 0.7+ | 0.6− | 2005 06 03 | E12 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 08 24 | 644 | 0.4+ | 0.9+ | 2005 06 03 | E12 | 0.2+ | 0.5− | 2006 10 21 | 703 | 0.5− | 0.1+ |
| 2001 08 24 | 644 | 0.7+ | 0.4− | 2005 06 03 | E12 | 0.6+ | 0.5− | 2006 10 21 | 703 | 0.6− | 0.6− |
| 2001 08 24 | 644 | 0.7+ | 1.3+ | 2005 06 03 | E12 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2001 08 24 | 644 | 0.8+ | 1.0− | 2005 06 23 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 1.5+ | 0.7+ |
| 2001 08 24 | 644 | 0.6+ | 1.1+ | 2005 06 23 | 644 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.4− | 0.8+ |
| 2004 02 11 | 691 | 0.1+ | 0.4+ | 2005 06 23 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 0.2− | 0.3− |
| 2004 02 11 | 691 | 0.0 | 0.8+ | 2006 09 19 | 703 | 1.2− | 0.9+ | 2006 10 31 | 703 | 1.0+ | 0.3+ |
| 2004 02 11 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.8+ | 0.2+ | 2006 10 31 | 703 | 0.0 | 0.1− |
| 2005 05 02 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 703 | (0.5+ | 1.5+) | | | | |
| 2005 05 02 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 1.2+ | | | | |

**(139400)∗ 2001 NL$_{20}$**

Discovered 2001 July 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.89922 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22324282 | $\omega$ | 213.50139 | | +0.28770215 | −0.94193536 | |
| $a$ | 2.6912315 | $\Omega$ | 220.55212 | | +0.92675492 | +0.31941623 | |
| $e$ | 0.2081843 | $i$ | 15.44699 | | +0.24156323 | −0.10359083 | |
| $P$ | 4.41 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 18 | 644 | 0.8− | 0.2− | 2004 04 25 | 704 | (0.4+ | 2.1+) | 2006 10 12 | 691 | 0.1+ | 0.2− |
| 2001 06 18 | 644 | 0.8− | 0.1− | 2004 04 25 | 704 | 0.9+ | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.1− |
| 2001 06 18 | 644 | 1.2− | 0.1− | 2004 04 25 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.0 |
| 2001 06 28 | 699 | 0.4+ | 0.4− | 2004 04 26 | 699 | 0.1− | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2001 06 28 | 699 | 0.5− | 0.5+ | 2004 04 26 | 699 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2001 06 28 | 699 | 0.2− | 1.3+ | 2004 04 26 | 699 | 0.5+ | 0.8+ | 2006 10 18 | 704 | 0.8− | 0.5− |
| 2001 06 28 | 699 | 0.2+ | 0.5− | 2004 04 26 | 699 | 0.4+ | 0.9+ | 2006 10 18 | 704 | 1.2− | 0.4− |
| 2001 07 13 | 644 | (1.7− | 0.8+) | 2004 05 10 | 608 | 0.1+ | 0.5+ | 2006 10 18 | 704 | 1.0− | 0.1+ |
| 2001 07 13 | 644 | (1.9− | 0.7+) | 2004 05 10 | 608 | 0.3− | 0.0 | 2006 10 23 | 704 | 0.4+ | 0.1+ |
| 2001 07 13 | 644 | (1.9− | 0.8+) | 2004 05 10 | 608 | 0.3− | 0.0 | 2006 10 23 | 704 | 1.3+ | 0.1− |
| 2001 07 19 | 699 | 0.5+ | 1.2+ | 2004 05 12 | 699 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.8+ | 0.1+ |
| 2001 07 19 | 699 | 0.3+ | 0.5+ | 2004 05 12 | 699 | 0.0 | 0.3+ | 2006 10 28 | 704 | 0.1+ | 0.2+ |
| 2001 07 19 | 699 | 0.1+ | 0.3+ | 2004 05 12 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 704 | 0.3− | 0.3− |
| 2001 07 19 | 699 | 0.3− | 1.1+ | 2004 05 12 | 699 | 0.6− | 0.8+ | 2006 10 28 | 704 | 0.1− | 0.0 |
| 2001 07 30 | 644 | 0.6+ | 1.1+ | 2004 05 15 | 704 | 0.8+ | 0.1+ | 2006 10 28 | 704 | 1.3+ | 0.2− |
| 2001 07 30 | 644 | 0.6+ | 1.1+ | 2004 05 15 | 704 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 07 30 | 644 | 0.5+ | 1.1+ | 2004 05 15 | 704 | 0.5+ | 0.8+ | 2006 10 28 | 704 | 0.1+ | 0.1+ |
| 2001 08 03 | 644 | 0.4− | 0.4− | 2004 05 15 | 704 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 08 03 | 644 | 0.3− | 0.3− | 2004 05 15 | 704 | 0.3+ | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 08 03 | 644 | 0.1− | 0.2− | 2004 05 16 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2001 08 03 | 644 | 0.1− | 0.3− | 2004 05 16 | 691 | 0.5+ | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 08 03 | 644 | 0.4− | 0.2− | 2004 05 16 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 08 03 | 644 | 0.3− | 0.3− | 2004 05 21 | 704 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 08 12 | 596 | (0.8+ | 1.7−) | 2004 05 21 | 704 | 0.8+ | 0.7+ | 2006 11 02 | 704 | 0.0 | 0.8− |
| 2001 08 12 | 596 | 0.7+ | 0.8− | 2004 05 21 | 704 | 0.1+ | 0.1+ | 2006 11 02 | 704 | 0.1− | 0.3+ |
| 2001 08 20 | 644 | 0.1+ | 0.3+ | 2004 05 21 | 704 | 0.0 | 0.1− | 2006 11 02 | 704 | 0.2+ | 0.7− |
| 2001 08 20 | 644 | 0.0 | 0.3+ | 2004 05 21 | 704 | 0.1− | 0.1− | 2006 11 02 | 704 | 0.5+ | 0.4− |
| 2001 08 20 | 644 | 0.1− | 0.2+ | 2004 05 28 | 691 | 0.2− | 0.5+ | 2006 11 02 | 704 | 0.2− | 0.3− |
| 2001 08 21 | 704 | 0.0 | 0.5− | 2004 05 28 | 691 | 0.1− | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.4− |
| 2001 08 21 | 704 | 0.9+ | 1.0+ | 2004 05 28 | 691 | 0.3− | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.4− |
| 2001 08 21 | 704 | 0.3+ | 1.2+ | 2006 08 24 | 704 | 0.1+ | 0.4+ | 2006 11 02 | 703 | (0.1− | 1.6−) |
| 2001 08 21 | 704 | 0.1− | 0.7+ | 2006 08 24 | 704 | 0.7− | 0.7+ | 2006 11 02 | 703 | 0.4+ | 0.7− |
| 2001 08 23 | 699 | 0.2− | 0.3+ | 2006 08 24 | 704 | 0.6− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 08 23 | 699 | 0.2− | 0.9+ | 2006 08 24 | 704 | (0.0 | 2.1+) | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 08 23 | 699 | 0.3− | 0.5+ | 2006 08 24 | 704 | 0.7− | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 08 23 | 699 | 0.2+ | 0.0 | 2006 08 24 | 704 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 09 24 | 644 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 09 24 | 644 | 0.0 | 0.5+ | 2006 08 24 | 704 | 0.6− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 09 24 | 644 | 0.1+ | 0.4+ | 2006 08 24 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2001 10 09 | 608 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2001 10 09 | 608 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2001 10 09 | 608 | 0.6− | 0.3− | 2006 08 29 | 703 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2001 10 15 | 608 | 1.4− | 0.3+ | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.0 | 1.0+ |
| 2001 10 15 | 608 | 0.9− | 0.1− | 2006 08 30 | 704 | (1.5− | 0.0 ) | 2006 11 14 | 704 | 0.3− | 0.7+ |
| 2001 10 15 | 608 | 0.9− | 0.1+ | 2006 08 30 | 704 | (1.9− | 0.3+) | 2006 11 14 | 704 | 0.2− | 0.4+ |
| 2001 10 16 | 704 | 0.3+ | 0.6− | 2006 08 30 | 704 | 0.6+ | 1.1− | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 2001 10 16 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.4− | 1.2+ | 2006 11 14 | 704 | 0.4− | 1.0+ |
| 2001 10 16 | 704 | 1.0+ | 1.2− | 2006 08 30 | 704 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.2+ | 1.1+ |
| 2001 10 16 | 704 | 0.4− | 0.8− | 2006 09 17 | 699 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.1− | 1.3+ |
| 2001 12 08 | 704 | (0.7− | 1.5−) | 2006 09 17 | 699 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.3− | 1.3+ |
| 2001 12 08 | 704 | 1.1− | 0.2− | 2006 09 17 | 699 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 2001 12 08 | 704 | 0.4− | 0.1− | 2006 09 17 | 699 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2001 12 08 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.7+ | 0.5+ | 2006 09 18 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 704 | (1.0− | 3.2+) |
| 2002 10 31 | 704 | 0.1+ | 0.6− | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.9− | 1.1+ | 2006 09 18 | 704 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 10 31 | 704 | 1.2+ | 0.4+ | 2006 09 18 | 704 | 1.0+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2002 10 31 | 704 | 0.3+ | 0.3+ | 2006 09 21 | 704 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2002 11 05 | 683 | 0.0 | 0.2+ | 2006 09 21 | 704 | (0.3− | 1.6+) | 2006 11 19 | 704 | 0.8− | 0.1− |
| 2002 11 05 | 683 | (2.2+ | 0.1−) | 2006 09 21 | 704 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2002 11 05 | 683 | 0.9+ | 0.5− | 2006 09 21 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.3− |
| 2002 11 15 | 699 | 0.5+ | 0.4+ | 2006 09 21 | 704 | 0.8− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.3+ |
| 2002 11 15 | 699 | 0.3− | 0.9+ | 2006 09 21 | 704 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.3− | 0.1+ |
| 2002 11 15 | 699 | (1.1+ | 1.7+) | 2006 09 21 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.3+ |
| 2002 11 15 | 699 | (3.8+ | 0.4+) | 2006 09 21 | 704 | 0.9+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2002 12 06 | 644 | 0.5+ | 0.7+ | 2006 09 27 | 704 | 0.3− | 1.4+ | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2002 12 06 | 644 | 0.3+ | 0.7+ | 2006 09 27 | 704 | 0.3− | 1.4+ | 2006 11 24 | H51 | (2.6+ | 1.5+) |
| 2002 12 06 | 644 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 1.2+ | 0.4+ | 2006 11 24 | H51 | 1.1+ | 0.2− |
| 2003 01 02 | 704 | 0.3− | 0.8+ | 2006 09 27 | 704 | 0.8+ | 1.1+ | 2006 11 24 | H51 | 0.5+ | 0.1− |
| 2003 01 02 | 704 | 0.8− | 1.0+ | 2006 09 27 | 704 | (2.4+ | 0.1−) | 2006 11 25 | 704 | 0.5− | 1.1+ |
| 2003 01 02 | 704 | 0.1+ | 0.8+ | 2006 09 29 | 704 | 0.4− | 0.8+ | 2006 11 25 | 704 | 0.8− | 0.3+ |
| 2003 01 02 | 704 | 0.4− | 1.1+ | 2006 09 29 | 704 | 0.4+ | 0.4+ | 2006 11 25 | 704 | 0.7+ | 0.5+ |
| 2003 01 02 | 704 | 0.5− | 1.1+ | 2006 09 29 | 704 | 0.2− | 0.1+ | 2006 11 25 | 704 | 1.1− | 0.1+ |
| 2003 01 29 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 704 | 0.6− | 0.4+ | 2006 11 25 | 704 | 0.8+ | 0.1+ |
| 2003 01 29 | 704 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.4+ | 0.2+ | 2006 11 25 | 704 | 0.8− | 2.4+ |
| 2003 01 29 | 704 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 25 | 704 | 0.1+ | 0.7+ |
| 2003 01 29 | 704 | 0.0 | 0.7+ | 2006 09 30 | 704 | 0.6− | 0.4+ | 2006 11 25 | 704 | 0.9− | 1.1− |
| 2004 04 13 | 644 | 0.1− | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2004 04 13 | 644 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.2− |
| 2004 04 13 | 644 | 0.2+ | 0.7+ | 2006 09 30 | 704 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2004 04 21 | 704 | 0.3− | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.1− | 0.2− |
| 2004 04 21 | 704 | 0.6− | 0.6+ | 2006 09 30 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2004 04 21 | 704 | 0.0 | 0.6+ | 2006 09 30 | 704 | 0.2− | 0.1− | | | | |
| 2004 04 25 | 704 | (0.2+ | 2.7+) | 2006 10 12 | 691 | 0.1− | 0.1− | | | | |

**(139401)∗ 2001 NT$_{20}$**

Discovered 2001 July 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.64937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22770371 | $\omega$ | 281.13512 | | −0.52910462 | +0.83224958 | |
| $a$ | 2.6559668 | $\Omega$ | 315.59401 | | −0.65649347 | −0.52509806 | |
| $e$ | 0.0586702 | $i$ | 13.68582 | | −0.53764730 | −0.17785572 | |
| $P$ | 4.33 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.8− | 0.8+ | 2004 03 17 | 703 | 0.9+ | 0.6+ | 2005 06 28 | 644 | 0.2− | 0.2+ |
| 2001 07 14 | 644 | 0.8− | 0.7+ | 2004 03 17 | 703 | 1.2+ | 1.0+ | 2005 07 03 | 644 | 0.1+ | 0.1− |
| 2001 07 14 | 644 | 0.3− | 0.7+ | 2004 03 17 | 703 | 0.4+ | 0.7+ | 2005 07 03 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 0.1+ | 0.5+ | 2004 03 17 | 703 | 0.4− | 0.2+ | 2005 07 03 | 644 | 0.2− | 0.0 | |
| 2001 07 19 | 699 | 0.6+ | 0.2− | 2004 03 17 | 704 | 0.3+ | 0.0 | 2005 07 31 | E12 | 0.6− | 0.5− | |
| 2001 07 19 | 699 | 1.0+ | 0.6+ | 2004 03 17 | 704 | 0.6+ | 0.8+ | 2005 07 31 | E12 | 0.1+ | 0.0 | |
| 2001 07 19 | 699 | 0.3+ | 1.0+ | 2004 03 17 | 704 | 0.2+ | 0.2− | 2005 07 31 | E12 | 0.3+ | 0.5− | |
| 2001 08 17 | 704 | 0.9+ | 0.1− | 2004 03 17 | 704 | 0.8+ | 1.0+ | 2005 07 31 | E12 | 0.3− | 0.2− | |
| 2001 08 17 | 704 | 0.1+ | 0.1+ | 2004 03 17 | 704 | 0.6+ | 1.3+ | 2005 08 06 | 704 | 0.4− | 0.4− | |
| 2001 08 17 | 704 | 0.2− | 0.6+ | 2004 03 26 | 704 | 0.2+ | 0.3− | 2005 08 06 | 704 | 0.2− | 0.3+ | |
| 2001 08 24 | 699 | (1.6− | 0.8+) | 2004 03 26 | 704 | 0.3+ | 0.1− | 2005 08 06 | 704 | 0.6+ | 0.3+ | |
| 2001 08 24 | 699 | 0.9− | 0.4+ | 2004 03 26 | 704 | 0.8− | 1.0+ | 2005 08 06 | 704 | 0.3− | 0.0 | |
| 2001 08 24 | 699 | (2.2− | 0.0 ) | 2004 03 26 | 704 | 0.1+ | 0.2+ | 2005 08 27 | E12 | 0.4+ | 0.1+ | |
| 2001 08 24 | 699 | 1.4− | 0.9+ | 2004 03 29 | 704 | 0.6+ | 0.3− | 2005 08 27 | E12 | 0.5− | 0.2+ | |
| 2001 08 25 | 704 | 1.0− | 0.1− | 2004 03 29 | 704 | 0.5+ | 0.9+ | 2005 08 27 | E12 | 0.3− | 0.4+ | |
| 2001 08 25 | 704 | 0.5− | 0.2− | 2004 03 29 | 704 | 0.7+ | 0.7− | 2005 08 27 | E12 | 0.6+ | 1.0+ | |
| 2001 08 25 | 704 | 0.6− | 0.3+ | 2004 04 12 | 644 | 0.8+ | 0.2− | 2005 10 01 | G96 | 0.2+ | 0.3+ | |
| 2001 08 25 | 704 | 0.4− | 0.2− | 2004 04 12 | 644 | 0.5+ | 0.2− | 2005 10 01 | G96 | 0.1− | 0.1− | |
| 2001 09 16 | 704 | 0.2+ | 0.3− | 2004 04 12 | 644 | 0.6+ | 0.2− | 2005 10 01 | G96 | 0.1+ | 0.0 | |
| 2001 09 16 | 704 | 0.6+ | 0.2− | 2004 04 17 | 704 | 0.1− | 0.5− | 2005 10 01 | G96 | 0.2− | 0.3+ | |
| 2001 09 16 | 704 | 1.0+ | 0.7− | 2004 04 17 | 704 | 0.1+ | 0.4− | 2006 10 23 | 703 | 1.3− | 0.2+ | |
| 2001 09 16 | 704 | 0.1− | 0.8− | 2004 04 17 | 704 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.4+ | 0.8+ | |
| 2001 09 25 | 704 | (0.7− | 2.5+) | 2004 04 24 | 703 | 0.9− | 0.3+ | 2006 10 23 | 703 | 0.4− | 1.0+ | |
| 2001 09 25 | 704 | (1.1− | 2.0+) | 2004 04 24 | 703 | 0.5− | 1.0− | 2006 10 23 | 703 | (1.7− | 0.1+) | |
| 2001 09 25 | 704 | (1.7− | 2.0+) | 2004 04 24 | 703 | 0.2+ | 0.2− | 2006 11 13 | 704 | 0.2− | 0.3+ | |
| 2001 09 25 | 704 | (1.7− | 2.0+) | 2004 04 24 | 703 | 1.3− | 0.1− | 2006 11 13 | 704 | 0.1+ | 0.5+ | |
| 2001 09 25 | 704 | (1.3− | 3.1+) | 2005 05 20 | 644 | 0.4+ | 0.3+ | 2006 11 13 | 704 | 0.6+ | 0.3+ | |
| 2004 01 29 | 699 | 0.9− | 1.1+ | 2005 05 20 | 644 | 0.2− | 0.3+ | 2006 11 20 | 703 | 1.6+ | 0.2+ | |
| 2004 01 29 | 699 | 0.4− | 0.7+ | 2005 05 20 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 703 | 1.1− | 0.5+ | |
| 2004 01 29 | 699 | 0.3− | 1.1+ | 2005 06 28 | 644 | 0.2− | 0.1+ | 2006 11 20 | 703 | 0.3− | 0.3− | |
| 2004 01 29 | 699 | 1.1− | 0.8+ | 2005 06 28 | 644 | 0.2− | 0.2+ | 2006 11 20 | 703 | 0.7− | 1.1+ | |

**(139402)∗ 2001 NF$_{22}$**

Discovered 2001 July 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.83879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21026292 | $\omega$ | 183.56195 | | +0.81014872 | | +0.57993396 |
| $a$ | 2.8008784 | $\Omega$ | 140.58377 | | −0.53446188 | | +0.79071471 |
| $e$ | 0.1994747 | $i$ | 7.75227 | | −0.24085173 | | +0.19607867 |
| $P$ | 4.69 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 24 | 691 | 0.4− | 0.3− | 2001 09 07 | 644 | 0.9+ | 0.2− | 2004 03 20 | 704 | 0.5+ | 1.3+ | |
| 1995 03 24 | 691 | 0.1− | 0.6− | 2001 09 11 | 699 | 0.3+ | 0.2− | 2004 03 20 | 704 | 1.0− | 0.7+ | |
| 1995 03 24 | 691 | 0.5+ | 0.2+ | 2001 09 11 | 699 | 0.2+ | 0.5+ | 2005 05 13 | 691 | 0.1− | 0.4+ | |
| 2001 07 14 | 644 | 1.1− | 0.5+ | 2001 09 11 | 699 | 0.7+ | 0.3+ | 2005 05 13 | 691 | 0.1+ | 0.3+ | |
| 2001 07 14 | 644 | 1.4− | 0.4+ | 2001 09 11 | 699 | 0.5+ | 0.1− | 2005 05 13 | 691 | 0.1− | 0.3+ | |
| 2001 07 14 | 644 | (2.0− | 0.4+) | 2001 09 12 | 704 | 0.1+ | 0.3− | 2005 06 11 | 691 | 0.1+ | 0.0 | |
| 2001 07 19 | 699 | 0.5+ | 0.1− | 2001 09 12 | 704 | 0.5+ | 0.2− | 2005 06 11 | 691 | 0.2− | 0.1+ | |
| 2001 07 19 | 699 | 0.1− | 0.8+ | 2001 09 12 | 704 | 0.1− | 0.1− | 2005 06 11 | 691 | 0.3+ | 0.2− | |
| 2001 07 19 | 699 | 0.3− | 0.6+ | 2001 09 12 | 704 | 0.4− | 0.1+ | 2005 06 15 | 691 | 0.3+ | 0.1+ | |
| 2001 07 19 | 699 | 0.2+ | 0.8+ | 2001 09 12 | 704 | 0.4− | 0.2− | 2005 06 15 | 691 | 0.1+ | 0.2− | |
| 2001 08 03 | 608 | 0.6+ | 0.7− | 2001 09 19 | 699 | 0.6− | 0.6+ | 2005 06 15 | 691 | 0.0 | 0.0 | |
| 2001 08 03 | 608 | 0.1+ | 0.9− | 2001 09 19 | 699 | 0.6− | 0.2− | 2005 06 28 | 644 | 0.1+ | 0.1− | |
| 2001 08 03 | 608 | 0.7+ | 0.8− | 2001 09 19 | 704 | 0.2+ | 0.8− | 2005 06 28 | 644 | 0.0 | 0.3+ | |
| 2001 08 15 | 608 | 0.6− | 0.5+ | 2001 09 19 | 699 | 0.4− | 0.3+ | 2005 06 28 | 644 | 0.2− | 0.1+ | |
| 2001 08 15 | 608 | 1.0− | 0.7+ | 2001 09 19 | 699 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.8− | 1.2+ | |
| 2001 08 15 | 608 | 0.2− | 0.5+ | 2001 09 19 | 704 | 0.5− | 0.0 | 2006 09 16 | 699 | 0.7+ | 0.9+ | |
| 2001 08 16 | 704 | 0.1− | 0.1− | 2001 09 19 | 699 | 0.2− | 0.1+ | 2006 09 16 | 699 | 1.5− | 0.7+ | |
| 2001 08 16 | 704 | 0.0 | 0.1+ | 2001 09 19 | 699 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.8− | 0.9+ | |
| 2001 08 16 | 704 | 0.4+ | 0.2+ | 2001 09 19 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.4+ | |
| 2001 08 16 | 644 | 0.4− | 0.2− | 2001 09 19 | 699 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.7− | |
| 2001 08 16 | 644 | 0.3− | 0.4− | 2001 09 19 | 699 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.8− | |
| 2001 08 16 | 704 | 0.6− | 0.6− | 2001 09 19 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.5− | |
| 2001 08 16 | 644 | 0.4− | 0.2− | 2001 09 19 | 704 | 0.8− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.0 | |
| 2001 08 18 | 704 | 0.2+ | 0.3+ | 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.1− | |
| 2001 08 18 | 704 | 0.2+ | 0.7+ | 2001 09 21 | 704 | 0.7− | 0.5− | 2006 10 16 | 703 | 0.5− | 0.1+ | |
| 2001 08 18 | 704 | (0.2− | 1.5+) | 2001 09 21 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.1+ | |
| 2001 08 19 | 807 | 0.3+ | 0.2+ | 2001 09 21 | 704 | 0.1+ | 0.6− | 2006 10 22 | 703 | 0.7− | 0.2− | |
| 2001 08 19 | 807 | 0.2+ | 0.1− | 2001 09 21 | 704 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.3− | |
| 2001 08 25 | 704 | 0.6+ | 0.2+ | 2001 09 23 | 608 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.1− | |
| 2001 08 25 | 704 | 0.4+ | 0.4+ | 2001 09 23 | 608 | 0.4+ | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.1− | |
| 2001 08 25 | 704 | 0.0 | 0.5+ | 2001 09 23 | 608 | 0.6+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.7+ | |
| 2001 08 25 | 704 | 0.2− | 0.6+ | 2001 10 10 | 644 | 0.1+ | 1.2+ | 2006 10 23 | 644 | 0.2− | 0.3+ | |
| 2001 08 25 | 704 | 0.0 | 0.2+ | 2001 10 10 | 644 | 0.2+ | 1.1+ | 2006 10 23 | 644 | 0.3+ | 0.2+ | |
| 2001 08 25 | 699 | 0.2− | 0.7− | 2001 10 10 | 644 | 0.1+ | 1.1+ | 2006 10 28 | 703 | 0.9+ | 0.8− | |
| 2001 08 25 | 699 | 0.8− | 0.2− | 2001 10 16 | 644 | 0.1+ | 0.7+ | 2006 10 28 | 703 | 0.6+ | 0.2+ | |
| 2001 08 25 | 699 | 0.2− | 0.2− | 2001 10 16 | 644 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.7− | |
| 2001 08 25 | 699 | 0.2+ | 0.0 | 2001 10 16 | 644 | 0.3+ | 0.0 | 2006 10 28 | 703 | 1.1+ | 0.4− | |
| 2001 08 28 | 644 | 0.9− | 0.3− | 2004 02 16 | 691 | 0.1+ | 0.7+ | 2006 11 16 | 703 | 0.0 | 0.1+ | |
| 2001 08 28 | 644 | 0.7− | 0.5− | 2004 02 16 | 691 | 0.1+ | 0.7+ | 2006 11 16 | 703 | 0.6− | 0.1+ | |
| 2001 08 28 | 644 | 0.6− | 0.4− | 2004 02 16 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.7+ | |
| 2001 09 07 | 644 | 1.1+ | 0.1− | 2004 03 20 | 704 | 0.9+ | 0.1+ | 2006 11 16 | 703 | 0.3+ | 1.9+ | |
| 2001 09 07 | 644 | 1.0+ | 0.2− | 2004 03 20 | 704 | (0.5− | 1.6+) | | | | | |

**(139403)∗ 2001 OG$_1$**

Discovered 2001 July 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.27432 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21690715 | $\omega$ | 251.68892 | | +0.77156876 | | +0.61204529 |
| $a$ | 2.7433853 | $\Omega$ | 70.20561 | | −0.49152258 | | +0.74665406 |
| $e$ | 0.1125812 | $i$ | 10.62229 | | −0.40384056 | | +0.26059219 |
| $P$ | 4.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.6+ | 0.2+ | 2002 12 05 | 608 | 1.0− | 1.1+ | 2005 06 10 | 691 | 0.2+ | 0.0 | |
| 2001 06 27 | 644 | 0.2+ | 0.2+ | 2002 12 05 | 608 | 0.3− | 1.1+ | 2005 06 10 | 691 | 0.0 | 0.2+ | |
| 2001 06 27 | 644 | 0.2+ | 0.4− | 2002 12 11 | 333 | 0.3− | 0.1+ | 2006 09 20 | 703 | 1.2− | 0.4− | |
| 2001 07 18 | 644 | 0.4+ | 0.0 | 2002 12 11 | 333 | 0.1− | 0.6+ | 2006 09 20 | 703 | 0.7− | 0.0 | |
| 2001 07 18 | 644 | 0.3+ | 0.6− | 2002 12 11 | 333 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.5+ | 0.8+ | |
| 2001 07 18 | 644 | 0.3+ | 0.3− | 2004 02 15 | 704 | (0.3+ | 1.7+) | 2006 09 20 | 703 | (0.0 | 1.8−) | |
| 2001 07 19 | 644 | 0.5− | 0.1− | 2004 02 15 | 704 | 0.5+ | 1.2+ | 2006 09 24 | 699 | 0.6+ | 0.0 | |
| 2001 07 19 | 644 | 0.7− | 0.1− | 2004 02 15 | 704 | 1.4+ | 0.2− | 2006 09 24 | 699 | 0.1+ | 1.0+ | |
| 2001 07 19 | 644 | 0.5− | 0.2− | 2005 05 20 | G96 | 0.1− | 0.3+ | 2006 09 24 | 699 | 0.3+ | 0.4− | |
| 2001 08 20 | 644 | 0.2− | 0.3+ | 2005 05 20 | G96 | 0.0 | 0.1+ | 2006 09 24 | 699 | 0.4+ | 0.3+ | |
| 2001 08 20 | 644 | 0.4+ | 0.7+ | 2005 05 20 | G96 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.4+ | 0.2− | |
| 2001 08 20 | 644 | 0.1+ | 0.4+ | 2005 05 20 | G96 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.4− | 1.1+ | |
| 2002 12 05 | 695 | 0.3− | 0.1− | 2005 06 01 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 703 | 0.6− | 0.0 | |
| 2002 12 05 | 704 | 0.4− | 0.5+ | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 0.1+ | 1.0+ | |
| 2002 12 05 | 704 | 0.4− | 0.3− | 2005 06 01 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.6− | |
| 2002 12 05 | 704 | 0.7+ | 0.6− | 2005 06 06 | 691 | 0.9− | 0.4− | 2006 10 21 | 703 | 0.6+ | 0.9− | |
| 2002 12 05 | 704 | 0.7+ | 0.2− | 2005 06 06 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.2+ | |
| 2002 12 05 | 695 | 0.3− | 0.1− | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.2+ | |
| 2002 12 05 | 608 | 0.7− | 1.3+ | 2005 06 10 | 691 | 0.3+ | 0.1+ | | | | | |

**(139404)∗ 2001 OE$_2$**

Discovered 2001 July 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.81425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22823977 | $\omega$ | 15.96898 | | +0.11305024 | | +0.97288002 |
| $a$ | 2.6518065 | $\Omega$ | 260.85300 | | −0.93250784 | | +0.03377482 |
| $e$ | 0.1259247 | $i$ | 11.79446 | | −0.34299966 | | +0.22883123 |
| $P$ | 4.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.6− | 0.2+ | 2001 08 20 | 704 | 0.1− | 0.6+ | 2004 02 23 | 704 | 0.6+ | 0.6+ | |
| 2001 06 15 | 704 | 0.5− | 0.6+ | 2001 09 20 | 645 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.1− | |
| 2001 06 15 | 704 | 0.2− | 0.7+ | 2001 09 20 | 645 | 0.1− | 0.1− | 2004 02 27 | 608 | 0.4− | 0.3− | |
| 2001 06 15 | 704 | 0.2+ | 0.1− | 2002 12 06 | 704 | 0.9− | 0.5+ | 2004 02 27 | 608 | 0.1− | 1.2− | |
| 2001 06 15 | 704 | 0.6+ | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.4− | 2004 02 27 | 608 | 0.4+ | 0.8− | |
| 2001 06 28 | 699 | 0.2− | 0.2− | 2002 12 06 | 704 | 0.1− | 0.4− | 2004 03 16 | 704 | 1.2+ | 0.5− | |
| 2001 06 28 | 699 | (1.6+ | 0.1+) | 2002 12 06 | 704 | 0.1+ | 0.6+ | 2004 03 16 | 704 | 0.5+ | 0.2− | |
| 2001 06 28 | 699 | 1.1+ | 1.1+ | 2004 01 28 | 704 | 0.0 | 0.6+ | 2004 03 16 | 704 | 0.6− | 0.1+ | |
| 2001 06 28 | 699 | 0.4+ | 0.7+ | 2004 01 28 | 704 | 0.6− | 1.1+ | 2004 03 16 | 704 | 0.0 | 0.9+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 699 | 0.5+ | 0.2− | 2004 01 28 | 704 | (1.5+ | 0.5+) | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2001 07 16 | 699 | 0.0 | 1.2+ | 2004 01 28 | 704 | 0.7+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2001 07 16 | 699 | 0.4− | 1.3+ | 2004 01 28 | 704 | 0.8+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2001 07 16 | 704 | 0.2+ | 0.6− | 2004 01 29 | 699 | 1.1+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2001 07 16 | 699 | 0.7− | 0.6+ | 2004 01 29 | 699 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.1− | | |
| 2001 07 16 | 704 | 0.4− | 1.1+ | 2004 01 29 | 699 | 0.5− | 1.2+ | 2006 10 22 | 644 | 0.6+ | 0.1+ | | |
| 2001 07 16 | 704 | 0.1− | 0.3− | 2004 01 29 | 699 | 1.2− | 1.2+ | 2006 11 15 | 703 | 0.2− | 0.7− | | |
| 2001 07 16 | 704 | 0.1− | 0.5+ | 2004 02 13 | 644 | 1.0+ | 0.9+ | 2006 11 15 | 703 | 1.3− | 1.3+ | | |
| 2001 07 19 | 699 | 0.2+ | 0.5+ | 2004 02 13 | 644 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 1.4+ | | |
| 2001 07 19 | 699 | 0.1+ | 0.2− | 2004 02 13 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 1.0− | 0.4+ | | |
| 2001 07 19 | 699 | 0.8− | 1.0+ | 2004 02 19 | 704 | 0.3− | 0.5+ | 2006 11 17 | 644 | 0.1− | 0.2+ | | |
| 2001 07 19 | 699 | 0.5− | 0.0 | 2004 02 19 | 704 | 0.5+ | 0.8+ | 2006 11 17 | 644 | 0.4+ | 0.1− | | |
| 2001 08 17 | 644 | (1.9+ | 0.8+) | 2004 02 19 | 704 | 0.3+ | 0.8+ | 2006 11 17 | 644 | 0.2+ | 0.3+ | | |
| 2001 08 17 | 644 | (1.7+ | 0.8+) | 2004 02 19 | 704 | 0.1− | 0.5+ | 2006 11 22 | 703 | 0.4− | 0.8− | | |
| 2001 08 17 | 644 | (1.5+ | 0.8+) | 2004 02 19 | 704 | 0.6− | 1.3+ | 2006 11 22 | 703 | 1.0+ | 0.1− | | |
| 2001 08 20 | 704 | 0.2+ | 0.8+ | 2004 02 23 | 704 | 0.7+ | 0.4− | 2006 11 22 | 703 | 0.3+ | 0.3− | | |
| 2001 08 20 | 704 | 0.0 | 0.8+ | 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 703 | 0.1+ | 0.1− | | |

**(139405)∗ 2001 OG$_2$**

Discovered 2001 July 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.75078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22845934 | $\omega$ | 65.17784 | | −0.13581487 | +0.98896344 | |
| $a$ | 2.6501071 | $\Omega$ | 197.32831 | | −0.96554919 | −0.14551505 | |
| $e$ | 0.1773236 | $i$ | 11.46611 | | −0.22196642 | +0.02786907 | |
| $P$ | 4.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 28 | 699 | 0.2− | 0.3− | 2001 08 27 | 704 | 0.5+ | 0.4− | 2005 07 02 | 703 | 0.9− | 0.3− | | |
| 2001 06 28 | 699 | 0.5− | 0.3+ | 2001 10 14 | 704 | 0.1+ | 0.2− | 2005 07 02 | 703 | (1.7− | 0.3+) | | |
| 2001 06 28 | 699 | 0.1− | 0.4− | 2001 10 14 | 704 | 0.1+ | 1.2− | 2005 07 02 | 703 | 0.7− | 0.1− | | |
| 2001 06 28 | 699 | 0.2− | 0.1+ | 2001 10 14 | 704 | 0.3+ | 0.1+ | 2005 07 02 | 703 | (0.6− | 1.6−) | | |
| 2001 07 16 | 699 | 1.3+ | 0.3+ | 2002 11 16 | 644 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2− | | |
| 2001 07 16 | 699 | 0.7+ | 0.1+ | 2002 11 16 | 644 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.4− | | |
| 2001 07 16 | 699 | 0.2− | 0.1− | 2002 11 16 | 644 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.3+ | 0.3− | | |
| 2001 07 16 | 699 | 0.5+ | 0.5+ | 2002 11 24 | 644 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.3− | | |
| 2001 07 16 | 683 | (1.0− | 2.1+) | 2002 11 24 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.3− | | |
| 2001 07 16 | 683 | 1.1− | 0.1+ | 2002 11 24 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.2− | | |
| 2001 07 16 | 683 | 0.0 | 0.1+ | 2004 01 27 | 699 | (0.6+ | 1.9+) | 2006 10 22 | 691 | 0.1− | 0.2− | | |
| 2001 07 19 | 699 | 1.3− | 0.5+ | 2004 01 27 | 699 | (0.5− | 2.2+) | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 2001 07 19 | 699 | 0.8− | 0.7− | 2004 01 27 | 699 | 0.6− | 1.1+ | 2006 11 01 | G96 | 0.4+ | 0.2− | | |
| 2001 07 19 | 699 | 0.4+ | 1.2+ | 2004 01 27 | 699 | 1.0+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.2+ | | |
| 2001 07 19 | 699 | 0.5− | 0.2+ | 2005 05 14 | 704 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.0 | | |
| 2001 08 20 | 704 | 0.1+ | 0.8+ | 2005 05 14 | 704 | 0.4+ | 0.4− | 2006 11 13 | 291 | 0.3+ | 0.4+ | | |
| 2001 08 20 | 704 | 0.2+ | 0.9+ | 2005 05 14 | 704 | 0.4+ | 0.8+ | 2006 11 13 | 291 | 0.2+ | 0.5+ | | |
| 2001 08 20 | 704 | 0.5− | 0.7+ | 2005 05 14 | 704 | 0.6− | 1.0+ | 2006 11 13 | 291 | 0.2+ | 0.1+ | | |
| 2001 08 20 | 704 | 0.1+ | 0.7+ | 2005 05 14 | 704 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.5− | | |
| 2001 08 24 | 699 | 0.0 | 0.2− | 2005 06 03 | E12 | 0.1− | 0.4− | 2006 11 13 | 703 | 0.3+ | 1.1− | | |
| 2001 08 24 | 699 | 0.3− | 0.3+ | 2005 06 03 | E12 | 0.2− | 0.1− | 2006 11 13 | 703 | (1.0− | 1.7−) | | |
| 2001 08 24 | 699 | 0.5+ | 0.6+ | 2005 06 03 | E12 | 0.2− | 0.6− | 2006 11 13 | 703 | 0.4+ | 1.1− | | |
| 2001 08 24 | 699 | 0.5− | 0.0 | 2005 06 03 | E12 | 0.1− | 0.8− | 2006 11 20 | 704 | 1.0− | 0.8+ | | |
| 2001 08 27 | 704 | 0.6+ | 0.9− | 2005 06 09 | 704 | 0.5+ | 1.3+ | 2006 11 20 | 704 | 1.6− | 0.5+ | | |
| 2001 08 27 | 704 | 0.1− | 1.5− | 2005 06 09 | 704 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.5+ | | |
| 2001 08 27 | 704 | 0.0 | 0.6− | 2005 06 09 | 704 | 0.5+ | 1.1+ | 2006 11 20 | 704 | 0.5− | 1.4+ | | |
| 2001 08 27 | 704 | 0.4+ | 0.4− | 2005 06 09 | 704 | 0.6+ | 0.1+ | | | | | | |

**(139406)∗ 2001 OD$_4$**

Discovered 2001 July 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.77266 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21827394 | $\omega$ | 37.63972 | | +0.95293517 | −0.29703518 | |
| $a$ | 2.7319209 | $\Omega$ | 339.38950 | | +0.21894783 | +0.81275220 | |
| $e$ | 0.0858934 | $i$ | 9.92976 | | +0.20970552 | +0.50120252 | |
| $P$ | 4.52 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 28 | 644 | 0.6− | 0.1+ | 2002 12 11 | 704 | 1.1+ | 0.2+ | 2006 08 29 | 699 | 0.1+ | 0.5+ | | |
| 2001 06 28 | 644 | 0.7− | 0.1+ | 2002 12 11 | 704 | 0.6− | 0.1− | 2006 08 29 | 699 | 0.1− | 0.5+ | | |
| 2001 06 28 | 644 | 0.9− | 0.1+ | 2002 12 15 | 704 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.4+ | | |
| 2001 07 18 | 644 | 0.2− | 0.3+ | 2002 12 15 | 704 | 0.1+ | 0.7+ | 2006 08 30 | 704 | 0.1+ | 0.8+ | | |
| 2001 07 18 | 644 | 0.1− | 0.3+ | 2002 12 15 | 704 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.4− | 0.5− | | |
| 2001 07 18 | 644 | 0.0 | 0.2+ | 2002 12 15 | 704 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.9− | 0.5+ | | |
| 2001 07 20 | 644 | (0.1+ | 1.9−) | 2002 12 15 | 704 | 0.0 | 0.8+ | 2006 08 30 | 704 | 0.9− | 0.5+ | | |
| 2001 07 20 | 644 | (0.2+ | 1.8−) | 2002 12 29 | 704 | 0.1+ | 0.4− | 2006 09 01 | 704 | 0.1+ | 0.4+ | | |
| 2001 07 20 | 644 | (0.1− | 1.7−) | 2002 12 29 | 704 | 0.6− | 0.4+ | 2006 09 01 | 704 | 0.6− | 0.9+ | | |
| 2001 07 21 | 644 | 0.5− | 0.1− | 2002 12 29 | 704 | 0.0 | 0.7− | 2006 09 01 | 704 | (0.8− | 1.6+) | | |
| 2001 07 21 | 644 | 0.2− | 0.2− | 2003 01 31 | 704 | (0.6− | 3.2+) | 2006 09 14 | 644 | 0.2− | 0.1+ | | |
| 2001 07 21 | 644 | 0.2− | 0.1+ | 2003 01 31 | 704 | (1.0− | 2.8+) | 2006 09 14 | 644 | 0.3− | 0.3+ | | |
| 2001 07 24 | 644 | 0.1+ | 0.8+ | 2003 01 31 | 704 | (0.4− | 2.3+) | 2006 09 14 | 644 | 0.2− | 0.1+ | | |
| 2001 07 24 | 644 | 0.2+ | 0.7+ | 2003 01 31 | 704 | (1.2− | 2.8+) | 2006 09 16 | 703 | 0.1+ | 0.5+ | | |
| 2001 07 24 | 644 | 0.2+ | 0.9+ | 2003 01 31 | 704 | (1.4− | 2.9+) | 2006 09 16 | 703 | 0.3+ | 0.8+ | | |
| 2001 07 28 | 699 | 1.2− | 1.4+ | 2004 01 29 | 704 | 0.1− | 0.8+ | 2006 09 16 | 703 | 0.3+ | 0.6+ | | |
| 2001 07 28 | 699 | 0.6+ | 0.6+ | 2004 01 29 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 703 | 0.1− | 0.1+ | | |
| 2001 07 28 | 699 | 0.6+ | 0.4+ | 2004 01 29 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.1− | 1.4− | | |
| 2001 07 28 | 699 | 0.3+ | 0.4+ | 2004 02 19 | 704 | (1.8+ | 1.1+) | 2006 09 18 | 703 | 1.1− | 0.4+ | | |
| 2001 08 08 | 608 | 0.6− | 0.7+ | 2004 02 19 | 704 | 1.0+ | 1.5+ | 2006 09 18 | 703 | 0.6− | 0.4+ | | |
| 2001 08 08 | 608 | (0.8− | 1.6+) | 2004 02 19 | 704 | 1.0+ | 0.7+ | 2006 09 18 | 703 | 0.4− | 0.1+ | | |
| 2001 08 08 | 608 | 0.3− | 0.6+ | 2004 02 19 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 704 | 0.3− | 0.4− | | |
| 2001 08 09 | 644 | 0.3+ | 0.1− | 2004 02 19 | 704 | 0.5+ | 1.4+ | 2006 09 18 | 704 | 0.3− | 0.1− | | |
| 2001 08 09 | 644 | 0.2+ | 0.1− | 2004 02 25 | 704 | (2.7+ | 0.1+) | 2006 09 18 | 704 | 0.7− | 0.2+ | | |
| 2001 08 09 | 644 | 0.2+ | 0.0 | 2004 02 25 | 704 | 0.9+ | 0.6+ | 2006 09 18 | 704 | 0.6− | 0.5− | | |
| 2001 08 19 | 704 | 0.2− | 0.6+ | 2004 02 25 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 704 | 0.1+ | 0.1− | | |
| 2001 08 19 | 704 | 0.7+ | 0.8+ | 2004 02 25 | 704 | 1.0+ | 1.3+ | 2006 09 19 | 699 | 0.1− | 0.4+ | | |
| 2001 08 19 | 704 | 0.4− | 0.3− | 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.2+ | | |
| 2001 08 19 | 704 | 0.2− | 0.4− | 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.5+ | | |
| 2001 08 19 | 704 | 0.2− | 0.3− | 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 09 21 | 704 | 0.4− | 0.7+ | | |
| 2001 08 25 | 644 | (2.2+ | 3.1+) | 2004 03 16 | 704 | 0.5+ | 1.4+ | 2006 09 21 | 704 | 0.5− | 0.6+ | | |
| 2001 08 25 | 704 | 0.7− | 1.0+ | 2004 03 16 | 704 | (1.6+ | 1.0+) | 2006 09 21 | 704 | 0.4− | 0.1+ | | |
| 2001 08 25 | 644 | (1.6+ | 2.5+) | 2004 03 16 | 704 | 1.1+ | 0.6+ | 2006 09 27 | 703 | 0.4− | 0.3+ | | |
| 2001 08 25 | 704 | 0.1− | 0.9+ | 2004 03 16 | 704 | 0.8− | 1.3+ | 2006 09 27 | 703 | 0.6− | 0.1+ | | |
| 2001 08 25 | 644 | (1.8+ | 2.7+) | 2004 03 18 | 704 | 1.2+ | 0.6+ | 2006 09 27 | 703 | 0.3− | 0.3+ | | |
| 2001 08 25 | 704 | 0.0 | 0.9+ | 2004 03 18 | 704 | 0.7+ | 0.2− | 2006 09 27 | 703 | 0.4− | 0.3− | | |
| 2001 08 25 | 704 | 0.2+ | 1.1+ | 2004 03 18 | 704 | 1.3+ | 0.6+ | 2006 10 03 | 704 | 0.4− | 0.7+ | | |
| 2001 08 25 | 704 | 0.7− | 0.8+ | 2004 03 18 | 704 | 0.7+ | 0.8+ | 2006 10 03 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 11 | 704 | 0.2− | 1.5− | 2004 03 18 | 704 | 0.9+ | 0.5− | 2006 10 03 | 704 | 0.1− | 0.4+ | | |
| 2001 09 11 | 704 | (0.0 | 2.1−) | 2004 03 20 | 699 | 1.3+ | 0.6+ | 2006 10 03 | 704 | 0.9+ | 0.0 | | |
| 2001 09 11 | 704 | (0.2− | 1.6−) | 2004 03 20 | 699 | 0.2+ | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.9− | | |
| 2001 09 11 | 704 | (0.4− | 2.1−) | 2004 03 20 | 704 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.1− | | |
| 2001 09 11 | 704 | 0.1− | 1.5− | 2004 03 20 | 699 | 0.7− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.1− | | |
| 2002 10 31 | 704 | 0.8− | 0.2− | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 10 04 | G96 | 0.3− | 0.1− | | |
| 2002 10 31 | 704 | 0.5− | 0.4− | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.1− | | |
| 2002 10 31 | 704 | 0.3− | 0.0 | 2004 03 20 | 699 | (1.8− | 1.3−) | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 10 31 | 704 | 0.2− | 0.3− | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2002 10 31 | 704 | 0.3− | 0.5− | 2004 03 27 | 704 | 0.6+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.5+ | | |
| 2002 11 07 | 704 | 0.6− | 0.7− | 2004 03 27 | 704 | 0.8+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2002 11 07 | 704 | 0.4− | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.5+ | | |
| 2002 11 07 | 704 | 0.9− | 0.4− | 2004 03 27 | 704 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.4+ | | |
| 2002 11 07 | 704 | 0.3− | 0.7− | 2004 03 27 | 704 | 0.3+ | 0.5− | 2006 10 16 | 683 | 0.4+ | 0.2− | | |
| 2002 11 15 | 704 | 0.3+ | 0.8+ | 2004 04 09 | 843 | 0.4− | 1.1+ | 2006 10 16 | 683 | 0.9+ | 1.0+ | | |
| 2002 11 15 | 704 | 0.3− | 0.4+ | 2004 04 09 | 843 | 1.2− | 0.4+ | 2006 10 16 | 683 | 0.4− | 0.5+ | | |
| 2002 11 15 | 704 | 0.5+ | 0.4− | 2004 04 09 | 843 | 1.4− | 0.4+ | 2006 10 17 | 683 | (1.6+ | 0.8−) | | |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2004 04 09 | 843 | 1.2− | 0.1− | 2006 10 17 | 683 | 0.7+ | 0.0 | | |
| 2002 12 06 | 704 | 0.3− | 0.6+ | 2004 04 09 | 703 | 0.7− | 0.2− | 2006 10 17 | 683 | 1.1+ | 0.5− | | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2004 04 09 | 703 | 0.7− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.1+ | | |
| 2002 12 06 | 704 | 0.3− | 0.4+ | 2004 04 09 | 703 | 0.9− | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 2002 12 06 | 704 | 0.0 | 0.3+ | 2004 04 09 | 703 | (1.9− | 0.6+) | 2006 10 17 | 703 | 0.3− | 0.3− | | |
| 2002 12 11 | 704 | 0.2− | 0.1+ | 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.6− | | |
| 2002 12 11 | 704 | 0.1− | 0.1+ | 2004 04 12 | 691 | 0.3+ | 0.0 | 2006 10 19 | 683 | 0.0 | 0.3+ | | |
| 2002 12 11 | 704 | 0.7+ | 0.7+ | 2004 04 12 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 683 | (0.6+ | 1.6+) | | |
| 2002 12 11 | 704 | 0.0 | 0.4+ | 2004 04 14 | 699 | 0.0 | 0.3− | 2006 10 19 | 683 | (0.9− | 2.0+) | | |
| 2002 12 11 | 704 | 0.1− | 0.0 | 2004 04 14 | 699 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2002 12 11 | 704 | 0.5− | 0.3+ | 2004 04 14 | 699 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2002 12 11 | 704 | 0.8+ | 0.4+ | 2004 04 14 | 699 | 1.1− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 08 26 | 704 | (0.3+ | 2.2+) | 2006 10 26 | 704 | (0.5− | 1.5+) |
| 2002 12 11 | 704 | 0.4− | 0.1− | 2006 08 26 | 704 | 0.7+ | 0.5+ | 2006 10 26 | 704 | 0.3+ | 0.5+ |
| 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 08 26 | 704 | (0.7− | 1.6+) | 2006 10 26 | 704 | 1.0− | 0.9+ |
| 2002 12 11 | 704 | 1.2+ | 0.6+ | 2006 08 27 | 683 | 0.3− | 0.2− | 2006 10 26 | 704 | 0.9− | 0.0 |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2006 08 27 | 683 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.8+ | 1.1− | 2006 08 27 | 683 | 0.3+ | 0.8+ | 2006 11 28 | 704 | 0.8− | 0.4− |
| 2002 12 11 | 704 | 0.5+ | 1.1− | 2006 08 28 | 683 | 0.3+ | 1.0− | 2006 11 28 | 704 | 0.7+ | 0.4− |
| 2002 12 11 | 704 | 0.8+ | 0.5+ | 2006 08 28 | 683 | 0.1+ | 0.6− | 2006 11 28 | 704 | 0.3+ | 1.4+ |
| 2002 12 11 | 704 | 0.2+ | 1.1− | 2006 08 28 | 683 | 0.5− | 0.5+ | 2006 11 28 | 704 | 0.9+ | 0.4+ |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 08 29 | 699 | 0.1+ | 0.8+ | | | | |
| 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 08 29 | 699 | 0.3− | 0.5+ | | | | |

**(139407)∗ 2001 OX$_9$ = 2005 JD$_{134}$**

Discovered 2001 July 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75007)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.58671 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22833685 | $\omega$ | 208.81868 | | +0.77320265 | | +0.58239449 |
| $a$ | 2.6510548 | $\Omega$ | 113.37230 | | −0.51671002 | | +0.80799259 |
| $e$ | 0.1305526 | $i$ | 15.86541 | | −0.36765258 | | +0.08924482 |
| $P$ | 4.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 13 | 691 | 0.1− | 0.4+ | 2005 05 14 | 704 | 0.6+ | 0.2− | 2005 08 05 | 644 | 0.2− | 0.1− |
| 2001 06 13 | 691 | 0.1− | 0.6+ | 2005 05 14 | 704 | 0.1+ | 0.5+ | 2005 08 05 | 644 | 0.3− | 0.0 |
| 2001 06 13 | 691 | 0.0 | 0.6+ | 2005 05 16 | G96 | (0.2+ | 3.6+) | 2005 08 05 | 644 | 0.4− | 0.1− |
| 2001 07 18 | 644 | 0.0 | 0.9− | 2005 05 16 | G96 | (0.4− | 4.3+) | 2006 10 02 | 703 | 0.0 | 0.1+ |
| 2001 07 18 | 644 | 0.2+ | 1.4− | 2005 05 16 | G96 | (0.2− | 4.0+) | 2006 10 02 | 703 | 0.3+ | 0.1+ |
| 2001 07 18 | 644 | 0.1− | 0.8− | 2005 05 16 | G96 | (0.7− | 4.2+) | 2006 10 02 | 703 | 0.6− | 0.3+ |
| 2001 07 21 | 608 | (0.2+ | 1.9−) | 2005 06 13 | 691 | 0.3− | 0.0 | 2006 10 02 | 703 | 0.2+ | 1.0− |
| 2001 07 21 | 608 | (0.2− | 1.8−) | 2005 06 13 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | (1.6+ | 0.4+) |
| 2001 07 21 | 608 | (0.0 | 1.9−) | 2005 06 13 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.3+ |
| 2001 07 30 | 644 | 0.1− | 0.8− | 2005 06 17 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2001 07 30 | 644 | 0.0 | 0.9− | 2005 06 17 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.2+ |
| 2001 07 30 | 644 | 0.2+ | 0.6− | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.7− | 0.2− |
| 2001 08 06 | 644 | 0.2+ | 0.4− | 2005 06 27 | 691 | 0.1− | 0.3− | 2006 10 31 | 703 | 1.1− | 0.9+ |
| 2001 08 06 | 644 | 0.2+ | 0.3− | 2005 06 27 | 691 | 0.6+ | 0.2+ | 2006 10 31 | 703 | 0.4+ | 0.2+ |
| 2001 08 06 | 644 | 0.0 | 0.3− | 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.6+ | 0.3− |
| 2002 10 31 | 704 | 0.1− | 0.0 | 2005 07 02 | 703 | (1.1− | 5.2+) | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2002 10 31 | 704 | 0.4+ | 0.1+ | 2005 07 02 | 703 | (1.6− | 0.0 ) | 2006 11 07 | 644 | 0.1− | 0.4− |
| 2002 10 31 | 704 | (0.9+ | 1.8+) | 2005 07 02 | 703 | 0.6+ | 0.7+ | 2006 11 07 | 644 | 0.5− | 0.1− |
| 2002 12 14 | 704 | 0.0 | 0.3− | 2005 07 02 | 703 | 0.1+ | 0.3− | 2006 11 23 | 703 | 0.2− | 1.0+ |
| 2002 12 14 | 704 | 0.8− | 0.5+ | 2005 07 05 | 704 | (1.8− | 1.4+) | 2006 11 23 | 703 | 0.8+ | 0.4+ |
| 2002 12 14 | 704 | 0.7+ | 0.5+ | 2005 07 05 | 704 | 1.2− | 0.5+ | 2006 11 23 | 703 | 0.3+ | 0.0 |
| 2005 05 14 | 704 | 0.9+ | 0.7− | 2005 07 05 | 704 | 0.5+ | 1.1+ | 2006 11 23 | 703 | 1.3− | 0.4+ |

**(139408)∗ 2001 OU$_{11}$**

Discovered 2001 July 18 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.26458 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21708960 | $\omega$ | 189.37767 | | +0.46108430 | | +0.86957500 |
| $a$ | 2.7418480 | $\Omega$ | 108.25414 | | −0.80159493 | | +0.49360634 |
| $e$ | 0.1783498 | $i$ | 10.72621 | | −0.38058748 | | +0.01386027 |
| $P$ | 4.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 644 | 0.6+ | 0.1− | 2004 03 18 | 645 | 0.0 | 0.2+ | 2005 05 31 | 703 | 1.1− | 0.1+ |
| 2001 05 24 | 644 | 0.5+ | 0.1− | 2005 04 04 | 703 | 0.2− | 0.5− | 2005 05 31 | 703 | 1.2− | 0.7+ |
| 2001 05 24 | 644 | 0.4+ | 0.1− | 2005 04 04 | 703 | 1.2− | 1.3− | 2005 05 31 | 703 | 0.6− | 0.7+ |
| 2001 06 16 | 699 | 0.9+ | 0.4+ | 2005 04 04 | 703 | 1.2− | 0.8− | 2005 06 09 | 704 | (1.5+ | 0.4−) |
| 2001 06 16 | 699 | 1.0+ | 1.1+ | 2005 04 04 | 703 | 1.1− | 1.4− | 2005 06 09 | 704 | 0.7+ | 0.5+ |
| 2001 06 16 | 699 | 0.9− | 1.2+ | 2005 04 09 | 704 | 1.2+ | 1.3+ | 2005 06 09 | 704 | 0.9− | 0.5+ |
| 2001 06 16 | 699 | 0.7+ | 0.3− | 2005 04 09 | 704 | 0.7+ | 0.5+ | 2005 06 09 | 704 | (1.5− | 0.6−) |
| 2001 06 22 | 644 | 0.3+ | 0.0 | 2005 04 09 | 704 | 0.1+ | 0.4+ | 2005 06 23 | 644 | 0.3+ | 0.4+ |
| 2001 06 22 | 644 | 0.2− | 0.5− | 2005 04 09 | 704 | 0.7+ | 0.4+ | 2005 06 23 | 644 | 0.2+ | 0.2+ |
| 2001 06 22 | 644 | 0.1+ | 0.1− | 2005 05 04 | 703 | 0.1− | 0.6− | 2005 06 23 | 644 | 0.2+ | 0.0 |
| 2001 06 27 | 699 | 0.3− | 0.5− | 2005 05 04 | 703 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.6+ |
| 2001 06 27 | 699 | 0.6− | 0.3− | 2005 05 04 | 703 | 0.5− | 1.1+ | 2006 08 28 | 699 | 0.6− | 1.0+ |
| 2001 06 27 | 699 | 0.3− | 0.1− | 2005 05 04 | 703 | 0.3− | 0.1− | 2006 08 28 | 699 | 1.3+ | 0.9+ |
| 2001 06 27 | 699 | 1.1− | 0.0 | 2005 05 06 | 704 | 0.0 | 0.5+ | 2006 08 28 | 699 | 0.7− | 1.2+ |
| 2001 07 16 | 699 | 0.7− | 0.1− | 2005 05 06 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 703 | 0.6− | 1.4+ |
| 2001 07 16 | 699 | 0.4− | 0.3+ | 2005 05 06 | 704 | 0.5+ | 0.1− | 2006 09 25 | 703 | 0.2+ | 0.4+ |
| 2001 07 16 | 699 | 0.3− | 0.0 | 2005 05 06 | 704 | 0.6+ | 0.4− | 2006 09 25 | 703 | 0.7− | 0.2− |
| 2001 07 16 | 699 | 0.4− | 0.8+ | 2005 05 06 | 704 | 0.1+ | 0.5− | 2006 09 25 | 703 | 0.0 | 0.1+ |
| 2001 07 18 | 608 | 0.6+ | 0.5− | 2005 05 11 | 699 | 0.7+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 07 18 | 608 | 0.5+ | 0.2− | 2005 05 11 | 699 | 1.1+ | 0.9− | 2006 10 10 | 644 | 0.5+ | 0.1+ |
| 2001 07 18 | 608 | 0.3+ | 0.2− | 2005 05 11 | 703 | 0.4− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 07 21 | 644 | 0.7+ | 1.2− | 2005 05 11 | 703 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2001 07 21 | 644 | 0.5+ | 0.9− | 2005 05 11 | 703 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 07 21 | 644 | 0.6+ | 1.2− | 2005 05 11 | 699 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 2001 07 27 | 644 | 0.0 | 1.2+ | 2005 05 11 | 703 | 1.1− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 07 27 | 644 | 0.1+ | 1.2+ | 2005 05 11 | 699 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 07 27 | 644 | 0.1+ | 1.2+ | 2005 05 19 | G96 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2001 07 28 | 699 | 1.0− | 0.1− | 2005 05 19 | G96 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.5− | 0.5+ |
| 2001 07 28 | 699 | 0.6− | 0.3− | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.1− |
| 2001 07 28 | 699 | 0.7− | 0.1− | 2005 05 19 | G96 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.5− | 0.7− |
| 2001 07 28 | 699 | 0.5+ | 0.1− | 2005 05 20 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 1.0− |
| 2001 09 15 | 644 | 0.6− | 0.1− | 2005 05 20 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.6+ |
| 2001 09 15 | 644 | 0.5− | 0.3+ | 2005 05 20 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.1+ |
| 2001 09 15 | 644 | 0.4− | 0.1− | 2005 05 20 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 1.1− | 0.3+ |
| 2001 09 21 | 644 | 0.4+ | 0.6+ | 2005 05 20 | 644 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.8+ |
| 2001 09 21 | 644 | 0.1+ | 0.6+ | 2005 05 20 | 644 | 0.3+ | 0.4− | 2006 10 28 | 703 | 0.3− | 0.4− |
| 2001 09 21 | 644 | 0.6+ | 0.5+ | 2005 05 31 | 699 | (0.3− | 1.5+) | 2006 10 28 | 703 | 1.3+ | 0.8+ |
| 2004 02 15 | 704 | 0.2+ | 0.4+ | 2005 05 31 | 699 | 0.9+ | 0.3+ | 2006 10 28 | 703 | 1.3− | 1.5− |
| 2004 02 15 | 704 | 1.0+ | 0.8− | 2005 05 31 | 699 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.7+ | 0.2− |
| 2004 02 15 | 704 | 0.6− | 0.2− | 2005 05 31 | 703 | 0.6− | 0.7− | | | | |
| 2004 03 18 | 645 | 0.0 | 0.2+ | 2005 05 31 | 699 | 0.5+ | 1.0+ | | | | |

**(139409)∗ 2001 OC$_{13}$**

Discovered 2001 July 21 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.67627 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21814340 | $\omega$ | 17.97500 | | +0.87276405 | | +0.46125851 |
| $a$ | 2.7330107 | $\Omega$ | 313.45781 | | −0.47052262 | | +0.70779147 |
| $e$ | 0.1956912 | $i$ | 12.71445 | | −0.12996684 | | +0.53504375 |
| $P$ | 4.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 910 | 0.3+ | 0.7+ | 2001 09 07 | 704 | 0.7+ | 1.0− | 2004 03 27 | 703 | (2.1− | 1.4−) |
| 1999 03 20 | 910 | 0.3− | 0.3+ | 2001 09 07 | 704 | 0.5+ | 1.0− | 2004 03 27 | 703 | 0.4− | 0.7+ |
| 1999 03 20 | 910 | 0.5− | 0.3+ | 2001 09 07 | 704 | 0.3+ | 0.9− | 2004 03 27 | 703 | 1.1− | 0.3− |
| 2001 06 27 | 608 | (0.6+ | 2.0+) | 2001 09 07 | 704 | 0.6+ | 0.7− | 2006 08 12 | 644 | 0.1− | 0.2+ |
| 2001 06 27 | 608 | 0.4+ | 1.4+ | 2001 09 07 | 704 | 0.7+ | 0.6− | 2006 08 12 | 644 | 0.0 | 0.3+ |
| 2001 06 27 | 608 | 0.7+ | 1.3+ | 2001 09 20 | 704 | 0.4+ | 1.1+ | 2006 08 12 | 644 | 0.1− | 0.2+ |
| 2001 07 16 | 699 | 0.7− | 0.1+ | 2001 09 20 | 704 | (0.4+ | 1.5+) | 2006 08 23 | 704 | 0.1− | 0.8+ |
| 2001 07 16 | 699 | 0.1− | 0.9+ | 2001 09 20 | 704 | 0.5+ | 1.0+ | 2006 08 23 | 704 | 0.6− | 0.3+ |
| 2001 07 16 | 699 | 0.5− | 0.0 | 2001 09 20 | 704 | 0.2+ | 1.2+ | 2006 08 23 | 704 | (2.2− | 0.6+) |
| 2001 07 16 | 699 | 0.3− | 0.6+ | 2001 09 20 | 704 | 0.4+ | 1.2+ | 2006 08 23 | 704 | 0.6− | 0.7+ |
| 2001 07 21 | 428 | 0.3+ | 0.8− | 2001 10 14 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.4− | 0.4+ |
| 2001 07 21 | 428 | 0.3+ | 0.9+ | 2001 10 14 | 704 | 0.5− | 0.3− | 2006 09 17 | 703 | 0.1− | 0.0 |
| 2001 07 22 | 428 | (1.1+ | 1.9−) | 2001 10 14 | 704 | 1.0+ | 1.1+ | 2006 09 17 | 703 | 0.0 | 0.1− |
| 2001 07 22 | 428 | 0.6+ | 0.5− | 2001 10 14 | 704 | 0.1+ | 0.7+ | 2006 09 17 | 703 | 0.2− | 0.4+ |
| 2001 07 27 | 699 | 0.4− | 0.1− | 2001 11 10 | 704 | 0.1+ | 0.9+ | 2006 10 02 | 704 | 1.5+ | 0.8+ |
| 2001 07 27 | 699 | 0.2+ | 0.5− | 2001 11 10 | 704 | 0.8+ | 0.7+ | 2006 10 02 | 704 | 0.3+ | 0.7+ |
| 2001 07 27 | 699 | 0.3− | 0.3− | 2001 11 10 | 704 | 0.3+ | 0.1+ | 2006 10 02 | 704 | 0.3+ | 0.1+ |
| 2001 07 27 | 699 | 0.3− | 1.3+ | 2001 11 10 | 704 | 0.6− | 0.4+ | 2006 10 02 | 704 | 0.9+ | 0.4− |
| 2001 07 27 | 428 | 0.1− | 0.3− | 2001 11 10 | 704 | 0.5+ | 0.5+ | 2006 10 02 | 703 | 0.8− | 0.4− |
| 2001 07 27 | 428 | 0.7− | 0.1+ | 2004 01 29 | 704 | 1.0+ | 0.3+ | 2006 10 02 | 703 | 0.8− | 0.1− |
| 2001 07 30 | 704 | 0.1− | 0.4− | 2004 01 29 | 704 | 1.4+ | 0.2+ | 2006 10 02 | 703 | 0.0 | 0.9− |
| 2001 07 30 | 704 | 0.2− | 0.3+ | 2004 01 29 | 704 | 0.2+ | 0.4− | 2006 10 02 | 703 | 0.4+ | 0.0 |
| 2001 07 30 | 704 | 0.0 | 0.6− | 2004 02 15 | 703 | 0.7− | 0.8+ | 2006 10 02 | 703 | 0.0 | 0.0 |
| 2001 07 30 | 704 | 0.2− | 0.7+ | 2004 02 15 | 703 | 1.0− | 0.4+ | 2006 10 02 | 703 | 0.5− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 30 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 703 | 0.4+ | 0.8+ | 2006 10 02 | 703 | 0.3− | 0.1+ |
| 2001 07 31 | 428 | 0.3− | 0.3+ | 2004 02 15 | 703 | 1.0− | 1.1+ | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2001 07 31 | 428 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.9+ | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2001 08 07 | 608 | 0.2− | 0.1+ | 2004 02 19 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.2+ |
| 2001 08 07 | 608 | 0.3− | 0.1− | 2004 02 19 | 704 | (1.8+ | 0.4+) | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2001 08 07 | 608 | 0.1− | 0.5+ | 2004 02 19 | 704 | 1.1+ | 0.4+ | 2006 10 20 | 704 | 0.8+ | 0.3+ |
| 2001 08 16 | 704 | 0.6− | 0.0 | 2004 02 19 | 704 | 0.7+ | 1.1+ | 2006 10 20 | 704 | 0.1+ | 0.2− |
| 2001 08 16 | 704 | 0.8− | 0.1− | 2004 02 26 | 683 | 1.1− | 0.4+ | 2006 10 20 | 704 | 0.5+ | 0.0 |
| 2001 08 16 | 704 | 0.5− | 0.3− | 2004 02 26 | 683 | 1.3+ | 0.5− | 2006 10 20 | 704 | 0.3+ | 0.1+ |
| 2001 08 16 | 704 | 0.8− | 0.0 | 2004 02 26 | 704 | (1.8+ | 0.4+) | 2006 10 27 | 703 | 0.0 | 0.5− |
| 2001 08 16 | 704 | 0.4− | 0.7− | 2004 02 26 | 683 | (2.4+ | 0.4−) | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2001 08 19 | 704 | (0.3+ | 2.7−) | 2004 02 26 | 704 | 0.9+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2001 08 19 | 704 | (0.8+ | 2.2−) | 2004 02 26 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.6− | 0.6+ |
| 2001 08 19 | 704 | (1.0+ | 2.7−) | 2004 02 29 | 683 | (3.3+ | 0.7+) | 2006 11 15 | 703 | 0.4+ | 0.6+ |
| 2001 08 19 | 704 | (0.6+ | 2.7−) | 2004 02 29 | 683 | (1.8+ | 1.4+) | 2006 11 15 | 703 | 0.3+ | 0.3+ |
| 2001 08 19 | 704 | (0.8+ | 3.0−) | 2004 02 29 | 683 | 1.4− | 0.5− | 2006 11 15 | 703 | 0.8+ | 0.3− |
| 2001 08 24 | 704 | 0.8− | 0.4+ | 2004 03 12 | 644 | 0.5+ | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.0 |
| 2001 08 24 | 704 | 0.5− | 0.2+ | 2004 03 12 | 644 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.7+ |
| 2001 08 24 | 704 | 0.7− | 0.2+ | 2004 03 12 | 644 | 0.4+ | 0.2+ | 2006 11 16 | 704 | (2.9+ | 3.2−) |
| 2001 08 24 | 704 | 0.7− | 0.1+ | 2004 03 16 | 704 | 0.8+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.3+ |
| 2001 08 24 | 704 | 0.6− | 0.2+ | 2004 03 16 | 704 | 0.5− | 0.6+ | 2006 11 16 | 704 | 1.0− | 0.8+ |
| 2001 08 24 | 608 | 0.2+ | 0.5− | 2004 03 16 | 704 | 0.7+ | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.8− |
| 2001 08 24 | 608 | 0.2+ | 0.5− | 2004 03 16 | 704 | 0.6+ | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.3− |
| 2001 08 24 | 608 | 0.1+ | 0.7− | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 11 22 | 703 | 0.3− | 0.4− |
| 2001 09 03 | 644 | 0.2− | 0.1+ | 2004 03 19 | 704 | 0.1+ | 1.1− | 2006 11 22 | 703 | 0.3− | 0.0 |
| 2001 09 03 | 644 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.6+ | 1.0− | 2006 11 22 | 703 | 0.2− | 0.3− |
| 2001 09 03 | 644 | 0.3+ | 0.0 | 2004 03 27 | 703 | 0.1+ | 0.5+ | | | | |

**(139410)∗ 2001 OR$_{14}$**

Discovered 2001 July 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.20958 | | (2000.0) | | | |
| $n$ | 0.21500322 | $\omega$ | 51.89072 | | +0.98409012 | −0.09452381 |
| $a$ | 2.7595573 | $\Omega$ | 312.97812 | | +0.00299673 | +0.85544268 |
| $e$ | 0.2482527 | $i$ | 11.86615 | | +0.17764474 | +0.50919845 |
| $P$ | 4.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.1− | 0.3+ | 2001 08 24 | 704 | 0.1− | 0.0 | 2001 12 07 | 704 | 0.1− | 1.5− |
| 1994 01 10 | 691 | 0.2+ | 0.2+ | 2001 08 24 | 699 | 0.0 | 0.5+ | 2002 12 11 | 704 | 0.3+ | 1.4+ |
| 1994 01 10 | 691 | 0.1− | 0.2+ | 2001 08 24 | 704 | 0.3− | 0.2+ | 2002 12 11 | 704 | 0.3− | 0.6+ |
| 1997 12 06 | 704 | 0.3+ | 1.3+ | 2001 08 24 | 704 | 0.4− | 0.3− | 2002 12 11 | 704 | (0.6− | 1.7+) |
| 1997 12 06 | 704 | 0.5+ | 0.1− | 2001 08 24 | 699 | 0.1+ | 0.7+ | 2002 12 11 | 644 | 1.4+ | 1.1+ |
| 1997 12 06 | 704 | 0.3+ | 0.0 | 2001 09 04 | 644 | 0.4− | 0.7+ | 2002 12 11 | 644 | (1.1+ | 1.8+) |
| 1997 12 06 | 704 | 0.4+ | 1.5− | 2001 09 04 | 644 | 0.8− | 0.5+ | 2002 12 11 | 644 | (0.5+ | 2.1+) |
| 1997 12 06 | 704 | 1.1− | 0.2+ | 2001 09 04 | 644 | 0.6− | 0.3+ | 2002 12 31 | 704 | 0.1+ | 1.0+ |
| 2001 06 19 | 699 | 0.2− | 0.4+ | 2001 09 08 | 704 | 0.5+ | 0.2+ | 2002 12 31 | 704 | 0.5+ | 0.2+ |
| 2001 06 19 | 699 | 0.6+ | 0.1− | 2001 09 08 | 704 | 0.2+ | 0.3+ | 2002 12 31 | 704 | 0.9+ | 0.9+ |
| 2001 06 19 | 699 | 0.2+ | 0.7− | 2001 09 08 | 704 | 0.1+ | 0.4+ | 2002 12 31 | 704 | 0.2+ | 0.7+ |
| 2001 06 19 | 699 | 0.5− | 0.7+ | 2001 09 08 | 704 | 0.4+ | 0.1+ | 2002 12 31 | 704 | 0.2− | 0.2+ |
| 2001 07 16 | 608 | 0.6− | 0.9− | 2001 09 08 | 704 | 0.6+ | 0.4+ | 2003 01 05 | 704 | 0.2+ | 0.3− |
| 2001 07 16 | 699 | 0.1− | 0.1+ | 2001 09 12 | 704 | 0.5+ | 0.2− | 2003 01 05 | 704 | 0.4+ | 0.4+ |
| 2001 07 16 | 608 | 0.7− | 0.9− | 2001 09 12 | 704 | 0.5− | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.3+ |
| 2001 07 16 | 699 | 0.5+ | 0.2− | 2001 09 12 | 704 | (0.1+ | 1.6−) | 2003 01 05 | 704 | 0.4+ | 0.6+ |
| 2001 07 16 | 608 | 0.4− | 0.7− | 2001 09 20 | 704 | 0.2− | 1.1+ | 2003 01 05 | 704 | 0.0 | 0.1+ |
| 2001 07 16 | 699 | 0.1− | 0.7+ | 2001 09 20 | 704 | 1.4+ | 0.6+ | 2003 01 09 | 704 | (2.1− | 1.9+) |
| 2001 07 16 | 699 | 0.7+ | 0.3+ | 2001 09 20 | 704 | 0.8− | 0.5+ | 2003 01 09 | 704 | 0.6− | 0.8+ |
| 2001 07 20 | 704 | 0.2− | 0.6+ | 2001 09 20 | 704 | 0.3− | 0.8+ | 2003 01 09 | 704 | 0.1− | 0.7+ |
| 2001 07 20 | 704 | 0.2+ | 0.0 | 2001 10 03 | 644 | (2.7− | 0.5−) | 2003 01 25 | 645 | 0.0 | 0.0 |
| 2001 07 20 | 704 | 0.0 | 0.5+ | 2001 10 03 | 644 | (3.1− | 0.4−) | 2003 01 25 | 645 | 0.2+ | 0.1− |
| 2001 07 22 | 704 | 0.2− | 0.4+ | 2001 10 03 | 644 | (3.0− | 0.6−) | 2003 01 25 | 699 | 0.5+ | 0.4+ |
| 2001 07 22 | 704 | 0.2− | 0.5+ | 2001 10 11 | 704 | 0.5− | 0.0 | 2003 01 25 | 699 | 0.5+ | 0.5+ |
| 2001 07 22 | 704 | 0.2− | 0.6+ | 2001 10 11 | 704 | (0.3− | 1.8+) | 2003 01 25 | 699 | 0.5− | 1.3+ |
| 2001 07 31 | 644 | 0.8+ | 0.2+ | 2001 10 11 | 704 | 0.4+ | 0.4+ | 2003 01 25 | 699 | 1.4− | 0.2− |
| 2001 07 31 | 644 | 0.6+ | 0.2− | 2001 10 11 | 704 | 0.4− | 0.3+ | 2003 02 01 | 704 | 0.0 | 0.3+ |
| 2001 07 31 | 644 | 0.8+ | 0.2− | 2001 10 14 | 704 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.0 | 0.2+ |
| 2001 08 12 | 104 | (1.5− | 1.6−) | 2001 10 14 | 704 | 0.1− | 0.1+ | 2003 02 01 | 704 | 0.2+ | 0.8+ |
| 2001 08 12 | 104 | 0.4+ | 0.8+ | 2001 10 14 | 704 | 0.4+ | 0.1− | 2003 02 01 | 704 | (1.9− | 0.0 ) |
| 2001 08 12 | 104 | 0.2+ | 0.1− | 2001 10 14 | 704 | 0.2+ | 0.4+ | 2003 02 01 | 704 | 0.3− | 0.4+ |
| 2001 08 16 | 704 | 0.1− | 0.1+ | 2001 10 14 | 704 | 0.1+ | 0.3− | 2006 08 23 | 704 | (1.9− | 1.8−) |
| 2001 08 16 | 704 | 0.1− | 0.2+ | 2001 10 21 | 704 | 1.3− | 0.0 | 2006 08 23 | 704 | 0.7− | 0.4− |
| 2001 08 16 | 704 | 0.5− | 0.2− | 2001 10 21 | 704 | (1.6− | 0.1+) | 2006 08 23 | 704 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.1− | 0.1+ | 2001 10 21 | 704 | 1.3− | 1.1− | 2006 09 25 | 703 | 0.0 | 0.4− |
| 2001 08 16 | 704 | 0.1− | 0.3− | 2001 11 10 | 704 | 0.0 | 0.6− | 2006 09 25 | 703 | 0.0 | 0.2+ |
| 2001 08 18 | 704 | (1.7− | 0.8+) | 2001 11 10 | 704 | 0.2− | 0.8+ | 2006 09 25 | 703 | 0.5+ | 0.3− |
| 2001 08 18 | 704 | 0.7− | 0.1+ | 2001 11 10 | 704 | 0.9+ | 1.0+ | 2006 09 25 | 703 | 0.2+ | 0.3− |
| 2001 08 18 | 704 | 0.8− | 0.3+ | 2001 11 10 | 704 | (1.8+ | 0.4+) | 2006 10 03 | 703 | 0.5− | 0.5− |
| 2001 08 18 | 704 | 1.1− | 0.3+ | 2001 11 10 | 704 | 0.3+ | 1.3+ | 2006 10 03 | 703 | 0.0 | 0.5− |
| 2001 08 19 | 704 | 1.1− | 0.2− | 2001 11 18 | 704 | 0.0 | 0.2+ | 2006 10 03 | 703 | 0.5− | 0.8− |
| 2001 08 19 | 704 | 0.9− | 0.3+ | 2001 11 18 | 704 | 1.0− | 0.8− | 2006 10 03 | 703 | 0.4− | 0.6− |
| 2001 08 19 | 704 | 0.6− | 0.0 | 2001 11 18 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 704 | 1.1+ | 0.4− |
| 2001 08 19 | 704 | 0.6− | 0.2+ | 2001 11 18 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 704 | 0.3+ | 0.8− |
| 2001 08 19 | 704 | 0.1− | 0.4− | 2001 11 18 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 704 | 0.6− | 1.1− |
| 2001 08 24 | 699 | 0.3+ | 0.3+ | 2001 12 07 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.4+ |
| 2001 08 24 | 704 | 0.1− | 0.1+ | 2001 12 07 | 704 | 0.5+ | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.2+ |
| 2001 08 24 | 704 | 0.2+ | 0.1+ | 2001 12 07 | 704 | 0.9− | 0.4+ | 2006 11 14 | 704 | 0.4+ | 0.7− |
| 2001 08 24 | 699 | 0.6+ | 0.0 | 2001 12 07 | 704 | 0.7+ | 0.4− | 2006 11 14 | 704 | 0.6+ | 0.8− |

**(139411)∗ 2001 OD$_{15}$**

Discovered 2001 July 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 115.83286 | | (2000.0) | | | |
| $n$ | 0.25903861 | $\omega$ | 298.22390 | | +0.79710942 | +0.60185613 |
| $a$ | 2.4372105 | $\Omega$ | 24.86966 | | −0.50528777 | +0.70912205 |
| $e$ | 0.1523547 | $i$ | 6.66952 | | −0.33060677 | +0.36730794 |
| $P$ | 3.80 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 18 | 691 | 0.1+ | 0.2+ | 2004 03 24 | 699 | 0.3+ | 1.1− | 2005 09 24 | 644 | 0.1− | 0.1+ |
| 1996 02 18 | 691 | 0.1+ | 0.1+ | 2004 03 24 | 699 | 0.2+ | 0.1+ | 2005 09 25 | 703 | 0.5− | 0.5− |
| 1996 02 18 | 691 | 0.0 | 0.3+ | 2004 03 28 | 704 | 0.2− | 0.2− | 2005 09 25 | 703 | 0.6− | 0.3+ |
| 2001 06 27 | 644 | 0.7− | 1.1− | 2004 03 28 | 704 | 0.6+ | 0.8+ | 2005 09 25 | 703 | 1.2− | 0.0 |
| 2001 06 27 | 644 | 0.7− | 0.6− | 2004 03 28 | 704 | 0.5+ | 0.1− | 2005 09 25 | 703 | 0.9− | 0.1+ |
| 2001 06 27 | 644 | 0.6− | 0.9− | 2004 03 28 | 704 | 0.3− | 1.0− | 2005 09 27 | 704 | 0.5+ | 0.7+ |
| 2001 07 18 | 644 | 0.1+ | 0.6+ | 2004 03 28 | 704 | 1.8− | 1.5+ | 2005 09 27 | 704 | 0.3− | 0.6+ |
| 2001 07 18 | 644 | 0.1+ | 0.4+ | 2004 03 29 | 691 | 0.2− | 0.4+ | 2005 09 27 | 704 | 0.5− | 0.1+ |
| 2001 07 18 | 644 | 0.1+ | 0.6+ | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2005 09 27 | 704 | 0.6− | 0.2+ |
| 2001 07 22 | 644 | 0.1+ | 0.3− | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2005 09 27 | 704 | 0.3− | 0.3+ |
| 2001 07 22 | 644 | 0.5+ | 0.3− | 2004 04 14 | 691 | 0.1− | 0.1+ | 2005 10 03 | 703 | 0.4− | 0.9+ |
| 2001 07 22 | 644 | 0.5+ | 0.2− | 2004 04 14 | 691 | 0.2+ | 0.0 | 2005 10 03 | 703 | 0.5− | 0.2+ |
| 2001 08 24 | 644 | 0.2+ | 0.6+ | 2004 04 14 | 691 | 0.1− | 0.1+ | 2005 10 03 | 703 | 0.0 | 0.1− |
| 2001 08 24 | 644 | 0.1+ | 0.6+ | 2004 04 23 | 691 | 0.2+ | 0.0 | 2005 10 03 | 703 | 0.3+ | 0.3+ |
| 2001 08 24 | 644 | 0.4+ | 0.4+ | 2004 04 23 | 691 | 0.2+ | 0.2+ | 2005 10 10 | 703 | 0.5− | 0.0 |
| 2001 09 11 | 704 | (3.6− | 2.0−) | 2004 04 23 | 691 | 0.1+ | 0.0 | 2005 10 10 | 703 | 0.5+ | 0.6+ |
| 2001 09 11 | 704 | (2.5− | 1.2−) | 2005 08 27 | 644 | 0.0 | 0.2− | 2005 10 10 | 703 | 0.0 | 0.2+ |
| 2001 09 11 | 704 | (2.7− | 1.4−) | 2005 08 27 | 644 | 0.2+ | 0.4− | 2005 10 10 | 703 | 1.1− | 0.1+ |
| 2004 03 19 | 704 | 1.8+ | 1.1+ | 2005 08 27 | 644 | 0.1+ | 0.6− | 2005 10 26 | 704 | 0.5+ | 1.8+ |
| 2004 03 19 | 704 | (2.7+ | 0.4−) | 2005 09 13 | 703 | 0.3+ | 0.5− | 2005 10 26 | 704 | 0.0 | 0.6+ |
| 2004 03 19 | 704 | 0.1+ | 1.1+ | 2005 09 13 | 703 | 0.2+ | 0.2+ | 2005 10 26 | 704 | 1.2+ | 0.1+ |
| 2004 03 19 | 704 | 1.4+ | 1.1+ | 2005 09 13 | 703 | 0.4− | 0.0 | 2005 10 31 | 704 | 0.4− | 0.7+ |
| 2004 03 19 | 704 | 0.7+ | 1.4+ | 2005 09 13 | 703 | 0.0 | 0.1− | 2005 10 31 | 704 | 0.8− | 1.8+ |
| 2004 03 24 | 699 | 0.3− | 0.6− | 2005 09 24 | 644 | 0.8+ | 0.1+ | 2005 10 31 | 704 | 0.1+ | 2.3+ |
| 2004 03 24 | 699 | 0.1− | 0.0 | 2005 09 24 | 644 | 0.3− | 0.0 | | | | |

**(139412)∗ 2001 OX$_{15}$**

Discovered 2001 July 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.88174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20995298 | $\omega$ | 315.90792 | | +0.98894150 | −0.11253811 | |
| $a$ | 2.8036343 | $\Omega$ | 50.80405 | | +0.14487612 | +0.87233918 | |
| $e$ | 0.0758771 | $i$ | 7.15972 | | −0.03171159 | +0.47577256 | |
| $P$ | 4.69 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.7− | 1.3− | 2002 11 05 | 704 | 0.1− | 0.4+ | 2004 03 23 | 704 | (0.5+ | 2.3+) |
| 1995 03 25 | 691 | 0.4− | 1.1− | 2002 11 05 | 704 | 0.5− | 0.4+ | 2004 03 23 | 704 | (0.4+ | 2.0+) |
| 1995 03 25 | 691 | 0.2− | 0.8− | 2002 11 05 | 704 | 0.5− | 0.2− | 2004 03 23 | 704 | (0.3− | 2.7+) |
| 2001 07 18 | 644 | 0.3− | 0.2+ | 2002 11 14 | 704 | 0.2+ | 0.5− | 2005 06 26 | 644 | 0.2+ | 0.5+ |
| 2001 07 18 | 644 | 0.0 | 0.2+ | 2002 11 14 | 704 | 0.3+ | 1.2+ | 2005 06 26 | 644 | 0.2+ | 0.1− |
| 2001 07 18 | 644 | 0.4− | 0.1+ | 2002 11 14 | 704 | 0.5+ | 0.5+ | 2005 06 26 | 644 | 1.4+ | 0.3+ |
| 2001 07 22 | 644 | 0.6− | 0.2+ | 2002 11 14 | 704 | 0.5+ | 0.6− | 2006 09 14 | 703 | 0.9− | 0.2+ |
| 2001 07 22 | 644 | 0.8− | 0.0 | 2002 11 27 | 599 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.4+ | 0.3− |
| 2001 07 22 | 644 | 0.6− | 0.4− | 2002 11 27 | 599 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.3+ | 0.6− |
| 2001 07 24 | 644 | 0.0 | 0.0 | 2002 11 28 | 599 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.7+ | 0.2− |
| 2001 07 24 | 644 | 0.5− | 0.0 | 2002 11 28 | 599 | 0.0 | 0.2− | 2006 09 20 | 703 | 0.2− | 0.3− |
| 2001 07 24 | 644 | 0.2− | 0.2− | 2002 12 06 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 703 | 0.6+ | 0.2− |
| 2001 08 09 | 644 | 0.4+ | 0.2− | 2002 12 06 | 704 | 0.4+ | 0.7− | 2006 09 20 | 703 | 0.1− | 0.3+ |
| 2001 08 09 | 644 | 0.0 | 0.4− | 2002 12 06 | 704 | 0.2− | 0.4− | 2006 09 20 | 703 | 0.1+ | 0.3− |
| 2001 08 09 | 644 | 0.0 | 0.1− | 2002 12 06 | 704 | 0.3+ | 0.7− | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2001 08 11 | 735 | 0.3+ | 0.1− | 2002 12 11 | 704 | 0.5+ | 0.8− | 2006 09 26 | 703 | 0.6+ | 0.3− |
| 2001 08 11 | 735 | (2.6− | 0.7−) | 2002 12 11 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 0.7− | 0.3+ |
| 2001 08 11 | 735 | (1.8− | 0.8+) | 2002 12 11 | 704 | 0.2+ | 0.9− | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 2001 08 17 | 735 | 0.4+ | 0.2− | 2002 12 11 | 704 | 0.4− | 0.8− | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2001 08 17 | 735 | 0.4+ | 0.2− | 2004 03 13 | 691 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 08 17 | 735 | 0.2− | 0.2+ | 2004 03 13 | 691 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | 0.0 | 1.2− | 2004 03 13 | 691 | 0.1+ | 1.0+ | | | | |

**(139413)∗ 2001 OH$_{16}$**

Discovered 2001 July 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.29367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21315531 | $\omega$ | 284.91740 | | +0.75315030 | +0.64893573 | |
| $a$ | 2.7754833 | $\Omega$ | 34.82041 | | −0.50719147 | +0.67727776 | |
| $e$ | 0.3048650 | $i$ | 10.89456 | | −0.41895277 | +0.34666590 | |
| $P$ | 4.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 08 | 261 | 0.1− | 0.1− | 2001 11 07 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 1992 09 08 | 261 | 0.7− | 0.1− | 2001 11 07 | 704 | 0.5− | 0.7+ | 2006 10 21 | 704 | 0.2− | 0.7− |
| 1992 09 30 | 261 | 0.3+ | 0.3+ | 2005 04 03 | E12 | 0.3− | 0.4+ | 2006 10 21 | 704 | 0.1+ | 0.5+ |
| 1992 09 30 | 261 | 0.2+ | 0.3− | 2005 04 03 | E12 | 1.3− | 0.9+ | 2006 10 21 | 704 | 0.0 | 0.7+ |
| 2001 07 21 | 644 | 0.1− | 0.1+ | 2005 04 03 | E12 | 0.3− | 0.1− | 2006 10 21 | 704 | 0.6+ | 0.3+ |
| 2001 07 21 | 644 | 0.2− | 0.0 | 2005 04 03 | E12 | 0.9− | 0.9+ | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2001 07 21 | 644 | 0.0 | 0.0 | 2005 04 07 | 691 | 0.5+ | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.7+ |
| 2001 07 22 | 644 | 0.8− | 0.4− | 2005 04 07 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.4+ |
| 2001 07 22 | 644 | 0.0 | 0.3+ | 2005 04 07 | 691 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2001 07 22 | 644 | 0.2+ | 0.3+ | 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2001 08 11 | 608 | 0.4+ | 0.5+ | 2005 04 11 | G96 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 08 11 | 608 | 0.5+ | 0.5+ | 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.6+ |
| 2001 08 11 | 608 | 0.1+ | 0.5+ | 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2001 08 19 | 704 | 0.2− | 0.5+ | 2005 04 12 | 704 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.7− | 0.3+ |
| 2001 08 19 | 704 | 1.0− | 0.5+ | 2005 04 12 | 704 | 0.2+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 1.3+ |
| 2001 08 19 | 704 | 1.5− | 0.4− | 2005 04 12 | 704 | 0.7+ | 0.3+ | 2006 10 29 | 704 | 0.7+ | 0.4+ |
| 2001 08 19 | 704 | 0.9− | 0.2+ | 2005 04 12 | 704 | 0.7+ | 0.4+ | 2006 10 29 | 704 | 0.7− | 0.7− |
| 2001 08 19 | 704 | 1.1− | 0.1− | 2005 04 18 | 703 | 0.8− | 1.3− | 2006 10 29 | 704 | 0.2− | 1.0− |
| 2001 08 23 | 608 | 0.0 | 0.4− | 2005 04 18 | 703 | 0.2− | 0.3− | 2006 10 29 | 704 | 0.4+ | 0.6+ |
| 2001 08 23 | 608 | 0.0 | 0.6− | 2005 04 18 | 703 | 0.2+ | 0.9− | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2001 08 23 | 608 | 0.2− | 0.4− | 2005 04 18 | 704 | 1.1+ | 1.4+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2001 08 23 | 608 | 0.4− | 0.4− | 2005 04 18 | 703 | 0.5− | 0.1− | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2001 08 23 | 608 | 0.6− | 0.5− | 2005 04 18 | 704 | 1.0+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2001 08 23 | 608 | 0.4− | 0.6− | 2005 04 18 | 704 | (0.6+ | 1.6+) | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2001 08 24 | 608 | 0.0 | 0.4− | 2005 04 18 | 704 | (2.5+ | 1.8+) | 2006 11 11 | 703 | 0.1+ | 1.1− |
| 2001 08 24 | 608 | 0.1− | 0.3− | 2005 05 01 | 644 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2001 08 24 | 608 | 0.0 | 0.2− | 2005 05 01 | 644 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 09 11 | 704 | 0.4+ | 0.1+ | 2005 05 01 | 644 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2001 09 11 | 704 | 0.5+ | 0.2+ | 2005 05 04 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 704 | 0.6+ | 0.2+ | 2005 05 04 | 704 | 1.0+ | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.3− |
| 2001 09 11 | 704 | 0.4+ | 0.8+ | 2005 05 04 | 704 | 0.8+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2001 09 11 | 704 | 0.7+ | 0.2+ | 2005 05 08 | E12 | 0.3+ | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 09 17 | 699 | 0.1+ | 0.1− | 2005 05 08 | E12 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2001 09 17 | 699 | 0.0 | 0.2+ | 2005 05 08 | E12 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2001 09 17 | 699 | 0.5− | 0.2+ | 2005 05 08 | E12 | 0.1− | 0.6+ | 2006 11 15 | 704 | 0.8− | 0.5+ |
| 2001 09 17 | 699 | 0.3− | 0.3+ | 2005 05 14 | G96 | 0.1− | 0.4+ | 2006 11 15 | 704 | 1.0− | 0.7+ |
| 2001 09 23 | 608 | 0.1− | 0.8− | 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 11 15 | 704 | 1.3− | 0.0 |
| 2001 09 23 | 608 | 0.1− | 0.9− | 2005 05 14 | G96 | 0.2− | 0.4+ | 2006 11 15 | 704 | 0.8− | 0.4+ |
| 2001 09 23 | 608 | 0.2− | 0.3− | 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.0 | 1.3+ |
| 2001 10 07 | 644 | 0.5+ | 0.2+ | 2005 06 02 | 699 | (0.6− | 1.6+) | 2006 11 16 | 704 | 0.5− | 0.6− |
| 2001 10 07 | 644 | 0.6+ | 0.0 | 2005 06 02 | 699 | (0.5+ | 1.9+) | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2001 10 07 | 644 | 0.5+ | 0.0 | 2005 06 02 | 699 | (2.1+ | 0.4+) | 2006 11 16 | 704 | 0.6− | 0.5+ |
| 2001 10 10 | 644 | 0.2− | 0.1+ | 2005 06 02 | 699 | (0.1+ | 1.7+) | 2006 11 16 | 704 | 0.4− | 0.3+ |
| 2001 10 10 | 644 | 0.2− | 0.2+ | 2005 06 27 | 644 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.1− |
| 2001 10 10 | 644 | 0.1− | 0.3+ | 2005 06 27 | 644 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.8+ |
| 2001 10 15 | 644 | 0.4+ | 0.4− | 2005 06 27 | 644 | 0.1+ | 0.7+ | 2006 11 16 | 704 | 0.4+ | 0.7+ |
| 2001 10 15 | 644 | 0.5+ | 0.5− | 2005 08 09 | E12 | 0.7+ | 0.5+ | 2006 11 17 | 704 | 0.8− | 0.8− |
| 2001 10 15 | 644 | 0.4+ | 0.4− | 2005 08 09 | E12 | 0.8− | 0.6+ | 2006 11 17 | 704 | 0.9− | 0.3− |
| 2001 10 15 | 704 | 0.8+ | 0.3− | 2005 08 09 | E12 | 0.8− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 2001 10 15 | 704 | 0.0 | 0.3− | 2005 08 09 | E12 | 0.9+ | 0.6+ | 2006 11 17 | 704 | (2.0− | 1.2+) |
| 2001 10 15 | 704 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.8− | 2006 11 19 | 704 | 0.7+ | 0.0 |
| 2001 10 15 | 704 | 0.4+ | 0.2− | 2006 09 20 | 704 | 1.3+ | 0.7− | 2006 11 19 | 704 | 0.8+ | 0.1+ |
| 2001 10 16 | 644 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 1.2+ | 1.2+ | 2006 11 19 | 704 | 0.7+ | 0.4+ |
| 2001 10 16 | 644 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.8+ |
| 2001 10 16 | 644 | 0.1− | 0.6+ | 2006 09 20 | 704 | 0.7+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2001 10 20 | 704 | 1.1+ | 0.1+ | 2006 09 29 | 704 | (2.3− | 0.8−) | 2006 11 22 | 704 | 1.3− | 0.1+ |
| 2001 10 20 | 704 | 0.4+ | 0.1− | 2006 09 29 | 704 | 1.3− | 0.5− | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2001 10 20 | 704 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.9− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.5− |
| 2001 10 24 | 644 | 0.1+ | 0.7+ | 2006 09 29 | 704 | (2.3− | 0.4+) | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2001 10 24 | 644 | 0.0 | 0.5+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2001 10 24 | 644 | 0.2+ | 0.6+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.2− |
| 2001 11 07 | 704 | 1.0− | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.3− |
| 2001 11 07 | 704 | 0.5− | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.4+ | 2006 12 01 | 704 | 0.8− | 0.8+ |
| 2001 11 07 | 704 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.0 | | | | |

**(139414)∗ 2001 OR$_{16}$**

Discovered 2001 July 20 by A. Boattini and M. Tombelli at San Marcello Pistoiese.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.56245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21358208 | $\omega$ | 150.43280 | | +0.26929795 | +0.95543624 | |
| $a$ | 2.7717848 | $\Omega$ | 134.88479 | | −0.91369957 | +0.29315277 | |
| $e$ | 0.1319055 | $i$ | 9.82593 | | −0.30435459 | −0.03468501 | |
| $P$ | 4.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 691 | 0.2+ | 0.3+ | 2001 08 19 | 704 | 0.6+ | 1.1+ | 2005 06 07 | 699 | 1.2− | 0.6+ |
| 2001 06 27 | 691 | 0.0 | 0.4+ | 2001 08 24 | 704 | 0.1− | 0.6− | 2005 06 07 | 699 | 1.4− | 0.3− |
| 2001 06 27 | 691 | 0.0 | 0.3+ | 2001 08 24 | 704 | 0.1− | 0.6− | 2005 06 23 | 644 | 0.4+ | 0.1− |
| 2001 07 16 | 699 | 1.4− | 0.1+ | 2001 08 24 | 704 | 0.2− | 0.6− | 2005 06 23 | 644 | 0.9+ | 0.1+ |
| 2001 07 16 | 699 | 0.5− | 0.1− | 2001 08 25 | 608 | 0.0 | 0.4− | 2005 06 23 | 644 | 0.2+ | 0.2+ |
| 2001 07 16 | 699 | 1.0− | 1.4+ | 2001 08 25 | 608 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.5− |
| 2001 07 16 | 699 | 1.4− | 0.5− | 2001 08 25 | 608 | 0.2+ | 0.5− | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2001 07 20 | 104 | 0.7+ | 0.7+ | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 1.1− | 1.1− |
| 2001 07 20 | 104 | 0.5− | 1.4− | 2004 01 28 | 691 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.1− | 0.3− |
| 2001 07 20 | 104 | 0.7+ | 0.2+ | 2004 01 28 | 691 | 0.3+ | 0.1− | 2006 09 14 | 644 | 0.1− | 0.8+ |
| 2001 07 21 | 104 | 0.3− | 0.4+ | 2004 04 14 | 645 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.3+ |
| 2001 07 21 | 104 | 1.3+ | 1.4− | 2004 04 14 | 645 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.5+ | 0.4+ |
| 2001 07 22 | 104 | 0.1+ | 0.9+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.3+ | 1.0+ |
| 2001 07 22 | 104 | 0.4− | 0.7+ | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.5− | 0.1− |
| 2001 07 22 | 104 | (1.4− | 2.2−) | 2005 04 05 | 703 | 0.5+ | 0.5− | 2006 09 25 | 703 | 0.8− | 0.8+ |
| 2001 07 26 | 104 | 0.8− | 0.2− | 2005 04 05 | 703 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.5− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 26 | 104 | 0.7− | 0.0 | 2005 04 05 | 703 | 0.0 | 0.7+ | 2006 10 02 | 703 | 1.4+ | 0.5+ |
| 2001 07 28 | 608 | 0.3+ | 0.6− | 2005 04 05 | 703 | 0.4+ | 0.0 | 2006 10 02 | 703 | 0.9+ | 0.1− |
| 2001 07 28 | 608 | 0.3− | 0.2+ | 2005 05 04 | 703 | 0.5− | 0.6+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 2001 07 28 | 608 | 0.2− | 0.1+ | 2005 05 04 | 703 | 0.9+ | 0.6+ | 2006 10 02 | 703 | 0.6− | 0.9+ |
| 2001 08 07 | 608 | 0.1+ | 0.2− | 2005 05 04 | 703 | (0.7+ | 1.8+) | 2006 10 02 | 703 | 1.0+ | 0.1+ |
| 2001 08 07 | 608 | 0.1+ | 0.2+ | 2005 05 04 | 703 | 0.6− | 0.2+ | 2006 10 02 | 703 | 0.2+ | 1.0+ |
| 2001 08 07 | 608 | 0.2+ | 0.6− | 2005 05 11 | 699 | 0.7− | 0.7− | 2006 10 02 | 703 | 0.7− | 0.6+ |
| 2001 08 16 | 704 | 0.4+ | 1.3− | 2005 05 11 | 699 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.2+ | 0.6− | 2005 05 11 | 703 | 0.4− | 0.7− | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2001 08 16 | 704 | 0.9+ | 0.3− | 2005 05 11 | 703 | 0.9+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 08 16 | 704 | 0.1− | 0.2− | 2005 05 11 | 703 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2001 08 16 | 704 | 0.2− | 0.5+ | 2005 05 11 | 699 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2001 08 19 | 704 | 0.1+ | 0.1− | 2005 05 11 | 703 | 0.4− | 0.5− | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2001 08 19 | 704 | 1.0+ | 0.3+ | 2005 05 11 | 699 | 1.1+ | 0.3− | 2006 10 19 | 703 | 0.4+ | 1.6− |
| 2001 08 19 | 704 | 1.0+ | 0.3− | 2005 06 07 | 699 | 0.2− | 0.1− | 2006 10 19 | 703 | 2.3− | 0.3+ |
| 2001 08 19 | 704 | 0.2− | 0.0 | 2005 06 07 | 699 | 0.6+ | 0.4+ | | | | |

**(139415)∗ 2001 OH$_{18}$**

Discovered 2001 July 17 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.47031 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22608524 | $\omega$ | 73.79431 | | +0.97655820 | | +0.06636489 |
| $a$ | 2.6686272 | $\Omega$ | 282.05299 | | −0.15049596 | | +0.89064355 |
| $e$ | 0.1438633 | $i$ | 12.08623 | | +0.15389949 | | +0.44983305 |
| $P$ | 4.36 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 22 | 012 | 0.4+ | 0.1+ | 2001 10 14 | 704 | 0.0 | 0.5+ | 2004 03 17 | 704 | 0.0 | 0.5+ |
| 1997 10 22 | 012 | 0.7+ | 0.3− | 2001 10 14 | 704 | 0.3+ | 0.5+ | 2004 03 17 | 704 | (0.8+ | 2.2+) |
| 1997 10 22 | 012 | 0.1+ | 0.2+ | 2001 10 14 | 704 | 0.9− | 0.7+ | 2004 03 17 | 704 | 0.5+ | 1.4+ |
| 1998 10 28 | 691 | 0.4− | 0.2+ | 2001 10 14 | 704 | 0.8− | 0.1+ | 2005 08 04 | 644 | 0.4+ | 0.4+ |
| 1998 10 28 | 691 | 0.2− | 0.1− | 2001 11 10 | 704 | 0.1− | 0.1+ | 2005 08 04 | 644 | 0.4+ | 0.4+ |
| 1998 10 28 | 691 | 0.2− | 0.5− | 2001 11 10 | 704 | 1.1+ | 0.3+ | 2005 08 04 | 644 | 0.0 | 0.3+ |
| 2001 06 24 | 691 | 0.1− | 0.3+ | 2001 11 10 | 704 | 1.1+ | 0.2− | 2006 10 02 | 704 | (0.3+ | 1.9+) |
| 2001 06 24 | 691 | 0.2− | 0.2+ | 2001 11 10 | 704 | 0.1+ | 0.3− | 2006 10 02 | 704 | 0.9+ | 1.5+ |
| 2001 06 24 | 691 | 0.0 | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.8+ | 2006 10 02 | 704 | 0.4+ | 0.0 |
| 2001 06 30 | 608 | 0.1+ | 0.4− | 2002 12 11 | 704 | 0.1− | 0.8+ | 2006 10 02 | 704 | 0.2+ | 0.5+ |
| 2001 06 30 | 608 | 0.1− | 0.3− | 2002 12 11 | 704 | (2.0+ | 0.6−) | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2001 06 30 | 608 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.4+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 07 17 | 608 | 0.2+ | 0.6+ | 2002 12 30 | 704 | 0.9− | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 07 17 | 608 | 0.3+ | 0.6+ | 2002 12 30 | 704 | 1.2− | 1.2+ | 2006 10 23 | 703 | 0.5− | 0.6− |
| 2001 07 17 | 608 | 0.1+ | 0.9+ | 2002 12 30 | 704 | (1.4− | 1.6+) | 2006 10 23 | 703 | 0.3− | 0.2− |
| 2001 07 19 | 691 | 0.1− | 0.1− | 2002 12 30 | 704 | 0.8− | 0.7+ | 2006 10 23 | 703 | 0.1− | 0.5− |
| 2001 07 19 | 691 | 0.2− | 0.1− | 2003 01 05 | 704 | 0.6+ | 0.4+ | 2006 10 23 | 703 | 0.1− | 0.8− |
| 2001 07 19 | 691 | 0.2− | 0.1− | 2003 01 05 | 704 | 1.1+ | 0.6+ | 2006 10 29 | 703 | 0.0 | 0.2+ |
| 2001 07 23 | 608 | (1.0− | 1.7−) | 2003 01 05 | 704 | 0.5+ | 0.7+ | 2006 10 29 | 703 | 0.8− | 0.4+ |
| 2001 07 23 | 608 | 0.4− | 1.3− | 2003 01 05 | 704 | 0.0 | 0.9+ | 2006 10 29 | 703 | 0.2+ | 0.1+ |
| 2001 07 23 | 608 | 0.8− | 0.9− | 2003 01 05 | 704 | 0.4+ | 0.3+ | 2006 10 29 | 703 | 0.1− | 0.2+ |
| 2001 08 19 | 704 | 0.1+ | 0.3+ | 2003 01 08 | 704 | 0.4− | 1.1− | 2006 11 16 | 703 | 0.3+ | 0.4− |
| 2001 08 19 | 704 | 0.6− | 0.7+ | 2003 01 08 | 704 | 0.5+ | 0.5− | 2006 11 16 | 703 | 0.4+ | 0.3− |
| 2001 08 19 | 704 | 0.3− | 0.2− | 2003 01 08 | 704 | 0.9+ | 0.1+ | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2001 08 19 | 704 | 0.8+ | 0.4− | 2003 01 08 | 704 | (1.6+ | 0.2+) | 2006 11 16 | 703 | 0.1− | 0.8− |
| 2001 08 25 | 704 | 0.5+ | 0.8+ | 2003 01 31 | 704 | 1.1+ | 0.1+ | 2006 11 21 | 703 | (2.1+ | 1.6+) |
| 2001 08 25 | 704 | 0.5− | 0.4+ | 2003 01 31 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 703 | 0.5− | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 0.9+ | 2003 01 31 | 704 | 0.2− | 0.3− | 2006 11 21 | 703 | 0.2+ | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 1.2+ | 2003 01 31 | 704 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.2+ | 1.1+ |
| 2001 09 20 | 644 | 0.1+ | 0.0 | 2004 03 14 | 644 | 0.8+ | 0.8+ | 2006 11 29 | 704 | 0.2− | 1.0+ |
| 2001 09 20 | 644 | 0.2+ | 0.2+ | 2004 03 14 | 644 | 0.8+ | 0.6+ | 2006 11 29 | 704 | 0.9− | 0.4+ |
| 2001 09 20 | 644 | 0.2+ | 0.2− | 2004 03 14 | 644 | 0.8+ | 0.6+ | 2006 11 29 | 704 | (1.3− | 2.2+) |
| 2001 10 14 | 704 | 0.7− | 0.1+ | 2004 03 17 | 704 | 0.8+ | 0.8+ | 2006 11 29 | 704 | 0.0 | 1.0+ |

**(139416)∗ 2001 OL$_{18}$ = 2005 JU$_{20}$**

Discovered 2001 July 17 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 75010)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.24016 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21884526 | $\omega$ | 171.01845 | | +0.69260835 | | +0.71327161 |
| $a$ | 2.7271642 | $\Omega$ | 142.69962 | | −0.67231245 | | +0.69230809 |
| $e$ | 0.2103805 | $i$ | 10.20956 | | −0.26132289 | | +0.10933036 |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 608 | 1.1+ | 0.4− | 2004 02 12 | 691 | 0.1+ | 0.4+ | 2005 06 23 | 644 | 0.6+ | 0.6+ |
| 2001 07 17 | 608 | 0.6+ | 0.2− | 2004 02 12 | 691 | 0.4+ | 0.5+ | 2005 06 23 | 644 | 0.8+ | 0.1+ |
| 2001 07 17 | 608 | 0.6+ | 0.4− | 2004 02 12 | 691 | 0.2+ | 0.5+ | 2005 06 23 | 644 | 0.6+ | 0.2+ |
| 2001 07 23 | 608 | 0.7− | 0.9+ | 2005 04 12 | 699 | 0.1− | 0.6+ | 2006 09 26 | 703 | 1.1− | 0.0 |
| 2001 07 23 | 608 | 0.6− | 1.4+ | 2005 04 12 | 699 | 0.4− | 0.2− | 2006 09 26 | 703 | 1.3− | 0.6+ |
| 2001 07 23 | 608 | 0.6− | 1.1+ | 2005 04 12 | 699 | 0.6− | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 2001 07 23 | 608 | 1.0− | 1.2+ | 2005 04 12 | 699 | 1.5− | 0.1− | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2001 07 23 | 608 | 1.2− | 1.2+ | 2005 05 04 | 703 | 0.6+ | 0.1+ | 2006 09 29 | 699 | 0.7− | 1.2+ |
| 2001 07 23 | 608 | 0.9− | 1.1+ | 2005 05 04 | 703 | (0.0 | 1.6+) | 2006 09 29 | 699 | 1.0+ | 0.5− |
| 2001 08 11 | 704 | 0.6+ | 0.4+ | 2005 05 04 | 703 | 0.5+ | 0.8+ | 2006 09 29 | 699 | (1.1+ | 1.7+) |
| 2001 08 11 | 704 | (1.7+ | 0.0 ) | 2005 05 04 | 703 | 0.1− | 0.7+ | 2006 09 29 | 699 | 0.6+ | 0.4+ |
| 2001 08 11 | 704 | 0.8+ | 0.4+ | 2005 05 06 | 704 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 08 19 | 704 | (0.5− | 1.9−) | 2005 05 06 | 704 | 0.4+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 08 19 | 704 | 0.3+ | 0.6+ | 2005 05 06 | 704 | 1.1+ | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 08 19 | 704 | 0.5+ | 0.0 | 2005 05 06 | 704 | 1.1+ | 0.3− | 2006 10 17 | 703 | (0.6+ | 1.6−) |
| 2001 08 19 | 704 | 0.1+ | 0.7− | 2005 05 11 | 703 | 0.9− | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.7− |
| 2001 08 24 | 704 | 0.1+ | 0.4+ | 2005 05 11 | 703 | 0.3− | 0.1− | 2006 10 17 | 703 | (2.1+ | 2.3+) |
| 2001 08 24 | 704 | 0.3− | 0.4− | 2005 05 11 | 703 | 1.1− | 0.2− | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 08 24 | 704 | 0.0 | 0.2− | 2005 05 11 | 703 | 1.1− | 0.6− | 2006 10 22 | 703 | 0.6+ | 0.6+ |
| 2001 08 24 | 704 | 0.6− | 0.3− | 2005 05 20 | 644 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.6+ |
| 2001 08 24 | 608 | (1.0+ | 2.0−) | 2005 05 20 | 644 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2001 08 24 | 608 | 0.3+ | 0.9− | 2005 05 20 | 644 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.8+ |
| 2001 08 24 | 608 | 0.5+ | 0.6− | 2005 05 31 | 703 | 0.5+ | 1.3− | 2006 10 28 | 703 | 0.1− | 1.2+ |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | 2005 05 31 | 703 | 0.0 | 0.8− | 2006 10 28 | 703 | 0.6+ | 0.1− |
| 2004 01 30 | 691 | 0.2− | 0.2+ | 2005 05 31 | 703 | 0.6− | 0.3− | 2006 10 28 | 703 | 1.0− | 0.0 |
| 2004 01 30 | 691 | 0.1− | 0.3+ | 2005 05 31 | 703 | 1.0− | 0.4+ | 2006 10 28 | 703 | 0.9− | 0.2− |

**(139417)∗ 2001 ON$_{18}$**

Discovered 2001 July 17 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.19846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24253536 | $\omega$ | 103.94018 | | +0.16021622 | | +0.98705847 |
| $a$ | 2.5465527 | $\Omega$ | 175.26343 | | −0.93447603 | | +0.15389531 |
| $e$ | 0.1602352 | $i$ | 4.72870 | | −0.31793916 | | +0.04507562 |
| $P$ | 4.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.4+ | 0.1+ | 2001 08 11 | 608 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 2000 03 03 | 704 | 0.8+ | 0.3+ | 2001 08 11 | 608 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.5+ | 1.3+ | 2001 08 11 | 608 | 0.5+ | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2000 04 06 | 691 | 0.5− | 0.8− | 2004 02 12 | 691 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2000 04 06 | 691 | 0.6− | 0.4− | 2004 02 12 | 691 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2000 04 06 | 691 | 0.2− | 0.6− | 2004 02 12 | 691 | 0.2− | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2001 07 17 | 608 | 0.7+ | 0.6+ | 2004 03 20 | 691 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.3− | 0.1− |
| 2001 07 17 | 608 | 0.3+ | 0.0 | 2004 03 20 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.4− | 0.1+ |
| 2001 07 17 | 608 | 0.7+ | 0.1− | 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2001 07 17 | 608 | 0.5+ | 0.9+ | 2004 05 09 | 291 | 0.4+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 07 17 | 608 | 0.3− | 0.2+ | 2004 05 09 | 291 | 0.4+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2001 07 17 | 608 | 0.5+ | 0.2− | 2004 05 09 | 291 | 0.5+ | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2001 07 23 | 608 | 0.8− | 0.1− | 2005 06 09 | 691 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2001 07 23 | 608 | 0.8− | 0.0 | 2005 06 09 | 691 | 0.2− | 0.4+ | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2001 07 23 | 608 | 0.9− | 0.4− | 2005 06 09 | 691 | 0.0 | 0.4+ | | | | |

**(139418)∗ 2001 OM$_{20}$**

Discovered 2001 July 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.40373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20988458 | $\omega$ | 22.03050 | | +0.06741703 | +0.97542819 | |
| $a$ | 2.8042434 | $\Omega$ | 252.33875 | | −0.94509861 | −0.00494082 | |
| $e$ | 0.2510724 | $i$ | 12.71635 | | −0.31975546 | +0.22026219 | |
| $P$ | 4.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 699 | (0.6− | 1.7+) | 2001 10 06 | 644 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.9− | 1.5− |
| 2001 07 21 | 699 | 0.2+ | 0.7+ | 2004 01 28 | 645 | 0.0 | 0.2+ | 2006 09 17 | 703 | 1.2+ | 1.1− |
| 2001 07 21 | 699 | 0.4− | 0.1+ | 2004 01 28 | 645 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.5− | 0.7− |
| 2001 07 21 | 699 | 0.2+ | 0.1+ | 2005 05 04 | 644 | 0.3+ | 0.6+ | 2006 09 28 | 703 | 0.3+ | 0.4+ |
| 2001 07 22 | 699 | (1.7+ | 1.9+) | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 09 28 | 703 | 0.6+ | 1.4− |
| 2001 07 22 | 699 | 0.1− | 0.7+ | 2005 05 04 | 644 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2001 07 22 | 699 | 0.1+ | 0.7+ | 2005 05 09 | E12 | 0.6− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2001 07 22 | 699 | 0.1+ | 0.8+ | 2005 05 09 | E12 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 08 01 | 644 | 0.5− | 0.5+ | 2005 05 09 | E12 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 08 01 | 644 | 0.4− | 0.5+ | 2005 05 09 | E12 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 08 01 | 644 | 0.5− | 0.6+ | 2005 05 11 | 644 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 08 18 | 699 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2001 08 18 | 699 | 1.1− | 0.7− | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.4− |
| 2001 08 18 | 699 | 0.1− | 0.8+ | 2005 05 12 | 644 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.4− | 0.5+ |
| 2001 08 18 | 699 | 0.2− | 0.8− | 2005 05 12 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 08 18 | 699 | 0.2− | 0.8+ | 2005 05 12 | 644 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2001 08 18 | 699 | 0.6− | 0.3− | 2005 05 16 | 644 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2001 08 18 | 699 | 0.3− | 1.3+ | 2005 05 16 | 644 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.4− | 0.6+ |
| 2001 08 18 | 699 | 0.7+ | 1.1− | 2005 05 16 | 644 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2001 08 24 | 699 | 0.3+ | 0.5+ | 2005 06 02 | 699 | 1.1+ | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2001 08 24 | 699 | 0.7+ | 0.2+ | 2005 06 02 | 699 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.8+ |
| 2001 08 24 | 699 | 0.3+ | 0.2+ | 2005 06 02 | 699 | 1.0− | 1.0− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2001 08 24 | 699 | 0.4+ | 0.8+ | 2005 06 02 | 699 | 0.3+ | 1.3+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2001 10 06 | 644 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.6+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2001 10 06 | 644 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.6− | 0.5− | | | | |

**(139419)∗ 2001 OR$_{20}$**

Discovered 2001 July 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.70603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21943933 | $\omega$ | 60.78522 | | +0.62477257 | +0.75297045 | |
| $a$ | 2.7222399 | $\Omega$ | 249.37514 | | −0.77086750 | +0.55273954 | |
| $e$ | 0.1914539 | $i$ | 12.75470 | | −0.12418750 | +0.35709173 | |
| $P$ | 4.49 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 699 | 0.1+ | 0.8+ | 2001 09 10 | 704 | 0.1− | 0.9− | 2006 08 29 | 703 | 0.1− | 0.2− |
| 2000 05 04 | 699 | 1.1− | 0.4− | 2001 09 10 | 704 | 0.2− | 1.0− | 2006 08 29 | 703 | 0.5+ | 0.1+ |
| 2000 05 04 | 699 | 1.1+ | 0.5+ | 2001 09 18 | 645 | 0.1− | 0.4− | 2006 08 29 | 703 | 0.4+ | 1.0+ |
| 2000 05 04 | 699 | 0.4+ | 0.0 | 2001 09 18 | 645 | 0.1− | 0.4− | 2006 08 29 | 703 | 1.0+ | 1.0+ |
| 2001 06 06 | 644 | 0.0 | 1.2+ | 2001 09 21 | 699 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.3− |
| 2001 06 06 | 644 | 0.2+ | 1.3+ | 2001 09 21 | 699 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2001 06 06 | 644 | 0.1+ | 0.5+ | 2001 09 21 | 699 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.5− |
| 2001 06 30 | 699 | 0.8− | 0.9+ | 2001 09 21 | 699 | 0.6− | 0.3− | 2006 10 27 | 703 | 0.6− | 0.2− |
| 2001 06 30 | 699 | 0.2+ | 0.7+ | 2001 10 17 | 704 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.1+ | 0.2+ |
| 2001 06 30 | 699 | 0.8+ | 0.2+ | 2001 10 17 | 704 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.4− | 0.4− |
| 2001 06 30 | 699 | 0.1+ | 0.2− | 2001 10 17 | 704 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.2+ |
| 2001 07 16 | 704 | 0.0 | 0.9− | 2001 10 17 | 704 | 0.7− | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.1+ |
| 2001 07 16 | 704 | 0.3− | 0.3− | 2001 10 17 | 704 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2001 07 16 | 704 | 0.5+ | 0.4+ | 2001 10 19 | 608 | 0.7− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 07 21 | 699 | 0.7− | 0.3− | 2001 10 19 | 608 | 0.6− | 0.2+ | 2006 11 02 | 703 | 0.4+ | 0.5− |
| 2001 07 21 | 699 | 0.4− | 0.1− | 2001 10 19 | 608 | 0.3− | 0.2− | 2006 11 02 | 703 | 0.2+ | 1.4+ |
| 2001 07 21 | 699 | 0.7− | 0.1− | 2001 10 20 | 699 | 0.3+ | 0.2+ | 2006 11 02 | 703 | 0.2+ | 0.0 |
| 2001 07 21 | 699 | 0.4+ | 0.7+ | 2001 10 20 | 699 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.7− |
| 2001 07 22 | 699 | 1.1− | 0.4− | 2001 10 20 | 699 | 0.6+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 07 22 | 699 | 0.3− | 0.3− | 2001 10 20 | 699 | 0.9+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 07 22 | 699 | 0.3− | 0.3+ | 2005 05 20 | 644 | 0.0 | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 07 22 | 699 | 0.3− | 0.1+ | 2005 05 20 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2001 08 12 | 596 | (1.7− | 0.8−) | 2005 05 20 | 644 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.4+ | 0.5+ |
| 2001 08 12 | 596 | (1.5− | 0.1+) | 2005 06 04 | 704 | 0.3− | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2001 08 18 | 699 | 0.1− | 1.1+ | 2005 06 04 | 704 | 0.1+ | 0.9+ | 2006 11 14 | 703 | 0.1− | 0.2+ |
| 2001 08 18 | 699 | 0.3+ | 1.4+ | 2005 06 04 | 704 | 1.0+ | 0.4− | 2006 11 14 | 703 | 0.7− | 0.7+ |
| 2001 08 18 | 699 | 0.2+ | 0.9+ | 2005 06 04 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 703 | 0.3+ | 0.2− |
| 2001 08 18 | 699 | 0.0 | 0.7+ | 2005 06 13 | 599 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.6+ |
| 2001 08 21 | 704 | (0.6− | 1.9−) | 2005 06 13 | 599 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2001 08 21 | 704 | 0.8+ | 0.8− | 2005 06 13 | 599 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 08 21 | 704 | (0.2+ | 1.8−) | 2005 06 14 | 599 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 08 21 | 704 | 0.3− | 0.7− | 2005 07 04 | 704 | 0.0 | 0.9+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 08 26 | 699 | 0.6+ | 0.7+ | 2005 07 04 | 704 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.9− | 0.2− |
| 2001 08 26 | 699 | 0.1+ | 0.2+ | 2005 07 04 | 704 | 0.7− | 1.0+ | 2006 11 15 | 704 | 0.2+ | 0.1+ |
| 2001 08 26 | 699 | 0.0 | 0.1− | 2005 07 04 | 704 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.2− | 0.4+ |
| 2001 08 26 | 699 | 0.0 | 0.2+ | 2005 07 05 | A13 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.8− | 1.1+ |
| 2001 08 26 | 608 | 1.0+ | 0.3+ | 2005 07 05 | A13 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.8− | 0.1− |
| 2001 08 26 | 608 | 0.7+ | 0.8+ | 2005 07 05 | A13 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2001 08 26 | 608 | 0.3+ | 0.7+ | 2005 07 07 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 704 | 0.9− | 0.5+ |
| 2001 08 26 | 608 | 1.1+ | 1.0+ | 2005 07 07 | 704 | 0.0 | 0.9+ | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2001 08 26 | 608 | 0.9+ | 1.4+ | 2005 07 07 | 704 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2001 08 26 | 608 | 0.7+ | 1.1+ | 2005 07 12 | G96 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2001 08 26 | 608 | 1.2+ | 0.8+ | 2005 07 12 | G96 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 2001 08 26 | 608 | 1.1+ | 1.2+ | 2005 07 12 | G96 | 0.6− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2001 08 26 | 608 | 0.9+ | 1.0+ | 2005 07 12 | G96 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.4− |
| 2001 09 08 | 699 | 0.6+ | 1.1+ | 2005 07 12 | 703 | 0.8− | 0.3− | 2006 11 22 | 704 | 0.5− | 1.0+ |
| 2001 09 08 | 699 | 0.1+ | 0.0 | 2005 07 12 | 703 | 0.6− | 0.5− | 2006 11 22 | 704 | 0.9− | 0.3+ |
| 2001 09 08 | 699 | 0.7+ | 0.6+ | 2005 07 12 | 703 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2001 09 08 | 699 | 0.1− | 0.0 | 2005 07 12 | 703 | 1.0− | 0.6− | 2006 12 01 | 704 | 1.1− | 0.4− |
| 2001 09 10 | 704 | 0.0 | 1.1− | 2005 08 22 | 644 | 0.0 | 0.2+ | 2006 12 01 | 704 | 0.0 | 1.0+ |
| 2001 09 10 | 704 | 0.2− | 0.8− | 2005 08 22 | 644 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.8+ | 0.7+ |
| 2001 09 10 | 704 | 0.0 | 0.9− | 2005 08 22 | 644 | 0.4+ | 0.3− | | | | |

**(139420)∗ 2001 OF$_{26}$ = 1992 EQ$_{34}$ = 1992 EA$_{37}$ = 2002 SZ$_{55}$**

Discovered 2001 July 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37677)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.49788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23546839 | $\omega$ | 89.23133 | | −0.12006170 | +0.99234376 | |
| $a$ | 2.5972533 | $\Omega$ | 173.65017 | | −0.98275391 | −0.11466678 | |
| $e$ | 0.0895140 | $i$ | 15.18312 | | −0.14064119 | −0.04588454 | |
| $P$ | 4.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | (2.3− | 2.6+) | 2005 04 18 | 704 | 1.4+ | 0.9+ | 2006 09 17 | 704 | 0.2+ | 0.1+ |
| 1992 03 06 | 809 | (0.3− | 2.4+) | 2005 04 18 | 704 | 0.6+ | 0.6+ | 2006 09 17 | 704 | 0.7+ | 0.3+ |
| 2001 05 23 | 704 | 0.4− | 0.7+ | 2005 05 04 | 703 | 0.8− | 0.8− | 2006 09 17 | 704 | 0.9+ | 0.3+ |
| 2001 05 23 | 704 | 0.1+ | 0.6+ | 2005 05 04 | 703 | 0.6− | 0.3− | 2006 09 17 | 704 | (1.9+ | 0.5+) |
| 2001 05 23 | 704 | 0.1− | 1.3+ | 2005 05 04 | 703 | 0.6− | 0.7− | 2006 09 17 | 704 | 0.1+ | 0.2+ |
| 2001 07 09 | 644 | 0.4+ | 0.5− | 2005 05 04 | 703 | 0.1+ | 0.6− | 2006 09 17 | 704 | 0.4+ | 0.5+ |
| 2001 07 09 | 644 | 0.3+ | 0.4− | 2005 05 06 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.6− | 0.7+ |
| 2001 07 09 | 644 | 0.6+ | 0.3− | 2005 05 06 | 704 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.0 |
| 2001 07 17 | 644 | 0.5− | 0.1+ | 2005 05 06 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | 1.2+ | 0.5+ |
| 2001 07 17 | 644 | 0.0 | 0.1− | 2005 05 11 | 703 | 0.8− | 0.3− | 2006 09 19 | 699 | 1.2+ | 0.5+ |
| 2001 07 17 | 644 | 0.4− | 0.4+ | 2005 05 11 | 703 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.4− | 0.3+ |
| 2001 07 24 | 644 | (0.1− | 2.4−) | 2005 05 11 | 703 | 0.7− | 0.3− | 2006 09 20 | 704 | 1.2− | 0.2+ |
| 2001 07 24 | 644 | (0.3− | 2.3−) | 2005 05 11 | 703 | 1.1− | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.2+ |
| 2001 07 24 | 644 | (0.1+ | 3.1−) | 2005 05 13 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.1− |
| 2002 09 30 | 704 | 0.2− | 0.9+ | 2005 05 13 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.3+ | 0.3+ |
| 2002 09 30 | 704 | 0.5− | 0.1+ | 2005 05 13 | 704 | 0.8+ | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.1− |
| 2002 09 30 | 704 | 0.4+ | 0.6− | 2005 05 13 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.4− |
| 2002 09 30 | 704 | 0.8+ | 0.8+ | 2005 05 13 | 704 | 0.6+ | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.3− |
| 2002 09 30 | 704 | 0.7− | 0.1− | 2005 06 01 | 704 | 0.5+ | 0.1+ | 2006 09 24 | 106 | 0.0 | 0.7− |
| 2002 10 02 | 608 | 0.3+ | 0.6+ | 2005 06 01 | 704 | 0.3+ | 0.5− | 2006 09 24 | 106 | 0.1− | 0.8− |
| 2002 10 02 | 608 | 0.2+ | 0.5+ | 2005 06 01 | 704 | 0.0 | 0.7− | 2006 09 24 | 106 | 0.2− | 0.7− |
| 2002 10 02 | 608 | 0.2+ | 0.2+ | 2005 06 01 | 704 | 1.1+ | 0.7+ | 2006 09 24 | 106 | 0.3− | 0.8− |
| 2002 10 04 | 704 | 1.0− | 0.1+ | 2005 06 01 | 704 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.1− |
| 2002 10 04 | 704 | 0.9− | 0.7+ | 2005 06 07 | 703 | 0.7− | 0.8− | 2006 09 25 | 699 | 0.7+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | (1.3− | 1.5+) | 2005 06 07 | 703 | 1.0− | 0.5− | 2006 09 25 | 699 | 0.1− | 0.5+ | | |
| 2002 10 04 | 645 | 0.1+ | 0.1− | 2005 06 07 | 703 | 1.4− | 0.8− | 2006 09 25 | 699 | 0.4+ | 0.2+ | | |
| 2002 10 04 | 645 | 0.1+ | 0.1− | 2005 06 07 | 703 | 0.2− | 0.9− | 2006 09 26 | 704 | 1.0− | 0.3+ | | |
| 2002 10 07 | 644 | 0.5− | 0.3+ | 2005 07 01 | 699 | (1.7− | 0.9−) | 2006 09 26 | 704 | 1.1− | 0.2+ | | |
| 2002 10 07 | 644 | 0.2− | 0.3+ | 2005 07 01 | 699 | (0.5+ | 1.6+) | 2006 09 26 | 704 | 0.4− | 0.0 | | |
| 2002 10 07 | 644 | 0.2− | 0.2+ | 2005 07 01 | 699 | (1.7+ | 0.5+) | 2006 09 26 | 704 | 0.9− | 0.3− | | |
| 2002 10 15 | 644 | 0.4− | 0.4+ | 2005 07 01 | 699 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.3+ | 1.0− | | |
| 2002 10 15 | 644 | 0.4− | 0.7+ | 2006 08 19 | 691 | 0.7− | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.5− | | |
| 2002 10 15 | 644 | 0.4− | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.1− | | |
| 2002 11 06 | 644 | 0.1− | 0.8+ | 2006 08 19 | 691 | 0.5− | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.9− | | |
| 2002 11 06 | 644 | 0.1+ | 0.9+ | 2006 08 21 | 704 | 0.8+ | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.4− | | |
| 2002 11 06 | 644 | 0.2− | 0.8+ | 2006 08 21 | 704 | 1.3+ | 0.0 | 2006 09 28 | 704 | 0.5+ | 1.3+ | | |
| 2005 04 04 | 703 | 0.1− | 1.2+ | 2006 08 21 | 704 | 0.2+ | 0.8− | 2006 09 28 | 704 | 0.5− | 0.3− | | |
| 2005 04 04 | 703 | 0.7+ | 1.0− | 2006 08 25 | 704 | 0.4+ | 0.4− | 2006 09 28 | 704 | 0.1− | 0.8+ | | |
| 2005 04 04 | 703 | 0.4+ | 0.8− | 2006 08 25 | 704 | (0.8− | 1.8+) | 2006 09 30 | 703 | 0.3− | 0.4− | | |
| 2005 04 04 | 703 | 0.3− | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.7− | | |
| 2005 04 07 | 699 | 0.7+ | 0.2− | 2006 08 25 | 704 | 0.7− | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.5+ | | |
| 2005 04 07 | 699 | 0.1− | 0.5− | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.8− | | |
| 2005 04 07 | 699 | 0.3+ | 0.2− | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.5− | 0.2− | | |
| 2005 04 07 | 699 | 0.3+ | 0.6+ | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.1+ | | |
| 2005 04 09 | 704 | 0.6+ | 0.4+ | 2006 09 13 | 644 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.6+ | 0.2+ | | |
| 2005 04 09 | 704 | 0.7+ | 0.2− | 2006 09 13 | 644 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.7− | 0.3− | | |
| 2005 04 09 | 704 | 0.4+ | 0.1+ | 2006 09 13 | 644 | 0.4+ | 0.8− | 2006 10 16 | 703 | 0.0 | 0.1+ | | |
| 2005 04 09 | 704 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.3− | | |
| 2005 04 09 | 704 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.9+ | | |
| 2005 04 12 | 699 | (2.0− | 0.6−) | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3− | | |
| 2005 04 12 | 699 | 0.6− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2005 04 12 | 699 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2+ | | |
| 2005 04 12 | 699 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2005 04 18 | 704 | 0.1+ | 0.9+ | 2006 09 17 | 704 | (1.3+ | 4.5+) | 2006 10 22 | 644 | 0.1+ | 0.3− | | |
| 2005 04 18 | 704 | 0.7− | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.4+ | 0.2+ | | |
| 2005 04 18 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 704 | 0.1+ | 1.0+ | | | | | | |

**(139421)∗ 2001 OA$_{27}$**

Discovered 2001 July 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.66212 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23117147 | $\omega$ | 53.42322 | | +0.96403023 | −0.23542317 | |
| $a$ | 2.6293389 | $\Omega$ | 319.77585 | | +0.13810242 | +0.84027001 | |
| $e$ | 0.1863615 | $i$ | 11.01405 | | +0.22709786 | +0.48838739 | |
| $P$ | 4.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 691 | 0.1+ | 1.0− | 2001 08 06 | 644 | 0.4+ | 0.2+ | 2003 01 10 | 704 | 0.1− | 1.4+ | | |
| 1999 04 09 | 691 | 0.3+ | 0.4− | 2002 12 05 | 704 | 0.9− | 0.5+ | 2003 02 01 | 704 | 0.3− | 1.2+ | | |
| 1999 04 09 | 691 | 0.1+ | 0.3− | 2002 12 05 | 704 | 0.1− | 0.8+ | 2003 02 01 | 704 | (0.7+ | 1.6+) | | |
| 2001 06 20 | 644 | 0.8+ | 0.8+ | 2002 12 05 | 704 | 0.7− | 1.0+ | 2003 02 01 | 704 | 0.3+ | 0.5+ | | |
| 2001 06 20 | 644 | 0.6+ | 1.0+ | 2002 12 05 | 704 | 0.3− | 1.0+ | 2004 03 14 | 644 | 0.0 | 0.2+ | | |
| 2001 06 20 | 644 | 0.6+ | 0.9+ | 2002 12 15 | 704 | 0.5− | 0.1+ | 2004 03 14 | 644 | 0.3+ | 1.1+ | | |
| 2001 06 30 | 644 | 1.1− | 0.4− | 2002 12 15 | 704 | 0.3+ | 1.1+ | 2004 03 14 | 644 | 0.1− | 1.0+ | | |
| 2001 06 30 | 644 | 0.9− | 0.0 | 2002 12 15 | 704 | 0.4− | 0.7+ | 2006 10 16 | 704 | 1.0+ | 0.1− | | |
| 2001 06 30 | 644 | 1.0− | 0.7− | 2002 12 15 | 704 | 0.9− | 0.6+ | 2006 10 16 | 704 | 0.1+ | 0.9− | | |
| 2001 07 18 | 644 | 0.1+ | 0.9+ | 2002 12 15 | 704 | 0.5− | 0.2+ | 2006 10 16 | 704 | 0.7+ | 0.7− | | |
| 2001 07 18 | 644 | 0.2+ | 0.6+ | 2003 01 04 | 704 | 0.2− | 0.4− | 2006 10 16 | 704 | 1.1+ | 0.3+ | | |
| 2001 07 18 | 644 | 0.1− | 0.6+ | 2003 01 04 | 704 | 1.3+ | 1.1− | 2006 10 16 | 704 | 0.3+ | 0.8+ | | |
| 2001 07 24 | 644 | 0.4− | 0.5− | 2003 01 04 | 704 | 0.3− | 0.9− | 2006 10 23 | 703 | 0.0 | 0.0 | | |
| 2001 07 24 | 644 | 0.4− | 0.4− | 2003 01 04 | 704 | 1.0− | 1.1− | 2006 10 23 | 703 | 0.4− | 0.9− | | |
| 2001 07 24 | 644 | 0.4− | 0.6− | 2003 01 05 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 703 | 0.4− | 0.1+ | | |
| 2001 07 30 | 644 | 0.3− | 0.0 | 2003 01 05 | 704 | 0.6+ | 0.7+ | 2006 10 23 | 703 | 0.3− | 0.0 | | |
| 2001 07 30 | 644 | 0.0 | 0.2+ | 2003 01 05 | 704 | 0.2+ | 1.0+ | 2006 11 20 | 703 | 0.0 | 0.5− | | |
| 2001 07 30 | 644 | 0.5− | 0.1+ | 2003 01 10 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 703 | 0.3+ | 0.2− | | |
| 2001 08 06 | 644 | 0.4+ | 0.4+ | 2003 01 10 | 704 | 0.6+ | 1.0+ | 2006 11 20 | 703 | 0.3+ | 0.3+ | | |
| 2001 08 06 | 644 | 0.5+ | 0.5+ | 2003 01 10 | 704 | (1.5+ | 1.7+) | 2006 11 20 | 703 | 0.3− | 0.2− | | |

**(139422)∗ 2001 OJ$_{28}$ = 2003 BX$_{55}$**

Discovered 2001 July 18 by NEAT at Palomar.

Id. M. E. Sansaturio (*MPO* 42951)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.28362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23516120 | $\omega$ | 334.31823 | | +0.76859899 | −0.63482261 | |
| $a$ | 2.5995146 | $\Omega$ | 65.31947 | | +0.60092568 | +0.67403232 | |
| $e$ | 0.2344245 | $i$ | 4.99366 | | +0.21941725 | +0.37773097 | |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 644 | 0.2− | 0.7+ | 2003 01 28 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2001 07 18 | 644 | 0.1+ | 1.5+ | 2003 01 30 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.3+ | | |
| 2001 07 18 | 644 | (0.7+ | 1.7+) | 2003 01 30 | 699 | 0.7− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.0 | | |
| 2001 07 24 | 644 | 0.2− | 0.4+ | 2003 01 30 | 699 | (0.1+ | 1.8+) | 2006 10 22 | G96 | 0.2− | 0.1− | | |
| 2001 07 24 | 644 | 0.1− | 0.7+ | 2003 01 30 | 699 | 0.6− | 1.0+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2001 07 24 | 644 | 0.1− | 0.4+ | 2003 02 01 | 704 | 0.2+ | 0.8− | 2006 10 22 | G96 | 0.3+ | 0.6− | | |
| 2001 07 25 | 608 | 0.1− | 0.4− | 2003 02 01 | 704 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.1+ | | |
| 2001 07 25 | 608 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.2− | 0.5− | 2006 10 29 | G96 | 0.4+ | 0.1+ | | |
| 2001 07 25 | 608 | 0.6− | 0.7− | 2003 02 01 | 704 | 0.1+ | 1.1− | 2006 10 29 | G96 | 0.4+ | 0.2+ | | |
| 2001 09 11 | 704 | 0.5+ | 0.1− | 2003 02 01 | 704 | (0.4+ | 1.8−) | 2006 10 29 | G96 | 0.2+ | 0.4+ | | |
| 2001 09 11 | 704 | 0.2− | 1.2+ | 2003 02 04 | 704 | 0.4− | 0.4+ | 2006 11 02 | G96 | 0.7− | 0.2− | | |
| 2001 09 11 | 704 | (0.1− | 1.7+) | 2003 02 04 | 704 | 0.4+ | 0.9+ | 2006 11 02 | G96 | 0.1− | 0.6− | | |
| 2002 12 31 | 704 | (0.2− | 2.7+) | 2003 02 04 | 704 | 0.1+ | 0.2+ | 2006 11 02 | G96 | 0.2− | 0.2− | | |
| 2002 12 31 | 704 | (1.3− | 2.1+) | 2003 02 04 | 704 | 0.5+ | 0.8+ | 2006 11 02 | G96 | 0.2− | 0.4− | | |
| 2002 12 31 | 704 | 0.7+ | 0.6+ | 2003 02 04 | 704 | (1.1+ | 1.9+) | 2006 11 17 | 644 | 0.0 | 0.5+ | | |
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2004 04 12 | 644 | 0.1+ | 0.1− | 2006 11 17 | 644 | 0.1− | 0.5+ | | |
| 2003 01 05 | 704 | 0.1+ | 0.7− | 2004 04 12 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.4+ | | |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2004 04 12 | 644 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.2− | | |
| 2003 01 05 | 704 | 0.3− | 0.9+ | 2004 04 24 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.1+ | | |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2004 04 24 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1+ | | |
| 2003 01 28 | 644 | 0.1+ | 0.6+ | 2004 04 24 | 691 | 0.0 | 0.3− | 2006 11 22 | G96 | 0.2− | 0.2− | | |
| 2003 01 28 | 644 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.4− | 0.2− | | | | | | |

**(139423)∗ 2001 OQ$_{32}$**

Discovered 2001 July 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.56473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24193802 | $\omega$ | 277.05005 | | +0.98637334 | +0.09691467 | |
| $a$ | 2.5507426 | $\Omega$ | 77.45268 | | −0.03228179 | +0.90638482 | |
| $e$ | 0.2021763 | $i$ | 7.82807 | | −0.16132427 | +0.41118622 | |
| $P$ | 4.07 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 644 | 0.5− | 0.4+ | 2002 12 11 | 704 | 0.2− | 0.7− | 2004 03 23 | 704 | 0.2− | 0.3− | | |
| 2001 05 24 | 644 | 0.4− | 0.5+ | 2002 12 11 | 704 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.3− | 0.4+ | | |
| 2001 05 24 | 644 | 0.2− | 0.7+ | 2002 12 11 | 704 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.4− | 0.4+ | | |
| 2001 06 26 | 644 | 0.7+ | 0.1− | 2002 12 11 | 704 | 0.8− | 0.5− | 2004 03 23 | 704 | 0.4− | 0.0 | | |
| 2001 06 26 | 644 | 0.3+ | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.5+ | 2004 03 28 | 703 | (2.1− | 0.0 | ) | |
| 2001 06 26 | 644 | 0.6+ | 0.3− | 2003 01 05 | 704 | 0.4+ | 0.5+ | 2004 03 28 | 703 | 1.0+ | 0.5+ | | |
| 2001 07 19 | 644 | 0.6+ | 0.3+ | 2003 01 05 | 704 | 0.4+ | 0.4+ | 2004 03 28 | 703 | 0.7+ | 1.1− | | |
| 2001 07 19 | 644 | 0.5+ | 0.5+ | 2003 01 05 | 704 | 0.3+ | 0.4+ | 2004 03 28 | 703 | 0.3+ | 0.6+ | | |
| 2001 07 19 | 644 | 0.6+ | 0.5+ | 2003 01 05 | 704 | 0.4+ | 0.4+ | 2005 06 11 | 704 | 0.3− | 0.0 | | |
| 2001 07 25 | 644 | 0.8− | 1.2− | 2003 01 09 | 704 | 0.5− | 0.0 | 2005 06 11 | 704 | 0.2+ | 0.2− | | |
| 2001 07 25 | 644 | 1.2− | 1.1− | 2003 01 09 | 704 | 0.8− | 0.3+ | 2005 06 11 | 704 | 0.4+ | 0.1+ | | |
| 2001 07 25 | 644 | 1.3− | 1.2− | 2003 01 09 | 704 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.4+ | 0.1− | | |
| 2001 07 30 | 644 | 0.4+ | 0.0 | 2003 01 09 | 704 | 0.1− | 0.7+ | 2006 09 28 | 691 | 0.3+ | 0.0 | | |
| 2001 07 30 | 644 | 0.3+ | 0.1+ | 2003 01 09 | 704 | 0.3− | 0.8+ | 2006 09 28 | 691 | 0.3+ | 0.1− | | |
| 2001 07 30 | 644 | 0.2+ | 0.2+ | 2003 01 09 | 704 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.3− | | |
| 2001 08 06 | 644 | 0.3− | 0.5+ | 2003 01 09 | 704 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.1− | 0.4− | | |
| 2001 08 06 | 644 | 0.1+ | 0.4+ | 2003 01 09 | 704 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.4− | | |
| 2001 08 06 | 644 | 0.2+ | 0.1+ | 2003 01 09 | 704 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2001 08 17 | 644 | 0.2− | 0.8+ | 2003 01 13 | 704 | 0.5+ | 0.5− | 2006 11 21 | 704 | 0.5− | 0.2− | | |
| 2001 08 17 | 644 | 0.2− | 0.8+ | 2003 01 13 | 704 | 0.5+ | 0.9− | 2006 11 21 | 704 | 1.5− | 1.2+ | | |
| 2001 08 17 | 644 | 0.0 | 0.5+ | 2003 01 13 | 704 | 0.6+ | 1.4− | 2006 11 21 | 704 | 1.1− | 1.6+ | | |
| 2001 09 10 | 644 | (1.8+ | 1.0−) | 2003 01 13 | 704 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.1− | 1.9+ | | |
| 2001 09 10 | 644 | (1.9+ | 0.8−) | 2003 01 13 | 704 | 0.3− | 0.2− | | | | | | |
| 2001 09 10 | 644 | (1.8+ | 1.0−) | 2004 03 23 | 704 | 0.1− | 0.1+ | | | | | | |

**(139424)∗ 2001 OU$_{33}$ = 2002 XG$_{80}$**

Discovered 2001 July 19 by NEAT at Palomar.

Id. A. Doppler (*MPO* 40185)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.42442 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23454635 | $\omega$ | 26.10423 | | +0.31331813 | | −0.94661584 |
| $a$ | 2.6040557 | $\Omega$ | 45.74330 | | +0.85170548 | | +0.24478808 |
| $e$ | 0.1801047 | $i$ | 6.07760 | | +0.42003514 | | +0.20975520 |
| $P$ | 4.20 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.9− | 0.2− | 2003 03 06 | 704 | 0.5+ | 0.0 | 2006 11 15 | 704 | (1.9+ | 0.8−) |
| 2001 07 19 | 644 | 1.0− | 0.3− | 2003 03 07 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 704 | (1.4+ | 1.5−) |
| 2001 07 19 | 644 | 0.6− | 0.1+ | 2003 03 07 | 644 | 0.0 | 0.1− | 2006 11 15 | 704 | (2.1+ | 1.4−) |
| 2001 07 25 | 644 | 0.1+ | 0.1+ | 2003 03 07 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2001 07 25 | 644 | 0.1− | 0.6+ | 2004 04 30 | 608 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2001 07 25 | 644 | 0.1− | 0.6+ | 2004 04 30 | 608 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 08 27 | 644 | 0.8+ | 0.2+ | 2004 04 30 | 608 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2001 08 27 | 644 | 0.5+ | 0.6+ | 2005 09 01 | 644 | 0.1− | 0.4+ | 2006 11 15 | 291 | 0.9− | 0.3+ |
| 2001 08 27 | 644 | 1.0+ | 0.1+ | 2005 09 01 | 644 | 0.0 | 0.6+ | 2006 11 15 | 291 | 0.7− | 0.3+ |
| 2002 11 12 | 704 | 0.5+ | 1.2+ | 2005 09 01 | 644 | 0.3+ | 0.3+ | 2006 11 15 | 291 | 1.1− | 0.2+ |
| 2002 11 12 | 704 | 0.4+ | 1.1+ | 2006 08 29 | 703 | 0.4− | 0.5− | 2006 11 16 | 704 | (0.7− | 4.0+) |
| 2002 11 12 | 704 | 0.6+ | 1.4+ | 2006 08 29 | 703 | 1.2− | 0.8− | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2002 11 12 | 704 | (0.2− | 1.6+) | 2006 08 29 | 703 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.8+ |
| 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.9− | 1.4− | 2006 11 16 | 704 | 0.6− | 0.7+ |
| 2002 12 11 | 704 | 0.5+ | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.3− | 1.2+ |
| 2002 12 11 | 704 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 16 | 704 | (0.3− | 2.1+) |
| 2002 12 11 | 704 | 0.6+ | 1.0+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 16 | 704 | 0.2− | 1.2+ |
| 2002 12 14 | 704 | 0.9− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.8+ |
| 2002 12 14 | 704 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.6− | 0.8+ |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.5+ | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.9− | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2003 01 07 | 300 | 0.1+ | 0.8− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.7− |
| 2003 01 07 | 300 | 0.2− | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.5− |
| 2003 01 08 | 300 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2003 01 08 | 300 | (2.9− | 2.1+) | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.3− |
| 2003 01 08 | 300 | 1.0− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2003 01 12 | 644 | 0.3− | 0.0 | 2006 10 28 | 704 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2003 01 12 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 0.3+ | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2003 01 12 | 644 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2003 01 13 | 644 | 0.1− | 0.6− | 2006 10 28 | 704 | 0.6+ | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2003 01 13 | 704 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2003 01 13 | 704 | 0.4− | 0.4− | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 11 22 | 704 | 0.1− | 0.7− |
| 2003 01 13 | 704 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.6− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2003 01 13 | 704 | 0.5+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.5− |
| 2003 01 13 | 644 | 0.0 | 0.4− | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.1− | 0.4+ |
| 2003 01 13 | 704 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 27 | 704 | 0.9+ | 0.7+ |
| 2003 01 13 | 644 | 0.7+ | 0.6− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 27 | 704 | 0.5+ | 0.2− |
| 2003 02 01 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 691 | (1.8− | 0.3+) | 2006 11 27 | 704 | 0.4+ | 0.1− |
| 2003 02 01 | 704 | 0.4+ | 0.3− | 2006 11 14 | 691 | (2.5− | 0.3−) | 2006 11 28 | 704 | 0.0 | 0.1+ |
| 2003 02 01 | 704 | 0.6+ | 0.6+ | 2006 11 14 | 691 | (5.3− | 0.6−) | 2006 11 28 | 704 | 0.4+ | 0.7− |
| 2003 02 01 | 704 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.0 |
| 2003 02 01 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.3+ |
| 2003 03 06 | 704 | 0.0 | 0.9− | 2006 11 14 | 703 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.4− |
| 2003 03 06 | 704 | 0.7− | 0.3− | 2006 11 14 | 703 | 1.1+ | 0.0 | | | | |
| 2003 03 06 | 704 | 0.2− | 0.2+ | 2006 11 15 | 704 | (3.5+ | 2.2+) | | | | |

**(139425)∗ 2001 OE$_{34}$ = 2000 DF$_{4}$**

Discovered 2001 July 19 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 15875)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.11442 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23809087 | $\omega$ | 201.23435 | | −0.70622366 | | +0.70715119 |
| $a$ | 2.5781463 | $\Omega$ | 23.88014 | | −0.63669953 | | −0.61309445 |
| $e$ | 0.1818594 | $i$ | 4.87868 | | −0.30961566 | | −0.35221072 |
| $P$ | 4.14 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 1.0+ | 0.9+ | 2001 07 19 | 644 | 0.4− | 0.7+ | 2006 09 26 | G96 | 0.3− | 0.9− |
| 2000 02 03 | 704 | 0.7− | 0.3+ | 2001 07 19 | 644 | 0.5− | 0.6+ | 2006 09 26 | G96 | 0.9− | 0.6− |
| 2000 02 03 | 704 | 0.2− | 0.7+ | 2001 07 19 | 644 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.8− |
| 2000 02 03 | 704 | 0.1+ | 0.7+ | 2001 07 25 | 644 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.7− |
| 2000 02 03 | 704 | 0.2+ | 1.2+ | 2001 07 25 | 644 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.4− | 0.3+ |
| 2000 02 28 | 704 | 0.5+ | 0.7+ | 2001 07 25 | 644 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.5+ |
| 2000 02 28 | 704 | 0.3− | 1.0+ | 2001 08 09 | 644 | (1.3+ | 2.1+) | 2006 10 16 | 691 | 0.3− | 0.1+ |
| 2000 02 28 | 704 | 0.4+ | 1.0+ | 2001 08 09 | 644 | 1.4+ | 1.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2000 02 28 | 704 | 0.0 | 0.4+ | 2001 08 09 | 644 | (1.2+ | 1.6+) | 2006 10 20 | 691 | 0.5− | 0.1+ |
| 2000 02 28 | 704 | 0.6− | 1.1+ | 2001 08 13 | 608 | 0.7− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 1.2+ | 0.3− | 2001 08 13 | 608 | 0.1+ | 0.7− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2000 02 29 | 704 | 0.9+ | 0.8+ | 2001 08 13 | 608 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2000 02 29 | 704 | 0.1− | 1.1+ | 2004 01 30 | 704 | (0.1+ | 1.6+) | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2000 02 29 | 704 | 1.3+ | 0.6+ | 2004 01 30 | 704 | 0.1− | 0.8− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2000 02 29 | 704 | 1.3+ | 0.8+ | 2004 01 30 | 704 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2000 03 04 | 704 | 0.0 | 0.7+ | 2004 02 13 | 699 | 0.5− | 0.4− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2000 03 04 | 704 | 0.1− | 0.5+ | 2004 02 13 | 699 | 0.1+ | 1.0+ | 2006 10 29 | 691 | 0.1− | 0.1− |
| 2000 03 04 | 704 | 0.7+ | 0.5+ | 2004 02 13 | 699 | 1.2+ | 0.6− | 2006 11 17 | 691 | 0.6+ | 0.2+ |
| 2000 03 04 | 704 | 0.9− | 0.3+ | 2004 02 13 | 699 | 1.0− | 0.4+ | 2006 11 17 | 691 | 0.5+ | 0.1+ |
| 2000 03 04 | 704 | 0.5+ | 0.3− | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.5+ | 0.3+ |
| 2000 03 04 | 704 | 0.3+ | 0.7+ | 2004 02 17 | 645 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2000 03 04 | 704 | 0.2+ | 0.7+ | 2005 07 29 | E12 | 0.4+ | 1.0+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2000 03 04 | 704 | 0.0 | 0.5+ | 2005 07 29 | E12 | 0.4+ | 0.5− | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 2000 03 04 | 704 | 0.3− | 0.1− | 2005 07 29 | E12 | 1.0− | 0.9+ | | | | |
| 2000 03 04 | 704 | 0.4+ | 0.3+ | 2005 07 29 | E12 | 0.4− | 0.3+ | | | | |

**(139426)∗ 2001 OM$_{34}$**

Discovered 2001 July 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.56467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22623756 | $\omega$ | 333.68495 | | +0.85690658 | | +0.51504371 |
| $a$ | 2.6674293 | $\Omega$ | 355.15557 | | −0.41813950 | | +0.67070018 |
| $e$ | 0.1241234 | $i$ | 14.40004 | | −0.30144729 | | +0.53375205 |
| $P$ | 4.36 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 1.0+ | 0.3− | 2001 09 11 | 704 | 0.4− | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2000 03 27 | 699 | 0.6+ | 0.8+ | 2001 09 11 | 704 | 0.5− | 0.3− | 2006 09 28 | 703 | 0.7− | 0.2+ |
| 2000 03 27 | 699 | 0.1+ | 0.7+ | 2001 09 21 | 644 | 0.4+ | 0.6+ | 2006 09 28 | 703 | 0.1− | 1.3+ |
| 2000 03 27 | 699 | 0.2+ | 0.6+ | 2001 09 21 | 644 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.9+ |
| 2000 04 03 | 699 | 0.7+ | 1.3+ | 2001 09 21 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2000 04 03 | 699 | 0.1+ | 0.4+ | 2002 12 07 | 704 | 0.5− | 1.3+ | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2000 04 03 | 699 | 0.0 | 1.0+ | 2002 12 07 | 704 | 0.3+ | 0.9+ | 2006 10 19 | 644 | 0.5+ | 0.1− |
| 2000 04 03 | 699 | 0.9+ | 1.1− | 2002 12 07 | 704 | 0.6− | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 04 07 | 704 | 1.2+ | 1.4+ | 2004 02 15 | 703 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 04 07 | 704 | 0.6+ | 0.6+ | 2004 02 15 | 703 | (1.0+ | 1.7−) | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 04 07 | 704 | 0.1+ | 1.4− | 2004 02 15 | 703 | 1.3− | 0.2− | 2006 10 29 | 703 | 0.3− | 1.0− |
| 2001 07 19 | 644 | 0.4+ | 0.1+ | 2004 02 15 | 703 | (0.5− | 1.8+) | 2006 10 29 | 703 | 0.5+ | 0.1− |
| 2001 07 19 | 644 | 0.4+ | 0.1− | 2004 02 23 | 704 | 0.1− | 0.2− | 2006 10 29 | 703 | 0.1− | 0.3+ |
| 2001 07 19 | 644 | 0.5+ | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.7− | 2006 10 29 | 703 | 0.4− | 0.5− |
| 2001 07 25 | 644 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.5+ | 0.2− | 2006 11 15 | 703 | 0.1− | 0.4+ |
| 2001 07 25 | 644 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.7− | 0.1+ |
| 2001 07 25 | 644 | 0.1− | 0.4+ | 2004 02 23 | 704 | 1.1− | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.0 |
| 2001 08 09 | 644 | 1.1− | 0.5+ | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.5+ |
| 2001 08 09 | 644 | 1.1− | 0.1+ | 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2001 08 09 | 644 | 0.9− | 0.1+ | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.4− | 0.4− |
| 2001 08 21 | 644 | 0.2+ | 0.1− | 2004 03 19 | 704 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.6− |
| 2001 08 21 | 644 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.5+ | 0.5− | 2006 11 16 | 703 | 0.6+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 644 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 11 21 | 703 | 1.0+ | 0.5+ |
| 2001 08 21 | 644 | 0.3− | 0.2− | 2006 09 19 | 703 | 1.0+ | 0.0 | 2006 11 21 | 703 | 0.3+ | 0.4+ |
| 2001 08 21 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 1.0− | 0.2+ | 2006 11 21 | 703 | 0.4+ | 1.3+ |
| 2001 08 21 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.6− | 0.0 | | | | |
| 2001 09 11 | 704 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.1− | | | | |

**(139427)∗ 2001 OW$_{35}$**

Discovered 2001 July 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.84043 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22664545 | $\omega$ | 24.21904 | | +0.98542042 | −0.16275870 | |
| $a$ | 2.6642280 | $\Omega$ | 344.89620 | | +0.10767851 | +0.82215134 | |
| $e$ | 0.1288850 | $i$ | 10.96443 | | +0.13172672 | +0.54550599 | |
| $P$ | 4.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 07 | 691 | 0.1+ | 0.0 | 2001 08 19 | 704 | 0.1+ | 1.0− | 2003 01 10 | 704 | (1.5− | 2.7+) |
| 1997 10 07 | 691 | 0.6− | 0.1+ | 2001 08 19 | 704 | 1.0+ | 0.5− | 2003 01 13 | 704 | 0.7+ | 0.7+ |
| 1997 10 07 | 691 | 0.1− | 0.3− | 2001 08 26 | 608 | 0.7− | 0.8+ | 2003 01 13 | 704 | 1.3+ | 0.3+ |
| 1997 10 08 | 691 | 1.7+ | 0.9+ | 2001 08 26 | 608 | 0.3− | 0.7+ | 2003 01 13 | 704 | 1.1+ | 0.5− |
| 1997 10 08 | 691 | 0.6− | 0.0 | 2001 08 26 | 608 | 0.2− | 0.7+ | 2003 01 13 | 704 | 0.2− | 0.1− |
| 1997 10 08 | 691 | 0.9− | 0.0 | 2001 08 26 | 608 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 07 21 | 608 | 0.1− | 0.4+ | 2001 08 26 | 608 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2001 07 21 | 608 | 0.5− | 0.1− | 2001 08 26 | 608 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 07 21 | 608 | 0.1+ | 0.2+ | 2001 09 11 | 704 | 0.4+ | 0.9− | 2006 10 23 | 703 | 0.4+ | 0.1+ |
| 2001 07 25 | 644 | 0.3+ | 0.7− | 2001 09 11 | 704 | 0.1− | 0.6− | 2006 10 23 | 703 | 0.1+ | 0.4− |
| 2001 07 25 | 644 | 0.3− | 0.6− | 2001 09 11 | 704 | 1.2− | 0.6− | 2006 10 23 | 703 | 0.0 | 0.0 |
| 2001 07 25 | 644 | 0.3− | 0.8− | 2002 12 12 | 644 | 0.5− | 0.7+ | 2006 10 23 | 703 | 0.1− | 0.4− |
| 2001 07 27 | 608 | 0.3+ | 0.4+ | 2002 12 12 | 644 | 0.4− | 0.6+ | 2006 10 29 | 703 | 0.5− | 0.1− |
| 2001 07 27 | 608 | 0.4+ | 0.9+ | 2002 12 12 | 644 | 0.2− | 0.6+ | 2006 10 29 | 703 | 0.7− | 0.1− |
| 2001 07 27 | 608 | 0.4+ | 1.2+ | 2002 12 15 | 704 | (2.2− | 0.7−) | 2006 10 29 | 703 | 0.4+ | 0.5− |
| 2001 07 28 | 699 | 0.6+ | 1.1+ | 2002 12 15 | 704 | 0.2− | 1.2+ | 2006 10 29 | 703 | 0.1+ | 0.2− |
| 2001 07 28 | 699 | 0.5− | 0.7+ | 2002 12 15 | 704 | 0.3− | 0.4+ | 2006 11 21 | 703 | 1.3+ | 1.4− |
| 2001 07 28 | 699 | 0.9− | 0.3+ | 2002 12 15 | 704 | 0.6− | 0.1+ | 2006 11 21 | 703 | 0.4+ | 0.2− |
| 2001 07 28 | 699 | (1.9− | 0.9+) | 2003 01 10 | 704 | (1.8− | 1.5+) | 2006 11 21 | 703 | 0.1− | 0.4− |
| 2001 08 19 | 704 | (2.1+ | 0.8+) | 2003 01 10 | 704 | (1.7− | 2.2+) | 2006 11 21 | 703 | 0.1− | 0.4− |
| 2001 08 19 | 704 | 1.2+ | 1.4− | 2003 01 10 | 704 | (2.0− | 3.1+) | | | | |

**(139428)∗ 2001 OO$_{38}$ = 2002 VZ$_{127}$**

Discovered 2001 July 20 by NEAT at Palomar.

Id. A. Doppler (*MPO* 40186)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.11301 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23420123 | $\omega$ | 54.76180 | | +0.16400937 | −0.98164897 | |
| $a$ | 2.6066132 | $\Omega$ | 26.31096 | | +0.81866998 | +0.08042322 | |
| $e$ | 0.2571568 | $i$ | 12.68004 | | +0.55034570 | +0.17290869 | |
| $P$ | 4.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 07 | 699 | 1.1+ | 0.7+ | 2002 12 15 | 704 | 0.6+ | 0.2+ | 2003 03 25 | 704 | 0.2− | 0.6+ |
| 1999 04 07 | 699 | 0.9− | 0.1− | 2002 12 15 | 704 | 0.5+ | 0.7+ | 2003 03 25 | 704 | 1.0+ | 0.3− |
| 1999 04 07 | 699 | 0.1+ | 0.1− | 2002 12 15 | 704 | 0.5+ | 0.3+ | 2003 04 04 | 704 | 0.4− | 0.5+ |
| 2001 07 20 | 644 | 0.6− | 0.4+ | 2003 01 11 | 704 | 0.1+ | 0.4+ | 2003 04 04 | 704 | 0.4− | 1.2+ |
| 2001 07 20 | 644 | 0.5− | 0.7+ | 2003 01 11 | 704 | 0.3+ | 0.4+ | 2003 04 04 | 704 | 0.6− | 0.5+ |
| 2001 07 20 | 644 | 0.6− | 0.2− | 2003 01 11 | 704 | 0.0 | 0.2+ | 2003 04 04 | 704 | 0.0 | 0.1− |
| 2001 07 26 | 644 | 0.4− | 0.6+ | 2003 01 11 | 704 | 0.4− | 1.0+ | 2003 04 04 | 704 | 0.9+ | 0.5+ |
| 2001 07 26 | 644 | 0.1+ | 0.7+ | 2003 01 13 | 704 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.5+ |
| 2001 07 26 | 644 | 0.1− | 0.8+ | 2003 01 13 | 704 | 0.1− | 0.1+ | 2006 08 29 | 703 | (2.1− | 0.2−) |
| 2001 08 27 | 644 | 0.3+ | 1.1+ | 2003 01 13 | 704 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.8+ | 0.4− |
| 2001 08 27 | 644 | 0.0 | 0.7+ | 2003 01 13 | 704 | 0.0 | 0.6− | 2006 08 29 | 703 | 0.1+ | 0.1− |
| 2001 08 27 | 644 | 1.2− | 1.0+ | 2003 01 13 | 704 | 0.1+ | 0.2− | 2006 09 18 | 704 | 0.9+ | 0.8− |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2003 01 25 | 704 | 0.2+ | 0.4− | 2006 09 18 | 704 | 0.2+ | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.3− | 2003 01 25 | 704 | 0.1− | 0.3+ | 2006 09 18 | 704 | 0.6− | 0.2+ |
| 2002 11 15 | 704 | 0.5− | 1.1+ | 2003 01 25 | 704 | 0.1− | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.6+ |
| 2002 11 15 | 704 | 1.4− | 1.4+ | 2003 01 25 | 704 | 0.0 | 0.3+ | 2006 09 18 | 704 | 0.1− | 0.5+ |
| 2002 11 15 | 704 | 0.3− | 1.0+ | 2003 01 25 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.6+ |
| 2002 11 15 | 704 | (0.7+ | 1.6+) | 2003 02 06 | 699 | 0.3− | 0.6+ | 2006 09 25 | 704 | 1.3+ | 0.3+ |
| 2002 11 15 | 704 | 0.6− | 0.5+ | 2003 02 06 | 699 | 0.4− | 0.6+ | 2006 09 25 | 704 | 0.5− | 0.0 |
| 2002 11 16 | 699 | 0.3− | 1.1+ | 2003 02 06 | 699 | 0.3− | 0.5+ | 2006 09 25 | 704 | 0.9+ | 0.1− |
| 2002 11 16 | 699 | 0.1+ | 0.6+ | 2003 02 06 | 699 | 0.1+ | 0.6+ | 2006 09 25 | 704 | (0.1+ | 1.7+) |
| 2002 11 16 | 699 | 0.4+ | 0.5+ | 2003 02 25 | 704 | 0.9− | 0.3− | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2002 11 16 | 699 | 0.2+ | 0.0 | 2003 02 25 | 704 | 0.1− | 0.8− | 2006 09 29 | 704 | 0.1+ | 0.5+ |
| 2002 12 04 | 704 | 0.6+ | 0.4+ | 2003 02 25 | 704 | 0.4− | 0.3− | 2006 09 29 | 704 | 1.0+ | 0.6+ |
| 2002 12 04 | 704 | 0.1− | 0.2+ | 2003 02 25 | 704 | 0.0 | 0.1+ | 2006 11 13 | 704 | 0.1+ | 0.6− |
| 2002 12 04 | 704 | 0.1+ | 0.9− | 2003 03 08 | 644 | 0.3+ | 0.6− | 2006 11 13 | 704 | 0.0 | 0.6− |
| 2002 12 04 | 704 | 0.4+ | 0.2+ | 2003 03 08 | 644 | 0.3+ | 0.5− | 2006 11 13 | 704 | 2.8− | 0.2+ |
| 2002 12 04 | 704 | 0.2+ | 0.2+ | 2003 03 08 | 644 | 0.4+ | 0.5− | 2006 11 13 | 704 | 0.0 | 0.1− |
| 2002 12 15 | 704 | 0.5+ | 0.2+ | 2003 03 25 | 704 | 0.5+ | 0.4+ | 2006 11 13 | 704 | 0.2− | 0.2− |
| 2002 12 15 | 704 | 0.7+ | 0.6+ | 2003 03 25 | 704 | 0.1+ | 0.4+ | | | | |

**(139429)∗ 2001 OH$_{40}$**

Discovered 2001 July 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.23598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23904599 | $\omega$ | 316.52917 | | +0.35753615 | −0.90636058 | |
| $a$ | 2.5712743 | $\Omega$ | 111.35158 | | +0.90929013 | +0.28287713 | |
| $e$ | 0.2366123 | $i$ | 13.98740 | | +0.21297739 | +0.31383280 | |
| $P$ | 4.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.8+ | 1.0+ | 2001 09 17 | 699 | 0.7− | 1.3+ | 2003 04 07 | 644 | 0.1+ | 0.0 |
| 2001 07 20 | 644 | 0.5+ | 1.3+ | 2001 09 17 | 699 | 0.5− | 0.2+ | 2003 04 10 | 644 | 0.3+ | 0.4+ |
| 2001 07 20 | 644 | 0.1+ | 1.3+ | 2001 09 17 | 699 | 0.8− | 0.4+ | 2003 04 10 | 644 | 0.1+ | 0.0 |
| 2001 07 26 | 644 | 0.3− | 0.9+ | 2003 03 08 | 704 | 0.0 | 0.5+ | 2003 04 10 | 644 | 0.2+ | 0.5+ |
| 2001 07 26 | 644 | 0.2− | 0.5+ | 2003 03 08 | 704 | 0.5− | 1.1+ | 2004 06 13 | 691 | 0.1+ | 0.0 |
| 2001 07 26 | 644 | 0.0 | 0.4+ | 2003 03 08 | 704 | 0.3+ | 1.2+ | 2004 06 13 | 691 | 0.0 | 0.1− |
| 2001 08 19 | 704 | 0.8+ | 1.1+ | 2003 03 08 | 704 | 0.3− | 0.7+ | 2004 06 13 | 691 | 0.3− | 0.1+ |
| 2001 08 19 | 704 | 0.0 | 0.9+ | 2003 03 08 | 704 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.5+ | 0.5+ |
| 2001 08 19 | 704 | 0.4+ | 0.6+ | 2003 03 08 | 704 | 0.9+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 2001 08 19 | 704 | 0.5+ | 1.1+ | 2003 03 08 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 691 | 0.4+ | 0.2+ |
| 2001 08 26 | 644 | 0.4− | 0.4+ | 2003 03 08 | 704 | 0.7+ | 0.5+ | 2006 10 27 | G96 | (1.7− | 0.4−) |
| 2001 08 26 | 644 | 0.2− | 0.3+ | 2003 03 08 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3+ |
| 2001 08 26 | 644 | 0.2− | 0.2− | 2003 03 08 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4− | 0.5− |
| 2001 09 11 | 704 | 0.0 | 0.0 | 2003 03 08 | 644 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.7− | 0.0 |
| 2001 09 11 | 704 | 0.1+ | 0.1− | 2003 03 22 | 644 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2001 09 11 | 704 | 0.1+ | 0.7− | 2003 03 22 | 644 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.5− | 0.1+ |
| 2001 09 11 | 704 | 1.0− | 1.1− | 2003 03 22 | 644 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 1.0− | 0.4− |
| 2001 09 11 | 704 | (0.2+ | 1.9−) | 2003 04 07 | 644 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.2+ |
| 2001 09 17 | 699 | 1.2− | 0.6− | 2003 04 07 | 644 | 0.4+ | 0.1+ | | | | |

**(139430)∗ 2001 OA$_{45}$ = 2000 EP$_{185}$**

Discovered 2001 July 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. T. B. Spahr (*MPO* 14987)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.22710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23564455 | $\omega$ | 152.41745 | | +0.54194397 | +0.83114719 | |
| $a$ | 2.5959587 | $\Omega$ | 149.90463 | | −0.80953727 | +0.55605097 | |
| $e$ | 0.1551524 | $i$ | 14.37168 | | −0.22571254 | +0.00129023 | |
| $P$ | 4.18 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 608 | 0.1− | 0.3− | 2001 08 17 | 704 | 0.5− | 0.2− | 2004 01 23 | 699 | 0.5+ | 0.5+ |
| 2000 03 05 | 608 | 0.0 | 0.2− | 2001 08 17 | 704 | 0.4− | 0.5+ | 2004 02 11 | 644 | 0.2− | 0.5+ |
| 2000 03 05 | 608 | 0.2+ | 0.2− | 2001 08 17 | 704 | 0.6− | 0.1− | 2004 02 11 | 644 | 0.1+ | 0.4+ |
| 2000 03 12 | 704 | 1.0+ | 0.2− | 2001 08 19 | 704 | 0.5+ | 0.3+ | 2004 02 11 | 644 | 0.1+ | 0.8+ |
| 2000 03 12 | 704 | 0.5− | 1.4+ | 2001 08 19 | 704 | 0.7− | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.1+ |
| 2000 03 12 | 704 | 1.3+ | 0.2+ | 2001 08 19 | 704 | 0.0 | 0.3− | 2004 02 16 | 691 | 0.0 | 0.2+ |
| 2000 03 12 | 704 | 0.1+ | 1.5+ | 2001 08 19 | 704 | 0.6+ | 0.4− | 2004 02 16 | 691 | 0.1− | 0.1+ |
| 2000 03 12 | 704 | 1.1− | 1.5+ | 2001 08 19 | 704 | 0.0 | 0.3+ | 2004 02 18 | 608 | 0.3+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.4− | 0.6+ | 2001 08 24 | 699 | 0.0 | 0.6+ | 2004 02 18 | 608 | 0.4+ | 0.2− |
| 2000 04 08 | 704 | 0.2− | 1.2+ | 2001 08 24 | 704 | 0.5− | 0.8+ | 2004 02 18 | 608 | 0.4+ | 0.5− |
| 2000 04 08 | 704 | 0.2+ | 0.4+ | 2001 08 24 | 704 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.9+ | 0.2+ |
| 2000 04 08 | 704 | 0.4− | 0.3− | 2001 08 24 | 699 | 0.2− | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.6+ |
| 2000 04 08 | 704 | 1.6+ | 0.5− | 2001 08 24 | 704 | 0.0 | 0.7+ | 2004 02 23 | 704 | 0.1+ | 0.5+ |
| 2001 05 29 | 704 | 0.3+ | 0.4− | 2001 08 24 | 699 | 0.2+ | 0.4+ | 2004 02 23 | 704 | 0.2+ | 0.4+ |
| 2001 05 29 | 704 | 0.2+ | 0.5+ | 2001 08 24 | 704 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.6+ | 0.7+ |
| 2001 05 29 | 704 | 0.1+ | 0.2− | 2001 08 24 | 704 | 0.2+ | 0.4+ | 2004 03 10 | 644 | 0.1− | 0.1+ |
| 2001 05 29 | 704 | 0.5+ | 0.6+ | 2001 08 24 | 699 | 0.1− | 0.3+ | 2004 03 10 | 644 | 0.1− | 0.2+ |
| 2001 05 29 | 704 | 0.1− | 0.8+ | 2001 08 28 | 644 | 0.0 | 0.7+ | 2004 03 10 | 644 | 0.1− | 0.3+ |
| 2001 06 15 | 704 | 0.7− | 0.7− | 2001 08 28 | 644 | 0.4+ | 0.2+ | 2004 03 15 | 704 | 0.4+ | 0.1− |
| 2001 06 15 | 704 | 0.3− | 0.5+ | 2001 08 28 | 644 | 0.1− | 0.7+ | 2004 03 15 | 703 | 0.3+ | 1.3+ |
| 2001 06 15 | 704 | 0.3+ | 0.1+ | 2001 08 28 | 644 | 0.6+ | 0.4+ | 2004 03 15 | 704 | 0.8− | 0.9+ |
| 2001 06 15 | 704 | 0.0 | 1.1− | 2001 08 28 | 644 | 0.3− | 0.8+ | 2004 03 15 | 704 | 1.0− | 0.9+ |
| 2001 06 29 | 704 | 0.9+ | 0.2+ | 2001 08 28 | 644 | 0.5+ | 0.4+ | 2004 03 15 | 703 | 1.1+ | 0.8+ |
| 2001 06 29 | 699 | 0.0 | 0.7+ | 2001 09 07 | 704 | 0.1− | 0.7+ | 2004 03 15 | 703 | 1.2− | 0.6+ |
| 2001 06 29 | 699 | 0.1+ | 0.6+ | 2001 09 07 | 704 | 0.2− | 0.5+ | 2004 03 15 | 703 | 0.7− | 1.1+ |
| 2001 06 29 | 699 | 0.4+ | 0.0 | 2001 09 07 | 704 | 0.1− | 1.0+ | 2006 09 19 | 703 | 0.8− | 1.0+ |
| 2001 06 29 | 699 | 0.3+ | 0.0 | 2001 09 07 | 704 | 0.3− | 0.8+ | 2006 09 19 | 703 | 0.5+ | 0.6+ |
| 2001 07 16 | 699 | 0.1+ | 0.8− | 2001 09 07 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | (2.0− | 2.0−) |
| 2001 07 16 | 699 | 0.3− | 0.3+ | 2001 09 18 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.3− | 1.0+ |
| 2001 07 16 | 699 | 0.3− | 0.7+ | 2001 09 18 | 704 | 0.2− | 0.5+ | 2006 10 20 | 703 | 1.2+ | 0.7− |
| 2001 07 16 | 699 | 0.1+ | 0.1− | 2001 09 18 | 704 | 0.1+ | 0.4− | 2006 10 20 | 703 | 0.2− | 0.2− |
| 2001 07 20 | 704 | 0.7+ | 0.4+ | 2001 09 19 | 704 | 0.3− | 0.1+ | 2006 10 20 | 703 | 0.1+ | 0.5+ |
| 2001 07 20 | 704 | 0.4+ | 0.1+ | 2001 09 19 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.3+ | 0.6+ |
| 2001 07 20 | 704 | 0.0 | 0.4+ | 2001 09 19 | 704 | 0.5+ | 0.3− | 2006 11 16 | 703 | 0.7− | 0.8+ |
| 2001 07 26 | 608 | 0.8− | 1.2+ | 2001 09 19 | 704 | 0.2− | 0.4− | 2006 11 16 | 703 | 0.5− | 0.5+ |
| 2001 07 26 | 608 | 0.8− | 1.1+ | 2001 09 19 | 704 | 0.0 | 0.5− | 2006 11 16 | 703 | 0.1+ | 1.2+ |
| 2001 07 26 | 608 | 0.7− | 1.1+ | 2001 09 21 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 703 | 0.8− | 0.7+ |
| 2001 08 02 | 608 | 0.1− | 0.0 | 2001 09 21 | 704 | 0.4− | 0.2− | 2006 11 22 | 703 | 0.5+ | 1.4+ |
| 2001 08 02 | 608 | 0.3+ | 0.2+ | 2001 09 21 | 704 | 0.1− | 0.6− | 2006 11 22 | 703 | 0.4− | 0.6+ |
| 2001 08 02 | 608 | 0.2− | 0.1− | 2001 09 21 | 704 | 0.0 | 0.5− | 2006 11 22 | 703 | 0.3− | 0.4+ |
| 2001 08 13 | 608 | 0.1− | 0.6− | 2004 01 23 | 699 | 0.7+ | 0.5− | 2006 11 22 | 703 | 0.1− | 0.5+ |
| 2001 08 13 | 608 | 0.2+ | 0.7− | 2004 01 23 | 699 | 0.8− | 0.3+ | | | | |
| 2001 08 13 | 608 | 0.4+ | 0.0 | 2004 01 23 | 699 | 0.5− | 1.0+ | | | | |

**(139431)∗ 2001 OM$_{45}$**

Discovered 2001 July 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.12835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21784106 | $\omega$ | 150.17360 | | +0.62646517 | +0.77100261 | |
| $a$ | 2.7355388 | $\Omega$ | 157.96545 | | −0.76180252 | +0.63671158 | |
| $e$ | 0.1553446 | $i$ | 17.76038 | | −0.16491910 | −0.01238305 | |
| $P$ | 4.52 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.3− | 0.2− | 2001 09 20 | 704 | 0.8− | 1.0+ | 2005 06 01 | 704 | 0.2+ | 0.5+ |
| 1996 05 11 | 691 | 0.3− | 0.2− | 2001 09 22 | 704 | (0.1− | 1.6+) | 2005 06 01 | 704 | 0.4− | 1.3+ |
| 1996 05 11 | 691 | 0.2− | 0.6− | 2001 09 22 | 704 | (1.2− | 2.3+) | 2005 06 01 | 704 | 0.4+ | 0.8+ |
| 2001 07 16 | 699 | 0.5+ | 1.4+ | 2001 09 22 | 704 | (0.1+ | 2.3+) | 2005 06 07 | 703 | 0.3− | 1.3+ |
| 2001 07 16 | 699 | 1.0+ | 0.3+ | 2001 09 22 | 704 | 0.1+ | 1.3+ | 2005 06 07 | 703 | 0.3+ | 0.2+ |
| 2001 07 16 | 699 | 0.3− | 0.7+ | 2001 09 23 | 704 | 0.2− | 1.3+ | 2005 06 07 | 703 | 0.7− | 0.5+ |
| 2001 07 16 | 699 | 0.1+ | 0.8+ | 2001 09 23 | 704 | 0.9− | 1.0+ | 2005 06 07 | 703 | 0.8− | 0.7+ |
| 2001 07 20 | 704 | 0.8− | 0.8+ | 2001 09 23 | 704 | 0.7− | 0.0 | 2005 06 27 | 699 | 0.4− | 1.0+ |
| 2001 07 20 | 704 | (1.5− | 2.1+) | 2001 09 23 | 704 | 0.5− | 0.5+ | 2005 06 27 | 699 | 0.2− | 0.1+ |
| 2001 07 20 | 704 | 0.7− | 0.8+ | 2004 02 12 | 691 | 0.3+ | 0.2+ | 2005 06 27 | 699 | 0.2− | 0.6+ |
| 2001 08 17 | 704 | 0.3+ | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2005 06 27 | 699 | (0.1− | 1.7+) |
| 2001 08 17 | 704 | 0.2− | 0.8− | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2005 07 28 | 704 | 0.9+ | 0.6+ |
| 2001 08 17 | 704 | 0.6− | 0.5+ | 2004 02 22 | 691 | 0.0 | 0.2+ | 2005 07 28 | 704 | 0.7+ | 0.6+ |
| 2001 08 24 | 699 | (1.2− | 2.2+) | 2004 02 22 | 691 | 0.1− | 0.2+ | 2005 07 28 | 704 | 0.2+ | 0.4+ |
| 2001 08 24 | 699 | 0.4− | 0.7+ | 2004 02 22 | 691 | 0.1− | 0.4+ | 2006 09 26 | 703 | (2.2+ | 2.2+) |
| 2001 08 24 | 699 | 0.1+ | 0.9+ | 2004 03 18 | 691 | 0.3+ | 0.0 | 2006 09 26 | 703 | (4.5+ | 4.5+) |
| 2001 08 24 | 699 | 0.4− | 0.9+ | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.4− | 1.3+ |
| 2001 08 24 | 704 | 0.6− | 1.4+ | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.9+ |
| 2001 08 24 | 704 | 0.2− | 0.8+ | 2004 03 27 | 691 | 0.1− | 0.1+ | 2006 10 02 | 703 | 1.0− | 0.4+ |
| 2001 08 24 | 704 | 0.5− | 0.8+ | 2004 03 27 | 691 | 0.2+ | 0.1− | 2006 10 02 | 703 | 0.6− | 0.5+ |
| 2001 09 18 | 691 | 1.0+ | 1.0− | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.3− | 1.3+ |
| 2001 09 18 | 691 | 0.9+ | 1.0− | 2005 05 03 | 691 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.3− | 0.5+ |
| 2001 09 18 | 691 | 0.8+ | 0.8− | 2005 05 03 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.6+ |
| 2001 09 19 | 691 | 0.2+ | 1.2− | 2005 05 03 | 691 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.4+ |
| 2001 09 19 | 691 | 0.4− | 0.7− | 2005 05 30 | 703 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.3− | 0.6+ |
| 2001 09 19 | 691 | 0.2+ | 0.2− | 2005 05 30 | 703 | 0.4+ | 0.5− | 2006 10 21 | 703 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.2− | 1.4+ | 2005 05 30 | 703 | 0.7− | 0.1− | 2006 10 21 | 703 | 0.9− | 0.5+ |
| 2001 09 20 | 704 | 0.3− | 1.4+ | 2005 05 30 | 703 | 1.2+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 2001 09 20 | 704 | 0.1− | 1.4+ | 2005 06 01 | 704 | 0.5+ | 0.7− | 2006 10 21 | 703 | 0.6− | 0.8+ |
| 2001 09 20 | 704 | 0.8− | 0.9+ | 2005 06 01 | 704 | 0.5+ | 0.5+ | | | | |

**(139432)∗ 2001 OS$_{45}$ = 2005 JG$_{124}$**

Discovered 2001 July 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 75014)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.76049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21448583 | $\omega$ | 225.08566 | | +0.83449401 | +0.53475106 | |
| $a$ | 2.7639932 | $\Omega$ | 102.15180 | | −0.45947950 | +0.80844275 | |
| $e$ | 0.2501017 | $i$ | 7.81303 | | −0.30413539 | +0.24588947 | |
| $P$ | 4.60 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 03 | 608 | 0.7− | 0.1− | 2001 08 16 | 704 | 0.0 | 0.5− | 2006 10 01 | 704 | 0.1+ | 0.1− |
| 2001 07 03 | 608 | 0.4− | 0.2− | 2001 08 16 | 704 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 2001 07 03 | 608 | 0.7− | 0.0 | 2001 08 16 | 704 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.2+ | 1.5+ |
| 2001 07 16 | 699 | 0.3+ | 0.1− | 2001 08 16 | 704 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2001 07 16 | 699 | 0.2− | 0.6+ | 2001 08 25 | 644 | 0.4− | 0.1− | 2006 10 17 | 703 | 1.0− | 0.3− |
| 2001 07 16 | 699 | 0.3+ | 0.2− | 2001 08 25 | 644 | 0.7− | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.1+ |
| 2001 07 16 | 699 | 0.3+ | 0.1+ | 2001 08 25 | 644 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2001 07 19 | 608 | (0.0 | 1.7−) | 2004 02 17 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 07 19 | 608 | 0.1+ | 1.2− | 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 07 19 | 608 | 0.1+ | 1.5− | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 07 25 | 608 | 0.2− | 0.4+ | 2005 03 31 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2001 07 25 | 608 | 0.4− | 0.4+ | 2005 03 31 | 691 | 0.4+ | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2001 07 25 | 608 | 0.3− | 0.4+ | 2005 03 31 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.5− | 0.1+ |
| 2001 07 25 | 608 | 0.3− | 0.5+ | 2005 05 11 | 699 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.8+ |
| 2001 07 25 | 608 | 0.2− | 0.4+ | 2005 05 11 | 699 | 0.5− | 1.3+ | 2006 10 28 | 703 | 0.2− | 0.4+ |
| 2001 07 25 | 608 | 0.3− | 0.4+ | 2005 05 11 | 699 | 0.9+ | 1.3+ | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2001 07 28 | 699 | (1.6+ | 0.5−) | 2005 05 11 | 699 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.1− | 0.7+ |
| 2001 07 28 | 699 | 0.2+ | 0.2+ | 2005 05 14 | 704 | 0.0 | 0.5+ | 2006 11 10 | 704 | 0.5+ | 0.7+ |
| 2001 07 28 | 699 | 0.1+ | 0.4+ | 2005 05 14 | 704 | 0.1− | 0.1+ | 2006 11 10 | 704 | 1.0+ | 0.6+ |
| 2001 07 28 | 699 | 0.1+ | 0.4+ | 2005 05 14 | 704 | 0.8− | 0.7+ | 2006 11 10 | 704 | 0.6+ | 0.6+ |
| 2001 08 02 | 608 | 0.5+ | 0.3− | 2006 09 26 | 704 | 0.2+ | 0.8+ | 2006 11 10 | 704 | 0.2+ | 0.7+ |
| 2001 08 02 | 608 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.6− | 0.2+ | 2006 11 10 | 704 | 1.0− | 0.8+ |
| 2001 08 02 | 608 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.9− | 0.5+ | 2006 11 16 | 703 | 0.5+ | 0.7+ |
| 2001 08 09 | 644 | 1.2+ | 0.2− | 2006 09 26 | 704 | 0.1− | 0.5− | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2001 08 09 | 644 | 1.3+ | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.5+ | 2006 11 16 | 703 | 0.2− | 0.5+ |
| 2001 08 09 | 644 | 1.0+ | 0.1− | 2006 10 01 | 704 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.4− | 0.5+ |

**(139433)∗ 2001 ON$_{47}$**

Discovered 2001 July 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.38986 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23339169 | $\omega$ | 165.78136 | | +0.59083337 | +0.79981766 | |
| $a$ | 2.6126373 | $\Omega$ | 140.28093 | | −0.75546290 | +0.59451625 | |
| $e$ | 0.1296330 | $i$ | 9.53608 | | −0.28318147 | +0.08271724 | |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 14 | 691 | 0.1− | 0.4+ | 2001 08 16 | 704 | 0.2+ | 0.3+ | 2001 09 19 | 704 | 0.3− | 0.7+ |
| 1991 02 14 | 691 | 0.5+ | 0.1− | 2001 08 16 | 704 | 0.2+ | 0.2− | 2001 09 19 | 704 | 0.1− | 0.3− |
| 1991 02 14 | 691 | 0.2− | 0.1+ | 2001 08 16 | 704 | 0.2+ | 0.3+ | 2001 09 21 | 704 | 0.2+ | 0.0 |
| 1991 02 20 | 691 | 0.0 | 0.6+ | 2001 08 18 | 704 | 0.2+ | 0.9+ | 2001 09 21 | 704 | 1.2+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 20 | 691 | 0.3− | 0.8+ | 2001 08 18 | 704 | 0.7+ | 0.3− | 2001 09 21 | 704 | 0.6− | 0.8− | | |
| 1991 02 20 | 691 | 0.3+ | 0.3+ | 2001 08 18 | 704 | 0.1− | 0.4− | 2001 09 21 | 704 | 0.4− | 0.5+ | | |
| 2001 06 03 | 608 | 0.1− | 0.7+ | 2001 08 18 | 704 | 0.0 | 0.5+ | 2004 02 15 | 703 | 0.9− | 0.0 | | |
| 2001 06 03 | 608 | 0.2+ | 1.1− | 2001 08 19 | 704 | 0.0 | 0.7+ | 2004 02 15 | 703 | 0.8− | 0.2+ | | |
| 2001 06 03 | 608 | 0.4+ | 0.3− | 2001 08 19 | 704 | 0.7+ | 0.1+ | 2004 02 15 | 703 | 0.6+ | 1.0+ | | |
| 2001 07 16 | 699 | 0.7+ | 0.2− | 2001 08 19 | 704 | 0.6+ | 0.1− | 2004 02 15 | 703 | 0.1− | 0.9+ | | |
| 2001 07 16 | 699 | 1.2+ | 0.4− | 2001 08 19 | 704 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.0 | | |
| 2001 07 16 | 699 | 0.2+ | 0.3+ | 2001 08 19 | 704 | 0.4− | 0.4− | 2004 03 20 | 704 | 0.8+ | 0.5+ | | |
| 2001 07 16 | 699 | 0.9+ | 0.5+ | 2001 08 20 | 807 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.5+ | | |
| 2001 07 20 | 704 | 1.1− | 0.6+ | 2001 08 20 | 807 | 0.2− | 0.6+ | 2004 03 26 | 703 | 0.3+ | 1.0− | | |
| 2001 07 20 | 704 | 1.0− | 0.2+ | 2001 08 21 | 807 | 0.1− | 0.2+ | 2004 03 26 | 703 | 0.7+ | 1.5+ | | |
| 2001 07 20 | 704 | 1.5− | 0.4+ | 2001 08 21 | 807 | 0.0 | 0.4+ | 2004 03 26 | 703 | 0.9+ | 1.2+ | | |
| 2001 07 27 | 699 | 0.4+ | 0.6+ | 2001 08 24 | 699 | 0.5− | 0.3+ | 2004 03 26 | 703 | 0.8+ | 1.3+ | | |
| 2001 07 27 | 699 | 0.7+ | 0.4+ | 2001 08 24 | 699 | 0.1− | 0.1+ | 2005 07 04 | 704 | (1.8− | 0.2−) | | |
| 2001 07 27 | 699 | 0.4+ | 1.3+ | 2001 08 24 | 699 | 0.2− | 0.0 | 2005 07 04 | 704 | 0.3− | 0.4+ | | |
| 2001 07 27 | 699 | 0.2+ | 0.2+ | 2001 08 24 | 699 | 0.2+ | 0.3+ | 2005 07 04 | 704 | 0.1+ | 1.2− | | |
| 2001 08 03 | 608 | 0.7− | 0.3− | 2001 08 24 | 704 | 0.5− | 0.7+ | 2005 07 07 | 704 | 0.6+ | 0.0 | | |
| 2001 08 03 | 608 | 0.3+ | 0.4− | 2001 08 24 | 704 | 0.7+ | 0.6− | 2005 07 07 | 704 | 1.2− | 0.8+ | | |
| 2001 08 03 | 608 | 0.1− | 0.0 | 2001 08 24 | 704 | 0.3− | 0.1− | 2005 07 07 | 704 | 0.7− | 0.7+ | | |
| 2001 08 10 | 608 | 0.7− | 0.4+ | 2001 09 08 | 699 | 0.6− | 0.4+ | 2005 07 07 | 704 | 0.4+ | 0.3− | | |
| 2001 08 10 | 608 | 0.9− | 0.7+ | 2001 09 08 | 699 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.5− | | |
| 2001 08 10 | 608 | 0.4− | 1.0+ | 2001 09 08 | 699 | 0.5− | 0.3− | 2006 11 13 | 703 | 1.3− | 0.1+ | | |
| 2001 08 15 | 608 | 0.3− | 0.0 | 2001 09 08 | 699 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.0 | | |
| 2001 08 15 | 608 | 0.2− | 0.2+ | 2001 09 11 | 704 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.0 | 1.0+ | | |
| 2001 08 15 | 608 | 0.1− | 0.0 | 2001 09 11 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.1+ | 0.7+ | | |
| 2001 08 15 | 608 | 0.0 | 0.0 | 2001 09 11 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.7− | 0.1− | | |
| 2001 08 15 | 608 | 0.2− | 0.2+ | 2001 09 11 | 704 | 0.2− | 0.5+ | 2006 11 19 | 703 | 0.5+ | 0.3− | | |
| 2001 08 15 | 608 | 0.3− | 0.0 | 2001 09 11 | 704 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.8+ | 0.9+ | | |
| 2001 08 16 | 704 | 0.2+ | 0.5+ | 2001 09 19 | 704 | 0.1− | 0.7+ | | | | | | |
| 2001 08 16 | 704 | 0.6+ | 0.8+ | 2001 09 19 | 704 | 0.3+ | 0.3− | | | | | | |

**(139434)∗ 2001 OL$_{48}$**

Discovered 2001 July 16 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.70760 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23189022 | $\omega$ | 153.64993 | | +0.55585629 | | −0.79914045 |
| $a$ | 2.6239029 | $\Omega$ | 261.75536 | | +0.71600769 | | +0.60016519 |
| $e$ | 0.0925179 | $i$ | 13.37346 | | +0.42232307 | | +0.03429687 |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.3− | 0.2− | 2003 01 09 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.0 | | |
| 2001 07 16 | 608 | 0.0 | 0.5− | 2003 01 09 | 704 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.2− | 0.0 | | |
| 2001 07 16 | 608 | 0.4− | 0.1+ | 2003 01 09 | 704 | (1.7− | 0.7+) | 2006 11 13 | 691 | 0.2− | 0.2− | | |
| 2001 07 20 | 699 | 0.3+ | 0.4+ | 2003 01 09 | 704 | 0.7+ | 0.3+ | 2006 11 15 | 704 | 0.1+ | 0.2− | | |
| 2001 07 20 | 699 | 0.5+ | 0.5+ | 2003 01 09 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 704 | 0.7+ | 0.9− | | |
| 2001 07 20 | 699 | 0.9− | 1.1+ | 2003 01 27 | 704 | 0.7− | 0.8− | 2006 11 15 | 704 | 0.4+ | 0.2+ | | |
| 2001 07 20 | 699 | 0.5+ | 1.0+ | 2003 01 27 | 704 | 0.1− | 1.4− | 2006 11 15 | 704 | 0.0 | 0.1− | | |
| 2001 07 30 | 644 | 0.3− | 1.0+ | 2003 01 27 | 704 | 0.2− | 0.5− | 2006 11 15 | 704 | 1.0+ | 0.9+ | | |
| 2001 07 30 | 644 | 0.3− | 0.7+ | 2004 03 17 | E12 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.2− | 0.2− | | |
| 2001 07 30 | 644 | 0.1− | 0.9+ | 2004 03 17 | E12 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.6+ | 0.1+ | | |
| 2001 08 03 | 644 | (3.2− | 1.8+) | 2004 03 17 | E12 | 0.5+ | 0.0 | 2006 11 15 | 704 | 0.2+ | 0.0 | | |
| 2001 08 03 | 644 | (3.0− | 1.9+) | 2004 03 17 | E12 | 0.5− | 0.3+ | 2006 11 15 | 704 | 0.1+ | 0.5− | | |
| 2001 08 03 | 644 | (3.2− | 1.6+) | 2004 04 16 | E12 | 0.8− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.2+ | | |
| 2001 08 14 | 644 | 0.1− | 0.5+ | 2004 04 16 | E12 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.4+ | | |
| 2001 08 14 | 644 | 0.1− | 0.5+ | 2004 04 16 | E12 | 0.6+ | 0.3− | 2006 11 16 | 704 | 0.5− | 0.4+ | | |
| 2001 08 14 | 644 | 0.0 | 0.6+ | 2004 04 16 | E12 | 0.4+ | 0.6+ | 2006 11 16 | 704 | 0.3+ | 0.3+ | | |
| 2001 08 23 | 699 | 0.2+ | 0.5+ | 2004 04 22 | E12 | 0.8− | 1.1+ | 2006 11 16 | 704 | 1.0+ | 0.1− | | |
| 2001 08 23 | 699 | (0.7+ | 1.9+) | 2004 04 22 | E12 | 0.5− | 1.4+ | 2006 11 19 | 704 | 0.6+ | 0.7+ | | |
| 2001 08 23 | 699 | 0.0 | 0.2− | 2004 04 22 | E12 | 0.2− | 1.0+ | 2006 11 19 | 704 | (1.5+ | 1.6+) | | |
| 2001 08 23 | 699 | 0.9+ | 1.3+ | 2004 04 22 | E12 | 0.7− | 1.3+ | 2006 11 19 | 704 | (1.9− | 1.2+) | | |
| 2001 10 15 | 608 | 1.0− | 0.3+ | 2004 04 25 | 704 | 0.8+ | 0.0 | 2006 11 19 | 704 | 0.0 | 1.2+ | | |
| 2001 10 15 | 608 | 1.4− | 0.1− | 2004 04 25 | 704 | 0.7+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.1− | | |
| 2001 10 15 | 608 | 0.7− | 0.2+ | 2004 04 25 | 704 | 0.0 | 0.3+ | 2006 11 22 | 704 | (1.9− | 1.2+) | | |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2004 04 25 | 704 | 0.9+ | 0.3+ | 2006 11 22 | 704 | 1.0+ | 1.4+ | | |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2004 04 25 | 704 | 0.6+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.4+ | | |
| 2002 11 06 | 704 | 0.6+ | 0.2− | 2004 04 27 | 704 | 1.3+ | 0.3+ | 2006 11 22 | 704 | (2.6+ | 1.4+) | | |
| 2002 11 06 | 704 | 1.2+ | 1.5+ | 2004 04 27 | 704 | 0.7+ | 0.3+ | 2006 11 22 | 704 | 1.2+ | 1.1+ | | |
| 2002 11 06 | 704 | (1.4+ | 2.1+) | 2004 04 27 | 704 | 0.2+ | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.1− | | |
| 2002 11 06 | 704 | 1.3− | 1.0+ | 2004 04 27 | 704 | 0.2− | 0.5+ | 2006 11 25 | 691 | 0.1+ | 0.2− | | |
| 2002 12 31 | 704 | 0.5− | 0.7+ | 2004 05 14 | 699 | 0.1+ | 0.7+ | 2006 11 25 | 691 | 0.1+ | 0.3− | | |
| 2002 12 31 | 704 | 0.5− | 0.4+ | 2004 05 14 | 699 | 1.3− | 0.2− | 2006 11 27 | 704 | 0.6− | 0.2− | | |
| 2002 12 31 | 704 | 0.3− | 0.7+ | 2004 05 14 | 699 | 0.4− | 0.9+ | 2006 11 27 | 704 | 0.1− | 0.1− | | |
| 2002 12 31 | 704 | 0.9− | 0.8+ | 2004 05 14 | 699 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.5− | 0.1+ | | |
| 2003 01 07 | 704 | 0.5+ | 0.1+ | 2005 06 27 | 644 | 0.3+ | 0.4+ | 2006 11 27 | 704 | 0.1− | 0.0 | | |
| 2003 01 07 | 704 | 1.0+ | 0.1+ | 2005 06 27 | 644 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 1.6− | 0.4+ | | |
| 2003 01 07 | 704 | 0.9+ | 0.0 | 2005 06 27 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 1.5− | 0.1− | | |
| 2003 01 07 | 704 | 0.6+ | 0.6+ | 2006 10 29 | 704 | 0.9− | 1.2+ | 2006 11 28 | 704 | 0.8+ | 0.2− | | |
| 2003 01 07 | 704 | 0.8− | 1.1+ | 2006 10 29 | 704 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 1.0− | 1.0+ | | |
| 2003 01 08 | 704 | 0.2+ | 0.6− | 2006 10 29 | 704 | 0.8+ | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.8+ | | |
| 2003 01 08 | 704 | 0.5+ | 0.1− | 2006 10 29 | 704 | 0.3− | 0.6+ | | | | | | |
| 2003 01 08 | 704 | 0.3− | 0.0 | 2006 10 29 | 704 | 0.4+ | 0.4− | | | | | | |

**(139435)∗ 2001 ON$_{51}$**

Discovered 2001 July 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.42538 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23419196 | $\omega$ | 214.29651 | | +0.45249589 | | +0.88724870 |
| $a$ | 2.6066821 | $\Omega$ | 82.75447 | | −0.79658892 | | +0.44734437 |
| $e$ | 0.0742645 | $i$ | 5.18502 | | −0.40086602 | | +0.11257333 |
| $P$ | 4.21 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 26 | 699 | 0.0 | 0.0 | 2002 12 10 | 704 | 0.9− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2000 03 26 | 699 | 0.1− | 0.7+ | 2002 12 10 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2000 03 26 | 699 | 0.3− | 0.0 | 2002 12 10 | 704 | (1.0+ | 1.6−) | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2000 03 26 | 699 | 0.0 | 0.7+ | 2002 12 11 | 704 | 0.0 | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.2− | | |
| 2001 07 16 | 699 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.4− | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2001 07 16 | 699 | 0.1+ | 0.6+ | 2002 12 11 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2001 07 16 | 699 | 0.0 | 0.3+ | 2004 03 19 | 644 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.3− | | |
| 2001 07 16 | 699 | 0.5− | 0.7− | 2004 03 19 | 644 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.0 | | |
| 2001 07 21 | 644 | 0.1− | 0.4− | 2004 03 19 | 644 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.3− | | |
| 2001 07 21 | 644 | 0.1+ | 0.5− | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2006 11 11 | 703 | 0.9− | 0.4− | | |
| 2001 07 21 | 644 | 0.5+ | 0.2− | 2004 03 20 | 704 | 1.1+ | 1.4+ | 2006 11 11 | 703 | 0.6+ | 1.3− | | |
| 2001 07 27 | 644 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (1.0− | 1.6−) | | |
| 2001 07 27 | 644 | 0.2− | 0.6+ | 2004 03 20 | 704 | 1.0+ | 0.5+ | 2006 11 13 | 644 | 0.4+ | 0.0 | | |
| 2001 07 27 | 644 | 0.8− | 0.6+ | 2006 09 30 | 703 | 1.1− | 0.9− | 2006 11 13 | 644 | 0.3+ | 0.4− | | |
| 2001 07 28 | 699 | (0.7+ | 1.8+) | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.2+ | | |
| 2001 07 28 | 699 | 0.2− | 1.0+ | 2006 09 30 | 703 | 0.5− | 0.0 | 2006 11 14 | 704 | 1.0+ | 1.3+ | | |
| 2001 07 28 | 699 | 0.3− | 0.1− | 2006 09 30 | 703 | 1.2− | 0.2− | 2006 11 14 | 704 | 0.0 | 0.6+ | | |
| 2001 07 28 | 699 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.7− | 2006 11 14 | 704 | 0.1+ | 0.8+ | | |
| 2001 08 12 | 644 | 0.4+ | 1.4+ | 2006 10 03 | G96 | 0.3− | 0.4− | 2006 11 14 | 704 | 0.8+ | 0.5+ | | |
| 2001 08 12 | 644 | 0.0 | 1.0+ | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 11 14 | 704 | 0.3− | 1.3+ | | |
| 2001 08 12 | 644 | 0.5+ | 1.4+ | 2006 10 16 | 703 | 1.1+ | 1.1− | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.6− | | |
| 2002 11 14 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2002 11 14 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.7− | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 2002 11 24 | 644 | 0.5+ | 1.2+ | 2006 10 17 | 683 | (1.8− | 2.2−) | 2006 11 17 | 704 | (0.8+ | 2.4+) | | |
| 2002 11 24 | 644 | 0.0 | 1.0+ | 2006 10 17 | 683 | 0.4+ | 0.9− | 2006 11 17 | 704 | (0.2− | 3.8+) | | |
| 2002 11 24 | 644 | 0.4+ | 1.0+ | 2006 10 17 | 683 | 0.8+ | 1.4+ | 2006 11 17 | 704 | (0.5− | 1.7+) | | |
| 2002 11 28 | 699 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | (1.5− | 0.8+) | | |
| 2002 11 28 | 699 | 0.7− | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.7+ | | |
| 2002 11 28 | 699 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.8+ | 1.0+ | | |
| 2002 11 28 | 699 | 0.0 | 0.5− | 2006 10 20 | 683 | 0.5+ | 0.9− | 2006 11 20 | 704 | (1.7+ | 0.0 ) | | |
| 2002 12 10 | 704 | 0.7− | 0.0 | 2006 10 20 | 683 | 0.5+ | 1.2− | | | | | | |
| 2002 12 10 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | | | | | | |

**(139436)∗ 2001 OT$_{51}$ = 2000 DO$_{97}$**

Discovered 2001 July 21 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 15886)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.60128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22553262 | $\omega$ | 244.26138 | | −0.47951247 | +0.87750093 | |
| $a$ | 2.6729847 | $\Omega$ | 357.05061 | | −0.74156889 | −0.40991635 | |
| $e$ | 0.1723612 | $i$ | 8.65141 | | −0.46919439 | −0.24891908 | |
| $P$ | 4.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 1.0− | 0.5+ | 2001 07 27 | 644 | 1.0− | 0.4+ | 2004 01 03 | 704 | 0.5+ | 0.0 | |
| 2000 02 11 | 704 | 1.4− | 0.9− | 2001 07 27 | 644 | 0.4− | 0.3+ | 2006 07 22 | G96 | 0.3− | 0.2+ | |
| 2000 02 11 | 704 | 0.2+ | 1.1+ | 2001 07 27 | 644 | 0.5− | 0.5+ | 2006 07 22 | G96 | 0.2− | 0.3− | |
| 2000 02 11 | 704 | 0.1− | 0.3− | 2001 07 31 | 644 | 0.1+ | 0.5+ | 2006 07 22 | G96 | 0.7− | 0.1− | |
| 2000 02 29 | 704 | 1.1+ | 0.9+ | 2001 07 31 | 644 | 0.3+ | 0.2+ | 2006 07 22 | G96 | 0.5+ | 0.3− | |
| 2000 02 29 | 704 | 0.6+ | 1.0+ | 2001 07 31 | 644 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.2+ | |
| 2000 02 29 | 704 | 1.8+ | 0.7+ | 2001 08 11 | 644 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.7− | 0.3+ | |
| 2000 02 29 | 704 | (2.3+ | 0.3+) | 2001 08 11 | 644 | 0.6+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.3+ | |
| 2000 02 29 | 704 | 0.6+ | 0.2+ | 2001 08 11 | 644 | 0.3+ | 0.3+ | 2006 09 19 | 699 | (1.8+ | 0.4+) | |
| 2000 03 05 | 704 | 0.4+ | 1.0+ | 2001 08 24 | 644 | (1.5− | 2.1−) | 2006 09 19 | 699 | 0.8− | 0.4− | |
| 2000 03 05 | 704 | 0.0 | 0.8+ | 2001 08 24 | 644 | (1.3− | 2.3−) | 2006 09 19 | 699 | 0.3− | 0.9+ | |
| 2000 03 05 | 704 | 0.6− | 1.1+ | 2001 08 24 | 644 | (1.6− | 2.1−) | 2006 09 19 | 699 | 0.3− | 0.7+ | |
| 2000 03 05 | 704 | 0.6− | 1.2+ | 2002 11 01 | 941 | (0.2− | 1.9+) | 2006 09 25 | 691 | 0.2− | 0.5+ | |
| 2000 03 05 | 704 | 0.6− | 0.7+ | 2002 11 01 | 941 | 1.1+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | |
| 2000 03 11 | 699 | 1.5+ | 1.7+ | 2002 11 01 | 941 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.3− | 0.3+ | |
| 2000 03 11 | 699 | 0.3− | 1.4+ | 2002 11 01 | 941 | 0.3− | 0.8− | 2006 10 22 | G96 | 0.4+ | 0.4− | |
| 2000 03 11 | 699 | 1.4+ | 0.7+ | 2003 12 27 | 704 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.5+ | 0.0 | |
| 2000 03 11 | 699 | 1.0+ | 1.0+ | 2003 12 27 | 704 | 0.5− | 0.6− | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2001 06 18 | 644 | 0.2+ | 0.1+ | 2003 12 27 | 704 | 0.5− | 0.6− | 2006 10 22 | G96 | 0.3+ | 0.0 | |
| 2001 06 18 | 644 | 0.4+ | 0.0 | 2003 12 27 | 704 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.0 | |
| 2001 06 18 | 644 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.1− | |
| 2001 07 21 | 644 | 0.5− | 0.7+ | 2004 01 03 | 704 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.0 | |
| 2001 07 21 | 644 | 0.3− | 0.4+ | 2004 01 03 | 704 | 1.3+ | 0.8− | 2006 10 31 | G96 | 0.1− | 0.2− | |
| 2001 07 21 | 644 | 0.4− | 0.4+ | 2004 01 03 | 704 | 1.2+ | 0.7− | | | | | |

**(139437)∗ 2001 ON$_{52}$ = 2002 XF$_{81}$**

Discovered 2001 July 21 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 40194)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.90187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23300580 | $\omega$ | 321.00339 | | +0.63172325 | −0.73767381 | |
| $a$ | 2.6155211 | $\Omega$ | 88.46627 | | +0.75744649 | +0.52199593 | |
| $e$ | 0.1528371 | $i$ | 13.78832 | | +0.16492589 | +0.42820275 | |
| $P$ | 4.23 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 1.5+ | 1.1− | 2002 12 27 | 699 | 1.2− | 1.0+ | 2004 04 26 | 699 | 0.3− | 0.1+ | |
| 1999 02 18 | 704 | 1.2+ | 0.1− | 2002 12 28 | 699 | 0.2+ | 0.4+ | 2004 04 26 | 699 | 0.1+ | 0.8+ | |
| 1999 02 18 | 704 | 0.1− | 1.6− | 2002 12 28 | 699 | 0.5+ | 1.0− | 2006 09 22 | 704 | 0.8− | 0.0 | |
| 1999 02 18 | 704 | 0.7− | 0.8− | 2002 12 28 | 699 | 0.5− | 0.1− | 2006 09 22 | 704 | 0.7− | 0.2− | |
| 2001 07 21 | 644 | 0.8− | 0.1− | 2002 12 28 | 699 | 0.3− | 0.5− | 2006 09 22 | 704 | 0.8− | 0.2+ | |
| 2001 07 21 | 644 | 0.6− | 0.4− | 2002 12 30 | 704 | 0.0 | 0.4− | 2006 09 22 | 704 | 0.2− | 0.3+ | |
| 2001 07 21 | 644 | 0.6− | 0.5− | 2002 12 30 | 704 | 0.6+ | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.1+ | |
| 2001 07 27 | 644 | 0.1+ | 0.4+ | 2002 12 30 | 704 | 0.1+ | 0.8− | 2006 11 14 | 704 | 0.6+ | 0.3+ | |
| 2001 07 27 | 644 | 0.7+ | 1.1+ | 2003 01 10 | 704 | 0.4− | 0.4+ | 2006 11 14 | 704 | 1.0+ | 0.2− | |
| 2001 07 27 | 644 | 0.1+ | 0.7+ | 2003 01 10 | 704 | 0.5− | 0.8+ | 2006 11 14 | 704 | 0.7+ | 0.5− | |
| 2001 07 27 | 644 | 0.4+ | 1.3+ | 2003 01 10 | 704 | 0.1− | 0.9+ | 2006 11 17 | 704 | 0.6+ | 0.3− | |
| 2001 07 27 | 644 | 0.1+ | 0.7+ | 2003 01 10 | 704 | 0.3− | 0.7+ | 2006 11 17 | 704 | 0.9+ | 0.0 | |
| 2001 07 27 | 644 | 0.4+ | 1.3+ | 2003 01 10 | 704 | 0.8− | 1.4+ | 2006 11 17 | 704 | 1.9+ | 0.1− | |
| 2001 08 01 | 644 | 0.0 | 1.2− | 2003 01 13 | 704 | 0.6− | 0.0 | 2006 11 17 | 704 | 0.7+ | 0.2+ | |
| 2001 08 01 | 644 | 0.4− | 0.6− | 2003 01 13 | 704 | 0.8− | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.2+ | |
| 2001 08 01 | 644 | 0.3− | 0.8− | 2003 01 13 | 704 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.4− | |
| 2002 12 11 | 704 | 0.2− | 0.8− | 2003 01 31 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.8− | |
| 2002 12 11 | 704 | 0.6+ | 0.1+ | 2003 01 31 | 704 | 0.3+ | 0.9− | 2006 11 18 | 704 | 0.2+ | 0.5− | |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.3+ | 0.2− | 2006 11 20 | 704 | 1.1+ | 0.0 | |
| 2002 12 11 | 704 | 0.0 | 0.8+ | 2004 04 16 | 704 | 0.7− | 1.6+ | 2006 11 20 | 704 | 0.5+ | 0.3− | |
| 2002 12 11 | 704 | 0.4+ | 1.2+ | 2004 04 16 | 704 | 1.0+ | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.2+ | |
| 2002 12 14 | 704 | 0.7− | 0.5− | 2004 04 16 | 704 | 1.1+ | 1.4+ | 2006 11 20 | 704 | 0.2+ | 0.2+ | |
| 2002 12 14 | 704 | 0.7− | 0.3− | 2004 04 16 | 704 | 0.5− | 0.7− | 2006 11 20 | 704 | 0.8+ | 0.8− | |
| 2002 12 14 | 704 | 0.2− | 0.3+ | 2004 04 24 | 704 | 0.4− | 0.3− | 2006 11 29 | 704 | 1.2− | 0.7+ | |
| 2002 12 14 | 704 | 0.4+ | 0.1− | 2004 04 24 | 704 | 0.8+ | 0.5− | 2006 11 29 | 704 | 0.4+ | 0.4+ | |
| 2002 12 14 | 704 | 0.5− | 0.2+ | 2004 04 24 | 704 | 0.0 | 0.3+ | 2006 11 29 | 704 | 1.7− | 0.2+ | |
| 2002 12 27 | 699 | 0.3− | 0.0 | 2004 04 24 | 704 | 0.6+ | 0.1+ | 2006 11 29 | 704 | (3.1− | 2.2+) | |
| 2002 12 27 | 699 | 0.7+ | 0.1+ | 2004 04 26 | 699 | (2.7+ | 0.4−) | 2006 11 29 | 704 | 1.8− | 2.1+ | |
| 2002 12 27 | 699 | 0.1− | 0.2+ | 2004 04 26 | 699 | 0.4+ | 0.9+ | | | | | |

**(139438)∗ 2001 OY$_{52}$**

Discovered 2001 July 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.91036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21611588 | $\omega$ | 276.12752 | | +0.98730480 | +0.04651242 | |
| $a$ | 2.7500775 | $\Omega$ | 81.27842 | | +0.02088747 | +0.90984162 | |
| $e$ | 0.3142758 | $i$ | 8.83857 | | −0.15745774 | +0.41234067 | |
| $P$ | 4.56 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 608 | 0.6+ | 1.2− | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.9+ | 1.0+ | |
| 2001 06 16 | 608 | 0.4+ | 1.1− | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 11 16 | H07 | 1.3− | 0.5+ | |
| 2001 06 16 | 608 | 0.2+ | 1.1− | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 11 16 | H07 | 1.2− | 0.3+ | |
| 2001 07 21 | 644 | 0.3+ | 0.1− | 2005 06 08 | 691 | 0.1+ | 0.4− | 2006 11 16 | H07 | 1.3− | 0.5+ | |
| 2001 07 21 | 644 | 0.3+ | 0.1+ | 2005 06 08 | 691 | 0.1+ | 0.4+ | 2006 11 16 | H07 | 1.4− | 0.4+ | |
| 2001 07 21 | 644 | 0.3− | 0.4− | 2005 06 08 | 691 | (1.7− | 0.3+) | 2006 11 18 | 704 | (2.7+ | 1.7−) | |
| 2001 07 27 | 644 | 0.2− | 0.2− | 2005 06 13 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | (0.1+ | 2.5−) | |
| 2001 07 27 | 644 | 0.6− | 0.5− | 2005 06 13 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | (1.7+ | 2.4−) | |
| 2001 07 27 | 644 | 0.4− | 0.3− | 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | (0.7+ | 2.4−) | |
| 2001 08 01 | 644 | 0.1− | 0.2− | 2005 06 23 | 644 | 0.3+ | 0.3+ | 2006 11 18 | 704 | (0.8+ | 2.2−) | |
| 2001 08 01 | 644 | 0.1+ | 0.2− | 2005 06 23 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.4− | |
| 2001 08 01 | 644 | 0.0 | 0.1− | 2005 06 23 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.3− | |
| 2001 08 09 | 644 | 0.2− | 0.5− | 2006 10 01 | 703 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.4− | |
| 2001 08 09 | 644 | 0.0 | 0.5− | 2006 10 01 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.3− | |
| 2001 08 09 | 644 | 0.2− | 0.8− | 2006 10 01 | 703 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.7− | |
| 2001 08 14 | 644 | 0.3+ | 0.2+ | 2006 10 01 | 703 | 0.1− | 0.0 | 2006 11 22 | H07 | 0.4+ | 0.1− | |
| 2001 08 14 | 644 | 0.6+ | 0.4+ | 2006 10 03 | 704 | 0.8+ | 0.1− | 2006 11 22 | H07 | 1.4− | 1.0− | |
| 2001 08 14 | 644 | 0.3+ | 0.5+ | 2006 10 03 | 704 | 0.7+ | 0.6− | 2006 11 22 | H07 | 0.4+ | 0.1+ | |
| 2001 09 06 | 644 | 0.2− | 0.2+ | 2006 10 03 | 704 | 0.2+ | 0.1+ | 2006 11 22 | H07 | 0.7+ | 0.1+ | |
| 2001 09 06 | 644 | 0.2+ | 0.4− | 2006 10 03 | 704 | 0.8+ | 0.1− | 2006 11 25 | 704 | 0.3− | 0.5+ | |
| 2001 09 06 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 25 | 704 | 0.0 | 1.3+ | |
| 2001 10 18 | 699 | 0.7− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 25 | 704 | 0.1+ | 0.1+ | |
| 2001 10 18 | 699 | 0.9+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 25 | 704 | 0.3+ | 0.8− | |
| 2001 10 18 | 699 | 0.4− | 0.0 | 2006 11 05 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.6− | 0.1− | |
| 2001 10 18 | 699 | 0.8− | 1.0+ | 2006 11 05 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.5+ | |
| 2001 11 07 | 704 | 0.1+ | 1.1+ | 2006 11 05 | 644 | 0.2− | 0.7+ | 2006 11 29 | 704 | 0.1+ | 0.5+ | |
| 2001 11 07 | 704 | 1.0+ | 0.6− | 2006 11 14 | 704 | 0.2+ | 0.7− | 2006 12 01 | G96 | 0.1+ | 0.0 | |
| 2001 11 07 | 704 | 0.6+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.9+ | 2006 12 01 | G96 | 0.1+ | 0.2− | |
| 2001 11 07 | 704 | 0.3+ | 1.2− | 2006 11 14 | 704 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.0 | |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.3+ | 0.5+ | 2006 12 01 | G96 | 0.2− | 0.0 | |

**(139439)∗ 2001 OK$_{54}$**

Discovered 2001 July 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.77958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21573196 | $\omega$ | 314.93515 | | +0.63451718 | −0.74854208 | |
| $a$ | 2.7533392 | $\Omega$ | 94.68828 | | +0.75234074 | +0.54107347 | |
| $e$ | 0.2952209 | $i$ | 11.13896 | | +0.17711964 | +0.38330699 | |
| $P$ | 4.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 25 | 327 | 1.0+ | 0.4− | 2001 09 11 | 704 | 0.2− | 1.3+ | 2006 11 14 | 704 | 0.5+ | 0.7+ | |
| 1997 11 25 | 327 | 0.1− | 0.2+ | 2001 09 11 | 704 | 0.3− | 1.1+ | 2006 11 17 | 704 | 0.6+ | 0.3+ | |
| 1997 11 25 | 327 | 0.6+ | 0.7+ | 2001 10 14 | 644 | (0.6+ | 1.6+) | 2006 11 17 | 704 | 0.9+ | 0.2+ | |
| 1998 01 25 | 566 | 0.2− | 0.2− | 2001 10 14 | 644 | 0.5+ | 1.3+ | 2006 11 17 | 704 | 1.3− | 0.8− | |
| 1998 01 25 | 566 | 0.1− | 0.4− | 2001 10 14 | 644 | (1.1+ | 2.2+) | 2006 11 17 | 704 | 0.2+ | 1.1+ | |
| 1998 01 25 | 566 | 0.1− | 0.3− | 2001 10 15 | 704 | 0.8− | 0.0 | 2006 11 17 | 704 | (2.3− | 0.1+) | |
| 1999 03 20 | 645 | 0.2+ | 0.2+ | 2001 10 15 | 704 | 1.0− | 0.0 | 2006 11 17 | 704 | (1.7+ | 0.0 ) | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.2+ | 2001 10 15 | 704 | 0.2+ | 0.7+ | 2006 11 17 | 704 | (2.6− | 0.1+) | | |
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2001 10 15 | 704 | 1.0− | 0.3− | 2006 11 17 | G96 | 0.7− | 0.0 | | |
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2001 10 15 | 704 | 0.1− | 1.1+ | 2006 11 17 | G96 | 0.6− | 0.2− | | |
| 2001 07 21 | 644 | 0.4− | 0.4+ | 2001 11 07 | 644 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.4− | 0.0 | | |
| 2001 07 21 | 644 | 0.5− | 0.4+ | 2001 11 07 | 644 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.0 | | |
| 2001 07 21 | 644 | 0.6− | 0.4+ | 2001 11 07 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.3+ | | |
| 2001 07 27 | 644 | 0.7− | 0.3+ | 2001 12 05 | 704 | 0.5− | 0.6− | 2006 11 21 | 704 | 1.4+ | 0.4+ | | |
| 2001 07 27 | 644 | 0.4− | 0.4+ | 2001 12 05 | 704 | (0.4+ | 2.8+) | 2006 11 21 | 704 | 1.0+ | 0.4+ | | |
| 2001 07 27 | 644 | 0.3− | 0.8+ | 2001 12 05 | 704 | 0.4− | 1.0+ | 2006 11 21 | 704 | 0.6+ | 0.6+ | | |
| 2001 08 14 | 608 | 0.0 | 0.4− | 2001 12 05 | 704 | (0.7− | 2.7+) | 2006 12 01 | 704 | 0.0 | 0.3+ | | |
| 2001 08 14 | 608 | 0.2+ | 0.3− | 2003 03 08 | 644 | 0.5+ | 0.8+ | 2006 12 01 | G96 | 0.6− | 0.1− | | |
| 2001 08 14 | 608 | 0.1+ | 0.1− | 2003 03 08 | 644 | 0.4+ | 0.5+ | 2006 12 01 | 704 | 0.3− | 0.1+ | | |
| 2001 08 19 | 704 | (0.7− | 2.3+) | 2003 03 08 | 644 | 0.3+ | 1.0+ | 2006 12 01 | G96 | 0.4− | 0.2− | | |
| 2001 08 19 | 704 | 0.3− | 1.1+ | 2006 10 22 | 704 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.2− | 0.0 | | |
| 2001 08 19 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 704 | 0.5− | 1.2+ | 2006 12 01 | G96 | 0.5− | 0.2− | | |
| 2001 09 11 | 704 | 0.1− | 1.2+ | 2006 10 22 | 704 | 0.3− | 1.3+ | 2006 12 01 | 704 | 0.1− | 0.3− | | |
| 2001 09 11 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 704 | 0.7+ | 0.5+ | 2006 12 01 | 704 | 0.6− | 0.1− | | |
| 2001 09 11 | 704 | 0.0 | 0.8+ | 2006 11 14 | 704 | 0.3+ | 0.3+ | | | | | | |

**(139440)∗ 2001 OW**$_{55}$

Discovered 2001 July 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.43593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23295521 | $\omega$ | 96.72289 | | +0.21454043 | −0.97369697 | |
| $a$ | 2.6158997 | $\Omega$ | 340.37075 | | +0.78139529 | +0.21823661 | |
| $e$ | 0.1650023 | $i$ | 13.20242 | | +0.58599812 | +0.06547513 | |
| $P$ | 4.23 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 644 | 0.9− | 0.3− | 2001 10 23 | 699 | 0.5+ | 0.2− | 2003 03 13 | 704 | 0.3− | 0.5− | | |
| 2001 07 22 | 644 | 1.1− | 0.4− | 2001 10 23 | 699 | 0.4+ | 0.6+ | 2003 03 13 | 704 | 0.5− | 0.1+ | | |
| 2001 07 22 | 644 | 0.9− | 0.0 | 2001 10 26 | 644 | 0.2+ | 0.4+ | 2003 03 13 | 704 | 0.0 | 0.3− | | |
| 2001 07 27 | 644 | 0.6− | 0.1− | 2001 10 26 | 644 | 1.0− | 0.6+ | 2003 03 14 | 644 | 0.2+ | 0.7− | | |
| 2001 07 27 | 644 | 0.7− | 0.1+ | 2001 10 26 | 644 | 0.4+ | 0.2+ | 2003 03 14 | 644 | 0.3+ | 0.8− | | |
| 2001 07 27 | 644 | 0.5− | 0.1+ | 2001 12 11 | 704 | 0.5+ | 1.2+ | 2003 03 14 | 644 | 0.2+ | 0.7− | | |
| 2001 08 05 | 644 | 0.0 | 0.2+ | 2001 12 11 | 704 | 1.5+ | 0.2− | 2003 03 14 | 608 | 0.0 | 0.6− | | |
| 2001 08 05 | 644 | 0.1− | 0.4+ | 2001 12 11 | 704 | 0.2+ | 0.2− | 2003 03 14 | 608 | 0.4+ | 1.0− | | |
| 2001 08 05 | 644 | 0.3− | 0.3+ | 2001 12 11 | 704 | 1.1+ | 0.3+ | 2003 03 14 | 608 | 0.0 | 1.0− | | |
| 2001 08 13 | 608 | 0.5− | 0.4− | 2001 12 14 | 704 | 1.3− | 0.6− | 2003 03 24 | 608 | (1.5+ | 1.8+) | | |
| 2001 08 13 | 608 | 0.3− | 0.3− | 2001 12 14 | 704 | (1.9− | 1.0+) | 2003 03 24 | 608 | 1.4+ | 1.3+ | | |
| 2001 08 13 | 608 | 0.6− | 0.4− | 2001 12 14 | 704 | (0.2− | 1.5+) | 2003 03 24 | 608 | 1.4+ | 1.3+ | | |
| 2001 08 17 | 704 | 0.2− | 1.1+ | 2001 12 14 | 704 | 0.1+ | 0.1− | 2003 04 01 | 704 | 0.2+ | 1.0+ | | |
| 2001 08 17 | 704 | 0.4− | 0.4+ | 2002 12 06 | 704 | 0.7+ | 0.3+ | 2003 04 01 | 704 | 0.0 | 0.8+ | | |
| 2001 08 17 | 704 | 0.3− | 0.6+ | 2002 12 06 | 704 | 0.3+ | 0.1+ | 2003 04 01 | 704 | 1.1+ | 0.7+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.5+ | 2002 12 06 | 704 | 0.1+ | 0.1+ | 2003 04 01 | 704 | 0.2− | 1.1+ | | |
| 2001 08 24 | 704 | 0.3+ | 0.0 | 2002 12 11 | 704 | 0.5+ | 1.0− | 2003 04 01 | 704 | 0.0 | 0.6+ | | |
| 2001 08 24 | 704 | 0.3+ | 0.3+ | 2002 12 11 | 704 | (1.6+ | 0.3−) | 2003 04 09 | 704 | 0.2+ | 1.0+ | | |
| 2001 08 31 | 644 | 0.1− | 1.2− | 2002 12 11 | 704 | (1.8+ | 0.3+) | 2003 04 09 | 704 | 0.2− | 0.7+ | | |
| 2001 08 31 | 644 | 0.0 | 1.1− | 2002 12 11 | 704 | (0.3+ | 1.7+) | 2003 04 09 | 704 | 0.1− | 0.4+ | | |
| 2001 08 31 | 644 | 0.2− | 0.9− | 2003 01 05 | 704 | 0.7+ | 0.7+ | 2003 04 09 | 704 | 0.3− | 0.3+ | | |
| 2001 09 10 | 644 | 0.0 | 0.6+ | 2003 01 05 | 704 | 1.4+ | 0.4− | 2003 04 09 | 704 | 0.9− | 0.2− | | |
| 2001 09 10 | 644 | 0.0 | 0.5+ | 2003 01 05 | 704 | 1.2+ | 0.2+ | 2005 07 28 | 644 | 0.4− | 0.5+ | | |
| 2001 09 10 | 644 | 0.1− | 0.8+ | 2003 01 09 | 704 | 0.6− | 0.4− | 2005 07 28 | 644 | 0.5− | 0.5+ | | |
| 2001 09 10 | 699 | 0.5− | 1.0+ | 2003 01 09 | 704 | 0.3+ | 0.2− | 2005 07 28 | 644 | 0.2− | 0.5+ | | |
| 2001 09 10 | 699 | 0.4− | 0.5+ | 2003 01 09 | 704 | 0.4+ | 0.4− | 2005 07 29 | 644 | 0.3− | 0.4+ | | |
| 2001 09 10 | 699 | 0.8− | 0.7+ | 2003 01 09 | 704 | 0.6− | 0.4− | 2005 07 29 | 644 | 0.4− | 0.4+ | | |
| 2001 09 10 | 699 | 0.5− | 0.7+ | 2003 01 28 | 704 | 0.8+ | 0.5+ | 2005 07 29 | 644 | 0.3− | 0.5+ | | |
| 2001 09 17 | 704 | 0.1+ | 0.1+ | 2003 01 28 | 704 | 0.1− | 0.2+ | 2005 07 29 | 644 | 0.5− | 0.4+ | | |
| 2001 09 17 | 704 | 0.0 | 0.4− | 2003 01 28 | 704 | 0.1− | 0.5+ | 2005 07 29 | 644 | 0.3− | 0.5+ | | |
| 2001 09 17 | 704 | 0.8+ | 0.2− | 2003 01 28 | 704 | 0.2+ | 0.3+ | 2005 07 29 | 644 | 0.5− | 0.2+ | | |
| 2001 09 18 | 699 | 0.2− | 0.3+ | 2003 01 28 | 608 | 0.9+ | 0.4− | 2005 08 06 | 644 | 0.6− | 0.4+ | | |
| 2001 09 18 | 699 | 0.0 | 0.1+ | 2003 01 28 | 608 | 0.7+ | 0.4+ | 2005 08 06 | 644 | 0.2− | 0.7+ | | |
| 2001 09 18 | 699 | 0.5− | 0.3+ | 2003 01 28 | 608 | 0.3+ | 0.2+ | 2005 08 06 | 644 | 0.2− | 0.4+ | | |
| 2001 09 18 | 699 | 0.1+ | 0.1− | 2003 01 31 | 699 | 0.2− | 0.3+ | 2005 08 25 | 599 | 0.1− | 0.5+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2003 01 31 | 704 | 0.2+ | 1.3+ | 2005 08 25 | 599 | 0.2− | 0.5+ | | |
| 2001 09 20 | 704 | 0.3+ | 1.4+ | 2003 01 31 | 699 | 0.2− | 0.2+ | 2005 08 25 | 599 | 0.2− | 0.5+ | | |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2003 01 31 | 704 | 0.0 | 1.2+ | 2005 08 25 | 599 | 0.2− | 0.6+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 699 | 0.1− | 0.2+ | 2005 08 27 | 644 | 0.3− | 0.3+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2003 01 31 | 704 | 0.2+ | 1.3+ | 2005 08 27 | 644 | 0.3− | 0.4+ | | |
| 2001 09 22 | 704 | 0.1− | 0.2+ | 2003 01 31 | 704 | 0.3+ | 0.3+ | 2005 08 27 | 644 | 0.3− | 0.4+ | | |
| 2001 09 22 | 704 | 0.3− | 0.6+ | 2003 01 31 | 699 | 0.0 | 0.1+ | 2005 08 29 | 704 | 0.3− | 0.6+ | | |
| 2001 09 22 | 704 | 0.5− | 0.1+ | 2003 01 31 | 704 | 0.2+ | 1.0+ | 2005 08 29 | 704 | 0.4− | 0.7+ | | |
| 2001 09 22 | 704 | 0.1− | 0.9+ | 2003 02 03 | 704 | 0.8+ | 0.1+ | 2005 08 29 | 704 | 0.2− | 0.6+ | | |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2003 02 03 | 704 | 1.0+ | 1.1+ | 2005 08 29 | 704 | 0.3− | 0.3+ | | |
| 2001 09 22 | 704 | 0.4− | 0.7+ | 2003 02 03 | 704 | 0.7+ | 0.0 | 2005 08 29 | 704 | 0.1− | 0.5+ | | |
| 2001 09 22 | 704 | 0.1+ | 0.1+ | 2003 02 03 | 699 | 1.1+ | 0.1− | 2005 08 29 | 699 | 0.4− | 0.9+ | | |
| 2001 09 22 | 704 | 0.3− | 0.7+ | 2003 02 03 | 704 | 1.2+ | 0.6+ | 2005 08 29 | 699 | 0.0 | 0.4+ | | |
| 2001 09 23 | 704 | 0.5− | 0.6− | 2003 02 03 | 699 | (1.8+ | 0.7−) | 2005 08 29 | 699 | 0.2− | 0.9+ | | |
| 2001 09 23 | 704 | 0.7− | 0.4− | 2003 02 03 | 699 | 0.3+ | 0.2+ | 2005 09 02 | 608 | 0.5− | 0.6+ | | |
| 2001 09 23 | 704 | 0.5+ | 0.2− | 2003 02 03 | 699 | 1.2+ | 0.0 | 2005 09 02 | 608 | 0.6− | 0.5+ | | |
| 2001 09 23 | 704 | 0.0 | 0.3+ | 2003 02 08 | 608 | 0.1+ | 0.1− | 2005 09 02 | 608 | 0.4− | 0.2+ | | |
| 2001 09 23 | 704 | 0.6− | 0.2− | 2003 02 08 | 608 | 0.1+ | 0.4− | 2005 09 05 | 703 | (0.5− | 1.9−) | | |
| 2001 09 23 | 704 | 0.3− | 0.7− | 2003 02 08 | 608 | 0.2+ | 0.2− | 2005 09 05 | 703 | (3.6− | 0.4+) | | |
| 2001 09 23 | 704 | 0.6+ | 0.1+ | 2003 02 22 | 644 | 0.6+ | 0.3+ | 2005 09 05 | 703 | 0.8− | 0.6− | | |
| 2001 09 23 | 704 | 0.2+ | 0.8+ | 2003 02 22 | 644 | 0.9+ | 1.2+ | 2005 09 07 | 699 | 0.2− | 0.4+ | | |
| 2001 09 23 | 704 | 0.5− | 0.4− | 2003 02 22 | 644 | 0.7+ | 0.3+ | 2005 09 07 | 699 | (0.6+ | 2.0+) | | |
| 2001 09 23 | 704 | 0.7− | 0.2− | 2003 02 22 | 644 | 0.9+ | 1.1+ | 2005 09 07 | 699 | 0.0 | 0.6+ | | |
| 2001 09 23 | 704 | 0.6+ | 0.0 | 2003 02 22 | 644 | (2.4+ | 1.2+) | 2005 09 08 | 704 | 0.3− | 0.1+ | | |
| 2001 09 23 | 704 | 0.4+ | 0.7+ | 2003 02 22 | 644 | (3.2+ | 2.1+) | 2005 09 08 | 704 | 0.3− | 1.2+ | | |
| 2001 09 23 | 704 | 0.6− | 0.4− | 2003 02 23 | 699 | 0.5+ | 1.2+ | 2005 09 08 | 704 | 0.7+ | 0.8+ | | |
| 2001 09 23 | 704 | 0.2− | 0.5− | 2003 02 23 | 699 | 0.1− | 0.7+ | 2005 09 08 | 704 | 0.4− | 0.5+ | | |
| 2001 09 23 | 704 | 0.6+ | 0.0 | 2003 02 23 | 699 | 0.4+ | 0.6+ | 2005 09 08 | 704 | 0.7− | 0.3+ | | |
| 2001 09 23 | 704 | 0.3+ | 0.8+ | 2003 02 23 | 699 | 0.4− | 0.9+ | 2005 09 23 | 703 | 1.2− | 0.2− | | |
| 2001 09 23 | 704 | 0.4− | 0.2− | 2003 02 23 | 699 | 0.8+ | 1.1+ | 2005 09 23 | 703 | 0.6− | 0.2− | | |
| 2001 09 23 | 704 | 0.0 | 0.3− | 2003 02 23 | 699 | 0.5− | 0.7+ | 2005 09 23 | 703 | 1.0− | 0.5− | | |
| 2001 09 24 | 704 | 0.3+ | 0.2+ | 2003 02 23 | 699 | 0.3+ | 0.3− | 2005 09 23 | 703 | 0.9− | 0.6− | | |
| 2001 09 24 | 704 | 0.4+ | 0.2− | 2003 02 23 | 699 | 0.7− | 0.5+ | 2005 09 30 | 699 | 0.4− | 1.1+ | | |
| 2001 09 24 | 704 | 0.0 | 0.6+ | 2003 02 23 | 608 | 0.6+ | 0.3+ | 2005 09 30 | 699 | 0.2− | 0.9+ | | |
| 2001 09 24 | 704 | 0.3+ | 0.2+ | 2003 02 23 | 608 | 0.7+ | 0.7+ | 2005 09 30 | 699 | 0.5− | 1.0+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.1+ | 2003 02 23 | 608 | 0.9+ | 0.2+ | 2005 10 05 | 691 | 0.1− | 0.5+ | | |
| 2001 09 25 | 704 | 0.3+ | 0.7+ | 2003 03 05 | 704 | 0.5+ | 1.1+ | 2005 10 05 | 691 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.0 | 2003 03 05 | 704 | (1.8+ | 0.7+) | 2005 10 05 | 691 | 0.1− | 0.5+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.7+ | 2003 03 05 | 704 | (0.2+ | 1.8−) | 2005 10 07 | 704 | 0.1− | 0.1+ | | |
| 2001 09 25 | 704 | 0.1− | 0.5− | 2003 03 05 | 704 | 0.4+ | 0.0 | 2005 10 07 | 704 | 0.4+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.6+ | 0.6+ | 2003 03 05 | 704 | 0.3− | 1.3− | 2005 10 07 | 704 | 0.1+ | 0.3− | | |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2003 03 06 | 699 | 0.9+ | 0.5+ | 2005 10 07 | 704 | 0.5+ | 0.8+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.7+ | 2003 03 06 | 699 | 0.0 | 0.9+ | 2005 10 27 | G96 | 0.2− | 0.4− | | |
| 2001 09 25 | 704 | 0.0 | 0.3− | 2003 03 06 | 699 | 0.7+ | 0.6+ | 2005 10 27 | G96 | 0.4− | 0.2− | | |
| 2001 09 25 | 704 | 0.3+ | 0.7+ | 2003 03 06 | 699 | 0.1− | 0.7+ | 2005 10 27 | G96 | 0.5− | 0.1− | | |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2003 03 06 | 644 | 0.3+ | 0.4+ | 2005 10 27 | G96 | 0.1− | 0.0 | | |
| 2001 09 26 | 704 | 0.0 | 0.1+ | 2003 03 06 | 644 | 0.4+ | 0.3+ | 2005 11 01 | 703 | 1.0− | 0.4+ | | |
| 2001 09 26 | 704 | 0.5+ | 0.3+ | 2003 03 06 | 644 | 0.3+ | 0.3+ | 2005 11 01 | 703 | 0.4− | 0.6+ | | |
| 2001 09 26 | 704 | 0.0 | 0.1− | 2003 03 07 | 291 | 0.2+ | 0.4+ | 2005 11 01 | 703 | 0.7+ | 0.5+ | | |
| 2001 09 26 | 704 | 0.5+ | 0.9+ | 2003 03 07 | 291 | 0.2+ | 0.5+ | 2005 11 01 | 703 | (0.9− | 1.6+) | | |
| 2001 09 26 | 704 | 0.8+ | 0.9+ | 2003 03 07 | 291 | 0.2+ | 0.4+ | 2005 11 25 | 703 | 0.4+ | 1.3+ | | |
| 2001 09 28 | 644 | 0.5− | 1.1− | 2003 03 09 | 704 | 0.1+ | 0.7+ | 2005 11 25 | 703 | 0.1+ | 1.1+ | | |
| 2001 09 28 | 644 | 0.4− | 0.7− | 2003 03 09 | 704 | 0.2+ | 0.5+ | 2005 11 25 | 703 | 0.1− | 0.7+ | | |
| 2001 09 28 | 644 | 0.2− | 1.1− | 2003 03 09 | 704 | 0.3+ | 0.7+ | 2005 11 25 | 703 | 1.0− | 0.6+ | | |
| 2001 10 05 | 644 | 0.1+ | 0.0 | 2003 03 09 | 704 | 0.4+ | 0.8+ | 2006 10 28 | 703 | 0.4− | 0.7− | | |
| 2001 10 05 | 644 | 0.2+ | 0.0 | 2003 03 09 | 704 | 0.5+ | 0.9+ | 2006 10 28 | 703 | 0.2− | 0.0 | | |
| 2001 10 05 | 644 | 0.0 | 0.2+ | 2003 03 10 | 704 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.3− | 0.4− | 2003 03 10 | 704 | 0.1+ | 0.9+ | 2006 10 28 | 703 | 0.7− | 0.7− | | |
| 2001 10 17 | 704 | 0.3− | 0.1− | 2003 03 10 | 704 | 0.0 | 0.8+ | 2006 11 15 | 703 | 0.7− | 0.4+ | | |
| 2001 10 17 | 704 | 0.3− | 0.2− | 2003 03 10 | 704 | 0.1+ | 0.8+ | 2006 11 15 | 703 | (1.8− | 0.1+) | | |
| 2001 10 17 | 704 | 0.4− | 0.3− | 2003 03 10 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.6− | | |
| 2001 10 17 | 704 | 0.5− | 0.4− | 2003 03 12 | 704 | 0.1− | 0.6+ | 2006 11 15 | 703 | 1.0− | 0.2− | | |
| 2001 10 19 | 704 | 0.9− | 1.3− | 2003 03 12 | 704 | 0.3− | 0.4+ | 2006 11 21 | 703 | 0.1− | 1.0− | | |
| 2001 10 19 | 704 | 0.4− | 0.0 | 2003 03 12 | 704 | 0.1+ | 0.5+ | 2006 11 21 | 703 | 0.5− | 0.7− | | |
| 2001 10 19 | 704 | 1.1− | 0.4− | 2003 03 12 | 704 | 0.3+ | 0.4+ | 2006 11 21 | 703 | 0.6− | 0.2− | | |
| 2001 10 19 | 704 | 0.6− | 0.7− | 2003 03 12 | 704 | 0.1− | 0.0 | 2006 11 21 | 703 | 0.2− | 0.3− | | |
| 2001 10 23 | 699 | 0.7+ | 0.3+ | 2003 03 13 | 704 | 0.1− | 0.4− | | | | | | |
| 2001 10 23 | 699 | 0.1+ | 0.5− | 2003 03 13 | 704 | 0.3− | 0.4+ | | | | | | |

**(139441)∗ 2001 OY$_{56}$ = 2000 EL$_{200}$**

Discovered 2001 July 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 14989), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.66497 | | (2000.0) | | | |
| $n$ | 0.22855289 | $\omega$ | 300.35755 | | −0.20385516 | +0.97458335 |
| $a$ | 2.6493840 | $\Omega$ | 317.55532 | | −0.84433229 | −0.22305028 |
| $e$ | 0.1376819 | $i$ | 7.91212 | | −0.49552604 | −0.02087739 |
| $P$ | 4.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 01 | 703 | 0.3+ | 0.1+ | 2001 08 19 | 704 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.9+ | 0.5− |
| 2000 03 01 | 703 | 0.5− | 0.5+ | 2001 08 19 | 704 | 0.2+ | 0.2− | 2004 02 17 | 704 | 0.8+ | 0.8+ |
| 2000 03 01 | 703 | 0.5− | 0.3+ | 2001 08 19 | 704 | 0.0 | 0.1− | 2004 02 19 | 608 | 0.5+ | 0.2+ |
| 2000 03 01 | 703 | 0.2− | 0.0 | 2001 09 07 | 704 | 0.1− | 0.0 | 2004 02 19 | 608 | 0.8+ | 0.3+ |
| 2000 03 08 | 704 | 0.3− | 0.1+ | 2001 09 07 | 704 | 0.3+ | 0.7+ | 2004 02 19 | 608 | 0.4+ | 0.1+ |
| 2000 03 08 | 704 | 0.6− | 0.3− | 2001 09 07 | 704 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.2+ | 0.4+ |
| 2000 03 08 | 704 | 0.9+ | 1.7− | 2001 09 07 | 704 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.9+ |
| 2000 03 30 | 703 | 0.8+ | 1.6+ | 2001 09 07 | 704 | 0.4− | 0.4+ | 2004 02 26 | 704 | 0.9+ | 0.1− |
| 2000 03 30 | 703 | 0.0 | 0.9+ | 2001 09 08 | 699 | 0.7+ | 0.1− | 2004 02 26 | 704 | 0.4+ | 0.2− |
| 2000 03 30 | 703 | 1.0− | 0.7+ | 2001 09 08 | 699 | 0.7− | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.3− |
| 2000 03 30 | 703 | 0.0 | 0.7− | 2001 09 08 | 699 | 0.2− | 0.8− | 2004 03 01 | 691 | 0.2− | 0.4+ |
| 2001 07 16 | 699 | 0.9− | 0.8+ | 2001 09 08 | 699 | 1.3+ | 1.3+ | 2004 03 01 | 691 | 0.1+ | 0.3+ |
| 2001 07 16 | 699 | (1.6− | 0.0 ) | 2001 09 22 | 691 | 0.4+ | 0.5+ | 2004 03 01 | 691 | 0.0 | 0.2+ |
| 2001 07 16 | 699 | 0.5− | 0.5+ | 2001 09 22 | 691 | 0.0 | 0.7+ | 2004 03 18 | 704 | 0.7+ | 1.3+ |
| 2001 07 16 | 699 | 0.4− | 1.2+ | 2001 09 22 | 691 | 0.2+ | 1.0+ | 2004 03 18 | 704 | 0.2+ | 1.0+ |
| 2001 07 21 | 608 | 0.4− | 0.0 | 2004 01 26 | 699 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.3+ |
| 2001 07 21 | 608 | 0.4− | 0.7+ | 2004 01 26 | 699 | 0.2+ | 0.7+ | 2004 03 18 | 704 | 0.2+ | 0.8+ |
| 2001 07 21 | 608 | 0.3− | 0.4+ | 2004 01 26 | 699 | 0.4− | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.3+ |
| 2001 07 27 | 699 | 0.4− | 0.1− | 2004 01 26 | 699 | 0.2− | 0.9+ | 2006 10 19 | 703 | 0.8− | 0.0 |
| 2001 07 27 | 699 | 0.6− | 0.1+ | 2004 01 30 | 704 | 0.5− | 0.7+ | 2006 10 19 | 703 | 0.2− | 0.5+ |
| 2001 07 27 | 699 | 0.7− | 0.3+ | 2004 01 30 | 704 | 0.1− | 0.0 | 2006 10 19 | 703 | 1.4+ | 0.6− |
| 2001 07 27 | 699 | 0.5− | 0.6+ | 2004 01 30 | 704 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2001 07 30 | 704 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 07 30 | 704 | 0.5− | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 07 30 | 704 | 0.8− | 0.2+ | 2004 02 10 | 644 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2001 07 30 | 704 | 0.6+ | 0.6− | 2004 02 10 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 1.5+ | 1.1+ |
| 2001 08 16 | 704 | (1.8− | 0.4−) | 2004 02 10 | 644 | 0.6+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.9− |
| 2001 08 16 | 704 | 1.4− | 0.1+ | 2004 02 11 | 699 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2001 08 16 | 704 | 1.0− | 0.5+ | 2004 02 11 | 699 | 0.5− | 0.9+ | 2006 11 07 | 644 | 0.4− | 0.3− |
| 2001 08 16 | 704 | 0.7− | 0.1+ | 2004 02 11 | 699 | 0.0 | 0.3− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 08 16 | 704 | 0.8− | 1.2− | 2004 02 11 | 699 | 0.2+ | 0.8+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2001 08 18 | 704 | 1.3− | 0.4+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.5+ |
| 2001 08 18 | 704 | (0.3− | 1.7+) | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.5+ |
| 2001 08 18 | 704 | 0.0 | 0.9+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 1.7− | 0.7− |
| 2001 08 18 | 704 | 0.1+ | 0.6+ | 2004 02 17 | 704 | 0.7+ | 0.7+ | 2006 11 15 | 703 | 0.9− | 0.1+ |
| 2001 08 19 | 704 | 0.7+ | 0.6+ | 2004 02 17 | 704 | 1.0+ | 0.0 | | | | |
| 2001 08 19 | 704 | 0.7+ | 0.3− | 2004 02 17 | 704 | 0.5+ | 0.2+ | | | | |

**(139442)∗ 2001 OQ$_{60}$ = 2005 NZ$_{49}$**

Discovered 2001 July 21 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 84712)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.60193 | | (2000.0) | | | |
| $n$ | 0.23211221 | $\omega$ | 64.34438 | | +0.57500945 | +0.80908350 |
| $a$ | 2.6222297 | $\Omega$ | 241.29099 | | −0.79149618 | +0.51253950 |
| $e$ | 0.1963840 | $i$ | 7.95889 | | −0.20711815 | +0.28755373 |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.1+ | 0.3− | 2005 06 17 | G96 | 0.3− | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.4+ |
| 2001 06 15 | 704 | 1.2− | 0.1+ | 2005 06 17 | G96 | 0.5− | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2001 06 15 | 704 | 0.3− | 0.7+ | 2005 06 27 | 644 | 0.1− | 0.8+ | 2006 11 09 | 691 | 0.1− | 0.5+ |
| 2001 07 21 | 608 | 0.2− | 0.6+ | 2005 06 27 | 644 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 07 21 | 608 | 0.5− | 0.7+ | 2005 06 27 | 644 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.6− | 0.1− |
| 2001 07 21 | 608 | 0.3− | 0.6+ | 2005 07 05 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.3− |
| 2001 07 27 | 608 | 0.3+ | 0.2+ | 2005 07 05 | G96 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 07 27 | 608 | 0.2+ | 0.6+ | 2005 07 05 | G96 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2001 07 27 | 608 | 0.5+ | 0.5+ | 2005 07 05 | G96 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2004 02 18 | 691 | 0.2+ | 0.4+ | 2005 07 11 | G96 | 0.4− | 0.5− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2004 02 18 | 691 | 0.1+ | 0.3+ | 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2004 02 18 | 691 | 0.2+ | 0.3+ | 2005 07 11 | G96 | 0.5− | 0.4− | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2005 06 04 | 704 | 0.4+ | 0.2− | 2005 07 11 | G96 | 0.7− | 0.8− | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2005 06 04 | 704 | 0.4+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2005 06 04 | 704 | 0.5+ | 0.5− | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2005 06 04 | 704 | 0.7− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2005 06 04 | 704 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2005 06 11 | 703 | 1.5+ | 0.8− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2005 06 11 | 703 | (1.2− | 1.6−) | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2005 06 11 | 703 | (2.8+ | 3.2−) | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2005 06 11 | 703 | 0.0 | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2005 06 17 | G96 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2005 06 17 | G96 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− |

**(139443)∗ 2001 OT$_{60}$**

Discovered 2001 July 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 156.79906 | | (2000.0) | | | |
| $n$ | 0.22711581 | $\omega$ | 261.85132 | | −0.88923044 | +0.41521613 |
| $a$ | 2.6605482 | $\Omega$ | 302.48410 | | −0.27564478 | −0.82129598 |
| $e$ | 0.0617686 | $i$ | 13.15667 | | −0.36508791 | −0.39123966 |
| $P$ | 4.34 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 06 | 608 | 0.6− | 0.2− | 2003 12 22 | 704 | 0.3+ | 0.3+ | 2004 02 19 | 704 | 0.5+ | 0.1+ |
| 2000 03 06 | 608 | 0.2− | 0.2− | 2003 12 22 | 704 | 0.4+ | 0.0 | 2004 02 19 | 704 | 0.4+ | 0.5+ |
| 2000 03 06 | 608 | 0.8− | 1.1− | 2003 12 22 | 704 | 1.5+ | 0.3− | 2004 02 20 | 704 | 0.9+ | 1.4+ |
| 2000 04 07 | 704 | 1.5− | 0.6+ | 2003 12 22 | 704 | 0.1+ | 0.1+ | 2004 02 20 | 704 | (0.1+ | 1.7+) |
| 2000 04 07 | 704 | 0.6+ | 0.8− | 2003 12 22 | 704 | 0.8+ | 0.6− | 2004 02 20 | 704 | 0.2+ | 0.0 |
| 2000 04 07 | 704 | 0.1+ | 1.5+ | 2003 12 22 | 704 | 0.1+ | 0.3+ | 2004 02 20 | 704 | 0.0 | 0.1+ |
| 2000 04 07 | 704 | 1.2+ | 0.6− | 2003 12 25 | 645 | 0.1− | 0.1− | 2004 02 22 | 704 | 0.8− | 1.0− |
| 2001 06 16 | 644 | 0.6− | 0.1− | 2003 12 25 | 645 | 0.2− | 0.1− | 2004 02 22 | 704 | 0.1− | 0.7− |
| 2001 06 16 | 644 | 0.5− | 0.1− | 2004 01 24 | 704 | 0.1+ | 0.6+ | 2004 02 22 | 704 | 0.1− | 0.1+ |
| 2001 06 16 | 644 | 0.3− | 0.2+ | 2004 01 24 | 704 | 0.2+ | 0.9− | 2004 02 22 | 704 | 0.6− | 0.4− |
| 2001 07 13 | 644 | 0.2+ | 0.3+ | 2004 01 24 | 704 | 0.4+ | 0.2+ | 2004 02 23 | 608 | 0.2+ | 0.9+ |
| 2001 07 13 | 644 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.9+ | 0.0 | 2004 02 23 | 608 | 0.1− | 0.8+ |
| 2001 07 13 | 644 | 0.2+ | 0.1+ | 2004 01 24 | 704 | 0.8+ | 0.4− | 2004 02 23 | 608 | (0.0 | 1.5+) |
| 2001 07 21 | 608 | 0.2− | 0.1− | 2004 01 26 | 699 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.1− | 0.2− |
| 2001 07 21 | 608 | 0.1− | 0.2− | 2004 01 26 | 699 | 0.2+ | 0.6− | 2004 02 26 | 704 | 0.3+ | 0.3− |
| 2001 07 21 | 608 | 0.3− | 0.0 | 2004 01 26 | 699 | 0.5− | 0.1− | 2004 02 26 | 704 | 0.2− | 0.6− |
| 2001 07 27 | 608 | 0.3+ | 0.2+ | 2004 01 26 | 699 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.1− | 0.1+ |
| 2001 07 27 | 608 | 0.9+ | 0.1− | 2004 01 29 | 704 | 0.5+ | 0.4− | 2004 02 26 | 704 | 0.2− | 0.3+ |
| 2001 07 27 | 608 | 0.4+ | 0.2+ | 2004 01 29 | 704 | 0.5+ | 0.2− | 2004 04 16 | 704 | 0.0 | 0.2− |
| 2001 08 19 | 704 | 0.1− | 0.9+ | 2004 01 29 | 704 | 0.5+ | 0.3− | 2004 04 16 | 704 | 0.5− | 0.4+ |
| 2001 08 19 | 704 | (0.4− | 2.2+) | 2004 01 29 | 704 | 0.4+ | 0.1− | 2004 04 16 | 704 | 0.6+ | 0.4− |
| 2001 08 19 | 704 | (1.1− | 1.5+) | 2004 02 02 | 704 | 0.4− | 0.6− | 2006 08 29 | 699 | 0.3+ | 0.0 |
| 2002 10 06 | 704 | 1.3− | 1.1+ | 2004 02 02 | 704 | 0.2− | 0.4+ | 2006 08 29 | 699 | 0.2− | 0.1− |
| 2002 10 06 | 704 | 0.3− | 0.7− | 2004 02 02 | 704 | 0.2+ | 1.1+ | 2006 08 29 | 699 | 0.4− | 0.9+ |
| 2002 10 06 | 704 | (0.5− | 1.6−) | 2004 02 03 | 704 | 0.1− | 0.1+ | 2006 08 29 | 699 | 0.0 | 1.1+ |
| 2002 10 06 | 704 | 0.0 | 0.4− | 2004 02 03 | 704 | 1.1− | 0.3+ | 2006 09 06 | 644 | 0.6− | 0.0 |
| 2002 10 06 | 704 | 0.7+ | 0.4− | 2004 02 03 | 704 | 0.7+ | 0.0 | 2006 09 06 | 644 | 0.4− | 0.1+ |
| 2002 10 15 | 704 | 0.6+ | 1.3− | 2004 02 03 | 704 | (0.7+ | 1.6+) | 2006 09 06 | 644 | 0.3− | 0.2+ |
| 2002 10 15 | 704 | 0.2− | 0.8− | 2004 02 11 | 644 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.3+ |
| 2002 10 15 | 704 | 1.4+ | 1.3− | 2004 02 11 | 644 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.6− | 0.1− |
| 2003 12 01 | 704 | 0.0 | 1.1+ | 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 09 16 | 703 | 1.3− | 0.1− |
| 2003 12 01 | 704 | 0.8+ | 0.8+ | 2004 02 13 | 333 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.1− |
| 2003 12 01 | 704 | 0.2+ | 0.2+ | 2004 02 13 | 333 | 0.6− | 0.1+ | 2006 09 21 | 699 | 0.6+ | 1.3+ |
| 2003 12 18 | 644 | 0.4+ | 0.3+ | 2004 02 13 | 333 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.3+ | 0.7+ |
| 2003 12 18 | 644 | 0.1+ | 0.2+ | 2004 02 17 | 704 | 0.3− | 1.5+ | 2006 09 21 | 699 | (0.1+ | 1.5+) |
| 2003 12 18 | 644 | 0.4+ | 0.3+ | 2004 02 17 | 704 | 0.1− | 1.0+ | 2006 09 21 | 699 | 0.7− | 1.4+ |
| 2003 12 21 | 704 | (2.7+ | 0.5−) | 2004 02 17 | 704 | 0.3− | 1.1+ | 2006 10 20 | 703 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 704 | 0.7+ | 0.2− | 2004 02 17 | 704 | 0.6− | 1.2+ | 2006 10 20 | 703 | 0.0 | 1.0+ |
| 2003 12 21 | 704 | 1.0+ | 0.3+ | 2004 02 17 | 704 | 0.1− | 1.0+ | 2006 10 20 | 703 | 0.7+ | 0.9− |
| 2003 12 21 | 704 | 1.0+ | 1.4− | 2004 02 19 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 703 | 0.2+ | 0.7− |
| 2003 12 22 | 704 | 0.8+ | 0.6+ | 2004 02 19 | 704 | 0.1− | 0.1+ | | | | |
| 2003 12 22 | 704 | 0.7+ | 0.1+ | 2004 02 19 | 704 | 0.4+ | 0.3+ | | | | |

**(139444)∗ 2001 OY$_{61}$**

Discovered 2001 July 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 337.71942 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.21460657 | $\omega$ | 281.51921 | +0.85800634 | −0.49991705 | |
| $a$ | 2.7629565 | $\Omega$ | 108.57264 | +0.50628095 | +0.78439709 | |
| $e$ | 0.0758803 | $i$ | 7.14678 | +0.08662972 | +0.36715686 | |
| $P$ | 4.59 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 608 | 0.4− | 0.4+ | 2002 12 01 | 704 | 0.1+ | 0.3+ | 2004 03 26 | 691 | 0.1+ | 0.5+ |
| 2001 07 21 | 608 | 0.6+ | 0.8+ | 2002 12 08 | 608 | 0.0 | 0.2− | 2004 03 26 | 703 | 1.3+ | 0.6+ |
| 2001 07 21 | 608 | 0.3+ | 0.9+ | 2002 12 08 | 608 | 0.3+ | 0.2+ | 2004 03 26 | 703 | 1.5− | 0.8− |
| 2001 07 27 | 608 | 0.3− | 1.0+ | 2002 12 08 | 608 | 0.7+ | 0.2− | 2004 03 26 | 703 | 0.4− | 0.7+ |
| 2001 07 27 | 608 | 0.7− | 0.5+ | 2002 12 11 | 704 | 0.7+ | 1.0+ | 2004 03 26 | 703 | 1.1− | 0.4+ |
| 2001 07 27 | 608 | 0.6− | 0.1− | 2002 12 11 | 704 | 0.2− | 1.1+ | 2004 04 13 | 703 | (3.0+ | 4.0+) |
| 2001 08 14 | 608 | 0.2− | 0.1+ | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2004 04 13 | 703 | (3.4+ | 1.7+) |
| 2001 08 14 | 608 | 0.3− | 0.1+ | 2002 12 11 | 704 | 0.4− | 1.0+ | 2004 04 13 | 703 | 0.1+ | 0.1+ |
| 2001 08 14 | 608 | 0.3− | 0.0 | 2002 12 11 | 704 | 0.6− | 0.3+ | 2004 04 13 | 703 | 0.7− | 0.5+ |
| 2001 08 21 | 608 | 0.5− | 0.1+ | 2002 12 13 | 644 | 0.2+ | 0.1− | 2006 08 19 | 644 | 0.2− | 0.5+ |
| 2001 08 21 | 608 | 0.4− | 0.2+ | 2002 12 13 | 644 | 0.2− | 0.2− | 2006 08 19 | 644 | 0.1− | 0.1+ |
| 2001 08 21 | 608 | 0.2− | 0.1− | 2002 12 13 | 644 | 0.1− | 0.2− | 2006 08 19 | 644 | 0.0 | 0.6+ |
| 2001 08 22 | 608 | 0.4+ | 0.2− | 2003 01 07 | 704 | 0.8− | 0.1+ | 2006 08 28 | 699 | 0.1− | 2.0+ |
| 2001 08 22 | 608 | 0.1+ | 0.1− | 2003 01 07 | 704 | 0.4+ | 0.1− | 2006 08 28 | 699 | 0.4+ | 1.7+ |
| 2001 08 22 | 608 | 0.2+ | 0.3+ | 2003 01 07 | 704 | 0.6− | 0.2+ | 2006 08 28 | 699 | 1.2− | 0.2− |
| 2001 08 25 | 704 | (0.2− | 3.0−) | 2003 01 07 | 704 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.8+ |
| 2001 08 25 | 704 | 0.4+ | 1.5− | 2003 01 07 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 1.3− | 0.8− |
| 2001 08 25 | 704 | 0.2+ | 1.7− | 2003 01 27 | 704 | 0.5− | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.5+ |
| 2001 08 25 | 704 | (0.4+ | 2.2−) | 2003 01 27 | 704 | 0.5− | 0.4− | 2006 09 18 | 699 | 0.7− | 1.2+ |
| 2001 08 26 | 608 | 0.6− | 0.5− | 2003 01 27 | 704 | 1.1− | 0.4− | 2006 09 18 | 699 | 0.6+ | 0.1+ |
| 2001 08 26 | 608 | 0.6− | 1.1− | 2003 01 27 | 704 | 0.6− | 0.2− | 2006 09 19 | 703 | 0.7− | 1.0+ |
| 2001 08 26 | 608 | 0.7− | 0.8− | 2004 03 11 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.0 |
| 2001 08 27 | 644 | 0.2+ | 1.1+ | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.6+ |
| 2001 08 27 | 644 | 0.0 | 0.9+ | 2004 03 11 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.8+ |
| 2001 08 27 | 644 | 0.1+ | 1.1+ | 2004 03 15 | 704 | 0.2− | 0.7− | 2006 09 26 | 703 | 0.2− | 0.4+ |
| 2001 09 11 | 704 | 1.0+ | 0.2− | 2004 03 15 | 704 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 2001 09 11 | 704 | 1.3+ | 0.7+ | 2004 03 15 | 704 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2001 09 11 | 704 | 0.4+ | 0.4+ | 2004 03 15 | 704 | 1.2+ | 1.3− | 2006 09 26 | 703 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.9+ | 0.0 | 2006 10 02 | 703 | 0.4+ | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.5+ | 0.8+ | 2006 10 02 | 703 | 0.3+ | 0.8+ |
| 2002 11 07 | 704 | 0.3− | 0.2− | 2004 03 23 | 704 | 0.6+ | 0.7+ | 2006 10 02 | 703 | 0.8− | 0.2− |
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 10 02 | 703 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.2− | 0.7+ | 2006 10 04 | 703 | 0.5+ | 0.1− |
| 2002 12 01 | 704 | 0.9+ | 0.1− | 2004 03 23 | 704 | 0.5+ | 1.1+ | 2006 10 04 | 703 | 0.8− | 0.4+ |
| 2002 12 01 | 704 | 0.3+ | 0.0 | 2004 03 26 | 691 | 0.1− | 0.5+ | 2006 10 04 | 703 | (1.1+ | 4.9−) |
| 2002 12 01 | 704 | 1.3+ | 0.2− | 2004 03 26 | 691 | 0.1+ | 0.3+ | | | | |

**(139445)∗ 2001 OE$_{63}$**

Discovered 2001 July 26 by W. K. Y. Yeung at Desert Beaver Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 46.52713 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.21682370 | $\omega$ | 170.86973 | +0.79867567 | +0.60082861 | |
| $a$ | 2.7440891 | $\Omega$ | 152.11595 | −0.55652810 | +0.75866956 | |
| $e$ | 0.2874293 | $i$ | 4.10741 | −0.22889658 | +0.25184416 | |
| $P$ | 4.55 | $H$ | 16.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 28 | 691 | 0.9+ | 0.8− | 2001 08 22 | 621 | 0.1+ | 0.1+ | 2001 09 21 | 704 | 0.3− | 0.0 |
| 1992 09 28 | 691 | 0.2− | 0.6− | 2001 08 22 | 621 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.8− | 0.0 |
| 1992 09 28 | 691 | 0.2− | 0.6− | 2001 08 22 | 621 | 0.1+ | 0.3+ | 2001 10 18 | 699 | 1.3+ | 0.4− |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2001 08 23 | 621 | 0.0 | 0.0 | 2001 10 18 | 699 | (1.5− | 0.0 ) |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2001 08 23 | 621 | 0.0 | 0.5+ | 2001 10 18 | 699 | 0.4− | 0.3− |
| 2000 05 05 | 645 | 0.2− | 0.1− | 2001 08 23 | 621 | 0.0 | 0.0 | 2001 10 18 | 699 | 0.8− | 0.7+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2001 08 27 | 699 | 0.4− | 0.6+ | 2004 02 18 | 291 | 0.2+ | 0.6+ |
| 2001 07 26 | 919 | 1.3− | 0.0 | 2001 08 27 | 699 | 0.2− | 0.0 | 2004 02 18 | 291 | 0.2− | 0.4+ |
| 2001 07 26 | 919 | 0.5+ | 0.3+ | 2001 08 27 | 699 | 0.5− | 0.4+ | 2004 02 18 | 291 | 0.2+ | 0.5+ |
| 2001 07 26 | 919 | 0.6+ | 0.1− | 2001 08 27 | 699 | 0.1+ | 0.2+ | 2004 02 29 | 691 | 1.1+ | 0.1− |
| 2001 07 28 | 919 | 0.0 | 0.7− | 2001 09 07 | 704 | 0.4+ | 0.5− | 2004 02 29 | 691 | 0.0 | 0.0 |
| 2001 07 28 | 919 | (1.9+ | 0.0 ) | 2001 09 07 | 704 | 0.4+ | 0.3− | 2004 02 29 | 691 | 0.1− | 0.2+ |
| 2001 07 28 | 919 | 0.0 | 0.0 | 2001 09 07 | 704 | 0.0 | 0.6+ | 2005 04 16 | 691 | 0.0 | 0.5+ |
| 2001 08 13 | 621 | 0.2+ | 0.2+ | 2001 09 07 | 704 | 0.4− | 0.3− | 2005 04 16 | 691 | 0.3− | 0.4+ |
| 2001 08 13 | 621 | 0.5+ | 0.1+ | 2001 09 07 | 333 | 0.0 | 0.5+ | 2005 04 16 | 691 | 0.1− | 0.5+ |
| 2001 08 13 | 621 | 0.5+ | 0.1− | 2001 09 07 | 704 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 08 14 | 621 | 0.0 | 0.1+ | 2001 09 07 | 333 | 0.6+ | 1.3+ | 2006 10 22 | 691 | 0.6− | 0.3+ |
| 2001 08 14 | 621 | 0.1+ | 0.1+ | 2001 09 07 | 333 | 0.1+ | 0.9+ | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 2001 08 14 | 621 | 0.3+ | 0.0 | 2001 09 07 | 699 | 0.4+ | 0.1− | 2006 10 30 | 703 | (1.3− | 3.0+) |
| 2001 08 16 | 704 | 0.6+ | 0.4+ | 2001 09 07 | 699 | 0.4+ | 0.6+ | 2006 10 30 | 703 | 0.9− | 0.5+ |
| 2001 08 16 | 704 | 0.5+ | 0.3+ | 2001 09 07 | 699 | 0.7− | 0.6+ | 2006 10 30 | 703 | (0.4− | 1.5+) |
| 2001 08 16 | 704 | 1.4− | 0.6+ | 2001 09 07 | 699 | 0.3+ | 0.9+ | 2006 10 30 | 703 | 0.9− | 0.1+ |
| 2001 08 16 | 704 | 0.6+ | 0.2+ | 2001 09 12 | 704 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.3+ |
| 2001 08 16 | 704 | 0.6+ | 0.0 | 2001 09 12 | 704 | 0.4+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2001 08 16 | 704 | (2.9+ | 0.3+) | 2001 09 12 | 704 | 0.8− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2001 08 16 | 704 | 0.3+ | 0.1− | 2001 09 12 | 704 | 0.6− | 0.4+ | 2006 11 13 | 683 | (0.4+ | 1.9−) |
| 2001 08 18 | 704 | 0.2+ | 0.8+ | 2001 09 12 | 704 | 1.3− | 0.4+ | 2006 11 13 | 683 | 1.2− | 0.8− |
| 2001 08 18 | 704 | 0.3+ | 0.3+ | 2001 09 19 | 704 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.5+ | 0.6− |
| 2001 08 18 | 704 | 0.1− | 0.2+ | 2001 09 19 | 704 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.5− |
| 2001 08 18 | 704 | 1.4+ | 0.7+ | 2001 09 19 | 704 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.0 | 0.2− |
| 2001 08 20 | 333 | (1.6+ | 0.6+) | 2001 09 19 | 704 | 0.2− | 0.6− | 2006 11 13 | 703 | 0.1+ | 1.3+ |
| 2001 08 20 | 333 | 1.1− | 1.1+ | 2001 09 19 | 704 | 0.3− | 0.6− | 2006 11 22 | 683 | 1.5+ | 0.6+ |
| 2001 08 22 | 621 | 0.3− | 0.1− | 2001 09 21 | 704 | 0.9− | 0.1− | 2006 11 22 | 683 | 0.9+ | 0.5+ |
| 2001 08 22 | 621 | 0.2− | 0.1+ | 2001 09 21 | 704 | 0.8− | 0.2+ | 2006 11 22 | 683 | 0.4+ | 1.2+ |
| 2001 08 22 | 621 | 0.1− | 0.4+ | 2001 09 21 | 704 | 0.6+ | 0.6− | | | | |

**(139446)∗ 2001 OU$_{63}$**

Discovered 2001 July 23 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 24.16831 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22697859 | $\omega$ | 44.77013 | +0.90545547 | −0.41738163 | |
| $a$ | 2.6616204 | $\Omega$ | 339.51506 | +0.30076216 | +0.75909818 | |
| $e$ | 0.2732242 | $i$ | 12.72568 | +0.29948709 | +0.49956234 | |
| $P$ | 4.34 | $H$ | 15.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.5− | 0.1− | 2001 08 19 | 704 | 0.1− | 0.2− | 2001 10 13 | 704 | 0.9+ | 0.7+ |
| 1999 02 08 | 691 | 0.3− | 0.0 | 2001 08 19 | 704 | 0.1− | 0.7− | 2001 10 13 | 704 | 0.3− | 0.1+ |
| 1999 02 08 | 691 | 0.3− | 0.1− | 2001 08 21 | 608 | 0.2+ | 0.6− | 2001 10 13 | 704 | 0.3− | 1.0− |
| 1999 02 12 | 691 | 0.4+ | 0.1+ | 2001 08 21 | 608 | 0.3+ | 0.8− | 2001 11 18 | 608 | 0.1− | 1.0+ |
| 1999 02 12 | 691 | 0.2− | 0.2− | 2001 08 21 | 608 | 0.3+ | 0.6− | 2001 11 18 | 608 | 0.0 | 1.1+ |
| 1999 02 12 | 691 | 0.2+ | 0.5− | 2001 08 22 | 608 | 0.5− | 0.6− | 2001 11 18 | 608 | 0.2+ | 1.2+ |
| 1999 02 21 | 691 | 0.7− | 0.1− | 2001 08 22 | 608 | 0.5− | 0.6− | 2003 01 28 | 644 | 0.6+ | 0.5+ |
| 1999 02 21 | 691 | 1.3− | 0.5+ | 2001 08 22 | 608 | 0.6− | 0.8− | 2003 01 28 | 644 | 0.5+ | 0.4+ |
| 1999 02 21 | 691 | 0.7− | 0.1+ | 2001 08 25 | 704 | 0.2+ | 0.4+ | 2003 01 28 | 644 | 0.2+ | 0.3+ |
| 1999 03 21 | 691 | 0.4+ | 0.4− | 2001 08 25 | 704 | 0.2+ | 0.2+ | 2003 02 01 | 704 | 1.2+ | 0.2+ |
| 1999 03 21 | 691 | 0.4+ | 0.2− | 2001 08 25 | 704 | 0.4+ | 0.3− | 2003 02 01 | 704 | 0.4− | 0.2− |
| 1999 03 21 | 691 | 0.4+ | 0.3− | 2001 08 25 | 704 | 0.3+ | 0.1+ | 2003 02 01 | 704 | 1.0+ | 0.3− |
| 2001 07 16 | 608 | 0.1+ | 0.2+ | 2001 08 25 | 704 | 0.8+ | 0.3− | 2003 02 01 | 704 | 0.9+ | 0.0 |
| 2001 07 16 | 608 | 0.0 | 0.4+ | 2001 08 26 | 608 | 1.1+ | 0.5− | 2003 02 02 | 644 | 0.6+ | 0.2+ |
| 2001 07 16 | 608 | 0.1− | 0.4+ | 2001 08 26 | 608 | 1.2+ | 0.3− | 2003 02 02 | 644 | 0.4+ | 0.0 |
| 2001 07 23 | 608 | 1.1− | 0.7+ | 2001 08 26 | 608 | 0.9+ | 1.2− | 2003 02 02 | 644 | 0.7+ | 0.0 |
| 2001 07 23 | 608 | 1.3− | 1.1+ | 2001 08 26 | 608 | 1.1+ | 0.3− | 2003 02 04 | 704 | 0.2+ | 0.8+ |
| 2001 07 23 | 608 | 1.1− | 1.4+ | 2001 08 26 | 608 | 1.0+ | 0.8− | 2003 02 04 | 704 | 0.3+ | 0.8− |
| 2001 07 28 | 699 | 0.1+ | 0.6+ | 2001 08 26 | 608 | 1.3+ | 0.2− | 2003 02 04 | 704 | 0.4+ | 0.1− |
| 2001 07 28 | 699 | 0.4+ | 0.7+ | 2001 09 08 | 699 | 0.4− | 0.4− | 2003 02 04 | 704 | 0.3+ | 0.0 |
| 2001 07 28 | 699 | 0.1+ | 0.6+ | 2001 09 08 | 699 | 0.8− | 0.5+ | 2003 02 04 | 608 | 0.3− | 1.1+ |
| 2001 07 28 | 699 | (1.7+ | 0.8+) | 2001 09 08 | 699 | 0.3− | 0.5− | 2003 02 04 | 608 | 0.6− | 0.8+ |
| 2001 07 28 | 608 | 0.0 | 0.8+ | 2001 09 08 | 699 | 0.6− | 0.5− | 2003 02 04 | 608 | 0.6− | 0.7+ |
| 2001 07 28 | 608 | 0.9− | 0.9+ | 2001 09 17 | 699 | 0.7+ | 0.4− | 2003 02 07 | 644 | 0.5+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 28 | 608 | 0.2− | 1.3+ | 2001 09 17 | 699 | 1.0+ | 0.2− | 2003 02 07 | 644 | 0.5+ | 0.1+ | | |
| 2001 07 30 | 704 | 0.3+ | 0.5− | 2001 09 17 | 699 | 0.4− | 0.3− | 2003 02 07 | 644 | 0.4+ | 0.3+ | | |
| 2001 07 30 | 704 | 0.4− | 0.3− | 2001 09 17 | 699 | 0.5+ | 0.8+ | 2003 02 19 | 644 | 0.5+ | 0.4+ | | |
| 2001 07 30 | 704 | 0.7− | 0.1− | 2001 09 18 | 704 | 0.1+ | 0.1+ | 2003 02 19 | 644 | 0.7+ | 0.6+ | | |
| 2001 07 30 | 704 | 1.3− | 0.7− | 2001 09 18 | 704 | 0.6+ | 0.2+ | 2003 02 19 | 644 | 0.8+ | 0.2+ | | |
| 2001 07 30 | 704 | 0.2− | 0.1− | 2001 09 18 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.6− | | |
| 2001 07 31 | 644 | 0.3− | 0.5+ | 2001 09 19 | 704 | 0.5− | 1.1− | 2006 10 19 | 703 | (1.1+ | 2.6−) | | |
| 2001 07 31 | 644 | 0.2− | 0.3+ | 2001 09 19 | 704 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.6− | 1.3− | | |
| 2001 07 31 | 644 | 0.1− | 0.3+ | 2001 09 19 | 704 | 0.6− | 0.8− | 2006 10 19 | 703 | 0.2− | 1.1− | | |
| 2001 08 10 | 644 | 0.2− | 0.1+ | 2001 09 19 | 704 | 0.1− | 0.7− | 2006 10 27 | 703 | 1.3− | 1.4− | | |
| 2001 08 10 | 644 | 0.2− | 0.1− | 2001 09 19 | 704 | 0.6− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.3+ | | |
| 2001 08 10 | 644 | 0.6− | 0.1+ | 2001 09 20 | 291 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.2− | | |
| 2001 08 16 | 704 | 0.5− | 0.3+ | 2001 09 20 | 291 | 0.0 | 0.3+ | 2006 10 27 | 703 | (3.1− | 0.4−) | | |
| 2001 08 16 | 704 | 0.4+ | 0.6+ | 2001 09 20 | 291 | 0.6− | 0.1+ | 2006 11 13 | 704 | 0.7− | 0.1− | | |
| 2001 08 16 | 704 | 0.1− | 0.6+ | 2001 09 21 | 704 | 1.5+ | 1.1− | 2006 11 13 | 704 | 0.4+ | 0.5+ | | |
| 2001 08 16 | 704 | 0.5− | 0.1+ | 2001 09 21 | 704 | 1.0+ | 0.8− | 2006 11 13 | 704 | 0.3− | 0.2+ | | |
| 2001 08 19 | 704 | 0.3− | 0.3+ | 2001 09 21 | 704 | 1.2+ | 0.4− | 2006 11 13 | 704 | 0.1+ | 0.2+ | | |
| 2001 08 19 | 704 | 0.2+ | 0.0 | 2001 09 21 | 704 | 1.0+ | 0.3− | 2006 11 13 | 704 | 0.2+ | 1.5+ | | |

**(139447)∗ 2001 OD$_{64}$**

Discovered 2001 July 23 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.40416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22445292 | $\omega$ | 229.80411 | | +0.95943001 | | +0.26962349 |
| $a$ | 2.6815499 | $\Omega$ | 114.41036 | | −0.22326962 | | +0.90511942 |
| $e$ | 0.1076603 | $i$ | 5.19460 | | −0.17217647 | | +0.32872786 |
| $P$ | 4.39 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.2+ | 0.2+ | 2001 09 17 | 699 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.2− | | |
| 2000 04 05 | 699 | 0.7+ | 0.2− | 2001 09 17 | 699 | 1.1+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.3− | | |
| 2000 04 05 | 699 | 0.8+ | 1.4+ | 2001 09 17 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.8− | 0.6+ | | |
| 2000 04 05 | 699 | 0.3+ | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.4+ | | |
| 2001 07 16 | 608 | 0.1+ | 0.1+ | 2002 12 31 | 704 | 0.8+ | 0.3− | 2006 10 27 | 704 | 0.1− | 0.8+ | | |
| 2001 07 16 | 608 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 704 | 0.6+ | 0.5+ | | |
| 2001 07 16 | 608 | 0.1+ | 0.1+ | 2002 12 31 | 704 | 0.6− | 0.0 | 2006 10 27 | 704 | 1.3+ | 0.2− | | |
| 2001 07 23 | 608 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.7+ | 0.6+ | 2006 11 01 | 703 | 0.8− | 0.3+ | | |
| 2001 07 23 | 608 | 0.1+ | 0.3− | 2004 02 18 | 704 | 0.4+ | 0.3− | 2006 11 01 | 703 | 0.1− | 0.1− | | |
| 2001 07 23 | 608 | 0.4+ | 0.1− | 2004 02 18 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.3+ | | |
| 2001 07 27 | 699 | (0.3+ | 1.8+) | 2004 02 18 | 704 | 0.7+ | 0.9+ | 2006 11 01 | 703 | 0.1+ | 0.4− | | |
| 2001 07 27 | 699 | 0.2− | 1.3+ | 2004 03 11 | 644 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2001 07 27 | 699 | 1.1− | 0.3+ | 2004 03 11 | 644 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 2001 07 27 | 699 | 0.8+ | 0.0 | 2004 03 11 | 644 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.2− | | |
| 2001 07 28 | 608 | (0.2− | 1.8+) | 2004 03 15 | 703 | 0.9+ | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 2001 07 28 | 608 | (0.2+ | 1.9+) | 2004 03 15 | 704 | (0.0 | 2.1+) | 2006 11 10 | 644 | 0.2− | 0.0 | | |
| 2001 07 28 | 608 | 0.5− | 0.7+ | 2004 03 15 | 703 | 0.4− | 1.3+ | 2006 11 10 | 644 | 0.1+ | 0.1− | | |
| 2001 08 14 | 608 | (1.8+ | 1.4+) | 2004 03 15 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 644 | 0.2− | 0.1− | | |
| 2001 08 14 | 608 | (1.7+ | 1.2+) | 2004 03 15 | 703 | 0.0 | 1.1+ | 2006 11 11 | 644 | 0.5− | 0.0 | | |
| 2001 08 14 | 608 | (1.6+ | 0.9+) | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 644 | 0.0 | 0.1− | | |
| 2001 08 16 | 704 | 0.3+ | 0.6+ | 2004 03 15 | 703 | 0.1+ | 1.2+ | 2006 11 14 | 704 | (2.0− | 2.0−) | | |
| 2001 08 16 | 704 | 0.7− | 0.4+ | 2004 03 15 | 704 | 0.3+ | 0.9+ | 2006 11 14 | 704 | 0.7− | 1.1+ | | |
| 2001 08 16 | 704 | 0.7+ | 0.8+ | 2004 03 15 | 704 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.8+ | 0.8+ | | |
| 2001 08 16 | 704 | 0.3+ | 1.0+ | 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.5+ | 0.5+ | | |
| 2001 08 19 | 704 | 0.8− | 1.4+ | 2004 03 15 | 691 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.7− | 0.6+ | | |
| 2001 08 19 | 704 | 0.2− | 1.3+ | 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 11 17 | 704 | (0.5− | 3.3+) | | |
| 2001 08 19 | 704 | 0.4+ | 1.2+ | 2004 03 26 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | (0.0 | 3.0+) | | |
| 2001 08 19 | 704 | 0.2− | 1.3+ | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | (0.6+ | 3.4+) | | |
| 2001 08 23 | 699 | 0.1− | 1.0+ | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | (1.4+ | 1.8+) | | |
| 2001 08 23 | 699 | 0.7− | 0.5− | 2006 10 03 | 704 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.3+ | | |
| 2001 08 23 | 699 | 0.4+ | 0.2+ | 2006 10 03 | 704 | (0.2− | 2.6+) | 2006 11 20 | 704 | 0.4− | 0.3+ | | |
| 2001 08 23 | 699 | 0.7− | 1.1+ | 2006 10 03 | 704 | 0.2− | 1.0+ | 2006 11 20 | 704 | 0.1− | 0.6+ | | |
| 2001 08 25 | 704 | 0.5− | 1.5− | 2006 10 03 | 704 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.5+ | | |
| 2001 08 25 | 704 | 0.7− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.7+ | 0.4+ | | |
| 2001 08 25 | 704 | (0.1+ | 1.7−) | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.6+ | | |
| 2001 08 27 | 608 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 1.0+ | | |
| 2001 08 27 | 608 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 20 | 704 | 0.2+ | 0.6+ | | |
| 2001 08 27 | 608 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.3+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.5− | | |
| 2001 09 17 | 699 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2001 09 17 | 699 | 1.4− | 0.7− | 2006 10 16 | 703 | 0.6+ | 0.8− | 2006 11 23 | G96 | 0.3+ | 0.4− | | |
| 2001 09 17 | 699 | (1.6+ | 0.4+) | 2006 10 22 | 704 | 0.3− | 1.1+ | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2001 09 17 | 699 | 1.2− | 0.5− | 2006 10 22 | 704 | 0.9− | 0.2+ | | | | | | |
| 2001 09 17 | 699 | 0.2+ | 0.5+ | 2006 10 22 | 704 | 0.0 | 0.5+ | | | | | | |

**(139448)∗ 2001 OL$_{64}$ = 2005 JN$_{20}$**

Discovered 2001 July 24 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 75016)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.95582 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22183691 | $\omega$ | 102.73905 | | +0.14729546 | | +0.98894918 |
| $a$ | 2.7025900 | $\Omega$ | 175.62486 | | −0.97135776 | | +0.14784302 |
| $e$ | 0.1855098 | $i$ | 12.75261 | | −0.18646218 | | +0.01104386 |
| $P$ | 4.44 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | (1.0+ | 3.0+) | 2005 05 15 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.9− | 1.0+ | | |
| 2000 03 11 | 704 | 0.9+ | 1.3+ | 2005 05 15 | 644 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2− | | |
| 2000 03 11 | 704 | 0.5+ | 0.7+ | 2005 05 19 | 703 | 1.1− | 0.4− | 2006 10 04 | G96 | 0.3+ | 0.2− | | |
| 2000 03 11 | 704 | 0.8− | 0.2− | 2005 05 19 | 703 | 0.3+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.5− | | |
| 2001 07 11 | 644 | 0.2+ | 0.6+ | 2005 05 19 | 703 | 1.2+ | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.4− | | |
| 2001 07 11 | 644 | 0.1+ | 0.6+ | 2005 05 19 | 703 | (1.7− | 0.0 ) | 2006 10 16 | 703 | (1.8− | 0.9+) | | |
| 2001 07 11 | 644 | 0.3+ | 0.7+ | 2005 05 31 | 703 | 0.8− | 0.1+ | 2006 10 16 | 703 | 1.4− | 0.6− | | |
| 2001 07 24 | 608 | 0.6+ | 0.9− | 2005 05 31 | 703 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.3+ | | |
| 2001 07 24 | 608 | (0.2+ | 1.9−) | 2005 05 31 | 703 | 1.1− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.4+ | | |
| 2001 07 24 | 608 | 0.2+ | 0.7− | 2005 05 31 | 703 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2001 07 28 | 608 | 0.3− | 0.5− | 2005 06 01 | 699 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 07 28 | 608 | 0.6− | 0.0 | 2005 06 01 | 699 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.5+ | 0.1+ | | |
| 2001 07 28 | 608 | 0.6− | 0.1+ | 2005 06 01 | 699 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.0 | | |
| 2005 05 04 | 703 | 0.5− | 0.3− | 2005 06 01 | 699 | (0.5− | 1.6+) | 2006 10 22 | 703 | 0.0 | 0.4− | | |
| 2005 05 04 | 703 | 1.0+ | 0.9+ | 2005 06 25 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.6− | 2.8+ | | |
| 2005 05 04 | 703 | 0.7− | 0.2+ | 2005 06 25 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.7+ | | |
| 2005 05 04 | 703 | 0.8− | 0.3+ | 2005 06 25 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2005 05 06 | 704 | 0.6+ | 0.0 | 2005 07 01 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2005 05 06 | 704 | 0.2− | 0.6+ | 2005 07 01 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.2+ | | |
| 2005 05 06 | 704 | 0.9+ | 0.2+ | 2005 07 01 | 644 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.6+ | 0.1− | | |
| 2005 05 06 | 704 | 1.1+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 1.0− | 2006 10 28 | 703 | 0.4− | 0.4− | | |
| 2005 05 06 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 0.7+ | 0.9+ | 2006 10 28 | 703 | 0.7+ | 0.6− | | |
| 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | (1.7− | 0.6+) | 2006 10 28 | 703 | 0.3− | 1.1+ | | |

**(139449)∗ 2001 OX$_{64}$**

Discovered 2001 July 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.06930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23997207 | $\omega$ | 222.48898 | | −0.49921546 | | +0.86613751 |
| $a$ | 2.5646548 | $\Omega$ | 17.60652 | | −0.77184843 | | −0.43178468 |
| $e$ | 0.2202248 | $i$ | 4.60499 | | −0.39374349 | | −0.25172964 |
| $P$ | 4.11 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.2− | 0.2+ | 2001 08 13 | 644 | 1.4− | 0.5+ | 2005 09 01 | 644 | 0.0 | 0.2+ | | |
| 1996 01 15 | 691 | 0.1+ | 0.0 | 2001 08 13 | 644 | 1.0− | 0.4+ | 2005 09 01 | 644 | 0.3+ | 0.5+ | | |
| 1996 01 15 | 691 | 0.4+ | 0.5− | 2001 08 19 | 704 | 0.1+ | 0.7− | 2006 09 27 | G96 | 0.4+ | 0.2− | | |
| 2000 02 11 | 704 | 1.2− | 1.7+ | 2001 08 19 | 704 | 0.0 | 0.7+ | 2006 09 27 | G96 | 0.7+ | 0.1− | | |
| 2000 02 11 | 704 | 0.3+ | 1.9+ | 2001 08 19 | 704 | 0.6+ | 1.1+ | 2006 09 27 | G96 | 0.4+ | 0.1− | | |
| 2000 02 11 | 704 | 0.1+ | 1.5+ | 2001 08 19 | 704 | 0.9+ | 1.2+ | 2006 09 27 | G96 | 0.0 | 0.2− | | |
| 2001 07 18 | 644 | 0.3− | 0.4+ | 2004 02 15 | 704 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.3+ | | |
| 2001 07 18 | 644 | 0.0 | 0.3+ | 2004 02 15 | 704 | 0.2+ | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 07 18 | 644 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.8+ | 0.6+ | 2006 10 15 | 691 | 0.5− | 0.2+ | | |
| 2001 07 25 | 608 | 0.7+ | 0.4− | 2005 07 06 | E12 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.1+ | | |
| 2001 07 25 | 608 | 0.4+ | 0.3− | 2005 07 06 | E12 | 0.2+ | 0.7− | 2006 10 19 | 691 | 0.9− | 1.2− | | |
| 2001 07 25 | 608 | 0.4+ | 0.1− | 2005 07 06 | E12 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2001 07 25 | 608 | 0.1+ | 0.6− | 2005 07 17 | E12 | 0.4+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.4+ | | |
| 2001 07 25 | 608 | 0.0 | 0.3− | 2005 07 17 | E12 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.4+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.2+ | 0.3− | 2005 07 17 | E12 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 07 28 | 699 | 0.1+ | 0.3− | 2005 07 17 | E12 | 1.1+ | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 07 28 | 699 | 0.4− | 0.7+ | 2005 07 29 | E12 | 0.1− | 0.9− | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2001 07 28 | 699 | 0.4− | 0.5+ | 2005 07 29 | E12 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2001 07 28 | 699 | 0.6− | 0.1+ | 2005 07 29 | E12 | 1.0− | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2001 08 13 | 644 | 1.2− | 0.7+ | 2005 09 01 | 644 | 0.2+ | 0.4+ | | | | |

**(139450)∗ 2001 OC$_{65}$**

Discovered 2001 July 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.52625 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22890772 | $\omega$ | 224.99605 | | +0.66011960 | | +0.74289961 |
| $a$ | 2.6466454 | $\Omega$ | 86.64824 | | −0.65408526 | | +0.64120991 |
| $e$ | 0.1368527 | $i$ | 6.38947 | | −0.36934346 | | +0.19222390 |
| $P$ | 4.31 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.4+ | 0.6+ | 2002 12 05 | 704 | 0.4− | 0.4+ | 2006 11 01 | 703 | 0.5− | 0.2+ |
| 1996 05 11 | 691 | 0.3+ | 0.6+ | 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 11 01 | 703 | 0.0 | 0.5+ |
| 1996 05 11 | 691 | 0.3+ | 0.8+ | 2002 12 05 | 704 | 0.2− | 0.0 | 2006 11 01 | 703 | 0.6− | 0.4− |
| 2001 06 27 | 699 | 0.2− | 0.2− | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.6+ |
| 2001 06 27 | 699 | 0.9+ | 0.1+ | 2002 12 10 | 704 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.7+ |
| 2001 06 27 | 699 | 0.2+ | 1.0+ | 2002 12 10 | 704 | 0.9− | 0.1+ | 2006 11 09 | 644 | 0.6+ | 0.5+ |
| 2001 06 27 | 699 | 0.3− | 0.3− | 2002 12 10 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.6+ |
| 2001 07 22 | 644 | 0.4− | 0.5+ | 2002 12 11 | 704 | 0.1+ | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2001 07 22 | 644 | 0.4− | 0.3+ | 2002 12 11 | 704 | (0.1− | 1.9+) | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2001 07 22 | 644 | 0.6− | 0.5+ | 2002 12 11 | 704 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 2001 07 25 | 608 | 0.1+ | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2001 07 25 | 608 | 0.4+ | 0.4− | 2002 12 31 | 704 | 0.5+ | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.2+ |
| 2001 07 25 | 608 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.4+ |
| 2001 07 25 | 608 | 0.4− | 0.0 | 2002 12 31 | 704 | 1.4+ | 1.1− | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2001 07 25 | 608 | 0.0 | 0.1− | 2003 01 04 | 704 | 0.9− | 0.2− | 2006 11 20 | 704 | 0.7− | 0.4+ |
| 2001 07 25 | 608 | 0.3− | 0.1− | 2003 01 04 | 704 | 0.2− | 1.0+ | 2006 11 20 | 704 | 0.4− | 0.7+ |
| 2001 08 24 | 644 | 0.1+ | 0.5+ | 2003 01 04 | 704 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2001 08 24 | 644 | 0.2+ | 0.5+ | 2003 01 04 | 704 | 1.1− | 0.0 | 2006 11 20 | 704 | 1.0− | 0.6+ |
| 2001 08 24 | 644 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.8− | 0.0 | 2006 11 20 | 704 | (0.5− | 1.5+) |

**(139451)∗ 2001 OE$_{65}$ = 1995 BV$_5$**

Discovered 2001 July 22 by NEAT at Palomar.

Id. A. Doppler (*MPO* 15893)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.46776 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23006902 | $\omega$ | 30.99869 | | +0.98687581 | | +0.08052553 |
| $a$ | 2.6377317 | $\Omega$ | 323.55786 | | −0.14601220 | | +0.81518539 |
| $e$ | 0.1119036 | $i$ | 13.62915 | | +0.06896798 | | +0.57357512 |
| $P$ | 4.28 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 28 | 691 | 0.2+ | 0.1− | 2001 08 16 | 704 | 0.4− | 0.4+ | 2002 11 15 | 644 | 0.1+ | 1.1+ |
| 1995 01 28 | 691 | 0.0 | 0.2− | 2001 08 16 | 704 | 1.3− | 0.7+ | 2002 12 06 | 704 | 0.1− | 0.8− |
| 1995 01 28 | 691 | 0.3+ | 0.3+ | 2001 08 19 | 704 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.8+ | 0.0 |
| 1995 02 06 | 691 | 0.4− | 0.3+ | 2001 08 19 | 704 | 0.7− | 0.2− | 2002 12 06 | 704 | 0.9+ | 0.3− |
| 1995 02 06 | 691 | 0.1− | 0.3− | 2001 08 19 | 704 | 0.1− | 0.1− | 2003 01 07 | 704 | 0.8− | 0.4+ |
| 1995 02 06 | 691 | 0.1− | 0.4− | 2001 08 19 | 704 | 0.4− | 0.1− | 2003 01 07 | 704 | 0.2− | 0.1− |
| 2001 06 27 | 644 | 0.5+ | 0.5+ | 2001 08 19 | 704 | 0.4− | 0.1− | 2003 01 07 | 704 | 0.2+ | 0.4− |
| 2001 06 27 | 644 | 0.3+ | 0.6+ | 2001 08 24 | 704 | 0.8+ | 0.2− | 2003 01 07 | 704 | 0.4− | 0.1+ |
| 2001 06 27 | 644 | 0.4+ | 0.4+ | 2001 08 24 | 704 | 1.2+ | 0.5− | 2004 03 17 | 703 | 1.0+ | 1.0+ |
| 2001 07 16 | 699 | 0.3− | 0.7+ | 2001 08 24 | 704 | 0.8+ | 0.3− | 2004 03 17 | 703 | (1.8+ | 1.3+) |
| 2001 07 16 | 699 | 0.0 | 0.5+ | 2001 08 24 | 704 | 0.6+ | 0.7− | 2004 03 17 | 704 | 0.3+ | 0.4+ |
| 2001 07 16 | 699 | 0.8− | 0.3+ | 2001 09 07 | 704 | 0.5+ | 0.3+ | 2004 03 17 | 703 | 0.9+ | 0.9+ |
| 2001 07 16 | 699 | 0.6− | 0.1− | 2001 09 07 | 704 | (0.1+ | 1.7+) | 2004 03 17 | 704 | 0.0 | 0.5− |
| 2001 07 22 | 644 | 0.1− | 1.1− | 2001 09 07 | 704 | (0.6+ | 1.6+) | 2004 03 17 | 703 | 0.4+ | 0.3+ |
| 2001 07 22 | 644 | 0.4− | 1.2− | 2001 09 07 | 704 | 0.7− | 0.0 | 2004 03 17 | 704 | 0.2− | 1.2− |
| 2001 07 22 | 644 | 0.4− | 1.3− | 2001 09 08 | 699 | 0.0 | 0.2− | 2004 03 17 | 704 | 0.1− | 0.7− |
| 2001 07 25 | 608 | 0.5+ | 0.2+ | 2001 09 08 | 699 | 0.4− | 0.6− | 2004 03 17 | 704 | 0.2− | 0.5+ |
| 2001 07 25 | 608 | 0.4+ | 0.3+ | 2001 09 08 | 699 | 0.1+ | 0.0 | 2004 03 26 | 699 | 0.2− | 1.2+ |
| 2001 07 25 | 608 | 0.7+ | 0.2+ | 2001 09 08 | 699 | 0.4− | 0.7− | 2004 03 26 | 699 | 0.7+ | 0.8+ |
| 2001 07 25 | 608 | 0.5+ | 0.2+ | 2001 09 19 | 704 | (1.8+ | 1.3−) | 2004 03 26 | 699 | 0.5− | 0.2− |
| 2001 07 25 | 608 | 0.9+ | 0.3+ | 2001 09 19 | 704 | (2.2+ | 1.8−) | 2004 03 26 | 699 | 1.1− | 0.2− |
| 2001 07 25 | 608 | 0.5+ | 0.5+ | 2001 09 19 | 704 | (2.7+ | 0.7−) | 2006 11 13 | 704 | 0.5+ | 0.3+ |
| 2001 07 30 | 704 | 0.1− | 0.8+ | 2001 09 19 | 704 | (2.3+ | 1.2−) | 2006 11 13 | 704 | 0.2− | 0.2− |
| 2001 07 30 | 704 | 0.1− | 1.0+ | 2001 09 19 | 704 | (2.3+ | 1.5−) | 2006 11 13 | 704 | 0.4− | 0.5− |
| 2001 07 30 | 704 | 0.1+ | 1.0+ | 2001 09 21 | 704 | (0.4+ | 1.9−) | 2006 11 13 | 704 | 0.2+ | 0.3+ |
| 2001 07 30 | 704 | 0.1− | 1.3+ | 2001 09 21 | 704 | (0.9+ | 1.7−) | 2006 11 20 | 703 | 0.8− | 0.3+ |
| 2001 08 13 | 644 | 0.4− | 0.3+ | 2001 09 21 | 704 | 1.2+ | 1.5− | 2006 11 20 | 703 | 0.6+ | 0.2+ |
| 2001 08 13 | 644 | 0.7− | 0.2+ | 2001 09 21 | 704 | 1.1+ | 1.4− | 2006 11 20 | 703 | 0.0 | 0.5+ |
| 2001 08 13 | 644 | 0.7− | 0.4+ | 2001 09 21 | 704 | (1.2+ | 1.8−) | 2006 11 20 | 703 | 0.1− | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.4+ | 2002 11 15 | 644 | 0.1+ | 1.0+ | | | | |
| 2001 08 16 | 704 | 1.4− | 0.5− | 2002 11 15 | 644 | 0.0 | 1.2+ | | | | |

**(139452)∗ 2001 OK$_{66}$**

Discovered 2001 July 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.87491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18478075 | $\omega$ | 157.07502 | | +0.95410864 | | +0.29905758 |
| $a$ | 3.0527992 | $\Omega$ | 185.59285 | | −0.29347528 | | +0.92346170 |
| $e$ | 0.1377658 | $i$ | 9.17061 | | −0.05957307 | | +0.24038106 |
| $P$ | 5.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 691 | 0.1+ | 0.7− | 2001 09 18 | 699 | 0.1+ | 0.3− | 2001 10 17 | 644 | 0.1+ | 0.6+ |
| 1999 04 09 | 691 | 0.4+ | 0.5− | 2001 09 18 | 683 | 0.6+ | 1.2+ | 2001 10 17 | 644 | 0.0 | 0.6+ |
| 1999 04 11 | 691 | 0.5− | 0.7− | 2001 09 18 | 683 | 1.4− | 0.0 | 2001 10 20 | 704 | 0.8− | 0.8− |
| 1999 04 11 | 691 | 0.7− | 0.5− | 2001 09 18 | 699 | 0.6− | 0.4− | 2001 10 20 | 704 | 0.2+ | 0.3+ |
| 2001 07 22 | 644 | 0.2− | 0.0 | 2001 09 18 | 699 | 0.1+ | 0.4+ | 2001 10 20 | 704 | 0.2− | 1.0− |
| 2001 07 22 | 644 | 0.3+ | 0.5+ | 2001 09 18 | 699 | 1.0− | 0.3+ | 2001 10 20 | 704 | 0.0 | 0.2− |
| 2001 07 22 | 644 | 0.4− | 0.1+ | 2001 09 20 | 704 | (1.5− | 0.5−) | 2001 10 23 | 704 | 1.1− | 1.3+ |
| 2001 07 29 | 644 | 0.0 | 0.3+ | 2001 09 20 | 704 | 1.2− | 0.5− | 2001 10 23 | 704 | (1.8+ | 0.1+) |
| 2001 07 29 | 644 | 0.0 | 0.2+ | 2001 09 20 | 704 | 1.5− | 0.2− | 2001 10 23 | 704 | 0.1+ | 1.0+ |
| 2001 07 29 | 644 | 0.3+ | 0.3+ | 2001 09 20 | 704 | 1.5− | 0.3− | 2001 10 23 | 704 | (0.1+ | 1.6+) |
| 2001 08 26 | 333 | 0.6− | 0.5− | 2001 09 20 | 704 | (1.6− | 0.2−) | 2001 10 23 | 704 | 0.7+ | 0.7+ |
| 2001 08 26 | 333 | 0.1− | 0.1− | 2001 09 22 | 704 | 0.1+ | 0.3− | 2001 10 24 | 704 | 0.2+ | 0.4+ |
| 2001 08 27 | 699 | 0.5− | 0.4− | 2001 09 22 | 704 | 0.3+ | 0.4− | 2001 10 24 | 704 | 0.2+ | 0.8+ |
| 2001 08 27 | 699 | 0.6− | 0.3+ | 2001 09 22 | 704 | 0.1− | 0.3− | 2001 10 24 | 704 | 0.1− | 0.5+ |
| 2001 08 27 | 699 | 0.3− | 0.1+ | 2001 09 22 | 704 | 0.5+ | 0.2− | 2001 10 24 | 704 | 0.4+ | 1.2+ |
| 2001 08 27 | 699 | 0.7− | 0.2+ | 2001 09 24 | 704 | 0.6− | 0.8+ | 2004 03 12 | 644 | 0.2− | 0.9+ |
| 2001 09 11 | 699 | 0.3+ | 0.3+ | 2001 09 24 | 704 | (1.8− | 0.1+) | 2004 03 12 | 644 | 0.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.3+ | 0.1+ | 2001 09 24 | 704 | (0.6− | 2.8−) | 2004 03 12 | 644 | 0.1+ | 0.5+ |
| 2001 09 11 | 699 | 0.0 | 0.6+ | 2001 09 24 | 704 | 0.9− | 0.5− | 2005 04 04 | G96 | 0.2+ | 0.6− |
| 2001 09 11 | 699 | 1.1+ | 0.1− | 2001 09 24 | 704 | 0.4− | 0.6− | 2005 04 04 | G96 | 0.0 | 0.2− |
| 2001 09 12 | 691 | 0.4− | 0.0 | 2001 09 25 | 699 | 0.6− | 1.2+ | 2005 04 04 | G96 | 0.2+ | 0.2+ |
| 2001 09 12 | 691 | 0.4+ | 0.1+ | 2001 09 25 | 699 | 0.3− | 0.3− | 2005 04 04 | G96 | 0.4− | 0.1− |
| 2001 09 12 | 691 | 0.3+ | 0.2+ | 2001 09 25 | 699 | 0.6− | 0.1− | 2005 04 30 | 691 | 0.1− | 0.2+ |
| 2001 09 14 | 644 | 0.0 | 0.8+ | 2001 09 25 | 699 | 0.2+ | 0.3− | 2005 04 30 | 691 | 0.3− | 0.0 |
| 2001 09 14 | 644 | 0.7+ | 0.9+ | 2001 10 11 | 644 | 0.5− | 0.6− | 2005 04 30 | 691 | 0.3− | 0.2+ |
| 2001 09 14 | 644 | 0.4+ | 0.8+ | 2001 10 11 | 644 | 0.4− | 0.6− | 2005 05 14 | 691 | 0.3+ | 0.0 |
| 2001 09 16 | 644 | 0.0 | 0.5+ | 2001 10 11 | 644 | 0.2− | 0.6− | 2005 05 14 | 691 | 0.3+ | 0.1+ |
| 2001 09 16 | 644 | 0.4+ | 0.0 | 2001 10 13 | 704 | 1.1+ | 0.1− | 2005 05 14 | 691 | 0.2+ | 0.1+ |
| 2001 09 16 | 644 | 0.5+ | 0.0 | 2001 10 13 | 704 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.3+ | 0.0 |
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2001 10 13 | 704 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 0.2− | 0.6− | 2001 10 13 | 704 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.0 | 0.8− |
| 2001 09 16 | 704 | 1.0− | 0.3− | 2001 10 13 | 704 | 0.1+ | 0.7− | 2006 08 30 | 704 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.4− | 0.3− | 2001 10 14 | 645 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.7− |
| 2001 09 17 | 683 | 0.0 | 1.0+ | 2001 10 14 | 645 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.3− | 0.5− |
| 2001 09 17 | 683 | 0.4+ | 0.3+ | 2001 10 15 | 645 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.6− |
| 2001 09 17 | 683 | (0.4− | 2.3+) | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.6− | 0.0 |
| 2001 09 18 | 683 | 0.1− | 0.6+ | 2001 10 17 | 644 | 0.3+ | 0.6+ | 2006 11 18 | G96 | 0.3+ | 0.4− |

**(139453)∗ 2001 OT$_{67}$ = 2000 EN$_{80}$**

Discovered 2001 July 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 15895)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.46697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23018518 | $\omega$ | 217.94660 | | −0.16468235 | +0.98521951 | |
| $a$ | 2.6368443 | $\Omega$ | 42.63328 | | −0.88707851 | −0.12704332 | |
| $e$ | 0.1476857 | $i$ | 3.99103 | | −0.43124405 | −0.11490215 | |
| $P$ | 4.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.5− | 0.2− | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ | |
| 2000 03 05 | 704 | 0.3+ | 0.3− | 2004 02 11 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.4+ | 0.1+ | |
| 2000 03 05 | 704 | 0.3+ | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2+ | |
| 2000 03 05 | 704 | 0.2+ | 0.1+ | 2004 02 26 | 695 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.0 | |
| 2000 03 05 | 704 | 0.1+ | 1.0+ | 2004 02 26 | 695 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 | |
| 2000 03 12 | 704 | 1.2+ | 0.4− | 2004 02 27 | 695 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.1− | |
| 2000 03 12 | 704 | 0.7− | 0.1+ | 2004 02 27 | 695 | 0.8− | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.1− | |
| 2000 03 12 | 704 | 0.4+ | 0.9+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− | |
| 2000 03 12 | 704 | 0.6+ | 0.9+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.4− | |
| 2000 03 12 | 704 | 0.7− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2− | |
| 2001 07 16 | 699 | 0.1− | 0.9+ | 2006 10 15 | 691 | 0.1+ | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.2− | |
| 2001 07 16 | 699 | 0.5+ | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.0 | |
| 2001 07 16 | 699 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.2− | 0.2− | |
| 2001 07 16 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 17 | 691 | 0.4+ | 0.3− | |
| 2001 07 22 | 644 | 0.1− | 1.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.3− | |
| 2001 07 22 | 644 | 0.1+ | 1.2− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.2− | |
| 2001 07 22 | 644 | 0.0 | 1.2− | 2006 10 21 | 644 | 0.2− | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | |
| 2001 08 13 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | |
| 2001 08 13 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.3+ | 0.0 | |
| 2001 08 13 | 644 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.2− | |
| 2001 08 24 | 644 | 0.3+ | 0.8+ | 2006 10 23 | 691 | 0.7− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.1− | |
| 2001 08 24 | 644 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.5− | |
| 2001 08 24 | 644 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1− | |
| 2004 01 18 | 644 | 0.4+ | 0.3+ | 2006 10 23 | 691 | (1.9+ | 0.7−) | 2006 11 23 | 691 | 0.2+ | 0.1+ | |
| 2004 01 18 | 644 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.3+ | 0.4− | |
| 2004 01 18 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | | |

**(139454)∗ 2001 OD$_{69}$ = 2000 EW$_{161}$**

Discovered 2001 July 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 15897)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.67679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22691873 | $\omega$ | 269.40797 | | +0.11919782 | +0.99281825 | |
| $a$ | 2.6620884 | $\Omega$ | 7.46094 | | −0.87688285 | +0.11008061 | |
| $e$ | 0.2082472 | $i$ | 4.50026 | | −0.46569125 | +0.04684213 | |
| $P$ | 4.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.5− | 0.5− | 2001 08 19 | 704 | 0.8+ | 0.5− | 2006 09 30 | G96 | 0.0 | 0.1+ | |
| 2000 03 03 | 704 | 0.4− | 0.6− | 2001 08 19 | 704 | 0.1+ | 0.6− | 2006 09 30 | G96 | 0.0 | 0.2− | |
| 2000 03 03 | 704 | 0.9+ | 0.5− | 2001 08 24 | 608 | 0.0 | 1.4+ | 2006 09 30 | G96 | 0.0 | 0.2+ | |
| 2000 03 03 | 704 | 0.4+ | 0.2+ | 2001 08 24 | 608 | 0.8+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.0 | |
| 2000 03 11 | 704 | 0.4+ | 0.9+ | 2001 08 24 | 608 | 0.2− | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.0 | |
| 2000 03 11 | 704 | 0.1− | 1.8+ | 2001 08 24 | 608 | 0.0 | 0.7− | 2006 10 13 | 691 | 0.1− | 0.3− | |
| 2000 03 11 | 704 | 0.2+ | 0.6+ | 2001 08 24 | 608 | 0.2− | 0.4− | 2006 10 13 | 691 | 0.3+ | 0.1− | |
| 2000 03 11 | 704 | 1.1+ | 0.5+ | 2001 08 24 | 608 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.2+ | |
| 2000 03 11 | 704 | 0.6+ | 0.5+ | 2001 08 25 | 704 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.6+ | 0.1+ | |
| 2000 04 05 | 704 | 0.2+ | 1.4+ | 2001 08 25 | 704 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2+ | |
| 2000 04 05 | 704 | 1.2+ | 0.7+ | 2001 08 25 | 704 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.4− | 0.2+ | |
| 2000 04 05 | 704 | 0.5+ | 0.4+ | 2001 08 25 | 704 | 0.7+ | 0.5− | 2006 10 21 | 691 | 0.6− | 0.2+ | |
| 2001 07 18 | 644 | 0.1+ | 0.9+ | 2001 08 25 | 704 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.5− | 0.3+ | |
| 2001 07 18 | 644 | 0.0 | 0.8+ | 2001 09 11 | 704 | 0.8− | 0.4+ | 2006 10 27 | 703 | (1.7+ | 0.1+) | |
| 2001 07 18 | 644 | 0.0 | 0.6+ | 2001 09 11 | 704 | 1.0− | 0.6+ | 2006 10 27 | 703 | 0.9+ | 0.2+ | |
| 2001 07 22 | 704 | 0.1− | 0.6− | 2001 09 11 | 704 | 0.5− | 0.1+ | 2006 10 27 | 703 | (1.8− | 0.6−) | |
| 2001 07 22 | 704 | 0.0 | 0.7− | 2001 09 11 | 704 | 1.0− | 0.8+ | 2006 10 27 | 703 | (0.0 | 1.8+) | |
| 2001 07 22 | 704 | 1.1− | 0.0 | 2001 09 11 | 704 | 1.2− | 1.2+ | 2006 11 01 | G96 | 0.1+ | 0.1− | |
| 2001 07 30 | 704 | (1.2− | 2.0−) | 2001 09 19 | 704 | (0.7+ | 2.4+) | 2006 11 01 | G96 | 0.4+ | 0.1− | |
| 2001 07 30 | 704 | 0.1− | 0.6− | 2001 09 19 | 704 | (0.6+ | 2.7+) | 2006 11 01 | G96 | 0.1+ | 0.1+ | |
| 2001 07 30 | 704 | 0.5+ | 0.4+ | 2001 09 19 | 704 | (0.3+ | 1.8+) | 2006 11 01 | G96 | 0.3+ | 0.2− | |
| 2001 07 30 | 704 | 0.0 | 1.2+ | 2001 09 19 | 704 | (0.1+ | 2.9+) | 2006 11 14 | G96 | 0.1+ | 0.2− | |
| 2001 07 30 | 704 | 0.4+ | 1.4+ | 2001 09 21 | 704 | 0.3+ | 0.4+ | 2006 11 14 | G96 | 0.4+ | 0.2− | |
| 2001 08 16 | 704 | 0.6− | 0.5+ | 2001 09 21 | 704 | 0.1+ | 1.1+ | 2006 11 14 | G96 | 0.0 | 0.2− | |
| 2001 08 16 | 704 | 0.2− | 0.0 | 2001 09 21 | 704 | 0.6− | 1.0+ | 2006 11 14 | G96 | 0.2+ | 0.1− | |
| 2001 08 16 | 704 | 1.1− | 0.9+ | 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.4− | |
| 2001 08 16 | 704 | 0.2− | 1.1+ | 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.1− | |
| 2001 08 16 | 704 | 0.8− | 1.1+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.3− | |
| 2001 08 19 | 704 | 0.1− | 0.7+ | 2004 03 01 | 291 | 0.0 | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2001 08 19 | 704 | 0.5+ | 0.2+ | 2004 03 01 | 291 | 0.3+ | 0.3+ | | | | | |
| 2001 08 19 | 704 | 0.1− | 0.2+ | 2004 03 01 | 291 | 0.1+ | 0.4+ | | | | | |

**(139455)∗ 2001 OC$_{71}$**

Discovered 2001 July 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.67330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20955247 | $\omega$ | 223.41338 | | +0.94530253 | +0.31386638 | |
| $a$ | 2.8072054 | $\Omega$ | 118.09756 | | −0.26493613 | +0.89762709 | |
| $e$ | 0.2120547 | $i$ | 5.77943 | | −0.19029447 | +0.30944064 | |
| $P$ | 4.70 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 29 | 691 | 0.6− | 0.8− | 2001 10 20 | 704 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.7− | |
| 1995 03 29 | 691 | 0.3− | 0.3+ | 2001 10 20 | 704 | 0.7− | 1.1+ | 2006 09 30 | 703 | 0.6− | 0.1− | |
| 1995 03 29 | 691 | 0.5+ | 0.2+ | 2001 10 20 | 704 | 1.2+ | 0.4− | 2006 09 30 | 703 | 1.0− | 0.3− | |
| 1995 03 29 | 691 | 0.1− | 0.4+ | 2001 10 20 | 704 | 1.0− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− | |
| 1995 03 29 | 691 | 0.5− | 0.4+ | 2001 10 20 | 704 | 0.9+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.0 | |
| 1995 03 29 | 691 | 0.1− | 0.5+ | 2001 10 20 | 704 | (1.6− | 0.2+) | 2006 10 12 | 644 | 0.0 | 0.1− | |
| 2001 07 20 | 644 | 0.1− | 0.1+ | 2001 10 20 | 704 | 0.3+ | 1.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | |
| 2001 07 20 | 644 | 0.0 | 0.3+ | 2001 10 23 | 699 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ | |
| 2001 07 20 | 644 | 0.4− | 0.2+ | 2001 10 23 | 699 | 0.7+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− | |
| 2001 07 22 | 704 | 1.3+ | 1.1+ | 2001 10 23 | 699 | 0.3− | 1.3+ | 2006 10 16 | 703 | 0.5+ | 0.4− | |
| 2001 07 22 | 704 | 0.4− | 0.0 | 2001 10 23 | 699 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.1+ | |
| 2001 07 22 | 704 | 0.2− | 0.1+ | 2001 10 24 | 644 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.0 | |
| 2001 07 22 | 704 | 0.0 | 0.8− | 2001 10 24 | 644 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.3− | |
| 2001 07 22 | 704 | 0.3− | 0.9− | 2001 10 24 | 644 | 0.3− | 0.1− | 2006 10 22 | 703 | (1.6− | 0.7−) | |
| 2001 08 01 | 644 | 0.3− | 1.0+ | 2001 11 18 | 608 | 0.8− | 0.6− | 2006 10 22 | 703 | 0.1+ | 0.1+ | |
| 2001 08 01 | 644 | 0.4− | 1.2+ | 2001 11 18 | 608 | 0.9− | 1.1− | 2006 10 22 | 703 | 0.2+ | 0.4− | |
| 2001 08 01 | 644 | 0.4− | 1.1+ | 2001 11 18 | 608 | 0.8− | 0.4− | 2006 10 22 | 703 | 0.2− | 0.1+ | |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2− | 0.1+ | |
| 2001 08 16 | 704 | (1.7+ | 0.7−) | 2002 12 31 | 645 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.1− | |
| 2001 08 16 | 704 | 1.1+ | 0.5− | 2003 01 04 | 291 | 0.5+ | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.1− | |
| 2001 08 16 | 704 | 0.4− | 0.2− | 2003 01 04 | 291 | 0.0 | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.0 | |
| 2001 09 11 | 699 | 0.3− | 0.1+ | 2003 01 04 | 291 | 0.3+ | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.0 | |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2003 01 08 | 704 | 0.4+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1+ | |
| 2001 09 11 | 699 | 0.3+ | 0.8+ | 2003 01 08 | 704 | 0.7+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.3− | |
| 2001 09 11 | 699 | 0.2− | 0.6+ | 2003 01 08 | 704 | 0.7+ | 1.4− | 2006 11 11 | 703 | 0.3− | 0.2− | |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2003 01 08 | 704 | 0.9+ | 0.1− | 2006 11 11 | 644 | 0.3− | 0.1+ | |
| 2001 09 12 | 704 | 0.3+ | 1.0+ | 2003 01 08 | 704 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.5+ | 0.2− | |
| 2001 09 12 | 704 | 0.7+ | 0.8+ | 2004 03 26 | 691 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.1− | |
| 2001 09 12 | 704 | 0.3+ | 0.1+ | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 644 | 0.2− | 0.1− | |
| 2001 09 12 | 704 | 0.7+ | 1.2+ | 2004 03 26 | 691 | 0.5+ | 0.4+ | 2006 11 11 | 644 | 0.2− | 0.2+ | |
| 2001 09 13 | 644 | 0.6− | 0.1+ | 2005 05 20 | G96 | 0.1− | 0.3+ | 2006 11 19 | 703 | 1.0− | 0.0 | |
| 2001 09 13 | 644 | 0.4− | 0.1+ | 2005 05 20 | G96 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.6− | 0.5− | |
| 2001 09 13 | 644 | 0.5− | 0.0 | 2005 05 20 | G96 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.2− | |
| 2001 09 27 | 644 | 0.2− | 0.2+ | 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.4− | 0.4− | |
| 2001 09 27 | 644 | 0.5− | 0.1− | 2005 06 03 | 703 | 0.8− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.7+ | |
| 2001 09 27 | 644 | 0.1− | 0.1+ | 2005 06 03 | 703 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.7+ | 0.1+ | |
| 2001 10 08 | 644 | 0.2+ | 0.3+ | 2005 06 03 | 703 | (3.6− | 0.2−) | 2006 11 20 | 704 | 0.1+ | 0.8+ | |
| 2001 10 08 | 644 | 0.1+ | 0.4+ | 2005 06 03 | 703 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.7− | 0.0 | |
| 2001 10 08 | 644 | 0.2+ | 0.2+ | 2005 06 24 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.8+ | |
| 2001 10 11 | 704 | 0.5+ | 0.1+ | 2005 06 24 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 1.0− | 0.4+ | |
| 2001 10 11 | 704 | 0.4+ | 0.2+ | 2005 06 24 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.4+ | |
| 2001 10 11 | 704 | 0.2+ | 0.1+ | 2005 06 24 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.4− | |
| 2001 10 11 | 704 | 0.4+ | 0.1− | 2005 06 24 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.3− | 1.4− | 2005 06 24 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.2+ | | |
| 2001 10 16 | 644 | 0.1+ | 0.1− | 2005 07 12 | G96 | 0.7+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2001 10 16 | 644 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− | | |
| 2001 10 16 | 644 | 0.0 | 0.1− | 2005 07 12 | G96 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.4− | | |
| 2001 10 20 | 704 | 0.1+ | 0.1− | 2005 07 12 | G96 | 0.6+ | 0.5+ | 2006 11 23 | G96 | 0.4− | 0.4− | | |
| 2001 10 20 | 704 | 0.7− | 1.1+ | 2006 09 30 | 703 | 0.3− | 0.5− | | | | | | |

**(139456)∗ 2001 OT$_{71}$**

Discovered 2001 July 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.21045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29073540 | $\omega$ | 84.39048 | | −0.35646494 | +0.93424058 | |
| $a$ | 2.2566841 | $\Omega$ | 164.71153 | | −0.87325839 | −0.32885503 | |
| $e$ | 0.1980347 | $i$ | 2.45218 | | −0.33219350 | −0.13801775 | |
| $P$ | 3.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 25 | 691 | 0.0 | 0.5− | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2004 05 21 | 704 | 1.2+ | 0.3+ | | |
| 1995 10 25 | 691 | 0.1+ | 0.4− | 2004 03 28 | 704 | 0.1+ | 0.5+ | 2004 05 21 | 704 | 1.2+ | 1.5− | | |
| 1995 10 25 | 691 | 0.5+ | 0.2− | 2004 03 28 | 704 | 0.3− | 0.7+ | 2004 05 21 | 704 | 0.9+ | 0.0 | | |
| 2001 06 15 | 704 | 0.1+ | 0.7− | 2004 03 28 | 704 | 0.3+ | 0.8+ | 2004 05 21 | 704 | 1.6+ | 2.0− | | |
| 2001 06 15 | 704 | 0.1− | 1.3− | 2004 03 28 | 704 | 0.1+ | 0.6+ | 2004 06 12 | 703 | 2.6+ | 0.1+ | | |
| 2001 06 15 | 704 | 0.4− | 0.1+ | 2004 03 28 | 704 | 0.1− | 0.5+ | 2004 06 12 | 703 | 0.8+ | 1.2+ | | |
| 2001 06 15 | 704 | 0.0 | 0.9− | 2004 03 29 | 291 | 0.0 | 0.1+ | 2004 06 12 | 703 | 2.3+ | 0.1− | | |
| 2001 07 21 | 608 | 0.6− | 0.4+ | 2004 03 29 | 291 | 0.1+ | 0.2+ | 2004 06 12 | 703 | 1.3+ | 0.8+ | | |
| 2001 07 21 | 608 | 0.3− | 0.7+ | 2004 03 29 | 291 | 0.0 | 0.2+ | 2004 06 13 | 704 | 0.2+ | 0.7+ | | |
| 2001 07 21 | 608 | 0.5− | 0.4+ | 2004 03 30 | 918 | 0.1− | 0.4− | 2004 06 13 | 704 | 0.6+ | 0.1− | | |
| 2001 07 22 | 704 | 0.2− | 1.3+ | 2004 03 30 | 918 | 1.7− | 0.4+ | 2004 06 13 | 704 | 0.2+ | 0.2− | | |
| 2001 07 22 | 704 | 0.1− | 0.6+ | 2004 03 30 | 918 | 0.2+ | 0.0 | 2004 06 15 | 704 | 0.2+ | 0.2− | | |
| 2001 07 22 | 704 | 0.8+ | 0.8+ | 2004 03 30 | 918 | 0.3− | 0.3− | 2004 06 15 | 704 | 1.1+ | 0.2+ | | |
| 2001 08 13 | 644 | 0.1+ | 0.3+ | 2004 04 02 | 608 | 0.7+ | 0.4− | 2004 06 15 | 704 | 1.2+ | 0.9+ | | |
| 2001 08 13 | 644 | 0.4+ | 0.2+ | 2004 04 02 | 608 | 1.3+ | 0.6− | 2005 09 25 | 691 | 0.2+ | 0.6+ | | |
| 2001 08 13 | 644 | 0.2+ | 0.1+ | 2004 04 02 | 608 | 0.6+ | 0.8− | 2005 09 25 | 691 | 0.1+ | 0.5+ | | |
| 2001 08 14 | 644 | 0.3− | 0.2+ | 2004 04 12 | 699 | 1.0− | 0.5− | 2005 09 25 | 691 | 0.1+ | 0.4+ | | |
| 2001 08 14 | 644 | 0.3− | 0.1+ | 2004 04 12 | 699 | 0.6− | 0.1+ | 2005 10 01 | 703 | 1.3− | 0.5+ | | |
| 2001 08 14 | 644 | 0.5− | 0.1+ | 2004 04 12 | 699 | 0.1+ | 0.5+ | 2005 10 01 | 703 | 1.3− | 0.2+ | | |
| 2004 03 14 | 703 | 0.7+ | 1.3+ | 2004 04 12 | 699 | 0.1− | 0.5+ | 2005 10 01 | 703 | 0.0 | 0.8+ | | |
| 2004 03 14 | 703 | 0.8+ | 1.2+ | 2004 04 14 | 691 | 0.2+ | 0.0 | 2005 10 01 | 703 | 0.2− | 1.1+ | | |
| 2004 03 14 | 703 | 0.3+ | 0.8+ | 2004 04 14 | 691 | 0.0 | 0.1+ | 2005 10 03 | G96 | 0.2− | 0.2+ | | |
| 2004 03 14 | 703 | 0.6+ | 1.0+ | 2004 04 14 | 691 | 0.0 | 0.0 | 2005 10 03 | G96 | 0.3− | 0.4+ | | |
| 2004 03 16 | 704 | 0.7+ | 0.1+ | 2004 04 15 | 699 | 0.4− | 0.8− | 2005 10 03 | G96 | 0.1− | 0.3+ | | |
| 2004 03 16 | 704 | 0.2+ | 0.9+ | 2004 04 15 | 699 | 0.2− | 0.0 | 2005 10 07 | 691 | 0.3− | 0.7+ | | |
| 2004 03 16 | 704 | 0.3− | 0.6− | 2004 04 15 | 699 | 0.4− | 0.3+ | 2005 10 07 | 691 | 0.4− | 0.5+ | | |
| 2004 03 16 | 704 | 0.1+ | 0.0 | 2004 04 15 | 699 | 0.1− | 0.0 | 2005 10 07 | 691 | 0.6− | 0.7+ | | |
| 2004 03 18 | 704 | 0.3+ | 0.1− | 2004 04 19 | 704 | 0.5+ | 0.2+ | 2005 10 22 | 703 | 0.7− | 0.6+ | | |
| 2004 03 18 | 704 | 0.9+ | 0.5+ | 2004 04 19 | 704 | 0.6+ | 0.4+ | 2005 10 22 | 703 | 0.1+ | 0.9+ | | |
| 2004 03 18 | 704 | 0.6+ | 0.2+ | 2004 04 19 | 704 | 0.4− | 0.2+ | 2005 10 22 | 703 | 0.1− | 0.4− | | |
| 2004 03 18 | 704 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.3+ | 2005 10 22 | 703 | 1.4− | 1.3+ | | |
| 2004 03 18 | 704 | 0.4− | 0.1+ | 2004 04 19 | 704 | 0.0 | 0.5+ | 2005 10 22 | 703 | 0.1+ | 0.3+ | | |
| 2004 03 21 | 699 | 0.3− | 0.1+ | 2004 04 22 | 704 | 0.8+ | 1.4+ | 2005 10 22 | 703 | 0.6− | 0.5+ | | |
| 2004 03 21 | 699 | 0.2+ | 0.7− | 2004 04 22 | 704 | 0.3+ | 0.5+ | 2005 10 22 | 703 | 0.3− | 0.4− | | |
| 2004 03 21 | 699 | 0.1− | 0.1− | 2004 04 22 | 704 | 0.1− | 1.1+ | 2005 10 22 | 703 | 0.8− | 2.0+ | | |
| 2004 03 21 | 699 | 0.1+ | 0.2+ | 2004 04 22 | 704 | 0.4+ | 1.4+ | 2005 10 28 | 703 | 0.8+ | 0.7+ | | |
| 2004 03 23 | 704 | 2.1− | 0.2+ | 2004 04 22 | 704 | 0.4+ | 1.3+ | 2005 10 28 | 703 | 1.3+ | 2.0+ | | |
| 2004 03 23 | 704 | 2.1− | 0.4+ | 2004 04 23 | 691 | 0.1− | 0.1+ | 2005 10 28 | 703 | (2.5+ | 0.8−) | | |
| 2004 03 23 | 704 | 2.1− | 0.6+ | 2004 04 23 | 691 | 0.1− | 0.1− | 2005 10 28 | 703 | 1.0+ | 1.0+ | | |
| 2004 03 23 | 704 | 1.9− | 0.1+ | 2004 04 23 | 691 | 0.3− | 0.0 | 2005 12 01 | G96 | 0.1− | 0.2+ | | |
| 2004 03 23 | 704 | 1.8− | 0.3+ | 2004 04 23 | 703 | 0.1+ | 0.8− | 2005 12 01 | G96 | 0.3+ | 0.2+ | | |
| 2004 03 27 | 704 | 0.0 | 0.7+ | 2004 04 23 | 703 | 1.0+ | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.5+ | | |
| 2004 03 27 | 704 | 0.1+ | 0.5+ | 2004 04 23 | 703 | 0.5+ | 0.9− | 2005 12 01 | G96 | 0.8− | 0.3+ | | |
| 2004 03 27 | 704 | 0.2− | 0.7+ | 2004 04 23 | 703 | 0.7+ | 0.1+ | | | | | | |
| 2004 03 27 | 704 | 0.0 | 0.6+ | 2004 05 21 | 704 | 0.4− | 0.7− | | | | | | |

**(139457)∗ 2001 OJ$_{74}$**

Discovered 2001 July 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.91987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18905600 | $\omega$ | 222.90230 | | +0.99120748 | −0.04991487 | |
| $a$ | 3.0066006 | $\Omega$ | 139.46900 | | +0.08050593 | +0.96247653 | |
| $e$ | 0.1093033 | $i$ | 10.86905 | | −0.10500723 | +0.26673478 | |
| $P$ | 5.21 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 1.0− | 1.1+ | 2001 09 10 | 699 | 0.8− | 0.1+ | 2005 05 15 | 644 | 0.4+ | 0.5+ | | |
| 2001 07 19 | 699 | 0.2− | 0.1+ | 2001 09 21 | 704 | 0.3+ | 0.2+ | 2005 05 15 | 644 | 0.2+ | 0.3+ | | |
| 2001 07 19 | 699 | 0.7− | 1.1+ | 2001 09 21 | 704 | 0.5− | 0.5− | 2006 07 25 | 644 | 0.1+ | 0.2+ | | |
| 2001 07 19 | 699 | 0.7+ | 0.6− | 2001 09 21 | 704 | 0.4+ | 0.1+ | 2006 07 25 | 644 | 0.1+ | 0.4+ | | |
| 2001 07 19 | 699 | 0.4+ | 0.9+ | 2001 09 21 | 704 | 0.6+ | 0.0 | 2006 07 25 | 644 | 0.1+ | 0.2+ | | |
| 2001 07 19 | 699 | 0.1− | 0.2+ | 2001 10 11 | 644 | 0.0 | 0.1− | 2006 07 25 | 644 | 0.0 | 0.2+ | | |
| 2001 07 19 | 699 | 1.2− | 0.6+ | 2001 10 11 | 644 | 0.1− | 0.3+ | 2006 07 25 | 644 | 0.2+ | 0.3+ | | |
| 2001 07 19 | 699 | (1.7− | 0.9+) | 2001 10 11 | 644 | 0.6+ | 0.2+ | 2006 07 25 | 644 | 0.1+ | 0.1+ | | |
| 2001 07 22 | 704 | (4.1− | 4.0+) | 2003 01 05 | 704 | 0.1− | 1.1+ | 2006 08 12 | 644 | 0.1− | 0.3+ | | |
| 2001 07 22 | 704 | (5.6− | 2.9+) | 2003 01 05 | 704 | 0.4− | 0.6+ | 2006 08 12 | 644 | 0.0 | 0.1+ | | |
| 2001 07 22 | 704 | (4.6− | 2.4+) | 2003 01 05 | 704 | 0.6− | 0.5+ | 2006 08 12 | 644 | 0.1− | 0.4+ | | |
| 2001 08 25 | 704 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.9− | 1.3+ | 2006 08 24 | 644 | 0.4+ | 0.3− | | |
| 2001 08 25 | 704 | 0.2− | 0.1− | 2004 02 17 | 704 | 0.8− | 0.7− | 2006 08 24 | 644 | 0.3− | 0.1+ | | |
| 2001 08 25 | 704 | 0.6+ | 0.2+ | 2004 02 17 | 704 | 0.1− | 0.9+ | 2006 08 24 | 644 | 0.0 | 0.0 | | |
| 2001 08 25 | 704 | 0.9+ | 0.2+ | 2004 02 17 | 704 | 0.3+ | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2001 08 25 | 704 | 1.0+ | 0.0 | 2004 02 18 | 691 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.3− | | |
| 2001 08 27 | 699 | (1.7+ | 1.5+) | 2004 02 18 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 2001 08 27 | 699 | 0.2+ | 0.2+ | 2004 02 18 | 691 | 0.8+ | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.5− | | |
| 2001 08 27 | 699 | 0.2− | 0.1+ | 2005 05 04 | 703 | 0.7− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.2− | | |
| 2001 08 27 | 699 | 0.1− | 0.2+ | 2005 05 04 | 703 | 0.1+ | 1.0+ | 2006 10 23 | G96 | 0.1− | 0.1+ | | |
| 2001 09 10 | 699 | 0.3− | 0.0 | 2005 05 04 | 703 | 0.2− | 0.6− | 2006 10 23 | G96 | 0.1− | 0.1− | | |
| 2001 09 10 | 699 | 0.7− | 0.8+ | 2005 05 04 | 703 | 1.0− | 0.7+ | | | | | | |
| 2001 09 10 | 699 | 0.2− | 0.1− | 2005 05 15 | 644 | 0.2+ | 0.5+ | | | | | | |

**(139458)∗ 2001 OT$_{74}$**

Discovered 2001 July 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.31938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19459305 | $\omega$ | 18.60784 | | +0.65068040 | +0.73282713 | |
| $a$ | 2.9492924 | $\Omega$ | 292.50902 | | −0.72116685 | +0.51433910 | |
| $e$ | 0.1803024 | $i$ | 12.43614 | | −0.23776751 | +0.44544325 | |
| $P$ | 5.06 | $H$ | 13.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 699 | 0.4+ | 0.6+ | 2002 01 06 | 699 | 0.4− | 0.7+ | 2004 03 27 | 703 | 0.2− | 0.8+ | | |
| 2001 07 29 | 699 | 0.2− | 0.4+ | 2002 01 09 | 704 | 0.3− | 0.5+ | 2004 03 27 | 703 | 0.1− | 0.9+ | | |
| 2001 07 29 | 699 | 0.2− | 0.6+ | 2002 01 09 | 704 | 0.2− | 0.3− | 2004 03 27 | 703 | 0.5+ | 0.3+ | | |
| 2001 07 29 | 704 | 0.9− | 0.7+ | 2002 01 09 | 704 | 0.8+ | 0.5+ | 2004 03 28 | 608 | 0.8+ | 0.6− | | |
| 2001 07 29 | 699 | 0.7+ | 0.3+ | 2002 01 09 | 704 | 0.8+ | 0.7− | 2004 03 28 | 608 | 0.3+ | 1.1− | | |
| 2001 07 29 | 699 | 0.2+ | 0.7+ | 2002 12 02 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 608 | 0.0 | 0.3− | | |
| 2001 07 29 | 704 | 0.8− | 1.1+ | 2002 12 02 | 704 | 0.1− | 0.5− | 2005 07 05 | E12 | 0.3− | 1.1+ | | |
| 2001 07 29 | 699 | 0.3− | 0.2+ | 2002 12 02 | 704 | (1.5− | 0.2+) | 2005 07 05 | E12 | 0.2− | 0.4+ | | |
| 2001 07 29 | 704 | 1.5+ | 0.2+ | 2002 12 06 | 704 | 0.3+ | 0.5− | 2005 07 05 | E12 | 0.2− | 1.0+ | | |
| 2001 07 29 | 699 | 0.0 | 1.2+ | 2002 12 06 | 704 | 0.0 | 0.5− | 2005 07 05 | E12 | 0.1− | 0.8+ | | |
| 2001 07 29 | 699 | 0.6− | 0.0 | 2002 12 06 | 704 | 0.2− | 0.1− | 2005 07 25 | E12 | (0.0 | 2.2+) | | |
| 2001 07 29 | 704 | 0.1+ | 0.7+ | 2002 12 09 | 333 | 1.0− | 0.4− | 2005 07 25 | E12 | (1.0− | 2.3+) | | |
| 2001 07 29 | 704 | 0.6− | 1.1+ | 2002 12 09 | 333 | 0.8− | 0.7− | 2005 07 25 | E12 | 0.8− | 0.6+ | | |
| 2001 07 30 | 704 | 0.4+ | 0.1+ | 2002 12 09 | 333 | 0.2− | 0.7− | 2005 07 25 | E12 | (0.2+ | 2.4+) | | |
| 2001 07 30 | 704 | 0.8− | 0.6+ | 2002 12 11 | 333 | 0.6− | 0.2+ | 2006 08 24 | 704 | 0.9+ | 0.8+ | | |
| 2001 07 30 | 704 | 0.2+ | 0.5− | 2002 12 11 | 333 | 0.6− | 1.0− | 2006 08 24 | 704 | 1.0+ | 1.4+ | | |
| 2001 07 30 | 704 | 0.1− | 0.5− | 2002 12 11 | 333 | 0.6− | 0.8− | 2006 08 24 | 704 | (1.8+ | 1.8+) | | |
| 2001 07 30 | 704 | 0.2− | 0.5− | 2002 12 11 | 704 | 0.3− | 0.3+ | 2006 08 24 | 704 | 1.5+ | 1.4+ | | |
| 2001 08 07 | 644 | (3.0− | 1.5+) | 2002 12 11 | 704 | 0.4− | 0.6− | 2006 08 24 | 704 | (1.1+ | 1.9+) | | |
| 2001 08 07 | 644 | (3.2− | 1.4+) | 2002 12 11 | 704 | 0.7+ | 0.1− | 2006 09 17 | 703 | 0.1− | 0.3− | | |
| 2001 08 07 | 644 | (3.0− | 1.4+) | 2002 12 11 | 704 | 0.2− | 0.9− | 2006 09 17 | 703 | 0.3+ | 0.3− | | |
| 2001 08 22 | 704 | 0.7− | 0.3+ | 2002 12 11 | 704 | 0.1− | 0.4− | 2006 09 17 | 703 | 0.0 | 0.2− | | |
| 2001 08 22 | 644 | 1.2− | 0.5+ | 2002 12 14 | 704 | 0.6+ | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.9− | 1.1+ | 2002 12 14 | 704 | 0.4− | 0.6+ | 2006 09 20 | 704 | (1.9+ | 0.3+) | | |
| 2001 08 22 | 644 | 1.2− | 0.4+ | 2002 12 14 | 704 | (0.4− | 1.7−) | 2006 09 20 | 704 | (1.8+ | 0.2+) | | |
| 2001 08 22 | 704 | 0.4− | 0.4− | 2002 12 14 | 704 | 0.5+ | 0.1− | 2006 09 20 | 704 | (1.9+ | 0.3−) | | |
| 2001 08 22 | 644 | 1.3− | 0.6+ | 2002 12 14 | 704 | 0.7− | 0.4− | 2006 09 20 | 704 | (2.3+ | 0.2+) | | |
| 2001 08 22 | 704 | 0.4− | 0.0 | 2002 12 30 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | (2.0+ | 0.1−) | | |
| 2001 09 10 | 704 | 0.6+ | 0.2− | 2002 12 30 | 704 | 0.7+ | 0.3+ | 2006 09 28 | 703 | (1.8− | 2.1+) | | |
| 2001 09 10 | 704 | 0.3+ | 0.0 | 2002 12 30 | 704 | 0.0 | 0.2+ | 2006 09 28 | 703 | (1.0+ | 2.7+) | | |
| 2001 09 10 | 704 | 0.6+ | 0.3− | 2003 01 05 | 704 | 0.3+ | 0.8+ | 2006 09 28 | 703 | 0.0 | 0.3− | | |
| 2001 09 10 | 704 | 0.7+ | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.9+ | 2006 09 28 | 703 | 0.7− | 0.0 | | |
| 2001 09 10 | 704 | 0.5+ | 0.1− | 2003 01 05 | 704 | 0.0 | 0.8+ | 2006 09 30 | 704 | 0.0 | 0.1+ | | |
| 2001 09 18 | 644 | 0.1− | 0.2+ | 2003 01 05 | 704 | 0.1− | 0.8+ | 2006 09 30 | 704 | 0.6− | 0.2+ | | |
| 2001 09 18 | 644 | 0.2− | 0.3+ | 2003 01 09 | 704 | 0.5− | 0.4− | 2006 09 30 | 704 | 0.8− | 0.2+ | | |
| 2001 09 18 | 644 | 0.0 | 0.2+ | 2003 01 09 | 704 | 1.2− | 0.0 | 2006 09 30 | 704 | 0.7− | 0.3+ | | |
| 2001 09 22 | 699 | 0.1+ | 0.2− | 2003 01 09 | 704 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2001 09 22 | 699 | 0.2− | 0.1+ | 2003 01 09 | 704 | 0.4− | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.1− | | |
| 2001 09 22 | 699 | 0.3− | 0.2− | 2003 04 01 | 704 | 1.0− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2001 09 22 | 699 | 0.2− | 0.1− | 2003 04 01 | 704 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.4− | | |
| 2001 10 15 | 704 | 0.2+ | 0.3+ | 2003 04 01 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.3− | 0.6− | | |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2003 04 01 | 704 | 0.2− | 0.9+ | 2006 10 19 | 703 | 0.5+ | 0.9− | | |
| 2001 10 15 | 704 | 0.4− | 0.2+ | 2004 01 28 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.6− | | |
| 2001 10 15 | 704 | 0.4− | 0.3+ | 2004 01 28 | 704 | 0.2+ | 1.2+ | 2006 10 19 | 703 | 0.4− | 0.3− | | |
| 2001 10 15 | 704 | 0.6− | 0.1+ | 2004 01 28 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2001 10 18 | 704 | 0.7− | 1.1+ | 2004 01 28 | 704 | 0.7+ | 1.2+ | 2006 10 19 | 703 | 0.2− | 0.3− | | |
| 2001 10 18 | 704 | 0.2+ | 0.9+ | 2004 01 28 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.7− | | |
| 2001 10 18 | 704 | 0.0 | 0.9+ | 2004 01 29 | 699 | 0.9− | 0.3+ | 2006 10 21 | 704 | 0.1+ | 0.1+ | | |
| 2001 10 18 | 704 | 1.3+ | 0.8+ | 2004 01 29 | 699 | 0.3− | 1.1− | 2006 10 21 | 704 | 0.2+ | 0.1+ | | |
| 2001 10 18 | 704 | 0.4+ | 1.0+ | 2004 01 29 | 699 | 1.2− | 0.8+ | 2006 10 21 | 704 | 0.1− | 0.1− | | |
| 2001 10 27 | 644 | 0.0 | 0.8+ | 2004 01 29 | 699 | 0.1+ | 0.1+ | 2006 10 21 | 704 | 0.0 | 0.2+ | | |
| 2001 10 27 | 644 | 0.0 | 0.7+ | 2004 01 30 | 699 | (0.2− | 1.6+) | 2006 10 21 | 704 | 0.1− | 0.2− | | |
| 2001 10 27 | 644 | 0.0 | 0.9+ | 2004 01 30 | 699 | 0.8+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2001 10 27 | 704 | 0.2+ | 0.1− | 2004 01 30 | 699 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2001 10 27 | 704 | 0.4− | 0.5− | 2004 01 30 | 699 | 0.5− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.2− | | |
| 2001 10 27 | 704 | 0.1+ | 0.1− | 2004 02 02 | 608 | 0.6+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2− | | |
| 2001 10 27 | 704 | 0.4+ | 0.0 | 2004 02 02 | 608 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2001 10 27 | 704 | 0.2− | 0.9− | 2004 02 02 | 608 | 0.3+ | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.2− | | |
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2004 02 14 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.2− | | |
| 2001 11 12 | 704 | 0.0 | 0.2− | 2004 02 14 | 644 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.6− | 0.7− | | |
| 2001 11 12 | 704 | 0.2− | 0.1+ | 2004 02 14 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.4− | | |
| 2001 11 12 | 704 | 0.1+ | 0.1+ | 2004 02 14 | 644 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.3− | | |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2004 02 14 | 644 | 0.3+ | 0.1+ | 2006 10 31 | 703 | 0.2+ | 0.2− | | |
| 2001 11 19 | 644 | 0.1+ | 0.1+ | 2004 02 14 | 644 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.4+ | 0.3− | | |
| 2001 11 19 | 644 | 0.2+ | 0.5+ | 2004 02 19 | 704 | 1.1+ | 0.5+ | 2006 10 31 | 703 | 0.3− | 0.3− | | |
| 2001 11 19 | 644 | 0.1− | 0.3+ | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2006 10 31 | 703 | 0.1− | 0.0 | | |
| 2001 12 10 | 704 | 0.4− | 0.3+ | 2004 02 19 | 704 | 0.1− | 0.6+ | 2006 11 23 | 703 | 0.2+ | 0.5+ | | |
| 2001 12 10 | 704 | 0.1+ | 0.0 | 2004 02 19 | 704 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.5+ | 0.9+ | | |
| 2001 12 10 | 704 | (0.1− | 1.6+) | 2004 03 13 | 644 | 1.3+ | 0.0 | 2006 11 23 | 703 | 0.2+ | 0.4+ | | |
| 2001 12 21 | 704 | 0.7+ | 0.3− | 2004 03 13 | 644 | 1.1+ | 0.1+ | 2006 11 23 | 703 | 0.6+ | 0.1+ | | |
| 2001 12 21 | 704 | 0.6− | 0.4+ | 2004 03 13 | 644 | 0.8+ | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.3+ | | |
| 2001 12 21 | 704 | 0.1− | 0.2+ | 2004 03 16 | 704 | 1.3+ | 0.2− | 2006 11 29 | 704 | 1.1+ | 0.3− | | |
| 2002 01 06 | 699 | 0.7− | 1.1− | 2004 03 16 | 704 | 0.7+ | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.5+ | | |
| 2002 01 06 | 699 | 0.0 | 0.4− | 2004 03 16 | 704 | 1.2+ | 0.8+ | 2006 11 29 | 704 | 0.1− | 0.4+ | | |
| 2002 01 06 | 699 | 0.1+ | 0.8− | 2004 03 27 | 703 | 0.9− | 0.7+ | 2006 11 29 | 704 | 0.5+ | 0.1+ | | |

**(139459)∗ 2001 OY$_{74}$**

Discovered 2001 July 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.31501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21687031 | $\omega$ | 41.39285 | | +0.89426457 | +0.42512167 | |
| $a$ | 2.7436959 | $\Omega$ | 292.94040 | | −0.44008421 | +0.77851874 | |
| $e$ | 0.1911910 | $i$ | 8.73576 | | −0.08134346 | +0.46171435 | |
| $P$ | 4.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 699 | 1.0− | 0.0 | 2001 09 08 | 704 | 0.8+ | 0.3+ | 2001 10 14 | 699 | 0.5− | 0.5− | | |
| 2001 07 16 | 699 | 0.7− | 0.0 | 2001 09 08 | 704 | 0.5+ | 0.2− | 2001 10 14 | 699 | 0.7− | 0.0 | | |
| 2001 07 16 | 699 | 0.8− | 0.2− | 2001 09 08 | 704 | 0.5+ | 0.6+ | 2002 12 07 | 695 | 0.1− | 0.3+ | | |
| 2001 07 16 | 608 | 0.0 | 0.3− | 2001 09 08 | 704 | 0.4+ | 0.3+ | 2002 12 07 | 695 | 0.1+ | 0.2+ | | |
| 2001 07 16 | 699 | 1.1− | 0.5+ | 2001 09 08 | 704 | 0.1+ | 0.1− | 2003 01 08 | 704 | 0.4− | 0.6+ | | |
| 2001 07 16 | 608 | 0.1+ | 0.3− | 2001 09 09 | 699 | 0.1+ | 0.5− | 2003 01 08 | 704 | 0.2+ | 0.1+ | | |
| 2001 07 16 | 608 | 0.2+ | 0.3− | 2001 09 09 | 699 | 0.2+ | 0.3− | 2003 01 08 | 704 | 0.0 | 0.8+ | | |
| 2001 07 28 | 608 | 1.2− | 0.5+ | 2001 09 09 | 699 | 0.3+ | 0.2− | 2003 01 08 | 704 | 0.3+ | 1.1+ | | |
| 2001 07 28 | 608 | 1.0− | 1.2+ | 2001 09 09 | 699 | 0.1+ | 0.7+ | 2003 01 08 | 704 | 0.8+ | 0.4+ | | |
| 2001 07 28 | 608 | 1.2− | 1.1+ | 2001 09 20 | 704 | 0.1− | 0.5− | 2004 02 14 | 644 | 0.3+ | 1.0+ | | |
| 2001 07 29 | 704 | 0.5− | 0.1+ | 2001 09 20 | 704 | 0.1− | 0.5− | 2004 02 14 | 644 | 0.3+ | 0.8+ | | |
| 2001 07 29 | 704 | 0.7− | 1.3+ | 2001 09 20 | 704 | 0.6− | 0.6− | 2004 02 14 | 644 | 0.4+ | 0.8+ | | |
| 2001 07 29 | 704 | 0.1+ | 0.5+ | 2001 09 20 | 704 | 0.8− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 2001 07 29 | 704 | (0.8− | 2.3+) | 2001 09 21 | 704 | 1.1+ | 0.1− | 2006 10 11 | 644 | 0.5+ | 0.1− | | |
| 2001 07 30 | 704 | 0.1+ | 0.3+ | 2001 09 21 | 704 | 0.9+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2001 07 30 | 704 | 0.3+ | 0.8+ | 2001 09 21 | 704 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 2001 07 30 | 704 | 0.3+ | 0.7+ | 2001 09 21 | 704 | (1.6+ | 0.9−) | 2006 10 11 | 644 | 0.5+ | 0.1− | | |
| 2001 07 30 | 704 | 0.4+ | 1.3+ | 2001 09 21 | 704 | 0.1+ | 0.6− | 2006 10 11 | 644 | 0.5+ | 0.0 | | |
| 2001 08 10 | 608 | 0.2+ | 1.3+ | 2001 09 21 | 704 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2− | | |
| 2001 08 10 | 608 | (0.1+ | 1.6+) | 2001 09 21 | 704 | 0.7− | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.2− | | |
| 2001 08 10 | 608 | 0.0 | 1.2+ | 2001 09 21 | 704 | 0.4− | 1.0− | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2001 08 17 | 704 | 0.2− | 0.5+ | 2001 10 11 | 704 | 1.4− | 0.6− | 2006 10 27 | 703 | 0.1− | 0.5− | | |
| 2001 08 17 | 704 | 0.2+ | 0.7+ | 2001 10 11 | 704 | 0.5− | 0.6− | 2006 10 27 | 703 | 0.2+ | 0.0 | | |
| 2001 08 17 | 704 | 0.3+ | 0.2+ | 2001 10 11 | 704 | 0.0 | 0.6− | 2006 10 27 | 703 | 1.4− | 0.0 | | |
| 2001 08 24 | 699 | 0.5+ | 0.2− | 2001 10 11 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.7− | 1.1+ | | |
| 2001 08 24 | 699 | 0.1+ | 0.0 | 2001 10 11 | 704 | 0.0 | 0.9+ | 2006 11 15 | 703 | 0.4+ | 0.2− | | |
| 2001 08 24 | 699 | 0.9+ | 0.5− | 2001 10 14 | 704 | 0.3+ | 0.2− | 2006 11 15 | 703 | 0.5− | 0.4− | | |
| 2001 08 24 | 699 | 0.0 | 0.3+ | 2001 10 14 | 699 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.3+ | | |
| 2001 08 25 | 704 | 0.3+ | 0.5− | 2001 10 14 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.3− | | |
| 2001 08 25 | 704 | 0.5+ | 0.9− | 2001 10 14 | 704 | 0.4+ | 0.3− | 2006 11 22 | 703 | 0.4+ | 0.7+ | | |
| 2001 08 25 | 704 | 0.0 | 0.6− | 2001 10 14 | 699 | 0.6− | 0.1+ | 2006 11 22 | 703 | 1.0− | 0.2+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.7− | 2001 10 14 | 704 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.4+ | | |
| 2001 08 25 | 704 | 0.2+ | 1.0− | 2001 10 14 | 704 | 0.4+ | 0.9+ | | | | | | |

**(139460)∗ 2001 OS$_{78}$**

Discovered 2001 July 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.39882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21942629 | $\omega$ | 288.50750 | | +0.44982033 | −0.88318418 | |
| $a$ | 2.7223478 | $\Omega$ | 134.00505 | | +0.87317716 | +0.40362836 | |
| $e$ | 0.1856756 | $i$ | 10.64305 | | +0.18767876 | +0.23889297 | |
| $P$ | 4.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 26 | 644 | 0.3+ | 0.0 | 2003 01 27 | 699 | 0.5− | 0.7+ | 2004 03 30 | 291 | 0.3+ | 0.7+ | | |
| 2001 07 26 | 644 | 0.5+ | 0.0 | 2003 01 27 | 699 | (0.0 | 1.7+) | 2004 03 30 | 291 | 0.1+ | 0.3+ | | |
| 2001 07 26 | 644 | 0.3− | 0.7+ | 2003 01 27 | 644 | 0.5+ | 0.3+ | 2004 03 30 | 291 | 0.1− | 0.6+ | | |
| 2001 07 31 | 644 | 0.5− | 0.6+ | 2003 01 27 | 644 | 0.9+ | 0.3+ | 2004 04 23 | 691 | 0.2+ | 0.4+ | | |
| 2001 07 31 | 644 | 0.1− | 0.5+ | 2003 01 27 | 644 | 0.7+ | 0.2+ | 2004 04 23 | 691 | 0.1+ | 0.4+ | | |
| 2001 07 31 | 644 | 0.2− | 0.4+ | 2003 01 28 | 608 | 0.4+ | 0.6− | 2004 04 23 | 691 | 0.0 | 0.2+ | | |
| 2001 08 25 | 644 | 0.6− | 0.8+ | 2003 01 28 | 608 | 0.1− | 0.5− | 2005 06 13 | 691 | 0.1+ | 0.6+ | | |
| 2001 08 25 | 704 | 0.7− | 1.1+ | 2003 01 28 | 608 | 0.1− | 0.5− | 2005 06 13 | 691 | 0.0 | 0.8+ | | |
| 2001 08 25 | 644 | 0.6− | 1.2+ | 2003 01 29 | 049 | 0.5− | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.6+ | | |
| 2001 08 25 | 704 | 0.5+ | 0.1+ | 2003 01 29 | 049 | 0.4− | 0.6− | 2006 09 18 | 703 | 0.1+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.7+ | 0.2− | 2003 01 29 | 049 | 0.6− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.3− | | |
| 2001 08 25 | 644 | 0.4− | 0.9+ | 2003 01 30 | 699 | 0.3+ | 0.0 | 2006 09 18 | 703 | 1.3+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.5+ | 0.6+ | 2003 01 30 | 699 | 0.3+ | 0.5− | 2006 09 18 | 703 | 0.6− | 0.2− | | |
| 2001 08 25 | 699 | 0.3+ | 0.7+ | 2003 01 30 | 699 | 0.5+ | 0.2− | 2006 09 20 | 699 | (0.5− | 1.5+) | | |
| 2001 08 25 | 699 | 1.3+ | 1.2+ | 2003 01 30 | 699 | 0.2+ | 0.3− | 2006 09 20 | 699 | 0.3+ | 0.7+ | | |
| 2001 08 25 | 699 | 1.1− | 0.3− | 2003 01 31 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.3− | 0.5− | | |
| 2001 08 25 | 699 | 0.7+ | 0.5+ | 2003 01 31 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.3− | 0.7+ | | |
| 2001 09 11 | 704 | 1.0− | 1.0+ | 2003 01 31 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.5+ | | |
| 2001 09 11 | 704 | 1.4− | 0.4+ | 2003 01 31 | 704 | 0.3− | 0.8+ | 2006 10 01 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 11 | 704 | 1.0− | 0.1+ | 2003 02 03 | 704 | 0.5− | 0.4+ | 2006 10 01 | 704 | 0.6+ | 0.4+ | | |
| 2003 01 08 | 704 | 0.5− | 0.3− | 2003 02 03 | 704 | 0.7− | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.7+ | | |
| 2003 01 08 | 704 | 0.4+ | 0.2− | 2003 02 03 | 704 | 0.3− | 0.2+ | 2006 10 01 | 704 | 0.2+ | 1.2+ | | |
| 2003 01 08 | 704 | 0.8− | 0.4+ | 2003 02 03 | 704 | 0.1− | 0.8+ | 2006 10 30 | 703 | 0.3− | 0.2− | | |
| 2003 01 08 | 704 | 0.2+ | 0.3− | 2003 02 03 | 704 | 0.6− | 0.5+ | 2006 10 30 | 703 | 0.0 | 0.5+ | | |
| 2003 01 08 | 704 | 0.6+ | 1.3− | 2003 02 09 | 608 | 0.3− | 1.2+ | 2006 10 30 | 703 | 0.3+ | 0.3− | | |
| 2003 01 26 | 049 | 0.7− | 0.5− | 2003 02 09 | 608 | 0.8− | 1.1+ | 2006 10 30 | 703 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 049 | 0.4+ | 0.5− | 2003 02 09 | 608 | (0.6− | 1.7+) | 2006 11 13 | 703 | 0.2− | 0.6+ | | |
| 2003 01 26 | 049 | 0.0 | 1.2+ | 2003 02 10 | 291 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.1+ | | |
| 2003 01 27 | 704 | 0.1+ | 0.3+ | 2003 02 10 | 291 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.1+ | 0.1+ | | |
| 2003 01 27 | 704 | 0.3+ | 0.7+ | 2003 02 10 | 291 | 0.4− | 0.4+ | 2006 11 13 | 703 | 0.3+ | 0.2− | | |
| 2003 01 27 | 704 | 0.3+ | 0.1+ | 2003 03 08 | 704 | 0.6+ | 0.9+ | 2006 11 21 | 704 | 1.5− | 0.6+ | | |
| 2003 01 27 | 699 | 1.1+ | 0.7+ | 2003 03 08 | 704 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.7− | 0.5− | | |
| 2003 01 27 | 704 | 0.2+ | 0.5+ | 2003 03 08 | 704 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.9+ | | |
| 2003 01 27 | 699 | 0.4+ | 1.2+ | 2003 03 08 | 704 | 1.2+ | 0.3+ | 2006 11 21 | 704 | 0.0 | 1.6+ | | |
| 2003 01 27 | 704 | 0.2+ | 0.0 | 2003 03 08 | 704 | 1.0+ | 1.0+ | 2006 11 21 | 704 | 0.7− | 1.3+ | | |

**(139461)∗ 2001 OC$_{80}$**

Discovered 2001 July 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.02112 | | (2000.0) | | +0.80734557 | −0.56904273 |
| $n$ | 0.21109406 | $\omega$ | 335.44198 | | +0.56678168 | +0.67420080 |
| $a$ | 2.7935216 | $\Omega$ | 60.14470 | | +0.16416958 | +0.47079046 |
| $e$ | 0.2246255 | $i$ | 10.37250 | | | |
| $P$ | 4.67 | $H$ | 14.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 644 | 0.5− | 0.2+ | 2002 12 14 | 704 | 1.1− | 0.3+ | 2006 09 26 | 704 | 1.2− | 0.2− | | |
| 2001 07 29 | 644 | 0.1− | 0.1− | 2002 12 14 | 704 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.8− | 0.8+ | | |
| 2001 07 29 | 644 | 0.5− | 0.2+ | 2002 12 14 | 704 | 1.0− | 0.5− | 2006 09 26 | 704 | 1.5− | 0.2− | | |
| 2001 07 29 | 644 | 0.4− | 0.0 | 2002 12 14 | 704 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.2+ | 0.1+ | | |
| 2001 07 29 | 644 | 0.2− | 0.1− | 2003 01 07 | 704 | 1.3+ | 0.4− | 2006 09 26 | 703 | 0.1+ | 0.3− | | |
| 2001 07 29 | 644 | 0.0 | 0.2− | 2003 01 07 | 704 | (1.7+ | 0.9−) | 2006 09 26 | 703 | 0.6+ | 0.1+ | | |
| 2001 07 31 | 644 | 0.5− | 0.0 | 2003 01 07 | 704 | 1.4+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.3− | | |
| 2001 07 31 | 644 | 0.6− | 0.2+ | 2003 01 07 | 704 | 0.5+ | 0.4− | 2006 09 29 | 699 | 0.1− | 0.0 | | |
| 2001 07 31 | 644 | 0.5− | 0.2+ | 2003 01 07 | 704 | (1.6+ | 0.4−) | 2006 09 29 | 699 | 0.1+ | 0.2− | | |
| 2001 08 01 | 644 | 0.5− | 0.1+ | 2003 01 10 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.3+ | 0.2+ | | |
| 2001 08 01 | 644 | 0.3− | 0.0 | 2003 01 10 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.4− | 0.2+ | | |
| 2001 08 01 | 644 | 0.5− | 0.2+ | 2003 01 10 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.3+ | | |
| 2001 08 10 | 644 | 0.0 | 0.9+ | 2003 01 10 | 704 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.6− | 0.4+ | | |
| 2001 08 10 | 644 | 0.6− | 1.0+ | 2003 01 10 | 704 | 0.1− | 0.1+ | 2006 09 30 | 704 | 1.3− | 0.3+ | | |
| 2001 08 10 | 644 | 0.3+ | 1.1+ | 2003 01 13 | 704 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.7− | 0.4+ | | |
| 2001 08 16 | 644 | 0.0 | 0.8+ | 2003 01 13 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2001 08 16 | 644 | 0.1+ | 0.8+ | 2003 01 13 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.8− | 0.3− | | |
| 2001 08 16 | 644 | 0.9+ | 0.4+ | 2003 01 13 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.0 | | |
| 2001 08 25 | 644 | 1.3+ | 0.9+ | 2003 01 25 | 704 | 1.3− | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.2− | | |
| 2001 08 25 | 644 | 1.3+ | 1.0+ | 2003 01 25 | 704 | 0.6− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.3− | | |
| 2001 08 25 | 644 | 1.2+ | 1.0+ | 2003 01 25 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2001 09 10 | 699 | 0.2+ | 0.1+ | 2003 01 25 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3− | | |
| 2001 09 10 | 699 | 0.9− | 0.4+ | 2003 01 31 | 699 | 0.7− | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.3− | | |
| 2001 09 10 | 699 | 0.7− | 0.1+ | 2003 01 31 | 699 | 1.3− | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.1− | | |
| 2001 09 10 | 699 | 0.6+ | 1.0− | 2003 01 31 | 699 | 0.8− | 0.3− | 2006 10 22 | 703 | 0.0 | 0.1− | | |
| 2001 09 11 | 704 | 0.6− | 0.1+ | 2003 01 31 | 699 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.4− | | |
| 2001 09 11 | 704 | 0.3− | 0.2+ | 2003 02 06 | 699 | (2.4+ | 0.8−) | 2006 10 23 | 644 | 0.4− | 0.4− | | |
| 2001 09 11 | 704 | 0.7− | 0.5− | 2003 02 06 | 699 | 0.7+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.8+ | | |
| 2001 09 11 | 704 | 0.7− | 0.5− | 2003 02 06 | 699 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.3− | 0.3− | | |
| 2001 09 11 | 704 | 0.6− | 0.5− | 2003 02 06 | 699 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.3− | | |
| 2001 09 18 | 644 | 0.6+ | 0.5+ | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 10 23 | 644 | 0.4− | 0.4− | | |
| 2001 09 18 | 644 | 0.4+ | 0.6+ | 2004 03 23 | 704 | 0.6+ | 0.9+ | 2006 10 23 | 644 | 0.1− | 0.2− | | |
| 2001 09 18 | 644 | 0.4+ | 0.7+ | 2004 03 23 | 704 | 0.9− | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.3− | | |
| 2001 10 18 | 699 | 0.7+ | 1.3− | 2004 04 20 | 704 | (0.7+ | 1.6+) | 2006 10 28 | 703 | 0.3+ | 0.1+ | | |
| 2001 10 18 | 699 | 0.0 | 0.6− | 2004 04 20 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.3− | | |
| 2001 10 18 | 699 | 0.3− | 0.9− | 2004 04 20 | 704 | 0.2− | 1.1+ | 2006 10 28 | 703 | 0.2+ | 0.3− | | |
| 2001 10 18 | 699 | 0.2+ | 0.5+ | 2004 04 20 | 704 | 0.2+ | 0.6+ | 2006 11 10 | 704 | 0.1− | 0.1+ | | |
| 2001 11 19 | 608 | 0.4− | 1.2− | 2004 04 20 | 704 | 0.3+ | 1.0+ | 2006 11 10 | 704 | 0.1+ | 0.3+ | | |
| 2001 11 19 | 608 | 0.3− | 1.3− | 2004 04 20 | E12 | 1.1+ | 0.3− | 2006 11 10 | 704 | 0.1+ | 1.0+ | | |
| 2001 11 19 | 608 | (0.2− | 1.7−) | 2004 04 20 | E12 | 0.4− | 0.7− | 2006 11 10 | 704 | 0.1+ | 0.1+ | | |
| 2002 11 14 | 644 | 0.1− | 0.5+ | 2004 04 20 | E12 | 0.2− | 0.4+ | 2006 11 10 | 704 | 0.1+ | 0.2+ | | |
| 2002 11 14 | 644 | 0.7+ | 0.2− | 2004 04 20 | E12 | 0.8+ | 0.8− | 2006 11 17 | 704 | 0.4− | 1.0− | | |
| 2002 11 14 | 644 | 0.0 | 0.4+ | 2006 08 10 | 644 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.7+ | 0.4+ | | |
| 2002 11 14 | 644 | 0.5+ | 0.0 | 2006 08 10 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 2.2+ | 0.5+ | | |
| 2002 11 14 | 644 | 0.2+ | 0.7+ | 2006 08 10 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.9+ | | |
| 2002 11 14 | 644 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.9+ | 0.2+ | | |
| 2002 11 16 | 699 | (1.5+ | 2.4−) | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.0 | | |
| 2002 11 16 | 699 | (2.1+ | 0.9+) | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.5+ | 0.0 | | |
| 2002 11 16 | 699 | 1.0+ | 1.0+ | 2006 09 18 | 703 | 0.4− | 0.4− | 2006 11 20 | 704 | 1.0+ | 0.4+ | | |
| 2002 11 16 | 699 | 1.1− | 1.1+ | 2006 09 21 | 699 | (3.2+ | 0.4+) | 2006 11 20 | 704 | 0.1+ | 0.5+ | | |
| 2002 11 22 | 644 | 0.6+ | 0.4+ | 2006 09 21 | 699 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.0 | | |
| 2002 11 22 | 644 | 0.7+ | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.6+ | | |
| 2002 11 22 | 644 | 0.6+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.1− | | |
| 2002 12 05 | 704 | 0.9+ | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.9+ | | |
| 2002 12 05 | 704 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.8+ | | |
| 2002 12 05 | 704 | 0.2+ | 1.0− | 2006 09 25 | 699 | 0.1− | 0.3+ | | | | | | |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.0 | | | | | | |

**(139462)∗ 2001 OD$_{84}$**

Discovered 2001 July 22 by R. H. McNaught at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.85237 | | (2000.0) | | +0.17423594 | +0.98379531 |
| $n$ | 0.21203577 | $\omega$ | 286.87507 | | −0.72653963 | +0.09944680 |
| $a$ | 2.7852443 | $\Omega$ | 352.75288 | | −0.66466683 | +0.14918821 |
| $e$ | 0.2334308 | $i$ | 19.58805 | | | |
| $P$ | 4.65 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.9+ | 0.7+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.3− | 0.4− | | |
| 2000 03 05 | 704 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 25 | 704 | (1.8− | 0.3+) | | |
| 2000 03 05 | 704 | 0.2− | 0.9+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | (1.9− | 0.8+) | | |
| 2000 03 05 | 704 | 0.9+ | 0.6+ | 2006 08 25 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 699 | 0.2− | 0.2+ | | |
| 2001 07 17 | 413 | 0.0 | 0.5− | 2006 08 25 | 704 | (0.3− | 1.6+) | 2006 09 25 | 704 | (2.5− | 0.2+) | | |
| 2001 07 17 | 413 | (2.1+ | 0.6−) | 2006 08 25 | 704 | 1.0− | 0.9+ | 2006 09 25 | 699 | 0.9− | 0.3+ | | |
| 2001 07 22 | 413 | 0.9− | 0.8− | 2006 08 25 | 704 | 1.1− | 1.1+ | 2006 09 25 | 699 | 0.3+ | 0.1+ | | |
| 2001 07 22 | 413 | 0.3+ | 0.0 | 2006 08 28 | 703 | (0.2+ | 2.4+) | 2006 09 29 | 704 | 0.3− | 0.6− | | |
| 2001 08 07 | 413 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.2− | 1.5+ | 2006 09 29 | 704 | 0.2+ | 0.4+ | | |
| 2001 08 07 | 413 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 1.3+ | 2006 09 29 | 704 | 1.2+ | 0.2− | | |
| 2001 08 07 | 413 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.8+ | 0.8+ | 2006 09 29 | 704 | 0.2− | 0.5+ | | |
| 2001 08 23 | 413 | 0.0 | 0.2− | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.9− | 0.2+ | | |
| 2001 08 23 | 413 | 0.4+ | 0.2− | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.1− | 0.4− | | |
| 2001 08 23 | 413 | 0.1+ | 0.2− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.4− | 0.2− | | |
| 2001 09 21 | 644 | 0.0 | 0.2− | 2006 09 01 | 704 | 0.7− | 0.6+ | 2006 10 01 | 703 | 0.6− | 0.5− | | |
| 2001 09 21 | 644 | 0.4− | 0.2+ | 2006 09 01 | 704 | 0.2− | 0.2− | 2006 10 01 | 703 | 0.3+ | 0.7− | | |
| 2001 09 21 | 644 | 0.5− | 0.0 | 2006 09 01 | 704 | 0.6+ | 0.4− | 2006 10 01 | 704 | 1.0+ | 0.1− | | |
| 2001 09 26 | 413 | 0.2+ | 0.2− | 2006 09 12 | 703 | 0.9− | 0.6− | 2006 10 01 | 704 | 0.9+ | 0.5+ | | |
| 2001 09 26 | 413 | 0.4− | 0.1+ | 2006 09 12 | 703 | 0.3+ | 1.1− | 2006 10 01 | 704 | 0.6− | 0.5+ | | |
| 2001 09 26 | 413 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.0 | | |
| 2001 10 08 | 644 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.9− | 1.0− | 2006 10 01 | 704 | 0.6+ | 0.0 | | |
| 2001 10 08 | 644 | 0.2+ | 0.5+ | 2006 09 13 | 644 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.2+ | | |
| 2001 10 08 | 644 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 08 | 644 | 1.0+ | 0.7+ | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2001 10 08 | 644 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.0 | | |
| 2001 10 08 | 644 | 0.8+ | 0.7+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 03 | 413 | 0.1− | 0.2− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 03 | 413 | 0.2+ | 0.4− | 2006 09 16 | 699 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2001 11 03 | 413 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.9+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.1− | | |
| 2005 04 05 | 644 | 0.1− | 0.6+ | 2006 09 16 | 699 | 0.6+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2005 04 05 | 644 | 0.6+ | 0.3+ | 2006 09 16 | 699 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.4− | | |
| 2005 04 05 | 644 | 0.8+ | 0.3+ | 2006 09 18 | 704 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 2005 04 06 | 699 | 0.1− | 0.9+ | 2006 09 18 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.1+ | | |
| 2005 04 06 | 699 | 0.7+ | 1.1+ | 2006 09 18 | 704 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.2− | | |
| 2005 04 06 | 699 | (1.7+ | 0.3+) | 2006 09 18 | 704 | 0.5− | 0.8+ | 2006 10 17 | 703 | 1.1− | 0.6+ | | |
| 2005 04 06 | 699 | 1.3+ | 1.2+ | 2006 09 18 | 704 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.4+ | | |
| 2005 04 14 | 703 | (0.8− | 1.6−) | 2006 09 19 | 699 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.3− | | |
| 2005 04 14 | 703 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− | | |
| 2005 04 14 | 703 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2005 04 14 | 703 | 0.8+ | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2005 04 18 | E12 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.7+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.4+ | | |
| 2005 04 18 | E12 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.4− | 0.1− | | |
| 2005 04 18 | E12 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.7− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.3+ | | |
| 2005 04 18 | E12 | 0.1− | 0.3− | 2006 09 19 | 699 | 1.4+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2005 05 01 | 644 | 0.3+ | 0.1− | 2006 09 24 | 106 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.2+ | | |
| 2005 05 01 | 644 | 0.5+ | 0.1− | 2006 09 24 | 106 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 01 | 644 | 0.6+ | 0.1− | 2006 09 24 | 106 | 0.2− | 0.3− | 2006 10 23 | 703 | 0.2− | 0.8− |
| 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 24 | 106 | 0.0 | 0.5− | 2006 10 23 | 703 | 0.4+ | 0.4+ |
| 2006 08 17 | 644 | 0.2− | 0.4+ | 2006 09 25 | 704 | 1.0− | 0.1− | 2006 10 23 | 703 | 0.5+ | 0.4− |
| 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.9− | 0.3− | 2006 10 23 | 703 | 0.4− | 0.9− |

**(139463)∗ 2001 OF$_{85}$**

Discovered 2001 July 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.61208 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21962587 | $\omega$ | 158.91316 | | +0.92964137 | −0.36611063 | |
| $a$ | 2.7206983 | $\Omega$ | 222.63624 | | +0.32866448 | +0.87495278 | |
| $e$ | 0.0576610 | $i$ | 3.52048 | | +0.16657303 | +0.31689217 | |
| $P$ | 4.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | (1.0− | 2.1+) | 2004 03 16 | 704 | 1.0+ | 0.3+ | 2006 09 25 | 704 | 0.2+ | 0.5− |
| 2000 04 06 | 704 | 0.8+ | 0.4+ | 2004 03 16 | 704 | 0.6− | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.1+ |
| 2000 04 06 | 704 | 0.2− | 1.0+ | 2004 03 16 | 704 | 0.5− | 0.1+ | 2006 09 25 | 704 | 0.7− | 0.3+ |
| 2000 04 06 | 704 | 0.5+ | 1.1+ | 2004 03 18 | 704 | 0.4+ | 1.3+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2000 04 29 | 704 | 0.9+ | 1.5+ | 2004 03 18 | 704 | 0.1+ | 1.1+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2000 04 29 | 704 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2000 04 29 | 704 | 0.2+ | 1.3+ | 2004 03 18 | 704 | 0.9+ | 1.1+ | 2006 09 29 | 704 | 0.1− | 0.8+ |
| 2000 04 29 | 704 | 0.1+ | 1.6+ | 2004 03 18 | 704 | (0.9+ | 1.9+) | 2006 09 29 | 704 | 0.2− | 0.2− |
| 2000 04 29 | 704 | (0.5+ | 2.0+) | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 2001 06 30 | 644 | 0.6+ | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2001 06 30 | 644 | 0.6+ | 0.1+ | 2004 03 20 | 704 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2001 06 30 | 644 | 0.7+ | 0.2+ | 2004 03 20 | 704 | (1.6+ | 0.3+) | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 07 20 | 699 | 0.7− | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2001 07 20 | 699 | (2.1− | 0.8+) | 2004 03 27 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 07 20 | 699 | 0.5− | 1.3+ | 2004 03 27 | 704 | 0.7+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 07 20 | 699 | 0.6− | 1.2+ | 2004 03 27 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 07 26 | 608 | 0.1+ | 0.6+ | 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.8− | 0.5+ |
| 2001 07 26 | 608 | 0.8+ | 0.2+ | 2004 03 31 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2001 07 26 | 608 | 0.3+ | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.6+ |
| 2001 08 18 | 644 | 0.2− | 0.8+ | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 2001 08 18 | 644 | 0.3− | 0.8+ | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 08 18 | 644 | 0.2− | 0.6+ | 2004 04 12 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 08 26 | 608 | 0.6− | 0.2− | 2004 04 12 | 691 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 08 26 | 608 | 0.6− | 0.2− | 2004 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2001 08 26 | 608 | 0.9− | 0.1+ | 2004 04 17 | 691 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2002 11 06 | 704 | 0.9+ | 0.2+ | 2004 04 17 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.5+ | 0.5− | 2006 09 14 | 703 | 1.1− | 0.3− | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2002 11 06 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.7+ | 1.0+ |
| 2002 11 24 | 644 | 0.1− | 0.7− | 2006 09 14 | 703 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2002 11 24 | 644 | 0.3− | 0.7− | 2006 09 14 | 703 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 11 24 | 644 | 0.1+ | 1.0− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2002 11 28 | 608 | (1.8− | 0.7+) | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2002 11 28 | 608 | (2.0− | 1.1+) | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 28 | 608 | 1.4− | 0.3+ | 2006 09 17 | 703 | 0.4+ | 1.0+ | 2006 10 27 | G98 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.7+ | 2006 09 17 | 703 | 0.3+ | 0.2+ | 2006 10 27 | G98 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 703 | 0.3+ | 0.5+ | 2006 10 27 | G98 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.8+ | 2006 09 17 | 703 | 0.2+ | 0.3+ | 2006 10 27 | G98 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.3− | 1.1+ | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.1− | 1.0+ | 2006 09 18 | 699 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2002 12 10 | 704 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2002 12 10 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 12 10 | 704 | (0.2− | 3.0+) | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | 1.2− | 0.3− | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2004 03 12 | 644 | 0.1+ | 0.6+ | 2006 09 21 | A50 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 03 12 | 644 | 0.1+ | 0.5+ | 2006 09 21 | A50 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2004 03 12 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 1.1− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 0.6+ | 1.0+ | 2006 09 25 | 704 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.0 |

**(139464)∗ 2001 OH$_{86}$**

Discovered 2001 July 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.08943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21331656 | $\omega$ | 80.11262 | | +0.47372543 | −0.88042619 | |
| $a$ | 2.7740844 | $\Omega$ | 341.56695 | | +0.77998751 | +0.43043091 | |
| $e$ | 0.1623990 | $i$ | 3.77743 | | +0.40890549 | +0.19894461 | |
| $P$ | 4.62 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 699 | 0.2− | 0.3+ | 2001 10 21 | 704 | 0.1− | 0.3+ | 2003 05 21 | 926 | 0.1+ | 0.4+ |
| 2001 07 22 | 699 | 0.0 | 1.0+ | 2001 10 21 | 704 | 0.0 | 0.2+ | 2003 05 21 | 926 | 0.5+ | 0.4+ |
| 2001 07 22 | 699 | (0.4− | 1.6+) | 2001 10 21 | 704 | 0.7+ | 1.3+ | 2004 04 14 | 699 | 0.4+ | 1.3+ |
| 2001 07 22 | 699 | 0.8− | 0.9+ | 2001 10 23 | 699 | 0.1+ | 0.5+ | 2004 04 14 | 699 | 0.1− | 0.4+ |
| 2001 07 25 | 691 | 0.7− | 0.3− | 2001 10 23 | 699 | 0.3+ | 0.5− | 2004 04 14 | 699 | 0.4+ | 1.1+ |
| 2001 07 25 | 691 | 0.6− | 0.3− | 2001 10 23 | 699 | 0.2+ | 0.3+ | 2004 04 14 | 699 | 0.8+ | 1.4+ |
| 2001 07 25 | 691 | 0.6− | 0.4− | 2001 10 23 | 699 | 0.6+ | 1.0+ | 2006 08 29 | 703 | 0.2+ | 0.2− |
| 2001 08 12 | 644 | 0.2+ | 0.0 | 2001 11 16 | 644 | 0.4+ | 0.7+ | 2006 08 29 | 703 | 0.5− | 0.3− |
| 2001 08 12 | 644 | 0.1+ | 0.2+ | 2001 11 16 | 644 | 0.3+ | 0.9+ | 2006 08 29 | 703 | 0.3− | 0.6− |
| 2001 08 12 | 644 | 0.2+ | 0.3+ | 2001 11 16 | 644 | 0.0 | 0.7+ | 2006 08 29 | 703 | 0.5− | 0.2− |
| 2001 08 16 | 704 | 0.6− | 0.9+ | 2001 11 18 | 704 | 0.5+ | 0.0 | 2006 08 30 | 704 | (0.3+ | 1.7−) |
| 2001 08 16 | 704 | 0.8− | 0.3− | 2001 11 18 | 704 | 0.2+ | 1.1+ | 2006 08 30 | 704 | 0.7+ | 0.1+ |
| 2001 08 16 | 704 | 1.1− | 0.0 | 2001 11 18 | 704 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.1+ |
| 2001 08 16 | 704 | 1.2− | 0.2+ | 2001 11 18 | 704 | 0.6+ | 0.5+ | 2006 08 30 | 704 | 0.4+ | 0.2+ |
| 2001 08 16 | 704 | (2.2− | 0.5+) | 2001 11 18 | 704 | 0.5− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.3− |
| 2001 08 18 | 704 | 0.6+ | 0.4+ | 2001 12 07 | 704 | 1.0+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.4− |
| 2001 08 18 | 704 | 0.0 | 0.1+ | 2001 12 07 | 704 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.4− |
| 2001 08 18 | 704 | 0.1+ | 0.0 | 2001 12 07 | 704 | 0.1− | 0.8+ | 2006 10 04 | G96 | 0.4+ | 0.4− |
| 2001 08 18 | 704 | 0.1+ | 0.0 | 2001 12 07 | 704 | 0.8+ | 1.5+ | 2006 10 13 | 691 | 0.1+ | 0.2− |
| 2001 08 24 | 704 | 1.0− | 0.2+ | 2001 12 07 | 704 | (0.8+ | 1.9+) | 2006 10 13 | 691 | 0.0 | 0.1− |
| 2001 08 24 | 704 | 1.2− | 0.3+ | 2001 12 10 | 645 | 0.1− | 0.3− | 2006 10 13 | 691 | 0.0 | 0.1− |
| 2001 08 24 | 704 | 0.7− | 0.7+ | 2001 12 10 | 645 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.5− |
| 2001 08 24 | 704 | 1.0− | 0.5+ | 2002 12 31 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2001 08 24 | 704 | 1.0− | 0.4− | 2002 12 31 | 704 | 0.3+ | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2001 08 26 | 691 | 0.3− | 0.1− | 2002 12 31 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 2001 08 26 | 691 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.5− |
| 2001 08 26 | 691 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.3− | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 2001 09 07 | 704 | 0.5+ | 0.6+ | 2003 01 05 | 704 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.4+ | 0.4− |
| 2001 09 07 | 704 | 0.1+ | 0.7+ | 2003 01 05 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.5− |
| 2001 09 07 | 704 | 0.0 | 0.7+ | 2003 01 05 | 704 | 0.3+ | 0.2− | 2006 10 21 | 704 | 0.0 | 0.3− |
| 2001 09 07 | 704 | 0.0 | 0.6+ | 2003 01 05 | 704 | 0.3+ | 0.0 | 2006 10 21 | 704 | 0.4+ | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 0.8+ | 2003 01 05 | 704 | 0.1− | 0.3+ | 2006 10 21 | 704 | 0.3+ | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2003 01 08 | 608 | 0.5+ | 0.4− | 2006 10 21 | 704 | 0.2+ | 0.3− |
| 2001 09 16 | 704 | 0.2+ | 0.6+ | 2003 01 08 | 608 | 0.1− | 0.3− | 2006 10 21 | 704 | 0.1− | 0.8− |
| 2001 09 18 | 699 | 0.5+ | 0.4+ | 2003 01 08 | 608 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.9+ | 0.5+ |
| 2001 09 18 | 699 | 0.4+ | 0.1+ | 2003 01 09 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.6− |
| 2001 09 18 | 699 | 0.0 | 0.7+ | 2003 01 09 | 704 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2001 09 18 | 699 | 0.4+ | 0.5+ | 2003 01 09 | 704 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.2− |
| 2001 09 19 | 699 | 0.9− | 0.0 | 2003 01 09 | 704 | 0.0 | 0.9+ | 2006 10 29 | 704 | 0.2+ | 0.1+ |
| 2001 09 19 | 699 | 1.2+ | 1.1+ | 2003 01 17 | 644 | 0.1+ | 0.5+ | 2006 10 29 | 704 | 0.1− | 0.3− |
| 2001 09 19 | 699 | 0.2+ | 0.4− | 2003 01 17 | 644 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.3+ | 0.6− |
| 2001 09 19 | 699 | 0.2+ | 1.1+ | 2003 01 17 | 644 | 0.0 | 0.6+ | 2006 10 29 | 704 | (8.6− | 12.2+) |
| 2001 09 20 | 704 | 0.6− | 0.8+ | 2003 01 27 | 704 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.8+ | 2003 01 27 | 699 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.7− | 0.8+ | 2003 01 27 | 704 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.7− | 0.7+ | 2003 01 27 | 704 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.9− | 1.0+ | 2003 01 27 | 699 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 09 22 | 704 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 09 22 | 704 | 0.1+ | 0.3+ | 2003 01 27 | 699 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2001 09 22 | 704 | 0.4+ | 0.8+ | 2003 01 27 | 704 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.5+ | 0.8− |
| 2001 09 22 | 704 | 0.0 | 0.8+ | 2003 01 27 | 699 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2001 09 22 | 704 | 0.1+ | 0.5+ | 2003 01 28 | 608 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2003 01 28 | 608 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 09 23 | 704 | 0.2+ | 0.3+ | 2003 01 28 | 608 | 0.6− | 0.2− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 09 23 | 704 | 0.2+ | 0.8+ | 2003 02 01 | 704 | 0.3+ | 1.0+ | 2006 11 14 | G96 | 0.1− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.2+ | 1.3+ | 2003 02 01 | 704 | 0.2+ | 0.9+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.2+ | 0.9+ | 2003 02 01 | 704 | 0.3+ | 1.1+ | 2006 11 16 | 704 | 0.6+ | 0.0 |
| 2001 09 24 | 644 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2001 09 24 | 644 | 0.1− | 0.4+ | 2003 02 01 | 704 | 0.3− | 0.6+ | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2001 09 24 | 644 | 0.2− | 0.4+ | 2003 02 04 | 704 | 0.2− | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.2− |
| 2001 09 26 | 699 | 0.2− | 0.2− | 2003 02 04 | 704 | 0.2+ | 1.0+ | 2006 11 16 | 704 | 0.2− | 0.1− |
| 2001 09 26 | 699 | 0.3− | 0.1+ | 2003 02 04 | 704 | 0.5+ | 1.1+ | 2006 11 17 | 704 | 0.3− | 0.2− |
| 2001 09 26 | 699 | (2.6− | 1.9+) | 2003 02 04 | 704 | 0.1+ | 1.2+ | 2006 11 17 | 704 | 0.3− | 0.3+ |
| 2001 09 26 | 699 | 0.3− | 0.3+ | 2003 02 04 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 704 | 0.5− | 0.3− |
| 2001 10 05 | 644 | 0.1+ | 0.5+ | 2003 02 05 | 300 | 1.0+ | 0.2− | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2001 10 05 | 644 | 0.0 | 0.8+ | 2003 02 05 | 300 | 0.2+ | 0.3− | 2006 11 17 | 704 | (3.3+ | 0.6−) |
| 2001 10 05 | 644 | 0.4− | 0.5+ | 2003 02 05 | 300 | (1.7− | 0.7+) | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2001 10 06 | 704 | 0.4− | 0.8+ | 2003 02 08 | 704 | 0.6+ | 1.2+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2001 10 06 | 704 | 0.1+ | 0.3+ | 2003 02 08 | 704 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2001 10 06 | 704 | 0.4+ | 0.1+ | 2003 02 08 | 704 | 0.0 | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2001 10 11 | 644 | 0.4− | 0.5+ | 2003 02 08 | 704 | 0.1+ | 0.8+ | 2006 11 19 | 704 | 0.4− | 0.4− |
| 2001 10 11 | 644 | 0.5− | 0.4+ | 2003 02 08 | 704 | 0.6+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2001 10 11 | 644 | 0.5− | 0.3+ | 2003 02 09 | 608 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.9+ |
| 2001 10 13 | 704 | 0.1− | 0.3+ | 2003 02 09 | 608 | 0.0 | 0.6+ | 2006 11 19 | 704 | 0.3− | 0.8− |
| 2001 10 13 | 704 | 0.1− | 0.8+ | 2003 02 09 | 608 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2001 10 13 | 704 | 0.2− | 0.3+ | 2003 03 06 | 644 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.2− |
| 2001 10 13 | 704 | 0.2+ | 0.3+ | 2003 03 06 | 644 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.0 | 0.3− |
| 2001 10 13 | 704 | 0.1− | 0.4+ | 2003 03 06 | 644 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.5− |
| 2001 10 16 | 704 | 0.6+ | 0.0 | 2003 03 08 | 704 | (0.4− | 2.5+) | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2001 10 16 | 704 | 1.2+ | 0.1+ | 2003 03 08 | 704 | (0.0 | 1.6+) | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2001 10 16 | 704 | 0.5+ | 0.1+ | 2003 03 08 | 704 | 0.6+ | 0.1− | 2006 12 01 | 704 | 0.1− | 0.6+ |
| 2001 10 16 | 704 | 0.8+ | 0.5+ | 2003 03 08 | 704 | 0.6+ | 0.8− | 2006 12 01 | 704 | 0.5+ | 0.1− |
| 2001 10 16 | 704 | 0.5+ | 0.2+ | 2003 03 12 | 644 | 0.5+ | 0.3− | 2006 12 01 | 704 | 0.4− | 0.7+ |
| 2001 10 19 | 644 | 0.5− | 0.7− | 2003 03 12 | 644 | 0.2+ | 0.2− | 2006 12 01 | 704 | 1.3− | 0.5+ |
| 2001 10 19 | 644 | 0.5+ | 0.2+ | 2003 03 12 | 644 | 0.2+ | 0.2− | | | | |
| 2001 10 19 | 644 | 0.3+ | 0.6+ | 2003 05 21 | 926 | 0.0 | 1.3+ | | | | |

**(139465)∗ 2001 OF$_{88}$**

Discovered 2001 July 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.60990 | | (2000.0) | | | |
| $n$ | 0.21913446 | $\omega$ | 347.31464 | | +0.75039881 | +0.66078265 |
| $a$ | 2.7247642 | $\Omega$ | 331.30498 | | −0.60342557 | +0.67473588 |
| $e$ | 0.1826126 | $i$ | 1.95356 | | −0.26977622 | +0.32878228 |
| $P$ | 4.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 691 | 0.3− | 0.1− | 2001 08 19 | 704 | 0.7+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 1999 01 19 | 691 | 0.3− | 0.2− | 2001 08 19 | 704 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 1999 01 19 | 691 | 0.4− | 0.3− | 2001 08 24 | 699 | 1.0+ | 0.7+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 1999 01 23 | 691 | 0.2− | 0.1− | 2001 08 24 | 699 | 0.3+ | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 1999 01 23 | 691 | 0.5+ | 0.1− | 2001 08 24 | 699 | (0.5+ | 2.3−) | 2006 10 17 | 691 | 0.5− | 0.0 |
| 1999 01 23 | 691 | 0.5+ | 0.3− | 2001 08 24 | 699 | 0.4+ | 0.9+ | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 2000 04 05 | 704 | 1.1+ | 1.1+ | 2001 08 26 | 608 | 1.3− | 0.0 | 2006 10 17 | 691 | 0.3− | 0.1+ |
| 2000 04 05 | 704 | 0.4+ | 0.9+ | 2001 08 26 | 608 | 0.7− | 0.3− | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2000 04 05 | 704 | 0.4− | 1.1+ | 2001 08 26 | 608 | 0.6− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2001 07 16 | 699 | 0.3− | 1.1+ | 2004 02 19 | 704 | (1.8+ | 0.8+) | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 07 16 | 699 | 0.3+ | 0.1− | 2004 02 19 | 704 | (1.6+ | 0.0 ) | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 07 16 | 699 | 1.2− | 0.7− | 2004 02 19 | 704 | 0.9− | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2001 07 16 | 699 | 0.8− | 0.5− | 2004 02 29 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 07 21 | 608 | 0.3+ | 0.0 | 2004 02 29 | 691 | 0.5+ | 0.3+ | 2006 10 29 | 704 | 0.3+ | 0.4− |
| 2001 07 21 | 608 | 0.5− | 0.6− | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 704 | 1.2− | 0.6+ |
| 2001 07 21 | 608 | 0.4− | 0.5− | 2004 03 01 | 291 | 0.6− | 0.2+ | 2006 10 29 | 704 | 0.6+ | 0.3− |
| 2001 07 21 | 608 | 1.0− | 1.1− | 2004 03 01 | 291 | 0.4− | 0.8+ | 2006 10 29 | 704 | 0.7+ | 0.9+ |
| 2001 07 21 | 608 | 0.4− | 0.9− | 2004 03 01 | 291 | 0.8− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 07 21 | 608 | 0.6− | 0.7− | 2004 03 17 | 691 | 0.7+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 07 27 | 699 | 0.1− | 0.2+ | 2004 03 17 | 691 | 0.5+ | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2001 07 27 | 699 | 0.0 | 0.7+ | 2004 03 17 | 691 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2001 07 27 | 699 | 0.2+ | 0.4+ | 2004 03 18 | 291 | 0.7+ | 0.5+ | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 07 27 | 699 | 0.0 | 0.4+ | 2004 03 18 | 291 | 0.2+ | 0.5+ | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2001 08 14 | 608 | 0.3+ | 0.9+ | 2004 03 18 | 291 | 0.5+ | 0.6+ | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2001 08 14 | 608 | 0.2+ | 1.4+ | 2005 06 26 | 644 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.4+ | 0.3+ |
| 2001 08 14 | 608 | 0.9+ | 1.2+ | 2005 06 26 | 644 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.4+ | 0.5+ |
| 2001 08 16 | 704 | (1.7− | 1.6+) | 2005 06 26 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.6+ | 1.1− |
| 2001 08 16 | 704 | 0.7− | 0.8+ | 2005 07 03 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2001 08 16 | 704 | 0.3+ | 0.6+ | 2005 07 03 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.8− |
| 2001 08 16 | 704 | 0.6− | 1.0+ | 2005 07 03 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2001 08 16 | 704 | 0.6− | 1.1+ | 2006 07 22 | G96 | 0.3+ | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.5− |
| 2001 08 19 | 704 | 0.1+ | 0.0 | 2006 07 22 | G96 | 0.8− | 0.9+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 08 19 | 704 | 0.3+ | 0.5+ | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.6+ |
| 2001 08 19 | 704 | 0.6+ | 0.6+ | 2006 07 22 | G96 | 0.7− | 0.2+ | 2006 11 23 | 691 | 0.3+ | 0.1+ |

**(139466)∗ 2001 OU$_{88}$**

Discovered 2001 July 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.42998 | | (2000.0) | | | |
| $n$ | 0.17372940 | $\omega$ | 169.88786 | | +0.41629827 | +0.89961669 |
| $a$ | 3.1809280 | $\Omega$ | 124.59570 | | −0.84498808 | +0.43633746 |
| $e$ | 0.1233832 | $i$ | 9.21717 | | −0.33569466 | +0.01730418 |
| $P$ | 5.67 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 699 | 0.5+ | 0.1+ | 2001 08 21 | 608 | 0.3− | 0.8+ | 2005 03 16 | 703 | 0.3+ | 0.0 |
| 2000 04 28 | 699 | 1.1+ | 1.1− | 2001 08 25 | 704 | 0.3− | 0.8− | 2005 03 16 | 703 | 0.4+ | 0.1− |
| 2000 04 28 | 699 | 0.1+ | 0.5− | 2001 08 25 | 704 | 0.9− | 0.5− | 2005 03 16 | 703 | 0.2+ | 0.5+ |
| 2000 04 28 | 699 | 0.1− | 0.1− | 2001 08 25 | 704 | 0.6− | 0.2− | 2005 04 02 | 703 | 0.4− | 0.2− |
| 2000 05 12 | 608 | (0.8− | 2.7−) | 2001 08 25 | 704 | 0.9− | 0.9− | 2005 04 02 | 703 | 0.5+ | 0.6− |
| 2000 05 12 | 608 | (0.2− | 2.8−) | 2001 08 25 | 704 | 0.6− | 0.3− | 2005 04 02 | 703 | 0.4− | 0.2− |
| 2000 05 12 | 608 | (0.8− | 2.6−) | 2002 10 31 | 704 | 2.3+ | 2.8− | 2005 04 02 | 703 | 0.5− | 1.9+ |
| 2001 07 21 | 608 | 0.1+ | 1.0+ | 2002 10 31 | 704 | 0.8+ | 0.8− | 2006 05 18 | 644 | 0.9− | 0.6− |
| 2001 07 21 | 608 | 0.0 | 0.9+ | 2002 10 31 | 704 | 2.3+ | 1.6− | 2006 05 18 | 644 | 0.3− | 0.2− |
| 2001 07 21 | 608 | 0.1+ | 1.0+ | 2002 10 31 | 704 | 1.6+ | 1.4− | 2006 05 18 | 644 | 0.5− | 0.6− |
| 2001 07 27 | 699 | 0.3+ | 0.7+ | 2002 10 31 | 704 | 1.3+ | 0.4− | 2006 05 18 | 644 | 0.4− | 0.2− |
| 2001 07 27 | 699 | 0.3− | 0.6+ | 2002 12 08 | 644 | 0.4− | 0.8+ | 2006 05 18 | 644 | 0.5− | 0.4− |
| 2001 07 27 | 699 | 0.0 | 1.3+ | 2002 12 08 | 644 | 0.2+ | 0.4+ | 2006 05 18 | 644 | 0.5− | 0.6− |
| 2001 07 27 | 699 | 0.2+ | 0.7+ | 2002 12 08 | 644 | 0.8− | 1.0+ | 2006 06 15 | 691 | 0.1+ | 0.1− |
| 2001 08 19 | 704 | 0.1+ | 0.3+ | 2003 12 23 | 704 | 0.9− | 1.3+ | 2006 06 15 | 691 | 0.2+ | 0.2− |
| 2001 08 19 | 704 | 0.1− | 0.1+ | 2003 12 23 | 704 | 0.9− | 0.1+ | 2006 06 15 | 691 | 0.3+ | 0.1− |
| 2001 08 19 | 704 | 0.3+ | 1.1− | 2003 12 23 | 704 | 0.4+ | 0.6+ | 2006 06 17 | 691 | 0.0 | 0.2− |
| 2001 08 19 | 704 | 0.0 | 0.7+ | 2003 12 28 | 691 | 0.5− | 0.4+ | 2006 06 17 | 691 | 0.1+ | 0.0 |
| 2001 08 19 | 704 | 0.7− | 0.4+ | 2003 12 28 | 691 | 0.1+ | 0.1− | 2006 06 17 | 691 | 0.0 | 0.1− |
| 2001 08 21 | 608 | 0.4− | 0.6+ | 2003 12 28 | 691 | 0.4− | 0.2+ | | | | |
| 2001 08 21 | 608 | 0.4− | 0.9+ | 2005 03 16 | 703 | 0.2− | 0.9+ | | | | |

**(139467)∗ 2001 OT$_{90}$ = 2000 FS$_{39}$**

Discovered 2001 July 25 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 15916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.75795 | | (2000.0) | | | |
| $n$ | 0.22142135 | $\omega$ | 157.45621 | | −0.44767410 | +0.89174210 |
| $a$ | 2.7059705 | $\Omega$ | 85.89518 | | −0.83020057 | −0.38698570 |
| $e$ | 0.0328958 | $i$ | 3.80618 | | −0.33219709 | −0.23460198 |
| $P$ | 4.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.8+ | 0.6+ | 2001 07 27 | 699 | 0.3− | 0.3+ | 2004 02 18 | 333 | 0.6+ | 0.3+ |
| 2000 03 29 | 704 | 0.8− | 0.7+ | 2001 08 13 | 644 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.3− |
| 2000 03 29 | 704 | 0.4− | 0.2− | 2001 08 13 | 644 | 0.1− | 0.2+ | 2004 03 20 | 704 | 1.0+ | 0.0 |
| 2000 04 04 | 704 | 0.6+ | 0.4− | 2001 08 13 | 644 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.4− |
| 2000 04 04 | 704 | 0.0 | 0.8+ | 2001 08 23 | 699 | 0.5+ | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.6− |
| 2000 04 04 | 704 | 0.1− | 0.3− | 2001 08 23 | 699 | 0.4+ | 0.2+ | 2004 03 20 | 704 | 0.2+ | 0.1− |
| 2000 04 04 | 704 | 0.3+ | 0.3+ | 2001 08 23 | 699 | (0.1− | 1.7+) | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 2000 04 27 | 699 | 0.6− | 0.8+ | 2001 08 23 | 699 | 0.5+ | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.3+ |
| 2000 04 27 | 699 | 0.8+ | 0.8+ | 2001 08 25 | 608 | 0.1+ | 0.5− | 2006 09 20 | 644 | 0.5+ | 0.3+ |
| 2000 04 27 | 699 | 0.5− | 0.2− | 2001 08 25 | 608 | 0.3+ | 0.7− | 2006 10 16 | 703 | 1.0− | 0.1+ |
| 2000 04 27 | 699 | 0.0 | 0.2+ | 2001 08 25 | 608 | 0.4+ | 0.3− | 2006 10 16 | 703 | 1.3− | 0.0 |
| 2001 07 25 | 608 | 0.0 | 0.0 | 2004 02 11 | 699 | 0.6+ | 0.3+ | 2006 10 16 | 703 | (3.6− | 0.7−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.3− | 0.5− | 2004 02 11 | 699 | 0.1+ | 1.0− | 2006 10 16 | 703 | (3.2− | 0.4−) |
| 2001 07 25 | 608 | 0.1+ | 0.4− | 2004 02 11 | 699 | (0.6− | 1.9+) | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 07 25 | 608 | 0.1− | 0.1− | 2004 02 11 | 699 | 1.4− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2001 07 25 | 608 | 0.7− | 0.3− | 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2001 07 25 | 608 | 0.4− | 0.5− | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2001 07 27 | 699 | 0.2+ | 0.4− | 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3+ |
| 2001 07 27 | 699 | 0.0 | 0.6+ | 2004 02 18 | 333 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2001 07 27 | 699 | 0.1+ | 1.0+ | 2004 02 18 | 333 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.2+ |

**(139468)∗ 2001 OV$_{90}$ = 2005 NZ$_{110}$**

Discovered 2001 July 25 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 84718)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.87283 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24069084 | $\omega$ | 301.94835 | | −0.61964124 | +0.78276102 | |
| $a$ | 2.5595464 | $\Omega$ | 289.65202 | | −0.69785471 | −0.58309158 | |
| $e$ | 0.1133917 | $i$ | 3.51297 | | −0.35922629 | −0.21746126 | |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 01 | 910 | 0.6+ | 1.1+ | 2004 03 20 | 704 | 0.0 | 1.1− | 2006 10 17 | 691 | 0.3− | 0.2+ |
| 1997 08 02 | 910 | 0.3+ | 0.5+ | 2004 03 20 | 704 | 0.9− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 1997 08 02 | 910 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.5+ |
| 2001 07 25 | 608 | 0.5− | 0.1+ | 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2001 07 25 | 608 | 0.6− | 0.5− | 2005 06 13 | G96 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.6+ | 0.0 |
| 2001 07 25 | 608 | 0.5− | 0.2+ | 2005 06 13 | G96 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.6− | 0.8+ |
| 2001 07 27 | 699 | 0.4− | 0.5+ | 2005 06 13 | G96 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 1.0− | 0.0 |
| 2001 07 27 | 699 | (1.6− | 0.3+) | 2005 07 07 | 568 | 0.3− | 0.7+ | 2006 10 27 | 703 | 1.2+ | 0.8+ |
| 2001 07 27 | 699 | (2.0− | 2.7+) | 2005 07 07 | 568 | 0.4− | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2001 07 27 | 699 | 1.4− | 0.7+ | 2005 07 07 | 568 | 0.4− | 0.7+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2004 02 12 | 691 | 0.1− | 0.3+ | 2005 07 08 | 568 | 0.5− | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.4+ | 2005 07 15 | G96 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.2+ |
| 2004 02 12 | 691 | (2.0+ | 0.2−) | 2005 07 15 | G96 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.0 |
| 2004 02 14 | 608 | 0.8+ | 0.9+ | 2005 07 15 | G96 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.4+ | 0.5− |
| 2004 02 14 | 608 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2004 02 14 | 608 | 0.6+ | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2004 03 20 | 691 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 691 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.6+ |
| 2004 03 20 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2004 03 20 | 704 | 0.4− | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.1+ |

**(139469)∗ 2001 OF$_{91}$ = 2002 TV$_{371}$**

Discovered 2001 July 19 by M. White and M. Collins at OCA-Anza Observatory.

Id. G. V. Williams (*MPO* 49925)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.63232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24046768 | $\omega$ | 333.11861 | | −0.54697516 | −0.82779533 | |
| $a$ | 2.5611297 | $\Omega$ | 149.55941 | | +0.80554190 | −0.56101750 | |
| $e$ | 0.0359044 | $i$ | 14.25931 | | +0.22786052 | −0.00377593 | |
| $P$ | 4.10 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 608 | 0.2+ | 0.2+ | 2004 02 25 | 704 | 0.9+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 2001 06 15 | 608 | 0.1+ | 0.5+ | 2004 02 25 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.8+ |
| 2001 06 15 | 608 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2001 07 19 | 643 | 0.9+ | 0.5+ | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.1− | 1.4+ |
| 2001 07 19 | 643 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.4− |
| 2001 07 23 | 643 | 0.4− | 0.4+ | 2004 02 26 | 704 | 0.5− | 0.5− | 2006 10 17 | 703 | 0.8− | 0.7− |
| 2001 07 26 | 643 | (0.0 | 1.7+) | 2004 02 26 | 704 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2001 07 26 | 643 | 0.9− | 0.4+ | 2004 03 01 | 291 | 0.1− | 0.0 | 2006 10 20 | 703 | 0.2+ | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2004 03 01 | 291 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.4+ | 0.1− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2004 03 01 | 291 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.7+ | 0.6+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 03 11 | 644 | 0.0 | 0.3+ | 2006 10 20 | 703 | 0.9+ | 0.7+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 1.0− | 1.1+ |
| 2002 10 30 | 704 | 0.8+ | 0.8+ | 2004 03 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.9+ |
| 2002 10 30 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.3− | 0.4+ | 2006 10 21 | 703 | 1.4− | 0.1+ |
| 2002 10 30 | 704 | 0.1+ | 0.8+ | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 10 21 | 703 | (1.6− | 0.3−) |
| 2002 10 30 | 704 | 1.1− | 0.2− | 2004 03 15 | 704 | 0.9+ | 0.2+ | 2006 10 28 | 703 | 1.0+ | 0.5+ |
| 2002 11 06 | 644 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.5+ | 0.9+ | 2006 10 28 | 703 | 0.8+ | 1.1+ |
| 2002 11 06 | 644 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.1− | 0.5− |
| 2002 11 06 | 644 | 0.3− | 0.1+ | 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.5+ |
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.4+ |
| 2002 12 10 | 644 | 0.4− | 0.4+ | 2004 03 17 | 691 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2002 12 10 | 644 | 0.4− | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.3− | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2004 02 18 | 704 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.6+ | 0.3+ |
| 2004 02 18 | 704 | 0.5+ | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2004 02 18 | 704 | 1.0+ | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2004 02 18 | 704 | 1.1+ | 0.6+ | 2004 03 23 | 704 | 0.1+ | 0.4− | 2006 11 17 | 703 | 1.3− | 0.3− |
| 2004 02 18 | 704 | 0.3− | 0.0 | 2004 03 27 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.9− | 1.0− |
| 2004 02 21 | 608 | 0.0 | 0.1+ | 2004 03 27 | 691 | 0.3− | 0.1− | 2006 11 23 | 703 | 0.2+ | 0.5+ |
| 2004 02 21 | 608 | 0.3− | 1.1+ | 2004 03 27 | 691 | 0.2− | 0.1− | 2006 11 23 | 703 | 0.7+ | 0.6+ |
| 2004 02 21 | 608 | 0.5+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.1+ | 1.4+ |
| 2004 02 25 | 704 | 0.7+ | 0.1− | 2006 09 26 | 703 | (0.3− | 2.0−) | 2006 11 23 | 703 | 0.5− | 0.3− |
| 2004 02 25 | 704 | 0.5+ | 0.4− | 2006 09 26 | 703 | 0.4− | 1.1− | | | | |
| 2004 02 25 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.1+ | 1.3− | | | | |

**(139470)∗ 2001 OK$_{91}$**

Discovered 2001 July 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.43392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20030512 | $\omega$ | 144.57329 | | +0.97224093 | −0.13032341 | |
| $a$ | 2.8929528 | $\Omega$ | 224.21776 | | +0.09106650 | +0.97580121 | |
| $e$ | 0.1300259 | $i$ | 16.17974 | | +0.21553297 | +0.17557850 | |
| $P$ | 4.92 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 31 | 691 | 0.4+ | 0.3+ | 2003 02 04 | 644 | 0.1− | 0.7+ | 2006 08 29 | 699 | 0.3+ | 0.4− |
| 1995 05 31 | 691 | 0.4+ | 1.1+ | 2005 05 03 | 703 | 0.8− | 0.7+ | 2006 08 29 | 699 | 0.2+ | 0.2+ |
| 1995 05 31 | 691 | 1.6+ | 1.1− | 2005 05 03 | 703 | 1.4− | 0.9+ | 2006 09 01 | 704 | 0.4+ | 0.4+ |
| 2001 07 30 | 644 | 0.3− | 0.3+ | 2005 05 03 | 703 | 0.5− | 0.6+ | 2006 09 01 | 704 | 0.3− | 0.6+ |
| 2001 07 30 | 644 | 0.2− | 0.1+ | 2005 05 03 | 703 | (2.3− | 0.2−) | 2006 09 01 | 704 | 0.4+ | 0.8+ |
| 2001 07 30 | 644 | 0.5− | 0.1+ | 2005 05 14 | G96 | 0.4− | 0.2− | 2006 09 16 | 683 | (0.3+ | 1.8−) |
| 2001 08 04 | 644 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.5− | 0.1− | 2006 09 16 | 683 | 0.7+ | 0.7− |
| 2001 08 04 | 644 | 0.2− | 0.1− | 2005 05 14 | G96 | 0.5− | 0.3− | 2006 09 18 | 683 | 0.8+ | 0.0 |
| 2001 08 04 | 644 | 0.1− | 0.0 | 2005 05 14 | G96 | 0.6− | 0.5− | 2006 09 18 | 683 | 1.3+ | 0.3+ |
| 2001 08 14 | 644 | 1.1− | 0.1+ | 2005 05 14 | 644 | 0.2− | 0.1− | 2006 09 19 | 683 | (1.3+ | 1.8+) |
| 2001 08 14 | 644 | 1.0− | 0.1+ | 2005 05 14 | 644 | 0.2− | 0.0 | 2006 09 19 | 683 | (2.2− | 1.2+) |
| 2001 08 14 | 644 | 0.9− | 0.0 | 2005 05 14 | 644 | 0.2− | 0.1− | 2006 09 20 | 703 | 0.3+ | 0.4− |
| 2001 08 18 | 699 | 0.1+ | 0.5− | 2005 05 19 | G96 | 0.4− | 0.4− | 2006 09 20 | 703 | 0.3+ | 0.1− |
| 2001 08 18 | 699 | 0.2+ | 0.3− | 2005 05 19 | G96 | 0.2− | 0.3− | 2006 09 20 | 703 | 0.8+ | 0.7− |
| 2001 08 18 | 699 | 0.7− | 0.1− | 2005 05 19 | G96 | 0.4− | 0.1− | 2006 09 20 | 703 | 0.8+ | 0.8− |
| 2001 08 18 | 699 | 0.2+ | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.3− | 2006 09 27 | 703 | 0.2+ | 0.7+ |
| 2001 08 21 | 644 | 0.4− | 0.1+ | 2005 06 04 | 691 | 0.1− | 0.3− | 2006 09 27 | 703 | 0.4− | 0.8− |
| 2001 08 21 | 644 | 0.7− | 0.6+ | 2005 06 04 | 691 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.1− | 0.0 |
| 2001 08 21 | 644 | 0.5− | 0.1− | 2005 06 04 | 691 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.1− | 0.4+ |
| 2001 08 21 | 644 | 0.7− | 0.3+ | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1− | 0.7− |
| 2001 08 21 | 644 | 0.2− | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.6+ |
| 2001 08 21 | 644 | 0.5− | 0.5+ | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.1− |
| 2001 08 21 | 644 | 0.0 | 0.3+ | 2005 06 28 | 644 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.1+ |
| 2001 08 21 | 644 | 0.7− | 0.4+ | 2005 06 28 | 644 | 0.3− | 0.0 | 2006 10 23 | 703 | 0.2− | 0.8− |
| 2001 08 21 | 644 | 0.0 | 0.3+ | 2005 06 28 | 644 | 0.6− | 0.3− | 2006 10 23 | 703 | 0.6− | 0.1− |
| 2001 08 21 | 644 | 0.8− | 0.6+ | 2005 07 05 | 644 | 0.2+ | 0.1− | 2006 10 23 | 703 | 0.7− | 0.6− |
| 2001 08 21 | 644 | 0.3+ | 0.5+ | 2005 07 05 | 644 | 0.4− | 0.1− | 2006 10 23 | 703 | 0.9− | 0.0 |
| 2001 08 21 | 644 | 0.6− | 0.7+ | 2005 07 05 | 644 | 0.4− | 0.1+ | 2006 10 29 | 703 | 0.5− | 0.4+ |
| 2001 09 15 | 644 | (1.6− | 0.0 ) | 2006 08 10 | 644 | 0.3+ | 0.0 | 2006 10 29 | 703 | 0.6+ | 0.4+ |
| 2001 09 15 | 644 | 1.5− | 0.2+ | 2006 08 10 | 644 | 0.4+ | 0.1+ | 2006 10 29 | 703 | 0.2− | 0.2+ |
| 2001 09 15 | 644 | (1.6− | 0.2+) | 2006 08 10 | 644 | 0.2+ | 0.1− | 2006 10 29 | 703 | 0.6− | 0.6− |
| 2001 10 04 | 608 | 1.0− | 0.7− | 2006 08 13 | 644 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.5− | 0.8− |
| 2001 10 04 | 608 | 0.1− | 1.2− | 2006 08 13 | 644 | 0.5+ | 0.0 | 2006 11 13 | 703 | 0.9+ | 1.0− |
| 2001 10 04 | 608 | 0.0 | 0.2− | 2006 08 13 | 644 | 0.5+ | 0.0 | 2006 11 13 | 703 | 1.1+ | 0.3+ |
| 2002 12 14 | 704 | 0.9− | 0.3− | 2006 08 25 | 704 | 0.9+ | 0.0 | 2006 11 13 | 703 | 0.8+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 0.7+ | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.6− |
| 2002 12 14 | 704 | 0.1− | 0.4+ | 2006 08 25 | 704 | 0.5+ | 0.0 | 2006 11 27 | 703 | 0.7+ | 1.0− |
| 2002 12 14 | 704 | 0.4− | 0.1+ | 2006 08 25 | 704 | 0.9+ | 0.8+ | 2006 11 27 | 703 | 0.2+ | 0.1− |
| 2003 02 04 | 644 | 0.1− | 0.5+ | 2006 08 29 | 699 | 0.9+ | 0.9+ | 2006 11 27 | 703 | 0.9− | 0.4+ |
| 2003 02 04 | 644 | 0.2− | 0.8+ | 2006 08 29 | 699 | 0.3+ | 0.1− | | | | |

**(139471)∗ 2001 OY$_{91}$**

Discovered 2001 July 31 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.85950 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22544146 | $\omega$ | 144.97711 | | +0.84081712 | −0.49789262 | |
| $a$ | 2.6737052 | $\Omega$ | 246.24529 | | +0.42839410 | +0.85193703 | |
| $e$ | 0.1116184 | $i$ | 13.42080 | | +0.33091550 | +0.16219198 | |
| $P$ | 4.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 0.1+ | 0.3− | 2001 11 18 | 704 | 0.1− | 0.8− | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2001 07 19 | 699 | 0.7+ | 0.2− | 2001 11 18 | 704 | (0.4− | 1.9−) | 2006 11 14 | 691 | 0.4+ | 0.2− |
| 2001 07 19 | 699 | 0.2− | 0.2+ | 2001 11 18 | 704 | 0.8− | 0.9− | 2006 11 14 | 691 | 0.3+ | 0.1− |
| 2001 07 19 | 699 | 0.1+ | 0.5− | 2002 12 14 | 704 | 0.2+ | 0.9+ | 2006 11 14 | 691 | 0.4+ | 0.1− |
| 2001 07 31 | 644 | 0.5− | 0.1− | 2002 12 14 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2001 07 31 | 644 | 0.3+ | 0.2+ | 2002 12 14 | 704 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2001 07 31 | 644 | 0.8− | 0.2+ | 2002 12 14 | 704 | 0.4+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2001 07 31 | 644 | 0.0 | 0.2+ | 2003 01 05 | 704 | (1.0− | 2.2+) | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2001 07 31 | 644 | 0.9− | 0.3+ | 2003 01 05 | 704 | 0.4+ | 1.3+ | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2001 07 31 | 644 | 0.4− | 0.1+ | 2003 01 05 | 704 | (0.2+ | 1.9+) | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2001 08 04 | 644 | 0.8− | 0.1− | 2003 01 05 | 704 | (0.1− | 1.6+) | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2001 08 04 | 644 | 0.9− | 0.3− | 2005 06 27 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2001 08 04 | 644 | 1.1− | 0.3− | 2005 06 27 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 08 10 | 644 | 0.7+ | 0.6+ | 2005 06 27 | 644 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 08 10 | 644 | 0.8+ | 0.1+ | 2006 10 19 | 703 | 0.9+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 1.1+ |
| 2001 08 10 | 644 | 0.8+ | 0.3+ | 2006 10 19 | 703 | 1.0− | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 08 16 | 644 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.5− | 2006 11 27 | 703 | 0.6− | 0.2+ |
| 2001 08 16 | 644 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2001 08 16 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.4− | 0.1+ |
| 2001 08 18 | 699 | 0.9+ | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.6− | 0.3+ |
| 2001 08 18 | 699 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.3− |
| 2001 08 18 | 699 | 0.9− | 0.8+ | 2006 10 20 | G96 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.8− | 0.1− |
| 2001 08 18 | 699 | 0.1− | 0.8− | 2006 10 27 | 703 | 0.7− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2001 08 23 | 699 | 0.2− | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.5+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2001 08 23 | 699 | 0.7+ | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2001 08 23 | 699 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.4− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.2+ |
| 2001 08 23 | 699 | 0.6+ | 0.2− | 2006 11 10 | 691 | 0.4− | 0.3+ | 2006 12 01 | 691 | 0.2− | 0.4− |
| 2001 09 17 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.5− | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.2− |
| 2001 09 17 | 704 | 0.0 | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.3− |
| 2001 09 17 | 704 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.1+ |
| 2001 09 21 | 699 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.5− | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.8+ |
| 2001 09 21 | 699 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 12 01 | 704 | 0.1+ | 0.3+ |
| 2001 09 21 | 699 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.7− | 2006 12 01 | 704 | 0.1+ | 0.2− |
| 2001 09 21 | 699 | 1.1+ | 0.0 | 2006 11 13 | 691 | 0.3+ | 0.0 | 2006 12 01 | 704 | 0.2− | 0.8+ |
| 2001 11 18 | 704 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.1− | | | | |

**(139472)∗ 2001 ON$_{96}$ = 1996 TK$_{43}$**

Discovered 2001 July 24 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 17686)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.20175 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19807926 | $\omega$ | 84.21225 | | +0.83645693 | +0.54220359 | |
| $a$ | 2.9145850 | $\Omega$ | 242.92938 | | −0.53155494 | +0.76727597 | |
| $e$ | 0.3637663 | $i$ | 5.13638 | | −0.13337601 | +0.34249502 | |
| $P$ | 4.98 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.4+ | 0.2− | 2001 09 22 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 106 | 0.2+ | 0.2+ |
| 1996 10 05 | 691 | 0.2+ | 0.2+ | 2001 09 23 | 704 | 0.0 | 0.4+ | 2006 09 22 | 106 | 0.2− | 0.3− |
| 1996 10 05 | 691 | 0.0 | 1.1− | 2001 09 23 | 704 | 0.1− | 0.2− | 2006 09 25 | 291 | 0.0 | 0.1− |
| 1996 10 12 | 691 | 0.1+ | 0.2− | 2001 09 23 | 704 | 0.2+ | 1.0+ | 2006 09 25 | 291 | 0.2+ | 0.1− |
| 1996 10 12 | 691 | 0.2− | 0.3− | 2001 09 23 | 704 | 0.1− | 0.4+ | 2006 09 25 | 291 | 0.3+ | 0.1− |
| 1996 10 12 | 691 | 0.1+ | 0.1− | 2001 09 23 | 704 | 0.4+ | 0.9+ | 2006 09 25 | 683 | (1.2+ | 1.6−) |
| 2001 07 24 | 644 | 0.2− | 0.9+ | 2001 09 28 | 644 | 0.7− | 0.5− | 2006 09 25 | 683 | 0.3+ | 0.0 |
| 2001 07 24 | 644 | 0.3− | 0.0 | 2001 09 28 | 644 | 0.3− | 0.5− | 2006 09 25 | 683 | 0.2+ | 1.0+ |
| 2001 07 24 | 644 | 0.1− | 0.9+ | 2001 09 28 | 644 | 0.4− | 0.3− | 2006 09 26 | 683 | 0.6+ | 0.8+ |
| 2001 07 24 | 644 | 0.2+ | 0.0 | 2001 10 13 | 699 | 0.1+ | 1.2+ | 2006 09 26 | 683 | 0.5+ | 0.2+ |
| 2001 07 24 | 644 | 0.1+ | 0.8+ | 2001 10 13 | 699 | 1.2+ | 1.3+ | 2006 09 26 | 683 | 0.3− | 0.3− |
| 2001 07 24 | 644 | 0.2− | 0.2+ | 2001 10 13 | 699 | 0.2− | 0.2+ | 2006 09 27 | 699 | 0.3− | 0.4+ |
| 2001 07 29 | 704 | 0.2+ | 0.6− | 2001 10 13 | 699 | 0.2+ | 0.4+ | 2006 09 27 | 699 | 0.0 | 0.5+ |
| 2001 07 29 | 704 | 0.4− | 0.2+ | 2001 10 14 | 704 | 0.2− | 0.4+ | 2006 09 27 | 699 | 0.6+ | 0.5+ |
| 2001 07 29 | 704 | 0.5− | 0.4− | 2001 10 14 | 704 | 0.2− | 0.6+ | 2006 09 27 | 699 | 0.2+ | 0.1+ |
| 2001 07 29 | 704 | 0.7− | 0.0 | 2001 10 14 | 704 | 0.2− | 0.3+ | 2006 09 27 | 683 | 0.6+ | 0.9− |
| 2001 08 05 | 644 | 0.4− | 0.1+ | 2001 10 14 | 704 | 0.1− | 1.0+ | 2006 09 27 | 703 | 0.4− | 0.4− |
| 2001 08 05 | 644 | 0.3− | 0.0 | 2001 10 14 | 704 | 0.2+ | 0.8+ | 2006 09 27 | 703 | 0.2− | 0.1− |
| 2001 08 05 | 644 | 0.5− | 0.1− | 2001 10 15 | 704 | (0.0 | 1.9+) | 2006 09 27 | 703 | 0.4− | 0.5− |
| 2001 08 17 | 704 | 1.1− | 0.9− | 2001 10 15 | 704 | (0.2+ | 2.3+) | 2006 09 27 | 683 | 0.8+ | 0.1− |
| 2001 08 17 | 704 | 0.9+ | 1.4− | 2001 10 15 | 704 | (0.7− | 1.9+) | 2006 09 27 | 703 | 0.2− | 0.6− |
| 2001 08 17 | 704 | 0.3+ | 0.4+ | 2001 10 15 | 704 | 0.2− | 1.4+ | 2006 09 27 | 683 | 0.1+ | 0.0 |
| 2001 08 17 | 704 | 0.3+ | 0.4+ | 2001 10 17 | 704 | 0.6+ | 0.5− | 2006 09 29 | 683 | 1.0− | 0.1+ |
| 2001 08 26 | 699 | 0.6+ | 0.3− | 2001 10 17 | 704 | 0.3− | 0.1+ | 2006 09 29 | 683 | (1.4− | 1.9+) |
| 2001 08 26 | 699 | 0.3+ | 0.5+ | 2001 10 17 | 704 | 0.3+ | 1.0− | 2006 09 29 | 683 | 0.4+ | 1.0− |
| 2001 08 26 | 699 | 0.6+ | 0.3+ | 2001 10 17 | 704 | 0.1− | 0.5− | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2001 08 26 | 699 | 0.9+ | 0.1− | 2001 10 17 | 704 | 0.1− | 1.0− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2001 08 31 | 644 | 0.1− | 0.5+ | 2001 10 17 | 704 | 0.2+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 08 31 | 644 | 0.2+ | 0.3+ | 2001 10 17 | 704 | 0.8+ | 0.6− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2001 08 31 | 644 | 0.2− | 0.2+ | 2001 10 17 | 704 | 0.1+ | 0.7+ | 2006 10 03 | 704 | 0.6− | 0.1+ |
| 2001 09 10 | 704 | (2.8− | 0.6+) | 2001 10 21 | 704 | 0.4− | 0.3+ | 2006 10 03 | 704 | 0.8− | 0.6+ |
| 2001 09 10 | 704 | (2.6− | 1.2+) | 2001 10 21 | 704 | 0.4− | 0.6+ | 2006 10 03 | 704 | 0.0 | 0.8+ |
| 2001 09 10 | 704 | (2.7− | 0.9+) | 2001 10 21 | 704 | 0.5− | 0.7+ | 2006 10 03 | 704 | 0.1+ | 0.4+ |
| 2001 09 10 | 704 | (2.5− | 0.9+) | 2001 10 21 | 704 | (0.5− | 1.6+) | 2006 10 03 | 704 | 0.6− | 0.4+ |
| 2001 09 10 | 699 | 0.8− | 0.3+ | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2001 09 10 | 704 | (2.4− | 1.3+) | 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2001 09 10 | 699 | 0.9− | 0.4+ | 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2001 09 10 | 699 | 0.8− | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2001 09 10 | 699 | 1.1− | 0.3− | 2006 09 14 | 644 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2001 09 17 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2001 09 17 | 704 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 09 17 | 704 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.9+ | 0.6− | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 0.7− | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.6− | 2006 09 16 | 703 | 0.3+ | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.8− | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.5+ | 0.1+ | 2006 11 20 | G96 | 0.6− | 0.1− |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | 0.2− | 0.2− | 2006 09 22 | 106 | 0.2+ | 0.3− | 2006 11 20 | G96 | 0.9− | 0.1− |
| 2001 09 22 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 106 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.8− | 0.3+ |

**(139473)∗ 2001 OK$_{99}$**

Discovered 2001 July 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.51518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27212582 | $\omega$ | 159.11288 | | +0.23004057 | +0.97119283 | |
| $a$ | 2.3584294 | $\Omega$ | 124.13750 | | −0.90319130 | +0.23685111 | |
| $e$ | 0.2310341 | $i$ | 4.30808 | | −0.36239042 | +0.02619243 | |
| $P$ | 3.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 10 | 691 | 0.0 | 0.2+ | 2001 08 24 | 699 | 0.1+ | 0.3+ | 2004 03 30 | 691 | 0.3− | 0.2+ |
| 2000 02 10 | 691 | 0.0 | 0.3+ | 2001 08 24 | 699 | 0.1+ | 0.0 | 2004 03 30 | 691 | 0.2− | 0.3+ |
| 2000 02 10 | 691 | 0.4+ | 0.1+ | 2001 08 24 | 704 | 0.5+ | 0.5− | 2004 04 15 | 704 | 0.8+ | 0.1+ |
| 2001 07 16 | 699 | 0.3+ | 0.9+ | 2001 08 24 | 704 | 0.4+ | 0.5− | 2004 04 15 | 704 | 0.4+ | 0.7+ |
| 2001 07 16 | 608 | 1.5+ | 1.2+ | 2001 08 24 | 704 | 0.3− | 0.6− | 2004 04 15 | 704 | 0.4− | 0.8+ |
| 2001 07 16 | 699 | 0.7+ | 0.7+ | 2001 09 11 | 704 | 1.2+ | 0.3+ | 2004 04 20 | 704 | 0.6+ | 0.4− |
| 2001 07 16 | 608 | 1.5+ | 1.4+ | 2001 09 11 | 704 | 0.6− | 0.2− | 2004 04 20 | 704 | 0.4+ | 0.3+ |
| 2001 07 16 | 699 | 0.7+ | 0.2+ | 2001 09 11 | 704 | 0.5− | 0.3− | 2004 04 20 | 704 | 0.6+ | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 1.3+ | 0.8+ | 2001 09 11 | 704 | 0.2− | 0.3+ | 2005 10 01 | 703 | 0.6− | 0.1− |
| 2001 07 16 | 699 | 0.3+ | 1.7+ | 2004 02 23 | 704 | 0.2+ | 1.4+ | 2005 10 01 | 703 | 0.4− | 0.4+ |
| 2001 07 27 | 699 | 1.8− | 1.8− | 2004 02 23 | 704 | 1.3+ | 1.4+ | 2005 10 01 | 703 | 0.2− | 0.8+ |
| 2001 07 27 | 699 | 0.5− | 0.8+ | 2004 02 23 | 704 | 0.6+ | 0.4+ | 2005 10 01 | 703 | (3.7+ | 1.5+) |
| 2001 07 27 | 699 | 0.2− | 0.6+ | 2004 02 23 | 704 | 2.0+ | 0.7+ | 2005 10 07 | 703 | 0.1− | 1.3+ |
| 2001 07 27 | 699 | 0.6+ | 0.2+ | 2004 02 23 | 704 | 0.0 | 1.0+ | 2005 10 07 | 699 | 0.6− | 1.6+ |
| 2001 07 30 | 704 | 0.8− | 0.5+ | 2004 03 15 | 703 | 0.1− | 0.6+ | 2005 10 07 | 703 | 0.4− | 0.2+ |
| 2001 07 30 | 704 | 0.6− | 0.6+ | 2004 03 15 | 703 | 0.7− | 1.6+ | 2005 10 07 | 703 | 0.0 | 0.5− |
| 2001 07 30 | 704 | (0.8− | 2.3+) | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2005 10 07 | 703 | 1.2− | 0.6+ |
| 2001 07 30 | 704 | 0.7− | 1.5+ | 2004 03 15 | 703 | (0.1− | 2.2+) | 2005 10 07 | 699 | 0.0 | 1.4+ |
| 2001 07 30 | 704 | 0.8− | 1.3+ | 2004 03 15 | 704 | 0.2+ | 0.3− | 2005 10 07 | 699 | (4.0− | 0.8+) |
| 2001 08 10 | 608 | 0.6− | 0.7+ | 2004 03 15 | 703 | (0.3− | 2.8+) | 2005 10 07 | 699 | 1.6− | 0.3− |
| 2001 08 10 | 608 | 0.9− | 1.1+ | 2004 03 15 | 704 | 0.9+ | 0.9+ | 2005 10 28 | 703 | 0.1− | 0.6+ |
| 2001 08 10 | 608 | 0.6− | 0.9+ | 2004 03 15 | 704 | 0.0 | 0.1+ | 2005 10 28 | 703 | 0.6+ | 0.8+ |
| 2001 08 14 | 608 | 0.0 | 0.3− | 2004 03 20 | 699 | 0.6− | 1.7+ | 2005 10 28 | 703 | 0.2+ | 0.1+ |
| 2001 08 14 | 608 | 0.1+ | 0.4− | 2004 03 20 | 699 | 0.4− | 1.1+ | 2005 10 28 | 703 | 0.8+ | 1.1+ |
| 2001 08 14 | 608 | 0.1− | 0.4− | 2004 03 20 | 699 | 0.4+ | 0.6+ | 2005 10 30 | 699 | 0.9− | 1.1+ |
| 2001 08 16 | 704 | 0.8− | 1.6− | 2004 03 20 | 699 | 1.3+ | 0.0 | 2005 10 30 | 699 | 0.0 | 0.6+ |
| 2001 08 16 | 704 | (1.1− | 2.1−) | 2004 03 20 | 704 | 1.4+ | 0.8+ | 2005 10 30 | 699 | (0.8− | 2.4+) |
| 2001 08 16 | 704 | (0.7− | 2.4−) | 2004 03 20 | 704 | 0.5+ | 0.1+ | 2005 10 30 | 699 | 0.5− | 1.2+ |
| 2001 08 16 | 704 | (0.8− | 2.1−) | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2005 11 03 | 703 | 0.3+ | 0.8+ |
| 2001 08 19 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.5− | 2005 11 03 | 703 | 0.4− | 0.8− |
| 2001 08 19 | 704 | 0.0 | 0.1− | 2004 03 20 | 704 | 1.2+ | 1.2+ | 2005 11 03 | 703 | 0.2− | 0.4− |
| 2001 08 19 | 704 | 0.3− | 0.3+ | 2004 03 28 | 703 | (3.8+ | 0.1+) | 2005 11 03 | 703 | 0.4− | 1.0+ |
| 2001 08 19 | 704 | 0.2− | 0.1+ | 2004 03 28 | 703 | 1.1− | 1.1− | 2005 11 09 | 703 | 0.2+ | 1.5+ |
| 2001 08 19 | 704 | 0.2− | 0.2+ | 2004 03 28 | 703 | 0.3+ | 0.2+ | 2005 11 09 | 703 | 0.2+ | 0.4+ |
| 2001 08 24 | 699 | 1.3− | 0.3+ | 2004 03 28 | 703 | 0.6− | 0.0 | 2005 11 09 | 703 | 0.5+ | 0.9+ |
| 2001 08 24 | 699 | 0.2+ | 0.0 | 2004 03 30 | 691 | 0.3− | 0.3+ | 2005 11 09 | 703 | 0.3+ | 0.3− |

**(139474)∗ 2001 OW$_{100}$**

Discovered 2001 July 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.68870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22631029 | $\omega$ | 235.00650 | | +0.97326732 | +0.01414703 | |
| $a$ | 2.6668578 | $\Omega$ | 123.13156 | | +0.04370214 | +0.96845913 | |
| $e$ | 0.1914902 | $i$ | 15.88725 | | −0.22547917 | +0.24877054 | |
| $P$ | 4.36 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 699 | 0.7− | 0.8− | 2001 09 03 | 644 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.4− |
| 2001 06 16 | 699 | 0.5+ | 1.3+ | 2001 09 03 | 644 | 0.5− | 0.2− | 2006 09 20 | 699 | 0.4+ | 0.5+ |
| 2001 06 16 | 699 | 0.3− | 0.1+ | 2001 09 10 | 699 | 0.2− | 0.3− | 2006 09 20 | 699 | 0.6− | 1.1− |
| 2001 06 16 | 699 | (0.2− | 2.5+) | 2001 09 10 | 699 | 0.6− | 0.2+ | 2006 09 20 | 699 | 0.1+ | 1.2+ |
| 2001 06 27 | 699 | 0.4+ | 0.1+ | 2001 09 10 | 699 | 0.5− | 0.6− | 2006 09 20 | 703 | 0.8+ | 1.4+ |
| 2001 06 27 | 699 | 0.4+ | 0.4+ | 2001 09 10 | 699 | 1.1− | 0.2+ | 2006 09 20 | 703 | 0.5− | 1.5+ |
| 2001 06 27 | 699 | 0.9+ | 0.3+ | 2001 09 11 | 704 | 1.1+ | 0.1− | 2006 09 20 | 703 | (0.8− | 2.4+) |
| 2001 06 27 | 699 | 0.3+ | 0.0 | 2001 09 11 | 704 | 0.9+ | 0.3+ | 2006 09 20 | 703 | 0.6− | 0.3− |
| 2001 07 27 | 699 | 0.6+ | 0.1− | 2001 09 11 | 704 | (1.9+ | 0.1−) | 2006 10 01 | 704 | 0.0 | 0.8+ |
| 2001 07 27 | 699 | 0.1− | 0.1+ | 2001 09 11 | 704 | 0.8+ | 0.2+ | 2006 10 01 | 704 | 0.3+ | 0.1+ |
| 2001 07 27 | 699 | 0.5+ | 0.4− | 2001 09 18 | 644 | 0.6− | 0.2+ | 2006 10 01 | 704 | 0.7− | 1.3+ |
| 2001 07 27 | 699 | 0.5+ | 0.2− | 2001 09 18 | 644 | 0.7− | 0.2− | 2006 10 01 | 704 | 0.3+ | 0.2− |
| 2001 07 30 | 704 | (0.1+ | 1.6−) | 2001 09 18 | 644 | 0.7− | 0.3+ | 2006 10 20 | 703 | 0.6+ | 0.8− |
| 2001 07 30 | 704 | 0.4+ | 0.8− | 2001 09 21 | 644 | (1.7+ | 0.7−) | 2006 10 20 | 703 | 0.1+ | 1.0− |
| 2001 07 30 | 704 | 0.1− | 1.0− | 2001 09 21 | 644 | 1.4+ | 0.5− | 2006 10 20 | 703 | 0.0 | 0.7− |
| 2001 08 07 | 608 | 0.2− | 0.0 | 2001 09 21 | 644 | (2.0+ | 1.2−) | 2006 10 20 | 703 | 1.4+ | 1.0− |
| 2001 08 07 | 608 | 0.6− | 0.2+ | 2003 01 01 | 704 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.9− |
| 2001 08 07 | 608 | 0.3− | 0.2− | 2003 01 01 | 704 | 0.4− | 0.5− | 2006 10 28 | 703 | 0.2+ | 0.1− |
| 2001 08 12 | 644 | 0.3− | 0.3+ | 2003 01 01 | 704 | 0.2− | 0.2− | 2006 10 28 | 703 | 0.2+ | 0.3− |
| 2001 08 12 | 644 | 0.2− | 0.2+ | 2003 01 01 | 704 | 0.1− | 0.6− | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2001 08 12 | 644 | 0.1− | 0.2+ | 2003 01 01 | 704 | 0.1+ | 1.0− | 2006 11 10 | 704 | 0.2− | 0.1+ |
| 2001 08 16 | 704 | 0.2− | 0.7+ | 2003 01 07 | 704 | 0.3− | 0.2+ | 2006 11 10 | 704 | (0.2− | 1.9+) |
| 2001 08 16 | 704 | 1.4− | 0.7− | 2003 01 07 | 704 | 0.1− | 0.2− | 2006 11 10 | 704 | 0.6+ | 0.2− |
| 2001 08 16 | 704 | 0.3− | 0.4+ | 2003 01 07 | 704 | 0.0 | 0.2+ | 2006 11 10 | 704 | 0.2− | 0.4+ |
| 2001 08 19 | 704 | (2.2− | 1.8+) | 2003 01 07 | 704 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.2− | 0.2+ |
| 2001 08 19 | 704 | (2.3− | 1.5+) | 2003 01 07 | 704 | 0.0 | 0.6+ | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2001 08 19 | 704 | (2.6− | 1.9+) | 2004 03 26 | 703 | 0.5+ | 0.5+ | 2006 11 16 | 703 | 1.3− | 0.2+ |
| 2001 08 19 | 704 | (2.9− | 2.2+) | 2004 03 26 | 703 | 1.1+ | 0.7+ | 2006 11 16 | 703 | 0.5− | 0.2− |
| 2001 08 19 | 704 | (2.2− | 2.8+) | 2004 03 26 | 703 | (1.4+ | 1.6+) | 2006 11 22 | 704 | (1.6− | 1.5+) |
| 2001 08 24 | 644 | 0.2− | 0.4− | 2004 03 26 | 703 | 1.0+ | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2001 08 24 | 644 | 0.1− | 0.2− | 2005 06 09 | 703 | (2.1+ | 1.3−) | 2006 11 22 | 704 | 0.4+ | 1.1+ |
| 2001 08 24 | 644 | 0.0 | 0.3− | 2005 06 09 | 703 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.2− |
| 2001 08 25 | 704 | 0.8+ | 0.1+ | 2005 06 09 | 703 | 0.0 | 0.9+ | 2006 11 22 | 704 | 0.8− | 1.0+ |
| 2001 08 25 | 704 | 0.2+ | 0.2+ | 2005 06 09 | 703 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.9+ |
| 2001 08 25 | 704 | 1.2+ | 0.1− | 2005 06 29 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2001 08 25 | 704 | 0.7+ | 0.9+ | 2005 06 29 | 644 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2001 09 03 | 644 | 0.6− | 0.2+ | 2005 06 29 | 644 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.5− | 0.9+ |

**(139475)∗ 2001 OT$_{102}$**

Discovered 2001 July 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.47912 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21140705 | $\omega$ | 272.43986 | | +0.89288801 | −0.42095719 | |
| $a$ | 2.7907638 | $\Omega$ | 112.49264 | | +0.45022718 | +0.82927329 | |
| $e$ | 0.1670087 | $i$ | 9.96177 | | +0.00681859 | +0.36756067 | |
| $P$ | 4.66 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 29 | 691 | 0.3− | 0.1− | 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2000 05 29 | 691 | 0.3− | 0.2+ | 2002 12 10 | 704 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2000 05 29 | 691 | 0.3− | 0.2+ | 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2000 06 10 | 691 | 0.1− | 0.1− | 2002 12 10 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.2− |
| 2000 06 10 | 691 | 0.4+ | 0.2− | 2002 12 28 | 699 | 0.6+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.2− |
| 2000 06 10 | 691 | 0.1− | 0.1+ | 2002 12 28 | 699 | 0.3+ | 0.5− | 2006 09 26 | 703 | 0.3− | 0.2− |
| 2001 07 28 | 608 | 0.0 | 0.3− | 2002 12 28 | 699 | 1.1+ | 0.8+ | 2006 09 29 | 699 | 0.0 | 0.2+ |
| 2001 07 28 | 608 | 0.6− | 0.7− | 2002 12 28 | 699 | 1.2+ | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.1+ |
| 2001 07 28 | 608 | 0.6− | 1.3− | 2002 12 31 | 645 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.3+ |
| 2001 07 30 | 704 | 1.1+ | 1.0+ | 2002 12 31 | 645 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.1− | 0.4+ |
| 2001 07 30 | 704 | 1.4+ | 0.2+ | 2003 01 04 | 704 | 0.4+ | 1.5+ | 2006 09 30 | 704 | 0.1− | 0.2+ |
| 2001 07 30 | 704 | 0.3− | 0.7+ | 2003 01 04 | 704 | 0.5+ | 1.0+ | 2006 09 30 | 704 | 0.2+ | 0.1+ |
| 2001 08 12 | 608 | 0.3+ | 0.6+ | 2003 01 04 | 704 | (1.5+ | 1.9+) | 2006 09 30 | 704 | 0.1− | 0.1+ |
| 2001 08 12 | 608 | 0.4+ | 1.0+ | 2003 01 04 | 704 | (1.0+ | 1.6+) | 2006 09 30 | 704 | 0.1− | 0.3+ |
| 2001 08 12 | 608 | 0.3+ | 0.4+ | 2003 01 08 | 704 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.3− | 0.2+ |
| 2001 08 19 | 704 | 0.7− | 0.4+ | 2003 01 08 | 704 | 0.3− | 0.4+ | 2006 10 02 | 703 | 0.0 | 1.1+ |
| 2001 08 19 | 704 | 1.1− | 0.0 | 2003 01 08 | 704 | 0.4− | 0.3+ | 2006 10 02 | 703 | 1.4− | 0.1+ |
| 2001 08 19 | 704 | 0.2− | 0.4+ | 2003 01 08 | 704 | 1.3+ | 0.9+ | 2006 10 02 | 703 | 0.9+ | 0.6+ |
| 2001 08 19 | 704 | 0.4+ | 0.4+ | 2003 01 08 | 704 | 0.8− | 0.2+ | 2006 10 02 | 703 | (2.4+ | 1.9+) |
| 2001 08 19 | 704 | 1.4− | 1.0+ | 2003 01 31 | 704 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 704 | 0.2+ | 0.2+ | 2003 01 31 | 704 | 0.4+ | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 09 11 | 704 | 0.2+ | 0.7+ | 2003 01 31 | 704 | 0.7+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 09 11 | 704 | 0.2+ | 0.3− | 2003 01 31 | 704 | 0.8− | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 09 11 | 704 | 1.1+ | 0.1+ | 2003 02 03 | 704 | (0.5+ | 1.6−) | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2001 09 11 | 704 | 0.5+ | 0.8− | 2003 02 03 | 704 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 09 11 | 704 | 0.2+ | 1.4− | 2003 02 03 | 704 | 0.4− | 1.4− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 09 16 | 704 | 0.3− | 0.1+ | 2003 02 08 | 704 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2001 09 16 | 704 | 0.2− | 0.9+ | 2003 02 08 | 704 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.2+ | 0.7+ | 2003 02 08 | 704 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.4− |
| 2001 09 16 | 704 | 0.3+ | 0.7+ | 2004 03 15 | 704 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.0 | 1.2+ | 2004 03 15 | 704 | 0.7+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 09 17 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2001 09 17 | 704 | 0.3+ | 0.7+ | 2004 03 15 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2001 09 17 | 704 | 0.2+ | 0.3+ | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2001 09 25 | 704 | 0.3− | 0.2− | 2004 03 23 | 704 | (1.6+ | 0.1−) | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2004 03 23 | 704 | 1.1+ | 0.9− | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.3+ | 1.3− | 2004 03 23 | 704 | 0.9+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.4− | 0.8− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2001 10 18 | 699 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.2− | 0.7− |
| 2001 10 18 | 699 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 10 18 | 699 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 10 18 | 699 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2001 10 20 | 704 | 0.4− | 0.5− | 2006 09 21 | 699 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.4+ | 0.8− |
| 2001 10 20 | 704 | 0.7− | 0.0 | 2006 09 21 | 699 | 0.0 | 0.5− | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2001 10 20 | 704 | 1.3− | 0.3− | 2006 09 21 | 699 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.6− |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2006 09 21 | 699 | 0.6+ | 0.2− | 2006 10 28 | 703 | 0.2+ | 0.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.6+ |

**(139476)∗ 2001 OC$_{104}$**

Discovered 2001 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.04412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22724631 | $\omega$ | 164.00819 | | +0.16451754 | +0.96072805 | |
| $a$ | 2.6595296 | $\Omega$ | 115.01348 | | −0.92985489 | +0.22664467 | |
| $e$ | 0.1504326 | $i$ | 14.27587 | | −0.32909553 | −0.16010563 | |
| $P$ | 4.34 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 28 | 691 | 0.1+ | 1.4+ | 2004 01 18 | 644 | 0.0 | 0.0 | 2004 03 09 | 644 | 0.2+ | 1.2+ |
| 1995 12 28 | 691 | 0.0 | 0.7+ | 2004 01 18 | 644 | 0.0 | 0.1+ | 2004 03 09 | 644 | 0.7+ | 0.8+ |
| 1995 12 28 | 691 | 0.0 | 0.6+ | 2004 01 18 | 644 | 0.0 | 0.1+ | 2004 03 23 | 704 | (0.4+ | 1.6+) |
| 2001 07 23 | 608 | 0.3− | 0.7+ | 2004 01 28 | 703 | 1.3− | 0.1− | 2004 03 23 | 704 | 0.1− | 1.3+ |
| 2001 07 23 | 608 | 0.3− | 0.8+ | 2004 01 28 | 703 | 0.6− | 0.5− | 2004 03 23 | 704 | (0.5+ | 2.1+) |
| 2001 07 23 | 608 | 0.4− | 0.6+ | 2004 01 28 | 703 | (1.8− | 1.6+) | 2004 04 15 | 645 | 0.0 | 0.1− |
| 2001 07 30 | 704 | 0.6+ | 0.3− | 2004 01 28 | 703 | 1.0+ | 0.1− | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2001 07 30 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.1+ | 2004 05 14 | 645 | 0.1− | 0.1− |
| 2001 07 30 | 704 | 0.2+ | 0.1+ | 2004 01 30 | 704 | 0.4+ | 1.5− | 2004 05 14 | 645 | 0.0 | 0.1− |
| 2001 07 30 | 704 | 0.5+ | 0.5+ | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2005 06 08 | 138 | (2.1− | 2.1−) |
| 2001 07 30 | 704 | 0.2+ | 0.7+ | 2004 01 30 | 704 | 0.3+ | 0.1+ | 2005 06 09 | 138 | 0.1+ | 1.1− |
| 2001 07 31 | 644 | (0.2− | 2.7−) | 2004 02 10 | 644 | 0.0 | 0.1+ | 2005 06 09 | 138 | (2.0+ | 0.1+) |
| 2001 07 31 | 644 | (0.0 | 2.6−) | 2004 02 10 | 644 | 0.0 | 0.1+ | 2005 07 05 | 704 | 0.5− | 0.7+ |
| 2001 07 31 | 644 | (0.0 | 2.8−) | 2004 02 10 | 644 | 0.5− | 0.8+ | 2005 07 05 | 704 | 0.3− | 0.4+ |
| 2001 08 10 | 644 | 0.1+ | 0.1+ | 2004 02 10 | 644 | 0.4+ | 0.0 | 2005 07 05 | 704 | 0.4− | 0.0 |
| 2001 08 10 | 644 | 0.2+ | 0.2+ | 2004 02 10 | 644 | 0.2+ | 0.1− | 2005 07 05 | 704 | 0.3+ | 0.2+ |
| 2001 08 10 | 644 | 0.3+ | 0.1+ | 2004 02 10 | 644 | 0.2+ | 0.8+ | 2005 07 05 | 704 | 0.0 | 0.8+ |
| 2001 09 10 | 699 | 0.4+ | 0.1+ | 2004 02 10 | 644 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2001 09 10 | 699 | 0.0 | 0.3+ | 2004 02 10 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2001 09 10 | 699 | 0.2− | 1.1+ | 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 09 10 | 699 | 0.7+ | 0.6+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2001 09 11 | 704 | 0.5− | 0.9+ | 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 09 11 | 704 | 0.5− | 0.3+ | 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 704 | 0.2− | 0.1− | 2004 02 15 | 704 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.2− |
| 2001 09 11 | 704 | 0.7+ | 0.0 | 2004 02 15 | 704 | 0.3− | 0.2+ | 2006 11 17 | 703 | 1.0− | 0.1+ |
| 2001 09 11 | 704 | 0.0 | 0.5− | 2004 02 15 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 1.3− | 0.9+ |
| 2002 12 10 | 644 | 0.2− | 0.4+ | 2004 02 15 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 703 | (1.7− | 1.0+) |
| 2002 12 10 | 644 | 0.0 | 0.5+ | 2004 02 15 | 704 | 0.7+ | 0.2− | | | | |
| 2002 12 10 | 644 | 0.1− | 0.5+ | 2004 03 09 | 644 | 0.2+ | 0.7+ | | | | |

**(139477)∗ 2001 OK$_{104}$**

Discovered 2001 July 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.26632 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22034750 | $\omega$ | 167.42886 | | +0.51737278 | +0.82856801 | |
| $a$ | 2.7147549 | $\Omega$ | 133.25989 | | −0.80839066 | +0.55525415 | |
| $e$ | 0.1751485 | $i$ | 17.08969 | | −0.28076671 | −0.07188793 | |
| $P$ | 4.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.1− | 0.5+ | 2001 09 10 | 644 | 0.5+ | 0.0 | 2005 07 02 | 703 | 0.7− | 0.3+ |
| 2000 03 29 | 704 | 0.8− | 1.1+ | 2001 09 10 | 644 | 0.6+ | 0.0 | 2005 07 02 | 703 | 0.8− | 0.6+ |
| 2000 03 29 | 704 | 0.8− | 0.5+ | 2001 09 10 | 699 | 0.1+ | 0.0 | 2005 07 02 | 703 | 0.6− | 0.3− |
| 2001 07 19 | 699 | 0.3+ | 0.7− | 2001 09 10 | 699 | 1.0+ | 0.2− | 2005 07 04 | 644 | 0.2+ | 0.1− |
| 2001 07 19 | 699 | 0.8+ | 0.2− | 2001 09 10 | 699 | 0.5+ | 0.0 | 2005 07 04 | 644 | 0.3+ | 0.1− |
| 2001 07 19 | 699 | 0.7− | 0.1+ | 2001 09 10 | 699 | 1.4+ | 0.3+ | 2005 07 04 | 644 | 0.1+ | 0.2+ |
| 2001 07 19 | 699 | 0.8− | 0.1− | 2001 09 11 | 704 | 0.8+ | 0.9− | 2005 08 29 | 644 | 0.0 | 0.2+ |
| 2001 07 30 | 704 | 1.3− | 0.2+ | 2001 09 11 | 704 | 0.4+ | 1.4− | 2005 08 29 | 644 | 0.1+ | 0.0 |
| 2001 07 30 | 704 | 1.2− | 0.2+ | 2001 09 11 | 704 | (0.3+ | 1.5−) | 2005 08 29 | 644 | 0.1+ | 0.5+ |
| 2001 07 30 | 704 | 0.7+ | 0.8+ | 2001 09 11 | 704 | (0.2+ | 2.0−) | 2006 10 21 | 703 | 0.2+ | 1.3+ |
| 2001 08 01 | 644 | 0.1− | 0.5+ | 2001 09 21 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.3− |
| 2001 08 01 | 644 | 0.1+ | 0.6+ | 2001 09 21 | 644 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.5+ | 0.2+ |
| 2001 08 01 | 644 | 0.0 | 0.6+ | 2001 09 21 | 644 | 0.3− | 0.0 | 2006 10 21 | 703 | 1.3+ | 0.9+ |
| 2001 08 13 | 608 | 0.2+ | 1.1+ | 2004 02 17 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 703 | (1.9− | 0.5−) |
| 2001 08 13 | 608 | 0.2+ | 0.7+ | 2004 02 17 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.7− |
| 2001 08 13 | 608 | 0.1+ | 1.3+ | 2004 02 17 | 691 | 0.3+ | 0.8+ | 2006 10 21 | 703 | 1.5− | 1.1− |
| 2001 08 19 | 704 | 0.5− | 0.2+ | 2005 06 06 | 704 | 1.3− | 0.6+ | 2006 10 21 | 703 | 0.9− | 0.8− |
| 2001 08 19 | 704 | 0.1+ | 0.4+ | 2005 06 06 | 704 | (0.6+ | 2.2−) | 2006 10 28 | 703 | 0.4− | 0.0 |
| 2001 08 19 | 704 | 0.3− | 0.0 | 2005 06 06 | 704 | (1.0+ | 3.9−) | 2006 10 28 | 703 | 0.2− | 1.2− |
| 2001 08 19 | 704 | 0.3− | 0.1+ | 2005 06 06 | 704 | 0.0 | 0.3− | 2006 10 28 | 703 | (1.7− | 0.6+) |
| 2001 08 19 | 704 | 0.2− | 0.4+ | 2005 06 28 | 704 | 1.1+ | 0.1− | 2006 10 28 | 703 | 0.9− | 0.5+ |
| 2001 08 25 | 608 | 0.7− | 0.7+ | 2005 06 28 | 704 | 1.0+ | 0.8+ | 2006 11 17 | 703 | 0.8− | 0.9+ |
| 2001 08 25 | 608 | 0.8− | 1.2+ | 2005 06 28 | 704 | 0.9+ | 1.4− | 2006 11 17 | 703 | 0.6+ | 0.6+ |
| 2001 08 25 | 608 | 0.6− | 0.9+ | 2005 06 28 | 704 | (2.4+ | 1.2−) | 2006 11 17 | 703 | 0.0 | 1.2+ |
| 2001 09 10 | 644 | 0.3+ | 0.3− | 2005 07 02 | 703 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.8+ |

**(139478)∗ 2001 OP$_{104}$ = 1998 FD$_{105}$**

Discovered 2001 July 19 by D. J. Tholen at Mauna Kea.

Id. M. E. Sansaturio (*MPO* 60815)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.01706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17957619 | $\omega$ | 332.20620 | | −0.98956421 | +0.00974973 | |
| $a$ | 3.1115029 | $\Omega$ | 209.44204 | | +0.01156726 | −0.98911320 | |
| $e$ | 0.1502988 | $i$ | 17.00599 | | −0.14362757 | −0.14683333 | |
| $P$ | 5.49 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 31 | 704 | (2.1− | 2.1+) | 2003 02 06 | 644 | 0.1− | 1.0+ | 2006 10 11 | 691 | 0.2− | 0.5− |
| 1998 03 31 | 704 | 0.5+ | 0.5− | 2004 05 23 | 704 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.7− |
| 1998 03 31 | 704 | 1.0+ | 1.0− | 2004 05 23 | 704 | 1.0+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.6− |
| 1998 03 31 | 704 | 0.6− | 1.3− | 2004 05 23 | 704 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.3− | 0.3− |
| 1998 03 31 | 704 | 0.7+ | 1.0− | 2004 05 23 | 704 | 0.9− | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.8− |
| 1998 04 01 | 704 | 0.6− | 0.3+ | 2004 05 24 | 704 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.4+ | 0.3− |
| 1998 04 01 | 704 | (1.4− | 2.8+) | 2004 05 24 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.9− |
| 1998 04 01 | 704 | 0.7+ | 0.4− | 2004 05 24 | 704 | 0.6+ | 0.8+ | 2006 10 21 | 703 | (1.7− | 0.7−) |
| 1998 04 01 | 704 | 0.7− | 1.5− | 2004 05 24 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 1.0− |
| 1998 04 01 | 704 | (2.7− | 1.4−) | 2004 05 28 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 1.3+ |
| 2001 07 19 | 568 | 0.1+ | 0.8+ | 2004 05 28 | 704 | 0.3+ | 1.1+ | 2006 10 27 | 691 | 0.6+ | 0.0 |
| 2001 07 19 | 568 | 0.3+ | 0.7+ | 2004 05 28 | 704 | 0.2+ | 0.5+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2001 07 20 | 568 | 0.1− | 0.4+ | 2004 06 13 | 691 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2001 07 20 | 568 | 0.1− | 0.4+ | 2004 06 13 | 691 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2001 07 21 | 568 | 0.3+ | 0.1+ | 2004 06 13 | 691 | 0.3− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.6− |
| 2001 07 21 | 568 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2001 07 22 | 568 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2001 07 22 | 568 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.5+ | 0.3− | 2006 11 15 | G96 | 0.9+ | 0.8− |
| 2001 07 23 | 568 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 07 23 | 568 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 08 11 | 568 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.6− | 0.4− |
| 2001 08 11 | 568 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.5− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.8− |
| 2003 02 06 | 644 | 0.1− | 0.9+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.2+ | 1.1− |
| 2003 02 06 | 644 | 0.2+ | 0.7+ | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.4− | 0.4− |

**(139479)∗ 2001 OW$_{105}$**

Discovered 2001 July 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.76906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22482400 | $\omega$ | 114.48447 | | +0.93061408 | +0.36151946 | |
| $a$ | 2.6785984 | $\Omega$ | 224.38145 | | −0.35836390 | +0.86832425 | |
| $e$ | 0.1708019 | $i$ | 4.68322 | | −0.07438248 | +0.33958310 | |
| $P$ | 4.38 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 31 | 557 | 0.4+ | 0.1+ | 2001 09 12 | 704 | 0.0 | 0.1+ | 2006 11 12 | 703 | 0.9− | 0.6+ |
| 1997 10 31 | 557 | 0.8+ | 0.5− | 2001 09 12 | 704 | 0.8+ | 0.1− | 2006 11 12 | 703 | 0.5− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 691 | 0.2− | 0.4− | 2001 09 12 | 704 | 0.6+ | 0.8− | 2006 11 12 | 703 | 0.5− | 0.1+ |
| 1997 11 02 | 691 | 0.1− | 0.3− | 2001 09 12 | 704 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 1997 11 02 | 691 | 0.1+ | 0.2+ | 2001 09 12 | 704 | 0.2+ | 1.0+ | 2006 11 15 | 691 | 0.5+ | 0.4+ |
| 2001 07 20 | 699 | 0.2− | 0.3+ | 2001 10 13 | 699 | 1.2− | 0.3+ | 2006 11 15 | 691 | 1.3− | 0.2− |
| 2001 07 20 | 699 | 0.1+ | 0.6+ | 2001 10 13 | 699 | 0.3− | 0.3− | 2006 11 17 | 704 | 1.5+ | 0.1− |
| 2001 07 20 | 699 | (0.3+ | 1.5+) | 2001 10 13 | 699 | 0.4− | 0.9+ | 2006 11 17 | 704 | 0.7+ | 0.3+ |
| 2001 07 20 | 699 | 0.2− | 1.0+ | 2001 10 13 | 699 | 0.4− | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.1+ |
| 2001 07 29 | 704 | 1.0+ | 0.4+ | 2001 10 18 | 644 | 0.3− | 0.6+ | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2001 07 29 | 704 | 0.3+ | 0.5+ | 2001 10 18 | 644 | 0.6− | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.9+ |
| 2001 07 29 | 704 | (0.7− | 1.7+) | 2001 10 18 | 644 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2001 08 03 | 608 | (2.2− | 2.6+) | 2004 03 18 | 704 | 1.2+ | 0.1+ | 2006 11 18 | 704 | 1.2− | 0.2− |
| 2001 08 03 | 608 | (2.4− | 2.8+) | 2004 03 18 | 704 | (2.4+ | 0.2+) | 2006 11 18 | 704 | 1.0+ | 0.4+ |
| 2001 08 03 | 608 | (1.3− | 1.9+) | 2004 03 18 | 704 | 0.7+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 08 20 | 704 | 0.2− | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 08 20 | 704 | 0.6− | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 08 20 | 704 | 0.1− | 0.3+ | 2004 04 13 | 691 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2001 08 20 | 704 | 0.0 | 0.0 | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.6− | 0.2+ |
| 2001 08 25 | 704 | 0.2+ | 0.4+ | 2004 04 24 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.3+ |
| 2001 08 25 | 704 | 0.3+ | 0.4+ | 2004 04 24 | 691 | 0.1− | 0.6+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2001 08 25 | 704 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.6+ | 0.8− | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2001 08 25 | 704 | 0.0 | 0.3+ | 2006 08 29 | 703 | 1.5+ | 1.3+ | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2001 08 25 | 704 | 0.4− | 0.3+ | 2006 08 29 | 703 | (2.0+ | 0.1−) | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 08 30 | 644 | 0.1− | 0.6+ | 2006 08 29 | 703 | (1.8− | 0.8+) | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 08 30 | 644 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 08 30 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2001 09 08 | 704 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 08 | 704 | 0.5− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.3− | 0.0 |
| 2001 09 08 | 704 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.6− | 2006 11 29 | 704 | 0.0 | 0.5+ |
| 2001 09 08 | 704 | 0.3− | 0.5− | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.0 | 0.1− |
| 2001 09 08 | 704 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.2− | 0.1− |
| 2001 09 09 | 704 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.1+ |
| 2001 09 09 | 704 | 0.6− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2001 09 09 | 704 | 0.5− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.4+ | 2006 12 01 | 691 | 0.3+ | 0.2+ |
| 2001 09 09 | 704 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2001 09 09 | 704 | 1.3+ | 1.2− | 2006 11 12 | 703 | 0.2− | 0.1− | | | | |

**(139480)∗ 2001 PU$_1$**

Discovered 2001 Aug. 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.58175 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22299068 | $\omega$ | 294.64870 | | +0.86112460 | −0.49981899 | |
| $a$ | 2.6932597 | $\Omega$ | 95.45946 | | +0.49366203 | +0.77835926 | |
| $e$ | 0.1370571 | $i$ | 5.35949 | | +0.12149988 | +0.37991821 | |
| $P$ | 4.42 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 699 | 0.1− | 0.5+ | 2003 01 08 | 704 | 0.4+ | 0.0 | 2006 10 22 | 704 | 0.3+ | 0.8+ |
| 2001 07 16 | 699 | 0.7+ | 0.4− | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 704 | 0.7+ | 0.1− |
| 2001 07 16 | 699 | 0.1− | 0.7+ | 2004 03 14 | 691 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.6+ |
| 2001 07 16 | 699 | 0.1+ | 1.0+ | 2004 03 14 | 691 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2001 07 25 | 608 | 0.1− | 1.1− | 2004 03 16 | 704 | 0.6− | 1.3− | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2001 07 25 | 608 | 0.4+ | 0.2− | 2004 03 16 | 704 | 1.2+ | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.4− |
| 2001 07 25 | 608 | 0.1− | 0.7− | 2004 03 16 | 704 | 1.0+ | 1.3+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2001 07 25 | 608 | 0.2− | 0.8− | 2004 03 16 | 704 | (1.5+ | 0.0 ) | 2006 10 22 | 644 | 0.5+ | 0.1+ |
| 2001 07 25 | 608 | 0.6− | 0.5− | 2004 03 16 | 704 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2001 07 25 | 608 | 0.7+ | 0.4− | 2004 03 20 | 704 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2001 08 08 | 608 | 0.1+ | 1.5+ | 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 10 24 | 644 | 0.3+ | 0.1+ |
| 2001 08 08 | 608 | (0.1+ | 2.1+) | 2004 03 20 | 704 | 1.2+ | 1.0− | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2001 08 08 | 608 | 0.8+ | 1.4+ | 2004 03 20 | 704 | 0.4+ | 0.3− | 2006 10 27 | 704 | (0.2+ | 1.5+) |
| 2001 08 09 | 644 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 10 27 | 704 | 0.4− | 0.4− |
| 2001 08 09 | 644 | 0.3+ | 0.0 | 2004 03 24 | 699 | 0.6+ | 0.6+ | 2006 10 27 | 704 | 0.6− | 0.5+ |
| 2001 08 09 | 644 | 0.4+ | 0.2− | 2004 03 24 | 699 | 0.7− | 0.9+ | 2006 10 27 | 704 | 0.0 | 0.1+ |
| 2001 08 14 | 644 | (1.8+ | 0.1+) | 2004 03 24 | 699 | (0.8− | 2.8+) | 2006 10 27 | 704 | 0.2− | 1.0− |
| 2001 08 14 | 644 | (1.7+ | 0.2+) | 2004 03 24 | 699 | (1.7− | 2.0+) | 2006 10 31 | 704 | 0.8− | 0.1+ |
| 2001 08 14 | 644 | (1.9+ | 0.3+) | 2004 04 10 | 644 | 0.2+ | 1.0+ | 2006 10 31 | 704 | 1.2− | 0.3+ |
| 2001 08 23 | 699 | 1.2− | 0.2+ | 2004 04 10 | 644 | 0.1+ | 0.4+ | 2006 10 31 | 704 | 0.7− | 0.4+ |
| 2001 08 23 | 699 | 0.7− | 1.1+ | 2004 04 10 | 644 | 0.7+ | 0.6+ | 2006 10 31 | 704 | 0.1+ | 1.0+ |
| 2001 08 23 | 699 | 0.2+ | 0.8+ | 2004 04 20 | 704 | 0.2+ | 0.2+ | 2006 10 31 | 704 | (1.7− | 0.9+) |
| 2001 08 23 | 699 | 0.6− | 0.9+ | 2004 04 20 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.6+ |
| 2001 08 25 | 644 | 0.1− | 0.7+ | 2004 04 20 | 704 | 1.1− | 0.8+ | 2006 11 13 | 703 | 0.5− | 1.0+ |
| 2001 08 25 | 644 | 0.4− | 0.5+ | 2004 04 20 | 704 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.8− |
| 2001 08 25 | 644 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.9+ | 2006 11 13 | 703 | 0.0 | 0.2− |
| 2001 09 11 | 704 | 0.4− | 0.4+ | 2006 09 26 | 704 | 0.6+ | 0.9+ | 2006 11 14 | 704 | (1.3+ | 2.9+) |
| 2001 09 11 | 704 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.5+ | 0.2− | 2006 11 14 | 704 | (0.6+ | 3.2+) |
| 2001 09 11 | 704 | 0.3+ | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.6+ | 2006 11 14 | 644 | 0.3+ | 0.0 |
| 2001 09 11 | 704 | 0.1+ | 1.4− | 2006 09 26 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 644 | 0.2+ | 0.0 |
| 2001 09 11 | 704 | 0.1− | 1.0− | 2006 09 29 | 699 | 0.1− | 0.3− | 2006 11 14 | 704 | (1.1+ | 2.7+) |
| 2002 12 02 | 704 | 0.3− | 0.1− | 2006 09 29 | 699 | 1.0+ | 0.0 | 2006 11 14 | 644 | 0.2+ | 0.3+ |
| 2002 12 02 | 704 | 0.0 | 0.3− | 2006 09 29 | 699 | 0.0 | 0.5+ | 2006 11 14 | 644 | 0.3+ | 0.2+ |
| 2002 12 02 | 704 | 0.2− | 0.1− | 2006 09 29 | 699 | 0.6+ | 0.7+ | 2006 11 14 | 644 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 11 14 | 644 | 0.4+ | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 1.0+ | 2006 11 17 | 704 | 0.3− | 0.8− |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 17 | 644 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.5− | 2006 11 17 | 704 | 0.6− | 0.2+ |
| 2002 12 10 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.6+ | 0.5− | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2002 12 10 | 704 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.6− | 1.0− | 2006 11 17 | 704 | 0.2− | 0.1+ |
| 2002 12 10 | 704 | 0.3− | 0.3− | 2006 09 30 | 703 | 1.5+ | 0.1− | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2002 12 10 | 704 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 17 | 644 | 0.2+ | 0.1+ |
| 2002 12 10 | 704 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.4+ |
| 2002 12 11 | 704 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.3+ |
| 2002 12 11 | 704 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.5+ |
| 2002 12 11 | 704 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.1− | 0.4+ |
| 2002 12 11 | 704 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.9− | 0.1− |
| 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.4− |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.2− |
| 2002 12 31 | 704 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | (1.3− | 2.0+) |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.3− | 1.1+ |
| 2003 01 04 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.4− | 2006 11 20 | 704 | 1.3− | 0.2+ |
| 2003 01 04 | 704 | 0.2+ | 0.7− | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.1− |
| 2003 01 04 | 704 | 0.4+ | 0.7− | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 1.0− | 0.4+ |
| 2003 01 04 | 704 | 0.3+ | 0.4− | 2006 10 22 | 704 | 0.2− | 1.5− | 2006 11 20 | 704 | 0.5− | 0.7+ |
| 2003 01 08 | 704 | 0.9+ | 0.2− | 2006 10 22 | 704 | 0.7+ | 0.9− | | | | |
| 2003 01 08 | 704 | 0.4− | 0.3+ | 2006 10 22 | 704 | (1.9+ | 0.0 ) | | | | |

**(139481)∗ 2001 PB$_3$**

Discovered 2001 Aug. 3 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.86378 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21337360 | $\omega$ | 18.93296 | | +0.08907451 | +0.98577120 | |
| $a$ | 2.7735900 | $\Omega$ | 256.37363 | | −0.93172227 | +0.03187545 | |
| $e$ | 0.2479685 | $i$ | 8.43458 | | −0.35207860 | +0.16504274 | |
| $P$ | 4.62 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 699 | 0.4+ | 1.1+ | 2001 09 16 | 704 | 0.7− | 0.3+ | 2005 05 19 | 644 | 0.3+ | 0.4+ |
| 2000 05 02 | 699 | 0.6+ | 1.6+ | 2001 09 21 | 699 | 0.4+ | 0.6+ | 2005 06 03 | 703 | 0.3− | 0.4+ |
| 2000 05 02 | 699 | 0.1+ | 0.2+ | 2001 09 21 | 699 | 1.0− | 0.9+ | 2005 06 03 | 703 | 0.7− | 0.1+ |
| 2000 05 02 | 699 | 0.4+ | 1.1+ | 2001 09 21 | 699 | 1.1− | 0.3− | 2005 06 03 | 703 | 0.1− | 0.0 |
| 2001 07 05 | 608 | 0.7+ | 0.1− | 2001 09 21 | 699 | 0.1− | 0.2− | 2005 06 03 | 703 | 0.0 | 0.8+ |
| 2001 07 05 | 608 | 0.4+ | 0.7− | 2001 09 25 | 704 | 0.5+ | 0.1− | 2005 06 11 | 704 | 0.3+ | 1.2− |
| 2001 07 05 | 608 | 0.6+ | 0.5− | 2001 09 25 | 704 | 0.5+ | 0.5− | 2005 06 11 | 704 | 0.1+ | 0.4− |
| 2001 08 03 | 608 | 0.2+ | 0.6− | 2001 09 25 | 704 | 1.1+ | 0.9− | 2005 06 11 | 704 | 0.6+ | 0.2+ |
| 2001 08 03 | 608 | 0.5+ | 0.6− | 2001 09 25 | 704 | 0.4+ | 0.5− | 2005 06 28 | 699 | 0.1+ | 0.1+ |
| 2001 08 03 | 608 | 0.5+ | 0.6− | 2001 09 25 | 704 | 0.3+ | 1.0− | 2005 06 28 | 699 | 0.5− | 0.0 |
| 2001 08 10 | 644 | 0.2+ | 0.4+ | 2001 10 13 | 644 | 0.3− | 0.4− | 2005 06 28 | 699 | 0.1+ | 0.1− |
| 2001 08 10 | 644 | 0.5+ | 0.5+ | 2001 10 13 | 644 | 0.5− | 0.4− | 2005 06 28 | 699 | 0.2+ | 0.2− |
| 2001 08 10 | 644 | 0.4+ | 0.4+ | 2001 10 13 | 644 | 0.5− | 0.3− | 2006 09 17 | 703 | (1.5− | 0.5+) |
| 2001 08 17 | 704 | 0.8− | 0.0 | 2001 11 18 | 704 | 0.1− | 0.1− | 2006 09 17 | 703 | (1.7+ | 0.7−) |
| 2001 08 17 | 704 | 0.8− | 0.8+ | 2001 11 18 | 704 | 0.5+ | 0.3− | 2006 09 17 | 703 | 0.4+ | 0.6− |
| 2001 08 17 | 704 | 0.2+ | 0.4+ | 2001 11 18 | 704 | 0.6− | 0.7− | 2006 09 17 | 703 | 0.3+ | 0.5+ |
| 2001 08 24 | 699 | 0.9− | 0.1+ | 2001 11 18 | 704 | 0.3+ | 0.4− | 2006 09 28 | 703 | 0.4− | 0.2+ |
| 2001 08 24 | 699 | 0.5− | 0.4+ | 2004 01 17 | 644 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.9+ |
| 2001 08 24 | 699 | 0.3− | 0.4− | 2004 01 17 | 644 | 0.1+ | 0.8+ | 2006 09 28 | 703 | 0.4− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.4− | 0.4+ | 2004 01 17 | 644 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.2+ | 0.3− | | |
| 2001 08 31 | 644 | 0.4+ | 1.2+ | 2005 04 11 | E12 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.1− | | |
| 2001 08 31 | 644 | 0.6+ | 1.4+ | 2005 04 11 | E12 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.8+ | | |
| 2001 08 31 | 644 | (0.1+ | 1.6+) | 2005 04 11 | E12 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.7− | | |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2005 04 11 | E12 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.4− | 0.0 | | |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2005 04 28 | E12 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.3+ | 0.2+ | 2005 04 28 | E12 | 0.7− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2005 04 28 | E12 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3− | 0.4+ | | |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2005 04 28 | E12 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2005 05 12 | 703 | 0.5+ | 0.8− | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2005 05 12 | 703 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.5− | 0.1+ | 2005 05 12 | 703 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.9+ | 1.1+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.7+ | 2005 05 12 | 703 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.4+ | | |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2005 05 18 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2005 05 18 | 644 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.9− | 1.1− | | |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2005 05 18 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 1.5− | 1.0+ | | |
| 2001 09 16 | 704 | 0.0 | 0.2+ | 2005 05 19 | 644 | 1.0+ | 0.2− | 2006 10 31 | 703 | 0.7− | 1.4+ | | |
| 2001 09 16 | 704 | 0.2− | 0.4+ | 2005 05 19 | 644 | 0.3+ | 0.5+ | 2006 10 31 | 703 | 1.2− | 0.0 | | |

**(139482)∗ 2001 PP$_7$**

Discovered 2001 Aug. 7 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.41964 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21538339 | $\omega$ | 221.69700 | | +0.94252742 | | −0.32776759 |
| $a$ | 2.7563090 | $\Omega$ | 157.18888 | | +0.33332460 | | +0.90889232 |
| $e$ | 0.2109286 | $i$ | 9.63489 | | +0.02316823 | | +0.25784330 |
| $P$ | 4.58 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 07 | 608 | (1.9+ | 0.4+) | 2004 03 22 | 704 | 1.5− | 1.4+ | 2006 09 19 | 704 | 0.3− | 0.5+ | | |
| 2001 08 07 | 608 | (2.0+ | 0.2+) | 2004 04 16 | 691 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.1+ | | |
| 2001 08 07 | 608 | (2.2+ | 0.2+) | 2004 04 16 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.0 | | |
| 2001 08 11 | 704 | 0.5− | 0.7− | 2004 04 16 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 608 | (0.7+ | 4.0+) | | |
| 2001 08 11 | 704 | 0.7− | 1.4− | 2005 06 03 | 691 | 0.2− | 0.1+ | 2006 09 20 | 608 | (0.6+ | 4.1+) | | |
| 2001 08 11 | 704 | (1.5− | 0.5−) | 2005 06 03 | 691 | 0.2+ | 1.0+ | 2006 09 20 | 608 | (0.8+ | 4.2+) | | |
| 2001 08 12 | 608 | 0.3+ | 1.0− | 2005 06 03 | 691 | 0.2− | 0.6− | 2006 09 20 | 644 | 0.2− | 0.1+ | | |
| 2001 08 12 | 608 | 0.3+ | 0.8− | 2005 06 13 | 691 | 0.5+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.6+ | | |
| 2001 08 12 | 608 | 0.3+ | 1.0− | 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.4+ | | |
| 2001 08 24 | 608 | 0.3− | 0.0 | 2005 06 13 | 691 | 0.0 | 0.3+ | 2006 09 21 | 699 | 0.1+ | 0.1− | | |
| 2001 08 24 | 608 | 0.6− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.3+ | | |
| 2001 08 24 | 608 | 0.3− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 08 | 704 | 0.2− | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 08 | 704 | 0.4+ | 0.9+ | 2006 08 19 | 699 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.4+ | | |
| 2001 09 08 | 704 | 0.5+ | 0.2+ | 2006 08 19 | 699 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.2− | 0.1+ | | |
| 2001 09 08 | 704 | 0.6+ | 0.2+ | 2006 08 19 | 699 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.2+ | | |
| 2001 09 08 | 704 | 0.3− | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.4− | | |
| 2001 09 10 | 699 | 0.6− | 1.1+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.0 | | |
| 2001 09 10 | 699 | 0.4− | 0.9+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.6+ | | |
| 2001 09 10 | 699 | 0.7+ | 0.9+ | 2006 08 28 | 704 | 0.7− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.2+ | | |
| 2001 09 10 | 699 | 0.1+ | 1.4+ | 2006 08 28 | 704 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.4+ | | |
| 2001 09 12 | 704 | 1.3+ | 1.4+ | 2006 08 28 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.8+ | | |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2006 08 28 | 704 | 0.3+ | 0.5− | 2006 09 29 | 699 | 0.3+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2006 08 31 | 704 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.1− | 0.4+ | | |
| 2003 01 05 | 704 | 0.4− | 0.9+ | 2006 08 31 | 704 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.6− | 0.5+ | | |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 08 31 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.4+ | | |
| 2003 01 05 | 704 | 0.1− | 0.9+ | 2006 08 31 | 704 | 0.3− | 0.6− | 2006 09 30 | 704 | 0.1+ | 0.5+ | | |
| 2003 01 27 | 704 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 0.0 | 0.8+ | 2006 09 30 | 704 | 0.8+ | 0.1− | | |
| 2003 01 27 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.4+ | | |
| 2003 01 27 | 704 | 0.7+ | 0.3+ | 2006 09 12 | 703 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.4+ | 0.4+ | | |
| 2004 02 23 | 704 | 0.8+ | 1.2+ | 2006 09 12 | 703 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.1− | 0.3+ | | |
| 2004 02 23 | 704 | 0.2− | 0.1+ | 2006 09 16 | 704 | 0.1− | 0.7− | 2006 10 17 | 703 | 0.0 | 0.3+ | | |
| 2004 02 23 | 704 | 1.0+ | 0.8+ | 2006 09 16 | 704 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.0 | | |
| 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 704 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.1+ | | |
| 2004 03 20 | 691 | 0.1− | 0.5+ | 2006 09 16 | 704 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.1− | | |
| 2004 03 20 | 691 | 0.0 | 0.5+ | 2006 09 16 | 704 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2004 03 20 | 691 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2004 03 20 | 704 | 1.1+ | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.2− | 0.3+ | | |
| 2004 03 20 | 704 | 1.0+ | 0.7+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.1− | | |
| 2004 03 20 | 704 | 0.9+ | 1.0+ | 2006 09 19 | 704 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.2− | 0.1+ | | |
| 2004 03 20 | 704 | 0.9+ | 0.5+ | 2006 09 19 | 704 | 0.6− | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.4+ | | |
| 2004 03 22 | 704 | (0.4+ | 2.0+) | 2006 09 19 | 704 | 0.3− | 0.1+ | | | | | | |
| 2004 03 22 | 704 | (0.4+ | 2.8+) | 2006 09 19 | 704 | 0.1− | 0.6+ | | | | | | |

**(139483)∗ 2001 PZ$_8$ = 1996 TA$_2$**

Discovered 2001 Aug. 11 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 19964)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.67711 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19021411 | $\omega$ | 266.26896 | | +0.99238485 | | +0.11710404 |
| $a$ | 2.9943845 | $\Omega$ | 87.00330 | | −0.09226726 | | +0.91215665 |
| $e$ | 0.0791033 | $i$ | 2.19202 | | −0.08160312 | | +0.39275550 |
| $P$ | 5.18 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.4− | 0.2− | 2001 09 21 | 704 | 0.2− | 0.1+ | 2005 06 11 | 691 | 0.1+ | 0.3+ | | |
| 1991 10 13 | 691 | 0.2+ | 0.0 | 2001 09 21 | 704 | 0.4− | 0.2− | 2005 06 11 | 691 | 0.0 | 0.3+ | | |
| 1991 10 13 | 691 | 0.8+ | 0.3− | 2001 09 21 | 704 | 0.4− | 0.3− | 2005 06 11 | 691 | 0.0 | 0.3+ | | |
| 1996 10 03 | 327 | 0.3− | 0.4− | 2001 09 21 | 704 | 0.8− | 0.2− | 2005 06 13 | G96 | 0.1− | 0.1+ | | |
| 1996 10 03 | 327 | 0.6− | 0.9− | 2001 09 21 | 704 | 0.2− | 0.8− | 2005 06 13 | G96 | 0.6− | 0.2+ | | |
| 1996 10 03 | 327 | 0.2+ | 0.2− | 2001 10 11 | 704 | 0.7+ | 1.7+ | 2005 06 13 | G96 | 0.5− | 0.2+ | | |
| 1996 10 05 | 327 | 0.0 | 0.4− | 2001 10 11 | 704 | 0.6− | 0.9+ | 2005 06 13 | G96 | 0.1+ | 0.3+ | | |
| 1996 10 05 | 327 | 0.3− | 0.3− | 2001 10 11 | 704 | 1.1− | 1.3+ | 2005 06 14 | 291 | 0.2+ | 0.1+ | | |
| 1996 10 05 | 327 | 0.2− | 0.1− | 2001 10 17 | 644 | 0.3− | 0.3+ | 2005 06 14 | 291 | 0.3+ | 0.2+ | | |
| 2001 08 11 | 608 | 0.8− | 0.4− | 2001 10 17 | 644 | 0.0 | 0.3+ | 2005 06 14 | 291 | 0.3+ | 0.2+ | | |
| 2001 08 11 | 608 | 1.0− | 0.5− | 2001 10 17 | 644 | 0.0 | 0.2+ | 2006 08 13 | 644 | 0.3− | 0.2− | | |
| 2001 08 11 | 608 | 0.8− | 0.8− | 2001 10 20 | 695 | 0.1− | 0.1− | 2006 08 13 | 644 | 0.2− | 0.2− | | |
| 2001 08 12 | 644 | 0.5− | 0.1+ | 2001 10 20 | 695 | 0.2+ | 0.2− | 2006 08 13 | 644 | 0.2− | 0.2− | | |
| 2001 08 12 | 644 | 0.4− | 0.1− | 2001 10 24 | 704 | 0.5+ | 0.4− | 2006 08 28 | 704 | 1.0+ | 0.4+ | | |
| 2001 08 12 | 644 | 0.2− | 0.3+ | 2001 10 24 | 704 | 0.5+ | 0.8− | 2006 08 28 | 704 | 0.4+ | 0.2+ | | |
| 2001 08 16 | 704 | 0.6− | 0.0 | 2001 10 24 | 704 | 0.3− | 0.8− | 2006 08 28 | 704 | 1.3+ | 0.5+ | | |
| 2001 08 16 | 704 | 0.4− | 0.1+ | 2001 10 24 | 704 | 1.7− | 0.6− | 2006 08 28 | 704 | 1.8+ | 0.8+ | | |
| 2001 08 16 | 704 | 1.0− | 0.6+ | 2002 12 08 | 291 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 0.7+ | 0.1+ | | |
| 2001 09 12 | 704 | 1.8+ | 0.8+ | 2002 12 08 | 291 | 0.1− | 0.6+ | 2006 08 28 | 699 | 0.4− | 0.1+ | | |
| 2001 09 12 | 704 | 1.7+ | 0.1− | 2002 12 08 | 291 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | 1.9+ | 0.7− | 2005 05 08 | G96 | 0.0 | 0.3− | 2006 08 28 | 699 | 0.1− | 0.5+ | | |
| 2001 09 12 | 704 | 1.1+ | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.9− | 0.2− | | |
| 2001 09 19 | 699 | 0.4− | 0.7− | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.8− | 0.6+ | | |
| 2001 09 19 | 699 | 0.4+ | 0.7+ | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.7− | 0.5− | | |
| 2001 09 19 | 699 | 0.3+ | 0.7+ | 2005 05 20 | G96 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.3− | 2.2− | | |
| 2001 09 19 | 699 | 1.3+ | 1.3+ | 2005 05 20 | G96 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2005 05 20 | G96 | 0.3+ | 0.1+ | 2006 09 20 | 644 | 0.5− | 0.1+ | | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2005 05 20 | G96 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2005 06 01 | 691 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.4− | | |
| 2001 09 19 | 704 | 0.1− | 0.8+ | 2005 06 01 | 691 | 0.3+ | 0.6− | | | | | | |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2005 06 01 | 691 | 0.4− | 0.3− | | | | | | |

**(139484)∗ 2001 PZ$_{10}$ = 4738 P-L = 2000 HE$_{100}$ = 2000 JT$_4$**

Discovered 2001 Aug. 8 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 15943), A. Doppler (*MPO* 75024)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.61526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23877157 | $\omega$ | 311.77606 | | +0.75277586 | | +0.65826745 |
| $a$ | 2.5732440 | $\Omega$ | 7.05865 | | −0.59511315 | | +0.68282763 |
| $e$ | 0.1823408 | $i$ | 1.64661 | | −0.28136958 | | +0.31690754 |
| $P$ | 4.13 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2− | 0.2− | 2001 08 13 | 608 | 0.2+ | 0.2− | 2001 08 26 | 608 | 0.1+ | 0.9− | | |
| 1960 09 24 | 675 | 0.6− | 0.1− | 2001 08 13 | 608 | 0.0 | 0.2+ | 2001 08 26 | 608 | 0.2− | 0.4− | | |
| 1960 09 26 | 675 | 0.6+ | 0.0 | 2001 08 13 | 608 | 0.1+ | 0.0 | 2001 08 28 | 644 | 0.5− | 0.4+ | | |
| 1960 09 26 | 675 | 0.0 | 0.8+ | 2001 08 16 | 704 | 0.4− | 0.2− | 2001 08 28 | 644 | 0.8− | 0.3+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 27 | 675 | 0.5+ | 0.1+ | 2001 08 16 | 704 | 0.6− | 0.3+ | 2001 08 28 | 644 | 0.5− | 0.2+ |
| 1960 09 27 | 675 | 0.7− | 0.3+ | 2001 08 16 | 704 | 1.0+ | 1.4+ | 2004 03 11 | 644 | 0.4+ | 0.8+ |
| 1960 09 28 | 675 | 0.4+ | 0.8− | 2001 08 16 | 704 | 1.3− | 0.5+ | 2004 03 11 | 644 | 0.3+ | 0.3+ |
| 1960 09 28 | 675 | 0.2+ | 0.7− | 2001 08 16 | 704 | 0.4− | 0.8+ | 2004 03 11 | 644 | 0.8+ | 0.4+ |
| 1993 09 15 | 809 | (1.7+ | 3.6+) | 2001 08 19 | 704 | 1.0+ | 0.4+ | 2004 03 14 | 691 | 0.3− | 0.0 |
| 1993 09 15 | 809 | (0.6+ | 2.0+) | 2001 08 19 | 704 | 0.9+ | 0.6+ | 2004 03 14 | 691 | 0.0 | 0.5+ |
| 1993 09 15 | 809 | (0.5+ | 2.8+) | 2001 08 19 | 704 | 1.0+ | 0.5+ | 2004 03 14 | 691 | 0.1− | 0.5+ |
| 2000 04 24 | 691 | 0.1+ | 0.1− | 2001 08 19 | 704 | 0.7+ | 0.3+ | 2004 03 18 | 704 | (2.3+ | 0.4+) |
| 2000 04 24 | 691 | 0.4− | 0.4− | 2001 08 20 | 608 | 0.9− | 0.4+ | 2004 03 18 | 704 | 0.6− | 0.8+ |
| 2000 04 24 | 691 | 0.1− | 0.3− | 2001 08 20 | 608 | 0.8− | 0.2− | 2004 03 18 | 704 | 1.3+ | 0.1+ |
| 2000 05 02 | 691 | 0.8+ | 0.2+ | 2001 08 20 | 608 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.8+ | 0.8+ |
| 2000 05 02 | 691 | 1.0+ | 0.0 | 2001 08 21 | 608 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2000 05 02 | 691 | 0.7+ | 0.1+ | 2001 08 21 | 608 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2001 08 21 | 608 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2000 05 04 | 645 | 0.2− | 0.1+ | 2001 08 23 | 699 | (1.6+ | 0.9−) | 2006 11 16 | 691 | 0.4− | 0.1+ |
| 2001 07 27 | 699 | 0.7+ | 0.6+ | 2001 08 23 | 699 | 0.4− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2001 07 27 | 699 | 0.9− | 0.5+ | 2001 08 23 | 699 | 1.0+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2001 07 27 | 699 | 0.7− | 0.2− | 2001 08 23 | 699 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.6+ | 0.6+ |
| 2001 07 27 | 699 | 0.4− | 0.0 | 2001 08 26 | 608 | 0.2− | 0.7− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2001 08 08 | 608 | 0.5− | 1.4+ | 2001 08 26 | 608 | 0.3+ | 0.4− | 2006 11 20 | 691 | 0.1− | 0.5+ |
| 2001 08 08 | 608 | 0.4− | 1.4+ | 2001 08 26 | 608 | 0.2− | 0.7− | | | | |
| 2001 08 08 | 608 | 0.3− | 1.3+ | 2001 08 26 | 608 | 0.1− | 0.4− | | | | |

**(139485)∗ 2001 PT$_{14}$**

Discovered 2001 Aug. 14 by P. Kušnirák at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.71017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22758109 | $\omega$ | 246.49584 | | +0.85648435 | −0.51556325 | |
| $a$ | 2.6569208 | $\Omega$ | 144.52481 | | +0.48794627 | +0.79284294 | |
| $e$ | 0.0525497 | $i$ | 2.47698 | | +0.16835378 | +0.32495324 | |
| $P$ | 4.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.6+ | 0.3+ | 2004 03 15 | 703 | 1.5+ | 0.1+ | 2004 04 25 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.6− | 0.9+ | 2004 03 15 | 703 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2000 04 06 | 704 | 0.2+ | 0.5+ | 2004 03 15 | 703 | 1.0+ | 1.4+ | 2006 09 30 | 703 | 0.6− | 1.0− |
| 2000 04 06 | 704 | 0.6+ | 0.4+ | 2004 03 16 | 704 | 1.0+ | 1.0+ | 2006 09 30 | 703 | 1.0− | 0.8− |
| 2000 04 06 | 704 | 0.4+ | 0.2+ | 2004 03 16 | 704 | 0.4− | 1.2+ | 2006 09 30 | 703 | 0.9− | 0.7− |
| 2001 07 27 | 699 | 0.1+ | 1.1+ | 2004 03 16 | 704 | 0.5+ | 0.9+ | 2006 10 02 | G96 | 0.3+ | 0.2+ |
| 2001 07 27 | 699 | 0.6− | 0.5− | 2004 03 16 | 704 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2001 07 27 | 699 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.3− | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2001 07 27 | 699 | 0.8+ | 0.6+ | 2004 03 19 | 704 | (1.6+ | 0.2−) | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2001 08 14 | 557 | (1.7− | 0.9+) | 2004 03 19 | 704 | (2.3+ | 0.0 ) | 2006 10 03 | 704 | 0.2− | 0.5+ |
| 2001 08 14 | 557 | 0.0 | 1.3+ | 2004 03 19 | 704 | 0.5+ | 0.8− | 2006 10 03 | 704 | 0.1+ | 0.9− |
| 2001 08 15 | 557 | 0.0 | 1.1+ | 2004 03 19 | 704 | (2.1+ | 0.2−) | 2006 10 03 | 704 | 0.4− | 0.7− |
| 2001 08 15 | 557 | 0.3− | 0.8+ | 2004 03 19 | 704 | 1.0+ | 0.7+ | 2006 10 19 | 644 | 0.9− | 0.4− |
| 2001 08 26 | 557 | 0.8− | 1.4+ | 2004 03 19 | 704 | (3.2+ | 0.7+) | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 08 26 | 557 | 0.6− | 1.0+ | 2004 03 21 | 699 | 0.3+ | 0.7− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 08 26 | 557 | 0.8− | 0.9+ | 2004 03 21 | 699 | (0.6− | 1.8−) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 11 05 | 291 | 0.2− | 0.2+ | 2004 03 21 | 699 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2002 11 05 | 291 | 0.1+ | 0.2+ | 2004 03 21 | 699 | 0.8+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 291 | 0.3− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 704 | 0.2+ | 1.0+ |
| 2002 11 28 | 608 | 0.2+ | 0.1− | 2004 03 22 | 704 | 0.5− | 0.7+ | 2006 10 27 | 704 | 0.8− | 0.6+ |
| 2002 11 28 | 608 | 0.5+ | 0.1− | 2004 03 22 | 704 | 0.4− | 1.3+ | 2006 10 27 | 704 | (4.3− | 0.1+) |
| 2002 11 28 | 608 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.5+ |
| 2002 12 05 | 608 | 0.3+ | 1.0− | 2004 03 22 | 704 | 0.2+ | 0.9+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2002 12 05 | 608 | 0.1+ | 0.7− | 2004 03 23 | 683 | 0.6− | 0.7− | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2002 12 05 | 608 | 0.3+ | 0.3+ | 2004 03 23 | 683 | 1.3+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2004 03 23 | 683 | (2.3+ | 0.9−) | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2002 12 11 | 704 | 0.0 | 0.2− | 2004 03 28 | 704 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.6− | 0.3+ |
| 2002 12 11 | 704 | 0.3− | 0.5− | 2004 03 28 | 704 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.2+ |
| 2002 12 11 | 704 | 0.3+ | 0.7− | 2004 03 28 | 704 | 1.0+ | 0.5+ | 2006 11 13 | 703 | 0.1− | 0.6+ |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2004 03 28 | 704 | 0.2+ | 0.6− | 2006 11 13 | 703 | (0.1− | 2.1+) |
| 2003 01 04 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.8+ | 0.8+ | 2006 11 13 | 703 | (0.2− | 1.6+) |
| 2003 01 04 | 704 | 0.2− | 0.2+ | 2004 03 29 | 691 | 0.2− | 0.1− | 2006 11 14 | 704 | 1.1+ | 0.0 |
| 2003 01 04 | 704 | 0.2− | 0.4+ | 2004 03 29 | 691 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.6+ | 0.2+ |
| 2003 01 04 | 704 | 0.2− | 0.5+ | 2004 03 29 | 691 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.1− |
| 2003 01 04 | 704 | 0.4− | 0.2+ | 2004 04 12 | 703 | 0.0 | 0.5− | 2006 11 17 | 704 | 0.5+ | 1.3+ |
| 2004 02 26 | 704 | (0.4− | 1.6−) | 2004 04 12 | 703 | (0.1− | 1.9+) | 2006 11 17 | 704 | 0.1+ | 1.0+ |
| 2004 02 26 | 704 | 0.6+ | 0.3+ | 2004 04 12 | 703 | (1.6+ | 0.9−) | 2006 11 17 | 704 | 0.0 | 1.1+ |
| 2004 02 26 | 704 | 0.5+ | 0.3− | 2004 04 12 | 703 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.6+ |
| 2004 02 26 | 704 | 0.0 | 0.2+ | 2004 04 15 | 691 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2004 03 12 | 644 | 0.2+ | 0.3+ | 2004 04 15 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2004 03 12 | 644 | 0.0 | 0.3+ | 2004 04 15 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2004 03 12 | 644 | 0.4+ | 0.3+ | 2004 04 25 | 691 | 0.7− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2004 03 15 | 703 | 0.0 | 0.1+ | 2004 04 25 | 691 | 0.1− | 0.3+ | | | | |

**(139486)∗ 2001 PT$_{15}$**

Discovered 2001 Aug. 9 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.47186 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21902624 | $\omega$ | 208.57183 | | +0.44552205 | +0.87274431 | |
| $a$ | 2.7256617 | $\Omega$ | 88.50251 | | −0.77873157 | +0.48775227 | |
| $e$ | 0.2614697 | $i$ | 11.51570 | | −0.44168682 | +0.02037360 | |
| $P$ | 4.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 608 | (0.8+ | 2.0−) | 2002 11 06 | 291 | 0.4+ | 0.1− | 2005 05 15 | 644 | 0.3− | 0.3+ |
| 2001 05 29 | 608 | 0.5+ | 1.3− | 2002 11 06 | 291 | 0.3+ | 0.2+ | 2005 05 15 | 644 | 0.0 | 0.4+ |
| 2001 05 29 | 608 | (0.5+ | 1.9−) | 2002 11 06 | 291 | 0.1+ | 0.0 | 2005 05 15 | 644 | 0.3− | 0.3+ |
| 2001 07 18 | 644 | 0.2− | 1.3− | 2004 02 17 | 645 | 0.1− | 0.0 | 2005 06 03 | 699 | 1.1+ | 0.1+ |
| 2001 07 18 | 644 | 0.4− | 1.3− | 2004 02 17 | 645 | 0.0 | 0.0 | 2005 06 03 | 699 | 0.2+ | 0.7+ |
| 2001 07 18 | 644 | 0.4− | 1.2− | 2005 04 13 | 703 | 0.1− | 0.0 | 2005 06 03 | 699 | 0.4+ | 1.0+ |
| 2001 07 30 | 644 | 0.1+ | 0.4+ | 2005 04 13 | 703 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.5− |
| 2001 07 30 | 644 | 0.2− | 0.5+ | 2005 04 13 | 703 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.6− |
| 2001 07 30 | 644 | 0.1+ | 0.4+ | 2005 04 13 | 703 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 1.0+ | 0.2+ |
| 2001 08 09 | 644 | 0.3− | 0.1+ | 2005 04 18 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.1− |
| 2001 08 09 | 644 | 0.2− | 0.2+ | 2005 04 18 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 1.5− | 1.2+ |
| 2001 08 09 | 644 | 0.1− | 0.2+ | 2005 04 18 | 704 | 0.9− | 1.0+ | 2006 09 29 | 699 | 0.1+ | 0.2− |
| 2001 08 14 | 644 | 0.4− | 0.3+ | 2005 04 18 | 704 | 0.0 | 0.7+ | 2006 09 29 | 699 | 0.1− | 0.2− |
| 2001 08 14 | 644 | 0.1− | 0.1+ | 2005 05 04 | 703 | 1.3+ | 0.7+ | 2006 09 29 | 699 | (1.9− | 0.6+) |
| 2001 08 14 | 644 | 0.0 | 0.1+ | 2005 05 04 | 703 | (3.6+ | 1.4+) | 2006 10 17 | 703 | (1.6− | 0.4+) |
| 2001 08 21 | 644 | 0.5+ | 0.5+ | 2005 05 04 | 703 | 0.7+ | 1.4− | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2001 08 21 | 644 | 0.5+ | 0.4+ | 2005 05 04 | 703 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2001 08 21 | 644 | 0.4+ | 0.4+ | 2005 05 06 | 704 | (2.4+ | 1.9+) | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2001 08 21 | 644 | 0.3+ | 0.7+ | 2005 05 06 | 704 | 0.7+ | 0.6+ | 2006 10 28 | 703 | 0.2+ | 0.7+ |
| 2001 08 21 | 644 | 0.4+ | 0.5+ | 2005 05 06 | 704 | 0.9+ | 0.3+ | 2006 10 28 | 703 | 0.4− | 1.0+ |
| 2001 08 21 | 644 | 0.3+ | 0.2+ | 2005 05 06 | 704 | 0.2+ | 0.2− | 2006 10 28 | 703 | 1.3− | 0.7+ |
| 2001 08 25 | 644 | 0.4− | 0.3+ | 2005 05 06 | 704 | (1.6+ | 1.4+) | 2006 10 28 | 703 | 0.8− | 0.4− |
| 2001 08 25 | 644 | 0.4− | 0.1− | 2005 05 11 | 699 | 0.4+ | 0.3+ | 2006 11 16 | 703 | 0.9− | 1.1+ |
| 2001 08 25 | 644 | 0.4− | 0.4+ | 2005 05 11 | 699 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.1+ |
| 2001 09 22 | 644 | 0.2− | 0.1− | 2005 05 11 | 699 | 1.0+ | 0.4+ | 2006 11 16 | 703 | (1.8− | 0.2+) |
| 2001 09 22 | 644 | 0.3− | 0.2− | 2005 05 11 | 699 | 0.1− | 0.8+ | 2006 11 16 | 703 | 0.8+ | 0.9+ |
| 2001 09 22 | 644 | 0.5− | 0.3− | 2005 05 11 | 703 | 0.1− | 0.8− | 2006 11 17 | 644 | 0.4− | 0.1+ |
| 2001 10 08 | 644 | 0.5+ | 0.1+ | 2005 05 11 | 703 | 0.2+ | 0.0 | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2001 10 08 | 644 | 0.4+ | 0.0 | 2005 05 11 | 703 | 0.8− | 0.2+ | 2006 11 17 | 644 | 0.2− | 0.2+ |
| 2001 10 08 | 644 | 0.5+ | 0.0 | 2005 05 11 | 703 | 0.6− | 0.3+ | | | | |

**(139487)∗ 2001 PA$_{20}$**

Discovered 2001 Aug. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.22368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20522024 | $\omega$ | 175.45755 | | −0.94410077 | −0.32313554 | |
| $a$ | 2.8465747 | $\Omega$ | 345.17837 | | +0.29385088 | −0.73519929 | |
| $e$ | 0.0739606 | $i$ | 14.77709 | | +0.14941684 | −0.59587367 | |
| $P$ | 4.80 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.0 | 0.6+ | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2004 03 10 | 703 | 0.5− | 0.3− |
| 2001 07 20 | 644 | 0.2+ | 0.6+ | 2004 01 17 | 644 | 0.1+ | 0.3+ | 2004 03 14 | 704 | 0.1+ | 0.3+ |
| 2001 07 20 | 644 | 0.3+ | 0.8+ | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2004 03 14 | 704 | 0.1+ | 0.4+ |
| 2001 08 10 | 644 | 0.1+ | 0.6+ | 2004 01 28 | 703 | 0.3− | 0.7+ | 2004 03 14 | 704 | 0.3− | 0.7+ |
| 2001 08 10 | 644 | 0.3− | 0.3+ | 2004 01 28 | 703 | 0.2+ | 0.1+ | 2004 04 19 | 704 | (2.1+ | 0.7+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | 0.1− | 0.4+ | 2004 01 28 | 703 | 0.4− | 0.3− | 2004 04 19 | 704 | (1.7+ | 0.0 | ) | |
| 2001 08 14 | 608 | 0.3− | 0.2+ | 2004 01 28 | 703 | 0.0 | 0.1+ | 2004 04 19 | 704 | (2.7+ | 0.3+) | | |
| 2001 08 14 | 608 | 0.6− | 0.4+ | 2004 01 30 | 704 | 0.5+ | 0.2− | 2004 04 19 | 704 | (2.0+ | 0.9+) | | |
| 2001 08 14 | 608 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.5+ | 0.4+ | 2004 04 19 | 704 | (1.6+ | 1.2+) | | |
| 2001 08 22 | 608 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.3+ | 0.2− | 2006 08 17 | 644 | 0.1− | 0.7+ | | |
| 2001 08 22 | 608 | 0.1+ | 0.4− | 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.7+ | | |
| 2001 08 22 | 608 | 0.3+ | 0.2− | 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.5+ | | |
| 2001 09 11 | 704 | 0.5− | 0.3+ | 2004 02 11 | 644 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 11 | 704 | 1.1− | 0.5− | 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 08 23 | 644 | 0.2− | 0.5+ | | |
| 2001 09 11 | 704 | 0.1− | 0.5− | 2004 02 11 | 644 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.3− | 0.4+ | | |
| 2002 10 06 | 704 | 0.3+ | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 704 | (2.5− | 0.3+) | | |
| 2002 10 06 | 704 | 0.5− | 0.2+ | 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 704 | (0.0 | 1.7−) | | |
| 2002 10 06 | 704 | (2.3− | 0.1+) | 2004 02 11 | 644 | 0.2+ | 0.7+ | 2006 08 28 | 704 | 1.0− | 1.0− | | |
| 2002 10 10 | 704 | 0.2− | 0.2+ | 2004 02 14 | 703 | (0.1− | 1.6+) | 2006 08 28 | 704 | 0.5+ | 0.2+ | | |
| 2002 10 10 | 704 | 0.2− | 1.1− | 2004 02 14 | 703 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.1+ | | |
| 2002 10 10 | 704 | 0.7+ | 0.3− | 2004 02 14 | 703 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.0 | | |
| 2002 11 25 | 644 | 0.5+ | 0.0 | 2004 02 14 | 703 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.0 | | |
| 2002 11 25 | 644 | 0.4+ | 0.1+ | 2004 02 15 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.3+ | | |
| 2002 11 25 | 644 | 0.4+ | 0.1− | 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.4+ | | |
| 2003 11 19 | 704 | (1.1+ | 2.6+) | 2004 02 15 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 1.3− | 0.2+ | | |
| 2003 11 19 | 704 | 0.3− | 0.0 | 2004 02 15 | 704 | 0.4+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.7+ | | |
| 2003 11 19 | 704 | 1.2+ | 0.7+ | 2004 02 15 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.7+ | | |
| 2003 11 19 | 704 | (1.9+ | 0.0 ) | 2004 02 18 | 644 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.2+ | | |
| 2003 11 21 | 699 | 1.1− | 0.2+ | 2004 02 18 | 644 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3+ | | |
| 2003 11 21 | 699 | 1.2+ | 0.5− | 2004 02 18 | 644 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.4− | 0.5+ | | |
| 2003 11 21 | 699 | 0.8− | 0.4− | 2004 03 09 | 644 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.3+ | | |
| 2003 11 21 | 699 | 1.4− | 1.1+ | 2004 03 09 | 644 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.1+ | | |
| 2004 01 13 | 699 | 0.3− | 0.2+ | 2004 03 09 | 644 | 0.5+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.0 | | |
| 2004 01 13 | 699 | 1.3− | 1.0+ | 2004 03 10 | 703 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.4− | | |
| 2004 01 13 | 699 | 0.3− | 0.1− | 2004 03 10 | 703 | 1.3− | 0.0 | 2006 10 17 | G96 | 0.4− | 0.7− | | |
| 2004 01 13 | 699 | 0.5− | 1.0− | 2004 03 10 | 703 | 0.3+ | 0.1+ | | | | | | |

**(139488)∗ 2001 PU$_{21}$**

Discovered 2001 Aug. 10 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.73017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23733227 | $\omega$ | 325.94622 | | +0.42925304 | +0.90270669 | |
| $a$ | 2.5836372 | $\Omega$ | 329.44380 | | −0.81525647 | +0.37326478 | |
| $e$ | 0.1162515 | $i$ | 3.31166 | | −0.38871419 | +0.21399542 | |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 0.5+ | 1.2+ | 2001 09 20 | 704 | 0.5− | 0.6− | 2004 03 27 | 704 | 0.5− | 0.4− | | |
| 2000 03 10 | 704 | 0.4+ | 0.8+ | 2001 09 22 | 704 | 1.4+ | 0.4− | 2004 03 27 | 704 | 0.2+ | 0.5− | | |
| 2000 03 10 | 704 | 0.7+ | 1.0+ | 2001 09 22 | 704 | 0.4+ | 0.8− | 2005 07 02 | 691 | 0.0 | 0.0 | | |
| 2001 08 10 | 608 | 0.3− | 0.4− | 2001 09 22 | 704 | 1.4+ | 0.6− | 2005 07 02 | 691 | 0.0 | 0.0 | | |
| 2001 08 10 | 608 | 0.3+ | 0.1+ | 2001 09 22 | 704 | (1.2+ | 1.7−) | 2005 07 02 | 691 | 0.1− | 0.0 | | |
| 2001 08 10 | 608 | 0.0 | 0.6− | 2001 09 23 | 704 | 1.3+ | 0.2+ | 2005 07 07 | 691 | 0.1− | 0.2+ | | |
| 2001 08 15 | 608 | 0.2− | 0.8− | 2001 09 23 | 704 | 0.4+ | 1.2− | 2005 07 07 | 691 | 0.0 | 0.1+ | | |
| 2001 08 15 | 608 | 0.4− | 0.4− | 2001 09 23 | 704 | 0.4+ | 0.8− | 2005 07 07 | 691 | 0.2− | 0.1+ | | |
| 2001 08 15 | 608 | 0.5− | 0.4− | 2002 12 06 | 695 | 0.2− | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.4+ | | |
| 2001 08 15 | 608 | 0.4− | 0.3− | 2002 12 06 | 695 | 0.1− | 0.1+ | 2005 07 11 | 691 | 0.2+ | 0.2+ | | |
| 2001 08 15 | 608 | 0.4− | 0.1+ | 2004 02 26 | 704 | 0.0 | 0.3+ | 2005 07 11 | 691 | 0.0 | 0.1+ | | |
| 2001 08 15 | 608 | 0.6− | 0.0 | 2004 02 26 | 704 | 0.2+ | 0.9+ | 2005 08 06 | 704 | (0.4− | 2.0−) | | |
| 2001 08 16 | 704 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.8+ | 1.0+ | 2005 08 06 | 704 | 0.8+ | 0.3− | | |
| 2001 08 16 | 704 | 0.2− | 0.5+ | 2004 02 26 | 704 | 0.5+ | 0.9+ | 2005 08 06 | 704 | 0.2+ | 1.1− | | |
| 2001 08 16 | 704 | 0.4− | 0.1+ | 2004 02 26 | 704 | 0.6− | 0.1+ | 2005 08 06 | 704 | 0.1− | 0.0 | | |
| 2001 08 16 | 704 | 0.3− | 0.0 | 2004 03 12 | 644 | 0.1− | 0.4+ | 2005 08 09 | 704 | 0.5+ | 0.0 | | |
| 2001 08 16 | 704 | 0.4− | 0.4+ | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2005 08 09 | 704 | 0.6+ | 0.6+ | | |
| 2001 08 18 | 704 | 0.7− | 0.9+ | 2004 03 12 | 644 | 0.0 | 0.4+ | 2005 08 09 | 704 | 1.2− | 0.7+ | | |
| 2001 08 18 | 704 | 0.0 | 0.9+ | 2004 03 14 | 691 | 0.3+ | 0.3+ | 2005 08 09 | 704 | 0.4− | 0.6− | | |
| 2001 08 18 | 704 | 0.8− | 0.8+ | 2004 03 14 | 691 | 0.3+ | 0.5+ | 2005 08 10 | 704 | 0.1+ | 0.2− | | |
| 2001 08 19 | 704 | 0.9− | 0.4+ | 2004 03 14 | 691 | 0.2+ | 0.4+ | 2005 08 10 | 704 | 0.1− | 0.4− | | |
| 2001 08 19 | 704 | 1.3− | 0.7+ | 2004 03 16 | 683 | (0.0 | 2.5−) | 2005 08 10 | 704 | 0.3− | 0.1− | | |
| 2001 08 19 | 704 | 0.6− | 0.5+ | 2004 03 16 | 683 | (0.2+ | 2.1+) | 2005 08 10 | 704 | 0.1+ | 0.5+ | | |
| 2001 08 19 | 704 | 0.4− | 0.8+ | 2004 03 16 | 683 | 0.6− | 0.9+ | 2005 10 25 | G96 | 0.2− | 0.3+ | | |
| 2001 08 19 | 704 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2005 10 25 | G96 | 0.2− | 0.1+ | | |
| 2001 08 24 | 699 | 0.7− | 0.4+ | 2004 03 20 | 704 | 0.6− | 0.4+ | 2005 10 25 | G96 | 0.2− | 0.5+ | | |
| 2001 08 24 | 699 | 0.4− | 0.7+ | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2005 10 25 | G96 | 0.6− | 0.2+ | | |
| 2001 08 24 | 699 | 0.6− | 0.0 | 2004 03 20 | 704 | (0.5+ | 2.3+) | 2005 11 25 | G96 | 0.0 | 0.3+ | | |
| 2001 08 24 | 699 | 0.1− | 0.3+ | 2004 03 21 | 691 | 0.2+ | 0.1− | 2005 11 25 | G96 | 0.2− | 0.0 | | |
| 2001 08 24 | 691 | 0.1+ | 0.0 | 2004 03 21 | 691 | 0.3+ | 0.1+ | 2005 11 25 | G96 | 0.5− | 0.1− | | |
| 2001 08 24 | 691 | 0.2− | 0.0 | 2004 03 21 | 691 | 0.1+ | 0.1− | 2005 11 25 | G96 | 0.1+ | 0.5+ | | |
| 2001 08 24 | 691 | 0.0 | 0.0 | 2004 03 25 | 704 | 0.8+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.1− | | |
| 2001 09 08 | 699 | (1.9− | 0.6+) | 2004 03 25 | 704 | 0.5+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.2− | | |
| 2001 09 08 | 699 | 0.1− | 0.3− | 2004 03 25 | 704 | 0.2+ | 0.8+ | 2006 11 13 | G96 | 0.0 | 0.4− | | |
| 2001 09 08 | 699 | 0.5+ | 0.5− | 2004 03 25 | 704 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.4− | 0.4− | | |
| 2001 09 08 | 699 | 0.4− | 0.8+ | 2004 03 25 | 704 | 0.4+ | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.5+ | | |
| 2001 09 19 | 691 | 0.0 | 1.0+ | 2004 03 25 | 704 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.6+ | | |
| 2001 09 19 | 691 | 0.0 | 0.9+ | 2004 03 25 | 704 | (0.9+ | 1.7+) | 2006 11 21 | 691 | 0.1− | 0.4+ | | |
| 2001 09 19 | 691 | 0.2− | 0.9+ | 2004 03 25 | 704 | 0.6+ | 0.0 | 2006 11 25 | 691 | 0.0 | 0.2+ | | |
| 2001 09 20 | 704 | 0.8+ | 0.5+ | 2004 03 27 | 704 | 0.1− | 0.6+ | 2006 11 25 | 691 | 0.2+ | 0.5+ | | |
| 2001 09 20 | 704 | 1.2+ | 0.6− | 2004 03 27 | 704 | 0.3− | 0.0 | 2006 11 25 | 691 | 0.2− | 0.5+ | | |
| 2001 09 20 | 704 | (1.6+ | 0.4−) | 2004 03 27 | 704 | 0.5− | 0.1+ | | | | | | |

**(139489)∗ 2001 PU$_{23}$**

Discovered 2001 Aug. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.44785 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22105665 | $\omega$ | 222.70840 | | +0.58879804 | +0.79646093 | |
| $a$ | 2.7089459 | $\Omega$ | 83.82557 | | −0.69918171 | +0.58736491 | |
| $e$ | 0.0644102 | $i$ | 7.96243 | | −0.40553889 | +0.14370961 | |
| $P$ | 4.46 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.6− | 0.4+ | 2002 12 10 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | (3.9− | 0.3+) | | |
| 2001 08 11 | 608 | 0.5− | 0.6+ | 2002 12 10 | 704 | 1.0+ | 0.9− | 2006 09 30 | 703 | (1.7− | 2.0+) | | |
| 2001 08 11 | 608 | 0.2− | 0.1+ | 2002 12 31 | 704 | 0.1− | 0.5− | 2006 09 30 | G92 | 0.3− | 0.0 | | |
| 2001 08 14 | 644 | 0.7− | 0.4+ | 2002 12 31 | 704 | 0.5+ | 1.1+ | 2006 09 30 | 703 | 0.7− | 0.8− | | |
| 2001 08 14 | 644 | 1.1− | 0.5+ | 2002 12 31 | 704 | 0.2+ | 1.1+ | 2006 09 30 | 703 | 0.9+ | 0.3− | | |
| 2001 08 14 | 644 | 0.5− | 0.3+ | 2002 12 31 | 704 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 19 | 704 | 0.5− | 0.2+ | 2002 12 31 | 704 | 1.3− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 2001 08 19 | 704 | 0.5+ | 0.1+ | 2003 01 06 | 291 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.4+ | | |
| 2001 08 19 | 704 | 0.2+ | 1.4+ | 2003 01 06 | 291 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.0 | | |
| 2001 08 19 | 704 | 0.3+ | 0.1− | 2003 01 06 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.2+ | | |
| 2001 08 23 | 608 | 0.3+ | 0.2− | 2004 03 23 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1− | 1.0+ | | |
| 2001 08 23 | 608 | 0.8+ | 0.1− | 2004 03 23 | 704 | 0.1+ | 1.1+ | 2006 10 16 | 703 | 0.6− | 0.3− | | |
| 2001 08 23 | 608 | 0.4+ | 0.6− | 2004 03 23 | 704 | (1.2+ | 1.7+) | 2006 10 22 | 644 | 0.3+ | 0.1+ | | |
| 2001 08 23 | 608 | 0.1− | 0.2− | 2004 03 23 | 704 | 0.7+ | 1.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 08 23 | 608 | 0.4+ | 0.1− | 2006 09 15 | 644 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.0 | | |
| 2001 08 23 | 608 | 0.1− | 0.6− | 2006 09 15 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.4+ | | |
| 2001 08 25 | 699 | 0.4− | 0.3− | 2006 09 15 | 644 | 0.4+ | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.4+ | | |
| 2001 08 25 | 699 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 1.5− | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.0 | | |
| 2001 08 25 | 699 | 0.7+ | 1.3+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 28 | 703 | 1.1− | 0.7− | | |
| 2001 08 25 | 699 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.5+ | 1.0+ | | |
| 2001 09 11 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | (1.3− | 1.6−) | 2006 11 13 | 703 | 0.2− | 0.8− | | |
| 2001 09 11 | 704 | 0.5− | 1.3− | 2006 09 27 | G92 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.0 | 0.7− | | |
| 2001 09 11 | 704 | (0.1− | 2.1−) | 2006 09 27 | G92 | 0.4+ | 0.0 | 2006 11 13 | 703 | 1.4+ | 1.4− | | |
| 2001 09 11 | 704 | (1.3− | 4.3−) | 2006 09 27 | G92 | 0.5+ | 0.7+ | 2006 11 19 | 703 | 0.7− | 0.1+ | | |
| 2002 12 05 | 704 | 0.0 | 0.8+ | 2006 09 28 | G92 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.3+ | 0.7+ | | |
| 2002 12 05 | 704 | 0.8+ | 1.4+ | 2006 09 28 | G92 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.2+ | 1.3− | | |
| 2002 12 05 | 704 | (1.7+ | 0.9+) | 2006 09 28 | G92 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 1.1− | 0.2− | | |
| 2002 12 10 | 704 | 0.8− | 0.9+ | 2006 09 28 | G92 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.4− | | |
| 2002 12 10 | 704 | 0.6+ | 0.5− | 2006 09 28 | G92 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.6+ | 0.6− | | |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 09 28 | G92 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.5+ | 0.6− | | |
| 2002 12 10 | 704 | 0.3− | 0.9− | 2006 09 30 | G92 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 09 30 | G92 | 0.5+ | 0.0 | | | | | | |

**(139490)∗ 2001 PY$_{23}$**

Discovered 2001 Aug. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.35340 | | (2000.0) | | | |
| $n$ | 0.21593434 | $\omega$ | 241.92225 | | +0.51654631 | +0.84791831 |
| $a$ | 2.7516186 | $\Omega$ | 59.66838 | | −0.72912467 | +0.50857170 |
| $e$ | 0.0966586 | $i$ | 7.93979 | | −0.44895114 | +0.14963078 |
| $P$ | 4.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 21 | 691 | 0.6+ | 0.1+ | 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 10 01 | 704 | (1.3− | 2.2+) |
| 1991 04 21 | 691 | 0.1− | 0.7+ | 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 10 01 | 704 | 1.4+ | 0.3+ |
| 1991 04 21 | 691 | 0.2+ | 0.6+ | 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.1− | 0.6+ |
| 2000 04 04 | 699 | 0.5− | 0.5+ | 2002 12 31 | 704 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.4+ | 1.3+ |
| 2000 04 04 | 699 | (2.1+ | 1.7+) | 2002 12 31 | 704 | 0.6+ | 0.5− | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2000 04 04 | 699 | 0.1− | 0.5+ | 2002 12 31 | 704 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2000 04 04 | 699 | 1.2− | 0.3− | 2002 12 31 | 704 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2001 07 25 | 608 | 0.3− | 1.3+ | 2004 02 17 | 691 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 07 25 | 608 | 1.0− | 1.3+ | 2004 02 17 | 691 | 0.5− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2001 07 25 | 608 | 0.3− | 1.4+ | 2004 02 17 | 691 | 0.6− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 08 11 | 608 | 0.3− | 0.4− | 2004 02 18 | 291 | 0.8+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 08 11 | 608 | 0.4− | 0.5− | 2004 02 18 | 291 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 08 11 | 608 | 0.4− | 0.2− | 2004 02 18 | 291 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 08 14 | 644 | 0.1+ | 0.0 | 2004 02 21 | 291 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 08 14 | 644 | 0.0 | 0.3− | 2004 02 21 | 291 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 08 14 | 644 | 0.2+ | 0.1+ | 2004 02 21 | 291 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 08 19 | 704 | 0.8+ | 0.3+ | 2005 02 16 | 809 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 08 19 | 704 | 0.2+ | 0.1− | 2005 02 16 | 809 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 08 19 | 704 | 0.7+ | 0.1− | 2005 02 16 | 809 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 08 27 | 644 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 08 27 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 16 | 703 | 1.0− | 0.5− |
| 2001 08 27 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 10 16 | 703 | 1.3− | 0.5+ |
| 2001 09 11 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2001 09 11 | 704 | (0.5+ | 1.5−) | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2001 09 11 | 704 | (0.8+ | 1.7−) | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 09 11 | 704 | (0.2− | 2.1−) | 2006 09 20 | 644 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 704 | (1.6− | 1.3−) | 2006 09 21 | 699 | (2.0− | 0.9−) | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 1.4+ | 2006 09 21 | 699 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 1.3+ | 0.1− | 2006 09 21 | 699 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 1.4+ | 0.4+ | 2006 09 21 | 699 | 1.0+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | (0.3+ | 1.8+) | 2006 09 25 | 699 | (1.9− | 1.0+) | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2002 12 10 | 704 | (2.2− | 0.5−) | 2006 09 25 | 699 | 0.2− | 0.8+ | 2006 10 22 | 703 | 0.3+ | 0.3+ |
| 2002 12 10 | 704 | 0.3− | 0.4− | 2006 09 25 | 699 | 0.7− | 0.1+ | 2006 10 22 | 703 | 0.9− | 1.0+ |
| 2002 12 10 | 704 | (2.1− | 0.8−) | 2006 09 25 | 699 | 0.9+ | 0.9+ | 2006 10 22 | 703 | 0.0 | 0.5− |
| 2002 12 10 | 704 | 0.7− | 0.4− | 2006 09 29 | 699 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.7− | 0.4+ |
| 2002 12 10 | 704 | 1.1− | 1.0− | 2006 09 29 | 699 | 0.6− | 0.1+ | 2006 10 22 | 703 | 1.1− | 0.0 |
| 2002 12 10 | 704 | 0.1− | 0.7+ | 2006 09 29 | 699 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2002 12 10 | 704 | 1.0− | 0.1+ | 2006 09 29 | 699 | 0.9− | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 11 01 | H55 | 0.7+ | 0.5− |
| 2002 12 10 | 704 | 1.1− | 0.5− | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 01 | H55 | 1.1+ | 0.7+ |
| 2002 12 11 | 704 | 0.4+ | 0.9− | 2006 09 30 | 703 | 0.9+ | 0.0 | 2006 11 01 | H55 | 1.3+ | 1.3+ |
| 2002 12 11 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.3− | | | | |

**(139491)∗ 2001 PF$_{26}$**

Discovered 2001 Aug. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.78071 | | (2000.0) | | | |
| $n$ | 0.21432357 | $\omega$ | 222.24928 | | +0.97927736 | −0.12114060 |
| $a$ | 2.7653882 | $\Omega$ | 143.73957 | | +0.15002107 | +0.97225107 |
| $e$ | 0.2916042 | $i$ | 15.92655 | | −0.13604971 | +0.20013199 |
| $P$ | 4.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 25 | 644 | 0.2+ | 0.6+ | 2001 08 25 | 699 | 0.2− | 0.9+ | 2005 07 06 | 291 | 0.3+ | 0.2+ |
| 2001 06 25 | 644 | 0.3+ | 0.2+ | 2001 09 11 | 704 | 0.4+ | 0.5− | 2005 07 06 | 291 | 0.2+ | 0.1+ |
| 2001 06 25 | 644 | 0.3+ | 0.5+ | 2001 09 11 | 704 | 0.2+ | 0.4− | 2005 07 06 | 291 | 0.2+ | 0.3− |
| 2001 07 19 | 699 | 0.6+ | 0.6+ | 2001 09 11 | 704 | 0.1+ | 0.1− | 2006 10 23 | 703 | 0.1+ | 0.0 |
| 2001 07 19 | 699 | 1.0+ | 0.2+ | 2001 09 11 | 704 | 0.5+ | 0.2− | 2006 10 23 | 703 | 0.4− | 0.0 |
| 2001 07 19 | 699 | 0.4+ | 0.9+ | 2001 09 11 | 704 | 0.3+ | 0.2− | 2006 10 23 | 703 | 0.4− | 0.5+ |
| 2001 07 19 | 699 | 0.5+ | 0.3− | 2001 09 17 | 699 | 0.2+ | 0.2− | 2006 10 23 | 703 | 0.2+ | 0.1+ |
| 2001 08 11 | 608 | 0.2+ | 0.7− | 2001 09 17 | 699 | 0.3− | 0.4− | 2006 10 30 | 703 | 0.1− | 0.4− |
| 2001 08 11 | 608 | 0.2+ | 0.7− | 2001 09 17 | 699 | 0.0 | 0.4− | 2006 10 30 | 703 | 0.1− | 0.1− |
| 2001 08 11 | 608 | 0.2− | 0.6− | 2001 09 17 | 699 | 0.4− | 0.3+ | 2006 10 30 | 703 | 0.3+ | 0.3− |
| 2001 08 14 | 608 | 0.2− | 0.8+ | 2001 10 07 | 644 | 0.1− | 0.3− | 2006 10 30 | 703 | 0.3+ | 0.5+ |
| 2001 08 14 | 608 | 0.2− | 0.6+ | 2001 10 07 | 644 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.4− | 0.5+ |
| 2001 08 14 | 608 | 0.3− | 0.6+ | 2001 10 07 | 644 | 0.5− | 0.0 | 2006 11 16 | 703 | 0.8− | 0.3+ |
| 2001 08 16 | 704 | 0.1− | 0.4+ | 2003 03 11 | 291 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.7− | 0.1+ |
| 2001 08 16 | 704 | 0.9+ | 0.7+ | 2003 03 11 | 291 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.5+ | 0.3+ |
| 2001 08 16 | 704 | 0.5− | 0.6+ | 2003 03 11 | 291 | 0.3+ | 0.6+ | 2006 11 22 | 703 | 0.0 | 0.4+ |
| 2001 08 16 | 704 | 0.1− | 0.6+ | 2005 06 24 | 644 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.2− | 0.3+ |
| 2001 08 19 | 704 | 0.8− | 0.3+ | 2005 06 24 | 644 | 0.1− | 0.1− | 2006 11 22 | 703 | 0.3+ | 0.7+ |
| 2001 08 19 | 704 | 1.0− | 0.2− | 2005 06 24 | 644 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.1+ | 0.9+ |
| 2001 08 19 | 704 | 0.7+ | 0.1− | 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 12 01 | 703 | 1.4+ | 0.1− |
| 2001 08 19 | 704 | 0.1− | 0.5− | 2005 07 05 | 691 | 0.4− | 1.0+ | 2006 12 01 | 703 | 1.2− | 0.0 |
| 2001 08 25 | 699 | 0.9− | 0.7+ | 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 12 01 | 703 | 0.1+ | 0.6+ |
| 2001 08 25 | 699 | 0.3− | 0.1− | 2005 07 05 | 413 | 0.3− | 0.1+ | 2006 12 01 | 703 | 0.3− | 0.0 |
| 2001 08 25 | 699 | 0.1− | 0.1− | 2005 07 05 | 413 | 0.1− | 0.2− | | | | |

**(139492)∗ 2001 PK$_{26}$**

Discovered 2001 Aug. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.30529 | | (2000.0) | | | |
| $n$ | 0.19109939 | $\omega$ | 235.29051 | | +0.92766313 | −0.34315546 |
| $a$ | 2.9851295 | $\Omega$ | 144.12689 | | +0.36757560 | +0.90863177 |
| $e$ | 0.1753032 | $i$ | 14.55445 | | −0.06579737 | +0.23797612 |
| $P$ | 5.16 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 0.2+ | 1.1+ | 2001 09 12 | 704 | 0.2− | 0.1− | 2006 08 16 | 644 | 0.3− | 0.1− |
| 2001 07 19 | 699 | 0.1− | 0.6+ | 2001 09 12 | 704 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.1− |
| 2001 07 19 | 699 | 0.1− | 0.6+ | 2001 09 12 | 704 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.1− | 0.1+ |
| 2001 07 19 | 699 | 0.2+ | 0.4− | 2001 09 12 | 704 | 0.1− | 0.3− | 2006 08 17 | 644 | 0.1− | 0.0 |
| 2001 08 11 | 608 | 0.6− | 0.8− | 2001 09 12 | 704 | 0.1+ | 0.3− | 2006 08 17 | 644 | 0.1− | 0.1− |
| 2001 08 11 | 608 | 0.5− | 0.7− | 2001 09 17 | 699 | 0.2+ | 0.9+ | 2006 08 19 | 699 | 0.5+ | 0.3+ |
| 2001 08 11 | 608 | 0.4− | 0.6− | 2001 09 17 | 699 | 0.8− | 0.8+ | 2006 08 19 | 699 | 0.1− | 0.2+ |
| 2001 08 14 | 608 | 0.2+ | 0.4+ | 2001 09 17 | 699 | 0.8+ | 0.6+ | 2006 08 19 | 699 | 0.2− | 0.3+ |
| 2001 08 14 | 608 | 0.7+ | 0.4+ | 2001 09 17 | 699 | 0.3+ | 0.7+ | 2006 08 19 | 699 | 0.2− | 0.4+ |
| 2001 08 14 | 608 | 0.1+ | 0.3+ | 2001 09 25 | 704 | 0.6− | 0.7− | 2006 08 21 | 644 | 0.2− | 0.0 |
| 2001 08 16 | 704 | 1.0− | 0.0 | 2001 09 25 | 704 | 0.5+ | 1.6− | 2006 08 21 | 644 | 0.1− | 0.0 |
| 2001 08 16 | 704 | 2.0− | 0.5+ | 2001 09 25 | 704 | 0.0 | 0.9− | 2006 08 21 | 644 | 0.1+ | 0.2+ |
| 2001 08 16 | 704 | 0.9− | 0.4+ | 2001 09 25 | 704 | 0.8− | 0.6− | 2006 08 21 | 644 | 0.1− | 0.2− |
| 2001 08 16 | 704 | 0.8− | 0.7+ | 2001 09 25 | 704 | 0.4+ | 1.0− | 2006 08 21 | 644 | 0.1− | 0.0 |
| 2001 08 18 | 704 | 1.0− | 0.5+ | 2001 10 10 | 644 | 0.3+ | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.1− |
| 2001 08 18 | 704 | 1.3− | 0.3− | 2001 10 10 | 644 | 0.4+ | 0.5+ | 2006 08 29 | 704 | 0.4+ | 0.5− |
| 2001 08 18 | 704 | 0.2+ | 0.0 | 2001 10 10 | 644 | 0.0 | 0.4+ | 2006 08 29 | 704 | 0.2− | 0.5+ |
| 2001 08 18 | 704 | 0.1− | 0.2+ | 2001 10 16 | 644 | 0.0 | 0.5− | 2006 08 29 | 704 | 0.3− | 0.4+ |
| 2001 08 19 | 704 | 1.5+ | 0.7+ | 2001 10 16 | 644 | 0.0 | 0.3− | 2006 08 29 | 704 | 0.1+ | 0.0 |
| 2001 08 19 | 704 | 0.7+ | 1.9+ | 2001 10 16 | 644 | 0.3− | 0.4− | 2006 08 29 | 704 | 0.0 | 0.1+ |
| 2001 08 19 | 704 | 0.6+ | 0.4+ | 2002 12 14 | 704 | 0.0 | 0.8+ | 2006 08 31 | 704 | 0.2− | 0.0 |
| 2001 08 25 | 704 | 1.2+ | 0.1+ | 2002 12 14 | 704 | 0.4− | 0.1+ | 2006 08 31 | 704 | 1.0+ | 0.1− |
| 2001 08 25 | 644 | 0.3+ | 0.7+ | 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.7+ | 0.5− |
| 2001 08 25 | 704 | 0.4− | 0.4+ | 2004 03 18 | 691 | 0.3+ | 0.3+ | 2006 08 31 | 704 | 0.5+ | 0.6− |
| 2001 08 25 | 644 | 0.3+ | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.5+ | 2006 09 17 | 704 | 1.5+ | 0.1− |
| 2001 08 25 | 704 | 0.3− | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.3+ | 0.3+ | 2005 05 01 | 691 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.3+ | 0.4− |
| 2001 08 25 | 644 | 0.2+ | 0.5+ | 2005 05 01 | 691 | 0.0 | 0.6+ | 2006 09 17 | 704 | 0.1− | 0.4− |
| 2001 08 25 | 704 | 0.2+ | 0.0 | 2005 05 01 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.0 | 0.2+ |
| 2001 08 25 | 699 | 0.5+ | 0.6+ | 2005 05 13 | 703 | 0.3− | 1.0− | 2006 09 18 | 699 | 1.4− | 0.7+ |
| 2001 08 25 | 699 | 0.4− | 0.2+ | 2005 05 13 | 703 | 0.3− | 1.8− | 2006 09 18 | 699 | 0.7− | 0.3+ |
| 2001 08 25 | 699 | 1.2+ | 0.2+ | 2005 05 13 | 703 | (2.2− | 1.0−) | 2006 09 18 | 699 | 0.1+ | 0.1− |
| 2001 08 25 | 699 | 0.4+ | 0.7+ | 2005 05 13 | 703 | 1.1− | 0.2− | 2006 09 22 | 704 | 0.1+ | 0.6− |
| 2001 08 25 | 699 | 0.1+ | 0.6+ | 2006 07 25 | 644 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.2− | 1.1− |
| 2001 08 25 | 699 | 1.2− | 0.4− | 2006 07 25 | 644 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.2− | 1.5− |
| 2001 08 25 | 699 | 0.8+ | 0.4+ | 2006 07 25 | 644 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.3+ | 1.6− |
| 2001 08 25 | 699 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.3− | | | | |

**(139493)∗ 2001 $PL_{28}$ = 2004 $FW_{162}$ = 2005 $MJ_8$**

Discovered 2001 Aug. 14 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 84726), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.82042 | | (2000.0) | | | |
| $n$ | 0.24235678 | $\omega$ | 76.11455 | | +0.66940956 | +0.74283142 |
| $a$ | 2.5478035 | $\Omega$ | 235.91114 | | −0.68599334 | +0.61312169 |
| $e$ | 0.1288667 | $i$ | 0.66476 | | −0.28513854 | +0.26885548 |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 1.0+ | 0.8+ | 2001 09 07 | 704 | 0.2+ | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.2− |
| 2000 03 10 | 704 | 0.3− | 0.4− | 2001 09 07 | 704 | 0.3+ | 0.6+ | 2005 07 07 | 691 | 0.1− | 0.0 |
| 2000 03 10 | 704 | 0.8+ | 0.8+ | 2001 09 07 | 704 | 0.7− | 1.1+ | 2005 07 07 | 691 | 0.1+ | 0.0 |
| 2000 03 10 | 704 | 1.6+ | 0.7+ | 2001 09 07 | 704 | 0.3+ | 1.2+ | 2005 07 11 | 699 | (0.5− | 1.7+) |
| 2000 03 10 | 704 | 0.1+ | 0.7+ | 2001 09 07 | 704 | 1.0− | 1.2+ | 2005 07 11 | 699 | 0.6− | 1.1+ |
| 2001 08 14 | 608 | 0.7+ | 0.2+ | 2004 02 26 | 704 | (1.8+ | 2.1+) | 2005 07 11 | 699 | 0.7− | 0.0 |
| 2001 08 14 | 608 | 0.4+ | 0.3+ | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2005 07 11 | 699 | 0.3− | 0.6− |
| 2001 08 14 | 608 | 0.7+ | 0.2+ | 2004 02 26 | 704 | 0.6+ | 0.4− | 2005 07 12 | 703 | 0.4− | 0.6− |
| 2001 08 15 | 608 | 0.2− | 0.0 | 2004 03 20 | 608 | 0.9+ | 0.2− | 2005 07 12 | 703 | 0.1− | 0.1+ |
| 2001 08 15 | 608 | 0.4+ | 0.1+ | 2004 03 20 | 608 | 0.2+ | 0.1+ | 2005 07 12 | 703 | 1.4− | 0.5+ |
| 2001 08 15 | 608 | 0.1+ | 0.2+ | 2004 03 20 | 608 | 0.5+ | 0.4+ | 2005 07 12 | 703 | 0.1− | 0.3+ |
| 2001 08 15 | 608 | 0.4− | 0.0 | 2004 03 23 | 691 | 0.1− | 0.6+ | 2005 07 18 | 644 | 0.1− | 0.2− |
| 2001 08 15 | 608 | 0.1− | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2005 07 18 | 644 | 0.3− | 0.1− |
| 2001 08 15 | 608 | 0.4− | 0.0 | 2004 03 23 | 691 | 0.4+ | 0.4+ | 2005 07 18 | 644 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.2− | 1.0+ | 2004 04 13 | 691 | 0.2− | 0.4+ | 2005 08 02 | 704 | 0.4+ | 0.0 |
| 2001 08 16 | 704 | 0.2− | 1.1+ | 2004 04 13 | 691 | 0.0 | 0.5+ | 2005 08 02 | 704 | 1.0+ | 0.4− |
| 2001 08 16 | 704 | 0.3− | 0.9+ | 2004 04 13 | 691 | 0.2− | 0.5+ | 2005 08 02 | 704 | 0.0 | 0.3+ |
| 2001 08 16 | 704 | 0.2+ | 0.8+ | 2005 06 27 | 691 | 0.1+ | 0.0 | 2005 08 02 | 704 | 0.1+ | 0.2+ |
| 2001 08 16 | 704 | 0.5− | 1.3+ | 2005 06 27 | 691 | 0.1− | 0.0 | 2005 08 06 | 704 | 0.3+ | 0.9− |
| 2001 08 18 | 704 | 0.3+ | 0.0 | 2005 06 27 | 691 | 0.2+ | 0.2+ | 2005 08 06 | 704 | 1.0+ | 0.4+ |
| 2001 08 18 | 704 | 0.3− | 0.1− | 2005 06 28 | 644 | 0.1+ | 0.0 | 2005 08 06 | 704 | 0.2+ | 0.5− |
| 2001 08 18 | 704 | 0.6− | 1.2+ | 2005 06 28 | 644 | 0.3− | 0.2− | 2005 09 29 | G96 | 0.0 | 0.1− |
| 2001 08 19 | 704 | 0.5− | 0.4− | 2005 06 28 | 644 | 0.2+ | 0.6− | 2005 09 29 | G96 | 0.5− | 0.2+ |
| 2001 08 19 | 704 | 1.1− | 0.1− | 2005 07 02 | 691 | 0.2− | 0.4+ | 2005 09 29 | G96 | 0.0 | 0.0 |
| 2001 08 19 | 704 | 0.2+ | 1.3+ | 2005 07 02 | 691 | 0.4+ | 0.4+ | 2005 09 29 | G96 | 0.5− | 0.1+ |
| 2001 08 19 | 704 | (1.8− | 0.8+) | 2005 07 02 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2001 08 24 | 699 | 0.3+ | 1.2+ | 2005 07 03 | G96 | 0.3− | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.8+ |
| 2001 08 24 | 691 | 0.2− | 0.2− | 2005 07 03 | G96 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.8− | 0.4+ |
| 2001 08 24 | 699 | 0.2− | 0.5+ | 2005 07 03 | G96 | 0.4− | 0.2− | 2006 11 25 | 691 | 0.3+ | 0.6+ |
| 2001 08 24 | 691 | 0.2− | 0.3− | 2005 07 03 | G96 | 0.4− | 0.4− | 2006 11 25 | 691 | 0.3+ | 0.4+ |
| 2001 08 24 | 699 | 0.0 | 0.3+ | 2005 07 07 | 691 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2001 08 24 | 691 | 0.2− | 0.2− | 2005 07 07 | 691 | 0.1+ | 0.1+ | | | | |
| 2001 08 24 | 699 | (1.6− | 0.5−) | 2005 07 07 | 691 | 0.2+ | 0.0 | | | | |

**(139494)∗ 2001 $PE_{31}$ = 2000 $HY_{93}$**

Discovered 2001 Aug. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 15951)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.35773 | | (2000.0) | | | |
| $n$ | 0.22451183 | $\omega$ | 327.29473 | | −0.98788155 | +0.07348664 |
| $a$ | 2.6810808 | $\Omega$ | 217.66868 | | −0.04124350 | −0.97343339 |
| $e$ | 0.0265141 | $i$ | 12.92728 | | −0.14962960 | −0.21685743 |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.2+ | 1.1+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2000 04 29 | 704 | 0.5+ | 1.4+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2000 04 29 | 704 | 0.0 | 1.0+ | 2002 12 03 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 04 29 | 704 | 0.1+ | 0.1+ | 2002 12 03 | 644 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2000 05 07 | 704 | 0.3+ | 0.1+ | 2002 12 03 | 644 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2000 05 07 | 704 | 0.0 | 1.1+ | 2002 12 05 | 608 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2000 05 07 | 704 | 0.7− | 0.2+ | 2002 12 05 | 608 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 05 07 | 704 | 1.2+ | 0.3+ | 2002 12 05 | 608 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.7+ | 0.1− |
| 2001 07 31 | 644 | 1.0− | 0.0 | 2004 03 16 | 703 | 1.1− | 1.4+ | 2006 11 11 | 703 | 0.6+ | 0.3+ |
| 2001 07 31 | 644 | 0.6− | 0.1+ | 2004 03 16 | 703 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.5− | 1.4− |
| 2001 07 31 | 644 | 0.4− | 0.4+ | 2004 03 16 | 703 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2001 08 10 | 644 | 0.3− | 0.6+ | 2004 03 16 | 703 | 1.1− | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.4+ |
| 2001 08 10 | 644 | 0.0 | 0.9+ | 2004 03 17 | 704 | 0.1− | 1.0− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2001 08 10 | 644 | 0.3− | 0.6+ | 2004 03 17 | 704 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2001 08 16 | 644 | 0.0 | 0.5+ | 2004 03 17 | 704 | 0.0 | 0.8− | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2001 08 16 | 644 | 0.0 | 0.3+ | 2004 03 20 | 608 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.4+ |
| 2001 08 16 | 644 | 0.1+ | 0.4+ | 2004 03 20 | 608 | 0.6+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 08 21 | 644 | 0.0 | 0.8+ | 2004 03 20 | 608 | 0.5+ | 0.5− | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 08 21 | 644 | 0.5+ | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2001 08 21 | 644 | 0.1+ | 0.8+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2001 09 25 | 704 | 0.7− | 1.1+ | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.1− | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.5− | 1.1− | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.3+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.3− |

**(139495)∗ 2001 $PF_{31}$**

Discovered 2001 Aug. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.94610 | | (2000.0) | | | |
| $n$ | 0.21957945 | $\omega$ | 101.62101 | | +0.91367442 | +0.36045435 |
| $a$ | 2.7210817 | $\Omega$ | 237.51264 | | −0.40143063 | +0.87265650 |
| $e$ | 0.2102903 | $i$ | 12.86474 | | +0.06365928 | +0.32945910 |
| $P$ | 4.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 18 | 691 | 0.1+ | 0.2− | 2001 08 24 | 704 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1998 01 18 | 691 | 0.3− | 0.6− | 2001 08 30 | 644 | (3.3− | 3.2−) | 2006 10 31 | G96 | 0.0 | 0.3− |
| 1998 01 18 | 691 | 0.3+ | 0.8− | 2001 08 30 | 644 | (3.2− | 3.0−) | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 06 19 | 608 | 0.1+ | 0.8− | 2001 08 30 | 644 | (2.6− | 3.1−) | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 06 19 | 608 | 0.4− | 0.9− | 2001 09 17 | 704 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2001 06 19 | 608 | 0.1− | 0.6− | 2001 09 17 | 704 | 0.5+ | 0.6+ | 2006 11 10 | 691 | 0.7− | 0.0 |
| 2001 07 19 | 699 | 0.2− | 0.0 | 2001 09 17 | 704 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2001 07 19 | 699 | 0.7− | 0.7+ | 2001 09 21 | 699 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2001 07 19 | 699 | 0.1+ | 0.3+ | 2001 09 21 | 699 | 0.6− | 0.9+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 07 19 | 699 | 0.2− | 0.6+ | 2001 09 21 | 699 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.8+ |
| 2001 07 31 | 644 | 0.2+ | 0.6+ | 2001 09 21 | 699 | 0.8− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2001 07 31 | 644 | 0.3+ | 0.5+ | 2001 10 16 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.6+ |
| 2001 07 31 | 644 | 0.2+ | 0.5+ | 2001 10 16 | 704 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.8+ | 0.1+ |
| 2001 08 10 | 644 | 0.6+ | 0.3− | 2001 10 16 | 704 | 0.6+ | 0.4+ | 2006 11 18 | 691 | 0.2+ | 0.4+ |
| 2001 08 10 | 644 | 0.2− | 0.2− | 2001 10 16 | 704 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2001 08 10 | 644 | 0.6+ | 0.4− | 2001 11 18 | 704 | 0.8− | 0.7+ | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2001 08 10 | 644 | 0.4− | 0.2− | 2001 11 18 | 704 | 0.4+ | 0.9+ | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2001 08 10 | 644 | 0.0 | 0.3− | 2001 11 18 | 704 | 0.6+ | 1.0+ | 2006 11 18 | 704 | (1.6+ | 1.2+) |
| 2001 08 10 | 644 | 0.2− | 0.1− | 2001 11 18 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | (0.5+ | 1.7+) |
| 2001 08 16 | 644 | 0.2+ | 0.3− | 2001 11 18 | 704 | 0.2+ | 0.8− | 2006 11 18 | 704 | (0.6+ | 1.8+) |
| 2001 08 16 | 644 | 0.2− | 0.4+ | 2005 06 05 | 704 | 0.2+ | 0.9+ | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2001 08 16 | 644 | 0.2+ | 0.2− | 2005 06 05 | 704 | (0.7− | 1.7+) | 2006 11 19 | 704 | 0.4− | 0.9+ |
| 2001 08 16 | 644 | 0.2− | 0.4+ | 2005 06 05 | 704 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.6+ |
| 2001 08 16 | 644 | 0.3+ | 0.1− | 2005 06 05 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 704 | (1.6− | 1.7−) |
| 2001 08 16 | 644 | 0.2− | 0.4+ | 2005 07 05 | 644 | 0.2− | 0.6− | 2006 11 19 | 704 | 1.2− | 1.2+ |
| 2001 08 18 | 699 | 0.2− | 0.2+ | 2005 07 05 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 2001 08 18 | 699 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | (0.9+ | 2.1+) |
| 2001 08 18 | 699 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.2+ | 0.2− |
| 2001 08 18 | 699 | 0.6+ | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 11 21 | 704 | (0.7+ | 2.6+) |
| 2001 08 20 | 916 | 0.1+ | 0.7− | 2006 10 04 | G96 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2001 08 20 | 916 | 0.6− | 0.0 | 2006 10 19 | 691 | 0.6+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2001 08 20 | 916 | 1.1− | 0.7− | 2006 10 19 | 691 | 0.7+ | 0.1− | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2001 08 21 | 916 | 0.4− | 0.5− | 2006 10 19 | 691 | 0.4+ | 0.1− | 2006 11 27 | 703 | 0.2− | 0.2+ |
| 2001 08 21 | 916 | 0.9− | 0.7− | 2006 10 23 | 691 | 0.1− | 0.5− | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2001 08 21 | 916 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.2− | 0.8+ |
| 2001 08 21 | 704 | 1.2+ | 1.1− | 2006 10 23 | 691 | 0.7− | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2001 08 21 | 704 | 0.2− | 1.1− | 2006 10 28 | 704 | 0.3+ | 0.6− | 2006 11 29 | 704 | 0.0 | 0.1− |
| 2001 08 21 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 704 | 0.8− | 0.5− | 2006 11 29 | 704 | 0.5− | 0.2− |
| 2001 08 24 | 704 | 0.1− | 0.3− | 2006 10 28 | 704 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.6− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.1− | 0.1− | 2006 10 28 | 704 | 1.4− | 0.5− | 2006 11 29 | 704 | 0.1− | 0.9+ |
| 2001 08 24 | 704 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− | | | | |

**(139496)∗ 2001 PJ$_{31}$**

Discovered 2001 Aug. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.55496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23125283 | $\omega$ | 51.96931 | | +0.11130044 | +0.98334391 | |
| $a$ | 2.6287221 | $\Omega$ | 225.09035 | | −0.96348448 | +0.07134003 | |
| $e$ | 0.1343398 | $i$ | 11.70597 | | −0.24353616 | +0.16716861 | |
| $P$ | 4.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.1− | 0.1− | 2001 10 16 | 704 | 0.7+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.5− |
| 1993 10 12 | 691 | 0.3+ | 0.4− | 2001 10 16 | 704 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 1993 10 12 | 691 | 0.1− | 0.2− | 2001 10 16 | 704 | 0.3+ | 0.7− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2000 04 07 | 704 | 0.8+ | 1.3+ | 2001 10 16 | 608 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2000 04 07 | 704 | 0.9− | 1.1+ | 2001 10 16 | 608 | 0.2− | 0.6− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 04 07 | 704 | 0.4+ | 0.7+ | 2001 10 16 | 608 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2000 04 07 | 704 | 0.3− | 0.2+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2000 04 07 | 704 | 0.3+ | 0.7− | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 06 30 | 699 | 0.2− | 0.2+ | 2004 02 19 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.4+ |
| 2001 06 30 | 699 | 0.2− | 0.1− | 2004 02 19 | 704 | 0.0 | 0.9− | 2006 11 11 | 703 | 1.0− | 0.4+ |
| 2001 06 30 | 699 | 1.4− | 0.1+ | 2004 02 19 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2001 06 30 | 699 | 0.3− | 1.1+ | 2004 02 19 | 704 | 0.1− | 1.3+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2001 07 20 | 699 | 0.1+ | 0.5− | 2004 03 13 | 644 | 0.2+ | 0.7+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2001 07 20 | 699 | 0.1− | 0.5+ | 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2001 07 20 | 699 | 0.6+ | 0.4+ | 2004 03 13 | 644 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2001 07 20 | 699 | 0.3+ | 0.3− | 2004 03 16 | 704 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2001 07 31 | 644 | 0.2− | 0.3+ | 2004 03 16 | 704 | 0.6+ | 0.7+ | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2001 07 31 | 644 | 0.2− | 0.0 | 2004 03 16 | 704 | 1.0+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2001 07 31 | 644 | 0.5− | 0.1+ | 2004 03 16 | 704 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 1.3+ | 1.0− |
| 2001 08 10 | 644 | 0.3− | 0.7+ | 2004 03 16 | 704 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2001 08 10 | 644 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.8− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2001 08 10 | 644 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2001 08 16 | 644 | 0.4− | 0.3+ | 2006 08 29 | 703 | 0.7− | 0.6− | 2006 11 18 | 704 | (1.7+ | 0.3−) |
| 2001 08 16 | 644 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.9− | 0.7+ | 2006 11 18 | 704 | (0.0 | 1.5+) |
| 2001 08 16 | 644 | 0.3− | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2001 08 23 | 699 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.2− | 1.0+ |
| 2001 08 23 | 699 | 1.0+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2001 08 23 | 699 | 0.5+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2001 08 23 | 699 | 0.8+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 1.0+ |
| 2001 08 30 | 644 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 1.1+ | 0.0 |
| 2001 08 30 | 644 | 0.0 | 0.7+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 1.1− | 0.7− |
| 2001 08 30 | 644 | 0.0 | 1.0+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2001 09 08 | 699 | 0.4− | 1.3+ | 2006 10 16 | 691 | 0.9+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2001 09 08 | 699 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.7+ | 1.0+ |
| 2001 09 08 | 699 | 0.7− | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.4− |
| 2001 09 08 | 699 | 0.8+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.8+ | 0.8+ |
| 2001 09 19 | 704 | 0.4+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.7− | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | | | |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.4− | 0.2− | | | | |

**(139497)∗ 2001 PC$_{34}$**

Discovered 2001 Aug. 10 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.61046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21876643 | $\omega$ | 281.20707 | | −0.64322765 | +0.74848174 | |
| $a$ | 2.7278193 | $\Omega$ | 307.53127 | | −0.59881984 | −0.62308007 | |
| $e$ | 0.1073794 | $i$ | 11.73938 | | −0.47715091 | −0.22703812 | |
| $P$ | 4.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 608 | 0.2+ | 0.2+ | 2003 12 21 | 704 | (1.5+ | 0.9+) | 2004 02 18 | 704 | 0.7+ | 0.3+ |
| 2001 08 10 | 608 | 1.0− | 0.1− | 2003 12 21 | 704 | 0.0 | 1.3− | 2004 02 19 | 608 | 1.0+ | 0.9+ |
| 2001 08 10 | 608 | 0.3− | 0.2− | 2003 12 21 | 704 | (1.8+ | 0.5+) | 2004 02 19 | 608 | 0.7+ | 0.1+ |
| 2001 08 16 | 644 | 0.0 | 0.4+ | 2003 12 21 | 704 | 0.9+ | 0.2− | 2004 02 19 | 608 | 0.4+ | 0.7+ |
| 2001 08 16 | 644 | 0.2− | 0.6+ | 2004 01 05 | 699 | 1.1+ | 0.6− | 2004 02 23 | 704 | 0.6+ | 0.1+ |
| 2001 08 16 | 644 | 0.1+ | 0.7+ | 2004 01 05 | 699 | 0.7+ | 0.3− | 2004 02 23 | 704 | 0.6+ | 0.2− |
| 2001 08 24 | 699 | 0.1− | 0.1+ | 2004 01 05 | 699 | 0.3+ | 0.3− | 2004 02 23 | 704 | (1.8+ | 0.3+) |
| 2001 08 24 | 699 | 0.4+ | 0.6+ | 2004 01 05 | 699 | 0.6− | 0.4− | 2004 02 23 | 704 | 0.8+ | 0.3− |
| 2001 08 24 | 699 | 0.5+ | 0.0 | 2004 01 23 | 699 | 0.4+ | 0.1+ | 2004 03 15 | 704 | 1.4− | 0.1+ |
| 2001 08 24 | 699 | 0.4+ | 0.1− | 2004 01 23 | 699 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.2− | 0.2+ |
| 2001 08 30 | 644 | 0.7− | 0.4+ | 2004 01 23 | 699 | 0.3+ | 0.5+ | 2004 03 15 | 704 | 1.1− | 0.7− |
| 2001 08 30 | 644 | 0.8− | 0.2+ | 2004 01 23 | 699 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.5− |
| 2001 08 30 | 644 | 0.3− | 0.3+ | 2004 01 24 | 704 | 0.6− | 0.7+ | 2004 03 15 | 704 | 1.4− | 0.3− |
| 2001 09 08 | 704 | 0.6+ | 0.5+ | 2004 01 24 | 704 | 1.1− | 1.0+ | 2004 03 19 | 704 | 0.2+ | 0.7+ |
| 2001 09 08 | 704 | 0.3+ | 0.6+ | 2004 01 24 | 704 | 0.7− | 0.9+ | 2004 03 19 | 704 | 0.1− | 1.5+ |
| 2001 09 08 | 704 | 0.3− | 0.9+ | 2004 01 29 | 704 | 0.5+ | 1.5+ | 2004 03 19 | 704 | 0.0 | 0.1− |
| 2001 09 08 | 704 | 1.2− | 0.9+ | 2004 01 29 | 704 | 1.2+ | 0.5+ | 2004 03 19 | 704 | 1.1− | 1.4+ |
| 2001 09 08 | 704 | 0.4+ | 0.7+ | 2004 01 29 | 704 | 0.2− | 0.1− | 2006 08 29 | 699 | 0.4− | 1.1+ |
| 2001 09 09 | 704 | 0.4+ | 0.9+ | 2004 01 29 | 704 | 1.0+ | 0.5+ | 2006 08 29 | 699 | 0.4+ | 0.7− |
| 2001 09 09 | 704 | 0.3− | 1.4+ | 2004 01 29 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 699 | 0.9− | 0.7+ |
| 2001 09 09 | 704 | 0.7− | 1.4+ | 2004 02 12 | 333 | 0.2+ | 0.1+ | 2006 08 29 | 699 | 0.8+ | 1.1− |
| 2001 09 12 | 704 | 0.9+ | 0.1+ | 2004 02 12 | 333 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.3+ |
| 2001 09 12 | 704 | 1.0− | 0.7+ | 2004 02 12 | 333 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.2− | 2004 02 12 | 333 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.7− | 0.8− |
| 2001 09 20 | 704 | 0.8− | 0.4+ | 2004 02 12 | 333 | 0.3+ | 0.9+ | 2006 09 16 | 703 | 0.3− | 0.5+ |
| 2001 09 20 | 704 | 0.7− | 0.8− | 2004 02 12 | 333 | 0.5− | 0.6+ | 2006 09 22 | 699 | 0.4+ | 0.4+ |
| 2001 09 20 | 704 | 1.0− | 0.4− | 2004 02 17 | 333 | 0.2− | 0.1+ | 2006 09 22 | 699 | 0.8− | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2004 02 17 | 333 | 0.6− | 0.3+ | 2006 09 22 | 699 | 0.2− | 0.3+ |
| 2002 12 03 | 644 | 0.5+ | 0.5− | 2004 02 17 | 333 | 0.3− | 0.6+ | 2006 09 22 | 699 | 0.6− | 0.4+ |
| 2002 12 03 | 644 | 0.4+ | 0.3− | 2004 02 17 | 691 | 0.3+ | 0.0 | 2006 10 16 | 104 | 0.2+ | 0.0 |
| 2002 12 03 | 644 | 0.4+ | 0.2− | 2004 02 17 | 691 | 0.2+ | 0.0 | 2006 10 16 | 104 | 0.8+ | 0.9+ |
| 2002 12 06 | 704 | 0.6− | 1.1− | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 10 16 | 104 | 0.1+ | 0.3− |
| 2002 12 06 | 704 | 0.8− | 1.0− | 2004 02 18 | 704 | 0.9+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2002 12 06 | 704 | 0.3− | 0.4+ | 2004 02 18 | 704 | 0.5+ | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 12 06 | 704 | 0.4+ | 1.0− | 2004 02 18 | 704 | 0.7+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |

**(139498)∗ 2001 PJ$_{34}$**

Discovered 2001 Aug. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.25959 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21144229 | $\omega$ | 181.97436 | | −0.57500302 | −0.78439409 | |
| $a$ | 2.7904537 | $\Omega$ | 303.20508 | | +0.75439721 | −0.39829871 | |
| $e$ | 0.1311769 | $i$ | 16.13956 | | +0.31663287 | −0.47548297 | |
| $P$ | 4.66 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | (0.3− | 2.6+) | 2002 10 12 | 704 | (0.1+ | 3.4−) | 2004 04 30 | E12 | 0.0 | 0.1+ |
| 2001 08 10 | 644 | (0.2+ | 3.0+) | 2002 12 06 | 704 | 0.3+ | 0.5+ | 2004 04 30 | E12 | 1.1+ | 0.7+ |
| 2001 08 10 | 644 | (0.2+ | 3.3+) | 2002 12 06 | 704 | 0.1+ | 0.3+ | 2005 07 02 | 691 | 0.5− | 0.1− |
| 2001 08 16 | 644 | 0.6− | 0.2− | 2002 12 06 | 704 | 0.4+ | 0.5+ | 2005 07 02 | 691 | 0.3− | 0.1− |
| 2001 08 16 | 644 | 0.8− | 0.1− | 2002 12 06 | 704 | 0.4− | 0.3+ | 2005 07 02 | 691 | 0.7+ | 0.8− |
| 2001 08 16 | 644 | 0.7− | 0.0 | 2002 12 06 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.5+ | 0.6− |
| 2001 09 09 | 699 | 0.0 | 0.2+ | 2002 12 15 | 704 | 0.0 | 1.2+ | 2006 09 17 | 703 | 0.2+ | 0.4− |
| 2001 09 09 | 699 | 0.2− | 0.4+ | 2002 12 15 | 704 | 0.3+ | 0.5− | 2006 09 17 | 703 | (2.4− | 0.5−) |
| 2001 09 09 | 699 | 0.8− | 0.1− | 2002 12 15 | 704 | 0.1+ | 0.4− | 2006 09 24 | 699 | 0.5− | 0.4+ |
| 2001 09 09 | 699 | 1.4− | 1.3+ | 2002 12 15 | 704 | 0.3+ | 0.1+ | 2006 09 24 | 699 | 0.0 | 0.1− |
| 2001 09 15 | 644 | 0.4+ | 1.3+ | 2002 12 15 | 704 | 0.5− | 0.7+ | 2006 09 24 | 699 | 0.5− | 0.3− |
| 2001 09 15 | 644 | 0.7+ | 0.8+ | 2003 01 02 | 704 | 0.0 | 0.7− | 2006 09 24 | 699 | 0.2+ | 0.1− |
| 2001 09 15 | 644 | 0.4+ | 0.9+ | 2003 01 02 | 704 | 0.2− | 1.2− | 2006 09 28 | 703 | 0.6− | 0.1+ |
| 2001 09 25 | 644 | 0.5+ | 0.6+ | 2003 01 02 | 704 | 0.2+ | 0.9− | 2006 09 28 | 703 | 0.5− | 0.4− |
| 2001 09 25 | 644 | 0.3+ | 0.7+ | 2003 01 02 | 704 | (0.8− | 1.8−) | 2006 09 28 | 703 | 1.1+ | 0.3+ |
| 2001 09 25 | 644 | 0.2+ | 0.5+ | 2003 01 02 | 704 | 0.3− | 0.6− | 2006 09 28 | 703 | 0.5− | 0.5− |
| 2001 10 06 | 644 | 0.3+ | 0.2− | 2003 01 02 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.1− |
| 2001 10 06 | 644 | 0.1+ | 0.1+ | 2003 01 02 | 704 | (1.7− | 0.7−) | 2006 10 19 | 703 | 0.2− | 0.3+ |
| 2001 10 06 | 644 | 0.7+ | 0.4− | 2003 01 04 | 704 | 0.2− | 0.1− | 2006 10 19 | 703 | (1.8− | 3.6−) |
| 2001 10 13 | 608 | 0.0 | 0.6− | 2003 01 04 | 704 | (2.9+ | 0.0 ) | 2006 10 19 | 703 | (1.8+ | 2.3−) |
| 2001 10 13 | 608 | 0.4+ | 1.0− | 2003 01 04 | 704 | 0.1− | 0.2− | 2006 10 20 | 704 | 0.1+ | 0.6+ |
| 2001 10 13 | 608 | 0.1− | 1.0− | 2003 01 04 | 704 | 0.1+ | 0.2− | 2006 10 20 | 704 | 0.3+ | 0.8+ |
| 2001 10 17 | 704 | 0.1− | 0.1+ | 2003 01 04 | 704 | 0.2− | 0.3− | 2006 10 20 | 704 | 0.8+ | 0.3+ |
| 2001 10 17 | 704 | 0.4+ | 0.3− | 2003 02 01 | 704 | 1.1− | 0.1+ | 2006 10 20 | 704 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.1− | 0.3− | 2003 02 01 | 704 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2001 10 17 | 704 | 0.3+ | 0.5− | 2003 02 01 | 704 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.3− |
| 2001 10 17 | 704 | 0.4− | 0.6+ | 2003 02 01 | 704 | 0.5+ | 0.6− | 2006 10 27 | 703 | 0.5+ | 0.3+ |
| 2002 10 05 | 704 | 1.5− | 0.3− | 2003 02 01 | 704 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.7− | 0.2− |
| 2002 10 05 | 704 | 0.3+ | 0.0 | 2003 02 04 | 704 | 0.2− | 1.1+ | 2006 11 22 | 703 | 0.3− | 0.6− |
| 2002 10 05 | 704 | 0.2+ | 1.0+ | 2003 02 04 | 704 | 0.2− | 0.4− | 2006 11 22 | 703 | 0.2+ | 0.2+ |
| 2002 10 05 | 704 | 0.5+ | 1.0+ | 2003 02 04 | 704 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.7+ | 1.3+ |
| 2002 10 12 | 704 | (1.0− | 2.2−) | 2003 02 04 | 704 | 0.4+ | 0.0 | 2006 11 22 | 703 | 0.3− | 0.8− |
| 2002 10 12 | 704 | (1.0− | 1.9−) | 2004 04 30 | E12 | 0.5+ | 0.6+ | | | | |
| 2002 10 12 | 704 | (0.1+ | 2.9−) | 2004 04 30 | E12 | 0.6+ | 0.9+ | | | | |

**(139499)∗ 2001 PU$_{35}$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.20975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22926552 | $\omega$ | 171.14345 | | +0.25811308 | −0.94388847 | |
| $a$ | 2.6438910 | $\Omega$ | 263.70121 | | +0.87321420 | +0.31917581 | |
| $e$ | 0.2593116 | $i$ | 11.96362 | | +0.41336980 | −0.08486080 | |
| $P$ | 4.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.2+ | 0.5+ | 2003 03 10 | 704 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2001 08 11 | 644 | 0.2+ | 0.5+ | 2003 03 10 | 704 | 0.6+ | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2001 08 11 | 644 | 0.2+ | 0.5+ | 2003 03 10 | 704 | 0.7+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2001 08 16 | 644 | 0.6− | 0.2+ | 2003 03 10 | 704 | 0.9− | 1.1+ | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2001 08 16 | 644 | 0.6− | 0.1− | 2005 06 29 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2001 08 16 | 644 | 0.5− | 0.1− | 2005 06 29 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 08 24 | 699 | 0.4+ | 0.1− | 2005 06 29 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2001 08 24 | 699 | 0.1− | 0.2− | 2005 07 03 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 1.0+ |
| 2001 08 24 | 699 | 0.0 | 0.3+ | 2005 07 03 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 1.0+ | 0.3+ |
| 2001 08 24 | 699 | (2.3− | 1.9+) | 2005 07 03 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 2003 02 07 | 644 | 0.3+ | 0.0 | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2003 02 07 | 644 | 0.5+ | 0.1+ | 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 2003 02 07 | 644 | 0.5+ | 0.2+ | 2005 07 04 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2003 03 08 | 699 | (1.6− | 0.2+) | 2006 10 22 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2003 03 08 | 699 | 0.8+ | 0.9− | 2006 10 22 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 1.3+ | 0.5+ |
| 2003 03 08 | 699 | 1.2− | 1.2+ | 2006 10 22 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2003 03 08 | 699 | (0.6− | 1.9+) | 2006 10 22 | G96 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2003 03 09 | 699 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.7+ |
| 2003 03 09 | 699 | 0.5+ | 0.8+ | 2006 10 22 | G96 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.6+ |
| 2003 03 09 | 699 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.8+ | 0.2− |
| 2003 03 09 | 699 | 0.4+ | 0.6+ | 2006 10 22 | G96 | 0.5− | 0.0 | | | | |
| 2003 03 10 | 704 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.2− | | | | |

**(139500)∗ 2001 PO$_{36}$ = 2000 GE$_{84}$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 17720)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.32799 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22890622 | $\omega$ | 247.20654 | | +0.32685290 | +0.93204887 | |
| $a$ | 2.6466570 | $\Omega$ | 42.89212 | | −0.76078083 | +0.35765237 | |
| $e$ | 0.1526481 | $i$ | 13.28228 | | −0.56069574 | +0.05804897 | |
| $P$ | 4.31 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 704 | 0.1− | 0.3− | 2004 03 18 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2000 04 03 | 704 | 0.9+ | 1.0+ | 2004 03 18 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.9− |
| 2000 04 03 | 704 | 0.6+ | 0.1− | 2004 03 18 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2000 04 03 | 704 | 0.4+ | 0.5+ | 2004 04 14 | 644 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2000 04 08 | 704 | 1.0+ | 0.7+ | 2004 04 14 | 644 | 0.5− | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.1− |
| 2000 04 08 | 704 | 0.8+ | 0.2− | 2004 04 14 | 644 | 0.5− | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.2− |
| 2000 04 08 | 704 | 0.3+ | 1.1+ | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2000 04 08 | 704 | 0.8+ | 0.9+ | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.5− | 0.1− |
| 2001 08 11 | 644 | 0.8− | 0.5+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.5− | 0.2+ |
| 2001 08 11 | 644 | 0.7− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.2− | 2006 11 15 | 704 | 1.1+ | 0.4− |
| 2001 08 11 | 644 | 0.5− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.3+ |
| 2001 08 16 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.4+ |
| 2001 08 16 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.1+ | 1.0+ |
| 2001 08 16 | 644 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 08 27 | 644 | 0.4− | 1.0+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2001 08 27 | 644 | 0.5− | 1.0+ | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2001 08 27 | 644 | 0.5− | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.7+ | 0.1− |
| 2001 09 18 | 644 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.6+ |
| 2001 09 18 | 644 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.8+ |
| 2001 09 18 | 644 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.7+ |
| 2004 03 09 | 644 | 0.2− | 0.5+ | 2006 11 09 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2004 03 09 | 644 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.3+ | 2006 11 22 | 704 | 1.0− | 0.3+ |
| 2004 03 09 | 644 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.9+ |
| 2004 03 14 | 704 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.8+ |
| 2004 03 14 | 704 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2004 03 14 | 704 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.1− | | | | |

**(139501)∗ 2001 PF$_{37}$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.49163 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21352193 | $\omega$ | 233.79833 | | +0.89712912 | +0.36265684 | |
| $a$ | 2.7723053 | $\Omega$ | 103.72294 | | −0.27346218 | +0.90437238 | |
| $e$ | 0.1457913 | $i$ | 15.05115 | | −0.34695500 | +0.22492360 | |
| $P$ | 4.62 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.3+ | 0.3− | 2005 06 02 | 703 | 0.4+ | 1.1+ | 2006 09 25 | 703 | 0.7− | 0.2+ |
| 2001 08 11 | 644 | 0.6+ | 0.6− | 2005 06 03 | E12 | 0.3+ | 0.1− | 2006 09 25 | 703 | (2.1− | 0.9−) |
| 2001 08 11 | 644 | 0.2+ | 0.4− | 2005 06 03 | E12 | 0.6− | 0.2− | 2006 09 25 | 703 | 0.2− | 0.9+ |
| 2001 08 17 | 644 | 0.1− | 0.1− | 2005 06 03 | E12 | 0.0 | 0.3− | 2006 09 25 | 703 | (1.1+ | 2.3+) |
| 2001 08 17 | 644 | 0.3+ | 0.1− | 2005 06 03 | E12 | 0.8− | 0.7+ | 2006 10 04 | 703 | 0.8+ | 0.2− |
| 2001 08 17 | 644 | 0.1+ | 0.2+ | 2005 06 09 | 703 | (1.5− | 0.0 ) | 2006 10 04 | 703 | 0.8− | 1.0− |
| 2001 08 22 | 644 | 0.2− | 0.2− | 2005 06 09 | 703 | 0.2− | 0.1+ | 2006 10 04 | 703 | 1.2− | 0.3+ |
| 2001 08 22 | 644 | 0.4− | 0.3− | 2005 06 09 | 703 | 0.5− | 0.2+ | 2006 10 04 | 703 | 0.0 | 0.1− |
| 2001 08 22 | 644 | 0.3− | 0.2− | 2005 06 09 | 703 | 0.7− | 0.0 | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2002 12 31 | 704 | 0.4− | 1.4+ | 2005 06 14 | 691 | 0.3+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2002 12 31 | 704 | (0.9− | 1.6+) | 2005 06 14 | 691 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | (1.0− | 2.0+) | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.8+ | 1.3+ |
| 2003 01 07 | 704 | 0.4− | 0.1− | 2005 06 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3− | 0.8+ |
| 2003 01 07 | 704 | 0.6+ | 0.2− | 2005 06 28 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.6+ |
| 2003 01 07 | 704 | 0.0 | 0.3+ | 2005 06 28 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 1.0+ |
| 2003 01 07 | 704 | 0.4− | 0.3+ | 2005 06 28 | 644 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 1.1− | 0.9+ |
| 2004 03 14 | 704 | 0.9+ | 1.1+ | 2005 06 28 | 644 | 0.0 | 0.3+ | 2006 10 31 | 703 | 0.5+ | 0.0 |
| 2004 03 14 | 704 | 0.3+ | 0.3+ | 2005 06 28 | 644 | 0.2− | 0.0 | 2006 10 31 | 703 | 0.9+ | 0.5+ |
| 2004 03 14 | 704 | 0.5+ | 1.2+ | 2005 07 02 | 599 | 0.4+ | 0.2+ | 2006 10 31 | 703 | 0.6− | 0.8+ |
| 2005 05 21 | G96 | 0.2− | 0.3− | 2005 07 02 | 599 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2005 05 21 | G96 | 0.1− | 0.3− | 2005 07 02 | 599 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2005 05 21 | G96 | 0.0 | 0.5− | 2005 07 02 | 599 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2005 05 21 | G96 | 0.1+ | 0.1− | 2005 07 05 | 704 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.1− | 0.1+ |
| 2005 06 02 | 703 | 1.1− | 0.5− | 2005 07 05 | 704 | 0.3− | 0.3− | 2006 11 23 | 703 | (1.8+ | 0.4+) |
| 2005 06 02 | 703 | 0.2+ | 0.0 | 2005 07 05 | 704 | 0.0 | 0.7+ | 2006 11 23 | 703 | 0.5− | 1.0− |
| 2005 06 02 | 703 | 0.3+ | 0.5+ | 2005 07 05 | 704 | (3.0− | 1.0+) | 2006 11 23 | 703 | 0.4+ | 0.0 |

**(139502)∗ 2001 PT$_{37}$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.26979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22450435 | $\omega$ | 32.23368 | | +0.37663593 | −0.92105198 | |
| $a$ | 2.6811403 | $\Omega$ | 35.91838 | | +0.81007632 | +0.27560928 | |
| $e$ | 0.0179561 | $i$ | 9.71955 | | +0.44935702 | +0.27514139 | |
| $P$ | 4.39 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 09 | 704 | 0.6− | 0.7+ | 2004 03 18 | 683 | 0.4+ | 1.3+ | 2006 10 04 | 703 | 1.0− | 0.2+ |
| 2000 05 09 | 704 | 0.4+ | 1.0+ | 2004 03 20 | 704 | (1.9+ | 0.1−) | 2006 10 04 | 703 | 0.1+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 09 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 704 | (2.0+ | 0.5+) | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2000 05 09 | 704 | 1.2+ | 0.5− | 2004 03 20 | 704 | 1.0+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 08 11 | 644 | 0.0 | 0.4+ | 2004 03 20 | 704 | 1.3+ | 1.0− | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2001 08 11 | 644 | 0.3− | 0.3+ | 2004 03 20 | 704 | 1.0+ | 0.3+ | 2006 10 12 | 691 | 0.5− | 0.5− |
| 2001 08 11 | 644 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2001 08 17 | 644 | 0.4+ | 0.3+ | 2004 03 22 | 704 | 0.6+ | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.1+ |
| 2001 08 17 | 644 | 0.7+ | 0.2+ | 2004 03 22 | 704 | 0.7+ | 0.4− | 2006 10 16 | 691 | 0.3− | 0.1− |
| 2001 08 17 | 644 | 0.6+ | 0.1+ | 2004 03 22 | 704 | 1.0+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2001 08 19 | 704 | 0.3− | 1.2+ | 2004 03 22 | 704 | 1.0+ | 0.6+ | 2006 10 16 | 691 | 0.4− | 0.2+ |
| 2001 08 19 | 704 | 0.1− | 0.1+ | 2004 03 24 | 699 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 2001 08 19 | 704 | 0.4− | 0.4− | 2004 03 24 | 699 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.4+ |
| 2001 08 25 | 699 | 1.3+ | 0.8+ | 2004 03 24 | 699 | 0.0 | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.5+ |
| 2001 08 25 | 699 | 1.2− | 0.6+ | 2004 03 24 | 699 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 08 25 | 699 | 1.1− | 1.4+ | 2004 03 30 | 703 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 08 25 | 699 | 0.6− | 0.2+ | 2004 03 30 | 703 | 1.0− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2001 09 10 | 699 | 0.0 | 0.5+ | 2004 03 30 | 703 | 0.6− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2001 09 10 | 699 | 1.0− | 1.4+ | 2004 03 30 | 703 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2001 09 10 | 699 | 1.2− | 0.9+ | 2004 04 15 | 699 | (1.7+ | 0.5+) | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2001 09 10 | 699 | 1.0− | 0.3− | 2004 04 15 | 699 | 0.9− | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2001 09 11 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.4− | 0.4+ | 2006 10 28 | 704 | (2.5− | 0.7+) |
| 2001 09 11 | 704 | 0.9− | 0.0 | 2004 04 15 | 699 | 0.3− | 0.1+ | 2006 10 28 | 704 | 0.1+ | 1.3+ |
| 2001 09 11 | 704 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.5+ | 1.0+ | 2006 10 28 | 704 | (1.0− | 2.4−) |
| 2003 01 04 | 704 | 0.6+ | 0.2− | 2004 04 19 | 704 | (0.2− | 2.0+) | 2006 10 28 | 704 | 0.9+ | 1.1+ |
| 2003 01 04 | 704 | 0.5− | 0.3− | 2004 04 19 | 704 | 0.8+ | 0.9+ | 2006 10 29 | 691 | 0.0 | 0.4− |
| 2003 01 04 | 704 | 0.8+ | 0.6− | 2004 04 19 | 704 | 0.0 | 0.8+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.1+ | 2004 04 19 | 704 | 0.4− | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2004 02 25 | 704 | (0.3+ | 1.9+) | 2004 04 21 | 704 | 0.0 | 1.1+ | 2006 11 11 | 703 | 0.7− | 0.6− |
| 2004 02 25 | 704 | 0.3− | 0.2+ | 2004 04 21 | 704 | 1.2+ | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.3− |
| 2004 02 25 | 704 | 0.5− | 0.8+ | 2004 04 21 | 704 | 0.2− | 0.9+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2004 02 25 | 704 | 0.5+ | 0.5+ | 2004 04 21 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2004 03 14 | 691 | 0.1+ | 0.2+ | 2004 04 21 | 704 | 0.4+ | 0.7− | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2004 03 14 | 691 | 0.1+ | 0.3+ | 2004 04 22 | 704 | 0.8− | 0.7+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2004 03 14 | 691 | 0.1− | 0.4+ | 2004 04 22 | 704 | 0.2− | 1.4+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2004 03 15 | 683 | 0.5+ | 0.4− | 2004 04 22 | 704 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 683 | 0.7+ | 0.4− | 2004 04 22 | 704 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2004 03 15 | 683 | 0.4+ | 0.6− | 2004 04 22 | 704 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2004 03 16 | 704 | 0.2+ | 1.0+ | 2006 09 26 | G96 | 0.4− | 0.1+ | 2006 11 26 | 704 | 0.4+ | 0.6+ |
| 2004 03 16 | 704 | 1.2+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 26 | 704 | 0.1− | 0.7− |
| 2004 03 16 | 704 | 0.8+ | 1.2+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 26 | 704 | 0.8+ | 1.4+ |
| 2004 03 16 | 704 | (0.3+ | 1.7+) | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.4+ | 1.3+ |
| 2004 03 16 | 704 | (1.5+ | 2.6+) | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.9+ | 2.4+ |
| 2004 03 17 | 683 | (1.6− | 1.7−) | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.7− | 1.2+ |
| 2004 03 17 | 683 | 1.1+ | 1.4− | 2006 09 28 | G96 | 0.4+ | 0.1+ | 2006 11 28 | 704 | 0.8− | 1.1+ |
| 2004 03 17 | 683 | 1.0− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.7+ | 2.1+ |
| 2004 03 18 | 683 | 0.5+ | 0.8+ | 2006 10 04 | 703 | 0.0 | 0.2− | | | | |
| 2004 03 18 | 683 | 1.2+ | 0.1+ | 2006 10 04 | 703 | 0.5+ | 0.1+ | | | | |

**(139503)∗ 2001 PB$_{39}$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.87250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22217530 | $\omega$ | 257.74827 | | +0.78783102 | | +0.58793345 |
| $a$ | 2.6998452 | $\Omega$ | 65.96092 | | −0.45751237 | | +0.75808504 |
| $e$ | 0.2847001 | $i$ | 11.58842 | | −0.41231627 | | +0.28220796 |
| $P$ | 4.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 06 | 691 | 0.4+ | 1.1− | 2005 05 03 | 703 | 0.2− | 1.3+ | 2006 10 29 | G96 | 0.1+ | 0.3− |
| 1997 12 06 | 691 | 0.2+ | 1.1− | 2005 05 04 | 644 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 1997 12 06 | 691 | 0.9+ | 1.0− | 2005 05 04 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2001 08 04 | 644 | 0.2− | 0.2− | 2005 05 04 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.4+ |
| 2001 08 04 | 644 | 0.5− | 0.2− | 2005 06 04 | 704 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.7− | 0.0 |
| 2001 08 04 | 644 | 0.4− | 0.2− | 2005 06 04 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2001 08 11 | 644 | 0.1+ | 0.3+ | 2005 06 04 | 704 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 2001 08 11 | 644 | 0.4− | 0.4+ | 2005 06 04 | 704 | 0.9+ | 0.8+ | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2001 08 11 | 644 | 0.3− | 0.4+ | 2005 06 11 | 703 | 0.7− | 1.4+ | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2001 08 17 | 644 | 0.1+ | 0.3+ | 2005 06 11 | 703 | 0.9− | 0.4− | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2001 08 17 | 644 | 0.1+ | 0.4+ | 2005 06 11 | 703 | 0.5− | 1.4− | 2006 11 19 | 691 | 0.3− | 0.3+ |
| 2001 08 17 | 644 | 0.0 | 0.4+ | 2005 06 11 | 703 | (0.8− | 2.2−) | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2001 10 14 | 644 | 0.4− | 0.9− | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 10 14 | 644 | 0.1+ | 0.5− | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.7+ |
| 2001 10 14 | 644 | 0.5+ | 0.6− | 2005 06 13 | G96 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.4+ |
| 2001 10 18 | 699 | 0.2− | 0.3− | 2005 06 13 | G96 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2001 10 18 | 699 | 0.3− | 1.4+ | 2005 06 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.6+ |
| 2001 10 18 | 699 | 1.0+ | 0.9+ | 2005 06 15 | 691 | 0.4+ | 0.1+ | 2006 12 01 | 691 | 0.2− | 0.7+ |
| 2001 10 18 | 699 | 0.1+ | 0.3+ | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.3− | 0.2+ |
| 2005 05 03 | 703 | 0.1− | 0.4− | 2006 10 29 | G96 | 0.6− | 0.4− | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2005 05 03 | 703 | (2.2+ | 0.3+) | 2006 10 29 | G96 | 0.1− | 0.3− | | | | |
| 2005 05 03 | 703 | 0.2+ | 0.8+ | 2006 10 29 | G96 | 0.5+ | 0.0 | | | | |

**(139504)∗ 2001 PU$_{39}$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.03072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21616631 | $\omega$ | 130.21960 | | +0.53583673 | | −0.83492955 |
| $a$ | 2.7496498 | $\Omega$ | 286.94967 | | +0.72929376 | | +0.53263774 |
| $e$ | 0.0950313 | $i$ | 7.54404 | | +0.42545224 | | +0.13852681 |
| $P$ | 4.56 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 0.4− | 0.0 | 2001 09 16 | 704 | 0.5+ | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.3− |
| 1994 01 11 | 691 | 0.6− | 0.4− | 2001 09 16 | 704 | 0.1− | 0.3− | 2004 04 19 | 704 | 0.9− | 0.6+ |
| 1994 01 11 | 691 | 0.2− | 0.1− | 2001 09 16 | 704 | 0.2+ | 0.1− | 2004 04 19 | 704 | 0.1− | 0.3+ |
| 1998 01 01 | 691 | 0.4+ | 0.1+ | 2001 09 25 | 704 | 1.1+ | 0.8+ | 2005 06 16 | 691 | 0.5+ | 0.8+ |
| 1998 01 01 | 691 | 0.0 | 0.2− | 2001 09 25 | 704 | 0.4+ | 0.2− | 2005 06 16 | 691 | 0.1+ | 0.1− |
| 1998 01 01 | 691 | 0.7+ | 0.1− | 2001 09 25 | 704 | 0.4+ | 0.1− | 2005 06 16 | 691 | 0.2− | 0.1− |
| 2001 08 11 | 644 | (0.7+ | 1.6+) | 2001 09 25 | 704 | 0.6+ | 0.2− | 2006 10 01 | 291 | 0.6− | 0.2− |
| 2001 08 11 | 644 | (0.6+ | 1.6+) | 2001 09 25 | 704 | 0.3+ | 0.6− | 2006 10 01 | 291 | 0.7− | 0.3− |
| 2001 08 11 | 644 | 0.4+ | 1.5+ | 2003 01 04 | 704 | 0.8+ | 0.8+ | 2006 10 01 | 291 | 0.7− | 0.2− |
| 2001 08 16 | 644 | 0.1− | 0.7+ | 2003 01 04 | 704 | 1.0+ | 0.5+ | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2001 08 16 | 644 | 0.7− | 0.7+ | 2003 01 04 | 704 | (0.7+ | 2.2+) | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2001 08 16 | 644 | 0.6− | 0.7+ | 2003 01 04 | 704 | (0.6− | 1.7+) | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2001 08 17 | 704 | 0.5+ | 0.2− | 2003 01 04 | 291 | 0.8− | 0.5+ | 2006 10 19 | 703 | 0.1− | 0.9+ |
| 2001 08 17 | 704 | 0.6− | 0.5− | 2003 01 04 | 291 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2001 08 17 | 704 | 0.4− | 1.0+ | 2003 01 04 | 291 | 0.6+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.4− |
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2003 01 08 | 704 | 1.2+ | 1.4+ | 2006 10 27 | 703 | 1.0+ | 0.1+ |
| 2001 08 25 | 704 | 0.3− | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.5+ | 0.0 |
| 2001 08 25 | 704 | 1.2− | 0.0 | 2003 01 08 | 704 | 1.1+ | 0.3− | 2006 11 08 | 644 | 0.3+ | 0.2− |
| 2001 09 10 | 704 | 1.1− | 0.3− | 2003 01 08 | 704 | 0.6+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2001 09 10 | 704 | 0.6+ | 0.7− | 2003 01 08 | 704 | 0.9+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2001 09 10 | 704 | 0.5− | 0.4+ | 2003 02 03 | 704 | 0.7+ | 1.3+ | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2001 09 10 | 704 | 0.5− | 0.5+ | 2003 02 03 | 704 | 0.1− | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.1− |
| 2001 09 11 | 699 | 0.3− | 0.3+ | 2003 02 03 | 704 | 0.1+ | 0.8+ | 2006 11 15 | 703 | 0.6+ | 1.2− |
| 2001 09 11 | 699 | 0.7− | 0.2+ | 2003 02 03 | 704 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.4− |
| 2001 09 11 | 699 | 0.2− | 0.7+ | 2003 02 03 | 704 | 0.3+ | 0.1+ | 2006 11 17 | 644 | 0.6+ | 0.0 |
| 2001 09 11 | 699 | 1.0− | 0.1− | 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 2001 09 16 | 704 | 0.6− | 1.1+ | 2004 04 19 | 704 | 0.7+ | 0.6+ | 2006 11 17 | 644 | 0.2+ | 0.1− |

**(139505)∗ 2001 PF$_{40}$ = 2004 CL$_{102}$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 60828)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.76408 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18835656 | $\omega$ | 21.43902 | | +0.43903896 | | +0.88348188 |
| $a$ | 3.0140391 | $\Omega$ | 274.91849 | | −0.84633823 | | +0.34561486 |
| $e$ | 0.0725053 | $i$ | 9.44027 | | −0.30158977 | | +0.31624380 |
| $P$ | 5.23 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.1+ | 0.3+ | 2001 09 25 | 704 | 0.7+ | 0.6− | 2005 05 12 | 644 | 0.1+ | 0.0 |
| 2001 08 11 | 644 | 0.1+ | 0.1+ | 2001 09 25 | 704 | 0.2− | 0.7− | 2005 05 19 | 644 | 0.3+ | 0.3+ |
| 2001 08 11 | 644 | 0.6+ | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.8+ | 2005 05 19 | 644 | 0.4+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.3− | 0.4+ | 2002 12 06 | 704 | 0.4+ | 0.2+ | 2005 05 19 | 644 | 0.2+ | 0.5+ | | |
| 2001 08 17 | 644 | 0.4− | 0.5+ | 2002 12 06 | 704 | 0.7− | 0.1− | 2005 06 26 | 644 | 0.3+ | 0.2− | | |
| 2001 08 17 | 644 | 0.3− | 0.4+ | 2004 02 12 | 644 | 0.1+ | 1.0+ | 2005 06 26 | 644 | 0.2+ | 0.0 | | |
| 2001 08 24 | 699 | 0.1− | 1.7+ | 2004 02 12 | 644 | 0.3+ | 1.0+ | 2005 06 26 | 644 | 0.2+ | 0.0 | | |
| 2001 08 24 | 699 | 0.4+ | 0.5+ | 2004 02 12 | 644 | 0.3+ | 1.0+ | 2006 08 27 | 699 | 0.9− | 0.5+ | | |
| 2001 08 24 | 699 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.4+ | 1.0+ | 2006 08 27 | 699 | (2.4+ | 0.4+) | | |
| 2001 08 24 | 699 | 0.8+ | 0.2+ | 2004 02 19 | 704 | 1.0+ | 0.8+ | 2006 08 27 | 699 | 0.7+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.2− | 0.0 | 2004 02 19 | 704 | 0.5− | 0.3+ | 2006 08 27 | 699 | 1.1+ | 0.5+ | | |
| 2001 08 25 | 704 | 0.0 | 0.3+ | 2004 02 19 | 704 | (2.2+ | 0.7+) | 2006 09 01 | A13 | 0.1− | 0.4− | | |
| 2001 08 25 | 704 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.2+ | 1.2+ | 2006 09 01 | A13 | 0.0 | 0.4− | | |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.6+ | 1.5+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 09 | 644 | 0.6− | 0.6+ | 2004 02 23 | 704 | 0.8+ | 1.2+ | 2006 09 14 | 691 | 0.3− | 0.6+ | | |
| 2001 09 09 | 644 | 0.3− | 0.3+ | 2004 02 23 | 704 | 1.6+ | 0.7+ | 2006 09 14 | 691 | 0.0 | 0.5+ | | |
| 2001 09 09 | 644 | 0.4− | 0.9+ | 2005 05 11 | 644 | 0.0 | 0.3+ | 2006 09 16 | 691 | 0.2− | 0.2+ | | |
| 2001 09 13 | 644 | 0.3− | 0.2+ | 2005 05 11 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 691 | 0.0 | 0.1+ | | |
| 2001 09 13 | 644 | 0.5− | 0.1− | 2005 05 11 | 644 | 0.3+ | 0.2+ | 2006 09 16 | 691 | 0.1− | 0.1+ | | |
| 2001 09 13 | 644 | 0.6− | 0.1− | 2005 05 12 | 644 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.5− | 0.5− | | |
| 2001 09 23 | 644 | 0.0 | 0.3+ | 2005 05 12 | 703 | 1.0− | 0.2− | 2006 09 17 | 703 | 0.3− | 0.5− | | |
| 2001 09 23 | 644 | 0.1− | 0.1− | 2005 05 12 | 703 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.1− | 0.5− | | |
| 2001 09 23 | 644 | 0.3− | 0.3+ | 2005 05 12 | 703 | 0.3− | 0.5+ | 2006 09 17 | 703 | 0.6− | 0.9− | | |
| 2001 09 25 | 704 | 0.7− | 0.3+ | 2005 05 12 | 703 | 0.5− | 0.9+ | | | | | | |
| 2001 09 25 | 704 | 0.6+ | 0.3− | 2005 05 12 | 644 | 0.4+ | 0.4+ | | | | | | |

**(139506)∗ 2001 PM$_{40}$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.41494 | | (2000.0) | | −0.75146957 | −0.63174280 |
| $n$ | 0.23521672 | $\omega$ | 256.89543 | | +0.65709058 | −0.69067909 |
| $a$ | 2.5991056 | $\Omega$ | 243.58236 | | +0.05937553 | −0.35194238 |
| $e$ | 0.1230153 | $i$ | 12.26490 | | | |
| $P$ | 4.19 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 699 | 1.2− | 0.2+ | 2001 10 13 | 644 | 0.5+ | 0.8+ | 2005 11 04 | G96 | 0.0 | 0.4− | | |
| 1999 01 17 | 699 | (2.4+ | 0.7+) | 2001 10 15 | 608 | 0.4+ | 1.0− | 2005 11 04 | G96 | 0.2+ | 0.4− | | |
| 1999 01 17 | 699 | 0.2+ | 1.0+ | 2001 10 15 | 608 | 0.0 | 0.7− | 2005 11 04 | G96 | 0.4+ | 0.3− | | |
| 1999 02 17 | 704 | 0.1− | 0.2− | 2001 10 15 | 608 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.4− | 0.5− | | |
| 1999 02 17 | 704 | 1.9+ | 0.5+ | 2004 05 15 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.3+ | | |
| 1999 02 17 | 704 | 0.4+ | 0.7− | 2004 05 15 | 704 | 0.4+ | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.0 | | |
| 1999 02 17 | 704 | 0.5− | 1.1+ | 2004 05 15 | 704 | 0.7− | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.4+ | | |
| 1999 02 17 | 704 | (4.4− | 0.7−) | 2004 05 15 | 704 | 0.2− | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2001 08 11 | 644 | 1.0− | 0.5− | 2004 05 16 | 704 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2001 08 11 | 644 | 1.2− | 0.4− | 2004 05 16 | 704 | (1.7+ | 0.2−) | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2001 08 11 | 644 | 1.4− | 0.5− | 2004 05 16 | 704 | 0.8− | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.1+ | | |
| 2001 08 17 | 644 | 0.2− | 0.3+ | 2004 05 16 | 704 | 0.9+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2001 08 17 | 644 | 0.1− | 0.3+ | 2004 05 16 | 704 | 0.8+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.5− | | |
| 2001 08 17 | 644 | 0.2− | 0.3+ | 2004 05 28 | 428 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.1− | | |
| 2001 09 10 | 704 | 0.6− | 0.6+ | 2004 06 14 | 704 | 0.2− | 0.3− | 2006 11 20 | 704 | 1.0− | 0.3+ | | |
| 2001 09 10 | 704 | 0.2+ | 0.0 | 2004 06 14 | 704 | 0.4− | 0.7+ | 2006 11 20 | 704 | 0.2− | 0.4+ | | |
| 2001 09 10 | 704 | 0.6+ | 0.0 | 2004 06 14 | 704 | 0.1− | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.1− | | |
| 2001 09 21 | 699 | 0.1+ | 0.0 | 2004 06 14 | 704 | 0.1+ | 0.4+ | 2006 11 22 | 691 | 0.2+ | 0.1− | | |
| 2001 09 21 | 699 | 0.0 | 0.8+ | 2004 06 14 | 704 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.2− | | |
| 2001 09 21 | 699 | 0.4+ | 1.4+ | 2005 10 03 | 703 | 0.7+ | 0.8+ | 2006 11 29 | 704 | 0.5+ | 0.7+ | | |
| 2001 09 21 | 699 | 0.7− | 0.7+ | 2005 10 03 | 703 | 0.9+ | 0.9− | 2006 11 29 | 704 | 0.2+ | 0.5+ | | |
| 2001 10 13 | 644 | 0.2+ | 1.3+ | 2005 10 03 | 703 | 0.5− | 0.0 | 2006 11 29 | 704 | 0.2− | 0.4+ | | |
| 2001 10 13 | 644 | 0.5+ | 1.4+ | 2005 10 03 | 703 | 0.4− | 1.3− | 2006 11 29 | 704 | 0.5+ | 0.3+ | | |

**(139507)∗ 2001 PL$_{41}$ = 1997 YX$_8$**

Discovered 2001 Aug. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 17722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.20256 | | (2000.0) | | +0.11447422 | −0.97719499 |
| $n$ | 0.22614150 | $\omega$ | 182.68395 | | +0.91479231 | +0.17388884 |
| $a$ | 2.6681845 | $\Omega$ | 260.78687 | | +0.38736376 | −0.12187134 |
| $e$ | 0.2676980 | $i$ | 10.43865 | | | |
| $P$ | 4.36 | $H$ | 15.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 06 | 704 | 1.2− | 0.9+ | 2001 09 18 | 645 | 0.0 | 0.2− | 2003 04 07 | 704 | (1.0+ | 2.3+) | | |
| 1997 12 06 | 704 | 0.2+ | 1.1− | 2001 09 21 | 699 | 0.1+ | 0.6+ | 2003 04 07 | 704 | 1.3+ | 0.8+ | | |
| 1997 12 06 | 704 | 0.0 | 0.5− | 2001 09 21 | 644 | 0.4− | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | |
| 1997 12 06 | 704 | 0.8+ | 0.1− | 2001 09 21 | 699 | 0.7+ | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 1997 12 25 | 566 | 0.0 | 0.7− | 2001 09 21 | 644 | 0.2− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.0 | | |
| 1997 12 25 | 566 | 0.1− | 0.7− | 2001 09 21 | 699 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.1+ | | |
| 1997 12 25 | 566 | 0.0 | 0.7− | 2001 09 21 | 644 | 0.3− | 0.9+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | | |
| 1997 12 30 | 566 | 0.2+ | 1.2+ | 2001 09 21 | 699 | 0.3+ | 0.7+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | | |
| 1997 12 30 | 566 | 0.3+ | 0.0 | 2001 09 29 | 644 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.5− | | |
| 1997 12 30 | 566 | 0.5− | 0.7− | 2001 09 29 | 644 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.4− | | |
| 1997 12 30 | 566 | 0.4+ | 0.4− | 2001 09 29 | 644 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.4− | | |
| 1997 12 30 | 566 | 0.5− | 0.8+ | 2001 10 06 | 644 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.5− | 0.2− | | |
| 1997 12 30 | 566 | 0.0 | 0.0 | 2001 10 06 | 644 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2001 08 11 | 644 | 1.4− | 0.5− | 2001 10 06 | 644 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.3− | | |
| 2001 08 11 | 644 | 0.8− | 0.5− | 2001 10 13 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 2001 08 11 | 644 | 1.2− | 0.3− | 2001 10 13 | 644 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.0 | | |
| 2001 08 17 | 644 | 0.3− | 0.4+ | 2001 10 13 | 644 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.1− | | |
| 2001 08 17 | 644 | 0.4− | 0.3+ | 2001 10 17 | 704 | 0.1+ | 1.4+ | 2006 11 01 | G96 | 0.5− | 0.2− | | |
| 2001 08 17 | 644 | 0.0 | 0.2+ | 2001 10 17 | 704 | 0.1+ | 1.2+ | 2006 11 01 | G96 | 0.0 | 0.1− | | |
| 2001 08 21 | 608 | 0.4+ | 0.2+ | 2001 10 17 | 704 | 0.2+ | 1.3+ | 2006 11 01 | G96 | 0.2− | 0.2− | | |
| 2001 08 21 | 608 | 0.1+ | 0.0 | 2001 10 17 | 704 | 0.2+ | 1.2+ | 2006 11 14 | 703 | 0.5− | 0.2− | | |
| 2001 08 21 | 608 | 0.2+ | 0.1+ | 2001 10 17 | 704 | (0.1− | 1.6+) | 2006 11 14 | 703 | 0.3− | 0.9− | | |
| 2001 08 26 | 699 | 0.7− | 0.2+ | 2001 10 23 | 291 | 0.1+ | 0.2− | 2006 11 14 | 703 | 1.2− | 0.6− | | |
| 2001 08 26 | 699 | 0.6− | 0.2− | 2001 10 23 | 291 | 0.5+ | 0.1− | 2006 11 14 | 703 | 0.0 | 1.2− | | |
| 2001 08 26 | 699 | 0.5− | 0.1+ | 2001 10 23 | 291 | 1.3+ | 0.1− | 2006 11 18 | 704 | 1.2− | 0.6+ | | |
| 2001 08 26 | 699 | 0.3− | 0.2+ | 2001 11 11 | 644 | 0.6+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.3+ | | |
| 2001 08 31 | 644 | 0.4− | 1.3− | 2001 11 11 | 644 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.5− | | |
| 2001 08 31 | 644 | 0.0 | 1.2− | 2001 11 11 | 644 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.1+ | 0.8+ | | |
| 2001 08 31 | 644 | 0.1− | 1.3− | 2001 12 19 | 704 | 0.3+ | 0.7+ | 2006 11 20 | 704 | 0.0 | 0.5+ | | |
| 2001 09 09 | 699 | 0.7− | 0.6+ | 2001 12 19 | 704 | 0.8+ | 0.1+ | 2006 11 20 | 704 | 0.4− | 1.0+ | | |
| 2001 09 09 | 699 | 0.5− | 0.3+ | 2001 12 19 | 704 | 0.8+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.6+ | | |
| 2001 09 09 | 699 | 0.2− | 0.5+ | 2003 03 11 | 704 | 0.8+ | 0.6+ | 2006 11 20 | 704 | 0.6+ | 1.1+ | | |
| 2001 09 09 | 699 | 0.3− | 0.4+ | 2003 03 11 | 704 | 0.5+ | 0.6+ | 2006 11 24 | 644 | 0.1− | 0.2− | | |
| 2001 09 10 | 704 | 0.6+ | 1.0+ | 2003 03 11 | 704 | 0.5+ | 0.6+ | 2006 11 24 | 644 | 0.0 | 0.0 | | |
| 2001 09 10 | 704 | 0.3+ | 0.6+ | 2003 03 11 | 704 | 0.3− | 0.7+ | 2006 11 24 | 644 | 0.1− | 0.1− | | |
| 2001 09 10 | 704 | 0.1+ | 0.7+ | 2003 03 28 | 644 | 0.2+ | 0.6+ | 2006 11 25 | 704 | 0.2+ | 0.4− | | |
| 2001 09 10 | 704 | 0.2+ | 0.9+ | 2003 03 28 | 644 | 0.2+ | 0.6+ | 2006 11 25 | 704 | 0.8+ | 0.0 | | |
| 2001 09 10 | 704 | 0.1− | 0.2+ | 2003 03 28 | 644 | 0.4+ | 1.1+ | 2006 11 25 | 704 | 0.4+ | 0.8+ | | |
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2003 03 28 | 699 | 0.1− | 0.3+ | 2006 11 25 | 704 | 1.1+ | 1.6+ | | |
| 2001 09 16 | 704 | 0.8− | 0.6+ | 2003 03 28 | 699 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.7+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.9− | 0.5+ | 2003 03 28 | 699 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.9+ | 0.2+ | | |
| 2001 09 16 | 704 | 1.0− | 0.0 | 2003 03 28 | 699 | 0.1− | 0.2+ | 2006 11 28 | 704 | 1.0+ | 0.3+ | | |
| 2001 09 16 | 704 | 1.2− | 0.6+ | 2003 04 07 | 704 | (1.7+ | 0.5−) | 2006 11 28 | 704 | 0.2+ | 0.2− | | |
| 2001 09 18 | 645 | 0.1− | 0.2− | 2003 04 07 | 704 | (1.9+ | 0.6+) | 2006 11 28 | 704 | 0.0 | 0.1+ | | |

**(139508)∗ 2001 PW$_{42}$**

Discovered 2001 Aug. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.69873 | | (2000.0) | | +0.39919452 | +0.91163657 |
| $n$ | 0.21536188 | $\omega$ | 71.19077 | | −0.88609137 | +0.35619400 |
| $a$ | 2.7564926 | $\Omega$ | 222.75653 | | −0.23555429 | +0.20504782 |
| $e$ | 0.2510501 | $i$ | 8.28183 | | | |
| $P$ | 4.58 | $H$ | 16.5 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 25 | 691 | 0.1− | 0.1+ | 2001 09 23 | 704 | 1.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | | |
| 1997 11 25 | 691 | 0.1+ | 0.1+ | 2001 09 23 | 704 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.1− | | |
| 1997 11 25 | 691 | 0.0 | 0.4− | 2001 09 23 | 704 | 0.4− | 0.8− | 2006 10 27 | G96 | 0.1+ | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 644 | 0.6+ | 0.6− | 2001 09 25 | 704 | 0.6+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 08 12 | 644 | 0.6+ | 0.7− | 2001 09 25 | 704 | 0.7− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2001 08 12 | 644 | 0.6+ | 0.9− | 2001 09 25 | 704 | 0.7− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2001 08 17 | 644 | 0.4− | 0.0 | 2001 09 25 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 08 17 | 644 | 0.4− | 0.2− | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 08 17 | 644 | 0.2− | 0.4− | 2005 05 14 | G96 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 08 24 | 699 | (1.5− | 0.8+) | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2001 08 24 | 699 | 0.1− | 0.6+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 08 24 | 699 | 0.4− | 1.1+ | 2005 06 03 | 691 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 08 24 | 699 | 0.1+ | 0.2− | 2005 06 03 | 691 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.4− | 0.5− | 2005 06 03 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 08 25 | 704 | 1.2− | 0.2− | 2005 06 28 | 644 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.4+ | 0.1− | 2005 06 28 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2005 06 28 | 644 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.1− |
| 2001 09 16 | 704 | 0.6+ | 0.5− | 2006 10 03 | G96 | 0.6+ | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.6− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.5− | 0.3− |
| 2001 09 18 | 699 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2001 09 18 | 699 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | 1.0+ | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3+ |
| 2001 09 18 | 699 | (2.0+ | 0.1−) | 2006 10 20 | 691 | 0.4− | 0.0 | | | | |

**(139509)∗ 2001 PC$_{47}$ = 1999 CN$_{137}$**

Discovered 2001 Aug. 13 by W. Bickel at Bergisch Gladbach.

Id. T. B. Spahr (*MPO* 17725)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.73785 | | (2000.0) | | +0.93392819 | −0.35714650 |
| $n$ | 0.24070605 | $\omega$ | 82.42496 | | +0.32087425 | +0.85607613 |
| $a$ | 2.5594386 | $\Omega$ | 298.49906 | | +0.15753681 | +0.37360412 |
| $e$ | 0.2079770 | $i$ | 0.97691 | | | |
| $P$ | 4.09 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.3+ | 0.4− | 2001 08 23 | 699 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.1− | 0.0 |
| 1999 02 09 | 691 | 0.2− | 0.0 | 2001 08 23 | 699 | 0.3+ | 0.4+ | 2005 07 05 | 644 | 0.4− | 0.3+ |
| 1999 02 09 | 691 | 0.6+ | 0.0 | 2001 08 27 | 699 | 0.7− | 0.3− | 2005 07 05 | 644 | 0.2− | 0.2− |
| 1999 02 12 | 691 | 0.7− | 0.3+ | 2001 08 27 | 699 | 0.2+ | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.4+ |
| 1999 02 12 | 691 | 0.5− | 0.1+ | 2001 08 27 | 699 | 0.5− | 0.5+ | 2005 07 11 | 691 | 0.1+ | 0.1− |
| 1999 02 12 | 691 | 0.8− | 0.2+ | 2001 08 27 | 699 | 0.4− | 0.2+ | 2005 07 11 | 691 | 0.2+ | 0.0 |
| 1999 03 14 | 691 | 0.7+ | 0.3+ | 2001 09 07 | 704 | 0.2− | 0.6− | 2005 07 12 | G96 | 0.6− | 0.4− |
| 1999 03 14 | 691 | 0.6− | 0.4− | 2001 09 07 | 704 | 0.2+ | 0.7+ | 2005 07 12 | G96 | 0.8− | 0.3− |
| 1999 03 14 | 691 | 0.2− | 0.1− | 2001 09 07 | 704 | 0.3+ | 0.3− | 2005 07 12 | G96 | 0.0 | 0.2− |
| 2001 08 13 | 621 | 0.1− | 0.3+ | 2001 09 07 | 704 | (0.9− | 1.7+) | 2005 07 12 | G96 | 0.2− | 0.6− |
| 2001 08 13 | 621 | 0.4+ | 0.0 | 2001 09 07 | 704 | 0.2− | 0.8+ | 2005 07 15 | G96 | 0.4− | 0.1+ |
| 2001 08 14 | 621 | 0.0 | 0.8+ | 2001 09 20 | 704 | 0.1+ | 0.1+ | 2005 07 15 | G96 | 0.4− | 0.2− |
| 2001 08 14 | 621 | 0.3− | 0.7+ | 2001 09 20 | 704 | 0.3− | 0.7− | 2005 07 15 | G96 | 0.4− | 0.0 |
| 2001 08 14 | 621 | 0.0 | 0.7− | 2001 09 20 | 704 | 0.2− | 0.2− | 2005 07 15 | G96 | 0.4− | 0.3− |
| 2001 08 16 | 704 | 0.3− | 1.2+ | 2001 09 20 | 704 | 0.1− | 0.3− | 2005 09 29 | G96 | 0.1+ | 0.2+ |
| 2001 08 16 | 704 | 0.6+ | 0.3+ | 2001 09 20 | 704 | (0.0 | 1.6−) | 2005 09 29 | G96 | 0.0 | 0.0 |
| 2001 08 16 | 704 | 0.9+ | 1.4+ | 2001 09 21 | 704 | (1.8+ | 0.4−) | 2005 09 29 | G96 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | (1.8+ | 0.1+) | 2001 09 21 | 704 | (2.2+ | 0.2−) | 2005 09 29 | G96 | 0.4− | 0.1+ |
| 2001 08 16 | 704 | 0.2+ | 0.1+ | 2001 09 21 | 704 | (2.3+ | 0.0 ) | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2001 08 22 | 621 | 0.2− | 0.0 | 2001 09 21 | 704 | 1.2+ | 1.3+ | 2006 11 16 | G96 | 0.3− | 0.6+ |
| 2001 08 22 | 621 | 0.2+ | 0.0 | 2001 09 21 | 704 | (2.5+ | 0.2−) | 2006 11 16 | G96 | 0.4− | 0.6− |
| 2001 08 22 | 621 | 0.2+ | 0.0 | 2003 01 28 | 291 | 0.4+ | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.6+ |
| 2001 08 23 | 621 | 0.0 | 0.2− | 2003 01 28 | 291 | 0.6+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2001 08 23 | 621 | 0.4− | 0.2− | 2003 01 28 | 291 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.2+ |
| 2001 08 23 | 621 | 0.2+ | 0.3− | 2004 04 25 | 291 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.4+ |
| 2001 08 23 | 699 | 0.1+ | 0.8− | 2004 04 25 | 291 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2001 08 23 | 699 | 0.0 | 0.5− | 2004 04 25 | 291 | 0.1+ | 0.1− | | | | |

**(139510)∗ 2001 PG$_{47}$**

Discovered 2001 Aug. 14 by W. Bickel at Bergisch Gladbach.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.06342 | | (2000.0) | | +0.81389307 | −0.55960525 |
| $n$ | 0.22328502 | $\omega$ | 98.61608 | | +0.44126508 | +0.77032107 |
| $a$ | 2.6908923 | $\Omega$ | 295.55378 | | +0.37797249 | +0.30569168 |
| $e$ | 0.0595883 | $i$ | 9.97466 | | | |
| $P$ | 4.41 | $H$ | 15.5 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 327 | 0.5+ | 0.1− | 2001 08 28 | 704 | 0.2− | 0.3+ | 2003 01 07 | 704 | 0.3− | 0.3+ |
| 1997 10 29 | 327 | 0.2+ | 0.3− | 2001 08 28 | 704 | 0.4− | 0.5+ | 2003 01 07 | 704 | 0.2− | 0.1+ |
| 1997 10 29 | 327 | 0.3+ | 0.1− | 2001 09 20 | 704 | (1.6− | 1.1−) | 2003 01 07 | 704 | 0.2− | 0.1+ |
| 2001 08 14 | 621 | 0.2+ | 0.6+ | 2001 09 20 | 704 | 0.4+ | 0.5− | 2003 01 08 | 704 | 0.5− | 0.1+ |
| 2001 08 14 | 621 | 0.1+ | 0.1+ | 2001 09 20 | 704 | 0.7− | 0.6− | 2003 01 08 | 704 | 0.6− | 0.0 |
| 2001 08 14 | 621 | 0.3+ | 0.2+ | 2001 09 20 | 704 | 1.2− | 0.8− | 2003 01 08 | 704 | 0.4− | 0.4+ |
| 2001 08 14 | 621 | 0.1+ | 0.8+ | 2001 09 25 | 704 | 1.0+ | 0.3− | 2003 01 08 | 704 | 0.3− | 0.6+ |
| 2001 08 14 | 621 | 0.0 | 0.3+ | 2001 09 25 | 704 | 0.7− | 0.2− | 2004 04 13 | 644 | 0.4+ | 0.2+ |
| 2001 08 15 | 621 | 0.1− | 0.1+ | 2001 09 25 | 704 | 0.2+ | 0.4− | 2004 04 13 | 644 | 0.1+ | 0.1+ |
| 2001 08 21 | 621 | 0.4− | 0.3+ | 2001 09 25 | 704 | 0.8+ | 0.2+ | 2004 04 13 | 644 | 0.3+ | 0.2+ |
| 2001 08 21 | 621 | 0.2− | 0.3+ | 2001 11 09 | 621 | 0.0 | 0.2− | 2005 07 10 | E12 | 0.6− | 0.2+ |
| 2001 08 21 | 621 | 0.3− | 0.3+ | 2001 11 09 | 621 | 0.4− | 0.1− | 2005 07 10 | E12 | 0.0 | 0.0 |
| 2001 08 22 | 621 | 0.5− | 0.2− | 2001 11 09 | 621 | 0.5− | 0.4− | 2005 07 10 | E12 | 0.1− | 0.1− |
| 2001 08 22 | 621 | 0.5− | 0.0 | 2001 11 09 | 621 | 0.0 | 0.3− | 2005 07 10 | E12 | 0.1+ | 0.0 |
| 2001 08 22 | 621 | 0.3− | 0.3+ | 2001 11 10 | 621 | 0.4+ | 0.1− | 2006 10 23 | 703 | 0.0 | 0.1− |
| 2001 08 23 | 699 | 0.2+ | 0.3+ | 2001 11 18 | 645 | 0.0 | 0.2− | 2006 10 23 | 703 | 0.6+ | 0.7− |
| 2001 08 23 | 699 | 1.0+ | 0.8+ | 2001 11 18 | 645 | 0.0 | 0.3− | 2006 10 23 | 703 | 1.2+ | 0.3+ |
| 2001 08 23 | 699 | 0.3+ | 0.9+ | 2002 12 06 | 704 | 0.1− | 0.9+ | 2006 10 23 | 703 | 0.4+ | 0.1− |
| 2001 08 23 | 699 | 0.5+ | 0.7+ | 2002 12 06 | 704 | 0.1− | 0.3+ | 2006 10 29 | 703 | 0.5+ | 0.5+ |
| 2001 08 25 | 704 | 0.4+ | 0.0 | 2002 12 06 | 704 | 0.2− | 1.0+ | 2006 10 29 | 703 | 0.1− | 0.4− |
| 2001 08 25 | 704 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.9+ | 1.2+ | 2006 10 29 | 703 | 0.2+ | 0.1+ |
| 2001 08 25 | 704 | 0.8+ | 1.4+ | 2002 12 11 | 704 | 0.4+ | 0.4− | 2006 10 29 | 703 | 0.5− | 0.1− |
| 2001 08 25 | 704 | 0.3− | 0.3+ | 2002 12 11 | 704 | 0.8+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 1.0− |
| 2001 08 25 | 704 | 0.0 | 0.1− | 2002 12 11 | 704 | 1.3+ | 0.6− | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2001 08 27 | 699 | 1.3− | 0.8+ | 2002 12 11 | 704 | 0.6+ | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.6− |
| 2001 08 27 | 699 | 0.2+ | 0.4+ | 2002 12 14 | 704 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.5+ | 0.8− |
| 2001 08 27 | 704 | 0.1− | 0.7+ | 2002 12 14 | 704 | 0.6+ | 1.0+ | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2001 08 27 | 704 | 0.3− | 0.7+ | 2002 12 14 | 704 | (0.8+ | 1.6+) | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2001 08 27 | 699 | (1.8− | 0.4+) | 2002 12 14 | 704 | 0.7+ | 1.2+ | 2006 11 17 | 644 | 0.1+ | 0.3− |
| 2001 08 27 | 704 | 0.6− | 0.5+ | 2003 01 05 | 704 | 0.1− | 0.7+ | 2006 11 21 | 703 | 0.7− | 0.2+ |
| 2001 08 27 | 699 | 0.4− | 0.1− | 2003 01 05 | 704 | 0.3− | 0.7− | 2006 11 21 | 703 | 0.2+ | 0.0 |
| 2001 08 27 | 704 | 0.2− | 0.9+ | 2003 01 05 | 704 | 0.1− | 0.4+ | 2006 11 21 | 703 | 1.0− | 0.4+ |
| 2001 08 27 | 704 | 0.2− | 0.7+ | 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 11 21 | 703 | (3.9− | 1.6+) |
| 2001 08 28 | 704 | 0.4− | 0.9+ | 2003 01 07 | 704 | 0.1− | 0.5+ | | | | |
| 2001 08 28 | 704 | 0.3− | 0.5+ | 2003 01 07 | 704 | 0.2− | 0.5+ | | | | |

**(139511)∗ 2001 PV$_{48}$ = 2002 XF$_{36}$**

Discovered 2001 Aug. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 40254)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.21523 | | (2000.0) | | +0.02141672 | −0.92926593 |
| $n$ | 0.22980010 | $\omega$ | 180.49697 | | +0.91853987 | +0.16393491 |
| $a$ | 2.6397892 | $\Omega$ | 268.31090 | | +0.39474782 | −0.33104406 |
| $e$ | 0.0494293 | $i$ | 21.65090 | | | |
| $P$ | 4.29 | $H$ | 14.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 704 | (3.5− | 0.4−) | 2002 12 05 | 704 | 0.1− | 0.7+ | 2003 01 07 | 704 | (2.0− | 1.2+) |
| 1999 01 23 | 704 | 0.2+ | 0.0 | 2002 12 05 | 704 | 0.5− | 0.2+ | 2003 01 08 | 704 | 1.0+ | 0.4− |
| 1999 01 23 | 704 | 0.4− | 0.0 | 2002 12 05 | 704 | 0.3+ | 0.3+ | 2003 01 08 | 704 | 0.5+ | 0.1− |
| 1999 01 23 | 704 | 0.3+ | 0.4+ | 2002 12 07 | 704 | 0.5− | 0.8− | 2003 01 08 | 704 | 0.3+ | 0.4− |
| 2001 08 04 | 608 | 0.7− | 0.9+ | 2002 12 07 | 704 | 0.1− | 0.5− | 2003 02 02 | 704 | (2.0+ | 1.2+) |
| 2001 08 04 | 608 | 0.5− | 0.7+ | 2002 12 07 | 704 | 0.1+ | 0.1− | 2003 02 02 | 704 | 0.7+ | 0.0 |
| 2001 08 04 | 608 | 1.0− | 0.1+ | 2002 12 10 | 704 | 0.2+ | 0.1− | 2003 02 02 | 704 | 0.8+ | 0.4+ |
| 2001 08 14 | 644 | 0.7+ | 0.1+ | 2002 12 10 | 704 | 0.0 | 0.0 | 2003 02 02 | 704 | 1.3+ | 0.5+ |
| 2001 08 14 | 644 | 0.7+ | 0.3+ | 2002 12 10 | 704 | 0.4− | 0.8+ | 2004 04 18 | E12 | (2.3+ | 0.5−) |
| 2001 08 14 | 644 | 0.3+ | 0.0 | 2002 12 10 | 704 | 0.7+ | 0.3+ | 2004 04 18 | E12 | 0.1− | 0.8+ |
| 2001 08 18 | 699 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.1− | 0.1+ | 2004 04 18 | E12 | 0.8+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 699 | 0.2− | 0.0 | 2002 12 10 | 704 | 0.1+ | 0.4+ | 2004 04 18 | E12 | 1.1+ | 0.1− |
| 2001 08 18 | 699 | 0.1+ | 0.1+ | 2002 12 10 | 704 | 0.1+ | 0.5+ | 2004 05 11 | E12 | 0.4+ | 0.4+ |
| 2001 08 18 | 699 | 0.2+ | 0.7+ | 2002 12 31 | 704 | 0.5+ | 0.2+ | 2004 05 11 | E12 | 0.1− | 1.2+ |
| 2001 08 21 | 644 | (4.4+ | 9.2+) | 2002 12 31 | 704 | 1.1− | 0.6+ | 2004 05 11 | E12 | 0.9− | 1.2+ |
| 2001 08 21 | 644 | (4.0+ | 9.6+) | 2002 12 31 | 704 | 0.4+ | 0.1− | 2004 05 11 | E12 | (1.1− | 1.8+) |
| 2001 08 21 | 644 | (3.6+ | 9.2+) | 2002 12 31 | 704 | 0.3+ | 0.2− | 2005 06 21 | 644 | 0.0 | 0.1+ |
| 2001 08 22 | 704 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.1− | 0.4− | 2005 06 21 | 644 | 0.1+ | 0.4+ |
| 2001 08 22 | 704 | 0.1− | 0.6+ | 2003 01 01 | 704 | 0.3− | 0.2+ | 2005 06 21 | 644 | 0.2− | 0.4+ |
| 2001 08 22 | 704 | 0.3− | 0.0 | 2003 01 01 | 704 | 0.5− | 0.2− | 2006 11 13 | 704 | 0.4+ | 0.1+ |
| 2001 08 22 | 704 | 0.5− | 0.2− | 2003 01 01 | 704 | 0.3− | 0.2− | 2006 11 13 | 704 | 0.1+ | 0.3− |
| 2001 08 22 | 704 | 0.1+ | 0.2+ | 2003 01 01 | 704 | 0.1+ | 0.3− | 2006 11 13 | 704 | 0.2+ | 0.1+ |
| 2001 09 09 | 704 | 0.3− | 0.4+ | 2003 01 03 | 704 | 0.5− | 0.5+ | 2006 11 20 | 703 | 1.2− | 0.1− |
| 2001 09 09 | 704 | 0.1+ | 0.4− | 2003 01 03 | 704 | 0.0 | 0.8+ | 2006 11 20 | 703 | 0.6− | 0.0 |
| 2001 09 09 | 704 | 0.4− | 0.3− | 2003 01 03 | 704 | 0.2+ | 1.0+ | 2006 11 20 | 703 | 0.0 | 0.6+ |
| 2001 09 09 | 704 | 0.2− | 0.0 | 2003 01 07 | 704 | 0.3− | 0.3− | 2006 11 20 | 703 | 0.0 | 0.3− |
| 2001 09 09 | 704 | (1.8− | 0.5−) | 2003 01 07 | 704 | 0.2− | 1.2− | 2006 11 23 | 644 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.1− | 0.5+ | 2003 01 07 | 704 | 0.6− | 0.0 | 2006 11 23 | 644 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.5+ | 0.5+ | 2003 01 07 | 704 | 0.3− | 0.7+ | 2006 11 23 | 644 | 0.3+ | 0.0 |

**(139512)∗ 2001 PY$_{49}$**

Discovered 2001 Aug. 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.12242 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22331691 | $\omega$ | 337.53387 | | +0.99371108 | | +0.07820957 |
| $a$ | 2.6906361 | $\Omega$ | 18.52578 | | −0.01396354 | | +0.79661612 |
| $e$ | 0.1299286 | $i$ | 14.60825 | | −0.11110045 | | +0.59940473 |
| $P$ | 4.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 15 | 608 | 0.4+ | 0.1− | 2002 12 07 | 704 | 0.6+ | 0.3+ | 2004 04 14 | 691 | 0.2+ | 0.1+ |
| 2001 08 15 | 608 | 0.0 | 0.1− | 2002 12 07 | 704 | 0.1− | 0.6+ | 2004 04 23 | 691 | 0.1− | 0.0 |
| 2001 08 15 | 608 | 0.1− | 0.1+ | 2002 12 07 | 704 | 0.9− | 0.9− | 2004 04 23 | 691 | 0.2− | 0.2+ |
| 2001 08 19 | 704 | 0.6− | 0.4+ | 2002 12 09 | 699 | 0.4+ | 0.3+ | 2004 04 23 | 691 | 0.2− | 0.0 |
| 2001 08 19 | 704 | 0.9− | 0.7+ | 2002 12 09 | 699 | 0.6+ | 0.5+ | 2005 06 01 | E12 | 0.2− | 0.2− |
| 2001 08 19 | 704 | 0.6− | 0.9+ | 2002 12 09 | 699 | 0.4− | 0.0 | 2005 06 01 | E12 | 0.6− | 0.3+ |
| 2001 08 19 | 704 | 1.3− | 1.1+ | 2002 12 09 | 699 | 0.2− | 0.6+ | 2005 06 01 | E12 | 0.6+ | 1.4+ |
| 2001 08 19 | 704 | 0.9− | 1.4+ | 2002 12 28 | 704 | 1.1+ | 0.2− | 2005 06 01 | E12 | 0.4+ | 0.7+ |
| 2001 08 20 | 644 | 0.3+ | 0.1− | 2002 12 28 | 704 | 0.9+ | 0.5+ | 2005 06 30 | E12 | 0.0 | 0.2− |
| 2001 08 20 | 644 | 0.0 | 0.5+ | 2002 12 28 | 704 | 0.1+ | 1.1+ | 2005 06 30 | E12 | 0.1+ | 0.3+ |
| 2001 08 20 | 644 | 0.2+ | 0.4+ | 2002 12 28 | 704 | (1.5+ | 1.7+) | 2005 06 30 | E12 | 0.2+ | 0.9+ |
| 2001 08 22 | 608 | 0.5− | 0.9− | 2003 01 11 | 704 | 0.5+ | 0.9+ | 2005 06 30 | E12 | 0.2− | 0.5− |
| 2001 08 22 | 608 | 0.3+ | 1.2− | 2003 01 11 | 704 | 0.2+ | 0.9+ | 2006 10 23 | 703 | 0.1+ | 0.4− |
| 2001 08 22 | 608 | 0.1+ | 0.3− | 2003 01 11 | 704 | 0.7− | 1.2+ | 2006 10 23 | 703 | 0.2+ | 0.3+ |
| 2001 08 26 | 644 | 0.5− | 0.5+ | 2003 01 31 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 703 | 0.3+ | 0.3− |
| 2001 08 26 | 644 | 0.4− | 0.6+ | 2003 01 31 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 703 | 0.0 | 0.1+ |
| 2001 08 26 | 644 | 0.4− | 0.5+ | 2003 01 31 | 644 | 0.0 | 0.1+ | 2006 10 29 | 703 | 0.3− | 0.1+ |
| 2001 09 17 | 699 | 0.2+ | 0.1− | 2004 03 22 | 704 | 1.0− | 0.4+ | 2006 10 29 | 703 | 0.1− | 0.1+ |
| 2001 09 17 | 699 | 0.1− | 1.1− | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 10 29 | 703 | 0.4+ | 0.0 |
| 2001 09 17 | 699 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.2− | 0.6+ | 2006 10 29 | 703 | 0.1+ | 0.4+ |
| 2001 09 17 | 699 | 0.6− | 0.5+ | 2004 03 22 | 704 | 0.2+ | 0.9+ | 2006 11 14 | 704 | 0.6− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.3− | 2006 11 14 | 704 | 0.0 | 0.7− |
| 2001 09 25 | 704 | 0.2+ | 0.8+ | 2004 03 28 | 704 | (1.9+ | 0.7+) | 2006 11 14 | 704 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.3+ | 0.4+ |
| 2001 10 20 | 704 | 1.3+ | 0.2− | 2004 03 28 | 704 | 1.1+ | 0.4+ | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2001 10 20 | 704 | 0.8+ | 0.8− | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 1.1− | 2004 03 28 | 704 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.1− | 0.3+ |
| 2001 10 20 | 704 | 0.3+ | 0.4− | 2004 04 14 | 691 | 0.0 | 0.0 | | | | |
| 2002 12 07 | 704 | 0.2− | 0.0 | 2004 04 14 | 691 | 0.3+ | 0.0 | | | | |

**(139513)∗ 2001 PA$_{50}$**

Discovered 2001 Aug. 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.11312 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24303295 | $\omega$ | 244.25074 | | +0.83041372 | | +0.52115868 |
| $a$ | 2.5430757 | $\Omega$ | 83.76250 | | −0.41323172 | | +0.81328494 |
| $e$ | 0.1333623 | $i$ | 11.42981 | | −0.37370122 | | +0.25876871 |
| $P$ | 4.06 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 644 | 0.7− | 0.2+ | 2001 09 11 | 704 | 0.6+ | 0.3+ | 2005 08 10 | E12 | 0.6− | 0.2+ |
| 2001 07 27 | 644 | 0.3− | 0.5+ | 2001 09 11 | 704 | 0.5+ | 0.2− | 2005 08 10 | E12 | 0.1+ | 0.2+ |
| 2001 07 27 | 644 | 0.5− | 0.2+ | 2001 09 11 | 704 | 0.2− | 0.0 | 2005 08 28 | E12 | 0.2+ | 0.2+ |
| 2001 08 15 | 608 | 0.2+ | 0.6− | 2001 09 17 | 699 | 0.3+ | 0.1+ | 2005 08 28 | E12 | 0.0 | 0.4+ |
| 2001 08 15 | 608 | 0.2+ | 0.0 | 2001 09 17 | 699 | 0.6− | 0.1+ | 2005 08 28 | E12 | 0.4+ | 1.1− |
| 2001 08 15 | 608 | 0.3+ | 0.1− | 2001 09 17 | 699 | 0.4− | 0.1− | 2005 08 28 | E12 | 0.9− | 1.4+ |
| 2001 08 19 | 704 | 0.2+ | 0.9+ | 2001 09 17 | 699 | 1.0− | 0.1− | 2005 09 03 | I10 | 0.0 | 0.8+ |
| 2001 08 19 | 704 | 0.5+ | 0.8+ | 2001 10 14 | 644 | 0.0 | 1.0− | 2005 09 03 | I10 | 0.3+ | 0.4+ |
| 2001 08 19 | 704 | 0.2+ | 0.3+ | 2001 10 14 | 644 | 0.4+ | 1.4− | 2005 09 03 | I10 | 0.3+ | 0.5+ |
| 2001 08 19 | 704 | 0.5+ | 0.5+ | 2001 10 14 | 644 | 0.0 | 1.3− | 2005 09 10 | 699 | 0.4− | 0.2+ |
| 2001 08 19 | 704 | 0.5+ | 0.3+ | 2003 01 05 | 704 | 0.2− | 0.6+ | 2005 09 10 | 699 | 0.2+ | 0.0 |
| 2001 08 20 | 644 | 0.7+ | 0.5+ | 2003 01 05 | 704 | 0.5− | 0.3+ | 2005 09 10 | 699 | 0.7− | 0.7− |
| 2001 08 20 | 644 | 0.3+ | 0.6+ | 2003 01 05 | 704 | 0.6− | 0.0 | 2005 09 10 | 699 | 0.2+ | 0.1+ |
| 2001 08 20 | 644 | 0.7+ | 0.6+ | 2003 01 05 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2001 08 23 | 608 | 0.2+ | 0.9− | 2003 01 05 | 704 | 0.4− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.4+ |
| 2001 08 23 | 608 | 0.3+ | 0.8− | 2004 04 12 | 703 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.8+ | 0.1+ |
| 2001 08 23 | 608 | 0.3+ | 1.1− | 2004 04 12 | 703 | (0.0 | 1.7+) | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 08 23 | 608 | 0.2− | 1.0− | 2004 04 12 | 703 | 1.4− | 0.1− | 2006 10 22 | G96 | 0.5− | 0.2+ |
| 2001 08 23 | 608 | 0.3− | 1.1− | 2004 04 12 | 703 | 0.1− | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2001 08 23 | 608 | 0.8− | 0.5− | 2004 04 15 | 704 | 0.5+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2001 08 24 | 608 | 0.5− | 1.1+ | 2004 04 15 | 704 | 0.4+ | 1.4+ | 2006 10 29 | G96 | 0.2− | 0.0 |
| 2001 08 24 | 608 | 0.2− | 0.6− | 2004 04 15 | 704 | 0.4+ | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.0 |
| 2001 08 24 | 608 | 0.5− | 0.2− | 2004 04 15 | 704 | 0.8+ | 0.6− | 2006 10 29 | G96 | 0.4− | 0.4− |
| 2001 08 26 | 644 | 0.0 | 0.9+ | 2004 04 24 | 291 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.2− | 0.2+ |
| 2001 08 26 | 644 | 0.1− | 0.6+ | 2004 04 24 | 291 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2001 08 26 | 644 | 0.2− | 0.7+ | 2004 04 24 | 291 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.7− |
| 2001 09 11 | 704 | 0.2− | 0.2+ | 2005 08 10 | E12 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.5− | 0.2+ |
| 2001 09 11 | 704 | 0.7+ | 0.2+ | 2005 08 10 | E12 | 0.9− | 0.0 | | | | |

**(139514)∗ 2001 PM$_{50}$ = 1997 WZ$_{37}$**

Discovered 2001 Aug. 15 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 17728)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.68373 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21744235 | $\omega$ | 320.81524 | | +0.80623137 | | −0.56332651 |
| $a$ | 2.7388818 | $\Omega$ | 74.39539 | | +0.57892815 | | +0.68837305 |
| $e$ | 0.1689816 | $i$ | 10.81394 | | +0.12179152 | | +0.45695271 |
| $P$ | 4.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | (2.2− | 0.5−) | 2003 01 31 | 704 | 0.2+ | 0.1− | 2006 11 14 | 683 | (1.8− | 1.3+) |
| 1997 11 29 | 704 | 0.4− | 1.0− | 2004 03 30 | 691 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.1− | 0.7+ |
| 1997 11 29 | 704 | (0.7− | 2.3−) | 2004 03 30 | 691 | 0.1− | 0.6+ | 2006 11 15 | 683 | 0.0 | 0.2+ |
| 1997 11 29 | 704 | 1.4− | 1.1− | 2004 03 30 | 691 | 0.3+ | 0.7+ | 2006 11 15 | 683 | 0.0 | 0.9+ |
| 1997 11 29 | 704 | 1.9− | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.9+ | 2006 11 15 | 683 | 0.3− | 0.8+ |
| 1997 12 04 | 704 | 0.9+ | 0.4− | 2006 09 18 | 703 | 0.8− | 0.3− | 2006 11 17 | 704 | 0.2− | 0.0 |
| 1997 12 04 | 704 | (3.3+ | 0.7+) | 2006 09 18 | 703 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 0.7− | 0.4+ |
| 1997 12 04 | 704 | 1.4+ | 0.3− | 2006 09 18 | 703 | 0.0 | 0.5+ | 2006 11 17 | 704 | 1.0− | 0.2− |
| 1997 12 04 | 704 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.3+ | 1.0+ | 2006 11 17 | 704 | 0.2− | 0.1+ |
| 2001 07 26 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 11 17 | 704 | 1.2− | 0.3+ |
| 2001 07 26 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.4+ | 2006 11 19 | 704 | (1.7+ | 0.9+) |
| 2001 07 26 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 1.1− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.8+ |
| 2001 08 15 | 608 | 0.2− | 0.5+ | 2006 11 02 | 703 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2001 08 15 | 608 | 1.0− | 0.4+ | 2006 11 02 | 703 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2001 08 15 | 608 | 0.6− | 0.4+ | 2006 11 02 | 703 | 0.4+ | 1.1+ | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2001 08 22 | 608 | 0.3+ | 0.5− | 2006 11 02 | 703 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.9+ | 0.5− |
| 2001 08 22 | 608 | 1.0+ | 0.8− | 2006 11 09 | 644 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.5− | 0.3+ |
| 2001 08 22 | 608 | 0.7+ | 0.7− | 2006 11 09 | 644 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.4− | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 704 | 0.2+ | 0.6− | 2006 11 09 | 644 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.5+ | |
| 2001 09 11 | 704 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.7− | 0.4+ | |
| 2001 09 11 | 704 | 1.1+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.3− | 2006 11 23 | 683 | 0.4− | 1.3− | |
| 2001 09 11 | 704 | 0.3− | 0.5− | 2006 11 09 | 644 | 0.4− | 0.1− | 2006 11 23 | 683 | (0.6+ | 1.7−) | |
| 2001 09 11 | 704 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.4− | 0.1− | 2006 11 23 | 683 | 0.1− | 0.2+ | |
| 2001 09 17 | 699 | 0.6+ | 0.3+ | 2006 11 10 | 644 | 0.5− | 0.2− | 2006 11 25 | 683 | 0.5+ | 0.3− | |
| 2001 09 17 | 699 | 0.2− | 0.7− | 2006 11 10 | 644 | 0.4− | 0.7− | 2006 11 25 | 683 | 0.2+ | 1.4− | |
| 2001 09 17 | 699 | 0.1− | 0.3− | 2006 11 13 | 683 | 0.9+ | 0.3+ | 2006 11 25 | 683 | 0.2+ | 0.3+ | |
| 2001 09 17 | 699 | 0.5− | 0.5+ | 2006 11 13 | 683 | 0.7+ | 0.8+ | 2006 11 25 | 704 | 0.4+ | 0.3+ | |
| 2001 10 07 | 644 | 0.1− | 0.1+ | 2006 11 13 | 683 | 0.4+ | 0.2− | 2006 11 25 | 704 | 0.1− | 0.5− | |
| 2001 10 07 | 644 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.8− | 2006 11 25 | 704 | 0.7− | 0.5+ | |
| 2001 10 07 | 644 | 0.1+ | 0.6+ | 2006 11 13 | 703 | 0.6− | 0.3− | 2006 11 28 | 683 | 1.7+ | 0.2− | |
| 2003 01 10 | 704 | 1.2+ | 0.1+ | 2006 11 13 | 703 | 0.8− | 0.7− | 2006 11 28 | 683 | 1.2+ | 0.1+ | |
| 2003 01 10 | 704 | (1.6+ | 0.4−) | 2006 11 13 | 703 | 0.1+ | 0.1− | 2006 11 28 | 683 | 1.7+ | 0.3+ | |
| 2003 01 10 | 704 | (2.5+ | 0.0 ) | 2006 11 14 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.4− | 0.3+ | |
| 2003 01 10 | 704 | 0.3+ | 0.8− | 2006 11 14 | 704 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.1+ | 0.4+ | |
| 2003 01 10 | 704 | 0.2+ | 1.3− | 2006 11 14 | 683 | 1.3− | 0.3− | 2006 11 28 | 704 | 0.1− | 0.5+ | |
| 2003 01 31 | 704 | 1.1+ | 0.2− | 2006 11 14 | 704 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.8− | |
| 2003 01 31 | 704 | 1.1+ | 0.8+ | 2006 11 14 | 683 | (2.0− | 0.9+) | 2006 11 28 | 704 | 0.0 | 0.7+ | |
| 2003 01 31 | 704 | 0.3+ | 0.6− | 2006 11 14 | 704 | 0.7− | 0.1+ | | | | | |

**(139515)∗ 2001 PD$_{53}$**

Discovered 2001 Aug. 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.70103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21934209 | $\omega$ | 53.45518 | | −0.83906664 | +0.54312590 | |
| $a$ | 2.7230444 | $\Omega$ | 159.38478 | | −0.52324327 | −0.78990452 | |
| $e$ | 0.0526743 | $i$ | 5.10472 | | −0.14894177 | −0.28471935 | |
| $P$ | 4.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.5− | 1.0+ | 2004 01 24 | 704 | 1.2+ | 0.1+ | 2004 03 18 | 704 | 0.5− | 0.4+ | |
| 2000 04 05 | 699 | 0.1+ | 0.4+ | 2004 01 24 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.9+ | 0.8+ | |
| 2000 04 05 | 699 | 0.2+ | 0.7+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.9− | 1.3+ | |
| 2000 04 05 | 699 | 0.1− | 0.2+ | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 08 28 | 703 | (0.2+ | 1.9+) | |
| 2000 04 27 | 699 | 0.1+ | 0.8+ | 2004 02 11 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.3− | |
| 2000 04 27 | 699 | 0.5+ | 1.7+ | 2004 02 14 | 703 | 1.2− | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.0 | |
| 2000 04 27 | 699 | 0.8+ | 0.8+ | 2004 02 14 | 703 | 0.1+ | 1.3+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | |
| 2000 04 27 | 699 | 0.6+ | 1.4+ | 2004 02 14 | 703 | 1.4+ | 0.9− | 2006 09 15 | 691 | 0.2+ | 0.5+ | |
| 2001 07 27 | 699 | 0.3− | 0.5+ | 2004 02 14 | 699 | 1.4− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.6+ | |
| 2001 07 27 | 699 | 0.2− | 0.3− | 2004 02 14 | 703 | 0.4− | 0.6− | 2006 09 19 | 691 | 0.1+ | 0.2+ | |
| 2001 07 27 | 699 | 1.0+ | 0.4+ | 2004 02 14 | 699 | (1.6+ | 0.2−) | 2006 09 19 | 691 | 0.1+ | 0.0 | |
| 2001 07 27 | 699 | 1.4− | 0.8+ | 2004 02 15 | 608 | 0.4− | 0.3− | 2006 09 19 | 691 | 1.1− | 0.4− | |
| 2001 08 14 | 608 | 0.8+ | 0.2− | 2004 02 15 | 608 | 0.6− | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.4+ | |
| 2001 08 14 | 608 | 1.0+ | 0.1+ | 2004 02 15 | 608 | 0.1− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.5+ | |
| 2001 08 14 | 608 | 0.4+ | 0.5+ | 2004 02 17 | 704 | 1.0+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.2+ | |
| 2001 08 16 | 704 | 0.9− | 0.5+ | 2004 02 17 | 704 | 0.6+ | 0.4+ | 2006 09 23 | 691 | 1.1− | 0.4+ | |
| 2001 08 16 | 704 | 1.4− | 1.0+ | 2004 02 17 | 704 | 0.4+ | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.3+ | |
| 2001 08 16 | 704 | 1.0− | 1.1+ | 2004 02 17 | 704 | 1.0+ | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | |
| 2001 08 24 | 704 | 0.3+ | 0.2+ | 2004 02 17 | 704 | 0.8+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 1.5+ | |
| 2001 08 24 | 704 | 0.2+ | 0.5− | 2004 02 26 | 704 | 0.8− | 0.7+ | 2006 10 17 | 703 | (1.6+ | 1.4+) | |
| 2001 08 24 | 704 | (0.4+ | 1.6−) | 2004 02 26 | 704 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 1.2+ | 1.1+ | |
| 2001 08 24 | 704 | 1.0+ | 0.6− | 2004 02 26 | 704 | 1.0− | 1.5+ | 2006 10 17 | 703 | (1.8+ | 0.8+) | |
| 2002 11 07 | 704 | 0.8+ | 1.2− | 2004 02 26 | 704 | (0.2+ | 1.8+) | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 2002 11 07 | 704 | 1.1+ | 0.6− | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 | |
| 2002 11 07 | 704 | 0.8− | 0.2+ | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ | |
| 2002 11 07 | 704 | 0.4− | 0.0 | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.6+ | |
| 2002 11 22 | 644 | 0.4− | 0.2+ | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.7− | 0.5+ | |
| 2002 11 22 | 644 | 0.2+ | 0.3+ | 2004 03 18 | 704 | (0.6+ | 1.9+) | 2006 10 21 | 644 | 0.1+ | 0.5+ | |
| 2002 11 22 | 644 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.6+ | | | | | |
| 2004 01 24 | 704 | 0.4+ | 0.5− | 2004 03 18 | 704 | 0.6+ | 1.0+ | | | | | |

**(139516)∗ 2001 PA$_{57}$**

Discovered 2001 Aug. 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.57966 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21058487 | $\omega$ | 149.13048 | | +0.99274679 | +0.11965488 | |
| $a$ | 2.7980229 | $\Omega$ | 204.00565 | | −0.11533326 | +0.92041548 | |
| $e$ | 0.2530823 | $i$ | 1.64577 | | −0.03394184 | +0.37218013 | |
| $P$ | 4.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 644 | 0.8− | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 | |
| 2001 07 29 | 644 | 0.8− | 0.3+ | 2006 09 27 | 704 | (0.0 | 1.6+) | 2006 10 23 | 691 | 0.3− | 0.2− | |
| 2001 07 29 | 644 | 0.7− | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.3− | |
| 2001 08 14 | 608 | (1.8− | 0.6−) | 2006 09 27 | 704 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− | |
| 2001 08 14 | 608 | 0.1+ | 0.6− | 2006 09 27 | 704 | 0.3− | 0.5+ | 2006 10 23 | 704 | 1.2− | 0.4+ | |
| 2001 08 14 | 608 | 0.3+ | 0.4− | 2006 09 27 | 704 | (1.8+ | 0.3+) | 2006 10 23 | 704 | 0.0 | 0.0 | |
| 2001 08 19 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 10 23 | 704 | 0.9− | 0.1− | |
| 2001 08 19 | 704 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 704 | 1.1− | 0.1+ | |
| 2001 08 19 | 704 | 0.2− | 1.1+ | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.0 | |
| 2001 08 19 | 704 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.2− | |
| 2001 08 19 | 704 | 0.1+ | 0.8− | 2006 09 29 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.2− | 0.1− | |
| 2001 09 07 | 704 | (1.7+ | 0.3−) | 2006 09 29 | 704 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.4− | 0.3− | |
| 2001 09 07 | 704 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2001 09 07 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− | |
| 2001 09 07 | 704 | 0.6− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.2− | |
| 2001 09 19 | 691 | 0.4+ | 0.7− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | 1.0+ | 0.4− | |
| 2001 09 19 | 691 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 28 | 704 | 1.1+ | 0.4+ | |
| 2001 09 19 | 691 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.2+ | 0.4+ | |
| 2004 03 27 | 291 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.8+ | 0.0 | |
| 2004 03 27 | 291 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 28 | 704 | (2.1+ | 0.2−) | |
| 2004 03 27 | 291 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.0 | |
| 2005 06 13 | G96 | 0.3+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2− | 0.3− | |
| 2005 06 13 | G96 | 0.0 | 0.1− | 2006 10 16 | 185 | 1.1+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1− | |
| 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 10 16 | 185 | 0.9+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.2+ | |
| 2005 06 13 | G96 | 0.0 | 0.6+ | 2006 10 16 | 185 | (1.8+ | 0.1−) | 2006 11 09 | 644 | 0.1− | 0.1+ | |
| 2005 06 14 | 691 | 0.2− | 0.5+ | 2006 10 17 | 185 | 0.9+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.0 | |
| 2005 06 14 | 691 | 0.6+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.0 | |
| 2005 06 14 | 691 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.2− | 0.2+ | |
| 2006 09 15 | 644 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.3− | 0.1+ | |
| 2006 09 15 | 644 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.5+ | 0.1− | |
| 2006 09 15 | 644 | 0.1+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.4+ | |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3− | |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 20 | 703 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.1− | |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 20 | 703 | 0.0 | 0.4− | 2006 11 13 | 704 | 0.5− | 0.4+ | |
| 2006 09 21 | 224 | 0.0 | 0.5+ | 2006 10 20 | 703 | 0.5+ | 0.8− | 2006 11 13 | 704 | 0.7+ | 0.2+ | |
| 2006 09 21 | 224 | 0.3+ | 0.5+ | 2006 10 20 | 703 | 0.6− | 0.0 | 2006 11 13 | 704 | 0.3+ | 0.5+ | |
| 2006 09 21 | 224 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.2+ | 2006 11 13 | 704 | 1.4+ | 0.9+ | |
| 2006 09 21 | 683 | 1.4+ | 1.0− | 2006 10 21 | 703 | 0.4+ | 0.1+ | 2006 11 13 | 704 | 0.8− | 0.4+ | |
| 2006 09 21 | 683 | 0.9+ | 0.6− | 2006 10 21 | 703 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.7+ | |
| 2006 09 21 | 683 | (1.5− | 0.2+) | 2006 10 21 | 703 | 0.2− | 0.2− | 2006 11 20 | G96 | 0.5+ | 0.2− | |
| 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.5− | 0.1− | |
| 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.7− | 0.4+ | |

**(139517)∗ 2001 PY$_{57}$ = 1999 FN$_{35}$**

Discovered 2001 Aug. 14 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 17729)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.18791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20300669 | $\omega$ | 187.17307 | | −0.89940990 | −0.40999757 | |
| $a$ | 2.8672297 | $\Omega$ | 327.26446 | | +0.41366886 | −0.68639725 | |
| $e$ | 0.0435323 | $i$ | 16.27397 | | +0.14120872 | −0.60063367 | |
| $P$ | 4.86 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 21 | 699 | 0.5+ | 0.4+ | 2001 09 20 | 704 | 0.3+ | 0.1+ | 2004 03 23 | 704 | (0.3− | 2.2+) | |
| 1999 02 21 | 699 | 0.2+ | 0.2+ | 2001 09 20 | 704 | 0.6− | 0.7+ | 2004 03 23 | 704 | (1.0− | 2.9+) | |
| 1999 02 21 | 699 | 0.2+ | 0.8+ | 2001 09 20 | 645 | 0.1− | 0.0 | 2004 03 31 | 704 | 0.1+ | 0.5+ | |
| 1999 03 20 | 704 | 1.4+ | 0.2− | 2001 09 20 | 645 | 0.1− | 0.0 | 2004 03 31 | 704 | 0.6+ | 1.6+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 704 | 0.9+ | 0.1− | 2001 09 20 | 645 | 0.1− | 0.0 | 2004 03 31 | 704 | 0.6+ | 0.9+ | | |
| 1999 03 20 | 704 | 0.4+ | 0.0 | 2001 09 20 | 645 | 0.1− | 0.1+ | 2004 03 31 | 704 | 0.2− | 0.1+ | | |
| 1999 03 20 | 704 | 0.3+ | 0.2+ | 2002 12 10 | 704 | 0.8− | 0.7− | 2006 08 25 | D35 | 0.2+ | 0.2+ | | |
| 1999 03 23 | 704 | (0.1− | 2.9+) | 2002 12 10 | 704 | 0.3− | 0.0 | 2006 08 25 | D35 | 0.1− | 0.3+ | | |
| 1999 03 23 | 704 | 1.1+ | 1.4+ | 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 08 25 | D35 | 0.0 | 0.2+ | | |
| 1999 03 23 | 704 | 0.9+ | 0.9+ | 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.4+ | 1.1+ | | |
| 1999 03 23 | 704 | 0.7− | 1.4+ | 2004 01 23 | 704 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.0 | 1.1+ | | |
| 1999 03 23 | 704 | (3.3− | 1.5+) | 2004 01 23 | 704 | 0.6+ | 1.1+ | 2006 08 27 | 699 | (0.9+ | 1.5+) | | |
| 2001 07 14 | 644 | 0.3− | 0.2+ | 2004 01 23 | 704 | 0.5+ | 0.3− | 2006 08 27 | 699 | 0.3− | 0.3+ | | |
| 2001 07 14 | 644 | 0.2− | 0.8+ | 2004 01 28 | 704 | 0.3− | 1.2+ | 2006 09 06 | 644 | 0.1− | 0.1+ | | |
| 2001 07 14 | 644 | 0.3+ | 0.0 | 2004 01 28 | 704 | 0.1− | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.6+ | | |
| 2001 08 14 | 608 | 0.3− | 0.8− | 2004 01 28 | 704 | 0.3− | 0.1− | 2006 09 06 | 644 | 0.2− | 0.4+ | | |
| 2001 08 14 | 608 | 0.0 | 0.5− | 2004 01 30 | 608 | 0.9+ | 0.0 | 2006 09 15 | 704 | 0.0 | 0.7+ | | |
| 2001 08 14 | 608 | 0.3+ | 0.1− | 2004 01 30 | 608 | 0.4+ | 0.0 | 2006 09 15 | 704 | 0.6+ | 0.5+ | | |
| 2001 08 17 | 704 | 0.7− | 0.5+ | 2004 01 30 | 608 | 1.1+ | 0.4+ | 2006 09 15 | 704 | 0.6+ | 0.7+ | | |
| 2001 08 17 | 704 | 0.7− | 0.8+ | 2004 02 14 | 644 | 0.1+ | 0.5+ | 2006 09 15 | 704 | 0.4− | 0.3− | | |
| 2001 08 17 | 704 | 0.4− | 0.4+ | 2004 02 14 | 644 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.4+ | | |
| 2001 08 17 | 704 | 0.2+ | 0.7+ | 2004 02 14 | 644 | 0.2+ | 0.5+ | 2006 09 16 | 644 | 0.0 | 0.5+ | | |
| 2001 08 23 | 699 | 0.4− | 0.3+ | 2004 02 17 | 703 | 0.9+ | 0.6+ | 2006 09 16 | 644 | 0.1+ | 0.5+ | | |
| 2001 08 23 | 699 | 0.0 | 0.9+ | 2004 02 17 | 703 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.7− | | |
| 2001 08 23 | 699 | 0.0 | 1.0+ | 2004 02 17 | 703 | 0.6+ | 1.6+ | 2006 09 17 | 703 | 0.2− | 0.1− | | |
| 2001 08 23 | 699 | 0.1+ | 0.1+ | 2004 02 17 | 703 | 0.1+ | 1.2+ | 2006 09 17 | 703 | 1.1− | 0.1− | | |
| 2001 09 08 | 704 | 0.1− | 0.5+ | 2004 02 19 | 704 | 0.2− | 0.7+ | 2006 09 17 | 703 | 0.2− | 0.1+ | | |
| 2001 09 08 | 704 | 0.4− | 0.4+ | 2004 02 19 | 704 | 0.2+ | 1.6+ | 2006 09 22 | 703 | 0.4− | 0.8+ | | |
| 2001 09 08 | 704 | 0.0 | 1.1+ | 2004 02 19 | 704 | 0.3+ | 0.9+ | 2006 09 22 | 703 | 0.1− | 1.2− | | |
| 2001 09 08 | 704 | 0.7− | 1.2+ | 2004 02 19 | 704 | 0.5+ | 0.0 | 2006 09 22 | 703 | 0.1− | 0.2+ | | |
| 2001 09 08 | 704 | 0.8− | 0.7+ | 2004 02 19 | 704 | 1.1+ | 0.4− | 2006 09 22 | 703 | 0.3− | 0.3− | | |
| 2001 09 11 | 699 | (0.7− | 2.1+) | 2004 03 14 | 644 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.2− | | |
| 2001 09 11 | 699 | 0.9+ | 0.8+ | 2004 03 14 | 644 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.7− | 0.2+ | | |
| 2001 09 11 | 699 | 0.1− | 0.9+ | 2004 03 14 | 644 | 0.5+ | 0.0 | 2006 09 27 | 703 | 0.1+ | 0.1− | | |
| 2001 09 11 | 699 | 0.3+ | 0.6+ | 2004 03 16 | 704 | 0.5− | 0.6+ | 2006 09 27 | 703 | 1.1− | 0.1+ | | |
| 2001 09 16 | 704 | 1.1− | 0.5+ | 2004 03 16 | 704 | (1.0− | 1.7+) | 2006 10 03 | G96 | 0.3+ | 0.0 | | |
| 2001 09 16 | 704 | 1.4+ | 0.3+ | 2004 03 16 | 704 | 0.6+ | 0.8− | 2006 10 03 | G96 | 0.1+ | 0.0 | | |
| 2001 09 16 | 704 | 0.8+ | 1.3− | 2004 03 16 | 704 | 0.4+ | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.3− | | |
| 2001 09 16 | 704 | 0.0 | 0.3− | 2004 03 16 | 704 | 0.5+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2− | | |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2004 03 23 | 704 | (0.6− | 2.1+) | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 20 | 704 | 1.3− | 0.2+ | 2004 03 23 | 704 | (0.6− | 2.1+) | 2006 10 11 | 644 | 0.4+ | 0.0 | | |
| 2001 09 20 | 704 | 0.8− | 1.1+ | 2004 03 23 | 704 | (0.7− | 2.6+) | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |

**(139518)∗ 2001 PJ$_{59}$**

Discovered 2001 Aug. 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.58961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21988853 | $\omega$ | 298.60100 | | −0.24208421 | −0.96760989 | |
| $a$ | 2.7185313 | $\Omega$ | 164.88939 | | +0.95818099 | −0.25002532 | |
| $e$ | 0.0973982 | $i$ | 15.94157 | | +0.15259235 | +0.03490625 | |
| $P$ | 4.48 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.2+ | 1.0+ | 2001 10 11 | 704 | 0.1− | 0.6+ | 2004 05 11 | 703 | 1.1− | 1.4− | | |
| 2001 07 20 | 644 | (0.9+ | 1.6+) | 2001 10 11 | 704 | 0.3− | 0.7+ | 2004 05 11 | 703 | (2.4+ | 0.8+) | | |
| 2001 07 20 | 644 | 0.4+ | 1.3+ | 2001 10 11 | 704 | 0.2+ | 1.1+ | 2004 05 11 | 703 | (0.9− | 2.5+) | | |
| 2001 08 14 | 608 | 0.2− | 0.8+ | 2001 10 11 | 704 | 0.6− | 0.0 | 2004 05 11 | 703 | (1.6− | 0.0 ) | | |
| 2001 08 14 | 608 | 0.0 | 0.4+ | 2001 10 11 | 704 | 1.0− | 0.6− | 2004 05 13 | 691 | 0.1+ | 0.7+ | | |
| 2001 08 14 | 608 | 0.2+ | 0.6+ | 2001 10 11 | 704 | 0.2− | 0.1− | 2004 05 13 | 691 | 0.2+ | 0.7+ | | |
| 2001 08 16 | 704 | 0.4+ | 0.3+ | 2001 10 11 | 704 | 0.6+ | 0.4− | 2004 05 13 | 691 | 0.0 | 0.7+ | | |
| 2001 08 16 | 704 | 0.0 | 0.7− | 2001 10 17 | 644 | 0.1− | 0.1+ | 2005 10 07 | G96 | 0.6+ | 0.1− | | |
| 2001 08 16 | 704 | 0.6+ | 0.9− | 2001 10 17 | 644 | 0.2+ | 0.1+ | 2005 10 07 | G96 | 1.0+ | 0.2+ | | |
| 2001 08 27 | 699 | 0.3+ | 0.4− | 2001 10 17 | 644 | 0.3− | 0.2+ | 2005 10 07 | G96 | 0.8+ | 0.2+ | | |
| 2001 08 27 | 699 | 0.2− | 0.3+ | 2001 10 20 | 704 | 0.5− | 0.6+ | 2005 10 07 | G96 | 0.7+ | 0.1+ | | |
| 2001 08 27 | 699 | 1.3− | 0.1− | 2001 10 20 | 704 | 0.0 | 0.2+ | 2005 10 27 | G96 | 0.1− | 0.1− | | |
| 2001 08 27 | 699 | 0.1+ | 0.1+ | 2001 10 20 | 704 | 0.4− | 0.1+ | 2005 10 27 | G96 | 0.1+ | 0.3− | | |
| 2001 09 11 | 699 | 0.3+ | 1.3+ | 2003 01 02 | 704 | (0.1+ | 1.9+) | 2005 10 27 | G96 | 0.2− | 0.3+ | | |
| 2001 09 11 | 699 | 1.2− | 0.4+ | 2003 01 02 | 704 | 0.2− | 1.4+ | 2005 10 27 | G96 | 0.2− | 0.3− | | |
| 2001 09 11 | 699 | 0.8+ | 0.9+ | 2003 01 02 | 704 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.4+ | 0.7− | | |
| 2001 09 11 | 699 | 1.1− | 0.5− | 2003 01 02 | 704 | 0.9+ | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.0 | | |
| 2001 09 12 | 704 | 0.3+ | 0.1+ | 2003 01 03 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 1.0− | | |
| 2001 09 12 | 704 | 0.4+ | 0.3+ | 2003 01 03 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.6+ | 0.2− | 2003 01 03 | 704 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.9− | | |
| 2001 09 19 | 704 | 0.8− | 0.7− | 2003 01 03 | 704 | 0.7− | 1.0+ | 2006 10 17 | 703 | 0.7− | 0.4− | | |
| 2001 09 19 | 704 | 0.8− | 0.3− | 2003 01 03 | 704 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.4+ | 1.0− | | |
| 2001 09 19 | 704 | 0.7+ | 0.3+ | 2003 01 28 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.9− | | |
| 2001 09 19 | 704 | 0.6− | 0.0 | 2003 01 28 | 704 | 0.4− | 0.4− | 2006 10 20 | 703 | 0.9− | 0.6− | | |
| 2001 09 21 | 704 | 0.3− | 0.9− | 2003 01 28 | 704 | 0.8− | 0.1− | 2006 10 20 | 703 | 0.1− | 0.0 | | |
| 2001 09 21 | 704 | (1.6− | 1.1+) | 2003 01 28 | 704 | 0.8− | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2003 01 29 | 683 | (2.6− | 3.5+) | 2006 10 20 | 703 | 0.2− | 0.8+ | | |
| 2001 09 21 | 704 | 0.7− | 0.3− | 2003 01 29 | 683 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 0.4+ | 0.4− | | |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2003 01 29 | 683 | (2.7− | 2.6+) | 2006 10 28 | 703 | 0.5− | 0.3+ | | |
| 2001 09 24 | 704 | 0.1− | 0.2+ | 2003 01 30 | 683 | (1.0+ | 5.4+) | 2006 10 28 | 703 | 1.4− | 0.2+ | | |
| 2001 09 24 | 704 | 1.3+ | 0.8+ | 2003 01 30 | 683 | 1.3+ | 1.1+ | 2006 10 28 | 703 | 0.2− | 0.4− | | |
| 2001 09 24 | 704 | 0.8+ | 0.6+ | 2003 01 30 | 683 | 0.3− | 1.0+ | 2006 11 16 | 703 | 0.7+ | 0.3− | | |
| 2001 09 25 | 644 | 0.2− | 0.5+ | 2003 01 31 | 683 | 0.3+ | 0.9+ | 2006 11 16 | 703 | 0.2+ | 0.4− | | |
| 2001 09 25 | 644 | 0.2+ | 1.1+ | 2003 01 31 | 683 | 0.4+ | 0.5+ | 2006 11 16 | 703 | 0.2+ | 0.7− | | |
| 2001 09 25 | 644 | 0.2+ | 1.0+ | 2003 01 31 | 683 | 0.0 | 0.1+ | 2006 11 16 | 703 | (2.4+ | 2.5−) | | |
| 2001 09 27 | 644 | 0.5− | 1.1+ | 2003 02 02 | 683 | (1.4− | 1.6+) | 2006 11 22 | 703 | 0.1+ | 0.1+ | | |
| 2001 09 27 | 644 | 0.3+ | 1.2+ | 2003 02 02 | 683 | 1.1− | 1.4+ | 2006 11 22 | 703 | 0.2− | 0.4+ | | |
| 2001 09 27 | 644 | 0.3− | 1.1+ | 2003 02 02 | 683 | 0.2+ | 0.9+ | 2006 11 22 | 703 | 0.1+ | 0.2− | | |
| 2001 10 08 | 644 | 0.1+ | 0.1− | 2003 02 04 | 644 | 0.4+ | 0.4+ | 2006 11 22 | 703 | 0.9+ | 0.5− | | |
| 2001 10 08 | 644 | 0.3− | 0.2− | 2003 02 04 | 644 | 0.3+ | 0.4+ | | | | | | |
| 2001 10 08 | 644 | 0.2− | 0.1− | 2003 02 04 | 644 | 0.3+ | 0.3+ | | | | | | |

**(139519)∗ 2001 PP$_{60}$ = 1999 CB$_{66}$**

Discovered 2001 Aug. 13 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 17730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.04428 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21732119 | $\omega$ | 115.02747 | | +0.38618265 | −0.92098150 | |
| $a$ | 2.7398997 | $\Omega$ | 312.15436 | | +0.81927395 | +0.36813552 | |
| $e$ | 0.1037593 | $i$ | 3.98633 | | +0.42385511 | +0.12755120 | |
| $P$ | 4.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 699 | 1.4+ | 0.4+ | 2002 12 11 | 704 | 0.0 | 0.5− | 2006 09 15 | 704 | 0.6− | 0.2+ | | |
| 1999 02 12 | 699 | 0.9+ | 1.3+ | 2002 12 11 | 704 | 0.4− | 0.7− | 2006 09 15 | 704 | 0.2+ | 0.4+ | | |
| 1999 02 12 | 699 | (2.3+ | 1.3+) | 2002 12 11 | 704 | 0.3− | 1.3− | 2006 09 15 | 704 | 0.2− | 0.5+ | | |
| 1999 02 12 | 704 | 0.6+ | 0.1− | 2002 12 11 | 704 | 0.7− | 0.6− | 2006 09 15 | 704 | 0.3+ | 0.9+ | | |
| 1999 02 12 | 704 | 0.5− | 0.2+ | 2002 12 12 | 704 | (1.6+ | 0.1−) | 2006 09 18 | 691 | 0.1− | 0.2+ | | |
| 1999 02 12 | 704 | 0.4− | 0.2− | 2002 12 12 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.1+ | | |
| 1999 02 12 | 704 | 0.2− | 0.2− | 2002 12 12 | 704 | (2.2+ | 0.0 ) | 2006 09 18 | 691 | 0.1− | 0.2+ | | |
| 1999 02 12 | 704 | 1.1+ | 1.3+ | 2002 12 12 | 704 | 0.8+ | 0.3+ | 2006 09 18 | 704 | 0.1+ | 1.3+ | | |
| 1999 02 16 | 704 | 1.0+ | 0.7+ | 2002 12 12 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 704 | 0.1+ | 0.2− | | |
| 1999 02 16 | 704 | 0.5+ | 1.3+ | 2002 12 12 | 704 | (1.7− | 1.1+) | 2006 09 18 | 704 | 0.6+ | 1.2− | | |
| 1999 02 16 | 704 | 1.9+ | 0.4− | 2002 12 12 | 704 | 0.4− | 0.7− | 2006 09 18 | 704 | 0.6+ | 0.3+ | | |
| 1999 02 16 | 704 | 1.6+ | 0.4+ | 2002 12 14 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 704 | 1.0+ | 0.0 | | |
| 2001 07 21 | 608 | 0.2− | 0.7− | 2002 12 14 | 704 | 0.8− | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.2− | | |
| 2001 07 21 | 608 | 0.2+ | 1.1− | 2002 12 14 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.1+ | | |
| 2001 07 21 | 608 | 0.6+ | 0.6− | 2002 12 14 | 704 | 0.7− | 0.3− | 2006 09 19 | 699 | 0.0 | 0.2− | | |
| 2001 07 21 | 608 | 0.1+ | 0.6− | 2002 12 14 | 704 | 0.2− | 0.6+ | 2006 09 19 | 699 | 0.2− | 0.2+ | | |
| 2001 07 21 | 608 | 0.1− | 0.4− | 2002 12 14 | 704 | 0.6− | 0.3− | 2006 09 25 | 704 | 0.9− | 0.3− | | |
| 2001 07 21 | 608 | 0.4+ | 0.6− | 2002 12 14 | 704 | 0.0 | 0.9+ | 2006 09 25 | 704 | 1.0− | 0.2+ | | |
| 2001 07 27 | 699 | 0.4− | 0.2− | 2002 12 14 | 704 | 0.4− | 0.6− | 2006 09 25 | 704 | 0.3− | 0.2+ | | |
| 2001 07 27 | 699 | 0.0 | 0.5+ | 2002 12 14 | 704 | 0.1+ | 0.8+ | 2006 09 25 | 704 | 0.2− | 0.3− | | |
| 2001 07 27 | 699 | 0.8− | 0.7+ | 2002 12 14 | 704 | 0.9− | 0.4− | 2006 09 25 | 704 | 0.2− | 0.0 | | |
| 2001 07 27 | 699 | 0.4− | 0.2− | 2003 01 05 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.2+ | | |
| 2001 08 13 | 608 | 0.7− | 0.1− | 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2001 08 13 | 608 | 0.6− | 0.3+ | 2003 01 05 | 704 | 0.7− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 2001 08 13 | 608 | 0.6− | 0.5+ | 2003 01 05 | 704 | 1.2− | 0.6− | 2006 09 27 | 699 | 0.1+ | 0.4− | | |
| 2001 08 16 | 704 | (1.7+ | 1.6+) | 2003 01 05 | 704 | 0.9+ | 0.3+ | 2006 09 27 | 699 | 0.7− | 0.5+ | | |
| 2001 08 16 | 704 | 0.2+ | 1.0+ | 2004 03 17 | 704 | (0.6+ | 1.7+) | 2006 09 27 | 699 | 0.4+ | 0.2− | | |
| 2001 08 16 | 704 | 1.2+ | 0.6+ | 2004 03 17 | 704 | 0.7+ | 0.8+ | 2006 09 29 | 704 | 0.1+ | 0.4+ | | |
| 2001 08 16 | 704 | (1.8+ | 1.2+) | 2004 03 17 | 704 | (1.3+ | 2.5+) | 2006 09 29 | 704 | 0.2+ | 0.5+ | | |
| 2001 08 27 | 691 | 0.4− | 0.4+ | 2004 03 17 | 704 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.1+ | | |
| 2001 08 27 | 691 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.9− | 1.0+ | | |
| 2001 08 27 | 691 | 0.4− | 0.8+ | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 13 | 644 | 0.1+ | 0.4− | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2001 09 13 | 644 | 0.4+ | 0.5− | 2004 03 19 | 704 | 0.2− | 0.6− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2001 09 13 | 644 | 0.4+ | 0.4− | 2004 03 19 | 704 | 0.3− | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.9+ | 0.9− | 2004 03 27 | 699 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 0.3− | 2004 03 27 | 699 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.2− | 2004 03 27 | 699 | 0.2− | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 09 23 | 691 | 0.0 | 0.3− | 2004 03 27 | 699 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.8+ |
| 2001 09 23 | 691 | 0.1− | 0.1− | 2004 03 31 | 704 | 0.0 | 0.8+ | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2001 09 23 | 691 | 0.1− | 0.1− | 2004 03 31 | 704 | 0.1− | 1.3+ | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | 0.5+ | 0.4− | 2004 03 31 | 704 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2004 03 31 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2002 11 12 | 704 | 0.7− | 0.9− | 2004 03 31 | 704 | 0.2+ | 1.3+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 11 12 | 704 | 0.5− | 0.2+ | 2006 08 30 | 704 | 0.7+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.8− |
| 2002 11 12 | 704 | 0.3+ | 0.3− | 2006 08 30 | 704 | (0.6+ | 1.6−) | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.7+ | 0.2− | 2006 11 06 | 644 | 0.4+ | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.6+ | 0.6+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 11 06 | 644 | 0.4− | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.2− | | | | |
| 2002 12 11 | 704 | 0.3− | 0.3− | 2006 09 06 | 644 | 0.4− | 0.1+ | | | | |

**(139520)∗ 2001 PM$_{61}$**

Discovered 2001 Aug. 13 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.09254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21443747 | $\omega$ | 39.44029 | | +0.92952476 | −0.36776193 | |
| $a$ | 2.7644088 | $\Omega$ | 342.08044 | | +0.31214628 | +0.82383183 | |
| $e$ | 0.1126061 | $i$ | 5.05466 | | +0.19633751 | +0.43133777 | |
| $P$ | 4.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.4− | 0.7+ | 2001 09 12 | 704 | 0.2− | 0.8+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2001 08 13 | 608 | 0.6− | 0.3+ | 2001 09 12 | 704 | 0.9+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.4+ |
| 2001 08 13 | 608 | 0.7− | 0.7+ | 2001 09 12 | 704 | 0.4− | 1.0− | 2006 10 22 | G96 | 0.0 | 0.3+ |
| 2001 08 16 | 704 | 0.4+ | 0.7+ | 2001 09 12 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.4+ |
| 2001 08 16 | 704 | 0.2− | 0.4+ | 2001 09 12 | 704 | 0.4+ | 0.7− | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2001 08 16 | 704 | 0.3+ | 0.3+ | 2001 09 12 | 704 | 0.6− | 0.0 | 2006 10 29 | 691 | 0.2− | 0.3+ |
| 2001 08 16 | 704 | 0.6− | 0.1− | 2001 09 19 | 704 | 0.4+ | 0.6− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 08 23 | 699 | 0.1+ | 0.1− | 2001 09 19 | 704 | 0.6+ | 0.2− | 2006 10 29 | 704 | 0.8− | 0.4+ |
| 2001 08 23 | 699 | 0.4− | 0.6+ | 2001 09 19 | 704 | 0.2+ | 0.1+ | 2006 10 29 | 704 | 0.1− | 0.3+ |
| 2001 08 23 | 699 | 0.3− | 0.4− | 2001 09 19 | 704 | 0.6+ | 0.5+ | 2006 10 29 | 704 | 0.5− | 0.6− |
| 2001 08 23 | 699 | 0.6− | 0.3− | 2001 09 21 | 704 | 0.3+ | 0.5+ | 2006 10 29 | 704 | 0.4− | 0.7+ |
| 2001 08 28 | 644 | 0.0 | 0.4+ | 2001 09 21 | 704 | 0.5− | 0.5− | 2006 11 07 | 644 | 0.3− | 0.6− |
| 2001 08 28 | 644 | 0.4+ | 0.9+ | 2001 09 21 | 704 | 0.6− | 0.0 | 2006 11 07 | 644 | 0.0 | 0.5+ |
| 2001 08 28 | 644 | 0.2+ | 0.2+ | 2001 09 21 | 704 | 0.5− | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.3+ |
| 2001 09 07 | 704 | 0.1− | 0.1− | 2003 01 05 | 704 | (0.2+ | 1.9+) | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2001 09 07 | 704 | 0.8+ | 1.0+ | 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.5− | 0.3+ |
| 2001 09 07 | 704 | 0.6+ | 0.5− | 2003 01 05 | 704 | 0.1+ | 1.2+ | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 2001 09 07 | 704 | 0.7+ | 0.3− | 2003 01 05 | 704 | (1.0+ | 1.7+) | 2006 11 14 | 703 | 0.3+ | 0.4− |
| 2001 09 07 | 704 | 0.2− | 0.5− | 2004 03 27 | 704 | 1.0+ | 0.1− | 2006 11 14 | 703 | 0.8− | 1.1− |
| 2001 09 10 | 704 | 0.5+ | 0.6+ | 2004 03 27 | 704 | 0.8+ | 0.9+ | 2006 11 14 | 703 | 0.3− | 0.7− |
| 2001 09 10 | 704 | 0.2− | 0.0 | 2004 03 27 | 704 | 0.0 | 1.0+ | 2006 11 14 | 703 | 0.8− | 0.5− |
| 2001 09 10 | 704 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2001 09 10 | 704 | 0.4+ | 0.2− | 2004 04 19 | 691 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.7+ | 0.1− |
| 2001 09 10 | 704 | 0.2− | 0.1+ | 2004 04 19 | 691 | 0.1− | 0.6+ | 2006 11 19 | 704 | 0.4+ | 0.6− |
| 2001 09 10 | 704 | 0.0 | 0.2− | 2004 04 19 | 691 | 0.3+ | 0.9+ | 2006 11 19 | 704 | 0.1− | 0.7− |
| 2001 09 10 | 704 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 1.3+ |
| 2001 09 10 | 704 | 0.1+ | 1.0+ | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | (0.2+ | 1.6−) |
| 2001 09 10 | 704 | 0.1− | 0.9+ | 2006 09 30 | 691 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2001 09 11 | 704 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.8− |
| 2001 09 11 | 704 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2001 09 11 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 1.2− | 0.7+ |
| 2001 09 11 | 704 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2001 09 11 | 704 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 1.0+ | 1.4− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.7− | 0.5− | 2006 10 21 | 691 | 0.2− | 0.1− | | | | |
| 2001 09 12 | 704 | 1.2− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 | | | | |

**(139521)∗ 2001 PA$_{65}$**

Discovered 2001 Aug. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.94752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20922554 | $\omega$ | 291.98741 | | +0.73927790 | −0.66385656 | |
| $a$ | 2.8101290 | $\Omega$ | 109.80281 | | +0.65361771 | +0.66702499 | |
| $e$ | 0.0427890 | $i$ | 6.89629 | | +0.16202495 | +0.33818950 | |
| $P$ | 4.71 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 03 | 644 | 0.5− | 0.2− | 2003 01 08 | 704 | 0.1− | 0.7+ | 2004 04 23 | 704 | 0.5+ | 0.1− |
| 2001 08 03 | 644 | 0.6− | 0.1− | 2004 01 23 | 704 | 0.2+ | 1.0+ | 2004 05 07 | 703 | (0.6+ | 1.6+) |
| 2001 08 03 | 644 | 0.6− | 0.3+ | 2004 01 23 | 704 | (0.9+ | 1.7+) | 2004 05 07 | 703 | 0.9+ | 0.3+ |
| 2001 08 25 | 699 | 1.0− | 1.1+ | 2004 01 23 | 704 | (0.9+ | 1.7+) | 2004 05 07 | 703 | 0.9+ | 0.7− |
| 2001 08 25 | 699 | (1.5− | 1.0+) | 2004 01 23 | 704 | 0.6+ | 1.0+ | 2004 05 07 | 703 | 1.2+ | 1.4+ |
| 2001 08 25 | 699 | 0.1− | 1.0+ | 2004 03 21 | 691 | 0.2− | 0.2+ | 2004 05 12 | 644 | 0.5+ | 0.7+ |
| 2001 08 25 | 699 | 0.0 | 1.2+ | 2004 03 21 | 691 | 0.2− | 0.2+ | 2004 05 12 | 644 | 0.5+ | 0.9+ |
| 2001 09 07 | 699 | 0.4+ | 0.8+ | 2004 03 21 | 691 | 0.1− | 0.1+ | 2004 05 12 | 644 | 0.1− | 0.9+ |
| 2001 09 07 | 699 | (0.7− | 2.4+) | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.6+ |
| 2001 09 07 | 699 | 1.3− | 1.4+ | 2004 03 23 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.3− |
| 2001 09 07 | 699 | (2.2− | 0.4+) | 2004 03 23 | 704 | 0.1− | 0.8+ | 2006 09 18 | 703 | 0.3+ | 0.4− |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.4− |
| 2001 09 12 | 704 | 1.0− | 0.0 | 2004 03 23 | 704 | 0.8+ | 0.6+ | 2006 09 21 | 699 | 0.1− | 0.7+ |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2004 03 26 | 012 | 0.8− | 1.3− | 2006 09 21 | 699 | 0.4+ | 0.8+ |
| 2001 09 12 | 704 | 0.2+ | 0.1− | 2004 03 26 | 012 | 0.7+ | 1.4+ | 2006 09 21 | 699 | 0.2− | 0.1+ |
| 2001 09 17 | 699 | 0.1+ | 1.2+ | 2004 03 26 | 012 | 0.3+ | 0.5+ | 2006 09 21 | 699 | 0.4− | 0.5+ |
| 2001 09 17 | 699 | 0.4− | 0.2+ | 2004 03 26 | 012 | (2.0+ | 0.5−) | 2006 09 25 | 699 | 0.4− | 1.1+ |
| 2001 09 17 | 699 | 1.4+ | 0.4+ | 2004 03 26 | 012 | 0.9+ | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.5+ |
| 2001 09 17 | 699 | 1.1+ | 0.6+ | 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2001 09 26 | 704 | 0.2− | 0.8+ | 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.9− | 0.4+ |
| 2001 09 26 | 704 | 0.4− | 0.3+ | 2004 03 28 | 691 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.5+ |
| 2001 09 26 | 704 | (1.6+ | 0.2−) | 2004 03 30 | 703 | 0.4− | 1.0− | 2006 09 26 | 703 | 0.5− | 0.7+ |
| 2001 09 26 | 704 | 0.1+ | 0.1+ | 2004 03 30 | 703 | 1.0+ | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2001 10 10 | 644 | 0.4− | 0.1+ | 2004 03 30 | 703 | 0.6+ | 0.9− | 2006 09 26 | 703 | 0.4− | 0.3+ |
| 2001 10 10 | 644 | 0.1− | 0.1+ | 2004 03 30 | 703 | 0.8− | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.7+ |
| 2001 10 10 | 644 | 0.1− | 0.1− | 2004 04 10 | 644 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.4− | 0.1− |
| 2001 10 24 | 644 | 0.2− | 0.2+ | 2004 04 10 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.1+ |
| 2001 10 24 | 644 | 0.1− | 0.3+ | 2004 04 10 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 704 | 0.9+ | 0.1− |
| 2001 10 24 | 644 | 0.3− | 0.4+ | 2004 04 15 | 644 | 0.1+ | 0.7+ | 2006 09 30 | 704 | 0.9+ | 0.8+ |
| 2002 12 10 | 704 | 0.2+ | 0.4− | 2004 04 15 | 704 | (1.2+ | 1.7+) | 2006 09 30 | 704 | 0.4+ | 0.1+ |
| 2002 12 10 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2004 04 15 | 704 | 0.7+ | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2002 12 10 | 704 | 0.2+ | 0.2− | 2004 04 15 | 704 | 0.9+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2002 12 31 | 704 | 0.6− | 0.2+ | 2004 04 15 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2002 12 31 | 704 | 0.4− | 0.1+ | 2004 04 21 | 704 | (0.3− | 2.1+) | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2002 12 31 | 704 | 0.2− | 0.1+ | 2004 04 21 | 704 | 0.7+ | 1.3+ | 2006 10 22 | 703 | 0.8+ | 0.5− |
| 2002 12 31 | 704 | 0.1− | 0.5+ | 2004 04 21 | 703 | 0.4− | 1.4− | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2003 01 04 | 704 | 0.9+ | 0.5+ | 2004 04 21 | 703 | 0.4− | 0.6− | 2006 10 22 | 703 | 0.2+ | 0.5+ |
| 2003 01 04 | 704 | 0.2+ | 0.4+ | 2004 04 21 | 704 | 0.3+ | 0.9+ | 2006 10 22 | 703 | 0.2+ | 0.4− |
| 2003 01 04 | 704 | 0.3+ | 0.9+ | 2004 04 21 | 703 | 0.7− | 0.3+ | 2006 11 16 | 703 | 0.3− | 0.4+ |
| 2003 01 04 | 704 | 0.2+ | 0.5+ | 2004 04 21 | 703 | 1.0− | 0.3+ | 2006 11 16 | 703 | 0.2− | 0.4+ |
| 2003 01 04 | 704 | (1.8+ | 0.1+) | 2004 04 23 | 704 | 0.2− | 0.5− | 2006 11 16 | 703 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 0.2− | 0.1+ | 2004 04 23 | 704 | 0.4+ | 0.6+ | 2006 11 16 | 703 | 0.8+ | 0.5− |
| 2003 01 08 | 704 | 0.7+ | 0.0 | 2004 04 23 | 704 | 0.2+ | 1.1+ | | | | |
| 2003 01 08 | 704 | 0.4− | 0.0 | 2004 04 23 | 704 | 1.2+ | 0.1+ | | | | |

**(139522)∗ 2001 QX$_1$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.75998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21364068 | $\omega$ | 250.24958 | | −0.62682938 | +0.77603666 | |
| $a$ | 2.7712779 | $\Omega$ | 340.42533 | | −0.61411527 | −0.54709656 | |
| $e$ | 0.1544400 | $i$ | 11.99979 | | −0.47952828 | −0.31377134 | |
| $P$ | 4.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.6− | 0.6+ | 2001 09 21 | 704 | 0.5+ | 0.6− | 2004 02 18 | 691 | 0.1+ | 0.0 | |
| 2000 05 07 | 704 | 0.1+ | 0.4+ | 2001 09 21 | 704 | 0.9+ | 0.1+ | 2004 02 18 | 691 | 0.0 | 0.1+ | |
| 2000 05 07 | 704 | 1.0+ | 0.3+ | 2001 09 21 | 704 | 0.1+ | 0.4− | 2004 03 18 | 645 | 0.0 | 0.1− | |
| 2001 08 01 | 644 | (1.5− | 0.6−) | 2003 12 29 | 704 | 0.6+ | 0.6+ | 2004 03 18 | 645 | 0.0 | 0.1− | |
| 2001 08 01 | 644 | 1.3− | 0.7− | 2003 12 29 | 704 | 0.7+ | 0.2+ | 2004 03 18 | 645 | 0.0 | 0.0 | |
| 2001 08 01 | 644 | 1.3− | 0.4− | 2003 12 29 | 704 | 0.6+ | 1.2+ | 2004 03 18 | 645 | 0.0 | 0.0 | |
| 2001 08 16 | 704 | 0.7+ | 0.6+ | 2004 01 17 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.8− | 0.2− | |
| 2001 08 16 | 704 | 0.6+ | 0.6− | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.1+ | |
| 2001 08 16 | 704 | 0.1− | 0.4+ | 2004 01 17 | 644 | 0.5+ | 0.5+ | 2006 09 16 | 703 | 0.5− | 0.7+ | |
| 2001 08 16 | 704 | 0.4+ | 0.4+ | 2004 01 28 | 703 | 0.4− | 0.9+ | 2006 09 16 | 703 | 0.8+ | 0.4− | |
| 2001 08 17 | 704 | 0.6− | 0.2− | 2004 01 28 | 703 | 1.2− | 0.5− | 2006 09 19 | 699 | 0.3+ | 0.2+ | |
| 2001 08 17 | 704 | 0.4+ | 1.4+ | 2004 01 28 | 703 | 0.6+ | 0.0 | 2006 09 19 | 699 | 1.0− | 0.4− | |
| 2001 08 17 | 704 | 0.3+ | 0.5− | 2004 01 28 | 703 | 1.2− | 0.5− | 2006 09 19 | 699 | 0.6− | 1.1− | |
| 2001 08 23 | 699 | 0.8− | 0.2+ | 2004 01 30 | 704 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.5+ | |
| 2001 08 23 | 699 | 0.0 | 0.6+ | 2004 01 30 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.3− | 0.5− | |
| 2001 08 23 | 699 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.1+ | 1.0− | 2006 09 27 | 703 | 0.1− | 0.4+ | |
| 2001 08 23 | 699 | 0.2− | 1.3+ | 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 09 27 | 703 | 0.4− | 0.1+ | |
| 2001 09 07 | 704 | 0.6− | 0.7− | 2004 01 30 | 704 | 0.8+ | 0.1+ | 2006 09 27 | 703 | (2.0+ | 1.2+) | |
| 2001 09 07 | 704 | 1.2− | 0.1+ | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.4+ | 0.4− | |
| 2001 09 07 | 704 | 0.2− | 0.9+ | 2004 02 10 | 644 | 0.6+ | 0.3+ | 2006 10 04 | G96 | 0.4+ | 0.2− | |
| 2001 09 12 | 704 | 0.3− | 0.3− | 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.0 | |
| 2001 09 12 | 704 | 0.4+ | 1.0− | 2004 02 13 | 699 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.5+ | |
| 2001 09 12 | 704 | (1.1+ | 1.7−) | 2004 02 13 | 699 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | |
| 2001 09 19 | 704 | 0.6+ | 1.2+ | 2004 02 13 | 699 | 0.8− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2004 02 13 | 699 | 1.2− | 0.3− | 2006 10 17 | 703 | 0.2− | 1.0− | |
| 2001 09 19 | 704 | 0.3+ | 1.5+ | 2004 02 15 | 704 | 0.1− | 0.4+ | 2006 10 17 | 703 | (1.2+ | 2.7−) | |
| 2001 09 19 | 704 | (0.7+ | 1.7+) | 2004 02 15 | 704 | 0.6− | 1.3+ | 2006 10 17 | 703 | 0.3+ | 0.5− | |
| 2001 09 19 | 704 | (0.0 | 1.8+) | 2004 02 15 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.7+ | 0.1− | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2004 02 15 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2+ | |
| 2001 09 21 | 704 | 0.6+ | 0.2+ | 2004 02 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.3+ | |

**(139523)∗ 2001 QH$_2$**

Discovered 2001 Aug. 17 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.67461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21031705 | $\omega$ | 303.29026 | | +0.22409714 | −0.96647142 | |
| $a$ | 2.8003978 | $\Omega$ | 133.22551 | | +0.94156116 | +0.18151827 | |
| $e$ | 0.1403116 | $i$ | 9.90598 | | +0.25148172 | +0.18161530 | |
| $P$ | 4.69 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 608 | 0.4− | 0.2− | 2001 09 21 | 704 | 0.5− | 1.4+ | 2004 04 10 | 644 | (1.7+ | 0.7+) | |
| 2001 08 12 | 608 | 0.3− | 0.5− | 2002 11 07 | 704 | 0.1− | 0.4+ | 2004 04 10 | 644 | 1.2+ | 0.9+ | |
| 2001 08 12 | 608 | 0.2− | 0.1− | 2002 11 07 | 704 | 0.2+ | 0.1+ | 2004 04 10 | 644 | 1.4+ | 0.8+ | |
| 2001 08 16 | 704 | 0.4− | 0.1− | 2002 11 07 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 699 | 1.0+ | 0.7+ | |
| 2001 08 16 | 704 | 0.2− | 0.1− | 2002 11 07 | 704 | 0.5+ | 0.1− | 2006 08 28 | 699 | 1.1+ | 0.2+ | |
| 2001 08 16 | 704 | 1.1+ | 0.1− | 2003 01 01 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.2− | |
| 2001 08 16 | 704 | 0.2− | 0.1− | 2003 01 01 | 704 | 0.2− | 0.2+ | 2006 08 28 | 699 | 1.1− | 0.5+ | |
| 2001 08 17 | 428 | 0.4+ | 0.1− | 2003 01 01 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 1.0+ | 0.7− | |
| 2001 08 17 | 428 | 0.5+ | 0.5+ | 2003 01 01 | 704 | 0.1− | 0.1− | 2006 09 17 | 699 | 0.6+ | 0.1− | |
| 2001 08 18 | 428 | 1.2+ | 0.3+ | 2003 01 01 | 704 | (1.6− | 0.2−) | 2006 09 17 | 699 | 0.2− | 1.2+ | |
| 2001 08 18 | 428 | 0.3− | 0.1+ | 2003 01 07 | 704 | 0.5+ | 0.2− | 2006 09 17 | 699 | 0.8− | 0.6+ | |
| 2001 08 19 | 428 | (1.8− | 0.5+) | 2003 01 07 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.1+ | |
| 2001 08 19 | 428 | 0.0 | 0.7+ | 2003 01 07 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.7− | |
| 2001 08 23 | 699 | 0.3− | 0.6+ | 2003 01 07 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.0 | |
| 2001 08 23 | 699 | 1.1− | 1.0+ | 2003 01 08 | 704 | 0.6− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.1+ | |
| 2001 08 23 | 699 | 0.3− | 0.3+ | 2003 01 08 | 704 | 0.3− | 1.4− | 2006 10 09 | 644 | 0.0 | 0.2− | |
| 2001 08 23 | 699 | 0.5− | 0.3+ | 2003 01 08 | 704 | (3.8− | 3.2−) | 2006 10 09 | 644 | 0.0 | 0.1− | |
| 2001 08 25 | 704 | 0.4+ | 0.2− | 2003 01 08 | 704 | 0.6− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.2− | |
| 2001 08 25 | 704 | 0.2− | 0.1− | 2003 01 08 | 704 | (3.9− | 2.6−) | 2006 10 21 | 703 | 0.1+ | 0.5− | |
| 2001 08 25 | 704 | 0.6− | 0.7− | 2003 01 08 | 704 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.4+ | 0.6− | |
| 2001 08 25 | 704 | 0.1− | 0.1+ | 2003 01 08 | 704 | (4.5− | 1.3−) | 2006 10 21 | 703 | 0.1− | 0.4+ | |
| 2001 08 26 | 428 | 0.1+ | 0.9− | 2003 01 08 | 704 | 0.3− | 0.8+ | 2006 10 21 | 703 | 0.4− | 0.1− | |
| 2001 08 26 | 428 | (1.6+ | 0.1−) | 2003 01 27 | 704 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.5+ | 0.4+ | |
| 2001 09 11 | 704 | 0.4+ | 0.2+ | 2003 01 27 | 704 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2001 09 11 | 704 | 0.1+ | 0.2+ | 2003 01 27 | 704 | 0.9+ | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.1+ | |
| 2001 09 11 | 704 | 0.6− | 0.9+ | 2003 01 27 | 704 | 0.6+ | 0.3+ | 2006 10 28 | 703 | 1.2− | 0.7+ | |
| 2001 09 11 | 704 | 0.2+ | 1.4+ | 2003 01 27 | 704 | 0.2+ | 0.7+ | 2006 10 28 | 703 | 0.3− | 0.4+ | |
| 2001 09 19 | 704 | 0.5+ | 0.5+ | 2003 02 02 | 704 | 0.4− | 0.2− | 2006 10 28 | 703 | 0.1− | 0.3− | |
| 2001 09 19 | 704 | 0.0 | 0.8+ | 2003 02 02 | 704 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.7− | 0.1− | |
| 2001 09 19 | 704 | 0.8− | 0.4+ | 2003 02 02 | 704 | 0.7− | 0.1− | 2006 11 11 | 644 | 0.5− | 0.3− | |
| 2001 09 19 | 704 | 0.8+ | 0.5− | 2003 02 02 | 704 | 0.5− | 0.1+ | 2006 11 11 | 644 | 0.1− | 0.0 | |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2004 01 30 | 291 | 0.0 | 0.5+ | 2006 11 11 | 644 | 0.2− | 0.6− | |
| 2001 09 21 | 704 | (0.2− | 1.5+) | 2004 01 30 | 291 | 0.1+ | 0.7+ | | | | | |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2004 01 30 | 291 | 0.4− | 0.3+ | | | | | |

**(139524)∗ 2001 QJ$_2$**

Discovered 2001 Aug. 17 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.64018 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22980850 | $\omega$ | 333.28599 | | +0.83308627 | +0.55311004 | |
| $a$ | 2.6397248 | $\Omega$ | 353.12399 | | −0.49804194 | +0.74529871 | |
| $e$ | 0.1003810 | $i$ | 2.89441 | | −0.24066883 | +0.37228903 | |
| $P$ | 4.29 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.1− | 0.7+ | 2001 10 11 | 644 | 0.2− | 0.5+ | 2004 04 15 | 691 | 0.2+ | 0.3+ | |
| 2001 08 16 | 704 | 0.2− | 0.5+ | 2001 10 23 | 704 | 0.6− | 0.7+ | 2004 04 22 | 691 | 0.1+ | 0.3+ | |
| 2001 08 16 | 704 | (2.8+ | 0.5+) | 2001 10 23 | 704 | 0.2− | 0.4+ | 2004 04 22 | 691 | 0.2+ | 0.5+ | |
| 2001 08 16 | 704 | 1.1− | 0.5+ | 2001 10 23 | 704 | 0.0 | 0.5+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | |
| 2001 08 17 | 428 | (2.4+ | 3.0+) | 2001 10 24 | 704 | 0.4+ | 1.1+ | 2005 07 17 | E12 | 0.4− | 1.3+ | |
| 2001 08 18 | 428 | 0.9+ | 1.2− | 2001 10 24 | 704 | 0.1+ | 0.7+ | 2005 07 17 | E12 | 0.3− | 0.5+ | |
| 2001 08 18 | 428 | 0.1+ | 0.2+ | 2001 10 24 | 704 | (0.0 | 1.5+) | 2005 07 17 | E12 | 0.8+ | 0.4+ | |
| 2001 08 22 | 428 | 0.1+ | 0.1+ | 2001 10 24 | 704 | 0.5− | 1.4+ | 2005 07 17 | E12 | 0.2+ | 0.1− | |
| 2001 08 22 | 428 | 1.0− | 0.4− | 2003 01 05 | 704 | 0.5− | 0.0 | 2005 08 06 | 704 | 0.7− | 0.9+ | |
| 2001 08 23 | 699 | 0.3+ | 0.9+ | 2003 01 05 | 704 | 0.9+ | 0.3− | 2005 08 06 | 704 | 0.3+ | 0.2+ | |
| 2001 08 23 | 699 | 0.4+ | 0.7+ | 2003 01 05 | 704 | 0.7+ | 0.3− | 2005 08 06 | 704 | 0.5+ | 0.1− | |
| 2001 08 23 | 699 | 0.6+ | 0.8+ | 2004 02 26 | 704 | 0.6+ | 0.2− | 2005 08 06 | 704 | 0.3− | 0.9+ | |
| 2001 08 23 | 699 | 0.4+ | 0.6+ | 2004 02 26 | 704 | 0.9+ | 0.2− | 2006 09 17 | 291 | 0.5− | 0.4+ | |
| 2001 08 26 | 428 | 0.5+ | 0.5+ | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 09 17 | 291 | 0.4− | 0.3+ | |
| 2001 08 26 | 428 | 0.7− | 0.2− | 2004 02 26 | 704 | 0.9+ | 0.6+ | 2006 09 17 | 291 | 0.6− | 0.3+ | |
| 2001 08 27 | 699 | 0.2+ | 0.8+ | 2004 03 14 | 012 | 0.3+ | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.2− | |
| 2001 08 27 | 699 | 0.3− | 0.3+ | 2004 03 14 | 012 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.4− | |
| 2001 08 27 | 699 | 0.9− | 0.7+ | 2004 03 14 | 012 | 1.1+ | 0.5+ | 2006 10 20 | G96 | 0.8− | 1.3+ | |
| 2001 08 27 | 699 | 0.5− | 1.1+ | 2004 03 14 | 012 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.4− | 0.1+ | |
| 2001 09 07 | 704 | 0.3− | 0.6+ | 2004 03 15 | 703 | 0.1− | 1.2+ | 2006 11 10 | 691 | 0.8− | 0.1− | |
| 2001 09 07 | 704 | 0.4− | 0.1+ | 2004 03 15 | 703 | 0.2+ | 1.1+ | 2006 11 10 | 691 | 0.4− | 0.1− | |
| 2001 09 07 | 704 | 0.6− | 0.5+ | 2004 03 15 | 703 | 1.1− | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | |
| 2001 09 07 | 704 | 0.1− | 0.1+ | 2004 03 15 | 703 | (1.6− | 0.7−) | 2006 11 14 | 691 | 0.1− | 0.0 | |
| 2001 09 07 | 704 | 0.3+ | 1.1+ | 2004 03 16 | 704 | (1.1+ | 1.7+) | 2006 11 14 | 691 | 0.2− | 0.1− | |
| 2001 09 10 | 704 | 0.4− | 0.2− | 2004 03 16 | 704 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.4+ | 0.4+ | |
| 2001 09 10 | 704 | 0.9− | 0.1+ | 2004 03 16 | 704 | 0.5+ | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.1+ | |
| 2001 09 10 | 704 | 1.0− | 0.8− | 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.3+ | |
| 2001 09 10 | 704 | 0.5− | 0.3− | 2004 03 17 | 691 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.7− | |
| 2001 09 10 | 704 | (1.1− | 1.6−) | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.7+ | 0.6+ | |
| 2001 09 11 | 704 | 0.1− | 0.9+ | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.7+ | 1.0+ | |
| 2001 09 11 | 704 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 0.0 | 0.1+ | |
| 2001 09 11 | 704 | 0.0 | 0.6+ | 2004 03 18 | 704 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 0.0 | 0.7+ | |
| 2001 09 11 | 704 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.7+ | |
| 2001 09 11 | 704 | 0.3− | 0.4− | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.4+ | 1.1+ | |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2004 03 21 | 291 | 0.2+ | 0.4+ | 2006 11 19 | 704 | (0.4− | 1.6+) | |
| 2001 09 12 | 704 | 0.2+ | 0.1+ | 2004 03 21 | 291 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.4+ | |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2004 03 21 | 291 | 0.3− | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.0 | |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2004 03 24 | 699 | (1.0+ | 3.3+) | 2006 11 22 | 691 | 0.1+ | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.7− | 1.2+ | 2004 03 24 | 699 | 0.5− | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 1.4+ | 2004 03 24 | 699 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.9+ | 1.3+ |
| 2001 09 19 | 704 | 1.0− | 1.1+ | 2004 03 24 | 699 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.7− | 1.4+ | 2004 03 27 | 704 | 0.5+ | 1.2+ | 2006 11 22 | 704 | 0.8+ | 0.7+ |
| 2001 09 19 | 704 | 0.7− | 1.1+ | 2004 03 27 | 704 | 1.1+ | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | (1.0− | 1.8+) | 2004 03 27 | 704 | 0.9+ | 0.5− | 2006 11 22 | 704 | 0.6+ | 0.7+ |
| 2001 09 21 | 704 | (1.4− | 1.7+) | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 704 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | (0.7− | 2.0+) | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 704 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | (0.8+ | 2.9+) | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 704 | 0.5+ | 0.7+ |
| 2001 10 11 | 644 | 0.1+ | 0.7+ | 2004 04 15 | 691 | 0.4+ | 0.0 | 2006 11 27 | 704 | 0.7+ | 0.1+ |
| 2001 10 11 | 644 | 0.3− | 0.4+ | 2004 04 15 | 691 | 0.2− | 0.4+ | | | | |

**(139525)∗ 2001 QN$_3$ = 2005 JQ$_{109}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75034)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 67.19005 | | (2000.0) | | +0.28377530 | +0.95603623 |
| $n$ | 0.21705333 | $\omega$ | 322.12570 | | −0.84602431 | +0.21333536 |
| $a$ | 2.7421534 | $\Omega$ | 324.18799 | | −0.45134738 | +0.20120326 |
| $e$ | 0.2114673 | $i$ | 7.25908 | | | |
| $P$ | 4.54 | $H$ | 15.8 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 07 | 691 | 0.2− | 0.0 | 2001 08 24 | 704 | 0.0 | 0.4+ | 2005 05 16 | 644 | 0.5+ | 0.6+ |
| 1995 02 07 | 691 | 0.1− | 0.3− | 2001 08 24 | 704 | 0.4− | 1.3+ | 2005 05 18 | 428 | 0.4− | 0.3+ |
| 1995 02 07 | 691 | 0.2− | 0.1− | 2001 08 26 | 691 | 0.3+ | 0.3− | 2005 05 18 | 428 | 0.2+ | 0.3+ |
| 2001 07 27 | 699 | 0.7+ | 0.3+ | 2001 08 26 | 691 | 0.6+ | 0.4− | 2005 06 02 | 699 | 0.7+ | 0.9+ |
| 2001 07 27 | 699 | 0.3+ | 0.1+ | 2001 08 26 | 691 | 0.3+ | 0.3− | 2005 06 02 | 699 | (2.2+ | 0.2−) |
| 2001 07 27 | 699 | 0.1− | 0.0 | 2001 08 27 | 608 | 0.6− | 0.7+ | 2005 06 02 | 699 | (3.0+ | 0.6−) |
| 2001 07 27 | 699 | 0.0 | 0.1− | 2001 08 27 | 608 | 0.2− | 0.7− | 2005 06 02 | 699 | 0.8− | 0.7+ |
| 2001 08 14 | 608 | 0.2+ | 0.5− | 2001 08 27 | 608 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.2− |
| 2001 08 14 | 608 | 0.2+ | 0.2− | 2001 09 07 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.9− | 0.1+ |
| 2001 08 14 | 608 | 0.1+ | 0.1+ | 2001 09 07 | 704 | 0.1+ | 0.1− | 2006 09 16 | 703 | (0.7+ | 1.7+) |
| 2001 08 16 | 704 | 0.6− | 0.4− | 2001 09 07 | 704 | 1.4+ | 1.3− | 2006 09 16 | 703 | 0.9− | 0.8+ |
| 2001 08 16 | 704 | 0.9− | 0.5− | 2001 09 07 | 704 | 0.8+ | 0.2− | 2006 09 20 | 699 | 1.1− | 0.1+ |
| 2001 08 16 | 704 | 1.0− | 0.7− | 2001 09 19 | 704 | 0.0 | 0.6+ | 2006 09 20 | 699 | 0.2+ | 1.5+ |
| 2001 08 16 | 704 | 0.2− | 0.0 | 2001 09 19 | 704 | 0.1+ | 0.7− | 2006 09 20 | 699 | 0.5− | 0.6+ |
| 2001 08 16 | 704 | 1.2− | 0.2− | 2001 09 19 | 704 | (1.4− | 1.7+) | 2006 09 20 | 699 | 0.1+ | 1.0+ |
| 2001 08 18 | 704 | 0.3+ | 0.2+ | 2001 09 19 | 704 | 0.8− | 1.0+ | 2006 09 30 | 703 | 1.1− | 0.5+ |
| 2001 08 18 | 704 | 0.4+ | 0.3− | 2004 02 11 | 691 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.9− | 1.1+ |
| 2001 08 18 | 704 | 0.1+ | 0.7+ | 2004 02 11 | 691 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.7− |
| 2001 08 18 | 704 | 0.1+ | 0.2− | 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.9+ |
| 2001 08 18 | 704 | 0.3+ | 0.6+ | 2005 05 04 | 644 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2001 08 18 | 704 | 0.3− | 0.2− | 2005 05 04 | 644 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2001 08 18 | 704 | 0.0 | 0.7+ | 2005 05 04 | 644 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 08 19 | 704 | 0.9− | 1.0+ | 2005 05 12 | 703 | 0.0 | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2001 08 19 | 704 | 0.5− | 0.3− | 2005 05 12 | 703 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 08 19 | 704 | 0.3− | 0.4+ | 2005 05 12 | 703 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 2001 08 19 | 704 | 0.9− | 1.0+ | 2005 05 12 | 703 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 08 19 | 704 | 0.7− | 0.2− | 2005 05 14 | 428 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 08 20 | 704 | 0.0 | 0.7− | 2005 05 14 | 428 | 0.7− | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2001 08 20 | 704 | 0.2+ | 0.9+ | 2005 05 16 | 644 | 0.5+ | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.6+ |
| 2001 08 20 | 704 | 0.2− | 1.2+ | 2005 05 16 | 644 | 0.6+ | 0.5+ | 2006 11 14 | 703 | 0.6− | 0.2+ |
| 2001 08 20 | 704 | 0.2+ | 0.0 | 2005 05 16 | 644 | 0.5+ | 0.4+ | 2006 11 14 | 703 | 0.9+ | 0.4− |
| 2001 08 20 | 704 | 0.7+ | 0.4+ | 2005 05 16 | 644 | 0.5+ | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.5+ |
| 2001 08 24 | 704 | 0.1− | 0.2+ | 2005 05 16 | 644 | 0.3+ | 0.5+ | | | | |

**(139526)∗ 2001 QU$_4$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.10709 | | (2000.0) | | +0.98878038 | −0.09185152 |
| $n$ | 0.21190114 | $\omega$ | 212.94633 | | +0.11276992 | +0.97616735 |
| $a$ | 2.7864239 | $\Omega$ | 151.60847 | | −0.09796071 | +0.19662297 |
| $e$ | 0.2000571 | $i$ | 14.34385 | | | |
| $P$ | 4.65 | $H$ | 15.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 12 | 691 | 0.2− | 0.1− | 2001 09 07 | 704 | 0.4+ | 0.2− | 2005 07 05 | 691 | 0.1− | 0.0 |
| 1994 02 12 | 691 | 0.6+ | 0.4− | 2001 09 07 | 704 | 0.4+ | 0.6− | 2006 09 19 | 703 | 0.3− | 0.7− |
| 1994 02 12 | 691 | (1.2+ | 2.6−) | 2001 09 07 | 704 | 0.6− | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 2001 07 16 | 699 | 1.1− | 1.1+ | 2001 09 08 | 699 | 0.9+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.3+ |
| 2001 07 16 | 699 | 0.4+ | 1.0+ | 2001 09 08 | 699 | 1.2+ | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.3− |
| 2001 07 16 | 699 | 1.4− | 0.1− | 2001 09 08 | 699 | 1.1+ | 0.1− | 2006 09 21 | 699 | 0.1+ | 0.5+ |
| 2001 07 16 | 608 | 0.4+ | 0.6− | 2001 09 08 | 699 | 0.2− | 0.2− | 2006 09 21 | 699 | 0.2− | 0.0 |
| 2001 07 16 | 699 | (1.9− | 2.4+) | 2001 09 19 | 704 | 0.5− | 0.5+ | 2006 09 21 | 699 | 0.1+ | 0.5+ |
| 2001 07 16 | 608 | 0.4+ | 0.7− | 2001 09 19 | 704 | 0.6− | 0.6+ | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2001 07 16 | 608 | 0.4+ | 0.3− | 2001 09 19 | 704 | 1.4− | 0.5+ | 2006 09 25 | 699 | 0.9− | 0.3+ |
| 2001 08 15 | 608 | 0.8+ | 0.2− | 2001 09 19 | 704 | 1.1− | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.6+ |
| 2001 08 15 | 608 | 0.8+ | 0.6+ | 2001 09 19 | 704 | 0.9− | 0.8+ | 2006 09 25 | 699 | 0.4+ | 0.2− |
| 2001 08 15 | 608 | 1.1+ | 0.2− | 2001 09 21 | 704 | 0.7− | 0.6− | 2006 09 26 | 703 | 0.4+ | 0.4+ |
| 2001 08 16 | 704 | 0.6+ | 0.3− | 2001 09 21 | 704 | 0.5− | 0.0 | 2006 09 26 | 703 | 0.7+ | 0.6+ |
| 2001 08 16 | 704 | 0.3+ | 0.1+ | 2001 09 21 | 704 | 1.3− | 0.2− | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2001 08 16 | 704 | 0.7+ | 0.1− | 2004 03 20 | 691 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.1− | 1.2+ |
| 2001 08 16 | 704 | 0.0 | 0.1+ | 2004 03 20 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.6+ |
| 2001 08 16 | 704 | 0.8+ | 0.3+ | 2004 03 20 | 691 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.4− |
| 2001 08 18 | 704 | 0.4− | 1.3− | 2004 03 30 | 691 | 0.2− | 0.4+ | 2006 09 29 | 699 | 0.5− | 0.3+ |
| 2001 08 18 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 691 | 0.1− | 0.7+ | 2006 10 02 | 703 | 0.0 | 0.1+ |
| 2001 08 18 | 704 | 0.2+ | 0.3− | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.0 |
| 2001 08 18 | 704 | 0.3+ | 0.1− | 2005 05 09 | 691 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.1+ | 0.1− |
| 2001 08 19 | 704 | 0.4− | 0.5− | 2005 05 09 | 691 | 0.3+ | 0.1− | 2006 10 02 | 703 | 0.2− | 0.2− |
| 2001 08 19 | 704 | 0.6− | 0.7− | 2005 05 09 | 691 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2001 08 19 | 704 | 0.2− | 0.2+ | 2005 05 20 | 644 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2001 08 19 | 704 | 0.7− | 0.8+ | 2005 05 20 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2001 08 19 | 704 | 0.5− | 0.4− | 2005 05 20 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2001 08 21 | 691 | 0.3+ | 0.1− | 2005 06 05 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2001 08 21 | 691 | 0.2+ | 0.2− | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 08 21 | 691 | 0.2+ | 0.1− | 2005 06 05 | 691 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.9+ |
| 2001 08 24 | 699 | 0.4− | 0.6− | 2005 06 24 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 2001 08 24 | 699 | 0.6− | 0.3+ | 2005 06 24 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1− | 0.4− |
| 2001 08 24 | 699 | 0.2+ | 0.5− | 2005 06 24 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2001 08 24 | 699 | 0.1− | 0.3− | 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2001 08 28 | 644 | 0.7− | 0.4+ | 2005 06 30 | 644 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2001 08 28 | 644 | 0.7− | 0.0 | 2005 06 30 | 644 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.5− | 0.2+ |
| 2001 08 28 | 644 | 0.9− | 0.2+ | 2005 07 05 | 691 | 0.1+ | 0.1+ | | | | |
| 2001 09 07 | 704 | 0.0 | 0.5+ | 2005 07 05 | 691 | 0.1− | 0.1+ | | | | |

**(139527)∗ 2001 QM$_5$ = 2005 JP$_{65}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.01557 | | (2000.0) | | −0.00784917 | +0.99814549 |
| $n$ | 0.19782146 | $\omega$ | 292.92202 | | −0.85336005 | −0.03815429 |
| $a$ | 2.9171165 | $\Omega$ | 336.38682 | | −0.52126291 | +0.04743235 |
| $e$ | 0.1089357 | $i$ | 8.66763 | | | |
| $P$ | 4.98 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.2+ | 0.0 | 2005 05 04 | 644 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.0 |
| 2001 08 16 | 704 | 0.6− | 0.5+ | 2005 05 04 | 644 | 0.2+ | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.1− |
| 2001 08 16 | 704 | 0.1+ | 0.1+ | 2005 05 11 | 644 | 0.3− | 0.1− | 2006 08 19 | 699 | 0.8− | 0.5+ |
| 2001 08 16 | 704 | 0.6+ | 0.6+ | 2005 05 11 | 644 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.0 | 0.8+ |
| 2001 08 16 | 704 | 0.1− | 0.2+ | 2005 05 11 | 644 | 0.1− | 0.2− | 2006 08 19 | 699 | 0.9− | 0.7+ |
| 2001 08 18 | 704 | 0.3− | 1.2+ | 2005 05 12 | 644 | 0.2− | 0.6+ | 2006 08 19 | 699 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 704 | 0.3− | 0.7+ | 2005 05 12 | 644 | 0.0 | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.0 |
| 2001 08 18 | 704 | 0.8− | 0.7+ | 2005 05 12 | 644 | 0.4+ | 0.4− | 2006 08 20 | 644 | 0.1− | 0.1+ |
| 2001 09 07 | 704 | 1.0+ | 0.3− | 2006 07 25 | 644 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.3− | 0.1+ |
| 2001 09 07 | 704 | 0.3+ | 1.2− | 2006 07 25 | 644 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.0 | 0.1− |
| 2001 09 07 | 704 | 1.5+ | 1.5− | 2006 07 25 | 644 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.0 |
| 2001 09 07 | 704 | 0.3+ | 0.9− | 2006 08 13 | 644 | 0.2+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2006 08 13 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.2+ | 1.9+ |
| 2001 09 19 | 704 | 0.4− | 0.1− | 2006 08 13 | 644 | 0.2+ | 0.1− | 2006 08 29 | 704 | 0.6+ | 0.6+ |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2006 08 15 | 644 | 0.1− | 0.1− | 2006 08 29 | 704 | 0.9+ | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.1− | 2006 08 29 | 704 | 1.2+ | 0.6+ |
| 2002 11 14 | 644 | 0.4− | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.1− | 0.3− |
| 2002 11 14 | 644 | 0.0 | 0.7+ | 2006 08 16 | 644 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.4+ | 0.4− |
| 2002 11 14 | 644 | 0.2− | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.2− | 0.2− |
| 2005 04 06 | 699 | 0.4− | 1.1+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.3− |
| 2005 04 06 | 699 | 0.4− | 0.8− | 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 06 | 699 | 1.1+ | 0.2− | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2005 04 06 | 699 | 0.4+ | 1.2+ | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2005 05 04 | 644 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.2− |

**(139528)∗ 2001 QO$_5$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.73373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21235532 | $\omega$ | 51.85045 | | +0.92294953 | −0.38029264 | |
| $a$ | 2.7824494 | $\Omega$ | 330.36389 | | +0.30466940 | +0.81623073 | |
| $e$ | 0.2433664 | $i$ | 6.91231 | | +0.23524609 | +0.43490792 | |
| $P$ | 4.64 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.1− | 0.2+ | 2001 09 08 | 699 | 0.6+ | 0.8+ | 2006 08 30 | 699 | 0.0 | 0.5+ |
| 1994 02 10 | 691 | 0.1+ | 0.4+ | 2001 09 08 | 699 | 0.6+ | 0.1− | 2006 08 30 | 699 | 0.6+ | 0.2+ |
| 1994 02 10 | 691 | 0.1+ | 0.1− | 2001 09 08 | 699 | 0.3− | 0.3− | 2006 08 30 | 699 | 0.3+ | 0.1− |
| 1999 03 20 | 645 | 0.1+ | 0.2+ | 2001 09 12 | 704 | 0.6− | 0.4+ | 2006 09 28 | 703 | 0.4+ | 0.5+ |
| 1999 03 20 | 645 | 0.2+ | 0.3+ | 2001 09 12 | 704 | 0.5− | 0.8+ | 2006 09 28 | 703 | 0.5+ | 0.1− |
| 2001 08 16 | 704 | 0.1+ | 0.3+ | 2001 09 12 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.7− |
| 2001 08 16 | 704 | 0.2+ | 0.5+ | 2001 09 19 | 704 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.3− |
| 2001 08 16 | 704 | 0.0 | 0.2− | 2001 09 19 | 704 | 0.0 | 0.1− | 2006 10 19 | 703 | 1.0+ | 0.2− |
| 2001 08 18 | 704 | 0.4− | 0.5+ | 2001 09 19 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2001 08 18 | 704 | 0.3+ | 0.6+ | 2001 09 19 | 704 | 0.8− | 0.0 | 2006 10 19 | 703 | 0.3− | 0.4− |
| 2001 08 18 | 704 | 0.0 | 0.2+ | 2001 09 19 | 704 | 0.9− | 0.5+ | 2006 10 19 | 703 | (3.0− | 5.6+) |
| 2001 08 18 | 704 | 0.2− | 0.8+ | 2001 09 20 | 691 | 0.3+ | 0.1− | 2006 10 21 | 704 | (0.5− | 2.1+) |
| 2001 08 19 | 704 | 0.2− | 0.5+ | 2001 09 20 | 691 | 0.2− | 0.1+ | 2006 10 21 | 704 | 0.0 | 0.9+ |
| 2001 08 19 | 704 | 0.1+ | 0.2+ | 2001 09 20 | 691 | 0.2+ | 0.2− | 2006 10 21 | 704 | 0.2− | 0.6+ |
| 2001 08 19 | 704 | 0.5− | 0.7+ | 2001 09 21 | 704 | 0.7+ | 1.0− | 2006 10 21 | 704 | 0.5− | 0.1+ |
| 2001 08 19 | 704 | 0.0 | 0.5+ | 2001 09 21 | 704 | 0.1+ | 1.2+ | 2006 10 21 | 704 | 0.4− | 0.2+ |
| 2001 08 20 | 704 | (1.7+ | 0.8−) | 2001 09 21 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.7− |
| 2001 08 20 | 704 | 0.4− | 0.0 | 2001 10 18 | 644 | 0.8+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2001 08 20 | 704 | 0.2+ | 0.3+ | 2001 10 18 | 644 | 0.4+ | 0.4− | 2006 10 27 | 703 | 0.3+ | 0.2+ |
| 2001 08 20 | 704 | 0.2+ | 0.7+ | 2001 10 18 | 644 | 0.9+ | 0.1− | 2006 10 27 | 703 | 0.4− | 0.3− |
| 2001 08 20 | 704 | 0.4− | 0.7− | 2002 12 31 | 704 | 0.9+ | 1.3+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2001 08 22 | 704 | 0.1+ | 0.6+ | 2002 12 31 | 704 | 0.6− | 1.3+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2001 08 22 | 704 | 0.4− | 0.0 | 2002 12 31 | 704 | 0.2+ | 0.7+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2001 08 22 | 704 | 0.1+ | 0.7+ | 2003 02 01 | 704 | 0.6+ | 0.9− | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 08 22 | 704 | 0.5+ | 0.2+ | 2003 02 01 | 704 | 0.5+ | 0.7+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2001 08 22 | 704 | 0.5− | 0.4+ | 2003 02 01 | 704 | 0.6+ | 0.6+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2001 08 24 | 704 | 0.8− | 0.3− | 2003 02 01 | 704 | (1.9+ | 1.7+) | 2006 11 15 | 703 | 0.5− | 0.0 |
| 2001 08 24 | 704 | 0.8− | 0.4+ | 2006 08 25 | 704 | 0.9− | 1.0+ | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2001 08 24 | 704 | 0.9− | 0.5+ | 2006 08 25 | 704 | (0.1− | 1.6+) | 2006 11 15 | 703 | 0.6− | 0.4+ |
| 2001 08 24 | 704 | 0.7− | 0.9+ | 2006 08 25 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.8− | 0.7− |
| 2001 08 24 | 704 | 1.4− | 0.2+ | 2006 08 25 | 704 | 1.4− | 0.7+ | 2006 11 17 | 704 | 0.2+ | 1.2+ |
| 2001 08 24 | 704 | 0.2− | 0.4+ | 2006 08 29 | 703 | 0.6− | 0.1− | 2006 11 17 | 704 | 0.8+ | 0.4+ |
| 2001 08 24 | 704 | 0.5− | 0.4− | 2006 08 29 | 703 | 0.1+ | 0.5− | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2001 08 24 | 704 | 0.3− | 0.2+ | 2006 08 29 | 703 | 1.2− | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2001 09 07 | 704 | 0.5− | 0.2− | 2006 08 29 | 703 | 0.9− | 0.6− | 2006 11 18 | 185 | 0.3+ | 0.2+ |
| 2001 09 07 | 704 | 0.1− | 0.4− | 2006 08 30 | 704 | 0.1− | 1.0+ | 2006 11 18 | 185 | 0.3+ | 0.2− |
| 2001 09 07 | 704 | 0.5+ | 0.1− | 2006 08 30 | 704 | 1.0+ | 0.4− | 2006 11 18 | 185 | 0.3+ | 0.4− |
| 2001 09 07 | 704 | 0.3+ | 0.5− | 2006 08 30 | 704 | 0.2− | 0.2− | 2006 11 18 | 185 | 0.4+ | 0.0 |
| 2001 09 07 | 704 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.7+ | 0.7+ | | | | |
| 2001 09 08 | 699 | 0.8+ | 0.6+ | 2006 08 30 | 699 | 0.3+ | 0.3+ | | | | |

**(139529)∗ 2001 QO$_9$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.35601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23119988 | $\omega$ | 62.21022 | | +0.96629265 | −0.25231888 | |
| $a$ | 2.6291234 | $\Omega$ | 312.35568 | | +0.20508516 | +0.87447252 | |
| $e$ | 0.2274746 | $i$ | 3.96704 | | +0.15562322 | +0.41428612 | |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 03 | 608 | 0.4+ | 0.7+ | 2001 09 07 | 704 | 0.7− | 0.9+ | 2003 01 27 | 704 | (2.3− | 1.8+) |
| 2001 07 03 | 608 | 0.6+ | 0.3− | 2001 09 07 | 704 | 0.2− | 1.4+ | 2003 01 27 | 704 | 1.1− | 0.3+ |
| 2001 07 03 | 608 | 0.1+ | 0.0 | 2001 09 07 | 704 | 1.3− | 1.0+ | 2003 01 27 | 704 | (3.0− | 1.7+) |
| 2001 07 19 | 699 | 0.9+ | 1.3+ | 2001 09 12 | 704 | 0.3− | 0.1− | 2003 01 27 | 704 | 0.8− | 0.9+ |
| 2001 07 19 | 699 | (0.6+ | 1.7+) | 2001 09 12 | 704 | 0.1+ | 0.0 | 2003 01 27 | 704 | (1.2− | 2.4+) |
| 2001 07 19 | 699 | (1.5+ | 0.9+) | 2001 09 12 | 704 | 0.3− | 0.0 | 2003 01 27 | 704 | (1.9− | 0.8−) |
| 2001 07 19 | 699 | (0.2+ | 2.0+) | 2001 09 12 | 704 | 0.2+ | 0.1− | 2003 01 27 | 704 | (1.2− | 2.1+) |
| 2001 08 16 | 704 | 0.0 | 0.1+ | 2001 09 12 | 704 | 0.2+ | 0.1− | 2003 01 28 | 608 | (1.4− | 2.6−) |
| 2001 08 16 | 704 | 0.2− | 0.2+ | 2001 09 19 | 645 | 0.1− | 0.3− | 2003 01 28 | 608 | 0.2− | 0.8− |
| 2001 08 16 | 704 | 0.1− | 0.3+ | 2001 09 19 | 645 | 0.0 | 0.3− | 2003 01 28 | 608 | 1.4+ | 0.4+ |
| 2001 08 16 | 704 | 0.5+ | 0.3+ | 2001 09 20 | 704 | 0.0 | 0.5+ | 2003 01 29 | 291 | 0.2+ | 0.5+ |
| 2001 08 16 | 704 | 0.0 | 0.4− | 2001 09 20 | 704 | 0.4− | 0.0 | 2003 01 29 | 291 | 0.1+ | 0.5+ |
| 2001 08 18 | 704 | 0.4+ | 1.0+ | 2001 09 20 | 704 | 0.3− | 0.0 | 2003 01 29 | 291 | 0.4+ | 0.5+ |
| 2001 08 18 | 704 | 0.2+ | 0.2− | 2001 09 20 | 704 | 0.4− | 0.1− | 2003 02 21 | 644 | 0.0 | 0.4+ |
| 2001 08 18 | 704 | 1.0− | 0.3+ | 2001 09 20 | 704 | 0.2− | 0.2− | 2003 02 21 | 644 | 0.2+ | 0.3− |
| 2001 08 18 | 704 | 0.6+ | 0.0 | 2001 09 22 | 704 | 0.8− | 0.3+ | 2003 02 21 | 644 | 0.1− | 0.0 |
| 2001 08 20 | 704 | 0.4+ | 0.9+ | 2001 09 22 | 704 | 0.0 | 0.2+ | 2004 04 19 | 704 | 0.3− | 1.4+ |
| 2001 08 20 | 704 | 0.0 | 1.0+ | 2001 09 22 | 704 | 0.2− | 0.1+ | 2004 04 19 | 704 | 1.1+ | 0.9+ |
| 2001 08 20 | 704 | 0.1− | 0.1+ | 2001 09 22 | 704 | 0.1− | 0.3− | 2004 04 19 | 704 | 0.3+ | 0.7+ |
| 2001 08 20 | 704 | 0.7+ | 0.4+ | 2001 09 22 | 704 | 0.1+ | 0.2− | 2005 07 10 | E12 | 0.8+ | 0.2+ |
| 2001 08 20 | 704 | 0.1+ | 1.2− | 2001 09 23 | 704 | 0.4+ | 0.3+ | 2005 07 10 | E12 | 0.2− | 0.5+ |
| 2001 08 23 | 699 | 0.2+ | 0.1+ | 2001 09 23 | 704 | 0.4+ | 0.3− | 2005 07 10 | E12 | 0.4+ | 0.6− |
| 2001 08 23 | 699 | 0.8− | 0.5− | 2001 09 23 | 704 | 0.5− | 0.3− | 2005 07 10 | E12 | 0.2− | 0.2+ |
| 2001 08 23 | 699 | 0.0 | 0.0 | 2001 10 13 | 699 | 0.3+ | 0.2+ | 2005 07 10 | E12 | 0.4+ | 0.1+ |
| 2001 08 23 | 699 | 0.2+ | 0.1− | 2001 10 13 | 699 | 0.6− | 0.3+ | 2005 07 10 | E12 | 0.7− | 0.2+ |
| 2001 08 24 | 704 | 0.6+ | 0.6+ | 2001 10 13 | 699 | 1.2+ | 0.0 | 2005 07 10 | E12 | 0.3− | 0.3− |
| 2001 08 24 | 704 | 0.8+ | 0.5+ | 2001 10 13 | 699 | 1.3+ | 0.0 | 2005 07 10 | E12 | 0.3+ | 0.5+ |
| 2001 08 24 | 704 | 0.6+ | 0.3− | 2001 10 18 | 644 | 0.0 | 0.6+ | 2005 11 25 | G96 | 0.7− | 0.0 |
| 2001 08 25 | 106 | 0.6− | 0.4+ | 2001 10 18 | 644 | 0.0 | 0.5+ | 2005 11 25 | G96 | 0.5− | 0.0 |
| 2001 08 25 | 106 | 0.4− | 0.1− | 2001 10 18 | 644 | 0.1+ | 0.5+ | 2005 11 25 | G96 | 0.6− | 0.2+ |
| 2001 08 25 | 106 | 0.0 | 0.2+ | 2001 10 21 | 704 | 0.4+ | 0.1− | 2005 11 25 | G96 | 0.0 | 0.3+ |
| 2001 08 27 | 699 | 0.4− | 0.4+ | 2001 10 21 | 704 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.6− | 0.2+ | 2001 10 21 | 704 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2001 08 27 | 699 | 1.0− | 1.3+ | 2001 10 21 | 704 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | (2.0+ | 0.9+) | 2001 10 21 | 704 | 0.7+ | 0.3+ | 2006 11 02 | G96 | 0.4− | 0.5− |
| 2001 08 30 | 644 | 0.3+ | 0.3+ | 2001 11 03 | 644 | 0.4− | 0.8+ | 2006 11 02 | G96 | 0.5− | 0.4− |
| 2001 08 30 | 644 | 0.3+ | 0.4+ | 2001 11 03 | 644 | 0.8− | 1.1+ | 2006 11 02 | G96 | 0.1+ | 0.1− |
| 2001 08 30 | 644 | 0.1+ | 0.8+ | 2001 11 03 | 644 | 0.5− | 1.2+ | 2006 11 02 | G96 | 0.2+ | 0.5− |
| 2001 09 07 | 704 | 0.0 | 1.0+ | 2003 01 27 | 704 | (1.4− | 2.3+) | | | | |
| 2001 09 07 | 704 | 0.4− | 1.1+ | 2003 01 27 | 704 | 0.4+ | 1.0+ | | | | |

**(139530)∗ 2001 QF$_{11}$ = 1997 SN$_{17}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 15962)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.92890 | | (2000.0) | | | |
| $n$ | 0.22888505 | $\omega$ | 45.06313 | | +0.54674291 | +0.83632443 |
| $a$ | 2.6468201 | $\Omega$ | 258.12117 | | −0.77936976 | +0.49067855 |
| $e$ | 0.1534814 | $i$ | 2.36714 | | −0.30603098 | +0.24453221 |
| $P$ | 4.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | 0.1+ | 0.4+ | 2001 09 06 | 644 | 0.7− | 0.1− | 2006 09 27 | G96 | 0.3− | 0.1+ |
| 1995 01 31 | 691 | 0.1+ | 0.1− | 2001 09 06 | 644 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.2+ |
| 1995 01 31 | 691 | 0.9− | 0.4+ | 2001 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.7− | 0.1− |
| 1997 09 30 | 402 | 0.3+ | 0.3+ | 2001 09 08 | 704 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 1997 09 30 | 402 | 0.3+ | 0.4+ | 2001 09 08 | 704 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.2+ |
| 1997 09 30 | 402 | 0.1− | 0.2− | 2001 09 08 | 704 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.5− | 0.0 |
| 1997 10 01 | 402 | 0.4+ | 0.5+ | 2001 09 08 | 704 | 0.4− | 0.4− | 2006 11 01 | G96 | 0.4− | 0.2− |
| 1997 10 01 | 402 | 0.1+ | 1.2− | 2001 09 08 | 704 | 0.3− | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 1997 10 01 | 402 | 0.6− | 0.5− | 2001 09 12 | 644 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.0 |
| 1997 10 01 | 867 | (2.6+ | 1.8−) | 2001 09 12 | 644 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 1997 10 01 | 867 | 1.2+ | 1.4− | 2001 09 12 | 644 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.8+ |
| 1997 10 01 | 867 | 1.5+ | 1.1− | 2001 09 12 | 704 | 0.3− | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.5+ |
| 1997 10 02 | 867 | 0.2+ | 0.1− | 2001 09 12 | 704 | 0.3− | 0.2− | 2006 11 11 | 703 | (2.9− | 2.4+) |
| 1997 10 02 | 867 | 0.1− | 0.1+ | 2001 09 12 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.9+ |
| 1997 10 02 | 867 | 0.2+ | 0.2+ | 2001 09 12 | 704 | 0.3− | 0.4− | 2006 11 11 | 703 | (2.5− | 0.9+) |
| 1997 10 09 | 691 | 0.4+ | 0.3− | 2001 09 12 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | (0.0 | 1.6+) |
| 1997 10 09 | 691 | 0.3+ | 0.2− | 2001 09 20 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.7+ |
| 1997 10 09 | 691 | 0.5+ | 0.4− | 2001 09 20 | 704 | 0.6− | 0.2− | 2006 11 15 | 691 | (1.0+ | 1.7+) |
| 2001 06 25 | 644 | 0.1− | 0.2+ | 2001 09 20 | 704 | 0.5− | 0.4− | 2006 11 15 | 691 | 0.2+ | 0.6+ |
| 2001 06 25 | 644 | 0.1+ | 0.7+ | 2001 09 20 | 704 | 0.6− | 0.4− | 2006 11 21 | 704 | 1.0− | 1.0− |
| 2001 06 25 | 644 | 0.3+ | 0.3+ | 2001 09 20 | 704 | 1.0− | 0.6− | 2006 11 21 | 704 | 0.1− | 0.5− |
| 2001 07 20 | 699 | 0.3− | 0.1+ | 2001 09 23 | 704 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2001 07 20 | 699 | 0.3− | 0.2+ | 2001 09 23 | 704 | 0.2− | 0.9− | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2001 07 20 | 699 | 0.1− | 0.1− | 2001 09 23 | 704 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.1− | 0.5− |
| 2001 07 20 | 699 | 0.5− | 0.0 | 2001 10 19 | 644 | 0.5− | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 08 13 | 608 | 0.3− | 0.6− | 2001 10 19 | 644 | 0.1− | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 08 13 | 608 | 0.2− | 0.6− | 2001 10 19 | 644 | 0.2− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 08 13 | 608 | 0.4− | 0.7− | 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 08 16 | 704 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 11 27 | 703 | 1.0+ | 0.4− |
| 2001 08 16 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | 1.2+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 08 16 | 704 | 0.6− | 0.2− | 2004 03 18 | 704 | (2.2+ | 0.9+) | 2006 11 27 | 703 | 0.2+ | 0.6+ |
| 2001 08 16 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | (1.2+ | 2.1+) | 2006 11 27 | 703 | 1.2− | 0.1+ |
| 2001 08 16 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2001 08 18 | 704 | 0.6+ | 1.2+ | 2004 03 20 | 704 | 1.3+ | 1.1+ | 2006 11 27 | 703 | 0.7− | 0.3+ |
| 2001 08 18 | 704 | (0.8− | 1.8+) | 2004 03 20 | 704 | 0.0 | 0.9− | 2006 12 01 | G96 | 0.5− | 0.0 |
| 2001 08 18 | 704 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2001 08 18 | 704 | 0.1− | 1.0+ | 2005 06 26 | 644 | 0.5+ | 0.0 | 2006 12 01 | G96 | 0.5− | 0.2+ |
| 2001 08 20 | 704 | 0.7− | 0.9+ | 2005 06 26 | 644 | 0.6+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2001 08 20 | 704 | 0.2+ | 0.6+ | 2005 06 26 | 644 | 0.4+ | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.2− |
| 2001 08 20 | 704 | 0.2− | 1.4+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2001 08 20 | 704 | 0.1− | 0.8+ | 2006 09 27 | G96 | 0.4− | 0.1+ | 2006 12 01 | 691 | 0.2− | 0.5− |
| 2001 08 20 | 704 | 0.4− | 1.2+ | 2006 09 27 | G96 | 0.1− | 0.0 | | | | |

**(139531)**∗ **2001 QD$_{12}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.10146 | | (2000.0) | | | |
| $n$ | 0.21494532 | $\omega$ | 158.43556 | | +0.88471617 | +0.46601696 |
| $a$ | 2.7600528 | $\Omega$ | 173.75909 | | −0.44029096 | +0.84270487 |
| $e$ | 0.1136563 | $i$ | 5.42148 | | −0.15303977 | +0.26958616 |
| $P$ | 4.59 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.2− | 0.6+ | 2001 09 24 | 704 | 0.1− | 1.0+ | 2004 04 24 | 691 | 0.0 | 0.3+ |
| 2000 04 10 | 695 | 0.2− | 0.5+ | 2001 09 24 | 704 | 0.2− | 0.9+ | 2006 09 22 | 704 | 0.3+ | 0.1+ |
| 2000 05 01 | 699 | 0.6− | 0.2− | 2001 09 24 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.9+ | 0.5+ |
| 2000 05 01 | 699 | 0.8− | 0.3− | 2001 09 24 | 704 | (0.1+ | 1.6+) | 2006 09 22 | 704 | 0.7− | 1.0+ |
| 2000 05 01 | 699 | 0.2− | 0.4+ | 2004 02 19 | 704 | 1.2+ | 0.1− | 2006 09 30 | 703 | 0.3− | 0.1− |
| 2000 05 01 | 699 | 0.8− | 0.5+ | 2004 02 19 | 704 | 0.0 | 1.2+ | 2006 09 30 | 703 | 0.8− | 0.4+ |
| 2000 05 23 | 699 | 1.2+ | 1.0+ | 2004 02 19 | 704 | (0.0 | 1.7+) | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2000 05 23 | 699 | 0.6+ | 0.5+ | 2004 02 26 | 704 | 1.1− | 1.4+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2000 05 23 | 699 | 1.0+ | 0.3− | 2004 02 26 | 704 | 0.5− | 1.0+ | 2006 10 03 | G96 | 0.1− | 0.2+ |
| 2000 05 23 | 699 | 0.1+ | 0.8+ | 2004 02 26 | 704 | 0.3+ | 1.3+ | 2006 10 03 | G96 | 0.4− | 0.1+ |
| 2001 08 16 | 704 | 0.2− | 1.1+ | 2004 02 26 | 704 | 0.4+ | 1.1+ | 2006 10 03 | G96 | 0.1+ | 0.2+ |
| 2001 08 16 | 704 | 1.2− | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.7+ | 2006 10 03 | G96 | 0.2+ | 0.2+ |
| 2001 08 16 | 704 | 0.7− | 0.7+ | 2004 03 16 | 291 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2001 08 16 | 704 | 1.2− | 1.1+ | 2004 03 16 | 291 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2001 08 16 | 704 | 0.7− | 0.7+ | 2004 03 16 | 291 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2001 08 18 | 704 | 0.7− | 0.4+ | 2004 03 17 | 704 | 0.7+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 08 18 | 704 | 1.1− | 0.6+ | 2004 03 17 | 704 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 08 18 | 704 | 0.5− | 0.1+ | 2004 03 17 | 704 | 0.6+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 08 18 | 704 | 0.7− | 1.0+ | 2004 03 17 | 704 | 0.9+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2001 08 23 | 699 | 0.2− | 0.7+ | 2004 03 17 | 704 | 0.9+ | 1.1+ | 2006 10 21 | G96 | 0.2− | 0.2+ |
| 2001 08 23 | 699 | 0.5− | 0.8+ | 2004 03 17 | 704 | (3.6+ | 2.2+) | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 08 23 | 699 | 0.5+ | 1.0+ | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2001 08 23 | 699 | 0.6− | 0.5+ | 2004 03 18 | 704 | 1.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 08 27 | 699 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 08 27 | 699 | 0.4− | 0.1+ | 2004 03 18 | 704 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 08 27 | 699 | 0.1+ | 0.6+ | 2004 03 18 | 704 | 1.1+ | 0.3− | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2001 08 27 | 699 | 0.4− | 0.8+ | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2001 09 07 | 704 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 1.2+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2001 09 07 | 704 | 0.0 | 0.5+ | 2004 03 20 | 704 | (1.9+ | 0.1+) | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2001 09 07 | 704 | 0.3− | 0.9+ | 2004 03 20 | 704 | (2.0+ | 0.2+) | 2006 10 27 | 704 | 1.4− | 1.0+ |
| 2001 09 07 | 704 | 0.1− | 0.5+ | 2004 03 21 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 704 | 0.8− | 0.6+ |
| 2001 09 07 | 704 | 0.3+ | 0.4+ | 2004 03 21 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 704 | (1.5− | 2.0+) |
| 2001 09 12 | 691 | 0.1− | 0.5+ | 2004 03 21 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 704 | (0.9− | 1.7+) |
| 2001 09 12 | 691 | 0.3− | 0.5+ | 2004 03 27 | 704 | 1.2+ | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.6− |
| 2001 09 12 | 691 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 703 | 0.4+ | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 0.7+ | 2004 03 27 | 704 | 0.6+ | 0.8+ | 2006 11 13 | 703 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.1+ | 0.8+ | 2004 03 27 | 704 | 0.8+ | 0.7+ | 2006 11 14 | 704 | 0.8− | 0.7+ |
| 2001 09 12 | 704 | 0.1− | 1.0+ | 2004 03 29 | 291 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.8+ |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2004 03 29 | 291 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.8+ | 0.2+ |
| 2001 09 16 | 691 | 0.2+ | 0.4+ | 2004 03 29 | 291 | 1.2+ | 0.8+ | 2006 11 14 | 704 | 1.1+ | 0.3− |
| 2001 09 16 | 691 | 0.1+ | 0.4+ | 2004 03 30 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.4+ | 0.7− |
| 2001 09 16 | 691 | 0.1+ | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.4− | 0.7+ |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2004 03 31 | 691 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.5− | 0.6+ |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2004 03 31 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.4− | 0.5+ |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2004 03 31 | 691 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.1+ | 0.6+ |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2004 04 12 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.9+ |
| 2001 09 24 | 644 | 0.6− | 0.5+ | 2004 04 12 | 691 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.8− | 0.0 |
| 2001 09 24 | 644 | 0.2− | 0.4+ | 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 1.2+ |
| 2001 09 24 | 644 | 0.4− | 0.5+ | 2004 04 24 | 691 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.9+ |
| 2001 09 24 | 704 | 0.1− | 0.6+ | 2004 04 24 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 1.3− | 0.1− |

**(139532)**∗ **2001 QM$_{12}$ = 1620 T-2**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17748)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.77130 | | (2000.0) | | | |
| $n$ | 0.21047371 | $\omega$ | 9.56905 | | +0.98889454 | +0.14748818 |
| $a$ | 2.7990080 | $\Omega$ | 341.91872 | | −0.13995694 | +0.88275381 |
| $e$ | 0.2056060 | $i$ | 3.37996 | | −0.04999647 | +0.44608626 |
| $P$ | 4.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.2+ | 0.5− | 2001 09 18 | 691 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1973 09 19 | 675 | 0.4− | 0.3− | 2001 09 19 | 704 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 1973 09 24 | 675 | 1.6+ | 0.6− | 2001 09 19 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2− |
| 1973 09 24 | 675 | 0.4+ | 1.8− | 2001 09 19 | 704 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.3+ | 0.3− |
| 1973 09 25 | 675 | 0.2+ | 1.4− | 2001 09 19 | 704 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 25 | 675 | 0.1− | 0.9− | 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 07 19 | 699 | 0.2+ | 0.9+ | 2001 09 21 | 704 | 0.0 | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 07 19 | 699 | 0.7− | 0.1+ | 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 10 29 | 704 | 0.3+ | 0.8+ |
| 2001 07 19 | 699 | 0.9− | 0.7+ | 2001 09 21 | 704 | 0.1− | 0.4+ | 2006 10 29 | 704 | 1.0− | 0.1+ |
| 2001 07 19 | 699 | 0.0 | 0.7+ | 2001 09 21 | 704 | 0.2− | 0.5+ | 2006 10 29 | 704 | 1.1− | 0.3+ |
| 2001 08 13 | 608 | 0.3+ | 1.3+ | 2001 09 21 | 704 | 0.3− | 0.6+ | 2006 10 29 | 704 | 0.4− | 0.1− |
| 2001 08 13 | 608 | 0.1− | 0.1− | 2001 10 11 | 644 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.9− | 0.6+ |
| 2001 08 13 | 608 | 0.5− | 0.3− | 2001 10 11 | 644 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 08 16 | 704 | 0.8− | 0.2+ | 2001 10 11 | 644 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.2+ |
| 2001 08 16 | 704 | 0.7− | 0.1+ | 2001 10 24 | 704 | 0.4− | 0.8− | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2001 08 16 | 704 | 0.7− | 0.6+ | 2001 10 24 | 704 | 0.2+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2001 08 16 | 704 | 0.7− | 0.2− | 2001 10 24 | 704 | 0.6− | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | 0.8− | 0.3+ | 2001 10 24 | 704 | 0.4+ | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 2001 08 18 | 704 | 0.4− | 0.4− | 2001 10 24 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.6+ |
| 2001 08 18 | 704 | 1.1− | 0.2− | 2002 11 07 | 645 | 0.1+ | 0.0 | 2006 11 14 | 703 | 1.3+ | 0.8− |
| 2001 08 18 | 704 | 0.0 | 0.9− | 2002 11 07 | 645 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.4+ |
| 2001 08 18 | 704 | 0.1+ | 0.6+ | 2002 12 06 | 645 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.5+ |
| 2001 08 24 | 704 | 0.7− | 0.2− | 2002 12 06 | 645 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.3− |
| 2001 08 24 | 704 | 0.0 | 0.2+ | 2002 12 31 | 704 | 0.8− | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.3− |
| 2001 08 24 | 704 | 0.3− | 0.1+ | 2002 12 31 | 704 | (1.9+ | 0.4+) | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2001 08 24 | 704 | 0.3− | 0.1+ | 2002 12 31 | 704 | (1.6+ | 1.1+) | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2001 08 30 | 644 | 0.1+ | 0.2+ | 2004 03 15 | 691 | 0.2+ | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2001 08 30 | 644 | 0.2− | 0.2+ | 2004 03 15 | 691 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.4− | 0.5− |
| 2001 08 30 | 644 | 0.0 | 0.4− | 2004 03 15 | 691 | 0.4+ | 0.6+ | 2006 11 18 | 704 | 1.3− | 1.4+ |
| 2001 09 07 | 704 | 0.0 | 0.4+ | 2004 04 13 | 691 | 0.5+ | 1.1+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2001 09 07 | 644 | 0.4− | 1.0+ | 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 1.5− | 0.9+ |
| 2001 09 07 | 704 | 0.3− | 0.0 | 2004 04 13 | 691 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.6− | 0.5+ |
| 2001 09 07 | 644 | 0.4− | 1.4+ | 2006 07 22 | G96 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.3− |
| 2001 09 07 | 704 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.1− | 0.7− | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 09 07 | 704 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2001 09 07 | 644 | 0.1− | 1.4+ | 2006 07 22 | G96 | 0.1− | 1.1+ | 2006 11 19 | 704 | 1.0− | 0.2− |
| 2001 09 07 | 704 | 0.5− | 0.2− | 2006 09 20 | 699 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 2001 09 07 | 699 | 0.3+ | 0.3− | 2006 09 20 | 699 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2001 09 07 | 699 | 0.6+ | 0.4+ | 2006 09 20 | 699 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2001 09 07 | 699 | 0.6+ | 0.7+ | 2006 09 20 | 699 | 0.8− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2001 09 07 | 699 | 0.0 | 1.3+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.3− |
| 2001 09 12 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.3− |
| 2001 09 12 | 704 | 0.2− | 0.7+ | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2001 09 12 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.5− | 0.6− |
| 2001 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.6− |
| 2001 09 18 | 691 | 0.8+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 1.0− | 0.0 |

**(139533)∗ 2001 QW$_{12}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.06487 | | (2000.0) | | | |
| $n$ | 0.18621059 | $\omega$ | 60.20324 | | +0.80060718 | −0.59035396 |
| $a$ | 3.0371515 | $\Omega$ | 335.52567 | | +0.42780519 | +0.68298102 |
| $e$ | 0.1406870 | $i$ | 14.32739 | | +0.41953649 | +0.43013850 |
| $P$ | 5.29 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.3− | 0.5+ | 2001 09 22 | 704 | 0.4− | 0.6+ | 2003 01 13 | 704 | 0.2− | 0.5+ |
| 2001 07 14 | 644 | 0.2− | 0.3+ | 2001 09 22 | 704 | 0.4− | 1.3+ | 2004 03 16 | 691 | 0.3+ | 0.3+ |
| 2001 07 14 | 644 | 0.1− | 0.3+ | 2001 09 23 | 704 | 0.4− | 0.1− | 2004 03 16 | 691 | 0.5+ | 0.3+ |
| 2001 07 14 | 644 | 0.2− | 1.4+ | 2001 09 23 | 704 | 0.7− | 0.1+ | 2004 03 16 | 691 | 0.1+ | 0.3+ |
| 2001 07 14 | 644 | 0.1+ | 1.6+ | 2001 09 23 | 704 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.6− | 0.7+ |
| 2001 07 14 | 644 | 0.3+ | 1.6+ | 2001 09 24 | 644 | 0.9− | 0.2− | 2004 03 19 | 704 | 0.5− | 1.0+ |
| 2001 08 16 | 704 | 0.3− | 0.5+ | 2001 09 24 | 644 | 1.1− | 0.2− | 2004 03 19 | 704 | 0.9+ | 1.1+ |
| 2001 08 16 | 704 | 0.5− | 0.4− | 2001 09 24 | 644 | 0.6− | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.3+ |
| 2001 08 16 | 704 | 0.5− | 1.0+ | 2001 10 14 | 704 | 0.6+ | 0.4+ | 2004 03 20 | 704 | 1.9+ | 0.6+ |
| 2001 08 16 | 704 | 0.5− | 0.1− | 2001 10 14 | 704 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.9+ | 0.5+ |
| 2001 08 18 | 704 | 0.3+ | 0.2− | 2001 10 14 | 704 | 0.2− | 0.1− | 2004 03 20 | 704 | (2.8+ | 1.0+) |
| 2001 08 18 | 704 | 0.1− | 0.6+ | 2001 10 14 | 704 | 0.3− | 0.7+ | 2004 03 20 | 704 | 0.4+ | 1.0+ |
| 2001 08 18 | 704 | 0.1+ | 0.0 | 2002 11 28 | 699 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.3+ | 0.8+ |
| 2001 08 18 | 704 | 0.8+ | 0.6+ | 2002 11 28 | 699 | (0.6+ | 2.1−) | 2004 03 20 | 704 | 1.0+ | 1.3+ |
| 2001 09 08 | 704 | 0.2− | 0.2+ | 2002 11 28 | 699 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.0 | 1.0+ |
| 2001 09 08 | 704 | 0.4− | 0.3− | 2002 11 28 | 699 | 0.9+ | 0.8+ | 2004 03 20 | 704 | 1.1+ | 0.8+ |
| 2001 09 08 | 704 | 0.3− | 0.4− | 2002 12 07 | 704 | 0.5− | 1.0+ | 2006 08 12 | 644 | 0.1− | 0.5+ |
| 2001 09 08 | 704 | 0.1− | 0.2− | 2002 12 07 | 704 | 0.5− | 1.2+ | 2006 08 12 | 644 | 0.0 | 0.4+ |
| 2001 09 08 | 704 | 0.1− | 0.3− | 2002 12 07 | 704 | 0.2− | 0.2+ | 2006 08 12 | 644 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.1+ | 0.9− | 2002 12 07 | 704 | 0.1− | 0.5+ | 2006 08 12 | 644 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.2+ | 0.3+ | 2002 12 07 | 704 | 0.2− | 0.3+ | 2006 08 12 | 644 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.0 | 0.0 | 2002 12 15 | 704 | 0.5+ | 0.6− | 2006 08 12 | 644 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | 0.5− | 0.3+ | 2002 12 15 | 704 | 0.5+ | 0.4− | 2006 08 14 | 644 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 0.8+ | 0.1+ | 2002 12 15 | 704 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2002 12 15 | 704 | 0.7+ | 0.2− | 2006 08 14 | 644 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2003 01 07 | 704 | 0.3+ | 0.0 | 2006 08 23 | 644 | 0.5− | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2003 01 07 | 704 | 0.7+ | 0.6+ | 2006 08 23 | 644 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2003 01 07 | 704 | 0.3− | 0.9+ | 2006 08 23 | 644 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.2− | 2003 01 07 | 704 | 0.2− | 0.9+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 0.1− | 0.6+ | 2003 01 13 | 704 | 0.1− | 0.7+ | 2006 09 14 | 644 | 0.1− | 0.5+ |
| 2001 09 22 | 704 | 0.4− | 0.8+ | 2003 01 13 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 644 | 0.7− | 0.3+ |
| 2001 09 22 | 704 | 0.4− | 0.3+ | 2003 01 13 | 704 | 0.2− | 0.3+ | | | | |

**(139534)∗ 2001 QS$_{18}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.40059 | | (2000.0) | | | |
| $n$ | 0.24399593 | $\omega$ | 224.59629 | | +0.98820461 | −0.14909102 |
| $a$ | 2.5363801 | $\Omega$ | 143.93505 | | +0.15178294 | +0.92322655 |
| $e$ | 0.1792078 | $i$ | 3.40634 | | +0.02033693 | +0.35415336 |
| $P$ | 4.04 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.0 | 0.2+ | 2001 09 21 | 704 | 0.5− | 0.8+ | 2005 09 01 | 691 | 0.4− | 0.3− |
| 1996 04 13 | 691 | 0.0 | 0.8+ | 2001 09 21 | 704 | 0.4− | 1.1+ | 2005 09 01 | 691 | 0.1− | 0.0 |
| 1996 04 13 | 691 | 0.5+ | 0.6+ | 2001 09 21 | 704 | 0.2− | 1.1+ | 2005 09 07 | 699 | 0.1+ | 0.4− |
| 1999 02 14 | 691 | 0.1− | 0.4+ | 2001 10 11 | 704 | 0.2+ | 0.2+ | 2005 09 07 | 699 | 0.1+ | 0.5− |
| 1999 02 14 | 691 | 0.1− | 0.3+ | 2001 10 11 | 704 | 0.4+ | 1.0− | 2005 09 07 | 699 | 0.4+ | 0.6− |
| 1999 02 14 | 691 | 0.3− | 0.4+ | 2001 10 11 | 704 | (1.0+ | 2.6−) | 2005 09 07 | 699 | 0.2+ | 0.2− |
| 2001 07 19 | 699 | 0.5− | 0.8+ | 2001 10 11 | 704 | (1.1+ | 2.2−) | 2005 09 11 | 691 | 0.0 | 0.2− |
| 2001 07 19 | 699 | 0.8− | 0.5+ | 2001 10 11 | 704 | 0.2− | 1.3− | 2005 09 11 | 691 | 0.0 | 0.2− |
| 2001 07 19 | 699 | 0.3− | 1.3+ | 2003 01 27 | 704 | 0.8− | 1.0− | 2005 09 11 | 691 | 0.5+ | 0.1+ |
| 2001 07 19 | 699 | 0.4− | 0.8+ | 2003 01 27 | 704 | 1.1+ | 0.3+ | 2005 09 12 | 608 | 0.2− | 0.7− |
| 2001 08 16 | 704 | 0.5− | 0.3+ | 2003 01 27 | 704 | 0.7+ | 0.6− | 2005 09 12 | 608 | 0.1− | 0.5− |
| 2001 08 16 | 704 | 1.3− | 0.2+ | 2003 01 28 | 291 | 0.3+ | 0.6+ | 2005 09 12 | 608 | 0.1− | 0.6− |
| 2001 08 16 | 704 | 0.5− | 0.4+ | 2003 01 28 | 291 | 0.6− | 1.0+ | 2005 09 22 | 644 | 0.2+ | 0.1− |
| 2001 08 16 | 704 | 0.9− | 0.3+ | 2003 01 28 | 291 | 0.2− | 0.8+ | 2005 09 22 | 644 | 0.2+ | 0.1− |
| 2001 08 16 | 704 | 0.5− | 0.1+ | 2003 02 21 | 644 | 1.3+ | 1.0+ | 2005 09 22 | 644 | 0.3+ | 0.1− |
| 2001 08 18 | 704 | (1.6− | 0.4+) | 2003 02 21 | 644 | 1.3+ | 0.7+ | 2005 09 23 | 699 | 0.2+ | 0.8+ |
| 2001 08 18 | 704 | 1.5− | 0.9− | 2003 02 21 | 644 | 1.0+ | 0.4+ | 2005 09 23 | 699 | 0.5+ | 0.6− |
| 2001 08 18 | 704 | 0.8− | 0.0 | 2003 03 06 | 644 | 1.0+ | 1.1+ | 2005 09 23 | 699 | 0.3− | 1.4+ |
| 2001 08 18 | 704 | (2.1− | 0.4−) | 2003 03 06 | 644 | 1.0+ | 0.9+ | 2005 09 23 | 699 | 0.1+ | 0.4+ |
| 2001 08 23 | 699 | 0.3− | 0.8+ | 2003 03 06 | 644 | 1.0+ | 1.0+ | 2005 09 27 | 704 | (1.7− | 0.4+) |
| 2001 08 23 | 699 | 0.1− | 0.5+ | 2005 06 17 | G96 | 0.8+ | 0.5+ | 2005 09 27 | 704 | (1.6− | 0.0 ) |
| 2001 08 23 | 699 | 0.1− | 0.6+ | 2005 06 17 | G96 | 0.9+ | 0.3+ | 2005 09 27 | 704 | (1.9− | 0.4−) |
| 2001 08 23 | 699 | 0.2− | 1.0+ | 2005 06 17 | G96 | 0.6+ | 0.3+ | 2005 09 27 | 704 | 0.7− | 0.5+ |
| 2001 08 24 | 704 | (4.0− | 1.3−) | 2005 06 17 | G96 | 0.7+ | 0.3+ | 2005 10 01 | 704 | 0.7+ | 0.4+ |
| 2001 08 24 | 704 | (3.8− | 2.0−) | 2005 07 12 | 699 | 0.7+ | 0.4+ | 2005 10 01 | 704 | 0.4+ | 0.6− |
| 2001 08 24 | 704 | (3.8− | 1.3−) | 2005 07 12 | 699 | 1.4− | 1.1+ | 2005 10 01 | 704 | 0.6+ | 0.2+ |
| 2001 09 07 | 704 | 0.7+ | 0.1− | 2005 07 12 | 699 | 0.1+ | 1.1+ | 2005 10 01 | 704 | 0.2− | 0.4− |
| 2001 09 07 | 704 | 0.7+ | 0.3+ | 2005 07 12 | 699 | 0.5− | 0.5+ | 2005 10 01 | 704 | 0.3+ | 0.3− |
| 2001 09 07 | 704 | 0.2− | 0.4+ | 2005 07 29 | 644 | 0.2− | 0.3− | 2005 10 01 | 699 | 0.0 | 0.7+ |
| 2001 09 07 | 704 | 0.4+ | 0.4+ | 2005 07 29 | 644 | 0.2− | 0.3− | 2005 10 01 | 699 | 0.1− | 0.1− |
| 2001 09 07 | 704 | 0.1− | 0.4+ | 2005 07 29 | 644 | 0.1− | 0.3− | 2005 10 01 | 699 | 0.5+ | 0.2+ |
| 2001 09 07 | 644 | 0.5+ | 0.4+ | 2005 07 30 | 644 | 0.1− | 0.1− | 2005 10 01 | 699 | 0.0 | 0.0 |
| 2001 09 07 | 644 | 0.6+ | 0.4+ | 2005 07 30 | 644 | 0.1+ | 0.0 | 2005 11 03 | G96 | 0.2+ | 0.2− |
| 2001 09 07 | 644 | 0.6+ | 0.4+ | 2005 07 30 | 644 | 0.1− | 0.1− | 2005 11 03 | G96 | 0.2+ | 0.3− |
| 2001 09 07 | 699 | 0.3+ | 0.5− | 2005 08 08 | 807 | 0.3− | 1.0− | 2005 11 03 | G96 | 0.3+ | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 699 | 0.3+ | 0.5+ | 2005 08 08 | 807 | 0.2− | 0.3− | 2005 11 03 | G96 | 0.3− | 0.4− |
| 2001 09 07 | 699 | 0.3+ | 0.1− | 2005 08 28 | 691 | 0.0 | 0.1+ | 2005 11 20 | 699 | (1.8+ | 0.2−) |
| 2001 09 07 | 699 | 0.4+ | 0.2+ | 2005 08 28 | 691 | 0.1− | 0.3+ | 2005 11 20 | 699 | 0.4+ | 0.6+ |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2005 08 28 | 691 | 0.1− | 0.2+ | 2005 11 20 | 699 | 0.7+ | 0.2− |
| 2001 09 12 | 704 | 0.4+ | 0.4− | 2005 08 28 | 699 | 0.6− | 0.0 | 2005 11 20 | 699 | 0.4− | 0.6− |
| 2001 09 12 | 704 | 0.4+ | 0.2+ | 2005 08 28 | 699 | 0.1− | 0.1+ | 2005 11 25 | 703 | 0.1+ | 0.7− |
| 2001 09 12 | 704 | 0.6+ | 0.2+ | 2005 08 28 | 699 | 0.5− | 0.4− | 2005 11 25 | 703 | 0.2− | 0.7+ |
| 2001 09 12 | 704 | 1.0+ | 0.7+ | 2005 08 28 | 699 | 0.1− | 0.5+ | 2005 11 25 | 703 | 1.1− | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.9+ | 2005 08 29 | 704 | 0.2− | 0.3+ | 2005 11 25 | 703 | (2.0− | 1.3−) |
| 2001 09 19 | 704 | 0.2− | 1.4+ | 2005 08 29 | 704 | 0.3− | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2001 09 19 | 704 | (0.8+ | 2.0+) | 2005 08 29 | 704 | 0.3− | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 1.1− | 0.1+ | 2005 08 29 | 704 | 0.7− | 0.8+ | 2006 11 21 | G96 | 0.6+ | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2005 08 29 | 704 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2005 09 01 | 691 | 0.2− | 0.1+ | | | | |

**(139535)∗ 2001 QC$_{21}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.14392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20472992 | $\omega$ | 247.46717 | | +0.66577130 | −0.74077981 | |
| $a$ | 2.8511178 | $\Omega$ | 159.94448 | | +0.74374141 | +0.64920384 | |
| $e$ | 0.1473550 | $i$ | 15.11269 | | +0.05997735 | +0.17256780 | |
| $P$ | 4.81 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | (0.7− | 1.6+) | 2001 10 11 | 704 | (1.0+ | 3.1+) | 2006 08 19 | 699 | 0.4− | 0.1− |
| 2001 08 13 | 608 | (0.3− | 2.1+) | 2001 10 11 | 704 | 0.2+ | 1.3+ | 2006 08 19 | 699 | 0.3+ | 0.1− |
| 2001 08 13 | 608 | (0.2− | 1.7+) | 2001 10 11 | 704 | (0.8+ | 2.0+) | 2006 08 19 | 699 | 1.1− | 1.5− |
| 2001 08 16 | 704 | 0.9− | 0.4+ | 2001 10 20 | 704 | 0.7+ | 0.8+ | 2006 08 19 | 699 | 0.3+ | 0.4+ |
| 2001 08 16 | 704 | 0.1+ | 1.2+ | 2001 10 20 | 704 | 0.1+ | 0.6+ | 2006 08 23 | 704 | 0.5+ | 0.8+ |
| 2001 08 16 | 704 | 1.0− | 0.8+ | 2001 10 20 | 704 | 0.0 | 1.0+ | 2006 08 23 | 704 | 0.2− | 0.7− |
| 2001 08 16 | 704 | 0.6− | 0.5+ | 2001 10 20 | 704 | 1.0+ | 1.0+ | 2006 08 23 | 704 | 0.1− | 0.3− |
| 2001 08 16 | 704 | 0.4− | 0.5+ | 2003 01 02 | 704 | 0.1+ | 0.5− | 2006 08 23 | 704 | 0.8+ | 0.9− |
| 2001 08 18 | 704 | 0.3+ | 0.9+ | 2003 01 02 | 704 | 0.1− | 0.6− | 2006 09 18 | 703 | 0.9− | 0.2− |
| 2001 08 18 | 704 | 0.5− | 0.9+ | 2003 01 02 | 704 | 0.3+ | 0.8− | 2006 09 18 | 703 | 0.2− | 0.6− |
| 2001 08 18 | 704 | 0.9− | 1.1+ | 2003 01 02 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 1.1− | 1.2− |
| 2001 08 25 | 704 | 0.6− | 0.3− | 2003 01 02 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 1.0− | 0.9− |
| 2001 08 25 | 704 | 0.3− | 0.3+ | 2003 01 05 | 704 | 0.1− | 1.2+ | 2006 09 19 | 703 | 0.3+ | 0.0 |
| 2001 08 25 | 704 | 0.4+ | 0.5+ | 2003 01 05 | 704 | (1.0− | 1.7+) | 2006 09 19 | 703 | 0.2− | 0.5− |
| 2001 08 25 | 704 | 0.4− | 0.2+ | 2003 01 05 | 704 | 0.7− | 1.4+ | 2006 09 19 | 703 | 0.4+ | 0.7− |
| 2001 08 25 | 704 | 0.0 | 0.3− | 2003 01 05 | 704 | 1.3− | 1.3+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 1.0+ | 0.1+ | 2003 01 05 | 704 | 0.0 | 1.2+ | 2006 09 25 | 699 | 0.2+ | 0.3+ |
| 2001 09 12 | 704 | 0.9+ | 0.1− | 2003 01 09 | 704 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.3− |
| 2001 09 12 | 704 | 0.7+ | 0.0 | 2003 01 09 | 704 | 1.0− | 1.3+ | 2006 09 25 | 699 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.5+ | 0.8− | 2003 01 09 | 704 | 0.7− | 0.1− | 2006 09 25 | 699 | 0.4− | 0.1+ |
| 2001 09 12 | 704 | 1.1+ | 0.4− | 2003 01 14 | 608 | 0.0 | 0.6− | 2006 09 26 | 703 | 0.3+ | 0.1− |
| 2001 09 18 | 699 | 0.0 | 0.3+ | 2003 01 14 | 608 | 0.1+ | 0.7− | 2006 09 26 | 703 | 0.5+ | 0.3− |
| 2001 09 18 | 699 | 0.2− | 0.6+ | 2003 01 14 | 608 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2001 09 18 | 699 | 0.8− | 0.0 | 2003 01 26 | 644 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.8+ | 0.3− |
| 2001 09 18 | 699 | 0.2− | 0.7+ | 2003 01 26 | 644 | 0.1+ | 0.2− | 2006 09 29 | 699 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2003 01 26 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.6− |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2003 01 28 | 704 | 0.5− | 0.5+ | 2006 09 29 | 699 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 0.3+ | 0.6− | 2003 01 28 | 704 | 0.5− | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2003 01 28 | 704 | 0.1+ | 0.3− | 2006 09 30 | 704 | 1.0− | 1.1+ |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2003 01 28 | 704 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.2+ | 1.0+ |
| 2001 09 19 | 704 | 0.7− | 0.4+ | 2003 01 28 | 704 | 0.5− | 1.3− | 2006 09 30 | 704 | 1.0+ | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2003 02 01 | 699 | 0.6+ | 0.7+ | 2006 09 30 | 704 | 0.8+ | 0.5+ |
| 2001 09 19 | 704 | 0.5− | 0.8+ | 2003 02 01 | 699 | 0.6+ | 0.0 | 2006 09 30 | 704 | 0.3− | 1.4+ |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2003 02 01 | 699 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.5− |
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2003 02 01 | 699 | 1.3+ | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.5− |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2003 02 03 | 699 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2001 09 21 | 704 | 0.0 | 0.4− | 2003 02 03 | 699 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.9+ | 0.6− | 2003 02 03 | 699 | 0.8+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2003 02 03 | 699 | 0.8+ | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2001 09 21 | 704 | 0.8− | 0.3− | 2003 02 04 | 644 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2003 02 04 | 644 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2003 02 04 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.1− | 0.0 | 2003 03 07 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2001 09 21 | 704 | 0.6− | 0.9− | 2003 03 07 | 704 | (0.6+ | 2.1+) | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2003 03 07 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2001 09 25 | 644 | 0.2− | 0.3− | 2003 03 07 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 09 25 | 644 | 0.2− | 0.1− | 2003 03 07 | 704 | 0.2− | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2001 09 25 | 644 | 0.2− | 0.2− | 2004 03 23 | 704 | (2.0+ | 0.7+) | 2006 10 31 | 703 | 0.2− | 0.2− |
| 2001 09 27 | 644 | 0.2− | 0.4+ | 2004 03 23 | 704 | 0.1− | 0.6+ | 2006 10 31 | 703 | 0.7+ | 1.3− |
| 2001 09 27 | 644 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.3− | 0.3+ | 2006 10 31 | 703 | 0.1+ | 0.9− |
| 2001 09 27 | 644 | 0.5− | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.1− | 2006 10 31 | 703 | 0.1+ | 0.8− |
| 2001 10 10 | 644 | 0.1+ | 0.3+ | 2004 04 15 | 704 | 1.1+ | 0.4+ | 2006 11 14 | 291 | 0.1+ | 0.3+ |
| 2001 10 10 | 644 | 0.1+ | 0.2+ | 2004 04 15 | 704 | (0.1+ | 2.2+) | 2006 11 14 | 291 | 0.1+ | 0.2+ |
| 2001 10 10 | 644 | 0.1+ | 0.2+ | 2004 04 15 | 704 | 0.3+ | 0.9+ | 2006 11 14 | 291 | 0.2+ | 0.2+ |
| 2001 10 11 | 704 | 0.6+ | 1.1+ | 2004 04 15 | 704 | 0.3− | 0.8+ | | | | |

**(139536)∗ 2001 QY$_{24}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.32579 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19313757 | $\omega$ | 265.58766 | | +0.04956488 | −0.99875446 | |
| $a$ | 2.9640911 | $\Omega$ | 181.60522 | | +0.97818414 | +0.04970162 | |
| $e$ | 0.1078329 | $i$ | 11.80683 | | +0.20174019 | +0.00439086 | |
| $P$ | 5.10 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.3+ | 0.2− | 2001 10 17 | 644 | 1.3− | 0.5+ | 2006 08 29 | 703 | 0.5+ | 0.1+ |
| 1991 10 07 | 691 | (4.5+ | 2.7−) | 2001 10 17 | 644 | 1.2− | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 1991 10 07 | 691 | 0.6− | 0.1− | 2001 10 17 | 644 | 1.2− | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.0 |
| 2001 08 16 | 704 | 1.3+ | 1.2+ | 2001 10 20 | 704 | 0.7− | 1.0+ | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | 0.9+ | 0.1− | 2001 10 20 | 704 | 0.9− | 0.3+ | 2006 09 12 | 703 | 0.9+ | 0.2+ |
| 2001 08 16 | 704 | 0.5+ | 0.5+ | 2001 10 20 | 704 | 0.3+ | 1.3+ | 2006 09 12 | 703 | 0.3+ | 1.0+ |
| 2001 08 16 | 704 | 0.0 | 0.4− | 2001 10 20 | 704 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.5− | 0.5− |
| 2001 08 18 | 704 | 0.3+ | 1.0+ | 2001 10 20 | 704 | 1.1− | 0.6+ | 2006 09 12 | 703 | 1.1− | 0.2− |
| 2001 08 18 | 704 | 0.1+ | 0.2+ | 2001 10 24 | 704 | 0.8+ | 0.8+ | 2006 09 13 | 644 | 0.2+ | 0.2− |
| 2001 08 18 | 704 | 1.2+ | 0.4− | 2001 10 24 | 704 | 0.4+ | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.2− |
| 2001 08 27 | 699 | 0.9+ | 0.6+ | 2001 10 24 | 704 | 0.4+ | 0.5− | 2006 09 13 | 644 | 0.2− | 0.3− |
| 2001 08 27 | 699 | 0.4+ | 0.1+ | 2002 12 14 | 704 | 0.2− | 1.1+ | 2006 09 16 | 699 | 0.9− | 0.6+ |
| 2001 08 27 | 699 | 0.2+ | 0.1− | 2002 12 14 | 704 | 0.2− | 0.7+ | 2006 09 16 | 699 | 0.4− | 0.4+ |
| 2001 08 27 | 699 | 0.1− | 0.2+ | 2002 12 14 | 704 | (0.2− | 1.8+) | 2006 09 16 | 699 | 0.9− | 0.0 |
| 2001 09 11 | 699 | (1.5+ | 0.4−) | 2002 12 14 | 704 | 0.0 | 0.4− | 2006 09 16 | 699 | 0.2− | 0.7+ |
| 2001 09 11 | 699 | 0.1+ | 0.3+ | 2002 12 14 | 704 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.7+ | 0.8+ |
| 2001 09 11 | 699 | 0.1− | 0.4− | 2004 03 19 | 704 | 0.8− | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.3− |
| 2001 09 11 | 699 | 0.0 | 0.8+ | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.4− |
| 2001 09 16 | 704 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.8+ | 1.0− | 2006 09 19 | 703 | 0.3− | 0.6− |
| 2001 09 16 | 704 | 0.7− | 0.6+ | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 09 19 | 699 | 1.0− | 0.9− |
| 2001 09 16 | 704 | 0.5− | 0.3+ | 2004 03 19 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.8− | 0.3− |
| 2001 09 16 | 704 | 0.4− | 0.9+ | 2004 03 22 | 704 | 0.8+ | 0.5− | 2006 09 19 | 699 | 0.3− | 1.2+ |
| 2001 09 18 | 699 | 0.1+ | 0.5− | 2004 03 22 | 704 | 1.1+ | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.7− |
| 2001 09 18 | 699 | 0.4+ | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.8+ | 2006 09 27 | 704 | 0.4+ | 0.6− |
| 2001 09 18 | 699 | 1.3− | 1.2+ | 2004 04 17 | 699 | 0.1+ | 1.0+ | 2006 09 27 | 704 | 1.1+ | 0.1− |
| 2001 09 18 | 699 | 0.1+ | 0.1+ | 2004 04 17 | 699 | 0.8+ | 1.1+ | 2006 09 27 | 704 | 0.6+ | 0.2− |
| 2001 09 19 | 644 | 0.4+ | 0.1+ | 2004 04 17 | 699 | 1.4− | 1.4+ | 2006 09 27 | 704 | 0.6+ | 0.1− |
| 2001 09 19 | 644 | 0.4+ | 0.3+ | 2004 04 17 | 699 | (2.6− | 0.0 ) | 2006 09 27 | 704 | 1.3+ | 0.1+ |
| 2001 09 19 | 644 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.1− | 0.1− | 2006 09 30 | 699 | 1.5+ | 0.6− |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2004 04 20 | 704 | (0.6− | 1.8+) | 2006 09 30 | 699 | 0.6− | 0.8+ |
| 2001 09 20 | 704 | 0.2+ | 0.0 | 2004 04 20 | 704 | 0.8− | 0.2+ | 2006 09 30 | 699 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.1− | 2006 09 30 | 699 | 0.4− | 0.3− |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2004 04 20 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.3− |
| 2001 09 24 | 644 | 0.5+ | 0.8− | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.5− | 0.7− |
| 2001 09 24 | 644 | 0.3+ | 0.7− | 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.8+ | 1.2− |
| 2001 09 24 | 644 | 0.1+ | 0.7− | 2006 08 22 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | 1.0− | 0.1− |
| 2001 09 26 | 699 | 0.7+ | 0.9+ | 2006 08 24 | 704 | 1.2− | 0.9− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 09 26 | 699 | 0.0 | 0.6− | 2006 08 24 | 704 | (1.8− | 0.4+) | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2001 09 26 | 699 | 1.5+ | 0.1− | 2006 08 24 | 704 | 0.2− | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 09 26 | 699 | 1.2− | 0.7+ | 2006 08 24 | 704 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2001 10 11 | 644 | 0.3− | 0.0 | 2006 08 29 | 703 | (0.2+ | 1.6−) | 2006 11 11 | G96 | 0.2+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2001 10 11 | 644 | 0.0 | 0.6+ | 2006 08 29 | 703 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.2− | 0.7− |

**(139537)∗ 2001 QE$_{25}$ = 2000 ET$_{123}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 15970)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.92683 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22395538 | $\omega$ | 265.99366 | | +0.08963086 | +0.99578154 | |
| $a$ | 2.6855199 | $\Omega$ | 9.21801 | | −0.85824832 | +0.08722289 | |
| $e$ | 0.2789758 | $i$ | 7.03959 | | −0.50534754 | +0.02848309 | |
| $P$ | 4.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 1.0+ | 0.5+ | 2001 09 19 | 699 | 0.1− | 0.8+ | 2001 10 24 | 704 | 0.4+ | 0.7+ |
| 2000 03 11 | 699 | 1.7+ | 0.7+ | 2001 09 19 | 704 | 0.4− | 0.4− | 2001 10 24 | 704 | 0.0 | 0.6+ |
| 2000 03 11 | 699 | 0.8+ | 1.0+ | 2001 09 19 | 704 | 0.2− | 0.5− | 2001 10 24 | 704 | 0.2− | 0.6+ |
| 2000 03 11 | 699 | 1.4+ | 0.3+ | 2001 09 19 | 704 | 0.2− | 0.3− | 2001 10 24 | 704 | 0.5+ | 0.1− |
| 2000 03 12 | 704 | 0.4+ | 0.4+ | 2001 09 19 | 704 | 0.0 | 0.2− | 2001 10 24 | 704 | 0.4− | 0.5+ |
| 2000 03 12 | 704 | 0.4+ | 0.6+ | 2001 09 19 | 644 | 0.3+ | 0.2+ | 2001 10 24 | 704 | 0.3+ | 1.0− |
| 2000 03 12 | 704 | 1.4+ | 0.5− | 2001 09 19 | 644 | 0.2+ | 0.0 | 2001 10 24 | 704 | 0.0 | 0.6+ |
| 2000 03 12 | 704 | 0.2+ | 0.3− | 2001 09 19 | 644 | 0.3+ | 0.2+ | 2001 10 24 | 704 | 0.3+ | 0.4+ |
| 2000 03 12 | 704 | 0.0 | 0.7+ | 2001 09 21 | 704 | 0.5+ | 0.8+ | 2001 10 24 | 704 | 0.2− | 0.0 |
| 2000 04 03 | 704 | 0.6+ | 0.3+ | 2001 09 21 | 704 | 0.8+ | 1.0+ | 2004 02 11 | 691 | 0.5− | 0.5+ |
| 2000 04 03 | 704 | 0.0 | 1.0+ | 2001 09 21 | 704 | 0.7+ | 1.2+ | 2004 02 11 | 691 | 0.2− | 0.3+ |
| 2000 04 03 | 704 | 0.5+ | 1.0+ | 2001 09 21 | 704 | (0.5+ | 1.6+) | 2004 02 11 | 691 | 0.3− | 1.0+ |
| 2000 04 03 | 704 | 0.1− | 1.4+ | 2001 09 21 | 704 | 0.5+ | 1.5+ | 2004 02 15 | 704 | 0.6+ | 0.3+ |
| 2000 04 03 | 704 | 0.5+ | 1.1+ | 2001 09 24 | 704 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.3+ | 1.2+ |
| 2001 08 16 | 704 | 0.1− | 0.0 | 2001 09 24 | 704 | 0.0 | 0.0 | 2004 02 15 | 704 | (0.3+ | 3.0+) |
| 2001 08 16 | 704 | 0.2+ | 0.9+ | 2001 09 24 | 704 | 0.2+ | 0.4+ | 2004 03 17 | 645 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 1.0− | 0.6− | 2001 09 24 | 644 | 0.1− | 0.0 | 2004 03 17 | 645 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.9− | 0.0 | 2001 09 24 | 704 | 0.3− | 0.1+ | 2004 04 13 | 291 | 0.1− | 0.6+ |
| 2001 08 16 | 704 | 0.6− | 0.0 | 2001 09 24 | 704 | 0.2+ | 0.6+ | 2004 04 13 | 291 | 0.2− | 0.4+ |
| 2001 08 18 | 704 | 0.7− | 1.1− | 2001 09 24 | 644 | 0.0 | 0.1+ | 2004 04 13 | 291 | 0.2− | 0.5+ |
| 2001 08 18 | 704 | 1.4− | 0.3− | 2001 09 24 | 644 | 0.1+ | 0.0 | 2004 04 14 | 291 | 0.3+ | 0.3+ |
| 2001 08 18 | 704 | 0.3− | 0.2− | 2001 09 25 | 704 | 1.0− | 0.1+ | 2004 04 14 | 291 | 0.5+ | 1.1− |
| 2001 08 18 | 704 | 0.8− | 0.2+ | 2001 09 25 | 704 | 0.6− | 0.4+ | 2004 04 14 | 291 | 1.1+ | 0.3+ |
| 2001 08 18 | 704 | 0.3− | 0.1− | 2001 09 25 | 704 | 1.1− | 0.1+ | 2006 10 18 | A50 | 0.7− | 0.3+ |
| 2001 08 20 | 704 | 0.1+ | 0.0 | 2001 09 25 | 704 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.4+ | 0.1− |
| 2001 08 20 | 704 | 0.0 | 0.1+ | 2001 09 25 | 704 | 1.0− | 0.4+ | 2006 10 19 | 691 | 0.4+ | 0.3− |
| 2001 08 20 | 704 | 0.3+ | 0.8+ | 2001 09 25 | 704 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 2001 08 24 | 704 | 0.0 | 0.4+ | 2001 09 25 | 704 | 0.8− | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 08 24 | 704 | 0.0 | 0.2+ | 2001 09 25 | 704 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2001 08 24 | 704 | 0.1− | 0.2− | 2001 09 25 | 704 | 1.3− | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2001 08 24 | 704 | 0.0 | 0.2− | 2001 09 25 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 1.4+ | 0.5+ |
| 2001 08 24 | 704 | 0.5− | 0.1− | 2001 09 26 | 699 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.8− | 0.0 |
| 2001 08 25 | 644 | 0.1− | 1.4− | 2001 09 26 | 699 | 0.1+ | 0.6+ | 2006 11 14 | 703 | 0.4+ | 0.9+ |
| 2001 08 25 | 644 | 0.0 | 1.2− | 2001 09 26 | 699 | 0.7− | 0.0 | 2006 11 14 | 703 | 0.3− | 0.2− |
| 2001 08 25 | 704 | 0.6− | 1.0+ | 2001 09 26 | 699 | 0.0 | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.5− | 0.0 | 2001 10 11 | 704 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2001 08 25 | 644 | 0.1− | 1.2− | 2001 10 11 | 704 | 0.5+ | 0.7+ | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2001 08 25 | 704 | 1.0− | 0.9+ | 2001 10 11 | 704 | 0.4− | 0.6− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 08 25 | 704 | 0.1− | 1.1+ | 2001 10 11 | 704 | 0.5− | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2001 08 25 | 704 | 0.1− | 0.6+ | 2001 10 11 | 704 | 0.5− | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2001 08 25 | 106 | 0.0 | 0.2+ | 2001 10 13 | 704 | 0.2− | 0.8+ | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2001 08 26 | 106 | 0.0 | 0.3+ | 2001 10 13 | 704 | (0.3+ | 2.0+) | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2001 08 26 | 106 | 0.0 | 0.0 | 2001 10 13 | 704 | 0.7− | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2001 09 07 | 699 | 0.5− | 0.3+ | 2001 10 17 | 644 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2001 09 07 | 699 | 0.5+ | 0.2+ | 2001 10 17 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 2001 09 07 | 699 | 0.0 | 0.2− | 2001 10 17 | 644 | 0.3− | 0.2+ | 2006 11 22 | 704 | (3.2+ | 2.1−) |
| 2001 09 07 | 699 | 0.4− | 0.6+ | 2001 10 23 | 704 | 0.1− | 0.1− | 2006 11 22 | 704 | (2.1+ | 0.0 ) |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2001 10 23 | 704 | 0.3− | 0.9+ | 2006 11 22 | 704 | (2.1+ | 1.5−) |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2001 10 23 | 704 | 0.1− | 0.4+ | 2006 11 22 | 704 | (2.9+ | 0.9−) |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2001 10 23 | 704 | 0.2+ | 0.5+ | 2006 12 01 | G96 | 0.2+ | 0.8− |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2001 10 23 | 704 | 0.0 | 0.8+ | 2006 12 01 | G96 | 0.4+ | 1.0− |
| 2001 09 12 | 704 | 0.0 | 0.0 | 2001 10 23 | 699 | (0.2+ | 2.0+) | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2001 09 19 | 699 | 0.1+ | 0.4+ | 2001 10 23 | 699 | 0.2+ | 0.6+ | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2001 09 19 | 699 | (0.0 | 1.5+) | 2001 10 23 | 699 | 0.7+ | 0.6+ | | | | |
| 2001 09 19 | 699 | 0.7+ | 0.4− | 2001 10 23 | 699 | 1.0+ | 0.9+ | | | | |

**(139538)∗ 2001 QZ$_{35}$ = 2001 MB$_{31}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 75038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.26558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21930770 | $\omega$ | 273.61192 | | +0.86413704 | −0.49487391 | |
| $a$ | 2.7233291 | $\Omega$ | 116.06891 | | +0.49264165 | +0.79468608 | |
| $e$ | 0.1215964 | $i$ | 5.84461 | | +0.10281723 | +0.35153073 | |
| $P$ | 4.49 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 703 | 0.3− | 0.1− |
| 2000 04 05 | 699 | 0.1+ | 1.1+ | 2002 12 11 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.2− | 0.0 |
| 2000 04 05 | 699 | 0.3− | 0.7+ | 2002 12 31 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.6+ |
| 2000 04 05 | 699 | 0.1+ | 0.7+ | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.2+ |
| 2000 04 28 | 699 | 0.0 | 0.3− | 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 09 19 | 704 | 0.6+ | 0.4+ |
| 2000 04 28 | 699 | 0.0 | 1.0+ | 2002 12 31 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 704 | 0.1− | 1.2+ |
| 2000 04 28 | 699 | 0.2+ | 1.0+ | 2003 01 04 | 704 | 0.9− | 0.0 | 2006 09 19 | 704 | (1.8− | 0.3+) |
| 2000 04 28 | 699 | 0.5− | 0.1− | 2003 01 04 | 704 | 0.2− | 0.5+ | 2006 09 19 | 704 | 0.3+ | 0.2− |
| 2000 05 05 | 704 | 0.6+ | 1.2− | 2003 01 04 | 704 | 0.6− | 0.1+ | 2006 09 19 | 704 | 0.8− | 0.3− |
| 2000 05 05 | 704 | 0.7+ | 0.7+ | 2003 01 04 | 704 | 0.1− | 0.7+ | 2006 09 20 | 608 | 0.1− | 1.1− |
| 2000 05 05 | 704 | (0.2− | 2.1+) | 2003 01 07 | 704 | 0.0 | 0.9+ | 2006 09 20 | 608 | 0.3− | 1.0− |
| 2001 06 27 | 699 | 0.3+ | 0.4+ | 2003 01 07 | 704 | 0.3− | 0.3+ | 2006 09 20 | 608 | 0.0 | 0.9− |
| 2001 06 27 | 699 | (0.6+ | 2.1+) | 2003 01 07 | 704 | 0.7− | 0.2− | 2006 09 21 | 699 | 0.5+ | 0.2− |
| 2001 06 27 | 699 | 0.1+ | 1.0+ | 2003 01 07 | 704 | 0.0 | 0.5− | 2006 09 21 | 699 | 0.9− | 0.1+ |
| 2001 06 27 | 699 | 0.1− | 0.8+ | 2003 01 07 | 704 | (2.2− | 0.3+) | 2006 09 21 | 699 | 0.7+ | 0.6+ |
| 2001 07 16 | 699 | 0.5− | 0.8+ | 2004 03 15 | 704 | 0.5+ | 0.3− | 2006 09 21 | 699 | 0.4+ | 0.9+ |
| 2001 07 16 | 699 | (0.9− | 2.7+) | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.3+ | 1.3+ |
| 2001 07 16 | 699 | (1.9− | 1.7+) | 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 09 22 | 704 | 0.1+ | 1.4+ |
| 2001 07 16 | 699 | (0.3− | 2.1+) | 2004 03 15 | 704 | 0.9+ | 0.6+ | 2006 09 22 | 704 | 0.3− | 0.9+ |
| 2001 07 27 | 699 | 0.2− | 0.8+ | 2004 03 15 | 704 | 0.7+ | 0.6− | 2006 09 22 | 704 | 0.9− | 0.4+ |
| 2001 07 27 | 699 | 0.1− | 0.7+ | 2004 03 20 | 691 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.0 | 1.3+ |
| 2001 07 27 | 699 | 0.3− | 0.4+ | 2004 03 20 | 691 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.2− |
| 2001 07 27 | 699 | 0.4− | 0.6+ | 2004 03 20 | 691 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.4− | 1.0+ |
| 2001 08 07 | 608 | 0.5+ | 0.2+ | 2004 03 20 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 699 | 0.3− | 0.7+ |
| 2001 08 07 | 608 | 0.0 | 0.2+ | 2004 03 20 | 704 | 0.5+ | 1.3+ | 2006 09 29 | 699 | 0.3− | 1.1+ |
| 2001 08 07 | 608 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 704 | 0.3+ | 0.2+ |
| 2001 08 16 | 704 | 0.5− | 0.3+ | 2004 03 20 | 704 | 0.2− | 1.3+ | 2006 09 30 | 704 | 0.3− | 0.5+ |
| 2001 08 16 | 704 | 0.5+ | 0.6− | 2004 03 20 | 704 | 1.0+ | 0.4+ | 2006 09 30 | 704 | 0.8− | 0.3+ |
| 2001 08 16 | 704 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 704 | 0.4− | 0.5+ |
| 2001 08 16 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.7+ |
| 2001 08 16 | 704 | 0.4+ | 0.5− | 2004 03 22 | 704 | 1.2+ | 1.0+ | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 2001 08 19 | 704 | 0.9− | 0.5+ | 2004 03 22 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2001 08 19 | 704 | 0.6− | 0.4+ | 2004 03 22 | 704 | 0.7+ | 0.9+ | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2001 08 19 | 704 | 1.2− | 0.3+ | 2004 03 30 | 691 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.2+ |
| 2001 08 19 | 704 | 0.5− | 0.9+ | 2004 03 30 | 691 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2001 08 24 | 644 | 0.3+ | 0.4+ | 2004 03 30 | 691 | 0.1− | 0.5+ | 2006 10 22 | 703 | 1.2+ | 1.2− |
| 2001 08 24 | 644 | 0.5+ | 0.6+ | 2006 09 16 | 704 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2001 08 24 | 644 | 0.5+ | 0.3+ | 2006 09 16 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.8− | 0.0 |
| 2002 12 11 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 704 | 0.2+ | 0.7+ | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 0.8+ | 2006 09 16 | 704 | 0.7+ | 0.0 | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2002 12 11 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 704 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.3− | 0.0 |

**(139539)∗ 2001 QJ$_{36}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.16388 | | (2000.0) | | +0.99800276 | −0.05550099 |
| $n$ | 0.21794358 | $\omega$ | 219.54765 | | +0.06264615 | +0.93095480 |
| $a$ | 2.7346809 | $\Omega$ | 143.60000 | | +0.00812042 | +0.36089167 |
| $e$ | 0.2069582 | $i$ | 2.91406 | | −0.00812042 | +0.36089167 |
| $P$ | 4.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | (4.5+ | 3.4−) | 2001 08 16 | 704 | 0.8− | 0.7− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 1997 10 30 | 704 | (2.9+ | 2.4−) | 2001 08 19 | 704 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 1997 10 30 | 704 | 1.9+ | 1.3− | 2001 08 19 | 704 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 1997 10 30 | 704 | (4.1+ | 0.3−) | 2001 08 19 | 704 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 1997 10 31 | 704 | 0.6− | 0.3− | 2001 08 19 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 1997 10 31 | 704 | 0.2+ | 1.2+ | 2001 08 19 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 1997 10 31 | 704 | 0.5− | 1.0+ | 2001 08 25 | 608 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1997 10 31 | 704 | 1.3+ | 0.8+ | 2001 08 25 | 608 | 0.5− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 1997 10 31 | 704 | 0.3+ | 1.4+ | 2001 08 25 | 608 | 0.5− | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.1+ |
| 1997 11 06 | 704 | (5.5− | 0.9+) | 2001 08 27 | 644 | 0.6− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 1997 11 06 | 704 | (5.8− | 2.3+) | 2001 08 27 | 644 | 0.9− | 0.3+ | 2006 10 27 | 704 | 0.5− | 0.2+ |
| 1997 11 06 | 704 | (5.0− | 0.0 ) | 2001 08 27 | 644 | 0.6− | 0.4+ | 2006 10 27 | 704 | 0.4− | 0.8+ |
| 1997 11 06 | 704 | (5.9− | 2.7+) | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 10 27 | 704 | 0.7+ | 0.2+ |
| 1997 11 06 | 704 | (5.4− | 0.6+) | 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 704 | 0.1− | 0.3+ |
| 1997 11 06 | 704 | (3.6− | 3.0+) | 2004 03 17 | 691 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.6+ | 0.3− |
| 1997 11 06 | 704 | (4.0− | 1.1+) | 2004 07 15 | 807 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 1997 11 06 | 704 | (5.4− | 1.7+) | 2004 07 16 | 807 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.5+ | 0.3− |
| 1997 11 06 | 704 | (12.3− | 0.8+) | 2005 07 04 | 691 | 0.6+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 1999 02 18 | 691 | 0.3− | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.5+ | 0.2+ |
| 1999 02 18 | 691 | 0.5− | 0.1− | 2005 07 04 | 691 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 1999 02 18 | 691 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.6+ | 0.4+ |
| 1999 03 10 | 691 | 0.5− | 1.2− | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.2+ |
| 1999 03 10 | 691 | 0.3− | 0.2− | 2006 09 30 | 703 | (1.2− | 2.1−) | 2006 11 13 | 703 | 0.5− | 0.4− |
| 1999 03 10 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.0 | 1.4− | 2006 11 13 | 703 | 0.9− | 0.6+ |
| 2001 07 27 | 699 | 0.3+ | 0.2− | 2006 10 03 | G96 | 0.5+ | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2001 07 27 | 699 | 0.6+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 2001 07 27 | 699 | 1.2+ | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.7− | 0.5+ |
| 2001 07 27 | 699 | 0.5− | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 14 | 704 | 1.1− | 0.1+ |
| 2001 08 07 | 608 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 11 14 | 704 | 1.3− | 0.2− |
| 2001 08 07 | 608 | 0.9+ | 0.6− | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 14 | 704 | 0.6− | 0.1+ |
| 2001 08 07 | 608 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.7− | 0.1− |
| 2001 08 16 | 704 | 0.6+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.2− | 0.5+ |
| 2001 08 16 | 704 | 0.3− | 1.1− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.5− | 0.4+ |
| 2001 08 16 | 704 | 0.8− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.6+ |
| 2001 08 16 | 704 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 17 | 704 | 1.0− | 0.2− |

**(139540)∗ 2001 QY$_{37}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.10237 | | (2000.0) | | +0.27621932 | +0.95752261 |
| $n$ | 0.21337890 | $\omega$ | 319.57288 | | −0.83891629 | +0.19817967 |
| $a$ | 2.7735441 | $\Omega$ | 326.22235 | | −0.46895879 | +0.20946422 |
| $e$ | 0.1789075 | $i$ | 8.56326 | | | |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 608 | 0.7+ | 1.3+ | 2005 04 10 | E12 | 0.5− | 0.2+ | 2006 09 22 | 106 | 0.2− | 0.1− |
| 2001 07 21 | 608 | 0.4+ | 0.9+ | 2005 05 01 | E12 | 0.0 | 0.1− | 2006 09 22 | 106 | 0.4− | 0.4− |
| 2001 07 21 | 608 | 0.3+ | 0.9+ | 2005 05 01 | E12 | 0.1− | 0.2− | 2006 09 22 | 683 | 0.0 | 1.0− |
| 2001 08 14 | 608 | 0.1− | 0.7− | 2005 05 01 | E12 | 0.5+ | 0.0 | 2006 09 22 | 683 | (1.7+ | 0.2−) |
| 2001 08 14 | 608 | 0.4+ | 0.7− | 2005 05 16 | 644 | 0.4+ | 0.5+ | 2006 09 22 | 683 | 1.0+ | 1.3− |
| 2001 08 14 | 608 | 0.5+ | 0.8− | 2005 05 16 | 644 | 0.5+ | 0.5+ | 2006 09 23 | 106 | 0.3+ | 0.3− |
| 2001 08 16 | 704 | 0.1− | 0.6− | 2005 05 16 | 644 | 0.3+ | 0.3+ | 2006 09 23 | 106 | 1.0+ | 0.6+ |
| 2001 08 16 | 704 | 1.0− | 0.5− | 2005 06 02 | 699 | (2.2+ | 0.1+) | 2006 09 23 | 106 | 0.2+ | 0.1− |
| 2001 08 16 | 704 | 0.2− | 0.7+ | 2005 06 02 | 699 | 0.6− | 0.2+ | 2006 09 23 | 106 | 0.1− | 0.1− |
| 2001 08 16 | 704 | 0.5− | 0.2− | 2005 06 02 | 699 | 0.2+ | 0.0 | 2006 09 25 | 683 | (0.5− | 1.6−) |
| 2001 08 16 | 704 | 0.4− | 0.2+ | 2005 06 02 | 699 | 0.1− | 0.2+ | 2006 09 25 | 683 | (0.2− | 1.6−) |
| 2001 08 19 | 704 | 0.1− | 0.4+ | 2005 06 05 | E12 | 0.1− | 0.7− | 2006 09 25 | 683 | 0.5− | 0.4− |
| 2001 08 19 | 704 | 0.5− | 0.4+ | 2005 06 05 | E12 | 0.0 | 0.0 | 2006 09 26 | 683 | 0.0 | 0.2+ |
| 2001 08 19 | 704 | 0.7− | 0.7+ | 2005 06 05 | E12 | 0.1− | 0.5+ | 2006 09 26 | 683 | 0.2− | 0.6+ |
| 2001 08 19 | 704 | 0.3− | 0.3+ | 2005 06 05 | E12 | 0.3+ | 0.7+ | 2006 09 26 | 683 | 0.0 | 0.5+ |
| 2001 08 19 | 704 | 0.5− | 0.5+ | 2006 08 27 | 683 | 0.2+ | 0.5+ | 2006 09 27 | 699 | 0.8+ | 0.5− |
| 2001 08 24 | 699 | 1.0+ | 0.3+ | 2006 08 27 | 683 | 1.3+ | 0.8− | 2006 09 27 | 699 | 0.4+ | 0.2+ |
| 2001 08 24 | 699 | 0.6+ | 0.0 | 2006 08 27 | 683 | 1.2+ | 0.6+ | 2006 09 27 | 699 | 0.2+ | 0.3+ |
| 2001 08 24 | 699 | 0.5− | 0.5+ | 2006 08 29 | 699 | 1.2+ | 0.9+ | 2006 09 27 | 699 | 0.8+ | 0.5+ |
| 2001 08 24 | 699 | 0.0 | 0.5+ | 2006 08 29 | 699 | 0.1− | 0.5+ | 2006 09 27 | 683 | 0.3+ | 0.2+ |
| 2001 09 07 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 699 | 1.0− | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.2+ |
| 2001 09 07 | 704 | (0.5+ | 1.9+) | 2006 08 29 | 699 | 0.2+ | 1.2+ | 2006 09 27 | 703 | 0.5− | 0.5− |
| 2001 09 07 | 704 | 0.4+ | 1.1+ | 2006 09 14 | 644 | 0.4− | 0.2+ | 2006 09 27 | 683 | 0.0 | 1.2+ |
| 2001 09 19 | 704 | 0.2− | 1.2− | 2006 09 14 | 644 | 0.4− | 0.3+ | 2006 09 27 | 703 | 0.3+ | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.5− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.1− |
| 2001 09 19 | 704 | 0.6+ | 0.6+ | 2006 09 16 | 703 | 0.5− | 0.8+ | 2006 09 27 | 683 | 0.2− | 0.3+ |
| 2001 09 23 | 691 | 0.6− | 0.5+ | 2006 09 16 | 703 | 0.6− | 0.9− | 2006 09 28 | 683 | 0.2+ | 0.3+ |
| 2001 09 23 | 691 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.4+ | 0.7− | 2006 09 28 | 683 | 0.5− | 0.6+ |
| 2001 09 23 | 691 | 0.3− | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.0 | 2006 09 28 | 683 | 0.5− | 0.0 |
| 2004 01 28 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 683 | 1.0− | 1.2− | 2006 09 29 | 683 | 0.9− | 0.4+ |
| 2004 01 28 | 691 | 0.0 | 0.5+ | 2006 09 17 | 683 | (0.2− | 1.8−) | 2006 09 29 | 683 | (0.4+ | 1.6+) |
| 2004 01 28 | 691 | 0.2− | 0.6+ | 2006 09 17 | 683 | (1.1− | 1.6−) | 2006 09 29 | 683 | 0.2+ | 1.1+ |
| 2004 03 18 | 645 | 0.1+ | 0.2+ | 2006 09 19 | 683 | 0.7+ | 0.5+ | 2006 09 30 | 683 | 0.1− | 0.2+ |
| 2004 03 18 | 645 | 0.2+ | 0.1+ | 2006 09 19 | 683 | 0.2− | 0.3− | 2006 09 30 | 683 | (0.6− | 2.4+) |
| 2005 04 07 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.4− | 2006 09 30 | 683 | 0.7− | 1.4+ |
| 2005 04 07 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 683 | 0.5+ | 0.4+ | 2006 10 03 | 704 | 0.5+ | 0.0 |
| 2005 04 07 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 1.2− | 1.0+ | 2006 10 03 | 704 | 0.3− | 0.6− |
| 2005 04 07 | E12 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 10 03 | 704 | 1.1− | 0.7− |
| 2005 04 07 | E12 | 0.7+ | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.5+ | 2006 10 03 | 704 | 0.9+ | 0.1+ |
| 2005 04 07 | E12 | 0.1− | 0.3+ | 2006 09 21 | 683 | 1.4− | 0.9− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2005 04 07 | E12 | 0.4− | 0.5+ | 2006 09 21 | 683 | (0.6− | 2.3−) | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2005 04 10 | E12 | 0.2− | 0.1+ | 2006 09 21 | 683 | 1.4− | 1.3− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2005 04 10 | E12 | 0.4+ | 0.2+ | 2006 09 22 | 106 | 1.2+ | 0.9− | | | | |
| 2005 04 10 | E12 | 0.1− | 0.4− | 2006 09 22 | 106 | 0.1+ | 0.8− | | | | |

**(139541)∗ 2001 QR$_{38}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.59430 | | (2000.0) | | +0.87969462 | +0.43245966 |
| $n$ | 0.22924830 | $\omega$ | 203.47775 | | −0.38560022 | +0.89209487 |
| $a$ | 2.6440234 | $\Omega$ | 129.38885 | | −0.27829812 | +0.13094038 |
| $e$ | 0.1354321 | $i$ | 14.82719 | | | |
| $P$ | 4.30 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.1+ | 0.8− | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.4+ | 0.2− |
| 2000 03 29 | 704 | 0.6+ | 0.9+ | 2004 03 19 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.4− |
| 2000 03 29 | 704 | 0.1+ | 0.4+ | 2004 03 19 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.6+ |
| 2001 06 21 | 704 | 0.2− | 0.1+ | 2005 05 28 | 941 | 0.5+ | 1.2+ | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 2001 06 21 | 704 | 0.5− | 1.0+ | 2005 05 28 | 941 | 0.3+ | 1.1+ | 2006 09 30 | 704 | 0.1− | 1.2− |
| 2001 06 21 | 704 | 0.1+ | 0.3+ | 2005 05 28 | 941 | 0.3+ | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 06 21 | 704 | 0.4+ | 0.6− | 2005 05 28 | 941 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2001 06 21 | 704 | 0.9+ | 0.6− | 2005 05 28 | 941 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.5+ |
| 2001 06 29 | 608 | 0.6+ | 0.2+ | 2005 06 07 | 703 | 0.6− | 0.2+ | 2006 10 17 | 703 | 1.2− | 0.2− |
| 2001 06 29 | 608 | 0.6+ | 1.4+ | 2005 06 07 | 703 | 0.6− | 0.8+ | 2006 10 17 | 703 | (1.7− | 0.8+) |
| 2001 06 29 | 608 | 0.4+ | 0.7+ | 2005 06 07 | 703 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.4+ |
| 2001 07 13 | 644 | 0.4+ | 0.4+ | 2005 06 07 | 703 | (0.2− | 5.2−) | 2006 10 17 | 703 | 0.4+ | 0.4+ |
| 2001 07 13 | 644 | 0.4+ | 0.4+ | 2005 06 09 | 704 | 1.2− | 0.6+ | 2006 10 21 | 703 | 0.7− | 0.9+ |
| 2001 07 13 | 644 | 0.1+ | 0.3+ | 2005 06 09 | 704 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.5− |
| 2001 07 21 | 608 | 0.2− | 0.2− | 2005 06 09 | 704 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 2001 07 21 | 608 | 0.0 | 0.5− | 2005 06 09 | 703 | 0.0 | 0.9+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2001 07 21 | 608 | 0.4− | 0.1− | 2005 06 09 | 703 | 0.7+ | 0.0 | 2006 10 28 | 703 | 0.0 | 0.5+ |
| 2001 08 16 | 704 | 0.2− | 0.7− | 2005 06 09 | 703 | 0.4+ | 0.0 | 2006 10 28 | 703 | 0.4− | 0.5+ |
| 2001 08 16 | 704 | 0.2− | 0.5− | 2005 06 09 | 703 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.7− |
| 2001 08 16 | 704 | 0.2+ | 0.3+ | 2005 07 02 | 703 | 0.5− | 1.1− | 2006 10 28 | 703 | 0.7+ | 0.9+ |
| 2001 08 19 | 704 | 0.5− | 0.4− | 2005 07 02 | 703 | 0.2− | 1.2− | 2006 11 07 | 644 | 0.9− | 0.1+ |
| 2001 08 19 | 704 | 0.6− | 0.2− | 2005 07 02 | 703 | 0.3− | 0.7− | 2006 11 07 | 644 | 0.1− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.7− | 0.4+ | 2005 07 02 | 703 | 0.8− | 0.7− | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 1.0− | 0.0 | 2005 07 03 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2002 12 14 | 704 | 0.3− | 0.3+ | 2005 07 03 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2002 12 14 | 704 | 0.8− | 0.3+ | 2005 07 03 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2002 12 14 | 704 | 0.5− | 0.2+ | 2005 07 04 | 644 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2002 12 14 | 704 | 0.2− | 1.4+ | 2005 07 04 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.3+ | 0.3+ |
| 2004 02 16 | 704 | 0.0 | 0.2− | 2005 07 04 | 644 | (0.4− | 2.4+) | 2006 11 23 | 703 | 0.3+ | 0.4− |
| 2004 02 16 | 704 | 0.7+ | 0.3− | 2006 09 19 | 703 | 1.2− | 0.7+ | 2006 11 23 | 703 | 0.5+ | 0.1+ |
| 2004 02 16 | 704 | 0.4+ | 0.8+ | 2006 09 19 | 703 | 0.9+ | 0.2− | 2006 11 23 | 703 | 0.1+ | 0.2+ |

**(139542)∗ 2001 QH$_{40}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.29267 | | (2000.0) | | | |
| $n$ | 0.21738252 | $\omega$ | 79.47725 | | +0.99565193 | −0.09224647 |
| $a$ | 2.7393844 | $\Omega$ | 285.81469 | | +0.07933191 | +0.91258922 |
| $e$ | 0.2445479 | $i$ | 0.77146 | | +0.04882294 | +0.39833591 |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 13 | 691 | 0.7+ | 0.2+ | 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 1994 01 13 | 691 | 0.8− | 0.3− | 2004 03 29 | 691 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 1994 01 13 | 691 | 0.2+ | 0.0 | 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 06 30 | 644 | 0.0 | 0.5+ | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 06 30 | 644 | 0.2− | 0.5+ | 2005 06 14 | G96 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2001 06 30 | 644 | 0.5− | 0.6+ | 2005 06 14 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2001 07 16 | 699 | 0.1+ | 1.3+ | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2001 07 16 | 699 | 0.3+ | 1.1+ | 2005 06 14 | G96 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 07 16 | 699 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 07 16 | 699 | 0.1− | 1.1+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2001 07 27 | 699 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 07 27 | 699 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 2001 07 27 | 699 | 0.6− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.1− | 0.1− |
| 2001 07 27 | 699 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2001 08 07 | 608 | 0.9− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2001 08 07 | 608 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.2− |
| 2001 08 07 | 608 | 1.0− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.4− | 0.4− |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2001 08 16 | 704 | 0.2+ | 1.3+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2001 08 16 | 704 | 1.2− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 18 | 704 | 1.3− | 0.1+ |
| 2001 08 16 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 704 | 1.4+ | 0.6− | 2006 11 21 | 704 | (1.8+ | 1.8+) |
| 2001 08 19 | 704 | 0.8+ | 0.4+ | 2006 10 23 | 704 | 0.7− | 0.4+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2001 08 19 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 704 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2001 08 19 | 704 | 0.2− | 0.9− | 2006 10 23 | 704 | 0.7+ | 0.5− | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2001 08 19 | 704 | 0.8− | 0.3− | 2006 10 23 | 704 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 2001 08 19 | 704 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.7− | 2006 11 26 | 704 | 0.1− | 0.4+ |
| 2001 08 25 | 608 | 0.1+ | 0.5− | 2006 10 28 | 704 | 0.5+ | 1.3− | 2006 11 26 | 704 | 0.5− | 0.6+ |
| 2001 08 25 | 608 | 0.4+ | 0.2− | 2006 10 28 | 704 | 1.1− | 0.5− | 2006 11 26 | 704 | 0.1− | 0.2− |
| 2001 08 25 | 608 | 0.5+ | 0.6− | 2006 10 28 | 704 | 0.1− | 0.6− | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2006 10 28 | 704 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2003 01 08 | 704 | 0.8− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2003 01 08 | 704 | 0.7+ | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.8− |
| 2003 01 08 | 704 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.5+ |
| 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.8+ | 0.2+ |
| 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.1+ |

**(139543)∗ 2001 QL$_{45}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.47337 | | (2000.0) | | | |
| $n$ | 0.25346872 | $\omega$ | 269.28609 | | +0.67630683 | +0.73646754 |
| $a$ | 2.4727856 | $\Omega$ | 43.28237 | | −0.66684279 | +0.62076004 |
| $e$ | 0.2120492 | $i$ | 1.25266 | | −0.31293732 | +0.26883553 |
| $P$ | 3.89 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.1+ | 0.5− | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2005 09 11 | 704 | 0.1− | 0.8+ |
| 1996 03 12 | 691 | 0.2− | 0.1+ | 2004 03 17 | 691 | 0.3+ | 1.0+ | 2005 09 11 | 704 | 0.2+ | 0.9+ |
| 1996 03 12 | 691 | 0.0 | 0.2+ | 2004 03 18 | 704 | (0.8+ | 3.2+) | 2005 09 11 | 704 | 0.1+ | 0.4+ |
| 2001 07 21 | 608 | 0.1+ | 0.5− | 2004 03 18 | 704 | 0.4+ | 1.7+ | 2005 09 11 | 704 | 0.4+ | 0.5+ |
| 2001 07 21 | 608 | 0.2− | 0.3− | 2004 03 18 | 704 | 1.2+ | 0.6+ | 2005 09 14 | 691 | 0.1+ | 0.4+ |
| 2001 07 21 | 608 | 0.2− | 0.5− | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2005 09 14 | 691 | 0.0 | 0.0 |
| 2001 07 30 | 704 | 0.2− | 0.1+ | 2004 03 23 | 691 | 0.3+ | 0.3+ | 2005 09 14 | 691 | 0.1− | 0.1+ |
| 2001 07 30 | 704 | 0.7− | 0.0 | 2004 03 23 | 691 | 0.4+ | 0.3+ | 2005 09 22 | 644 | 0.1− | 0.2+ |
| 2001 07 30 | 704 | 0.2− | 0.4+ | 2004 04 21 | 691 | 0.1+ | 0.2+ | 2005 09 22 | 644 | 0.4− | 0.3+ |
| 2001 07 30 | 704 | 0.3− | 0.6+ | 2004 04 21 | 691 | 0.4− | 0.1− | 2005 09 22 | 644 | 0.1− | 0.2+ |
| 2001 08 14 | 608 | 0.2− | 0.3− | 2004 04 21 | 691 | 0.1+ | 0.1+ | 2005 09 23 | 703 | 0.9− | 0.6+ |
| 2001 08 14 | 608 | 0.2− | 0.2+ | 2005 08 26 | 699 | 0.4− | 0.3+ | 2005 09 23 | 703 | 0.1+ | 0.2+ |
| 2001 08 14 | 608 | 0.2− | 0.3+ | 2005 08 26 | 644 | 0.3− | 0.3− | 2005 09 23 | 703 | 0.1− | 1.0+ |
| 2001 08 16 | 704 | 0.0 | 0.6− | 2005 08 26 | 699 | 0.8− | 0.9+ | 2005 09 23 | 703 | 0.7− | 0.1− |
| 2001 08 16 | 704 | 0.4+ | 0.1− | 2005 08 26 | 644 | 0.4− | 0.2− | 2005 09 23 | 703 | 0.3− | 0.8− |
| 2001 08 16 | 704 | 0.2− | 0.6+ | 2005 08 26 | 699 | 0.1− | 0.5+ | 2005 09 23 | 703 | 0.1− | 0.8− |
| 2001 08 16 | 704 | 0.1+ | 0.0 | 2005 08 26 | 699 | 0.7+ | 0.9+ | 2005 09 23 | 703 | 0.3− | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.7+ | 2005 08 26 | 644 | 0.2− | 0.2− | 2005 09 23 | 703 | 1.2− | 0.9− |
| 2001 08 19 | 704 | 0.6− | 0.1− | 2005 08 26 | 699 | 1.1− | 0.1− | 2005 10 01 | 704 | 0.2− | 0.1+ |
| 2001 08 19 | 704 | 0.2+ | 0.4− | 2005 08 26 | 699 | 1.5− | 0.6+ | 2005 10 01 | 704 | 0.3− | 0.4+ |
| 2001 08 19 | 704 | 0.7+ | 0.4− | 2005 08 26 | 699 | 0.0 | 0.7+ | 2005 10 01 | 704 | 0.1− | 0.2+ |
| 2001 08 19 | 704 | 0.6+ | 0.5− | 2005 08 26 | 699 | 0.6+ | 0.2+ | 2005 10 01 | 704 | 0.3− | 0.5+ |
| 2001 08 19 | 704 | 0.4+ | 1.4− | 2005 08 29 | 704 | 0.7− | 1.2+ | 2005 10 01 | 704 | 1.0− | 0.3+ |
| 2001 08 22 | 608 | 0.0 | 0.2+ | 2005 08 29 | 704 | 0.4+ | 0.7+ | 2005 10 01 | 699 | 0.4− | 0.1− |
| 2001 08 22 | 608 | 0.0 | 1.0+ | 2005 08 29 | 704 | 0.3+ | 0.6+ | 2005 10 01 | 699 | 0.4− | 1.2+ |
| 2001 08 22 | 608 | 0.2+ | 0.2+ | 2005 08 29 | 704 | 0.0 | 0.5+ | 2005 10 01 | 699 | 0.2− | 0.7+ |
| 2001 08 24 | 699 | 0.0 | 0.5− | 2005 08 29 | 704 | 0.1− | 0.3+ | 2005 10 01 | 699 | 0.2+ | 0.7+ |
| 2001 08 24 | 699 | 1.0+ | 0.5− | 2005 08 29 | 699 | 0.6+ | 0.4− | 2005 10 06 | G96 | 0.2− | 0.2− |
| 2001 08 24 | 699 | 1.5+ | 0.6− | 2005 08 29 | 699 | 0.1+ | 0.4+ | 2005 10 06 | G96 | 0.3+ | 0.2− |
| 2001 08 24 | 699 | 0.4+ | 0.8− | 2005 08 29 | 699 | 0.4+ | 0.5+ | 2005 10 06 | G96 | 0.1− | 0.1− |
| 2001 09 07 | 704 | 0.7+ | 0.8− | 2005 08 29 | 699 | 0.2− | 0.1+ | 2005 10 06 | G96 | 0.0 | 0.1− |
| 2001 09 07 | 704 | (0.6+ | 2.2−) | 2005 08 30 | 691 | 0.1− | 0.0 | 2005 11 29 | G96 | 0.9+ | 0.3+ |
| 2001 09 07 | 704 | 0.1+ | 1.8− | 2005 08 30 | 691 | 0.1− | 0.0 | 2005 11 29 | G96 | 1.0− | 0.0 |
| 2001 09 07 | 704 | 0.3+ | 0.1− | 2005 08 30 | 691 | 0.2− | 0.1+ | 2005 11 29 | G96 | 0.5+ | 0.0 |
| 2001 09 07 | 704 | (0.1+ | 2.9−) | 2005 09 07 | A50 | 0.1− | 0.1− | 2005 11 29 | G96 | 0.3+ | 0.1+ |
| 2001 09 07 | 704 | 0.2+ | 0.2− | 2005 09 07 | A50 | 0.3+ | 0.0 | 2005 12 01 | G96 | 0.3+ | 0.7+ |
| 2001 09 07 | 704 | 1.2− | 0.4− | 2005 09 09 | 704 | 0.2+ | 1.1+ | 2005 12 01 | G96 | 0.4+ | 0.2+ |
| 2001 09 11 | 704 | 0.4+ | 1.3− | 2005 09 09 | 704 | 0.8− | 0.7+ | 2005 12 01 | G96 | 0.1− | 0.2− |
| 2001 09 11 | 704 | 0.3− | 0.0 | 2005 09 09 | 704 | 0.4+ | 0.3+ | 2005 12 01 | G96 | 0.4− | 0.3+ |
| 2001 09 11 | 704 | 0.6+ | 0.4− | 2005 09 09 | 704 | 1.1+ | 0.5− | | | | |
| 2004 03 17 | 691 | 0.1+ | 0.7+ | 2005 09 11 | 704 | 0.1+ | 0.8+ | | | | |

**(139544)∗ 2001 QJ$_{46}$ = 1992 SW$_2$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 19981)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.96654 | | (2000.0) | | | |
| $n$ | 0.21524592 | $\omega$ | 164.08814 | | +0.82682262 | +0.56126489 |
| $a$ | 2.7574825 | $\Omega$ | 161.62579 | | −0.52791129 | +0.79688880 |
| $e$ | 0.0607956 | $i$ | 6.68387 | | −0.19409800 | +0.22349488 |
| $P$ | 4.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.4− | 0.9− | 2004 02 26 | 704 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.3− | 0.5+ |
| 1992 09 24 | 691 | 0.2+ | 0.4− | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.3− |
| 1992 09 24 | 691 | 0.0 | 0.4− | 2004 02 26 | 704 | 0.2− | 0.7+ | 2006 09 30 | 703 | 0.7+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 25 | 691 | 0.5+ | 0.7− | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.4− |
| 1992 09 25 | 691 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.3− |
| 1992 09 25 | 691 | 0.4+ | 0.3− | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.7− | 0.7+ |
| 2001 08 16 | 704 | 0.6− | 1.1+ | 2004 03 18 | 704 | 0.7+ | 0.3− | 2006 10 01 | 704 | 0.7− | 0.5+ |
| 2001 08 16 | 704 | 0.3− | 0.8+ | 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 10 01 | 704 | 0.9− | 0.1+ |
| 2001 08 16 | 704 | 0.3+ | 0.4+ | 2004 03 29 | 691 | 0.3− | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2001 08 16 | 704 | 0.1+ | 0.2+ | 2004 03 29 | 691 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | 0.3+ | 1.3+ | 2004 03 29 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 2001 08 19 | 704 | 0.4+ | 0.1− | 2006 09 12 | 703 | 0.1+ | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2001 08 19 | 704 | 0.0 | 1.4+ | 2006 09 12 | 703 | 0.6− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2001 08 19 | 704 | 0.4+ | 0.5+ | 2006 09 12 | 703 | 1.0− | 1.4− | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2001 08 19 | 704 | 0.4− | 0.8+ | 2006 09 12 | 703 | (2.8− | 0.9−) | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2001 08 24 | 699 | (1.1− | 1.6+) | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2001 08 24 | 699 | 0.8− | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2001 08 24 | 699 | (1.9− | 0.0 ) | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2001 08 24 | 699 | 0.6− | 0.0 | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 09 19 | 691 | 0.6− | 0.5+ | 2006 09 22 | 704 | (0.2− | 1.5+) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | (2.6+ | 0.5−) | 2006 09 22 | 704 | 0.2+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 09 19 | 691 | 0.3− | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4− |
| 2001 09 19 | 704 | 1.1+ | 0.5− | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 0.8− | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 09 19 | 691 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.9− | 1.1+ | 2006 10 22 | 703 | 0.6− | 0.2− |
| 2001 09 19 | 704 | 0.7+ | 0.2+ | 2006 09 26 | 704 | (0.2+ | 1.8+) | 2006 10 22 | 703 | 0.4+ | 0.4+ |
| 2001 09 21 | 704 | 1.4+ | 0.8− | 2006 09 26 | 704 | 0.3+ | 1.2+ | 2006 10 22 | 703 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | (1.7+ | 0.1−) | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.1− | 2.5+ |
| 2001 09 21 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.7+ | 0.5+ | | | | |
| 2004 02 26 | 704 | 0.3− | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.1+ | | | | |

**(139545)∗ 2001 QZ$_{48}$ = 2000 GE$_{63}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 17800)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.41248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22818710 | $\omega$ | 16.84168 | | +0.89505879 | +0.44563681 | |
| $a$ | 2.6522145 | $\Omega$ | 316.68183 | | −0.41189733 | +0.81181989 | |
| $e$ | 0.0836349 | $i$ | 1.39159 | | −0.17091035 | +0.37730134 | |
| $P$ | 4.32 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 0.1+ | 0.4− | 2001 08 24 | 644 | 0.4+ | 0.8− | 2004 03 23 | 691 | 0.2+ | 0.3+ |
| 1998 11 17 | 691 | 0.2+ | 0.3− | 2001 08 24 | 644 | (0.4+ | 2.0+) | 2004 03 27 | 704 | 0.0 | 0.3+ |
| 1998 11 17 | 691 | 0.2+ | 0.4− | 2001 08 24 | 644 | 0.7+ | 0.6− | 2004 03 27 | 704 | 0.7− | 0.6− |
| 1998 12 16 | 691 | 0.1− | 0.4+ | 2001 08 28 | 691 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 1.2− | 0.6+ |
| 1998 12 16 | 691 | 0.0 | 0.1+ | 2001 08 28 | 691 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.2+ |
| 1998 12 16 | 691 | 0.5− | 0.2+ | 2001 08 28 | 691 | 0.1+ | 0.1+ | 2004 03 31 | 691 | 0.1− | 0.6+ |
| 2000 04 05 | 704 | 0.3+ | 1.4+ | 2001 09 07 | 704 | 1.4− | 0.6+ | 2004 03 31 | 691 | 0.3+ | 0.2+ |
| 2000 04 05 | 704 | 0.5− | 0.5+ | 2001 09 07 | 704 | 1.0− | 1.0− | 2004 03 31 | 691 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 1.1+ | 0.3+ | 2001 09 07 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.8− |
| 2000 04 05 | 704 | 0.6− | 0.3+ | 2001 09 07 | 704 | 1.2− | 1.1+ | 2006 10 17 | 691 | 0.0 | 0.4+ |
| 2000 04 06 | 704 | 0.2− | 1.2+ | 2001 09 18 | 691 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.4+ |
| 2000 04 06 | 704 | 0.1− | 0.2+ | 2001 09 18 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2000 04 06 | 704 | 1.3+ | 0.5+ | 2001 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.4+ |
| 2000 04 06 | 704 | 0.6+ | 0.6− | 2001 09 21 | 704 | (0.1+ | 2.3+) | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2001 08 15 | 608 | 0.3+ | 1.0+ | 2001 09 21 | 704 | 1.2+ | 1.0+ | 2006 10 31 | G96 | 0.3− | 0.2+ |
| 2001 08 15 | 608 | 0.5+ | 1.3+ | 2001 09 21 | 704 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3+ |
| 2001 08 15 | 608 | 0.8+ | 1.3+ | 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2001 08 16 | 704 | 0.4− | 0.6+ | 2002 12 31 | 704 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2001 08 16 | 704 | 0.1− | 0.6+ | 2002 12 31 | 704 | 0.6− | 0.9+ | 2006 11 09 | 644 | 0.1+ | 0.7+ |
| 2001 08 16 | 704 | 0.5− | 0.3+ | 2002 12 31 | 704 | (0.5+ | 1.5+) | 2006 11 09 | 644 | 0.4− | 0.5+ |
| 2001 08 16 | 704 | 0.3+ | 0.2+ | 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 08 19 | 704 | 0.8− | 0.6− | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.6+ | 1.1+ |
| 2001 08 19 | 704 | 0.5− | 0.8− | 2004 03 17 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | (0.6+ | 1.5+) |
| 2001 08 19 | 704 | 1.4− | 0.5+ | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2001 08 19 | 704 | 0.8− | 0.7− | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2006 11 18 | 704 | (0.2+ | 1.6+) |
| 2001 08 23 | 691 | 0.5− | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.7+ | 2006 11 18 | 704 | 0.2+ | 0.9+ |
| 2001 08 23 | 691 | 0.3− | 0.5+ | 2004 03 18 | 704 | (1.8+ | 0.5+) | 2006 11 21 | 704 | (0.5− | 2.0+) |
| 2001 08 23 | 691 | 0.5− | 0.2+ | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 11 21 | 704 | 1.3+ | 0.1+ |
| 2001 08 23 | 691 | 0.2+ | 0.1− | 2004 03 23 | 704 | (0.5+ | 1.8+) | 2006 11 21 | 704 | 0.5+ | 1.3+ |
| 2001 08 23 | 691 | 0.1+ | 0.0 | 2004 03 23 | 704 | 1.2+ | 0.8+ | 2006 11 21 | 704 | (1.7− | 2.1+) |
| 2001 08 23 | 691 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.7+ | 0.9+ | 2006 12 01 | G96 | 0.8− | 0.4+ |
| 2001 08 24 | 644 | (0.6+ | 1.8+) | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.6− | 0.4+ |
| 2001 08 24 | 644 | 0.6+ | 0.9− | 2004 03 23 | 704 | 0.6+ | 0.9+ | 2006 12 01 | G96 | 0.6− | 0.4+ |
| 2001 08 24 | 644 | (0.4+ | 1.8+) | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 1.0− | 0.5+ |

**(139546)∗ 2001 QJ$_{50}$ = 1999 FH$_{53}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17802)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.30147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22084773 | $\omega$ | 113.33649 | | −0.01333201 | −0.99594677 | |
| $a$ | 2.7106540 | $\Omega$ | 336.89012 | | +0.81454135 | +0.04077917 | |
| $e$ | 0.1650994 | $i$ | 13.09871 | | +0.57995229 | −0.08016917 | |
| $P$ | 4.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 704 | (0.1− | 2.3+) | 2001 09 24 | 704 | 0.7− | 0.6+ | 2003 02 26 | 704 | (0.4− | 2.2+) |
| 1999 03 20 | 704 | 1.7− | 1.4+ | 2001 09 24 | 704 | 0.4− | 0.4+ | 2003 02 26 | 704 | 0.2− | 0.4+ |
| 1999 03 20 | 704 | 0.7+ | 0.4+ | 2001 09 24 | 704 | 1.0+ | 0.1+ | 2003 02 26 | 704 | (0.4+ | 2.0+) |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 09 24 | 704 | 0.1− | 0.2+ | 2003 02 26 | 704 | 1.2− | 0.3+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 09 24 | 704 | 0.4− | 0.6− | 2003 02 26 | 704 | (0.5− | 2.8+) |
| 1999 03 20 | 704 | (2.0− | 0.8−) | 2001 09 24 | 704 | 0.6− | 0.2+ | 2003 02 26 | 704 | (0.0 | 1.9+) |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2002 10 05 | 704 | (2.1− | 0.6−) | 2003 03 05 | 704 | 0.0 | 0.6− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2002 10 05 | 704 | 1.5− | 0.7+ | 2003 03 05 | 704 | 0.8− | 0.2− |
| 1999 03 23 | 704 | 1.0+ | 0.9− | 2002 10 05 | 704 | 0.1− | 0.1− | 2003 03 05 | 704 | 0.7+ | 0.8− |
| 1999 03 23 | 704 | 0.1− | 0.5− | 2002 10 05 | 704 | 0.2− | 0.5+ | 2003 03 05 | 704 | 0.2+ | 1.1+ |
| 1999 03 23 | 704 | 1.2− | 0.9+ | 2002 10 31 | 704 | 0.0 | 0.6− | 2003 03 05 | 704 | 0.1+ | 0.1+ |
| 1999 03 23 | 699 | 1.3+ | 0.1+ | 2002 10 31 | 704 | 0.0 | 0.2+ | 2003 03 05 | 704 | 0.0 | 0.2+ |
| 1999 03 23 | 704 | 1.5+ | 1.3− | 2002 10 31 | 704 | 0.3+ | 0.6− | 2003 03 05 | 704 | 0.8− | 0.0 |
| 1999 03 23 | 699 | 1.1+ | 0.6+ | 2002 10 31 | 704 | 1.5+ | 0.1− | 2003 03 05 | 704 | 0.1+ | 1.0+ |
| 1999 03 23 | 699 | 1.4+ | 0.9+ | 2002 11 07 | 699 | 0.3+ | 0.9− | 2003 03 05 | 704 | 0.6− | 0.8+ |
| 2001 08 16 | 704 | (1.7− | 0.2+) | 2002 11 07 | 699 | 0.8+ | 0.6+ | 2003 03 05 | 704 | 0.0 | 0.2− |
| 2001 08 16 | 704 | (2.0− | 0.6−) | 2002 11 07 | 704 | (1.6− | 1.5+) | 2003 03 07 | 644 | 0.3+ | 0.0 |
| 2001 08 16 | 704 | 1.3− | 0.8− | 2002 11 07 | 699 | 0.8− | 0.1− | 2003 03 07 | 644 | 0.5+ | 0.0 |
| 2001 08 16 | 704 | 1.0− | 1.0+ | 2002 11 07 | 704 | 1.2− | 0.3− | 2003 03 07 | 644 | 0.2+ | 0.0 |
| 2001 08 19 | 704 | 0.1− | 0.3+ | 2002 11 07 | 699 | 0.8− | 0.2− | 2004 04 30 | E12 | 0.8+ | 1.4+ |
| 2001 08 19 | 704 | 0.0 | 0.8− | 2002 11 07 | 704 | (1.8− | 0.6+) | 2004 04 30 | E12 | 0.9− | 1.4+ |
| 2001 08 19 | 704 | 0.2− | 0.2+ | 2002 11 28 | 699 | 0.4+ | 0.3− | 2004 04 30 | E12 | 0.2− | 1.5+ |
| 2001 08 19 | 704 | 0.6+ | 1.0− | 2002 11 28 | 699 | 0.0 | 0.2− | 2004 04 30 | E12 | 0.8+ | 1.0+ |
| 2001 08 22 | 621 | 0.2+ | 0.5+ | 2002 11 28 | 699 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.7+ |
| 2001 08 23 | 621 | 0.3− | 0.4+ | 2002 11 28 | 699 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.6+ | 0.0 |
| 2001 08 23 | 621 | 0.2− | 0.9+ | 2002 12 07 | 704 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.4− | 0.0 |
| 2001 08 23 | 699 | 0.1− | 0.5+ | 2002 12 07 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.5+ |
| 2001 08 23 | 699 | 1.2− | 0.4− | 2002 12 07 | 704 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.4− |
| 2001 08 23 | 699 | 0.0 | 0.3+ | 2002 12 07 | 704 | 0.0 | 0.4− | 2006 09 28 | 703 | 0.2+ | 0.6− |
| 2001 08 23 | 699 | 0.6− | 1.0+ | 2002 12 07 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.1+ |
| 2001 08 27 | 699 | 0.0 | 1.4+ | 2002 12 15 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.2+ |
| 2001 08 27 | 699 | 0.0 | 0.7+ | 2002 12 15 | 704 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 08 27 | 699 | 0.5+ | 0.5+ | 2002 12 15 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 08 27 | 699 | 0.6+ | 0.9+ | 2002 12 15 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 09 07 | 704 | 0.5− | 0.2+ | 2002 12 15 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.7+ | 0.5− |
| 2001 09 07 | 704 | 0.5− | 0.6+ | 2002 12 29 | 704 | 0.5+ | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2001 09 07 | 704 | 0.1− | 0.5+ | 2002 12 29 | 704 | 0.7+ | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2002 12 29 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 703 | 0.4+ | 0.4− |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2003 01 07 | 704 | 0.4− | 0.3+ | 2006 10 20 | 704 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.7− | 0.3+ | 2003 01 07 | 704 | 0.2− | 0.3+ | 2006 10 20 | 704 | 0.3+ | 0.6+ |
| 2001 09 12 | 704 | 0.5− | 0.8+ | 2003 01 07 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 704 | 0.3+ | 1.4+ |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2003 01 07 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 704 | 0.5− | 0.7+ |
| 2001 09 19 | 704 | (0.2+ | 1.6+) | 2003 01 07 | 704 | 0.0 | 0.2+ | 2006 10 20 | 704 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2003 01 10 | 704 | 0.5− | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.6− | 2003 01 10 | 704 | 0.8− | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4+ | 0.3+ | 2003 01 10 | 704 | 0.4− | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2003 01 10 | 704 | 0.5− | 0.9+ | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2003 01 13 | 704 | 0.1− | 1.0+ | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2003 01 13 | 704 | 0.3− | 0.4− | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2003 01 13 | 704 | 1.1− | 0.2− | 2006 11 22 | 703 | 0.4+ | 0.1+ |
| 2001 09 21 | 704 | 0.5+ | 0.2− | 2003 01 13 | 704 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.7+ | 0.8+ |
| 2001 09 24 | 704 | 0.1+ | 0.0 | 2003 01 13 | 704 | 0.3− | 0.4− | 2006 11 22 | 703 | 0.1+ | 0.1+ |
| 2001 09 24 | 704 | 0.7− | 0.7+ | 2003 02 26 | 704 | 0.3+ | 0.9+ | 2006 11 22 | 703 | 0.6− | 0.2+ |
| 2001 09 24 | 704 | 0.1+ | 0.0 | 2003 02 26 | 704 | 0.5+ | 0.2+ | | | | |

**(139547)∗ 2001 QC$_{51}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.77994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22241969 | $\omega$ | 296.18158 | | +0.66142244 | −0.74596662 | |
| $a$ | 2.6978672 | $\Omega$ | 112.18507 | | +0.71463265 | +0.59533256 | |
| $e$ | 0.2220279 | $i$ | 4.82020 | | +0.22764121 | +0.29851792 | |
| $P$ | 4.43 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 05 | 691 | 0.2− | 0.0 | 2003 02 01 | 704 | 0.3− | 0.1− | 2006 10 23 | 683 | (1.9+ | 0.8−) |
| 1994 01 05 | 691 | 0.4− | 0.1− | 2003 02 02 | 608 | (1.8+ | 2.4+) | 2006 10 23 | 683 | (1.6+ | 0.4−) |
| 1994 01 05 | 691 | 0.2+ | 0.5− | 2003 02 02 | 608 | (1.7+ | 2.1+) | 2006 10 27 | 704 | 0.3+ | 0.6+ |
| 2000 06 22 | 691 | 0.6− | 0.2− | 2003 02 02 | 608 | (1.4+ | 1.7+) | 2006 10 27 | 704 | 0.6− | 0.3− |
| 2000 06 22 | 691 | 0.6− | 0.2− | 2003 02 03 | 704 | 0.2− | 0.2+ | 2006 10 27 | 704 | 0.4− | 0.3+ |
| 2000 06 22 | 691 | 0.7− | 0.6+ | 2003 02 03 | 704 | 0.3+ | 0.4− | 2006 10 27 | 704 | 0.4− | 0.3+ |
| 2001 08 16 | 704 | 0.2+ | 0.2+ | 2003 02 03 | 704 | 0.1+ | 0.5− | 2006 10 27 | 704 | (1.5− | 0.1−) |
| 2001 08 16 | 704 | 0.2− | 0.4+ | 2003 02 03 | 704 | 0.5− | 0.1− | 2006 10 27 | 683 | 0.1+ | 0.3− |
| 2001 08 16 | 704 | 0.1+ | 0.1− | 2003 02 03 | 704 | 0.5− | 0.2− | 2006 10 27 | 683 | 0.4+ | 0.2+ |
| 2001 08 16 | 704 | 0.5− | 0.1+ | 2003 02 07 | 704 | 1.4− | 0.8+ | 2006 10 30 | 703 | 0.6− | 0.8− |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2003 02 07 | 704 | 0.3− | 1.1+ | 2006 10 30 | 703 | 0.3− | 0.6− |
| 2001 08 19 | 704 | 0.9+ | 0.3+ | 2003 02 07 | 704 | 0.4− | 0.8+ | 2006 10 30 | 703 | 0.7− | 0.5− |
| 2001 08 19 | 704 | 0.8+ | 0.7+ | 2003 02 07 | 704 | 0.1− | 0.3− | 2006 10 30 | 703 | 0.2− | 0.4− |
| 2001 08 19 | 704 | (0.2+ | 1.8+) | 2003 02 20 | 587 | 0.5+ | 0.1− | 2006 10 31 | 683 | 0.4+ | 0.3+ |
| 2001 08 19 | 704 | 0.0 | 0.0 | 2003 02 20 | 587 | 0.3+ | 0.1+ | 2006 10 31 | 683 | 0.1− | 0.4+ |
| 2001 08 22 | 608 | 0.4− | 1.2+ | 2003 02 20 | 587 | 0.2+ | 0.0 | 2006 11 02 | 704 | 0.5+ | 0.3+ |
| 2001 08 22 | 608 | 0.0 | 1.3+ | 2003 02 23 | 587 | 0.2+ | 0.1− | 2006 11 02 | 704 | 0.6+ | 0.2+ |
| 2001 08 22 | 608 | 0.5− | 1.0+ | 2004 04 15 | 152 | 1.2+ | 0.1− | 2006 11 02 | 704 | 0.8+ | 0.4+ |
| 2001 08 23 | 699 | 0.0 | 0.8+ | 2004 04 16 | 152 | 0.0 | 1.3+ | 2006 11 02 | 704 | 0.5+ | 0.0 |
| 2001 08 23 | 699 | 0.3− | 0.5+ | 2004 04 16 | 152 | 1.0− | 1.4+ | 2006 11 02 | 704 | 1.0+ | 0.4− |
| 2001 08 23 | 699 | (0.2+ | 2.0−) | 2004 04 16 | 152 | 0.3− | 1.3+ | 2006 11 10 | 683 | 0.2+ | 0.6+ |
| 2001 08 23 | 699 | 0.2+ | 0.3+ | 2004 04 17 | 152 | 0.7+ | 0.8+ | 2006 11 10 | 683 | (1.7+ | 1.0+) |
| 2001 08 26 | 608 | 0.6+ | 1.2+ | 2004 04 17 | 152 | 1.3+ | 0.8+ | 2006 11 10 | 683 | 0.3+ | 0.1+ |
| 2001 08 26 | 608 | 1.2+ | 0.9+ | 2004 04 17 | 152 | 1.1+ | 0.7+ | 2006 11 10 | 644 | 0.2− | 0.3− |
| 2001 08 26 | 608 | 0.2+ | 0.9+ | 2004 04 17 | 152 | 1.3+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.3− |
| 2002 11 14 | 644 | 0.1− | 0.2+ | 2004 04 22 | 704 | 0.0 | 0.7− | 2006 11 10 | 644 | 0.2− | 0.3− |
| 2002 11 14 | 644 | 0.3+ | 0.2− | 2004 04 22 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 683 | (2.1+ | 0.9−) |
| 2002 11 14 | 644 | 0.3+ | 0.4+ | 2004 04 22 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 683 | 1.2+ | 0.7− |
| 2002 12 01 | 327 | (2.7− | 0.9−) | 2006 08 31 | 704 | 0.1− | 0.3+ | 2006 11 11 | 683 | (1.6+ | 1.2−) |
| 2002 12 01 | 327 | (1.9− | 0.4−) | 2006 08 31 | 704 | 0.5+ | 1.1− | 2006 11 13 | 683 | 0.5+ | 0.1− |
| 2002 12 01 | 327 | (1.5− | 0.7−) | 2006 08 31 | 704 | 0.3− | 0.6− | 2006 11 13 | 683 | 0.3+ | 0.8+ |
| 2002 12 27 | 699 | 1.4+ | 0.5− | 2006 08 31 | 704 | 0.1− | 0.4− | 2006 11 13 | 683 | 0.2− | 0.8+ |
| 2002 12 27 | 699 | (2.0+ | 0.6+) | 2006 09 16 | 704 | 0.6− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.3− |
| 2002 12 27 | 699 | 1.1+ | 0.9+ | 2006 09 16 | 704 | 0.3− | 1.0+ | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 2002 12 27 | 699 | (1.8+ | 1.3+) | 2006 09 16 | 704 | 0.2− | 0.6− | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2002 12 28 | 699 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.5+ | 0.8− | 2006 11 13 | 703 | 0.1+ | 0.6− |
| 2002 12 28 | 699 | 1.0− | 0.6+ | 2006 09 16 | G92 | 1.0− | 0.9− | 2006 11 14 | 704 | 0.2+ | 0.2+ |
| 2002 12 28 | 699 | 0.7− | 0.4− | 2006 09 16 | 704 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.1+ |
| 2002 12 28 | 699 | (1.6− | 1.6+) | 2006 09 16 | G92 | 0.5+ | 0.1− | 2006 11 14 | 683 | (1.8+ | 0.1−) |
| 2003 01 04 | 704 | (1.2+ | 6.2+) | 2006 09 16 | G92 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.0 |
| 2003 01 04 | 704 | (0.8+ | 6.9+) | 2006 09 17 | 699 | 0.9+ | 0.5+ | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 2003 01 04 | 704 | (2.4+ | 5.5+) | 2006 09 17 | 699 | 0.3+ | 0.2+ | 2006 11 14 | 683 | 1.3+ | 0.1− |
| 2003 01 04 | 704 | (2.4+ | 5.5+) | 2006 09 17 | 699 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.4− | 0.1+ |
| 2003 01 08 | 704 | 0.5+ | 0.1− | 2006 09 17 | 699 | 0.8+ | 0.6− | 2006 11 14 | 683 | 1.5+ | 0.2+ |
| 2003 01 08 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2003 01 08 | 704 | (0.4− | 1.9+) | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2003 01 08 | 704 | 0.3+ | 1.4+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.1+ |
| 2003 01 08 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.4− |
| 2003 01 13 | 106 | 0.4− | 0.1− | 2006 09 19 | 704 | 1.0− | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2003 01 13 | 106 | 0.3− | 0.6+ | 2006 09 19 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2003 01 13 | 106 | 0.3− | 0.4− | 2006 09 19 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2003 01 14 | 608 | 0.1− | 1.1− | 2006 09 19 | 704 | 0.8− | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2003 01 14 | 608 | 0.3− | 0.6− | 2006 09 19 | 704 | 0.7− | 1.0− | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2003 01 14 | 608 | 0.1+ | 0.9− | 2006 09 22 | 704 | 0.6− | 0.9+ | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2003 01 27 | 699 | 0.4+ | 0.3− | 2006 09 22 | 704 | 0.1− | 0.8+ | 2006 11 20 | 704 | 0.6− | 0.3− |
| 2003 01 27 | 699 | 0.3− | 0.3− | 2006 09 22 | 704 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2003 01 27 | 699 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2003 01 27 | 699 | 0.4+ | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.3− |
| 2003 01 27 | 608 | 1.3+ | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.6− | 0.0 |
| 2003 01 27 | 608 | 1.2+ | 0.2− | 2006 09 26 | 704 | 0.8+ | 0.1− | 2006 11 25 | 704 | 0.4+ | 0.8+ |
| 2003 01 27 | 608 | 1.2+ | 0.2− | 2006 09 26 | 704 | 0.0 | 0.5− | 2006 11 25 | 704 | 0.3+ | 0.8+ |
| 2003 01 30 | 699 | 0.8+ | 0.6+ | 2006 09 26 | 704 | 0.1+ | 0.8+ | 2006 11 25 | 704 | 0.3− | 0.9+ |
| 2003 01 30 | 644 | 0.3+ | 0.7+ | 2006 09 26 | 704 | 0.1− | 0.6− | 2006 11 25 | 704 | 0.1+ | 1.2+ |
| 2003 01 30 | 699 | 0.7+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.5− | 2006 11 25 | 704 | 0.0 | 1.0+ |
| 2003 01 30 | 699 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.4− | 2006 11 25 | 704 | 0.2+ | 0.9+ |
| 2003 01 30 | 699 | 0.7+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.4− | 2006 11 25 | 704 | 0.2− | 1.1+ |
| 2003 01 30 | 644 | 0.4+ | 0.8+ | 2006 10 22 | 704 | 0.2− | 0.3+ | 2006 11 25 | 704 | 0.3+ | 0.9+ |
| 2003 01 30 | 644 | 0.3+ | 0.7+ | 2006 10 22 | 704 | 1.0− | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.2− |
| 2003 02 01 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 704 | 0.4− | 0.3− | 2006 11 28 | 704 | 0.6− | 0.1− |
| 2003 02 01 | 704 | 0.0 | 0.3+ | 2006 10 22 | 704 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.6− | 0.2− |
| 2003 02 01 | 704 | 0.3− | 0.4+ | 2006 10 22 | 704 | 0.7− | 0.0 | 2006 11 28 | 704 | 0.5− | 0.2− |
| 2003 02 01 | 704 | 0.1− | 0.7+ | 2006 10 23 | 683 | (1.7+ | 0.8−) | 2006 11 28 | 704 | 0.4− | 0.4− |

**(139548)∗ 2001 QG$_{55}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.32046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19693855 | $\omega$ | 206.82203 | | +0.73448294 | +0.67506592 | |
| $a$ | 2.9258287 | $\Omega$ | 110.53980 | | −0.60856310 | +0.70047157 | |
| $e$ | 0.1793771 | $i$ | 4.25213 | | −0.30030944 | +0.23157198 | |
| $P$ | 5.00 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.2− | 0.4− | 2001 09 21 | 704 | 1.0− | 0.2+ | 2006 08 28 | 704 | 0.2− | 0.2+ |
| 1995 03 26 | 691 | 0.6+ | 0.3− | 2001 09 21 | 704 | 0.0 | 0.7+ | 2006 08 28 | 704 | 0.8− | 0.2+ |
| 1995 03 26 | 691 | 0.4+ | 0.6+ | 2001 09 21 | 704 | 0.6− | 0.6+ | 2006 08 28 | 704 | 0.3+ | 0.3+ |
| 2000 04 27 | 699 | 0.3− | 0.3+ | 2001 09 21 | 704 | 0.6− | 0.1− | 2006 08 28 | 704 | 0.3− | 0.1− |
| 2000 04 27 | 699 | 1.2+ | 0.9+ | 2001 09 21 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.4+ |
| 2000 04 27 | 699 | 0.2+ | 0.8+ | 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.1− | 0.4+ |
| 2000 04 27 | 699 | 0.7+ | 0.3+ | 2004 02 12 | 691 | 0.3+ | 0.7+ | 2006 08 28 | 699 | 0.1+ | 0.4+ |
| 2001 08 16 | 704 | 1.5+ | 0.5− | 2004 02 12 | 691 | 0.2+ | 0.6+ | 2006 08 28 | 699 | 0.8+ | 0.3+ |
| 2001 08 16 | 704 | 0.5− | 0.8+ | 2004 02 23 | 704 | 0.2− | 1.3+ | 2006 08 31 | 704 | 0.1+ | 0.3+ |
| 2001 08 16 | 704 | 0.2− | 0.1+ | 2004 02 23 | 704 | 1.1+ | 0.3+ | 2006 08 31 | 704 | 0.9+ | 0.4+ |
| 2001 08 19 | 704 | 0.7− | 0.6+ | 2004 02 23 | 704 | 0.5+ | 1.5+ | 2006 08 31 | 704 | (2.0+ | 0.4−) |
| 2001 08 19 | 704 | 0.7− | 0.2− | 2005 04 14 | 691 | 0.4− | 0.1+ | 2006 08 31 | 704 | 1.3+ | 0.3− |
| 2001 08 19 | 704 | 0.6− | 0.4− | 2005 04 14 | 691 | 0.3− | 0.0 | 2006 09 12 | 704 | 0.3− | 1.5+ |
| 2001 08 19 | 704 | 0.3− | 0.8+ | 2005 04 14 | 691 | 0.3− | 0.1+ | 2006 09 12 | 704 | 0.7+ | 0.3− |
| 2001 08 25 | 704 | 0.1+ | 0.2− | 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 09 12 | 704 | 0.3+ | 0.1− |
| 2001 08 25 | 704 | 0.5− | 0.3+ | 2005 04 18 | 691 | 0.1− | 0.3+ | 2006 09 12 | 704 | 0.7− | 0.5+ |
| 2001 08 25 | 704 | 0.1+ | 0.6− | 2005 04 18 | 691 | 0.1− | 0.1+ | 2006 09 12 | 704 | (1.2− | 1.8−) |
| 2001 08 25 | 704 | 0.7+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.5+ | 0.1− |
| 2001 08 25 | 704 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.3+ | 0.8− | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1− | 0.9+ |
| 2001 08 27 | 699 | 0.8− | 0.2− | 2006 08 17 | 644 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.4− |
| 2001 08 27 | 699 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.0 | 0.4− |
| 2001 08 27 | 699 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 16 | 704 | 0.4+ | 0.6− |
| 2001 09 10 | 699 | (1.7+ | 0.3+) | 2006 08 18 | 699 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.8+ | 0.0 |
| 2001 09 10 | 699 | 0.4+ | 0.2+ | 2006 08 18 | 699 | 0.0 | 0.5+ | 2006 09 16 | 704 | 0.9+ | 0.9− |
| 2001 09 10 | 699 | 0.9+ | 0.4+ | 2006 08 18 | 699 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.2+ |
| 2001 09 10 | 699 | 0.0 | 0.1+ | 2006 08 18 | 699 | 1.2+ | 0.6+ | 2006 09 18 | 699 | 0.4+ | 0.2− |
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2006 08 22 | 644 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.4− | 0.7+ |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2006 08 22 | 644 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.9− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.9− | 0.8+ |
| 2001 09 12 | 704 | 1.1− | 0.4+ | 2006 08 23 | 704 | 0.2− | 0.6− | 2006 09 25 | 699 | 0.6− | 0.9+ |
| 2001 09 12 | 704 | 0.7− | 0.1− | 2006 08 23 | 704 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.2− | 0.9+ |
| 2001 09 19 | 704 | 0.9− | 0.3+ | 2006 08 23 | 704 | (0.7+ | 1.5+) | 2006 09 25 | 699 | 0.8+ | 0.1+ |
| 2001 09 19 | 704 | 0.9− | 1.0+ | 2006 08 24 | 644 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 0.9+ | 2006 08 24 | 644 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.3− | 0.2− |
| 2001 09 19 | 704 | 0.8− | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 0.2+ | 1.0+ | | | | |

**(139549)∗ 2001 QJ$_{56}$ = 2004 CQ$_{79}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60856)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.24393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19709997 | $\omega$ | 243.22546 | | +0.99245886 | +0.10798560 | |
| $a$ | 2.9242310 | $\Omega$ | 110.52865 | | −0.07837356 | +0.92285643 | |
| $e$ | 0.1163545 | $i$ | 3.55104 | | −0.09424965 | +0.36969598 | |
| $P$ | 5.00 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.8− | 0.3− | 2003 01 08 | 704 | 0.8− | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.2− |
| 2001 08 11 | 608 | 0.4− | 0.9− | 2003 01 08 | 704 | 0.7+ | 0.9+ | 2006 08 15 | 644 | 0.2+ | 0.3+ |
| 2001 08 11 | 608 | 0.7− | 0.5− | 2004 02 11 | 644 | 0.0 | 0.3− | 2006 08 15 | 644 | 0.3+ | 0.6+ |
| 2001 08 16 | 704 | 0.4− | 0.6+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.2+ | 0.4+ |
| 2001 08 16 | 704 | 0.8+ | 0.6+ | 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 08 19 | 699 | 0.3− | 0.2− |
| 2001 08 16 | 704 | 0.0 | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 08 19 | 699 | 0.6− | 0.6+ |
| 2001 08 16 | 704 | 0.4+ | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.5+ | 0.7+ |
| 2001 08 19 | 704 | 0.2− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2001 08 19 | 704 | 0.4+ | 0.1− | 2004 02 17 | 704 | (0.9+ | 1.8+) | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2001 08 19 | 704 | 0.7+ | 0.2+ | 2004 02 17 | 704 | 0.1+ | 0.6+ | 2006 08 20 | 644 | 0.2+ | 0.4+ |
| 2001 08 19 | 704 | 1.0+ | 0.5− | 2004 02 17 | 704 | 0.4+ | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.5+ |
| 2001 08 23 | 704 | 0.3+ | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.2+ |
| 2001 08 23 | 704 | 0.1− | 0.4+ | 2004 02 18 | 608 | 0.4+ | 0.3+ | 2006 08 23 | 644 | 0.1+ | 0.5+ |
| 2001 08 23 | 699 | 0.2+ | 0.4+ | 2004 02 18 | 608 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.3− | 0.4+ |
| 2001 08 23 | 704 | 0.3+ | 0.3+ | 2004 02 18 | 608 | 0.1+ | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 2001 08 23 | 704 | 0.2+ | 0.4− | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.5+ |
| 2001 08 23 | 699 | 0.1+ | 0.6+ | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 08 27 | 691 | 0.3− | 0.5+ |
| 2001 08 23 | 704 | 0.4+ | 0.2− | 2004 02 23 | 704 | 0.3+ | 0.6− | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2001 08 23 | 699 | 0.4− | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2001 08 23 | 699 | 0.4− | 0.2+ | 2004 03 10 | 644 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.6− |
| 2001 08 25 | 704 | 0.7− | 1.0− | 2004 03 10 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.2+ |
| 2001 08 25 | 704 | 0.1− | 0.7− | 2004 03 10 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.6− |
| 2001 08 25 | 704 | 0.5− | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.3+ |
| 2001 08 25 | 704 | 0.7+ | 0.6− | 2004 03 30 | 691 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.1− |
| 2001 08 25 | 704 | 0.6− | 0.1− | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.9+ | 0.8− |
| 2002 12 31 | 704 | 0.1+ | 0.3− | 2005 05 13 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 1.0− |
| 2002 12 31 | 704 | 0.4− | 1.4+ | 2005 05 13 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.2+ |
| 2002 12 31 | 704 | 0.1− | 1.3+ | 2005 05 13 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.9+ | 0.9+ |
| 2003 01 08 | 704 | 0.6− | 0.7+ | 2005 05 14 | G96 | 0.9− | 0.3− | 2006 10 21 | 703 | 1.0− | 0.8+ |
| 2003 01 08 | 704 | 0.0 | 0.5+ | 2005 05 14 | G96 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.5− | 0.3+ |
| 2003 01 08 | 704 | 0.2+ | 0.8+ | 2005 05 14 | G96 | 0.2− | 0.1− | | | | |

**(139550)∗ 2001 QX$_{56}$ = 2004 CS$_{52}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60857)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.94215 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21888468 | $\omega$ | 311.10325 | | +0.52866180 | +0.84787553 | |
| $a$ | 2.7268368 | $\Omega$ | 350.55659 | | −0.68643896 | +0.39911404 | |
| $e$ | 0.0809570 | $i$ | 14.21724 | | −0.49931779 | +0.34902015 | |
| $P$ | 4.50 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 327 | 0.3+ | 0.6− | 2004 02 19 | 049 | 0.3− | 0.4− | 2006 09 16 | 703 | 0.4+ | 0.2− |
| 1997 11 23 | 327 | 0.3+ | 0.4− | 2004 02 19 | 049 | 0.8− | 0.6− | 2006 09 17 | 703 | 0.2− | 0.4+ |
| 1997 11 23 | 327 | 0.1− | 0.8+ | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.5− | 0.1− |
| 2000 05 03 | 645 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.9− | 0.1+ |
| 2000 05 03 | 645 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 09 17 | 703 | 0.1− | 0.5− |
| 2001 08 11 | 608 | 0.7− | 1.1+ | 2004 02 23 | 704 | 0.1− | 0.3− | 2006 09 18 | 703 | 1.4+ | 0.2+ |
| 2001 08 11 | 608 | 1.2− | 0.9+ | 2004 02 23 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.5+ | 0.2− |
| 2001 08 11 | 608 | 0.5− | 0.2+ | 2004 03 11 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.5+ |
| 2001 08 16 | 704 | 0.7+ | 0.6+ | 2004 03 11 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.1− | 0.8+ | 2004 03 11 | 644 | 0.2+ | 0.1− | 2006 09 19 | G92 | 0.2+ | 0.0 |
| 2001 08 16 | 704 | 0.4+ | 0.0 | 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 09 19 | G92 | 0.6+ | 0.2+ |
| 2001 08 16 | 704 | 0.3+ | 0.2− | 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 09 19 | G92 | 0.5− | 0.3+ |
| 2001 08 19 | 704 | 1.0− | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.9− | 0.8+ |
| 2001 08 19 | 704 | 0.9− | 1.0+ | 2004 03 15 | 703 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.0 | 1.0+ |
| 2001 08 19 | 704 | 1.0− | 0.4+ | 2004 03 15 | 704 | 0.6− | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.8− |
| 2001 08 19 | 704 | 1.0− | 0.5+ | 2004 03 15 | 704 | 0.2+ | 0.2− | 2006 09 20 | 699 | 0.5− | 0.2+ |
| 2001 08 19 | 704 | (1.8− | 0.5−) | 2004 03 15 | 703 | 0.1− | 0.8+ | 2006 09 28 | 703 | 0.3− | 1.0− |
| 2001 08 24 | 608 | 0.5− | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.1− | 2006 09 28 | 703 | (2.8+ | 1.7−) |
| 2001 08 24 | 608 | 0.2− | 0.3+ | 2004 03 15 | 703 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.2− |
| 2001 08 24 | 608 | 0.2− | 0.4+ | 2004 03 15 | 704 | 0.1+ | 0.4− | 2006 09 28 | 703 | 0.7− | 0.0 |
| 2001 08 25 | 699 | 0.5− | 0.1+ | 2004 03 15 | 703 | (0.8+ | 2.8−) | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 2001 08 25 | 699 | 0.6+ | 0.2+ | 2004 03 19 | 704 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 08 25 | 699 | 0.3− | 0.3− | 2004 03 19 | 704 | 0.7− | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 2001 08 25 | 699 | 0.0 | 0.1− | 2004 03 19 | 704 | (0.2+ | 1.8+) | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2001 08 27 | 644 | 0.1− | 0.6+ | 2004 03 19 | 704 | 0.6− | 1.2+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 08 27 | 644 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2001 08 27 | 644 | 0.3+ | 0.7+ | 2004 03 22 | 704 | 0.5+ | 0.3+ | 2006 10 13 | 644 | 0.3− | 0.2− |
| 2001 09 11 | 704 | 0.3− | 0.1+ | 2004 03 22 | 704 | 0.9+ | 0.1+ | 2006 10 13 | 644 | 0.1− | 0.4+ |
| 2001 09 11 | 704 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.7+ | 0.5+ | 2006 10 13 | 644 | 0.0 | 0.5+ |
| 2001 09 11 | 704 | 0.3+ | 0.5− | 2004 03 22 | 704 | 0.9+ | 0.9+ | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2001 09 11 | 704 | 0.6− | 0.4− | 2004 03 28 | 704 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.1− | 0.3+ |
| 2001 09 11 | 704 | 0.3− | 0.3− | 2004 03 28 | 704 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.6− | 0.3+ |
| 2004 01 23 | 704 | 0.5+ | 1.0+ | 2004 03 28 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.4+ |
| 2004 01 23 | 704 | 0.8+ | 1.1− | 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2004 01 23 | 704 | 0.8− | 1.2+ | 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2004 01 23 | 704 | 1.4+ | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2004 01 23 | 704 | 0.5+ | 1.3+ | 2006 08 12 | 644 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2004 02 11 | 644 | 0.3− | 0.1− | 2006 08 12 | 644 | 0.5− | 0.5+ | 2006 10 27 | 703 | 1.0− | 0.4− |
| 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 08 12 | 644 | 0.1− | 0.8+ | 2006 10 27 | 703 | 0.3+ | 0.7− |
| 2004 02 11 | 644 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2004 02 17 | 704 | (0.6− | 1.8+) | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.3− |
| 2004 02 17 | 704 | 0.7+ | 1.4+ | 2006 08 30 | 699 | 1.2+ | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.8+ |
| 2004 02 17 | 704 | 0.9+ | 0.9+ | 2006 08 30 | 699 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.9− |
| 2004 02 17 | 704 | 1.4+ | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.7+ |
| 2004 02 17 | 704 | 0.7+ | 0.2+ | 2006 09 16 | 703 | (0.5− | 2.0+) | | | | |
| 2004 02 19 | 049 | 0.2+ | 1.4− | 2006 09 16 | 703 | 0.5+ | 0.1− | | | | |

**(139551)∗ 2001 QF$_{57}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.70013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22470298 | $\omega$ | 236.32831 | | +0.89914615 | +0.43423680 | |
| $a$ | 2.6795601 | $\Omega$ | 97.88195 | | −0.38110053 | +0.83813497 | |
| $e$ | 0.0901492 | $i$ | 3.15630 | | −0.21517105 | +0.33010328 | |
| $P$ | 4.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 699 | 0.4− | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2000 05 01 | 699 | 0.2+ | 0.9+ | 2004 02 23 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2000 05 01 | 699 | 0.8+ | 0.7+ | 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 11 02 | 703 | 0.3+ | 0.2+ |
| 2000 05 01 | 699 | 1.0+ | 0.0 | 2004 02 23 | 704 | 0.6− | 1.4+ | 2006 11 02 | 703 | 0.1+ | 0.4− |
| 2001 07 19 | 699 | (0.0 | 1.6+) | 2004 03 15 | 703 | 0.3+ | 0.5+ | 2006 11 02 | 703 | 0.2+ | 0.1− |
| 2001 07 19 | 699 | 0.1− | 0.6+ | 2004 03 15 | 704 | (1.9− | 3.4+) | 2006 11 02 | 703 | 0.1− | 0.1+ |
| 2001 07 19 | 699 | 0.5+ | 0.6+ | 2004 03 15 | 703 | 0.5− | 1.5+ | 2006 11 11 | 703 | 0.5+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 0.5− | 1.0+ | 2004 03 15 | 703 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.3− | | |
| 2001 08 16 | 704 | 0.0 | 0.3+ | 2004 03 15 | 703 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.5+ | 0.2+ | | |
| 2001 08 16 | 704 | 0.9− | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.1+ | | |
| 2001 08 16 | 704 | (0.3+ | 1.8+) | 2004 03 15 | 704 | 0.5+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.0 | | |
| 2001 08 16 | 704 | (0.2− | 1.8+) | 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.1− | | |
| 2001 08 19 | 704 | 0.3− | 0.7+ | 2004 03 18 | 691 | 0.3+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.1− | | |
| 2001 08 19 | 704 | 1.0− | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.1− | | |
| 2001 08 19 | 704 | 0.1− | 0.4+ | 2004 03 19 | 704 | 0.9+ | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.5+ | | |
| 2001 08 25 | 704 | 1.1− | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.7− | 2006 11 17 | 704 | 0.3+ | 0.4+ | | |
| 2001 08 25 | 704 | 0.5− | 0.2+ | 2004 03 19 | 704 | 0.4+ | 0.3− | 2006 11 17 | 704 | 0.3− | 0.6+ | | |
| 2001 08 25 | 704 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 704 | 0.1− | 0.5+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 704 | 0.2+ | 0.1− | | |
| 2001 08 27 | 699 | 0.6− | 0.2− | 2004 03 28 | 704 | 0.5+ | 0.4− | 2006 11 17 | 703 | 0.4− | 0.3− | | |
| 2001 08 27 | 699 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.1+ | 1.1+ | 2006 11 17 | 703 | 0.6− | 0.2+ | | |
| 2001 08 27 | 699 | 0.5− | 0.7+ | 2004 03 28 | 704 | 0.7+ | 1.0+ | 2006 11 17 | 703 | 0.4− | 0.2+ | | |
| 2001 08 27 | 699 | 0.2+ | 0.0 | 2004 03 30 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.4− | | |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2004 03 30 | 691 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.6+ | 1.0+ | | |
| 2001 09 19 | 704 | 0.4+ | 1.0+ | 2004 03 30 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | (2.0− | 0.7+) | | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2004 04 19 | 704 | 0.3− | 0.3− | 2006 11 18 | 704 | (1.6− | 2.9+) | | |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2004 04 19 | 704 | 0.9+ | 0.2− | 2006 11 18 | 704 | (2.5− | 0.4+) | | |
| 2001 09 19 | 704 | 0.4+ | 0.8+ | 2004 04 19 | 704 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.7− | 2004 04 19 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.8− | 2006 11 20 | 704 | 0.2+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.7+ | 0.8+ | 2006 10 16 | 703 | 0.4− | 0.7− | 2006 11 20 | 704 | 0.6+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.1+ | | |
| 2003 01 04 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2003 01 04 | 704 | 0.6+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.0 | | |
| 2003 01 04 | 704 | 0.5− | 1.2+ | 2006 10 17 | G96 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.0 | | |
| 2003 01 04 | 704 | (0.6+ | 1.6+) | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2003 01 08 | 704 | 0.5− | 0.9− | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.9+ | | |
| 2003 01 08 | 704 | 1.0+ | 0.9− | 2006 10 20 | 644 | 0.5− | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.4+ | | |
| 2003 01 08 | 704 | 0.2− | 0.8− | 2006 10 20 | 644 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.3+ | | |
| 2003 01 08 | 704 | 0.0 | 1.0− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.7+ | | |
| 2004 02 23 | 704 | 0.2− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.2+ | | |

**(139552)∗ 2001 QK$_{58}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.25093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19799613 | $\omega$ | 344.23345 | | +0.95894475 | +0.28358090 | |
| $a$ | 2.9154007 | $\Omega$ | 359.27673 | | −0.23259224 | +0.78117603 | |
| $e$ | 0.0851607 | $i$ | 11.96773 | | −0.16225236 | +0.55618872 | |
| $P$ | 4.98 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.9− | 0.6− | 2001 09 25 | 704 | 0.3+ | 0.3− | 2006 08 30 | 704 | 0.5− | 0.3− | | |
| 2001 08 16 | 704 | 0.8− | 1.0− | 2001 10 11 | 704 | 0.7+ | 0.6+ | 2006 08 30 | 704 | 0.6+ | 1.1+ | | |
| 2001 08 16 | 704 | 0.1+ | 0.6− | 2001 10 11 | 704 | 0.1+ | 0.7+ | 2006 08 30 | 704 | 0.9− | 0.3− | | |
| 2001 08 19 | 704 | 0.1+ | 0.8+ | 2001 10 11 | 704 | 0.2+ | 0.8− | 2006 08 30 | 704 | 0.6− | 0.4− | | |
| 2001 08 19 | 704 | (0.7+ | 1.6−) | 2001 10 11 | 704 | 0.2− | 1.0− | 2006 08 31 | 704 | 0.3+ | 0.5+ | | |
| 2001 08 19 | 704 | 0.7+ | 0.0 | 2001 10 11 | 704 | 0.8+ | 1.1+ | 2006 08 31 | 704 | 0.4+ | 0.3+ | | |
| 2001 08 25 | 704 | 0.5− | 0.2− | 2001 10 13 | 704 | 0.0 | 1.0+ | 2006 08 31 | 704 | 0.8− | 0.4− | | |
| 2001 08 25 | 704 | 0.2+ | 0.1− | 2001 10 13 | 704 | 0.5− | 0.5+ | 2006 08 31 | 704 | 0.7− | 0.4+ | | |
| 2001 08 25 | 644 | (1.6+ | 3.3+) | 2001 10 13 | 704 | 1.1− | 1.2+ | 2006 08 31 | 704 | 0.6− | 0.9+ | | |
| 2001 08 25 | 704 | 0.7− | 0.8+ | 2001 10 17 | 644 | 0.8− | 0.1+ | 2006 09 12 | 704 | 0.1+ | 0.9+ | | |
| 2001 08 25 | 644 | (1.8+ | 3.0+) | 2001 10 17 | 644 | 0.6− | 0.1− | 2006 09 12 | 704 | (0.4− | 1.6+) | | |
| 2001 08 25 | 704 | 0.1+ | 0.5+ | 2001 10 17 | 644 | 0.7− | 0.1− | 2006 09 12 | 704 | 0.2+ | 0.1+ | | |
| 2001 08 25 | 644 | (1.3+ | 3.1+) | 2001 10 23 | 704 | 0.5− | 0.9− | 2006 09 12 | 704 | 0.2+ | 0.4− | | |
| 2001 08 25 | 704 | 1.1− | 0.9+ | 2001 10 23 | 704 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.2− | | |
| 2001 08 25 | 699 | 0.1− | 0.3− | 2001 10 23 | 704 | 0.4− | 1.3− | 2006 09 14 | 703 | 0.0 | 0.7− | | |
| 2001 08 25 | 699 | 0.0 | 0.2− | 2001 10 23 | 704 | 0.6− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.0 | | |
| 2001 08 25 | 699 | 0.4− | 0.5+ | 2001 10 23 | 704 | 0.5− | 0.9− | 2006 09 16 | 704 | 0.4+ | 0.1+ | | |
| 2001 08 25 | 699 | 0.9+ | 0.4+ | 2001 10 23 | 704 | 0.4− | 0.6+ | 2006 09 16 | 704 | 0.1+ | 0.0 | | |
| 2001 09 06 | 644 | 0.2+ | 0.3+ | 2001 10 23 | 704 | 0.4− | 0.4− | 2006 09 16 | 704 | 0.4− | 0.6− | | |
| 2001 09 06 | 644 | 0.2+ | 0.2− | 2001 10 23 | 704 | 0.4− | 0.9+ | 2006 09 16 | 704 | 0.2− | 0.3− | | |
| 2001 09 06 | 644 | 0.0 | 0.2+ | 2001 10 24 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 704 | 0.6+ | 0.0 | | |
| 2001 09 12 | 704 | 0.1+ | 0.3+ | 2001 10 24 | 704 | 0.0 | 0.4− | 2006 09 19 | 704 | 0.8+ | 0.8+ | | |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2001 10 24 | 704 | 0.1+ | 1.1− | 2006 09 19 | 704 | 0.0 | 0.5+ | | |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2001 10 24 | 704 | 0.1− | 1.1− | 2006 09 19 | 699 | 0.4− | 0.3− | | |
| 2001 09 12 | 704 | 0.2+ | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.2− | 2006 09 19 | 704 | 0.3− | 1.4+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.1+ | 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.1− | | |
| 2001 09 19 | 699 | 0.4+ | 0.3− | 2002 12 06 | 704 | 0.9− | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.6− | | |
| 2001 09 19 | 704 | 0.5+ | 1.0− | 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.9+ | | |
| 2001 09 19 | 699 | 0.6+ | 0.2− | 2002 12 15 | 704 | 0.9+ | 0.4− | 2006 09 26 | 704 | (0.1+ | 2.1+) | | |
| 2001 09 19 | 704 | 0.4+ | 0.7− | 2002 12 15 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | 1.2+ | 0.1+ | | |
| 2001 09 19 | 699 | 0.1+ | 1.0+ | 2002 12 15 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.9+ | 1.5+ | | |
| 2001 09 19 | 704 | 0.4+ | 1.5− | 2004 02 15 | 703 | 0.4+ | 0.4+ | 2006 09 26 | 704 | (1.1+ | 2.0+) | | |
| 2001 09 19 | 704 | 0.3+ | 1.3− | 2004 02 15 | 703 | 0.0 | 0.7+ | 2006 09 26 | 704 | (0.4− | 2.1+) | | |
| 2001 09 19 | 699 | 0.3− | 0.9+ | 2004 02 15 | 703 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 0.6− | 1.5+ | | |
| 2001 09 19 | 704 | 0.3+ | 1.3− | 2004 02 15 | 703 | 0.1+ | 0.7+ | 2006 09 28 | 704 | 0.2+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.2+ | 0.4− | | |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.0 | 1.3+ | 2006 09 30 | 703 | 0.6− | 0.1− | | |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.7+ | 1.3+ | 2006 09 30 | 703 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2004 03 20 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.3+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2004 03 28 | 704 | 1.1+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2001 09 24 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 0.4+ | 1.0+ | 2006 10 09 | 644 | 0.1+ | 0.0 | | |
| 2001 09 24 | 704 | 0.4− | 0.4+ | 2004 03 28 | 704 | (1.1+ | 2.1+) | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2001 09 24 | 704 | 1.2+ | 0.8+ | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2001 09 24 | 704 | 0.9+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 09 24 | 704 | (0.6− | 1.8+) | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 24 | 704 | (0.1− | 2.1+) | 2006 08 23 | 704 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.2− | | |
| 2001 09 24 | 704 | 0.0 | 0.7− | 2006 08 23 | 704 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1− | | |
| 2001 09 24 | 704 | 0.3+ | 0.2+ | 2006 08 23 | 704 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2001 09 25 | 704 | 0.6− | 0.2− | 2006 08 23 | 704 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2001 09 25 | 704 | 0.1+ | 0.0 | 2006 08 23 | 704 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.7− | | |
| 2001 09 25 | 704 | 0.6+ | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2001 09 25 | 704 | 0.8− | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.5− | | |
| 2001 09 25 | 704 | 0.4− | 0.1− | 2006 08 28 | 704 | 1.0− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.3+ | | |
| 2001 09 25 | 704 | 0.6+ | 0.0 | 2006 08 28 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.4+ | | |
| 2001 09 25 | 704 | 1.1+ | 0.2+ | 2006 08 28 | 704 | 0.7− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.6− | | |
| 2001 09 25 | 704 | 0.1− | 0.2+ | 2006 08 28 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.7− | | |

**(139553)∗ 2001 QZ$_{58}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.60352 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21919978 | $\omega$ | 53.34289 | | +0.99003545 | −0.12282702 | |
| $a$ | 2.7242229 | $\Omega$ | 313.59927 | | +0.07824508 | +0.88645822 | |
| $e$ | 0.0490703 | $i$ | 5.45725 | | +0.11707907 | +0.44621223 | |
| $P$ | 4.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.7+ | 0.1+ | 2001 08 27 | 704 | 0.3+ | 0.8− | 2004 03 27 | 703 | 0.4+ | 0.9+ | | |
| 1999 02 09 | 691 | 0.8+ | 0.1+ | 2001 09 08 | 704 | 0.0 | 0.4+ | 2004 03 27 | 703 | 0.9− | 0.4+ | | |
| 1999 02 09 | 691 | 0.7+ | 0.2+ | 2001 09 08 | 704 | 0.2+ | 1.0+ | 2004 03 27 | 703 | (1.3− | 2.9+) | | |
| 1999 02 09 | 691 | 0.7− | 0.2− | 2001 09 08 | 704 | 0.1− | 0.9+ | 2004 03 27 | 703 | 0.2− | 0.8+ | | |
| 1999 02 09 | 691 | 0.4− | 0.1− | 2001 09 08 | 704 | 0.2− | 0.7+ | 2004 04 21 | 704 | (1.8+ | 0.3−) | | |
| 1999 02 09 | 691 | 0.8− | 0.2− | 2001 09 08 | 704 | 0.1− | 0.9+ | 2004 04 21 | 704 | 0.1− | 0.4+ | | |
| 1999 02 23 | 691 | 0.5− | 0.4+ | 2001 09 11 | 699 | 0.2− | 0.1− | 2004 04 21 | 704 | 0.7+ | 0.4− | | |
| 1999 02 23 | 691 | 0.4+ | 0.3+ | 2001 09 11 | 699 | 1.0− | 0.1+ | 2004 04 21 | 704 | (0.1− | 1.5+) | | |
| 1999 02 23 | 691 | 0.3+ | 0.6+ | 2001 09 11 | 699 | 0.3− | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.4− | | |
| 2001 08 14 | 608 | 0.7− | 0.6− | 2001 09 11 | 699 | 1.3− | 0.1− | 2006 10 27 | 703 | 0.5− | 0.9− | | |
| 2001 08 14 | 608 | 0.3− | 0.6− | 2001 09 16 | 704 | 0.9+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.6− | | |
| 2001 08 14 | 608 | 0.4− | 0.6− | 2001 09 16 | 704 | 0.4− | 0.2− | 2006 10 27 | 703 | 0.6− | 0.2− | | |
| 2001 08 17 | 704 | 0.7+ | 0.2− | 2001 09 16 | 704 | 0.4+ | 0.9+ | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 08 17 | 704 | (0.9− | 1.7−) | 2001 09 16 | 704 | 0.4− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2001 08 17 | 704 | 0.4+ | 0.5+ | 2001 09 16 | 704 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 08 17 | 704 | 0.5− | 0.7− | 2001 09 20 | 704 | 0.8+ | 1.3+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 08 19 | 704 | 1.4+ | 0.8− | 2001 09 20 | 704 | 0.7+ | 1.1+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 19 | 704 | 0.4− | 0.6+ | 2001 09 20 | 704 | (1.1+ | 1.9+) | 2006 11 10 | 644 | 0.2− | 0.1+ | | |
| 2001 08 19 | 704 | 0.1+ | 0.1− | 2001 09 20 | 704 | 0.9+ | 1.2+ | 2006 11 14 | 703 | 1.2+ | 0.3− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.8− | 0.2+ | 2001 09 20 | 704 | 1.1+ | 1.3+ | 2006 11 14 | 703 | 0.5− | 0.2− |
| 2001 08 22 | 704 | 1.2+ | 0.7+ | 2001 09 22 | 704 | 0.6+ | 0.9+ | 2006 11 14 | 703 | 0.2+ | 0.8+ |
| 2001 08 22 | 704 | 1.3+ | 0.2+ | 2001 09 22 | 704 | 0.3+ | 1.0+ | 2006 11 14 | 703 | (2.5− | 4.5+) |
| 2001 08 22 | 704 | (2.1− | 1.3+) | 2001 09 22 | 704 | 0.4− | 0.9+ | 2006 11 16 | 704 | 0.9+ | 0.6+ |
| 2001 08 22 | 704 | 0.5− | 0.9− | 2001 09 22 | 704 | 0.8+ | 1.1+ | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2001 08 22 | 704 | 0.3− | 0.8− | 2001 09 22 | 704 | 0.5+ | 1.2+ | 2006 11 16 | 704 | 0.5− | 0.5+ |
| 2001 08 23 | 704 | 0.3− | 0.3+ | 2001 09 23 | 704 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.6+ |
| 2001 08 23 | 704 | 0.3+ | 0.7+ | 2001 09 23 | 704 | 0.4+ | 0.6+ | 2006 11 22 | 703 | 1.4− | 0.4− |
| 2001 08 23 | 704 | 1.3− | 0.6− | 2001 09 23 | 704 | 0.6+ | 0.6+ | 2006 11 22 | 703 | 1.0+ | 1.0+ |
| 2001 08 23 | 704 | 1.4− | 0.4+ | 2001 12 10 | 645 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.7− | 0.4− |
| 2001 08 23 | 704 | 0.5− | 1.3+ | 2001 12 10 | 645 | 0.1− | 0.3− | 2006 11 22 | 703 | 1.2+ | 0.1− |
| 2001 08 23 | 704 | 0.1− | 0.4+ | 2003 01 09 | 704 | 0.2− | 1.5+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 08 23 | 704 | 0.4− | 0.4+ | 2003 01 09 | 704 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2001 08 23 | 704 | 1.0− | 0.1− | 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | 1.0− | 0.8− | 2003 01 09 | 704 | 0.1− | 1.1+ | 2006 11 25 | G96 | 0.3− | 0.1− |
| 2001 08 23 | 699 | 0.0 | 0.1+ | 2003 01 10 | 858 | 0.8+ | 0.2− | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2001 08 23 | 699 | 0.6− | 0.1+ | 2003 01 10 | 858 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2001 08 23 | 699 | 0.4+ | 0.4+ | 2004 03 14 | 644 | 0.7+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2001 08 27 | 704 | (1.6− | 0.6+) | 2004 03 14 | 644 | 0.3+ | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2001 08 27 | 704 | 0.6− | 0.1+ | 2004 03 14 | 644 | 0.4+ | 0.3+ | | | | |

**(139554)∗ 2001 QV$_{59}$**

Discovered 2001 Aug. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.06448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23596402 | $\omega$ | 277.78481 | | +0.92550696 | −0.36518685 | |
| $a$ | 2.5936151 | $\Omega$ | 103.67761 | | +0.37526248 | +0.84845283 | |
| $e$ | 0.1720585 | $i$ | 5.92958 | | +0.05113652 | +0.38310098 | |
| $P$ | 4.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | (0.1+ | 2.2+) | 2001 10 20 | 704 | 1.0− | 1.0+ | 2005 07 11 | 691 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.3− | 0.5+ | 2001 10 20 | 704 | 0.1+ | 1.2+ | 2005 07 11 | 699 | 0.2− | 1.2+ |
| 2001 08 16 | 704 | 0.1+ | 0.5+ | 2003 01 05 | 699 | 1.5− | 0.4− | 2005 07 11 | 691 | 0.3− | 0.0 |
| 2001 08 16 | 704 | 0.2+ | 0.4+ | 2003 01 05 | 699 | 0.9+ | 0.6+ | 2005 07 11 | 691 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.6+ | 0.7− | 2003 01 05 | 699 | 0.1− | 0.2− | 2005 07 30 | E12 | 0.0 | 0.2+ |
| 2001 08 18 | 704 | 0.1− | 0.7+ | 2003 01 05 | 699 | 0.3+ | 1.3+ | 2005 07 30 | E12 | 0.6+ | 0.1+ |
| 2001 08 18 | 704 | 0.9− | 1.3+ | 2003 01 09 | 704 | 0.0 | 1.5+ | 2005 07 30 | E12 | 0.6− | 0.1− |
| 2001 08 18 | 704 | 0.7− | 0.1+ | 2003 01 09 | 704 | 0.2− | 0.8+ | 2005 07 30 | E12 | 0.3+ | 0.1+ |
| 2001 08 18 | 704 | (1.6− | 0.5−) | 2003 01 09 | 704 | 0.7− | 0.4+ | 2005 08 02 | 704 | 0.6+ | 0.1+ |
| 2001 08 19 | 704 | 0.1− | 1.1− | 2003 01 09 | 704 | 0.8− | 1.0+ | 2005 08 02 | 704 | 1.2+ | 0.1− |
| 2001 08 19 | 704 | 0.0 | 0.8− | 2003 01 30 | 699 | 1.0+ | 1.1− | 2005 08 02 | 704 | 0.1− | 0.2− |
| 2001 08 19 | 704 | 0.0 | 1.1− | 2003 01 30 | 699 | 0.3+ | 0.2− | 2005 08 06 | 704 | 0.1+ | 0.4+ |
| 2001 08 19 | 704 | 0.2− | 0.1− | 2003 01 30 | 699 | 0.1− | 0.0 | 2005 08 06 | 704 | 1.1+ | 1.5− |
| 2001 08 19 | 704 | 0.5− | 0.4− | 2003 01 30 | 699 | 0.7− | 0.6+ | 2005 08 06 | 704 | 1.0+ | 0.3− |
| 2001 08 24 | 608 | 0.3+ | 0.7+ | 2003 01 31 | 644 | 0.3− | 0.5+ | 2005 08 06 | 704 | 0.1− | 0.3+ |
| 2001 08 24 | 608 | 0.2+ | 0.6+ | 2003 01 31 | 644 | 0.1− | 0.4+ | 2005 08 27 | E12 | 0.5− | 0.2+ |
| 2001 08 24 | 608 | 0.3+ | 0.6+ | 2003 01 31 | 644 | 0.2+ | 0.2+ | 2005 08 27 | E12 | 0.1− | 1.0− |
| 2001 08 25 | 699 | 0.4− | 0.1+ | 2003 02 01 | 704 | (0.8− | 2.4+) | 2005 08 27 | E12 | 0.4+ | 0.5+ |
| 2001 08 25 | 699 | 0.4− | 0.3+ | 2003 02 01 | 704 | (0.8− | 2.2+) | 2005 08 27 | E12 | 1.4+ | 0.2− |
| 2001 08 25 | 699 | 0.1+ | 0.4+ | 2003 02 01 | 704 | 0.9+ | 1.0+ | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2001 08 25 | 699 | 0.4+ | 0.6+ | 2003 02 07 | 704 | 0.3+ | 1.4+ | 2006 09 26 | 691 | 0.8− | 0.1− |
| 2001 09 10 | 699 | 1.0+ | 0.1+ | 2003 02 07 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2001 09 10 | 699 | 0.7+ | 0.4+ | 2003 02 07 | 704 | 1.3+ | 0.7− | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2001 09 10 | 699 | 1.0+ | 0.1− | 2005 05 22 | 644 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 09 10 | 699 | 0.0 | 0.3+ | 2005 05 22 | 644 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2001 09 19 | 704 | 0.8+ | 0.4+ | 2005 05 22 | 644 | 0.6− | 0.4+ | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2001 09 19 | 704 | 0.3+ | 0.4− | 2005 06 29 | 703 | 0.4− | 0.4− | 2006 10 29 | G96 | 0.6+ | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 1.1− | 2005 06 29 | 703 | 0.3+ | 0.3− | 2006 10 29 | G96 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2005 06 29 | 703 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.4− | 2005 06 29 | 703 | 0.3− | 0.3− | 2006 10 29 | G96 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 0.5− | 0.2− | 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.6− | 2005 07 07 | 691 | 0.7− | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.3− | 1.1− | 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2001 09 21 | 704 | 0.8− | 0.5− | 2005 07 11 | 699 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.7+ | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2005 07 11 | 699 | 0.7− | 0.0 | | | | |
| 2001 10 20 | 704 | 0.5− | 0.8+ | 2005 07 11 | 699 | 0.2− | 0.3+ | | | | |

**(139555)∗ 2001 QP$_{67}$ = 2005 UU$_{449}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 93981)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.09575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27636490 | $\omega$ | 35.66495 | | +0.57558650 | −0.81628002 | |
| $a$ | 2.3342505 | $\Omega$ | 19.34222 | | +0.71188958 | +0.47078538 | |
| $e$ | 0.2320537 | $i$ | 8.48289 | | +0.40238465 | +0.33473581 | |
| $P$ | 3.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 15 | 699 | 0.5+ | 0.8− | 2001 10 10 | 644 | 0.8+ | 1.9− | 2005 11 02 | 704 | 0.4+ | 1.4+ |
| 1999 01 15 | 699 | 0.8− | 1.2− | 2001 10 10 | 644 | 0.4+ | 1.9− | 2005 11 02 | 704 | 0.5+ | 1.1+ |
| 1999 01 15 | 699 | 0.3− | 0.4− | 2003 02 26 | 599 | 0.7− | 0.3+ | 2005 11 02 | 704 | 0.2− | 0.9+ |
| 2001 08 19 | 704 | 0.6− | 1.3+ | 2003 02 26 | 599 | 0.4− | 0.2− | 2005 11 02 | 704 | 0.2+ | 1.0+ |
| 2001 08 19 | 704 | 1.0+ | 0.6+ | 2003 02 26 | 599 | 0.2+ | 0.4− | 2005 11 26 | 704 | 0.4− | 0.5− |
| 2001 08 19 | 704 | 0.4− | 1.4+ | 2003 03 09 | 704 | 0.3− | 0.8+ | 2005 11 26 | 704 | 0.1− | 0.6− |
| 2001 08 19 | 704 | 0.3+ | 0.3+ | 2003 03 09 | 704 | 0.4− | 1.2+ | 2005 11 26 | 704 | 0.1− | 0.0 |
| 2001 08 19 | 704 | 0.2− | 1.8+ | 2003 03 09 | 704 | 0.8+ | 1.0+ | 2005 11 26 | 704 | 0.4− | 0.7− |
| 2001 08 20 | 704 | 0.7− | 0.2+ | 2003 04 05 | 691 | 1.1+ | 0.4− | 2005 12 23 | 704 | 0.2+ | 0.2+ |
| 2001 08 20 | 704 | 0.4− | 0.4+ | 2003 04 05 | 691 | 1.0+ | 0.3− | 2005 12 23 | 704 | 0.4+ | 0.7+ |
| 2001 08 20 | 704 | 0.5+ | 0.4+ | 2003 04 05 | 691 | 0.4+ | 0.2− | 2005 12 23 | 704 | 0.5+ | 0.1+ |
| 2001 08 25 | 699 | 0.5− | 0.3+ | 2003 05 01 | 691 | 0.3− | 0.7+ | 2005 12 23 | 704 | 0.1+ | 0.7+ |
| 2001 08 25 | 699 | 0.1− | 1.0+ | 2003 05 01 | 691 | 0.6− | 0.5+ | 2005 12 23 | 704 | 0.4+ | 0.0 |
| 2001 08 25 | 699 | 0.0 | 0.7+ | 2003 05 01 | 691 | 0.8− | 0.9+ | 2006 01 22 | 704 | 0.1− | 0.3+ |
| 2001 08 25 | 699 | 1.0− | 0.5+ | 2005 10 30 | 704 | 1.1+ | 0.9− | 2006 01 22 | 704 | 0.4− | 1.0+ |
| 2001 08 25 | 608 | 0.2− | 0.0 | 2005 10 30 | 704 | 0.9− | 1.1+ | 2006 01 22 | 704 | 0.2− | 0.1+ |
| 2001 08 25 | 608 | 0.5− | 0.3+ | 2005 10 30 | 704 | 1.0− | 0.6+ | 2006 01 22 | 704 | 0.6− | 0.2+ |
| 2001 08 25 | 608 | 0.5− | 0.2− | 2005 10 30 | 704 | 0.2− | 0.5+ | | | | |
| 2001 10 10 | 644 | 0.2− | 1.9− | 2005 11 02 | 704 | 0.0 | 0.2− | | | | |

**(139556)∗ 2001 QT$_{67}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.16207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21536409 | $\omega$ | 282.75578 | | +0.82855542 | −0.53603872 | |
| $a$ | 2.7564738 | $\Omega$ | 109.86882 | | +0.55683182 | +0.75864450 | |
| $e$ | 0.1752192 | $i$ | 9.90253 | | +0.05860240 | +0.37029855 | |
| $P$ | 4.58 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.6+ | 0.2− | 2002 12 31 | 704 | 0.2+ | 0.1− | 2004 03 23 | 704 | 1.3+ | 1.3+ |
| 1993 11 20 | 691 | 0.6− | 0.8− | 2003 01 04 | 704 | 0.1+ | 0.3+ | 2004 03 29 | 691 | 0.1− | 0.4+ |
| 1993 11 20 | 691 | 0.5− | 0.9− | 2003 01 04 | 704 | 0.1+ | 0.2+ | 2004 03 29 | 691 | 0.1− | 0.5+ |
| 2001 08 13 | 608 | 0.3+ | 1.2− | 2003 01 04 | 704 | 0.6− | 0.3+ | 2004 03 29 | 691 | 0.0 | 0.2+ |
| 2001 08 13 | 608 | 0.2+ | 0.6− | 2003 01 04 | 704 | 0.0 | 0.2− | 2006 09 30 | 699 | 0.7− | 0.6+ |
| 2001 08 13 | 608 | 0.0 | 0.7− | 2003 01 08 | 704 | (2.0+ | 0.3+) | 2006 09 30 | 699 | 0.3− | 0.1+ |
| 2001 08 19 | 704 | 0.5+ | 0.0 | 2003 01 08 | 704 | 0.2− | 0.0 | 2006 09 30 | 699 | 0.3+ | 0.3− |
| 2001 08 19 | 704 | 0.5+ | 0.3− | 2003 01 08 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 699 | 0.6− | 0.1− |
| 2001 08 19 | 704 | 0.5+ | 0.8− | 2003 01 08 | 704 | 1.1+ | 0.0 | 2006 10 01 | 704 | 0.7+ | 0.3+ |
| 2001 08 19 | 704 | 1.3+ | 0.9− | 2003 01 08 | 704 | 0.7+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.5+ |
| 2001 08 20 | 704 | 0.2− | 0.1− | 2003 01 25 | 699 | 1.2− | 0.3− | 2006 10 01 | 704 | 0.3− | 0.4− |
| 2001 08 20 | 704 | 0.7+ | 0.6+ | 2003 01 25 | 699 | (1.5− | 0.1+) | 2006 10 01 | 704 | 0.6+ | 0.0 |
| 2001 08 20 | 704 | 0.6+ | 0.9+ | 2003 01 25 | 699 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2001 08 25 | 699 | 0.4− | 0.1+ | 2003 01 25 | 699 | 0.8− | 0.7− | 2006 10 16 | 703 | 0.6+ | 0.3+ |
| 2001 08 25 | 699 | 0.4+ | 0.4+ | 2003 01 26 | 608 | 0.3+ | 0.6− | 2006 10 16 | 703 | (2.4+ | 1.0+) |
| 2001 08 25 | 699 | 0.6+ | 0.0 | 2003 01 26 | 608 | 0.3+ | 0.9− | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2001 08 25 | 699 | 0.1− | 0.3− | 2003 01 26 | 608 | 0.3+ | 0.7− | 2006 10 28 | 703 | 0.6+ | 0.4+ |
| 2001 08 25 | 608 | 0.3− | 0.2+ | 2003 02 01 | 704 | 0.6− | 1.3+ | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2001 08 25 | 608 | 0.1− | 0.5− | 2003 02 01 | 704 | 0.2+ | 1.3+ | 2006 10 28 | 703 | 0.5+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 608 | 0.3− | 0.0 | 2003 02 01 | 704 | 0.4+ | 0.1− | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2001 09 10 | 699 | 0.6− | 0.7+ | 2003 02 01 | 704 | (0.3+ | 1.5+) | 2006 11 10 | 704 | 0.6+ | 0.3+ |
| 2001 09 10 | 699 | 0.6+ | 1.2+ | 2003 02 01 | 704 | 0.7+ | 0.5+ | 2006 11 10 | 704 | 0.0 | 0.5+ |
| 2001 09 10 | 699 | 0.1− | 0.4+ | 2003 02 04 | 699 | 0.1− | 0.5− | 2006 11 10 | 704 | 0.6+ | 0.7+ |
| 2001 09 10 | 699 | 0.4− | 1.0+ | 2003 02 04 | 699 | 0.8+ | 1.0− | 2006 11 10 | 704 | 0.6+ | 0.7− |
| 2001 09 11 | 704 | 0.1− | 0.2+ | 2003 02 04 | 699 | 0.2+ | 0.8− | 2006 11 10 | 704 | 0.1+ | 0.5+ |
| 2001 09 11 | 704 | 0.6− | 0.1− | 2003 02 04 | 704 | 0.3+ | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.2+ |
| 2001 09 11 | 704 | 0.1− | 0.2− | 2003 02 04 | 699 | 0.3+ | 0.7+ | 2006 11 16 | 703 | 1.0− | 0.7+ |
| 2001 09 11 | 704 | 0.7− | 0.1− | 2003 02 04 | 644 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2001 09 11 | 704 | 0.1− | 0.9− | 2003 02 04 | 704 | 0.7− | 0.4+ | 2006 11 16 | 703 | 0.4− | 0.3+ |
| 2001 11 20 | 608 | 0.9− | 0.6− | 2003 02 04 | 704 | 0.4+ | 0.1− | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2001 11 20 | 608 | 0.2− | 0.9− | 2003 02 04 | 704 | 0.0 | 0.5+ | 2006 11 17 | 644 | 0.2− | 0.1− |
| 2001 11 20 | 608 | 0.6− | 0.6− | 2003 02 04 | 704 | 0.6− | 0.4− | 2006 11 17 | 644 | 0.5− | 0.1+ |
| 2002 12 19 | 644 | 0.2− | 0.6+ | 2003 02 04 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.1+ |
| 2002 12 19 | 644 | 0.2− | 0.2+ | 2003 02 04 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2002 12 19 | 644 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.7− | 0.4− | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2002 12 31 | 704 | 0.2− | 0.5− | 2004 03 23 | 704 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2002 12 31 | 704 | 0.1+ | 0.6+ | 2004 03 23 | 704 | 0.8+ | 0.4− | 2006 11 21 | 704 | 0.9− | 0.0 |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2004 03 23 | 704 | 1.2+ | 0.4+ | | | | |

**(139557)∗ 2001 QF$_{68}$**

Discovered 2001 Aug. 20 by C. Wolfe at Oakley Observatory, Terre Haute.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.51908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21173424 | $\omega$ | 48.07216 | | +0.94295647 | −0.09068489 | |
| $a$ | 2.7878879 | $\Omega$ | 314.23048 | | −0.14566511 | +0.75280850 | |
| $e$ | 0.2105379 | $i$ | 26.55438 | | +0.29935727 | +0.65196289 | |
| $P$ | 4.65 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 27 | 608 | 0.3− | 0.2− | 2001 09 10 | 704 | 0.2+ | 0.8+ | 2003 01 31 | 699 | 1.0− | 0.6+ |
| 2001 05 27 | 608 | 0.2+ | 0.1− | 2001 09 10 | 704 | 0.2+ | 0.8+ | 2003 02 01 | 704 | 0.4− | 0.6− |
| 2001 05 27 | 608 | 0.1− | 0.2+ | 2001 09 10 | 704 | 0.5+ | 1.0+ | 2003 02 01 | 704 | 0.2+ | 0.2− |
| 2001 06 28 | 608 | 0.6− | 0.3+ | 2001 09 23 | 699 | 0.1+ | 0.2− | 2003 02 01 | 704 | 0.4+ | 0.1+ |
| 2001 06 28 | 608 | 0.6− | 0.3+ | 2001 09 23 | 699 | 0.1+ | 0.2− | 2003 02 01 | 704 | 0.6+ | 0.3− |
| 2001 06 28 | 608 | 0.2− | 0.2− | 2001 09 23 | 699 | 0.3− | 0.0 | 2003 02 01 | 704 | 0.5+ | 0.1+ |
| 2001 07 17 | 699 | 0.2+ | 0.8+ | 2001 09 23 | 699 | 0.0 | 0.3− | 2003 02 04 | 699 | (2.3+ | 0.4−) |
| 2001 07 17 | 699 | 0.6+ | 0.7+ | 2001 09 30 | 644 | 1.0− | 0.4− | 2003 02 04 | 699 | 0.7− | 0.0 |
| 2001 07 17 | 699 | 0.4− | 0.4+ | 2001 09 30 | 644 | 1.1− | 0.3− | 2003 02 04 | 699 | 0.8− | 0.3− |
| 2001 07 17 | 699 | 0.0 | 1.0+ | 2001 09 30 | 644 | 1.3− | 0.3− | 2003 02 04 | 699 | 0.7+ | 0.1+ |
| 2001 08 18 | 699 | 0.3− | 0.2+ | 2001 10 06 | 608 | (1.6+ | 1.9+) | 2003 02 04 | 704 | 1.0+ | 0.7+ |
| 2001 08 18 | 699 | 0.2− | 0.1+ | 2001 10 06 | 608 | (1.4+ | 1.8+) | 2003 02 04 | 704 | 0.7+ | 0.4− |
| 2001 08 18 | 699 | 0.1− | 0.3+ | 2001 10 06 | 608 | 1.5+ | 1.1+ | 2003 02 04 | 704 | 0.4+ | 0.3− |
| 2001 08 18 | 699 | 0.1− | 0.2+ | 2001 10 29 | 644 | 0.0 | 0.4+ | 2003 02 04 | 704 | 0.3− | 1.3+ |
| 2001 08 20 | 916 | 0.2+ | 0.9− | 2001 10 29 | 644 | 0.2− | 0.5+ | 2003 02 04 | 704 | 1.4+ | 0.1+ |
| 2001 08 20 | 916 | 0.1+ | 0.2− | 2001 10 29 | 644 | 0.1− | 0.4+ | 2003 02 23 | 699 | 0.6+ | 0.4+ |
| 2001 08 20 | 916 | 0.4+ | 0.4+ | 2001 11 13 | 704 | 1.1− | 0.7− | 2003 02 23 | 699 | 1.0+ | 0.9− |
| 2001 08 20 | 916 | 0.7− | 0.2+ | 2001 11 13 | 704 | (2.3− | 0.4−) | 2003 02 23 | 699 | (0.2− | 1.6+) |
| 2001 08 20 | 916 | 0.8+ | 1.3− | 2001 11 13 | 704 | 1.2− | 0.4− | 2003 02 23 | 699 | 1.4+ | 0.9+ |
| 2001 08 20 | 916 | 0.3+ | 0.2− | 2001 11 13 | 704 | 1.0− | 0.5− | 2003 02 26 | 704 | 0.3− | 0.2− |
| 2001 08 20 | 916 | 0.0 | 0.0 | 2001 11 13 | 704 | 1.4− | 0.5− | 2003 02 26 | 704 | 0.6+ | 0.4− |
| 2001 08 20 | 916 | 0.0 | 0.1+ | 2001 11 17 | 704 | 0.3+ | 0.8− | 2003 02 26 | 704 | 0.6− | 1.0− |
| 2001 08 20 | 916 | 1.1+ | 0.1+ | 2001 11 17 | 704 | 0.6+ | 1.1− | 2003 02 26 | 704 | 0.8− | 0.9− |
| 2001 08 21 | 916 | 0.5+ | 0.3+ | 2001 11 17 | 704 | 0.5+ | 1.5− | 2003 03 06 | 704 | 0.3− | 0.7+ |
| 2001 08 21 | 916 | 0.3− | 0.5+ | 2001 12 11 | 704 | 1.4+ | 1.1− | 2003 03 06 | 704 | 0.7+ | 1.2− |
| 2001 08 21 | 916 | 0.3− | 0.1+ | 2001 12 11 | 704 | 0.3+ | 0.7− | 2003 03 06 | 704 | 0.9+ | 0.5− |
| 2001 08 21 | 916 | 0.7+ | 0.0 | 2001 12 11 | 704 | 0.1+ | 0.3− | 2003 03 06 | 704 | (2.3+ | 1.2−) |
| 2001 08 21 | 916 | 1.3− | 0.5− | 2001 12 11 | 704 | 0.8+ | 0.8− | 2003 03 08 | 704 | 0.4+ | 0.8− |
| 2001 08 21 | 916 | 0.1+ | 0.4− | 2002 11 07 | 704 | 0.1− | 0.5− | 2003 03 08 | 704 | 0.0 | 0.4− |
| 2001 08 21 | 916 | 0.3+ | 0.2− | 2002 11 07 | 704 | 0.1− | 0.3+ | 2003 03 08 | 704 | 0.0 | 1.1− |
| 2001 08 21 | 916 | 1.2+ | 0.7+ | 2002 11 07 | 704 | 0.5− | 0.3+ | 2003 03 08 | 704 | 0.1+ | 1.2− |
| 2001 08 21 | 916 | 1.1− | 0.6+ | 2002 11 07 | 704 | 1.1− | 1.3+ | 2004 03 19 | E12 | 0.3+ | 0.6+ |
| 2001 08 21 | 916 | 0.2+ | 0.4− | 2002 11 14 | 644 | 0.0 | 0.4+ | 2004 03 19 | E12 | 0.9+ | 0.5+ |
| 2001 08 21 | 916 | 0.6− | 0.5− | 2002 11 14 | 644 | 0.1+ | 0.2+ | 2004 03 19 | E12 | 0.6− | 1.0+ |
| 2001 08 21 | 704 | 0.4− | 0.8+ | 2002 11 14 | 644 | 0.3+ | 0.2+ | 2004 03 19 | E12 | 0.1− | 1.1+ |
| 2001 08 21 | 704 | 0.2− | 0.9+ | 2002 12 15 | 704 | 0.6+ | 0.3− | 2006 07 14 | 699 | 0.6+ | 0.0 |
| 2001 08 21 | 704 | 0.5− | 0.7+ | 2002 12 15 | 704 | 0.1+ | 0.1+ | 2006 07 14 | 699 | 0.8+ | 0.5− |
| 2001 08 21 | 704 | 0.0 | 0.5+ | 2002 12 15 | 704 | 0.2+ | 0.3+ | 2006 07 14 | 699 | 0.7+ | 0.8+ |
| 2001 08 21 | 704 | 0.0 | 0.5+ | 2002 12 15 | 704 | 1.1− | 0.7+ | 2006 07 14 | 699 | 0.1− | 1.5+ |
| 2001 08 24 | 699 | 0.1− | 0.0 | 2002 12 31 | 699 | 0.2+ | 0.1− | 2006 11 11 | 704 | 0.1+ | 0.4− |
| 2001 08 24 | 699 | 0.3− | 0.4+ | 2002 12 31 | 699 | 0.3+ | 0.2+ | 2006 11 11 | 704 | 0.2− | 0.1− |
| 2001 08 24 | 699 | 0.2− | 0.3+ | 2002 12 31 | 699 | 0.6+ | 0.1− | 2006 11 11 | 704 | 1.2− | 0.3− |
| 2001 08 24 | 699 | 0.1+ | 0.1− | 2002 12 31 | 699 | 0.7+ | 0.0 | 2006 11 11 | 704 | 0.1+ | 0.1− |
| 2001 08 27 | 916 | 0.0 | 0.9+ | 2003 01 10 | 704 | 0.6+ | 0.6+ | 2006 11 11 | 704 | 0.2+ | 0.6− |
| 2001 08 27 | 916 | 0.7− | 0.3− | 2003 01 10 | 704 | 0.1+ | 0.1− | 2006 11 13 | 704 | 0.3+ | 0.2− |
| 2001 08 27 | 916 | 0.1+ | 0.1+ | 2003 01 10 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 704 | 0.2+ | 0.2− |
| 2001 08 27 | 916 | 0.5− | 0.5− | 2003 01 10 | 704 | 0.2+ | 1.0+ | 2006 11 13 | 704 | 0.4− | 0.3− |
| 2001 08 27 | 916 | 0.6− | 0.6− | 2003 01 10 | 704 | 0.9+ | 0.7+ | 2006 11 13 | 704 | 0.4+ | 0.3− |
| 2001 08 27 | 916 | 0.4− | 1.3− | 2003 01 13 | 704 | 0.1− | 0.2+ | 2006 11 13 | 704 | 0.9+ | 0.0 |
| 2001 08 27 | 916 | 0.9+ | 0.2+ | 2003 01 13 | 704 | 0.3+ | 0.3+ | 2006 11 13 | 704 | 0.5+ | 0.1+ |
| 2001 08 27 | 916 | (1.7− | 0.0 ) | 2003 01 13 | 704 | 0.0 | 0.6+ | 2006 11 13 | 704 | 0.3+ | 0.2− |
| 2001 08 27 | 916 | 0.2+ | 0.3+ | 2003 01 13 | 704 | 0.4+ | 0.2+ | 2006 11 13 | 704 | 0.2+ | 0.6− |
| 2001 08 27 | 916 | 0.8− | 0.1− | 2003 01 13 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 704 | 0.6− | 0.4− |
| 2001 08 27 | 916 | 0.2+ | 0.3+ | 2003 01 27 | 644 | 0.1+ | 0.7+ | 2006 11 14 | 704 | 0.7− | 0.0 |
| 2001 08 27 | 636 | 0.5− | 0.3+ | 2003 01 27 | 644 | 0.1+ | 0.8+ | 2006 11 14 | 704 | 0.1+ | 0.2− |
| 2001 08 27 | 636 | 0.0 | 0.3+ | 2003 01 27 | 644 | 0.1− | 0.8+ | 2006 11 14 | 704 | 0.3+ | 0.1− |
| 2001 08 27 | 636 | 0.1− | 0.2+ | 2003 01 31 | 699 | 0.6− | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.1− |
| 2001 09 10 | 704 | 0.2+ | 0.6+ | 2003 01 31 | 699 | 1.3− | 0.1+ | | | | |
| 2001 09 10 | 704 | 0.0 | 0.7+ | 2003 01 31 | 699 | 0.3+ | 0.6+ | | | | |

**(139558)∗ 2001 QJ$_{68}$**

Discovered 2001 Aug. 20 by C. Wolfe at Oakley Observatory, Terre Haute.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.30819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22458107 | $\omega$ | 168.83818 | | +0.85440957 | −0.49530490 | |
| $a$ | 2.6805296 | $\Omega$ | 222.06661 | | +0.45685606 | +0.86007164 | |
| $e$ | 0.1767288 | $i$ | 13.55449 | | +0.24752135 | +0.12226949 | |
| $P$ | 4.39 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | 1.3− | 0.9+ | 2001 08 21 | 916 | 0.2+ | 0.0 | 2001 10 19 | 704 | 0.5+ | 0.1− |
| 1997 10 29 | 704 | 1.3− | 0.3− | 2001 08 21 | 916 | 0.5+ | 0.0 | 2001 10 19 | 704 | 0.5− | 0.3− |
| 1997 10 29 | 704 | 0.5+ | 0.2− | 2001 08 21 | 916 | 0.9− | 0.0 | 2001 10 20 | 699 | 0.4− | 0.0 |
| 1997 10 29 | 704 | 0.7+ | 0.4+ | 2001 08 21 | 916 | 0.4+ | 0.3+ | 2001 10 20 | 699 | 0.8+ | 1.2+ |
| 1997 10 29 | 704 | 1.1+ | 0.8+ | 2001 08 27 | 916 | 0.1− | 0.8− | 2001 10 20 | 699 | 0.8− | 0.3− |
| 1997 10 30 | 704 | 1.7+ | 0.2+ | 2001 08 27 | 916 | 0.2− | 0.5+ | 2001 10 20 | 699 | 0.4+ | 0.9+ |
| 1997 10 30 | 704 | 1.5+ | 0.7− | 2001 08 27 | 916 | 0.2− | 1.2− | 2001 10 20 | 699 | 0.0 | 0.6+ |
| 1997 10 30 | 704 | 1.2+ | 1.1− | 2001 08 27 | 916 | 0.6+ | 0.3− | 2001 10 20 | 699 | 0.1+ | 1.0+ |
| 1997 10 30 | 704 | 0.8+ | 0.2− | 2001 08 27 | 916 | 0.5− | 1.0− | 2001 10 20 | 699 | 0.6+ | 0.4− |
| 1997 10 31 | 704 | 2.0− | 0.4+ | 2001 08 27 | 916 | 0.0 | 0.5+ | 2001 10 20 | 699 | 0.7+ | 0.3+ |
| 1997 10 31 | 704 | 1.3− | 1.6+ | 2001 08 27 | 916 | 0.8+ | 0.5− | 2001 11 10 | 704 | 0.3+ | 0.1− |
| 1997 10 31 | 704 | (2.5− | 1.4+) | 2001 08 27 | 916 | 0.4+ | 1.2+ | 2001 11 10 | 704 | 1.0+ | 0.0 |
| 1997 10 31 | 704 | (1.1− | 2.1+) | 2001 08 28 | 916 | 0.5− | 0.1− | 2001 11 10 | 704 | 0.8− | 1.1− |
| 1997 10 31 | 704 | 0.9− | 1.1+ | 2001 08 28 | 916 | 0.1+ | 0.1− | 2001 11 10 | 704 | (2.2+ | 0.4−) |
| 1997 11 06 | 704 | (3.7− | 0.8+) | 2001 08 28 | 916 | 0.4− | 0.5− | 2001 11 11 | 644 | 0.1− | 0.2+ |
| 1997 11 06 | 704 | (3.2− | 0.7−) | 2001 08 28 | 916 | 0.2+ | 0.9+ | 2001 11 11 | 644 | 0.1− | 0.3+ |
| 1997 11 06 | 704 | (3.2− | 0.7−) | 2001 09 08 | 699 | 0.3− | 0.4+ | 2001 11 11 | 644 | 0.1− | 0.2+ |
| 1997 11 06 | 704 | (3.1− | 1.3−) | 2001 09 08 | 699 | 0.1− | 0.4+ | 2001 11 18 | 704 | 0.1+ | 1.4+ |
| 1997 11 06 | 704 | (3.8− | 0.9−) | 2001 09 08 | 699 | 0.3− | 0.5+ | 2001 11 18 | 704 | 0.4− | 0.0 |
| 1997 11 29 | 704 | 0.8− | 0.4− | 2001 09 08 | 699 | 0.3− | 0.6+ | 2001 11 18 | 704 | 0.2+ | 0.2+ |
| 1997 11 29 | 704 | 0.4+ | 0.1+ | 2001 09 09 | 699 | 0.1+ | 0.0 | 2001 11 18 | 704 | 0.6− | 0.1− |
| 1997 11 29 | 704 | 0.4− | 0.3− | 2001 09 09 | 699 | 0.3− | 0.1− | 2001 11 18 | 704 | 0.4− | 0.9+ |
| 1997 11 29 | 704 | 0.3− | 0.4− | 2001 09 09 | 699 | 0.3− | 0.1+ | 2003 01 25 | 644 | 0.0 | 0.7+ |
| 2000 05 24 | 691 | 0.3− | 0.1+ | 2001 09 09 | 699 | 0.5− | 0.0 | 2003 01 25 | 644 | 0.0 | 0.7+ |
| 2000 05 24 | 691 | 0.0 | 0.2+ | 2001 09 17 | 644 | 0.3+ | 0.4+ | 2003 01 25 | 644 | 0.0 | 0.6+ |
| 2000 05 24 | 691 | 0.2− | 0.2+ | 2001 09 17 | 644 | 0.2+ | 0.7+ | 2003 01 29 | 704 | 1.3+ | 0.4− |
| 2001 06 27 | 608 | 0.2− | 0.7− | 2001 09 17 | 644 | 0.4+ | 0.4+ | 2003 01 29 | 704 | (1.3+ | 2.0−) |
| 2001 06 27 | 608 | 0.1+ | 0.8− | 2001 09 21 | 699 | 0.5+ | 0.1− | 2003 01 29 | 704 | 0.6+ | 0.6+ |
| 2001 06 27 | 608 | 0.1+ | 1.0− | 2001 09 21 | 699 | 0.3− | 0.8+ | 2003 01 29 | 704 | 0.2− | 0.1− |
| 2001 08 18 | 699 | 0.2− | 0.7+ | 2001 09 21 | 699 | 0.4+ | 0.5+ | 2004 04 22 | 691 | 0.1+ | 0.4+ |
| 2001 08 18 | 699 | 0.2+ | 1.3+ | 2001 09 21 | 699 | 0.3+ | 0.0 | 2004 04 22 | 691 | (1.2− | 1.7+) |
| 2001 08 18 | 699 | 0.1− | 1.0+ | 2001 10 13 | 644 | 0.4− | 1.4− | 2004 04 22 | 691 | 0.3+ | 0.3+ |
| 2001 08 18 | 699 | 0.4+ | 0.3+ | 2001 10 13 | 644 | 0.4− | 1.3− | 2006 11 19 | 704 | 0.4+ | 1.2− |
| 2001 08 20 | 916 | 0.6− | 0.2+ | 2001 10 13 | 644 | 0.4− | 1.5− | 2006 11 19 | 704 | 1.0− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 916 | 1.1+ | 0.7− | 2001 10 16 | 704 | 0.2− | 1.1+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2001 08 20 | 916 | 0.6− | 0.2− | 2001 10 16 | 704 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2001 08 20 | 916 | 0.2− | 0.2− | 2001 10 16 | 704 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.9− | 0.2− |
| 2001 08 20 | 916 | 0.0 | 0.5− | 2001 10 16 | 704 | (0.3+ | 2.0+) | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2001 08 21 | 916 | 0.0 | 1.3− | 2001 10 19 | 704 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.4+ |
| 2001 08 21 | 916 | 0.2+ | 0.3− | 2001 10 19 | 704 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2001 08 21 | 916 | 0.0 | 0.8− | 2001 10 19 | 704 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.5+ |

**(139559)∗ 2001 QH$_{70}$ = 2000 HK$_{68}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 15981)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 43.21948 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21520519 | $\omega$ | 143.05328 | | +0.91971352 | | +0.39051692 | |
| $a$ | 2.7578304 | $\Omega$ | 194.12654 | | −0.38797084 | | +0.88839385 | |
| $e$ | 0.2758856 | $i$ | 9.50272 | | −0.06004722 | | +0.24135637 | |
| $P$ | 4.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 21 | 691 | 0.4− | 0.6+ | 2001 09 22 | 704 | 0.8− | 0.0 | 2001 11 20 | 704 | 0.1− | 0.8+ |
| 1991 04 21 | 691 | 0.4+ | 0.1+ | 2001 09 22 | 704 | 0.2+ | 0.2+ | 2001 11 20 | 704 | 0.9+ | 0.3+ |
| 1991 04 21 | 691 | 0.3+ | 0.3+ | 2001 09 22 | 704 | 0.6− | 0.1+ | 2001 11 20 | 704 | 0.2− | 1.3+ |
| 2000 04 28 | 691 | 0.2− | 0.1− | 2001 09 23 | 683 | 0.8− | 0.1+ | 2001 11 22 | 608 | 0.9− | 0.8− |
| 2000 04 28 | 691 | 0.0 | 0.3− | 2001 09 23 | 704 | 0.5+ | 0.5+ | 2001 11 22 | 608 | 0.1− | 0.3− |
| 2000 04 28 | 691 | 0.3− | 0.0 | 2001 09 23 | 683 | (1.6− | 0.3−) | 2001 11 22 | 608 | 0.4− | 0.3− |
| 2000 04 29 | 704 | 0.4+ | 0.1+ | 2001 09 23 | 704 | 0.8+ | 0.7+ | 2005 05 08 | 691 | 0.2− | 0.3+ |
| 2000 04 29 | 704 | 0.9+ | 0.1+ | 2001 09 23 | 683 | (0.3− | 1.6−) | 2005 05 08 | 691 | 0.0 | 0.5+ |
| 2000 04 29 | 704 | 0.6+ | 1.4− | 2001 09 23 | 704 | 0.6+ | 0.4+ | 2005 05 08 | 691 | 0.1− | 0.3+ |
| 2001 06 27 | 608 | 1.2+ | 0.6+ | 2001 09 23 | 704 | 0.7+ | 0.4+ | 2005 06 02 | 703 | 0.2+ | 0.3+ |
| 2001 06 27 | 608 | 1.0+ | 0.1− | 2001 09 23 | 704 | 0.3+ | 0.5+ | 2005 06 02 | 703 | 0.4− | 1.4+ |
| 2001 06 27 | 608 | 1.2+ | 0.2− | 2001 09 25 | 683 | 0.3− | 0.7+ | 2005 06 02 | 703 | 0.3− | 0.5+ |
| 2001 07 22 | 699 | 0.1− | 0.4+ | 2001 09 25 | 683 | 0.1− | 0.3+ | 2005 06 02 | 703 | 0.3+ | 0.1+ |
| 2001 07 22 | 699 | (1.7+ | 0.3−) | 2001 09 25 | 683 | 1.0− | 1.1− | 2005 06 03 | E12 | 0.4− | 0.6− |
| 2001 07 22 | 699 | (1.5+ | 2.1−) | 2001 09 26 | 699 | 0.1+ | 0.2+ | 2005 06 03 | E12 | 0.1− | 0.1+ |
| 2001 07 22 | 699 | 0.1− | 0.9− | 2001 09 26 | 699 | 0.0 | 0.6+ | 2005 06 03 | E12 | 1.0− | 0.1− |
| 2001 08 17 | 704 | 0.7+ | 0.7+ | 2001 09 26 | 699 | 0.0 | 0.1+ | 2005 06 03 | E12 | 0.4− | 0.4− |
| 2001 08 17 | 704 | 0.8+ | 0.2− | 2001 09 26 | 699 | 0.4− | 0.1+ | 2005 06 13 | 691 | 0.1+ | 0.1+ |
| 2001 08 17 | 704 | 0.6− | 0.2+ | 2001 10 05 | 644 | 0.1− | 0.3+ | 2005 06 13 | 691 | 0.2+ | 0.2+ |
| 2001 08 17 | 704 | 0.1− | 1.0− | 2001 10 05 | 644 | 0.1− | 0.3+ | 2005 06 13 | 691 | 0.1+ | 0.3+ |
| 2001 08 21 | 704 | 0.1− | 0.0 | 2001 10 05 | 644 | 0.0 | 0.0 | 2005 06 17 | 691 | 0.0 | 0.1+ |
| 2001 08 21 | 704 | 0.6− | 1.1− | 2001 10 11 | 644 | 0.0 | 1.2+ | 2005 06 17 | 691 | 0.2+ | 0.0 |
| 2001 08 21 | 704 | 0.3+ | 0.1− | 2001 10 11 | 644 | 0.2+ | 1.2+ | 2005 06 17 | 691 | 0.1+ | 0.1− |
| 2001 08 21 | 704 | 0.1+ | 0.0 | 2001 10 11 | 644 | 0.0 | 1.2+ | 2005 06 23 | 644 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 1.3+ | 0.3+ | 2001 10 13 | 704 | 1.0− | 0.5+ | 2005 06 23 | 644 | 0.1− | 0.2− |
| 2001 08 25 | 704 | 0.9− | 0.4− | 2001 10 13 | 704 | 0.8− | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2001 10 13 | 704 | 1.1− | 0.8+ | 2006 10 02 | G92 | 0.9+ | 0.4+ |
| 2001 08 25 | 704 | 0.3+ | 0.2− | 2001 10 13 | 704 | 0.8− | 0.3+ | 2006 10 02 | G92 | 0.1− | 0.3− |
| 2001 09 08 | 704 | 0.2− | 0.1+ | 2001 10 13 | 704 | 0.8− | 0.2+ | 2006 10 02 | G92 | (1.4− | 10.7−) |
| 2001 09 08 | 704 | 0.0 | 0.1− | 2001 10 15 | 645 | 0.0 | 0.3− | 2006 10 02 | G92 | 0.5− | 0.4+ |
| 2001 09 08 | 704 | 0.5+ | 0.3− | 2001 10 15 | 645 | 0.0 | 0.3− | 2006 10 02 | G92 | 0.5+ | 0.3+ |
| 2001 09 08 | 704 | 0.3+ | 0.1− | 2001 10 16 | 704 | 0.6+ | 1.0+ | 2006 10 02 | G92 | 0.3+ | 0.2+ |
| 2001 09 08 | 704 | 0.0 | 0.4− | 2001 10 16 | 704 | 0.6+ | 0.9+ | 2006 10 02 | G92 | 0.2− | 0.6+ |
| 2001 09 09 | 644 | 0.2+ | 0.3+ | 2001 10 16 | 704 | 1.3+ | 0.7+ | 2006 10 02 | G92 | 0.3+ | 0.4+ |
| 2001 09 09 | 644 | 0.4+ | 0.2+ | 2001 10 19 | 644 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 09 09 | 644 | 0.3+ | 0.6+ | 2001 10 19 | 644 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2001 09 10 | 699 | 0.2+ | 0.1− | 2001 10 19 | 644 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 09 10 | 699 | 0.4+ | 0.3− | 2001 10 21 | 704 | 0.3− | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.2+ |
| 2001 09 10 | 699 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.7− | 0.0 | 2006 11 15 | 703 | 1.0+ | 0.5+ |
| 2001 09 10 | 699 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.4− | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.7+ |
| 2001 09 16 | 704 | (0.9− | 2.0−) | 2001 10 21 | 704 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.2− | 1.2+ |
| 2001 09 16 | 704 | 0.8− | 0.6− | 2001 10 21 | 704 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.8+ |
| 2001 09 16 | 704 | 0.6− | 0.9− | 2001 10 25 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2001 09 16 | 704 | 0.6− | 0.8− | 2001 10 25 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 0.4− | 1.0− | 2001 10 25 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2001 09 18 | 699 | 0.2+ | 0.2+ | 2001 11 09 | 704 | 1.2− | 1.1+ | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2001 09 18 | 699 | 0.2+ | 0.3+ | 2001 11 09 | 704 | 1.2+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2+ |
| 2001 09 18 | 699 | 0.7+ | 0.0 | 2001 11 09 | 704 | 0.5+ | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2001 09 18 | 699 | 0.0 | 0.1+ | 2001 11 09 | 704 | 0.5− | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2001 11 09 | 704 | (2.4− | 2.6−) | 2006 11 25 | 703 | 0.6− | 0.1− |
| 2001 09 20 | 704 | 0.3+ | 0.0 | 2001 11 17 | 699 | 0.1− | 0.3+ | 2006 11 25 | 703 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2001 11 17 | 699 | 0.2− | 0.7+ | 2006 11 25 | 703 | 0.3+ | 0.4− |
| 2001 09 20 | 704 | 0.2+ | 0.3− | 2001 11 17 | 699 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.6+ | 0.4− | 2001 11 17 | 699 | 0.8− | 0.7+ | | | | |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2001 11 20 | 704 | 0.3− | 0.4− | | | | |

**(139560)∗ 2001 QL$_{71}$ = 2006 JZ$_{41}$**

Discovered 2001 Aug. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 100036)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 194.96431 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17594461 | $\omega$ | 202.78305 | | −0.48456743 | | −0.75341028 | |
| $a$ | 3.1541722 | $\Omega$ | 278.91724 | | +0.85579514 | | −0.30308787 | |
| $e$ | 0.1537186 | $i$ | 26.73878 | | +0.18113279 | | −0.58353294 | |
| $P$ | 5.60 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.5+ | 0.4+ | 2002 12 15 | 704 | 1.2+ | 1.1+ | 2006 05 08 | G96 | 0.0 | 0.1+ |
| 2001 08 16 | 644 | 0.4+ | 0.8+ | 2003 01 22 | 644 | 0.0 | 0.2+ | 2006 05 08 | G96 | 0.0 | 0.2− |
| 2001 08 16 | 644 | 0.7+ | 0.7+ | 2003 01 22 | 644 | 0.2− | 0.3+ | 2006 05 08 | G96 | 0.5− | 0.3− |
| 2001 08 21 | 644 | 0.5− | 0.2+ | 2003 01 22 | 644 | 0.1− | 0.1− | 2006 05 08 | G96 | 0.4− | 0.0 |
| 2001 08 21 | 644 | 0.4− | 0.0 | 2003 01 29 | 644 | 0.0 | 0.0 | 2006 05 09 | G96 | 0.2− | 0.1− |
| 2001 08 21 | 644 | 0.5− | 0.1+ | 2003 01 29 | 644 | 0.1+ | 0.3+ | 2006 05 09 | G96 | 0.5− | 0.1+ |
| 2001 08 25 | 704 | 1.1− | 1.0− | 2003 01 29 | 644 | 0.1+ | 0.1+ | 2006 05 09 | G96 | 0.4− | 0.1− |
| 2001 08 25 | 704 | 0.2+ | 0.6+ | 2004 01 27 | 704 | 0.3+ | 1.4+ | 2006 05 09 | G96 | 0.2− | 0.2+ |
| 2001 08 25 | 704 | 0.5− | 0.7+ | 2004 01 27 | 704 | 0.7+ | 0.2+ | 2006 05 11 | G96 | 0.1+ | 0.7+ |
| 2001 08 25 | 704 | 0.1− | 0.5− | 2004 01 27 | 704 | 1.2+ | 1.3+ | 2006 05 11 | G96 | 0.1− | 0.5+ |
| 2002 10 29 | 704 | 0.1+ | 0.9+ | 2004 01 27 | 704 | 0.1+ | 1.2+ | 2006 05 11 | G96 | 0.3+ | 0.4+ |
| 2002 10 29 | 704 | 0.3+ | 0.1+ | 2004 01 27 | 704 | 0.5+ | 0.8+ | 2006 05 11 | G96 | 0.5− | 0.0 |
| 2002 10 29 | 704 | 1.3− | 1.0− | 2004 03 16 | 644 | 0.3+ | 0.0 | 2006 05 25 | 691 | 0.1− | 0.2+ |
| 2002 12 15 | 704 | 0.4− | 0.8+ | 2004 03 16 | 644 | 0.1+ | 0.1− | 2006 05 25 | 691 | 0.2− | 0.3+ |
| 2002 12 15 | 704 | 0.3− | 0.1+ | 2004 03 16 | 644 | 0.1+ | 0.2+ | 2006 05 25 | 691 | 0.0 | 0.2+ |

**(139561)∗ 2001 QF$_{72}$**

Discovered 2001 Aug. 21 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 26.28436 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21552158 | $\omega$ | 345.57461 | | +0.93437997 | | −0.35507732 | |
| $a$ | 2.7551307 | $\Omega$ | 35.26752 | | +0.33168980 | | +0.83701648 | |
| $e$ | 0.1882392 | $i$ | 2.90139 | | +0.13006131 | | +0.41632139 | |
| $P$ | 4.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 10 13 | 704 | 0.4+ | 0.1− | 2001 12 19 | 704 | 0.2− | 0.5− |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 10 13 | 704 | 1.2+ | 0.5+ | 2001 12 19 | 704 | 0.8− | 0.1− |
| 2001 08 16 | 704 | 0.4− | 0.4− | 2001 10 13 | 704 | 0.7+ | 0.1+ | 2001 12 19 | 704 | 0.8− | 1.3− |
| 2001 08 16 | 704 | 1.0− | 0.4+ | 2001 10 13 | 704 | 0.9+ | 0.8+ | 2001 12 19 | 704 | 0.7− | 0.1+ |
| 2001 08 16 | 704 | 0.7+ | 0.3− | 2001 10 13 | 704 | 1.0+ | 0.6+ | 2003 01 26 | 608 | 0.2− | 0.6− |
| 2001 08 21 | 333 | 1.0+ | 0.1+ | 2001 10 14 | 699 | 1.1− | 0.7− | 2003 01 26 | 608 | 0.2+ | 0.2− |
| 2001 08 21 | 333 | (1.6+ | 0.3−) | 2001 10 14 | 699 | 0.9− | 0.7+ | 2003 01 26 | 608 | 0.3+ | 0.5− |
| 2001 08 22 | 333 | 0.7− | 0.2+ | 2001 10 14 | 699 | 1.2− | 0.0 | 2003 01 27 | 704 | 0.6+ | 0.1− |
| 2001 08 22 | 333 | 0.7+ | 0.6− | 2001 10 14 | 699 | 0.6− | 0.1− | 2003 01 27 | 704 | 0.1+ | 0.1+ |
| 2001 09 11 | 699 | 0.5− | 0.3+ | 2001 10 16 | 704 | 0.6+ | 0.0 | 2003 01 27 | 704 | 0.3+ | 0.6+ |
| 2001 09 11 | 699 | 0.0 | 0.4+ | 2001 10 16 | 704 | 0.8+ | 0.2+ | 2003 01 27 | 704 | (0.9+ | 2.0+) |
| 2001 09 11 | 699 | 0.1− | 0.4− | 2001 10 16 | 704 | 0.4+ | 0.4− | 2003 02 04 | 608 | 0.5+ | 0.4+ |
| 2001 09 11 | 699 | 1.0− | 1.1+ | 2001 10 16 | 704 | 0.4+ | 0.2− | 2003 02 04 | 608 | 0.7+ | 0.0 |
| 2001 09 16 | 704 | 0.0 | 0.6+ | 2001 10 16 | 704 | 1.0+ | 0.7− | 2003 02 04 | 608 | 0.1+ | 0.5− |
| 2001 09 16 | 704 | 0.1− | 0.3+ | 2001 10 17 | 644 | 0.4+ | 0.9+ | 2003 02 19 | 644 | 0.7+ | 0.8+ |
| 2001 09 16 | 704 | 0.3− | 0.2+ | 2001 10 17 | 644 | 0.4+ | 0.9+ | 2003 02 19 | 644 | 1.1+ | 0.9+ |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2001 10 17 | 644 | 0.4+ | 0.8+ | 2003 02 19 | 644 | 0.7+ | 0.8+ |
| 2001 09 19 | 704 | 1.4− | 0.1+ | 2001 10 20 | 704 | 0.4− | 0.1+ | 2003 02 21 | 644 | 0.5+ | 1.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | (1.7− | 0.1+) | 2001 10 20 | 704 | 0.0 | 0.2+ | 2003 02 21 | 644 | 1.1+ | 1.2+ | | |
| 2001 09 19 | 704 | (1.6− | 0.1+) | 2001 10 20 | 704 | 0.0 | 0.4+ | 2003 02 21 | 644 | 0.0 | 1.2+ | | |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2001 10 20 | 704 | 0.1+ | 0.4+ | 2004 05 13 | 691 | 0.7+ | 0.5+ | | |
| 2001 09 21 | 704 | 0.4− | 0.7+ | 2001 10 20 | 704 | 0.4+ | 0.6+ | 2004 05 13 | 691 | 0.3+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2001 10 23 | 704 | 0.0 | 0.4− | 2004 05 13 | 691 | 0.1+ | 0.7+ | | |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2001 10 23 | 704 | 0.2− | 0.1− | 2004 05 21 | 691 | 0.0 | 0.6+ | | |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2001 10 23 | 704 | 0.3− | 0.3− | 2004 05 21 | 691 | 0.2+ | 0.3+ | | |
| 2001 09 25 | 699 | 0.4− | 0.3+ | 2001 10 23 | 704 | 0.2− | 0.6− | 2004 05 21 | 691 | 0.3+ | 0.6+ | | |
| 2001 09 25 | 699 | 0.3− | 0.3− | 2001 10 23 | 704 | 0.3− | 0.7− | 2005 07 10 | E12 | 0.3− | 0.0 | | |
| 2001 09 25 | 699 | 0.2− | 0.1+ | 2001 10 24 | 704 | 0.2− | 0.2− | 2005 07 10 | E12 | 0.5− | 0.1+ | | |
| 2001 09 25 | 699 | 0.4− | 0.0 | 2001 10 24 | 704 | 0.2+ | 0.4− | 2005 07 10 | E12 | (2.4− | 0.9−) | | |
| 2001 09 26 | 704 | 0.0 | 0.3+ | 2001 10 24 | 704 | 0.7+ | 0.0 | 2005 07 10 | E12 | 0.9+ | 0.2+ | | |
| 2001 09 26 | 704 | 0.5− | 0.4+ | 2001 10 24 | 704 | 0.0 | 0.4− | 2006 11 21 | 704 | 1.0− | 1.0− | | |
| 2001 09 26 | 704 | 0.6− | 0.5+ | 2001 11 05 | 704 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | | |
| 2001 09 26 | 704 | 0.6− | 0.4+ | 2001 11 05 | 704 | 0.8+ | 0.6+ | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2001 09 26 | 704 | 0.1− | 0.6+ | 2001 11 05 | 704 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.4− | 0.4+ | | |
| 2001 10 06 | 704 | 0.4− | 0.0 | 2001 11 09 | 704 | (2.0+ | 0.8+) | 2006 11 24 | 691 | 0.1− | 0.1− | | |
| 2001 10 06 | 704 | 0.8− | 0.4− | 2001 11 09 | 704 | 0.3+ | 1.5+ | 2006 11 24 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 06 | 704 | 1.4− | 0.3− | 2001 11 09 | 704 | 0.5+ | 0.9+ | 2006 11 24 | 691 | 0.0 | 0.2− | | |
| 2001 10 11 | 644 | 0.0 | 0.0 | 2001 11 09 | 704 | 0.5+ | 1.1+ | 2006 11 28 | 704 | 1.3+ | 1.0− | | |
| 2001 10 11 | 644 | 0.1+ | 0.0 | 2001 11 09 | 704 | 1.4+ | 0.6+ | 2006 11 28 | 704 | 0.6− | 0.7+ | | |
| 2001 10 11 | 644 | 0.2+ | 0.0 | 2001 12 07 | 704 | 0.7− | 0.9+ | 2006 11 28 | 704 | 0.7− | 0.3− | | |
| 2001 10 12 | 699 | 0.5− | 0.2+ | 2001 12 07 | 704 | 1.1− | 1.4+ | 2006 11 28 | 704 | 0.1− | 0.2− | | |
| 2001 10 12 | 699 | 0.4− | 0.1+ | 2001 12 07 | 704 | (0.8− | 1.7+) | 2006 11 28 | 704 | 1.3− | 0.0 | | |
| 2001 10 12 | 699 | 0.5− | 0.0 | 2001 12 07 | 704 | (1.8− | 1.0+) | | | | | | |
| 2001 10 12 | 699 | 0.1− | 0.7+ | 2001 12 07 | 704 | (3.1− | 0.6+) | | | | | | |

**(139562)∗ 2001 QE$_{74}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.16189 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21488644 | $\omega$ | 47.99042 | | +0.66794623 | −0.74420950 | |
| $a$ | 2.7605569 | $\Omega$ | 0.10168 | | +0.63890885 | +0.57327829 | |
| $e$ | 0.2279991 | $i$ | 7.42319 | | +0.38163242 | +0.34278889 | |
| $P$ | 4.59 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.0 | 0.1+ | 2001 11 24 | 203 | 0.0 | 0.7+ | 2003 03 25 | 699 | 0.9− | 0.0 |
| 2001 08 16 | 704 | 0.4− | 0.3+ | 2001 11 25 | 203 | 0.2+ | 0.5+ | 2003 03 25 | 699 | 0.2− | 0.6+ |
| 2001 08 16 | 704 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.1− | 0.1+ | 2003 03 26 | 644 | 0.1+ | 0.0 |
| 2001 08 16 | 704 | 0.4− | 0.0 | 2002 01 08 | 704 | 0.2+ | 0.4+ | 2003 03 26 | 644 | 0.3+ | 0.2+ |
| 2001 08 22 | 704 | 0.2+ | 0.7+ | 2002 01 08 | 704 | 0.2+ | 0.5+ | 2003 03 26 | 644 | 0.1+ | 0.1+ |
| 2001 08 22 | 704 | 0.2+ | 0.1+ | 2002 01 08 | 704 | 0.5+ | 0.5+ | 2003 04 01 | 704 | 0.1− | 0.0 |
| 2001 08 22 | 704 | 0.5− | 0.4+ | 2002 01 08 | 704 | 0.7+ | 0.8+ | 2003 04 01 | 704 | 0.3+ | 0.8+ |
| 2001 08 22 | 704 | 0.2− | 0.2+ | 2002 01 15 | 704 | 0.1+ | 1.0+ | 2003 04 01 | 704 | 0.2+ | 0.1+ |
| 2001 08 22 | 704 | 0.1− | 0.3+ | 2002 01 15 | 704 | 0.8− | 0.2+ | 2003 04 01 | 704 | 0.9+ | 0.5+ |
| 2001 08 25 | 699 | (1.9− | 2.0+) | 2002 01 15 | 704 | 0.7− | 0.2+ | 2003 04 01 | 704 | 0.8+ | 0.1− |
| 2001 08 25 | 699 | (1.6− | 2.4+) | 2002 01 15 | 704 | (2.3− | 0.2+) | 2003 04 01 | 106 | 0.8+ | 0.4+ |
| 2001 08 25 | 699 | 1.0− | 0.2+ | 2002 01 15 | 704 | (1.7− | 0.1−) | 2003 04 01 | 106 | 0.0 | 1.0+ |
| 2001 08 25 | 699 | 0.4− | 1.0+ | 2002 01 19 | 704 | 0.1− | 0.4− | 2003 04 01 | 106 | 0.8+ | 0.4+ |
| 2001 09 09 | 704 | 0.4+ | 0.7+ | 2002 01 19 | 704 | 0.7+ | 0.6− | 2003 04 05 | 448 | 1.1+ | 0.3+ |
| 2001 09 09 | 704 | 0.2+ | 0.3+ | 2002 01 19 | 704 | 0.2− | 1.2+ | 2003 04 05 | 448 | 1.0+ | 0.6+ |
| 2001 09 09 | 704 | 0.1+ | 0.8+ | 2002 01 19 | 704 | 0.1+ | 0.0 | 2003 04 05 | 448 | 0.9+ | 0.4+ |
| 2001 09 20 | 704 | 0.4− | 0.1− | 2002 01 19 | 704 | (0.4− | 2.0+) | 2003 04 07 | 691 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.4− | 0.6+ | 2002 02 06 | 704 | 0.0 | 0.1+ | 2003 04 07 | 691 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2002 02 06 | 704 | 0.0 | 0.4+ | 2003 04 07 | 691 | 0.3− | 0.4+ |
| 2001 09 20 | 704 | (0.1− | 1.8+) | 2002 02 06 | 704 | 0.4+ | 0.0 | 2003 04 09 | 704 | (1.2+ | 1.8+) |
| 2001 09 22 | 699 | 0.1− | 0.4+ | 2002 02 06 | 704 | 1.0+ | 0.3− | 2003 04 09 | 704 | 0.9+ | 0.8+ |
| 2001 09 22 | 699 | 0.0 | 0.0 | 2002 02 08 | 704 | 0.1+ | 0.3− | 2003 04 09 | 704 | 0.5+ | 0.2− |
| 2001 09 22 | 704 | 0.3− | 0.1+ | 2002 02 08 | 704 | 0.3+ | 0.0 | 2003 04 09 | 704 | (1.5+ | 0.4−) |
| 2001 09 22 | 704 | 1.1− | 0.1+ | 2002 02 08 | 704 | 0.5− | 0.0 | 2005 06 28 | 644 | 0.1− | 1.1+ |
| 2001 09 22 | 699 | 0.2+ | 0.3+ | 2002 02 08 | 704 | 0.1+ | 0.0 | 2005 06 28 | 644 | 0.1− | 1.3+ |
| 2001 09 22 | 704 | 0.4− | 0.9+ | 2002 02 12 | 704 | 0.0 | 0.5+ | 2005 06 28 | 644 | 0.1− | 1.2+ |
| 2001 09 22 | 704 | 0.5− | 0.9+ | 2002 02 12 | 704 | 0.5+ | 0.2+ | 2005 07 26 | 644 | 0.1− | 1.3+ |
| 2001 09 22 | 699 | 0.4+ | 0.5+ | 2002 02 12 | 704 | 0.3− | 0.4− | 2005 07 26 | 644 | 0.3− | 1.3+ |
| 2001 09 23 | 704 | 0.8− | 0.8− | 2002 02 12 | 704 | 0.2+ | 1.0+ | 2005 07 26 | 644 | 0.5− | 1.4+ |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2002 02 12 | 704 | 0.5+ | 0.1+ | 2005 07 26 | 428 | 0.8− | 0.3+ |
| 2001 09 23 | 704 | 0.6− | 0.3− | 2003 01 04 | 704 | (2.3+ | 0.6+) | 2005 07 26 | 428 | 0.5+ | 0.6+ |
| 2001 09 23 | 704 | 0.2+ | 0.2− | 2003 01 04 | 704 | 0.7+ | 0.1+ | 2005 08 04 | 644 | 0.1− | 1.2+ |
| 2001 09 23 | 704 | 0.2− | 0.8+ | 2003 01 04 | 704 | 0.7+ | 1.2+ | 2005 08 04 | 644 | 0.2− | 1.1+ |
| 2001 09 26 | 704 | 0.3− | 0.6− | 2003 01 08 | 704 | 0.2+ | 0.0 | 2005 08 04 | 644 | 0.5− | 1.1+ |
| 2001 09 26 | 704 | 0.4+ | 0.1− | 2003 01 08 | 704 | 1.4+ | 0.6+ | 2005 08 10 | E12 | 0.0 | 0.5+ |
| 2001 09 26 | 704 | 1.4+ | 0.1− | 2003 01 08 | 704 | (1.7+ | 0.7+) | 2005 08 10 | E12 | 0.6− | 0.7+ |
| 2001 09 26 | 704 | 0.1− | 0.6− | 2003 02 27 | 608 | 0.5+ | 0.3− | 2005 08 10 | E12 | 0.1− | 0.6+ |
| 2001 09 26 | 704 | 0.3− | 0.7+ | 2003 02 27 | 608 | 0.8+ | 0.4− | 2005 08 10 | E12 | 0.2− | 1.1+ |
| 2001 10 14 | 704 | 0.2+ | 0.4− | 2003 02 27 | 608 | 0.2+ | 1.2− | 2005 08 22 | E12 | 0.6− | 0.5+ |
| 2001 10 14 | 704 | 0.3+ | 0.4− | 2003 03 05 | 704 | 0.1+ | 0.1+ | 2005 08 22 | E12 | 0.3+ | 0.5+ |
| 2001 10 14 | 704 | 0.3+ | 0.7− | 2003 03 05 | 704 | 0.1− | 1.0+ | 2005 08 22 | E12 | 0.6− | 0.1+ |
| 2001 10 14 | 704 | 0.3+ | 0.7− | 2003 03 05 | 704 | 0.5+ | 0.2+ | 2005 08 22 | E12 | 0.3− | 0.4+ |
| 2001 10 14 | 704 | 0.1+ | 0.8− | 2003 03 07 | 699 | 0.2− | 0.5+ | 2005 08 27 | E12 | 0.5− | 0.4+ |
| 2001 10 18 | 704 | 0.4− | 0.1− | 2003 03 07 | 699 | 0.3+ | 0.1− | 2005 08 27 | E12 | 0.4− | 0.6+ |
| 2001 10 18 | 704 | 0.7− | 0.3+ | 2003 03 07 | 699 | 0.3+ | 0.6+ | 2005 08 27 | E12 | 0.8− | 0.4+ |
| 2001 10 18 | 704 | 1.4− | 0.2+ | 2003 03 07 | 699 | 0.0 | 0.2− | 2005 08 27 | E12 | 0.2− | 0.9+ |
| 2001 10 18 | 704 | 0.9− | 0.1− | 2003 03 08 | 683 | (2.4+ | 0.7+) | 2005 09 08 | E12 | 0.1− | 0.3+ |
| 2001 10 18 | 704 | 0.2− | 0.3− | 2003 03 08 | 683 | 0.1+ | 0.5+ | 2005 09 08 | E12 | 0.4− | 0.7+ |
| 2001 10 21 | 704 | 0.3− | 1.0+ | 2003 03 08 | 683 | 1.3+ | 0.0 | 2005 09 08 | E12 | 0.3− | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.7+ | 2003 03 09 | 683 | 1.4+ | 1.1+ | 2005 09 08 | E12 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.5− | 0.8+ | 2003 03 09 | 683 | 1.5+ | 1.0+ | 2005 10 08 | 699 | 0.7− | 0.2+ |
| 2001 10 21 | 704 | 0.4− | 0.6+ | 2003 03 09 | 704 | 0.0 | 0.3+ | 2005 10 08 | 699 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 0.6− | 0.7+ | 2003 03 09 | 683 | 1.1+ | 0.1− | 2005 10 08 | 699 | 0.2+ | 0.4+ |
| 2001 10 27 | 704 | 0.1− | 0.1+ | 2003 03 09 | 704 | 0.6+ | 0.8+ | 2005 10 08 | 699 | 0.4− | 0.6+ |
| 2001 10 27 | 704 | 0.1+ | 0.1− | 2003 03 09 | 704 | 0.1+ | 0.5+ | 2005 10 31 | 704 | 0.7− | 0.4+ |
| 2001 10 27 | 704 | 0.3− | 0.5+ | 2003 03 09 | 704 | 0.1− | 0.6+ | 2005 10 31 | 704 | 0.3+ | 0.8+ |
| 2001 10 27 | 704 | 0.3− | 0.0 | 2003 03 09 | 704 | 0.4− | 0.4+ | 2005 10 31 | 704 | 0.2− | 0.1− |
| 2001 11 11 | 644 | 0.2+ | 0.0 | 2003 03 11 | 683 | 0.9+ | 0.1+ | 2005 10 31 | 704 | 0.2− | 0.5+ |
| 2001 11 11 | 644 | 0.2+ | 0.1+ | 2003 03 11 | 683 | 0.0 | 0.9− | 2006 08 30 | 704 | 0.4+ | 0.2− |
| 2001 11 11 | 644 | 0.1+ | 0.0 | 2003 03 11 | 704 | 0.4− | 0.4+ | 2006 08 30 | 704 | (0.3− | 1.7+) |
| 2001 11 12 | 704 | 0.5+ | 0.3+ | 2003 03 11 | 683 | (2.1+ | 1.4−) | 2006 08 30 | 704 | 0.1+ | 1.1+ |
| 2001 11 12 | 704 | 0.6+ | 0.6+ | 2003 03 11 | 704 | 0.8− | 1.0+ | 2006 09 25 | 704 | 0.7− | 0.4+ |
| 2001 11 12 | 704 | 0.5+ | 0.4+ | 2003 03 11 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 0.5+ | 0.2− |
| 2001 11 12 | 704 | 0.7+ | 0.8+ | 2003 03 11 | 704 | 1.1+ | 1.0+ | 2006 09 25 | 704 | 0.2+ | 1.3− |
| 2001 11 12 | 704 | 0.6+ | 0.7+ | 2003 03 11 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.7− |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2003 03 12 | 683 | 0.9− | 0.8+ | 2006 10 20 | 704 | 0.4− | 0.0 |
| 2001 11 21 | 704 | 0.4− | 1.3+ | 2003 03 12 | 683 | 0.7− | 0.8+ | 2006 10 20 | 704 | 0.4+ | 1.4+ |
| 2001 11 21 | 704 | 0.7− | 0.9+ | 2003 03 12 | 683 | 0.6− | 0.2+ | 2006 10 20 | 704 | 0.0 | 0.7− |
| 2001 11 21 | 704 | 0.8− | 1.1+ | 2003 03 12 | 704 | 0.7+ | 0.9+ | 2006 10 20 | 704 | 0.4− | 0.4+ |
| 2001 11 21 | 704 | 0.7− | 0.8+ | 2003 03 12 | 704 | 0.0 | 0.6− | 2006 10 21 | 703 | 0.2− | 0.8− |
| 2001 11 23 | 203 | 0.4− | 0.3+ | 2003 03 12 | 704 | 0.8+ | 1.2+ | 2006 10 21 | 703 | 0.6− | 0.9− |
| 2001 11 23 | 203 | 1.1+ | 0.1+ | 2003 03 12 | 704 | 0.2− | 0.9+ | 2006 10 21 | 703 | 0.7− | 0.3+ |
| 2001 11 24 | 704 | 0.0 | 0.6− | 2003 03 12 | 704 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2001 11 24 | 704 | 0.4− | 0.9− | 2003 03 24 | 691 | 0.4− | 1.3+ | 2006 10 28 | 703 | 0.4+ | 0.3− |
| 2001 11 24 | 704 | 0.2− | 0.8− | 2003 03 24 | 691 | (0.8− | 1.6+) | 2006 10 28 | 703 | 2.9+ | 1.9+ |
| 2001 11 24 | 704 | 0.2− | 1.4− | 2003 03 24 | 691 | (1.0− | 1.8+) | 2006 10 28 | 703 | 0.3− | 1.4+ |
| 2001 11 24 | 704 | 0.6− | 1.3− | 2003 03 25 | 699 | 0.4+ | 0.5− | 2006 10 28 | 703 | 0.7− | 0.1− |
| 2001 11 24 | 203 | 0.0 | 0.6+ | 2003 03 25 | 699 | 0.5+ | 0.4− | | | | |

**(139563)∗ 2001 QJ$_{75}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.67878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21517316 | $\omega$ | 28.02503 | | +0.76553105 | −0.64310623 | |
| $a$ | 2.7581041 | $\Omega$ | 12.05849 | | +0.57158589 | +0.66592954 | |
| $e$ | 0.1764846 | $i$ | 5.32999 | | +0.29538415 | +0.37809023 | |
| $P$ | 4.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 16 | 566 | 0.1− | 0.1− | 2001 10 26 | 644 | 0.5+ | 0.8+ | 2003 03 06 | 699 | (3.1+ | 0.4+) |
| 1996 09 16 | 566 | 0.4+ | 0.3+ | 2001 10 26 | 644 | 0.7+ | 1.0+ | 2003 03 06 | 699 | 1.2+ | 0.1+ |
| 1996 09 16 | 566 | 0.6− | 0.2+ | 2001 10 27 | 699 | 0.2− | 0.4+ | 2003 03 09 | 704 | 0.3− | 0.1− |
| 2001 08 16 | 704 | 0.7+ | 0.4+ | 2001 10 27 | 699 | 0.0 | 0.3+ | 2003 03 09 | 704 | 1.3+ | 0.0 |
| 2001 08 16 | 704 | 0.2+ | 0.1+ | 2001 10 27 | 699 | 0.2− | 0.5+ | 2003 03 09 | 704 | 0.6− | 0.5+ |
| 2001 08 16 | 704 | 0.0 | 1.1− | 2001 10 27 | 699 | 0.4− | 0.4− | 2003 03 09 | 704 | 1.2+ | 1.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.7− | 0.3+ | 2001 10 28 | 704 | 0.8+ | 0.2+ | 2003 03 09 | 704 | 0.7+ | 1.1+ | 2001 09 21 | 644 | 0.4− | 0.6+ | 2002 01 21 | 704 | 0.6− | 1.2− | 2004 03 31 | 704 | 0.1+ | 0.1+ |
| 2001 08 22 | 704 | 0.2− | 1.1+ | 2001 10 28 | 704 | 0.3− | 0.3+ | 2003 03 26 | 699 | 0.6+ | 0.7+ | 2001 09 21 | 644 | 0.4− | 0.4+ | 2002 01 21 | 704 | 0.7− | 0.0 | 2004 04 12 | 699 | 0.8+ | 0.1− |
| 2001 08 22 | 704 | 0.0 | 1.0+ | 2001 10 28 | 704 | 0.4+ | 0.0 | 2003 03 26 | 699 | 0.8− | 0.0 | 2001 09 21 | 644 | 0.3− | 0.5+ | 2002 01 21 | 704 | 1.4− | 0.7− | 2004 04 12 | 699 | 0.2+ | 0.1+ |
| 2001 08 22 | 704 | 0.4+ | 0.9+ | 2001 11 10 | 644 | 0.0 | 0.6+ | 2003 03 26 | 699 | 0.3− | 1.2+ | 2001 09 22 | 704 | 0.1+ | 0.1+ | 2002 02 06 | 704 | 0.2− | 0.1− | 2004 04 12 | 699 | 0.2+ | 1.0− |
| 2001 08 22 | 704 | 0.6− | 0.5+ | 2001 11 10 | 644 | 0.1+ | 0.3+ | 2003 03 26 | 699 | 0.3+ | 0.9+ | 2001 09 22 | 704 | 0.0 | 0.5+ | 2002 02 06 | 704 | 0.0 | 0.4+ | 2004 04 12 | 699 | 0.4+ | 0.4+ |
| 2001 08 22 | 704 | 0.5− | 1.4+ | 2001 11 10 | 644 | 0.2+ | 0.4+ | 2003 04 09 | 691 | 0.2+ | 0.2+ | 2001 09 22 | 704 | 0.2+ | 0.0 | 2002 02 06 | 704 | 0.0 | 0.0 | 2004 04 15 | 699 | 0.3− | 0.7+ |
| 2001 08 25 | 699 | 0.5− | 0.3+ | 2001 11 12 | 704 | 0.0 | 0.8+ | 2003 04 09 | 691 | 0.2+ | 0.7+ | 2001 09 22 | 644 | 0.2− | 0.2− | 2002 02 06 | 704 | 0.3+ | 0.4+ | 2004 04 15 | 699 | 0.3+ | 0.2+ |
| 2001 08 25 | 699 | 0.6− | 0.6+ | 2001 11 12 | 704 | 0.0 | 0.4+ | 2003 04 09 | 691 | 0.1+ | 0.8+ | 2001 09 22 | 644 | 0.1− | 0.2− | 2002 02 06 | 704 | 0.3− | 0.6+ | 2004 04 15 | 699 | 0.1− | 0.3+ |
| 2001 08 25 | 699 | 0.8− | 1.0− | 2001 11 12 | 704 | 0.0 | 0.3+ | 2005 07 09 | G92 | 0.2− | 0.2+ | 2001 09 22 | 644 | 0.2− | 0.4− | 2002 02 08 | 704 | 0.4+ | 0.6+ | 2004 04 15 | 699 | 0.4− | 0.4+ |
| 2001 08 25 | 699 | 0.9− | 0.9+ | 2001 11 12 | 704 | 0.2− | 0.1+ | 2005 07 09 | G92 | 0.5− | 0.5+ | 2001 09 23 | 704 | 0.2− | 0.3+ | 2002 02 08 | 704 | 0.2+ | 0.1+ | 2004 04 16 | 644 | 0.4+ | 0.8+ |
| 2001 08 27 | 704 | 0.2− | 0.4+ | 2001 11 12 | 704 | 0.3− | 0.1+ | 2005 07 09 | G92 | 0.5− | 0.3− | 2001 09 23 | 704 | 0.2− | 0.0 | 2002 02 08 | 704 | 0.6+ | 0.9− | 2004 04 16 | 704 | 0.2+ | 1.1+ |
| 2001 08 27 | 704 | 0.6+ | 0.2+ | 2001 11 17 | 644 | 0.3+ | 0.0 | 2005 07 10 | G92 | 0.8− | 0.7+ | 2001 09 23 | 704 | 0.0 | 0.4+ | 2002 02 08 | 704 | 0.4+ | 0.0 | 2004 04 16 | 644 | 0.1+ | 0.7+ |
| 2001 08 27 | 704 | (1.7− | 0.7+) | 2001 11 17 | 644 | 0.1+ | 0.0 | 2005 07 10 | G92 | 0.0 | 1.0+ | 2001 09 23 | 704 | 0.2− | 0.4+ | 2003 01 10 | 704 | 0.0 | 0.6− | 2004 04 16 | 704 | 0.2− | 0.7+ |
| 2001 08 27 | 704 | 0.4+ | 0.1− | 2001 11 17 | 644 | 0.1+ | 0.0 | 2005 07 10 | G92 | 0.5− | 0.4− | 2001 10 12 | 699 | 0.1− | 0.1+ | 2003 01 10 | 704 | 0.1+ | 0.7− | 2004 04 16 | 704 | (1.8+ | 0.3+) |
| 2001 09 06 | 644 | 0.0 | 0.4+ | 2001 11 21 | 704 | 0.9− | 0.3− | 2005 07 11 | G92 | 0.3− | 0.0 | 2001 10 12 | 699 | 0.7− | 0.2+ | 2003 01 10 | 704 | 0.1+ | 0.8− | 2004 04 16 | 644 | 0.3+ | 0.7+ |
| 2001 09 06 | 644 | 0.4− | 0.5+ | 2001 11 21 | 704 | 0.0 | 0.8− | 2005 07 11 | G92 | 0.3− | 0.6+ | 2001 10 12 | 699 | 0.3− | 0.4− | 2003 01 24 | 644 | 0.3+ | 0.3+ | 2004 04 16 | 704 | 1.4+ | 0.3+ |
| 2001 09 06 | 644 | 0.2− | 0.3+ | 2001 11 21 | 704 | 0.7− | 0.1+ | 2005 07 11 | G92 | 0.3− | 0.5+ | 2001 10 12 | 699 | 1.5− | 0.2− | 2003 01 24 | 644 | 0.3+ | 0.3+ | 2004 04 21 | 704 | 0.5+ | 1.2+ |
| 2001 09 21 | 644 | 0.2− | 0.1+ | 2001 11 21 | 704 | 0.3− | 0.1+ | 2005 07 12 | G92 | 0.2− | 0.0 | 2001 10 14 | 704 | 0.3+ | 0.2+ | 2003 01 24 | 644 | 0.3+ | 0.3+ | 2004 04 21 | 704 | 0.1− | 1.1+ |
| 2001 09 21 | 644 | 0.3+ | 0.5+ | 2001 11 21 | 704 | 0.6− | 0.9− | 2005 07 12 | G92 | 0.6− | 0.3+ | 2001 10 14 | 704 | 0.2+ | 0.3− | 2003 01 29 | 644 | 0.5+ | 0.7+ | 2004 04 21 | 704 | 0.7+ | 1.2+ |
| 2001 09 21 | 644 | 0.3+ | 0.1+ | 2001 11 23 | 608 | 1.2− | 1.4+ | 2005 07 12 | G92 | 0.4− | 0.4+ | 2001 10 14 | 704 | 0.7+ | 0.2− | 2003 01 29 | 644 | 0.8+ | 0.9+ | 2004 04 21 | 704 | 0.3+ | 0.1+ |
| 2001 09 24 | 704 | 1.1+ | 0.2+ | 2001 11 23 | 608 | (1.3− | 1.6+) | 2005 07 26 | 644 | 0.1− | 0.5+ | 2001 10 14 | 704 | 0.2+ | 0.5− | 2003 01 29 | 644 | 0.7+ | 0.7+ | 2004 04 21 | 704 | 0.3+ | 1.0+ |
| 2001 09 24 | 704 | (1.8+ | 0.4+) | 2001 11 23 | 608 | (1.2− | 1.9+) | 2005 07 26 | 644 | 0.0 | 0.3+ | 2001 10 14 | 704 | 0.7+ | 0.3− | 2003 02 01 | 644 | 0.1− | 0.2− | 2004 04 22 | 704 | 0.1− | 0.0 |
| 2001 09 24 | 704 | (1.5+ | 0.0 ) | 2001 11 24 | 704 | 0.0 | 0.6− | 2005 07 26 | 644 | 0.2− | 0.4+ | 2001 10 18 | 704 | 0.0 | 0.6− | 2003 02 01 | 644 | 0.5+ | 0.7+ | 2004 04 22 | 704 | 0.6+ | 0.6+ |
| 2001 09 24 | 704 | 0.9+ | 0.0 | 2001 11 24 | 704 | 0.2+ | 0.8− | 2005 08 01 | E12 | 0.0 | 0.3+ | 2001 10 18 | 704 | 0.1+ | 0.2− | 2003 02 01 | 644 | 0.1− | 0.1− | 2004 04 22 | 704 | 0.5+ | 0.2+ |
| 2001 09 24 | 704 | (1.9+ | 1.0+) | 2001 11 24 | 704 | 0.0 | 0.5− | 2005 08 01 | E12 | 0.1+ | 0.7+ | 2001 10 18 | 704 | 0.0 | 0.3+ | 2003 02 01 | 644 | 0.6+ | 0.9+ | 2004 04 22 | 704 | 0.9+ | 1.2+ |
| 2001 10 14 | 704 | 0.4+ | 0.1− | 2001 11 24 | 704 | 0.8+ | 0.3− | 2005 08 01 | E12 | 0.2+ | 0.7+ | 2001 10 18 | 704 | 0.2+ | 0.6− | 2003 02 01 | 644 | 0.1− | 0.2− | 2004 04 22 | 704 | (1.9+ | 0.3+) |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2001 11 24 | 704 | 0.4+ | 0.4− | 2005 08 01 | E12 | 0.0 | 0.0 | 2001 10 21 | 704 | 1.3+ | 0.0 | 2003 02 01 | 644 | 0.6+ | 0.9+ | 2004 04 30 | 608 | 0.5+ | 0.3− |
| 2001 10 14 | 704 | (1.8+ | 0.9+) | 2001 12 10 | 704 | 0.0 | 0.0 | 2005 08 22 | 644 | 0.2− | 0.4+ | 2001 10 21 | 704 | 0.9− | 0.3+ | 2003 02 08 | 699 | 0.3− | 0.8− | 2004 04 30 | 608 | 0.6+ | 0.4+ |
| 2001 10 14 | 704 | 0.4− | 0.1+ | 2001 12 10 | 704 | 0.1− | 0.6− | 2005 08 22 | 644 | 0.1− | 0.2+ | 2001 10 21 | 704 | 0.9+ | 0.2+ | 2003 02 08 | 699 | 0.3+ | 0.2− | 2004 04 30 | 608 | 0.1+ | 0.0 |
| 2001 10 18 | 704 | 0.9+ | 0.9− | 2001 12 10 | 704 | 0.1− | 0.4+ | 2005 08 22 | 644 | 0.2− | 0.1+ | 2001 10 21 | 704 | 0.3− | 0.4+ | 2003 02 08 | 699 | 0.1− | 0.5+ | 2006 08 16 | 644 | 0.3− | 0.3+ |
| 2001 10 18 | 704 | 1.1+ | 0.5− | 2001 12 10 | 704 | 0.1+ | 0.2+ | 2005 08 22 | E12 | (1.9− | 0.8−) | 2001 10 21 | 704 | 1.3+ | 0.3+ | 2003 02 08 | 699 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.4− | 0.2+ |
| 2001 10 18 | 704 | 0.6+ | 0.5− | 2001 12 10 | 704 | 0.9− | 0.6+ | 2005 08 22 | E12 | 1.1+ | 0.1+ | 2001 10 21 | 704 | 0.3− | 0.6+ | 2003 02 26 | 704 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.3+ |
| 2001 10 18 | 704 | 0.1− | 0.3− | 2002 01 06 | 644 | 0.1+ | 0.2− | 2005 08 22 | E12 | 0.8+ | 0.6− | 2001 10 21 | 704 | (1.6+ | 0.2+) | 2003 02 26 | 704 | 0.3− | 1.1+ | 2006 08 18 | 644 | 0.2− | 0.3+ |
| 2001 10 18 | 691 | 0.4− | 0.2− | 2002 01 06 | 644 | 0.4+ | 0.5− | 2005 08 22 | E12 | 0.6− | 0.3+ | 2001 10 21 | 704 | 0.4− | 0.5+ | 2003 02 26 | 704 | 0.7+ | 0.3− | 2006 08 18 | 644 | 0.5− | 0.4+ |
| 2001 10 18 | 691 | 0.6− | 0.1− | 2002 01 06 | 644 | 0.0 | 0.7− | 2006 10 20 | 703 | 0.1+ | 0.5+ | 2001 10 21 | 704 | (1.7+ | 0.5+) | 2003 02 26 | 704 | 0.4+ | 0.6+ | 2006 08 18 | 644 | 0.1− | 0.4+ |
| 2001 10 18 | 691 | 0.5− | 0.2− | 2002 01 09 | 704 | (1.8+ | 1.2−) | 2006 10 20 | 703 | 0.6− | 0.2+ | 2001 10 21 | 704 | 0.5− | 0.6+ | 2003 02 26 | 704 | 0.4− | 0.3+ | 2006 08 19 | 428 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.0 | 0.6+ | 2002 01 09 | 704 | (0.9+ | 1.6−) | 2006 10 20 | 703 | (1.7− | 0.6−) | 2001 10 21 | 704 | 0.4− | 0.5+ | 2003 02 26 | 704 | 1.0+ | 0.1+ | 2006 08 19 | 428 | 0.4− | 0.9+ |
| 2001 10 21 | 704 | 0.6+ | 0.2+ | 2002 01 09 | 704 | (1.8+ | 0.4−) | 2006 10 20 | 703 | 0.3− | 0.0 | 2001 10 21 | 704 | 0.0 | 0.3+ | 2003 02 26 | 704 | 0.2− | 0.3+ | 2006 08 28 | E12 | 0.3− | 0.9+ |
| 2001 10 21 | 704 | 0.5+ | 0.1+ | 2002 01 09 | 704 | (1.7+ | 0.6−) | 2006 11 15 | 704 | 0.2+ | 0.2+ | 2001 10 21 | 704 | 0.2− | 0.4+ | 2003 02 26 | 704 | (0.2− | 2.4+) | 2006 08 28 | E12 | 0.6− | 1.0+ |
| 2001 10 21 | 704 | 0.4+ | 0.2− | 2002 01 09 | 704 | 0.6+ | 0.4− | 2006 11 15 | 704 | 0.7+ | 0.5+ | 2001 11 11 | 699 | 0.4+ | 0.5+ | 2003 02 26 | 704 | 0.2+ | 0.4+ | 2006 08 28 | E12 | 0.6− | 0.6+ |
| 2001 10 21 | 704 | 0.6+ | 0.0 | 2003 03 06 | 699 | 0.8+ | 0.1+ | 2006 11 15 | 704 | 0.7− | 0.6− | 2001 11 11 | 699 | 0.1+ | 0.2+ | 2003 03 03 | 644 | 1.2− | 0.2+ | 2006 08 28 | E12 | 0.0 | 0.6+ |
| 2001 10 26 | 644 | 0.4+ | 1.0+ | 2003 03 06 | 699 | (2.6+ | 0.2−) | 2006 11 15 | 704 | 0.8+ | 0.1+ | 2001 11 11 | 699 | 0.3+ | 0.6+ | 2003 03 03 | 644 | 0.3− | 0.0 | 2006 09 17 | 699 | 0.3− | 0.9+ |
| | | | | | | | | | | | | 2001 11 11 | 699 | 0.1+ | 0.3+ | 2003 03 03 | 644 | 0.2− | 0.1− | 2006 09 17 | 699 | 0.3− | 0.7+ |
| | | | | | | | | | | | | 2001 11 11 | 699 | 0.2− | 0.3+ | 2003 03 08 | 644 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.0 | 0.4+ |
| | | | | | | | | | | | | 2001 11 11 | 699 | 0.2+ | 0.4+ | 2003 03 08 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.1− | 1.1+ |
| | | | | | | | | | | | | 2001 11 11 | 699 | 0.4+ | 0.4+ | 2003 03 08 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 608 | 1.1− | 0.4+ |
| | | | | | | | | | | | | 2001 11 11 | 699 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.2− | 2006 09 17 | 608 | (2.3− | 1.7+) |
| | | | | | | | | | | | | 2001 11 11 | 644 | 0.1− | 0.4+ | 2004 03 19 | 704 | 0.1+ | 0.4− | 2006 09 17 | 608 | (2.0− | 1.9+) |
| | | | | | | | | | | | | 2001 11 11 | 644 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.5− | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.7+ |
| | | | | | | | | | | | | 2001 11 11 | 644 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.2− | 0.1− | 2006 09 20 | 703 | 0.0 | 1.4+ |
| | | | | | | | | | | | | 2001 11 18 | 644 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.3− | 2006 09 20 | 703 | 0.2− | 0.3+ |
| | | | | | | | | | | | | 2001 11 18 | 644 | 0.1+ | 0.1+ | 2004 03 20 | 699 | 0.3+ | 0.5+ | 2006 09 20 | 703 | 0.2+ | 0.7+ |
| | | | | | | | | | | | | 2001 11 18 | 644 | 0.1+ | 0.0 | 2004 03 20 | 699 | 0.3+ | 0.1+ | 2006 09 20 | 703 | 0.2+ | 0.5+ |
| | | | | | | | | | | | | 2001 11 21 | 704 | 0.3− | 0.1+ | 2004 03 20 | 699 | 0.3− | 0.1+ | 2006 09 20 | 703 | 0.0 | 1.0+ |
| | | | | | | | | | | | | 2001 11 21 | 704 | 0.2− | 0.4+ | 2004 03 20 | 699 | 0.1+ | 1.0− | 2006 09 20 | 703 | 1.1− | 0.0 |
| | | | | | | | | | | | | 2001 11 21 | 704 | 0.1− | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 09 20 | 703 | 0.2− | 0.8+ |
| | | | | | | | | | | | | 2001 11 21 | 704 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.6+ | 0.2− | 2006 09 26 | 703 | 1.0− | 1.0− |
| | | | | | | | | | | | | 2001 11 21 | 704 | 0.2− | 0.3+ | 2004 03 22 | 704 | 0.9+ | 0.3− | 2006 09 26 | 703 | 0.1+ | 0.9− |
| | | | | | | | | | | | | 2001 11 23 | 203 | 0.4+ | 0.1− | 2004 03 22 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 703 | 1.1+ | 1.3− |
| | | | | | | | | | | | | 2001 11 24 | 203 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| | | | | | | | | | | | | 2001 11 24 | 203 | 0.5− | 0.7− | 2004 03 24 | 699 | 1.0+ | 0.2− | 2006 10 11 | E12 | 0.6− | 0.3+ |
| | | | | | | | | | | | | 2001 11 25 | 203 | 0.2+ | 0.6− | 2004 03 24 | 699 | 0.2+ | 0.3+ | 2006 10 11 | E12 | 0.5− | 0.4+ |
| | | | | | | | | | | | | 2001 12 07 | 644 | 0.2+ | 0.1− | 2004 03 24 | 699 | 0.2+ | 0.1+ | 2006 10 11 | E12 | 0.5− | 0.3+ |
| | | | | | | | | | | | | 2001 12 07 | 644 | 0.0 | 0.2− | 2004 03 24 | 699 | 0.0 | 0.1− | 2006 10 11 | E12 | 0.4− | 0.5+ |
| | | | | | | | | | | | | 2001 12 07 | 644 | (1.3+ | 1.6−) | 2004 03 27 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 1.0− | 0.5− |
| | | | | | | | | | | | | 2001 12 10 | 704 | 1.0+ | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 703 | 0.3+ | 1.2+ |
| | | | | | | | | | | | | 2001 12 10 | 704 | 0.1+ | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 11 19 | 703 | 1.0− | 0.2+ |
| | | | | | | | | | | | | 2001 12 10 | 704 | 0.3+ | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 1.2− | 1.0+ |

**(139564)∗ 2001 QC$_{76}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.06018 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17506736 | $\omega$ | 1.21116 | | +0.92760503 | −0.36271625 |
| $a$ | 3.1647004 | $\Omega$ | 20.76142 | | +0.34058236 | +0.72287899 |
| $e$ | 0.1454324 | $i$ | 14.60178 | | +0.15346847 | +0.58811809 |
| $P$ | 5.63 | $H$ | 13.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 1.0− | 0.4+ | 2001 12 14 | 704 | 0.7− | 0.5− | 2004 03 28 | 704 | 0.7+ | 0.5+ | 2001 08 16 | 704 | 0.6− | 1.0+ | 2001 12 18 | 699 | 0.1+ | 0.2− | 2004 03 28 | 704 | 0.2+ | 0.8+ |
| 2001 07 20 | 699 | 1.0− | 1.0+ | 2001 12 14 | 704 | 0.8− | 0.2− | 2004 03 28 | 704 | 0.1+ | 0.0 | 2001 08 16 | 704 | 0.4− | 0.4+ | 2001 12 18 | 699 | 0.6− | 0.3+ | 2004 03 28 | 704 | 0.0 | 0.1− |
| 2001 07 20 | 699 | 0.6− | 0.3+ | 2001 12 18 | 699 | 0.5− | 0.6+ | 2004 03 28 | 704 | (0.7+ | 2.0+) | 2001 08 16 | 704 | 0.2− | 0.1+ | 2002 01 08 | 704 | 0.3− | 0.1+ | 2004 03 29 | 704 | 0.2− | 0.3+ |
| 2001 07 20 | 699 | (0.3− | 1.5+) | 2001 12 18 | 699 | 0.2+ | 0.0 | 2004 03 28 | 704 | 0.4− | 0.5+ | 2001 08 16 | 704 | 0.6− | 0.7+ | 2002 01 08 | 704 | 0.1− | 0.6− | 2004 03 29 | 704 | 0.2+ | 1.0+ |
| 2001 08 16 | 704 | 0.6− | 1.0+ | 2001 12 18 | 699 | 0.1+ | 0.2− | 2004 03 28 | 704 | 0.2+ | 0.8+ | 2001 08 22 | 704 | 0.1+ | 0.5+ | 2002 01 08 | 704 | 0.2+ | 0.2− | 2004 03 29 | 704 | 0.3− | 0.5+ |
| 2001 08 16 | 704 | 0.4− | 0.4+ | 2001 12 18 | 699 | 0.6− | 0.3+ | 2004 03 28 | 704 | 0.0 | 0.1− | 2001 08 22 | 704 | 0.2+ | 0.5+ | 2002 01 08 | 704 | 0.3+ | 0.7− | 2004 03 29 | 704 | 0.5− | 1.1+ |
| 2001 08 16 | 704 | 0.2− | 0.1+ | 2002 01 08 | 704 | 0.3− | 0.1+ | 2004 03 29 | 704 | 0.2− | 0.3+ | 2001 08 22 | 704 | 0.4+ | 0.2+ | 2002 01 08 | 704 | 0.3+ | 0.6− | 2004 03 31 | 704 | (1.6+ | 0.7+) |
| 2001 08 16 | 704 | 0.6− | 0.7+ | 2002 01 08 | 704 | 0.1− | 0.6− | 2004 03 29 | 704 | 0.2+ | 1.0+ | 2001 08 22 | 704 | 0.0 | 0.5+ | 2002 01 21 | 704 | 1.1− | 0.7− | 2004 03 31 | 704 | 0.4+ | 1.4+ |
| 2001 08 22 | 704 | 0.1+ | 0.5+ | 2002 01 08 | 704 | 0.2+ | 0.2− | 2004 03 29 | 704 | 0.3− | 0.5+ | 2001 08 22 | 704 | 0.2+ | 1.0+ | 2002 01 21 | 704 | 0.3− | 0.0 | 2004 03 31 | 704 | 0.6+ | 0.4+ |
| 2001 08 22 | 704 | 0.2+ | 0.5+ | 2002 01 08 | 704 | 0.3+ | 0.7− | 2004 03 29 | 704 | 0.5− | 1.1+ | | | | | | | | | | | | |
| 2001 08 22 | 704 | 0.4+ | 0.2+ | 2002 01 08 | 704 | 0.3+ | 0.6− | 2004 03 31 | 704 | (1.6+ | 0.7+) | | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 704 | 0.4− | 0.1− | 2004 03 27 | 704 | 0.5+ | 1.0+ | 2006 11 20 | 704 | 0.5− | 0.0 |
| 2001 12 10 | 704 | 0.1− | 0.5− | 2004 03 28 | 704 | 0.6+ | 0.7+ | 2006 11 20 | 704 | 0.1− | 1.5+ |
| 2001 12 14 | 704 | 0.2− | 0.1+ | 2004 03 28 | 704 | 0.1− | 0.9+ | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2001 12 14 | 704 | 0.5− | 0.6+ | 2004 03 28 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2001 12 14 | 704 | 0.7− | 0.1− | 2004 03 28 | 704 | 0.0 | 0.2+ | | | | |

**(139565)∗ 2001 QL$_{77}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.79332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18416199 | $\omega$ | 332.99736 | | +0.93082680 | −0.36063489 | |
| $a$ | 3.0596333 | $\Omega$ | 48.27058 | | +0.34799660 | +0.82517102 | |
| $e$ | 0.3310675 | $i$ | 4.54931 | | +0.11162359 | +0.43478186 | |
| $P$ | 5.35 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | (1.4− | 1.7+) | 2001 11 21 | 704 | (0.8+ | 2.6−) | 2006 08 22 | 644 | 0.1+ | 0.1+ |
| 2001 07 20 | 699 | 0.2− | 1.1+ | 2001 11 21 | 608 | 0.4− | 0.8+ | 2006 08 23 | 704 | 0.1− | 0.4+ |
| 2001 07 20 | 699 | 0.3+ | 1.5− | 2001 11 21 | 608 | 0.2− | 0.7+ | 2006 08 23 | 704 | 0.6+ | 0.7+ |
| 2001 07 20 | 699 | 0.5+ | 0.6+ | 2001 11 21 | 608 | 0.0 | 0.5+ | 2006 08 23 | 704 | 0.1− | 0.3+ |
| 2001 08 16 | 704 | 0.2− | 0.6+ | 2001 11 24 | 644 | 0.0 | 0.9+ | 2006 08 23 | 704 | 0.1− | 0.7− |
| 2001 08 16 | 704 | 0.2+ | 1.0+ | 2001 11 24 | 644 | 0.2− | 0.9+ | 2006 08 23 | 704 | 0.1+ | 0.2+ |
| 2001 08 16 | 704 | 0.1+ | 1.3+ | 2001 11 24 | 644 | 0.2+ | 0.9+ | 2006 08 28 | 704 | 0.3+ | 0.2− |
| 2001 08 16 | 704 | 0.9+ | 0.3+ | 2001 11 27 | 644 | 0.2− | 0.2+ | 2006 08 28 | 704 | 0.4+ | 0.6+ |
| 2001 08 22 | 704 | 1.2− | 0.4− | 2001 11 27 | 644 | 0.2− | 0.0 | 2006 08 28 | 704 | 0.4− | 0.9+ |
| 2001 08 22 | 704 | 0.9− | 1.1− | 2001 11 27 | 644 | 0.2− | 0.2+ | 2006 08 28 | 704 | 0.4− | 0.9+ |
| 2001 08 22 | 704 | 1.4− | 1.0− | 2001 12 10 | 704 | 0.2− | 0.2+ | 2006 08 28 | 704 | 0.0 | 0.9+ |
| 2001 08 22 | 704 | 1.3− | 0.0 | 2001 12 10 | 704 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.6− | 0.6+ |
| 2001 08 23 | 699 | 0.3+ | 0.6+ | 2001 12 10 | 704 | 0.0 | 0.2+ | 2006 08 31 | 704 | 0.2− | 0.3+ |
| 2001 08 23 | 699 | 0.0 | 1.0+ | 2001 12 10 | 704 | 0.2− | 0.0 | 2006 08 31 | 704 | 0.4− | 0.5+ |
| 2001 08 23 | 699 | 0.1− | 0.3− | 2001 12 10 | 704 | 0.2+ | 0.2− | 2006 08 31 | 704 | 0.6− | 0.6+ |
| 2001 08 23 | 699 | 0.6+ | 0.3− | 2001 12 11 | 704 | 0.1+ | 0.3− | 2006 08 31 | 704 | 0.1+ | 0.5− |
| 2001 09 14 | 644 | 0.4− | 0.1+ | 2001 12 11 | 704 | 0.0 | 0.0 | 2006 09 12 | 704 | 0.5+ | 0.6+ |
| 2001 09 14 | 644 | 0.4− | 0.1− | 2001 12 11 | 704 | 0.2− | 0.3− | 2006 09 12 | 704 | 0.5+ | 0.6+ |
| 2001 09 14 | 644 | 0.8− | 0.2+ | 2001 12 11 | 704 | 0.2− | 0.1− | 2006 09 12 | 704 | 0.6+ | 0.5+ |
| 2001 09 26 | 704 | 0.0 | 0.4+ | 2001 12 11 | 704 | 0.1− | 0.4− | 2006 09 12 | 704 | 0.6+ | 0.1+ |
| 2001 09 26 | 704 | 0.0 | 0.1− | 2001 12 15 | 704 | (0.4− | 1.8−) | 2006 09 12 | 704 | 0.3+ | 1.0+ |
| 2001 09 26 | 704 | 0.7+ | 0.3+ | 2001 12 15 | 704 | (0.6− | 1.8−) | 2006 09 14 | 703 | 0.3+ | 0.1+ |
| 2001 09 26 | 704 | 0.5− | 0.1− | 2001 12 15 | 704 | 0.8− | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.2+ |
| 2001 09 26 | 704 | 0.6+ | 1.3+ | 2001 12 15 | 704 | 1.4− | 1.3− | 2006 09 14 | 703 | 0.5+ | 0.2+ |
| 2001 10 12 | 699 | 0.3+ | 1.3− | 2001 12 18 | 704 | 0.8− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2001 10 12 | 699 | 0.5− | 0.7+ | 2001 12 18 | 704 | 1.1− | 0.3+ | 2006 09 16 | 704 | 0.8− | 0.9− |
| 2001 10 12 | 699 | 0.2− | 0.4+ | 2001 12 18 | 704 | 0.5− | 0.7+ | 2006 09 16 | 704 | 0.1− | 0.5− |
| 2001 10 12 | 699 | 0.6+ | 1.1+ | 2001 12 18 | 704 | 0.7− | 1.1+ | 2006 09 16 | 704 | 0.6− | 0.7− |
| 2001 10 22 | 704 | 0.1+ | 0.1− | 2001 12 18 | 704 | 1.0− | 1.2+ | 2006 09 16 | 704 | 0.7− | 0.6− |
| 2001 10 22 | 704 | 0.2+ | 0.1− | 2001 12 19 | 704 | 0.6+ | 0.2+ | 2006 09 16 | 704 | 0.8− | 0.1− |
| 2001 10 22 | 704 | 0.6+ | 0.6+ | 2001 12 19 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 608 | (1.7+ | 4.5+) |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2001 12 19 | 704 | (1.5+ | 0.0 ) | 2006 09 17 | 608 | (2.0+ | 4.3+) |
| 2001 10 23 | 704 | 0.0 | 0.1− | 2001 12 19 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 608 | (1.7+ | 4.5+) |
| 2001 10 23 | 704 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.4+ | 0.5+ | 2002 01 06 | 691 | 0.0 | 0.6− | 2006 09 18 | 699 | 0.3+ | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.7+ | 2002 01 06 | 691 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2002 01 06 | 691 | 0.1− | 0.6− | 2006 09 18 | 699 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.1+ | 0.1+ | 2002 01 08 | 704 | 0.6− | 0.3− | 2006 09 19 | 704 | 0.5+ | 0.1+ |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2002 01 08 | 704 | 0.3− | 0.5− | 2006 09 19 | 704 | (1.7− | 0.3−) |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2002 01 08 | 704 | 0.1− | 0.1+ | 2006 09 19 | 704 | 1.3− | 0.1− |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2002 01 08 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 704 | 0.2− | 0.4− |
| 2001 10 25 | 333 | 0.1+ | 0.2− | 2002 01 08 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 704 | (2.2− | 0.1−) |
| 2001 10 25 | 333 | 0.4+ | 0.3− | 2002 01 14 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.2− |
| 2001 10 25 | 333 | 0.1− | 0.8+ | 2002 01 14 | 704 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.3− |
| 2001 10 26 | 704 | (1.8+ | 1.1−) | 2002 01 14 | 704 | 1.2+ | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.1− |
| 2001 10 26 | 704 | 0.9+ | 0.4− | 2002 01 14 | 704 | 0.5+ | 0.6− | 2006 09 22 | 704 | 0.1+ | 0.1+ |
| 2001 10 26 | 704 | 1.2+ | 0.5− | 2002 01 14 | 704 | 0.3+ | 0.3− | 2006 09 22 | 704 | 0.1− | 0.7+ |
| 2001 10 26 | 704 | 0.7+ | 1.3− | 2002 01 21 | 704 | 0.4− | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.4+ |
| 2001 10 26 | 704 | 1.1+ | 1.1− | 2002 01 21 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 704 | 0.5− | 0.2+ |
| 2001 10 26 | 333 | 0.7− | 0.5− | 2002 01 21 | 704 | 0.5− | 1.0+ | 2006 09 22 | 704 | 0.7− | 0.7+ |
| 2001 10 26 | 333 | 0.2+ | 1.1− | 2002 01 21 | 704 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.1− |
| 2001 10 26 | 333 | 1.1− | 0.8− | 2003 03 11 | 291 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.0 |
| 2001 10 26 | 333 | 0.4− | 0.2− | 2003 03 11 | 291 | 0.1+ | 0.7+ | 2006 09 25 | 699 | 0.1+ | 0.1+ |
| 2001 10 26 | 333 | 0.4− | 0.6− | 2003 03 11 | 291 | 0.3+ | 0.7+ | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2001 10 26 | 333 | 0.0 | 0.2− | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.5+ |
| 2001 11 09 | 704 | 0.4+ | 0.2− | 2004 04 20 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.1+ | 0.5+ |
| 2001 11 09 | 704 | 0.6+ | 0.4− | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.2+ |
| 2001 11 09 | 704 | 0.5+ | 0.3− | 2006 08 07 | E12 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 0.6+ | 0.3− | 2006 08 07 | E12 | 1.1− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 2001 11 09 | 704 | 0.7+ | 0.4− | 2006 08 07 | E12 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.6− | 0.3+ |
| 2001 11 12 | 704 | 0.3+ | 0.3+ | 2006 08 07 | E12 | 0.8− | 0.3− | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2001 11 12 | 704 | 0.5+ | 0.1− | 2006 08 14 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.3− |
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | (1.7+ | 0.5−) | 2006 08 14 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.5− |
| 2001 11 12 | 704 | 0.6+ | 0.1− | 2006 08 14 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2001 11 16 | 644 | 0.0 | 0.1− | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2001 11 16 | 644 | 0.1+ | 0.1− | 2006 08 14 | 644 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2001 11 16 | 644 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 11 19 | 699 | 0.1+ | 0.2− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 11 19 | 699 | 0.7− | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.1− |
| 2001 11 19 | 699 | 0.2− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.6+ | 0.3− |
| 2001 11 19 | 699 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.8+ | 1.1+ |
| 2001 11 19 | 704 | 0.2− | 0.5+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 1.4+ | 1.2− |
| 2001 11 19 | 704 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.6+ | 0.6+ |
| 2001 11 19 | 704 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.1+ | 0.5+ | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 2001 11 19 | 704 | 0.1+ | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.7− |
| 2001 11 21 | 704 | (0.3+ | 2.2−) | 2006 08 20 | 644 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2001 11 21 | 704 | (0.4+ | 2.3−) | 2006 08 20 | 644 | 0.1+ | 0.1− | 2006 11 27 | 703 | 1.8+ | 1.7+ |
| 2001 11 21 | 704 | (0.0 | 2.6−) | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 11 27 | 703 | 1.2− | 0.4− |
| 2001 11 21 | 704 | (1.0+ | 2.6−) | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.7− |

**(139566)∗ 2001 QR$_{77}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.90395 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18453359 | $\omega$ | 209.61377 | | +0.55193312 | −0.82059591 | |
| $a$ | 3.0555245 | $\Omega$ | 207.70715 | | +0.81398157 | +0.56879532 | |
| $e$ | 0.1929537 | $i$ | 18.59957 | | +0.18111828 | −0.05562582 | |
| $P$ | 5.34 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 17 | 691 | 0.1+ | 0.2− | 2001 11 18 | 704 | 1.0+ | 0.4+ | 2006 09 27 | 699 | 0.2− | 0.3+ |
| 1990 10 17 | 691 | 0.1+ | 0.1+ | 2001 11 18 | 704 | 0.6+ | 0.1+ | 2006 10 03 | 704 | 1.0− | 0.5− |
| 1990 10 17 | 691 | 0.0 | 0.4− | 2001 11 18 | 704 | 0.7+ | 0.7+ | 2006 10 03 | 704 | 0.1+ | 0.0 |
| 1990 11 11 | 691 | 0.1− | 0.2− | 2001 11 18 | 704 | 0.7+ | 0.1+ | 2006 10 03 | 704 | 0.1− | 0.2− |
| 1990 11 11 | 691 | 0.0 | 0.2− | 2001 12 07 | 704 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.1+ | 0.0 |
| 1990 11 11 | 691 | 0.2− | 0.1− | 2001 12 07 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.1− | 1.2+ | 2001 12 07 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2001 08 16 | 704 | (0.5− | 2.7+) | 2001 12 07 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 08 16 | 704 | 0.5+ | 0.8+ | 2001 12 07 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 08 16 | 704 | 0.8+ | 0.5+ | 2001 12 18 | 645 | 0.1+ | 0.1− | 2006 10 19 | 704 | 0.8− | 0.1− |
| 2001 08 22 | 704 | 0.2− | 0.1− | 2001 12 18 | 645 | 0.1+ | 0.1− | 2006 10 19 | 704 | 0.3+ | 0.7− |
| 2001 08 22 | 704 | 0.1− | 0.2+ | 2002 01 10 | 644 | 0.5− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 08 22 | 704 | 0.2− | 0.2+ | 2002 01 10 | 644 | 0.3− | 0.4+ | 2006 10 19 | 704 | 0.0 | 1.1− |
| 2001 08 22 | 704 | 0.2+ | 0.1+ | 2002 01 10 | 644 | 0.5− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2001 08 22 | 704 | 0.4− | 0.5+ | 2002 01 13 | 645 | 0.0 | 0.1− | 2006 10 19 | 704 | 0.9+ | 0.5− |
| 2001 08 29 | 644 | 0.2− | 0.2+ | 2002 01 13 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 08 29 | 644 | 0.3− | 0.1− | 2002 02 06 | 699 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 08 29 | 644 | 0.5+ | 0.1+ | 2002 02 06 | 699 | 0.9− | 1.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | 1.1− | 0.9+ | 2002 02 06 | 699 | 1.2− | 0.5+ | 2006 10 29 | 704 | 0.4+ | 0.8+ |
| 2001 09 17 | 704 | 0.1+ | 0.3− | 2002 02 06 | 699 | 0.9− | 0.1+ | 2006 10 29 | 704 | (0.5− | 1.8+) |
| 2001 09 17 | 704 | 0.1− | 0.7+ | 2003 03 08 | 699 | 0.9+ | 0.4+ | 2006 10 29 | 704 | 0.7+ | 0.2+ |
| 2001 09 17 | 704 | 0.6− | 0.5+ | 2003 03 08 | 699 | 1.0− | 1.0+ | 2006 10 29 | 704 | 0.5+ | 0.6+ |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2003 03 08 | 699 | (0.1+ | 1.8+) | 2006 10 29 | 704 | 0.8+ | 0.9+ |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2003 03 08 | 699 | 0.5− | 0.0 | 2006 11 06 | 644 | 0.2− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1+ | 0.7+ | 2003 03 11 | 704 | 0.2+ | 1.0+ | 2006 11 06 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.4− | 0.6+ | 2003 03 11 | 704 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.3− | | |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2003 03 11 | 704 | 0.6− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 16 | 608 | 0.5− | 0.2− | 2003 03 11 | 704 | 1.1+ | 1.3+ | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 2001 10 16 | 608 | 0.6− | 0.1− | 2003 03 25 | 608 | 0.6− | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2001 10 16 | 608 | 0.5− | 0.0 | 2003 03 25 | 608 | 0.7− | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.4+ | | |
| 2001 10 17 | 704 | 0.2− | 0.6+ | 2003 03 25 | 608 | 0.9− | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.4+ | | |
| 2001 10 17 | 704 | 0.1− | 0.5+ | 2003 03 28 | 699 | 0.9+ | 0.8− | 2006 11 11 | 703 | 0.8− | 0.1− | | |
| 2001 10 17 | 704 | 0.7− | 0.0 | 2003 03 28 | 699 | 0.8− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2001 10 17 | 704 | 0.2− | 0.3+ | 2003 03 28 | 699 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2001 10 17 | 704 | 0.1− | 0.2+ | 2003 03 28 | 699 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2001 10 20 | 704 | 0.4− | 0.4+ | 2004 05 18 | 704 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.5+ | | |
| 2001 10 20 | 704 | 0.5− | 0.0 | 2004 05 18 | 704 | 0.8+ | 0.7+ | 2006 11 17 | 703 | 0.2− | 0.3+ | | |
| 2001 10 20 | 704 | 0.2+ | 0.1+ | 2004 05 18 | 704 | 0.5+ | 1.0+ | 2006 11 17 | 703 | 0.9− | 0.1− | | |
| 2001 10 20 | 704 | 0.4− | 0.0 | 2004 05 18 | 704 | 1.1+ | 1.4+ | 2006 11 17 | 703 | 0.4− | 0.3+ | | |
| 2001 10 20 | 704 | 0.5− | 0.2− | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.7+ | | |
| 2001 10 23 | 608 | 1.1− | 1.1+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.1+ | | |
| 2001 10 23 | 608 | 1.3− | 0.9+ | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.1+ | | |
| 2001 10 23 | 608 | 0.8− | 1.0+ | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.2− | | |
| 2001 11 09 | 644 | 0.3− | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.5+ | | |
| 2001 11 09 | 644 | 0.8− | 0.1− | 2006 09 16 | 703 | 1.0− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.4+ | | |
| 2001 11 09 | 644 | 0.3− | 0.4+ | 2006 09 16 | 703 | 0.7− | 0.7+ | 2006 11 20 | 704 | 0.3+ | 0.8+ | | |
| 2001 11 15 | 704 | 1.2+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.8− | 0.2− | | |
| 2001 11 15 | 704 | 1.3+ | 0.6− | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.6+ | | |
| 2001 11 15 | 704 | 1.2+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.6+ | 0.0 | | |
| 2001 11 15 | 704 | 1.4+ | 0.8− | 2006 09 27 | 699 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.2− | | |
| 2001 11 15 | 704 | 1.0+ | 1.2− | 2006 09 27 | 699 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.4+ | | |
| 2001 11 18 | 704 | 1.0+ | 0.0 | 2006 09 27 | 699 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1− | | |

**(139567)∗ 2001 QM$_{80}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.57051 | | (2000.0) | | | |
| $n$ | 0.18000002 | $\omega$ | 6.63565 | | +0.73880526 | −0.64776815 |
| $a$ | 3.1066168 | $\Omega$ | 36.03001 | | +0.60287194 | +0.51198224 |
| $e$ | 0.2015577 | $i$ | 18.42508 | | +0.30118470 | +0.56415478 |
| $P$ | 5.48 | $H$ | 14.1 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 25 | 691 | 0.2− | 0.0 | 2001 12 09 | 704 | 0.7+ | 0.5− | 2004 04 22 | 704 | 0.2+ | 0.5+ | | |
| 1993 04 25 | 691 | 0.1− | 0.2− | 2001 12 09 | 704 | 0.7+ | 0.6− | 2004 04 22 | 704 | (1.6− | 0.2+) | | |
| 1993 04 25 | 691 | 0.2− | 0.2− | 2001 12 09 | 704 | 1.0+ | 0.2− | 2004 04 22 | 704 | 0.5+ | 0.4− | | |
| 2001 08 16 | 704 | 0.3+ | 0.5+ | 2001 12 09 | 704 | 1.0+ | 0.3− | 2004 04 23 | 704 | 1.3+ | 0.7+ | | |
| 2001 08 16 | 704 | 0.6− | 0.0 | 2001 12 14 | 704 | (0.4− | 2.1+) | 2004 04 23 | 704 | 0.2+ | 0.5+ | | |
| 2001 08 16 | 704 | 1.4− | 0.9+ | 2001 12 14 | 704 | (0.7− | 2.5+) | 2004 04 23 | 704 | (0.1+ | 2.1+) | | |
| 2001 08 22 | 704 | 1.3+ | 1.2− | 2001 12 14 | 704 | (2.0− | 2.9+) | 2004 04 23 | 704 | 0.3+ | 0.7+ | | |
| 2001 08 22 | 704 | 0.0 | 0.5+ | 2001 12 14 | 704 | (0.2− | 2.9+) | 2004 04 25 | 704 | 0.7− | 1.2+ | | |
| 2001 08 22 | 704 | 0.2+ | 0.8+ | 2001 12 22 | 704 | 0.3+ | 0.2+ | 2004 04 25 | 704 | 0.3− | 1.4+ | | |
| 2001 08 22 | 704 | 0.3− | 0.3+ | 2001 12 22 | 704 | 0.4+ | 0.4− | 2004 04 25 | 704 | 0.3+ | 0.7+ | | |
| 2001 09 24 | 704 | 0.7+ | 0.7+ | 2001 12 22 | 704 | 0.1− | 0.2− | 2004 04 25 | 704 | 0.1+ | 0.6+ | | |
| 2001 09 24 | 704 | 0.6+ | 0.1− | 2001 12 22 | 704 | 0.0 | 0.4− | 2004 04 25 | 703 | 1.3− | 0.4+ | | |
| 2001 09 24 | 704 | 0.8+ | 0.9+ | 2001 12 22 | 704 | 0.4− | 0.4− | 2004 04 25 | 703 | (1.5− | 1.6+) | | |
| 2001 09 24 | 704 | 0.5+ | 0.4+ | 2002 01 23 | 704 | (0.5− | 1.6+) | 2004 04 25 | 703 | (3.9− | 1.1−) | | |
| 2001 09 24 | 704 | 0.2+ | 0.2+ | 2002 01 23 | 704 | 0.0 | 0.4− | 2004 04 25 | 703 | (0.3− | 2.5+) | | |
| 2001 09 25 | 644 | 0.9− | 0.4− | 2002 01 23 | 704 | 0.7+ | 0.1− | 2006 09 14 | 644 | 0.4− | 0.2+ | | |
| 2001 09 25 | 644 | 0.9− | 0.4− | 2003 02 21 | 644 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.6− | 0.2+ | | |
| 2001 09 25 | 644 | 0.7− | 0.9− | 2003 02 21 | 644 | 0.4+ | 0.4+ | 2006 09 14 | 644 | 0.7− | 0.2+ | | |
| 2001 10 14 | 704 | 0.4− | 0.0 | 2003 02 21 | 644 | 0.0 | 0.1+ | 2006 09 17 | 699 | 1.0− | 0.4+ | | |
| 2001 10 14 | 704 | 0.6− | 0.2− | 2003 02 26 | 704 | 0.7+ | 1.0+ | 2006 09 17 | 699 | 0.3+ | 0.8+ | | |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2003 02 26 | 704 | 1.0+ | 0.2+ | 2006 09 17 | 699 | 0.1− | 0.1− | | |
| 2001 10 14 | 704 | 0.0 | 0.3− | 2003 02 26 | 704 | (1.4+ | 2.0+) | 2006 09 17 | 699 | 0.2− | 0.1− | | |
| 2001 10 14 | 704 | 0.3− | 0.1− | 2003 02 28 | 704 | 1.4+ | 0.3− | 2006 09 20 | 703 | 1.1− | 0.6+ | | |
| 2001 10 18 | 704 | 0.1− | 0.4− | 2003 02 28 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 703 | (2.7− | 0.9+) | | |
| 2001 10 18 | 704 | (0.2− | 1.6−) | 2003 02 28 | 704 | 1.2+ | 1.1+ | 2006 09 20 | 703 | 1.3− | 0.5+ | | |
| 2001 10 18 | 704 | 0.8− | 0.2− | 2003 02 28 | 704 | (1.3+ | 1.7+) | 2006 09 20 | 703 | 0.1+ | 0.4+ | | |
| 2001 10 18 | 704 | 1.4− | 0.6− | 2003 02 28 | 704 | 1.0+ | 1.1+ | 2006 09 26 | 703 | 0.2+ | 0.7+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.4+ | 2003 03 09 | 644 | 0.8+ | 0.3+ | 2006 09 26 | 703 | 0.5− | 1.2+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2003 03 09 | 644 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.5+ | 0.2+ | | |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2003 03 09 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.8+ | 0.7+ | | |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2003 03 22 | 644 | 0.0 | 0.6+ | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.2− | 2003 03 22 | 644 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2001 10 27 | 704 | 0.1− | 0.9+ | 2003 03 22 | 644 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2001 10 27 | 704 | 0.6− | 0.5+ | 2004 04 21 | 704 | 0.5− | 0.1+ | 2006 10 28 | 703 | 0.6− | 1.1+ | | |
| 2001 10 27 | 704 | 0.4− | 0.6+ | 2004 04 21 | 704 | 0.3− | 0.6− | 2006 10 28 | 703 | 0.1+ | 0.0 | | |
| 2001 10 27 | 704 | (0.8− | 1.7+) | 2004 04 21 | 704 | 0.2+ | 0.8− | 2006 10 28 | 703 | 0.8− | 0.4+ | | |
| 2001 10 27 | 704 | 0.2− | 1.5+ | 2004 04 21 | 704 | 0.9+ | 0.3− | 2006 10 28 | 703 | 0.7− | 0.0 | | |
| 2001 12 09 | 704 | 0.4+ | 0.7− | 2004 04 22 | 704 | 1.4+ | 0.2+ | | | | | | |

**(139568)∗ 2001 QL$_{81}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.31183 | | (2000.0) | | | |
| $n$ | 0.19349226 | $\omega$ | 20.55290 | | +0.99113239 | +0.11182029 |
| $a$ | 2.9604677 | $\Omega$ | 332.72138 | | −0.13285767 | +0.84340935 |
| $e$ | 0.0739866 | $i$ | 9.01093 | | +0.00233050 | +0.52550631 |
| $P$ | 5.09 | $H$ | 14.1 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 704 | 0.8+ | 0.5+ | 2001 11 17 | 704 | 0.7+ | 0.3+ | 2004 04 11 | 644 | 0.0 | 0.5+ | | |
| 2001 08 17 | 704 | 0.3+ | 0.6+ | 2001 11 17 | 704 | 0.5+ | 0.4− | 2004 04 16 | 704 | 0.2+ | 1.4+ | | |
| 2001 08 17 | 704 | 0.1+ | 0.2− | 2001 11 17 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 704 | 0.1+ | 0.9+ | | |
| 2001 08 17 | 704 | 0.1+ | 0.6+ | 2001 11 17 | 704 | 0.8+ | 0.8− | 2004 04 16 | 704 | 0.0 | 0.6+ | | |
| 2001 08 22 | 704 | 0.8+ | 0.7+ | 2001 12 19 | 699 | 0.4− | 0.4+ | 2004 04 16 | 704 | 0.3− | 0.7+ | | |
| 2001 08 22 | 704 | 1.3+ | 0.8+ | 2001 12 19 | 699 | 1.3− | 0.8− | 2004 04 16 | 704 | 0.8+ | 0.6− | | |
| 2001 08 22 | 704 | 1.1− | 1.4+ | 2001 12 19 | 699 | 0.2− | 1.0+ | 2004 04 19 | 704 | 0.4+ | 0.2+ | | |
| 2001 08 22 | 704 | 0.7+ | 0.5+ | 2001 12 19 | 699 | 1.0− | 0.0 | 2004 04 19 | 704 | 0.7+ | 0.7+ | | |
| 2001 08 22 | 704 | (1.0+ | 1.5+) | 2002 12 14 | 704 | 0.9− | 0.5− | 2004 04 19 | 704 | 0.9+ | 0.0 | | |
| 2001 08 28 | 699 | 0.0 | 0.8+ | 2002 12 14 | 704 | 0.6+ | 0.0 | 2004 04 19 | 704 | 0.9+ | 0.6+ | | |
| 2001 08 28 | 699 | 0.2− | 1.2+ | 2002 12 14 | 704 | 0.4− | 0.6+ | 2006 08 26 | 704 | 0.3+ | 1.1+ | | |
| 2001 08 28 | 699 | 0.7+ | 0.5+ | 2002 12 14 | 704 | 0.0 | 1.3− | 2006 08 26 | 704 | 0.0 | 0.6+ | | |
| 2001 08 28 | 699 | 1.0+ | 0.1+ | 2002 12 14 | 704 | (1.8− | 0.6+) | 2006 08 26 | 704 | 0.7− | 1.1+ | | |
| 2001 09 10 | 704 | 0.1+ | 0.3− | 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.1− | | |
| 2001 09 10 | 704 | 0.2− | 0.3− | 2003 01 05 | 704 | 0.5+ | 0.4− | 2006 08 29 | 703 | 0.3+ | 1.1+ | | |
| 2001 09 10 | 704 | 0.5− | 0.5− | 2003 01 05 | 704 | 0.4− | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.6+ | | |
| 2001 09 10 | 704 | 0.9− | 0.0 | 2003 01 05 | 704 | 0.5+ | 0.1+ | 2006 08 29 | 703 | (0.8− | 1.7+) | | |
| 2001 09 10 | 704 | 0.4− | 0.7− | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.6− | 0.2+ | | |
| 2001 09 19 | 699 | 0.2− | 0.3+ | 2003 01 09 | 704 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.4− | 0.4+ | | |
| 2001 09 19 | 699 | 0.6− | 0.4+ | 2003 01 09 | 704 | 0.6− | 0.2+ | 2006 08 30 | 704 | 0.8− | 0.2− | | |
| 2001 09 19 | 699 | 0.3+ | 0.4+ | 2003 01 09 | 704 | 0.6− | 0.9+ | 2006 08 30 | 704 | 0.9− | 0.0 | | |
| 2001 09 19 | 699 | 0.4− | 0.5+ | 2003 02 01 | 704 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 1.2− | 1.1+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.7− | 2003 02 01 | 704 | 0.1+ | 0.2− | 2006 09 01 | 704 | 0.5− | 1.2+ | | |
| 2001 09 20 | 704 | 0.2+ | 1.2− | 2003 02 01 | 704 | 0.1− | 0.6+ | 2006 09 01 | 704 | 0.1+ | 1.1+ | | |
| 2001 09 20 | 704 | 0.5+ | 1.0− | 2003 02 01 | 704 | 1.2+ | 0.8+ | 2006 09 01 | 704 | 0.5− | 0.4+ | | |
| 2001 09 20 | 699 | 0.2− | 0.0 | 2003 02 01 | 704 | 0.7+ | 0.0 | 2006 09 01 | 704 | 0.6− | 0.1+ | | |
| 2001 09 20 | 704 | 0.1+ | 1.3− | 2003 03 07 | 644 | 0.3− | 0.6− | 2006 09 16 | 703 | 0.4+ | 0.2− | | |
| 2001 09 20 | 699 | 0.2− | 0.0 | 2003 03 07 | 644 | 0.2− | 0.6− | 2006 09 16 | 703 | 0.1− | 0.0 | | |
| 2001 09 20 | 699 | 0.1− | 0.3− | 2003 03 07 | 644 | 0.3− | 0.4− | 2006 09 16 | 703 | (0.3+ | 2.1−) | | |
| 2001 09 20 | 699 | 0.4− | 0.1+ | 2004 02 16 | 703 | 0.3− | 0.3− | 2006 09 16 | 703 | (1.3+ | 2.3−) | | |
| 2001 09 22 | 704 | 0.5+ | 0.5− | 2004 02 16 | 703 | 1.2+ | 0.4− | 2006 09 18 | 704 | (0.3− | 1.9+) | | |
| 2001 09 22 | 704 | 0.7+ | 0.6− | 2004 02 16 | 703 | 0.8+ | 1.0+ | 2006 09 18 | 704 | 0.4− | 1.1+ | | |
| 2001 09 22 | 704 | 0.2− | 0.6+ | 2004 02 16 | 703 | 0.0 | 0.7+ | 2006 09 18 | 704 | (0.1+ | 1.7+) | | |
| 2001 09 22 | 704 | 0.3+ | 0.6+ | 2004 02 26 | 704 | 0.8+ | 0.0 | 2006 09 18 | 704 | 0.2− | 1.0+ | | |
| 2001 09 22 | 704 | 0.9− | 0.1+ | 2004 02 26 | 704 | 0.0 | 0.3− | 2006 09 18 | 704 | 0.8− | 1.2+ | | |
| 2001 09 23 | 704 | 0.8− | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | | |
| 2001 09 23 | 704 | 0.9− | 0.4+ | 2004 02 26 | 704 | 1.0+ | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.1+ | | |
| 2001 09 23 | 704 | 0.8− | 0.1− | 2004 03 16 | 703 | 0.2− | 1.0+ | 2006 09 19 | 699 | 0.1+ | 0.6+ | | |
| 2001 09 28 | 644 | 0.0 | 0.2+ | 2004 03 16 | 703 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.3− | | |
| 2001 09 28 | 644 | 0.2− | 0.2+ | 2004 03 16 | 703 | 0.9− | 1.4+ | 2006 09 22 | 106 | 0.2− | 0.3+ | | |
| 2001 09 28 | 644 | 0.1− | 0.2+ | 2004 03 16 | 703 | 0.9− | 0.2− | 2006 09 22 | 106 | 0.0 | 0.1− | | |
| 2001 09 29 | 644 | 0.2+ | 0.2+ | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2006 09 22 | 106 | 0.4− | 0.5− | | |
| 2001 09 29 | 644 | 0.1+ | 0.3+ | 2004 03 17 | 704 | 1.0− | 0.1− | 2006 09 22 | 106 | (0.2+ | 1.7−) | | |
| 2001 09 29 | 644 | 0.3+ | 0.5+ | 2004 03 17 | 704 | 0.8+ | 1.3+ | 2006 10 09 | 644 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 699 | 1.0− | 1.2+ | 2004 03 17 | 704 | 0.4+ | 0.8+ | 2006 10 09 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 13 | 699 | 0.0 | 0.4+ | 2004 03 17 | 704 | 1.0+ | 1.2+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 699 | 0.2− | 0.3+ | 2004 03 19 | 704 | 1.1+ | 0.5+ | 2006 10 17 | 703 | 0.4+ | 0.2+ | | |
| 2001 10 13 | 699 | 0.5− | 0.8− | 2004 03 19 | 704 | 0.8+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.4+ | | |
| 2001 10 13 | 644 | 0.2+ | 0.1+ | 2004 03 19 | 704 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.2+ | | |
| 2001 10 13 | 644 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.1− | | |
| 2001 10 13 | 644 | 0.3+ | 0.4+ | 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2001 10 17 | 704 | 0.1− | 0.2+ | 2004 03 26 | 699 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2001 10 17 | 704 | 0.3− | 0.3+ | 2004 03 26 | 699 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2001 10 17 | 704 | (2.2− | 2.0+) | 2004 03 26 | 699 | 0.2+ | 0.9+ | 2006 10 23 | G96 | 0.4− | 0.2− | | |
| 2001 10 17 | 704 | 0.0 | 0.0 | 2004 03 26 | 699 | 0.7+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.2− | | |
| 2001 10 17 | 704 | 0.2− | 0.4+ | 2004 03 31 | 704 | 0.7+ | 0.7− | 2006 10 23 | G96 | 0.2+ | 0.1− | | |
| 2001 10 20 | 644 | 0.1− | 0.9− | 2004 03 31 | 704 | 0.2− | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.2− | | |
| 2001 10 20 | 644 | 0.0 | 0.9− | 2004 03 31 | 704 | 0.5+ | 1.2+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 20 | 644 | 0.1− | 1.0− | 2004 03 31 | 704 | 0.5+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 11 | 644 | 0.0 | 0.2+ | 2004 03 31 | 704 | (0.2+ | 2.6+) | 2006 11 08 | 644 | 0.2+ | 0.0 | | |
| 2001 11 11 | 644 | 0.0 | 0.6+ | 2004 04 11 | 644 | 0.3+ | 0.7+ | | | | | | |
| 2001 11 11 | 644 | 0.1− | 0.4+ | 2004 04 11 | 644 | 0.4+ | 0.2+ | | | | | | |

**(139569)∗ 2001 QU$_{84}$ = 2003 EX$_{15}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 42969)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 24.21083 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24117019 | $\omega$ | 309.30642 | | +0.60751573 | −0.78760829 | |
| *a* | 2.5561537 | $\Omega$ | 102.97850 | | +0.75740964 | +0.53536629 | |
| *e* | 0.2626151 | *i* | 6.06430 | | +0.23928076 | +0.30505102 | |
| *P* | 4.09 | *H* | 16.1 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.7+ | 0.1+ | 2003 01 05 | 704 | 1.1+ | 0.4+ | 2005 07 11 | 699 | 0.8− | 1.0+ | | |
| 2001 07 27 | 699 | 0.1− | 0.3+ | 2003 01 05 | 704 | 0.4+ | 1.4+ | 2005 07 11 | 699 | (1.0+ | 1.7+) | | |
| 2001 07 27 | 699 | 0.6+ | 0.6− | 2003 01 27 | 704 | 0.2− | 0.9+ | 2005 07 11 | 691 | 0.0 | 0.1+ | | |
| 2001 07 27 | 699 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.7+ | 0.2+ | 2005 07 11 | 699 | 0.8+ | 0.0 | | |
| 2001 08 19 | 704 | 0.5− | 0.3+ | 2003 01 27 | 704 | 0.2− | 0.8+ | 2005 07 11 | 691 | 0.2+ | 0.2+ | | |
| 2001 08 19 | 704 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.2+ | 1.1+ | 2005 07 11 | 691 | 0.1+ | 0.1− | | |
| 2001 08 19 | 704 | 1.1− | 0.6+ | 2003 01 27 | 704 | (1.1+ | 1.9+) | 2006 09 28 | G96 | 0.4+ | 0.1− | | |
| 2001 08 19 | 704 | 1.0− | 0.2+ | 2003 02 04 | 699 | 0.9+ | 0.4− | 2006 09 28 | G96 | 0.3+ | 0.1− | | |
| 2001 08 19 | 704 | 0.3− | 0.4+ | 2003 02 04 | 699 | 0.6− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2001 08 22 | 704 | 0.0 | 0.3+ | 2003 02 04 | 699 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.2− | | |
| 2001 08 22 | 704 | 0.3− | 1.1+ | 2003 02 04 | 699 | 0.0 | 0.0 | 2006 10 20 | 695 | 0.6+ | 0.1− | | |
| 2001 08 22 | 704 | 0.3− | 0.9+ | 2003 02 04 | 704 | 0.2+ | 0.1− | 2006 10 20 | 695 | 0.1− | 0.0 | | |
| 2001 08 22 | 704 | 1.2− | 0.3+ | 2003 02 04 | 704 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2001 08 22 | 704 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.0 | 0.9− | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2001 08 23 | 704 | (0.2+ | 1.6+) | 2003 02 04 | 704 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.1+ | | |
| 2001 08 23 | 699 | 0.6+ | 0.2+ | 2003 02 04 | 704 | 0.7− | 0.6− | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2001 08 23 | 704 | 0.4− | 0.7+ | 2003 02 21 | 644 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2001 08 23 | 699 | 0.3+ | 0.4+ | 2003 02 21 | 644 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2001 08 23 | 699 | 0.2+ | 0.8+ | 2003 02 21 | 644 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2001 08 23 | 704 | 0.5+ | 0.5+ | 2003 03 07 | 644 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2001 08 23 | 699 | 0.3− | 0.8+ | 2003 03 07 | 644 | 0.1+ | 0.5+ | 2006 11 09 | 291 | 0.2+ | 0.7+ | | |
| 2001 08 24 | 704 | 0.5+ | 0.2− | 2003 03 07 | 644 | 0.5+ | 0.4+ | 2006 11 09 | 291 | 0.1+ | 0.4+ | | |
| 2001 08 24 | 704 | 0.2+ | 0.6+ | 2003 03 08 | 704 | 0.8+ | 0.3− | 2006 11 09 | 291 | 0.1− | 0.6+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.6+ | 2003 03 08 | 704 | 0.2+ | 0.8+ | 2006 11 09 | 291 | 0.0 | 0.5+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.2+ | 2003 03 08 | 704 | 0.7+ | 0.2+ | 2006 11 09 | 291 | 0.1+ | 0.1+ | | |
| 2001 08 25 | 644 | 0.1− | 0.2− | 2003 03 08 | 704 | 0.3+ | 0.9+ | 2006 11 09 | 291 | 0.0 | 0.4+ | | |
| 2001 08 25 | 644 | 0.1− | 0.1− | 2003 03 08 | 704 | 0.5+ | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2001 08 25 | 644 | 0.1+ | 0.0 | 2003 03 08 | 599 | 0.9− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2001 09 11 | 704 | 0.2+ | 0.1+ | 2003 03 08 | 599 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2001 09 11 | 704 | 0.1+ | 0.1+ | 2003 03 08 | 599 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.2+ | | |
| 2001 09 11 | 704 | 0.2+ | 0.1+ | 2003 03 08 | 599 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.4− | | |
| 2001 09 11 | 704 | 0.5+ | 0.1− | 2005 07 02 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.3− | | |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2005 07 02 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.7− | | |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2005 07 02 | 691 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.6− | 0.1− | | |
| 2003 01 05 | 704 | 1.2+ | 0.3+ | 2005 07 11 | 699 | 1.0− | 0.9− | | | | | | |

**(139570)∗ 2001 QF$_{87}$**

Discovered 2001 Aug. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 314.14355 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18825919 | $\omega$ | 159.76084 | | +0.83138378 | −0.53826560 | |
| *a* | 3.0150783 | $\Omega$ | 233.56973 | | +0.48330582 | +0.82304216 | |
| *e* | 0.1348302 | *i* | 9.88320 | | +0.27425624 | +0.18130570 | |
| *P* | 5.24 | *H* | 14.7 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.1− | 0.9− | 2001 10 13 | 644 | 0.3− | 0.4+ | 2005 06 30 | 691 | 0.1− | 0.4+ | | |
| 2001 08 17 | 644 | 0.6− | 0.7− | 2001 10 16 | 704 | 0.9− | 0.2− | 2005 06 30 | 691 | 0.2− | 0.4+ | | |
| 2001 08 17 | 644 | 0.5− | 1.3− | 2001 10 16 | 704 | 1.1− | 0.2− | 2005 07 04 | 691 | 0.0 | 0.3+ | | |
| 2001 08 21 | 608 | 0.3− | 0.7− | 2001 10 16 | 704 | 0.9− | 0.7+ | 2005 07 04 | 691 | 0.1− | 0.4+ | | |
| 2001 08 21 | 608 | 0.7− | 0.3− | 2001 10 16 | 704 | 0.7− | 1.8+ | 2005 07 04 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 21 | 608 | 1.1− | 0.4− | 2002 12 14 | 704 | 0.4+ | 1.0+ | 2005 07 12 | G96 | 0.0 | 0.3+ | | |
| 2001 08 24 | 699 | 0.2− | 0.1+ | 2002 12 14 | 704 | 0.2− | 0.6+ | 2005 07 12 | G96 | 0.3+ | 0.3+ | | |
| 2001 08 24 | 699 | 0.4+ | 0.0 | 2002 12 14 | 704 | 0.1+ | 0.8+ | 2005 07 12 | G96 | 0.2+ | 0.0 | | |
| 2001 08 24 | 699 | 0.8− | 0.1+ | 2002 12 14 | 704 | 0.1− | 0.5+ | 2005 07 12 | G96 | 0.1+ | 0.2+ | | |
| 2001 08 24 | 699 | 0.3+ | 0.6+ | 2003 01 01 | 704 | 0.2− | 0.2− | 2006 08 22 | 644 | 0.3+ | 0.0 | | |
| 2001 09 09 | 699 | 0.1+ | 0.7+ | 2003 01 01 | 704 | 0.3− | 0.2− | 2006 08 22 | 644 | 0.3+ | 0.1− | | |
| 2001 09 09 | 699 | 0.6+ | 1.3+ | 2003 01 01 | 704 | 0.4+ | 0.3− | 2006 08 22 | 644 | 0.2+ | 0.0 | | |
| 2001 09 09 | 699 | 0.2+ | 0.0 | 2003 01 01 | 704 | 0.2+ | 0.1− | 2006 08 23 | 644 | 0.4− | 0.0 | | |
| 2001 09 09 | 699 | 0.1+ | 0.0 | 2003 01 01 | 704 | 0.4− | 0.4+ | 2006 08 23 | 644 | 0.2+ | 0.1− | | |
| 2001 09 18 | 699 | 0.2+ | 1.1− | 2003 01 05 | 704 | 1.2− | 0.7+ | 2006 08 23 | 644 | 0.0 | 0.1+ | | |
| 2001 09 18 | 699 | 0.8+ | 0.6+ | 2003 01 05 | 704 | 0.8− | 0.1− | 2006 08 27 | 699 | 0.4+ | 0.0 | | |
| 2001 09 18 | 699 | 0.3+ | 0.1+ | 2003 01 05 | 704 | (2.1− | 0.5+) | 2006 08 27 | 699 | 0.4+ | 0.6− | | |
| 2001 09 18 | 699 | 1.3+ | 0.0 | 2003 01 09 | 704 | 0.7+ | 0.7+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | | |
| 2001 09 23 | 644 | 0.3+ | 0.3+ | 2003 01 09 | 704 | 0.6+ | 0.2+ | 2006 08 27 | 699 | 0.0 | 0.7− | | |
| 2001 09 23 | 644 | 0.4+ | 0.4+ | 2003 01 09 | 704 | 1.2+ | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.3− | | |
| 2001 09 23 | 644 | 0.2+ | 0.3+ | 2003 01 09 | 704 | 0.8+ | 0.4+ | 2006 08 30 | 699 | 0.1+ | 0.4+ | | |
| 2001 09 25 | 704 | 0.3+ | 0.2+ | 2005 05 22 | 644 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.3− | 0.1+ | | |
| 2001 09 25 | 704 | 0.6+ | 0.7+ | 2005 05 22 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.4+ | 0.2− | | |
| 2001 09 25 | 704 | 0.1+ | 0.1− | 2005 05 22 | 644 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.8− | 0.1− | | |
| 2001 09 25 | 704 | 0.1− | 0.2+ | 2005 06 27 | 691 | 0.1− | 0.3+ | 2006 09 11 | 703 | 0.2+ | 0.6+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2005 06 27 | 691 | 0.2− | 0.3+ | 2006 09 11 | 703 | 0.1− | 0.6− | | |
| 2001 10 13 | 644 | 0.2− | 0.6+ | 2005 06 27 | 691 | 0.6+ | 1.0− | 2006 09 11 | 703 | 0.4− | 0.8− | | |
| 2001 10 13 | 644 | 0.2− | 0.5+ | 2005 06 30 | 691 | 0.0 | 0.4+ | | | | | | |

**(139571)∗ 2001 QF$_{88}$ = 1992 SC$_{6}$**

Discovered 2001 Aug. 21 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 17851)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 1.01356 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21636696 | $\omega$ | 228.60025 | | +0.93896462 | −0.34216155 | |
| *a* | 2.7479495 | $\Omega$ | 151.35486 | | +0.33363855 | +0.88048463 | |
| *e* | 0.1180270 | *i* | 4.26481 | | +0.08384967 | +0.32813456 | |
| *P* | 4.56 | *H* | 15.7 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 26 | 691 | 0.1+ | 0.4− | 2001 08 24 | 644 | 0.5− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 1992 09 26 | 691 | 0.1+ | 0.1− | 2001 08 24 | 644 | 0.5− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 1992 09 26 | 691 | 0.0 | 0.2− | 2001 08 28 | 691 | 0.2− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 1992 09 27 | 691 | 0.1− | 0.2− | 2001 08 28 | 691 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 1992 09 27 | 691 | 1.1+ | 0.1− | 2001 08 28 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 1992 09 27 | 691 | 0.3− | 0.2− | 2001 09 07 | 704 | 1.3+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 1992 09 28 | 691 | 0.2− | 0.4− | 2001 09 07 | 704 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 1992 09 28 | 691 | 0.4− | 0.2− | 2001 09 07 | 704 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.1− | | |
| 1992 09 28 | 691 | 0.2− | 0.5− | 2001 09 07 | 704 | 0.4+ | 0.6− | 2006 10 16 | 703 | 0.5− | 0.3− | | |
| 1994 01 14 | 691 | 0.4+ | 0.3+ | 2001 09 07 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.0 | | |
| 1994 01 14 | 691 | 0.2+ | 0.1+ | 2001 09 10 | 699 | 1.2− | 0.3− | 2006 10 16 | 703 | 0.2− | 0.1− | | |
| 1994 01 14 | 691 | 0.4+ | 0.3+ | 2001 09 10 | 699 | 1.2− | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 1995 04 25 | 691 | 0.1− | 0.2− | 2001 09 10 | 699 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.3+ | | |
| 1995 04 25 | 691 | 0.1− | 1.0− | 2001 09 10 | 699 | 0.5− | 1.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 1995 04 25 | 691 | 0.4+ | 0.3− | 2001 09 19 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | (4.9+ | 1.2−) | 2001 09 19 | 704 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 1997 10 30 | 704 | (3.8+ | 0.2+) | 2001 09 19 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 1997 10 30 | 704 | 1.5+ | 0.5− | 2001 09 19 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.9+ | 0.5− | | |
| 1997 10 30 | 704 | (2.1+ | 1.4−) | 2001 09 21 | 704 | 0.3− | 0.6− | 2006 10 21 | 703 | 0.4+ | 0.5+ | | |
| 1999 03 12 | 691 | 0.6− | 0.5− | 2001 09 21 | 704 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.0 | 0.2+ | | |
| 1999 03 12 | 691 | 0.7− | 0.3− | 2001 09 21 | 704 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.3− | | |
| 1999 03 12 | 691 | 0.9− | 0.3− | 2004 03 18 | 704 | 0.6+ | 1.2+ | 2006 10 22 | 704 | 0.6+ | 0.3+ | | |
| 1999 03 20 | 691 | 0.1− | 0.2− | 2004 03 18 | 704 | (1.6+ | 1.6+) | 2006 10 22 | 704 | 0.4− | 1.0+ | | |
| 1999 03 20 | 691 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 704 | 0.4+ | 0.5− | | |
| 1999 03 20 | 691 | 0.3− | 0.2− | 2004 03 18 | 704 | 1.4− | 0.3− | 2006 10 22 | 704 | 0.2− | 0.9− | | |
| 2001 08 11 | 608 | 0.1− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 1.2+ | 2006 10 22 | 704 | 0.1+ | 0.0 | | |
| 2001 08 11 | 608 | 0.1− | 0.1+ | 2004 03 22 | 704 | 1.2+ | 0.4− | 2006 10 27 | 704 | 0.6+ | 0.2+ | | |
| 2001 08 11 | 608 | 0.2− | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 1.1+ | 0.5+ | | |
| 2001 08 16 | 704 | 0.0 | 0.5+ | 2004 03 22 | 704 | 0.7+ | 0.7+ | 2006 10 27 | 704 | 1.3− | 1.1+ | | |
| 2001 08 16 | 704 | 0.3+ | 0.9+ | 2004 03 28 | 704 | 0.8+ | 1.1+ | 2006 10 27 | 704 | 0.8− | 1.5+ | | |
| 2001 08 16 | 704 | 0.4+ | 0.0 | 2004 03 28 | 704 | 1.4+ | 1.5+ | 2006 11 13 | 703 | 0.8− | 0.7+ | | |
| 2001 08 16 | 704 | 0.2+ | 0.3− | 2004 03 28 | 704 | 0.3+ | 1.1+ | 2006 11 13 | 703 | 0.5+ | 0.4− | | |
| 2001 08 16 | 704 | 0.2+ | 0.7+ | 2004 03 28 | 704 | (0.6+ | 1.6+) | 2006 11 13 | 703 | 0.4− | 0.4− | | |
| 2001 08 19 | 704 | 1.0− | 0.9+ | 2004 03 28 | 704 | (0.2+ | 1.7+) | 2006 11 13 | 703 | 0.6− | 0.3− | | |
| 2001 08 19 | 704 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.1+ | | |
| 2001 08 19 | 704 | 0.6− | 1.3− | 2006 09 30 | 703 | 0.3− | 0.9− | 2006 11 17 | 704 | 0.5+ | 0.2− | | |
| 2001 08 19 | 704 | (0.1− | 1.9−) | 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.4− | 0.6− | | |
| 2001 08 21 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.1+ | | |
| 2001 08 21 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.9+ | 0.3− | | |
| 2001 08 21 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.6+ | 0.5− | | |
| 2001 08 23 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.6− | 0.3− | 2006 11 20 | 704 | 0.5+ | 0.2− | | |
| 2001 08 23 | 691 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.5− | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.1− | | |
| 2001 08 23 | 691 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | | | | | |
| 2001 08 24 | 644 | 0.3− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.1+ | | | | | | |

**(139572)∗ 2001 QE$_{90}$**

Discovered 2001 Aug. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.85782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18032547 | $\omega$ | 72.44534 | | +0.90341205 | +0.24337242 | |
| $a$ | 3.1028778 | $\Omega$ | 272.31794 | | −0.37739272 | +0.84212177 | |
| $e$ | 0.0104262 | $i$ | 20.68928 | | +0.20352252 | +0.48124921 | |
| $P$ | 5.47 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.6− | 0.1+ | 2001 10 15 | 704 | 0.1− | 0.0 | 2004 03 26 | 704 | 1.7+ | 0.7+ | | |
| 2001 07 20 | 644 | 0.4− | 0.1+ | 2001 10 15 | 704 | 0.3− | 0.5+ | 2004 03 26 | 704 | 1.8+ | 1.0+ | | |
| 2001 07 20 | 644 | 0.3− | 0.1+ | 2001 10 15 | 704 | 1.2− | 0.6+ | 2004 03 26 | 704 | 0.5+ | 0.9+ | | |
| 2001 08 16 | 644 | 0.6− | 0.1+ | 2001 10 15 | 704 | 0.0 | 0.4+ | 2004 04 17 | 704 | 0.1+ | 1.6+ | | |
| 2001 08 16 | 644 | 0.3− | 0.1+ | 2001 10 27 | 704 | 0.6− | 0.6− | 2004 04 17 | 704 | 0.6− | 1.1+ | | |
| 2001 08 16 | 644 | 0.5− | 0.3+ | 2001 10 27 | 704 | 0.2− | 0.4− | 2004 04 17 | 704 | 0.2+ | 0.8+ | | |
| 2001 08 22 | 644 | 0.4− | 0.1+ | 2001 10 27 | 704 | 0.6− | 0.0 | 2006 08 10 | 644 | 0.6+ | 0.1+ | | |
| 2001 08 22 | 644 | 0.7− | 0.2+ | 2001 10 27 | 704 | 0.4− | 0.2− | 2006 08 10 | 644 | 0.1− | 0.1+ | | |
| 2001 08 22 | 644 | 0.6− | 0.2+ | 2001 10 29 | 644 | 0.1+ | 0.8+ | 2006 08 10 | 644 | 0.3− | 0.2− | | |
| 2001 08 23 | 704 | 0.4− | 0.5− | 2001 10 29 | 644 | 0.2+ | 1.4+ | 2006 08 25 | 704 | 0.3+ | 1.2+ | | |
| 2001 08 23 | 704 | 0.3− | 0.1+ | 2001 10 29 | 644 | 0.2− | 1.2+ | 2006 08 25 | 704 | 0.3− | 0.6+ | | |
| 2001 08 23 | 704 | 0.1− | 0.2+ | 2001 11 11 | 704 | 0.5+ | 1.0+ | 2006 08 25 | 704 | 0.6+ | 0.7+ | | |
| 2001 08 23 | 704 | 0.1− | 0.4+ | 2001 11 11 | 704 | 0.4+ | 0.2− | 2006 09 01 | 704 | 0.8− | 0.8+ | | |
| 2001 08 23 | 704 | 0.0 | 0.8+ | 2001 11 11 | 704 | 0.8+ | 0.5+ | 2006 09 01 | 704 | 0.6− | 0.6+ | | |
| 2001 09 24 | 704 | 0.5+ | 0.7− | 2001 11 11 | 704 | 0.9+ | 1.1+ | 2006 09 01 | 704 | 0.7− | 0.5+ | | |
| 2001 09 24 | 704 | 0.2− | 0.5− | 2001 11 11 | 704 | 1.7+ | 0.1+ | 2006 09 20 | 703 | 0.5− | 0.1− | | |
| 2001 09 24 | 704 | 0.1− | 0.8− | 2002 12 05 | 704 | 0.6− | 0.7+ | 2006 09 20 | 703 | 0.8− | 1.0− | | |
| 2001 09 24 | 704 | 0.0 | 1.1− | 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 09 20 | 703 | 0.6− | 0.4− | | |
| 2001 09 24 | 704 | 0.2+ | 1.4− | 2002 12 05 | 704 | 0.0 | 0.6+ | 2006 09 20 | 703 | 0.5− | 0.8− | | |
| 2001 09 28 | 704 | 0.5+ | 0.4+ | 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 703 | 0.4+ | 0.6+ | | |
| 2001 09 28 | 704 | 1.0+ | 0.2+ | 2002 12 05 | 704 | 0.4+ | 0.0 | 2006 09 27 | 703 | 1.4+ | 0.7− | | |
| 2001 09 28 | 704 | 0.1− | 0.3+ | 2003 01 07 | 704 | 0.4− | 0.2− | 2006 09 27 | 703 | 0.3− | 0.5+ | | |
| 2001 09 28 | 704 | 0.6+ | 0.5+ | 2003 01 07 | 704 | 0.3− | 0.9− | 2006 09 27 | 703 | 0.7+ | 0.0 | | |
| 2001 09 28 | 704 | 0.1+ | 0.8+ | 2003 01 07 | 704 | 0.9− | 1.0− | | | | | | |
| 2001 10 15 | 704 | 0.2− | 0.0 | 2004 03 26 | 704 | 1.3+ | 0.9+ | | | | | | |

**(139573)∗ 2001 QH$_{90}$ = 2002 AT$_{206}$**

Discovered 2001 Aug. 18 by NEAT at Palomar.

Id. G. V. Williams (d, *MPO* 75044)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.76171 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17624120 | $\omega$ | 265.04334 | | +0.89352297 | −0.36064891 | |
| $a$ | 3.1506325 | $\Omega$ | 115.88094 | | +0.42744179 | +0.86563046 | |
| $e$ | 0.2538381 | $i$ | 17.29583 | | −0.13751440 | +0.34729854 | |
| $P$ | 5.59 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 14 | 566 | 1.0+ | 0.8− | 2001 11 22 | 644 | 0.0 | 0.2+ | 2006 07 28 | F84 | 0.2+ | 0.3− | | |
| 1997 01 14 | 566 | 1.6+ | 0.2− | 2001 11 22 | 644 | 0.2+ | 0.2+ | 2006 07 28 | F84 | 0.2− | 0.5− | | |
| 1997 01 14 | 566 | 0.9− | 0.4− | 2001 11 22 | 644 | 0.4− | 0.1− | 2006 07 28 | F84 | 0.6+ | 0.1− | | |
| 2001 08 18 | 644 | 0.5− | 0.5+ | 2002 01 09 | 645 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.2+ | | |
| 2001 08 18 | 644 | 0.6− | 0.4+ | 2002 01 09 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.3+ | 0.2+ | | |
| 2001 08 18 | 644 | 0.7− | 0.6+ | 2002 01 12 | 704 | 0.4− | 0.7+ | 2006 08 14 | 644 | 0.0 | 0.3+ | | |
| 2001 08 22 | 644 | (1.2+ | 1.9+) | 2002 01 12 | 704 | 0.4+ | 0.4+ | 2006 08 19 | 644 | 0.0 | 0.1+ | | |
| 2001 08 22 | 644 | (1.5+ | 2.0+) | 2002 01 12 | 704 | 0.5− | 0.8+ | 2006 08 19 | 644 | 0.1+ | 0.0 | | |
| 2001 08 22 | 644 | (0.5+ | 2.2+) | 2002 01 12 | 704 | 0.5+ | 0.2+ | 2006 08 19 | 644 | 0.1− | 0.2+ | | |
| 2001 08 28 | 644 | 0.3+ | 0.4+ | 2002 01 12 | 704 | 0.0 | 0.7+ | 2006 08 23 | 644 | 0.0 | 0.2+ | | |
| 2001 08 28 | 644 | 0.4+ | 0.0 | 2002 01 13 | 645 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.1− | | |
| 2001 08 28 | 644 | 0.0 | 0.2− | 2002 01 13 | 645 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.1+ | 0.0 | | |
| 2001 09 23 | 699 | 0.4− | 0.0 | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.3− | 0.0 | | |
| 2001 09 23 | 699 | 0.2− | 0.3+ | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.1− | 0.2+ | | |
| 2001 09 23 | 699 | 1.0− | 0.3− | 2005 05 04 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.0 | | |
| 2001 09 23 | 699 | 0.5− | 0.4− | 2005 05 04 | 691 | 0.1− | 0.3+ | 2006 09 12 | E12 | 0.1+ | 0.2+ | | |
| 2001 10 14 | 699 | 0.1− | 0.6+ | 2005 05 04 | 691 | 0.4+ | 0.2+ | 2006 09 12 | E12 | 0.5− | 0.4− | | |
| 2001 10 14 | 699 | 0.1− | 0.6+ | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 09 12 | E12 | 0.2− | 0.0 | | |
| 2001 10 14 | 699 | 0.3+ | 0.5+ | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 09 12 | E12 | 0.6+ | 0.7− | | |
| 2001 10 14 | 699 | 0.1+ | 0.4− | 2005 05 10 | 691 | 0.1− | 0.3+ | 2006 10 13 | E12 | 1.4+ | 1.1− | | |
| 2001 10 26 | 608 | 0.2+ | 0.6− | 2005 05 14 | 691 | 0.1+ | 0.4+ | 2006 10 13 | E12 | 0.8− | 0.2+ | | |
| 2001 10 26 | 608 | 0.2− | 0.9− | 2005 05 14 | 691 | 0.2+ | 0.4+ | 2006 10 13 | E12 | 0.3+ | 0.1+ | | |
| 2001 10 26 | 608 | 0.1+ | 0.2− | 2005 05 14 | 691 | 0.1− | 0.2+ | 2006 10 13 | E12 | 0.5+ | 0.5− | | |

**(139574)∗ 2001 QR$_{90}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.22193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18377583 | $\omega$ | 225.92590 | | +0.89611883 | +0.24607592 | |
| $a$ | 3.0639179 | $\Omega$ | 116.52183 | | −0.18497129 | +0.96356781 | |
| $e$ | 0.1791974 | $i$ | 24.38007 | | −0.40343111 | +0.10480323 | |
| $P$ | 5.36 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 21 | 260 | 1.3− | 0.1+ | 2001 08 27 | 704 | 0.8+ | 1.0+ | 2005 04 16 | 703 | 0.1− | 1.0+ | | |
| 1990 09 21 | 260 | 1.2+ | 0.7− | 2001 08 27 | 704 | 0.7+ | 0.8+ | 2005 04 16 | 703 | 0.8− | 0.5− | | |
| 2001 08 19 | 704 | 0.6− | 0.2− | 2001 08 27 | 704 | 0.9+ | 0.7+ | 2005 05 13 | 699 | 0.7+ | 1.0+ | | |
| 2001 08 19 | 704 | 0.0 | 1.2+ | 2001 08 27 | 704 | 0.8+ | 1.1+ | 2005 05 13 | 699 | 1.0+ | 0.1+ | | |
| 2001 08 19 | 704 | 0.1+ | 0.9+ | 2001 09 11 | 704 | 0.5− | 0.4+ | 2005 05 13 | 699 | 0.2+ | 0.9+ | | |
| 2001 08 19 | 704 | 0.0 | 0.9− | 2001 09 11 | 704 | 0.4+ | 0.2+ | 2005 05 13 | 699 | 0.5+ | 0.2− | | |
| 2001 08 19 | 704 | 0.9− | 0.4− | 2001 09 11 | 704 | 1.0+ | 1.0+ | 2006 07 18 | E12 | 0.1− | 0.2− | | |
| 2001 08 22 | 704 | 0.8− | 0.4+ | 2001 09 11 | 704 | 0.2+ | 0.1+ | 2006 07 18 | E12 | 0.3− | 0.1− | | |
| 2001 08 22 | 704 | 0.1+ | 0.2+ | 2001 09 23 | 644 | 0.1− | 0.3+ | 2006 07 18 | E12 | 0.2− | 0.4− | | |
| 2001 08 22 | 704 | 1.9+ | 1.1+ | 2001 09 23 | 644 | 0.4− | 0.3− | 2006 07 18 | E12 | 0.8− | 0.1− | | |
| 2001 08 22 | 704 | 0.3− | 0.4− | 2001 09 23 | 644 | 0.3− | 0.1− | 2006 08 14 | E12 | 0.0 | 0.2+ | | |
| 2001 08 22 | 704 | 0.2+ | 0.1+ | 2001 09 25 | 699 | 0.4− | 0.7+ | 2006 08 14 | E12 | 0.3− | 0.2− | | |
| 2001 08 23 | 704 | 0.1+ | 0.6− | 2001 09 25 | 699 | 0.1− | 0.3− | 2006 08 14 | E12 | 0.0 | 0.0 | | |
| 2001 08 23 | 704 | 0.1+ | 0.0 | 2001 09 25 | 699 | 0.6− | 0.2+ | 2006 08 14 | E12 | 0.0 | 0.3+ | | |
| 2001 08 23 | 704 | 0.5− | 0.5+ | 2001 09 25 | 699 | 0.7− | 0.2− | 2006 08 25 | E12 | 0.7+ | 0.3+ | | |
| 2001 08 23 | 704 | 0.2− | 0.5+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 08 25 | E12 | 0.2− | 0.4+ | | |
| 2001 08 23 | 704 | 0.2+ | 0.1− | 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 08 25 | E12 | 0.7+ | 0.0 | | |
| 2001 08 26 | 644 | 0.7− | 0.9− | 2004 05 14 | 645 | 0.0 | 0.0 | 2006 09 12 | E12 | 0.6− | 0.0 | | |
| 2001 08 26 | 644 | 0.9− | 0.7− | 2004 05 14 | 645 | 0.1+ | 0.1+ | 2006 09 12 | E12 | 0.2+ | 1.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 1.3− | 0.9− | 2005 04 16 | 703 | 0.0 | 0.1+ | 2006 09 12 | E12 | 0.7+ | 0.3+ |
| 2001 08 27 | 704 | 0.4− | 1.0+ | 2005 04 16 | 703 | 0.9− | 0.4+ | 2006 09 12 | E12 | 0.4− | 0.3− |

**(139575)∗ 2001 QW$_{91}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.16291 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20995307 | $\omega$ | 31.13519 | | +0.35306702 | | +0.93084590 |
| $a$ | 2.8036334 | $\Omega$ | 259.68296 | | −0.87688078 | | +0.29412928 |
| $e$ | 0.0865220 | $i$ | 5.49312 | | −0.32622656 | | +0.21682684 |
| $P$ | 4.69 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 30 | 691 | 0.3+ | 0.3− | 2004 01 23 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 699 | (1.5+ | 0.4+) |
| 1997 11 30 | 691 | 0.2+ | 0.0 | 2004 01 23 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.8+ | 0.4+ |
| 1997 11 30 | 691 | 0.3− | 0.6− | 2004 01 26 | 699 | (0.7− | 2.0+) | 2006 09 19 | 291 | 0.4+ | 0.1− |
| 2001 07 25 | 608 | 0.2− | 0.3− | 2004 01 26 | 699 | (0.6− | 1.8+) | 2006 09 19 | 291 | 0.3+ | 0.0 |
| 2001 07 25 | 608 | 0.7− | 0.6+ | 2004 01 26 | 699 | 0.9+ | 1.3+ | 2006 09 19 | 291 | 0.4+ | 0.0 |
| 2001 07 25 | 608 | 0.5− | 0.3− | 2004 01 26 | 699 | 0.1− | 1.1+ | 2006 09 19 | 703 | 0.7− | 0.7− |
| 2001 07 25 | 608 | 0.2− | 0.2+ | 2004 02 25 | 333 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 1.0− | 1.0+ |
| 2001 07 25 | 608 | 0.6− | 0.4+ | 2004 02 25 | 333 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.8− | 0.6− |
| 2001 07 25 | 608 | 0.5− | 0.3+ | 2004 02 25 | 333 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.7+ | 0.3− |
| 2001 08 17 | 644 | 0.1− | 0.0 | 2004 02 26 | 333 | 0.2+ | 1.2+ | 2006 09 19 | 699 | 0.2− | 0.1− |
| 2001 08 17 | 644 | 0.3+ | 0.0 | 2004 02 26 | 333 | 0.2+ | 1.0+ | 2006 09 19 | 703 | 0.4− | 0.4− |
| 2001 08 17 | 644 | 0.1− | 0.1− | 2004 02 26 | 333 | 0.3+ | 0.9+ | 2006 09 19 | 699 | 0.7− | 0.6+ |
| 2001 08 19 | 704 | 0.2+ | 0.0 | 2006 08 21 | 691 | 0.7− | 0.6+ | 2006 09 25 | 704 | 1.4+ | 0.8− |
| 2001 08 19 | 704 | 0.1+ | 0.1+ | 2006 08 21 | 691 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.4− | 0.4+ |
| 2001 08 19 | 704 | 0.4− | 0.6+ | 2006 08 21 | 691 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.6+ | 0.3− |
| 2001 08 19 | 704 | 0.4− | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.2+ | 2006 09 30 | 699 | 0.3+ | 0.5+ |
| 2001 08 23 | 704 | 0.8+ | 1.2− | 2006 08 29 | 703 | 0.0 | 0.8+ | 2006 09 30 | 699 | 0.4− | 0.2− |
| 2001 08 23 | 704 | 0.1− | 1.1+ | 2006 08 29 | 703 | 0.2+ | 1.1+ | 2006 09 30 | 699 | 0.4− | 1.5+ |
| 2001 08 23 | 704 | 0.6+ | 1.0+ | 2006 08 29 | 703 | 0.5+ | 0.4+ | 2006 09 30 | 699 | 0.1+ | 0.0 |
| 2001 08 23 | 704 | 0.4− | 0.8+ | 2006 09 12 | 703 | 0.5− | 0.8− | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2001 09 08 | 704 | 0.7+ | 0.4− | 2006 09 12 | 703 | 0.7− | 0.3− | 2006 10 10 | 644 | 0.4− | 0.0 |
| 2001 09 08 | 704 | 0.5+ | 0.2+ | 2006 09 12 | 703 | (0.4− | 2.2−) | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 09 08 | 704 | 0.1− | 0.2+ | 2006 09 12 | 703 | 1.2− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 09 08 | 704 | 0.4+ | 0.5− | 2006 09 16 | 699 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2004 01 23 | 704 | 0.4− | 0.1− | 2006 09 16 | 699 | (0.5− | 1.9+) | 2006 10 23 | 644 | 0.2+ | 0.6+ |
| 2004 01 23 | 704 | 1.4+ | 1.0+ | 2006 09 16 | 699 | 0.8+ | 1.1+ | | | | |

**(139576)∗ 2001 QZ$_{91}$ = 2005 NX$_{82}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84759)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.52327 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23567616 | $\omega$ | 209.85448 | | −0.12582963 | | +0.98704312 |
| $a$ | 2.5957266 | $\Omega$ | 53.09571 | | −0.88375708 | | −0.06593180 |
| $e$ | 0.1549955 | $i$ | 7.15244 | | −0.45071091 | | −0.14628352 |
| $P$ | 4.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.1+ | 0.2+ | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.1− |
| 2001 08 19 | 704 | 0.5− | 0.7− | 2005 07 06 | E12 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2001 08 19 | 704 | 1.0− | 0.9+ | 2005 07 06 | E12 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 08 23 | 704 | 0.7+ | 0.5+ | 2005 07 06 | E12 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2001 08 23 | 704 | 0.0 | 0.7+ | 2005 07 06 | E12 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 08 23 | 704 | 0.1+ | 0.1+ | 2005 07 10 | 428 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2001 08 23 | 704 | 0.7+ | 0.7+ | 2005 07 10 | 428 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2001 08 23 | 704 | 0.0 | 0.2− | 2005 07 16 | 428 | 0.2− | 0.5− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 08 24 | 608 | 1.1− | 0.7− | 2005 07 16 | 428 | 1.1− | 0.1+ | 2006 11 01 | 691 | 0.5− | 0.3+ |
| 2001 08 24 | 608 | 0.3− | 0.7− | 2005 07 29 | E12 | (0.4+ | 1.6+) | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2001 08 24 | 608 | 0.2− | 0.5− | 2005 07 29 | E12 | 0.6+ | 0.5− | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2001 08 27 | 644 | 0.4+ | 0.3+ | 2005 07 29 | E12 | 1.1+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.6− |
| 2001 08 27 | 644 | 0.5+ | 0.1− | 2005 07 29 | E12 | 0.1− | 1.1+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 08 27 | 644 | 0.5+ | 0.3+ | 2005 08 24 | E12 | 1.4− | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2004 02 13 | 644 | 0.4+ | 0.4+ | 2005 08 24 | E12 | 0.9+ | 0.4− | 2006 11 14 | 691 | 0.4+ | 0.3+ |
| 2004 02 13 | 644 | 0.6− | 0.5+ | 2005 08 24 | E12 | 0.6− | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2004 02 13 | 644 | 0.1− | 0.2+ | 2005 08 24 | E12 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.4− |
| 2004 02 16 | 704 | 0.9+ | 1.1− | 2006 09 28 | G96 | 0.5+ | 0.1− | 2006 11 16 | 703 | 0.8− | 0.5+ |
| 2004 02 16 | 704 | 0.1+ | 1.1+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.4− | 0.5+ |
| 2004 02 16 | 704 | 0.5+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.6− | 2006 11 16 | 703 | 0.6− | 0.6+ |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.4− | | | | |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | | | | |

**(139577)∗ 2001 QP$_{93}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.12360 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17860487 | $\omega$ | 332.31323 | | +0.93058039 | | −0.30820409 |
| $a$ | 3.1227738 | $\Omega$ | 47.09173 | | +0.36543567 | | +0.74985576 |
| $e$ | 0.2000378 | $i$ | 15.64810 | | +0.02183809 | | +0.58542855 |
| $P$ | 5.52 | $H$ | 13.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.2+ | 0.5+ | 2001 11 24 | 704 | 0.8+ | 0.0 | 2004 03 22 | 704 | 0.5− | 0.8+ |
| 2001 08 22 | 704 | 0.0 | 0.3+ | 2001 11 24 | 704 | 0.3+ | 0.4− | 2004 04 09 | E12 | 0.4+ | 1.2+ |
| 2001 08 22 | 704 | 0.0 | 0.6+ | 2001 11 24 | 704 | 0.5+ | 0.3− | 2004 04 09 | E12 | 0.1− | 0.5+ |
| 2001 08 22 | 704 | 0.0 | 0.2+ | 2001 11 24 | 704 | 0.6+ | 0.1− | 2004 04 09 | E12 | 0.5− | 0.5+ |
| 2001 08 22 | 704 | 0.2− | 0.7+ | 2001 11 27 | 704 | (2.9+ | 0.8−) | 2004 04 09 | E12 | 0.1− | 0.0 |
| 2001 08 23 | 704 | 0.1+ | 0.4+ | 2001 11 27 | 704 | (3.0+ | 1.2−) | 2004 04 20 | 704 | 1.1+ | 0.6+ |
| 2001 08 23 | 704 | 0.2− | 1.3+ | 2001 11 27 | 704 | (2.7+ | 1.1−) | 2004 04 20 | 704 | 0.7+ | 0.5+ |
| 2001 08 23 | 704 | 0.0 | 0.4+ | 2001 11 27 | 704 | (2.8+ | 1.5−) | 2004 04 20 | 703 | (2.5+ | 2.4−) |
| 2001 08 23 | 704 | 0.2− | 0.8+ | 2001 11 27 | 704 | (2.4+ | 1.8−) | 2004 04 20 | 704 | 1.0+ | 0.8+ |
| 2001 08 23 | 704 | 0.2− | 1.2+ | 2001 12 10 | 704 | 1.0− | 0.8− | 2004 04 20 | 703 | 0.1− | 0.9+ |
| 2001 08 24 | 704 | (2.8− | 3.1+) | 2001 12 10 | 704 | 0.9− | 0.2− | 2004 04 20 | 704 | 1.4+ | 0.4+ |
| 2001 08 24 | 704 | (0.8− | 1.8+) | 2001 12 10 | 704 | 0.7− | 0.2− | 2004 04 20 | 703 | 0.1− | 1.2+ |
| 2001 08 24 | 704 | 0.6− | 1.4+ | 2001 12 10 | 704 | 0.1+ | 0.6− | 2004 04 20 | 704 | 0.9+ | 0.7+ |
| 2001 09 24 | 704 | 0.0 | 0.4+ | 2001 12 10 | 704 | 0.8− | 0.9− | 2004 04 20 | 703 | 0.0 | 0.7+ |
| 2001 09 24 | 704 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.7+ | 1.4+ | 2004 04 22 | 704 | 0.0 | 0.6+ |
| 2001 09 24 | 704 | 0.4− | 0.2− | 2001 12 17 | 704 | 0.1+ | 1.3+ | 2004 04 22 | 704 | 0.4+ | 0.6+ |
| 2001 09 24 | 704 | 0.2− | 0.5+ | 2001 12 17 | 704 | 0.4+ | 1.4+ | 2004 04 22 | 704 | 1.0− | 0.6− |
| 2001 09 24 | 704 | 0.3+ | 0.0 | 2001 12 17 | 704 | 0.4+ | 1.1+ | 2004 04 22 | 704 | 0.5+ | 0.3+ |
| 2001 10 13 | 704 | 0.1− | 0.4+ | 2001 12 18 | 699 | 0.6+ | 0.4− | 2004 04 22 | 704 | 0.9+ | 1.1+ |
| 2001 10 13 | 704 | 0.4− | 0.3+ | 2001 12 18 | 699 | 0.0 | 0.1− | 2004 05 14 | 704 | 0.5+ | 0.1+ |
| 2001 10 13 | 704 | 0.0 | 0.0 | 2001 12 18 | 699 | (1.4+ | 1.8−) | 2004 05 14 | 704 | 0.7+ | 0.0 |
| 2001 10 13 | 704 | 0.5+ | 0.9+ | 2001 12 18 | 699 | 0.4+ | 0.5+ | 2004 05 14 | 704 | 0.1+ | 0.5+ |
| 2001 10 13 | 704 | 0.5+ | 0.6+ | 2001 12 21 | 704 | 0.3+ | 1.3− | 2006 05 22 | E12 | 0.2− | 0.1+ |
| 2001 10 18 | 704 | 0.7+ | 0.3− | 2001 12 21 | 704 | 1.0+ | 0.9− | 2006 05 22 | E12 | 0.5− | 0.0 |
| 2001 10 18 | 704 | 1.1+ | 0.7− | 2001 12 21 | 704 | 0.5+ | 1.0− | 2006 05 22 | E12 | 0.1+ | 0.3+ |
| 2001 10 18 | 704 | 0.6+ | 0.1+ | 2001 12 21 | 704 | 0.5+ | 1.2− | 2006 05 22 | E12 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | (1.5− | 0.4+) | 2001 12 21 | 704 | 0.6+ | 0.8− | 2006 09 14 | 644 | 0.1− | 0.4+ |
| 2001 10 21 | 704 | 1.1− | 0.4+ | 2002 02 08 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 2001 10 21 | 704 | 1.1− | 0.5+ | 2002 02 08 | 704 | 0.7+ | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 1.2− | 0.8+ | 2002 02 08 | 704 | 0.4+ | 0.7+ | 2006 09 20 | 703 | 0.0 | 0.3+ |
| 2001 10 22 | 704 | 0.2+ | 0.1+ | 2002 02 08 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 703 | 0.4− | 0.3+ |
| 2001 10 22 | 704 | 0.2+ | 0.4− | 2002 02 08 | 704 | 0.7+ | 0.1− | 2006 09 20 | 703 | 0.4− | 0.2+ |
| 2001 10 22 | 704 | 0.3− | 0.1+ | 2002 02 12 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 703 | 0.3− | 0.1− |
| 2001 10 22 | 704 | 0.1+ | 0.5+ | 2002 02 12 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.6+ |
| 2001 10 22 | 704 | 0.1− | 0.3− | 2002 02 12 | 704 | 0.6− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.5+ |
| 2001 10 22 | 704 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.4− | 0.9+ | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2001 10 22 | 704 | 0.2− | 0.3+ | 2002 02 12 | 704 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 2001 10 22 | 704 | 0.1− | 0.3− | 2002 02 18 | 704 | 0.0 | 0.3+ | 2006 09 30 | 608 | 0.3− | 0.2− |
| 2001 10 22 | 704 | 0.5+ | 0.4− | 2002 02 18 | 704 | 0.3+ | 0.0 | 2006 09 30 | 608 | 0.1− | 0.4− |
| 2001 10 22 | 704 | 0.5+ | 0.0 | 2002 02 18 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 608 | 0.1− | 0.5− |
| 2001 10 27 | 704 | 0.1+ | 0.2+ | 2003 01 26 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.5− | 0.5+ |
| 2001 10 27 | 704 | 0.0 | 0.5+ | 2003 01 26 | 699 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2001 10 27 | 704 | 0.1− | 0.2+ | 2003 01 26 | 699 | 0.6− | 0.7+ | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2001 10 27 | 704 | 0.0 | 0.4+ | 2003 01 26 | 699 | 0.1− | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.6+ |
| 2001 10 27 | 704 | 0.0 | 0.6+ | 2003 02 01 | 644 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 691 | 0.4− | 0.3− | 2003 02 01 | 644 | 0.6+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 2001 11 11 | 691 | 0.3− | 0.7− | 2003 02 01 | 644 | 0.5+ | 0.0 | 2006 10 28 | 703 | 0.2− | 0.1+ |
| 2001 11 11 | 691 | 1.2− | 0.2+ | 2003 02 21 | 644 | 0.5+ | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.1− | 0.2+ | 2003 02 21 | 644 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.3− | 0.4+ |
| 2001 11 12 | 704 | 0.1− | 0.2+ | 2003 02 21 | 644 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2001 11 12 | 704 | 0.2− | 0.5+ | 2003 02 26 | 704 | 0.4+ | 0.7+ | 2006 11 07 | 644 | 0.2− | 0.8+ |
| 2001 11 12 | 704 | 0.1+ | 1.0+ | 2003 02 26 | 704 | 0.7+ | 0.5+ | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.8+ | 2003 02 26 | 704 | 1.4+ | 0.3− | 2006 11 11 | 704 | (0.3+ | 2.0+) |
| 2001 11 21 | 704 | (0.6− | 2.3−) | 2003 02 26 | 704 | 1.3+ | 0.3+ | 2006 11 11 | 704 | 0.6− | 0.9+ |
| 2001 11 21 | 704 | 0.1− | 0.1− | 2004 03 16 | 704 | 0.9+ | 0.1+ | 2006 11 11 | 704 | 1.1+ | 1.2+ |
| 2001 11 21 | 704 | 1.0− | 1.2− | 2004 03 16 | 704 | 0.7+ | 0.9+ | 2006 11 11 | 704 | 1.2− | 0.9+ |
| 2001 11 21 | 704 | (1.1− | 2.2−) | 2004 03 16 | 704 | 0.8+ | 1.5+ | 2006 11 13 | 644 | 0.1− | 0.5+ |
| 2001 11 21 | 704 | (0.9− | 1.9−) | 2004 03 20 | 699 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2001 11 24 | 704 | (0.2− | 2.5−) | 2004 03 20 | 699 | 0.3− | 0.9+ | 2006 11 13 | 644 | 0.3− | 0.4+ |
| 2001 11 24 | 704 | 0.2+ | 1.3− | 2004 03 20 | 699 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.2− |
| 2001 11 24 | 704 | 0.0 | 1.3− | 2004 03 20 | 699 | 1.2+ | 0.5+ | 2006 11 27 | 703 | 0.5− | 0.6+ |
| 2001 11 24 | 704 | 0.3+ | 1.4− | 2004 03 22 | 704 | 0.3− | 0.7+ | 2006 11 27 | 703 | 1.6− | 0.6+ |
| 2001 11 24 | 704 | 1.0+ | 0.3+ | 2004 03 22 | 704 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.3+ |

**(139578)∗ 2001 QP$_{94}$ = 1999 FE$_{20}$**

Discovered 2001 Aug. 23 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 17854)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.58823 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20361435 | $\omega$ | 183.42312 | | +0.94827434 | −0.31736504 | |
| $a$ | 2.8615222 | $\Omega$ | 195.08692 | | +0.29193040 | +0.88099434 | |
| $e$ | 0.0796907 | $i$ | 1.63596 | | +0.12470936 | +0.35089657 | |
| $P$ | 4.84 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.3− | 0.4− | 2001 09 24 | 704 | 0.2+ | 1.2+ | 2006 09 15 | 691 | 0.0 | 0.1− |
| 1999 03 19 | 691 | 0.1+ | 0.2− | 2001 09 24 | 704 | 0.9+ | 0.8− | 2006 09 18 | 699 | 0.1+ | 0.1− |
| 1999 03 19 | 691 | 0.1− | 0.4− | 2001 09 24 | 704 | 1.4+ | 0.8+ | 2006 09 18 | 699 | 0.8− | 1.0− |
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2001 09 25 | 644 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.3+ | 0.7+ |
| 1999 03 20 | 645 | 0.1− | 0.2+ | 2001 09 25 | 644 | 0.0 | 0.7+ | 2006 09 18 | 699 | 0.5− | 1.5+ |
| 1999 03 21 | 645 | 0.0 | 0.3+ | 2001 09 25 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.2+ | 2001 09 26 | 704 | 0.1+ | 1.1− | 2006 09 19 | 691 | 0.3− | 0.8− |
| 1999 03 25 | 691 | 0.4+ | 1.4− | 2001 09 26 | 704 | 1.1+ | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.6− |
| 1999 03 25 | 691 | 0.2− | 0.4− | 2001 09 26 | 704 | (1.6− | 1.0−) | 2006 09 20 | 704 | (1.7+ | 0.4+) |
| 1999 03 25 | 691 | 0.2− | 0.8− | 2001 09 26 | 704 | 0.4− | 1.1− | 2006 09 20 | 704 | 0.0 | 1.1+ |
| 2001 08 23 | 333 | 0.2+ | 0.3− | 2001 09 26 | 704 | 0.1+ | 1.1− | 2006 09 20 | 704 | 0.4+ | 0.6+ |
| 2001 08 23 | 333 | (1.6+ | 1.2−) | 2001 10 11 | 644 | 0.6− | 0.3+ | 2006 09 20 | 644 | 0.4+ | 0.3+ |
| 2001 08 24 | 333 | 0.2− | 0.3− | 2001 10 11 | 644 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 2001 08 24 | 333 | 1.0+ | 0.1+ | 2001 10 11 | 644 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2001 08 24 | 704 | 0.5+ | 0.1− | 2001 10 13 | 704 | 0.8− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2001 08 24 | 704 | 0.6+ | 0.5− | 2001 10 13 | 704 | 1.0− | 0.5− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2001 08 24 | 704 | 0.1− | 0.7+ | 2001 10 13 | 704 | 0.0 | 1.0− | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2001 08 24 | 704 | 0.3− | 0.1+ | 2001 10 17 | 644 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.4− |
| 2001 08 27 | 699 | 0.3− | 0.8+ | 2001 10 17 | 644 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 08 27 | 699 | (1.6− | 0.2+) | 2001 10 17 | 644 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 08 27 | 699 | 0.6− | 0.9+ | 2001 10 17 | 644 | 0.5− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2001 08 27 | 699 | 0.6− | 0.0 | 2001 10 17 | 644 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.8+ | 0.5+ |
| 2001 09 11 | 699 | 0.8− | 0.1− | 2001 10 17 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.5− | 0.6+ |
| 2001 09 11 | 699 | 1.0− | 0.6+ | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.7− |
| 2001 09 11 | 699 | 0.3− | 0.1− | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 1.3+ |
| 2001 09 11 | 699 | 0.5− | 0.5+ | 2001 10 20 | 704 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.7+ | 1.3− |
| 2001 09 14 | 644 | 0.3− | 0.8+ | 2001 10 20 | 704 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 09 14 | 644 | 0.3− | 0.7+ | 2001 10 20 | 704 | 0.4+ | 1.3+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2001 09 14 | 644 | 0.3− | 0.7+ | 2002 11 07 | 645 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.2− | 0.2− |
| 2001 09 16 | 704 | 1.5− | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 10 15 | 703 | 1.0− | 0.5− |
| 2001 09 16 | 704 | 0.4− | 0.4− | 2003 01 08 | 704 | 0.2+ | 0.1− | 2006 10 15 | 703 | 0.1− | 0.6− |
| 2001 09 16 | 704 | 0.1− | 0.6− | 2003 01 08 | 704 | 0.2+ | 0.1− | 2006 10 15 | 703 | 0.2+ | 0.1− |
| 2001 09 18 | 699 | 0.9− | 0.1+ | 2003 01 08 | 017 | (2.5+ | 7.8+) | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2001 09 18 | 699 | 0.9− | 1.1+ | 2003 01 08 | 017 | (2.2+ | 0.4+) | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2001 09 18 | 699 | (0.3+ | 2.2+) | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 09 18 | 699 | 0.3+ | 0.9+ | 2004 03 27 | 704 | 0.8− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.3− | 0.9+ | 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.3− | 0.8+ | 2004 03 29 | 691 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2004 03 29 | 691 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.6− | 1.0+ | 2004 03 29 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.3+ | 0.8+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.4+ | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.5+ | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.7+ | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 10 29 | 291 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.9+ | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.6+ | 1.0+ | 2006 09 06 | 644 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2001 09 24 | 704 | 0.3+ | 0.3− | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 09 24 | 704 | 1.3+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 1.0− | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2001 09 24 | 704 | 0.6− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.6− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2001 09 24 | 704 | 0.0 | 0.9+ | 2006 09 14 | 703 | 0.1− | 0.8− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 09 24 | 704 | 0.1− | 0.5− | 2006 09 14 | 703 | 1.1+ | 1.0− | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2001 09 24 | 704 | (0.0 | 2.1+) | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2001 09 24 | 704 | 0.1+ | 0.5− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 1.2− |

**(139579)∗ 2001 QB$_{96}$ = 2001 QL$_{324}$**

Discovered 2001 Aug. 23 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 24065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.86903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20410030 | $\omega$ | 119.35819 | | +0.90401430 | −0.42718273 | |
| $a$ | 2.8569784 | $\Omega$ | 265.93497 | | +0.38625847 | +0.83275269 | |
| $e$ | 0.0816435 | $i$ | 0.94922 | | +0.18320082 | +0.35219010 | |
| $P$ | 4.83 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.4− | 0.3+ | 2002 12 05 | 704 | 0.1+ | 0.7+ | 2005 06 13 | G96 | 0.2− | 0.1− |
| 2001 08 16 | 704 | 1.1− | 0.7+ | 2002 12 05 | 704 | 0.5− | 0.8+ | 2005 06 13 | G96 | 0.2− | 0.4+ |
| 2001 08 16 | 704 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.6− | 0.4+ | 2005 06 13 | G96 | 0.0 | 0.4+ |
| 2001 08 16 | 704 | 0.5+ | 0.5+ | 2002 12 06 | 704 | 0.1+ | 0.8+ | 2005 06 13 | G96 | 0.2+ | 0.2− |
| 2001 08 16 | 704 | 0.4− | 0.4− | 2002 12 06 | 704 | 1.0+ | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 2001 08 17 | 644 | 0.4− | 0.3+ | 2002 12 06 | 704 | (0.2− | 1.8+) | 2006 08 19 | 691 | 0.0 | 0.2+ |
| 2001 08 17 | 644 | 0.4− | 0.2+ | 2002 12 06 | 704 | 0.6+ | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 2001 08 17 | 644 | 0.2− | 0.3+ | 2002 12 10 | 704 | 0.6+ | 0.7− | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 2001 08 23 | 691 | 0.4− | 0.1− | 2002 12 10 | 704 | 0.7+ | 0.8− | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2001 08 23 | 691 | 0.5− | 0.2+ | 2002 12 10 | 704 | 0.7+ | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.1− |
| 2001 08 23 | 691 | 0.2− | 0.1− | 2002 12 10 | 704 | 0.7+ | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.1+ |
| 2001 08 24 | 699 | 0.0 | 1.1+ | 2002 12 10 | 704 | 1.0+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.5− |
| 2001 08 24 | 699 | 0.9− | 0.6+ | 2002 12 10 | 704 | 0.6+ | 1.0− | 2006 08 28 | 703 | 1.3− | 0.5+ |
| 2001 08 24 | 699 | 1.1+ | 0.7+ | 2002 12 10 | 704 | (1.0+ | 2.5+) | 2006 08 28 | 703 | 0.3− | 0.7+ |
| 2001 08 24 | 699 | 0.2− | 0.1+ | 2002 12 11 | 291 | 0.6− | 0.5− | 2006 09 13 | 644 | 0.1+ | 0.1− |
| 2001 08 24 | 691 | 0.2− | 0.0 | 2002 12 11 | 291 | 0.4+ | 0.5+ | 2006 09 13 | 644 | 0.3− | 0.4− |
| 2001 08 24 | 691 | 0.1− | 0.0 | 2002 12 11 | 291 | 0.7− | 1.2+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2001 08 24 | 691 | 0.1− | 0.1+ | 2003 01 04 | 704 | 0.4− | 0.4− | 2006 09 17 | 703 | (0.1+ | 1.7−) |
| 2001 09 19 | 691 | 0.4+ | 0.1− | 2003 01 04 | 704 | 0.6+ | 0.2− | 2006 09 17 | 703 | 0.7+ | 1.3− |
| 2001 09 19 | 691 | 0.2+ | 0.3+ | 2003 01 04 | 704 | 0.9− | 1.0+ | 2006 09 17 | 703 | 0.6− | 0.1+ |
| 2001 09 19 | 691 | 0.2+ | 0.3+ | 2003 01 04 | 704 | (0.4− | 1.6+) | 2006 09 17 | 703 | 1.0+ | 0.9− |
| 2001 09 20 | 704 | 1.1+ | 0.3− | 2003 01 05 | 291 | 0.5− | 0.3− | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.6+ | 1.2+ | 2003 01 05 | 291 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.1− |
| 2001 09 20 | 704 | (1.1+ | 1.9+) | 2003 01 05 | 291 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.4− |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2004 02 26 | 704 | 0.9+ | 1.0+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.7+ | 0.7+ | 2004 02 26 | 704 | (2.1+ | 1.0+) | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2002 12 04 | 695 | 0.1+ | 0.0 | 2004 02 26 | 704 | (2.1+ | 0.3+) | 2006 11 21 | G96 | 0.6+ | 0.1− |
| 2002 12 04 | 695 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.4+ | 1.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2004 03 28 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | (1.7+ | 0.9−) | 2004 03 28 | 691 | 0.0 | 0.3+ | | | | |
| 2002 12 05 | 704 | 0.3− | 1.1− | 2004 03 28 | 691 | 0.4+ | 0.6+ | | | | |

**(139580)∗ 2001 QZ$_{96}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.78683 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21920988 | $\omega$ | 342.44959 | | −0.28871768 | +0.95471626 | |
| $a$ | 2.7241392 | $\Omega$ | 270.72259 | | −0.86956956 | −0.29287938 | |
| $e$ | 0.1103729 | $i$ | 4.11920 | | −0.40061312 | −0.05233096 | |
| $P$ | 4.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 0.0 | 1.0+ | 2002 11 14 | 704 | 0.9− | 0.7+ | 2006 09 25 | 683 | (3.4+ | 1.1−) |
| 2000 03 27 | 699 | 0.8− | 0.5+ | 2002 11 14 | 704 | (0.9+ | 1.7+) | 2006 09 25 | 683 | (1.0+ | 2.0−) |
| 2000 03 27 | 699 | 0.3+ | 1.5+ | 2002 11 14 | 704 | 1.4+ | 0.9+ | 2006 09 27 | 683 | 0.2+ | 0.4− |
| 2000 03 27 | 699 | 0.2− | 0.2+ | 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 09 27 | 683 | (2.6+ | 1.0−) |
| 2000 05 01 | 699 | 0.1+ | 0.4+ | 2002 11 24 | 644 | 0.2− | 0.7+ | 2006 09 27 | 683 | 0.2+ | 1.0+ |
| 2000 05 01 | 699 | 0.9+ | 0.9+ | 2002 11 24 | 644 | 0.3− | 0.5+ | 2006 09 30 | 683 | 0.3− | 0.7+ |
| 2000 05 01 | 699 | 1.5+ | 1.9+ | 2002 12 11 | 644 | 0.4− | 0.5+ | 2006 09 30 | 683 | 0.3+ | 0.5+ |
| 2000 05 01 | 699 | 0.5+ | 1.2− | 2002 12 11 | 644 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2001 07 16 | 608 | 0.2− | 0.9− | 2002 12 11 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.5− |
| 2001 07 16 | 608 | 0.1+ | 0.4− | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 30 | 683 | 1.0− | 0.8+ |
| 2001 07 16 | 608 | 0.0 | 0.1+ | 2004 02 11 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.8− |
| 2001 08 17 | 704 | 0.4+ | 0.7+ | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.6− |
| 2001 08 17 | 704 | 0.1− | 0.2+ | 2004 02 17 | 704 | 0.4− | 0.1+ | 2006 10 03 | 704 | 0.4− | 0.3+ |
| 2001 08 17 | 704 | 0.7+ | 0.0 | 2004 02 17 | 704 | 0.2+ | 1.0+ | 2006 10 03 | 704 | 1.1− | 0.3+ |
| 2001 08 24 | 704 | 0.2+ | 0.5+ | 2004 02 17 | 704 | 0.8+ | 0.8+ | 2006 10 03 | 704 | 0.1+ | 0.9− |
| 2001 08 24 | 704 | 1.2− | 0.1+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2001 08 24 | 704 | 0.4− | 0.1+ | 2004 02 17 | 704 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2001 09 08 | 704 | 0.3− | 0.4+ | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.4+ |
| 2001 09 08 | 704 | 0.9+ | 0.0 | 2005 08 04 | 644 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.7+ |
| 2001 09 08 | 704 | 0.6− | 0.1− | 2005 08 04 | 644 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2001 09 08 | 704 | 0.1− | 1.1+ | 2006 09 18 | 704 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.5− | 1.5+ |
| 2001 09 08 | 704 | 0.2− | 0.6+ | 2006 09 18 | 704 | 0.6+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 1.0+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.7+ | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.8− | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 2001 09 22 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 699 | 0.8− | 0.5− | 2006 11 11 | 703 | 0.8+ | 0.4+ |
| 2001 09 22 | 704 | 0.0 | 0.3+ | 2006 09 25 | 704 | (1.8− | 1.1−) | 2006 11 11 | 703 | 0.9− | 1.0− |
| 2001 09 22 | 704 | 1.1− | 0.7− | 2006 09 25 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2002 11 01 | 644 | 0.4+ | 0.6− | 2006 09 25 | 704 | 1.2− | 0.8+ | 2006 11 20 | G96 | 0.5+ | 0.6− |
| 2002 11 01 | 644 | 0.1− | 0.4− | 2006 09 25 | 704 | 0.2+ | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2002 11 01 | 644 | 0.4+ | 0.6− | 2006 09 25 | 704 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.7+ | 0.5− |
| 2002 11 14 | 704 | 0.5− | 0.9+ | 2006 09 25 | 683 | (2.0+ | 2.1−) | 2006 11 20 | G96 | 0.5− | 0.3− |

**(139581)∗ 2001 QJ$_{103}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.25678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21906754 | $\omega$ | 171.38302 | | +0.36243590 | +0.91917761 | |
| $a$ | 2.7253191 | $\Omega$ | 119.73991 | | −0.86533167 | +0.39329553 | |
| $e$ | 0.0912331 | $i$ | 10.22407 | | −0.34618106 | −0.02076401 | |
| $P$ | 4.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.5+ | 0.1+ | 2001 09 11 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2001 07 16 | 608 | 0.4+ | 0.2+ | 2001 09 11 | 704 | 0.3+ | 1.0− | 2006 09 19 | 703 | (1.7+ | 0.6−) |
| 2001 07 16 | 608 | 0.5+ | 0.2+ | 2001 09 11 | 704 | 1.0− | 0.6− | 2006 09 29 | 699 | 1.1− | 1.1+ |
| 2001 07 27 | 699 | 0.3+ | 0.9+ | 2002 12 05 | 608 | 0.5− | 0.5− | 2006 09 29 | 699 | 0.7+ | 0.6− |
| 2001 07 27 | 699 | 1.2+ | 1.2+ | 2002 12 05 | 608 | 0.5− | 0.7− | 2006 09 29 | 699 | 0.1+ | 0.1− |
| 2001 07 27 | 699 | 0.7+ | 0.1+ | 2002 12 05 | 608 | 1.0− | 0.9− | 2006 09 29 | 699 | 0.3+ | 1.2+ |
| 2001 07 27 | 699 | 0.7+ | 0.2− | 2004 01 23 | 704 | 0.6+ | 1.5+ | 2006 10 11 | 291 | 0.2− | 0.1+ |
| 2001 08 14 | 608 | 0.6+ | 0.3+ | 2004 01 23 | 704 | (0.4− | 2.1+) | 2006 10 11 | 291 | 0.2− | 0.1+ |
| 2001 08 14 | 608 | 0.2+ | 0.4− | 2004 01 23 | 704 | (0.3+ | 2.7+) | 2006 10 11 | 291 | 0.3− | 0.1+ |
| 2001 08 14 | 608 | 0.6+ | 0.1+ | 2004 02 16 | 704 | 1.2+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2001 08 19 | 704 | 0.5− | 0.7+ | 2004 02 16 | 704 | (1.6+ | 0.2+) | 2006 10 17 | 703 | 0.7− | 0.4+ |
| 2001 08 19 | 704 | 0.7− | 0.5+ | 2004 02 16 | 704 | 1.0+ | 0.6+ | 2006 10 17 | 703 | 1.0+ | 0.9+ |
| 2001 08 19 | 704 | 1.4− | 0.6− | 2004 02 16 | 691 | 1.5+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2001 08 19 | 704 | 0.6+ | 1.2+ | 2004 02 16 | 691 | 0.4− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 08 19 | 704 | 0.1− | 0.1− | 2004 02 16 | 691 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2001 08 22 | 608 | 0.5− | 0.1− | 2004 02 17 | 608 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 08 22 | 608 | 1.0− | 0.2+ | 2004 02 17 | 608 | 0.6− | 0.5+ | 2006 10 28 | 703 | 0.4+ | 0.2− |
| 2001 08 22 | 608 | 0.6− | 0.1+ | 2004 02 17 | 608 | 0.6− | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.5− |
| 2001 08 23 | 699 | 0.2− | 0.7+ | 2005 06 03 | E12 | 0.1− | 0.6+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2001 08 23 | 699 | 0.7+ | 0.4+ | 2005 06 03 | E12 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.6+ | 0.5− |
| 2001 08 23 | 699 | 0.6− | 0.4+ | 2005 06 03 | E12 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.0 |
| 2001 08 23 | 699 | 0.4+ | 0.6+ | 2005 06 03 | E12 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2001 08 24 | 704 | 0.4− | 0.3− | 2005 06 09 | 703 | 0.8− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.0 |
| 2001 08 24 | 704 | 0.2− | 0.8+ | 2005 06 09 | 703 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2001 08 24 | 704 | 0.4− | 0.3− | 2005 06 09 | 703 | 0.7+ | 0.5+ | 2006 11 17 | 703 | 1.1+ | 1.0+ |
| 2001 08 28 | 644 | (0.2+ | 2.6−) | 2005 06 09 | 703 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.8+ |
| 2001 08 28 | 644 | (0.6− | 2.1−) | 2006 09 19 | 703 | 0.3− | 0.9− | 2006 11 17 | 703 | 0.7− | 0.9+ |
| 2001 08 28 | 644 | (0.0 | 2.3−) | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.0 |

**(139582)∗ 2001 QA$_{105}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.45454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17814600 | $\omega$ | 203.49612 | | +0.63218258 | −0.77421097 | |
| $a$ | 3.1281339 | $\Omega$ | 207.32285 | | +0.72106920 | +0.60236603 | |
| $e$ | 0.1481993 | $i$ | 3.83517 | | +0.28355668 | +0.19430012 | |
| $P$ | 5.53 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 1.0− | 0.5− | 2001 11 12 | 704 | 0.4+ | 0.7− | 2004 03 23 | 291 | 0.3− | 0.2+ |
| 2000 08 01 | 704 | 0.2+ | 1.1+ | 2001 11 12 | 704 | 0.2+ | 0.9− | 2004 03 27 | 704 | 1.0+ | 1.1+ |
| 2000 08 01 | 704 | 0.1+ | 0.7+ | 2001 11 16 | 644 | 0.2− | 0.1+ | 2004 03 27 | 704 | (1.2+ | 1.6+) |
| 2000 08 01 | 704 | 0.5− | 0.4+ | 2001 11 16 | 644 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 0.5− | 0.5+ |
| 2000 08 01 | 704 | 1.2− | 0.6+ | 2001 11 16 | 644 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.3− | 0.3+ |
| 2001 08 22 | 704 | 0.2+ | 0.1+ | 2001 11 17 | 704 | 0.4− | 0.2+ | 2004 04 21 | 704 | 0.3− | 0.1+ |
| 2001 08 22 | 704 | 0.4− | 0.3+ | 2001 11 17 | 704 | 0.5− | 0.0 | 2004 04 21 | 704 | 0.3+ | 0.8− |
| 2001 08 22 | 704 | 0.4+ | 1.0+ | 2001 11 17 | 704 | 0.5− | 0.4+ | 2004 04 21 | 704 | 1.0+ | 1.2+ |
| 2001 08 24 | 704 | (0.5+ | 1.8+) | 2001 11 17 | 704 | 0.2− | 0.1+ | 2004 05 10 | 291 | 0.2+ | 0.3+ |
| 2001 08 24 | 704 | 0.2+ | 0.4+ | 2001 11 18 | 704 | 0.2− | 0.0 | 2004 05 10 | 291 | 0.8+ | 0.5+ |
| 2001 08 24 | 704 | 1.4+ | 0.3+ | 2001 11 18 | 704 | 0.2− | 0.3− | 2004 05 10 | 291 | 1.0+ | 0.2+ |
| 2001 08 24 | 704 | (1.7+ | 0.1+) | 2001 11 18 | 704 | 0.0 | 0.3+ | 2004 05 13 | 691 | 0.1+ | 0.6+ |
| 2001 09 16 | 644 | 0.4− | 0.6+ | 2001 11 18 | 704 | 0.2+ | 0.0 | 2004 05 13 | 691 | 0.2+ | 0.7+ |
| 2001 09 16 | 644 | 0.5− | 0.8+ | 2001 11 18 | 704 | 0.4− | 0.8− | 2004 05 13 | 691 | 0.0 | 0.8+ |
| 2001 09 16 | 644 | 0.2− | 1.4+ | 2001 11 18 | 704 | 0.0 | 0.0 | 2004 05 21 | 691 | 0.1+ | 0.6+ |
| 2001 09 19 | 699 | 0.1− | 0.9+ | 2001 11 18 | 704 | 0.2− | 0.3− | 2004 05 21 | 691 | 0.4+ | 0.6+ |
| 2001 09 19 | 699 | 0.1− | 0.5+ | 2001 11 18 | 704 | 0.4+ | 0.0 | 2004 05 21 | 691 | 0.1+ | 0.6+ |
| 2001 09 19 | 699 | 1.2+ | 0.6− | 2001 11 18 | 704 | 0.2+ | 0.3− | 2004 05 29 | 691 | 0.1+ | 0.4+ |
| 2001 09 19 | 699 | 0.1− | 0.5+ | 2001 11 18 | 704 | 0.1+ | 0.4− | 2004 05 29 | 691 | 0.4+ | 1.1+ |
| 2001 10 12 | 699 | 0.6+ | 0.1+ | 2001 11 19 | 608 | 0.2− | 0.1− | 2004 05 29 | 691 | 0.1+ | 0.4+ |
| 2001 10 12 | 699 | 0.2+ | 0.0 | 2001 11 19 | 608 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 2001 10 12 | 699 | 0.3+ | 0.4− | 2001 11 19 | 608 | 0.3− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.4+ |
| 2001 10 12 | 699 | 0.5− | 0.7+ | 2001 11 20 | 704 | 0.2− | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.4+ |
| 2001 10 13 | 704 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.2− | 0.2+ | 2006 08 24 | 704 | 0.3+ | 0.5+ |
| 2001 10 13 | 704 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.0 | 0.2+ | 2006 08 24 | 704 | 0.1+ | 0.4+ |
| 2001 10 13 | 704 | 0.3+ | 0.3− | 2001 11 20 | 704 | 0.3+ | 0.2+ | 2006 08 24 | 704 | 0.1− | 0.5+ |
| 2001 10 13 | 704 | 0.8+ | 0.1− | 2001 11 20 | 704 | 0.1+ | 0.1− | 2006 08 24 | 704 | 0.9− | 0.3− |
| 2001 10 13 | 704 | 0.5+ | 0.6+ | 2001 11 21 | 704 | 0.6+ | 0.2+ | 2006 08 24 | 704 | 0.7+ | 0.3+ |
| 2001 10 17 | 704 | 0.4− | 0.4+ | 2001 11 21 | 704 | 0.8+ | 0.5+ | 2006 08 27 | 699 | 0.1+ | 0.6+ |
| 2001 10 17 | 704 | 0.2+ | 0.2+ | 2001 11 21 | 704 | 0.2+ | 0.3− | 2006 08 27 | 699 | 0.4− | 0.2+ |
| 2001 10 17 | 704 | 0.2− | 0.3+ | 2001 11 21 | 704 | 0.4+ | 0.0 | 2006 08 27 | 699 | 0.7+ | 0.5+ |
| 2001 10 17 | 704 | 0.7− | 0.4+ | 2001 11 21 | 704 | 1.3+ | 1.3+ | 2006 08 27 | 699 | 0.1+ | 0.6+ |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2001 11 23 | 608 | 0.4+ | 1.1+ | 2006 08 28 | 703 | 0.3− | 0.1− |
| 2001 10 18 | 704 | 0.5− | 0.0 | 2001 11 23 | 608 | 1.1+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.2+ |
| 2001 10 18 | 704 | 0.5− | 0.4− | 2001 11 23 | 608 | 1.1+ | 0.2− | 2006 08 28 | 703 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.3− | 0.2+ | 2001 12 09 | 699 | 0.6+ | 1.3+ | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 0.1− | 0.7+ | 2001 12 09 | 699 | (1.6+ | 1.4+) | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.7− | 0.1− | 2001 12 09 | 699 | 0.7− | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.5+ | 0.2− | 2001 12 09 | 699 | 0.2− | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.1+ | 0.4− | 2001 12 11 | 704 | 0.4+ | 0.6+ | 2006 08 29 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 691 | 0.7− | 0.1+ | 2001 12 11 | 704 | 0.5+ | 0.4− | 2006 08 29 | 691 | 0.0 | 0.2+ | | |
| 2001 10 21 | 691 | 0.7− | 0.0 | 2001 12 11 | 704 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.1− | 0.2+ | | |
| 2001 10 21 | 691 | 0.7− | 0.0 | 2001 12 11 | 704 | 0.4+ | 0.2+ | 2006 09 01 | 704 | 0.8− | 0.3+ | | |
| 2001 10 22 | 704 | 0.4− | 0.5+ | 2001 12 11 | 704 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.0 | 0.0 | | |
| 2001 10 22 | 704 | 0.2+ | 0.1− | 2001 12 14 | 704 | 0.1+ | 1.0+ | 2006 09 01 | 704 | 0.4− | 0.5+ | | |
| 2001 10 22 | 704 | 0.2+ | 0.1− | 2001 12 14 | 704 | 0.1− | 0.7+ | 2006 09 01 | 704 | 0.2− | 0.6− | | |
| 2001 10 22 | 704 | 0.4− | 0.0 | 2001 12 14 | 704 | 0.2− | 0.5+ | 2006 09 01 | 704 | 0.7− | 0.1+ | | |
| 2001 10 22 | 704 | 0.1+ | 0.0 | 2001 12 14 | 704 | 0.7− | 1.1+ | 2006 09 12 | 703 | 0.6− | 0.2+ | | |
| 2001 10 23 | 704 | 0.3+ | 0.5+ | 2001 12 14 | 704 | 0.9− | 0.3+ | 2006 09 12 | 703 | 0.7− | 0.1+ | | |
| 2001 10 23 | 291 | 0.0 | 0.1+ | 2003 01 28 | 704 | 0.2+ | 0.7+ | 2006 09 12 | 703 | 0.1− | 0.1− | | |
| 2001 10 23 | 704 | 0.4+ | 0.1− | 2003 01 28 | 704 | 1.1− | 1.5+ | 2006 09 12 | 703 | 0.2− | 0.4+ | | |
| 2001 10 23 | 291 | 0.1− | 0.2+ | 2003 01 28 | 704 | 0.7− | 0.1− | 2006 09 13 | 644 | 0.0 | 0.1+ | | |
| 2001 10 23 | 704 | 0.3+ | 0.0 | 2003 01 28 | 704 | 0.7− | 0.6− | 2006 09 13 | 644 | 0.0 | 0.1+ | | |
| 2001 10 23 | 291 | 0.4− | 0.1+ | 2003 01 28 | 704 | 0.5+ | 0.4− | 2006 09 13 | 644 | 0.5+ | 0.2+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.1− | 2003 02 02 | 704 | 0.3− | 1.3+ | 2006 09 16 | 699 | 0.4− | 0.1+ | | |
| 2001 10 23 | 704 | 0.2+ | 0.4− | 2003 02 02 | 704 | 0.6− | 0.5+ | 2006 09 16 | 699 | 0.2− | 0.2+ | | |
| 2001 10 24 | 704 | 0.2+ | 0.5+ | 2003 02 02 | 704 | 0.2− | 1.1+ | 2006 09 16 | 699 | 0.5− | 0.4+ | | |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2003 02 03 | 699 | 0.6− | 1.2+ | 2006 09 16 | 699 | 0.3− | 0.1+ | | |
| 2001 10 24 | 704 | 0.1+ | 0.1+ | 2003 02 03 | 699 | 0.8− | 0.5+ | 2006 09 18 | 704 | 0.6+ | 0.5− | | |
| 2001 10 24 | 704 | 0.0 | 0.0 | 2003 02 03 | 699 | 0.5+ | 0.8+ | 2006 09 18 | 704 | 0.8+ | 0.9− | | |
| 2001 10 24 | 704 | 0.1− | 0.3+ | 2003 02 03 | 699 | 1.0+ | 0.4+ | 2006 09 18 | 704 | 0.2+ | 0.3− | | |
| 2001 10 25 | 644 | 0.9+ | 1.3+ | 2003 02 04 | 608 | 0.4+ | 0.2− | 2006 09 18 | 704 | 0.3− | 0.1+ | | |
| 2001 10 25 | 644 | 0.8+ | 1.3+ | 2003 02 04 | 608 | 1.0+ | 0.4− | 2006 09 18 | 704 | (1.3+ | 2.0−) | | |
| 2001 10 25 | 644 | 0.9+ | 1.4+ | 2003 02 04 | 608 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.2+ | | |
| 2001 10 26 | 704 | 0.1+ | 0.2+ | 2003 02 09 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.3− | | |
| 2001 10 26 | 704 | 0.7− | 0.1− | 2003 02 09 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.1− | | |
| 2001 10 26 | 704 | 0.5− | 0.4+ | 2003 02 09 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.2− | | |
| 2001 10 26 | 704 | 0.8− | 0.4+ | 2003 02 11 | 608 | 0.7− | 0.6+ | 2006 09 19 | 699 | 0.2− | 0.5+ | | |
| 2001 10 26 | 704 | 0.5− | 0.3+ | 2003 02 11 | 608 | 0.7− | 0.7+ | 2006 09 19 | 703 | 0.6− | 0.0 | | |
| 2001 10 27 | 699 | 0.1− | 0.9+ | 2003 02 11 | 608 | 0.1− | 0.9+ | 2006 09 19 | 699 | 0.4− | 0.3+ | | |
| 2001 10 27 | 699 | 0.6+ | 0.4+ | 2003 02 22 | 644 | 0.2− | 0.7+ | 2006 09 19 | 699 | 0.1− | 0.2+ | | |
| 2001 10 27 | 699 | 0.2+ | 0.3+ | 2003 02 22 | 644 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.3− | 0.5+ | | |
| 2001 10 27 | 699 | 0.4+ | 0.2− | 2003 02 22 | 644 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.1− | 0.0 | | |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2003 03 06 | 704 | (0.2− | 2.0+) | 2006 09 27 | 704 | 0.1+ | 0.6+ | | |
| 2001 11 09 | 704 | 0.2+ | 0.1− | 2003 03 06 | 704 | 0.9+ | 0.9+ | 2006 09 27 | 704 | 0.1+ | 0.2+ | | |
| 2001 11 09 | 704 | 0.1− | 0.2+ | 2003 03 06 | 704 | 0.5+ | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.5+ | | |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2003 03 06 | 704 | 0.2− | 0.1+ | 2006 09 29 | 704 | (0.1− | 1.7+) | | |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2003 03 07 | 704 | 0.0 | 1.1+ | 2006 09 29 | 704 | 0.8+ | 0.3+ | | |
| 2001 11 09 | 644 | 0.0 | 1.0+ | 2003 03 07 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.9+ | 1.0+ | | |
| 2001 11 09 | 644 | 0.1+ | 0.7+ | 2003 03 07 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.8− | 1.5+ | | |
| 2001 11 09 | 644 | 0.2+ | 0.9+ | 2003 03 07 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 699 | 0.1+ | 0.8+ | | |
| 2001 11 11 | 291 | 0.6− | 0.2− | 2003 03 07 | 704 | 1.0+ | 0.4+ | 2006 09 30 | 699 | 0.8+ | 0.7+ | | |
| 2001 11 11 | 291 | 0.1+ | 0.2+ | 2004 03 17 | 701 | 0.7− | 0.5+ | 2006 09 30 | 699 | 0.8− | 0.4+ | | |
| 2001 11 11 | 291 | 0.0 | 0.3+ | 2004 03 17 | 701 | 0.4+ | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.4− | | |
| 2001 11 12 | 704 | 0.8+ | 0.3− | 2004 03 17 | 701 | 1.5+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1− | | |
| 2001 11 12 | 704 | 0.2+ | 0.4− | 2004 03 23 | 291 | 0.1+ | 0.7+ | 2006 11 16 | G96 | 0.4+ | 0.2− | | |
| 2001 11 12 | 704 | 0.1+ | 0.5− | 2004 03 23 | 291 | 0.0 | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |

**(139583)∗ 2001 QK$_{105}$**

Discovered 2001 Aug. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.14690 | | (2000.0) | | | |
| $n$ | 0.20886670 | $\omega$ | 224.37268 | | +0.84846219 | −0.51847705 |
| $a$ | 2.8133466 | $\Omega$ | 165.71231 | | +0.51910491 | +0.85437776 |
| $e$ | 0.1004878 | $i$ | 25.50631 | | −0.10316008 | +0.03493136 |
| $P$ | 4.72 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | (0.0 | 1.9+) | 2001 10 26 | 608 | 0.2+ | 0.5+ | 2005 07 28 | 704 | 1.0+ | 0.1+ | | |
| 2001 08 23 | 704 | 0.7− | 0.6+ | 2001 10 26 | 608 | 0.5+ | 0.4+ | 2005 07 28 | 704 | 0.4+ | 0.7+ | | |
| 2001 08 23 | 704 | (0.7+ | 2.1+) | 2001 11 17 | 608 | 1.2+ | 0.2− | 2005 07 28 | 704 | 0.2− | 0.1+ | | |
| 2001 08 23 | 704 | 0.4− | 1.4+ | 2001 11 17 | 608 | 1.2+ | 0.0 | 2005 07 28 | 704 | 0.3+ | 0.1− | | |
| 2001 08 24 | 704 | 0.8− | 0.1− | 2001 11 17 | 608 | 1.2+ | 0.2− | 2005 07 28 | 704 | 0.2− | 0.3+ | | |
| 2001 08 24 | 704 | 0.3− | 0.3− | 2004 04 27 | 704 | 0.3+ | 0.8+ | 2005 08 29 | 644 | 0.4+ | 0.1− | | |
| 2001 08 24 | 704 | 0.6− | 0.3− | 2004 04 27 | 704 | (0.1− | 1.8−) | 2005 08 29 | 644 | 0.3− | 0.4− | | |
| 2001 08 24 | 704 | 0.1− | 0.8+ | 2004 04 27 | 704 | 0.3− | 0.4+ | 2005 08 29 | 644 | 0.1− | 0.5− | | |
| 2001 08 24 | 704 | 0.4− | 0.0 | 2004 04 27 | 704 | (0.5+ | 1.8−) | 2006 10 01 | E12 | 0.2+ | 0.0 | | |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2004 04 27 | 704 | 1.2+ | 0.5− | 2006 10 01 | E12 | 0.3+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.6− | 0.1+ | 2004 05 11 | 703 | 0.6− | 0.1+ | 2006 10 01 | E12 | 0.1− | 1.3+ | | |
| 2001 09 12 | 704 | 0.6− | 0.0 | 2004 05 11 | 703 | 1.3− | 0.6+ | 2006 11 01 | 703 | 0.2+ | 0.3− | | |
| 2001 09 22 | 644 | 0.2− | 1.5− | 2004 05 11 | 703 | 0.6+ | 0.4− | 2006 11 01 | 703 | 0.4+ | 1.1− | | |
| 2001 09 22 | 644 | 0.5− | 1.3− | 2004 05 11 | 703 | 0.1+ | 1.1+ | 2006 11 01 | 703 | 0.5− | 0.0 | | |
| 2001 09 22 | 644 | 0.2+ | 0.5− | 2005 05 20 | 644 | 0.2− | 0.0 | 2006 11 01 | 703 | 0.4+ | 0.1+ | | |
| 2001 09 27 | 699 | 1.2+ | 0.3+ | 2005 05 20 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.3+ | 0.2− | | |
| 2001 09 27 | 699 | 0.6− | 0.9+ | 2005 05 20 | 644 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.8+ | | |
| 2001 09 27 | 699 | 0.2− | 1.0+ | 2005 07 01 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.6+ | 0.2+ | | |
| 2001 09 27 | 699 | 0.1− | 1.2+ | 2005 07 01 | 644 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.1− | 0.3− | | |
| 2001 10 12 | 608 | 0.4− | 0.9− | 2005 07 01 | 644 | 0.1+ | 0.1+ | 2006 11 24 | 703 | 0.6− | 0.2+ | | |
| 2001 10 12 | 608 | 0.3− | 1.4− | 2005 07 08 | 703 | 0.1− | 0.3− | 2006 11 24 | 703 | 0.0 | 0.3− | | |
| 2001 10 12 | 608 | 0.6− | 1.0− | 2005 07 08 | 703 | 0.2− | 0.0 | 2006 11 24 | 703 | 0.4− | 0.1− | | |
| 2001 10 23 | 699 | 0.7+ | 0.3+ | 2005 07 08 | 703 | 1.1− | 0.4+ | 2006 11 24 | 703 | 0.3+ | 0.0 | | |
| 2001 10 23 | 699 | 0.2+ | 0.6+ | 2005 07 08 | 703 | 0.6− | 0.2− | 2006 11 25 | 703 | 0.3+ | 0.0 | | |
| 2001 10 23 | 699 | 0.1+ | 0.4+ | 2005 07 17 | 644 | 0.1+ | 0.0 | 2006 11 25 | 703 | 0.5− | 0.0 | | |
| 2001 10 23 | 699 | (2.3+ | 1.4−) | 2005 07 17 | 644 | 0.1+ | 0.2− | 2006 11 25 | 703 | 0.2− | 0.0 | | |
| 2001 10 26 | 608 | 0.2− | 0.4+ | 2005 07 17 | 644 | 0.2+ | 0.3− | 2006 11 25 | 703 | 1.0− | 0.1+ | | |

**(139584)∗ 2001 QX$_{105}$ = 2001 PP$_{50}$**

Discovered 2001 Aug. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (d, *MPO* 18515)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 101.67599 | | (2000.0) | | | |
| $n$ | 0.23059492 | $\omega$ | 35.91379 | | +0.23929553 | +0.94535372 |
| $a$ | 2.6337197 | $\Omega$ | 248.85631 | | −0.93701480 | +0.16507453 |
| $e$ | 0.1692662 | $i$ | 13.73572 | | −0.25444237 | +0.28117031 |
| $P$ | 4.27 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 18 | 644 | 0.7− | 0.5+ | 2001 09 15 | 644 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.3− | | |
| 2001 06 18 | 644 | 0.6− | 0.8+ | 2001 10 16 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.3− | | |
| 2001 06 18 | 644 | 0.8− | 0.9+ | 2001 10 16 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.3+ | 0.4+ | | |
| 2001 06 29 | 699 | 0.8− | 0.6+ | 2001 10 16 | 704 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 1.2+ | 0.8− | | |
| 2001 06 29 | 699 | 0.3+ | 0.5+ | 2001 10 16 | 704 | 0.0 | 1.2+ | 2006 10 27 | 703 | 0.2+ | 0.4− | | |
| 2001 06 29 | 699 | 0.4− | 1.4+ | 2001 10 16 | 704 | 0.6+ | 0.5+ | 2006 10 27 | 703 | 0.4− | 0.4− | | |
| 2001 06 29 | 699 | 0.2− | 0.2+ | 2001 11 18 | 704 | 0.2+ | 1.4+ | 2006 10 27 | 691 | 0.1+ | 0.1− | | |
| 2001 07 16 | 704 | 0.3− | 0.3+ | 2001 11 18 | 704 | 0.0 | 1.0+ | 2006 10 27 | 691 | 0.2+ | 0.0 | | |
| 2001 07 16 | 704 | 0.6− | 0.6− | 2001 11 18 | 704 | 0.7+ | 0.9+ | 2006 10 27 | 691 | (1.9− | 0.1+) | | |
| 2001 07 16 | 704 | 1.2+ | 0.3− | 2001 11 18 | 704 | (1.0+ | 1.8+) | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2001 07 16 | 704 | 0.2− | 0.9+ | 2002 12 05 | 704 | 0.4− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.1− | | |
| 2001 08 04 | 644 | 0.8− | 0.3+ | 2002 12 05 | 704 | 1.3− | 1.0− | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 2001 08 04 | 644 | 0.5− | 0.2+ | 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2001 08 04 | 644 | 0.7− | 0.4+ | 2002 12 05 | 704 | 0.5+ | 1.2+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | |
| 2001 08 09 | 644 | 0.2+ | 1.2− | 2002 12 10 | 704 | 0.7+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 09 | 644 | 0.1+ | 1.1− | 2002 12 10 | 704 | 0.7+ | 0.5− | 2006 11 09 | 644 | 0.2+ | 0.0 | | |
| 2001 08 09 | 644 | 0.0 | 1.1− | 2002 12 10 | 704 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2001 08 18 | 699 | 0.4− | 0.9+ | 2004 01 29 | 699 | 0.4+ | 1.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 18 | 699 | 0.1− | 0.2+ | 2004 01 29 | 699 | 0.9− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.2+ | | |
| 2001 08 18 | 699 | 0.1− | 0.0 | 2004 01 29 | 699 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.0 | 0.3+ | | |
| 2001 08 18 | 699 | 0.6− | 0.5+ | 2004 01 29 | 699 | (0.7+ | 1.8+) | 2006 11 15 | 691 | 0.0 | 0.3+ | | |
| 2001 08 21 | 644 | 0.1+ | 1.2− | 2004 02 14 | 644 | 0.5+ | 0.4+ | 2006 11 15 | 704 | 0.2+ | 0.3+ | | |
| 2001 08 21 | 644 | 0.0 | 0.8− | 2004 02 14 | 644 | 0.4+ | 0.5+ | 2006 11 15 | 704 | 0.7+ | 0.5− | | |
| 2001 08 21 | 644 | 0.0 | 0.9− | 2004 02 14 | 644 | 0.3+ | 0.2+ | 2006 11 15 | 704 | 0.6− | 0.4+ | | |
| 2001 08 21 | 704 | 0.0 | 1.4+ | 2004 02 18 | 703 | 0.9+ | 0.9+ | 2006 11 15 | 704 | 0.3− | 1.1+ | | |
| 2001 08 21 | 704 | 0.8− | 0.4− | 2004 02 18 | 703 | 0.7+ | 0.4+ | 2006 11 16 | 704 | 0.4− | 0.1+ | | |
| 2001 08 21 | 644 | 0.1− | 1.3− | 2004 02 18 | 703 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.5− | | |
| 2001 08 21 | 704 | 0.4+ | 0.2+ | 2004 02 18 | 703 | 0.9− | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.1+ | | |
| 2001 08 21 | 644 | 0.5+ | 1.2− | 2004 03 16 | 704 | 0.3+ | 0.9+ | 2006 11 16 | 704 | 0.3− | 0.5− | | |
| 2001 08 21 | 644 | 0.3+ | 1.2− | 2004 03 16 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.8− | 0.7+ | | |
| 2001 08 21 | 704 | (2.0+ | 0.7+) | 2004 03 16 | 704 | 0.1− | 1.1− | 2006 11 19 | 704 | 0.8− | 0.8+ | | |
| 2001 08 23 | 699 | 0.9− | 0.8+ | 2004 03 16 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 1.3− | 1.2+ | | |
| 2001 08 23 | 699 | 0.3− | 0.1+ | 2005 07 30 | 160 | 1.0− | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.8+ | | |
| 2001 08 23 | 699 | 0.2− | 0.1+ | 2005 07 30 | 160 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.2− | 1.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.0 | 0.1− | 2005 07 30 | 160 | 0.6+ | 0.4+ | 2006 11 19 | 704 | 0.7− | 1.0− |
| 2001 09 07 | 644 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.8+ | 1.2− | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2001 09 07 | 644 | 0.6+ | 0.3+ | 2006 10 19 | 703 | (0.2+ | 2.2+) | 2006 11 22 | 704 | 0.4− | 0.5+ |
| 2001 09 07 | 644 | 0.7+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.2+ |
| 2001 09 15 | 644 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.2− | 1.2− | 2006 11 22 | 704 | 0.0 | 0.9+ |
| 2001 09 15 | 644 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.0 |

**(139585)∗ 2001 QB$_{110}$**

Discovered 2001 Aug. 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.14930 | | | (2000.0) | | |
| $n$ | 0.20952563 | $\omega$ | 353.42153 | | +0.99226162 | −0.12010796 |
| $a$ | 2.8074452 | $\Omega$ | 13.59819 | | +0.11914778 | +0.84972003 |
| $e$ | 0.1613322 | $i$ | 7.69451 | | +0.03493821 | +0.51337116 |
| $P$ | 4.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.9− | 0.3+ | 2005 02 17 | 809 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.0 | 1.2+ |
| 2001 08 19 | 704 | 0.5− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.6+ | 1.2+ |
| 2001 08 19 | 704 | 0.8− | 0.7+ | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.4+ | 1.0+ |
| 2001 08 19 | 704 | 0.9− | 0.4− | 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.3+ |
| 2001 08 19 | 704 | 0.3+ | 0.2+ | 2006 08 19 | 699 | 1.1+ | 0.7− | 2006 09 29 | 704 | (1.8− | 0.1−) |
| 2001 08 21 | 608 | 0.1+ | 0.3+ | 2006 08 19 | 699 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.9− | 0.5+ |
| 2001 08 21 | 608 | 0.3+ | 1.1− | 2006 08 19 | 699 | 1.0− | 0.6+ | 2006 09 29 | 704 | 0.8− | 0.3+ |
| 2001 08 21 | 608 | 0.3+ | 0.9− | 2006 08 19 | 699 | 0.4− | 0.6+ | 2006 09 29 | 691 | 0.2+ | 0.2+ |
| 2001 08 25 | 699 | 0.8− | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 09 29 | 691 | 0.2+ | 0.1+ |
| 2001 08 25 | 699 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.6− | 2006 09 29 | 691 | 0.6+ | 0.0 |
| 2001 08 25 | 699 | 0.9+ | 1.0+ | 2006 09 14 | 703 | 0.7− | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 2001 08 25 | 699 | (1.7− | 0.0 ) | 2006 09 14 | 703 | (1.5+ | 1.9−) | 2006 10 03 | 691 | 0.1− | 0.1+ |
| 2001 08 25 | 608 | 1.1− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 03 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 608 | 1.3− | 1.2+ | 2006 09 15 | 691 | 0.5− | 0.3− | 2006 10 15 | 703 | 0.1+ | 0.3+ |
| 2001 08 25 | 608 | 1.0− | 0.8+ | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 10 15 | 703 | 1.3− | 0.3+ |
| 2001 09 10 | 699 | 0.0 | 0.6− | 2006 09 17 | 704 | 0.6+ | 0.2− | 2006 10 15 | 703 | 0.3+ | 1.0+ |
| 2001 09 10 | 699 | 0.8+ | 0.1+ | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 15 | 703 | 0.9+ | 1.0+ |
| 2001 09 10 | 699 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.2+ |
| 2001 09 10 | 699 | 0.7+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2001 09 11 | 704 | 0.2− | 0.8+ | 2006 09 17 | 704 | 0.5− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2001 09 11 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.4− | 0.0 |
| 2001 09 11 | 704 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.3− | 0.6− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 09 11 | 704 | 0.4− | 0.7+ | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 09 11 | 704 | 0.9− | 0.9+ | 2006 09 18 | 699 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.5+ |
| 2001 09 17 | 704 | (0.7− | 1.6+) | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 09 17 | 704 | 0.2+ | 0.8− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 09 17 | 704 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2001 09 17 | 704 | 0.4− | 1.0+ | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 1.0+ | 1.0− | 2006 09 20 | 704 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 1.1+ | 1.2− | 2006 09 20 | 704 | 0.6− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 1.0+ | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.3+ | 0.6− | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.6+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2004 03 17 | 691 | 0.4+ | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.3− | 0.3+ |
| 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.3+ |
| 2004 03 17 | 691 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 11 06 | 644 | 0.1+ | 0.1− |
| 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 2004 03 29 | 691 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.3+ | 0.6+ |
| 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.2− | 0.1+ |
| 2005 02 17 | 809 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.4− |

**(139586)∗ 2001 QS$_{110}$ = 2000 HY$_{104}$**

Discovered 2001 Aug. 24 by P. Pravec and P. Kušnirák at Ondřejov.

Id. T. B. Spahr (*MPO* 15984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 101.91745 | | | (2000.0) | | |
| $n$ | 0.22310992 | $\omega$ | 60.27042 | | +0.34458543 | +0.92637312 |
| $a$ | 2.6923001 | $\Omega$ | 230.68692 | | −0.91480133 | +0.29502837 |
| $e$ | 0.1481429 | $i$ | 11.32746 | | −0.21071168 | +0.23407501 |
| $P$ | 4.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | 1.1− | 0.2− | 2001 09 10 | 704 | 0.4+ | 1.1+ | 2006 09 27 | G96 | 0.2− | 0.6− |
| 2000 04 26 | 699 | 1.0− | 0.0 | 2001 09 10 | 704 | (0.6+ | 1.8+) | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2000 04 26 | 699 | 0.2+ | 0.5+ | 2001 09 10 | 699 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2000 04 26 | 699 | 0.1− | 0.5+ | 2001 09 10 | 699 | 0.5− | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2000 05 03 | 704 | 0.9+ | 1.3+ | 2001 09 10 | 699 | 0.4− | 1.2+ | 2006 10 17 | G96 | 0.0 | 0.7− |
| 2000 05 03 | 704 | 0.8+ | 0.4+ | 2001 09 11 | 704 | 0.5− | 0.8+ | 2006 10 17 | G96 | 0.6+ | 0.4− |
| 2000 05 03 | 704 | 0.2− | 0.1+ | 2001 09 11 | 704 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2000 05 03 | 704 | 1.1+ | 1.4+ | 2001 09 11 | 704 | 0.1+ | 1.1+ | 2006 10 17 | G96 | 0.5− | 0.3− |
| 2001 08 23 | 704 | 0.2+ | 0.4+ | 2001 09 11 | 704 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 08 23 | 704 | 0.3+ | 0.7+ | 2001 09 11 | 704 | (1.6+ | 0.2+) | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2001 08 23 | 704 | 0.3+ | 0.0 | 2001 09 18 | 645 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.4− | 0.2− |
| 2001 08 23 | 704 | 0.1+ | 0.5+ | 2001 09 18 | 645 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.4− | 0.5− |
| 2001 08 23 | 704 | 0.0 | 0.1− | 2001 09 25 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2001 08 24 | 557 | 0.1+ | 0.4+ | 2001 09 25 | 704 | 0.4+ | 0.2− | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2001 08 24 | 557 | 0.4− | 0.5− | 2001 09 25 | 704 | 0.4+ | 1.0+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 08 25 | 704 | 0.3− | 0.6+ | 2001 09 25 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.2+ | 0.8+ | 2001 09 25 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2001 08 25 | 704 | 1.3+ | 0.0 | 2001 10 13 | 644 | 0.4− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 08 26 | 557 | 0.2+ | 0.2− | 2001 10 13 | 644 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2001 08 26 | 557 | 0.1− | 0.7− | 2001 10 13 | 644 | 0.4− | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 08 28 | 557 | 0.0 | 0.8− | 2005 07 28 | A13 | 0.4+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 08 28 | 557 | 0.4− | 0.9− | 2005 07 28 | A13 | 0.5+ | 1.2+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 09 10 | 704 | 0.6− | 1.3+ | 2005 09 05 | 621 | (0.1− | 3.3−) | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2001 09 10 | 704 | 0.6− | 0.5+ | 2005 09 05 | 621 | 0.4− | 1.4− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 09 10 | 699 | 0.7− | 0.5+ | 2005 09 05 | 621 | 0.6− | 0.7− | | | | |

**(139587)∗ 2001 QO$_{111}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 233.50576 | | | (2000.0) | | |
| $n$ | 0.37485400 | $\omega$ | 138.10465 | | −0.25767488 | −0.94858338 |
| $a$ | 1.9049984 | $\Omega$ | 325.61302 | | +0.77732206 | −0.09050532 |
| $e$ | 0.0839335 | $i$ | 18.99519 | | +0.57391120 | −0.30331230 |
| $P$ | 2.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.0 | 0.8− | 2001 09 10 | 699 | 1.1+ | 1.5+ | 2004 12 16 | 704 | 0.5+ | 0.1+ |
| 2000 02 08 | 704 | 0.7+ | 0.5+ | 2001 09 10 | 699 | 0.2+ | 1.4+ | 2004 12 16 | 704 | 0.4− | 0.4− |
| 2000 02 08 | 704 | 0.5+ | 1.7+ | 2001 09 21 | 644 | 0.4− | 0.3+ | 2004 12 16 | 704 | 0.2− | 0.2+ |
| 2000 03 09 | 704 | 0.4+ | 1.0− | 2001 09 21 | 644 | 0.4− | 0.3+ | 2004 12 16 | 704 | 0.1+ | 0.2+ |
| 2000 03 09 | 704 | 1.0+ | 0.8+ | 2001 09 21 | 644 | 0.5− | 0.4+ | 2004 12 20 | 704 | 1.1− | 0.1− |
| 2000 03 09 | 704 | 0.6+ | 0.1+ | 2001 09 30 | 644 | 0.6− | 0.1+ | 2004 12 20 | 704 | 0.3+ | 0.2+ |
| 2000 04 07 | 704 | 0.3+ | 1.3+ | 2001 09 30 | 644 | 0.7− | 0.1+ | 2004 12 20 | 704 | 0.0 | 0.5− |
| 2000 04 07 | 704 | 0.2− | 1.6+ | 2001 09 30 | 644 | 0.6− | 0.2− | 2005 01 15 | 704 | 0.1+ | 0.1+ |
| 2000 04 07 | 704 | 1.1+ | 1.2+ | 2001 10 18 | 704 | 0.0 | 0.9− | 2005 01 15 | 704 | 0.1− | 0.1− |
| 2001 08 05 | 644 | 0.4− | 0.7+ | 2001 10 18 | 704 | 0.6+ | 0.0 | 2005 01 15 | 704 | 0.1− | 0.0 |
| 2001 08 05 | 644 | 0.4+ | 0.8+ | 2001 10 18 | 704 | 0.6+ | 0.1+ | 2005 01 15 | 704 | 0.2+ | 0.0 |
| 2001 08 05 | 644 | 0.0 | 0.3+ | 2001 10 18 | 704 | 0.9+ | 0.4− | 2005 01 15 | 704 | 0.5− | 0.4− |
| 2001 08 20 | 644 | 0.6− | 0.6+ | 2001 10 18 | 704 | 1.0+ | 0.5− | 2005 01 31 | 704 | 0.0 | 0.9+ |
| 2001 08 20 | 644 | 0.6− | 0.5+ | 2004 11 20 | 704 | 1.0+ | 0.2+ | 2005 01 31 | 704 | 0.4− | 0.1− |
| 2001 08 20 | 644 | 0.5− | 0.4+ | 2004 11 20 | 704 | 0.7− | 0.6+ | 2005 01 31 | 704 | 0.2+ | 1.3+ |
| 2001 08 22 | 704 | 0.1+ | 0.5− | 2004 11 20 | 704 | 0.2− | 0.0 | 2005 01 31 | 704 | 0.3− | 1.5+ |
| 2001 08 22 | 704 | 0.3+ | 0.3− | 2004 11 20 | 704 | 0.3+ | 0.6+ | 2006 08 12 | 644 | 0.4− | 0.2+ |
| 2001 08 22 | 704 | 0.2+ | 1.1− | 2004 12 04 | 699 | 0.7− | 0.4+ | 2006 08 12 | 644 | 0.2− | 0.6+ |
| 2001 08 22 | 704 | 0.6+ | 0.6+ | 2004 12 04 | 699 | 0.0 | 0.9+ | 2006 08 12 | 644 | 0.5− | 0.6+ |
| 2001 08 22 | 704 | 0.4− | 0.2− | 2004 12 04 | 699 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.4+ | 0.1+ |
| 2001 08 26 | 704 | 0.1+ | 0.8+ | 2004 12 04 | 699 | 0.5+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 704 | 1.1− | 0.9+ | 2004 12 10 | 704 | 1.7+ | 0.6− | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2001 08 26 | 704 | 0.4− | 0.7+ | 2004 12 10 | 704 | 1.2+ | 0.7− | 2006 08 28 | 703 | 0.3− | 0.5+ |
| 2001 08 26 | 704 | 0.9− | 1.0+ | 2004 12 10 | 704 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.5− | 0.8+ |
| 2001 09 09 | 704 | 0.0 | 1.8− | 2004 12 10 | 704 | 0.6− | 0.5+ | 2006 08 28 | 703 | 0.7− | 1.2+ |
| 2001 09 09 | 704 | 0.5− | 1.3− | 2004 12 10 | 704 | 1.0+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.4+ |
| 2001 09 09 | 704 | 0.3+ | 1.4− | 2004 12 15 | 703 | 0.5+ | 0.3− | 2006 09 16 | 703 | 0.3+ | 1.5+ |
| 2001 09 09 | 704 | 0.6− | 1.4− | 2004 12 15 | 703 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.0 | 1.0+ |
| 2001 09 10 | 699 | 0.7+ | 0.2+ | 2004 12 15 | 703 | 0.2− | 0.1+ | 2006 09 16 | 703 | 1.1− | 0.9− |
| 2001 09 10 | 699 | 2.0+ | 0.3− | 2004 12 15 | 703 | 0.2− | 0.8+ | 2006 09 16 | 703 | 1.0− | 0.9+ |

**(139588)∗ 2001 QS$_{111}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.92851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25587296 | $\omega$ | 103.44530 | | +0.33744684 | −0.93957776 | |
| $a$ | 2.4572713 | $\Omega$ | 326.65376 | | +0.81800962 | +0.32298852 | |
| $e$ | 0.1227106 | $i$ | 6.01978 | | +0.46582174 | +0.11345505 | |
| $P$ | 3.85 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 28 | 691 | 0.1− | 0.0 | 2001 10 17 | 704 | 0.1− | 0.6− | 2005 10 30 | 704 | 0.1− | 0.2− |
| 1995 01 28 | 691 | 0.6+ | 0.2+ | 2001 10 17 | 704 | 0.8+ | 0.1− | 2005 10 30 | 704 | 0.1− | 0.2+ |
| 1995 01 28 | 691 | 0.4− | 0.1− | 2001 10 17 | 704 | 0.1+ | 0.8− | 2005 10 30 | 704 | 0.1+ | 0.4− |
| 2001 08 22 | 704 | 0.7− | 0.3+ | 2001 10 17 | 704 | 0.8+ | 0.3− | 2005 10 30 | 704 | 0.2+ | 0.2+ |
| 2001 08 22 | 704 | 0.8− | 0.3− | 2001 10 17 | 704 | 0.4+ | 0.1− | 2005 10 30 | 704 | 0.2− | 0.2− |
| 2001 08 22 | 704 | 1.0− | 0.3+ | 2001 10 20 | 644 | 0.3− | 0.2+ | 2005 10 30 | 703 | 0.5+ | 0.5+ |
| 2001 08 22 | 704 | 0.8− | 0.5+ | 2001 10 20 | 644 | 0.3− | 0.3+ | 2005 10 30 | 703 | 0.9+ | 0.7+ |
| 2001 08 22 | 704 | 0.8− | 0.5+ | 2001 10 20 | 644 | 0.4− | 0.3+ | 2005 10 30 | 703 | 0.7− | 0.4+ |
| 2001 08 26 | 704 | 0.4+ | 0.2+ | 2001 11 05 | 734 | 0.4+ | 0.6+ | 2005 10 30 | 703 | 0.6+ | 0.6+ |
| 2001 08 26 | 704 | 0.4+ | 1.0+ | 2001 11 05 | 734 | 0.3+ | 0.2+ | 2005 11 02 | 703 | 0.7− | 0.3− |
| 2001 08 26 | 704 | 0.2+ | 0.2+ | 2001 11 05 | 734 | 0.1+ | 0.1+ | 2005 11 02 | 703 | 0.5− | 0.0 |
| 2001 08 26 | 704 | 0.0 | 0.3+ | 2001 11 05 | 734 | 0.0 | 0.2− | 2005 11 02 | 703 | 0.7− | 1.0− |
| 2001 08 28 | 699 | 0.2+ | 0.9+ | 2001 11 10 | 704 | 0.4− | 0.6− | 2005 11 02 | 703 | 0.2+ | 1.0− |
| 2001 08 28 | 699 | 0.6− | 1.2+ | 2001 11 10 | 704 | 0.7− | 0.2− | 2005 11 03 | 704 | 0.7+ | 1.2+ |
| 2001 08 28 | 699 | 0.0 | 0.0 | 2001 11 10 | 704 | 0.5+ | 1.2− | 2005 11 03 | 704 | 0.2− | 0.4+ |
| 2001 08 28 | 699 | 0.0 | 0.2+ | 2001 11 10 | 704 | 0.4+ | 0.5− | 2005 11 03 | 704 | 0.1− | 0.2+ |
| 2001 09 17 | 704 | 0.2− | 0.2+ | 2001 11 10 | 704 | 0.3− | 1.3− | 2005 11 03 | 704 | 0.4− | 0.7+ |
| 2001 09 17 | 704 | 0.7− | 0.2+ | 2001 11 17 | 704 | 0.4+ | 0.2− | 2005 11 03 | 704 | 1.3+ | 0.3+ |
| 2001 09 17 | 704 | 0.5− | 0.1− | 2001 11 17 | 704 | 0.2+ | 0.1− | 2005 11 21 | 703 | 0.6− | 0.3+ |
| 2001 09 17 | 704 | 0.3+ | 0.5− | 2001 11 17 | 704 | 0.2+ | 0.4+ | 2005 11 21 | 703 | 0.3+ | 0.2+ |
| 2001 09 19 | 699 | 0.3+ | 0.6− | 2001 11 17 | 704 | 0.4− | 0.4− | 2005 11 21 | 703 | 0.8+ | 0.4− |
| 2001 09 19 | 699 | 0.4− | 0.9+ | 2001 11 17 | 704 | 0.1− | 0.2− | 2005 11 21 | 703 | 0.1− | 0.1− |
| 2001 09 19 | 699 | 0.7− | 0.0 | 2001 11 20 | 699 | 0.4+ | 0.1+ | 2005 11 28 | 704 | 1.0− | 1.2+ |
| 2001 09 19 | 699 | 0.9− | 0.6+ | 2001 11 20 | 699 | 0.8− | 0.2+ | 2005 11 28 | 704 | 0.5− | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 0.7+ | 2001 11 20 | 699 | 0.2+ | 1.1+ | 2005 11 28 | 704 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2001 11 20 | 699 | 0.1+ | 1.0+ | 2005 11 28 | 699 | 0.4− | 1.3− |
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2001 12 11 | 704 | 0.9− | 0.2− | 2005 11 28 | 704 | 0.3− | 0.8+ |
| 2001 09 20 | 699 | 0.9− | 0.4+ | 2001 12 11 | 704 | 0.1− | 0.2− | 2005 11 28 | 699 | 0.7+ | 1.0− |
| 2001 09 20 | 699 | 0.3+ | 0.3+ | 2001 12 11 | 704 | 0.7− | 1.6− | 2005 11 28 | 703 | 0.0 | 1.1− |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2003 03 07 | 704 | 1.9− | 0.6− | 2005 11 28 | 703 | 0.4− | 0.0 |
| 2001 09 20 | 699 | 0.4− | 0.2− | 2003 03 07 | 704 | 1.8− | 0.3+ | 2005 11 28 | 699 | 0.5+ | 1.8− |
| 2001 09 20 | 699 | 1.0− | 0.1+ | 2003 03 07 | 704 | (2.6− | 0.9+) | 2005 11 28 | 703 | 0.6+ | 0.4− |
| 2001 09 20 | 704 | 0.5− | 1.4+ | 2003 03 10 | 699 | (2.0+ | 0.4+) | 2005 11 28 | 703 | 0.2+ | 0.3+ |
| 2001 09 22 | 704 | 0.4+ | 0.2+ | 2003 03 10 | 699 | 1.1+ | 0.3+ | 2005 11 28 | 699 | 0.9+ | 0.4+ |
| 2001 09 22 | 704 | 0.2+ | 0.5+ | 2003 03 10 | 699 | 0.3− | 0.0 | 2005 12 03 | 703 | 0.2+ | 0.3− |
| 2001 09 22 | 704 | 1.2+ | 0.3+ | 2003 03 10 | 699 | 0.8+ | 0.8+ | 2005 12 03 | 703 | (0.4+ | 2.2−) |
| 2001 09 22 | 704 | 0.2− | 1.5+ | 2003 03 28 | 691 | 0.3+ | 0.2− | 2005 12 03 | 703 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.6− | 0.0 | 2003 03 28 | 691 | 0.4+ | 0.2+ | 2005 12 03 | 703 | 0.7− | 0.7− |
| 2001 09 23 | 704 | 0.0 | 0.7− | 2003 03 28 | 691 | 0.6+ | 0.0 | 2005 12 10 | 704 | 0.2− | 0.5− |
| 2001 09 23 | 704 | 0.2+ | 0.3+ | 2003 03 31 | 704 | 0.4+ | 1.6+ | 2005 12 10 | 704 | 0.5+ | 0.6+ |
| 2001 09 23 | 704 | 1.2+ | 1.9− | 2003 03 31 | 704 | 0.2+ | 0.5+ | 2005 12 10 | 704 | 0.6+ | 0.0 |
| 2001 09 23 | 704 | 1.0+ | 0.6+ | 2003 03 31 | 704 | 1.1− | 0.9+ | 2005 12 10 | 704 | 0.3− | 0.1− |
| 2001 09 28 | 644 | 0.5− | 0.2+ | 2003 03 31 | 704 | 0.3+ | 1.1+ | 2005 12 10 | 704 | 0.1+ | 0.6− |
| 2001 09 28 | 644 | 0.5− | 0.1+ | 2003 04 04 | 699 | 0.4− | 0.0 | 2006 01 05 | 703 | 0.9− | 1.2+ |
| 2001 09 28 | 644 | 0.5− | 0.2+ | 2003 04 04 | 699 | 0.6+ | 0.3− | 2006 01 05 | 703 | 0.2− | 0.5− |
| 2001 10 14 | 704 | 0.3+ | 0.0 | 2003 04 04 | 699 | 0.4+ | 1.1+ | 2006 01 05 | 703 | 0.9− | 0.2+ |
| 2001 10 14 | 704 | 0.3+ | 0.2− | 2003 04 04 | 699 | 0.3+ | 1.2+ | 2006 01 05 | 703 | 0.8− | 0.6− |
| 2001 10 14 | 704 | 0.5+ | 0.3+ | 2005 10 04 | 703 | 0.3− | 0.4− | 2006 01 21 | 703 | 1.2+ | 0.6− |
| 2001 10 14 | 704 | 0.4+ | 0.4+ | 2005 10 04 | 703 | 0.4+ | 0.4+ | 2006 01 21 | 703 | 1.1− | 0.4− |
| 2001 10 14 | 704 | 0.4+ | 0.4+ | 2005 10 04 | 703 | 0.6− | 0.2+ | 2006 01 21 | 703 | 1.8− | 0.9+ |
| 2001 10 15 | 704 | 1.1− | 0.0 | 2005 10 04 | 703 | 0.1+ | 0.0 | 2006 01 21 | 703 | 0.6− | 0.5− |
| 2001 10 15 | 704 | 0.7− | 0.3+ | 2005 10 14 | 703 | 0.6+ | 0.4− | 2006 01 22 | 699 | 0.2+ | 0.1− |
| 2001 10 15 | 704 | 0.0 | 0.5+ | 2005 10 14 | 703 | 0.8+ | 0.8− | 2006 01 22 | 699 | 0.8+ | 1.2+ |
| 2001 10 15 | 704 | 0.3+ | 0.0 | 2005 10 14 | 703 | 0.9+ | 0.8− | 2006 01 22 | 699 | 0.6+ | 1.1+ |
| 2001 10 15 | 704 | 1.0+ | 0.2− | 2005 10 14 | 703 | 0.1− | 0.6+ | 2006 01 22 | 699 | 0.7+ | 0.1+ |

**(139589)∗ 2001 QT$_{111}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.21911 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23337862 | $\omega$ | 170.19041 | | +0.16370527 | −0.96842225 | |
| $a$ | 2.6127349 | $\Omega$ | 270.21100 | | +0.89188343 | +0.22674931 | |
| $e$ | 0.1573603 | $i$ | 10.83848 | | +0.42159760 | −0.10364889 | |
| $P$ | 4.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 24 | 644 | (0.4− | 1.7+) | 2001 10 23 | 699 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2001 07 24 | 644 | 0.3− | 1.3+ | 2001 10 23 | 699 | 1.0+ | 1.0− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2001 07 24 | 644 | (0.3+ | 1.6+) | 2001 10 23 | 699 | 0.3+ | 0.5− | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2001 08 20 | 644 | 0.5− | 0.7+ | 2001 10 23 | 699 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 08 20 | 644 | 0.9− | 0.4+ | 2001 11 11 | 699 | 0.4− | 0.5+ | 2006 10 21 | G96 | 0.9− | 0.0 |
| 2001 08 20 | 644 | 0.9− | 0.5+ | 2001 11 11 | 699 | 0.3+ | 0.5− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2001 08 22 | 704 | 0.5+ | 0.8+ | 2001 11 11 | 699 | 1.4− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 08 22 | 704 | 1.0+ | 1.0+ | 2001 11 11 | 699 | 0.3+ | 1.4− | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2001 08 22 | 704 | 0.2− | 0.8+ | 2003 02 06 | 644 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2001 08 22 | 704 | 1.0+ | 0.3+ | 2003 02 06 | 644 | 0.5+ | 0.9+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 08 26 | 704 | (1.7+ | 0.3+) | 2003 02 06 | 644 | (0.5+ | 1.6+) | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 08 26 | 699 | 0.1− | 1.3+ | 2003 03 08 | 699 | 0.4− | 0.3+ | 2006 11 23 | 703 | 0.1+ | 0.5+ |
| 2001 08 26 | 704 | 1.2+ | 0.1+ | 2003 03 08 | 699 | 0.9− | 0.8+ | 2006 11 23 | 703 | 0.4− | 0.2− |
| 2001 08 26 | 699 | 0.8− | 0.7+ | 2003 03 08 | 699 | 0.5+ | 0.4+ | 2006 11 23 | 703 | 0.3+ | 0.7− |
| 2001 08 26 | 704 | (0.2− | 2.3+) | 2003 03 08 | 699 | 0.4+ | 0.3+ | 2006 11 23 | 703 | 0.8− | 0.0 |
| 2001 08 26 | 704 | 0.7+ | 0.5+ | 2003 03 10 | 704 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2001 08 26 | 699 | 0.9− | 0.1+ | 2003 03 10 | 704 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2001 08 26 | 699 | 1.1− | 0.0 | 2003 03 10 | 704 | 0.5+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2001 09 10 | 699 | 0.4+ | 0.8− | 2003 03 10 | 704 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2001 09 10 | 699 | 0.5− | 0.1− | 2003 03 14 | 608 | 0.6+ | 0.9− | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2001 09 10 | 699 | 0.3+ | 0.1+ | 2003 03 14 | 608 | 0.5+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2001 09 10 | 699 | 0.6+ | 0.5− | 2003 03 14 | 608 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 699 | 0.4− | 0.8+ | 2005 08 05 | 644 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.4− | 0.4+ |
| 2001 09 21 | 699 | 0.8+ | 0.2+ | 2005 08 05 | 644 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2001 09 21 | 699 | 0.5+ | 0.2− | 2005 08 05 | 644 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2001 09 21 | 699 | 0.5+ | 0.2− | 2005 09 09 | 704 | 0.4− | 0.9+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 09 25 | 644 | 0.5− | 0.0 | 2005 09 09 | 704 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.4− | 0.1+ |
| 2001 09 25 | 644 | 0.5− | 0.0 | 2005 09 09 | 704 | 0.5+ | 0.9+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2001 09 25 | 644 | 0.8− | 0.2+ | 2005 09 26 | 703 | 1.1− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2001 09 29 | 644 | 0.5− | 0.1+ | 2005 09 26 | 703 | 0.6− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 09 29 | 644 | 0.5− | 0.0 | 2005 09 26 | 703 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2001 09 29 | 644 | 0.4− | 0.2+ | 2005 09 26 | 703 | 0.6+ | 0.3− | 2006 11 28 | 704 | 0.5+ | 1.1+ |
| 2001 10 17 | 704 | 0.6+ | 1.1− | 2005 11 04 | G96 | 0.5+ | 0.3− | 2006 11 28 | 704 | 0.1− | 0.5− |
| 2001 10 17 | 704 | 0.2+ | 1.1− | 2005 11 04 | G96 | 0.3+ | 0.5− | 2006 11 28 | 704 | 1.0+ | 1.4+ |
| 2001 10 17 | 704 | (1.8+ | 2.8−) | 2005 11 04 | G96 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | (0.2+ | 1.6−) | 2005 11 04 | G96 | 0.1+ | 0.3− | | | | |
| 2001 10 17 | 704 | (0.5+ | 2.2−) | 2006 09 25 | G96 | 0.0 | 0.3− | | | | |

**(139590)∗ 2001 QJ$_{113}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.05788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19035000 | $\omega$ | 266.50033 | | −0.98561458 | −0.05384399 | |
| $a$ | 2.9929592 | $\Omega$ | 270.36791 | | +0.11380744 | −0.91221717 | |
| $e$ | 0.0478770 | $i$ | 9.21882 | | −0.12494704 | −0.40615349 | |
| $P$ | 5.18 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.1− | 0.7+ | 2002 12 06 | 704 | 0.1− | 0.2− | 2004 03 31 | 703 | 0.6+ | 0.2+ | |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.2+ | 0.0 | 2004 03 31 | 703 | 0.1− | 0.5+ | |
| 2001 08 25 | 704 | 0.2− | 1.0+ | 2002 12 06 | 704 | 0.0 | 0.8+ | 2004 03 31 | 704 | 1.0+ | 0.9+ | |
| 2001 08 25 | 704 | 0.6+ | 0.7− | 2002 12 06 | 704 | 0.8+ | 0.5+ | 2004 03 31 | 704 | 0.5+ | 1.1+ | |
| 2001 08 25 | 704 | 0.4− | 1.5+ | 2002 12 06 | 704 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 1.1+ | 0.9− | |
| 2001 08 25 | 704 | 0.4+ | 0.2+ | 2002 12 06 | 704 | 0.0 | 0.2+ | 2004 03 31 | 704 | 0.1− | 0.8+ | |
| 2001 08 25 | 704 | 0.9− | 0.4+ | 2002 12 06 | 704 | 0.1+ | 0.8+ | 2004 03 31 | 704 | 0.2− | 0.8+ | |
| 2001 08 25 | 704 | 0.1− | 0.5+ | 2002 12 10 | 704 | 0.4− | 0.2− | 2004 04 21 | 703 | 1.3+ | 0.6+ | |
| 2001 08 26 | 704 | 0.3− | 0.1− | 2002 12 10 | 704 | 0.5+ | 0.3+ | 2004 04 21 | 703 | (2.2+ | 0.3+) | |
| 2001 08 26 | 704 | 0.5+ | 0.5− | 2002 12 10 | 704 | 0.1+ | 0.1+ | 2004 04 21 | 703 | (0.2− | 3.1+) | |
| 2001 08 26 | 704 | 0.2− | 0.2− | 2002 12 10 | 704 | 0.1+ | 0.1+ | 2004 04 21 | 703 | (0.4+ | 2.9+) | |
| 2001 09 10 | 704 | 0.2+ | 0.0 | 2002 12 10 | 704 | 0.7− | 0.5− | 2006 08 18 | 644 | 0.1− | 0.2+ | |
| 2001 09 10 | 704 | 0.3− | 0.0 | 2002 12 10 | 704 | 0.1− | 0.4− | 2006 08 18 | 644 | 0.3− | 0.0 | |
| 2001 09 10 | 704 | 0.5− | 0.1− | 2002 12 10 | 704 | 0.5− | 1.1− | 2006 08 18 | 644 | 0.3− | 0.2+ | |
| 2001 09 10 | 699 | 0.9+ | 1.0− | 2002 12 10 | 704 | 0.1− | 0.5− | 2006 08 27 | 699 | 0.2+ | 0.2+ | |
| 2001 09 10 | 704 | 0.1− | 0.4+ | 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.4− | 0.8+ | |
| 2001 09 10 | 704 | 0.9+ | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.2− | 0.2− | |
| 2001 09 10 | 699 | 0.5+ | 0.3+ | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.5+ | 0.3− | |
| 2001 09 10 | 699 | 0.1− | 0.0 | 2002 12 31 | 704 | 0.7− | 0.5− | 2006 08 30 | 699 | 0.4+ | 1.0+ | |
| 2001 09 10 | 699 | 0.8− | 0.1− | 2002 12 31 | 704 | 0.7+ | 0.5+ | 2006 08 30 | 699 | 0.1+ | 0.4− | |
| 2001 09 25 | 704 | 0.2− | 0.8+ | 2002 12 31 | 704 | 0.4− | 0.3− | 2006 08 30 | 699 | 0.7+ | 0.5+ | |
| 2001 09 25 | 704 | 0.8− | 0.3+ | 2003 01 04 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 1.5− | 0.4− | |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2003 01 04 | 704 | 0.6+ | 0.3− | 2006 09 11 | 703 | 0.8+ | 1.0− | |
| 2001 09 25 | 704 | 0.7+ | 0.8+ | 2003 01 04 | 704 | 0.5+ | 0.2− | 2006 09 11 | 703 | 0.2− | 0.5− | |
| 2001 09 25 | 704 | 0.2− | 0.9+ | 2003 01 04 | 704 | 0.0 | 0.4− | 2006 09 11 | 703 | 0.7− | 0.5− | |
| 2001 10 13 | 644 | 0.0 | 0.1− | 2003 01 04 | 704 | 0.3+ | 0.4− | 2006 09 11 | 703 | (0.4+ | 2.7−) | |
| 2001 10 13 | 644 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.6+ | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.8+ | |
| 2001 10 13 | 644 | 0.0 | 0.1− | 2003 01 08 | 704 | 0.3− | 1.4− | 2006 09 15 | 704 | 0.9− | 0.9+ | |
| 2001 10 17 | 704 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.3+ | 0.5− | 2006 09 15 | 704 | 0.8+ | 0.1− | |
| 2001 10 17 | 704 | 0.1+ | 0.2+ | 2003 01 10 | 291 | 0.0 | 0.3+ | 2006 09 15 | 704 | 0.7+ | 1.2− | |
| 2001 10 17 | 704 | 1.0+ | 0.4− | 2003 01 10 | 291 | 0.1− | 0.3+ | 2006 09 15 | 704 | 0.7− | 1.3+ | |
| 2001 10 17 | 704 | 0.2− | 0.8+ | 2003 01 10 | 291 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.9− | 0.2+ | |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2004 02 17 | 703 | 0.8− | 0.1− | 2006 09 20 | 699 | 0.6− | 0.5+ | |
| 2001 10 19 | 704 | (1.6− | 0.0 ) | 2004 02 17 | 703 | 0.3− | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.1− | |
| 2001 10 19 | 704 | 0.3− | 0.5+ | 2004 02 17 | 703 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.7− | 0.3+ | |
| 2001 10 19 | 704 | 0.4− | 0.0 | 2004 02 17 | 703 | 0.1+ | 0.8+ | 2006 09 29 | 699 | 0.9+ | 0.7+ | |
| 2001 10 19 | 704 | 0.7− | 0.5+ | 2004 03 01 | 703 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.2− | 0.4+ | |
| 2001 11 11 | 699 | 0.3+ | 1.2− | 2004 03 01 | 703 | (0.7+ | 1.7+) | 2006 09 29 | 699 | 0.6+ | 0.0 | |
| 2001 11 11 | 699 | 0.1+ | 0.9− | 2004 03 01 | 703 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.4− | 0.1+ | |
| 2001 11 11 | 699 | 0.8− | 0.9− | 2004 03 01 | 703 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.2− | 0.6+ | |
| 2001 11 11 | 699 | 0.5− | 0.3− | 2004 03 17 | 704 | 0.2+ | 0.8+ | 2006 10 01 | 703 | (1.5− | 0.8+) | |
| 2002 12 05 | 704 | 0.4− | 0.1− | 2004 03 17 | 704 | 0.1+ | 0.8+ | 2006 10 01 | 703 | 0.2+ | 0.1+ | |
| 2002 12 05 | 704 | 0.5− | 0.0 | 2004 03 17 | 704 | 0.7+ | 1.2+ | 2006 10 01 | 703 | 0.2− | 1.0+ | |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2004 03 17 | 704 | 0.5+ | 0.9+ | 2006 10 11 | 644 | 0.4+ | 0.1− | |
| 2002 12 05 | 704 | 0.6− | 0.1+ | 2004 03 17 | 704 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2004 03 31 | 703 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.3+ | |
| 2002 12 06 | 704 | 0.1+ | 0.7− | 2004 03 31 | 703 | 0.7+ | 1.2− | | | | | |

**(139591)∗ 2001 QS$_{113}$**

Discovered 2001 Aug. 25 by P. Pravec and P. Kušnirák at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.27982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21617487 | $\omega$ | 138.15581 | | +0.49343091 | −0.85882420 | |
| $a$ | 2.7495771 | $\Omega$ | 281.84944 | | +0.75603405 | +0.50174035 | |
| $e$ | 0.1440453 | $i$ | 8.08517 | | +0.43004471 | +0.10333256 | |
| $P$ | 4.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.5− | 0.7− | 2003 01 14 | 608 | 0.3− | 0.4− | 2006 10 19 | 703 | 0.2− | 0.2− | |
| 2001 08 25 | 704 | 0.1− | 0.3+ | 2003 01 14 | 608 | 0.2+ | 0.6− | 2006 10 19 | 703 | 0.8+ | 0.9− | |
| 2001 08 25 | 704 | 0.3− | 0.7− | 2003 01 14 | 608 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.6+ | |
| 2001 08 25 | 704 | 0.0 | 0.2+ | 2003 01 26 | 699 | 0.5+ | 0.6− | 2006 10 27 | 703 | 0.4+ | 0.6− | |
| 2001 08 25 | 704 | 0.4− | 0.2− | 2003 01 26 | 699 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.5− | |
| 2001 08 25 | 557 | 0.5+ | 0.5+ | 2003 01 26 | 699 | 0.9− | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.6− | |
| 2001 08 25 | 557 | 0.3+ | 0.1+ | 2003 01 26 | 699 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.5+ | 0.1− | |
| 2001 08 26 | 557 | 0.2− | 0.3+ | 2003 01 27 | 644 | 0.1− | 0.4+ | 2006 11 10 | 644 | 0.4+ | 0.1− | |
| 2001 08 27 | 557 | 0.3+ | 0.1− | 2003 01 27 | 644 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.7− | 1.0− | |
| 2001 08 27 | 557 | 0.2− | 0.3+ | 2003 01 27 | 644 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.4+ | 0.0 | |
| 2001 08 28 | 557 | 0.1+ | 0.0 | 2003 01 30 | 699 | 0.0 | 1.0− | 2006 11 13 | 644 | 0.4+ | 0.1− | |
| 2001 08 28 | 557 | 0.5+ | 0.0 | 2003 01 30 | 699 | 0.7+ | 0.6+ | 2006 11 13 | 644 | 0.8+ | 0.3− | |
| 2001 08 28 | 557 | 1.1+ | 0.2− | 2003 01 30 | 699 | 0.6+ | 1.3+ | 2006 11 14 | 703 | (1.6+ | 0.5+) | |
| 2001 08 29 | 557 | 0.1− | 0.0 | 2003 01 30 | 699 | 0.6+ | 1.2+ | 2006 11 14 | 703 | 0.3− | 0.3+ | |
| 2001 09 16 | 704 | 1.4− | 0.7+ | 2005 06 03 | 691 | 0.6+ | 0.1− | 2006 11 14 | 703 | 0.8− | 1.2− | |
| 2001 09 16 | 704 | 0.4− | 0.2− | 2005 06 03 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 1.9+ | 0.7+ | |
| 2001 09 16 | 704 | 0.4− | 0.9+ | 2005 06 03 | 691 | 0.1− | 0.3− | 2006 11 16 | 704 | 1.8− | 0.9− | |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2005 06 08 | 691 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.4− | 1.3+ | |
| 2001 09 16 | 704 | 0.7− | 0.9+ | 2005 06 08 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 1.9− | 1.5+ | |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2005 06 08 | 691 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.1− | 0.8− | |
| 2001 09 25 | 704 | 0.5− | 0.2+ | 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.5+ | 0.8− | |
| 2001 09 25 | 704 | 0.2− | 0.2+ | 2005 06 13 | G96 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.5+ | 1.3− | |
| 2001 09 25 | 704 | 0.5+ | 1.2+ | 2005 06 13 | G96 | 0.5+ | 0.1+ | 2006 11 22 | 703 | 1.0− | 0.3+ | |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.4− | 0.1+ | | | | | |

**(139592)∗ 2001 QK$_{114}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.41749 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21745298 | $\omega$ | 63.15653 | | +0.09066429 | +0.99375861 | |
| $a$ | 2.7387926 | $\Omega$ | 212.24926 | | −0.95147435 | +0.06716666 | |
| $e$ | 0.2432461 | $i$ | 6.99577 | | −0.29406895 | +0.08906437 | |
| $P$ | 4.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 02 | 691 | 0.1+ | 0.9− | 2001 09 18 | 699 | 0.5+ | 0.5− | 2005 06 09 | 691 | 0.1+ | 0.1− | |
| 1992 10 02 | 691 | 0.1− | 0.7− | 2001 09 20 | 704 | 0.2+ | 0.1+ | 2005 06 09 | 691 | 0.1+ | 0.2− | |
| 1992 10 02 | 691 | 0.8+ | 1.1− | 2001 09 20 | 704 | 0.6+ | 1.0+ | 2005 06 23 | 644 | 0.2− | 0.3− | |
| 2001 08 17 | 704 | 1.0− | 1.4+ | 2001 09 20 | 704 | 0.9− | 0.1− | 2005 06 23 | 644 | 0.3+ | 0.4− | |
| 2001 08 17 | 704 | (1.2− | 1.8+) | 2001 09 20 | 704 | 0.6+ | 0.6+ | 2005 06 23 | 644 | 0.0 | 0.1− | |
| 2001 08 17 | 704 | 0.4− | 1.3+ | 2001 09 20 | 704 | 0.6− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.6− | |
| 2001 08 23 | 699 | 0.6− | 1.2+ | 2001 10 19 | 644 | 0.2+ | 1.3+ | 2006 09 26 | G96 | 0.0 | 0.4− | |
| 2001 08 23 | 699 | 1.2− | 0.3− | 2001 10 19 | 644 | 0.1− | 1.4+ | 2006 09 26 | G96 | 0.2− | 0.2− | |
| 2001 08 23 | 699 | 0.8− | 0.2− | 2001 10 19 | 644 | (0.2+ | 1.6+) | 2006 09 26 | G96 | 0.0 | 0.2− | |
| 2001 08 23 | 699 | 0.5− | 0.6+ | 2001 10 21 | 704 | 0.1+ | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.3− | |
| 2001 08 25 | 704 | 0.1− | 0.4− | 2001 10 21 | 704 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.1− | |
| 2001 08 25 | 704 | 0.7− | 0.1+ | 2001 10 21 | 704 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.4− | 0.2− | |
| 2001 08 25 | 704 | 0.4− | 0.2− | 2001 10 21 | 704 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.7+ | 0.2− | |
| 2001 08 25 | 704 | 0.7− | 0.3− | 2005 05 03 | 704 | 0.2+ | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.5+ | |
| 2001 08 25 | 704 | 0.2− | 0.3− | 2005 05 03 | 704 | 0.5+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1+ | |
| 2001 09 08 | 704 | 0.3+ | 0.1+ | 2005 05 03 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2− | |
| 2001 09 08 | 704 | 0.5+ | 0.3− | 2005 05 03 | 704 | 0.4− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1+ | |
| 2001 09 08 | 704 | 0.4+ | 0.1+ | 2005 05 03 | 704 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 | |
| 2001 09 08 | 704 | 0.4+ | 0.3+ | 2005 05 04 | 644 | 0.5− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | |
| 2001 09 08 | 704 | 0.5+ | 0.6+ | 2005 05 04 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | |
| 2001 09 09 | 699 | 0.0 | 0.1+ | 2005 05 04 | 644 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.7+ | 0.5− | |
| 2001 09 09 | 699 | 0.7+ | 0.8+ | 2005 06 01 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− | |
| 2001 09 09 | 699 | 0.5+ | 0.5+ | 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− | |
| 2001 09 09 | 699 | 0.2+ | 0.2+ | 2005 06 01 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 | |
| 2001 09 16 | 704 | 0.5− | 0.7− | 2005 06 02 | 703 | (1.1+ | 2.3+) | 2006 10 27 | G96 | 0.2+ | 0.0 | |
| 2001 09 16 | 704 | 0.3+ | 0.5+ | 2005 06 02 | 703 | 0.8− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2001 09 16 | 704 | 0.5+ | 0.2+ | 2005 06 02 | 703 | 1.0− | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.0 | |
| 2001 09 16 | 704 | 1.4+ | 0.5+ | 2005 06 02 | 703 | 0.4− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.2+ | |
| 2001 09 16 | 704 | (1.7+ | 0.0 ) | 2005 06 05 | 704 | 0.1+ | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.3+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.2− | 1.3+ | 2005 06 05 | 704 | 0.6+ | 0.2− | 2006 10 29 | 691 | 0.4+ | 0.0 |
| 2001 09 18 | 699 | 1.0− | 0.5− | 2005 06 05 | 704 | 0.4+ | 0.4− | | | | |
| 2001 09 18 | 699 | 0.6− | 0.2− | 2005 06 09 | 691 | 0.2+ | 0.2− | | | | |

**(139593)∗ 2001 QL$_{114}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.98353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19668046 | $\omega$ | 194.95715 | | −0.58353012 | −0.80108834 | |
| $a$ | 2.9283876 | $\Omega$ | 290.91616 | | +0.75895640 | −0.47959265 | |
| $e$ | 0.0700806 | $i$ | 8.19995 | | +0.28892522 | −0.35811781 | |
| $P$ | 5.01 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | (1.1+ | 2.1+) | 2001 12 07 | 704 | 0.4− | 0.7− | 2004 03 17 | 704 | 0.1− | 0.4+ |
| 2001 07 19 | 699 | 0.7+ | 0.7+ | 2001 12 07 | 704 | 0.4+ | 0.2− | 2004 03 17 | 704 | 0.1+ | 0.7+ |
| 2001 07 19 | 699 | 0.4+ | 1.0+ | 2001 12 07 | 704 | 0.7− | 0.6+ | 2004 03 31 | 704 | 0.3+ | 0.4+ |
| 2001 07 19 | 699 | 1.1+ | 0.2+ | 2002 10 04 | 704 | 0.6+ | 0.4+ | 2004 03 31 | 704 | 0.8+ | 0.9+ |
| 2001 08 10 | 608 | 0.6− | 0.6+ | 2002 10 04 | 704 | 0.5− | 1.6+ | 2004 03 31 | 704 | 0.2− | 1.3+ |
| 2001 08 10 | 608 | 0.4+ | 0.5+ | 2002 10 04 | 704 | 0.5+ | 1.0+ | 2004 03 31 | 704 | 0.4+ | 0.2− |
| 2001 08 10 | 608 | 0.1+ | 0.7+ | 2002 10 04 | 704 | 0.6+ | 1.4+ | 2004 04 06 | 608 | 0.4+ | 1.1+ |
| 2001 08 17 | 704 | 0.1− | 1.2+ | 2002 11 12 | 704 | 0.2− | 1.1+ | 2004 04 06 | 608 | 0.7+ | 1.5+ |
| 2001 08 17 | 704 | 0.7− | 0.6+ | 2002 11 12 | 704 | 0.2− | 0.1− | 2004 04 06 | 608 | 0.6+ | 0.6+ |
| 2001 08 17 | 704 | 0.3+ | 0.0 | 2002 11 12 | 704 | 1.3− | 1.2+ | 2004 04 11 | 644 | 0.1− | 0.7+ |
| 2001 08 17 | 704 | 0.1+ | 0.9+ | 2002 11 12 | 704 | 1.0− | 0.0 | 2004 04 11 | 644 | 0.1+ | 0.3+ |
| 2001 08 24 | 699 | 1.1− | 0.8+ | 2002 12 06 | 704 | 0.2+ | 0.3− | 2004 04 11 | 644 | 0.1− | 0.6− |
| 2001 08 24 | 699 | 1.4− | 1.2+ | 2002 12 06 | 704 | 0.3+ | 0.0 | 2004 04 15 | 703 | 0.1+ | 0.1− |
| 2001 08 24 | 699 | 0.3− | 0.2+ | 2002 12 06 | 704 | 0.7+ | 0.4− | 2004 04 15 | 703 | 0.3+ | 0.6+ |
| 2001 08 24 | 699 | 1.2− | 0.4+ | 2002 12 06 | 704 | 0.5+ | 0.4+ | 2004 04 15 | 703 | 0.9+ | 0.1+ |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2002 12 10 | 704 | 0.3− | 0.1+ | 2004 04 15 | 703 | 0.5+ | 0.6+ |
| 2001 08 25 | 704 | 0.3+ | 0.4+ | 2002 12 10 | 704 | 0.1+ | 0.2+ | 2004 04 16 | 704 | 0.1+ | 1.7+ |
| 2001 08 25 | 704 | 0.6− | 0.5− | 2002 12 10 | 704 | 0.4+ | 1.5+ | 2004 04 16 | 704 | 1.2+ | 1.1+ |
| 2001 08 25 | 704 | 0.2− | 0.3+ | 2002 12 10 | 704 | 0.0 | 0.5+ | 2004 04 16 | 704 | 0.0 | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.5+ | 2002 12 10 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 704 | 0.2− | 1.3+ |
| 2001 09 08 | 704 | 0.2+ | 0.1+ | 2002 12 11 | 704 | 1.0+ | 0.1− | 2006 08 18 | 644 | 0.7− | 0.2+ |
| 2001 09 08 | 704 | 0.1− | 0.8+ | 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 08 18 | 644 | 0.4− | 0.0 |
| 2001 09 08 | 704 | 0.3− | 1.6+ | 2002 12 11 | 704 | 0.1+ | 0.2− | 2006 08 18 | 644 | 0.1− | 0.2− |
| 2001 09 08 | 704 | 0.4− | 0.8+ | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.0 |
| 2001 09 08 | 704 | 0.1+ | 1.8+ | 2002 12 14 | 704 | 0.2− | 0.3− | 2006 08 18 | 644 | 0.5− | 0.0 |
| 2001 09 09 | 683 | 0.2− | 1.1+ | 2002 12 14 | 704 | 0.9− | 0.3− | 2006 08 18 | 644 | 0.6− | 0.2+ |
| 2001 09 09 | 683 | 1.1− | 0.8− | 2002 12 14 | 704 | 0.7− | 0.1− | 2006 08 19 | 644 | 0.2− | 0.1+ |
| 2001 09 09 | 683 | 1.5− | 0.4+ | 2002 12 14 | 704 | 1.1− | 0.4+ | 2006 08 19 | 644 | 0.3− | 0.0 |
| 2001 09 12 | 683 | 0.3− | 0.9+ | 2002 12 14 | 704 | 0.5− | 0.0 | 2006 08 19 | 644 | 0.3− | 0.1+ |
| 2001 09 12 | 683 | 1.3− | 1.3− | 2002 12 15 | 704 | 0.1− | 0.1− | 2006 08 24 | 704 | (2.3+ | 0.4+) |
| 2001 09 12 | 683 | (2.0− | 2.2+) | 2002 12 15 | 704 | 0.8+ | 0.0 | 2006 08 24 | 704 | 1.4+ | 1.2+ |
| 2001 09 15 | 644 | 0.3+ | 0.1+ | 2002 12 15 | 704 | 0.5+ | 0.2+ | 2006 08 24 | 704 | 1.0+ | 0.9+ |
| 2001 09 15 | 644 | 0.0 | 0.0 | 2002 12 15 | 704 | 0.7+ | 0.7− | 2006 08 24 | 704 | 1.6+ | 1.2+ |
| 2001 09 15 | 644 | 0.2+ | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.1+ | 2006 08 24 | 704 | 1.0+ | 0.9+ |
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2003 01 05 | 704 | 0.9+ | 0.1+ | 2006 08 27 | 699 | 0.9− | 1.1+ |
| 2001 09 16 | 704 | 0.4+ | 0.8+ | 2003 01 05 | 704 | 0.6+ | 0.3+ | 2006 08 27 | 699 | 0.3+ | 0.7+ |
| 2001 09 16 | 704 | 0.2+ | 1.2+ | 2003 01 05 | 704 | 0.6+ | 0.1− | 2006 08 27 | 699 | 0.5+ | 0.0 |
| 2001 09 16 | 704 | 0.4+ | 1.3+ | 2003 01 05 | 704 | 1.2+ | 1.1+ | 2006 08 29 | 703 | 1.1− | 0.2− |
| 2001 09 16 | 704 | 0.8+ | 0.8+ | 2003 02 01 | 704 | 0.9− | 0.0 | 2006 08 29 | 703 | 1.1− | 0.7− |
| 2001 09 20 | 704 | 0.7+ | 0.1+ | 2003 02 01 | 704 | 0.8− | 1.0− | 2006 08 29 | 703 | 0.2− | 0.7− |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2003 02 01 | 704 | 1.6− | 0.5− | 2006 08 29 | 703 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2003 02 01 | 704 | 1.6− | 0.8− | 2006 08 30 | 699 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.6− | 0.1− | 2003 02 01 | 704 | 0.5− | 0.5− | 2006 08 30 | 699 | 0.5− | 0.2− |
| 2001 09 20 | 704 | 0.6− | 1.0+ | 2003 12 22 | 704 | 0.7+ | 0.8+ | 2006 08 30 | 699 | 0.2− | 0.4− |
| 2001 09 21 | 699 | 0.6+ | 0.4− | 2003 12 22 | 704 | 0.7+ | 1.1+ | 2006 08 30 | 699 | 0.0 | 0.2− |
| 2001 09 21 | 699 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.2+ | 1.3+ | 2006 09 01 | 704 | 0.5− | 0.4+ |
| 2001 09 21 | 699 | 0.7+ | 0.8− | 2003 12 22 | 704 | 0.7+ | 1.2+ | 2006 09 01 | 704 | 0.3− | 0.3− |
| 2001 09 21 | 699 | 0.0 | 0.5− | 2003 12 22 | 704 | 0.7+ | 1.1+ | 2006 09 01 | 704 | 0.7+ | 0.4+ |
| 2001 09 25 | 644 | 0.3+ | 0.3+ | 2004 02 16 | 703 | 0.6+ | 0.3− | 2006 09 01 | 704 | 0.7+ | 0.2− |
| 2001 09 25 | 644 | 0.5− | 0.8+ | 2004 02 16 | 703 | 0.7+ | 1.0+ | 2006 09 01 | 704 | 0.3− | 0.4+ |
| 2001 09 25 | 644 | 0.4− | 0.8+ | 2004 02 16 | 703 | 0.4+ | 0.2+ | 2006 09 11 | 703 | 0.1+ | 0.6+ |
| 2001 10 14 | 704 | 1.6+ | 0.0 | 2004 02 16 | 703 | 0.7+ | 0.4+ | 2006 09 11 | 703 | 1.2− | 0.6+ |
| 2001 10 14 | 704 | 1.4+ | 0.9− | 2004 03 16 | 703 | 0.9+ | 0.7+ | 2006 09 11 | 703 | 0.3− | 0.1− |
| 2001 10 14 | 704 | (2.0+ | 0.4−) | 2004 03 16 | 703 | 0.4+ | 0.3+ | 2006 09 11 | 703 | 1.0− | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 16 | 703 | 0.5− | 0.6+ | 2006 09 18 | 703 | 0.7+ | 0.1+ |
| 2001 10 15 | 645 | 0.1− | 0.1− | 2004 03 16 | 703 | 0.0 | 1.4+ | 2006 09 18 | 703 | 0.2− | 0.6+ |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2004 03 17 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.6+ |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2004 03 17 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.6+ |
| 2001 12 07 | 704 | (2.3− | 0.0 ) | 2004 03 17 | 704 | 0.4+ | 0.6+ | | | | |

**(139594)∗ 2001 QN$_{114}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.95596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19316976 | $\omega$ | 191.85220 | | +0.91098323 | −0.41061252 | |
| $a$ | 2.9637617 | $\Omega$ | 192.60533 | | +0.39145426 | +0.89042775 | |
| $e$ | 0.1119146 | $i$ | 10.24615 | | +0.12989652 | +0.19630534 | |
| $P$ | 5.10 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.2− | 0.7− | 2001 10 19 | 644 | 0.9− | 0.5+ | 2006 08 27 | 699 | 0.9+ | 0.4+ |
| 2001 08 11 | 608 | 0.0 | 0.8− | 2001 10 19 | 644 | 0.6− | 0.8+ | 2006 08 27 | 699 | 0.2+ | 0.4+ |
| 2001 08 11 | 608 | 0.2− | 0.5− | 2001 10 19 | 644 | 0.7− | 0.4+ | 2006 08 27 | 699 | 0.3− | 0.3− |
| 2001 08 17 | 704 | 0.6+ | 0.8− | 2001 10 21 | 704 | 0.4− | 0.4+ | 2006 08 27 | 699 | (0.3+ | 1.5+) |
| 2001 08 17 | 704 | (1.0− | 1.9+) | 2001 10 21 | 704 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.5+ | 0.1+ |
| 2001 08 17 | 704 | (2.6+ | 0.8−) | 2001 10 21 | 704 | 0.4+ | 0.7+ | 2006 08 29 | 703 | 0.7− | 0.1− |
| 2001 08 17 | 704 | 0.1− | 0.7+ | 2001 10 21 | 704 | 0.7− | 0.5− | 2006 08 29 | 703 | 0.5+ | 0.8− |
| 2001 08 17 | 704 | 0.9− | 0.6+ | 2004 03 15 | 703 | 0.9− | 0.9+ | 2006 08 29 | 703 | 0.4+ | 0.2− |
| 2001 08 25 | 704 | 0.7+ | 0.2+ | 2004 03 15 | 703 | (1.8− | 0.5+) | 2006 09 11 | 703 | 1.1− | 0.7− |
| 2001 08 25 | 704 | 0.7+ | 0.1+ | 2004 03 15 | 703 | 0.1+ | 0.6− | 2006 09 11 | 703 | (1.8− | 0.6−) |
| 2001 08 25 | 704 | 0.7+ | 0.6− | 2004 03 15 | 703 | 0.8− | 1.1+ | 2006 09 11 | 703 | 0.5− | 0.2− |
| 2001 08 25 | 704 | 1.4+ | 0.3+ | 2004 03 18 | 704 | 1.4+ | 0.7+ | 2006 09 11 | 703 | (0.4+ | 1.7+) |
| 2001 09 08 | 704 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.7+ | 2006 09 15 | 691 | 0.7− | 0.0 |
| 2001 09 08 | 704 | 0.1+ | 0.4− | 2004 03 18 | 704 | 0.1+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.5− |
| 2001 09 08 | 704 | 0.3− | 0.5− | 2004 03 20 | 704 | 0.7+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.3− |
| 2001 09 08 | 704 | 0.4− | 0.8− | 2004 03 20 | 704 | 0.3+ | 0.5− | 2006 09 17 | 691 | 0.2− | 0.0 |
| 2001 09 08 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.2− |
| 2001 09 11 | 699 | 0.8− | 0.8+ | 2004 03 20 | 704 | (0.9+ | 1.9+) | 2006 09 17 | 691 | 0.2− | 0.2− |
| 2001 09 11 | 699 | 0.4− | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2+ |
| 2001 09 11 | 699 | 1.0− | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2001 09 11 | 699 | 0.3− | 0.6+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.1+ | 2004 04 21 | 691 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 0.6+ | 0.5− | 2004 04 21 | 691 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 09 16 | 704 | 0.6+ | 0.1− | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 1.0+ | 0.4+ | 2005 05 08 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2001 09 18 | 699 | 1.0+ | 1.3+ | 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2001 09 18 | 699 | 0.2− | 0.7− | 2005 05 08 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2001 09 18 | 699 | 0.3− | 0.6+ | 2005 06 03 | 691 | 0.2− | 0.4− | 2006 09 30 | 691 | 0.4+ | 0.0 |
| 2001 09 18 | 699 | (1.7− | 1.7+) | 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2001 09 24 | 644 | 0.6− | 0.3+ | 2005 06 03 | 691 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.8− | 0.9+ |
| 2001 09 24 | 644 | 0.6− | 0.4+ | 2005 06 13 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.0 | 1.4+ |
| 2001 09 24 | 644 | 0.7− | 0.0 | 2005 06 13 | 691 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.1− | 0.5+ |
| 2001 10 14 | 704 | (1.1+ | 1.7−) | 2005 06 13 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 1.3+ |
| 2001 10 14 | 704 | (1.8+ | 0.3−) | 2006 08 22 | 644 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.5− | 0.5− |
| 2001 10 14 | 704 | 0.8+ | 0.3− | 2006 08 22 | 644 | 0.2− | 0.0 | | | | |
| 2001 10 14 | 704 | 0.1+ | 0.7− | 2006 08 22 | 644 | 0.3− | 0.1− | | | | |

**(139595)∗ 2001 QN$_{116}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.77289 | | (2000.0) | | | |
| $n$ | 0.21375483 | $\omega$ | 62.48755 | | +0.97327941 | −0.21037808 |
| $a$ | 2.7702912 | $\Omega$ | 309.50789 | | +0.14491001 | +0.87360704 |
| $e$ | 0.1938082 | $i$ | 6.85011 | | +0.17812432 | +0.43880726 |
| $P$ | 4.61 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 09 | 691 | 0.8− | 0.5− | 2001 09 22 | 704 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.9+ | 0.5+ |
| 1993 12 09 | 691 | 0.4− | 0.7− | 2001 09 22 | 704 | 0.2+ | 0.2+ | 2003 01 08 | 704 | 0.3+ | 0.7− |
| 1993 12 09 | 691 | 0.2− | 0.7− | 2001 09 23 | 704 | 0.5+ | 0.1+ | 2003 01 16 | 926 | 0.2+ | 0.0 |
| 2001 08 17 | 704 | 0.4− | 1.4− | 2001 09 23 | 704 | 0.4+ | 0.1+ | 2003 01 16 | 926 | 0.3+ | 0.3+ |
| 2001 08 17 | 704 | 0.2+ | 0.1− | 2001 09 23 | 704 | 0.7+ | 0.2+ | 2003 01 16 | 926 | 0.5+ | 0.5+ |
| 2001 08 17 | 704 | 0.7+ | 0.7+ | 2001 09 23 | 704 | 0.1− | 0.2+ | 2003 01 27 | 704 | 1.6+ | 0.1+ |
| 2001 08 17 | 704 | 0.1+ | 0.5+ | 2001 09 23 | 704 | (2.1+ | 0.7+) | 2003 01 27 | 704 | (1.8+ | 1.5+) |
| 2001 08 17 | 704 | 0.1+ | 0.6+ | 2001 09 28 | 644 | 0.5− | 0.2− | 2003 01 27 | 704 | 1.2+ | 0.3+ |
| 2001 08 25 | 704 | 0.2+ | 0.7+ | 2001 09 28 | 644 | 0.3− | 0.2− | 2003 01 27 | 704 | 1.3+ | 0.9+ |
| 2001 08 25 | 704 | 0.1− | 0.3− | 2001 09 28 | 644 | 0.4− | 0.2− | 2003 01 28 | 704 | (0.7− | 2.3+) |
| 2001 08 25 | 704 | 0.1− | 0.3− | 2001 10 05 | 644 | 0.3− | 0.2− | 2003 01 28 | 704 | (1.6+ | 0.3−) |
| 2001 08 25 | 704 | 0.2+ | 0.6− | 2001 10 05 | 644 | 0.5+ | 0.1+ | 2003 01 28 | 704 | 0.0 | 1.2+ |
| 2001 09 08 | 704 | 0.6+ | 0.3− | 2001 10 05 | 644 | 0.1+ | 0.1− | 2003 01 28 | 704 | 1.0− | 1.2+ |
| 2001 09 08 | 704 | 0.3− | 0.2− | 2001 10 14 | 704 | 0.3+ | 0.5+ | 2003 01 28 | 704 | 0.4+ | 1.2+ |
| 2001 09 08 | 704 | 0.0 | 0.1− | 2001 10 14 | 704 | 0.1− | 0.3+ | 2003 01 30 | 699 | 0.4− | 0.4+ |
| 2001 09 08 | 704 | 0.3− | 0.1+ | 2001 10 14 | 704 | 0.8− | 0.3+ | 2003 01 30 | 644 | 0.1− | 0.4+ |
| 2001 09 08 | 704 | 0.0 | 0.2+ | 2001 10 14 | 704 | 0.1− | 0.6+ | 2003 01 30 | 699 | 0.2− | 0.7+ |
| 2001 09 09 | 704 | 0.7+ | 0.6+ | 2001 10 14 | 704 | 0.2+ | 1.0+ | 2003 01 30 | 699 | 0.2− | 0.2+ |
| 2001 09 09 | 704 | 0.2+ | 1.4+ | 2001 10 16 | 704 | 0.4+ | 0.2− | 2003 01 30 | 699 | 0.8− | 0.4+ |
| 2001 09 09 | 704 | 0.3+ | 1.5+ | 2001 10 16 | 704 | 0.2− | 0.4− | 2003 01 30 | 644 | 0.0 | 0.5+ |
| 2001 09 09 | 704 | 0.2− | 1.1+ | 2001 10 16 | 704 | 0.4− | 0.1− | 2003 01 30 | 644 | 0.1+ | 0.5+ |
| 2001 09 09 | 704 | 0.1− | 1.3+ | 2001 10 16 | 704 | 0.1− | 0.5− | 2003 02 02 | 608 | 0.6+ | 0.4+ |
| 2001 09 10 | 699 | 0.2− | 0.1− | 2001 10 16 | 704 | 0.3− | 0.1+ | 2003 02 02 | 608 | 0.6+ | 0.3− |
| 2001 09 10 | 699 | 0.3− | 0.3− | 2001 10 21 | 704 | 1.3− | 0.5− | 2003 02 02 | 608 | (0.8− | 1.6−) |
| 2001 09 10 | 699 | 0.1− | 0.7− | 2001 10 21 | 704 | 1.0− | 0.2− | 2006 10 02 | 704 | 0.2− | 0.1− |
| 2001 09 10 | 699 | 1.1− | 0.3+ | 2001 10 21 | 704 | 0.9− | 0.4− | 2006 10 02 | 704 | 0.6− | 0.6− |
| 2001 09 15 | 644 | 0.2+ | 0.2− | 2001 10 21 | 704 | 0.9− | 0.4+ | 2006 10 02 | 704 | 0.6+ | 0.9− |
| 2001 09 15 | 644 | 0.2+ | 0.2− | 2001 10 21 | 704 | (1.6− | 0.5−) | 2006 10 02 | 704 | 0.5+ | 0.1− |
| 2001 09 15 | 644 | 0.1+ | 0.0 | 2001 10 23 | 699 | 0.0 | 0.4+ | 2006 10 02 | 704 | 0.6− | 0.1+ |
| 2001 09 16 | 704 | 1.1+ | 1.2− | 2001 10 23 | 699 | 0.7+ | 0.4+ | 2006 10 23 | 703 | 1.1− | 0.7+ |
| 2001 09 16 | 704 | (1.4+ | 1.6−) | 2001 10 23 | 699 | 1.4− | 0.5− | 2006 10 23 | 703 | 0.1+ | 0.3+ |
| 2001 09 16 | 704 | (1.3+ | 1.7−) | 2001 10 23 | 699 | 0.2− | 0.4− | 2006 10 23 | 703 | 1.2+ | 0.8+ |
| 2001 09 16 | 704 | (0.9+ | 1.9−) | 2001 11 18 | 704 | 0.7− | 0.8+ | 2006 10 23 | 703 | 0.0 | 0.1− |
| 2001 09 16 | 704 | (0.9+ | 1.5−) | 2001 11 18 | 704 | 0.3+ | 1.0+ | 2006 11 13 | 644 | 0.1+ | 0.4− |
| 2001 09 18 | 699 | 0.1+ | 0.1− | 2001 11 18 | 704 | 0.9+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.4− |
| 2001 09 18 | 699 | 0.2− | 0.2+ | 2001 11 24 | 704 | 1.0+ | 1.2+ | 2006 11 13 | 644 | 0.2− | 0.6− |
| 2001 09 18 | 699 | 0.1− | 0.0 | 2001 11 24 | 704 | 0.3+ | 0.3− | 2006 11 15 | 704 | 0.2− | 0.1− |
| 2001 09 18 | 699 | 0.1+ | 0.1− | 2001 11 24 | 704 | 0.4− | 0.2− | 2006 11 15 | 704 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.5− | 2001 11 24 | 704 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.9− | 2001 11 24 | 704 | 0.2+ | 1.1+ | 2006 11 15 | 704 | 0.4+ | 1.0− |
| 2001 09 20 | 704 | 0.1− | 0.5− | 2001 12 07 | 704 | 0.8− | 0.0 | 2006 11 15 | 704 | 0.3+ | 0.6− |
| 2001 09 20 | 704 | 0.0 | 1.0− | 2001 12 07 | 704 | 0.6+ | 1.4+ | 2006 11 29 | 704 | 1.1+ | 0.5− |
| 2001 09 22 | 704 | 0.2+ | 0.0 | 2001 12 07 | 704 | 0.5+ | 0.6+ | 2006 11 29 | 704 | 0.3− | 0.8− |
| 2001 09 22 | 704 | 0.7+ | 1.0− | 2001 12 07 | 704 | 0.1+ | 0.9− | 2006 11 29 | 704 | 0.8− | 1.1− |
| 2001 09 22 | 704 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.3+ |

**(139596)∗ 2001 QX$_{116}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.05338 | | (2000.0) | | | |
| $n$ | 0.20971038 | $\omega$ | 357.06654 | | +0.42242373 | +0.89568350 |
| $a$ | 2.8057960 | $\Omega$ | 297.88561 | | −0.82837125 | +0.31926724 |
| $e$ | 0.1951409 | $i$ | 9.04516 | | −0.36791205 | +0.30954725 |
| $P$ | 4.70 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 04 | 691 | 0.5+ | 0.2+ | 2001 09 25 | 644 | 0.6+ | 0.9+ | 2004 02 23 | 704 | 1.3+ | 0.3+ |
| 1994 01 04 | 691 | 0.4− | 0.4− | 2001 09 25 | 704 | 1.4+ | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.4+ |
| 1994 01 04 | 691 | 1.1− | 0.1− | 2001 10 13 | 644 | 0.1− | 0.4+ | 2004 02 25 | 704 | 0.1+ | 0.8+ |
| 2001 07 24 | 644 | 0.1+ | 0.3+ | 2001 10 13 | 644 | 0.0 | 0.3+ | 2004 02 25 | 704 | 0.6+ | 0.7+ |
| 2001 07 24 | 644 | 0.2+ | 0.3+ | 2001 10 13 | 644 | 0.2− | 0.3+ | 2004 02 25 | 704 | 1.0+ | 1.3+ |
| 2001 07 24 | 644 | 0.3+ | 0.4+ | 2001 10 17 | 704 | 0.1+ | 0.2+ | 2004 02 25 | 704 | 0.1+ | 0.7+ |
| 2001 08 04 | 644 | 0.5− | 0.7+ | 2001 10 17 | 704 | 0.3+ | 0.1+ | 2004 02 25 | 704 | 0.5+ | 0.2+ |
| 2001 08 04 | 644 | 0.5− | 0.5+ | 2001 10 17 | 704 | 0.7+ | 0.5− | 2004 02 26 | 704 | 0.2− | 0.9− |
| 2001 08 04 | 644 | 0.4− | 0.6+ | 2001 10 17 | 704 | 1.2+ | 0.5− | 2004 02 26 | 704 | 1.0− | 1.5+ |
| 2001 08 17 | 704 | 0.0 | 1.4+ | 2001 10 17 | 704 | 0.1+ | 0.9− | 2004 02 26 | 704 | 0.2+ | 0.0 |
| 2001 08 17 | 704 | 0.2− | 0.4+ | 2001 10 19 | 704 | 0.7− | 0.1+ | 2004 02 26 | 704 | (0.1+ | 1.7+) |
| 2001 08 17 | 704 | 0.9− | 0.2+ | 2001 10 19 | 704 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 1.4+ | 1.1+ |
| 2001 08 17 | 704 | 1.2− | 0.3+ | 2001 10 19 | 704 | 0.2− | 0.3− | 2004 03 15 | 704 | 1.3+ | 0.8+ |
| 2001 08 17 | 704 | 1.2− | 1.3+ | 2001 10 19 | 704 | 0.5− | 0.6− | 2004 03 15 | 704 | 0.5+ | 0.5+ |
| 2001 08 25 | 704 | 0.3− | 1.0+ | 2001 10 19 | 704 | 0.0 | 0.4− | 2004 03 15 | 704 | 0.9+ | 0.2− |
| 2001 08 25 | 704 | 0.0 | 0.8+ | 2001 10 23 | 699 | 1.0− | 1.0+ | 2004 03 15 | 704 | 0.7+ | 0.4+ |
| 2001 08 25 | 704 | 0.2+ | 0.6+ | 2001 10 23 | 699 | 0.3+ | 0.1+ | 2005 07 03 | E12 | 1.0− | 0.6+ |
| 2001 08 25 | 704 | 0.1− | 0.2+ | 2001 10 23 | 699 | 1.0− | 1.5+ | 2005 07 03 | E12 | 0.1+ | 0.2+ |
| 2001 08 30 | 644 | 0.1+ | 0.5+ | 2001 10 23 | 699 | 0.7+ | 0.5+ | 2005 07 03 | E12 | 0.7− | 0.7+ |
| 2001 08 30 | 644 | 0.2+ | 0.5+ | 2001 10 26 | 644 | 1.4− | 0.7− | 2005 07 03 | E12 | 0.1− | 0.0 |
| 2001 08 30 | 644 | 0.0 | 0.4+ | 2001 10 26 | 644 | (1.8− | 0.8−) | 2005 07 27 | E12 | 0.2+ | 0.1+ |
| 2001 09 10 | 704 | 0.4− | 0.2− | 2001 10 26 | 644 | (1.6− | 0.9−) | 2005 07 27 | E12 | 0.8+ | 0.0 |
| 2001 09 10 | 704 | 0.2− | 0.3− | 2001 11 11 | 644 | 0.5− | 0.4+ | 2005 07 27 | E12 | 0.1− | 0.1+ |
| 2001 09 10 | 704 | 0.6− | 0.6− | 2001 11 11 | 644 | 0.1− | 0.3+ | 2005 07 27 | E12 | 0.6− | 0.3− |
| 2001 09 10 | 699 | 0.0 | 0.5+ | 2001 11 11 | 644 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2001 09 10 | 704 | 0.4− | 0.4− | 2001 11 17 | 699 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2001 09 10 | 704 | 0.5− | 0.1− | 2001 11 17 | 699 | 1.0− | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2001 09 10 | 699 | 0.0 | 0.5+ | 2001 11 17 | 699 | 0.8− | 0.7+ | 2006 10 19 | 703 | (5.8− | 1.4−) |
| 2001 09 10 | 699 | 0.4+ | 0.4+ | 2001 11 17 | 699 | 0.1− | 0.9+ | 2006 10 20 | 704 | 0.4− | 0.1+ |
| 2001 09 10 | 699 | 0.2+ | 0.7+ | 2001 11 25 | 704 | 0.6− | 0.1+ | 2006 10 20 | 704 | 0.0 | 0.5− |
| 2001 09 17 | 644 | 0.4− | 0.5+ | 2001 11 25 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 704 | 0.6+ | 0.3− |
| 2001 09 17 | 644 | 0.4− | 0.6+ | 2001 11 25 | 704 | 0.0 | 1.0+ | 2006 10 27 | 703 | 0.2− | 0.7− |
| 2001 09 17 | 644 | 0.2− | 0.2+ | 2001 12 11 | 704 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 1.2− |
| 2001 09 18 | 645 | 0.1+ | 0.2− | 2001 12 11 | 704 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2001 09 18 | 645 | 0.1+ | 0.3− | 2001 12 11 | 704 | 0.1+ | 1.0− | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2001 09 21 | 699 | 0.1− | 0.1+ | 2001 12 11 | 704 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.2+ |
| 2001 09 21 | 699 | 0.2− | 0.0 | 2001 12 11 | 704 | 0.7− | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.5− |
| 2001 09 21 | 699 | 0.1− | 0.1+ | 2004 01 23 | 704 | 0.3+ | 0.6− | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2001 09 21 | 699 | 0.3+ | 0.6+ | 2004 01 23 | 704 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 1.0+ | 1.0+ | 2004 01 23 | 704 | 0.1+ | 0.1+ | 2006 11 15 | 703 | (1.6+ | 1.4+) |
| 2001 09 25 | 644 | 0.4+ | 0.7+ | 2004 01 23 | 704 | 0.3+ | 0.9+ | 2006 11 15 | 703 | 0.8+ | 0.7− |
| 2001 09 25 | 704 | (1.7+ | 0.9+) | 2004 02 12 | 644 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.0 |
| 2001 09 25 | 644 | 0.5+ | 0.6+ | 2004 02 12 | 644 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.7− | 0.3− |
| 2001 09 25 | 704 | 0.8+ | 1.0+ | 2004 02 12 | 644 | 0.3+ | 0.7+ | | | | |
| 2001 09 25 | 704 | 0.5+ | 1.2+ | 2004 02 23 | 704 | 1.1+ | 0.6+ | | | | |

**(139597)∗ 2001 QD$_{118}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.97677 | | (2000.0) | | | |
| $n$ | 0.19374004 | $\omega$ | 131.45689 | | +0.17161630 | −0.97749184 |
| $a$ | 2.9579429 | $\Omega$ | 308.24064 | | +0.85088746 | +0.20984820 |
| $e$ | 0.0883450 | $i$ | 8.98838 | | +0.49652630 | −0.02175850 |
| $P$ | 5.09 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 644 | 0.1− | 0.1− | 2001 09 25 | 704 | 0.4+ | 0.1+ | 2004 04 12 | 644 | 1.0+ | 0.5+ |
| 2001 08 12 | 644 | 0.0 | 0.0 | 2001 10 13 | 644 | 0.2+ | 0.1+ | 2004 04 12 | 644 | 0.9+ | 0.4+ |
| 2001 08 12 | 644 | 0.2− | 0.1− | 2001 10 13 | 644 | 0.2− | 0.1− | 2004 04 17 | 699 | 0.0 | 0.2− |
| 2001 08 17 | 704 | 1.0− | 0.4+ | 2001 10 13 | 644 | 0.3+ | 0.1− | 2004 04 17 | 699 | 0.2+ | 1.3+ |
| 2001 08 17 | 704 | 1.0− | 0.9− | 2001 10 16 | 704 | 0.1− | 0.1+ | 2004 04 17 | 699 | 0.7− | 1.2+ |
| 2001 08 17 | 704 | 1.5− | 0.5+ | 2001 10 16 | 704 | 0.6+ | 0.3+ | 2004 04 17 | 699 | 0.8+ | 0.7+ |
| 2001 08 17 | 704 | 0.5− | 0.2+ | 2001 10 16 | 704 | 0.9+ | 0.5− | 2006 08 15 | 644 | 0.4− | 0.2− |
| 2001 08 25 | 704 | 0.6− | 0.5+ | 2002 12 06 | 704 | 0.2− | 0.3− | 2006 08 15 | 644 | 0.3− | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 1.0− | 0.2+ | 2002 12 06 | 704 | 0.2+ | 0.4+ | 2006 08 15 | 644 | 0.1− | 0.4− |
| 2001 08 25 | 704 | 0.9− | 0.7+ | 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 08 24 | 704 | 0.4+ | 0.3− |
| 2001 08 25 | 704 | 0.8− | 0.5+ | 2002 12 11 | 704 | 1.1+ | 0.2− | 2006 08 24 | 704 | 0.8+ | 0.4− |
| 2001 09 08 | 704 | 0.4− | 1.0+ | 2002 12 11 | 704 | 0.5+ | 0.3− | 2006 08 24 | 704 | 0.7+ | 0.5− |
| 2001 09 08 | 704 | 0.4+ | 1.0+ | 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 08 24 | 704 | 0.2− | 0.6− |
| 2001 09 08 | 704 | 0.4− | 0.4+ | 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 08 27 | 699 | 0.1− | 0.2+ |
| 2001 09 08 | 704 | 0.5− | 0.1+ | 2002 12 11 | 704 | 0.2+ | 0.5− | 2006 08 27 | 699 | 0.5− | 0.3− |
| 2001 09 08 | 704 | 0.0 | 0.1− | 2002 12 15 | 704 | 1.6− | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.1+ |
| 2001 09 11 | 699 | 0.1− | 0.1+ | 2002 12 15 | 704 | 0.2− | 0.7+ | 2006 08 27 | 699 | 0.8− | 0.1+ |
| 2001 09 11 | 699 | 0.3+ | 0.2− | 2002 12 15 | 704 | 0.1− | 0.8+ | 2006 08 29 | 703 | 0.1+ | 0.3+ |
| 2001 09 11 | 699 | 0.3− | 0.9+ | 2002 12 15 | 704 | 0.2− | 0.4+ | 2006 08 29 | 703 | 1.1+ | 0.3− |
| 2001 09 11 | 699 | 0.1+ | 0.5+ | 2003 01 05 | 704 | 0.4− | 0.3− | 2006 08 29 | 703 | 0.1+ | 1.5+ |
| 2001 09 16 | 704 | (0.3− | 2.0+) | 2003 01 05 | 704 | 0.6− | 0.2− | 2006 08 29 | 703 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.3− | 1.4+ | 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.1− |
| 2001 09 16 | 704 | 0.3− | 1.5+ | 2003 01 05 | 704 | 0.5− | 0.0 | 2006 08 30 | 704 | 1.4+ | 0.7+ |
| 2001 09 16 | 704 | 0.2− | 0.8+ | 2003 01 05 | 704 | 0.5− | 0.6+ | 2006 08 30 | 704 | 0.8+ | 0.8+ |
| 2001 09 16 | 704 | 0.2+ | 1.4+ | 2003 01 07 | 704 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | 0.6− | 0.8+ | 2003 01 07 | 704 | 0.1+ | 0.5+ | 2006 09 11 | 703 | 0.2+ | 0.6− |
| 2001 09 18 | 699 | 0.1− | 0.2+ | 2003 01 07 | 704 | 0.3+ | 0.5+ | 2006 09 11 | 703 | 0.2+ | 0.5− |
| 2001 09 18 | 699 | 0.3+ | 0.0 | 2003 01 07 | 704 | 0.2+ | 0.9+ | 2006 09 11 | 703 | 0.3− | 0.6− |
| 2001 09 18 | 699 | 0.6+ | 0.4+ | 2003 01 07 | 704 | 0.2− | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.9− | 0.4+ | 2003 01 09 | 704 | 0.4+ | 0.0 | 2006 09 13 | 644 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.6+ | 0.3− | 2003 01 09 | 704 | 0.6− | 1.0− | 2006 09 13 | 644 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 0.6+ | 0.2− | 2003 01 09 | 704 | 0.6+ | 0.2− | 2006 09 18 | 704 | 0.3+ | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.0 | 2003 01 09 | 704 | 0.7− | 0.5− | 2006 09 18 | 704 | 0.0 | 0.5+ |
| 2001 09 23 | 704 | 0.1− | 0.9− | 2003 01 10 | 704 | 1.1+ | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.9− |
| 2001 09 23 | 704 | 1.1+ | 0.9+ | 2003 01 10 | 704 | 0.6+ | 0.3− | 2006 09 18 | 704 | 0.3+ | 0.2− |
| 2001 09 23 | 704 | 0.7+ | 1.2− | 2003 01 10 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 704 | 0.8+ | 2.1+ |
| 2001 09 23 | 704 | 0.6+ | 0.9− | 2004 03 27 | 699 | 0.2+ | 0.6+ | 2006 09 20 | 699 | 0.8− | 0.5− |
| 2001 09 25 | 704 | 0.0 | 0.2− | 2004 03 27 | 699 | 1.3+ | 0.2+ | 2006 09 20 | 699 | 0.7− | 0.0 |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2004 03 27 | 699 | 0.7− | 0.9+ | 2006 09 20 | 699 | 1.4− | 0.9+ |
| 2001 09 25 | 704 | 0.5− | 0.4− | 2004 03 27 | 699 | 0.5+ | 1.5+ | 2006 09 20 | 699 | 1.3− | 0.9− |
| 2001 09 25 | 704 | 0.4− | 0.5− | 2004 04 12 | 644 | 0.8+ | 0.4+ | | | | |

**(139598)∗ 2001 QT$_{120}$ = 2002 XU$_{55}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40337)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.59908 | | (2000.0) | | +0.61407633 | −0.77003788 |
| $n$ | 0.22761831 | $\omega$ | 284.94420 | | +0.78100447 | +0.56126648 |
| $a$ | 2.6566311 | $\Omega$ | 125.84795 | | +0.11376410 | +0.30335063 |
| $e$ | 0.1972120 | $i$ | 12.32817 | | | |
| $P$ | 4.33 | $H$ | 14.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 02 | 608 | 0.1+ | 0.5+ | 2002 12 28 | 699 | 0.0 | 0.3− | 2003 03 05 | 704 | 0.3+ | 0.0 |
| 2001 08 02 | 608 | 0.3+ | 0.3+ | 2002 12 28 | 699 | 0.6+ | 0.7− | 2003 03 05 | 704 | 0.3− | 1.1+ |
| 2001 08 02 | 608 | (0.4− | 1.6+) | 2002 12 28 | 699 | 0.6+ | 0.0 | 2004 04 24 | 704 | 0.4− | 0.3− |
| 2001 08 13 | 608 | 0.6+ | 0.5+ | 2002 12 28 | 699 | 1.4+ | 0.1− | 2004 04 24 | 704 | 0.7+ | 1.0+ |
| 2001 08 13 | 608 | 0.6+ | 0.1− | 2002 12 31 | 704 | 0.3+ | 0.1+ | 2004 04 24 | 704 | (1.8+ | 2.1+) |
| 2001 08 13 | 608 | 0.6+ | 0.2− | 2002 12 31 | 704 | 0.5+ | 0.4− | 2004 04 26 | 699 | (0.7− | 2.9+) |
| 2001 08 19 | 704 | 0.1+ | 0.8+ | 2002 12 31 | 704 | 0.2+ | 0.0 | 2004 04 26 | 699 | 0.6+ | 0.6+ |
| 2001 08 19 | 704 | 0.3+ | 0.3− | 2002 12 31 | 704 | 0.1+ | 0.1+ | 2004 04 26 | 699 | 0.0 | 1.4+ |
| 2001 08 19 | 704 | 0.4− | 0.1+ | 2002 12 31 | 704 | 0.1+ | 0.0 | 2004 04 26 | 699 | 0.6− | 0.2+ |
| 2001 08 19 | 704 | 0.4− | 0.1+ | 2003 01 07 | 704 | 0.2− | 0.8+ | 2006 09 19 | 703 | 0.5+ | 0.3+ |
| 2001 08 19 | 704 | 0.1+ | 0.0 | 2003 01 07 | 704 | 0.0 | 1.3+ | 2006 09 19 | 703 | 0.5− | 0.4− |
| 2001 08 25 | 704 | 0.2+ | 0.8+ | 2003 01 07 | 704 | 0.3− | 0.9+ | 2006 09 19 | 703 | 0.4+ | 0.4− |
| 2001 08 25 | 704 | 0.2− | 0.0 | 2003 01 07 | 704 | 0.2− | 1.1+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2001 08 25 | 704 | 0.8− | 0.4+ | 2003 01 07 | 704 | 0.2− | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.4+ |
| 2001 08 25 | 704 | 0.7+ | 0.6− | 2003 01 08 | 704 | 0.7+ | 1.2+ | 2006 09 19 | 703 | 0.2− | 0.1− |
| 2001 08 25 | 608 | 0.3− | 1.4+ | 2003 01 08 | 704 | (0.3− | 1.7+) | 2006 09 19 | 703 | 0.0 | 1.0− |
| 2001 08 25 | 608 | (1.1+ | 1.8+) | 2003 01 08 | 704 | (0.1+ | 3.1+) | 2006 09 19 | 703 | 0.1+ | 0.4− |
| 2001 08 25 | 608 | 1.1+ | 1.3+ | 2003 01 08 | 704 | 0.3+ | 1.4+ | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 2001 09 11 | 704 | 0.4− | 0.5+ | 2003 01 08 | 704 | 0.2+ | 1.2+ | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 2001 09 11 | 704 | 0.7− | 0.4+ | 2003 01 24 | 644 | 0.5+ | 0.8+ | 2006 10 01 | 704 | 0.0 | 0.5+ |
| 2001 09 11 | 704 | 0.1+ | 0.4+ | 2003 01 24 | 644 | 0.5+ | 0.7+ | 2006 10 01 | 704 | 0.5+ | 0.1+ |
| 2001 09 11 | 704 | 0.9− | 0.8+ | 2003 01 24 | 644 | 1.1+ | 0.4+ | 2006 10 31 | 704 | 1.0+ | 0.8+ |
| 2001 09 11 | 704 | 1.0− | 0.7+ | 2003 01 27 | 704 | 0.2− | 0.3− | 2006 10 31 | 704 | 0.1− | 1.0+ |
| 2002 11 07 | 704 | 0.8− | 0.9+ | 2003 01 27 | 704 | 0.1+ | 0.4− | 2006 10 31 | 704 | 1.0− | 0.5− |
| 2002 11 07 | 704 | 0.9− | 0.4+ | 2003 01 27 | 704 | 0.5+ | 0.5− | 2006 10 31 | 704 | 0.7− | 0.1+ |
| 2002 11 07 | 704 | 0.1+ | 0.5+ | 2003 01 27 | 704 | 0.2+ | 0.7− | 2006 10 31 | 704 | 1.2− | 0.7− |
| 2002 12 10 | 644 | 0.1+ | 0.6+ | 2003 01 27 | 704 | 0.0 | 0.1− | 2006 11 10 | 704 | 0.2+ | 0.2− |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2003 01 31 | 704 | 0.2− | 0.1+ | 2006 11 10 | 704 | 0.1+ | 0.1+ |
| 2002 12 10 | 644 | 0.2+ | 0.5+ | 2003 01 31 | 704 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.4+ | 0.8− |
| 2002 12 11 | 704 | 0.4− | 0.9− | 2003 01 31 | 704 | 0.0 | 1.2+ | 2006 11 10 | 704 | 0.4+ | 0.7− |
| 2002 12 11 | 704 | 0.1− | 0.6− | 2003 01 31 | 704 | 0.5+ | 0.9+ | 2006 11 10 | 704 | 0.4− | 0.1− |
| 2002 12 11 | 704 | 0.6− | 0.7− | 2003 02 03 | 704 | 0.3− | 0.6+ | 2006 11 16 | 703 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 1.4− | 2003 02 03 | 704 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 0.8− | 0.9− | 2003 02 03 | 704 | 0.4− | 0.7+ | 2006 11 16 | 703 | 0.6− | 0.1− |
| 2002 12 13 | 699 | 0.9+ | 1.2− | 2003 02 03 | 704 | 1.1− | 0.5+ | 2006 11 16 | 703 | 0.4− | 0.2− |
| 2002 12 13 | 699 | (1.7+ | 0.4−) | 2003 02 03 | 704 | 0.3− | 0.9+ | 2006 11 21 | 704 | 0.4− | 0.3− |
| 2002 12 13 | 699 | 0.9− | 0.2+ | 2003 02 08 | 704 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2002 12 13 | 699 | 0.4− | 0.5− | 2003 02 08 | 704 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2002 12 14 | 699 | 0.3− | 0.3− | 2003 02 08 | 704 | 1.2+ | 0.9− | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2002 12 14 | 699 | 0.3− | 0.2− | 2003 02 12 | 608 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2002 12 14 | 699 | 1.0− | 0.7+ | 2003 02 12 | 608 | 0.4− | 0.9− | 2006 11 22 | 703 | 0.1+ | 1.0+ |
| 2002 12 14 | 699 | 1.2− | 1.0− | 2003 02 12 | 608 | 0.0 | 0.8− | 2006 11 22 | 703 | 1.3+ | 0.7+ |
| 2002 12 18 | 608 | 0.0 | 0.4− | 2003 03 05 | 704 | 0.4+ | 0.3− | 2006 11 22 | 703 | 0.6+ | 0.7+ |
| 2002 12 18 | 608 | 0.2+ | 0.2+ | 2003 03 05 | 704 | 0.4+ | 0.3− | | | | |
| 2002 12 18 | 608 | 0.1− | 0.6− | 2003 03 05 | 704 | 0.4− | 0.6+ | | | | |

**(139599)∗ 2001 QJ$_{122}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.73503 | | (2000.0) | | +0.43091449 | −0.89098277 |
| $n$ | 0.21715352 | $\omega$ | 306.61699 | | +0.87078329 | +0.36897414 |
| $a$ | 2.7413099 | $\Omega$ | 117.26551 | | +0.23674706 | +0.26458985 |
| $e$ | 0.1631252 | $i$ | 9.26070 | | | |
| $P$ | 4.54 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.1+ | 0.1− | 2003 01 04 | 704 | 0.2+ | 0.9+ | 2006 09 29 | 699 | 0.4− | 0.1+ |
| 1994 01 08 | 691 | 0.2+ | 0.4− | 2003 01 04 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 0.5− | 0.0 |
| 1994 01 08 | 691 | 1.3− | 0.1− | 2003 01 04 | 704 | 0.8+ | 1.1+ | 2006 09 29 | 699 | 0.2+ | 0.1+ |
| 2000 05 27 | 704 | 0.3− | 1.2+ | 2003 01 04 | 704 | 0.8+ | 0.9+ | 2006 09 29 | 699 | 0.6− | 0.1− |
| 2000 05 27 | 704 | (2.0+ | 1.0+) | 2003 01 08 | 704 | 0.3+ | 0.5− | 2006 09 29 | 699 | 0.5+ | 0.2− |
| 2000 05 27 | 704 | 0.6+ | 0.8+ | 2003 01 08 | 704 | 0.7+ | 0.5− | 2006 09 29 | 699 | 0.2+ | 0.3+ |
| 2000 05 27 | 704 | 0.1+ | 0.6+ | 2003 01 08 | 704 | 0.5+ | 0.3− | 2006 09 30 | 704 | 0.3− | 0.5+ |
| 2000 05 27 | 704 | 0.6+ | 1.1− | 2003 01 08 | 704 | 0.0 | 0.0 | 2006 09 30 | 704 | (1.9+ | 1.5+) |
| 2001 07 16 | 608 | 0.2+ | 0.5− | 2003 01 08 | 704 | 0.2+ | 0.4− | 2006 09 30 | 704 | (2.2− | 1.2+) |
| 2001 07 16 | 608 | 0.8+ | 0.3− | 2003 01 11 | 017 | 0.1− | 0.4− | 2006 09 30 | 704 | (1.6+ | 0.9+) |
| 2001 07 16 | 608 | 0.2+ | 0.0 | 2003 01 11 | 017 | 0.4+ | 1.4− | 2006 09 30 | 704 | 0.2+ | 0.9+ |
| 2001 07 25 | 608 | 0.8+ | 0.3− | 2003 01 31 | 704 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 07 25 | 608 | 1.0+ | 0.6− | 2003 01 31 | 704 | 0.3− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 07 25 | 608 | 0.6+ | 0.1+ | 2003 01 31 | 704 | 0.3− | 0.4− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 08 19 | 704 | 0.4+ | 1.3+ | 2003 01 31 | 704 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 08 19 | 704 | 0.2+ | 0.1+ | 2003 01 31 | 704 | 0.8− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 08 19 | 704 | 0.0 | 0.0 | 2003 02 03 | 704 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 08 19 | 704 | 0.1+ | 0.2+ | 2003 02 03 | 704 | 0.2+ | 0.7− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 08 19 | 704 | 0.2+ | 1.5+ | 2003 02 03 | 704 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 08 23 | 608 | 0.5+ | 0.4− | 2003 02 03 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 08 23 | 608 | 1.0+ | 0.7− | 2003 02 07 | 704 | 0.5− | 0.7− | 2006 10 16 | 703 | 0.5− | 0.5− |
| 2001 08 23 | 608 | 0.6+ | 0.4− | 2003 02 07 | 704 | 0.3+ | 1.5− | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2001 08 23 | 608 | 0.3+ | 0.5− | 2003 02 07 | 704 | 0.6− | 0.5− | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2001 08 23 | 608 | 0.6+ | 0.7− | 2003 02 11 | 735 | 0.9+ | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2001 08 23 | 608 | 0.4+ | 0.7− | 2003 02 11 | 735 | 0.6+ | 0.2− | 2006 10 17 | 703 | 0.8− | 0.8− |
| 2001 08 25 | 704 | 0.3− | 0.1+ | 2003 02 11 | 735 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2001 08 25 | 704 | 0.4+ | 0.6− | 2004 04 21 | 703 | 0.4− | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2001 08 25 | 699 | 1.1− | 0.9− | 2004 04 21 | 703 | 1.0− | 1.1+ | 2006 10 17 | 703 | 0.3− | 0.4+ |
| 2001 08 25 | 704 | 0.2+ | 1.0− | 2004 04 21 | 703 | 1.2− | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2001 08 25 | 699 | 0.2+ | 0.6− | 2004 04 21 | 703 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 1.2− | 0.8− | 2006 09 21 | 699 | 0.5+ | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.2+ |
| 2001 08 25 | 699 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.6− |
| 2001 08 25 | 704 | 0.4+ | 1.5− | 2006 09 21 | 699 | 0.4− | 1.1− | 2006 10 28 | 703 | 0.6− | 0.0 |
| 2001 08 25 | 699 | 0.7+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.2+ |
| 2002 12 11 | 704 | 0.6+ | 0.7+ | 2006 09 25 | 699 | 0.5− | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.9+ | 0.3+ | 2006 09 25 | 699 | 0.2+ | 0.3− | 2006 11 07 | 644 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.5− | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.8+ | 0.7+ | 2006 09 25 | 699 | 0.3− | 0.7+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.8+ | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2003 01 01 | 704 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.8+ |
| 2003 01 01 | 704 | 0.6+ | 0.0 | 2006 09 26 | 703 | 0.3− | 0.7+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2003 01 01 | 704 | 0.1− | 0.4+ | 2006 09 26 | 703 | (2.4− | 2.4+) | 2006 11 17 | 703 | 0.5+ | 0.0 |
| 2003 01 01 | 704 | 0.3+ | 0.5− | 2006 09 29 | 699 | 0.2− | 0.2+ | | | | |
| 2003 01 01 | 704 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.6− | 0.1+ | | | | |

**(139600)∗ 2001 QL$_{122}$ = 1992 RS$_1$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17885)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.61097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21583971 | $\omega$ | 77.95515 | | +0.51800668 | −0.84245812 | |
| $a$ | 2.7524229 | $\Omega$ | 338.74990 | | +0.53492011 | +0.45415598 | |
| $e$ | 0.1857841 | $i$ | 24.11804 | | +0.66748000 | +0.28983904 | |
| $P$ | 4.57 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 02 | 809 | (3.8+ | 0.3+) | 2001 09 21 | 704 | 0.6− | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.1+ |
| 1992 09 02 | 809 | 0.9+ | 1.1+ | 2001 09 21 | 704 | 0.2− | 0.3− | 2006 09 25 | 703 | 0.4+ | 0.1+ |
| 1992 09 02 | 809 | 0.6− | 0.1+ | 2001 09 21 | 704 | 0.6− | 0.9− | 2006 09 25 | 703 | (3.1− | 0.1+) |
| 1992 09 03 | 809 | 1.2− | 0.2− | 2002 12 28 | 704 | 0.2+ | 0.8− | 2006 10 02 | 704 | 0.4− | 0.3+ |
| 2001 08 19 | 704 | 0.5− | 0.1− | 2002 12 28 | 704 | 0.5+ | 0.3+ | 2006 10 02 | 704 | 0.2+ | 0.3+ |
| 2001 08 19 | 704 | 0.3− | 0.7+ | 2002 12 28 | 704 | 0.9+ | 0.3− | 2006 10 02 | 704 | 0.9+ | 0.2+ |
| 2001 08 19 | 704 | 0.1− | 0.6+ | 2003 01 14 | 704 | 0.3− | 0.4− | 2006 10 02 | 704 | 0.6+ | 0.3+ |
| 2001 08 19 | 704 | 0.2+ | 0.5+ | 2003 01 14 | 704 | 0.3+ | 0.0 | 2006 10 02 | 704 | 0.2− | 0.3+ |
| 2001 08 23 | 608 | 0.7+ | 0.4− | 2003 01 14 | 704 | 0.2− | 0.1+ | 2006 10 02 | 703 | 0.6+ | 0.2+ |
| 2001 08 23 | 608 | 0.6+ | 0.2− | 2003 01 14 | 704 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 0.4+ | 0.3+ |
| 2001 08 23 | 608 | 0.7+ | 0.4− | 2003 01 14 | 704 | 0.4+ | 0.1− | 2006 10 02 | 703 | 0.2+ | 0.5− |
| 2001 08 23 | 608 | 0.4+ | 0.6− | 2003 02 07 | 699 | (0.4− | 1.7+) | 2006 10 02 | 703 | 0.1+ | 0.3− |
| 2001 08 23 | 608 | 0.2− | 0.4− | 2003 02 07 | 699 | 0.4− | 0.2+ | 2006 10 17 | 704 | (6.7− | 2.1−) |
| 2001 08 23 | 608 | 0.5+ | 0.2− | 2003 02 07 | 699 | 0.8− | 0.8+ | 2006 10 17 | 704 | (5.4− | 0.1+) |
| 2001 08 25 | 704 | 0.5− | 0.2+ | 2003 02 07 | 699 | 0.1− | 0.8+ | 2006 10 17 | 704 | (4.6− | 1.6−) |
| 2001 08 25 | 699 | 1.1− | 0.7− | 2006 09 17 | 703 | 0.5− | 0.2− | 2006 10 23 | 703 | 0.3+ | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.7− | 2006 09 17 | 703 | (2.1− | 2.1−) | 2006 10 23 | 703 | 0.1− | 0.2+ |
| 2001 08 25 | 699 | 0.6+ | 0.4+ | 2006 09 17 | 703 | 0.0 | 0.3+ | 2006 10 23 | 703 | 0.4− | 0.2+ |
| 2001 08 25 | 704 | 0.0 | 1.1− | 2006 09 17 | 703 | 0.3+ | 0.7+ | 2006 10 23 | 703 | 0.1+ | 0.3+ |
| 2001 08 25 | 699 | 0.3+ | 0.4+ | 2006 09 19 | 704 | (3.1+ | 6.3+) | 2006 10 29 | 703 | 0.2− | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.3+ | 2006 09 19 | 704 | (2.6− | 1.6+) | 2006 10 29 | 703 | 0.4− | 0.1+ |
| 2001 08 25 | 699 | 0.0 | 0.7+ | 2006 09 19 | 704 | (2.1− | 0.0 ) | 2006 10 29 | 703 | 0.5− | 0.3+ |
| 2001 09 11 | 704 | 0.7− | 1.1+ | 2006 09 19 | 704 | 0.4− | 1.1+ | 2006 10 29 | 703 | 0.4− | 0.3+ |
| 2001 09 11 | 704 | 0.3+ | 0.6+ | 2006 09 24 | 699 | 0.5+ | 0.7+ | 2006 11 16 | 703 | 0.2− | 0.3− |
| 2001 09 11 | 704 | 0.5− | 0.6− | 2006 09 24 | 699 | 0.5− | 0.0 | 2006 11 16 | 703 | 0.5− | 0.0 |
| 2001 09 11 | 704 | 0.6+ | 0.1+ | 2006 09 24 | 699 | 0.2− | 0.0 | 2006 11 16 | 703 | (0.8− | 3.4−) |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2006 09 24 | 699 | 0.2+ | 0.6+ | 2006 11 16 | 703 | (1.2+ | 3.2−) |
| 2001 09 21 | 704 | 0.7+ | 0.7+ | 2006 09 25 | 703 | 0.9+ | 0.8− | | | | |

**(139601)∗ 2001 QY$_{124}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.46551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21474661 | $\omega$ | 13.79257 | | +0.81479951 | −0.57876640 | |
| $a$ | 2.7617552 | $\Omega$ | 21.67602 | | +0.52289518 | +0.70861150 | |
| $e$ | 0.1698488 | $i$ | 5.22454 | | +0.25036449 | +0.40360773 | |
| $P$ | 4.59 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 699 | 0.1+ | 0.6− | 2006 10 23 | 704 | (0.7+ | 2.1+) |
| 2001 08 19 | 704 | 0.1− | 1.0+ | 2006 09 20 | 699 | 0.1+ | 0.5+ | 2006 10 23 | 704 | 1.4+ | 0.3+ |
| 2001 08 19 | 704 | 0.2− | 0.9+ | 2006 09 20 | 699 | 0.2− | 0.5− | 2006 10 23 | 704 | 0.4− | 0.4+ |
| 2001 08 19 | 704 | 0.1− | 1.3+ | 2006 09 20 | 699 | 0.3− | 0.2− | 2006 10 23 | 704 | 0.1− | 0.2+ |
| 2001 08 25 | 704 | 1.1+ | 0.2− | 2006 09 22 | 184 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 0.7+ | 0.3+ |
| 2001 08 25 | 699 | 0.4+ | 0.1+ | 2006 09 22 | 184 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.4+ | 0.2− |
| 2001 08 25 | 704 | 0.1+ | 0.0 | 2006 09 22 | 184 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.1− | 0.4+ |
| 2001 08 25 | 699 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 28 | 704 | 1.1+ | 0.1+ |
| 2001 08 25 | 704 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 28 | 704 | 0.1+ | 0.3+ |
| 2001 08 25 | 699 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.4− | 0.3− |
| 2001 08 25 | 704 | 0.4+ | 0.9− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2001 08 25 | 699 | 0.5− | 0.8+ | 2006 09 27 | 704 | 0.6+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 08 25 | 704 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.1− | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2001 08 27 | 644 | 0.9− | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2001 08 27 | 644 | 0.9− | 0.1+ | 2006 09 27 | 704 | 0.4− | 1.0+ | 2006 11 07 | 644 | 0.4− | 0.2− |
| 2001 08 27 | 644 | 1.2− | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2001 09 10 | 699 | 0.3− | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2001 09 10 | 699 | 0.6+ | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2001 09 10 | 699 | 0.3− | 0.3− | 2006 09 29 | 704 | 1.1− | 0.1− | 2006 11 11 | 703 | (0.5− | 2.6+) |
| 2001 09 10 | 699 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.5− | 0.8+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 09 11 | 704 | 0.5− | 0.1+ | 2006 10 03 | 704 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.4− | 0.3+ |
| 2001 09 11 | 704 | (1.4+ | 2.2+) | 2006 10 03 | 704 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2001 09 11 | 704 | 0.2+ | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2001 09 11 | 704 | 0.7+ | 0.1− | 2006 10 03 | 704 | 0.5+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2001 09 11 | 704 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2003 01 05 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2003 01 05 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 0.2− | 1.2+ | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2003 01 05 | 704 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.7+ | 1.4− |
| 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.3+ | 1.2+ |
| 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 1.3− | 0.4+ |
| 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.3− | 1.2+ |
| 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | (0.6+ | 1.9−) |
| 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2006 08 25 | 704 | (0.1− | 1.6+) | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2006 08 25 | 704 | (2.4− | 0.6+) | 2006 10 20 | 644 | 0.4+ | 0.3− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2006 08 25 | 704 | 1.4− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.0 |
| 2006 08 28 | 703 | 0.7− | 1.0− | 2006 10 21 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2006 08 28 | 703 | 1.1− | 1.0− | 2006 10 21 | 703 | 0.5− | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2006 08 28 | 703 | 0.6− | 0.7− | 2006 10 21 | 703 | 0.7− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2006 08 28 | 703 | 0.6− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.8− |
| 2006 08 30 | 699 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.3+ |
| 2006 08 30 | 699 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.4+ | 1.2+ |
| 2006 08 30 | 699 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.5− | 0.5− |
| 2006 08 30 | 699 | 0.4+ | 0.4+ | 2006 10 23 | 704 | 0.2− | 0.9+ | 2006 11 28 | 704 | 0.9− | 0.1− |

**(139602)∗ 2001 QH$_{125}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.43548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19132618 | $\omega$ | 87.81353 | | +0.69986871 | −0.70519241 | |
| $a$ | 2.9827701 | $\Omega$ | 317.00223 | | +0.57114565 | +0.64795712 | |
| $e$ | 0.0511432 | $i$ | 9.58225 | | +0.42892475 | +0.28784586 | |
| $P$ | 5.15 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 691 | 0.6− | 0.3− | 2001 10 16 | 704 | 0.3− | 0.3+ | 2004 04 11 | 644 | 0.3+ | 0.2− | 2004 03 17 | 691 | 0.4+ | 0.6+ | 2006 09 21 | 012 | 0.6+ | 0.0 |
| 2001 07 21 | 691 | 0.6− | 0.4− | 2001 10 21 | 704 | 1.1− | 0.1+ | 2004 04 16 | 704 | 0.6+ | 0.5+ | 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 21 | 012 | 0.4+ | 0.3− |
| 2001 07 21 | 691 | 0.6− | 0.3− | 2001 10 21 | 704 | 0.3+ | 1.5+ | 2004 04 16 | 704 | 0.4+ | 0.7+ | 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 21 | 012 | 0.0 | 0.1− |
| 2001 08 12 | 644 | 0.3+ | 0.5+ | 2001 10 21 | 704 | 0.2+ | 0.2− | 2004 04 16 | 704 | 0.2+ | 0.1+ | 2001 08 19 | 704 | 0.7− | 0.9+ | 2006 09 21 | 012 | 0.0 | 0.4− |
| 2001 08 12 | 644 | 0.3+ | 0.5+ | 2001 10 21 | 704 | 0.9− | 0.1+ | 2006 08 18 | 699 | 0.3+ | 0.3+ | 2001 08 19 | 704 | 0.9− | 0.6+ | 2006 09 22 | 012 | 0.3+ | 0.1− |
| 2001 08 12 | 644 | 0.1+ | 0.5+ | 2001 11 18 | 704 | 1.3+ | 0.2− | 2006 08 18 | 699 | 0.0 | 0.1+ | 2001 08 19 | 704 | 0.1− | 0.4− | 2006 09 22 | 012 | 0.3+ | 0.1− |
| 2001 08 19 | 704 | 0.8− | 0.2+ | 2001 11 18 | 704 | 0.3− | 0.4+ | 2006 08 18 | 699 | 0.0 | 0.4+ | 2001 08 19 | 704 | 1.2+ | 1.0− | 2006 09 22 | 012 | 0.2− | 0.2+ |
| 2001 08 19 | 704 | 0.3− | 0.1+ | 2001 11 18 | 704 | 0.7+ | 0.5+ | 2006 08 18 | 699 | 0.4+ | 0.6− | 2001 08 25 | 704 | 0.5− | 1.2+ | 2006 09 22 | 012 | 0.3− | 0.2− |
| 2001 08 19 | 704 | 0.4− | 0.5+ | 2001 11 18 | 704 | 1.0+ | 0.5− | 2006 08 24 | 704 | 0.5+ | 0.7− | 2001 08 25 | 704 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2001 08 19 | 704 | 0.6− | 1.1+ | 2002 12 05 | 704 | 0.5+ | 0.3+ | 2006 08 24 | 704 | 0.1+ | 0.2+ | 2001 08 25 | 704 | 0.9− | 1.2+ | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2001 08 19 | 704 | 0.7− | 1.1+ | 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 08 24 | 704 | 0.0 | 0.4+ | 2001 08 25 | 704 | 0.4− | 1.3+ | 2006 09 25 | 691 | 0.5− | 0.1− |
| 2001 08 25 | 704 | 0.4+ | 0.3+ | 2002 12 05 | 704 | 0.2+ | 0.2+ | 2006 08 24 | 704 | 0.2+ | 0.1+ | 2001 08 27 | 699 | 0.0 | 0.9− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 08 25 | 704 | 0.1+ | 0.6+ | 2002 12 05 | 704 | 1.0+ | 0.3+ | 2006 08 24 | 704 | 0.2− | 0.3+ | 2001 08 27 | 699 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2002 12 05 | 704 | 0.7− | 1.3+ | 2006 08 28 | 699 | 0.0 | 0.5− | 2001 08 27 | 699 | 1.3+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2001 08 25 | 704 | 0.6− | 0.5+ | 2002 12 15 | 704 | 0.4− | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.2− | 2001 08 27 | 699 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.6− |
| 2001 08 25 | 704 | 0.2+ | 0.9+ | 2002 12 15 | 704 | 0.1− | 0.5− | 2006 08 28 | 699 | 0.6− | 0.1− | 2001 09 07 | 704 | 0.3− | 0.8+ | 2006 09 29 | 704 | 0.2− | 0.6+ |
| 2001 09 08 | 704 | 0.4− | 0.7+ | 2002 12 15 | 704 | 0.1− | 0.3− | 2006 08 28 | 699 | 1.0− | 0.8− | 2001 09 07 | 704 | 1.1− | 0.5+ | 2006 09 29 | 704 | 0.4− | 0.1− |
| 2001 09 08 | 704 | 0.2− | 1.0+ | 2002 12 15 | 704 | 0.6+ | 0.1+ | 2006 08 29 | 703 | 0.8− | 0.5− | 2001 09 07 | 704 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 2001 09 08 | 704 | 0.7− | 0.5+ | 2002 12 15 | 704 | 0.8− | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.1+ | 2001 09 07 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 1.1+ | 1.5+ | 2006 09 29 | 704 | 0.2− | 0.5− |
| 2001 09 08 | 704 | 0.4− | 0.9+ | 2003 01 04 | 704 | 1.8+ | 1.7+ | 2006 08 29 | 703 | 0.3− | 1.0− | 2001 09 07 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | (0.8+ | 2.0+) | 2006 09 29 | 691 | 0.0 | 0.1+ |
| 2001 09 08 | 704 | 0.2− | 0.1+ | 2003 01 04 | 704 | 0.7− | 0.9− | 2006 08 29 | 703 | 0.5− | 0.5− | 2001 09 07 | 699 | 1.1− | 0.6+ | 2004 03 31 | 691 | 0.6− | 0.5+ | 2006 09 29 | 691 | 0.1− | 0.0 |
| 2001 09 11 | 699 | 1.0+ | 0.1+ | 2003 01 04 | 704 | 0.7− | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.0 | 2001 09 07 | 699 | (0.4+ | 2.3+) | 2004 03 31 | 691 | 0.3− | 0.3+ | 2006 09 29 | 691 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 0.2− | 0.6+ | 2003 01 04 | 704 | 1.0− | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.0 | 2001 09 07 | 699 | (0.9− | 1.5+) | 2004 03 31 | 691 | 0.3− | 0.3+ | 2006 10 03 | 691 | 1.0+ | 0.1− |
| 2001 09 11 | 699 | 0.1− | 0.5+ | 2003 01 04 | 704 | 0.8− | 0.1+ | 2006 08 30 | 704 | 0.6− | 0.2+ | 2001 09 07 | 699 | 1.2− | 0.6− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.2+ |
| 2001 09 11 | 699 | 0.5+ | 0.0 | 2004 02 19 | 704 | 0.6+ | 0.5+ | 2006 08 30 | 704 | 0.3− | 0.6+ | 2001 09 12 | 704 | 0.5− | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 2001 09 16 | 704 | 0.2− | 0.0 | 2004 02 19 | 704 | 1.5+ | 1.1+ | 2006 08 30 | 704 | 0.2− | 0.4+ | 2001 09 12 | 704 | 0.3− | 1.1+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 15 | 703 | 0.8− | 0.1+ |
| 2001 09 16 | 704 | 0.5− | 0.0 | 2004 02 19 | 704 | 1.3+ | 0.1− | 2006 09 11 | 703 | 0.2+ | 0.2+ | 2001 09 12 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.5+ | 2006 10 15 | 703 | 0.0 | 0.3+ |
| 2001 09 16 | 704 | 0.7− | 0.2+ | 2004 02 19 | 704 | 1.3+ | 0.7+ | 2006 09 11 | 703 | 0.4− | 0.8− | 2001 09 12 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 15 | 703 | 0.6− | 0.3+ |
| 2001 09 16 | 704 | 0.4− | 0.1− | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 09 11 | 703 | 1.0− | 0.5− | 2001 09 12 | 704 | 1.0− | 0.9+ | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.4− | 1.0+ |
| 2001 09 16 | 704 | 0.4− | 0.3− | 2004 02 26 | 704 | 0.6+ | 1.1+ | 2006 09 11 | 703 | 0.5+ | 0.7− | 2001 09 19 | 704 | 0.1− | 0.5+ | 2006 09 14 | 703 | 1.1− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 2001 09 18 | 699 | 0.6+ | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.1+ | 2006 09 17 | 703 | 1.1− | 0.9+ | 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2001 09 18 | 699 | 0.7+ | 0.2+ | 2004 03 16 | 703 | 0.4+ | 1.8+ | 2006 09 17 | 703 | 0.6− | 0.3+ | 2001 09 19 | 704 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.3− |
| 2001 09 18 | 699 | 0.0 | 0.6+ | 2004 03 16 | 703 | 0.0 | 0.8+ | 2006 09 17 | 703 | 0.3+ | 0.3+ | 2001 09 21 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2001 09 18 | 699 | 0.4+ | 0.1+ | 2004 03 16 | 703 | 0.4− | 0.2− | 2006 09 17 | 703 | 0.6+ | 0.3+ | 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 0.9− | 0.2− | 2004 03 16 | 703 | 0.0 | 0.8+ | 2006 09 20 | 699 | 0.7− | 0.3+ | 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 0.7− | 0.2− | 2004 03 17 | 704 | 0.7+ | 0.6+ | 2006 09 20 | 699 | 0.8− | 0.4+ | 2001 09 21 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 644 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | 1.2− | 0.4− | 2004 03 17 | 704 | 0.9+ | 0.7+ | 2006 09 20 | 699 | 0.5+ | 0.2− | 2001 09 21 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 704 | (1.2− | 1.6+) | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 09 20 | 704 | 1.6− | 0.3+ | 2004 03 17 | 704 | 0.3− | 1.2+ | 2006 09 25 | 704 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 704 | 1.2− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.7− | 0.5− | 2004 03 17 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 704 | 1.7+ | 1.1+ | 2002 12 06 | 704 | 0.3+ | 0.4− | 2006 09 17 | 704 | 1.4− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 09 23 | 704 | 0.5+ | 0.5+ | 2004 03 17 | 704 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.4+ | 2002 12 06 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2001 09 23 | 704 | 0.7+ | 0.6+ | 2004 03 17 | 704 | 0.6+ | 1.4+ | 2006 09 25 | 704 | 0.6+ | 0.2− | 2003 01 05 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 09 23 | 704 | 1.1+ | 0.3+ | 2004 03 17 | 704 | 0.8+ | 0.7+ | 2006 09 25 | 704 | 0.1− | 0.4+ | 2003 01 05 | 704 | 0.4− | 1.0+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 09 23 | 704 | 1.1+ | 0.3+ | 2004 03 17 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 704 | 1.0+ | 0.7+ | 2003 01 05 | 704 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.3+ | 1.1− |
| 2001 09 23 | 704 | 1.3+ | 0.2− | 2004 03 17 | 704 | 0.0 | 0.9+ | 2006 09 30 | 699 | 0.4+ | 0.6+ | 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 09 18 | 699 | 1.0+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2001 09 28 | 644 | 0.4− | 1.0+ | 2004 03 26 | 699 | 0.5+ | 1.4+ | 2006 09 30 | 704 | 0.2− | 0.4+ | 2003 01 09 | 704 | 0.7− | 0.3− | 2006 09 18 | 699 | 0.5− | 0.7− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 09 28 | 644 | 0.1− | 0.9+ | 2004 03 26 | 699 | 0.0 | 0.7+ | 2006 09 30 | 699 | 0.6− | 0.8+ | 2003 01 09 | 704 | 0.4− | 1.5+ | 2006 09 18 | 699 | 0.7− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 09 28 | 644 | 0.1− | 0.9+ | 2004 03 26 | 699 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.3− | 0.3+ | 2003 01 09 | 704 | 0.6+ | 1.3+ | 2006 09 21 | 012 | 0.6+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 10 16 | 704 | 0.0 | 0.8+ | 2004 03 26 | 699 | 1.0+ | 0.4+ | 2006 09 30 | 699 | 0.4− | 0.8+ | 2003 01 09 | 704 | (1.1+ | 2.1+) | 2006 09 21 | 012 | 0.9+ | 0.9+ | | | | |
| 2001 10 16 | 704 | 0.1+ | 1.2+ | 2004 04 11 | 644 | 0.6+ | 1.1+ | 2006 09 30 | 699 | 0.3+ | 0.7− | 2003 01 09 | 704 | 0.2+ | 1.4+ | 2006 09 21 | 012 | 0.6+ | 0.2− | | | | |
| 2001 10 16 | 704 | 0.0 | 1.2+ | 2004 04 11 | 644 | 0.6+ | 0.6+ | | | | | | | | | | | | | | | | |

**(139603)**∗ **2001 QR**$_{125}$

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.86610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21053106 | $\omega$ | 349.33781 | | +0.99990013 | −0.00458656 | |
| $a$ | 2.7984997 | $\Omega$ | 10.95150 | | +0.01022438 | +0.88776966 | |
| $e$ | 0.1130998 | $i$ | 4.03497 | | −0.00975697 | +0.46026513 | |
| $P$ | 4.68 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.6− | 0.6+ | 2004 03 17 | 691 | 0.4+ | 0.6+ | 2006 09 21 | 012 | 0.6+ | 0.0 | 2001 08 19 | 704 | 0.1− | 0.4− | 2004 03 18 | 704 | 1.2+ | 0.1+ | 2006 09 22 | 012 | 0.3+ | 0.1− |
| 2001 08 01 | 644 | 0.2− | 0.9+ | 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 21 | 012 | 0.4+ | 0.3− | 2001 08 19 | 704 | 1.2+ | 1.0− | 2004 03 18 | 704 | (1.4+ | 2.1+) | 2006 09 22 | 012 | 0.2− | 0.2+ |
| 2001 08 01 | 644 | 0.4− | 0.8+ | 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 21 | 012 | 0.0 | 0.1− | 2001 08 25 | 704 | 0.5− | 1.2+ | 2004 03 18 | 704 | 0.0 | 1.1+ | 2006 09 22 | 012 | 0.3− | 0.2− |
| 2001 08 19 | 704 | 0.7− | 0.9+ | 2004 03 18 | 704 | 1.4+ | 0.6+ | 2006 09 21 | 012 | 0.0 | 0.4− | 2001 08 25 | 704 | 0.1− | 0.7+ | 2004 03 20 | 699 | 1.3− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2001 08 19 | 704 | 0.9− | 0.6+ | 2004 03 18 | 704 | 0.5+ | 0.4− | 2006 09 22 | 012 | 0.3+ | 0.1− | 2001 08 25 | 704 | 0.9− | 1.2+ | 2004 03 20 | 699 | (1.5+ | 0.3+) | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2001 08 19 | 704 | 0.1− | 0.4− | 2004 03 18 | 704 | 1.2+ | 0.1+ | 2006 09 22 | 012 | 0.3+ | 0.1− | 2001 08 25 | 704 | 0.4− | 1.3+ | 2004 03 20 | 699 | 0.6− | 1.1− | 2006 09 25 | 691 | 0.5− | 0.1− |
| 2001 08 19 | 704 | 1.2+ | 1.0− | 2004 03 18 | 704 | (1.4+ | 2.1+) | 2006 09 22 | 012 | 0.2− | 0.2+ | 2001 08 27 | 699 | 0.0 | 0.9− | 2004 03 20 | 699 | 0.9+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 08 25 | 704 | 0.5− | 1.2+ | 2004 03 18 | 704 | 0.0 | 1.1+ | 2006 09 22 | 012 | 0.3− | 0.2− | 2001 08 27 | 699 | 0.1− | 0.8+ | 2004 03 23 | 691 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2001 08 25 | 704 | 0.1− | 0.7+ | 2004 03 20 | 699 | 1.3− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1− | 2001 08 27 | 699 | 1.3+ | 0.5+ | 2004 03 23 | 691 | 0.6+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2001 08 25 | 704 | 0.9− | 1.2+ | 2004 03 20 | 699 | (1.5+ | 0.3+) | 2006 09 25 | 691 | 0.1− | 0.1− | 2001 08 27 | 699 | 0.2+ | 0.6+ | 2004 03 23 | 691 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.6− |
| 2001 08 25 | 704 | 0.4− | 1.3+ | 2004 03 20 | 699 | 0.6− | 1.1− | 2006 09 25 | 691 | 0.5− | 0.1− | 2001 09 07 | 704 | 0.3− | 0.8+ | 2004 03 27 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.6+ |
| 2001 08 27 | 699 | 0.0 | 0.9− | 2004 03 20 | 699 | 0.9+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2001 09 07 | 704 | 1.1− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.1− |
| 2001 08 27 | 699 | 0.1− | 0.8+ | 2004 03 23 | 691 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.4+ | 0.2− | 2001 09 07 | 704 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 2001 08 27 | 699 | 1.3+ | 0.5+ | 2004 03 23 | 691 | 0.6+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2001 09 07 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 1.1+ | 1.5+ | 2006 09 29 | 704 | 0.2− | 0.5− |
| 2001 08 27 | 699 | 0.2+ | 0.6+ | 2004 03 23 | 691 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.6− | 2001 09 07 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | (0.8+ | 2.0+) | 2006 09 29 | 691 | 0.0 | 0.1+ |
| 2001 09 07 | 704 | 0.3− | 0.8+ | 2004 03 27 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.6+ | 2001 09 07 | 699 | 1.1− | 0.6+ | 2004 03 31 | 691 | 0.6− | 0.5+ | 2006 09 29 | 691 | 0.1− | 0.0 |
| 2001 09 07 | 704 | 1.1− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.1− | 2001 09 07 | 699 | (0.4+ | 2.3+) | 2004 03 31 | 691 | 0.3− | 0.3+ | 2006 09 29 | 691 | 0.0 | 0.1+ |
| 2001 09 07 | 704 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.4− | 0.6+ | 2001 09 07 | 699 | (0.9− | 1.5+) | 2004 03 31 | 691 | 0.3− | 0.3+ | 2006 10 03 | 691 | 1.0+ | 0.1− |
| 2001 09 07 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 1.1+ | 1.5+ | 2006 09 29 | 704 | 0.2− | 0.5− | 2001 09 07 | 699 | 1.2− | 0.6− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.2+ |
| 2001 09 07 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | (0.8+ | 2.0+) | 2006 09 29 | 691 | 0.0 | 0.1+ | 2001 09 12 | 704 | 0.5− | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 2001 09 07 | 699 | 1.1− | 0.6+ | 2004 03 31 | 691 | 0.6− | 0.5+ | 2006 09 29 | 691 | 0.1− | 0.0 | 2001 09 12 | 704 | 0.3− | 1.1+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 15 | 703 | 0.8− | 0.1+ |
| 2001 09 07 | 699 | (0.4+ | 2.3+) | 2004 03 31 | 691 | 0.3− | 0.3+ | 2006 09 29 | 691 | 0.0 | 0.1+ | 2001 09 12 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.5+ | 2006 10 15 | 703 | 0.0 | 0.3+ |
| 2001 09 07 | 699 | (0.9− | 1.5+) | 2004 03 31 | 691 | 0.3− | 0.3+ | 2006 10 03 | 691 | 1.0+ | 0.1− | 2001 09 12 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 15 | 703 | 0.6− | 0.3+ |
| 2001 09 07 | 699 | 1.2− | 0.6− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2001 09 12 | 704 | 1.0− | 0.9+ | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.4− | 1.0+ |
| 2001 09 12 | 704 | 0.5− | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2001 09 19 | 704 | 0.1− | 0.5+ | 2006 09 14 | 703 | 1.1− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 2001 09 12 | 704 | 0.3− | 1.1+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 15 | 703 | 0.8− | 0.1+ | 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.5+ | 2006 10 15 | 703 | 0.0 | 0.3+ | 2001 09 19 | 704 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.3− |
| 2001 09 12 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 15 | 703 | 0.6− | 0.3+ | 2001 09 21 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2001 09 12 | 704 | 1.0− | 0.9+ | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.4− | 1.0+ | 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2006 09 14 | 703 | 1.1− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2001 09 21 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 644 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2001 09 21 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 704 | (1.2− | 1.6+) | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2002 12 06 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 704 | 1.2− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2002 12 06 | 704 | 0.3+ | 0.4− | 2006 09 17 | 704 | 1.4− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2002 12 06 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 644 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.4− | 2003 01 05 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 704 | (1.2− | 1.6+) | 2006 10 19 | G96 | 0.2+ | 0.3− | 2003 01 05 | 704 | 0.4− | 1.0+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 704 | 1.2− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2003 01 05 | 704 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.3+ | 1.1− |
| 2002 12 06 | 704 | 0.3+ | 0.4− | 2006 09 17 | 704 | 1.4− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 09 18 | 699 | 1.0+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.6+ | 2003 01 09 | 704 | 0.7− | 0.3− | 2006 09 18 | 699 | 0.5− | 0.7− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2003 01 05 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2003 01 09 | 704 | 0.4− | 1.5+ | 2006 09 18 | 699 | 0.7− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2003 01 05 | 704 | 0.4− | 1.0+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2003 01 09 | 704 | 0.6+ | 1.3+ | 2006 09 21 | 012 | 0.6+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2003 01 05 | 704 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.3+ | 1.1− | 2003 01 09 | 704 | (1.1+ | 2.1+) | 2006 09 21 | 012 | 0.9+ | 0.9+ | | | | |
| 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 09 18 | 699 | 1.0+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.1− | 2003 01 09 | 704 | 0.2+ | 1.4+ | 2006 09 21 | 012 | 0.6+ | 0.2− | | | | |
| 2003 01 09 | 704 | 0.7− | 0.3− | 2006 09 18 | 699 | 0.5− | 0.7− | 2006 11 15 | G96 | 0.4+ | 0.3− | | | | | | | | | | | | |

**(139604)**∗ **2001 QP**$_{126}$

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.83040 | | (2000.0) | | | |
| $n$ | 0.21276811 | $\omega$ | 193.83265 | | +0.98122741 | −0.19241011 |
| $a$ | 2.7788495 | $\Omega$ | 177.16113 | | +0.19230480 | +0.97106193 |
| $e$ | 0.2278198 | $i$ | 15.31462 | | +0.01454747 | +0.14148172 |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 17 | 644 | 0.1− | 0.4− | 2006 07 22 | G96 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.4+ |
| 2001 06 17 | 644 | 0.2+ | 0.3− | 2006 08 21 | 704 | 0.1− | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.0 |
| 2001 06 17 | 644 | 0.2− | 0.7− | 2006 08 21 | 704 | 0.6+ | 0.1− | 2006 09 26 | 703 | 0.3+ | 0.4+ |
| 2001 08 20 | 704 | (0.7+ | 1.6−) | 2006 08 21 | 704 | 0.7+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.4− |
| 2001 08 20 | 704 | 0.5− | 0.3− | 2006 08 21 | 704 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.5+ | 0.7+ |
| 2001 08 20 | 704 | 0.3− | 1.4+ | 2006 08 25 | 704 | 0.3− | 0.4− | 2006 09 29 | 699 | 0.4− | 0.4+ |
| 2001 08 20 | 704 | 0.8+ | 0.6− | 2006 08 25 | 704 | 0.0 | 1.0+ | 2006 09 29 | 699 | 0.0 | 0.6+ |
| 2001 08 25 | 704 | 0.8− | 0.6− | 2006 08 25 | 704 | 0.6+ | 0.1− | 2006 09 29 | 699 | 0.5− | 0.6+ |
| 2001 08 25 | 704 | 0.2+ | 0.2− | 2006 08 25 | 704 | 0.7− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.4+ |
| 2001 08 25 | 704 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.6+ | 1.1+ | 2006 10 01 | 704 | 0.9− | 0.7+ |
| 2001 08 25 | 704 | 0.5− | 0.5+ | 2006 09 16 | 704 | 1.0+ | 0.9+ | 2006 10 01 | 704 | 0.1+ | 0.4− |
| 2001 08 25 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.5+ | 0.9+ | 2006 10 01 | 704 | 0.1+ | 0.6+ |
| 2001 08 27 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.4+ |
| 2001 08 27 | 704 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.4+ |
| 2001 08 27 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 08 27 | 704 | 0.9− | 0.0 | 2006 09 16 | 699 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2001 08 27 | 704 | 0.4− | 0.8+ | 2006 09 18 | 703 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 1.3+ | 0.6− | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.8+ | 0.6− | 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.6− | 2006 09 21 | 699 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2001 10 18 | 644 | 0.3− | 0.7+ | 2006 09 21 | 699 | 0.7− | 0.6− | 2006 10 22 | 703 | 0.7− | 0.3+ |
| 2001 10 18 | 644 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.8+ |
| 2001 10 18 | 644 | 0.0 | 0.8+ | 2006 09 21 | 699 | 0.8+ | 0.6− | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.2− | 0.6− | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2004 03 17 | 691 | 0.0 | 0.5+ | 2006 09 22 | 704 | 0.7+ | 0.9− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2004 03 17 | 691 | 0.3+ | 0.6+ | 2006 09 22 | 704 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2005 05 13 | 691 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.6+ | 1.0− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2005 05 13 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.8− | 0.3+ | 2006 10 28 | 703 | 0.6− | 0.2− |
| 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.0 | 0.0 |
| 2005 06 05 | 691 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.0 |
| 2005 06 05 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.4+ | 0.6+ |
| 2005 06 05 | 691 | 0.3− | 0.8+ | 2006 09 26 | 704 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2006 07 22 | G96 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.2− | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2006 07 22 | G96 | 0.0 | 0.5− | 2006 09 26 | 704 | 0.4+ | 0.3− | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2006 07 22 | G96 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.1+ | | | | |

**(139605)∗ 2001 QH$_{127}$**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.14449 | | (2000.0) | | | |
| $n$ | 0.21414823 | $\omega$ | 30.95718 | | +0.29759057 | +0.94820251 |
| $a$ | 2.7668974 | $\Omega$ | 256.55255 | | −0.89763418 | +0.23825953 |
| $e$ | 0.1769026 | $i$ | 6.56162 | | −0.32510419 | +0.21010567 |
| $P$ | 4.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 608 | 1.5− | 0.9+ | 2002 12 05 | 704 | 0.2+ | 0.9+ | 2005 05 30 | 699 | 0.1− | 0.4+ |
| 2001 07 29 | 608 | (1.7− | 1.5+) | 2005 04 30 | 428 | 1.2− | 0.2− | 2005 06 03 | 703 | 0.0 | 0.5+ |
| 2001 07 29 | 608 | 0.8− | 1.2+ | 2005 04 30 | 428 | 0.4− | 0.2− | 2005 06 03 | 703 | 0.5− | 0.3+ |
| 2001 08 20 | 704 | (1.9+ | 0.9+) | 2005 05 02 | 428 | 0.5+ | 0.5− | 2005 06 03 | 703 | (2.9− | 4.0+) |
| 2001 08 20 | 704 | 0.3+ | 0.5− | 2005 05 02 | 428 | 0.1+ | 0.2− | 2005 06 03 | 703 | 0.8− | 1.0+ |
| 2001 08 20 | 704 | 0.1− | 0.7− | 2005 05 02 | 428 | 0.4− | 0.3+ | 2005 06 11 | 703 | 0.6− | 0.0 |
| 2001 08 24 | 699 | 0.1+ | 0.0 | 2005 05 04 | 644 | 0.3+ | 0.1+ | 2005 06 11 | 703 | 0.3− | 0.3− |
| 2001 08 24 | 699 | 0.3+ | 0.3+ | 2005 05 04 | 644 | 0.3+ | 0.3+ | 2005 06 11 | 703 | 1.4− | 0.6+ |
| 2001 08 24 | 699 | 0.0 | 0.3− | 2005 05 04 | 644 | 0.3+ | 0.5+ | 2005 06 11 | 703 | 0.4+ | 0.2− |
| 2001 08 24 | 699 | 0.2+ | 0.3+ | 2005 05 04 | 644 | 0.5+ | 0.1+ | 2006 09 16 | 703 | 1.4+ | 0.5− |
| 2001 08 25 | 704 | 0.4− | 0.0 | 2005 05 04 | 644 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.5+ | 0.5− |
| 2001 08 25 | 704 | 0.4− | 0.5− | 2005 05 04 | 644 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.8− | 0.5+ |
| 2001 08 25 | 704 | 0.1− | 0.4− | 2005 05 08 | E12 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.5− | 0.6− |
| 2001 08 25 | 704 | 0.4− | 0.1− | 2005 05 08 | E12 | 0.5+ | 0.1− | 2006 10 17 | 703 | 0.1− | 1.0+ |
| 2001 09 20 | 704 | 0.9+ | 0.1− | 2005 05 08 | E12 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.6− | 0.3+ | 2005 05 08 | E12 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2005 05 11 | 644 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.8+ |
| 2001 09 20 | 704 | 0.5− | 0.6+ | 2005 05 11 | 644 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.6+ | 2005 05 11 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.6+ | 0.7− | 2005 05 12 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 1.2+ | 0.2− | 2005 05 12 | 644 | 0.6+ | 0.2+ | 2006 10 23 | 644 | 0.5+ | 0.1− |
| 2001 09 21 | 704 | 0.6+ | 0.0 | 2005 05 12 | 644 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 1.0− | 2005 05 30 | 699 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | (0.3− | 1.6+) | 2005 05 30 | 699 | 0.0 | 0.1+ | | | | |
| 2002 12 05 | 704 | 0.4− | 1.1+ | 2005 05 30 | 699 | 0.2− | 0.6− | | | | |

**(139606)∗ 2001 QJ$_{127}$**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 142.48588 | | (2000.0) | | | |
| $n$ | 0.24308391 | $\omega$ | 358.10846 | | −0.19677991 | +0.97230426 |
| $a$ | 2.5427202 | $\Omega$ | 260.52721 | | −0.89785625 | −0.23037558 |
| $e$ | 0.1716940 | $i$ | 7.34519 | | −0.39386778 | +0.03938938 |
| $P$ | 4.05 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 0.1+ | 0.9+ | 2005 07 29 | 699 | 0.1− | 1.0+ |
| 2000 03 04 | 645 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 0.6+ | 0.2+ | 2005 07 30 | 644 | 0.2+ | 0.1+ |
| 2001 07 20 | 699 | 0.2+ | 1.0+ | 2004 02 19 | 704 | 0.4− | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.0 |
| 2001 07 20 | 699 | 0.1− | 0.1− | 2004 02 19 | 704 | 0.5− | 0.7+ | 2005 07 30 | 644 | 0.1+ | 0.1+ |
| 2001 07 20 | 699 | 0.4− | 0.1− | 2004 02 19 | 704 | (1.8+ | 0.1+) | 2005 08 24 | 644 | 0.2+ | 0.1+ |
| 2001 07 20 | 699 | 0.9+ | 0.1− | 2005 06 29 | 644 | 0.4+ | 0.1+ | 2005 08 24 | 644 | 0.1+ | 0.2− |
| 2001 08 20 | 704 | 0.9+ | 0.4+ | 2005 06 29 | 644 | 0.4+ | 0.1+ | 2005 08 24 | 644 | 0.1+ | 0.2+ |
| 2001 08 20 | 704 | 0.1− | 0.7− | 2005 06 29 | 644 | 0.2+ | 0.1+ | 2005 09 03 | 644 | 0.1− | 0.2+ |
| 2001 08 20 | 704 | 0.4+ | 0.0 | 2005 06 30 | 699 | 0.3+ | 0.5+ | 2005 09 03 | 644 | 0.1− | 0.1+ |
| 2001 08 24 | 699 | 0.5− | 1.1+ | 2005 06 30 | 699 | 0.8+ | 0.1− | 2005 09 03 | 644 | 0.0 | 0.1− |
| 2001 08 24 | 699 | (2.0+ | 0.9+) | 2005 06 30 | 699 | 0.4+ | 0.6− | 2005 09 03 | 644 | 0.2− | 0.0 |
| 2001 08 24 | 699 | 0.1− | 0.2− | 2005 06 30 | 703 | 0.4− | 0.5− | 2005 09 03 | 644 | 0.2+ | 0.0 |
| 2001 08 24 | 699 | 0.8− | 0.6− | 2005 06 30 | 699 | (0.4+ | 1.9+) | 2005 09 03 | 644 | 0.0 | 0.0 |
| 2001 08 24 | 691 | 0.2− | 0.3+ | 2005 06 30 | 703 | (2.4− | 1.4−) | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2001 08 24 | 691 | 0.4− | 0.3+ | 2005 06 30 | 703 | (2.1− | 0.5−) | 2006 10 20 | G96 | 0.5− | 0.5− |
| 2001 08 24 | 691 | 0.1− | 0.3+ | 2005 06 30 | 703 | 0.8− | 0.7− | 2006 10 20 | G96 | 0.6− | 0.2+ |
| 2001 08 25 | 704 | 0.0 | 0.6+ | 2005 07 08 | 691 | 0.4− | 1.0+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2001 08 25 | 704 | 0.8+ | 0.4+ | 2005 07 08 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.4+ |
| 2001 08 25 | 704 | 0.0 | 0.6− | 2005 07 08 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 0.0 | 2005 07 11 | 703 | 0.8− | 1.2− | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.2− | 0.3− | 2005 07 11 | 703 | 0.3+ | 1.0− | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.0 | 2005 07 11 | 703 | 0.4− | 0.9− | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.8+ | 0.7− | 2005 07 11 | 703 | 0.5− | 0.7− | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.8− | 2005 07 12 | 703 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 0.5− | 2005 07 12 | 703 | 0.8+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.9+ | 2005 07 12 | 703 | 0.6− | 1.0− | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.6− | 0.6+ | 2005 07 12 | 703 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2005 07 29 | 699 | 0.9+ | 0.5+ | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2005 07 29 | 699 | 0.3+ | 0.8+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.5− | 1.3+ | 2005 07 29 | 699 | 0.6− | 1.1+ | | | | |

**(139607)∗ 2001 QZ$_{127}$ = 2193 P-L**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17891)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.31211 | | (2000.0) | | +0.98523734 | +0.16558474 |
| $n$ | 0.21482447 | $\omega$ | 154.45617 | | −0.17119129 | +0.95151079 |
| $a$ | 2.7610878 | $\Omega$ | 196.19123 | | −0.00096398 | +0.25924681 |
| $e$ | 0.1654777 | $i$ | 8.96728 | | | |
| $P$ | 4.59 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.4+ | 0.3+ | 2005 06 10 | 691 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1960 09 24 | 675 | 0.0 | 1.2− | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 1960 09 26 | 675 | 0.1− | 0.9+ | 2005 06 14 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 1960 09 26 | 675 | (1.0+ | 9.2+) | 2005 06 14 | 691 | 0.1− | 0.5+ | 2006 10 16 | 621 | 0.1+ | 0.2− |
| 1960 09 28 | 675 | 0.1− | 0.9+ | 2005 06 24 | 644 | 0.4+ | 0.1− | 2006 10 16 | 621 | 0.2+ | 0.1+ |
| 1960 09 28 | 675 | 0.2− | 0.5− | 2005 06 24 | 644 | 0.5+ | 0.2− | 2006 10 16 | 621 | 0.1+ | 0.2− |
| 2001 05 25 | 644 | 0.0 | 0.3+ | 2005 06 24 | 644 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2001 05 25 | 644 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.2− |
| 2001 05 25 | 644 | 0.5− | 0.3+ | 2005 07 27 | 644 | 0.5+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.1− |
| 2001 07 20 | 699 | 0.9+ | 0.3− | 2005 07 27 | 644 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2001 07 20 | 699 | 0.0 | 0.8− | 2006 08 30 | 699 | 0.2− | 0.7− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 07 20 | 699 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2001 07 20 | 699 | 0.3− | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2001 08 20 | 704 | 0.6+ | 0.3− | 2006 08 30 | 699 | 0.6− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 08 20 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 699 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 08 20 | 704 | 0.1+ | 0.1− | 2006 09 20 | 699 | 1.0− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 08 20 | 704 | 0.3+ | 1.2+ | 2006 09 20 | 699 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 08 25 | 704 | 0.5− | 0.1− | 2006 09 20 | 699 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 0.2− | 2006 09 22 | 683 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 08 25 | 704 | 0.3− | 0.3− | 2006 09 22 | 683 | 1.2+ | 0.6− | 2006 10 21 | 703 | 0.8+ | 0.1+ |
| 2001 08 25 | 704 | 0.0 | 0.4− | 2006 09 22 | 683 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.5− |
| 2001 08 25 | 704 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.8+ | 1.0− |
| 2001 09 09 | 699 | 0.1− | 0.5− | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 1.2− |
| 2001 09 09 | 699 | 0.0 | 0.2− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 09 09 | 699 | 0.3+ | 0.9− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 09 09 | 699 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.2− | 1.0− | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 0.7− | 2006 09 27 | 704 | (2.0+ | 0.7+) | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2001 10 18 | 644 | 0.0 | 0.7+ | 2006 09 27 | 704 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.0 | 0.7+ | 2006 09 27 | 704 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 10 18 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 06 08 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.8− | 1.1− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2005 06 08 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | (1.1− | 2.0−) | 2006 11 14 | 704 | 0.8− | 1.4+ |
| 2005 06 08 | 691 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.0 | 2006 11 14 | 704 | 0.1− | 0.3− |
| 2005 06 09 | 703 | 0.2− | 1.2− | 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.3− | 1.0+ |
| 2005 06 09 | 703 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.8+ | 0.9+ |
| 2005 06 09 | 703 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.4− |
| 2005 06 09 | 703 | 1.2− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.6+ | 1.3+ |
| 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2005 06 10 | 691 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.1− |

**(139608)∗ 2001 QF$_{128}$**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 121.04197 | | (2000.0) | | −0.22448512 | +0.97166555 |
| $n$ | 0.23668285 | $\omega$ | 29.05697 | | −0.91217568 | −0.23623486 |
| $a$ | 2.5883610 | $\Omega$ | 228.07569 | | −0.34284394 | −0.00769084 |
| $e$ | 0.3015448 | $i$ | 5.70616 | | | |
| $P$ | 4.16 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.8− | 0.3− | 2001 09 08 | 704 | 0.2+ | 0.5+ | 2005 07 05 | 704 | 0.3+ | 0.3+ |
| 2001 07 20 | 699 | 0.4+ | 0.7+ | 2001 09 08 | 704 | 0.0 | 0.3+ | 2005 07 05 | 704 | 0.1+ | 0.3− |
| 2001 07 20 | 699 | 1.2+ | 1.3+ | 2001 09 08 | 704 | 0.4+ | 0.4+ | 2005 07 05 | 704 | 0.7+ | 0.8+ |
| 2001 07 20 | 699 | 1.2+ | 0.0 | 2001 09 08 | 704 | 0.4+ | 0.1+ | 2005 07 05 | 704 | 0.1+ | 0.2+ |
| 2001 08 03 | 608 | 0.3− | 0.8− | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2005 07 05 | 704 | 0.4+ | 0.4+ |
| 2001 08 03 | 608 | 0.4− | 0.9− | 2004 01 18 | 644 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.3− | 0.2+ |
| 2001 08 03 | 608 | 0.4− | 0.9− | 2004 01 18 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.3− |
| 2001 08 20 | 704 | 0.0 | 0.1− | 2004 01 18 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.3− |
| 2001 08 20 | 704 | 0.3− | 0.0 | 2004 01 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.4− |
| 2001 08 20 | 608 | 0.3− | 1.3+ | 2004 01 18 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.2− |
| 2001 08 20 | 704 | 0.0 | 0.1− | 2005 01 23 | 809 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 08 20 | 608 | 0.2− | 0.0 | 2005 01 23 | 809 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 08 20 | 704 | (2.1+ | 0.5+) | 2005 01 23 | 809 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2001 08 20 | 608 | 0.5− | 0.4− | 2005 06 05 | 704 | 0.8− | 0.2− | 2006 11 01 | 691 | 0.5− | 0.0 |
| 2001 08 24 | 699 | 0.9− | 1.1+ | 2005 06 05 | 704 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 08 24 | 699 | 0.6− | 0.3+ | 2005 06 05 | 704 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2001 08 24 | 699 | 0.2− | 0.3+ | 2005 06 05 | 704 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2001 08 24 | 699 | 0.8− | 0.2+ | 2005 06 05 | 704 | 0.9− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2001 08 25 | 704 | 0.1− | 0.1− | 2005 06 08 | G92 | (0.5+ | 1.5−) | 2006 11 21 | G96 | 0.6+ | 0.0 |
| 2001 08 25 | 704 | 0.0 | 0.0 | 2005 06 08 | G92 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.2+ | 0.3+ | 2005 06 08 | G92 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.5+ | 0.1− |
| 2001 08 25 | 704 | 0.3+ | 0.0 | 2005 06 08 | G92 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2001 08 25 | 704 | 0.1− | 0.0 | 2005 06 08 | G92 | 0.2+ | 0.1− | | | | |
| 2001 09 08 | 704 | 0.7+ | 0.5+ | 2005 06 08 | G92 | 0.0 | 0.2− | | | | |

**(139609)∗ 2001 QB$_{129}$ = 2000 GR$_{20}$**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17892)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.96921 | | (2000.0) | | +0.53405368 | +0.84409351 |
| $n$ | 0.22527172 | $\omega$ | 96.03370 | | −0.81201560 | +0.49634025 |
| $a$ | 2.6750481 | $\Omega$ | 206.42037 | | −0.23540885 | +0.20286080 |
| $e$ | 0.1372050 | $i$ | 6.17779 | | | |
| $P$ | 4.38 | $H$ | 15.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.2− | 0.5+ | 2001 09 12 | 704 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2001 09 12 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2000 04 05 | 699 | 0.1+ | 0.8+ | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2000 04 05 | 704 | 0.6+ | 0.2+ | 2004 03 20 | 704 | (1.5+ | 0.2+) | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2000 04 05 | 699 | 0.7− | 0.8− | 2004 03 20 | 704 | 0.9+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 0.7+ | 1.0+ | 2005 02 10 | 809 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2000 04 05 | 699 | 0.8+ | 0.8+ | 2005 02 10 | 809 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2000 04 05 | 704 | 0.3+ | 1.1+ | 2005 02 10 | 809 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2000 04 05 | 704 | 1.2+ | 1.2+ | 2005 06 05 | 704 | 0.6− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2000 04 06 | 704 | 1.1+ | 1.2+ | 2005 06 05 | 704 | 0.1+ | 0.9+ | 2006 11 10 | 644 | 0.4− | 0.3+ |
| 2000 04 06 | 704 | 1.0− | 0.3+ | 2005 06 05 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.6− | 1.0+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 11 11 | 644 | 0.1− | 0.6+ |
| 2000 04 06 | 704 | 0.6− | 1.2+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.5+ |
| 2001 08 10 | 608 | 0.7− | 1.4+ | 2006 09 26 | G96 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 08 10 | 608 | 0.8− | 0.6+ | 2006 09 26 | G96 | 0.4− | 0.1− | 2006 11 11 | 644 | 0.1− | 0.2+ |
| 2001 08 10 | 608 | 0.8− | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2001 08 20 | 704 | 0.4+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.8− | 1.1+ |
| 2001 08 20 | 704 | 0.7+ | 0.6− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 11 | 644 | 0.4+ | 0.4+ |
| 2001 08 20 | 704 | 0.4+ | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2001 08 25 | 704 | 0.5− | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2001 08 25 | 704 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2001 08 25 | 704 | 0.3− | 0.7+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2001 08 25 | 704 | 1.4− | 0.2+ | 2006 10 18 | 691 | 0.4− | 0.7+ | 2006 11 17 | 703 | 0.4+ | 0.6+ |
| 2001 09 12 | 704 | 0.3+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.6+ |
| 2001 09 12 | 704 | 1.2+ | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.5+ |
| 2001 09 12 | 704 | 0.7+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | (0.1+ | 2.5+) |

**(139610)∗ 2001 QX$_{132}$**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.51156 | | (2000.0) | | | |
| $n$ | 0.20605431 | $\omega$ | 309.23885 | | +0.84258024 | +0.53084283 |
| $a$ | 2.8388880 | $\Omega$ | 19.24389 | | −0.36861598 | +0.69148065 |
| $e$ | 0.3070095 | $i$ | 16.01114 | | −0.39265863 | +0.48995959 |
| $P$ | 4.78 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 03 | 704 | 0.7+ | 0.7+ | 2001 10 19 | 644 | 0.2− | 0.1+ | 2006 08 24 | 704 | 0.2+ | 0.9+ |
| 2000 05 03 | 704 | 0.4+ | 1.2+ | 2001 10 21 | 704 | 0.3− | 0.4+ | 2006 08 24 | 704 | 1.0+ | 0.2+ |
| 2000 05 03 | 704 | 0.3+ | 1.4+ | 2001 10 21 | 704 | 0.6− | 0.2+ | 2006 08 24 | 704 | 0.4− | 0.4− |
| 2000 05 03 | 704 | 1.0+ | 0.8+ | 2001 10 21 | 704 | 0.8− | 0.2+ | 2006 08 24 | 704 | 0.6+ | 0.1+ |
| 2000 05 03 | 704 | 0.6+ | 0.6+ | 2001 10 21 | 704 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.2+ |
| 2001 08 13 | 608 | 0.9− | 0.9+ | 2001 10 21 | 704 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.1+ |
| 2001 08 13 | 608 | 0.7− | 0.7+ | 2001 11 09 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.7+ | 0.6+ |
| 2001 08 13 | 608 | 0.7− | 0.6+ | 2001 11 09 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.7+ | 0.2− |
| 2001 08 18 | 699 | 0.7+ | 0.6+ | 2001 11 09 | 644 | 0.3− | 0.4− | 2006 08 30 | 704 | 1.0+ | 1.4− |
| 2001 08 18 | 699 | 0.3− | 0.4+ | 2001 11 10 | 644 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.1− | 0.8− |
| 2001 08 18 | 699 | 0.9+ | 0.8+ | 2001 11 10 | 644 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.1+ |
| 2001 08 18 | 699 | 0.2+ | 1.0+ | 2001 11 10 | 644 | 0.2+ | 0.0 | 2006 08 30 | 704 | 1.0− | 1.0+ |
| 2001 08 20 | 704 | 0.2+ | 0.6− | 2001 11 13 | 704 | 0.3− | 0.3− | 2006 09 18 | 704 | 1.4− | 0.9+ |
| 2001 08 20 | 704 | 0.4− | 0.3+ | 2001 11 13 | 704 | 0.4− | 1.2+ | 2006 09 18 | 704 | 0.1+ | 1.1− |
| 2001 08 20 | 704 | 0.9− | 1.1− | 2001 11 13 | 704 | 0.9− | 0.2− | 2006 09 18 | 704 | 0.0 | 0.1+ |
| 2001 08 20 | 704 | 0.9− | 0.2− | 2001 11 13 | 608 | 0.6− | 0.1+ | 2006 09 18 | 704 | 0.1+ | 0.1− |
| 2001 08 20 | 704 | 0.2− | 0.1+ | 2001 11 13 | 608 | 0.9− | 0.1− | 2006 09 18 | 704 | 0.8+ | 0.4+ |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2001 11 13 | 608 | 0.7− | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.4+ | 0.3− | 2001 11 17 | 704 | 1.2+ | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.8− |
| 2001 08 25 | 704 | 0.1− | 0.5+ | 2001 11 17 | 704 | 0.6+ | 1.2+ | 2006 09 18 | 703 | 0.3+ | 0.1+ |
| 2001 08 25 | 704 | 0.2+ | 0.7− | 2001 11 17 | 704 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.1− |
| 2001 08 27 | 699 | 0.5+ | 0.5+ | 2001 11 17 | 704 | 0.1+ | 1.3+ | 2006 09 21 | 704 | 0.4+ | 0.1+ |
| 2001 08 27 | 699 | 0.6+ | 0.2+ | 2001 11 19 | 704 | 0.2+ | 0.6+ | 2006 09 21 | 704 | 0.3− | 0.8+ |
| 2001 08 27 | 699 | 0.5+ | 0.5+ | 2001 11 19 | 704 | 0.3+ | 0.6+ | 2006 09 21 | 704 | (1.9+ | 0.3−) |
| 2001 08 27 | 699 | 0.2+ | 0.8+ | 2001 11 19 | 704 | 0.5+ | 0.7+ | 2006 09 21 | 704 | 0.5− | 0.6+ |
| 2001 09 08 | 683 | (0.7+ | 1.9+) | 2001 11 19 | 704 | 0.2+ | 0.6+ | 2006 09 21 | 704 | 0.8− | 1.3+ |
| 2001 09 08 | 683 | 0.3− | 0.1+ | 2001 11 24 | 704 | 0.4− | 0.0 | 2006 09 21 | 704 | 0.6+ | 0.0 |
| 2001 09 08 | 683 | (4.6+ | 0.7+) | 2001 11 24 | 704 | 0.2− | 0.5+ | 2006 09 21 | 704 | 0.4+ | 0.6+ |
| 2001 09 11 | 699 | 0.3+ | 0.6+ | 2001 11 24 | 704 | 0.3+ | 0.3+ | 2006 09 21 | 704 | 0.1− | 0.8+ |
| 2001 09 11 | 699 | 0.6+ | 0.3+ | 2001 11 24 | 704 | 0.9− | 0.8+ | 2006 09 25 | 704 | 0.3− | 0.2− |
| 2001 09 11 | 699 | 0.6+ | 0.4+ | 2001 12 11 | 704 | 1.0− | 0.6+ | 2006 09 25 | 704 | 0.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.4+ | 0.1+ | 2001 12 11 | 704 | 1.1− | 0.8+ | 2006 09 25 | 704 | 0.3− | 0.3− |
| 2001 09 16 | 644 | 0.1− | 0.8− | 2001 12 11 | 704 | 0.6− | 0.5+ | 2006 09 25 | 704 | 0.3− | 0.0 |
| 2001 09 16 | 644 | 0.4− | 0.3− | 2001 12 11 | 704 | 1.1− | 0.5+ | 2006 09 25 | 704 | 0.2− | 1.0+ |
| 2001 09 16 | 644 | 0.2+ | 0.8− | 2001 12 11 | 704 | 0.8− | 1.1+ | 2006 09 28 | 703 | 0.6− | 0.5− |
| 2001 09 16 | 704 | 0.3+ | 0.1− | 2001 12 17 | 704 | (2.1− | 0.2+) | 2006 09 28 | 703 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2001 12 17 | 704 | 0.4− | 0.1− | 2006 09 28 | 703 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.7+ | 0.3+ | 2001 12 17 | 704 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2001 12 17 | 704 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 0.1− | 2001 12 17 | 704 | 1.1− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2002 01 12 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 704 | 0.6+ | 0.2+ |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2002 01 12 | 704 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.6+ | 0.3− |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2002 01 12 | 704 | 0.8+ | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.7− |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2002 01 12 | 704 | 0.2+ | 0.0 | 2006 10 01 | 704 | (1.9− | 1.1+) |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2003 12 25 | 645 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 1.4− | 0.9+ |
| 2001 09 26 | 704 | 0.5− | 0.1− | 2003 12 25 | 645 | 0.1+ | 0.2+ | 2006 10 01 | 704 | (1.7− | 0.6+) |
| 2001 09 26 | 704 | 1.1− | 0.1− | 2005 04 10 | E12 | 0.3+ | 1.0+ | 2006 10 01 | 704 | 0.9− | 0.1− |
| 2001 09 26 | 704 | 0.6− | 0.1+ | 2005 04 10 | E12 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.7− | 0.5− |
| 2001 09 26 | 704 | 0.9− | 0.2+ | 2005 04 10 | E12 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 0.9− | 0.1− | 2005 04 10 | E12 | 0.2− | 0.9+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2001 10 11 | 644 | 0.1− | 0.2− | 2005 04 28 | E12 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2001 10 11 | 644 | 0.1− | 0.1− | 2005 04 28 | E12 | 0.2− | 0.5+ | 2006 10 19 | A50 | 0.1− | 0.4+ |
| 2001 10 11 | 644 | 0.1− | 0.2− | 2005 04 28 | E12 | 0.5+ | 0.0 | 2006 10 19 | A50 | 0.0 | 0.4+ |
| 2001 10 12 | 699 | 0.2+ | 0.2+ | 2005 04 28 | E12 | 0.2+ | 0.2+ | 2006 10 19 | A50 | 0.0 | 0.0 |
| 2001 10 12 | 699 | 0.2+ | 0.2+ | 2005 05 01 | E12 | 0.4+ | 0.3+ | 2006 10 19 | A50 | 0.0 | 0.0 |
| 2001 10 12 | 699 | 0.5+ | 0.0 | 2005 05 01 | E12 | 0.2+ | 0.1+ | 2006 10 20 | 704 | 0.9+ | 0.3+ |
| 2001 10 12 | 699 | 0.3− | 0.1+ | 2005 05 01 | E12 | 0.7+ | 0.1− | 2006 10 20 | 704 | 0.3− | 0.5+ |
| 2001 10 13 | 704 | 0.0 | 0.2+ | 2005 05 01 | E12 | (2.1− | 0.3−) | 2006 10 20 | 704 | 0.3− | 0.0 |
| 2001 10 13 | 704 | 0.4− | 0.3+ | 2005 05 10 | 699 | 0.8+ | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 0.4− | 0.7+ | 2005 05 10 | 699 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2001 10 13 | 704 | 0.4− | 0.4+ | 2005 05 10 | 699 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2001 10 13 | 704 | 0.4− | 0.7+ | 2005 05 10 | 699 | 0.5+ | 1.2+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2001 10 14 | 699 | 0.1+ | 0.0 | 2005 05 11 | 644 | 0.4+ | 0.3+ | 2006 11 14 | 644 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.1+ | 0.1− | 2005 05 11 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 644 | 0.1+ | 0.3+ |
| 2001 10 14 | 699 | 0.4+ | 0.1− | 2005 05 11 | 644 | 0.5+ | 0.3+ | 2006 11 14 | 644 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.1+ | 0.1+ | 2005 05 12 | 644 | 0.6+ | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.1+ |
| 2001 10 14 | 608 | 0.2− | 0.8− | 2005 05 12 | 703 | 0.6− | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2001 10 14 | 608 | 0.4− | 0.8− | 2005 05 12 | 644 | 0.7+ | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.0 |
| 2001 10 14 | 608 | 0.3− | 0.9− | 2005 05 12 | 703 | 0.7− | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2001 10 15 | 291 | 0.3+ | 0.2− | 2005 05 12 | 703 | 0.2− | 0.6+ | 2006 11 15 | 704 | 0.2+ | 0.1+ |
| 2001 10 15 | 291 | 0.4+ | 0.2− | 2005 05 12 | 703 | 0.0 | 0.9+ | 2006 11 15 | 704 | 0.7+ | 0.4− |
| 2001 10 15 | 291 | 0.5+ | 0.2− | 2005 05 12 | 644 | 0.5+ | 0.4+ | 2006 11 15 | 704 | 0.5+ | 0.1+ |
| 2001 10 16 | 704 | 0.4− | 0.0 | 2005 07 27 | E12 | 0.7+ | 1.2+ | 2006 11 15 | 704 | 0.2+ | 0.0 |
| 2001 10 16 | 704 | 0.1− | 0.3+ | 2005 07 27 | E12 | 0.3+ | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.1− |
| 2001 10 16 | 704 | 0.2− | 0.1− | 2005 07 27 | E12 | 0.9+ | 0.2+ | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2001 10 16 | 704 | 0.1− | 0.2− | 2005 07 27 | E12 | 0.5+ | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2001 10 16 | 704 | 0.2− | 0.1+ | 2006 08 21 | 704 | 1.0+ | 0.5− | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2001 10 17 | 644 | 0.1+ | 0.9− | 2006 08 21 | 704 | 0.6+ | 0.3+ | 2006 11 21 | 703 | 0.5− | 0.0 |
| 2001 10 17 | 644 | 0.1+ | 1.1− | 2006 08 21 | 704 | 0.5− | 0.5+ | 2006 11 21 | 703 | 0.1− | 0.3+ |
| 2001 10 17 | 644 | 0.1+ | 1.0− | 2006 08 21 | 704 | 0.1+ | 0.7− | 2006 11 21 | 703 | 0.1− | 0.0 |
| 2001 10 19 | 644 | 0.2− | 0.1+ | 2006 08 21 | 704 | 0.5− | 0.1+ | 2006 11 21 | 703 | 1.2− | 0.7− |
| 2001 10 19 | 644 | 0.1− | 0.1+ | 2006 08 24 | 704 | 0.3+ | 0.6+ | | | | |

**(139611)∗ 2001 QG$_{133}$**

Discovered 2001 Aug. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.31088 | | (2000.0) | | | |
| $n$ | 0.21523975 | $\omega$ | 164.22269 | | +0.98744351 | +0.15567269 |
| $a$ | 2.7575352 | $\Omega$ | 186.98898 | | −0.15794283 | +0.96958789 |
| $e$ | 0.2195090 | $i$ | 12.75172 | | −0.00306343 | +0.18885269 |
| $P$ | 4.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 704 | 0.3+ | 1.1− | 2001 09 16 | 704 | 0.3− | 0.1+ | 2005 06 13 | 691 | 0.1− | 0.0 |
| 2001 08 21 | 704 | 0.8− | 0.1− | 2001 09 16 | 704 | 0.5− | 0.3+ | 2005 06 13 | 691 | 0.0 | 0.1− |
| 2001 08 21 | 704 | 0.5− | 0.0 | 2001 09 18 | 699 | 0.3− | 0.3+ | 2005 06 24 | 644 | 0.1− | 0.0 |
| 2001 08 21 | 704 | 0.1+ | 0.6+ | 2001 09 18 | 699 | 0.1− | 0.4+ | 2005 06 24 | 644 | 0.2+ | 0.1+ |
| 2001 08 24 | 699 | 0.3− | 0.4+ | 2001 09 18 | 699 | 0.3+ | 0.4− | 2005 06 24 | 644 | 0.2− | 0.1+ |
| 2001 08 24 | 699 | 0.4+ | 0.3+ | 2001 09 18 | 699 | 0.9+ | 0.1− | 2005 06 28 | 691 | 0.1− | 0.3+ |
| 2001 08 24 | 699 | 0.0 | 0.2− | 2001 09 20 | 704 | 0.1+ | 0.4+ | 2005 06 28 | 691 | 0.4+ | 0.1+ |
| 2001 08 24 | 699 | 0.9− | 0.1− | 2001 09 20 | 704 | 0.2− | 0.9− | 2005 06 28 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.1− | 0.1− | 2001 09 20 | 704 | 0.2+ | 0.8− | 2005 06 30 | 644 | 0.3− | 0.3− |
| 2001 08 25 | 683 | (4.3− | 4.8−) | 2001 09 20 | 704 | 0.4− | 0.6− | 2005 06 30 | 644 | 0.4− | 0.1− |
| 2001 08 25 | 704 | 0.3+ | 0.3+ | 2001 10 14 | 704 | 0.1+ | 0.5+ | 2005 06 30 | 644 | 0.2+ | 0.1+ |
| 2001 08 25 | 683 | (5.4− | 0.2−) | 2001 10 14 | 704 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.7+ | 0.5+ |
| 2001 08 25 | 704 | 0.0 | 0.0 | 2001 10 14 | 704 | 0.7− | 0.4− | 2006 09 18 | 703 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.3+ | 0.4+ | 2001 10 14 | 704 | 0.9+ | 1.3+ | 2006 09 18 | 703 | 0.4+ | 0.3+ |
| 2001 08 25 | 704 | 0.1+ | 0.5+ | 2001 10 14 | 704 | 0.7− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.7− |
| 2001 09 08 | 704 | 0.1− | 0.3− | 2001 10 19 | 644 | 0.1− | 0.8+ | 2006 11 13 | 703 | 1.3− | 0.7− |
| 2001 09 08 | 704 | 0.2− | 0.3+ | 2001 10 19 | 644 | 0.1+ | 0.8+ | 2006 11 13 | 703 | 1.4+ | 0.8+ |
| 2001 09 08 | 704 | 0.8+ | 0.0 | 2001 10 19 | 644 | 0.2− | 0.7+ | 2006 11 13 | 703 | 0.6− | 0.6− |
| 2001 09 08 | 704 | 0.7+ | 0.6− | 2001 10 21 | 704 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.6− | 0.9+ |
| 2001 09 08 | 704 | 0.4+ | 0.0 | 2001 10 21 | 704 | 0.1− | 0.9+ | 2006 11 19 | 703 | 0.3+ | 1.3+ |
| 2001 09 09 | 699 | 0.1+ | 0.0 | 2001 10 21 | 704 | (0.3− | 1.6+) | 2006 11 19 | 703 | 0.6− | 0.8+ |
| 2001 09 09 | 699 | 0.3− | 0.1+ | 2004 03 15 | 691 | 0.3+ | 0.5+ | 2006 11 19 | 703 | 0.7+ | 0.7+ |
| 2001 09 09 | 699 | 1.0− | 0.6+ | 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 11 19 | 703 | 0.2− | 0.8− |
| 2001 09 09 | 699 | 0.3+ | 0.4− | 2004 03 15 | 691 | 0.1+ | 0.5+ | | | | |
| 2001 09 16 | 704 | 0.6+ | 0.5+ | 2005 06 13 | 691 | 0.1− | 0.0 | | | | |

**(139612)∗ 2001 QZ$_{135}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.54854 | | (2000.0) | | | |
| $n$ | 0.21497451 | $\omega$ | 222.96545 | | +0.22743984 | −0.97005947 |
| $a$ | 2.7598029 | $\Omega$ | 214.14870 | | +0.92952279 | +0.24234252 |
| $e$ | 0.2457356 | $i$ | 8.72803 | | +0.29027315 | −0.01595990 |
| $P$ | 4.58 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 19 | 691 | 0.0 | 0.4− | 2001 10 19 | 644 | 0.1− | 0.3− | 2001 12 14 | 704 | 0.1+ | 0.5− |
| 1994 04 19 | 691 | 0.0 | 0.3− | 2001 10 21 | 704 | (1.7+ | 0.7−) | 2001 12 14 | 704 | 0.1− | 0.2− |
| 1994 04 19 | 691 | 0.3− | 0.0 | 2001 10 21 | 704 | (1.8+ | 0.5−) | 2001 12 14 | 704 | 0.0 | 0.0 |
| 2001 08 22 | 704 | 1.0− | 1.3+ | 2001 10 21 | 704 | (1.9+ | 0.3−) | 2001 12 19 | 704 | 0.7− | 0.9+ |
| 2001 08 22 | 704 | 0.5− | 0.2+ | 2001 10 21 | 704 | (2.0+ | 0.1−) | 2001 12 19 | 704 | 0.2− | 0.4+ |
| 2001 08 22 | 704 | 0.7− | 0.3+ | 2001 10 21 | 704 | (2.3+ | 0.0 ) | 2001 12 19 | 704 | 1.3− | 0.6+ |
| 2001 08 22 | 704 | 0.3− | 0.3− | 2001 10 22 | 704 | 0.5− | 0.3− | 2001 12 19 | 704 | (1.7− | 0.5+) |
| 2001 08 22 | 704 | 0.3− | 0.7+ | 2001 10 22 | 704 | 0.3− | 0.3− | 2001 12 19 | 704 | 1.0− | 0.9+ |
| 2001 08 25 | 704 | 0.0 | 0.4+ | 2001 10 22 | 704 | 0.0 | 0.2− | 2001 12 19 | 699 | 0.7+ | 0.1− |
| 2001 08 25 | 704 | 0.1− | 0.7+ | 2001 10 23 | 704 | 1.2+ | 0.3+ | 2001 12 19 | 699 | 0.3+ | 0.3+ |
| 2001 08 25 | 704 | 0.2− | 0.8+ | 2001 10 23 | 704 | 1.0+ | 0.0 | 2001 12 19 | 699 | 0.6− | 0.1− |
| 2001 08 28 | 699 | 0.4− | 0.4+ | 2001 10 23 | 704 | 1.1+ | 0.6+ | 2001 12 19 | 699 | 0.1− | 0.7+ |
| 2001 08 28 | 699 | 0.1+ | 0.5+ | 2001 10 23 | 704 | 1.3+ | 0.3+ | 2001 12 20 | 704 | (3.0− | 0.3−) |
| 2001 08 28 | 699 | 0.4− | 0.4+ | 2001 10 23 | 704 | 1.2+ | 0.0 | 2001 12 20 | 704 | 1.0− | 1.1+ |
| 2001 08 28 | 699 | 0.0 | 1.0+ | 2001 10 24 | 152 | 0.4− | 0.4− | 2001 12 20 | 704 | 1.2− | 0.4+ |
| 2001 09 17 | 704 | 0.3+ | 1.1+ | 2001 10 24 | 152 | 0.1+ | 0.2+ | 2001 12 20 | 704 | 1.3− | 0.7+ |
| 2001 09 17 | 704 | 0.3+ | 0.3+ | 2001 10 24 | 152 | 0.8− | 0.0 | 2001 12 20 | 704 | 0.6− | 0.5+ |
| 2001 09 17 | 704 | 0.2− | 0.0 | 2001 10 25 | 704 | 0.2− | 0.8+ | 2002 01 02 | 644 | 0.9+ | 0.9+ |
| 2001 09 17 | 704 | 0.3− | 0.2− | 2001 10 25 | 704 | 0.1− | 0.4− | 2002 01 02 | 644 | 0.0 | 1.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.3+ | 2001 10 25 | 704 | 0.1− | 0.7+ | 2002 01 02 | 644 | 0.9+ | 1.2+ |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2001 10 25 | 704 | 0.2+ | 0.3− | 2003 03 07 | 704 | 0.7+ | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2001 10 25 | 704 | 0.0 | 0.4+ | 2003 03 07 | 704 | 0.5+ | 0.6+ |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2001 10 25 | 704 | 0.1+ | 0.2− | 2003 03 07 | 704 | 0.6+ | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 0.0 | 2001 10 25 | 704 | 0.2+ | 0.7+ | 2003 03 07 | 704 | 0.5+ | 0.5+ |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2001 10 25 | 704 | 0.1+ | 0.1− | 2003 03 07 | 704 | 1.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.1+ | 2001 10 25 | 704 | 0.3+ | 0.5+ | 2003 03 07 | 704 | 0.1+ | 0.9+ |
| 2001 09 20 | 704 | 0.6+ | 0.1+ | 2001 10 25 | 704 | 0.5+ | 0.3+ | 2003 03 07 | 704 | 0.7+ | 0.5+ |
| 2001 09 20 | 704 | 0.7− | 0.6− | 2001 10 26 | 644 | 0.3− | 0.2− | 2003 03 07 | 704 | 0.9+ | 0.5+ |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2001 10 26 | 644 | 0.4− | 0.3− | 2003 03 28 | 691 | (0.9− | 1.8+) |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2001 10 26 | 644 | 0.3− | 0.3− | 2003 03 28 | 691 | (0.7− | 2.2+) |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2001 11 09 | 704 | 0.0 | 0.4− | 2003 03 28 | 691 | (0.6− | 1.8+) |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2001 11 09 | 704 | 0.4+ | 0.5− | 2003 03 30 | 699 | 0.3+ | 0.3+ |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2001 11 09 | 704 | 0.4+ | 0.3− | 2003 03 30 | 699 | 0.1− | 0.4− |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2001 11 09 | 704 | 0.3+ | 0.6− | 2003 03 30 | 699 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.9− | 2001 11 09 | 704 | 0.4+ | 0.8− | 2003 03 30 | 699 | 0.2+ | 1.0+ |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2001 11 14 | 608 | 0.2− | 1.2− | 2003 03 31 | 704 | 1.3+ | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2001 11 14 | 608 | 0.5− | 0.2− | 2003 03 31 | 704 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.4+ | 0.3− | 2001 11 14 | 608 | 0.5− | 0.4− | 2003 03 31 | 704 | 0.5+ | 0.4+ |
| 2001 09 20 | 291 | 0.0 | 0.3+ | 2001 11 16 | 644 | 0.0 | 0.1− | 2003 03 31 | 704 | 0.6+ | 1.3+ |
| 2001 09 20 | 291 | 0.3+ | 0.3+ | 2001 11 16 | 644 | 0.1− | 0.3− | 2003 03 31 | 704 | 1.0+ | 0.1+ |
| 2001 09 20 | 291 | 0.4+ | 0.3+ | 2001 11 16 | 644 | 0.1− | 0.0 | 2003 04 05 | 608 | (2.0+ | 1.2+) |
| 2001 09 23 | 704 | 0.2− | 0.0 | 2001 11 17 | 704 | 0.5+ | 0.6+ | 2003 04 05 | 608 | (1.6+ | 1.3+) |
| 2001 09 23 | 704 | 0.1+ | 0.2+ | 2001 11 17 | 704 | 0.6+ | 0.8− | 2003 04 05 | 608 | (1.7+ | 0.8+) |
| 2001 09 23 | 704 | 0.4− | 0.1+ | 2001 11 17 | 704 | 0.8− | 0.5− | 2003 04 29 | 691 | 0.4− | 1.0+ |
| 2001 09 24 | 704 | 0.3− | 0.4+ | 2001 11 17 | 704 | 0.6− | 0.5+ | 2003 04 29 | 691 | 0.4− | 1.2+ |
| 2001 09 24 | 704 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.2+ | 0.2+ | 2003 04 29 | 691 | 0.2− | 0.9+ |
| 2001 09 24 | 704 | 0.0 | 0.7+ | 2001 11 20 | 704 | 0.5+ | 0.1− | 2005 07 12 | 703 | 0.4− | 0.7+ |
| 2001 09 24 | 704 | 0.3− | 0.6+ | 2001 11 20 | 704 | 0.5+ | 0.0 | 2005 07 12 | 703 | 0.2− | 0.4− |
| 2001 09 24 | 704 | 0.6− | 0.4+ | 2001 11 20 | 704 | 0.3+ | 0.4− | 2005 07 12 | 703 | (1.8− | 1.9+) |
| 2001 10 07 | 644 | 0.0 | 0.3+ | 2001 11 20 | 704 | 0.4+ | 0.1− | 2005 07 12 | 703 | (2.3− | 1.2−) |
| 2001 10 07 | 644 | 0.1+ | 0.2+ | 2001 11 20 | 608 | 1.1+ | 1.2+ | 2005 07 30 | 644 | 0.0 | 1.0+ |
| 2001 10 07 | 644 | 0.1− | 0.1+ | 2001 11 20 | 608 | (0.7+ | 1.5+) | 2005 07 30 | 644 | 0.0 | 0.9+ |
| 2001 10 14 | 704 | 0.5− | 0.4− | 2001 11 20 | 608 | 0.5+ | 1.0+ | 2005 07 30 | 644 | 0.2− | 0.7+ |
| 2001 10 14 | 704 | 0.3− | 0.6− | 2001 11 21 | 704 | 0.4− | 0.3+ | 2005 08 24 | 644 | 0.2− | 0.9+ |
| 2001 10 14 | 704 | 0.4− | 0.9− | 2001 11 21 | 704 | 0.0 | 0.2+ | 2005 08 24 | 644 | 0.3− | 1.2+ |
| 2001 10 14 | 704 | 0.3− | 0.7− | 2001 11 21 | 704 | 0.2− | 0.1+ | 2005 08 24 | 644 | 0.5− | 0.9+ |
| 2001 10 14 | 704 | 0.5− | 0.9− | 2001 11 21 | 704 | 0.3− | 0.1+ | 2006 08 21 | 691 | 0.1+ | 0.3− |
| 2001 10 17 | 704 | 0.7+ | 0.3+ | 2001 11 21 | 704 | 0.6− | 0.6− | 2006 08 21 | 691 | 0.5− | 0.1− |
| 2001 10 17 | 704 | 0.8+ | 0.1+ | 2001 12 07 | 704 | 1.2− | 0.3− | 2006 08 21 | 691 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.6+ | 0.1+ | 2001 12 07 | 704 | 0.1+ | 0.8+ | 2006 11 28 | 704 | 0.2+ | 1.0+ |
| 2001 10 17 | 704 | 0.8+ | 0.1− | 2001 12 07 | 704 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.3− |
| 2001 10 17 | 704 | 0.8+ | 0.2+ | 2001 12 07 | 704 | 0.4− | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2001 10 19 | 644 | 0.1− | 0.4− | 2001 12 14 | 704 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2001 10 19 | 644 | 0.1− | 0.3− | 2001 12 14 | 704 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.5− |

**(139613)∗ 2001 QG$_{136}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.65017 | | (2000.0) | | | |
| $n$ | 0.23019337 | $\omega$ | 94.42370 | | +0.34450478 | −0.93356656 |
| $a$ | 2.6367817 | $\Omega$ | 334.71752 | | +0.74310765 | +0.33552197 |
| $e$ | 0.1300377 | $i$ | 13.38177 | | +0.57367889 | +0.12600986 |
| $P$ | 4.28 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.5+ | 0.3− | 2002 01 09 | 704 | 0.5+ | 0.9+ | 2005 09 06 | 704 | 1.0− | 1.2+ |
| 2001 08 22 | 704 | 0.3+ | 0.7− | 2003 01 27 | 608 | 0.1+ | 1.2+ | 2005 09 08 | 704 | 0.4+ | 0.5+ |
| 2001 08 22 | 704 | (1.6+ | 1.2−) | 2003 01 27 | 608 | 0.0 | 1.5+ | 2005 09 08 | 704 | 0.1+ | 0.4+ |
| 2001 08 22 | 704 | 0.4+ | 0.2+ | 2003 01 27 | 608 | 0.0 | 1.5+ | 2005 09 08 | 704 | (1.6− | 0.2−) |
| 2001 08 25 | 704 | 0.5− | 0.8− | 2003 01 31 | 699 | 0.4− | 0.4+ | 2005 09 08 | 704 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | 0.8+ | 1.2− | 2003 01 31 | 704 | 0.9+ | 0.5+ | 2005 09 08 | 704 | 0.1− | 0.6+ |
| 2001 08 25 | 704 | 0.5+ | 0.8− | 2003 01 31 | 699 | 0.9+ | 1.0+ | 2005 09 13 | 691 | 0.2− | 0.5+ |
| 2001 08 25 | 704 | 0.2+ | 0.9− | 2003 01 31 | 704 | 0.9+ | 0.9+ | 2005 09 13 | 691 | 0.2− | 0.3+ |
| 2001 09 09 | 704 | 0.3+ | 0.4+ | 2003 01 31 | 704 | 1.5+ | 0.3− | 2005 09 13 | 691 | 0.4− | 0.5+ |
| 2001 09 09 | 704 | 0.2+ | 0.2+ | 2003 01 31 | 699 | (1.2− | 1.7+) | 2005 09 14 | 703 | 0.2+ | 0.3− |
| 2001 09 09 | 704 | 0.2− | 0.6+ | 2003 01 31 | 704 | 0.9+ | 0.4− | 2005 09 14 | 703 | 1.0− | 0.7− |
| 2001 09 09 | 704 | 0.3+ | 0.1+ | 2003 01 31 | 699 | (1.5+ | 1.1+) | 2005 09 14 | 703 | 0.7− | 0.2+ |
| 2001 09 19 | 699 | 0.6− | 0.8+ | 2003 01 31 | 704 | 0.6+ | 1.2+ | 2005 09 14 | 703 | 0.9− | 0.6− |
| 2001 09 19 | 699 | 0.4− | 0.6+ | 2003 02 06 | 291 | 0.0 | 0.3+ | 2005 09 23 | 699 | 0.8− | 0.5+ |
| 2001 09 19 | 699 | 0.4− | 0.3+ | 2003 02 06 | 291 | 0.3+ | 0.5+ | 2005 09 23 | 699 | 0.3− | 0.1+ |
| 2001 09 19 | 699 | (0.6+ | 1.7+) | 2003 02 06 | 291 | 0.1+ | 0.5+ | 2005 09 23 | 699 | 0.5− | 1.0+ |
| 2001 09 25 | 704 | 0.1− | 0.1− | 2003 02 28 | 608 | 0.5− | 0.3− | 2005 09 23 | 699 | 0.0 | 0.9+ |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2003 02 28 | 608 | 0.1− | 0.0 | 2005 09 25 | 691 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.0 | 0.2+ | 2003 02 28 | 608 | 0.2+ | 0.0 | 2005 09 25 | 691 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2003 03 09 | 704 | 0.3+ | 0.4− | 2005 09 25 | 691 | 0.2− | 0.2+ |
| 2001 09 25 | 704 | 0.1− | 0.2− | 2003 03 09 | 704 | 0.6+ | 0.7+ | 2005 10 01 | 703 | 0.3− | 0.0 |
| 2001 09 29 | 644 | 0.2− | 1.0− | 2003 03 09 | 704 | 0.9+ | 0.7+ | 2005 10 01 | 703 | 0.6− | 0.2+ |
| 2001 09 29 | 644 | 0.3+ | 0.2− | 2003 03 09 | 704 | 0.8+ | 0.9+ | 2005 10 01 | 703 | 0.2− | 0.3− |
| 2001 09 29 | 644 | 0.2− | 1.0− | 2003 03 14 | 608 | 0.5+ | 0.8− | 2005 10 01 | 703 | 0.3− | 0.0 |
| 2001 09 29 | 644 | 0.5+ | 0.2− | 2003 03 14 | 608 | 0.6+ | 0.5− | 2005 10 07 | 691 | 0.0 | 0.2+ |
| 2001 09 29 | 644 | 0.0 | 1.1− | 2003 03 14 | 608 | 0.1+ | 0.3− | 2005 10 07 | 691 | 0.4+ | 0.7− |
| 2001 09 29 | 644 | 0.4+ | 0.3− | 2003 03 26 | 699 | 0.3+ | 0.2− | 2005 10 07 | 691 | 0.0 | 0.3+ |
| 2001 10 12 | 608 | 0.2− | 0.6− | 2003 03 26 | 699 | 1.0− | 0.7− | 2005 10 07 | 704 | 0.5− | 0.5+ |
| 2001 10 12 | 608 | 0.3− | 0.4− | 2003 03 26 | 699 | 0.0 | 0.6+ | 2005 10 07 | G96 | 0.3− | 0.5+ |
| 2001 10 12 | 608 | 0.5− | 0.7− | 2003 03 26 | 699 | 0.8− | 0.2+ | 2005 10 07 | 704 | 0.8− | 0.3+ |
| 2001 10 13 | 644 | 0.4+ | 0.9+ | 2003 03 27 | 704 | 0.5+ | 0.6+ | 2005 10 07 | G96 | 0.2− | 0.5+ |
| 2001 10 13 | 644 | 0.3+ | 1.0+ | 2003 03 27 | 704 | 0.7+ | 1.1+ | 2005 10 07 | G96 | 0.1+ | 0.2+ |
| 2001 10 13 | 644 | 0.1+ | 1.0+ | 2003 03 27 | 704 | 0.6− | 0.6− | 2005 10 07 | G96 | 0.2+ | 0.5+ |
| 2001 10 15 | 608 | 0.1− | 0.4− | 2003 03 31 | 704 | 0.4− | 0.4− | 2005 10 07 | 704 | 1.2− | 1.0+ |
| 2001 10 15 | 608 | 0.2+ | 0.3− | 2003 03 31 | 704 | 1.4+ | 0.5+ | 2005 10 07 | 704 | (2.0− | 0.3+) |
| 2001 10 15 | 608 | 0.1− | 0.3− | 2003 03 31 | 704 | 0.7+ | 0.5+ | 2005 11 22 | 703 | 1.3− | 0.5− |
| 2001 10 18 | 704 | 0.2+ | 0.1+ | 2003 03 31 | 704 | 0.3+ | 1.5+ | 2005 11 22 | 703 | 0.3− | 0.0 |
| 2001 10 18 | 704 | 0.1− | 0.2+ | 2005 08 02 | 704 | 0.3+ | 0.8+ | 2005 11 22 | 703 | 0.2− | 0.9− |
| 2001 10 18 | 704 | 0.3− | 0.3− | 2005 08 02 | 704 | 0.0 | 0.5+ | 2005 11 22 | 703 | 0.9− | 0.2− |
| 2001 10 18 | 704 | 0.0 | 0.4− | 2005 08 02 | 704 | 0.8− | 0.5− | 2006 10 28 | 703 | (0.8− | 2.0+) |
| 2001 10 18 | 704 | 0.0 | 0.3+ | 2005 08 24 | 644 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.8+ | 1.0− |
| 2001 10 20 | 699 | 0.5− | 0.0 | 2005 08 24 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2001 10 20 | 699 | 0.2+ | 0.5+ | 2005 08 24 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.7− | 0.7+ |
| 2001 10 20 | 699 | 0.1− | 0.5+ | 2005 08 25 | 644 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.9− |
| 2001 10 20 | 699 | 0.1− | 0.7+ | 2005 08 25 | 644 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.9+ |
| 2001 11 19 | 644 | 0.1− | 0.0 | 2005 08 25 | 644 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2001 11 19 | 644 | 0.3+ | 0.5− | 2005 08 30 | 704 | (1.7+ | 0.6+) | 2006 11 15 | 703 | 0.6− | 0.0 |
| 2001 11 19 | 644 | 0.0 | 0.0 | 2005 08 30 | 704 | 1.3+ | 0.4− | 2006 11 21 | 703 | 0.1+ | 1.0− |
| 2002 01 09 | 704 | 0.2+ | 0.7+ | 2005 08 30 | 704 | 1.2+ | 1.0+ | 2006 11 21 | 703 | 0.3− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.2+ | 0.4+ | 2005 09 06 | 704 | 0.8+ | 0.1+ | 2006 11 21 | 703 | 0.1− | 0.3− |
| 2002 01 09 | 704 | 0.1− | 0.5+ | 2005 09 06 | 704 | 0.5+ | 0.1+ | 2006 11 21 | 703 | 0.5− | 0.2+ |

**(139614)∗ 2001 QW$_{136}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.43710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19103092 | $\omega$ | 106.37517 | | +0.86927131 | −0.47392204 | |
| $a$ | 2.9858427 | $\Omega$ | 282.10056 | | +0.38065165 | +0.82317219 | |
| $e$ | 0.0911871 | $i$ | 8.26686 | | +0.31539136 | +0.31270665 | |
| $P$ | 5.16 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 01 | 691 | 0.5− | 0.6+ | 2001 11 12 | 704 | 0.1+ | 0.2+ | 2003 03 11 | 644 | 0.3− | 1.2+ |
| 1998 03 01 | 691 | 1.0− | 0.6+ | 2001 11 12 | 704 | 1.2+ | 0.8+ | 2004 03 15 | 644 | 0.4+ | 0.1+ |
| 1998 03 01 | 691 | 0.6− | 0.4+ | 2001 11 12 | 704 | 0.7+ | 0.1+ | 2004 03 15 | 644 | 0.4+ | 0.2− |
| 1998 03 02 | 691 | 1.2+ | 0.2+ | 2001 11 12 | 704 | 0.2− | 0.7+ | 2004 03 15 | 644 | 0.0 | 0.1− |
| 1998 03 02 | 691 | 0.8+ | 0.1+ | 2001 11 12 | 704 | 0.4+ | 0.3+ | 2004 03 26 | 704 | 0.0 | 0.0 |
| 1998 03 02 | 691 | 0.9+ | 0.1+ | 2001 12 11 | 704 | 1.4+ | 1.0+ | 2004 03 26 | 704 | 0.5− | 0.5− |
| 2001 08 22 | 704 | 0.4+ | 0.1+ | 2001 12 11 | 704 | (2.1+ | 0.5+) | 2004 03 26 | 704 | (1.8− | 0.4+) |
| 2001 08 22 | 704 | 0.4− | 0.3− | 2001 12 11 | 704 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.4− | 0.5+ |
| 2001 08 22 | 704 | 0.3− | 0.2+ | 2001 12 11 | 704 | 0.7+ | 0.6+ | 2006 09 14 | 644 | 0.3− | 0.5+ |
| 2001 08 22 | 704 | 0.2− | 0.2+ | 2001 12 11 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 644 | 0.4− | 0.3+ |
| 2001 08 22 | 704 | 0.3+ | 0.2− | 2002 12 10 | 644 | 0.5− | 0.3+ | 2006 09 16 | 703 | 0.5+ | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.5+ | 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 09 16 | 703 | 1.0+ | 0.4+ |
| 2001 08 25 | 704 | 0.3+ | 0.5+ | 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 09 16 | 703 | 0.1+ | 0.7+ |
| 2001 08 25 | 704 | 0.1− | 0.4+ | 2003 01 01 | 704 | 1.5+ | 0.7− | 2006 09 16 | 703 | 0.2+ | 0.6+ |
| 2001 09 19 | 699 | 1.5− | 0.2+ | 2003 01 01 | 704 | 0.6− | 0.5− | 2006 09 21 | 106 | 0.2− | 0.1− |
| 2001 09 19 | 699 | 0.1+ | 0.9+ | 2003 01 01 | 704 | 1.0− | 1.0− | 2006 09 21 | 106 | 0.1+ | 0.0 |
| 2001 09 19 | 699 | 0.1+ | 0.1− | 2003 01 05 | 704 | 0.0 | 0.2− | 2006 09 21 | 106 | 0.8+ | 0.7− |
| 2001 09 19 | 699 | 0.1− | 1.0− | 2003 01 05 | 704 | 0.0 | 0.1+ | 2006 09 21 | 106 | 0.1− | 0.5− |
| 2001 09 25 | 704 | 0.1− | 0.5+ | 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 09 22 | 704 | 0.0 | 0.3− |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2003 01 05 | 704 | 0.2+ | 0.2− | 2006 09 22 | 704 | 0.2+ | 0.2+ |
| 2001 09 25 | 704 | 0.8− | 0.6+ | 2003 01 05 | 704 | (0.5− | 2.9+) | 2006 09 22 | 699 | 0.8− | 0.3+ |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2003 01 07 | 704 | 0.5+ | 0.2− | 2006 09 22 | 704 | 0.4+ | 0.3+ |
| 2001 09 25 | 704 | 0.8− | 0.2+ | 2003 01 07 | 704 | 0.4− | 0.8+ | 2006 09 22 | 699 | 0.2− | 0.7+ |
| 2001 10 12 | 608 | 0.5+ | 0.4− | 2003 01 07 | 704 | 0.1+ | 1.1+ | 2006 09 22 | 699 | 0.9− | 0.4+ |
| 2001 10 12 | 608 | 0.4+ | 0.2− | 2003 01 07 | 704 | 0.7+ | 0.0 | 2006 09 22 | 699 | 0.3+ | 0.4+ |
| 2001 10 12 | 608 | 0.2+ | 0.7− | 2003 01 07 | 704 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.4− | 0.2− |
| 2001 10 13 | 699 | 0.3− | 0.3+ | 2003 01 08 | 704 | 0.5+ | 0.5+ | 2006 09 27 | 703 | 0.2− | 0.0 |
| 2001 10 13 | 699 | 0.4+ | 0.1− | 2003 01 08 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 703 | 0.5− | 0.3− |
| 2001 10 13 | 699 | 0.4− | 0.0 | 2003 01 08 | 704 | 0.5+ | 0.9− | 2006 09 27 | 703 | 0.3− | 0.2+ |
| 2001 10 13 | 644 | 0.2+ | 0.0 | 2003 01 08 | 704 | 0.1− | 0.2+ | 2006 09 28 | 621 | 0.2+ | 0.3− |
| 2001 10 13 | 699 | 0.6+ | 0.1− | 2003 01 08 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 621 | 0.2+ | 0.3− |
| 2001 10 13 | 644 | 0.0 | 0.1− | 2003 01 14 | 608 | 0.1− | 0.3− | 2006 09 28 | 621 | 0.2+ | 0.2− |
| 2001 10 13 | 644 | 0.2+ | 0.0 | 2003 01 14 | 608 | 0.2− | 0.6− | 2006 10 03 | 704 | 0.9+ | 0.5− |
| 2001 10 18 | 704 | 0.3− | 0.7− | 2003 01 14 | 608 | 0.4− | 0.7− | 2006 10 03 | 704 | 0.1− | 0.2+ |
| 2001 10 18 | 704 | 0.4− | 0.1− | 2003 01 26 | 699 | 0.3+ | 0.3− | 2006 10 03 | 704 | 0.5+ | 0.6+ |
| 2001 10 18 | 704 | 0.6− | 1.0− | 2003 01 26 | 699 | 0.1+ | 0.4− | 2006 10 03 | 704 | 0.7+ | 0.4+ |
| 2001 10 18 | 704 | 0.9− | 0.1− | 2003 01 26 | 699 | 0.9+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 10 18 | 704 | 0.6− | 0.8− | 2003 01 26 | 699 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 10 19 | 704 | 0.7− | 0.8− | 2003 01 26 | 608 | 0.3+ | 1.1− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 10 19 | 704 | 0.7+ | 0.4− | 2003 01 26 | 608 | 1.0+ | 1.2− | 2006 10 17 | 703 | (0.2+ | 2.7+) |
| 2001 10 19 | 704 | 0.2+ | 0.2+ | 2003 01 26 | 608 | 0.2− | 1.2− | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2001 10 19 | 704 | 0.1− | 1.3+ | 2003 01 27 | 704 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2001 10 28 | 704 | (2.1+ | 0.3−) | 2003 01 27 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.7+ |
| 2001 10 28 | 704 | 0.3+ | 0.3− | 2003 01 27 | 704 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 10 28 | 704 | 0.3+ | 0.1+ | 2003 01 27 | 704 | 1.4− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 10 28 | 704 | 0.0 | 0.8− | 2003 01 27 | 704 | 0.5− | 0.2+ | 2006 10 23 | 703 | 0.7− | 0.5− |
| 2001 11 10 | 704 | 1.1− | 1.1− | 2003 01 27 | 699 | 0.4− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2001 11 10 | 704 | 1.0− | 0.1− | 2003 01 27 | 644 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2001 11 10 | 704 | 0.2+ | 0.3− | 2003 01 27 | 699 | 0.4+ | 0.4− | 2006 10 23 | 703 | 0.9− | 0.0 |
| 2001 11 10 | 704 | 0.6+ | 0.3− | 2003 01 27 | 699 | 0.8− | 0.3− | 2006 10 23 | 703 | 0.5− | 0.4− |
| 2001 11 10 | 704 | 0.8+ | 1.1− | 2003 01 27 | 699 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.8− | 0.1+ |
| 2001 11 11 | 699 | 0.0 | 0.1− | 2003 01 27 | 644 | 0.4− | 0.5− | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2001 11 11 | 699 | 0.2+ | 0.4− | 2003 01 27 | 644 | 0.2− | 0.4− | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2001 11 11 | 699 | 0.2+ | 0.1− | 2003 02 01 | 608 | 0.3− | 0.5− | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2001 11 11 | 699 | 0.0 | 0.3− | 2003 02 01 | 608 | 0.3− | 0.5− | 2006 10 24 | 644 | 0.2− | 0.2+ |
| 2001 11 11 | 644 | 0.2+ | 0.1− | 2003 02 01 | 608 | 0.3− | 0.6− | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2001 11 11 | 644 | 0.0 | 0.2+ | 2003 03 11 | 644 | 0.3− | 1.0+ | | | | |
| 2001 11 11 | 644 | 0.1+ | 0.3+ | 2003 03 11 | 644 | 0.2− | 1.1+ | | | | |

**(139615)∗ 2001 QX$_{136}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.02401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18975810 | $\omega$ | 71.74818 | | +0.96905250 | −0.20641962 | |
| $a$ | 2.9991798 | $\Omega$ | 299.96929 | | +0.12194398 | +0.87712971 | |
| $e$ | 0.1114542 | $i$ | 8.99086 | | +0.21463205 | +0.43362935 | |
| $P$ | 5.19 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 1.0+ | 0.4− | 2001 11 10 | 704 | 0.6− | 0.2− | 2004 04 17 | 704 | 0.5− | 0.1− |
| 2001 08 22 | 704 | 0.5+ | 0.5− | 2001 11 10 | 704 | 1.0− | 0.2+ | 2004 04 17 | 704 | 0.2+ | 0.5+ |
| 2001 08 22 | 704 | 0.6+ | 0.3+ | 2001 11 10 | 704 | 1.4− | 0.7+ | 2006 08 29 | 699 | 0.0 | 0.4+ |
| 2001 08 22 | 704 | 0.9+ | 0.6+ | 2001 11 11 | 699 | 0.8− | 0.1− | 2006 08 29 | 699 | 0.2+ | 0.3+ |
| 2001 08 25 | 704 | 0.7+ | 0.5+ | 2001 11 11 | 699 | 1.1− | 0.0 | 2006 08 29 | 699 | 0.4+ | 0.6− |
| 2001 08 25 | 704 | 0.2+ | 0.4+ | 2001 11 11 | 699 | 0.6− | 0.4− | 2006 08 29 | 699 | 0.5− | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 0.6+ | 2001 11 11 | 699 | 1.1− | 0.2− | 2006 08 31 | 704 | 1.2+ | 0.7+ |
| 2001 08 28 | 699 | 0.1− | 0.4+ | 2001 11 11 | 644 | 0.2− | 0.6+ | 2006 08 31 | 704 | (1.9+ | 0.1+) |
| 2001 08 28 | 699 | 0.7+ | 0.9+ | 2001 11 11 | 644 | 0.0 | 0.7+ | 2006 08 31 | 704 | (1.7+ | 1.6+) |
| 2001 08 28 | 699 | 0.4− | 0.0 | 2001 11 11 | 644 | 0.3− | 0.7+ | 2006 08 31 | 704 | (2.4+ | 1.0+) |
| 2001 08 28 | 699 | 0.9+ | 0.2+ | 2001 11 12 | 704 | 0.7− | 0.6+ | 2006 08 31 | 704 | 1.0+ | 0.2+ |
| 2001 09 10 | 704 | 0.7+ | 0.2− | 2001 11 12 | 704 | 1.1− | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.1+ |
| 2001 09 10 | 704 | 0.9+ | 0.8+ | 2001 11 12 | 704 | 0.9− | 0.4+ | 2006 09 16 | 703 | 0.1+ | 0.4+ |
| 2001 09 10 | 704 | 0.7+ | 0.4+ | 2001 11 12 | 704 | 0.4− | 0.2− | 2006 09 16 | 703 | 0.4− | 0.2+ |
| 2001 09 10 | 704 | 0.1+ | 0.6+ | 2001 11 12 | 704 | 0.7− | 0.4+ | 2006 09 16 | 703 | 0.9− | 0.0 |
| 2001 09 19 | 699 | 0.2− | 0.2+ | 2001 12 07 | 644 | 1.2+ | 0.3− | 2006 09 19 | 699 | 0.9+ | 0.2+ |
| 2001 09 19 | 699 | 0.2− | 0.4− | 2001 12 07 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.2+ |
| 2001 09 19 | 699 | 0.8− | 0.5− | 2001 12 07 | 644 | 0.3+ | 0.6− | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2001 09 19 | 699 | 1.2− | 0.1+ | 2002 01 09 | 704 | 0.6+ | 0.1− | 2006 09 19 | 699 | 0.6− | 0.6+ |
| 2001 09 23 | 704 | 0.2+ | 0.7− | 2002 01 09 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.3− | 0.8+ |
| 2001 09 23 | 704 | 0.5− | 0.3− | 2002 01 09 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.4+ | 0.3+ |
| 2001 09 23 | 704 | 0.4− | 0.3− | 2002 01 09 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.5+ | 0.6+ |
| 2001 09 24 | 704 | 0.3− | 0.4+ | 2002 01 09 | 704 | 0.2− | 0.3+ | 2006 09 27 | 699 | 0.2− | 0.1+ |
| 2001 09 24 | 704 | 0.8− | 0.3− | 2003 01 08 | 704 | 1.0+ | 1.2− | 2006 09 27 | 699 | 0.1+ | 0.3− |
| 2001 09 24 | 704 | 0.5− | 0.1− | 2003 01 08 | 704 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.5− | 0.4− |
| 2001 09 24 | 704 | 0.7+ | 0.6− | 2003 01 08 | 704 | 0.4− | 0.3− | 2006 09 27 | 699 | 0.2− | 1.0+ |
| 2001 09 24 | 704 | 1.4− | 0.7− | 2003 01 08 | 704 | 0.5+ | 0.5+ | 2006 09 27 | 703 | 0.5− | 0.4− |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2003 01 08 | 704 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.5− | 0.6+ |
| 2001 09 25 | 704 | 0.5+ | 0.4+ | 2003 01 14 | 599 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.5− | 0.3− |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2003 01 14 | 599 | 0.9− | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.4+ | 2003 01 14 | 599 | 0.7+ | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.2− | 0.2+ | 2003 01 27 | 704 | 0.1− | 1.2+ | 2006 10 03 | 704 | 0.1− | 0.2− |
| 2001 10 12 | 608 | 0.9+ | 0.8+ | 2003 01 27 | 704 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.0 | 0.4+ |
| 2001 10 12 | 608 | 1.0+ | 0.9+ | 2003 01 27 | 704 | 0.2+ | 0.3+ | 2006 10 03 | 704 | 0.4− | 0.5+ |
| 2001 10 12 | 608 | 0.7+ | 0.9+ | 2003 01 27 | 704 | 0.6− | 0.8+ | 2006 10 03 | 704 | 0.1− | 0.1+ |
| 2001 10 12 | 608 | 0.4− | 0.2− | 2003 01 27 | 704 | 0.7+ | 0.0 | 2006 10 03 | 703 | 0.3+ | 0.1− |
| 2001 10 12 | 608 | 0.7− | 0.2− | 2003 01 29 | 291 | 0.7− | 0.2− | 2006 10 03 | 703 | 0.8− | 0.5− |
| 2001 10 12 | 608 | 0.6− | 0.3− | 2003 01 29 | 291 | 0.6− | 0.2− | 2006 10 03 | 703 | 0.0 | 0.1+ |
| 2001 10 13 | 699 | 0.2+ | 0.1− | 2003 01 29 | 291 | 0.4− | 0.3− | 2006 10 03 | 703 | 0.3+ | 0.4− |
| 2001 10 13 | 699 | 0.3+ | 0.2− | 2003 01 30 | 644 | 0.2+ | 0.1+ | 2006 10 03 | 703 | 0.5+ | 0.3− |
| 2001 10 13 | 699 | 0.1+ | 0.0 | 2003 01 30 | 699 | 0.8+ | 0.3− | 2006 10 03 | 703 | 0.2− | 0.2+ |
| 2001 10 13 | 699 | 0.1− | 0.1− | 2003 01 30 | 699 | 0.0 | 0.3− | 2006 10 03 | 703 | (1.6− | 2.0+) |
| 2001 10 13 | 644 | 0.1+ | 1.3− | 2003 01 30 | 699 | 0.4+ | 0.2+ | 2006 10 03 | 703 | 0.7− | 0.1− |
| 2001 10 13 | 644 | 0.1+ | 1.3− | 2003 01 30 | 644 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2001 10 13 | 644 | 0.1+ | 1.5− | 2003 01 30 | 699 | 0.9+ | 0.3− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2001 10 18 | 704 | 0.8+ | 0.2+ | 2003 01 30 | 644 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 10 18 | 704 | 0.9+ | 0.0 | 2003 01 31 | 704 | 1.3+ | 1.2+ | 2006 10 16 | 683 | (1.9− | 0.1+) |
| 2001 10 18 | 704 | 0.5+ | 0.4− | 2003 01 31 | 704 | 0.1− | 0.1− | 2006 10 16 | 683 | (1.9− | 0.9+) |
| 2001 10 18 | 704 | 0.8+ | 0.3− | 2003 01 31 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 683 | 1.5− | 0.8+ |
| 2001 10 18 | 704 | 0.9+ | 0.3− | 2003 01 31 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 704 | 0.2+ | 0.0 | 2004 03 15 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2001 10 19 | 704 | 0.2+ | 0.5− | 2004 03 15 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.7− |
| 2001 10 19 | 704 | 0.6+ | 0.4− | 2004 03 15 | 644 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2001 10 19 | 704 | 0.5+ | 0.4− | 2004 03 15 | 644 | 0.4+ | 0.7+ | 2006 10 23 | 703 | 0.1+ | 1.0− |
| 2001 10 19 | 704 | 0.9+ | 0.5− | 2004 03 15 | 644 | 0.3+ | 0.7+ | 2006 10 23 | 703 | 0.5+ | 0.7− |
| 2001 10 28 | 704 | 0.0 | 0.9+ | 2004 03 15 | 644 | 0.1− | 0.9+ | 2006 10 23 | 703 | 1.4+ | 0.1− |
| 2001 10 28 | 704 | 0.6− | 0.1+ | 2004 03 26 | 704 | 1.2+ | 0.2+ | 2006 10 23 | 703 | 0.1+ | 0.0 |
| 2001 10 28 | 704 | 0.1− | 0.2+ | 2004 03 26 | 704 | 0.7+ | 0.1+ | 2006 10 27 | 941 | 0.4+ | 0.3+ |
| 2001 10 28 | 704 | 0.2+ | 0.3− | 2004 03 26 | 704 | (0.1+ | 1.7+) | 2006 10 27 | 941 | 0.3+ | 0.1+ |
| 2001 11 10 | 704 | 0.3− | 0.4+ | 2004 04 17 | 704 | 0.4− | 1.0+ | 2006 10 27 | 941 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 0.4− | 0.1− | 2004 04 17 | 704 | 0.7+ | 0.6+ | | | | |

**(139616)∗ 2001 QY$_{136}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.38554 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21978979 | $\omega$ | 144.91655 | | +0.76946983 | −0.62229430 | |
| $a$ | 2.7193454 | $\Omega$ | 254.21705 | | +0.54650598 | +0.75800480 | |
| $e$ | 0.1820096 | $i$ | 8.59151 | | +0.33052593 | +0.19539324 | |
| $P$ | 4.48 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 16 | 691 | 0.7+ | 0.6+ | 2001 10 26 | 916 | (0.1− | 2.6−) | 2003 02 06 | 644 | (0.1− | 1.7+) |
| 1996 05 16 | 691 | 0.7+ | 0.3− | 2001 10 28 | 916 | (0.4− | 1.7−) | 2003 02 06 | 644 | (0.3− | 1.6+) |
| 1996 05 16 | 691 | 0.9+ | 0.2+ | 2001 10 28 | 916 | 1.1− | 0.0 | 2004 06 13 | 691 | 0.6− | 0.3+ |
| 2001 08 22 | 704 | 0.0 | 0.2− | 2001 10 28 | 916 | (1.8− | 1.3−) | 2004 06 13 | 691 | 0.4− | 0.5+ |
| 2001 08 22 | 704 | 0.1+ | 1.2+ | 2001 10 28 | 704 | 0.6− | 0.3− | 2004 06 13 | 691 | 0.5− | 0.1+ |
| 2001 08 22 | 704 | 0.0 | 0.1− | 2001 10 28 | 704 | 0.0 | 0.3+ | 2005 06 27 | 691 | 0.2+ | 0.3+ |
| 2001 08 22 | 704 | 1.4− | 0.7+ | 2001 10 28 | 704 | 0.0 | 0.1+ | 2005 06 27 | 691 | 0.3+ | 0.3+ |
| 2001 08 22 | 704 | (0.4+ | 1.6+) | 2001 10 28 | 704 | 0.0 | 0.3+ | 2005 06 27 | 691 | 0.2+ | 0.2+ |
| 2001 08 25 | 704 | 0.7− | 0.1− | 2001 11 10 | 704 | (1.6− | 0.2−) | 2005 07 11 | 703 | 0.4− | 0.2− |
| 2001 08 25 | 704 | 0.8+ | 0.2− | 2001 11 10 | 704 | 1.2− | 0.3− | 2005 07 11 | 703 | 0.5− | 0.8− |
| 2001 08 25 | 704 | 0.4+ | 0.0 | 2001 11 10 | 704 | 0.6− | 0.4− | 2005 07 11 | 703 | (0.1− | 1.8+) |
| 2001 08 25 | 704 | 0.0 | 0.3− | 2001 11 10 | 704 | 0.7− | 1.1− | 2005 07 11 | 703 | 0.8+ | 0.1+ |
| 2001 08 28 | 699 | 0.9+ | 0.2− | 2001 11 10 | 704 | 0.1− | 0.6− | 2005 07 12 | 703 | 1.3+ | 0.2− |
| 2001 08 28 | 699 | 0.5+ | 0.3− | 2001 11 11 | 644 | 0.3− | 0.0 | 2005 07 12 | 703 | 0.2− | 0.5− |
| 2001 08 28 | 699 | 0.1+ | 0.4+ | 2001 11 11 | 644 | 0.2− | 0.1− | 2005 07 12 | 703 | 0.4− | 0.5+ |
| 2001 08 28 | 699 | 0.2+ | 0.1+ | 2001 11 11 | 644 | 0.2− | 0.2− | 2005 07 12 | 703 | 0.2− | 1.4− |
| 2001 09 19 | 699 | 0.4− | 0.4+ | 2001 11 12 | 704 | 0.0 | 0.5+ | 2005 07 29 | 699 | (1.2+ | 1.6+) |
| 2001 09 19 | 699 | 0.5− | 0.7− | 2001 11 12 | 704 | 0.7− | 0.2+ | 2005 07 29 | 699 | 0.2− | 0.5+ |
| 2001 09 19 | 699 | 0.0 | 0.5− | 2001 11 12 | 704 | 0.0 | 0.2+ | 2005 07 29 | 699 | 0.4− | 0.3+ |
| 2001 09 19 | 699 | 0.2+ | 0.4+ | 2001 11 12 | 704 | 0.3+ | 0.2− | 2005 07 29 | 699 | 0.4− | 0.1− |
| 2001 09 19 | 699 | 0.1+ | 0.8− | 2001 11 17 | 644 | 0.5+ | 0.6+ | 2005 07 30 | 644 | 0.1+ | 0.1+ |
| 2001 09 19 | 699 | 0.7+ | 0.5+ | 2001 11 17 | 644 | 0.3+ | 0.6+ | 2005 07 30 | 644 | 0.0 | 0.0 |
| 2001 09 19 | 699 | 0.2− | 0.8− | 2001 11 17 | 644 | 0.3+ | 0.5+ | 2005 07 30 | 644 | 0.1+ | 0.0 |
| 2001 09 19 | 699 | 0.2+ | 0.3+ | 2001 11 21 | 704 | 0.8− | 0.4+ | 2005 11 25 | 703 | 0.2− | 0.5+ |
| 2001 09 19 | 644 | 0.3− | 0.8− | 2001 11 21 | 704 | 0.3− | 0.1− | 2005 11 25 | 703 | 1.3− | 1.1+ |
| 2001 09 19 | 644 | 0.5− | 0.6− | 2001 11 21 | 704 | 0.1− | 0.4+ | 2005 11 25 | 703 | (1.9+ | 0.1−) |
| 2001 09 19 | 644 | 0.4− | 0.5− | 2001 11 21 | 704 | 0.4− | 0.4− | 2005 11 25 | 703 | 0.6− | 1.1− |
| 2001 09 25 | 704 | 0.4− | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.7− | 2006 09 18 | 691 | 1.2+ | 0.6− |
| 2001 09 25 | 704 | 0.5− | 0.4− | 2001 11 24 | 704 | 0.6− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.7− | 0.5− | 2001 11 24 | 704 | (1.9− | 0.8+) | 2006 09 18 | 691 | 0.2− | 0.4− |
| 2001 09 25 | 704 | 0.4− | 0.6− | 2001 11 24 | 704 | 0.7− | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.5− | 0.3− | 2001 11 24 | 704 | 1.2− | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 699 | 0.2− | 0.0 | 2001 11 24 | 704 | 1.1− | 0.6− | 2006 09 24 | 691 | 0.1− | 0.1+ |
| 2001 10 13 | 699 | 0.3− | 0.3+ | 2001 12 11 | 704 | 0.3− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 699 | 0.2− | 0.1+ | 2001 12 11 | 704 | 1.1− | 0.6− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 10 13 | 699 | 0.4− | 0.2+ | 2001 12 11 | 704 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 10 13 | 644 | 0.3− | 0.5+ | 2001 12 11 | 704 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.5− | 0.1− |
| 2001 10 13 | 644 | 0.2− | 0.2+ | 2001 12 11 | 704 | 0.4+ | 0.6− | 2006 11 01 | G96 | 0.3− | 0.0 |
| 2001 10 13 | 644 | 0.2− | 0.4+ | 2001 12 18 | 704 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2001 10 18 | 704 | 0.9+ | 0.0 | 2001 12 18 | 704 | 0.4+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2001 10 18 | 704 | 0.8+ | 0.3+ | 2001 12 18 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 1.6+ | 0.9− |
| 2001 10 18 | 704 | 0.8+ | 0.3+ | 2001 12 18 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 704 | 1.8+ | 1.2− |
| 2001 10 18 | 704 | 0.8+ | 0.4+ | 2001 12 18 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 704 | 0.4+ | 0.6− |
| 2001 10 18 | 704 | 1.5+ | 0.0 | 2002 01 08 | 291 | 0.1− | 0.6+ | 2006 11 14 | 704 | 1.2+ | 0.6+ |
| 2001 10 19 | 704 | 0.2+ | 0.1− | 2002 01 08 | 291 | 0.2+ | 0.7+ | 2006 11 18 | G96 | 0.4− | 0.2− |
| 2001 10 19 | 704 | 0.3+ | 0.1− | 2002 01 08 | 291 | 0.0 | 0.6+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2001 10 19 | 704 | 0.4+ | 0.0 | 2002 01 09 | 291 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2001 10 19 | 704 | 0.0 | 0.2− | 2002 01 09 | 291 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2001 10 26 | 916 | 0.2− | 1.4− | 2002 01 09 | 291 | 0.3− | 0.1− | | | | |
| 2001 10 26 | 916 | (0.6− | 1.6−) | 2003 02 06 | 644 | 0.2− | 1.4+ | | | | |

**(139617)∗ 2001 QS$_{137}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.61528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19353527 | $\omega$ | 41.18840 | | +0.93365945 | −0.35308310 | |
| $a$ | 2.9600290 | $\Omega$ | 339.25112 | | +0.26777101 | +0.79957460 | |
| $e$ | 0.0817463 | $i$ | 9.76755 | | +0.23786281 | +0.48581147 | |
| $P$ | 5.09 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 1.3− | 0.6+ | 2001 12 07 | 644 | 0.2− | 0.4− | 2004 04 17 | 704 | 0.0 | 0.0 |
| 2001 08 22 | 704 | 0.9− | 1.1+ | 2001 12 07 | 644 | 0.2− | 0.3− | 2006 08 06 | 699 | 0.5+ | 0.1− |
| 2001 08 22 | 704 | 1.0− | 0.5+ | 2001 12 07 | 644 | 0.3+ | 0.4− | 2006 08 06 | 699 | 0.9+ | 0.1− |
| 2001 08 22 | 704 | 1.2− | 0.2+ | 2002 12 31 | 704 | 0.8+ | 1.0+ | 2006 08 06 | 699 | 1.0− | 0.4+ |
| 2001 08 22 | 704 | 1.4− | 1.1+ | 2002 12 31 | 704 | 0.5+ | 0.5+ | 2006 08 06 | 699 | 0.5+ | 0.1+ |
| 2001 08 25 | 704 | 1.3− | 0.2+ | 2002 12 31 | 704 | 0.2− | 1.0+ | 2006 08 30 | 704 | 0.4+ | 0.2+ |
| 2001 08 25 | 704 | 0.9− | 0.7+ | 2002 12 31 | 704 | 0.7+ | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.8+ |
| 2001 08 25 | 704 | 1.0− | 0.4+ | 2002 12 31 | 704 | 1.4− | 0.9+ | 2006 08 30 | 704 | (0.5− | 1.9+) |
| 2001 08 25 | 704 | 0.3− | 0.3+ | 2003 01 05 | 699 | (0.7− | 1.6+) | 2006 09 16 | 703 | 0.3− | 0.1− |
| 2001 09 25 | 704 | 1.2+ | 0.4− | 2003 01 05 | 699 | 0.3− | 0.7+ | 2006 09 16 | 703 | 0.0 | 0.5− |
| 2001 09 25 | 704 | 0.4+ | 0.1− | 2003 01 05 | 699 | 0.4− | 0.5+ | 2006 09 16 | 703 | 0.7− | 0.2− |
| 2001 09 25 | 704 | 0.9+ | 0.8− | 2003 01 05 | 699 | 0.9− | 0.1− | 2006 09 16 | 703 | 0.4− | 0.2− |
| 2001 09 25 | 704 | (0.8+ | 1.7−) | 2003 01 05 | 704 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.7+ | 0.0 |
| 2001 09 25 | 704 | 0.4+ | 0.9− | 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 09 20 | 699 | 0.4+ | 0.4+ |
| 2001 10 13 | 644 | 0.3− | 0.3− | 2003 01 05 | 704 | 0.3+ | 0.3− | 2006 09 20 | 699 | 0.5+ | 0.6+ |
| 2001 10 13 | 644 | 0.2− | 0.2− | 2003 01 05 | 704 | 0.1− | 0.6− | 2006 09 20 | 699 | 0.2+ | 0.3+ |
| 2001 10 13 | 644 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.0 | 0.5− | 2006 09 28 | 703 | 0.2+ | 0.5− |
| 2001 10 18 | 704 | 0.1− | 0.2+ | 2003 01 09 | 704 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.2− |
| 2001 10 18 | 704 | 0.0 | 0.1+ | 2003 01 09 | 704 | 0.8− | 0.3− | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2001 10 18 | 704 | 0.2+ | 0.2+ | 2003 01 09 | 704 | 0.7− | 0.6− | 2006 09 28 | 703 | 0.2− | 0.1− |
| 2001 10 18 | 704 | 0.3+ | 0.0 | 2003 01 09 | 704 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.1− | 0.7+ | 2003 01 09 | 704 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 10 19 | 704 | 0.2+ | 0.1+ | 2003 01 31 | 699 | 0.7− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 10 19 | 704 | 0.2+ | 0.4− | 2003 01 31 | 699 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 10 19 | 704 | 0.4− | 0.5+ | 2003 01 31 | 699 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 10 19 | 704 | 0.9+ | 0.7+ | 2003 01 31 | 699 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2001 10 19 | 704 | 0.2+ | 0.7+ | 2003 02 01 | 704 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2001 10 24 | 704 | 0.4+ | 0.3+ | 2003 02 01 | 704 | 1.1+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.5+ | 2003 02 01 | 704 | 0.2+ | 0.6− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 0.5− | 0.2− | 2003 02 01 | 704 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2003 02 01 | 704 | 1.1+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.9− |
| 2001 10 24 | 704 | 0.1− | 0.4− | 2003 02 07 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2001 11 10 | 704 | 0.1− | 0.1+ | 2003 02 07 | 704 | 0.1− | 0.4− | 2006 10 17 | 703 | (2.8− | 6.0−) |
| 2001 11 10 | 704 | 0.2+ | 0.2+ | 2003 02 07 | 704 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 11 10 | 704 | 0.4− | 0.2+ | 2004 03 17 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2001 11 10 | 704 | 0.0 | 0.8+ | 2004 03 17 | 704 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 644 | 0.0 | 0.5+ | 2004 03 17 | 704 | 0.4+ | 1.1− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 11 11 | 644 | 0.4− | 0.5+ | 2004 03 17 | 704 | 0.5− | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 11 11 | 644 | 0.1− | 0.7+ | 2004 04 14 | 699 | 0.5− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.5+ | 0.4− | 2004 04 14 | 699 | 0.0 | 1.3+ | 2006 11 18 | 704 | 1.0+ | 1.1− |
| 2001 11 12 | 704 | 0.6+ | 0.1− | 2004 04 14 | 699 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 0.8− | 0.1− |
| 2001 11 12 | 704 | 0.5+ | 0.5− | 2004 04 14 | 699 | 0.6+ | 0.1− | 2006 11 18 | 704 | 1.1+ | 1.2− |
| 2001 11 12 | 704 | 0.4+ | 0.0 | 2004 04 17 | 704 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4+ | 1.5− |
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2004 04 17 | 704 | (0.7− | 1.7+) | | | | |

**(139618)∗ 2001 QW$_{138}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.50269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23168857 | $\omega$ | 99.35657 | | +0.33065882 | −0.93809849 | |
| $a$ | 2.6254251 | $\Omega$ | 330.67549 | | +0.76198107 | +0.32984884 | |
| $e$ | 0.1851229 | $i$ | 12.15612 | | +0.55682098 | +0.10569280 | |
| $P$ | 4.25 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 28 | 699 | 0.5+ | 0.2+ | 2002 02 10 | 704 | 0.1+ | 0.1+ | 2005 09 11 | 608 | (1.3− | 1.7+) |
| 2001 07 28 | 699 | 0.3− | 0.1+ | 2002 02 10 | 704 | 0.1− | 0.4+ | 2005 09 11 | 608 | (1.3− | 1.6+) |
| 2001 07 28 | 699 | (1.8+ | 0.7+) | 2002 02 10 | 704 | 0.6− | 0.1+ | 2005 09 11 | 608 | 1.3− | 1.2+ |
| 2001 07 28 | 699 | 0.4+ | 0.4+ | 2002 02 10 | 704 | 0.4− | 0.4+ | 2005 09 23 | 644 | 0.5− | 0.2+ |
| 2001 08 22 | 704 | 0.5− | 0.3+ | 2002 03 05 | 699 | 0.1+ | 0.4− | 2005 09 23 | 644 | 0.3− | 0.1+ |
| 2001 08 22 | 704 | 0.4− | 0.5− | 2002 03 05 | 699 | 1.1+ | 0.4− | 2005 09 23 | 699 | 0.2+ | 0.1+ |
| 2001 08 22 | 704 | 0.3− | 0.4+ | 2002 03 05 | 699 | 0.3− | 0.2− | 2005 09 23 | 644 | 0.3− | 0.1+ |
| 2001 08 22 | 704 | 0.5− | 0.2− | 2002 03 05 | 699 | 1.0− | 0.3+ | 2005 09 23 | 699 | 0.3− | 0.1− |
| 2001 08 22 | 704 | 0.2− | 0.1− | 2003 01 07 | 704 | (0.9− | 1.6+) | 2005 09 23 | 699 | 0.1− | 0.4+ |
| 2001 08 25 | 704 | 0.2− | 0.4+ | 2003 01 07 | 704 | 0.2+ | 1.3+ | 2005 09 24 | 703 | 0.1+ | 0.3+ |
| 2001 08 25 | 704 | 0.0 | 0.2+ | 2003 01 07 | 704 | 1.2+ | 0.5+ | 2005 09 24 | 703 | 0.0 | 0.3+ |
| 2001 08 25 | 704 | 0.1+ | 0.1+ | 2003 01 07 | 704 | 1.0+ | 1.4+ | 2005 09 24 | 703 | 0.3− | 0.9+ |
| 2001 08 25 | 704 | 0.0 | 0.1+ | 2003 03 02 | 704 | (1.5+ | 0.6−) | 2005 09 24 | 703 | 0.1− | 0.9+ |
| 2001 08 25 | 704 | 0.3+ | 0.1− | 2003 03 02 | 704 | 0.1− | 0.7− | 2005 10 01 | 703 | 0.9− | 0.1+ |
| 2001 09 19 | 644 | 0.3+ | 0.6+ | 2003 03 02 | 704 | (0.8+ | 1.6−) | 2005 10 01 | 703 | 0.4− | 0.4− |
| 2001 09 19 | 644 | 0.5+ | 0.6+ | 2003 03 02 | 704 | 0.5− | 0.7− | 2005 10 01 | 703 | 0.5− | 0.1+ |
| 2001 09 19 | 644 | 0.3+ | 0.5+ | 2003 03 11 | 704 | 0.6+ | 0.6+ | 2005 10 01 | 703 | 0.5− | 0.3+ |
| 2001 09 22 | 699 | 0.2− | 0.3+ | 2003 03 11 | 704 | 0.1− | 0.3+ | 2005 10 02 | 699 | 0.1− | 0.5+ |
| 2001 09 22 | 699 | 0.4− | 0.2− | 2003 03 11 | 704 | (0.8+ | 3.2+) | 2005 10 02 | 699 | 0.1+ | 1.0+ |
| 2001 09 22 | 699 | 0.6− | 0.1+ | 2003 03 11 | 704 | 0.3+ | 0.1+ | 2005 10 02 | 699 | 0.0 | 0.7+ |
| 2001 09 22 | 699 | 0.5− | 0.2+ | 2003 03 11 | 704 | 0.0 | 0.2+ | 2005 10 02 | 699 | 0.5− | 0.3+ |
| 2001 09 24 | 704 | 0.2+ | 0.2+ | 2003 03 30 | 704 | (1.6− | 0.7+) | 2005 10 07 | 703 | 0.6− | 0.1− |
| 2001 09 24 | 704 | 0.6+ | 0.2+ | 2003 03 30 | 704 | 0.4− | 0.6+ | 2005 10 07 | 703 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | 0.4+ | 0.5+ | 2003 03 30 | 704 | 0.0 | 1.0+ | 2005 10 07 | 703 | 0.4− | 0.0 |
| 2001 09 24 | 704 | 0.5+ | 0.3+ | 2003 03 30 | 704 | 0.2+ | 0.8+ | 2005 10 07 | 703 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | 0.6+ | 0.3+ | 2003 03 31 | 691 | 0.1+ | 0.9+ | 2005 10 08 | 704 | 0.1+ | 0.7+ |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2003 03 31 | 691 | 0.2+ | 0.7+ | 2005 10 08 | 704 | 0.0 | 0.5+ |
| 2001 09 25 | 704 | 0.7− | 0.4+ | 2003 03 31 | 691 | 0.3+ | 0.8+ | 2005 10 08 | 704 | 0.3− | 0.3+ |
| 2001 09 25 | 704 | 0.5+ | 0.3− | 2003 04 02 | 704 | 1.4+ | 0.5+ | 2005 10 08 | 704 | 0.3− | 0.3+ |
| 2001 09 25 | 704 | 0.6+ | 0.3− | 2003 04 02 | 704 | 1.0+ | 0.5− | 2005 10 08 | 704 | 0.0 | 0.8+ |
| 2001 09 25 | 704 | 0.7+ | 0.0 | 2003 04 02 | 704 | 0.7+ | 0.3+ | 2005 10 30 | 704 | (1.5+ | 0.3+) |
| 2001 10 15 | 704 | 0.5− | 0.7− | 2003 04 02 | 704 | 0.6+ | 0.0 | 2005 10 30 | 704 | 0.2− | 1.1+ |
| 2001 10 15 | 704 | 0.4− | 0.4− | 2003 04 02 | 704 | 1.3+ | 0.5+ | 2005 10 30 | 704 | 0.4− | 0.2+ |
| 2001 10 15 | 704 | 0.6− | 0.5− | 2003 04 02 | 704 | 0.9+ | 0.1− | 2005 10 30 | 704 | 1.2− | 0.9− |
| 2001 10 15 | 704 | 0.8− | 0.4− | 2003 04 07 | 704 | 0.1− | 1.3+ | 2005 10 30 | 699 | 0.6+ | 0.4+ |
| 2001 10 15 | 704 | 0.9− | 0.1− | 2003 04 07 | 704 | 0.7+ | 0.2+ | 2005 10 30 | 699 | 0.0 | 0.1+ |
| 2001 10 21 | 699 | 0.4− | 0.4− | 2003 04 07 | 704 | 0.8+ | 0.7+ | 2005 10 30 | 699 | 0.4− | 0.4+ |
| 2001 10 21 | 699 | 0.5− | 0.0 | 2003 04 07 | 704 | 1.3+ | 0.5+ | 2005 10 30 | 699 | 0.7− | 0.1+ |
| 2001 10 21 | 699 | 0.2− | 0.3− | 2003 04 07 | 704 | 0.6+ | 0.0 | 2005 11 18 | 699 | 0.3− | 0.2+ |
| 2001 10 21 | 699 | (0.7+ | 1.8−) | 2003 04 11 | 699 | 0.4− | 0.4− | 2005 11 18 | 699 | 0.1+ | 0.1+ |
| 2001 10 27 | 704 | 0.0 | 0.1− | 2003 04 11 | 699 | 1.0− | 0.7− | 2005 11 18 | 699 | 0.1− | 0.3+ |
| 2001 10 27 | 644 | 0.1+ | 0.9+ | 2003 04 11 | 699 | 0.8− | 0.2− | 2005 11 18 | 699 | 0.2+ | 0.7− |
| 2001 10 27 | 704 | 0.2− | 0.2− | 2003 04 11 | 699 | 1.3− | 0.1+ | 2005 11 20 | 644 | 0.1− | 0.3+ |
| 2001 10 27 | 644 | 0.1+ | 0.8+ | 2003 04 28 | 704 | 0.3+ | 0.6+ | 2005 11 20 | 644 | 0.1− | 0.1+ |
| 2001 10 27 | 644 | 0.1+ | 0.9+ | 2003 04 28 | 704 | 0.9+ | 0.6+ | 2005 11 20 | 644 | 0.1+ | 0.3+ |
| 2001 10 27 | 704 | 0.0 | 0.1− | 2003 04 28 | 704 | 0.8+ | 0.3+ | 2005 12 02 | 703 | 0.1− | 0.1+ |
| 2001 10 27 | 704 | 0.1− | 0.0 | 2003 04 28 | 704 | 0.5+ | 0.8+ | 2005 12 02 | 703 | 0.4− | 0.4− |
| 2001 10 27 | 704 | 0.1+ | 0.0 | 2003 05 02 | 703 | 1.4+ | 0.8+ | 2005 12 02 | 703 | 0.2− | 0.2− |
| 2001 11 12 | 699 | 0.5+ | 0.1+ | 2003 05 02 | 703 | 0.7+ | 1.1+ | 2005 12 02 | 703 | 0.3− | 0.2+ |
| 2001 11 12 | 699 | 0.6+ | 0.3− | 2003 05 02 | 703 | 0.0 | 0.4+ | 2005 12 07 | 704 | 0.4− | 0.1+ |
| 2001 11 12 | 699 | 0.6+ | 0.2+ | 2003 05 02 | 703 | 1.1+ | 0.6+ | 2005 12 07 | 704 | 0.1+ | 0.4− |
| 2001 11 12 | 699 | 0.3+ | 0.1+ | 2005 08 03 | 704 | 0.2+ | 0.2+ | 2005 12 07 | 704 | 0.5− | 0.4+ |
| 2001 12 09 | 704 | 0.1+ | 0.8+ | 2005 08 03 | 704 | 0.2− | 1.2+ | 2005 12 07 | 704 | 0.1− | 0.2− |
| 2001 12 09 | 704 | 0.6+ | 0.7+ | 2005 08 03 | 704 | 0.0 | 0.5+ | 2005 12 07 | 704 | 0.9− | 0.2+ |
| 2001 12 09 | 704 | 0.1+ | 0.5+ | 2005 08 03 | 704 | (0.9+ | 1.6+) | 2006 10 20 | 703 | (0.7− | 1.7+) |
| 2001 12 09 | 704 | 0.1+ | 0.6+ | 2005 08 29 | 644 | 0.2− | 0.3+ | 2006 10 20 | 703 | 0.1− | 0.6+ |
| 2001 12 09 | 704 | 0.2+ | 0.8+ | 2005 08 29 | 644 | 0.2− | 0.3+ | 2006 10 20 | 703 | 0.2− | 0.8+ |
| 2001 12 21 | 704 | 0.2− | 0.4− | 2005 08 29 | 644 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.7− | 0.7+ |
| 2001 12 21 | 704 | 0.5− | 1.1− | 2005 08 31 | 699 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2001 12 21 | 704 | 0.3− | 1.0− | 2005 08 31 | 699 | 0.6+ | 0.4+ | 2006 11 19 | 704 | 0.9+ | 0.4− |
| 2002 01 08 | 704 | 0.2+ | 1.1− | 2005 08 31 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2002 01 08 | 704 | 0.0 | 1.0− | 2005 08 31 | 704 | 0.4− | 0.0 | 2006 11 22 | 704 | (1.7+ | 0.1−) |
| 2002 01 08 | 704 | 0.1+ | 1.0− | 2005 08 31 | 699 | 0.5+ | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.2− |
| 2002 01 08 | 704 | 0.3+ | 0.8− | 2005 08 31 | 704 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.7− |
| 2002 02 06 | 704 | 0.5− | 0.3− | 2005 08 31 | 704 | 0.4− | 0.2− | 2006 11 22 | 704 | 1.0+ | 0.4− |
| 2002 02 06 | 704 | 0.5− | 0.2− | 2005 08 31 | 699 | 0.6+ | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.9+ |
| 2002 02 06 | 704 | 0.4− | 0.3− | 2005 08 31 | 704 | 0.4− | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2002 02 06 | 704 | 0.4− | 0.1− | 2005 09 06 | A50 | 1.0− | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 02 06 | 704 | 0.4− | 0.2− | 2005 09 06 | A50 | 0.2+ | 0.4− | 2006 11 24 | 691 | 0.1− | 1.0+ |
| 2002 02 09 | 699 | 1.2+ | 0.3+ | 2005 09 11 | 704 | 0.2− | 0.6+ | 2006 11 28 | 704 | 0.4+ | 0.3− |
| 2002 02 09 | 699 | 0.5− | 0.1− | 2005 09 11 | 704 | 0.1− | 0.9+ | 2006 11 28 | 704 | 0.0 | 0.0 |
| 2002 02 09 | 699 | 0.1+ | 0.9+ | 2005 09 11 | 704 | 0.1+ | 0.8+ | 2006 11 28 | 704 | 0.8− | 0.1+ |
| 2002 02 09 | 699 | 0.2− | 0.7+ | 2005 09 11 | 704 | 0.4− | 0.9+ | 2006 11 28 | 704 | 0.4+ | 0.5+ |
| 2002 02 10 | 704 | 0.1+ | 0.6+ | 2005 09 11 | 704 | 0.1+ | 0.7+ | 2006 11 28 | 704 | 0.0 | 0.5− |

**(139619)∗ 2001 QD$_{141}$**

Discovered 2001 Aug. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.03972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18559530 | $\omega$ | 147.76780 | | +0.61675572 | −0.75695155 | |
| $a$ | 3.0438604 | $\Omega$ | 263.22399 | | +0.66817824 | +0.64847593 | |
| $e$ | 0.1759251 | $i$ | 12.56074 | | +0.41611324 | +0.08064318 | |
| $P$ | 5.31 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 10 | 691 | 0.2+ | 0.3+ | 2001 11 10 | 704 | 0.0 | 0.5− | 2003 02 07 | 644 | 0.4+ | 0.7+ |
| 2000 06 10 | 691 | 0.0 | 0.4+ | 2001 11 10 | 704 | 0.1− | 0.4− | 2003 02 07 | 644 | 0.2+ | 0.6+ |
| 2000 06 10 | 691 | 0.1+ | 0.5+ | 2001 11 11 | 704 | 0.0 | 0.2− | 2003 02 07 | 644 | 0.8+ | 0.3+ |
| 2001 08 23 | 704 | 0.4+ | 0.8− | 2001 11 11 | 704 | 0.1− | 0.2− | 2003 03 10 | 704 | 1.1+ | 0.3− |
| 2001 08 23 | 704 | 0.2+ | 0.8+ | 2001 11 11 | 704 | 0.1− | 0.3− | 2003 03 10 | 704 | 0.6− | 0.7− |
| 2001 08 23 | 704 | 0.1− | 0.4+ | 2001 11 11 | 704 | 0.1+ | 0.1+ | 2003 03 10 | 704 | 0.1− | 0.7− |
| 2001 08 23 | 704 | (0.2+ | 1.9−) | 2001 11 11 | 704 | 0.2− | 0.3− | 2003 03 10 | 704 | 0.2+ | 0.6+ |
| 2001 08 23 | 704 | 0.4− | 0.6− | 2001 11 11 | 644 | 0.1− | 0.2− | 2004 04 20 | E12 | 0.4− | 1.0+ |
| 2001 08 25 | 704 | 0.1+ | 0.3− | 2001 11 11 | 644 | 0.0 | 0.0 | 2004 04 20 | E12 | 0.4− | 1.0+ |
| 2001 08 25 | 704 | 0.3+ | 0.4− | 2001 11 11 | 644 | 0.1− | 0.4− | 2004 04 20 | E12 | 0.8− | 0.8+ |
| 2001 08 25 | 704 | 0.1+ | 0.2− | 2001 11 18 | 644 | 0.2− | 0.2+ | 2004 04 20 | E12 | 0.5− | 1.0+ |
| 2001 08 25 | 704 | 0.1+ | 0.3− | 2001 11 18 | 644 | 0.2+ | 0.1− | 2004 04 25 | 704 | 0.1− | 0.4− |
| 2001 10 09 | 704 | 0.2+ | 0.5+ | 2001 11 18 | 644 | 0.1+ | 0.1− | 2004 04 25 | 704 | 0.3− | 0.3− |
| 2001 10 09 | 704 | 0.4+ | 0.6+ | 2001 12 10 | 704 | 0.3+ | 0.1− | 2004 04 25 | 704 | 0.6− | 0.7+ |
| 2001 10 09 | 704 | 0.6+ | 0.0 | 2001 12 10 | 704 | 0.2+ | 0.3− | 2004 04 25 | 704 | 0.4− | 1.1+ |
| 2001 10 09 | 704 | 0.1− | 1.3+ | 2001 12 10 | 704 | 0.5+ | 0.1+ | 2006 09 21 | 704 | 0.5− | 0.9+ |
| 2001 10 09 | 704 | (1.0+ | 1.9+) | 2001 12 10 | 704 | 0.5+ | 0.1− | 2006 09 21 | 704 | 0.9− | 0.1+ |
| 2001 10 15 | 704 | 0.6− | 0.4− | 2001 12 10 | 704 | 0.1− | 0.8+ | 2006 09 21 | 704 | 1.0+ | 1.1− |
| 2001 10 15 | 704 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 09 21 | 704 | 0.0 | 1.1+ |
| 2001 10 15 | 704 | 0.3− | 0.2− | 2001 12 17 | 704 | 1.0− | 0.3+ | 2006 09 22 | 699 | 0.0 | 0.8+ |
| 2001 10 15 | 704 | 0.1+ | 0.2− | 2001 12 17 | 704 | 0.8− | 0.2+ | 2006 09 22 | 699 | 0.0 | 0.2+ |
| 2001 10 15 | 704 | 0.2− | 0.3− | 2001 12 17 | 704 | 1.0− | 0.3+ | 2006 09 22 | 699 | (2.6− | 0.9+) |
| 2001 10 19 | 704 | 0.2+ | 0.2− | 2001 12 17 | 704 | 1.1− | 0.3+ | 2006 09 22 | 699 | 1.0− | 0.3+ |
| 2001 10 19 | 704 | 0.0 | 0.5+ | 2001 12 20 | 644 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.1− | 0.8+ |
| 2001 10 19 | 704 | 0.1+ | 0.7+ | 2001 12 20 | 644 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.6+ |
| 2001 10 19 | 704 | 0.3+ | 0.4+ | 2001 12 20 | 644 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.6+ | 0.0 |
| 2001 10 19 | 704 | 0.6− | 0.9+ | 2002 01 06 | 644 | 0.2− | 0.7+ | 2006 09 28 | 703 | 0.1− | 0.2− |
| 2001 10 27 | 699 | 0.2− | 0.2− | 2002 01 06 | 644 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.8+ | 0.3− |
| 2001 10 27 | 699 | 0.4− | 0.3− | 2002 01 06 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.5+ | 0.0 |
| 2001 10 27 | 699 | 0.3− | 0.2+ | 2002 01 07 | 699 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.2+ |
| 2001 10 27 | 704 | 0.2− | 0.7+ | 2002 01 07 | 699 | 0.4− | 0.9− | 2006 10 20 | 703 | 0.1− | 0.0 |
| 2001 10 27 | 699 | 0.8− | 1.0− | 2002 01 07 | 699 | 0.7+ | 0.4− | 2006 10 20 | 703 | 0.1+ | 0.3− |
| 2001 10 27 | 704 | 0.9+ | 0.2+ | 2002 01 07 | 699 | 0.9+ | 0.8+ | 2006 10 20 | 703 | 0.0 | 0.0 |
| 2001 10 27 | 704 | 0.0 | 0.5+ | 2003 01 14 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 703 | 0.2+ | 0.2− |
| 2001 10 27 | 704 | 0.8+ | 0.4+ | 2003 01 14 | 644 | 0.3+ | 0.3+ | 2006 11 25 | 703 | 0.6− | 0.9+ |
| 2001 10 27 | 704 | 0.2− | 0.4+ | 2003 01 14 | 644 | 0.3+ | 0.3+ | 2006 11 25 | 703 | 0.5− | 0.3− |
| 2001 11 10 | 704 | 0.1− | 0.2− | 2003 02 06 | 644 | 1.0+ | 1.0+ | 2006 11 25 | 703 | 0.1+ | 0.4− |
| 2001 11 10 | 704 | 0.1+ | 0.1− | 2003 02 06 | 644 | 0.6+ | 0.1+ | 2006 11 25 | 703 | 0.8− | 0.4+ |
| 2001 11 10 | 704 | 0.1− | 0.5− | 2003 02 06 | 644 | 0.8+ | 0.2+ | | | | |

**(139620)∗ 2001 QF$_{141}$**

Discovered 2001 Aug. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.25801 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37442118 | $\omega$ | 107.95685 | | +0.80919552 | | +0.54288896 |
| $a$ | 1.9064662 | $\Omega$ | 220.01111 | | −0.57671199 | | +0.80699250 |
| $e$ | 0.0903412 | $i$ | 20.45278 | | +0.11227591 | | +0.23245361 |
| $P$ | 2.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.7− | 0.6− | 2001 11 10 | 704 | 0.4+ | 0.5+ | 2003 03 31 | 704 | 1.1− | 0.5− |
| 2000 04 07 | 704 | 1.1+ | 0.4+ | 2001 11 10 | 704 | 0.0 | 0.2+ | 2003 03 31 | 704 | 1.4− | 1.1− |
| 2000 04 07 | 704 | 0.0 | 0.6+ | 2001 11 10 | 704 | 0.6+ | 0.5+ | 2003 03 31 | 704 | 0.7− | 1.2− |
| 2000 04 07 | 704 | 0.8+ | 0.8+ | 2001 11 10 | 704 | 0.3− | 0.7+ | 2003 04 28 | 704 | 0.1+ | 0.4+ |
| 2001 08 23 | 704 | 0.3+ | 0.1+ | 2001 11 10 | 704 | 0.5− | 0.8+ | 2003 04 28 | 704 | 0.4+ | 0.8+ |
| 2001 08 23 | 704 | 0.1+ | 0.7− | 2001 11 10 | 704 | 0.4+ | 0.3+ | 2003 04 28 | 704 | 0.1+ | 0.4+ |
| 2001 08 23 | 704 | 0.2− | 0.5+ | 2001 11 10 | 704 | 0.8+ | 0.6− | 2003 04 28 | 704 | 0.2− | 0.3− |
| 2001 08 23 | 704 | 0.5+ | 0.2+ | 2001 11 10 | 704 | 0.8+ | 0.4− | 2003 04 28 | 704 | 0.5− | 0.0 |
| 2001 08 25 | 704 | (1.6+ | 1.6+) | 2001 11 10 | 704 | 0.6+ | 1.0− | 2003 05 01 | 704 | 0.1− | 0.7+ |
| 2001 08 25 | 704 | (0.6+ | 1.7+) | 2001 11 10 | 704 | 0.4+ | 1.1− | 2003 05 01 | 704 | 0.4+ | 1.2+ |
| 2001 08 25 | 704 | 0.7+ | 0.7+ | 2001 11 10 | 704 | 0.6+ | 1.2− | 2003 05 01 | 704 | (0.2− | 1.6+) |
| 2001 08 25 | 704 | 0.7+ | 0.1− | 2001 11 11 | 704 | 0.2+ | 0.6+ | 2003 05 01 | 704 | 0.1− | 1.1+ |
| 2001 09 19 | 699 | 0.7− | 0.8+ | 2001 11 11 | 704 | 0.3− | 0.3+ | 2003 05 01 | 704 | 0.2− | 1.4+ |
| 2001 09 19 | 699 | 0.7− | 0.3+ | 2001 11 11 | 704 | 0.0 | 0.5+ | 2003 05 05 | 704 | 0.3+ | 0.6+ |
| 2001 09 19 | 699 | 0.8+ | 1.1+ | 2001 11 11 | 704 | 0.3− | 0.7+ | 2003 05 05 | 704 | 0.2+ | 0.8+ |
| 2001 09 19 | 699 | 0.4− | 0.1+ | 2001 11 11 | 704 | 0.2− | 0.5+ | 2003 05 05 | 704 | 0.2+ | 0.8+ |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2001 11 12 | 704 | 0.4− | 0.1+ | 2003 05 05 | 704 | 0.1+ | 0.8+ |
| 2001 09 20 | 704 | 0.8− | 0.4− | 2001 11 12 | 704 | 0.6− | 0.4+ | 2003 05 05 | 704 | 0.1+ | 1.2+ |
| 2001 09 20 | 704 | 0.7− | 0.4− | 2001 11 12 | 704 | 0.2− | 0.7+ | 2003 05 08 | 704 | 0.2− | 0.7− |
| 2001 09 22 | 704 | (1.5− | 0.4+) | 2001 11 12 | 704 | 0.8− | 0.8− | 2003 05 08 | 704 | 0.9+ | 0.0 |
| 2001 09 22 | 704 | 0.0 | 0.2+ | 2001 11 12 | 704 | 0.5− | 0.2+ | 2003 05 08 | 704 | 0.6+ | 0.8− |
| 2001 09 22 | 704 | (3.2− | 0.8+) | 2001 11 15 | 644 | 0.1+ | 0.3+ | 2003 05 08 | 704 | 0.8+ | 0.2− |
| 2001 09 22 | 704 | (0.2+ | 2.3+) | 2001 11 15 | 644 | 0.2− | 0.5+ | 2003 05 08 | 704 | 0.4+ | 0.6− |
| 2001 09 23 | 704 | (1.6− | 0.6−) | 2001 11 15 | 644 | 0.1+ | 0.3+ | 2003 05 08 | 704 | 0.5+ | 0.5+ |
| 2001 09 23 | 704 | 0.2− | 0.0 | 2001 11 17 | 704 | 0.0 | 0.0 | 2003 05 08 | 704 | 0.7+ | 0.5− |
| 2001 09 23 | 704 | 0.6+ | 0.3− | 2001 11 17 | 704 | 0.5− | 0.9− | 2003 05 08 | 704 | 0.9+ | 0.3+ |
| 2001 10 12 | 699 | 0.2− | 0.2+ | 2001 11 17 | 704 | 0.2+ | 0.1− | 2003 05 08 | 704 | 0.6+ | 0.6− |
| 2001 10 12 | 699 | 0.5− | 0.2+ | 2001 11 17 | 704 | 0.9− | 0.5− | 2003 05 08 | 704 | 0.2+ | 0.7+ |
| 2001 10 12 | 699 | 0.2− | 0.2+ | 2001 11 18 | 704 | 0.3− | 0.2+ | 2003 05 11 | 691 | (1.5− | 0.6−) |
| 2001 10 12 | 699 | 0.2− | 0.4+ | 2001 11 18 | 704 | 0.3− | 0.4− | 2003 05 11 | 691 | 0.3− | 0.4+ |
| 2001 10 14 | 704 | 0.7− | 0.8+ | 2001 11 18 | 704 | 0.4− | 0.7+ | 2003 05 11 | 691 | 0.5− | 0.4+ |
| 2001 10 14 | 704 | 0.6− | 0.7+ | 2001 11 18 | 704 | 1.2+ | 0.7+ | 2003 05 27 | 691 | 0.3− | 1.1+ |
| 2001 10 14 | 704 | 0.9− | 0.6+ | 2001 11 18 | 704 | 0.1+ | 0.5− | 2003 05 27 | 699 | 0.6− | 0.1− |
| 2001 10 14 | 704 | 0.7− | 0.8+ | 2001 11 18 | 704 | 0.5− | 0.3+ | 2003 05 27 | 699 | 0.7− | 0.1+ |
| 2001 10 14 | 704 | 0.0 | 1.5+ | 2001 11 18 | 704 | 0.0 | 0.3+ | 2003 05 27 | 691 | 0.2− | 1.1+ |
| 2001 10 19 | 644 | 0.4− | 0.1+ | 2001 11 18 | 704 | 0.4− | 0.1+ | 2003 05 27 | 699 | 0.6− | 0.2− |
| 2001 10 19 | 644 | 0.2− | 0.0 | 2001 11 18 | 704 | 0.3+ | 0.0 | 2003 05 27 | 699 | 0.6− | 0.2− |
| 2001 10 19 | 644 | 0.3− | 0.2+ | 2001 11 18 | 704 | 0.3+ | 0.2+ | 2003 05 27 | 691 | 0.2− | 1.1+ |
| 2001 10 21 | 704 | 0.5− | 0.5+ | 2001 11 18 | 608 | 0.8+ | 0.4+ | 2003 05 30 | 704 | 0.0 | 0.3+ |
| 2001 10 21 | 704 | 0.6− | 0.2− | 2001 11 18 | 608 | 0.5+ | 0.5+ | 2003 05 30 | 704 | (1.7+ | 0.5+) |
| 2001 10 21 | 704 | 0.7− | 0.0 | 2001 11 18 | 608 | 0.6+ | 0.5+ | 2003 05 30 | 704 | 1.5+ | 0.4+ |
| 2001 10 21 | 704 | 0.6− | 0.4− | 2001 11 20 | 704 | 0.4− | 0.6− | 2003 05 30 | 704 | (1.6+ | 0.8+) |
| 2001 10 21 | 704 | 0.1− | 0.6− | 2001 11 20 | 704 | 0.3− | 0.3− | 2003 06 01 | 704 | 0.7+ | 0.5+ |
| 2001 10 22 | 704 | 1.0− | 0.5+ | 2001 11 20 | 704 | 0.3− | 0.7+ | 2003 06 01 | 704 | 0.2− | 0.3+ |
| 2001 10 22 | 704 | 1.1− | 0.2+ | 2001 11 20 | 704 | 0.4+ | 0.9− | 2003 06 01 | 704 | 0.3+ | 0.5+ |
| 2001 10 22 | 704 | 0.3− | 0.0 | 2001 11 20 | 704 | (0.2+ | 1.8−) | 2003 06 02 | 703 | 0.0 | 1.4+ |
| 2001 10 26 | 704 | 0.1− | 0.1− | 2001 11 24 | 704 | 0.5+ | 1.2+ | 2003 06 02 | 703 | 0.4+ | 0.4+ |
| 2001 10 26 | 704 | 0.5− | 0.1− | 2001 11 24 | 704 | 1.3+ | 1.1+ | 2003 06 02 | 703 | (1.9− | 2.3+) |
| 2001 10 26 | 704 | 0.5− | 0.2+ | 2001 11 24 | 704 | 0.9+ | 0.7+ | 2003 06 02 | 703 | 0.1+ | 1.0+ |
| 2001 10 26 | 704 | 0.5− | 0.2+ | 2001 11 24 | 704 | (0.6+ | 2.0+) | 2003 06 22 | 699 | 0.5− | 0.3− |
| 2001 10 26 | 644 | 0.3− | 0.2+ | 2001 11 24 | 704 | 0.7+ | 1.2+ | 2003 06 22 | 699 | 0.4+ | 0.4+ |
| 2001 10 26 | 644 | 0.1− | 0.2+ | 2001 11 24 | 704 | 0.3+ | 1.1+ | 2003 06 22 | 699 | 0.8− | 0.1+ |
| 2001 10 26 | 644 | 0.1− | 0.3+ | 2001 11 24 | 704 | 0.1− | 0.3+ | 2003 06 22 | 699 | 0.6− | 0.6+ |
| 2001 10 30 | 608 | 0.3+ | 0.9+ | 2001 11 24 | 704 | 0.4+ | 1.3+ | 2006 08 23 | 704 | 0.8+ | 0.9− |
| 2001 10 30 | 608 | 0.6+ | 1.0+ | 2001 11 24 | 704 | 0.6+ | 0.7+ | 2006 08 23 | 704 | (1.3+ | 1.9+) |
| 2001 10 30 | 608 | 0.4+ | 1.1+ | 2001 11 24 | 644 | 0.1+ | 0.0 | 2006 08 23 | 704 | 1.1+ | 0.2− |
| 2001 11 08 | 644 | 0.1− | 0.7+ | 2001 11 24 | 644 | 0.0 | 0.2+ | 2006 08 23 | 704 | (1.9+ | 0.6−) |
| 2001 11 08 | 644 | 0.2+ | 0.5+ | 2001 11 24 | 644 | 0.0 | 0.3+ | 2006 10 15 | 185 | 0.6+ | 0.2− |
| 2001 11 08 | 644 | 0.0 | 1.1+ | 2001 11 27 | 704 | 0.1− | 0.2+ | 2006 10 15 | 185 | 0.5+ | 0.1− |
| 2001 11 09 | 704 | 0.8+ | 0.2+ | 2001 11 27 | 704 | 0.1+ | 1.3+ | 2006 10 15 | 185 | 0.2+ | 0.2− |
| 2001 11 09 | 704 | 0.2− | 0.7+ | 2001 11 27 | 704 | 0.2− | 1.1+ | 2006 10 15 | 185 | 0.3+ | 0.1− |
| 2001 11 09 | 704 | 0.4+ | 0.4+ | 2001 12 07 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.9+ |
| 2001 11 09 | 704 | 0.6− | 0.3+ | 2001 12 07 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2001 11 09 | 704 | 0.0 | 0.8+ | 2001 12 07 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | (2.0+ | 1.0+) |
| 2001 11 10 | 704 | 0.5+ | 1.2+ | 2001 12 07 | 704 | 0.4− | 0.4+ | 2006 10 22 | 703 | (0.6− | 2.2+) |
| 2001 11 10 | 704 | 0.2− | 0.1+ | 2001 12 07 | 704 | 0.6− | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.8− |
| 2001 11 10 | 704 | 0.2− | 0.8+ | 2001 12 15 | 704 | (0.1− | 2.4−) | 2006 11 19 | 703 | 0.4− | 0.6− |
| 2001 11 10 | 704 | 0.1+ | 0.1− | 2001 12 15 | 704 | (2.0− | 1.3−) | 2006 11 19 | 703 | (0.2+ | 1.5−) |
| 2001 11 10 | 704 | 0.3− | 0.3+ | 2001 12 15 | 704 | (0.5− | 2.2−) | 2006 11 19 | 703 | 0.8− | 0.6− |
| 2001 11 10 | 704 | 0.7+ | 0.2+ | 2001 12 15 | 704 | (0.1− | 2.4−) | 2006 11 27 | 703 | 2.8− | 1.3− |
| 2001 11 10 | 704 | 0.5+ | 0.9+ | 2001 12 15 | 704 | (0.5− | 2.4−) | 2006 11 27 | 703 | 1.0+ | 1.8− |
| 2001 11 10 | 704 | 0.3− | 0.2− | 2001 12 20 | 608 | 0.1− | 0.6+ | 2006 11 27 | 703 | 0.5+ | 1.6− |
| 2001 11 10 | 704 | 0.2+ | 1.0+ | 2001 12 20 | 608 | 0.0 | 0.7+ | 2006 11 27 | 703 | 1.0+ | 1.7− |
| 2001 11 10 | 704 | 0.0 | 0.5+ | 2001 12 20 | 608 | 0.4− | 0.6+ | 2006 11 27 | 703 | 1.2− | 0.9− |
| 2001 11 10 | 704 | 0.0 | 1.0+ | 2002 01 08 | 645 | 0.2+ | 0.1− | 2006 11 27 | 703 | 1.2− | 1.2− |
| 2001 11 10 | 704 | 0.0 | 0.1+ | 2002 01 08 | 645 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.3+ | 2.0− |
| 2001 11 10 | 704 | 0.2+ | 0.7+ | 2002 01 09 | 645 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.2− | 1.0+ |
| 2001 11 10 | 704 | 0.3− | 0.2+ | 2002 01 09 | 645 | 0.1+ | 0.1− | | | | |

**(139621)∗ 2001 QO$_{141}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.64092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21273991 | $\omega$ | 235.75039 | | +0.97546593 | | −0.21114462 |
| $a$ | 2.7790950 | $\Omega$ | 136.34606 | | +0.21971020 | | +0.91579650 |
| $e$ | 0.0870053 | $i$ | 5.17995 | | +0.01391583 | | +0.34166462 |
| $P$ | 4.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.2+ | 1.4+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 1994 01 10 | 691 | 0.3+ | 0.5− | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 1994 01 10 | 691 | 0.3− | 0.3− | 2004 03 22 | 704 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 08 16 | 704 | 0.5− | 1.3+ | 2004 03 22 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 08 16 | 704 | 1.3− | 1.4+ | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 08 16 | 704 | 1.2− | 0.5+ | 2004 03 26 | 704 | 0.2− | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 08 24 | 704 | 0.5+ | 1.0+ | 2004 03 26 | 704 | 0.2− | 0.9+ | 2006 10 15 | 703 | 0.3+ | 0.4− |
| 2001 08 24 | 704 | (0.8− | 2.1+) | 2004 03 26 | 704 | 0.9+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.9− |
| 2001 08 24 | 704 | (0.4− | 2.7+) | 2004 03 26 | 704 | 1.2+ | 0.4+ | 2006 10 15 | 703 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | (0.1+ | 1.7+) | 2004 03 28 | 704 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2001 08 25 | 704 | (0.6+ | 2.2+) | 2004 03 28 | 704 | 0.1+ | 1.1+ | 2006 10 16 | 703 | (1.6+ | 0.7−) |
| 2001 08 25 | 704 | 0.4+ | 1.0+ | 2004 03 28 | 704 | 0.6+ | 0.9+ | 2006 10 16 | 703 | 0.4+ | 0.5+ |
| 2001 09 12 | 704 | 0.1− | 1.2+ | 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2001 09 12 | 704 | (1.7+ | 0.8+) | 2004 04 16 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.1+ | 1.1+ | 2004 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 1.0+ |
| 2001 09 12 | 704 | 0.2− | 1.1+ | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.7+ |
| 2001 09 12 | 704 | (0.1− | 1.7+) | 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | (0.7+ | 1.9+) | 2004 04 21 | 691 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.5+ | 1.4+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 1.2+ | 0.6+ | 2006 09 06 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 1.0+ |
| 2001 09 19 | 704 | (1.3+ | 2.3+) | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.7+ |
| 2001 09 19 | 704 | 0.1+ | 0.5− | 2006 09 26 | 704 | 0.7− | 0.2− | 2006 10 22 | 703 | 0.8− | 0.5+ |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.8− | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.6− | 1.3− | 2006 09 26 | 704 | (0.6− | 1.7+) | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.9+ | 0.6+ | 2006 11 14 | 704 | 0.5+ | 0.7+ |
| 2001 09 21 | 704 | 1.4− | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.5+ | 2006 11 14 | 704 | 0.3− | 1.2+ |
| 2001 09 21 | 704 | 0.8+ | 0.1− | 2006 09 30 | 703 | 0.7+ | 1.0− | 2006 11 14 | 704 | 0.7− | 0.3+ |
| 2001 09 21 | 704 | 0.7− | 0.1− | 2006 09 30 | 703 | (0.2− | 2.2−) | 2006 11 14 | 704 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.7− | 2006 11 14 | 704 | (3.9− | 0.2−) |
| 2004 03 15 | 703 | 0.9− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 11 16 | 703 | 0.4+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.1+ | 1.2+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.9+ | 0.1+ | | |
| 2004 03 15 | 703 | 0.9+ | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 16 | 703 | 1.0+ | 0.2− | | |
| 2004 03 15 | 703 | (1.8− | 1.4+) | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.2+ | | |

**(139622)∗ 2001 QQ$_{142}$**

Discovered 2001 Aug. 25 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.41175 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.58121382 | $\omega$ | 337.77657 | | +0.47825068 | −0.86337446 | |
| $a$ | 1.4220409 | $\Omega$ | 83.32835 | | +0.82815178 | +0.38241234 | |
| $e$ | 0.3110975 | $i$ | 9.31775 | | +0.29230278 | +0.32915854 | |
| $P$ | 1.70 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 608 | 0.3− | 0.3+ | 2001 10 29 | 649 | 1.1+ | 0.1+ | 2002 04 11 | 644 | 0.0 | 0.0 | | |
| 2001 08 22 | 608 | 0.1− | 0.3+ | 2001 10 29 | 649 | 0.8+ | 0.1− | 2002 04 11 | 644 | 0.5− | 0.4+ | | |
| 2001 08 25 | 608 | 0.1− | 0.8− | 2001 10 29 | 649 | 1.1+ | 0.3− | 2002 04 18 | 658 | 0.1+ | 0.4+ | | |
| 2001 08 25 | 608 | 0.0 | 0.7− | 2001 11 06 | 649 | (10.9+ | 17.5−) | 2002 04 18 | 658 | 0.1+ | 0.2− | | |
| 2001 08 25 | 608 | 0.2− | 1.1− | 2001 11 06 | 649 | 0.2− | 0.3− | 2002 04 18 | 658 | 0.4+ | 0.3+ | | |
| 2001 08 26 | 046 | 0.9+ | 0.6+ | 2001 11 06 | 649 | (1.4+ | 2.2−) | 2002 05 19 | 291 | 0.1+ | 0.2+ | | |
| 2001 08 26 | 046 | 0.0 | 0.5+ | 2001 11 18 | 696 | 0.2− | 0.0 | 2002 05 19 | 291 | 0.5+ | 0.0 | | |
| 2001 08 26 | 046 | 0.8− | 0.3− | 2001 11 18 | 696 | 0.4+ | 0.1+ | 2002 05 19 | 291 | 0.6+ | 0.5+ | | |
| 2001 08 26 | 046 | (1.6− | 0.5+) | 2001 11 25 | 608 | 0.2+ | 0.1+ | 2004 03 21 | 291 | 1.1− | 0.6+ | | |
| 2001 08 26 | 046 | 0.6− | 0.2+ | 2001 11 25 | 608 | 0.3− | 0.4+ | 2004 03 21 | 291 | 0.8− | 0.2+ | | |
| 2001 08 26 | 557 | 1.0− | 0.2+ | 2001 11 25 | 608 | 0.4+ | 0.9+ | 2004 03 21 | 291 | 0.5+ | 0.2− | | |
| 2001 08 26 | 557 | 0.3− | 0.2− | 2001 12 13 | 704 | 0.4+ | 0.2− | 2004 03 21 | 291 | (3.0+ | 0.9+) | | |
| 2001 08 26 | 557 | 0.7− | 0.2+ | 2001 12 13 | 704 | 0.1+ | 0.6+ | 2004 03 21 | 291 | (2.9+ | 1.2−) | | |
| 2001 08 26 | 557 | 0.6− | 0.5+ | 2001 12 13 | 704 | 0.6+ | 0.3− | 2004 04 20 | 291 | 0.0 | 0.2+ | | |
| 2001 08 26 | 644 | 0.1− | 0.5+ | 2001 12 13 | 704 | 1.1+ | 0.9− | 2004 04 20 | 291 | 0.0 | 0.1+ | | |
| 2001 08 26 | 644 | 0.6− | 0.5+ | 2002 01 09 | 704 | 0.7− | 0.5+ | 2004 04 20 | 291 | 0.1− | 0.3+ | | |
| 2001 08 26 | 644 | 0.0 | 0.5+ | 2002 01 09 | 704 | 0.7+ | 0.7+ | 2004 05 28 | 291 | 0.2− | 0.3+ | | |
| 2001 08 26 | 644 | 0.9− | 0.4+ | 2002 01 09 | 704 | (1.5+ | 0.1+) | 2004 05 28 | 291 | 0.2− | 0.1+ | | |
| 2001 08 26 | 644 | 0.1+ | 0.5+ | 2002 01 09 | 704 | 0.8− | 0.1− | 2004 05 28 | 291 | 0.1− | 0.0 | | |
| 2001 08 26 | 644 | 0.7− | 0.6+ | 2002 01 09 | 704 | (0.5− | 2.3+) | 2006 07 18 | E12 | 0.1− | 0.0 | | |
| 2001 08 29 | 649 | 0.7+ | 0.5+ | 2002 01 14 | 711 | 0.9+ | 0.8+ | 2006 07 18 | E12 | 0.8− | 0.1+ | | |
| 2001 08 29 | 649 | 0.1− | 0.1+ | 2002 01 14 | 711 | 0.8+ | 0.8+ | 2006 07 18 | E12 | 0.4− | 0.0 | | |
| 2001 08 29 | 649 | 0.3− | 0.4+ | 2002 01 14 | 711 | (1.6+ | 0.9+) | 2006 08 13 | E12 | 0.1+ | 0.1+ | | |
| 2001 08 29 | 649 | 0.4− | 0.3+ | 2002 01 14 | 291 | 0.2− | 0.2+ | 2006 08 13 | E12 | 0.5+ | 0.0 | | |
| 2001 08 30 | 118 | 0.6− | 0.1− | 2002 01 14 | 291 | 0.2− | 0.2+ | 2006 08 13 | E12 | 0.2+ | 0.3+ | | |
| 2001 08 30 | 118 | 0.4− | 0.9− | 2002 01 14 | 291 | 0.2− | 0.3+ | 2006 08 13 | E12 | 0.2− | 0.3+ | | |
| 2001 08 30 | 118 | 0.6− | 0.9− | 2002 01 21 | 699 | 0.6+ | 0.4+ | 2006 08 22 | E12 | 0.2+ | 0.0 | | |
| 2001 08 30 | 649 | 0.8− | 0.8+ | 2002 01 21 | 699 | 0.2+ | 0.1+ | 2006 08 22 | E12 | 0.3− | 0.5+ | | |
| 2001 08 30 | 649 | 0.4− | 0.1− | 2002 01 21 | 699 | 1.0+ | 0.9+ | 2006 08 22 | E12 | 0.3+ | 0.1+ | | |
| 2001 08 30 | 649 | 0.5+ | 0.3+ | 2002 01 21 | 699 | 0.1+ | 0.6− | 2006 08 22 | E12 | 0.2+ | 0.1− | | |
| 2001 09 07 | 649 | 0.9− | 0.0 | 2002 02 21 | 704 | 0.2− | 0.2− | 2006 08 31 | 808 | (1.0− | 1.7+) | | |
| 2001 09 07 | 649 | 0.7+ | 0.5+ | 2002 02 21 | 704 | 0.1− | 0.5+ | 2006 08 31 | 808 | 0.6+ | 0.0 | | |
| 2001 09 07 | 649 | 0.8+ | 1.0+ | 2002 02 21 | 704 | 0.1+ | 0.2+ | 2006 08 31 | 808 | 0.5− | 0.3− | | |
| 2001 09 07 | 649 | 0.1− | 0.0 | 2002 02 21 | 704 | 0.6+ | 0.1− | 2006 08 31 | E12 | 0.5+ | 0.4− | | |
| 2001 09 10 | 649 | 0.0 | 0.3+ | 2002 02 21 | 704 | 0.8+ | 1.1− | 2006 08 31 | E12 | 0.2+ | 0.2+ | | |
| 2001 09 10 | 649 | 0.1− | 0.2+ | 2002 02 21 | 291 | 0.0 | 0.2+ | 2006 08 31 | E12 | 0.7+ | 0.3− | | |
| 2001 09 10 | 649 | 0.1+ | 0.1+ | 2002 02 21 | 291 | 0.0 | 0.2+ | 2006 08 31 | E12 | 0.0 | 0.1+ | | |
| 2001 09 10 | 649 | 0.1+ | 0.5+ | 2002 02 21 | 291 | 0.0 | 0.2+ | 2006 09 01 | E12 | 0.0 | 0.4+ | | |
| 2001 09 10 | 649 | 0.4− | 0.4+ | 2002 03 10 | 113 | 1.3+ | 0.1− | 2006 09 01 | E12 | 0.1− | 0.6+ | | |
| 2001 09 11 | 104 | 0.6+ | 0.3− | 2002 03 10 | 113 | 0.0 | 0.2+ | 2006 09 01 | E12 | 0.2+ | 0.3+ | | |
| 2001 09 11 | 104 | 0.1+ | 0.2− | 2002 03 10 | 113 | 0.2+ | 0.3+ | 2006 09 01 | E12 | 0.1− | 0.5+ | | |
| 2001 09 11 | 104 | 1.2+ | 0.2+ | 2002 03 10 | 113 | 0.1+ | 0.2+ | 2006 09 02 | 808 | 0.8− | 0.1− | | |
| 2001 09 11 | 104 | (1.8+ | 0.9+) | 2002 03 10 | 113 | 0.3+ | 0.0 | 2006 09 02 | 808 | 0.4− | 0.2+ | | |
| 2001 09 11 | 104 | 0.0 | 0.2− | 2002 03 11 | 118 | 0.3+ | 0.3+ | 2006 09 02 | 808 | 0.4− | 1.0+ | | |
| 2001 09 11 | 649 | 0.1− | 0.3+ | 2002 03 11 | 118 | 0.2+ | 0.2+ | 2006 09 15 | E12 | 0.4− | 0.5+ | | |
| 2001 09 11 | 649 | 0.0 | 0.6+ | 2002 03 11 | 118 | 0.0 | 0.3+ | 2006 09 15 | E12 | 0.7+ | 0.1+ | | |
| 2001 09 11 | 649 | 0.2− | 0.1+ | 2002 03 11 | 118 | 0.2+ | 0.1+ | 2006 09 15 | E12 | 0.1− | 0.3+ | | |
| 2001 09 12 | 104 | 0.2+ | 0.1+ | 2002 03 21 | 704 | 0.0 | 0.3+ | 2006 09 15 | E12 | 0.3+ | 0.3− | | |
| 2001 09 12 | 104 | 0.4− | 0.0 | 2002 03 21 | 704 | 0.1+ | 0.2+ | 2006 09 22 | E12 | (1.8− | 0.2+) | | |
| 2001 09 12 | 104 | 0.6− | 0.0 | 2002 03 21 | 704 | 0.1+ | 0.3− | 2006 09 22 | E12 | 0.3− | 0.4+ | | |
| 2001 09 12 | 104 | 0.3− | 1.2+ | 2002 03 21 | 704 | 0.5+ | 0.2− | 2006 09 22 | E12 | 1.3+ | 0.5+ | | |
| 2001 09 12 | 104 | 1.2− | 0.5+ | 2002 03 21 | 704 | 0.1− | 0.3− | 2006 09 22 | E12 | (2.7+ | 0.4−) | | |
| 2001 09 12 | 104 | 0.0 | 0.6− | 2002 04 02 | 658 | 0.1− | 0.0 | 2006 09 27 | 423 | 0.2− | 0.1+ | | |
| 2001 09 22 | 649 | 0.2+ | 0.2− | 2002 04 02 | 658 | 0.1− | 0.2+ | 2006 09 28 | 423 | 0.2+ | 0.5− | | |
| 2001 09 22 | 649 | 0.2+ | 0.3+ | 2002 04 02 | 658 | 0.2− | 0.2+ | 2006 09 28 | 423 | 0.2− | 0.3− | | |
| 2001 09 22 | 649 | 0.2− | 0.1+ | 2002 04 02 | 113 | 0.1− | 0.8− | 2006 09 29 | 808 | 0.1+ | 0.2− | | |
| 2001 09 23 | 829 | (2.9− | 0.6−) | 2002 04 02 | 113 | 0.4− | 0.1− | 2006 09 29 | 808 | 0.2+ | 0.3− | | |
| 2001 09 23 | 829 | (3.7− | 0.8−) | 2002 04 02 | 113 | 0.1− | 0.1+ | 2006 09 29 | 808 | 0.1+ | 0.3− | | |
| 2001 10 10 | 696 | 0.2+ | 0.2+ | 2002 04 02 | 113 | 0.2− | 0.4− | 2006 11 22 | E12 | 0.0 | 0.3− | | |
| 2001 10 10 | 696 | 0.0 | 0.0 | 2002 04 10 | 644 | 0.5+ | 0.2+ | 2006 11 22 | E12 | 0.6− | 0.1+ | | |
| 2001 10 25 | 649 | 0.4+ | 0.2− | 2002 04 10 | 644 | 0.1− | 0.2− | 2006 11 22 | E12 | 0.6− | 0.2− | | |
| 2001 10 25 | 649 | 0.1+ | 0.2− | 2002 04 10 | 644 | 0.4+ | 0.1+ | 2006 11 22 | E12 | 0.6+ | 0.1− | | |
| 2001 10 25 | 649 | 0.5+ | 0.2+ | 2002 04 11 | 644 | 0.1− | 0.5+ | | | | | | |

**(139623)∗ 2001 QR$_{142}$**

Discovered 2001 Aug. 24 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.99934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18233929 | $\omega$ | 330.53219 | | +0.33532813 | +0.91057476 | |
| $a$ | 3.0799893 | $\Omega$ | 317.72210 | | −0.77871790 | +0.12351596 | |
| $e$ | 0.0777471 | $i$ | 21.05429 | | −0.53023908 | +0.39445837 | |
| $P$ | 5.41 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 25 | 644 | 0.9− | 0.1+ | 2001 09 19 | 683 | (1.5− | 1.7+) | 2004 01 30 | 704 | 1.5− | 0.7+ | | |
| 2001 06 25 | 644 | 1.5− | 0.1+ | 2001 09 19 | 683 | 0.6− | 0.0 | 2004 01 30 | 704 | 0.9− | 0.6+ | | |
| 2001 06 25 | 644 | 1.0− | 0.1+ | 2001 09 19 | 683 | 1.1+ | 1.4− | 2004 01 30 | 704 | 0.8− | 0.1+ | | |
| 2001 08 22 | 683 | (0.6+ | 3.0−) | 2001 09 21 | 699 | 0.3− | 1.2+ | 2004 01 30 | 704 | 1.2− | 1.1+ | | |
| 2001 08 22 | 683 | (1.2+ | 2.1−) | 2001 09 21 | 699 | 0.1+ | 0.3+ | 2004 02 10 | 703 | 0.5+ | 0.3− | | |
| 2001 08 23 | 683 | 0.4− | 0.7+ | 2001 09 21 | 699 | 0.8− | 0.0 | 2004 02 10 | 703 | 1.4+ | 0.7− | | |
| 2001 08 23 | 683 | 0.3+ | 0.1+ | 2001 09 21 | 699 | 0.3+ | 0.2− | 2004 02 10 | 703 | 0.1+ | 0.0 | | |
| 2001 08 24 | 683 | 1.4+ | 0.2− | 2001 09 23 | 683 | 1.5− | 1.2+ | 2004 02 10 | 703 | 0.3− | 0.3− | | |
| 2001 08 24 | 683 | (2.4+ | 1.0+) | 2001 09 23 | 683 | 1.1− | 0.2+ | 2004 02 12 | 291 | 0.0 | 0.2+ | | |
| 2001 08 25 | 704 | 0.5− | 0.7+ | 2001 09 23 | 683 | (2.0− | 0.5+) | 2004 02 12 | 291 | 0.1+ | 0.3+ | | |
| 2001 08 25 | 704 | 0.3+ | 0.3+ | 2001 09 25 | 683 | 0.4− | 0.6+ | 2004 02 12 | 291 | 0.4+ | 0.1+ | | |
| 2001 08 25 | 683 | 0.8+ | 0.7+ | 2001 09 25 | 704 | 0.2+ | 0.4+ | 2004 02 16 | 704 | 0.4+ | 0.4+ | | |
| 2001 08 25 | 704 | 0.0 | 0.3+ | 2001 09 25 | 683 | 0.7− | 0.6− | 2004 02 16 | 704 | 0.2+ | 0.0 | | |
| 2001 08 25 | 683 | 1.4− | 0.1− | 2001 09 25 | 704 | 0.4− | 1.1+ | 2004 02 16 | 704 | 0.7+ | 0.6+ | | |
| 2001 08 25 | 704 | (2.4− | 0.5+) | 2001 09 25 | 683 | 0.6+ | 0.8− | 2004 02 16 | 704 | 0.3+ | 0.6+ | | |
| 2001 08 25 | 704 | 0.4− | 0.1+ | 2001 09 25 | 704 | 0.1− | 0.2+ | 2004 02 23 | 704 | (0.6+ | 1.5+) | | |
| 2001 08 27 | 683 | (1.1+ | 1.6−) | 2001 09 25 | 704 | 1.2− | 0.2+ | 2004 02 23 | 704 | 0.7+ | 1.1+ | | |
| 2001 08 27 | 683 | 0.4+ | 0.2+ | 2001 09 25 | 704 | 0.4+ | 0.3− | 2004 02 23 | 704 | 0.3+ | 0.9+ | | |
| 2001 08 27 | 683 | 1.3+ | 0.1+ | 2002 10 28 | 704 | 0.8+ | 0.3+ | 2004 02 23 | 704 | 0.2+ | 1.5+ | | |
| 2001 08 30 | 644 | 0.0 | 0.6+ | 2002 10 28 | 704 | 0.5+ | 0.2− | 2004 02 23 | 704 | 0.6+ | 0.8+ | | |
| 2001 08 30 | 644 | 0.8− | 0.3+ | 2002 10 28 | 704 | 1.3+ | 0.8+ | 2004 03 16 | 699 | 0.6− | 0.5− | | |
| 2001 08 30 | 644 | 0.3− | 0.6+ | 2002 12 12 | 704 | 0.2+ | 0.1− | 2004 03 16 | 699 | 0.4+ | 0.4− | | |
| 2001 09 07 | 683 | 0.2+ | 0.3+ | 2002 12 12 | 704 | 0.1− | 0.3+ | 2004 03 16 | 699 | 0.7+ | 0.4− | | |
| 2001 09 07 | 683 | (1.8− | 0.7−) | 2002 12 12 | 704 | 0.1+ | 0.8+ | 2004 03 16 | 699 | 0.3− | 0.7+ | | |
| 2001 09 07 | 683 | (0.2− | 1.8−) | 2003 01 29 | 645 | 0.0 | 0.2− | 2005 04 09 | E12 | 0.5+ | 0.5− | | |
| 2001 09 09 | 699 | 0.2+ | 0.5+ | 2003 01 29 | 645 | 0.0 | 0.2− | 2005 04 09 | E12 | 0.1+ | 0.5− | | |
| 2001 09 09 | 699 | 0.5+ | 0.2+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2005 04 09 | E12 | 0.5+ | 0.0 | | |
| 2001 09 09 | 699 | 0.1− | 0.2+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2005 04 09 | E12 | 0.6+ | 0.1+ | | |
| 2001 09 09 | 699 | 0.1− | 0.4+ | 2003 12 19 | 704 | 1.0+ | 0.6− | 2005 04 17 | E12 | 0.1+ | 0.2+ | | |
| 2001 09 10 | 683 | (0.2+ | 2.7+) | 2003 12 19 | 704 | 0.7+ | 0.4+ | 2005 04 17 | E12 | 0.7+ | 0.2+ | | |
| 2001 09 10 | 683 | 0.6− | 0.8+ | 2003 12 19 | 704 | 0.7+ | 0.3+ | 2005 04 17 | E12 | 0.0 | 0.2+ | | |
| 2001 09 10 | 683 | 1.1+ | 0.7− | 2004 01 16 | 644 | 0.5+ | 0.2+ | 2005 04 19 | I10 | (0.5+ | 2.0+) | | |
| 2001 09 12 | 683 | 0.1+ | 0.5+ | 2004 01 16 | 644 | 0.5+ | 0.3+ | 2005 04 19 | I10 | 0.7+ | 0.8+ | | |
| 2001 09 12 | 683 | (1.8− | 1.5+) | 2004 01 16 | 644 | 0.4+ | 0.1+ | 2005 04 19 | I10 | (0.6+ | 1.7−) | | |
| 2001 09 14 | 644 | 0.2+ | 0.5+ | 2004 01 22 | 704 | 0.7+ | 1.4+ | 2006 08 23 | 644 | 0.6− | 0.4+ | | |
| 2001 09 14 | 644 | 0.4+ | 0.5+ | 2004 01 22 | 704 | 0.5+ | 1.4+ | 2006 08 23 | 644 | 0.8− | 0.5+ | | |
| 2001 09 14 | 644 | 0.5+ | 0.8+ | 2004 01 22 | 704 | 0.4+ | 0.9+ | 2006 08 23 | 644 | 0.9− | 0.8+ | | |
| 2001 09 16 | 704 | 0.6− | 0.5+ | 2004 01 22 | 704 | (1.4+ | 2.0+) | 2006 09 15 | 644 | 0.4− | 0.3+ | | |
| 2001 09 16 | 704 | 0.7− | 0.1+ | 2004 01 22 | 704 | 0.3+ | 0.9+ | 2006 09 15 | 644 | 0.5− | 0.4+ | | |
| 2001 09 16 | 704 | 0.5− | 0.1− | 2004 01 26 | 699 | 0.5− | 0.4+ | 2006 09 15 | 644 | 0.4+ | 0.5+ | | |
| 2001 09 16 | 704 | 1.2− | 0.7− | 2004 01 26 | 699 | 0.0 | 0.9+ | 2006 11 01 | G96 | 0.1+ | 0.1− | | |
| 2001 09 18 | 683 | (0.2− | 1.8+) | 2004 01 26 | 699 | 0.8+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5+ | | |
| 2001 09 18 | 683 | 1.4− | 0.6− | 2004 01 26 | 699 | 0.2− | 0.5− | 2006 11 01 | G96 | 0.3+ | 0.2+ | | |
| 2001 09 18 | 683 | 0.5− | 0.9− | 2004 01 30 | 704 | 0.0 | 1.4+ | 2006 11 01 | G96 | 0.6− | 0.5− | | |

**(139624)∗ 2001 QX$_{146}$**

Discovered 2001 Aug. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.18466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22592443 | $\omega$ | 287.79977 | | +0.96455377 | +0.07067396 | |
| $a$ | 2.6698934 | $\Omega$ | 68.76791 | | +0.06037093 | +0.87881798 | |
| $e$ | 0.1160766 | $i$ | 15.82863 | | −0.25688786 | +0.47189421 | |
| $P$ | 4.36 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 0.1+ | 0.1+ | 2005 07 05 | E12 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.6− |
| 1999 02 18 | 704 | 0.0 | 0.1+ | 2005 07 05 | E12 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.1− |
| 1999 02 18 | 704 | 0.4+ | 0.0 | 2006 09 16 | 703 | (0.7− | 1.6−) | 2006 11 18 | 704 | 0.8+ | 0.9− |
| 1999 02 18 | 704 | 0.5+ | 0.0 | 2006 09 16 | 703 | 0.7− | 0.6− | 2006 11 18 | 704 | 0.4− | 0.2− |
| 2001 07 22 | 644 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2001 07 22 | 644 | 0.1− | 0.7+ | 2006 09 16 | 703 | 1.1+ | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2001 07 22 | 644 | 0.2− | 0.6+ | 2006 09 23 | 104 | 0.3+ | 0.7− | 2006 11 21 | 704 | 0.4+ | 0.9+ |
| 2001 08 20 | 644 | 0.4− | 0.2− | 2006 09 23 | 104 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 1.1− | 0.6+ |
| 2001 08 20 | 644 | 0.3− | 0.5− | 2006 09 23 | 104 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 1.2+ |
| 2001 08 20 | 644 | 0.4− | 0.2− | 2006 09 23 | 104 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2001 08 26 | 644 | 0.6+ | 0.5− | 2006 10 01 | 703 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 08 26 | 644 | 0.4+ | 0.2− | 2006 10 01 | 703 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 08 26 | 644 | 0.6+ | 0.5− | 2006 10 01 | 703 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 644 | 0.2− | 0.3+ | 2006 10 01 | 703 | 1.2+ | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2001 09 21 | 644 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 1.4− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.6− | 0.5− | 2006 10 23 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.3− | 0.2− |
| 2002 12 05 | 704 | 1.4− | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2003 01 13 | 704 | 0.3+ | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.4− | 0.7− |
| 2003 01 13 | 704 | 0.9+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 1.7+ | 1.1− |
| 2003 01 13 | 704 | 0.2− | 0.8+ | 2006 11 02 | 703 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 01 13 | 704 | 0.6+ | 0.1− | 2006 11 02 | 703 | 1.2− | 0.2− | 2006 11 27 | 703 | 0.5− | 0.4− |
| 2005 06 07 | E12 | 0.3+ | 0.5+ | 2006 11 02 | 703 | 0.6− | 0.7− | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2005 06 07 | E12 | 0.5− | 0.4+ | 2006 11 02 | 703 | 0.6− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2005 06 07 | E12 | 0.1+ | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.5− | 2006 12 01 | 691 | 0.2+ | 0.3+ |
| 2005 06 07 | E12 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.1+ | 0.3+ |
| 2005 07 05 | E12 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.5− | | | | |

**(139625)∗ 2001 QF$_{149}$**

Discovered 2001 Aug. 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.50780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22648590 | $\omega$ | 356.79769 | | +0.95390500 | −0.29956468 | |
| $a$ | 2.6654790 | $\Omega$ | 20.66151 | | +0.27646934 | +0.85376021 | |
| $e$ | 0.0946079 | $i$ | 2.93426 | | +0.11674737 | +0.42585738 | |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.5− | 0.5− | 2004 03 24 | 699 | 0.8+ | 0.5− | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 1995 02 25 | 691 | 0.3− | 0.7− | 2004 03 24 | 699 | (1.0− | 2.6+) | 2006 11 11 | 703 | 0.5− | 0.4− |
| 1995 02 25 | 691 | 0.1− | 1.0− | 2004 03 26 | 291 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 1995 03 26 | 691 | 0.0 | 0.5+ | 2004 03 26 | 291 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.9+ |
| 1995 03 26 | 691 | 0.4+ | 0.8+ | 2004 03 26 | 291 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.3+ |
| 1995 03 26 | 691 | 0.4+ | 0.0 | 2004 03 26 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2000 04 05 | 691 | 0.6− | 0.0 | 2004 03 26 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2000 04 05 | 691 | 0.5− | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2000 04 05 | 691 | 0.8− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.7− | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2001 08 08 | 608 | 1.1+ | 0.7− | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2001 08 08 | 608 | 0.7+ | 0.2− | 2004 03 27 | 704 | 0.1+ | 0.7− | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2001 08 08 | 608 | 0.3+ | 0.3− | 2004 03 27 | 704 | 0.3− | 0.7− | 2006 11 19 | 704 | 1.0+ | 1.3+ |
| 2001 08 21 | 608 | 0.1+ | 0.0 | 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.5+ |
| 2001 08 21 | 608 | 0.7+ | 0.3− | 2004 04 22 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2001 08 21 | 608 | 0.3+ | 0.0 | 2004 04 22 | 691 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2001 08 26 | 608 | 0.2− | 0.8+ | 2006 07 22 | G96 | 0.7+ | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2001 08 26 | 608 | 0.8− | 0.6+ | 2006 07 22 | G96 | 1.5− | 0.9+ | 2006 11 20 | G96 | 0.2− | 0.2− |
| 2001 08 26 | 608 | 0.1+ | 0.9+ | 2006 07 22 | G96 | 0.2+ | 1.0− | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 0.4− | 0.6− | 2006 07 22 | G96 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2002 12 06 | 704 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 12 06 | 704 | 0.5− | 0.8+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2004 03 18 | 704 | 0.9+ | 0.8+ | 2006 10 20 | 691 | 0.4+ | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 1.7+ | 0.3+ |
| 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.6− | 0.2+ |
| 2004 03 18 | 704 | 1.3+ | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.0 |
| 2004 03 18 | 704 | (1.8+ | 0.8+) | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4− | 0.8+ |
| 2004 03 22 | 704 | 0.6+ | 1.1+ | 2006 10 21 | 644 | 0.5− | 0.2− | 2006 11 29 | 704 | 0.1− | 1.1− |
| 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.7+ |
| 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 2.1− |
| 2004 03 22 | 704 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.7− | 0.8− |
| 2004 03 24 | 699 | 0.3− | 1.3− | 2006 11 11 | 703 | 0.1+ | 0.6− | | | | |
| 2004 03 24 | 699 | 1.2− | 1.0− | 2006 11 11 | 703 | 0.3− | 0.3− | | | | |

**(139626)∗ 2001 QF$_{150}$**

Discovered 2001 Aug. 25 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.62303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23600116 | $\omega$ | 224.80738 | | +0.72033231 | +0.68701227 | |
| $a$ | 2.5933430 | $\Omega$ | 91.54180 | | −0.60657935 | +0.69075680 | |
| $e$ | 0.2868975 | $i$ | 5.48669 | | −0.33642661 | +0.22554198 | |
| $P$ | 4.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 21 | 691 | 0.2− | 0.1+ | 2001 09 27 | 644 | 0.6− | 0.4+ | 2005 07 07 | 699 | 0.9− | 0.3+ |
| 1996 04 21 | 691 | 0.1− | 0.0 | 2001 09 27 | 644 | 0.6− | 0.2+ | 2005 07 07 | 699 | 0.1+ | 1.2+ |
| 1996 04 21 | 691 | 0.1+ | 0.4− | 2001 09 27 | 644 | 0.7− | 0.5+ | 2005 07 29 | 644 | 0.2− | 0.2+ |
| 2001 08 04 | 644 | 0.2− | 0.5+ | 2001 10 16 | 704 | 0.1− | 0.8− | 2005 07 29 | 644 | 0.3− | 0.3+ |
| 2001 08 04 | 644 | 0.5− | 0.7+ | 2001 10 16 | 704 | 0.6+ | 0.4− | 2005 07 29 | 644 | 0.3− | 0.2+ |
| 2001 08 04 | 644 | 0.1− | 0.7+ | 2001 10 16 | 704 | 0.6+ | 0.3− | 2005 08 28 | 699 | 0.4− | 0.3+ |
| 2001 08 20 | 704 | 0.7+ | 0.0 | 2001 10 16 | 704 | 0.9+ | 0.5− | 2005 08 28 | 699 | 0.2− | 0.3+ |
| 2001 08 20 | 704 | 0.3− | 0.2+ | 2001 10 16 | 704 | 0.8+ | 0.6− | 2005 08 28 | 699 | 0.1+ | 0.3+ |
| 2001 08 20 | 704 | 0.2+ | 0.3+ | 2001 10 16 | 644 | 0.6− | 0.0 | 2005 08 28 | 699 | 0.4− | 0.3+ |
| 2001 08 24 | 683 | 1.4− | 0.9+ | 2001 10 16 | 644 | 0.6− | 0.1− | 2005 08 28 | E12 | 0.5− | 0.2− |
| 2001 08 24 | 683 | 0.9− | 0.3− | 2001 10 16 | 644 | 0.6− | 0.1− | 2005 08 28 | E12 | 0.1− | 0.1+ |
| 2001 08 24 | 683 | (0.8− | 2.8+) | 2001 10 19 | 699 | 0.1− | 1.0+ | 2005 08 28 | E12 | 0.3− | 0.1− |
| 2001 08 25 | 644 | 0.4− | 0.2− | 2001 10 19 | 699 | 0.3+ | 0.0 | 2005 08 28 | E12 | 0.4− | 0.1− |
| 2001 08 25 | 644 | 0.5− | 0.0 | 2001 10 19 | 699 | 0.0 | 0.2− | 2005 09 13 | 703 | 0.2+ | 0.0 |
| 2001 08 25 | 644 | 0.3− | 0.1− | 2001 10 19 | 699 | 0.5− | 0.8− | 2005 09 13 | 703 | 0.1+ | 0.3− |
| 2001 08 26 | 644 | 0.3− | 0.2− | 2001 10 20 | 704 | 0.6+ | 0.0 | 2005 09 13 | 703 | 0.5+ | 0.0 |
| 2001 08 26 | 644 | 0.3− | 0.2− | 2001 10 20 | 704 | 0.6+ | 0.2− | 2005 09 13 | 703 | 0.2− | 0.1− |
| 2001 08 26 | 644 | 0.2− | 0.2− | 2001 10 20 | 704 | 0.3+ | 0.0 | 2005 09 13 | 703 | 1.1+ | 0.2− |
| 2001 08 27 | 644 | 1.4+ | 0.7− | 2001 10 20 | 704 | 0.3+ | 0.2− | 2005 09 13 | 703 | 0.5− | 0.1− |
| 2001 08 27 | 644 | 1.2+ | 0.6− | 2001 10 22 | 704 | 0.6− | 0.4+ | 2005 09 13 | 703 | 0.4− | 0.1− |
| 2001 08 27 | 644 | 1.4+ | 0.8− | 2001 10 22 | 704 | 0.4− | 0.2+ | 2005 09 13 | 703 | 0.2+ | 0.1− |
| 2001 09 03 | 644 | 0.3− | 0.3+ | 2001 10 22 | 704 | 0.7− | 0.0 | 2005 09 26 | 703 | (0.3+ | 2.0−) |
| 2001 09 03 | 644 | 0.2− | 0.1+ | 2001 10 22 | 704 | 0.3− | 0.1− | 2005 09 26 | 704 | 0.8+ | 0.2− |
| 2001 09 03 | 644 | 0.5− | 0.3− | 2001 10 24 | 704 | 0.8− | 0.2− | 2005 09 26 | 703 | (0.8+ | 1.7−) |
| 2001 09 12 | 644 | 0.2+ | 0.4+ | 2001 10 24 | 704 | 0.3− | 0.2+ | 2005 09 26 | 704 | (0.6+ | 2.4−) |
| 2001 09 12 | 644 | 0.3− | 0.3+ | 2001 10 24 | 704 | 0.7− | 1.3+ | 2005 09 26 | 703 | 0.3+ | 0.3− |
| 2001 09 12 | 644 | 0.1− | 0.6+ | 2001 11 18 | 704 | 0.0 | 0.2+ | 2005 09 26 | 704 | 0.0 | 0.0 |
| 2001 09 16 | 644 | 0.4− | 0.3+ | 2001 11 18 | 645 | 0.2+ | 0.2− | 2005 09 26 | 703 | 0.1− | 0.3− |
| 2001 09 16 | 704 | 0.0 | 0.0 | 2001 11 18 | 704 | 0.9− | 0.6+ | 2005 09 26 | 704 | 0.0 | 0.5− |
| 2001 09 16 | 644 | 0.5− | 0.4+ | 2001 11 18 | 645 | 0.2+ | 0.1− | 2005 09 26 | 704 | 1.0− | 1.1− |
| 2001 09 16 | 644 | 0.3− | 0.5+ | 2001 11 18 | 704 | (0.1− | 1.6+) | 2005 10 25 | 704 | 0.8+ | 0.4+ |
| 2001 09 16 | 704 | 0.2+ | 0.2+ | 2001 12 07 | 704 | 0.3− | 1.1− | 2005 10 25 | 704 | 0.5+ | 0.2+ |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2001 12 07 | 704 | 0.2+ | 0.5− | 2005 10 25 | 704 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.5+ | 0.2− | 2001 12 07 | 704 | (0.2− | 1.9−) | 2005 10 25 | 704 | 0.5+ | 1.3+ |
| 2001 09 16 | 704 | 0.1+ | 0.2+ | 2001 12 07 | 704 | 0.7+ | 1.1− | 2005 10 25 | 704 | 0.6+ | 0.5+ |
| 2001 09 17 | 699 | 0.0 | 0.1− | 2001 12 07 | 704 | 0.8+ | 0.6− | 2005 12 06 | 703 | (2.1− | 0.4−) |
| 2001 09 17 | 699 | 0.6− | 0.3+ | 2001 12 15 | 209 | 0.7− | 1.3+ | 2005 12 06 | 703 | 0.5− | 1.5+ |
| 2001 09 17 | 699 | 0.3+ | 0.1+ | 2001 12 15 | 209 | 0.8− | 0.1+ | 2005 12 06 | 703 | 0.0 | 0.4− |
| 2001 09 17 | 699 | (2.1+ | 0.9−) | 2001 12 15 | 209 | 0.2− | 0.6− | 2005 12 06 | 703 | 0.3+ | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2002 12 31 | 291 | 0.4− | 1.0+ | 2006 10 29 | G96 | 0.3− | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2002 12 31 | 291 | 0.4+ | 0.9+ | 2006 10 29 | G96 | 0.3+ | 0.1− |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2002 12 31 | 291 | 0.3+ | 0.4+ | 2006 10 29 | G96 | 0.3+ | 0.4− |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 1.2+ | 0.1+ | 2006 10 29 | G96 | 0.2+ | 0.3− |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 11 27 | G96 | 0.5− | 0.4− |
| 2001 09 21 | 704 | 0.3+ | 0.7+ | 2004 03 20 | 704 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.7− | 0.5− |
| 2001 09 21 | 704 | 0.8− | 0.6− | 2004 03 20 | 704 | (1.7+ | 0.3−) | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2005 07 07 | 699 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.3+ | 0.4+ | 2005 07 07 | 699 | 0.2− | 0.4+ | | | | |

**(139627)∗ 2001 QO$_{150}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.43439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.40233647 | $\omega$ | 345.48501 | | −0.99394711 | −0.06877885 | |
| $a$ | 1.8172295 | $\Omega$ | 191.63260 | | +0.06715507 | −0.99750659 | |
| $e$ | 0.0352414 | $i$ | 25.14146 | | −0.08694443 | +0.01581365 | |
| $P$ | 2.45 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 704 | 0.3− | 0.2+ | 2001 09 24 | 704 | 0.7− | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.9+ |
| 1998 04 28 | 704 | 1.1+ | 0.3− | 2001 09 24 | 704 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.2− |
| 1998 04 28 | 704 | 0.7+ | 0.6− | 2001 09 24 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.3− |
| 1998 04 28 | 704 | (2.1+ | 2.1+) | 2001 09 24 | 704 | 0.1+ | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 1998 04 28 | 704 | 1.0− | 0.4− | 2001 09 25 | 704 | 0.1+ | 0.3− | 2006 09 15 | 691 | (3.6+ | 2.4−) |
| 2001 08 22 | 704 | 0.1+ | 0.2− | 2001 09 25 | 704 | 0.2+ | 0.2− | 2006 09 16 | 644 | 0.3+ | 0.1+ |
| 2001 08 22 | 704 | 0.7+ | 0.7+ | 2001 09 25 | 704 | 0.1+ | 0.2− | 2006 09 16 | 644 | 0.0 | 0.3+ |
| 2001 08 22 | 704 | 0.7+ | 0.2+ | 2001 09 25 | 704 | 0.0 | 0.7− | 2006 09 16 | 644 | 0.1+ | 0.5+ |
| 2001 08 22 | 704 | (0.6+ | 1.7+) | 2001 09 25 | 704 | 0.1− | 0.4− | 2006 09 27 | 704 | 0.5+ | 0.6+ |
| 2001 08 22 | 704 | 0.7+ | 1.2+ | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.3− | 0.4+ |
| 2001 08 26 | 699 | 1.0− | 0.0 | 2001 10 14 | 645 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.8+ |
| 2001 08 26 | 699 | 0.2+ | 0.8+ | 2001 10 15 | 645 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2001 08 26 | 699 | 0.8+ | 0.9− | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.8+ | 0.6+ |
| 2001 08 26 | 699 | 0.3+ | 0.1+ | 2001 10 21 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2001 08 27 | 704 | 0.7+ | 0.3− | 2001 10 21 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2001 08 27 | 704 | 0.1+ | 0.2− | 2001 10 21 | 704 | 0.2+ | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2001 08 27 | 704 | 0.7+ | 0.5+ | 2001 10 21 | 704 | 0.6+ | 0.9− | 2006 10 22 | 703 | 1.0− | 0.4+ |
| 2001 08 27 | 704 | 0.7− | 0.3+ | 2001 10 21 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.1− | 0.2− |
| 2001 08 27 | 704 | 0.1+ | 1.1− | 2001 10 24 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.1+ |
| 2001 09 10 | 704 | 0.1+ | 0.3+ | 2001 10 24 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 09 10 | 704 | 0.1+ | 0.3− | 2001 10 24 | 704 | 0.0 | 0.3− | 2006 10 22 | 703 | 1.1− | 0.0 |
| 2001 09 10 | 704 | 0.5− | 0.1− | 2003 05 29 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 09 10 | 699 | 1.0− | 0.5− | 2003 05 29 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2001 09 10 | 704 | 0.3− | 0.3+ | 2003 06 21 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.8+ | 0.7+ |
| 2001 09 10 | 704 | 0.0 | 0.0 | 2003 06 21 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.6+ | 0.2+ |
| 2001 09 10 | 699 | 0.5− | 0.9− | 2003 06 22 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2001 09 10 | 699 | 0.5− | 0.6− | 2003 06 22 | 645 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.7+ | 0.1− |
| 2001 09 10 | 699 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.5− | | | | |
| 2001 09 24 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.6− | | | | |

**(139628)∗ 2001 QQ$_{151}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.60026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24523901 | $\omega$ | 320.91702 | | +0.43926387 | −0.89403167 | |
| $a$ | 2.5278017 | $\Omega$ | 102.86570 | | +0.84522196 | +0.37807974 | |
| $e$ | 0.1383193 | $i$ | 5.18248 | | +0.30437986 | +0.24033953 | |
| $P$ | 4.02 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 910 | 0.1− | 0.6− | 2003 01 09 | 704 | 1.2+ | 1.4+ | 2005 07 28 | 644 | 0.5+ | 0.7+ |
| 1998 12 22 | 910 | 0.2+ | 1.4− | 2003 01 09 | 704 | (2.0+ | 0.4−) | 2005 08 31 | 644 | 0.1+ | 0.2+ |
| 1998 12 22 | 910 | 0.7+ | 0.9− | 2003 01 28 | 608 | 0.8− | 1.1− | 2005 08 31 | 644 | 0.1− | 0.1+ |
| 2001 08 01 | 644 | 0.8− | 0.5+ | 2003 01 28 | 608 | 0.6− | 0.7− | 2005 08 31 | 644 | 0.1+ | 0.2+ |
| 2001 08 01 | 644 | 0.8− | 0.6+ | 2003 01 28 | 608 | 0.7− | 0.3− | 2005 08 31 | 644 | 0.1− | 0.1+ |
| 2001 08 01 | 644 | 0.9− | 0.1+ | 2003 01 30 | 699 | 0.8− | 0.6+ | 2005 08 31 | 644 | 0.4− | 0.0 |
| 2001 08 25 | 704 | 0.9− | 0.6− | 2003 01 30 | 699 | 0.4+ | 1.1+ | 2005 08 31 | 644 | 0.3− | 0.2+ |
| 2001 08 25 | 704 | 0.1− | 0.1− | 2003 01 30 | 699 | 0.8+ | 0.4+ | 2005 09 06 | 649 | 0.5− | 0.1− |
| 2001 08 25 | 704 | 0.1− | 1.2− | 2003 01 30 | 699 | 0.8+ | 0.1+ | 2005 09 06 | 649 | 0.5+ | 0.1+ |
| 2001 08 27 | 704 | (0.3+ | 2.0+) | 2003 02 01 | 704 | 0.8− | 0.8+ | 2005 09 06 | 649 | 0.1+ | 0.6+ |
| 2001 08 27 | 704 | (1.2+ | 1.8+) | 2003 02 01 | 704 | 1.4− | 0.2− | 2006 10 17 | G96 | 0.2− | 0.3− |
| 2001 08 27 | 704 | 0.5+ | 0.6+ | 2003 02 01 | 704 | 0.1− | 1.0− | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2001 08 27 | 704 | (0.8+ | 2.0+) | 2003 02 04 | 704 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.7+ | 1.4+ | 2003 02 04 | 704 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.3− |
| 2001 09 16 | 704 | 0.8+ | 0.2+ | 2003 02 04 | 704 | 0.1+ | 1.1+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2001 09 16 | 704 | 0.4+ | 0.3− | 2003 02 04 | 704 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.7− |
| 2001 09 16 | 704 | 0.3+ | 0.5− | 2003 02 07 | 704 | 1.3+ | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.7− |
| 2001 09 16 | 704 | 0.5− | 0.3+ | 2003 02 07 | 704 | 0.8− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 0.9+ | 1.0+ | 2003 02 07 | 704 | 1.2− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.8+ | 0.0 | 2003 02 07 | 704 | 0.4+ | 1.5+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.3+ | 1.0+ | 2005 07 28 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.5− |
| 2003 01 09 | 704 | 0.0 | 0.8+ | 2005 07 28 | 644 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.3− |

**(139629)∗ 2001 QO$_{152}$**

Discovered 2001 Aug. 26 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.51030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21188421 | $\omega$ | 156.58905 | | +0.98297123 | +0.18292117 | |
| $a$ | 2.7865723 | $\Omega$ | 192.90784 | | −0.17855520 | +0.92822841 | |
| $e$ | 0.1781712 | $i$ | 4.50164 | | −0.04342346 | +0.32393188 | |
| $P$ | 4.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.2− | 0.0 | 2001 09 22 | 704 | 1.2+ | 0.7+ | 2001 11 20 | 704 | (0.4+ | 1.5+) |
| 1994 02 10 | 691 | 0.1+ | 0.1− | 2001 09 22 | 704 | 0.2− | 0.1− | 2001 11 20 | 704 | 0.6+ | 1.4+ |
| 1994 02 10 | 691 | 0.0 | 0.1+ | 2001 09 23 | 704 | 0.3+ | 1.0+ | 2001 11 20 | 704 | (0.1+ | 1.6+) |
| 2001 08 26 | 333 | 0.3− | 0.4− | 2001 09 23 | 704 | 0.6+ | 0.8+ | 2001 12 10 | 645 | 0.2+ | 0.2− |
| 2001 08 26 | 333 | 0.1− | 0.7+ | 2001 09 23 | 704 | 0.1+ | 1.0+ | 2001 12 10 | 645 | 0.1+ | 0.1− |
| 2001 08 27 | 699 | 0.1− | 0.2+ | 2001 09 23 | 704 | 0.3+ | 0.5+ | 2004 03 26 | 691 | 0.1+ | 0.2+ |
| 2001 08 27 | 333 | 0.2− | 0.5+ | 2001 09 23 | 704 | 0.7+ | 0.6+ | 2004 03 26 | 691 | 0.0 | 0.5+ |
| 2001 08 27 | 699 | 0.5− | 0.4− | 2001 09 24 | 704 | 0.4+ | 0.1− | 2004 03 26 | 691 | 0.1+ | 0.6+ |
| 2001 08 27 | 699 | 0.8− | 0.3+ | 2001 09 24 | 704 | 0.3+ | 0.1+ | 2004 04 22 | 691 | 0.3+ | 0.4+ |
| 2001 08 27 | 699 | 0.3− | 0.6+ | 2001 09 24 | 704 | 0.2+ | 0.0 | 2004 04 22 | 691 | 0.7+ | 0.4+ |
| 2001 08 27 | 333 | 0.2− | 0.1+ | 2001 09 24 | 704 | 0.3+ | 0.1− | 2004 04 22 | 691 | 0.1− | 0.7+ |
| 2001 09 10 | 699 | 0.8+ | 0.8+ | 2001 09 24 | 704 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2001 09 10 | 699 | 0.4− | 0.6+ | 2001 09 25 | 699 | 0.5− | 0.7+ | 2006 10 16 | 703 | (0.2+ | 1.9+) |
| 2001 09 10 | 699 | 0.5− | 0.3+ | 2001 09 25 | 699 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.7+ | 0.2− |
| 2001 09 10 | 699 | 0.2+ | 0.2+ | 2001 09 25 | 699 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2001 09 11 | 699 | 1.4+ | 0.2+ | 2001 09 25 | 699 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2001 09 11 | 699 | 0.1+ | 0.6+ | 2001 10 13 | 704 | 0.7+ | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.6− |
| 2001 09 11 | 699 | 1.1+ | 1.2+ | 2001 10 13 | 704 | 1.0+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.7− |
| 2001 09 11 | 699 | 0.3+ | 0.8+ | 2001 10 13 | 704 | 0.5+ | 0.0 | 2006 10 17 | G96 | 0.4− | 0.3− |
| 2001 09 16 | 704 | 1.5− | 0.4− | 2001 10 13 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 1.2− | 0.2− | 2001 10 13 | 704 | 0.0 | 0.4− | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 1.2− | 0.1− | 2001 10 14 | 645 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 1.3− | 0.4− | 2001 10 14 | 645 | 0.1+ | 0.3− | 2006 11 13 | 703 | 1.0− | 0.2+ |
| 2001 09 17 | 683 | 0.9+ | 0.1+ | 2001 10 17 | 644 | (0.3+ | 1.7+) | 2006 11 13 | 703 | 0.2+ | 0.6− |
| 2001 09 17 | 683 | 0.3+ | 0.2− | 2001 10 17 | 644 | (0.1+ | 1.7+) | 2006 11 13 | 703 | 0.6− | 0.1+ |
| 2001 09 17 | 683 | (1.0− | 2.5−) | 2001 10 17 | 644 | (0.4+ | 1.7+) | 2006 11 13 | 703 | 0.5+ | 0.7+ |
| 2001 09 18 | 699 | 0.5− | 1.1+ | 2001 10 17 | 644 | 0.2+ | 1.2+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 09 18 | 699 | 0.7− | 0.4− | 2001 10 17 | 644 | 0.6+ | 1.3+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2001 09 18 | 699 | 0.1− | 0.1+ | 2001 10 17 | 644 | 0.2+ | 1.2+ | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2001 09 18 | 699 | 0.1+ | 0.3− | 2001 10 20 | 704 | 1.0− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 09 19 | 683 | 1.3− | 1.3+ | 2001 10 20 | 704 | 1.0− | 0.2− | 2006 11 20 | 704 | 0.4− | 0.7+ |
| 2001 09 19 | 683 | 1.1− | 0.2+ | 2001 10 20 | 704 | 1.0− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 1.1+ |
| 2001 09 19 | 683 | 0.2− | 0.6+ | 2001 10 20 | 704 | 1.4− | 0.6+ | 2006 11 20 | 704 | 0.4+ | 0.4+ |
| 2001 09 20 | 704 | 0.5− | 0.3− | 2001 10 20 | 704 | 1.0− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.6+ |
| 2001 09 20 | 704 | 0.4+ | 0.3− | 2001 10 24 | 704 | 0.8− | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.8− | 1.0− | 2001 10 24 | 704 | 1.3− | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.8+ |
| 2001 09 20 | 704 | 0.0 | 0.7− | 2001 10 24 | 704 | 0.2− | 0.6− | 2006 11 28 | 704 | 0.7+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.7− | 2001 10 24 | 704 | 0.4− | 0.4− | 2006 11 28 | 704 | 0.4+ | 1.2+ | | |
| 2001 09 22 | 704 | 0.1− | 0.2+ | 2001 11 20 | 704 | 0.4+ | 0.7+ | 2006 11 28 | 704 | 0.6− | 0.8+ | | |
| 2001 09 22 | 704 | 0.1+ | 0.6+ | 2001 11 20 | 704 | 0.9− | 0.8+ | 2006 11 28 | 704 | 1.3− | 1.9+ | | |

**(139630)∗ 2001 QY$_{155}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.65118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22156871 | $\omega$ | 125.53802 | | +0.51990690 | +0.85420508 | |
| $a$ | 2.7047706 | $\Omega$ | 175.77666 | | −0.80600827 | +0.49269331 | |
| $e$ | 0.2326849 | $i$ | 4.30135 | | −0.28292666 | +0.16609331 | |
| $P$ | 4.45 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 691 | 0.6+ | 0.5+ | 2001 09 12 | 644 | 0.0 | 0.3+ | 2005 06 11 | 703 | (1.7− | 1.0−) | | |
| 2000 04 24 | 691 | 1.0+ | 0.1+ | 2001 09 12 | 691 | 0.2+ | 0.2+ | 2005 06 11 | 703 | 0.6− | 0.2− | | |
| 2000 04 24 | 691 | 0.6+ | 0.1− | 2001 09 12 | 644 | 0.5− | 0.2+ | 2005 06 16 | 691 | 0.0 | 0.1− | | |
| 2000 05 04 | 645 | 0.1− | 0.2+ | 2001 09 12 | 691 | 0.3+ | 0.3+ | 2005 06 16 | 691 | 0.1+ | 0.0 | | |
| 2000 05 04 | 645 | 0.0 | 0.2+ | 2001 09 12 | 704 | 0.5+ | 0.5− | 2005 06 16 | 691 | 0.0 | 0.0 | | |
| 2000 05 05 | 645 | 0.1− | 0.2+ | 2001 09 12 | 704 | 1.1+ | 0.1+ | 2005 07 03 | 691 | 0.0 | 0.0 | | |
| 2000 05 05 | 645 | 0.1− | 0.2+ | 2001 09 12 | 704 | 0.5+ | 1.1− | 2005 07 03 | 691 | 0.1+ | 0.1− | | |
| 2001 08 16 | 704 | 0.3+ | 0.5+ | 2001 09 12 | 704 | 0.5+ | 0.3− | 2005 07 03 | 691 | 0.1− | 0.3− | | |
| 2001 08 16 | 704 | 1.1− | 0.0 | 2001 09 12 | 704 | (0.7+ | 1.6−) | 2005 07 05 | 644 | 0.1+ | 0.3− | | |
| 2001 08 16 | 704 | 0.6− | 0.4+ | 2001 09 20 | 704 | 1.1− | 1.2+ | 2005 07 05 | 644 | 0.1+ | 0.2− | | |
| 2001 08 16 | 704 | 0.1+ | 0.8+ | 2001 09 20 | 704 | 0.2− | 0.6+ | 2005 07 05 | 644 | 0.4− | 0.1− | | |
| 2001 08 16 | 704 | 0.2− | 0.2+ | 2001 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1− | | |
| 2001 08 23 | 699 | 0.3+ | 0.3+ | 2001 09 20 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.3+ | | |
| 2001 08 23 | 699 | 0.5+ | 1.1+ | 2001 09 22 | 704 | 1.3− | 0.7− | 2006 10 02 | G96 | 0.5+ | 0.2+ | | |
| 2001 08 23 | 699 | 0.5+ | 0.3+ | 2001 09 22 | 704 | 0.6− | 0.6− | 2006 10 02 | G96 | 0.0 | 0.4− | | |
| 2001 08 23 | 699 | 0.5− | 0.1+ | 2001 09 22 | 704 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.5− | 0.0 | | |
| 2001 08 27 | 699 | 0.2+ | 0.1− | 2001 09 22 | 704 | 1.1− | 0.7− | 2006 10 17 | G96 | 0.3− | 0.2+ | | |
| 2001 08 27 | 699 | 0.4− | 0.2− | 2001 09 24 | 644 | 0.8− | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.2− | | |
| 2001 08 27 | 699 | 0.7− | 0.8+ | 2001 09 24 | 644 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.6− | | |
| 2001 08 27 | 699 | 0.2+ | 1.1+ | 2001 09 24 | 644 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.5+ | | |
| 2001 09 07 | 704 | 0.8+ | 0.1− | 2001 10 11 | 644 | 0.8− | 0.7+ | 2006 10 22 | 691 | 0.5− | 0.5+ | | |
| 2001 09 07 | 704 | 0.0 | 0.6− | 2001 10 11 | 644 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.4+ | | |
| 2001 09 07 | 704 | 1.0+ | 0.3− | 2001 10 11 | 644 | 0.7− | 0.5+ | 2006 11 16 | G96 | 1.8+ | 1.4+ | | |
| 2001 09 07 | 699 | 0.1− | 0.9+ | 2005 06 05 | 704 | 0.3+ | 1.2+ | 2006 11 16 | G96 | 1.6+ | 1.5+ | | |
| 2001 09 07 | 699 | 0.5− | 0.4− | 2005 06 05 | 704 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1− | | |
| 2001 09 07 | 699 | 0.2− | 0.0 | 2005 06 05 | 704 | 0.8− | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.1− | | |
| 2001 09 07 | 699 | 0.6+ | 0.1− | 2005 06 05 | 704 | 0.8+ | 0.9+ | 2006 11 16 | G96 | 0.7− | 0.7+ | | |
| 2001 09 12 | 644 | 0.4− | 0.3+ | 2005 06 11 | 703 | 0.6− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.3+ | | |
| 2001 09 12 | 691 | 0.2+ | 0.2+ | 2005 06 11 | 703 | 0.1− | 0.3+ | | | | | | |

**(139631)∗ 2001 QP$_{156}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.61757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21509029 | $\omega$ | 218.22438 | | +0.90865011 | −0.41338668 | |
| $a$ | 2.7588125 | $\Omega$ | 165.83846 | | +0.41714555 | +0.89241448 | |
| $e$ | 0.1855815 | $i$ | 13.92487 | | +0.01856270 | +0.18085311 | |
| $P$ | 4.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.9+ | 1.4+ | 2001 10 13 | 704 | 0.0 | 0.7+ | 2006 09 18 | 703 | 0.2+ | 0.4− | | |
| 2001 07 20 | 699 | 1.3+ | 0.0 | 2001 10 13 | 704 | (0.2+ | 1.6+) | 2006 09 26 | 703 | 0.9+ | 0.5+ | | |
| 2001 07 20 | 699 | 0.2+ | 0.2+ | 2001 10 13 | 704 | 0.3− | 1.2+ | 2006 09 26 | 703 | 0.9+ | 0.5+ | | |
| 2001 07 20 | 699 | 0.2− | 0.3+ | 2001 10 13 | 704 | 0.5+ | 0.9+ | 2006 09 26 | 703 | 0.6+ | 0.2+ | | |
| 2001 08 21 | 807 | 0.1+ | 0.1− | 2001 10 18 | 699 | (1.2− | 2.2+) | 2006 09 26 | 703 | 0.3− | 0.7+ | | |
| 2001 08 21 | 807 | 0.1− | 0.4− | 2001 10 18 | 699 | (1.6+ | 1.7+) | 2006 09 30 | 699 | 0.8+ | 0.0 | | |
| 2001 08 22 | 691 | 0.0 | 0.1+ | 2001 10 18 | 699 | (0.9+ | 2.0+) | 2006 09 30 | 699 | 0.0 | 0.3+ | | |
| 2001 08 22 | 691 | 0.2− | 0.0 | 2001 10 18 | 699 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.2+ | 0.0 | | |
| 2001 08 22 | 691 | 0.0 | 0.2+ | 2001 10 23 | 704 | (2.6+ | 0.8+) | 2006 10 01 | 704 | 0.7+ | 0.8+ | | |
| 2001 08 23 | 699 | 0.3− | 0.2+ | 2001 10 23 | 704 | (1.9+ | 0.4+) | 2006 10 01 | 704 | 0.2+ | 0.7+ | | |
| 2001 08 23 | 699 | 0.6+ | 0.1− | 2001 10 23 | 704 | (2.4+ | 0.7+) | 2006 10 01 | 704 | 0.4− | 1.1+ | | |
| 2001 08 23 | 699 | 0.4− | 0.6+ | 2001 10 23 | 704 | 1.0+ | 1.0+ | 2006 10 01 | 704 | 0.7+ | 0.1+ | | |
| 2001 08 23 | 699 | 0.1− | 0.1+ | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 10 01 | 704 | 1.1+ | 0.6− | | |
| 2001 08 27 | 699 | 0.2− | 0.6+ | 2002 11 13 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.3− | 0.4− | | |
| 2001 08 27 | 699 | 0.5− | 0.8− | 2003 01 02 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.4− | 0.2− | | |
| 2001 08 27 | 699 | 0.4− | 0.2− | 2003 01 02 | 704 | 0.5+ | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.1+ | | |
| 2001 08 27 | 699 | 0.8− | 0.4+ | 2003 01 02 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.3− | | |
| 2001 09 07 | 699 | 0.4− | 0.3+ | 2003 01 02 | 704 | 0.3− | 0.5− | 2006 10 28 | 703 | 0.8− | 0.3− | | |
| 2001 09 07 | 699 | 0.1− | 1.0+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.1+ | | |
| 2001 09 07 | 699 | 0.4− | 0.6+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.2− | 0.3− | | |
| 2001 09 07 | 699 | (1.7+ | 1.4+) | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.2− | 0.3+ | | |
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 10 | 704 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.6− | 0.8+ | 2004 03 22 | 699 | 0.2− | 0.5+ | 2006 11 10 | 704 | 0.3− | 0.2+ | | |
| 2001 09 12 | 704 | 0.6− | 0.6+ | 2004 03 22 | 699 | (2.1− | 1.3+) | 2006 11 10 | 704 | 0.2− | 0.6+ | | |
| 2001 09 12 | 704 | 1.4− | 0.1+ | 2004 03 22 | 699 | 0.1− | 0.3+ | 2006 11 10 | 704 | 0.1− | 0.6− | | |
| 2001 09 12 | 704 | 0.4− | 0.4− | 2004 03 22 | 699 | 1.2+ | 1.3− | 2006 11 16 | 703 | 0.2− | 0.8− | | |
| 2001 09 19 | 645 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.5− | 0.6+ | 2006 11 16 | 703 | 0.3+ | 0.0 | | |
| 2001 09 19 | 645 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.4− | | |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 11 16 | 703 | 0.0 | 0.3− | | |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.4+ | 1.2+ | 2006 11 22 | 704 | 0.3+ | 1.2+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2004 04 15 | 644 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.4− | 0.1− | | |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 644 | 0.3− | 1.0+ | 2006 11 22 | 704 | 0.8− | 0.2+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2004 04 15 | 644 | 0.1− | 0.8+ | 2006 11 22 | 704 | 1.0− | 0.7+ | | |
| 2001 10 11 | 644 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 11 22 | 704 | 2.1− | 0.3− | | |
| 2001 10 11 | 644 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.2− | | | | | | |
| 2001 10 11 | 644 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.7+ | 0.2+ | | | | | | |

**(139632)∗ 2001 QT$_{156}$ = 2000 KL$_{68}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. T. B. Spahr (*MPO* 17915)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.12889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21285236 | $\omega$ | 114.32355 | | +0.99670528 | +0.06689824 | |
| $a$ | 2.7781162 | $\Omega$ | 241.86882 | | −0.07924339 | +0.92373608 | |
| $e$ | 0.1288312 | $i$ | 2.98095 | | +0.01729362 | +0.37714225 | |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 29 | 704 | 0.2− | 0.3+ | 2001 09 23 | 704 | 0.2+ | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.2− | | |
| 2000 05 29 | 704 | 0.2− | 0.7− | 2001 10 11 | 644 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.1− | | |
| 2000 05 29 | 704 | 1.0+ | 0.2− | 2001 10 11 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2000 05 29 | 704 | 0.8+ | 0.4+ | 2001 10 11 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2000 05 29 | 704 | 1.8+ | 0.3+ | 2001 10 19 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2000 06 04 | 691 | 0.0 | 0.2+ | 2001 10 19 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2000 06 04 | 691 | 0.2− | 0.3+ | 2001 10 19 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2000 06 04 | 691 | 0.0 | 0.3+ | 2001 10 21 | 704 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 07 20 | 699 | 0.6+ | 0.3− | 2001 10 21 | 704 | (0.4− | 1.7−) | 2006 10 21 | 703 | 0.2+ | 0.3+ | | |
| 2001 07 20 | 699 | 1.1+ | 0.6− | 2001 10 21 | 704 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.2+ | 0.2− | | |
| 2001 07 20 | 699 | 1.5+ | 0.4− | 2001 10 21 | 704 | 0.0 | 1.2− | 2006 10 21 | 703 | 0.1+ | 0.2+ | | |
| 2001 07 20 | 699 | 0.9+ | 0.2+ | 2004 03 16 | 691 | 0.3− | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.5+ | | |
| 2001 08 12 | 608 | 0.5− | 0.1+ | 2004 03 16 | 691 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2001 08 12 | 608 | 0.8− | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2001 08 12 | 608 | 0.7− | 0.4+ | 2004 03 18 | 704 | 0.9+ | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 08 20 | 704 | 0.4+ | 0.8− | 2004 03 18 | 704 | (1.7+ | 0.2+) | 2006 10 28 | 683 | 0.6+ | 0.6− | | |
| 2001 08 20 | 704 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.7− | 2006 10 28 | 683 | 0.6− | 0.9− | | |
| 2001 08 20 | 704 | 1.4− | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 10 28 | 683 | 0.6− | 0.5+ | | |
| 2001 08 20 | 704 | 1.0− | 0.0 | 2004 03 23 | 691 | 0.3+ | 0.6+ | 2006 10 29 | 704 | 0.4− | 1.0+ | | |
| 2001 08 20 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 29 | 704 | 0.8+ | 0.3− | | |
| 2001 08 23 | 699 | 0.5+ | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 10 29 | 704 | 0.5− | 0.0 | | |
| 2001 08 23 | 699 | 0.2+ | 0.3+ | 2004 04 13 | 691 | 0.6+ | 0.3+ | 2006 10 29 | 704 | 0.1+ | 1.0− | | |
| 2001 08 23 | 699 | 0.5+ | 0.6+ | 2004 04 13 | 691 | 0.6+ | 0.6+ | 2006 10 31 | 683 | 0.6+ | 1.1− | | |
| 2001 08 23 | 699 | 0.4+ | 0.4+ | 2004 04 13 | 691 | 0.5+ | 0.5+ | 2006 10 31 | 683 | 0.2+ | 1.3+ | | |
| 2001 08 27 | 699 | 0.5− | 0.8− | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 31 | 683 | 0.4+ | 0.3− | | |
| 2001 08 27 | 699 | 0.6− | 0.5+ | 2006 09 18 | 699 | (2.5+ | 1.9+) | 2006 11 01 | 691 | 0.1− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.4− | 0.3− | 2006 09 18 | 699 | (3.6+ | 2.0+) | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2001 08 27 | 699 | 0.6− | 0.1+ | 2006 09 25 | 704 | 1.0− | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2001 09 07 | 699 | 0.8+ | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.6+ | 0.5+ |
| 2001 09 07 | 699 | (0.2+ | 1.6+) | 2006 09 25 | 704 | 0.2+ | 0.8+ | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2001 09 07 | 699 | 0.8+ | 0.3− | 2006 09 25 | 704 | 0.6+ | 0.3+ | 2006 11 07 | 644 | 0.3− | 0.3+ |
| 2001 09 07 | 699 | 0.7+ | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 09 08 | 704 | 0.6− | 0.0 | 2006 09 29 | 691 | 0.7+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2001 09 08 | 704 | 0.3− | 0.2− | 2006 09 29 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2001 09 08 | 704 | 1.0− | 0.8+ | 2006 09 29 | 691 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.3− | 0.3+ |
| 2001 09 08 | 704 | 1.1− | 0.1+ | 2006 10 03 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2001 09 08 | 704 | 0.3+ | 0.9+ | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 1.2− | 0.2− |
| 2001 09 12 | 704 | 0.8− | 0.7+ | 2006 10 03 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.3+ |
| 2001 09 12 | 704 | 0.5− | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2001 09 12 | 704 | 0.2− | 0.7+ | 2006 10 10 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.8+ |
| 2001 09 12 | 704 | (0.4− | 1.6+) | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 2001 09 20 | 704 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.4− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 09 22 | 704 | (1.7− | 0.7+) | 2006 10 17 | 703 | 1.0+ | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2001 09 22 | 704 | 0.8− | 0.9+ | 2006 10 17 | 703 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.5− |
| 2001 09 22 | 704 | 1.2− | 0.9+ | 2006 10 17 | 703 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.2− | 1.0+ |
| 2001 09 22 | 704 | (1.8− | 0.9+) | 2006 10 19 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2001 09 22 | 704 | 1.0− | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.9+ |
| 2001 09 23 | 704 | 0.6+ | 0.5+ | 2006 10 19 | 644 | 0.5− | 0.0 | 2006 11 21 | 704 | (0.8+ | 1.6−) |
| 2001 09 23 | 704 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.4+ |

**(139633)∗ 2001 QN$_{157}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.16469 | | (2000.0) | | | |
| $n$ | 0.19783792 | $\omega$ | 49.18314 | | +0.99075017 | −0.10274515 |
| $a$ | 2.9169548 | $\Omega$ | 316.49839 | | +0.04787152 | +0.87587228 |
| $e$ | 0.1523309 | $i$ | 7.39858 | | +0.12697408 | +0.47147765 |
| $P$ | 4.98 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 09 20 | 704 | 0.3+ | 1.1− | 2006 08 28 | 699 | 0.5− | 0.2− |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2001 09 22 | 704 | 0.1− | 0.6− | 2006 08 28 | 699 | 0.1− | 1.0+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 09 22 | 704 | 0.6− | 0.3− | 2006 08 28 | 699 | 0.3− | 0.2+ |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 09 22 | 704 | 0.1+ | 0.7− | 2006 08 30 | 704 | 0.3− | 0.4+ |
| 2001 05 23 | 807 | 0.0 | 0.4+ | 2001 09 22 | 704 | 0.2− | 0.5− | 2006 08 30 | 704 | 0.1− | 0.0 |
| 2001 05 23 | 807 | 0.1+ | 0.4+ | 2001 09 22 | 704 | 0.3− | 0.8− | 2006 08 30 | 704 | 0.5+ | 0.7+ |
| 2001 08 16 | 704 | 0.3− | 0.2+ | 2001 09 23 | 704 | 0.3− | 0.2− | 2006 08 30 | 704 | 0.8+ | 0.5− |
| 2001 08 16 | 704 | 0.7− | 0.9+ | 2001 09 23 | 704 | 0.3+ | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.3+ |
| 2001 08 16 | 704 | 0.4+ | 0.8+ | 2001 09 23 | 704 | 0.1− | 0.5− | 2006 09 01 | 704 | 0.8+ | 1.1− |
| 2001 08 16 | 704 | 0.3+ | 0.8+ | 2002 12 11 | 704 | 0.7− | 0.3+ | 2006 09 01 | 704 | 1.1+ | 0.5+ |
| 2001 08 16 | 704 | 0.4− | 1.3+ | 2002 12 11 | 704 | 0.3− | 1.5+ | 2006 09 01 | 704 | 0.3+ | 0.7+ |
| 2001 08 23 | 699 | 0.8+ | 1.1− | 2002 12 11 | 704 | 1.1+ | 1.4+ | 2006 09 14 | 703 | 0.3+ | 0.2+ |
| 2001 08 23 | 699 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 0.8+ | 0.6+ |
| 2001 08 23 | 699 | 0.2− | 0.3+ | 2006 06 20 | G96 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2001 08 23 | 699 | 0.3+ | 0.1+ | 2006 06 20 | G96 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.8− | 0.3+ |
| 2001 08 27 | 699 | 0.2+ | 0.0 | 2006 06 20 | G96 | 0.0 | 0.2− | 2006 09 18 | 703 | 1.3− | 0.5+ |
| 2001 08 27 | 699 | 0.9+ | 1.9+ | 2006 06 20 | G96 | 0.5− | 0.4− | 2006 09 18 | 703 | 0.2+ | 1.0+ |
| 2001 08 27 | 699 | 0.7− | 0.2+ | 2006 07 25 | 644 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.4− | 0.9− |
| 2001 08 27 | 699 | 0.2− | 0.3+ | 2006 07 25 | 644 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.7+ |
| 2001 09 12 | 704 | 0.3+ | 0.2+ | 2006 07 25 | 644 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.5+ |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2006 08 18 | 699 | 0.8− | 1.9+ | 2006 09 25 | 704 | 0.3+ | 0.7+ |
| 2001 09 12 | 704 | 0.3− | 0.4+ | 2006 08 18 | 699 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.8− | 0.7+ |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2006 08 18 | 699 | 0.1− | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 0.1+ | 0.1− | 2006 08 18 | 699 | 0.5− | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.5− | 0.3− | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.7− | 2006 08 28 | 703 | 0.8− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.0 |

**(139634)∗ 2001 QQ$_{157}$ = 1996 UH$_2$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 17917)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.93745 | | (2000.0) | | | |
| $n$ | 0.18986367 | $\omega$ | 2.61640 | | +0.80297778 | +0.59017973 |
| $a$ | 2.9980680 | $\Omega$ | 320.82313 | | −0.54918992 | +0.67846026 |
| $e$ | 0.1626906 | $i$ | 7.56389 | | −0.23155368 | +0.43746951 |
| $P$ | 5.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.4+ | 0.2+ | 2001 09 12 | 704 | 0.7− | 1.1+ | 2006 08 16 | 644 | 0.2+ | 0.1− |
| 1996 10 04 | 691 | 0.2+ | 0.1− | 2001 09 12 | 704 | 0.4− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.0 |
| 1996 10 04 | 691 | (4.6+ | 7.0−) | 2001 09 12 | 704 | (0.4− | 1.6+) | 2006 08 16 | 644 | 0.0 | 0.1− |
| 1996 10 17 | 691 | 0.1− | 0.1− | 2001 09 12 | 704 | 0.0 | 0.8+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 1996 10 17 | 691 | 0.0 | 0.8− | 2001 09 12 | 704 | 0.4− | 1.3+ | 2006 08 17 | 644 | 0.0 | 0.2− |
| 1996 10 18 | 691 | 0.2− | 0.1− | 2001 09 19 | 645 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 1996 10 18 | 691 | 0.1− | 0.1+ | 2001 09 19 | 645 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.1− | 0.2− |
| 1996 10 18 | 691 | 0.2− | 0.0 | 2001 09 20 | 704 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.2− |
| 2001 07 19 | 699 | 0.4− | 0.7+ | 2001 09 20 | 704 | 0.5− | 0.7+ | 2006 08 17 | 644 | 0.2− | 0.0 |
| 2001 07 19 | 699 | 0.0 | 1.2+ | 2001 09 20 | 704 | 0.7− | 0.3− | 2006 08 17 | 644 | 0.1− | 0.2− |
| 2001 07 19 | 699 | 0.3+ | 0.4+ | 2004 02 13 | 691 | 0.1+ | 0.7+ | 2006 08 18 | 644 | 0.4+ | 0.2+ |
| 2001 07 19 | 699 | 0.5+ | 1.2+ | 2004 02 13 | 691 | 0.5+ | 0.6+ | 2006 08 18 | 644 | 0.3+ | 0.1− |
| 2001 08 16 | 704 | 0.3+ | 0.3+ | 2004 02 13 | 691 | 0.3+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.0 |
| 2001 08 16 | 704 | 0.2− | 0.3+ | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.2− | 0.4− |
| 2001 08 16 | 704 | 0.1+ | 1.3+ | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.0 | 0.2− |
| 2001 08 16 | 704 | 0.2+ | 0.2+ | 2006 08 14 | 644 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.2− | 0.3− |
| 2001 08 23 | 699 | 0.4− | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2001 08 23 | 699 | 0.1+ | 0.7+ | 2006 08 15 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2001 08 23 | 699 | 0.2+ | 0.1− | 2006 08 15 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 08 23 | 699 | 0.7− | 0.3+ | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 08 27 | 699 | 0.2− | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2001 08 27 | 699 | 0.1+ | 0.7+ | 2006 08 15 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.2+ |
| 2001 08 27 | 699 | 0.5− | 1.2+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.3+ |
| 2001 08 27 | 699 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1− |

**(139635)∗ 2001 QS$_{157}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.50094 | | (2000.0) | | | |
| $n$ | 0.21908344 | $\omega$ | 248.98652 | | +0.37936791 | −0.92524347 |
| $a$ | 2.7251873 | $\Omega$ | 178.71313 | | +0.88014726 | +0.36016756 |
| $e$ | 0.0403659 | $i$ | 5.42807 | | +0.28534330 | +0.11917991 |
| $P$ | 4.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.1− | 0.2+ | 2001 09 22 | 704 | 1.4− | 1.2+ | 2006 09 23 | 691 | 0.4− | 0.5+ |
| 1995 03 27 | 691 | 0.1+ | 0.1+ | 2001 09 22 | 704 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.5− | 0.0 |
| 1995 03 27 | 691 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.8+ | 1.0+ | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2000 05 28 | 691 | 0.1− | 0.2− | 2004 03 18 | 704 | 1.0+ | 1.5+ | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2000 05 28 | 691 | 0.2− | 0.3− | 2004 03 18 | 704 | (1.7+ | 0.4+) | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2000 05 28 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | 1.2+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 07 20 | 699 | (1.7+ | 0.6−) | 2004 03 21 | 699 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 07 20 | 699 | (1.1+ | 1.9−) | 2004 03 21 | 699 | 1.0+ | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 07 20 | 699 | 0.2+ | 1.3− | 2004 03 21 | 699 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 1.2− | 0.3+ |
| 2001 07 20 | 699 | 1.3+ | 0.4+ | 2004 03 21 | 699 | (1.8+ | 1.7+) | 2006 10 21 | 703 | 0.6− | 0.6− |
| 2001 08 16 | 704 | 0.7+ | 0.7+ | 2004 03 24 | 699 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 2001 08 16 | 704 | 0.2+ | 0.4− | 2004 03 24 | 699 | 1.2− | 0.4− | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 08 16 | 704 | 0.3− | 0.4+ | 2004 03 24 | 699 | 1.2+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.2+ | 2004 03 24 | 699 | 0.6− | 0.7+ | 2006 10 21 | 703 | 0.4− | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.4− | 1.2+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 08 23 | 699 | 0.1+ | 1.2− | 2004 03 27 | 704 | 0.5+ | 0.9+ | 2006 10 21 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2001 08 23 | 699 | 0.6− | 0.2+ | 2004 03 27 | 704 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | | |
| 2001 08 23 | 699 | 0.9− | 0.1− | 2004 03 29 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.6+ | 0.4+ | | |
| 2001 08 27 | 699 | 0.5− | 0.5+ | 2004 03 29 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− | | |
| 2001 08 27 | 699 | 0.1− | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.2+ | | |
| 2001 08 27 | 699 | 0.1− | 0.2+ | 2004 04 12 | 699 | 1.4− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.0 | | |
| 2001 08 27 | 699 | 0.7− | 0.1+ | 2004 04 12 | 699 | 0.0 | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.0 | | |
| 2001 09 12 | 704 | 0.6− | 0.2+ | 2004 04 12 | 699 | 0.7− | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2004 04 12 | 699 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2001 09 12 | 704 | 1.1− | 0.6+ | 2004 04 19 | 704 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2001 09 12 | 704 | 0.4− | 0.9+ | 2004 04 19 | 704 | 0.3− | 0.6+ | 2006 11 13 | 703 | 0.0 | 0.4+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.6+ | 2004 04 19 | 704 | 0.2− | 0.0 | 2006 11 13 | 703 | 2.0− | 0.2+ | | |
| 2001 09 20 | 704 | 0.8+ | 0.4+ | 2004 04 19 | 704 | 0.3− | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.3+ | | |
| 2001 09 20 | 704 | 1.2+ | 0.5+ | 2004 04 19 | 704 | 0.7− | 0.0 | 2006 11 13 | 703 | 1.7+ | 0.8− | | |
| 2001 09 20 | 704 | 0.6+ | 1.2+ | 2006 09 19 | 691 | 0.4+ | 0.4− | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2001 09 20 | 704 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2001 09 22 | 704 | 1.2+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.1− | | |
| 2001 09 22 | 704 | (0.9− | 1.5+) | 2006 09 23 | 691 | 0.6− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2− | | |

**(139636)∗ 2001 QH$_{159}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.72424 | | (2000.0) | | | |
| $n$ | 0.20504050 | $\omega$ | 232.91221 | | +0.92592414 | −0.37623449 |
| $a$ | 2.8482380 | $\Omega$ | 149.14795 | | +0.36389218 | +0.86490648 |
| $e$ | 0.0667030 | $i$ | 3.72847 | | +0.10122726 | +0.33224145 |
| $P$ | 4.81 | $H$ | 15.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.3+ | 0.6+ | 2001 09 26 | 704 | 0.3+ | 0.7− | 2006 09 17 | 704 | 0.8− | 0.6+ | | |
| 2000 05 27 | 704 | 0.9− | 0.5− | 2001 09 26 | 704 | 0.1− | 0.8+ | 2006 09 17 | 704 | 0.7+ | 0.2− | | |
| 2000 05 27 | 704 | 0.9− | 1.3− | 2001 10 11 | 644 | 0.9− | 1.0+ | 2006 09 17 | 704 | 0.3− | 0.5− | | |
| 2000 05 27 | 704 | 0.6+ | 0.6− | 2001 10 11 | 644 | 1.0− | 1.1+ | 2006 09 17 | 704 | 0.1− | 0.2+ | | |
| 2001 05 26 | 691 | 0.4− | 0.1− | 2001 10 11 | 644 | 1.1− | 1.2+ | 2006 09 18 | 699 | 0.9+ | 0.9+ | | |
| 2001 05 26 | 691 | 0.2− | 0.1− | 2002 12 11 | 704 | 0.2+ | 1.4+ | 2006 09 18 | 699 | 0.8+ | 0.6+ | | |
| 2001 05 26 | 691 | 0.2− | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.5+ | 0.5+ | | |
| 2001 07 19 | 699 | 1.1+ | 0.1+ | 2002 12 11 | 704 | (0.0 | 1.9+) | 2006 09 18 | 699 | 1.0+ | 0.5+ | | |
| 2001 07 19 | 699 | 0.2+ | 0.0 | 2002 12 11 | 704 | 0.2− | 1.3+ | 2006 09 19 | 703 | 0.6+ | 0.1+ | | |
| 2001 07 19 | 699 | 0.3− | 0.1− | 2004 02 16 | 703 | 0.6+ | 0.5+ | 2006 09 19 | 703 | 0.5+ | 0.2− | | |
| 2001 07 19 | 699 | 0.8− | 0.7− | 2004 02 16 | 703 | 1.0− | 1.5− | 2006 09 19 | 703 | 0.7+ | 0.4+ | | |
| 2001 08 23 | 699 | 0.0 | 0.0 | 2004 02 16 | 703 | 0.0 | 0.7+ | 2006 09 19 | 703 | 0.1+ | 0.9+ | | |
| 2001 08 23 | 699 | 0.0 | 1.4+ | 2004 02 16 | 703 | 0.1+ | 0.9+ | 2006 09 20 | 704 | 0.9− | 0.2+ | | |
| 2001 08 23 | 699 | 0.2− | 0.7+ | 2004 02 26 | 695 | 0.0 | 0.5+ | 2006 09 20 | 704 | (0.4+ | 1.6+) | | |
| 2001 08 23 | 699 | 0.1+ | 0.3+ | 2004 02 26 | 695 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.9+ | | |
| 2001 08 27 | 699 | 0.0 | 0.6+ | 2004 03 12 | 644 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.4+ | | |
| 2001 08 27 | 699 | 0.2− | 0.2− | 2004 03 12 | 644 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.5+ | 0.9+ | | |
| 2001 08 27 | 699 | 0.4+ | 0.7+ | 2004 03 12 | 644 | 0.6+ | 0.7+ | 2006 09 22 | 704 | 0.4+ | 0.2− | | |
| 2001 08 27 | 699 | 0.3− | 0.2− | 2004 03 15 | 703 | 0.4+ | 0.1− | 2006 09 22 | 704 | (0.6+ | 1.9+) | | |
| 2001 08 30 | 644 | 1.2+ | 1.3− | 2004 03 15 | 703 | 0.4+ | 0.6+ | 2006 09 22 | 704 | (1.6+ | 0.9+) | | |
| 2001 08 30 | 644 | 1.0+ | 0.5− | 2004 03 15 | 703 | 0.3− | 0.9+ | 2006 09 22 | 704 | (0.7+ | 1.7+) | | |
| 2001 08 30 | 644 | 1.0+ | 0.3− | 2004 03 15 | 703 | 0.5− | 0.7+ | 2006 09 22 | 704 | (1.7+ | 1.8+) | | |
| 2001 09 07 | 704 | 0.3+ | 0.1+ | 2004 03 16 | 704 | 0.6+ | 0.9+ | 2006 09 26 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 07 | 704 | 0.2+ | 0.4+ | 2004 03 16 | 704 | 0.6+ | 1.4+ | 2006 09 26 | 704 | 1.1+ | 0.6− | | |
| 2001 09 07 | 704 | 1.2− | 0.1+ | 2004 03 16 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.3+ | 0.2− | | |
| 2001 09 07 | 704 | 0.0 | 0.8+ | 2004 03 16 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.2+ | | |
| 2001 09 07 | 704 | 0.9+ | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.4− | 2006 09 28 | 704 | 0.2+ | 0.3− | | |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2004 03 19 | 704 | (0.3− | 2.0−) | 2006 09 28 | 704 | 0.5− | 0.6− | | |
| 2001 09 12 | 704 | 0.6+ | 0.2+ | 2004 03 19 | 704 | 0.3− | 0.6− | 2006 09 28 | 704 | (1.5− | 0.6−) | | |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.8− | 0.5+ | 2006 09 28 | 704 | 0.6− | 0.4+ | | |
| 2001 09 12 | 704 | 0.6− | 0.3− | 2004 03 19 | 704 | 0.4− | 0.7− | 2006 09 30 | 704 | 0.1− | 0.9+ | | |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2004 03 20 | 699 | (0.3+ | 1.8+) | 2006 09 30 | 703 | 0.1− | 0.1− | | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2004 03 20 | 699 | 0.8− | 0.2− | 2006 09 30 | 704 | 0.7− | 0.5+ | | |
| 2001 09 19 | 704 | 0.5− | 0.8+ | 2004 03 20 | 699 | 1.1+ | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2004 03 20 | 699 | 0.3− | 1.0+ | 2006 09 30 | 703 | 0.3− | 0.1− | | |
| 2001 09 19 | 704 | 0.2− | 0.7+ | 2004 03 22 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 704 | 0.9− | 0.7+ | | |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.7+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.3− | | |
| 2001 09 20 | 704 | 0.9− | 0.1− | 2004 03 22 | 704 | 1.0+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.3− | | |
| 2001 09 20 | 704 | 1.1− | 0.3− | 2004 03 22 | 704 | 1.1+ | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2001 09 20 | 704 | 0.1− | 1.0+ | 2004 03 22 | 704 | 1.4+ | 1.1+ | 2006 09 30 | 704 | 0.4+ | 0.1− | | |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2001 09 20 | 291 | 0.1− | 0.5+ | 2004 03 23 | 691 | 0.3+ | 0.8+ | 2006 09 30 | G96 | 0.1+ | 0.2− | | |
| 2001 09 20 | 291 | 0.0 | 0.6+ | 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.0 | | |
| 2001 09 20 | 291 | 0.1+ | 0.7+ | 2004 03 28 | 704 | 0.5+ | 1.2+ | 2006 09 30 | 703 | 0.0 | 0.5+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.9+ | 2004 03 28 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.1+ | | |
| 2001 09 20 | 704 | 1.2− | 0.2− | 2004 03 28 | 704 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.3− | 1.0+ | 2004 03 31 | 691 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.4+ | 0.1+ | | |
| 2001 09 20 | 704 | 1.3− | 0.2+ | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.1− | 0.8− | 2004 03 31 | 691 | 0.0 | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 1.0− | 0.1+ | 2004 04 12 | 703 | 0.6+ | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2004 04 12 | 703 | (0.0 | 2.9+) | 2006 10 09 | 644 | 0.4+ | 0.0 | | |
| 2001 09 21 | 704 | 0.4− | 0.3− | 2004 04 12 | 703 | (2.7+ | 1.0+) | 2006 10 09 | 644 | 0.0 | 0.2− | | |
| 2001 09 21 | 704 | 0.0 | 1.1+ | 2004 04 12 | 703 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 1.2− | | |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.1− | 0.2+ | | |
| 2001 09 21 | 704 | 0.8− | 0.5+ | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 10 16 | 703 | 1.3− | 0.8+ | | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.0 | 0.4+ | | |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2006 08 18 | 699 | 0.9− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2006 08 18 | 699 | 0.4+ | 1.3− | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2006 08 18 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.8− | 0.1+ | | |
| 2001 09 21 | 704 | 0.0 | 1.4+ | 2006 08 18 | 699 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2006 08 18 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | (0.6− | 1.9+) | 2006 08 18 | 699 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2001 09 22 | 704 | 0.3+ | 0.0 | 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.0 | | |
| 2001 09 22 | 704 | 0.3− | 0.8− | 2006 08 21 | 704 | (0.4+ | 1.6−) | 2006 10 20 | G96 | 0.5+ | 0.3− | | |
| 2001 09 22 | 704 | 0.0 | 0.6− | 2006 08 21 | 704 | 1.0+ | 1.3− | 2006 10 20 | G96 | 0.3+ | 0.2− | | |
| 2001 09 22 | 704 | 0.3+ | 0.1+ | 2006 08 21 | 704 | (1.6+ | 1.6−) | 2006 10 20 | G96 | 0.1− | 0.0 | | |
| 2001 09 22 | 704 | 0.1+ | 0.4− | 2006 08 21 | 704 | 0.3− | 1.3− | 2006 10 21 | 644 | 0.4+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.8+ | 0.8− | 2006 08 27 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2001 09 25 | 704 | 0.7+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2001 09 25 | 704 | 1.2+ | 0.5− | 2006 09 15 | 291 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 291 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.4+ | | |
| 2001 09 25 | 704 | 0.3+ | 0.3− | 2006 09 15 | 291 | 0.0 | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.0 | | |
| 2001 09 25 | 704 | 0.3− | 0.1− | 2006 09 16 | 291 | 0.2− | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | 0.3+ | 1.2+ | 2006 09 16 | 291 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.1− | | |
| 2001 09 26 | 704 | 0.0 | 0.4− | 2006 09 16 | 291 | 0.3− | 0.1+ | | | | | | |

**(139637)∗ 2001 QA$_{160}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.03681 | | (2000.0) | | | |
| $n$ | 0.22291031 | $\omega$ | 335.36305 | | +0.65306282 | +0.75646632 |
| $a$ | 2.6939071 | $\Omega$ | 335.36185 | | −0.67988242 | +0.56494151 |
| $e$ | 0.0402075 | $i$ | 4.89933 | | −0.33356986 | +0.32954484 |
| $P$ | 4.42 | $H$ | 15.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.8− | 0.9+ | 2004 03 16 | 703 | 1.2+ | 1.0+ | 2006 10 04 | G96 | 0.4+ | 0.2− | | |
| 2001 08 16 | 704 | 0.1− | 0.8+ | 2004 03 16 | 704 | 0.7+ | 1.1+ | 2006 10 04 | G96 | 0.3+ | 0.1− | | |
| 2001 08 16 | 704 | 0.6− | 0.8+ | 2004 03 16 | 704 | (1.7+ | 1.3+) | 2006 10 04 | G96 | 0.3+ | 0.2− | | |
| 2001 08 23 | 699 | 0.3+ | 0.8+ | 2004 03 16 | 704 | (1.7+ | 0.1+) | 2006 10 19 | 703 | 0.5− | 0.1+ | | |
| 2001 08 23 | 699 | 0.4− | 0.8+ | 2004 03 16 | 704 | (0.7+ | 2.1+) | 2006 10 19 | 703 | 0.2− | 0.4− | | |
| 2001 08 23 | 699 | (0.5+ | 1.7+) | 2004 03 18 | 704 | 0.5+ | 0.8+ | 2006 10 19 | 703 | 0.3− | 0.1− | | |
| 2001 08 23 | 699 | (1.7+ | 0.9+) | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 10 19 | 703 | 0.8+ | 0.3+ | | |
| 2001 08 27 | 699 | 0.6− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 1.1+ | 2006 10 22 | 644 | 0.2+ | 0.6+ | | |
| 2001 08 27 | 699 | (1.5− | 0.5−) | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.5+ | | |
| 2001 08 27 | 699 | (0.4− | 2.4+) | 2004 03 18 | 704 | 1.2+ | 0.7+ | 2006 10 22 | 644 | 0.4+ | 0.3+ | | |
| 2001 08 27 | 699 | 0.4− | 0.9+ | 2004 03 19 | 704 | 1.0+ | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 08 28 | 644 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2001 08 28 | 644 | 0.1+ | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.2+ | | |
| 2001 08 28 | 644 | 0.3− | 0.5+ | 2004 03 20 | 699 | 0.9− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.9− | | |
| 2001 09 07 | 704 | 0.5− | 0.1− | 2004 03 20 | 699 | 1.2+ | 0.6+ | 2006 10 27 | 703 | 0.1+ | 1.0+ | | |
| 2001 09 07 | 704 | 0.1− | 0.3− | 2004 03 20 | 699 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 699 | 0.3− | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.4+ |
| 2001 09 07 | 704 | 0.6+ | 1.1− | 2004 03 20 | 704 | 0.3− | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2001 09 07 | 704 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.2− | 0.9+ | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 09 12 | 704 | 0.2− | 1.3+ | 2004 03 20 | 704 | 0.5− | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 09 12 | 704 | (0.1− | 1.6+) | 2004 03 25 | 704 | 0.4+ | 1.4+ | 2006 11 14 | 703 | 0.5− | 0.5+ |
| 2001 09 12 | 704 | (0.2+ | 2.5+) | 2004 03 25 | 704 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.2− |
| 2001 09 12 | 704 | (0.0 | 1.7+) | 2004 03 25 | 704 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.7− | 0.8+ |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2004 03 26 | 699 | 0.0 | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2004 03 26 | 699 | 1.4− | 0.9+ | 2006 11 16 | 704 | (0.7− | 1.7+) |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2004 03 26 | 704 | 0.2+ | 0.1− | 2006 11 16 | 704 | (0.4+ | 1.8+) |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2004 03 26 | 704 | 0.5+ | 0.7+ | 2006 11 16 | 704 | 0.2− | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.7+ | 2004 03 26 | 699 | 0.2+ | 0.1+ | 2006 11 16 | 704 | (0.6+ | 2.7+) |
| 2001 09 21 | 704 | (1.5− | 0.3+) | 2004 03 26 | 704 | 1.1+ | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.6− | 0.5+ | 2004 03 26 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 1.6+ | 0.1+ |
| 2001 09 21 | 704 | 1.1− | 0.7+ | 2004 03 26 | 699 | 1.2− | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.7+ |
| 2001 09 21 | 704 | 1.5− | 0.7+ | 2004 03 26 | 704 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 2001 09 21 | 704 | 1.2− | 0.5+ | 2004 03 27 | 704 | 1.0+ | 0.0 | 2006 11 19 | 704 | 0.7− | 0.4+ |
| 2001 09 24 | 704 | 0.9+ | 0.3+ | 2004 03 27 | 704 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.5− |
| 2001 09 24 | 704 | 0.2+ | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.4− | 2006 11 21 | 704 | 0.7− | 0.1+ |
| 2001 09 24 | 704 | 0.8+ | 0.4+ | 2004 03 27 | 704 | 1.0+ | 0.2− | 2006 11 21 | 704 | 1.7− | 0.2− |
| 2001 09 24 | 704 | 0.2+ | 0.8+ | 2004 03 27 | 704 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.6− |
| 2001 09 24 | 704 | 0.0 | 0.3+ | 2004 04 11 | 621 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.2− |
| 2001 09 24 | 704 | 0.3+ | 0.4+ | 2004 04 11 | 621 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.2− |
| 2001 09 24 | 704 | 0.5+ | 0.2+ | 2004 04 11 | 621 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2001 09 24 | 704 | 1.1− | 0.3− | 2004 04 12 | 699 | 0.8− | 1.0− | 2006 11 22 | 704 | 0.6+ | 1.7+ |
| 2001 09 24 | 704 | 0.4− | 0.1+ | 2004 04 12 | 699 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2001 09 26 | 704 | 0.5+ | 0.5+ | 2004 04 12 | 699 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.9+ |
| 2001 09 26 | 704 | 0.2− | 0.0 | 2004 04 12 | 699 | 0.5− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.7+ |
| 2001 09 26 | 704 | 0.1− | 1.1+ | 2004 04 13 | 621 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.8− | 0.7+ |
| 2003 01 05 | 704 | 0.0 | 0.3+ | 2004 04 13 | 621 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2003 01 05 | 704 | 0.4− | 1.2− | 2004 04 13 | 621 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 1.3+ |
| 2003 01 05 | 704 | 0.9− | 0.2+ | 2005 06 07 | E12 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.7+ | 0.1+ |
| 2003 01 05 | 704 | 0.1− | 0.5+ | 2005 06 07 | E12 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2004 03 16 | 703 | (1.6+ | 0.1−) | 2005 06 07 | E12 | 0.4− | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 03 16 | 703 | 0.9+ | 1.2+ | 2005 06 07 | E12 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2004 03 16 | 703 | 1.4+ | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.1− |

**(139638)∗ 2001 QH$_{160}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.35366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22253483 | $\omega$ | 178.01324 | | −0.92768608 | −0.35908909 | |
| $a$ | 2.6969365 | $\Omega$ | 339.98073 | | +0.33830174 | −0.69258821 | |
| $e$ | 0.0302026 | $i$ | 17.37722 | | +0.15795716 | −0.62560099 | |
| $P$ | 4.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.2− | 0.3+ | 2001 10 19 | 644 | 0.0 | 0.5− | 2004 04 12 | 644 | 0.0 | 0.5+ |
| 2001 08 01 | 644 | 0.3− | 0.2+ | 2001 10 21 | 704 | 0.5− | 0.1− | 2004 04 12 | 644 | 0.2+ | 0.5+ |
| 2001 08 01 | 644 | 0.7− | 0.7+ | 2001 10 21 | 704 | 0.8− | 0.3− | 2004 04 17 | 704 | 0.3+ | 0.8+ |
| 2001 08 16 | 704 | 0.4− | 0.2+ | 2001 10 21 | 704 | 0.2− | 0.0 | 2004 04 17 | 704 | 0.1+ | 0.4+ |
| 2001 08 16 | 704 | 0.3− | 1.1+ | 2002 12 10 | 704 | 0.6− | 0.1− | 2004 04 17 | 704 | 0.1− | 0.8+ |
| 2001 08 16 | 704 | 0.8− | 0.9+ | 2002 12 10 | 704 | 0.2− | 0.2− | 2005 07 25 | E12 | 0.6+ | 0.1+ |
| 2001 08 16 | 704 | 0.8− | 0.5+ | 2002 12 10 | 704 | 0.4− | 0.1− | 2005 07 25 | E12 | 0.4− | 0.2+ |
| 2001 08 23 | 699 | 0.1− | 0.1− | 2002 12 10 | 704 | 0.3+ | 0.7− | 2005 07 25 | E12 | 0.6+ | 0.4− |
| 2001 08 23 | 699 | 0.2− | 0.2− | 2002 12 28 | 704 | 0.4+ | 0.4+ | 2005 07 25 | E12 | 0.6− | 0.7− |
| 2001 08 23 | 699 | 0.3+ | 0.7+ | 2002 12 28 | 704 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2001 08 23 | 699 | 0.7+ | 0.8+ | 2002 12 28 | 704 | 0.3+ | 0.7+ | 2006 09 19 | 703 | 0.6+ | 0.0 |
| 2001 08 24 | 704 | 0.8+ | 1.0− | 2002 12 28 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.9+ |
| 2001 08 24 | 704 | 0.4+ | 0.9− | 2002 12 28 | 704 | 1.1− | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.7+ |
| 2001 08 24 | 704 | 1.3+ | 0.4− | 2004 03 04 | E12 | 1.0− | 0.3− | 2006 09 25 | 703 | 0.1− | 0.7+ |
| 2001 08 27 | 699 | 0.0 | 0.3+ | 2004 03 04 | E12 | 0.4+ | 0.3− | 2006 09 25 | 703 | 0.5− | 0.6− |
| 2001 08 27 | 699 | 0.1− | 0.4+ | 2004 03 04 | E12 | 0.3− | 0.7− | 2006 09 25 | 703 | 1.1− | 0.7− |
| 2001 08 27 | 699 | 0.7− | 0.2− | 2004 03 04 | E12 | 1.4+ | 0.3+ | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 2001 08 27 | 699 | 0.2+ | 0.2+ | 2004 03 17 | 703 | (2.0+ | 1.2+) | 2006 10 02 | 703 | 1.4+ | 0.6+ |
| 2001 09 12 | 704 | 1.3− | 0.3− | 2004 03 17 | 703 | 0.8+ | 1.2+ | 2006 10 02 | 703 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.7− | 0.3+ | 2004 03 17 | 703 | 1.2+ | 0.9+ | 2006 10 02 | 703 | 0.2− | 0.7+ |
| 2001 09 12 | 704 | 0.6− | 0.9+ | 2004 03 17 | 703 | (1.5+ | 1.0+) | 2006 10 02 | 703 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.8+ | 2004 03 17 | 704 | 1.4+ | 0.2− | 2006 10 23 | 703 | 0.1+ | 0.7+ |
| 2001 09 12 | 704 | (0.3− | 2.1+) | 2004 03 17 | 704 | 0.9+ | 0.3+ | 2006 10 23 | 703 | 0.5+ | 0.6+ |
| 2001 09 19 | 704 | 0.5− | 0.1− | 2004 03 17 | 704 | 0.9+ | 0.2+ | 2006 10 23 | 703 | 0.1− | 0.7+ |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2004 03 17 | 704 | 0.7+ | 1.0+ | 2006 10 23 | 703 | 0.3+ | 0.9+ |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2004 03 17 | 704 | 0.6+ | 0.1+ | 2006 10 31 | 703 | (1.9+ | 0.7+) |
| 2001 09 19 | 704 | 0.5− | 0.6+ | 2004 03 26 | 699 | 0.5− | 1.2+ | 2006 10 31 | 703 | 0.5+ | 1.0− |
| 2001 09 19 | 704 | 0.8− | 0.6+ | 2004 03 26 | 699 | 0.3+ | 1.1+ | 2006 10 31 | 703 | 0.4− | 0.5+ |
| 2001 09 22 | 704 | 0.8+ | 0.3+ | 2004 03 26 | 699 | 0.9+ | 0.3+ | 2006 10 31 | 703 | 0.4+ | 0.5− |
| 2001 09 22 | 704 | 0.0 | 0.3+ | 2004 03 26 | 699 | 0.8− | 0.5− | 2006 11 16 | 703 | 0.2− | 0.5+ |
| 2001 09 22 | 704 | 0.7+ | 0.7− | 2004 03 28 | 608 | 0.3+ | 0.4+ | 2006 11 16 | 703 | 1.4− | 0.1− |
| 2001 09 22 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 608 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.4− | 1.0+ |
| 2001 09 24 | 704 | 0.2+ | 0.0 | 2004 03 28 | 608 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.7− | 0.3+ |
| 2001 09 24 | 704 | 0.9− | 1.0+ | 2004 03 31 | 704 | 0.3+ | 1.0+ | 2006 11 22 | 703 | 1.0− | 0.2+ |
| 2001 09 24 | 704 | 0.1+ | 0.4+ | 2004 03 31 | 704 | 0.1+ | 0.2− | 2006 11 22 | 703 | 0.5− | 0.1− |
| 2001 09 24 | 704 | 0.5− | 1.0+ | 2004 03 31 | 704 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.4− | 0.1+ |
| 2001 09 24 | 704 | 0.4+ | 0.4− | 2004 03 31 | 704 | 0.9+ | 0.5+ | 2006 11 22 | 703 | 0.9− | 0.5+ |
| 2001 10 19 | 644 | 0.5+ | 0.7− | 2004 03 31 | 704 | 0.1+ | 0.5+ | | | | |
| 2001 10 19 | 644 | 0.0 | 0.3− | 2004 04 12 | 644 | 0.2+ | 0.6+ | | | | |

**(139639)∗ 2001 QZ$_{160}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.11264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20309672 | $\omega$ | 97.01501 | | +0.82999143 | −0.55757473 | |
| $a$ | 2.8663823 | $\Omega$ | 296.87429 | | +0.50488698 | +0.76244037 | |
| $e$ | 0.0759582 | $i$ | 0.96279 | | +0.23707249 | +0.32832164 | |
| $P$ | 4.85 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | (0.5− | 1.8+) | 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2001 08 16 | 704 | 1.2+ | 0.4− | 2004 03 15 | 703 | 0.4− | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.3+ | 0.9+ | 2004 03 15 | 703 | 0.3+ | 0.4− | 2006 09 16 | 699 | 0.7+ | 0.2− |
| 2001 08 23 | 699 | 0.0 | 0.7+ | 2004 03 15 | 691 | 0.1− | 0.5+ | 2006 09 16 | 699 | 0.2− | 0.9+ |
| 2001 08 23 | 699 | (1.5+ | 0.5+) | 2004 03 15 | 703 | 0.8+ | 1.3+ | 2006 09 16 | 699 | 0.9− | 0.6+ |
| 2001 08 23 | 699 | 0.2− | 1.0+ | 2004 03 15 | 703 | 0.0 | 0.4− | 2006 09 16 | 699 | (1.6− | 2.8+) |
| 2001 08 23 | 699 | 0.4+ | 0.2+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.8+ | 1.4+ |
| 2001 08 27 | 699 | 0.4− | 0.2+ | 2004 03 16 | 704 | 0.8+ | 0.2− | 2006 09 17 | 704 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.3− | 0.2+ | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 704 | (0.2− | 2.0+) |
| 2001 08 27 | 699 | 0.3+ | 0.6+ | 2004 03 16 | 704 | 1.1+ | 1.0+ | 2006 09 17 | 704 | 0.4− | 0.1+ |
| 2001 08 27 | 699 | 0.2+ | 0.7+ | 2004 03 16 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.6+ |
| 2001 09 07 | 704 | (1.3− | 1.6−) | 2004 03 20 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 2001 09 07 | 704 | (0.3− | 1.9−) | 2004 03 20 | 704 | 0.6+ | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 2001 09 07 | 704 | 0.1− | 0.8− | 2004 03 20 | 704 | 0.5− | 1.1+ | 2006 09 19 | 699 | 0.5+ | 0.7+ |
| 2001 09 07 | 704 | 0.8− | 0.1− | 2004 03 20 | 704 | (1.6+ | 0.4+) | 2006 09 19 | 703 | 0.4− | 0.7+ |
| 2001 09 12 | 704 | 0.4− | 0.8+ | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 1.0+ | 2004 03 23 | 691 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.5− |
| 2001 09 12 | 704 | 0.1+ | 1.1+ | 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.7− | 0.5− | 2004 03 27 | 704 | 0.0 | 0.9+ | 2006 09 25 | 699 | (0.7+ | 2.0+) |
| 2001 09 20 | 704 | 0.4− | 0.2− | 2004 03 27 | 704 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.7− | 0.7+ |
| 2001 09 20 | 704 | (2.1+ | 1.0−) | 2004 03 27 | 704 | 0.1− | 0.0 | 2006 09 25 | 699 | (1.8− | 0.1+) |
| 2001 09 22 | 704 | 0.0 | 0.2− | 2004 04 21 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | (2.8− | 0.4+) |
| 2001 09 22 | 704 | 0.6− | 1.0− | 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.2− |
| 2001 09 22 | 704 | 0.2− | 1.5− | 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.8− |
| 2002 12 10 | 704 | 1.3− | 1.4− | 2006 08 15 | 644 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.5− | 0.4− |
| 2002 12 10 | 704 | 1.0− | 0.3− | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.3− | 1.0− |
| 2002 12 10 | 704 | 0.1− | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.6+ | 2006 09 30 | 704 | 0.8+ | 0.6+ |
| 2003 01 05 | 291 | 0.5+ | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 09 30 | 704 | 0.1− | 0.8+ |
| 2003 01 05 | 291 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.9+ | 2006 09 30 | 704 | (0.0 | 1.9+) |
| 2003 01 05 | 291 | 0.7+ | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.2− | 0.2+ |
| 2003 01 08 | 704 | (2.2− | 0.0 ) | 2006 08 28 | 703 | 0.7− | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.2+ |
| 2003 01 08 | 704 | 1.2− | 0.2− | 2006 08 28 | 691 | 0.1− | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.1+ |
| 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | (0.6− | 1.6+) | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2003 01 08 | 704 | (1.8− | 0.2+) | 2006 09 12 | 703 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2004 02 26 | 704 | (1.6+ | 0.9+) | 2006 09 12 | 703 | 0.9− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 02 26 | 704 | 0.8+ | 0.0 | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2004 02 26 | 704 | (1.7+ | 0.3+) | 2006 09 12 | 703 | 0.4+ | 0.3+ | | | | |
| 2004 02 26 | 704 | 1.4+ | 1.1+ | 2006 09 13 | 644 | 0.1− | 0.2+ | | | | |

**(139640)∗ 2001 QZ$_{162}$ = 2000 HU$_{59}$ = 2000 JU$_{13}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. T. B. Spahr (d, *MPO* 1670; *MPO* 17922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 21.08512 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.20893522 | ω | 128.20989 | | +0.93452970 | +0.35299848 | |
| *a* | 2.8127315 | Ω | 211.19423 | | −0.34768801 | +0.87847504 | |
| *e* | 0.1135394 | *i* | 5.01052 | | −0.07594267 | +0.32198399 | |
| *P* | 4.72 | *H* | 15.5 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 699 | 0.2− | 0.7− | 2001 09 20 | 704 | 0.2− | 0.2− | 2006 09 16 | 644 | 0.4− | 0.0 |
| 2000 04 25 | 699 | 0.6− | 0.2+ | 2001 09 20 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.4− | 0.3− |
| 2000 04 25 | 699 | 1.1− | 0.4− | 2001 09 20 | 704 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.5+ | 0.1+ |
| 2000 04 25 | 699 | 1.1+ | 1.0+ | 2001 09 22 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 703 | 0.6+ | 0.5− |
| 2000 04 27 | 691 | 0.3− | 0.0 | 2001 09 22 | 704 | 0.6+ | 0.9+ | 2006 09 17 | 703 | 0.1− | 0.1+ |
| 2000 04 27 | 691 | 0.1− | 0.1− | 2001 09 22 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2000 04 27 | 691 | 0.0 | 0.1− | 2001 09 22 | 704 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 0.7+ | 0.5+ | 2001 09 22 | 704 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.4+ | 0.1− |
| 2000 04 29 | 704 | 0.2+ | 0.7− | 2004 03 16 | 691 | 0.2+ | 0.8+ | 2006 09 18 | 704 | 0.2− | 0.7+ |
| 2000 04 29 | 704 | 0.3− | 0.5+ | 2004 03 16 | 691 | 0.2+ | 0.8+ | 2006 09 18 | 704 | 0.4+ | 0.3− |
| 2000 04 29 | 704 | 0.1− | 1.6+ | 2004 03 16 | 691 | 0.3+ | 0.8+ | 2006 09 18 | 704 | 0.0 | 0.1+ |
| 2000 04 29 | 704 | (0.9+ | 2.1+) | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.2− | 0.3+ |
| 2000 05 06 | 704 | 0.6+ | 0.6− | 2005 05 19 | G96 | 0.2− | 0.4− | 2006 09 25 | 704 | (0.2− | 2.0+) |
| 2000 05 06 | 704 | 0.5+ | 0.8− | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 09 25 | 704 | (0.3− | 1.6+) |
| 2000 05 06 | 704 | 0.5+ | 1.1− | 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.4− | 0.2+ |
| 2000 05 07 | 704 | 0.9+ | 0.2+ | 2005 05 22 | 644 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.6+ | 0.1+ |
| 2000 05 07 | 704 | 0.3+ | 0.6+ | 2005 05 22 | 644 | 0.3− | 0.5− | 2006 09 25 | 704 | 0.1+ | 0.3+ |
| 2000 05 07 | 704 | 0.7+ | 0.1− | 2005 05 22 | 644 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.3− | 0.0 |
| 2000 05 07 | 704 | 0.1− | 1.8+ | 2005 06 06 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.1+ | 0.1+ |
| 2000 05 07 | 704 | 0.3− | 0.9+ | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.3+ | 0.8+ |
| 2001 08 11 | 608 | 0.4+ | 0.1− | 2005 06 06 | 691 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.3− |
| 2001 08 11 | 608 | 0.3− | 0.3− | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 2001 08 11 | 608 | 0.3+ | 0.7− | 2005 06 10 | 691 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.2+ |
| 2001 08 23 | 699 | 0.6− | 0.7+ | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 1.3+ | 0.5− |
| 2001 08 23 | 699 | 0.3− | 0.3− | 2005 06 16 | 691 | 0.7+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.6− |
| 2001 08 23 | 699 | 0.3− | 0.3− | 2005 06 16 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.3− | 0.0 |
| 2001 08 23 | 699 | 0.5− | 0.6+ | 2005 06 16 | 691 | 0.6− | 0.5− | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 2001 08 25 | 104 | 0.5− | 0.7+ | 2005 06 23 | 644 | 0.6− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2001 08 25 | 104 | 1.2− | 0.8+ | 2005 06 23 | 644 | 0.2− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2001 08 27 | 699 | 0.9− | 0.8− | 2005 06 23 | 644 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2001 08 27 | 699 | 1.1− | 0.5− | 2005 06 27 | 691 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2001 08 27 | 699 | 0.2+ | 0.8+ | 2005 06 27 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2001 08 27 | 699 | 0.7− | 0.2+ | 2005 06 27 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2001 09 08 | 704 | 0.7− | 0.0 | 2005 06 30 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2001 09 08 | 704 | 1.0+ | 0.4+ | 2005 06 30 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2001 09 08 | 704 | 0.7− | 0.6+ | 2005 06 30 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2001 09 09 | 699 | 0.3− | 0.4+ | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 09 09 | 699 | 0.2+ | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2001 09 09 | 699 | 0.7− | 0.6+ | 2006 08 24 | 644 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2001 09 09 | 699 | 0.6− | 0.6+ | 2006 09 04 | A13 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.6+ | 1.0+ | 2006 09 04 | A13 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | (0.7+ | 1.7+) | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 09 12 | 704 | 1.0+ | 1.2+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.5− |
| 2001 09 12 | 704 | 1.4+ | 1.0+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.7+ | 0.1− | 2006 09 16 | 644 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 09 20 | 704 | 0.2− | 0.0 | 2006 09 16 | 644 | 0.1+ | 0.3+ | | | | |

**(139641)∗ 2001 QY$_{165}$ = 1995 GV$_{7}$ = 2000 HY$_{67}$**

Discovered 2001 Aug. 24 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 20017, *MPO* 93993)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 52.19604 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21566944 | ω | 220.66477 | | +0.69548014 | +0.71080251 | |
| *a* | 2.7538714 | Ω | 93.69036 | | −0.62890770 | +0.67297331 | |
| *e* | 0.0928562 | *i* | 6.05132 | | −0.34753772 | +0.20461357 | |
| *P* | 4.57 | *H* | 15.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 04 | 327 | (2.7+ | 0.2+) | 2001 08 27 | 644 | 0.5− | 0.3− | 2006 09 26 | 703 | 0.4+ | 0.2− |
| 1995 04 04 | 327 | 0.2− | 0.1+ | 2001 08 27 | 644 | 0.8− | 0.1− | 2006 09 26 | 703 | 0.5− | 0.4− |
| 1995 04 04 | 327 | 0.8+ | 0.7+ | 2002 11 04 | 291 | 0.5− | 0.4+ | 2006 09 26 | 703 | 0.7+ | 0.0 |
| 1995 04 04 | 327 | (2.2+ | 0.2+) | 2002 11 04 | 291 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.5− | 0.6+ |
| 1995 04 05 | 327 | (5.2− | 1.6+) | 2002 11 04 | 291 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.7− | 0.3+ |
| 1995 04 05 | 327 | (2.9− | 0.3+) | 2002 12 05 | 704 | 0.8− | 0.6− | 2006 10 01 | 704 | 0.6+ | 0.1− |
| 1995 04 05 | 327 | 0.3− | 0.3+ | 2002 12 05 | 704 | 0.7+ | 0.5+ | 2006 10 04 | G96 | 0.5+ | 0.2− |
| 2000 04 27 | 699 | 0.7+ | 1.1+ | 2002 12 05 | 704 | 0.9+ | 0.1− | 2006 10 04 | G96 | 0.5+ | 0.2− |
| 2000 04 27 | 699 | 0.5+ | 1.1+ | 2002 12 05 | 704 | 0.4+ | 0.7+ | 2006 10 04 | G96 | 0.4+ | 0.3− |
| 2000 04 27 | 699 | 0.7+ | 0.1− | 2002 12 05 | 704 | 0.0 | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2000 04 27 | 699 | 0.4− | 0.8+ | 2004 03 23 | 704 | 0.6+ | 1.2+ | 2006 10 16 | 703 | 1.5+ | 0.1− |
| 2000 04 29 | 704 | 0.1+ | 1.2− | 2004 03 23 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 703 | 0.7+ | 1.1+ |
| 2000 04 29 | 704 | 0.3+ | 0.1− | 2004 03 23 | 704 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.8+ |
| 2000 04 29 | 704 | 0.9+ | 0.8− | 2004 03 23 | 704 | 0.5− | 1.4+ | 2006 10 16 | 703 | 0.7+ | 0.1+ |
| 2000 04 29 | 704 | 0.8+ | 1.4− | 2005 06 16 | G96 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 08 19 | 704 | (2.1+ | 1.7−) | 2005 06 16 | G96 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.4− |
| 2001 08 19 | 704 | (0.5+ | 2.2−) | 2005 06 16 | G96 | 0.8− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 08 19 | 704 | (0.8+ | 1.6−) | 2005 06 16 | G96 | 0.6− | 0.5+ | 2006 10 22 | 703 | 0.9− | 0.1− |
| 2001 08 19 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.4+ | 0.1+ |
| 2001 08 24 | 608 | 0.0 | 1.0+ | 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2001 08 24 | 608 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 2001 08 24 | 608 | 0.0 | 0.7+ | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 10 28 | 703 | 0.2+ | 1.5+ |
| 2001 08 25 | 699 | 0.6+ | 0.1+ | 2006 09 26 | 704 | (1.8− | 0.8+) | 2006 10 28 | 703 | 0.5− | 0.5− |
| 2001 08 25 | 699 | 0.3− | 0.7+ | 2006 09 26 | 704 | 1.0− | 1.1+ | 2006 10 28 | 703 | 0.5+ | 0.2− |
| 2001 08 25 | 699 | 1.2− | 0.1+ | 2006 09 26 | 704 | 1.3− | 0.3+ | 2006 10 28 | 703 | 0.7− | 0.0 |
| 2001 08 25 | 699 | (1.8− | 0.2+) | 2006 09 26 | 704 | 1.1+ | 0.9+ | | | | |
| 2001 08 27 | 644 | 0.4− | 0.2− | 2006 09 26 | 703 | (2.0− | 0.4−) | | | | |

**(139642)∗ 2001 QM$_{166}$ = 1999 CK$_{26}$**

Discovered 2001 Aug. 24 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 22801)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 266.79426 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21922898 | ω | 341.73069 | | −0.47267201 | −0.87292252 | |
| *a* | 2.7239810 | Ω | 136.26073 | | +0.82874134 | −0.48691715 | |
| *e* | 0.1197005 | *i* | 10.06076 | | +0.29961469 | −0.03029779 | |
| *P* | 4.50 | *H* | 15.3 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.1+ | 0.3+ | 2002 12 10 | 644 | 0.1+ | 0.4+ | 2004 05 12 | 644 | 0.4+ | 0.6+ |
| 1999 02 10 | 704 | 0.6+ | 0.7+ | 2002 12 10 | 644 | 0.1+ | 0.3+ | 2004 05 12 | 644 | 0.2+ | 0.5+ |
| 1999 02 10 | 704 | 0.1+ | 1.0+ | 2002 12 14 | 608 | 0.1+ | 1.3+ | 2005 06 04 | 691 | 0.3− | 0.2+ |
| 1999 02 10 | 704 | 0.3− | 0.9+ | 2002 12 14 | 608 | 0.0 | 1.2+ | 2005 06 04 | 691 | 0.2− | 0.2+ |
| 1999 02 10 | 704 | (0.8+ | 2.2+) | 2002 12 14 | 608 | 0.1+ | 0.9+ | 2005 06 04 | 691 | 0.3− | 0.3+ |
| 1999 02 12 | 699 | 1.1+ | 0.3− | 2003 01 01 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 1.5− | 1.1+ |
| 1999 02 12 | 699 | 0.9+ | 0.0 | 2003 01 01 | 704 | 0.5+ | 0.4− | 2006 09 18 | 703 | 0.8+ | 0.5+ |
| 1999 02 12 | 699 | 0.9+ | 0.9+ | 2003 01 01 | 704 | 0.8− | 0.7− | 2006 09 18 | 703 | 0.4+ | 0.3+ |
| 1999 02 13 | 704 | 0.4+ | 0.5− | 2004 03 16 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 703 | (0.6− | 1.9+) |
| 1999 02 13 | 704 | 0.4+ | 1.3+ | 2004 03 16 | 704 | 0.4− | 0.7+ | 2006 09 26 | 703 | 0.5+ | 1.5+ |
| 1999 02 13 | 704 | (2.5− | 1.4−) | 2004 03 16 | 704 | (2.2+ | 2.2+) | 2006 09 26 | 703 | 0.5+ | 0.6− |
| 1999 02 13 | 704 | 1.5− | 0.4+ | 2004 03 16 | 704 | 1.0+ | 0.3+ | 2006 09 26 | 703 | (0.8− | 1.6−) |
| 2001 08 16 | 704 | 0.4+ | 0.4+ | 2004 03 22 | 699 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2001 08 16 | 704 | 0.5− | 0.7+ | 2004 03 22 | 699 | 0.4− | 0.4+ | 2006 09 29 | 699 | 1.4− | 0.6− |
| 2001 08 16 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 699 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.3+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.5− | 0.9+ | 2004 03 22 | 699 | 1.2− | 1.4+ | 2006 09 29 | 699 | 0.1− | 0.1− | | |
| 2001 08 24 | 608 | 0.2− | 0.5+ | 2004 03 23 | 704 | 0.3− | 1.0+ | 2006 09 29 | 699 | 0.2− | 0.8+ | | |
| 2001 08 24 | 608 | 0.5− | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 10 02 | 703 | (1.2− | 1.8+) | | |
| 2001 08 24 | 608 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.3− | 0.1− | 2006 10 02 | 703 | 1.4+ | 0.5+ | | |
| 2001 08 25 | 704 | 0.0 | 0.2− | 2004 03 23 | 704 | (0.1− | 1.6+) | 2006 10 02 | 703 | (1.9+ | 2.5+) | | |
| 2001 08 25 | 704 | 0.5+ | 0.0 | 2004 04 15 | 704 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.3− | 1.1+ | | |
| 2001 08 25 | 704 | 1.3+ | 0.2− | 2004 04 15 | 704 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.7− | | |
| 2001 08 25 | 704 | 0.7− | 0.7+ | 2004 04 15 | 704 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.1+ | | |
| 2001 08 27 | 644 | 0.6− | 0.3+ | 2004 04 15 | 704 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.2− | | |
| 2001 08 27 | 644 | 0.5− | 0.4+ | 2004 04 15 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.5− | 0.1+ | | |
| 2001 08 27 | 644 | 0.1− | 0.4+ | 2004 04 15 | 644 | 0.1+ | 0.3+ | 2006 10 17 | D35 | 0.1− | 0.6+ | | |
| 2002 11 05 | 704 | 0.1− | 1.1− | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 10 17 | D35 | 0.0 | 0.6+ | | |
| 2002 11 05 | 704 | (0.7+ | 1.6−) | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 10 17 | D35 | 0.5− | 1.0+ | | |
| 2002 11 05 | 704 | 0.3− | 1.2+ | 2004 04 23 | 703 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 11 05 | 704 | 0.0 | 0.6− | 2004 04 23 | 703 | 0.1+ | 1.1+ | 2006 10 23 | 644 | 0.2− | 0.3+ | | |
| 2002 11 28 | 699 | 0.6− | 0.3+ | 2004 04 23 | 703 | 0.0 | 0.9− | 2006 10 23 | 644 | 0.4+ | 0.3+ | | |
| 2002 11 28 | 699 | 0.6− | 0.2+ | 2004 04 23 | 703 | 1.1+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.3+ | | |
| 2002 11 28 | 699 | 0.8− | 0.0 | 2004 04 24 | 704 | 1.3+ | 0.7+ | 2006 10 24 | 644 | 0.5+ | 0.3+ | | |
| 2002 11 28 | 699 | 1.1− | 0.4+ | 2004 04 24 | 704 | 0.3+ | 0.5+ | 2006 10 24 | 644 | 0.4+ | 0.1+ | | |
| 2002 12 05 | 608 | 0.4− | 0.6− | 2004 04 24 | 704 | 0.1− | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.5+ | | |
| 2002 12 05 | 608 | 0.8− | 0.7− | 2004 04 24 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.6+ | 1.0+ | | |
| 2002 12 05 | 608 | 0.7− | 0.7− | 2004 04 24 | 704 | 0.2+ | 0.0 | 2006 10 28 | 703 | (1.7+ | 0.0 ) | | |
| 2002 12 10 | 644 | 0.1+ | 0.4+ | 2004 05 12 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.2+ | | |

**(139643)∗ 2001 QL$_{167}$ = 2002 XS$_{15}$**

Discovered 2001 Aug. 24 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 40369)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 231.20067 | | (2000.0) | | −0.95603970 | −0.29203394 |
| $n$ | 0.23108296 | $\omega$ | 156.31852 | | +0.22082916 | −0.77655692 |
| $a$ | 2.6300102 | $\Omega$ | 6.86530 | | +0.19293152 | −0.55827907 |
| $e$ | 0.1414417 | $i$ | 12.82708 | | | |
| $P$ | 4.27 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2004 04 26 | 699 | 0.2− | 0.7− | | |
| 2001 08 19 | 704 | 0.7+ | 0.7+ | 2004 02 26 | 704 | 0.9+ | 0.0 | 2004 04 26 | 699 | 0.3+ | 0.6− | | |
| 2001 08 19 | 704 | 0.2− | 1.2+ | 2004 02 26 | 704 | 0.5+ | 1.3+ | 2004 04 26 | 699 | 0.1+ | 0.4− | | |
| 2001 08 24 | 608 | 0.3− | 1.1+ | 2004 02 26 | 704 | 0.0 | 0.7+ | 2004 04 28 | 608 | 1.1+ | 0.2+ | | |
| 2001 08 24 | 608 | 0.5− | 0.5+ | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2004 04 28 | 608 | 0.9+ | 0.1− | | |
| 2001 08 24 | 608 | 0.4− | 0.4+ | 2004 03 14 | 703 | 0.2− | 0.5+ | 2004 04 28 | 608 | 0.7+ | 0.2+ | | |
| 2001 08 25 | 699 | 0.7− | 0.9− | 2004 03 14 | 703 | 0.2+ | 1.0+ | 2005 07 05 | E12 | 0.9− | 0.5+ | | |
| 2001 08 25 | 699 | 0.4− | 0.5+ | 2004 03 14 | 703 | 0.1+ | 1.1+ | 2005 07 05 | E12 | 0.3− | 0.8+ | | |
| 2001 08 25 | 699 | (1.0+ | 2.1+) | 2004 03 14 | 703 | 0.9− | 0.0 | 2005 07 05 | E12 | 0.2− | 1.1+ | | |
| 2001 08 25 | 699 | (1.6− | 0.6+) | 2004 03 16 | 704 | 0.3− | 0.1+ | 2005 07 05 | E12 | 0.0 | 0.9+ | | |
| 2001 08 27 | 644 | 0.1+ | 0.7− | 2004 03 16 | 704 | 0.5+ | 0.8+ | 2005 08 10 | E12 | 0.6+ | 0.9+ | | |
| 2001 08 27 | 644 | 0.0 | 0.5− | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2005 08 10 | E12 | (0.6+ | 2.1+) | | |
| 2001 08 27 | 644 | 0.1− | 0.3− | 2004 03 16 | 704 | 0.3+ | 0.1+ | 2005 08 10 | E12 | 1.2− | 1.4+ | | |
| 2001 09 11 | 704 | 0.4− | 0.8+ | 2004 03 16 | 704 | 0.4+ | 0.6+ | 2005 08 10 | E12 | 0.6+ | 1.0+ | | |
| 2001 09 11 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 09 20 | 699 | 1.4− | 0.4+ | | |
| 2001 09 11 | 704 | 1.3− | 0.4− | 2004 03 18 | 704 | 0.0 | 1.0+ | 2006 09 20 | 699 | 0.7+ | 0.3+ | | |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 699 | 1.1− | 1.2+ | | |
| 2002 10 05 | 704 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 699 | (1.8+ | 0.9+) | | |
| 2002 10 05 | 704 | 0.6+ | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.4+ | | |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2004 03 27 | 699 | 0.0 | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.3+ | | |
| 2002 12 03 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 699 | 0.3+ | 0.8− | 2006 09 25 | 691 | 0.7+ | 0.2+ | | |
| 2002 12 03 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 699 | 0.0 | 0.4− | 2006 09 30 | 703 | 1.2− | 0.2− | | |
| 2002 12 03 | 644 | 0.1+ | 0.4+ | 2004 03 27 | 699 | 0.1− | 0.2+ | 2006 09 30 | 703 | (1.7− | 0.1−) | | |
| 2002 12 06 | 704 | 0.3− | 0.6− | 2004 03 27 | 704 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 1.4− | 1.5+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.5− | 2004 03 27 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | (0.8+ | 1.6+) | | |
| 2002 12 06 | 704 | 0.4− | 0.2− | 2004 03 27 | 704 | 0.0 | 0.8+ | 2006 09 30 | 691 | 0.3− | 0.3+ | | |
| 2002 12 06 | 704 | 0.7− | 0.9− | 2004 03 27 | 704 | 0.0 | 1.2+ | 2006 09 30 | 691 | 0.3− | 0.4+ | | |
| 2002 12 09 | 699 | 1.1− | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 691 | 0.4− | 0.5+ | | |
| 2002 12 09 | 699 | 0.3− | 0.0 | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.4+ | | |
| 2002 12 09 | 699 | 0.7− | 0.6+ | 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.4− | | |
| 2002 12 09 | 699 | 0.5+ | 1.0+ | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 10 17 | 703 | 1.1− | 0.8+ | | |
| 2002 12 12 | 644 | 0.2+ | 0.3+ | 2004 03 31 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.2− | | |
| 2002 12 12 | 644 | 0.2+ | 0.7+ | 2004 03 31 | 704 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.0 | | |
| 2002 12 12 | 644 | 0.1+ | 0.4+ | 2004 03 31 | 704 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.0 | | |
| 2002 12 12 | 644 | 0.0 | 0.7+ | 2004 03 31 | 704 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.1− | | |
| 2002 12 12 | 644 | 1.0+ | 0.3+ | 2004 03 31 | 704 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.2− | | |
| 2002 12 12 | 644 | 0.3+ | 0.7+ | 2004 04 11 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2003 12 27 | 704 | 0.3+ | 0.8+ | 2004 04 11 | 644 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.7− | 0.2+ | | |
| 2003 12 27 | 704 | (1.1+ | 2.1+) | 2004 04 11 | 644 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.4+ | | |
| 2003 12 27 | 704 | 0.7+ | 1.4+ | 2004 04 11 | 703 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.7+ | | |
| 2003 12 27 | 704 | (2.0+ | 0.0 ) | 2004 04 11 | 703 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.4+ | | |
| 2004 01 22 | 704 | 0.0 | 0.6− | 2004 04 11 | 703 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.5− | 0.6+ | | |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2004 04 11 | 703 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.4+ | | |
| 2004 01 22 | 704 | 0.1− | 1.1+ | 2004 04 16 | 704 | (1.6+ | 0.5−) | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2004 01 28 | 704 | 0.1+ | 0.4− | 2004 04 16 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5+ | | |
| 2004 01 28 | 704 | 0.6− | 0.9+ | 2004 04 16 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2004 01 28 | 704 | 0.0 | 0.7+ | 2004 04 20 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 2004 01 28 | 704 | 0.6− | 0.0 | 2004 04 20 | 704 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.6+ | | |
| 2004 02 19 | 704 | 0.4+ | 0.7− | 2004 04 20 | 704 | 0.2+ | 0.2+ | 2006 10 25 | 106 | 0.1− | 0.1+ | | |
| 2004 02 19 | 704 | 1.1+ | 1.3− | 2004 04 20 | 704 | 0.2− | 0.3− | 2006 10 25 | 106 | 0.4+ | 0.1+ | | |
| 2004 02 19 | 704 | 0.7− | 0.5− | 2004 04 20 | 704 | 0.3+ | 0.0 | 2006 10 25 | 106 | 0.3+ | 0.1− | | |
| 2004 02 19 | 704 | 0.5+ | 1.1− | 2004 04 21 | 704 | 0.1− | 0.3+ | 2006 10 25 | 106 | 0.9− | 0.4− | | |
| 2004 02 19 | 704 | 0.1− | 0.8− | 2004 04 21 | 704 | 0.0 | 0.3+ | 2006 10 31 | 703 | 0.3+ | 0.5+ | | |
| 2004 02 23 | 704 | 0.3+ | 1.0+ | 2004 04 21 | 704 | 0.2− | 0.2+ | 2006 10 31 | 703 | 0.3− | 0.4+ | | |
| 2004 02 23 | 704 | 0.9+ | 1.1− | 2004 04 21 | 704 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.1+ | 0.4− | | |
| 2004 02 23 | 704 | 0.7+ | 0.2+ | 2004 04 21 | 704 | 0.3+ | 0.5+ | 2006 10 31 | 703 | 1.3+ | 0.4− | | |
| 2004 02 23 | 704 | 0.8+ | 0.4− | 2004 04 26 | 699 | 0.1+ | 0.8+ | | | | | | |

**(139644)∗ 2001 QZ$_{168}$**

Discovered 2001 Aug. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.55278 | | (2000.0) | | +0.66839868 | −0.73801035 |
| $n$ | 0.23381188 | $\omega$ | 331.30858 | | +0.69932483 | +0.58110695 |
| $a$ | 2.6095062 | $\Omega$ | 76.58407 | | +0.25335350 | +0.34300937 |
| $e$ | 0.2444897 | $i$ | 5.46563 | | | |
| $P$ | 4.22 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 24 | 691 | 0.2+ | 0.1+ | 2001 09 11 | 704 | 0.7+ | 0.3− | 2006 09 24 | 691 | 0.1− | 0.0 | | |
| 1995 03 24 | 691 | 0.7− | 0.9− | 2001 09 11 | 704 | 0.0 | 1.0− | 2006 09 24 | 691 | 0.3+ | 0.4− | | |
| 1995 03 24 | 691 | 0.1+ | 0.3− | 2001 09 11 | 704 | 0.7+ | 0.9+ | 2006 10 22 | G96 | 0.0 | 0.6− | | |
| 2001 07 30 | 704 | 0.8+ | 0.1+ | 2003 01 26 | 699 | 0.8+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 2001 07 30 | 704 | 0.6+ | 0.9− | 2003 01 26 | 699 | 1.1− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2001 07 30 | 704 | 0.5+ | 0.2− | 2003 01 26 | 699 | 1.2+ | 0.0 | 2006 10 22 | G96 | 0.4− | 0.0 | | |
| 2001 08 14 | 608 | 0.4− | 0.1− | 2003 01 26 | 699 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2001 08 14 | 608 | 0.3− | 0.4+ | 2003 02 01 | 704 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 2001 08 14 | 608 | 0.3− | 0.6+ | 2003 02 01 | 704 | (1.2− | 2.1−) | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2001 08 19 | 704 | 0.1− | 0.3+ | 2003 02 01 | 704 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2001 08 19 | 704 | 0.1+ | 0.5+ | 2003 02 01 | 704 | 0.0 | 1.0+ | 2006 11 14 | 703 | 1.4+ | 0.2+ | | |
| 2001 08 19 | 704 | (1.7− | 0.1−) | 2003 02 01 | 704 | 1.1+ | 0.5+ | 2006 11 14 | 703 | 0.1− | 0.8+ | | |
| 2001 08 19 | 704 | 0.4+ | 1.3− | 2003 02 19 | 644 | 0.5+ | 0.1+ | 2006 11 14 | 703 | 1.1− | 0.1− | | |
| 2001 08 26 | 608 | 0.7− | 0.3+ | 2003 02 19 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.9− | | |
| 2001 08 26 | 608 | 0.5− | 0.3+ | 2003 02 19 | 644 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.8− | | |
| 2001 08 26 | 608 | 0.4− | 0.6+ | 2003 02 23 | 699 | 0.4− | 1.0+ | 2006 11 21 | G96 | 0.4− | 0.5− | | |
| 2001 08 26 | 608 | 0.0 | 0.6+ | 2003 02 23 | 699 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2001 08 26 | 608 | 0.5− | 0.4+ | 2003 02 23 | 699 | 0.2+ | 0.9+ | 2006 11 21 | G96 | 0.3− | 0.4− | | |
| 2001 08 26 | 608 | 0.7− | 1.2+ | 2003 02 23 | 699 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.0 | 0.4+ | | |
| 2001 08 27 | 644 | 0.1− | 0.1+ | 2003 03 07 | 644 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.3− | 1.5+ | | |
| 2001 08 27 | 644 | 0.3− | 0.0 | 2003 03 07 | 644 | 0.4− | 0.6+ | 2006 11 22 | 704 | 0.7+ | 0.3− | | |
| 2001 08 27 | 644 | 0.0 | 0.0 | 2003 03 07 | 644 | 0.5− | 0.5+ | 2006 11 22 | 704 | 0.5− | 0.1+ | | |
| 2001 09 11 | 704 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.3+ | 0.1+ | | | | | | |

**(139645)∗ 2001 QC$_{170}$ = 2004 DF$_{45}$**

Discovered 2001 Aug. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60888)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.51661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18249502 | $\omega$ | 171.56262 | | −0.66874038 | −0.73734489 | |
| $a$ | 3.0782369 | $\Omega$ | 320.32623 | | +0.67312198 | −0.54591942 | |
| $e$ | 0.0626123 | $i$ | 8.59768 | | +0.31574215 | −0.39786242 | |
| $P$ | 5.40 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.5− | 0.2+ | 2002 12 05 | 704 | 0.7− | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.3− |
| 2001 08 23 | 704 | 1.0− | 1.4− | 2003 11 30 | 691 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.1− |
| 2001 08 23 | 704 | 0.0 | 1.0− | 2003 11 30 | 691 | 0.4+ | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.1+ |
| 2001 08 23 | 704 | 0.1− | 0.1− | 2003 11 30 | 691 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.3+ |
| 2001 08 23 | 699 | 0.4+ | 0.6+ | 2004 01 29 | 699 | 0.8− | 0.6+ | 2004 03 20 | 704 | 0.0 | 0.8+ |
| 2001 08 23 | 699 | 0.4− | 1.0+ | 2004 01 29 | 699 | 0.3+ | 0.5+ | 2004 03 20 | 704 | 0.1− | 0.3+ |
| 2001 08 23 | 699 | 0.5− | 0.2+ | 2004 01 29 | 699 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.4− | 0.7− |
| 2001 08 23 | 699 | (1.6+ | 1.9+) | 2004 01 29 | 699 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.8+ | 0.1+ |
| 2001 08 27 | 704 | 0.6− | 0.3− | 2004 02 18 | 704 | 1.3+ | 0.5+ | 2004 03 27 | 704 | 0.1+ | 0.5+ |
| 2001 08 27 | 704 | (1.3+ | 1.6+) | 2004 02 18 | 704 | 0.3+ | 0.0 | 2004 03 27 | 704 | (1.6+ | 0.4+) |
| 2001 08 27 | 704 | 1.3+ | 0.9+ | 2004 02 18 | 704 | 0.6+ | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.1+ |
| 2001 08 27 | 704 | 0.6+ | 0.5+ | 2004 02 18 | 704 | 0.6+ | 0.2+ | 2006 08 15 | 644 | 0.2+ | 0.7+ |
| 2001 09 11 | 699 | (2.3− | 1.0+) | 2004 02 25 | 333 | 0.3− | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.7+ |
| 2001 09 11 | 699 | 0.2− | 0.6+ | 2004 02 25 | 333 | 0.7− | 0.7+ | 2006 08 15 | 644 | 0.3+ | 0.7+ |
| 2001 09 11 | 699 | 0.7+ | 0.7+ | 2004 02 25 | 333 | 0.7− | 0.3+ | 2006 08 20 | 644 | 0.0 | 0.7+ |
| 2001 09 11 | 699 | 0.0 | 0.2+ | 2004 02 25 | 333 | 1.0− | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.6+ |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2004 02 26 | 333 | 0.6− | 0.4+ | 2006 08 20 | 644 | 0.1− | 0.8+ |
| 2001 09 20 | 704 | 0.4+ | 0.4+ | 2004 02 26 | 333 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.8− | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.5− | 2004 02 26 | 333 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 1.2− | 0.3+ | 2004 02 26 | 333 | 0.8+ | 1.0+ | 2006 08 28 | 703 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.1+ | 0.6+ | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.0 |
| 2002 10 31 | 704 | 0.9− | 0.0 | 2004 03 12 | 644 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 1.2− | 0.2− | 2004 03 12 | 644 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.5− | 0.0 |
| 2002 10 31 | 704 | 0.5− | 0.6+ | 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.3+ |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.9+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2002 12 05 | 704 | 1.5+ | 0.1− | 2004 03 15 | 704 | (0.0 | 1.5+) | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.7+ | 0.7− | 2004 03 15 | 704 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.2− | 0.1+ |

**(139646)∗ 2001 QC$_{171}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.91427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21119087 | $\omega$ | 322.50362 | | +0.87505908 | +0.48396744 | |
| $a$ | 2.7926679 | $\Omega$ | 8.55976 | | −0.43216141 | +0.78761837 | |
| $e$ | 0.0875414 | $i$ | 2.64342 | | −0.21796358 | +0.38135655 | |
| $P$ | 4.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.3− | 0.7+ | 2004 03 15 | 691 | 0.3+ | 0.5+ | 2006 10 16 | 104 | 0.5− | 1.3+ |
| 1992 10 25 | 691 | 0.4+ | 0.2− | 2004 03 15 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 104 | 0.3− | 0.3− |
| 1992 10 25 | 691 | 0.3− | 0.1+ | 2004 03 18 | 704 | (1.8+ | 1.1+) | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 08 23 | 699 | 0.7− | 1.1+ | 2004 03 18 | 704 | 0.5+ | 1.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2001 08 23 | 699 | 1.2− | 0.3+ | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2001 08 23 | 699 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.1+ | 1.2+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | 0.7+ | 0.0 | 2004 03 18 | 704 | 1.4+ | 1.2+ | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2001 08 24 | 704 | (2.5− | 1.3−) | 2004 03 19 | 704 | 0.2− | 1.0+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2001 08 24 | 704 | (1.4− | 2.2−) | 2004 03 19 | 704 | 0.7+ | 1.1+ | 2006 10 20 | 691 | 0.2+ | 0.1− |
| 2001 08 24 | 704 | (2.0− | 1.9−) | 2004 03 19 | 704 | (1.8+ | 0.7+) | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2001 08 27 | 704 | (1.2− | 1.7+) | 2004 03 19 | 704 | (1.6+ | 1.1+) | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2001 08 27 | 704 | 0.4− | 0.9+ | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 2001 08 27 | 704 | 1.4− | 1.1+ | 2004 03 23 | 691 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.3+ | 0.0 |
| 2001 08 27 | 704 | (1.9− | 1.3+) | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.6+ | 0.1− |
| 2001 09 12 | 704 | 0.4− | 0.5+ | 2004 03 27 | 291 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.5+ | 1.0+ | 2004 03 27 | 291 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2004 03 27 | 291 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 1.2+ | 2004 04 21 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 09 12 | 704 | 0.4+ | 1.2+ | 2004 04 21 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.9− | 0.2+ | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.8− | 0.7− | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.3+ |
| 2001 09 16 | 704 | 0.9− | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 11 07 | 644 | 0.3+ | 0.3+ |
| 2001 09 21 | 691 | 0.2− | 0.6+ | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2001 09 21 | 691 | 0.1− | 0.8+ | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2001 09 21 | 691 | 0.1− | 0.6+ | 2006 07 22 | G96 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.7− |
| 2001 09 21 | 704 | 0.6− | 0.5+ | 2006 07 22 | G96 | 0.1− | 0.6+ | 2006 11 11 | 703 | (0.5− | 1.6−) |
| 2001 09 21 | 704 | 0.1− | 0.8+ | 2006 07 22 | G96 | 0.9− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 1.1− |
| 2001 09 21 | 704 | 0.7− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.5+ |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 11 18 | 691 | 0.1− | 1.5− |
| 2001 09 21 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.3− | 0.3+ |
| 2004 02 26 | 704 | 0.4− | 0.5− | 2006 09 20 | 699 | 0.1− | 1.5− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2004 02 26 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 699 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2004 02 26 | 704 | 0.8− | 0.6+ | 2006 09 20 | 699 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 0.3− | 0.2− | | | | |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 104 | (4.8− | 11.9+) | | | | |

**(139647)∗ 2001 QR$_{171}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.31058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22344922 | $\omega$ | 107.37874 | | +0.43686669 | +0.89921689 | |
| $a$ | 2.6895740 | $\Omega$ | 188.63876 | | −0.87338193 | +0.41774678 | |
| $e$ | 0.1577125 | $i$ | 9.03584 | | −0.21529401 | +0.12998697 | |
| $P$ | 4.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.7+ | 1.2+ | 2001 09 08 | 704 | 0.6+ | 0.3− | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2000 04 05 | 704 | (3.0+ | 1.0+) | 2001 09 08 | 704 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2000 04 05 | 704 | (2.3+ | 1.3−) | 2001 09 08 | 704 | (0.8+ | 2.2−) | 2006 09 27 | G96 | 0.3+ | 0.1− |
| 2000 05 01 | 691 | 0.4− | 0.5− | 2005 06 02 | 703 | 0.8− | 0.9− | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 2000 05 01 | 691 | 0.8− | 0.7− | 2005 06 02 | 703 | (2.0− | 1.1−) | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 2000 05 01 | 691 | 0.4− | 0.3− | 2005 06 02 | 703 | 1.3− | 1.3+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2000 05 05 | 645 | 0.1+ | 0.1+ | 2005 06 02 | 703 | (3.5− | 0.5−) | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2005 06 09 | 703 | 0.8− | 0.3− | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2001 07 12 | 608 | 0.2+ | 0.6− | 2005 06 09 | 703 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2001 07 12 | 608 | 0.4+ | 1.0− | 2005 06 09 | 703 | 0.3− | 1.0− | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2001 07 12 | 608 | 0.0 | 1.0− | 2005 06 09 | 703 | 0.6− | 0.8+ | 2006 10 04 | G96 | 0.6− | 0.4+ |
| 2001 08 25 | 704 | 0.3+ | 0.6+ | 2005 06 11 | 691 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.3+ | 0.2− | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.6− |
| 2001 08 25 | 704 | 0.3− | 0.9− | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | (2.2− | 0.2−) |
| 2001 08 27 | 704 | 0.1+ | 0.1− | 2005 06 27 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2001 08 27 | 704 | 0.3− | 0.0 | 2005 06 27 | 691 | 0.2+ | 0.2− | 2006 10 16 | 703 | (1.1+ | 2.6−) |
| 2001 08 27 | 704 | 0.5− | 0.9+ | 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2001 08 27 | 704 | 0.0 | 1.2+ | 2005 07 04 | 691 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2001 09 08 | 704 | 0.2− | 0.3− | 2005 07 04 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2001 09 08 | 704 | 0.5− | 0.3− | 2005 07 04 | 691 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.3− |

**(139648)∗ 2001 QA$_{172}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.02087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19892302 | $\omega$ | 98.00226 | | +0.15393473 | +0.98807683 | |
| $a$ | 2.9063373 | $\Omega$ | 180.86857 | | −0.96474898 | +0.14967024 | |
| $e$ | 0.1476987 | $i$ | 10.93882 | | −0.21345609 | +0.03609705 | |
| $P$ | 4.95 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.2+ | 0.6− | 2005 03 10 | 699 | 0.1− | 0.3− | 2006 08 29 | 691 | 0.1− | 0.0 |
| 2001 07 20 | 699 | 1.0+ | 1.5+ | 2005 03 10 | 699 | 1.6− | 0.7− | 2006 08 29 | 691 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.1+ | 0.2− | 2005 04 01 | 699 | 0.5+ | 1.7+ | 2006 08 29 | 703 | 0.1− | 0.5− | | |
| 2001 07 20 | 699 | 0.9− | 1.0− | 2005 04 01 | 699 | 0.7+ | 1.7+ | 2006 08 29 | 703 | 0.6− | 0.1− | | |
| 2001 08 10 | 608 | 0.0 | 0.3+ | 2005 04 01 | 699 | 1.2− | 0.3− | 2006 08 29 | 703 | 0.5+ | 0.3+ | | |
| 2001 08 10 | 608 | 0.2+ | 0.8− | 2005 04 01 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.5− | 1.1− | | |
| 2001 08 10 | 608 | 0.3+ | 0.9− | 2005 04 01 | 699 | 0.6+ | 0.4+ | 2006 08 29 | 703 | 0.9+ | 0.5− | | |
| 2001 08 25 | 704 | 0.2+ | 0.7− | 2005 04 01 | 691 | 0.1− | 0.2+ | 2006 08 29 | 703 | 1.9+ | 0.3− | | |
| 2001 08 25 | 704 | 0.5− | 0.3+ | 2005 04 01 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 1.2+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.4+ | 0.2− | 2005 04 02 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.0 | | |
| 2001 08 25 | 704 | 0.3− | 0.1− | 2005 04 02 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.3− | 2005 04 02 | 691 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.2− | 0.7+ | | |
| 2001 08 27 | 704 | 0.6+ | 0.2+ | 2005 04 02 | 644 | 0.5+ | 0.1+ | 2006 08 30 | 704 | 0.4− | 0.9+ | | |
| 2001 08 27 | 704 | 0.1+ | 0.2+ | 2005 04 02 | 644 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.6− | 0.4+ | | |
| 2001 08 27 | 704 | 0.0 | 0.1+ | 2005 04 02 | 644 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.1+ | 0.3+ | | |
| 2001 08 27 | 704 | 0.1+ | 0.1+ | 2005 04 05 | 703 | 0.2+ | 1.7− | 2006 09 11 | 703 | 0.0 | 1.5− | | |
| 2001 08 27 | 704 | 0.2− | 0.1+ | 2005 04 05 | 703 | 0.3+ | 0.2− | 2006 09 11 | 703 | 0.3− | 1.6+ | | |
| 2001 09 08 | 704 | 0.7+ | 0.4+ | 2005 04 05 | 703 | 0.6+ | 1.2+ | 2006 09 11 | 703 | 0.5+ | 0.2+ | | |
| 2001 09 08 | 704 | 0.7+ | 1.1− | 2005 04 05 | 703 | 0.6+ | 0.3− | 2006 09 11 | 703 | (1.4− | 2.8+) | | |
| 2001 09 08 | 704 | 0.9− | 0.0 | 2005 04 13 | 704 | 0.8+ | 0.9+ | 2006 09 14 | 691 | 0.1− | 0.2+ | | |
| 2001 09 08 | 704 | 0.2− | 0.5− | 2005 04 13 | 704 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.1+ | | |
| 2001 09 08 | 704 | 0.6− | 0.1− | 2005 04 13 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.2+ | | |
| 2001 09 09 | 704 | 0.5− | 0.1− | 2005 04 15 | 699 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.3− | 0.1+ | | |
| 2001 09 09 | 704 | 0.3+ | 0.1+ | 2005 04 15 | 699 | 0.3+ | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.1+ | | |
| 2001 09 09 | 704 | 0.2− | 0.1+ | 2005 04 15 | 699 | 0.1+ | 0.0 | 2006 09 17 | 691 | (0.9− | 2.5−) | | |
| 2001 09 11 | 704 | 0.1+ | 1.0− | 2005 04 15 | 699 | 1.1− | 0.9− | 2006 09 18 | 703 | 0.2− | 0.9+ | | |
| 2001 09 11 | 704 | 0.1+ | 0.1− | 2005 05 13 | 703 | 1.6− | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.6− | | |
| 2001 09 11 | 704 | 0.1− | 0.6− | 2005 05 13 | 703 | 0.6+ | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.1− | | |
| 2001 09 11 | 704 | 0.0 | 0.6+ | 2005 05 13 | 703 | 0.7− | 0.3− | 2006 09 18 | 703 | 0.2+ | 0.4− | | |
| 2001 09 11 | 704 | 0.2− | 0.3+ | 2005 05 13 | 703 | 1.6− | 0.5− | 2006 09 28 | G96 | 0.6+ | 0.7− | | |
| 2002 11 24 | 644 | 0.3− | 0.8+ | 2006 08 24 | 704 | 0.1− | 1.5+ | 2006 09 28 | G96 | 0.2+ | 0.2− | | |
| 2002 11 24 | 644 | 0.0 | 1.3+ | 2006 08 24 | 704 | 1.0− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.2− | | |
| 2002 11 24 | 644 | 0.0 | 0.9+ | 2006 08 24 | 704 | 0.5+ | 1.1+ | 2006 09 28 | G96 | 0.4− | 0.3− | | |
| 2005 03 10 | 699 | 1.0+ | 0.1− | 2006 08 24 | 704 | 0.2+ | 1.7+ | | | | | | |
| 2005 03 10 | 699 | 0.2+ | 1.4+ | 2006 08 29 | 691 | 0.2− | 0.0 | | | | | | |

**(139649)∗ 2001 QT$_{174}$**

Discovered 2001 Aug. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.34323 | | (2000.0) | | | |
| $n$ | 0.24411333 | $\omega$ | 159.83455 | | −0.56754214 | −0.82226108 |
| $a$ | 2.5355668 | $\Omega$ | 324.70741 | | +0.74502895 | −0.49105445 |
| $e$ | 0.0504543 | $i$ | 4.19083 | | +0.35046795 | −0.28766690 |
| $P$ | 4.04 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 28 | 691 | 0.2− | 0.3− | 2002 12 14 | 704 | 1.4− | 1.8+ | 2005 08 27 | 699 | 1.3− | 0.3− | | |
| 1997 07 28 | 691 | 0.4− | 0.1− | 2002 12 14 | 704 | (0.1+ | 2.3+) | 2005 08 27 | 699 | 1.4− | 0.6− | | |
| 1997 07 28 | 691 | 0.3− | 0.5− | 2002 12 14 | 704 | 0.0 | 0.6− | 2005 08 27 | 699 | 1.4− | 0.4+ | | |
| 2001 08 16 | 704 | 0.1+ | 1.0− | 2002 12 14 | 704 | 0.1+ | 0.2− | 2005 08 27 | 699 | 1.0− | 0.0 | | |
| 2001 08 16 | 704 | 0.5− | 0.9− | 2002 12 14 | 704 | 0.4− | 0.6+ | 2005 08 31 | 185 | 1.3− | 0.8− | | |
| 2001 08 16 | 704 | 1.5+ | 0.2− | 2003 01 05 | 704 | 0.1+ | 0.3+ | 2005 08 31 | 185 | 0.3− | 0.2− | | |
| 2001 08 27 | 704 | 0.6+ | 1.4− | 2003 01 05 | 704 | 0.1− | 0.4+ | 2005 09 11 | 691 | 0.3+ | 0.2− | | |
| 2001 08 27 | 704 | 1.5+ | 0.4− | 2003 01 05 | 704 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.4+ | 0.1− | | |
| 2001 08 27 | 704 | 0.3− | 0.2− | 2003 01 05 | 704 | 0.2− | 1.0+ | 2005 09 11 | 691 | 0.3+ | 0.1+ | | |
| 2001 08 28 | 704 | (0.4− | 2.1+) | 2003 01 09 | 704 | 0.8+ | 0.1+ | 2005 09 22 | 644 | 0.2+ | 0.1− | | |
| 2001 08 28 | 704 | 0.1− | 0.4+ | 2003 01 09 | 704 | 0.8+ | 0.6− | 2005 09 22 | 644 | 0.0 | 0.2− | | |
| 2001 08 28 | 704 | 0.2+ | 0.1+ | 2003 01 09 | 704 | 0.7+ | 0.7− | 2005 09 22 | 644 | 0.1− | 0.3+ | | |
| 2001 09 12 | 704 | 0.2− | 1.0+ | 2004 05 13 | 644 | 0.2+ | 0.5+ | 2005 09 25 | 691 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2004 05 13 | 644 | 0.1+ | 0.6+ | 2005 09 25 | 691 | 0.1− | 0.3+ | | |
| 2001 09 12 | 704 | 0.0 | 0.5+ | 2004 05 13 | 644 | 0.3+ | 0.8+ | 2005 09 25 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.9+ | 2005 07 30 | 644 | 0.2− | 0.1+ | 2005 10 30 | G96 | 0.5+ | 0.3− | | |
| 2001 09 12 | 704 | 0.1+ | 1.7+ | 2005 07 30 | 644 | 0.1+ | 0.0 | 2005 10 30 | G96 | 0.1+ | 0.4− | | |
| 2001 09 20 | 704 | 0.4+ | 1.8+ | 2005 07 30 | 644 | 0.2− | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.3− | | |
| 2001 09 20 | 704 | 0.2+ | 1.8+ | 2005 08 06 | 644 | 0.0 | 0.3+ | 2005 10 30 | G96 | 0.1+ | 0.5− | | |
| 2001 09 20 | 704 | 1.3+ | 1.3+ | 2005 08 06 | 644 | 0.1− | 0.2+ | 2005 10 31 | G96 | 0.3+ | 0.5− | | |
| 2001 09 22 | 704 | 0.0 | 0.4+ | 2005 08 06 | 644 | 0.3− | 0.7+ | 2005 10 31 | G96 | 0.3+ | 1.0− | | |
| 2001 09 22 | 704 | 0.7+ | 0.2+ | 2005 08 25 | 644 | 0.2+ | 0.1− | 2005 10 31 | G96 | 0.2− | 1.3− | | |
| 2001 09 22 | 704 | 0.2− | 0.8+ | 2005 08 25 | 644 | 0.0 | 0.1− | 2005 10 31 | G96 | 0.4+ | 0.9− | | |
| 2001 09 22 | 704 | 0.5− | 0.8+ | 2005 08 25 | 644 | 0.1+ | 0.1+ | | | | | | |

**(139650)∗ 2001 QF$_{176}$**

Discovered 2001 Aug. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.54203 | | (2000.0) | | | |
| $n$ | 0.21243633 | $\omega$ | 252.47188 | | +0.72303045 | −0.69055204 |
| $a$ | 2.7817420 | $\Omega$ | 151.19291 | | +0.64789762 | +0.66825736 |
| $e$ | 0.0890387 | $i$ | 2.27179 | | +0.23969905 | +0.27671281 |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 16 | 691 | 0.7+ | 0.3+ | 2002 12 11 | 704 | 0.6+ | 1.1− | 2006 09 20 | 704 | 1.0+ | 0.3− | | |
| 1994 01 16 | 691 | 0.4− | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.0 | | |
| 1994 01 16 | 691 | 0.1− | 0.1+ | 2002 12 11 | 704 | 0.6+ | 0.6− | 2006 09 20 | 704 | 0.0 | 0.4− | | |
| 1997 10 23 | 691 | 0.1− | 0.5+ | 2002 12 11 | 704 | 0.1+ | 1.1− | 2006 09 20 | 704 | 0.0 | 0.6− | | |
| 1997 10 23 | 691 | 0.2− | 0.8+ | 2003 01 07 | 704 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.2− | | |
| 1997 10 23 | 691 | 0.3− | 0.6+ | 2003 01 07 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.2− | | |
| 1997 11 06 | 704 | (3.3− | 2.9+) | 2003 01 07 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 1997 11 06 | 704 | (6.2− | 0.8+) | 2003 01 07 | 704 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.0 | 1.1− | | |
| 1997 11 06 | 704 | (2.9− | 0.4−) | 2003 01 07 | 704 | (1.7+ | 0.2+) | 2006 09 27 | 704 | 0.8− | 0.5+ | | |
| 1997 11 06 | 704 | (5.1− | 0.2+) | 2004 03 13 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.6− | 0.3+ | | |
| 1999 04 07 | 691 | 0.1− | 0.0 | 2004 03 13 | 644 | 0.3+ | 0.8+ | 2006 09 27 | 704 | 0.5+ | 0.5− | | |
| 1999 04 07 | 691 | 0.8− | 0.3+ | 2004 03 13 | 644 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.6− | 0.4+ | | |
| 1999 04 07 | 691 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1− | | |
| 2001 08 16 | 704 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.3− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2− | | |
| 2001 08 16 | 704 | 0.9+ | 0.6+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2− | | |
| 2001 08 16 | 704 | 0.3− | 0.1+ | 2004 03 18 | 704 | 1.4+ | 0.8+ | 2006 10 01 | 704 | (1.9− | 1.2+) | | |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2006 09 06 | 644 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.5− | | |
| 2001 08 23 | 691 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 10 01 | 704 | (1.5− | 1.3+) | | |
| 2001 08 23 | 691 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.8− | | |
| 2001 08 23 | 691 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2001 08 28 | 691 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2001 08 28 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.3+ | | |
| 2001 08 28 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | (0.5− | 2.0−) | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.0 | 1.3+ | 2006 09 18 | 699 | 1.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2006 09 18 | 699 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.1− | 1.1+ | 2006 09 18 | 699 | 0.5− | 0.0 | | | | | | |

**(139651)∗ 2001 QM$_{176}$**

Discovered 2001 Aug. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.23356 | | (2000.0) | | | |
| $n$ | 0.21717087 | $\omega$ | 269.85680 | | +0.67960317 | −0.73343157 |
| $a$ | 2.7411638 | $\Omega$ | 137.31802 | | +0.68140686 | +0.62369226 |
| $e$ | 0.0920613 | $i$ | 1.24701 | | +0.27170614 | +0.27034440 |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 910 | 0.4+ | 0.0 | 2004 04 11 | 644 | 1.0+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 1999 01 20 | 910 | 0.3+ | 0.1− | 2004 04 11 | 644 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 1999 01 20 | 910 | 0.9+ | 1.0+ | 2004 04 11 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.5+ | | |
| 1999 03 12 | 691 | 0.9− | 0.6− | 2004 04 12 | 699 | 1.1+ | 0.4− | 2006 10 21 | 703 | 0.6+ | 0.2+ | | |
| 1999 03 12 | 691 | 0.0 | 0.4− | 2004 04 12 | 699 | 0.5− | 1.0+ | 2006 10 21 | 703 | 0.4+ | 0.8+ | | |
| 1999 03 12 | 691 | 0.8− | 0.3− | 2004 04 12 | 699 | 0.6− | 0.8+ | 2006 10 21 | 703 | 0.3− | 0.1+ | | |
| 1999 03 20 | 691 | 0.1+ | 0.3− | 2004 04 12 | 699 | 0.2− | 0.1− | 2006 10 23 | 704 | 0.3+ | 0.2+ | | |
| 1999 03 20 | 691 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 704 | 0.3+ | 0.4+ | | |
| 1999 03 20 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.4− | 1.1+ | | |
| 2001 08 16 | 704 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− | | |
| 2001 08 16 | 704 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.3− | | |
| 2001 08 16 | 704 | 1.0+ | 1.4− | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2001 08 23 | 691 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.5+ | 1.2− | | |
| 2001 08 23 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 1.4− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.3+ | | |
| 2001 08 23 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 1.7+ | 1.2+ | | |
| 2001 08 28 | 691 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.3− | 1.2− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 691 | 0.3+ | 0.1+ | 2006 10 13 | D35 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 08 28 | 691 | 0.3+ | 0.2+ | 2006 10 13 | D35 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | (0.1+ | 1.7−) | 2006 10 13 | D35 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | (2.0− | 0.7+) | 2006 10 15 | 703 | 0.6+ | 1.2+ | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2001 09 21 | 704 | 0.9− | 1.0− | 2006 10 15 | 703 | (1.8+ | 1.0+) | 2006 11 20 | G96 | 0.3+ | 0.5− |
| 2001 09 21 | 704 | 0.2− | 1.1− | 2006 10 15 | 703 | 0.8+ | 1.1+ | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2003 01 04 | 704 | 0.7+ | 0.4+ | 2006 10 15 | 703 | 0.7− | 0.7+ | 2006 11 20 | G96 | 0.6+ | 0.5− |
| 2003 01 04 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2003 01 04 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.6− |
| 2003 01 04 | 704 | 0.1− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.9+ | 2006 11 21 | 704 | 0.0 | 0.9− |
| 2003 01 04 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.0 | | | | |

**(139652)∗ 2001 QT$_{176}$**

Discovered 2001 Aug. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.76361 | | (2000.0) | | +0.90267869 | −0.43004166 |
| $n$ | 0.21337835 | $\omega$ | 214.64230 | | +0.41330104 | +0.85651112 |
| $a$ | 2.7735488 | $\Omega$ | 170.78944 | | +0.11980578 | +0.28539950 |
| $e$ | 0.0953136 | $i$ | 5.49984 | | | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 25 | 691 | 0.4+ | 0.3− | 2001 09 20 | 704 | 1.2− | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 1995 04 25 | 691 | (5.5+ | 4.8−) | 2001 09 20 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 1995 04 25 | 691 | 0.1+ | 0.8− | 2001 09 20 | 704 | 0.8− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 1999 03 16 | 691 | 0.1+ | 0.7+ | 2001 09 20 | 291 | 0.5− | 0.6+ | 2006 10 14 | D35 | 0.1− | 0.1− |
| 1999 03 16 | 691 | 0.4+ | 1.0+ | 2001 09 20 | 704 | (1.7− | 0.4−) | 2006 10 14 | D35 | 0.3− | 0.2− |
| 1999 03 16 | 691 | 0.0 | 0.1+ | 2001 09 20 | 291 | 0.2− | 0.6+ | 2006 10 14 | D35 | 0.3− | 0.2− |
| 1999 03 19 | 691 | (3.6− | 0.3+) | 2001 09 20 | 291 | 1.0+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 1999 03 19 | 691 | 0.4− | 0.3+ | 2001 09 21 | 704 | (0.3+ | 1.7−) | 2006 10 16 | 703 | (0.1+ | 1.8−) |
| 1999 03 19 | 691 | 0.3− | 0.2+ | 2001 09 21 | 704 | 0.3− | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2001 08 20 | 807 | 0.0 | 0.1+ | 2001 09 21 | 704 | (0.5− | 1.8−) | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2001 08 20 | 807 | 0.2+ | 0.1− | 2001 09 21 | 704 | 0.1+ | 1.0+ | 2006 10 18 | 691 | 0.3− | 0.2+ |
| 2001 08 23 | 699 | 0.6+ | 0.9+ | 2001 09 21 | 704 | 0.8− | 1.5− | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | 1.3− | 0.6− | 2001 09 21 | 704 | (0.4− | 1.6+) | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2001 08 23 | 699 | 0.1− | 0.3+ | 2001 09 21 | 704 | (0.0 | 1.7−) | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2001 08 23 | 699 | 0.3+ | 0.4+ | 2001 09 21 | 704 | (0.3+ | 1.7+) | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2001 08 26 | 691 | 0.3− | 0.0 | 2001 09 21 | 704 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2001 08 26 | 691 | 0.2− | 0.1+ | 2003 01 07 | 704 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 08 26 | 691 | 0.4− | 0.0 | 2003 01 07 | 704 | 1.0+ | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.4− |
| 2001 08 28 | 691 | 0.2+ | 0.4+ | 2003 01 07 | 704 | 0.7+ | 1.0+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2001 08 28 | 691 | 0.4+ | 0.2+ | 2003 01 27 | 704 | 0.6− | 1.1+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2001 08 28 | 691 | 0.4+ | 0.3+ | 2003 01 27 | 704 | 0.1− | 0.6+ | 2006 11 13 | 703 | 1.4− | 0.4+ |
| 2001 09 12 | 704 | 0.6− | 0.2− | 2003 01 27 | 704 | 0.6+ | 1.1+ | 2006 11 13 | 703 | 0.3− | 0.5+ |
| 2001 09 12 | 704 | 0.7− | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.5− | 0.7+ |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.6+ | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2004 04 13 | 691 | 0.4− | 0.4+ | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.0 | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 1.2+ | 0.2+ |
| 2001 09 19 | 699 | 1.1+ | 0.0 | 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.7− | 0.8− |
| 2001 09 19 | 699 | 0.1+ | 0.4+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.4− | 0.5− |
| 2001 09 19 | 699 | 0.1+ | 0.6+ | 2006 09 30 | 703 | (0.2− | 1.8−) | 2006 11 20 | 704 | 0.3− | 1.1+ |
| 2001 09 19 | 699 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 1.1− | 2006 11 20 | 704 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2006 09 30 | 703 | 1.0− | 1.4− | 2006 11 20 | 704 | 1.2+ | 0.7− |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | (0.5− | 1.5−) | 2006 11 20 | 704 | 1.0+ | 0.9+ |
| 2001 09 19 | 704 | 0.4− | 0.4− | 2006 10 03 | G96 | 0.5+ | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2001 09 19 | 704 | 1.0− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2001 09 20 | 704 | 1.2− | 0.2− | 2006 10 03 | G96 | 0.4+ | 0.5− | 2006 11 23 | G96 | 0.1− | 0.2− |

**(139653)∗ 2001 QE$_{177}$ = 2000 KA$_{59}$**

Discovered 2001 Aug. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 17931)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 151.90896 | | (2000.0) | | −0.60189427 | +0.79846151 |
| $n$ | 0.21968943 | $\omega$ | 67.91369 | | −0.75063475 | −0.55990647 |
| $a$ | 2.7201735 | $\Omega$ | 165.05707 | | −0.27252662 | −0.22127800 |
| $e$ | 0.1163761 | $i$ | 3.00320 | | | |
| $P$ | 4.49 | $H$ | 16.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.3+ | 0.1+ | 2004 02 16 | G98 | 0.0 | 0.9+ | 2004 03 27 | 704 | 0.9+ | 0.7− |
| 1995 02 24 | 691 | 0.2+ | 0.1+ | 2004 02 16 | G98 | 0.2+ | 0.8+ | 2004 03 27 | 704 | 0.6+ | 0.3− |
| 1995 02 24 | 691 | 0.1+ | 0.1− | 2004 02 16 | G98 | 0.0 | 0.7+ | 2004 03 27 | 704 | 0.9+ | 1.1− |
| 2000 05 24 | 691 | 0.4− | 0.2− | 2004 02 16 | G98 | 0.2− | 0.8+ | 2004 03 27 | 704 | 0.6+ | 0.1− |
| 2000 05 24 | 691 | 0.6− | 0.1− | 2004 02 16 | G98 | 0.2− | 0.9+ | 2004 03 27 | 704 | 0.5+ | 0.2− |
| 2000 05 24 | 691 | 0.7− | 0.1− | 2004 02 17 | G98 | 0.0 | 0.7+ | 2005 06 29 | 691 | 0.3+ | 0.3+ |
| 2000 05 25 | 699 | 0.6+ | 0.8+ | 2004 02 17 | G98 | 0.3− | 0.6+ | 2005 06 29 | 691 | 0.5+ | 0.3+ |
| 2000 05 25 | 699 | 0.8+ | 0.7+ | 2004 02 17 | G98 | 0.1+ | 0.2+ | 2005 06 29 | 691 | 0.4+ | 0.2+ |
| 2000 05 25 | 699 | 0.8+ | 1.0− | 2004 02 17 | G98 | 0.2+ | 0.3+ | 2005 07 04 | G96 | 0.5+ | 0.0 |
| 2000 05 25 | 699 | 0.1+ | 1.3+ | 2004 02 17 | G98 | 0.3− | 0.4+ | 2005 07 04 | G96 | 0.1− | 0.0 |
| 2001 08 26 | 691 | 0.1− | 0.5+ | 2004 02 26 | 704 | 0.4+ | 0.1− | 2005 07 04 | G96 | 0.3− | 0.2− |
| 2001 08 26 | 691 | 0.3− | 0.7+ | 2004 02 26 | 704 | 0.8− | 0.5+ | 2005 07 04 | G96 | 0.3− | 0.0 |
| 2001 08 26 | 691 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.5− | 0.5+ | 2005 07 10 | 691 | 0.1+ | 0.3+ |
| 2001 08 28 | 691 | 0.2+ | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.7+ | 2005 07 10 | 691 | 0.0 | 0.3+ |
| 2001 08 28 | 691 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.6− | 0.9+ | 2005 07 10 | 691 | 0.3− | 0.2+ |
| 2001 08 28 | 691 | 0.2+ | 0.4+ | 2004 03 11 | 644 | 0.1+ | 0.3+ | 2005 07 11 | G96 | 0.5+ | 0.0 |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2004 03 11 | 644 | 0.0 | 0.4+ | 2005 07 11 | G96 | 0.2+ | 0.5− |
| 2001 09 19 | 704 | 0.8− | 0.3+ | 2004 03 11 | 644 | 0.1+ | 0.4+ | 2005 07 11 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2004 03 14 | 691 | 0.1− | 0.3+ | 2005 07 11 | G96 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.9− | 0.0 | 2004 03 14 | 691 | 0.0 | 0.4+ | 2005 07 15 | G96 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 03 14 | 691 | 0.2− | 0.4+ | 2005 07 15 | G96 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.7− | 1.2+ | 2004 03 15 | 704 | 0.7+ | 1.1+ | 2005 07 15 | G96 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.2− | 1.1+ | 2004 03 15 | 704 | 0.7+ | 1.1+ | 2005 07 15 | G96 | 0.6− | 0.2+ |
| 2001 09 21 | 704 | 0.7− | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.9+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.6− | 0.8+ | 2004 03 15 | 704 | 1.2+ | 1.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 02 14 | G98 | 0.2+ | 1.1+ | 2004 03 15 | 704 | 1.0+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 02 14 | G98 | 0.5+ | 0.8+ | 2004 03 18 | 704 | 1.1+ | 0.0 | 2006 11 16 | G96 | 0.7− | 0.1+ |
| 2004 02 14 | G98 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.6− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 02 14 | G98 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.5− | 0.1− |
| 2004 02 14 | G98 | 1.0+ | 0.4− | 2004 03 18 | 704 | 1.0+ | 0.5− | 2006 11 16 | G96 | 0.6− | 0.1− |
| 2004 02 16 | G98 | 0.7+ | 0.7+ | 2004 03 18 | 704 | 0.1+ | 0.0 | | | | |

**(139654)∗ 2001 QP$_{177}$ = 2004 EZ$_{115}$ = 2004 FJ$_{40}$**

Discovered 2001 Aug. 25 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 68925, d, *MPO* 84787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.35670 | | (2000.0) | | +0.99870965 | +0.03081488 |
| $n$ | 0.21663360 | $\omega$ | 24.66512 | | −0.04620222 | +0.88127171 |
| $a$ | 2.7456942 | $\Omega$ | 333.47381 | | +0.02108035 | +0.47160431 |
| $e$ | 0.0362992 | $i$ | 5.18577 | | | |
| $P$ | 4.55 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.2− | 0.3− | 2004 03 18 | 704 | (1.2+ | 1.7+) | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2001 07 27 | 699 | (0.6+ | 1.6−) | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.4+ | 0.2+ |
| 2001 07 27 | 699 | 1.0− | 0.5− | 2004 03 18 | 704 | 0.3+ | 1.0+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 07 27 | 699 | 0.6− | 0.6+ | 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 08 25 | 608 | 0.7+ | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 608 | 1.2+ | 0.1+ | 2004 03 19 | 704 | 0.7+ | 0.9+ | 2006 09 29 | 704 | 0.3− | 0.4+ |
| 2001 08 25 | 608 | 0.4+ | 0.0 | 2004 03 19 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.2+ |
| 2001 08 28 | 644 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.0 | 1.0− | 2006 09 29 | 704 | 1.2− | 0.7+ |
| 2001 08 28 | 644 | 0.7− | 0.4+ | 2004 03 19 | 704 | 0.0 | 1.1+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2001 08 28 | 644 | 0.2− | 0.2+ | 2005 02 17 | 809 | 0.2+ | 0.7+ | 2006 10 01 | 703 | 0.2− | 0.2+ |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2005 02 17 | 809 | 0.3− | 0.5+ | 2006 10 01 | 703 | 0.1− | 0.4− |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 08 21 | 691 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.8+ | 0.3+ |
| 2002 12 14 | 704 | 0.5− | 0.5− | 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 10 01 | 703 | 0.2− | 0.1− |
| 2002 12 14 | 704 | 0.2+ | 0.5− | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.3+ | 1.2− | 2006 08 28 | 703 | (1.8− | 1.8−) | 2006 10 01 | 704 | (1.7− | 1.1+) |
| 2004 02 26 | 704 | 1.0+ | 0.9+ | 2006 08 28 | 703 | 0.4− | 0.9+ | 2006 10 01 | 704 | (1.4− | 1.6+) |
| 2004 02 26 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 703 | (0.5− | 1.5−) | 2006 10 01 | 704 | (0.6− | 1.8+) |
| 2004 02 26 | 704 | (1.8+ | 0.3+) | 2006 09 12 | 703 | 0.1+ | 0.3+ | 2006 10 01 | 704 | (1.1− | 1.9+) |
| 2004 02 26 | 704 | 0.4+ | 0.9+ | 2006 09 12 | 703 | 0.6− | 0.5− | 2006 10 01 | 704 | 1.2− | 0.6+ |
| 2004 02 26 | 704 | 0.4− | 1.4+ | 2006 09 12 | 703 | 0.9+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2004 03 15 | 704 | 0.1− | 0.9+ | 2006 09 12 | 703 | 0.8− | 0.8− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2004 03 15 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2004 03 15 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 699 | (1.7− | 0.1−) | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2004 03 15 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.5− | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2004 03 15 | 704 | 1.0+ | 0.6+ | 2006 09 19 | 699 | 0.2− | 1.1+ | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.0 | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.8+ | 0.3+ |

**(139655)**∗ **2001 QD$_{183}$**

Discovered 2001 Aug. 22 by W. Bickel at Bergisch Gladbach.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.31915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20410074 | $\omega$ | 152.15098 | | +0.89197535 | +0.45208367 | |
| $a$ | 2.8569743 | $\Omega$ | 180.97212 | | −0.42081501 | +0.82981573 | |
| $e$ | 0.0660725 | $i$ | 1.93978 | | −0.16521109 | +0.32714861 | |
| $P$ | 4.83 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 0.9+ | 0.3− | 2004 02 16 | 691 | 0.1− | 0.6+ | 2006 09 17 | 704 | 0.3− | 0.7+ |
| 1994 01 11 | 691 | 0.0 | 0.2+ | 2004 02 26 | 333 | 0.6+ | 0.3+ | 2006 09 19 | 699 | (1.6− | 2.0+) |
| 1994 01 11 | 691 | 0.1+ | 0.6− | 2004 02 26 | 333 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.1+ |
| 1999 02 12 | 691 | 1.0− | 0.4+ | 2004 02 26 | 333 | 1.2+ | 0.4+ | 2006 09 19 | 699 | 0.6− | 0.3− |
| 1999 02 12 | 691 | 1.0− | 0.1+ | 2004 03 14 | 691 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.8+ |
| 1999 02 12 | 691 | 1.4− | 0.4+ | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.0 |
| 2000 05 07 | 704 | 1.0− | 0.2+ | 2004 03 14 | 691 | 0.6+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.6+ |
| 2000 05 07 | 704 | 0.3+ | 0.3− | 2004 03 23 | 291 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.4+ | 0.8+ |
| 2000 05 07 | 704 | 0.1+ | 0.3+ | 2004 03 23 | 291 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 1.0− | 1.4+ |
| 2000 05 07 | 704 | 0.8+ | 0.5+ | 2004 03 23 | 291 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.1+ |
| 2000 05 07 | 704 | 0.1+ | 0.3+ | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.1− | 0.9+ |
| 2001 08 22 | 621 | 0.3− | 0.4− | 2004 03 30 | 691 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.3+ | 1.4+ |
| 2001 08 22 | 621 | 0.0 | 0.0 | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2001 08 22 | 621 | 0.2+ | 0.1+ | 2005 06 06 | 691 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2001 08 22 | 621 | 0.0 | 0.6+ | 2005 06 06 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2001 08 22 | 621 | 0.2+ | 0.4+ | 2005 06 06 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2001 08 22 | 621 | 0.7+ | 0.9+ | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.7− | 0.2− |
| 2001 08 23 | 699 | 1.2− | 0.7+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.7− |
| 2001 08 23 | 699 | 0.1+ | 1.2+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2001 08 23 | 699 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.6− | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2001 08 23 | 699 | 0.0 | 1.1+ | 2006 08 28 | 703 | (1.1− | 1.8+) | 2006 11 15 | G96 | 0.6− | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 1.2+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.6+ | 2006 11 15 | G96 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 1.5+ | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2004 02 16 | 691 | 0.6+ | 0.2+ | 2006 09 17 | 704 | 0.7− | 1.0+ | | | | |
| 2004 02 16 | 691 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.1− | 1.0− | | | | |

**(139656)**∗ **2001 QW$_{183}$**

Discovered 2001 Aug. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.29091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21282162 | $\omega$ | 104.98324 | | +0.99259305 | −0.11987329 | |
| $a$ | 2.7783836 | $\Omega$ | 261.90448 | | +0.10239389 | +0.91290387 | |
| $e$ | 0.1364574 | $i$ | 1.14213 | | +0.06537985 | +0.39017549 | |
| $P$ | 4.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 04 | 691 | 0.4− | 0.3+ | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2000 06 04 | 691 | 0.4− | 0.0 | 2004 03 28 | 291 | 0.4+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.0 |
| 2000 06 04 | 691 | 0.5− | 0.3− | 2004 03 28 | 291 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.0 |
| 2001 05 24 | 807 | 0.2+ | 0.3+ | 2004 03 28 | 291 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2001 05 24 | 807 | 0.2+ | 0.6+ | 2004 04 25 | 691 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2001 08 15 | 608 | 0.3− | 0.3− | 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2001 08 15 | 608 | 0.5− | 0.2− | 2004 04 25 | 691 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.1− |
| 2001 08 15 | 608 | 0.1− | 0.7− | 2005 06 16 | G96 | (1.9+ | 1.7+) | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2001 08 16 | 704 | (0.7− | 1.6+) | 2005 06 16 | G96 | 0.5+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2001 08 16 | 704 | (0.8− | 1.8+) | 2005 06 16 | G96 | 0.6+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 08 16 | 704 | (0.3+ | 1.6+) | 2005 06 16 | G96 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2001 08 16 | 704 | 0.2− | 0.7+ | 2006 07 22 | G96 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 08 21 | 691 | 0.1+ | 0.5+ | 2006 07 22 | G96 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2001 08 21 | 691 | 0.4+ | 0.6+ | 2006 07 22 | G96 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2001 08 21 | 691 | 0.2− | 0.5+ | 2006 07 22 | G96 | 0.5− | 0.2− | 2006 10 27 | 691 | 0.6+ | 0.2+ |
| 2001 08 24 | 699 | (1.3− | 2.1+) | 2006 09 06 | 644 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.3+ |
| 2001 08 24 | 699 | 0.1− | 0.3+ | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.4+ |
| 2001 08 24 | 699 | (0.6− | 1.7+) | 2006 09 06 | 644 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 08 24 | 699 | 1.0+ | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2001 08 28 | 644 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.5+ | 0.8− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 08 28 | 644 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.5+ | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 08 28 | 644 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.0 | 1.2− | 2006 10 31 | 691 | 0.4− | 0.2+ |
| 2001 09 07 | 704 | 1.3− | 0.6+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2001 09 07 | 704 | 0.4− | 0.6− | 2006 09 15 | 691 | 0.7− | 0.8− | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2001 09 07 | 704 | 0.4− | 0.1+ | 2006 09 15 | 691 | 1.3+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2001 09 07 | 704 | (0.4+ | 1.7+) | 2006 09 18 | 699 | 0.6− | 0.8+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 1.2+ | 0.6+ |
| 2002 12 31 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.5− | 0.3− | 2006 09 18 | 699 | (1.5+ | 0.6−) | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2004 03 17 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.6− | 0.4− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | (2.6+ | 0.9+) | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.1− |

**(139657)**∗ **2001 QC$_{184}$**

Discovered 2001 Aug. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.19611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23151444 | $\omega$ | 76.14287 | | +0.92390004 | −0.38179051 | |
| $a$ | 2.6267415 | $\Omega$ | 306.29583 | | +0.33776931 | +0.84495215 | |
| $e$ | 0.1077678 | $i$ | 1.80536 | | +0.17977936 | +0.37455556 | |
| $P$ | 4.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 11 | 691 | 0.4− | 0.3+ | 2001 09 20 | 704 | 1.0+ | 0.6+ | 2005 11 02 | 695 | 0.4− | 0.0 |
| 1999 01 11 | 691 | 0.3− | 0.5+ | 2001 09 20 | 704 | 0.8− | 0.2+ | 2006 11 10 | 691 | 0.4+ | 0.3+ |
| 1999 01 11 | 691 | 0.2− | 0.2+ | 2001 09 20 | 704 | 0.5− | 0.5+ | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 1999 01 15 | 691 | 0.1+ | 0.1+ | 2002 12 06 | 645 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 1999 01 15 | 691 | 0.1+ | 1.5+ | 2002 12 06 | 645 | 0.2+ | 0.1− | 2006 11 18 | 704 | (1.7− | 0.1+) |
| 1999 01 15 | 691 | 0.0 | 0.0 | 2004 04 13 | 691 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 1999 01 23 | 691 | 0.3− | 0.4− | 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.8− |
| 1999 01 23 | 691 | 0.1+ | 0.1− | 2004 04 13 | 691 | 0.5+ | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 1999 01 23 | 691 | 0.2− | 0.4− | 2004 04 20 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2001 08 21 | 691 | 0.1+ | 0.8+ | 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 08 21 | 691 | 0.1− | 0.7+ | 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 08 21 | 691 | 0.1− | 0.6+ | 2005 07 15 | G96 | 0.3− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 08 23 | 699 | 0.1− | 0.5+ | 2005 07 15 | G96 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2001 08 23 | 699 | 0.3+ | 0.9− | 2005 07 15 | G96 | 0.6− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2001 08 23 | 699 | 1.4− | 1.0+ | 2005 07 15 | G96 | 0.6− | 0.2+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2001 08 23 | 699 | (1.0− | 2.0+) | 2005 11 02 | 695 | 0.5− | 0.3− | 2006 11 24 | 691 | 0.2− | 0.1+ |

**(139658)**∗ **2001 QY$_{184}$ = 2005 DN$_2$**

Discovered 2001 Aug. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75058)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.19844 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21453470 | $\omega$ | 113.94653 | | +0.88596803 | +0.44826319 | |
| $a$ | 2.7635735 | $\Omega$ | 219.71081 | | −0.46348130 | +0.84723713 | |
| $e$ | 0.1626461 | $i$ | 10.71880 | | −0.01567584 | +0.28504274 | |
| $P$ | 4.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 704 | 0.2+ | 0.2− | 2004 03 27 | 691 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 08 21 | 704 | 0.9− | 0.7− | 2005 02 16 | 809 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2+ |
| 2001 08 21 | 704 | 1.2− | 0.4− | 2005 02 16 | 809 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.3+ |
| 2001 08 24 | 699 | 0.2+ | 0.1− | 2005 02 16 | 809 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.3+ |
| 2001 08 24 | 699 | 0.5+ | 0.4+ | 2005 02 18 | 809 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2001 08 24 | 699 | 0.5+ | 0.3− | 2005 02 18 | 809 | 0.9+ | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.3+ |
| 2001 08 24 | 699 | 0.9+ | 0.7− | 2005 02 18 | 809 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 2001 09 09 | 699 | 0.0 | 0.3+ | 2005 06 02 | E12 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.1− |
| 2001 09 09 | 699 | 0.3− | 0.2+ | 2005 06 02 | E12 | 0.1+ | 0.4− | 2006 10 15 | 691 | 0.2− | 0.6+ |
| 2001 09 09 | 699 | 0.6− | 0.6− | 2005 06 02 | E12 | 0.5− | 0.5+ | 2006 10 15 | 691 | 0.2− | 0.3+ |
| 2001 09 09 | 699 | 0.6− | 0.5+ | 2005 06 02 | E12 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2001 09 09 | 699 | 0.6+ | 0.2− | 2005 06 05 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 2001 09 09 | 699 | 0.4− | 0.5− | 2005 06 05 | 704 | 0.4+ | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 09 09 | 699 | 0.3− | 0.4+ | 2005 06 05 | 704 | 0.7+ | 0.6+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2001 09 09 | 699 | 0.3+ | 0.4+ | 2005 06 05 | 704 | 0.4− | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2001 09 14 | 644 | 0.6− | 0.6+ | 2005 06 11 | 703 | 0.1+ | 0.6+ | 2006 10 29 | 691 | 0.4− | 0.2− |
| 2001 09 14 | 644 | 0.4− | 0.4+ | 2005 06 11 | 703 | 0.9− | 0.9+ | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2001 09 14 | 644 | 0.8− | 0.2+ | 2005 06 11 | 703 | 0.8− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.5+ |
| 2001 09 16 | 704 | 0.8+ | 0.0 | 2005 06 11 | 703 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.9+ | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.6+ | 0.3+ | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 1.0+ | 0.3+ | 2005 06 14 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2001 09 16 | 704 | 0.7+ | 0.2+ | 2005 07 04 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 2001 09 21 | 699 | 1.0− | 0.2− | 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2001 09 21 | 699 | 0.6− | 0.5+ | 2005 07 04 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.9+ |
| 2001 09 21 | 699 | 0.0 | 0.4− | 2005 07 04 | 703 | 0.6− | 1.4− | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2001 09 21 | 699 | 0.4− | 0.1+ | 2005 07 04 | 703 | 0.2− | 0.6− | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2001 09 25 | 704 | 0.8+ | 0.6+ | 2005 07 04 | 703 | (2.8− | 0.7−) | 2006 11 13 | G96 | 0.6+ | 0.3− |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2005 07 04 | 703 | (2.0− | 0.9−) | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2001 09 25 | 704 | 0.0 | 1.3+ | 2005 07 27 | 644 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2001 09 25 | 704 | 0.3+ | 0.3− | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2001 10 05 | 644 | 0.4− | 0.1− | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.4− |
| 2001 10 05 | 644 | 0.2− | 0.5− | 2005 07 31 | 599 | 0.4− | 0.7+ | 2006 11 17 | 703 | 1.2+ | 0.5+ |
| 2001 10 05 | 644 | 0.4− | 0.2− | 2005 07 31 | 599 | 0.1+ | 0.6+ | 2006 11 17 | 703 | 0.5− | 0.4− |
| 2001 10 19 | 704 | 1.1+ | 0.6− | 2005 07 31 | 599 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 1.1+ |
| 2001 10 19 | 704 | 0.2+ | 0.7− | 2005 07 31 | 599 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2001 10 19 | 704 | 0.0 | 0.8− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2004 03 27 | 691 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2004 03 27 | 691 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.2− | | | | |

**(139659)∗ 2001 QZ$_{184}$**

Discovered 2001 Aug. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.49876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21354054 | $\omega$ | 24.95785 | | −0.02498491 | +0.98120792 | |
| $a$ | 2.7721442 | $\Omega$ | 244.10815 | | −0.94918905 | −0.08334417 | |
| $e$ | 0.2084078 | $i$ | 12.27931 | | −0.31371309 | +0.17402520 | |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 0.1+ | 0.4− | 2005 04 07 | 644 | 0.1+ | 0.3+ | 2005 05 10 | 699 | 0.2+ | 0.1− |
| 2001 07 19 | 699 | 0.4− | 0.2+ | 2005 04 14 | 703 | 0.2− | 0.1− | 2005 05 10 | 699 | 0.8− | 1.4+ |
| 2001 07 19 | 699 | 0.2+ | 0.4− | 2005 04 14 | 703 | 0.8− | 0.0 | 2005 06 02 | 699 | 0.4+ | 0.2+ |
| 2001 07 19 | 699 | 0.9− | 0.0 | 2005 04 14 | 703 | 0.3− | 0.8− | 2005 06 02 | 699 | 0.9+ | 0.5− |
| 2001 08 21 | 704 | 0.3+ | 0.7+ | 2005 04 14 | 703 | 0.2− | 0.3+ | 2005 06 02 | 699 | 0.3− | 0.5+ |
| 2001 08 21 | 704 | 0.1+ | 0.9+ | 2005 04 16 | 428 | 0.5+ | 0.0 | 2005 06 02 | 699 | 0.7+ | 0.6+ |
| 2001 08 21 | 704 | 0.0 | 0.3+ | 2005 04 16 | 428 | 0.1+ | 0.5− | 2006 09 16 | 703 | 0.7− | 0.6+ |
| 2001 08 23 | 699 | 0.2+ | 0.3+ | 2005 04 17 | 428 | 0.4+ | 0.2+ | 2006 09 16 | 703 | (2.0− | 0.7−) |
| 2001 08 23 | 699 | (2.3− | 0.9+) | 2005 04 17 | 428 | 0.7+ | 0.4− | 2006 09 16 | 703 | 0.0 | 0.6− |
| 2001 08 23 | 699 | 0.0 | 0.6+ | 2005 04 17 | 428 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.3+ |
| 2001 08 23 | 699 | 0.1− | 0.4+ | 2005 04 18 | 428 | 0.5− | 0.0 | 2006 09 28 | 703 | 0.6+ | 0.8+ |
| 2001 09 09 | 699 | 0.2+ | 1.0− | 2005 04 18 | 428 | 0.6− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2001 09 09 | 699 | 0.4+ | 0.3− | 2005 04 18 | 428 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.1+ |
| 2001 09 09 | 699 | 0.4− | 0.0 | 2005 04 28 | E12 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2001 09 09 | 699 | (1.2− | 1.6+) | 2005 04 28 | E12 | 1.0− | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.7+ |
| 2001 09 12 | 683 | (1.2− | 2.0+) | 2005 04 28 | E12 | 0.5+ | 0.1− | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 09 12 | 683 | 0.7− | 0.3− | 2005 04 28 | E12 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.7− |
| 2001 09 12 | 683 | 0.8+ | 0.1− | 2005 05 08 | E12 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.5+ |
| 2003 11 21 | 691 | 0.0 | 0.5+ | 2005 05 08 | E12 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.4− | 1.2− |
| 2003 11 21 | 691 | 0.1+ | 0.1− | 2005 05 08 | E12 | 0.1− | 0.4+ | 2006 10 19 | 703 | (1.9+ | 0.8+) |
| 2003 11 21 | 691 | 0.1+ | 0.3+ | 2005 05 08 | E12 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2005 04 07 | 644 | 0.1+ | 0.1+ | 2005 05 10 | 699 | 0.8+ | 0.4− | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2005 04 07 | 644 | 0.2+ | 0.2+ | 2005 05 10 | 699 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.6+ |

**(139660)∗ 2001 QA$_{185}$ = 1997 WH$_{51}$**

Discovered 2001 Aug. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.51292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21116824 | $\omega$ | 158.57570 | | +0.84676835 | −0.50132519 | |
| $a$ | 2.7928674 | $\Omega$ | 232.76125 | | +0.44981252 | +0.85332581 | |
| $e$ | 0.1542831 | $i$ | 12.91391 | | +0.28399305 | +0.14320654 | |
| $P$ | 4.67 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 0.0 | 1.0+ | 2001 09 09 | 699 | 0.1− | 0.2+ | 2006 09 22 | 106 | 0.3+ | 0.7+ |
| 1997 11 29 | 704 | 0.3+ | 0.0 | 2001 09 09 | 699 | 0.2+ | 0.8− | 2006 09 22 | 106 | 0.3+ | 0.5− |
| 1997 11 29 | 704 | 0.7+ | 0.7+ | 2001 09 09 | 699 | 0.1− | 0.4− | 2006 09 22 | 106 | 0.9+ | 0.4− |
| 1997 11 29 | 704 | (2.2− | 1.3+) | 2001 09 09 | 699 | 0.8− | 0.7+ | 2006 09 22 | 699 | 0.4− | 0.3− |
| 1997 11 29 | 704 | 1.0− | 0.9+ | 2001 09 14 | 644 | 0.2− | 0.4+ | 2006 09 22 | 699 | 0.1+ | 0.2+ |
| 1997 12 05 | 704 | 1.4+ | 0.2− | 2001 09 14 | 644 | 0.3− | 0.3+ | 2006 09 22 | 699 | 0.3− | 0.4+ |
| 1997 12 05 | 704 | (3.3+ | 0.0 ) | 2001 09 14 | 644 | 0.3− | 0.3+ | 2006 09 22 | 699 | 0.1+ | 0.0 |
| 1997 12 05 | 704 | 0.5− | 0.3− | 2002 12 14 | 704 | 1.2+ | 0.4+ | 2006 09 28 | 703 | 0.7− | 0.3+ |
| 1997 12 05 | 704 | 1.0− | 1.0− | 2002 12 14 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.1− |
| 1997 12 05 | 704 | 0.9− | 1.1− | 2002 12 14 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.5− | 0.3+ |
| 2000 05 28 | 704 | 0.2− | 0.3+ | 2002 12 14 | 704 | 0.7+ | 0.9+ | 2006 09 28 | 703 | 0.2+ | 0.2+ |
| 2000 05 28 | 704 | 0.6+ | 0.3− | 2004 03 17 | 704 | 0.4− | 0.2+ | 2006 10 04 | 703 | 0.1− | 0.1+ |
| 2000 05 28 | 704 | 0.9+ | 0.5+ | 2004 03 17 | 704 | 0.8− | 0.0 | 2006 10 04 | 703 | 0.4− | 0.4− |
| 2001 07 29 | 644 | 0.1+ | 0.1+ | 2004 03 17 | 704 | 0.1+ | 1.5+ | 2006 10 04 | 703 | 0.5+ | 0.1+ |
| 2001 07 29 | 644 | 0.1− | 0.5+ | 2004 03 17 | 704 | 0.6− | 0.4+ | 2006 10 04 | 703 | 0.2− | 0.0 |
| 2001 07 29 | 644 | 0.3+ | 0.3+ | 2004 03 26 | 704 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 08 18 | 644 | 0.3+ | 0.3+ | 2004 03 26 | 704 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 08 18 | 644 | 0.7+ | 0.1+ | 2004 03 26 | 704 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.5+ | 0.2− |
| 2001 08 21 | 704 | 0.2− | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2001 08 21 | 704 | 0.1− | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.3+ |
| 2001 08 21 | 704 | (1.6− | 0.5+) | 2006 09 15 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.3− |
| 2001 08 23 | 699 | 0.0 | 0.7+ | 2006 09 15 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 08 23 | 699 | 0.2+ | 1.2+ | 2006 09 15 | 644 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 08 23 | 699 | 0.8− | 0.8− | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 08 23 | 699 | 0.0 | 1.3+ | 2006 09 16 | 703 | 0.1− | 0.8− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 08 29 | 644 | 0.5− | 0.2− | 2006 09 16 | 703 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 08 29 | 644 | (1.6+ | 0.1+) | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2001 08 29 | 644 | 0.6− | 0.0 | 2006 09 21 | 704 | (0.4− | 2.4−) | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 08 29 | 644 | 0.6+ | 0.3− | 2006 09 21 | 704 | 0.6− | 1.0− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2001 08 29 | 644 | 0.3− | 0.1− | 2006 09 21 | 704 | 0.2− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 08 29 | 644 | 0.7+ | 0.3− | 2006 09 22 | 106 | 0.6− | 0.6− | | | | |

**(139661)∗ 2001 QK$_{186}$**

Discovered 2001 Aug. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.20206 | | (2000.0) | | | |
| $n$ | 0.22548983 | $\omega$ | 33.92984 | | +0.99835255 | +0.01726582 |
| $a$ | 2.6733229 | $\Omega$ | 324.95661 | | −0.04089685 | +0.88302079 |
| $e$ | 0.0279985 | $i$ | 5.46831 | | +0.04024464 | +0.46901618 |
| $P$ | 4.37 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 1.1− | 0.7+ | 2001 09 22 | 704 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.4− | 0.8+ |
| 2001 08 16 | 704 | 0.4− | 0.1+ | 2001 09 22 | 704 | 0.4+ | 1.1− | 2006 10 19 | 703 | 0.6− | 0.2− |
| 2001 08 16 | 704 | 0.2− | 0.1+ | 2001 09 23 | 704 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2001 08 21 | 691 | 0.0 | 0.3+ | 2001 09 23 | 704 | 0.4+ | 0.3− | 2006 10 19 | 703 | (0.1− | 1.5−) |
| 2001 08 21 | 691 | 0.0 | 0.1+ | 2001 09 23 | 704 | 0.5+ | 0.9− | 2006 10 25 | D35 | 0.2+ | 0.1− |
| 2001 08 21 | 691 | 0.1− | 0.1+ | 2001 10 19 | 644 | 0.5− | 0.9+ | 2006 10 25 | D35 | 0.3+ | 0.1+ |
| 2001 08 23 | 699 | 1.0− | 1.3+ | 2001 10 19 | 644 | 0.3− | 0.6+ | 2006 10 25 | D35 | 0.2+ | 0.6− |
| 2001 08 23 | 699 | 0.4− | 1.1+ | 2001 10 19 | 644 | 0.3− | 0.8+ | 2006 10 25 | D35 | 0.2+ | 0.1+ |
| 2001 08 23 | 699 | 0.8− | 0.3+ | 2003 01 05 | 704 | 0.4− | 0.4+ | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 2001 08 23 | 699 | (0.1− | 1.9+) | 2003 01 05 | 704 | 0.7− | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 09 07 | 704 | 0.1− | 0.4− | 2003 01 05 | 704 | 0.3− | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 09 07 | 704 | 0.1− | 1.1− | 2003 01 05 | 704 | 1.0− | 1.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2001 09 07 | 704 | 0.6+ | 1.1− | 2003 01 09 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2001 09 07 | 704 | 0.5− | 0.1− | 2003 01 09 | 704 | 0.9+ | 0.1− | 2006 11 15 | 703 | 1.0+ | 0.5− |
| 2001 09 11 | 699 | 0.4− | 0.9+ | 2003 01 09 | 704 | 0.4+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2001 09 11 | 699 | 0.1+ | 0.6+ | 2003 01 09 | 704 | 0.2− | 0.0 | 2006 11 15 | 703 | 1.2+ | 0.1+ |
| 2001 09 11 | 699 | 0.1− | 0.4+ | 2004 03 31 | 704 | 0.9+ | 1.1+ | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2001 09 11 | 699 | 0.5+ | 0.6+ | 2004 03 31 | 704 | 1.1+ | 0.9+ | 2006 11 15 | 703 | 1.1+ | 0.6− |
| 2001 09 12 | 704 | 0.3− | 0.8+ | 2004 03 31 | 704 | (1.0+ | 2.5+) | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2001 09 12 | 704 | 0.0 | 0.3+ | 2005 07 02 | 691 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2005 07 02 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2001 09 12 | 704 | 0.3+ | 0.7+ | 2005 07 02 | 691 | 0.6+ | 1.2− | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2001 09 12 | 704 | 0.1+ | 0.4+ | 2005 07 11 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 09 16 | 644 | 0.1+ | 0.3− | 2005 07 11 | 691 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2001 09 16 | 644 | 0.1+ | 1.0+ | 2005 07 11 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 644 | 0.2+ | 0.5+ | 2005 07 30 | E12 | 0.6+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | (2.2+ | 1.0+) | 2005 07 30 | E12 | 0.0 | 0.2+ | 2006 11 22 | 291 | 0.6− | 0.3− |
| 2001 09 20 | 704 | 0.3− | 0.7+ | 2005 07 30 | E12 | 0.4+ | 1.0+ | 2006 11 22 | 291 | 0.7− | 0.1− |
| 2001 09 20 | 704 | (0.1− | 1.6+) | 2005 07 30 | E12 | 0.1+ | 0.6+ | 2006 11 22 | 291 | 0.7− | 0.1− |
| 2001 09 20 | 704 | (0.1+ | 1.9+) | 2005 10 05 | G96 | (1.5− | 0.2+) | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2001 09 20 | 704 | (0.7− | 1.6+) | 2005 10 05 | G96 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2001 09 22 | 704 | 1.2− | 0.1+ | 2005 10 05 | G96 | 0.0 | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2001 09 22 | 704 | 0.7+ | 1.0− | 2005 10 05 | G96 | 0.5+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.2− |

**(139662)∗ 2001 QL$_{187}$ = 1989 WE$_6$**

Discovered 2001 Aug. 21 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 17939)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.21629 | | (2000.0) | | | |
| $n$ | 0.23612842 | $\omega$ | 312.26528 | | +0.41553541 | −0.90350890 |
| $a$ | 2.5924111 | $\Omega$ | 112.90208 | | +0.86445056 | +0.35641325 |
| $e$ | 0.3165392 | $i$ | 6.53824 | | +0.28294089 | +0.23799426 |
| $P$ | 4.17 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 11 24 | 095 | 0.1− | 0.3+ | 2001 09 11 | 704 | 0.7− | 1.1+ | 2003 04 01 | 704 | 0.0 | 0.8− |
| 1995 04 02 | 691 | 0.0 | 0.5− | 2003 02 01 | 704 | 1.2+ | 1.2+ | 2003 04 01 | 704 | 0.0 | 0.5− |
| 1995 04 02 | 691 | 0.8− | 1.1− | 2003 02 01 | 704 | 0.4+ | 0.4+ | 2003 04 01 | 704 | 0.3+ | 0.1+ |
| 1995 04 02 | 691 | 0.1+ | 0.1− | 2003 02 01 | 704 | 0.5+ | 1.1+ | 2003 04 08 | 691 | 0.7− | 0.6+ |
| 1999 03 23 | 704 | 1.7+ | 1.4− | 2003 02 01 | 704 | 0.3+ | 0.6+ | 2003 04 08 | 691 | 0.6− | 0.6+ |
| 1999 03 23 | 704 | (3.0+ | 1.9+) | 2003 02 01 | 704 | 0.1+ | 0.5+ | 2003 04 08 | 691 | 0.5− | 0.6+ |
| 1999 03 23 | 704 | 0.9− | 0.1+ | 2003 02 22 | 644 | 0.4− | 0.1+ | 2005 06 27 | 691 | 0.0 | 1.0+ |
| 1999 03 23 | 704 | (6.2− | 0.1−) | 2003 02 22 | 644 | 0.3− | 0.1− | 2005 06 27 | 691 | 0.3+ | 0.5+ |
| 2001 08 14 | 608 | 0.3+ | 0.5+ | 2003 02 22 | 644 | 0.0 | 0.0 | 2005 06 27 | 691 | 0.2− | 0.4+ |
| 2001 08 14 | 608 | 0.1+ | 0.2+ | 2003 02 28 | 704 | 1.3+ | 0.1− | 2005 07 30 | E12 | 0.2− | 0.7+ |
| 2001 08 14 | 608 | 0.3+ | 0.3+ | 2003 02 28 | 704 | 0.9+ | 1.0− | 2005 07 30 | E12 | 0.5− | 0.1+ |
| 2001 08 19 | 704 | 0.3− | 0.9+ | 2003 02 28 | 704 | 1.4+ | 0.1+ | 2005 07 30 | E12 | 0.2− | 0.2− |
| 2001 08 19 | 704 | (0.2− | 2.1+) | 2003 03 06 | 699 | 0.9+ | 1.4+ | 2005 07 30 | E12 | 0.4− | 0.6+ |
| 2001 08 19 | 704 | 1.3− | 0.0 | 2003 03 06 | 699 | (1.7− | 0.8+) | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2001 08 21 | 608 | 0.8+ | 0.4− | 2003 03 06 | 699 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2001 08 21 | 608 | 0.2+ | 0.5− | 2003 03 06 | 699 | 0.1+ | 1.1+ | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 2001 08 21 | 608 | 0.9+ | 0.4− | 2003 03 07 | 699 | 0.0 | 0.2+ | 2006 10 16 | 703 | 1.1+ | 1.5+ |
| 2001 08 23 | 699 | 0.4− | 0.5− | 2003 03 07 | 699 | 0.8+ | 0.8+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | 0.0 | 0.3+ | 2003 03 07 | 699 | 1.3+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | 0.4− | 0.8+ | 2003 03 07 | 699 | (0.3+ | 1.5+) | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2001 08 23 | 699 | 1.1− | 0.9+ | 2003 03 25 | 644 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 0.1− | 1.0+ |
| 2001 09 11 | 704 | 0.3+ | 1.2+ | 2003 03 25 | 644 | 0.3+ | 0.3+ | 2006 11 28 | 704 | (0.3+ | 1.7+) |
| 2001 09 11 | 704 | (1.0− | 1.6+) | 2003 03 25 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.6+ | 1.1+ |
| 2001 09 11 | 704 | (0.7− | 2.6+) | 2003 04 01 | 704 | (2.6+ | 0.1−) | 2006 11 28 | 704 | 0.8− | 1.5+ |

**(139663)∗ 2001 QX$_{187}$**

Discovered 2001 Aug. 21 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.78881 | | (2000.0) | | | |
| $n$ | 0.21566029 | $\omega$ | 135.11709 | | +0.73313662 | −0.65020477 |
| $a$ | 2.7539492 | $\Omega$ | 266.52342 | | +0.55435371 | +0.74115848 |
| $e$ | 0.1156122 | $i$ | 11.52103 | | +0.39395769 | +0.16708641 |
| $P$ | 4.57 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 1.3− | 0.5− | 2001 09 29 | 644 | 0.0 | 0.7+ | 2006 10 19 | 703 | 0.4− | 0.2− |
| 1997 11 29 | 704 | 0.7− | 1.0− | 2001 09 29 | 644 | 0.3+ | 0.7+ | 2006 10 23 | 703 | 0.9− | 0.2− |
| 1997 11 29 | 704 | (0.7+ | 2.5−) | 2001 09 29 | 644 | 0.2+ | 0.6+ | 2006 10 23 | 703 | 0.0 | 0.2− |
| 1997 11 29 | 704 | (1.2− | 3.4−) | 2002 12 05 | 291 | 1.2− | 0.7+ | 2006 10 23 | 703 | 0.3+ | 0.7+ |
| 1997 11 29 | 704 | (2.8− | 2.7−) | 2002 12 05 | 291 | 0.0 | 0.5− | 2006 10 23 | 703 | 0.2− | 0.1− |
| 2001 08 21 | 608 | 0.7+ | 0.5+ | 2002 12 05 | 291 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2001 08 21 | 608 | 1.0+ | 0.5+ | 2002 12 05 | 291 | 0.3+ | 0.2+ | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2001 08 21 | 608 | 0.9+ | 0.1− | 2002 12 05 | 291 | 0.7+ | 0.3+ | 2006 10 24 | 644 | 0.4+ | 0.3+ |
| 2001 08 22 | 704 | 0.0 | 0.5+ | 2002 12 05 | 291 | 0.7+ | 0.3+ | 2006 11 02 | G96 | 0.2+ | 0.3− |
| 2001 08 22 | 704 | 0.4− | 0.9− | 2002 12 06 | 291 | 0.3− | 0.2+ | 2006 11 02 | G96 | 0.1− | 0.3− |
| 2001 08 22 | 704 | 0.4− | 0.1− | 2002 12 06 | 291 | 0.6− | 0.4+ | 2006 11 02 | G96 | 0.2+ | 0.2− |
| 2001 08 22 | 704 | 0.1− | 0.4+ | 2002 12 06 | 291 | 0.4− | 0.3+ | 2006 11 02 | G96 | 0.3+ | 0.2− |
| 2001 08 22 | 704 | 0.0 | 0.3− | 2002 12 06 | 644 | 0.7+ | 0.7+ | 2006 11 02 | 703 | 1.0− | 0.4− |
| 2001 09 10 | 644 | 0.7− | 0.1− | 2002 12 06 | 644 | 0.8+ | 0.2+ | 2006 11 02 | 703 | 0.0 | 0.5− |
| 2001 09 10 | 704 | 0.1− | 0.0 | 2002 12 06 | 644 | 0.4+ | 0.6+ | 2006 11 02 | 703 | 0.1+ | 0.1+ |
| 2001 09 10 | 644 | 0.7− | 0.0 | 2003 01 01 | 704 | 1.2+ | 0.3− | 2006 11 02 | 703 | 0.8+ | 0.2− |
| 2001 09 10 | 704 | 0.1− | 0.4+ | 2003 01 01 | 704 | 0.9+ | 0.2− | 2006 11 11 | 644 | 0.0 | 0.2+ |
| 2001 09 10 | 644 | 0.6− | 0.2+ | 2003 01 01 | 704 | 0.9+ | 0.0 | 2006 11 11 | 644 | 0.2− | 0.3+ |
| 2001 09 10 | 704 | 0.4+ | 0.4+ | 2003 01 07 | 704 | 1.0+ | 0.4− | 2006 11 11 | 644 | 0.1+ | 0.2+ |
| 2001 09 10 | 704 | 0.3− | 0.2+ | 2003 01 07 | 704 | 0.8+ | 0.5+ | 2006 11 15 | G96 | 0.6+ | 0.3− |
| 2001 09 10 | 704 | 0.2+ | 0.7+ | 2003 01 07 | 704 | 1.0+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 09 21 | 699 | 0.2+ | 0.5− | 2003 01 07 | 704 | 1.0+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 09 21 | 699 | 1.0− | 0.9+ | 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2001 09 21 | 644 | 0.1+ | 0.4+ | 2005 06 10 | 691 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.0 | 0.5− |
| 2001 09 21 | 644 | 0.2+ | 0.3+ | 2005 06 10 | 691 | 0.2− | 0.3+ | 2006 11 21 | 703 | 0.4− | 0.4− |
| 2001 09 21 | 699 | 0.1+ | 0.6+ | 2005 06 14 | 691 | 0.3− | 0.4+ | 2006 11 21 | 703 | 1.1− | 0.1− |
| 2001 09 21 | 644 | 0.1+ | 0.4+ | 2005 06 14 | 691 | 0.2− | 0.3+ | 2006 11 21 | 703 | 0.5+ | 0.6− |
| 2001 09 21 | 699 | 0.6− | 0.1+ | 2005 06 14 | 691 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.9− | 0.1− |
| 2001 09 23 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 11 22 | 703 | 0.6+ | 0.1− |
| 2001 09 23 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.6− | 2006 11 22 | 703 | 0.4− | 0.3+ |
| 2001 09 23 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.5− | 2006 11 22 | 703 | 0.0 | 0.2+ |

**(139664)∗ 2001 QE$_{189}$ = 2002 XH$_{108}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 42980)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 149.29276 | | (2000.0) | | | |
| $n$ | 0.21136529 | $\omega$ | 172.23323 | | −0.87858725 | +0.47378406 |
| $a$ | 2.7911313 | $\Omega$ | 36.24465 | | −0.44345665 | −0.76259911 |
| $e$ | 0.0106740 | $i$ | 5.83518 | | −0.17728689 | −0.44042168 |
| $P$ | 4.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 699 | 0.2+ | 1.2+ | 2004 01 23 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.7+ | 1.2− |
| 2000 05 28 | 699 | (2.4+ | 1.3+) | 2004 01 23 | 704 | (0.8+ | 2.4+) | 2006 09 18 | 703 | (2.5− | 0.2−) |
| 2000 05 28 | 699 | 0.9+ | 1.2+ | 2004 01 23 | 704 | 1.1+ | 0.8+ | 2006 09 18 | 703 | 0.8+ | 1.4− |
| 2000 05 28 | 699 | 1.3+ | 0.4+ | 2004 01 23 | 704 | 0.6+ | 1.2+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2001 08 11 | 608 | 0.4+ | 0.3− | 2004 02 17 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 644 | 0.6− | 0.3+ |
| 2001 08 11 | 608 | 0.3+ | 0.3+ | 2004 02 17 | 704 | 1.1+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2001 08 11 | 608 | 0.7+ | 0.1− | 2004 02 17 | 704 | (1.1+ | 1.7+) | 2006 09 26 | 704 | 1.4+ | 0.5+ |
| 2001 08 19 | 704 | (2.6+ | 2.0+) | 2004 02 17 | 704 | (1.3+ | 2.3+) | 2006 09 26 | 704 | (2.7+ | 0.7+) |
| 2001 08 19 | 704 | (1.7+ | 0.2−) | 2004 02 18 | 691 | 0.2− | 0.5+ | 2006 09 26 | 704 | 1.3+ | 1.2+ |
| 2001 08 19 | 704 | (0.7+ | 1.6−) | 2004 02 18 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.7+ |
| 2001 08 22 | 704 | 0.3+ | 0.1− | 2004 02 18 | 608 | 0.1+ | 1.0+ | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2001 08 22 | 704 | (2.6+ | 0.0 ) | 2004 02 18 | 608 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2001 08 22 | 704 | 1.0− | 0.6+ | 2004 02 18 | 608 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.9+ | 0.1− |
| 2001 08 22 | 704 | 0.0 | 0.3+ | 2004 02 18 | 691 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2001 08 23 | 608 | 0.4− | 0.9+ | 2004 03 20 | 704 | 1.0+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 1.1− |
| 2001 08 23 | 608 | 0.5− | 1.2+ | 2004 03 20 | 704 | 0.7+ | 1.2+ | 2006 10 16 | 703 | 0.4+ | 1.0+ |
| 2001 08 23 | 608 | 0.2− | 0.7+ | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.6− |
| 2001 08 25 | 699 | 0.1− | 0.7− | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 08 25 | 699 | 0.6− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 08 25 | 699 | 0.8− | 0.5− | 2006 08 22 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 08 25 | 699 | 1.4− | 1.5+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 1.0+ | 0.5− | 2006 08 22 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.8+ | 1.4+ | 2006 08 28 | 699 | 1.1− | 0.4+ | 2006 10 21 | 644 | 0.4+ | 0.4− |
| 2002 11 12 | 704 | (1.6+ | 1.0−) | 2006 08 28 | 699 | 0.6− | 1.0+ | 2006 10 22 | 644 | 0.5+ | 0.3+ |
| 2002 11 12 | 704 | 0.8− | 0.9+ | 2006 08 28 | 699 | 1.3− | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.3− | 2006 08 28 | 699 | 1.0− | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.5− | 2006 08 29 | 691 | 0.0 | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.7− | 0.0 | 2006 08 29 | 691 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.5+ | 2006 09 12 | 703 | 1.3− | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 09 12 | 703 | (1.2+ | 2.1+) | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.7− | 2006 09 12 | 703 | 0.9− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2002 12 11 | 704 | 0.5+ | 0.4− | 2006 09 12 | 703 | 1.1− | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.3− | 2006 09 16 | 704 | 0.6− | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 1.1+ | 0.2+ | 2006 09 16 | 704 | 0.2+ | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 12 27 | 644 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 12 27 | 644 | 0.1− | 0.4+ | 2006 09 16 | 704 | 1.0+ | 0.4+ | | | | |
| 2002 12 27 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.3+ | | | | |

**(139665)∗ 2001 QX$_{190}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.17050 | | (2000.0) | | | |
| $n$ | 0.22200916 | $\omega$ | 30.95894 | | +0.84330012 | +0.49285568 |
| $a$ | 2.7011920 | $\Omega$ | 298.00987 | | −0.52927366 | +0.69231461 |
| $e$ | 0.0980640 | $i$ | 14.04998 | | −0.09335036 | +0.52706144 |
| $P$ | 4.44 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 1.0− | 0.7+ | 2001 09 23 | 644 | (1.8− | 1.9+) | 2004 03 26 | 704 | 0.4+ | 0.4− |
| 2001 08 17 | 644 | 1.0− | 0.6+ | 2001 09 26 | 704 | 0.6− | 0.6+ | 2004 03 26 | 704 | 0.0 | 0.6+ |
| 2001 08 17 | 644 | 1.1− | 0.7+ | 2001 09 26 | 704 | 0.6− | 0.2+ | 2004 03 26 | 704 | 0.4− | 0.4− |
| 2001 08 22 | 704 | 0.2+ | 0.3+ | 2001 09 26 | 704 | 0.5− | 0.7+ | 2004 03 26 | 704 | 0.0 | 0.8+ |
| 2001 08 22 | 704 | 0.5+ | 0.4+ | 2001 09 26 | 704 | 0.3− | 0.4+ | 2004 03 26 | 704 | 1.0+ | 0.1+ |
| 2001 08 22 | 704 | 0.8+ | 0.1− | 2001 09 26 | 704 | 0.6− | 0.7+ | 2004 04 13 | 644 | 0.4+ | 0.4+ |
| 2001 08 22 | 704 | 0.8+ | 0.3− | 2001 10 06 | 644 | 0.1+ | 0.3− | 2004 04 13 | 644 | 0.5+ | 0.1− |
| 2001 08 22 | 704 | 1.1+ | 0.3+ | 2001 10 06 | 644 | 0.1− | 0.1− | 2004 04 13 | 644 | 0.6+ | 0.2+ |
| 2001 08 26 | 699 | 0.5− | 0.4− | 2001 10 06 | 644 | 0.5+ | 0.1− | 2004 04 17 | 704 | 0.8+ | 0.1− |
| 2001 08 26 | 699 | 1.2+ | 0.6+ | 2001 11 17 | 704 | 0.4− | 0.4+ | 2004 04 17 | 704 | 1.0+ | 0.4+ |
| 2001 08 26 | 699 | 0.0 | 0.4+ | 2001 11 17 | 704 | 0.3− | 0.3+ | 2004 04 17 | 704 | 0.6+ | 0.2− |
| 2001 08 26 | 699 | 0.5+ | 0.7− | 2001 11 17 | 704 | 0.5− | 0.7+ | 2004 04 17 | 704 | 0.8+ | 0.2+ |
| 2001 09 09 | 699 | 0.7− | 0.4+ | 2001 11 17 | 704 | 0.0 | 0.4+ | 2004 05 12 | E12 | 0.8+ | 0.7+ |
| 2001 09 09 | 699 | 0.1+ | 0.2+ | 2002 12 11 | 704 | 0.5− | 0.0 | 2004 05 12 | E12 | (2.0− | 0.8+) |
| 2001 09 09 | 699 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.4− | 0.2+ | 2004 05 12 | E12 | 1.3− | 1.1+ |
| 2001 09 09 | 699 | 0.2− | 0.1− | 2002 12 11 | 704 | 0.1− | 0.5+ | 2004 05 12 | E12 | 0.7− | 1.2+ |
| 2001 09 10 | 704 | 0.2+ | 0.2− | 2002 12 11 | 704 | 1.1− | 0.9+ | 2005 08 06 | 704 | 0.4− | 0.3+ |
| 2001 09 10 | 704 | 0.5+ | 0.5+ | 2003 01 05 | 704 | 0.4− | 0.2+ | 2005 08 06 | 704 | 0.3− | 1.2− |
| 2001 09 10 | 704 | 0.8+ | 0.1+ | 2003 01 05 | 704 | (1.8+ | 1.3−) | 2005 08 06 | 704 | 0.9+ | 0.9+ |
| 2001 09 10 | 704 | 0.5+ | 0.1− | 2003 01 05 | 704 | 0.2− | 0.2+ | 2005 08 06 | 704 | 0.3− | 0.9− |
| 2001 09 10 | 704 | 0.3+ | 0.0 | 2003 01 05 | 704 | 0.2− | 0.2− | 2005 08 06 | 704 | 0.0 | 0.4− |
| 2001 09 21 | 644 | 0.6− | 0.2− | 2003 01 05 | 704 | 0.3− | 0.1− | 2006 11 13 | 704 | 0.3+ | 0.3− |
| 2001 09 21 | 644 | 0.6− | 0.0 | 2003 01 09 | 704 | (2.8+ | 0.3+) | 2006 11 13 | 704 | 0.3+ | 0.5+ |
| 2001 09 21 | 699 | 0.2− | 0.7− | 2003 01 09 | 704 | 1.5+ | 0.4− | 2006 11 13 | 704 | 0.5+ | 0.0 |
| 2001 09 21 | 644 | 0.6− | 0.1+ | 2003 01 09 | 704 | 0.0 | 0.2+ | 2006 11 20 | 703 | 0.0 | 0.0 |
| 2001 09 21 | 699 | 0.2+ | 0.1− | 2003 01 09 | 704 | (1.0+ | 1.8−) | 2006 11 20 | 703 | 0.1− | 0.2+ |
| 2001 09 21 | 699 | 0.2+ | 0.1− | 2004 03 16 | E12 | 0.3− | 0.1− | 2006 11 20 | 703 | 0.3− | 0.2− |
| 2001 09 21 | 699 | 0.5− | 0.1+ | 2004 03 16 | E12 | 0.0 | 0.2+ | 2006 11 20 | 703 | 0.1− | 0.4− |
| 2001 09 23 | 644 | (2.2− | 1.7+) | 2004 03 16 | E12 | 0.2− | 0.1− | | | | |
| 2001 09 23 | 644 | (2.0− | 1.6+) | 2004 03 16 | E12 | 0.1+ | 0.2+ | | | | |

**(139666)∗ 2001 QG$_{192}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.53002 | | (2000.0) | | | |
| $n$ | 0.22834156 | $\omega$ | 173.73967 | | +0.06488516 | −0.97494021 |
| $a$ | 2.6510184 | $\Omega$ | 272.39653 | | +0.90606243 | +0.14691308 |
| $e$ | 0.2173029 | $i$ | 12.29709 | | +0.41813968 | −0.16705726 |
| $P$ | 4.32 | $H$ | 14.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 704 | (0.6− | 2.2+) | 2001 12 11 | 704 | 0.8− | 0.4+ | 2005 08 30 | 699 | 1.1+ | 0.4+ |
| 2001 07 29 | 704 | 0.2+ | 0.6+ | 2001 12 14 | 704 | 0.1+ | 0.1− | 2005 08 30 | 699 | 0.7+ | 0.5+ |
| 2001 07 29 | 704 | 0.5+ | 0.9+ | 2001 12 14 | 704 | 0.1+ | 0.6− | 2005 08 30 | 699 | 0.4+ | 0.2+ |
| 2001 08 22 | 704 | (1.7+ | 0.1−) | 2001 12 14 | 704 | 0.5+ | 0.6+ | 2005 12 25 | 703 | 0.4+ | 0.7+ |
| 2001 08 22 | 704 | 1.2+ | 0.5− | 2001 12 14 | 704 | 0.4− | 0.2− | 2005 12 25 | 703 | 1.1− | 1.4− |
| 2001 08 22 | 704 | (0.8+ | 2.0+) | 2003 01 03 | 704 | 0.3− | 0.4+ | 2005 12 25 | 703 | (0.2+ | 1.6−) |
| 2001 08 22 | 704 | 0.7+ | 0.4+ | 2003 01 03 | 704 | 0.5− | 0.5+ | 2005 12 25 | 703 | 0.2− | 0.2− |
| 2001 08 22 | 704 | 0.1− | 1.3+ | 2003 01 03 | 704 | 0.2+ | 1.1+ | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2001 08 26 | 699 | 0.6− | 0.5+ | 2003 01 03 | 704 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2001 08 26 | 699 | 0.5− | 0.1+ | 2003 01 05 | 704 | 1.3+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2001 08 26 | 699 | 0.3− | 0.1+ | 2003 01 05 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 703 | 0.6− | 0.4− |
| 2001 08 26 | 699 | 0.9− | 0.5+ | 2003 01 05 | 704 | (1.5+ | 0.0 ) | 2006 10 20 | 703 | 0.8− | 0.5− |
| 2001 09 09 | 704 | 0.4− | 0.1− | 2003 02 07 | 644 | 0.5+ | 0.2+ | 2006 10 20 | 703 | 0.1− | 0.5− |
| 2001 09 09 | 704 | 0.1+ | 0.4− | 2003 02 07 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 703 | 0.2− | 0.5− |
| 2001 09 09 | 704 | 1.1− | 0.1− | 2003 02 07 | 644 | 0.6+ | 0.7+ | 2006 10 28 | 704 | 0.4− | 1.4+ |
| 2001 09 09 | 704 | 0.2+ | 0.4− | 2003 03 08 | 699 | 0.7+ | 0.8+ | 2006 10 28 | 704 | 0.7− | 0.2− |
| 2001 09 10 | 699 | 0.5− | 0.2+ | 2003 03 08 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 704 | 0.3− | 0.5+ |
| 2001 09 10 | 699 | 0.0 | 0.2+ | 2003 03 08 | 699 | 0.5+ | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.7− |
| 2001 09 10 | 699 | 0.4+ | 0.2+ | 2003 03 08 | 699 | 0.2+ | 0.8+ | 2006 10 31 | G96 | 0.8− | 1.1− |
| 2001 09 10 | 699 | 0.3− | 0.1+ | 2003 03 10 | 333 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.4− | 0.4− |
| 2001 09 21 | 699 | 0.5+ | 0.2+ | 2003 03 10 | 333 | 1.0− | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.7− |
| 2001 09 21 | 699 | 0.3+ | 0.3+ | 2003 03 10 | 333 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.2− | 0.2− |
| 2001 09 21 | 699 | 0.4+ | 0.3+ | 2003 03 10 | 333 | 0.6− | 1.1+ | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2001 09 21 | 699 | 0.2+ | 0.2+ | 2003 03 11 | 704 | 0.4+ | 0.5+ | 2006 11 06 | 644 | 0.2− | 0.2− |
| 2001 10 16 | 608 | 0.6− | 0.1+ | 2003 03 11 | 704 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.8− | 0.0 |
| 2001 10 16 | 608 | 0.8− | 0.1+ | 2003 03 11 | 704 | 0.3+ | 0.7+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2001 10 16 | 608 | 0.3− | 0.1+ | 2003 03 25 | 608 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.4− |
| 2001 10 17 | 704 | 0.5+ | 0.3+ | 2003 03 25 | 608 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.5− |
| 2001 10 17 | 704 | 0.5+ | 0.8+ | 2003 03 25 | 608 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2001 10 17 | 704 | 0.2− | 0.0 | 2003 04 07 | 704 | 0.6+ | 1.0+ | 2006 11 18 | 704 | (0.5+ | 1.6+) |
| 2001 10 17 | 704 | 0.1− | 0.7+ | 2003 04 07 | 704 | 0.9+ | 0.8+ | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.1− | 0.2− | 2003 04 07 | 704 | (2.0+ | 1.0+) | 2006 11 18 | 704 | 0.7+ | 0.3− |
| 2001 10 23 | 608 | 0.3− | 0.4− | 2003 04 07 | 704 | (0.0 | 1.9+) | 2006 11 18 | 704 | 1.4+ | 0.4− |
| 2001 10 23 | 608 | 0.4− | 0.6− | 2003 05 03 | 608 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.5− |
| 2001 10 23 | 608 | 0.8− | 0.5− | 2003 05 03 | 608 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.2− |
| 2001 11 13 | 704 | 0.3− | 0.3+ | 2003 05 03 | 608 | 0.0 | 0.1− | 2006 11 18 | 704 | (0.3− | 2.0−) |
| 2001 11 13 | 704 | 0.3− | 0.3+ | 2005 07 16 | 703 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 11 13 | 704 | 0.0 | 0.4+ | 2005 07 16 | 703 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2001 11 13 | 704 | 0.2− | 0.6+ | 2005 07 16 | 703 | 0.9− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2001 11 13 | 704 | 0.1+ | 0.3+ | 2005 07 16 | 703 | 0.4− | 0.6+ | 2006 11 21 | 704 | 0.5− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.2− | 0.4+ | 2005 07 29 | 699 | 0.3+ | 1.1− | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2001 11 17 | 704 | 0.0 | 0.7+ | 2005 07 29 | 699 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2001 11 17 | 704 | 0.5+ | 0.3+ | 2005 07 29 | 699 | 0.3− | 0.6− | 2006 11 28 | 224 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.1+ | 0.1+ | 2005 07 29 | 699 | 0.3− | 0.1− | 2006 11 28 | 224 | 0.3− | 0.1− |
| 2001 11 19 | 644 | 0.4− | 0.2+ | 2005 08 26 | 699 | 0.1− | 0.1+ | 2006 11 28 | 224 | 0.1− | 0.1+ |
| 2001 11 19 | 644 | 0.3− | 0.1+ | 2005 08 26 | 699 | 0.1+ | 0.9+ | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2001 11 19 | 644 | 0.5− | 0.3+ | 2005 08 26 | 699 | 1.0− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 1.0+ |
| 2001 12 11 | 704 | 0.2− | 0.6− | 2005 08 29 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2001 12 11 | 704 | 0.3− | 0.0 | 2005 08 29 | 644 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2001 12 11 | 704 | 0.0 | 0.1− | 2005 08 29 | 644 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.2+ |
| 2001 12 11 | 704 | 0.5− | 0.5+ | 2005 08 30 | 699 | 0.1+ | 0.6+ | | | | |

**(139667)∗ 2001 QZ$_{193}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.85547 | | (2000.0) | | | |
| $n$ | 0.18748295 | $\omega$ | 135.76087 | | +0.71535209 | −0.67247717 |
| $a$ | 3.0233948 | $\Omega$ | 267.51568 | | +0.57672117 | +0.72161344 |
| $e$ | 0.1313756 | $i$ | 10.95489 | | +0.39454289 | +0.16446426 |
| $P$ | 5.26 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | (0.3− | 1.7−) | 2001 10 23 | 699 | 1.0− | 0.6+ | 2003 02 05 | 608 | 0.8+ | 1.0− |
| 2001 08 22 | 704 | 0.5+ | 0.2− | 2001 10 23 | 699 | 0.2− | 0.7+ | 2003 02 05 | 608 | 0.7+ | 0.9− |
| 2001 08 22 | 704 | 0.6+ | 0.0 | 2001 10 23 | 699 | 1.4− | 0.2− | 2004 03 30 | 704 | 0.4+ | 0.1+ |
| 2001 08 22 | 704 | 0.1+ | 0.4+ | 2001 10 26 | 644 | 0.7− | 0.3− | 2004 03 30 | 704 | 0.3+ | 0.2+ |
| 2001 08 22 | 704 | 0.2+ | 0.6+ | 2001 10 26 | 644 | 0.3− | 0.4− | 2004 03 30 | 704 | 0.5− | 0.2− |
| 2001 08 26 | 699 | 0.5− | 0.7+ | 2001 10 26 | 644 | 0.6− | 0.4− | 2004 03 30 | 704 | 0.3− | 0.6− |
| 2001 08 26 | 699 | 0.6+ | 0.0 | 2001 11 11 | 699 | 1.0+ | 0.3+ | 2006 08 19 | 644 | 0.1+ | 0.3+ |
| 2001 08 26 | 699 | 0.5+ | 0.5− | 2001 11 11 | 699 | 1.4+ | 1.0− | 2006 08 19 | 644 | 0.2+ | 0.0 |
| 2001 08 26 | 699 | 0.7+ | 0.0 | 2001 11 11 | 699 | 0.1+ | 0.5+ | 2006 08 19 | 644 | 0.1− | 0.1+ |
| 2001 09 09 | 704 | 0.3− | 0.1− | 2001 11 11 | 699 | 0.5+ | 0.3+ | 2006 08 27 | 699 | 0.6− | 0.3+ |
| 2001 09 09 | 704 | 0.2− | 0.2− | 2002 12 10 | 644 | 0.3+ | 0.3+ | 2006 08 27 | 699 | 0.2− | 0.1− |
| 2001 09 09 | 704 | 0.3− | 0.6− | 2002 12 10 | 644 | 0.3− | 0.2− | 2006 08 27 | 699 | 0.3+ | 0.6+ |
| 2001 09 09 | 704 | 0.6− | 1.0− | 2002 12 10 | 644 | 0.4+ | 0.3− | 2006 08 27 | 699 | 0.0 | 0.8+ |
| 2001 09 09 | 704 | 0.4− | 1.5− | 2002 12 11 | 704 | 0.9− | 1.3− | 2006 09 11 | 703 | 0.7− | 0.9− |
| 2001 09 29 | 644 | 0.4+ | 0.1− | 2002 12 11 | 704 | 1.1− | 0.4+ | 2006 09 11 | 703 | 0.6− | 0.6+ |
| 2001 09 29 | 644 | 0.3+ | 0.3− | 2002 12 11 | 704 | 0.0 | 0.3− | 2006 09 11 | 703 | 0.1− | 0.5+ |
| 2001 09 29 | 644 | 0.6+ | 0.2− | 2002 12 11 | 704 | 1.3− | 0.6− | 2006 09 11 | 703 | 0.1+ | 0.4− |
| 2001 10 06 | 644 | 0.1+ | 0.4− | 2003 01 07 | 704 | 0.9+ | 0.4+ | 2006 09 16 | G92 | 0.2− | 0.7+ |
| 2001 10 06 | 644 | 0.0 | 0.4− | 2003 01 07 | 704 | 0.3+ | 0.1+ | 2006 09 16 | G92 | 0.4+ | 0.2− |
| 2001 10 06 | 644 | 0.0 | 0.4− | 2003 01 07 | 704 | 0.8+ | 0.5+ | 2006 09 16 | G92 | 0.7− | 0.1− |
| 2001 10 17 | 704 | 0.7− | 0.9+ | 2003 01 07 | 704 | 0.1− | 1.0+ | 2006 11 19 | 703 | 1.8+ | 0.7− |
| 2001 10 17 | 704 | (0.3− | 1.7−) | 2003 01 27 | 704 | 0.5− | 0.6+ | 2006 11 19 | 703 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2003 01 27 | 704 | 0.4− | 0.8+ | 2006 11 19 | 703 | 1.3− | 0.3+ |
| 2001 10 17 | 704 | 0.5+ | 0.1− | 2003 01 27 | 704 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.4+ | 1.6+ |
| 2001 10 17 | 704 | 0.3+ | 0.2− | 2003 01 27 | 704 | 0.0 | 1.0+ | | | | |
| 2001 10 23 | 699 | 0.4+ | 0.2+ | 2003 02 05 | 608 | 0.6+ | 0.4+ | | | | |

**(139668)∗ 2001 QB$_{194}$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.86064 | | (2000.0) | | | |
| $n$ | 0.24012276 | $\omega$ | 144.69887 | | +0.20148102 | −0.96065376 |
| $a$ | 2.5635817 | $\Omega$ | 292.99822 | | +0.84415503 | +0.26929892 |
| $e$ | 0.1206748 | $i$ | 11.98687 | | +0.49679743 | −0.06798855 |
| $P$ | 4.10 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 644 | 0.1− | 1.0+ | 2003 01 09 | 704 | 0.2+ | 1.5+ | 2005 10 07 | 683 | 1.2+ | 0.9− |
| 2001 07 22 | 644 | 0.2+ | 0.9+ | 2003 01 09 | 704 | (1.6+ | 0.6+) | 2005 10 07 | 683 | 0.0 | 0.7− |
| 2001 07 22 | 644 | 0.9+ | 1.2+ | 2003 01 09 | 704 | 0.8+ | 0.4+ | 2005 10 07 | 703 | 0.5+ | 0.2− |
| 2001 08 21 | 608 | 0.1+ | 0.5− | 2003 01 09 | 704 | (1.7− | 3.8−) | 2005 10 07 | 703 | 0.1+ | 0.2− |
| 2001 08 21 | 608 | 0.4+ | 0.2− | 2003 01 26 | 608 | 1.3+ | 0.7+ | 2005 10 07 | 703 | 0.2+ | 0.0 |
| 2001 08 21 | 608 | 0.3+ | 0.2− | 2003 01 26 | 608 | 1.2+ | 0.7+ | 2005 10 07 | 703 | 0.1− | 0.3− |
| 2001 08 22 | 704 | 0.6− | 0.2+ | 2003 01 26 | 608 | 1.3+ | 0.6+ | 2005 10 08 | 683 | 1.0+ | 0.1+ |
| 2001 08 22 | 704 | 0.3− | 0.2− | 2003 02 01 | 704 | 0.0 | 0.6− | 2005 10 08 | 683 | 0.7+ | 0.3− |
| 2001 08 22 | 704 | 0.2− | 0.7+ | 2003 02 01 | 704 | 0.1− | 0.3− | 2005 10 08 | 683 | 0.2− | 0.5+ |
| 2001 08 22 | 704 | 1.3− | 0.1+ | 2003 02 01 | 704 | 0.4− | 0.2+ | 2005 10 09 | 683 | 0.1+ | 0.2+ |
| 2001 08 22 | 704 | 1.1− | 0.5+ | 2003 02 01 | 704 | 0.6− | 0.8− | 2005 10 09 | 683 | 0.3+ | 0.2− |
| 2001 08 26 | 699 | 0.3− | 0.5+ | 2003 02 01 | 608 | 0.0 | 0.9− | 2005 10 09 | 683 | 0.3− | 0.6+ |
| 2001 08 26 | 699 | 0.2+ | 0.3+ | 2003 02 01 | 608 | 0.2− | 0.9− | 2005 10 10 | 683 | 0.7+ | 0.5− |
| 2001 08 26 | 699 | 0.7− | 0.6+ | 2003 02 01 | 608 | 0.5+ | 0.1− | 2005 10 10 | 683 | 0.5+ | 0.1− |
| 2001 08 26 | 699 | 0.5− | 0.3+ | 2003 02 06 | 644 | 0.2+ | 1.5+ | 2005 10 10 | 683 | 0.2− | 0.1− |
| 2001 09 09 | 704 | 0.1− | 0.1− | 2003 02 06 | 644 | 0.2+ | 1.3+ | 2005 10 11 | 683 | 0.5+ | 0.9− |
| 2001 09 09 | 704 | 0.6− | 0.1− | 2003 02 06 | 644 | 0.1+ | 1.3+ | 2005 10 11 | 683 | (1.7+ | 1.3−) |
| 2001 09 09 | 704 | 0.6− | 0.9− | 2003 02 12 | 608 | (1.9+ | 0.2−) | 2005 10 11 | 683 | (2.4+ | 0.8−) |
| 2001 09 09 | 704 | 0.3− | 0.9− | 2003 02 12 | 608 | (1.7+ | 0.4+) | 2005 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 09 09 | 704 | (0.6− | 1.6−) | 2003 02 12 | 608 | (2.0+ | 0.6+) | 2005 10 22 | 644 | 0.1+ | 0.1− |
| 2001 09 10 | 699 | 0.3+ | 0.3+ | 2003 03 10 | 704 | 0.6− | 0.9+ | 2005 10 22 | 644 | 0.1+ | 0.2− |
| 2001 09 10 | 699 | 0.1− | 0.4+ | 2003 03 10 | 704 | 0.4− | 1.3+ | 2005 11 04 | G96 | 0.0 | 0.2− |
| 2001 09 10 | 699 | 0.3− | 0.3+ | 2003 03 10 | 704 | 0.5+ | 0.5+ | 2005 11 04 | G96 | 0.0 | 0.1− |
| 2001 09 10 | 699 | 0.5+ | 0.6+ | 2003 03 10 | 704 | 0.6+ | 0.4− | 2005 11 04 | G96 | 0.1− | 0.2− |
| 2001 09 18 | 644 | 0.3− | 0.1− | 2005 06 11 | 703 | 0.1+ | 0.0 | 2005 11 04 | G96 | 0.0 | 0.1− |
| 2001 09 18 | 644 | 0.4− | 0.2− | 2005 06 11 | 703 | 0.6− | 0.8+ | 2005 11 29 | 699 | 1.0+ | 0.6+ |
| 2001 09 18 | 644 | 0.1− | 0.3− | 2005 06 11 | 703 | 0.5+ | 0.3− | 2005 11 29 | 699 | (0.7− | 2.2+) |
| 2001 09 29 | 644 | 0.3− | 0.0 | 2005 06 11 | 703 | 0.9− | 0.9+ | 2005 11 29 | 699 | 1.3− | 0.6+ |
| 2001 09 29 | 644 | 0.1− | 0.1+ | 2005 07 03 | 703 | 0.3− | 0.6− | 2005 11 29 | 699 | (0.5− | 3.2−) |
| 2001 09 29 | 644 | 0.3− | 0.0 | 2005 07 03 | 703 | 0.3− | 1.1− | 2005 12 02 | 703 | (2.9+ | 0.7+) |
| 2001 10 18 | 704 | 0.0 | 0.0 | 2005 07 03 | 703 | 1.4− | 0.0 | 2005 12 02 | 703 | 0.1+ | 0.3+ |
| 2001 10 18 | 704 | 0.1− | 0.4− | 2005 07 03 | 703 | 0.9− | 0.0 | 2005 12 02 | 703 | (1.9− | 0.7+) |
| 2001 10 18 | 704 | 0.6+ | 0.4+ | 2005 07 09 | 703 | 0.6− | 0.3− | 2005 12 02 | 703 | 0.1+ | 1.4− |
| 2001 10 18 | 704 | 0.0 | 0.1− | 2005 07 09 | 703 | 1.1− | 0.3− | 2006 09 25 | 703 | 1.0− | 0.8− |
| 2001 10 18 | 704 | 0.4+ | 0.3− | 2005 07 09 | 703 | 0.6− | 0.3+ | 2006 09 25 | 703 | 0.4+ | 0.4− |
| 2001 10 19 | 608 | 0.3− | 0.7+ | 2005 07 09 | 703 | 0.0 | 0.1− | 2006 09 25 | 703 | (1.9+ | 3.6−) |
| 2001 10 19 | 608 | 0.3− | 0.9+ | 2005 08 04 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 703 | (0.7+ | 2.7−) |
| 2001 10 19 | 608 | 0.4− | 0.8+ | 2005 08 04 | 704 | 0.4− | 0.2− | 2006 10 01 | 703 | 0.6− | 0.2+ |
| 2001 10 23 | 699 | 0.5+ | 0.3+ | 2005 08 04 | 704 | 0.4− | 0.1+ | 2006 10 01 | 703 | (2.2+ | 1.0−) |
| 2001 10 23 | 699 | 0.1+ | 0.1− | 2005 08 04 | 704 | 0.1+ | 0.7+ | 2006 10 01 | 703 | 0.5− | 0.8+ |
| 2001 10 23 | 699 | 0.6− | 0.1+ | 2005 08 04 | 704 | 0.0 | 0.3+ | 2006 10 01 | 703 | 0.2+ | 1.4+ |
| 2001 10 23 | 699 | 0.1+ | 0.1− | 2005 08 09 | 704 | 0.3+ | 0.0 | 2006 10 19 | 695 | 0.3− | 0.1− |
| 2001 10 26 | 608 | 0.7+ | 1.1+ | 2005 08 09 | 704 | 0.6+ | 0.7+ | 2006 10 19 | 695 | 0.4− | 0.2− |
| 2001 10 26 | 608 | 0.3+ | 0.3+ | 2005 08 09 | 704 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2001 10 26 | 608 | 0.0 | 0.6+ | 2005 08 09 | 704 | 0.1− | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2001 11 11 | 699 | 0.8− | 0.2− | 2005 08 16 | 704 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 11 11 | 699 | 0.5− | 0.2+ | 2005 08 16 | 704 | 0.7− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2001 11 11 | 699 | 0.4− | 0.0 | 2005 08 16 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2001 11 11 | 699 | 0.2+ | 0.5− | 2005 08 31 | 699 | 0.7− | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2001 11 13 | 704 | 0.2+ | 0.2+ | 2005 08 31 | 699 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2001 11 13 | 704 | 0.3+ | 0.7+ | 2005 08 31 | 699 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2− | 0.7− |
| 2001 11 13 | 704 | 0.3+ | 0.7+ | 2005 08 31 | 699 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.6− | 0.4− |
| 2001 11 17 | 704 | 0.4+ | 0.8− | 2005 09 01 | 704 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.6− |
| 2001 11 17 | 704 | 0.3+ | 0.6− | 2005 09 01 | 704 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.6− | 0.4− |
| 2001 11 17 | 704 | 0.0 | 0.7− | 2005 09 01 | 704 | 0.1− | 0.3+ | 2006 11 21 | 704 | 1.5+ | 0.5+ |
| 2001 11 17 | 704 | 0.8+ | 0.7− | 2005 09 01 | 704 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 1.4+ | 0.7+ |
| 2001 12 11 | 704 | 0.6− | 0.4+ | 2005 09 01 | 704 | 0.1+ | 0.1+ | 2006 11 21 | 704 | (1.6+ | 0.0 ) |
| 2001 12 11 | 704 | 0.5− | 1.0+ | 2005 09 12 | 704 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.7+ |
| 2001 12 11 | 704 | 0.1− | 0.5+ | 2005 09 12 | 704 | 0.2− | 0.6− | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2001 12 11 | 704 | 0.3− | 0.1+ | 2005 09 12 | 704 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.0 | 0.6− |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2005 09 12 | 704 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.5− |
| 2001 12 14 | 704 | 0.4+ | 0.5− | 2005 09 12 | 704 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2001 12 14 | 704 | 0.8+ | 0.2− | 2005 09 30 | 703 | 1.0+ | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2003 01 07 | 704 | 0.0 | 0.1+ | 2005 09 30 | 703 | 0.7+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.5− |
| 2003 01 07 | 704 | 0.4− | 0.2− | 2005 09 30 | 703 | 0.6− | 0.4− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2003 01 07 | 704 | 0.4+ | 0.1+ | 2005 09 30 | 703 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2003 01 08 | 699 | 0.4+ | 0.3+ | 2005 10 06 | 683 | (2.0− | 2.0−) | 2006 11 28 | 704 | 1.1− | 0.3+ |
| 2003 01 08 | 699 | 0.1− | 0.3− | 2005 10 06 | 683 | (1.7− | 2.7−) | 2006 11 28 | 704 | 0.7+ | 0.4+ |
| 2003 01 08 | 699 | 0.2− | 0.5+ | 2005 10 06 | 683 | (2.1− | 1.7−) | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2003 01 08 | 699 | 0.5+ | 0.3− | 2005 10 07 | 683 | 0.7+ | 0.4− | 2006 11 28 | 704 | 0.4− | 0.9+ |

**(139669)∗ 2001 QJ$_{194}$ = 2002 VB$_2$**

Discovered 2001 Aug. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37714)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 263.52034 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18325159 | $\omega$ | 189.66674 | | −0.07220742 | | −0.98022449 | |
| $a$ | 3.0697585 | $\Omega$ | 264.63994 | | +0.92700329 | | +0.00220743 | |
| $e$ | 0.1441263 | $i$ | 10.66426 | | +0.36803668 | | −0.19787641 | |
| $P$ | 5.38 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.3− | 0.7+ | 2002 11 04 | 291 | 0.7− | 0.4+ | 2004 03 16 | 644 | 0.2+ | 0.3+ |
| 2001 08 22 | 704 | 0.2+ | 0.2+ | 2002 12 05 | 644 | 0.1+ | 0.0 | 2004 03 16 | 644 | 0.2+ | 0.2+ |
| 2001 08 22 | 704 | 0.9+ | 1.9+ | 2002 12 05 | 644 | 0.1− | 0.2− | 2004 04 12 | E12 | 0.1− | 1.2+ |
| 2001 08 22 | 704 | 0.2+ | 0.5+ | 2002 12 05 | 644 | 0.1+ | 0.2− | 2004 04 12 | E12 | 0.8− | 0.7+ |
| 2001 08 22 | 704 | 0.7− | 0.5+ | 2002 12 10 | 644 | 0.8+ | 0.0 | 2004 04 12 | E12 | 0.4+ | 0.8+ |
| 2001 08 26 | 699 | 0.0 | 0.1+ | 2002 12 10 | 644 | 0.5+ | 0.2− | 2004 04 12 | E12 | 0.0 | 0.5+ |
| 2001 08 26 | 699 | 0.3+ | 0.9+ | 2002 12 10 | 644 | 0.4+ | 0.1− | 2004 04 13 | 644 | 0.0 | 0.6+ |
| 2001 08 26 | 699 | 0.5+ | 0.3+ | 2002 12 11 | 704 | 1.3− | 0.6+ | 2004 04 13 | 644 | 0.5+ | 0.7+ |
| 2001 08 26 | 699 | 0.4+ | 0.2+ | 2002 12 11 | 704 | 1.5− | 0.4− | 2004 04 13 | 644 | 0.1+ | 0.3+ |
| 2001 09 10 | 699 | 0.3− | 0.5+ | 2002 12 11 | 704 | 1.9− | 0.2+ | 2004 04 14 | E12 | 0.5− | 0.9+ |
| 2001 09 10 | 699 | 0.3+ | 0.1− | 2002 12 11 | 704 | 1.4− | 1.1− | 2004 04 14 | E12 | 0.5+ | 0.8+ |
| 2001 09 10 | 699 | 1.0− | 0.1− | 2002 12 14 | 699 | 0.2+ | 1.0+ | 2004 04 14 | E12 | 0.6− | 1.9+ |
| 2001 09 10 | 699 | 0.1− | 0.3+ | 2002 12 14 | 699 | 1.6+ | 1.6+ | 2004 04 14 | E12 | 1.1− | 1.9+ |
| 2001 09 23 | 644 | 0.2+ | 0.8− | 2002 12 14 | 699 | (2.4+ | 1.7+) | 2004 04 16 | E12 | 0.1+ | 1.1− |
| 2001 09 23 | 644 | 0.4+ | 1.0− | 2002 12 14 | 699 | 1.3+ | 1.0− | 2004 04 16 | E12 | 0.3+ | 1.0− |
| 2001 09 23 | 644 | 0.0 | 1.2− | 2002 12 18 | 608 | 0.0 | 1.2− | 2004 04 16 | E12 | 0.4+ | 1.1− |
| 2001 09 25 | 704 | 0.5+ | 0.7− | 2002 12 18 | 608 | 0.6+ | 1.0− | 2004 04 16 | E12 | 0.5+ | 1.4− |
| 2001 09 25 | 704 | 1.2+ | 0.1− | 2002 12 18 | 608 | 0.0 | 0.6− | 2004 04 16 | E12 | 0.3− | 0.4+ |
| 2001 09 25 | 704 | 0.3− | 0.2− | 2002 12 27 | 699 | 1.2+ | 0.4+ | 2004 04 16 | E12 | 0.6+ | 0.6+ |
| 2001 09 25 | 704 | 0.2+ | 0.7+ | 2002 12 27 | 699 | 0.7− | 0.5+ | 2004 04 16 | E12 | 0.5+ | 1.1− |
| 2001 09 29 | 644 | 0.4+ | 0.8+ | 2002 12 27 | 699 | 0.6+ | 0.6+ | 2004 04 16 | E12 | 2.0+ | 0.6− |
| 2001 09 29 | 644 | 0.5+ | 0.8+ | 2002 12 27 | 699 | 0.1+ | 0.5+ | 2004 04 25 | 704 | 0.0 | 0.8+ |
| 2001 09 29 | 644 | 0.4+ | 0.7+ | 2002 12 28 | 699 | 0.5+ | 0.3+ | 2004 04 25 | 704 | 0.1− | 0.6+ |
| 2001 10 12 | 608 | 0.1− | 0.6− | 2002 12 28 | 699 | 0.2+ | 0.5+ | 2004 04 25 | 704 | 0.1− | 0.9+ |
| 2001 10 12 | 608 | 0.3− | 1.0− | 2002 12 28 | 699 | 0.3+ | 0.3+ | 2004 04 25 | 704 | 0.6− | 0.2+ |
| 2001 10 12 | 608 | 0.1− | 0.6− | 2002 12 28 | 699 | 0.6− | 1.1+ | 2004 04 25 | 704 | 0.6− | 0.9+ |
| 2001 10 13 | 699 | 0.1+ | 0.3+ | 2003 01 01 | 704 | 0.1+ | 0.1+ | 2004 05 15 | 704 | 0.6+ | 0.6+ |
| 2001 10 13 | 699 | 0.3+ | 0.2+ | 2003 01 01 | 704 | 0.1+ | 0.5− | 2004 05 15 | 704 | 0.8+ | 1.2+ |
| 2001 10 13 | 644 | 0.3− | 1.7− | 2003 01 01 | 704 | 0.0 | 0.1+ | 2004 05 15 | 704 | 0.3+ | 0.1+ |
| 2001 10 13 | 699 | 0.4− | 0.6+ | 2003 01 01 | 704 | 0.6+ | 0.7− | 2004 05 15 | 704 | 0.5− | 0.5+ |
| 2001 10 13 | 644 | 0.1− | 1.5− | 2003 01 01 | 704 | 0.1− | 0.6− | 2004 05 15 | 704 | 0.9+ | 0.1− |
| 2001 10 13 | 699 | 0.0 | 0.2− | 2003 01 07 | 704 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.5+ |
| 2001 10 13 | 644 | 0.1− | 1.5− | 2003 01 07 | 704 | 0.1− | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.3+ |
| 2001 10 17 | 704 | 0.9+ | 0.1+ | 2003 01 07 | 704 | 0.2+ | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.6+ | 0.2− | 2003 01 07 | 704 | 0.3+ | 0.8+ | 2006 08 30 | 699 | 0.6− | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.5+ | 2003 01 07 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 699 | 0.7− | 0.0 |
| 2001 10 17 | 704 | 0.9− | 0.1+ | 2003 01 09 | 704 | 0.1+ | 1.7+ | 2006 08 30 | 699 | 0.8+ | 0.5+ |
| 2001 10 17 | 704 | 0.7+ | 0.1− | 2003 01 09 | 704 | 0.9+ | 0.9+ | 2006 08 30 | 699 | 0.0 | 0.1− |
| 2001 10 19 | 608 | 0.4− | 0.6+ | 2003 01 09 | 704 | 0.7+ | 0.5+ | 2006 09 16 | 691 | 0.0 | 0.2+ |
| 2001 10 19 | 608 | 0.5− | 1.1+ | 2003 01 09 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 691 | 0.0 | 0.2+ |
| 2001 10 19 | 608 | 0.3− | 0.6+ | 2003 01 09 | 704 | 1.1+ | 0.5+ | 2006 09 16 | 691 | 0.1− | 0.1+ |
| 2001 11 11 | 699 | 1.0− | 0.1+ | 2003 01 10 | 608 | 1.3+ | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2001 11 11 | 699 | 0.6− | 0.6+ | 2003 01 10 | 608 | 1.3+ | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2001 11 11 | 699 | 0.6− | 0.4− | 2003 01 10 | 608 | 1.2+ | 0.3− | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 2001 11 11 | 699 | 0.8− | 0.1+ | 2003 01 27 | 704 | 0.3+ | 0.5− | 2006 09 19 | 699 | 0.4− | 0.8+ |
| 2001 11 17 | 704 | 0.7+ | 0.5− | 2003 01 27 | 704 | 0.2− | 0.5− | 2006 09 19 | 699 | 0.7− | 1.2+ |
| 2001 11 17 | 704 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.7+ | 0.1− | 2006 09 19 | 699 | 0.9− | 0.1+ |
| 2001 11 17 | 704 | 0.0 | 0.6+ | 2003 01 27 | 704 | 0.4+ | 0.0 | 2006 09 19 | 699 | 0.2− | 0.2+ |
| 2001 11 17 | 704 | 0.5− | 0.7− | 2003 01 27 | 704 | 0.2− | 0.1− | 2006 09 20 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 644 | 0.4+ | 0.3+ | 2003 01 31 | 291 | 0.1− | 0.1+ | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.6+ | 0.3+ | 2003 01 31 | 291 | 0.1− | 0.0 | 2006 09 20 | 691 | 0.1+ | 0.2+ |
| 2002 10 04 | 644 | 0.3+ | 0.5+ | 2003 01 31 | 291 | 0.0 | 0.3+ | 2006 09 22 | 691 | 0.1− | 0.2+ |
| 2002 11 02 | 291 | 0.4− | 0.1+ | 2003 02 02 | 704 | 0.6− | 0.8+ | 2006 09 22 | 691 | 0.0 | 0.4+ |
| 2002 11 02 | 291 | 0.2− | 0.2+ | 2003 02 02 | 704 | (2.8− | 0.3+) | 2006 09 22 | 691 | 0.0 | 0.2+ |
| 2002 11 02 | 291 | 0.7− | 0.1+ | 2003 02 02 | 704 | 0.2− | 1.0− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2002 11 04 | 291 | 0.1− | 0.2+ | 2003 02 02 | 704 | 0.8− | 1.4− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2004 03 16 | 644 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ |

**(139670)∗ 2001 QH$_{196}$**

Discovered 2001 Aug. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 237.91066 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28911945 | $\omega$ | 1.57589 | | −0.31502195 | | +0.94765063 | |
| $a$ | 2.2650850 | $\Omega$ | 250.06438 | | −0.87137360 | | −0.31056632 | |
| $e$ | 0.1786879 | $i$ | 3.17998 | | −0.37612394 | | −0.07420812 | |
| $P$ | 3.41 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.5+ | 0.3− | 2004 04 29 | 608 | 0.0 | 0.2− | 2004 06 14 | 704 | 0.1− | 0.7+ |
| 2001 07 20 | 699 | 0.5− | 0.3− | 2004 04 29 | 608 | 0.6− | 0.1+ | 2004 06 14 | 704 | 0.1+ | 0.1− |
| 2001 07 20 | 699 | 1.1− | 0.1+ | 2004 04 29 | 608 | 0.3− | 0.1+ | 2004 06 14 | 704 | 0.5− | 0.2+ |
| 2001 07 20 | 699 | 0.2+ | 0.7− | 2004 05 09 | 644 | 0.4− | 0.5+ | 2004 06 14 | 704 | 0.3− | 0.3+ |
| 2001 08 22 | 691 | 0.2+ | 0.3− | 2004 05 09 | 644 | 0.0 | 0.2+ | 2004 06 14 | 704 | 0.5− | 0.9+ |
| 2001 08 22 | 691 | 0.1− | 0.3− | 2004 05 09 | 644 | 0.1+ | 0.1+ | 2004 07 05 | 703 | 0.5− | 1.2+ |
| 2001 08 22 | 691 | 0.1− | 0.3− | 2004 05 12 | 699 | 0.2+ | 0.6+ | 2004 07 05 | 703 | 0.5+ | 0.0 |
| 2001 08 27 | 699 | 0.3− | 0.7+ | 2004 05 12 | 699 | (0.5+ | 1.5+) | 2004 07 05 | 703 | 1.0+ | 1.1+ |
| 2001 08 27 | 699 | 0.2+ | 0.1+ | 2004 05 12 | 699 | 0.9+ | 0.5+ | 2004 07 05 | 703 | 1.1+ | 0.2+ |
| 2001 08 27 | 699 | 0.0 | 0.1+ | 2004 05 12 | 699 | 0.5+ | 0.4+ | 2004 07 14 | E12 | 0.4+ | 0.1+ |
| 2001 08 27 | 699 | 0.3+ | 0.4+ | 2004 05 12 | 428 | 0.1+ | 0.4− | 2004 07 14 | E12 | 0.3− | 0.0 |
| 2001 09 06 | 644 | 0.4− | 0.6+ | 2004 05 15 | 704 | 0.4− | 0.1+ | 2004 07 14 | E12 | 0.2− | 0.1+ |
| 2001 09 06 | 644 | 0.1+ | 0.9+ | 2004 05 15 | 704 | 0.4− | 0.3+ | 2004 07 14 | E12 | 0.2+ | 0.1− |
| 2001 09 06 | 644 | 0.5− | 0.5+ | 2004 05 15 | 704 | 0.7− | 0.2+ | 2004 07 15 | 704 | 0.6+ | 0.3− |
| 2001 09 08 | 704 | 0.6+ | 0.8− | 2004 05 15 | 704 | 0.7− | 0.1− | 2004 07 15 | 704 | 0.1+ | 0.3+ |
| 2001 09 08 | 704 | 0.8− | 0.1− | 2004 05 15 | 704 | 0.0 | 0.4− | 2004 07 15 | 704 | 0.2+ | 0.4+ |
| 2001 09 08 | 704 | 0.1− | 0.5+ | 2004 05 16 | 704 | 0.4− | 0.0 | 2004 07 15 | 704 | 0.2+ | 0.6− |
| 2001 09 08 | 704 | 0.2+ | 0.6− | 2004 05 16 | 704 | 0.1− | 0.2+ | 2005 10 24 | 691 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.5− | 1.2+ | 2004 05 16 | 704 | 0.9− | 0.4+ | 2005 10 24 | 691 | 0.0 | 0.5+ |
| 2001 09 12 | 704 | 0.6− | 0.6+ | 2004 05 16 | 704 | 0.3− | 0.0 | 2005 10 24 | 691 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.3+ | 0.9+ | 2004 05 16 | 704 | 0.9− | 0.0 | 2005 10 28 | 691 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2004 05 16 | E12 | 0.8+ | 0.3− | 2005 10 28 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 0.8+ | 2004 05 16 | E12 | 0.3− | 0.5− | 2005 10 28 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.5+ | 0.7+ | 2004 05 16 | E12 | 0.3− | 0.2− | 2005 10 29 | 703 | (2.1− | 1.5−) |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2004 05 16 | E12 | (0.3− | 2.2−) | 2005 10 29 | 703 | 0.2+ | 0.6− |
| 2001 09 20 | 704 | 0.3− | 0.9+ | 2004 05 18 | 704 | 0.1+ | 0.4+ | 2005 10 29 | 703 | 1.2− | 0.9− |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2004 05 18 | 704 | 0.3+ | 0.2− | 2005 10 29 | 703 | 0.1− | 0.6+ |
| 2001 09 22 | 704 | 0.3+ | 0.2+ | 2004 05 18 | 704 | 0.5+ | 0.3+ | 2005 11 01 | 691 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.2− | 0.2− | 2004 05 18 | 704 | 0.7+ | 0.6+ | 2005 11 01 | 691 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.3− | 0.2− | 2004 05 18 | 704 | 0.9− | 0.0 | 2005 11 01 | 691 | 0.1+ | 0.1− |
| 2001 09 22 | 704 | 0.3− | 0.2+ | 2004 06 09 | E12 | 1.3+ | 0.7− | 2005 11 05 | 291 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 0.4− | 0.4+ | 2004 06 09 | E12 | (2.4+ | 0.6−) | 2005 11 05 | 291 | 0.2− | 0.2− |
| 2002 12 09 | 291 | 0.2+ | 1.0+ | 2004 06 09 | E12 | (1.6+ | 1.4−) | 2005 11 05 | 291 | 0.2− | 0.0 |
| 2002 12 09 | 291 | 0.1+ | 0.5+ | 2004 06 09 | E12 | (2.2+ | 1.3−) | 2005 11 10 | 691 | 0.3+ | 0.0 |
| 2002 12 09 | 291 | 0.2+ | 0.4+ | 2004 06 11 | 704 | 0.5− | 0.4− | 2005 11 10 | 691 | 0.0 | 0.0 |
| 2004 04 25 | 704 | 0.6− | 0.7+ | 2004 06 11 | 704 | 0.7+ | 0.3+ | 2005 11 10 | 691 | 0.1+ | 0.1+ |
| 2004 04 25 | 704 | 0.3+ | 0.1+ | 2004 06 11 | 704 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.5− | 0.0 |
| 2004 04 25 | 704 | 0.8− | 0.1− | 2004 06 11 | 704 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.4+ |
| 2004 04 25 | 704 | 0.5− | 0.5+ | 2004 06 11 | 704 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 04 26 | 699 | 0.5+ | 0.5+ | 2004 06 12 | E12 | 0.9+ | 0.6− | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2004 04 26 | 699 | 0.4+ | 0.5+ | 2004 06 12 | E12 | 0.9+ | 0.7− | 2006 11 24 | 291 | 0.3− | 0.7+ |
| 2004 04 26 | 699 | 0.6+ | 0.7+ | 2004 06 12 | E12 | 0.3+ | 0.2+ | 2006 11 24 | 291 | 0.1− | 0.5+ |
| 2004 04 26 | 699 | 0.9+ | 0.4+ | 2004 06 12 | E12 | 0.1+ | 0.3+ | 2006 11 24 | 291 | 0.3+ | 0.8+ |

**(139671)∗ 2001 QN$_{200}$**

Discovered 2001 Aug. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.31191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37137029 | $\omega$ | 353.95278 | | −0.80531212 | +0.54556358 | |
| $a$ | 1.9168933 | $\Omega$ | 221.98185 | | −0.52836042 | −0.83797387 | |
| $e$ | 0.0558103 | $i$ | 20.29592 | | −0.26890082 | +0.01265618 | |
| $P$ | 2.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.1+ | 0.6+ | 2001 11 10 | 704 | 0.2− | 0.8+ | 2003 05 25 | 608 | 1.0+ | 0.0 | |
| 2000 04 07 | 704 | 0.1+ | 0.6+ | 2001 11 10 | 704 | 0.5− | 0.3− | 2003 05 25 | 608 | 0.5+ | 0.1− | |
| 2000 04 07 | 704 | 0.3+ | 0.6+ | 2001 11 10 | 704 | 0.4+ | 0.6+ | 2003 05 26 | 691 | 0.4+ | 0.5− | |
| 2000 04 07 | 704 | 0.3− | 0.3+ | 2001 11 10 | 704 | 0.3− | 1.0+ | 2003 05 26 | 691 | 0.6+ | 0.4− | |
| 2001 08 22 | 644 | 0.5− | 1.1− | 2001 11 10 | 704 | 0.2− | 0.9+ | 2003 05 26 | 691 | 0.2+ | 0.2− | |
| 2001 08 22 | 644 | 1.3− | 1.5− | 2001 11 17 | 704 | 0.5− | 0.2− | 2003 05 27 | 291 | 0.3− | 0.2+ | |
| 2001 08 22 | 644 | 1.0− | 1.1− | 2001 11 17 | 704 | 0.1+ | 0.3− | 2003 05 27 | 291 | 0.3− | 0.2+ | |
| 2001 08 23 | 704 | 0.7− | 0.6− | 2001 11 17 | 704 | 0.7− | 0.0 | 2003 05 27 | 291 | 0.3− | 0.1+ | |
| 2001 08 23 | 704 | 0.1− | 0.2− | 2001 11 17 | 704 | 0.1− | 0.1− | 2003 05 28 | 703 | (1.9− | 2.5−) | |
| 2001 08 23 | 704 | 0.4− | 0.5− | 2001 11 17 | 644 | 0.3− | 0.6+ | 2003 05 28 | 703 | (1.3− | 2.2−) | |
| 2001 08 23 | 704 | 1.0+ | 0.4+ | 2001 11 17 | 644 | 0.0 | 0.6+ | 2003 05 28 | 703 | (1.3− | 2.5−) | |
| 2001 09 11 | 704 | 1.4+ | 0.1+ | 2001 11 17 | 644 | 0.1− | 0.3+ | 2003 05 28 | 703 | (0.4− | 3.1−) | |
| 2001 09 11 | 704 | 0.3+ | 0.9+ | 2001 11 19 | 704 | 0.2+ | 0.9+ | 2003 06 03 | 704 | 0.6− | 0.8+ | |
| 2001 09 11 | 704 | 0.2+ | 0.3+ | 2001 11 19 | 704 | 0.2− | 0.8+ | 2003 06 03 | 704 | 0.5− | 0.5+ | |
| 2001 09 11 | 704 | 0.3+ | 0.2− | 2001 11 19 | 704 | 0.0 | 0.1+ | 2003 06 03 | 704 | 0.4− | 0.6+ | |
| 2001 09 26 | 704 | 0.5− | 0.6+ | 2001 11 20 | 704 | 1.4− | 0.3− | 2003 06 03 | 704 | 0.1+ | 0.1− | |
| 2001 09 26 | 704 | 0.6− | 0.3+ | 2001 11 20 | 704 | (1.8− | 1.6+) | 2003 06 23 | 699 | 0.3− | 0.2+ | |
| 2001 09 26 | 704 | 0.2+ | 0.5+ | 2001 11 20 | 704 | (1.6− | 1.3+) | 2003 06 23 | 699 | 0.5− | 0.4+ | |
| 2001 09 26 | 704 | 0.1+ | 0.2− | 2003 04 28 | 704 | 0.1+ | 0.7+ | 2003 06 23 | 699 | (1.1+ | 1.7+) | |
| 2001 09 26 | 704 | 0.4+ | 0.3− | 2003 04 28 | 704 | 0.3+ | 0.3+ | 2003 06 23 | 699 | 0.0 | 0.2− | |
| 2001 09 28 | 704 | 1.1+ | 0.0 | 2003 04 28 | 704 | 0.5+ | 0.4+ | 2003 07 23 | 644 | 0.4− | 0.4+ | |
| 2001 09 28 | 704 | 1.4+ | 1.1− | 2003 04 28 | 704 | 1.1+ | 1.2+ | 2003 07 23 | 644 | 0.1− | 0.6+ | |
| 2001 09 28 | 704 | 1.4+ | 1.1− | 2003 05 01 | 704 | 0.2+ | 0.8+ | 2003 07 23 | 644 | 0.1− | 0.4+ | |
| 2001 09 28 | 704 | 1.2+ | 1.3− | 2003 05 01 | 704 | 0.2− | 0.3+ | 2004 12 07 | 704 | 0.0 | 0.2+ | |
| 2001 09 28 | 704 | 1.2+ | 1.0− | 2003 05 01 | 704 | 0.9− | 0.2+ | 2004 12 07 | 704 | 0.3+ | 0.2+ | |
| 2001 10 12 | 608 | 0.2− | 1.4+ | 2003 05 01 | 704 | 0.4− | 0.2+ | 2004 12 07 | 704 | 0.0 | 0.1− | |
| 2001 10 12 | 608 | 0.2− | 1.2+ | 2003 05 02 | 704 | 0.3− | 0.1− | 2004 12 07 | 704 | 0.3− | 0.3+ | |
| 2001 10 12 | 608 | 0.4− | 1.1+ | 2003 05 02 | 704 | 0.5− | 0.4+ | 2004 12 07 | 704 | 0.7+ | 0.1+ | |
| 2001 10 13 | 699 | 0.2+ | 0.4− | 2003 05 02 | 704 | 0.5− | 0.5+ | 2004 12 12 | 704 | 0.5+ | 0.3+ | |
| 2001 10 13 | 699 | 0.2+ | 0.4+ | 2003 05 02 | 704 | 0.1− | 0.6+ | 2004 12 12 | 704 | 0.2+ | 0.1+ | |
| 2001 10 13 | 699 | 0.1+ | 0.8+ | 2003 05 05 | 704 | (1.0+ | 1.7−) | 2004 12 12 | 704 | 0.2− | 0.9+ | |
| 2001 10 13 | 699 | 0.3+ | 0.0 | 2003 05 05 | 704 | 0.5− | 0.9− | 2006 08 24 | 704 | 0.1− | 0.4+ | |
| 2001 10 18 | 704 | 0.7− | 0.1− | 2003 05 05 | 704 | 0.6+ | 0.2− | 2006 08 24 | 704 | 1.3− | 0.5− | |
| 2001 10 18 | 704 | 0.2+ | 0.7+ | 2003 05 05 | 704 | 0.4− | 0.3− | 2006 08 24 | 704 | 1.1+ | 0.3− | |
| 2001 10 18 | 704 | 0.1+ | 0.9+ | 2003 05 05 | 704 | 0.2− | 0.9− | 2006 08 24 | 704 | 0.1− | 0.5+ | |
| 2001 10 18 | 704 | 0.5− | 0.2+ | 2003 05 05 | 704 | (1.6− | 0.5−) | 2006 11 13 | 703 | 0.5− | 1.0− | |
| 2001 10 18 | 704 | 0.1+ | 0.0 | 2003 05 12 | 608 | 0.1− | 1.0+ | 2006 11 13 | 703 | (4.0+ | 1.6+) | |
| 2001 10 19 | 704 | 1.2− | 1.0+ | 2003 05 12 | 608 | 0.2− | 0.7+ | 2006 11 13 | 703 | (0.1− | 1.8−) | |
| 2001 10 19 | 704 | 0.7− | 0.8+ | 2003 05 12 | 608 | 0.3− | 0.9+ | 2006 11 13 | 703 | (1.0− | 3.2−) | |
| 2001 10 19 | 704 | (2.1− | 1.6+) | 2003 05 25 | 608 | 1.0+ | 0.6+ | | | | | |

**(139672)∗ 2001 QD$_{201}$**

Discovered 2001 Aug. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.84201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20904395 | $\omega$ | 206.82476 | | +0.62056961 | −0.78251051 | |
| $a$ | 2.8117561 | $\Omega$ | 204.91839 | | +0.73931853 | +0.60541459 | |
| $e$ | 0.1195578 | $i$ | 6.91163 | | +0.26134549 | +0.14543207 | |
| $P$ | 4.71 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.0 | 0.1− | 2001 09 25 | 704 | 0.0 | 0.9+ | 2006 10 16 | 461 | 0.0 | 0.1+ | |
| 1992 11 18 | 691 | 0.0 | 0.1− | 2001 09 25 | 704 | 0.4− | 0.5− | 2006 10 16 | 461 | 0.0 | 0.2+ | |
| 1992 11 18 | 691 | 0.0 | 0.2− | 2001 09 25 | 704 | 0.6+ | 0.7+ | 2006 10 16 | 461 | 0.1− | 0.2+ | |
| 2001 08 17 | 704 | 0.7+ | 0.2+ | 2001 09 25 | 704 | 0.3− | 0.0 | 2006 10 16 | 461 | 0.3+ | 0.2+ | |
| 2001 08 17 | 704 | 0.6+ | 0.4+ | 2001 09 25 | 704 | (0.4+ | 2.2+) | 2006 10 16 | 461 | 0.1+ | 0.2+ | |
| 2001 08 17 | 704 | 0.4− | 0.4− | 2001 09 25 | 704 | 0.3+ | 0.5+ | 2006 10 18 | 461 | 0.1+ | 0.4+ | |
| 2001 08 17 | 704 | 0.8− | 0.2− | 2001 09 25 | 704 | (0.3+ | 1.6+) | 2006 10 18 | 461 | 0.2+ | 0.3+ | |
| 2001 08 22 | 691 | 0.1+ | 0.2+ | 2001 09 25 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 461 | 0.1+ | 0.2+ | |
| 2001 08 22 | 691 | 0.1+ | 0.3+ | 2001 09 26 | 699 | 0.7+ | 0.4− | 2006 10 19 | 461 | 0.1+ | 0.3+ | |
| 2001 08 22 | 691 | 0.6− | 0.4+ | 2001 09 26 | 699 | (0.1− | 1.6−) | 2006 10 19 | 461 | 0.1− | 0.2+ | |
| 2001 08 24 | 699 | 0.7− | 0.3− | 2001 09 26 | 699 | 0.2− | 0.7− | 2006 10 19 | 461 | 0.1− | 0.2+ | |
| 2001 08 24 | 699 | 0.4− | 0.8+ | 2001 09 26 | 699 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.3− | 0.0 | |
| 2001 08 24 | 699 | 1.3− | 0.1− | 2001 10 11 | 644 | 1.3+ | 1.1− | 2006 10 19 | 691 | 0.1− | 0.0 | |
| 2001 08 24 | 699 | 0.3− | 1.0− | 2001 10 11 | 644 | (1.7+ | 0.5−) | 2006 10 19 | 691 | 0.1− | 0.1− | |
| 2001 09 08 | 704 | 0.8+ | 0.1− | 2001 10 11 | 644 | (1.6+ | 0.6−) | 2006 10 20 | 644 | 0.3+ | 0.3+ | |
| 2001 09 08 | 704 | 1.0+ | 0.1+ | 2001 10 15 | 645 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.2+ | |
| 2001 09 08 | 704 | 0.1+ | 1.1+ | 2001 10 15 | 645 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 2001 09 08 | 704 | 0.7+ | 0.2+ | 2001 10 19 | 644 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.0 | |
| 2001 09 10 | 333 | 0.3+ | 0.8− | 2001 10 19 | 644 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.3+ | |
| 2001 09 10 | 333 | 0.4+ | 0.4+ | 2001 10 19 | 644 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2001 09 11 | 691 | 0.1− | 0.2+ | 2001 10 21 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.2− | |
| 2001 09 11 | 691 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.6− | 0.0 | |
| 2001 09 11 | 691 | 0.5+ | 0.1+ | 2001 10 21 | 704 | 0.7− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1− | |
| 2001 09 12 | 333 | 0.0 | 0.3− | 2001 10 21 | 704 | 0.0 | 0.1− | 2006 10 23 | 704 | 0.8+ | 1.0− | |
| 2001 09 12 | 333 | 0.1− | 0.4− | 2003 01 10 | 704 | 1.1+ | 1.2+ | 2006 10 23 | 704 | (2.7− | 0.3−) | |
| 2001 09 12 | 333 | 0.1− | 0.1− | 2003 01 10 | 704 | (0.0 | 1.6+) | 2006 10 23 | 704 | (1.6− | 0.3+) | |
| 2001 09 12 | 333 | 0.7+ | 0.4− | 2003 01 10 | 704 | (0.5+ | 2.1+) | 2006 10 23 | 704 | 1.0− | 0.2+ | |
| 2001 09 16 | 704 | 0.9− | 0.0 | 2003 01 28 | 704 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.3− | |
| 2001 09 16 | 704 | 1.2− | 0.0 | 2003 01 28 | 704 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2− | |
| 2001 09 16 | 704 | 0.9− | 0.1+ | 2003 01 28 | 704 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.3− | |
| 2001 09 16 | 704 | 0.8− | 0.7+ | 2003 01 28 | 704 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.3− | |
| 2001 09 16 | 704 | 0.5− | 0.9+ | 2003 01 28 | 704 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.0 | |
| 2001 09 18 | 699 | 0.4− | 0.1+ | 2003 02 01 | 704 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− | |
| 2001 09 18 | 699 | 0.0 | 0.2− | 2003 02 01 | 704 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 | |
| 2001 09 18 | 699 | 0.8− | 0.3− | 2003 02 01 | 704 | 0.3− | 1.2− | 2006 11 01 | 691 | 0.2+ | 0.2+ | |
| 2001 09 18 | 699 | 0.6− | 0.2+ | 2003 02 01 | 704 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2+ | |
| 2001 09 19 | 704 | 0.1− | 1.0+ | 2004 04 16 | 691 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1− | |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2004 04 16 | 691 | 0.1− | 0.8+ | 2006 11 07 | 644 | 0.2+ | 0.1+ | |
| 2001 09 19 | 704 | 0.0 | 0.4− | 2004 04 16 | 691 | 0.3+ | 0.7+ | 2006 11 07 | 644 | 0.3+ | 0.6+ | |
| 2001 09 19 | 704 | 0.4+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.3+ | 0.3+ | |
| 2001 09 19 | 704 | 0.5+ | 0.8− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.4− | |
| 2001 09 20 | 704 | (1.6− | 0.7+) | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.1− | |
| 2001 09 20 | 704 | (1.8− | 0.6+) | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.2+ | |
| 2001 09 20 | 704 | 1.4− | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.1+ | |
| 2001 09 20 | 704 | 1.2− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.3− | |
| 2001 09 22 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.3− | 0.2− | |
| 2001 09 22 | 704 | 0.0 | 0.9+ | 2006 09 29 | 704 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2− | |
| 2001 09 22 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.4+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.4− | |
| 2001 09 22 | 704 | 1.3+ | 0.0 | 2006 09 29 | 704 | 0.8+ | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.1− | |
| 2001 09 22 | 704 | 0.5+ | 0.4+ | 2006 10 01 | 461 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.4− | |
| 2001 09 23 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 461 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.3− | |
| 2001 09 23 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 461 | 0.2+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.2− | |
| 2001 09 23 | 704 | 0.3+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.2+ | |
| 2001 09 23 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.1− | |
| 2001 09 23 | 704 | 0.7+ | 0.5+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.1− | |
| 2001 09 24 | 704 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.9− | |
| 2001 09 24 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.6+ | |
| 2001 09 24 | 704 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5− | 0.6+ | |
| 2001 09 24 | 704 | (1.0− | 2.1+) | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.7− | 1.2+ | |
| 2001 09 24 | 704 | 0.5+ | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.9+ | |
| 2001 09 24 | 704 | (0.8− | 2.6+) | 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 1.4− | 0.3− | |
| 2001 09 24 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 461 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.3− | |
| 2001 09 24 | 704 | 0.5+ | 0.4− | 2006 10 16 | 461 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.8− | 1.4− | |
| 2001 09 24 | 704 | 1.4+ | 0.3+ | 2006 10 16 | 461 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.8− | 0.5+ | |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2006 10 16 | 461 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 1.4− | 0.1+ | |

**(139673)∗ 2001 QS$_{202}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.42136 | | (2000.0) | | | |
| $n$ | 0.23329937 | $\omega$ | 9.81152 | | +0.47785247 | −0.87701017 |
| $a$ | 2.6133265 | $\Omega$ | 51.66104 | | +0.80156136 | +0.41198854 |
| $e$ | 0.1917035 | $i$ | 3.66233 | | +0.35938336 | +0.24722177 |
| $P$ | 4.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 699 | 0.7+ | 0.3+ | 2003 01 05 | 704 | 0.1− | 1.4+ | 2004 05 09 | 691 | 0.3+ | 0.2+ |
| 1999 02 18 | 699 | 0.4+ | 0.1− | 2003 01 05 | 704 | (0.2− | 1.8+) | 2004 05 09 | 691 | 0.1− | 0.3+ |
| 1999 02 18 | 699 | 1.5+ | 0.2− | 2003 01 09 | 704 | (1.6− | 0.4−) | 2006 10 28 | 704 | 0.7+ | 0.2+ |
| 2001 07 27 | 699 | (0.5− | 1.8+) | 2003 01 09 | 704 | 0.7− | 1.0− | 2006 10 28 | 704 | 0.4− | 0.4+ |
| 2001 07 27 | 699 | 0.9− | 0.1− | 2003 01 09 | 704 | 0.1− | 0.4− | 2006 10 28 | 704 | 0.1− | 0.2+ |
| 2001 07 27 | 699 | 0.7+ | 0.4+ | 2003 02 01 | 704 | 0.3− | 0.1− | 2006 10 28 | 704 | 1.1+ | 0.4+ |
| 2001 07 27 | 699 | (0.9+ | 2.6+) | 2003 02 01 | 704 | 0.1+ | 0.7− | 2006 11 18 | 704 | 0.2+ | 0.5− |
| 2001 08 14 | 608 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2001 08 14 | 608 | 0.2− | 0.3+ | 2003 02 01 | 704 | 0.8+ | 0.6+ | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2001 08 14 | 608 | 0.0 | 0.2+ | 2003 02 04 | 704 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2001 08 23 | 699 | 0.6+ | 1.5+ | 2003 02 04 | 704 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.9+ |
| 2001 08 23 | 699 | 0.1+ | 0.7+ | 2003 02 04 | 704 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 2001 08 23 | 699 | 0.6− | 0.4+ | 2003 02 04 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.8+ | 1.4+ |
| 2001 08 23 | 699 | 0.3+ | 0.1+ | 2003 02 07 | 704 | 0.2− | 0.8− | 2006 11 21 | 704 | 0.8+ | 0.4+ |
| 2001 08 27 | 608 | 0.4− | 0.3+ | 2003 02 07 | 704 | 0.9+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2001 08 27 | 608 | 0.9− | 0.1− | 2003 02 07 | 704 | 0.6+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 08 27 | 608 | 0.1+ | 0.1+ | 2003 02 26 | 704 | 0.2− | 0.4− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.4− | 0.4+ | 2003 02 26 | 704 | 0.1+ | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.4− | 0.2+ | 2003 02 26 | 704 | 0.1− | 0.6− | 2006 11 28 | 704 | 0.2− | 0.2− |
| 2002 12 31 | 704 | 0.2+ | 0.5+ | 2003 02 26 | 704 | 0.6− | 0.4− | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2002 12 31 | 704 | 0.7− | 0.0 | 2003 02 26 | 704 | 0.5− | 1.1− | 2006 11 28 | 704 | 0.6− | 0.6+ |
| 2002 12 31 | 704 | 0.2− | 0.2− | 2004 04 22 | 691 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.8+ |
| 2003 01 05 | 704 | 0.8− | 1.2+ | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2003 01 05 | 704 | 0.8− | 0.9+ | 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.4+ | 0.6− |
| 2003 01 05 | 704 | 0.5− | 1.3+ | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.2+ |

**(139674)∗ 2001 QD$_{203}$ = 2000 KK$_{44}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 17945)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.43467 | | (2000.0) | | | |
| $n$ | 0.23020446 | $\omega$ | 344.57812 | | +0.56639401 | −0.82071682 |
| $a$ | 2.6366970 | $\Omega$ | 70.86762 | | +0.76427553 | +0.48903739 |
| $e$ | 0.1623361 | $i$ | 4.55189 | | +0.30835164 | +0.29540876 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 691 | 0.3− | 0.1− | 2003 01 05 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2000 05 28 | 691 | 0.4− | 0.6− | 2003 01 05 | 704 | 0.6+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2000 05 28 | 691 | 0.3− | 0.1+ | 2003 01 09 | 704 | 0.9+ | 0.8− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2000 06 02 | 691 | 0.2− | 0.5+ | 2003 01 09 | 704 | 1.4+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2000 06 02 | 691 | 0.1− | 0.7+ | 2003 01 09 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2000 06 02 | 691 | 0.5− | 0.4+ | 2003 01 09 | 704 | 0.9+ | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2001 07 14 | 608 | 0.2− | 0.9− | 2003 01 09 | 704 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2001 07 14 | 608 | 0.1+ | 1.2− | 2003 02 01 | 704 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.6− | 0.6− |
| 2001 07 14 | 608 | 0.0 | 0.8− | 2003 02 01 | 704 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.1− |
| 2001 08 19 | 704 | 0.0 | 0.6− | 2003 02 01 | 704 | 0.4− | 0.8+ | 2006 11 15 | 703 | 0.9− | 0.4− |
| 2001 08 19 | 704 | 0.3+ | 0.4− | 2003 02 01 | 704 | 0.6+ | 0.5+ | 2006 11 16 | H07 | 1.3− | 0.6− |
| 2001 08 19 | 704 | 0.6+ | 0.0 | 2003 02 01 | 704 | 0.2− | 0.5+ | 2006 11 16 | H07 | 1.1− | 0.8+ |
| 2001 08 19 | 704 | 0.1− | 0.7+ | 2003 02 03 | 704 | (1.1− | 1.6−) | 2006 11 16 | H07 | 0.5− | 0.3+ |
| 2001 08 19 | 704 | 0.4+ | 0.0 | 2003 02 03 | 704 | (2.7− | 1.0−) | 2006 11 16 | H07 | 0.2+ | 0.2+ |
| 2001 08 23 | 699 | 0.8+ | 0.3− | 2003 02 03 | 704 | (3.0− | 0.7−) | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 2001 08 23 | 699 | 0.4+ | 0.0 | 2003 02 03 | 704 | (2.2− | 1.7−) | 2006 11 17 | 704 | 0.6+ | 0.8+ |
| 2001 08 23 | 699 | 0.2+ | 0.1+ | 2003 02 03 | 704 | (1.6− | 0.7−) | 2006 11 17 | 704 | 0.6+ | 0.9+ |
| 2001 08 23 | 699 | 0.9+ | 0.1+ | 2003 02 04 | 704 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.0 | 1.1+ |
| 2001 08 26 | 608 | 0.7+ | 0.3+ | 2003 02 04 | 704 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.4− |
| 2001 08 26 | 608 | 0.2− | 1.0+ | 2003 02 04 | 704 | 0.2+ | 0.8+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2001 08 26 | 608 | 0.4− | 0.9+ | 2003 02 04 | 704 | 0.1− | 0.9+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2001 08 26 | 608 | 0.5− | 0.7+ | 2004 04 13 | 691 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2001 08 26 | 608 | 0.2− | 0.6+ | 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2001 08 26 | 608 | 0.0 | 0.9+ | 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2001 09 11 | 704 | (2.8+ | 5.0+) | 2004 05 21 | 691 | 0.4+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 09 11 | 704 | (3.1+ | 4.4+) | 2004 05 21 | 691 | 0.5+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2001 09 11 | 704 | (4.1+ | 4.3+) | 2004 05 21 | 691 | 0.5+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2006 08 29 | 703 | 0.6+ | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2006 08 29 | 703 | (0.1+ | 2.7+) | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2002 12 11 | 704 | 1.2+ | 0.3+ | 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2002 12 11 | 704 | (0.1− | 2.2+) | 2006 08 29 | 703 | 0.6+ | 0.7+ | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.8+ |
| 2002 12 11 | 704 | 0.1− | 1.2+ | 2006 09 16 | 703 | 0.4− | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 12 13 | 704 | 0.1+ | 1.0+ | 2006 09 16 | 703 | 0.2− | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 12 13 | 645 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.7− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 12 13 | 645 | 0.1− | 0.2− | 2006 09 20 | 704 | (0.1− | 1.6+) | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2002 12 13 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | (2.0+ | 0.3+) | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 12 13 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.9+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 12 13 | 704 | 0.7+ | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.7− | 2006 11 27 | 704 | 0.3− | 0.4+ |
| 2002 12 13 | 704 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.0 | 0.2+ | 2006 11 27 | 704 | 0.2− | 0.9+ |
| 2002 12 14 | 704 | 0.6− | 0.4− | 2006 09 27 | 704 | 0.3+ | 0.1− | 2006 11 27 | 704 | 0.3− | 0.8+ |
| 2002 12 14 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 704 | 0.5+ | 1.0+ | 2006 11 27 | 704 | 0.1− | 0.4+ |
| 2002 12 14 | 704 | 0.3− | 0.3− | 2006 09 27 | 704 | 0.3− | 0.6− | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2002 12 14 | 704 | 0.9− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 12 14 | 704 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 12 01 | 704 | 0.3− | 0.4+ |
| 2002 12 27 | 699 | 0.2+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2002 12 27 | 699 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.7− | 0.1+ |
| 2002 12 27 | 699 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.0 | 2006 12 01 | 704 | 0.2− | 0.1− |
| 2002 12 27 | 699 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.6− | 0.2+ |
| 2003 01 05 | 704 | 0.2− | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.2− | 0.0 |
| 2003 01 05 | 704 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1− | | | | |

**(139675)∗ 2001 QS$_{203}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.57550 | | (2000.0) | | | |
| $n$ | 0.22948699 | $\omega$ | 309.59364 | | +0.92097484 | +0.38890425 |
| $a$ | 2.6421897 | $\Omega$ | 27.54399 | | −0.33997015 | +0.83176758 |
| $e$ | 0.1103260 | $i$ | 2.93024 | | −0.19033033 | +0.39612646 |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.2+ | 0.4+ | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 11 02 | G96 | 0.0 | 0.2− |
| 1997 10 21 | 691 | 0.4+ | 0.3+ | 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 11 02 | 691 | 0.3+ | 0.0 |
| 1997 10 21 | 691 | 0.4+ | 0.1+ | 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 1997 10 23 | 691 | 0.1− | 0.5+ | 2004 03 15 | 691 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1997 10 23 | 691 | 1.2− | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1997 10 23 | 691 | 1.0− | 0.8+ | 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2000 04 05 | 691 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.7− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2000 04 05 | 704 | 0.7+ | 0.6+ | 2006 07 22 | G96 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2000 04 05 | 691 | 0.1+ | 0.1− | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2000 04 05 | 704 | 0.5+ | 0.6+ | 2006 07 22 | G96 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.3+ |
| 2000 04 05 | 691 | 0.0 | 0.1− | 2006 07 22 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.6+ |
| 2000 04 05 | 704 | 0.6+ | 1.4+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.8− | 1.2+ |
| 2000 04 05 | 704 | 1.2+ | 1.5+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8− | 0.8+ |
| 2000 04 05 | 704 | 0.9+ | 0.7+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.4− |
| 2001 07 25 | 608 | 0.1− | 0.5− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2001 07 25 | 608 | 0.4+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2001 07 25 | 608 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2001 07 25 | 608 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.0 | 1.1− | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2001 07 25 | 608 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.5+ | 2006 11 13 | 644 | 0.3+ | 0.3− |
| 2001 07 25 | 608 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.6− | 2006 11 13 | 644 | 0.5− | 0.2− |
| 2001 08 23 | 699 | 0.2− | 0.2+ | 2006 10 27 | 703 | 1.1− | 0.6− | 2006 11 17 | 703 | 0.7− | 0.3+ |
| 2001 08 23 | 699 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.5− | 0.5− |
| 2001 08 23 | 699 | (0.8− | 2.4+) | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 1.3− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2001 08 24 | 644 | 0.6− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.9+ | 1.5+ |
| 2001 08 24 | 644 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.4− | 0.8− |
| 2001 08 24 | 644 | 0.6− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 2002 12 11 | 704 | 1.0+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.7− |
| 2002 12 11 | 704 | 0.6− | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.8+ |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.8− | 1.0+ |
| 2004 02 23 | 704 | 0.1+ | 0.9+ | 2006 11 02 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2004 02 23 | 704 | 0.4− | 0.0 | 2006 11 02 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | (0.7− | 1.5+) |
| 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 11 02 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.6+ |

**(139676)∗ 2001 QQ$_{204}$ = 2002 XT$_{73}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 40390)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.36014 | | (2000.0) | | | |
| $n$ | 0.21121181 | $\omega$ | 183.28607 | | −0.40568617 | −0.90431253 |
| $a$ | 2.7924833 | $\Omega$ | 290.68211 | | +0.84179351 | −0.31305836 |
| $e$ | 0.1153828 | $i$ | 8.16098 | | +0.35609327 | −0.29019529 |
| $P$ | 4.67 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.7− | 0.3− | 2002 12 30 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 699 | (1.6+ | 0.7+) |
| 2001 08 23 | 699 | 0.9− | 1.3+ | 2002 12 30 | 704 | 0.1− | 0.1+ | 2006 09 21 | A13 | 0.4− | 0.3− |
| 2001 08 23 | 699 | 1.0− | 1.0+ | 2003 01 05 | 704 | 0.6− | 1.2+ | 2006 09 21 | A13 | 0.1− | 0.4− |
| 2001 08 23 | 699 | 0.6− | 0.5+ | 2003 01 05 | 704 | 0.6+ | 0.0 | 2006 09 21 | A13 | 0.1+ | 0.1− |
| 2001 08 25 | 704 | 0.3− | 0.6+ | 2003 01 05 | 704 | 0.5+ | 1.1+ | 2006 09 27 | 699 | 0.5− | 0.0 |
| 2001 08 25 | 704 | 0.9+ | 0.7+ | 2004 03 17 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 699 | 0.3+ | 0.7+ |
| 2001 08 25 | 704 | 0.1+ | 0.7+ | 2004 03 17 | 704 | 0.2− | 0.2− | 2006 09 27 | 699 | 1.3+ | 0.3+ |
| 2001 08 25 | 704 | 0.8+ | 0.7+ | 2004 03 17 | 704 | 0.4+ | 0.0 | 2006 09 27 | 699 | 0.3+ | 0.1+ |
| 2001 09 08 | 704 | 0.0 | 0.7− | 2004 03 17 | 704 | 0.7− | 0.2+ | 2006 09 27 | 703 | 0.4− | 0.2+ |
| 2001 09 08 | 704 | 0.2+ | 0.3− | 2004 03 26 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.0 | 0.3+ |
| 2001 09 08 | 704 | 0.2− | 0.4− | 2004 03 26 | 704 | 0.4− | 0.0 | 2006 09 27 | 703 | 1.1− | 0.4+ |
| 2002 10 12 | 704 | 0.0 | 1.1+ | 2004 03 26 | 704 | 0.9− | 0.6+ | 2006 09 27 | 703 | 0.2− | 0.3− |
| 2002 10 12 | 704 | 0.2− | 0.7− | 2004 03 26 | 704 | 0.6+ | 0.6− | 2006 09 27 | 703 | 0.2+ | 0.7− |
| 2002 10 12 | 704 | 0.7− | 0.3− | 2004 04 17 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.5+ |
| 2002 11 12 | 704 | 1.1− | 0.5− | 2004 04 17 | 704 | 0.3− | 0.1+ | 2006 09 27 | 703 | 0.4+ | 0.2+ |
| 2002 11 12 | 704 | 0.7− | 0.3− | 2004 04 17 | 704 | 0.3+ | 0.0 | 2006 09 27 | 703 | 0.2− | 0.7− |
| 2002 11 12 | 704 | 0.3− | 0.1+ | 2004 04 17 | 704 | 0.0 | 0.4+ | 2006 10 03 | 703 | 0.1− | 0.4+ |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2004 05 13 | 644 | 0.8+ | 0.8+ | 2006 10 03 | 703 | 1.2+ | 0.8+ |
| 2002 12 06 | 704 | 0.7+ | 0.2+ | 2004 05 13 | 644 | 0.8+ | 0.9+ | 2006 10 03 | 703 | 0.1− | 0.3+ |
| 2002 12 06 | 704 | 1.1+ | 0.7+ | 2004 05 13 | 644 | 0.7+ | 0.9+ | 2006 10 03 | 703 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.8+ | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.6− |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2002 12 11 | 704 | 0.5− | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.9− |
| 2002 12 11 | 704 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.2− | 1.0− | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.6− | 0.6+ | 2006 09 16 | 703 | 1.0− | 1.1− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 12 11 | 704 | 1.2+ | 0.0 | 2006 09 16 | 703 | (0.5− | 2.2−) | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2002 12 14 | 704 | 0.4− | 0.1− | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 1.0− | 0.3− | 2006 09 19 | 699 | 0.9+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 12 14 | 704 | 0.3+ | 0.5− | 2006 09 19 | 699 | 1.0+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2002 12 30 | 704 | 0.7+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |

**(139677)∗ 2001 QB$_{205}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.12008 | | (2000.0) | | | |
| $n$ | 0.19600530 | $\omega$ | 72.98435 | | +0.98443170 | −0.12874560 |
| $a$ | 2.9351086 | $\Omega$ | 294.27941 | | +0.06295095 | +0.89388315 |
| $e$ | 0.0872044 | $i$ | 7.54311 | | +0.16410793 | +0.42941529 |
| $P$ | 5.03 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.7+ | 1.0+ | 2001 09 09 | 699 | 0.5− | 0.0 | 2006 08 18 | 699 | 0.9− | 0.4+ |
| 2001 07 20 | 699 | 0.2+ | 0.4+ | 2001 09 20 | 704 | 0.4+ | 0.3+ | 2006 08 18 | 699 | (1.9+ | 2.6+) |
| 2001 07 20 | 699 | 0.6− | 0.9+ | 2001 09 20 | 704 | 0.8− | 0.7− | 2006 08 28 | 699 | 0.5− | 1.1+ |
| 2001 07 20 | 699 | 0.3+ | 0.0 | 2001 09 20 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 699 | 0.1− | 0.4+ |
| 2001 07 29 | 704 | 0.4− | 0.1− | 2001 09 20 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 0.2+ | 0.3− |
| 2001 07 29 | 704 | 0.0 | 0.5− | 2001 09 20 | 704 | 0.5+ | 0.8+ | 2006 08 28 | 699 | 0.1− | 1.1− |
| 2001 07 29 | 704 | 0.4− | 0.2+ | 2002 12 07 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.3+ | 1.5− |
| 2001 07 29 | 704 | 0.7− | 0.8+ | 2002 12 07 | 704 | 0.2+ | 1.1+ | 2006 08 29 | 703 | 0.4− | 0.0 |
| 2001 08 23 | 699 | 0.5+ | 0.7+ | 2002 12 07 | 704 | 0.7− | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.4− |
| 2001 08 23 | 699 | 0.9− | 0.8+ | 2002 12 07 | 704 | 0.6− | 0.7+ | 2006 08 29 | 703 | 0.0 | 0.3− |
| 2001 08 23 | 699 | 0.3+ | 0.1+ | 2002 12 07 | 695 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.4+ |
| 2001 08 23 | 699 | 0.4− | 0.3+ | 2002 12 07 | 695 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.5− | 0.7+ |
| 2001 08 25 | 704 | 0.3+ | 0.6− | 2002 12 15 | 704 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.4+ | 0.1− |
| 2001 08 25 | 704 | 1.0− | 0.6+ | 2002 12 15 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.7− | 1.1+ |
| 2001 08 25 | 704 | 0.7− | 0.7+ | 2002 12 15 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.4+ | 0.7+ |
| 2001 08 25 | 704 | 0.3+ | 0.8+ | 2004 03 16 | 691 | 0.5+ | 0.5+ | 2006 09 01 | 704 | 0.8+ | 0.4+ |
| 2001 08 25 | 704 | 0.0 | 0.6+ | 2004 03 16 | 691 | 0.5+ | 0.6+ | 2006 09 01 | 704 | 0.3+ | 0.8+ |
| 2001 09 08 | 704 | 0.3− | 0.2+ | 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 09 01 | 704 | 0.4+ | 0.1+ |
| 2001 09 08 | 704 | 0.7− | 0.1− | 2004 03 27 | 691 | 0.1+ | 0.6+ | 2006 09 11 | 703 | 0.2+ | 0.7+ |
| 2001 09 08 | 704 | 1.0− | 0.1+ | 2004 03 27 | 691 | 0.2+ | 0.7+ | 2006 09 11 | 703 | 1.4− | 0.6− |
| 2001 09 08 | 704 | 0.7− | 0.1+ | 2004 03 27 | 691 | 0.4+ | 0.8+ | 2006 09 11 | 703 | 0.7− | 1.0+ |
| 2001 09 08 | 704 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 11 | 703 | 0.5+ | 0.2+ |
| 2001 09 09 | 699 | 0.2− | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.4+ | 0.6+ |
| 2001 09 09 | 699 | 0.7+ | 0.8+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.4− | 0.4− |
| 2001 09 09 | 699 | 0.2− | 0.9+ | 2006 08 18 | 699 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.8− | 0.5+ |

**(139678)∗ 2001 QG$_{205}$ = 2005 UO$_{454}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 93998)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 261.82825 | | (2000.0) | | | |
| $n$ | 0.26839421 | $\omega$ | 273.86426 | | −0.89069544 | +0.44244502 |
| $a$ | 2.3802393 | $\Omega$ | 292.42121 | | −0.35923502 | −0.82579246 |
| $e$ | 0.0981549 | $i$ | 6.48608 | | −0.27858900 | −0.34972734 |
| $P$ | 3.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.0 | 0.9+ | 2003 01 05 | 704 | (0.6− | 1.5+) | 2005 11 03 | G96 | 0.3− | 0.2− |
| 2000 04 07 | 704 | 0.3+ | 0.1+ | 2004 06 15 | 704 | 0.5+ | 0.4− | 2005 11 03 | G96 | 0.0 | 0.4− |
| 2000 04 07 | 704 | 0.7+ | 0.7+ | 2004 06 15 | 704 | 0.5− | 0.5− | 2005 11 03 | 703 | 0.1− | 0.3− |
| 2000 04 07 | 704 | 0.4+ | 0.5+ | 2004 06 15 | 704 | (1.4− | 1.6−) | 2006 10 04 | G96 | 0.3+ | 0.2+ |
| 2000 04 07 | 704 | 0.2− | 0.2+ | 2005 10 03 | 703 | 0.4− | 1.3+ | 2006 10 04 | G96 | 0.2− | 0.1+ |
| 2000 05 01 | 699 | 0.3+ | 0.7+ | 2005 10 03 | 703 | 1.1− | 0.8+ | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2000 05 01 | 699 | 0.3+ | 0.7+ | 2005 10 03 | 703 | 1.3− | 1.2− | 2006 10 04 | G96 | 0.4+ | 0.3− |
| 2000 05 01 | 699 | 0.3+ | 0.6+ | 2005 10 08 | 704 | 0.7+ | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2000 05 01 | 699 | 0.1+ | 1.4+ | 2005 10 08 | 703 | 0.4− | 0.6+ | 2006 11 01 | G96 | 0.9+ | 0.1+ |
| 2001 08 23 | 699 | 0.7+ | 1.5+ | 2005 10 08 | 703 | 0.9− | 0.2− | 2006 11 01 | G96 | 0.6+ | 0.1− |
| 2001 08 23 | 699 | 0.4+ | 1.5+ | 2005 10 08 | 704 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.7+ | 0.1− |
| 2001 08 23 | 699 | (1.2− | 2.5+) | 2005 10 08 | 703 | 0.8− | 0.8+ | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2001 08 23 | 699 | 0.3+ | 0.2+ | 2005 10 08 | 703 | 0.8− | 0.9+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 08 25 | 704 | 0.3− | 0.3+ | 2005 10 08 | 704 | 1.0+ | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2001 08 25 | 704 | 0.2− | 0.2− | 2005 10 27 | 703 | 0.1− | 1.3− | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.0 | 0.7+ | 2005 10 27 | 703 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.4+ | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 0.6+ | 2005 10 27 | 703 | 0.5+ | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.1+ |
| 2001 08 25 | 704 | 0.0 | 0.2− | 2005 10 27 | 703 | 0.4− | 0.5− | 2006 11 27 | G96 | 0.1− | 0.2+ |
| 2001 09 08 | 704 | 0.1− | 0.7− | 2005 11 03 | 703 | 0.1− | 0.5− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2001 09 08 | 704 | 1.0− | 1.0+ | 2005 11 03 | 703 | 0.9+ | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2001 09 08 | 704 | 0.1+ | 0.3+ | 2005 11 03 | G96 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.2+ |
| 2003 01 05 | 704 | (0.2+ | 1.8−) | 2005 11 03 | G96 | 0.1− | 0.4− | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.4− | 1.2+ | 2005 11 03 | 703 | 0.4+ | 0.5− | 2006 11 27 | G96 | 0.3+ | 1.1+ |

**(139679)∗ 2001 QA$_{206}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 111.57419 | | (2000.0) | | | |
| $n$ | 0.27886834 | $\omega$ | 55.71304 | | +0.84722000 | −0.53058528 |
| $a$ | 2.3202596 | $\Omega$ | 336.29890 | | +0.46325963 | +0.76222169 |
| $e$ | 0.1061238 | $i$ | 3.76730 | | +0.26001691 | +0.37080636 |
| $P$ | 3.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 608 | 0.4− | 0.8− | 2001 09 24 | 644 | 0.4− | 1.2+ | 2005 11 30 | 704 | 0.2− | 0.7− |
| 1996 03 17 | 608 | 0.2+ | 0.1− | 2001 09 24 | 644 | 0.1− | 0.7+ | 2005 12 01 | 704 | 0.3− | 0.6− |
| 2001 08 01 | 644 | 0.5− | 0.2+ | 2001 09 24 | 644 | 0.4− | 0.8+ | 2005 12 01 | 704 | 0.6+ | 0.6− |
| 2001 08 01 | 644 | 0.4− | 0.4+ | 2002 12 14 | 645 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.7+ | 0.1− |
| 2001 08 01 | 644 | 0.2− | 0.2+ | 2002 12 14 | 645 | 0.1− | 0.0 | 2005 12 01 | 704 | 0.2+ | 0.1− |
| 2001 08 16 | 704 | 0.6+ | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.7− | 0.5+ |
| 2001 08 16 | 704 | 0.6− | 0.8+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 12 02 | 704 | 1.3+ | 0.4− |
| 2001 08 16 | 704 | 0.1− | 1.3+ | 2003 02 22 | 699 | (2.5+ | 1.0−) | 2005 12 02 | 704 | 0.2− | 0.7+ |
| 2001 08 16 | 704 | 0.3− | 0.6+ | 2003 02 22 | 699 | 0.6+ | 0.3+ | 2005 12 02 | 704 | 0.7+ | 0.4− |
| 2001 08 23 | 699 | 1.0− | 0.4+ | 2003 02 22 | 699 | 0.4+ | 0.2+ | 2005 12 02 | 704 | 0.0 | 0.5+ |
| 2001 08 23 | 699 | 0.9− | 0.4+ | 2003 02 22 | 699 | 1.1+ | 0.7− | 2005 12 02 | 704 | 1.1+ | 0.9− |
| 2001 08 23 | 699 | 0.3+ | 0.7+ | 2003 03 06 | 644 | 0.5+ | 0.9+ | 2005 12 02 | 704 | 0.5+ | 0.5+ |
| 2001 08 23 | 699 | 0.3− | 0.6+ | 2003 03 06 | 644 | 0.3+ | 0.8+ | 2005 12 02 | 704 | 0.4+ | 0.6− |
| 2001 08 24 | 704 | 1.8+ | 0.3− | 2003 03 06 | 644 | 0.6+ | 0.4+ | 2005 12 02 | 704 | 0.4+ | 0.3+ |
| 2001 08 24 | 704 | 0.7+ | 0.2+ | 2005 10 30 | 704 | 0.4− | 0.8+ | 2005 12 02 | 704 | 0.5+ | 0.2− |
| 2001 08 24 | 704 | (2.2+ | 0.4−) | 2005 10 30 | 704 | 0.1− | 0.3+ | 2005 12 02 | 704 | 0.2− | 0.3+ |
| 2001 09 07 | 704 | 0.3− | 0.1+ | 2005 10 30 | 704 | 0.1− | 1.1+ | 2005 12 03 | 704 | 0.8+ | 0.1− |
| 2001 09 07 | 704 | 0.2− | 0.2− | 2005 11 02 | 704 | 1.0− | 0.7+ | 2005 12 03 | 704 | 0.3− | 0.2− |
| 2001 09 07 | 704 | 0.7− | 0.4− | 2005 11 02 | 704 | 0.4− | 0.3+ | 2005 12 03 | 704 | 0.0 | 0.4− |
| 2001 09 07 | 704 | 0.2+ | 0.5− | 2005 11 02 | 704 | 0.2+ | 0.5+ | 2005 12 03 | 704 | 0.3+ | 0.1− |
| 2001 09 07 | 704 | 0.1+ | 0.1− | 2005 11 02 | 704 | 0.7− | 0.5+ | 2005 12 05 | 704 | 0.2+ | 0.7− |
| 2001 09 12 | 704 | 0.3+ | 0.5+ | 2005 11 21 | 703 | 0.5− | 0.8− | 2005 12 05 | 704 | 0.3+ | 0.7− |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2005 11 21 | 703 | 0.7− | 0.6− | 2005 12 05 | 704 | 0.4+ | 0.2− |
| 2001 09 12 | 704 | 0.6+ | 0.6+ | 2005 11 21 | 703 | 0.9− | 0.6− | 2005 12 05 | 704 | 0.1+ | 0.5− |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2005 11 28 | 704 | 0.1+ | 0.9+ | 2005 12 05 | 704 | 0.7+ | 0.6− |
| 2001 09 19 | 645 | 0.1− | 0.3− | 2005 11 28 | 704 | 0.3− | 0.9+ | 2005 12 23 | 644 | 0.1− | 0.1− |
| 2001 09 19 | 645 | 0.1− | 0.3− | 2005 11 28 | 704 | 0.0 | 0.8+ | 2005 12 23 | 644 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.5+ | 2005 11 28 | 704 | 0.6− | 0.7+ | 2005 12 23 | 644 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2005 11 28 | 704 | 0.4− | 0.8+ | 2005 12 28 | 644 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2005 11 28 | 703 | 0.4− | 0.8− | 2005 12 28 | 644 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.3+ | 0.2− | 2005 11 28 | 703 | 0.8− | 0.6− | 2005 12 28 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.9− | 2005 11 28 | 703 | 0.2− | 0.5− | 2005 12 28 | 644 | 0.3− | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.2− | 2005 11 28 | 703 | 0.2− | 0.6− | 2005 12 28 | 644 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.9+ | 0.6+ | 2005 11 29 | 704 | 0.1+ | 0.5+ | 2005 12 28 | 644 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.5− | 2005 11 29 | 704 | 0.0 | 0.5+ | 2005 12 29 | 704 | 0.9+ | 0.1− |
| 2001 09 22 | 704 | 0.2− | 0.2+ | 2005 11 29 | 704 | 0.2+ | 0.8+ | 2005 12 29 | 644 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 0.2+ | 0.7+ | 2005 11 29 | 704 | 0.3+ | 1.0+ | 2005 12 29 | 704 | 0.3+ | 0.1+ |
| 2001 09 22 | 704 | 0.3− | 1.1+ | 2005 11 29 | 704 | 0.1+ | 0.8+ | 2005 12 29 | 644 | 0.2− | 0.0 |
| 2001 09 22 | 704 | 0.8+ | 0.6+ | 2005 11 30 | 704 | 0.1− | 0.3− | 2005 12 29 | 704 | 0.3+ | 0.1− |
| 2001 09 23 | 704 | 0.7+ | 0.4+ | 2005 11 30 | 704 | 0.0 | 0.2− | 2005 12 29 | 704 | 0.9+ | 0.4− |
| 2001 09 23 | 704 | 0.7+ | 0.8+ | 2005 11 30 | 704 | 0.2− | 0.1+ | 2005 12 29 | 644 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.4+ | 0.9+ | 2005 11 30 | 704 | 0.2− | 0.1− | | | | |

**(139680)∗ 2001 QE$_{206}$ = 2004 DM$_{59}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60897)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.12129 | | (2000.0) | | | |
| $n$ | 0.19243906 | $\omega$ | 178.45291 | | +0.94072064 | +0.33313157 |
| $a$ | 2.9712594 | $\Omega$ | 161.69021 | | −0.31333347 | +0.92552757 |
| $e$ | 0.0985719 | $i$ | 11.71389 | | −0.12987231 | +0.18006128 |
| $P$ | 5.12 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.7− | 0.4− | 2001 09 19 | 291 | (1.7+ | 0.0 ) | 2006 07 21 | 703 | 0.2− | 1.2− |
| 1994 03 10 | 691 | 0.1+ | 0.5− | 2001 09 19 | 704 | 0.7− | 0.5+ | 2006 07 21 | 703 | 0.8+ | 0.7+ |
| 2000 05 26 | 699 | 0.4+ | 1.0+ | 2001 09 19 | 704 | 0.2− | 0.2− | 2006 07 21 | 703 | 0.3+ | 0.3− |
| 2000 05 26 | 699 | 0.6+ | 0.7+ | 2001 09 19 | 645 | 0.1− | 0.0 | 2006 07 21 | 703 | 0.2− | 0.7− |
| 2000 05 26 | 699 | 0.4+ | 0.4− | 2001 09 19 | 645 | 0.1− | 0.1− | 2006 08 19 | 699 | 0.3− | 0.5+ |
| 2000 05 26 | 699 | 0.9+ | 1.9+ | 2001 09 19 | 291 | 0.0 | 0.3+ | 2006 08 19 | 699 | 0.1− | 0.0 |
| 2001 08 13 | 608 | 0.8− | 0.9+ | 2001 09 21 | 704 | 0.0 | 0.1− | 2006 08 19 | 699 | 0.2− | 0.5− |
| 2001 08 13 | 608 | 0.4− | 0.5− | 2001 09 21 | 704 | (1.7− | 0.8−) | 2006 08 19 | 699 | 0.4+ | 0.4− |
| 2001 08 13 | 608 | 0.4− | 0.3− | 2001 09 21 | 704 | 0.8− | 0.4− | 2006 08 21 | 644 | 0.3− | 0.1− |
| 2001 08 16 | 704 | 1.1+ | 0.9+ | 2001 09 21 | 704 | 0.6− | 1.2− | 2006 08 21 | 644 | 0.2− | 0.0 |
| 2001 08 16 | 704 | (0.2+ | 1.7+) | 2001 09 21 | 704 | 0.5− | 0.7− | 2006 08 21 | 644 | 0.3− | 0.2− |
| 2001 08 16 | 704 | 0.5− | 0.8+ | 2004 02 25 | 333 | 0.2+ | 0.3+ | 2006 08 23 | A50 | 0.4+ | 0.2− |
| 2001 08 16 | 704 | 0.6+ | 1.2+ | 2004 02 25 | 333 | 0.2− | 0.7+ | 2006 08 23 | A50 | 0.6+ | 0.8+ |
| 2001 08 23 | 699 | 0.7+ | 1.2+ | 2004 02 25 | 333 | 0.4+ | 1.4+ | 2006 08 23 | A50 | 0.4− | 0.0 |
| 2001 08 23 | 699 | 0.8+ | 0.7+ | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 0.8+ | 0.2− |
| 2001 08 23 | 699 | 0.8+ | 1.0+ | 2004 02 26 | 704 | 1.2+ | 0.5+ | 2006 08 30 | 704 | 0.5− | 0.4+ |
| 2001 08 23 | 699 | 0.7+ | 0.5+ | 2004 02 26 | 704 | 1.1− | 1.1+ | 2006 08 30 | 704 | 0.0 | 0.7+ |
| 2001 08 24 | 704 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.6− | 0.9− |
| 2001 08 24 | 704 | 0.2+ | 1.0+ | 2004 02 29 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.6+ | 0.0 |
| 2001 08 24 | 704 | 0.5− | 0.5+ | 2004 02 29 | 691 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.6− | 0.3+ |
| 2001 09 07 | 704 | 0.1− | 1.1+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | (1.1+ | 1.6+) |
| 2001 09 07 | 704 | 0.6+ | 0.6+ | 2004 03 01 | 703 | (1.6− | 2.4+) | 2006 09 20 | 704 | 0.0 | 1.1+ |
| 2001 09 07 | 704 | 0.5+ | 1.1+ | 2004 03 01 | 703 | 1.4− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.4− |
| 2001 09 07 | 704 | 0.2− | 0.9+ | 2004 03 01 | 703 | 0.9+ | 0.7+ | 2006 09 27 | G96 | 0.4− | 0.5− |
| 2001 09 07 | 704 | 0.2− | 0.3− | 2004 03 01 | 703 | (3.0− | 0.7−) | 2006 09 27 | G96 | 0.5− | 0.5− |
| 2001 09 12 | 704 | 0.2− | 0.7+ | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2001 09 12 | 704 | 0.2− | 0.8− | 2004 03 17 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2004 03 17 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.5− | 0.5+ | 2004 03 20 | 704 | 1.2+ | 0.6− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.7− | 0.9+ | 2004 03 20 | 704 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | (0.3+ | 1.9−) | 2004 03 20 | 704 | 0.6+ | 0.9+ | 2006 11 11 | G96 | 0.5− | 0.8− |
| 2001 09 19 | 704 | 0.9− | 0.3− | 2005 05 15 | 644 | 0.3− | 0.6− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 09 19 | 291 | 1.4+ | 0.0 | 2005 05 15 | 644 | 0.4− | 0.4− | 2006 11 11 | G96 | 1.3+ | 0.1− |
| 2001 09 19 | 704 | 0.6− | 0.7+ | 2005 05 15 | 644 | 0.5− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.3− |

**(139681)∗ 2001 QR$_{206}$ = 2004 EV$_{74}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60897)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.60079 | | (2000.0) | | | |
| $n$ | 0.22337848 | $\omega$ | 337.67133 | | −0.31998332 | −0.94622933 |
| $a$ | 2.6901418 | $\Omega$ | 130.95616 | | +0.87848122 | −0.31511886 |
| $e$ | 0.0337866 | $i$ | 3.60966 | | +0.35479772 | −0.07314479 |
| $P$ | 4.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 691 | 0.6+ | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.5− |
| 1999 01 18 | 691 | 0.8+ | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.5+ | 2006 10 02 | G96 | 0.5− | 0.6− |
| 1999 01 18 | 691 | 0.9+ | 0.1+ | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 1999 01 18 | 691 | 0.6− | 0.1− | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.2− |
| 1999 01 18 | 691 | 1.8− | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.9+ | 2006 10 02 | G96 | 0.5+ | 0.5− |
| 1999 01 18 | 691 | 0.8− | 0.2− | 2004 03 22 | 704 | 0.7+ | 0.5+ | 2006 10 02 | G96 | 0.5− | 0.5− |
| 2001 08 23 | 699 | 0.0 | 1.1+ | 2004 03 22 | 704 | 0.4+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2001 08 23 | 699 | 0.3+ | 0.8+ | 2004 03 22 | 704 | 0.8+ | 0.6+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2001 08 23 | 699 | (0.3− | 1.8+) | 2004 03 28 | 704 | 0.4− | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.2+ |
| 2001 08 23 | 699 | 0.1− | 0.4+ | 2004 03 28 | 704 | 0.5+ | 1.0− | 2006 10 03 | G96 | 0.6− | 0.2− |
| 2001 08 24 | 704 | 0.6− | 0.2+ | 2004 03 28 | 704 | 0.8+ | 0.7+ | 2006 10 03 | G96 | 0.6− | 0.2+ |
| 2001 08 24 | 704 | 1.1− | 0.0 | 2004 04 19 | 704 | 0.1− | 1.3+ | 2006 10 03 | G96 | 0.5− | 0.2+ |
| 2001 08 24 | 704 | 0.7− | 1.5+ | 2004 04 19 | 704 | 0.4+ | 0.4− | 2006 10 16 | 703 | (0.7− | 2.2+) |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2004 04 19 | 704 | 1.0+ | 0.3+ | 2006 10 16 | 703 | 1.1+ | 0.4+ |
| 2001 09 12 | 704 | 1.0− | 0.8+ | 2004 04 19 | 704 | 1.1− | 0.4− | 2006 10 16 | 703 | 0.8+ | 1.0+ |
| 2001 09 12 | 704 | (1.6− | 0.4−) | 2005 06 14 | G96 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2001 09 12 | 704 | 1.2− | 1.0+ | 2005 06 14 | G96 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 1.1+ | 2005 06 14 | G96 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 1.1+ | 0.2+ | 2005 06 14 | G96 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.9+ | 0.3+ | 2005 06 27 | 691 | 0.9− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 2001 09 19 | 704 | 0.6+ | 0.1− | 2005 06 27 | 691 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.6+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3+ | 0.6− | 2005 06 27 | 691 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2005 07 03 | G96 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 1.3+ | 0.3+ | 2005 07 03 | G96 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 1.1+ | 0.0 | 2005 07 03 | G96 | 0.5+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.6+ | 0.3+ | 2005 07 03 | G96 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.8+ | 1.0− |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2005 07 07 | 568 | 0.7− | 0.1+ | 2006 11 14 | 704 | 1.3− | 0.8+ |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2005 07 07 | 568 | 0.7− | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.7+ |
| 2002 12 31 | 704 | 0.1− | 0.8+ | 2005 07 07 | 568 | 0.7− | 0.2+ | 2006 11 14 | 704 | (0.8+ | 1.8+) |
| 2002 12 31 | 704 | 0.4+ | 0.2+ | 2005 07 08 | 568 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2002 12 31 | 704 | 0.5+ | 1.0+ | 2005 07 15 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2005 07 15 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2005 07 15 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2004 03 13 | 644 | 0.6+ | 0.3+ | 2005 07 15 | G96 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2004 03 13 | 644 | 0.6+ | 0.4+ | 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 03 13 | 644 | 0.3+ | 0.4+ | 2005 07 15 | G96 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 0.2+ | 0.0 | 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2+ |

**(139682)∗ 2001 QM$_{207}$ = 1994 AX$_{16}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 17947)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.99462 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21042948 | $\omega$ | 236.27989 | | +0.95748080 | −0.26977640 | |
| $a$ | 2.7994002 | $\Omega$ | 139.10595 | | +0.28801328 | +0.91436013 | |
| $e$ | 0.0714748 | $i$ | 8.98400 | | −0.01669927 | +0.30193750 | |
| $P$ | 4.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 1.0− | 0.3− | 2001 09 21 | 704 | 0.1− | 0.9+ | 2006 09 18 | 703 | 0.8+ | 0.8+ |
| 1994 01 11 | 691 | 0.1− | 0.5− | 2001 09 21 | 704 | 0.8− | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.2+ |
| 1994 01 19 | 691 | 0.8+ | 0.2+ | 2002 12 14 | 704 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 1994 01 19 | 691 | 0.1+ | 0.3+ | 2002 12 14 | 704 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.8+ |
| 1994 01 19 | 691 | 0.1+ | 0.3+ | 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.5+ |
| 2001 08 13 | 608 | 0.2+ | 0.0 | 2002 12 14 | 704 | 0.4+ | 0.4+ | 2006 09 21 | 699 | 0.4+ | 0.6+ |
| 2001 08 13 | 608 | 0.2− | 0.4− | 2002 12 14 | 704 | 0.0 | 0.6+ | 2006 09 21 | 699 | 0.4− | 0.3+ |
| 2001 08 13 | 608 | 0.1+ | 0.3− | 2003 01 28 | 704 | 0.5+ | 0.2+ | 2006 09 21 | 699 | 0.4− | 0.1+ |
| 2001 08 23 | 699 | 0.6+ | 0.7+ | 2003 01 28 | 704 | 0.5+ | 0.1− | 2006 09 25 | 699 | 0.5− | 0.1+ |
| 2001 08 23 | 699 | 0.1+ | 0.7+ | 2003 01 28 | 704 | 1.0+ | 0.4+ | 2006 09 25 | 699 | 0.5+ | 0.0 |
| 2001 08 23 | 699 | 0.2− | 0.1+ | 2004 02 18 | 704 | (2.2+ | 2.8+) | 2006 09 25 | 699 | 0.4+ | 0.3+ |
| 2001 08 23 | 699 | 0.1− | 1.0+ | 2004 02 18 | 704 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.4+ |
| 2001 08 25 | 704 | 1.2+ | 0.0 | 2004 02 18 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.0 |
| 2001 08 25 | 704 | 0.2− | 0.2− | 2004 02 25 | 704 | 1.1+ | 0.6− | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.5+ | 0.6+ | 2004 02 25 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.2+ |
| 2001 08 25 | 704 | 0.7+ | 0.4+ | 2004 02 25 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.2+ |
| 2001 08 27 | 699 | (3.0− | 1.1+) | 2004 02 25 | 704 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.1− | 0.3+ |
| 2001 08 27 | 699 | 1.0− | 0.8+ | 2004 03 11 | 644 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.5+ |
| 2001 08 27 | 699 | 0.8− | 0.4+ | 2004 03 11 | 644 | 0.2+ | 0.8+ | 2006 09 29 | 699 | 0.2+ | 0.3+ |
| 2001 08 27 | 699 | 0.7− | 0.4+ | 2004 03 11 | 644 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 0.3− | 0.9+ |
| 2001 09 10 | 699 | 0.4+ | 0.5+ | 2004 03 15 | 704 | 1.0+ | 1.2+ | 2006 10 17 | 703 | 0.4− | 0.6+ |
| 2001 09 10 | 699 | 0.8− | 0.8+ | 2004 03 15 | 704 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2001 09 10 | 699 | 0.7− | 0.8+ | 2004 03 15 | 704 | 0.0 | 1.0+ | 2006 10 17 | 703 | 0.2+ | 0.5+ |
| 2001 09 10 | 699 | 0.4− | 1.3+ | 2004 03 15 | 704 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.9− | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2004 03 15 | 704 | 0.4+ | 0.4+ | 2006 10 17 | D35 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.7+ | 0.2+ | 2004 03 20 | 691 | 0.1+ | 0.7+ | 2006 10 17 | D35 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.3+ | 0.5− | 2004 03 20 | 691 | 0.0 | 0.5+ | 2006 10 17 | D35 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2004 03 20 | 691 | 0.2+ | 0.6+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2004 03 20 | 704 | (0.1+ | 2.1+) | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2004 03 20 | 704 | (0.5+ | 1.5+) | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 0.1− | 2004 03 20 | 704 | (1.1+ | 2.0+) | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 1.0− | 0.4+ | 2004 03 20 | 704 | 0.3− | 0.6− | 2006 10 28 | 703 | 0.6− | 0.7− |
| 2001 09 19 | 704 | 0.3+ | 0.9− | 2004 03 20 | 704 | 0.4+ | 1.0+ | 2006 10 28 | 703 | 0.4+ | 0.5− |
| 2001 09 19 | 704 | 0.7− | 0.3+ | 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 10 28 | 703 | 0.3+ | 0.3− |
| 2001 09 21 | 704 | 0.4+ | 0.7− | 2004 03 23 | 704 | 0.2+ | 0.1− | | | | |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2004 03 23 | 704 | 0.6− | 0.6+ | | | | |

**(139683)∗ 2001 QG$_{208}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.54752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23709980 | $\omega$ | 0.30985 | | +0.28612147 | −0.95718558 | |
| $a$ | 2.5853256 | $\Omega$ | 73.06458 | | +0.87902639 | +0.24395609 | |
| $e$ | 0.1803662 | $i$ | 2.63232 | | +0.38137529 | +0.15582421 | |
| $P$ | 4.16 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 08 | 691 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.5+ | 0.4+ | 2003 02 21 | 699 | 0.0 | 0.6+ |
| 1991 04 08 | 691 | 0.1+ | 0.3+ | 2003 01 08 | 608 | 0.4+ | 0.7+ | 2003 02 21 | 699 | 0.3+ | 1.5+ |
| 1991 04 08 | 691 | 0.3− | 0.5+ | 2003 01 08 | 608 | 0.2− | 0.5+ | 2003 02 21 | 699 | 1.2+ | 0.8+ |
| 1995 02 25 | 691 | 0.4− | 0.5− | 2003 01 08 | 608 | 0.1− | 0.4+ | 2003 03 06 | 704 | 0.4+ | 0.4+ |
| 1995 02 25 | 691 | 0.3− | 0.4+ | 2003 01 09 | 704 | 0.2− | 0.9+ | 2003 03 06 | 704 | 0.4− | 0.0 |
| 1995 02 25 | 691 | 0.4− | 0.2+ | 2003 01 09 | 704 | 0.3− | 1.3+ | 2003 03 06 | 704 | 0.4+ | 0.2− |
| 1995 02 26 | 691 | 0.2− | 0.1− | 2003 01 09 | 704 | 0.6+ | 0.9+ | 2003 03 06 | 704 | 0.2− | 0.9+ |
| 1995 02 26 | 691 | 0.2− | 0.4+ | 2003 01 09 | 704 | 1.3+ | 0.4+ | 2003 03 06 | 704 | 0.1+ | 0.6+ |
| 1995 02 26 | 691 | 0.4− | 0.0 | 2003 01 09 | 704 | 0.7+ | 0.5+ | 2003 03 08 | 704 | 0.8− | 0.1− |
| 1995 02 26 | 691 | 0.0 | 0.1− | 2003 01 17 | 644 | 0.1− | 0.3+ | 2003 03 08 | 704 | 0.2+ | 0.7+ |
| 1995 02 26 | 691 | 0.1− | 0.4− | 2003 01 17 | 644 | 0.0 | 0.4+ | 2003 03 08 | 704 | 0.9+ | 1.0+ |
| 1995 02 26 | 691 | 0.3− | 0.1− | 2003 01 17 | 644 | 0.1+ | 0.1+ | 2003 03 08 | 704 | 0.2+ | 0.8+ |
| 1995 02 27 | 691 | 0.5+ | 1.1− | 2003 01 27 | 704 | 0.3− | 0.3+ | 2003 03 08 | 704 | 0.4+ | 0.1+ |
| 1995 02 27 | 691 | 0.4+ | 1.6− | 2003 01 27 | 699 | 0.4− | 0.3+ | 2003 03 08 | 704 | 0.2+ | 1.3− |
| 1995 02 27 | 691 | 0.2+ | 0.2− | 2003 01 27 | 704 | 0.5+ | 0.5+ | 2003 03 08 | 704 | 0.9+ | 0.3+ |
| 1995 03 04 | 691 | 0.5+ | 0.5+ | 2003 01 27 | 704 | 0.3− | 0.9+ | 2003 03 08 | 704 | 1.2+ | 0.3+ |
| 1995 03 04 | 691 | (2.2− | 1.6+) | 2003 01 27 | 699 | 0.4+ | 0.7+ | 2003 03 08 | 704 | 0.5+ | 0.1+ |
| 1999 02 18 | 699 | 1.1+ | 0.4− | 2003 01 27 | 704 | 0.2− | 0.2+ | 2003 03 10 | 699 | 0.4+ | 0.3+ |
| 1999 02 18 | 699 | 0.6+ | 0.0 | 2003 01 27 | 699 | 0.2− | 0.5+ | 2003 03 10 | 699 | 0.5− | 0.0 |
| 1999 02 18 | 699 | 0.3+ | 1.0+ | 2003 01 27 | 704 | 0.0 | 1.0+ | 2003 03 10 | 699 | 0.4− | 0.4− |
| 2001 07 18 | 644 | 0.1− | 0.6+ | 2003 01 27 | 699 | 0.1− | 0.7+ | 2003 03 10 | 699 | 1.1+ | 0.3− |
| 2001 07 18 | 644 | 0.0 | 0.6+ | 2003 01 28 | 608 | 0.1+ | 0.6− | 2005 07 18 | 644 | 0.4− | 0.3+ |
| 2001 07 18 | 644 | 0.7− | 0.6+ | 2003 01 28 | 608 | 0.1+ | 0.1− | 2005 07 18 | 644 | 0.6− | 0.6+ |
| 2001 08 23 | 699 | 0.6− | 1.1+ | 2003 01 28 | 608 | 0.2+ | 0.3− | 2005 07 18 | 644 | 0.8− | 0.8+ |
| 2001 08 23 | 699 | 0.5− | 0.1− | 2003 01 30 | 699 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.2− |
| 2001 08 23 | 699 | 0.9− | 0.5+ | 2003 01 30 | 699 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.3+ | 0.1+ |
| 2001 08 23 | 699 | 0.1− | 0.6+ | 2003 01 30 | 699 | 0.2+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2001 08 24 | 608 | 0.3− | 0.0 | 2003 01 30 | 699 | 0.5− | 1.0+ | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2001 08 24 | 608 | 0.7− | 0.3+ | 2003 01 31 | 644 | 0.9− | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.6− |
| 2001 08 24 | 608 | 0.4+ | 0.4+ | 2003 01 31 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.8− |
| 2001 08 25 | 704 | 0.8− | 0.3+ | 2003 01 31 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.7− | 0.5− |
| 2001 08 25 | 704 | 0.6− | 0.2+ | 2003 02 01 | 704 | 0.1+ | 0.4− | 2006 10 29 | G96 | 0.3− | 0.4− |
| 2001 08 25 | 704 | 1.4− | 0.4− | 2003 02 01 | 704 | 1.1+ | 0.5− | 2006 10 29 | G96 | 0.4− | 0.4− |
| 2001 09 10 | 699 | 0.7+ | 0.7+ | 2003 02 01 | 704 | 0.3+ | 1.0− | 2006 10 29 | G96 | 0.6− | 0.5− |
| 2001 09 10 | 699 | (0.3+ | 1.6+) | 2003 02 04 | 704 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.5− | 0.3− |
| 2001 09 10 | 699 | 1.2+ | 1.5+ | 2003 02 04 | 704 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.6− | 0.5− |
| 2001 09 10 | 699 | 0.5− | 0.7− | 2003 02 04 | 704 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.5− | 0.3− |
| 2001 09 19 | 704 | 1.1+ | 0.9+ | 2003 02 04 | 704 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2001 09 19 | 704 | 1.2+ | 1.5+ | 2003 02 04 | 704 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 09 19 | 704 | 0.4+ | 1.3+ | 2003 02 07 | 704 | 1.2+ | 0.6+ | 2006 12 01 | G96 | 0.7− | 0.5− |
| 2001 09 19 | 704 | 0.5+ | 1.1+ | 2003 02 07 | 704 | 0.4− | 0.8+ | 2006 12 01 | G96 | 0.4− | 0.6− |
| 2003 01 05 | 704 | 0.3− | 1.4+ | 2003 02 07 | 704 | 0.6− | 0.1+ | 2006 12 01 | G96 | 0.5− | 0.5− |
| 2003 01 05 | 704 | (0.1+ | 1.7+) | 2003 02 07 | 704 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2003 01 05 | 704 | (1.6+ | 0.3+) | 2003 02 07 | 704 | 0.2− | 0.8+ | | | | |
| 2003 01 05 | 704 | 0.1− | 0.6− | 2003 02 21 | 699 | 1.5+ | 0.3− | | | | |

**(139684)∗ 2001 QV$_{208}$ = 2001 QL$_{6}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (d, *MPO* 75062)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.74237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21264569 | $\omega$ | 359.27379 | | +0.91760287 | +0.39641686 | |
| $a$ | 2.7799159 | $\Omega$ | 337.30229 | | −0.36431372 | +0.80922272 | |
| $e$ | 0.1645669 | $i$ | 4.35521 | | −0.15899839 | +0.43360381 | |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 699 | (0.3− | 1.8+) | 2001 09 10 | 699 | 1.3− | 1.2+ | 2006 09 18 | 704 | 0.4+ | 1.0+ |
| 2001 07 16 | 699 | (0.3− | 2.5+) | 2001 09 10 | 699 | 0.2+ | 1.1+ | 2006 09 18 | 704 | 0.1− | 0.1− |
| 2001 07 16 | 699 | 0.5+ | 1.4+ | 2001 09 10 | 699 | 0.1+ | 1.1+ | 2006 09 18 | 704 | 0.0 | 0.7+ |
| 2001 07 16 | 699 | 0.4+ | 0.0 | 2001 09 19 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.2+ |
| 2001 08 02 | 608 | 0.2− | 0.2+ | 2001 09 19 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.5− |
| 2001 08 02 | 608 | 0.3− | 1.1− | 2001 09 19 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.9− | 0.4+ |
| 2001 08 02 | 608 | 0.1− | 0.2− | 2001 09 19 | 704 | 1.4+ | 0.5− | 2006 09 18 | 699 | 0.5+ | 0.4+ |
| 2001 08 11 | 608 | 0.0 | 1.5− | 2001 09 19 | 704 | 0.1+ | 1.3− | 2006 09 25 | 704 | 0.4+ | 0.1− |
| 2001 08 11 | 608 | 0.5− | 0.6− | 2001 09 21 | 704 | 0.7+ | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.6− |
| 2001 08 11 | 608 | 0.3− | 0.8− | 2001 09 21 | 704 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.2+ | 0.3+ |
| 2001 08 16 | 704 | 0.3+ | 0.1− | 2001 09 21 | 704 | 0.4+ | 0.2− | 2006 09 25 | 704 | 0.9+ | 0.2+ |
| 2001 08 16 | 704 | 0.1− | 0.3+ | 2001 09 21 | 704 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.0 | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.0 | 2004 02 13 | 291 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.8− | 1.5− |
| 2001 08 16 | 704 | 0.3+ | 0.4+ | 2004 02 13 | 291 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.7+ |
| 2001 08 16 | 704 | 0.4+ | 0.2− | 2004 02 13 | 291 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 1.0+ | 0.4− |
| 2001 08 18 | 704 | (1.6− | 0.6+) | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 704 | (0.3+ | 1.7+) |
| 2001 08 18 | 704 | 0.6− | 0.3+ | 2005 05 19 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2001 08 18 | 704 | 0.9− | 0.6+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.1− |
| 2001 08 18 | 704 | 0.5− | 0.2+ | 2005 05 21 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.2+ |
| 2001 08 19 | 704 | 0.3− | 0.2+ | 2005 05 21 | 644 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2001 08 19 | 704 | 0.3+ | 0.5+ | 2005 05 21 | 644 | 0.4− | 0.8+ | 2006 10 19 | 644 | 0.6− | 0.3+ |
| 2001 08 19 | 704 | 0.0 | 0.7+ | 2005 06 26 | 644 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.5− | 0.0 |
| 2001 08 19 | 704 | 0.1− | 0.3+ | 2005 06 26 | 644 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.8− | 0.0 |
| 2001 08 23 | 699 | 0.2− | 0.1+ | 2005 06 26 | 644 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2001 08 23 | 699 | 0.2− | 0.4+ | 2006 08 06 | 699 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.7+ |
| 2001 08 23 | 699 | 0.2+ | 0.2+ | 2006 08 06 | 699 | 0.0 | 0.9− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 08 23 | 699 | 0.1+ | 0.0 | 2006 08 06 | 699 | 0.9+ | 1.2+ | 2006 11 10 | 683 | 0.1− | 1.4− |
| 2001 08 24 | 644 | 0.4− | 0.2+ | 2006 08 06 | 699 | 0.6− | 0.2+ | 2006 11 10 | 683 | 1.4− | 1.0+ |
| 2001 08 24 | 644 | 0.5− | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.2+ | 2006 11 10 | 683 | (1.9− | 0.0 ) |
| 2001 08 24 | 644 | 0.4− | 0.3+ | 2006 08 20 | 644 | 0.8− | 0.0 | 2006 11 15 | 704 | 0.5+ | 1.0+ |
| 2001 09 07 | 704 | 0.8+ | 0.8− | 2006 08 20 | 644 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.5+ |
| 2001 09 07 | 704 | 0.6+ | 1.0− | 2006 09 14 | 644 | 0.5− | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.6+ |
| 2001 09 07 | 704 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.5− | 0.1+ | 2006 11 15 | 704 | 1.0+ | 0.6+ |
| 2001 09 07 | 704 | 0.1+ | 0.9− | 2006 09 14 | 644 | 0.5− | 0.2− | 2006 11 15 | 704 | 1.0+ | 0.7+ |
| 2001 09 10 | 699 | 0.3− | 0.4+ | 2006 09 18 | 704 | 0.5+ | 0.2+ | | | | |

**(139685)∗ 2001 QN$_{210}$**

Discovered 2001 Aug. 23 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.73792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21075446 | $\omega$ | 196.05143 | | +0.99189507 | −0.12458529 | |
| $a$ | 2.7965217 | $\Omega$ | 170.99430 | | +0.12686878 | +0.96035602 | |
| $e$ | 0.1622037 | $i$ | 9.17281 | | +0.00696239 | +0.24938891 | |
| $P$ | 4.68 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.1+ | 0.1+ | 2001 09 19 | 704 | 0.3− | 0.7+ | 2004 03 19 | 704 | 0.1− | 0.8− |
| 2000 05 27 | 704 | 0.4− | 0.1+ | 2001 09 21 | 704 | 0.5− | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.6+ |
| 2000 05 27 | 704 | 0.7+ | 0.4+ | 2001 09 21 | 704 | 0.4− | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.4+ |
| 2000 05 27 | 704 | 1.8− | 0.0 | 2001 09 21 | 704 | 0.1+ | 0.1+ | 2004 04 20 | 704 | 0.6+ | 1.2+ |
| 2001 08 16 | 704 | 0.4− | 0.4+ | 2001 09 21 | 704 | 0.5+ | 0.1− | 2004 04 20 | 704 | 0.9+ | 0.0 |
| 2001 08 16 | 704 | 0.7− | 0.2+ | 2001 09 21 | 704 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.2+ | 0.2+ | 2001 10 08 | 644 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.9+ | 0.0 |
| 2001 08 16 | 704 | 0.3− | 0.3+ | 2001 10 08 | 644 | 0.4+ | 0.8+ | 2006 09 18 | 703 | 0.0 | 0.0 |
| 2001 08 16 | 704 | 0.3− | 0.3+ | 2001 10 08 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.3+ |
| 2001 08 23 | 333 | 0.5+ | 0.2+ | 2001 10 13 | 704 | 0.7− | 0.4− | 2006 09 18 | 703 | 0.7+ | 0.5+ |
| 2001 08 23 | 333 | 0.1+ | 0.6+ | 2001 10 13 | 704 | 1.4− | 0.2+ | 2006 09 19 | 699 | 1.1− | 0.3+ |
| 2001 08 23 | 333 | 0.4+ | 0.1+ | 2001 10 13 | 704 | 1.4− | 0.2− | 2006 09 19 | 699 | 0.6+ | 0.4− |
| 2001 08 24 | 704 | 0.1+ | 0.6+ | 2001 10 13 | 704 | (1.6− | 0.2+) | 2006 09 19 | 699 | 0.6− | 0.3− |
| 2001 08 24 | 704 | 0.6+ | 0.8+ | 2001 10 13 | 704 | 1.0− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.6− |
| 2001 08 24 | 704 | 0.8+ | 0.7+ | 2001 10 16 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 704 | (2.0− | 0.1−) |
| 2001 08 24 | 704 | 0.7+ | 0.0 | 2001 10 16 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 704 | (2.0− | 1.3−) |
| 2001 08 27 | 699 | 0.5+ | 0.2+ | 2001 10 16 | 644 | 0.4− | 0.0 | 2006 09 26 | 704 | (1.3− | 2.0−) |
| 2001 08 27 | 699 | 0.0 | 0.3− | 2001 10 16 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.7+ | 0.7− |
| 2001 08 27 | 699 | 0.1+ | 0.4+ | 2001 10 16 | 644 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2001 08 27 | 699 | 0.5− | 0.4+ | 2001 10 16 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.5+ | 0.0 |
| 2001 08 30 | 644 | 1.1+ | 0.0 | 2001 10 16 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.7− |
| 2001 08 30 | 644 | 1.3+ | 0.4− | 2001 10 16 | 644 | 0.2− | 0.0 | 2006 10 30 | 703 | 0.3− | 0.0 |
| 2001 08 30 | 644 | 0.9+ | 0.1− | 2001 10 19 | 699 | 0.0 | 0.5+ | 2006 10 30 | 703 | 0.4+ | 0.4+ |
| 2001 09 10 | 683 | (0.8+ | 2.1+) | 2001 10 19 | 699 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.4+ | 0.1− |
| 2001 09 10 | 683 | 0.1+ | 1.1− | 2001 10 19 | 699 | 0.3− | 0.1− | 2006 10 30 | 703 | 0.0 | 0.2+ |
| 2001 09 10 | 683 | (4.7+ | 1.0+) | 2001 10 19 | 699 | 0.0 | 0.0 | 2006 11 05 | 644 | 0.2+ | 0.1− |
| 2001 09 11 | 699 | (2.2− | 1.3+) | 2001 10 24 | 704 | 0.8+ | 0.3− | 2006 11 05 | 644 | 0.2+ | 0.3− |
| 2001 09 11 | 699 | 0.4+ | 0.3+ | 2001 10 24 | 704 | 0.3− | 0.2− | 2006 11 05 | 644 | 0.2+ | 0.2− |
| 2001 09 11 | 699 | 0.1− | 0.1− | 2001 10 24 | 704 | 0.0 | 0.3− | 2006 11 09 | 958 | 0.1− | 0.9+ |
| 2001 09 11 | 699 | 0.2− | 0.4+ | 2001 10 24 | 704 | 0.5− | 0.3− | 2006 11 09 | 958 | 0.6+ | 0.3+ |
| 2001 09 12 | 683 | 0.2− | 1.1+ | 2001 10 24 | 704 | 0.8+ | 0.4− | 2006 11 09 | 958 | (2.2+ | 0.5+) |
| 2001 09 12 | 683 | 1.3− | 1.4− | 2001 12 17 | 699 | (2.0− | 1.3−) | 2006 11 13 | 703 | 0.1− | 0.8− |
| 2001 09 12 | 683 | (0.7− | 2.6−) | 2001 12 17 | 699 | (1.6+ | 0.9−) | 2006 11 13 | 703 | 0.2+ | 0.9− |
| 2001 09 15 | 644 | 0.2− | 0.3+ | 2001 12 17 | 699 | 1.1− | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.5− |
| 2001 09 15 | 644 | 0.1− | 0.3+ | 2001 12 17 | 699 | (1.5+ | 0.4−) | 2006 11 13 | 703 | 0.2+ | 0.3− |
| 2001 09 15 | 644 | 0.2− | 0.1+ | 2003 01 26 | 699 | 0.2− | 1.0+ | 2006 11 19 | 703 | 0.3+ | 0.7− |
| 2001 09 16 | 704 | 1.0− | 0.2− | 2003 01 26 | 699 | 0.2− | 1.1+ | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2001 09 16 | 704 | 0.7− | 0.2− | 2003 01 26 | 699 | 0.4+ | 1.3+ | 2006 11 19 | 703 | 0.3− | 0.9− |
| 2001 09 16 | 704 | 0.9− | 0.3− | 2003 01 26 | 699 | 0.9− | 1.0+ | 2006 11 19 | 703 | 0.3+ | 0.3− |
| 2001 09 18 | 699 | 0.2+ | 0.2+ | 2003 01 27 | 704 | 0.6+ | 0.8+ | 2006 11 20 | 704 | 1.7− | 0.1− |
| 2001 09 18 | 699 | 0.7+ | 0.7+ | 2003 01 27 | 704 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.7+ | 1.0− |
| 2001 09 18 | 699 | 0.8+ | 0.3+ | 2003 01 27 | 704 | (1.7+ | 0.7+) | 2006 11 20 | 704 | 0.5+ | 0.5− |
| 2001 09 18 | 699 | 0.3+ | 0.2+ | 2003 01 27 | 644 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.0 | 2003 01 27 | 704 | (2.1+ | 0.3−) | 2006 11 20 | 704 | 1.6− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2003 01 27 | 644 | 0.3+ | 0.9+ | | | | |
| 2001 09 19 | 704 | 0.7− | 0.5+ | 2003 01 27 | 644 | 0.3+ | 0.8+ | | | | |

**(139686)∗ 2001 QW$_{210}$ = 2000 KY$_{60}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 17948)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.96382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23597891 | $\omega$ | 5.19683 | | −0.93782098 | +0.34455041 | |
| $a$ | 2.5935060 | $\Omega$ | 195.16543 | | −0.32399954 | −0.91245649 | |
| $e$ | 0.0337509 | $i$ | 9.27244 | | −0.12456369 | −0.22069929 | |
| $P$ | 4.18 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 11 | 699 | 0.7+ | 0.0 | 2004 03 24 | 699 | (2.0− | 0.5−) | 2004 04 22 | 704 | 0.1− | 0.5+ |
| 2000 05 11 | 699 | 0.9+ | 0.1− | 2004 03 24 | 699 | 1.0− | 0.9− | 2004 04 22 | 704 | (1.7+ | 0.0 ) |
| 2000 05 11 | 699 | 1.0+ | 1.4+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 704 | 0.0 | 1.4+ |
| 2000 05 11 | 699 | 0.1+ | 0.5+ | 2004 03 27 | 704 | (2.0− | 0.5−) | 2004 04 24 | 704 | 0.2+ | 0.3− |
| 2000 05 25 | 699 | 0.1− | 0.1+ | 2004 03 27 | 704 | 1.3− | 1.1+ | 2004 04 24 | 704 | 0.1− | 0.2− |
| 2000 05 25 | 699 | 0.4− | 0.0 | 2004 03 27 | 704 | 0.3− | 0.3+ | 2004 04 24 | 704 | 0.1+ | 0.4+ |
| 2000 05 25 | 699 | 1.2+ | 0.3+ | 2004 03 31 | 704 | 0.8+ | 0.6+ | 2004 04 24 | 704 | 0.1+ | 0.5+ |
| 2000 05 25 | 699 | 0.2− | 0.3− | 2004 03 31 | 704 | 0.3+ | 0.3+ | 2004 04 24 | 704 | 0.0 | 0.4+ |
| 2000 05 27 | 704 | 0.4− | 0.2+ | 2004 03 31 | 704 | 0.3+ | 0.5+ | 2004 05 10 | 703 | (0.0 | 1.6−) |
| 2000 05 27 | 704 | 0.7− | 0.6− | 2004 03 31 | 704 | 0.2+ | 0.8+ | 2004 05 10 | 703 | 0.5− | 0.2− |
| 2000 05 27 | 704 | 1.2− | 0.5− | 2004 03 31 | 704 | 0.4+ | 0.6+ | 2004 05 10 | 703 | 0.2− | 0.1− |
| 2000 05 27 | 704 | 0.3− | 0.3− | 2004 04 12 | 699 | 0.5− | 0.2+ | 2004 05 10 | 703 | 0.3+ | 0.9+ |
| 2000 05 27 | 704 | 0.3− | 0.4− | 2004 04 12 | 699 | 1.0+ | 0.3+ | 2004 05 14 | 704 | 0.7− | 1.4+ |
| 2001 08 23 | 699 | 0.6+ | 0.1+ | 2004 04 12 | 699 | 0.7− | 0.1+ | 2004 05 14 | 704 | 0.8− | 1.1+ |
| 2001 08 23 | 699 | 1.3+ | 0.6+ | 2004 04 12 | 699 | 0.5− | 0.3− | 2004 05 14 | 704 | (0.3− | 2.3+) |
| 2001 08 23 | 699 | 0.2− | 0.7+ | 2004 04 19 | 704 | 0.6+ | 0.0 | 2004 05 14 | 704 | (0.3+ | 2.7+) |
| 2001 08 23 | 699 | (1.6+ | 0.1−) | 2004 04 19 | 704 | 0.6+ | 0.8− | 2005 08 23 | 941 | 0.1+ | 0.1+ |
| 2001 08 25 | 704 | 0.2− | 0.3− | 2004 04 19 | 704 | 0.7+ | 0.2+ | 2005 08 23 | 941 | 0.1+ | 0.1+ |
| 2001 08 25 | 704 | 1.1− | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.2+ | 2005 08 23 | 941 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 1.0− | 0.7+ | 2004 04 19 | 704 | 0.2+ | 0.1− | 2005 08 23 | 941 | 0.1− | 0.1− | | |
| 2001 09 08 | 704 | (2.2+ | 1.1+) | 2004 04 20 | 704 | 0.0 | 0.4+ | 2005 08 23 | 941 | 0.0 | 0.1+ | | |
| 2001 09 08 | 704 | 0.4− | 0.4− | 2004 04 20 | 704 | 0.1− | 0.3+ | 2005 08 24 | 644 | 0.3+ | 0.1+ | | |
| 2001 09 08 | 704 | 0.3− | 0.3+ | 2004 04 20 | 704 | 0.0 | 0.4+ | 2005 08 24 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 08 | 704 | 0.5+ | 0.6− | 2004 04 20 | 704 | 0.0 | 0.5− | 2005 08 24 | 644 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 0.9− | 0.9+ | 2004 04 20 | 704 | 0.2− | 0.2− | 2005 11 01 | G96 | 0.1− | 0.2− | | |
| 2001 09 16 | 704 | 1.3− | 1.2+ | 2004 04 21 | 704 | 0.1+ | 1.0− | 2005 11 01 | G96 | 0.0 | 0.3− | | |
| 2001 09 16 | 704 | 1.4− | 0.9+ | 2004 04 21 | 704 | 0.7+ | 0.9− | 2005 11 01 | G96 | 0.1− | 0.6− | | |
| 2001 09 16 | 704 | 0.8− | 0.4+ | 2004 04 21 | 704 | 0.2− | 0.3− | 2005 11 01 | G96 | 0.0 | 0.3− | | |
| 2001 09 23 | 704 | 0.3+ | 0.0 | 2004 04 21 | 704 | 0.5+ | 0.9− | 2006 11 15 | 703 | 0.5− | 0.5+ | | |
| 2001 09 23 | 704 | 0.8+ | 0.6+ | 2004 04 21 | 704 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.2+ | | |
| 2001 09 23 | 704 | 0.5+ | 0.7+ | 2004 04 21 | 599 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.7− | 0.3− | | |
| 2001 09 23 | 704 | 0.5+ | 0.7+ | 2004 04 21 | 599 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.3− | 0.6+ | | |
| 2001 10 19 | 644 | 0.3+ | 0.1+ | 2004 04 21 | 599 | 0.3− | 0.2+ | 2006 11 25 | 703 | 0.3+ | 1.0+ | | |
| 2001 10 19 | 644 | 0.2+ | 0.4+ | 2004 04 21 | 599 | 0.3− | 0.2+ | 2006 11 25 | 703 | 0.6+ | 0.5+ | | |
| 2001 10 19 | 644 | 0.3+ | 0.1+ | 2004 04 22 | 704 | 0.3+ | 0.1+ | 2006 11 25 | 703 | 0.5+ | 1.7+ | | |
| 2004 03 22 | 699 | 0.8− | 0.2− | 2004 04 22 | 704 | 0.3+ | 0.2+ | 2006 11 25 | 703 | 0.3+ | 1.2+ | | |
| 2004 03 22 | 699 | 1.3− | 0.6+ | 2004 04 22 | 704 | 0.6+ | 0.6− | 2006 11 28 | 704 | 0.4+ | 0.1− | | |
| 2004 03 22 | 699 | 0.2− | 0.5+ | 2004 04 22 | 704 | 1.0+ | 0.6− | 2006 11 28 | 704 | 0.5+ | 0.8+ | | |
| 2004 03 22 | 699 | 0.9+ | 1.3+ | 2004 04 22 | 704 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.5− | 0.2+ | | |
| 2004 03 24 | 699 | 0.2− | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.5+ | | |
| 2004 03 24 | 699 | 0.1− | 0.1− | 2004 04 22 | 704 | 0.4+ | 0.3+ | | | | | | |

**(139687)∗ 2001 QY$_{210}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.86376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21306445 | $\omega$ | 135.19018 | | +0.87118023 | −0.48562672 | |
| $a$ | 2.7762723 | $\Omega$ | 253.98968 | | +0.42676992 | +0.82173552 | |
| $e$ | 0.1645564 | $i$ | 4.30727 | | +0.24271884 | +0.29819025 | |
| $P$ | 4.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.0 | 1.1+ | 2001 10 14 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.1+ | 0.2− | | |
| 2000 05 28 | 704 | 0.5− | 0.9+ | 2001 10 14 | 704 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.2+ | 0.3− | | |
| 2000 05 28 | 704 | 0.4− | 0.6+ | 2001 10 14 | 704 | 1.0+ | 1.1− | 2006 10 21 | 691 | 0.1+ | 0.2− | | |
| 2001 08 15 | 608 | (0.9+ | 1.8+) | 2001 11 15 | 608 | 1.3+ | 0.4+ | 2006 10 27 | 703 | 0.7+ | 0.0 | | |
| 2001 08 15 | 608 | 0.7+ | 0.8+ | 2001 11 15 | 608 | 1.1+ | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.2+ | | |
| 2001 08 15 | 608 | 0.6+ | 0.0 | 2001 11 15 | 608 | 0.7+ | 0.8+ | 2006 10 27 | 703 | 0.7+ | 0.3− | | |
| 2001 08 23 | 699 | 0.7− | 0.7+ | 2001 12 10 | 645 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.3− | 0.1− | | |
| 2001 08 23 | 699 | 0.1+ | 0.3+ | 2001 12 10 | 645 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.5+ | 0.5+ | | |
| 2001 08 23 | 699 | 0.3− | 0.5+ | 2003 01 01 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 704 | 0.3+ | 0.3+ | | |
| 2001 08 23 | 699 | 0.0 | 0.7+ | 2003 01 01 | 704 | 0.6− | 0.5+ | 2006 10 29 | 704 | 0.6− | 0.2− | | |
| 2001 08 25 | 704 | 0.6− | 0.2+ | 2003 01 01 | 704 | 0.7− | 0.7+ | 2006 10 29 | 704 | 0.2− | 0.9− | | |
| 2001 08 25 | 704 | 0.9− | 0.4+ | 2003 01 03 | 704 | 0.7+ | 0.5+ | 2006 10 29 | 704 | (0.8− | 1.9+) | | |
| 2001 08 25 | 704 | (1.8− | 0.7−) | 2003 01 03 | 704 | 0.8+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2001 08 25 | 704 | 1.1− | 0.6+ | 2003 01 03 | 704 | (0.1− | 1.9+) | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2001 08 25 | 704 | 1.0− | 0.5− | 2003 01 03 | 704 | (1.7+ | 1.3+) | 2006 11 01 | G96 | 0.0 | 0.3− | | |
| 2001 08 31 | 644 | 0.2− | 0.2+ | 2003 01 03 | 704 | 1.3+ | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 2001 08 31 | 644 | 0.2− | 0.3+ | 2003 01 04 | 704 | 0.6+ | 0.3− | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 2001 08 31 | 644 | 0.3− | 0.5+ | 2003 01 04 | 704 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 2001 09 06 | 644 | 0.3+ | 0.1− | 2003 01 04 | 704 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2001 09 06 | 644 | 0.7+ | 0.4+ | 2003 01 04 | 704 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.6− | | |
| 2001 09 06 | 644 | 0.1+ | 0.3− | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.7− | | |
| 2001 09 08 | 704 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.8+ | 0.9− | 2006 11 11 | 703 | 0.6− | 1.4− | | |
| 2001 09 08 | 704 | 0.4− | 0.7+ | 2003 01 08 | 704 | 0.1− | 1.0− | 2006 11 13 | 644 | 0.0 | 0.1− | | |
| 2001 09 08 | 704 | 0.0 | 0.3+ | 2003 01 08 | 704 | (1.7− | 0.0 ) | 2006 11 13 | 644 | 0.3− | 0.2− | | |
| 2001 09 08 | 704 | 1.1− | 0.6+ | 2003 01 11 | 291 | 0.3− | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.1− | | |
| 2001 09 08 | 704 | 0.2− | 0.8+ | 2003 01 11 | 291 | 0.5− | 0.3+ | 2006 11 13 | 104 | 0.2+ | 0.3+ | | |
| 2001 09 11 | 699 | 0.2+ | 0.6+ | 2003 01 11 | 291 | 0.4− | 0.2+ | 2006 11 13 | 104 | 0.3+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.2+ | 0.3− | 2003 01 26 | 608 | 0.8+ | 0.0 | 2006 11 13 | 104 | 0.1+ | 0.2+ | | |
| 2001 09 11 | 699 | 0.0 | 0.3+ | 2003 01 26 | 608 | 1.2+ | 0.2− | 2006 11 16 | 704 | 0.7− | 0.8+ | | |
| 2001 09 11 | 699 | 0.1− | 0.3+ | 2003 01 26 | 608 | 0.8+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.6+ | | |
| 2001 09 13 | 644 | (0.4− | 1.8+) | 2003 01 27 | 704 | 0.3− | 0.5+ | 2006 11 16 | 704 | 1.0− | 0.9+ | | |
| 2001 09 13 | 644 | 0.6− | 0.3+ | 2003 01 27 | 704 | 0.8+ | 1.2+ | 2006 11 16 | 704 | 1.1− | 0.4+ | | |
| 2001 09 13 | 644 | 0.6− | 0.4+ | 2003 01 27 | 704 | 0.0 | 0.6+ | 2006 11 16 | 704 | 0.5− | 0.3+ | | |
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2003 01 27 | 704 | 0.5+ | 0.4+ | 2006 11 17 | 704 | 1.4− | 0.7+ | | |
| 2001 09 16 | 704 | 0.2− | 1.1+ | 2003 01 27 | 699 | 0.6+ | 0.2− | 2006 11 17 | 704 | 0.7− | 0.4+ | | |
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2003 01 27 | 699 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.8− | 0.2+ | | |
| 2001 09 16 | 704 | 0.7− | 0.4+ | 2003 01 27 | 699 | 0.0 | 0.4+ | 2006 11 17 | 704 | 1.3− | 0.1+ | | |
| 2001 09 16 | 704 | 0.5− | 0.4+ | 2003 01 27 | 699 | 0.3+ | 0.7− | 2006 11 17 | 704 | 0.3+ | 0.5+ | | |
| 2001 09 18 | 699 | 0.3− | 0.2− | 2003 02 03 | 644 | 0.9− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.8+ | | |
| 2001 09 18 | 699 | 0.4− | 0.2+ | 2003 02 03 | 644 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.5− | 0.4+ | | |
| 2001 09 18 | 699 | 0.8− | 0.1− | 2003 02 03 | 644 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.4− | 1.0+ | | |
| 2001 09 18 | 699 | 0.2− | 0.0 | 2004 05 09 | 691 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.0 | 1.0+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2004 05 09 | 691 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2006 10 13 | 691 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.2− | 0.2+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.6+ | | |
| 2001 09 20 | 704 | 0.1− | 0.5− | 2006 10 13 | 691 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.5+ | | |
| 2001 09 23 | 704 | 0.4− | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.1− | | |
| 2001 09 23 | 704 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.3+ | | |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.5+ | 0.0 | 2006 11 29 | 704 | 0.1− | 0.3+ | | |
| 2001 09 26 | 699 | 0.5+ | 0.9+ | 2006 10 21 | 704 | 0.9+ | 0.9− | 2006 11 29 | 704 | 0.1+ | 0.1− | | |
| 2001 09 26 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 704 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.0 | | |
| 2001 09 26 | 699 | 1.5+ | 1.0+ | 2006 10 21 | 704 | 0.5− | 0.6+ | 2006 11 29 | 704 | 0.2+ | 0.0 | | |
| 2001 09 26 | 699 | 0.3+ | 0.5+ | 2006 10 21 | 704 | 0.6− | 0.5+ | | | | | | |
| 2001 10 14 | 704 | 1.2+ | 0.2− | 2006 10 21 | 704 | (0.9− | 3.2+) | | | | | | |

**(139688)∗ 2001 QT$_{212}$ = 2000 KJ$_{45}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 17950)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.89727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21057473 | $\omega$ | 172.63573 | | +0.97402741 | +0.22633736 | |
| $a$ | 2.7981128 | $\Omega$ | 174.27045 | | −0.21091550 | +0.91733031 | |
| $e$ | 0.0922111 | $i$ | 3.72254 | | −0.08237271 | +0.32753091 | |
| $P$ | 4.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 691 | 0.1− | 0.0 | 2001 09 21 | 704 | 1.1+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2000 05 30 | 691 | 0.4+ | 1.0− | 2001 09 21 | 704 | 1.2− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2000 05 30 | 691 | 0.2− | 0.2− | 2001 09 21 | 704 | 0.3− | 1.0+ | 2006 10 20 | 644 | 0.4+ | 0.4+ | | |
| 2000 06 03 | 691 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.9− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2000 06 03 | 691 | 0.1+ | 0.1+ | 2001 09 21 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.4+ | 0.5+ | | |
| 2000 06 03 | 691 | 0.3− | 0.1+ | 2001 09 21 | 704 | 1.1− | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.1+ | | |
| 2001 08 23 | 699 | 1.0− | 0.4+ | 2001 09 21 | 704 | 0.5− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2001 08 23 | 699 | 0.2− | 0.1− | 2001 09 21 | 704 | 0.6+ | 0.9+ | 2006 10 21 | 703 | 0.5− | 0.2+ | | |
| 2001 08 23 | 699 | 0.5− | 0.6+ | 2001 10 17 | 644 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2001 08 23 | 699 | 0.5+ | 0.4+ | 2001 10 17 | 644 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2001 08 24 | 704 | (1.6+ | 0.6+) | 2001 10 17 | 644 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.4+ | 0.2− | | |
| 2001 08 24 | 704 | 0.2+ | 0.1− | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 1.0− | 0.3+ | | |
| 2001 08 24 | 704 | 0.6+ | 1.0− | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.3− | | |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2004 03 17 | 691 | 0.3+ | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2001 09 12 | 704 | 0.4+ | 0.6+ | 2004 04 25 | 691 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.5+ | 0.3− | | |
| 2001 09 19 | 691 | 0.1+ | 0.0 | 2004 04 25 | 691 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.6+ | 0.3− | | |
| 2001 09 19 | 704 | 0.6− | 0.6+ | 2004 04 25 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.1− | | |
| 2001 09 19 | 691 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.0 | 0.8+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | | | | | |
| 2001 09 19 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1− | | | | | | |

**(139689)∗ 2001 QG$_{213}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.13735 | | (2000.0) | | +0.96031830 | +0.27843470 |
| $n$ | 0.23621634 | $\omega$ | 134.85714 | | −0.26439850 | +0.89032115 |
| $a$ | 2.5917678 | $\Omega$ | 208.98747 | | −0.08878170 | +0.36028096 |
| $e$ | 0.1990092 | $i$ | 1.91726 | | | |
| $P$ | 4.17 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.5+ | 0.5+ | 2001 09 21 | 704 | 0.7− | 1.4+ | 2005 07 31 | E12 | 0.3+ | 0.3+ |
| 1997 10 30 | 704 | 0.4+ | 1.1+ | 2001 09 21 | 704 | 0.3− | 0.8+ | 2005 07 31 | E12 | 0.5+ | 0.4− |
| 1997 10 30 | 704 | 0.2− | 1.1− | 2001 09 22 | 704 | 0.3− | 1.0+ | 2005 07 31 | E12 | 0.4+ | 0.4+ |
| 1997 10 30 | 704 | (2.4− | 0.4+) | 2001 09 22 | 704 | 0.4− | 1.5+ | 2005 08 06 | 644 | 0.1+ | 0.2− |
| 2000 04 07 | 691 | 0.1+ | 0.3+ | 2001 09 22 | 704 | 0.1− | 1.0+ | 2005 08 06 | 644 | 0.5− | 0.6− |
| 2000 04 07 | 691 | 0.2+ | 0.2+ | 2001 09 22 | 704 | 0.1− | 1.1+ | 2005 08 06 | 644 | 0.1+ | 0.5− |
| 2000 04 07 | 691 | 0.2+ | 0.3+ | 2001 09 22 | 704 | 0.2− | 0.7+ | 2005 08 25 | 644 | 0.1+ | 0.2− |
| 2001 08 23 | 699 | 0.0 | 0.6− | 2001 09 23 | 704 | 0.0 | 0.9+ | 2005 08 25 | 644 | 0.0 | 0.2− |
| 2001 08 23 | 699 | 0.3+ | 0.3+ | 2001 09 23 | 704 | 0.1− | 1.0+ | 2005 08 25 | 644 | 0.1− | 0.1− |
| 2001 08 23 | 699 | 0.0 | 0.5− | 2001 09 23 | 704 | 0.3− | 0.9+ | 2005 08 29 | 699 | 0.0 | 0.3+ |
| 2001 08 23 | 699 | 0.1+ | 1.4− | 2001 09 23 | 704 | 0.2+ | 0.5+ | 2005 08 29 | 699 | 0.2− | 0.0 |
| 2001 08 24 | 704 | 0.3+ | 0.0 | 2001 09 23 | 704 | 0.2+ | 1.0+ | 2005 08 29 | 699 | 0.5+ | 0.2− |
| 2001 08 24 | 704 | 0.1+ | 0.6− | 2001 09 26 | 699 | 0.8+ | 0.8+ | 2005 08 29 | 699 | 0.1+ | 0.3+ |
| 2001 08 24 | 704 | 0.3− | 0.9− | 2001 09 26 | 699 | 0.6− | 0.7+ | 2005 08 30 | 704 | 0.3+ | 0.7+ |
| 2001 08 24 | 704 | 0.3+ | 0.4− | 2001 09 26 | 699 | 1.0+ | 1.1+ | 2005 08 30 | 704 | 0.4+ | 0.9+ |
| 2001 09 07 | 704 | 1.0− | 1.0− | 2001 09 26 | 699 | 0.5+ | 0.7+ | 2005 08 30 | 704 | 0.2− | 0.7− |
| 2001 09 07 | 704 | 0.8+ | 1.4− | 2001 10 11 | 644 | 0.2+ | 0.5+ | 2005 09 17 | 644 | 0.2+ | 0.4− |
| 2001 09 07 | 704 | 0.9+ | 0.9− | 2001 10 11 | 644 | 0.1+ | 0.5+ | 2005 09 17 | 644 | 0.2+ | 0.6− |
| 2001 09 07 | 704 | 0.7− | 0.7− | 2001 10 11 | 644 | 0.3+ | 0.5+ | 2005 09 17 | 644 | 0.4+ | 0.3− |
| 2001 09 07 | 644 | 0.8− | 1.1− | 2001 10 19 | 644 | 0.1+ | 0.2− | 2005 09 29 | G96 | 0.0 | 0.3− |
| 2001 09 07 | 644 | 0.5− | 0.3− | 2001 10 19 | 644 | 0.4+ | 0.1− | 2005 09 29 | G96 | 0.1− | 0.7− |
| 2001 09 07 | 644 | 0.0 | 0.1+ | 2001 10 19 | 644 | 0.2+ | 0.2− | 2005 09 29 | G96 | 0.1+ | 0.4− |
| 2001 09 08 | 704 | 0.6− | 0.6+ | 2004 04 20 | 691 | 0.4+ | 0.4+ | 2005 09 29 | G96 | 0.2− | 0.6− |
| 2001 09 08 | 704 | 0.6− | 0.8− | 2004 04 20 | 691 | 0.2+ | 0.7+ | 2005 09 29 | G96 | 0.4− | 0.5− |
| 2001 09 08 | 704 | 1.0− | 1.1+ | 2004 04 20 | 691 | 0.0 | 0.8+ | 2005 09 29 | G96 | 0.1− | 0.6− |
| 2001 09 08 | 704 | 0.4− | 0.2− | 2005 05 19 | G96 | 0.1− | 0.3− | 2005 09 29 | G96 | 0.1+ | 0.8− |
| 2001 09 16 | 704 | 0.4− | 0.2− | 2005 05 19 | G96 | 0.3− | 0.2− | 2005 09 29 | G96 | 0.2− | 0.7− |
| 2001 09 16 | 704 | 0.8− | 0.3+ | 2005 05 19 | G96 | 0.3− | 0.5− | 2005 10 03 | 644 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.3+ | 0.0 | 2005 05 19 | G96 | 0.3− | 0.7− | 2005 10 03 | 644 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.1+ | 2005 06 21 | 644 | 0.6+ | 0.1− | 2005 10 03 | 644 | 0.1− | 0.0 |
| 2001 09 18 | 699 | 0.4− | 0.7− | 2005 06 21 | 644 | 0.1− | 0.1− | 2005 10 26 | G96 | 0.6+ | 0.5− |
| 2001 09 18 | 699 | 0.4− | 0.2− | 2005 06 21 | 644 | 0.3+ | 0.0 | 2005 10 26 | G96 | 0.1+ | 0.5− |
| 2001 09 18 | 699 | 0.5− | 0.1+ | 2005 07 09 | 691 | 0.1− | 0.1+ | 2005 10 26 | G96 | 0.1− | 0.4− |
| 2001 09 18 | 699 | 0.9− | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.1+ | 2005 10 26 | G96 | 0.5+ | 0.6− |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2005 07 18 | 644 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2005 07 28 | 644 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.5+ | 0.4+ |
| 2001 09 21 | 704 | 1.2− | 1.4+ | 2005 07 28 | 644 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.9− | 1.1+ | 2005 07 28 | 644 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2001 09 21 | 704 | 0.8− | 1.1+ | 2005 07 31 | E12 | 0.6+ | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.2− |

**(139690)∗ 2001 QN$_{214}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.34961 | | (2000.0) | | +0.42077327 | +0.90700721 |
| $n$ | 0.21338667 | $\omega$ | 138.85598 | | −0.84284816 | +0.39778800 |
| $a$ | 2.7734767 | $\Omega$ | 156.01273 | | −0.33549490 | +0.13821227 |
| $e$ | 0.2424694 | $i$ | 2.39154 | | | |
| $P$ | 4.62 | $H$ | 16.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.4+ | 0.2+ | 2001 09 12 | 704 | 0.4− | 0.8+ | 2005 05 14 | 644 | 0.6+ | 0.1+ |
| 1997 11 23 | 691 | 0.3− | 0.4+ | 2001 09 19 | 704 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.4+ | 0.2− |
| 1997 11 23 | 691 | 0.3− | 0.7+ | 2001 09 19 | 704 | 0.6+ | 0.1+ | 2005 05 14 | 644 | 0.2+ | 0.1− |
| 1997 11 25 | 691 | 0.4− | 1.0+ | 2001 09 19 | 704 | 0.4+ | 0.2+ | 2005 06 16 | G96 | 0.2− | 0.1− |
| 1997 11 25 | 691 | 0.9− | 0.1− | 2001 09 19 | 704 | 0.1+ | 0.6+ | 2005 06 16 | G96 | 0.0 | 0.1− |
| 1997 11 29 | 691 | 0.1− | 0.9− | 2001 09 19 | 291 | 0.1− | 0.3+ | 2005 06 16 | G96 | 0.0 | 0.2− |
| 1997 11 29 | 691 | 0.2+ | 0.6− | 2001 09 19 | 291 | 0.0 | 0.1+ | 2005 06 16 | G96 | 0.1+ | 0.1+ |
| 1997 11 29 | 691 | 0.7+ | 0.6− | 2001 09 19 | 291 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2001 09 21 | 704 | (2.0+ | 1.7+) | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2000 03 03 | 645 | 0.3+ | 0.1+ | 2001 09 21 | 704 | (2.2+ | 1.0+) | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2000 05 04 | 645 | 0.1− | 0.2+ | 2001 09 21 | 704 | (2.5+ | 1.2+) | 2006 09 30 | G96 | 0.5− | 0.0 |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2005 03 13 | G96 | 0.7− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.5+ |
| 2001 08 23 | 699 | 1.2+ | 0.4− | 2005 03 13 | G96 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 2001 08 23 | 699 | 0.9+ | 0.2+ | 2005 03 13 | G96 | 0.5− | 0.1+ | 2006 10 18 | 691 | 0.9+ | 0.7+ |
| 2001 08 23 | 699 | 0.6− | 0.1+ | 2005 03 13 | G96 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 08 23 | 699 | 0.3− | 0.2− | 2005 05 08 | 704 | 0.3+ | 1.2+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2001 08 24 | 704 | (4.8+ | 1.9−) | 2005 05 08 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 08 24 | 704 | (4.1+ | 1.8−) | 2005 05 08 | 704 | 0.7− | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 08 24 | 704 | (5.4+ | 2.2−) | 2005 05 08 | 704 | 1.1+ | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 09 07 | 704 | 0.9− | 0.1+ | 2005 05 11 | G96 | (1.5− | 2.4−) | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 07 | 704 | 0.8− | 0.7+ | 2005 05 11 | G96 | 0.9− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2001 09 07 | 704 | 0.9− | 0.0 | 2005 05 11 | G96 | 0.8− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2001 09 07 | 704 | 0.7− | 0.7+ | 2005 05 11 | G96 | 0.6− | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2005 05 12 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2005 05 12 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 0.7+ | 2005 05 12 | G96 | 0.1− | 0.0 | | | | |
| 2001 09 12 | 704 | 0.1+ | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.1− | | | | |

**(139691)∗ 2001 QT$_{214}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.13828 | | (2000.0) | | −0.00273544 | −0.99963100 |
| $n$ | 0.20050494 | $\omega$ | 288.99532 | | +0.94599996 | −0.01134729 |
| $a$ | 2.8910304 | $\Omega$ | 161.10022 | | +0.32415520 | +0.02467984 |
| $e$ | 0.2377677 | $i$ | 4.78598 | | | |
| $P$ | 4.92 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 691 | 0.0 | 0.1− | 2003 01 27 | 704 | 0.5+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 1998 02 28 | 691 | 0.3+ | 0.3− | 2003 01 27 | 704 | 0.1− | 0.3− | 2006 09 15 | 691 | 0.7+ | 0.1− |
| 1998 02 28 | 691 | 0.1+ | 0.1− | 2003 01 27 | 644 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.0 |
| 1998 03 31 | 910 | 1.5− | 0.3− | 2003 01 27 | 644 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.8+ | 1.1+ |
| 1998 03 31 | 910 | 1.2− | 0.3− | 2003 01 27 | 644 | 0.0 | 0.4+ | 2006 09 16 | 699 | (2.0+ | 0.2−) |
| 1998 03 31 | 910 | 1.1− | 0.6− | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.4+ | 1.2− |
| 2001 08 17 | 644 | (0.2+ | 2.0+) | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 09 17 | 704 | (0.5− | 1.9−) |
| 2001 08 17 | 644 | (0.0 | 1.5+) | 2003 01 30 | 699 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.2− | 0.9− |
| 2001 08 17 | 644 | (0.2+ | 1.5+) | 2003 01 30 | 699 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.4+ | 1.2− |
| 2001 08 23 | 699 | 0.6− | 0.6+ | 2003 01 30 | 699 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.9+ | 0.0 |
| 2001 08 23 | 699 | 0.4+ | 0.7+ | 2003 01 30 | 699 | 0.4+ | 1.0+ | 2006 09 19 | 699 | 0.7+ | 0.5− |
| 2001 08 23 | 699 | (1.0+ | 1.5+) | 2003 01 31 | 704 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.5+ | 1.2− |
| 2001 08 23 | 699 | 0.0 | 0.4+ | 2003 01 31 | 704 | 0.2− | 0.6+ | 2006 09 19 | 699 | 0.2− | 0.6− |
| 2001 08 24 | 704 | 0.6+ | 0.9− | 2003 01 31 | 704 | 0.1− | 0.6+ | 2006 09 20 | 704 | 0.7+ | 0.5+ |
| 2001 08 24 | 704 | 0.1+ | 0.9+ | 2003 01 31 | 704 | 0.1− | 0.7+ | 2006 09 20 | 704 | 0.9+ | 0.6+ |
| 2001 08 24 | 704 | 0.3+ | 1.5+ | 2003 01 31 | 704 | 0.1− | 0.7+ | 2006 09 20 | 644 | 0.6− | 0.0 |
| 2001 09 10 | 704 | 0.6+ | 0.8+ | 2003 02 03 | 699 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.0 | 1.1+ |
| 2001 09 10 | 704 | 0.1− | 0.0 | 2003 02 03 | 699 | 0.3+ | 0.5− | 2006 09 20 | 704 | 0.6+ | 0.9− |
| 2001 09 10 | 704 | 0.1+ | 0.5+ | 2003 02 03 | 699 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.8− | 0.1− |
| 2001 09 10 | 704 | 0.4− | 1.1+ | 2003 02 03 | 699 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.7+ |
| 2001 09 10 | 704 | 0.7− | 0.6+ | 2003 02 03 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.6− | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.0 | 2003 02 03 | 608 | 0.5+ | 0.7− | 2006 09 27 | 704 | 0.1− | 0.8− |
| 2001 09 12 | 704 | 0.2+ | 0.3+ | 2003 02 03 | 608 | 0.4+ | 0.4− | 2006 09 27 | 704 | 0.4− | 0.6− |
| 2001 09 12 | 704 | 0.3− | 0.8+ | 2003 02 03 | 644 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.7− | 0.5− |
| 2001 09 12 | 704 | 0.5− | 0.7+ | 2003 02 03 | 608 | 0.5+ | 0.4− | 2006 09 27 | 704 | 0.9− | 0.3− |
| 2001 09 12 | 704 | 0.2+ | 1.2+ | 2003 02 03 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.2+ | 1.2− |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2003 02 08 | 704 | 1.0+ | 0.5+ | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2003 02 08 | 704 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.3− | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2003 02 08 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 1.0− | 0.4+ | 2003 02 08 | 704 | 0.3+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 09 19 | 291 | 0.1+ | 0.3+ | 2003 02 08 | 704 | 0.4+ | 0.2− | 2006 10 09 | 644 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2003 02 09 | 608 | 0.2+ | 0.6− | 2006 10 09 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 291 | 0.3+ | 0.4+ | 2003 02 09 | 608 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.1− | 1.2− | | |
| 2001 09 19 | 291 | 0.1+ | 0.3+ | 2003 02 09 | 608 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.9− | | |
| 2001 09 21 | 704 | 1.3− | 0.9− | 2003 02 28 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 1.3− | 0.2− | | |
| 2001 09 21 | 704 | (1.1− | 1.9−) | 2003 02 28 | 704 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.3− | | |
| 2001 09 21 | 704 | 0.6− | 1.2− | 2003 02 28 | 704 | 0.8+ | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | (2.6− | 1.3−) | 2003 03 05 | 704 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | (2.3− | 0.9−) | 2003 03 05 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2001 10 20 | 695 | 0.1− | 0.3+ | 2003 03 05 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.7− | 0.3− | | |
| 2001 10 20 | 695 | 0.1+ | 0.3+ | 2003 03 05 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 11 16 | 644 | 0.7+ | 0.2+ | 2003 03 12 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2002 11 16 | 644 | 0.4+ | 1.0+ | 2003 03 12 | 644 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2002 11 16 | 644 | 0.5+ | 1.0+ | 2003 03 12 | 644 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2002 12 14 | 645 | 0.1− | 0.2− | 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2002 12 14 | 645 | 0.1− | 0.2− | 2006 08 18 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− | | |
| 2003 01 17 | 644 | 0.4+ | 0.4+ | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.1− | | |
| 2003 01 17 | 644 | 0.2+ | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.1+ | | |
| 2003 01 17 | 644 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.3+ | 0.3+ | 2006 10 24 | 644 | 0.1− | 0.0 | | |
| 2003 01 27 | 704 | 0.0 | 1.1− | 2006 08 27 | 691 | 0.1+ | 0.1+ | | | | | | |

**(139692)∗ 2001 QU$_{214}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.35367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21321011 | $\omega$ | 63.01131 | | +0.63911385 | −0.76845584 | |
| $a$ | 2.7750077 | $\Omega$ | 347.11182 | | +0.64549249 | +0.55838804 | |
| $e$ | 0.1539843 | $i$ | 8.18783 | | +0.41817810 | +0.31253546 | |
| $P$ | 4.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 15 | 691 | 0.3− | 0.2+ | 2001 09 20 | 704 | 0.4− | 1.3− | 2003 02 04 | 704 | 0.1+ | 0.9+ | | |
| 1994 02 15 | 691 | 0.2+ | 0.0 | 2001 09 20 | 704 | 0.1− | 1.4− | 2003 02 04 | 704 | (0.1− | 1.9+) | | |
| 1994 02 15 | 691 | 0.7+ | 0.3+ | 2001 09 20 | 704 | 0.6− | 1.2− | 2003 02 04 | 704 | 0.1+ | 0.9+ | | |
| 2001 08 16 | 704 | (1.0− | 2.6+) | 2001 09 20 | 704 | 0.1+ | 1.4− | 2003 02 23 | 699 | 1.1+ | 0.6+ | | |
| 2001 08 16 | 704 | (0.2− | 2.0+) | 2001 09 20 | 704 | (0.2− | 1.5−) | 2003 02 23 | 699 | 0.1− | 0.3− | | |
| 2001 08 16 | 704 | 0.5− | 0.3+ | 2001 10 11 | 644 | 1.1− | 0.9+ | 2003 02 23 | 699 | 1.0− | 0.4+ | | |
| 2001 08 18 | 644 | 0.2− | 0.5+ | 2001 10 11 | 644 | 0.9− | 1.0+ | 2003 02 23 | 699 | 0.3+ | 0.5+ | | |
| 2001 08 18 | 644 | 0.0 | 0.2+ | 2001 10 11 | 644 | 0.8− | 0.8+ | 2006 10 18 | H06 | 0.9+ | 0.3− | | |
| 2001 08 18 | 644 | 0.1+ | 0.9+ | 2001 10 13 | 704 | 1.4− | 0.4− | 2006 10 18 | H06 | 0.7+ | 0.8− | | |
| 2001 08 23 | 699 | 0.9− | 1.4+ | 2001 10 13 | 704 | (1.9− | 0.4−) | 2006 10 18 | H06 | 0.8+ | 0.5− | | |
| 2001 08 23 | 699 | 0.2+ | 0.8+ | 2001 10 13 | 704 | (0.9− | 1.7+) | 2006 10 19 | 703 | 0.4+ | 0.0 | | |
| 2001 08 23 | 699 | 0.1+ | 0.5+ | 2001 10 13 | 704 | 0.3+ | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.3− | | |
| 2001 08 23 | 699 | 1.2− | 0.9+ | 2001 10 19 | 644 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.1− | | |
| 2001 08 24 | 704 | 0.6− | 0.5+ | 2001 10 19 | 644 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.5− | | |
| 2001 08 24 | 704 | 0.2− | 1.5− | 2001 10 19 | 644 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2001 08 24 | 704 | 0.4− | 0.3− | 2001 10 21 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2001 08 27 | 691 | 0.1− | 0.1+ | 2001 10 21 | 704 | 0.8+ | 1.2+ | 2006 10 19 | 703 | 0.0 | 0.2+ | | |
| 2001 08 27 | 691 | 0.0 | 0.2+ | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.3+ | | |
| 2001 08 27 | 691 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 704 | 0.4− | 0.5+ | | |
| 2001 09 07 | 704 | 0.7− | 0.7+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 10 20 | 704 | (1.9− | 0.5+) | | |
| 2001 09 07 | 704 | 0.3− | 0.3− | 2001 12 10 | 645 | 0.0 | 0.2− | 2006 10 20 | 704 | 0.4− | 1.1+ | | |
| 2001 09 07 | 704 | 0.5+ | 0.0 | 2002 12 31 | 704 | 0.1− | 0.8+ | 2006 10 20 | 704 | 1.0+ | 0.1− | | |
| 2001 09 11 | 699 | 0.6− | 1.3+ | 2002 12 31 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.3− | | |
| 2001 09 11 | 699 | 0.5− | 0.8+ | 2002 12 31 | 704 | 0.5− | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.3+ | | |
| 2001 09 11 | 699 | 0.4− | 0.4+ | 2002 12 31 | 704 | 0.5− | 0.7+ | 2006 10 27 | 703 | 0.3− | 0.5− | | |
| 2001 09 11 | 699 | 0.3− | 0.5+ | 2002 12 31 | 704 | 0.2− | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.1− | | |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2003 01 31 | 644 | 0.1− | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 09 12 | 704 | 0.3+ | 0.4− | 2003 01 31 | 644 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.2− | 2003 01 31 | 644 | 0.0 | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2003 01 31 | 644 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.0 | 1.3− | | |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2003 01 31 | 644 | 0.3− | 0.4− | 2006 11 15 | 703 | 0.1+ | 0.5− | | |
| 2001 09 18 | 691 | 0.1− | 0.5+ | 2003 01 31 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.7+ | 1.1− | | |
| 2001 09 18 | 691 | 0.1+ | 0.5+ | 2003 02 01 | 704 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.8+ | 0.6− | | |
| 2001 09 18 | 691 | 0.3− | 0.6+ | 2003 02 01 | 704 | 0.3− | 1.0+ | 2006 11 22 | 703 | 0.0 | 0.5− | | |
| 2001 09 19 | 699 | 1.0+ | 0.1+ | 2003 02 01 | 704 | 0.8+ | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.5− | | |
| 2001 09 19 | 699 | 0.8+ | 1.2+ | 2003 02 01 | 704 | 0.4+ | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.7− | | |
| 2001 09 19 | 699 | (0.6− | 1.7+) | 2003 02 01 | 704 | 0.6+ | 1.4+ | 2006 11 22 | 703 | 0.0 | 0.0 | | |
| 2001 09 19 | 699 | 0.6− | 0.1− | 2003 02 04 | 704 | 1.3+ | 0.6+ | | | | | | |

**(139693)∗ 2001 QG$_{215}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.68293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21248109 | $\omega$ | 328.57823 | | +0.83509458 | +0.55010470 | |
| $a$ | 2.7813514 | $\Omega$ | 358.04598 | | −0.49606137 | +0.75197776 | |
| $e$ | 0.0397190 | $i$ | 2.29082 | | −0.23778173 | +0.36320003 | |
| $P$ | 4.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 23 | 691 | 0.4+ | 0.1− | 2001 10 11 | 644 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.1+ | | |
| 1999 03 23 | 691 | 0.1− | 0.0 | 2001 10 11 | 644 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.3− | | |
| 1999 03 23 | 691 | 0.4− | 0.1− | 2001 10 17 | 644 | (0.5+ | 1.7+) | 2006 10 19 | 644 | 0.1+ | 0.3+ | | |
| 2001 08 12 | 644 | 0.4− | 0.8+ | 2001 10 17 | 644 | (0.8+ | 1.7+) | 2006 10 19 | 644 | 0.3+ | 0.0 | | |
| 2001 08 12 | 644 | 0.6− | 0.8+ | 2001 10 17 | 644 | (1.2+ | 2.0+) | 2006 10 20 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 12 | 644 | 0.2− | 0.2+ | 2004 03 15 | 703 | 1.1− | 1.0+ | 2006 10 20 | 691 | 0.2+ | 0.0 | | |
| 2001 08 12 | 644 | 1.1− | 0.3+ | 2004 03 15 | 703 | (0.3− | 1.9+) | 2006 10 20 | 691 | 0.0 | 0.2+ | | |
| 2001 08 12 | 644 | 0.9− | 0.5+ | 2004 03 15 | 703 | 0.1+ | 0.7+ | 2006 10 21 | 703 | 0.8+ | 0.6− | | |
| 2001 08 12 | 644 | 0.8− | 0.1+ | 2004 03 15 | 703 | (1.1− | 2.7+) | 2006 10 21 | 703 | 0.2− | 0.3+ | | |
| 2001 08 12 | 644 | 0.3− | 1.0+ | 2004 03 16 | 704 | 1.4+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.0 | | |
| 2001 08 12 | 644 | 1.3− | 0.5+ | 2004 03 16 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 703 | 0.3+ | 0.2+ | | |
| 2001 08 12 | 644 | 0.9− | 0.4+ | 2004 03 16 | 704 | 0.8− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2001 08 16 | 704 | 0.8− | 1.1+ | 2004 03 16 | 704 | (1.6+ | 0.3+) | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2001 08 16 | 704 | 0.9− | 0.6+ | 2004 03 17 | 691 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 08 16 | 704 | 1.3− | 0.1+ | 2004 03 17 | 691 | 0.5+ | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.1− | | |
| 2001 08 23 | 699 | 0.2+ | 0.9+ | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2001 08 23 | 699 | 0.9+ | 0.2+ | 2004 03 18 | 704 | 1.4+ | 1.3+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 2001 08 23 | 699 | (1.3+ | 1.7+) | 2004 03 18 | 704 | 1.3+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2001 08 23 | 699 | 0.1+ | 0.4− | 2004 03 18 | 704 | 0.4+ | 1.5+ | 2006 10 29 | 691 | 0.2+ | 0.0 | | |
| 2001 08 24 | 704 | 0.1− | 0.8+ | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 10 29 | 691 | 0.3+ | 0.0 | | |
| 2001 08 24 | 704 | 0.2− | 0.3− | 2004 03 18 | 704 | (0.9+ | 2.1+) | 2006 10 29 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 24 | 704 | 0.5+ | 1.1− | 2004 03 26 | 699 | (2.3− | 0.7+) | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2001 09 12 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 0.0 | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.0 | 2004 03 27 | 704 | 1.4+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.2− | 0.5+ | 2006 11 07 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2004 03 27 | 704 | 0.7+ | 0.7+ | 2006 11 07 | 644 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.8+ | 2004 03 27 | 704 | 0.1− | 1.2+ | 2006 11 07 | 644 | 0.0 | 0.3+ | | |
| 2001 09 19 | 699 | 0.3− | 1.0+ | 2004 04 15 | 691 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.4+ | | |
| 2001 09 19 | 699 | 0.0 | 0.6+ | 2004 04 15 | 691 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.4− | | |
| 2001 09 19 | 699 | 0.8− | 0.1+ | 2004 04 15 | 691 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.4+ | | |
| 2001 09 19 | 699 | 1.0− | 0.5+ | 2004 04 21 | 704 | 0.8+ | 1.4+ | 2006 11 11 | 703 | 1.3+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2004 04 21 | 704 | 0.1+ | 0.8+ | 2006 11 18 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 691 | 0.0 | 0.2+ | 2004 04 21 | 704 | 0.1− | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2004 04 25 | 691 | 0.4+ | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2004 04 25 | 691 | 0.5+ | 0.7+ | 2006 11 19 | 704 | 0.7− | 0.1− | | |
| 2001 09 19 | 691 | 0.0 | 0.2+ | 2004 04 25 | 691 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 1.1− | 0.7+ | | |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2006 09 22 | 224 | 1.3+ | 0.7− | 2006 11 19 | 704 | 0.6− | 0.4+ | | |
| 2001 09 19 | 691 | 0.0 | 0.4+ | 2006 09 22 | 224 | 0.3+ | 0.4− | 2006 11 19 | 704 | (0.8− | 1.6+) | | |
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2006 09 22 | 224 | 0.5− | 0.6− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.2+ | | |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2006 09 25 | 691 | 0.5− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 2001 09 21 | 704 | 0.1− | 0.8+ | 2006 10 16 | 104 | 0.0 | 0.8+ | 2006 11 22 | 704 | 1.3− | 0.6− | | |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2006 10 16 | 104 | 1.1+ | 0.0 | 2006 11 22 | 704 | (1.7− | 0.4+) | | |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2006 10 16 | 104 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.6− | 2.4+ | | |
| 2001 09 21 | 704 | (0.6− | 1.9+) | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.5+ | 1.2+ | | |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.6− | 0.0 | 2006 11 27 | 703 | 0.9+ | 0.8+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 27 | 703 | 1.3− | 0.5+ | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.1+ | | | | | | |
| 2001 10 11 | 644 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.4− | 0.2+ | | | | | | |

**(139694)∗ 2001 QJ$_{218}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.59875 | | (2000.0) | | +0.78963599 | −0.61140559 |
| $n$ | 0.19322320 | $\omega$ | 58.30720 | | +0.50213942 | +0.69222765 |
| $a$ | 2.9632153 | $\Omega$ | 339.24074 | | +0.35260601 | +0.38341112 |
| $e$ | 0.1076565 | $i$ | 8.36402 | | | |
| $P$ | 5.10 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.2+ | 0.9− | 2001 09 20 | 704 | 0.2+ | 0.9− | 2006 08 13 | 644 | 0.0 | 0.3+ |
| 2001 08 16 | 704 | 0.4− | 0.5− | 2001 09 22 | 704 | 1.1+ | 0.8+ | 2006 08 13 | 644 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.3− | 0.6+ | 2001 09 22 | 704 | 0.8− | 0.6+ | 2006 08 28 | 699 | (4.0+ | 0.1+) |
| 2001 08 16 | 704 | 0.0 | 1.3− | 2001 09 22 | 704 | 0.8+ | 0.9+ | 2006 08 28 | 699 | 0.4+ | 0.1− |
| 2001 08 23 | 699 | 0.0 | 1.3+ | 2001 09 22 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 699 | (0.6+ | 1.6+) |
| 2001 08 23 | 699 | 0.0 | 0.9+ | 2001 09 23 | 704 | 0.7− | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.2− |
| 2001 08 23 | 699 | (1.5− | 1.5+) | 2001 09 23 | 704 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.2− | 0.9− |
| 2001 08 23 | 699 | 0.3+ | 0.9+ | 2001 09 23 | 704 | 0.3+ | 0.6− | 2006 08 28 | 699 | (1.7− | 0.9+) |
| 2001 08 24 | 704 | 0.3+ | 0.1− | 2001 10 11 | 644 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.2+ | 1.0− |
| 2001 08 24 | 704 | 0.2− | 0.4− | 2001 10 11 | 644 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2001 08 24 | 704 | 0.3− | 0.5+ | 2001 10 11 | 644 | 0.5− | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.1+ |
| 2001 09 07 | 704 | 0.0 | 0.7+ | 2001 10 19 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.4− |
| 2001 09 07 | 644 | 0.2− | 0.5+ | 2001 10 19 | 644 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.5+ |
| 2001 09 07 | 704 | (0.2+ | 1.7+) | 2001 10 19 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.5+ | 1.0− |
| 2001 09 07 | 644 | 0.3− | 0.7+ | 2003 01 02 | 704 | 0.7+ | 0.1− | 2006 09 14 | 703 | (0.0 | 1.6−) |
| 2001 09 07 | 704 | 0.5− | 0.1+ | 2003 01 02 | 704 | 0.6− | 0.4+ | 2006 09 14 | 703 | (0.1− | 1.8−) |
| 2001 09 07 | 704 | 0.3+ | 0.3− | 2003 01 02 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.4+ |
| 2001 09 07 | 644 | 0.2− | 0.5+ | 2003 01 02 | 704 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 09 07 | 704 | 0.5+ | 1.3+ | 2004 03 20 | 704 | 1.2+ | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2001 09 16 | 691 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2001 09 16 | 691 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.2+ | 1.0+ | 2006 09 30 | G96 | 0.4+ | 0.1+ |
| 2001 09 16 | 691 | 0.2− | 0.0 | 2004 03 20 | 704 | 0.7+ | 1.0+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.5− | 0.4− | 2004 03 27 | 704 | 0.6− | 1.3+ | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.5− | 2004 03 27 | 704 | 0.9+ | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.8+ | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.8− | 2006 08 13 | 644 | 0.4+ | 0.3+ | | | | |

**(139695)∗ 2001 QY$_{218}$ = 1999 AF$_{29}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 17956)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.99938 | | (2000.0) | | +0.36113534 | +0.93178463 |
| $n$ | 0.21256714 | $\omega$ | 344.22765 | | −0.85050151 | +0.31290787 |
| $a$ | 2.7806007 | $\Omega$ | 306.92809 | | −0.38239829 | +0.18402735 |
| $e$ | 0.0653488 | $i$ | 2.64286 | | | |
| $P$ | 4.64 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.3+ | 0.4+ | 2001 09 12 | 704 | 0.7− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 1999 01 13 | 691 | 1.3+ | 0.8+ | 2001 09 12 | 704 | 0.9− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 1999 01 13 | 691 | 0.6+ | 0.7− | 2001 09 20 | 704 | 0.3− | 1.0− | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 1999 01 18 | 691 | 0.9− | 0.1+ | 2001 09 20 | 704 | 0.1− | 0.6− | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 1999 01 18 | 691 | 0.6− | 0.1− | 2001 09 20 | 704 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 1999 01 18 | 691 | 0.5− | 0.2+ | 2001 09 20 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | (2.2− | 0.5+) | 2001 09 21 | 291 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | 0.2− | 0.2+ | 2001 09 21 | 291 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 08 23 | 699 | 1.1− | 0.6+ | 2001 09 21 | 291 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 1.3− |
| 2001 08 23 | 699 | 0.2− | 0.4− | 2004 02 19 | 704 | 0.4+ | 0.5− | 2006 10 17 | 703 | 0.5− | 0.9− |
| 2001 08 24 | 704 | 0.5− | 0.1− | 2004 02 19 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2001 08 24 | 704 | 1.1− | 0.2− | 2004 02 19 | 704 | (0.0 | 1.7+) | 2006 10 17 | 703 | 1.2− | 0.9− |
| 2001 08 24 | 704 | 0.0 | 0.3− | 2004 02 19 | 704 | 0.0 | 1.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.3+ | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2001 09 11 | 699 | 0.3− | 1.4+ | 2004 03 18 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2001 09 11 | 699 | 0.5− | 0.4+ | 2004 03 18 | 704 | (1.8+ | 0.3+) | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2001 09 11 | 699 | (0.9− | 2.4−) | 2006 09 15 | 691 | 0.7+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2001 09 12 | 704 | (0.9+ | 1.6+) | 2006 09 15 | 691 | 0.5+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.4+ | 1.0+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.8+ | 2006 09 26 | 691 | 0.2− | 0.2+ | | | | |

**(139696)∗ 2001 QN$_{220}$**

Discovered 2001 Aug. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.98539 | | (2000.0) | | +0.90788056 | +0.41852744 |
| $n$ | 0.21826846 | $\omega$ | 13.84895 | | −0.38823851 | +0.81754181 |
| $a$ | 2.7319666 | $\Omega$ | 321.38055 | | −0.15818896 | +0.39555046 |
| $e$ | 0.1858400 | $i$ | 2.22593 | | | |
| $P$ | 4.52 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.0 | 0.3− | 2001 10 05 | 644 | 0.6− | 0.9+ | 2006 09 28 | G96 | 0.6− | 0.1+ |
| 1999 02 07 | 691 | 0.3− | 0.6− | 2001 10 05 | 644 | 0.2− | 1.0+ | 2006 09 28 | G96 | 0.3− | 0.4+ |
| 1999 02 07 | 691 | 0.3− | 0.3− | 2001 10 05 | 644 | 0.6− | 0.9+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2001 07 22 | 699 | 0.2− | 0.5+ | 2001 10 06 | 704 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2001 07 22 | 699 | (1.5+ | 0.5+) | 2001 10 06 | 704 | 0.1− | 0.6− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2001 07 22 | 699 | 0.1+ | 0.5+ | 2001 10 06 | 704 | 0.5− | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2001 07 22 | 699 | 1.3− | 0.5+ | 2001 10 06 | 704 | (0.6− | 1.6+) | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 08 23 | 691 | 0.2− | 0.1− | 2001 10 13 | 704 | 1.0+ | 0.6− | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2001 08 23 | 691 | 0.2− | 0.1− | 2001 10 13 | 704 | 1.2+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2001 08 23 | 691 | 0.3− | 0.1− | 2001 10 13 | 704 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.5− | 0.2− |
| 2001 08 24 | 704 | 0.4− | 0.5− | 2001 10 13 | 704 | 1.0+ | 0.3+ | 2006 11 11 | 703 | (5.0+ | 0.4+) |
| 2001 08 24 | 704 | 0.7− | 0.4− | 2001 10 13 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2001 08 24 | 704 | 0.5− | 0.3− | 2001 10 19 | 644 | 0.8− | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2001 08 24 | 704 | 0.7− | 0.4− | 2001 10 19 | 644 | 0.6− | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.2− |
| 2001 08 24 | 704 | 0.5− | 0.2− | 2001 10 19 | 644 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.3− | 0.4− |
| 2001 09 11 | 699 | 0.1+ | 0.9+ | 2001 10 21 | 704 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.9+ | 0.5+ |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2001 10 21 | 704 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.9− | 1.0+ |
| 2001 09 11 | 699 | 0.4− | 0.2− | 2001 10 21 | 704 | 0.7+ | 0.2− | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2001 10 21 | 704 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2001 09 15 | 644 | 0.4− | 0.2− | 2001 10 21 | 704 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.0 | 0.1− |
| 2001 09 15 | 644 | 0.6− | 0.1+ | 2001 10 23 | 699 | 0.5+ | 1.2+ | 2006 11 16 | 704 | 0.0 | 1.4+ |
| 2001 09 15 | 644 | 0.2− | 0.2+ | 2001 10 23 | 699 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.8+ |
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2001 10 23 | 699 | 0.9− | 0.0 | 2006 11 16 | 704 | 0.1+ | 1.0+ |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2001 10 23 | 699 | 1.0− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2001 09 16 | 704 | 0.4− | 0.3+ | 2001 11 12 | 645 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.1− | 0.9+ | 2001 11 12 | 645 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | (0.1− | 2.0+) | 2001 11 16 | 557 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.2− | 1.0+ | 2001 11 16 | 557 | 0.9+ | 0.5+ | 2006 11 19 | 704 | 1.1+ | 0.2+ |
| 2001 09 18 | 699 | 1.1− | 0.5+ | 2001 12 07 | 704 | (1.5+ | 0.2+) | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 1.4+ | 2001 12 07 | 704 | 0.8+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2001 09 20 | 704 | 0.3+ | 1.0+ | 2001 12 07 | 704 | 0.9+ | 0.1+ | 2006 11 19 | 704 | 0.9+ | 1.0+ |
| 2001 09 20 | 704 | 0.4+ | 1.2+ | 2004 03 12 | 644 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.4− |
| 2001 09 20 | 704 | 0.3+ | 1.1+ | 2004 03 12 | 644 | 0.1− | 0.5+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.5+ | 1.1+ | 2004 03 12 | 644 | 0.1− | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2001 09 22 | 704 | 0.5+ | 0.1+ | 2004 03 15 | 691 | 0.5+ | 0.8+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 0.6+ | 0.4+ | 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | 0.9+ | 0.2+ | 2004 03 15 | 691 | 0.3+ | 0.8+ | 2006 11 22 | 704 | 0.7− | 1.3+ |
| 2001 09 22 | 704 | 0.9+ | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 11 22 | 704 | 0.6− | 1.5+ |
| 2001 09 22 | 704 | 1.1+ | 0.1+ | 2004 03 18 | 704 | 0.8+ | 1.2+ | 2006 11 22 | 704 | (2.0+ | 0.7+) |
| 2001 09 23 | 704 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.9+ | 1.0+ | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2001 09 23 | 704 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 1.1+ | 0.8+ | 2006 11 25 | 691 | 0.2+ | 0.2− |
| 2001 09 23 | 704 | 0.3+ | 0.2+ | 2004 03 20 | 699 | 0.0 | 0.9+ | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.1− | 0.4+ | 2004 03 20 | 699 | 0.2+ | 0.5+ | 2006 11 27 | 704 | 0.2− | 0.7+ |
| 2001 09 23 | 704 | 0.3+ | 0.8+ | 2004 03 20 | 699 | 0.5− | 0.4− | 2006 11 27 | 704 | 0.2+ | 0.4+ |
| 2001 09 24 | 644 | 0.2+ | 1.1+ | 2004 03 20 | 699 | (0.2− | 2.1−) | 2006 11 27 | 704 | 0.1− | 0.1+ |
| 2001 09 24 | 644 | 0.4+ | 1.4+ | 2004 03 31 | 691 | 0.1− | 0.6+ | 2006 11 27 | 704 | (0.5− | 1.6+) |
| 2001 09 24 | 644 | 0.1+ | 1.3+ | 2004 03 31 | 691 | 0.7+ | 0.5+ | 2006 12 01 | 704 | 0.0 | 0.1+ |
| 2001 09 26 | 699 | 0.2+ | 0.0 | 2004 03 31 | 691 | 0.2+ | 0.6+ | 2006 12 01 | 704 | 0.2+ | 1.4+ |
| 2001 09 26 | 699 | 0.3− | 0.6+ | 2004 07 15 | 807 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 699 | 0.0 | 0.6+ | 2004 07 16 | 807 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.6− | 0.8− |
| 2001 09 26 | 699 | 0.4+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.2+ | | | | |

**(139697)∗ 2001 QY$_{222}$ = 1998 XQ$_{24}$ = 2004 CN$_{100}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60904)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 83.01031 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21973768 | ω | 183.85696 | | +0.33034276 | +0.94075914 | |
| *a* | 2.7197753 | Ω | 105.44503 | | −0.86383930 | +0.33398429 | |
| *e* | 0.0410172 | *i* | 4.54966 | | −0.38033580 | +0.05853831 | |
| *P* | 4.49 | *H* | 15.7 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 18 | 691 | 0.2+ | 0.2− | 2004 02 15 | 703 | 0.9− | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.7+ |
| 1994 01 18 | 691 | 0.9− | 0.2− | 2004 02 15 | 703 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.3− | 0.5+ |
| 1994 01 18 | 691 | 0.5+ | 0.4− | 2004 02 15 | 703 | 1.2− | 0.2+ | 2006 09 18 | 703 | 1.0− | 1.2+ |
| 1997 10 04 | 910 | 1.3+ | 0.9+ | 2004 02 15 | 703 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.0 | 0.1+ |
| 1997 10 04 | 910 | 1.1+ | 0.7+ | 2004 02 17 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.6− | 0.3+ |
| 1997 10 04 | 910 | 1.4+ | 0.8+ | 2004 02 17 | 704 | 1.1+ | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.1− |
| 1998 12 11 | 691 | 0.3− | 0.4− | 2004 02 17 | 704 | (1.0+ | 2.2+) | 2006 09 25 | 699 | 1.1+ | 0.3− |
| 1998 12 11 | 691 | 0.7− | 0.3− | 2004 02 17 | 704 | (1.6+ | 0.4+) | 2006 09 25 | 699 | 0.5− | 0.2− |
| 1998 12 11 | 691 | 0.3− | 0.5+ | 2004 02 25 | 926 | 0.0 | 0.4+ | 2006 09 25 | 699 | 1.3+ | 0.8+ |
| 1998 12 17 | 691 | 0.5+ | 0.0 | 2004 02 25 | 926 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.4− |
| 1998 12 17 | 691 | 0.1− | 0.4− | 2004 02 25 | 926 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.7+ | 0.6+ |
| 1998 12 17 | 691 | 0.3+ | 0.2− | 2004 02 25 | 704 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.6+ | 0.8+ |
| 2000 04 26 | 699 | 1.0+ | 1.1+ | 2004 02 25 | 704 | 0.5+ | 0.7− | 2006 09 30 | 703 | 0.6− | 0.7− |
| 2000 04 26 | 699 | 0.1− | 0.0 | 2004 02 25 | 704 | 1.0+ | 0.3− | 2006 09 30 | 703 | 1.3− | 0.3− |
| 2000 04 26 | 699 | 0.6+ | 0.4+ | 2004 02 25 | 704 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2000 04 26 | 699 | 0.9+ | 0.3− | 2004 02 25 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2001 08 15 | 608 | 0.3+ | 0.6− | 2004 02 26 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 08 15 | 608 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.4+ | 1.4+ | 2006 10 16 | 703 | 0.9+ | 0.5+ |
| 2001 08 15 | 608 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.3+ | 1.4+ | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2001 08 23 | 608 | 0.4− | 0.1+ | 2004 02 26 | 704 | (0.9+ | 1.7+) | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2001 08 23 | 608 | 0.1+ | 0.7− | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2001 08 23 | 608 | 0.1+ | 0.2− | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2001 08 24 | 699 | 1.2− | 0.1+ | 2004 02 26 | 704 | (1.7+ | 0.8+) | 2006 10 22 | 703 | 0.7− | 0.6+ |
| 2001 08 24 | 699 | 0.2− | 0.8+ | 2004 02 26 | 704 | 0.3+ | 0.6− | 2006 10 22 | 703 | 0.6+ | 0.4− |
| 2001 08 24 | 699 | 1.3− | 0.6− | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2001 08 24 | 699 | 0.2− | 0.7− | 2004 03 20 | 704 | 0.1+ | 0.9+ | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2001 08 25 | 704 | 0.7− | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.8+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2001 08 25 | 704 | (0.4+ | 1.6−) | 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.5− | 0.8− | 2006 09 17 | 691 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.1− |

**(139698)∗ 2001 QB$_{223}$ = 2002 YY$_{31}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 40401)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 357.60415 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.23256851 | ω | 315.66884 | | +0.45620672 | −0.88651850 | |
| *a* | 2.6187986 | Ω | 107.04799 | | +0.83724650 | +0.39821494 | |
| *e* | 0.1835429 | *i* | 4.63178 | | +0.30148586 | +0.23560520 | |
| *P* | 4.24 | *H* | 15.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 31 | 691 | 0.3+ | 0.4− | 2003 01 08 | 704 | 0.5+ | 0.6+ | 2003 02 21 | 608 | 0.1− | 0.2− |
| 1995 03 31 | 691 | 0.1− | 0.3− | 2003 01 08 | 704 | 0.2− | 0.4− | 2003 02 21 | 608 | 0.3− | 0.3+ |
| 1995 03 31 | 691 | 0.9− | 0.7− | 2003 01 08 | 704 | 0.4+ | 0.3+ | 2003 02 21 | 608 | 0.7+ | 0.3− |
| 2001 08 15 | 608 | 0.2− | 1.0− | 2003 01 08 | 704 | 0.1+ | 0.0 | 2003 02 23 | 699 | 0.1− | 0.4+ |
| 2001 08 15 | 608 | 0.7+ | 0.9− | 2003 01 08 | 704 | 0.7+ | 0.4− | 2003 02 23 | 699 | 0.2+ | 0.9+ |
| 2001 08 15 | 608 | 0.1+ | 0.3− | 2003 01 27 | 699 | 0.5− | 0.2− | 2003 02 23 | 699 | 0.9− | 0.0 |
| 2001 08 23 | 608 | 0.3+ | 0.2− | 2003 01 27 | 699 | 1.4+ | 1.3− | 2003 02 23 | 699 | 1.0− | 0.8+ |
| 2001 08 23 | 608 | 0.5+ | 0.1− | 2003 01 27 | 699 | 0.5+ | 0.1− | 2003 02 28 | 608 | 0.0 | 0.7− |
| 2001 08 23 | 608 | 0.4+ | 0.2− | 2003 01 27 | 699 | 0.5+ | 1.1+ | 2003 02 28 | 608 | 0.1+ | 0.3− |
| 2001 08 23 | 608 | 0.2+ | 0.5− | 2003 01 27 | 608 | 0.2− | 0.2− | 2003 02 28 | 608 | 0.7+ | 0.4− |
| 2001 08 23 | 608 | 0.1+ | 0.1− | 2003 01 27 | 608 | 0.3− | 0.1− | 2004 05 18 | 599 | 0.6+ | 0.8+ |
| 2001 08 23 | 608 | 0.1− | 0.2+ | 2003 01 27 | 608 | 0.7− | 0.0 | 2004 05 18 | 599 | 1.0+ | 1.1+ |
| 2001 08 24 | 699 | 0.8+ | 0.6− | 2003 01 31 | 644 | 0.4+ | 1.0+ | 2004 05 18 | 599 | 0.5+ | 0.4+ |
| 2001 08 24 | 699 | 0.0 | 0.1− | 2003 01 31 | 644 | 0.4+ | 1.0+ | 2004 05 18 | 599 | 0.4+ | 1.1+ |
| 2001 08 24 | 699 | 0.2− | 0.1− | 2003 01 31 | 644 | 0.5+ | 1.1+ | 2005 07 11 | 691 | 0.2− | 0.3+ |
| 2001 08 24 | 699 | 0.4+ | 0.4+ | 2003 02 01 | 704 | 0.7− | 0.3+ | 2005 07 11 | 691 | 0.2− | 0.1+ |
| 2001 08 25 | 704 | 0.4− | 0.3− | 2003 02 01 | 704 | 0.2+ | 0.4+ | 2005 07 11 | 691 | 0.2− | 0.0 |
| 2001 08 25 | 704 | 0.3− | 0.4+ | 2003 02 01 | 704 | 0.1+ | 0.3+ | 2005 07 30 | E12 | 1.2+ | 1.2− |
| 2001 08 25 | 704 | 0.1+ | 0.4− | 2003 02 01 | 704 | 0.3+ | 0.7+ | 2005 07 30 | E12 | 0.5− | 0.2− |
| 2001 08 25 | 704 | 0.2− | 0.1+ | 2003 02 01 | 704 | 0.0 | 0.6+ | 2005 07 30 | E12 | 0.3+ | 0.2+ |
| 2002 12 31 | 704 | 0.2+ | 0.6− | 2003 02 02 | 644 | 0.3+ | 0.0 | 2005 07 30 | E12 | 0.4− | 0.3+ |
| 2002 12 31 | 704 | 0.1+ | 0.8− | 2003 02 02 | 644 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.7+ | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 1.0− | 2003 02 02 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.4− | 1.3− | 2003 02 02 | 608 | 0.5+ | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2003 01 01 | 291 | 0.2− | 0.2+ | 2003 02 02 | 608 | 0.5+ | 0.7− | 2006 11 28 | 691 | 0.0 | 0.2+ |
| 2003 01 01 | 291 | 0.4− | 0.0 | 2003 02 02 | 608 | 0.3+ | 1.1− | 2006 11 28 | 691 | 0.2+ | 0.3− |
| 2003 01 01 | 291 | 0.2− | 0.2+ | 2003 02 07 | 704 | 0.8− | 0.1− | 2006 11 28 | 691 | 0.0 | 0.2− |
| 2003 01 04 | 704 | (2.0+ | 0.1−) | 2003 02 07 | 704 | 0.2− | 0.8− | 2006 12 01 | 704 | 0.5− | 0.5+ |
| 2003 01 04 | 704 | 1.0− | 0.1+ | 2003 02 07 | 704 | 0.9− | 0.4+ | 2006 12 01 | 704 | 1.5− | 0.4+ |
| 2003 01 04 | 704 | 0.2+ | 0.8− | 2003 02 18 | 644 | 0.1+ | 0.3− | 2006 12 01 | 704 | 1.4− | 0.1− |
| 2003 01 04 | 704 | 0.4+ | 0.3+ | 2003 02 18 | 644 | 0.3+ | 0.3+ | | | | |
| 2003 01 04 | 704 | 0.1+ | 0.1+ | 2003 02 18 | 644 | 0.3+ | 0.1+ | | | | |

**(139699)∗ 2001 QR$_{223}$ = 2003 BN$_{66}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 40402)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 73.31130 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26864837 | ω | 277.44586 | | +0.66849348 | −0.74328867 | |
| *a* | 2.3787378 | Ω | 130.57113 | | +0.69479654 | +0.61204132 | |
| *e* | 0.1759018 | *i* | 1.90622 | | +0.26528142 | +0.27005070 | |
| *P* | 3.67 | *H* | 16.5 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.0 | 0.2+ | 2003 03 12 | 644 | 0.2− | 0.9+ | 2005 10 12 | 691 | 0.0 | 0.1+ |
| 1996 03 26 | 691 | 0.1+ | 0.0 | 2003 03 12 | 644 | 0.0 | 0.7+ | 2005 10 12 | 691 | 0.2+ | 0.0 |
| 1996 03 26 | 691 | 0.4+ | 0.1− | 2005 09 23 | 691 | 0.1+ | 0.0 | 2005 10 13 | 704 | 0.2− | 0.1− |
| 2001 08 14 | 608 | 0.1+ | 0.8− | 2005 09 23 | 691 | 0.1− | 0.1+ | 2005 10 13 | 704 | 0.2+ | 0.3− |
| 2001 08 14 | 608 | 0.0 | 0.3+ | 2005 09 23 | 691 | 0.0 | 0.1+ | 2005 10 13 | 704 | 0.8− | 0.6− |
| 2001 08 14 | 608 | 0.3− | 0.3− | 2005 09 24 | 703 | 0.3− | 0.2− | 2005 10 13 | 704 | 0.6− | 0.8+ |
| 2001 08 16 | 704 | (4.5− | 1.0+) | 2005 09 24 | 703 | 1.0− | 0.4+ | 2005 10 13 | 704 | 0.1− | 0.3− |
| 2001 08 16 | 704 | 0.4− | 0.8− | 2005 09 24 | 703 | 1.5− | 0.0 | 2005 10 13 | 704 | 0.5+ | 0.7+ |
| 2001 08 16 | 704 | 0.2+ | 0.8− | 2005 09 24 | 703 | 0.5+ | 0.5+ | 2005 10 13 | 704 | 0.6− | 0.1− |
| 2001 08 24 | 699 | 1.6+ | 1.5+ | 2005 09 24 | 644 | 0.2+ | 0.1+ | 2005 10 13 | 704 | 0.2+ | 0.0 |
| 2001 08 24 | 699 | 0.4− | 1.1+ | 2005 09 24 | 644 | 0.0 | 0.1+ | 2005 10 13 | 704 | 0.2− | 0.0 |
| 2001 08 24 | 699 | (1.1+ | 2.1+) | 2005 09 24 | 644 | 0.1+ | 0.1+ | 2005 10 13 | 704 | 0.2− | 0.2+ |
| 2001 08 24 | 699 | 0.2− | 1.8+ | 2005 09 29 | 699 | 2.0+ | 0.4− | 2005 10 21 | 644 | 0.1− | 0.1− |
| 2001 08 26 | 608 | 0.8− | 0.3− | 2005 09 29 | 699 | 0.8− | 0.4− | 2005 10 21 | 644 | 0.1− | 0.1+ |
| 2001 08 26 | 608 | 0.8− | 0.7+ | 2005 09 29 | 699 | 0.2+ | 0.0 | 2005 10 21 | 644 | 0.2− | 0.2+ |
| 2001 08 26 | 608 | 1.1− | 0.2+ | 2005 09 29 | 699 | 0.2− | 0.1− | 2005 10 22 | 703 | 1.5− | 0.5− |
| 2001 08 26 | 608 | 0.1− | 0.0 | 2005 10 01 | 704 | 0.1− | 1.2− | 2005 10 22 | 703 | 0.4+ | 0.7− |
| 2001 08 26 | 608 | 0.3− | 0.3+ | 2005 10 01 | 704 | 0.4− | 1.0+ | 2005 10 22 | 703 | 0.7+ | 0.6+ |
| 2001 08 26 | 608 | 0.3− | 0.1+ | 2005 10 01 | 704 | 0.3+ | 0.8+ | 2005 10 22 | 703 | 0.5+ | 0.5− |
| 2002 12 07 | 645 | 0.2− | 0.1− | 2005 10 01 | 691 | 0.2+ | 0.1+ | 2005 10 27 | 691 | 0.2+ | 0.0 |
| 2002 12 07 | 645 | 0.2− | 0.2− | 2005 10 01 | 704 | 1.2+ | 0.6+ | 2005 10 27 | 691 | 0.1+ | 0.0 |
| 2003 01 05 | 291 | 0.1− | 0.3+ | 2005 10 01 | 691 | 0.0 | 0.1− | 2005 10 27 | 691 | 0.2+ | 0.0 |
| 2003 01 05 | 291 | 0.1− | 0.3+ | 2005 10 01 | 704 | 0.4+ | 1.1+ | 2005 10 28 | 704 | 0.5− | 0.1− |
| 2003 01 05 | 291 | 0.0 | 0.2+ | 2005 10 01 | 691 | 0.2+ | 0.1− | 2005 10 28 | 704 | 0.1+ | 0.3+ |
| 2003 01 30 | 699 | 0.9+ | 1.1− | 2005 10 05 | 704 | 0.8− | 0.1+ | 2005 10 28 | 704 | 0.5− | 0.4+ |
| 2003 01 30 | 699 | 0.7+ | 0.2+ | 2005 10 05 | 704 | 0.1− | 0.2+ | 2005 10 28 | 704 | 0.9+ | 0.8+ |
| 2003 01 30 | 699 | 1.0− | 1.2+ | 2005 10 05 | 704 | 0.8− | 0.3+ | 2005 10 31 | 699 | 0.2− | 0.9+ |
| 2003 01 30 | 699 | 0.0 | 0.4− | 2005 10 05 | 704 | 0.6− | 0.0 | 2005 10 31 | 704 | 0.9− | 0.0 |
| 2003 01 31 | 704 | 0.7+ | 0.8+ | 2005 10 05 | 704 | 0.4− | 0.5+ | 2005 10 31 | 699 | 0.2− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 704 | 1.4+ | 0.4+ | 2005 10 06 | 699 | 0.0 | 0.0 | 2005 10 31 | 704 | 0.8− | 1.0− |
| 2003 01 31 | 704 | 0.8+ | 1.2+ | 2005 10 06 | 699 | 0.7+ | 0.7− | 2005 10 31 | 699 | 0.1+ | 0.5+ |
| 2003 02 12 | 608 | 1.5+ | 0.4+ | 2005 10 06 | 699 | 0.2+ | 0.1− | 2005 10 31 | 704 | 1.1− | 0.4+ |
| 2003 02 12 | 608 | 0.9+ | 0.9+ | 2005 10 07 | 703 | 1.4+ | 0.3+ | 2005 10 31 | 699 | 0.0 | 0.2− |
| 2003 02 12 | 608 | 0.6+ | 0.1+ | 2005 10 07 | 703 | 1.0+ | 1.0+ | 2005 11 30 | G96 | 0.0 | 0.4− |
| 2003 03 03 | 615 | 0.5+ | 0.9− | 2005 10 07 | 703 | 1.1+ | 0.6+ | 2005 11 30 | G96 | 0.1− | 0.3− |
| 2003 03 03 | 615 | 0.8+ | 0.3+ | 2005 10 11 | 704 | 0.4+ | 0.2+ | 2005 11 30 | G96 | 0.4+ | 0.4− |
| 2003 03 03 | 615 | 1.3− | 0.4+ | 2005 10 11 | 704 | 0.3+ | 0.4− | 2005 11 30 | G96 | 0.2+ | 0.6− |
| 2003 03 06 | 644 | 0.3+ | 1.2+ | 2005 10 11 | 704 | 1.3− | 0.1− | 2005 12 04 | 699 | 0.0 | 0.5− |
| 2003 03 06 | 644 | 0.5+ | 1.1+ | 2005 10 11 | 704 | 0.4− | 0.3+ | 2005 12 04 | 699 | 0.7− | 0.0 |
| 2003 03 06 | 644 | 0.3+ | 0.6+ | 2005 10 11 | 704 | 0.4− | 0.2− | 2005 12 04 | 699 | 0.5+ | 0.9− |
| 2003 03 12 | 644 | 0.1− | 0.7+ | 2005 10 12 | 691 | 0.0 | 0.0 | 2005 12 04 | 699 | 0.4+ | 0.6− |

**(139700)∗ 2001 QX$_{225}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.09482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18907313 | $\omega$ | 337.91153 | | −0.05258456 | +0.98729452 | |
| $a$ | 3.0064190 | $\Omega$ | 288.81630 | | −0.89088568 | −0.11422001 | |
| $e$ | 0.0745750 | $i$ | 9.11485 | | −0.45117354 | +0.11046862 | |
| $P$ | 5.21 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.4− | 0.6− | 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 2001 08 24 | 699 | 0.5+ | 0.2− | 2004 01 23 | 704 | 0.2− | 0.0 | 2006 08 25 | A50 | 0.1+ | 0.6+ |
| 2001 08 24 | 699 | 0.7+ | 0.3+ | 2004 01 23 | 704 | 0.4− | 1.1+ | 2006 08 25 | A50 | 0.5− | 0.3− |
| 2001 08 24 | 699 | 0.3+ | 0.1+ | 2004 01 23 | 704 | 0.9+ | 0.7+ | 2006 08 27 | 699 | 0.6− | 0.4+ |
| 2001 08 25 | 704 | 0.8− | 0.1− | 2004 02 13 | 699 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 0.2+ | 0.1− |
| 2001 08 25 | 704 | 0.1− | 0.6+ | 2004 02 13 | 699 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.9− | 0.8+ |
| 2001 08 25 | 704 | 1.0− | 0.3− | 2004 02 13 | 699 | (0.2− | 1.7+) | 2006 08 27 | 699 | 0.7− | 0.3+ |
| 2001 09 12 | 704 | 0.4− | 0.3− | 2004 02 13 | 699 | 0.8− | 0.0 | 2006 08 29 | 703 | 1.0− | 1.2− |
| 2001 09 12 | 704 | 0.4+ | 0.0 | 2004 02 18 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.2− | 2004 02 18 | 691 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.6− |
| 2001 09 12 | 704 | 0.3− | 0.8− | 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.2+ |
| 2001 09 12 | 704 | 0.3− | 0.4− | 2004 02 26 | 704 | 0.7+ | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.4+ |
| 2001 09 25 | 704 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 1.1+ | 0.6+ | 2006 08 30 | 699 | (1.6− | 0.4+) |
| 2001 09 25 | 704 | 0.3− | 0.2− | 2004 02 26 | 704 | 0.4+ | 0.7+ | 2006 08 30 | 699 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.9+ | 0.3+ | 2006 08 30 | 699 | 0.6− | 0.5+ |
| 2001 09 25 | 704 | (0.3+ | 1.7−) | 2004 02 26 | 704 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.2− | 0.6− |
| 2001 10 13 | 644 | 0.4+ | 0.1− | 2004 02 26 | 704 | (2.0+ | 1.8+) | 2006 09 11 | 703 | 0.4+ | 0.4− |
| 2001 10 13 | 644 | 0.0 | 0.4− | 2004 02 26 | 704 | 0.0 | 0.4+ | 2006 09 11 | 703 | 0.2− | 0.8− |
| 2001 10 13 | 644 | 0.1+ | 0.6− | 2004 02 26 | 704 | (1.9+ | 0.0 ) | 2006 09 11 | 703 | 0.3+ | 0.6− |
| 2001 10 17 | 704 | 0.8− | 0.6− | 2004 02 26 | 704 | 0.8+ | 0.3− | 2006 09 11 | 703 | 0.8− | 0.8+ |
| 2001 10 17 | 704 | 0.1− | 0.3+ | 2005 05 18 | E12 | 0.1+ | 0.8+ | 2006 09 11 | 703 | 0.3+ | 1.2+ |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2005 05 18 | E12 | 0.2− | 0.5+ | 2006 09 11 | 703 | 0.8+ | 0.3+ |
| 2001 10 17 | 704 | 0.8+ | 0.1− | 2005 05 18 | E12 | 0.7− | 0.4− | 2006 09 11 | 703 | 0.3− | 0.9+ |
| 2001 10 21 | 291 | 0.3+ | 0.2+ | 2005 05 18 | E12 | 0.5+ | 0.8− | 2006 09 26 | 703 | 0.7+ | 0.9+ |
| 2001 10 21 | 291 | 0.3+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.5+ | 1.1+ |
| 2001 10 21 | 291 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.5+ |
| 2002 12 10 | 704 | 0.5− | 0.9− | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 2002 12 10 | 704 | 0.4− | 0.3− | 2006 08 22 | 644 | 0.4+ | 0.0 | | | | |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.4+ | | | | |

**(139701)∗ 2001 QH$_{226}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.52675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19748049 | $\omega$ | 212.95770 | | +0.29813441 | −0.95064403 | |
| $a$ | 2.9204734 | $\Omega$ | 219.88568 | | +0.90221131 | +0.31005874 | |
| $e$ | 0.0592586 | $i$ | 7.70504 | | +0.31165786 | +0.01181167 | |
| $P$ | 4.99 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.1+ | 0.7+ | 2001 10 14 | 704 | 0.3− | 1.5+ | 2006 08 30 | 704 | 0.8− | 0.1− |
| 2001 08 24 | 699 | 0.4− | 0.1− | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.8− | 0.7− |
| 2001 08 24 | 699 | 0.6− | 1.8+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 09 15 | 704 | 1.1− | 0.3+ |
| 2001 08 24 | 699 | 0.4+ | 0.4+ | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.1− | 1.0+ |
| 2001 08 25 | 704 | 0.1− | 0.5− | 2001 12 10 | 645 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.2+ |
| 2001 08 25 | 704 | 0.8− | 0.8+ | 2003 01 05 | 704 | 0.0 | 0.6+ | 2006 09 15 | 704 | 1.0+ | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 0.6− | 2003 01 05 | 704 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.1− | 0.5− |
| 2001 08 25 | 704 | 0.6+ | 0.4+ | 2003 01 05 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.4− | 0.3+ |
| 2001 09 16 | 704 | 0.7− | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.8− | 0.1− | 2004 03 14 | 644 | 0.3+ | 1.0+ | 2006 09 17 | 703 | 0.2+ | 0.9− |
| 2001 09 16 | 704 | 0.5− | 0.0 | 2004 03 14 | 644 | 0.5+ | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.1+ |
| 2001 09 16 | 704 | 1.1− | 0.4− | 2004 03 14 | 644 | 0.5+ | 0.8+ | 2006 09 17 | 703 | 0.2+ | 1.0− |
| 2001 09 16 | 704 | 0.8− | 0.3+ | 2004 03 31 | 704 | 1.6+ | 0.8+ | 2006 09 17 | 703 | 0.5+ | 0.5− |
| 2001 09 20 | 704 | 1.2− | 0.5+ | 2004 03 31 | 704 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.1− | 0.7− |
| 2001 09 20 | 704 | 0.4+ | 0.2+ | 2004 03 31 | 704 | 0.3− | 0.1+ | 2006 09 20 | 699 | 0.8+ | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2004 04 16 | 644 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.1− | 0.5+ |
| 2001 09 20 | 704 | 0.3− | 0.5− | 2004 04 16 | 644 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.7+ | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.5− | 2004 04 16 | 644 | 0.6+ | 0.0 | 2006 09 27 | 704 | 0.3+ | 1.0+ |
| 2001 09 21 | 704 | 1.2+ | 0.8+ | 2004 04 20 | 704 | 0.7− | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.0 |
| 2001 09 21 | 704 | 0.7+ | 0.4+ | 2004 04 20 | 704 | 0.4− | 1.3+ | 2006 09 27 | 704 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 1.2+ | 1.3+ | 2004 04 20 | 704 | 0.1− | 0.7+ | 2006 09 27 | 704 | 0.2+ | 0.6+ |
| 2001 09 21 | 704 | 1.4+ | 0.8+ | 2004 04 20 | 704 | 0.8− | 0.7− | 2006 09 29 | 699 | 0.4− | 0.8− |
| 2001 09 28 | 704 | 0.3+ | 0.6+ | 2006 08 29 | 703 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.8+ | 0.5+ |
| 2001 09 28 | 704 | 0.8− | 0.7+ | 2006 08 29 | 703 | 0.6− | 1.0− | 2006 09 29 | 699 | 1.2+ | 1.0+ |
| 2001 09 28 | 704 | 0.3− | 0.2− | 2006 08 29 | 703 | 0.9− | 0.3− | 2006 09 29 | 699 | 0.0 | 0.6− |
| 2001 10 14 | 704 | 0.2+ | 1.2+ | 2006 08 29 | 703 | 1.2− | 0.3− | | | | |
| 2001 10 14 | 704 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 0.6− | 0.1+ | | | | |

**(139702)∗ 2001 QN$_{226}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.80193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18433375 | $\omega$ | 25.46307 | | +0.99177509 | +0.00039970 | |
| $a$ | 3.0577324 | $\Omega$ | 333.54246 | | −0.07993863 | +0.78291091 | |
| $e$ | 0.1086188 | $i$ | 16.69506 | | +0.09995989 | +0.62213370 | |
| $P$ | 5.35 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 644 | 0.6− | 1.6+ | 2001 10 13 | 644 | 0.2− | 0.0 | 2006 08 23 | 704 | 0.0 | 0.0 |
| 2001 08 13 | 644 | 0.8− | 1.5+ | 2001 10 13 | 644 | 0.1− | 0.1+ | 2006 08 23 | 704 | 0.3+ | 0.5+ |
| 2001 08 13 | 644 | 0.7− | 1.7+ | 2001 10 13 | 644 | 0.1− | 0.0 | 2006 08 23 | 704 | 0.1− | 0.4− |
| 2001 08 17 | 704 | 0.4+ | 0.2+ | 2001 10 17 | 704 | 0.1+ | 0.1+ | 2006 08 23 | 704 | 0.4+ | 0.0 |
| 2001 08 17 | 704 | 0.6+ | 1.8+ | 2001 10 17 | 704 | 0.6− | 0.3+ | 2006 08 23 | 704 | 0.7+ | 0.5− |
| 2001 08 17 | 704 | 0.2+ | 0.3+ | 2001 10 17 | 704 | 0.0 | 0.1− | 2006 08 28 | 704 | 0.2− | 0.1+ |
| 2001 08 17 | 704 | 0.1− | 0.5− | 2001 10 17 | 704 | 0.3+ | 0.3+ | 2006 08 28 | 704 | 0.9− | 0.0 |
| 2001 08 17 | 704 | 0.3+ | 0.7+ | 2001 10 17 | 704 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.3+ |
| 2001 08 24 | 699 | 0.3− | 0.5+ | 2002 12 12 | 644 | 0.2+ | 0.7+ | 2006 08 28 | 704 | 0.5+ | 1.2− |
| 2001 08 24 | 699 | 0.2− | 0.9+ | 2002 12 12 | 644 | 0.0 | 0.8+ | 2006 08 28 | 703 | 0.2− | 0.7− |
| 2001 08 24 | 699 | 0.0 | 0.2+ | 2002 12 12 | 644 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 0.8− | 0.2− |
| 2001 08 24 | 699 | 1.1+ | 0.0 | 2004 02 19 | 704 | 1.1+ | 0.5+ | 2006 08 28 | 703 | 0.2+ | 0.3+ |
| 2001 08 25 | 704 | 0.3− | 0.8− | 2004 02 19 | 704 | 0.2+ | 1.1− | 2006 08 28 | E12 | 0.2+ | 0.6+ |
| 2001 08 25 | 704 | 1.6− | 0.4− | 2004 02 19 | 704 | 0.2− | 0.1− | 2006 08 28 | E12 | 0.3− | 0.4+ |
| 2001 08 25 | 704 | 0.2+ | 0.7− | 2004 02 19 | 704 | 1.2+ | 0.6+ | 2006 08 28 | E12 | 0.4+ | 0.2− |
| 2001 08 25 | 704 | 0.9+ | 0.6− | 2004 03 13 | 644 | 0.5+ | 0.5+ | 2006 08 28 | E12 | 0.2− | 0.4− |
| 2001 09 08 | 704 | 0.6− | 0.1− | 2004 03 13 | 644 | 0.5+ | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2001 09 08 | 704 | 0.5− | 0.0 | 2004 03 13 | 644 | 0.5+ | 0.4+ | 2006 09 13 | 644 | 0.3− | 0.2+ |
| 2001 09 08 | 704 | 0.1+ | 0.0 | 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.2+ |
| 2001 09 08 | 704 | 0.5− | 0.2− | 2004 03 16 | 691 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.8− | 0.6+ |
| 2001 09 08 | 704 | 0.2− | 0.0 | 2004 03 16 | 704 | 1.2+ | 1.1+ | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| 2001 09 15 | 644 | 0.0 | 0.5− | 2004 03 16 | 704 | 1.5+ | 1.7+ | 2006 09 18 | 699 | 0.1+ | 0.4+ |
| 2001 09 15 | 644 | 0.4− | 0.5− | 2004 03 16 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 0.3+ | 0.7− |
| 2001 09 15 | 644 | 0.1− | 0.5− | 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 24 | 699 | 0.2− | 0.1+ |
| 2001 09 18 | 699 | 0.5− | 0.9+ | 2004 03 16 | 704 | 1.4+ | 0.5+ | 2006 09 24 | 699 | 1.1− | 0.2− |
| 2001 09 18 | 699 | 1.0− | 0.1− | 2004 03 18 | 704 | 1.4+ | 0.4+ | 2006 09 24 | 699 | 1.6− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.8− | 0.4− | 2006 09 24 | 699 | 1.8− | 0.9+ | | |
| 2001 09 18 | 699 | 0.4− | 0.9+ | 2004 03 18 | 704 | (1.5+ | 2.8+) | 2006 09 27 | 704 | 0.7+ | 1.6+ | | |
| 2001 09 23 | 608 | 0.1+ | 1.0− | 2004 03 18 | 704 | (0.7+ | 2.6+) | 2006 09 27 | 704 | 0.4+ | 2.1+ | | |
| 2001 09 23 | 608 | 0.2+ | 1.0− | 2006 08 16 | E12 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 1.2+ | 2.6+ | | |
| 2001 09 23 | 608 | 0.1+ | 0.7+ | 2006 08 16 | E12 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1− | | |
| 2001 09 25 | 704 | 0.3+ | 0.0 | 2006 08 16 | E12 | 0.5− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.3− | | |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2006 08 16 | E12 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 2001 09 25 | 704 | 0.3+ | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.1− | | |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.3− | 0.2+ | | | | | | |
| 2001 09 25 | 704 | 0.0 | 0.4− | 2006 08 17 | 644 | 0.3− | 0.2+ | | | | | | |

**(139703)∗ 2001 QC$_{227}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.88740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23322426 | $\omega$ | 316.38449 | | −0.91211197 | −0.40181464 | |
| $a$ | 2.6138875 | $\Omega$ | 200.35862 | | +0.40993527 | −0.89295529 | |
| $e$ | 0.1032265 | $i$ | 13.50100 | | +0.00219830 | −0.20291833 | |
| $P$ | 4.23 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | (1.2− | 1.7+) | 2001 09 18 | 699 | 0.4+ | 0.1− | 2004 05 12 | 703 | 0.7+ | 0.1+ | | |
| 2001 08 24 | 699 | 0.3− | 0.6+ | 2001 09 18 | 699 | 0.2− | 1.1+ | 2004 05 14 | 704 | 0.7+ | 1.0− | | |
| 2001 08 24 | 699 | 0.8− | 0.6+ | 2001 09 20 | 704 | 0.5+ | 0.2− | 2004 05 14 | 704 | 0.8− | 1.3+ | | |
| 2001 08 24 | 699 | 0.7+ | 0.9+ | 2001 09 20 | 704 | 0.3+ | 0.2+ | 2004 05 14 | 704 | 0.1− | 0.3− | | |
| 2001 08 25 | 704 | 0.1− | 0.3− | 2001 09 20 | 704 | 1.1− | 1.0− | 2004 05 14 | 704 | 0.3+ | 0.3− | | |
| 2001 08 25 | 704 | 0.2+ | 1.1− | 2001 09 20 | 704 | 0.7− | 0.3+ | 2004 05 23 | 704 | 0.2+ | 0.4+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.8− | 2003 01 02 | 704 | 0.2+ | 0.4+ | 2004 05 23 | 704 | 0.7+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.9− | 2003 01 02 | 704 | 0.0 | 1.0+ | 2004 05 23 | 704 | 0.1+ | 0.2− | | |
| 2001 08 25 | 704 | 0.8+ | 0.5− | 2003 01 02 | 704 | 0.6+ | 0.1+ | 2004 05 23 | 704 | 0.0 | 0.5− | | |
| 2001 09 11 | 699 | 0.7+ | 0.7+ | 2003 01 02 | 704 | 0.3− | 1.0+ | 2004 05 23 | 704 | 0.2− | 0.7+ | | |
| 2001 09 11 | 699 | 1.4+ | 0.3+ | 2003 01 02 | 704 | 0.0 | 1.1+ | 2004 06 09 | 699 | 0.1− | 0.3+ | | |
| 2001 09 11 | 699 | 0.3− | 0.4+ | 2004 04 15 | 699 | 0.1− | 1.0+ | 2004 06 09 | 699 | 1.2+ | 0.1+ | | |
| 2001 09 11 | 704 | 1.3− | 0.1+ | 2004 04 15 | 699 | 0.3− | 0.0 | 2004 06 09 | 699 | 0.1− | 0.1− | | |
| 2001 09 11 | 699 | 0.9+ | 0.4+ | 2004 04 15 | 699 | 0.6− | 0.1+ | 2004 06 09 | 699 | 0.4− | 0.4+ | | |
| 2001 09 11 | 704 | 0.3− | 0.1− | 2004 04 15 | 699 | 0.5+ | 0.6− | 2006 10 16 | 703 | 0.3+ | 0.3+ | | |
| 2001 09 11 | 704 | 0.5− | 0.6+ | 2004 04 20 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.9− | | |
| 2001 09 11 | 704 | 0.5− | 0.6+ | 2004 04 20 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.0 | | |
| 2001 09 11 | 704 | 0.4− | 0.5+ | 2004 04 20 | 704 | 0.4+ | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.1+ | | |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2004 04 20 | 704 | 0.5+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2001 09 12 | 704 | 0.2− | 0.5− | 2004 04 21 | 608 | 0.0 | 0.8− | 2006 10 20 | 644 | 0.6+ | 0.8+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2004 04 21 | 608 | 0.1− | 0.1− | 2006 10 30 | 703 | 0.2− | 0.4− | | |
| 2001 09 12 | 704 | 0.2+ | 0.5+ | 2004 04 21 | 608 | 0.1− | 0.1+ | 2006 10 30 | 703 | 0.8− | 0.2− | | |
| 2001 09 16 | 704 | (0.6− | 3.9+) | 2004 04 22 | 704 | 0.7− | 0.5− | 2006 10 30 | 703 | 0.3− | 1.1+ | | |
| 2001 09 16 | 704 | (0.7− | 4.0+) | 2004 04 22 | 704 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.1+ | 0.8− | | |
| 2001 09 16 | 704 | (1.7+ | 3.8+) | 2004 04 22 | 704 | 0.5− | 0.6+ | 2006 11 19 | 703 | 0.4+ | 1.1+ | | |
| 2001 09 16 | 704 | (1.4− | 2.8+) | 2004 05 12 | 703 | (2.2− | 1.5−) | 2006 11 19 | 703 | 0.5+ | 1.0− | | |
| 2001 09 18 | 699 | 0.5+ | 0.6+ | 2004 05 12 | 703 | 0.4− | 0.2− | 2006 11 19 | 703 | 0.5− | 0.5− | | |
| 2001 09 18 | 699 | 1.0− | 0.4− | 2004 05 12 | 703 | 0.4− | 1.4+ | 2006 11 19 | 703 | 0.0 | 0.3+ | | |

**(139704)∗ 2001 QK$_{227}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.51323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22027955 | $\omega$ | 231.15497 | | +0.22246960 | −0.97023711 | |
| $a$ | 2.7153132 | $\Omega$ | 206.46573 | | +0.94773224 | +0.23823173 | |
| $e$ | 0.1582707 | $i$ | 12.39232 | | +0.22871572 | −0.04342344 | |
| $P$ | 4.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 03 | 691 | 0.2− | 0.7− | 2006 08 28 | 703 | 0.1− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 1995 06 03 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 1997 11 06 | 704 | 0.9− | 1.8+ | 2006 08 28 | 703 | 0.9+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2− | | |
| 1997 11 06 | 704 | 1.4− | 0.6+ | 2006 09 16 | 703 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.2− | | |
| 1997 11 06 | 704 | 1.4+ | 0.1+ | 2006 09 16 | 703 | 1.0− | 0.9− | 2006 10 22 | 691 | 0.3− | 0.3− | | |
| 1997 11 06 | 704 | (1.1+ | 3.9+) | 2006 09 16 | 703 | 1.4+ | 0.6− | 2006 10 28 | 683 | 0.8+ | 1.0− | | |
| 2001 08 24 | 699 | 1.0− | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.5+ | 2006 10 28 | 683 | (1.8+ | 1.2+) | | |
| 2001 08 24 | 699 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 10 28 | 683 | 0.1− | 0.6+ | | |
| 2001 08 24 | 699 | 0.7− | 0.7− | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 30 | 703 | 0.1+ | 0.5− | | |
| 2001 08 24 | 699 | 0.6+ | 1.1+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 30 | 703 | 1.0− | 1.4− | | |
| 2001 08 25 | 704 | 0.0 | 1.4+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 10 30 | 703 | 0.4− | 0.2− | | |
| 2001 08 25 | 704 | (0.7− | 1.5+) | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 30 | 703 | 0.3+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.8+ | 1.4+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 30 | A44 | 1.2+ | 1.2− | | |
| 2001 08 25 | 704 | 0.3+ | 1.4+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 31 | A44 | 1.0+ | 1.3− | | |
| 2001 08 25 | 704 | 0.2− | 1.2+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 31 | A44 | 1.1+ | 1.3− | | |
| 2001 08 31 | 644 | 0.5+ | 0.3+ | 2006 10 03 | 704 | 0.5− | 0.8+ | 2006 11 13 | 703 | 0.4− | 0.2− | | |
| 2001 08 31 | 644 | 0.2+ | 0.8+ | 2006 10 03 | 704 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 0.4− | 0.1− | | |
| 2001 08 31 | 644 | 0.4+ | 0.8+ | 2006 10 03 | 704 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.3+ | | |
| 2001 09 15 | 644 | (0.2+ | 1.6+) | 2006 10 03 | 704 | (2.0+ | 0.7−) | 2006 11 13 | 703 | 0.4− | 0.2+ | | |
| 2001 09 15 | 644 | (0.1+ | 1.6+) | 2006 10 16 | 703 | 0.9+ | 1.2+ | 2006 11 15 | 958 | 0.6− | 0.2− | | |
| 2001 09 15 | 644 | 0.4− | 0.9+ | 2006 10 16 | 703 | 0.6+ | 1.0+ | 2006 11 15 | 958 | 1.3− | 0.4+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.3− | 1.4+ | 2006 11 15 | 958 | 0.6− | 0.1− | | |
| 2001 09 16 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 1.4+ | 1.0+ | 2006 11 19 | 704 | 0.3+ | 1.3+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.1− | 1.1+ | | |
| 2001 09 16 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 1.0+ | | |
| 2001 09 16 | 704 | 0.8+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.3− | 0.5− | | |
| 2001 10 15 | 645 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.4+ | 1.1+ | | |
| 2001 10 15 | 645 | 0.1− | 0.1− | 2006 10 17 | A44 | 0.3+ | 0.3− | 2006 11 19 | 703 | 0.3− | 0.4− | | |
| 2003 01 02 | 704 | 0.4+ | 0.2+ | 2006 10 17 | A44 | 0.4+ | 0.1− | 2006 11 19 | 703 | 0.3− | 0.6− | | |
| 2003 01 02 | 704 | 0.2− | 0.6+ | 2006 10 17 | A44 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.2− | 1.4+ | | |
| 2003 01 02 | 704 | 0.1− | 0.2+ | 2006 10 18 | A44 | 0.4+ | 0.1− | 2006 11 19 | 703 | 0.4− | 0.8− | | |
| 2003 01 02 | 704 | 0.5+ | 0.1+ | 2006 10 18 | A44 | 0.5+ | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.1− | | |
| 2003 01 25 | 644 | 0.4+ | 0.4+ | 2006 10 18 | A44 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.3− | 0.4− | | |
| 2003 01 25 | 644 | 0.4+ | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.4− | | |
| 2003 01 25 | 644 | 0.4+ | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2003 01 28 | 704 | 0.3− | 0.3− | 2006 10 18 | 691 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.5+ | 0.7− | | |
| 2003 01 28 | 704 | 0.3+ | 0.4+ | 2006 10 18 | A44 | (0.5− | 2.3−) | 2006 11 25 | G96 | 0.1+ | 0.4− | | |
| 2003 01 28 | 704 | 0.3+ | 0.7+ | 2006 10 18 | A44 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.3− | 0.4− | | |
| 2003 01 28 | 704 | 0.1+ | 0.7+ | 2006 10 19 | A44 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2006 08 28 | 703 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.4− | | |

**(139705)∗ 2001 QF$_{228}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.80560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20931641 | $\omega$ | 115.87012 | | +0.92628678 | +0.36419831 | |
| $a$ | 2.8093156 | $\Omega$ | 222.95665 | | −0.37606287 | +0.87721125 | |
| $e$ | 0.1697106 | $i$ | 8.15872 | | −0.02386473 | +0.31282586 | |
| $P$ | 4.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 30 | 691 | 0.4+ | 0.5− | 2005 02 16 | 809 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.1+ | | |
| 2000 04 30 | 691 | 0.1+ | 0.3− | 2005 02 16 | 809 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1+ | | |
| 2000 04 30 | 691 | 0.6− | 0.2− | 2005 06 01 | 691 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.7+ | 0.6+ | | |
| 2001 08 24 | 699 | 0.7− | 0.1− | 2005 06 01 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.7− | 0.2+ | | |
| 2001 08 24 | 699 | 0.2+ | 0.2− | 2005 06 01 | 691 | 0.6+ | 0.4− | 2006 10 17 | 703 | 0.7− | 0.4+ | | |
| 2001 08 24 | 699 | 0.9− | 0.7+ | 2005 06 06 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.3− | | |
| 2001 08 24 | 699 | 0.9− | 0.3− | 2005 06 06 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2001 08 25 | 704 | 1.0+ | 1.4+ | 2005 06 06 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2001 08 25 | 704 | 0.3+ | 1.1+ | 2006 09 20 | 699 | 0.6− | 0.4− | 2006 10 20 | 644 | 0.3− | 0.2+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.8− | 1.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 08 25 | 704 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 08 25 | 704 | 0.2+ | 0.4− | 2006 09 20 | 699 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2001 09 16 | 704 | 0.5− | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.2− | | |
| 2001 09 16 | 704 | 0.9− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.2− | 0.1+ | | |
| 2001 09 16 | 704 | 0.7− | 0.0 | 2006 09 30 | 703 | 0.9− | 1.3+ | 2006 11 13 | 691 | 0.1− | 0.1+ | | |
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.0 | 2006 11 13 | 691 | 0.3− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 11 13 | 691 | 0.2− | 0.2+ | | |
| 2001 09 25 | 704 | 0.1+ | 1.3+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2001 09 25 | 704 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2001 10 15 | 645 | 0.1+ | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 2001 10 15 | 645 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2005 02 16 | 809 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.3+ | | | | | | |

**(139706)∗ 2001 QT$_{228}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 228.66811 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19020963 | $\omega$ | 205.65038 | | −0.31624383 | | −0.93578558 | | |
| $a$ | 2.9944315 | $\Omega$ | 263.10774 | | +0.89519289 | | −0.23997097 | | |
| $e$ | 0.0350784 | $i$ | 9.03302 | | +0.31403747 | | −0.25830076 | | |
| $P$ | 5.18 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.2+ | 0.1− | 2003 01 08 | 704 | 0.9− | 1.0+ | 2006 08 22 | 644 | 0.0 | 0.2− | | |
| 2001 08 24 | 699 | 0.1− | 1.0− | 2003 01 08 | 704 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.0 | | |
| 2001 08 24 | 699 | 0.1− | 0.6+ | 2003 01 08 | 704 | 1.4− | 1.2+ | 2006 08 22 | 644 | 0.1− | 0.3− | | |
| 2001 08 24 | 699 | 0.1+ | 0.3− | 2003 01 08 | 704 | 1.3+ | 0.8− | 2006 08 23 | 644 | 0.4− | 0.1+ | | |
| 2001 08 25 | 704 | 0.4+ | 0.4− | 2004 02 14 | 644 | 0.6+ | 0.9+ | 2006 08 23 | 644 | 0.2+ | 0.1− | | |
| 2001 08 25 | 704 | 0.7+ | 0.1− | 2004 02 14 | 644 | 0.6+ | 0.9+ | 2006 08 23 | 644 | 0.0 | 0.1+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.4− | 2004 02 14 | 644 | 0.5+ | 0.7+ | 2006 09 11 | 703 | 0.5+ | 0.4− | | |
| 2001 08 25 | 704 | 0.6− | 0.2− | 2004 02 19 | 704 | 0.4− | 0.5+ | 2006 09 11 | 703 | 0.3− | 0.7− | | |
| 2001 08 25 | 704 | 0.0 | 0.1+ | 2004 02 19 | 704 | 1.0+ | 0.2− | 2006 09 11 | 703 | 0.3− | 0.0 | | |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2004 02 19 | 704 | 0.5+ | 1.3+ | 2006 09 11 | 703 | 0.2+ | 0.2− | | |
| 2001 09 16 | 704 | 0.1+ | 0.2− | 2004 02 19 | 704 | 1.7+ | 1.7+ | 2006 09 14 | 691 | 0.4− | 0.5+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.6− | 2004 02 19 | 704 | (1.3+ | 2.4+) | 2006 09 14 | 691 | 0.3− | 0.7+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.3− | 2004 03 01 | 703 | 0.8+ | 0.6+ | 2006 09 14 | 691 | 0.4− | 0.7+ | | |
| 2002 11 14 | 704 | 0.6− | 0.5+ | 2004 03 01 | 703 | 1.8− | 0.8+ | 2006 09 16 | 691 | 0.1− | 0.5+ | | |
| 2002 11 14 | 704 | 1.0− | 0.5− | 2004 03 01 | 703 | 0.3− | 0.9+ | 2006 09 16 | 691 | 0.2− | 0.4+ | | |
| 2002 11 14 | 704 | 0.7− | 0.4− | 2004 03 01 | 703 | 0.0 | 0.7+ | 2006 09 16 | 691 | 0.3− | 0.5+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2004 03 16 | 704 | 1.3+ | 1.5+ | 2006 09 17 | 291 | 0.1− | 0.8+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2004 03 16 | 704 | 0.1+ | 1.2+ | 2006 09 17 | 291 | 0.1− | 0.5+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.7+ | 2004 03 16 | 704 | 0.9+ | 1.2+ | 2006 09 17 | 291 | 0.2− | 0.8+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.8+ | 2004 03 16 | 704 | 1.1+ | 2.1+ | | | | | | |
| 2002 12 05 | 704 | 0.5+ | 0.4+ | 2004 03 16 | 704 | 1.4+ | 1.2+ | | | | | | |

**(139707)∗ 2001 QD$_{229}$ = 2005 LZ$_{48}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 84802)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 58.08414 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21535578 | $\omega$ | 94.93555 | | +0.67111551 | | +0.73757353 | | |
| $a$ | 2.7565446 | $\Omega$ | 217.57290 | | −0.71947043 | | +0.62366553 | | |
| $e$ | 0.2048927 | $i$ | 7.04252 | | −0.17879114 | | +0.25889497 | | |
| $P$ | 4.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 05 | 691 | 0.1− | 0.3− | 2001 09 18 | 699 | 0.5+ | 0.3− | 2005 07 04 | 691 | 0.2+ | 0.0 | | |
| 1997 12 05 | 691 | 0.3+ | 0.4− | 2001 09 18 | 699 | 0.3− | 0.9+ | 2005 07 04 | 691 | 0.1− | 0.2+ | | |
| 1997 12 05 | 691 | 0.1− | 0.2− | 2001 09 18 | 699 | 0.6− | 1.1+ | 2005 07 04 | 691 | 0.1+ | 0.1− | | |
| 2001 08 24 | 699 | 0.6− | 0.1+ | 2001 09 24 | 704 | 0.7+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.3− | | |
| 2001 08 24 | 699 | 1.0+ | 0.6+ | 2001 09 24 | 704 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.3− | | |
| 2001 08 24 | 699 | 0.2− | 0.3− | 2001 09 24 | 704 | 0.4− | 1.2+ | 2006 09 27 | G96 | 0.0 | 0.1− | | |
| 2001 08 24 | 699 | 0.4+ | 1.4+ | 2001 09 24 | 704 | 0.6+ | 1.2+ | 2006 09 27 | G96 | 0.3− | 0.1− | | |
| 2001 08 25 | 704 | 0.5+ | 0.1− | 2001 09 24 | 704 | (0.8+ | 1.9+) | 2006 10 12 | 691 | 0.2− | 0.1− | | |
| 2001 08 25 | 704 | 0.4− | 0.3− | 2001 10 15 | 645 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.3− | 0.0 | | |
| 2001 08 25 | 704 | 0.5+ | 0.0 | 2001 10 15 | 645 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.4− | 0.1+ | | |
| 2001 08 25 | 704 | 0.3+ | 1.1− | 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.4+ | 1.0− | 2005 06 01 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | | |
| 2001 09 11 | 699 | 0.5+ | 0.7− | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 11 | 699 | 0.9− | 0.6+ | 2005 06 10 | 691 | 0.5− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | | |
| 2001 09 11 | 699 | 0.4− | 0.0 | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2+ | | |
| 2001 09 11 | 699 | 0.0 | 0.1+ | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.2− | 2005 06 16 | 691 | 0.2− | 0.1+ | 2006 10 29 | 291 | 0.2− | 0.5+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.4+ | 2005 06 16 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 291 | 0.1− | 0.6+ | | |
| 2001 09 16 | 704 | 0.2− | 0.8+ | 2005 06 16 | 691 | 0.0 | 0.1+ | 2006 10 29 | 291 | 0.0 | 0.6+ | | |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2005 06 30 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.3+ | | |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2005 06 30 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2+ | | |
| 2001 09 18 | 699 | 0.0 | 0.2− | 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.4+ | | |

**(139708)∗ 2001 QX$_{230}$ = 2002 XW$_{23}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 40407)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 158.87105 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19328786 | $\omega$ | 251.85942 | | −0.98796453 | | −0.03881739 | | |
| $a$ | 2.9625544 | $\Omega$ | 285.70678 | | +0.10062798 | | −0.89645020 | | |
| $e$ | 0.0488171 | $i$ | 8.94803 | | −0.11747381 | | −0.44144110 | | |
| $P$ | 5.10 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.1+ | 1.0+ | 2004 01 23 | 704 | 0.4− | 0.4+ | 2004 03 14 | 644 | 0.0 | 0.5+ | | |
| 2001 08 24 | 699 | 0.1+ | 0.7+ | 2004 01 23 | 704 | 1.2+ | 0.2+ | 2004 03 14 | 644 | 0.2+ | 0.5+ | | |
| 2001 08 24 | 699 | 0.3− | 0.7+ | 2004 01 23 | 704 | 0.8+ | 0.5− | 2004 03 27 | 703 | (1.9− | 2.8+) | | |
| 2001 08 24 | 699 | 0.3− | 0.5+ | 2004 01 29 | 704 | 0.0 | 0.9+ | 2004 03 27 | 703 | 0.6− | 0.8+ | | |
| 2001 08 25 | 704 | 0.4+ | 0.6+ | 2004 01 29 | 704 | 0.4+ | 1.0+ | 2004 03 27 | 703 | 1.4+ | 0.0 | | |
| 2001 08 25 | 704 | 1.0− | 1.6+ | 2004 01 29 | 704 | 1.2+ | 1.0+ | 2004 03 27 | 703 | 1.6− | 0.4− | | |
| 2001 08 25 | 704 | 0.6+ | 0.5+ | 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 08 30 | 699 | 1.0− | 1.7− | | |
| 2001 08 25 | 704 | 0.2+ | 0.5+ | 2004 02 12 | 644 | 0.2+ | 0.7+ | 2006 08 30 | 699 | 0.3− | 0.7+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2004 02 12 | 644 | 0.9+ | 0.5+ | 2006 08 30 | 699 | 0.2+ | 0.2− | | |
| 2001 09 09 | 699 | 1.5− | 1.7+ | 2004 02 14 | 644 | 0.1− | 0.5+ | 2006 08 30 | 699 | 0.5+ | 0.1+ | | |
| 2001 09 09 | 699 | 0.9− | 0.2+ | 2004 02 14 | 644 | 0.2− | 0.6+ | 2006 09 11 | 703 | 0.2− | 1.4+ | | |
| 2001 09 09 | 699 | 0.9− | 0.8+ | 2004 02 14 | 644 | 0.1− | 0.7+ | 2006 09 11 | 703 | 0.4− | 0.8− | | |
| 2001 09 09 | 699 | 0.1+ | 0.7− | 2004 02 14 | 608 | 1.5+ | 0.6+ | 2006 09 11 | 703 | 0.4+ | 0.9− | | |
| 2002 12 05 | 704 | 0.2− | 1.8− | 2004 02 14 | 608 | 1.1+ | 0.4+ | 2006 09 11 | 703 | 0.8+ | 1.1− | | |
| 2002 12 05 | 704 | 0.5− | 1.2− | 2004 02 14 | 608 | 1.3+ | 0.9+ | 2006 09 14 | 691 | 0.3− | 0.2+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.8− | 2004 02 18 | 683 | 0.4+ | 0.6− | 2006 09 14 | 691 | 0.3− | 0.4+ | | |
| 2002 12 05 | 704 | 0.3+ | 1.5− | 2004 02 18 | 683 | 1.0+ | 0.1− | 2006 09 14 | 691 | 0.2− | 0.5+ | | |
| 2002 12 06 | 704 | 0.1+ | 0.4+ | 2004 02 18 | 683 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.5+ | | |
| 2002 12 06 | 704 | 0.4− | 0.0 | 2004 02 18 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.2+ | | |
| 2002 12 06 | 704 | 0.3+ | 0.5+ | 2004 02 18 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.5+ | | |
| 2002 12 06 | 704 | 0.1− | 0.2+ | 2004 02 18 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 2002 12 06 | 704 | 0.4− | 0.7+ | 2004 02 19 | 704 | 0.6+ | 1.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 2004 01 14 | 644 | 0.2− | 0.1+ | 2004 02 19 | 704 | 0.3− | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 2004 01 14 | 644 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 691 | 0.3+ | 0.4+ | | |
| 2004 01 14 | 644 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.9− | 1.3+ | 2006 09 30 | 691 | 0.2− | 0.2+ | | |
| 2004 01 23 | 704 | 0.1− | 0.7+ | 2004 03 14 | 644 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | |

**(139709)∗ 2001 QT$_{231}$ = 2003 AU$_{13}$ = 2004 HM$_{23}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 60906)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 334.06390 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21900362 | $\omega$ | 201.54063 | | +0.47635744 | | −0.87440808 | | |
| $a$ | 2.7258494 | $\Omega$ | 220.16982 | | +0.82612751 | | +0.48099341 | | |
| $e$ | 0.1283498 | $i$ | 8.21435 | | +0.30099322 | | +0.06368550 | | |
| $P$ | 4.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 910 | 0.9+ | 0.6+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 1997 09 30 | 910 | 0.7+ | 0.4+ | 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.4+ | | |
| 1997 10 01 | 910 | 0.9+ | 0.6+ | 2004 05 23 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 1997 10 31 | 704 | 0.2+ | 1.9− | 2004 05 23 | 691 | 0.1+ | 1.0+ | 2006 11 11 | G96 | 0.3+ | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 31 | 704 | 0.1+ | 1.8+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.1− | | |
| 1997 10 31 | 704 | 0.4+ | 1.6+ | 2006 09 28 | G96 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.6+ | | |
| 1997 10 31 | 704 | 0.7+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.3− | | |
| 1997 11 06 | 704 | 0.5− | 0.6− | 2006 09 28 | G96 | 0.5+ | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.0 | | |
| 1997 11 06 | 704 | 1.5− | 0.1− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.4+ | 0.2+ | | |
| 1997 11 06 | 704 | 0.2− | 0.9− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.6+ | 0.2+ | | |
| 1997 11 06 | 704 | 1.4− | 1.7− | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.6− | | |
| 1997 11 06 | 704 | 1.5− | 1.4− | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.3− | | |
| 2001 08 24 | 699 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 1.2− | 0.0 | | |
| 2001 08 24 | 699 | 0.8+ | 0.7+ | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.6+ | 0.1+ | | |
| 2001 08 24 | 699 | 0.5+ | 0.0 | 2006 10 19 | 291 | 0.7− | 0.4+ | 2006 11 18 | 704 | (1.7+ | 1.0+) | | |
| 2001 08 24 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 291 | 1.2− | 0.7+ | 2006 11 18 | 704 | 1.1+ | 0.4− | | |
| 2001 08 26 | 704 | 0.0 | 0.5− | 2006 10 19 | 291 | 0.8− | 1.0+ | 2006 11 18 | 704 | 1.3+ | 0.1− | | |
| 2001 08 26 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.8+ | | |
| 2001 08 26 | 704 | 0.2+ | 0.6− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.5+ | | |
| 2001 08 26 | 704 | 0.3+ | 1.2− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2001 08 26 | 704 | 0.3+ | 0.7− | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.2+ | | |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.6− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.5+ | | |
| 2003 01 01 | 704 | 0.5+ | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.6+ | | |
| 2003 01 01 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.6− | 0.6+ | | |
| 2003 01 01 | 704 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 1.1+ | | |
| 2003 01 01 | 704 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 1.0+ | | |
| 2003 01 05 | 704 | (1.7+ | 0.3+) | 2006 10 21 | 644 | 0.5+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.3− | | |
| 2003 01 05 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.6+ | 0.2− | | |
| 2003 01 05 | 704 | (1.9+ | 0.0 ) | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.3− | | |
| 2003 01 05 | 704 | 0.8+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.6+ | 0.3− | | |
| 2004 04 16 | 691 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.4+ | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.2− | | |
| 2004 04 16 | 691 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.3− | 1.1+ | | |
| 2004 04 16 | 691 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 1.4− | 0.4− | | |
| 2004 04 22 | 691 | 0.1+ | 0.7+ | 2006 11 08 | 644 | 0.4+ | 0.1− | 2006 11 28 | 704 | 0.1− | 0.1+ | | |
| 2004 04 22 | 691 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.3+ | | | | | | |

**(139710)∗ 2001 QU$_{232}$ = 2000 JP$_{75}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17963)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 118.00294 | | (2000.0) | | | |
| $n$ | 0.22532980 | $\omega$ | 105.48474 | | +0.12086479 | +0.99195823 |
| $a$ | 2.6745884 | $\Omega$ | 171.19701 | | −0.97860585 | +0.12541323 |
| $e$ | 0.1028485 | $i$ | 14.20632 | | −0.16650011 | −0.01704081 |
| $P$ | 4.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.1− | 2001 10 17 | 644 | 1.1− | 1.2+ | 2004 03 23 | 691 | 0.0 | 0.2+ | | |
| 2000 05 04 | 645 | 0.0 | 0.1− | 2001 10 17 | 644 | 1.0− | 1.3+ | 2004 03 23 | 691 | 0.2+ | 0.2+ | | |
| 2000 05 05 | 704 | 0.6+ | 0.4− | 2001 10 17 | 644 | 1.4− | 1.2+ | 2004 03 23 | 691 | 0.0 | 0.1+ | | |
| 2000 05 05 | 704 | 0.0 | 0.2+ | 2001 10 24 | 704 | 1.1− | 0.3+ | 2004 03 28 | 704 | 0.2− | 0.6+ | | |
| 2000 05 05 | 704 | 0.7+ | 0.8+ | 2001 10 24 | 704 | 0.9+ | 0.8+ | 2004 03 28 | 704 | 0.2+ | 1.4+ | | |
| 2000 05 05 | 704 | 1.3+ | 1.4+ | 2001 10 24 | 704 | 0.7+ | 1.0+ | 2004 03 28 | 704 | 1.2+ | 0.4+ | | |
| 2000 05 05 | 704 | 1.5+ | 0.3+ | 2004 02 19 | 704 | 0.8− | 0.2+ | 2004 03 28 | 704 | 0.9+ | 0.9+ | | |
| 2000 05 06 | 704 | 0.1+ | 0.6+ | 2004 02 19 | 704 | 1.3+ | 0.1+ | 2004 04 13 | 691 | 0.2− | 0.3+ | | |
| 2000 05 06 | 704 | 0.7+ | 0.7+ | 2004 02 19 | 704 | 0.9+ | 0.5− | 2004 04 13 | 691 | 0.0 | 0.3+ | | |
| 2000 05 06 | 704 | 1.2+ | 0.1− | 2004 02 19 | 704 | 1.0− | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | | |
| 2000 05 06 | 704 | 0.5+ | 0.3− | 2004 02 26 | 704 | 0.3− | 1.4+ | 2004 04 15 | 644 | 0.2+ | 1.1+ | | |
| 2000 05 06 | 704 | (2.6+ | 0.7−) | 2004 02 26 | 704 | 0.4− | 0.6+ | 2004 04 15 | 644 | 0.4+ | 0.9+ | | |
| 2000 05 10 | 645 | 0.2− | 0.1− | 2004 02 26 | 704 | 0.5+ | 0.3+ | 2004 04 15 | 644 | 0.1− | 0.5+ | | |
| 2000 05 10 | 645 | 0.1− | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.1− | | |
| 2001 08 20 | 807 | 0.2+ | 0.6+ | 2004 03 15 | 333 | 0.6− | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.4+ | | |
| 2001 08 20 | 807 | 0.0 | 0.5+ | 2004 03 15 | 333 | 0.1− | 0.0 | 2004 04 19 | 704 | 0.1+ | 0.3− | | |
| 2001 08 24 | 704 | 0.3− | 0.1+ | 2004 03 16 | 333 | 0.3+ | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.6+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.0 | 2004 03 16 | 333 | 0.8+ | 0.6+ | 2004 04 19 | 704 | 1.2+ | 0.5− | | |
| 2001 08 24 | 704 | 0.4− | 0.9+ | 2004 03 16 | 704 | 0.0 | 1.3+ | 2005 05 23 | 644 | 0.2− | 0.4+ | | |
| 2001 08 24 | 704 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.5− | 0.5+ | 2005 05 23 | 644 | 0.1+ | 0.3+ | | |
| 2001 08 26 | 691 | 0.3+ | 0.5+ | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2005 05 23 | 644 | 0.3− | 0.3+ | | |
| 2001 08 26 | 691 | 0.3+ | 0.5+ | 2004 03 16 | 704 | 0.3+ | 0.5+ | 2005 06 29 | 644 | 0.1+ | 0.3+ | | |
| 2001 08 26 | 691 | 0.3+ | 0.4+ | 2004 03 17 | 704 | 0.9− | 0.8+ | 2005 06 29 | 644 | 0.1+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.5− | 0.2+ | 2004 03 17 | 704 | 0.2+ | 0.9+ | 2005 06 29 | 644 | 0.1− | 0.6+ | | |
| 2001 09 12 | 704 | 0.7− | 0.3+ | 2004 03 17 | 704 | 0.3+ | 1.1+ | 2006 11 13 | 703 | (2.1− | 1.4+) | | |
| 2001 09 12 | 704 | 0.4− | 0.0 | 2004 03 17 | 704 | 0.8+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.4− | | |
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2004 03 19 | 704 | 0.4− | 0.9+ | 2006 11 13 | 703 | 0.2+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.4− | 0.9+ | 2006 11 13 | 703 | 0.4+ | 1.0+ | | |
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2004 03 19 | 704 | 0.8− | 0.5+ | 2006 11 19 | 703 | 1.1− | 1.2− | | |
| 2001 09 19 | 704 | 0.5− | 0.9+ | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 703 | 0.1+ | 1.0− | | |
| 2001 09 19 | 704 | 0.7− | 0.8+ | 2004 03 19 | 704 | 1.1− | 0.5+ | 2006 11 19 | 703 | (0.3− | 1.8−) | | |
| 2001 09 19 | 704 | 0.4− | 1.0+ | 2004 03 20 | 699 | (1.7− | 0.5−) | 2006 11 19 | 703 | 0.7+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.4− | 0.9+ | 2004 03 20 | 699 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.1+ | | |
| 2001 09 21 | 704 | 0.6+ | 0.8+ | 2004 03 22 | 704 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.6− | 0.2− | | |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.2+ | 0.8+ | 2006 12 01 | G96 | 0.3+ | 0.0 | | |
| 2001 09 21 | 704 | 0.3+ | 1.0+ | 2004 03 22 | 704 | 0.4− | 0.7+ | | | | | | |
| 2001 09 21 | 704 | (0.5− | 1.7+) | 2004 03 22 | 704 | 0.5+ | 0.5+ | | | | | | |

**(139711)∗ 2001 QO$_{233}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.04578 | | (2000.0) | | | |
| $n$ | 0.20329894 | $\omega$ | 99.12191 | | +0.97506565 | −0.22110081 |
| $a$ | 2.8644812 | $\Omega$ | 273.65347 | | +0.19539026 | +0.89597227 |
| $e$ | 0.0697485 | $i$ | 1.09152 | | +0.10521229 | +0.38515987 |
| $P$ | 4.85 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.2− | 0.3+ | 2001 10 25 | 644 | 0.1− | 0.5+ | 2006 09 14 | A50 | 0.6+ | 0.1− | | |
| 2001 08 24 | 704 | 0.9− | 0.5+ | 2001 10 25 | 644 | 0.1+ | 0.7+ | 2006 09 14 | A50 | 0.1+ | 0.3− | | |
| 2001 08 24 | 704 | 0.3− | 0.2+ | 2002 12 31 | 704 | 0.1− | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.1+ | | |
| 2001 08 24 | 704 | 0.5− | 0.2+ | 2002 12 31 | 704 | 0.1− | 0.5+ | 2006 09 17 | 691 | 0.3− | 0.2+ | | |
| 2001 08 24 | 704 | 0.6− | 0.5+ | 2002 12 31 | 704 | 0.0 | 0.9+ | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 2001 08 27 | 699 | 0.1− | 0.4+ | 2002 12 31 | 704 | 0.5− | 0.1− | 2006 09 19 | 699 | 0.6+ | 0.2+ | | |
| 2001 08 27 | 699 | 1.2− | 1.0+ | 2002 12 31 | 704 | 0.4− | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.4+ | | |
| 2001 08 27 | 699 | 0.5− | 1.2+ | 2003 01 01 | 704 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.4+ | | |
| 2001 08 27 | 699 | 0.5− | 0.6+ | 2003 01 01 | 704 | 0.8− | 0.6− | 2006 09 20 | 704 | 0.4− | 0.6+ | | |
| 2001 09 10 | 704 | 0.6− | 0.4− | 2003 01 01 | 704 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 10 | 704 | 0.6− | 0.3− | 2003 01 01 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.9+ | | |
| 2001 09 10 | 704 | 0.3− | 0.1+ | 2003 01 02 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.5− | | |
| 2001 09 10 | 704 | 0.1− | 0.2− | 2003 01 02 | 704 | 0.3+ | 0.7+ | 2006 09 22 | A50 | 0.1+ | 0.1+ | | |
| 2001 09 10 | 704 | 0.0 | 0.3− | 2003 01 02 | 704 | 0.1+ | 0.2− | 2006 09 22 | A50 | 0.3+ | 0.0 | | |
| 2001 09 16 | 704 | 0.4− | 0.3+ | 2003 01 02 | 704 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.0 | | |
| 2001 09 16 | 704 | 0.2+ | 0.1+ | 2003 01 02 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.5+ | 2003 01 04 | 704 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.0 | | |
| 2001 09 19 | 644 | 0.4+ | 0.5+ | 2003 01 04 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 704 | 0.6+ | 0.7+ | | |
| 2001 09 19 | 644 | 0.4+ | 0.5+ | 2003 01 04 | 704 | 0.6+ | 0.7+ | 2006 09 29 | 704 | 0.9+ | 1.1+ | | |
| 2001 09 19 | 644 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.3+ | 1.0+ | 2006 09 29 | 704 | 0.9+ | 1.2+ | | |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2004 02 26 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.6+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.8+ | 0.0 | 2004 02 26 | 704 | 1.3+ | 1.0+ | 2006 09 29 | 704 | 0.0 | 1.4+ | | |
| 2001 09 20 | 704 | 0.2− | 0.4− | 2004 02 26 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.2− | | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2004 03 18 | 704 | 0.7+ | 1.0+ | 2006 10 17 | 703 | (1.6− | 0.1+) | | |
| 2001 09 20 | 704 | 0.0 | 0.8+ | 2004 03 18 | 704 | 0.7+ | 0.8+ | 2006 10 17 | 703 | 0.6− | 0.2− | | |
| 2001 09 22 | 704 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.2+ | | |
| 2001 09 22 | 704 | 0.3− | 0.1− | 2004 03 26 | 691 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.2− | | |
| 2001 09 22 | 704 | 0.7+ | 0.2− | 2004 03 26 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2001 09 22 | 704 | 0.3+ | 0.3− | 2004 03 26 | 691 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 22 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.2+ | | |
| 2001 09 23 | 704 | 0.3− | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3− | | |
| 2001 09 23 | 704 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.4− | | |
| 2001 09 23 | 704 | 0.3+ | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.4− | | |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2001 09 24 | 644 | 0.6− | 0.2+ | 2004 04 12 | 691 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.5− | 0.1− | | |
| 2001 09 24 | 644 | 0.4− | 0.1− | 2004 04 12 | 691 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.3− | | |
| 2001 09 24 | 644 | 0.3− | 0.4+ | 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2001 10 11 | 704 | 0.1+ | 0.5+ | 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.6− | 0.7+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2001 10 11 | 704 | 0.3− | 0.1+ | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 11 | 704 | 0.3+ | 0.7− | 2004 04 21 | 704 | 1.1+ | 1.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 10 13 | 704 | 0.2+ | 1.1+ | 2004 04 21 | 704 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 13 | 704 | 0.2+ | 1.1+ | 2004 04 21 | 704 | (1.5+ | 0.1+) | 2006 10 23 | 291 | 0.1− | 0.2+ |
| 2001 10 13 | 704 | 0.3− | 1.5+ | 2004 04 21 | 704 | 1.5+ | 0.7− | 2006 10 23 | 291 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.1+ | 0.6+ | 2004 04 21 | 704 | 0.5+ | 1.4+ | 2006 10 23 | 291 | 0.2− | 0.1+ |
| 2001 10 19 | 644 | 0.5− | 1.1+ | 2004 04 22 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 10 19 | 644 | 0.4− | 0.9+ | 2004 04 22 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 10 19 | 644 | 0.3− | 0.8+ | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.5− | 1.1+ | 2006 08 24 | 644 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.1− | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.4− | 1.3+ | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.6− | 0.5+ | 2006 09 06 | 644 | 0.5− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.2+ | | | | |

**(139712)∗ 2001 QB$_{234}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 143.13580 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21131062 | $\omega$ | 61.58663 | | −0.53101270 | | +0.84734985 | | |
| $a$ | 2.7916127 | $\Omega$ | 176.32842 | | −0.80163220 | | −0.50048256 | | |
| $e$ | 0.0110031 | $i$ | 4.36360 | | −0.27461124 | | −0.17752586 | | |
| $P$ | 4.66 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.9+ | 1.0+ | 2004 03 19 | 291 | 0.1− | 0.3+ | 2005 06 05 | 691 | 0.0 | 0.3+ |
| 2001 08 24 | 704 | 0.7+ | 0.7+ | 2004 03 19 | 291 | 0.1+ | 0.3+ | 2005 06 05 | 691 | 0.0 | 0.0 |
| 2001 08 24 | 704 | 0.0 | 0.9+ | 2004 03 19 | 291 | 0.1+ | 0.7+ | 2005 06 05 | 691 | 0.2− | 0.4+ |
| 2001 08 24 | 704 | 1.1+ | 1.4+ | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 691 | 0.3− | 0.3+ | 2004 03 20 | 704 | (1.1+ | 1.6+) | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2001 08 25 | 691 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2001 08 25 | 691 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2006 09 23 | 691 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.2− | 0.4− | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 0.3− | 0.3− | 2004 03 22 | 704 | (0.0 | 2.0+) | 2006 09 23 | 691 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.8− | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2004 03 22 | 704 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.4− | 2004 03 23 | 704 | 1.1+ | 0.8+ | 2006 10 01 | 691 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.7− | 1.0− | 2004 03 23 | 704 | 0.7+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 1.1+ |
| 2001 09 21 | 704 | 0.9− | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2004 03 24 | 699 | (1.9− | 1.5−) | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2004 03 24 | 699 | 0.6− | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2004 03 24 | 699 | 0.5− | 1.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.9+ | 1.1+ | 2004 03 24 | 699 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | (1.8− | 0.6+) | 2004 03 27 | 704 | 0.7+ | 0.9+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 09 21 | 704 | 0.4+ | 1.0+ | 2004 03 27 | 704 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 09 23 | 691 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2001 09 23 | 691 | 0.2− | 0.5+ | 2004 03 27 | 704 | 0.7+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 09 23 | 691 | 0.3− | 0.4+ | 2004 04 11 | 644 | 0.3+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2004 02 26 | 704 | 0.8+ | 0.4+ | 2004 04 11 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2004 02 26 | 704 | 0.2− | 0.7+ | 2004 04 11 | 644 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 02 26 | 704 | (0.3+ | 1.7+) | 2004 04 15 | 699 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | 0.4+ | 1.5+ | 2004 04 15 | 699 | (0.6+ | 1.6+) | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2004 03 15 | 703 | 0.6− | 0.4+ | 2004 04 15 | 699 | (0.5+ | 1.7+) | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2004 03 15 | 703 | 0.3+ | 1.1+ | 2004 04 15 | 699 | 0.9− | 1.0+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 703 | (1.6− | 1.2+) | 2004 04 19 | 704 | 1.1+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.4+ | 0.8+ | 2004 04 19 | 704 | 0.4+ | 1.0+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2004 03 18 | 704 | 0.0 | 1.0+ | 2004 04 19 | 704 | 0.4− | 0.6+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2004 03 18 | 704 | 0.6+ | 0.3+ | 2004 04 28 | 691 | 0.1+ | 0.5+ | 2006 11 21 | 691 | 0.2− | 0.5+ |
| 2004 03 18 | 704 | 0.4+ | 0.1+ | 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 2004 03 18 | 704 | 0.7+ | 0.1− | 2004 04 28 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1+ |

**(139713)∗ 2001 QH$_{235}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 63.73636 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21747557 | $\omega$ | 342.28299 | | +0.85146113 | | +0.52310824 | | |
| $a$ | 2.7386029 | $\Omega$ | 345.99331 | | −0.46071990 | | +0.71243590 | | |
| $e$ | 0.0771834 | $i$ | 8.80209 | | −0.25050174 | | +0.46775299 | | |
| $P$ | 4.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.5− | 0.3− | 2001 09 20 | 704 | 0.0 | 0.4+ | 2001 10 21 | 704 | 0.9+ | 0.8+ |
| 2001 08 24 | 704 | 0.3− | 0.0 | 2001 09 20 | 704 | 0.9+ | 0.4+ | 2001 10 21 | 704 | 0.0 | 1.1+ |
| 2001 08 24 | 704 | 0.1− | 0.1− | 2001 09 20 | 704 | 0.1+ | 0.1− | 2001 10 21 | 704 | 0.5+ | 1.1+ |
| 2001 08 24 | 704 | 0.6− | 0.3− | 2001 09 22 | 683 | (1.2− | 2.6+) | 2001 10 25 | 644 | 0.3− | 0.1+ |
| 2001 08 24 | 704 | 0.0 | 0.0 | 2001 09 22 | 704 | 0.1+ | 0.1+ | 2001 10 25 | 644 | 0.2− | 0.1+ |
| 2001 08 25 | 683 | 1.0− | 0.2+ | 2001 09 22 | 683 | (2.0− | 1.2+) | 2001 10 25 | 644 | 0.0 | 0.1− |
| 2001 08 25 | 683 | 1.1− | 0.4− | 2001 09 22 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 1.0+ | 0.2− |
| 2001 08 25 | 683 | (1.6− | 0.0 ) | 2001 09 22 | 683 | (3.0− | 0.7−) | 2004 03 20 | 704 | 0.9− | 1.1+ |
| 2001 08 27 | 699 | 1.0− | 0.5− | 2001 09 22 | 704 | 0.1+ | 0.2− | 2004 03 20 | 704 | (1.2+ | 1.8+) |
| 2001 08 27 | 699 | 0.2− | 0.1+ | 2001 09 22 | 704 | 0.4+ | 0.3− | 2004 03 20 | 704 | (0.5+ | 1.9+) |
| 2001 08 27 | 699 | 1.0+ | 0.5− | 2001 09 23 | 704 | 0.2+ | 1.1− | 2004 03 20 | 704 | 0.7+ | 0.5+ |
| 2001 08 27 | 699 | 0.0 | 0.3+ | 2001 09 23 | 704 | 0.4− | 0.4− | 2005 07 05 | E12 | 0.3+ | 0.5+ |
| 2001 09 08 | 683 | (1.9− | 0.0 ) | 2001 09 23 | 704 | 0.2− | 0.2− | 2005 07 05 | E12 | 0.6− | 0.1+ |
| 2001 09 08 | 683 | 0.8− | 1.4− | 2001 09 23 | 704 | 0.1+ | 0.3− | 2005 07 05 | E12 | 0.2+ | 0.1− |
| 2001 09 08 | 683 | (3.6+ | 0.9−) | 2001 09 23 | 704 | 0.4− | 0.7− | 2005 07 05 | E12 | 0.3+ | 0.4− |
| 2001 09 11 | 699 | 0.1− | 0.2− | 2001 09 24 | 704 | 0.2+ | 0.7+ | 2005 08 04 | 644 | 0.0 | 0.4+ |
| 2001 09 11 | 699 | 0.1− | 0.4+ | 2001 09 24 | 704 | 0.2− | 0.0 | 2005 08 04 | 644 | 0.2− | 0.1+ |
| 2001 09 11 | 699 | 0.0 | 0.6− | 2001 09 24 | 704 | 0.2+ | 0.3+ | 2005 08 04 | 644 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 0.3+ | 0.2+ | 2001 09 24 | 704 | 0.5+ | 1.2− | 2006 10 27 | 703 | 0.6+ | 1.2+ |
| 2001 09 12 | 691 | 0.2− | 0.1+ | 2001 09 24 | 704 | 0.2+ | 0.0 | 2006 10 27 | 703 | (0.3+ | 2.1+) |
| 2001 09 12 | 691 | 0.2− | 0.1+ | 2001 09 24 | 704 | 0.2+ | 1.1− | 2006 10 27 | 703 | 0.4+ | 0.3+ |
| 2001 09 12 | 691 | 0.1− | 0.0 | 2001 09 24 | 704 | 0.6− | 0.5− | 2006 10 27 | 703 | (2.3+ | 0.4−) |
| 2001 09 12 | 691 | 0.2+ | 0.3+ | 2001 09 24 | 704 | 0.4+ | 0.8+ | 2006 11 02 | 703 | 0.7− | 0.4− |
| 2001 09 12 | 691 | 0.5+ | 0.3+ | 2001 09 24 | 704 | 0.7− | 0.1− | 2006 11 02 | 703 | 0.0 | 0.0 |
| 2001 09 12 | 691 | 0.4+ | 0.3+ | 2001 10 14 | 704 | (1.8− | 0.5+) | 2006 11 02 | 703 | 0.2− | 1.2− |
| 2001 09 16 | 704 | 0.0 | 1.1− | 2001 10 14 | 704 | (1.7− | 0.1+) | 2006 11 02 | 703 | 1.0− | 0.6− |
| 2001 09 16 | 704 | 0.4− | 1.3− | 2001 10 14 | 704 | 1.3− | 0.5+ | 2006 11 21 | 703 | 0.5+ | 0.4+ |
| 2001 09 16 | 704 | 0.2+ | 0.9− | 2001 10 14 | 704 | (2.0− | 0.3+) | 2006 11 21 | 703 | 0.7+ | 0.4+ |
| 2001 09 17 | 683 | (0.7− | 2.9+) | 2001 10 14 | 704 | (2.5− | 0.5+) | 2006 11 21 | 703 | 0.4+ | 0.4+ |
| 2001 09 17 | 683 | 0.2− | 0.2+ | 2001 10 21 | 704 | 0.7+ | 1.1+ | 2006 11 21 | 703 | 1.0− | 0.2+ |
| 2001 09 17 | 683 | (1.6− | 0.8+) | 2001 10 21 | 704 | 0.9+ | 0.9+ | | | | |

**(139714)∗ 2001 QQ$_{237}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 148.85902 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26275722 | $\omega$ | 155.94344 | | +0.70773483 | | +0.70490943 | | |
| $a$ | 2.4141613 | $\Omega$ | 159.00497 | | −0.66761258 | | +0.68910173 | | |
| $e$ | 0.2066405 | $i$ | 7.54652 | | −0.23109491 | | +0.16805205 | | |
| $P$ | 3.75 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 691 | 0.1+ | 0.0 | 2001 09 27 | 644 | 0.6− | 0.5+ | 2005 10 02 | 699 | 0.3− | 0.5+ |
| 1996 03 17 | 691 | 0.2− | 0.5+ | 2001 10 11 | 704 | 0.2+ | 0.2+ | 2005 10 02 | 699 | 0.3+ | 0.7+ |
| 1996 03 17 | 691 | 0.6+ | 0.3+ | 2001 10 11 | 704 | 0.3+ | 0.4+ | 2005 10 02 | 699 | 0.0 | 0.7+ |
| 2001 08 16 | 704 | 0.1+ | 0.2+ | 2001 10 11 | 704 | 0.1− | 0.2+ | 2005 10 02 | 699 | (0.9− | 2.2+) |
| 2001 08 16 | 704 | 0.4− | 0.3+ | 2001 10 11 | 704 | 0.1+ | 0.2+ | 2005 10 22 | 703 | 0.5− | 0.1+ |
| 2001 08 16 | 704 | 0.2− | 0.3+ | 2001 10 11 | 704 | 0.1− | 1.0− | 2005 10 22 | 703 | 0.4+ | 0.3− |
| 2001 08 16 | 704 | 0.6+ | 0.0 | 2001 10 13 | 704 | 0.6− | 0.2− | 2005 10 22 | 703 | 0.7− | 0.4+ |
| 2001 08 16 | 704 | 0.1+ | 0.3+ | 2001 10 13 | 704 | 0.1− | 0.0 | 2005 10 22 | 703 | 0.3+ | 0.3− |
| 2001 08 24 | 704 | 0.8− | 0.4+ | 2001 10 13 | 704 | 0.2+ | 0.2+ | 2005 10 22 | 644 | 0.2+ | 0.6+ |
| 2001 08 24 | 704 | 0.8− | 0.2+ | 2001 10 13 | 704 | 0.0 | 0.4− | 2005 10 22 | 644 | 0.2+ | 0.6+ |
| 2001 08 24 | 704 | 0.2− | 0.7+ | 2001 10 13 | 704 | 1.3− | 1.2− | 2005 10 22 | 644 | 0.2+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.5− | 0.6+ | 2001 10 16 | 644 | 0.0 | 0.3+ | 2005 10 27 | 699 | 0.4+ | 0.8+ |
| 2001 08 27 | 699 | 0.1− | 0.5+ | 2001 10 16 | 644 | 0.2+ | 0.2+ | 2005 10 27 | 699 | 0.8− | 1.0+ |
| 2001 08 27 | 699 | 0.1− | 0.1+ | 2001 10 16 | 644 | 0.2+ | 0.2+ | 2005 10 27 | 699 | 0.9+ | 0.2− |
| 2001 08 27 | 699 | 0.2+ | 0.2+ | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2005 10 27 | 699 | 0.2+ | 0.6+ |
| 2001 08 27 | 699 | 0.0 | 0.2+ | 2004 03 16 | 691 | 0.1+ | 0.5+ | 2005 10 31 | G96 | 0.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.2− | 0.0 | 2004 03 16 | 691 | 0.3+ | 0.4+ | 2005 10 31 | G96 | 0.0 | 0.4+ |
| 2001 09 11 | 699 | 0.3− | 0.3+ | 2004 03 20 | 704 | (2.1+ | 2.2+) | 2005 10 31 | G96 | 0.3+ | 0.4+ |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.5+ | 1.8+ | 2005 10 31 | G96 | 0.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.6− | 0.1+ | 2004 03 20 | 704 | 0.6+ | 1.3+ | 2005 11 03 | 703 | 0.3+ | 0.8+ |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2004 03 20 | 704 | 1.0+ | 1.8+ | 2005 11 03 | 703 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.5− | 0.3− | 2004 04 14 | 691 | 0.1− | 0.5+ | 2005 11 03 | 703 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.3− | 0.7− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2005 11 03 | 703 | 0.2− | 0.5+ |
| 2001 09 12 | 704 | 1.0− | 0.7− | 2004 04 14 | 691 | 0.1− | 0.6+ | 2005 11 04 | 704 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.3− | 0.9− | 2004 04 20 | 703 | 1.1+ | 1.8+ | 2005 11 04 | 704 | 0.2− | 1.0− |
| 2001 09 18 | 699 | 0.9+ | 1.0+ | 2004 04 20 | 703 | 0.3− | 1.1+ | 2005 11 04 | 704 | 0.5− | 0.3− |
| 2001 09 18 | 699 | 0.8+ | 0.9+ | 2004 04 20 | 703 | (0.8− | 2.6+) | 2005 11 04 | 704 | 0.1− | 0.5+ |
| 2001 09 18 | 699 | 0.3+ | 0.8+ | 2004 04 20 | 703 | 0.6− | 0.3+ | 2005 11 09 | 703 | 0.4− | 0.3+ |
| 2001 09 18 | 699 | 1.2+ | 0.8+ | 2004 04 23 | 704 | 0.0 | 0.4+ | 2005 11 09 | 703 | 1.0− | 0.1− |
| 2001 09 19 | 704 | 1.4+ | 0.5− | 2004 04 23 | 704 | 0.9+ | 1.3+ | 2005 11 09 | 703 | 0.7− | 0.3+ |
| 2001 09 19 | 704 | 0.3+ | 0.4+ | 2004 04 23 | 704 | 0.1− | 1.2+ | 2005 11 09 | 703 | 0.6− | 0.3+ |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2004 04 23 | 704 | 1.4+ | 0.8+ | 2005 11 22 | 703 | 0.4− | 0.6+ |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 704 | 0.3+ | 0.4+ | 2005 11 22 | 703 | 1.5− | 1.5− |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2004 04 25 | 704 | 0.3− | 0.4+ | 2005 11 22 | 703 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2004 04 25 | 704 | 0.2+ | 0.6+ | 2005 11 22 | 703 | 1.3− | 0.9− |
| 2001 09 21 | 704 | 0.0 | 0.9+ | 2004 04 25 | 704 | 0.2+ | 0.2+ | 2005 12 05 | 699 | 0.2− | 0.4− |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2004 04 25 | 704 | 0.1+ | 0.4+ | 2005 12 05 | 699 | 0.1+ | 0.8+ |
| 2001 09 21 | 704 | 0.9− | 1.0+ | 2005 09 30 | 644 | 0.2+ | 0.1+ | 2005 12 05 | 699 | 0.1+ | 0.5+ |
| 2001 09 21 | 704 | 0.0 | 1.1+ | 2005 09 30 | 644 | 0.3− | 0.1+ | 2005 12 05 | 699 | 1.0+ | 1.0+ |
| 2001 09 25 | 644 | 0.1− | 0.4+ | 2005 09 30 | 644 | 0.1+ | 0.3+ | 2005 12 06 | 704 | 0.3+ | 0.5+ |
| 2001 09 25 | 644 | 0.1− | 0.5+ | 2005 10 01 | 703 | 1.1− | 0.7+ | 2005 12 06 | 704 | 0.5+ | 1.2+ |
| 2001 09 25 | 644 | 0.2− | 0.3+ | 2005 10 01 | 703 | 0.4+ | 0.5+ | 2005 12 06 | 704 | 0.4+ | 1.3+ |
| 2001 09 27 | 644 | 0.4− | 0.3+ | 2005 10 01 | 703 | 0.3+ | 1.0+ | 2005 12 06 | 704 | 0.3+ | 0.6+ |
| 2001 09 27 | 644 | 0.5− | 0.4+ | 2005 10 01 | 703 | 0.1+ | 0.9+ | | | | |

**(139715)∗ 2001 QF$_{238}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.14151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23948608 | $\omega$ | 18.94900 | | +0.95457170 | −0.29797742 | |
| $a$ | 2.5681233 | $\Omega$ | 358.38482 | | +0.26593439 | +0.85420655 | |
| $e$ | 0.1895261 | $i$ | 3.09908 | | +0.13443126 | +0.42607584 | |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.3− | 0.8− | 2001 10 06 | 704 | 0.8+ | 0.7− | 2005 08 29 | 699 | 0.3+ | 0.4+ |
| 1995 02 24 | 691 | 0.4+ | 0.2− | 2001 10 06 | 704 | 0.0 | 0.6− | 2005 08 29 | 704 | 0.2+ | 0.5+ |
| 1995 02 24 | 691 | 0.1+ | 0.4− | 2001 10 06 | 704 | (0.3− | 1.8−) | 2005 08 29 | 699 | 0.0 | 0.1+ |
| 1997 10 30 | 566 | 0.4+ | 0.4+ | 2001 10 11 | 644 | 0.2− | 0.7+ | 2005 08 29 | 704 | 0.3+ | 0.0 |
| 1997 10 30 | 566 | 0.7+ | 0.4+ | 2001 10 11 | 644 | 0.3− | 0.7+ | 2005 08 29 | 699 | 1.0− | 1.3− |
| 1997 10 30 | 566 | 0.2+ | 0.1+ | 2001 10 11 | 644 | 0.2− | 0.8+ | 2005 08 31 | 691 | 0.0 | 0.0 |
| 2001 07 31 | 644 | (1.6− | 0.0 ) | 2001 10 13 | 704 | 0.8− | 0.2− | 2005 08 31 | 691 | 0.1+ | 0.1+ |
| 2001 07 31 | 644 | (1.6− | 0.1−) | 2001 10 13 | 704 | 0.3− | 0.2+ | 2005 08 31 | 691 | 0.1+ | 0.1− |
| 2001 07 31 | 644 | 1.3− | 0.0 | 2001 10 13 | 704 | 0.5− | 0.5− | 2005 09 01 | 691 | 0.1− | 0.1+ |
| 2001 08 24 | 704 | 0.6− | 0.6+ | 2001 10 13 | 704 | 0.9− | 0.3+ | 2005 09 01 | 691 | 0.2+ | 0.1+ |
| 2001 08 24 | 704 | 1.3− | 0.3+ | 2001 10 14 | 645 | 0.1+ | 0.2− | 2005 09 01 | 691 | 0.2− | 0.2+ |
| 2001 08 24 | 704 | 0.8− | 0.5+ | 2001 10 14 | 645 | 0.1+ | 0.2− | 2005 09 07 | 699 | 0.9− | 0.2+ |
| 2001 08 24 | 704 | 1.0− | 0.5+ | 2001 10 15 | 645 | 0.1+ | 0.2− | 2005 09 07 | 699 | (1.5− | 0.3+) |
| 2001 08 27 | 699 | 0.2− | 0.5+ | 2001 10 15 | 645 | 0.0 | 0.2− | 2005 09 07 | 699 | 0.4− | 0.0 |
| 2001 08 27 | 699 | 0.2− | 0.5+ | 2001 10 16 | 704 | 0.2− | 0.3− | 2005 09 07 | 699 | 0.7+ | 0.1− |
| 2001 08 27 | 699 | 0.7− | 0.0 | 2001 10 16 | 704 | 0.9− | 1.4+ | 2005 09 08 | 704 | (1.7+ | 1.1+) |
| 2001 08 27 | 699 | 1.3− | 0.7− | 2001 10 16 | 704 | 0.4− | 0.7+ | 2005 09 08 | 704 | 0.9+ | 0.4+ |
| 2001 09 11 | 699 | 0.1+ | 0.6+ | 2001 10 16 | 704 | 0.2− | 0.3+ | 2005 09 08 | 704 | 0.7+ | 1.3+ |
| 2001 09 11 | 699 | 0.6+ | 0.6+ | 2001 10 16 | 704 | 0.7+ | 0.4− | 2005 09 08 | 704 | (1.9+ | 2.0+) |
| 2001 09 11 | 699 | 0.2+ | 0.3+ | 2001 10 21 | 704 | 0.2+ | 0.7+ | 2005 09 08 | 704 | (1.6+ | 1.0+) |
| 2001 09 11 | 699 | 0.0 | 0.4+ | 2001 10 21 | 704 | 0.4+ | 0.4+ | 2005 09 11 | 691 | 0.1+ | 0.2+ |
| 2001 09 14 | 644 | 0.0 | 0.4+ | 2001 10 21 | 704 | 0.3− | 0.3+ | 2005 09 11 | 691 | 0.0 | 0.2+ |
| 2001 09 14 | 644 | 0.0 | 0.2+ | 2001 10 21 | 704 | 0.0 | 0.7+ | 2005 09 11 | 691 | 0.0 | 0.2+ |
| 2001 09 14 | 644 | 0.1+ | 0.4+ | 2001 10 21 | 704 | 0.1− | 0.3+ | 2005 09 22 | 644 | 0.2− | 0.1− |
| 2001 09 16 | 644 | 0.2− | 0.4+ | 2001 10 23 | 699 | 0.1+ | 0.1+ | 2005 09 22 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 644 | 0.0 | 0.6+ | 2001 10 23 | 699 | 0.8+ | 0.1− | 2005 09 22 | 644 | 0.1+ | 0.0 |
| 2001 09 16 | 644 | 0.3+ | 0.4+ | 2001 10 23 | 699 | 0.3+ | 1.0− | 2005 10 01 | 704 | 0.4+ | 0.1− |
| 2001 09 16 | 704 | 0.7− | 0.6+ | 2001 10 23 | 699 | 0.1− | 1.1− | 2005 10 01 | 704 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.2− | 0.7+ | 2001 11 12 | 645 | 0.1+ | 0.0 | 2005 10 01 | 704 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.1+ | 0.7+ | 2001 11 12 | 645 | 0.1+ | 0.0 | 2005 10 01 | 704 | 0.1+ | 0.4+ |
| 2001 09 16 | 704 | 0.1+ | 1.3+ | 2001 11 18 | 704 | 0.5− | 0.4+ | 2005 10 01 | 704 | 0.6+ | 0.1+ |
| 2001 09 16 | 704 | 0.2− | 0.6+ | 2001 11 18 | 704 | 0.8− | 0.3+ | 2005 10 05 | 704 | 0.0 | 0.9− |
| 2001 09 18 | 699 | 0.1− | 0.2+ | 2001 11 18 | 704 | 1.2+ | 0.9− | 2005 10 05 | 704 | 0.6− | 0.5− |
| 2001 09 18 | 699 | 0.4+ | 0.8+ | 2001 11 18 | 645 | 0.1+ | 0.1− | 2005 10 05 | 704 | 0.4+ | 0.9+ |
| 2001 09 18 | 699 | 0.2− | 0.3+ | 2001 11 18 | 704 | 0.3+ | 1.0+ | 2005 10 25 | G96 | 0.0 | 0.0 |
| 2001 09 18 | 699 | 0.3+ | 0.7+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2005 10 25 | G96 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.6− | 2001 11 18 | 704 | 0.3− | 0.4+ | 2005 10 25 | G96 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.6− | 2001 12 07 | 704 | 1.4− | 0.8+ | 2005 10 25 | G96 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.4− | 2001 12 07 | 704 | (1.5− | 1.8+) | 2005 10 26 | 704 | 0.3− | 0.5− |
| 2001 09 19 | 704 | 0.6− | 0.3− | 2001 12 07 | 704 | (2.7− | 0.5+) | 2005 10 26 | 704 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.4− | 2001 12 07 | 704 | (2.0− | 1.1+) | 2005 10 26 | 704 | 0.4− | 0.7+ |
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2003 01 28 | 645 | 0.1+ | 0.2+ | 2005 10 26 | 704 | 0.9− | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.3+ | 2003 01 28 | 645 | 0.1+ | 0.2+ | 2005 10 26 | 704 | 0.1− | 0.3− |
| 2001 09 20 | 704 | 0.4− | 0.4+ | 2004 05 09 | 691 | 0.2− | 0.1− | 2005 10 29 | G96 | 0.1+ | 0.4− |
| 2001 09 20 | 704 | 0.9− | 0.0 | 2004 05 09 | 691 | 0.2− | 0.4+ | 2005 10 29 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.8− | 0.2+ | 2004 05 09 | 691 | 0.3− | 0.1+ | 2005 10 29 | G96 | 0.1+ | 0.2− |
| 2001 09 22 | 704 | 0.1+ | 0.5+ | 2005 07 12 | 699 | 1.2+ | 0.3− | 2005 10 29 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 0.1+ | 0.3+ | 2005 07 12 | 699 | 0.0 | 0.4+ | 2005 11 25 | G96 | 0.0 | 0.3− |
| 2001 09 22 | 704 | 0.1− | 0.3+ | 2005 07 12 | 699 | 0.1− | 0.3− | 2005 11 25 | G96 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 0.2− | 0.2− | 2005 07 12 | 699 | 0.8− | 0.8− | 2005 11 25 | G96 | 0.6+ | 0.1+ |
| 2001 09 23 | 704 | 0.1− | 0.3+ | 2005 07 29 | 644 | 0.1+ | 0.1+ | 2005 11 25 | G96 | 0.3+ | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.4+ | 2005 07 29 | 644 | 0.1+ | 0.0 | 2005 11 29 | G96 | 0.3+ | 0.4− |
| 2001 09 23 | 704 | 0.5− | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.1+ | 2005 11 29 | G96 | 0.0 | 0.3− |
| 2001 09 23 | 704 | 0.6− | 0.0 | 2005 08 06 | 644 | 0.0 | 0.0 | 2005 11 29 | G96 | 0.1− | 0.1− |
| 2001 09 23 | 704 | 0.3− | 0.3+ | 2005 08 06 | 644 | 0.0 | 0.1+ | 2005 11 29 | G96 | 0.0 | 0.2− |
| 2001 09 24 | 704 | 0.9+ | 0.3− | 2005 08 06 | 644 | 0.0 | 0.1− | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2001 09 24 | 704 | 0.3− | 0.5− | 2005 08 08 | 807 | 0.0 | 0.0 | 2005 12 02 | G96 | 0.0 | 0.2− |
| 2001 09 24 | 704 | 0.4+ | 0.1− | 2005 08 08 | 807 | 0.1+ | 0.0 | 2005 12 02 | G96 | 0.0 | 0.2− |
| 2001 09 24 | 704 | 0.2− | 0.0 | 2005 08 25 | 644 | 0.0 | 0.2+ | 2005 12 02 | G96 | 0.4+ | 0.1− |
| 2001 09 26 | 704 | 0.2− | 0.7− | 2005 08 25 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.5+ |
| 2001 09 26 | 704 | 0.0 | 0.6− | 2005 08 25 | 644 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2001 09 26 | 704 | 0.3+ | 0.4− | 2005 08 27 | 608 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.6+ |
| 2001 09 26 | 704 | 0.1− | 0.4− | 2005 08 27 | 608 | 0.7− | 0.4+ | 2006 11 02 | G96 | 0.3− | 0.2− |
| 2001 09 26 | 704 | 0.4+ | 0.0 | 2005 08 27 | 608 | 0.3− | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.1− |
| 2001 10 05 | 644 | 0.2− | 0.6+ | 2005 08 29 | 704 | 0.2+ | 0.4+ | 2006 11 02 | G96 | 0.8+ | 0.2− |
| 2001 10 05 | 644 | 0.1− | 0.5+ | 2005 08 29 | 699 | 0.5+ | 0.0 | 2006 11 02 | G96 | 0.0 | 0.4− |
| 2001 10 05 | 644 | 0.2− | 0.5+ | 2005 08 29 | 704 | 0.4+ | 0.1− | | | | |
| 2001 10 06 | 704 | 1.0+ | 0.9− | 2005 08 29 | 704 | 0.0 | 1.0+ | | | | |

**(139716)∗ 2001 QF$_{240}$ = 1999 CM$_{140}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17969)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.33981 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21794139 | $\omega$ | 8.30130 | | +0.99208509 | +0.12352126 | |
| $a$ | 2.7346992 | $\Omega$ | 344.54859 | | −0.11952423 | +0.87384642 | |
| $e$ | 0.0732416 | $i$ | 4.86093 | | −0.03848547 | +0.47024986 | |
| $P$ | 4.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 691 | 0.6− | 0.3+ | 2001 09 12 | 704 | 0.3+ | 0.5+ | 2004 04 28 | 691 | 0.0 | 1.4+ |
| 1997 11 29 | 691 | (2.9− | 4.7−) | 2001 09 12 | 704 | 0.0 | 0.3+ | 2004 04 28 | 691 | 0.1− | 1.3+ |
| 1997 11 29 | 691 | 1.4− | 0.1− | 2001 09 16 | 704 | 1.4+ | 0.4− | 2004 04 28 | 691 | 0.3− | 0.8+ |
| 1999 02 07 | 691 | 0.6+ | 0.1+ | 2001 09 16 | 704 | 1.4+ | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.5− |
| 1999 02 07 | 691 | 0.8+ | 0.2− | 2001 09 16 | 704 | 1.0+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.6− |
| 1999 02 07 | 691 | 0.5+ | 0.0 | 2001 09 16 | 704 | (1.6+ | 0.1+) | 2006 10 04 | G96 | 0.4+ | 0.2− |
| 1999 02 13 | 691 | 0.2+ | 0.2+ | 2001 09 20 | 691 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 691 | 0.2+ | 0.0 | 2001 09 20 | 704 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.6− | 0.4− |
| 1999 02 13 | 691 | 0.2+ | 0.0 | 2001 09 20 | 691 | 0.0 | 0.0 | 2006 10 19 | 703 | (1.5+ | 0.4+) |
| 2001 07 19 | 699 | 0.0 | 0.3+ | 2001 09 20 | 704 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.8+ | 0.8− |
| 2001 07 19 | 699 | 1.0+ | 0.5− | 2001 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2001 07 19 | 699 | 0.4+ | 1.3+ | 2001 09 20 | 691 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 07 19 | 699 | (1.0+ | 1.6−) | 2001 09 20 | 704 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2001 09 20 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2001 08 16 | 704 | 0.0 | 0.1− | 2001 09 21 | 704 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2001 08 16 | 704 | 0.1− | 0.8+ | 2001 09 21 | 704 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.2− |
| 2001 08 16 | 704 | 0.2− | 0.8+ | 2001 09 21 | 704 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 08 24 | 704 | (3.5− | 0.6−) | 2001 09 21 | 704 | 0.1− | 1.0+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2001 08 24 | 704 | (3.8− | 0.1−) | 2001 09 21 | 704 | 0.4− | 1.2+ | 2006 11 10 | 644 | 0.1− | 0.4+ |
| 2001 08 24 | 704 | (4.1− | 0.1+) | 2001 09 23 | 704 | 0.3− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2001 08 27 | 691 | 0.6− | 0.1− | 2001 09 23 | 704 | 0.2− | 0.2− | 2006 11 14 | 703 | (2.3− | 0.4+) |
| 2001 08 27 | 691 | 0.5− | 0.1− | 2001 09 23 | 704 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.1+ | 0.6− |
| 2001 08 27 | 691 | 0.6− | 0.0 | 2001 09 23 | 704 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.9− | 1.0+ |
| 2001 09 08 | 704 | 0.4− | 0.9+ | 2001 09 23 | 704 | 0.0 | 0.2− | 2006 11 14 | 703 | (0.1+ | 1.9−) |
| 2001 09 08 | 704 | 0.5+ | 0.1+ | 2001 10 11 | 644 | 0.2− | 0.7+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2001 09 08 | 704 | 0.0 | 0.3+ | 2001 10 11 | 644 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2001 09 08 | 704 | 0.8+ | 0.9+ | 2001 10 11 | 644 | 0.0 | 1.0+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2001 09 08 | 704 | 0.2+ | 0.8+ | 2001 10 21 | 704 | 0.1− | 0.9− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 699 | 0.0 | 0.6+ | 2001 10 21 | 704 | 1.1+ | 0.8+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2001 09 11 | 699 | 0.2+ | 0.2− | 2001 10 21 | 704 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2001 09 11 | 699 | 0.2− | 0.6+ | 2001 10 21 | 704 | 1.3− | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2001 09 11 | 699 | 0.3− | 0.4+ | 2003 01 05 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2003 01 05 | 704 | 0.6+ | 0.4+ | | | | |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2003 01 05 | 704 | 0.5+ | 0.5+ | | | | |

**(139717)∗ 2001 QS$_{240}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.91100 | | (2000.0) | | | |
| $n$ | 0.22207989 | $\omega$ | 150.39598 | | +0.80722447 | +0.59023354 |
| $a$ | 2.7006185 | $\Omega$ | 173.42693 | | −0.54754361 | +0.75109480 |
| $e$ | 0.0661239 | $i$ | 1.80611 | | −0.22041925 | +0.29577181 |
| $P$ | 4.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.9+ | 0.3+ | 2001 09 23 | 704 | 0.7− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.7− |
| 2001 08 24 | 704 | 0.3− | 0.6+ | 2001 10 17 | 644 | 0.1+ | 1.3+ | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2001 08 24 | 704 | 1.3+ | 0.5+ | 2001 10 17 | 644 | 0.4+ | 1.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2001 08 25 | 691 | 0.1− | 0.3− | 2001 10 17 | 644 | 0.3+ | 1.2+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2001 08 25 | 691 | 0.3− | 0.1+ | 2004 03 27 | 704 | (1.8+ | 1.7+) | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2001 08 25 | 691 | 0.1− | 0.1+ | 2004 03 27 | 704 | 1.0+ | 1.4+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2004 03 27 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 695 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2004 03 29 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2004 03 29 | 691 | 0.5+ | 0.4+ | 2006 10 19 | 695 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2004 03 29 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 695 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2004 03 31 | 291 | 0.4+ | 0.7+ | 2006 11 25 | 291 | 0.0 | 0.6+ |
| 2001 09 19 | 644 | 0.1+ | 0.6+ | 2004 03 31 | 291 | 0.2+ | 0.7+ | 2006 11 25 | 291 | 0.1− | 0.5+ |
| 2001 09 19 | 644 | 0.1+ | 0.7+ | 2004 03 31 | 291 | 0.3+ | 0.7+ | 2006 11 25 | 291 | 0.3− | 0.1− |
| 2001 09 19 | 644 | 0.2+ | 0.9+ | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 1.3− | 0.8− | 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.8− | 0.2− | 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 1.2− | 0.7+ | 2005 05 19 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2005 05 19 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.7+ |
| 2001 09 21 | 704 | 0.6− | 0.6+ | 2005 05 19 | G96 | 0.2− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2001 09 22 | 704 | 1.3+ | 0.1+ | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 11 27 | 703 | 1.4− | 0.3− |
| 2001 09 22 | 704 | 0.1+ | 0.2+ | 2005 07 04 | G96 | 0.7− | 0.1+ | 2006 11 27 | 703 | 0.2+ | 0.3+ |
| 2001 09 22 | 704 | 0.2+ | 0.2+ | 2005 07 04 | G96 | 0.5− | 0.6+ | 2006 11 27 | 703 | 0.4+ | 1.0− |
| 2001 09 23 | 691 | 0.0 | 0.1+ | 2005 07 04 | G96 | 0.2− | 0.4+ | 2006 11 27 | 703 | 2.1+ | 1.5− |
| 2001 09 23 | 704 | 0.7+ | 0.3− | 2005 07 04 | G96 | 0.0 | 0.4+ | 2006 12 01 | 691 | 0.5− | 0.5+ |
| 2001 09 23 | 691 | 0.1− | 0.2+ | 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.2+ |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2005 07 09 | 691 | 0.2+ | 0.1+ | | | | |
| 2001 09 23 | 691 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.6− | 1.0− | | | | |

**(139718)∗ 2001 QW$_{240}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.89359 | | (2000.0) | | | |
| $n$ | 0.19319115 | $\omega$ | 189.60408 | | +0.97126444 | −0.23781943 |
| $a$ | 2.9635430 | $\Omega$ | 184.18870 | | +0.22597296 | +0.93378369 |
| $e$ | 0.0457400 | $i$ | 7.34930 | | +0.07471011 | +0.26737602 |
| $P$ | 5.10 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 07 | 691 | 0.0 | 0.0 | 2002 12 14 | 704 | (1.8+ | 1.4−) | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 1999 04 07 | 691 | 0.0 | 0.0 | 2002 12 14 | 704 | 0.6− | 0.9+ | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 1999 04 07 | 691 | 0.3+ | 0.2+ | 2002 12 14 | 704 | 0.7+ | 0.2+ | 2006 08 30 | 704 | 0.6− | 0.1+ |
| 1999 04 09 | 691 | 0.5− | 0.4− | 2004 03 12 | 644 | 0.1+ | 0.7+ | 2006 08 30 | 704 | 1.3− | 0.9+ |
| 1999 04 09 | 691 | 0.9− | 1.5− | 2004 03 12 | 644 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.1− |
| 1999 04 17 | 691 | 0.0 | 0.8− | 2004 03 12 | 644 | 0.3+ | 0.6+ | 2006 08 30 | 704 | 0.0 | 0.4− |
| 1999 04 17 | 691 | 0.2+ | 0.5− | 2004 03 15 | 691 | 0.1− | 0.6+ | 2006 09 12 | 703 | 0.2− | 0.2− |
| 1999 04 17 | 691 | 0.0 | 0.4− | 2004 03 15 | 703 | 0.6+ | 0.4+ | 2006 09 12 | 703 | 0.3+ | 0.3+ |
| 2001 08 24 | 704 | 0.5+ | 0.5+ | 2004 03 15 | 703 | 0.4− | 0.8− | 2006 09 12 | 703 | 0.9− | 0.3+ |
| 2001 08 24 | 704 | 0.9+ | 0.3− | 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 09 12 | 703 | 0.4− | 0.1− |
| 2001 08 24 | 704 | (1.3+ | 1.8+) | 2004 03 15 | 703 | 0.8− | 0.0 | 2006 09 16 | 699 | (0.0 | 1.5+) |
| 2001 08 27 | 691 | 0.4+ | 0.0 | 2004 03 15 | 703 | 0.1+ | 1.1+ | 2006 09 16 | 699 | 0.1+ | 0.3− |
| 2001 08 27 | 691 | 0.1+ | 0.0 | 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 09 16 | 699 | 0.1+ | 0.0 |
| 2001 08 27 | 691 | 0.3+ | 0.2− | 2004 03 16 | 704 | 0.4− | 0.1− | 2006 09 16 | 699 | 0.3+ | 0.4+ |
| 2001 09 16 | 704 | 0.2− | 0.2− | 2004 03 16 | 704 | 0.0 | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.0 | 0.6+ | 2004 03 16 | 704 | 0.6− | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.2− | 0.4+ | 2004 03 16 | 704 | (1.7+ | 1.7+) | 2006 09 16 | 644 | 0.2+ | 0.4+ |
| 2001 09 18 | 699 | 0.0 | 1.1+ | 2004 03 18 | 704 | (1.7+ | 1.8+) | 2006 09 17 | 703 | 0.2+ | 0.2− |
| 2001 09 18 | 699 | 1.4− | 1.2+ | 2004 03 18 | 704 | 0.5+ | 1.0+ | 2006 09 17 | 703 | 0.4+ | 0.3+ |
| 2001 09 18 | 699 | 1.2− | 1.1+ | 2004 03 18 | 704 | 0.6+ | 0.8+ | 2006 09 17 | 703 | 0.1+ | 0.4− |
| 2001 09 18 | 699 | 0.7− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2004 03 18 | 704 | 1.2+ | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.8− |
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2004 03 20 | 699 | (1.7+ | 0.5+) | 2006 09 17 | 704 | 0.8− | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.0 | 2004 03 20 | 699 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.8− | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.3− | 2004 03 20 | 704 | 0.0 | 0.9+ | 2006 09 20 | 699 | 0.6+ | 0.5+ |
| 2001 09 20 | 704 | 0.1− | 0.5− | 2004 03 20 | 704 | 1.0+ | 1.0+ | 2006 09 20 | 704 | 0.4+ | 0.0 |
| 2001 09 22 | 704 | 0.3+ | 0.2− | 2004 03 20 | 704 | (2.2− | 0.6+) | 2006 09 20 | 704 | 0.2+ | 0.7+ |
| 2001 09 22 | 704 | 0.1+ | 0.0 | 2004 03 20 | 699 | 0.5− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.6− |
| 2001 09 22 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.8+ | 1.0+ | 2006 09 20 | 704 | 0.4+ | 0.4− |
| 2001 09 22 | 704 | 0.1+ | 0.3− | 2004 03 20 | 704 | 1.2+ | 1.2+ | 2006 09 20 | 704 | 0.6+ | 0.0 |
| 2001 09 23 | 704 | 0.0 | 0.3− | 2004 03 20 | 699 | 0.3+ | 0.4+ | 2006 09 20 | 699 | 0.2+ | 0.1+ |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2004 03 23 | 691 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.3− | 0.4+ |
| 2001 09 23 | 704 | 0.1+ | 0.1− | 2004 03 23 | 691 | 0.1− | 0.6+ | 2006 09 20 | 699 | 0.9+ | 1.1+ |
| 2001 09 23 | 704 | 0.0 | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.5+ | 0.5+ |
| 2001 09 23 | 704 | 0.5− | 0.4− | 2004 03 27 | 704 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.5+ |
| 2001 09 24 | 644 | 0.1+ | 0.7− | 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.2− |
| 2001 09 24 | 644 | 0.3− | 0.8− | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2001 09 24 | 644 | 0.0 | 0.8− | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2001 09 26 | 699 | 0.4+ | 1.2+ | 2004 03 27 | 704 | 0.4+ | 1.1− | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2001 09 26 | 699 | 0.1− | 0.5+ | 2004 04 12 | 699 | 0.9+ | 0.1− | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2001 09 26 | 699 | 0.9− | 0.7− | 2004 04 12 | 699 | 0.9+ | 0.3− | 2006 09 30 | 699 | 1.0+ | 0.5+ |
| 2001 09 26 | 699 | 0.3− | 0.1+ | 2004 04 12 | 699 | (1.3− | 1.6+) | 2006 09 30 | 699 | 0.4+ | 0.4+ |
| 2001 10 11 | 644 | 0.3+ | 0.2+ | 2004 04 12 | 699 | 1.2− | 0.5+ | 2006 09 30 | 699 | 1.2− | 1.2+ |
| 2001 10 11 | 644 | 0.2+ | 0.5+ | 2004 04 21 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 699 | 0.8− | 0.7+ |
| 2001 10 11 | 644 | 0.3+ | 0.2+ | 2004 04 21 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 703 | (1.0+ | 1.6+) |
| 2001 10 14 | 704 | 0.8− | 0.3+ | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | (0.6+ | 1.8+) |
| 2001 10 14 | 704 | 0.6− | 0.1− | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.1+ |
| 2001 10 14 | 704 | (1.6− | 0.8+) | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 1.4− | 1.3+ |
| 2001 10 17 | 644 | 0.4− | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2001 10 17 | 644 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2001 10 17 | 644 | 0.4− | 0.3− | 2006 08 22 | 644 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2001 10 20 | 704 | 0.8+ | 0.7− | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 1.4− | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.5+ | 0.9+ | 2006 08 28 | 703 | 1.3− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2001 10 20 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.2− | 0.1− | 2006 08 28 | 703 | 1.4− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 0.8− | 0.5+ | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 10 24 | 704 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 1.1+ | 1.6− |
| 2001 10 24 | 704 | 0.7− | 0.0 | 2006 08 28 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.8− |
| 2002 12 14 | 704 | 0.3− | 0.4− | 2006 08 29 | 691 | 0.1+ | 0.1+ | | | | |

**(139719)∗ 2001 QH$_{241}$ = 1995 DR$_8$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17970)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.99288 | | (2000.0) | | | |
| $n$ | 0.23698584 | $\omega$ | 18.19078 | | +0.92234351 | −0.38635002 |
| $a$ | 2.5861544 | $\Omega$ | 4.54281 | | +0.34789848 | +0.82593876 |
| $e$ | 0.1387182 | $i$ | 2.90463 | | +0.16807465 | +0.41055918 |
| $P$ | 4.16 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.1+ | 0.8+ | 2001 09 23 | 704 | 0.6− | 0.1− | 2005 08 05 | 644 | 0.1+ | 0.2+ |
| 1995 02 24 | 691 | 0.2− | 0.6+ | 2001 09 23 | 704 | 0.3− | 0.4− | 2005 08 05 | 644 | 0.0 | 0.0 |
| 1995 02 24 | 691 | 0.3+ | 0.8+ | 2001 09 25 | 644 | 0.0 | 0.6+ | 2005 08 29 | 704 | 1.4− | 0.8+ |
| 1995 03 02 | 691 | 1.6+ | 1.1+ | 2001 09 25 | 644 | 0.3+ | 0.7+ | 2005 08 29 | 704 | (2.5− | 0.6+) |
| 1995 03 02 | 691 | 0.3+ | 1.0+ | 2001 09 25 | 644 | 0.3+ | 0.4+ | 2005 08 29 | 704 | 0.0 | 0.8+ |
| 1995 03 02 | 691 | 0.4+ | 0.9+ | 2001 09 26 | 699 | 0.1+ | 0.3+ | 2005 08 29 | 704 | 1.0− | 0.4+ |
| 1995 03 07 | 691 | 0.0 | 0.1− | 2001 09 26 | 699 | 0.8+ | 0.3− | 2005 08 29 | 704 | 1.1+ | 0.6+ |
| 1995 03 07 | 691 | 0.0 | 0.5− | 2001 09 26 | 699 | 0.1− | 0.5+ | 2005 08 29 | 699 | 0.3− | 0.6− |
| 1995 03 07 | 691 | 0.2− | 0.2+ | 2001 09 26 | 699 | 0.7− | 0.8+ | 2005 08 29 | 699 | 0.4+ | 0.1+ |
| 1997 10 30 | 704 | 0.2− | 0.2+ | 2001 09 26 | 704 | 0.4− | 0.7+ | 2005 08 29 | 699 | 0.0 | 0.2− |
| 1997 10 30 | 704 | 0.4− | 1.2+ | 2001 09 26 | 704 | 0.3− | 0.8+ | 2005 08 29 | 699 | 0.4+ | 0.8− |
| 1997 10 30 | 704 | 0.8− | 0.4+ | 2001 09 26 | 704 | 0.3− | 0.2+ | 2005 09 05 | 703 | 0.3− | 0.1− |
| 1997 10 30 | 704 | 0.7− | 0.2− | 2001 09 26 | 704 | 0.1+ | 0.3+ | 2005 09 05 | 703 | 0.2+ | 0.8+ |
| 1997 10 30 | 704 | 0.8+ | 0.1− | 2001 09 26 | 704 | 1.0− | 1.0+ | 2005 09 05 | 703 | 0.2+ | 0.3+ |
| 2001 08 24 | 704 | 0.2− | 0.1+ | 2001 10 13 | 704 | 0.3− | 0.2− | 2005 09 05 | 703 | 0.1+ | 1.2− |
| 2001 08 24 | 704 | 0.2− | 0.4+ | 2001 10 13 | 704 | 0.1− | 0.4+ | 2005 09 08 | 704 | 0.9− | 0.8+ |
| 2001 08 24 | 704 | 0.0 | 0.3+ | 2001 10 13 | 704 | 0.1− | 0.0 | 2005 09 08 | 704 | 0.3− | 0.4+ |
| 2001 08 27 | 699 | (0.2+ | 1.8+) | 2001 10 13 | 704 | 0.2+ | 0.5+ | 2005 09 08 | 704 | 0.0 | 0.8+ |
| 2001 08 27 | 699 | (2.1+ | 0.7+) | 2001 10 13 | 704 | 0.3− | 0.4+ | 2005 09 13 | 703 | 0.1− | 0.9− |
| 2001 08 27 | 699 | 0.0 | 0.0 | 2001 10 15 | 704 | 0.6− | 0.1+ | 2005 09 13 | 703 | 0.4+ | 0.9− |
| 2001 08 27 | 699 | 0.7− | 0.3+ | 2001 10 15 | 704 | 0.6+ | 0.4+ | 2005 09 13 | 703 | 0.2− | 0.6− |
| 2001 09 11 | 699 | 0.0 | 0.3+ | 2001 10 15 | 704 | 0.3+ | 0.6+ | 2005 09 13 | 703 | 0.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.0 | 0.3+ | 2001 10 17 | 644 | 0.4+ | 1.2+ | 2005 09 22 | 644 | 0.1+ | 0.1− |
| 2001 09 11 | 699 | 0.0 | 0.1+ | 2001 10 17 | 644 | 0.2+ | 1.1+ | 2005 09 22 | 644 | 0.3+ | 0.1− |
| 2001 09 11 | 699 | 0.0 | 0.4+ | 2001 10 17 | 644 | 0.0 | 1.0+ | 2005 09 22 | 644 | 0.2− | 0.2− |
| 2001 09 14 | 644 | 0.1+ | 0.3+ | 2001 10 17 | 644 | 0.4+ | 1.1+ | 2005 09 24 | 644 | 0.3− | 0.1+ |
| 2001 09 14 | 644 | 0.3− | 0.2+ | 2001 10 17 | 644 | 0.4+ | 1.1+ | 2005 09 24 | 644 | 0.1+ | 0.3− |
| 2001 09 14 | 644 | 0.2− | 0.5+ | 2001 10 17 | 644 | 0.1+ | 1.3+ | 2005 09 24 | 644 | 0.1+ | 0.3− |
| 2001 09 16 | 704 | 0.6− | 0.1+ | 2001 10 20 | 704 | 0.1− | 0.1+ | 2005 09 30 | 699 | 0.3− | 0.0 |
| 2001 09 16 | 704 | 0.4− | 0.3+ | 2001 10 20 | 704 | 0.1− | 0.2+ | 2005 09 30 | 699 | 0.1+ | 0.4+ |
| 2001 09 16 | 704 | 0.8− | 0.5+ | 2001 10 20 | 704 | 0.7− | 0.1+ | 2005 09 30 | 699 | 0.3+ | 1.3+ |
| 2001 09 16 | 704 | 1.0− | 0.3+ | 2001 10 20 | 704 | 0.3− | 0.2− | 2005 09 30 | 699 | 1.2− | 1.0− |
| 2001 09 18 | 699 | 0.2− | 0.1+ | 2001 10 20 | 704 | 0.1− | 0.1+ | 2005 10 03 | G96 | 0.2− | 0.1+ |
| 2001 09 18 | 699 | 0.1− | 0.5+ | 2001 10 23 | 704 | 0.4− | 0.5+ | 2005 10 03 | G96 | 0.2− | 0.1+ |
| 2001 09 18 | 699 | 0.1+ | 0.5+ | 2001 10 23 | 704 | 0.0 | 0.4− | 2005 10 03 | G96 | 0.2− | 0.2+ |
| 2001 09 18 | 699 | 0.6− | 0.3+ | 2001 10 23 | 704 | 0.6− | 0.3+ | 2005 10 03 | G96 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2001 10 24 | 704 | 0.3− | 1.4+ | 2005 10 29 | G96 | 0.5+ | 0.3− |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2001 10 24 | 704 | 0.4− | 0.0 | 2005 10 29 | G96 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2001 10 24 | 704 | 0.2+ | 0.1− | 2005 10 29 | G96 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2001 10 24 | 704 | 0.1− | 0.7− | 2005 10 29 | G96 | 0.7+ | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2001 11 20 | 704 | 0.6− | 0.0 | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2001 11 20 | 704 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.3− |
| 2001 09 21 | 704 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2004 05 09 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.9+ | 0.3+ |
| 2001 09 21 | 704 | 0.1+ | 0.2− | 2004 05 09 | 691 | 0.0 | 0.4+ | 2006 11 25 | G96 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2004 05 09 | 691 | 0.0 | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 0.0 | 1.1− | 2004 05 09 | 691 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2001 09 22 | 704 | 0.7+ | 0.5− | 2004 05 09 | 691 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2001 09 22 | 704 | 1.2+ | 0.9− | 2004 05 09 | 691 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 1.0+ | 0.7− | 2005 07 28 | 644 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2001 09 22 | 704 | 0.6+ | 1.0− | 2005 07 28 | 644 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.6− | 0.5+ | 2005 07 28 | 644 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2001 09 23 | 704 | 0.6− | 0.2− | 2005 08 05 | 644 | 0.0 | 0.1+ | | | | |

**(139720)∗ 2001 QM$_{241}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.31264 | | (2000.0) | | | |
| $n$ | 0.18097129 | $\omega$ | 138.00819 | | +0.79832573 | +0.60218492 |
| $a$ | 3.0954914 | $\Omega$ | 184.98045 | | −0.57182716 | +0.75431786 |
| $e$ | 0.1457484 | $i$ | 4.64095 | | −0.18891723 | +0.26149164 |
| $P$ | 5.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.1+ | 0.8+ | 2001 09 23 | 704 | 0.7− | 0.2+ | 2004 02 12 | 691 | 0.0 | 0.3+ |
| 1994 04 06 | 691 | 0.3+ | 0.8+ | 2001 09 23 | 704 | 0.1− | 0.5+ | 2004 02 12 | 691 | 0.4+ | 0.6+ |
| 1994 04 06 | 691 | 0.3+ | 0.8+ | 2001 09 23 | 704 | 0.3− | 0.2+ | 2005 03 13 | G96 | 0.0 | 0.2+ |
| 2001 07 22 | 644 | 0.0 | 0.2+ | 2001 09 24 | 704 | 0.1+ | 0.2− | 2005 03 13 | G96 | 0.3− | 0.6+ |
| 2001 07 22 | 644 | 0.1− | 0.6+ | 2001 09 24 | 704 | 0.0 | 0.7− | 2005 03 13 | G96 | 0.4− | 0.2+ |
| 2001 07 22 | 644 | 0.2+ | 0.6+ | 2001 09 24 | 704 | 1.2− | 0.2+ | 2005 03 13 | G96 | (0.2− | 1.8+) |
| 2001 08 24 | 704 | 0.7+ | 0.3+ | 2001 09 24 | 704 | 0.8− | 0.3− | 2005 03 14 | G96 | 0.1+ | 0.3+ |
| 2001 08 24 | 704 | 1.1+ | 0.1+ | 2001 09 26 | 704 | 0.5− | 0.1− | 2005 03 14 | G96 | 0.5+ | 0.1+ |
| 2001 08 24 | 704 | 0.6− | 0.3+ | 2001 09 26 | 704 | 0.0 | 0.3− | 2005 03 14 | G96 | 0.1− | 0.2+ |
| 2001 08 27 | 699 | 0.1+ | 0.6− | 2001 09 26 | 704 | 0.2− | 0.2− | 2005 03 14 | G96 | 0.0 | 0.0 |
| 2001 08 27 | 699 | (0.3+ | 1.8+) | 2001 09 26 | 704 | 0.2− | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.4+ |
| 2001 08 27 | 699 | 0.3+ | 0.2+ | 2001 09 26 | 704 | 0.3+ | 1.0+ | 2005 04 11 | G96 | 0.1− | 0.4+ |
| 2001 08 27 | 699 | 1.3+ | 0.5+ | 2001 10 13 | 704 | 0.7+ | 1.2+ | 2005 04 11 | G96 | 0.0 | 0.3+ |
| 2001 09 10 | 644 | 0.7− | 0.4− | 2001 10 13 | 704 | 0.3− | 0.6+ | 2005 04 11 | G96 | 0.2+ | 0.3+ |
| 2001 09 10 | 644 | 1.0− | 0.5− | 2001 10 13 | 704 | 0.2+ | 1.2+ | 2005 05 11 | 807 | 0.3+ | 0.3+ |
| 2001 09 10 | 644 | 1.2− | 0.6− | 2001 10 17 | 644 | 0.4+ | 0.3− | 2005 05 11 | 807 | 0.2+ | 0.4+ |
| 2001 09 11 | 699 | 0.3+ | 0.0 | 2001 10 17 | 644 | (0.1− | 1.6+) | 2006 08 11 | 644 | 0.3+ | 0.2− |
| 2001 09 11 | 699 | 0.2− | 0.7− | 2001 10 17 | 644 | 0.1+ | 0.3− | 2006 08 11 | 644 | 0.2+ | 0.2+ |
| 2001 09 11 | 699 | 0.0 | 0.6+ | 2001 10 17 | 644 | (0.3− | 2.0+) | 2006 08 11 | 644 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.6+ | 0.8+ | 2001 10 17 | 644 | 0.4+ | 0.3− | 2006 08 14 | 644 | 0.3+ | 0.0 |
| 2001 09 16 | 644 | 0.4− | 0.6+ | 2001 10 17 | 644 | (0.3− | 2.0+) | 2006 08 14 | 644 | 0.1− | 0.2− |
| 2001 09 16 | 644 | 0.2− | 0.5+ | 2001 10 17 | 644 | 0.5+ | 0.1− | 2006 08 14 | 644 | 0.2+ | 0.1+ |
| 2001 09 16 | 644 | 0.4− | 0.3+ | 2001 10 17 | 644 | 0.1+ | 0.4− | 2006 08 15 | 644 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.4− | 0.4+ | 2001 10 17 | 644 | 0.3− | 0.5− | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2001 09 16 | 704 | 0.0 | 1.2+ | 2001 10 20 | 704 | 0.4− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.6+ | 0.2+ | 2001 10 20 | 704 | 0.4+ | 0.2− | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.1+ | 2001 10 20 | 704 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2001 10 20 | 704 | 0.1− | 0.3− | 2006 09 13 | 644 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.6+ | 2001 10 23 | 704 | (1.1− | 1.6+) | 2006 10 22 | G96 | 0.3+ | 0.7− |
| 2001 09 20 | 704 | 0.2− | 0.8+ | 2001 10 23 | 704 | 0.1− | 1.4+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2001 09 20 | 704 | 0.4− | 0.4+ | 2001 10 23 | 704 | 0.7− | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2001 09 20 | 704 | 0.7− | 0.6+ | 2001 10 23 | 704 | 0.7+ | 1.1+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 0.4− | 0.3+ | 2001 10 24 | 704 | 0.0 | 0.9+ | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2001 09 22 | 704 | 0.6− | 0.5+ | 2001 10 24 | 704 | 0.3− | 0.8+ | 2006 11 23 | G96 | 0.7− | 0.7− |
| 2001 09 22 | 704 | 0.2+ | 0.3+ | 2001 10 24 | 704 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.3+ | 0.8+ | 2001 10 24 | 704 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.4− | 0.6+ | 2001 10 24 | 704 | 0.2+ | 1.1+ | | | | |
| 2001 09 23 | 704 | 0.2− | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.6+ | | | | |

**(139721)∗ 2001 QA$_{243}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.60306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20026538 | $\omega$ | 48.48363 | | +0.05598130 | −0.99796069 | |
| $a$ | 2.8933355 | $\Omega$ | 38.33980 | | +0.90068825 | +0.03722217 | |
| $e$ | 0.0299707 | $i$ | 2.83383 | | +0.43084425 | +0.05185533 | |
| $P$ | 4.92 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.1+ | 0.2+ | 2001 10 23 | 704 | 0.1+ | 0.8+ | 2004 04 16 | 704 | 1.2+ | 0.4+ |
| 2001 07 19 | 644 | 0.3− | 0.3+ | 2001 10 23 | 704 | 0.6+ | 0.5− | 2004 04 21 | 704 | 0.3+ | 0.7+ |
| 2001 07 19 | 644 | 0.2− | 0.4+ | 2001 10 23 | 704 | 0.2− | 0.1+ | 2004 04 21 | 704 | 0.3+ | 0.1− |
| 2001 08 24 | 704 | (1.0− | 1.9−) | 2001 10 24 | 704 | 0.4− | 0.1+ | 2004 04 21 | 704 | 0.1− | 1.0+ |
| 2001 08 24 | 704 | (0.7− | 2.4−) | 2001 10 24 | 704 | 0.1− | 0.6− | 2004 04 21 | 704 | 0.2− | 1.2+ |
| 2001 08 24 | 704 | (1.4− | 2.4−) | 2001 10 24 | 704 | 0.6− | 0.6− | 2004 04 21 | 704 | 0.1+ | 0.9+ |
| 2001 08 27 | 699 | (1.7− | 0.3−) | 2001 10 24 | 704 | 1.1− | 0.7− | 2004 04 22 | 704 | 0.5− | 1.5+ |
| 2001 08 27 | 699 | 0.2− | 0.7+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.8+ | 0.3+ |
| 2001 08 27 | 699 | 0.2+ | 0.4+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.1− | 0.9+ |
| 2001 08 27 | 699 | (2.0− | 0.8−) | 2002 01 18 | 291 | 0.5+ | 0.7+ | 2004 04 22 | 704 | 0.8+ | 1.0+ |
| 2001 09 11 | 699 | 0.2− | 0.1− | 2002 01 18 | 291 | 1.4+ | 1.0+ | 2004 04 22 | 704 | 0.3+ | 1.0+ |
| 2001 09 11 | 699 | 0.8− | 0.6− | 2002 01 18 | 291 | 0.5+ | 1.0+ | 2004 04 22 | 704 | 0.1+ | 0.7+ |
| 2001 09 11 | 699 | 1.4− | 0.2+ | 2002 12 11 | 704 | 0.0 | 0.5− | 2004 04 22 | 704 | 0.1+ | 0.8+ |
| 2001 09 11 | 699 | 0.3− | 0.8− | 2002 12 11 | 704 | 0.2− | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.7+ |
| 2001 09 16 | 704 | 1.1− | 0.5+ | 2002 12 11 | 704 | 1.2− | 0.6− | 2004 04 22 | 703 | 1.3+ | 0.6+ |
| 2001 09 16 | 704 | 0.2− | 0.5− | 2002 12 31 | 858 | 1.0+ | 0.9+ | 2004 04 22 | 704 | 0.1− | 1.2+ |
| 2001 09 16 | 704 | (1.6− | 0.8+) | 2002 12 31 | 858 | 1.0+ | 0.9+ | 2004 04 22 | 704 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | 0.2− | 1.4+ | 2002 12 31 | 858 | 0.3− | 0.8+ | 2004 04 22 | 703 | 0.7+ | 0.7+ |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2003 01 02 | 858 | 0.6− | 1.3+ | 2004 04 22 | 703 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 0.5− | 0.4+ | 2003 01 02 | 858 | 0.4+ | 0.5+ | 2004 04 22 | 703 | (1.4+ | 1.9+) |
| 2001 09 19 | 704 | 0.4− | 0.6+ | 2003 01 02 | 858 | (0.4− | 1.7+) | 2006 08 24 | 644 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 1.2+ | 0.4+ | 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2003 01 05 | 704 | 0.1+ | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 1.3+ | 0.2+ | 2003 01 05 | 704 | 1.1− | 1.4+ | 2006 09 14 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2003 01 05 | 704 | 0.1− | 0.3+ | 2006 09 14 | 691 | 1.0− | 0.4+ |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2004 03 14 | 644 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2004 03 14 | 644 | 0.2+ | 0.4+ | 2006 09 15 | 704 | 0.5− | 0.3− |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2004 03 14 | 644 | 0.4+ | 0.5+ | 2006 09 15 | 704 | 0.6+ | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 1.1+ | 2004 03 16 | 704 | 0.3+ | 1.2+ | 2006 09 15 | 704 | 0.8− | 0.8+ |
| 2001 09 21 | 704 | 0.1+ | 1.2+ | 2004 03 16 | 704 | 0.4+ | 1.0+ | 2006 09 15 | 704 | 0.5+ | 1.4+ |
| 2001 09 21 | 704 | 0.2+ | 1.5+ | 2004 03 16 | 704 | 0.4+ | 0.8+ | 2006 09 16 | 644 | 0.1+ | 0.4+ |
| 2001 09 21 | 704 | (0.1− | 1.7+) | 2004 03 16 | 704 | 0.8+ | 0.5− | 2006 09 16 | 644 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | (1.4+ | 1.8+) | 2004 03 18 | 704 | 0.5− | 0.5− | 2006 09 16 | 644 | 0.2− | 0.0 |
| 2001 09 23 | 704 | 0.0 | 0.6+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 09 17 | 704 | (1.0− | 1.8+) |
| 2001 09 23 | 704 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.6+ | 2006 09 17 | 704 | 0.2− | 1.0+ |
| 2001 09 23 | 704 | 0.2+ | 0.6− | 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.5− | 1.3+ |
| 2001 09 23 | 704 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.5+ | 1.3+ | 2006 09 17 | 704 | 0.6+ | 1.3+ |
| 2001 09 23 | 704 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2004 03 22 | 704 | 0.0 | 1.0+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.4− | 0.6+ | 2004 03 22 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 0.2− | 1.0+ | 2004 03 22 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 699 | 0.5− | 0.1− |
| 2001 09 23 | 704 | 0.3− | 0.7+ | 2004 03 24 | 699 | 0.5+ | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.1+ |
| 2001 09 26 | 704 | 0.6− | 1.0+ | 2004 03 24 | 699 | 0.6+ | 0.9+ | 2006 09 18 | 699 | 0.3− | 0.5+ |
| 2001 09 26 | 704 | 0.2− | 1.5+ | 2004 03 24 | 699 | 0.7+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.7+ |
| 2001 09 26 | 704 | 0.4− | 0.4+ | 2004 03 24 | 699 | 0.8− | 0.4− | 2006 09 27 | 704 | 0.5− | 0.8+ |
| 2001 09 26 | 704 | 0.9− | 0.6+ | 2004 03 27 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.1− |
| 2001 09 26 | 704 | 0.7− | 1.2+ | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 1.0− | 0.3− |
| 2001 10 06 | 644 | 0.9− | 0.6− | 2004 03 27 | 704 | 0.3+ | 0.8+ | 2006 10 01 | 704 | 0.8+ | 0.7+ |
| 2001 10 06 | 644 | 1.1− | 0.6− | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 1.0− | 0.3− |
| 2001 10 06 | 644 | 1.2− | 0.6− | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.6− | 0.3+ |
| 2001 10 13 | 704 | 0.0 | 1.2+ | 2004 03 28 | 704 | (1.8+ | 0.1−) | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2001 10 13 | 704 | 0.7− | 0.4+ | 2004 03 28 | 704 | 0.3+ | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 10 13 | 704 | 1.0− | 1.3+ | 2004 03 28 | 704 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 10 13 | 704 | 0.7− | 0.9+ | 2004 03 28 | 704 | (1.5+ | 0.7+) | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 10 13 | 704 | 1.3− | 0.6+ | 2004 03 28 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 10 16 | 704 | 1.3− | 1.0− | 2004 03 28 | 704 | 0.1+ | 1.0+ | 2006 10 19 | 644 | 0.5− | 0.4+ |
| 2001 10 16 | 704 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.2− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.9+ |
| 2001 10 16 | 704 | 0.1+ | 0.1+ | 2004 03 28 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2001 10 17 | 644 | 0.2− | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 17 | 644 | 0.3− | 0.4+ | 2004 03 31 | 704 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 10 17 | 644 | 0.2− | 0.5+ | 2004 03 31 | 704 | 0.6+ | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 10 19 | 699 | 0.4− | 0.7− | 2004 03 31 | 704 | 0.1+ | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 10 19 | 699 | 1.2+ | 0.2− | 2004 03 31 | 704 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 10 19 | 699 | 1.2+ | 0.3− | 2004 04 15 | 699 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 10 19 | 699 | 0.1+ | 0.5+ | 2004 04 15 | 699 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2004 04 15 | 699 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.0 | 0.5+ |
| 2001 10 20 | 704 | 0.1+ | 0.3− | 2004 04 15 | 699 | 0.0 | 1.2+ | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.4+ | 0.1− | 2004 04 16 | 704 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.2− | 0.3− | 2004 04 16 | 704 | 1.4+ | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2001 10 20 | 704 | 0.1− | 0.3− | 2004 04 16 | 704 | 0.1+ | 1.0+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2001 10 23 | 704 | 0.5+ | 1.4− | 2004 04 16 | 704 | 1.2+ | 0.6+ | 2006 11 14 | G96 | 0.5− | 0.1− |

**(139722)∗ 2001 QU$_{244}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.90220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20872936 | $\omega$ | 341.92093 | | +0.94595858 | +0.32428413 | |
| $a$ | 2.8145806 | $\Omega$ | 359.15263 | | −0.28387917 | +0.82588187 | |
| $e$ | 0.0560231 | $i$ | 5.71591 | | −0.15676408 | +0.46125799 | |
| $P$ | 4.72 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 1.4+ | 0.1− | 2002 12 11 | 704 | 0.1− | 0.0 | 2004 04 28 | 608 | 0.5+ | 0.4− |
| 2001 08 24 | 704 | 1.1+ | 0.6+ | 2002 12 11 | 704 | (1.7+ | 0.5−) | 2005 05 30 | E12 | (1.2− | 1.6+) |
| 2001 08 24 | 704 | 1.0+ | 1.3+ | 2002 12 14 | 704 | 0.3+ | 0.4+ | 2005 05 30 | E12 | 1.1− | 0.4+ |
| 2001 08 24 | 704 | 0.7+ | 1.2+ | 2002 12 14 | 704 | 0.2+ | 0.4+ | 2005 05 30 | E12 | 0.5− | 0.1− |
| 2001 08 27 | 699 | 0.6− | 0.3+ | 2002 12 14 | 704 | 1.0+ | 1.3− | 2005 05 30 | E12 | 0.3− | 0.5+ |
| 2001 08 27 | 699 | 0.3− | 0.5+ | 2002 12 30 | 704 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.1+ |
| 2001 08 27 | 699 | 0.3− | 0.1+ | 2002 12 30 | 704 | 0.6+ | 0.0 | 2006 09 25 | 704 | 0.1− | 0.0 |
| 2001 08 27 | 699 | 0.9− | 0.7+ | 2002 12 30 | 704 | 0.8+ | 0.0 | 2006 09 25 | 704 | 0.6− | 0.1− |
| 2001 09 11 | 699 | 0.8+ | 0.4+ | 2003 01 05 | 704 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.6− | 0.3+ |
| 2001 09 11 | 699 | 0.4− | 0.3+ | 2003 01 05 | 704 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.5+ | 0.1+ |
| 2001 09 11 | 699 | 0.4+ | 0.0 | 2003 01 05 | 704 | 0.0 | 0.2+ | 2006 09 29 | 704 | 1.0− | 1.5− |
| 2001 09 11 | 699 | 0.1− | 0.4+ | 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.2− | 0.2+ |
| 2001 09 12 | 916 | 0.5− | 0.2− | 2003 01 05 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2001 09 12 | 916 | (1.7− | 0.9+) | 2003 01 07 | 704 | 0.9+ | 0.3− | 2006 09 29 | 704 | 1.2+ | 0.1+ |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2003 01 07 | 704 | 0.1+ | 1.0− | 2006 09 29 | 704 | 0.6+ | 1.3+ |
| 2001 09 16 | 704 | 0.1+ | 0.9+ | 2003 01 07 | 704 | 0.0 | 1.1− | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 2001 09 16 | 704 | 1.4+ | 0.6+ | 2003 01 07 | 704 | 0.4+ | 1.3− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2001 09 18 | 699 | 1.1− | 0.4+ | 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2001 09 18 | 699 | 0.7− | 0.1+ | 2003 01 09 | 704 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2001 09 18 | 699 | (2.4− | 0.7+) | 2003 01 09 | 704 | 0.9+ | 0.9− | 2006 10 11 | 691 | 0.1− | 0.0 |
| 2001 09 18 | 699 | 0.4− | 0.5+ | 2003 01 09 | 704 | 1.0+ | 0.4− | 2006 10 11 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2003 01 09 | 704 | 0.3− | 1.1+ | 2006 10 11 | 691 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2003 01 09 | 704 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2003 01 09 | 704 | 0.5− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2003 01 09 | 704 | 0.7+ | 0.8− | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2003 01 09 | 704 | 0.1− | 0.5− | 2006 10 19 | 704 | 0.3− | 0.1+ |
| 2001 09 23 | 704 | 0.1− | 0.3− | 2003 01 12 | J95 | 1.2− | 0.8+ | 2006 10 19 | 704 | 0.9+ | 0.1+ |
| 2001 09 23 | 704 | 0.3− | 0.1+ | 2003 01 12 | J95 | 0.1− | 0.5+ | 2006 10 19 | 704 | 0.3− | 0.2− |
| 2001 09 23 | 704 | 0.1+ | 0.1− | 2003 01 12 | J95 | 1.3− | 0.0 | 2006 10 19 | 704 | 0.9+ | 0.3− |
| 2001 09 23 | 704 | 0.2+ | 0.0 | 2003 02 01 | 704 | 0.6+ | 0.7− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2003 02 01 | 704 | 0.4+ | 0.7− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.2+ | 0.4+ | 2003 02 01 | 704 | 0.6+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.5+ | 0.6− | 2006 10 21 | 691 | 0.4− | 0.1− |
| 2001 09 23 | 704 | 0.2+ | 0.4+ | 2003 02 04 | 704 | 1.2+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 09 24 | 704 | 0.5− | 0.4+ | 2003 02 04 | 704 | 1.4+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 09 24 | 704 | 0.7− | 0.2+ | 2003 02 04 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2001 09 24 | 704 | 0.6− | 0.5+ | 2003 02 04 | 704 | 0.2+ | 1.3+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 09 24 | 704 | 0.2− | 1.2+ | 2004 02 26 | 704 | 1.0+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2001 09 24 | 704 | 0.3− | 0.6+ | 2004 02 26 | 704 | 0.8+ | 0.7+ | 2006 10 29 | 704 | 0.2+ | 0.4+ |
| 2001 09 25 | 699 | 0.9+ | 0.4+ | 2004 02 26 | 704 | 0.0 | 1.1+ | 2006 10 29 | 704 | 0.0 | 0.2− |
| 2001 09 25 | 333 | 0.1− | 0.3− | 2004 02 26 | 704 | 0.8+ | 0.2+ | 2006 10 29 | 704 | 0.4+ | 0.4− |
| 2001 09 25 | 699 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.7+ | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.9+ |
| 2001 09 25 | 333 | 1.5+ | 0.7− | 2004 03 14 | 703 | (0.7− | 1.5+) | 2006 10 29 | 704 | 0.5− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 699 | 0.2+ | 0.4+ | 2004 03 14 | 703 | 1.0− | 1.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 09 25 | 333 | 0.9+ | 0.9+ | 2004 03 14 | 703 | 1.2− | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 09 25 | 699 | 0.2− | 0.3+ | 2004 03 14 | 703 | 0.4− | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 10 06 | 704 | 0.8− | 0.9− | 2004 03 18 | 704 | 1.0+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2001 10 06 | 704 | 0.5− | 0.2− | 2004 03 18 | 704 | 0.8+ | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2001 10 06 | 704 | 0.1+ | 0.3− | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 10 06 | 644 | 0.5− | 0.6+ | 2004 03 18 | 704 | (1.7+ | 0.5+) | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2001 10 06 | 644 | 0.6− | 0.3+ | 2004 03 18 | 704 | 1.4+ | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2001 10 06 | 644 | 0.5− | 0.7+ | 2004 03 27 | 704 | 0.5+ | 0.9+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2001 10 11 | 644 | 0.9− | 0.4+ | 2004 03 27 | 704 | 0.7+ | 1.1+ | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.8− | 0.5+ | 2004 03 27 | 704 | 0.8+ | 0.2+ | 2006 11 14 | 703 | 0.1− | 1.0+ |
| 2001 10 11 | 644 | 0.9− | 0.3+ | 2004 03 27 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 1.1+ |
| 2001 10 13 | 704 | (0.2− | 1.8+) | 2004 03 27 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 703 | 0.8− | 0.7+ |
| 2001 10 13 | 704 | 0.4− | 1.2+ | 2004 03 29 | 691 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.4− | 0.8+ |
| 2001 10 13 | 704 | 0.3− | 0.9+ | 2004 03 29 | 691 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.9+ |
| 2001 10 13 | 699 | 0.1− | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.5− | 0.0 |
| 2001 10 13 | 704 | 0.1− | 1.2+ | 2004 03 31 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.4− | 0.9+ |
| 2001 10 13 | 699 | 0.3− | 0.3+ | 2004 03 31 | 704 | 1.2+ | 0.2+ | 2006 11 18 | 704 | 1.4− | 0.2+ |
| 2001 10 13 | 704 | 0.5− | 1.2+ | 2004 03 31 | 704 | 0.9+ | 0.0 | 2006 11 18 | 704 | 0.9− | 1.3+ |
| 2001 10 13 | 699 | 0.2− | 0.4+ | 2004 04 03 | 608 | 1.5+ | 0.3− | 2006 11 18 | 704 | 0.6− | 0.7+ |
| 2001 10 13 | 699 | 0.0 | 0.4+ | 2004 04 03 | 608 | 0.5+ | 0.9− | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2001 10 16 | 704 | 0.9− | 0.7+ | 2004 04 03 | 608 | 1.4+ | 0.9− | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2001 10 16 | 704 | 0.5− | 0.2+ | 2004 04 11 | 703 | 1.1− | 1.4+ | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2001 10 16 | 704 | 0.9− | 0.3+ | 2004 04 11 | 703 | 1.0− | 1.4+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2001 10 16 | 704 | 0.8− | 0.3+ | 2004 04 11 | 703 | 0.0 | 1.0+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2001 10 16 | 704 | 0.9− | 0.8+ | 2004 04 11 | 703 | 1.0+ | 1.1+ | 2006 11 19 | 704 | 0.8+ | 1.0+ |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2004 04 16 | 644 | 0.2+ | 0.8+ | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2004 04 16 | 644 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.6+ | 0.5+ |
| 2001 10 21 | 683 | 1.1− | 1.3+ | 2004 04 16 | 704 | 0.8− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2001 10 21 | 683 | 1.2− | 0.6− | 2004 04 16 | 644 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2004 04 16 | 704 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2001 10 21 | 683 | 1.3+ | 0.1+ | 2004 04 16 | 704 | 0.9+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.4− | 0.6+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2004 04 20 | 704 | 0.8+ | 0.4+ | 2006 11 22 | 704 | 0.7− | 0.3− |
| 2001 10 25 | 644 | 0.6− | 0.3+ | 2004 04 20 | 704 | (0.7+ | 1.9+) | 2006 11 22 | 704 | 0.5− | 0.3− |
| 2001 10 25 | 644 | 0.6− | 0.2+ | 2004 04 20 | 704 | 0.7+ | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.4+ |
| 2001 10 25 | 644 | 0.7− | 0.0 | 2004 04 20 | 704 | 0.0 | 1.0+ | 2006 11 29 | 704 | 0.2− | 0.4− |
| 2002 12 06 | 704 | 0.9− | 0.0 | 2004 04 23 | 691 | 0.3+ | 0.6+ | 2006 11 29 | 704 | 0.6+ | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2004 04 23 | 691 | 0.0 | 0.7+ | 2006 11 29 | 704 | 0.3− | 0.8+ |
| 2002 12 06 | 704 | 0.9− | 0.4− | 2004 04 23 | 691 | 0.1+ | 0.6+ | 2006 11 29 | 704 | 1.2+ | 0.0 |
| 2002 12 11 | 704 | 0.2− | 0.4+ | 2004 04 28 | 608 | 0.5+ | 0.3− | | | | |
| 2002 12 11 | 704 | 0.3+ | 0.9− | 2004 04 28 | 608 | (2.0+ | 0.7−) | | | | |

**(139723)∗ 2001 QB$_{246}$ = 1161 T-3**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20054)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.73687 | | (2000.0) | | | |
| $n$ | 0.20521648 | $\omega$ | 41.59622 | | +0.72495281 | −0.68873845 |
| $a$ | 2.8466095 | $\Omega$ | 2.00528 | | +0.54312984 | +0.56346453 |
| $e$ | 0.1468818 | $i$ | 15.07101 | | +0.42361941 | +0.45623139 |
| $P$ | 4.80 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.3− | 0.4+ | 2001 09 25 | 699 | 1.1+ | 0.2− | 2003 02 01 | 644 | 0.3+ | 0.4+ |
| 1977 10 11 | 675 | 0.4+ | 1.6+ | 2001 09 25 | 691 | 0.2+ | 0.1− | 2003 02 01 | 644 | 0.6+ | 0.0 |
| 1977 10 12 | 675 | 1.9+ | 0.7+ | 2001 09 25 | 691 | 0.5+ | 0.1− | 2003 02 19 | 644 | 0.2+ | 0.7+ |
| 1977 10 12 | 675 | 1.5+ | 0.2+ | 2001 09 25 | 691 | 0.3+ | 0.1− | 2003 02 19 | 644 | 0.2− | 0.6+ |
| 1977 10 16 | 675 | 0.5− | 1.0− | 2001 10 13 | 699 | 0.2− | 0.0 | 2003 02 19 | 644 | 0.0 | 0.8+ |
| 1977 10 16 | 675 | 0.2− | 0.5+ | 2001 10 13 | 699 | 0.7− | 0.2+ | 2003 02 26 | 704 | 0.5+ | 0.0 |
| 1977 10 17 | 675 | 1.5− | 0.8− | 2001 10 13 | 699 | 0.6− | 0.4+ | 2003 02 26 | 704 | 0.1+ | 0.2+ |
| 1977 10 17 | 675 | 1.8− | 0.5− | 2001 10 13 | 699 | 0.6+ | 0.5− | 2003 02 26 | 704 | 0.3+ | 0.1+ |
| 1977 10 22 | 675 | (0.3− | 4.1−) | 2001 10 14 | 704 | 0.1+ | 0.0 | 2003 02 26 | 704 | 0.4+ | 1.2+ |
| 1977 10 22 | 675 | (0.4+ | 2.6−) | 2001 10 14 | 704 | 0.0 | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.7− |
| 2001 08 24 | 704 | 1.1+ | 1.0+ | 2001 10 14 | 704 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.5− | 0.5− |
| 2001 08 24 | 704 | 0.6− | 0.6+ | 2001 10 14 | 704 | 0.4+ | 0.5− | 2006 09 28 | 703 | 0.2− | 1.5+ |
| 2001 08 24 | 704 | 0.9− | 1.3+ | 2001 10 14 | 704 | 0.0 | 0.3+ | 2006 09 28 | 703 | 1.3+ | 0.6+ |
| 2001 08 27 | 699 | (0.3− | 1.7−) | 2001 10 15 | 704 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.2− |
| 2001 08 27 | 699 | 0.3− | 0.5+ | 2001 10 15 | 704 | 0.3− | 0.6− | 2006 09 28 | 703 | 0.1− | 0.0 |
| 2001 08 27 | 699 | 0.4+ | 0.2+ | 2001 10 15 | 704 | 0.4− | 0.9− | 2006 09 28 | 703 | 0.6− | 0.5− |
| 2001 08 27 | 699 | 0.0 | 0.4+ | 2001 10 15 | 704 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 09 11 | 699 | 0.9+ | 1.1+ | 2001 10 15 | 704 | 0.8− | 1.0− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 09 11 | 699 | 0.8+ | 0.0 | 2001 10 17 | 704 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2001 09 11 | 699 | 1.5+ | 0.0 | 2001 10 17 | 704 | 0.1− | 0.1+ | 2006 10 15 | H55 | 0.5+ | 0.7− |
| 2001 09 11 | 699 | (1.5+ | 0.0 ) | 2001 10 17 | 704 | 0.2− | 0.1+ | 2006 10 15 | H55 | 0.3+ | 0.5+ |
| 2001 09 17 | 704 | 0.8+ | 0.4− | 2001 10 17 | 704 | 0.2− | 0.5+ | 2006 10 15 | H55 | 0.2+ | 0.2+ |
| 2001 09 17 | 704 | 0.3+ | 0.6+ | 2001 10 17 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 703 | 0.2− | 1.4− |
| 2001 09 17 | 704 | 0.1+ | 0.6+ | 2001 10 18 | 704 | 0.0 | 0.3− | 2006 10 23 | 703 | 0.7+ | 1.3− |
| 2001 09 17 | 704 | 0.1+ | 0.3+ | 2001 10 18 | 704 | 0.2− | 0.5− | 2006 10 23 | 703 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.3+ | 0.5+ | 2001 10 18 | 704 | 0.4− | 0.9− | 2006 10 23 | 703 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2001 10 18 | 704 | 0.5− | 0.6− | 2006 10 29 | 703 | 0.5+ | 0.2− |
| 2001 09 20 | 704 | 0.7− | 0.4+ | 2001 10 20 | 644 | 0.5− | 0.4+ | 2006 10 29 | 703 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.6+ | 2001 10 20 | 644 | 0.4− | 0.4+ | 2006 10 29 | 703 | 0.5− | 0.4+ |
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2001 10 20 | 644 | 0.5− | 0.2+ | 2006 10 29 | 703 | 0.2+ | 0.9− |
| 2001 09 22 | 704 | 0.2− | 0.4− | 2001 10 21 | 704 | 0.6− | 0.2+ | 2006 11 15 | 704 | 0.6+ | 0.5− |
| 2001 09 22 | 704 | 1.1− | 0.7+ | 2001 10 21 | 704 | 0.4− | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.8− |
| 2001 09 22 | 704 | 0.9− | 0.9− | 2001 10 21 | 704 | 1.0− | 1.2+ | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 2001 09 22 | 704 | 0.1+ | 0.5+ | 2001 10 21 | 704 | 0.5− | 0.4− | 2006 11 21 | 703 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 0.8− | 0.1+ | 2001 10 21 | 704 | 0.7− | 0.4+ | 2006 11 21 | 703 | 0.6− | 0.1+ |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.5− | 0.1+ | 2006 11 21 | 703 | 0.5+ | 0.5− |
| 2001 09 23 | 704 | 0.2+ | 0.2− | 2001 10 21 | 704 | 0.1+ | 1.0+ | 2006 11 21 | 703 | 0.4− | 0.3− |
| 2001 09 23 | 704 | 0.9− | 0.2+ | 2001 10 21 | 704 | 0.3− | 0.3− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2001 09 25 | 699 | 1.0+ | 0.8− | 2001 10 21 | 704 | 0.5− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2001 09 25 | 699 | (2.5+ | 1.0−) | 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.7+ | 0.5− |
| 2001 09 25 | 699 | 1.5− | 0.1− | 2003 02 01 | 644 | 0.3+ | 0.4+ | 2006 12 01 | G96 | 0.6+ | 0.4− |

**(139724)∗ 2001 QW$_{246}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.13241 | | (2000.0) | | | |
| $n$ | 0.19008548 | $\omega$ | 108.31850 | | +0.35624372 | +0.93428751 |
| $a$ | 2.9957352 | $\Omega$ | 182.67708 | | −0.92985242 | +0.35299251 |
| $e$ | 0.0700447 | $i$ | 17.49962 | | −0.09200480 | +0.05003130 |
| $P$ | 5.19 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 05 | 644 | 0.6− | 0.8+ | 2004 03 20 | 704 | 0.9+ | 1.2+ | 2006 09 18 | 699 | 0.5− | 0.6+ |
| 2001 08 05 | 644 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 704 | 1.3− | 0.8+ |
| 2001 08 05 | 644 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.9+ |
| 2001 08 24 | 704 | 0.7− | 0.5− | 2004 03 27 | 704 | 0.7− | 1.0+ | 2006 09 20 | 704 | (1.1− | 1.8+) |
| 2001 08 24 | 704 | 0.1− | 1.0− | 2004 03 27 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.8− | 0.2− |
| 2001 08 24 | 704 | 0.0 | 0.1− | 2004 03 27 | 704 | 1.4+ | 0.4+ | 2006 09 20 | 704 | 0.3− | 1.4+ |
| 2001 08 24 | 704 | 0.2+ | 0.2− | 2004 03 30 | 691 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.5+ |
| 2001 08 27 | 699 | 1.3+ | 0.9+ | 2004 03 30 | 691 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.9− | 0.1+ |
| 2001 08 27 | 699 | 1.2+ | 1.5+ | 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.5− | 0.1− |
| 2001 08 27 | 699 | (2.1+ | 0.5−) | 2004 03 31 | 691 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.4+ |
| 2001 08 27 | 699 | 0.3+ | 0.1+ | 2004 03 31 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.1− |
| 2001 09 11 | 699 | 0.8− | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2001 09 11 | 699 | 0.4− | 0.9− | 2005 06 24 | 644 | 0.2− | 0.4+ | 2006 09 28 | 691 | 0.3− | 0.0 |
| 2001 09 11 | 699 | 0.3− | 0.5+ | 2005 06 24 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.2+ | 0.4+ | 2005 06 24 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.7− |
| 2001 09 19 | 704 | 0.1− | 1.0+ | 2005 07 29 | 644 | 0.0 | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.3+ | 0.9+ | 2005 07 29 | 644 | 0.0 | 0.3+ | 2006 09 28 | 704 | 1.1− | 0.3+ |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2005 07 29 | 644 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.8+ | 0.1+ |
| 2001 10 10 | 644 | 0.7− | 0.5+ | 2005 08 27 | 644 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.1+ |
| 2001 10 10 | 644 | 0.6− | 0.5+ | 2005 08 27 | 644 | 0.6+ | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.1− |
| 2001 10 10 | 644 | 0.5− | 0.5+ | 2005 08 27 | 644 | 0.4− | 0.6+ | 2006 09 29 | 704 | 0.3− | 0.5− |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 09 29 | 704 | 1.3+ | 0.8+ |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.7+ | 0.4+ |
| 2001 10 16 | 704 | 0.4− | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.8+ |
| 2001 10 16 | 704 | (1.9− | 0.5+) | 2006 08 25 | 704 | (3.3− | 1.5+) | 2006 10 01 | 704 | (2.3+ | 0.7+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.6− | 0.6− | 2006 08 25 | 704 | (1.2− | 1.8+) | 2006 10 01 | 704 | 1.2+ | 0.7+ | | |
| 2001 10 16 | 704 | (1.7− | 0.3+) | 2006 08 25 | 704 | (0.7− | 1.8+) | 2006 10 01 | 704 | 1.4+ | 0.1− | | |
| 2001 10 19 | 699 | 0.2− | 0.6+ | 2006 08 25 | 704 | (1.5− | 1.9+) | 2006 10 01 | 704 | 1.1+ | 0.2+ | | |
| 2001 10 19 | 699 | 0.6− | 0.0 | 2006 08 25 | 704 | 0.9− | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 19 | 699 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1− | | |
| 2001 10 19 | 699 | 1.0− | 0.3− | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 10 09 | 644 | 0.4− | 0.3+ | | |
| 2004 03 12 | 644 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 0.6− | 0.5+ | 2006 10 17 | 703 | (2.0− | 0.6+) | | |
| 2004 03 12 | 644 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.8− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.3+ | | |
| 2004 03 12 | 644 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 1.1+ | 0.8− | | |
| 2004 03 13 | 644 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | (1.6+ | 1.1−) | | |
| 2004 03 13 | 644 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.3− | | |
| 2004 03 13 | 644 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2004 03 16 | 704 | 0.0 | 1.0+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.0 | 1.0+ | | |
| 2004 03 16 | 704 | (1.7− | 1.1+) | 2006 09 06 | 644 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2004 03 16 | 704 | 0.6− | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2004 03 16 | 704 | 0.1− | 1.4+ | 2006 09 13 | 644 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2004 03 16 | 704 | 0.1+ | 0.7+ | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.2− | | |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.1− | | |
| 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 09 16 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3− | | |
| 2004 03 18 | 704 | 0.5− | 0.3+ | 2006 09 16 | 691 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.1− | | |
| 2004 03 18 | 704 | 0.3+ | 1.2+ | 2006 09 16 | 691 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.4+ | | |
| 2004 03 20 | 699 | 0.6+ | 0.5+ | 2006 09 17 | 704 | 0.1+ | 1.5+ | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2004 03 20 | 699 | 0.8− | 1.0+ | 2006 09 17 | 704 | 0.9+ | 1.0+ | 2006 10 23 | 644 | 0.3− | 0.1+ | | |
| 2004 03 20 | 704 | 0.5+ | 0.1− | 2006 09 17 | 704 | 0.5+ | 0.9+ | 2006 11 25 | G96 | 0.1+ | 0.3+ | | |
| 2004 03 20 | 699 | 0.2− | 0.2+ | 2006 09 17 | 704 | 1.1+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.4+ | | |
| 2004 03 20 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.9− | 2006 11 25 | G96 | 0.4− | 0.2+ | | |
| 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 09 18 | 699 | 0.1− | 0.5− | 2006 11 25 | G96 | 0.2+ | 0.1+ | | |
| 2004 03 20 | 699 | 0.6+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.4+ | | | | | | |
| 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.7+ | 0.4+ | | | | | | |

**(139725)∗ 2001 QE$_{249}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.51942 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19272800 | $\omega$ | 348.79543 | | +0.88884035 | −0.44143406 |
| $a$ | 2.9682889 | $\Omega$ | 38.17538 | | +0.43427565 | +0.72599788 |
| $e$ | 0.1045343 | $i$ | 11.46725 | | +0.14617626 | +0.52731685 |
| $P$ | 5.11 | $H$ | 14.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.1− | 0.9− | 2002 01 06 | 699 | 0.4+ | 0.1+ | 2004 05 16 | 704 | 0.1+ | 0.9+ | | |
| 2001 08 24 | 704 | 0.0 | 0.1− | 2002 01 06 | 699 | (0.4− | 1.7+) | 2004 05 16 | 704 | 0.1− | 0.5− | | |
| 2001 08 24 | 704 | 0.1+ | 0.3− | 2002 01 06 | 699 | 0.4− | 0.8+ | 2004 05 28 | 691 | 0.3+ | 0.5+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.6− | 2002 01 06 | 699 | 0.5− | 0.7+ | 2004 05 28 | 691 | 0.4+ | 0.5+ | | |
| 2001 08 25 | 699 | 0.3− | 0.3− | 2002 01 09 | 704 | 0.5− | 0.3+ | 2004 05 28 | 691 | 0.4+ | 0.6+ | | |
| 2001 08 25 | 699 | 0.1− | 0.3+ | 2002 01 09 | 704 | 0.1− | 0.9+ | 2006 09 03 | 850 | 0.1+ | 0.2− | | |
| 2001 08 25 | 699 | 0.3+ | 0.2+ | 2002 01 09 | 704 | 0.3− | 1.2+ | 2006 09 03 | 850 | 0.3+ | 0.0 | | |
| 2001 08 25 | 699 | 0.2+ | 0.3+ | 2003 01 07 | 704 | 0.2+ | 0.2+ | 2006 09 03 | 850 | 0.1− | 0.1− | | |
| 2001 08 31 | 644 | 0.3+ | 1.0+ | 2003 01 07 | 704 | 0.1− | 0.5+ | 2006 09 16 | 704 | 0.8+ | 0.3+ | | |
| 2001 08 31 | 644 | 0.2− | 0.5+ | 2003 01 07 | 704 | 0.2− | 0.3+ | 2006 09 16 | 704 | 1.4+ | 0.5− | | |
| 2001 08 31 | 644 | 0.3− | 0.6+ | 2003 01 07 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 1.0+ | 0.7+ | | |
| 2001 09 14 | 644 | 0.3− | 0.3+ | 2003 01 10 | 704 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.5− | 0.1+ | | |
| 2001 09 14 | 644 | 0.8− | 0.3+ | 2003 01 10 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.5+ | | |
| 2001 09 14 | 644 | 0.8− | 0.6+ | 2003 01 10 | 704 | 0.5+ | 0.1− | 2006 09 17 | 691 | 0.4− | 0.5+ | | |
| 2001 09 19 | 704 | 1.0+ | 0.8− | 2003 01 10 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.2− | 2003 01 13 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.5+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.1− | 1.4− | 2003 01 13 | 704 | 0.9− | 1.1− | 2006 09 18 | 703 | 0.3+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.2+ | 1.3− | 2003 01 13 | 704 | 0.7− | 0.7− | 2006 09 18 | 703 | 0.0 | 0.3+ | | |
| 2001 09 19 | 704 | 0.5− | 0.6− | 2003 01 24 | 644 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.8+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.3− | 2003 01 24 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.1+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.2− | 2003 01 24 | 644 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.1+ | | |
| 2001 09 26 | 704 | 0.4+ | 0.6+ | 2003 01 25 | 704 | 0.5+ | 0.2− | 2006 09 19 | 704 | 0.1+ | 1.0+ | | |
| 2001 09 26 | 704 | 0.1− | 0.8− | 2003 01 25 | 704 | 0.8+ | 0.6− | 2006 09 19 | 704 | 0.7+ | 0.5− | | |
| 2001 09 26 | 704 | 0.5− | 0.1+ | 2003 01 25 | 704 | 0.0 | 1.0− | 2006 09 19 | 704 | 0.2− | 0.4− | | |
| 2001 10 13 | 704 | 0.0 | 0.2− | 2003 01 29 | 644 | 0.1− | 0.0 | 2006 09 19 | 704 | 0.8+ | 0.2− | | |
| 2001 10 13 | 704 | 0.2+ | 0.0 | 2003 01 29 | 644 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.3− | 1.0− | | |
| 2001 10 13 | 704 | 0.7− | 0.3+ | 2003 01 29 | 644 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.3− | 0.0 | | |
| 2001 10 13 | 704 | 0.3− | 1.1− | 2003 02 01 | 644 | 0.5− | 0.6− | 2006 09 20 | 644 | 0.1− | 0.0 | | |
| 2001 10 13 | 704 | 0.1+ | 1.5− | 2003 02 01 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.3+ | | |
| 2001 10 17 | 704 | 0.1+ | 0.3+ | 2003 02 01 | 644 | 0.4− | 0.7− | 2006 09 22 | 704 | 0.1− | 1.0+ | | |
| 2001 10 17 | 704 | 0.2− | 0.7+ | 2003 02 01 | 644 | 0.1+ | 0.6+ | 2006 09 22 | 704 | 0.3− | 1.0+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.4+ | 2003 02 01 | 644 | 0.6− | 0.8− | 2006 09 22 | 704 | 0.7− | 0.5+ | | |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2003 02 01 | 644 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.7− | 0.1+ | | |
| 2001 10 17 | 704 | 0.2− | 1.0+ | 2003 02 02 | 704 | 0.2− | 0.8− | 2006 09 22 | 704 | 0.6− | 0.2+ | | |
| 2001 10 18 | 644 | 0.3+ | 0.8− | 2003 02 02 | 704 | 0.3− | 0.3− | 2006 09 26 | 704 | (0.8− | 1.6+) | | |
| 2001 10 18 | 644 | 0.3+ | 0.8− | 2003 02 02 | 704 | 0.4− | 0.2− | 2006 09 26 | 704 | 0.8+ | 0.4+ | | |
| 2001 10 18 | 644 | 0.3+ | 0.7− | 2003 02 02 | 704 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.7+ | | |
| 2001 10 20 | 704 | 0.4+ | 0.3− | 2003 02 02 | 704 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.6+ | | |
| 2001 10 20 | 704 | 0.3− | 0.6+ | 2003 02 07 | 644 | 0.0 | 0.6+ | 2006 09 26 | 704 | (0.4− | 2.2+) | | |
| 2001 10 20 | 704 | 0.3− | 0.3+ | 2003 02 07 | 644 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 1.3− | 0.3+ | | |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2003 02 07 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.4+ | | |
| 2001 10 22 | 704 | 0.1− | 0.4+ | 2003 02 09 | 644 | 0.0 | 0.3− | 2006 09 30 | 703 | (1.7+ | 0.1−) | | |
| 2001 10 22 | 704 | 0.2− | 0.2+ | 2003 02 09 | 644 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.1− | 0.2+ | | |
| 2001 10 22 | 704 | 0.2− | 0.9+ | 2003 02 09 | 644 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.0 | 0.3+ | | |
| 2001 10 23 | 704 | 1.4− | 0.1+ | 2003 02 26 | 704 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.2+ | | |
| 2001 10 23 | 704 | (1.6− | 0.2+) | 2003 02 26 | 704 | 0.4− | 1.1+ | 2006 10 01 | 704 | 0.2− | 0.2− | | |
| 2001 10 23 | 704 | (1.7− | 0.1+) | 2003 02 26 | 704 | (1.6− | 0.7−) | 2006 10 01 | 704 | 0.9− | 0.2− | | |
| 2001 10 23 | 704 | 1.5− | 0.5+ | 2003 02 26 | 704 | (1.7− | 0.3+) | 2006 10 15 | 703 | 0.2− | 0.1+ | | |
| 2001 10 23 | 704 | 1.4− | 0.4+ | 2003 03 03 | 644 | 0.0 | 0.7+ | 2006 10 15 | 703 | 0.7− | 0.0 | | |
| 2001 10 24 | 704 | 1.2− | 0.0 | 2003 03 03 | 644 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.6− | 0.1− | | |
| 2001 10 24 | 704 | 1.1− | 0.0 | 2003 03 03 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.1− | | |
| 2001 10 24 | 704 | 0.8− | 0.5− | 2004 03 19 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 703 | 0.1− | 0.2+ | | |
| 2001 10 24 | 704 | 1.2− | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.3− | 0.2− | | |
| 2001 10 24 | 704 | 1.2− | 0.5+ | 2004 03 19 | 704 | 0.1+ | 0.1− | 2006 10 21 | 703 | 1.0− | 0.4+ | | |
| 2001 10 25 | 644 | 0.3− | 0.2+ | 2004 03 19 | 704 | 0.7+ | 0.8+ | 2006 10 22 | 704 | (2.1− | 1.9+) | | |
| 2001 10 25 | 644 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.9+ | 2006 10 22 | 704 | (0.6− | 1.9+) | | |
| 2001 10 25 | 644 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 10 22 | 704 | 0.7− | 0.4+ | | |
| 2001 10 26 | 704 | 0.8+ | 0.1+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 704 | 0.7− | 1.0+ | | |
| 2001 10 26 | 704 | 0.2+ | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 704 | 0.6− | 0.4− | | |
| 2001 10 26 | 704 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2001 10 26 | 704 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 26 | 704 | 0.2− | 0.6− | 2004 03 28 | 704 | (0.9+ | 1.8+) | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 11 09 | 704 | 1.3− | 0.5+ | 2004 03 28 | 704 | 0.1− | 1.0+ | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2001 11 09 | 704 | 1.3− | 0.5+ | 2004 03 28 | 704 | (0.3+ | 1.7+) | 2006 10 22 | G96 | 0.1+ | 0.7− | | |
| 2001 11 09 | 704 | 1.3− | 0.1+ | 2004 03 28 | 704 | (0.8+ | 2.3+) | 2006 10 22 | G96 | 0.3+ | 0.1− | | |
| 2001 11 09 | 704 | 1.3− | 0.3− | 2004 03 28 | 704 | (0.1− | 1.9+) | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2001 11 09 | 704 | (1.7− | 0.1−) | 2004 03 31 | 704 | 0.0 | 1.3+ | 2006 10 27 | 704 | 0.2− | 0.9+ | | |
| 2001 11 16 | 644 | 0.0 | 0.3+ | 2004 03 31 | 704 | 1.5+ | 1.5+ | 2006 10 27 | 704 | 0.3+ | 0.1− | | |
| 2001 11 16 | 644 | 0.1+ | 0.5+ | 2004 03 31 | 704 | 1.3+ | 0.1+ | 2006 10 27 | 704 | 0.2− | 0.5+ | | |
| 2001 11 16 | 644 | 0.1+ | 0.2+ | 2004 03 31 | 704 | 0.5+ | 0.9+ | 2006 10 27 | 704 | 0.9+ | 0.3+ | | |
| 2001 11 17 | 704 | 0.5+ | 0.5+ | 2004 03 31 | 704 | 0.8+ | 0.7+ | 2006 10 31 | 704 | 0.1− | 0.3− | | |
| 2001 11 17 | 704 | 0.4+ | 0.5+ | 2004 04 11 | 703 | 0.9− | 0.3− | 2006 10 31 | 704 | (0.8− | 2.3−) | | |
| 2001 11 17 | 704 | 0.6+ | 0.1+ | 2004 04 11 | 703 | 0.5− | 0.3+ | 2006 10 31 | 704 | 1.3− | 1.1− | | |
| 2001 11 17 | 704 | (2.7+ | 0.3−) | 2004 04 11 | 703 | 0.3− | 0.0 | 2006 10 31 | 704 | 1.4− | 1.0− | | |
| 2001 11 17 | 704 | (2.4− | 0.5+) | 2004 04 11 | 703 | 0.2− | 0.0 | 2006 10 31 | 704 | 0.0 | 1.3+ | | |
| 2001 11 18 | 691 | 0.4+ | 0.0 | 2004 04 15 | 699 | 0.8+ | 0.8+ | 2006 11 06 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 18 | 691 | 0.1+ | 0.0 | 2004 04 15 | 699 | 0.3+ | 0.6+ | 2006 11 06 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 18 | 691 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.3+ | 1.2+ | 2006 11 06 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.5+ | 2004 04 15 | 699 | 0.3+ | 1.0+ | 2006 11 11 | 703 | 0.8− | 0.3+ | | |
| 2001 11 19 | 704 | 0.1− | 0.2+ | 2004 04 16 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 2001 11 19 | 704 | 0.1− | 0.5+ | 2004 04 16 | 704 | 1.0+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 2001 11 19 | 704 | 0.3− | 0.3+ | 2004 04 16 | 704 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.4+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.0 | 2004 04 16 | 704 | 0.5+ | 0.8+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2001 11 20 | 699 | 0.4+ | 1.4+ | 2004 04 16 | 644 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.6− | | |
| 2001 11 20 | 699 | 0.0 | 0.7+ | 2004 04 16 | 704 | 0.4+ | 0.7+ | 2006 11 16 | G96 | 0.4+ | 0.6− | | |
| 2001 11 20 | 699 | 0.2+ | 0.4+ | 2004 04 16 | 644 | 1.0+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2001 11 20 | 699 | 0.3+ | 0.6+ | 2004 04 16 | 644 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 0.4+ | 0.6− | | |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 703 | (0.9+ | 1.6+) | | |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.4+ | 0.8+ | | |
| 2001 11 21 | 704 | 0.0 | 0.5+ | 2004 04 19 | 704 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.5+ | | |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2004 04 19 | 704 | 0.1− | 0.9+ | 2006 11 18 | 704 | 0.7+ | 0.1− | | |
| 2001 11 21 | 704 | 0.2− | 0.4+ | 2004 04 19 | 704 | 0.8+ | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.1− | | |
| 2001 11 24 | 644 | 0.4+ | 0.1+ | 2004 04 21 | 704 | (1.1+ | 2.2+) | 2006 11 18 | 704 | 0.0 | 0.2+ | | |
| 2001 11 24 | 644 | 0.2+ | 0.2+ | 2004 04 21 | 704 | 0.9+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 644 | 0.6+ | 0.0 | 2004 04 21 | 704 | (1.6+ | 1.9+) | 2006 11 18 | 704 | 0.3− | 1.0+ | | |
| 2001 12 05 | 608 | 0.9+ | 0.3+ | 2004 04 21 | 704 | (0.6+ | 1.7+) | 2006 11 20 | G96 | 0.0 | 0.4− | | |
| 2001 12 05 | 608 | 0.9+ | 0.7+ | 2004 04 21 | 704 | 0.6+ | 0.1− | 2006 11 20 | G96 | 0.4+ | 0.6− | | |
| 2001 12 05 | 608 | 0.7+ | 1.3+ | 2004 05 12 | 699 | 1.3− | 0.6+ | 2006 11 20 | G96 | 0.3+ | 0.2− | | |
| 2001 12 15 | 704 | 0.7+ | 0.4− | 2004 05 12 | 699 | (2.2− | 0.2+) | 2006 11 20 | G96 | 0.4+ | 0.5− | | |
| 2001 12 15 | 704 | (0.8+ | 1.6+) | 2004 05 12 | 699 | 0.6+ | 1.3+ | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2001 12 15 | 704 | 1.1+ | 1.1+ | 2004 05 12 | 699 | 0.9− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.8+ | | |
| 2001 12 15 | 704 | (0.4+ | 3.1+) | 2004 05 14 | 704 | 0.4+ | 0.5− | 2006 11 21 | 704 | 0.0 | 1.3+ | | |
| 2001 12 19 | 704 | 0.2− | 0.8− | 2004 05 14 | 704 | 1.1+ | 0.8+ | 2006 11 21 | 704 | 0.2− | 0.8+ | | |
| 2001 12 19 | 704 | 1.4+ | 0.9− | 2004 05 14 | 704 | (1.6+ | 1.2+) | 2006 11 21 | 704 | 1.1− | 0.7+ | | |
| 2001 12 19 | 704 | (2.0+ | 0.0 ) | 2004 05 16 | 704 | 0.5+ | 0.0 | | | | | | |
| 2001 12 19 | 704 | (0.2+ | 1.6+) | 2004 05 16 | 704 | 0.4+ | 0.2+ | | | | | | |

**(139726)∗ 2001 QB$_{250}$**

Discovered 2001 Aug. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.77668 | | (2000.0) | | | |
| $n$ | 0.22011463 | $\omega$ | 323.61542 | | +0.79755040 | −0.59344844 |
| $a$ | 2.7166693 | $\Omega$ | 73.13990 | | +0.57674107 | +0.69746438 |
| $e$ | 0.0807908 | $i$ | 6.49871 | | +0.17687029 | +0.40169938 |
| $P$ | 4.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 08 | 691 | 0.6− | 0.4+ | 2003 01 05 | 704 | 0.3+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.6+ | | |
| 1995 03 08 | 691 | 0.3− | 0.7+ | 2003 01 05 | 704 | 0.5+ | 0.0 | 2006 11 02 | 703 | 0.2+ | 0.6+ | | |
| 1995 03 08 | 691 | 0.5− | 0.5− | 2003 01 09 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.4+ | | |
| 1997 11 06 | 704 | (4.9− | 2.5+) | 2003 01 09 | 704 | 1.5+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.4− | | |
| 1997 11 06 | 704 | (5.8− | 0.0 ) | 2003 01 09 | 704 | 0.9+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 1997 11 06 | 704 | (6.6− | 2.1+) | 2003 01 09 | 704 | (1.8+ | 0.2+) | 2006 11 11 | 644 | 0.1− | 0.3+ | | |
| 1997 11 06 | 704 | (5.2− | 0.4−) | 2003 01 09 | 704 | 0.7+ | 0.6+ | 2006 11 11 | 703 | 1.0− | 0.0 | | |
| 1997 11 06 | 704 | (4.0− | 1.1+) | 2003 01 09 | 704 | 1.0+ | 1.0+ | 2006 11 11 | 644 | 0.2+ | 0.2+ | | |
| 2000 05 28 | 704 | 0.9+ | 0.2− | 2003 01 09 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 644 | 0.0 | 0.2+ | | |
| 2000 05 28 | 704 | 0.2+ | 0.8+ | 2003 01 09 | 704 | 0.9+ | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.3− | | |
| 2000 05 28 | 704 | 0.1− | 0.5+ | 2003 01 09 | 704 | 0.5+ | 0.6+ | 2006 11 14 | G96 | 0.3− | 0.2− | | |
| 2000 05 28 | 704 | 0.4+ | 0.6− | 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.2− | 0.2− | | |
| 2000 05 28 | 704 | 0.3− | 0.6+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2001 08 23 | 608 | 0.6+ | 0.1− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 11 14 | 704 | (0.3+ | 1.7+) | | |
| 2001 08 23 | 608 | 0.1+ | 0.2+ | 2004 04 20 | 704 | (1.3− | 2.0+) | 2006 11 14 | 704 | (0.0 | 1.7+) | | |
| 2001 08 23 | 608 | 0.5+ | 0.1+ | 2004 04 20 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.8+ | 0.0 | | |
| 2001 08 23 | 608 | 0.3− | 0.3− | 2004 04 20 | 704 | 1.2+ | 0.5+ | 2006 11 14 | 704 | 0.1− | 1.4+ | | |
| 2001 08 23 | 608 | 0.0 | 0.1+ | 2004 04 20 | 704 | 1.2+ | 0.6+ | 2006 11 14 | 704 | 0.5+ | 0.1+ | | |
| 2001 08 23 | 608 | 0.0 | 0.2− | 2005 07 06 | E12 | 0.0 | 0.7+ | 2006 11 18 | 704 | 1.0− | 0.5− | | |
| 2001 08 24 | 608 | 0.1+ | 0.0 | 2005 07 06 | E12 | 0.7+ | 0.5+ | 2006 11 18 | 704 | 1.1− | 0.3+ | | |
| 2001 08 24 | 608 | 0.1− | 0.0 | 2005 07 06 | E12 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.8− | 1.2− | | |
| 2001 08 24 | 608 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.6− | 0.4+ | | |
| 2001 08 25 | 699 | (1.5− | 0.3+) | 2006 10 16 | 703 | 0.2+ | 1.4+ | 2006 11 18 | 704 | (0.1− | 1.6−) | | |
| 2001 08 25 | 699 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.8− | 1.2− | | |
| 2001 08 25 | 699 | 0.6− | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 18 | 704 | 1.0− | 1.1− | | |
| 2001 08 25 | 699 | 1.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.8− | | |
| 2001 09 11 | 704 | 0.1− | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.3− | | |
| 2001 09 11 | 704 | 1.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.5− | | |
| 2001 09 11 | 704 | 0.1− | 0.9+ | 2006 10 22 | 691 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.6− | | |
| 2001 09 17 | 699 | 0.5+ | 1.1+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 21 | 704 | 1.0− | 0.4− | | |
| 2001 09 17 | 699 | 0.5+ | 1.2+ | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.2− | | |
| 2001 09 17 | 699 | 0.2+ | 1.2+ | 2006 10 26 | 106 | (2.0+ | 0.5−) | 2006 11 28 | 704 | 0.8+ | 0.1+ | | |
| 2001 09 17 | 699 | 1.1+ | 0.8+ | 2006 10 26 | 106 | 1.1+ | 0.9+ | 2006 11 28 | 704 | 0.1− | 0.5+ | | |
| 2001 10 10 | 644 | 0.5− | 0.1+ | 2006 10 26 | 106 | 1.4+ | 1.1+ | 2006 11 28 | 704 | 0.2+ | 0.5+ | | |
| 2001 10 10 | 644 | 0.3− | 0.2+ | 2006 10 26 | 106 | 0.3+ | 1.1+ | 2006 11 28 | 704 | 0.5− | 0.1+ | | |
| 2001 10 10 | 644 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.9+ | 0.5+ | 2006 11 28 | 704 | 0.3+ | 0.3− | | |
| 2003 01 05 | 704 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.7+ | 1.3+ | | | | | | |

**(139727)∗ 2001 QD$_{250}$**

Discovered 2001 Aug. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.54193 | | (2000.0) | | | |
| $n$ | 0.21945404 | $\omega$ | 299.88433 | | +0.48037269 | −0.85084373 |
| $a$ | 2.7221183 | $\Omega$ | 119.89180 | | +0.86530519 | +0.42015563 |
| $e$ | 0.1900052 | $i$ | 14.21232 | | +0.14313983 | +0.31549040 |
| $P$ | 4.49 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.1− | 0.6+ | 2003 01 05 | 704 | 0.3− | 0.5+ | 2005 06 15 | G96 | 0.2− | 0.8+ | | |
| 2001 08 19 | 704 | 0.3+ | 0.7+ | 2003 01 05 | 704 | 0.2+ | 0.8+ | 2005 06 15 | G96 | 0.1+ | 0.7+ | | |
| 2001 08 19 | 704 | 0.5+ | 0.6+ | 2003 01 05 | 704 | 0.1+ | 0.8+ | 2005 06 28 | G96 | 0.3− | 0.3+ | | |
| 2001 08 19 | 704 | 0.4+ | 0.2+ | 2003 01 05 | 704 | 0.0 | 0.8+ | 2005 06 28 | G96 | 0.4− | 0.6+ | | |
| 2001 08 19 | 704 | 0.0 | 0.5+ | 2003 01 05 | 704 | 0.4+ | 1.1+ | 2005 06 28 | G96 | 0.5− | 0.5+ | | |
| 2001 08 23 | 608 | 0.5− | 0.3− | 2003 01 09 | 704 | 0.2+ | 0.7+ | 2005 06 30 | G96 | 0.1+ | 0.1+ | | |
| 2001 08 23 | 608 | 0.8− | 0.7− | 2003 01 09 | 704 | 0.4+ | 1.0+ | 2005 06 30 | G96 | 0.3− | 0.5+ | | |
| 2001 08 23 | 608 | 0.6− | 0.6− | 2003 01 09 | 704 | 0.3− | 0.8+ | 2005 06 30 | G96 | 0.1− | 0.4+ | | |
| 2001 08 23 | 608 | 0.8− | 0.5− | 2003 01 18 | 644 | 0.1+ | 0.1+ | 2005 06 30 | G96 | 0.1− | 0.5+ | | |
| 2001 08 23 | 608 | 0.6− | 0.9− | 2003 01 18 | 644 | 0.2+ | 0.3+ | 2005 07 03 | G96 | 0.0 | 0.5+ | | |
| 2001 08 23 | 608 | 1.0− | 0.6− | 2003 01 18 | 644 | 0.0 | 0.0 | 2005 07 03 | G96 | 0.3+ | 0.4+ | | |
| 2001 08 24 | 608 | 0.5− | 0.1− | 2003 01 26 | 699 | 0.8+ | 0.0 | 2005 07 03 | G96 | 0.3− | 0.5+ | | |
| 2001 08 24 | 608 | 0.7− | 0.3+ | 2003 01 26 | 699 | 0.2+ | 0.5+ | 2005 07 03 | G96 | 0.0 | 0.4+ | | |
| 2001 08 24 | 608 | 0.5− | 0.1− | 2003 01 26 | 699 | 0.7+ | 0.1+ | 2005 07 04 | 599 | 0.1+ | 0.1+ | | |
| 2001 08 25 | 699 | 0.3+ | 0.0 | 2003 01 26 | 699 | 1.1+ | 0.7+ | 2005 07 04 | 599 | 0.4+ | 0.6+ | | |
| 2001 08 25 | 699 | 0.1− | 0.1+ | 2003 02 01 | 704 | 0.1− | 0.1− | 2005 07 04 | 599 | 0.3+ | 0.3+ | | |
| 2001 08 25 | 699 | 0.2+ | 0.6+ | 2003 02 01 | 704 | 0.6− | 0.1+ | 2005 07 15 | G96 | 0.0 | 0.3+ | | |
| 2001 08 25 | 699 | 0.2− | 0.3+ | 2003 02 01 | 704 | 0.6− | 0.0 | 2005 07 15 | 691 | 0.1− | 0.0 | | |
| 2001 09 11 | 704 | 0.7+ | 0.6+ | 2003 02 01 | 704 | 0.4− | 0.1− | 2005 07 15 | G96 | 0.3− | 0.1+ | | |
| 2001 09 11 | 704 | 0.3+ | 0.5+ | 2003 02 01 | 704 | 0.2− | 0.3+ | 2005 07 15 | 691 | 0.0 | 0.1− | | |
| 2001 09 11 | 704 | 0.4+ | 0.2− | 2003 02 02 | 644 | 0.1− | 0.3+ | 2005 07 15 | G96 | 0.2− | 0.1+ | | |
| 2001 09 11 | 704 | 1.4+ | 1.2+ | 2003 02 02 | 644 | 0.1− | 0.2+ | 2005 07 15 | 691 | 0.1− | 0.1+ | | |
| 2001 09 11 | 704 | 0.6− | 1.4− | 2003 02 02 | 644 | 0.1− | 0.3+ | 2005 08 06 | 704 | 0.0 | 0.6− | | |
| 2001 09 17 | 699 | 0.0 | 0.2+ | 2003 02 04 | 704 | 0.2− | 1.4+ | 2005 08 06 | 704 | 0.9+ | 0.2+ | | |
| 2001 09 17 | 699 | 0.4+ | 0.2+ | 2003 02 04 | 704 | 0.6− | 0.6+ | 2005 08 06 | 704 | 0.4− | 0.2+ | | |
| 2001 09 17 | 699 | 0.1+ | 0.2+ | 2003 02 04 | 704 | 0.3− | 0.5+ | 2005 08 06 | 704 | 0.0 | 0.2+ | | |
| 2001 09 17 | 699 | 0.6+ | 0.0 | 2003 02 04 | 704 | 0.1− | 0.7+ | 2006 09 19 | 703 | 0.9− | 0.6+ | | |
| 2001 09 23 | 608 | 0.2− | 0.2+ | 2003 02 04 | 704 | (0.5− | 1.6+) | 2006 09 19 | 703 | 0.8− | 0.3+ | | |
| 2001 09 23 | 608 | 0.3− | 0.6+ | 2003 02 04 | 608 | 0.2+ | 0.9− | 2006 09 19 | 703 | 0.2− | 0.7+ | | |
| 2001 09 23 | 608 | 0.3− | 0.2+ | 2003 02 04 | 608 | 0.1+ | 0.7− | 2006 09 19 | 703 | 0.2− | 0.2+ | | |
| 2001 10 15 | 644 | 0.3− | 0.3+ | 2003 02 04 | 608 | 0.1+ | 0.8− | 2006 10 01 | 704 | 0.5− | 0.6+ | | |
| 2001 10 15 | 644 | 0.7− | 0.3+ | 2003 02 07 | 704 | 0.1+ | 0.9+ | 2006 10 01 | 704 | 0.1− | 0.2+ | | |
| 2001 10 15 | 644 | 0.7− | 0.1+ | 2003 02 07 | 704 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.6− | 1.4− | | |
| 2001 10 18 | 699 | 0.1− | 1.2+ | 2003 02 07 | 704 | 0.0 | 0.6+ | 2006 10 01 | 704 | (2.3− | 0.2+) | | |
| 2001 10 18 | 699 | 0.4+ | 0.3− | 2003 02 19 | 644 | 0.2+ | 1.4+ | 2006 10 31 | 704 | 0.8+ | 0.2+ | | |
| 2001 10 18 | 699 | 0.3+ | 0.2+ | 2003 02 19 | 644 | 0.1+ | 1.4+ | 2006 10 31 | 704 | 0.7+ | 0.7+ | | |
| 2001 10 18 | 699 | 0.3− | 1.1+ | 2003 02 19 | 644 | 0.1+ | 1.3+ | 2006 10 31 | 704 | 0.5+ | 0.0 | | |
| 2001 11 07 | 704 | 0.1− | 0.7+ | 2003 02 23 | 699 | 0.1− | 0.7+ | 2006 10 31 | 704 | 0.6+ | 0.5+ | | |
| 2001 11 07 | 704 | 0.5+ | 0.0 | 2003 02 23 | 699 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.1− | | |
| 2001 11 07 | 704 | 0.2+ | 1.1− | 2003 02 23 | 699 | 0.4− | 0.6+ | 2006 11 13 | 703 | 0.2− | 0.2+ | | |
| 2001 11 07 | 704 | 0.6+ | 0.4+ | 2003 02 23 | 699 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.1− | 0.1− | | |
| 2001 11 21 | 608 | 0.7+ | 0.2− | 2003 03 05 | 704 | 0.1+ | 0.9+ | 2006 11 13 | 703 | 0.0 | 0.1− | | |
| 2001 11 21 | 608 | 0.0 | 0.6+ | 2003 03 05 | 704 | 0.4− | 0.3− | 2006 11 19 | 703 | 0.3− | 0.4+ | | |
| 2001 11 21 | 608 | 0.6+ | 0.0 | 2003 03 05 | 704 | 0.4+ | 1.4+ | 2006 11 19 | 703 | 0.1+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.7+ | 2003 03 05 | 704 | 0.4− | 0.7+ | 2006 11 19 | 703 | 0.0 | 0.3+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2003 03 05 | 704 | 0.8− | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.3+ | | |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2003 03 07 | 644 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.0 | | |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2003 03 07 | 644 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.4− | 0.1− | | |
| 2002 12 05 | 704 | 0.9+ | 0.6+ | 2003 03 07 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.2− | | |
| 2002 12 08 | 608 | 0.8+ | 0.0 | 2003 03 13 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.1− | | |
| 2002 12 08 | 608 | 0.7+ | 0.2− | 2003 03 13 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2002 12 08 | 608 | 0.7+ | 0.2− | 2003 03 13 | 644 | 0.0 | 0.1− | 2006 12 01 | 703 | 0.1+ | 0.3+ | | |
| 2002 12 31 | 704 | (0.7+ | 2.2−) | 2005 06 14 | 691 | 0.3+ | 0.7+ | 2006 12 01 | 703 | 0.2− | 0.1− | | |
| 2002 12 31 | 704 | (1.3+ | 2.0−) | 2005 06 14 | 691 | 0.3+ | 0.7+ | 2006 12 01 | 703 | 0.1− | 0.2− | | |
| 2002 12 31 | 704 | 0.4+ | 1.2− | 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 703 | 0.0 | 0.0 | | |
| 2002 12 31 | 704 | (1.4+ | 1.6−) | 2005 06 15 | G96 | 0.0 | 0.5+ | | | | | | |
| 2002 12 31 | 704 | 0.2+ | 1.5− | 2005 06 15 | G96 | 0.2− | 0.7+ | | | | | | |

**(139728)∗ 2001 QE$_{250}$**

Discovered 2001 Aug. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.32371 | | $\omega$ | 175.48727 | +0.62872631 | +0.74500915 |
| $n$ | 0.22185317 | | $\Omega$ | 133.26667 | −0.72269485 | +0.66560380 |
| $a$ | 2.7024580 | | $i$ | 17.82123 | −0.28708079 | −0.04396528 |
| $e$ | 0.1584456 | | $H$ | 14.6 | $G$ 0.15 | $U$ 2 |
| $P$ | 4.44 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 699 | 0.2+ | 0.1− | 2001 08 24 | 608 | 0.6+ | 0.6+ | 2004 02 16 | 704 | 1.2− | 0.4− |
| 2000 03 12 | 699 | 0.4+ | 0.8+ | 2001 08 24 | 608 | 0.7+ | 0.5+ | 2004 02 16 | 704 | 0.3− | 0.4+ |
| 2000 03 12 | 699 | 1.2+ | 0.2+ | 2001 08 25 | 699 | 0.0 | 0.1− | 2004 02 16 | 704 | 0.3+ | 1.3+ |
| 2000 03 12 | 699 | 0.4+ | 0.2− | 2001 08 25 | 699 | 0.5− | 0.1− | 2004 02 16 | 704 | 0.0 | 0.1− |
| 2000 04 03 | 704 | 0.0 | 0.8− | 2001 08 25 | 699 | 0.0 | 0.8− | 2004 03 23 | 704 | 0.7+ | 1.0− |
| 2000 04 03 | 704 | 0.3+ | 0.4+ | 2001 08 25 | 699 | 0.3− | 0.2− | 2004 03 23 | 704 | 0.0 | 0.2+ |
| 2000 04 03 | 704 | 0.1+ | 0.5− | 2001 09 11 | 704 | 0.5+ | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.5+ |
| 2000 05 30 | 699 | 0.5− | 0.4+ | 2001 09 11 | 704 | 0.3+ | 0.4− | 2004 03 23 | 704 | 0.8− | 0.6+ |
| 2000 05 30 | 699 | 0.3− | 0.6+ | 2001 09 11 | 704 | 0.0 | 1.3− | 2004 03 23 | 704 | 0.0 | 0.9+ |
| 2000 05 30 | 699 | 0.6− | 0.1− | 2001 09 11 | 704 | 0.1− | 0.2− | 2006 10 20 | 703 | 0.6− | 0.5+ |
| 2000 05 30 | 699 | 0.6− | 0.0 | 2001 09 17 | 699 | 0.7+ | 0.3− | 2006 10 20 | 703 | 0.4− | 0.2− |
| 2001 08 03 | 608 | 0.1+ | 0.1+ | 2001 09 17 | 699 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.8− | 0.1+ |
| 2001 08 03 | 608 | 0.1− | 0.4− | 2001 09 17 | 699 | 0.1+ | 0.2− | 2006 10 20 | 703 | 0.0 | 0.8− |
| 2001 08 03 | 608 | 0.2+ | 0.1+ | 2001 09 17 | 699 | 0.2+ | 0.9− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 08 19 | 704 | 0.2− | 0.3− | 2001 09 27 | 644 | 0.2+ | 0.6+ | 2006 11 07 | 644 | 0.1+ | 0.4+ |
| 2001 08 19 | 704 | 0.3− | 0.1+ | 2001 09 27 | 644 | 0.5+ | 0.5+ | 2006 11 07 | 644 | 0.4+ | 0.1− |
| 2001 08 19 | 704 | 0.4+ | 0.2− | 2001 09 27 | 644 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2001 08 19 | 704 | 0.3+ | 0.2+ | 2001 10 14 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.7+ |
| 2001 08 19 | 704 | 0.1− | 0.1+ | 2001 10 14 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.7− |
| 2001 08 23 | 608 | 0.9− | 0.6+ | 2001 10 14 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2001 08 23 | 608 | 0.6− | 0.8+ | 2001 11 07 | 704 | 0.4+ | 0.4+ | 2006 11 23 | 703 | 0.7+ | 0.1+ |
| 2001 08 23 | 608 | 0.6− | 0.5+ | 2001 11 07 | 704 | (0.5+ | 1.7−) | 2006 11 23 | 703 | 0.1+ | 0.2− |
| 2001 08 23 | 608 | 1.1− | 0.4+ | 2001 11 07 | 704 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.7+ |
| 2001 08 23 | 608 | 1.1− | 0.2+ | 2001 11 07 | 704 | 0.3+ | 0.3− | 2006 11 23 | 703 | 0.0 | 0.0 |
| 2001 08 23 | 608 | 1.1− | 0.2+ | 2001 11 07 | 704 | 0.2− | 0.6+ | | | | |
| 2001 08 24 | 608 | 0.4+ | 1.3+ | 2004 02 16 | 704 | 0.7+ | 0.1− | | | | |

**(139729)∗ 2001 QJ$_{250}$**

Discovered 2001 Aug. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.85526 | | $\omega$ | 348.12476 | +0.93266989 | −0.34557769 |
| $n$ | 0.20224171 | | $\Omega$ | 32.69101 | +0.34466147 | +0.76904329 |
| $a$ | 2.8744553 | | $i$ | 11.04296 | +0.10646760 | +0.53772529 |
| $e$ | 0.1404317 | | $H$ | 15.1 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.87 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.3+ | 0.1+ | 2002 12 15 | 704 | (2.0+ | 0.1−) | 2006 09 17 | 608 | 0.2− | 1.2− |
| 2001 08 19 | 704 | 0.3− | 0.5+ | 2002 12 31 | 699 | 0.6+ | 0.0 | 2006 09 17 | 608 | (0.3+ | 1.6−) |
| 2001 08 19 | 704 | 0.5− | 0.0 | 2002 12 31 | 699 | 0.5+ | 0.4+ | 2006 09 17 | 608 | 0.3+ | 1.4− |
| 2001 08 23 | 608 | 0.8− | 0.0 | 2002 12 31 | 699 | 0.1+ | 1.3+ | 2006 09 19 | 703 | 0.2+ | 0.5+ |
| 2001 08 23 | 608 | 0.1− | 0.0 | 2002 12 31 | 699 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.7+ |
| 2001 08 23 | 608 | 0.4− | 0.1+ | 2003 01 07 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2001 08 23 | 608 | 0.3− | 0.1− | 2003 01 07 | 704 | 0.2− | 0.6− | 2006 09 19 | 703 | 0.2− | 0.7+ |
| 2001 08 23 | 608 | 0.1− | 0.3− | 2003 01 07 | 704 | 0.4+ | 0.7− | 2006 09 25 | 703 | 0.9− | 0.2+ |
| 2001 08 23 | 608 | 0.1− | 0.2+ | 2003 01 07 | 704 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.6− | 0.4+ |
| 2001 08 24 | 608 | 0.8+ | 0.3+ | 2003 01 10 | 704 | (1.4− | 1.9+) | 2006 09 25 | 703 | 0.4− | 0.2+ |
| 2001 08 24 | 608 | 0.2+ | 0.1+ | 2003 01 10 | 704 | 1.0− | 0.8+ | 2006 09 25 | 703 | 0.1− | 0.4+ |
| 2001 08 24 | 608 | 0.3+ | 0.3+ | 2003 01 10 | 704 | (1.1− | 2.1−) | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2001 08 25 | 699 | 0.2− | 0.1+ | 2003 01 13 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2001 08 25 | 699 | 0.3− | 0.6+ | 2003 01 13 | 704 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2001 08 25 | 699 | 0.4− | 0.0 | 2003 01 13 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.6− |
| 2001 08 25 | 699 | 0.3+ | 0.3+ | 2004 03 12 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2001 09 11 | 704 | 0.3+ | 0.6− | 2004 03 12 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.4+ |
| 2001 09 11 | 704 | 0.6+ | 0.5− | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.7+ |
| 2001 09 11 | 704 | 0.7+ | 0.8− | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.8+ | 0.7+ | 2006 10 19 | 703 | 0.9− | 1.4+ |
| 2001 09 11 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.7+ | 1.0− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2001 09 17 | 699 | 0.7+ | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 09 17 | 699 | (0.2+ | 2.1+) | 2004 03 20 | 704 | 1.0+ | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 09 17 | 699 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.5− | 1.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 09 17 | 699 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.8− | 1.2+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.4− | 0.5+ | 2004 04 16 | 691 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.7+ | 0.7+ | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.9− | 0.1− | 2004 04 16 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 09 25 | 704 | 0.3− | 0.6+ | 2006 08 19 | 644 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 10 16 | 644 | 0.9− | 0.1+ | 2006 08 19 | 644 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 10 16 | 644 | 0.4− | 0.1− | 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2001 10 16 | 644 | 0.5− | 0.2− | 2006 08 30 | D35 | 0.2− | 0.9+ | 2006 10 24 | 644 | 0.3− | 0.3− |
| 2001 10 24 | 644 | 0.1+ | 1.0+ | 2006 08 30 | D35 | 0.1− | 0.7+ | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2001 10 24 | 644 | 0.1+ | 0.5+ | 2006 08 30 | D35 | 0.1− | 0.7+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 699 | 0.5+ | 0.8+ | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2002 12 15 | 704 | 1.0− | 0.9+ | 2006 09 17 | 699 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2002 12 15 | 704 | 0.8+ | 0.1− | 2006 09 17 | 699 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2002 12 15 | 704 | (0.4+ | 1.7+) | 2006 09 17 | 699 | 0.0 | 0.8+ | | | | |

**(139730)∗ 2001 QY$_{251}$ = 1999 CP$_{75}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 318.39637 | | $\omega$ | 179.69958 | +0.42573354 | −0.89517721 |
| $n$ | 0.22009790 | | $\Omega$ | 245.10012 | +0.82987865 | +0.44440194 |
| $a$ | 2.7168070 | | $i$ | 8.36413 | +0.36062774 | +0.03412737 |
| $e$ | 0.1653839 | | $H$ | 15.0 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.48 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.3− | 0.7+ | 2002 11 14 | 704 | 0.2+ | 0.8− | 2006 09 27 | 703 | 0.3− | 0.3− |
| 1999 02 12 | 704 | 0.6+ | 0.6+ | 2002 11 14 | 704 | 0.3− | 0.6− | 2006 09 27 | 703 | 0.1− | 0.4+ |
| 1999 02 12 | 704 | 1.3− | 1.5− | 2002 12 11 | 704 | 0.3+ | 1.2− | 2006 09 27 | 703 | 0.5− | 0.1− |
| 1999 02 12 | 704 | 0.1+ | 0.6+ | 2002 12 11 | 704 | 0.5+ | 1.1− | 2006 09 27 | 703 | 0.4− | 0.6− |
| 1999 02 16 | 704 | 1.7− | 0.7− | 2002 12 11 | 704 | 0.5+ | 1.0− | 2006 10 03 | 704 | (0.2− | 2.1+) |
| 1999 02 16 | 704 | 0.9− | 1.4− | 2002 12 11 | 704 | (0.2+ | 1.6−) | 2006 10 03 | 704 | 0.1+ | 0.2+ |
| 1999 02 16 | 704 | 0.7+ | 0.1+ | 2002 12 12 | 704 | 0.0 | 0.4− | 2006 10 03 | 704 | 0.6− | 0.2+ |
| 1999 02 16 | 704 | 0.3+ | 1.2+ | 2002 12 12 | 704 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2000 05 28 | 704 | 0.7+ | 1.5− | 2002 12 12 | 704 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2000 05 28 | 704 | 0.4+ | 0.2− | 2002 12 12 | 704 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2000 05 28 | 704 | 0.8+ | 1.3+ | 2002 12 12 | 704 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 2001 08 16 | 644 | 0.2− | 0.0 | 2002 12 12 | 704 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2001 08 16 | 644 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.3+ | 1.3+ | 2006 10 17 | 703 | 0.7− | 0.6+ |
| 2001 08 16 | 644 | 0.3− | 0.3+ | 2002 12 31 | 704 | 0.7+ | 1.3+ | 2006 10 17 | 703 | 0.0 | 1.3+ |
| 2001 08 23 | 608 | 0.5+ | 0.1+ | 2002 12 31 | 704 | (0.5+ | 1.7+) | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2001 08 23 | 608 | 0.4+ | 0.1− | 2002 12 31 | 704 | 0.6+ | 1.5+ | 2006 10 21 | 644 | 0.3− | 0.3− |
| 2001 08 23 | 608 | 0.1+ | 0.3− | 2002 12 31 | 704 | 0.3+ | 1.4+ | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2001 08 25 | 704 | 0.0 | 1.4+ | 2003 01 07 | 704 | 0.1− | 0.1+ | 2006 10 26 | 704 | 0.4− | 0.6+ |
| 2001 08 25 | 704 | 0.5− | 1.0+ | 2003 01 07 | 704 | 0.4+ | 0.7+ | 2006 10 26 | 704 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 1.3− | 0.3+ | 2003 01 07 | 704 | 0.1+ | 0.8+ | 2006 10 26 | 704 | (1.9+ | 1.6−) |
| 2001 08 26 | 644 | 0.1− | 0.8+ | 2003 01 07 | 704 | 0.2− | 1.1+ | 2006 10 27 | 683 | 1.1+ | 0.2− |
| 2001 08 26 | 644 | 0.4+ | 0.4+ | 2003 01 07 | 704 | 0.5+ | 1.3+ | 2006 10 27 | 683 | 0.6− | 1.1− |
| 2001 08 26 | 644 | 0.7− | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 10 27 | 683 | (2.6− | 0.3−) |
| 2002 11 05 | 704 | 0.1+ | 0.6− | 2006 09 14 | 644 | 0.2− | 0.4− | 2006 10 28 | 683 | 0.9− | 1.0− |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.4− | 2006 10 28 | 683 | 0.6+ | 0.1− |
| 2002 11 05 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.3+ | 2006 10 28 | 683 | 0.7+ | 0.1+ |
| 2002 11 05 | 704 | 0.4− | 0.8− | 2006 09 16 | 703 | 0.6+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.3− |
| 2002 11 06 | 704 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.8+ | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.5− |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.5+ | 0.5+ | 2006 11 13 | 703 | 0.3+ | 0.1− |
| 2002 11 06 | 704 | 0.3− | 0.6+ | 2006 09 22 | 704 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2006 09 22 | 704 | 1.2+ | 0.1− | 2006 11 13 | 703 | 0.4+ | 0.3− |
| 2002 11 06 | 704 | 0.2+ | 0.5+ | 2006 09 22 | 699 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.3− | 1.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.4− | 0.7− | 2006 09 22 | 704 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.9+ | |
| 2002 11 14 | 704 | 0.4− | 0.3− | 2006 09 22 | 699 | 0.4− | 0.5− | 2006 11 22 | 704 | 0.0 | 0.8+ | |
| 2002 11 14 | 704 | 0.1+ | 0.6− | 2006 09 22 | 699 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.5+ | |
| 2002 11 14 | 704 | 0.6− | 1.1− | 2006 09 22 | 699 | 0.2− | 0.1− | | | | | |

**(139731)∗ 2001 QP$_{254}$**

Discovered 2001 Aug. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.90275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21352381 | $\omega$ | 305.07482 | | +0.43072420 | −0.87833936 | |
| $a$ | 2.7722890 | $\Omega$ | 118.12009 | | +0.88551213 | +0.36696900 | |
| $e$ | 0.1591692 | $i$ | 13.59799 | | +0.17419796 | +0.30635555 | |
| $P$ | 4.62 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.0 | 0.7+ | 2002 11 11 | 704 | 0.3+ | 0.3+ | 2004 04 25 | 699 | 0.7− | 0.2+ | |
| 2001 07 16 | 608 | 0.5− | 0.3+ | 2002 12 11 | 704 | 0.6+ | 0.3− | 2004 04 25 | 699 | 0.3− | 0.5+ | |
| 2001 07 16 | 608 | 0.1− | 0.9+ | 2002 12 11 | 704 | 0.1+ | 0.1− | 2004 04 25 | 699 | (0.8− | 2.4+) | |
| 2001 08 11 | 608 | 0.3− | 1.0+ | 2002 12 11 | 704 | 0.4+ | 0.2− | 2004 05 12 | 644 | 0.3+ | 0.9+ | |
| 2001 08 11 | 608 | 1.1− | 0.9+ | 2002 12 11 | 704 | 0.0 | 0.1+ | 2004 05 12 | 644 | 0.4+ | 0.7+ | |
| 2001 08 11 | 608 | 0.5− | 0.2+ | 2002 12 11 | 704 | 0.4+ | 0.1− | 2004 05 12 | 644 | 0.7+ | 0.8+ | |
| 2001 08 19 | 704 | 1.4+ | 0.2− | 2002 12 31 | 704 | 0.8− | 0.0 | 2006 08 10 | 644 | 0.4− | 0.3+ | |
| 2001 08 19 | 704 | 0.2− | 0.2− | 2002 12 31 | 704 | 0.6− | 0.2− | 2006 08 10 | 644 | 0.1− | 0.2− | |
| 2001 08 19 | 704 | 0.5+ | 0.8− | 2002 12 31 | 704 | 1.0− | 0.1− | 2006 08 10 | 644 | 0.0 | 0.4− | |
| 2001 08 25 | 699 | 0.7+ | 0.6− | 2002 12 31 | 704 | 0.9− | 0.4+ | 2006 09 24 | 699 | 0.6− | 0.6+ | |
| 2001 08 25 | 699 | 0.6+ | 0.9+ | 2003 01 31 | 704 | 1.3+ | 1.4+ | 2006 09 24 | 699 | 0.4− | 0.5+ | |
| 2001 08 25 | 699 | 0.8− | 0.6+ | 2003 01 31 | 704 | 0.6+ | 1.1+ | 2006 09 24 | 699 | 0.2− | 0.2+ | |
| 2001 08 25 | 699 | 0.9− | 0.4− | 2003 01 31 | 704 | 0.7+ | 1.3+ | 2006 09 24 | 699 | 0.3+ | 0.0 | |
| 2001 08 27 | 644 | 0.3− | 0.3+ | 2003 01 31 | 704 | (0.8+ | 1.9+) | 2006 09 25 | 703 | 1.0− | 0.6− | |
| 2001 08 27 | 644 | 0.2− | 0.3+ | 2003 01 31 | 704 | (1.0+ | 1.8+) | 2006 09 25 | 703 | 0.1+ | 0.3− | |
| 2001 08 27 | 644 | 0.2− | 0.5+ | 2003 02 03 | 704 | 0.2− | 0.8− | 2006 09 25 | 703 | 0.7+ | 0.8+ | |
| 2001 09 11 | 704 | 0.5+ | 0.1+ | 2003 02 03 | 704 | 0.0 | 0.7− | 2006 09 25 | 703 | 0.3+ | 1.1− | |
| 2001 09 11 | 704 | 0.6+ | 0.6− | 2003 02 03 | 704 | 0.5− | 1.3− | 2006 10 25 | E12 | 0.9+ | 0.0 | |
| 2001 09 11 | 704 | 0.2− | 0.8− | 2003 02 03 | 704 | 0.6− | 0.9− | 2006 10 25 | E12 | 0.1+ | 0.2+ | |
| 2002 11 07 | 704 | 0.6+ | 0.4+ | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 10 25 | E12 | 0.5+ | 0.4− | |
| 2002 11 07 | 704 | 0.8+ | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.8− | 2006 10 25 | E12 | 0.3+ | 0.1+ | |
| 2002 11 07 | 704 | 0.6+ | 1.3+ | 2004 03 15 | 704 | 1.3+ | 0.8− | 2006 11 13 | 644 | 0.0 | 0.2− | |
| 2002 11 07 | 704 | 0.9+ | 0.0 | 2004 03 30 | 049 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.0 | |
| 2002 11 11 | 704 | 1.0− | 1.0+ | 2004 03 30 | 049 | 0.8− | 0.7+ | 2006 11 13 | 644 | 0.4− | 0.0 | |
| 2002 11 11 | 704 | 0.7− | 0.5+ | 2004 03 30 | 049 | 0.6− | 0.2− | | | | | |
| 2002 11 11 | 704 | 0.9− | 0.6+ | 2004 04 25 | 699 | (0.4− | 2.0+) | | | | | |

**(139732)∗ 2001 QQ$_{256}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.57271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23845737 | $\omega$ | 312.31823 | | +0.55720365 | −0.82715242 | |
| $a$ | 2.5755039 | $\Omega$ | 103.67855 | | +0.78227033 | +0.49335955 | |
| $e$ | 0.2271103 | $i$ | 4.31440 | | +0.27852688 | +0.26910079 | |
| $P$ | 4.13 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 09 | 691 | 0.4− | 0.0 | 2001 10 23 | 699 | 0.0 | 0.4− | 2003 03 26 | 699 | 0.2+ | 0.7+ | |
| 1995 04 09 | 691 | 0.0 | 0.1− | 2001 10 24 | 704 | (1.6+ | 1.3+) | 2003 03 26 | 699 | 0.6+ | 0.6− | |
| 1995 04 09 | 691 | 0.1− | 0.1+ | 2001 10 24 | 704 | 1.2+ | 0.1+ | 2003 03 30 | 704 | 0.9+ | 0.1+ | |
| 2001 07 20 | 644 | 0.4− | 0.9+ | 2001 10 24 | 704 | 0.2+ | 0.8+ | 2003 03 30 | 704 | (1.3+ | 1.5+) | |
| 2001 07 20 | 644 | 0.2− | 0.5+ | 2001 10 24 | 704 | 1.4+ | 1.1+ | 2003 03 30 | 704 | 1.1+ | 1.1+ | |
| 2001 07 20 | 644 | 0.3− | 0.3+ | 2001 10 24 | 704 | 1.5+ | 0.5− | 2003 03 30 | 704 | (0.5+ | 2.5+) | |
| 2001 08 16 | 704 | 0.9− | 0.1+ | 2001 11 17 | 699 | 0.1− | 0.7+ | 2005 07 29 | 644 | 0.2− | 0.6+ | |
| 2001 08 16 | 704 | 0.7+ | 0.8− | 2001 11 17 | 699 | 0.3+ | 0.7+ | 2005 07 29 | 644 | 0.0 | 0.4+ | |
| 2001 08 16 | 704 | (0.3− | 1.8−) | 2001 11 17 | 699 | 1.1+ | 0.1− | 2005 07 29 | 644 | 0.1− | 0.5+ | |
| 2001 08 25 | 704 | 0.2− | 0.7+ | 2001 11 17 | 699 | 0.8+ | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.5+ | |
| 2001 08 25 | 704 | 0.0 | 0.2+ | 2001 11 17 | 608 | 0.6+ | 0.3− | 2005 07 29 | 644 | 0.1− | 0.4+ | |
| 2001 08 25 | 704 | 0.4+ | 0.0 | 2001 11 17 | 608 | 1.3+ | 0.2− | 2005 07 29 | 644 | 0.1− | 0.3+ | |
| 2001 08 25 | 704 | 0.1− | 0.4+ | 2001 11 17 | 608 | 0.8+ | 0.6− | 2005 07 30 | 644 | 0.2− | 0.5+ | |
| 2001 08 25 | 704 | 0.1+ | 0.1− | 2001 11 19 | 704 | 0.1− | 0.6− | 2005 07 30 | 644 | 0.1− | 0.4+ | |
| 2001 08 26 | 644 | 0.8− | 0.1+ | 2001 11 19 | 704 | 0.7− | 0.1+ | 2005 07 30 | 644 | 0.0 | 0.4+ | |
| 2001 08 26 | 644 | 0.6− | 0.2+ | 2001 11 19 | 704 | 0.4− | 0.2− | 2005 07 30 | 644 | 0.2− | 0.3+ | |
| 2001 08 26 | 644 | 0.6− | 0.2+ | 2001 11 20 | 704 | (0.1+ | 1.8−) | 2005 07 30 | 644 | 0.1− | 0.4+ | |
| 2001 09 11 | 699 | 0.1− | 0.2+ | 2001 11 20 | 704 | 0.2+ | 0.2− | 2005 07 30 | 644 | 0.1− | 0.4+ | |
| 2001 09 11 | 699 | 0.1− | 0.7+ | 2001 11 20 | 704 | 0.4+ | 0.4− | 2005 08 02 | 704 | 0.3+ | 1.0+ | |
| 2001 09 11 | 699 | 0.1− | 0.7+ | 2001 11 20 | 704 | 0.4+ | 0.3+ | 2005 08 02 | 704 | 0.0 | 0.6+ | |
| 2001 09 11 | 699 | 0.2+ | 0.7+ | 2001 11 20 | 704 | 0.4+ | 0.7− | 2005 08 02 | 704 | 0.5+ | 0.6+ | |
| 2001 09 12 | 704 | 0.6+ | 0.6+ | 2001 12 05 | 704 | 0.4− | 0.8+ | 2005 08 10 | 608 | 0.6− | 0.8− | |
| 2001 09 12 | 704 | 0.4+ | 0.3+ | 2001 12 05 | 704 | 0.8+ | 0.1− | 2005 08 10 | 608 | 0.6− | 0.5− | |
| 2001 09 12 | 704 | 0.8+ | 0.4+ | 2001 12 05 | 704 | 0.3− | 0.0 | 2005 08 10 | 608 | 0.6− | 0.3+ | |
| 2001 09 12 | 704 | 0.6+ | 0.6+ | 2001 12 05 | 704 | 0.1+ | 0.4+ | 2005 08 28 | 699 | 0.2− | 0.5+ | |
| 2001 09 12 | 704 | 0.7+ | 0.6+ | 2001 12 05 | 704 | 0.3− | 0.1+ | 2005 08 28 | 699 | 0.1− | 0.2+ | |
| 2001 09 16 | 678 | (3.8− | 2.4−) | 2003 01 31 | 291 | 0.4+ | 0.5+ | 2005 08 28 | 699 | 0.1+ | 1.2+ | |
| 2001 09 16 | 678 | 0.1+ | 0.5− | 2003 01 31 | 291 | 0.4+ | 0.7+ | 2005 09 13 | 703 | 0.1− | 0.0 | |
| 2001 09 16 | 704 | 0.7− | 0.0 | 2003 01 31 | 291 | 0.5+ | 0.7+ | 2005 09 13 | 703 | 0.2− | 0.0 | |
| 2001 09 16 | 704 | 0.4− | 0.3+ | 2003 02 01 | 704 | 0.6+ | 0.4+ | 2005 09 13 | 703 | 0.5− | 0.8+ | |
| 2001 09 16 | 704 | 0.4− | 0.4+ | 2003 02 01 | 704 | 0.2+ | 0.8+ | 2005 09 13 | 703 | 0.7− | 0.4+ | |
| 2001 09 16 | 704 | 0.1− | 0.7+ | 2003 02 01 | 704 | 0.7+ | 0.9+ | 2005 09 22 | 644 | 0.2+ | 0.2+ | |
| 2001 09 16 | 704 | 0.4− | 1.0+ | 2003 02 01 | 704 | 0.9+ | 0.0 | 2005 09 22 | 644 | 0.1+ | 0.1+ | |
| 2001 09 17 | 678 | (1.7− | 2.4−) | 2003 02 12 | 608 | (0.3+ | 1.7+) | 2005 09 22 | 644 | 0.1+ | 0.1+ | |
| 2001 09 17 | 678 | 0.1+ | 0.5− | 2003 02 12 | 608 | 0.2− | 0.8+ | 2005 09 26 | 703 | 0.0 | 0.3− | |
| 2001 09 17 | 678 | (2.4+ | 1.9−) | 2003 02 12 | 608 | 0.1− | 1.2+ | 2005 09 26 | 703 | 0.5− | 0.3− | |
| 2001 09 19 | 704 | (3.7+ | 0.2+) | 2003 02 24 | 608 | 0.2− | 0.2+ | 2005 09 26 | 703 | 0.4+ | 0.1+ | |
| 2001 09 19 | 704 | (3.9+ | 0.1+) | 2003 02 24 | 608 | 0.1− | 0.2− | 2005 09 26 | 703 | 0.9− | 0.6− | |
| 2001 09 19 | 704 | (3.6+ | 0.1−) | 2003 02 24 | 608 | 0.5− | 0.9+ | 2005 09 27 | 704 | 0.5+ | 0.8+ | |
| 2001 09 19 | 704 | (3.7+ | 0.3−) | 2003 02 27 | 608 | 0.6+ | 0.1+ | 2005 09 27 | 704 | 0.3+ | 0.0 | |
| 2001 09 19 | 704 | (3.7+ | 0.1−) | 2003 02 27 | 608 | 0.3+ | 0.1+ | 2005 09 27 | 704 | 0.1+ | 0.3− | |
| 2001 09 21 | 704 | 0.6− | 0.1+ | 2003 02 27 | 608 | 0.5+ | 0.5+ | 2005 09 27 | 704 | 0.4− | 0.5+ | |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2003 03 06 | 704 | 0.8− | 1.2+ | 2005 09 27 | 704 | 0.2− | 0.5− | |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2003 03 06 | 704 | 0.8− | 0.3− | 2005 10 08 | 699 | 0.4+ | 0.1− | |
| 2001 09 21 | 704 | 0.5− | 0.1+ | 2003 03 06 | 704 | 0.1+ | 0.2+ | 2005 10 08 | 699 | 0.6− | 0.2+ | |
| 2001 09 21 | 704 | 0.5− | 0.0 | 2003 03 07 | 699 | 0.6+ | 0.8+ | 2005 10 08 | 699 | (0.9− | 1.7+) | |
| 2001 09 25 | 644 | 0.0 | 0.2+ | 2003 03 07 | 699 | 0.3+ | 1.1+ | 2005 10 08 | 699 | 0.5− | 1.4+ | |
| 2001 09 25 | 644 | 0.1− | 0.2+ | 2003 03 07 | 699 | 0.3+ | 0.7+ | 2005 11 30 | 704 | 0.0 | 0.1− | |
| 2001 09 25 | 644 | 0.0 | 0.0 | 2003 03 07 | 699 | 0.7+ | 0.6+ | 2005 11 30 | 704 | 0.8− | 0.7− | |
| 2001 09 27 | 644 | 0.4− | 0.1+ | 2003 03 09 | 704 | 0.3+ | 0.2+ | 2005 11 30 | 704 | 0.8+ | 0.6− | |
| 2001 09 27 | 644 | 0.4− | 0.1+ | 2003 03 09 | 704 | 0.7+ | 0.0 | 2005 11 30 | 704 | 0.2+ | 0.5+ | |
| 2001 09 27 | 644 | 0.4− | 0.1+ | 2003 03 09 | 704 | 0.5− | 0.5+ | 2005 11 30 | 704 | 1.2− | 0.5− | |
| 2001 10 08 | 644 | 0.3− | 0.1− | 2003 03 09 | 704 | 0.7+ | 0.4+ | 2005 12 06 | 703 | 0.6− | 1.1+ | |
| 2001 10 08 | 644 | 0.3− | 0.1− | 2003 03 09 | 704 | 0.0 | 0.6+ | 2005 12 06 | 703 | 0.7+ | 0.9+ | |
| 2001 10 08 | 644 | 0.4− | 0.0 | 2003 03 10 | 704 | (2.3+ | 2.0−) | 2005 12 06 | 703 | (0.8+ | 1.8+) | |
| 2001 10 11 | 704 | 0.7− | 0.1+ | 2003 03 10 | 704 | 1.1+ | 1.5− | 2005 12 06 | 703 | 0.1− | 1.0+ | |
| 2001 10 11 | 704 | 0.7− | 0.4+ | 2003 03 10 | 704 | (0.5− | 2.7−) | 2006 11 01 | G96 | 0.1+ | 0.4− | |
| 2001 10 11 | 704 | 0.7− | 0.3+ | 2003 03 10 | 704 | (1.0+ | 1.7+) | 2006 11 01 | G96 | 0.1+ | 0.4− | |
| 2001 10 11 | 704 | 0.4− | 0.2+ | 2003 03 12 | 704 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− | |
| 2001 10 11 | 704 | 0.9− | 0.1+ | 2003 03 12 | 704 | 0.9+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− | |
| 2001 10 13 | 704 | 0.1+ | 0.2+ | 2003 03 12 | 704 | (1.9+ | 1.1−) | 2006 11 17 | G96 | 0.3− | 0.2+ | |
| 2001 10 13 | 704 | 0.3− | 0.4+ | 2003 03 12 | 704 | 0.8+ | 1.1+ | 2006 11 17 | G96 | 0.3− | 0.0 | |
| 2001 10 13 | 704 | 0.1+ | 0.5+ | 2003 03 12 | 704 | (1.8+ | 0.7−) | 2006 11 17 | G96 | 0.2− | 0.2− | |
| 2001 10 13 | 704 | 0.2− | 0.4− | 2003 03 13 | 704 | (0.0 | 1.5+) | 2006 11 17 | G96 | 0.2− | 0.3− | |
| 2001 10 16 | 644 | 0.1− | 0.1− | 2003 03 13 | 704 | 0.7+ | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.0 | |
| 2001 10 16 | 644 | 0.4− | 0.0 | 2003 03 13 | 704 | (0.3− | 1.8+) | 2006 11 17 | G96 | 0.1− | 0.0 | |
| 2001 10 16 | 644 | 0.1+ | 0.1− | 2003 03 13 | 704 | (6.5+ | 1.4+) | 2006 11 17 | G96 | 0.1+ | 0.0 | |
| 2001 10 16 | 644 | 0.4− | 0.1+ | 2003 03 13 | 704 | 0.5− | 0.1+ | 2006 11 17 | G96 | 1.6− | 1.5− | |
| 2001 10 16 | 644 | 0.2+ | 0.2− | 2003 03 15 | 608 | 0.0 | 0.8+ | 2006 11 19 | 691 | 0.5+ | 0.3+ | |
| 2001 10 16 | 644 | 0.4− | 0.0 | 2003 03 15 | 608 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.6− | 1.1+ | |
| 2001 10 23 | 699 | 0.1− | 0.2− | 2003 03 15 | 608 | 0.3− | 0.4+ | 2006 11 19 | 691 | 0.4+ | 0.1+ | |
| 2001 10 23 | 699 | 0.1+ | 0.3− | 2003 03 26 | 699 | 0.9− | 0.9+ | | | | | |
| 2001 10 23 | 699 | 0.5− | 0.7− | 2003 03 26 | 699 | 1.0− | 0.3− | | | | | |

**(139733)∗ 2001 QG$_{257}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.07426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20883503 | $\omega$ | 192.40935 | | +0.90251342 | +0.41933902 | |
| $a$ | 2.8136311 | $\Omega$ | 142.30853 | | −0.38014022 | +0.88274880 | |
| $e$ | 0.2245952 | $i$ | 9.23329 | | −0.20239302 | +0.21191826 | |
| $P$ | 4.72 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.1+ | 0.3+ | 2001 09 18 | 699 | 0.6+ | 0.0 | 2004 03 17 | 691 | 0.4+ | 1.2+ |
| 2001 07 19 | 644 | 0.2+ | 0.6+ | 2001 09 18 | 699 | 0.1+ | 0.1+ | 2005 06 03 | 691 | 0.1− | 0.0 |
| 2001 07 19 | 644 | 0.1+ | 0.4+ | 2001 09 18 | 699 | 0.1+ | 0.6+ | 2005 06 03 | 691 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | 1.0− | 0.5+ | 2001 09 24 | 644 | 0.0 | 0.6+ | 2005 06 03 | 691 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 1.3− | 0.3+ | 2001 09 24 | 644 | 0.5− | 0.5+ | 2005 06 13 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.6− | 0.6+ | 2001 09 24 | 644 | 0.2− | 0.4+ | 2005 06 13 | 691 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 0.1+ | 0.1− | 2001 09 25 | 704 | 0.3+ | 0.7+ | 2005 06 13 | 691 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 0.5− | 0.5− | 2001 09 25 | 704 | 0.2+ | 1.2+ | 2005 07 01 | 691 | 0.2+ | 0.4+ |
| 2001 08 27 | 699 | 0.2+ | 0.2− | 2001 09 25 | 704 | 0.9+ | 0.9+ | 2005 07 01 | 691 | 0.1− | 0.4+ |
| 2001 08 27 | 699 | 0.4+ | 0.3− | 2001 09 25 | 704 | 0.5+ | 1.2+ | 2005 07 01 | 691 | 0.1− | 0.3+ |
| 2001 08 27 | 699 | 0.1+ | 0.4+ | 2001 09 25 | 704 | 0.8+ | 0.8+ | 2006 09 30 | 703 | 0.6− | 1.5− |
| 2001 08 27 | 699 | 0.5+ | 0.7− | 2001 10 11 | 704 | 0.8− | 0.2− | 2006 09 30 | 703 | 1.3− | 0.0 |
| 2001 08 29 | 644 | 0.1+ | 0.8+ | 2001 10 11 | 704 | 0.7− | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 2001 08 29 | 644 | 0.1− | 0.7+ | 2001 10 11 | 704 | 0.6− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2001 08 29 | 644 | 0.3− | 1.2+ | 2001 10 11 | 704 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2001 09 10 | 644 | 1.5+ | 0.1+ | 2001 10 15 | 644 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.8+ |
| 2001 09 10 | 644 | 1.4+ | 0.1− | 2001 10 15 | 644 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.8− | 0.7+ |
| 2001 09 10 | 644 | 1.4+ | 0.1+ | 2001 10 15 | 644 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2001 09 11 | 699 | 0.6− | 0.3+ | 2001 10 20 | 704 | 0.8− | 0.7− | 2006 11 13 | 703 | 1.2+ | 0.6+ |
| 2001 09 11 | 699 | 0.6− | 0.5+ | 2001 10 20 | 704 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.1− | 0.8+ |
| 2001 09 11 | 699 | 0.2− | 0.3− | 2001 10 20 | 704 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.2− | 0.8+ |
| 2001 09 11 | 699 | 1.2− | 0.1− | 2001 10 23 | 644 | 0.0 | 0.9− | 2006 11 13 | 703 | 0.5+ | 1.0+ |
| 2001 09 12 | 704 | 0.1+ | 0.1− | 2001 10 23 | 644 | 0.0 | 1.2− | 2006 11 19 | 703 | 0.0 | 0.5+ |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2001 10 23 | 644 | 0.0 | 1.0− | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2004 03 17 | 691 | 0.2+ | 0.7+ | 2006 11 19 | 703 | 0.0 | 0.7− |
| 2001 09 18 | 699 | 0.1+ | 0.1− | 2004 03 17 | 691 | 0.3+ | 0.9+ | 2006 11 19 | 703 | 0.4+ | 0.9+ |

**(139734)∗ 2001 QM$_{258}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.09873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20301516 | $\omega$ | 303.28668 | | +0.97713147 | −0.20153888 | |
| $a$ | 2.8671500 | $\Omega$ | 68.41974 | | +0.21114727 | +0.88198956 | |
| $e$ | 0.0821421 | $i$ | 4.18088 | | +0.02511803 | +0.42600058 | |
| $P$ | 4.85 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.2− | 0.8− | 2001 10 16 | 644 | 0.5− | 0.1+ | 2006 09 16 | 704 | 0.3+ | 0.4+ |
| 2001 08 25 | 704 | 0.9− | 0.2− | 2001 10 17 | 644 | 0.3− | 0.1− | 2006 09 16 | 644 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.4− | 0.3− | 2001 10 17 | 644 | 0.3− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.0 | 0.1− | 2001 10 17 | 644 | 0.4− | 0.1+ | 2006 09 16 | 644 | 0.3− | 0.1+ |
| 2001 08 26 | 644 | 0.5+ | 0.4− | 2001 10 24 | 644 | 0.3+ | 0.8− | 2006 09 19 | 704 | 0.7+ | 0.1+ |
| 2001 08 26 | 644 | 0.5+ | 0.1− | 2001 10 24 | 644 | 0.2+ | 0.5− | 2006 09 19 | 704 | (1.5+ | 0.1+) |
| 2001 08 26 | 644 | 0.3+ | 0.1− | 2001 10 24 | 644 | 0.2+ | 0.8− | 2006 09 19 | 704 | (2.7+ | 0.7+) |
| 2001 09 09 | 644 | 0.6+ | 1.3+ | 2001 11 17 | 699 | 0.0 | 0.7− | 2006 09 19 | 704 | 0.6− | 0.6+ |
| 2001 09 09 | 644 | (0.8+ | 1.9+) | 2001 11 17 | 699 | 0.1− | 0.3− | 2006 09 19 | 704 | 0.4+ | 0.2+ |
| 2001 09 09 | 644 | 1.3+ | 1.4+ | 2001 11 17 | 699 | 0.6+ | 1.2+ | 2006 09 21 | 699 | 1.0+ | 0.7+ |
| 2001 09 11 | 699 | 0.3− | 0.3− | 2001 11 17 | 699 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 0.1− | 0.4+ |
| 2001 09 11 | 699 | 0.1− | 0.2+ | 2001 11 20 | 704 | 1.4− | 0.1− | 2006 09 21 | 699 | 0.2+ | 0.5+ |
| 2001 09 11 | 699 | 0.5− | 0.0 | 2001 11 20 | 704 | 0.5− | 0.5− | 2006 09 21 | 699 | 0.1− | 0.5− |
| 2001 09 11 | 699 | 0.3− | 0.4+ | 2001 11 20 | 704 | 0.1+ | 0.2− | 2006 09 22 | 704 | 1.0− | 0.2+ |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2001 11 20 | 704 | 0.5− | 0.6− | 2006 09 22 | 704 | 0.2− | 0.5+ |
| 2001 09 12 | 704 | 0.2− | 0.4+ | 2001 11 20 | 704 | 0.2− | 0.6+ | 2006 09 22 | 704 | 0.2− | 0.8− |
| 2001 09 12 | 704 | 0.1+ | 0.7+ | 2002 12 11 | 704 | 0.5− | 0.6− | 2006 09 22 | 704 | 0.4− | 0.1− |
| 2001 09 12 | 704 | 0.1+ | 0.9+ | 2002 12 11 | 704 | 0.4− | 1.3+ | 2006 09 22 | 704 | 0.5− | 0.2+ |
| 2001 09 12 | 704 | (1.8+ | 1.4+) | 2002 12 11 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 0.3− | 0.3+ |
| 2001 09 18 | 699 | 0.6− | 0.4+ | 2002 12 11 | 704 | 0.1− | 0.8+ | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2001 09 18 | 699 | 1.2− | 0.5+ | 2002 12 11 | 704 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2001 09 18 | 699 | 0.6− | 0.5+ | 2003 01 05 | 704 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.9− | 0.3− |
| 2001 09 18 | 699 | 0.9− | 0.9− | 2003 01 05 | 704 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.8− |
| 2001 09 19 | 704 | 1.0− | 0.7− | 2003 01 05 | 704 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.5− |
| 2001 09 19 | 704 | 0.0 | 0.7− | 2003 01 05 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.6− | 0.8− |
| 2001 09 19 | 704 | (1.5− | 0.4−) | 2003 01 05 | 704 | 0.1− | 0.6+ | 2006 09 26 | 704 | 1.0− | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2003 01 09 | 704 | 0.3+ | 0.2− | 2006 09 26 | 704 | 0.0 | 0.7− |
| 2001 09 19 | 704 | 0.5− | 0.2− | 2003 01 09 | 704 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 1.5− | 0.2− | 2003 01 09 | 704 | 0.3+ | 1.1− | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | (1.6− | 0.3+) | 2003 01 09 | 704 | 0.3+ | 0.5− | 2006 09 28 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | (1.8− | 0.2+) | 2003 01 09 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.8+ | 0.5+ |
| 2001 09 21 | 704 | 1.5− | 0.4+ | 2003 02 01 | 704 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.7+ | 0.4+ |
| 2001 09 21 | 704 | (2.0− | 0.1−) | 2003 02 01 | 704 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.8+ | 0.3+ |
| 2001 09 25 | 704 | 0.6+ | 0.9+ | 2003 02 01 | 704 | 0.4+ | 0.7+ | 2006 10 01 | 704 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2003 02 01 | 704 | 0.8+ | 0.5+ | 2006 10 01 | 704 | 0.5+ | 0.6+ |
| 2001 09 25 | 704 | 0.6+ | 0.8+ | 2003 02 01 | 704 | (0.4+ | 1.6+) | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.0 | 0.4+ | 2004 03 14 | 691 | 0.3+ | 0.8+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.7+ | 0.7+ | 2004 03 14 | 691 | 0.2+ | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.1+ | 0.8+ | 2004 03 14 | 691 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2001 09 25 | 704 | 0.5+ | 1.1+ | 2004 03 16 | 704 | (1.6+ | 1.6+) | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2001 09 25 | 704 | 0.3+ | 0.4+ | 2004 03 16 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2001 09 25 | 644 | 0.3− | 0.0 | 2004 03 16 | 704 | (0.2+ | 1.6+) | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 1.3+ | 2004 03 16 | 704 | 1.2+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.4− |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2004 03 16 | 704 | 0.7+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2001 09 25 | 644 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2001 09 25 | 644 | 0.5− | 0.2+ | 2004 03 19 | 704 | (0.7− | 1.5+) | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2001 09 26 | 704 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.7− | 1.4+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 1.0+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.1− | 0.7+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2001 09 26 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2001 09 27 | 644 | 0.6− | 0.1+ | 2004 03 22 | 704 | (0.5+ | 1.6+) | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2001 09 27 | 644 | 0.3− | 0.3+ | 2004 03 24 | 699 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.8− |
| 2001 09 27 | 644 | 0.3− | 0.4+ | 2004 03 24 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.3− |
| 2001 10 08 | 644 | 0.4+ | 1.0+ | 2004 03 24 | 699 | 0.2− | 1.5+ | 2006 10 22 | 703 | 0.1+ | 0.0 |
| 2001 10 08 | 644 | 0.5+ | 0.9+ | 2004 03 24 | 699 | 0.1− | 1.3+ | 2006 10 27 | 704 | 1.1− | 0.2+ |
| 2001 10 08 | 644 | 0.4+ | 1.0+ | 2004 03 28 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 704 | 1.0+ | 0.1− |
| 2001 10 11 | 704 | 0.2− | 1.1+ | 2004 03 28 | 704 | 1.3+ | 1.1+ | 2006 10 27 | 704 | 0.0 | 1.1+ |
| 2001 10 11 | 704 | 0.0 | 1.2+ | 2004 03 28 | 704 | (0.8− | 1.7+) | 2006 10 27 | 704 | 0.2+ | 0.2− |
| 2001 10 11 | 704 | 0.5+ | 1.1+ | 2004 03 28 | 704 | (0.1− | 2.0+) | 2006 11 11 | 703 | 0.4− | 1.0− |
| 2001 10 11 | 704 | 0.1− | 0.8+ | 2004 03 28 | 704 | 0.0 | 1.3+ | 2006 11 11 | 703 | 0.1+ | 1.2− |
| 2001 10 11 | 704 | 0.1+ | 1.2+ | 2004 04 10 | 644 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2001 10 13 | 704 | 1.0− | 0.0 | 2004 04 10 | 644 | 0.2+ | 1.2+ | 2006 11 11 | 703 | 0.0 | 1.0− |
| 2001 10 13 | 704 | 0.2− | 0.8+ | 2004 04 10 | 644 | 0.1+ | 1.1+ | 2006 11 14 | 704 | 1.2+ | 1.1+ |
| 2001 10 13 | 704 | (0.7− | 1.7+) | 2006 09 16 | 704 | 0.3+ | 0.5+ | 2006 11 14 | 704 | 0.8+ | 1.2+ |
| 2001 10 13 | 704 | 1.3− | 1.4+ | 2006 09 16 | 704 | 1.0− | 1.1+ | 2006 11 14 | 704 | 1.0+ | 2.1+ |
| 2001 10 16 | 644 | 0.5− | 0.2+ | 2006 09 16 | 704 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.1− | 0.2− |
| 2001 10 16 | 644 | 0.4− | 0.2+ | 2006 09 16 | 704 | 0.9− | 0.4− | | | | |

**(139735)∗ 2001 QK$_{259}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.36382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19244686 | $\omega$ | 297.87678 | | −0.64780510 | +0.74800344 | |
| $a$ | 2.9711791 | $\Omega$ | 290.99622 | | −0.63323282 | −0.63406305 | |
| $e$ | 0.0440602 | $i$ | 8.89505 | | −0.42351476 | −0.19609921 | |
| $P$ | 5.12 | $H$ | 13.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 644 | 0.6− | 0.6− | 2002 12 06 | 704 | 0.2− | 0.1− | 2004 02 19 | 704 | 0.3+ | 0.7+ |
| 2001 07 25 | 644 | 0.8− | 0.4− | 2002 12 06 | 704 | 1.2− | 0.6+ | 2004 02 19 | 704 | 0.1+ | 0.0 |
| 2001 07 25 | 644 | 0.4− | 0.2− | 2002 12 06 | 704 | 0.1+ | 0.0 | 2004 02 24 | 608 | (2.7+ | 1.2+) |
| 2001 08 04 | 644 | 0.0 | 0.9+ | 2002 12 06 | 704 | 0.3+ | 0.1+ | 2004 02 24 | 608 | (2.5+ | 1.6+) |
| 2001 08 04 | 644 | 0.0 | 1.1+ | 2002 12 07 | 704 | 0.8+ | 0.3− | 2004 02 24 | 608 | (2.9+ | 1.8+) |
| 2001 08 04 | 644 | 0.2+ | 0.7+ | 2002 12 07 | 704 | 0.3+ | 0.8+ | 2004 03 16 | 691 | 0.1− | 0.3+ |
| 2001 08 25 | 704 | 0.1+ | 0.2− | 2002 12 07 | 704 | 0.4+ | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.2+ | 0.0 | 2002 12 07 | 704 | 0.4+ | 0.9+ | 2004 03 16 | 704 | 0.5+ | 0.5+ | | |
| 2001 08 25 | 704 | 0.1− | 0.2+ | 2002 12 07 | 704 | 0.0 | 0.7− | 2004 03 16 | 691 | 0.1− | 0.3+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.2− | 2002 12 07 | 704 | 0.2+ | 0.7+ | 2004 03 16 | 704 | 0.6+ | 0.3+ | | |
| 2001 08 26 | 699 | 0.6− | 0.6+ | 2002 12 07 | 704 | 0.9+ | 0.5− | 2004 03 16 | 704 | 0.2+ | 0.4+ | | |
| 2001 08 26 | 699 | 0.8− | 0.1+ | 2002 12 07 | 704 | 0.3+ | 0.7+ | 2004 03 16 | 691 | 0.0 | 0.3+ | | |
| 2001 08 26 | 699 | 0.0 | 0.1+ | 2002 12 07 | 704 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.5+ | 0.0 | | |
| 2001 08 26 | 699 | 0.5− | 0.4+ | 2002 12 07 | 704 | 0.2+ | 1.0+ | 2004 03 17 | 608 | 0.9+ | 0.3− | | |
| 2001 09 10 | 704 | 0.1− | 0.3− | 2002 12 10 | 704 | 0.3− | 1.0− | 2004 03 17 | 608 | 0.7+ | 0.4− | | |
| 2001 09 10 | 704 | 0.1− | 0.0 | 2002 12 10 | 704 | 0.3− | 0.2− | 2004 03 17 | 608 | 1.2+ | 0.4− | | |
| 2001 09 10 | 704 | 0.1− | 0.2− | 2002 12 10 | 704 | 0.3− | 0.8− | 2004 03 29 | 703 | 1.0− | 1.3+ | | |
| 2001 09 10 | 699 | 0.7− | 0.6+ | 2002 12 10 | 704 | 0.7− | 0.8− | 2004 03 29 | 703 | 1.5− | 0.9+ | | |
| 2001 09 10 | 704 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.7− | 0.8− | 2004 03 29 | 703 | 0.5− | 1.4+ | | |
| 2001 09 10 | 704 | 0.7− | 0.3− | 2002 12 11 | 704 | 0.0 | 0.3+ | 2004 03 29 | 703 | 0.5+ | 0.0 | | |
| 2001 09 10 | 699 | 0.0 | 0.6+ | 2002 12 11 | 704 | 0.4+ | 0.9− | 2004 04 08 | 608 | 0.7+ | 0.5+ | | |
| 2001 09 10 | 699 | 0.2− | 1.0+ | 2002 12 11 | 704 | 0.2+ | 0.4− | 2004 04 08 | 608 | 0.7+ | 0.1+ | | |
| 2001 09 10 | 699 | 0.6− | 0.7+ | 2002 12 11 | 704 | (3.0− | 0.3−) | 2004 04 08 | 608 | 0.7+ | 0.5+ | | |
| 2001 09 21 | 699 | 0.3+ | 0.4+ | 2002 12 13 | 704 | 0.2− | 0.2− | 2004 04 09 | 703 | 0.8− | 1.0− | | |
| 2001 09 21 | 699 | 0.1− | 0.2+ | 2002 12 13 | 704 | 0.3− | 0.4+ | 2004 04 09 | 703 | 1.0+ | 0.7+ | | |
| 2001 09 21 | 699 | 0.3+ | 0.1− | 2002 12 13 | 704 | 0.1− | 0.6+ | 2004 04 09 | 703 | 0.2+ | 0.3+ | | |
| 2001 09 21 | 699 | 0.4+ | 0.0 | 2002 12 13 | 704 | 0.1− | 0.4+ | 2004 04 09 | 703 | 0.1− | 0.7+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2002 12 13 | 704 | 0.1− | 1.1+ | 2004 05 14 | 704 | 0.8− | 0.3− | | |
| 2001 09 25 | 644 | 0.2− | 0.3+ | 2002 12 14 | 704 | 0.2− | 1.0− | 2004 05 14 | 704 | 0.7+ | 1.4+ | | |
| 2001 09 25 | 704 | 0.2− | 0.6+ | 2002 12 14 | 704 | 0.1− | 0.1+ | 2004 05 14 | 704 | (0.5+ | 1.8+) | | |
| 2001 09 25 | 644 | 0.0 | 0.2+ | 2002 12 14 | 704 | 0.6− | 0.3− | 2004 05 14 | 704 | 0.1− | 0.8+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2002 12 14 | 704 | 0.1− | 1.2− | 2006 08 26 | D35 | 0.1+ | 0.2+ | | |
| 2001 09 25 | 704 | 0.1− | 0.5+ | 2002 12 14 | 704 | 0.1+ | 1.0− | 2006 08 26 | D35 | 0.0 | 0.3+ | | |
| 2001 09 25 | 644 | 0.0 | 0.4+ | 2002 12 14 | 704 | 0.8+ | 1.0− | 2006 08 26 | D35 | 0.2+ | 0.0 | | |
| 2001 09 25 | 704 | 0.2+ | 0.6+ | 2002 12 14 | 704 | 0.5− | 1.0− | 2006 08 31 | 704 | (2.2− | 0.1+) | | |
| 2001 09 29 | 644 | 0.2+ | 0.2+ | 2002 12 14 | 704 | 0.1+ | 0.2+ | 2006 08 31 | 704 | (2.4− | 0.0 ) | | |
| 2001 09 29 | 644 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.3− | 0.6− | 2006 08 31 | 704 | (2.0− | 0.3+) | | |
| 2001 09 29 | 644 | 0.3+ | 0.1+ | 2002 12 30 | 704 | 0.5+ | 0.3− | 2006 08 31 | 704 | (3.9− | 0.6+) | | |
| 2001 10 05 | 644 | 1.0− | 0.2− | 2002 12 30 | 704 | 0.9+ | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.6+ | | |
| 2001 10 05 | 644 | 0.7− | 0.1+ | 2002 12 30 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.1− | | |
| 2001 10 05 | 644 | 0.8− | 0.1+ | 2003 01 05 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.4− | 0.1+ | | |
| 2001 10 13 | 644 | 0.4− | 0.2+ | 2003 01 05 | 704 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.1− | | |
| 2001 10 13 | 644 | 0.6− | 0.2+ | 2003 01 05 | 704 | 0.8− | 0.2− | 2006 09 15 | 704 | 0.4+ | 0.4+ | | |
| 2001 10 13 | 644 | 0.5− | 0.2+ | 2003 01 05 | 704 | 0.7− | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.0 | | |
| 2001 10 17 | 704 | (1.5− | 0.2+) | 2003 01 05 | 704 | 0.5− | 0.6+ | 2006 09 15 | 704 | 0.1+ | 0.2− | | |
| 2001 10 17 | 704 | 0.0 | 0.7+ | 2004 01 28 | 704 | 0.1+ | 0.7+ | 2006 09 15 | 704 | 0.7+ | 0.6− | | |
| 2001 10 17 | 704 | 0.6+ | 1.1+ | 2004 01 28 | 704 | 0.5+ | 0.8+ | 2006 09 15 | 704 | 0.4− | 0.1− | | |
| 2001 10 17 | 704 | 0.0 | 0.5+ | 2004 01 28 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.2+ | 0.9+ | | |
| 2001 10 17 | 704 | 0.6− | 1.2+ | 2004 01 28 | 704 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.9+ | 0.7− | | |
| 2001 10 19 | 704 | 0.6+ | 0.4+ | 2004 01 30 | 699 | 0.9+ | 0.9− | 2006 09 20 | 699 | 0.1− | 0.5+ | | |
| 2001 10 19 | 704 | (0.4− | 1.6+) | 2004 01 30 | 699 | 0.3+ | 0.7+ | 2006 09 20 | 699 | 0.4+ | 0.3+ | | |
| 2001 10 19 | 704 | (0.2− | 1.9+) | 2004 01 30 | 699 | 0.3− | 1.1+ | 2006 09 22 | 703 | 0.4− | 0.4+ | | |
| 2001 10 19 | 704 | 0.5− | 0.0 | 2004 01 30 | 699 | 0.3− | 0.3− | 2006 09 22 | 703 | 0.2− | 0.3+ | | |
| 2001 10 19 | 704 | 0.4− | 0.5+ | 2004 02 14 | 699 | 0.6+ | 0.8− | 2006 09 22 | 703 | 0.6− | 0.8+ | | |
| 2001 11 11 | 699 | 0.3+ | 0.3+ | 2004 02 14 | 699 | 0.8− | 0.3+ | 2006 09 22 | 703 | 0.5− | 0.4+ | | |
| 2001 11 11 | 699 | 0.0 | 0.0 | 2004 02 14 | 699 | 0.5− | 0.4− | 2006 09 23 | 106 | 0.1− | 0.7− | | |
| 2001 11 11 | 699 | 0.1+ | 0.4+ | 2004 02 14 | 699 | 0.2− | 0.5+ | 2006 09 23 | 106 | 0.0 | 0.5+ | | |
| 2001 11 11 | 699 | 0.2+ | 0.7+ | 2004 02 17 | 703 | (1.9+ | 0.1+) | 2006 09 23 | 106 | 0.4− | 0.4− | | |
| 2001 12 11 | 704 | 0.5+ | 0.2+ | 2004 02 17 | 703 | 1.1+ | 0.2+ | 2006 09 23 | 106 | 0.1+ | 0.4− | | |
| 2001 12 11 | 704 | 1.2+ | 0.5− | 2004 02 17 | 703 | (1.8+ | 1.0+) | 2006 09 29 | 699 | 0.1− | 0.4+ | | |
| 2001 12 11 | 704 | 0.5+ | 0.9− | 2004 02 17 | 703 | (1.9+ | 0.8+) | 2006 09 29 | 699 | 0.9+ | 0.4− | | |
| 2002 11 12 | 704 | (2.5− | 0.9−) | 2004 02 18 | 608 | 1.1+ | 1.4+ | 2006 09 29 | 699 | 0.4− | 0.5− | | |
| 2002 11 12 | 704 | (2.7− | 1.1−) | 2004 02 18 | 608 | 1.1+ | 1.1+ | 2006 10 17 | 703 | 0.1+ | 0.5+ | | |
| 2002 11 12 | 704 | (2.4− | 0.9−) | 2004 02 18 | 608 | (0.7+ | 1.6+) | 2006 10 17 | 703 | 0.1+ | 0.2+ | | |
| 2002 11 12 | 704 | (1.9− | 0.5−) | 2004 02 19 | 704 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.4+ | | |
| 2002 11 12 | 704 | (2.7− | 1.0−) | 2004 02 19 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.8− | 0.5+ | | |
| 2002 12 06 | 704 | 0.4− | 0.4+ | 2004 02 19 | 704 | 0.6+ | 0.2+ | | | | | | |

**(139736)∗ 2001 QO$_{259}$ = 2000 JT$_{70}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17983)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.95886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21382706 | $\omega$ | 341.58109 | | −0.05426951 | +0.98942913 | |
| $a$ | 2.7696674 | $\Omega$ | 285.13729 | | −0.89773012 | −0.10731371 | |
| $e$ | 0.2480415 | $i$ | 8.00813 | | −0.43719041 | +0.09753855 | |
| $P$ | 4.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 14 | 704 | 1.4− | 0.4− | 2001 09 10 | 699 | 0.1+ | 0.1− | 2001 10 17 | 704 | 0.8− | 0.1− | |
| 2000 03 14 | 704 | 0.1+ | 0.2+ | 2001 09 10 | 704 | 0.1+ | 0.5− | 2001 10 17 | 704 | 0.4+ | 0.2− | |
| 2000 03 14 | 704 | 0.2+ | 0.9+ | 2001 09 10 | 704 | 0.1− | 1.0+ | 2001 10 17 | 704 | 0.1− | 0.1+ | |
| 2000 03 14 | 704 | 0.3− | 1.1+ | 2001 09 10 | 699 | 0.2+ | 0.6+ | 2003 12 25 | 645 | 0.1+ | 0.1+ | |
| 2000 03 14 | 704 | 0.5+ | 1.2+ | 2001 09 10 | 699 | 0.3+ | 0.5+ | 2003 12 25 | 645 | 0.0 | 0.1+ | |
| 2000 05 01 | 699 | 0.0 | 0.4+ | 2001 09 10 | 699 | 0.1− | 0.1− | 2005 06 10 | 428 | 0.1− | 0.1− | |
| 2000 05 01 | 699 | 0.6+ | 0.5+ | 2001 09 17 | 704 | 0.5+ | 0.1+ | 2005 06 10 | 428 | 0.4+ | 0.2− | |
| 2000 05 01 | 699 | 1.0+ | 0.3+ | 2001 09 17 | 704 | 0.7+ | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.1+ | |
| 2000 05 01 | 699 | 0.2− | 0.2+ | 2001 09 17 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | (1.7− | 0.2+) | |
| 2000 05 06 | 704 | 0.4+ | 0.4− | 2001 09 18 | 645 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.3− | 0.4− | |
| 2000 05 06 | 704 | 0.5+ | 0.6+ | 2001 09 18 | 645 | 0.0 | 0.2− | 2006 09 28 | 703 | 0.6+ | 0.1− | |
| 2000 05 06 | 704 | 0.5+ | 0.7+ | 2001 09 21 | 699 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.3+ | |
| 2000 05 06 | 704 | 0.9+ | 0.6+ | 2001 09 21 | 699 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 2000 05 06 | 704 | 0.8+ | 1.8+ | 2001 09 21 | 699 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.7+ | 0.2+ | |
| 2001 07 26 | 644 | 0.6− | 0.5+ | 2001 09 21 | 699 | 0.3+ | 0.7+ | 2006 10 19 | 703 | 0.4− | 0.2− | |
| 2001 07 26 | 644 | 0.7− | 0.5+ | 2001 09 25 | 704 | 0.2− | 0.9+ | 2006 10 19 | 703 | 0.4+ | 0.5+ | |
| 2001 07 26 | 644 | 1.0− | 0.5+ | 2001 09 25 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.7− | 0.5− | |
| 2001 08 05 | 644 | 0.9− | 0.4+ | 2001 09 25 | 704 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.0 | |
| 2001 08 05 | 644 | 1.0− | 0.1+ | 2001 09 25 | 704 | 0.3+ | 0.8+ | 2006 10 19 | A50 | 0.2+ | 0.2+ | |
| 2001 08 05 | 644 | 0.9− | 0.0 | 2001 09 25 | 704 | 0.1+ | 0.5+ | 2006 10 19 | A50 | 0.2− | 0.2− | |
| 2001 08 25 | 704 | 0.3− | 0.8+ | 2001 09 29 | 644 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.4+ | 0.1+ | |
| 2001 08 25 | 704 | 0.4+ | 0.1− | 2001 09 29 | 644 | 0.3− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | |
| 2001 08 25 | 704 | 0.1+ | 0.6+ | 2001 09 29 | 644 | (1.4+ | 1.8+) | 2006 10 23 | 644 | 0.4+ | 0.2+ | |
| 2001 08 25 | 704 | 0.9+ | 0.7+ | 2001 09 29 | 644 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.7− | 0.2+ | |
| 2001 08 26 | 699 | 0.0 | 0.4+ | 2001 09 29 | 644 | (1.2+ | 1.8+) | 2006 10 27 | 703 | 0.3− | 0.5+ | |
| 2001 08 26 | 699 | 0.1+ | 0.5+ | 2001 09 29 | 644 | (1.3+ | 1.8+) | 2006 10 27 | 703 | 0.3− | 1.0− | |
| 2001 08 26 | 699 | 0.2− | 0.9+ | 2001 10 13 | 644 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.2+ | |
| 2001 08 26 | 699 | 0.7+ | 1.0+ | 2001 10 13 | 644 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.0 | 0.5+ | |
| 2001 09 10 | 704 | 0.6− | 0.6+ | 2001 10 13 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | (1.8− | 0.1−) | |
| 2001 09 10 | 704 | 0.3− | 0.7+ | 2001 10 17 | 704 | 0.4− | 0.3− | 2006 11 15 | 703 | (1.7− | 0.5−) | |
| 2001 09 10 | 704 | 0.3+ | 0.9+ | 2001 10 17 | 704 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.5− | 0.6− | |

**(139737)∗ 2001 QU$_{260}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.76723 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21729957 | $\omega$ | 188.75661 | | +0.83492963 | −0.54172862 | |
| $a$ | 2.7400815 | $\Omega$ | 204.81481 | | +0.51791417 | +0.83305586 | |
| $e$ | 0.1611008 | $i$ | 13.37315 | | +0.18616507 | +0.11201805 | |
| $P$ | 4.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.3− | 0.9+ | 2001 10 13 | 699 | 0.1− | 0.3+ | 2001 11 17 | 699 | (2.0+ | 1.9+) | |
| 2001 08 25 | 704 | 0.1− | 0.4− | 2001 10 13 | 699 | 0.2+ | 0.4+ | 2001 11 17 | 699 | 0.1+ | 1.2+ | |
| 2001 08 25 | 704 | 0.6+ | 0.1+ | 2001 10 13 | 699 | 0.4+ | 0.4+ | 2001 11 17 | 699 | 0.2− | 0.9+ | |
| 2001 08 25 | 704 | 0.8+ | 0.1+ | 2001 10 14 | 704 | 0.1+ | 0.3− | 2001 11 18 | 291 | 0.5+ | 0.2+ | |
| 2001 08 26 | 699 | 0.5− | 0.4+ | 2001 10 14 | 704 | 0.3− | 0.1+ | 2001 11 18 | 291 | 0.5+ | 0.2+ | |
| 2001 08 26 | 699 | 0.3− | 0.4− | 2001 10 14 | 704 | 0.3− | 0.4+ | 2001 11 18 | 291 | 0.6+ | 0.2+ | |
| 2001 08 26 | 699 | 0.0 | 0.6+ | 2001 10 14 | 704 | 0.5− | 0.4+ | 2001 11 18 | 704 | 0.4− | 0.5+ | |
| 2001 08 26 | 699 | 0.6− | 0.0 | 2001 10 14 | 704 | 0.2+ | 0.6+ | 2001 11 18 | 704 | 0.0 | 1.1+ | |
| 2001 09 10 | 704 | 0.4+ | 0.6− | 2001 10 15 | 704 | 0.6+ | 0.0 | 2001 11 18 | 704 | 0.9− | 0.5+ | |
| 2001 09 10 | 704 | 0.3+ | 0.3− | 2001 10 15 | 704 | 0.1− | 0.7+ | 2001 11 18 | 704 | (1.0− | 1.8+) | |
| 2001 09 10 | 704 | 1.0+ | 0.2− | 2001 10 15 | 704 | 0.8+ | 0.4+ | 2001 11 18 | 645 | 0.2+ | 0.2− | |
| 2001 09 10 | 699 | 0.3− | 0.7+ | 2001 10 15 | 704 | 0.7+ | 0.4+ | 2001 11 18 | 645 | 0.2+ | 0.2− | |
| 2001 09 10 | 704 | 0.6+ | 0.4− | 2001 10 15 | 704 | 0.2− | 0.7+ | 2001 11 18 | 704 | 0.7+ | 1.1+ | |
| 2001 09 10 | 704 | 0.3+ | 0.2+ | 2001 10 16 | 704 | 0.1+ | 0.1+ | 2001 12 07 | 704 | 0.4+ | 0.3+ | |
| 2001 09 10 | 699 | 0.0 | 0.4+ | 2001 10 16 | 704 | 0.6+ | 1.3− | 2001 12 07 | 704 | 0.4− | 0.6− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 699 | 0.4+ | 0.6+ | 2001 10 16 | 704 | 0.1− | 0.8− | 2001 12 07 | 704 | 0.2+ | 0.7+ | |
| 2001 09 10 | 699 | 0.1+ | 0.2− | 2001 10 16 | 704 | 0.8+ | 0.0 | 2001 12 07 | 704 | 0.9− | 0.1− | |
| 2001 09 14 | 644 | 1.0+ | 1.3− | 2001 10 16 | 704 | 1.2+ | 0.4+ | 2003 02 04 | 704 | 0.0 | 0.4+ | |
| 2001 09 14 | 644 | 0.3+ | 0.9− | 2001 10 17 | 704 | 0.2− | 0.2− | 2003 02 04 | 704 | 0.0 | 0.7+ | |
| 2001 09 14 | 644 | 0.4+ | 0.8− | 2001 10 17 | 704 | 0.4− | 0.5− | 2003 02 04 | 704 | 0.6− | 0.1− | |
| 2001 09 17 | 704 | 0.4+ | 0.3+ | 2001 10 17 | 704 | 0.2− | 0.2− | 2003 02 04 | 704 | 0.2+ | 0.7+ | |
| 2001 09 17 | 704 | 0.5+ | 0.2− | 2001 10 17 | 704 | 0.5− | 0.0 | 2003 02 04 | 704 | 0.7− | 0.4+ | |
| 2001 09 17 | 704 | 0.1+ | 0.1− | 2001 10 17 | 704 | 1.0+ | 0.4− | 2003 02 06 | 644 | 0.3+ | 0.7+ | |
| 2001 09 17 | 704 | 0.3+ | 0.0 | 2001 10 19 | 704 | 0.1− | 0.4+ | 2003 02 06 | 644 | 0.7+ | 1.2+ | |
| 2001 09 18 | 699 | 0.1+ | 0.4+ | 2001 10 19 | 704 | 0.2− | 0.1+ | 2003 02 06 | 644 | 0.9+ | 0.8+ | |
| 2001 09 18 | 699 | 0.5+ | 0.1+ | 2001 10 19 | 704 | 0.1+ | 0.0 | 2004 04 12 | 644 | 0.4− | 0.8+ | |
| 2001 09 18 | 699 | 0.1− | 0.0 | 2001 10 19 | 704 | 0.4− | 0.0 | 2004 04 12 | 644 | 0.6− | 0.9+ | |
| 2001 09 18 | 699 | 0.0 | 0.7+ | 2001 10 19 | 704 | 0.0 | 0.8+ | 2004 04 12 | 644 | 0.1+ | 0.7+ | |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2001 10 21 | 704 | 0.5− | 0.1− | 2004 04 19 | 704 | 0.3− | 0.1+ | |
| 2001 09 20 | 704 | 0.1− | 1.1+ | 2001 10 21 | 704 | 0.2− | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.6+ | |
| 2001 09 20 | 704 | 1.3− | 0.6+ | 2001 10 21 | 704 | 0.7− | 0.1− | 2004 04 19 | 704 | 1.2+ | 0.0 | |
| 2001 09 20 | 704 | 0.3− | 1.0+ | 2001 10 21 | 704 | 0.5− | 0.1− | 2004 04 19 | 704 | 0.2+ | 0.5+ | |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.8− | 0.1− | 2006 08 29 | 703 | 0.0 | 0.0 | |
| 2001 09 22 | 704 | 0.3− | 0.1+ | 2001 10 23 | 699 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.0 | |
| 2001 09 22 | 704 | 0.1+ | 0.1+ | 2001 10 23 | 699 | 0.4− | 1.3+ | 2006 08 29 | 703 | 0.7+ | 0.3− | |
| 2001 09 22 | 704 | 0.2+ | 0.3+ | 2001 10 23 | 699 | 0.9− | 0.6− | 2006 08 29 | 703 | 0.5− | 0.3+ | |
| 2001 09 22 | 704 | 0.1+ | 0.2+ | 2001 10 23 | 699 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.0 | 0.8+ | |
| 2001 09 23 | 704 | 0.4− | 0.1− | 2001 10 25 | 644 | 0.3+ | 0.8− | 2006 09 22 | 704 | 0.9+ | 0.0 | |
| 2001 09 23 | 704 | 1.3− | 0.1+ | 2001 10 25 | 644 | 0.1+ | 0.7− | 2006 09 22 | 704 | 0.4+ | 0.4− | |
| 2001 09 23 | 704 | 0.5+ | 0.0 | 2001 10 25 | 644 | 0.0 | 0.9− | 2006 11 15 | 703 | 0.1+ | 0.1+ | |
| 2001 09 23 | 704 | 1.2− | 0.9− | 2001 11 02 | 644 | 0.7− | 0.5+ | 2006 11 15 | 703 | (1.4− | 1.9−) | |
| 2001 09 25 | 699 | 0.2+ | 0.6− | 2001 11 02 | 644 | 0.5− | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.4− | |
| 2001 09 25 | 699 | 0.4+ | 0.3+ | 2001 11 02 | 644 | 0.4− | 0.4+ | 2006 11 15 | 703 | (2.1+ | 1.2+) | |
| 2001 09 25 | 699 | 0.9+ | 0.0 | 2001 11 09 | 704 | 0.4− | 0.9− | 2006 11 20 | 704 | 0.7− | 1.3− | |
| 2001 09 25 | 699 | 0.1+ | 0.4+ | 2001 11 09 | 704 | 0.3− | 0.2+ | 2006 11 20 | 704 | 1.0− | 1.2− | |
| 2001 09 28 | 644 | 1.1− | 0.5+ | 2001 11 09 | 704 | 1.1− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.2− | |
| 2001 09 28 | 644 | 0.9− | 0.5+ | 2001 11 09 | 704 | 1.2− | 0.0 | 2006 11 20 | 704 | (2.7− | 0.3+) | |
| 2001 09 28 | 644 | 1.0− | 0.5+ | 2001 11 09 | 704 | 1.1− | 0.1− | 2006 12 01 | 703 | 0.5− | 0.1+ | |
| 2001 10 05 | 644 | 0.1+ | 0.3− | 2001 11 17 | 291 | 0.6− | 0.0 | 2006 12 01 | 703 | 0.8− | 0.3+ | |
| 2001 10 05 | 644 | 0.4+ | 0.0 | 2001 11 17 | 699 | (1.0− | 1.7+) | 2006 12 01 | 703 | 0.7+ | 0.0 | |
| 2001 10 05 | 644 | 0.6+ | 0.1+ | 2001 11 17 | 291 | 0.8− | 0.1− | 2006 12 01 | 703 | 1.1+ | 0.3+ | |
| 2001 10 13 | 699 | 0.3− | 0.4+ | 2001 11 17 | 291 | 1.1− | 0.1+ | | | | | |

**(139738)∗ 2001 QJ$_{261}$ = 1999 JN$_{110}$**

Discovered 2001 Aug. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.46045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22544045 | $\omega$ | 254.79252 | | −0.35920274 | −0.92459186 | |
| $a$ | 2.6737132 | $\Omega$ | 217.06137 | | +0.91653228 | −0.32385957 | |
| $e$ | 0.2249628 | $i$ | 12.15522 | | +0.17590330 | −0.20061126 | |
| $P$ | 4.37 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.2+ | 0.4− | 2001 10 14 | 704 | 0.0 | 0.1− | 2003 03 28 | 699 | 0.1− | 0.1+ | |
| 1999 05 13 | 704 | 1.9− | 0.6− | 2001 10 14 | 704 | 1.0− | 0.1− | 2003 03 28 | 699 | 0.8− | 0.3+ | |
| 1999 05 13 | 704 | 0.5− | 0.7+ | 2001 10 14 | 704 | 0.4− | 0.0 | 2003 03 28 | 699 | 0.1+ | 0.1− | |
| 1999 05 18 | 704 | (0.4+ | 2.0+) | 2001 10 14 | 704 | 0.2− | 0.3− | 2003 03 28 | 699 | 0.1+ | 0.1+ | |
| 1999 05 18 | 704 | (2.2− | 0.7+) | 2001 10 17 | 704 | 0.1+ | 0.1− | 2003 04 04 | 699 | 0.9+ | 0.8+ | |
| 1999 05 18 | 704 | 0.2− | 0.4+ | 2001 10 17 | 704 | 0.3− | 0.4− | 2003 04 04 | 699 | 0.2− | 0.9+ | |
| 1999 05 18 | 704 | (0.4− | 2.5+) | 2001 10 17 | 704 | 0.1− | 0.2− | 2003 04 04 | 699 | 1.2− | 0.1− | |
| 1999 05 18 | 704 | 0.7− | 1.2+ | 2001 10 17 | 704 | 0.1+ | 0.1+ | 2003 04 04 | 699 | 0.9− | 0.1− | |
| 2001 08 25 | 704 | 0.9+ | 0.2− | 2001 10 17 | 704 | 0.6− | 0.5− | 2003 04 07 | 704 | 0.0 | 0.5− | |
| 2001 08 25 | 704 | 0.4+ | 0.8− | 2001 10 17 | 704 | 0.2+ | 0.3+ | 2003 04 07 | 704 | 0.1+ | 0.0 | |
| 2001 08 25 | 704 | 0.0 | 0.5− | 2001 10 17 | 704 | 0.1− | 0.2+ | 2003 04 07 | 704 | 0.3+ | 0.2+ | |
| 2001 08 27 | 644 | 0.0 | 1.0− | 2001 10 17 | 704 | 0.4− | 0.2− | 2003 04 07 | 704 | 0.2+ | 1.4+ | |
| 2001 08 27 | 644 | 0.1− | 0.9− | 2001 10 21 | 704 | 0.9+ | 0.5+ | 2003 04 07 | 704 | 0.1− | 0.0 | |
| 2001 08 27 | 644 | 0.1− | 0.7− | 2001 10 21 | 704 | 0.2− | 0.4+ | 2003 04 07 | 704 | 0.1− | 0.4− | |
| 2001 08 28 | 699 | 0.8− | 0.6+ | 2001 10 21 | 704 | 0.4− | 1.2+ | 2003 04 07 | 704 | 0.0 | 1.5+ | |
| 2001 08 28 | 699 | 0.2− | 1.4+ | 2001 10 21 | 704 | 0.5+ | 0.6+ | 2003 04 27 | 704 | 0.6+ | 0.5+ | |
| 2001 08 28 | 699 | 1.3+ | 1.1+ | 2001 10 21 | 704 | 0.3+ | 0.7+ | 2003 04 27 | 704 | 0.3+ | 0.2+ | |
| 2001 08 28 | 699 | (3.0+ | 1.4+) | 2001 11 11 | 691 | 0.1− | 0.5+ | 2003 04 27 | 704 | 0.2+ | 0.4+ | |
| 2001 09 10 | 704 | 0.2+ | 0.5+ | 2001 11 11 | 691 | 0.0 | 0.3+ | 2003 04 27 | 704 | 0.5+ | 0.2+ | |
| 2001 09 10 | 704 | 0.2+ | 0.3+ | 2001 11 11 | 691 | 0.1+ | 0.5+ | 2003 04 27 | 704 | 0.3− | 0.3+ | |
| 2001 09 10 | 704 | 0.1+ | 0.4+ | 2001 11 17 | 691 | 0.2− | 0.2− | 2003 05 01 | 704 | 0.7+ | 1.0+ | |
| 2001 09 10 | 704 | 0.0 | 0.2+ | 2001 11 17 | 699 | 0.7− | 0.8+ | 2003 05 01 | 704 | 0.7+ | 0.6+ | |
| 2001 09 10 | 704 | 0.4− | 0.3+ | 2001 11 17 | 691 | 0.2− | 0.0 | 2003 05 01 | 704 | 0.4+ | 1.0+ | |
| 2001 09 11 | 699 | 1.1− | 0.6+ | 2001 11 17 | 699 | 0.1− | 0.1+ | 2004 06 16 | 947 | (9.8+ | 0.8+) | |
| 2001 09 11 | 699 | 1.0− | 0.2+ | 2001 11 17 | 691 | 0.1− | 0.1− | 2005 08 05 | 644 | 0.3+ | 0.8+ | |
| 2001 09 11 | 699 | 1.0− | 1.2+ | 2001 11 17 | 699 | 0.1+ | 0.2+ | 2005 08 05 | 644 | 0.1+ | 0.5+ | |
| 2001 09 11 | 699 | 0.5− | 0.2+ | 2001 11 17 | 699 | 0.4− | 0.5+ | 2005 08 05 | 644 | 0.0 | 0.6+ | |
| 2001 09 21 | 699 | 0.0 | 0.3+ | 2003 02 23 | 699 | 0.6+ | 0.7+ | 2005 08 05 | 644 | 0.1+ | 0.5+ | |
| 2001 09 21 | 699 | 0.2− | 1.3+ | 2003 02 23 | 699 | 0.1− | 0.8+ | 2005 08 05 | 644 | 0.2+ | 0.6+ | |
| 2001 09 21 | 699 | 0.5+ | 0.8+ | 2003 02 23 | 699 | 0.4− | 0.4+ | 2005 08 05 | 644 | 0.1+ | 0.6+ | |
| 2001 09 21 | 699 | 0.3+ | 0.0 | 2003 02 23 | 699 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.8− | 0.3+ | |
| 2001 09 26 | 704 | 0.5+ | 0.7+ | 2003 03 09 | 699 | 1.5+ | 0.9+ | 2006 11 20 | 704 | 0.5− | 0.0 | |
| 2001 09 26 | 704 | 0.4+ | 0.7+ | 2003 03 09 | 699 | 0.3+ | 0.9+ | 2006 11 20 | 704 | 0.5− | 0.9+ | |
| 2001 09 26 | 704 | 0.3+ | 0.7+ | 2003 03 09 | 699 | 0.3+ | 1.0+ | 2006 11 20 | 704 | 0.6+ | 0.3− | |
| 2001 09 26 | 704 | 0.5+ | 1.0+ | 2003 03 09 | 699 | 0.9+ | 0.6+ | 2006 11 22 | E12 | 0.0 | 0.4− | |
| 2001 09 26 | 704 | 0.8+ | 0.3+ | 2003 03 11 | 704 | 0.7+ | 1.0+ | 2006 11 22 | E12 | 0.4− | 0.8− | |
| 2001 09 28 | 644 | 0.5− | 0.2+ | 2003 03 11 | 704 | 0.1+ | 0.4+ | 2006 11 22 | E12 | 0.8− | 0.3− | |
| 2001 09 28 | 644 | 0.6− | 0.3+ | 2003 03 11 | 704 | 1.4+ | 0.7+ | 2006 11 22 | E12 | 0.0 | 0.9− | |
| 2001 09 28 | 644 | 0.4− | 0.2+ | 2003 03 11 | 704 | 0.1− | 0.0 | | | | | |
| 2001 10 14 | 704 | 0.7+ | 0.1− | 2003 03 11 | 704 | 0.3+ | 0.9+ | | | | | |

**(139739)∗ 2001 QW$_{262}$ = 1999 FG$_{13}$**

Discovered 2001 Aug. 25 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 20065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.86026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21231220 | $\omega$ | 36.83437 | | +0.86756363 | −0.49718002 | |
| $a$ | 2.7828262 | $\Omega$ | 352.94787 | | +0.42966010 | +0.76151179 | |
| $e$ | 0.0829813 | $i$ | 5.63589 | | +0.25045067 | +0.41582667 | |
| $P$ | 4.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 09 | 691 | 0.6− | 0.3+ | 2001 09 24 | 644 | 0.1− | 0.5+ | 2006 10 13 | 691 | 0.0 | 0.1+ | |
| 1999 03 09 | 691 | 0.7− | 0.3− | 2001 09 24 | 704 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.0 | |
| 1999 03 09 | 691 | 0.8− | 0.4− | 2001 09 24 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.0 | |
| 1999 03 19 | 691 | 0.2− | 0.2− | 2001 09 24 | 704 | 0.3+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.3+ | |
| 1999 03 19 | 691 | 0.0 | 0.0 | 2001 09 24 | 644 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.0 | |
| 1999 03 19 | 691 | 0.3− | 0.0 | 2001 09 24 | 704 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.1+ | |
| 1999 03 23 | 691 | 0.4+ | 0.7− | 2001 09 24 | 704 | (0.7− | 1.5+) | 2006 10 21 | 691 | 0.5− | 0.0 | |
| 1999 03 23 | 691 | 0.0 | 0.4− | 2001 09 24 | 704 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.5− | |
| 1999 03 23 | 691 | 1.1+ | 0.2− | 2001 10 11 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.6− | 1.2+ | |
| 2001 08 25 | 691 | 0.3+ | 0.0 | 2001 10 11 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.9+ | |
| 2001 08 25 | 691 | 0.3+ | 0.1+ | 2001 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 1.2+ | 0.4− | |
| 2001 08 25 | 691 | 0.3+ | 0.0 | 2001 10 14 | 645 | 0.0 | 0.2− | 2006 10 27 | 703 | (0.6+ | 1.9+) | |
| 2001 08 27 | 699 | 0.2− | 0.6− | 2001 10 14 | 645 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.1− | 0.1− | |
| 2001 08 27 | 699 | 0.0 | 0.1− | 2001 10 15 | 645 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.8+ | 1.4+ | |
| 2001 08 27 | 699 | 0.4− | 0.5− | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.8− | 1.1− | |
| 2001 08 27 | 699 | 0.2− | 0.5− | 2001 10 19 | 644 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.3+ | |
| 2001 09 16 | 704 | 1.1+ | 0.2+ | 2001 10 19 | 644 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.2− | 0.5+ | |
| 2001 09 16 | 704 | 0.3+ | 0.1− | 2001 10 19 | 644 | 0.0 | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.2+ | |
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2001 10 21 | 704 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.1− | |
| 2001 09 18 | 699 | 0.1+ | 1.0+ | 2001 10 21 | 704 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.4− | |
| 2001 09 18 | 699 | 0.7− | 0.4+ | 2001 10 21 | 704 | 0.7+ | 0.8+ | 2006 11 01 | G96 | 0.0 | 0.1− | |
| 2001 09 18 | 699 | 0.4+ | 0.3− | 2001 10 21 | 704 | 0.4+ | 0.9+ | 2006 11 01 | G96 | 0.0 | 0.0 | |
| 2001 09 18 | 699 | 1.1− | 1.1+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 11 02 | 691 | 0.1− | 0.4+ | |
| 2001 09 20 | 704 | (2.2− | 2.9+) | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 11 02 | 691 | 0.2− | 0.3+ | |
| 2001 09 20 | 704 | 0.6− | 1.3+ | 2003 01 05 | 704 | 0.9+ | 0.4− | 2006 11 02 | 691 | 0.1− | 0.4+ | |
| 2001 09 20 | 704 | (0.5− | 2.0+) | 2003 01 05 | 704 | 0.3+ | 0.7+ | 2006 11 14 | 703 | 0.6+ | 0.2+ | |
| 2001 09 20 | 704 | (0.1− | 2.2+) | 2003 01 05 | 704 | 0.8+ | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.3+ | |
| 2001 09 20 | 704 | (0.6− | 2.2+) | 2003 01 05 | 704 | (2.0+ | 0.6+) | 2006 11 14 | 703 | 0.3+ | 1.3+ | |
| 2001 09 22 | 704 | 0.4− | 0.2− | 2003 01 09 | 704 | 0.3− | 0.9− | 2006 11 14 | 703 | 0.3− | 0.5− | |
| 2001 09 22 | 704 | 0.3− | 0.3− | 2003 01 09 | 704 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.2− | 0.0 | |
| 2001 09 22 | 704 | 0.1+ | 0.0 | 2003 01 09 | 704 | 0.3− | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 704 | 0.2+ | 0.6− | 2003 01 09 | 704 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2001 09 23 | 704 | 0.2+ | 0.2− | 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2001 09 23 | 704 | 0.1+ | 0.2− | 2004 05 09 | 691 | 0.3+ | 0.5+ | 2006 11 23 | 703 | 0.2+ | 1.0− |
| 2001 09 23 | 704 | 0.1− | 0.1− | 2004 05 09 | 691 | 0.4+ | 0.8+ | 2006 11 23 | 703 | 0.0 | 0.5− |
| 2001 09 23 | 704 | 0.5+ | 0.4− | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.7+ | 2.0− |
| 2001 09 23 | 704 | 0.2+ | 0.4+ | 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.7− |

**(139740)∗ 2001 QB$_{265}$**

Discovered 2001 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.95771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19058883 | $\omega$ | 59.64045 | | +0.73442510 | −0.67689048 | |
| $a$ | 2.9904584 | $\Omega$ | 342.79752 | | +0.55117504 | +0.63731710 | |
| $e$ | 0.1128992 | $i$ | 9.61277 | | +0.39601243 | +0.36830178 | |
| $P$ | 5.17 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 644 | 0.1− | 0.1+ | 2001 09 24 | 704 | 0.6+ | 0.4− | 2006 08 19 | 644 | 0.2+ | 0.2− |
| 2001 07 29 | 644 | 0.5− | 0.1− | 2001 09 24 | 704 | 0.4+ | 0.0 | 2006 08 25 | 704 | 0.5+ | 0.0 |
| 2001 07 29 | 644 | 0.2− | 0.2− | 2001 09 25 | 699 | 0.7− | 0.5− | 2006 08 25 | 704 | 0.1+ | 0.5+ |
| 2001 08 26 | 704 | 0.3− | 0.5+ | 2001 09 25 | 699 | 0.5+ | 0.1− | 2006 08 25 | 704 | 0.6+ | 0.4− |
| 2001 08 26 | 704 | 0.1+ | 0.5− | 2001 09 25 | 699 | 0.5+ | 0.1+ | 2006 08 25 | 704 | (1.0+ | 1.9+) |
| 2001 08 26 | 704 | 0.0 | 0.8+ | 2001 09 25 | 699 | 0.4+ | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 2001 08 26 | 704 | 0.0 | 0.9+ | 2001 10 14 | 704 | 0.0 | 0.6− | 2006 08 27 | 691 | 0.0 | 0.1− |
| 2001 08 26 | 704 | 0.0 | 0.0 | 2001 10 14 | 704 | 0.2+ | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 2001 08 27 | 699 | 0.1− | 0.3+ | 2001 10 14 | 704 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.6− |
| 2001 08 27 | 699 | 0.4+ | 1.0+ | 2001 10 14 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.5− |
| 2001 08 27 | 699 | 1.5− | 1.3+ | 2001 10 14 | 704 | 0.6− | 0.2− | 2006 08 28 | 703 | 0.1− | 0.4− |
| 2001 08 27 | 699 | 0.1− | 1.1+ | 2001 10 16 | 704 | 0.9− | 0.3− | 2006 08 28 | 703 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 1.4+ | 2001 10 16 | 704 | 0.3+ | 0.7− | 2006 08 31 | 704 | 0.2− | 1.0+ |
| 2001 09 16 | 704 | 1.5− | 0.4+ | 2001 10 16 | 704 | 1.3− | 0.2− | 2006 08 31 | 704 | 0.4+ | 0.3− |
| 2001 09 16 | 704 | 1.2− | 0.9+ | 2001 10 16 | 704 | 0.6− | 1.2− | 2006 08 31 | 704 | 0.9+ | 0.6− |
| 2001 09 16 | 704 | 0.6− | 0.6+ | 2003 01 10 | 704 | 0.7− | 1.2− | 2006 09 20 | 704 | 0.3− | 0.4+ |
| 2001 09 18 | 699 | 0.2+ | 0.2− | 2003 01 10 | 704 | 0.2− | 0.5− | 2006 09 20 | 704 | 1.0− | 0.2+ |
| 2001 09 18 | 699 | 1.1+ | 0.0 | 2003 01 10 | 704 | 0.2+ | 0.6− | 2006 09 20 | 704 | 0.7− | 1.0− |
| 2001 09 18 | 699 | 0.6+ | 0.0 | 2003 01 10 | 704 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.0 | 0.8+ |
| 2001 09 18 | 699 | 0.5+ | 0.2− | 2003 01 10 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.9+ | 2003 03 07 | 644 | 0.1+ | 0.7+ | 2006 09 20 | 699 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.3+ | 0.9+ | 2003 03 07 | 644 | 0.2+ | 0.6+ | 2006 09 20 | 699 | 0.3+ | 0.6− |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2003 03 07 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.5− | 0.5+ |
| 2001 09 20 | 704 | 0.7+ | 1.5+ | 2004 04 19 | 704 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.6− |
| 2001 09 22 | 704 | 0.0 | 0.6+ | 2004 04 19 | 704 | 1.0+ | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.5− |
| 2001 09 22 | 704 | 0.3− | 0.7+ | 2004 04 19 | 704 | 1.4+ | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 0.2− | 0.4− | 2004 04 19 | 704 | 0.1− | 1.2+ | 2006 10 19 | G96 | 0.1+ | 0.7− |
| 2001 09 22 | 704 | 0.5− | 0.3+ | 2006 08 17 | 644 | 0.3+ | 0.3− | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2001 09 23 | 704 | 0.6− | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2001 09 23 | 704 | 0.7− | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.5− | 2006 10 19 | G96 | 0.0 | 0.9− |
| 2001 09 23 | 704 | (1.8− | 0.3−) | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.3− |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2006 08 19 | 644 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.4− |
| 2001 09 24 | 704 | 0.4+ | 0.3− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2001 09 24 | 704 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.1+ | | | | |
| 2001 09 24 | 704 | 0.2− | 0.5− | 2006 08 19 | 644 | 0.5+ | 0.3− | | | | |

**(139741)∗ 2001 QA$_{266}$**

Discovered 2001 Aug. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.45627 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21865182 | $\omega$ | 115.71582 | | +0.89998593 | −0.36704542 | |
| $a$ | 2.7287724 | $\Omega$ | 266.57059 | | +0.26490468 | +0.88893770 | |
| $e$ | 0.0469239 | $i$ | 13.62627 | | +0.34619480 | +0.27398436 | |
| $P$ | 4.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 699 | 1.2+ | 0.6− | 2001 10 06 | 644 | 0.4− | 0.4+ | 2006 10 02 | 703 | 0.8+ | 0.2+ |
| 2001 08 18 | 699 | 0.9+ | 0.3− | 2001 10 06 | 644 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.2− | 0.1+ |
| 2001 08 18 | 699 | 0.6− | 0.2+ | 2001 10 06 | 644 | 0.2− | 0.5+ | 2006 10 02 | 703 | 0.4− | 0.6+ |
| 2001 08 18 | 699 | 0.6− | 0.9+ | 2001 10 17 | 704 | 0.1− | 0.3− | 2006 10 02 | 703 | 0.4− | 0.1+ |
| 2001 08 20 | 644 | 0.4− | 1.5− | 2001 10 17 | 704 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 08 20 | 644 | (0.3− | 1.5−) | 2001 10 17 | 704 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 08 20 | 644 | (0.7− | 1.6−) | 2001 10 17 | 704 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 08 26 | 699 | 0.0 | 0.3+ | 2002 12 05 | 704 | 0.2− | 1.1+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2001 08 26 | 699 | 0.8+ | 0.5+ | 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 08 26 | 699 | 0.1− | 1.3+ | 2002 12 05 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2001 08 26 | 699 | 0.9+ | 0.5+ | 2003 01 07 | 704 | 1.2+ | 0.9− | 2006 10 23 | 703 | 0.9− | 0.4− |
| 2001 09 08 | 699 | 1.3− | 0.3− | 2003 01 07 | 704 | 0.1− | 0.7− | 2006 10 23 | 703 | 0.4+ | 1.3+ |
| 2001 09 08 | 699 | (1.8+ | 0.1+) | 2003 01 07 | 704 | 0.3− | 1.0− | 2006 10 23 | 703 | 0.2− | 0.3− |
| 2001 09 08 | 699 | (0.8− | 1.8+) | 2003 01 07 | 704 | (0.3+ | 1.8−) | 2006 10 23 | 703 | 1.2− | 0.8− |
| 2001 09 08 | 699 | 0.2+ | 0.5+ | 2003 01 27 | 704 | 0.9− | 0.2− | 2006 11 15 | 703 | 0.0 | 0.5− |
| 2001 09 10 | 704 | 0.2− | 0.2− | 2003 01 27 | 704 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2001 09 10 | 704 | 0.1+ | 0.5− | 2003 01 27 | 704 | 0.7− | 0.7+ | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 2001 09 10 | 704 | 0.4+ | 0.7− | 2003 01 27 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.5+ | 0.2− |
| 2001 09 10 | 704 | 0.4− | 1.1− | 2004 04 16 | 699 | 1.0+ | 1.4+ | 2006 11 22 | 703 | 0.9+ | 1.1+ |
| 2001 09 10 | 704 | 0.2+ | 1.0− | 2004 04 16 | 699 | 0.1− | 0.8− | 2006 11 22 | 703 | 0.6+ | 0.5− |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2004 04 16 | 699 | (0.2+ | 2.4−) | 2006 11 22 | 703 | 0.2− | 0.2− |
| 2001 09 18 | 645 | 0.0 | 0.1+ | 2004 04 16 | 699 | 0.6− | 0.0 | 2006 11 22 | 703 | 0.5− | 0.2+ |

**(139742)∗ 2001 QJ$_{266}$**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.41250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22718670 | $\omega$ | 90.57057 | | +0.65024652 | +0.75278060 | |
| $a$ | 2.6599948 | $\Omega$ | 220.60464 | | −0.74452729 | +0.60457426 | |
| $e$ | 0.0642339 | $i$ | 9.05887 | | −0.15119050 | +0.26040609 | |
| $P$ | 4.34 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 704 | 0.1− | 1.6+ | 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2000 05 05 | 704 | 0.2− | 0.1+ | 2004 02 17 | 703 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2000 05 05 | 704 | 0.5− | 0.7+ | 2004 02 17 | 703 | 0.8+ | 0.5+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2000 05 05 | 704 | 0.4+ | 1.1+ | 2004 02 17 | 703 | 0.5− | 0.9− | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2001 07 17 | 699 | 0.2− | 1.0+ | 2004 02 17 | 703 | 1.3+ | 0.8+ | 2006 11 11 | 703 | 0.5+ | 0.5+ |
| 2001 07 17 | 699 | 0.3− | 1.3+ | 2004 02 19 | 704 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2001 07 17 | 699 | 1.3− | 0.2+ | 2004 02 19 | 704 | 0.7− | 0.7+ | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 2001 07 17 | 699 | 1.0− | 1.3+ | 2004 02 19 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.8+ |
| 2001 07 26 | 608 | 0.4− | 0.3− | 2004 02 19 | 704 | 0.3+ | 1.1+ | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 07 26 | 608 | 0.0 | 0.5− | 2004 02 19 | 704 | 0.2+ | 1.4+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2001 07 26 | 608 | 0.1− | 0.3− | 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 08 20 | 704 | 0.6+ | 0.5+ | 2004 03 16 | 704 | 0.8+ | 0.4− | 2006 11 14 | G96 | 0.7+ | 0.4− |
| 2001 08 20 | 704 | 0.2+ | 0.9+ | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2001 08 20 | 704 | 0.7− | 0.7+ | 2004 03 16 | 704 | 1.3+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2001 08 20 | 704 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.4− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 08 24 | 699 | 1.4+ | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.9− | 0.3− |
| 2001 08 24 | 699 | 0.4+ | 0.5− | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.4− |
| 2001 08 24 | 699 | 0.1− | 1.2+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | (1.1− | 1.9−) |
| 2001 08 24 | 699 | 0.9+ | 0.8− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | (2.2+ | 0.5+) | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.9− |
| 2002 11 07 | 704 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.8− |
| 2002 11 07 | 704 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.6− | 0.6− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.7− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2002 12 05 | 704 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.7+ | 2006 11 23 | 683 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.3− | 0.2− | 2006 10 19 | 644 | 0.4− | 0.3− | 2006 11 23 | 683 | (0.4− | 1.7+) |
| 2002 12 05 | 608 | 0.2− | 1.2+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 683 | (2.3− | 0.4−) |
| 2002 12 05 | 608 | 0.2− | 0.7+ | 2006 10 22 | 644 | 0.4+ | 0.6+ | 2006 11 26 | 704 | 0.0 | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 608 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 26 | 704 | 0.0 | 1.7+ |
| 2002 12 10 | 644 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 26 | 704 | 0.6+ | 1.6+ |
| 2002 12 10 | 644 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.1+ | | | | |

**(139743)∗ 2001 QS$_{266}$**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.65454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22952197 | $\omega$ | 70.53027 | | +0.73736229 | +0.65816502 | |
| $a$ | 2.6419213 | $\Omega$ | 247.99050 | | −0.66480545 | +0.66718311 | |
| $e$ | 0.0944649 | $i$ | 9.43854 | | −0.11971036 | +0.34883449 | |
| $P$ | 4.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 09 | 691 | 0.1− | 0.6+ | 2003 01 07 | 704 | (0.1− | 1.8+) | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 1993 11 09 | 691 | 0.1− | 0.5+ | 2003 01 07 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.4− |
| 1993 11 09 | 691 | 0.1− | 0.7+ | 2003 01 07 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 704 | 0.9− | 0.3+ |
| 2001 05 25 | 644 | 1.0− | 0.3+ | 2003 01 11 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.2+ |
| 2001 05 25 | 644 | 0.8− | 0.1+ | 2003 01 11 | 644 | 0.4+ | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.5+ |
| 2001 05 25 | 644 | 0.2− | 0.1+ | 2003 01 11 | 644 | 0.3+ | 0.3+ | 2006 11 16 | 704 | (0.4− | 1.7+) |
| 2001 07 20 | 699 | 0.1− | 0.2+ | 2003 01 27 | 704 | 1.0+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.7− |
| 2001 07 20 | 699 | 0.5+ | 0.2+ | 2003 01 27 | 704 | 0.4+ | 1.1− | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2001 07 20 | 699 | 0.2+ | 0.9+ | 2003 01 27 | 704 | 0.7− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.2− |
| 2001 07 20 | 699 | 0.1− | 0.4+ | 2003 01 27 | 704 | 0.9− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2001 07 29 | 704 | 0.9− | 0.5+ | 2004 03 17 | 704 | (1.4+ | 2.3+) | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2001 07 29 | 704 | 0.7− | 0.5+ | 2004 03 17 | 704 | (1.7+ | 0.6+) | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 07 29 | 704 | 0.6− | 0.8− | 2004 03 17 | 704 | 0.2+ | 1.3+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 08 20 | 704 | 0.6+ | 0.1− | 2004 03 17 | 704 | (2.3+ | 1.1−) | 2006 11 19 | 704 | 1.2+ | 0.3+ |
| 2001 08 20 | 704 | 0.4+ | 0.3+ | 2004 03 29 | 703 | 0.0 | 0.4− | 2006 11 19 | 704 | 1.1+ | 0.2+ |
| 2001 08 20 | 704 | 0.2+ | 0.0 | 2004 03 29 | 703 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 1.4+ | 0.4+ |
| 2001 08 23 | 699 | 1.3+ | 0.7+ | 2004 03 29 | 703 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.8+ | 0.1− |
| 2001 08 23 | 699 | 0.8+ | 0.1− | 2004 03 29 | 703 | 0.8+ | 1.4+ | 2006 11 19 | 704 | 0.9+ | 0.0 |
| 2001 08 23 | 699 | 0.9+ | 0.6+ | 2005 06 05 | 704 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | 0.5+ | 0.4+ | 2005 06 05 | 704 | 0.4− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 08 24 | 683 | (1.5− | 2.9+) | 2005 06 05 | 704 | 0.5− | 0.6+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 08 24 | 683 | 0.3− | 1.0+ | 2005 06 05 | 704 | 0.1− | 0.4+ | 2006 11 20 | 703 | 0.5+ | 0.7+ |
| 2001 08 24 | 683 | 1.0− | 0.3− | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 20 | 703 | 0.2− | 0.5+ |
| 2001 09 09 | 699 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 20 | 703 | 0.4− | 0.1+ |
| 2001 09 09 | 699 | 0.8+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 20 | 703 | 0.6+ | 1.1− |
| 2001 09 09 | 699 | 0.6− | 0.7− | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2001 09 09 | 699 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.9+ | 0.1− |
| 2002 12 11 | 704 | (1.2+ | 1.6+) | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 1.0− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 1.1− | 1.1+ | 2006 11 13 | 691 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.5− | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.8+ | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.3− |

**(139744)∗ 2001 QQ$_{268}$**

Discovered 2001 Aug. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.73521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23633318 | $\omega$ | 269.78960 | | +0.75198522 | −0.65081208 | |
| $a$ | 2.5909135 | $\Omega$ | 130.81124 | | +0.64634391 | +0.69678994 | |
| $e$ | 0.2282911 | $i$ | 7.95134 | | +0.12945183 | +0.30154174 | |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 05 | 644 | 0.4− | 0.3+ | 2001 10 23 | 644 | 0.3− | 0.0 | 2005 08 27 | 644 | 0.2+ | 0.1+ |
| 2001 08 05 | 644 | 0.5− | 0.2+ | 2001 10 23 | 644 | 0.3− | 0.0 | 2005 08 28 | 699 | 0.1+ | 0.1+ |
| 2001 08 05 | 644 | 0.1− | 0.3+ | 2001 10 23 | 644 | 0.3− | 0.1− | 2005 08 28 | 699 | 0.6+ | 0.5+ |
| 2001 08 20 | 704 | 0.4− | 0.0 | 2001 11 15 | 644 | 0.3+ | 0.0 | 2005 08 28 | 699 | 0.4+ | 0.6+ |
| 2001 08 20 | 704 | 0.6− | 0.7+ | 2001 11 15 | 644 | 0.2− | 0.3− | 2005 08 28 | 699 | 0.2+ | 0.5+ |
| 2001 08 20 | 704 | 0.4− | 0.5+ | 2001 11 15 | 644 | 0.3+ | 0.0 | 2005 09 13 | 703 | 0.0 | 0.6+ |
| 2001 08 25 | 644 | 0.1+ | 0.8+ | 2001 11 19 | 704 | 0.3+ | 0.5− | 2005 09 13 | 703 | 0.6− | 0.5− |
| 2001 08 25 | 644 | 0.3+ | 0.2+ | 2001 11 19 | 704 | 0.7− | 0.6− | 2005 09 13 | 703 | 0.6− | 0.3− |
| 2001 08 25 | 644 | 0.3+ | 0.3+ | 2001 11 19 | 704 | 0.2− | 0.5+ | 2005 09 13 | 703 | 1.0+ | 0.4+ |
| 2001 09 16 | 704 | 0.0 | 1.0+ | 2001 11 19 | 704 | 0.2− | 0.4+ | 2005 09 27 | 644 | 0.1− | 0.5+ |
| 2001 09 16 | 704 | (0.3− | 1.6−) | 2001 11 19 | 704 | 1.4− | 0.3+ | 2005 09 27 | 644 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | 0.3+ | 0.3− | 2001 11 20 | 704 | 0.2− | 0.0 | 2005 09 27 | 704 | 0.1+ | 0.5+ |
| 2001 09 16 | 704 | (0.2− | 2.0+) | 2001 11 20 | 704 | 0.2− | 0.3+ | 2005 09 27 | 704 | 1.0− | 0.0 |
| 2001 09 17 | 699 | 0.1− | 0.2+ | 2001 11 20 | 704 | 0.0 | 0.8+ | 2005 09 27 | 644 | 0.1− | 0.1+ |
| 2001 09 17 | 699 | 0.8+ | 0.7+ | 2001 11 20 | 704 | 0.5− | 0.3+ | 2005 09 27 | 644 | 1.2+ | 0.3− |
| 2001 09 17 | 699 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.7− | 0.9+ | 2005 09 27 | 704 | 0.5− | 0.2− |
| 2001 09 17 | 699 | 0.5− | 1.0+ | 2001 12 15 | 704 | 0.7+ | 0.7− | 2005 09 27 | 704 | 0.5− | 0.5− |
| 2001 09 25 | 704 | 0.8+ | 1.0− | 2001 12 15 | 704 | 0.5+ | 0.8− | 2005 10 03 | 703 | 0.3+ | 0.0 |
| 2001 09 25 | 704 | 0.1+ | 1.1− | 2001 12 15 | 704 | 0.3+ | 0.5− | 2005 10 03 | 703 | 1.1− | 0.9− |
| 2001 09 25 | 704 | 0.3+ | 1.2− | 2001 12 15 | 704 | 0.4+ | 0.2− | 2005 10 03 | 703 | 0.0 | 0.4− |
| 2001 09 25 | 704 | 0.4+ | 1.0− | 2001 12 15 | 704 | 0.3− | 0.6− | 2005 10 03 | 703 | 0.3+ | 0.1− |
| 2001 09 25 | 704 | 0.6+ | 0.6− | 2002 01 02 | 608 | 0.9− | 0.2− | 2005 10 10 | 703 | 0.5− | 0.9− |
| 2001 10 11 | 704 | 0.4+ | 0.2+ | 2002 01 02 | 608 | 0.0 | 0.1− | 2005 10 10 | 703 | 0.9− | 0.7− |
| 2001 10 11 | 704 | 0.3+ | 0.1− | 2002 01 02 | 608 | 0.1+ | 0.6− | 2005 10 10 | 703 | 0.3+ | 0.4+ |
| 2001 10 11 | 704 | 0.3+ | 0.5− | 2002 01 05 | 699 | 0.9− | 0.6+ | 2005 10 10 | 703 | 0.0 | 0.6− |
| 2001 10 11 | 704 | 0.0 | 0.0 | 2002 01 05 | 699 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.9− |
| 2001 10 11 | 704 | 0.0 | 0.2− | 2002 01 05 | 699 | 0.4+ | 0.5− | 2006 10 21 | G96 | 0.5− | 0.2− |
| 2001 10 15 | 704 | 0.1+ | 0.3+ | 2002 01 05 | 699 | 0.8− | 1.0+ | 2006 10 21 | G96 | 0.3+ | 0.6− |
| 2001 10 15 | 704 | 0.2+ | 0.5+ | 2002 01 14 | 704 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.7+ | 0.7− |
| 2001 10 15 | 704 | 0.2− | 0.6+ | 2002 01 14 | 704 | 0.4− | 0.4− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 10 15 | 704 | 0.0 | 0.9+ | 2002 01 14 | 704 | 0.9− | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.5− |
| 2001 10 15 | 704 | 0.0 | 0.9+ | 2002 01 14 | 704 | (1.9− | 0.8−) | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2001 10 15 | 644 | 0.4− | 0.0 | 2003 03 11 | 644 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2001 10 15 | 644 | 0.3− | 0.0 | 2003 03 11 | 644 | 0.3+ | 0.5+ | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2001 10 15 | 644 | 0.3− | 0.1+ | 2003 03 11 | 644 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.3+ |
| 2001 10 19 | 699 | 0.4+ | 0.5+ | 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.8+ | 0.3− |
| 2001 10 19 | 699 | 0.7+ | 0.2+ | 2003 03 23 | 645 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.6+ | 0.7− |
| 2001 10 19 | 699 | 0.7+ | 0.6+ | 2005 08 27 | 644 | 0.2+ | 0.0 | | | | |
| 2001 10 19 | 699 | 0.6+ | 0.6+ | 2005 08 27 | 644 | 0.2+ | 0.0 | | | | |

**(139745)∗ 2001 QL$_{271}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.58049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21740169 | $\omega$ | 221.66790 | | +0.77045985 | +0.63440561 | |
| $a$ | 2.7392233 | $\Omega$ | 98.84612 | | −0.56684681 | +0.72671355 | |
| $e$ | 0.0703524 | $i$ | 3.63343 | | −0.29167843 | +0.26347094 | |
| $P$ | 4.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 0.2+ | 1.1− | 2001 08 23 | 699 | 1.4+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.1+ |
| 1998 11 17 | 691 | 0.4− | 0.1− | 2001 08 23 | 699 | 0.8− | 0.5− | 2006 09 18 | 703 | 0.3− | 0.5+ |
| 1998 11 17 | 691 | 0.2− | 0.7− | 2001 08 23 | 699 | 0.2+ | 0.6− | 2006 09 28 | 704 | 0.5− | 0.7− |
| 1998 12 11 | 691 | 0.3+ | 0.5− | 2001 08 23 | 699 | 0.1+ | 0.5− | 2006 09 28 | 704 | 0.9− | 0.2+ |
| 1998 12 11 | 691 | 0.3− | 0.3− | 2002 12 05 | 704 | 0.8+ | 0.9+ | 2006 09 28 | 704 | 0.7− | 0.2+ |
| 1998 12 11 | 691 | 0.8− | 0.8− | 2002 12 05 | 704 | 0.9− | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.8− |
| 1998 12 22 | 691 | 0.2+ | 0.1+ | 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 1998 12 22 | 691 | 0.1− | 0.3+ | 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.2+ |
| 1998 12 22 | 691 | 0.2+ | 0.2+ | 2002 12 05 | 704 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 1998 12 26 | 691 | 0.2+ | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.6− | 2006 10 01 | 704 | 0.2− | 0.1+ |
| 1998 12 26 | 691 | 0.1+ | 0.0 | 2004 02 17 | 704 | 0.9+ | 0.1+ | 2006 10 01 | 704 | 0.6+ | 0.2+ |
| 1998 12 26 | 691 | 0.1− | 0.2+ | 2004 02 17 | 704 | 1.1+ | 0.5− | 2006 10 01 | 704 | (1.8+ | 1.2+) |
| 1999 01 10 | 691 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.9+ | 0.9+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 1999 01 10 | 691 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.2− | 0.9+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 1999 01 10 | 691 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.8+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2001 07 27 | 699 | (1.7+ | 0.6−) | 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2001 07 27 | 699 | 0.9+ | 0.8− | 2005 06 16 | G96 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2001 07 27 | 699 | 0.3+ | 0.4+ | 2005 06 16 | G96 | 0.6− | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.8+ |
| 2001 07 27 | 699 | 0.5+ | 0.1+ | 2005 06 16 | G96 | 1.1− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.8− |
| 2001 08 13 | 608 | 0.2− | 0.1+ | 2005 06 16 | G96 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.5+ |
| 2001 08 13 | 608 | 0.4− | 0.1+ | 2006 09 12 | 703 | (0.5+ | 2.5+) | 2006 10 19 | 644 | 0.8− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.6+ | 0.0 | 2006 09 12 | 703 | (1.6+ | 1.4+) | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 2001 08 19 | 704 | 0.2+ | 0.3− | 2006 09 12 | 703 | 0.0 | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.6+ | | |
| 2001 08 19 | 704 | 0.3− | 0.8− | 2006 09 12 | 703 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2001 08 19 | 704 | 0.1− | 0.8− | 2006 09 18 | 703 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2001 08 19 | 704 | 0.6+ | 0.7− | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |

**(139746)∗ 2001 QK$_{273}$ = 2000 KJ$_{67}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17990)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.07762 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22218551 | $\omega$ | 147.27877 | | +0.17481913 | +0.96306109 | |
| $a$ | 2.6997625 | $\Omega$ | 131.88686 | | −0.95214622 | +0.21832804 | |
| $e$ | 0.0585903 | $i$ | 15.96947 | | −0.25071068 | −0.15762680 | |
| $P$ | 4.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 699 | 0.2+ | 0.2+ | 2001 09 16 | 704 | 0.3− | 0.5+ | 2004 03 30 | 703 | (1.8+ | 0.6+) | | |
| 2000 04 29 | 699 | 0.6− | 0.4+ | 2001 09 16 | 704 | 0.2+ | 0.7+ | 2004 03 30 | 703 | 0.7+ | 0.5+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.5+ | 2001 09 16 | 704 | 0.2− | 0.1+ | 2004 03 30 | 703 | (2.6+ | 1.1−) | | |
| 2000 04 29 | 699 | 0.1+ | 0.2− | 2001 09 16 | 704 | 0.1− | 1.0+ | 2004 04 08 | 644 | 0.0 | 0.0 | | |
| 2000 04 29 | 704 | 0.5− | 1.7+ | 2001 09 16 | 704 | 0.0 | 0.6+ | 2004 04 08 | 644 | 0.1− | 0.1− | | |
| 2000 04 29 | 699 | 1.0− | 0.3+ | 2003 11 20 | 691 | 0.1− | 0.3+ | 2004 04 08 | 644 | 0.1+ | 0.1− | | |
| 2000 04 29 | 704 | 2.0− | 2.0+ | 2003 11 20 | 691 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.3− | 0.1+ | | |
| 2000 04 29 | 704 | 1.4− | 1.6+ | 2003 11 20 | 691 | 0.8+ | 0.1+ | 2006 09 19 | 703 | 1.4− | 0.3+ | | |
| 2000 05 31 | 699 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.3− | 0.1− | | |
| 2000 05 31 | 699 | 1.1− | 0.2+ | 2004 02 17 | 704 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.5+ | | |
| 2000 05 31 | 699 | 0.4+ | 0.3+ | 2004 02 17 | 704 | 0.7+ | 0.1− | 2006 09 27 | 703 | (0.7− | 2.0+) | | |
| 2000 05 31 | 699 | 0.2− | 0.2+ | 2004 02 17 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.4− | 0.9− | | |
| 2000 06 05 | 608 | 0.4+ | 0.6− | 2004 02 17 | 704 | 0.4− | 1.3− | 2006 09 27 | 703 | (2.2+ | 0.3+) | | |
| 2000 06 05 | 608 | 0.0 | 1.0− | 2004 02 27 | 704 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.3+ | | |
| 2000 06 05 | 608 | 0.0 | 1.5− | 2004 02 27 | 704 | 0.3− | 0.8+ | 2006 10 02 | 703 | 0.4− | 0.5+ | | |
| 2001 07 30 | 704 | 0.4+ | 0.3+ | 2004 02 27 | 704 | 0.6− | 0.1+ | 2006 10 02 | 703 | 0.3− | 0.8− | | |
| 2001 07 30 | 704 | 0.8+ | 0.8+ | 2004 03 10 | 703 | 1.0+ | 0.9+ | 2006 10 02 | 703 | 0.9− | 1.4+ | | |
| 2001 07 30 | 704 | (0.2+ | 2.1+) | 2004 03 10 | 703 | 0.6+ | 0.6− | 2006 10 02 | 703 | 0.7+ | 0.5+ | | |
| 2001 08 19 | 704 | 1.0+ | 0.3− | 2004 03 10 | 703 | 1.0− | 0.8+ | 2006 10 21 | 703 | 0.9− | 0.4+ | | |
| 2001 08 19 | 704 | 0.3+ | 0.3− | 2004 03 10 | 703 | 0.0 | 1.0+ | 2006 10 21 | 703 | 0.5+ | 0.3− | | |
| 2001 08 19 | 704 | 0.0 | 0.9− | 2004 03 14 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.8+ | | |
| 2001 08 19 | 704 | 1.3+ | 0.2+ | 2004 03 14 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.1+ | | |
| 2001 08 19 | 704 | 0.1+ | 0.2+ | 2004 03 14 | 704 | 0.0 | 0.4− | 2006 10 31 | 703 | 0.3+ | 0.4+ | | |
| 2001 08 25 | 699 | 0.2− | 0.6+ | 2004 03 14 | 704 | 0.5+ | 0.2− | 2006 10 31 | 703 | 0.7+ | 0.0 | | |
| 2001 08 25 | 699 | 0.5− | 0.1− | 2004 03 19 | 644 | 0.3− | 0.5− | 2006 10 31 | 703 | 1.1− | 0.6+ | | |
| 2001 08 25 | 699 | 0.4− | 0.6− | 2004 03 19 | 644 | 0.1− | 0.7− | 2006 10 31 | 703 | 0.1+ | 0.3− | | |
| 2001 08 25 | 699 | 0.0 | 0.3+ | 2004 03 19 | 644 | 0.0 | 0.5− | 2006 11 23 | 703 | 0.9− | 0.9− | | |
| 2001 09 10 | 699 | 0.8+ | 0.2+ | 2004 03 25 | 704 | 0.4+ | 0.2− | 2006 11 23 | 703 | 0.9− | 0.2+ | | |
| 2001 09 10 | 699 | 0.1− | 0.2+ | 2004 03 25 | 704 | 1.2+ | 0.4− | 2006 11 23 | 703 | 0.0 | 0.3− | | |
| 2001 09 10 | 699 | 0.8+ | 1.1+ | 2004 03 25 | 704 | 0.3+ | 0.2− | 2006 11 23 | 703 | 1.2− | 1.0− | | |
| 2001 09 10 | 699 | 0.6+ | 0.4+ | 2004 03 30 | 703 | 1.3+ | 0.8+ | | | | | | |

**(139747)∗ 2001 QZ$_{273}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.14641 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22586543 | $\omega$ | 237.25832 | | −0.60481652 | +0.79612824 | |
| $a$ | 2.6703583 | $\Omega$ | 355.38217 | | −0.62589455 | −0.49027886 | |
| $e$ | 0.0194062 | $i$ | 13.95173 | | −0.49239515 | −0.35469207 | |
| $P$ | 4.36 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.3− | 2004 04 20 | 703 | (1.9+ | 0.2−) | | |
| 2001 08 13 | 608 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.4− | 0.8+ | 2004 04 20 | 703 | 1.5+ | 0.1+ | | |
| 2001 08 13 | 608 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.7− | 0.3+ | 2004 04 20 | 703 | 1.4+ | 1.0− | | |
| 2001 08 19 | 704 | (0.2− | 1.7+) | 2004 03 20 | 704 | 0.2− | 0.4+ | 2004 04 20 | 703 | 0.4+ | 0.5− | | |
| 2001 08 19 | 704 | 1.3+ | 0.9+ | 2004 03 20 | 704 | 0.9− | 0.0 | 2004 04 26 | 699 | 0.7− | 0.1+ | | |
| 2001 08 19 | 704 | (0.2+ | 2.0+) | 2004 03 20 | 704 | 0.0 | 0.3+ | 2004 04 26 | 699 | 0.1− | 0.5+ | | |
| 2001 08 25 | 699 | 0.5− | 0.8+ | 2004 03 21 | 699 | 0.0 | 0.2+ | 2004 04 26 | 699 | 0.8− | 0.7+ | | |
| 2001 08 25 | 699 | 1.1− | 0.6+ | 2004 03 21 | 699 | 0.3− | 0.5+ | 2004 04 26 | 699 | 0.1+ | 0.0 | | |
| 2001 08 25 | 699 | 0.4− | 0.3− | 2004 03 21 | 699 | 1.3− | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.7+ | | |
| 2001 08 25 | 699 | 0.7− | 0.6+ | 2004 03 21 | 699 | 0.8− | 1.1− | 2006 09 17 | 703 | 0.9+ | 0.5− | | |
| 2001 08 25 | 608 | 0.3− | 1.3+ | 2004 03 23 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 0.8+ | | |
| 2001 08 25 | 608 | 0.8− | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 703 | (0.2+ | 2.2+) | | |
| 2001 08 25 | 608 | 0.9− | 0.3+ | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.4+ | | |
| 2001 09 11 | 704 | 0.2− | 1.0+ | 2004 03 23 | 704 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.2− | 1.0+ | | |
| 2001 09 11 | 704 | 0.2− | 1.5+ | 2004 03 23 | 704 | 0.7+ | 0.2− | 2006 09 28 | 703 | (0.7− | 1.7+) | | |
| 2001 09 11 | 704 | 0.4− | 0.7+ | 2004 03 26 | 699 | 0.8− | 0.5+ | 2006 09 28 | 703 | (0.6+ | 1.6+) | | |
| 2001 09 11 | 704 | 0.9− | 0.1− | 2004 03 26 | 699 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.1+ | | |
| 2002 12 28 | 704 | 0.1− | 0.1− | 2004 03 26 | 699 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.1+ | | |
| 2002 12 28 | 704 | 0.5+ | 0.5+ | 2004 03 26 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.3− | | |
| 2002 12 28 | 704 | 0.6− | 0.3− | 2004 03 27 | 704 | 1.0+ | 0.2+ | 2006 10 19 | 703 | 0.8+ | 0.0 | | |
| 2004 02 15 | 703 | 0.3− | 0.7− | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.5+ | | |
| 2004 02 15 | 703 | 1.3+ | 1.0− | 2004 03 27 | 704 | 0.6+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2004 02 15 | 703 | (1.6+ | 1.6+) | 2004 03 27 | 704 | 1.0+ | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.4+ | | |
| 2004 02 15 | 703 | (1.1− | 1.5−) | 2004 03 27 | 704 | 0.8+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2004 02 26 | 704 | 0.1− | 0.2− | 2004 03 31 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2004 02 26 | 704 | 0.6+ | 0.6+ | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.5+ | | |
| 2004 02 26 | 704 | 0.2+ | 0.4+ | 2004 03 31 | 691 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.7+ | 2004 04 11 | 644 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.4+ | | |
| 2004 02 26 | 704 | 0.0 | 0.5+ | 2004 04 11 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2004 03 15 | 703 | 0.3− | 0.0 | 2004 04 11 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.8− | 0.3− | | |
| 2004 03 15 | 703 | 0.0 | 0.7+ | 2004 04 11 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.4− | | |
| 2004 03 15 | 703 | 0.5+ | 0.4+ | 2004 04 11 | 644 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 1.0− | 0.2− | | |
| 2004 03 15 | 703 | (0.2− | 2.3+) | 2004 04 11 | 644 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.2− | | |
| 2004 03 16 | 704 | 0.6+ | 0.0 | 2004 04 12 | 703 | 0.8+ | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.7+ | | |
| 2004 03 16 | 704 | 0.8+ | 0.6+ | 2004 04 12 | 703 | 0.3+ | 0.7− | 2006 11 15 | 703 | 0.4+ | 0.1+ | | |
| 2004 03 16 | 704 | 0.5+ | 0.4− | 2004 04 12 | 703 | 1.1− | 0.5− | 2006 11 15 | 703 | (0.4− | 1.7−) | | |
| 2004 03 16 | 704 | 1.4+ | 0.7+ | 2004 04 12 | 703 | 0.7− | 1.0+ | 2006 11 15 | 703 | (0.1+ | 1.7+) | | |
| 2004 03 16 | 704 | 0.5+ | 0.3+ | 2004 04 16 | 704 | 0.3+ | 0.8+ | 2006 11 22 | 703 | 0.2− | 0.4+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.6− | 2004 04 16 | 704 | 0.5+ | 1.0+ | 2006 11 22 | 703 | 0.7− | 0.1+ | | |
| 2004 03 18 | 704 | 0.5+ | 0.0 | 2004 04 16 | 704 | 0.7− | 0.2− | 2006 11 22 | 703 | 0.5+ | 0.3+ | | |
| 2004 03 18 | 704 | 0.0 | 0.3− | 2004 04 16 | 704 | 0.4− | 0.2− | 2006 11 22 | 703 | 0.9− | 0.7+ | | |
| 2004 03 18 | 704 | 0.4+ | 0.0 | 2004 04 16 | 704 | 0.0 | 0.4+ | | | | | | |

**(139748)∗ 2001 QQ$_{274}$ = 2003 AA$_{24}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40438)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.83574 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21850762 | $\omega$ | 295.73392 | | +0.96002061 | −0.25726414 | |
| $a$ | 2.7299728 | $\Omega$ | 79.33391 | | +0.27971209 | +0.86607900 | |
| $e$ | 0.0939699 | $i$ | 6.44694 | | +0.01102613 | +0.42862842 | |
| $P$ | 4.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.2+ | 0.2− | 2003 01 08 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.7+ | 0.5+ | | |
| 2001 08 19 | 704 | 0.3− | 0.4− | 2003 01 31 | 704 | 0.7− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 08 19 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.7− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2001 08 23 | 608 | 0.6− | 0.5+ | 2003 01 31 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2001 08 23 | 608 | 0.4− | 0.8+ | 2004 04 16 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 23 | 608 | 0.9− | 1.2+ | 2004 04 16 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2001 08 23 | 608 | 0.2− | 1.1+ | 2004 04 16 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2001 08 23 | 608 | 0.3− | 0.3+ | 2006 09 20 | 699 | (2.5+ | 0.6−) | 2006 10 22 | 703 | 0.6− | 0.0 | | |
| 2001 08 23 | 608 | 0.3− | 0.2+ | 2006 09 20 | 699 | (0.4+ | 1.6+) | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2001 08 25 | 699 | 0.6+ | 0.1− | 2006 09 20 | 699 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.3− | | |
| 2001 08 25 | 699 | 0.3+ | 1.0+ | 2006 09 20 | 699 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.3− | | |
| 2001 08 25 | 699 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.6+ | 0.5+ | 2006 11 13 | 703 | 0.9− | 0.5− | | |
| 2001 08 25 | 699 | 0.4+ | 0.7− | 2006 09 30 | 703 | 0.6− | 0.7+ | 2006 11 13 | 703 | 0.6+ | 0.3− | | |
| 2001 09 11 | 704 | 0.2+ | 0.3− | 2006 09 30 | 703 | (0.8+ | 1.7+) | 2006 11 13 | 703 | 0.4+ | 0.7− | | |
| 2001 09 11 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.8+ | 2006 11 13 | 703 | 0.3− | 1.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 704 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.4+ | 1.0− | 2006 11 14 | 704 | (3.2+ | 4.4+) |
| 2001 09 11 | 704 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.0 | 2006 11 14 | 704 | (1.0+ | 3.3+) |
| 2001 09 11 | 704 | 0.3+ | 0.3− | 2006 10 01 | 704 | 0.9+ | 0.3− | 2006 11 14 | 704 | (0.2− | 3.4+) |
| 2002 12 05 | 704 | 0.4+ | 0.1+ | 2006 10 01 | 704 | (0.4− | 1.9+) | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.6− | 0.5+ |
| 2002 12 05 | 704 | 0.7+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.8+ | 1.6− |
| 2003 01 04 | 704 | 0.9+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.8− |
| 2003 01 04 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.3− | 1.4+ |
| 2003 01 04 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.6− | 0.4− |
| 2003 01 04 | 704 | 0.0 | 0.9− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2003 01 08 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 1.0− | 0.8− |
| 2003 01 08 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.9− |
| 2003 01 08 | 704 | 0.8− | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.0 |

**(139749)∗ 2001 QW$_{274}$ = 1996 JA$_{15}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17991)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.06536 | | (2000.0) | | | |
| $n$ | 0.23037051 | $\omega$ | 256.92932 | | +0.85629442 | +0.50927535 |
| $a$ | 2.6354298 | $\Omega$ | 72.39654 | | −0.43198969 | +0.79748422 |
| $e$ | 0.1450895 | $i$ | 5.17742 | | −0.28309851 | +0.32350817 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 21 | 691 | 0.6+ | 0.2+ | 2001 09 10 | 699 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 1993 11 21 | 691 | 0.9− | 0.0 | 2001 09 10 | 699 | 0.1− | 0.8+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 1993 11 21 | 691 | 0.7+ | 0.1− | 2001 09 10 | 699 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 1996 05 13 | 691 | 0.3+ | 0.5+ | 2001 09 21 | 704 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 1996 05 13 | 691 | 0.2+ | 0.0 | 2001 09 21 | 704 | 0.2+ | 0.8− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 1996 05 20 | 691 | 0.3− | 0.9+ | 2001 09 21 | 704 | 0.8+ | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 1996 05 20 | 691 | 0.3− | 0.4+ | 2001 09 21 | 704 | 0.6+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 1996 05 20 | 691 | 0.9− | 0.3+ | 2003 01 05 | 704 | 0.5+ | 0.6− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2000 03 15 | 691 | 0.5+ | 0.1− | 2003 01 05 | 704 | 0.9+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2000 03 15 | 691 | 0.1+ | 0.4− | 2003 01 05 | 704 | 0.5− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2000 03 15 | 691 | 0.1+ | 0.3− | 2003 01 05 | 704 | 0.9+ | 0.4− | 2006 11 21 | 704 | 1.0+ | 0.3− |
| 2001 08 12 | 608 | 0.7+ | 0.2+ | 2003 01 05 | 704 | 0.3− | 1.0− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 08 12 | 608 | 0.7+ | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.5+ | 2006 11 23 | 691 | 0.3− | 0.1− |
| 2001 08 12 | 608 | 0.9+ | 0.8+ | 2004 03 20 | 704 | 0.2+ | 0.7− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2001 08 19 | 704 | 0.4− | 0.3− | 2004 03 20 | 704 | 1.3+ | 0.5− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2001 08 19 | 704 | 0.8+ | 0.1− | 2004 03 20 | 704 | 1.0+ | 0.3− | 2006 11 27 | 691 | 0.6− | 1.5+ |
| 2001 08 19 | 704 | (1.6+ | 0.1−) | 2004 03 20 | 704 | 1.3+ | 0.1+ | 2006 11 27 | 691 | 0.4− | 0.1+ |
| 2001 08 19 | 704 | 0.5+ | 0.9− | 2004 03 30 | 691 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2001 08 24 | 608 | 0.6− | 0.6− | 2004 03 30 | 691 | 0.4− | 0.3− | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2001 08 24 | 608 | 0.3− | 0.5− | 2004 03 30 | 691 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2001 08 24 | 608 | 1.0− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.3− | | | | |
| 2001 09 10 | 699 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1− | | | | |

**(139750)∗ 2001 QZ$_{276}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.36502 | | (2000.0) | | | |
| $n$ | 0.21914593 | $\omega$ | 15.70743 | | +0.60148176 | −0.78982032 |
| $a$ | 2.7246691 | $\Omega$ | 37.54784 | | +0.71012281 | +0.45976185 |
| $e$ | 0.1747657 | $i$ | 11.35759 | | +0.36598538 | +0.40595923 |
| $P$ | 4.50 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.4− | 0.2− | 2003 02 26 | 704 | 0.5− | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 08 19 | 704 | 0.9− | 0.3+ | 2003 02 26 | 704 | 1.3− | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 08 19 | 704 | 0.3− | 0.6− | 2003 02 26 | 704 | 0.3− | 1.2− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 08 23 | 608 | 0.5− | 1.0+ | 2003 03 08 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.0 |
| 2001 08 23 | 608 | 0.2− | 1.4+ | 2003 03 08 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 644 | 0.2− | 0.2− |
| 2001 08 23 | 608 | 0.1− | 0.9+ | 2003 03 08 | 644 | 0.0 | 0.2+ | 2006 11 11 | 644 | 0.0 | 0.0 |
| 2001 08 23 | 608 | 0.6− | 0.7+ | 2004 04 24 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2001 08 23 | 608 | 0.6− | 1.2+ | 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.2− |
| 2001 08 23 | 608 | 0.7− | 0.7+ | 2004 04 24 | 691 | 0.2+ | 0.7+ | 2006 11 14 | 703 | 0.1− | 0.4− |
| 2001 08 24 | 608 | (0.4− | 1.7+) | 2004 04 26 | 699 | (1.7− | 0.2−) | 2006 11 14 | 703 | 0.0 | 0.5− |
| 2001 08 24 | 608 | 0.8− | 1.5+ | 2004 04 26 | 699 | 0.1+ | 1.2− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2001 08 24 | 608 | 0.7− | 1.1+ | 2004 04 26 | 699 | (0.1+ | 2.1+) | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2001 09 11 | 704 | 0.1− | 0.0 | 2004 04 26 | 699 | 0.4+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2001 09 11 | 704 | 0.5− | 0.7+ | 2004 05 14 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.2+ | 1.2+ |
| 2001 09 11 | 704 | 0.4+ | 0.2+ | 2004 05 14 | 691 | 0.3+ | 0.5+ | 2006 11 15 | 704 | 0.1+ | 0.6+ |
| 2001 09 11 | 704 | 0.4+ | 0.5+ | 2004 05 14 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.7+ |
| 2001 09 17 | 699 | 0.3+ | 0.0 | 2005 07 05 | E12 | 0.5− | 0.6+ | 2006 11 15 | 704 | 0.3− | 0.5+ |
| 2001 09 17 | 699 | 0.7+ | 0.6+ | 2005 07 05 | E12 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 1.2+ | 0.7− |
| 2001 09 17 | 699 | 1.2+ | 0.0 | 2005 07 05 | E12 | 0.8− | 0.8+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2001 09 17 | 699 | 0.0 | 1.0+ | 2005 07 05 | E12 | 0.0 | 0.8+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.4+ | 0.6− | 2006 08 29 | 703 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2001 09 25 | 704 | 0.1+ | 0.9− | 2006 08 29 | 703 | 0.8− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2001 09 25 | 704 | 0.4− | 0.5− | 2006 08 29 | 703 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2001 09 25 | 704 | 0.7+ | 1.3− | 2006 08 29 | 703 | 0.6− | 0.5+ | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2001 10 15 | 644 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2001 10 15 | 644 | 0.7− | 0.0 | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.5− | 0.7− |
| 2001 10 15 | 644 | 0.6− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.5− |
| 2002 11 23 | 644 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.4− | 0.9− |
| 2002 11 23 | 644 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.6− |
| 2002 11 23 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.7− | 0.9− |
| 2002 11 23 | 644 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 11 23 | 644 | 0.7− | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.0 | 0.5+ |
| 2002 11 23 | 644 | 0.3− | 0.3+ | 2006 10 19 | 704 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.4+ |
| 2002 12 14 | 704 | (0.1− | 2.2+) | 2006 10 19 | 704 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 12 14 | 704 | 0.2+ | 1.3+ | 2006 10 19 | 704 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.4− | 0.7− |
| 2002 12 14 | 704 | 0.7+ | 0.6+ | 2006 10 19 | 695 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.5− | 0.1− |
| 2003 01 05 | 699 | 0.0 | 1.1+ | 2006 10 19 | 704 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2003 01 05 | 699 | 0.8+ | 0.3+ | 2006 10 19 | 695 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.8− |
| 2003 01 05 | 699 | 0.4+ | 0.8+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2003 01 05 | 699 | 1.4+ | 1.1+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.5+ |
| 2003 01 10 | 704 | 0.1+ | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.5+ |
| 2003 01 10 | 704 | 1.3− | 0.3+ | 2006 10 21 | 704 | 0.4+ | 0.5+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2003 01 10 | 704 | (0.9− | 2.7+) | 2006 10 21 | 704 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.6+ |
| 2003 01 10 | 644 | (0.2+ | 1.6+) | 2006 10 21 | 704 | 0.2− | 0.6− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2003 01 10 | 644 | 0.3+ | 1.3+ | 2006 10 21 | 704 | 0.2+ | 0.7− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2003 01 10 | 644 | 0.0 | 1.3+ | 2006 10 21 | 704 | 1.3− | 0.4− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2003 01 13 | 704 | 0.3+ | 0.6− | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 01 13 | 704 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 01 13 | 704 | 0.7− | 0.4− | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2003 01 13 | 704 | 0.2+ | 1.1− | 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2003 01 13 | 704 | 0.1− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 2003 01 25 | 704 | 0.8+ | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.4+ | 1.4− |
| 2003 01 25 | 704 | 0.1+ | 0.9+ | 2006 10 29 | 704 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2003 01 25 | 704 | 0.1+ | 0.8− | 2006 10 29 | 704 | 1.1− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2003 01 25 | 704 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.2+ | 0.8+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2003 02 06 | 699 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.8+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2003 02 06 | 699 | 0.5+ | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2003 02 06 | 699 | 1.1+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2003 02 06 | 699 | 0.7+ | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2003 02 26 | 704 | (0.8+ | 1.8−) | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.8− | 1.1+ |
| 2003 02 26 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 1.1− | 0.6+ |
| 2003 02 26 | 704 | 0.3+ | 0.7− | 2006 11 09 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.7− | 0.9+ |
| 2003 02 26 | 704 | 0.5+ | 0.9− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.2− | 0.4+ |
| 2003 02 26 | 704 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 1.0− | 0.5+ |
| 2003 02 26 | 704 | 1.0− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− | | | | |

**(139751)∗ 2001 QC$_{279}$ = 2005 MQ$_{43}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84816)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.77232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21633534 | $\omega$ | 235.01414 | | +0.96312682 | +0.22627938 | |
| $a$ | 2.7482173 | $\Omega$ | 111.52104 | | −0.16604151 | +0.92557049 | |
| $e$ | 0.2405988 | $i$ | 9.00126 | | −0.21170013 | +0.30350769 | |
| $P$ | 4.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.1− | 0.5+ | 2001 09 11 | 704 | 0.2+ | 1.0− | 2006 10 30 | 703 | 0.9− | 0.5− | |
| 2001 08 01 | 644 | 0.1+ | 0.6+ | 2001 09 11 | 704 | 0.5− | 0.1− | 2006 10 30 | 703 | 0.4− | 0.1− | |
| 2001 08 01 | 644 | 0.2+ | 0.5+ | 2001 09 11 | 704 | 0.2− | 0.6− | 2006 10 30 | 703 | 0.2+ | 0.3+ | |
| 2001 08 14 | 608 | 0.6− | 0.5+ | 2002 12 31 | 291 | 0.0 | 0.6+ | 2006 10 30 | 703 | 0.6− | 0.3+ | |
| 2001 08 14 | 608 | 0.6− | 0.2+ | 2002 12 31 | 291 | 0.0 | 0.8+ | 2006 11 13 | 703 | 1.1+ | 0.4+ | |
| 2001 08 14 | 608 | 0.2+ | 0.2+ | 2002 12 31 | 291 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.1− | 1.4+ | |
| 2001 08 19 | 704 | 0.2+ | 0.1− | 2005 06 01 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.9+ | 0.7+ | |
| 2001 08 19 | 704 | 1.1+ | 0.5+ | 2005 06 01 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.2+ | 1.4+ | |
| 2001 08 19 | 704 | 0.6+ | 0.3+ | 2005 06 01 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.5− | 0.3− | |
| 2001 08 19 | 704 | 0.2+ | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.1+ | |
| 2001 08 25 | 644 | 0.7− | 0.7+ | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.2− | 1.0+ | |
| 2001 08 25 | 644 | 0.5− | 0.8+ | 2005 06 14 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.6− | 0.6+ | |
| 2001 08 25 | 644 | 0.8− | 0.5+ | 2005 06 27 | 644 | 0.4− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.1− | |
| 2001 09 06 | 644 | 0.1+ | 0.4− | 2005 06 27 | 644 | 0.7− | 0.3− | 2006 12 01 | G96 | 0.2− | 0.2+ | |
| 2001 09 06 | 644 | 0.1+ | 0.7− | 2005 06 27 | 644 | 0.7− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.3− | |
| 2001 09 06 | 644 | 0.1+ | 0.3− | 2005 06 29 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3− | 0.9− | |
| 2001 09 11 | 704 | 0.8− | 0.6+ | 2005 06 29 | 691 | 0.0 | 1.0+ | | | | | |
| 2001 09 11 | 704 | 0.6+ | 0.6− | 2005 06 29 | 691 | 0.2+ | 0.1+ | | | | | |

**(139752)∗ 2001 QU$_{279}$ = 1993 YD$_1$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 17994)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.34061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23131036 | $\omega$ | 245.89422 | | +0.71263000 | +0.69604452 | |
| $a$ | 2.6282862 | $\Omega$ | 69.86151 | | −0.60499293 | +0.67298655 | |
| $e$ | 0.2066625 | $i$ | 5.35609 | | −0.35516479 | +0.25022216 | |
| $P$ | 4.26 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 0.1− | 0.0 | 2001 08 25 | 699 | 0.7+ | 1.3+ | 2001 10 24 | 644 | 0.6− | 0.4+ | |
| 1993 12 16 | 691 | 0.2+ | 0.1+ | 2001 08 25 | 699 | 0.1− | 0.6+ | 2001 10 24 | 644 | 0.6− | 0.3+ | |
| 1993 12 16 | 691 | 0.3− | 0.1− | 2001 08 25 | 699 | 0.2− | 0.6+ | 2004 02 29 | 691 | 0.5+ | 0.0 | |
| 1993 12 17 | 691 | 0.1− | 0.0 | 2001 08 25 | 699 | 0.1+ | 0.7+ | 2004 02 29 | 691 | 0.1+ | 0.0 | |
| 1993 12 17 | 691 | 0.5− | 0.1− | 2001 09 12 | 704 | 0.1− | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.1− | |
| 1993 12 17 | 691 | 0.2− | 0.2+ | 2001 09 12 | 704 | 0.4+ | 0.6+ | 2005 07 13 | 428 | 0.6− | 0.0 | |
| 1996 04 18 | 691 | 0.1+ | 0.4+ | 2001 09 12 | 704 | 0.6− | 0.5+ | 2005 07 13 | 428 | 0.3− | 0.2+ | |
| 1996 04 18 | 691 | 0.2+ | 0.4+ | 2001 09 12 | 704 | 0.7+ | 0.0 | 2005 07 26 | 644 | 0.8− | 0.4+ | |
| 1996 04 18 | 691 | 0.1+ | 0.2− | 2001 09 12 | 704 | 0.3+ | 0.0 | 2005 07 26 | 644 | 0.9− | 0.6+ | |
| 1997 10 30 | 704 | 1.3+ | 0.6− | 2001 09 23 | 608 | 1.2+ | 0.6− | 2005 07 26 | 644 | 0.4− | 0.1+ | |
| 1997 10 30 | 704 | 0.9− | 0.6+ | 2001 09 23 | 608 | 1.3+ | 0.3+ | 2005 07 26 | 644 | 0.5− | 0.2− | |
| 1997 10 30 | 704 | 0.4+ | 1.7− | 2001 09 23 | 608 | 0.9+ | 0.4+ | 2005 07 26 | 644 | 0.6− | 0.9− | |
| 1997 10 30 | 704 | 1.3− | 1.0+ | 2001 10 10 | 644 | 0.4− | 0.6+ | 2005 07 26 | 644 | 0.3− | 0.1+ | |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2001 10 10 | 644 | 0.4− | 0.7+ | 2006 11 20 | 691 | 0.5+ | 0.1+ | |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2001 10 10 | 644 | 0.5− | 0.3+ | 2006 11 20 | 691 | 0.3+ | 0.3+ | |
| 2001 08 19 | 704 | 0.1+ | 0.3+ | 2001 10 16 | 644 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.4+ | 0.3+ | |
| 2001 08 19 | 704 | 1.0+ | 0.7− | 2001 10 16 | 644 | 0.3− | 0.2+ | 2006 11 24 | 691 | 1.6− | 0.1− | |
| 2001 08 19 | 704 | 0.7+ | 0.7+ | 2001 10 16 | 644 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.1+ | |
| 2001 08 19 | 704 | 0.2− | 0.3+ | 2001 10 24 | 644 | 0.8− | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.1+ | |

**(139753)∗ 2001 QQ$_{280}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.15551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21523017 | $\omega$ | 349.21297 | | +0.91726552 | −0.38431080 | |
| $a$ | 2.7576170 | $\Omega$ | 33.99054 | | +0.37791933 | +0.75701693 | |
| $e$ | 0.1891242 | $i$ | 10.77768 | | +0.12570185 | +0.52842272 | |
| $P$ | 4.58 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.6− | 0.3+ | 2001 10 10 | 644 | 0.2+ | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.5+ | |
| 2001 07 20 | 644 | 0.5− | 0.5+ | 2001 10 11 | 704 | 1.3− | 0.1+ | 2006 09 18 | 703 | 0.1− | 1.2+ | |
| 2001 07 20 | 644 | 0.3− | 0.5+ | 2001 10 11 | 704 | 0.4+ | 1.3+ | 2006 09 18 | 703 | 0.1− | 0.9− | |
| 2001 08 19 | 704 | 0.4+ | 0.4+ | 2001 10 11 | 704 | (1.7+ | 1.6+) | 2006 09 18 | 703 | 0.2− | 1.3− | |
| 2001 08 19 | 704 | 0.7− | 0.1+ | 2001 10 11 | 704 | 0.1− | 1.3+ | 2006 09 18 | 703 | 0.4− | 0.4− | |
| 2001 08 19 | 704 | 1.2− | 0.2− | 2001 10 11 | 704 | 0.4− | 0.7+ | 2006 10 27 | 703 | 0.9+ | 0.4− | |
| 2001 08 20 | 608 | 0.0 | 0.1− | 2001 10 16 | 644 | 0.6− | 0.4+ | 2006 10 27 | 703 | 0.5− | 0.7+ | |
| 2001 08 20 | 608 | 0.1+ | 0.2− | 2001 10 16 | 644 | 0.7− | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.3− | |
| 2001 08 20 | 608 | 0.1+ | 0.2− | 2001 10 16 | 644 | 0.6− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.3+ | |
| 2001 09 11 | 699 | 0.5− | 0.7+ | 2001 10 24 | 644 | 0.7− | 0.5+ | 2006 11 14 | 703 | 0.1+ | 0.1+ | |
| 2001 09 11 | 699 | 0.3+ | 0.6− | 2001 10 24 | 644 | 0.9− | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.3+ | |
| 2001 09 11 | 699 | 0.8+ | 0.2+ | 2001 10 24 | 644 | 0.5− | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.3+ | |
| 2001 09 11 | 699 | 0.4+ | 0.0 | 2001 11 20 | 704 | 1.0− | 0.4− | 2006 11 14 | 703 | (0.1+ | 2.2+) | |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2001 11 20 | 704 | 1.3− | 0.5− | 2006 11 15 | 704 | 0.3+ | 0.7− | |
| 2001 09 12 | 704 | 0.7+ | 1.4+ | 2001 11 20 | 704 | (1.8− | 0.4−) | 2006 11 15 | 704 | 0.1+ | 0.7− | |
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2001 11 20 | 704 | (1.6− | 0.4−) | 2006 11 15 | 704 | 0.7− | 0.6− | |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2003 01 24 | 644 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.5+ | 0.5− | |
| 2001 09 12 | 704 | 0.1− | 0.0 | 2003 01 24 | 644 | 0.5+ | 0.6+ | 2006 11 15 | 704 | 0.5+ | 0.3− | |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2003 01 24 | 644 | 0.4+ | 0.7+ | 2006 11 15 | 704 | 0.3+ | 1.0− | |
| 2001 09 18 | 699 | 0.6+ | 0.2+ | 2003 01 29 | 644 | 0.6+ | 0.4+ | 2006 11 15 | 704 | 0.8+ | 0.3+ | |
| 2001 09 18 | 699 | 0.5− | 0.4+ | 2003 01 29 | 644 | 0.4+ | 0.5+ | 2006 11 15 | 704 | (1.5− | 0.1−) | |
| 2001 09 18 | 699 | 0.2− | 0.6+ | 2003 01 29 | 644 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.7− | |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2003 02 01 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 704 | (0.8+ | 1.6−) | |
| 2001 09 25 | 704 | 0.1− | 0.6+ | 2003 02 01 | 644 | 0.3+ | 0.4+ | 2006 11 16 | 704 | (0.6− | 3.5−) | |
| 2001 09 25 | 704 | 0.3− | 0.2+ | 2003 02 01 | 644 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 1.0− | 0.5+ | |
| 2001 09 25 | 704 | 0.4+ | 1.2+ | 2003 02 06 | 644 | 0.3+ | 1.1+ | 2006 11 23 | G96 | 0.1+ | 0.3− | |
| 2001 09 25 | 704 | 0.6− | 0.5− | 2003 02 06 | 644 | 0.3+ | 1.2+ | 2006 11 23 | G96 | 0.2+ | 0.0 | |
| 2001 09 25 | 704 | 0.5− | 0.3− | 2003 02 06 | 644 | 0.3+ | 1.0+ | 2006 11 24 | 703 | 0.3+ | 0.2− | |
| 2001 09 25 | 644 | 0.1+ | 0.2− | 2003 03 08 | 644 | 0.0 | 0.7+ | 2006 11 24 | 703 | 0.1+ | 0.2+ | |
| 2001 09 25 | 644 | 0.1+ | 0.4+ | 2003 03 08 | 644 | 0.2+ | 0.7+ | 2006 11 24 | 703 | 0.2− | 0.1− | |
| 2001 09 25 | 644 | 0.4+ | 0.1+ | 2003 03 08 | 644 | 0.3+ | 0.8+ | 2006 11 24 | 703 | 0.5− | 0.1+ | |
| 2001 10 10 | 644 | 0.4+ | 0.4+ | 2004 04 19 | 691 | 0.4+ | 0.5+ | | | | | |
| 2001 10 10 | 644 | 0.4+ | 0.5+ | 2004 04 19 | 691 | 0.2+ | 0.5+ | | | | | |

**(139754)∗ 2001 QC$_{281}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.66622 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21528844 | $\omega$ | 18.10811 | | +0.58343501 | −0.80195617 | |
| $a$ | 2.7571194 | $\Omega$ | 36.50593 | | +0.71592782 | +0.43323300 | |
| $e$ | 0.1409858 | $i$ | 12.45796 | | +0.38347222 | +0.41130946 | |
| $P$ | 4.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 1.0+ | 0.2− | 2004 05 13 | 691 | 0.5+ | 0.7+ | 2006 11 14 | 703 | 0.1− | 0.2− | |
| 2001 08 19 | 704 | 0.3+ | 0.3+ | 2004 05 13 | 691 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.2+ | 0.3+ | |
| 2001 08 19 | 704 | 0.2+ | 0.3− | 2004 05 21 | 691 | 0.4+ | 0.6+ | 2006 11 14 | 703 | 0.4+ | 0.4− | |
| 2001 08 23 | 608 | 0.2− | 0.7− | 2004 05 21 | 691 | 0.4+ | 0.8+ | 2006 11 14 | 703 | 0.5− | 0.5− | |
| 2001 08 23 | 608 | 0.4− | 0.9− | 2004 05 21 | 691 | 0.6+ | 0.4+ | 2006 11 14 | 703 | 0.5− | 0.2− | |
| 2001 08 23 | 608 | 0.7− | 0.4− | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 11 14 | 703 | 1.1− | 0.5− | |
| 2001 08 23 | 608 | 1.0− | 0.5− | 2006 09 27 | 704 | 0.4+ | 0.4− | 2006 11 14 | 703 | 1.3+ | 1.2− | |
| 2001 08 23 | 608 | 1.2− | 0.4− | 2006 09 27 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.0 | 0.2+ | |
| 2001 08 23 | 608 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.8− | 2006 11 16 | 704 | 0.1+ | 0.4+ | |
| 2001 08 25 | 699 | 0.4− | 0.1− | 2006 10 04 | 703 | 1.2+ | 0.9+ | 2006 11 16 | 704 | 0.2+ | 0.4+ | |
| 2001 08 25 | 699 | 0.3− | 0.6+ | 2006 10 04 | 703 | 0.5+ | 0.5+ | 2006 11 16 | 704 | 0.4− | 0.2+ | |
| 2001 08 25 | 699 | 0.6− | 0.3+ | 2006 10 04 | 703 | 0.2− | 1.2+ | 2006 11 16 | 704 | 0.1− | 0.3+ | |
| 2001 08 25 | 699 | (2.0− | 0.3+) | 2006 10 04 | 703 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 704 | 1.0+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 09 11 | 704 | 0.2− | 0.3− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (1.7− | 0.3+) |
| 2001 09 11 | 704 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 2001 10 15 | 644 | 0.6+ | 1.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.9+ |
| 2001 10 15 | 644 | 0.3+ | 1.1+ | 2006 10 20 | 695 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2001 10 15 | 644 | 0.5+ | 1.2+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.7+ |
| 2002 12 31 | 704 | 0.2− | 0.0 | 2006 10 20 | 695 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.6− | 0.9− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 2002 12 31 | 704 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2002 12 31 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2003 01 13 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2003 01 13 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2003 01 13 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2003 01 13 | 704 | 0.9+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2003 01 13 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 704 | (0.9+ | 1.8+) | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2003 01 25 | 704 | 0.1− | 1.3+ | 2006 10 23 | 704 | 0.9− | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.4− |
| 2003 01 25 | 704 | 0.6− | 0.3+ | 2006 10 23 | 704 | 0.0 | 0.6+ | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2003 01 25 | 704 | 1.4− | 0.2+ | 2006 10 23 | 704 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.1+ | 1.4− |
| 2003 01 25 | 704 | 0.8− | 0.3− | 2006 10 23 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.7− |
| 2003 02 06 | 699 | 0.1+ | 0.8− | 2006 10 28 | 704 | (0.2− | 1.8+) | 2006 11 22 | 704 | 0.2+ | 0.9− |
| 2003 02 06 | 699 | 0.9+ | 0.2+ | 2006 10 28 | 704 | 0.8− | 0.5+ | 2006 11 27 | 104 | 0.3+ | 0.6+ |
| 2003 02 06 | 699 | 0.2+ | 0.2− | 2006 10 28 | 704 | 0.4− | 0.1+ | 2006 11 27 | 104 | 0.4+ | 0.1− |
| 2003 02 06 | 699 | 0.2− | 0.2− | 2006 10 28 | 704 | 0.1− | 0.6+ | 2006 11 27 | 104 | 0.2+ | 0.1+ |
| 2004 04 21 | 704 | 0.3− | 0.4− | 2006 10 28 | 704 | 0.3+ | 0.8+ | 2006 11 28 | 104 | 0.6+ | 0.4+ |
| 2004 04 21 | 704 | 0.3+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 28 | 104 | 0.5+ | 0.0 |
| 2004 04 21 | 704 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 28 | 104 | 0.4− | 1.6− |
| 2004 05 13 | 691 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 104 | 0.0 | 0.0 |

**(139755)∗ 2001 QF$_{281}$ = 2003 AL$_{67}$**

Discovered 2001 Aug. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40442)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.44670 | | (2000.0) | | | |
| $n$ | 0.22493420 | $\omega$ | 36.01093 | | −0.20813437 | −0.94778522 |
| $a$ | 2.6777234 | $\Omega$ | 67.11520 | | +0.82483065 | −0.30284790 |
| $e$ | 0.0593828 | $i$ | 15.20479 | | +0.52567527 | +0.09993156 |
| $P$ | 4.38 | $H$ | 15.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 644 | 0.6− | 0.7+ | 2004 04 14 | 699 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2001 07 27 | 644 | 0.6− | 0.9+ | 2004 04 14 | 699 | 0.1+ | 0.1− | 2006 11 02 | 703 | 0.1− | 0.5− |
| 2001 07 27 | 644 | 0.5− | 0.9+ | 2004 04 16 | 012 | 0.2− | 0.5− | 2006 11 02 | 703 | 0.4+ | 0.5+ |
| 2001 08 19 | 704 | 0.6+ | 0.1+ | 2004 04 16 | 012 | 0.2+ | 0.1− | 2006 11 02 | 703 | 0.2+ | 0.4+ |
| 2001 08 19 | 704 | 0.4− | 0.5− | 2004 04 16 | 012 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.7+ | 0.5+ |
| 2001 08 19 | 704 | 0.1− | 0.5+ | 2004 04 16 | 012 | (2.0− | 1.1+) | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 08 20 | 608 | 0.0 | 0.4− | 2004 04 16 | 012 | 0.7+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 08 20 | 608 | 0.5− | 0.9− | 2004 04 16 | 704 | (1.1+ | 1.8+) | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 08 20 | 608 | 0.2− | 0.7− | 2004 04 16 | 704 | 0.5+ | 0.7+ | 2006 11 14 | 704 | 0.7+ | 0.3− |
| 2001 09 11 | 704 | (1.0− | 1.6+) | 2004 04 16 | 704 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 2001 09 11 | 704 | 0.7− | 0.4+ | 2004 04 16 | 704 | 0.4+ | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.3+ |
| 2001 09 11 | 704 | 0.8− | 0.4+ | 2004 04 16 | 704 | 0.2− | 0.6− | 2006 11 14 | 704 | 0.9+ | 0.3+ |
| 2001 09 11 | 704 | (0.0 | 1.7+) | 2004 04 20 | 012 | 0.9− | 0.1+ | 2006 11 17 | 704 | 0.0 | 1.3+ |
| 2001 09 11 | 704 | 0.0 | 1.3+ | 2004 04 20 | 012 | 0.5+ | 1.1+ | 2006 11 17 | 704 | 0.2− | 1.3+ |
| 2002 12 05 | 704 | 0.8− | 0.0 | 2004 04 20 | 012 | 0.5+ | 0.9+ | 2006 11 17 | 704 | 0.2− | 0.7+ |
| 2002 12 05 | 704 | 0.6− | 0.2+ | 2004 04 20 | 012 | (2.0− | 1.0+) | 2006 11 17 | 704 | 0.6− | 1.1+ |
| 2002 12 05 | 704 | 0.8− | 0.3+ | 2004 04 20 | 012 | (0.8+ | 1.7−) | 2006 11 17 | 704 | 0.8− | 1.3+ |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2004 04 20 | 012 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.8− | 1.2− |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2004 04 26 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | (1.8− | 1.2+) |
| 2002 12 15 | 704 | 1.3+ | 0.4+ | 2004 04 26 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 704 | (0.5+ | 2.6+) |
| 2002 12 15 | 704 | 0.8+ | 0.2+ | 2004 04 26 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 1.1− | 1.3+ |
| 2002 12 15 | 704 | 0.3+ | 0.1− | 2004 05 10 | 608 | 0.5+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2002 12 31 | 699 | 0.6− | 0.0 | 2004 05 10 | 608 | 0.4+ | 0.9− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 12 31 | 699 | 0.0 | 0.7− | 2004 05 10 | 608 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2002 12 31 | 699 | 0.3− | 0.6+ | 2004 05 18 | 704 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.6− | 0.8+ |
| 2002 12 31 | 699 | 0.0 | 0.2− | 2004 05 18 | 704 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 2003 01 08 | 704 | 0.9+ | 0.6− | 2004 05 18 | 704 | 0.4− | 0.5− | 2006 11 21 | 704 | 0.9− | 0.5+ |
| 2003 01 08 | 704 | 1.1+ | 0.5− | 2004 05 18 | 704 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.9− | 0.2+ |
| 2003 01 08 | 704 | 0.5+ | 0.5− | 2004 05 18 | 704 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2003 01 08 | 704 | (1.6+ | 0.5−) | 2004 05 22 | 704 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 01 10 | 704 | 0.1+ | 0.1+ | 2004 05 22 | 704 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2003 01 10 | 704 | 0.6− | 0.0 | 2004 05 22 | 704 | 0.4+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2003 01 10 | 704 | 0.2− | 0.7− | 2004 05 22 | 704 | 0.2+ | 1.4+ | 2006 11 25 | 291 | 0.1− | 0.3+ |
| 2003 01 10 | 704 | 0.4− | 0.0 | 2004 05 22 | 704 | 0.2− | 1.2+ | 2006 11 25 | 291 | 0.1− | 0.2+ |
| 2003 01 10 | 704 | 0.3+ | 1.5− | 2004 06 08 | 703 | 0.7− | 1.0+ | 2006 11 25 | 291 | 0.1− | 0.3+ |
| 2003 01 13 | 704 | 0.2+ | 0.0 | 2004 06 08 | 703 | 0.5− | 1.3+ | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2003 01 13 | 704 | 0.3− | 0.2− | 2004 06 08 | 703 | (0.6+ | 1.7+) | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2003 01 13 | 704 | 0.5+ | 0.2+ | 2004 06 08 | 703 | 0.8+ | 0.2− | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2003 01 13 | 704 | 0.3+ | 0.4+ | 2005 08 05 | E12 | 0.7+ | 0.8+ | 2006 11 25 | G96 | 0.4− | 0.3− |
| 2003 01 13 | 704 | 0.7+ | 0.1+ | 2005 08 05 | E12 | 0.0 | 0.6+ | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2004 03 26 | 291 | 0.5+ | 1.2+ | 2005 08 05 | E12 | 0.2− | 0.9+ | 2006 11 27 | 703 | 0.1+ | 0.4− |
| 2004 03 26 | 291 | 0.6+ | 1.0+ | 2005 08 05 | E12 | 0.0 | 0.8+ | 2006 11 27 | 703 | 0.3− | 0.1+ |
| 2004 03 26 | 291 | 0.4+ | 0.9+ | 2005 09 06 | E12 | (0.3− | 1.6+) | 2006 11 27 | 703 | 0.2− | 0.1− |
| 2004 03 30 | 413 | 0.0 | 0.1+ | 2005 09 06 | E12 | 0.3− | 0.8+ | 2006 11 29 | 704 | 0.2+ | 0.9+ |
| 2004 03 30 | 413 | 0.0 | 0.1+ | 2005 09 06 | E12 | 0.2+ | 0.9+ | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2004 03 30 | 413 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.4− |
| 2004 03 31 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 1.6+ |
| 2004 03 31 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.7+ |
| 2004 03 31 | 704 | 0.9+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.1− | 0.3− |
| 2004 04 14 | 699 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.0 | 0.3− |
| 2004 04 14 | 699 | 0.4+ | 0.2− | 2006 10 23 | G96 | 0.3+ | 0.3− | 2006 12 01 | 691 | 0.5− | 0.1− |

**(139756)∗ 2001 QE$_{282}$**

Discovered 2001 Aug. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.56734 | | (2000.0) | | | |
| $n$ | 0.21640874 | $\omega$ | 15.32626 | | +0.45032389 | +0.84846492 |
| $a$ | 2.7475959 | $\Omega$ | 282.12509 | | −0.84618098 | +0.30617460 |
| $e$ | 0.2516617 | $i$ | 16.52308 | | −0.28493182 | +0.43169943 |
| $P$ | 4.55 | $H$ | 13.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 704 | 0.4+ | 0.6+ | 2001 09 28 | 704 | 0.3+ | 0.1+ | 2002 12 31 | 704 | 0.5+ | 0.2− |
| 2000 05 10 | 704 | 0.1− | 0.2− | 2001 09 28 | 704 | 0.3+ | 0.4+ | 2002 12 31 | 704 | 0.2+ | 0.2+ |
| 2000 05 10 | 704 | 0.5+ | 0.1+ | 2001 09 28 | 704 | 0.4+ | 0.0 | 2002 12 31 | 704 | 0.5+ | 0.4+ |
| 2000 05 10 | 704 | 0.2− | 0.6+ | 2001 09 28 | 704 | 0.7+ | 0.5+ | 2002 12 31 | 704 | 0.5+ | 0.0 |
| 2000 05 10 | 704 | 0.9− | 1.1+ | 2001 10 15 | 704 | 0.7+ | 0.7− | 2002 12 31 | 704 | 0.3+ | 0.0 |
| 2001 07 31 | 704 | 0.1− | 0.0 | 2001 10 15 | 704 | 1.0+ | 0.6− | 2005 05 16 | 644 | 0.1+ | 0.4+ |
| 2001 07 31 | 704 | 1.5− | 0.1+ | 2001 10 15 | 704 | 0.7+ | 0.6− | 2005 05 16 | 644 | 0.0 | 0.3+ |
| 2001 07 31 | 704 | 0.8− | 0.2− | 2001 10 15 | 704 | 0.8+ | 0.2− | 2005 05 16 | 644 | 0.1+ | 0.3+ |
| 2001 08 19 | 699 | 0.9+ | 0.1+ | 2001 10 15 | 704 | 0.9+ | 0.3− | 2005 05 20 | 644 | 0.2+ | 0.2+ |
| 2001 08 19 | 699 | 0.1+ | 0.0 | 2001 10 20 | 699 | 0.6+ | 0.3+ | 2005 05 20 | 644 | 0.3+ | 0.3+ |
| 2001 08 19 | 699 | 0.2+ | 0.4+ | 2001 10 20 | 699 | 1.4+ | 0.1+ | 2005 05 20 | 644 | 0.2+ | 0.4+ |
| 2001 08 19 | 699 | 0.7+ | 0.5+ | 2001 10 20 | 699 | 0.6+ | 0.1+ | 2005 05 21 | 644 | 0.3+ | 0.4+ |
| 2001 08 23 | 704 | 0.8− | 0.1+ | 2001 10 20 | 699 | 0.8+ | 0.0 | 2005 05 21 | 644 | 0.6+ | 0.3+ |
| 2001 08 23 | 704 | 1.2− | 0.0 | 2001 10 27 | 704 | 1.2− | 1.0− | 2005 05 21 | 644 | 0.3+ | 0.3+ |
| 2001 08 23 | 704 | 0.9− | 0.4+ | 2001 10 27 | 704 | 0.3+ | 0.5− | 2005 06 11 | 704 | 1.1+ | 0.3− |
| 2001 08 23 | 704 | 1.0− | 0.6+ | 2001 10 27 | 704 | (1.4− | 1.9−) | 2005 06 11 | 704 | 0.9− | 0.1− |
| 2001 08 23 | 704 | 1.2− | 1.0+ | 2001 10 27 | 704 | 0.3+ | 0.5− | 2005 06 11 | 704 | 0.0 | 0.1− |
| 2001 09 06 | 644 | 0.4− | 0.3+ | 2001 10 27 | 704 | (1.3− | 1.6−) | 2005 06 11 | 704 | 0.0 | 0.1+ |
| 2001 09 06 | 644 | 0.4− | 0.3+ | 2001 10 27 | 704 | (1.9+ | 1.7+) | 2005 07 03 | 704 | 0.4− | 0.0 |
| 2001 09 06 | 644 | 0.4− | 0.4+ | 2001 10 27 | 704 | 1.1− | 1.4− | 2005 07 03 | 704 | 0.3− | 1.1− |
| 2001 09 08 | 704 | 0.2− | 0.1− | 2001 10 27 | 704 | (0.4− | 2.0−) | 2005 07 03 | 704 | 1.0− | 0.3+ |
| 2001 09 08 | 704 | 0.1+ | 0.1+ | 2001 11 02 | 644 | 0.3+ | 0.2− | 2005 07 03 | 704 | 0.2− | 0.1+ |
| 2001 09 08 | 704 | 0.8− | 0.9+ | 2001 11 02 | 644 | 0.3+ | 0.2− | 2006 10 29 | 703 | 0.0 | 0.1+ |
| 2001 09 08 | 704 | 0.2− | 0.5+ | 2001 11 02 | 644 | 0.4+ | 0.2+ | 2006 10 29 | 703 | 0.1+ | 0.0 |
| 2001 09 22 | 699 | 0.9+ | 0.1+ | 2001 12 10 | 704 | (2.5− | 0.6−) | 2006 10 29 | 703 | 0.3+ | 0.1− |
| 2001 09 22 | 699 | 0.1− | 0.0 | 2001 12 10 | 704 | (1.9− | 0.6+) | 2006 10 29 | 703 | 0.4− | 0.1+ |
| 2001 09 22 | 699 | (1.5+ | 0.2+) | 2001 12 10 | 704 | 1.4− | 0.5+ | 2006 11 14 | 704 | (0.5+ | 1.7+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | 0.6+ | 0.2− | 2001 12 10 | 704 | 1.5− | 0.4− | 2006 11 14 | 704 | 0.3+ | 1.3+ | | |
| 2001 09 24 | 704 | 0.2− | 0.1+ | 2001 12 10 | 704 | 1.0− | 0.2− | 2006 11 14 | 704 | 0.2− | 0.4− | | |
| 2001 09 24 | 704 | 0.4− | 0.1− | 2002 01 08 | 704 | 0.1+ | 1.0+ | 2006 11 22 | 703 | 0.5+ | 0.2− | | |
| 2001 09 24 | 704 | 0.1+ | 0.5− | 2002 01 08 | 704 | 0.6+ | 0.7+ | 2006 11 22 | 703 | 0.2+ | 0.3− | | |
| 2001 09 24 | 704 | 0.1+ | 0.3− | 2002 01 08 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.3+ | 0.3− | | |
| 2001 09 24 | 704 | 0.2+ | 0.2− | 2002 01 08 | 704 | 0.2− | 0.8+ | 2006 11 22 | 703 | 2.7− | 1.5+ | | |
| 2001 09 28 | 704 | 0.1+ | 0.1− | 2002 01 08 | 704 | 0.3+ | 0.7+ | | | | | | |

**(139757)∗ 2001 QF$_{283}$**

Discovered 2001 Aug. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.72096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22062208 | $\omega$ | 61.40622 | | +0.67813221 | +0.69715797 | |
| $a$ | 2.7125020 | $\Omega$ | 253.28703 | | −0.73011060 | +0.60281980 | |
| $e$ | 0.1045040 | $i$ | 14.05597 | | −0.08411431 | +0.38804516 | |
| $P$ | 4.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 03 | 645 | 0.1+ | 0.1+ | 2001 09 23 | 644 | 1.0+ | 0.6+ | 2003 01 07 | 704 | 0.7− | 0.2+ | | |
| 2000 05 03 | 645 | 0.1+ | 0.1+ | 2001 09 23 | 644 | 1.0+ | 0.6+ | 2003 01 07 | 704 | 0.4− | 0.3+ | | |
| 2000 05 05 | 699 | 0.3− | 0.1− | 2001 09 23 | 644 | 1.0+ | 0.7+ | 2004 01 17 | 644 | 0.7+ | 0.1+ | | |
| 2000 05 05 | 699 | 1.1− | 0.3+ | 2001 10 15 | 608 | 0.3− | 0.1− | 2004 01 17 | 644 | 0.4+ | 0.3+ | | |
| 2000 05 05 | 699 | 0.7− | 0.3+ | 2001 10 15 | 608 | 0.5− | 0.5+ | 2004 01 17 | 644 | 0.8+ | 0.1+ | | |
| 2000 05 05 | 699 | 0.3+ | 0.3+ | 2001 10 15 | 608 | 0.3− | 0.4+ | 2004 03 17 | 704 | 0.4+ | 1.1+ | | |
| 2001 07 16 | 699 | 0.1− | 0.3+ | 2001 10 16 | 704 | (0.3+ | 2.3−) | 2004 03 17 | 704 | 0.3− | 0.2− | | |
| 2001 07 16 | 699 | 0.6− | 0.1+ | 2001 10 16 | 704 | (0.2− | 2.1−) | 2004 03 17 | 704 | (0.0 | 2.2+) | | |
| 2001 07 16 | 699 | 0.2− | 0.7+ | 2001 10 16 | 704 | (0.8+ | 2.2−) | 2004 03 17 | 704 | 1.0+ | 0.7+ | | |
| 2001 07 16 | 704 | 0.3− | 0.3+ | 2001 10 16 | 704 | (0.1+ | 3.3−) | 2006 09 28 | 703 | 0.2+ | 0.5− | | |
| 2001 07 16 | 699 | 0.6− | 1.0+ | 2001 10 16 | 704 | (0.3− | 3.0−) | 2006 09 28 | 703 | 0.4− | 0.3− | | |
| 2001 07 16 | 704 | 0.3+ | 0.9+ | 2001 11 18 | 704 | 0.2− | 0.7+ | 2006 09 28 | 703 | 0.1− | 0.2+ | | |
| 2001 07 16 | 704 | 1.0− | 0.9+ | 2001 11 18 | 704 | 0.1− | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.3− | | |
| 2001 07 29 | 644 | 0.3− | 0.0 | 2001 11 18 | 704 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.0 | | |
| 2001 07 29 | 644 | 0.1− | 0.1− | 2001 11 18 | 704 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 2001 07 29 | 644 | 0.1− | 0.0 | 2001 12 07 | 704 | (1.7+ | 0.6+) | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2001 08 08 | 644 | 0.2− | 0.1+ | 2001 12 07 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.1− | | |
| 2001 08 08 | 644 | 0.0 | 0.1− | 2001 12 07 | 704 | 0.4+ | 0.9+ | 2006 10 19 | 703 | 0.8+ | 0.1− | | |
| 2001 08 08 | 644 | 0.2− | 0.0 | 2002 11 05 | 704 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.2− | 0.3− | | |
| 2001 08 18 | 644 | 0.0 | 0.9− | 2002 11 05 | 704 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.2− | 0.3+ | | |
| 2001 08 18 | 644 | 0.1− | 1.0− | 2002 11 05 | 704 | 0.3− | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2001 08 18 | 644 | 0.1− | 1.0− | 2002 11 05 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2001 08 21 | 704 | 1.0+ | 1.1− | 2002 11 06 | 704 | 1.0+ | 0.9− | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2001 08 21 | 704 | 0.8+ | 0.1+ | 2002 11 06 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 0.5− | 0.0 | | |
| 2001 08 21 | 704 | 0.0 | 0.5− | 2002 11 06 | 704 | 0.2+ | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.3+ | | |
| 2001 08 29 | 644 | 0.3− | 0.4+ | 2002 12 05 | 704 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.2+ | 0.1− | | |
| 2001 08 29 | 644 | 0.1− | 0.5+ | 2002 12 05 | 704 | 0.5+ | 1.0+ | 2006 10 27 | 703 | 0.7+ | 0.0 | | |
| 2001 08 29 | 644 | 0.2− | 0.4+ | 2002 12 05 | 704 | 1.0− | 0.8+ | 2006 11 15 | 703 | 0.3− | 0.2− | | |
| 2001 09 09 | 699 | 0.1+ | 0.6+ | 2002 12 05 | 704 | 0.5− | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.0 | | |
| 2001 09 09 | 699 | 0.1+ | 0.2+ | 2002 12 05 | 704 | 0.8+ | 0.4− | 2006 11 15 | 703 | 1.6− | 0.4− | | |
| 2001 09 09 | 699 | 0.1+ | 0.4+ | 2002 12 10 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 703 | 2.1− | 1.6+ | | |
| 2001 09 09 | 699 | 0.1+ | 0.2+ | 2002 12 10 | 704 | 0.4− | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.8+ | | |
| 2001 09 14 | 644 | 0.4− | 0.0 | 2002 12 10 | 704 | 0.6− | 0.2− | 2006 11 17 | 704 | 0.1− | 0.2+ | | |
| 2001 09 14 | 644 | 0.4− | 0.2+ | 2003 01 07 | 704 | 0.7+ | 0.5− | 2006 11 17 | 704 | 0.3+ | 0.1+ | | |
| 2001 09 14 | 644 | 0.4− | 0.1+ | 2003 01 07 | 704 | (0.1− | 1.8−) | 2006 11 17 | 704 | 0.9+ | 0.1+ | | |

**(139758)∗ 2001 QR$_{283}$**

Discovered 2001 Aug. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.44235 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21708645 | $\omega$ | 182.65542 | | +0.92461750 | −0.38054052 | |
| $a$ | 2.7418745 | $\Omega$ | 199.73663 | | +0.35035899 | +0.86666001 | |
| $e$ | 0.1035328 | $i$ | 2.79622 | | +0.14943582 | +0.32262878 | |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 06 | 691 | 0.3+ | 0.0 | 2001 09 22 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 1997 12 06 | 691 | 0.0 | 0.1− | 2001 09 22 | 704 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | | |
| 1997 12 06 | 691 | 0.1+ | 0.1+ | 2001 09 22 | 704 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 1998 01 23 | 691 | 0.7+ | 0.1+ | 2001 09 22 | 704 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.4− | 0.9+ | | |
| 1998 01 23 | 691 | 0.7+ | 0.2+ | 2001 09 23 | 704 | 0.3− | 0.4+ | 2006 11 02 | 703 | 0.5− | 0.5+ | | |
| 1998 01 23 | 691 | 0.9+ | 0.1+ | 2001 09 23 | 704 | 0.0 | 0.4+ | 2006 11 02 | 703 | (0.1− | 1.6+) | | |
| 1998 01 27 | 691 | 0.7− | 0.2− | 2001 09 23 | 704 | 0.0 | 0.5+ | 2006 11 02 | 703 | 0.3− | 1.3+ | | |
| 1998 01 27 | 691 | 0.9− | 0.1− | 2001 10 19 | 644 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2000 05 28 | 704 | 0.5− | 0.3+ | 2001 10 19 | 644 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2000 05 28 | 704 | 0.4+ | 0.2+ | 2001 10 19 | 644 | 0.3− | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 2000 05 28 | 704 | 0.0 | 1.2+ | 2002 12 31 | 645 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 2000 05 28 | 704 | 1.3+ | 0.6+ | 2002 12 31 | 645 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.7− | | |
| 2000 05 28 | 704 | 0.2− | 1.1+ | 2004 04 13 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.0 | 1.2− | | |
| 2001 08 14 | 608 | 0.3− | 0.3+ | 2004 04 13 | 691 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.8− | | |
| 2001 08 14 | 608 | 0.1− | 0.2+ | 2004 04 13 | 691 | 0.5+ | 0.6+ | 2006 11 11 | 644 | 0.2− | 0.0 | | |
| 2001 08 14 | 608 | 0.5− | 0.0 | 2004 04 21 | 704 | 0.7+ | 0.1+ | 2006 11 11 | 644 | 0.1− | 0.1− | | |
| 2001 08 18 | 704 | 0.4− | 0.6+ | 2004 04 21 | 704 | 1.1+ | 0.7+ | 2006 11 11 | 644 | 0.5− | 0.3+ | | |
| 2001 08 18 | 704 | 1.0− | 0.6− | 2004 04 21 | 704 | (1.0+ | 1.8+) | 2006 11 12 | G96 | 0.2− | 0.3− | | |
| 2001 08 18 | 704 | 0.9− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.2− | | |
| 2001 08 23 | 699 | 0.8− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.2− | | |
| 2001 08 23 | 699 | 1.1− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.2− | | |
| 2001 08 23 | 699 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.6− | 2006 11 17 | 703 | 0.1+ | 0.1+ | | |
| 2001 08 23 | 699 | 1.3− | 0.6+ | 2006 10 16 | 703 | 1.0+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.4− | | |
| 2001 09 07 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.1+ | | |
| 2001 09 07 | 704 | 0.8− | 0.1+ | 2006 10 16 | 703 | 1.5− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.1+ | | |
| 2001 09 07 | 704 | 0.5− | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 1.1+ | 0.3− | | |
| 2001 09 07 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.7+ | | |
| 2001 09 07 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.5− | 2006 11 18 | 704 | 1.3+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.6− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.6+ | | |
| 2001 09 11 | 699 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.3− | | |
| 2001 09 11 | 699 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.7− | 0.2− | 2006 10 28 | 704 | 0.2− | 0.6− | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.7− | 2006 11 18 | 704 | 0.4− | 0.6+ | | |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1+ | | |
| 2001 09 12 | 704 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.4− | | |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2006 10 28 | 704 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.0 | 0.0 | | |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 28 | 704 | 2.1+ | 0.5− | | |
| 2001 09 20 | 704 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.9+ | 2.2− | | |
| 2001 09 20 | 704 | 0.7+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.8− | | |
| 2001 09 22 | 704 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.1+ | 1.4+ | | |

**(139759)∗ 2001 QN$_{284}$**

Discovered 2001 Aug. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.10907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17028035 | $\omega$ | 251.48514 | | +0.70381510 | −0.67119674 | |
| $a$ | 3.2237377 | $\Omega$ | 149.31135 | | +0.68914567 | +0.72460067 | |
| $e$ | 0.2309393 | $i$ | 27.12280 | | −0.17240229 | +0.15636114 | |
| $P$ | 5.79 | $H$ | 13.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.1− | 0.3+ | 2002 01 05 | 704 | 0.8+ | 0.2+ | 2003 03 12 | 644 | 0.1− | 0.1+ | | |
| 2001 08 18 | 644 | 0.2− | 0.2+ | 2002 01 05 | 704 | 0.9+ | 0.1− | 2003 03 12 | 644 | 0.1+ | 0.4+ | | |
| 2001 08 18 | 644 | 0.2− | 0.3+ | 2002 01 05 | 704 | 0.3+ | 0.1− | 2003 03 12 | 644 | 0.1+ | 0.3+ | | |
| 2001 08 19 | 704 | 0.7− | 0.3+ | 2003 01 02 | 704 | 0.1+ | 0.2+ | 2003 04 01 | 704 | 0.1− | 0.3− | | |
| 2001 08 19 | 704 | 0.2− | 0.7+ | 2003 01 02 | 704 | 0.5− | 0.3+ | 2003 04 01 | 704 | 0.3+ | 0.2+ | | |
| 2001 08 19 | 704 | 0.4− | 1.5+ | 2003 01 02 | 704 | 1.3+ | 0.5− | 2003 04 01 | 704 | 0.1− | 0.6− | | |
| 2001 08 19 | 704 | 1.4− | 1.1+ | 2003 01 02 | 704 | 0.8+ | 0.3+ | 2003 04 01 | 704 | 0.2+ | 0.3+ | | |
| 2001 08 19 | 704 | 1.4− | 0.7+ | 2003 01 02 | 704 | 0.1− | 0.7− | 2003 04 01 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 26 | 699 | 0.1+ | 0.0 | 2003 01 07 | 704 | 0.6− | 0.8+ | 2003 04 04 | 704 | 0.4− | 1.0− | | |
| 2001 09 26 | 699 | 0.1+ | 0.0 | 2003 01 07 | 704 | 0.5+ | 0.1− | 2003 04 04 | 704 | 0.3+ | 0.2+ | | |
| 2001 09 26 | 699 | 0.1+ | 0.2− | 2003 01 07 | 704 | 0.2+ | 0.5− | 2003 04 04 | 704 | 0.1+ | 0.1− | | |
| 2001 09 26 | 699 | 0.1+ | 0.3+ | 2003 01 07 | 704 | 0.2+ | 0.3+ | 2003 04 04 | 704 | 0.4− | 0.5+ | | |
| 2001 10 09 | 704 | 0.2+ | 0.5+ | 2003 01 07 | 704 | 0.0 | 0.6+ | 2003 04 04 | 704 | 0.2− | 0.7+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 09 | 704 | 0.2+ | 0.5+ | 2003 01 08 | 704 | 1.2+ | 0.3+ | 2004 03 19 | 644 | 0.0 | 0.6+ | |
| 2001 10 09 | 704 | 0.1− | 0.9+ | 2003 01 08 | 704 | 0.2+ | 0.3+ | 2004 03 19 | 644 | 0.2+ | 0.3+ | |
| 2001 10 09 | 704 | 0.0 | 0.9+ | 2003 01 08 | 704 | 0.7+ | 0.0 | 2004 03 19 | 644 | 0.3+ | 0.2+ | |
| 2001 10 09 | 704 | 0.2− | 0.3+ | 2003 01 16 | 644 | 0.1+ | 1.0+ | 2004 03 29 | 704 | 0.4+ | 0.4+ | |
| 2001 10 11 | 704 | 0.2− | 0.2+ | 2003 01 16 | 644 | 0.3+ | 0.8+ | 2004 03 29 | 704 | 0.3− | 0.3+ | |
| 2001 10 11 | 704 | 0.0 | 0.4+ | 2003 01 16 | 644 | 0.2− | 0.2+ | 2004 03 29 | 704 | 0.2+ | 0.4+ | |
| 2001 10 11 | 704 | 0.2+ | 0.4+ | 2003 01 18 | 608 | 0.1+ | 0.7− | 2004 03 29 | 704 | 0.1+ | 0.1+ | |
| 2001 10 11 | 704 | 0.1− | 0.3+ | 2003 01 18 | 608 | 0.4+ | 0.4− | 2004 03 29 | 704 | 0.6− | 0.3− | |
| 2001 10 11 | 704 | 0.2+ | 0.3+ | 2003 01 18 | 608 | 0.1− | 0.8− | 2004 03 30 | 704 | (2.3+ | 0.7+) | |
| 2001 10 17 | 608 | 0.5− | 0.3− | 2003 01 28 | 704 | 0.4+ | 0.1+ | 2004 03 30 | 704 | 0.9+ | 0.2+ | |
| 2001 10 17 | 608 | 0.3− | 0.3− | 2003 01 28 | 704 | 0.7− | 0.3− | 2004 03 30 | 704 | 0.7+ | 0.9+ | |
| 2001 10 17 | 608 | 0.2− | 0.4− | 2003 01 28 | 704 | 0.4− | 0.4− | 2004 03 30 | 704 | 0.3+ | 0.6+ | |
| 2001 10 18 | 699 | 0.9+ | 0.9+ | 2003 01 28 | 704 | 0.4− | 0.0 | 2004 03 30 | 704 | 0.1+ | 0.4+ | |
| 2001 10 18 | 699 | 1.0+ | 0.8+ | 2003 02 02 | 704 | 0.5− | 0.3− | 2004 04 14 | 704 | 1.4+ | 1.1+ | |
| 2001 10 18 | 699 | 0.7+ | 0.8+ | 2003 02 02 | 704 | 1.0− | 0.1− | 2004 04 14 | 704 | 0.8+ | 0.9− | |
| 2001 10 18 | 699 | 0.9+ | 0.5+ | 2003 02 02 | 704 | 0.4− | 0.2− | 2004 04 14 | 704 | (2.2+ | 0.5+) | |
| 2001 10 18 | 699 | 0.2+ | 0.1+ | 2003 02 02 | 704 | 0.8− | 0.4+ | 2004 04 14 | 704 | 0.9− | 0.6+ | |
| 2001 10 18 | 699 | 0.1+ | 0.3+ | 2003 02 03 | 608 | 1.5− | 0.1+ | 2004 04 14 | 704 | (2.8+ | 0.0 ) | |
| 2001 10 18 | 699 | 0.0 | 0.7+ | 2003 02 03 | 608 | 1.1− | 0.1+ | 2005 06 04 | 703 | 0.8− | 0.6− | |
| 2001 10 18 | 699 | 0.7− | 0.5+ | 2003 02 03 | 608 | 0.5− | 0.1+ | 2005 06 04 | 703 | 0.2− | 0.0 | |
| 2001 10 23 | 704 | 1.1− | 1.1− | 2003 02 19 | 644 | 0.3− | 0.2+ | 2005 06 04 | 703 | 0.8− | 0.3+ | |
| 2001 10 23 | 704 | 0.9− | 1.0− | 2003 02 19 | 644 | 0.3− | 0.1+ | 2005 06 04 | 703 | 1.4− | 0.3− | |
| 2001 10 23 | 704 | 0.7− | 0.6− | 2003 02 19 | 644 | 0.2− | 0.1+ | 2005 06 11 | 699 | 0.9− | 0.9+ | |
| 2001 10 23 | 704 | 0.7− | 0.6− | 2003 02 22 | 644 | 0.4− | 0.3+ | 2005 06 11 | 699 | 0.9+ | 0.4+ | |
| 2001 10 23 | 704 | 0.9− | 0.8− | 2003 02 22 | 699 | 0.8− | 0.1− | 2005 06 11 | 699 | 0.8− | 0.0 | |
| 2001 11 06 | 704 | 0.0 | 0.1+ | 2003 02 22 | 699 | 0.4− | 0.3+ | 2005 06 11 | 699 | 0.3− | 0.3+ | |
| 2001 11 06 | 704 | 0.9+ | 0.3− | 2003 02 22 | 699 | 0.3− | 1.5+ | 2005 06 12 | H07 | 0.6+ | 0.3+ | |
| 2001 11 06 | 704 | 0.6+ | 0.1− | 2003 02 22 | 699 | 0.5− | 0.3+ | 2005 06 12 | H07 | 0.5+ | 0.1+ | |
| 2001 11 06 | 704 | 0.5+ | 0.1+ | 2003 02 22 | 644 | 0.1− | 0.1+ | 2005 06 12 | H07 | 0.4+ | 0.2+ | |
| 2001 11 06 | 704 | 0.3− | 0.9+ | 2003 02 22 | 644 | 0.3− | 0.3+ | 2005 06 12 | H07 | 0.5+ | 0.2+ | |
| 2001 11 06 | 644 | 0.0 | 0.1+ | 2003 02 28 | 704 | 0.1+ | 0.3− | 2006 07 23 | 644 | 0.7− | 0.7+ | |
| 2001 11 06 | 644 | 0.1− | 0.2− | 2003 02 28 | 704 | 0.3+ | 0.3+ | 2006 07 23 | 644 | 0.3− | 0.2+ | |
| 2001 11 06 | 644 | 0.2− | 0.5− | 2003 02 28 | 704 | 0.4+ | 0.2− | 2006 07 23 | 644 | 0.3− | 0.4+ | |
| 2001 11 07 | 704 | 0.2+ | 0.3− | 2003 03 01 | 608 | 1.6+ | 1.7+ | 2006 07 23 | 644 | 0.2− | 0.1+ | |
| 2001 11 07 | 704 | 0.4− | 0.8+ | 2003 03 01 | 608 | 1.6+ | 0.2+ | 2006 07 23 | 644 | 0.2− | 0.2+ | |
| 2001 11 07 | 704 | 0.3+ | 1.5+ | 2003 03 01 | 608 | 1.6+ | 0.8+ | 2006 07 23 | 644 | 0.2− | 0.3+ | |
| 2001 11 07 | 704 | 0.1− | 0.6+ | 2003 03 05 | 704 | 0.3− | 0.3+ | 2006 08 18 | 644 | 0.4− | 0.2+ | |
| 2001 11 07 | 704 | 0.1− | 0.7+ | 2003 03 05 | 704 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.3− | 0.4+ | |
| 2001 12 04 | 704 | 0.2+ | 0.9− | 2003 03 05 | 704 | (2.6− | 0.7+) | 2006 08 18 | 644 | 0.2− | 0.4+ | |
| 2001 12 04 | 704 | 0.0 | 0.8− | 2003 03 05 | 704 | 0.2− | 0.4+ | 2006 09 25 | 704 | 1.3+ | 0.8+ | |
| 2001 12 04 | 704 | 0.7+ | 0.9− | 2003 03 05 | 704 | 0.1+ | 0.5− | 2006 09 25 | 704 | 0.7+ | 1.8+ | |
| 2001 12 04 | 704 | 0.0 | 0.9− | 2003 03 06 | 644 | 0.3− | 0.5+ | 2006 09 25 | 704 | 1.2+ | 0.0 | |
| 2001 12 04 | 704 | 0.7+ | 0.4− | 2003 03 06 | 644 | 0.5− | 0.2+ | 2006 09 25 | 704 | 2.0+ | 0.2+ | |
| 2002 01 05 | 704 | 0.1− | 0.9− | 2003 03 06 | 644 | 0.5− | 0.2+ | | | | | |

**(139760)∗ 2001 QW$_{285}$ = 2003 AQ$_{77}$**

Discovered 2001 Aug. 23 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 46574)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.43275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23025500 | $\omega$ | 353.69937 | | +0.36334580 | −0.89412970 | |
| $a$ | 2.6363112 | $\Omega$ | 74.75039 | | +0.86618294 | +0.22074524 | |
| $e$ | 0.0541746 | $i$ | 15.74167 | | +0.34308445 | +0.38961983 | |
| $P$ | 4.28 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 608 | 0.2+ | 0.3− | 2003 01 25 | 704 | 1.2+ | 1.1− | 2004 05 23 | 704 | 0.9+ | 0.5+ | |
| 2001 08 23 | 608 | 0.0 | 0.3− | 2003 01 25 | 704 | 1.0+ | 0.2− | 2004 05 23 | 704 | (2.0+ | 0.2+) | |
| 2001 08 23 | 608 | 0.2− | 0.3− | 2003 02 06 | 699 | 0.1+ | 0.5+ | 2004 06 16 | 704 | (2.1+ | 1.1+) | |
| 2001 08 24 | 608 | 0.4+ | 0.3− | 2003 02 06 | 699 | (1.9+ | 0.4+) | 2004 06 16 | 704 | 1.1+ | 0.8+ | |
| 2001 08 24 | 608 | 0.5+ | 0.3− | 2003 02 06 | 699 | 0.1− | 0.8+ | 2004 06 16 | 704 | 1.4+ | 0.4− | |
| 2001 08 24 | 608 | 0.5+ | 0.0 | 2003 02 06 | 699 | 0.8+ | 0.0 | 2004 06 16 | 704 | (2.0+ | 0.2−) | |
| 2001 09 11 | 704 | 0.7− | 0.6+ | 2004 04 16 | 644 | 0.1+ | 0.3+ | 2004 06 18 | 704 | 1.5+ | 0.2− | |
| 2001 09 11 | 704 | 0.5+ | 0.6− | 2004 04 16 | 644 | 0.1+ | 0.4+ | 2004 06 18 | 704 | 0.3+ | 0.0 | |
| 2001 09 11 | 704 | 0.3+ | 0.2+ | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2004 06 18 | 704 | 0.1+ | 0.1− | |
| 2002 11 14 | 644 | 0.5+ | 0.4+ | 2004 04 23 | 599 | 0.0 | 0.0 | 2005 08 28 | E12 | 1.2− | 1.4+ | |
| 2002 11 14 | 644 | 0.7+ | 0.5+ | 2004 04 23 | 599 | 0.1− | 0.1+ | 2005 08 28 | E12 | 0.6− | 1.0+ | |
| 2002 11 14 | 644 | 0.0 | 0.8+ | 2004 04 23 | 599 | 0.1− | 0.2+ | 2005 08 28 | E12 | 0.5+ | 0.7+ | |
| 2002 12 31 | 704 | 0.1− | 0.0 | 2004 04 23 | 599 | 0.1− | 0.0 | 2005 08 28 | E12 | 1.2− | 0.7+ | |
| 2002 12 31 | 704 | 1.0+ | 0.5− | 2004 04 23 | 704 | 1.1− | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | |
| 2002 12 31 | 704 | 0.4− | 0.8+ | 2004 04 23 | 704 | 0.5+ | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.1+ | |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2004 04 23 | 704 | 0.4− | 0.2− | 2006 11 17 | 691 | 0.7− | 0.5− | |
| 2002 12 31 | 704 | 0.6− | 0.0 | 2004 04 23 | 704 | 0.5+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.4+ | |
| 2003 01 10 | 704 | 1.2− | 0.1+ | 2004 04 23 | 704 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.6− | 0.3− | |
| 2003 01 10 | 704 | 1.1− | 0.3+ | 2004 05 12 | 699 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.1+ | |
| 2003 01 10 | 704 | 1.3− | 1.3+ | 2004 05 12 | 699 | 0.5− | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.4+ | |
| 2003 01 13 | 704 | 0.3− | 0.6− | 2004 05 12 | 699 | 0.5− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.2+ | |
| 2003 01 13 | 704 | 0.1− | 0.8− | 2004 05 12 | 699 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.7+ | |
| 2003 01 13 | 704 | 0.2− | 0.7− | 2004 05 14 | 704 | 0.5+ | 0.5− | 2006 11 21 | 691 | 0.0 | 0.3+ | |
| 2003 01 13 | 704 | 0.6− | 0.8− | 2004 05 14 | 704 | 0.8− | 0.7+ | 2006 11 21 | 691 | 0.2+ | 0.3+ | |
| 2003 01 13 | 704 | 0.9− | 0.8− | 2004 05 14 | 704 | 0.3− | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.3+ | |
| 2003 01 25 | 704 | (1.6+ | 0.7−) | 2004 05 23 | 704 | 0.3− | 0.9+ | 2006 11 21 | 691 | 0.0 | 0.2+ | |
| 2003 01 25 | 704 | 0.5+ | 0.4+ | 2004 05 23 | 704 | (1.8+ | 1.1+) | | | | | |
| 2003 01 25 | 704 | 0.2+ | 0.6− | 2004 05 23 | 704 | 1.1+ | 1.0+ | | | | | |

**(139761)∗ 2001 QA$_{286}$**

Discovered 2001 Aug. 28 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.28625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23206397 | $\omega$ | 99.65741 | | +0.90883143 | −0.35318034 | |
| $a$ | 2.6225930 | $\Omega$ | 281.28636 | | +0.23458311 | +0.87275455 | |
| $e$ | 0.2145162 | $i$ | 13.08460 | | +0.34495824 | +0.33699130 | |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 644 | 0.6+ | 0.3+ | 2001 09 23 | 644 | 0.6− | 0.2− | 2003 02 02 | 704 | 0.4+ | 0.8− | |
| 2001 05 25 | 644 | 0.4+ | 0.4+ | 2001 09 23 | 644 | 0.7− | 0.1+ | 2003 02 02 | 704 | 0.1− | 0.8− | |
| 2001 05 25 | 644 | 0.2+ | 0.7+ | 2001 10 15 | 608 | 0.7− | 0.6− | 2003 02 02 | 704 | 0.8+ | 0.1+ | |
| 2001 06 29 | 699 | (3.4− | 1.6+) | 2001 10 15 | 608 | 0.5− | 0.3− | 2003 02 04 | 644 | 0.1+ | 0.5+ | |
| 2001 06 29 | 699 | 0.5+ | 0.8+ | 2001 10 15 | 608 | 0.6− | 0.4− | 2003 02 04 | 644 | 0.2+ | 0.6+ | |
| 2001 06 29 | 699 | 0.4− | 0.3− | 2001 11 18 | 704 | 0.7+ | 0.3− | 2003 02 04 | 644 | 0.0 | 0.5+ | |
| 2001 06 29 | 699 | 1.4+ | 0.8+ | 2001 11 18 | 704 | 1.0+ | 0.6+ | 2004 04 12 | E12 | 0.8− | 0.9+ | |
| 2001 07 20 | 699 | 0.8− | 0.0 | 2001 11 18 | 704 | 0.3+ | 0.3+ | 2004 04 12 | E12 | (1.6+ | 1.3+) | |
| 2001 07 20 | 699 | 0.9− | 0.0 | 2001 11 18 | 704 | 0.8+ | 0.8+ | 2004 04 12 | E12 | 0.9+ | 1.4+ | |
| 2001 07 20 | 704 | 0.9− | 1.5+ | 2001 11 18 | 704 | 0.3+ | 0.1+ | 2004 04 12 | E12 | 0.8+ | 1.5+ | |
| 2001 07 20 | 704 | (1.7+ | 1.8+) | 2002 12 14 | 645 | 0.0 | 0.1+ | 2004 05 13 | 644 | 0.7+ | 0.9+ | |
| 2001 07 20 | 704 | (0.7+ | 1.6+) | 2002 12 14 | 645 | 0.0 | 0.1+ | 2004 05 13 | 644 | 0.5+ | 0.2+ | |
| 2001 07 20 | 699 | 0.0 | 0.2+ | 2003 01 07 | 704 | 0.8+ | 0.6+ | 2004 05 13 | 644 | 0.3+ | 0.1+ | |
| 2001 07 20 | 704 | (1.6− | 1.9+) | 2003 01 07 | 704 | 0.2+ | 0.2− | 2005 06 08 | 691 | 0.2+ | 0.1− | |
| 2001 07 20 | 704 | (1.3− | 2.0+) | 2003 01 07 | 704 | 0.6− | 0.3− | 2005 06 08 | 691 | 0.1+ | 0.2− | |
| 2001 07 20 | 699 | 0.3− | 0.1− | 2003 01 07 | 704 | 0.1− | 0.3+ | 2005 06 08 | 691 | 0.3+ | 0.2− | |
| 2001 07 29 | 704 | 0.2+ | 0.6+ | 2003 01 07 | 704 | 0.0 | 0.3− | 2005 06 13 | G96 | 0.3+ | 0.2+ | |
| 2001 07 29 | 704 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.5+ | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.2+ | |
| 2001 07 29 | 704 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.0 | 0.5− | 2005 06 13 | G96 | 0.3+ | 1.1− | |
| 2001 08 20 | 704 | 0.9− | 0.2+ | 2003 01 08 | 704 | 0.3− | 0.2− | 2005 06 16 | 691 | 0.1+ | 0.1− | |
| 2001 08 20 | 704 | 0.6− | 0.1− | 2003 01 08 | 704 | 0.8+ | 0.2− | 2005 06 16 | 691 | 0.1+ | 0.1+ | |
| 2001 08 20 | 704 | 0.7− | 0.5− | 2003 01 08 | 704 | 0.0 | 0.5+ | 2005 06 16 | 691 | 0.4− | 0.1+ | |
| 2001 08 20 | 704 | 0.6− | 0.4+ | 2003 01 26 | 699 | 0.6+ | 0.1− | 2006 11 02 | G96 | 0.2+ | 0.1− | |
| 2001 08 20 | 704 | 1.0− | 0.5+ | 2003 01 26 | 699 | 0.0 | 0.4− | 2006 11 02 | G96 | 0.2− | 0.3− | |
| 2001 08 23 | 683 | 1.2− | 1.4+ | 2003 01 26 | 699 | 1.1+ | 0.8+ | 2006 11 02 | G96 | 0.2− | 0.3− | |
| 2001 08 23 | 683 | 0.6− | 0.3− | 2003 01 26 | 699 | 0.2+ | 0.6+ | 2006 11 02 | G96 | 0.0 | 0.1− | |
| 2001 08 23 | 683 | 0.9− | 1.3+ | 2003 01 26 | 644 | 0.0 | 0.6+ | 2006 11 19 | 704 | 1.5+ | 0.3− | |
| 2001 08 28 | 683 | (1.1+ | 1.7+) | 2003 01 26 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.3+ | |
| 2001 08 28 | 683 | 0.4+ | 1.3+ | 2003 01 26 | 644 | 0.0 | 0.6+ | 2006 11 19 | 704 | 0.4+ | 0.9− | |
| 2001 08 28 | 683 | 0.1− | 1.0+ | 2003 01 27 | 608 | 0.6+ | 0.9+ | 2006 11 19 | 704 | 0.7− | 0.2− | |
| 2001 08 29 | 644 | 0.3− | 0.2+ | 2003 01 27 | 608 | 0.7+ | 0.7+ | 2006 11 22 | G96 | 0.2+ | 0.0 | |
| 2001 08 29 | 644 | 0.3− | 0.3+ | 2003 01 27 | 608 | 0.8+ | 0.8+ | 2006 11 22 | G96 | 0.2− | 0.1− | |
| 2001 08 29 | 644 | 0.4− | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.0 | |
| 2001 09 06 | 644 | 0.4+ | 1.0+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1+ | |
| 2001 09 06 | 644 | 0.5+ | 1.0+ | 2003 01 28 | 704 | 1.4+ | 0.2+ | 2006 12 01 | 704 | 0.6− | 0.6+ | |
| 2001 09 06 | 644 | 0.5+ | 1.0+ | 2003 01 28 | 704 | 1.1+ | 0.2− | 2006 12 01 | 704 | 1.5− | 0.5− | |
| 2001 09 23 | 644 | 0.7− | 0.2− | 2003 01 28 | 704 | 0.9+ | 0.0 | 2006 12 01 | 704 | 1.1− | 0.4+ | |

**(139762)∗ 2001 QM$_{287}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 79.55353 | | | (2000.0) | | |
| $n$ | 0.21977468 | $\omega$ | 108.29561 | | +0.64194310 | +0.76604285 |
| $a$ | 2.7194701 | $\Omega$ | 201.74566 | | −0.73281083 | +0.60030470 |
| $e$ | 0.0583470 | $i$ | 5.10647 | | −0.22560440 | +0.22980997 |
| $P$ | 4.48 | $H$ | 15.5 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | (2.1− | 0.4−) | 2001 09 23 | 704 | 0.5+ | 0.1− | 2005 06 04 | 691 | 0.3− | 0.2+ |
| 1997 10 29 | 704 | 0.3− | 0.2− | 2001 09 23 | 704 | 1.4+ | 0.3− | 2005 06 17 | 691 | 0.2− | 0.1+ |
| 1997 10 29 | 704 | 1.2− | 1.2− | 2001 09 23 | 704 | 0.7+ | 0.8− | 2005 06 17 | 691 | 0.1− | 0.1+ |
| 1997 10 29 | 704 | 1.2− | 0.3− | 2001 09 23 | 704 | 0.5+ | 0.7− | 2005 06 17 | 691 | 0.0 | 0.1+ |
| 2001 08 17 | 704 | 0.5+ | 0.3+ | 2001 10 11 | 644 | 0.2− | 0.4+ | 2006 07 22 | G96 | 0.6+ | 0.2− |
| 2001 08 17 | 704 | 0.5− | 0.4− | 2001 10 11 | 644 | 0.7− | 0.7+ | 2006 07 22 | G96 | 0.3+ | 0.4− |
| 2001 08 17 | 704 | 0.7+ | 0.0 | 2001 10 11 | 644 | 0.3− | 0.2+ | 2006 07 22 | G96 | 0.4+ | 0.6+ |
| 2001 08 23 | 699 | 0.0 | 0.5+ | 2001 10 19 | 644 | 0.1− | 0.7+ | 2006 07 22 | G96 | 1.0− | 0.2+ |
| 2001 08 23 | 699 | 0.0 | 0.0 | 2001 10 19 | 644 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.1− |
| 2001 08 23 | 699 | (1.6+ | 0.1+) | 2001 10 19 | 644 | 0.5− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.1+ |
| 2001 08 23 | 699 | 0.1+ | 0.1− | 2004 03 13 | 644 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.2− |
| 2001 09 08 | 704 | 0.0 | 0.2+ | 2004 03 13 | 644 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2001 09 08 | 704 | 0.3+ | 0.7+ | 2004 03 13 | 644 | 0.2+ | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2001 09 08 | 704 | 0.1+ | 0.4+ | 2004 03 15 | 703 | 0.7− | 1.2+ | 2006 10 18 | 691 | 0.2− | 0.4+ |
| 2001 09 08 | 704 | 0.3− | 1.0+ | 2004 03 15 | 703 | 0.7+ | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.6+ |
| 2001 09 08 | 704 | 0.2+ | 1.1+ | 2004 03 15 | 703 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 09 11 | 699 | 0.9+ | 1.0+ | 2004 03 15 | 703 | 0.5− | 1.2+ | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2001 09 11 | 699 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2001 09 11 | 699 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.6+ | 1.3+ | 2006 11 02 | 703 | 0.2− | 0.3− |
| 2001 09 11 | 699 | 0.4+ | 1.1+ | 2004 03 18 | 704 | 0.6+ | 1.2+ | 2006 11 02 | 703 | 0.2+ | 1.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.7+ | 2004 03 18 | 704 | 1.0+ | 1.1+ | 2006 11 02 | 703 | 0.1− | 0.4− |
| 2001 09 16 | 704 | 1.0+ | 1.5+ | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2006 11 02 | 703 | 1.3− | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.7+ | 2004 03 20 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2001 09 18 | 699 | 0.5− | 0.0 | 2004 03 20 | 704 | 0.7+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.9+ |
| 2001 09 18 | 699 | 0.3+ | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.6− | 0.6− |
| 2001 09 18 | 699 | 0.2+ | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2001 09 18 | 699 | 0.1− | 0.0 | 2004 03 24 | 699 | 0.1+ | 1.2+ | 2006 11 15 | G96 | 0.1+ | 0.7+ |
| 2001 09 20 | 704 | 1.2− | 0.1+ | 2004 03 24 | 699 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 1.2− | 0.7− | 2004 03 24 | 699 | (0.4− | 2.0+) | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 09 20 | 704 | 1.2− | 0.4+ | 2004 03 24 | 699 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 1.0− | 0.3+ | 2004 03 27 | 704 | 0.9+ | 0.9+ | 2006 11 17 | 704 | 0.4− | 0.7− |
| 2001 09 20 | 704 | 1.3− | 0.7+ | 2004 03 27 | 704 | 0.2− | 0.7+ | 2006 11 17 | 704 | 1.2+ | 1.0+ |
| 2001 09 22 | 704 | 0.6+ | 0.4− | 2004 03 27 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.6+ |
| 2001 09 22 | 704 | 0.4+ | 0.0 | 2004 03 27 | 704 | 0.1− | 0.1+ | 2006 11 23 | 683 | 0.9+ | 0.5− |
| 2001 09 22 | 704 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.5+ | 1.4+ | 2006 11 23 | 683 | 0.5+ | 0.2− |
| 2001 09 22 | 704 | 1.0+ | 0.9− | 2005 06 04 | 691 | 0.1− | 0.1+ | 2006 11 23 | 683 | 2.3+ | 0.1− |
| 2001 09 23 | 704 | 0.8+ | 0.4− | 2005 06 04 | 691 | 0.2− | 0.1+ | | | | |

**(139763)∗ 2001 QT$_{287}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 116.52383 | | | (2000.0) | | |
| $n$ | 0.23427627 | $\omega$ | 0.81310 | | +0.19903107 | +0.97984068 |
| $a$ | 2.6060567 | $\Omega$ | 280.66733 | | −0.89922544 | +0.17558613 |
| $e$ | 0.1227288 | $i$ | 1.00800 | | −0.38958984 | +0.09529825 |
| $P$ | 4.21 | $H$ | 16.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.8+ | 0.1− | 2001 09 21 | 704 | 0.4+ | 0.0 | 2005 07 15 | G96 | 0.3+ | 0.1− |
| 2000 04 05 | 704 | 0.9+ | 0.7+ | 2001 09 21 | 704 | 0.8+ | 1.0+ | 2005 07 16 | 691 | 0.3+ | 0.1− |
| 2000 04 05 | 704 | 0.9+ | 0.2− | 2001 09 21 | 704 | 0.2+ | 0.4+ | 2005 07 16 | 691 | 0.1+ | 0.1− |
| 2000 04 05 | 704 | 0.2+ | 0.2+ | 2001 09 21 | 704 | 0.2+ | 0.8+ | 2005 07 16 | 691 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.2+ | 0.1+ | 2001 09 21 | 704 | 1.0− | 0.8+ | 2005 07 30 | E12 | 0.2+ | 0.3+ |
| 2001 08 12 | 608 | 0.2+ | 0.8− | 2004 03 16 | 599 | 0.1+ | 0.1+ | 2005 07 30 | E12 | 0.2+ | 0.6− |
| 2001 08 12 | 608 | 0.1+ | 1.0− | 2004 03 16 | 599 | 0.3+ | 0.4+ | 2005 07 30 | E12 | 0.2+ | 0.2− |
| 2001 08 12 | 608 | 0.3+ | 0.4− | 2004 03 16 | 599 | 0.0 | 0.4+ | 2005 07 30 | E12 | 0.2− | 0.0 |
| 2001 08 17 | 704 | 0.9− | 0.0 | 2004 03 18 | 704 | 0.7− | 0.4+ | 2005 09 30 | G96 | 0.4− | 0.0 |
| 2001 08 17 | 704 | 0.6− | 0.6+ | 2004 03 18 | 704 | 0.7+ | 0.3− | 2005 09 30 | G96 | 0.0 | 0.0 |
| 2001 08 17 | 704 | 0.0 | 0.9+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2005 09 30 | G96 | 0.7− | 0.1+ |
| 2001 08 21 | 807 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.3− | 0.7+ | 2005 09 30 | G96 | 0.9− | 0.2− |
| 2001 08 21 | 807 | 0.4+ | 0.2+ | 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 08 23 | 699 | 0.1+ | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 08 23 | 699 | 0.8+ | 0.1+ | 2004 03 18 | 691 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2001 08 23 | 699 | 0.2− | 1.2+ | 2005 06 30 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3− | 0.7+ |
| 2001 08 23 | 691 | 0.0 | 0.4+ | 2005 06 30 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2001 08 23 | 699 | 0.9− | 0.7+ | 2005 06 30 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2001 08 23 | 691 | 0.0 | 0.4+ | 2005 07 12 | G96 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.6+ |
| 2001 08 23 | 691 | 0.1+ | 0.4+ | 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 1.3− | 0.1+ | 2005 07 12 | G96 | 0.5− | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 1.4− | 0.4+ | 2005 07 12 | G96 | 0.1+ | 0.7− | 2006 11 22 | 691 | 0.2+ | 0.4− |
| 2001 09 12 | 704 | 0.5+ | 0.0 | 2005 07 15 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2005 07 15 | G96 | 0.1+ | 0.3− | | | | |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2005 07 15 | G96 | 0.2+ | 0.3− | | | | |

**(139764)∗ 2001 QU$_{287}$ = 2000 KM$_{12}$**

Discovered 2001 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 17999)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.75089 | | | (2000.0) | | |
| $n$ | 0.20117799 | $\omega$ | 119.13651 | | +0.94270450 | +0.33228580 |
| $a$ | 2.8845788 | $\Omega$ | 221.47590 | | −0.31964065 | +0.87385970 |
| $e$ | 0.1136243 | $i$ | 2.58803 | | −0.09559329 | +0.35490191 |
| $P$ | 4.90 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 27 | 691 | 0.2− | 0.0 | 2001 10 19 | 644 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1− |
| 1995 05 27 | 691 | 0.5− | 0.6− | 2001 10 19 | 644 | 0.4− | 0.3+ | 2006 09 18 | 704 | (1.0+ | 1.5−) |
| 1995 05 27 | 691 | 0.0 | 0.6− | 2004 03 12 | 644 | 0.4+ | 0.6+ | 2006 09 18 | 704 | 0.4− | 1.4− |
| 2000 05 28 | 704 | 0.0 | 1.1− | 2004 03 12 | 644 | 1.0+ | 0.9+ | 2006 09 18 | 704 | 1.2+ | 0.1+ |
| 2000 05 28 | 704 | 1.1+ | 0.5− | 2004 03 12 | 644 | 0.3+ | 0.7+ | 2006 09 18 | 704 | 0.4+ | 0.8− |
| 2000 05 28 | 704 | (2.3+ | 0.9+) | 2005 05 07 | G96 | 0.6+ | 0.2+ | 2006 09 18 | 704 | (1.3+ | 2.0−) |
| 2000 05 29 | 704 | 0.9+ | 1.1+ | 2005 05 07 | G96 | 0.6+ | 0.5+ | 2006 09 19 | 699 | 0.6+ | 0.4+ |
| 2000 05 29 | 704 | 0.3+ | 0.2+ | 2005 05 07 | G96 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.6− |
| 2000 05 29 | 704 | 0.9+ | 1.1+ | 2005 05 07 | G96 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.6+ |
| 2000 06 01 | 691 | 0.7− | 0.3− | 2006 08 17 | 644 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.4− | 0.6− |
| 2000 06 01 | 691 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.2− |
| 2000 06 01 | 691 | 0.1− | 0.5+ | 2006 08 17 | 644 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.3− | 0.3− |
| 2001 08 14 | 608 | 0.3− | 0.8− | 2006 08 17 | 644 | 0.1− | 0.1− | 2006 09 19 | 703 | 1.5− | 0.5+ |
| 2001 08 14 | 608 | 0.1− | 1.2− | 2006 08 17 | 644 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.0 |
| 2001 08 14 | 608 | 0.1+ | 0.6− | 2006 08 17 | 644 | 0.4− | 0.2− | 2006 09 20 | 704 | 0.8+ | 0.2+ |
| 2001 08 17 | 704 | 0.9+ | 1.3+ | 2006 08 18 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.9− | 1.2+ |
| 2001 08 17 | 704 | 0.5− | 0.4− | 2006 08 18 | 644 | 0.0 | 0.5− | 2006 09 20 | 704 | 0.8− | 0.6− |
| 2001 08 17 | 704 | 0.3+ | 0.8− | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.5− | 0.3+ |
| 2001 08 17 | 704 | 0.3− | 0.3+ | 2006 08 22 | 644 | 0.1+ | 0.3− | 2006 09 20 | 704 | (2.0+ | 1.2−) |
| 2001 08 23 | 699 | 0.3+ | 1.1+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 24 | 106 | (0.4+ | 1.8−) |
| 2001 08 23 | 699 | 0.1+ | 0.9+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 24 | 106 | 0.4+ | 0.8− |
| 2001 08 23 | 699 | 1.1− | 0.4+ | 2006 08 24 | 704 | 1.1+ | 0.5+ | 2006 09 24 | 106 | 0.5+ | 0.3+ |
| 2001 08 23 | 699 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.1+ | 1.3+ | 2006 09 24 | 106 | 0.9− | 0.0 |
| 2001 09 11 | 699 | 0.8− | 0.3− | 2006 08 24 | 704 | 0.2− | 0.5+ | 2006 09 25 | 699 | 1.0+ | 0.1+ |
| 2001 09 11 | 699 | 0.4− | 0.1− | 2006 08 24 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 1.0− | 0.5+ |
| 2001 09 11 | 699 | 0.5− | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.7− | 2006 09 25 | 699 | 0.4− | 0.0 |
| 2001 09 11 | 699 | 1.0− | 0.7− | 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2006 08 24 | 644 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.6− | 0.8+ |
| 2001 09 12 | 704 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.6+ | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.7+ |
| 2001 09 12 | 704 | 0.3+ | 0.2− | 2006 08 27 | 699 | (1.5+ | 0.6−) | 2006 09 29 | 704 | 0.5− | 0.3− |
| 2001 09 12 | 704 | 0.4+ | 0.1− | 2006 08 27 | 699 | 1.2+ | 0.2+ | 2006 10 01 | 703 | 1.0− | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2006 08 27 | 699 | 1.0+ | 0.2− | 2006 10 01 | 703 | 0.9+ | 0.6+ |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.2− | 0.7− | 2006 10 01 | 703 | (1.2+ | 1.8−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.6+ | 0.5+ | 2006 08 29 | 703 | 1.1+ | 0.0 | 2006 10 01 | 703 | 0.7− | 0.3− |
| 2001 09 20 | 704 | 0.5+ | 0.4+ | 2006 08 29 | 703 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 1.0+ | 0.8+ | 2006 08 29 | 703 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.8+ | 0.7− | 2006 08 30 | 704 | 1.4− | 1.1+ | 2006 10 10 | 644 | 0.3+ | 0.2− |
| 2001 09 22 | 704 | (1.6+ | 0.3−) | 2006 08 30 | 704 | 0.2− | 1.0+ | 2006 10 12 | 644 | 0.5+ | 0.2− |
| 2001 09 22 | 704 | 0.9+ | 0.1− | 2006 08 30 | 704 | (0.1+ | 1.8+) | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2001 09 22 | 704 | 0.9+ | 0.1− | 2006 09 12 | 703 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 09 22 | 704 | 0.7+ | 0.4+ | 2006 09 12 | 703 | 0.8− | 0.5− | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2001 09 24 | 644 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2001 09 24 | 644 | 0.4− | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.7− | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2001 09 24 | 644 | 0.2− | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2001 10 11 | 644 | 0.2+ | 0.9+ | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2001 10 11 | 644 | 0.0 | 0.9+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.8− |
| 2001 10 11 | 644 | 0.1+ | 0.9+ | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2001 10 19 | 644 | 0.5− | 0.0 | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.3− | 0.5− |

**(139765)∗ 2001 QN$_{288}$**

Discovered 2001 Aug. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.15037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22571774 | $\omega$ | 24.75893 | | +0.01272485 | +0.97834518 | |
| $a$ | 2.6715230 | $\Omega$ | 246.53574 | | −0.95083524 | −0.05209704 | |
| $e$ | 0.2228090 | $i$ | 13.01532 | | −0.30943567 | +0.20031628 | |
| $P$ | 4.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 608 | 0.1− | 0.8+ | 2001 09 21 | 699 | 0.3+ | 0.3− | 2004 03 16 | 704 | 0.2− | 1.4+ |
| 2000 04 13 | 608 | 0.1− | 0.9+ | 2001 09 23 | 644 | 0.3− | 0.1− | 2004 03 16 | 704 | 0.7+ | 0.7+ |
| 2000 04 13 | 608 | 0.2− | 1.4+ | 2001 09 23 | 644 | 0.4− | 0.0 | 2005 05 16 | 704 | 0.2+ | 0.3+ |
| 2001 08 17 | 644 | (0.1− | 1.9−) | 2001 09 23 | 644 | 0.3− | 0.1− | 2005 05 16 | 704 | 0.4+ | 0.2+ |
| 2001 08 17 | 644 | (0.2+ | 1.6−) | 2001 09 26 | 704 | 0.2− | 0.1− | 2005 05 16 | 704 | 0.2+ | 0.9+ |
| 2001 08 17 | 644 | (0.1− | 1.7−) | 2001 09 26 | 704 | 0.7− | 0.1+ | 2005 05 16 | 704 | 0.8+ | 0.3− |
| 2001 08 22 | 704 | 0.6− | 0.4+ | 2001 09 26 | 704 | 0.9− | 0.4+ | 2005 06 06 | 691 | 0.7− | 0.0 |
| 2001 08 22 | 704 | 0.4+ | 0.1− | 2001 09 26 | 704 | 1.0+ | 0.0 | 2005 06 06 | 691 | 0.3+ | 0.1+ |
| 2001 08 22 | 704 | 0.5+ | 0.8+ | 2001 09 26 | 704 | 0.3+ | 0.1+ | 2005 06 06 | 691 | 0.2+ | 0.1+ |
| 2001 08 22 | 704 | 0.4+ | 0.5+ | 2001 09 29 | 644 | 0.6+ | 0.7− | 2005 10 26 | 704 | 0.3− | 0.3− |
| 2001 08 22 | 704 | 0.5− | 1.3+ | 2001 09 29 | 644 | 0.5+ | 0.6− | 2005 10 26 | 704 | 0.2− | 0.3+ |
| 2001 09 10 | 704 | 0.9− | 0.5+ | 2001 09 29 | 644 | 0.2+ | 0.7− | 2005 10 26 | 704 | 0.8− | 0.1− |
| 2001 09 10 | 704 | 0.9− | 0.5+ | 2001 10 17 | 704 | 0.0 | 0.3+ | 2005 10 26 | 704 | 0.1+ | 0.5− |
| 2001 09 10 | 704 | 0.6− | 0.1+ | 2001 10 17 | 704 | 0.1+ | 0.2− | 2006 11 02 | 691 | 0.1− | 0.8+ |
| 2001 09 10 | 704 | 0.6− | 1.0+ | 2001 10 17 | 704 | 0.5+ | 0.2− | 2006 11 02 | 691 | 0.1− | 0.0 |
| 2001 09 10 | 704 | 0.6− | 1.2+ | 2001 10 17 | 704 | 0.2− | 0.1+ | 2006 11 02 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 644 | 0.6+ | 0.3+ | 2001 10 17 | 704 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.6− | 1.0− |
| 2001 09 21 | 644 | 0.4+ | 0.4+ | 2004 02 19 | 704 | 1.0+ | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.8− |
| 2001 09 21 | 699 | 0.3+ | 0.5+ | 2004 02 19 | 704 | (1.0+ | 4.0+) | 2006 11 14 | 703 | 0.5+ | 1.6− |
| 2001 09 21 | 644 | 0.6+ | 0.3+ | 2004 02 19 | 704 | 1.1+ | 1.3+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2001 09 21 | 699 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 1.0+ | 0.5− | | | | |
| 2001 09 21 | 699 | 0.6+ | 0.1+ | 2004 03 16 | 704 | (1.7− | 1.1+) | | | | |

**(139766)∗ 2001 QB$_{290}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.56880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21253501 | $\omega$ | 110.83787 | | +0.84044722 | −0.54065291 | |
| $a$ | 2.7808809 | $\Omega$ | 281.90686 | | +0.48221636 | +0.77703046 | |
| $e$ | 0.1047178 | $i$ | 2.14631 | | +0.24721622 | +0.32236330 | |
| $P$ | 4.64 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 0.6+ | 1.9− | 2002 12 31 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 0.2− | 0.2+ |
| 1997 11 06 | 704 | 0.9+ | 1.6− | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 1997 11 06 | 704 | 0.5− | 1.3− | 2002 12 31 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 704 | 0.8− | 0.2− |
| 1997 11 06 | 704 | 0.5+ | 1.0− | 2003 01 08 | 704 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 1997 11 07 | 327 | 0.3− | 0.2− | 2003 01 08 | 704 | 0.7+ | 0.4− | 2006 09 25 | 704 | 0.1− | 0.8− |
| 1997 11 07 | 327 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.2− | 0.9− | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1997 11 07 | 327 | 0.3+ | 0.4+ | 2003 01 08 | 704 | 0.7− | 0.7− | 2006 09 27 | 699 | 0.1+ | 0.4+ |
| 2001 08 16 | 704 | 0.3− | 0.9− | 2004 03 23 | 704 | 0.5+ | 0.5+ | 2006 09 27 | 699 | 0.2− | 0.4+ |
| 2001 08 16 | 704 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 1.3+ | 0.1− | 2006 09 27 | 699 | 0.7− | 0.7+ |
| 2001 08 16 | 704 | 0.4− | 1.0− | 2004 03 23 | 704 | (2.1+ | 1.1+) | 2006 09 27 | 699 | 0.1+ | 1.1+ |
| 2001 08 16 | 704 | 0.9+ | 0.6+ | 2004 03 23 | 704 | 0.0 | 1.0+ | 2006 09 29 | 704 | 0.3− | 0.3+ |
| 2001 08 17 | 704 | (0.9+ | 2.5+) | 2004 03 27 | 704 | 0.6− | 1.1+ | 2006 09 29 | 704 | (0.9− | 1.9+) |
| 2001 08 17 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.4− |
| 2001 08 17 | 704 | 1.0+ | 0.4+ | 2004 03 27 | 704 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.4− | 0.1− |
| 2001 08 28 | 644 | 0.2− | 0.1+ | 2004 03 27 | 704 | (1.1− | 1.7+) | 2006 09 29 | 704 | 0.8− | 0.4+ |
| 2001 08 28 | 644 | 0.1− | 0.5+ | 2006 08 29 | 699 | 0.0 | 1.1− | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 2001 08 28 | 644 | 0.1− | 0.2+ | 2006 08 29 | 699 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 1.4+ | 2006 08 29 | 699 | (0.3+ | 1.7+) | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2006 09 14 | A50 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2006 09 17 | 703 | (2.4− | 0.5+) | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2006 09 17 | 691 | (0.4+ | 2.0+) | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2001 09 22 | 704 | 0.1− | 1.3+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 09 22 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 09 22 | 704 | 0.5+ | 0.4− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2001 09 22 | 704 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.6− | 0.6− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.8+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2006 09 18 | 704 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 704 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 12 07 | 704 | 0.1+ | 0.7− | 2006 09 19 | 699 | 0.6− | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 12 07 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 12 07 | 704 | 0.1+ | 1.1+ | 2006 09 19 | 699 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 12 07 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.5+ | 0.4+ | | | | |
| 2002 12 07 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 0.9+ | 0.1− | | | | |

**(139767)∗ 2001 QF$_{290}$**

Discovered 2001 Aug. 31 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.13998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24009811 | $\omega$ | 100.92162 | | +0.40592781 | −0.91062836 | |
| $a$ | 2.5637572 | $\Omega$ | 324.80795 | | +0.77733408 | +0.38852105 | |
| $e$ | 0.2427973 | $i$ | 7.71030 | | +0.48059790 | +0.14073870 | |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | (2.2− | 1.2+) | 2001 10 15 | 645 | 0.1− | 0.2− | 2005 09 05 | 703 | 1.4− | 0.4+ |
| 2001 08 16 | 704 | 0.5+ | 1.0+ | 2001 10 15 | 645 | 0.1− | 0.2− | 2005 09 08 | 704 | 0.1− | 0.4+ |
| 2001 08 16 | 704 | 0.4− | 1.4+ | 2001 10 15 | 608 | 1.1+ | 0.8+ | 2005 09 08 | 704 | 0.5− | 0.3+ |
| 2001 08 31 | 644 | 0.3− | 0.0 | 2001 11 18 | 704 | 0.5+ | 0.1− | 2005 09 08 | 704 | 0.6− | 0.2+ |
| 2001 08 31 | 644 | 0.1− | 0.0 | 2001 11 18 | 704 | 0.3− | 0.7+ | 2005 09 08 | 704 | 0.1− | 0.1+ |
| 2001 08 31 | 644 | 0.4− | 0.1− | 2001 11 18 | 704 | 0.3− | 0.3− | 2005 09 22 | 644 | 0.1− | 0.1− |
| 2001 09 07 | 644 | 0.7− | 0.2+ | 2001 11 18 | 704 | 0.2− | 0.3+ | 2005 09 22 | 644 | 0.1+ | 0.2− |
| 2001 09 07 | 644 | 0.9− | 0.1+ | 2001 11 18 | 704 | 0.6− | 0.8+ | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2001 09 07 | 644 | 0.6− | 0.5+ | 2003 03 07 | 704 | 0.2− | 0.0 | 2005 09 23 | 691 | 0.3− | 0.3+ |
| 2001 09 08 | 704 | 0.2+ | 0.3+ | 2003 03 07 | 704 | 0.1+ | 1.5+ | 2005 09 23 | 691 | 0.4− | 0.3+ |
| 2001 09 08 | 704 | 0.4− | 0.1− | 2003 03 07 | 704 | (0.5+ | 2.3+) | 2005 09 23 | 691 | 0.3− | 0.4+ |
| 2001 09 08 | 704 | 0.4+ | 0.0 | 2003 03 10 | 699 | 0.5+ | 0.1+ | 2005 09 23 | 699 | 0.8+ | 0.1+ |
| 2001 09 08 | 704 | 0.4+ | 0.5+ | 2003 03 10 | 699 | 0.8+ | 1.1+ | 2005 09 23 | 699 | 1.3+ | 0.2− |
| 2001 09 08 | 704 | 0.0 | 0.9− | 2003 03 10 | 699 | 0.8+ | 1.1+ | 2005 09 23 | 699 | 0.0 | 0.3+ |
| 2001 09 16 | 644 | 0.3− | 0.2+ | 2003 03 10 | 699 | 1.3+ | 0.5+ | 2005 09 23 | 699 | 1.2+ | 0.1− |
| 2001 09 16 | 644 | 0.4− | 0.2− | 2003 03 25 | 644 | 0.4+ | 0.8+ | 2005 09 24 | 703 | 0.4− | 1.4− |
| 2001 09 16 | 644 | 0.4− | 0.1− | 2003 03 25 | 644 | 0.2+ | 0.9+ | 2005 09 24 | 703 | (1.6− | 0.2+) |
| 2001 09 16 | 704 | 0.4+ | 0.1− | 2003 03 25 | 644 | 0.3+ | 1.0+ | 2005 09 24 | 703 | 0.8− | 0.4− |
| 2001 09 16 | 704 | 0.0 | 0.2− | 2003 03 31 | 644 | 0.4+ | 0.8+ | 2005 09 24 | 703 | 0.3+ | 0.5− |
| 2001 09 16 | 704 | 0.5+ | 0.4− | 2003 03 31 | 644 | 0.0 | 0.9+ | 2005 09 30 | 699 | 1.1− | 0.7+ |
| 2001 09 16 | 704 | 0.4+ | 0.2− | 2003 03 31 | 644 | 0.2+ | 0.9+ | 2005 09 30 | 699 | 1.0+ | 0.5+ |
| 2001 09 16 | 704 | 0.4+ | 0.1− | 2003 03 31 | 704 | 0.6+ | 0.5+ | 2005 09 30 | 699 | 0.7− | 0.6+ |
| 2001 09 18 | 699 | 0.1− | 0.2− | 2003 03 31 | 704 | 0.8+ | 0.1+ | 2005 09 30 | 699 | 0.5+ | 0.3− |
| 2001 09 18 | 699 | 0.9− | 0.9+ | 2003 03 31 | 704 | 0.0 | 0.3− | 2005 11 01 | G96 | 0.0 | 0.3− |
| 2001 09 18 | 699 | 0.9− | 1.0+ | 2003 03 31 | 704 | 1.0− | 0.5− | 2005 11 01 | G96 | 0.1+ | 0.3− |
| 2001 09 18 | 699 | 0.3− | 0.6+ | 2005 07 29 | 644 | 0.2− | 0.0 | 2005 11 01 | G96 | 0.3+ | 0.4− |
| 2001 09 20 | 704 | 0.7+ | 0.6+ | 2005 07 29 | 644 | 0.5− | 0.1+ | 2005 11 01 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.0+ | 0.7+ | 2005 07 29 | 644 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.7− | 0.4− |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2005 08 25 | 644 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2005 08 25 | 644 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2001 09 23 | 704 | 0.0 | 0.4+ | 2005 08 25 | 644 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.7+ |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2005 08 27 | 699 | 0.5− | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.6+ |
| 2001 09 23 | 704 | 0.3+ | 0.3+ | 2005 08 27 | 699 | 0.2− | 0.5+ | 2006 11 22 | 691 | 0.2+ | 0.4+ |
| 2001 09 23 | 704 | 0.0 | 0.5+ | 2005 08 27 | 699 | (0.1+ | 1.9+) | 2006 11 22 | 691 | 0.1− | 0.6+ |
| 2001 10 05 | 644 | 0.1− | 0.3+ | 2005 08 27 | 699 | 0.6− | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2001 10 05 | 644 | 0.4+ | 0.0 | 2005 08 30 | 704 | 1.0+ | 0.6+ | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2001 10 05 | 644 | 0.2+ | 0.2+ | 2005 08 30 | 704 | 0.3+ | 0.9+ | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.0 | 0.8+ | 2005 08 30 | 704 | 0.3+ | 0.7+ | 2006 11 24 | G96 | 1.6+ | 0.9− |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2005 08 30 | 704 | 1.1+ | 0.8+ | 2006 11 25 | 691 | 0.6+ | 0.5+ |
| 2001 10 14 | 704 | 0.3− | 0.4+ | 2005 08 30 | 704 | 1.0+ | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.4+ | 0.2+ | 2005 09 05 | 703 | 0.3+ | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.2+ |
| 2001 10 15 | 608 | 1.2+ | 0.9+ | 2005 09 05 | 703 | 0.7− | 0.5+ | | | | |
| 2001 10 15 | 608 | 1.4+ | 0.0 | 2005 09 05 | 703 | 0.5− | 0.1− | | | | |

**(139768)∗ 2001 QW$_{291}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.96307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19546987 | $\omega$ | 296.68413 | | +0.32048242 | +0.94720072 | |
| $a$ | 2.9404660 | $\Omega$ | 351.98820 | | −0.84132871 | +0.27973375 | |
| $e$ | 0.1269332 | $i$ | 4.15177 | | −0.43526661 | +0.15671577 | |
| $P$ | 5.04 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.4+ | 1.2+ | 2001 09 21 | 704 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.2− | 0.1− |
| 2001 08 16 | 704 | 0.9− | 0.6+ | 2001 09 21 | 704 | 0.3+ | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 2001 08 16 | 704 | 0.0 | 0.2− | 2001 09 21 | 704 | 0.1+ | 0.7+ | 2006 08 27 | 699 | 0.0 | 0.8− |
| 2001 08 16 | 704 | (2.0− | 0.0 ) | 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 1.4− | 0.1+ |
| 2001 08 17 | 644 | 0.3− | 0.5+ | 2001 09 21 | 704 | 0.2+ | 0.5− | 2006 08 27 | 699 | 0.2+ | 0.6+ |
| 2001 08 17 | 644 | 0.3− | 0.4+ | 2001 10 11 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.1+ | 0.8+ |
| 2001 08 17 | 644 | 0.6− | 0.7+ | 2001 10 11 | 644 | 0.2− | 0.8+ | 2006 08 28 | 703 | 0.2− | 0.3− |
| 2001 09 08 | 704 | 0.3− | 1.1− | 2001 10 11 | 644 | 0.1− | 0.2− | 2006 08 28 | 703 | 1.1+ | 0.3− |
| 2001 09 08 | 704 | 1.0− | 0.3− | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.6− |
| 2001 09 08 | 704 | 0.5+ | 0.5+ | 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.6+ | 0.7+ |
| 2001 09 11 | 699 | 0.3+ | 0.9− | 2002 12 10 | 644 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.0 |
| 2001 09 11 | 699 | 0.6+ | 1.4+ | 2004 02 16 | 704 | 0.6+ | 1.1+ | 2006 09 14 | 703 | 0.8+ | 0.3+ |
| 2001 09 11 | 699 | 1.0+ | 0.1+ | 2004 02 16 | 704 | (0.4+ | 2.0+) | 2006 09 14 | 703 | 0.6+ | 0.5+ |
| 2001 09 11 | 699 | 0.1− | 0.5+ | 2004 02 16 | 704 | (0.5+ | 1.9+) | 2006 09 14 | 703 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 1.1− | 0.7+ | 2005 01 20 | 809 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2005 01 20 | 809 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.5+ | 0.3− |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2005 01 20 | 809 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.3− |
| 2001 09 12 | 704 | 0.2+ | 0.2+ | 2005 05 04 | 644 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2001 09 12 | 704 | 0.4− | 0.9+ | 2005 05 04 | 644 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.5− | 0.8− |
| 2001 09 19 | 704 | 0.4+ | 0.4+ | 2005 05 04 | 644 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.6− | 0.6− |
| 2001 09 19 | 704 | 0.5+ | 0.5− | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.7+ | 0.9− | 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2001 09 19 | 704 | 1.1+ | 0.3+ | 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2001 09 21 | 691 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 691 | 0.3− | 0.5− | 2006 08 18 | 644 | 0.2+ | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 691 | 0.3− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.1− | | | | |

**(139769)∗ 2001 QG$_{292}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.24035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21540965 | $\omega$ | 186.91690 | | +0.99481127 | +0.09513663 | |
| $a$ | 2.7560850 | $\Omega$ | 167.45181 | | −0.08357564 | +0.96625172 | |
| $e$ | 0.1582087 | $i$ | 9.55105 | | −0.05801414 | +0.23938804 | |
| $P$ | 4.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 05 | 644 | 0.9+ | 0.3− | 2001 10 10 | 644 | 0.2− | 0.3+ | 2003 01 07 | 704 | 1.0+ | 1.0+ |
| 2001 08 05 | 644 | 1.0+ | 0.1− | 2001 10 10 | 644 | 0.3− | 0.3+ | 2003 01 07 | 704 | 0.9+ | 1.2+ |
| 2001 08 05 | 644 | 1.2+ | 0.0 | 2001 10 10 | 644 | 0.3− | 0.4+ | 2003 01 25 | 809 | 0.1− | 0.2+ |
| 2001 08 13 | 608 | 0.6− | 1.0+ | 2001 10 14 | 645 | 0.0 | 0.4− | 2003 01 25 | 809 | 0.2− | 0.2+ |
| 2001 08 13 | 608 | 0.3− | 0.9+ | 2001 10 14 | 645 | 0.0 | 0.4− | 2003 01 25 | 809 | 0.2− | 0.3+ |
| 2001 08 13 | 608 | 0.1+ | 0.9+ | 2001 10 16 | 704 | 0.5− | 0.5− | 2003 01 26 | 644 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.2+ | 0.3− | 2001 10 16 | 704 | 0.2+ | 0.1+ | 2003 01 26 | 644 | 0.2− | 0.7+ |
| 2001 08 16 | 704 | 0.0 | 0.5− | 2001 10 16 | 704 | 0.4− | 0.1− | 2003 01 26 | 644 | 0.3+ | 0.2− |
| 2001 08 16 | 704 | 1.0+ | 1.3+ | 2001 10 16 | 704 | 0.4− | 0.2+ | 2003 01 27 | 704 | (0.2+ | 1.6+) |
| 2001 08 18 | 699 | 1.1+ | 0.5− | 2001 10 16 | 704 | 0.4− | 0.8+ | 2003 01 27 | 704 | (0.2+ | 1.8+) |
| 2001 08 18 | 699 | 0.3− | 0.1+ | 2001 10 16 | 644 | 0.3+ | 0.0 | 2003 01 27 | 644 | 0.0 | 0.6+ |
| 2001 08 18 | 699 | 0.1− | 1.4+ | 2001 10 16 | 644 | 0.2+ | 0.1− | 2003 01 27 | 704 | 0.6+ | 1.4+ |
| 2001 08 18 | 699 | 0.9− | 0.6− | 2001 10 16 | 644 | 0.2+ | 0.1− | 2003 01 27 | 704 | 0.4+ | 1.3+ |
| 2001 08 24 | 704 | (0.9− | 2.1+) | 2001 10 19 | 699 | 0.3− | 0.0 | 2003 01 27 | 644 | 0.1+ | 0.5+ |
| 2001 08 24 | 704 | 0.4+ | 1.2+ | 2001 10 19 | 699 | 0.5− | 0.2+ | 2003 01 27 | 644 | 0.2+ | 0.5+ |
| 2001 08 24 | 704 | 0.2+ | 0.8+ | 2001 10 19 | 699 | 0.8− | 0.3− | 2004 03 20 | 704 | 0.7+ | 0.8+ |
| 2001 08 24 | 704 | 0.9− | 0.2− | 2001 10 19 | 699 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.7+ | 0.2+ |
| 2001 09 16 | 644 | 0.3+ | 0.9+ | 2001 10 20 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.9+ |
| 2001 09 16 | 644 | 0.5+ | 0.8+ | 2001 10 20 | 704 | 0.1− | 0.5+ | 2004 03 20 | 704 | (1.5+ | 2.1+) |
| 2001 09 16 | 644 | 0.3+ | 0.8+ | 2001 10 20 | 704 | 0.3− | 0.0 | 2004 04 20 | 704 | (0.2+ | 1.7+) |
| 2001 09 16 | 704 | 0.4− | 0.2− | 2001 10 20 | 704 | 0.1− | 0.5+ | 2004 04 20 | 704 | (0.6+ | 1.6+) |
| 2001 09 16 | 704 | 0.3− | 0.1+ | 2001 10 22 | 704 | 0.5− | 0.0 | 2004 04 20 | 704 | 0.2− | 0.2+ |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2001 10 22 | 704 | 0.5+ | 0.1+ | 2004 04 20 | E12 | 0.3+ | 0.9− |
| 2001 09 16 | 704 | 0.4− | 0.8− | 2001 10 22 | 704 | 0.4− | 0.2+ | 2004 04 20 | E12 | (0.2+ | 1.9−) |
| 2001 09 18 | 683 | 0.5− | 1.1+ | 2001 10 22 | 704 | 0.5+ | 0.5+ | 2004 04 20 | E12 | 0.6− | 0.8− |
| 2001 09 18 | 683 | (1.6− | 1.9−) | 2001 11 08 | 644 | 0.2+ | 0.7+ | 2004 04 20 | E12 | 0.6+ | 0.2+ |
| 2001 09 18 | 683 | 1.2− | 1.0− | 2001 11 08 | 644 | 0.4− | 0.1+ | 2005 07 05 | 704 | 1.5− | 0.4− |
| 2001 09 19 | 704 | 0.4− | 1.1+ | 2001 11 08 | 644 | 1.1− | 0.0 | 2005 07 05 | 704 | 0.5− | 0.5+ |
| 2001 09 19 | 683 | 0.7− | 0.5+ | 2001 11 15 | 644 | 0.1− | 0.8+ | 2005 07 05 | 704 | 1.3+ | 0.1− |
| 2001 09 19 | 704 | 0.2+ | 1.0+ | 2001 11 15 | 644 | 0.2− | 0.8+ | 2006 10 01 | D35 | 0.5+ | 0.4− |
| 2001 09 19 | 683 | 0.4− | 0.3+ | 2001 11 15 | 644 | 0.2+ | 0.7+ | 2006 10 01 | D35 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 0.6+ | 2002 01 13 | 645 | 0.1+ | 0.2− | 2006 10 01 | D35 | 0.4− | 0.0 |
| 2001 09 19 | 683 | 0.1− | 0.5+ | 2002 01 13 | 645 | 0.1+ | 0.1− | 2006 10 02 | D35 | 0.2− | 0.4− |
| 2001 09 19 | 704 | 0.4− | 1.0+ | 2002 01 14 | 645 | 0.1+ | 0.1− | 2006 10 02 | D35 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.3− | 1.3+ | 2002 01 14 | 645 | 0.2+ | 0.2− | 2006 10 02 | D35 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.6+ | 2002 01 14 | 699 | (1.6− | 0.7−) | 2006 11 15 | 703 | 0.5− | 0.2− |
| 2001 09 21 | 704 | 0.3+ | 0.8+ | 2002 01 14 | 699 | 1.0− | 0.2+ | 2006 11 15 | 703 | 0.7+ | 0.8+ |
| 2001 09 21 | 704 | 0.3+ | 0.8+ | 2002 01 14 | 699 | 0.7− | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.6+ | 2002 01 14 | 699 | 0.8− | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.4− |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2002 12 14 | 645 | 0.1− | 0.1− | 2006 12 01 | 703 | 1.0+ | 1.3− |
| 2001 09 27 | 644 | 0.2+ | 0.8+ | 2002 12 14 | 645 | 0.2− | 0.1− | 2006 12 01 | 703 | 0.2− | 0.9+ |
| 2001 09 27 | 644 | 0.0 | 0.8+ | 2003 01 07 | 704 | 1.5+ | 0.8+ | 2006 12 01 | 703 | 0.3− | 0.7+ |
| 2001 09 27 | 644 | 0.5+ | 0.3+ | 2003 01 07 | 704 | 0.0 | 0.3+ | 2006 12 01 | 703 | 0.3+ | 1.1+ |

**(139770)∗ 2001 QV$_{293}$**

Discovered 2001 Aug. 22 by Y. Ohba at the Kiso Station of the Tokyo Astronomical Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.64163 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21470605 | $\omega$ | 12.27175 | | +0.95209265 | −0.30500876 | |
| $a$ | 2.7621029 | $\Omega$ | 5.63536 | | +0.25807091 | +0.76255527 | |
| $e$ | 0.0780460 | $i$ | 13.01761 | | +0.16407010 | +0.57050778 | |
| $P$ | 4.59 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 381 | 0.0 | 0.3− | 2001 10 24 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 703 | 0.1+ | 0.6− |
| 2001 08 22 | 381 | 0.0 | 0.4− | 2001 10 24 | 704 | 0.5− | 1.1+ | 2006 09 19 | 703 | 0.7− | 0.1− |
| 2001 08 23 | 381 | 0.3+ | 0.1+ | 2001 10 24 | 704 | 0.7− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 381 | 0.3− | 0.5− | 2002 11 28 | 699 | 0.3− | 0.9− | 2006 09 19 | 703 | 0.6− | 0.3− |
| 2001 08 24 | 381 | 0.0 | 0.1− | 2002 11 28 | 699 | 0.4+ | 0.8− | 2006 09 22 | 699 | 0.1− | 0.1− |
| 2001 08 24 | 381 | 0.2+ | 0.7− | 2002 11 28 | 699 | 1.2+ | 1.0+ | 2006 09 22 | 699 | 0.1+ | 0.7− |
| 2001 08 25 | 704 | 0.3− | 0.0 | 2002 11 28 | 699 | 0.7+ | 0.0 | 2006 09 22 | 699 | 0.6+ | 0.8− |
| 2001 08 25 | 704 | 0.6− | 0.2+ | 2002 12 07 | 704 | 0.3+ | 1.3+ | 2006 09 22 | 699 | 0.9− | 1.1− |
| 2001 08 25 | 704 | 0.5− | 0.7+ | 2002 12 07 | 704 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.1+ |
| 2001 08 25 | 704 | 1.1− | 0.2− | 2002 12 07 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.2− |
| 2001 08 25 | 699 | 0.1+ | 0.2+ | 2002 12 07 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 704 | 0.2− | 0.1+ |
| 2001 08 25 | 699 | 0.4− | 0.9+ | 2002 12 15 | 704 | 0.8− | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.4+ |
| 2001 08 25 | 699 | 0.2− | 0.2+ | 2002 12 15 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.6− | 0.1+ |
| 2001 08 25 | 699 | 0.7− | 0.1− | 2002 12 15 | 704 | 0.2+ | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2001 09 07 | 699 | 0.7− | 0.2+ | 2002 12 15 | 704 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.4− | 0.2− |
| 2001 09 07 | 699 | 0.5− | 0.7+ | 2002 12 28 | 704 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 09 07 | 699 | 0.6− | 1.4+ | 2002 12 28 | 704 | 0.3+ | 0.7− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 09 07 | 699 | (0.8+ | 2.8+) | 2002 12 28 | 704 | 0.4+ | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.2+ | 0.1+ | 2002 12 28 | 704 | 0.7− | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.4− |
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2003 01 10 | 704 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2001 09 12 | 704 | 0.6+ | 0.2+ | 2003 01 10 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2003 01 10 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.5+ | 0.4+ | 2003 01 14 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.7− | 0.7+ |
| 2001 09 19 | 699 | 0.6− | 0.3+ | 2003 01 14 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.2− | 0.7+ |
| 2001 09 19 | 699 | 0.3− | 1.0+ | 2003 01 14 | 704 | 0.2− | 0.9+ | 2006 10 19 | 703 | 0.2+ | 0.9+ |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2003 01 14 | 704 | 0.1− | 0.4− | 2006 10 21 | 704 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2003 01 31 | 644 | 0.4− | 0.2+ | 2006 10 21 | 704 | 0.5+ | 0.6− |
| 2001 09 19 | 699 | 0.5− | 0.7+ | 2003 01 31 | 644 | 0.3− | 0.4+ | 2006 10 21 | 704 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2003 01 31 | 644 | 0.2− | 0.3+ | 2006 10 21 | 704 | 0.5+ | 0.0 |
| 2001 09 19 | 699 | 0.0 | 0.4− | 2004 03 20 | 704 | 1.5+ | 1.1+ | 2006 10 21 | 704 | 0.7+ | 0.1+ |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2004 03 20 | 704 | 0.1− | 0.8+ | 2006 10 27 | 703 | 0.4+ | 0.4− |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.4+ | 0.5− |
| 2001 09 21 | 704 | 0.4+ | 0.6+ | 2004 03 27 | 704 | 1.2+ | 0.0 | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2004 03 27 | 704 | 0.8+ | 0.8+ | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.5− | 0.8+ | 2006 11 15 | 703 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.0 | 0.1− | 2006 11 15 | 703 | 1.1− | 0.3− |
| 2001 10 11 | 704 | 0.6+ | 0.4− | 2004 03 27 | 704 | 0.8+ | 1.0+ | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2001 10 11 | 704 | 0.2+ | 0.1+ | 2004 03 31 | 704 | 0.2+ | 1.4+ | 2006 11 16 | 704 | 1.2+ | 0.4+ |
| 2001 10 11 | 704 | 0.6− | 1.3+ | 2004 03 31 | 704 | 0.4+ | 1.1+ | 2006 11 16 | 704 | 0.8− | 0.4+ |
| 2001 10 11 | 704 | 0.7− | 0.1+ | 2004 03 31 | 704 | (1.7+ | 0.6+) | 2006 11 16 | 704 | 0.5+ | 0.7+ |
| 2001 10 17 | 644 | 0.5− | 0.9+ | 2004 04 20 | 704 | 0.9− | 1.4+ | 2006 11 16 | 704 | 1.0+ | 0.4− |
| 2001 10 17 | 644 | 0.2− | 0.6+ | 2004 04 20 | 704 | (1.6+ | 0.1−) | 2006 11 16 | 704 | 0.3+ | 0.4− |
| 2001 10 17 | 644 | 0.4− | 0.7+ | 2004 04 20 | 704 | 1.4+ | 0.2+ | 2006 11 22 | 703 | 0.3+ | 0.6− |
| 2001 10 23 | 704 | 0.2+ | 1.2+ | 2004 04 20 | 704 | 0.6+ | 0.5+ | 2006 11 22 | 703 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.8− | 0.3+ | 2006 09 18 | 704 | (0.3− | 1.8−) | 2006 11 22 | 703 | 0.9+ | 0.8+ |
| 2001 10 23 | 704 | 0.6− | 0.7+ | 2006 09 18 | 704 | (0.2− | 2.0−) | 2006 11 22 | 703 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | (3.5− | 2.1+) | 2006 09 18 | 704 | 0.0 | 0.4− | | | | |

**(139771)∗ 2001 QB$_{294}$**

Discovered 2001 Aug. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.82902 | | (2000.0) | | | |
| $n$ | 0.22472268 | $\omega$ | 179.27384 | | +0.92665025 | +0.36793153 |
| $a$ | 2.6794034 | $\Omega$ | 158.62876 | | −0.34596203 | +0.91490648 |
| $e$ | 0.1558982 | $i$ | 12.21603 | | −0.14706999 | +0.16604976 |
| $P$ | 4.39 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.1+ | 0.2− | 2001 09 19 | 691 | 0.0 | 0.2+ | 2006 09 20 | 699 | (0.7+ | 1.9+) |
| 2001 07 16 | 608 | 0.6− | 0.8+ | 2001 09 19 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 699 | (0.7− | 1.7−) |
| 2001 07 16 | 608 | 0.2− | 0.1− | 2001 09 20 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 0.4− | 0.1− |
| 2001 08 15 | 608 | 0.8− | 0.5− | 2001 09 20 | 691 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2001 08 15 | 608 | 1.2− | 0.7− | 2001 09 20 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.8+ | 0.3− |
| 2001 08 15 | 608 | 0.4− | 0.2+ | 2004 03 15 | 703 | 1.1− | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2001 08 15 | 608 | 0.5− | 0.6+ | 2004 03 15 | 703 | (0.7+ | 2.0+) | 2006 10 17 | 703 | 0.3− | 0.8+ |
| 2001 08 15 | 608 | 0.5− | 0.6+ | 2004 03 15 | 703 | (1.8+ | 0.9+) | 2006 10 28 | 703 | 0.1− | 0.2+ |
| 2001 08 15 | 608 | 1.0− | 0.7+ | 2004 03 15 | 703 | 1.4+ | 1.3+ | 2006 10 28 | 703 | 1.0+ | 1.3+ |
| 2001 08 24 | 699 | 1.1− | 0.3− | 2004 03 15 | 691 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.1− | 1.2+ |
| 2001 08 24 | 699 | 0.1− | 0.4+ | 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 1.1− | 0.5+ |
| 2001 08 24 | 699 | 0.3+ | 0.3+ | 2004 03 15 | 691 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.3+ | 0.7− |
| 2001 08 24 | 699 | 0.2+ | 0.3− | 2004 03 27 | 691 | 0.2+ | 0.7+ | 2006 11 13 | 703 | 0.8+ | 0.2+ |
| 2001 08 28 | 644 | 0.6− | 0.5+ | 2004 03 27 | 691 | 0.3+ | 0.9+ | 2006 11 13 | 703 | 0.2+ | 0.9+ |
| 2001 08 28 | 644 | 0.4− | 0.4+ | 2004 03 27 | 691 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.9− | 0.1− |
| 2001 08 28 | 644 | 0.4− | 0.6+ | 2005 06 03 | E12 | 0.2− | 0.4− | 2006 11 19 | 703 | 0.8− | 0.5+ |
| 2001 09 12 | 704 | 0.6+ | 1.0+ | 2005 06 03 | E12 | 0.4+ | 0.4− | 2006 11 19 | 703 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.0 | 1.2+ | 2005 06 03 | E12 | 0.8+ | 0.8− | 2006 11 19 | 703 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | (0.6− | 1.7+) | 2005 06 03 | E12 | 0.9− | 0.8− | 2006 11 19 | 703 | 0.2+ | 0.3+ |
| 2001 09 19 | 691 | 0.1+ | 0.2+ | 2005 06 27 | G96 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | (0.3+ | 1.6+) | 2005 06 27 | G96 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2005 06 27 | G96 | 0.3− | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2001 09 19 | 691 | 0.3+ | 0.2− | 2005 06 27 | G96 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.2− | 0.2− |
| 2001 09 19 | 704 | 1.1+ | 0.8+ | 2006 09 20 | 699 | 1.0+ | 0.6− | | | | |

**(139772)∗ 2001 QZ$_{294}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.03413 | | (2000.0) | | | |
| $n$ | 0.18072127 | $\omega$ | 291.30227 | | +0.15152790 | +0.98723403 |
| $a$ | 3.0983457 | $\Omega$ | 347.11802 | | −0.80557824 | +0.09457180 |
| $e$ | 0.1928464 | $i$ | 12.71601 | | −0.57278529 | +0.12816061 |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 1.3− | 1.2+ | 2001 11 10 | 704 | 0.5+ | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.1− |
| 2001 08 24 | 704 | 0.3− | 0.1+ | 2001 11 10 | 704 | 0.6+ | 0.0 | 2006 08 18 | 644 | 0.1− | 0.1− |
| 2001 08 24 | 704 | 0.5− | 0.3+ | 2001 11 10 | 704 | 0.5+ | 0.1+ | 2006 08 23 | 704 | 1.0+ | 0.6+ |
| 2001 08 28 | 644 | 0.3− | 0.3+ | 2001 11 10 | 704 | 0.8− | 0.0 | 2006 08 23 | 704 | 0.0 | 0.2− |
| 2001 08 28 | 699 | 0.2− | 1.1+ | 2004 02 10 | 644 | 0.1+ | 0.8+ | 2006 08 23 | 704 | 0.3+ | 0.6+ |
| 2001 08 28 | 644 | 0.4− | 0.4+ | 2004 02 10 | 644 | 0.1+ | 0.5+ | 2006 08 23 | 704 | 0.7+ | 0.3+ |
| 2001 08 28 | 699 | 0.9− | 0.2+ | 2004 02 10 | 644 | 0.4+ | 0.5+ | 2006 08 23 | 704 | 0.0 | 0.1+ |
| 2001 08 28 | 644 | 0.6− | 0.0 | 2004 02 17 | 645 | 0.1+ | 0.2+ | 2006 08 23 | 644 | 0.6− | 0.3− |
| 2001 08 28 | 699 | 0.1− | 0.1+ | 2004 02 17 | 645 | 0.2+ | 0.2+ | 2006 08 23 | 644 | 0.4− | 0.1− |
| 2001 08 28 | 699 | 0.4− | 0.3+ | 2004 02 22 | 703 | 1.0− | 0.7+ | 2006 08 23 | 644 | 0.1− | 0.0 |
| 2001 09 10 | 704 | 0.5+ | 0.5+ | 2004 02 22 | 703 | 0.2+ | 0.3+ | 2006 08 28 | 704 | (2.0+ | 0.3−) |
| 2001 09 10 | 704 | 0.3+ | 0.3+ | 2004 02 22 | 703 | 1.1− | 0.0 | 2006 08 28 | 704 | (2.1+ | 0.1−) |
| 2001 09 10 | 704 | 0.4+ | 0.6+ | 2004 02 22 | 703 | 1.0− | 0.2− | 2006 08 28 | 704 | (1.9+ | 1.2+) |
| 2001 09 10 | 704 | 0.3+ | 0.5+ | 2005 04 18 | 703 | 0.2− | 0.6+ | 2006 08 28 | 704 | (2.1+ | 0.5+) |
| 2001 09 10 | 704 | 0.2+ | 0.5+ | 2005 04 18 | 703 | 1.1+ | 0.3− | 2006 08 31 | 704 | 0.3− | 0.2− |
| 2001 09 11 | 699 | 0.0 | 0.9+ | 2005 04 18 | 703 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.3− |
| 2001 09 11 | 699 | 1.3− | 0.3+ | 2005 04 18 | 703 | 0.1+ | 0.3+ | 2006 08 31 | 704 | 0.1− | 0.5+ |
| 2001 09 11 | 699 | 0.6− | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 08 31 | 704 | 1.1− | 0.9+ |
| 2001 09 11 | 699 | 0.3+ | 0.5+ | 2005 05 01 | 644 | 0.5+ | 0.1− | 2006 08 31 | 704 | 0.5+ | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.6− | 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 09 16 | 704 | 0.0 | 0.4+ |
| 2001 09 20 | 704 | 0.6− | 0.9− | 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 09 16 | 704 | 0.0 | 0.8+ |
| 2001 09 20 | 704 | 0.8− | 1.1− | 2005 05 01 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 0.1− | 0.5+ |
| 2001 09 22 | 704 | 0.5− | 0.4+ | 2005 05 01 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.8+ |
| 2001 09 22 | 704 | 0.7+ | 0.5+ | 2005 05 02 | E12 | 0.1+ | 0.4+ | 2006 09 16 | 704 | 0.6− | 1.0+ |
| 2001 09 22 | 704 | 0.1+ | 0.5+ | 2005 05 02 | E12 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.3− |
| 2001 09 22 | 704 | 0.1+ | 0.0 | 2005 05 02 | E12 | 0.2− | 1.1+ | 2006 09 18 | 699 | 0.4+ | 0.5+ |
| 2001 09 23 | 704 | 0.6+ | 0.3+ | 2005 05 02 | E12 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.1+ |
| 2001 09 23 | 704 | 0.9+ | 0.9+ | 2005 05 04 | E12 | 0.5+ | 0.0 | 2006 09 18 | 699 | 0.4− | 0.2− |
| 2001 09 23 | 704 | 1.0+ | 0.9+ | 2005 05 04 | E12 | 0.1− | 0.9+ | 2006 09 19 | 704 | 0.6− | 0.6+ |
| 2001 09 23 | 704 | 1.0+ | 0.8+ | 2005 05 04 | E12 | 0.7+ | 0.3+ | 2006 09 19 | 704 | 0.7+ | 0.7+ |
| 2001 09 24 | 644 | 0.6− | 0.1+ | 2005 05 04 | E12 | 0.2− | 0.4+ | 2006 09 19 | 704 | 0.6− | 0.1− |
| 2001 09 24 | 644 | 0.6− | 0.3+ | 2005 05 08 | 699 | 0.4+ | 0.9+ | 2006 09 19 | 704 | 0.5+ | 0.9+ |
| 2001 09 24 | 644 | 0.5− | 0.5+ | 2005 05 08 | 699 | 0.7+ | 0.4− | 2006 09 19 | 704 | 0.3+ | 0.3+ |
| 2001 09 28 | 644 | 0.3− | 0.2+ | 2005 05 08 | 699 | 0.9+ | 0.9+ | 2006 09 24 | 699 | 0.7+ | 0.3+ |
| 2001 09 28 | 644 | 0.3− | 0.2+ | 2005 05 08 | 699 | 1.4+ | 0.9+ | 2006 09 24 | 699 | 0.6− | 0.1− |
| 2001 09 28 | 644 | 0.3− | 0.1+ | 2005 05 14 | 703 | 0.0 | 0.3+ | 2006 09 24 | 699 | 0.3− | 1.4+ |
| 2001 10 12 | 608 | 0.9− | 0.2+ | 2005 05 14 | 703 | 1.0− | 0.9+ | 2006 09 24 | 699 | 0.3− | 0.8+ |
| 2001 10 12 | 608 | 0.8− | 0.6+ | 2005 05 14 | 703 | 0.3− | 1.4+ | 2006 09 30 | 703 | 0.6+ | 0.2− |
| 2001 10 12 | 608 | 0.9− | 0.4+ | 2005 05 14 | 703 | (0.6+ | 1.8+) | 2006 09 30 | 703 | 0.6− | 0.1− |
| 2001 10 14 | 704 | 1.0+ | 0.3− | 2005 06 26 | E12 | 0.5+ | 0.4− | 2006 09 30 | 703 | 0.5+ | 1.0− |
| 2001 10 14 | 704 | 0.5+ | 0.2− | 2005 06 26 | E12 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.5+ | 0.1− | 2005 06 26 | E12 | 0.8+ | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.5+ | 0.0 | 2005 06 26 | E12 | 0.8+ | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.0 | | |
| 2001 10 15 | 608 | 1.3− | 0.2− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.7+ | 0.2+ | | |
| 2001 10 15 | 608 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.4− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2001 10 15 | 608 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.8− | | |
| 2001 10 21 | 704 | 0.2− | 1.0− | 2006 08 17 | 644 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.6− | | |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.9− | 0.8− | | |
| 2001 10 21 | 704 | 1.0− | 0.5+ | 2006 08 17 | 644 | 0.4− | 0.5− | 2006 11 13 | G96 | 0.3− | 0.6− | | |
| 2001 10 21 | 704 | 0.9− | 0.9− | 2006 08 18 | 644 | 0.5− | 0.2− | | | | | | |

**(139773)∗ 2001 QQ$_{296}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 40.66646 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21629459 | $\omega$ | 356.33710 | | | +0.97454994 | | −0.21392273 | |
| $a$ | 2.7485625 | $\Omega$ | 16.48533 | | | +0.21120658 | | +0.77604599 | |
| $e$ | 0.2200003 | $i$ | 13.65761 | | | +0.07512780 | | +0.59328719 | |
| $P$ | 4.56 | $H$ | 15.3 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 09 24 | 704 | 0.3+ | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.1− | | |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 09 24 | 704 | 0.3− | 0.4− | 2001 11 21 | 704 | 0.2− | 0.1+ | | |
| 1999 03 22 | 645 | 0.2+ | 0.2+ | 2001 09 24 | 704 | 0.1− | 0.7− | 2001 11 21 | 704 | 0.3− | 0.2− | | |
| 1999 03 22 | 645 | 0.2+ | 0.2+ | 2001 09 29 | 049 | 0.8− | 0.3+ | 2002 01 06 | 699 | 0.0 | 0.5+ | | |
| 2001 07 28 | 699 | (5.3+ | 6.7+) | 2001 09 29 | 049 | 0.5− | 0.0 | 2002 01 06 | 699 | 0.2− | 0.6+ | | |
| 2001 07 28 | 699 | 0.5+ | 1.5+ | 2001 09 29 | 049 | 0.5− | 0.1− | 2002 01 06 | 699 | 0.5+ | 0.3+ | | |
| 2001 07 28 | 699 | 1.1+ | 0.7+ | 2001 10 13 | 699 | 0.3− | 0.2+ | 2002 01 06 | 699 | (0.1+ | 1.5+) | | |
| 2001 07 28 | 699 | 0.6+ | 0.0 | 2001 10 13 | 699 | 0.6− | 0.3+ | 2002 01 08 | 704 | 0.9+ | 0.2− | | |
| 2001 08 16 | 704 | 0.7+ | 0.6+ | 2001 10 13 | 699 | 0.3− | 0.1+ | 2002 01 08 | 704 | 1.0+ | 0.1+ | | |
| 2001 08 16 | 704 | 0.4+ | 0.2+ | 2001 10 13 | 699 | 0.1− | 0.1− | 2002 01 08 | 704 | 0.2− | 0.9− | | |
| 2001 08 16 | 704 | 0.8+ | 1.0+ | 2001 10 14 | 704 | 0.1+ | 0.7+ | 2002 01 08 | 704 | 0.9+ | 0.2− | | |
| 2001 08 24 | 704 | 0.5− | 0.7+ | 2001 10 14 | 704 | 0.2− | 0.6+ | 2003 02 21 | 644 | 0.7+ | 1.3+ | | |
| 2001 08 24 | 704 | 0.4− | 0.6+ | 2001 10 14 | 704 | 0.2+ | 0.7+ | 2003 02 21 | 644 | 0.1+ | 1.0+ | | |
| 2001 08 24 | 704 | 0.7− | 0.3+ | 2001 10 14 | 704 | 0.3+ | 0.9+ | 2003 02 21 | 644 | 0.7+ | 1.1+ | | |
| 2001 08 24 | 704 | 0.4− | 0.2+ | 2001 10 14 | 704 | 0.2+ | 1.1+ | 2005 07 04 | E12 | 0.5− | 0.2− | | |
| 2001 08 28 | 699 | 1.2− | 0.4− | 2001 10 18 | 704 | 0.1− | 0.1+ | 2005 07 04 | E12 | 0.1+ | 0.5+ | | |
| 2001 08 28 | 699 | 0.2− | 0.2+ | 2001 10 18 | 704 | 0.2+ | 0.1+ | 2005 07 04 | E12 | 0.5− | 1.5+ | | |
| 2001 08 28 | 699 | 0.3+ | 0.0 | 2001 10 18 | 704 | 0.2+ | 0.3+ | 2005 07 04 | E12 | 1.1− | 0.6+ | | |
| 2001 08 28 | 699 | 0.3− | 0.0 | 2001 10 18 | 704 | 0.0 | 0.4+ | 2005 07 04 | E12 | 0.2+ | 0.6+ | | |
| 2001 09 10 | 704 | 0.8− | 0.1− | 2001 10 21 | 704 | 0.1− | 0.4− | 2005 07 04 | E12 | 0.4− | 0.4+ | | |
| 2001 09 10 | 704 | 0.6− | 0.6− | 2001 10 21 | 704 | 0.2− | 0.6− | 2005 07 04 | E12 | 0.2+ | 0.2+ | | |
| 2001 09 10 | 704 | 0.7− | 0.1− | 2001 10 21 | 704 | 1.0− | 1.0− | 2005 08 06 | E12 | 0.6− | 0.5+ | | |
| 2001 09 17 | 704 | 0.6− | 0.2+ | 2001 10 21 | 704 | 0.3− | 0.1+ | 2005 08 06 | E12 | 0.0 | 0.1− | | |
| 2001 09 17 | 704 | 0.3− | 1.2+ | 2001 10 21 | 704 | 0.3− | 0.4− | 2005 08 06 | E12 | 0.9− | 1.2+ | | |
| 2001 09 17 | 704 | 0.3+ | 1.1+ | 2001 10 23 | 333 | 0.3+ | 0.5− | 2005 08 06 | E12 | 0.2+ | 0.1+ | | |
| 2001 09 17 | 704 | 0.3+ | 0.8+ | 2001 10 23 | 333 | 0.9− | 0.6− | 2005 08 09 | 428 | 0.9+ | 0.2− | | |
| 2001 09 17 | 704 | 0.5− | 0.6+ | 2001 10 23 | 333 | 0.3− | 0.5− | 2005 08 10 | 428 | 0.4+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2001 10 28 | 704 | 0.1+ | 0.4+ | 2005 08 25 | E12 | (0.9+ | 1.6+) | | |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2001 10 28 | 704 | 0.2+ | 0.2+ | 2005 08 25 | E12 | 0.2+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.4+ | 0.2+ | 2001 10 28 | 704 | 0.1+ | 0.7− | 2005 08 25 | E12 | 0.7− | 0.4+ | | |
| 2001 09 20 | 704 | 0.7+ | 0.3+ | 2001 10 28 | 704 | 0.7− | 0.2− | 2005 08 25 | E12 | 0.1− | 0.6+ | | |
| 2001 09 20 | 704 | 0.7+ | 0.5+ | 2001 11 11 | 699 | 0.2− | 0.0 | 2005 09 23 | E12 | 0.6− | 0.3+ | | |
| 2001 09 21 | 699 | 0.5− | 0.9+ | 2001 11 11 | 699 | 0.1− | 0.6+ | 2005 09 23 | E12 | 0.4+ | 0.3+ | | |
| 2001 09 21 | 699 | 0.1+ | 0.2+ | 2001 11 11 | 699 | 0.4− | 0.3+ | 2005 09 23 | E12 | 0.0 | 0.1− | | |
| 2001 09 21 | 699 | 0.6− | 0.2+ | 2001 11 11 | 699 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.4− | 0.1+ | | |
| 2001 09 21 | 699 | 0.4− | 0.4+ | 2001 11 12 | 704 | 0.1− | 0.5+ | 2006 10 27 | 703 | 1.5− | 0.6+ | | |
| 2001 09 22 | 699 | 0.6− | 0.4+ | 2001 11 12 | 704 | (1.6− | 1.2+) | 2006 10 27 | 703 | 0.1− | 0.2+ | | |
| 2001 09 22 | 699 | 0.1− | 0.1+ | 2001 11 12 | 704 | 0.3− | 0.6+ | 2006 10 27 | 703 | (2.0+ | 0.9−) | | |
| 2001 09 22 | 699 | 0.3− | 0.2+ | 2001 11 12 | 704 | 0.3− | 0.5+ | 2006 11 20 | 703 | (3.4+ | 0.9−) | | |
| 2001 09 22 | 699 | 0.1+ | 0.2+ | 2001 11 12 | 704 | 0.9− | 0.2+ | 2006 11 20 | 703 | 0.0 | 0.8− | | |
| 2001 09 24 | 704 | 0.1+ | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.2− | 2006 11 20 | 703 | 0.0 | 0.1+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.4+ | 0.1− | 2006 11 20 | 703 | 0.9− | 0.1+ | | |

**(139774)∗ 2001 QJ$_{297}$**

Discovered 2001 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 323.71299 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18090388 | $\omega$ | 177.16598 | | | +0.81789937 | | −0.57526056 | |
| $a$ | 3.0962603 | $\Omega$ | 217.95849 | | | +0.52753883 | | +0.75725545 | |
| $e$ | 0.1750528 | $i$ | 1.00291 | | | +0.22965932 | | +0.30925630 | |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | (2.5+ | 0.4+) | 2001 11 09 | 704 | 0.5− | 0.3− | 2006 08 18 | 699 | 0.2+ | 0.2+ | | |
| 2001 08 24 | 704 | (1.9+ | 0.3−) | 2001 11 09 | 704 | 0.6− | 0.6− | 2006 08 18 | 699 | 0.3+ | 0.5+ | | |
| 2001 08 24 | 704 | 1.2+ | 0.4− | 2001 11 09 | 704 | 0.8− | 0.2+ | 2006 08 18 | 699 | 1.2+ | 0.7+ | | |
| 2001 08 28 | 699 | 0.9+ | 0.3− | 2001 11 09 | 704 | 0.7− | 0.6− | 2006 08 21 | 704 | 0.1+ | 0.8+ | | |
| 2001 08 28 | 699 | 0.1− | 0.9+ | 2001 11 09 | 704 | 0.7− | 0.3+ | 2006 08 21 | 704 | 0.1+ | 0.4+ | | |
| 2001 08 28 | 699 | (0.2− | 1.6+) | 2001 11 16 | 644 | 0.0 | 0.3+ | 2006 08 21 | 704 | (1.7− | 0.2−) | | |
| 2001 08 28 | 699 | 0.9+ | 0.7+ | 2001 11 16 | 644 | 0.2− | 0.2+ | 2006 08 21 | 704 | 0.6− | 0.0 | | |
| 2001 09 22 | 699 | 0.2+ | 0.2− | 2001 11 16 | 644 | 0.1− | 0.2+ | 2006 08 21 | 704 | 0.8− | 0.8+ | | |
| 2001 09 22 | 699 | 0.7− | 0.6+ | 2001 11 17 | 704 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.1− | 0.2− | | |
| 2001 09 22 | 699 | 0.7− | 0.6− | 2001 11 17 | 704 | 0.2+ | 0.7+ | 2006 08 22 | 644 | 0.1− | 0.1− | | |
| 2001 09 22 | 699 | 0.4− | 0.6+ | 2001 11 17 | 704 | 0.2+ | 0.7+ | 2006 08 22 | 644 | 0.0 | 0.1+ | | |
| 2001 09 24 | 704 | 0.6+ | 0.5− | 2001 11 17 | 704 | 0.1− | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.2+ | | |
| 2001 09 24 | 704 | 0.4− | 1.2+ | 2001 11 17 | 704 | 0.2− | 0.9+ | 2006 08 24 | 644 | 0.3− | 0.1+ | | |
| 2001 09 24 | 704 | 0.2− | 0.7+ | 2001 11 20 | 691 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.0 | 0.2+ | | |
| 2001 09 24 | 704 | 0.5+ | 0.3+ | 2001 11 20 | 704 | 0.2− | 0.7+ | 2006 08 25 | 704 | 0.3+ | 0.2+ | | |
| 2001 09 24 | 704 | 0.6− | 0.3− | 2001 11 20 | 704 | 0.2− | 0.7+ | 2006 08 25 | 704 | 0.1+ | 0.2+ | | |
| 2001 09 25 | 333 | 0.9− | 0.1− | 2001 11 20 | 691 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.1+ | 0.2− | | |
| 2001 09 25 | 333 | 0.6− | 1.3+ | 2001 11 20 | 704 | 0.2− | 0.5+ | 2006 08 25 | 704 | 0.0 | 0.4+ | | |
| 2001 09 25 | 333 | 0.9− | 0.7+ | 2001 11 20 | 691 | 0.2+ | 0.1− | 2006 08 25 | 704 | 0.1+ | 0.8+ | | |
| 2001 09 26 | 333 | 1.1− | 0.6+ | 2001 11 20 | 704 | 0.1+ | 1.2+ | 2006 08 27 | 691 | 0.5+ | 1.0+ | | |
| 2001 09 26 | 333 | 0.2− | 0.1− | 2001 11 20 | 704 | 0.1+ | 0.8+ | 2006 08 27 | 691 | 0.2− | 0.4+ | | |
| 2001 09 26 | 333 | 0.4+ | 1.0− | 2001 11 21 | 704 | 0.4− | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 11 | 333 | 0.9+ | 0.2− | 2001 11 21 | 704 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.4− | 1.2+ | | |
| 2001 10 11 | 333 | 0.1− | 0.8− | 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.1− | | |
| 2001 10 11 | 333 | 0.3+ | 0.8− | 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.8+ | | |
| 2001 10 11 | 333 | 0.4+ | 1.1− | 2001 11 21 | 704 | 0.2+ | 0.8+ | 2006 08 28 | 703 | 0.8+ | 0.4+ | | |
| 2001 10 11 | 333 | 0.1+ | 0.5− | 2002 01 07 | 699 | 0.4− | 1.2+ | 2006 08 28 | 703 | 0.5− | 0.3+ | | |
| 2001 10 11 | 333 | 0.3+ | 0.1+ | 2002 01 07 | 699 | 0.9− | 0.5− | 2006 08 28 | 699 | 1.3− | 0.2+ | | |
| 2001 10 11 | 644 | 0.3− | 0.2+ | 2002 01 07 | 699 | 0.2+ | 1.4+ | 2006 08 28 | 699 | 0.8− | 0.4+ | | |
| 2001 10 11 | 644 | 0.2− | 0.2+ | 2002 01 07 | 699 | (1.9− | 2.4+) | 2006 08 29 | 704 | 0.0 | 0.9+ | | |
| 2001 10 11 | 644 | 0.3− | 0.0 | 2003 02 02 | 644 | 0.4+ | 0.5+ | 2006 08 29 | 704 | 0.4− | 0.8+ | | |
| 2001 10 12 | 333 | 0.3+ | 0.4− | 2003 02 02 | 644 | 0.5+ | 0.5+ | 2006 08 29 | 704 | 0.1− | 0.7− | | |
| 2001 10 12 | 333 | 0.6− | 1.1− | 2003 02 02 | 644 | 0.3+ | 0.8+ | 2006 09 14 | 703 | 0.6− | 0.2+ | | |
| 2001 10 12 | 333 | 0.3+ | 0.3− | 2003 02 08 | 704 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.3− | | |
| 2001 10 13 | 704 | (2.6− | 0.6−) | 2003 02 08 | 704 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.3− | | |
| 2001 10 13 | 704 | 0.8− | 0.2− | 2003 02 08 | 704 | 0.7+ | 0.7+ | 2006 09 14 | 703 | 1.3− | 0.2− | | |
| 2001 10 13 | 704 | 0.4− | 0.2+ | 2003 02 08 | 704 | 1.3− | 1.4+ | 2006 09 17 | 704 | 0.1+ | 0.4− | | |
| 2001 10 13 | 704 | 0.1+ | 0.4+ | 2003 02 09 | 608 | 0.5+ | 0.2− | 2006 09 17 | 704 | 0.5+ | 0.4− | | |
| 2001 10 14 | 699 | 0.6− | 0.4− | 2003 02 09 | 608 | 0.4+ | 0.4− | 2006 09 17 | 704 | 0.3+ | 0.2+ | | |
| 2001 10 14 | 699 | 0.2− | 0.3+ | 2003 02 09 | 608 | 0.2− | 0.3− | 2006 09 17 | 704 | 1.2− | 0.5+ | | |
| 2001 10 14 | 699 | 0.3+ | 0.4− | 2003 02 21 | 644 | 0.1+ | 0.9+ | 2006 09 20 | 704 | 0.3+ | 0.5− | | |
| 2001 10 14 | 699 | 0.6− | 1.0+ | 2003 02 21 | 644 | 0.3+ | 0.9+ | 2006 09 20 | 704 | 0.2+ | 0.1− | | |
| 2001 10 17 | 704 | 0.8+ | 1.1+ | 2003 02 21 | 644 | 0.3+ | 0.9+ | 2006 09 20 | 704 | 0.3+ | 0.5− | | |
| 2001 10 17 | 704 | 0.1− | 0.9+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.4− | | |
| 2001 10 17 | 704 | 0.3− | 0.8+ | 2004 04 13 | 691 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.2− | | |
| 2001 10 17 | 704 | 0.0 | 0.7+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.7+ | 0.3− | | |
| 2001 10 17 | 704 | 0.3+ | 0.5+ | 2004 04 15 | 699 | 1.0+ | 0.5+ | 2006 09 27 | 704 | 1.4+ | 0.5− | | |
| 2001 10 18 | 644 | 0.2− | 0.5− | 2004 04 15 | 699 | 1.3− | 0.6− | 2006 09 27 | 704 | 0.2+ | 0.1+ | | |
| 2001 10 18 | 644 | 0.1− | 0.5− | 2004 04 15 | 699 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.6− | 1.2+ | | |
| 2001 10 18 | 644 | 0.1− | 0.5− | 2004 04 15 | 699 | 1.4+ | 0.8+ | 2006 09 27 | G96 | 0.0 | 0.3− | | |
| 2001 10 19 | 644 | 0.4− | 0.3+ | 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.1− | | |
| 2001 10 19 | 644 | 0.6− | 0.3+ | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.2− | | |
| 2001 10 19 | 644 | 0.5− | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.3− | | |
| 2001 10 21 | 704 | 0.9+ | 0.1− | 2004 05 09 | 691 | 0.5+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2001 10 21 | 704 | 0.7+ | 0.3+ | 2004 05 09 | 691 | 0.4+ | 0.7+ | 2006 10 28 | G96 | 0.5− | 0.4− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.6+ | 0.3+ | 2004 05 09 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.8+ | 0.3+ | 2004 05 24 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2001 10 21 | 704 | 0.6+ | 0.4+ | 2004 05 24 | 691 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2001 10 25 | 644 | 0.4− | 0.5+ | 2004 05 24 | 691 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2001 10 25 | 644 | 0.5− | 0.0 | 2006 08 15 | 644 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2001 10 25 | 644 | 0.4− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2001 10 26 | 704 | 0.4+ | 0.1+ | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 10 26 | 704 | 0.3+ | 0.2+ | 2006 08 18 | A50 | 0.7+ | 0.1+ | 2006 11 21 | G96 | 0.5− | 0.4− |
| 2001 10 26 | 704 | 1.0+ | 0.1+ | 2006 08 18 | A50 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.9− | 0.3− |
| 2001 10 26 | 704 | 0.6+ | 0.7− | 2006 08 18 | 699 | 0.1+ | 0.6− | | | | |

**(139775)∗ 2001 QG$_{298}$**

Discovered 2001 Aug. 19 by M. W. Buie at Cerro Tololo.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.04577 | | (2000.0) | | | |
| $n$ | 0.00400849 | $\omega$ | 208.88758 | | +0.97919145 | −0.20008373 |
| $a$ | 39.2478160 | $\Omega$ | 162.55571 | | +0.20105468 | +0.93373087 |
| $e$ | 0.1908213 | $i$ | 6.49707 | | +0.02758844 | +0.29683863 |
| $P$ | 246 | $H$ | 7.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.3+ | 0.2+ | 2002 08 12 | 807 | 0.2+ | 0.4+ | 2006 09 18 | 705 | 0.2− | 0.1− |
| 2001 08 19 | 807 | 0.3+ | 0.3+ | 2002 09 12 | 568 | 0.3− | 0.3− | 2006 09 20 | 705 | 0.2+ | 0.1+ |
| 2001 08 21 | 807 | 0.1− | 0.2− | 2002 09 12 | 568 | 0.2− | 0.4− | 2006 09 20 | 705 | 0.0 | 0.1− |
| 2001 08 21 | 807 | 0.1+ | 0.2− | 2002 09 13 | 644 | 0.1− | 0.3− | 2006 09 27 | 705 | 0.1− | 0.1− |
| 2001 09 19 | 688 | 0.0 | 0.0 | 2002 09 13 | 568 | 0.1− | 0.3− | 2006 09 27 | 705 | 0.2− | 0.1− |
| 2001 09 19 | 688 | 0.0 | 0.2+ | 2005 10 27 | 568 | 0.1+ | 0.3+ | 2006 09 30 | 705 | 0.1+ | 0.0 |
| 2001 10 12 | 304 | 0.0 | 0.1+ | 2005 10 27 | 568 | 0.1+ | 0.1+ | 2006 09 30 | 705 | 0.3+ | 0.0 |
| 2001 10 12 | 304 | 0.1+ | 0.2+ | 2005 10 28 | 568 | 0.1+ | 0.2+ | 2006 10 02 | 705 | 0.1+ | 0.2− |
| 2001 10 18 | 688 | 0.0 | 0.1+ | 2005 10 28 | 568 | 0.0 | 0.2+ | 2006 10 02 | 705 | 0.0 | 0.1− |
| 2001 10 18 | 688 | 0.2− | 0.5− | 2006 08 21 | 807 | 0.3− | 0.2+ | 2006 10 04 | 705 | 0.1+ | 0.1− |
| 2001 10 23 | 696 | 0.2− | 0.1+ | 2006 08 21 | 807 | 0.2− | 0.2+ | 2006 10 04 | 705 | 0.0 | 0.1− |
| 2001 10 23 | 696 | 0.1+ | 0.2+ | 2006 08 22 | 807 | 0.1− | 0.1+ | | | | |
| 2002 08 12 | 807 | 0.1+ | 0.0 | 2006 09 18 | 705 | 0.1+ | 0.1− | | | | |

**(139776)∗ 2001 QS$_{309}$ = 2002 VT$_{34}$**

Discovered 2001 Aug. 19 by M. W. Buie at Cerro Tololo.

Id. G. V. Williams (*MPO* 37722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 249.59344 | | (2000.0) | | | |
| $n$ | 0.19608613 | $\omega$ | 11.49256 | | −0.23392540 | −0.97065569 |
| $a$ | 2.9343019 | $\Omega$ | 92.05399 | | +0.88754778 | −0.23659629 |
| $e$ | 0.0622959 | $i$ | 3.19712 | | +0.39691037 | −0.04300845 |
| $P$ | 5.03 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.4− | 1.3+ | 2002 12 13 | 704 | 0.4− | 0.5− | 2004 03 22 | 704 | 0.2+ | 0.4+ |
| 2001 08 16 | 644 | 0.6− | 0.8+ | 2002 12 14 | 704 | 0.3+ | 0.2+ | 2004 03 22 | 704 | 0.5+ | 0.3+ |
| 2001 08 16 | 644 | 0.6− | 1.2+ | 2002 12 14 | 704 | 0.1+ | 0.5+ | 2004 03 30 | 691 | 0.2− | 0.3+ |
| 2001 08 19 | 807 | 0.4− | 0.4+ | 2002 12 14 | 704 | 0.1+ | 0.4+ | 2004 03 30 | 691 | 0.3− | 0.3+ |
| 2001 08 19 | 807 | 0.5− | 0.2+ | 2002 12 14 | 704 | 0.0 | 0.0 | 2004 03 30 | 691 | 0.0 | 0.4+ |
| 2001 08 20 | 807 | 0.3− | 0.8+ | 2002 12 14 | 704 | 0.7+ | 0.7+ | 2004 04 12 | 699 | 0.3− | 0.1+ |
| 2001 08 20 | 807 | 1.2− | 1.0+ | 2002 12 31 | 704 | 1.2− | 0.9+ | 2004 04 12 | 699 | 0.6− | 0.5+ |
| 2001 09 11 | 699 | 0.3− | 1.2+ | 2002 12 31 | 704 | 0.2− | 0.3+ | 2004 04 12 | 699 | 0.2+ | 0.1+ |
| 2001 09 11 | 699 | 0.8− | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.3+ | 2004 04 12 | 699 | 0.1+ | 0.9+ |
| 2001 09 11 | 699 | 0.8− | 0.1− | 2002 12 31 | 704 | 0.5− | 0.5+ | 2004 04 15 | 699 | 1.4− | 0.5− |
| 2001 09 11 | 699 | (2.7− | 1.1+) | 2002 12 31 | 704 | 0.1− | 0.5+ | 2004 04 15 | 699 | 0.4− | 0.2+ |
| 2001 09 12 | 704 | (0.7− | 1.9+) | 2003 01 04 | 704 | 0.7+ | 0.1− | 2004 04 15 | 704 | 1.1+ | 0.1− |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2003 01 04 | 704 | 1.0+ | 0.6− | 2004 04 15 | 699 | 1.1− | 1.1+ |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2003 01 04 | 704 | 0.9− | 0.1+ | 2004 04 15 | 704 | 0.1− | 0.9+ |
| 2001 09 12 | 704 | 0.5− | 1.0+ | 2003 01 04 | 704 | 0.8+ | 0.8− | 2004 04 15 | 704 | 1.0+ | 1.0+ |
| 2001 09 26 | 704 | 0.2+ | 0.9+ | 2003 01 04 | 704 | 0.7− | 0.3− | 2004 04 15 | 699 | 0.4+ | 0.2+ |
| 2001 09 26 | 704 | 1.0+ | 0.1− | 2003 01 08 | 704 | 0.4+ | 0.8+ | 2004 04 15 | 704 | 0.0 | 0.1− |
| 2001 09 26 | 704 | 1.2+ | 0.8+ | 2003 01 08 | 704 | 0.4+ | 1.0+ | 2004 04 15 | 704 | 0.3− | 0.8+ |
| 2002 11 05 | 704 | 0.2− | 0.9+ | 2003 01 08 | 704 | 0.4+ | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.6+ |
| 2002 11 05 | 704 | 0.7+ | 1.1+ | 2003 01 08 | 704 | 0.4+ | 0.7− | 2004 04 19 | 704 | 0.2+ | 0.1+ |
| 2002 11 05 | 704 | 0.2− | 0.5+ | 2003 01 08 | 704 | 0.4− | 0.9− | 2004 04 19 | 704 | 0.8+ | 0.4+ |
| 2002 11 05 | 704 | 0.0 | 0.8+ | 2004 02 19 | 704 | 0.5+ | 0.6+ | 2004 04 19 | 704 | 1.0+ | 0.0 |
| 2002 11 06 | 704 | (0.2+ | 1.5+) | 2004 02 19 | 704 | 0.1+ | 0.1+ | 2004 04 22 | 704 | 0.8+ | 0.7− |
| 2002 11 06 | 704 | (1.6+ | 1.6+) | 2004 02 19 | 704 | 0.8+ | 1.1+ | 2004 04 22 | 704 | 0.9− | 0.0 |
| 2002 11 06 | 704 | (0.2+ | 2.2+) | 2004 02 23 | 704 | 0.3+ | 0.3− | 2004 04 22 | 704 | 0.9+ | 0.1− |
| 2002 11 06 | 704 | (1.3+ | 1.8+) | 2004 02 23 | 704 | 0.4+ | 0.8+ | 2004 04 22 | 704 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.0 | 2004 02 23 | 704 | 0.2− | 0.4+ | 2004 04 22 | 704 | 0.2+ | 1.4− |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2004 02 23 | 704 | 0.0 | 0.3− | 2006 08 24 | 644 | 0.1− | 0.7+ |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.7+ |
| 2002 12 05 | 704 | 0.0 | 0.7− | 2004 02 27 | 683 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.4− | 0.7+ |
| 2002 12 10 | 704 | 0.5− | 0.1+ | 2004 02 27 | 683 | 0.9+ | 0.7− | 2006 08 30 | 699 | (0.8− | 2.4+) |
| 2002 12 10 | 704 | 0.1+ | 0.4− | 2004 02 27 | 683 | (2.7+ | 1.1+) | 2006 08 30 | 699 | (1.7− | 2.3+) |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.6+ | 0.8+ | 2006 08 30 | 699 | 0.6+ | 0.5+ |
| 2002 12 10 | 704 | 0.4− | 0.3− | 2004 03 15 | 704 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.6− | 1.4+ |
| 2002 12 10 | 704 | (1.6− | 0.0 ) | 2004 03 15 | 704 | 0.7+ | 0.8+ | 2006 08 30 | 699 | 0.9− | 0.9+ |
| 2002 12 10 | 704 | 0.7− | 1.1+ | 2004 03 15 | 704 | 0.7+ | 0.9+ | 2006 08 30 | 699 | (0.2− | 2.1+) |
| 2002 12 10 | 704 | 0.3− | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 08 30 | 699 | (1.8− | 0.2+) |
| 2002 12 10 | 704 | (1.6− | 0.8+) | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 699 | (1.7− | 1.3+) |
| 2002 12 10 | 704 | 0.5− | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.0 | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2002 12 13 | 704 | 0.4− | 0.1− | 2004 03 19 | 704 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2002 12 13 | 704 | 0.4− | 0.0 | 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2002 12 13 | 704 | 0.4+ | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2002 12 13 | 704 | 0.0 | 0.2+ | 2004 03 21 | 699 | (0.6− | 1.8+) | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2002 12 13 | 704 | 0.3− | 0.1+ | 2004 03 21 | 699 | 0.6− | 0.3− | 2006 11 27 | G96 | 0.3− | 0.3+ |
| 2002 12 13 | 704 | 0.3− | 0.3− | 2004 03 21 | 699 | (1.6− | 2.4+) | 2006 11 27 | G96 | 0.0 | 0.2+ |
| 2002 12 13 | 704 | 0.0 | 0.5+ | 2004 03 21 | 699 | (1.8− | 1.0+) | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2002 12 13 | 704 | 0.1+ | 1.0− | 2004 03 22 | 704 | 0.2+ | 0.3+ | | | | |
| 2002 12 13 | 704 | 0.8+ | 0.5+ | 2004 03 22 | 704 | 0.4− | 0.8+ | | | | |

**(139777)∗ 2001 QS$_{317}$ = 2002 XF$_{57}$**

Discovered 2001 Aug. 20 by M. W. Buie at Cerro Tololo.

Id. A. Doppler (*MPO* 40453)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 170.87590 | | (2000.0) | | | |
| $n$ | 0.21987958 | $\omega$ | 63.49093 | | −0.91620072 | +0.39516093 |
| $a$ | 2.7186050 | $\Omega$ | 139.68967 | | −0.39442889 | −0.86001177 |
| $e$ | 0.0111713 | $i$ | 5.90129 | | −0.07072551 | −0.32284298 |
| $P$ | 4.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.5+ | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.4+ | 2004 03 23 | 704 | 0.6+ | 0.5+ |
| 1995 02 03 | 691 | 0.2+ | 0.6− | 2004 02 23 | 704 | 1.0+ | 1.0− | 2004 03 23 | 704 | 0.1− | 0.2− |
| 1995 02 03 | 691 | 0.4− | 0.4− | 2004 02 23 | 704 | 1.0+ | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.5+ |
| 2000 04 28 | 699 | 0.1+ | 1.0+ | 2004 02 25 | 704 | 0.8− | 1.0+ | 2004 03 23 | 704 | 0.8+ | 0.6+ |
| 2000 04 28 | 699 | 0.0 | 0.5+ | 2004 02 25 | 704 | 0.4− | 0.8+ | 2006 09 26 | 704 | 0.7+ | 0.9+ |
| 2000 04 28 | 699 | 0.5− | 0.7− | 2004 02 25 | 704 | 0.0 | 1.3+ | 2006 09 26 | 704 | (1.7− | 0.3+) |
| 2000 04 28 | 699 | 1.1− | 1.7+ | 2004 02 26 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 704 | 0.8− | 0.4− |
| 2001 08 15 | 608 | 0.4+ | 0.9+ | 2004 02 26 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 2001 08 15 | 608 | (0.5+ | 2.0+) | 2004 02 26 | 704 | 1.2+ | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2001 08 15 | 608 | 0.5+ | 1.3+ | 2004 02 26 | 704 | (0.0 | 2.5+) | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2001 08 20 | 807 | 0.1+ | 0.5+ | 2004 02 26 | 704 | 0.7+ | 0.8+ | 2006 09 28 | 691 | 0.2− | 0.5+ |
| 2001 08 20 | 807 | 0.2+ | 0.5+ | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2001 08 21 | 807 | 0.1− | 0.8+ | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.7+ |
| 2001 08 21 | 807 | 0.1− | 0.8+ | 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | (0.5− | 1.6+) |
| 2001 08 24 | 699 | 0.4− | 1.1+ | 2004 03 15 | 704 | 1.2+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 08 24 | 704 | 0.6− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.7− | 0.9+ |
| 2001 08 24 | 704 | 0.7+ | 0.9+ | 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 08 24 | 699 | 0.5− | 1.4+ | 2004 03 15 | 704 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 08 24 | 704 | 0.8− | 1.2+ | 2004 03 15 | 704 | (1.6− | 0.7+) | 2006 10 02 | G96 | 0.4+ | 0.1+ |
| 2001 08 24 | 699 | 1.2− | 0.1+ | 2004 03 19 | 291 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2+ |
| 2001 08 24 | 699 | 0.4− | 0.1− | 2004 03 19 | 704 | 0.4− | 1.1+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2002 12 01 | 704 | 1.1− | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2002 12 01 | 704 | 0.1− | 0.6− | 2004 03 19 | 291 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 2002 12 01 | 704 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 1.4+ |
| 2002 12 10 | 644 | 0.5+ | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2002 12 10 | 644 | 0.4+ | 0.3+ | 2004 03 19 | 291 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.3+ | 1.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.5+ | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.7+ |
| 2002 12 13 | 291 | 0.1− | 0.1+ | 2004 03 20 | 699 | 0.3− | 0.6+ | 2006 10 22 | 703 | 1.3− | 0.2+ |
| 2002 12 13 | 291 | 0.0 | 0.2− | 2004 03 20 | 699 | 1.1− | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.5+ |
| 2002 12 13 | 291 | 0.4− | 0.0 | 2004 03 20 | 699 | 0.7− | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2004 02 23 | 704 | 0.4+ | 0.1− | 2004 03 20 | 699 | 0.5− | 0.0 | | | | |
| 2004 02 23 | 704 | 1.0+ | 0.4+ | 2004 03 23 | 704 | 0.3+ | 0.8+ | | | | |

**(139778)∗ 2001 QZ$_{327}$**

Discovered 2001 Aug. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.46609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20506208 | $\omega$ | 3.58608 | | −0.83120374 | +0.53051129 | |
| $a$ | 2.8480382 | $\Omega$ | 210.37225 | | −0.51792483 | −0.84762250 | |
| $e$ | 0.0839012 | $i$ | 19.20324 | | −0.20212426 | −0.00968825 | |
| $P$ | 4.81 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 19 | 704 | 1.8− | 1.4+ | 2004 03 15 | 644 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.2− |
| 1999 02 19 | 704 | (0.5− | 2.2+) | 2004 03 15 | 644 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.8− | 1.4+ |
| 1999 02 19 | 704 | (2.5− | 0.2−) | 2004 03 15 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.6− | 0.1+ |
| 1999 02 19 | 704 | (2.9− | 0.6+) | 2004 03 17 | 703 | 0.8+ | 0.0 | 2006 09 20 | 699 | 0.8− | 0.3− |
| 2000 06 01 | 704 | 0.4− | 0.1− | 2004 03 17 | 703 | 1.1+ | 1.4+ | 2006 09 20 | 699 | 0.8− | 0.4− |
| 2000 06 01 | 704 | 0.1− | 0.9+ | 2004 03 17 | 703 | 0.4− | 0.5+ | 2006 09 20 | 699 | 0.5+ | 0.1+ |
| 2000 06 01 | 704 | 0.2− | 1.2+ | 2004 03 17 | 703 | 0.7+ | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.6− |
| 2001 08 20 | 644 | 0.6− | 1.2+ | 2004 03 17 | 704 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.4− |
| 2001 08 20 | 644 | 0.4− | 1.1+ | 2004 03 17 | 704 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2001 08 20 | 644 | 0.6− | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.5− |
| 2001 09 10 | 704 | 0.1+ | 1.4+ | 2004 03 17 | 704 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 09 10 | 704 | (0.1+ | 1.7+) | 2004 03 17 | 704 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2001 09 10 | 704 | 0.8+ | 0.8+ | 2004 03 31 | 704 | 0.3+ | 1.3+ | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2001 09 10 | 699 | 0.1+ | 0.5− | 2004 03 31 | 704 | 0.2− | 1.1+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2001 09 10 | 704 | 0.4+ | 1.5+ | 2004 03 31 | 704 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 09 10 | 704 | 0.3+ | 1.2+ | 2004 03 31 | 704 | 0.3+ | 1.5+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 09 10 | 699 | 0.5+ | 0.5+ | 2004 03 31 | 704 | 0.5+ | 1.3+ | 2006 10 16 | 683 | 0.1− | 1.4− |
| 2001 09 10 | 699 | 0.8+ | 0.8+ | 2004 04 12 | 644 | 0.2− | 0.6+ | 2006 10 16 | 683 | (1.9− | 1.0+) |
| 2001 09 10 | 699 | 0.9− | 0.4+ | 2004 04 12 | 644 | 0.2− | 0.5+ | 2006 10 16 | 683 | 0.5− | 0.1− |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2004 04 12 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2004 04 15 | 703 | 0.6+ | 0.9+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2001 09 21 | 699 | 0.8− | 1.2+ | 2004 04 15 | 703 | 0.2+ | 1.4+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 699 | 0.1− | 0.0 | 2004 04 15 | 703 | 1.2+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2001 09 21 | 699 | 0.1+ | 0.2− | 2004 04 15 | 703 | 0.3− | 1.1+ | 2006 10 20 | 644 | 0.4− | 0.5+ |
| 2001 09 21 | 699 | 0.0 | 0.3+ | 2004 04 16 | 644 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 1.2− | 2004 04 16 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.0 | 0.8+ | 2004 04 16 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 1.1+ | 1.1+ | 2004 04 17 | 704 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 09 25 | 704 | 0.6− | 1.0+ | 2004 04 17 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 1.2+ | 2004 04 17 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 09 29 | 644 | 0.2− | 0.5+ | 2004 04 17 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 09 29 | 644 | 0.6+ | 1.3+ | 2004 04 24 | 608 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.1− | 1.2+ |
| 2001 09 29 | 644 | 0.4− | 0.5+ | 2004 04 24 | 608 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2001 09 29 | 644 | 0.5+ | 0.9+ | 2004 04 24 | 608 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2001 09 29 | 644 | 0.3− | 0.2+ | 2005 07 29 | 704 | 0.2− | 0.7− | 2006 11 11 | 703 | 0.7− | 0.9+ |
| 2001 09 29 | 644 | 0.9+ | 1.2+ | 2005 07 29 | 704 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 03 04 | E12 | 0.1− | 0.4+ | 2005 07 29 | 704 | 0.8+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2004 03 04 | E12 | 0.3− | 0.1+ | 2005 07 29 | 704 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2004 03 04 | E12 | 0.5− | 0.6+ | 2006 09 16 | 703 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2004 03 04 | E12 | 0.7− | 0.0 | 2006 09 16 | 703 | 0.2− | 0.6+ | | | | |

**(139779)∗ 2001 QR$_{328}$**

Discovered 2001 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.59062 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21150147 | $\omega$ | 314.54902 | | +0.98452963 | +0.08922889 | |
| $a$ | 2.7899331 | $\Omega$ | 41.03964 | | +0.00771940 | +0.83769814 | |
| $e$ | 0.1969334 | $i$ | 13.27761 | | −0.17504807 | +0.53879498 | |
| $P$ | 4.66 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.1+ | 0.2+ | 2003 01 13 | 704 | 0.3+ | 0.9+ | 2006 10 29 | 704 | 0.3+ | 0.9+ |
| 1995 03 26 | 691 | 0.2+ | 0.0 | 2003 01 13 | 704 | 0.9+ | 0.6+ | 2006 10 29 | 704 | 0.9− | 0.9− |
| 1995 03 26 | 691 | 0.1+ | 0.1+ | 2003 01 13 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 08 29 | 644 | 0.1− | 0.1+ | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2001 08 29 | 644 | 0.1+ | 0.1+ | 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2001 08 29 | 644 | 0.2− | 0.3+ | 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.2− |
| 2001 09 07 | 699 | 0.3− | 0.2+ | 2004 03 21 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2001 09 07 | 699 | 0.4− | 0.7+ | 2004 03 21 | 691 | 0.1+ | 1.1+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2001 09 07 | 699 | 1.1− | 0.7+ | 2004 03 21 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.5− | 0.2− |
| 2001 09 07 | 699 | 0.1+ | 0.7+ | 2004 03 23 | 704 | 0.2+ | 1.3+ | 2006 11 14 | 703 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.4− | 0.5− | 2006 11 14 | 703 | 0.7− | 0.3+ |
| 2001 09 12 | 704 | 0.4− | 0.0 | 2004 03 23 | 704 | 1.3+ | 0.8+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.0 | 2004 04 10 | 644 | 0.9+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2004 04 10 | 644 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.6− | 0.2+ | 2004 04 10 | 644 | 0.2+ | 0.7+ | 2006 11 15 | 704 | 0.3− | 0.2+ |
| 2001 09 18 | 699 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.0 | 0.8+ |
| 2001 09 18 | 699 | 0.7− | 0.3+ | 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.5+ |
| 2001 09 18 | 699 | 0.6− | 0.5+ | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.2+ | 1.2+ |
| 2001 09 25 | 704 | 0.0 | 0.1+ | 2006 09 01 | 704 | 1.1+ | 0.2− | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2006 09 01 | 704 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2006 09 01 | 704 | 0.7+ | 0.6+ | 2006 11 16 | 704 | 0.9− | 0.3+ |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.6− |
| 2001 09 25 | 644 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2001 09 25 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2001 09 25 | 644 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.6− | 0.1− | 2006 11 16 | 704 | 0.3− | 0.4+ |
| 2001 09 25 | 644 | 0.3− | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2001 10 11 | 704 | 0.3− | 0.5− | 2006 09 17 | 704 | 0.8+ | 0.3− | 2006 11 16 | 704 | 0.3− | 0.0 |
| 2001 10 11 | 704 | 0.4− | 0.3− | 2006 09 17 | 704 | (0.7+ | 1.8−) | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 10 11 | 704 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.7− | 0.7− | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 10 11 | 704 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.9− | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 10 11 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.5− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.7− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 0.1− | 2006 09 20 | 704 | (0.9− | 2.1−) | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.6+ | 2006 09 20 | 704 | (1.6− | 1.1−) | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.9− | 1.3− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | (1.5− | 0.9−) | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2001 10 24 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 11 18 | 608 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 11 18 | 608 | 0.7− | 0.7− | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2001 11 18 | 608 | 0.9− | 0.6− | 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.9− | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.3− | 1.4+ | 2006 10 17 | 691 | 0.5+ | 0.4− | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 10 19 | 704 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.4− | 0.0 | 2006 10 19 | 704 | (1.9+ | 0.7+) | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2001 11 20 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 704 | 0.6+ | 0.4− | 2006 11 28 | 704 | 0.6− | 2.2+ |
| 2001 12 07 | 704 | 0.6− | 1.1+ | 2006 10 19 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2001 12 07 | 704 | 1.4− | 0.9+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.5− | 0.1+ |
| 2001 12 07 | 704 | 1.3− | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2001 12 07 | 704 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.5− | 0.5+ |
| 2001 12 07 | 704 | 0.2− | 1.3+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 0.3+ | 0.2− |
| 2001 12 17 | 699 | 0.5+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 12 01 | 691 | 0.1− | 0.3− |
| 2001 12 17 | 699 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 699 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.8+ | 0.5− | | | | |
| 2001 12 17 | 699 | 0.4− | 0.3+ | 2006 10 29 | 704 | 0.8+ | 0.2− | | | | |

**(139780)∗ 2001 QA$_{329}$ = 2003 AK$_{51}$**

Discovered 2001 Aug. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40456)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.16391 | | $\omega$ | (2000.0) | +0.58201850 | −0.80885097 |
| $n$ | 0.21788997 | | $\Omega$ | 89.83658 | +0.67757137 | +0.53932966 |
| $a$ | 2.7351295 | | $i$ | 324.14557 | +0.44961262 | +0.23427255 |
| $e$ | 0.1496892 | | $H$ | 8.22088 | $G$ 0.15 | $U$ 0 |
| $P$ | 4.52 | | | 16.3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 21 | 691 | 0.4− | 0.5− | 2001 09 20 | 704 | 0.6+ | 0.1− | 2006 10 19 | 703 | 0.7− | 0.3− |
| 1994 01 21 | 691 | 0.4− | 0.3− | 2002 12 11 | 704 | 0.0 | 0.4+ | 2006 10 20 | 704 | 0.4+ | 0.0 |
| 1994 01 21 | 691 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.9+ | 0.1+ | 2006 10 20 | 704 | 0.4+ | 0.1+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2002 12 11 | 704 | 1.2+ | 0.2+ | 2006 10 20 | 704 | 0.3+ | 0.1− |
| 1999 03 20 | 645 | 0.1+ | 0.2+ | 2002 12 11 | 704 | 0.5− | 0.2+ | 2006 10 20 | 704 | 0.4+ | 1.1+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2002 12 11 | 704 | 1.0+ | 1.0+ | 2006 10 22 | 644 | 0.5− | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2002 12 13 | 645 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 08 16 | 704 | 0.1+ | 0.6+ | 2002 12 13 | 645 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2001 08 16 | 704 | 0.6− | 1.3+ | 2003 01 05 | 704 | 0.7+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 08 16 | 704 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.6+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 08 16 | 704 | (1.0+ | 1.7+) | 2003 01 05 | 704 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2001 08 23 | 691 | 0.0 | 0.2− | 2003 01 05 | 704 | 0.4− | 0.7− | 2006 10 27 | 703 | 0.2− | 0.3+ |
| 2001 08 23 | 691 | 0.0 | 0.1− | 2003 01 09 | 704 | 0.9+ | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.2− |
| 2001 08 23 | 691 | 0.1− | 0.1− | 2003 01 09 | 704 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.3+ |
| 2001 08 27 | 699 | 0.4+ | 0.5− | 2003 01 09 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.5− | 0.6− |
| 2001 08 27 | 699 | 0.6− | 1.3+ | 2003 01 09 | 704 | 0.4+ | 0.5+ | 2006 11 15 | 703 | 1.0− | 0.8+ |
| 2001 08 27 | 699 | (2.2− | 0.6−) | 2003 01 09 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.8− | 0.8+ |
| 2001 08 27 | 699 | 0.2+ | 1.1+ | 2006 09 17 | 703 | 0.1− | 0.7− | 2006 11 15 | 703 | 1.1− | 0.1+ |
| 2001 09 12 | 704 | 1.3+ | 0.8+ | 2006 09 17 | 703 | 0.7− | 0.0 | 2006 11 15 | 703 | 0.4− | 0.1− |
| 2001 09 12 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.9− | 0.5+ | 2006 11 15 | 703 | 0.4− | 0.7+ |
| 2001 09 12 | 704 | (0.5− | 1.6+) | 2006 09 17 | 703 | 1.1− | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.7+ |
| 2001 09 12 | 704 | 0.7+ | 0.5− | 2006 10 19 | 703 | 0.5− | 0.2− | 2006 11 15 | 703 | 0.3− | 1.4+ |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.7− | 0.2+ | 2006 11 15 | 703 | 0.7+ | 0.3+ |
| 2001 09 20 | 704 | 0.8+ | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.2− | | | | |

**(139781)∗ 2001 QG$_{329}$**

Discovered 2001 Aug. 19 at Cerro Tololo.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 129.07165 | | $\omega$ | (2000.0) | −0.51829507 | +0.85514367 |
| $n$ | 0.20839058 | | $\Omega$ | 67.53577 | −0.80671127 | −0.48500196 |
| $a$ | 2.8176302 | | $i$ | 171.22606 | −0.28387876 | −0.18303660 |
| $e$ | 0.0345626 | | $H$ | 3.74984 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.73 | | | 16.6 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.6+ | 0.2− | 2004 02 26 | 704 | 0.8+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 1999 02 09 | 691 | 1.3− | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.2+ |
| 1999 02 09 | 691 | 0.6+ | 0.1− | 2004 02 26 | 704 | 0.6+ | 0.5− | 2006 09 14 | 691 | 0.1+ | 0.2+ |
| 2001 08 19 | 807 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.6+ | 1.1+ | 2006 09 18 | 691 | 0.1+ | 0.5+ |
| 2001 08 19 | 807 | 0.2+ | 0.0 | 2004 03 17 | 291 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.3+ |
| 2001 08 27 | 691 | 0.5− | 0.2+ | 2004 03 17 | 291 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2001 08 27 | 691 | 0.1− | 0.1+ | 2004 03 17 | 291 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 08 27 | 691 | 0.5− | 0.1+ | 2004 03 23 | 704 | 0.8+ | 0.9+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 1.5+ | 2004 03 23 | 704 | 0.9+ | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.3− | 1.4+ | 2004 03 23 | 704 | (1.8+ | 0.7+) | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2004 03 30 | 291 | 0.1+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 09 12 | 704 | (1.1+ | 1.9+) | 2004 03 30 | 291 | 0.2+ | 0.7+ | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2001 09 21 | 691 | 0.2+ | 0.0 | 2004 03 30 | 291 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2001 09 21 | 691 | 0.2+ | 0.5+ | 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3+ |
| 2001 09 21 | 691 | 0.1− | 0.3+ | 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.9− | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2001 09 21 | 704 | 0.9+ | 0.9+ | 2004 04 24 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.7− | 0.4− |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2004 04 24 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.9− | 2004 04 24 | 691 | 0.4− | 0.2− | | | | |

**(139782)∗ 2001 QR$_{329}$ = 2005 ME$_{9}$**

Discovered 2001 Aug. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 84824)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 165.17764 | | $\omega$ | (2000.0) | −0.64012395 | +0.76792251 |
| $n$ | 0.22547098 | | $\Omega$ | 67.21576 | −0.73063060 | −0.59916496 |
| $a$ | 2.6734718 | | $i$ | 162.92027 | −0.23752948 | −0.22648701 |
| $e$ | 0.0274604 | | $H$ | 4.52258 | $G$ 0.15 | $U$ 0 |
| $P$ | 4.37 | | | 16.6 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 691 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.8+ | 0.2+ | 2005 10 01 | G96 | 0.2− | 0.2− |
| 2000 04 29 | 691 | 0.2− | 0.5+ | 2004 03 16 | 704 | (0.0 | 1.5+) | 2005 10 01 | G96 | 0.0 | 0.1+ |
| 2000 04 29 | 691 | 0.1− | 0.4+ | 2004 03 28 | 704 | 1.5+ | 0.1+ | 2005 10 01 | G96 | 0.2+ | 0.2+ |
| 2001 08 23 | 699 | 0.2+ | 0.2− | 2004 03 28 | 704 | 0.2− | 0.8+ | 2006 10 03 | G96 | 0.3− | 0.2+ |
| 2001 08 23 | 699 | 1.0− | 0.5+ | 2004 03 28 | 704 | 0.2− | 0.4− | 2006 10 03 | G96 | 0.0 | 0.2+ |
| 2001 08 23 | 699 | 0.1+ | 0.8+ | 2004 04 10 | 644 | 0.3+ | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2001 08 23 | 699 | 0.6+ | 0.8+ | 2004 04 10 | 644 | 0.3+ | 0.8+ | 2006 10 03 | G96 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2004 04 10 | 644 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.4− | 0.6+ |
| 2001 09 12 | 704 | 1.0− | 0.7+ | 2005 06 28 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 1.1+ | 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.8− | 0.6+ |
| 2001 09 12 | 704 | 0.3+ | 0.4+ | 2005 06 28 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.7− | 0.4+ |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2005 06 29 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.6+ |
| 2001 09 18 | 691 | 0.4− | 0.4+ | 2005 06 29 | 691 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 09 18 | 691 | 0.1+ | 0.0 | 2005 06 29 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2001 09 18 | 691 | 0.1− | 0.1+ | 2005 07 05 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (1.5− | 2.0+) |
| 2001 09 19 | 704 | (0.5+ | 2.8+) | 2005 07 05 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.0 | 1.3+ |
| 2001 09 19 | 704 | (1.9+ | 0.4+) | 2005 07 05 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | (0.4− | 2.3+) |
| 2001 09 19 | 704 | 0.6+ | 1.1+ | 2005 07 11 | G96 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.0 | 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2001 09 19 | 645 | 0.1+ | 0.1− | 2005 07 11 | G96 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 2001 09 19 | 645 | 0.1+ | 0.0 | 2005 07 11 | G96 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2004 03 16 | 704 | 1.5+ | 0.5+ | 2005 10 01 | G96 | 0.3− | 0.0 | | | | |

**(139783)∗ 2001 QW$_{330}$**

Discovered 2001 Aug. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.33459 | | $\omega$ | (2000.0) | −0.03071913 | −0.98715939 |
| $n$ | 0.21492286 | | $\Omega$ | 330.65585 | +0.94891587 | −0.07807561 |
| $a$ | 2.7602450 | | $i$ | 120.69976 | +0.31403026 | +0.13935762 |
| $e$ | 0.2026692 | | $H$ | 10.50412 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.59 | | | 14.8 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 27 | 566 | 0.2− | 1.1− | 2001 11 17 | 699 | 0.0 | 0.4+ | 2003 04 09 | 644 | 0.4+ | 0.4+ |
| 1997 12 27 | 566 | 0.2+ | 0.7− | 2001 11 17 | 699 | 0.9− | 0.9+ | 2003 04 09 | 644 | 0.1+ | 0.1+ |
| 1997 12 27 | 566 | 0.0 | 0.7− | 2001 11 17 | 699 | 0.9+ | 0.3+ | 2003 04 09 | 644 | 0.4+ | 0.2+ |
| 1998 03 02 | 327 | 0.5+ | 0.8− | 2001 11 17 | 699 | 0.5− | 0.5− | 2005 09 03 | 644 | 0.5− | 1.0+ |
| 1998 03 02 | 327 | 0.0 | 0.4− | 2002 11 06 | 291 | 0.3− | 0.1+ | 2005 09 03 | 644 | 0.3− | 0.6+ |
| 1998 03 02 | 327 | 0.3+ | 0.2+ | 2002 11 06 | 291 | 0.5− | 0.2+ | 2005 09 03 | 644 | 0.5− | 0.6+ |
| 2001 08 27 | 699 | 0.3+ | 1.2+ | 2002 11 06 | 291 | 0.7− | 0.2+ | 2006 10 03 | 704 | 0.1− | 0.2+ |
| 2001 08 27 | 699 | 0.4− | 1.1+ | 2003 02 06 | 704 | 0.5+ | 0.4− | 2006 10 03 | 704 | 0.6+ | 1.0+ |
| 2001 08 27 | 699 | 0.3− | 0.4+ | 2003 02 06 | 704 | 0.9− | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.0 | 0.4+ | 2003 02 06 | 704 | 1.1+ | 0.2+ | 2006 10 03 | 704 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.1− | 0.3− | 2003 02 12 | 608 | 0.5+ | 1.0+ | 2006 10 03 | 704 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 0.8− | 0.2+ | 2003 02 12 | 608 | 0.6+ | 1.4+ | 2006 11 19 | 704 | (0.1− | 3.1−) |
| 2001 09 12 | 704 | 0.6− | 0.2− | 2003 02 12 | 608 | 0.7+ | 1.3+ | 2006 11 19 | 704 | 1.1− | 0.2+ |
| 2001 10 11 | 704 | 0.8+ | 0.9+ | 2003 02 28 | 704 | 0.3+ | 1.2+ | 2006 11 19 | 704 | 0.9− | 0.3+ |
| 2001 10 11 | 704 | 0.6+ | 0.6+ | 2003 02 28 | 704 | 0.0 | 0.8+ | 2006 11 25 | 704 | 2.5+ | 2.2+ |
| 2001 10 11 | 704 | 0.1+ | 0.4+ | 2003 02 28 | 704 | 0.1+ | 0.4+ | 2006 11 25 | 704 | 1.6+ | 0.9− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.4− | 0.6+ | 2003 02 28 | 704 | 0.0 | 0.6+ | 2006 11 25 | 704 | 0.1− | 0.5− |
| 2001 10 19 | 699 | 0.1+ | 1.0+ | 2003 03 08 | 644 | 0.5+ | 0.1+ | 2006 11 25 | 704 | 0.6− | 0.4− |
| 2001 10 19 | 699 | 0.6− | 0.2− | 2003 03 08 | 644 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.2− |
| 2001 10 19 | 699 | (0.0 | 1.5+) | 2003 03 08 | 644 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2001 10 19 | 699 | 0.3+ | 0.9− | 2003 04 06 | 699 | 0.2+ | 0.9+ | 2006 11 28 | 704 | 0.6− | 0.5− |
| 2001 10 23 | 644 | 0.4− | 0.8+ | 2003 04 06 | 699 | 0.4− | 0.8+ | 2006 11 28 | 704 | 0.4− | 0.3− |
| 2001 10 23 | 644 | 0.5− | 0.6+ | 2003 04 06 | 699 | 0.6+ | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.2+ |
| 2001 10 23 | 644 | 0.7− | 0.6+ | 2003 04 06 | 699 | 0.6+ | 0.7+ | | | | |

**(139784)∗ 2001 RW**

Discovered 2001 Sept. 8 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 74.56997 | | (2000.0) | | | |
| $n$ | 0.22601398 | $\omega$ | 129.52693 | | +0.77199135 | +0.63402135 |
| $a$ | 2.6691881 | $\Omega$ | 191.37316 | | −0.63051354 | +0.75481779 |
| $e$ | 0.0986333 | $i$ | 13.26132 | | −0.08051106 | +0.16812799 |
| $P$ | 4.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.3− | 0.6+ | 2001 09 20 | 645 | 0.0 | 0.1− | 2004 03 27 | 704 | (1.6+ | 1.7+) |
| 2000 04 27 | 699 | 0.6+ | 1.9+ | 2001 09 20 | 645 | 0.0 | 0.1− | 2004 03 27 | 704 | 1.0+ | 0.7+ |
| 2000 04 27 | 704 | 0.3− | 0.3+ | 2001 09 25 | 644 | 0.1+ | 0.4+ | 2004 04 12 | 703 | (1.7+ | 0.8+) |
| 2000 04 27 | 699 | 0.2− | 0.1+ | 2001 09 25 | 644 | 0.1+ | 0.9+ | 2004 04 12 | 703 | (2.0+ | 0.1−) |
| 2000 04 27 | 704 | 0.6+ | 0.9+ | 2001 09 25 | 644 | 0.0 | 0.6+ | 2004 04 12 | 703 | (0.1+ | 1.6+) |
| 2000 04 27 | 699 | 0.1− | 1.1+ | 2001 10 14 | 704 | 0.6− | 1.3+ | 2004 04 12 | 703 | 0.2− | 0.8+ |
| 2000 04 27 | 704 | 0.2− | 1.3+ | 2001 10 14 | 704 | 0.2− | 0.9+ | 2004 04 25 | 691 | 0.0 | 0.2+ |
| 2000 04 27 | 704 | 0.8+ | 0.3− | 2001 10 14 | 704 | 0.6− | 0.5+ | 2004 04 25 | 691 | 0.3− | 0.0 |
| 2000 04 27 | 704 | 0.6− | 0.3+ | 2001 10 14 | 704 | 0.4− | 0.2+ | 2004 04 25 | 691 | 0.3+ | 0.4+ |
| 2001 06 21 | 644 | 0.1− | 1.1+ | 2001 10 19 | 644 | 1.0− | 0.1+ | 2005 06 09 | 704 | 0.6− | 0.2− |
| 2001 06 21 | 644 | 0.5− | 0.6+ | 2001 10 19 | 644 | 1.0− | 0.2+ | 2005 06 09 | 704 | 0.3+ | 0.0 |
| 2001 06 21 | 644 | 0.7− | 0.9+ | 2001 10 19 | 644 | 1.2− | 0.0 | 2005 06 09 | 704 | 0.5+ | 0.2+ |
| 2001 08 25 | 704 | 0.6+ | 0.8+ | 2001 10 21 | 704 | 0.3− | 0.5− | 2005 06 09 | 704 | 0.2− | 0.1+ |
| 2001 08 25 | 704 | 0.6+ | 0.6+ | 2001 10 21 | 704 | 0.1+ | 0.6− | 2006 09 18 | 703 | 1.3− | 1.4− |
| 2001 08 25 | 704 | 0.5+ | 0.3+ | 2001 10 21 | 704 | 0.3− | 0.7− | 2006 09 18 | 703 | 1.2+ | 1.2+ |
| 2001 08 25 | 704 | 0.4+ | 0.2+ | 2001 10 21 | 704 | 0.5− | 0.6− | 2006 09 18 | 703 | 0.5+ | 0.6− |
| 2001 08 25 | 704 | 0.6+ | 0.1− | 2001 10 21 | 704 | 0.0 | 1.2− | 2006 09 18 | 703 | 0.7− | 0.1− |
| 2001 09 07 | 683 | (2.8− | 0.1−) | 2003 01 02 | 704 | (1.9+ | 0.6+) | 2006 10 01 | 703 | 0.7− | 0.4+ |
| 2001 09 07 | 683 | 0.9− | 0.7− | 2003 01 02 | 704 | 0.6+ | 0.6+ | 2006 10 01 | 703 | 0.1+ | 1.0+ |
| 2001 09 07 | 683 | (1.9− | 1.6−) | 2003 01 02 | 704 | 0.4− | 0.7+ | 2006 10 01 | 703 | 1.3+ | 0.7+ |
| 2001 09 08 | 704 | 0.0 | 0.2+ | 2003 01 02 | 704 | 0.0 | 0.6− | 2006 10 01 | 703 | 0.5+ | 1.5+ |
| 2001 09 08 | 704 | 0.1+ | 0.8+ | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.9+ | 0.6− |
| 2001 09 08 | 704 | 0.2− | 0.8+ | 2004 03 13 | 644 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.7+ |
| 2001 09 08 | 704 | 0.0 | 0.9+ | 2004 03 13 | 644 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 1.0+ | 1.4+ |
| 2001 09 08 | 683 | 1.1− | 0.8+ | 2004 03 15 | 703 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.9+ |
| 2001 09 08 | 704 | 0.3+ | 1.0+ | 2004 03 15 | 703 | 1.2+ | 0.8− | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2001 09 08 | 683 | 1.2+ | 0.1− | 2004 03 15 | 703 | 0.6− | 0.2− | 2006 10 22 | 703 | 0.4− | 1.4+ |
| 2001 09 08 | 683 | (1.1− | 3.8+) | 2004 03 15 | 703 | 0.5+ | 0.6+ | 2006 10 22 | 703 | 1.2− | 0.9+ |
| 2001 09 15 | 644 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.3− | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2001 09 15 | 644 | 0.1+ | 0.2+ | 2004 03 16 | 704 | 0.2− | 0.1+ | 2006 10 30 | 703 | 0.5+ | 0.1+ |
| 2001 09 15 | 644 | 0.1+ | 0.1+ | 2004 03 16 | 704 | 1.3− | 0.3+ | 2006 10 30 | 703 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.3− | 2006 10 30 | 703 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.7+ | 0.2+ | 2006 10 30 | 703 | 1.1− | 0.3+ |
| 2001 09 16 | 704 | 0.7+ | 0.9+ | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.2− |
| 2001 09 16 | 704 | 0.2+ | 0.6+ | 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 11 13 | 703 | 0.7− | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 1.2− | 0.6+ | 2006 11 13 | 703 | 0.7+ | 0.7− |
| 2001 09 20 | 704 | 1.2+ | 0.7+ | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.6+ |
| 2001 09 20 | 704 | 0.6+ | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.8+ | 2006 11 19 | 703 | 1.0+ | 0.5− |
| 2001 09 20 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 11 19 | 703 | (1.1+ | 1.7+) |
| 2001 09 20 | 704 | 0.7+ | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 1.0− | 1.3+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.5+ | 1.2+ | 2006 11 19 | 703 | 0.1+ | 1.0+ |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.8+ | | | | |

**(139785)∗ 2001 RL$_3$**

Discovered 2001 Sept. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 114.48488 | | (2000.0) | | | |
| $n$ | 0.23246603 | $\omega$ | 73.80423 | | +0.07398955 | +0.99271775 |
| $a$ | 2.6195683 | $\Omega$ | 201.14289 | | −0.98568610 | +0.05831774 |
| $e$ | 0.2185487 | $i$ | 15.28116 | | −0.15148746 | +0.10540645 |
| $P$ | 4.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.2− | 0.0 | 2001 09 16 | 704 | 0.1− | 0.7+ | 2004 02 19 | 704 | (2.2+ | 0.4+) |
| 2000 03 09 | 704 | 0.8+ | 0.8+ | 2001 09 16 | 704 | 0.2+ | 0.9+ | 2004 02 19 | 704 | 1.3+ | 0.6− |
| 2000 03 09 | 704 | 0.0 | 1.7+ | 2001 09 16 | 704 | 0.1− | 0.9+ | 2004 02 19 | 704 | (2.0+ | 0.2−) |
| 2000 03 09 | 704 | 0.9− | 0.1− | 2001 09 21 | 699 | 0.6+ | 0.8+ | 2004 03 16 | 704 | 0.1+ | 0.2− |
| 2000 03 09 | 704 | 0.1− | 1.7+ | 2001 09 21 | 699 | 1.1+ | 0.3+ | 2004 03 16 | 704 | 0.4+ | 0.3+ |
| 2000 04 04 | 704 | 0.2− | 0.1− | 2001 09 21 | 699 | 1.3+ | 0.1+ | 2004 03 16 | 704 | 0.8+ | 0.8− |
| 2000 04 04 | 704 | 1.0+ | 0.8+ | 2001 09 21 | 699 | 0.4− | 0.1+ | 2005 07 27 | 160 | 0.2− | 0.9− |
| 2000 04 04 | 704 | 1.1+ | 0.5+ | 2001 09 25 | 704 | 0.7+ | 1.1+ | 2005 07 27 | 160 | 0.0 | 0.6− |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2001 09 25 | 704 | 0.1+ | 1.1+ | 2005 07 27 | 160 | 0.2+ | 0.1− |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2001 09 25 | 704 | 0.0 | 1.1+ | 2005 07 29 | 704 | 0.2+ | 0.8+ |
| 2001 08 03 | 644 | 0.1− | 0.1+ | 2001 09 25 | 704 | 1.0+ | 0.1+ | 2005 07 29 | 704 | 1.0− | 0.4− |
| 2001 08 03 | 644 | 0.1− | 0.1+ | 2001 09 25 | 704 | 0.2− | 0.8+ | 2005 07 29 | 704 | 0.6+ | 0.9+ |
| 2001 08 03 | 644 | 0.2− | 0.4+ | 2001 10 05 | 644 | (0.3+ | 1.6−) | 2005 07 29 | 704 | 0.7+ | 1.2+ |
| 2001 08 18 | 699 | 0.6+ | 0.3− | 2001 10 05 | 644 | (0.5+ | 1.5−) | 2005 07 30 | 160 | 0.2− | 0.8− |
| 2001 08 18 | 699 | 0.1+ | 0.8+ | 2001 10 05 | 644 | (0.3− | 1.5−) | 2005 08 05 | 160 | 0.3− | 0.9+ |
| 2001 08 18 | 699 | 0.2− | 0.3+ | 2001 10 15 | 645 | 0.1− | 0.2− | 2005 08 05 | 160 | 0.5− | 0.6− |
| 2001 08 18 | 699 | 0.0 | 0.1+ | 2001 10 15 | 645 | 0.2− | 0.2− | 2005 08 05 | 160 | 0.3+ | 0.4− |
| 2001 09 08 | 699 | 0.5+ | 0.3− | 2001 10 16 | 704 | (0.4− | 1.7+) | 2006 10 30 | 703 | 0.1+ | 0.0 |
| 2001 09 08 | 699 | 0.1+ | 0.2+ | 2001 10 16 | 704 | (1.8+ | 1.4+) | 2006 10 30 | 703 | (1.6− | 0.0 ) |
| 2001 09 08 | 699 | 0.6+ | 0.3+ | 2001 10 16 | 704 | 0.7+ | 0.9+ | 2006 10 30 | 703 | 0.5+ | 0.7+ |
| 2001 09 08 | 699 | 0.5+ | 0.3+ | 2001 10 16 | 704 | (0.8+ | 2.0+) | 2006 10 30 | 703 | 1.1− | 0.2+ |
| 2001 09 09 | 699 | 0.2− | 0.0 | 2004 01 28 | 704 | 0.7+ | 0.4− | 2006 11 13 | 703 | 0.2− | 0.8− |
| 2001 09 09 | 699 | 0.2− | 0.2+ | 2004 01 28 | 704 | 0.4+ | 1.4+ | 2006 11 13 | 703 | 0.3− | 0.6+ |
| 2001 09 09 | 699 | 0.2− | 0.2− | 2004 01 28 | 704 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2001 09 09 | 699 | 0.2− | 0.2+ | 2004 01 28 | 704 | 1.1− | 0.9− | 2006 11 13 | 703 | 1.0− | 0.3+ |
| 2001 09 15 | 644 | 0.1− | 0.9+ | 2004 01 28 | 704 | 0.6+ | 0.7+ | 2006 11 19 | 703 | 0.4+ | 0.2− |
| 2001 09 15 | 644 | 0.7− | 0.4+ | 2004 01 29 | 699 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.5+ | 0.5− |
| 2001 09 15 | 644 | 0.8− | 0.6+ | 2004 01 29 | 699 | 0.6+ | 0.4+ | 2006 11 19 | 703 | 0.9− | 1.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.8+ | 2004 01 29 | 699 | 0.5+ | 1.2+ | 2006 11 19 | 703 | 0.4− | 0.0 |
| 2001 09 16 | 704 | 0.0 | 1.2+ | 2004 01 29 | 699 | (1.9− | 0.9+) | | | | |

**(139786)∗ 2001 RU$_3$ = 2001 PH$_{64}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 113.86058 | | (2000.0) | | | |
| $n$ | 0.22893899 | $\omega$ | 299.40358 | | +0.06817736 | +0.99512929 |
| $a$ | 2.6464044 | $\Omega$ | 334.21228 | | −0.84923512 | +0.02043125 |
| $e$ | 0.1545743 | $i$ | 9.41972 | | −0.52359485 | +0.09643783 |
| $P$ | 4.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 0.5− | 1.3+ | 2001 09 20 | 704 | 0.5+ | 1.3+ | 2004 03 23 | 704 | 0.1− | 0.3− |
| 2001 07 19 | 699 | 0.5− | 0.1+ | 2001 09 20 | 704 | 0.1+ | 1.0+ | 2004 03 26 | 691 | 0.0 | 0.4+ |
| 2001 07 19 | 699 | 1.2− | 1.2+ | 2001 09 22 | 704 | 0.8− | 0.8+ | 2004 03 26 | 691 | 0.5+ | 0.1− |
| 2001 07 19 | 699 | (0.5− | 1.7+) | 2001 09 22 | 704 | 0.4+ | 0.9+ | 2004 03 26 | 691 | 0.1+ | 0.3+ |
| 2001 08 01 | 644 | 0.7− | 0.8+ | 2001 09 22 | 704 | 0.3− | 1.1+ | 2005 05 20 | E12 | 0.0 | 0.2+ |
| 2001 08 01 | 644 | 0.5− | 0.9+ | 2001 09 22 | 704 | 0.1− | 1.3+ | 2005 05 20 | E12 | 0.4+ | 0.4− |
| 2001 08 01 | 644 | 0.7− | 1.0+ | 2001 09 22 | 704 | (0.1+ | 1.7+) | 2005 05 20 | E12 | 0.0 | 0.4+ |
| 2001 08 13 | 608 | 0.3− | 0.9− | 2001 09 23 | 704 | 0.6+ | 1.1+ | 2005 05 20 | E12 | 0.9+ | 0.3− |
| 2001 08 13 | 608 | 0.1− | 0.0 | 2001 09 23 | 704 | (0.1+ | 2.0+) | 2005 07 06 | E12 | 0.2− | 0.4− |
| 2001 08 13 | 608 | 0.2− | 0.2+ | 2001 09 23 | 704 | (0.3+ | 1.6+) | 2005 07 06 | E12 | 0.2+ | 0.1+ |
| 2001 08 16 | 704 | 0.0 | 0.9+ | 2001 10 11 | 644 | 0.1− | 0.8− | 2005 07 06 | E12 | 0.1+ | 0.1− |
| 2001 08 16 | 704 | 0.9+ | 0.7− | 2001 10 11 | 644 | 0.0 | 1.2− | 2005 07 07 | 428 | 0.6+ | 0.1+ |
| 2001 08 16 | 704 | 0.3− | 1.4+ | 2001 10 11 | 644 | 0.1+ | 0.9− | 2005 07 07 | 428 | 0.6− | 0.2+ |
| 2001 08 16 | 704 | 0.9+ | 1.0+ | 2004 02 11 | 644 | 0.7+ | 0.2+ | 2005 07 17 | E12 | 0.4+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.2− | 0.2+ | 2004 02 11 | 644 | 0.4+ | 0.8+ | 2005 07 17 | E12 | 0.2+ | 0.8− |
| 2001 08 27 | 699 | 1.2− | 0.4− | 2004 02 11 | 644 | 0.4+ | 0.7+ | 2005 07 17 | E12 | 0.0 | 0.1+ |
| 2001 08 27 | 699 | 0.7− | 0.2+ | 2004 02 17 | 691 | 0.1+ | 0.4+ | 2005 07 17 | E12 | 0.1− | 0.4+ |
| 2001 08 27 | 699 | (2.0− | 0.4+) | 2004 02 17 | 691 | 0.1+ | 0.4+ | 2005 07 29 | E12 | 0.4− | 0.2+ |
| 2001 09 07 | 704 | 0.0 | 0.0 | 2004 02 17 | 691 | 0.0 | 0.5+ | 2005 07 29 | E12 | 0.3− | 0.2+ |
| 2001 09 07 | 704 | 1.4− | 1.1+ | 2004 02 18 | 291 | 0.3− | 1.1+ | 2005 07 29 | E12 | 0.1− | 0.0 |
| 2001 09 07 | 704 | 0.1+ | 0.3− | 2004 02 18 | 291 | 0.4− | 0.7+ | 2005 07 29 | E12 | 0.4− | 0.7+ |
| 2001 09 07 | 704 | 1.2− | 0.3− | 2004 02 18 | 291 | 0.5− | 0.5+ | 2005 08 27 | 644 | 0.7− | 0.2+ |
| 2001 09 07 | 699 | 0.4+ | 0.2+ | 2004 02 26 | 704 | 1.4+ | 0.0 | 2005 08 27 | 644 | 0.0 | 0.1+ |
| 2001 09 07 | 699 | (2.3− | 0.9−) | 2004 02 26 | 704 | (1.6+ | 0.3+) | 2005 08 27 | 644 | 0.1+ | 0.1+ |
| 2001 09 07 | 699 | 0.7− | 0.0 | 2004 02 26 | 704 | 1.1+ | 0.4− | 2006 11 02 | G96 | 0.2− | 0.0 |
| 2001 09 07 | 699 | 0.7− | 0.6+ | 2004 02 26 | 704 | 1.3+ | 0.5+ | 2006 11 02 | G96 | 0.6+ | 0.2− |
| 2001 09 09 | 704 | 0.0 | 0.7+ | 2004 02 26 | 704 | (1.7+ | 0.1+) | 2006 11 02 | G96 | 0.4+ | 0.1− |
| 2001 09 09 | 704 | 0.1+ | 1.0+ | 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 11 02 | G96 | 0.3− | 0.0 |
| 2001 09 09 | 704 | 0.4− | 0.4+ | 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 11 15 | 703 | 1.2+ | 0.4− |
| 2001 09 09 | 704 | 0.9− | 1.2− | 2004 03 17 | 691 | 0.3+ | 0.1− | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2001 09 09 | 704 | 0.3− | 0.1+ | 2004 03 20 | 704 | 0.9+ | 0.4− | 2006 11 15 | 703 | 0.4− | 0.7+ |
| 2001 09 12 | 704 | 0.9− | 1.4+ | 2004 03 20 | 704 | (1.8+ | 0.1−) | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2001 09 12 | 704 | (0.0 | 2.3+) | 2004 03 20 | 704 | (1.8+ | 0.1+) | 2006 11 21 | 703 | 0.2− | 0.4− |
| 2001 09 12 | 704 | (0.6− | 2.8+) | 2004 03 20 | 704 | 1.0+ | 0.0 | 2006 11 21 | 703 | 0.4+ | 0.1+ |
| 2001 09 12 | 704 | (0.5+ | 2.3+) | 2004 03 23 | 704 | 1.2+ | 0.8+ | 2006 11 21 | 703 | 0.9− | 0.6+ |
| 2001 09 20 | 704 | (0.6+ | 1.7+) | 2004 03 23 | 704 | 0.3+ | 0.1+ | 2006 11 21 | 703 | 0.3− | 0.4− |
| 2001 09 20 | 704 | 0.5+ | 1.1+ | 2004 03 23 | 704 | 0.4+ | 0.2+ | | | | |
| 2001 09 20 | 704 | (0.1+ | 1.6+) | 2004 03 23 | 704 | 0.6+ | 0.0 | | | | |

**(139787)∗ 2001 RY$_3$ = 1999 CC$_{150}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.33733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21912146 | $\omega$ | 277.29882 | | +0.10391162 | −0.99318620 | |
| $a$ | 2.7248720 | $\Omega$ | 166.39418 | | +0.97788606 | +0.09234278 | |
| $e$ | 0.1401530 | $i$ | 12.96040 | | +0.18149717 | +0.07109131 | |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 691 | 0.4− | 0.7− | 2001 09 19 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.6− | 0.7− |
| 1999 02 13 | 691 | 0.2− | 0.5− | 2001 09 19 | 645 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.7+ | 0.8− |
| 1999 02 13 | 691 | 1.5− | 0.9− | 2001 09 19 | 645 | 0.0 | 0.3− | 2006 09 30 | 699 | 0.4− | 0.2− |
| 1999 02 14 | 691 | 0.1− | 0.3− | 2001 09 21 | 704 | 0.9+ | 0.7− | 2006 09 30 | 703 | 0.6− | 0.6− |
| 1999 02 14 | 691 | 0.0 | 0.6− | 2001 09 21 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 699 | 0.6− | 0.6− |
| 1999 02 14 | 691 | 0.1− | 0.5− | 2001 09 21 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 699 | 0.1+ | 0.1− |
| 2001 05 22 | 807 | 0.1− | 0.0 | 2001 09 21 | 704 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 05 22 | 807 | 0.3− | 0.2− | 2002 12 14 | 704 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 08 23 | 699 | 0.6− | 0.5− | 2002 12 14 | 704 | 0.1− | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 08 23 | 699 | 0.9+ | 0.6+ | 2002 12 14 | 704 | (0.5+ | 1.7+) | 2006 10 16 | 703 | 0.4− | 0.9− |
| 2001 08 23 | 699 | 0.1− | 0.5+ | 2003 01 02 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2001 08 23 | 699 | 0.3− | 0.4+ | 2003 01 02 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 2001 09 07 | 704 | 0.4+ | 0.3− | 2003 01 02 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.8− |
| 2001 09 07 | 704 | 0.8+ | 0.4+ | 2003 01 02 | 704 | 0.1+ | 0.9+ | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 2001 09 07 | 704 | (0.1− | 1.7+) | 2003 01 04 | 704 | 0.8+ | 0.1− | 2006 10 28 | 703 | 0.9− | 0.5− |
| 2001 09 09 | 704 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.6+ | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2001 09 09 | 704 | (1.7+ | 0.7+) | 2003 01 04 | 704 | 1.0+ | 0.4+ | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2001 09 09 | 704 | 0.7+ | 0.9+ | 2003 01 04 | 704 | 0.4+ | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2003 01 28 | 704 | 1.1+ | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2003 01 28 | 704 | 0.8+ | 1.3+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.3+ | 0.9+ | 2003 01 28 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 704 | 0.1− | 0.7− |
| 2001 09 12 | 704 | 0.1− | 1.3+ | 2004 05 10 | 608 | (2.2+ | 0.7−) | 2006 11 10 | 704 | 0.0 | 0.6− |
| 2001 09 12 | 704 | 0.0 | 1.2+ | 2004 05 10 | 608 | 1.3+ | 0.1− | 2006 11 10 | 704 | 0.8− | 0.6− |
| 2001 09 18 | 691 | 0.1− | 0.2+ | 2004 05 10 | 608 | 1.4+ | 0.8− | 2006 11 10 | 704 | 0.3− | 0.5− |
| 2001 09 18 | 691 | 0.3− | 0.4− | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 11 10 | 704 | 0.0 | 0.5− |
| 2001 09 18 | 691 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.4− | 1.0+ | 2006 11 16 | 703 | 0.7+ | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.5+ | 0.1− | 2006 11 16 | 703 | 0.4+ | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.6− | 2006 11 16 | 703 | 0.6+ | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 09 30 | 699 | 0.8− | 0.7− | | | | |

**(139788)∗ 2001 RA$_4$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.40105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21346174 | $\omega$ | 96.47262 | | +0.62493391 | −0.76463831 | |
| $a$ | 2.7728265 | $\Omega$ | 313.57603 | | +0.60242336 | +0.60059736 | |
| $e$ | 0.2068456 | $i$ | 12.55131 | | +0.49653168 | +0.23369009 | |
| $P$ | 4.62 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 28 | 699 | (0.2+ | 1.7+) | 2002 12 31 | 704 | 0.0 | 0.3− | 2004 04 14 | 644 | 0.1+ | 0.3+ |
| 2001 06 28 | 699 | 0.1+ | 0.7+ | 2002 12 31 | 704 | 0.2− | 0.1− | 2004 04 22 | E12 | 0.3+ | 1.4+ |
| 2001 06 28 | 699 | 0.4+ | 0.4+ | 2003 01 05 | 704 | 0.0 | 0.0 | 2004 04 22 | E12 | 0.1− | 1.0+ |
| 2001 06 28 | 699 | (2.2− | 0.7−) | 2003 01 05 | 704 | 0.3+ | 0.1− | 2004 04 22 | E12 | (1.0− | 2.6+) |
| 2001 07 16 | 699 | 0.5− | 0.8+ | 2003 01 05 | 704 | 0.2+ | 0.7− | 2004 04 22 | E12 | (0.2+ | 1.7+) |
| 2001 07 16 | 699 | 0.3− | 1.1+ | 2003 01 05 | 704 | 0.3+ | 0.8− | 2004 04 25 | 704 | 0.1+ | 0.7− |
| 2001 07 16 | 699 | (2.5− | 0.8−) | 2003 01 05 | 704 | 0.1− | 0.1+ | 2004 04 25 | 704 | 0.4+ | 0.2+ |
| 2001 07 16 | 699 | 0.2+ | 1.1− | 2003 01 09 | 704 | 0.0 | 0.3+ | 2004 04 25 | 704 | 0.2− | 0.6− |
| 2001 08 15 | 608 | 0.9− | 0.4+ | 2003 01 09 | 704 | 0.2− | 0.2+ | 2006 08 24 | 704 | 0.6+ | 0.7+ |
| 2001 08 15 | 608 | 1.1− | 0.4+ | 2003 01 09 | 704 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.2+ | 0.1+ |
| 2001 08 15 | 608 | 0.9− | 0.5+ | 2003 01 09 | 704 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.3+ | 0.2+ |
| 2001 08 21 | 704 | (1.0− | 2.1+) | 2003 01 09 | 704 | 0.0 | 0.1− | 2006 08 24 | 704 | 0.5+ | 0.5+ |
| 2001 08 21 | 704 | 0.0 | 0.7+ | 2003 01 12 | 704 | 0.4− | 0.6− | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 2001 08 21 | 704 | 0.3+ | 0.6− | 2003 01 12 | 704 | 0.4− | 0.5− | 2006 09 17 | 703 | 0.4− | 0.7+ |
| 2001 09 08 | 704 | (1.6+ | 0.5−) | 2003 01 12 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.4+ | 0.0 |
| 2001 09 08 | 704 | (1.9+ | 0.1+) | 2003 01 12 | 704 | 0.2− | 0.5− | 2006 09 17 | 703 | 1.4+ | 0.7− |
| 2001 09 08 | 704 | 1.5+ | 1.2− | 2003 01 12 | 704 | 0.5+ | 0.1− | 2006 09 20 | 704 | 0.1− | 0.2− |
| 2001 09 08 | 704 | (1.8+ | 0.7−) | 2003 01 14 | 608 | (1.6− | 0.5−) | 2006 09 20 | 704 | 0.5− | 0.1+ |
| 2001 09 09 | 699 | 0.4− | 0.4+ | 2003 01 14 | 608 | 0.1+ | 0.8− | 2006 09 20 | 704 | 0.5− | 0.1+ |
| 2001 09 09 | 699 | 0.4− | 0.7+ | 2003 01 14 | 608 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.3− | 0.8− |
| 2001 09 09 | 699 | 0.4− | 0.2− | 2003 01 27 | 699 | 0.6− | 0.3+ | 2006 09 20 | 704 | 0.8− | 0.3+ |
| 2001 09 09 | 699 | 0.2+ | 0.7+ | 2003 01 27 | 699 | 0.9− | 1.0− | 2006 09 28 | 703 | 0.0 | 0.5− |
| 2001 09 09 | 704 | 0.0 | 0.1− | 2003 01 27 | 699 | 0.5− | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.2− |
| 2001 09 09 | 704 | 0.6− | 0.7+ | 2003 01 27 | 699 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.2− |
| 2001 09 09 | 704 | 0.7− | 0.5− | 2003 01 27 | 608 | 0.2+ | 0.5− | 2006 09 28 | 703 | 0.2+ | 0.5− |
| 2001 09 09 | 704 | 0.3− | 0.0 | 2003 01 27 | 608 | 0.2+ | 0.7− | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.4+ | 0.6− | 2003 01 27 | 608 | 0.4+ | 0.5− | 2006 10 01 | 704 | 0.4− | 0.1+ |
| 2001 09 12 | 704 | 0.1+ | 0.0 | 2003 01 28 | 858 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.8− | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.8+ | 2003 01 28 | 858 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.7− | 0.0 |
| 2001 09 20 | 704 | (0.6− | 2.2−) | 2003 01 28 | 858 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 0.0 | 2003 01 30 | 644 | 0.0 | 1.0+ | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 1.0+ | 0.1− | 2003 01 30 | 644 | 0.2+ | 1.0+ | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2003 01 30 | 644 | 0.2+ | 0.9+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2002 10 08 | 699 | 0.1− | 0.1+ | 2003 02 01 | 333 | 0.3− | 0.0 | 2006 10 20 | 704 | 0.5+ | 0.4+ |
| 2002 10 08 | 699 | (0.3− | 1.6−) | 2003 02 01 | 333 | 0.8+ | 0.9− | 2006 10 20 | 704 | 0.1− | 0.2+ |
| 2002 10 08 | 699 | 0.8− | 0.1+ | 2003 02 01 | 333 | 1.4− | 0.5− | 2006 10 20 | 704 | 0.6− | 0.0 |
| 2002 10 08 | 699 | 0.2− | 0.5+ | 2003 02 01 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 704 | 0.1+ | 1.1− |
| 2002 11 14 | 704 | 1.4+ | 0.6− | 2003 02 01 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 704 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 1.3− | 0.9− | 2003 02 01 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2002 11 14 | 704 | (1.2+ | 2.0−) | 2003 02 01 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2002 11 14 | 704 | 0.4− | 0.2+ | 2003 02 01 | 704 | 0.7+ | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 1.1+ | 0.5− | 2003 02 07 | 704 | 0.3+ | 1.0+ | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2002 11 16 | 699 | 0.5− | 0.6+ | 2003 02 07 | 704 | (0.5− | 2.0+) | 2006 11 15 | 703 | 0.5+ | 0.3− |
| 2002 11 16 | 699 | 0.2− | 0.0 | 2003 02 07 | 704 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.4+ | 0.4− |
| 2002 11 16 | 699 | 0.2+ | 0.5+ | 2003 02 07 | 704 | 0.5− | 1.3+ | 2006 11 15 | 703 | 0.8+ | 0.2− |
| 2002 11 16 | 699 | 0.2+ | 0.7+ | 2003 02 08 | 704 | 0.7− | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.6− |
| 2002 11 21 | 644 | 0.5− | 0.9− | 2003 02 08 | 704 | 1.2− | 0.7+ | 2006 11 16 | 704 | 1.1+ | 1.3+ |
| 2002 11 21 | 644 | 0.1− | 0.9− | 2003 02 08 | 704 | 0.5− | 0.5+ | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2002 11 21 | 644 | 0.1+ | 0.6− | 2003 02 08 | 704 | 1.0− | 0.9+ | 2006 11 16 | 704 | (1.3+ | 1.9−) |
| 2002 12 11 | 644 | 1.1+ | 0.2+ | 2003 02 08 | 704 | 1.2− | 0.3+ | 2006 11 16 | 704 | 0.4− | 1.1− |
| 2002 12 11 | 644 | 1.0+ | 0.1+ | 2003 02 17 | 608 | (0.7− | 2.3+) | 2006 11 22 | 703 | 0.0 | 0.3− |
| 2002 12 11 | 644 | 0.6+ | 0.3+ | 2003 02 17 | 608 | (0.7− | 2.0+) | 2006 11 22 | 703 | 0.0 | 0.5− |
| 2002 12 19 | 644 | (1.2+ | 1.8+) | 2003 02 17 | 608 | (0.9− | 2.3+) | 2006 11 22 | 703 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 19 | 644 | 0.7+ | 1.3+ | 2003 02 28 | 608 | 0.1+ | 0.3− | 2006 11 22 | 703 | 0.2+ | 0.3− |
| 2002 12 19 | 644 | 0.5+ | 1.3+ | 2003 02 28 | 608 | 0.1+ | 0.4− | 2006 11 28 | 704 | 1.1− | 1.2+ |
| 2002 12 28 | 699 | 0.8+ | 0.6+ | 2003 02 28 | 608 | 0.1− | 0.6− | 2006 11 28 | 704 | 2.6− | 0.1− |
| 2002 12 28 | 699 | 0.2+ | 0.4+ | 2003 03 08 | 704 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.8+ | 0.0 |
| 2002 12 28 | 699 | 0.1− | 0.5+ | 2003 03 08 | 704 | 1.4+ | 0.2+ | 2006 11 28 | 704 | 1.0+ | 0.0 |
| 2002 12 28 | 699 | 0.5+ | 0.3+ | 2003 03 08 | 704 | 0.7+ | 0.6− | 2006 12 01 | 704 | 0.4− | 1.4+ |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2003 03 08 | 704 | 0.1+ | 0.7− | 2006 12 01 | 704 | 0.3+ | 0.3+ |
| 2002 12 31 | 704 | 0.2+ | 0.2− | 2004 04 14 | 644 | 0.0 | 0.6+ | 2006 12 01 | 704 | 0.1− | 1.0+ |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2004 04 14 | 644 | 0.3+ | 0.3+ | 2006 12 01 | 704 | 0.2− | 1.1+ |

**(139789)∗ 2001 RK$_5$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.64646 | | (2000.0) | | | |
| $n$ | 0.20337654 | $\omega$ | 93.76819 | | +0.67478121 | +0.73591215 |
| $a$ | 2.8637525 | $\Omega$ | 218.86124 | | −0.70746352 | +0.62350410 |
| $e$ | 0.0674839 | $i$ | 5.09401 | | −0.21015636 | +0.26396201 |
| $P$ | 4.85 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 1.0− | 2.4− | 2001 09 23 | 704 | 0.1+ | 0.2+ | 2006 08 29 | 699 | 0.2− | 0.3+ |
| 1977 10 16 | 675 | 0.8+ | 2.1− | 2001 09 23 | 704 | 0.8+ | 0.1− | 2006 08 29 | 699 | 1.4+ | 0.9− |
| 1977 10 17 | 675 | 0.7+ | 0.7− | 2001 09 23 | 704 | 0.5+ | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.3+ |
| 1977 10 17 | 675 | 1.6+ | 0.1+ | 2001 09 23 | 704 | 0.6+ | 0.1+ | 2006 09 06 | 644 | 0.4+ | 0.1+ |
| 2001 08 17 | 704 | 0.8− | 0.5− | 2001 09 23 | 704 | 0.7+ | 0.1+ | 2006 09 06 | 644 | 0.1+ | 0.2+ |
| 2001 08 17 | 704 | 0.0 | 0.3+ | 2001 09 23 | 704 | 0.5+ | 0.1− | 2006 09 17 | 703 | 0.4− | 0.1+ |
| 2001 08 17 | 704 | 0.3− | 0.1− | 2001 09 23 | 704 | 1.1+ | 0.5− | 2006 09 17 | 703 | 0.8− | 0.3+ |
| 2001 08 27 | 699 | 0.2+ | 0.5+ | 2001 09 23 | 704 | 0.7+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 08 27 | 699 | 0.5− | 0.1+ | 2001 09 23 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 08 27 | 699 | 1.1− | 0.4− | 2001 09 23 | 704 | 0.6+ | 0.1− | 2006 09 17 | 703 | 0.7− | 0.0 |
| 2001 08 27 | 699 | 0.5+ | 0.8− | 2001 09 24 | 704 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.0 |
| 2001 09 08 | 704 | 1.4− | 0.2+ | 2001 09 24 | 704 | (1.6+ | 0.6+) | 2006 09 17 | 703 | 0.7− | 0.2+ |
| 2001 09 08 | 704 | 0.3+ | 0.9+ | 2001 09 24 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 1.3+ | 0.6− |
| 2001 09 08 | 704 | 0.0 | 0.3+ | 2001 09 24 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 691 | (1.1+ | 2.1−) |
| 2001 09 08 | 704 | 0.2+ | 0.8+ | 2001 09 24 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2001 09 09 | 704 | 0.0 | 1.0+ | 2001 09 26 | 699 | (2.2+ | 0.5−) | 2006 09 25 | 704 | 0.7− | 1.0+ |
| 2001 09 09 | 704 | 0.5+ | 0.3+ | 2001 09 26 | 699 | 0.8+ | 0.6− | 2006 09 25 | 704 | 1.0− | 0.6+ |
| 2001 09 09 | 704 | 0.1− | 0.0 | 2001 09 26 | 699 | 0.5+ | 0.3− | 2006 09 25 | 704 | (0.3+ | 1.7−) |
| 2001 09 09 | 704 | 0.1+ | 1.5+ | 2001 09 26 | 699 | 0.6− | 0.7+ | 2006 09 25 | 704 | (2.2− | 0.7+) |
| 2001 09 16 | 704 | 0.5+ | 0.8+ | 2001 10 14 | 704 | 1.1− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.4+ | 0.2+ | 2001 10 14 | 704 | 0.9− | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.1− | 0.1+ | 2001 10 14 | 704 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2001 10 14 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.5+ | 0.6+ |
| 2001 09 16 | 704 | 0.2− | 0.1− | 2001 10 16 | 704 | 0.6+ | 0.1− | 2006 09 29 | 704 | 0.4+ | 0.7+ |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2001 10 16 | 704 | 1.1+ | 0.7+ | 2006 09 29 | 704 | 0.9+ | 0.9− |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2001 10 16 | 704 | 1.3− | 0.3− | 2006 09 29 | 704 | 1.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2001 10 16 | 704 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2001 10 16 | 704 | 0.4+ | 0.7− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2001 10 21 | 704 | 0.9− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.0 | 2001 10 21 | 704 | (0.1+ | 2.2+) | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 10 21 | 704 | (1.0− | 2.2+) | 2006 10 17 | 703 | 0.1+ | 0.7+ |
| 2001 09 20 | 704 | 0.6− | 0.3+ | 2001 10 21 | 704 | 0.7+ | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2001 11 18 | 645 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.9− |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2001 11 18 | 645 | 0.1− | 0.1− | 2006 10 17 | 703 | 1.2− | 0.8+ |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2001 12 10 | 645 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 09 20 | 704 | 0.3− | 0.5− | 2001 12 10 | 645 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 0.2− | 2004 02 14 | 644 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2004 02 14 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2004 02 14 | 644 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2001 09 21 | 644 | 0.2+ | 0.5− | 2004 03 13 | 644 | 0.0 | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 09 21 | 644 | 0.1− | 1.1− | 2004 03 13 | 644 | 0.2+ | 0.8+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 09 21 | 644 | 0.1+ | 1.0− | 2004 03 13 | 644 | 0.2+ | 1.1+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2001 09 22 | 704 | 1.1+ | 0.5− | 2004 03 20 | 704 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.5+ | 0.5− | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 1.0+ | 0.3− | 2004 03 20 | 704 | 0.7− | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.6+ |
| 2001 09 22 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 1.0+ | 0.2− | 2006 11 06 | 644 | 0.2− | 0.5+ |
| 2001 09 22 | 704 | 0.4+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.6+ |
| 2001 09 22 | 704 | 0.1− | 0.5− | 2006 08 24 | 644 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.6+ | 0.3− | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2001 09 22 | 704 | 0.8+ | 0.6+ | 2006 08 29 | 699 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 0.3+ | 0.1− | 2006 08 29 | 699 | 0.6− | 1.4+ | 2006 11 15 | G96 | 0.0 | 0.0 |

**(139790)∗ 2001 RH$_6$**

Discovered 2001 Sept. 10 by R. Dyvig at Badlands Observatory, Quinn.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 249.64002 | | (2000.0) | | | |
| $n$ | 0.18076823 | $\omega$ | 119.23526 | | +0.11164508 | −0.98833574 |
| $a$ | 3.0978091 | $\Omega$ | 323.89283 | | +0.83981361 | +0.14955812 |
| $e$ | 0.0659194 | $i$ | 10.12293 | | +0.53127062 | −0.02872007 |
| $P$ | 5.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.3− | 0.1− | 2001 09 19 | 918 | 0.5− | 0.2− | 2004 02 26 | 704 | 0.6+ | 0.5+ |
| 2001 08 22 | 691 | 0.4− | 0.0 | 2001 09 19 | 918 | 0.5+ | 0.7− | 2004 02 26 | 704 | 0.8− | 0.4+ |
| 2001 08 22 | 691 | 0.3− | 0.0 | 2001 09 19 | 918 | 0.4+ | 0.0 | 2004 02 26 | 704 | 0.4− | 0.6− |
| 2001 08 24 | 699 | 0.3− | 0.9+ | 2001 09 19 | 918 | (1.7+ | 0.5−) | 2004 02 26 | 704 | 1.1+ | 1.3+ |
| 2001 08 24 | 699 | 0.2− | 1.1+ | 2001 09 20 | 704 | 0.1− | 0.4+ | 2004 03 31 | 413 | 0.1− | 0.3+ |
| 2001 08 24 | 699 | 1.3+ | 0.1− | 2001 09 20 | 704 | 0.4− | 0.6+ | 2004 03 31 | 413 | 0.1− | 0.6+ |
| 2001 08 24 | 699 | 0.7− | 0.2+ | 2001 09 20 | 704 | 0.3+ | 0.7+ | 2004 03 31 | 413 | 0.1− | 0.4+ |
| 2001 09 08 | 704 | 0.0 | 1.4− | 2001 09 20 | 704 | 1.1+ | 0.2+ | 2006 08 12 | 644 | 0.0 | 0.3+ |
| 2001 09 08 | 704 | 0.1+ | 0.2+ | 2001 09 23 | 704 | 0.4+ | 0.8+ | 2006 08 12 | 644 | 0.2− | 0.4+ |
| 2001 09 08 | 704 | (1.6− | 0.4−) | 2001 09 23 | 704 | 0.1− | 0.5+ | 2006 08 12 | 644 | 0.3− | 0.3+ |
| 2001 09 10 | 918 | 1.2− | 0.1− | 2001 09 23 | 704 | 0.7+ | 0.3+ | 2006 08 14 | 644 | 0.5− | 0.0 |
| 2001 09 10 | 918 | 0.6− | 0.5+ | 2001 09 23 | 704 | 1.2+ | 1.5+ | 2006 08 14 | 644 | 0.0 | 0.1− |
| 2001 09 10 | 918 | 0.2+ | 0.6+ | 2001 09 24 | 918 | 0.0 | 0.6+ | 2006 08 14 | 644 | 0.2− | 0.2+ |
| 2001 09 11 | 918 | 1.1+ | 0.0 | 2001 09 24 | 918 | 0.8− | 0.5− | 2006 08 20 | 644 | 0.2+ | 0.0 |
| 2001 09 11 | 918 | 0.7− | 0.3− | 2001 09 24 | 918 | 0.2+ | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 2001 09 11 | 918 | 0.6+ | 0.2− | 2001 09 24 | 918 | 0.5− | 0.9− | 2006 08 20 | 644 | 0.1+ | 0.6+ |
| 2001 09 11 | 918 | 1.1+ | 0.5− | 2002 12 07 | 918 | 1.0+ | 0.7+ | 2006 08 21 | 291 | 0.2+ | 0.1+ |
| 2001 09 13 | 918 | 1.4− | 1.2+ | 2002 12 07 | 918 | 0.1+ | 0.5− | 2006 08 21 | 291 | 0.2− | 0.1+ |
| 2001 09 13 | 918 | 0.4+ | 0.0 | 2002 12 07 | 918 | 1.5− | 0.8+ | 2006 08 21 | 291 | 0.0 | 0.4+ |
| 2001 09 13 | 918 | 0.8− | 0.7− | 2002 12 10 | 918 | 0.6− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.0 | 0.8− | 2002 12 10 | 918 | 0.2− | 0.7− | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2002 12 10 | 918 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2001 09 16 | 704 | 0.6+ | 0.1+ | 2002 12 11 | 918 | 0.9+ | 0.5+ | 2006 09 26 | G96 | 0.5+ | 0.0 |
| 2001 09 18 | 699 | 0.5+ | 0.3− | 2002 12 11 | 918 | (1.9− | 0.9+) | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 09 18 | 699 | 0.9− | 0.0 | 2004 02 14 | 644 | 0.9+ | 0.9+ | 2006 10 20 | G96 | 0.7− | 0.2− |
| 2001 09 18 | 699 | 0.0 | 0.7+ | 2004 02 14 | 644 | 1.0+ | 0.9+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 09 18 | 699 | 0.1+ | 0.8− | 2004 02 14 | 644 | 1.2+ | 0.9+ | 2006 10 20 | G96 | 0.1+ | 0.5− |

**(139791)∗ 2001 RR$_6$**

Discovered 2001 Sept. 10 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.72544 | | (2000.0) | | | |
| $n$ | 0.19942209 | $\omega$ | 132.89469 | | +0.66538651 | +0.74649882 |
| $a$ | 2.9014864 | $\Omega$ | 178.81687 | | −0.69253152 | +0.61756175 |
| $e$ | 0.0790537 | $i$ | 1.54809 | | −0.27867704 | +0.24770346 |
| $P$ | 4.94 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 04 | 691 | 0.3− | 0.4+ | 2001 10 17 | 644 | 0.4+ | 0.7− | 2006 09 14 | 691 | 0.1+ | 0.1+ |
| 1991 10 04 | 691 | 0.2− | 0.4+ | 2001 10 17 | 644 | 0.2+ | 0.7− | 2006 09 14 | 691 | 0.5+ | 1.0− |
| 1991 10 04 | 691 | 0.5+ | 0.0 | 2001 10 17 | 644 | 0.2+ | 0.8− | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 1999 02 14 | 691 | 0.7− | 0.7− | 2001 10 20 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 691 | 0.1+ | 0.2+ |
| 1999 02 14 | 691 | 0.7− | 0.8− | 2001 10 20 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 0.1+ | 0.4+ |
| 1999 02 14 | 691 | 0.7− | 0.7− | 2001 10 20 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 1999 03 14 | 691 | 0.6− | 0.1+ | 2001 10 20 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.3+ |
| 1999 03 14 | 691 | 0.0 | 0.3− | 2001 10 20 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 1.1+ | 0.2− |
| 1999 03 14 | 691 | 0.1+ | 0.4− | 2001 10 23 | 291 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.0 | 1.0+ |
| 1999 03 22 | 691 | 0.8+ | 0.2− | 2001 10 23 | 704 | 1.2+ | 1.4− | 2006 09 20 | 704 | 0.1− | 0.2+ |
| 1999 03 22 | 691 | 1.1+ | 0.5− | 2001 10 23 | 291 | 0.5− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.2+ |
| 1999 03 22 | 691 | 0.5+ | 0.0 | 2001 10 23 | 704 | (0.4+ | 2.1−) | 2006 09 20 | 704 | 0.6+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 23 | 691 | 0.6− | 0.3− | 2001 10 23 | 704 | (1.7+ | 0.6−) | 2006 09 20 | 704 | 0.1− | 0.6+ | | |
| 1999 03 23 | 691 | 0.7− | 0.7− | 2001 10 23 | 704 | 0.3+ | 0.5− | 2006 09 20 | 704 | 0.7− | 0.7− | | |
| 1999 03 23 | 691 | 0.7− | 0.4− | 2001 10 23 | 291 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.3+ | | |
| 1999 03 24 | 691 | 0.2+ | 0.0 | 2001 10 23 | 704 | 0.2− | 0.3− | 2006 09 20 | 644 | 0.1+ | 0.2+ | | |
| 1999 03 24 | 691 | 0.1+ | 0.2− | 2001 10 24 | 704 | 0.9− | 0.4+ | 2006 09 20 | 644 | 0.4+ | 0.0 | | |
| 1999 03 24 | 691 | 0.2− | 0.2+ | 2001 10 24 | 704 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | | |
| 2001 08 27 | 699 | 0.1+ | 0.0 | 2001 10 24 | 704 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.2− | | |
| 2001 08 27 | 699 | 0.7− | 0.4− | 2001 10 24 | 704 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1− | | |
| 2001 08 27 | 699 | 0.2+ | 0.9+ | 2004 02 19 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2001 08 27 | 699 | 1.1− | 0.1+ | 2004 02 19 | 704 | 0.3+ | 1.0+ | 2006 09 25 | G96 | 0.0 | 0.1− | | |
| 2001 09 10 | 333 | 1.1− | 0.6− | 2004 02 19 | 704 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1− | | |
| 2001 09 10 | 333 | 0.7− | 0.5− | 2004 02 19 | 704 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1− | | |
| 2001 09 11 | 333 | 0.4− | 0.6− | 2004 02 19 | 704 | 0.1+ | 0.1− | 2006 09 27 | 704 | 1.2− | 1.3+ | | |
| 2001 09 11 | 699 | 0.1− | 0.3− | 2004 02 26 | 704 | 1.2+ | 1.3+ | 2006 09 27 | 704 | 1.1− | 1.3+ | | |
| 2001 09 11 | 699 | 0.5+ | 0.3+ | 2004 02 26 | 704 | 1.0+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 1.3+ | | |
| 2001 09 11 | 333 | 0.5− | 0.3+ | 2004 02 26 | 704 | 0.9+ | 0.8+ | 2006 09 27 | 704 | 0.2− | 0.8+ | | |
| 2001 09 11 | 699 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.2− | 2006 09 29 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 11 | 699 | 0.6− | 0.9+ | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 09 29 | 691 | 0.0 | 0.1+ | | |
| 2001 09 16 | 704 | 0.5+ | 1.4+ | 2004 03 15 | 703 | 0.4− | 1.1+ | 2006 09 29 | 691 | 0.3+ | 0.1+ | | |
| 2001 09 16 | 704 | (0.2− | 1.5+) | 2004 03 15 | 703 | (1.3+ | 2.5−) | 2006 10 15 | 703 | 0.3− | 0.4+ | | |
| 2001 09 16 | 704 | (0.0 | 1.7+) | 2004 03 15 | 703 | 0.1+ | 0.9+ | 2006 10 15 | 703 | 0.1+ | 0.4+ | | |
| 2001 09 16 | 704 | (0.2+ | 1.6+) | 2004 03 15 | 703 | 0.6− | 0.1− | 2006 10 15 | 703 | 0.6− | 0.2− | | |
| 2001 09 17 | 333 | (2.7− | 0.1+) | 2004 03 16 | 704 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.7− | 0.1− | | |
| 2001 09 17 | 333 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.6+ | 1.3+ | 2006 10 15 | A24 | 0.2− | 1.0− | | |
| 2001 09 17 | 333 | (0.7+ | 1.9+) | 2004 03 16 | 704 | 0.0 | 0.8+ | 2006 10 15 | A24 | 0.7+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2004 03 16 | 704 | 0.5+ | 0.7+ | 2006 10 15 | A24 | 1.3+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.4+ | 0.2+ | 2004 03 16 | 704 | 0.2− | 0.4+ | 2006 10 15 | A24 | 0.5− | 0.6− | | |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2006 10 15 | A24 | 0.1− | 0.3+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.4+ | 0.0 | | |
| 2001 09 20 | 691 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 10 16 | 291 | 0.2− | 0.0 | | |
| 2001 09 20 | 691 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.9+ | 2006 10 16 | 291 | 0.1− | 0.0 | | |
| 2001 09 20 | 691 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.8− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 24 | 704 | 0.1− | 0.8+ | 2004 03 22 | 704 | 0.6+ | 1.1+ | 2006 10 16 | 291 | 0.2− | 0.1+ | | |
| 2001 09 24 | 704 | 1.1+ | 0.6+ | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.1− | | |
| 2001 09 24 | 704 | 0.4+ | 0.6+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.1− | | |
| 2001 09 24 | 704 | 0.7+ | 0.4+ | 2004 03 23 | 704 | 0.2− | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.2− | | |
| 2001 09 24 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.0 | | |
| 2001 09 25 | 333 | 0.7+ | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 09 25 | 333 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2001 09 25 | 333 | 0.4+ | 0.3− | 2004 03 23 | 704 | 0.9+ | 0.4+ | 2006 10 23 | 704 | 0.2− | 0.2+ | | |
| 2001 09 25 | 333 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.4− | 0.4+ | 2006 10 23 | 704 | 1.2− | 0.4+ | | |
| 2001 09 25 | 333 | 0.6− | 0.3− | 2004 03 23 | 691 | 0.0 | 0.5+ | 2006 10 23 | 704 | (1.6− | 0.9+) | | |
| 2001 09 25 | 333 | 0.8− | 0.8− | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 26 | 333 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.9+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2001 09 26 | 333 | 0.2− | 0.4− | 2004 03 27 | 704 | 0.6+ | 0.9+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2001 09 26 | 704 | 0.2− | 0.7+ | 2004 03 27 | 704 | 0.7+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2001 09 26 | 333 | 1.0− | 0.8− | 2004 03 27 | 704 | 0.8+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2001 09 26 | 704 | 0.4− | 1.1+ | 2004 03 27 | 704 | 0.8+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2001 09 26 | 704 | 0.5− | 1.0+ | 2004 03 31 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2001 09 26 | 704 | 0.5− | 1.3+ | 2004 03 31 | 691 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.5− | | |
| 2001 09 26 | 704 | 0.3− | 1.0+ | 2004 03 31 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.9− | 0.4− | 2004 04 12 | 699 | (1.8− | 0.6+) | 2006 11 11 | G96 | 0.3− | 0.4− | | |
| 2001 10 13 | 704 | 0.7− | 0.5− | 2004 04 12 | 699 | 0.7− | 0.7+ | 2006 11 11 | G96 | 0.4− | 0.4− | | |
| 2001 10 13 | 704 | 1.0+ | 1.1+ | 2004 04 12 | 699 | 1.2+ | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.3+ | | |
| 2001 10 13 | 704 | 0.4+ | 0.1+ | 2004 04 12 | 699 | (0.8+ | 1.6+) | 2006 11 11 | 703 | 0.7+ | 0.4− | | |
| 2001 10 16 | 704 | 1.2− | 0.6+ | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.5+ | | |
| 2001 10 16 | 704 | 0.3− | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.0 | | |
| 2001 10 16 | 704 | 0.5− | 1.0+ | 2004 04 25 | 691 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.3− | 0.0 | | |
| 2001 10 16 | 704 | 0.5− | 0.0 | 2006 07 21 | G96 | 0.5− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1− | | |
| 2001 10 16 | 704 | 0.4− | 0.0 | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.8− | | |
| 2001 10 16 | 691 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.4− | 0.0 | 2006 11 20 | G96 | 0.7− | 1.6− | | |
| 2001 10 16 | 691 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.8+ | 1.3− | | |
| 2001 10 16 | 691 | 0.1+ | 0.5− | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 1.1+ | 1.5− | | |

**(139792)∗ 2001 RU$_7$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.16965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21036751 | $\omega$ | 322.88989 | | +0.08158821 | +0.98498426 | |
| $a$ | 2.7999499 | $\Omega$ | 311.25060 | | −0.85896665 | −0.00793339 | |
| $e$ | 0.2576753 | $i$ | 11.67564 | | −0.50548953 | +0.17246176 | |
| $P$ | 4.69 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 03 | 608 | 0.7− | 1.1+ | 2001 09 18 | 644 | 0.5− | 0.1− | 2005 05 12 | 644 | 0.1+ | 0.4+ | | |
| 2001 07 03 | 608 | 1.1− | 1.1+ | 2001 09 20 | 704 | 0.9+ | 1.1+ | 2005 05 12 | 703 | 0.5− | 0.5+ | | |
| 2001 07 03 | 608 | 0.7− | 0.8+ | 2001 09 20 | 704 | 0.8+ | 1.1+ | 2005 05 12 | 644 | 0.5+ | 0.4+ | | |
| 2001 08 11 | 608 | 0.7+ | 0.6+ | 2001 09 20 | 704 | 0.4+ | 1.0+ | 2005 05 12 | 703 | 0.4− | 0.7− | | |
| 2001 08 11 | 608 | 0.7+ | 0.8+ | 2003 12 21 | 691 | 0.2+ | 0.2− | 2005 05 12 | 644 | 0.3+ | 0.3+ | | |
| 2001 08 11 | 608 | 1.3+ | 0.6+ | 2003 12 21 | 691 | 0.2+ | 0.1− | 2005 05 12 | 703 | 1.0− | 0.3− | | |
| 2001 08 27 | 699 | 0.4− | 0.1+ | 2003 12 21 | 691 | 0.1+ | 0.1+ | 2005 05 12 | 703 | 0.1+ | 0.6− | | |
| 2001 08 27 | 699 | 0.6− | 0.3+ | 2004 01 15 | 691 | 0.2+ | 0.6+ | 2005 05 16 | 644 | 0.2− | 0.2+ | | |
| 2001 08 27 | 699 | 0.4+ | 0.4+ | 2004 01 15 | 691 | 0.1+ | 0.5+ | 2005 05 16 | 644 | 0.3+ | 0.3+ | | |
| 2001 08 27 | 699 | 0.7− | 0.2+ | 2004 01 15 | 691 | 0.1+ | 0.7+ | 2005 05 16 | 644 | 0.1+ | 0.6+ | | |
| 2001 09 08 | 704 | 0.2+ | 0.5+ | 2004 01 22 | 704 | 1.0+ | 1.0+ | 2005 06 09 | E12 | 0.1− | 0.2+ | | |
| 2001 09 08 | 704 | 0.0 | 0.8+ | 2004 01 22 | 704 | 0.9+ | 1.1+ | 2005 06 09 | E12 | 0.1− | 0.2+ | | |
| 2001 09 08 | 704 | (0.5+ | 1.8+) | 2004 01 22 | 704 | 0.6− | 0.5+ | 2005 06 09 | E12 | 0.1− | 0.2− | | |
| 2001 09 08 | 704 | 0.5− | 0.4− | 2004 01 22 | 704 | 1.2− | 0.0 | 2005 06 09 | E12 | 0.4− | 0.2− | | |
| 2001 09 08 | 704 | 0.3+ | 0.5+ | 2005 03 18 | E12 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.1− | 0.2+ | | |
| 2001 09 10 | 704 | 0.3+ | 0.0 | 2005 03 18 | E12 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 10 | 704 | 0.3− | 0.4− | 2005 03 18 | E12 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 10 | 704 | 0.0 | 0.2+ | 2005 03 18 | E12 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.5− | | |
| 2001 09 10 | 704 | 0.0 | 0.2+ | 2005 04 02 | E12 | 0.1+ | 0.6+ | 2006 09 16 | 703 | 0.3− | 0.4+ | | |
| 2001 09 10 | 704 | 0.2− | 0.0 | 2005 04 02 | E12 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.2− | | |
| 2001 09 11 | 704 | 1.4− | 0.1+ | 2005 04 02 | E12 | 0.7+ | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.6− | | |
| 2001 09 11 | 704 | 1.2− | 0.2− | 2005 04 02 | E12 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 0.6− | 0.3+ | | |
| 2001 09 11 | 704 | (1.5− | 0.2−) | 2005 05 02 | E12 | 0.1− | 0.0 | 2006 09 28 | 703 | (0.3+ | 1.6+) | | |
| 2001 09 11 | 704 | 1.2− | 0.1− | 2005 05 02 | E12 | 0.5− | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.2− | | |
| 2001 09 11 | 704 | 1.4− | 0.5− | 2005 05 02 | E12 | 0.3− | 0.7+ | 2006 09 28 | 703 | 0.1+ | 0.3− | | |
| 2001 09 12 | 704 | 0.0 | 0.5− | 2005 05 02 | E12 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.4− | 2005 05 11 | 644 | 0.6+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.1− | 0.5− | 2005 05 11 | 644 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.2− | 2005 05 11 | 644 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.7+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.2− | 2005 05 12 | 644 | 1.0+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.5+ | | |
| 2001 09 18 | 644 | 0.5− | 0.2+ | 2005 05 12 | 644 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.2− | 0.1− | | |
| 2001 09 18 | 644 | 0.4− | 0.2+ | 2005 05 12 | 644 | 1.0+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.1+ | | |

**(139793)∗ 2001 RX$_7$ = 2005 JV$_{39}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75078)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.96798 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19421390 | $\omega$ | 118.03381 | | +0.90730489 | +0.41743212 | |
| $a$ | 2.9531296 | $\Omega$ | 217.35594 | | −0.40905838 | +0.84850486 | |
| $e$ | 0.1026462 | $i$ | 4.77229 | | −0.09730924 | +0.32525364 | |
| $P$ | 5.07 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.2− | 1.2− | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 08 24 | 704 | 0.1− | 0.1+ | | |
| 2001 09 08 | 704 | 1.4− | 1.2− | 2005 04 17 | 691 | 0.0 | 0.4− | 2006 08 24 | 704 | 0.3+ | 0.3+ | | |
| 2001 09 08 | 704 | 0.5− | 0.2− | 2005 04 17 | 691 | 0.4+ | 0.0 | 2006 08 24 | 704 | 0.4+ | 1.4− | | |
| 2001 09 08 | 704 | 0.4− | 0.3− | 2005 04 17 | 691 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.2− | 1.0+ | | |
| 2001 09 10 | 704 | 0.1− | 0.4+ | 2005 05 07 | G96 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.2+ | 0.5− | | |
| 2001 09 10 | 704 | 0.2− | 0.4+ | 2005 05 07 | G96 | 0.5− | 0.3− | 2006 08 28 | 699 | 0.1− | 0.4+ | | |
| 2001 09 10 | 704 | 0.2+ | 0.2+ | 2005 05 07 | G96 | 0.3+ | 0.3− | 2006 08 28 | 699 | 0.2+ | 0.4+ | | |
| 2001 09 10 | 704 | 0.1+ | 0.0 | 2005 05 07 | G96 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.5− | 0.4− | | |
| 2001 09 10 | 704 | 0.2− | 0.3+ | 2005 05 08 | 691 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.4− | | |
| 2001 09 11 | 704 | 0.2− | 0.7+ | 2005 05 08 | 691 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.6− | | |
| 2001 09 11 | 704 | 0.2− | 0.2+ | 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | 1.4− | 0.4− | | |
| 2001 09 11 | 704 | 0.0 | 0.4+ | 2005 05 12 | 691 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 704 | 0.0 | 0.0 | 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.8+ | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2005 05 12 | 691 | 0.0 | 0.5+ | 2006 08 30 | 704 | 1.7+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.7+ | 0.6+ |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2005 05 13 | G96 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.8+ | 0.2− |
| 2001 09 12 | 704 | 0.3− | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.3+ | 0.2− |
| 2001 09 12 | 704 | 0.1+ | 1.0+ | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.2− | 0.9− |
| 2001 09 20 | 704 | 0.9+ | 0.4− | 2005 06 13 | G96 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.7− | 0.2+ |
| 2001 09 20 | 704 | 0.8+ | 0.6− | 2005 06 13 | G96 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.7+ | 0.5− |
| 2001 09 20 | 704 | 0.6+ | 0.5+ | 2005 06 13 | G96 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.2+ |
| 2001 09 20 | 704 | 0.6+ | 0.3+ | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.3+ | 0.8+ | 2006 07 25 | 224 | 1.2− | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 07 25 | 224 | 0.0 | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.2− |
| 2004 03 18 | 704 | 0.1+ | 1.8+ | 2006 07 25 | 224 | 0.9− | 1.0+ | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.1+ | 0.5− | 2006 08 19 | 699 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2005 04 02 | G96 | 1.0− | 0.4− | 2006 08 19 | 699 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2006 08 19 | 699 | 0.8+ | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2005 04 02 | G96 | 0.7− | 0.3− | 2006 08 19 | 699 | 0.7+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2005 04 17 | 691 | 0.3− | 0.3− | 2006 08 24 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2005 04 17 | 691 | 0.0 | 0.4− | 2006 08 24 | 704 | 0.1− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.0 |

**(139794)∗ 2001 RJ$_8$ = 2004 CK$_{86}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60934)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.23278 | | (2000.0) | | +0.68164940 | +0.72845175 |
| $n$ | 0.19007107 | $\omega$ | 337.14739 | | −0.64295590 | +0.55157132 |
| $a$ | 2.9958866 | $\Omega$ | 335.65052 | | −0.34923031 | +0.40635837 |
| $e$ | 0.0899369 | $i$ | 9.58395 | | | |
| $P$ | 5.19 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 691 | 0.5− | 0.4− | 2001 09 12 | 704 | 0.0 | 0.2− | 2004 03 27 | 691 | 0.1− | 0.4+ |
| 1999 02 12 | 691 | 0.0 | 0.6− | 2001 09 12 | 333 | 0.0 | 0.0 | 2006 07 25 | 644 | 0.1+ | 0.2+ |
| 1999 02 12 | 691 | 0.1− | 0.0 | 2001 09 16 | 704 | 0.1+ | 0.5− | 2006 07 25 | 644 | 0.1+ | 0.2+ |
| 2001 08 16 | 704 | 0.3+ | 0.6+ | 2001 09 16 | 704 | 0.7+ | 0.2− | 2006 07 25 | 644 | 0.2+ | 0.5+ |
| 2001 08 16 | 704 | 1.0− | 1.4− | 2001 09 16 | 704 | 0.7+ | 0.0 | 2006 08 14 | 644 | 0.6− | 0.4+ |
| 2001 08 16 | 704 | 0.6− | 0.0 | 2001 09 16 | 704 | 0.7+ | 0.1− | 2006 08 14 | 644 | 0.1− | 0.0 |
| 2001 08 16 | 704 | 0.8− | 0.8− | 2001 09 16 | 704 | 0.6+ | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.5+ |
| 2001 09 08 | 704 | 0.4+ | 0.3+ | 2001 09 24 | 704 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 2001 09 08 | 704 | 0.1− | 0.8+ | 2001 09 24 | 704 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.1+ |
| 2001 09 08 | 704 | 0.0 | 0.0 | 2001 09 24 | 704 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.3+ |
| 2001 09 10 | 704 | 0.8− | 0.5− | 2001 09 24 | 704 | 0.6− | 0.0 | 2006 08 16 | A50 | 0.3+ | 0.5− |
| 2001 09 10 | 704 | 0.5− | 0.6− | 2001 09 26 | 699 | 0.1+ | 0.4+ | 2006 08 16 | A50 | 0.6− | 0.2+ |
| 2001 09 10 | 704 | 0.3− | 0.2− | 2001 09 26 | 699 | 0.6+ | 0.4− | 2006 08 18 | 699 | 0.4− | 1.3+ |
| 2001 09 10 | 704 | 0.7− | 0.5− | 2001 09 26 | 699 | 0.5− | 0.5− | 2006 08 18 | 699 | 1.3− | 0.6+ |
| 2001 09 10 | 704 | 0.7− | 0.8− | 2001 09 26 | 699 | 0.8+ | 0.7+ | 2006 08 18 | 699 | 0.7+ | 0.2+ |
| 2001 09 11 | 699 | 0.0 | 0.6+ | 2004 02 14 | 691 | 0.1− | 0.0 | 2006 08 18 | 699 | 1.4+ | 0.5+ |
| 2001 09 11 | 699 | 0.3+ | 0.2+ | 2004 02 14 | 691 | 0.4+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2001 09 11 | 699 | (0.2− | 1.6+) | 2004 02 14 | 691 | 0.5+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2001 09 11 | 699 | 0.2− | 1.2+ | 2004 02 17 | 704 | 1.3+ | 0.9+ | 2006 08 27 | 691 | 0.1+ | 0.3+ |
| 2001 09 11 | 704 | 0.3− | 0.0 | 2004 02 17 | 704 | 0.0 | 0.9+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2001 09 11 | 704 | 0.1+ | 0.7+ | 2004 02 17 | 704 | 1.0+ | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2001 09 11 | 704 | 0.2+ | 0.3− | 2004 02 17 | 704 | (0.3− | 1.9+) | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2001 09 11 | 704 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.7+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.2+ |
| 2001 09 11 | 704 | 0.3+ | 0.2+ | 2004 02 26 | 704 | (1.7+ | 3.1+) | 2006 08 28 | 703 | 0.7− | 0.2− |
| 2001 09 11 | 704 | 0.2− | 1.2+ | 2004 02 26 | 704 | 0.8+ | 1.5− | 2006 08 28 | 703 | 0.2− | 0.0 |
| 2001 09 11 | 704 | 0.1+ | 0.0 | 2004 02 26 | 704 | (1.5+ | 0.3−) | 2006 08 28 | 703 | 0.3+ | 0.1− |
| 2001 09 11 | 704 | 0.5+ | 1.0+ | 2004 03 17 | 691 | 0.4+ | 0.3+ | 2006 08 29 | 704 | 0.1+ | 1.3+ |
| 2001 09 11 | 704 | 0.0 | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 704 | 0.6− | 0.6+ |
| 2001 09 11 | 704 | 0.4− | 0.4+ | 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 704 | 0.5− | 1.4+ |
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2004 03 26 | 691 | 0.0 | 0.5+ | 2006 08 29 | 704 | (0.3− | 1.7+) |
| 2001 09 12 | 704 | 0.1+ | 0.3− | 2004 03 26 | 691 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.1+ | 0.4− | 2004 03 26 | 691 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.1− |
| 2001 09 12 | 333 | 0.1− | 0.6− | 2004 03 27 | 691 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 1.1− | 0.8− |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2004 03 27 | 691 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.2− |

**(139795)∗ 2001 RL$_8$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 193.32923 | | (2000.0) | | −0.84282324 | −0.53420866 |
| $n$ | 0.18629797 | $\omega$ | 173.13470 | | +0.48635484 | −0.70402106 |
| $a$ | 3.0362018 | $\Omega$ | 334.24193 | | +0.23045164 | −0.46794814 |
| $e$ | 0.0707721 | $i$ | 8.64829 | | | |
| $P$ | 5.29 | $H$ | 14.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.3− | 0.3+ | 2001 09 26 | 699 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.6+ |
| 2001 08 23 | 699 | 0.3− | 0.6+ | 2001 10 14 | 704 | 0.3− | 1.7+ | 2004 03 21 | 704 | 0.9+ | 1.4− |
| 2001 08 23 | 699 | 0.1+ | 0.8+ | 2001 10 14 | 704 | 0.7− | 0.6+ | 2004 03 21 | 704 | 0.1+ | 0.8+ |
| 2001 08 23 | 699 | 0.4+ | 0.5− | 2001 10 14 | 704 | 0.5− | 1.6+ | 2004 03 21 | 704 | 1.2+ | 0.3+ |
| 2001 09 08 | 704 | 0.3− | 0.4− | 2001 10 14 | 704 | 0.1− | 1.6+ | 2004 03 21 | 704 | 0.6+ | 0.5+ |
| 2001 09 08 | 704 | 0.3− | 0.3+ | 2001 10 14 | 704 | 0.3− | 0.6+ | 2004 03 22 | 704 | 0.1− | 0.4+ |
| 2001 09 08 | 704 | 0.4+ | 0.4+ | 2001 10 19 | 644 | 0.4− | 0.4− | 2004 03 22 | 704 | 0.5+ | 0.9+ |
| 2001 09 08 | 704 | 0.2− | 0.2− | 2001 10 19 | 644 | 0.3− | 0.6− | 2004 03 22 | 704 | 0.6+ | 0.2+ |
| 2001 09 09 | 644 | 0.2− | 0.7+ | 2001 10 19 | 644 | 0.4− | 0.4− | 2004 03 27 | 704 | 0.3− | 0.8+ |
| 2001 09 09 | 644 | 0.3− | 0.3+ | 2001 10 21 | 704 | 1.6− | 0.6+ | 2004 03 27 | 704 | 0.3− | 0.8+ |
| 2001 09 09 | 644 | 0.7− | 0.1+ | 2001 10 21 | 704 | (2.7− | 1.5+) | 2004 03 27 | 704 | 0.7+ | 0.7+ |
| 2001 09 10 | 704 | 0.5− | 0.7+ | 2001 10 21 | 704 | 1.9− | 0.1− | 2004 03 27 | 704 | 0.2− | 1.8+ |
| 2001 09 10 | 333 | 0.5+ | 0.0 | 2001 10 21 | 704 | 1.9− | 1.2+ | 2004 03 27 | 704 | 0.3− | 0.3− |
| 2001 09 10 | 704 | 0.4− | 0.5+ | 2001 10 21 | 704 | (2.4− | 1.2+) | 2004 04 09 | 703 | 0.6+ | 0.3+ |
| 2001 09 10 | 704 | 1.7− | 0.9− | 2002 10 31 | 704 | 0.2+ | 0.1+ | 2004 04 09 | 703 | 0.1+ | 0.2+ |
| 2001 09 10 | 333 | 1.3+ | 0.3− | 2002 10 31 | 704 | 0.3− | 0.3+ | 2004 04 09 | 703 | 0.0 | 0.3− |
| 2001 09 10 | 704 | 0.6− | 0.5+ | 2002 10 31 | 704 | 0.3+ | 0.4− | 2004 04 09 | 703 | 0.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.1+ | 0.6+ | 2002 11 06 | 704 | 0.7+ | 0.9− | 2004 04 14 | 699 | 0.4− | 1.0+ |
| 2001 09 11 | 699 | 0.6− | 0.2− | 2002 11 06 | 704 | 0.8− | 1.1− | 2004 04 14 | 699 | 0.4− | 0.9− |
| 2001 09 11 | 699 | 0.3− | 1.1+ | 2002 11 06 | 704 | 0.6− | 1.9− | 2004 04 14 | 699 | 1.1− | 0.4+ |
| 2001 09 11 | 699 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 1.0− | 0.2+ | 2004 04 14 | 699 | 0.6− | 1.8+ |
| 2001 09 11 | 704 | 0.5+ | 0.6− | 2002 12 05 | 704 | 0.1− | 0.3+ | 2004 04 16 | 704 | 0.5+ | 0.6+ |
| 2001 09 11 | 704 | 0.0 | 0.9− | 2002 12 05 | 704 | 0.4+ | 0.6+ | 2004 04 16 | 704 | 0.6− | 1.4+ |
| 2001 09 11 | 704 | 0.0 | 0.3+ | 2002 12 05 | 704 | 0.4− | 0.0 | 2004 04 16 | 704 | 0.2+ | 1.2+ |
| 2001 09 11 | 704 | 0.7+ | 0.6+ | 2002 12 05 | 704 | 0.9− | 1.2+ | 2004 04 16 | 704 | 0.4− | 1.4+ |
| 2001 09 11 | 704 | 0.0 | 0.9− | 2002 12 10 | 113 | 0.0 | 0.3+ | 2004 04 16 | 704 | 0.1− | 0.6+ |
| 2001 09 11 | 704 | 0.0 | 0.8+ | 2002 12 10 | 113 | 0.2− | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.3+ |
| 2001 09 11 | 704 | 0.5+ | 0.2+ | 2002 12 15 | 704 | 0.1+ | 0.4+ | 2006 08 18 | 699 | 0.7+ | 0.4+ |
| 2001 09 11 | 704 | 0.3+ | 1.1− | 2002 12 15 | 704 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2001 09 11 | 704 | 0.1+ | 0.5+ | 2002 12 15 | 704 | 1.0+ | 0.7+ | 2006 08 18 | 699 | 0.7+ | 1.0+ |
| 2001 09 11 | 704 | 0.5+ | 0.0 | 2002 12 15 | 704 | 0.0 | 0.2− | 2006 08 18 | 699 | 0.3+ | 1.0+ |
| 2001 09 11 | 704 | 0.2− | 1.1− | 2003 12 21 | 704 | 0.5− | 0.7+ | 2006 08 18 | 644 | 0.3− | 0.3+ |
| 2001 09 11 | 704 | 0.0 | 0.8+ | 2003 12 21 | 704 | 0.7+ | 0.5+ | 2006 08 18 | 699 | 0.1− | 0.6+ |
| 2001 09 12 | 704 | 0.5+ | 1.2+ | 2003 12 21 | 704 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2003 12 21 | 704 | 1.1+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 0.8+ | 2003 12 21 | 704 | 0.6+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.1+ | 2004 02 19 | 704 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.1+ | 0.4+ | 2004 02 19 | 704 | 1.2+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2004 02 19 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.7− |
| 2001 09 12 | 704 | 0.5− | 0.3− | 2004 02 19 | 704 | 0.1− | 0.8+ | 2006 08 28 | 703 | 0.6+ | 0.6− |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2004 02 19 | 704 | 0.2− | 1.2+ | 2006 08 28 | 699 | 1.3− | 0.1+ |
| 2001 09 12 | 704 | 0.6+ | 0.2+ | 2004 02 25 | 704 | 1.0+ | 0.9+ | 2006 08 28 | 699 | 1.1+ | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2004 02 25 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 699 | 1.0− | 0.8+ |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2004 02 25 | 704 | 0.4+ | 0.8+ | 2006 08 28 | 699 | 0.3− | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.8+ | 2004 02 25 | 704 | 0.6+ | 0.9+ | 2006 08 29 | 704 | 0.6+ | 0.8+ |
| 2001 09 12 | 704 | 0.0 | 0.0 | 2004 02 25 | 704 | 0.4+ | 0.3+ | 2006 08 29 | 704 | 0.6+ | 0.4− |
| 2001 09 12 | 704 | 0.6− | 0.2− | 2004 03 13 | 644 | 0.2+ | 0.5+ | 2006 08 29 | 704 | 0.4+ | 0.6+ |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2004 03 13 | 644 | 0.2+ | 0.6+ | 2006 08 29 | 704 | 0.5− | 1.5+ |
| 2001 09 12 | 704 | 0.5− | 0.1− | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.7+ | 1.4+ |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2004 03 16 | 704 | 0.3− | 0.7+ | 2006 08 30 | 704 | 0.9− | 0.3+ |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2004 03 16 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.8− | 0.1+ |
| 2001 09 15 | 644 | 0.1− | 0.5+ | 2004 03 16 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.1− |
| 2001 09 15 | 644 | 0.2− | 0.1+ | 2004 03 16 | 704 | 0.1− | 0.5− | 2006 08 30 | 704 | 0.3− | 1.2+ |
| 2001 09 15 | 644 | 0.3− | 0.8+ | 2004 03 16 | 704 | 0.5+ | 0.9+ | 2006 09 14 | 703 | 0.2+ | 0.5− |
| 2001 09 16 | 704 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 09 14 | 703 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.4− |
| 2001 09 16 | 704 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2001 09 16 | 704 | 0.6− | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 704 | (0.6− | 2.2+) |
| 2001 09 16 | 704 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.3+ | 2006 09 17 | 704 | 0.7− | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 1.9+ | 2004 03 20 | 699 | 0.0 | 0.3− | 2006 09 17 | 704 | 0.6− | 0.2+ |
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 699 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.2− | 1.1+ |
| 2001 09 20 | 704 | 0.0 | 0.8+ | 2004 03 20 | 704 | 1.6+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 09 20 | 704 | 0.5+ | 0.4+ | 2004 03 20 | 699 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 0.0 | 1.1+ | 2004 03 20 | 704 | 1.3+ | 0.9+ | 2006 09 26 | G96 | 0.5− | 0.4− |
| 2001 09 26 | 699 | 0.3+ | 0.1+ | 2004 03 20 | 704 | 0.9+ | 0.6− | 2006 09 26 | G96 | 0.4− | 0.5− |
| 2001 09 26 | 699 | 0.1+ | 0.4− | 2004 03 20 | 699 | 0.0 | 0.7+ | | | | |
| 2001 09 26 | 699 | 0.4− | 0.3+ | 2004 03 20 | 704 | 1.6+ | 0.2+ | | | | |

**(139796)∗ 2001 RN$_8$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.69351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19791594 | $\omega$ | 57.38402 | | +0.96177095 | −0.27351604 | |
| $a$ | 2.9161881 | $\Omega$ | 318.48509 | | +0.24386775 | +0.87803058 | |
| $e$ | 0.1357420 | $i$ | 1.17778 | | +0.12459997 | +0.39274836 | |
| $P$ | 4.98 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.0 | 0.2+ | 2001 10 11 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.3− |
| 2001 08 23 | 699 | 0.2− | 0.3− | 2001 10 19 | 644 | 0.3− | 0.3+ | 2006 09 19 | 699 | (1.8− | 0.5−) |
| 2001 08 23 | 699 | 0.7+ | 0.1+ | 2001 10 19 | 644 | 0.4− | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.3− |
| 2001 08 23 | 699 | (2.2+ | 0.3−) | 2001 10 19 | 644 | 0.2− | 0.8+ | 2006 09 19 | 699 | 1.0− | 0.4+ |
| 2001 08 24 | 704 | 0.8− | 0.0 | 2001 10 21 | 704 | 1.0− | 1.2− | 2006 09 19 | 699 | 0.1− | 0.2+ |
| 2001 08 24 | 704 | 0.0 | 0.4+ | 2001 10 21 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | (0.5− | 1.6+) |
| 2001 08 24 | 704 | 0.4+ | 0.1− | 2001 10 21 | 704 | 0.4− | 0.4− | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 2001 08 24 | 704 | 0.3+ | 1.2+ | 2001 10 21 | 704 | 1.4− | 0.3+ | 2006 09 20 | 704 | 1.3− | 1.0+ |
| 2001 09 08 | 704 | 0.6− | 0.8+ | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 20 | 704 | 1.2− | 0.7+ |
| 2001 09 08 | 704 | 0.3+ | 0.1+ | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.0 | 0.1− |
| 2001 09 08 | 704 | 0.4− | 0.2− | 2003 01 04 | 704 | 1.1+ | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2001 09 08 | 704 | 0.2+ | 0.4+ | 2003 01 04 | 704 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.1− |
| 2001 09 08 | 704 | 0.8− | 0.1+ | 2003 01 04 | 704 | 0.9+ | 0.9+ | 2006 09 24 | 106 | 0.1− | 0.3− |
| 2001 09 10 | 704 | 0.8− | 0.8+ | 2003 01 04 | 704 | 0.3+ | 1.1+ | 2006 09 24 | 106 | 0.9+ | 0.2− |
| 2001 09 10 | 704 | 0.2− | 0.8+ | 2003 01 08 | 704 | 0.4− | 0.3− | 2006 09 24 | 106 | 0.4− | 0.5− |
| 2001 09 10 | 704 | 0.7− | 1.0+ | 2003 01 08 | 704 | 0.5− | 0.4+ | 2006 09 24 | 106 | 0.0 | 0.3− |
| 2001 09 10 | 704 | 0.8− | 1.0+ | 2003 01 08 | 704 | 0.8− | 0.4− | 2006 09 25 | 699 | 0.9− | 0.1+ |
| 2001 09 10 | 704 | 0.6− | 0.8+ | 2003 01 08 | 704 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.4+ | 0.2− |
| 2001 09 11 | 704 | 0.1− | 0.3+ | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.2+ |
| 2001 09 11 | 704 | 0.7− | 0.1+ | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 0.8− | 0.5+ |
| 2001 09 11 | 704 | 0.2− | 0.3− | 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 1.4+ | 0.5+ |
| 2001 09 11 | 704 | 0.4− | 0.2− | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.4+ |
| 2001 09 11 | 704 | 0.4− | 0.7− | 2004 04 22 | 691 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.7+ | 0.1− |
| 2001 09 19 | 704 | 0.7− | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.9+ | 0.8+ |
| 2001 09 19 | 704 | 0.6− | 0.2+ | 2006 08 27 | 699 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.9+ | 0.7− |
| 2001 09 19 | 704 | 0.5− | 0.1+ | 2006 08 27 | 699 | 0.6+ | 0.7− | 2006 09 27 | 704 | 1.0+ | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2006 08 27 | 699 | 0.7− | 0.4− | 2006 09 27 | 704 | 0.5+ | 0.8+ |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2006 08 27 | 699 | 0.5− | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.3− |
| 2001 09 20 | 704 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.0 | 1.2+ |
| 2001 09 20 | 704 | 0.7+ | 0.8+ | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.4+ |
| 2001 09 20 | 704 | 0.8+ | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2001 09 20 | 704 | 1.4+ | 0.6+ | 2006 08 28 | 703 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 1.2− | 0.9− |
| 2001 09 20 | 704 | 1.0+ | 0.2+ | 2006 09 01 | 704 | 0.5+ | 0.8− | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2001 09 22 | 704 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.8+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 09 22 | 704 | 0.5+ | 0.2+ | 2006 09 01 | 704 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 09 22 | 704 | 0.2+ | 0.5+ | 2006 09 01 | 704 | (1.9+ | 0.4+) | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 09 22 | 704 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 1.0+ | 0.4− | 2006 09 12 | 703 | (0.4+ | 1.6−) | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 09 23 | 704 | 0.4+ | 0.3− | 2006 09 12 | 703 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.4− |
| 2001 09 23 | 704 | 0.6+ | 0.0 | 2006 09 12 | 703 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.9− |
| 2001 09 23 | 704 | 0.0 | 0.3− | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2001 09 23 | 704 | 0.4+ | 0.7− | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.5− | 0.5− |
| 2001 09 23 | 704 | 0.0 | 0.7− | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2001 09 26 | 699 | (1.6− | 1.0+) | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 11 27 | 703 | 0.3+ | 0.9− |
| 2001 09 26 | 699 | 0.8− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.8− | 0.2+ |
| 2001 09 26 | 699 | 0.3− | 1.0+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.7+ | 1.1− |
| 2001 09 26 | 699 | 0.2+ | 1.1− | 2006 09 17 | 704 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.6− | 1.9+ |
| 2001 10 11 | 644 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.3− | | | | |
| 2001 10 11 | 644 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.7− | 0.8+ | | | | |

**(139797)∗ 2001 RL$_{10}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.91684 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23584715 | $\omega$ | 160.19149 | | +0.02283381 | −0.93599172 | |
| $a$ | 2.5944718 | $\Omega$ | 287.19976 | | +0.86052088 | +0.19726197 | |
| $e$ | 0.1105944 | $i$ | 21.57541 | | +0.50890316 | −0.29155996 | |
| $P$ | 4.18 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 23 | 644 | 0.3+ | 0.2+ | 2003 01 02 | 699 | 0.4+ | 0.2− | 2006 10 21 | 703 | 0.9− | 1.3− |
| 2001 07 23 | 644 | 0.0 | 0.4+ | 2003 01 02 | 704 | 1.1− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.6− |
| 2001 07 23 | 644 | 0.2+ | 0.2+ | 2003 01 02 | 704 | 0.1− | 0.3+ | 2006 10 21 | 703 | 1.0− | 1.2− |
| 2001 08 21 | 644 | 0.0 | 0.5+ | 2003 01 02 | 704 | (0.3− | 2.0+) | 2006 10 21 | 703 | 0.5− | 1.4− |
| 2001 08 21 | 644 | 0.4+ | 0.7+ | 2003 01 02 | 704 | 0.2− | 0.6+ | 2006 11 06 | 644 | 0.0 | 0.1− |
| 2001 08 21 | 644 | 0.2+ | 0.4+ | 2003 01 02 | 704 | 0.1+ | 0.9+ | 2006 11 06 | 644 | 0.1− | 0.2− |
| 2001 09 09 | 699 | 0.1− | 0.9− | 2003 01 05 | 704 | 0.3+ | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2001 09 09 | 699 | 0.9− | 0.1+ | 2003 01 05 | 704 | 0.3− | 0.5+ | 2006 11 15 | 704 | 0.2+ | 0.9− |
| 2001 09 09 | 699 | 0.9− | 0.6− | 2003 01 05 | 704 | 0.9+ | 0.6+ | 2006 11 15 | 704 | 0.6− | 0.9− |
| 2001 09 09 | 699 | 1.1− | 0.3− | 2003 01 05 | 704 | 0.6+ | 0.2+ | 2006 11 15 | 704 | 1.4+ | 0.4+ |
| 2001 09 10 | 704 | 0.6+ | 0.7+ | 2003 01 25 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.8− |
| 2001 09 10 | 704 | (2.8+ | 1.5+) | 2003 01 25 | 644 | 0.5+ | 0.2+ | 2006 11 15 | 704 | 0.8− | 0.5− |
| 2001 09 10 | 704 | 0.3+ | 0.5+ | 2003 01 25 | 644 | 0.4+ | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.3− |
| 2001 09 10 | 704 | (1.7+ | 0.9+) | 2003 01 28 | 704 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 2001 09 11 | 704 | 0.2+ | 0.4− | 2003 01 28 | 704 | (1.0− | 2.0−) | 2006 11 15 | 703 | 0.4+ | 0.2− |
| 2001 09 11 | 704 | 0.0 | 0.5− | 2003 01 28 | 704 | 0.4− | 1.3− | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2001 09 11 | 704 | 0.5+ | 0.9− | 2003 01 28 | 704 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.5+ | 0.0 |
| 2001 09 11 | 704 | 0.5+ | 0.8− | 2003 01 28 | 704 | 0.6+ | 0.9+ | 2006 11 16 | 704 | 0.8+ | 0.6+ |
| 2001 09 11 | 704 | 0.2+ | 0.2− | 2005 07 08 | 699 | 0.9− | 1.1− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.1+ | 0.4− | 2005 07 08 | 699 | (1.6+ | 0.0 ) | 2006 11 16 | 704 | 0.6+ | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2005 07 08 | 699 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.7+ |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2005 07 08 | 699 | 0.0 | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 0.2+ | 0.2− | 2005 07 28 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2001 09 12 | 704 | 0.0 | 0.0 | 2005 07 28 | 704 | 0.9− | 1.0+ | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 2002 11 16 | 644 | 0.8+ | 1.3+ | 2005 07 28 | 704 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 11 16 | 644 | 0.7+ | 0.9− | 2005 07 28 | 704 | 0.5− | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.6+ |
| 2002 11 16 | 644 | 0.6+ | 0.5− | 2005 07 28 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2002 12 06 | 608 | 0.7+ | 1.0− | 2005 09 12 | 704 | 0.7+ | 0.6+ | 2006 11 22 | 704 | (0.9+ | 1.7+) |
| 2002 12 06 | 608 | 0.5+ | 0.6− | 2005 09 12 | 704 | 0.9+ | 0.5+ | 2006 11 22 | 704 | 0.3+ | 0.6+ |
| 2002 12 06 | 608 | 0.2+ | 0.5− | 2005 09 12 | 704 | 0.7+ | 0.0 | 2006 12 01 | 704 | 0.4+ | 1.5+ |
| 2002 12 07 | 645 | 0.2− | 0.1− | 2005 09 12 | 704 | 0.2− | 0.6+ | 2006 12 01 | 704 | 0.5+ | 1.8+ |
| 2002 12 07 | 645 | 0.2− | 0.1− | 2005 09 29 | 703 | 0.7− | 0.6− | 2006 12 01 | 704 | 1.4− | 0.4+ |
| 2003 01 02 | 699 | 0.0 | 1.2+ | 2005 09 29 | 703 | 0.4− | 0.5+ | 2006 12 01 | 704 | 0.7+ | 0.0 |
| 2003 01 02 | 699 | 0.1+ | 0.4+ | 2005 09 29 | 703 | 0.0 | 0.7+ | 2006 12 01 | 704 | 0.6− | 1.0+ |
| 2003 01 02 | 699 | 0.2− | 0.3− | 2005 09 29 | 703 | 0.1− | 0.6− | | | | |

**(139798)∗ 2001 RO$_{10}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.56811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.40670064 | $\omega$ | 290.24408 | | −0.45406178 | −0.89025096 | |
| $a$ | 1.8042061 | $\Omega$ | 187.08137 | | +0.88666229 | −0.44755588 | |
| $e$ | 0.1364786 | $i$ | 16.87837 | | +0.08750931 | −0.08453974 | |
| $P$ | 2.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 704 | 1.1− | 0.1+ | 2001 09 24 | 704 | 0.2− | 0.0 | 2005 05 08 | 703 | 0.3− | 0.1− |
| 1999 12 31 | 704 | 0.4+ | 0.0 | 2001 09 24 | 704 | 0.0 | 0.9+ | 2005 05 08 | 703 | 0.7− | 0.9+ |
| 1999 12 31 | 704 | 0.5− | 0.2− | 2001 10 14 | 704 | 0.1+ | 0.9+ | 2005 05 22 | 644 | 0.2− | 0.3+ |
| 1999 12 31 | 704 | 0.6− | 0.1+ | 2001 10 14 | 704 | 1.2+ | 0.0 | 2005 05 22 | 644 | 0.1+ | 0.6+ |
| 2000 02 10 | 704 | 0.2+ | 0.6+ | 2001 10 14 | 704 | 0.6+ | 0.6+ | 2005 05 22 | 644 | 0.5− | 0.1+ |
| 2000 02 10 | 704 | 1.2+ | 0.5+ | 2001 10 14 | 704 | 0.9+ | 0.4− | 2006 08 28 | 703 | 0.0 | 0.3+ |
| 2000 02 10 | 704 | 0.3− | 0.0 | 2001 10 21 | 704 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 0.9− | 0.5+ |
| 2000 02 10 | 704 | 0.3+ | 0.8+ | 2001 10 21 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.6+ |
| 2001 08 16 | 644 | 0.1− | 0.6+ | 2001 10 21 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2001 08 16 | 644 | 0.0 | 1.0+ | 2001 10 21 | 704 | 0.2− | 0.6+ | 2006 09 14 | 703 | 1.4− | 0.2− |
| 2001 08 16 | 644 | 0.4− | 0.2+ | 2001 10 21 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.5− | 0.6− |
| 2001 08 29 | 644 | 0.3+ | 0.0 | 2001 10 23 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.2− |
| 2001 08 29 | 644 | 0.4+ | 0.3+ | 2001 10 23 | 704 | 0.4− | 0.3− | 2006 09 17 | 704 | 0.3+ | 1.2+ |
| 2001 08 29 | 644 | 0.5+ | 0.3+ | 2001 10 23 | 704 | 0.2− | 0.9+ | 2006 09 17 | 704 | 0.5+ | 1.1+ |
| 2001 09 10 | 704 | 0.2− | 0.1+ | 2005 02 01 | 704 | 0.9+ | 0.8− | 2006 09 17 | 704 | 0.8+ | 0.5+ |
| 2001 09 10 | 704 | 0.1− | 0.1+ | 2005 02 01 | 704 | 0.9+ | 1.4+ | 2006 09 17 | 704 | 0.2+ | 0.2− |
| 2001 09 10 | 704 | 1.1− | 0.2+ | 2005 02 01 | 704 | 0.8+ | 0.4+ | 2006 09 17 | 704 | 0.7+ | 0.4+ |
| 2001 09 10 | 704 | 0.7− | 0.4+ | 2005 02 01 | 704 | 1.0+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2001 09 10 | 704 | 0.7− | 0.8+ | 2005 02 01 | 704 | 0.8+ | 1.0+ | 2006 09 18 | 691 | 0.1+ | 0.2+ |
| 2001 09 11 | 704 | 0.1− | 0.8+ | 2005 03 11 | 699 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 0.4+ | 0.6+ |
| 2001 09 11 | 704 | 0.5− | 0.4+ | 2005 03 11 | 699 | 0.6+ | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2001 09 11 | 704 | 0.4− | 0.5+ | 2005 03 11 | 699 | 0.5+ | 0.9+ | 2006 09 18 | 699 | 0.6+ | 0.5+ |
| 2001 09 11 | 704 | 0.1+ | 0.5+ | 2005 03 11 | 699 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 1.2+ | 1.2+ |
| 2001 09 11 | 704 | 0.0 | 0.4+ | 2005 03 13 | 703 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.0 | 1.0+ |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2005 03 13 | 703 | 0.5− | 0.5+ | 2006 09 26 | 704 | 0.6+ | 0.3+ |
| 2001 09 12 | 704 | 0.4− | 0.5+ | 2005 04 01 | 699 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.5+ |
| 2001 09 12 | 704 | 0.9− | 0.1− | 2005 04 01 | 699 | 0.5+ | 1.4+ | 2006 09 26 | 704 | 0.1+ | 0.6− |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2005 04 01 | 699 | 0.9+ | 1.1+ | 2006 09 26 | 704 | 0.9− | 0.9+ |
| 2001 09 12 | 704 | 0.1− | 0.8− | 2005 04 04 | 683 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.8− | 0.3+ |
| 2001 09 16 | 644 | 0.1− | 0.0 | 2005 04 04 | 683 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2001 09 16 | 644 | 0.6− | 0.2+ | 2005 04 04 | 683 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 2001 09 16 | 644 | 0.5− | 0.6− | 2005 04 04 | 703 | 0.1− | 0.9+ | 2006 09 30 | 703 | 0.2+ | 0.7− |
| 2001 09 16 | 704 | 0.1− | 0.7+ | 2005 04 04 | 703 | 0.5− | 0.4− | 2006 09 30 | 703 | 0.6− | 0.3+ |
| 2001 09 16 | 704 | 0.1− | 0.7+ | 2005 04 04 | 703 | 0.5− | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2005 04 04 | 703 | 0.3− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.3+ | 0.4+ | 2005 04 04 | 704 | 1.0− | 0.0 | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.5− | 0.5+ | 2005 04 04 | 704 | 0.3+ | 1.1− | 2006 10 16 | 703 | (0.5+ | 1.8−) |
| 2001 09 18 | 699 | 0.1− | 1.1+ | 2005 04 04 | 704 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.7+ | 1.0+ |
| 2001 09 18 | 699 | 1.0+ | 0.2+ | 2005 04 06 | G96 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2001 09 18 | 699 | 0.5+ | 0.5− | 2005 04 06 | G96 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2001 09 18 | 699 | 0.3+ | 0.8+ | 2005 04 06 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.0 | 2005 04 06 | G96 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2001 09 19 | 704 | 0.1− | 0.7− | 2005 04 16 | 691 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2005 04 16 | 691 | 0.1+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.6+ | 0.1+ | 2005 04 16 | 703 | 0.1− | 0.4− | 2006 10 22 | 703 | 1.1− | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.5− | 2005 04 16 | 703 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | (1.7− | 0.3+) | 2005 04 16 | 703 | 0.5− | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.9− | 2005 04 16 | 703 | 0.2− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 1.1+ | 0.5+ | 2005 04 30 | 699 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 0.6+ | 0.2+ | 2005 04 30 | 699 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2005 04 30 | 699 | 0.6+ | 1.0+ | 2006 10 28 | 703 | 0.0 | 0.0 |
| 2001 09 24 | 704 | 0.0 | 0.8+ | 2005 04 30 | 699 | 0.0 | 0.2− | 2006 10 28 | 703 | 1.1+ | 0.7− |
| 2001 09 24 | 704 | 0.3+ | 0.1+ | 2005 05 08 | 703 | 1.2− | 0.4− | 2006 10 28 | 703 | 0.4+ | 0.4− |
| 2001 09 24 | 704 | 0.3− | 0.6+ | 2005 05 08 | 703 | 0.5− | 0.7+ | | | | |

**(139799)∗ 2001 RL$_{11}$**

Discovered 2001 Sept. 10 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.47208 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12458099 | $\omega$ | 296.87728 | | +0.71507222 | +0.69623766 | |
| $a$ | 3.9704055 | $\Omega$ | 19.21356 | | −0.55461260 | +0.61959480 | |
| $e$ | 0.2264278 | $i$ | 10.97432 | | −0.42553094 | +0.36242987 | |
| $P$ | 7.91 | $H$ | 13.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 05 10 | 260 | 0.7+ | 1.1+ | 2001 10 14 | 699 | 0.3+ | 0.2+ | 2001 11 16 | 644 | 0.7− | 0.5+ |
| 1983 05 10 | 260 | 0.9+ | 1.4+ | 2001 10 14 | 699 | 0.3+ | 0.5+ | 2001 11 19 | 704 | 0.0 | 0.5+ |
| 2001 08 05 | 644 | 0.1+ | 0.1+ | 2001 10 14 | 699 | 0.1− | 0.2+ | 2001 11 19 | 704 | 0.2+ | 0.8+ |
| 2001 08 05 | 644 | 0.0 | 0.0 | 2001 10 17 | 704 | 0.3− | 0.6− | 2001 11 19 | 704 | 0.2− | 0.9+ |
| 2001 08 05 | 644 | 0.1+ | 0.3+ | 2001 10 17 | 704 | 0.5− | 0.8− | 2001 11 19 | 704 | 0.5− | 0.0 |
| 2001 08 27 | 699 | 1.0− | 1.0+ | 2001 10 17 | 704 | 0.3− | 0.6− | 2001 11 19 | 704 | 1.1− | 1.2+ |
| 2001 08 27 | 699 | 0.1− | 0.7+ | 2001 10 17 | 704 | 0.0 | 0.3− | 2001 11 21 | 704 | 0.5+ | 0.3− |
| 2001 08 27 | 699 | 0.0 | 1.3+ | 2001 10 17 | 704 | 0.1− | 0.5− | 2001 11 21 | 704 | 0.2+ | 0.0 |
| 2001 08 27 | 699 | 0.3+ | 1.2+ | 2001 10 17 | 291 | 0.2− | 0.0 | 2001 11 21 | 704 | 0.2− | 0.2− |
| 2001 09 10 | 333 | 0.5+ | 0.1+ | 2001 10 17 | 291 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.4+ | 0.0 |
| 2001 09 10 | 333 | 0.6+ | 0.9− | 2001 10 17 | 291 | 1.2− | 0.0 | 2001 11 21 | 704 | 0.9− | 0.3− |
| 2001 09 11 | 333 | 0.1− | 0.2+ | 2001 10 18 | 291 | 0.3+ | 0.1+ | 2003 12 22 | 704 | 0.9− | 0.8+ |
| 2001 09 11 | 699 | 0.3− | 0.4− | 2001 10 18 | 291 | 0.7+ | 0.1+ | 2003 12 22 | 704 | 0.9+ | 0.0 |
| 2001 09 11 | 699 | 1.2− | 0.4− | 2001 10 18 | 291 | 0.7+ | 0.6+ | 2003 12 22 | 704 | (1.9− | 3.7−) |
| 2001 09 11 | 333 | 0.2+ | 0.7− | 2001 10 19 | 644 | 0.1+ | 0.0 | 2003 12 22 | 704 | (0.4+ | 2.2−) |
| 2001 09 11 | 699 | 0.3− | 0.1+ | 2001 10 19 | 644 | 0.0 | 0.0 | 2003 12 30 | 704 | 0.0 | 1.1− |
| 2001 09 11 | 699 | 0.4− | 0.2− | 2001 10 19 | 644 | 0.3+ | 0.1+ | 2003 12 30 | 704 | 0.7− | 0.4− |
| 2001 09 16 | 644 | 0.1+ | 0.2+ | 2001 10 21 | 695 | 0.3+ | 0.1− | 2003 12 30 | 704 | 0.4+ | 0.1− |
| 2001 09 16 | 644 | 0.2− | 0.1+ | 2001 10 21 | 695 | 0.1+ | 0.3− | 2003 12 30 | 704 | 0.2+ | 0.1+ |
| 2001 09 16 | 644 | 0.3+ | 0.0 | 2001 10 21 | 704 | 0.1+ | 0.0 | 2006 02 22 | 703 | 1.0− | 0.3+ |
| 2001 09 17 | 704 | 0.8− | 0.8+ | 2001 10 21 | 704 | 0.2+ | 0.3+ | 2006 02 22 | 703 | (0.5− | 2.3+) |
| 2001 09 17 | 704 | 0.0 | 0.8+ | 2001 10 21 | 704 | 0.4+ | 0.3− | 2006 02 22 | 703 | 1.3− | 0.1− |
| 2001 09 17 | 704 | 0.3+ | 0.0 | 2001 10 21 | 704 | 0.4+ | 0.2− | 2006 02 22 | 703 | 0.6− | 1.2+ |
| 2001 09 17 | 704 | 0.0 | 0.1+ | 2001 10 21 | 704 | 1.1+ | 0.6− | 2006 02 24 | G96 | 0.5− | 0.3− |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2001 10 23 | 704 | (2.9+ | 1.1−) | 2006 02 24 | G96 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 10 23 | 704 | (3.2+ | 1.6−) | 2006 02 24 | G96 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2001 10 23 | 704 | (2.7+ | 1.4−) | 2006 02 24 | G96 | 0.4− | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2001 10 23 | 704 | (2.9+ | 1.3−) | 2006 03 03 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2001 10 23 | 704 | (3.0+ | 1.7−) | 2006 03 03 | 691 | 0.3+ | 0.1+ |
| 2001 09 24 | 704 | 0.6− | 0.3− | 2001 10 24 | 704 | 0.0 | 0.3− | 2006 03 03 | 691 | 0.1+ | 0.2+ |
| 2001 09 24 | 704 | 0.4+ | 0.1+ | 2001 10 24 | 704 | 0.2+ | 0.7− | 2006 03 24 | 699 | 0.6− | 0.0 |
| 2001 09 24 | 704 | 0.2+ | 0.3− | 2001 10 24 | 704 | 0.2+ | 0.9− | 2006 03 24 | 699 | 1.2+ | 0.2+ |
| 2001 09 24 | 704 | 0.4+ | 0.9− | 2001 10 24 | 704 | 0.3− | 0.9− | 2006 03 24 | 699 | 0.4+ | 0.3+ |
| 2001 09 24 | 704 | 0.5− | 1.3− | 2001 10 24 | 704 | 0.3− | 0.9− | 2006 03 24 | 699 | 0.5+ | 0.5+ |
| 2001 10 12 | 699 | 0.5+ | 0.4+ | 2001 11 09 | 704 | 0.2− | 0.1− | 2006 04 26 | 699 | 1.2+ | 0.3− |
| 2001 10 12 | 699 | 1.1+ | 0.3+ | 2001 11 09 | 704 | 0.4+ | 1.2+ | 2006 04 26 | 699 | 0.5+ | 1.0+ |
| 2001 10 12 | 699 | 0.4+ | 0.6+ | 2001 11 09 | 704 | 0.2+ | 0.1+ | 2006 04 26 | 699 | 0.9+ | 0.7− |
| 2001 10 12 | 699 | 0.4+ | 0.4+ | 2001 11 09 | 704 | 0.1− | 0.1− | 2006 04 26 | 699 | 0.7+ | 0.1− |
| 2001 10 13 | 704 | 0.8− | 0.1+ | 2001 11 09 | 644 | 0.1+ | 0.0 | 2006 05 06 | G96 | 0.4+ | 0.0 |
| 2001 10 13 | 704 | 0.4− | 0.4− | 2001 11 09 | 704 | 0.4+ | 0.4+ | 2006 05 06 | G96 | 0.4− | 0.1+ |
| 2001 10 13 | 704 | 1.1− | 0.0 | 2001 11 09 | 644 | 0.4− | 0.1− | 2006 05 06 | G96 | 0.1+ | 0.3+ |
| 2001 10 13 | 704 | 0.9− | 0.0 | 2001 11 09 | 644 | 0.1+ | 0.3− | 2006 05 06 | G96 | 0.1− | 0.0 |
| 2001 10 13 | 704 | 0.5− | 0.1− | 2001 11 16 | 644 | 0.3+ | 1.3+ | | | | |
| 2001 10 14 | 699 | 0.2− | 0.3+ | 2001 11 16 | 644 | 0.2− | 0.3+ | | | | |

**(139800)∗ 2001 RV$_{12}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.67994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21275407 | $\omega$ | 260.47947 | | −0.11060542 | −0.99338755 | |
| $a$ | 2.7789717 | $\Omega$ | 195.96898 | | +0.95010980 | −0.09659621 | |
| $e$ | 0.0312599 | $i$ | 6.42442 | | +0.29164673 | −0.06205123 | |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 02 | 691 | 0.3+ | 0.2− | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.2+ |
| 2000 07 02 | 691 | 0.0 | 0.2+ | 2004 03 20 | 704 | (1.8+ | 0.0 ) | 2006 08 24 | 644 | 0.2− | 0.7+ |
| 2000 07 02 | 691 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.3+ | 1.4+ | 2006 09 14 | 703 | 0.3− | 0.9− |
| 2001 08 23 | 699 | 0.7− | 0.1+ | 2004 03 20 | 704 | (1.9− | 0.7+) | 2006 09 14 | 703 | 1.3− | 0.3− |
| 2001 08 23 | 699 | (0.8+ | 2.6+) | 2004 03 24 | 699 | 0.1− | 0.7+ | 2006 09 14 | 703 | 1.1− | 1.3− |
| 2001 08 23 | 699 | 0.4− | 0.7+ | 2004 03 24 | 699 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.9− |
| 2001 08 23 | 699 | 0.2− | 0.3+ | 2004 03 24 | 699 | 1.4+ | 0.3− | 2006 09 15 | 691 | 0.2− | 0.4+ |
| 2001 09 08 | 704 | 0.1− | 0.0 | 2004 03 24 | 699 | 0.4+ | 0.6− | 2006 09 15 | 691 | 0.4+ | 0.5+ |
| 2001 09 08 | 704 | 0.1+ | 0.4+ | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 1.2+ | 0.7− | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.1− |
| 2001 09 08 | 704 | 0.5+ | 0.4− | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.7+ |
| 2001 09 11 | 704 | 0.4+ | 0.8− | 2004 03 27 | 704 | 0.9+ | 0.1− | 2006 09 18 | 699 | 1.1− | 0.8+ |
| 2001 09 11 | 704 | 0.8− | 0.2− | 2004 03 27 | 704 | 1.4+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.7− |
| 2001 09 11 | 704 | 0.6− | 1.1− | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2001 09 12 | 704 | 0.1− | 0.9+ | 2004 03 27 | 704 | (1.5+ | 1.7−) | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2001 09 12 | 704 | 0.6+ | 1.2+ | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.4− | 1.0+ |
| 2001 09 12 | 704 | 0.0 | 1.2+ | 2004 03 29 | 704 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2001 09 12 | 704 | 0.1+ | 1.0+ | 2004 03 29 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 0.2− | 1.2+ | 2004 03 29 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2004 03 29 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2004 03 29 | 704 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.6+ |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2004 03 30 | 704 | 1.0− | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | (1.6+ | 1.5+) | 2004 03 30 | 704 | 0.6+ | 0.4+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2001 10 19 | 644 | 0.9− | 0.5+ | 2004 03 30 | 704 | 0.6+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2001 10 19 | 644 | 0.4− | 0.9+ | 2004 03 30 | 704 | 0.8+ | 0.1+ | 2006 10 16 | G96 | 0.5− | 0.0 |
| 2001 10 19 | 644 | 0.7− | 0.2+ | 2004 03 30 | 704 | 0.0 | 1.0+ | 2006 10 16 | G96 | 0.1− | 0.3+ |
| 2002 12 01 | 704 | 0.1− | 0.2− | 2004 04 11 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.0 |
| 2002 12 01 | 704 | (2.0+ | 0.9+) | 2004 04 11 | 644 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.5+ |
| 2002 12 01 | 704 | 0.9− | 0.8+ | 2004 04 11 | 644 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 1.1− | 0.0 |
| 2002 12 01 | 704 | 1.2+ | 0.5+ | 2004 04 12 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2004 02 16 | 703 | (3.1+ | 0.1−) | 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.5+ | 0.8+ |
| 2004 02 16 | 703 | (2.0+ | 1.3+) | 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2004 02 16 | 703 | (1.2+ | 1.9+) | 2004 04 15 | 691 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.5+ | 0.4+ |
| 2004 02 16 | 703 | 0.8+ | 0.6− | 2004 04 15 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 0.6− | 1.2+ | 2004 04 15 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 1.4+ | 1.2+ | 2004 04 21 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.5+ |
| 2004 03 16 | 704 | 0.7− | 0.3+ | 2004 04 21 | 704 | 1.0+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2004 03 16 | 704 | 0.8− | 1.1+ | 2004 04 21 | 704 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2004 03 18 | 704 | 0.9− | 1.3+ | 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.1− | 0.1− | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.1+ |
| 2004 03 18 | 704 | 0.5+ | 1.0+ | 2004 04 22 | 691 | 0.0 | 0.5+ | | | | |
| 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 08 24 | 644 | 0.2+ | 0.8+ | | | | |

**(139801)∗ 2001 RL$_{14}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.15326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21365454 | $\omega$ | 158.62212 | | +0.74213933 | −0.66805500 | |
| $a$ | 2.7711580 | $\Omega$ | 243.41275 | | +0.60582556 | +0.70317428 | |
| $e$ | 0.0669537 | $i$ | 3.47128 | | +0.28671345 | +0.24341005 | |
| $P$ | 4.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 09 25 | 704 | 1.5+ | 1.0+ | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2001 09 25 | 704 | 0.6− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2001 09 10 | 704 | (1.5+ | 1.3+) | 2001 09 25 | 704 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2001 09 10 | 704 | 0.8+ | 1.0+ | 2001 09 25 | 704 | 0.4+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 09 10 | 704 | (0.2− | 1.6+) | 2001 09 25 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2001 09 10 | 704 | 0.8+ | 1.0+ | 2001 09 25 | 704 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 691 | 0.2− | 0.5+ | 2001 09 28 | 644 | 0.6− | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 09 11 | 704 | 0.5− | 0.7+ | 2001 09 28 | 644 | 1.2+ | 0.2− | 2006 10 03 | G96 | 0.0 | 0.4− |
| 2001 09 11 | 704 | 0.1+ | 0.6+ | 2001 09 28 | 644 | 1.0− | 1.0+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 09 11 | 691 | 0.2− | 0.5+ | 2001 09 28 | 644 | 1.4+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2001 09 11 | 704 | 0.3+ | 0.8+ | 2001 09 28 | 644 | 0.9− | 0.7+ | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2001 09 11 | 691 | 0.2− | 0.6+ | 2001 09 28 | 644 | 0.9+ | 0.4− | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 2001 09 11 | 704 | 0.2+ | 1.3+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.0 | 0.3+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2001 10 15 | 645 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.8− | 0.7+ |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2001 10 15 | 645 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 09 12 | 704 | 1.0− | 0.7+ | 2001 10 19 | 644 | 0.4− | 0.6− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2001 09 12 | 704 | 0.7− | 1.4+ | 2001 10 19 | 644 | 0.7− | 0.9− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 09 16 | 704 | 0.0 | 0.2+ | 2001 10 19 | 644 | 0.5− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.5+ | 2001 11 12 | 645 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 0.5− | 0.3+ | 2001 11 12 | 645 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.3− | 0.2− | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 0.1− | 0.0 | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 1.1+ | 1.2+ | 2001 12 10 | 645 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.3− | 1.1− |
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2001 12 10 | 645 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.0+ | 1.3+ |
| 2001 09 20 | 704 | 0.5+ | 0.6− | 2002 12 31 | 645 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2001 09 20 | 704 | 0.4+ | 0.2− | 2002 12 31 | 645 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 1.0− |
| 2001 09 22 | 704 | 0.2+ | 0.1+ | 2003 01 07 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2001 09 22 | 704 | 0.1+ | 0.0 | 2003 01 07 | 704 | 0.1+ | 1.0+ | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2001 09 22 | 704 | 0.2+ | 1.0+ | 2003 01 07 | 704 | 0.5+ | 1.4+ | 2006 11 13 | 644 | 0.1− | 0.5+ |
| 2001 09 22 | 704 | 1.0+ | 0.4− | 2003 01 07 | 704 | 0.6+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2001 09 23 | 704 | 0.3− | 0.2+ | 2003 01 07 | 704 | 0.5+ | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2001 09 23 | 704 | 0.1+ | 0.3+ | 2003 01 13 | 644 | 0.1+ | 0.7+ | 2006 11 13 | 644 | 0.2+ | 0.8+ |
| 2001 09 23 | 704 | 0.0 | 0.5+ | 2003 01 13 | 644 | 0.3+ | 0.8+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2001 09 23 | 704 | 0.1− | 0.4+ | 2003 01 13 | 644 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2001 09 23 | 704 | 0.3− | 1.0+ | 2004 04 13 | 691 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2001 09 24 | 704 | 0.5+ | 0.1− | 2004 04 13 | 691 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 09 24 | 704 | 0.1− | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2001 09 24 | 704 | 0.2− | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 1.3+ | 1.0+ |
| 2001 09 24 | 704 | 0.5+ | 0.6+ | 2004 04 19 | 691 | 0.1+ | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2001 09 24 | 704 | 0.3+ | 0.8+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2001 09 24 | 704 | 0.1− | 0.0 | 2004 05 09 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.1+ |
| 2001 09 24 | 704 | 0.9+ | 0.9+ | 2004 05 09 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 0.1+ | 0.1− | 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 1.5+ |
| 2001 09 24 | 704 | 0.2− | 0.0 | 2004 05 24 | 691 | 0.3+ | 0.6+ | 2006 11 22 | 104 | 0.1− | 0.7+ |
| 2001 09 24 | 704 | 0.0 | 0.2− | 2004 05 24 | 691 | 0.4+ | 0.6+ | 2006 11 22 | 104 | 1.5+ | 2.0− |
| 2001 09 25 | 704 | 0.4+ | 0.7+ | 2004 05 24 | 691 | 0.6+ | 0.5+ | 2006 11 22 | 104 | 0.2+ | 0.3+ |
| 2001 09 25 | 704 | 0.2+ | 1.1+ | 2006 09 28 | G96 | 0.0 | 0.4− | | | | |

**(139802)∗ 2001 RD$_{15}$ = 1995 GK$_5$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18014)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.59376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22397959 | $\omega$ | 255.96999 | | +0.07993039 | −0.99469495 | |
| $a$ | 2.6853264 | $\Omega$ | 190.13378 | | +0.99588953 | +0.08246525 | |
| $e$ | 0.0498146 | $i$ | 21.59428 | | +0.04260480 | −0.06149349 | |
| $P$ | 4.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 05 | 691 | 0.1− | 0.1+ | 2001 09 11 | 704 | 0.2− | 1.0+ | 2004 04 16 | 333 | 0.2+ | 0.9+ |
| 1995 04 05 | 691 | 0.0 | 0.1+ | 2001 09 12 | 704 | 0.8− | 0.3− | 2004 04 16 | 333 | 0.2+ | 0.6+ |
| 1995 04 05 | 691 | 0.1− | 0.0 | 2001 09 12 | 704 | 0.5+ | 1.0− | 2004 04 16 | 333 | 1.3+ | 0.2+ |
| 1995 04 07 | 691 | 0.3+ | 0.1+ | 2001 09 12 | 704 | (2.1− | 0.9−) | 2004 04 23 | 691 | 0.2+ | 0.3+ |
| 1995 04 07 | 691 | 0.1+ | 0.1− | 2001 09 12 | 704 | 0.4+ | 0.0 | 2004 04 23 | 691 | 0.1+ | 0.2+ |
| 1995 04 07 | 691 | 0.0 | 0.0 | 2001 09 16 | 704 | 0.6+ | 0.8+ | 2004 04 23 | 691 | 0.0 | 0.2+ |
| 2001 08 16 | 644 | 0.5− | 0.0 | 2001 09 16 | 704 | (1.6+ | 0.5+) | 2006 09 18 | 703 | (1.9− | 0.8−) |
| 2001 08 16 | 644 | 0.5− | 0.2− | 2001 09 16 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 703 | (1.6− | 0.0 ) |
| 2001 08 16 | 644 | 0.8− | 0.0 | 2001 09 16 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 703 | 1.1− | 0.0 |
| 2001 09 10 | 704 | 0.7− | 1.1+ | 2001 09 16 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 1.4+ | 1.1− |
| 2001 09 10 | 704 | 0.5+ | 0.5+ | 2001 09 25 | 704 | 1.2+ | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.9+ |
| 2001 09 10 | 704 | (0.7− | 1.8+) | 2001 09 25 | 704 | 0.6+ | 1.2+ | 2006 10 17 | 703 | 0.5+ | 1.2− |
| 2001 09 10 | 704 | 0.3+ | 1.1− | 2001 09 25 | 704 | 0.7+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2001 09 10 | 704 | (0.1− | 1.7+) | 2001 09 25 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.8+ | 1.1− |
| 2001 09 10 | 704 | 0.3+ | 0.1− | 2001 09 25 | 644 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.0 |
| 2001 09 10 | 704 | (0.2+ | 2.0+) | 2001 09 25 | 704 | 0.7+ | 0.3+ | 2006 10 28 | 703 | (0.1− | 1.8+) |
| 2001 09 10 | 704 | 0.4+ | 0.0 | 2001 09 25 | 644 | 0.5− | 0.4− | 2006 10 28 | 703 | 0.6+ | 0.7+ |
| 2001 09 10 | 704 | (0.3+ | 2.1+) | 2001 09 25 | 644 | 0.2− | 0.1− | 2006 10 28 | 703 | 1.2+ | 0.5+ |
| 2001 09 10 | 704 | 0.1+ | 0.6− | 2001 10 24 | 644 | 0.4− | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2001 09 11 | 699 | 0.4+ | 0.5− | 2001 10 24 | 644 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.5+ | 0.2− |
| 2001 09 11 | 699 | 1.3− | 0.5+ | 2001 10 24 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.4− | 0.6− |
| 2001 09 11 | 699 | 0.3− | 0.4+ | 2004 03 16 | 691 | 0.2− | 0.4+ | 2006 11 16 | 703 | 0.9+ | 0.9+ |
| 2001 09 11 | 699 | 0.3− | 0.7− | 2004 03 16 | 691 | 0.3− | 0.4+ | 2006 11 23 | 703 | 0.4− | 1.5+ |
| 2001 09 11 | 704 | 0.7− | 0.0 | 2004 03 16 | 691 | 0.1− | 0.6+ | 2006 11 23 | 703 | 0.2− | 0.9+ |
| 2001 09 11 | 704 | 0.5− | 0.4+ | 2004 04 14 | 185 | 0.1+ | 0.9− | 2006 11 23 | 703 | 1.9− | 2.9+ |
| 2001 09 11 | 704 | 0.2+ | 0.6+ | 2004 04 14 | 185 | 1.1− | 0.3− | 2006 11 23 | 703 | 1.0− | 0.8+ |
| 2001 09 11 | 704 | 0.9− | 0.9+ | 2004 04 14 | 185 | 0.0 | 0.6− | | | | |

**(139803)∗ 2001 RP$_{15}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.49014 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21716267 | $\omega$ | 295.51728 | | −0.15957351 | −0.98679174 | |
| $a$ | 2.7412329 | $\Omega$ | 163.59253 | | +0.93748173 | −0.16033308 | |
| $e$ | 0.0230298 | $i$ | 5.66830 | | +0.30929645 | −0.02313798 | |
| $P$ | 4.54 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 704 | 0.3+ | 0.1+ | 2004 03 13 | 644 | 0.0 | 0.1+ | 2004 04 20 | 691 | 0.1+ | 0.2+ |
| 2000 05 30 | 704 | 0.2+ | 0.7+ | 2004 03 13 | 644 | 0.2+ | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.2+ |
| 2000 05 30 | 704 | 0.4− | 1.3+ | 2004 03 19 | 704 | 0.5+ | 0.8+ | 2004 04 22 | 704 | 1.3+ | 0.6− |
| 2000 05 30 | 704 | 0.8+ | 0.7+ | 2004 03 19 | 704 | 0.5+ | 1.4+ | 2004 04 22 | 704 | 0.1+ | 0.5+ |
| 2000 05 30 | 704 | 0.8− | 0.5− | 2004 03 19 | 704 | 0.1+ | 0.4− | 2004 04 22 | 704 | 0.1− | 0.3+ |
| 2001 05 23 | 807 | 0.2+ | 0.6+ | 2004 03 19 | 704 | 0.4+ | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.1− |
| 2001 05 23 | 807 | 0.2+ | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.2− | 2005 06 04 | 691 | 0.1− | 0.1− |
| 2001 08 23 | 699 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2005 06 04 | 691 | 0.0 | 0.2− |
| 2001 08 23 | 699 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2005 06 04 | 691 | 0.0 | 0.1− |
| 2001 08 23 | 699 | 0.0 | 1.3+ | 2004 03 20 | 704 | 0.9+ | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.2− |
| 2001 08 23 | 699 | 0.3− | 0.0 | 2004 03 20 | 699 | (0.1− | 1.6+) | 2005 06 17 | 691 | 0.0 | 0.0 |
| 2001 09 07 | 704 | 1.2− | 0.2− | 2004 03 20 | 704 | 1.3+ | 1.2+ | 2005 06 17 | 691 | 0.1+ | 0.2− |
| 2001 09 07 | 704 | 0.2− | 0.2+ | 2004 03 20 | 699 | 0.4− | 0.6− | 2006 09 30 | 703 | 0.6− | 1.1+ |
| 2001 09 07 | 704 | 0.2− | 0.9+ | 2004 03 20 | 699 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.4+ |
| 2001 09 11 | 699 | 0.4+ | 1.3+ | 2004 03 20 | 699 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2001 09 11 | 699 | 0.2− | 0.5+ | 2004 03 21 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2004 03 21 | 691 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2001 09 11 | 699 | 0.1− | 0.5+ | 2004 03 21 | 691 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2001 09 11 | 699 | 0.2− | 0.7+ | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2001 09 11 | 699 | (0.7+ | 1.5+) | 2004 03 22 | 704 | 0.0 | 0.9+ | 2006 10 02 | G96 | 0.5− | 0.2+ |
| 2001 09 11 | 699 | 0.6− | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 09 11 | 699 | 0.2+ | 0.6− | 2004 03 22 | 704 | 0.8+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2001 09 12 | 704 | 0.4− | 0.9+ | 2004 03 22 | 704 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.8− | 0.8+ |
| 2001 09 12 | 704 | 0.1− | 0.8+ | 2004 03 28 | 704 | 0.7+ | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2001 09 12 | 704 | (0.4+ | 1.7+) | 2004 03 28 | 704 | 0.5+ | 0.8+ | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.7+ | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.7+ |
| 2001 09 19 | 704 | 0.4− | 0.8+ | 2004 03 28 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2004 03 28 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2004 04 12 | 699 | 1.0− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2004 04 12 | 699 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.8+ |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 04 12 | 699 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2004 04 12 | 699 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2004 04 15 | 699 | 0.9− | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2004 04 15 | 699 | 0.3− | 0.6+ | 2006 11 13 | 703 | 0.7− | 0.3+ |
| 2001 10 17 | 644 | 0.4+ | 0.8+ | 2004 04 15 | 699 | 0.7− | 0.6+ | 2006 11 13 | 703 | 0.5+ | 1.0+ |
| 2001 10 17 | 644 | 0.0 | 0.5+ | 2004 04 15 | 699 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.5+ | 0.2− |
| 2001 10 17 | 644 | 0.3− | 0.1+ | 2004 04 19 | 704 | 0.1+ | 0.4− | 2006 11 13 | 703 | 1.2+ | 0.9+ |
| 2002 12 31 | 704 | 0.1− | 1.3+ | 2004 04 19 | 704 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 1.1+ | 2004 04 19 | 704 | 0.5+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | (0.2− | 1.7+) | 2004 04 19 | 704 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 03 13 | 644 | 0.1+ | 0.3+ | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.1+ |

**(139804)∗ 2001 RH$_{16}$**

Discovered 2001 Sept. 10 by G. Hug at Farpoint Observatory, Eskridge.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.63520 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20424416 | $\omega$ | 117.49749 | | +0.88062263 | +0.46636554 | |
| $a$ | 2.8556366 | $\Omega$ | 214.88789 | | −0.46972345 | +0.83610423 | |
| $e$ | 0.1373526 | $i$ | 8.41540 | | −0.06215835 | +0.28884753 | |
| $P$ | 4.83 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 691 | 0.2+ | 0.2− | 2001 09 20 | 645 | 0.0 | 0.4− | 2006 10 01 | 703 | 0.5+ | 0.7+ |
| 2000 04 27 | 691 | 0.4− | 0.5− | 2001 10 09 | 734 | 0.7+ | 1.3+ | 2006 10 01 | 703 | (0.0 | 1.6−) |
| 2000 04 27 | 691 | 0.2+ | 0.3− | 2001 10 09 | 734 | 0.3+ | 0.5− | 2006 10 01 | 703 | (1.2+ | 2.3−) |
| 2001 08 25 | 704 | 0.0 | 0.7+ | 2005 01 17 | 809 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.4− | 0.6− |
| 2001 08 25 | 704 | 1.1− | 0.1+ | 2005 01 17 | 809 | 0.4− | 0.8− | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 2001 08 25 | 704 | 0.3+ | 0.2− | 2005 06 08 | 691 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 0.0 | 1.0+ | 2005 06 08 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.9− | 1.4+ | 2005 06 08 | 691 | 0.1− | 0.5+ | 2006 10 27 | 691 | 0.4− | 0.3+ |
| 2001 09 10 | 734 | (2.1− | 2.7−) | 2005 06 12 | 691 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2001 09 10 | 734 | 0.2− | 0.3+ | 2005 06 12 | 691 | 0.3+ | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2001 09 10 | 734 | 0.5+ | 0.1− | 2005 06 12 | 691 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.7+ |
| 2001 09 13 | 734 | 0.0 | 0.7+ | 2006 08 25 | D35 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 09 13 | 734 | 1.0+ | 0.7+ | 2006 08 25 | D35 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 09 13 | 734 | 0.8+ | 0.5− | 2006 08 25 | D35 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 734 | 0.1+ | 0.7+ | 2006 09 17 | 703 | 0.1+ | 0.9− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 734 | 1.1+ | 0.3− | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 734 | 1.1+ | 0.9− | 2006 09 17 | 703 | 0.2− | 0.4+ | | | | |
| 2001 09 20 | 645 | 0.0 | 0.4− | 2006 09 17 | 703 | 0.4+ | 0.7+ | | | | |

**(139805)∗ 2001 RT$_{16}$**

Discovered 2001 Sept. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.17801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19094429 | $\omega$ | 73.25978 | | −0.61140627 | +0.79112137 | |
| $a$ | 2.9867459 | $\Omega$ | 159.01899 | | −0.74344669 | −0.56666426 | |
| $e$ | 0.0935730 | $i$ | 2.81563 | | −0.27105239 | −0.23025768 | |
| $P$ | 5.16 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.5− | 0.8− | 2004 01 24 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 703 | 0.1+ | 0.4+ |
| 1994 04 02 | 691 | 0.5− | 0.5− | 2004 01 24 | 704 | 0.4− | 0.8+ | 2006 08 28 | 703 | 0.6− | 0.2+ |
| 1994 04 02 | 691 | 0.7+ | 0.2+ | 2004 01 24 | 704 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 0.3− | 0.0 |
| 1999 02 12 | 691 | 0.2− | 0.5− | 2004 01 24 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 1.2− |
| 1999 02 12 | 691 | 0.1− | 0.0 | 2004 01 28 | 704 | 0.2+ | 0.6− | 2006 09 12 | 703 | 0.5+ | 0.1+ |
| 1999 02 12 | 691 | 0.6− | 0.4− | 2004 01 28 | 704 | 0.6− | 1.5− | 2006 09 12 | 703 | 0.2+ | 1.1+ |
| 2001 08 27 | 644 | 0.4+ | 0.1− | 2004 01 28 | 704 | (1.6+ | 0.7−) | 2006 09 12 | 703 | 1.2− | 0.9− |
| 2001 08 27 | 644 | 0.3− | 0.1+ | 2004 01 28 | 704 | 0.6+ | 0.2− | 2006 09 12 | 703 | (2.0− | 0.4−) |
| 2001 08 27 | 644 | 0.3+ | 0.0 | 2004 01 28 | 704 | (1.6+ | 0.5−) | 2006 09 17 | 704 | 0.1+ | 0.8+ |
| 2001 09 11 | 333 | (1.5− | 0.7−) | 2004 02 11 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.9+ |
| 2001 09 11 | 333 | 0.5− | 0.5− | 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.9+ | 0.8− |
| 2001 09 12 | 333 | 0.8+ | 0.8− | 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 09 17 | 704 | (0.2− | 2.7+) |
| 2001 09 12 | 333 | 0.7+ | 0.5+ | 2004 02 14 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.3− | 0.3− |
| 2001 09 19 | 704 | 0.3+ | 0.5− | 2004 02 14 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.8+ | 1.0+ |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.5− |
| 2001 09 19 | 704 | 0.6+ | 0.6− | 2004 02 18 | 704 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.8− | 2004 02 18 | 704 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.9− | 0.1− |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2004 02 18 | 704 | 0.1− | 0.3+ | 2006 09 19 | 699 | (1.0− | 1.8+) |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2004 02 18 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | (1.6− | 0.5+) | 2004 02 18 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.3− |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2004 02 19 | 704 | 1.2+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.2+ | 2004 02 19 | 704 | 1.0+ | 0.4+ | 2006 09 20 | 704 | 0.7+ | 0.4− |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2004 02 19 | 704 | 0.9+ | 0.3+ | 2006 09 20 | 704 | 0.7− | 0.7− |
| 2001 09 21 | 704 | 0.3+ | 0.7+ | 2004 02 19 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.9+ | 0.7+ |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2004 02 19 | 704 | 0.9+ | 0.4+ | 2006 09 25 | 699 | 0.7− | 1.4+ |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2004 02 20 | 704 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.7+ | 1.5+ |
| 2001 09 21 | 704 | 0.4+ | 0.6+ | 2004 02 20 | 704 | 0.5+ | 1.0+ | 2006 09 25 | 699 | 0.5− | 0.6+ |
| 2001 09 26 | 704 | 0.4+ | 0.1+ | 2004 02 20 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.4+ | 0.7+ |
| 2001 09 26 | 704 | 0.6− | 0.2+ | 2004 02 26 | 704 | 0.2− | 1.1+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 2001 09 26 | 704 | 0.4+ | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 2001 09 26 | 704 | 0.9− | 0.5+ | 2004 02 26 | 704 | (1.8− | 1.0+) | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2001 10 11 | 644 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2001 10 11 | 644 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2001 10 11 | 644 | 0.2+ | 0.1+ | 2004 02 29 | 691 | 0.6+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.3− | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.3− | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 10 17 | 644 | 0.2+ | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 10 17 | 644 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 10 17 | 644 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2001 10 20 | 704 | 0.8+ | 0.2+ | 2004 03 18 | 704 | 1.0+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4− | 0.9+ | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2001 10 20 | 704 | (0.7− | 1.8+) | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 2001 10 20 | 704 | 0.3+ | 0.8+ | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2001 10 20 | 704 | 0.7+ | 0.9+ | 2006 08 27 | 699 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.6− |
| 2002 11 05 | 291 | 0.1− | 0.5− | 2006 08 27 | 699 | 1.2− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 11 05 | 291 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.5+ | 0.5− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2002 11 05 | 291 | 0.1+ | 0.4− | 2006 08 27 | 699 | 0.0 | 1.4+ | | | | |

**(139806)∗ 2001 RB$_{17}$ = 1999 FA$_{37}$**

Discovered 2001 Sept. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 20091)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.59760 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24596633 | $\omega$ | 337.46117 | | −0.53405219 | | −0.84503812 |
| $a$ | 2.5228162 | $\Omega$ | 144.80273 | | +0.78251181 | | −0.50589141 |
| $e$ | 0.1418547 | $i$ | 2.62872 | | +0.32009925 | | −0.17316022 |
| $P$ | 4.01 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 22 | 691 | 0.0 | 0.3+ | 2003 01 26 | 608 | 0.0 | 1.0− | 2003 03 30 | 645 | 0.3− | 0.1+ |
| 1991 02 22 | 691 | 0.1− | 0.6+ | 2003 01 26 | 608 | 0.3+ | 0.7− | 2003 03 30 | 645 | 0.2− | 0.1+ |
| 1991 02 22 | 691 | 0.0 | 0.1+ | 2003 01 28 | 704 | (1.7+ | 1.0−) | 2003 04 25 | 704 | 0.2− | 0.4+ |
| 1999 02 18 | 566 | 0.6− | 0.9− | 2003 01 28 | 704 | (1.9+ | 0.1+) | 2003 04 25 | 704 | 0.1− | 0.2+ |
| 1999 02 18 | 566 | 0.2− | 0.7− | 2003 01 28 | 704 | 1.4+ | 0.5− | 2003 04 25 | 704 | 0.2− | 0.3+ |
| 1999 02 18 | 566 | 0.4− | 1.1− | 2003 01 28 | 704 | 1.0+ | 0.4− | 2005 08 29 | 699 | 0.3− | 0.0 |
| 1999 03 20 | 704 | 0.2− | 1.2− | 2003 01 28 | 704 | 1.3+ | 0.0 | 2005 08 29 | 699 | 1.0− | 1.0+ |
| 1999 03 20 | 704 | 1.1+ | 1.7− | 2003 02 03 | 704 | 0.2− | 0.4+ | 2005 08 29 | 699 | 0.6− | 0.4− |
| 1999 03 20 | 704 | (1.7− | 2.2−) | 2003 02 03 | 704 | 0.4+ | 0.0 | 2005 08 29 | 699 | (1.8+ | 0.7+) |
| 1999 03 20 | 704 | (5.3− | 0.9−) | 2003 02 03 | 704 | 0.1+ | 0.6+ | 2005 09 09 | 704 | (2.5− | 3.8−) |
| 1999 03 23 | 704 | (2.2+ | 0.3+) | 2003 02 03 | 704 | 0.1+ | 0.2− | 2005 09 09 | 704 | 0.6− | 0.3− |
| 1999 03 23 | 704 | 0.0 | 0.6+ | 2003 02 03 | 704 | 0.4− | 0.6+ | 2005 09 09 | 704 | 0.4− | 0.8+ |
| 1999 03 23 | 704 | 1.4+ | 0.1+ | 2003 02 03 | 699 | 1.4+ | 0.6+ | 2005 09 13 | 691 | 0.1− | 0.1+ |
| 2001 08 27 | 644 | 0.1+ | 0.6+ | 2003 02 03 | 699 | 0.1− | 0.2− | 2005 09 13 | 691 | 0.1− | 0.1+ |
| 2001 08 27 | 644 | 0.1+ | 0.6+ | 2003 02 03 | 699 | (1.8+ | 1.0−) | 2005 09 13 | 691 | 0.2− | 0.1+ |
| 2001 08 27 | 644 | 0.1+ | 0.1+ | 2003 02 03 | 699 | 0.2+ | 1.5+ | 2005 09 28 | A50 | 0.3+ | 0.2+ |
| 2001 09 11 | 333 | (0.5+ | 1.7−) | 2003 02 08 | 608 | 0.7+ | 0.2− | 2005 09 28 | A50 | (0.1+ | 2.2−) |
| 2001 09 11 | 333 | 0.4+ | 0.3+ | 2003 02 08 | 608 | 0.5+ | 0.0 | 2005 09 28 | A50 | 0.0 | 0.5− |
| 2001 09 12 | 333 | 0.5+ | 1.2− | 2003 02 08 | 608 | 0.8+ | 0.0 | 2005 09 28 | A50 | 0.1− | 0.3+ |
| 2001 09 12 | 333 | 0.3− | 1.0− | 2003 02 22 | 644 | 0.1+ | 0.4+ | 2005 09 29 | 699 | 0.7+ | 1.0+ |
| 2001 09 16 | 704 | 0.4+ | 0.0 | 2003 02 22 | 644 | 0.1+ | 0.3+ | 2005 09 29 | 699 | 0.6+ | 0.6+ |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2003 02 22 | 644 | 0.1− | 0.3+ | 2005 09 29 | 699 | 1.0+ | 0.4− |
| 2001 09 16 | 704 | 1.0+ | 0.9+ | 2003 02 23 | 699 | 0.4+ | 0.4+ | 2005 09 29 | 699 | (0.8− | 1.8−) |
| 2001 09 16 | 704 | 0.9+ | 0.5− | 2003 02 23 | 699 | 0.5+ | 0.7+ | 2005 10 01 | 704 | 0.3+ | 0.4+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2003 02 23 | 699 | 0.2+ | 0.6+ | 2005 10 01 | 704 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2003 02 23 | 699 | 0.5+ | 0.3+ | 2005 10 01 | 704 | 0.3− | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2003 02 23 | 608 | 1.1+ | 0.5− | 2005 10 01 | 704 | 0.0 | 0.5+ |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2003 02 23 | 608 | 1.4+ | 0.1+ | 2005 10 01 | 704 | 0.3− | 0.8+ |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2003 02 23 | 608 | 1.3+ | 0.5− | 2005 10 06 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2003 02 26 | 608 | 0.1+ | 0.2+ | 2005 10 06 | 699 | 0.5− | 1.1− |
| 2001 09 21 | 704 | 0.7− | 0.9+ | 2003 02 26 | 608 | 0.1+ | 0.2+ | 2005 10 06 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.1− | 1.1+ | 2003 02 26 | 608 | 0.3− | 0.1− | 2005 10 06 | G96 | 0.4+ | 0.2− |
| 2001 09 21 | 704 | (0.3+ | 3.0+) | 2003 02 28 | 704 | 0.2− | 0.5+ | 2005 10 06 | G96 | 0.0 | 0.3− |
| 2001 09 23 | 704 | 0.5+ | 0.3+ | 2003 02 28 | 704 | 0.2− | 0.6+ | 2005 10 06 | 699 | 0.7+ | 0.3− |
| 2001 09 23 | 704 | 0.7+ | 0.3− | 2003 02 28 | 704 | 0.2− | 0.3+ | 2005 10 06 | 699 | 0.6+ | 0.5− |
| 2001 09 23 | 704 | 1.4+ | 0.1− | 2003 02 28 | 704 | 0.4− | 0.3+ | 2005 10 06 | 699 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.1− | 0.3− | 2003 02 28 | 608 | 0.5+ | 0.4+ | 2005 10 09 | 691 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 0.4− | 0.7+ | 2003 02 28 | 608 | 0.3+ | 0.5+ | 2005 10 09 | 691 | 0.2− | 0.1− |
| 2001 09 26 | 704 | 0.1+ | 0.3+ | 2003 02 28 | 608 | 0.5+ | 0.5+ | 2005 10 09 | 691 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.2− | 0.7+ | 2003 03 05 | 704 | 0.2+ | 0.1− | 2005 10 20 | 644 | 0.0 | 0.1− |
| 2001 09 26 | 704 | 0.1− | 0.4+ | 2003 03 05 | 704 | 0.3+ | 0.3+ | 2005 10 20 | 644 | 0.2+ | 0.6− |
| 2001 09 26 | 704 | 0.2+ | 0.3− | 2003 03 05 | 704 | 0.5+ | 0.3+ | 2005 10 20 | 644 | 0.3− | 0.2− |
| 2001 10 06 | 644 | 0.1− | 0.3+ | 2003 03 05 | 704 | 0.2+ | 0.1+ | 2005 10 20 | 644 | 0.2+ | 0.2− |
| 2001 10 06 | 644 | 0.2− | 0.0 | 2003 03 05 | 704 | 0.5− | 0.1+ | 2005 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 10 06 | 644 | 0.4− | 0.0 | 2003 03 06 | 699 | 0.4+ | 0.0 | 2005 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 10 13 | 704 | 0.5− | 0.8− | 2003 03 06 | 699 | 0.3+ | 0.2− | 2005 10 28 | 704 | 1.4+ | 0.7− |
| 2001 10 13 | 704 | 1.3− | 0.6− | 2003 03 06 | 699 | 0.3− | 0.2− | 2005 10 28 | 704 | (1.8+ | 0.0 ) |
| 2001 10 13 | 704 | (2.0+ | 0.3+) | 2003 03 06 | 699 | 0.3− | 0.9+ | 2005 10 28 | 704 | 1.0− | 0.5+ |
| 2001 10 13 | 704 | 0.7+ | 1.1+ | 2003 03 06 | 644 | 0.2− | 0.6+ | 2005 10 28 | 704 | (2.1+ | 1.2−) |
| 2001 10 17 | 644 | 0.9− | 0.2+ | 2003 03 06 | 644 | 0.1+ | 0.9+ | 2006 10 23 | 691 | 0.1+ | 0.7− |
| 2001 10 17 | 644 | 1.0− | 0.4+ | 2003 03 06 | 644 | 0.0 | 0.8+ | 2006 10 23 | 691 | 0.0 | 0.6− |
| 2001 10 17 | 644 | 0.8− | 0.6+ | 2003 03 07 | 699 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.3+ | 0.4− |
| 2001 10 20 | 704 | 0.3+ | 0.2+ | 2003 03 07 | 699 | 0.2+ | 0.5− | 2006 11 15 | G96 | 1.7− | 0.3− |
| 2001 10 20 | 704 | 0.1− | 0.7+ | 2003 03 07 | 699 | 0.7+ | 0.2+ | 2006 11 15 | G96 | 1.1− | 0.8− |
| 2001 10 20 | 704 | 0.3− | 0.1− | 2003 03 07 | 699 | 0.1− | 0.2+ | 2006 11 15 | G96 | 1.2− | 0.7− |
| 2001 10 20 | 704 | 0.1− | 0.5+ | 2003 03 14 | 608 | 0.2− | 0.8− | 2006 11 15 | G96 | 0.7− | 0.9− |
| 2001 10 20 | 704 | 0.0 | 0.6+ | 2003 03 14 | 608 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.9− | 0.6− |
| 2003 01 08 | 704 | 0.3+ | 0.7+ | 2003 03 14 | 608 | 0.1+ | 0.2− | 2006 11 16 | G96 | 1.1− | 0.6− |
| 2003 01 08 | 704 | 0.2+ | 0.1− | 2003 03 25 | 699 | 0.4− | 0.6+ | 2006 11 16 | G96 | 1.0− | 0.5− |
| 2003 01 08 | 704 | 0.5+ | 0.4+ | 2003 03 25 | 699 | 1.0− | 0.2+ | 2006 11 16 | G96 | 0.7− | 0.6− |
| 2003 01 08 | 704 | 0.6+ | 0.4+ | 2003 03 25 | 699 | 0.0 | 0.2+ | | | | |
| 2003 01 26 | 608 | 0.1− | 0.9− | 2003 03 25 | 699 | 1.1+ | 0.2− | | | | |

**(139807)∗ 2001 RJ$_{17}$**

Discovered 2001 Sept. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.49282 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18211076 | $\omega$ | 85.55963 | | −0.28370738 | | −0.95646902 |
| $a$ | 3.0825655 | $\Omega$ | 21.30917 | | +0.78814305 | | −0.27321413 |
| $e$ | 0.0571554 | $i$ | 10.84738 | | +0.54620568 | | −0.10257216 |
| $P$ | 5.41 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.9+ | 0.8+ | 2001 10 20 | 704 | 0.9− | 0.2+ | 2004 03 17 | 704 | 0.6+ | 0.4+ |
| 2001 08 27 | 699 | 0.3− | 1.0+ | 2001 10 20 | 704 | 0.9− | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.6+ |
| 2001 08 27 | 699 | 0.6− | 1.0+ | 2001 10 20 | 704 | 1.0− | 0.8+ | 2004 03 18 | 704 | 0.5+ | 0.5+ |
| 2001 08 27 | 699 | 0.5− | 0.4+ | 2001 10 20 | 704 | 0.9− | 1.0+ | 2004 03 18 | 704 | 0.2+ | 1.2+ |
| 2001 09 11 | 333 | 0.6+ | 0.2− | 2001 10 23 | 704 | 0.7− | 0.9+ | 2004 03 18 | 704 | 0.2+ | 0.7+ |
| 2001 09 11 | 333 | 0.2− | 0.5− | 2001 10 23 | 704 | 0.3+ | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.6+ |
| 2001 09 12 | 333 | 0.8+ | 0.8− | 2001 10 23 | 704 | 0.4+ | 1.8+ | 2004 03 19 | 704 | 1.1+ | 0.1− |
| 2001 09 12 | 333 | 0.1− | 0.7− | 2001 10 24 | 704 | 0.6− | 0.9+ | 2004 03 19 | 704 | 1.3+ | 0.1− |
| 2001 09 16 | 704 | 0.7− | 0.0 | 2001 10 24 | 704 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 0.2− | 0.6+ | 2001 10 24 | 704 | 1.6− | 1.1+ | 2004 03 19 | 704 | 0.6+ | 0.2− |
| 2001 09 16 | 704 | 1.2− | 0.4+ | 2001 10 24 | 704 | 0.2− | 0.7− | 2004 03 19 | 704 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | 0.1+ | 0.1− | 2001 10 24 | 704 | 1.1− | 0.0 | 2004 03 21 | 699 | 0.2+ | 0.4+ |
| 2001 09 16 | 704 | 0.5+ | 0.9+ | 2001 11 18 | 704 | 0.2− | 0.1+ | 2004 03 21 | 699 | 0.7− | 0.0 |
| 2001 09 19 | 704 | 0.3− | 1.0+ | 2001 11 18 | 704 | 0.4− | 1.5− | 2004 03 21 | 699 | 0.8+ | 0.3+ |
| 2001 09 19 | 704 | 0.5− | 1.5+ | 2001 11 18 | 704 | 0.9+ | 0.6+ | 2004 03 21 | 699 | 0.1+ | 0.5+ |
| 2001 09 19 | 704 | 0.9− | 1.4+ | 2001 11 18 | 704 | 0.5− | 0.8+ | 2004 03 22 | 704 | 0.1+ | 1.0+ |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2002 12 03 | 644 | 0.6+ | 0.1+ | 2004 03 22 | 704 | 0.7+ | 1.1+ |
| 2001 09 19 | 704 | 1.2− | 1.0+ | 2002 12 03 | 644 | 0.6+ | 0.0 | 2004 03 22 | 704 | 0.0 | 0.5+ |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2002 12 03 | 644 | 0.7+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 1.3+ | 2002 12 06 | 704 | 0.2+ | 0.1+ | 2004 03 22 | 704 | 1.1+ | 0.5+ |
| 2001 09 19 | 704 | 1.1− | 1.4+ | 2002 12 06 | 704 | 0.4− | 1.8− | 2004 03 24 | 699 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.6− | 1.0+ | 2002 12 06 | 704 | 0.4+ | 0.6− | 2004 03 24 | 699 | 0.5+ | 0.5+ |
| 2001 09 19 | 704 | 0.2+ | 1.0+ | 2002 12 06 | 704 | (2.2− | 2.5−) | 2004 03 24 | 699 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.6+ | 2002 12 12 | 644 | 0.1− | 0.2− | 2004 03 24 | 699 | 0.3− | 1.1+ |
| 2001 09 21 | 704 | 0.1− | 1.6+ | 2002 12 12 | 644 | 0.3+ | 0.3− | 2004 03 28 | 704 | 0.3+ | 1.1+ |
| 2001 09 21 | 704 | 0.7+ | 1.1+ | 2002 12 12 | 644 | 0.1− | 0.1− | 2004 03 28 | 704 | 0.2+ | 1.3+ |
| 2001 09 21 | 704 | (0.8− | 2.1+) | 2002 12 15 | 704 | 0.5+ | 0.2− | 2004 03 28 | 704 | 0.4+ | 1.2+ |
| 2001 09 21 | 704 | 0.5− | 1.6+ | 2002 12 15 | 704 | 0.1− | 0.6− | 2004 03 28 | 704 | 0.3+ | 0.7+ |
| 2001 09 24 | 704 | 0.4− | 0.2+ | 2002 12 15 | 704 | 0.7+ | 0.5− | 2004 03 28 | 704 | 0.5+ | 1.1+ |
| 2001 09 24 | 704 | 0.5+ | 0.9+ | 2002 12 15 | 704 | 0.8+ | 0.1+ | 2004 04 15 | 644 | 0.3+ | 0.5+ |
| 2001 09 24 | 704 | 0.1+ | 0.7+ | 2002 12 15 | 704 | 0.5+ | 0.2− | 2004 04 15 | 644 | 0.2+ | 0.6+ |
| 2001 09 24 | 704 | 0.3− | 1.1+ | 2003 01 07 | 704 | 0.0 | 0.6− | 2004 04 15 | 644 | 0.0 | 0.6+ |
| 2001 09 24 | 704 | 1.0− | 1.2+ | 2003 01 07 | 704 | 0.8+ | 0.1− | 2004 04 15 | 699 | 0.3+ | 0.2+ |
| 2001 09 26 | 704 | 0.4− | 0.0 | 2003 01 07 | 704 | 1.1+ | 0.3− | 2004 04 15 | 699 | 0.9− | 0.1+ |
| 2001 09 26 | 704 | 1.2+ | 1.5+ | 2003 01 07 | 704 | 0.6− | 0.2+ | 2004 04 15 | 699 | 0.8− | 0.3− |
| 2001 09 26 | 704 | 0.2− | 0.4+ | 2003 01 10 | 704 | 1.2− | 0.5+ | 2004 04 15 | 699 | 0.9+ | 1.0+ |
| 2001 09 26 | 704 | 0.2+ | 0.4+ | 2003 01 10 | 704 | 1.0− | 1.2+ | 2004 04 19 | 704 | 0.8+ | 0.9+ |
| 2001 09 26 | 704 | 0.1+ | 0.3+ | 2003 01 10 | 704 | 1.0− | 1.8+ | 2004 04 19 | 704 | 0.7+ | 0.8+ |
| 2001 09 26 | 704 | 0.0 | 0.4+ | 2003 01 10 | 704 | 1.6− | 1.6+ | 2004 04 19 | 704 | 0.5+ | 0.9+ |
| 2001 09 26 | 704 | 0.4− | 1.1+ | 2003 01 13 | 704 | 0.4+ | 0.0 | 2004 04 19 | 704 | 0.6+ | 0.4+ |
| 2001 09 26 | 704 | 0.1− | 1.2+ | 2003 01 13 | 704 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.4+ | 0.7+ |
| 2001 09 26 | 704 | 0.6− | 0.8+ | 2003 01 13 | 704 | 0.1− | 0.3− | 2004 04 22 | 704 | 1.3+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.5− | 1.1+ | 2003 01 13 | 704 | 0.6− | 0.1+ | 2004 04 22 | 704 | 1.0+ | 0.5+ | | |
| 2001 10 06 | 644 | 0.1+ | 0.9+ | 2004 02 23 | 704 | 1.2+ | 0.6+ | 2004 04 22 | 704 | 1.5+ | 0.2− | | |
| 2001 10 06 | 644 | 0.3+ | 0.8+ | 2004 02 23 | 704 | 0.9+ | 0.6+ | 2004 04 22 | 704 | 0.0 | 0.9+ | | |
| 2001 10 06 | 644 | 0.1+ | 0.5+ | 2004 02 23 | 704 | 1.1+ | 0.3− | 2004 04 23 | 703 | 0.3+ | 0.4+ | | |
| 2001 10 13 | 704 | 0.3− | 0.9+ | 2004 02 23 | 704 | 0.2+ | 1.6+ | 2004 04 23 | 703 | 1.3− | 0.3+ | | |
| 2001 10 13 | 704 | 1.0− | 1.3+ | 2004 02 23 | 704 | 0.8+ | 1.2+ | 2004 04 23 | 703 | 0.4− | 0.1− | | |
| 2001 10 13 | 704 | 0.5− | 0.8+ | 2004 03 15 | 703 | (1.8− | 3.3+) | 2004 04 23 | 703 | 1.2− | 0.5+ | | |
| 2001 10 13 | 704 | 0.9− | 1.4+ | 2004 03 15 | 703 | 1.3+ | 1.2+ | 2004 04 28 | 691 | 0.2+ | 0.5+ | | |
| 2001 10 14 | 645 | 0.2− | 0.1− | 2004 03 15 | 703 | 1.3+ | 1.2+ | 2004 04 28 | 691 | 0.1+ | 0.5+ | | |
| 2001 10 14 | 645 | 0.1− | 0.1− | 2004 03 15 | 703 | 1.4+ | 0.4− | 2004 04 28 | 691 | 0.1− | 0.5+ | | |
| 2001 10 15 | 608 | 0.6− | 0.1− | 2004 03 16 | 704 | 0.4+ | 1.3+ | 2006 08 19 | 644 | 0.4− | 0.6+ | | |
| 2001 10 15 | 608 | 0.2− | 0.5− | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2006 08 19 | 644 | 0.5− | 0.5+ | | |
| 2001 10 15 | 608 | 0.2− | 0.1− | 2004 03 16 | 704 | 0.5+ | 1.1+ | 2006 08 19 | 644 | 0.8− | 0.1+ | | |
| 2001 10 17 | 644 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.8+ | 0.5+ | 2006 08 28 | E12 | 0.8− | 0.7+ | | |
| 2001 10 17 | 644 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.9+ | 0.4+ | 2006 08 28 | E12 | 0.5+ | 0.1− | | |
| 2001 10 17 | 644 | 0.2− | 0.2+ | 2004 03 17 | 704 | 0.1− | 0.7+ | 2006 08 28 | E12 | 0.4+ | 0.6+ | | |
| 2001 10 17 | 644 | 0.2− | 0.2+ | 2004 03 17 | 704 | 0.2− | 0.6+ | 2006 08 28 | E12 | 0.4− | 0.1+ | | |
| 2001 10 17 | 644 | 0.3− | 0.1+ | 2004 03 17 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 644 | 0.4− | 0.1+ | | |
| 2001 10 17 | 644 | 0.1− | 0.2+ | 2004 03 17 | 704 | 0.2+ | 0.8+ | 2006 09 14 | 644 | 0.5− | 0.2− | | |
| 2001 10 19 | 699 | 0.7− | 0.4+ | 2004 03 17 | 704 | 1.1+ | 0.7+ | 2006 09 14 | 644 | 0.6− | 0.1− | | |
| 2001 10 19 | 699 | 0.9− | 0.3+ | 2004 03 17 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 699 | 1.7− | 0.6+ | | |
| 2001 10 19 | 699 | 0.9− | 0.2+ | 2004 03 17 | 704 | 0.1− | 0.2− | 2006 09 17 | 699 | 1.7+ | 0.2+ | | |
| 2001 10 19 | 699 | 0.2+ | 0.0 | 2004 03 17 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 699 | 0.1+ | 0.8+ | | |
| 2001 10 20 | 704 | 0.8− | 0.8+ | 2004 03 17 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 699 | 1.1+ | 0.4− | | |

**(139808)∗ 2001 RP$_{18}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.89850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25998248 | $\omega$ | 87.47113 | | +0.68381881 | −0.72701079 | |
| $a$ | 2.4313081 | $\Omega$ | 319.15440 | | +0.62608775 | +0.62829089 | |
| $e$ | 0.1278998 | $i$ | 5.44192 | | +0.37470784 | +0.27695825 | |
| $P$ | 3.79 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.0 | 0.7+ | 2003 03 06 | 644 | 0.1+ | 0.5+ | 2005 10 08 | 704 | 0.2+ | 0.1− | | |
| 2001 05 23 | 807 | 0.0 | 0.8+ | 2003 03 06 | 644 | 0.2+ | 0.8+ | 2005 10 08 | 704 | 0.6+ | 0.0 | | |
| 2001 08 16 | 704 | 0.5− | 0.6+ | 2003 03 12 | 644 | 0.2+ | 0.8+ | 2005 10 08 | 704 | 0.2− | 0.3− | | |
| 2001 08 16 | 704 | 0.9− | 0.3+ | 2003 03 12 | 644 | 0.4+ | 1.0+ | 2005 10 08 | 704 | 0.8+ | 0.1− | | |
| 2001 08 16 | 704 | 0.8+ | 0.0 | 2003 03 12 | 644 | 0.3+ | 0.9+ | 2005 10 11 | 704 | 0.3− | 0.8+ | | |
| 2001 09 07 | 704 | 0.0 | 0.2− | 2005 08 29 | 644 | 0.1+ | 0.2− | 2005 10 11 | 704 | 0.1+ | 0.2+ | | |
| 2001 09 07 | 704 | 0.9− | 0.6+ | 2005 08 29 | 644 | 0.0 | 0.0 | 2005 10 11 | 704 | 0.1− | 0.1− | | |
| 2001 09 07 | 704 | 1.0− | 0.9+ | 2005 08 29 | 644 | 0.1− | 0.0 | 2005 10 11 | 704 | 1.0+ | 0.9− | | |
| 2001 09 12 | 704 | 0.6+ | 0.5+ | 2005 08 30 | 704 | (1.4+ | 3.9+) | 2005 10 22 | 699 | 0.2− | 0.3− | | |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2005 08 30 | 704 | (2.4+ | 0.3+) | 2005 10 22 | 699 | 0.2− | 0.4− | | |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2005 08 30 | 704 | (1.1+ | 3.0+) | 2005 10 22 | 699 | 0.4− | 1.5+ | | |
| 2001 09 12 | 704 | 0.3− | 0.4+ | 2005 08 30 | 704 | (1.2+ | 1.6+) | 2005 10 22 | 699 | 0.2+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.7+ | 0.2+ | 2005 09 01 | 691 | 0.3− | 0.2+ | 2005 10 30 | 704 | 1.1+ | 0.4+ | | |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2005 09 01 | 691 | 0.5− | 0.0 | 2005 10 30 | 699 | 0.6− | 0.2+ | | |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2005 09 01 | 691 | 0.3− | 0.1+ | 2005 10 30 | 704 | 0.5+ | 0.5− | | |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2005 09 10 | 699 | 0.4− | 0.2− | 2005 10 30 | 699 | 0.5+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.2− | 2005 09 10 | 699 | 0.4− | 0.0 | 2005 10 30 | 704 | 0.4− | 0.2+ | | |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2005 09 10 | 699 | 0.0 | 0.0 | 2005 10 30 | 704 | 0.3− | 0.5+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.0 | 2005 09 10 | 699 | (2.5− | 2.0−) | 2005 10 30 | 699 | 0.5+ | 0.2− | | |
| 2001 09 20 | 704 | 0.7+ | 0.7− | 2005 09 26 | 644 | 0.2+ | 0.0 | 2005 10 30 | 699 | 0.9+ | 0.3+ | | |
| 2001 09 22 | 704 | 0.0 | 0.1+ | 2005 09 26 | 644 | 0.4+ | 0.2+ | 2005 11 02 | 704 | 0.9+ | 0.7− | | |
| 2001 09 22 | 704 | 0.4+ | 0.5+ | 2005 09 26 | 644 | 0.4+ | 0.1+ | 2005 11 02 | 704 | 0.6+ | 0.3− | | |
| 2001 09 22 | 704 | 0.2+ | 0.5+ | 2005 09 29 | 699 | 0.1+ | 0.3+ | 2005 11 02 | 704 | 0.3− | 0.1− | | |
| 2001 09 22 | 704 | 0.6− | 0.8+ | 2005 09 29 | 699 | 0.2+ | 0.0 | 2005 12 02 | 703 | 1.0− | 0.6+ | | |
| 2001 09 22 | 704 | 0.0 | 0.4+ | 2005 09 29 | 699 | 0.7− | 0.2+ | 2005 12 02 | 703 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 0.5+ | 0.1+ | 2005 09 29 | 699 | 1.1+ | 0.3− | 2005 12 02 | 703 | (2.6− | 0.8+) | | |
| 2001 09 23 | 704 | 0.1+ | 0.4− | 2005 10 01 | 703 | 0.1+ | 0.3− | 2005 12 02 | 703 | 0.1− | 0.4− | | |
| 2001 09 23 | 704 | 0.6+ | 0.6+ | 2005 10 01 | 703 | 0.6+ | 0.3− | 2006 01 28 | G96 | 0.3− | 0.6− | | |
| 2003 01 08 | 704 | 0.2+ | 0.5+ | 2005 10 01 | 703 | 0.6+ | 0.2+ | 2006 01 28 | G96 | 0.4− | 0.5− | | |
| 2003 01 08 | 704 | 0.0 | 0.4− | 2005 10 01 | 703 | 0.1+ | 0.2+ | 2006 01 28 | G96 | 0.1+ | 0.4− | | |
| 2003 01 08 | 704 | 0.9+ | 0.3− | 2005 10 01 | 703 | 0.7− | 0.6− | 2006 01 28 | G96 | 1.0− | 0.7− | | |
| 2003 01 08 | 704 | 0.6− | 1.2− | 2005 10 01 | 703 | 0.1+ | 0.6− | 2006 10 30 | G96 | 0.0 | 0.1+ | | |
| 2003 01 27 | 704 | 0.8+ | 1.3+ | 2005 10 01 | 703 | 1.1+ | 0.1− | 2006 10 30 | G96 | 0.3+ | 0.5− | | |
| 2003 01 27 | 704 | 0.6+ | 0.7+ | 2005 10 01 | 703 | 0.1− | 0.5+ | 2006 10 30 | G96 | 0.7− | 0.1− | | |
| 2003 01 27 | 704 | 0.1+ | 0.0 | 2005 10 06 | 699 | 0.2+ | 0.2+ | 2006 10 30 | G96 | 0.1+ | 0.4− | | |
| 2003 01 27 | 704 | 0.3+ | 1.1+ | 2005 10 06 | 699 | 0.4− | 0.3+ | 2006 11 20 | G96 | 0.7− | 0.2− | | |
| 2003 02 11 | 608 | 0.5+ | 0.4− | 2005 10 06 | 703 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.3− | 0.0 | | |
| 2003 02 11 | 608 | 0.4+ | 0.6− | 2005 10 06 | 703 | 0.0 | 0.4− | 2006 11 20 | G96 | 0.1+ | 0.1− | | |
| 2003 02 11 | 608 | 0.0 | 0.4+ | 2005 10 06 | 699 | 0.6− | 0.6+ | 2006 11 20 | G96 | 0.5− | 0.3− | | |
| 2003 02 21 | 644 | 0.1+ | 0.5+ | 2005 10 06 | 703 | 0.4− | 0.3− | 2006 12 01 | G96 | 0.5− | 0.6− | | |
| 2003 02 21 | 644 | 0.2− | 0.5+ | 2005 10 06 | 703 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.9− | 0.2− | | |
| 2003 02 21 | 644 | 0.2− | 0.6+ | 2005 10 06 | 699 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.5− | | |
| 2003 03 06 | 644 | 0.2− | 0.7+ | 2005 10 08 | 704 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.5+ | 0.1− | | |

**(139809)∗ 2001 RC$_{20}$ = 2002 YR$_{23}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40469)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.03981 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21863445 | $\omega$ | 158.87637 | | +0.57775213 | −0.81539605 | |
| $a$ | 2.7289170 | $\Omega$ | 255.81365 | | +0.74336076 | +0.54412247 | |
| $e$ | 0.0834183 | $i$ | 2.15719 | | +0.33707158 | +0.19763609 | |
| $P$ | 4.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 704 | 1.0− | 1.0+ | 2003 01 04 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.2− | | |
| 2001 09 07 | 704 | 0.4− | 0.5+ | 2003 01 04 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 07 | 704 | 0.3+ | 1.3+ | 2003 01 04 | 704 | 0.6+ | 0.9+ | 2006 10 15 | 691 | 0.1− | 0.2− | | |
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2003 01 04 | 704 | 0.1− | 0.8+ | 2006 10 15 | 691 | 0.1+ | 0.0 | | |
| 2001 09 12 | 704 | 0.4+ | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.2+ | 0.1− | | |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2003 01 08 | 704 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | | |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.4+ | 0.8− | 2006 10 19 | 691 | 0.4− | 0.2+ | | |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2003 01 08 | 704 | 0.7− | 0.3− | 2006 10 19 | 691 | 0.4− | 0.2+ | | |
| 2001 09 20 | 704 | 0.5+ | 0.7+ | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2001 09 20 | 704 | 1.2− | 0.9+ | 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2004 03 23 | 691 | 0.2− | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2001 09 20 | 704 | 0.4− | 0.5+ | 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.5+ | | |
| 2001 09 22 | 704 | 0.2− | 0.1− | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.5− | 0.6+ | | |
| 2001 09 22 | 704 | 0.6− | 0.7+ | 2004 04 19 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.5+ | 0.1+ | | |
| 2001 09 22 | 704 | 0.2− | 0.0 | 2004 04 19 | 704 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2001 09 22 | 704 | 0.2− | 0.2− | 2004 04 19 | 704 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2001 09 22 | 704 | 0.4+ | 1.2+ | 2004 05 09 | 691 | 0.5+ | 0.6+ | 2006 11 13 | 644 | 0.2+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2004 05 09 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.4+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.3− | 0.6− | 2004 05 09 | 691 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.6+ | 0.0 | | |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 31 | 704 | 0.5− | 1.1+ | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.0 | 0.6+ | | |
| 2002 12 31 | 704 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.9+ | | |
| 2002 12 31 | 704 | 0.7+ | 1.0+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 2002 12 31 | 704 | 0.3− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.9+ | 0.2+ | | |

**(139810)∗ 2001 RH$_{21}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.67547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21422709 | $\omega$ | 356.35580 | | +0.99963949 | +0.02670852 | |
| $a$ | 2.7662183 | $\Omega$ | 2.11958 | | −0.02237098 | +0.88512707 | |
| $e$ | 0.0937894 | $i$ | 4.26174 | | −0.01484717 | +0.46458232 | |
| $P$ | 4.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 03 | 691 | 0.1− | 0.5− | 2001 09 21 | 704 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.4+ | 0.1+ | | |
| 1997 12 03 | 691 | 0.1− | 0.3− | 2001 09 21 | 704 | 0.2− | 0.9+ | 2006 10 17 | 104 | 0.7+ | 0.9+ | | |
| 1997 12 03 | 691 | 0.6+ | 0.3− | 2004 03 17 | 691 | 0.4+ | 0.5+ | 2006 10 17 | 104 | 0.7− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.4+ | 0.2+ | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 10 17 | 104 | (6.3− | 3.3−) | | |
| 2001 08 01 | 644 | 0.0 | 0.7+ | 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2+ | | |
| 2001 08 01 | 644 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 691 | 0.4− | 0.3+ | | |
| 2001 08 24 | 704 | 0.5+ | 0.3+ | 2004 03 27 | 704 | 0.7+ | 1.1+ | 2006 10 20 | 691 | 0.3− | 0.3+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.1− | | |
| 2001 08 24 | 704 | 0.1+ | 0.1+ | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.1− | | |
| 2001 09 07 | 704 | 0.9− | 1.0+ | 2004 03 29 | 691 | 0.3+ | 1.0+ | 2006 10 20 | 644 | 0.4− | 0.1− | | |
| 2001 09 07 | 704 | 0.8− | 0.4+ | 2004 03 29 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.1− | | |
| 2001 09 07 | 704 | 0.3− | 0.2− | 2004 04 25 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.5+ | 0.3+ | | |
| 2001 09 07 | 704 | (1.9− | 2.3+) | 2004 04 25 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.2− | | |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.2− | | |
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.2+ | | |
| 2001 09 12 | 704 | 0.9− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2001 09 12 | 704 | 0.4+ | 0.9+ | 2006 09 25 | 691 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2006 10 03 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.2+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.6+ | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.1− | 1.0+ | 2006 10 15 | 104 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.3− | 0.3− | | |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2006 10 15 | 104 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 1.5− | 0.6− | | |
| 2001 09 19 | 704 | 0.1+ | 0.5− | 2006 10 15 | 104 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.0 | | |
| 2001 09 21 | 704 | 0.6− | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 2.0− | 2.8+ | | |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | | | | | | |

**(139811)∗ 2001 RP$_{23}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.60132 | | (2000.0) | | | |
| $n$ | 0.22054023 | $\omega$ | 331.95907 | | +0.88057753 | +0.47390197 |
| $a$ | 2.7131731 | $\Omega$ | 359.75208 | | −0.41667794 | +0.77386380 |
| $e$ | 0.1663281 | $i$ | 5.04940 | | −0.22574923 | +0.42018061 |
| $P$ | 4.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 06 | 691 | 0.2− | 0.1− | 2001 09 20 | 704 | 1.0+ | 0.0 | 2006 10 19 | 691 | 0.2− | 0.0 | | |
| 1995 02 06 | 691 | 0.1+ | 0.3− | 2001 09 20 | 704 | 0.9+ | 1.0+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | | |
| 1995 02 06 | 691 | 0.3− | 0.1− | 2001 09 21 | 704 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1+ | | |
| 2001 08 01 | 644 | 1.4− | 0.1+ | 2001 09 21 | 704 | 0.6+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.0 | | |
| 2001 08 01 | 644 | (1.7− | 0.3+) | 2001 09 21 | 704 | 0.7− | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.1+ | | |
| 2001 08 01 | 644 | 1.4− | 0.1+ | 2001 09 21 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 703 | (1.8− | 1.4−) | | |
| 2001 08 11 | 608 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.9+ | 0.4+ | | |
| 2001 08 11 | 608 | 0.2− | 0.8+ | 2001 09 21 | 704 | 0.6+ | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.1− | | |
| 2001 08 11 | 608 | 0.2− | 0.1+ | 2001 09 21 | 704 | 0.9− | 0.1− | 2006 10 27 | 703 | 0.4− | 0.6− | | |
| 2001 08 25 | 704 | 0.9− | 1.0+ | 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.6− | 0.5+ | 2001 09 21 | 704 | 0.4− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2001 08 25 | 704 | 0.0 | 1.5+ | 2001 09 21 | 704 | 0.5+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.9− | 0.6+ | 2004 03 16 | 291 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.4+ | 0.1+ | | |
| 2001 08 25 | 704 | 0.9− | 1.1+ | 2004 03 16 | 291 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2001 09 07 | 704 | 0.3− | 0.2− | 2004 03 16 | 291 | 1.2+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | |
| 2001 09 07 | 704 | 0.9− | 0.3+ | 2004 03 17 | 291 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 0.1− | 1.1− | | |
| 2001 09 07 | 704 | 1.1− | 0.4+ | 2004 03 17 | 291 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.4− | | |
| 2001 09 07 | 704 | 0.5− | 0.6− | 2004 03 17 | 291 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.8− | | |
| 2001 09 07 | 704 | 0.6+ | 0.5− | 2004 03 29 | 291 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 1.1− | 0.7+ | | |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2004 03 29 | 291 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 2001 09 12 | 704 | 0.6− | 0.3+ | 2004 03 29 | 291 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | (1.6− | 0.1+) | 2004 03 30 | 691 | 0.3− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2001 09 12 | 704 | 0.5+ | 0.9+ | 2004 03 30 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.6− | 0.3− | 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.9− | 0.6+ | 2004 04 24 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.5− | 0.8+ | 2004 04 24 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.5− | | |
| 2001 09 19 | 704 | 0.8− | 1.4+ | 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.3− | 1.4+ | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.2− | | |
| 2001 09 19 | 704 | (0.4− | 1.9+) | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.4+ | | |
| 2001 09 20 | 704 | 1.4+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.7− | 0.6+ | | |
| 2001 09 20 | 704 | 0.8+ | 0.6+ | 2006 10 04 | G96 | 0.5− | 0.6− | 2006 11 22 | 704 | 1.1− | 1.0+ | | |
| 2001 09 20 | 704 | 1.3+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 1.1+ | | |

**(139812)∗ 2001 RO$_{24}$ = 2000 GZ$_{20}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 18019)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.63266 | | (2000.0) | | | |
| $n$ | 0.21704111 | $\omega$ | 324.07450 | | +0.13491872 | +0.99075982 |
| $a$ | 2.7422564 | $\Omega$ | 313.67492 | | −0.90456445 | +0.11745027 |
| $e$ | 0.1723149 | $i$ | 1.09750 | | −0.40442564 | +0.06782634 |
| $P$ | 4.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 05 | 691 | 0.3+ | 0.3− | 2001 08 16 | 704 | 1.1− | 0.6+ | 2001 09 21 | 704 | 1.4− | 0.8+ | | |
| 1992 10 05 | 691 | 0.1+ | 0.5− | 2001 08 16 | 704 | 0.1− | 0.0 | 2001 09 21 | 704 | 0.9− | 1.4+ | | |
| 1992 10 05 | 691 | 0.2+ | 0.3− | 2001 08 16 | 704 | 0.6− | 0.5− | 2001 10 11 | 644 | 0.4− | 0.9+ | | |
| 1995 02 04 | 691 | 0.1− | 0.0 | 2001 08 23 | 699 | (2.3+ | 0.4+) | 2001 10 11 | 644 | 0.2− | 0.8+ | | |
| 1995 02 04 | 691 | 0.0 | 0.0 | 2001 08 23 | 699 | 1.0+ | 0.1+ | 2001 10 11 | 644 | 0.3− | 0.8+ | | |
| 1995 02 04 | 691 | 0.2+ | 0.2+ | 2001 08 23 | 699 | (2.5+ | 0.7−) | 2004 01 30 | 691 | 0.2− | 0.5+ | | |
| 1997 11 23 | 691 | 0.2+ | 0.2− | 2001 08 23 | 699 | (1.8+ | 1.1+) | 2004 01 30 | 691 | 0.0 | 0.5+ | | |
| 1997 11 23 | 691 | 0.2+ | 0.2− | 2001 09 07 | 704 | 0.0 | 0.7+ | 2004 01 30 | 691 | 0.1+ | 0.4+ | | |
| 1997 11 23 | 691 | 0.3+ | 0.3− | 2001 09 07 | 704 | 0.1− | 0.4+ | 2004 02 13 | 691 | 0.8− | 1.1+ | | |
| 1997 12 05 | 691 | 0.5− | 0.1− | 2001 09 07 | 704 | 0.5− | 0.3+ | 2004 02 13 | 691 | 0.3+ | 0.5+ | | |
| 1997 12 05 | 691 | (0.5− | 6.6+) | 2001 09 07 | 704 | 0.3− | 1.4+ | 2004 02 13 | 691 | 0.4+ | 0.6+ | | |
| 1997 12 05 | 691 | 0.1− | 0.3− | 2001 09 11 | 699 | 0.4− | 0.8+ | 2006 10 16 | 691 | 0.4+ | 0.9+ | | |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2001 09 11 | 699 | 0.0 | 0.4− | 2006 10 16 | 691 | 0.3− | 0.1+ | | |
| 2000 04 05 | 704 | 0.7+ | 0.1+ | 2001 09 11 | 699 | 1.0− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1+ | | |
| 2000 04 05 | 704 | 0.1+ | 0.5+ | 2001 09 11 | 699 | 0.5− | 0.8+ | 2006 10 16 | A44 | 0.7+ | 0.1− | | |
| 2000 04 05 | 704 | 0.9+ | 1.0+ | 2001 09 11 | 699 | 0.2− | 0.1+ | 2006 10 16 | A44 | 0.4+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.9+ | 2001 09 11 | 699 | 0.0 | 0.4+ | 2006 10 16 | A44 | 0.4+ | 0.2+ | | |
| 2000 04 06 | 699 | 0.7+ | 0.5− | 2001 09 11 | 699 | 1.0− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | | |
| 2000 04 06 | 704 | 0.0 | 1.3+ | 2001 09 11 | 699 | 0.2− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.1+ | | |
| 2000 04 06 | 699 | 0.4+ | 0.3− | 2001 09 12 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2000 04 06 | 704 | 0.5+ | 0.9+ | 2001 09 12 | 704 | 0.6+ | 0.6+ | 2006 10 20 | A44 | 0.2− | 0.3+ | | |
| 2000 04 06 | 704 | 0.9+ | 0.1+ | 2001 09 12 | 704 | 0.5+ | 1.4+ | 2006 10 20 | A44 | 0.1+ | 0.2+ | | |
| 2000 04 06 | 699 | 0.6+ | 0.3+ | 2001 09 12 | 704 | 0.1+ | 0.1+ | 2006 10 20 | A44 | 0.0 | 0.6+ | | |
| 2000 04 06 | 704 | 0.8+ | 0.6+ | 2001 09 19 | 704 | 0.2+ | 0.6+ | 2006 10 29 | 691 | 0.1+ | 0.0 | | |
| 2000 04 06 | 699 | 0.4+ | 0.2− | 2001 09 19 | 704 | 0.2+ | 0.9+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | | |
| 2000 04 06 | 704 | 0.3+ | 0.6+ | 2001 09 19 | 704 | 0.2+ | 0.6+ | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2001 05 26 | 691 | 1.4− | 0.2+ | 2001 09 19 | 704 | 0.3+ | 0.7+ | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 2001 05 26 | 691 | 0.1− | 0.3− | 2001 09 19 | 704 | 0.0 | 0.8+ | 2006 11 23 | 691 | 0.5+ | 0.2− | | |
| 2001 05 26 | 691 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.2− | 0.8+ | 2006 11 23 | 691 | 0.2+ | 0.2+ | | |
| 2001 08 16 | 704 | 0.5− | 0.9− | 2001 09 21 | 704 | 1.5− | 1.0+ | | | | | | |
| 2001 08 16 | 704 | 0.2− | 0.1+ | 2001 09 21 | 704 | 0.6− | 0.8+ | | | | | | |

**(139813)∗ 2001 RR$_{24}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.65698 | | (2000.0) | | | |
| $n$ | 0.20942427 | $\omega$ | 358.15658 | | +0.94575609 | +0.32441870 |
| $a$ | 2.8083509 | $\Omega$ | 342.88239 | | −0.29731392 | +0.84287672 |
| $e$ | 0.1059225 | $i$ | 3.36187 | | −0.13095743 | +0.42931497 |
| $P$ | 4.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 16 | 691 | 0.3+ | 0.4+ | 2001 09 19 | 704 | 1.0+ | 0.4− | 2006 09 15 | 691 | 0.2− | 0.2+ | | |
| 1999 02 16 | 691 | 0.4+ | 0.2+ | 2001 09 19 | 704 | 0.0 | 0.3− | 2006 09 18 | 683 | 0.6+ | 0.4− | | |
| 1999 02 16 | 691 | 0.4+ | 0.5+ | 2001 09 19 | 704 | 0.1− | 0.5+ | 2006 09 18 | 683 | 0.4+ | 0.2+ | | |
| 1999 03 09 | 691 | 0.2+ | 0.4− | 2001 09 19 | 704 | 0.1+ | 0.6− | 2006 09 18 | 683 | 0.0 | 0.6+ | | |
| 1999 03 09 | 691 | 0.1− | 0.5− | 2001 09 19 | 704 | 0.4− | 0.2− | 2006 09 18 | 699 | 1.1+ | 0.8+ | | |
| 1999 03 09 | 691 | 0.5− | 0.4− | 2001 09 21 | 704 | 0.0 | 0.6+ | 2006 09 18 | 699 | 0.2+ | 1.0+ | | |
| 1999 03 20 | 691 | 0.2− | 0.2− | 2001 09 21 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 699 | 0.2+ | 0.2− | | |
| 1999 03 20 | 691 | 0.3− | 0.1− | 2001 09 21 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | (1.6− | 0.1+) | | |
| 1999 03 20 | 691 | 0.8− | 0.5− | 2001 09 21 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 683 | 0.4− | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.9− | 0.6− | 2001 09 21 | 704 | 0.1+ | 0.8+ | 2006 09 19 | 683 | 0.2+ | 0.9− |
| 2001 08 14 | 608 | 0.7− | 0.3− | 2001 10 11 | 644 | 0.8− | 0.4+ | 2006 09 19 | 683 | 1.2+ | 0.2+ |
| 2001 08 14 | 608 | (0.9− | 2.1+) | 2001 10 11 | 644 | 1.0− | 0.2+ | 2006 09 21 | 683 | 0.7+ | 0.8− |
| 2001 08 19 | 807 | 0.4− | 0.3+ | 2001 10 11 | 644 | 0.9− | 0.3+ | 2006 09 21 | 683 | (0.9+ | 1.8−) |
| 2001 08 19 | 807 | 0.4− | 0.3+ | 2004 01 22 | 568 | 0.2+ | 0.3+ | 2006 09 21 | 683 | 1.2− | 1.2− |
| 2001 08 24 | 704 | 0.6− | 0.1+ | 2004 01 22 | 568 | 0.2+ | 0.4+ | 2006 09 25 | 683 | 0.7+ | 0.1− |
| 2001 08 24 | 704 | 0.4− | 0.3+ | 2004 01 22 | 568 | 0.2+ | 0.5+ | 2006 09 25 | 683 | (1.6+ | 0.6+) |
| 2001 08 24 | 704 | 0.5− | 0.5+ | 2004 01 27 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 683 | 0.1+ | 1.2+ |
| 2001 09 07 | 704 | 0.2− | 0.8− | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 683 | 0.6− | 0.7+ |
| 2001 09 07 | 704 | 0.8− | 1.3− | 2004 01 27 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 683 | (1.8− | 1.0+) |
| 2001 09 07 | 704 | 0.7− | 1.4− | 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 683 | 0.4− | 0.9+ |
| 2001 09 07 | 704 | 0.8+ | 1.3− | 2004 03 15 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2001 09 07 | 704 | (0.7+ | 2.4−) | 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2001 09 11 | 699 | 0.6− | 0.3+ | 2004 03 18 | 704 | (1.5+ | 1.5+) | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 09 11 | 699 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 1.1+ | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 09 11 | 699 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.4− | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 09 11 | 699 | 0.7− | 0.3+ | 2004 03 18 | 704 | 0.5+ | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 0.2+ | 0.1− | 2004 03 27 | 291 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 09 11 | 699 | 0.2− | 0.2+ | 2004 03 27 | 291 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2001 09 11 | 699 | 0.1+ | 1.0+ | 2004 03 27 | 291 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 09 11 | 699 | 0.9− | 0.1+ | 2004 03 30 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 09 12 | 691 | 0.2− | 0.6+ | 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 09 12 | 691 | 0.1− | 0.6+ | 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 09 12 | 691 | 0.0 | 0.6+ | 2004 04 24 | 691 | 0.1+ | 0.5+ | 2006 11 06 | 644 | 0.4+ | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.1+ | 2004 04 24 | 691 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2004 04 24 | 691 | 0.4+ | 0.3+ | 2006 11 06 | 644 | 0.3+ | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.3− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 09 17 | 291 | 0.5+ | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2001 09 17 | 291 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2001 09 17 | 291 | 0.3+ | 0.7+ | 2006 09 15 | 691 | 0.4− | 0.2− | | | | |

**(139814)∗ 2001 RS$_{24}$ = 2000 KR$_{14}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18019)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.77420 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22160115 | $\omega$ | 257.37859 | | −0.37489699 | +0.92706341 |
| $a$ | 2.7045066 | $\Omega$ | 350.60241 | | −0.84479790 | −0.34268648 |
| $e$ | 0.0084387 | $i$ | 0.83673 | | −0.38179674 | −0.15205069 |
| $P$ | 4.45 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 08 | 691 | (3.9+ | 3.3−) | 2004 03 18 | 704 | 1.4+ | 1.0+ | 2005 07 07 | 691 | 0.2+ | 0.1+ |
| 1993 12 08 | 691 | 0.2+ | 1.0+ | 2004 03 18 | 704 | 0.7+ | 1.3+ | 2005 07 07 | 691 | 0.4− | 0.4+ |
| 1993 12 08 | 691 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.0 | 0.7+ | 2005 07 07 | 691 | 0.2+ | 0.2− |
| 1997 09 28 | 691 | 0.4− | 0.4− | 2004 03 18 | 704 | 0.9+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 1997 09 28 | 691 | 0.3− | 0.2− | 2004 03 18 | 704 | 0.9+ | 1.1+ | 2006 09 27 | G96 | 0.5− | 0.1− |
| 1997 09 28 | 691 | 0.5− | 0.3− | 2004 03 27 | 704 | 0.1− | 0.7+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2000 05 28 | 704 | 1.0+ | 1.0− | 2004 03 27 | 704 | 0.6+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2000 05 28 | 704 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.1− | 1.2+ | 2006 10 12 | 691 | 0.3+ | 0.2+ |
| 2000 05 28 | 704 | 0.0 | 0.4− | 2004 03 27 | 704 | 0.7+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.4+ |
| 2000 05 28 | 704 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2000 05 28 | 704 | 0.6− | 0.9+ | 2004 03 31 | 291 | 0.1+ | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.5+ |
| 2000 05 29 | 704 | 0.2+ | 0.2+ | 2004 03 31 | 291 | 0.3+ | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.4+ |
| 2000 05 29 | 704 | 0.5+ | 1.1+ | 2004 03 31 | 291 | 0.0 | 0.7+ | 2006 10 16 | 691 | 0.1− | 0.5+ |
| 2000 05 29 | 704 | 0.1− | 0.1− | 2004 04 11 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2001 09 07 | 704 | (0.4− | 1.6+) | 2004 04 11 | 644 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2001 09 07 | 704 | 1.1− | 1.4+ | 2004 04 11 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2001 09 07 | 704 | 0.4− | 1.2+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 09 07 | 704 | (2.1− | 3.5+) | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 09 07 | 704 | 0.0 | 0.3+ | 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.1+ | 0.4+ | 2004 04 15 | 699 | 0.2− | 1.0+ | 2006 11 08 | 644 | 0.4+ | 0.4+ |
| 2001 09 11 | 699 | 0.7− | 0.7− | 2004 04 15 | 699 | 0.1− | 0.8− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 09 11 | 699 | 0.6+ | 1.1+ | 2004 04 15 | 699 | (0.0 | 1.8+) | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 09 11 | 699 | 0.7− | 1.0+ | 2004 04 15 | 699 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2004 04 21 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.5+ |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2004 04 21 | 704 | 1.1+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.2+ | 1.4+ | 2004 04 21 | 704 | 0.7− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2004 04 21 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2001 09 19 | 704 | 0.7+ | 0.9+ | 2004 04 21 | 704 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.3+ |
| 2001 09 19 | 704 | 1.4+ | 0.8+ | 2005 06 26 | G96 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.6+ |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2005 06 26 | G96 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.2− |
| 2001 09 21 | 704 | (1.8− | 1.7+) | 2005 06 26 | G96 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.1− | 1.1+ |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2005 06 26 | G96 | 0.8− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.2− | 1.4+ | 2005 06 30 | G96 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.1− | 2005 06 30 | G96 | 0.6− | 0.5+ | 2006 11 27 | G96 | 0.8− | 1.4− |
| 2001 09 21 | 704 | 0.6− | 0.8+ | 2005 06 30 | G96 | 0.5− | 0.5+ | | | | |

**(139815)∗ 2001 RV$_{24}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.00651 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21794539 | $\omega$ | 219.58075 | | −0.89150566 | +0.45256784 |
| $a$ | 2.7346658 | $\Omega$ | 347.28273 | | −0.38919392 | −0.78776630 |
| $e$ | 0.0383440 | $i$ | 5.21271 | | −0.23183132 | −0.41785956 |
| $P$ | 4.52 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.9− | 1.2+ | 2004 02 18 | 608 | 1.2+ | 0.7− | 2004 04 20 | 703 | 0.3+ | 1.0+ |
| 2001 08 16 | 704 | 1.0− | 0.6+ | 2004 02 18 | 608 | 0.5+ | 0.7− | 2004 04 20 | 703 | 0.3− | 1.2+ |
| 2001 08 16 | 704 | 0.9− | 1.2+ | 2004 02 26 | 704 | 0.5+ | 0.8+ | 2004 04 20 | 704 | 0.5+ | 0.2+ |
| 2001 08 16 | 704 | 0.9− | 0.6+ | 2004 02 26 | 704 | 0.2+ | 0.5+ | 2004 04 20 | 704 | 0.6− | 0.2+ |
| 2001 08 23 | 699 | 0.7− | 1.1+ | 2004 02 26 | 704 | 0.3+ | 0.5+ | 2004 04 20 | 704 | 0.4− | 0.4− |
| 2001 08 23 | 699 | 1.3− | 0.4+ | 2004 02 26 | 704 | 0.7+ | 0.6+ | 2004 04 20 | 704 | 0.5− | 0.3+ |
| 2001 08 23 | 699 | 0.4− | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2005 07 26 | 644 | 0.0 | 0.3+ |
| 2001 08 23 | 699 | 0.4+ | 0.3+ | 2004 03 15 | 703 | 0.3+ | 0.9+ | 2005 07 26 | 644 | 0.1− | 0.1+ |
| 2001 09 07 | 704 | 0.2− | 0.0 | 2004 03 15 | 703 | (2.2− | 2.1+) | 2005 07 26 | 644 | 0.3− | 0.6+ |
| 2001 09 07 | 704 | 0.2− | 0.7+ | 2004 03 15 | 703 | 1.1+ | 0.8+ | 2006 09 20 | 699 | (0.8− | 1.7+) |
| 2001 09 07 | 704 | 0.3+ | 0.9− | 2004 03 15 | 703 | 1.1+ | 0.3+ | 2006 09 20 | 699 | (2.0− | 0.6−) |
| 2001 09 07 | 704 | (0.8+ | 1.6−) | 2004 03 16 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.0 | 1.0+ |
| 2001 09 11 | 699 | 0.4+ | 0.1+ | 2004 03 16 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 699 | (2.6+ | 0.2−) |
| 2001 09 11 | 699 | 1.1+ | 0.0 | 2004 03 16 | 704 | 0.5+ | 0.7− | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2001 09 11 | 699 | 0.3+ | 0.3+ | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.7+ | 0.2+ |
| 2001 09 11 | 699 | 0.6+ | 1.1+ | 2004 03 16 | 608 | 0.8− | 0.6− | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.5+ | 2004 03 16 | 608 | 0.6+ | 0.2− | 2006 10 03 | 691 | 0.2+ | 0.4+ |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2004 03 16 | 608 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.7+ | 0.1− |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 10 03 | 691 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 0.5+ | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.3− |
| 2001 09 16 | 644 | 0.3− | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2001 09 16 | 691 | 0.1+ | 0.6+ | 2004 03 18 | 704 | 0.7+ | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2001 09 16 | 644 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 09 16 | 691 | 0.1+ | 0.6+ | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 644 | 0.9− | 0.2− | 2004 03 18 | 704 | 1.3+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 09 16 | 691 | 0.2+ | 0.4+ | 2004 03 18 | 704 | 1.1+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.6− | 0.9+ | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2001 09 16 | 704 | 0.8− | 1.1+ | 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2001 09 16 | 704 | 0.8− | 1.0+ | 2004 03 20 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 703 | (1.7+ | 0.7−) |
| 2001 09 16 | 704 | 0.1− | 1.1+ | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2001 09 17 | 704 | 1.2− | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 1.1+ |
| 2001 09 17 | 704 | 0.7+ | 0.6+ | 2004 03 23 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.6+ |
| 2001 09 17 | 704 | 0.8− | 0.3+ | 2004 03 23 | 291 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 09 17 | 704 | 1.2− | 0.3− | 2004 03 23 | 291 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 09 19 | 699 | 0.1+ | 0.4− | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2004 03 27 | 704 | 0.0 | 0.6+ | 2006 10 27 | 291 | 0.1+ | 0.3+ |
| 2001 09 19 | 699 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.8+ | 2006 10 27 | 291 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.7− | 0.0 | 2004 03 27 | 704 | 0.5− | 0.5+ | 2006 10 27 | 291 | 0.2+ | 0.3+ |
| 2001 09 19 | 699 | 0.7− | 1.0+ | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 10 28 | 291 | 0.3− | 0.5+ |
| 2001 09 19 | 704 | 0.5− | 0.6+ | 2004 03 29 | 691 | 0.0 | 0.6+ | 2006 10 28 | 291 | 0.2− | 0.5+ |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2004 03 29 | 691 | 0.3− | 0.8+ | 2006 10 28 | 291 | 0.4− | 0.5+ |
| 2001 09 19 | 699 | 0.8− | 0.3+ | 2004 03 29 | 691 | 0.1− | 0.6+ | 2006 10 29 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2004 04 12 | 699 | 0.8− | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.2+ | |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2004 04 12 | 699 | 0.7− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.2+ | |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2004 04 12 | 699 | 0.8− | 0.4− | 2006 10 29 | 704 | 1.4− | 0.1+ | |
| 2001 09 21 | 704 | 1.1− | 0.7− | 2004 04 12 | 703 | 1.1+ | 0.2+ | 2006 10 29 | G96 | 0.2− | 0.3− | |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2004 04 12 | 699 | 0.4+ | 0.7− | 2006 10 29 | 704 | 1.4− | 0.0 | |
| 2001 09 21 | 704 | 0.5− | 1.2+ | 2004 04 12 | 703 | 0.8+ | 1.3+ | 2006 10 29 | G96 | 0.1− | 0.3− | |
| 2001 10 11 | 644 | 0.5+ | 0.6− | 2004 04 12 | 703 | 0.9+ | 0.5+ | 2006 10 29 | G96 | 0.4+ | 0.1− | |
| 2001 10 11 | 644 | 1.1+ | 0.6− | 2004 04 12 | 703 | 0.2+ | 0.6+ | 2006 10 29 | G96 | 0.1− | 0.1− | |
| 2001 10 11 | 644 | 1.0+ | 0.4+ | 2004 04 15 | 699 | 0.8− | 0.3+ | 2006 10 29 | 704 | 1.1− | 0.5+ | |
| 2002 12 06 | 704 | 1.0− | 0.3+ | 2004 04 15 | 699 | 0.1+ | 0.1− | 2006 10 29 | 704 | 1.5+ | 0.7− | |
| 2002 12 06 | 704 | 0.6− | 0.5+ | 2004 04 15 | 699 | 0.8+ | 1.2+ | 2006 11 14 | 703 | 0.1+ | 0.8− | |
| 2002 12 06 | 704 | 0.4+ | 0.5− | 2004 04 15 | 699 | 0.4− | 0.3− | 2006 11 14 | 703 | 0.7− | 0.8− | |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2004 04 16 | 704 | 0.3+ | 1.0+ | 2006 11 14 | 703 | 0.1− | 0.7− | |
| 2003 01 05 | 704 | 0.1+ | 0.4+ | 2004 04 16 | 704 | 0.9+ | 0.9+ | 2006 11 14 | 703 | (2.0− | 0.6+) | |
| 2003 01 05 | 704 | 0.0 | 0.8+ | 2004 04 16 | 704 | 1.2+ | 0.5+ | 2006 11 25 | G96 | 0.2− | 0.1− | |
| 2003 01 05 | 704 | 0.8+ | 0.3+ | 2004 04 16 | 704 | 0.0 | 1.0+ | 2006 11 25 | G96 | 0.1− | 0.2− | |
| 2003 01 05 | 704 | 1.2− | 0.1+ | 2004 04 16 | 704 | 0.6+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.1− | |
| 2003 01 05 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 703 | 1.2+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.3− | |
| 2004 02 18 | 608 | 0.9+ | 0.3− | 2004 04 20 | 703 | 0.4− | 1.2+ | | | | | |

**(139816)∗ 2001 RY$_{24}$ = 1999 ED$_2$ = 2004 FC$_{141}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60941)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.31468 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20927760 | $\omega$ | 121.81175 | | −0.16728103 | −0.98559766 | |
| $a$ | 2.8096629 | $\Omega$ | 337.77787 | | +0.88095739 | −0.13813963 | |
| $e$ | 0.0735458 | $i$ | 3.75757 | | +0.44264109 | −0.09754328 | |
| $P$ | 4.71 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 26 | 691 | 0.2+ | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.2+ | |
| 1992 10 26 | 691 | 0.0 | 0.0 | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.5+ | 0.5+ | |
| 1992 10 26 | 691 | 0.1− | 0.3+ | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 1.2− | 0.2− | |
| 1997 12 21 | 691 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.1− | 1.3+ | 2006 09 19 | 699 | (0.2− | 2.0+) | |
| 1997 12 21 | 691 | 0.1− | 0.3+ | 2004 03 27 | 703 | 0.0 | 0.9+ | 2006 09 29 | 704 | 1.0− | 0.8− | |
| 1997 12 21 | 691 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.5− | |
| 1999 03 09 | 691 | 0.6+ | 0.2+ | 2004 03 27 | 703 | 1.1− | 0.4− | 2006 09 29 | 704 | 0.2+ | 1.0+ | |
| 1999 03 09 | 691 | 0.4+ | 0.3− | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.1+ | |
| 1999 03 09 | 691 | 0.4+ | 0.2+ | 2004 03 27 | 703 | 0.8+ | 1.2− | 2006 10 17 | 703 | 0.7− | 0.2+ | |
| 1999 03 10 | 691 | 0.8− | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.3+ | |
| 1999 03 10 | 691 | 0.7− | 0.1+ | 2004 03 27 | 703 | (4.5− | 0.4−) | 2006 10 17 | 703 | 0.3− | 0.7− | |
| 1999 03 10 | 691 | 0.5− | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.9+ | |
| 2001 09 07 | 704 | 0.1+ | 0.1− | 2004 03 31 | 704 | 1.0+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.5+ | |
| 2001 09 07 | 704 | 1.2− | 0.1− | 2004 03 31 | 704 | 0.9+ | 0.2− | 2006 10 19 | 644 | 0.4+ | 0.4− | |
| 2001 09 07 | 704 | 0.9− | 0.7+ | 2004 03 31 | 704 | (2.0+ | 0.4+) | 2006 10 20 | 644 | 0.2− | 0.4+ | |
| 2001 09 07 | 704 | 0.2− | 0.7+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 2001 09 12 | 704 | 0.0 | 1.0+ | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2001 09 12 | 704 | 0.2− | 1.1+ | 2004 04 16 | 644 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2004 04 16 | 644 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2004 04 16 | 644 | 0.5+ | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2001 09 20 | 704 | 0.3− | 0.3− | 2004 04 20 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2004 04 20 | 704 | 0.7+ | 1.0− | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2001 09 20 | 704 | 0.4− | 0.7+ | 2004 04 20 | 704 | 0.4+ | 0.7− | 2006 10 31 | G96 | 0.3+ | 0.1− | |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2006 09 14 | A50 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.3− | |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 09 14 | A50 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.1− | |
| 2003 01 05 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | |
| 2003 01 05 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 691 | 0.2+ | 0.4+ | | | | | |
| 2003 01 05 | 704 | 0.1− | 1.1+ | 2006 09 17 | 691 | 0.1− | 0.1+ | | | | | |

**(139817)∗ 2001 RK$_{25}$ = 2002 XK$_{90}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40471)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.14441 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18851177 | $\omega$ | 269.28584 | | +0.03509661 | −0.99937630 | |
| $a$ | 3.0123845 | $\Omega$ | 178.68372 | | +0.97114606 | +0.03318297 | |
| $e$ | 0.0957456 | $i$ | 9.78137 | | +0.23588889 | +0.01207861 | |
| $P$ | 5.23 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 704 | 0.5− | 1.6+ | 2004 02 26 | 704 | 0.4− | 0.7+ | 2004 03 26 | 699 | 0.6− | 2.0+ | |
| 2001 09 07 | 704 | 0.5− | 1.1+ | 2004 02 26 | 333 | 0.3− | 0.3+ | 2004 03 26 | 704 | 0.0 | 0.6+ | |
| 2001 09 07 | 704 | 0.4− | 0.4+ | 2004 02 26 | 704 | 0.2− | 1.3+ | 2004 03 27 | 704 | 1.0+ | 0.1+ | |
| 2001 09 12 | 704 | 0.6+ | 0.7+ | 2004 02 26 | 333 | 0.4− | 0.2− | 2004 03 27 | 704 | 0.3− | 0.7+ | |
| 2001 09 12 | 704 | 0.1− | 0.9+ | 2004 02 26 | 333 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.2− | 0.9+ | |
| 2001 09 12 | 704 | 0.7+ | 0.4+ | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 0.7− | 0.6+ | |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2004 03 12 | 644 | 0.2+ | 0.3+ | 2004 03 28 | 704 | 0.7+ | 1.1+ | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2004 03 12 | 644 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 1.6− | 1.0+ | |
| 2001 09 20 | 704 | 0.2− | 0.0 | 2004 03 15 | 703 | 0.6+ | 0.0 | 2004 03 28 | 704 | 1.3− | 0.7+ | |
| 2001 09 20 | 704 | 0.5− | 0.8+ | 2004 03 15 | 703 | 0.7+ | 1.1+ | 2004 03 29 | 691 | 0.0 | 0.3+ | |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2004 03 15 | 703 | 0.5+ | 0.9+ | 2004 03 29 | 691 | 0.0 | 0.1+ | |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2004 03 15 | 703 | 0.6+ | 1.3+ | 2004 03 29 | 691 | 0.1+ | 0.0 | |
| 2001 09 22 | 704 | 0.0 | 1.6+ | 2004 03 18 | 704 | 0.1+ | 1.0+ | 2004 04 15 | 691 | 0.1+ | 0.3+ | |
| 2001 09 22 | 704 | 0.6− | 0.9+ | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2004 04 15 | 691 | 0.2+ | 0.1− | |
| 2001 09 22 | 704 | 0.3− | 0.8+ | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2004 04 15 | 691 | 0.4− | 0.0 | |
| 2001 09 22 | 704 | 0.1− | 0.8+ | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.2+ | |
| 2002 12 01 | 704 | 0.4− | 0.4− | 2004 03 18 | 704 | 0.8+ | 1.3+ | 2006 08 16 | 644 | 0.0 | 0.5+ | |
| 2002 12 01 | 704 | 1.0− | 0.9+ | 2004 03 20 | 704 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.3+ | 0.4+ | |
| 2002 12 01 | 704 | 0.4− | 1.0+ | 2004 03 20 | 704 | 0.2− | 1.4− | 2006 08 28 | 699 | 1.1+ | 0.4− | |
| 2002 12 14 | 704 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.0 | 0.6− | 2006 08 28 | 699 | 0.2+ | 0.4+ | |
| 2002 12 14 | 704 | 0.6+ | 0.1− | 2004 03 20 | 704 | 0.2− | 0.0 | 2006 08 28 | 699 | (2.8+ | 0.5+) | |
| 2002 12 14 | 704 | 0.3+ | 0.8+ | 2004 03 20 | 704 | 0.4+ | 0.6− | 2006 08 28 | 699 | 0.4+ | 1.2+ | |
| 2002 12 14 | 704 | 0.1+ | 0.5+ | 2004 03 25 | 704 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.0 | 0.5+ | |
| 2002 12 14 | 704 | 0.4+ | 0.8+ | 2004 03 25 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.4− | 0.4+ | |
| 2002 12 16 | 608 | 0.5+ | 1.7+ | 2004 03 25 | 704 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 1.2− | 1.2+ | |
| 2002 12 16 | 608 | 0.4− | 0.9+ | 2004 03 25 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.3− | 0.2− | |
| 2002 12 16 | 608 | 0.7− | 0.5+ | 2004 03 25 | 704 | 0.8+ | 1.0+ | 2006 09 14 | 703 | 1.1− | 0.1− | |
| 2003 01 05 | 704 | 0.0 | 0.9+ | 2004 03 25 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.7− | |
| 2003 01 05 | 704 | 0.6+ | 0.8+ | 2004 03 26 | 699 | 0.1+ | 0.0 | 2006 09 14 | 703 | 1.2− | 0.8+ | |
| 2003 01 05 | 704 | 0.4+ | 0.3+ | 2004 03 26 | 699 | 0.4− | 0.6+ | 2006 09 14 | 703 | 1.4− | 2.7+ | |
| 2003 01 05 | 704 | 0.1+ | 0.3− | 2004 03 26 | 704 | 0.7+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | |
| 2003 01 05 | 704 | 0.4− | 0.1+ | 2004 03 26 | 699 | 0.9− | 0.3− | 2006 09 15 | 691 | 0.1− | 0.7+ | |
| 2004 02 26 | 704 | 0.7+ | 0.0 | 2004 03 26 | 704 | 0.5+ | 0.8+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | |
| 2004 02 26 | 704 | 0.4+ | 0.5+ | 2004 03 26 | 704 | 0.6+ | 0.4+ | | | | | |

**(139818)∗ 2001 RN$_{26}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.66781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21234662 | $\omega$ | 330.91349 | | +0.93220920 | +0.36182213 | |
| $a$ | 2.7825255 | $\Omega$ | 7.88823 | | −0.31907550 | +0.83260095 | |
| $e$ | 0.0998765 | $i$ | 3.51402 | | −0.17081230 | +0.41935713 | |
| $P$ | 4.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 21 | 691 | 1.0− | 0.9− | 2001 09 21 | 704 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.1+ | |
| 1994 01 21 | 691 | 0.4+ | 0.2− | 2001 10 11 | 644 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ | |
| 1994 01 21 | 691 | 0.2+ | 0.3− | 2001 10 11 | 644 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.5− | 1.1+ | |
| 2001 08 16 | 704 | 0.8− | 0.7+ | 2001 10 11 | 644 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 1.0− | |
| 2001 08 16 | 704 | 0.3− | 0.6+ | 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.2− | |
| 2001 08 16 | 704 | 0.0 | 0.2+ | 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.9− | 0.3+ | |
| 2001 08 16 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 691 | 0.5+ | 0.4+ | 2006 10 25 | 557 | 0.2− | 0.4− | |
| 2001 08 16 | 704 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 10 25 | 557 | 0.3+ | 0.5− | |
| 2001 08 23 | 699 | 0.1− | 0.4− | 2004 03 18 | 704 | 1.0+ | 0.9+ | 2006 10 25 | 557 | 0.1− | 0.6+ | |
| 2001 08 23 | 699 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 0.8+ | 0.1+ | 2006 10 25 | 557 | 0.9+ | 0.7+ | |
| 2001 08 23 | 699 | 0.4+ | 0.2+ | 2004 03 18 | 704 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1− | |
| 2001 08 23 | 699 | 0.2+ | 0.2− | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 06 | 644 | 0.3+ | 0.5+ | 2004 03 23 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.2− |
| 2001 09 06 | 644 | 0.4− | 0.5+ | 2004 03 23 | 691 | 0.3+ | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2001 09 06 | 644 | 0.3− | 0.2+ | 2004 04 21 | 691 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2001 09 07 | 704 | 0.7+ | 0.4+ | 2004 04 21 | 691 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 09 07 | 704 | 0.4− | 0.6− | 2004 04 21 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 09 07 | 704 | 1.0− | 0.8+ | 2006 07 21 | G96 | 0.6+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 09 07 | 704 | (1.7− | 1.0+) | 2006 07 21 | G96 | 0.1+ | 0.7− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 09 07 | 704 | 0.2− | 0.4+ | 2006 07 21 | G96 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 11 07 | 644 | 0.1+ | 0.5+ |
| 2001 09 12 | 704 | 0.6− | 0.7+ | 2006 10 03 | 691 | 0.3− | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.3− | 0.8+ | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2006 10 03 | 691 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.9− | 0.1− | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2006 10 12 | 691 | 0.6− | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.7− | 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | (1.5+ | 1.5−) |
| 2001 09 19 | 704 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.9− |
| 2001 09 19 | 704 | 0.2− | 0.8− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2001 09 19 | 704 | 0.1+ | 0.7− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 1.1− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.5− | 0.7− |
| 2001 09 21 | 704 | 0.8− | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2006 10 20 | 691 | 0.4+ | 0.7+ | | | | |

### (139819)∗ 2001 RG$_{27}$

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.04857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18825503 | $\omega$ | 268.92320 | | +0.95512098 | −0.29518158 | |
| $a$ | 3.0151227 | $\Omega$ | 108.24487 | | +0.28107831 | +0.87679470 | |
| $e$ | 0.2560698 | $i$ | 1.49232 | | +0.09348210 | +0.37960359 | |
| $P$ | 5.24 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 08 | 691 | 0.4− | 0.6− | 2001 09 19 | 699 | 0.2− | 0.4+ | 2003 01 31 | 291 | (3.0+ | 0.1+) |
| 1991 12 08 | 691 | 0.1+ | 0.8− | 2001 09 19 | 699 | 0.7+ | 1.0+ | 2003 01 31 | 291 | 0.9+ | 1.1+ |
| 2001 08 16 | 704 | 0.7− | 0.2+ | 2001 09 19 | 699 | 0.4+ | 0.4+ | 2003 01 31 | 291 | 0.5+ | 0.5+ |
| 2001 08 16 | 704 | 0.6+ | 0.6+ | 2001 09 19 | 704 | 0.3+ | 0.5+ | 2003 01 31 | 704 | 0.2− | 0.3− |
| 2001 08 16 | 704 | 0.4− | 1.2− | 2001 09 19 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 704 | 0.9+ | 1.0+ |
| 2001 08 16 | 644 | 0.3+ | 0.8− | 2001 09 19 | 704 | 0.1− | 0.4+ | 2003 01 31 | 704 | 0.1+ | 0.4+ |
| 2001 08 16 | 644 | 0.4+ | 0.9− | 2001 09 19 | 704 | 0.1+ | 0.0 | 2003 01 31 | 704 | 1.2+ | 1.2− |
| 2001 08 16 | 644 | 0.2+ | 0.8− | 2001 09 19 | 704 | 0.2− | 0.6+ | 2003 01 31 | 704 | (0.5− | 2.6−) |
| 2001 08 23 | 699 | 0.2− | 0.0 | 2001 09 19 | 704 | 0.1+ | 1.0+ | 2005 05 07 | G96 | 0.3+ | 0.6+ |
| 2001 08 23 | 699 | 0.4+ | 0.9+ | 2001 09 19 | 704 | 0.1+ | 0.3− | 2005 05 07 | G96 | 0.5+ | 0.3+ |
| 2001 08 23 | 699 | 0.3+ | 0.6+ | 2001 09 19 | 704 | 0.1− | 0.4+ | 2005 05 07 | G96 | 0.3+ | 0.2+ |
| 2001 08 23 | 699 | 1.3+ | 0.7+ | 2001 09 19 | 704 | 0.3+ | 0.1− | 2005 05 07 | G96 | 0.1+ | 0.2+ |
| 2001 08 28 | 644 | 0.7− | 0.3+ | 2001 09 20 | 704 | 0.1− | 0.3+ | 2005 05 12 | 691 | 0.0 | 0.2− |
| 2001 08 28 | 644 | 0.6− | 0.0 | 2001 09 20 | 704 | 0.0 | 1.1+ | 2005 05 12 | 691 | 0.3+ | 1.0+ |
| 2001 08 28 | 644 | 0.4− | 0.1+ | 2001 09 20 | 704 | 0.2− | 0.6+ | 2005 05 12 | 691 | 0.4+ | 0.4+ |
| 2001 09 07 | 704 | 0.2− | 0.2+ | 2001 09 20 | 704 | 0.4− | 0.2+ | 2006 07 20 | 644 | 0.7− | 0.1+ |
| 2001 09 07 | 704 | 0.5− | 0.6+ | 2001 09 20 | 704 | 0.4− | 0.1+ | 2006 07 20 | 644 | 0.4− | 0.2+ |
| 2001 09 07 | 704 | 0.7− | 0.6+ | 2001 09 21 | 704 | 0.2+ | 0.1+ | 2006 07 20 | 644 | 0.2− | 0.1+ |
| 2001 09 07 | 704 | 0.1+ | 0.3− | 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2001 09 07 | 704 | 0.3− | 0.4+ | 2001 09 21 | 704 | 0.2− | 0.1− | 2006 08 14 | 644 | 0.4− | 0.2− |
| 2001 09 07 | 644 | 0.0 | 0.7+ | 2001 09 21 | 704 | 0.4− | 0.1− | 2006 08 14 | 644 | 0.3− | 0.1− |
| 2001 09 07 | 644 | 0.2− | 0.7+ | 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.4+ |
| 2001 09 07 | 644 | 0.1+ | 0.5+ | 2001 10 11 | 704 | 0.2− | 0.6− | 2006 08 28 | 703 | 0.1− | 0.2− |
| 2001 09 11 | 699 | 0.1+ | 0.1+ | 2001 10 11 | 704 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.7+ |
| 2001 09 11 | 699 | 0.6+ | 0.0 | 2001 10 11 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 1.1− | 0.4+ |
| 2001 09 11 | 699 | 0.2− | 0.3+ | 2001 10 11 | 704 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2001 09 11 | 699 | 0.0 | 0.5+ | 2001 10 11 | 704 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.4− | 0.2+ | 2002 12 14 | 291 | 0.6− | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.5− |
| 2001 09 12 | 704 | 0.0 | 0.0 | 2002 12 14 | 291 | 0.3− | 0.9+ | 2006 09 30 | G96 | 0.6− | 0.3− |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2002 12 14 | 291 | 0.2− | 0.8+ | 2006 10 23 | G96 | 0.4+ | 0.5− |
| 2001 09 12 | 704 | 0.5− | 0.1+ | 2003 01 11 | 291 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2001 09 12 | 704 | 0.1+ | 0.9− | 2003 01 11 | 291 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2001 09 19 | 699 | 0.1− | 0.7+ | 2003 01 11 | 291 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.4− | 0.7− |

### (139820)∗ 2001 RD$_{28}$

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.47994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20867753 | $\omega$ | 25.82589 | | +0.32228504 | +0.94641074 | |
| $a$ | 2.8150466 | $\Omega$ | 262.98111 | | −0.87214515 | +0.28824246 | |
| $e$ | 0.0328452 | $i$ | 1.20973 | | −0.36809671 | +0.14568117 | |
| $P$ | 4.72 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 12 | 691 | 0.0 | 0.8− | 2001 09 07 | 704 | 0.1− | 1.1− | 2006 09 19 | 699 | 0.0 | 0.7+ |
| 1994 01 12 | 691 | 0.3+ | 0.3+ | 2001 09 12 | 704 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.9− | 0.0 |
| 1994 01 12 | 691 | 0.2+ | 0.1− | 2001 09 12 | 704 | 0.9+ | 0.6+ | 2006 09 19 | 699 | (0.4− | 2.6−) |
| 1999 02 10 | 691 | 1.0− | 0.4− | 2001 09 12 | 704 | (0.2+ | 1.8+) | 2006 09 25 | 691 | 0.2− | 0.0 |
| 1999 02 10 | 691 | 1.0− | 0.2− | 2001 09 12 | 704 | (0.0 | 2.1+) | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1999 02 10 | 691 | (1.5− | 2.4−) | 2001 09 12 | 704 | 1.3+ | 1.4+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 1999 02 14 | 691 | 0.1+ | 0.3− | 2001 09 20 | 704 | 0.1+ | 1.4+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1999 02 14 | 691 | 0.1+ | 0.3− | 2001 09 20 | 704 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.4− |
| 1999 02 14 | 691 | 0.0 | 0.2− | 2001 09 20 | 704 | 0.3− | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 1999 02 21 | 691 | 0.0 | 0.7+ | 2001 09 20 | 704 | 0.3+ | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.5− |
| 1999 02 21 | 691 | 0.3− | 0.8+ | 2002 12 10 | 704 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.1− |
| 1999 02 21 | 691 | 0.3− | 0.8+ | 2002 12 10 | 704 | 1.0+ | 0.3− | 2006 09 29 | 704 | 1.1− | 0.9+ |
| 2000 05 07 | 704 | 0.8+ | 0.1+ | 2002 12 10 | 704 | 0.4+ | 0.8+ | 2006 09 29 | 704 | 0.7− | 1.0+ |
| 2000 05 07 | 704 | 0.4+ | 0.7+ | 2002 12 10 | 704 | 0.4+ | 1.0+ | 2006 09 29 | 704 | (1.9− | 0.0 ) |
| 2000 05 07 | 704 | 0.7+ | 0.8+ | 2004 03 18 | 704 | 0.8+ | 0.5+ | 2006 10 09 | 644 | 0.6− | 0.2+ |
| 2000 06 04 | 691 | 0.4− | 0.2− | 2004 03 18 | 704 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2000 06 04 | 691 | 0.4− | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.2− | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2000 06 04 | 691 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.2+ | 0.9− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 08 16 | 704 | 1.3+ | 0.1− | 2004 03 27 | 704 | 1.0+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 08 16 | 704 | (0.0 | 2.2+) | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2001 08 16 | 704 | 0.3− | 0.0 | 2004 03 29 | 691 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.9+ | 0.3− |
| 2001 08 16 | 704 | 0.5− | 0.9+ | 2004 03 29 | 691 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.6− |
| 2001 09 07 | 704 | 0.2+ | 0.6+ | 2004 03 29 | 691 | 1.1+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 09 07 | 704 | 0.6+ | 0.8− | 2006 09 19 | 699 | (1.7− | 0.2−) | | | | |

### (139821)∗ 2001 RM$_{28}$ = 2000 HO$_{98}$

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 18021)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.50563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21160801 | $\omega$ | 166.87339 | | +0.69550774 | +0.71776836 | |
| $a$ | 2.7889966 | $\Omega$ | 147.17628 | | −0.66457783 | +0.65998994 | |
| $e$ | 0.1365325 | $i$ | 3.47188 | | −0.27313970 | +0.22185998 | |
| $P$ | 4.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 691 | 0.3− | 0.6+ | 2001 09 21 | 704 | 0.4− | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2000 04 27 | 691 | 0.1− | 0.5+ | 2001 09 22 | 704 | 0.3− | 1.0− | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2000 04 27 | 691 | 0.1+ | 0.6+ | 2001 09 22 | 704 | 0.1− | 0.8− | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2000 05 07 | 691 | 0.4+ | 0.4− | 2001 09 22 | 704 | 0.7+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2000 05 07 | 691 | 0.1+ | 0.1− | 2001 09 22 | 704 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2000 05 07 | 691 | 0.2+ | 0.2− | 2001 09 22 | 704 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2001 08 23 | 699 | 0.3+ | 0.4− | 2001 09 25 | 704 | 0.1+ | 0.3− | 2006 10 10 | 644 | 0.3− | 0.2− |
| 2001 08 23 | 699 | 0.3− | 0.1− | 2001 09 25 | 704 | 0.4+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 08 23 | 699 | 0.2− | 0.5− | 2001 09 25 | 704 | 0.7− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 08 23 | 699 | (0.5− | 2.2−) | 2005 05 20 | G96 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 09 07 | 704 | 1.0+ | 0.1− | 2005 05 20 | G96 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2001 09 07 | 704 | (1.8− | 1.1−) | 2005 05 20 | G96 | 0.4− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2001 09 07 | 704 | 0.5− | 1.5− | 2005 05 20 | G96 | 0.1− | 0.5− | 2006 10 21 | 703 | 0.1− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 704 | (0.4− | 2.4−) | 2005 06 16 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.1+ | | |
| 2001 09 12 | 704 | 0.4− | 1.2+ | 2005 06 16 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.1− | | |
| 2001 09 12 | 704 | 0.3− | 1.5+ | 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.1+ | 0.3− | | |
| 2001 09 12 | 704 | 0.7+ | 1.2+ | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.5+ | 0.3+ | | |
| 2001 09 19 | 704 | (1.5− | 1.5+) | 2005 07 04 | 691 | 0.4− | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.8+ | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.4− | 0.6+ | 2005 07 12 | G96 | 0.5+ | 0.7− | 2006 10 22 | G96 | 0.3− | 0.2− | | |
| 2001 09 19 | 704 | 0.2+ | 1.1+ | 2005 07 12 | G96 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.4− | | |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2005 07 12 | G96 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.2+ | | |
| 2001 09 21 | 704 | 0.5− | 0.7− | 2005 07 12 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.5− | 0.1− | | |

**(139822)∗ 2001 RY$_{28}$ = 2000 HU$_{72}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18022)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.20450 | | (2000.0) | | | |
| $n$ | 0.22963208 | $\omega$ | 97.32535 | | +0.49097692 | +0.87108141 |
| $a$ | 2.6410767 | $\Omega$ | 202.09324 | | −0.81192359 | +0.45229335 |
| $e$ | 0.1235520 | $i$ | 1.92027 | | −0.31578752 | +0.19143641 |
| $P$ | 4.29 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.4− | 0.3− | 2001 09 22 | 704 | (3.5− | 1.1−) | 2005 07 08 | 691 | 0.0 | 0.2+ | | |
| 2000 04 26 | 691 | 0.1− | 0.1+ | 2001 09 22 | 704 | 0.2+ | 1.4− | 2005 07 08 | 691 | 0.1− | 0.3+ | | |
| 2000 04 26 | 691 | 0.1+ | 0.1+ | 2001 09 22 | 704 | (1.4+ | 2.6−) | 2005 07 08 | 691 | 0.0 | 0.2+ | | |
| 2000 05 02 | 691 | 0.2− | 0.4+ | 2004 03 12 | 644 | 0.7+ | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.5− | | |
| 2000 05 02 | 691 | 0.5− | 0.3+ | 2004 03 12 | 644 | 0.6+ | 0.5+ | 2006 10 19 | G96 | 0.9+ | 0.3− | | |
| 2000 05 02 | 691 | 0.5− | 0.5+ | 2004 03 12 | 644 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1− | | |
| 2001 05 23 | 807 | (1.8− | 0.1−) | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.7− | 0.0 | | |
| 2001 05 23 | 807 | 0.2− | 0.1+ | 2004 03 23 | 691 | 0.4+ | 0.5+ | 2006 10 20 | 695 | 0.5− | 0.3+ | | |
| 2001 09 07 | 704 | (2.0− | 0.7−) | 2004 03 23 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 695 | 0.5− | 0.2+ | | |
| 2001 09 07 | 704 | (2.0− | 0.8+) | 2004 03 30 | 691 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.7− | | |
| 2001 09 07 | 704 | (1.6− | 1.6+) | 2004 03 30 | 691 | 0.9+ | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.5− | | |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2004 03 30 | 691 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 2001 09 12 | 704 | (1.9− | 0.6+) | 2005 05 20 | G96 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2005 05 20 | G96 | 0.5− | 0.3− | 2006 11 11 | 691 | 0.7− | 0.3− | | |
| 2001 09 12 | 704 | 0.4− | 0.3− | 2005 05 20 | G96 | 0.5− | 0.1− | 2006 11 11 | 691 | 0.4− | 0.4+ | | |
| 2001 09 20 | 704 | 1.3− | 0.7+ | 2005 06 18 | G96 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.5− | 0.2+ | | |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2005 06 18 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.5− | 0.5+ | | |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2005 06 18 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | (2.1+ | 4.4+) | | |
| 2001 09 20 | 291 | 0.3+ | 0.5+ | 2005 06 18 | G96 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.5− | 1.6+ | | |
| 2001 09 20 | 704 | 0.6− | 0.1− | 2005 06 29 | 691 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.4− | 1.7+ | | |
| 2001 09 20 | 291 | 0.5+ | 0.6+ | 2005 06 29 | 691 | 0.1− | 0.1+ | | | | | | |
| 2001 09 20 | 291 | 0.6+ | 0.8+ | 2005 06 29 | 691 | 0.2+ | 0.2+ | | | | | | |

**(139823)∗ 2001 RA$_{29}$ = 1999 EE$_{10}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 18022)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.44338 | | (2000.0) | | | |
| $n$ | 0.20578976 | $\omega$ | 122.26869 | | +0.59390674 | −0.80439689 |
| $a$ | 2.8413204 | $\Omega$ | 291.28945 | | +0.73268257 | +0.54839706 |
| $e$ | 0.0546826 | $i$ | 0.91300 | | +0.33234174 | +0.22848700 |
| $P$ | 4.79 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.1+ | | |
| 1992 11 26 | 691 | 0.2− | 0.1− | 2003 01 04 | 704 | 0.5− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.4+ | | |
| 1992 11 26 | 691 | 0.0 | 0.9+ | 2003 01 04 | 704 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.1+ | | |
| 1999 03 14 | 691 | 0.2− | 0.0 | 2004 03 13 | 644 | 0.7+ | 0.8+ | 2006 09 25 | 691 | 0.1− | 0.5+ | | |
| 1999 03 14 | 691 | 0.4− | 0.1− | 2004 03 13 | 644 | 0.4+ | 0.7+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | | |
| 1999 03 14 | 691 | 0.1− | 0.2− | 2004 03 13 | 644 | 0.5+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.3+ | | |
| 1999 03 21 | 691 | 0.3+ | 0.2− | 2004 03 18 | 704 | 0.4+ | 1.0+ | 2006 09 27 | 704 | 0.1− | 1.1+ | | |
| 1999 03 21 | 691 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.5+ | | |
| 1999 03 21 | 691 | 0.4+ | 0.4− | 2004 03 18 | 704 | 0.4+ | 1.0+ | 2006 09 27 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 07 | 704 | (0.4− | 2.1−) | 2004 03 26 | 691 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.7− | 0.7+ | | |
| 2001 09 07 | 704 | 0.2+ | 0.9− | 2004 03 26 | 691 | 0.0 | 0.7+ | 2006 10 02 | 691 | 0.3− | 0.2+ | | |
| 2001 09 07 | 704 | 0.3+ | 0.2− | 2004 03 26 | 691 | 0.1− | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.2+ | | |
| 2001 09 12 | 704 | 0.4− | 0.8+ | 2004 03 27 | 704 | 1.0+ | 1.2+ | 2006 10 02 | 691 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.7− | 0.6+ | 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.4− | | |
| 2001 09 12 | 704 | 0.8− | 0.4+ | 2004 03 27 | 704 | 0.6+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.0 | | |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 1.4+ | 1.4+ | 2006 10 22 | G96 | 0.3− | 0.3− | | |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2004 04 19 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.1− | | |
| 2001 09 20 | 704 | 0.9− | 0.5− | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | |
| 2001 09 20 | 704 | 0.4− | 0.3− | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2001 09 22 | 704 | 0.1+ | 1.2+ | 2006 07 22 | G96 | 0.5− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.5− | | |
| 2001 09 22 | 704 | 0.1+ | 0.7+ | 2006 07 22 | G96 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.1− | | |
| 2001 09 22 | 704 | 0.0 | 1.1+ | 2006 07 22 | G96 | 0.1− | 0.4+ | | | | | | |
| 2003 01 04 | 704 | 0.2− | 0.3− | 2006 07 22 | G96 | 0.1+ | 0.1− | | | | | | |

**(139824)∗ 2001 RP$_{30}$ = 2003 AJ$_{56}$**

Discovered 2001 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40474)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.28155 | | (2000.0) | | | |
| $n$ | 0.21298946 | $\omega$ | 20.75196 | | +0.95193115 | −0.30629923 |
| $a$ | 2.7769238 | $\Omega$ | 357.08004 | | +0.27270575 | +0.85162629 |
| $e$ | 0.1037037 | $i$ | 3.15604 | | +0.13949430 | +0.42533920 |
| $P$ | 4.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 12 | 691 | 0.7− | 0.6− | 2001 10 17 | 644 | 0.7− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.0 | | |
| 1994 01 12 | 691 | 0.8+ | 0.4− | 2001 10 23 | 704 | (1.2− | 2.0+) | 2006 10 19 | 691 | 0.2− | 0.0 | | |
| 1994 01 12 | 691 | 0.1− | 0.4+ | 2001 10 23 | 704 | (1.8− | 2.3+) | 2006 10 19 | 691 | 0.2− | 0.1+ | | |
| 2001 09 07 | 704 | 0.3− | 0.0 | 2001 10 23 | 704 | (1.5− | 2.6+) | 2006 10 19 | 691 | 0.4− | 0.7+ | | |
| 2001 09 07 | 704 | 0.5− | 0.0 | 2001 10 23 | 704 | (1.7− | 2.6+) | 2006 10 20 | G96 | 0.5+ | 0.4− | | |
| 2001 09 07 | 704 | 0.4− | 0.9+ | 2001 10 24 | 704 | 0.5− | 0.7+ | 2006 10 20 | G96 | 0.7− | 0.1− | | |
| 2001 09 07 | 644 | 0.2+ | 1.4+ | 2001 10 24 | 704 | (1.0− | 2.2+) | 2006 10 20 | G96 | 0.9+ | 0.0 | | |
| 2001 09 07 | 644 | 0.0 | 1.4+ | 2001 10 24 | 704 | 0.5+ | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.4− | | |
| 2001 09 07 | 644 | (0.0 | 1.7+) | 2001 10 24 | 704 | (0.1− | 2.1+) | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.4+ | 0.2− | 2002 12 06 | 645 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.3− | | |
| 2001 09 12 | 704 | 0.5+ | 0.1− | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2− | | |
| 2001 09 12 | 704 | 0.3+ | 0.2+ | 2003 01 05 | 704 | (2.0+ | 1.2+) | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2003 01 05 | 704 | 0.5+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.4+ | | |
| 2001 09 19 | 699 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.7+ | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 699 | 0.4− | 0.6+ | 2003 01 09 | 704 | 0.5+ | 0.0 | 2006 10 29 | 704 | 0.4− | 0.2+ | | |
| 2001 09 19 | 699 | 0.5− | 0.8+ | 2003 01 09 | 704 | 1.2− | 1.1+ | 2006 10 29 | 704 | 0.4+ | 1.2+ | | |
| 2001 09 19 | 699 | 0.0 | 0.0 | 2003 01 09 | 704 | 0.8+ | 1.2− | 2006 10 29 | 704 | 0.5+ | 0.2− | | |
| 2001 09 19 | 704 | 0.3+ | 0.7− | 2003 01 09 | 704 | 0.3+ | 0.9+ | 2006 10 29 | 704 | 0.4+ | 1.1− | | |
| 2001 09 19 | 704 | 0.6+ | 1.4− | 2004 04 20 | 691 | 0.4+ | 0.9+ | 2006 11 01 | 691 | 0.1− | 1.0+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.1− | 2004 04 20 | 691 | 0.6+ | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.2+ | 1.4− | 2004 04 20 | 691 | 0.2+ | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.2+ | | |
| 2001 09 19 | 704 | 0.2+ | 1.1+ | 2006 07 22 | G96 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.2− | 1.3− | 2006 07 22 | G96 | 0.1+ | 1.4+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.9+ | 0.4+ | 2006 07 22 | G96 | 0.4− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.2− | 1.1− | 2006 07 22 | G96 | 0.3+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.4− | | |
| 2001 09 21 | 704 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 14 | 703 | 0.1+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.8+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 14 | 703 | 0.1+ | 1.2− | | |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.3+ | 1.1− | | |
| 2001 09 21 | 704 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.0 | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.2− | | |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 1.0− | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.2− | | |
| 2001 09 21 | 704 | (0.4+ | 2.0−) | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.6+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.5+ | 1.0+ | 2006 10 03 | 291 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.2− | | |
| 2001 09 21 | 704 | (0.3+ | 1.7−) | 2006 10 03 | 291 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.0 | | |
| 2001 09 21 | 704 | (1.8+ | 0.5+) | 2006 10 03 | 704 | 0.4+ | 0.1+ | 2006 11 22 | 704 | 0.9+ | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.8− | 0.6− | 2006 10 03 | 291 | 0.2− | 0.2− | 2006 11 22 | 704 | 1.3+ | 0.1− | | |
| 2001 09 21 | 704 | (0.1− | 2.3−) | 2006 10 03 | 704 | 0.9− | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.0 | | |
| 2001 09 21 | 704 | 0.2+ | 0.5− | 2006 10 03 | 704 | 1.3− | 1.2− | 2006 11 22 | 704 | 0.2− | 0.3− | | |
| 2001 10 11 | 644 | (1.2− | 1.6+) | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.9+ | | |
| 2001 10 11 | 644 | 1.2− | 1.5+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 22 | 104 | 0.0 | 0.4+ | | |
| 2001 10 11 | 644 | (1.1− | 1.6+) | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 22 | 104 | 0.3− | 0.5− | | |
| 2001 10 17 | 644 | 0.8− | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 22 | 104 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 644 | 0.6− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.4+ | | | | | | |

**(139825)∗ 2001 RQ$_{31}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.24001 | | (2000.0) | | | |
| $n$ | 0.23929406 | $\omega$ | 156.19115 | | +0.74485262 | +0.66308161 |
| $a$ | 2.5694969 | $\Omega$ | 161.64813 | | −0.64378556 | +0.74346485 |
| $e$ | 0.1685082 | $i$ | 13.64567 | | −0.17531320 | +0.08707926 |
| $P$ | 4.12 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 26 | 691 | 0.4− | 0.1− | 2001 08 25 | 704 | 0.3− | 0.4+ | 2004 03 22 | 704 | 0.3− | 1.0+ | | |
| 1993 05 26 | 691 | 0.5− | 0.4− | 2001 08 25 | 704 | 0.0 | 0.5+ | 2004 03 22 | 704 | 0.4+ | 0.3+ | | |
| 1993 05 26 | 691 | 0.6− | 0.3− | 2001 09 08 | 704 | 1.0+ | 0.9+ | 2004 03 22 | 704 | 1.4+ | 1.1+ | | |
| 1996 02 14 | 691 | 0.5+ | 0.8− | 2001 09 08 | 704 | 0.7+ | 0.1+ | 2004 03 28 | 704 | 0.7− | 1.0− | | |
| 1996 02 14 | 691 | 0.3+ | 0.1− | 2001 09 08 | 704 | 0.3− | 0.6+ | 2004 03 28 | 704 | 0.1+ | 0.5− | | |
| 1996 02 14 | 691 | 0.2+ | 0.3− | 2001 09 08 | 704 | 0.5+ | 1.0+ | 2004 03 28 | 704 | 0.6− | 1.1+ | | |
| 1997 10 01 | 910 | 0.5+ | 0.9+ | 2001 09 08 | 704 | 0.0 | 0.5+ | 2004 03 28 | 704 | 0.1+ | 0.0 | | |
| 1997 10 01 | 910 | 0.5+ | 0.8+ | 2001 09 12 | 704 | 0.3+ | 0.2+ | 2005 06 09 | 704 | 0.4− | 0.4+ | | |
| 1997 10 01 | 910 | 0.6+ | 0.8+ | 2001 09 12 | 704 | 0.2+ | 0.8+ | 2005 06 09 | 704 | 1.3+ | 0.3+ | | |
| 2000 03 11 | 699 | 0.0 | 0.7+ | 2001 09 12 | 704 | 0.5+ | 0.7+ | 2005 06 09 | 704 | 0.3− | 0.1+ | | |
| 2000 03 11 | 699 | 0.1− | 1.2+ | 2001 09 12 | 704 | 0.4− | 0.2+ | 2005 06 09 | 704 | 0.9− | 0.7+ | | |
| 2000 03 11 | 699 | 0.2− | 0.5+ | 2001 09 12 | 704 | 0.7+ | 0.1+ | 2005 06 28 | 704 | 0.6− | 0.3− | | |
| 2000 03 11 | 699 | 0.0 | 1.0+ | 2001 09 20 | 704 | 0.3+ | 0.1+ | 2005 06 28 | 704 | 0.1+ | 0.6− | | |
| 2001 06 29 | 608 | (0.4− | 2.6+) | 2001 09 20 | 704 | 0.2− | 1.1+ | 2005 06 28 | 704 | 0.7− | 0.8− | | |
| 2001 06 29 | 608 | (1.1+ | 2.2+) | 2001 09 20 | 704 | 0.2− | 0.5− | 2005 06 28 | 704 | 0.6− | 1.3− | | |
| 2001 06 29 | 608 | 0.5+ | 1.4+ | 2001 09 20 | 704 | 0.8− | 1.1+ | 2005 06 28 | 704 | 0.7− | 0.1− | | |
| 2001 07 21 | 608 | 0.3+ | 0.4− | 2001 09 20 | 704 | 0.4− | 0.5+ | 2006 11 13 | 703 | 0.5+ | 0.5+ | | |
| 2001 07 21 | 608 | 0.6+ | 0.2− | 2004 02 13 | 291 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.7− | | |
| 2001 07 21 | 608 | 0.3+ | 0.2− | 2004 02 13 | 291 | 0.4− | 0.4+ | 2006 11 13 | 703 | 1.3+ | 0.9+ | | |
| 2001 07 21 | 608 | 0.5+ | 0.3− | 2004 02 13 | 291 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.3+ | 0.9+ | | |
| 2001 07 21 | 608 | 0.3+ | 0.4− | 2004 03 19 | 704 | 0.1− | 0.7+ | 2006 11 19 | 703 | 1.2− | 0.9− | | |
| 2001 07 21 | 608 | 0.0 | 0.6− | 2004 03 19 | 704 | 0.1− | 0.4− | 2006 11 19 | 703 | 0.4+ | 0.3+ | | |
| 2001 08 25 | 704 | 0.0 | 0.4− | 2004 03 19 | 704 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.3− | 1.2− | | |
| 2001 08 25 | 704 | 0.2− | 0.3− | 2004 03 22 | 704 | 1.0+ | 0.9− | 2006 11 19 | 703 | 0.0 | 0.2+ | | |

**(139826)∗ 2001 RJ$_{32}$ = 1999 BY$_{18}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18023)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 226.34492 | | (2000.0) | | | |
| $n$ | 0.22366606 | $\omega$ | 200.72194 | | −0.91093592 | −0.37916291 |
| $a$ | 2.6878353 | $\Omega$ | 315.87691 | | +0.40370304 | −0.73810522 |
| $e$ | 0.0878109 | $i$ | 13.50438 | | +0.08496828 | −0.55806467 |
| $P$ | 4.41 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.5− | 0.7+ | 2001 09 20 | 704 | 0.8− | 0.3+ | 2004 04 17 | 704 | 0.7− | 1.3+ | | |
| 1998 12 17 | 704 | (0.1+ | 2.5−) | 2003 01 22 | 644 | 0.3− | 0.8+ | 2004 04 17 | 704 | 0.3− | 0.5+ | | |
| 1998 12 17 | 704 | 1.2− | 1.7− | 2003 01 22 | 644 | 0.2− | 0.9+ | 2004 04 24 | 608 | 0.5+ | 1.0+ | | |
| 1998 12 17 | 704 | (4.6− | 1.6−) | 2003 01 22 | 644 | 0.2− | 1.1+ | 2004 04 24 | 608 | 0.3+ | 0.8+ | | |
| 1999 01 16 | 704 | 0.3+ | 0.6+ | 2004 01 19 | 608 | 0.5+ | 0.8+ | 2004 04 24 | 608 | 0.8+ | 1.4+ | | |
| 1999 01 16 | 704 | 1.1+ | 0.8− | 2004 01 19 | 608 | 1.0+ | 0.0 | 2005 07 06 | E12 | 0.4− | 0.0 | | |
| 1999 01 16 | 704 | 0.4− | 0.2− | 2004 01 19 | 608 | 0.1+ | 0.1+ | 2005 07 06 | E12 | 0.5− | 0.3+ | | |
| 1999 01 16 | 704 | (3.5+ | 0.4+) | 2004 03 01 | 703 | 0.1+ | 0.4− | 2005 07 06 | E12 | 0.1+ | 0.1+ | | |
| 1999 01 19 | 704 | 1.1+ | 0.0 | 2004 03 01 | 703 | 0.0 | 1.3+ | 2005 07 06 | E12 | 0.0 | 0.1+ | | |
| 1999 01 19 | 704 | 0.3− | 1.9+ | 2004 03 01 | 703 | 0.5+ | 0.6− | 2006 10 10 | 644 | 0.9− | 0.4+ | | |
| 1999 01 19 | 704 | 0.6− | 1.1− | 2004 03 01 | 703 | 0.3+ | 0.7+ | 2006 10 10 | 644 | 1.0− | 0.3+ | | |
| 1999 01 19 | 704 | 0.5+ | 1.3+ | 2004 03 17 | 703 | 1.3+ | 0.1+ | 2006 10 10 | 644 | 1.1− | 0.2+ | | |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2004 03 17 | 703 | 0.7+ | 1.1+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2001 08 16 | 704 | 0.3− | 0.9+ | 2004 03 17 | 703 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 1.0+ | | |
| 2001 08 16 | 704 | 0.2− | 0.2+ | 2004 03 17 | 703 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.5+ | | |
| 2001 08 16 | 704 | 0.1+ | 0.6− | 2004 03 17 | 704 | 0.1− | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.5+ | | |
| 2001 08 16 | 704 | 0.4− | 0.0 | 2004 03 17 | 704 | 0.7+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.2+ | | |
| 2001 08 24 | 699 | (1.6− | 0.9−) | 2004 03 17 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.5+ | | |
| 2001 08 24 | 699 | 0.0 | 0.8+ | 2004 03 17 | 704 | 0.4− | 0.7− | 2006 10 19 | 703 | 0.4+ | 0.4+ | | |
| 2001 08 24 | 699 | 0.3− | 0.4+ | 2004 03 17 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.1+ | | |
| 2001 08 24 | 699 | 0.1+ | 0.8+ | 2004 03 26 | 699 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.0 | | |
| 2001 09 08 | 704 | 0.7+ | 0.3+ | 2004 03 26 | 699 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.5+ | | |
| 2001 09 08 | 704 | 0.2− | 0.4+ | 2004 03 26 | 699 | 0.6+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 09 08 | 704 | 0.4− | 0.8+ | 2004 03 26 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2001 09 08 | 704 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.2− | 0.2+ | | |
| 2001 09 12 | 704 | 0.7+ | 0.6+ | 2004 03 31 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.4+ | | |
| 2001 09 12 | 704 | 0.5+ | 0.8+ | 2004 03 31 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.6− | | |
| 2001 09 12 | 704 | 0.9− | 0.4+ | 2004 03 31 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.5+ | | |
| 2001 09 12 | 704 | 0.0 | 0.5− | 2004 03 31 | 704 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.5− | 0.5− | | |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2004 04 17 | 704 | 0.1+ | 0.3+ | | | | | | |
| 2001 09 20 | 704 | 1.2− | 0.3+ | 2004 04 17 | 704 | 0.3− | 0.4− | | | | | | |

**(139827)∗ 2001 RV$_{32}$ = 1995 GQ$_{6}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20100)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.55261 | | (2000.0) | | | |
| $n$ | 0.21936785 | $\omega$ | 201.78644 | | +0.93992694 | −0.34128191 |
| $a$ | 2.7228313 | $\Omega$ | 178.11272 | | +0.33794910 | +0.92692460 |
| $e$ | 0.1905883 | $i$ | 14.05951 | | +0.04824681 | +0.15600464 |
| $P$ | 4.49 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 06 | 691 | 0.1+ | 0.3− | 2001 10 18 | 644 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.4+ | 1.2− | | |
| 1995 04 06 | 691 | 0.3− | 0.6− | 2001 10 18 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.8− | | |
| 1995 04 06 | 691 | 0.4− | 0.0 | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 1.0+ | 0.2+ | | |
| 1995 04 08 | 691 | 0.0 | 0.7− | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.7− | | |
| 1995 04 08 | 691 | 0.1− | 0.5− | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.7− | | |
| 1995 04 08 | 691 | 0.0 | 0.2− | 2004 03 28 | 704 | (0.6+ | 2.3+) | 2006 10 17 | 703 | 0.7+ | 0.5+ | | |
| 2001 08 20 | 704 | 0.7− | 1.1− | 2004 03 28 | 704 | (0.6+ | 1.7+) | 2006 10 17 | 703 | 0.3+ | 0.0 | | |
| 2001 08 20 | 704 | 0.1+ | 1.0− | 2004 03 28 | 704 | 0.6+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.2+ | | |
| 2001 08 20 | 704 | (0.4+ | 1.6+) | 2004 03 28 | 704 | 0.7+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.7− | | |
| 2001 08 25 | 704 | 0.6+ | 0.1+ | 2004 04 20 | 704 | 0.7+ | 0.1+ | 2006 10 28 | 703 | 1.3− | 0.6− | | |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 1.3+ | 0.0 | 2006 10 28 | 703 | 0.0 | 0.7− | | |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.8+ | 1.2+ | 2006 10 28 | 703 | 0.2+ | 0.6− | | |
| 2001 08 25 | 704 | 0.5+ | 0.0 | 2004 04 26 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.2+ | 0.6+ | | |
| 2001 08 25 | 704 | 1.0+ | 0.5− | 2004 04 26 | 691 | 0.0 | 0.7+ | 2006 11 10 | 704 | 0.0 | 0.2− | | |
| 2001 09 08 | 704 | 0.3− | 0.0 | 2004 04 26 | 691 | 0.1− | 0.7+ | 2006 11 10 | 704 | 0.4+ | 0.4+ | | |
| 2001 09 08 | 704 | 0.2− | 0.2− | 2005 07 28 | 644 | 0.8− | 0.0 | 2006 11 10 | 704 | 0.9+ | 1.0+ | | |
| 2001 09 08 | 704 | 0.3− | 0.6+ | 2005 07 28 | 644 | 0.9− | 0.1+ | 2006 11 16 | 703 | 0.6+ | 0.4+ | | |
| 2001 09 08 | 704 | 0.3− | 0.2− | 2005 07 28 | 644 | 0.8− | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.6+ | | |
| 2001 09 08 | 704 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 11 16 | 703 | 0.4+ | 0.0 | | |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.6− | 2006 11 16 | 703 | 0.6− | 0.2+ | | |
| 2001 09 12 | 704 | 0.0 | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 1.8− | 0.2+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 11 22 | 704 | 1.2− | 0.3+ | | |
| 2001 09 12 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.1+ | | |
| 2001 10 18 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 1.1− | 0.3− | | |

**(139828)∗ 2001 RR$_{33}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.56950 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21588835 | $\omega$ | 188.08466 | | +0.99834068 | −0.05653265 | |
| $a$ | 2.7520094 | $\Omega$ | 175.11596 | | +0.05735309 | +0.95919056 | |
| $e$ | 0.1573067 | $i$ | 7.39059 | | +0.00514815 | +0.27705150 | |
| $P$ | 4.57 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.5+ | 0.4− | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2001 09 08 | 704 | 0.3− | 0.6− | 2004 03 18 | 704 | 0.9− | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.6− |
| 2001 09 08 | 704 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.8+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2001 09 08 | 704 | 0.1− | 0.5+ | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.5+ | 0.6− |
| 2001 09 08 | 704 | 0.2+ | 0.0 | 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 704 | 0.9− | 0.2+ |
| 2001 09 09 | 699 | 0.1+ | 0.5− | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 10 27 | 704 | 1.5+ | 0.0 |
| 2001 09 09 | 699 | 0.3+ | 0.3− | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 704 | (1.7+ | 0.3+) |
| 2001 09 09 | 699 | 0.2− | 0.1− | 2004 04 22 | 691 | 0.3− | 0.4+ | 2006 10 27 | 704 | 0.2− | 0.5− |
| 2001 09 09 | 699 | 0.2− | 0.0 | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.3+ | 0.2+ |
| 2001 09 12 | 704 | 0.2+ | 0.6+ | 2004 04 22 | 691 | 0.0 | 0.6+ | 2006 11 13 | 703 | 0.1− | 0.7+ |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2005 06 15 | 291 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 1.1+ |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2005 06 15 | 291 | 0.7− | 0.0 | 2006 11 13 | 703 | 0.8+ | 0.2− |
| 2001 09 12 | 704 | 0.2− | 0.5+ | 2005 06 15 | 291 | 0.3+ | 0.2+ | 2006 11 14 | 235 | 0.4+ | 0.4+ |
| 2001 09 18 | 644 | 0.0 | 0.5+ | 2006 08 21 | 704 | 0.3− | 0.1− | 2006 11 17 | 644 | 0.5+ | 0.4+ |
| 2001 09 18 | 644 | 0.7− | 0.6+ | 2006 08 21 | 704 | 0.3− | 0.4+ | 2006 11 17 | 644 | 0.3− | 0.2+ |
| 2001 09 18 | 644 | 0.3− | 0.5+ | 2006 08 21 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2006 08 21 | 704 | 0.3− | 0.0 | 2006 11 19 | 703 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.5− | 0.3+ |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.5+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.8+ | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.9− |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.7+ | 2006 11 20 | 704 | (0.9+ | 1.7+) |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2006 09 29 | 699 | 0.3− | 0.9+ | 2006 11 20 | 704 | 0.7− | 0.3+ |
| 2001 09 22 | 704 | 0.6+ | 0.3+ | 2006 09 29 | 699 | 0.6+ | 0.4− | 2006 11 20 | 704 | 0.7− | 0.4+ |
| 2001 09 22 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 699 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.7− | 0.7+ |
| 2001 09 22 | 704 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.8− | 0.6− | 2006 11 20 | 704 | 0.4− | 0.4+ |
| 2001 09 22 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.5− | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2001 09 24 | 704 | 0.7− | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.7+ | 2006 11 21 | 704 | (0.0 | 1.7+) |
| 2001 09 24 | 704 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 11 21 | 704 | 1.1+ | 1.3+ |
| 2001 09 24 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2001 09 24 | 704 | 0.5− | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.7− | 1.0+ |
| 2001 09 24 | 704 | 0.0 | 1.0+ | 2006 10 16 | 703 | 0.4− | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.6+ |
| 2004 03 17 | 691 | 0.7+ | 0.5+ | 2006 10 16 | 703 | (1.6− | 1.5−) | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 03 17 | 691 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 11 23 | G96 | 0.6+ | 0.0 |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.2+ |

**(139829)∗ 2001 RG$_{34}$ = 2002 VQ$_{84}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37725)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.17854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21337577 | $\omega$ | 247.55585 | | +0.21215229 | −0.97695612 | |
| $a$ | 2.7735712 | $\Omega$ | 190.27921 | | +0.93790341 | +0.21028347 | |
| $e$ | 0.2056300 | $i$ | 7.53907 | | +0.27446058 | +0.03657319 | |
| $P$ | 4.62 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 06 | 644 | 0.2− | 0.9+ | 2003 02 01 | 608 | (0.7+ | 2.0+) | 2006 09 20 | 704 | 0.2− | 0.2+ |
| 2001 09 06 | 644 | 0.0 | 0.8+ | 2003 02 01 | 608 | 0.6+ | 1.3+ | 2006 09 20 | 704 | 0.0 | 0.3− |
| 2001 09 06 | 644 | 0.4+ | 1.1+ | 2003 02 04 | 644 | 0.1− | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.9− |
| 2001 09 08 | 704 | 0.4− | 0.2− | 2003 02 04 | 644 | 0.1+ | 1.1+ | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2001 09 08 | 704 | 0.5− | 0.1+ | 2003 02 04 | 644 | 0.0 | 1.0+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2001 09 08 | 704 | 0.7− | 0.7+ | 2003 02 28 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 08 | 704 | 0.1− | 0.4+ | 2003 02 28 | 704 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2001 09 12 | 704 | 0.2+ | 0.3− | 2003 02 28 | 704 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2003 02 28 | 704 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | (0.6− | 1.6−) | 2003 02 28 | 704 | 0.4− | 1.1+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.3− | 2003 03 07 | 704 | 0.9− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2001 09 22 | 704 | 1.2− | 0.2+ | 2003 03 07 | 704 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2001 09 22 | 704 | 0.6+ | 1.5+ | 2003 03 07 | 704 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.2+ |
| 2001 09 22 | 704 | 0.8− | 1.1+ | 2003 03 07 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.1+ |
| 2001 09 22 | 704 | (0.0 | 1.7+) | 2003 03 31 | 699 | 0.7+ | 0.3+ | 2006 09 27 | 704 | 0.8+ | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 0.8+ | 2003 03 31 | 699 | 0.6− | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.5+ |
| 2001 09 23 | 704 | 0.1− | 1.0+ | 2003 03 31 | 699 | 0.7− | 0.3− | 2006 09 27 | 704 | 0.1− | 0.7+ |
| 2001 09 23 | 704 | 0.5+ | 1.0+ | 2003 03 31 | 704 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.5+ |
| 2002 11 07 | 704 | 0.7− | 0.9+ | 2003 03 31 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.8+ | 0.0 | 2003 03 31 | 699 | 1.4− | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.5+ |
| 2002 11 07 | 704 | 0.6+ | 0.8+ | 2003 03 31 | 704 | 1.3− | 0.1− | 2006 09 29 | 704 | 0.2− | 0.5+ |
| 2002 11 07 | 704 | 0.6− | 0.3− | 2003 03 31 | 704 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.7+ | 0.2+ |
| 2002 11 11 | 704 | 0.5− | 1.0− | 2004 04 19 | 704 | (2.1+ | 0.6+) | 2006 09 29 | 704 | 0.5+ | 0.8+ |
| 2002 11 11 | 704 | 0.1− | 0.7+ | 2004 04 19 | 704 | 0.2− | 0.6+ | 2006 09 29 | 691 | 0.4+ | 0.1+ |
| 2002 11 11 | 704 | 0.3− | 0.0 | 2004 04 19 | 704 | 0.6+ | 1.0+ | 2006 09 29 | 691 | 0.2+ | 0.3+ |
| 2002 11 11 | 704 | 0.7− | 0.3+ | 2004 04 19 | 704 | 0.6+ | 1.2+ | 2006 09 29 | 691 | 0.3+ | 0.3+ |
| 2002 11 11 | 704 | 0.2+ | 0.6+ | 2004 04 19 | 704 | 0.7+ | 0.6+ | 2006 10 15 | 703 | 0.6− | 0.0 |
| 2002 11 19 | 644 | 0.2+ | 0.2+ | 2004 05 18 | 599 | 0.3+ | 0.8+ | 2006 10 15 | 703 | 1.0− | 0.0 |
| 2002 11 19 | 644 | 0.0 | 0.2+ | 2004 05 18 | 599 | 0.2+ | 0.8+ | 2006 10 15 | 703 | 0.2− | 0.3+ |
| 2002 11 19 | 644 | 0.2− | 0.1+ | 2004 05 18 | 599 | 0.5− | 1.4+ | 2006 10 15 | 703 | 1.0− | 0.0 |
| 2002 12 14 | 704 | 0.9+ | 0.6+ | 2004 05 18 | 599 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 0.5− | 0.0 | 2006 08 06 | 699 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 1.3+ | 0.8− | 2006 08 06 | 699 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 12 14 | 704 | 0.1+ | 0.8− | 2006 08 06 | 699 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.4− |
| 2003 01 01 | 704 | 0.4− | 0.6− | 2006 08 06 | 699 | 0.7− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.1+ |
| 2003 01 01 | 704 | 0.6− | 0.4+ | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2003 01 01 | 704 | 0.7− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.3− |
| 2003 01 01 | 704 | 0.8− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 01 01 | 704 | 0.3− | 0.4+ | 2006 09 14 | 703 | (2.9+ | 0.2+) | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 01 02 | 699 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.4+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 01 02 | 699 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.5+ | 1.5− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2003 01 02 | 699 | 1.4+ | 0.8− | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2003 01 02 | 699 | 0.5+ | 0.3− | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2003 01 05 | 704 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.3− | 0.1+ |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2006 09 16 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 704 | 0.6− | 0.2+ |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 704 | 0.4− | 0.3− |
| 2003 01 09 | 704 | (2.1+ | 1.2−) | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.6− | 0.0 |
| 2003 01 09 | 704 | (2.4+ | 1.4−) | 2006 09 17 | 704 | 0.1− | 0.6− | 2006 10 23 | 704 | 0.4− | 0.0 |
| 2003 01 09 | 704 | (2.1+ | 1.7−) | 2006 09 17 | 704 | 1.1− | 0.1− | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2003 01 09 | 704 | (2.2+ | 1.8−) | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 11 06 | 644 | 0.2− | 0.3− |
| 2003 01 26 | 644 | 0.3+ | 0.5− | 2006 09 17 | 704 | 0.1− | 0.4− | 2006 11 06 | 644 | 0.3+ | 0.0 |
| 2003 01 26 | 644 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2003 01 26 | 644 | 0.4+ | 0.8− | 2006 09 18 | 699 | 1.2− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2003 01 26 | 608 | 0.4− | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2003 01 26 | 608 | 0.7− | 0.5+ | 2006 09 18 | 699 | (2.1− | 1.3−) | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2003 01 26 | 608 | 0.4− | 0.7+ | 2006 09 18 | 699 | 1.3− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2003 01 28 | 704 | 1.0+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2003 01 28 | 704 | 1.2+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2003 01 28 | 704 | 1.3+ | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2003 01 28 | 704 | (1.6+ | 0.5+) | 2006 09 20 | 704 | 0.5+ | 0.3− | | | | |
| 2003 02 01 | 608 | (0.3+ | 2.0+) | 2006 09 20 | 704 | 0.6+ | 0.3− | | | | |

**(139830)∗ 2001 RZ$_{34}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.92978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22664606 | $\omega$ | 211.34285 | | +0.91033600 | −0.41311012 | |
| $a$ | 2.6642232 | $\Omega$ | 172.91918 | | +0.40918293 | +0.88928424 | |
| $e$ | 0.1519162 | $i$ | 11.73341 | | +0.06211039 | +0.19624873 | |
| $P$ | 4.35 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 608 | 0.1− | 1.4+ | 2001 09 20 | 704 | 0.7+ | 0.5+ | 2004 03 30 | 704 | (3.0+ | 0.3+) |
| 2001 06 27 | 608 | 0.3+ | 1.2+ | 2001 09 22 | 704 | 0.3− | 0.1− | 2004 03 30 | 704 | 0.3− | 0.9+ |
| 2001 06 27 | 608 | 0.0 | 1.1+ | 2001 09 22 | 704 | 0.0 | 0.3− | 2004 03 30 | 704 | 0.6+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | (0.7+ | 2.4+) | 2001 09 22 | 704 | 0.2+ | 0.2+ | 2004 03 30 | 704 | 1.3+ | 0.2− |
| 2001 07 20 | 699 | (0.0 | 1.6+) | 2001 09 22 | 704 | 0.6+ | 0.1− | 2004 04 21 | 703 | 0.6+ | 1.1+ |
| 2001 07 20 | 699 | 0.5+ | 0.7+ | 2001 09 22 | 704 | 0.5+ | 0.2+ | 2004 04 21 | 703 | 0.2− | 0.2− |
| 2001 07 20 | 699 | 0.2+ | 1.2+ | 2001 09 23 | 704 | 0.3+ | 0.2+ | 2004 04 21 | 703 | 1.2− | 0.3− |
| 2001 08 20 | 704 | (2.3− | 1.0+) | 2001 09 23 | 704 | 0.3+ | 0.4− | 2004 04 21 | 703 | 0.4− | 0.0 |
| 2001 08 20 | 704 | 0.7− | 1.0+ | 2001 09 23 | 704 | 1.2+ | 0.1+ | 2004 04 23 | 704 | 0.9− | 0.9+ |
| 2001 08 20 | 704 | 0.2+ | 0.3+ | 2001 10 06 | 704 | 0.5+ | 1.1+ | 2004 04 23 | 704 | 0.2− | 0.5+ |
| 2001 08 20 | 704 | 0.6− | 1.3+ | 2001 10 06 | 704 | (1.5+ | 0.4−) | 2004 04 23 | 704 | 0.1+ | 1.1+ |
| 2001 08 27 | 699 | 0.9+ | 0.0 | 2001 10 06 | 704 | 1.0+ | 0.8− | 2005 06 26 | 644 | 0.2+ | 0.2+ |
| 2001 08 27 | 699 | 0.2− | 0.0 | 2001 10 06 | 704 | 0.9− | 1.2+ | 2005 06 26 | 644 | 0.3+ | 0.2+ |
| 2001 08 27 | 699 | 0.2+ | 0.2− | 2001 10 11 | 644 | 0.4+ | 0.0 | 2005 06 26 | 644 | 0.4+ | 0.1+ |
| 2001 08 27 | 699 | 0.0 | 0.2− | 2001 10 11 | 644 | 0.1+ | 0.2+ | 2005 06 26 | 644 | 0.4+ | 0.1− |
| 2001 09 07 | 699 | 0.2− | 0.3+ | 2001 10 11 | 644 | 0.2+ | 0.0 | 2005 06 26 | 644 | 0.5+ | 0.0 |
| 2001 09 07 | 699 | 0.0 | 0.1+ | 2001 10 18 | 644 | 1.2− | 0.7− | 2005 06 26 | 644 | 0.3+ | 0.3+ |
| 2001 09 07 | 699 | 0.7− | 0.0 | 2001 10 18 | 644 | 1.0− | 0.7− | 2006 10 02 | D35 | 0.1− | 0.1+ |
| 2001 09 07 | 699 | 0.1+ | 0.4+ | 2001 10 18 | 644 | 1.3− | 0.5− | 2006 10 02 | D35 | 0.0 | 0.2+ |
| 2001 09 08 | 704 | 0.1− | 0.5+ | 2003 01 01 | 704 | (1.9− | 0.2+) | 2006 10 02 | D35 | 0.0 | 0.2+ |
| 2001 09 08 | 704 | 0.5− | 0.2+ | 2003 01 01 | 704 | (1.6− | 0.5−) | 2006 11 15 | 703 | 0.5− | 0.1+ |
| 2001 09 08 | 704 | 0.2− | 0.9+ | 2003 01 01 | 704 | 1.0− | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.9+ |
| 2001 09 08 | 704 | 0.3− | 0.6+ | 2003 01 05 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2001 09 08 | 704 | 0.0 | 1.0+ | 2003 01 05 | 704 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2003 01 05 | 704 | 1.0+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2003 01 28 | 704 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2003 01 28 | 704 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.2− | 0.8+ |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2003 01 28 | 704 | 0.8+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.3− | 1.1+ | 2003 01 28 | 704 | 0.9+ | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2001 09 19 | 645 | 0.0 | 0.3− | 2004 03 25 | 699 | 0.5− | 0.1− | 2006 11 21 | 703 | 0.0 | 0.1− |
| 2001 09 19 | 645 | 0.0 | 0.3− | 2004 03 25 | 699 | 0.4− | 0.4+ | 2006 11 21 | 703 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2004 03 25 | 699 | 0.3+ | 0.3+ | 2006 11 21 | 703 | 0.4+ | 0.3− |
| 2001 09 20 | 704 | 0.8+ | 0.8+ | 2004 03 25 | 699 | (2.4− | 3.0+) | 2006 11 21 | 703 | 0.3− | 0.1− |

**(139831)∗ 2001 RH$_{35}$ = 2000 KK$_{45}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 18024)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.33556 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21430369 | $\omega$ | 196.57346 | | +0.86109997 | −0.50801898 | |
| $a$ | 2.7655592 | $\Omega$ | 194.01437 | | +0.47559286 | +0.81912863 | |
| $e$ | 0.0463069 | $i$ | 4.87519 | | +0.17977283 | +0.26635503 | |
| $P$ | 4.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 0.3− | 0.4− | 2004 03 15 | 703 | 1.4− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.9+ |
| 1997 11 06 | 704 | 1.0+ | 1.1+ | 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.0 |
| 1997 11 06 | 704 | 1.0− | 0.4− | 2004 03 17 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.9+ |
| 1997 11 06 | 704 | 0.8+ | 0.4+ | 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.8− | 0.4− |
| 2000 05 30 | 691 | 0.5+ | 0.6+ | 2004 03 18 | 704 | 0.5+ | 1.1+ | 2006 09 29 | 691 | 0.1− | 0.0 |
| 2000 05 30 | 691 | 0.4− | 0.2+ | 2004 03 18 | 704 | 0.9+ | 1.5+ | 2006 09 29 | 691 | 0.2− | 0.0 |
| 2000 05 30 | 691 | 0.3− | 0.0 | 2004 03 18 | 704 | 1.2+ | 0.2+ | 2006 09 29 | 691 | 0.4− | 0.2− |
| 2000 06 03 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.6+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2000 06 03 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | (1.6+ | 0.3−) | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2000 06 03 | 691 | 0.1− | 0.1+ | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 08 12 | 608 | 0.3− | 0.4+ | 2004 03 26 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.7+ |
| 2001 08 12 | 608 | 1.0− | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 703 | (0.2− | 1.9+) |
| 2001 08 12 | 608 | 1.0− | 0.4+ | 2004 03 27 | 704 | 0.4+ | 1.2+ | 2006 10 15 | 703 | 0.1+ | 0.6− |
| 2001 08 22 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 703 | 0.5+ | 0.6+ |
| 2001 08 22 | 691 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 08 22 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.4+ |
| 2001 09 08 | 704 | 0.2+ | 0.8+ | 2004 03 27 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2001 09 08 | 704 | 0.5+ | 0.6− | 2004 03 27 | 704 | 0.5+ | 0.0 | 2006 10 16 | G96 | 0.4− | 0.4− |
| 2001 09 08 | 704 | 0.5− | 0.6+ | 2004 03 27 | 704 | 0.7+ | 0.9+ | 2006 10 16 | G96 | 0.2− | 0.5− |
| 2001 09 08 | 704 | 0.6+ | 0.4+ | 2004 03 27 | 704 | 0.9+ | 0.7+ | 2006 10 16 | G96 | 0.6− | 0.1− |
| 2001 09 08 | 704 | 0.2+ | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | (1.1+ | 1.7+) | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | (2.6+ | 1.0+) | 2004 04 15 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | (0.1− | 2.3+) | 2004 04 15 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2001 09 12 | 704 | (0.4+ | 1.8+) | 2004 04 15 | 691 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 1.0+ | 0.8+ | 2006 09 14 | 703 | (1.5− | 1.3+) | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 1.0+ | 2006 09 14 | 703 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.6− | 0.4+ |
| 2001 09 22 | 704 | 0.1− | 0.7+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 09 22 | 704 | (0.2− | 1.8+) | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 09 22 | 704 | 0.8− | 1.1+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 11 06 | 644 | 0.3− | 0.5+ |
| 2001 09 22 | 704 | (0.1+ | 1.5+) | 2006 09 18 | 699 | 0.0 | 0.9− | 2006 11 06 | 644 | 0.4+ | 0.5+ |
| 2001 09 22 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 06 | 644 | 0.4− | 0.7+ |
| 2001 09 23 | 704 | 0.7+ | 0.6− | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.1+ |
| 2001 09 23 | 704 | 1.4+ | 0.8− | 2006 09 18 | 699 | 0.3− | 1.1− | 2006 11 11 | 703 | 0.3− | 0.9+ |
| 2001 09 23 | 704 | 0.7+ | 0.3− | 2006 09 18 | 699 | 0.2− | 1.2+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 12 01 | 704 | 0.0 | 0.5− | 2006 09 20 | 704 | (0.2− | 2.0+) | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2002 12 01 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 704 | (0.6+ | 1.8+) | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2002 12 01 | 704 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.7− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2003 01 07 | 704 | 0.4− | 1.1− | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2003 01 07 | 704 | 1.3− | 1.2+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2003 01 07 | 704 | 0.1+ | 0.5− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2004 03 15 | 703 | 0.7+ | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 703 | (1.7− | 1.1−) | 2006 09 25 | G96 | 0.3− | 0.1− | | | | |
| 2004 03 15 | 703 | 0.3− | 0.9+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | | | | |

**(139832)∗ 2001 RL$_{35}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.15957 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20057470 | $\omega$ | 94.19794 | | +0.93392508 | −0.35249463 | |
| $a$ | 2.8903601 | $\Omega$ | 286.45029 | | +0.29845218 | +0.86038656 | |
| $e$ | 0.2013899 | $i$ | 3.55247 | | +0.19674916 | +0.36807947 | |
| $P$ | 4.91 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.2+ | 0.0 | 2002 12 31 | 704 | 0.3− | 1.3+ | 2006 09 01 | 704 | (0.0 | 1.6+) |
| 2001 07 20 | 699 | 0.1+ | 1.0+ | 2003 01 04 | 704 | 0.2+ | 0.6+ | 2006 09 01 | 704 | 0.4− | 0.4+ |
| 2001 07 20 | 699 | 1.1− | 0.9+ | 2003 01 04 | 704 | 0.4− | 0.5+ | 2006 09 01 | 704 | 0.1− | 1.1+ |
| 2001 07 20 | 699 | (1.3− | 1.8−) | 2003 01 04 | 704 | 0.6− | 0.6+ | 2006 09 01 | 704 | 0.3+ | 1.3+ |
| 2001 08 13 | 608 | 0.5+ | 1.0− | 2003 01 04 | 704 | 0.7+ | 0.5+ | 2006 09 12 | 703 | 0.7+ | 0.2− |
| 2001 08 13 | 608 | 0.3+ | 1.0− | 2003 01 04 | 291 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.1− | 0.6− |
| 2001 08 13 | 608 | 0.5+ | 1.0− | 2003 01 04 | 291 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.8− | 0.4− |
| 2001 08 23 | 699 | 0.2− | 0.2+ | 2003 01 04 | 291 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.2− |
| 2001 08 23 | 699 | 0.9− | 0.2+ | 2003 01 08 | 704 | 0.8+ | 0.6+ | 2006 09 18 | 704 | 0.4+ | 0.4+ |
| 2001 08 23 | 699 | 0.2− | 0.5+ | 2003 01 08 | 704 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.5− | 0.3+ |
| 2001 08 23 | 699 | 0.8− | 0.4+ | 2003 01 08 | 704 | 0.5+ | 0.5− | 2006 09 18 | 704 | 0.3− | 0.5+ |
| 2001 09 07 | 699 | 0.1− | 0.9+ | 2003 01 08 | 704 | 0.6+ | 0.3− | 2006 09 18 | 704 | 0.7+ | 0.0 |
| 2001 09 07 | 699 | 0.8+ | 0.5− | 2004 04 12 | 691 | 0.4+ | 0.8+ | 2006 09 18 | 704 | 0.1− | 0.4+ |
| 2001 09 07 | 699 | 0.6− | 1.4+ | 2004 04 12 | 691 | 0.0 | 0.7+ | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2001 09 07 | 699 | 1.2+ | 0.7+ | 2004 04 12 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.2+ |
| 2001 09 08 | 704 | 0.2+ | 0.0 | 2006 08 15 | 644 | 0.3− | 0.4+ | 2006 09 19 | 703 | 1.1− | 0.3+ |
| 2001 09 08 | 704 | 0.3+ | 0.2+ | 2006 08 15 | 644 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.3− |
| 2001 09 08 | 704 | 0.3+ | 0.1− | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.0 |
| 2001 09 08 | 704 | 0.6+ | 0.2− | 2006 08 20 | 691 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.2− |
| 2001 09 08 | 704 | 1.0+ | 0.4− | 2006 08 20 | 691 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.5− |
| 2001 09 12 | 704 | 0.6− | 0.6− | 2006 08 20 | 691 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.3+ |
| 2001 09 12 | 704 | 0.5− | 0.3− | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.2− | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 25 | 704 | 1.4+ | 0.2+ |
| 2001 09 12 | 704 | 0.6− | 0.1− | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.5− |
| 2001 09 12 | 704 | 0.6− | 0.3+ | 2006 08 24 | 704 | 0.8− | 0.0 | 2006 09 25 | 704 | 0.2− | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2006 08 24 | 704 | 0.1− | 0.7− | 2006 09 25 | 704 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2006 08 24 | 704 | 1.0+ | 0.8− | 2006 09 26 | 704 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2006 08 24 | 704 | 0.7− | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.5+ |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2006 08 24 | 704 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.4− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1− | 0.1− | 2006 08 26 | 704 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.6+ | 1.4+ |
| 2001 09 22 | 704 | 0.1+ | 0.1− | 2006 08 26 | 704 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.7− |
| 2001 09 22 | 704 | 1.0+ | 0.7− | 2006 08 26 | 704 | 0.1− | 0.3− | 2006 09 29 | 704 | (0.4+ | 2.5+) |
| 2001 09 22 | 704 | 0.8+ | 0.9− | 2006 08 27 | 699 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | 0.5+ | 1.4− | 2006 08 27 | 699 | 0.6+ | 0.7+ | 2006 09 30 | 699 | 0.4+ | 0.2− |
| 2001 09 22 | 704 | 0.5− | 0.8− | 2006 08 27 | 699 | 0.4+ | 0.5− | 2006 09 30 | 699 | 0.5+ | 0.5− |
| 2001 09 23 | 704 | (0.6+ | 2.6+) | 2006 08 27 | 699 | 1.1+ | 0.4− | 2006 09 30 | 699 | 0.3− | 0.0 |
| 2001 09 23 | 704 | (0.3+ | 2.1+) | 2006 08 30 | 704 | 0.0 | 1.0+ | 2006 09 30 | 699 | 0.2− | 0.7− |
| 2001 09 23 | 704 | (0.4− | 1.8+) | 2006 08 30 | 704 | (0.1+ | 2.1+) | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.6− | 0.0 | 2006 08 30 | 704 | 0.2− | 1.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 31 | 704 | 0.5− | 0.7− | 2006 08 30 | 704 | (0.8− | 2.0+) | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.3+ | 1.1+ | | | | |

**(139833)∗ 2001 RT$_{35}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.90511 | | (2000.0) | | | |
| $n$ | 0.19962134 | $\omega$ | 74.18195 | | +0.83882553 | −0.53523980 |
| $a$ | 2.8995554 | $\Omega$ | 318.04082 | | +0.42498530 | +0.75797629 |
| $e$ | 0.1042472 | $i$ | 8.55402 | | +0.34023407 | +0.37281402 |
| $P$ | 4.94 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 0.2− | 0.4+ | 2003 01 05 | 704 | 0.2+ | 0.8+ | 2006 08 30 | 704 | 0.3+ | 0.4+ |
| 2001 07 19 | 699 | 0.3+ | 0.6+ | 2003 01 05 | 704 | 0.2+ | 1.0+ | 2006 08 30 | 704 | 0.4− | 0.9+ |
| 2001 07 19 | 699 | (1.6− | 0.3−) | 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 08 30 | 704 | 0.6− | 0.3− |
| 2001 07 19 | 699 | 0.5− | 0.7+ | 2003 01 05 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.6− | 0.3+ |
| 2001 08 16 | 704 | 0.3− | 0.3− | 2003 01 09 | 704 | 0.3+ | 0.8+ | 2006 09 01 | 704 | 0.2− | 1.4− |
| 2001 08 16 | 704 | 0.4− | 0.1− | 2003 01 09 | 704 | 0.3− | 0.2+ | 2006 09 01 | 704 | 0.9+ | 0.3− |
| 2001 08 16 | 704 | 0.9+ | 0.7+ | 2003 01 09 | 704 | 0.0 | 0.6+ | 2006 09 01 | 704 | 0.4+ | 0.7− |
| 2001 08 16 | 704 | 0.6− | 0.7+ | 2003 01 09 | 704 | 0.3− | 0.3+ | 2006 09 01 | 704 | 0.5+ | 0.1+ |
| 2001 08 16 | 704 | 0.1− | 0.6+ | 2004 03 16 | 691 | 0.3+ | 0.6+ | 2006 09 01 | 704 | 0.5+ | 0.1+ |
| 2001 08 23 | 699 | 0.3+ | 0.0 | 2004 03 16 | 691 | 0.3+ | 0.6+ | 2006 09 11 | 703 | 0.4− | 1.3+ |
| 2001 08 23 | 699 | 0.6− | 0.9+ | 2004 03 16 | 691 | 0.2+ | 0.6+ | 2006 09 11 | 703 | 0.6− | 0.2+ |
| 2001 08 23 | 699 | 0.3− | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.6+ | 2006 09 11 | 703 | 0.2+ | 0.3+ |
| 2001 08 23 | 699 | 0.7+ | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.3− | 2006 09 11 | 703 | 1.1− | 0.5+ |
| 2001 09 07 | 699 | (1.6− | 0.9+) | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2001 09 07 | 699 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2001 09 07 | 699 | 0.5− | 1.5+ | 2004 03 19 | 704 | (0.7+ | 1.6+) | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2001 09 07 | 699 | 0.1+ | 0.3+ | 2004 03 19 | 704 | (1.9+ | 0.7+) | 2006 09 18 | 703 | 0.7+ | 0.4− |
| 2001 09 08 | 704 | 0.0 | 0.5+ | 2004 03 19 | 704 | 0.4− | 1.0+ | 2006 09 18 | 703 | 0.6− | 1.0− |
| 2001 09 08 | 704 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.2− |
| 2001 09 08 | 704 | 0.3− | 0.3− | 2004 03 19 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.5− |
| 2001 09 08 | 704 | 0.4− | 0.2+ | 2004 03 28 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.1− |
| 2001 09 08 | 704 | 0.3− | 0.1− | 2004 03 28 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.3− | 0.4− | 2004 03 28 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.4+ | 1.4+ |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2006 08 15 | 644 | 0.6− | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.1+ | 2006 08 15 | 644 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.8− | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.3− | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.1+ | 0.5+ |
| 2001 09 12 | 704 | 0.0 | 0.3− | 2006 08 24 | 704 | 0.0 | 0.6+ | 2006 09 25 | 704 | 1.2− | 0.4+ |
| 2001 09 18 | 699 | 0.8+ | 0.6+ | 2006 08 24 | 704 | 0.5− | 0.6+ | 2006 09 25 | 704 | 0.3− | 0.7+ |
| 2001 09 18 | 699 | 1.4− | 0.3+ | 2006 08 24 | 704 | 0.4+ | 0.6− | 2006 09 30 | 699 | 0.3− | 0.2+ |
| 2001 09 18 | 699 | (1.8+ | 0.1+) | 2006 08 24 | 704 | 0.3− | 0.9+ | 2006 09 30 | 699 | 0.2− | 0.0 |
| 2001 09 18 | 699 | 0.4− | 0.4− | 2006 08 27 | 699 | 0.5+ | 0.2+ | 2006 09 30 | 699 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 1.2− | 0.5+ | 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 09 30 | 699 | 0.6+ | 0.3+ |
| 2001 09 20 | 704 | 0.2− | 0.0 | 2006 08 27 | 699 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.7+ | 0.5+ | 2006 08 27 | 699 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.8+ | 0.1+ | 2006 08 29 | 703 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.6− | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 08 29 | 703 | 0.4− | 0.8− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.4+ | 0.1+ | | | | |

**(139834)∗ 2001 RD$_{37}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.24005 | | (2000.0) | | | |
| $n$ | 0.21572295 | $\omega$ | 125.91251 | | +0.81537121 | +0.57814234 |
| $a$ | 2.7534159 | $\Omega$ | 198.82640 | | −0.55684881 | +0.76883803 |
| $e$ | 0.0220923 | $i$ | 5.39694 | | −0.15839571 | +0.27320235 |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.5+ | 0.1+ | 2004 03 18 | 704 | 1.0+ | 1.0+ | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2001 08 22 | 691 | 0.4− | 0.2− | 2004 03 18 | 704 | 0.0 | 1.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2001 08 22 | 691 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.7+ | 1.4+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2001 08 27 | 699 | 0.8+ | 1.4− | 2004 03 27 | 704 | 1.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2001 08 27 | 699 | 0.5+ | 0.6+ | 2004 03 27 | 704 | 0.5− | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2001 08 27 | 699 | 0.4+ | 0.8+ | 2004 03 27 | 704 | 0.3+ | 1.0+ | 2006 10 03 | 691 | 0.1+ | 0.4+ |
| 2001 08 27 | 699 | 1.3+ | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 10 03 | 691 | 0.2+ | 0.2+ |
| 2001 09 08 | 704 | 0.3− | 0.7+ | 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 2001 09 08 | 704 | (2.1− | 1.0+) | 2004 03 31 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.2+ | 0.1− |
| 2001 09 08 | 704 | 0.3− | 1.5+ | 2004 03 31 | 691 | 0.8+ | 0.5+ | 2006 10 15 | 703 | 0.0 | 0.0 |
| 2001 09 08 | 704 | 1.0− | 0.4+ | 2004 04 12 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.2− |
| 2001 09 12 | 704 | (0.1+ | 1.7−) | 2004 04 12 | 691 | 0.0 | 0.5+ | 2006 10 15 | 703 | 0.2+ | 0.6+ |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2004 04 12 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.4− | 0.7− | 2006 09 14 | 703 | 1.1− | 0.6+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.0 | 1.4+ | 2006 09 14 | 703 | 0.5− | 0.7+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2001 09 12 | 704 | (2.1+ | 0.7+) | 2006 09 14 | 703 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 1.0− | 1.0+ | 2006 09 14 | 703 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.8− | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 09 20 | 704 | 0.2− | 0.8+ | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 09 22 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.5− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 22 | 704 | 0.7− | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 1.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 10 11 | 644 | 0.9− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 10 11 | 644 | 0.6− | 0.1+ | 2006 09 18 | 699 | 1.2+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2001 10 11 | 644 | 0.7− | 0.1+ | 2006 09 18 | 699 | 1.0+ | 0.7− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.7− | 0.9+ |
| 2002 12 10 | 644 | 0.1− | 0.1+ | 2006 09 21 | 012 | (2.1+ | 0.6+) | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2002 12 10 | 644 | 0.2− | 0.1+ | 2006 09 21 | 012 | 1.4+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.4+ |
| 2004 03 16 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 012 | 0.7− | 0.7− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2004 03 16 | 704 | 0.7+ | 0.2+ | 2006 09 21 | 012 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2004 03 16 | 704 | 0.9+ | 0.6+ | 2006 09 21 | 012 | (0.3+ | 1.7−) | 2006 11 11 | 703 | 0.7− | 1.1+ |
| 2004 03 16 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2004 03 18 | 704 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− |

**(139835)∗ 2001 RJ$_{37}$ = 1997 SR$_{27}$ = 1999 AP$_{18}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18025)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.80846 | | (2000.0) | | | |
| $n$ | 0.22381383 | $\omega$ | 23.24054 | | +0.44434552 | +0.89425364 |
| $a$ | 2.6866521 | $\Omega$ | 273.17720 | | −0.83011993 | +0.38852979 |
| $e$ | 0.0502385 | $i$ | 3.07432 | | −0.33683520 | +0.22215991 |
| $P$ | 4.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 691 | 0.5+ | 0.2− | 2001 09 20 | 704 | 0.9− | 0.3+ | 2005 06 03 | 691 | 0.1− | 0.1− |
| 1997 09 30 | 691 | 0.6+ | 0.1− | 2003 01 05 | 291 | 0.2− | 0.1− | 2005 06 03 | 691 | 0.1− | 0.2− |
| 1997 09 30 | 691 | 0.7+ | 0.4− | 2003 01 05 | 291 | 0.2− | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.5+ |
| 1997 10 05 | 691 | 0.9− | 0.1− | 2003 01 05 | 291 | 0.5− | 0.1+ | 2006 10 13 | 691 | 0.3− | 0.7+ |
| 1997 10 05 | 691 | 0.2− | 0.0 | 2004 03 13 | 644 | 0.0 | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.7+ |
| 1997 10 05 | 691 | 0.5− | 0.6− | 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.7+ | 0.2− | 2004 03 13 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.3+ | 0.3+ | | |
| 1999 01 13 | 691 | 0.8+ | 0.1− | 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 1999 01 14 | 691 | 0.1− | 0.0 | 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.1+ | | |
| 1999 01 14 | 691 | 0.5− | 0.2+ | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 1999 01 14 | 691 | 0.6− | 0.2− | 2004 03 20 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.8+ | | |
| 2001 08 22 | 691 | 0.0 | 0.4+ | 2004 03 20 | 704 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.7− | | |
| 2001 08 22 | 691 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 1.1− | 1.2+ | 2006 10 27 | 703 | 1.3+ | 1.4− | | |
| 2001 08 22 | 691 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.9+ | 1.0+ | 2006 10 27 | 703 | 0.3+ | 0.9− | | |
| 2001 09 08 | 704 | 0.1+ | 0.9+ | 2004 03 27 | 704 | 0.2+ | 0.8− | 2006 10 27 | 703 | 0.3+ | 0.2+ | | |
| 2001 09 08 | 704 | 0.6+ | 0.3− | 2004 03 27 | 704 | 0.1+ | 0.8− | 2006 11 01 | G96 | 0.4+ | 0.4− | | |
| 2001 09 08 | 704 | 0.1+ | 0.9− | 2004 03 27 | 704 | 0.8+ | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.3− | | |
| 2001 09 12 | 704 | (1.1− | 1.6+) | 2004 03 27 | 704 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.2− | | |
| 2001 09 12 | 704 | (1.0− | 1.7+) | 2004 03 27 | 704 | 0.7+ | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.2− | | |
| 2001 09 12 | 704 | 0.4− | 1.3+ | 2004 04 13 | 691 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2001 09 12 | 704 | 0.7− | 1.4+ | 2004 04 13 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.1+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2001 09 20 | 704 | 0.3− | 0.9+ | 2005 06 03 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.2− | | |

**(139836)∗ 2001 RP$_{38}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.42703 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18648438 | $\omega$ | 236.71909 | | +0.69824650 | −0.71463411 | |
| $a$ | 3.0341782 | $\Omega$ | 168.69161 | | +0.70701821 | +0.67929158 | |
| $e$ | 0.0748036 | $i$ | 12.31761 | | +0.11214752 | +0.16691626 | |
| $P$ | 5.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1− | 2001 09 25 | 691 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.1− | 0.3+ | | |
| 1999 03 20 | 645 | 0.1− | 0.1− | 2004 02 16 | 703 | 0.4− | 0.9− | 2004 03 23 | 691 | 0.0 | 0.5+ | | |
| 2001 08 27 | 691 | 0.8+ | 0.2+ | 2004 02 16 | 703 | 0.3− | 0.8− | 2004 03 23 | 704 | 0.1− | 0.0 | | |
| 2001 08 27 | 691 | 0.0 | 0.4+ | 2004 02 16 | 703 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.6+ | 0.4+ | | |
| 2001 08 27 | 691 | 0.2− | 0.5+ | 2004 02 16 | 703 | (1.8− | 0.5+) | 2004 03 30 | 691 | 0.1+ | 0.7+ | | |
| 2001 09 08 | 704 | 0.6+ | 1.1+ | 2004 02 26 | 704 | 0.7+ | 1.3+ | 2004 03 30 | 691 | 0.3+ | 0.5+ | | |
| 2001 09 08 | 704 | 0.9− | 0.7+ | 2004 02 26 | 704 | 0.3+ | 1.4+ | 2004 03 30 | 691 | 0.1− | 0.7+ | | |
| 2001 09 08 | 704 | 0.0 | 0.3− | 2004 02 26 | 704 | 0.9+ | 0.3+ | 2005 05 07 | 691 | 0.0 | 0.0 | | |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2004 03 15 | 704 | 0.8− | 0.1+ | 2005 05 07 | 691 | 0.3+ | 0.1− | | |
| 2001 09 11 | 699 | 0.4+ | 0.9+ | 2004 03 15 | 704 | 0.7− | 0.2+ | 2005 05 07 | 691 | 0.4+ | 0.1+ | | |
| 2001 09 11 | 699 | 0.4− | 1.3+ | 2004 03 15 | 704 | 0.5+ | 1.4+ | 2005 05 15 | 691 | 0.4− | 0.1− | | |
| 2001 09 11 | 699 | 0.6− | 0.8+ | 2004 03 15 | 704 | 0.2− | 0.5− | 2005 05 15 | 691 | 0.1+ | 0.1− | | |
| 2001 09 12 | 704 | 0.2− | 0.8+ | 2004 03 20 | 699 | (0.5− | 1.7+) | 2005 05 15 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.0 | 1.3+ | 2004 03 20 | 699 | 0.5− | 0.3− | 2005 06 05 | 691 | 0.0 | 0.0 | | |
| 2001 09 12 | 704 | (0.8+ | 1.9+) | 2004 03 20 | 699 | 0.3− | 1.3+ | 2005 06 05 | 691 | 0.4− | 0.1− | | |
| 2001 09 12 | 704 | 0.8+ | 0.6+ | 2004 03 20 | 699 | 0.7+ | 1.4+ | 2005 06 05 | 691 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | 0.1− | 0.9+ | 2004 03 22 | 704 | 0.6− | 0.3− | 2006 08 17 | 644 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2004 03 22 | 704 | (1.6+ | 0.8+) | 2006 08 17 | 644 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 1.1− | 0.7+ | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.3+ | | |
| 2001 09 19 | 704 | 0.0 | 1.3+ | 2004 03 22 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.2− | 0.7+ | 2004 03 22 | 704 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.0 | | |
| 2001 09 19 | 704 | 0.5− | 0.6+ | 2004 03 22 | 704 | 0.6+ | 0.6+ | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.3− | 0.9− | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2006 09 28 | G96 | 0.3− | 0.3− | | |
| 2001 09 21 | 704 | 0.3− | 0.7− | 2004 03 22 | 704 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | 0.5+ | 1.5− | 2004 03 22 | 704 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.3− | 0.2− | | |
| 2001 09 21 | 704 | (0.3− | 1.8−) | 2004 03 22 | 704 | 0.5+ | 0.5+ | 2006 11 18 | G96 | 0.4− | 0.3+ | | |
| 2001 09 21 | 704 | (0.1− | 1.6−) | 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.2− | | |
| 2001 09 25 | 691 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.6+ | | | | | | |
| 2001 09 25 | 691 | 0.4− | 0.2+ | 2004 03 23 | 704 | 0.8+ | 0.6+ | | | | | | |

**(139837)∗ 2001 RH$_{39}$ = 1999 FU$_{45}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.77701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22086983 | $\omega$ | 310.05503 | | −0.49707395 | −0.86610367 | |
| $a$ | 2.7104732 | $\Omega$ | 169.36334 | | +0.85740233 | −0.49960252 | |
| $e$ | 0.1283989 | $i$ | 16.60369 | | +0.13333693 | −0.01617870 | |
| $P$ | 4.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 699 | 1.3− | 0.7− | 2001 09 11 | 699 | 0.9+ | 0.0 | 2004 05 13 | 704 | 0.4+ | 0.1− | | |
| 1999 03 19 | 699 | 0.3+ | 0.4+ | 2001 09 12 | 704 | 0.1+ | 0.0 | 2004 05 13 | 704 | 0.0 | 0.8+ | | |
| 1999 03 19 | 699 | 0.7+ | 0.5− | 2001 09 12 | 704 | 0.5− | 1.1− | 2004 05 13 | 704 | 0.3+ | 0.1− | | |
| 1999 03 20 | 704 | 1.7− | 1.2− | 2001 09 12 | 704 | 0.2+ | 0.5+ | 2005 06 30 | 644 | 0.3− | 0.1− | | |
| 1999 03 20 | 704 | 0.2+ | 0.9− | 2001 09 12 | 704 | 0.1+ | 0.5+ | 2005 06 30 | 644 | 0.0 | 0.1− | | |
| 1999 03 20 | 704 | 1.0− | 1.4+ | 2001 09 12 | 704 | 0.1− | 0.7+ | 2005 06 30 | 644 | 0.2+ | 0.4− | | |
| 1999 03 20 | 704 | 0.4+ | 0.3+ | 2001 09 12 | 704 | 0.2− | 0.5+ | 2005 07 29 | 644 | 0.4+ | 0.5− | | |
| 1999 03 20 | 704 | 1.9+ | 0.7+ | 2001 09 12 | 704 | 0.3− | 0.2+ | 2005 07 29 | 644 | 0.3+ | 0.4− | | |
| 1999 03 23 | 704 | 1.1+ | 1.8+ | 2001 09 12 | 704 | 0.4− | 1.1+ | 2005 07 29 | 644 | 0.1− | 0.2− | | |
| 1999 03 23 | 704 | 1.0+ | 0.6+ | 2001 09 12 | 704 | 0.6+ | 0.8+ | 2006 10 17 | 703 | 0.8− | 0.4− | | |
| 1999 03 23 | 704 | (0.8− | 3.1+) | 2001 09 12 | 704 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.9+ | 0.1+ | | |
| 1999 03 23 | 704 | 0.6+ | 1.8+ | 2001 09 12 | 704 | (2.0− | 0.6−) | 2006 10 17 | 703 | 1.0− | 0.6+ | | |
| 1999 03 23 | 704 | 1.4− | 1.3+ | 2001 09 12 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.3+ | | |
| 2001 08 19 | 807 | 0.3+ | 0.2− | 2001 09 12 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.1+ | | |
| 2001 08 19 | 807 | 0.2+ | 0.3− | 2001 09 12 | 704 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.0 | 0.9+ | | |
| 2001 08 23 | 699 | (1.9+ | 0.7+) | 2001 09 19 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 0.8+ | 0.0 | | |
| 2001 08 23 | 699 | 0.6+ | 0.8+ | 2001 09 19 | 704 | 0.5+ | 0.4+ | 2006 10 28 | 703 | 0.6− | 0.2+ | | |
| 2001 08 23 | 699 | 0.0 | 0.6+ | 2001 09 19 | 704 | 0.3+ | 1.3+ | 2006 11 17 | 703 | 0.3+ | 1.1+ | | |
| 2001 08 23 | 699 | 0.4+ | 0.9− | 2001 09 21 | 704 | 1.1− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.3+ | | |
| 2001 09 10 | 704 | 0.9− | 0.9+ | 2001 09 21 | 704 | 1.0− | 0.4− | 2006 11 17 | 703 | 0.6− | 0.1+ | | |
| 2001 09 10 | 704 | 0.7− | 0.6+ | 2001 09 21 | 704 | 1.2− | 0.6− | 2006 11 17 | 703 | 1.0+ | 0.5− | | |
| 2001 09 10 | 704 | (0.2− | 1.6+) | 2001 09 21 | 704 | (2.2− | 1.2−) | 2006 11 23 | 703 | 0.5− | 0.6− | | |
| 2001 09 10 | 704 | (1.7− | 1.8+) | 2001 09 21 | 704 | 0.9− | 0.9− | 2006 11 23 | 703 | 0.1+ | 0.1− | | |
| 2001 09 10 | 704 | (0.8− | 1.9+) | 2004 04 15 | 644 | 0.3− | 0.5+ | 2006 11 23 | 703 | 1.1+ | 1.7− | | |
| 2001 09 11 | 699 | 0.0 | 1.0+ | 2004 04 15 | 644 | 0.9− | 0.3+ | 2006 11 23 | 703 | 0.0 | 0.5+ | | |
| 2001 09 11 | 699 | 0.6+ | 0.4− | 2004 04 15 | 644 | 0.3− | 0.1− | | | | | | |
| 2001 09 11 | 699 | 0.5− | 0.1+ | 2004 05 13 | 704 | 0.4+ | 0.3+ | | | | | | |

**(139838)∗ 2001 RR$_{39}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.43932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22632665 | $\omega$ | 266.34194 | | −0.81886621 | −0.54611742 | |
| $a$ | 2.6667292 | $\Omega$ | 240.47788 | | +0.57331484 | −0.76333793 | |
| $e$ | 0.2123717 | $i$ | 11.71453 | | +0.02771679 | −0.34506662 | |
| $P$ | 4.35 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 23 | 704 | 1.2+ | 1.0+ | 2003 01 01 | 704 | (2.9+ | 0.8+) | 2006 10 27 | 703 | 0.3+ | 1.2− | | |
| 1998 12 23 | 704 | 0.6− | 0.4− | 2003 01 01 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.1− | | |
| 1998 12 23 | 704 | 0.9− | 0.6+ | 2003 01 05 | 704 | 0.7+ | 0.9− | 2006 10 27 | 703 | 0.7− | 1.0− | | |
| 1998 12 23 | 704 | (3.0− | 0.7−) | 2003 01 05 | 704 | 1.2− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 1999 02 19 | 704 | 0.4+ | 1.6+ | 2003 01 05 | 704 | 0.4+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.0 | | |
| 1999 02 19 | 704 | 0.3+ | 0.1− | 2003 01 05 | 704 | 0.7+ | 0.3− | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 1999 02 19 | 704 | 0.2− | 0.7+ | 2003 01 05 | 704 | 0.8+ | 0.6− | 2006 11 09 | 691 | 0.2+ | 0.1− | | |
| 1999 02 19 | 704 | 0.6− | 0.9+ | 2003 01 09 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.3+ | 0.1− | | |
| 1999 02 19 | 704 | 0.4+ | 0.7+ | 2003 01 09 | 704 | 0.1− | 0.2− | 2006 11 09 | 691 | 0.3+ | 0.1− | | |
| 2001 08 17 | 644 | 0.2− | 0.7+ | 2003 01 09 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 2001 08 17 | 644 | 0.4− | 1.0+ | 2003 01 27 | 704 | 0.3− | 0.5− | 2006 11 11 | 703 | 0.1− | 0.0 | | |
| 2001 08 17 | 644 | 0.5− | 0.7+ | 2003 01 27 | 704 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.3− | 0.5+ | | |
| 2001 09 10 | 704 | 0.3− | 0.5− | 2003 01 27 | 704 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.2+ | | |
| 2001 09 10 | 704 | 0.6+ | 0.4+ | 2003 01 27 | 704 | 0.6− | 0.3− | 2006 11 13 | 691 | 0.2− | 0.2+ | | |
| 2001 09 10 | 704 | 0.1− | 0.8− | 2003 02 01 | 704 | 0.0 | 0.9− | 2006 11 13 | 691 | 0.1− | 0.1+ | | |
| 2001 09 10 | 704 | 0.4+ | 1.0− | 2003 02 01 | 704 | 1.1− | 0.6− | 2006 11 13 | 691 | 0.1− | 0.0 | | |
| 2001 09 10 | 704 | 0.4+ | 0.5− | 2003 02 01 | 704 | 0.6− | 0.9− | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2003 02 01 | 704 | (0.7− | 1.7−) | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2001 09 12 | 704 | 0.5− | 0.2− | 2003 02 01 | 704 | 1.0− | 0.5− | 2006 11 14 | G96 | 0.3− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.7− | 1.0− | 2003 02 01 | 704 | 0.2− | 0.7− | 2006 11 14 | G96 | 0.3+ | 0.2− | | |
| 2001 09 12 | 704 | 0.4− | 0.3− | 2003 03 30 | 704 | (0.8+ | 2.0+) | 2006 11 15 | 704 | 0.2+ | 0.1− | | |
| 2001 09 12 | 704 | (1.6− | 0.4−) | 2003 03 30 | 704 | (1.6+ | 0.4+) | 2006 11 15 | 704 | (0.1− | 1.5+) | | |
| 2001 09 12 | 704 | (0.8− | 1.9+) | 2003 03 30 | 704 | (1.7+ | 0.1−) | 2006 11 15 | 704 | 0.4+ | 0.4− | | |
| 2001 09 12 | 704 | 1.3− | 1.1+ | 2003 03 30 | 704 | 0.0 | 1.1− | 2006 11 15 | 704 | 0.2− | 0.2+ | | |
| 2001 09 12 | 704 | 0.6− | 0.7+ | 2003 04 25 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.2+ | | |
| 2001 09 12 | 704 | 0.9− | 0.1+ | 2003 04 25 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 691 | 0.3− | 0.5+ | | |
| 2001 09 23 | 644 | 0.8− | 0.4+ | 2003 04 25 | 704 | 1.0+ | 1.4+ | 2006 11 16 | 691 | 0.2− | 0.1+ | | |
| 2001 09 23 | 644 | 0.3− | 0.7+ | 2003 04 25 | 704 | 0.7+ | 0.2+ | 2006 11 16 | 704 | (0.1− | 2.0+) | | |
| 2001 09 23 | 644 | 0.1− | 0.7+ | 2004 06 16 | 704 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.0 | 1.1+ | | |
| 2001 09 25 | 704 | 0.8+ | 0.4+ | 2004 06 16 | 704 | 0.6+ | 0.1+ | 2006 11 16 | 704 | 0.6+ | 1.1+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2004 06 16 | 704 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 25 | 704 | 0.2− | 0.7− | 2004 06 16 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.6+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.0 | 2004 06 16 | 704 | 0.1− | 0.8− | 2006 11 17 | 704 | 1.0− | 0.5− | | |
| 2001 10 13 | 644 | (1.4+ | 2.1+) | 2004 06 18 | 704 | 0.2− | 1.2+ | 2006 11 17 | 704 | 0.3− | 0.6+ | | |
| 2001 10 13 | 644 | (0.9+ | 2.2+) | 2004 06 18 | 704 | 0.4+ | 0.2− | 2006 11 17 | 704 | (2.1+ | 0.3+) | | |
| 2001 10 13 | 644 | (1.2+ | 1.9+) | 2004 06 18 | 704 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.6− | 0.7+ | | |
| 2001 10 17 | 704 | 0.5+ | 0.5− | 2004 06 18 | 704 | 0.5+ | 0.1− | 2006 11 19 | 704 | (1.7− | 0.2−) | | |
| 2001 10 17 | 704 | 0.3− | 1.3− | 2005 09 09 | 704 | 0.9− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.5− | 0.7− | 2005 09 09 | 704 | 0.3+ | 0.8+ | 2006 11 19 | 704 | 0.4+ | 0.2+ | | |
| 2001 10 21 | 291 | 0.6+ | 0.3+ | 2005 09 09 | 704 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.2− | 0.1− | | |
| 2001 10 21 | 291 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.4− | | |
| 2001 10 21 | 291 | 0.6+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.0 | 0.3+ | | |
| 2002 11 11 | 704 | 0.7+ | 0.7+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.5− | | |
| 2002 11 11 | 704 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.2− | | |
| 2002 11 11 | 704 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.1− | | |
| 2002 12 14 | 704 | 0.8+ | 0.2− | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.5+ | | |
| 2002 12 14 | 704 | 0.5+ | 0.2− | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.4− | 0.5− | | |
| 2002 12 14 | 704 | 0.6+ | 0.0 | 2006 10 19 | G96 | (5.6− | 2.2−) | 2006 11 29 | 704 | 0.0 | 0.4+ | | |
| 2002 12 14 | 704 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.0 | | |
| 2003 01 01 | 704 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.9− | 0.6+ | | |
| 2003 01 01 | 704 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | | | | | |
| 2003 01 01 | 704 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.7− | | | | | | |

**(139839)∗ 2001 RO$_{41}$**

Discovered 2001 Sept. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.19856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20994053 | $\omega$ | 21.15355 | | +0.51765746 | | +0.85439068 |
| $a$ | 2.8037451 | $\Omega$ | 280.04684 | | −0.79143535 | | +0.45808114 |
| $e$ | 0.0752384 | $i$ | 2.63379 | | −0.32505514 | | +0.24531253 |
| $P$ | 4.69 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 16 | 691 | 0.6− | 0.5− | 2001 09 24 | 704 | (0.7− | 1.7+) | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 1994 01 16 | 691 | 0.3+ | 0.4− | 2001 09 24 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2− | | |
| 1994 01 16 | 691 | 0.0 | 0.1+ | 2001 09 24 | 704 | 0.3− | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.2− | | |
| 2001 09 11 | 699 | 0.0 | 0.4− | 2001 09 24 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2001 09 11 | 699 | 0.9+ | 0.2+ | 2001 09 24 | 704 | 0.3− | 1.1+ | 2006 10 16 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 11 | 699 | 0.1− | 1.4+ | 2001 09 24 | 704 | 0.5− | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.0 | | |
| 2001 09 11 | 699 | 0.8− | 0.1+ | 2001 09 24 | 704 | 0.8− | 1.1+ | 2006 10 16 | 691 | 0.1− | 0.3+ | | |
| 2001 09 11 | 704 | 1.1+ | 0.9+ | 2001 09 24 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.6− | | |
| 2001 09 11 | 704 | 0.5− | 0.6+ | 2001 10 11 | 644 | 0.3+ | 1.3+ | 2006 10 17 | 703 | 0.3− | 0.5− | | |
| 2001 09 11 | 704 | 0.0 | 0.5+ | 2001 10 11 | 644 | 0.1+ | 1.5+ | 2006 10 17 | 703 | 0.9− | 0.2− | | |
| 2001 09 11 | 704 | 0.8+ | 0.9+ | 2001 10 11 | 644 | 0.1+ | 1.1+ | 2006 10 17 | 703 | 1.2+ | 0.8− | | |
| 2001 09 11 | 704 | 0.7+ | 0.1+ | 2001 10 14 | 704 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.5− | 0.4+ | | |
| 2001 09 12 | 704 | (0.6+ | 1.7+) | 2001 10 14 | 704 | 0.3+ | 1.0− | 2006 10 19 | 644 | 0.3− | 0.0 | | |
| 2001 09 12 | 704 | 1.2+ | 1.4+ | 2001 10 14 | 704 | 1.0+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.1− | | |
| 2001 09 12 | 704 | 1.0+ | 0.9+ | 2001 10 14 | 704 | 0.7− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1− | | |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2001 10 14 | 704 | 0.3− | 0.9+ | 2006 10 20 | 691 | 0.5− | 0.1+ | | |
| 2001 09 12 | 704 | 0.8+ | 0.5− | 2001 11 18 | 645 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | | |
| 2001 09 15 | 644 | 0.4− | 0.3+ | 2001 11 18 | 645 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2001 09 15 | 644 | 0.1− | 0.7+ | 2001 12 10 | 645 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2001 09 15 | 644 | 0.2− | 0.3+ | 2001 12 10 | 645 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2001 09 16 | 704 | 0.9− | 0.4+ | 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 1.0+ | 0.1− | | |
| 2001 09 16 | 704 | 0.6− | 0.4+ | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.2+ | | |
| 2001 09 16 | 704 | 0.4− | 0.3+ | 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.1+ | | |
| 2001 09 16 | 704 | 0.6− | 0.5+ | 2004 03 18 | 704 | 0.3+ | 1.3+ | 2006 10 21 | 703 | 0.5+ | 0.2− | | |
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2004 03 18 | 704 | 1.2− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2− | | |
| 2001 09 20 | 704 | 1.0− | 0.4+ | 2004 03 18 | 704 | (0.8− | 1.8−) | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 1.1− | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.3− | | |
| 2001 09 20 | 704 | 1.1− | 0.1+ | 2004 03 27 | 704 | 0.9+ | 1.4+ | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2001 09 20 | 704 | 0.6− | 0.6+ | 2004 03 27 | 704 | (2.1+ | 1.1+) | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2004 03 27 | 704 | (2.3+ | 0.3+) | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2001 09 21 | 644 | 0.3− | 0.9+ | 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2001 09 21 | 644 | 0.5− | 1.0+ | 2004 03 30 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2001 09 21 | 644 | 0.4− | 0.6+ | 2004 03 30 | 691 | 0.1+ | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2001 09 22 | 704 | 0.6+ | 0.8+ | 2004 03 31 | 691 | 0.3+ | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2001 09 22 | 704 | 0.2− | 0.8+ | 2004 03 31 | 691 | 0.1+ | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 22 | 704 | 0.2+ | 0.4+ | 2004 03 31 | 691 | 0.4+ | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2001 09 22 | 704 | 1.1+ | 0.8+ | 2004 04 12 | 691 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 1.6− | 0.2− | | |
| 2001 09 23 | 704 | 0.4− | 0.5+ | 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 1.1− | 0.2− | | |
| 2001 09 23 | 704 | 0.2− | 0.2+ | 2004 04 12 | 691 | 0.9+ | 1.2+ | 2006 11 11 | 703 | 0.8+ | 0.3− | | |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.6− | | |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2001 09 23 | 704 | 0.9− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.5− | 1.1+ | 2006 10 10 | 644 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.4+ | 0.5+ | | | | | | |

**(139840)∗ 2001 RD$_{43}$**

Discovered 2001 Sept. 9 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.09880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21352339 | $\omega$ | 177.65320 | | +0.93801800 | | −0.33375675 |
| $a$ | 2.7722927 | $\Omega$ | 202.54711 | | +0.31388649 | | +0.93237158 |
| $e$ | 0.2103961 | $i$ | 14.10230 | | +0.14696092 | | +0.13888726 |
| $P$ | 4.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.5− | 0.2− | 2001 10 05 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.7− | | |
| 1995 04 26 | 691 | 0.3+ | 0.8− | 2001 10 11 | 683 | (1.9− | 2.8+) | 2006 10 16 | 703 | (0.8+ | 1.6−) | | |
| 1995 04 26 | 691 | 0.0 | 0.3− | 2001 10 11 | 683 | 0.8+ | 0.9− | 2006 10 16 | 703 | 0.6+ | 0.1+ | | |
| 2001 08 16 | 644 | 0.1+ | 0.9− | 2001 10 11 | 683 | (1.8+ | 1.1+) | 2006 10 16 | 703 | 0.7− | 0.3− | | |
| 2001 08 16 | 644 | 0.2− | 1.0− | 2001 10 14 | 704 | 0.8+ | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.1+ | | |
| 2001 08 16 | 644 | 0.0 | 0.8− | 2001 10 14 | 704 | 0.6+ | 0.4− | 2006 10 22 | 703 | (1.6+ | 0.1+) | | |
| 2001 08 24 | 699 | 0.6+ | 0.1+ | 2001 10 14 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.1+ | | |
| 2001 08 24 | 699 | 0.5+ | 0.5+ | 2001 10 14 | 704 | 0.7+ | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.9+ | | |
| 2001 08 24 | 699 | 1.4+ | 0.1+ | 2001 10 14 | 704 | 0.6− | 0.7− | 2006 10 30 | 703 | 0.3+ | 0.1− | | |
| 2001 08 24 | 699 | 1.1+ | 0.6+ | 2001 10 15 | 608 | 0.6− | 0.3− | 2006 10 30 | 703 | 0.3− | 0.3− | | |
| 2001 08 31 | 644 | 0.3+ | 0.5+ | 2001 10 15 | 608 | 0.3− | 0.6− | 2006 10 30 | 703 | 0.2− | 0.0 | | |
| 2001 08 31 | 644 | 0.1+ | 0.7+ | 2001 10 15 | 608 | 0.2− | 1.2− | 2006 10 30 | 703 | 0.8+ | 0.9+ | | |
| 2001 08 31 | 644 | 0.2+ | 0.6+ | 2001 10 16 | 704 | 0.0 | 1.2+ | 2006 11 13 | 703 | 0.1+ | 0.0 | | |
| 2001 09 09 | 644 | 0.5− | 0.4+ | 2001 10 16 | 704 | 0.3− | 0.6+ | 2006 11 13 | 703 | 0.3+ | 0.0 | | |
| 2001 09 09 | 644 | 0.7− | 0.5+ | 2001 10 16 | 704 | 0.1− | 0.7+ | 2006 11 13 | 703 | 0.3+ | 0.6− | | |
| 2001 09 09 | 644 | 0.7− | 0.4+ | 2001 10 16 | 704 | 0.5+ | 0.4− | 2006 11 13 | 703 | 0.5+ | 0.0 | | |
| 2001 09 13 | 644 | 0.1+ | 0.3+ | 2004 03 16 | 691 | 0.6+ | 0.5+ | 2006 11 18 | 461 | 0.0 | 0.0 | | |
| 2001 09 13 | 644 | 0.2− | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 461 | 0.0 | 0.4+ | | |
| 2001 09 13 | 644 | 0.4− | 0.4+ | 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 11 18 | 461 | 0.1+ | 0.4+ | | |
| 2001 09 16 | 644 | 0.9− | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.3− | | |
| 2001 09 16 | 644 | 0.4− | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.0 | 1.2+ | | |
| 2001 09 16 | 644 | 0.5− | 0.0 | 2004 03 23 | 691 | 0.5− | 0.2− | 2006 11 19 | 703 | 0.2− | 0.4+ | | |
| 2001 09 25 | 704 | 0.7− | 0.1− | 2004 04 20 | 691 | 0.4+ | 0.5+ | 2006 11 19 | 703 | 0.6− | 0.1− | | |
| 2001 09 25 | 704 | 0.8− | 0.1+ | 2004 04 20 | 691 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.2− | 0.9+ | | |
| 2001 09 25 | 704 | 0.1− | 0.4+ | 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 11 19 | 703 | 1.8− | 0.1− | | |
| 2001 09 25 | 704 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 11 20 | 703 | 0.5− | 0.1+ | | |
| 2001 09 25 | 704 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.6+ | 0.9+ | 2006 11 20 | 703 | 0.3+ | 0.6− | | |
| 2001 10 05 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 20 | 703 | 1.1− | 1.4− | | |
| 2001 10 05 | 644 | 0.2+ | 0.1− | 2006 09 30 | 703 | 1.4+ | 0.7− | 2006 11 20 | 703 | 0.3+ | 1.1− | | |

**(139841)∗ 2001 RG$_{43}$**

Discovered 2001 Sept. 11 at Oakley Observatory, Terre Haute.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.15767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23798067 | $\omega$ | 59.57863 | | +0.96956439 | +0.18019290 | |
| $a$ | 2.5789421 | $\Omega$ | 289.60655 | | −0.23665059 | +0.86331301 | |
| $e$ | 0.3097813 | $i$ | 10.13449 | | +0.06278045 | +0.47140340 | |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 26 | 566 | 0.2+ | 0.4+ | 2001 09 11 | 916 | 0.7+ | 1.0− | 2005 06 16 | 691 | 0.3− | 1.3− | |
| 1997 11 26 | 566 | 0.4+ | 0.1+ | 2001 09 11 | 916 | 0.2− | 0.6− | 2005 06 16 | 691 | 0.0 | 0.2− | |
| 1997 11 26 | 566 | 0.4+ | 0.1+ | 2001 09 13 | 916 | 0.2+ | 0.6− | 2005 06 28 | G96 | 0.2− | 0.2+ | |
| 2001 06 27 | 608 | 0.7− | 0.0 | 2001 09 13 | 916 | 1.1− | 0.2− | 2005 06 28 | G96 | 0.2− | 0.2+ | |
| 2001 06 27 | 608 | 0.4− | 0.0 | 2001 09 13 | 916 | 0.2− | 0.9− | 2005 06 28 | G96 | 0.1− | 0.2+ | |
| 2001 06 27 | 608 | 0.5− | 0.2+ | 2001 09 13 | 916 | 0.5− | 1.1+ | 2005 06 28 | G96 | 0.0 | 0.0 | |
| 2001 07 16 | 608 | 0.5− | 1.0+ | 2001 09 13 | 916 | 0.7− | 0.5− | 2005 07 06 | 691 | 0.1+ | 0.2+ | |
| 2001 07 16 | 608 | 0.8− | 1.3+ | 2001 09 14 | 644 | 0.2+ | 0.3+ | 2005 07 06 | 691 | 0.1+ | 0.0 | |
| 2001 07 16 | 608 | 0.8− | 1.1+ | 2001 09 14 | 644 | 0.5+ | 0.2+ | 2005 07 06 | 691 | 0.1+ | 0.1− | |
| 2001 07 17 | 699 | 0.2− | 0.2− | 2001 09 14 | 644 | 0.3+ | 0.3+ | 2005 07 10 | 691 | 0.2+ | 0.0 | |
| 2001 07 17 | 699 | 0.1+ | 0.0 | 2001 09 17 | 644 | 0.1+ | 0.3+ | 2005 07 10 | 691 | 0.2+ | 0.0 | |
| 2001 07 17 | 699 | 0.1− | 0.8+ | 2001 09 17 | 644 | 0.1− | 0.3+ | 2005 07 10 | 691 | 0.2+ | 0.1− | |
| 2001 07 17 | 699 | 0.5− | 0.8+ | 2001 09 17 | 644 | 0.1− | 0.4+ | 2005 07 15 | G96 | 0.1− | 0.0 | |
| 2001 08 21 | 704 | 0.4− | 0.1− | 2001 09 21 | 699 | 0.2− | 0.0 | 2005 07 15 | G96 | (1.6− | 0.3−) | |
| 2001 08 21 | 704 | 0.0 | 0.3+ | 2001 09 21 | 699 | 0.4+ | 0.0 | 2005 07 15 | G96 | 0.3− | 0.0 | |
| 2001 08 21 | 704 | 0.1− | 0.7+ | 2001 09 21 | 699 | 0.2+ | 0.4+ | 2005 07 15 | G96 | 0.6− | 0.4− | |
| 2001 08 21 | 704 | 0.1+ | 1.2+ | 2001 09 21 | 699 | 0.5+ | 0.2− | 2005 07 27 | 608 | (1.7+ | 0.3−) | |
| 2001 09 08 | 699 | 0.2+ | 0.2+ | 2001 09 22 | 916 | 0.1− | 0.1− | 2005 07 27 | 608 | (1.9+ | 0.8−) | |
| 2001 09 08 | 699 | 0.4+ | 0.4+ | 2001 09 22 | 916 | 0.9− | 0.2− | 2005 07 27 | 608 | 1.4+ | 0.5− | |
| 2001 09 08 | 699 | 0.0 | 0.1− | 2001 09 22 | 916 | (2.6− | 0.1−) | 2005 08 01 | E12 | 0.7+ | 0.3+ | |
| 2001 09 08 | 699 | 0.0 | 0.5+ | 2001 09 22 | 916 | 0.5− | 0.3− | 2005 08 01 | E12 | 0.2+ | 0.1+ | |
| 2001 09 09 | 699 | 0.1+ | 0.1+ | 2001 09 22 | 916 | 0.4+ | 0.5− | 2005 08 01 | E12 | 0.2− | 0.4+ | |
| 2001 09 09 | 699 | 0.2− | 0.3− | 2001 09 22 | 916 | 1.3+ | 1.1− | 2005 08 01 | E12 | 0.4+ | 0.4+ | |
| 2001 09 09 | 699 | 0.1− | 0.2− | 2001 09 22 | 916 | 0.3− | 1.3− | 2006 10 04 | G96 | 0.0 | 0.2+ | |
| 2001 09 09 | 699 | 0.3− | 0.1+ | 2001 09 23 | 916 | 0.7+ | 0.6− | 2006 10 04 | G96 | 0.2− | 0.4− | |
| 2001 09 09 | 699 | 0.3− | 0.7+ | 2001 09 23 | 916 | 0.4+ | 0.6− | 2006 10 04 | G96 | 0.0 | 0.6− | |
| 2001 09 09 | 699 | 0.1+ | 0.8+ | 2001 09 23 | 916 | 1.3− | 1.0− | 2006 10 04 | G96 | 0.2− | 0.3− | |
| 2001 09 09 | 699 | 0.2+ | 0.2+ | 2001 09 23 | 916 | 0.8− | 0.0 | 2006 11 01 | G96 | 0.6− | 0.1− | |
| 2001 09 09 | 699 | 0.1+ | 0.0 | 2001 10 17 | 704 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.4− | 0.0 | |
| 2001 09 11 | 916 | (1.6+ | 0.7+) | 2001 10 17 | 704 | 0.6+ | 0.4− | 2006 11 01 | G96 | 1.2− | 0.5− | |
| 2001 09 11 | 916 | 0.5+ | 0.4− | 2001 10 17 | 704 | 0.2+ | 0.6− | 2006 11 01 | G96 | 0.4− | 0.1− | |
| 2001 09 11 | 916 | 0.0 | 0.3− | 2001 10 17 | 704 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.5− | |
| 2001 09 11 | 916 | (2.1− | 0.9−) | 2001 10 17 | 704 | 0.6+ | 0.7− | 2006 11 15 | G96 | 0.3+ | 0.1− | |
| 2001 09 11 | 916 | (1.6+ | 1.3−) | 2001 11 19 | 644 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.7+ | 0.5− | |
| 2001 09 11 | 916 | 0.7+ | 0.1+ | 2001 11 19 | 644 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.6− | |
| 2001 09 11 | 916 | 0.4− | 0.1+ | 2001 11 19 | 644 | 0.2− | 0.7+ | | | | | |
| 2001 09 11 | 916 | 0.1− | 0.1− | 2005 06 16 | 691 | 0.0 | 0.2− | | | | | |

**(139842)∗ 2001 RV$_{43}$**

Discovered 2001 Sept. 10 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.90455 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19330475 | $\omega$ | 359.43532 | | +0.94848896 | +0.31237206 | |
| $a$ | 2.9623818 | $\Omega$ | 342.08640 | | −0.28999001 | +0.78886528 | |
| $e$ | 0.1196806 | $i$ | 9.89258 | | −0.12757151 | +0.52925916 | |
| $P$ | 5.10 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 06 | 691 | 0.7+ | 0.0 | 2001 09 28 | 644 | 0.4− | 0.2− | 2006 09 01 | 704 | (1.8− | 0.3+) | |
| 1996 11 06 | 691 | 1.0+ | 0.9− | 2001 10 05 | 644 | 0.5− | 0.1+ | 2006 09 01 | 704 | (1.1− | 2.6+) | |
| 1996 11 06 | 691 | 0.8+ | 0.2+ | 2001 10 05 | 644 | 0.4− | 0.2− | 2006 09 01 | 704 | 1.2− | 1.2− | |
| 1999 02 10 | 691 | 0.3− | 1.4− | 2001 10 05 | 644 | 0.4− | 0.2− | 2006 09 11 | 703 | 0.6− | 0.3− | |
| 1999 02 10 | 691 | (0.2+ | 2.8−) | 2001 10 14 | 704 | 0.2− | 0.5+ | 2006 09 11 | 703 | 0.2− | 0.3− | |
| 1999 02 10 | 691 | 0.7+ | 1.2− | 2001 10 14 | 683 | (0.2− | 1.6+) | 2006 09 11 | 703 | 0.3− | 0.2− | |
| 1999 03 21 | 645 | 0.0 | 0.3+ | 2001 10 14 | 683 | (3.5− | 2.8−) | 2006 09 11 | 703 | (1.4− | 2.3−) | |
| 1999 03 21 | 645 | 0.0 | 0.3+ | 2001 10 14 | 704 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.2− | |
| 2001 08 16 | 704 | 0.9− | 0.1− | 2001 10 14 | 704 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.2− | 0.2− | |
| 2001 08 16 | 704 | 0.6− | 0.2+ | 2001 10 14 | 704 | 0.3+ | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.2− | |
| 2001 08 16 | 704 | 0.5− | 0.4+ | 2001 10 21 | 704 | 0.8− | 0.4− | 2006 09 16 | 644 | 0.2− | 0.2− | |
| 2001 08 16 | 704 | 0.7+ | 0.2− | 2001 10 21 | 704 | 0.3− | 0.4− | 2006 09 16 | 644 | 0.1+ | 0.0 | |
| 2001 09 10 | 333 | 0.8+ | 0.0 | 2001 10 21 | 704 | 0.2− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.4− | |
| 2001 09 10 | 333 | 0.7+ | 0.1− | 2001 10 21 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 704 | 0.5+ | 1.0+ | |
| 2001 09 12 | 333 | 0.3+ | 0.1+ | 2001 10 21 | 704 | 0.0 | 0.6− | 2006 09 17 | 704 | 0.7+ | 1.1+ | |
| 2001 09 12 | 333 | 0.3+ | 0.8− | 2001 11 18 | 704 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2− | 0.7+ | |
| 2001 09 16 | 704 | 0.9− | 0.5+ | 2001 11 18 | 704 | 0.6+ | 0.6+ | 2006 09 17 | 703 | 0.1− | 0.5− | |
| 2001 09 16 | 704 | 0.6− | 0.5+ | 2001 11 18 | 704 | 0.3− | 0.9+ | 2006 09 17 | 704 | 0.0 | 0.5+ | |
| 2001 09 16 | 704 | 0.8− | 0.6+ | 2001 11 18 | 704 | 0.1+ | 1.2+ | 2006 09 17 | 703 | 1.1− | 0.3− | |
| 2001 09 18 | 699 | (1.0− | 1.6+) | 2002 12 12 | 644 | 0.1− | 1.2+ | 2006 09 17 | 704 | 0.0 | 0.2+ | |
| 2001 09 18 | 699 | 0.0 | 0.6+ | 2002 12 12 | 644 | 0.0 | 1.0+ | 2006 09 17 | 703 | (4.3− | 4.2−) | |
| 2001 09 18 | 699 | 0.1− | 0.1+ | 2002 12 12 | 644 | 0.0 | 1.2+ | 2006 09 17 | 703 | (2.9+ | 3.5−) | |
| 2001 09 18 | 699 | 0.5− | 0.8+ | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.2− | |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 0.1+ | 1.4+ | |
| 2001 09 20 | 704 | 0.2+ | 0.3− | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 09 20 | 704 | 0.6− | 1.2+ | |
| 2001 09 20 | 704 | 0.7− | 0.7+ | 2004 02 26 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 699 | 0.4+ | 0.4+ | |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2004 02 26 | 704 | (2.6+ | 1.6+) | 2006 09 20 | 704 | 0.3− | 0.9− | |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2004 03 15 | 704 | 0.4− | 1.0− | 2006 09 20 | 699 | 0.5+ | 0.9+ | |
| 2001 09 20 | 704 | 0.2− | 0.4− | 2004 03 15 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 699 | 0.1− | 0.5+ | |
| 2001 09 20 | 704 | 0.1+ | 0.7+ | 2004 03 15 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 699 | 0.3− | 0.8+ | |
| 2001 09 20 | 704 | 0.1− | 0.8− | 2004 03 15 | 599 | 0.0 | 0.7+ | 2006 09 27 | 704 | 0.7+ | 0.3+ | |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2004 03 15 | 599 | 0.6− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.4+ | |
| 2001 09 20 | 704 | 0.1− | 0.5− | 2004 03 15 | 599 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.1+ | |
| 2001 09 21 | 704 | 0.1− | 0.5− | 2004 03 16 | 599 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.2+ | 0.6+ | |
| 2001 09 21 | 704 | 0.0 | 0.4− | 2004 03 16 | 599 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.7+ | 0.3+ | |
| 2001 09 21 | 704 | 0.1+ | 0.7− | 2004 03 16 | 599 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.5− | |
| 2001 09 21 | 704 | 0.3+ | 0.6− | 2004 03 18 | 704 | (0.9+ | 2.2+) | 2006 09 27 | G96 | 0.1− | 0.4− | |
| 2001 09 21 | 704 | 0.3+ | 0.6− | 2004 03 18 | 704 | 0.7+ | 0.0 | 2006 09 27 | G96 | 0.2− | 0.4− | |
| 2001 09 22 | 704 | 1.0− | 0.0 | 2004 03 18 | 704 | (0.3+ | 1.8+) | 2006 09 27 | G96 | 0.2− | 0.5− | |
| 2001 09 22 | 704 | 0.0 | 0.2− | 2004 03 18 | 704 | 1.4+ | 1.2+ | 2006 09 29 | 704 | (1.3− | 1.8+) | |
| 2001 09 22 | 704 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.5+ | 2006 09 29 | 704 | (1.0− | 1.8+) | |
| 2001 09 22 | 704 | 0.3− | 0.1− | 2004 03 23 | 704 | 0.3− | 0.1+ | 2006 09 29 | 704 | (3.1− | 0.3+) | |
| 2001 09 22 | 704 | 0.2− | 0.4− | 2004 03 23 | 704 | 0.9+ | 0.2− | 2006 09 29 | 704 | 1.3− | 0.1− | |
| 2001 09 22 | 704 | 0.6− | 0.1− | 2004 03 23 | 704 | (1.5+ | 0.3+) | 2006 09 30 | 699 | 0.8+ | 0.3− | |
| 2001 09 22 | 704 | 0.5− | 0.3− | 2006 08 18 | 704 | 0.4+ | 0.9+ | 2006 09 30 | 699 | 0.1− | 0.1− | |
| 2001 09 22 | 704 | 1.2− | 0.3− | 2006 08 18 | 704 | 0.4− | 0.0 | 2006 09 30 | 699 | 1.3+ | 0.1− | |
| 2001 09 22 | 704 | 0.2+ | 0.5− | 2006 08 18 | 704 | 0.1+ | 1.1− | 2006 09 30 | 699 | 0.2− | 0.4+ | |
| 2001 09 23 | 704 | 0.6− | 0.7+ | 2006 08 21 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.1− | |
| 2001 09 23 | 704 | 0.1− | 0.4− | 2006 08 21 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2− | |
| 2001 09 23 | 704 | 0.4− | 0.4+ | 2006 08 21 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2001 09 23 | 704 | 0.4− | 0.4− | 2006 08 21 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 1.5− | 1.4− | |
| 2001 09 23 | 704 | 1.0− | 0.4+ | 2006 08 21 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | (1.9− | 0.4+) | |
| 2001 09 23 | 704 | 0.4− | 0.2− | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.0 | |
| 2001 09 23 | 704 | 0.3+ | 0.4+ | 2006 08 27 | 699 | 0.5− | 0.5− | 2006 11 11 | 703 | (2.8− | 0.7−) | |
| 2001 09 23 | 704 | 0.1− | 0.5− | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 11 14 | 291 | 0.5+ | 0.3+ | |
| 2001 09 23 | 704 | 0.1− | 0.9− | 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 11 14 | 291 | 0.5+ | 0.5+ | |
| 2001 09 23 | 704 | 0.3− | 0.4− | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 11 14 | 291 | 0.2+ | 0.2+ | |
| 2001 09 24 | 704 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.9− | 0.2− | 2006 11 17 | 291 | 0.4+ | 0.0 | |
| 2001 09 24 | 704 | 1.2− | 1.1+ | 2006 08 27 | 699 | 0.1+ | 0.7+ | 2006 11 17 | 291 | 0.2+ | 0.0 | |
| 2001 09 24 | 704 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 11 17 | 291 | 0.2+ | 0.1− | |
| 2001 09 24 | 704 | 0.6− | 1.4+ | 2006 08 28 | 703 | 0.6− | 0.3− | 2006 11 18 | 703 | 0.2+ | 0.2+ | |
| 2001 09 26 | 699 | 0.0 | 0.8+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 11 18 | 703 | 1.3− | 0.7+ | |
| 2001 09 26 | 699 | 0.8− | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 11 18 | 703 | 1.1+ | 0.5+ | |
| 2001 09 26 | 699 | 1.1+ | 0.5+ | 2006 08 29 | 704 | 0.9− | 0.2+ | 2006 11 18 | 703 | 0.2− | 0.0 | |
| 2001 09 26 | 699 | 0.3− | 0.3− | 2006 08 29 | 704 | 0.5− | 0.2+ | 2006 11 20 | 291 | 0.4+ | 0.2+ | |
| 2001 09 28 | 644 | 0.6− | 0.2+ | 2006 08 29 | 704 | 0.0 | 0.6+ | 2006 11 20 | 291 | 0.4+ | 0.1− | |
| 2001 09 28 | 644 | 0.4− | 0.1− | 2006 09 01 | 704 | 0.6− | 0.6− | 2006 11 20 | 291 | 0.4+ | 0.0 | |

**(139843)∗ 2001 RH$_{44}$**

Discovered 2001 Sept. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.48447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23491930 | $\omega$ | 358.03543 | | +0.40603630 | −0.91003428 | |
| $a$ | 2.6012989 | $\Omega$ | 68.00039 | | +0.83967062 | +0.33545238 | |
| $e$ | 0.1562260 | $i$ | 5.16687 | | +0.36067682 | +0.24353504 | |
| $P$ | 4.20 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.9+ | 1.5+ | 2001 11 16 | 644 | 0.0 | 0.0 | 2005 09 24 | 644 | 0.1− | 0.0 |
| 1995 05 29 | 691 | 0.1+ | 1.3+ | 2001 11 17 | 704 | 0.3− | 0.7− | 2005 09 24 | 644 | 0.1− | 0.2+ |
| 1995 05 29 | 691 | 0.5+ | 0.8+ | 2001 11 17 | 704 | 0.0 | 0.7− | 2005 09 24 | 703 | 0.1+ | 0.3+ |
| 2001 09 12 | 644 | 0.1− | 0.3+ | 2001 11 17 | 704 | 0.2− | 0.1− | 2005 09 24 | 703 | 0.2− | 0.6+ |
| 2001 09 12 | 644 | 0.8− | 0.0 | 2001 11 17 | 704 | 0.0 | 0.8+ | 2005 09 24 | 703 | 0.5− | 0.2+ |
| 2001 09 12 | 644 | 0.4− | 0.3+ | 2001 11 17 | 704 | 0.2+ | 0.5+ | 2005 09 24 | 644 | 0.2− | 0.1+ |
| 2001 09 14 | 644 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.5+ | 0.7− | 2005 09 24 | 703 | 0.8+ | 0.1+ |
| 2001 09 14 | 644 | 0.1− | 0.2+ | 2001 11 20 | 704 | 0.3+ | 0.6− | 2005 10 01 | 699 | 0.1− | 0.2− |
| 2001 09 14 | 644 | 0.2− | 0.3+ | 2001 11 20 | 704 | 0.7+ | 0.7− | 2005 10 01 | 699 | 0.5− | 0.2+ |
| 2001 09 17 | 704 | 0.4− | 1.0+ | 2001 11 20 | 704 | 0.9+ | 0.4− | 2005 10 01 | 699 | 0.2− | 0.0 |
| 2001 09 17 | 704 | 0.3+ | 0.7+ | 2001 11 20 | 704 | 0.1+ | 0.6− | 2005 10 01 | 699 | 0.0 | 0.3+ |
| 2001 09 17 | 704 | 0.0 | 2.0+ | 2001 11 21 | 704 | 0.3− | 0.1+ | 2005 10 05 | 661 | 0.2+ | 0.7+ |
| 2001 09 17 | 704 | 0.1− | 0.8+ | 2001 11 21 | 704 | 0.5− | 0.2− | 2005 10 05 | 661 | 0.0 | 0.3+ |
| 2001 09 23 | 644 | 0.5− | 0.9+ | 2001 11 21 | 704 | 0.3− | 0.0 | 2005 10 05 | 661 | 1.1− | 0.8− |
| 2001 09 23 | 644 | 0.5− | 0.7+ | 2001 11 21 | 704 | 0.5− | 0.0 | 2005 10 05 | 661 | 0.8+ | 0.5+ |
| 2001 09 23 | 644 | 0.5− | 0.8+ | 2001 11 21 | 704 | 0.4− | 0.1+ | 2005 10 05 | 661 | 0.2+ | 0.9+ |
| 2001 10 12 | 699 | 1.2− | 0.1− | 2001 12 11 | 291 | 0.5+ | 0.1+ | 2005 10 08 | 703 | 0.2− | 0.4− |
| 2001 10 12 | 699 | 0.5− | 0.5+ | 2001 12 11 | 291 | 0.1+ | 0.2+ | 2005 10 08 | 703 | 0.4+ | 0.8− |
| 2001 10 12 | 699 | 0.4− | 0.9+ | 2001 12 11 | 291 | 0.1+ | 0.2+ | 2005 10 08 | 703 | 1.5+ | 0.4− |
| 2001 10 12 | 699 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.3+ | 0.6+ | 2005 10 08 | 703 | (2.1+ | 0.0 ) |
| 2001 10 15 | 333 | 0.3− | 0.5+ | 2001 12 11 | 704 | 0.1− | 0.9+ | 2005 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 10 15 | 333 | 0.3− | 0.2− | 2001 12 11 | 704 | 0.2+ | 0.7+ | 2005 10 20 | 644 | 0.1+ | 0.0 |
| 2001 10 15 | 333 | 0.1+ | 0.6− | 2001 12 11 | 704 | 0.8+ | 1.2+ | 2005 10 20 | 644 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.3− | 0.7+ | 2001 12 11 | 704 | 0.3+ | 1.0+ | 2005 10 22 | 703 | 0.3− | 0.1− |
| 2001 10 17 | 704 | 0.5− | 0.2+ | 2001 12 14 | 704 | 0.4− | 0.7+ | 2005 10 22 | 703 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.1− | 1.0+ | 2001 12 14 | 704 | 0.3− | 0.2+ | 2005 10 22 | 703 | 0.6− | 0.3+ |
| 2001 10 17 | 704 | 0.6− | 0.8+ | 2001 12 14 | 704 | 0.5− | 0.5+ | 2005 10 22 | 703 | 0.4− | 0.5− |
| 2001 10 17 | 704 | 0.9− | 0.1+ | 2001 12 14 | 704 | 0.3− | 0.2+ | 2005 10 27 | 644 | 0.2+ | 0.0 |
| 2001 10 20 | 704 | 0.2− | 0.3+ | 2001 12 14 | 704 | 1.0− | 0.2+ | 2005 10 27 | 644 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.6+ | 0.3+ | 2005 10 27 | 704 | 0.3− | 0.4+ |
| 2001 10 20 | 704 | 0.6− | 0.2+ | 2001 12 17 | 704 | 0.5+ | 0.4+ | 2005 10 27 | 644 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.4− | 0.2+ | 2001 12 17 | 704 | 0.1+ | 0.9+ | 2005 10 27 | 704 | 0.1− | 0.3+ |
| 2001 10 20 | 704 | 0.8− | 0.1+ | 2001 12 17 | 704 | 0.4− | 0.5+ | 2005 10 27 | 704 | 0.4− | 0.6+ |
| 2001 10 22 | 704 | 0.1+ | 0.5+ | 2001 12 17 | 704 | 0.1− | 0.5+ | 2005 10 27 | 704 | 0.8− | 0.3+ |
| 2001 10 22 | 704 | 0.5− | 0.5+ | 2001 12 19 | 704 | 0.4+ | 0.3− | 2005 10 27 | 704 | 0.2+ | 1.0+ |
| 2001 10 22 | 704 | 0.0 | 0.5− | 2001 12 19 | 704 | 0.3+ | 0.1− | 2005 10 28 | 703 | 0.6− | 0.3− |
| 2001 10 22 | 704 | 0.5− | 0.6+ | 2001 12 19 | 704 | 0.3+ | 0.2− | 2005 10 28 | 703 | 0.5− | 0.4− |
| 2001 10 22 | 704 | 0.6− | 0.2+ | 2001 12 19 | 704 | 0.1− | 0.1− | 2005 10 28 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 333 | 0.2+ | 0.6+ | 2002 01 09 | 704 | 0.4+ | 0.2+ | 2005 10 28 | 703 | 0.6− | 0.4− |
| 2001 10 23 | 333 | 0.4− | 0.3− | 2002 01 09 | 704 | 0.9+ | 0.1+ | 2005 10 31 | 704 | 0.5− | 0.4+ |
| 2001 10 23 | 333 | 0.4+ | 0.4− | 2002 01 09 | 704 | 1.1+ | 0.4+ | 2005 10 31 | 704 | 0.6+ | 0.9− |
| 2001 10 23 | 704 | 0.2− | 0.2+ | 2002 01 09 | 704 | 0.0 | 0.7− | 2005 10 31 | 704 | 0.4− | 0.7+ |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2002 01 09 | 704 | 0.6+ | 0.6+ | 2005 10 31 | 704 | 0.1+ | 0.2− |
| 2001 10 23 | 704 | 0.4− | 0.5+ | 2002 01 13 | 291 | 0.2− | 1.0− | 2005 11 03 | 704 | 0.8− | 0.2− |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2002 01 13 | 291 | 0.0 | 0.9− | 2005 11 03 | 704 | 1.1− | 0.4+ |
| 2001 10 23 | 704 | 0.3− | 0.5+ | 2002 01 13 | 291 | 0.0 | 0.8− | 2005 11 03 | 704 | 0.2− | 0.5− |
| 2001 10 24 | 704 | 0.1+ | 0.4− | 2002 01 21 | 704 | 0.7+ | 0.3+ | 2005 11 03 | 704 | 1.8− | 0.7+ |
| 2001 10 24 | 704 | 0.0 | 0.3− | 2002 01 21 | 704 | 1.3+ | 0.3− | 2005 11 28 | 644 | 0.4+ | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.0 | 2002 01 21 | 704 | 0.3+ | 0.1+ | 2005 11 28 | 644 | 0.3+ | 0.2+ |
| 2001 10 24 | 704 | 0.1− | 0.1+ | 2003 03 26 | 644 | 0.7+ | 0.7+ | 2005 11 28 | 644 | 0.2+ | 0.2+ |
| 2001 10 24 | 704 | 0.6− | 0.0 | 2003 03 26 | 644 | 0.6+ | 0.4+ | 2005 12 01 | 699 | 0.4− | 2.0+ |
| 2001 10 25 | 644 | 0.3+ | 1.0+ | 2003 03 26 | 644 | 0.6+ | 0.3+ | 2005 12 01 | 699 | 0.3− | 0.4+ |
| 2001 10 25 | 644 | 0.5+ | 0.6+ | 2003 03 26 | 644 | 0.4+ | 0.6+ | 2005 12 01 | 699 | (2.0+ | 0.8+) |
| 2001 10 25 | 644 | 0.5+ | 0.6+ | 2003 03 26 | 644 | 0.2+ | 0.5+ | 2005 12 01 | G96 | 0.3+ | 0.0 |
| 2001 10 27 | 699 | 0.8+ | 1.0+ | 2003 03 26 | 691 | 0.1+ | 0.2+ | 2005 12 01 | G96 | 0.5+ | 0.0 |
| 2001 10 27 | 699 | 0.2− | 0.5+ | 2003 03 26 | 644 | 0.6+ | 0.6+ | 2005 12 01 | 699 | 0.0 | 0.2+ |
| 2001 10 27 | 699 | 0.4+ | 0.0 | 2003 03 26 | 691 | 0.3− | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.2− |
| 2001 10 27 | 699 | 1.0− | 0.8− | 2003 03 26 | 691 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.3− |
| 2001 11 09 | 704 | 0.7− | 0.0 | 2003 03 30 | 704 | 0.9+ | 0.3+ | 2005 12 04 | 699 | 0.1+ | 0.8+ |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2003 03 30 | 704 | 1.0+ | 0.6+ | 2005 12 04 | 699 | 0.7+ | 0.8− |
| 2001 11 09 | 704 | 0.1− | 0.1− | 2003 03 30 | 704 | 0.3+ | 0.4+ | 2005 12 04 | 699 | 1.1+ | 0.4+ |
| 2001 11 09 | 704 | 0.0 | 0.3+ | 2003 03 30 | 704 | 1.2+ | 0.5+ | 2005 12 04 | 699 | 0.5+ | 0.2− |
| 2001 11 09 | 644 | 0.1− | 0.2+ | 2003 03 30 | 704 | 0.3+ | 1.9+ | 2005 12 21 | 703 | 0.5+ | 1.2− |
| 2001 11 09 | 704 | 0.1+ | 0.4+ | 2003 04 09 | 704 | 0.3+ | 0.1− | 2005 12 21 | 703 | 0.3− | 0.0 |
| 2001 11 09 | 644 | 0.2− | 0.3+ | 2003 04 09 | 704 | 0.3− | 0.9+ | 2005 12 21 | 703 | 2.0+ | 0.7− |
| 2001 11 09 | 644 | 0.0 | 0.2+ | 2003 04 09 | 704 | 0.5− | 0.6+ | 2005 12 21 | 703 | 1.2+ | 0.3+ |
| 2001 11 16 | 644 | 0.1+ | 0.2+ | 2003 04 09 | 704 | 0.2+ | 1.1+ | | | | |
| 2001 11 16 | 644 | 0.2+ | 0.3+ | 2003 04 09 | 704 | 1.0+ | 1.1+ | | | | |

**(139844)∗ 2001 RF$_{48}$**

Discovered 2001 Sept. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.68105 | | (2000.0) | | +0.81755213 | −0.57585316 |
| $n$ | 0.21124826 | $\omega$ | 36.47355 | | +0.51423330 | +0.73106919 |
| $a$ | 2.7921620 | $\Omega$ | 358.68383 | | +0.25917683 | +0.36596581 |
| $e$ | 0.0993020 | $i$ | 3.20547 | | | |
| $P$ | 4.67 | $H$ | 15.8 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.4− | 0.2+ | 2001 10 06 | 644 | 0.1+ | 0.1+ | 2004 05 21 | 691 | 0.3+ | 0.6+ |
| 1994 03 05 | 691 | 0.1+ | 0.3+ | 2001 10 06 | 644 | 0.0 | 0.1+ | 2004 05 21 | 691 | 0.2+ | 0.6+ |
| 1994 03 05 | 691 | 0.2+ | 0.3+ | 2001 10 08 | 644 | 0.1+ | 1.3+ | 2005 08 06 | 704 | 0.1+ | 1.3+ |
| 2001 09 11 | 333 | 0.4− | 0.2− | 2001 10 08 | 644 | 0.1+ | 1.2+ | 2005 08 06 | 704 | 0.3− | 0.1+ |
| 2001 09 11 | 699 | 0.2+ | 0.6+ | 2001 10 08 | 644 | 0.3+ | 1.2+ | 2005 08 06 | 704 | 1.1− | 0.4+ |
| 2001 09 11 | 333 | 0.1− | 0.3− | 2001 10 11 | 644 | 0.1+ | 0.3+ | 2005 08 06 | 704 | 0.5+ | 0.8− |
| 2001 09 11 | 699 | 0.3− | 0.6+ | 2001 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2001 09 11 | 699 | 0.1− | 0.1− | 2001 10 11 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.9− |
| 2001 09 11 | 699 | 0.5− | 0.0 | 2001 10 13 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2001 09 14 | 644 | 0.1− | 0.4+ | 2001 10 13 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6− | 0.4− |
| 2001 09 14 | 644 | 0.4− | 0.9+ | 2001 10 13 | 704 | 0.3+ | 0.9+ | 2006 10 19 | 691 | 0.8+ | 0.3− |
| 2001 09 14 | 644 | 0.1− | 0.3+ | 2001 10 13 | 704 | 1.0− | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.2+ |
| 2001 09 17 | 333 | 0.5+ | 0.1+ | 2001 10 16 | 704 | 0.3− | 1.3+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 09 17 | 333 | 0.8+ | 0.6− | 2001 10 16 | 704 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2001 09 17 | 333 | 0.2− | 1.2− | 2001 10 16 | 704 | 0.6− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2001 09 18 | 699 | 0.5+ | 1.1+ | 2001 10 16 | 704 | 1.0+ | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 09 18 | 699 | 1.0− | 0.4+ | 2001 10 18 | 644 | 0.5− | 0.7+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.9− | 0.3+ | 2001 10 18 | 644 | 0.4− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2001 09 18 | 333 | 0.1+ | 0.5+ | 2001 10 18 | 644 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2001 09 18 | 333 | 1.3+ | 0.1+ | 2001 10 21 | 704 | 0.5+ | 0.8+ | 2006 11 02 | 691 | 0.2− | 0.1+ |
| 2001 09 18 | 699 | 0.8− | 0.9+ | 2001 10 21 | 704 | 0.3+ | 0.6+ | 2006 11 02 | 691 | 0.2− | 0.1− |
| 2001 09 18 | 333 | 0.5+ | 0.0 | 2001 10 21 | 704 | 1.2+ | 0.6+ | 2006 11 02 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2001 10 21 | 704 | 0.2− | 0.9− | 2006 11 09 | 644 | 0.4− | 0.2− |
| 2001 09 20 | 704 | 0.5+ | 0.4+ | 2001 10 21 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2001 10 24 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2001 09 20 | 704 | 0.4− | 0.1− | 2001 10 24 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2001 10 24 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.3+ | 0.2+ |
| 2001 09 23 | 704 | 1.4+ | 0.6+ | 2002 12 31 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.3− |
| 2001 09 23 | 704 | 0.6+ | 0.6− | 2002 12 31 | 704 | 0.4− | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.4+ |
| 2001 09 23 | 704 | 0.2− | 0.9+ | 2002 12 31 | 704 | (1.3+ | 1.8+) | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2001 09 23 | 691 | 0.5− | 0.5− | 2003 01 31 | 644 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.8− |
| 2001 09 23 | 691 | 0.4− | 0.4− | 2003 01 31 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 1.3+ | 0.7+ |
| 2001 09 23 | 691 | 0.6− | 0.3− | 2003 01 31 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.7+ | 0.8+ |
| 2001 09 24 | 691 | 0.0 | 0.0 | 2003 02 01 | 608 | 0.3+ | 0.5− | 2006 11 16 | 704 | 1.3− | 0.3+ |
| 2001 09 24 | 691 | 0.0 | 0.2− | 2003 02 01 | 608 | 0.3+ | 0.9− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2001 09 24 | 691 | 0.1+ | 0.2− | 2003 02 01 | 608 | 0.7+ | 0.5− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2001 09 24 | 704 | (1.6+ | 0.7−) | 2003 02 02 | 644 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2001 09 24 | 704 | 0.3− | 0.1− | 2003 02 02 | 644 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2001 09 24 | 704 | 0.8+ | 0.9− | 2003 02 02 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2001 09 24 | 704 | (1.3+ | 1.7−) | 2004 04 25 | 703 | 0.1+ | 0.9+ | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2001 10 06 | 704 | 0.6+ | 0.5+ | 2004 04 25 | 703 | 1.0+ | 0.4+ | 2006 11 22 | 704 | 0.7− | 0.1+ |
| 2001 10 06 | 704 | 0.4− | 0.0 | 2004 04 25 | 703 | (1.6− | 1.2+) | 2006 11 22 | 704 | 0.6+ | 0.3− |
| 2001 10 06 | 704 | 0.2+ | 0.1− | 2004 04 25 | 703 | (1.7− | 0.3−) | 2006 11 22 | 704 | 0.2+ | 0.6+ |
| 2001 10 06 | 644 | 0.2+ | 0.1+ | 2004 05 21 | 691 | 0.2+ | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.1+ |

**(139845)∗ 2001 RR$_{50}$**

Discovered 2001 Sept. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.00653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23077870 | $\omega$ | 342.35763 | | −0.00701955 | −0.99755364 | |
| $a$ | 2.6323213 | $\Omega$ | 108.00034 | | +0.92605050 | −0.03273047 | |
| $e$ | 0.2593889 | $i$ | 4.19386 | | +0.37733434 | +0.06176934 | |
| $P$ | 4.27 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 07 | 699 | 0.2− | 0.2+ | 2003 01 27 | 704 | 0.6− | 0.4+ | 2003 03 08 | 704 | 0.6+ | 0.3+ | |
| 1999 04 07 | 699 | 0.5− | 0.9+ | 2003 01 27 | 704 | 0.5− | 0.8+ | 2003 03 08 | 704 | 0.4+ | 0.5+ | |
| 1999 04 07 | 699 | 0.4− | 0.5− | 2003 01 30 | 608 | 0.4+ | 0.9− | 2003 03 08 | 704 | 0.1+ | 0.2+ | |
| 1999 04 12 | 704 | (0.1− | 2.2−) | 2003 01 30 | 608 | 0.0 | 0.9− | 2003 03 13 | 644 | 0.1+ | 0.1+ | |
| 1999 04 12 | 704 | 0.9+ | 1.7− | 2003 01 30 | 608 | 0.3+ | 0.9− | 2003 03 13 | 644 | 0.1− | 0.2+ | |
| 1999 04 12 | 704 | 0.1− | 1.1− | 2003 02 01 | 704 | 0.6− | 0.1+ | 2003 03 13 | 644 | 0.1− | 0.2+ | |
| 1999 04 12 | 704 | 1.2− | 0.4− | 2003 02 01 | 704 | 0.3− | 0.2+ | 2003 03 13 | 608 | 0.3+ | 0.8− | |
| 1999 04 12 | 704 | (2.6− | 2.1−) | 2003 02 01 | 704 | 0.5− | 0.1+ | 2003 03 13 | 608 | 0.2+ | 0.9− | |
| 2001 08 12 | 608 | 0.9− | 0.1− | 2003 02 01 | 704 | 0.5− | 0.2+ | 2003 03 13 | 608 | 0.1+ | 0.8− | |
| 2001 08 12 | 608 | 0.3− | 0.4− | 2003 02 01 | 704 | 0.7− | 0.0 | 2003 05 01 | 704 | 0.1− | 0.8+ | |
| 2001 08 12 | 608 | 0.3− | 0.2+ | 2003 02 03 | 644 | 0.2+ | 0.3+ | 2003 05 01 | 704 | 0.0 | 0.2− | |
| 2001 08 25 | 704 | 0.2− | 0.1+ | 2003 02 03 | 644 | 0.1+ | 0.6+ | 2003 05 01 | 704 | 0.1− | 1.1+ | |
| 2001 08 25 | 704 | 0.4− | 1.2+ | 2003 02 03 | 644 | 0.4− | 0.5+ | 2003 05 01 | 704 | 0.0 | 0.7+ | |
| 2001 08 25 | 704 | 0.2− | 0.8+ | 2003 02 04 | 704 | 0.1+ | 0.4+ | 2005 08 06 | 704 | 0.2− | 0.8− | |
| 2001 08 25 | 704 | 0.1+ | 0.8+ | 2003 02 04 | 704 | 0.2− | 0.6+ | 2005 08 06 | 704 | 0.9− | 0.0 | |
| 2001 08 25 | 704 | 0.4+ | 1.1+ | 2003 02 04 | 704 | 0.1+ | 0.7+ | 2005 08 06 | 704 | 0.0 | 0.5+ | |
| 2001 09 11 | 704 | 0.0 | 0.8+ | 2003 02 04 | 704 | 0.1+ | 0.7+ | 2005 08 06 | 704 | 0.4+ | 0.2+ | |
| 2001 09 11 | 704 | 0.3− | 1.1+ | 2003 02 04 | 704 | 0.0 | 0.7+ | 2006 09 01 | 704 | 0.5+ | 0.7+ | |
| 2001 09 11 | 704 | 0.6− | 0.9+ | 2003 02 12 | 608 | 1.2+ | 0.4− | 2006 09 01 | 704 | 0.2+ | 0.5+ | |
| 2001 09 16 | 704 | 0.0 | 0.6+ | 2003 02 12 | 608 | 1.2+ | 0.6− | 2006 09 01 | 704 | (2.2− | 1.5−) | |
| 2001 09 16 | 704 | (0.1+ | 1.6+) | 2003 02 12 | 608 | 0.9+ | 0.8− | 2006 09 01 | 704 | (2.2− | 0.1−) | |
| 2001 09 16 | 704 | 0.4− | 1.4+ | 2003 02 21 | 644 | 0.1+ | 0.7+ | 2006 10 22 | 704 | 1.1− | 0.1− | |
| 2001 09 16 | 704 | 0.2− | 1.3+ | 2003 02 21 | 644 | 0.0 | 0.7+ | 2006 10 22 | 704 | 0.6− | 0.6− | |
| 2001 09 19 | 704 | 0.4+ | 1.0+ | 2003 02 21 | 644 | 0.1− | 0.8+ | 2006 10 22 | 704 | 0.1− | 0.1+ | |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2003 02 21 | 947 | 0.3− | 0.0 | 2006 10 22 | 704 | (1.6− | 0.5+) | |
| 2001 09 19 | 704 | 0.4− | 1.1+ | 2003 02 21 | 947 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.4− | |
| 2003 01 05 | 704 | 0.3+ | 0.6+ | 2003 02 21 | 947 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 1.1− | |
| 2003 01 05 | 704 | 0.3− | 0.1− | 2003 02 24 | 608 | 0.1+ | 1.1+ | 2006 11 20 | 704 | 0.3+ | 0.9− | |
| 2003 01 05 | 704 | (1.9+ | 1.2−) | 2003 02 24 | 608 | 0.2− | 0.9+ | 2006 11 20 | 704 | 0.8− | 0.1+ | |
| 2003 01 05 | 704 | (0.5+ | 2.1+) | 2003 02 24 | 608 | 0.2+ | 0.9+ | 2006 11 20 | 704 | 0.8− | 0.3+ | |
| 2003 01 09 | 704 | 0.6+ | 0.1− | 2003 03 04 | 615 | (3.4+ | 0.3−) | 2006 11 23 | 691 | 0.0 | 0.0 | |
| 2003 01 09 | 704 | 0.6+ | 0.9+ | 2003 03 04 | 615 | (2.7+ | 0.5−) | 2006 11 23 | 691 | 0.0 | 0.1− | |
| 2003 01 09 | 704 | 0.6− | 0.5+ | 2003 03 04 | 615 | (2.8+ | 0.4−) | 2006 11 23 | 691 | 0.0 | 0.1− | |
| 2003 01 09 | 704 | 0.7+ | 1.4+ | 2003 03 06 | 704 | 0.9+ | 0.6+ | 2006 11 27 | 704 | 0.9− | 0.1+ | |
| 2003 01 16 | 699 | 0.1− | 0.4− | 2003 03 06 | 704 | 0.6+ | 0.2+ | 2006 11 27 | 704 | 0.2− | 0.2+ | |
| 2003 01 16 | 699 | 0.0 | 0.4+ | 2003 03 06 | 704 | 0.8+ | 0.1− | 2006 11 27 | 704 | 0.2− | 0.4− | |
| 2003 01 16 | 699 | 0.8− | 0.3− | 2003 03 06 | 704 | 0.8+ | 0.2+ | 2006 11 28 | 691 | 0.8+ | 0.3+ | |
| 2003 01 16 | 699 | 1.0− | 0.4+ | 2003 03 06 | 704 | 0.5+ | 0.0 | 2006 11 28 | 691 | 0.1+ | 0.1− | |
| 2003 01 17 | 644 | 0.4− | 0.1− | 2003 03 06 | 615 | 0.2− | 0.3− | 2006 11 28 | 691 | 0.1+ | 0.2− | |
| 2003 01 17 | 644 | 0.2− | 0.2+ | 2003 03 06 | 615 | 0.4− | 0.4+ | 2006 12 01 | 704 | 0.4− | 0.6+ | |
| 2003 01 17 | 644 | 0.2− | 0.1− | 2003 03 06 | 615 | 0.6− | 0.5+ | 2006 12 01 | 704 | 0.1− | 0.1− | |
| 2003 01 26 | 699 | 0.5+ | 0.1+ | 2003 03 07 | 644 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.5− | |
| 2003 01 26 | 699 | 0.8+ | 0.0 | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.2− | 0.1− | |
| 2003 01 26 | 699 | 0.4+ | 0.1− | 2003 03 07 | 644 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.1− | 0.1− | |
| 2003 01 26 | 699 | 0.5+ | 0.2+ | 2003 03 08 | 704 | 0.5+ | 0.4+ | | | | | |
| 2003 01 27 | 704 | (0.1− | 3.3+) | 2003 03 08 | 704 | 0.4+ | 0.5+ | | | | | |

**(139846)∗ 2001 RC$_{51}$ = 2004 GJ$_{72}$**

Discovered 2001 Sept. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68928)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.52271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21662291 | $\omega$ | 304.41952 | | −0.30583223 | −0.95113649 | |
| $a$ | 2.7457846 | $\Omega$ | 163.23254 | | +0.91471465 | −0.30591797 | |
| $e$ | 0.0699051 | $i$ | 8.47110 | | +0.26412830 | −0.04187563 | |
| $P$ | 4.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | (0.3− | 2.2−) | 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.6+ | 0.3+ | |
| 2001 09 08 | 704 | (1.1− | 1.5+) | 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.6+ | |
| 2001 09 08 | 704 | 1.2− | 1.3+ | 2004 03 16 | 691 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3+ | |
| 2001 09 08 | 704 | 0.3+ | 1.4+ | 2004 04 14 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.1+ | |
| 2001 09 11 | 704 | 0.2− | 0.1+ | 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.2− | |
| 2001 09 11 | 704 | 1.3− | 0.1+ | 2004 04 14 | 691 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.4− | |
| 2001 09 11 | 704 | 1.1− | 0.1− | 2004 04 20 | 703 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.9+ | |
| 2001 09 16 | 704 | (2.2+ | 0.4−) | 2004 04 20 | 703 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.7+ | |
| 2001 09 16 | 704 | 0.8+ | 0.7− | 2004 04 20 | 703 | (1.9+ | 2.0+) | 2006 10 22 | 703 | 0.2− | 0.1+ | |
| 2001 09 16 | 704 | 0.8+ | 0.4+ | 2004 04 20 | 703 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.8+ | |
| 2001 09 19 | 704 | 0.9− | 0.8− | 2005 05 13 | G96 | 0.8+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 1.5+ | |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.5− | 2006 10 28 | 703 | 0.4+ | 0.9+ | |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2005 05 13 | G96 | 0.9+ | 0.3− | 2006 10 28 | 703 | 0.1− | 0.2+ | |
| 2001 09 19 | 704 | 0.4+ | 0.6− | 2005 05 13 | G96 | 0.4+ | 0.1− | 2006 10 28 | 703 | 0.2− | 0.8+ | |
| 2001 09 21 | 704 | 0.9+ | 0.4+ | 2005 06 06 | 691 | 0.3+ | 0.1− | 2006 11 13 | 703 | (1.9− | 1.0+) | |
| 2001 09 21 | 704 | 0.7+ | 1.1+ | 2005 06 06 | 691 | 0.6+ | 0.3− | 2006 11 13 | 703 | 0.3− | 0.0 | |
| 2001 09 21 | 704 | 0.4− | 1.0+ | 2005 06 06 | 691 | 1.3− | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.1+ | |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.7+ | |
| 2003 01 05 | 704 | (0.6− | 2.8+) | 2006 09 27 | G96 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.5− | |
| 2003 01 05 | 704 | (0.5+ | 2.7+) | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.6− | 1.0− | |
| 2003 01 05 | 704 | (0.6+ | 1.9+) | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.9− | 0.5− | |
| 2003 01 05 | 704 | (0.1− | 2.4+) | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.2− | 2.0− | |

**(139847)∗ 2001 RN$_{53}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.02015 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19125353 | $\omega$ | 341.36055 | | +0.64315110 | −0.75610609 | |
| $a$ | 2.9835254 | $\Omega$ | 68.42268 | | +0.71806719 | +0.54060373 | |
| $e$ | 0.1749517 | $i$ | 7.48137 | | +0.26596273 | +0.36885116 | |
| $P$ | 5.15 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.2+ | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.0 | 2004 03 29 | 703 | 0.2− | 0.6− | |
| 2001 08 11 | 608 | 0.5+ | 0.6+ | 2002 12 06 | 704 | 0.4− | 0.3− | 2004 03 29 | 703 | 0.0 | 0.8− | |
| 2001 08 11 | 608 | 0.3+ | 0.3+ | 2002 12 06 | 704 | 0.6− | 0.5+ | 2004 03 29 | 703 | 0.1− | 2.0− | |
| 2001 08 25 | 699 | 0.3− | 0.1+ | 2002 12 09 | 333 | 1.0+ | 0.0 | 2004 03 29 | 703 | 0.4+ | 1.4− | |
| 2001 08 25 | 699 | 0.6− | 1.0+ | 2002 12 09 | 333 | 1.2+ | 0.5+ | 2004 04 20 | 704 | 0.0 | 0.6+ | |
| 2001 08 25 | 699 | 0.3− | 1.1+ | 2002 12 09 | 333 | 0.0 | 0.2− | 2004 04 20 | 704 | 0.7+ | 0.3+ | |
| 2001 08 25 | 699 | 0.6− | 1.2+ | 2002 12 14 | 704 | 0.4− | 0.3− | 2004 04 20 | 704 | 0.4+ | 0.3+ | |
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2002 12 14 | 704 | 1.2− | 0.1− | 2004 04 22 | 704 | 0.2− | 0.3+ | |
| 2001 09 12 | 704 | 0.1− | 0.8+ | 2002 12 14 | 704 | 0.9− | 0.4+ | 2004 04 22 | 704 | 0.4+ | 0.8+ | |
| 2001 09 12 | 704 | 1.0− | 1.7+ | 2002 12 14 | 704 | 0.2− | 0.2− | 2004 04 22 | 704 | 0.1− | 0.7+ | |
| 2001 09 12 | 704 | 0.2+ | 0.7+ | 2002 12 14 | 704 | 0.4+ | 0.4− | 2004 04 23 | 291 | 0.3+ | 0.7+ | |
| 2001 09 16 | 704 | 1.0− | 0.9+ | 2002 12 28 | 699 | 0.2+ | 0.3− | 2004 04 23 | 291 | 0.4+ | 0.6+ | |
| 2001 09 16 | 704 | 1.6− | 1.3+ | 2002 12 28 | 699 | 0.1+ | 0.4+ | 2004 04 23 | 291 | 0.5+ | 0.8+ | |
| 2001 09 16 | 704 | 1.3− | 1.0+ | 2002 12 28 | 699 | 0.5+ | 1.5+ | 2004 04 26 | 691 | 0.2+ | 0.5+ | |
| 2001 09 16 | 704 | 1.3− | 1.1+ | 2002 12 28 | 699 | 0.7+ | 0.0 | 2004 04 26 | 691 | 0.2+ | 0.7+ | |
| 2001 09 16 | 704 | 1.1− | 0.7+ | 2003 01 05 | 704 | 0.3+ | 0.3+ | 2004 04 26 | 691 | 0.3+ | 0.7+ | |
| 2001 09 17 | 699 | 0.7− | 0.8+ | 2003 01 05 | 704 | 0.4+ | 0.3+ | 2006 08 16 | E12 | 0.1− | 0.8+ | |
| 2001 09 17 | 699 | 0.7− | 0.3+ | 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 08 16 | E12 | 0.4− | 0.0 | |
| 2001 09 17 | 699 | 0.1+ | 0.7+ | 2003 01 05 | 704 | 0.2+ | 0.8+ | 2006 08 16 | E12 | 0.0 | 0.3+ | |
| 2001 09 17 | 699 | 0.4+ | 0.4+ | 2003 01 05 | 704 | 0.8+ | 1.0+ | 2006 08 16 | E12 | 0.2− | 0.1+ | |
| 2001 09 25 | 704 | 0.1− | 0.1+ | 2003 01 09 | 704 | 1.2+ | 1.9+ | 2006 08 20 | 644 | 0.3− | 0.3+ | |
| 2001 09 25 | 704 | 0.8− | 0.5+ | 2003 01 09 | 704 | 0.7+ | 0.4+ | 2006 08 20 | 644 | 0.2+ | 0.3+ | |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2003 01 09 | 704 | 1.6− | 1.4+ | 2006 08 20 | 644 | 0.2+ | 0.1+ | |
| 2001 09 25 | 704 | 0.6− | 0.4+ | 2003 01 09 | 704 | 0.1− | 0.9+ | 2006 08 23 | 644 | 0.1− | 0.1+ | |
| 2001 09 25 | 704 | 0.2+ | 0.1+ | 2003 01 09 | 704 | 1.0+ | 0.7+ | 2006 08 23 | 644 | 0.1− | 0.2+ | |
| 2001 09 27 | 644 | 0.4− | 0.2+ | 2003 02 03 | 644 | 0.1− | 0.8+ | 2006 08 23 | 644 | 0.1+ | 0.3+ | |
| 2001 09 27 | 644 | 0.1− | 0.1+ | 2003 02 03 | 644 | 0.1+ | 0.8+ | 2006 08 24 | 644 | 0.2+ | 0.1+ | |
| 2001 09 27 | 644 | 0.2− | 0.5+ | 2003 02 03 | 644 | 0.1− | 0.6+ | 2006 08 24 | 644 | 0.3− | 0.1+ | |
| 2001 10 10 | 644 | 0.3+ | 0.5+ | 2003 02 04 | 704 | 0.2+ | 0.5− | 2006 08 24 | 644 | 0.2− | 0.1+ | |
| 2001 10 10 | 644 | 0.3+ | 0.5+ | 2003 02 04 | 704 | 0.0 | 1.2+ | 2006 08 28 | E12 | 0.2+ | 0.0 | |
| 2001 10 10 | 644 | 0.1+ | 0.6+ | 2003 02 04 | 704 | 0.3− | 0.7+ | 2006 08 28 | E12 | 0.2+ | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.3+ | 1.5+ | 2003 02 04 | 704 | 0.1+ | 0.7− | 2006 08 28 | E12 | 0.1+ | 0.3+ | | |
| 2001 10 11 | 704 | 0.1+ | 0.4− | 2004 03 20 | 704 | 0.1− | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.5+ | | |
| 2001 10 11 | 704 | 0.9− | 0.8+ | 2004 03 20 | 704 | 0.5+ | 1.2+ | 2006 09 14 | 644 | 0.0 | 0.5+ | | |
| 2001 10 11 | 704 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 644 | 0.3+ | 0.6+ | | |
| 2001 10 11 | 704 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.5+ | 1.3+ | 2006 09 21 | F84 | 0.4+ | 0.0 | | |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.5− | 0.8+ | 2006 09 21 | F84 | 0.3+ | 0.2− | | |
| 2001 10 20 | 704 | 1.3+ | 0.5+ | 2004 03 22 | 704 | 0.8+ | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.5+ | | |
| 2001 10 20 | 704 | 0.3− | 0.7+ | 2004 03 22 | 704 | 0.3+ | 1.6+ | 2006 09 26 | 703 | 1.0− | 0.7+ | | |
| 2001 10 20 | 704 | 0.3+ | 0.6+ | 2004 03 22 | 704 | 1.4+ | 1.5+ | 2006 09 26 | 703 | 0.4− | 0.8+ | | |
| 2002 11 12 | 704 | 0.7+ | 2.0+ | 2004 03 26 | 691 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.5+ | | |
| 2002 11 12 | 704 | 0.5− | 1.4+ | 2004 03 26 | 691 | 0.0 | 0.4+ | | | | | | |
| 2002 11 12 | 704 | 0.5− | 1.9+ | 2004 03 26 | 691 | 0.1+ | 0.7+ | | | | | | |

**(139848)∗ 2001 RH$_{54}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.87031 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21579426 | $\omega$ | 309.79766 | | +0.88401580 | +0.46563296 | |
| $a$ | 2.7528093 | $\Omega$ | 22.54336 | | −0.38923488 | +0.78209012 | |
| $e$ | 0.0552158 | $i$ | 6.17753 | | −0.25886730 | +0.41415092 | |
| $P$ | 4.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 18 | 691 | 0.1− | 0.1+ | 2001 10 06 | 644 | 1.2− | 1.1+ | 2004 03 27 | 704 | 0.8+ | 0.1− | | |
| 1992 10 18 | 691 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.2− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 12 | 333 | 0.9+ | 0.5− | 2001 10 11 | 644 | 0.7− | 0.6+ | 2004 03 27 | 704 | 0.5+ | 0.8− | | |
| 2001 09 12 | 333 | 0.6+ | 0.2− | 2001 10 11 | 644 | 0.5− | 0.5+ | 2004 03 27 | 704 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2001 10 13 | 704 | (0.3− | 1.7+) | 2004 04 16 | 704 | 0.7+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.1+ | 1.0+ | 2001 10 13 | 704 | 0.3− | 1.3+ | 2004 04 16 | 704 | 0.3+ | 0.2+ | | |
| 2001 09 12 | 695 | 0.0 | 0.1+ | 2001 10 13 | 704 | 0.2+ | 0.9+ | 2004 04 16 | 704 | 0.3− | 0.8+ | | |
| 2001 09 12 | 704 | 0.1− | 0.9+ | 2001 10 13 | 704 | 0.7+ | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.2− | | |
| 2001 09 12 | 704 | 0.3− | 0.7+ | 2001 10 13 | 704 | 0.9− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.4− | | |
| 2001 09 12 | 704 | 0.2+ | 1.0+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.4− | | |
| 2001 09 12 | 695 | 0.0 | 0.3+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 2001 09 16 | 704 | 0.6− | 0.7+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 11 02 | 691 | 0.3+ | 0.2− | | |
| 2001 09 16 | 704 | 0.2+ | 0.5+ | 2001 10 14 | 645 | 0.1+ | 0.1− | 2006 11 02 | 691 | 0.1+ | 0.0 | | |
| 2001 09 16 | 704 | 0.1+ | 1.3+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 11 02 | 691 | 0.0 | 0.1+ | | |
| 2001 09 16 | 704 | 0.4− | 1.2+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 11 14 | 703 | 1.4− | 0.7− | | |
| 2001 09 16 | 704 | 0.6− | 0.7+ | 2001 10 17 | 644 | 0.4− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.8− | | |
| 2001 09 18 | 699 | 0.1+ | 0.1+ | 2001 10 17 | 644 | 0.2− | 0.6+ | 2006 11 14 | 703 | 0.2− | 0.8+ | | |
| 2001 09 18 | 699 | (1.9− | 1.3+) | 2001 10 17 | 644 | 0.2− | 0.3+ | 2006 11 14 | 703 | 1.0+ | 1.4− | | |
| 2001 09 18 | 699 | 0.1+ | 1.1− | 2001 10 20 | 704 | 0.3− | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.0 | | |
| 2001 09 18 | 699 | 0.2− | 0.5+ | 2001 10 20 | 704 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.4− | 0.0 | 2001 10 20 | 704 | 0.6− | 0.1+ | 2006 11 15 | 691 | 0.6− | 0.2+ | | |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2001 10 20 | 704 | 0.4− | 0.8+ | 2006 11 15 | 704 | 1.5+ | 0.0 | | |
| 2001 09 19 | 704 | 0.2− | 0.6− | 2001 10 24 | 704 | (1.5+ | 1.0+) | 2006 11 15 | 704 | 0.5+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.6− | 0.6− | 2001 10 24 | 704 | 0.9− | 0.7+ | 2006 11 15 | 704 | 0.5− | 0.2− | | |
| 2001 09 19 | 704 | 0.6− | 0.2− | 2001 10 24 | 704 | (1.5+ | 2.0+) | 2006 11 16 | 704 | 1.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2001 10 24 | 704 | 0.4+ | 0.7+ | 2006 11 16 | 704 | 0.0 | 0.4− | | |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2001 11 20 | 291 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.5− | 0.4+ | | |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2001 11 20 | 291 | 0.2− | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.7+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2001 11 20 | 291 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.3+ | 1.3+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.5+ | | |
| 2001 09 26 | 704 | 0.5+ | 1.2− | 2004 03 16 | 691 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.8+ | | |
| 2001 09 26 | 704 | 0.3− | 0.1+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.6+ | | |
| 2001 09 26 | 704 | 0.0 | 0.6− | 2004 03 25 | 699 | 0.2+ | 1.3+ | 2006 11 22 | 704 | 0.3− | 0.5+ | | |
| 2001 09 26 | 704 | 0.1− | 0.8− | 2004 03 25 | 699 | (1.1+ | 3.0+) | 2006 11 22 | 704 | 0.5− | 0.2− | | |
| 2001 09 26 | 704 | 0.4+ | 1.3− | 2004 03 25 | 699 | 1.1− | 0.7+ | 2006 11 22 | 704 | 0.6− | 0.1− | | |
| 2001 10 06 | 644 | 1.1− | 1.0+ | 2004 03 25 | 699 | 0.7− | 1.2+ | 2006 11 22 | 704 | 0.5− | 1.8− | | |
| 2001 10 06 | 644 | 0.7− | 1.1+ | 2004 03 27 | 704 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.4+ | | |

**(139849)∗ 2001 RM$_{54}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.07303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19159295 | $\omega$ | 194.64116 | | +0.99058164 | −0.13518091 | |
| $a$ | 2.9800008 | $\Omega$ | 173.01793 | | +0.13656799 | +0.96398545 | |
| $e$ | 0.1178545 | $i$ | 10.31911 | | +0.00985941 | +0.22903747 | |
| $P$ | 5.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 691 | 0.3− | 0.1− | 2001 09 26 | 704 | 0.7− | 1.2+ | 2006 08 28 | 691 | 0.2− | 0.1+ | | |
| 1996 10 11 | 691 | 0.4− | 0.3− | 2001 10 06 | 644 | 0.6− | 1.1+ | 2006 09 12 | 703 | 0.2+ | 1.4+ | | |
| 1996 10 11 | 691 | 0.7− | 0.0 | 2001 10 06 | 644 | 0.3− | 0.4+ | 2006 09 12 | 703 | 1.0+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.9+ | 0.9+ | 2001 10 06 | 644 | 0.6− | 0.5+ | 2006 09 12 | 703 | 1.4+ | 0.9+ | | |
| 2001 09 12 | 695 | 0.2+ | 0.7+ | 2001 10 16 | 644 | 0.8+ | 0.6− | 2006 09 12 | 703 | 0.3+ | 1.0+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.8+ | 2001 10 16 | 644 | 0.8+ | 1.0− | 2006 09 17 | 704 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | (0.6+ | 2.2+) | 2001 10 16 | 644 | 0.6+ | 1.0− | 2006 09 17 | 704 | 0.6+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.7+ | 1.0+ | 2004 03 17 | 691 | 0.2+ | 1.1+ | 2006 09 17 | 704 | 0.3− | 0.0 | | |
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 704 | 0.2+ | 0.4+ | | |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2004 03 17 | 691 | 0.3+ | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.4+ | | |
| 2001 09 12 | 704 | 0.4− | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.6+ | | |
| 2001 09 12 | 704 | 0.4+ | 1.0+ | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 09 17 | 704 | (1.9+ | 0.8−) | | |
| 2001 09 12 | 695 | 0.6+ | 0.8+ | 2004 03 18 | 704 | 1.0+ | 0.0 | 2006 09 17 | 704 | 0.9+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.7+ | 0.1− | 2004 03 18 | 704 | (1.7+ | 0.1+) | 2006 09 17 | 704 | 0.6+ | 0.2− | | |
| 2001 09 16 | 704 | 0.5− | 0.5− | 2004 03 29 | 691 | 0.2+ | 0.9+ | 2006 09 17 | 704 | 0.2+ | 1.1− | | |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2004 03 29 | 691 | 0.0 | 1.0+ | 2006 09 19 | 699 | 0.1− | 0.4+ | | |
| 2001 09 18 | 699 | 0.8+ | 0.4− | 2004 03 29 | 691 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.6− | 0.3− | | |
| 2001 09 18 | 699 | 0.7− | 0.0 | 2005 06 11 | 691 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.6− | | |
| 2001 09 18 | 699 | 0.8+ | 1.0+ | 2005 06 11 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1− | | |
| 2001 09 18 | 699 | (0.1− | 1.6+) | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.6− | | |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2005 06 15 | 691 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.1− | 0.4+ | | |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2005 06 15 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 1.0− | 0.6− | | |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2005 06 15 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.4− | 0.1+ | | |
| 2001 09 19 | 704 | 0.7+ | 0.1+ | 2005 06 27 | 691 | 0.2− | 0.0 | 2006 09 20 | 704 | (2.5− | 1.0+) | | |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2005 06 27 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | (1.7− | 0.5+) | | |
| 2001 09 21 | 704 | 0.5+ | 0.8+ | 2005 06 27 | 691 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2005 07 01 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2005 07 01 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.2− | 0.3− | | |
| 2001 09 21 | 704 | 0.5+ | 0.8+ | 2005 07 01 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 2001 09 23 | 704 | 0.1+ | 0.6+ | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.2− | | |
| 2001 09 23 | 704 | (1.3− | 2.7+) | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.5− | 0.2− | | |
| 2001 09 23 | 704 | 0.8+ | 0.5+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.3− | | |
| 2001 09 23 | 704 | 0.9− | 0.7+ | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.6+ | | |
| 2001 09 23 | 704 | 0.2+ | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.6− | 1.2− | | |
| 2001 09 23 | 704 | 0.0 | 1.3+ | 2006 08 23 | 644 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.4− | | |
| 2001 09 23 | 704 | 0.2+ | 0.8+ | 2006 08 27 | 699 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.3− | | |
| 2001 09 23 | 704 | 0.9+ | 0.3− | 2006 08 27 | 699 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1− | | |
| 2001 09 23 | 704 | 0.6+ | 0.4+ | 2006 08 27 | 699 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2001 09 24 | 644 | 0.3+ | 0.2+ | 2006 08 27 | 699 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.5− | | |
| 2001 09 24 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.5− | 0.7− | | |
| 2001 09 24 | 644 | 0.7+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.5− | 0.4− | | |
| 2001 09 26 | 704 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.1− | 2006 11 25 | G96 | 0.2− | 0.2− | | |
| 2001 09 26 | 704 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.0 | | |
| 2001 09 26 | 704 | 0.6− | 1.2+ | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.3− | | |
| 2001 09 26 | 704 | 0.4− | 0.8+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.3− | | |

**(139850)∗ 2001 RX$_{55}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.79301 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19761760 | $\omega$ | 327.73174 | | +0.60522121 | −0.79405476 | |
| $a$ | 2.9191223 | $\Omega$ | 84.96201 | | +0.74187135 | +0.53690031 | |
| $e$ | 0.0597778 | $i$ | 3.24747 | | +0.28867663 | +0.28498262 | |
| $P$ | 4.99 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | (1.3− | 1.5+) | 2004 02 19 | 704 | (0.8+ | 1.7+) | 2004 04 25 | 699 | 0.2− | 0.6+ |
| 2001 08 25 | 704 | 1.4− | 1.4+ | 2004 02 19 | 704 | 0.2+ | 0.7+ | 2004 04 25 | 699 | 1.2− | 0.4− |
| 2001 08 25 | 704 | (1.9− | 1.1+) | 2004 02 19 | 704 | 0.1+ | 0.6+ | 2004 04 25 | 699 | (1.1− | 2.3+) |
| 2001 08 28 | 644 | 0.2+ | 0.2− | 2004 02 23 | 704 | 0.1+ | 0.3− | 2006 08 17 | 644 | 0.0 | 0.2− |
| 2001 08 28 | 644 | 0.6+ | 0.5− | 2004 02 23 | 704 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.4+ |
| 2001 08 28 | 644 | 0.3+ | 0.9− | 2004 02 23 | 704 | 0.5+ | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 1.3− | 0.5+ | 2004 02 23 | 704 | 0.2+ | 0.3− | 2006 08 23 | 704 | 0.2− | 0.5+ |
| 2001 09 12 | 704 | 0.6− | 0.6+ | 2004 02 23 | 704 | 0.8+ | 0.1− | 2006 08 23 | 704 | 0.2− | 0.0 |
| 2001 09 12 | 704 | 0.7− | 0.2+ | 2004 02 23 | 704 | 0.2+ | 0.3− | 2006 08 23 | 704 | 0.8− | 0.2+ |
| 2001 09 12 | 704 | 0.4− | 0.9+ | 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.7− | 0.2+ | 2004 02 23 | 704 | 0.4− | 0.7− | 2006 08 24 | 644 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.0 | 2006 08 24 | 644 | 0.3+ | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.4− | 0.7+ | 2006 09 12 | 704 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | 0.5+ | 0.4+ | 2004 03 12 | 644 | 0.3+ | 0.7+ | 2006 09 12 | 704 | 0.6+ | 0.4+ |
| 2001 09 16 | 704 | 0.4+ | 1.0+ | 2004 03 12 | 644 | 0.3+ | 0.6+ | 2006 09 12 | 704 | 0.2+ | 0.5+ |
| 2001 09 16 | 704 | (0.7+ | 1.6+) | 2004 03 12 | 644 | 0.5+ | 0.3+ | 2006 09 12 | 704 | 0.3+ | 0.0 |
| 2001 09 19 | 699 | 0.9− | 0.5+ | 2004 03 16 | 704 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.6− | 0.7+ |
| 2001 09 19 | 699 | 1.2+ | 0.6+ | 2004 03 16 | 704 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.8− | 0.6+ |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2004 03 16 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.9+ |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2004 03 19 | 704 | 0.6+ | 1.0+ | 2006 09 14 | 703 | 0.1− | 0.3+ |
| 2001 09 19 | 699 | 0.4+ | 0.0 | 2004 03 19 | 704 | 1.0+ | 1.1+ | 2006 09 16 | 704 | 1.3− | 0.2− |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.3+ | 1.4+ | 2006 09 16 | 704 | 0.3+ | 0.1+ |
| 2001 09 19 | 699 | 0.2− | 0.9+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 704 | 1.0− | 0.3− |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2004 03 19 | 704 | (0.1− | 1.6+) | 2006 09 16 | 704 | 0.2− | 0.6− |
| 2001 09 19 | 704 | 0.3− | 0.1− | 2004 03 21 | 699 | 0.3+ | 0.1+ | 2006 09 16 | 704 | (0.1− | 1.6+) |
| 2001 10 17 | 644 | 0.3− | 0.8+ | 2004 03 21 | 699 | 0.3− | 0.5+ | 2006 09 22 | 704 | 0.0 | 0.3+ |
| 2001 10 17 | 644 | 0.3− | 0.6+ | 2004 03 21 | 699 | 0.4+ | 1.0+ | 2006 09 22 | 704 | 0.0 | 0.6+ |
| 2001 10 17 | 644 | 0.3− | 0.5+ | 2004 03 21 | 699 | 0.3− | 0.7+ | 2006 09 22 | 704 | 0.2+ | 0.8+ |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.5− | 0.1+ | 2006 09 22 | 704 | 0.5+ | 0.2− |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2004 03 22 | 704 | 1.2+ | 0.7+ | 2006 09 22 | 704 | 0.3− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.8+ |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2004 03 22 | 704 | (1.7+ | 0.9−) | 2006 09 25 | 699 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.9− | 2004 03 22 | 704 | 0.7+ | 0.4+ | 2006 09 25 | 699 | 1.5+ | 0.0 |
| 2002 12 05 | 704 | 0.6− | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 699 | 0.4− | 0.2− |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2006 09 26 | 704 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2004 03 22 | 704 | 0.1+ | 1.1+ | 2006 09 26 | 704 | 0.7+ | 0.3+ |
| 2002 12 05 | 704 | 0.7− | 0.0 | 2004 03 22 | 704 | 0.6+ | 0.9+ | 2006 09 26 | 704 | 0.9− | 0.3+ |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.3+ | 1.1+ | 2006 09 30 | 703 | 0.4+ | 0.2+ |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.7+ | 0.1− |
| 2002 12 31 | 704 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2002 12 31 | 704 | 0.1+ | 0.7+ | 2004 03 23 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.5− | 1.4+ |
| 2002 12 31 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.8+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2003 01 04 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | 0.5− | 0.9+ | 2006 11 25 | G96 | 0.0 | 0.4+ |
| 2003 01 04 | 704 | 0.5+ | 0.9+ | 2004 03 24 | 699 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.7+ | 0.2+ | 2004 03 24 | 699 | 0.5+ | 0.5+ | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2003 01 04 | 704 | 0.1− | 0.0 | 2004 03 24 | 699 | 0.3− | 1.1+ | 2006 11 27 | 703 | 0.3− | 0.1+ |
| 2003 01 08 | 704 | 0.2− | 0.2− | 2004 03 24 | 699 | 0.4+ | 0.3+ | 2006 11 27 | 703 | 2.6− | 2.7+ |
| 2003 01 08 | 704 | 0.2+ | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.7+ | 2006 11 27 | 703 | 1.4− | 0.5− |
| 2003 01 08 | 704 | 0.2− | 0.4+ | 2004 04 19 | 704 | (1.7+ | 0.3−) | 2006 11 27 | 703 | 1.0+ | 1.0+ |
| 2003 01 08 | 704 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.4+ | 0.0 | | | | |
| 2003 01 08 | 704 | 0.4+ | 0.3+ | 2004 04 25 | 699 | 0.5− | 0.3+ | | | | |

**(139851)∗ 2001 RC$_{57}$ = 2003 BC$_{59}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 42998)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.54752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21416528 | $\omega$ | 276.62768 | | +0.40470202 | −0.91373313 | |
| $a$ | 2.7667505 | $\Omega$ | 149.41973 | | +0.86457414 | +0.36944680 | |
| $e$ | 0.1631414 | $i$ | 4.07663 | | +0.29787217 | +0.16911781 | |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2003 01 27 | 704 | 1.0− | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2003 01 27 | 644 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 0.9− | 1.3− |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2003 01 27 | 644 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2003 01 27 | 644 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.7− |
| 2001 09 12 | 704 | 0.4− | 1.0+ | 2003 01 31 | 704 | 0.7− | 1.2+ | 2006 10 16 | 703 | 0.8+ | 0.6+ |
| 2001 09 16 | 704 | 0.0 | 0.6+ | 2003 01 31 | 704 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2003 01 31 | 704 | 0.1− | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.4+ | 0.6+ | 2003 01 31 | 704 | 1.1+ | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.7+ | 0.1+ | 2003 02 03 | 608 | 0.8+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.4− | 0.2− | 2003 02 03 | 608 | 0.4+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.9+ | 2003 02 03 | 608 | 0.6+ | 0.3+ | 2006 11 08 | 644 | 0.4+ | 0.1− |
| 2001 09 19 | 704 | 0.7+ | 1.3+ | 2003 02 08 | 704 | 0.1− | 1.1+ | 2006 11 08 | 644 | 0.5+ | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 1.0+ | 2003 02 08 | 704 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 1.0+ | 2003 02 08 | 704 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2001 09 19 | 704 | (0.2+ | 1.8+) | 2003 02 09 | 608 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.9− | 0.2− | 2003 02 09 | 608 | 0.3− | 0.3+ | 2006 11 14 | 704 | 0.2− | 0.6− |
| 2001 09 20 | 704 | 0.1+ | 0.9+ | 2003 02 09 | 608 | 0.1+ | 0.6+ | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2005 06 14 | 691 | 0.1− | 0.7+ | 2006 11 14 | 704 | (2.1− | 0.7−) |
| 2001 09 21 | 704 | 0.5− | 1.0− | 2005 06 14 | 691 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.5− | 0.6+ |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.6+ | 2006 11 14 | 704 | 0.7− | 0.8− |
| 2001 09 21 | 704 | 0.3+ | 0.9− | 2005 07 06 | 691 | 0.1− | 0.6+ | 2006 11 17 | 704 | (0.3+ | 1.7+) |
| 2001 09 21 | 704 | 0.1− | 1.1− | 2005 07 06 | 691 | 0.5+ | 0.1+ | 2006 11 17 | 704 | (1.9− | 0.4−) |
| 2001 09 21 | 704 | 0.2− | 1.2− | 2005 07 06 | 691 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.6− | 1.3+ |
| 2001 10 17 | 644 | 0.1− | 0.0 | 2005 07 15 | 691 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.1+ | 1.1+ |
| 2001 10 17 | 644 | 0.2+ | 0.4+ | 2005 07 15 | 691 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.6− | 0.8+ |
| 2001 10 17 | 644 | 0.2+ | 0.4+ | 2005 07 15 | 691 | 0.2− | 0.0 | 2006 11 20 | 704 | (1.6− | 4.9+) |
| 2003 01 27 | 704 | 0.2+ | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 20 | 704 | (0.5− | 4.1+) |
| 2003 01 27 | 704 | 1.0+ | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 11 20 | 704 | (1.2+ | 2.9+) |
| 2003 01 27 | 704 | 0.0 | 0.8+ | 2006 10 03 | G96 | 0.4+ | 0.3− | 2006 11 20 | 704 | (0.5+ | 4.5+) |

**(139852)∗ 2001 RD$_{57}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.77518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20152383 | $\omega$ | 258.11618 | | +0.79287491 | −0.60847564 | |
| $a$ | 2.8812776 | $\Omega$ | 139.35055 | | +0.57709493 | +0.73220793 | |
| $e$ | 0.0965438 | $i$ | 2.92735 | | +0.19573150 | +0.30598847 | |
| $P$ | 4.89 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2001 09 26 | 699 | 0.9− | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.6− |
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2001 09 26 | 699 | 0.5− | 1.3+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 10 17 | 644 | 0.2+ | 0.7+ | 2006 09 28 | 704 | (0.2− | 2.0−) |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 10 17 | 644 | 0.3+ | 0.5+ | 2006 09 28 | 704 | 0.6+ | 0.2− |
| 2001 08 12 | 644 | 0.3+ | 0.4+ | 2001 10 17 | 644 | 0.2− | 0.6+ | 2006 09 28 | 691 | 0.4− | 0.1+ |
| 2001 08 12 | 644 | 0.4+ | 0.2+ | 2003 01 08 | 704 | 0.2+ | 0.7+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2001 08 12 | 644 | 0.1− | 0.4+ | 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.6+ |
| 2001 09 12 | 704 | 0.6− | 0.6+ | 2003 01 08 | 704 | 0.3+ | 1.2+ | 2006 09 28 | 704 | 0.5+ | 0.3− |
| 2001 09 12 | 704 | (2.0− | 0.6−) | 2003 01 08 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 704 | 0.0 | 0.8+ |
| 2001 09 12 | 704 | 0.3+ | 0.1− | 2003 01 08 | 704 | 0.6+ | 0.7+ | 2006 09 30 | 704 | 0.0 | 0.4− |
| 2001 09 12 | 704 | 0.3− | 0.5+ | 2004 03 28 | 691 | 0.3+ | 0.1− | 2006 09 30 | 704 | 1.0+ | 0.4+ |
| 2001 09 12 | 704 | 0.2− | 0.5+ | 2004 03 28 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 704 | 0.5+ | 0.5+ |
| 2001 09 16 | 704 | 0.3− | 0.5+ | 2004 03 28 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.1− | 0.2− | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.0 | 0.7+ | 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.4− | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.4− | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.2− | 0.9− | 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.9+ | 2004 04 20 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.0 | 1.2+ | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.6+ |
| 2001 09 19 | 704 | 0.3− | 0.9+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2001 09 19 | 704 | 0.3− | 0.9+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | (1.2− | 2.0+) |
| 2001 09 20 | 704 | 0.2− | 1.4+ | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.5− |
| 2001 09 20 | 704 | 0.4− | 1.3+ | 2006 09 18 | 699 | 0.2− | 0.7− | 2006 10 22 | 703 | 0.1− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.9− | 0.1− | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.9+ | 0.6+ | 2006 09 18 | 699 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 0.0 | 0.6+ | 2006 09 20 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.5+ | | |
| 2001 09 21 | 704 | 0.3− | 1.1+ | 2006 09 20 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.1− | | |
| 2001 09 21 | 704 | 0.6+ | 0.9+ | 2006 09 27 | 704 | 0.6− | 0.6− | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2001 09 26 | 699 | 0.6− | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2001 09 26 | 699 | 0.9− | 0.8+ | 2006 09 27 | 704 | 0.7− | 1.1+ | 2006 11 23 | G96 | 0.0 | 0.1+ | | |

**(139853)∗ 2001 RQ$_{58}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.76150 | | (2000.0) | | | |
| $n$ | 0.22121400 | $\omega$ | 350.02185 | | +0.79322967 | −0.60622608 |
| $a$ | 2.7076611 | $\Omega$ | 47.45347 | | +0.56389418 | +0.69584220 |
| $e$ | 0.1466175 | $i$ | 4.45623 | | +0.22980437 | +0.38508904 |
| $P$ | 4.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | (3.1− | 0.5+) | 2001 10 11 | 704 | 0.5+ | 0.7+ | 2003 02 07 | 704 | 0.3− | 0.9− | | |
| 1997 11 29 | 704 | (3.0− | 1.5−) | 2001 10 11 | 704 | 0.6+ | 0.6+ | 2003 03 07 | 644 | 0.2+ | 0.4+ | | |
| 1997 11 29 | 704 | 1.8− | 0.1+ | 2001 10 11 | 704 | 0.4+ | 0.8+ | 2003 03 07 | 644 | 1.1+ | 0.4+ | | |
| 1997 11 29 | 704 | (4.1− | 1.1−) | 2001 10 11 | 704 | 0.4− | 0.2− | 2003 03 07 | 644 | 0.2+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2001 10 11 | 704 | 0.5+ | 1.4+ | 2003 03 07 | 644 | 0.3+ | 0.3+ | | |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2001 10 17 | 644 | 0.2+ | 0.7+ | 2003 03 07 | 644 | 0.1+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.5− | 0.1− | 2001 10 17 | 644 | 0.2+ | 0.7+ | 2003 03 07 | 644 | 0.8+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.5− | 0.2− | 2001 10 17 | 644 | 0.3− | 0.4+ | 2004 04 24 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2001 10 18 | 644 | 0.7− | 0.5+ | 2004 04 24 | 691 | 0.1− | 0.6+ | | |
| 2001 09 16 | 704 | 0.0 | 0.2+ | 2001 10 18 | 644 | 0.2− | 0.4+ | 2004 04 24 | 691 | 0.1+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.1− | 0.7+ | 2001 10 18 | 644 | 0.7− | 0.5+ | 2004 05 14 | 691 | 0.4+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.1− | 0.7+ | 2003 01 08 | 608 | (0.1+ | 1.6+) | 2004 05 14 | 691 | 0.1+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2003 01 08 | 608 | 0.3+ | 1.5+ | 2004 05 14 | 691 | 0.2+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.2+ | 0.0 | 2003 01 08 | 608 | 1.1+ | 1.1+ | 2005 07 29 | E12 | 0.1− | 0.2+ | | |
| 2001 09 18 | 699 | 1.3− | 0.6+ | 2003 01 27 | 699 | 1.1+ | 0.8+ | 2005 07 29 | E12 | 0.5+ | 0.6+ | | |
| 2001 09 18 | 699 | 0.6− | 1.0+ | 2003 01 27 | 699 | 0.0 | 0.3+ | 2005 07 29 | E12 | 0.1− | 0.6+ | | |
| 2001 09 18 | 699 | 0.5− | 0.7+ | 2003 01 27 | 699 | 0.1− | 1.0+ | 2005 07 29 | E12 | 0.5− | 0.6+ | | |
| 2001 09 18 | 699 | 0.1+ | 0.0 | 2003 01 27 | 699 | 0.8+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.1− | | |
| 2001 09 19 | 704 | 0.7− | 0.8+ | 2003 01 30 | 699 | 1.0+ | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.2− | | |
| 2001 09 19 | 704 | 0.6− | 1.4+ | 2003 01 30 | 699 | 1.2+ | 0.4− | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | 0.8− | 0.5+ | 2003 01 30 | 699 | 1.3+ | 1.2+ | 2006 11 18 | 704 | 0.8+ | 0.4+ | | |
| 2001 09 19 | 704 | (1.5+ | 2.1−) | 2003 01 30 | 699 | 1.3+ | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.6+ | | |
| 2001 09 19 | 704 | 0.2− | 0.9+ | 2003 02 01 | 704 | 0.1− | 0.8+ | 2006 11 18 | 704 | 0.3+ | 0.3− | | |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2003 02 01 | 704 | 0.1− | 0.8+ | 2006 11 18 | 704 | 0.5− | 0.4+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.7+ | 2003 02 01 | 704 | 0.7− | 0.6+ | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2003 02 01 | 704 | (0.2− | 2.5+) | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2003 02 02 | 644 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.7+ | 0.0 | | |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2003 02 02 | 644 | 0.4− | 0.4+ | 2006 11 20 | 691 | 1.3− | 0.2− | | |
| 2001 09 26 | 699 | 0.9− | 0.6+ | 2003 02 02 | 644 | 0.0 | 0.8+ | 2006 11 21 | 704 | 0.5+ | 0.5− | | |
| 2001 09 26 | 699 | 0.2− | 0.0 | 2003 02 07 | 704 | 0.1− | 1.0+ | 2006 11 21 | 704 | 0.3+ | 0.4− | | |
| 2001 09 26 | 699 | 0.5− | 0.4+ | 2003 02 07 | 704 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.1+ | | |
| 2001 09 26 | 699 | 0.7+ | 0.3− | 2003 02 07 | 704 | 0.1− | 1.2+ | 2006 11 21 | 704 | 0.8+ | 0.4− | | |

**(139854)∗ 2001 RP$_{59}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.56934 | | (2000.0) | | | |
| $n$ | 0.19243782 | $\omega$ | 23.16446 | | −0.28780006 | −0.95383660 |
| $a$ | 2.9712722 | $\Omega$ | 83.64924 | | +0.86459771 | −0.29732278 |
| $e$ | 0.0949279 | $i$ | 4.95426 | | +0.41187610 | −0.04236624 |
| $P$ | 5.12 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.1+ | 0.1− | 2002 12 05 | 704 | 1.0+ | 0.2+ | 2004 04 09 | E12 | 1.1+ | 0.8+ | | |
| 2001 08 26 | 644 | 0.3− | 0.3− | 2002 12 05 | 704 | 0.4+ | 0.2− | 2004 04 11 | 644 | 0.3+ | 0.6+ | | |
| 2001 08 26 | 644 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.1− | 0.1+ | 2004 04 11 | 644 | 0.4+ | 0.7+ | | |
| 2001 09 11 | 699 | 0.5− | 1.1+ | 2002 12 11 | 704 | 0.2− | 0.0 | 2004 04 11 | 644 | 0.3+ | 0.8+ | | |
| 2001 09 11 | 699 | (2.0− | 0.9+) | 2002 12 11 | 704 | 0.1+ | 0.5+ | 2004 04 17 | 699 | 0.2− | 0.1+ | | |
| 2001 09 11 | 699 | 0.3− | 0.5+ | 2002 12 11 | 704 | 0.3− | 0.2+ | 2004 04 17 | 699 | 0.3− | 0.1+ | | |
| 2001 09 11 | 699 | 0.7− | 0.7+ | 2002 12 14 | 704 | 0.2+ | 0.6− | 2004 04 17 | 699 | (0.1− | 1.7+) | | |
| 2001 09 12 | 704 | 0.5− | 0.7+ | 2002 12 14 | 704 | 0.6− | 0.0 | 2004 04 17 | 699 | 0.6+ | 0.6+ | | |
| 2001 09 12 | 704 | (0.1+ | 1.9+) | 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.4+ | | |
| 2001 09 12 | 704 | 0.4− | 0.1+ | 2002 12 14 | 704 | 0.0 | 0.2− | 2006 08 22 | 644 | 0.1+ | 0.3− | | |
| 2001 09 12 | 704 | 0.1− | 0.8+ | 2002 12 31 | 704 | 0.7− | 0.5− | 2006 08 22 | 644 | 0.1− | 0.1− | | |
| 2001 09 12 | 704 | 0.0 | 1.1+ | 2002 12 31 | 704 | 0.4− | 0.0 | 2006 08 23 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.2− | 0.0 | | |
| 2001 09 16 | 704 | 0.1+ | 0.1+ | 2002 12 31 | 704 | 0.3− | 0.2− | 2006 08 23 | 644 | 0.5+ | 0.0 | | |
| 2001 09 16 | 704 | 0.0 | 0.4+ | 2003 01 04 | 704 | 0.2+ | 1.4+ | 2006 09 14 | 703 | 0.6− | 0.8+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.2− | 2003 01 04 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.9− | 0.7− | | |
| 2001 09 18 | 699 | 0.8− | 0.1− | 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.4+ | | |
| 2001 09 18 | 699 | 0.8− | 0.5+ | 2003 01 04 | 704 | 0.8+ | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.0 | | |
| 2001 09 18 | 699 | 0.2+ | 0.3− | 2003 01 08 | 704 | 0.5− | 0.2+ | 2006 09 16 | 704 | 0.1+ | 1.1− | | |
| 2001 09 18 | 699 | 0.1− | 0.2− | 2003 01 08 | 704 | 0.5− | 0.3− | 2006 09 16 | 704 | 0.1+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.5− | 0.1− | 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 09 16 | 704 | 0.9+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.8− | 2003 01 08 | 704 | 0.7+ | 0.9+ | 2006 09 16 | 704 | 0.4+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.6+ | 0.4− | 2004 03 22 | 704 | 0.8+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.3+ | | |
| 2001 09 19 | 704 | 0.0 | 0.6− | 2004 03 22 | 704 | 1.1+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.2+ | | |
| 2001 09 21 | 704 | 1.1− | 1.3+ | 2004 03 22 | 704 | 0.0 | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.2− | | |
| 2001 09 21 | 704 | 1.5− | 1.1+ | 2004 03 22 | 704 | 0.6+ | 0.1− | 2006 09 21 | 699 | 0.9+ | 1.2− | | |
| 2001 09 21 | 704 | 0.7+ | 0.3+ | 2004 03 24 | 699 | 0.1− | 0.2− | 2006 09 21 | 699 | (0.1− | 2.1+) | | |
| 2001 09 21 | 704 | 0.3+ | 0.8+ | 2004 03 24 | 699 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.8+ | 0.2+ | | |
| 2001 09 25 | 644 | 0.0 | 1.2+ | 2004 03 24 | 699 | 0.4+ | 0.6+ | 2006 09 21 | 699 | 1.5− | 0.4− | | |
| 2001 09 25 | 644 | 0.1+ | 1.0+ | 2004 03 24 | 699 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.0 | | |
| 2001 09 25 | 644 | 0.0 | 1.4+ | 2004 04 08 | E12 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.6− | | |
| 2001 10 10 | 644 | 0.5− | 0.3+ | 2004 04 08 | E12 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.2+ | | |
| 2001 10 10 | 644 | 0.0 | 0.0 | 2004 04 08 | E12 | 0.0 | 1.5+ | 2006 09 26 | 703 | 0.4− | 0.5+ | | |
| 2001 10 10 | 644 | 0.3− | 0.4− | 2004 04 08 | E12 | 0.9− | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.0 | | |
| 2002 12 05 | 704 | 0.4+ | 0.4− | 2004 04 09 | E12 | 0.5− | 0.9+ | 2006 11 27 | G96 | 0.1+ | 0.4− | | |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 04 09 | E12 | 0.2− | 0.6+ | 2006 11 27 | G96 | 0.1+ | 0.0 | | |
| 2002 12 05 | 704 | 0.3+ | 0.7+ | 2004 04 09 | E12 | 0.6+ | 0.7+ | 2006 11 27 | G96 | 0.3− | 0.3+ | | |

**(139855)∗ 2001 RK$_{60}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.02348 | | (2000.0) | | | |
| $n$ | 0.21419504 | $\omega$ | 326.50487 | | +0.79439797 | −0.60100856 |
| $a$ | 2.7664943 | $\Omega$ | 70.68277 | | +0.57571795 | +0.69893613 |
| $e$ | 0.0791704 | $i$ | 5.34247 | | +0.19359934 | +0.38765577 |
| $P$ | 4.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.7+ | 1.4+ | 2002 12 31 | 704 | 0.7− | 1.1+ | 2006 10 22 | 691 | 0.3− | 0.3− | | |
| 2001 09 11 | 699 | 0.0 | 1.4+ | 2002 12 31 | 704 | 0.4− | 0.3+ | 2006 11 02 | 703 | 0.2− | 0.5− | | |
| 2001 09 11 | 699 | (0.3− | 1.7+) | 2002 12 31 | 704 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.5+ | 0.0 | | |
| 2001 09 11 | 699 | 0.8+ | 0.7+ | 2003 01 05 | 704 | 0.0 | 0.6+ | 2006 11 02 | 703 | 0.7+ | 0.5− | | |
| 2001 09 12 | 704 | 0.3− | 0.4+ | 2003 01 05 | 704 | 0.9+ | 0.0 | 2006 11 02 | 703 | (0.7− | 1.7−) | | |
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2003 01 05 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2− | | |
| 2001 09 12 | 704 | 1.3− | 0.4− | 2003 01 05 | 704 | 0.9+ | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.1+ | | |
| 2001 09 12 | 704 | 1.0− | 0.2+ | 2003 01 05 | 704 | 0.2+ | 1.3+ | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2003 01 11 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.2+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.2+ | 2003 01 11 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.5+ | 0.0 | | |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2003 01 11 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.1− | | |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2003 01 11 | 704 | 0.3− | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 2001 09 16 | 704 | 0.2+ | 0.5+ | 2003 01 11 | 704 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.5− | | |
| 2001 09 16 | 704 | 0.0 | 0.0 | 2003 01 11 | 704 | 0.0 | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.3− | | |
| 2001 09 18 | 699 | 1.1− | 1.1+ | 2003 01 11 | 704 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.5− | | |
| 2001 09 18 | 699 | 0.3+ | 0.6+ | 2003 01 16 | 644 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.5− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.8− | 0.2− | 2003 01 16 | 644 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2001 09 18 | 699 | 0.7− | 0.2− | 2003 01 16 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2004 03 31 | 691 | 0.5+ | 0.6+ | 2006 11 18 | 704 | 1.1− | 0.7+ |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2004 03 31 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.6+ | 0.5+ | 2004 03 31 | 691 | 0.1− | 0.8+ | 2006 11 18 | 704 | 0.8− | 0.2− |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2004 04 14 | 691 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2001 09 21 | 704 | 0.6− | 1.0+ | 2004 04 14 | 691 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.2+ | 1.3+ | 2004 05 23 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.8+ | 1.3+ |
| 2001 09 21 | 704 | 1.1− | 1.1+ | 2004 05 23 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | (1.6+ | 0.8−) |
| 2001 09 25 | 644 | 0.3− | 0.5− | 2004 05 23 | 691 | 0.2+ | 0.8− | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2001 09 25 | 644 | 0.0 | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2001 09 25 | 644 | 0.5− | 0.8− | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2001 10 19 | 699 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.1− |
| 2001 10 19 | 699 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 27 | 703 | 0.2+ | 0.1− |
| 2001 10 19 | 699 | 0.5− | 1.1+ | 2006 10 22 | 691 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2001 10 19 | 699 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.2+ | 0.4− |

**(139856)∗ 2001 $RM_{60}$ = 1995 $QM_{16}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20112)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 238.04627 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18328808 | $\omega$ | 305.52715 | | −0.33225974 | | −0.93961248 | | |
| $a$ | 3.0693511 | $\Omega$ | 163.28890 | | +0.93109155 | | −0.34064236 | | |
| $e$ | 0.0903466 | $i$ | 16.57906 | | +0.15057224 | | +0.03303280 | | |
| $P$ | 5.38 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.8− | 0.3+ | 2004 02 25 | 704 | 0.7− | 0.7+ | 2006 08 28 | 703 | 0.4+ | 1.0+ |
| 1995 08 28 | 691 | 0.2− | 0.2+ | 2004 02 25 | 704 | 1.1− | 1.1+ | 2006 08 28 | 703 | 1.4+ | 1.1+ |
| 1995 09 02 | 691 | 0.2+ | 1.1− | 2004 03 14 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.6− | 0.6− |
| 1995 09 02 | 691 | 0.1+ | 0.7− | 2004 03 14 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.8+ | 0.4+ |
| 1995 09 02 | 691 | 0.2+ | 0.6− | 2004 03 14 | 691 | 0.2− | 0.0 | 2006 09 18 | 699 | 1.0+ | 0.8− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 1.1+ | 0.9− | 2006 09 18 | 699 | 0.9+ | 1.1+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2004 03 15 | 704 | 0.1+ | 0.8+ | 2006 09 26 | G96 | 0.4− | 0.5+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2004 03 15 | 704 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | 0.4− | 1.3+ | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 1.0+ | 2004 03 21 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.1+ |
| 2001 09 12 | 704 | 0.2+ | 0.7+ | 2004 03 21 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.6+ | 2006 10 16 | G96 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 0.2− | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.5− | 0.7+ |
| 2001 09 16 | 704 | 0.5+ | 1.3+ | 2004 03 23 | 704 | 0.7+ | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2001 09 16 | 704 | (0.6+ | 1.6+) | 2004 03 23 | 704 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.3+ |
| 2001 09 16 | 704 | 0.4+ | 1.4+ | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.7+ |
| 2001 09 16 | 704 | 1.0+ | 0.9+ | 2004 03 28 | 703 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.6− |
| 2001 09 16 | 704 | 0.3− | 0.7+ | 2004 03 28 | 703 | 1.2− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 10 16 | 644 | 0.1− | 0.4+ | 2004 03 28 | 703 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2001 10 16 | 644 | 0.2− | 0.4+ | 2004 03 28 | 703 | 0.4− | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2001 10 16 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 1.3− | 0.3+ | 2006 11 16 | G96 | 0.6− | 0.1+ |
| 2004 02 25 | 704 | (1.9+ | 0.7−) | 2006 08 28 | 703 | 1.4− | 1.2− | | | | |

**(139857)∗ 2001 $RP_{61}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 160.99746 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18920631 | $\omega$ | 175.36074 | | −0.99542260 | | −0.09554367 | | |
| $a$ | 3.0050081 | $\Omega$ | 359.14648 | | +0.08198957 | | −0.84139825 | | |
| $e$ | 0.0546263 | $i$ | 8.84872 | | +0.04910758 | | −0.53190261 | | |
| $P$ | 5.21 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 691 | 0.0 | 0.4+ | 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 02 18 | 608 | 0.6+ | 0.4− |
| 1999 03 21 | 691 | 0.2+ | 0.0 | 2001 09 21 | 704 | 0.3− | 1.0+ | 2004 03 15 | 704 | 0.9+ | 0.9+ |
| 1999 03 21 | 691 | 0.1− | 0.4+ | 2001 09 21 | 704 | 0.1+ | 0.6+ | 2004 03 15 | 704 | 0.1+ | 0.7+ |
| 1999 03 23 | 699 | 0.1+ | 0.8+ | 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 03 15 | 704 | 0.0 | 1.1+ |
| 1999 03 23 | 699 | 1.7+ | 0.2− | 2001 09 21 | 704 | 0.5+ | 1.0+ | 2004 03 15 | 704 | 0.2+ | 0.4+ |
| 1999 03 23 | 699 | 0.7+ | 1.1+ | 2001 10 17 | 644 | 0.0 | 0.8+ | 2004 03 19 | 644 | 0.0 | 0.6+ |
| 2001 08 16 | 704 | (1.0− | 2.5+) | 2001 10 17 | 644 | 0.0 | 0.4+ | 2004 03 19 | 644 | 0.0 | 0.6+ |
| 2001 08 16 | 704 | (0.5− | 1.7+) | 2001 10 17 | 644 | 0.0 | 0.6+ | 2004 03 19 | 644 | 0.2+ | 0.6+ |
| 2001 08 16 | 704 | (0.3− | 2.0+) | 2002 12 05 | 704 | 0.7+ | 0.2− | 2004 03 19 | 704 | (1.7+ | 0.5+) |
| 2001 08 24 | 704 | 0.4+ | 1.2+ | 2002 12 05 | 704 | 0.8+ | 0.4+ | 2004 03 19 | 704 | 1.1+ | 0.6+ |
| 2001 08 24 | 704 | 0.2+ | 1.1+ | 2002 12 05 | 704 | 0.3− | 0.1+ | 2004 03 19 | 704 | (1.6+ | 0.5+) |
| 2001 08 24 | 704 | (1.9+ | 0.5+) | 2002 12 05 | 704 | 0.4− | 0.5− | 2004 03 19 | 704 | 0.4+ | 1.0+ |
| 2001 09 11 | 699 | 1.4− | 0.8+ | 2002 12 12 | 644 | 0.1− | 0.3− | 2004 03 22 | 704 | 0.2+ | 0.3− |
| 2001 09 11 | 699 | 0.3+ | 0.1− | 2002 12 12 | 644 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.2− | 0.3− |
| 2001 09 11 | 699 | (1.9− | 1.2+) | 2002 12 12 | 644 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.2+ | 0.0 |
| 2001 09 11 | 699 | 0.2+ | 0.1+ | 2004 02 11 | 644 | 0.1− | 0.4+ | 2004 03 22 | 704 | 0.0 | 0.8+ |
| 2001 09 12 | 704 | 1.5− | 0.2+ | 2004 02 11 | 644 | 0.1− | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.2+ |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 08 19 | 644 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2004 02 17 | 704 | 0.3+ | 0.7+ | 2006 08 19 | 644 | 0.1− | 0.6+ |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2004 02 17 | 704 | 0.3− | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.5+ |
| 2001 09 16 | 704 | 0.9− | 1.4+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 1.1− | 1.4+ | 2004 02 17 | 704 | 0.2− | 0.5+ | 2006 08 24 | 644 | 0.3− | 0.5+ |
| 2001 09 16 | 704 | 1.1− | 0.1− | 2004 02 17 | 704 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.9+ | 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2001 09 19 | 704 | 0.5− | 0.1− | 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.6− |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2004 02 18 | 608 | 0.9+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2001 09 19 | 704 | 0.8− | 0.3+ | 2004 02 18 | 608 | 0.7+ | 0.4− | | | | |

**(139858)∗ 2001 $RW_{61}$ = 2004 $EJ_{78}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60954)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 255.61695 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20172166 | $\omega$ | 28.79432 | | −0.34164578 | | −0.93848202 | | |
| $a$ | 2.8793936 | $\Omega$ | 81.22047 | | +0.85223201 | | −0.33191948 | | |
| $e$ | 0.0350791 | $i$ | 2.91716 | | +0.39620546 | | −0.09529404 | | |
| $P$ | 4.89 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.9− | 0.8+ | 2004 02 23 | 704 | 1.0+ | 1.0+ | 2004 04 16 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 1.0− | 0.5+ | 2004 03 15 | 703 | 0.8− | 0.8+ | 2004 04 16 | 691 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 1.3− | 0.9+ | 2004 03 15 | 703 | 1.0− | 0.9− | 2004 04 16 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | (1.7− | 0.3+) | 2004 03 15 | 703 | (2.0− | 0.5−) | 2004 04 21 | 691 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.8+ | 0.6+ | 2004 03 15 | 703 | (2.3− | 1.0−) | 2004 04 21 | 691 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 1.0+ | 2004 03 19 | 704 | 0.2− | 0.3+ | 2004 04 21 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | (0.8− | 1.8−) | 2004 03 19 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4+ | 1.3+ |
| 2001 09 19 | 704 | 0.7+ | 1.1− | 2004 03 19 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 0.7+ | 0.7+ |
| 2001 09 19 | 704 | 1.0+ | 1.3− | 2004 03 22 | 704 | 0.2− | 0.8+ | 2006 09 18 | 699 | 1.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.9− | 2004 03 22 | 704 | 0.6+ | 0.4+ | 2006 09 28 | 691 | 0.4− | 0.3+ |
| 2001 09 19 | 704 | 0.4+ | 0.7− | 2004 03 22 | 704 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.4+ | 0.8− | 2004 03 22 | 704 | 0.3+ | 1.1− | 2006 09 28 | 691 | 0.5− | 0.5+ |
| 2002 12 31 | 704 | 0.3− | 0.0 | 2004 03 27 | 621 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2004 03 27 | 621 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.3− | 0.9+ | 2004 03 27 | 621 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.5+ |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2004 03 28 | 704 | 0.3− | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.3+ |
| 2003 01 08 | 704 | 0.6− | 0.6− | 2004 03 28 | 704 | 0.1+ | 1.2+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2003 01 08 | 704 | 0.2− | 1.0− | 2004 03 28 | 704 | 0.5+ | 0.9+ | 2006 10 22 | 644 | 0.5− | 0.6+ |
| 2003 01 08 | 704 | 1.4+ | 0.6+ | 2004 03 28 | 704 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.5− | 0.1− |
| 2003 01 08 | 704 | 0.2− | 0.1+ | 2004 03 29 | 704 | 1.1+ | 0.7+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2003 01 08 | 704 | 0.1+ | 0.0 | 2004 03 29 | 704 | (2.2+ | 0.9+) | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2004 02 23 | 704 | 1.5+ | 0.1− | 2004 03 29 | 704 | 0.3+ | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2004 02 23 | 704 | 1.3+ | 0.8+ | 2004 03 29 | 704 | (4.4+ | 0.2+) | 2006 11 23 | G96 | 0.3− | 0.2− |

**(139859)∗ 2001 RR$_{64}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 236.79543 | | | (2000.0) | | |
| $n$ | 0.18343578 | $\omega$ | 151.70945 | | −0.32658962 | −0.93927845 |
| $a$ | 3.0677033 | $\Omega$ | 317.11699 | | +0.83537583 | −0.23472224 |
| $e$ | 0.0499232 | $i$ | 8.90450 | | +0.44213849 | −0.25032271 |
| $P$ | 5.37 | $H$ | 14.5 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.3− | 0.5+ | 2003 01 05 | 704 | 1.2− | 0.3+ | 2004 04 16 | 644 | 0.6+ | 0.6+ |
| 2001 09 10 | 704 | 0.2+ | 0.2+ | 2003 01 05 | 704 | 1.5− | 0.5+ | 2004 04 17 | 704 | 0.2+ | 0.7+ |
| 2001 09 10 | 704 | 0.6− | 0.7− | 2003 01 05 | 704 | 1.2− | 0.5+ | 2004 04 17 | 704 | 0.3− | 0.1− |
| 2001 09 10 | 704 | 0.2+ | 0.6+ | 2003 01 05 | 704 | 0.4− | 0.2+ | 2004 04 17 | 704 | 0.5− | 0.0 |
| 2001 09 17 | 704 | 0.9+ | 0.5+ | 2003 01 09 | 704 | 0.4+ | 0.7+ | 2004 04 17 | 704 | 0.2− | 0.3− |
| 2001 09 17 | 704 | 0.4+ | 0.4+ | 2003 01 09 | 704 | 0.2− | 0.6+ | 2004 04 26 | 699 | 1.9− | 0.3+ |
| 2001 09 17 | 704 | 0.3+ | 0.0 | 2003 01 09 | 704 | 0.5− | 1.2+ | 2004 04 26 | 699 | 0.0 | 0.9− |
| 2001 09 23 | 704 | 0.1+ | 0.1− | 2003 01 09 | 704 | 0.1− | 0.9+ | 2004 04 26 | 699 | 0.1+ | 1.2− |
| 2001 09 23 | 704 | 0.6− | 0.5− | 2003 01 11 | 704 | 0.7+ | 1.4− | 2004 04 26 | 699 | 0.7+ | 0.2− |
| 2001 09 23 | 704 | 1.0+ | 0.5+ | 2003 01 11 | 704 | 0.3− | 0.6− | 2006 08 15 | 644 | 0.0 | 0.5+ |
| 2001 09 25 | 699 | 0.3+ | 0.2+ | 2003 01 11 | 704 | 1.0+ | 0.0 | 2006 08 15 | 644 | 0.2+ | 0.1+ |
| 2001 09 25 | 699 | 1.5− | 0.8+ | 2003 01 11 | 704 | 0.5+ | 0.7− | 2006 08 15 | 644 | 0.2− | 0.1− |
| 2001 09 25 | 699 | 0.1+ | 0.3− | 2004 02 18 | 608 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.5− | 0.2− |
| 2001 09 25 | 699 | 0.7− | 0.8+ | 2004 02 18 | 608 | 0.2+ | 1.1+ | 2006 08 28 | 703 | 0.0 | 0.2− |
| 2001 09 29 | 644 | 0.8− | 0.0 | 2004 02 18 | 608 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 0.0 | 0.6+ |
| 2001 09 29 | 644 | 0.1− | 0.1+ | 2004 02 26 | 704 | 1.2+ | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 2001 09 29 | 644 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.9+ | 0.7+ | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.3+ | 0.4− | 2004 02 26 | 704 | (0.6+ | 2.3+) | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.3− | 0.0 | 2004 03 16 | 703 | 0.3+ | 0.9+ | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.7+ | 0.2+ | 2004 03 16 | 703 | 0.7+ | 0.9+ | 2006 08 30 | 704 | 0.7− | 0.5+ |
| 2001 10 17 | 704 | 0.1+ | 0.5+ | 2004 03 16 | 703 | 0.8+ | 0.3+ | 2006 08 30 | 704 | 0.7+ | 1.2− |
| 2001 10 17 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 703 | 0.2− | 0.1+ | 2006 08 30 | 704 | (0.3− | 2.5+) |
| 2001 10 23 | 699 | 0.1+ | 0.3+ | 2004 03 17 | 704 | 0.7+ | 0.0 | 2006 08 30 | 704 | 1.4+ | 1.6+ |
| 2001 10 23 | 699 | (2.6− | 0.5+) | 2004 03 17 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.7− | 0.4+ |
| 2001 10 23 | 699 | 0.5− | 0.2− | 2004 03 17 | 704 | 0.6+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.1− |
| 2001 10 23 | 699 | 0.4+ | 1.2+ | 2004 03 17 | 704 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 0.1− | 1.3+ |
| 2001 10 26 | 644 | 1.3− | 0.5+ | 2004 03 17 | 704 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.4− | 0.4− |
| 2001 10 26 | 644 | 1.2− | 0.8+ | 2004 03 31 | 704 | 0.4− | 0.5+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2001 10 26 | 644 | 1.0− | 0.7+ | 2004 03 31 | 704 | 0.1+ | 1.6+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2004 03 31 | 704 | 1.6+ | 0.9+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2002 12 11 | 704 | 0.0 | 0.6− | 2004 03 31 | 704 | 0.3− | 1.6+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.7+ | 0.5+ | 2004 03 31 | 704 | 1.2+ | 1.4+ | 2006 10 02 | G96 | 0.5− | 0.4− |
| 2002 12 11 | 704 | 1.2+ | 0.0 | 2004 04 16 | 644 | 0.4+ | 0.5+ | 2006 10 02 | G96 | 0.5− | 0.2− |
| 2002 12 11 | 704 | 0.4+ | 0.2− | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 1.0− | 0.5+ |

**(139860)∗ 2001 RC$_{65}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.15925 | | | (2000.0) | | |
| $n$ | 0.19775793 | $\omega$ | 131.48691 | | +0.95516663 | +0.26844616 |
| $a$ | 2.9177413 | $\Omega$ | 213.50434 | | −0.29014892 | +0.93265578 |
| $e$ | 0.0425699 | $i$ | 13.07462 | | +0.05890942 | +0.24101835 |
| $P$ | 4.98 | $H$ | 14.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.5+ | 0.2+ | 2001 10 14 | 704 | 0.3+ | 0.1− | 2006 09 14 | 644 | 0.1− | 0.1− |
| 1996 10 07 | 691 | 0.0 | 0.1+ | 2001 10 14 | 704 | 0.3+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 |
| 1996 10 07 | 691 | 0.3+ | 0.0 | 2001 10 14 | 704 | 0.3+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2001 08 25 | 704 | 0.5+ | 0.6+ | 2001 10 14 | 704 | 0.7+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.2− |
| 2001 08 25 | 704 | 0.2− | 0.2+ | 2001 10 15 | 704 | 0.0 | 0.7+ | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2001 08 25 | 704 | 0.6+ | 0.1− | 2001 10 15 | 704 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2001 08 25 | 704 | 0.1− | 1.1+ | 2001 10 15 | 704 | 0.9− | 0.1− | 2006 09 19 | 699 | (1.7+ | 1.1−) |
| 2001 09 10 | 704 | 0.1+ | 0.4+ | 2001 10 15 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.4+ | 1.1+ |
| 2001 09 10 | 704 | 0.4+ | 0.8+ | 2001 10 17 | 704 | 1.4− | 1.1+ | 2006 09 19 | 699 | 1.1+ | 1.0− |
| 2001 09 10 | 704 | 0.2+ | 0.1− | 2001 10 17 | 704 | 1.2− | 1.4+ | 2006 09 20 | 644 | 0.0 | 0.0 |
| 2001 09 10 | 704 | 0.5+ | 0.4+ | 2001 10 17 | 704 | (1.9− | 1.0+) | 2006 09 20 | 644 | 0.0 | 0.0 |
| 2001 09 10 | 699 | 0.0 | 0.5+ | 2001 10 17 | 704 | (1.1− | 1.6+) | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2001 09 10 | 704 | 0.4+ | 0.6+ | 2001 10 17 | 704 | 1.5− | 1.4+ | 2006 09 25 | 683 | 1.0+ | 0.6− |
| 2001 09 10 | 699 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.2− | 0.4+ | 2006 09 25 | 683 | 1.2+ | 0.9− |
| 2001 09 10 | 699 | 0.3− | 0.0 | 2001 10 21 | 704 | 0.2− | 0.1− | 2006 09 25 | 683 | 0.5+ | 0.3+ |
| 2001 09 10 | 699 | 1.0− | 0.2+ | 2001 10 21 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 683 | 0.4− | 0.1− |
| 2001 09 17 | 704 | 0.5− | 0.4+ | 2001 10 21 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 683 | 1.0+ | 1.1− |
| 2001 09 17 | 704 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 683 | 0.2+ | 0.6+ |
| 2001 09 17 | 704 | 0.3− | 0.2+ | 2001 11 10 | 704 | 0.3+ | 0.1− | 2006 09 27 | 683 | 0.3+ | 0.4+ |
| 2001 09 20 | 704 | 0.6− | 0.1+ | 2001 11 10 | 704 | 1.1+ | 1.2+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2001 11 10 | 704 | (1.5+ | 1.3+) | 2006 09 27 | 703 | 0.2− | 0.4− |
| 2001 09 20 | 704 | 0.2− | 0.6+ | 2001 11 18 | 691 | 0.2+ | 0.1− | 2006 09 27 | 703 | 0.5− | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.4− | 2001 11 18 | 691 | 0.2+ | 0.0 | 2006 09 27 | 683 | 1.1+ | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2001 11 18 | 691 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.1− | 0.4− |
| 2001 09 21 | 699 | 0.9− | 0.1+ | 2002 12 14 | 704 | 0.2+ | 0.5− | 2006 09 27 | 683 | 0.5− | 1.1+ |
| 2001 09 21 | 699 | 0.8− | 0.2− | 2002 12 14 | 704 | 0.1+ | 0.7+ | 2006 09 28 | 683 | 0.6+ | 1.0− |
| 2001 09 21 | 699 | 0.7− | 0.2+ | 2002 12 14 | 704 | 0.6− | 1.2+ | 2006 09 28 | 683 | 0.1− | 0.4− |
| 2001 09 21 | 699 | 1.1− | 0.4− | 2004 03 17 | 704 | 0.7+ | 0.5+ | 2006 09 28 | 683 | 0.7− | 0.1− |
| 2001 09 22 | 704 | 0.6− | 0.5+ | 2004 03 17 | 704 | 0.7+ | 0.6+ | 2006 09 30 | 683 | 1.3− | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.1− | 2004 03 17 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 683 | 0.3− | 0.9+ |
| 2001 09 22 | 704 | 0.7− | 0.6+ | 2004 03 17 | 704 | (0.5+ | 1.8+) | 2006 09 30 | 683 | (2.3− | 0.8+) |
| 2001 09 22 | 704 | 0.9− | 1.0+ | 2004 03 17 | 704 | 1.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 1.0− | 1.0+ | 2004 03 27 | 703 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2001 09 23 | 704 | 0.5+ | 0.2+ | 2004 03 27 | 703 | 0.3− | 0.7+ | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2001 09 23 | 704 | 0.6+ | 0.5+ | 2004 03 27 | 703 | 0.5− | 1.2+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2001 09 23 | 704 | 0.8− | 0.4+ | 2004 03 27 | 703 | 0.7− | 0.6+ | 2006 10 03 | 704 | 0.4− | 0.1− |
| 2001 09 23 | 704 | 0.6+ | 0.8+ | 2004 04 16 | 704 | 0.1+ | 0.2− | 2006 10 03 | 704 | 0.1− | 0.9+ |
| 2001 09 26 | 704 | 0.0 | 0.0 | 2004 04 16 | 704 | 0.2− | 0.5+ | 2006 10 03 | 704 | 0.1− | 0.3− |
| 2001 09 26 | 704 | 0.5+ | 0.6− | 2004 04 16 | 704 | (0.9+ | 1.6+) | 2006 10 03 | 704 | 0.9+ | 0.9+ |
| 2001 09 26 | 704 | 0.6− | 0.5− | 2004 04 19 | 704 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 09 26 | 704 | 0.0 | 0.4− | 2004 04 19 | 704 | 0.3+ | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.4− | 0.4− | 2004 04 19 | 704 | 0.6+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.1− | 0.6− | 2004 04 19 | 704 | 0.2− | 0.8− | 2006 10 17 | 703 | 0.9− | 0.5− |
| 2001 09 26 | 704 | 0.6− | 0.4− | 2005 06 03 | E12 | 0.7+ | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.3− |
| 2001 09 26 | 704 | 0.2− | 0.7− | 2005 06 03 | E12 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2001 09 26 | 704 | 0.4− | 0.9− | 2005 06 03 | E12 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 2001 09 26 | 704 | 0.3+ | 0.4− | 2005 06 03 | E12 | 0.9− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2001 09 28 | 644 | 0.0 | 0.5− | 2006 08 29 | 699 | 0.4− | 1.0+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2001 09 28 | 644 | 0.0 | 0.6− | 2006 08 29 | 699 | 1.2+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2001 09 28 | 644 | 0.1+ | 0.5− | 2006 08 29 | 699 | (1.8+ | 0.3+) | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2001 10 14 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 699 | (3.4+ | 0.5−) | | | | |

**(139861)∗ 2001 RP$_{65}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.41921 | | | (2000.0) | | |
| $n$ | 0.20412929 | $\omega$ | 146.75082 | | +0.76297836 | −0.64028400 |
| $a$ | 2.8567079 | $\Omega$ | 253.32046 | | +0.57100630 | +0.73201461 |
| $e$ | 0.0782580 | $i$ | 5.32404 | | +0.30301127 | +0.23278963 |
| $P$ | 4.83 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.1+ | 0.4+ | 2001 09 25 | 704 | 0.5+ | 1.4+ | 2006 10 17 | 703 | (0.8− | 1.6−) |
| 2001 08 27 | 644 | 0.1+ | 0.0 | 2001 09 25 | 704 | (1.7+ | 0.4+) | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 08 27 | 644 | 0.1− | 0.3+ | 2001 09 25 | 704 | (0.8+ | 1.6+) | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2001 08 28 | 699 | 0.2− | 0.2+ | 2001 09 25 | 704 | 0.1+ | 0.9+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2001 08 28 | 699 | 0.3− | 1.0+ | 2001 09 25 | 704 | 0.9+ | 1.0+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2001 08 28 | 699 | 0.8− | 0.4+ | 2001 09 25 | 704 | 0.1+ | 1.1+ | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2001 08 28 | 699 | 0.0 | 1.1+ | 2001 10 13 | 699 | 0.9− | 0.2− | 2006 10 19 | 644 | 0.3− | 0.1− |
| 2001 09 10 | 704 | 0.6− | 0.7− | 2001 10 13 | 699 | 0.8− | 0.4− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 09 10 | 704 | 0.3− | 0.6− | 2001 10 13 | 699 | 1.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2001 09 10 | 704 | 0.9− | 0.5+ | 2001 10 13 | 699 | (0.4− | 2.1+) | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 09 10 | 704 | 0.3− | 0.2+ | 2001 10 14 | 704 | 0.7+ | 0.5− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 09 10 | 704 | 0.2− | 0.3+ | 2001 10 14 | 704 | 0.5+ | 0.6− | 2006 10 21 | 691 | 0.2− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.1− | 0.4+ | 2001 10 14 | 704 | 0.3+ | 1.2− | 2006 10 21 | 691 | 0.2− | 0.4− |
| 2001 09 17 | 704 | 0.3+ | 0.1− | 2001 10 14 | 704 | 0.1+ | 1.2− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 09 17 | 704 | 0.2− | 0.3− | 2001 10 14 | 704 | 0.1+ | 1.3− | 2006 10 25 | 106 | 0.4− | 0.1− |
| 2001 09 18 | 699 | 0.4+ | 0.1+ | 2001 10 17 | 704 | 0.4+ | 0.1+ | 2006 10 25 | 106 | 0.7+ | 0.7− |
| 2001 09 18 | 699 | 0.7− | 0.1+ | 2001 10 17 | 704 | 0.0 | 0.4− | 2006 10 25 | 106 | 1.3− | 0.3− |
| 2001 09 18 | 699 | 0.1− | 0.3− | 2001 10 17 | 704 | 0.3+ | 0.7+ | 2006 10 26 | 106 | 0.8− | 0.1− |
| 2001 09 18 | 699 | 0.0 | 0.7+ | 2001 10 17 | 704 | 0.3+ | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | (1.3+ | 2.4+) | 2001 10 17 | 704 | 0.6+ | 0.7+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.8− | 0.1− | 2003 01 27 | 704 | 0.7+ | 1.0+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.9− | 0.1− | 2003 01 27 | 704 | 1.1+ | 0.9+ | 2006 10 29 | 704 | 0.7− | 1.2+ |
| 2001 09 20 | 704 | 0.9− | 0.0 | 2003 01 27 | 704 | 1.0− | 1.4+ | 2006 10 29 | 704 | 0.3+ | 1.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2003 01 27 | 704 | 0.1− | 0.9+ | 2006 10 29 | 704 | 0.3+ | 0.4+ |
| 2001 09 23 | 704 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.8+ | 1.1+ | 2006 11 07 | 644 | 0.5− | 0.2+ |
| 2001 09 23 | 704 | 0.1+ | 0.8− | 2004 04 20 | 704 | (0.9+ | 1.7+) | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.2− |
| 2001 09 23 | 704 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.4− | 0.4− | 2006 11 16 | 704 | 0.7+ | 0.7+ |
| 2001 09 23 | 704 | 0.7+ | 0.4− | 2004 05 10 | 691 | 0.3− | 0.6+ | 2006 11 16 | 704 | 0.6+ | 0.1+ |
| 2001 09 23 | 704 | 0.1− | 0.1+ | 2004 05 10 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2001 09 23 | 704 | 0.3+ | 0.5− | 2004 05 10 | 691 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.2− |
| 2001 09 23 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 691 | (2.2+ | 1.1+) | 2006 11 19 | 704 | 1.0+ | 0.3+ |
| 2001 09 23 | 704 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.8+ | 1.0+ |
| 2001 09 24 | 704 | (0.5+ | 1.5+) | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2001 09 24 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.9+ | 1.2− |
| 2001 09 24 | 704 | 0.3− | 0.7+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5+ | 1.2+ |
| 2001 09 24 | 704 | 1.1− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | (0.5+ | 1.6+) |
| 2001 09 24 | 704 | 0.0 | 1.4+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | (1.5− | 1.7+) |
| 2001 09 25 | 704 | 0.0 | 1.4+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2001 09 25 | 704 | 0.3+ | 1.5+ | 2006 10 17 | 703 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2001 09 25 | 704 | (2.1+ | 0.8+) | 2006 10 17 | 703 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2001 09 25 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 1.5− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3− |

**(139862)∗ 2001 RQ$_{65}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.42778 | | (2000.0) | | | |
| $n$ | 0.20608434 | $\omega$ | 43.32133 | | +0.96303168 | −0.26008060 |
| $a$ | 2.8386122 | $\Omega$ | 331.52927 | | +0.18892882 | +0.83782334 |
| $e$ | 0.1454576 | $i$ | 8.46816 | | +0.19203095 | +0.48001055 |
| $P$ | 4.78 | $H$ | 14.9 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 15 | 691 | 0.0 | 0.0 | 2001 09 25 | 699 | 0.9+ | 0.1+ | 2003 01 09 | 704 | 0.7+ | 0.3− |
| 1994 03 15 | 691 | 0.0 | 0.3− | 2001 09 26 | 704 | 0.6− | 0.4+ | 2003 01 09 | 704 | 0.3− | 0.1+ |
| 1994 03 15 | 691 | 0.5− | 0.4− | 2001 09 26 | 704 | 0.1+ | 0.2+ | 2003 01 09 | 704 | 0.8+ | 0.1+ |
| 2001 09 02 | 644 | 0.8+ | 0.0 | 2001 09 26 | 704 | 0.2+ | 0.0 | 2003 01 30 | 699 | 0.9+ | 0.5+ |
| 2001 09 02 | 644 | 1.0+ | 0.2+ | 2001 09 26 | 704 | 0.1+ | 0.0 | 2003 01 30 | 699 | (0.1+ | 2.2+) |
| 2001 09 02 | 644 | 0.7+ | 0.3+ | 2001 09 26 | 704 | (0.4+ | 1.6+) | 2003 01 30 | 699 | 0.2− | 1.1+ |
| 2001 09 10 | 704 | 0.1− | 0.1+ | 2001 09 28 | 644 | 0.1+ | 0.7− | 2003 01 30 | 699 | 0.3+ | 0.4− |
| 2001 09 10 | 704 | 0.1+ | 0.0 | 2001 09 28 | 644 | 0.0 | 0.9− | 2003 02 01 | 704 | (0.4− | 1.7+) |
| 2001 09 10 | 704 | 0.3− | 0.2− | 2001 09 28 | 644 | 0.2− | 1.0− | 2003 02 01 | 704 | 0.5− | 0.6+ |
| 2001 09 10 | 704 | 0.3− | 0.3− | 2001 10 13 | 699 | 0.3+ | 0.1− | 2003 02 01 | 704 | 0.2+ | 1.3+ |
| 2001 09 10 | 704 | 0.0 | 0.1− | 2001 10 13 | 699 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2001 09 11 | 699 | 0.4+ | 1.2+ | 2001 10 13 | 699 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4− |
| 2001 09 11 | 699 | 0.1+ | 0.4+ | 2001 10 13 | 699 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 09 11 | 699 | (0.8+ | 1.6+) | 2001 10 14 | 704 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2001 09 11 | 699 | 0.7− | 0.7+ | 2001 10 14 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2001 09 17 | 704 | 0.4− | 0.2− | 2001 10 14 | 704 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.2− | 1.2+ |
| 2001 09 17 | 704 | 0.0 | 0.1+ | 2001 10 14 | 704 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2001 09 17 | 704 | 0.2− | 0.0 | 2001 10 14 | 704 | 0.4− | 0.1+ | 2006 10 20 | 704 | 1.0− | 0.3+ |
| 2001 09 18 | 699 | 0.4− | 0.3+ | 2001 10 17 | 704 | 0.7− | 0.4− | 2006 10 20 | 704 | 0.3+ | 0.5+ |
| 2001 09 18 | 699 | 0.6− | 0.9+ | 2001 10 17 | 704 | 0.2− | 0.1− | 2006 10 20 | 704 | (0.3− | 1.6+) |
| 2001 09 18 | 699 | (2.4− | 0.9−) | 2001 10 17 | 704 | 0.3− | 0.7− | 2006 10 22 | 644 | 0.2− | 0.4− |
| 2001 09 18 | 699 | (2.1− | 0.9−) | 2001 10 17 | 704 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 1.1+ | 0.3− | 2001 10 17 | 704 | 0.3− | 0.7− | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 0.4+ | 0.3− | 2001 10 18 | 704 | 0.2− | 0.4− | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.7+ | 0.4− | 2001 10 18 | 704 | 1.4+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.5− |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2001 10 18 | 704 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.4+ | 0.4− |
| 2001 09 20 | 704 | 0.9+ | 0.6− | 2001 10 18 | 704 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.4− | 1.1− |
| 2001 09 22 | 704 | 0.3− | 0.2− | 2001 10 21 | 704 | 1.4+ | 0.4+ | 2006 10 27 | 703 | 0.8− | 0.2− |
| 2001 09 22 | 704 | 0.2− | 0.1− | 2001 10 21 | 704 | 1.2+ | 0.4+ | 2006 10 27 | 703 | 0.2+ | 1.0− |
| 2001 09 22 | 704 | 0.6+ | 0.0 | 2001 10 21 | 704 | 0.8+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2001 09 22 | 704 | 0.6− | 0.5− | 2001 10 21 | 704 | (1.6+ | 0.5−) | 2006 11 15 | 703 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 0.2+ | 0.1− | 2001 10 21 | 704 | 1.0+ | 0.3− | 2006 11 15 | 703 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.7− | 0.3− | 2001 12 11 | 704 | 0.6− | 0.9− | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 0.9− | 0.1− | 2001 12 11 | 704 | 0.4+ | 1.1+ | 2006 11 16 | 704 | (0.8+ | 3.3+) |
| 2001 09 23 | 704 | 1.1− | 0.3− | 2001 12 11 | 704 | 0.7+ | 0.2− | 2006 11 16 | 704 | 2.2+ | 1.4+ |
| 2001 09 23 | 704 | 0.9− | 0.6− | 2001 12 11 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 1.2+ |
| 2001 09 23 | 644 | 0.9− | 0.5+ | 2001 12 11 | 704 | (1.7+ | 2.0+) | 2006 11 16 | 704 | 0.5+ | 1.3− |
| 2001 09 23 | 704 | 0.7− | 0.0 | 2003 01 05 | 704 | 0.6+ | 0.9+ | 2006 11 22 | 703 | 0.1− | 0.4− |
| 2001 09 23 | 644 | 0.9− | 0.4+ | 2003 01 05 | 704 | 0.8+ | 0.1+ | 2006 11 22 | 703 | 0.3− | 0.6− |
| 2001 09 23 | 644 | 0.7− | 0.5+ | 2003 01 05 | 704 | 1.3− | 0.6− | 2006 11 22 | 703 | 0.3− | 0.6− |
| 2001 09 25 | 699 | 0.6− | 0.0 | 2003 01 05 | 704 | 0.3− | 0.6− | 2006 11 22 | 703 | 0.0 | 0.6− |
| 2001 09 25 | 699 | 0.2− | 0.3+ | 2003 01 09 | 704 | 0.2− | 0.7+ | | | | |
| 2001 09 25 | 699 | 0.1− | 0.4− | 2003 01 09 | 704 | 0.2+ | 0.5− | | | | |

**(139863)∗ 2001 RJ$_{66}$ = 2002 XH$_{61}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40493)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.06706 | | (2000.0) | | | |
| $n$ | 0.19096932 | $\omega$ | 300.60094 | | −0.98217788 | +0.16398060 |
| $a$ | 2.9864849 | $\Omega$ | 248.97106 | | −0.12024806 | −0.92382138 |
| $e$ | 0.0776551 | $i$ | 5.64745 | | −0.14445423 | −0.34592546 |
| $P$ | 5.16 | $H$ | 14.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 1.4+ | 0.9+ | 2002 12 31 | 704 | 0.3− | 1.0+ | 2006 08 30 | 704 | 0.6− | 0.3+ |
| 2001 09 10 | 704 | (1.8+ | 0.9+) | 2003 01 28 | 704 | 0.8+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.4+ |
| 2001 09 10 | 704 | (1.8+ | 0.8+) | 2003 01 28 | 704 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.2− | 0.6+ |
| 2001 09 10 | 704 | (2.1+ | 0.0 ) | 2003 01 28 | 704 | 0.3+ | 1.4− | 2006 08 30 | 704 | 0.8− | 0.0 |
| 2001 09 10 | 704 | (2.7+ | 0.2−) | 2004 01 17 | 608 | 0.1− | 1.0+ | 2006 08 31 | 704 | 0.2+ | 0.4+ |
| 2001 09 17 | 704 | 0.6+ | 1.5+ | 2004 01 17 | 608 | 0.3+ | 1.0+ | 2006 08 31 | 704 | 0.1− | 0.5− |
| 2001 09 17 | 704 | 0.2+ | 1.0+ | 2004 01 17 | 608 | 0.2− | 0.6+ | 2006 08 31 | 704 | 0.2− | 0.2+ |
| 2001 09 17 | 704 | 0.1+ | 0.4+ | 2004 01 19 | 608 | 1.3− | 0.3+ | 2006 08 31 | 704 | 1.0+ | 0.4+ |
| 2001 09 26 | 704 | 0.1+ | 0.5+ | 2004 01 19 | 608 | 0.5− | 1.0− | 2006 08 31 | 704 | 0.4− | 1.0+ |
| 2001 09 26 | 704 | 0.6− | 0.5− | 2004 01 19 | 608 | 0.2− | 0.7− | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2001 09 26 | 704 | 0.7− | 0.4+ | 2004 02 18 | 608 | 0.2+ | 0.9+ | 2006 09 13 | 644 | 0.4+ | 0.1− |
| 2001 09 26 | 704 | 0.3− | 0.1− | 2004 02 18 | 608 | 0.1+ | 1.0+ | 2006 09 13 | 644 | 0.4− | 0.1+ |
| 2001 09 26 | 704 | 0.4− | 0.1+ | 2004 02 18 | 608 | (0.3+ | 1.5+) | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 2001 09 27 | 704 | 0.4− | 0.5+ | 2004 02 26 | 704 | (0.8+ | 1.6+) | 2006 09 17 | 703 | 0.1− | 0.6+ |
| 2001 09 27 | 704 | 0.9− | 0.3+ | 2004 02 26 | 704 | (0.6+ | 1.8+) | 2006 09 17 | 703 | 0.5− | 0.7− |
| 2001 09 27 | 704 | 0.1− | 0.6− | 2004 02 26 | 704 | (1.7+ | 2.5+) | 2006 09 17 | 703 | 0.2− | 0.2+ |
| 2001 09 27 | 704 | 1.0− | 0.0 | 2004 02 26 | 704 | (0.8− | 1.9+) | 2006 09 19 | 699 | 0.7− | 0.8+ |
| 2001 09 28 | 644 | 0.1− | 0.1+ | 2004 02 26 | 704 | (0.7− | 2.7+) | 2006 09 19 | 699 | 1.2− | 0.2+ |
| 2001 09 28 | 644 | 0.1− | 0.1+ | 2004 03 16 | 703 | 0.1− | 0.7+ | 2006 09 19 | 699 | 1.1− | 0.5− |
| 2001 09 28 | 644 | 0.3− | 0.0 | 2004 03 16 | 703 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.2− | 0.3− |
| 2001 10 14 | 704 | 0.2− | 0.5− | 2004 03 16 | 703 | 0.7− | 1.0+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | 1.3+ | 1.1− | 2004 03 16 | 703 | (0.4− | 2.1+) | 2006 09 29 | 699 | 0.3− | 0.5+ |
| 2001 10 14 | 704 | 0.4+ | 0.2− | 2004 03 16 | 608 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.3− |
| 2001 10 14 | 704 | 0.2− | 1.3+ | 2004 03 16 | 608 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.9+ | 0.6+ |
| 2001 10 17 | 704 | 0.1+ | 0.2+ | 2004 03 16 | 608 | 0.8+ | 0.3+ | 2006 09 29 | 699 | 0.7+ | 0.3− |
| 2001 10 17 | 704 | 0.7+ | 0.8+ | 2004 03 17 | 704 | 1.4+ | 1.2+ | 2006 09 29 | 699 | 1.1− | 0.2+ |
| 2001 10 17 | 704 | 1.0+ | 0.7− | 2004 03 17 | 704 | 1.1+ | 0.9+ | 2006 09 29 | 699 | 1.4+ | 0.0 |
| 2001 10 17 | 704 | 0.4+ | 0.1+ | 2004 03 17 | 704 | 1.1+ | 1.1+ | 2006 10 11 | 691 | 0.2+ | 0.1− |
| 2001 10 18 | 704 | 0.2− | 0.1− | 2004 03 17 | 704 | 1.4+ | 1.0+ | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2001 10 18 | 704 | 0.7− | 0.1+ | 2004 03 17 | 704 | 1.3+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.3+ |
| 2001 10 18 | 704 | 0.1− | 0.4− | 2004 03 19 | 704 | 0.9+ | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 18 | 704 | 0.7− | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.8+ | 1.1+ | 2006 10 17 | 691 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2004 03 19 | 704 | 0.6+ | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2004 03 20 | 704 | 0.6+ | 1.2+ | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 10 19 | 691 | 0.2+ | 0.4+ |
| 2002 12 10 | 704 | 0.5− | 0.3− | 2004 03 20 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.8+ |
| 2002 12 10 | 704 | 0.3− | 0.8− | 2004 03 20 | 704 | 0.7+ | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.4+ |
| 2002 12 10 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2002 12 10 | 704 | 1.0+ | 0.4− | 2004 03 27 | 703 | 0.3− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2002 12 13 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 703 | 0.0 | 1.4+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2002 12 13 | 704 | 0.7− | 0.6+ | 2004 03 27 | 703 | (1.9− | 0.4+) | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2002 12 13 | 704 | 0.2+ | 1.3+ | 2004 03 27 | 703 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2002 12 13 | 704 | 0.2+ | 1.0+ | 2004 03 31 | 704 | 0.2− | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 0.2− | 1.0− | 2004 03 31 | 704 | 0.5− | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 12 14 | 704 | 0.6− | 0.1− | 2004 03 31 | 704 | (0.3+ | 1.6+) | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 0.1− | 0.6− | 2004 03 31 | 704 | (0.3− | 2.0+) | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 12 14 | 704 | 0.1− | 0.5− | 2004 03 31 | 704 | (0.9− | 1.8+) | 2006 10 23 | 691 | 0.2− | 0.7+ |
| 2002 12 14 | 704 | 0.0 | 0.0 | 2004 04 16 | 704 | 0.2− | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | 0.1− | 0.1− | 2004 04 16 | 704 | (0.9+ | 1.7+) | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 0.1+ | 0.1− | 2004 04 16 | 704 | (0.7+ | 1.6+) | 2006 10 23 | 691 | 0.0 | 0.4+ |
| 2002 12 14 | 704 | 0.4+ | 0.0 | 2004 04 16 | 704 | (0.7− | 2.1+) | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2002 12 14 | 704 | 0.7− | 0.0 | 2004 04 19 | 704 | (0.1+ | 1.6+) | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2002 12 31 | 704 | 0.7− | 0.8− | 2004 04 19 | 704 | (0.2+ | 1.8+) | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.5− | 0.3− | 2004 04 19 | 704 | (0.4+ | 1.7+) | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.3+ | 0.1+ | 2004 04 19 | 704 | 0.3− | 1.4+ | 2006 10 27 | 691 | 0.1+ | 0.4− |
| 2002 12 31 | 704 | 0.3− | 1.1+ | 2004 04 19 | 704 | 0.7+ | 1.4+ | | | | |

**(139864)∗ 2001 RW$_{66}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.28667 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17909449 | $\omega$ | 9.14485 | | +0.90753546 | +0.41066255 | |
| $a$ | 3.1170796 | $\Omega$ | 326.17416 | | −0.39461904 | +0.76216634 | |
| $e$ | 0.1141224 | $i$ | 9.09069 | | −0.14371916 | +0.50045854 | |
| $P$ | 5.50 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 644 | 0.2− | 0.6+ | 2001 10 17 | 704 | 0.0 | 0.8+ | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2001 08 28 | 644 | 0.4− | 0.6+ | 2001 10 19 | 704 | 0.1+ | 0.5+ | 2006 08 14 | 644 | 0.2− | 0.0 |
| 2001 08 28 | 644 | 0.3− | 0.1+ | 2001 10 19 | 704 | 0.6+ | 0.1+ | 2006 08 15 | 644 | 0.2− | 0.1+ |
| 2001 09 10 | 704 | 0.5+ | 0.5+ | 2001 10 19 | 704 | 0.9+ | 0.3+ | 2006 08 15 | 644 | 0.3− | 0.0 |
| 2001 09 10 | 704 | 0.1− | 0.3+ | 2001 10 19 | 704 | 0.7+ | 0.6+ | 2006 08 15 | 644 | 0.5− | 0.2+ |
| 2001 09 10 | 644 | 0.3− | 0.5+ | 2001 10 26 | 644 | 1.1− | 0.9+ | 2006 08 15 | 644 | 0.4− | 0.1+ |
| 2001 09 10 | 704 | 0.2+ | 0.4+ | 2001 10 26 | 644 | 0.4+ | 0.5− | 2006 08 15 | 644 | 0.4− | 0.1+ |
| 2001 09 10 | 644 | 0.0 | 0.3+ | 2001 10 26 | 644 | 1.3− | 0.8+ | 2006 08 15 | 644 | 0.4− | 0.2+ |
| 2001 09 10 | 704 | 0.1− | 1.2+ | 2001 10 26 | 644 | 0.4+ | 0.3− | 2006 08 20 | 644 | 0.1− | 0.0 |
| 2001 09 10 | 704 | 0.8+ | 0.8+ | 2001 10 26 | 644 | 1.1− | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 2001 09 10 | 644 | 0.1− | 0.1− | 2001 10 26 | 644 | 0.6+ | 0.9− | 2006 08 20 | 644 | 0.1− | 0.2− |
| 2001 09 17 | 704 | 0.5− | 0.4+ | 2003 01 05 | 704 | 0.5− | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.1− |
| 2001 09 17 | 704 | 1.1− | 0.5− | 2003 01 05 | 704 | 0.7+ | 0.3+ | 2006 08 20 | 644 | 0.3− | 0.1+ |
| 2001 09 17 | 704 | 0.9− | 0.2− | 2003 01 05 | 704 | 1.2+ | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2001 09 17 | 704 | (1.6− | 0.3−) | 2004 02 16 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.4+ | 0.7− |
| 2001 09 20 | 704 | 0.6− | 0.9+ | 2004 02 16 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 703 | (1.3− | 3.3−) |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.3+ | 0.4+ | 2006 08 28 | 703 | (1.7+ | 3.3−) |
| 2001 09 20 | 704 | 0.7+ | 0.2− | 2004 03 29 | 691 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.9− |
| 2001 09 20 | 704 | 0.8− | 0.2− | 2004 03 29 | 691 | 0.1− | 0.5+ | 2006 08 29 | 704 | 0.7+ | 1.0+ |
| 2001 09 24 | 644 | 0.2+ | 0.3+ | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 704 | 1.5+ | 0.5+ |
| 2001 09 24 | 644 | 0.0 | 0.2+ | 2005 05 12 | 644 | 0.4+ | 0.9+ | 2006 08 29 | 704 | 1.2+ | 0.3− |
| 2001 09 24 | 644 | 0.6+ | 0.4+ | 2005 05 12 | 644 | 0.7+ | 0.9+ | 2006 09 13 | 644 | 0.2− | 0.1− |
| 2001 09 25 | 704 | 0.3− | 0.1+ | 2005 05 12 | 644 | 1.3+ | 1.3+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.7− | 0.1+ | 2006 07 19 | 644 | 0.6− | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | 0.2− | 0.5+ | 2006 07 19 | 644 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.5− |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2006 07 19 | 644 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.7− |
| 2001 09 25 | 704 | 0.2− | 0.8+ | 2006 07 21 | 644 | 0.1+ | 0.1− | 2006 09 14 | 703 | 1.2+ | 0.8− |
| 2001 09 26 | 704 | 0.3+ | 0.2− | 2006 07 21 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.5− |
| 2001 09 26 | 704 | 0.2+ | 0.2+ | 2006 07 21 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.9− | 1.1+ |
| 2001 09 26 | 704 | 0.2− | 0.7− | 2006 07 25 | 644 | 0.4− | 0.1− | 2006 09 17 | 704 | 1.2+ | 1.0+ |
| 2001 09 26 | 704 | 0.2− | 0.6− | 2006 07 25 | 644 | 0.0 | 0.0 | 2006 09 17 | 704 | 1.3+ | 0.4+ |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2006 07 25 | 644 | 0.3− | 0.0 | 2006 09 17 | 704 | 1.2+ | 0.6+ |
| 2001 09 29 | 644 | 0.4+ | 0.0 | 2006 07 25 | 644 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 09 29 | 644 | 0.4+ | 0.0 | 2006 07 25 | 644 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 09 29 | 644 | 0.1+ | 0.2− | 2006 07 25 | 644 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2001 10 15 | 608 | 0.1+ | 0.7− | 2006 08 12 | 644 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 10 15 | 608 | 0.0 | 0.9− | 2006 08 12 | 644 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2001 10 15 | 608 | 0.0 | 0.9− | 2006 08 12 | 644 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 10 17 | 704 | 0.8− | 0.4+ | 2006 08 12 | D35 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.4− | 0.4− |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2006 08 12 | D35 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2001 10 17 | 704 | 0.4− | 0.4+ | 2006 08 12 | D35 | 0.5− | 0.6+ | | | | |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2006 08 14 | 644 | 0.3− | 0.1+ | | | | |

**(139865)∗ 2001 RN$_{67}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.88826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21219069 | $\omega$ | 156.48582 | | +0.64327366 | −0.76285582 | |
| $a$ | 2.7838884 | $\Omega$ | 253.41150 | | +0.69122064 | +0.61525948 | |
| $e$ | 0.1511393 | $i$ | 3.90045 | | +0.32926134 | +0.19876311 | |
| $P$ | 4.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 25 | 691 | 0.0 | 0.1− | 2001 10 15 | 608 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 1992 11 25 | 691 | 0.1+ | 0.2− | 2001 10 15 | 608 | 0.3− | 0.3− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 1992 11 25 | 691 | 0.1− | 0.2− | 2001 10 17 | 704 | 0.3− | 1.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 08 28 | 699 | 1.3+ | 0.8+ | 2001 10 17 | 704 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 08 28 | 699 | (1.9+ | 0.2−) | 2001 10 17 | 704 | 0.1− | 0.6− | 2006 11 11 | 691 | 0.5− | 0.1− |
| 2001 08 28 | 699 | (1.5+ | 0.2+) | 2001 10 17 | 704 | 0.6− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2001 08 28 | 699 | 0.9+ | 0.7+ | 2001 10 17 | 704 | 0.7+ | 0.9− | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2001 09 10 | 704 | 0.2− | 0.2+ | 2001 10 18 | 644 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2001 09 10 | 704 | 0.3+ | 0.1+ | 2001 10 18 | 644 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2001 09 10 | 704 | 1.2− | 1.1− | 2001 10 18 | 644 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2001 09 10 | 704 | 0.1− | 0.4− | 2001 10 20 | 644 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2001 09 17 | 704 | 0.0 | 0.3− | 2001 10 20 | 644 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.2+ | 0.3− |
| 2001 09 17 | 704 | 0.6+ | 0.3+ | 2001 10 20 | 644 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.5− | 0.5− |
| 2001 09 17 | 704 | 0.8+ | 1.2+ | 2001 10 21 | 704 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.5− |
| 2001 09 22 | 704 | 0.4+ | 0.8− | 2001 10 21 | 704 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.2− | 0.6− | 2001 10 21 | 704 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.4− |
| 2001 09 22 | 704 | (2.2− | 0.9+) | 2001 10 21 | 704 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.4+ | 0.8− | 2001 10 21 | 704 | 0.5− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.5+ | 0.6− | 2001 11 17 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 644 | 0.1+ | 0.3+ |
| 2001 09 23 | 704 | 0.4+ | 1.0+ | 2001 11 17 | 644 | 0.4− | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.2+ | 0.8+ | 2001 11 17 | 644 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.6− | 0.1+ | 2003 02 22 | 644 | 1.2+ | 0.5+ | 2006 11 18 | 704 | (1.6− | 2.0+) |
| 2001 09 27 | 704 | 0.0 | 0.1+ | 2003 02 22 | 644 | 0.5+ | 0.7+ | 2006 11 18 | 704 | (1.3− | 1.6+) |
| 2001 09 27 | 704 | 0.5− | 1.3+ | 2003 02 22 | 644 | 1.0+ | 0.7+ | 2006 11 18 | 704 | (1.8− | 1.0+) |
| 2001 09 27 | 704 | 0.5+ | 0.1+ | 2003 03 07 | 704 | 0.3+ | 0.4+ | 2006 11 18 | 704 | (1.7− | 1.4+) |
| 2001 09 27 | 704 | 1.0− | 0.1− | 2003 03 07 | 704 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.8− | 0.7+ |
| 2001 09 27 | 704 | (0.1− | 2.0+) | 2003 03 07 | 704 | 0.7− | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 09 27 | 704 | 0.3− | 1.1+ | 2003 03 07 | 704 | 0.4+ | 1.1+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2001 09 27 | 704 | 1.2+ | 0.1− | 2004 05 16 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 09 27 | 704 | (0.4− | 1.6+) | 2004 05 16 | 691 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.3− |
| 2001 09 27 | 704 | 0.7+ | 0.5+ | 2004 05 16 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2001 09 27 | 704 | 0.7− | 0.6+ | 2004 05 19 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2001 09 27 | 704 | (0.3+ | 1.8+) | 2004 05 19 | 691 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2001 09 27 | 704 | 0.3+ | 0.9+ | 2004 05 19 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.5− |
| 2001 09 27 | 704 | 0.0 | 0.1+ | 2005 06 18 | G96 | 0.8− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 09 27 | 704 | (0.4+ | 2.6+) | 2005 06 18 | G96 | 1.1− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 09 27 | 704 | 0.4+ | 0.4+ | 2005 06 18 | G96 | 0.6− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 10 06 | 644 | 0.2− | 0.1− | 2005 06 18 | G96 | 0.3− | 0.2+ | 2006 11 27 | 704 | 0.1− | 0.0 |
| 2001 10 06 | 644 | 0.7− | 0.7+ | 2005 07 05 | 691 | 0.2+ | 0.0 | 2006 11 27 | 704 | 0.2+ | 0.1− |
| 2001 10 06 | 644 | 0.5+ | 0.0 | 2005 07 05 | 691 | 0.4+ | 0.0 | 2006 11 27 | 704 | 0.1− | 0.4+ |
| 2001 10 06 | 644 | 0.2− | 0.5+ | 2005 07 05 | 691 | 0.3+ | 0.1− | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2001 10 06 | 644 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2001 10 06 | 644 | 0.8− | 0.5+ | 2006 09 18 | 703 | 0.8− | 1.2− | 2006 12 01 | 704 | 1.7+ | 0.7− |
| 2001 10 14 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 1.3− | 2006 12 01 | 691 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 1.0− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.2− | 1.0+ | | |
| 2001 10 14 | 704 | (1.7+ | 0.8−) | 2006 09 28 | G96 | 0.7− | 0.8− | 2006 12 01 | 704 | 1.1− | 0.7+ | | |
| 2001 10 14 | 704 | 0.5− | 0.9+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 12 01 | 704 | 0.5+ | 0.3+ | | |
| 2001 10 15 | 608 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.0 | 0.7+ | | |

**(139866)∗ 2001 RU$_{67}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.44504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21238342 | $\omega$ | 164.70133 | | +0.78947405 | −0.61101306 | |
| $a$ | 2.7822041 | $\Omega$ | 233.10993 | | +0.55521488 | +0.75137850 | |
| $e$ | 0.0688133 | $i$ | 4.17708 | | +0.26166230 | +0.24918544 | |
| $P$ | 4.64 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.4+ | 0.2+ | 2001 09 28 | 644 | 1.0− | 1.1+ | 2004 05 13 | 333 | 0.5+ | 0.5+ | | |
| 2001 08 27 | 699 | 1.3+ | 0.0 | 2001 09 28 | 644 | 0.8− | 1.0+ | 2004 05 27 | 691 | 0.1+ | 0.6+ | | |
| 2001 08 27 | 699 | 0.9+ | 0.1− | 2001 10 06 | 644 | 0.1− | 0.0 | 2004 05 27 | 691 | 0.1− | 0.9+ | | |
| 2001 08 27 | 699 | 1.2− | 0.1+ | 2001 10 06 | 644 | 0.2+ | 0.1− | 2004 05 27 | 691 | 0.5+ | 0.4+ | | |
| 2001 09 10 | 704 | 0.4+ | 0.2− | 2001 10 06 | 644 | 0.5− | 0.4+ | 2005 07 11 | 691 | 0.3+ | 0.0 | | |
| 2001 09 10 | 704 | 0.5+ | 0.4+ | 2001 10 14 | 704 | 0.1− | 0.2+ | 2005 07 11 | 691 | 0.4− | 0.2+ | | |
| 2001 09 10 | 704 | 0.2+ | 0.1+ | 2001 10 14 | 704 | 0.4+ | 0.4+ | 2005 07 11 | 691 | 0.5+ | 0.1− | | |
| 2001 09 10 | 704 | 0.1− | 0.3− | 2001 10 14 | 704 | 0.2+ | 0.4+ | 2005 07 12 | G96 | 0.2+ | 0.5− | | |
| 2001 09 10 | 704 | 0.2+ | 0.2− | 2001 10 14 | 704 | 0.2+ | 0.6+ | 2005 07 12 | G96 | 0.2− | 0.5− | | |
| 2001 09 11 | 699 | (0.5+ | 1.7+) | 2001 10 14 | 704 | 0.2+ | 0.4+ | 2005 07 12 | G96 | 0.1+ | 0.5− | | |
| 2001 09 11 | 699 | 0.1+ | 0.5+ | 2001 10 15 | 608 | 0.1− | 0.0 | 2005 07 12 | G96 | 0.3+ | 0.3− | | |
| 2001 09 11 | 699 | 0.6+ | 0.5+ | 2001 10 15 | 608 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1− | | |
| 2001 09 11 | 699 | 0.9+ | 0.4+ | 2001 10 15 | 608 | 0.4+ | 0.0 | 2006 10 17 | 691 | 0.2− | 0.0 | | |
| 2001 09 17 | 704 | 0.0 | 0.5+ | 2001 10 17 | 704 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1− | | |
| 2001 09 17 | 704 | 0.3− | 1.0+ | 2001 10 17 | 704 | 0.2+ | 0.8− | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2001 09 17 | 704 | 0.5+ | 1.5+ | 2001 10 17 | 704 | 0.7+ | 0.5− | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 2001 09 17 | 704 | 0.1+ | 0.7+ | 2001 10 17 | 704 | 0.7+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− | | |
| 2001 09 18 | 699 | 0.6+ | 0.7+ | 2001 10 17 | 704 | 1.0+ | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.6+ | | |
| 2001 09 18 | 699 | 0.0 | 0.5+ | 2001 10 21 | 704 | 1.1− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.4+ | | |
| 2001 09 18 | 699 | 0.5+ | 0.5− | 2001 10 21 | 704 | 0.7− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.1+ | | |
| 2001 09 18 | 699 | 0.2+ | 0.1− | 2001 10 21 | 704 | 0.9− | 0.1+ | 2006 11 17 | 703 | 0.9+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 21 | 704 | 1.1− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.4− | | |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 10 21 | 704 | 1.1− | 0.2+ | 2006 11 18 | 704 | 1.0+ | 0.4+ | | |
| 2001 09 20 | 704 | 0.3− | 0.5− | 2001 10 23 | 333 | 0.2− | 0.0 | 2006 11 18 | 704 | 1.4+ | 0.3− | | |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2001 10 23 | 333 | 0.5+ | 0.5− | 2006 11 18 | 704 | (1.8+ | 0.4−) | | |
| 2001 09 23 | 704 | 1.1− | 0.7+ | 2001 10 23 | 333 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.4− | | |
| 2001 09 23 | 704 | 1.1− | 0.5− | 2001 10 23 | 333 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.0 | | |
| 2001 09 23 | 704 | 0.7− | 0.2− | 2001 10 23 | 333 | 0.3− | 0.6− | 2006 11 19 | 704 | 1.1+ | 0.6− | | |
| 2001 09 23 | 704 | 0.7− | 1.0− | 2001 10 23 | 333 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.7+ | | |
| 2001 09 23 | 704 | 0.7− | 0.1− | 2001 11 10 | 704 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.5− | | |
| 2001 09 23 | 704 | 0.3+ | 0.3+ | 2001 11 10 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.6+ | 0.3− | | |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2001 11 10 | 704 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.6+ | | |
| 2001 09 23 | 704 | 0.1− | 1.0+ | 2001 11 10 | 704 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.7− | 0.8+ | | |
| 2001 09 23 | 704 | 0.1+ | 0.6+ | 2003 01 01 | 704 | 0.4+ | 0.0 | 2006 11 21 | 691 | 0.2− | 0.1+ | | |
| 2001 09 23 | 704 | 0.1+ | 0.4+ | 2003 01 01 | 704 | 0.4+ | 1.3+ | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2001 09 24 | 704 | 0.3− | 0.1+ | 2003 01 01 | 704 | (0.6+ | 2.1+) | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2001 09 24 | 704 | 0.7− | 0.8− | 2003 01 07 | 704 | 1.2+ | 1.2− | 2006 11 21 | 704 | 0.3− | 0.3+ | | |
| 2001 09 24 | 704 | 0.6− | 0.4+ | 2003 01 07 | 704 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.3+ | | |
| 2001 09 24 | 704 | 0.4+ | 0.2− | 2003 01 07 | 704 | 0.5+ | 0.6+ | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 2001 09 24 | 704 | 0.2− | 0.3− | 2003 01 07 | 704 | 0.5− | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.4+ | | |
| 2001 09 25 | 699 | 0.6+ | 0.2+ | 2003 01 14 | 608 | 0.7+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2001 09 25 | 699 | 0.1− | 0.2+ | 2003 01 14 | 608 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.0 | | |
| 2001 09 25 | 699 | 0.8− | 0.1+ | 2003 01 14 | 608 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.1− | | |
| 2001 09 25 | 699 | 1.3− | 1.1− | 2003 02 01 | 608 | 0.4− | 0.2− | 2006 11 27 | G96 | 0.2− | 0.1− | | |
| 2001 09 27 | 704 | 0.4+ | 0.1− | 2003 02 01 | 608 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.1− | 0.6+ | | |
| 2001 09 27 | 704 | 0.5+ | 0.6+ | 2003 02 01 | 608 | 0.1− | 0.5− | 2006 11 27 | G96 | 0.1− | 0.1− | | |
| 2001 09 27 | 704 | 0.3+ | 0.3+ | 2003 02 03 | 644 | 0.1− | 1.0+ | 2006 11 27 | 703 | 1.5− | 0.1− | | |
| 2001 09 27 | 704 | 0.5− | 0.7− | 2003 02 03 | 644 | 0.1+ | 0.7+ | 2006 11 27 | 703 | 0.4− | 0.6− | | |
| 2001 09 27 | 704 | 1.3− | 1.4+ | 2003 02 03 | 644 | 0.2+ | 0.8+ | 2006 11 27 | 703 | 0.3− | 0.2+ | | |
| 2001 09 27 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 0.1− | 0.6+ | 2006 11 27 | 704 | 0.2− | 0.4+ | | |
| 2001 09 27 | 704 | 0.2− | 0.8− | 2004 04 20 | 704 | 1.1+ | 1.4+ | 2006 11 27 | 704 | 0.2+ | 0.9− | | |
| 2001 09 27 | 704 | 1.0− | 0.7+ | 2004 04 20 | 704 | 0.4+ | 1.1+ | 2006 11 27 | 704 | 0.5− | 0.1− | | |
| 2001 09 27 | 704 | 0.9+ | 0.3− | 2004 04 20 | 704 | 0.3+ | 0.9+ | 2006 11 29 | 704 | 1.0+ | 0.3+ | | |
| 2001 09 27 | 704 | 1.1− | 1.4− | 2004 04 25 | 703 | 0.4+ | 0.7+ | 2006 11 29 | 704 | 0.8+ | 1.1+ | | |
| 2001 09 27 | 704 | 0.3+ | 1.3+ | 2004 04 25 | 703 | 1.5− | 0.7+ | 2006 11 29 | 704 | 0.5− | 0.4+ | | |
| 2001 09 27 | 704 | 0.3+ | 1.4− | 2004 04 25 | 703 | 0.2− | 0.6+ | 2006 11 29 | 704 | 0.1+ | 0.1− | | |
| 2001 09 27 | 704 | 0.5+ | 0.1− | 2004 04 25 | 703 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.2− | 0.9− | | |
| 2001 09 27 | 704 | 0.6+ | 0.7+ | 2004 05 13 | 333 | 0.0 | 0.6+ | | | | | | |
| 2001 09 28 | 644 | 0.9− | 1.1+ | 2004 05 13 | 333 | 0.2+ | 0.4+ | | | | | | |

**(139867)∗ 2001 RB$_{68}$ = 2000 KP$_9$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 18038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.18425 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21918627 | $\omega$ | 67.64136 | | +0.71573126 | +0.69522278 | |
| $a$ | 2.7243349 | $\Omega$ | 248.24181 | | −0.66413492 | +0.64821052 | |
| $e$ | 0.1586721 | $i$ | 4.09282 | | −0.21599438 | +0.31062583 | |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 11 | 691 | 0.2+ | 0.4− | 2001 10 14 | 704 | 0.2− | 0.5+ | 2005 06 29 | 703 | 0.8− | 0.2+ | | |
| 1999 01 11 | 691 | 0.7+ | 0.1+ | 2001 10 14 | 704 | 0.3− | 0.5+ | 2005 06 29 | 703 | 0.2+ | 0.0 | | |
| 1999 01 11 | 691 | 0.0 | 0.4− | 2001 10 14 | 704 | 1.0− | 1.0+ | 2005 06 29 | 703 | 0.3+ | 0.5+ | | |
| 2000 05 28 | 704 | 0.1+ | 0.5+ | 2001 10 14 | 704 | 0.5− | 0.8+ | 2005 07 04 | 704 | 1.0+ | 0.3− | | |
| 2000 05 28 | 704 | 0.8− | 1.4+ | 2001 10 15 | 608 | 0.2+ | 0.0 | 2005 07 04 | 704 | 0.6+ | 0.3+ | | |
| 2000 05 28 | 704 | 1.1− | 0.3− | 2001 10 15 | 608 | 0.3+ | 0.5− | 2005 07 04 | 704 | 0.3+ | 0.3+ | | |
| 2000 05 28 | 704 | 0.5+ | 1.4+ | 2001 10 15 | 608 | 0.5− | 0.1+ | 2005 07 04 | 704 | 0.1+ | 0.0 | | |
| 2000 05 29 | 704 | 0.4− | 1.5+ | 2001 10 17 | 704 | 0.4− | 0.4− | 2006 09 27 | G96 | 0.2− | 0.5− | | |
| 2000 05 29 | 704 | 0.6− | 0.5− | 2001 10 17 | 704 | 0.0 | 0.4− | 2006 09 27 | G96 | 0.0 | 0.2− | | |
| 2000 05 29 | 704 | 0.3− | 0.3− | 2001 10 17 | 704 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.1− | 0.2− | | |
| 2000 05 29 | 704 | 0.2− | 0.1− | 2001 10 17 | 704 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.2+ | 0.0 | | |
| 2001 08 28 | 699 | 0.3− | 0.9+ | 2001 10 18 | 644 | 0.1+ | 1.1− | 2006 10 19 | G96 | 0.5− | 0.6− | | |
| 2001 08 28 | 699 | 0.6− | 0.3+ | 2001 10 18 | 644 | 0.1+ | 1.0− | 2006 10 19 | G96 | 0.1− | 0.1− | | |
| 2001 08 28 | 699 | 0.7− | 0.2+ | 2001 10 18 | 644 | 0.0 | 1.2− | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 2001 08 28 | 699 | 1.0− | 0.4+ | 2001 10 20 | 644 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2001 09 10 | 704 | 1.2+ | 0.1+ | 2001 10 20 | 644 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.0 | | |
| 2001 09 10 | 704 | 0.3+ | 0.0 | 2001 10 20 | 644 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | | |
| 2001 09 10 | 704 | 0.4− | 0.2− | 2001 10 21 | 704 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 2001 09 17 | 704 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.5− | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2001 09 17 | 704 | 0.2+ | 0.2+ | 2001 10 21 | 704 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1− | | |
| 2001 09 17 | 704 | 0.6+ | 0.2− | 2001 10 21 | 704 | 0.5− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.2− | | |
| 2001 09 20 | 704 | 0.3+ | 0.3+ | 2001 10 21 | 704 | 0.5− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.3− | | |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2003 01 26 | 291 | 0.5− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2001 09 20 | 704 | 0.7− | 0.6+ | 2003 01 26 | 291 | 0.7+ | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2001 09 20 | 704 | 0.0 | 0.8+ | 2003 01 26 | 291 | (2.1+ | 0.5+) | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2004 03 26 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.1+ | 0.0 | 2004 03 26 | 704 | 1.0+ | 1.2+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 09 23 | 704 | 1.0− | 0.5+ | 2004 03 26 | 704 | 0.7+ | 1.0+ | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.4− | 0.1+ | 2004 03 26 | 704 | 0.0 | 1.3+ | 2006 11 23 | 691 | 0.5− | 0.2+ | | |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2001 09 25 | 691 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 0.0 | 1.1+ | 2006 11 23 | 691 | 0.3− | 0.1+ | | |
| 2001 09 25 | 691 | 0.6+ | 0.3+ | 2004 03 27 | 704 | 0.9+ | 1.3+ | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2001 09 25 | 691 | 0.5+ | 0.2+ | 2005 05 20 | G96 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.4+ | | |
| 2001 09 28 | 644 | 0.3− | 0.5+ | 2005 05 20 | G96 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.3+ | | |
| 2001 09 28 | 644 | 0.1− | 0.4+ | 2005 05 20 | G96 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2001 09 28 | 644 | 0.1− | 0.6+ | 2005 05 20 | G96 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.9+ | 0.1+ | | |
| 2001 10 14 | 704 | 1.1− | 0.3+ | 2005 06 29 | 703 | 0.8+ | 1.0+ | 2006 11 27 | 691 | 0.2− | 0.0 | | |

**(139868)∗ 2001 RX$_{69}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.53855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17614322 | $\omega$ | 28.04282 | | +0.99294413 | +0.10955837 | |
| $a$ | 3.1518009 | $\Omega$ | 325.57452 | | −0.11815240 | +0.88146181 | |
| $e$ | 0.1334310 | $i$ | 4.60367 | | −0.01009752 | +0.45937136 | |
| $P$ | 5.60 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 1.3+ | 0.3− | 2001 10 15 | 704 | 0.1+ | 0.2+ | 2003 01 09 | 704 | 0.2− | 0.4+ | |
| 2001 09 10 | 704 | 0.9+ | 0.9+ | 2001 10 15 | 704 | 0.1− | 0.1+ | 2003 01 09 | 704 | 0.5− | 0.2− | |
| 2001 09 10 | 704 | (2.2+ | 1.1+) | 2001 10 17 | 704 | 0.0 | 0.7+ | 2003 01 09 | 704 | 0.9+ | 1.4− | |
| 2001 09 17 | 704 | 0.4− | 0.2− | 2001 10 17 | 704 | 0.4+ | 0.7+ | 2003 01 13 | 644 | 0.1− | 0.4+ | |
| 2001 09 17 | 704 | 0.1− | 0.2− | 2001 10 17 | 704 | 0.1− | 1.1+ | 2003 01 13 | 644 | 0.4− | 0.3+ | |
| 2001 09 17 | 704 | 0.1− | 0.6− | 2001 10 17 | 704 | 0.8+ | 1.0+ | 2003 01 13 | 644 | 0.0 | 0.4+ | |
| 2001 09 17 | 704 | 0.1− | 0.2+ | 2001 10 17 | 704 | 0.2+ | 0.9+ | 2004 03 15 | 599 | 0.1− | 0.2+ | |
| 2001 09 19 | 704 | 1.3− | 0.4− | 2001 10 20 | 644 | 0.4− | 0.8+ | 2004 03 15 | 599 | 0.3− | 0.3+ | |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2001 10 20 | 644 | 0.4− | 0.6+ | 2004 03 15 | 599 | 0.2+ | 0.9+ | |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2001 10 20 | 644 | 0.5− | 0.4+ | 2004 03 18 | 691 | 0.1+ | 0.3+ | |
| 2001 09 19 | 704 | 0.0 | 0.9− | 2001 10 21 | 691 | 0.5+ | 0.2− | 2004 03 18 | 691 | 0.2+ | 0.3+ | |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2001 10 21 | 691 | 0.3+ | 0.3− | 2004 03 18 | 691 | 0.1+ | 0.3+ | |
| 2001 09 20 | 704 | 1.2− | 0.7− | 2001 10 21 | 691 | 0.4+ | 0.0 | 2005 05 11 | 644 | 0.6+ | 0.9+ | |
| 2001 09 20 | 704 | 1.2− | 0.3+ | 2001 12 11 | 704 | 0.6+ | 0.6+ | 2005 05 11 | 644 | 0.7+ | 0.8+ | |
| 2001 09 20 | 704 | (2.7− | 0.4+) | 2001 12 11 | 704 | 0.5− | 0.6+ | 2005 05 11 | 644 | 0.5+ | 0.5+ | |
| 2001 09 22 | 704 | (2.2− | 1.6−) | 2001 12 11 | 704 | (0.2+ | 2.3+) | 2005 06 03 | 703 | 0.1− | 0.5− | |
| 2001 09 22 | 704 | 0.1− | 1.2− | 2003 01 05 | 704 | (2.0+ | 1.4−) | 2005 06 03 | 703 | 1.0− | 0.8+ | |
| 2001 09 22 | 704 | 0.8− | 0.0 | 2003 01 05 | 704 | 0.8+ | 0.1− | 2005 06 03 | 703 | 0.5+ | 0.8− | |
| 2001 09 22 | 704 | (1.7− | 1.5−) | 2003 01 05 | 704 | 0.6+ | 0.1− | 2005 06 03 | 703 | (0.5− | 2.0+) | |
| 2001 09 22 | 704 | (1.0− | 2.1−) | 2003 01 05 | 704 | 0.4− | 1.1− | 2006 08 28 | 703 | (2.8+ | 0.6+) | |
| 2001 09 24 | 691 | 0.2− | 0.0 | 2003 01 05 | 704 | 1.3+ | 1.0− | 2006 08 28 | 703 | (3.6+ | 0.6−) | |
| 2001 09 24 | 691 | 0.5− | 0.1− | 2003 01 07 | 704 | 0.9+ | 0.4− | 2006 08 28 | 703 | 0.6+ | 1.2+ | |
| 2001 09 24 | 691 | 0.4− | 0.1− | 2003 01 07 | 704 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.6− | 0.2− | |
| 2001 09 25 | 644 | 0.2+ | 0.7+ | 2003 01 07 | 704 | 1.3− | 0.6+ | 2006 08 28 | 703 | 0.4+ | 0.3+ | |
| 2001 09 25 | 644 | 0.4+ | 0.5+ | 2003 01 07 | 704 | 0.1+ | 0.1− | 2006 08 28 | 703 | (1.8− | 0.9+) | |
| 2001 09 25 | 644 | 0.4+ | 0.5+ | 2003 01 07 | 704 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.8+ | 1.4+ | |
| 2001 10 06 | 644 | 0.1− | 0.1+ | 2003 01 07 | 704 | 1.0− | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.4+ | |
| 2001 10 06 | 644 | 0.0 | 0.1+ | 2003 01 07 | 704 | 1.0− | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.3− | |
| 2001 10 06 | 644 | 0.6− | 0.1+ | 2003 01 09 | 704 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.3− | |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2003 01 09 | 704 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.1− | |
| 2001 10 14 | 704 | 0.4+ | 0.1− | 2003 01 09 | 704 | (1.3+ | 1.8+) | 2006 09 26 | G96 | 0.5− | 0.0 | |
| 2001 10 14 | 704 | 0.2+ | 0.3− | 2003 01 09 | 704 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3− | |
| 2001 10 14 | 704 | 0.1− | 0.4− | 2003 01 09 | 704 | 1.1− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2− | |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2003 01 09 | 704 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.6− | 0.2− | |
| 2001 10 15 | 704 | 0.9− | 0.1− | 2003 01 09 | 704 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.0 | |
| 2001 10 15 | 704 | 0.3+ | 1.1+ | 2003 01 09 | 704 | 1.3+ | 0.2+ | | | | | |

**(139869)∗ 2001 RE$_{70}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.51761 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23264986 | $\omega$ | 115.37501 | | +0.92322182 | −0.37971165 | |
| $a$ | 2.6181881 | $\Omega$ | 266.98712 | | +0.32790795 | +0.85851986 | |
| $e$ | 0.1474923 | $i$ | 3.38687 | | +0.20034431 | +0.34461967 | |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 17 | 704 | 0.9+ | 1.2− | 2005 08 30 | 691 | 0.1− | 0.0 | |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 17 | 704 | (0.3+ | 1.7−) | 2005 08 30 | 691 | 0.1+ | 0.0 | |
| 2001 08 28 | 699 | 1.2+ | 1.4+ | 2001 10 17 | 704 | (0.1− | 1.6−) | 2005 08 30 | 704 | 0.1− | 0.3+ | |
| 2001 08 28 | 699 | 0.3− | 0.7+ | 2001 10 17 | 704 | 0.3− | 1.2− | 2005 08 30 | 704 | 0.3− | 0.7− | |
| 2001 08 28 | 699 | 0.7− | 0.7+ | 2001 10 17 | 704 | 0.4− | 1.4− | 2005 08 30 | 704 | 0.2− | 0.5+ | |
| 2001 08 28 | 699 | 0.2− | 0.5− | 2001 10 19 | 644 | 0.5− | 0.3+ | 2005 08 30 | 704 | 0.4+ | 0.4+ | |
| 2001 09 10 | 704 | 0.3− | 0.1+ | 2001 10 19 | 644 | 0.4− | 0.3+ | 2005 09 22 | 644 | 0.5+ | 0.2− | |
| 2001 09 10 | 704 | 0.0 | 0.3− | 2001 10 19 | 644 | 0.5− | 0.1+ | 2005 09 22 | 644 | 0.3+ | 0.1+ | |
| 2001 09 10 | 704 | 0.5+ | 1.0− | 2001 10 20 | 644 | 0.4+ | 0.0 | 2005 09 22 | 644 | 0.4+ | 0.0 | |
| 2001 09 10 | 704 | 0.2+ | 0.6− | 2001 10 20 | 644 | 0.2+ | 0.2+ | 2005 09 23 | 703 | 1.1− | 0.7− | |
| 2001 09 10 | 704 | 0.5− | 0.5− | 2001 10 20 | 644 | 0.1+ | 0.1+ | 2005 09 23 | 703 | 0.0 | 0.6+ | |
| 2001 09 17 | 704 | (2.0+ | 0.4+) | 2001 10 21 | 691 | 0.3+ | 0.1+ | 2005 09 23 | 703 | 1.1− | 0.5+ | |
| 2001 09 17 | 704 | (1.6+ | 1.3+) | 2001 10 21 | 691 | 0.4+ | 0.2− | 2005 09 23 | 703 | 0.9+ | 0.1− | |
| 2001 09 17 | 704 | 1.1+ | 0.9+ | 2001 10 21 | 691 | 0.5+ | 0.1+ | 2005 09 25 | 691 | 0.2+ | 0.1+ | |
| 2001 09 20 | 704 | 0.8− | 1.0+ | 2001 10 21 | 704 | (0.2− | 1.9+) | 2005 09 25 | 691 | 0.2+ | 0.0 | |
| 2001 09 20 | 704 | 0.8+ | 0.0 | 2001 10 21 | 704 | (0.2+ | 1.7+) | 2005 09 25 | 691 | 0.2+ | 0.1+ | |
| 2001 09 20 | 704 | 0.3− | 0.8+ | 2001 10 21 | 704 | (0.5+ | 1.5+) | 2005 11 01 | G96 | 0.1− | 0.1− | |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2001 10 21 | 704 | (0.7+ | 1.8+) | 2005 11 01 | G96 | 0.3+ | 0.0 | |
| 2001 09 22 | 704 | 0.1− | 0.2+ | 2001 10 25 | 644 | 0.4− | 0.4+ | 2005 11 01 | G96 | 0.1+ | 0.1− | |
| 2001 09 22 | 704 | 0.1− | 0.5− | 2001 10 25 | 644 | 0.7− | 0.3+ | 2005 11 01 | G96 | 0.0 | 0.0 | |
| 2001 09 22 | 704 | (0.2− | 1.6+) | 2001 10 25 | 644 | 0.5− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.5− | |
| 2001 09 22 | 704 | 0.1− | 0.2− | 2001 11 10 | 704 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.3− | 0.0 | |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2001 11 10 | 704 | 0.5+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2+ | |
| 2001 09 28 | 644 | 0.6− | 0.1− | 2001 11 10 | 704 | 0.5+ | 0.7− | 2006 09 25 | G96 | 0.1− | 0.0 | |
| 2001 09 28 | 644 | 0.5− | 0.1− | 2001 11 10 | 704 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.4− | |
| 2001 09 28 | 644 | 0.3− | 0.0 | 2001 11 10 | 704 | 0.5− | 0.1− | 2006 11 01 | G96 | 0.3− | 0.2− | |
| 2001 10 12 | 699 | 0.2− | 0.7+ | 2004 05 13 | 691 | 0.4+ | 0.0 | 2006 11 01 | G96 | 0.5− | 0.7− | |
| 2001 10 12 | 699 | 0.7− | 0.9+ | 2004 05 13 | 691 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.1+ | |
| 2001 10 12 | 699 | 0.4+ | 0.1− | 2004 05 13 | 691 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.4− | 0.0 | |
| 2001 10 12 | 699 | 1.0− | 0.9− | 2005 07 30 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.0 | |
| 2001 10 14 | 704 | 1.0+ | 0.4− | 2005 07 30 | 644 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− | |
| 2001 10 14 | 704 | 0.4+ | 0.5− | 2005 07 30 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− | |
| 2001 10 14 | 704 | 0.4+ | 0.2− | 2005 08 23 | 608 | 0.4− | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.1+ | |
| 2001 10 14 | 704 | 0.1+ | 0.3− | 2005 08 23 | 608 | 0.6− | 0.0 | 2006 11 20 | G96 | 0.2− | 0.2+ | |
| 2001 10 14 | 704 | 0.3+ | 0.6+ | 2005 08 23 | 608 | 0.1+ | 0.7+ | 2006 11 20 | G96 | 0.3+ | 0.0 | |
| 2001 10 15 | 704 | 0.3− | 0.2− | 2005 08 27 | 699 | 0.9− | 0.9− | 2006 11 20 | G96 | 1.0+ | 0.6− | |
| 2001 10 15 | 704 | 0.6− | 0.3+ | 2005 08 27 | 699 | 0.8− | 0.0 | 2006 11 21 | G96 | 0.5+ | 0.3+ | |
| 2001 10 15 | 704 | 0.7− | 0.9+ | 2005 08 27 | 699 | 1.0− | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.3+ | |
| 2001 10 15 | 704 | 0.6− | 0.4+ | 2005 08 27 | 699 | (0.6+ | 1.5−) | 2006 11 21 | G96 | 0.3− | 0.7+ | |
| 2001 10 15 | 704 | 0.1− | 0.1+ | 2005 08 30 | 691 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.4+ | |

**(139870)∗ 2001 RP$_{73}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.89883 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18427197 | $\omega$ | 354.33535 | | −0.77618565 | +0.61668521 | |
| $a$ | 3.0584158 | $\Omega$ | 224.64089 | | −0.57089324 | −0.77577416 | |
| $e$ | 0.1087972 | $i$ | 10.76824 | | −0.26761305 | −0.13369296 | |
| $P$ | 5.35 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 17 | 691 | 0.7− | 0.2+ | 2002 12 10 | 644 | 0.3− | 0.1+ | 2004 03 16 | 704 | (2.2+ | 0.6+) | |
| 1994 05 17 | 691 | 0.5+ | 0.4+ | 2002 12 10 | 644 | 0.5− | 0.5+ | 2004 03 16 | 704 | 0.3+ | 0.6+ | |
| 1994 05 17 | 691 | 0.0 | 0.8+ | 2002 12 10 | 644 | 0.4− | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.4+ | |
| 1999 04 11 | 699 | 0.9+ | 0.1− | 2004 01 28 | 704 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.2+ | |
| 1999 04 11 | 699 | 0.6+ | 0.6− | 2004 01 28 | 704 | 0.1+ | 1.1+ | 2004 03 19 | E12 | 0.1+ | 0.6− | |
| 1999 04 11 | 699 | 1.4+ | 0.6+ | 2004 01 28 | 704 | 0.6+ | 0.9+ | 2004 03 19 | E12 | 0.3− | 1.1− | |
| 2001 09 10 | 704 | 0.2+ | 1.3+ | 2004 01 28 | 704 | 0.1+ | 0.4+ | 2004 03 19 | E12 | 0.5− | 0.4− | |
| 2001 09 10 | 704 | (0.0 | 2.1+) | 2004 01 28 | 704 | 0.4+ | 0.5+ | 2004 03 19 | E12 | 0.3+ | 0.2+ | |
| 2001 09 10 | 704 | 0.4+ | 1.3+ | 2004 01 29 | 699 | 0.8− | 0.1+ | 2004 03 28 | 703 | 0.9+ | 0.6+ | |
| 2001 09 10 | 704 | 1.5+ | 1.3+ | 2004 01 29 | 699 | 1.3− | 0.2− | 2004 03 28 | 703 | 1.5− | 1.1+ | |
| 2001 09 17 | 704 | 0.0 | 0.9+ | 2004 01 29 | 699 | 0.5+ | 0.2+ | 2004 03 28 | 703 | 1.8+ | 0.5+ | |
| 2001 09 17 | 704 | 0.8− | 0.8+ | 2004 01 29 | 699 | 0.2+ | 0.9+ | 2004 03 28 | 703 | 0.6+ | 2.0+ | |
| 2001 09 17 | 704 | 0.5− | 1.2+ | 2004 02 14 | 644 | 0.1+ | 0.2+ | 2004 05 17 | 704 | 0.4+ | 0.3− | |
| 2001 09 21 | 699 | 0.1+ | 1.7+ | 2004 02 14 | 644 | 0.2+ | 0.2+ | 2004 05 17 | 704 | 0.1− | 0.1+ | |
| 2001 09 21 | 699 | 0.5+ | 0.1− | 2004 02 14 | 644 | 0.2+ | 0.3+ | 2004 05 17 | 704 | 0.5− | 0.4− | |
| 2001 09 21 | 699 | 0.7− | 0.5+ | 2004 02 17 | 644 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.9− | 0.8+ | |
| 2001 09 21 | 699 | 0.2+ | 0.4+ | 2004 02 17 | 644 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.3+ | 0.1+ | |
| 2001 09 28 | 644 | 0.2+ | 0.5− | 2004 02 17 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.1− | 0.2+ | |
| 2001 09 28 | 644 | 0.1− | 0.6− | 2004 02 19 | 704 | 0.4− | 0.5+ | 2006 08 27 | 699 | 1.1− | 0.9+ | |
| 2001 09 28 | 644 | 0.0 | 0.4− | 2004 02 19 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.6+ | 1.0+ | |
| 2001 10 14 | 704 | 0.4− | 0.1+ | 2004 02 19 | 704 | (2.2+ | 0.1+) | 2006 09 20 | 699 | 1.5− | 1.0+ | |
| 2001 10 14 | 704 | 0.6− | 1.2− | 2004 02 19 | 704 | 0.6+ | 0.4+ | 2006 09 20 | 699 | 0.1− | 0.6+ | |
| 2001 10 14 | 704 | 0.2− | 0.9− | 2004 03 01 | 703 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.4+ | 0.1+ | |
| 2001 10 17 | 704 | 0.8− | 0.4+ | 2004 03 01 | 703 | 0.4+ | 0.6+ | 2006 10 01 | 703 | 0.5− | 0.1− | |
| 2001 10 17 | 704 | 0.1− | 0.3− | 2004 03 01 | 703 | 0.6− | 1.2+ | 2006 10 01 | 703 | 0.1+ | 1.0+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.5− | 0.4+ | 2004 03 01 | 703 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.0 | 1.9+ |
| 2001 10 17 | 704 | 0.5+ | 0.3+ | 2004 03 16 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.1− | 1.8+ |

**(139871)∗ 2001 RM$_{74}$ = 2000 LK$_{26}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20125)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.60012 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17662628 | $\omega$ | 65.16591 | | +0.01262713 | +0.98641727 | |
| $a$ | 3.1460516 | $\Omega$ | 207.13959 | | −0.99694353 | −0.00020909 | |
| $e$ | 0.2104114 | $i$ | 21.04032 | | −0.07709830 | +0.16425871 | |
| $P$ | 5.58 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 01 | 704 | 0.5+ | 0.6− | 2001 10 25 | 704 | 0.8− | 0.2+ | 2005 04 19 | 699 | 0.4− | 1.2+ |
| 2000 06 01 | 704 | 0.2+ | 0.1− | 2001 11 20 | 704 | 1.2+ | 0.8− | 2005 04 19 | 699 | 0.0 | 1.3+ |
| 2000 06 01 | 704 | 0.5− | 0.2− | 2001 11 20 | 704 | (1.2− | 1.8+) | 2005 04 19 | 699 | 0.3− | 1.1+ |
| 2000 06 11 | 704 | 0.2+ | 0.4+ | 2001 11 20 | 704 | (0.5− | 2.8+) | 2005 04 19 | 699 | 0.6− | 0.4+ |
| 2000 06 11 | 704 | 0.5− | 0.1+ | 2001 11 20 | 704 | 0.1− | 0.4− | 2005 05 08 | 703 | 0.1− | 0.8+ |
| 2000 06 11 | 704 | 0.4+ | 1.2− | 2004 12 10 | 291 | 0.6− | 1.0+ | 2005 05 08 | 703 | 0.1− | 0.1+ |
| 2000 06 11 | 704 | 0.5+ | 0.7− | 2004 12 10 | 291 | 0.1+ | 0.4+ | 2005 05 08 | 703 | 0.7− | 0.3− |
| 2001 09 10 | 704 | 0.6+ | 0.4+ | 2004 12 10 | 291 | 0.4+ | 0.4+ | 2005 05 08 | 703 | 0.3− | 0.2+ |
| 2001 09 10 | 704 | 0.1+ | 0.1− | 2005 03 08 | 699 | 1.3+ | 0.6+ | 2005 05 09 | 699 | 0.1+ | 0.0 |
| 2001 09 10 | 704 | 0.4+ | 0.4− | 2005 03 08 | 699 | 1.2+ | 1.1+ | 2005 05 09 | 699 | 0.3− | 0.2+ |
| 2001 09 10 | 704 | 0.7+ | 0.3+ | 2005 03 08 | 699 | (1.8− | 0.9+) | 2005 05 09 | 699 | 0.4+ | 0.5+ |
| 2001 09 17 | 704 | 0.6− | 0.7+ | 2005 03 08 | 699 | 0.1+ | 0.1+ | 2005 05 09 | 699 | 0.3+ | 0.0 |
| 2001 09 17 | 704 | 0.2− | 0.6+ | 2005 03 17 | 704 | 0.1− | 0.6− | 2005 05 10 | G96 | 0.5− | 0.1− |
| 2001 09 17 | 704 | 0.5− | 1.2+ | 2005 03 17 | 704 | 0.0 | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.2− |
| 2001 09 20 | 704 | 0.4+ | 0.5+ | 2005 03 17 | 704 | 0.5− | 0.5− | 2005 05 10 | G96 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 1.2− | 0.4− | 2005 03 17 | 704 | 0.3− | 0.4+ | 2005 05 10 | G96 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.9− | 0.5+ | 2005 04 03 | E12 | 0.0 | 0.2+ | 2005 05 13 | 703 | 0.8− | 0.2+ |
| 2001 09 20 | 704 | 0.4− | 1.2+ | 2005 04 03 | E12 | 0.7− | 0.4+ | 2005 05 13 | 703 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.6+ | 0.9+ | 2005 04 03 | E12 | 0.1+ | 0.5− | 2005 05 13 | 703 | 0.4− | 0.3− |
| 2001 09 21 | 704 | 0.3− | 1.0− | 2005 04 03 | E12 | 0.4+ | 0.1+ | 2005 05 13 | 703 | 0.5− | 0.4+ |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2005 04 04 | 691 | 0.0 | 0.3+ | 2005 05 14 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2005 04 04 | 691 | 0.1+ | 0.1+ | 2005 05 14 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2005 04 04 | 691 | 0.2+ | 0.3+ | 2005 05 14 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2005 04 04 | 704 | 0.6+ | 0.7+ | 2005 06 01 | 608 | 0.6+ | 0.8− |
| 2001 09 21 | 704 | 0.2+ | 0.6+ | 2005 04 04 | 704 | 0.6+ | 0.0 | 2005 06 01 | 608 | 0.3+ | 0.6− |
| 2001 09 23 | 704 | 0.0 | 0.1− | 2005 04 04 | 704 | 0.5+ | 0.1+ | 2005 06 01 | 608 | 0.4+ | 0.5− |
| 2001 09 23 | 704 | 0.7− | 0.0 | 2005 04 04 | 704 | 1.1+ | 1.1+ | 2006 08 13 | 644 | 0.1− | 0.1+ |
| 2001 09 23 | 704 | 0.2+ | 0.3+ | 2005 04 04 | 704 | 0.1+ | 0.4− | 2006 08 13 | 644 | 0.0 | 0.1+ |
| 2001 09 24 | 704 | 0.1− | 0.8− | 2005 04 05 | 699 | (1.6− | 0.3+) | 2006 08 13 | 644 | 0.1+ | 0.0 |
| 2001 09 24 | 704 | 0.2− | 1.0+ | 2005 04 05 | 699 | 0.3− | 0.5+ | 2006 08 25 | 704 | 0.8+ | 0.2+ |
| 2001 09 24 | 704 | 0.1− | 1.5+ | 2005 04 05 | 699 | 0.2− | 0.0 | 2006 08 25 | 704 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 0.1− | 0.4+ | 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 08 25 | 704 | 0.2+ | 0.3− |
| 2001 10 12 | 699 | 0.3+ | 0.8+ | 2005 04 05 | G96 | 0.3− | 0.0 | 2006 08 25 | 704 | 0.5+ | 0.6+ |
| 2001 10 12 | 699 | 0.7+ | 0.9+ | 2005 04 05 | G96 | 0.3− | 0.1− | 2006 08 29 | 699 | 0.1+ | 0.7+ |
| 2001 10 12 | 699 | 1.2+ | 1.0+ | 2005 04 05 | G96 | 0.4− | 0.1+ | 2006 08 29 | 699 | 0.0 | 0.1+ |
| 2001 10 12 | 699 | 0.1+ | 0.8+ | 2005 04 07 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 699 | 0.0 | 0.6− |
| 2001 10 13 | 704 | 0.5+ | 0.4+ | 2005 04 07 | 704 | 0.4+ | 0.0 | 2006 08 29 | 699 | 0.0 | 0.4+ |
| 2001 10 13 | 704 | 0.2− | 0.8+ | 2005 04 07 | 704 | 0.1− | 0.7+ | 2006 09 01 | 704 | 1.4− | 0.1− |
| 2001 10 13 | 704 | 0.5− | 0.9+ | 2005 04 07 | 704 | 0.3− | 0.6+ | 2006 09 01 | 704 | 1.4− | 0.5− |
| 2001 10 13 | 704 | 0.1+ | 0.7+ | 2005 04 07 | 704 | 0.8− | 0.2− | 2006 09 01 | 704 | 0.5+ | 0.0 |
| 2001 10 13 | 704 | 0.7− | 0.3+ | 2005 04 07 | 704 | 0.1+ | 1.3+ | 2006 09 11 | 703 | (4.8+ | 1.5+) |
| 2001 10 14 | 704 | 0.3+ | 0.7+ | 2005 04 07 | 704 | 0.4+ | 0.1+ | 2006 09 11 | 703 | 0.2+ | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2005 04 07 | 704 | 0.3− | 0.6+ | 2006 09 11 | 703 | 0.7− | 0.7+ |
| 2001 10 14 | 704 | 0.1+ | 0.8+ | 2005 04 10 | 608 | 0.4+ | 0.7− | 2006 09 11 | 703 | 0.4+ | 0.4− |
| 2001 10 14 | 704 | 1.1+ | 0.1+ | 2005 04 10 | 608 | 0.5+ | 0.4− | 2006 09 27 | 703 | 0.5+ | 0.4+ |
| 2001 10 14 | 704 | 0.4− | 0.1+ | 2005 04 10 | 608 | 0.8+ | 0.5− | 2006 09 27 | 703 | 0.8− | 0.1+ |
| 2001 10 17 | 704 | (0.2+ | 4.4+) | 2005 04 11 | 699 | 0.1− | 0.5+ | 2006 09 27 | 703 | 0.6− | 0.0 |
| 2001 10 17 | 704 | (1.1+ | 4.7+) | 2005 04 11 | 699 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.7+ | 1.4+ |
| 2001 10 17 | 704 | (1.3+ | 3.5+) | 2005 04 11 | 699 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.8+ | 1.0+ |
| 2001 10 17 | 704 | (0.7+ | 3.7+) | 2005 04 11 | 699 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.2+ | 1.0+ |
| 2001 10 17 | 704 | (0.5− | 4.0+) | 2005 04 12 | 704 | 0.2− | 0.4+ | 2006 09 28 | 704 | 1.1+ | 0.8+ |
| 2001 10 19 | 644 | 0.1− | 0.2+ | 2005 04 12 | 704 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.9− |
| 2001 10 19 | 644 | 0.0 | 0.4+ | 2005 04 12 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.0 |
| 2001 10 19 | 644 | 0.2+ | 0.4+ | 2005 04 12 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2005 04 12 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2005 04 17 | 691 | 0.2− | 0.5− | 2006 10 29 | 703 | 0.3− | 0.5+ |
| 2001 10 21 | 704 | 0.0 | 0.1− | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 703 | 0.8− | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 0.6− | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 703 | 0.5− | 0.7− |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2005 04 18 | 703 | 1.0− | 0.2+ | 2006 10 29 | 703 | 0.7+ | 0.5+ |
| 2001 10 24 | 704 | 0.3+ | 0.7+ | 2005 04 18 | 703 | 0.8− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.8− |
| 2001 10 24 | 704 | 0.6− | 0.7+ | 2005 04 18 | 703 | 0.6− | 0.4− | 2006 11 13 | 703 | 0.5− | 0.3− |
| 2001 10 24 | 704 | 0.1− | 0.1− | 2005 04 18 | 703 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.5− | 0.5− | 2005 04 18 | 704 | 0.6+ | 1.3+ | 2006 11 13 | 703 | 0.3+ | 0.0 |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2005 04 18 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2001 10 25 | 704 | 0.2+ | 0.5+ | 2005 04 18 | 704 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.8− | 1.3+ |
| 2001 10 25 | 704 | 0.2− | 1.0+ | 2005 04 18 | 704 | 0.3+ | 0.9+ | 2006 11 19 | 703 | 0.4+ | 0.7+ |
| 2001 10 25 | 704 | 0.4− | 0.6+ | 2005 04 18 | 704 | 0.3+ | 0.5+ | 2006 11 19 | 703 | 0.0 | 0.1− |

**(139872)∗ 2001 RL$_{77}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.30853 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19497158 | $\omega$ | 331.52129 | | +0.89180493 | −0.41852528 | |
| $a$ | 2.9454739 | $\Omega$ | 54.24467 | | +0.44477873 | +0.74155376 | |
| $e$ | 0.2735687 | $i$ | 12.22321 | | +0.08280008 | +0.52434208 | |
| $P$ | 5.06 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.3+ | 0.3+ | 2001 11 19 | 704 | 0.5+ | 0.2− | 2006 09 22 | 704 | 0.4− | 0.3+ |
| 2001 08 24 | 699 | 0.4+ | 0.5+ | 2001 11 19 | 704 | 0.4+ | 0.1− | 2006 09 22 | 704 | 0.6+ | 1.2− |
| 2001 08 24 | 699 | 1.2− | 0.1+ | 2001 11 19 | 704 | 0.2+ | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.7− |
| 2001 08 24 | 699 | 0.3+ | 1.3+ | 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.4+ | 0.3+ |
| 2001 08 31 | 644 | 0.6+ | 0.2+ | 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.2+ |
| 2001 08 31 | 644 | 0.1+ | 0.1+ | 2001 11 20 | 704 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.5+ |
| 2001 08 31 | 644 | 0.2+ | 0.5+ | 2001 11 20 | 704 | 0.0 | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.3− |
| 2001 09 10 | 704 | 0.0 | 0.3+ | 2001 11 20 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 1.2− | 0.2+ |
| 2001 09 10 | 704 | 0.6+ | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.4− | 2006 09 26 | 704 | (0.1+ | 1.8+) |
| 2001 09 10 | 704 | 0.8+ | 0.0 | 2001 11 21 | 704 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.7− | 0.2− |
| 2001 09 10 | 704 | 0.6+ | 0.0 | 2001 11 21 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2001 09 10 | 704 | 0.1+ | 0.6+ | 2001 11 21 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2001 09 14 | 644 | 0.2+ | 0.4+ | 2001 11 21 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2001 09 14 | 644 | 0.1+ | 0.3+ | 2001 11 21 | 608 | 0.5− | 0.3− | 2006 10 03 | 704 | 0.6+ | 0.7− |
| 2001 09 14 | 644 | 0.2− | 0.3+ | 2001 11 21 | 608 | 0.4− | 1.2− | 2006 10 03 | 704 | (1.6+ | 1.1+) |
| 2001 09 17 | 704 | 0.1− | 0.8− | 2001 11 21 | 608 | 0.4− | 0.9− | 2006 10 03 | 704 | 0.6+ | 0.4− |
| 2001 09 17 | 704 | 1.0− | 0.1− | 2001 11 27 | 644 | 0.0 | 0.3− | 2006 10 03 | 704 | 1.1− | 0.9+ |
| 2001 09 17 | 704 | 0.3− | 0.5− | 2001 11 27 | 644 | 0.1− | 0.3+ | 2006 10 03 | 704 | 1.0− | 1.1+ |
| 2001 09 19 | 699 | 0.2− | 0.2− | 2001 11 27 | 644 | 0.5− | 0.6− | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2001 09 19 | 699 | 0.2− | 0.2+ | 2001 12 10 | 704 | 0.4− | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 699 | 0.3− | 1.0+ | 2001 12 10 | 704 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2001 09 19 | 699 | 0.7− | 0.0 | 2001 12 10 | 704 | 0.5− | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2001 12 10 | 704 | 0.8− | 0.2+ | 2006 10 15 | D35 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2001 12 10 | 704 | 0.9− | 0.3+ | 2006 10 15 | D35 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.6+ | 2001 12 15 | 704 | 0.1− | 0.2− | 2006 10 15 | D35 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2001 12 15 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2001 12 15 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 2001 09 25 | 644 | 0.1− | 0.2+ | 2001 12 15 | 704 | 0.5− | 0.6− | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2001 09 25 | 644 | 0.3− | 0.2+ | 2001 12 15 | 704 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2001 09 25 | 644 | 0.3− | 0.1+ | 2001 12 18 | 704 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.3+ | 0.9+ | 2001 12 18 | 704 | 0.7− | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.1+ | 1.4+ | 2001 12 18 | 704 | 0.9− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2001 09 26 | 704 | 0.6+ | 1.4+ | 2001 12 18 | 704 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.1− | 0.2+ |
| 2001 09 26 | 704 | (1.3− | 1.6+) | 2001 12 18 | 704 | 0.4+ | 1.3+ | 2006 10 22 | 704 | 0.6− | 0.4− |
| 2001 09 26 | 704 | (1.6− | 2.6+) | 2001 12 19 | 704 | 0.0 | 1.1− | 2006 10 22 | 704 | 0.1− | 0.4+ |
| 2001 10 12 | 699 | 0.0 | 0.6− | 2001 12 19 | 704 | 1.1− | 0.9− | 2006 10 22 | 704 | 0.4− | 0.4+ |
| 2001 10 12 | 699 | 0.2− | 0.0 | 2001 12 19 | 704 | 0.2− | 0.3− | 2006 10 25 | 850 | 0.3+ | 0.3− |
| 2001 10 12 | 699 | 0.2− | 0.0 | 2001 12 19 | 704 | (0.5− | 1.6−) | 2006 10 25 | 850 | 0.3+ | 0.5− |
| 2001 10 12 | 699 | 1.4+ | 0.3− | 2001 12 20 | 704 | 0.7+ | 0.1− | 2006 10 26 | 106 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.7+ | 0.5+ | 2001 12 20 | 704 | 0.0 | 0.4+ | 2006 10 26 | 106 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 0.2+ | 0.6+ | 2001 12 20 | 704 | 0.7+ | 0.9+ | 2006 10 26 | 106 | 0.2+ | 0.1+ |
| 2001 10 13 | 704 | 0.1− | 0.8+ | 2001 12 20 | 704 | 0.4− | 0.9+ | 2006 10 26 | 106 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 0.1+ | 0.8+ | 2001 12 20 | 704 | 0.6− | 1.1+ | 2006 10 27 | 704 | 0.4− | 0.2− |
| 2001 10 13 | 704 | 0.3+ | 1.2+ | 2001 12 21 | 704 | 0.4+ | 0.0 | 2006 10 27 | 704 | 0.0 | 0.4− |
| 2001 10 18 | 704 | 0.5+ | 0.2− | 2001 12 21 | 704 | 0.7− | 1.2− | 2006 10 27 | 704 | 0.3− | 0.2+ |
| 2001 10 18 | 704 | 0.1+ | 0.5− | 2001 12 21 | 704 | 0.1− | 0.2+ | 2006 10 27 | 704 | 0.2− | 0.3− |
| 2001 10 18 | 704 | 0.8+ | 0.6− | 2001 12 21 | 704 | 0.4+ | 0.5− | 2006 10 27 | 704 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.6+ | 0.3+ | 2001 12 21 | 704 | 0.2+ | 0.0 | 2006 11 02 | 704 | 0.2+ | 0.3+ |
| 2001 10 20 | 704 | (2.3+ | 0.6+) | 2002 01 06 | 644 | 0.2+ | 0.5− | 2006 11 02 | 704 | 0.5− | 0.1+ |
| 2001 10 20 | 704 | (2.5+ | 0.7+) | 2002 01 06 | 644 | 0.1+ | 0.6− | 2006 11 02 | 704 | 0.5− | 0.4+ |
| 2001 10 20 | 704 | (2.4+ | 0.4+) | 2002 01 06 | 644 | 0.2+ | 0.4− | 2006 11 02 | 704 | 0.5+ | 0.0 |
| 2001 10 20 | 704 | (2.3+ | 0.3+) | 2002 01 08 | 704 | 0.1− | 0.2− | 2006 11 02 | 704 | 0.6+ | 0.5− |
| 2001 10 22 | 704 | 0.1+ | 0.6− | 2002 01 08 | 704 | 0.3+ | 0.1− | 2006 11 02 | 703 | 0.1− | 0.3− |
| 2001 10 22 | 704 | 0.0 | 0.3− | 2002 01 08 | 704 | 1.0+ | 0.7− | 2006 11 02 | 703 | 0.1+ | 0.4− |
| 2001 10 22 | 704 | 0.5− | 0.2− | 2002 01 08 | 704 | 1.1+ | 0.8+ | 2006 11 02 | 703 | 0.1+ | 0.1+ |
| 2001 10 22 | 704 | 0.1+ | 0.8− | 2002 01 15 | 704 | 0.9− | 0.0 | 2006 11 02 | 703 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.5− | 0.1+ | 2002 01 15 | 704 | 0.4− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.9− | 0.6+ | 2002 01 15 | 704 | 0.5− | 0.8− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.9− | 0.4+ | 2002 01 15 | 704 | 1.3− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 1.0− | 0.2+ | 2002 01 15 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.9− | 0.8+ | 2002 02 08 | 704 | 0.6− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 10 24 | 333 | 0.4− | 0.0 | 2002 02 08 | 704 | 0.6− | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2001 10 24 | 333 | 0.5+ | 0.5− | 2002 02 08 | 704 | 1.1− | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2001 10 24 | 333 | 0.3+ | 0.2− | 2002 02 08 | 704 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2001 10 24 | 333 | 0.4+ | 0.0 | 2002 02 08 | 704 | 1.3− | 0.0 | 2006 11 11 | 703 | 0.7− | 1.2− |
| 2001 10 24 | 333 | 0.5− | 0.5− | 2002 02 12 | 704 | (1.3− | 1.7+) | 2006 11 11 | 703 | 1.3+ | 1.2− |
| 2001 10 24 | 333 | 0.1− | 0.0 | 2002 02 12 | 704 | 0.3+ | 0.6+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2001 10 24 | 704 | 0.1− | 0.4− | 2002 02 12 | 704 | 0.2− | 1.1+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2001 10 24 | 704 | 0.1+ | 0.5− | 2003 03 08 | 644 | 0.5+ | 0.5+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2001 10 24 | 704 | 0.5− | 0.8− | 2003 03 08 | 644 | 0.5+ | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2003 03 08 | 644 | 0.5+ | 0.1+ | 2006 11 17 | 703 | (1.6− | 0.7+) |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2003 03 23 | 644 | 0.8+ | 0.4− | 2006 11 17 | 703 | 0.7− | 0.4+ |
| 2001 10 25 | 333 | 0.1+ | 0.0 | 2003 03 23 | 644 | 0.7+ | 0.3− | 2006 11 17 | 703 | 1.0+ | 0.4+ |
| 2001 10 25 | 333 | 0.2+ | 0.0 | 2003 03 23 | 644 | 0.7+ | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2001 10 25 | 333 | 0.2+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2001 10 26 | 704 | 0.1− | 0.0 | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2001 10 26 | 704 | 0.3+ | 0.2+ | 2004 04 13 | 691 | 0.4− | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2001 10 26 | 704 | 0.1− | 0.0 | 2006 08 28 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2001 10 26 | 704 | 0.2− | 0.4+ | 2006 08 28 | 704 | 0.4+ | 0.9− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2001 10 26 | 333 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2001 10 26 | 704 | 0.2− | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2001 10 26 | 333 | 0.2+ | 0.1− | 2006 08 31 | 704 | 0.5− | 0.8+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2001 10 26 | 333 | 0.1− | 1.0− | 2006 08 31 | 704 | 0.5− | 1.5+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2001 10 28 | 704 | 0.0 | 0.2− | 2006 08 31 | 704 | 0.3− | 0.9+ | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 10 28 | 704 | 0.3+ | 0.3+ | 2006 08 31 | 704 | 0.7− | 1.2+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2001 10 28 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 704 | 0.5− | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2001 10 28 | 704 | 0.7− | 0.4− | 2006 09 16 | 704 | 0.5− | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2006 09 16 | 704 | 0.4− | 0.6+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2001 11 09 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 2001 11 09 | 704 | 0.4+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2001 11 12 | 704 | 1.3+ | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.8− | 2006 11 26 | 704 | 0.7+ | 0.6− |
| 2001 11 12 | 704 | 1.2+ | 0.1+ | 2006 09 18 | 683 | 1.5+ | 0.0 | 2006 11 26 | 704 | 0.1− | 0.3+ |
| 2001 11 12 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.6− | 2006 11 26 | 704 | 0.5− | 0.1− |
| 2001 11 12 | 704 | (1.5+ | 0.1+) | 2006 09 18 | 683 | (2.1+ | 0.1+) | 2006 11 26 | 704 | 0.5− | 1.2+ |
| 2001 11 12 | 704 | 1.0+ | 0.1+ | 2006 09 18 | 683 | (2.0+ | 0.4+) | 2006 11 27 | 703 | 0.1− | 0.4− |
| 2001 11 15 | 608 | 0.0 | 0.6− | 2006 09 19 | 704 | 1.3− | 0.3+ | 2006 11 27 | 703 | 0.0 | 0.5− |
| 2001 11 15 | 608 | 0.3+ | 0.4− | 2006 09 19 | 704 | 1.4− | 0.0 | 2006 11 27 | 703 | 0.4− | 0.5− |
| 2001 11 15 | 608 | 0.1− | 0.1− | 2006 09 19 | 704 | 0.5− | 0.1− | 2006 11 27 | 703 | 0.3+ | 0.1+ |
| 2001 11 16 | 644 | 0.3+ | 0.0 | 2006 09 19 | 704 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.0 |
| 2001 11 16 | 644 | 0.4+ | 0.0 | 2006 09 19 | 704 | 0.3− | 0.7+ | 2006 11 29 | 704 | 1.0− | 0.8+ |
| 2001 11 16 | 644 | 0.4+ | 0.1− | 2006 09 19 | 683 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.5+ |
| 2001 11 19 | 704 | 0.7+ | 0.1− | 2006 09 19 | 683 | 0.9+ | 0.4+ | 2006 11 29 | 704 | 0.0 | 0.7+ |
| 2001 11 19 | 704 | 0.5+ | 0.2− | 2006 09 19 | 683 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.2+ |

**(139873)∗ 2001 RD$_{78}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.64184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21000416 | $\omega$ | 150.42159 | | −0.87046430 | −0.49223151 | |
| $a$ | 2.8031787 | $\Omega$ | 0.09194 | | +0.42000386 | −0.74297216 | |
| $e$ | 0.1579049 | $i$ | 7.96962 | | +0.25668787 | −0.45354219 | |
| $P$ | 4.69 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.1+ | 0.8+ | 2001 11 17 | 704 | (1.1− | 2.5+) | 2003 03 26 | 704 | 0.4− | 0.6+ |
| 2001 09 10 | 704 | 0.4+ | 0.1− | 2001 11 17 | 704 | (0.3− | 1.8+) | 2003 03 26 | 704 | 0.3− | 0.7+ |
| 2001 09 10 | 704 | 0.4− | 0.7− | 2001 11 17 | 644 | 0.0 | 0.5+ | 2003 03 26 | 704 | 0.2+ | 0.2− |
| 2001 09 10 | 704 | 0.8− | 0.1− | 2001 11 17 | 644 | 0.3+ | 0.4+ | 2003 03 26 | 704 | 0.2− | 0.2+ |
| 2001 09 17 | 704 | 0.6− | 1.2+ | 2001 11 17 | 644 | 0.0 | 0.5+ | 2003 03 30 | 704 | 0.7− | 0.8+ |
| 2001 09 17 | 704 | 0.3+ | 0.4+ | 2001 11 20 | 699 | 0.6− | 0.0 | 2003 03 30 | 704 | 0.3+ | 0.3− |
| 2001 09 17 | 704 | 0.6− | 0.1− | 2001 11 20 | 699 | 0.8− | 0.3+ | 2003 03 30 | 704 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | 0.9− | 0.7+ | 2001 11 20 | 699 | 0.8+ | 0.6+ | 2003 04 22 | 703 | 0.8− | 1.1+ |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2001 11 20 | 699 | (0.6− | 1.7+) | 2003 04 22 | 703 | (5.2− | 2.5−) |
| 2001 09 20 | 704 | 0.7− | 0.9+ | 2002 12 06 | 704 | 1.3− | 0.4− | 2003 04 22 | 703 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 1.2− | 0.4+ | 2002 12 06 | 704 | 0.2− | 0.5− | 2003 04 22 | 703 | 0.7− | 1.0− |
| 2001 09 24 | 704 | 0.4− | 0.8+ | 2002 12 06 | 704 | 1.1+ | 0.1− | 2003 04 29 | 704 | 1.1− | 1.3+ |
| 2001 09 24 | 704 | 1.4− | 0.2+ | 2003 01 18 | 644 | 0.1+ | 0.1− | 2003 04 29 | 704 | (2.3+ | 0.9−) |
| 2001 09 24 | 704 | 0.3+ | 0.7− | 2003 01 18 | 644 | 0.1+ | 0.1− | 2003 04 29 | 704 | 1.2+ | 0.5+ |
| 2001 09 24 | 704 | 0.7+ | 0.3+ | 2003 01 18 | 644 | 0.1+ | 0.0 | 2003 04 29 | 704 | (2.0+ | 1.6−) |
| 2001 09 26 | 704 | 0.6+ | 0.1+ | 2003 01 26 | 699 | 0.7+ | 0.4+ | 2003 05 01 | 704 | 0.3+ | 0.5+ |
| 2001 09 26 | 704 | 0.0 | 0.6+ | 2003 01 26 | 699 | 0.2+ | 0.3+ | 2003 05 01 | 704 | 1.0+ | 1.0+ |
| 2001 09 26 | 704 | 1.1+ | 0.3− | 2003 01 26 | 699 | 0.1− | 0.5+ | 2003 05 01 | 704 | 0.6+ | 0.8+ |
| 2001 09 26 | 704 | 0.7+ | 0.3+ | 2003 01 26 | 699 | 0.9+ | 0.1+ | 2003 05 01 | 704 | 0.1+ | 0.2+ |
| 2001 09 26 | 704 | 0.7+ | 1.4− | 2003 01 30 | 608 | 0.0 | 0.8− | 2005 07 29 | 644 | 0.2− | 0.8+ |
| 2001 09 26 | 704 | 0.6+ | 1.0− | 2003 01 30 | 608 | 0.2− | 0.8− | 2005 07 29 | 644 | 0.5− | 0.5+ |
| 2001 09 26 | 704 | 0.0 | 0.6+ | 2003 01 30 | 608 | 0.3+ | 0.5− | 2005 07 29 | 644 | 0.3− | 0.9+ |
| 2001 10 07 | 644 | 0.3− | 0.2+ | 2003 01 31 | 704 | 0.4− | 0.4− | 2005 08 29 | 699 | 0.7+ | 0.3+ |
| 2001 10 07 | 644 | 0.1− | 0.2+ | 2003 01 31 | 704 | 0.6− | 0.5− | 2005 08 29 | 704 | 0.2+ | 0.7+ |
| 2001 10 07 | 644 | 0.2− | 0.2+ | 2003 01 31 | 704 | 0.5− | 0.5− | 2005 08 29 | 704 | 1.0− | 0.5+ |
| 2001 10 12 | 699 | 0.3− | 0.2− | 2003 01 31 | 704 | 0.4− | 0.1+ | 2005 08 29 | 699 | 0.3− | 0.8+ |
| 2001 10 12 | 699 | 0.4+ | 0.0 | 2003 01 31 | 704 | 0.7− | 0.4− | 2005 08 29 | 704 | 0.2− | 0.0 |
| 2001 10 12 | 699 | 0.4+ | 0.4− | 2003 02 02 | 644 | 0.1+ | 0.3+ | 2005 08 29 | 704 | 0.7− | 0.3+ |
| 2001 10 12 | 699 | 0.8+ | 0.2+ | 2003 02 02 | 644 | 0.1+ | 0.4+ | 2005 08 29 | 699 | (0.9− | 1.8−) |
| 2001 10 14 | 704 | 0.1+ | 0.3+ | 2003 02 02 | 644 | 0.0 | 0.3+ | 2005 08 29 | 699 | 0.3+ | 1.1+ |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2003 02 04 | 699 | 0.2+ | 0.2+ | 2005 08 31 | 691 | 0.2− | 0.5+ |
| 2001 10 14 | 704 | 0.2− | 0.2− | 2003 02 04 | 699 | 1.0− | 0.0 | 2005 08 31 | 691 | 0.3− | 0.4+ |
| 2001 10 14 | 704 | 0.4− | 0.2+ | 2003 02 04 | 699 | 0.1− | 0.0 | 2005 08 31 | 691 | 0.2− | 0.3+ |
| 2001 10 14 | 704 | 0.3− | 0.3− | 2003 02 04 | 699 | 0.0 | 0.1+ | 2005 09 07 | 699 | 0.0 | 0.6− |
| 2001 10 15 | 333 | 0.2− | 0.6+ | 2003 02 06 | 704 | 0.2+ | 0.3+ | 2005 09 07 | 699 | 0.5− | 0.3+ |
| 2001 10 15 | 333 | 0.2− | 0.7+ | 2003 02 06 | 704 | 0.1− | 0.8+ | 2005 09 07 | 699 | 0.3+ | 0.1+ |
| 2001 10 15 | 333 | 0.6− | 0.4+ | 2003 02 06 | 704 | 0.9+ | 0.5+ | 2005 09 07 | 699 | (2.7− | 1.5−) |
| 2001 10 15 | 333 | 0.1+ | 0.1+ | 2003 02 06 | 704 | 0.1+ | 0.1+ | 2005 09 13 | 703 | 0.1− | 0.9− |
| 2001 10 15 | 333 | 0.3− | 0.1− | 2003 02 06 | 704 | 0.2+ | 0.6+ | 2005 09 13 | 703 | 0.6+ | 0.5+ |
| 2001 10 15 | 333 | 0.9− | 0.0 | 2003 02 07 | 704 | 0.2− | 0.5+ | 2005 09 13 | 703 | (0.2+ | 2.2−) |
| 2001 10 16 | 333 | 0.1+ | 0.2− | 2003 02 07 | 704 | 0.1− | 0.3+ | 2005 09 13 | 703 | 0.7− | 0.8− |
| 2001 10 16 | 333 | 0.1+ | 0.3− | 2003 02 07 | 704 | 0.1+ | 0.4− | 2005 09 14 | 691 | 0.2− | 0.3+ |
| 2001 10 16 | 333 | 0.5+ | 0.1+ | 2003 02 19 | 644 | 0.1− | 0.5+ | 2005 09 14 | 691 | 0.2− | 0.4+ |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2003 02 19 | 644 | 0.1− | 0.5+ | 2005 09 14 | 691 | 0.2− | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2003 02 19 | 644 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.5− |
| 2001 10 17 | 704 | 0.8− | 0.0 | 2003 02 23 | 699 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.4− |
| 2001 10 17 | 704 | 0.8− | 0.1+ | 2003 02 23 | 699 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.4+ | 1.0− |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2003 02 23 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.8− | 0.0 |
| 2001 10 19 | 644 | 0.1− | 0.1− | 2003 02 23 | 699 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.7+ | 1.1− |
| 2001 10 19 | 644 | 0.1− | 0.1− | 2003 02 24 | 608 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.6+ | 0.9− |
| 2001 10 19 | 644 | 0.1+ | 0.1− | 2003 02 24 | 608 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.0 |
| 2001 10 20 | 644 | 0.2− | 0.4+ | 2003 02 24 | 608 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2001 10 20 | 644 | 0.1− | 0.5+ | 2003 03 06 | 704 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.6− |
| 2001 10 20 | 644 | 0.1− | 0.5+ | 2003 03 06 | 704 | 0.5+ | 0.0 | 2006 11 02 | G96 | 0.2+ | 0.6− |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2003 03 06 | 704 | 0.0 | 0.4+ | 2006 11 02 | G96 | 0.2+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.6− | 0.1+ | 2003 03 06 | 704 | 0.0 | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.5− |
| 2001 10 21 | 704 | 0.1− | 0.4− | 2003 03 06 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 1.1− | 0.2− | 2003 03 07 | 644 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.3− |
| 2001 10 21 | 704 | 0.7− | 0.0 | 2003 03 07 | 644 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 11 10 | 704 | (2.6+ | 2.5−) | 2003 03 07 | 644 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.4+ | 0.1− |
| 2001 11 10 | 644 | 0.5+ | 0.4+ | 2003 03 08 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.5+ | 0.4− |
| 2001 11 10 | 704 | 0.5+ | 1.4− | 2003 03 08 | 704 | 0.6+ | 0.9+ | 2006 11 13 | 644 | 0.4+ | 0.0 |
| 2001 11 10 | 644 | 0.3+ | 0.3+ | 2003 03 08 | 704 | 0.3− | 0.7+ | 2006 11 15 | 703 | 0.7− | 0.8− |
| 2001 11 10 | 644 | 0.6+ | 0.4+ | 2003 03 08 | 704 | 0.4+ | 0.9+ | 2006 11 15 | 703 | 0.1+ | 1.0− |
| 2001 11 10 | 704 | (0.7+ | 2.8+) | 2003 03 08 | 704 | 0.6+ | 0.8+ | 2006 11 15 | 703 | 0.1− | 0.5− |
| 2001 11 11 | 699 | 0.3+ | 0.0 | 2003 03 13 | 644 | 0.6+ | 0.6+ | 2006 11 15 | 704 | 0.9+ | 0.5− |
| 2001 11 11 | 699 | 0.3+ | 1.1+ | 2003 03 13 | 644 | 0.5+ | 0.5+ | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2001 11 11 | 699 | 0.3+ | 0.2− | 2003 03 13 | 644 | 0.1+ | 0.6+ | 2006 11 15 | 704 | 0.1− | 0.2+ |
| 2001 11 11 | 699 | 0.6+ | 0.5+ | 2003 03 13 | 608 | 1.0+ | 0.5+ | 2006 11 21 | 703 | 0.7+ | 0.3− |
| 2001 11 17 | 704 | (0.4− | 2.9+) | 2003 03 13 | 608 | 1.0+ | 0.6+ | 2006 11 21 | 703 | 0.1+ | 0.6− |
| 2001 11 17 | 704 | 1.0− | 1.4+ | 2003 03 13 | 608 | 1.1+ | 0.6+ | 2006 11 21 | 703 | 0.5− | 0.5− |
| 2001 11 17 | 704 | 0.1− | 1.3+ | 2003 03 26 | 704 | 0.0 | 0.8+ | 2006 11 21 | 703 | 0.0 | 0.4− |

**(139874)∗ 2001 RO$_{78}$**

Discovered 2001 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.89237 | | (2000.0) | | | |
| $n$ | 0.18108123 | $\omega$ | 319.91080 | | +0.97980763 | −0.00292702 |
| $a$ | 3.0942383 | $\Omega$ | 41.60761 | | +0.12193313 | +0.80118632 |
| $e$ | 0.2323234 | $i$ | 17.52215 | | −0.15845923 | +0.59840781 |
| $P$ | 5.44 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.7+ | 0.6+ | 2001 10 26 | 644 | 1.0+ | 0.4− | 2001 12 20 | 644 | 0.1+ | 0.8+ |
| 2001 08 25 | 704 | 0.9+ | 0.1+ | 2001 10 26 | 644 | 1.0+ | 0.2− | 2001 12 20 | 644 | 0.0 | 0.9+ |
| 2001 08 25 | 704 | 0.5− | 0.6+ | 2001 10 27 | 699 | 0.8− | 0.0 | 2001 12 20 | 644 | (0.2+ | 1.9+) |
| 2001 09 10 | 704 | 0.2− | 0.5− | 2001 10 27 | 699 | 0.1− | 0.3− | 2002 01 07 | 699 | 1.0+ | 1.0+ |
| 2001 09 10 | 704 | 0.4+ | 0.2− | 2001 10 27 | 699 | 0.9+ | 0.4− | 2002 01 07 | 699 | 0.8+ | 0.1− |
| 2001 09 10 | 704 | 0.3+ | 0.6− | 2001 10 27 | 699 | 0.4− | 0.0 | 2002 01 07 | 699 | (2.6+ | 0.0 ) |
| 2001 09 10 | 704 | 0.5+ | 0.2+ | 2001 11 09 | 644 | 0.0 | 0.7+ | 2002 01 07 | 699 | 0.1+ | 0.2− |
| 2001 09 17 | 704 | 1.0+ | 0.0 | 2001 11 09 | 644 | 0.1+ | 0.7+ | 2002 01 08 | 704 | 0.5+ | 0.2− |
| 2001 09 17 | 704 | 0.3− | 0.4− | 2001 11 09 | 644 | 0.2+ | 0.6+ | 2002 01 08 | 704 | 0.4+ | 0.1− |
| 2001 09 17 | 704 | (2.1+ | 0.0 ) | 2001 11 10 | 704 | 0.1− | 0.3− | 2002 01 08 | 704 | 0.0 | 0.9− |
| 2001 09 17 | 704 | 1.1+ | 0.6− | 2001 11 10 | 704 | 0.4− | 0.1− | 2002 01 08 | 704 | 0.5+ | 0.5− |
| 2001 09 23 | 644 | 0.2+ | 0.2+ | 2001 11 10 | 704 | 0.4− | 0.2− | 2002 01 08 | 704 | 0.2+ | 0.1− |
| 2001 09 23 | 644 | 0.4+ | 0.4+ | 2001 11 10 | 704 | 0.0 | 0.4− | 2003 01 13 | 704 | (0.0 | 1.7−) |
| 2001 09 23 | 644 | 0.1+ | 0.4+ | 2001 11 10 | 704 | 1.2− | 0.1− | 2003 01 13 | 704 | 0.2+ | 1.2+ |
| 2001 09 25 | 333 | 0.1+ | 0.7+ | 2001 11 12 | 704 | 0.4− | 0.0 | 2003 01 13 | 704 | 0.0 | 0.2+ |
| 2001 09 25 | 333 | 0.4+ | 1.0+ | 2001 11 12 | 704 | 0.1− | 0.2+ | 2003 01 13 | 704 | 1.1+ | 0.2+ |
| 2001 09 25 | 333 | 0.1+ | 0.5+ | 2001 11 12 | 704 | 0.4− | 0.3− | 2003 01 27 | 645 | 0.1− | 0.0 |
| 2001 09 25 | 691 | 0.3− | 0.5− | 2001 11 12 | 704 | 0.3− | 0.5+ | 2003 01 27 | 645 | 0.0 | 0.0 |
| 2001 09 25 | 691 | 0.0 | 0.3− | 2001 11 12 | 704 | 0.4− | 0.3+ | 2005 05 12 | 644 | 0.6+ | 0.6+ |
| 2001 09 25 | 691 | 0.1+ | 0.4− | 2001 11 17 | 644 | 0.5− | 0.1+ | 2005 05 12 | 644 | 0.5+ | 0.6+ |
| 2001 09 26 | 704 | 0.8+ | 0.1− | 2001 11 17 | 644 | 0.4+ | 0.0 | 2005 05 12 | 644 | 0.4+ | 0.6+ |
| 2001 09 26 | 704 | 0.2− | 0.5− | 2001 11 17 | 644 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 2001 09 26 | 704 | 0.9− | 0.4− | 2001 11 19 | 704 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2001 09 26 | 704 | 1.1− | 0.3− | 2001 11 19 | 704 | 0.2− | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 2001 09 26 | 704 | (1.8− | 0.4+) | 2001 11 19 | 704 | 0.3− | 0.1+ | 2006 08 25 | E12 | 0.3+ | 0.1− |
| 2001 10 13 | 704 | 0.2− | 0.3− | 2001 11 19 | 704 | 0.1− | 0.3+ | 2006 08 25 | E12 | 0.1+ | 0.4+ |
| 2001 10 13 | 704 | 0.7+ | 0.1− | 2001 11 19 | 704 | 0.3− | 0.2+ | 2006 08 25 | E12 | 0.5− | 0.1− |
| 2001 10 13 | 704 | 0.6+ | 0.5+ | 2001 11 24 | 704 | 0.6− | 0.3+ | 2006 08 25 | E12 | 0.1− | 0.2+ |
| 2001 10 13 | 704 | 0.3+ | 0.9+ | 2001 11 24 | 704 | 0.5− | 0.4+ | 2006 09 12 | E12 | 0.8− | 0.2− |
| 2001 10 13 | 704 | 0.3− | 0.9+ | 2001 11 24 | 704 | 0.4− | 0.1− | 2006 09 12 | E12 | 0.3− | 0.3− |
| 2001 10 18 | 333 | 0.3+ | 0.6− | 2001 11 24 | 704 | 0.8− | 0.2+ | 2006 09 12 | E12 | 0.2+ | 0.1+ |
| 2001 10 18 | 333 | 0.3− | 0.3− | 2001 11 24 | 704 | 0.4− | 0.1+ | 2006 09 12 | E12 | 0.2− | 0.5− |
| 2001 10 18 | 333 | 0.2+ | 0.2− | 2001 12 10 | 704 | 0.4+ | 0.1+ | 2006 09 28 | E12 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.5− | 0.7− | 2001 12 10 | 704 | 0.7+ | 0.5+ | 2006 09 28 | E12 | 0.6− | 0.2− |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2001 12 10 | 704 | 0.2+ | 0.7+ | 2006 10 12 | E12 | 0.1− | 0.4+ |
| 2001 10 21 | 704 | 0.3− | 0.2+ | 2001 12 10 | 704 | 0.2− | 0.3+ | 2006 10 12 | E12 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2001 12 10 | 704 | 0.2− | 0.7+ | 2006 10 12 | E12 | 0.6+ | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.1− | 2001 12 17 | 704 | 0.5− | 0.0 | 2006 10 28 | E12 | 0.5+ | 1.0+ |
| 2001 10 22 | 333 | 0.2+ | 0.6+ | 2001 12 17 | 704 | 0.6− | 0.4− | 2006 10 28 | E12 | 0.4+ | 0.2+ |
| 2001 10 22 | 333 | 0.3+ | 0.7− | 2001 12 17 | 704 | 1.3− | 0.1− | 2006 10 28 | E12 | 0.1− | 0.7− |
| 2001 10 22 | 333 | 0.9+ | 0.4+ | 2001 12 17 | 704 | 0.6− | 0.1− | | | | |
| 2001 10 26 | 644 | 0.9+ | 0.2− | 2001 12 17 | 704 | 0.6− | 0.4+ | | | | |

**(139875)∗ 2001 RQ$_{82}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 163.95437 | | (2000.0) | | | |
| $n$ | 0.22241577 | $\omega$ | 294.61536 | | −0.61735473 | +0.77569542 |
| $a$ | 2.6978989 | $\Omega$ | 296.61930 | | −0.65833646 | −0.60059844 |
| $e$ | 0.0271411 | $i$ | 8.42816 | | −0.43065791 | −0.19385081 |
| $P$ | 4.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.0 | 1.3+ | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2005 07 12 | G96 | 0.9+ | 0.1+ |
| 2001 08 25 | 704 | 0.8− | 0.0 | 2003 01 05 | 704 | 0.8+ | 0.4+ | 2005 07 12 | G96 | 0.2− | 0.1+ |
| 2001 08 25 | 704 | 0.5− | 1.1+ | 2004 03 17 | 704 | 0.7+ | 0.0 | 2005 07 12 | G96 | 0.2− | 0.0 |
| 2001 08 29 | 644 | 0.4+ | 0.9+ | 2004 03 17 | 704 | 0.0 | 0.5+ | 2005 07 12 | G96 | 0.8− | 0.0 |
| 2001 08 29 | 644 | 0.1− | 0.7+ | 2004 03 17 | 704 | 0.1+ | 0.4+ | 2005 07 15 | G96 | 0.3− | 0.1+ |
| 2001 08 29 | 644 | 0.3− | 0.6+ | 2004 03 17 | 704 | 0.0 | 0.6+ | 2005 07 15 | G96 | 0.2+ | 0.1+ |
| 2001 09 09 | 608 | 1.0− | 0.6− | 2004 03 17 | 704 | 0.7+ | 0.1+ | 2005 07 15 | G96 | 0.2+ | 0.4+ |
| 2001 09 09 | 608 | 0.7− | 1.1− | 2004 03 26 | 704 | 0.5+ | 0.8+ | 2005 07 15 | G96 | 0.2+ | 0.2− |
| 2001 09 09 | 608 | 1.3− | 0.8− | 2004 03 26 | 704 | 0.3+ | 0.6+ | 2005 07 16 | 691 | 0.0 | 0.0 |
| 2001 09 11 | 699 | 0.5+ | 0.1− | 2004 03 26 | 704 | 0.2− | 0.4+ | 2005 07 16 | 691 | 0.0 | 0.0 |
| 2001 09 11 | 699 | 0.4+ | 0.5+ | 2004 03 26 | 704 | 1.0+ | 0.7+ | 2005 07 16 | 691 | 0.2− | 0.1+ |
| 2001 09 11 | 699 | 0.7+ | 0.2+ | 2004 03 26 | 704 | 1.4+ | 1.1+ | 2006 08 29 | 703 | 0.1+ | 0.7+ |
| 2001 09 11 | 699 | 0.2+ | 0.0 | 2004 04 15 | 703 | 0.7− | 1.3+ | 2006 08 29 | 703 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2004 04 15 | 703 | 0.2− | 0.3+ | 2006 08 29 | 703 | 1.0− | 0.8− |
| 2001 09 16 | 704 | 0.0 | 0.7+ | 2004 04 15 | 703 | 1.3− | 0.5+ | 2006 08 29 | 703 | 0.3− | 0.0 |
| 2001 09 16 | 704 | 0.7− | 0.1+ | 2004 04 15 | 703 | 0.8− | 1.4+ | 2006 10 27 | 703 | 0.3+ | 0.3+ |
| 2001 09 16 | 704 | 0.1+ | 0.2− | 2004 04 17 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.4− |
| 2001 09 16 | 704 | 0.1− | 0.0 | 2004 04 17 | 704 | 1.0+ | 0.5+ | 2006 10 27 | 703 | 0.2+ | 0.1− |
| 2001 09 18 | 699 | 0.6− | 0.0 | 2004 04 17 | 704 | 1.1+ | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 2001 09 18 | 699 | 0.5+ | 0.7+ | 2004 04 17 | 704 | 0.7+ | 0.4+ | 2006 11 14 | 703 | 0.3+ | 0.8+ |
| 2001 09 18 | 699 | 0.0 | 0.1− | 2004 04 26 | 608 | 0.2− | 1.1− | 2006 11 14 | 703 | (0.2+ | 1.6+) |
| 2001 09 18 | 699 | 0.5+ | 0.9+ | 2004 04 26 | 608 | 0.4− | 0.9− | 2006 11 14 | 703 | 0.4− | 0.5+ |
| 2002 12 06 | 704 | 1.0+ | 0.9+ | 2004 04 26 | 608 | 0.4− | 0.8− | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.4− | 0.7+ | 2005 06 30 | 691 | 0.1+ | 0.1− | 2006 11 17 | 644 | 0.1− | 0.5+ |
| 2002 12 06 | 704 | 0.2− | 1.2+ | 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 11 17 | 644 | 0.0 | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 0.8+ | 2005 06 30 | 691 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 1.2− | 0.5− | 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.4+ |
| 2003 01 05 | 704 | 0.1− | 0.2− | 2005 07 05 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.0 | 0.9− | 2005 07 05 | 691 | 0.1+ | 0.0 | | | | |

**(139876)∗ 2001 RV$_{82}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.95317 | | (2000.0) | | | |
| $n$ | 0.21892904 | $\omega$ | 256.11220 | | −0.12237237 | −0.99102242 |
| $a$ | 2.7264684 | $\Omega$ | 201.14341 | | +0.95847300 | −0.10392306 |
| $e$ | 0.1802629 | $i$ | 8.58550 | | +0.25759369 | −0.08411043 |
| $P$ | 4.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 07 | 910 | 0.8− | 0.4+ | 2003 01 05 | 704 | 0.6− | 0.2+ | 2006 10 15 | D35 | 0.1− | 0.2− |
| 1997 09 07 | 910 | 0.9− | 0.3+ | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 10 15 | D35 | 0.3+ | 0.3− |
| 1997 09 07 | 910 | 1.0− | 0.5+ | 2003 01 05 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.2+ |
| 1999 04 07 | 699 | 0.5+ | 0.1− | 2003 01 09 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.3+ |
| 1999 04 07 | 699 | 1.3+ | 1.0+ | 2003 01 09 | 704 | 0.9+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 1999 04 07 | 699 | 0.1+ | 0.8+ | 2003 01 09 | 704 | (2.3− | 1.5+) | 2006 10 16 | 703 | 0.2− | 0.7+ |
| 2001 09 08 | 704 | 0.6+ | 1.1+ | 2003 01 09 | 704 | (0.1− | 2.5+) | 2006 10 18 | 691 | 0.3+ | 0.2− |
| 2001 09 08 | 704 | 0.5− | 0.9+ | 2003 01 26 | 644 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.6− | 0.9+ | 2003 01 26 | 644 | 0.5+ | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.3− |
| 2001 09 11 | 699 | 0.1− | 0.6− | 2003 01 26 | 644 | 0.5+ | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.3− |
| 2001 09 11 | 699 | 0.7− | 0.7− | 2003 01 27 | 608 | 0.6+ | 0.3− | 2006 10 22 | 691 | 0.3+ | 0.3− |
| 2001 09 11 | 699 | 0.1− | 0.1− | 2003 01 27 | 608 | 0.6+ | 0.2− | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2001 09 11 | 699 | 0.1− | 0.7+ | 2003 01 27 | 608 | 0.8+ | 0.2− | 2006 10 28 | 683 | 0.0 | 0.4− |
| 2001 09 13 | 644 | 0.1− | 0.5+ | 2003 01 28 | 683 | 1.1− | 1.2+ | 2006 10 28 | 683 | 0.3+ | 0.9− |
| 2001 09 13 | 644 | 0.3+ | 0.4+ | 2003 01 28 | 683 | 1.1− | 0.9+ | 2006 11 02 | 703 | 0.0 | 0.2− |
| 2001 09 13 | 644 | 0.2+ | 0.3+ | 2003 01 28 | 683 | 1.3− | 1.3+ | 2006 11 02 | 703 | 0.2+ | 0.5− |
| 2001 09 16 | 704 | 0.9+ | 0.4+ | 2003 01 28 | 704 | 0.1+ | 0.9+ | 2006 11 02 | 703 | 0.9+ | 0.1+ |
| 2001 09 16 | 704 | 0.3+ | 0.3+ | 2003 01 28 | 704 | 0.2+ | 0.7+ | 2006 11 02 | 703 | 0.1+ | 0.4− |
| 2001 09 16 | 704 | 0.9− | 0.5+ | 2003 01 28 | 704 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.4+ | 0.5+ | 2003 01 28 | 704 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.7+ | 2003 01 28 | 704 | 0.3+ | 1.0+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 09 18 | 699 | 0.3− | 0.1− | 2003 02 02 | 608 | (0.4+ | 2.1−) | 2006 11 14 | 704 | (0.8+ | 1.5+) |
| 2001 09 18 | 699 | 0.8+ | 0.1+ | 2003 02 02 | 608 | 0.5+ | 1.4− | 2006 11 14 | 704 | 0.1− | 0.3− |
| 2001 09 18 | 699 | 0.8+ | 0.6+ | 2003 02 02 | 608 | 0.1− | 1.3− | 2006 11 14 | 704 | 0.3+ | 0.3+ |
| 2001 09 18 | 699 | 0.8− | 1.3+ | 2003 02 03 | 699 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.8+ |
| 2001 09 20 | 704 | 1.1− | 0.9− | 2003 02 03 | 699 | 0.3− | 0.5+ | 2006 11 14 | 704 | 0.2− | 1.3+ |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2003 02 03 | 699 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.6+ |
| 2001 09 20 | 704 | (1.6− | 1.1+) | 2003 02 03 | 699 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.5− | 1.3+ |
| 2001 09 26 | 704 | 1.0+ | 0.4+ | 2003 02 04 | 704 | (1.2+ | 2.1+) | 2006 11 17 | 704 | 0.3− | 1.0+ |
| 2001 09 26 | 704 | 0.3− | 0.3+ | 2003 02 04 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.8− | 0.1+ |
| 2001 09 26 | 704 | 0.1− | 0.4− | 2003 02 04 | 704 | 0.1− | 0.9+ | 2006 11 17 | 704 | (0.0 | 1.5+) |
| 2001 09 26 | 704 | 0.2+ | 0.5+ | 2003 02 04 | 644 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.6+ | 0.3− |
| 2001 09 26 | 704 | 0.2+ | 0.5+ | 2003 02 04 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2001 10 21 | 704 | (2.0− | 0.8+) | 2003 02 04 | 644 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2001 10 21 | 704 | 0.5− | 1.3+ | 2003 03 02 | 704 | 0.7− | 0.7+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | (1.6− | 1.0+) | 2003 03 02 | 704 | 0.9− | 0.3+ | 2006 11 19 | 704 | (3.2+ | 1.8−) |
| 2002 11 07 | 704 | 0.4+ | 1.3− | 2003 03 02 | 704 | 1.3− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2002 11 07 | 704 | 0.7+ | 0.2− | 2004 04 20 | 704 | 0.2− | 0.2− | 2006 11 19 | 704 | (2.5+ | 2.2−) |
| 2002 11 07 | 704 | 0.2+ | 0.4+ | 2004 04 20 | 704 | 1.0− | 0.2+ | 2006 11 19 | 704 | (2.7+ | 2.0−) |
| 2002 11 19 | 644 | 0.6+ | 0.2+ | 2004 04 20 | 704 | 0.8− | 0.8− | 2006 11 19 | 704 | (2.8+ | 1.4−) |
| 2002 11 19 | 644 | 0.3+ | 0.3+ | 2004 05 20 | 691 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.7− | 1.2+ |
| 2002 11 19 | 644 | 0.1+ | 0.2+ | 2004 05 20 | 691 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.8− | 0.3+ |
| 2003 01 02 | 704 | 0.0 | 1.1− | 2004 05 20 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.6+ |
| 2003 01 02 | 704 | 0.7− | 1.1− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 1.0− | 0.4+ |
| 2003 01 02 | 704 | 0.9− | 1.2− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.8− | 0.6+ |
| 2003 01 02 | 704 | (1.2− | 1.7−) | 2006 09 30 | G96 | 0.0 | 0.4− | | | | |
| 2003 01 05 | 704 | 1.0+ | 0.3+ | 2006 10 15 | D35 | 0.1+ | 0.2− | | | | |

**(139877)∗ 2001 RO$_{83}$ = 1999 GJ$_{56}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 18049)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.10849 | | (2000.0) | | | |
| $n$ | 0.18836150 | $\omega$ | 172.13544 | | +0.99760954 | +0.06783988 |
| $a$ | 3.0139864 | $\Omega$ | 184.04499 | | −0.06906978 | +0.97301270 |
| $e$ | 0.1187750 | $i$ | 10.74519 | | −0.00213980 | +0.22055394 |
| $P$ | 5.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 691 | 0.1+ | 0.4− | 2001 09 23 | 704 | 0.2+ | 0.1+ | 2005 05 13 | 691 | 0.3+ | 0.5+ |
| 1999 04 09 | 691 | 0.6+ | 0.8− | 2001 09 23 | 704 | 0.1− | 0.3− | 2005 05 20 | G96 | 0.8− | 0.3− |
| 1999 04 09 | 691 | 0.3+ | 0.6− | 2001 09 24 | 644 | 0.2− | 0.4+ | 2005 05 20 | G96 | 0.3− | 0.1− |
| 1999 04 11 | 691 | 0.6− | 0.3− | 2001 09 24 | 644 | 0.2− | 0.5+ | 2005 05 20 | G96 | 1.0− | 0.0 |
| 1999 04 11 | 691 | 0.4− | 0.4− | 2001 09 24 | 644 | 0.2− | 0.2+ | 2005 05 20 | G96 | 0.6− | 0.2− |
| 1999 04 11 | 691 | 0.4− | 0.1− | 2001 09 26 | 699 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2− |
| 2001 08 27 | 699 | 0.1+ | 0.1− | 2001 09 26 | 699 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.1− | 0.2− |
| 2001 08 27 | 699 | 0.1+ | 0.1+ | 2001 09 26 | 699 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2− |
| 2001 08 27 | 699 | 0.2− | 0.1+ | 2001 09 26 | 699 | 0.9+ | 0.3− | 2006 08 18 | 704 | 0.3− | 0.2− |
| 2001 08 27 | 699 | 0.2+ | 0.2− | 2001 10 11 | 644 | 0.3− | 0.2− | 2006 08 18 | 704 | 0.1+ | 1.2− |
| 2001 09 10 | 333 | 0.0 | 0.8− | 2001 10 11 | 644 | 0.3− | 0.2− | 2006 08 18 | 704 | 0.1− | 1.3− |
| 2001 09 10 | 333 | 0.3+ | 0.2− | 2001 10 11 | 644 | 0.3− | 0.0 | 2006 08 18 | 704 | 0.3− | 0.1+ |
| 2001 09 11 | 699 | 0.6− | 0.0 | 2001 10 13 | 704 | (0.1− | 4.6−) | 2006 08 27 | 699 | 0.6+ | 0.2− |
| 2001 09 11 | 699 | 1.1− | 0.0 | 2001 10 13 | 704 | (0.1− | 4.7−) | 2006 08 27 | 699 | 1.1+ | 1.7− |
| 2001 09 11 | 699 | 1.7− | 0.1+ | 2001 10 13 | 704 | (0.5+ | 4.5−) | 2006 08 27 | 699 | 0.1+ | 0.4+ |
| 2001 09 11 | 699 | 0.8− | 0.2− | 2001 10 13 | 704 | (0.4− | 4.7−) | 2006 08 29 | 703 | 0.1− | 0.8+ |
| 2001 09 15 | 644 | 0.2+ | 0.7+ | 2001 10 17 | 644 | 0.4− | 1.0+ | 2006 08 29 | 703 | 0.2+ | 0.1+ |
| 2001 09 15 | 644 | 0.4− | 0.7+ | 2001 10 17 | 644 | 0.3− | 1.1+ | 2006 08 29 | 703 | 0.6+ | 0.8+ |
| 2001 09 15 | 644 | 0.0 | 0.8+ | 2001 10 17 | 644 | 0.3− | 1.0+ | 2006 08 29 | 703 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | 0.1− | 0.5− | 2001 10 19 | 644 | 0.3− | 0.8+ | 2006 08 30 | 699 | 1.0− | 0.5+ |
| 2001 09 16 | 704 | 0.4+ | 0.5− | 2001 10 19 | 644 | 0.2− | 0.8+ | 2006 08 30 | 699 | 0.2+ | 0.1− |
| 2001 09 16 | 704 | 0.9+ | 0.0 | 2001 10 19 | 644 | 0.3− | 0.7+ | 2006 08 30 | 699 | 0.7− | 0.3− |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2001 10 20 | 704 | 0.4− | 0.2− | 2006 08 30 | 699 | 0.6+ | 0.5− |
| 2001 09 18 | 699 | 0.7− | 0.5− | 2001 10 20 | 704 | 0.4− | 0.2+ | 2006 09 11 | 703 | 0.0 | 0.4− |
| 2001 09 18 | 699 | 0.0 | 0.2− | 2001 10 20 | 704 | 0.5− | 0.7+ | 2006 09 11 | 703 | 0.2− | 0.1− |
| 2001 09 18 | 699 | 0.7+ | 0.3+ | 2001 10 20 | 704 | 0.2− | 0.3+ | 2006 09 11 | 703 | 0.1+ | 0.4− |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 10 20 | 704 | 0.1+ | 0.4+ | 2006 09 11 | 703 | 0.5− | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 10 24 | 704 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.4− | 0.2+ | 2001 10 24 | 704 | 0.2+ | 1.3− | 2006 09 19 | 691 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2001 10 24 | 704 | 0.9− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.3+ | 1.6+ | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 644 | 0.2− | 0.1+ | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2001 09 21 | 644 | 0.1+ | 0.2− | 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.2− |
| 2001 09 21 | 644 | 0.0 | 0.1+ | 2005 04 30 | 691 | 0.5+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.4− |
| 2001 09 22 | 704 | 1.3+ | 0.3+ | 2005 05 09 | 703 | 0.3− | 1.2+ | 2006 09 23 | 691 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.6+ | 0.1− | 2005 05 09 | 703 | 0.4− | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.3− |
| 2001 09 22 | 704 | 1.1+ | 0.0 | 2005 05 09 | 703 | 1.0− | 0.8+ | 2006 09 23 | 691 | 0.1+ | 0.2− |
| 2001 09 22 | 704 | 1.3+ | 0.6− | 2005 05 09 | 703 | 1.7− | 1.2+ | 2006 09 23 | 691 | 0.2− | 0.2− |
| 2001 09 23 | 704 | 0.3+ | 0.1− | 2005 05 13 | 691 | 0.0 | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.3− |
| 2001 09 23 | 704 | 0.0 | 0.2− | 2005 05 13 | 691 | 0.4+ | 0.2+ | | | | |

**(139878)∗ 2001 RT$_{84}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.15044 | | (2000.0) | | | |
| $n$ | 0.19110617 | $\omega$ | 98.33878 | | +0.22876919 | −0.97130389 |
| $a$ | 2.9850589 | $\Omega$ | 338.10329 | | +0.81033156 | +0.22704197 |
| $e$ | 0.0634914 | $i$ | 10.04763 | | +0.53946958 | +0.07085688 |
| $P$ | 5.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 691 | 0.5− | 0.3+ | 2001 10 21 | 704 | 0.2− | 0.5+ | 2004 03 19 | 704 | 0.3− | 0.5+ |
| 2001 07 25 | 691 | 0.5− | 0.6+ | 2001 10 21 | 704 | 0.3− | 1.4+ | 2004 03 28 | 691 | 0.3+ | 0.4+ |
| 2001 07 25 | 691 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.1− | 0.9+ | 2004 03 28 | 691 | 0.1+ | 0.4+ |
| 2001 08 23 | 699 | 0.4+ | 1.0+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2004 03 28 | 691 | 0.4+ | 0.6+ |
| 2001 08 23 | 699 | 0.7− | 0.6+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 07 29 | A13 | 0.3− | 0.1+ |
| 2001 08 23 | 699 | 0.8+ | 1.4+ | 2001 12 10 | 645 | 0.1− | 0.1− | 2006 07 30 | A13 | 0.5− | 0.1+ |
| 2001 08 23 | 699 | 0.8− | 0.5+ | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 07 30 | A13 | 1.0− | 0.3− |
| 2001 09 11 | 699 | 0.7− | 0.4+ | 2002 12 06 | 704 | 0.5− | 0.0 | 2006 08 14 | A13 | 0.3+ | 0.0 |
| 2001 09 11 | 699 | 0.1+ | 0.4+ | 2002 12 06 | 704 | 0.2+ | 0.6+ | 2006 08 14 | A13 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 0.6+ | 0.2− | 2002 12 06 | 704 | 0.0 | 0.7+ | 2006 08 19 | 691 | 0.2+ | 0.0 |
| 2001 09 11 | 699 | 0.2+ | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.5− | 0.8+ | 2006 08 19 | 691 | 0.1+ | 0.3− |
| 2001 09 16 | 704 | 0.4− | 0.6+ | 2002 12 06 | 704 | 0.7+ | 0.2+ | 2006 08 21 | 704 | 0.6+ | 0.3+ |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2002 12 06 | 704 | 0.3+ | 1.6+ | 2006 08 21 | 704 | 0.3− | 0.1− |
| 2001 09 16 | 704 | 0.5− | 0.4+ | 2004 02 16 | 703 | 1.8+ | 0.8− | 2006 08 21 | 704 | 0.9+ | 0.2+ |
| 2001 09 18 | 699 | 0.5− | 0.2− | 2004 02 16 | 703 | (2.2+ | 0.8+) | 2006 08 21 | 704 | 0.1+ | 0.6+ |
| 2001 09 18 | 699 | 0.1+ | 0.2− | 2004 02 16 | 703 | 0.8+ | 0.7+ | 2006 08 21 | 704 | 0.1+ | 0.2− |
| 2001 09 18 | 699 | 0.3+ | 1.1− | 2004 02 16 | 703 | (2.1+ | 0.2+) | 2006 08 25 | 704 | 0.2+ | 0.4+ |
| 2001 09 18 | 699 | 0.3− | 0.6+ | 2004 03 13 | 644 | 0.4+ | 0.7+ | 2006 08 25 | 704 | 0.8− | 1.7+ |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 08 25 | 704 | (2.7− | 0.1+) |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2004 03 13 | 644 | 0.4+ | 0.7+ | 2006 08 25 | 704 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.8+ | 2004 03 16 | 703 | 0.0 | 0.3− | 2006 08 27 | 691 | 0.5+ | 0.3− |
| 2001 09 20 | 704 | 0.0 | 1.0+ | 2004 03 16 | 703 | 0.4− | 0.5− | 2006 08 27 | 691 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.7+ | 2004 03 16 | 703 | 0.3+ | 0.6+ | 2006 08 27 | 691 | 0.3− | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 1.3+ | 2004 03 16 | 703 | 0.7− | 0.7+ | 2006 08 28 | 703 | 0.4+ | 0.3+ |
| 2001 09 23 | 704 | 1.1+ | 0.1− | 2004 03 19 | 704 | 0.4− | 1.1+ | 2006 08 28 | 703 | 0.3− | 0.7+ |
| 2001 09 23 | 704 | 0.4+ | 0.6− | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2006 08 28 | 703 | 0.4+ | 0.3+ |
| 2001 09 23 | 704 | 1.2+ | 0.1− | 2004 03 19 | 704 | 0.6+ | 0.8+ | 2006 08 28 | 703 | 0.1+ | 0.7+ |
| 2001 09 23 | 704 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 0.7− | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 699 | 1.7− | 0.7− | 2004 03 19 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 1.2− | 0.2− |
| 2001 09 26 | 699 | 0.6+ | 0.4− | 2004 03 19 | 704 | 0.8+ | 0.3− | 2006 09 18 | 699 | 0.3+ | 1.1+ |
| 2001 09 26 | 699 | 1.1− | 0.9+ | 2004 03 19 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.5− |
| 2001 09 26 | 699 | 0.2− | 0.8+ | 2004 03 19 | 704 | 0.3+ | 0.9+ | | | | |

**(139879)∗ 2001 RK$_{85}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.34446 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18761037 | $\omega$ | 327.71235 | | +0.76418379 | +0.64432619 | |
| $a$ | 3.0220257 | $\Omega$ | 351.97334 | | −0.53787843 | +0.61141293 | |
| $e$ | 0.1408124 | $i$ | 12.17266 | | −0.35596337 | +0.45936695 | |
| $P$ | 5.25 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.9− | 0.1− | 2001 09 22 | 704 | 0.0 | 0.5− | 2005 06 05 | E12 | 0.7+ | 0.6+ |
| 2001 07 20 | 644 | 0.8− | 0.0 | 2001 09 22 | 704 | (2.2− | 0.1+) | 2006 08 16 | E12 | 0.7− | 0.3+ |
| 2001 07 20 | 644 | 0.6− | 0.2+ | 2001 09 22 | 704 | 0.2− | 0.5− | 2006 08 16 | E12 | 0.1− | 0.2− |
| 2001 08 16 | 493 | 0.2− | 0.2− | 2001 09 22 | 704 | 0.4− | 0.3− | 2006 08 16 | E12 | 0.0 | 0.1− |
| 2001 08 16 | 493 | 0.2− | 0.2− | 2001 09 24 | 704 | 0.4− | 0.2− | 2006 08 16 | E12 | 0.2+ | 0.2− |
| 2001 08 16 | 493 | 0.1− | 0.2− | 2001 09 24 | 704 | 0.6− | 0.1− | 2006 08 17 | 644 | 0.1− | 0.1− |
| 2001 08 16 | 704 | 0.7+ | 0.6+ | 2001 09 24 | 704 | 1.0− | 0.4− | 2006 08 17 | 644 | 0.1− | 0.0 |
| 2001 08 16 | 704 | 0.4+ | 0.2− | 2001 09 24 | 704 | 0.2− | 0.2− | 2006 08 17 | 644 | 0.2− | 0.1− |
| 2001 08 16 | 704 | 0.5− | 1.4+ | 2001 09 24 | 704 | 0.5− | 0.3− | 2006 08 20 | 644 | 0.1− | 0.3− |
| 2001 08 24 | 333 | 1.1+ | 0.8− | 2001 10 05 | 644 | 0.3− | 0.2− | 2006 08 20 | 644 | 0.2− | 0.1− |
| 2001 08 24 | 333 | 0.2+ | 1.2− | 2001 10 05 | 644 | 0.3− | 0.2− | 2006 08 20 | 644 | 0.1− | 0.2− |
| 2001 09 11 | 699 | 0.2− | 0.4+ | 2001 10 05 | 644 | 1.0− | 0.6− | 2006 08 20 | 644 | 0.2− | 0.4− |
| 2001 09 11 | 699 | 0.4+ | 0.1+ | 2001 10 14 | 704 | 0.0 | 0.9+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2001 09 11 | 699 | 0.0 | 0.2+ | 2001 10 14 | 704 | 0.4+ | 0.7+ | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2001 09 11 | 699 | 0.3+ | 0.5+ | 2001 10 14 | 704 | 0.0 | 0.5+ | 2006 08 23 | 704 | 0.5+ | 0.5− |
| 2001 09 15 | 644 | 0.4− | 0.4+ | 2001 10 14 | 704 | 0.6− | 0.1− | 2006 08 23 | 704 | 0.5+ | 0.6− |
| 2001 09 15 | 644 | 0.4− | 0.4+ | 2001 10 14 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 704 | 0.3+ | 0.8− |
| 2001 09 15 | 644 | 0.1− | 0.9+ | 2001 10 19 | 644 | 0.5− | 0.3− | 2006 08 23 | 704 | 0.6+ | 0.8− |
| 2001 09 16 | 704 | (2.4+ | 2.5+) | 2001 10 19 | 644 | 0.5− | 0.2− | 2006 08 23 | 704 | 0.5+ | 0.6− |
| 2001 09 16 | 704 | 1.3+ | 1.1+ | 2001 10 19 | 644 | 0.8− | 0.3− | 2006 08 23 | 644 | 0.2− | 0.1− |
| 2001 09 16 | 704 | 1.9+ | 1.5+ | 2001 10 21 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 644 | 0.2+ | 0.1− |
| 2001 09 16 | 704 | 1.4+ | 1.0+ | 2001 10 21 | 704 | 0.2+ | 0.9+ | 2006 08 23 | 644 | 0.2− | 0.1− |
| 2001 09 16 | 704 | 1.9+ | 1.6+ | 2001 10 21 | 704 | 0.0 | 1.0+ | 2006 08 28 | 704 | 0.7+ | 0.4− |
| 2001 09 16 | 704 | 1.2+ | 1.2+ | 2001 10 21 | 704 | 0.3− | 1.0+ | 2006 08 28 | 704 | 0.5+ | 0.9− |
| 2001 09 18 | 699 | 0.9− | 0.2− | 2001 10 21 | 704 | 0.1+ | 0.9+ | 2006 08 28 | 704 | 0.1+ | 0.7− |
| 2001 09 18 | 699 | 1.0− | 0.5− | 2002 12 06 | 704 | 0.0 | 0.2+ | 2006 08 28 | 704 | 1.0+ | 0.2+ |
| 2001 09 18 | 699 | 0.9− | 0.5+ | 2002 12 06 | 704 | 0.5− | 0.1+ | 2006 08 28 | 704 | 0.4+ | 0.5+ |
| 2001 09 18 | 699 | 0.7− | 0.3− | 2002 12 06 | 704 | 0.0 | 0.6− | 2006 08 31 | 704 | 0.5+ | 1.4− |
| 2001 09 20 | 704 | 0.9− | 0.2− | 2005 04 10 | E12 | 0.6+ | 1.6+ | 2006 08 31 | 704 | (0.4− | 2.4−) |
| 2001 09 20 | 704 | 0.9− | 0.1− | 2005 04 10 | E12 | 0.3+ | 0.6+ | 2006 08 31 | 704 | 0.2− | 1.0− |
| 2001 09 20 | 704 | 1.1− | 0.3− | 2005 04 10 | E12 | 0.5+ | 1.5+ | 2006 08 31 | 704 | 0.4− | 0.9− |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2005 04 10 | E12 | 1.0+ | 0.9+ | 2006 09 17 | 699 | 0.4+ | 0.1+ |
| 2001 09 21 | 644 | 0.2− | 0.1+ | 2005 06 05 | E12 | 0.4+ | 0.3+ | 2006 09 17 | 699 | 0.5+ | 1.1+ |
| 2001 09 21 | 644 | 0.1− | 0.3+ | 2005 06 05 | E12 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.6+ | 1.3+ |
| 2001 09 21 | 644 | 0.0 | 0.3+ | 2005 06 05 | E12 | 0.2+ | 0.6+ | 2006 09 17 | 699 | 0.2− | 0.2+ |

**(139880)∗ 2001 RL$_{85}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.73049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25465470 | $\omega$ | 246.68543 | | +0.38796304 | −0.92167443 | |
| $a$ | 2.4651022 | $\Omega$ | 180.48986 | | +0.88139995 | +0.37131503 | |
| $e$ | 0.1417464 | $i$ | 6.46227 | | +0.26947877 | +0.11243394 | |
| $P$ | 3.87 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 21 | 691 | 0.0 | 0.3− | 2001 10 17 | 644 | 0.3+ | 0.6− | 2005 10 05 | 704 | 0.6− | 0.1+ |
| 1995 02 21 | 691 | 0.2− | 0.8− | 2001 10 17 | 644 | 0.0 | 0.8− | 2005 10 05 | 704 | 1.6− | 0.1+ |
| 2001 08 27 | 699 | 0.4− | 0.8+ | 2001 10 17 | 644 | 0.1+ | 0.5− | 2005 10 05 | 704 | 0.6− | 0.6+ |
| 2001 08 27 | 699 | 0.9+ | 0.2− | 2001 10 17 | 644 | 0.2− | 0.2− | 2005 10 06 | 699 | 0.2− | 0.1− |
| 2001 08 27 | 699 | 0.8+ | 0.7− | 2001 10 20 | 704 | 0.5+ | 0.1+ | 2005 10 06 | 699 | 0.5+ | 0.1+ |
| 2001 08 27 | 699 | 0.8− | 0.6+ | 2001 10 20 | 704 | 0.2− | 1.1+ | 2005 10 06 | 699 | 0.4+ | 0.5− |
| 2001 09 11 | 699 | 0.2− | 1.2+ | 2001 10 20 | 704 | 0.3− | 0.1− | 2005 10 06 | 699 | 0.8+ | 0.3+ |
| 2001 09 11 | 699 | 0.8+ | 0.7+ | 2001 10 20 | 704 | 0.8+ | 0.2+ | 2005 10 07 | 703 | 0.8+ | 0.4− |
| 2001 09 11 | 699 | 0.6− | 1.1+ | 2001 10 20 | 704 | 0.8+ | 0.4− | 2005 10 07 | 703 | 0.0 | 0.0 |
| 2001 09 11 | 699 | 0.4+ | 0.2+ | 2001 10 23 | 704 | 0.4+ | 0.7+ | 2005 10 07 | 703 | 0.8+ | 0.7− |
| 2001 09 16 | 704 | 1.9− | 0.1+ | 2001 10 23 | 704 | 1.3+ | 1.0+ | 2005 10 07 | 703 | 0.2+ | 0.9+ |
| 2001 09 16 | 704 | 1.0− | 0.1+ | 2001 10 23 | 704 | 0.3− | 0.7+ | 2005 10 10 | A50 | 0.9+ | 0.4+ |
| 2001 09 16 | 704 | 0.0 | 1.0− | 2001 10 24 | 704 | 0.3+ | 0.1+ | 2005 10 10 | A50 | 1.1− | 1.0− |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2001 10 24 | 704 | 0.3+ | 0.0 | 2005 10 12 | 691 | 0.2+ | 0.3− |
| 2001 09 18 | 699 | 0.6+ | 0.5+ | 2001 10 24 | 704 | 0.4+ | 0.0 | 2005 10 12 | 691 | 0.4+ | 0.1− |
| 2001 09 18 | 699 | 0.2− | 0.1− | 2001 10 24 | 704 | 0.2+ | 0.1+ | 2005 10 12 | 691 | 0.3+ | 0.1− |
| 2001 09 18 | 699 | 0.9+ | 1.1+ | 2003 03 06 | 699 | 0.0 | 1.0+ | 2005 10 13 | 704 | 0.0 | 0.0 |
| 2001 09 18 | 699 | 0.7− | 1.2+ | 2003 03 06 | 699 | 0.3− | 0.1+ | 2005 10 13 | 704 | 0.8− | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2003 03 06 | 699 | 0.2− | 0.5+ | 2005 10 13 | 704 | 0.2+ | 0.8+ |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2003 03 06 | 699 | 0.1+ | 1.3+ | 2005 10 13 | 704 | 0.7+ | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2003 03 07 | 699 | 0.8− | 0.1− | 2005 10 13 | 704 | 0.4− | 0.8+ |
| 2001 09 19 | 704 | 0.2− | 0.7+ | 2003 03 07 | 699 | 0.5− | 0.5+ | 2005 10 13 | 704 | 0.8+ | 0.2− |
| 2001 09 19 | 704 | 0.5+ | 0.7+ | 2003 03 07 | 699 | 0.3+ | 0.1− | 2005 10 13 | 704 | 0.0 | 1.1+ |
| 2001 09 21 | 704 | 0.5− | 0.0 | 2003 03 07 | 699 | 0.0 | 0.7+ | 2005 10 13 | 704 | 0.4− | 0.9+ |
| 2001 09 21 | 704 | (2.5− | 0.0 ) | 2003 03 09 | 704 | 1.0+ | 0.5+ | 2005 10 13 | 704 | 0.6+ | 0.0 |
| 2001 09 21 | 704 | 1.2− | 0.0 | 2003 03 09 | 704 | 0.5+ | 0.5− | 2005 10 13 | 704 | 0.4− | 0.1+ |
| 2001 09 21 | 704 | 1.8− | 0.1− | 2003 03 09 | 704 | 0.6+ | 0.2+ | 2005 10 22 | 703 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 2.0− | 0.3+ | 2003 03 09 | 704 | 1.0+ | 1.4+ | 2005 10 22 | 703 | 0.3+ | 0.8− |
| 2001 09 22 | 704 | 0.2+ | 0.9− | 2003 03 26 | 644 | 0.1− | 0.1− | 2005 10 22 | 703 | 0.7+ | 0.1− |
| 2001 09 22 | 704 | 0.8− | 0.4− | 2003 03 26 | 644 | 0.0 | 0.4+ | 2005 10 22 | 703 | 0.2− | 0.6− |
| 2001 09 22 | 704 | 0.2+ | 1.8− | 2003 03 26 | 644 | 0.0 | 0.9+ | 2005 10 28 | 704 | 0.2− | 0.4+ |
| 2001 09 25 | 644 | 0.1− | 0.5+ | 2003 04 09 | 691 | 0.0 | 1.9+ | 2005 10 28 | 704 | 0.3− | 0.8+ |
| 2001 09 25 | 644 | 0.2− | 1.4+ | 2003 04 09 | 691 | 0.8+ | 1.3+ | 2005 10 28 | 704 | 1.3− | 1.1+ |
| 2001 09 25 | 644 | 0.5− | 0.8+ | 2003 04 09 | 691 | 0.4+ | 1.1+ | 2005 10 28 | 704 | 0.5− | 0.5+ |
| 2001 09 26 | 699 | 0.4+ | 0.4+ | 2005 08 30 | 644 | 0.1+ | 0.1− | 2005 10 28 | 703 | 0.5+ | 0.2− |
| 2001 09 26 | 699 | 0.2+ | 0.6+ | 2005 08 30 | 644 | 0.2+ | 0.1+ | 2005 10 28 | 704 | 0.3− | 0.1+ |
| 2001 09 26 | 699 | 0.4+ | 0.2+ | 2005 08 30 | 644 | 0.5+ | 0.2− | 2005 10 28 | 703 | 0.2+ | 0.6+ |
| 2001 09 26 | 699 | 1.0+ | 1.5+ | 2005 09 24 | 703 | 0.3− | 0.4− | 2005 10 28 | 704 | 0.3− | 0.2+ |
| 2001 09 26 | 704 | 0.6− | 0.7+ | 2005 09 24 | 703 | 1.2− | 0.6− | 2005 10 28 | 703 | 0.1+ | 0.7− |
| 2001 09 26 | 704 | 0.7− | 0.8+ | 2005 09 24 | 703 | 0.4− | 0.6− | 2005 10 28 | 704 | (0.4− | 3.7−) |
| 2001 09 26 | 704 | 0.5− | 1.0+ | 2005 09 24 | 703 | 0.6− | 0.4− | 2005 10 28 | 703 | 1.0− | 0.2− |
| 2001 09 26 | 704 | 1.1− | 0.8+ | 2005 10 01 | 704 | 0.3+ | 0.2− | 2005 10 28 | 704 | 0.9− | 0.4+ |
| 2001 09 26 | 704 | 1.0− | 0.1+ | 2005 10 01 | 704 | 0.4+ | 0.4− | 2005 10 28 | 704 | 1.3− | 0.8− |
| 2001 10 13 | 704 | (0.4+ | 2.1+) | 2005 10 01 | 704 | 0.1− | 0.7+ | 2005 11 03 | 461 | 0.3+ | 0.3− |
| 2001 10 13 | 704 | 0.3+ | 1.5+ | 2005 10 01 | 691 | 0.1− | 0.1− | 2005 11 03 | 461 | 0.1+ | 0.3− |
| 2001 10 13 | 704 | 0.1+ | 1.7+ | 2005 10 01 | 704 | 0.1− | 0.1+ | 2005 11 03 | 461 | 0.1− | 0.1− |
| 2001 10 13 | 704 | 0.4− | 0.1+ | 2005 10 01 | 691 | 0.1+ | 0.2− | 2005 11 04 | 461 | 0.3+ | 0.2− |
| 2001 10 13 | 704 | 0.3− | 1.3+ | 2005 10 01 | 704 | 0.5+ | 0.0 | 2005 11 04 | 461 | 0.5+ | 0.2− |
| 2001 10 17 | 644 | 0.2+ | 0.8− | 2005 10 01 | 691 | 0.1− | 0.0 | 2005 11 04 | 461 | 0.3+ | 0.1− |
| 2001 10 17 | 644 | 0.2+ | 0.6− | 2005 10 05 | 704 | 0.5+ | 1.7+ | | | | |

**(139881)∗ 2001 RX$_{85}$ = 2000 KX$_{63}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 18050)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.56835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21419959 | $\omega$ | 97.98981 | | +0.09892831 | +0.99505556 | |
| $a$ | 2.7664551 | $\Omega$ | 177.63344 | | −0.97620908 | +0.09876368 | |
| $e$ | 0.1251678 | $i$ | 12.31923 | | −0.19294823 | +0.01049588 | |
| $P$ | 4.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 704 | 0.7+ | 0.7+ | 2001 09 21 | 704 | 0.6− | 0.8+ | 2004 02 25 | 704 | 0.8− | 0.9+ |
| 2000 04 28 | 704 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.7− | 0.3+ | 2004 02 26 | 704 | 0.7+ | 0.2+ |
| 2000 04 28 | 704 | 1.0+ | 0.9+ | 2001 09 21 | 704 | 0.3− | 0.5+ | 2004 02 26 | 704 | 0.4+ | 0.4+ |
| 2000 05 06 | 704 | 0.8+ | 0.7+ | 2001 09 21 | 704 | 0.6− | 0.5+ | 2004 02 26 | 704 | 0.8− | 0.7− |
| 2000 05 06 | 704 | 0.7+ | 0.2+ | 2001 09 21 | 704 | 0.4− | 0.2+ | 2004 02 26 | 704 | 0.7+ | 1.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 06 | 704 | 1.2− | 1.0+ | 2001 09 21 | 704 | 0.1− | 1.0+ | 2004 02 26 | 704 | 0.0 | 0.6− |
| 2000 05 06 | 704 | 0.9− | 0.8+ | 2001 09 21 | 704 | 0.5+ | 1.2− | 2004 03 12 | 644 | 0.1− | 1.0+ |
| 2000 05 06 | 704 | 0.7− | 1.8+ | 2001 09 21 | 704 | 0.3− | 1.0+ | 2004 03 12 | 644 | 0.3− | 0.9+ |
| 2000 05 26 | 699 | 0.5+ | 0.1+ | 2001 09 21 | 704 | 0.3+ | 1.1+ | 2004 03 12 | 644 | 0.1− | 1.0+ |
| 2000 05 26 | 699 | 0.2+ | 0.1+ | 2001 09 23 | 704 | 1.0− | 1.4+ | 2004 03 16 | 704 | 0.1+ | 1.0+ |
| 2000 05 26 | 699 | 0.4+ | 0.1− | 2001 09 23 | 704 | 0.2− | 1.3+ | 2004 03 16 | 704 | 0.1+ | 0.7+ |
| 2000 05 26 | 699 | 0.4− | 0.0 | 2001 09 23 | 704 | 0.3− | 1.1+ | 2004 03 16 | 704 | 0.7+ | 1.4+ |
| 2000 05 28 | 704 | 0.4− | 0.7+ | 2001 09 23 | 704 | 0.0 | 1.1+ | 2004 03 18 | 704 | 0.8+ | 0.1+ |
| 2000 05 28 | 704 | 0.0 | 0.6+ | 2001 09 23 | 704 | 0.2− | 1.1+ | 2004 03 18 | 704 | 0.8+ | 0.1+ |
| 2000 05 28 | 704 | 0.0 | 0.8+ | 2001 09 25 | 644 | 0.8− | 0.3− | 2004 03 18 | 704 | 0.3+ | 0.0 |
| 2000 05 28 | 704 | 0.0 | 0.5+ | 2001 09 25 | 644 | 0.9− | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.0 |
| 2001 07 26 | 644 | 0.7− | 0.5− | 2001 09 25 | 644 | 1.0− | 0.3+ | 2004 03 18 | 704 | 0.5+ | 0.5+ |
| 2001 07 26 | 644 | 0.8− | 0.4− | 2001 09 26 | 704 | 0.3+ | 0.0 | 2004 03 18 | 691 | 0.1− | 0.6+ |
| 2001 07 26 | 644 | 1.0− | 0.0 | 2001 09 26 | 704 | 0.3+ | 0.4+ | 2004 03 18 | 691 | 0.1− | 0.5+ |
| 2001 08 16 | 704 | 0.7− | 0.1+ | 2001 09 26 | 704 | 0.8+ | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.5+ |
| 2001 08 16 | 704 | 0.5− | 0.8− | 2001 09 26 | 704 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.4+ |
| 2001 08 16 | 704 | 1.0+ | 0.2+ | 2001 09 26 | 704 | 0.5+ | 0.3− | 2004 03 20 | 704 | 0.4− | 0.0 |
| 2001 08 16 | 704 | 0.5+ | 0.1− | 2001 10 13 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.2− | 0.8+ |
| 2001 08 24 | 704 | 0.8+ | 0.3− | 2001 10 13 | 704 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.8− | 0.7+ |
| 2001 08 24 | 704 | 0.4+ | 0.2− | 2001 10 13 | 704 | 0.7+ | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.2+ |
| 2001 08 24 | 704 | 0.9+ | 0.3− | 2001 10 13 | 704 | 0.2+ | 0.7− | 2004 03 27 | 704 | 0.2− | 0.3+ |
| 2001 08 31 | 644 | 0.3− | 1.0+ | 2001 10 13 | 704 | 0.8+ | 0.5+ | 2004 03 27 | 704 | 0.0 | 0.7+ |
| 2001 08 31 | 644 | 0.2− | 0.7+ | 2001 10 17 | 644 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.3− | 0.5+ |
| 2001 08 31 | 644 | 0.2− | 0.8+ | 2001 10 17 | 644 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.8+ |
| 2001 09 09 | 644 | 0.3+ | 0.6+ | 2001 10 17 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2001 09 09 | 644 | 0.2+ | 0.8+ | 2001 10 19 | 699 | 0.4− | 0.7+ | 2006 09 30 | 703 | 1.3− | 0.0 |
| 2001 09 09 | 644 | 0.2+ | 0.3+ | 2001 10 19 | 699 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 2001 09 11 | 699 | 0.6− | 0.3+ | 2001 10 19 | 699 | (0.2− | 2.2+) | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 699 | 0.4− | 0.3+ | 2001 10 19 | 699 | 1.2− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.6+ |
| 2001 09 11 | 699 | 0.5− | 0.9+ | 2001 10 20 | 704 | 0.1+ | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 09 11 | 699 | 0.9− | 0.1− | 2001 10 20 | 704 | 0.7− | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.9+ |
| 2001 09 16 | 704 | (1.6+ | 0.5−) | 2001 10 20 | 704 | 0.4+ | 1.2+ | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2001 09 16 | 704 | (1.7+ | 1.1−) | 2001 10 20 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.3− | 0.9− |
| 2001 09 16 | 704 | (2.0+ | 0.1+) | 2001 10 20 | 704 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.9− |
| 2001 09 16 | 704 | 0.7+ | 0.1+ | 2001 10 20 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2001 09 18 | 699 | 0.5− | 0.7+ | 2001 10 20 | 704 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.6+ | 0.1− |
| 2001 09 18 | 699 | 0.7+ | 0.1+ | 2001 10 20 | 704 | 1.0+ | 0.8+ | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2001 09 18 | 699 | 0.4+ | 1.0+ | 2001 10 24 | 704 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.6− | 0.0 |
| 2001 09 18 | 699 | 0.8+ | 0.7+ | 2001 10 24 | 704 | 0.1+ | 1.0+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2001 10 24 | 704 | 0.0 | 0.7+ | 2006 11 08 | 644 | 0.7+ | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2001 10 24 | 704 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.7+ | 2006 11 13 | 703 | 0.6+ | 0.5− |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2004 02 19 | 704 | (0.0 | 2.2+) | 2006 11 13 | 703 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2004 02 19 | 704 | 0.6+ | 0.8+ | 2006 11 13 | 703 | 0.4+ | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2004 02 19 | 704 | 1.1+ | 1.1+ | 2006 11 13 | 703 | 0.1+ | 0.9− |
| 2001 09 20 | 704 | 0.4− | 0.5+ | 2004 02 19 | 704 | 0.8+ | 0.9+ | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2004 02 25 | 704 | 0.5+ | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.6− |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2004 02 25 | 704 | 0.5+ | 1.1+ | 2006 11 19 | 703 | 0.9− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.7+ | 2004 02 25 | 704 | 0.6+ | 0.2− | 2006 11 19 | 703 | 0.1− | 0.2+ |

**(139882)∗ 2001 RB$_{86}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 320.77597 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18211184 | $\omega$ | 195.29461 | | +0.95586475 | | −0.29375592 | |
| $a$ | 3.0825533 | $\Omega$ | 181.81595 | | +0.28443921 | | +0.92989912 | |
| $e$ | 0.1003967 | $i$ | 9.95848 | | +0.07359967 | | +0.22134833 | |
| $P$ | 5.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 09 | 644 | 0.9+ | 0.3− | 2001 09 25 | 699 | 0.9− | 1.3+ | 2004 03 18 | 704 | 0.0 | 0.8+ |
| 2001 09 09 | 644 | 0.8+ | 0.7− | 2001 09 25 | 699 | 0.8+ | 0.5+ | 2004 03 18 | 704 | 0.2− | 0.4+ |
| 2001 09 09 | 644 | 0.6+ | 0.3− | 2001 09 25 | 699 | 1.3− | 0.3+ | 2004 03 18 | 704 | 0.2− | 1.1+ |
| 2001 09 11 | 699 | 0.3+ | 0.0 | 2001 09 26 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.6− | 0.4+ |
| 2001 09 11 | 699 | 0.5+ | 1.1+ | 2001 09 26 | 704 | 0.1− | 0.3− | 2004 03 23 | 691 | 0.2+ | 0.1+ |
| 2001 09 11 | 699 | 1.0− | 0.8+ | 2001 09 26 | 704 | 0.1+ | 0.1− | 2004 03 23 | 691 | 0.2+ | 0.2+ |
| 2001 09 11 | 699 | 0.5− | 1.3+ | 2001 09 26 | 704 | 0.4+ | 0.5+ | 2004 03 23 | 691 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | 0.4− | 0.3+ | 2001 09 26 | 704 | 0.4+ | 0.2+ | 2005 05 09 | 691 | 0.1+ | 0.5+ |
| 2001 09 16 | 704 | 0.3− | 0.6− | 2001 09 26 | 704 | 0.3+ | 0.1+ | 2005 05 09 | 691 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.2− | 0.3− | 2001 09 26 | 704 | 0.2− | 0.3− | 2005 05 09 | 691 | 0.1+ | 0.4+ |
| 2001 09 16 | 704 | 0.3− | 0.6− | 2001 09 26 | 704 | 0.0 | 0.5+ | 2005 06 02 | 703 | 0.5+ | 0.3+ |
| 2001 09 18 | 699 | 1.0− | 1.0+ | 2001 09 26 | 704 | 0.8+ | 0.3+ | 2005 06 02 | 703 | (0.5+ | 2.6+) |
| 2001 09 18 | 699 | 0.1− | 1.4+ | 2001 10 11 | 644 | 0.3− | 0.3+ | 2005 06 02 | 703 | 1.2− | 1.1+ |
| 2001 09 18 | 699 | 0.4− | 0.9+ | 2001 10 11 | 644 | 0.6− | 0.6+ | 2005 06 02 | 703 | 1.2− | 0.3+ |
| 2001 09 18 | 699 | 0.2+ | 0.9+ | 2001 10 11 | 644 | 0.4− | 0.3+ | 2005 06 03 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | (0.9− | 1.7+) | 2001 10 15 | 645 | 0.0 | 0.0 | 2005 06 03 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | (1.0− | 1.8+) | 2001 10 15 | 645 | 0.0 | 0.0 | 2005 06 03 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | (0.5− | 1.8+) | 2001 10 17 | 644 | 0.0 | 0.7+ | 2005 06 15 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 1.2− | 1.4+ | 2001 10 17 | 644 | 0.0 | 0.8+ | 2005 06 15 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | (0.1− | 2.0+) | 2001 10 17 | 644 | 0.2+ | 0.9+ | 2005 06 15 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | (1.7− | 1.1+) | 2001 10 19 | 699 | 0.1− | 0.8+ | 2006 08 19 | 699 | 0.8− | 0.0 |
| 2001 09 21 | 704 | (1.6− | 1.0+) | 2001 10 19 | 699 | 0.5− | 0.8− | 2006 08 19 | 699 | 0.9+ | 0.4− |
| 2001 09 21 | 704 | 1.3− | 1.3+ | 2001 10 19 | 699 | (1.5+ | 0.3−) | 2006 08 19 | 699 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 1.5− | 1.5+ | 2001 10 19 | 699 | 0.2− | 0.6+ | 2006 08 19 | 699 | 0.4+ | 0.3− |
| 2001 09 21 | 704 | (1.0− | 1.8+) | 2001 10 20 | 704 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.3+ | 0.6− |
| 2001 09 21 | 691 | 0.4+ | 0.0 | 2001 10 20 | 704 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.5− | 0.5+ |
| 2001 09 21 | 691 | 0.4+ | 0.1− | 2001 10 20 | 704 | 0.2− | 0.9+ | 2006 08 30 | 704 | 0.3− | 0.0 |
| 2001 09 21 | 691 | 0.3+ | 0.1− | 2001 10 20 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.6+ | 0.5− |
| 2001 09 23 | 704 | 0.0 | 0.4+ | 2004 03 15 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 699 | (0.5− | 2.1+) |
| 2001 09 23 | 704 | 0.9− | 0.5+ | 2004 03 15 | 691 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.4+ | 0.1− |
| 2001 09 23 | 704 | 0.6− | 0.2+ | 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 09 18 | 699 | (1.7− | 0.8+) |
| 2001 09 23 | 704 | 0.3+ | 0.3+ | 2004 03 15 | 703 | (0.6− | 2.2+) | 2006 09 18 | 699 | 0.4+ | 0.5+ |
| 2001 09 23 | 704 | 0.2+ | 0.4− | 2004 03 15 | 703 | 0.6− | 1.0+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2004 03 15 | 703 | (2.3− | 0.8+) | 2006 11 18 | G96 | 0.4− | 0.3− |
| 2001 09 23 | 704 | 0.1− | 0.4− | 2004 03 15 | 703 | 0.3− | 0.2− | 2006 11 18 | G96 | 1.0− | 0.6− |
| 2001 09 23 | 704 | 0.8− | 0.1− | 2004 03 16 | 704 | 1.1+ | 1.1+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.6+ | 0.6+ | | | | |
| 2001 09 25 | 699 | (0.3− | 1.5−) | 2004 03 16 | 704 | 0.5+ | 0.7+ | | | | |

**(139883)∗ 2001 RO$_{86}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 279.69114 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18411006 | $\omega$ | 242.05607 | | +0.36970976 | | −0.92912843 | |
| $a$ | 3.0602087 | $\Omega$ | 186.25499 | | +0.87043443 | | +0.34857017 | |
| $e$ | 0.0708088 | $i$ | 3.11535 | | +0.32505170 | | +0.12336612 | |
| $P$ | 5.35 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 1.3+ | 1.4+ | 2001 10 20 | 704 | 0.5+ | 0.2+ | 2004 04 19 | 691 | 0.3+ | 0.3+ |
| 2001 08 27 | 699 | 0.5+ | 0.6+ | 2001 10 20 | 704 | 0.6+ | 0.0 | 2004 04 19 | 691 | 0.1+ | 0.5+ |
| 2001 08 27 | 699 | 0.4+ | 0.4+ | 2001 10 24 | 704 | 0.2− | 0.1+ | 2004 04 19 | 691 | 0.0 | 0.4+ |
| 2001 08 27 | 699 | 0.7+ | 0.8+ | 2001 10 24 | 704 | 0.7− | 0.4+ | 2004 04 21 | 704 | 0.7+ | 0.8+ |
| 2001 09 11 | 699 | 0.8− | 0.3+ | 2001 10 24 | 704 | 0.9− | 0.4− | 2004 04 21 | 704 | 1.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.0 | 0.1+ | 2001 10 24 | 704 | 0.6− | 0.1+ | 2004 04 21 | 704 | 0.8+ | 0.3+ |
| 2001 09 11 | 699 | 1.0− | 0.8+ | 2001 10 24 | 704 | 0.0 | 0.1− | 2004 04 21 | 704 | 0.4+ | 0.1+ |
| 2001 09 11 | 699 | 1.5− | 0.4+ | 2001 12 10 | 645 | 0.1− | 0.0 | 2004 04 21 | 704 | 0.2+ | 1.2+ |
| 2001 09 16 | 704 | 0.3+ | 0.2− | 2001 12 10 | 645 | 0.1− | 0.0 | 2004 04 23 | 703 | 1.4− | 2.0+ |
| 2001 09 16 | 704 | 1.0+ | 1.2− | 2002 12 11 | 704 | 0.2− | 1.1+ | 2004 04 23 | 703 | 1.6− | 0.1− |
| 2001 09 16 | 704 | 0.4− | 0.7− | 2002 12 11 | 704 | 0.6− | 0.9+ | 2004 04 23 | 703 | 0.3− | 1.7+ |
| 2001 09 16 | 704 | 1.0− | 0.3− | 2002 12 11 | 704 | 1.0− | 0.3+ | 2004 04 23 | 703 | 1.6− | 1.3+ |
| 2001 09 18 | 699 | 1.4+ | 0.7+ | 2003 01 04 | 704 | 0.5+ | 0.0 | 2004 04 28 | 691 | 0.5+ | 0.3+ |
| 2001 09 18 | 699 | 0.4+ | 1.4+ | 2003 01 04 | 704 | 1.2+ | 0.8+ | 2004 04 28 | 691 | 0.6+ | 0.4+ |
| 2001 09 18 | 699 | 0.2+ | 0.4+ | 2003 01 04 | 704 | 0.6+ | 0.3+ | 2004 04 28 | 691 | 0.8+ | 0.2+ |
| 2001 09 18 | 699 | 0.7− | 0.8+ | 2003 01 04 | 704 | 1.0+ | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.2− |
| 2001 09 21 | 704 | (0.5+ | 2.9+) | 2003 01 04 | 704 | 1.4+ | 0.7− | 2006 08 16 | 644 | 0.0 | 0.2− |
| 2001 09 21 | 704 | (0.5+ | 2.3+) | 2003 01 07 | 704 | 0.6− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.2− |
| 2001 09 21 | 704 | (0.6+ | 2.1+) | 2003 01 07 | 704 | 0.5− | 0.0 | 2006 08 17 | 644 | 0.2− | 0.0 |
| 2001 09 21 | 704 | (0.0 | 2.6+) | 2003 01 07 | 704 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 1.8+ | 2003 01 07 | 704 | 0.6− | 0.3− | 2006 08 17 | 644 | 0.1− | 0.1+ |
| 2001 09 22 | 683 | 1.4− | 0.7+ | 2003 01 07 | 704 | 0.6− | 0.2− | 2006 08 21 | 704 | 1.2+ | 0.3+ |
| 2001 09 22 | 683 | 0.9− | 1.0− | 2003 01 08 | 704 | 1.4+ | 0.9+ | 2006 08 21 | 704 | 0.2− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 683 | 1.7+ | 0.5− | 2003 01 08 | 704 | 0.5− | 1.0+ | 2006 08 21 | 704 | 1.0+ | 0.1+ |
| 2001 09 23 | 683 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.6− | 0.4+ | 2006 08 21 | 704 | 0.5+ | 0.1− |
| 2001 09 23 | 683 | 0.7− | 1.1− | 2003 01 08 | 704 | 0.3− | 0.0 | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2001 09 23 | 683 | 1.1+ | 1.7− | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2001 09 24 | 704 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.0 | 1.0+ | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2001 09 24 | 704 | 0.6− | 0.5+ | 2004 02 26 | 704 | 0.4− | 1.1+ | 2006 08 28 | 703 | 0.5+ | 0.3− |
| 2001 09 24 | 704 | 0.5+ | 1.0+ | 2004 02 26 | 704 | 0.8+ | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.4− |
| 2001 09 24 | 704 | 0.1− | 1.3+ | 2004 02 26 | 704 | 0.0 | 0.9+ | 2006 08 28 | 703 | 0.3− | 0.3− |
| 2001 09 24 | 704 | 0.2+ | 1.6+ | 2004 03 13 | 644 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.6− |
| 2001 09 25 | 683 | 1.4− | 0.4+ | 2004 03 13 | 644 | 0.6+ | 0.6+ | 2006 08 28 | 699 | 0.5+ | 0.9+ |
| 2001 09 25 | 683 | 1.3− | 0.8− | 2004 03 13 | 644 | 0.6+ | 0.6+ | 2006 08 28 | 699 | 0.3− | 0.2+ |
| 2001 09 25 | 683 | (3.8+ | 1.3+) | 2004 03 14 | 185 | 1.5+ | 0.4+ | 2006 08 28 | 699 | 1.2− | 1.5+ |
| 2001 09 26 | 704 | 0.5− | 0.9+ | 2004 03 14 | 185 | 0.4+ | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.9+ |
| 2001 09 26 | 704 | 0.0 | 1.4+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 08 29 | 704 | 0.0 | 0.7+ |
| 2001 09 26 | 704 | 0.5− | 0.9+ | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 08 29 | 704 | 1.0+ | 0.7+ |
| 2001 09 26 | 704 | 0.4− | 1.1+ | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 08 29 | 704 | 0.6+ | 0.1− |
| 2001 09 26 | 704 | 0.4− | 1.1+ | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.2− | 0.1− |
| 2001 10 06 | 704 | 1.1+ | 0.9+ | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 1.9− | 0.8− |
| 2001 10 06 | 704 | 0.8+ | 1.7+ | 2004 03 22 | 185 | 1.1− | 0.3+ | 2006 08 30 | 704 | 0.7− | 1.2− |
| 2001 10 06 | 704 | 0.5− | 0.7+ | 2004 03 22 | 185 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.6− | 1.0− |
| 2001 10 06 | 644 | 0.1+ | 0.2+ | 2004 03 22 | 185 | 0.1+ | 1.0− | 2006 09 14 | 703 | 0.6− | 0.7+ |
| 2001 10 06 | 644 | 0.0 | 0.2+ | 2004 03 22 | 185 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.3+ |
| 2001 10 06 | 644 | 0.0 | 0.2+ | 2004 03 24 | 699 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.8+ |
| 2001 10 11 | 644 | 0.1− | 0.6+ | 2004 03 24 | 699 | 1.1+ | 1.0+ | 2006 09 14 | 703 | 1.8− | 0.2+ |
| 2001 10 11 | 644 | 0.4− | 0.6+ | 2004 03 24 | 699 | 2.0− | 1.1+ | 2006 09 17 | 704 | 0.2− | 0.7+ |
| 2001 10 11 | 644 | 0.3− | 0.8+ | 2004 03 24 | 699 | 0.7− | 1.5+ | 2006 09 17 | 704 | 0.1+ | 0.5+ |
| 2001 10 13 | 704 | 0.8− | 0.3− | 2004 03 25 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 704 | 0.3− | 0.9+ |
| 2001 10 13 | 704 | 0.1+ | 0.4− | 2004 03 25 | 704 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.2− |
| 2001 10 13 | 704 | 0.1+ | 0.1− | 2004 03 25 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.4+ |
| 2001 10 13 | 699 | 0.1− | 0.5+ | 2004 03 26 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.4+ | 0.6+ |
| 2001 10 13 | 704 | 0.3+ | 0.1− | 2004 03 26 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.4− | 1.4− |
| 2001 10 13 | 699 | 0.0 | 0.6+ | 2004 03 26 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.1− |
| 2001 10 13 | 704 | 0.3− | 0.1− | 2004 03 26 | 704 | 1.0+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.0 |
| 2001 10 13 | 699 | 0.1+ | 0.2+ | 2004 03 26 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.4− |
| 2001 10 13 | 699 | 0.3− | 0.6+ | 2004 03 27 | 704 | 0.2− | 0.3− | 2006 09 20 | 704 | 0.4+ | 0.1+ |
| 2001 10 16 | 704 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.7− |
| 2001 10 16 | 704 | 1.2− | 1.4− | 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 1.1+ | 0.2− |
| 2001 10 16 | 704 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 09 20 | 704 | 1.1+ | 0.5− |
| 2001 10 16 | 704 | 0.5− | 0.9+ | 2004 03 27 | 704 | 1.1+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.8+ |
| 2001 10 16 | 704 | 0.0 | 0.8+ | 2004 04 12 | 699 | 1.0− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.1+ |
| 2001 10 17 | 644 | 0.5− | 0.3+ | 2004 04 12 | 699 | 0.7− | 0.0 | 2006 09 25 | 699 | 0.5− | 0.8− |
| 2001 10 17 | 644 | 0.5− | 0.2+ | 2004 04 12 | 699 | 0.8+ | 0.5+ | 2006 09 25 | 699 | 1.1− | 0.7− |
| 2001 10 17 | 644 | 0.6− | 0.2+ | 2004 04 12 | 699 | 0.9− | 1.0+ | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 2001 10 19 | 699 | 0.3− | 1.3+ | 2004 04 14 | 185 | 0.2− | 1.8+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2001 10 19 | 699 | 0.0 | 1.1+ | 2004 04 14 | 185 | 0.4+ | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.1− |
| 2001 10 19 | 699 | 0.1+ | 0.8+ | 2004 04 14 | 185 | 0.5− | 0.5+ | 2006 09 27 | G96 | 0.4− | 0.2− |
| 2001 10 19 | 699 | 0.2+ | 0.6+ | 2004 04 15 | 699 | 0.5− | 0.5− | 2006 09 29 | 704 | 0.1+ | 1.6+ |
| 2001 10 20 | 704 | 0.5+ | 0.9+ | 2004 04 15 | 699 | (2.5− | 0.1−) | 2006 09 29 | 704 | 0.3− | 2.2+ |
| 2001 10 20 | 704 | 0.6+ | 0.1+ | 2004 04 15 | 699 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.2+ | 1.9+ |
| 2001 10 20 | 704 | 0.7+ | 0.4+ | 2004 04 15 | 699 | 0.2+ | 0.5+ | 2006 09 29 | 704 | 0.1− | 1.7+ |

**(139884)∗ 2001 RB$_{87}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.66114 | | (2000.0) | | | |
| $n$ | 0.20977851 | $\omega$ | 174.89571 | | +0.95151636 | −0.30396248 |
| $a$ | 2.8051885 | $\Omega$ | 202.97139 | | +0.27776754 | +0.91493828 |
| $e$ | 0.0688649 | $i$ | 6.93951 | | +0.13214311 | +0.26550847 |
| $P$ | 4.70 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.1− | 0.5− | 2001 10 13 | 704 | 0.5+ | 1.1+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 08 27 | 699 | 0.9− | 0.4+ | 2001 10 13 | 704 | 0.2− | 0.7+ | 2006 10 03 | 704 | 0.5+ | 0.5+ |
| 2001 08 27 | 644 | 0.8+ | 0.9+ | 2001 10 13 | 704 | 0.4+ | 1.2+ | 2006 10 03 | 704 | 0.5− | 1.6+ |
| 2001 08 27 | 644 | 0.3+ | 0.0 | 2001 10 13 | 691 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.3− | 1.0+ |
| 2001 08 27 | 644 | 0.2+ | 0.8+ | 2001 10 13 | 691 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.0 | 0.7+ |
| 2001 08 27 | 644 | 0.1+ | 0.4+ | 2001 10 13 | 691 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 2001 08 27 | 699 | 0.6− | 0.7+ | 2001 10 16 | 704 | 0.2− | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.5+ |
| 2001 08 27 | 644 | 0.2+ | 1.0+ | 2001 10 16 | 704 | 0.9− | 1.2+ | 2006 10 15 | 691 | 0.3+ | 0.3+ |
| 2001 08 27 | 644 | 0.2− | 0.2+ | 2001 10 16 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2001 08 27 | 699 | 0.5− | 0.6+ | 2001 10 16 | 704 | 0.5− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 0.2+ | 0.1+ | 2001 10 16 | 704 | 0.4− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 09 11 | 699 | 0.3+ | 0.2− | 2001 10 18 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 09 11 | 699 | 0.2+ | 0.8+ | 2001 10 18 | 644 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2001 10 18 | 644 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2001 10 21 | 704 | 0.9− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.2+ | 0.6+ | 2001 10 21 | 704 | 1.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2001 10 21 | 704 | 1.2− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2001 10 21 | 704 | 1.2− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 09 18 | 699 | 0.9− | 0.5+ | 2001 10 21 | 704 | 1.3− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 09 18 | 699 | 0.3− | 0.0 | 2001 11 17 | 291 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2001 09 18 | 699 | 0.1+ | 0.2− | 2001 11 17 | 291 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2001 09 18 | 699 | 0.3− | 0.3+ | 2001 11 17 | 291 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2001 12 10 | 704 | 0.1− | 0.6− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 1.0+ | 2001 12 10 | 704 | 1.3+ | 1.5− | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 1.0− | 1.5+ | 2001 12 10 | 704 | 0.8− | 1.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 0.1+ | 2001 12 10 | 704 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2003 01 01 | 704 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2003 01 01 | 704 | 0.2+ | 1.0+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.1− | 2003 01 01 | 704 | 0.6+ | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.4− | 2003 01 01 | 704 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.3+ | 2004 03 14 | 644 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 1.1− | 1.2− |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2004 03 14 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2001 09 23 | 704 | (7.2+ | 0.3+) | 2004 03 14 | 644 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2001 09 23 | 704 | (7.6+ | 0.6+) | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2001 09 23 | 704 | (8.0+ | 0.2+) | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2001 09 24 | 704 | (4.6+ | 2.7−) | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.3− |
| 2001 09 24 | 704 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.5− | 0.9+ |
| 2001 09 24 | 704 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.8− | 0.2+ | 2006 11 14 | 704 | 0.7+ | 0.2+ |
| 2001 09 24 | 704 | 0.0 | 1.0+ | 2004 04 12 | 699 | 0.3+ | 0.5+ | 2006 11 14 | 704 | 0.8+ | 0.3+ |
| 2001 09 24 | 704 | 0.1− | 0.7+ | 2004 04 12 | 699 | 0.7+ | 0.2− | 2006 11 14 | 704 | 1.6+ | 1.1+ |
| 2001 09 25 | 704 | 0.6− | 0.3+ | 2004 04 12 | 699 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 09 25 | 704 | 0.6+ | 1.0− | 2004 04 12 | 699 | 0.5+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2001 09 25 | 704 | 0.5+ | 0.8− | 2004 04 16 | 704 | 0.6− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 09 25 | 704 | 1.2+ | 1.9− | 2004 04 16 | 704 | 0.0 | 1.0+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2001 09 25 | 704 | 0.6+ | 0.7− | 2004 04 16 | 704 | 0.7+ | 0.7+ | 2006 11 17 | 704 | 1.3− | 0.5+ |
| 2001 09 26 | 704 | 1.0+ | 0.4− | 2004 04 16 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.6− | 0.3− |
| 2001 09 26 | 704 | 1.7+ | 0.3− | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2001 09 26 | 704 | 0.6+ | 0.0 | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 2001 09 26 | 704 | 1.2+ | 1.2− | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 2001 09 26 | 704 | 0.5+ | 0.2− | 2004 05 09 | 691 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2001 10 06 | 644 | 0.0 | 0.7+ | 2004 05 09 | 691 | 0.1− | 0.7+ | 2006 11 20 | 704 | 1.7− | 0.2+ |
| 2001 10 06 | 644 | 0.0 | 0.6+ | 2004 05 09 | 691 | 0.0 | 1.0+ | 2006 11 20 | 704 | 0.7− | 0.2+ |
| 2001 10 06 | 644 | 0.4− | 0.2+ | 2004 05 24 | 691 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.8− | 0.5+ |
| 2001 10 11 | 644 | 0.2− | 0.4− | 2004 05 24 | 691 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 2.6+ | 0.1− |
| 2001 10 11 | 644 | 0.3− | 0.6− | 2004 05 24 | 691 | 0.3+ | 0.7+ | 2006 11 28 | 704 | 1.4+ | 0.5− |
| 2001 10 11 | 644 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.7+ | 0.1+ |
| 2001 10 13 | 704 | 1.0+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.8+ | 0.5+ |
| 2001 10 13 | 704 | 0.1+ | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | | | | |

**(139885)∗ 2001 RE$_{87}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.66301 | | (2000.0) | | | |
| $n$ | 0.19310013 | $\omega$ | 41.04641 | | +0.86084369 | −0.50789782 |
| $a$ | 2.9644742 | $\Omega$ | 349.34262 | | +0.41111615 | +0.73054924 |
| $e$ | 0.1011408 | $i$ | 9.78548 | | +0.29988606 | +0.45644016 |
| $P$ | 5.10 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 1.2− | 0.7− | 2001 11 10 | 704 | 0.2− | 0.9+ | 2006 09 20 | 704 | 0.3+ | 0.3− |
| 2001 08 27 | 699 | 0.7+ | 1.2− | 2001 11 10 | 704 | 0.3− | 0.3+ | 2006 09 24 | 106 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.0 | 0.6+ | 2001 11 10 | 704 | 1.0− | 0.1− | 2006 09 24 | 106 | 0.0 | 0.8− | | |
| 2001 08 27 | 644 | 0.0 | 0.6+ | 2001 12 11 | 704 | 0.3− | 0.2+ | 2006 09 24 | 106 | 0.3+ | 0.4− | | |
| 2001 08 27 | 699 | 0.3− | 0.5+ | 2001 12 11 | 704 | (0.3+ | 1.6+) | 2006 09 24 | 106 | 0.5− | 0.4− | | |
| 2001 08 27 | 644 | 0.2+ | 0.7+ | 2001 12 11 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 704 | 0.1+ | 1.2+ | | |
| 2001 08 27 | 699 | 1.0− | 0.1+ | 2002 12 06 | 645 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.9− | 0.4− | 2002 12 06 | 645 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.4+ | 0.2+ | | |
| 2001 09 11 | 699 | 1.1− | 0.5− | 2002 12 13 | 645 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.8+ | | |
| 2001 09 11 | 699 | 0.5− | 0.3− | 2002 12 13 | 645 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 11 | 699 | 0.3+ | 0.5− | 2003 01 10 | 704 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.3− | 0.3+ | | |
| 2001 09 17 | 644 | 0.3− | 0.6− | 2003 01 10 | 704 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 17 | 644 | 0.4− | 0.3− | 2003 01 10 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.3− | 0.2+ | | |
| 2001 09 17 | 644 | 0.0 | 0.3− | 2003 01 10 | 704 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.0 | | |
| 2001 09 17 | 704 | 0.5+ | 0.5+ | 2003 01 10 | 704 | 0.4+ | 1.1+ | 2006 09 26 | 704 | 0.8− | 0.0 | | |
| 2001 09 17 | 704 | 0.0 | 0.5− | 2003 01 12 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.6− | 0.6− | | |
| 2001 09 17 | 704 | 0.6+ | 0.2− | 2003 01 12 | 704 | 0.4+ | 1.0+ | 2006 09 26 | 704 | 0.2+ | 0.5− | | |
| 2001 09 17 | 704 | 0.3+ | 0.5− | 2003 01 12 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 1.0− | 0.0 | | |
| 2001 09 18 | 699 | 0.5+ | 0.4+ | 2003 01 12 | 704 | 1.1+ | 0.7+ | 2006 09 26 | 704 | 1.3− | 0.5+ | | |
| 2001 09 18 | 699 | 0.1− | 0.4− | 2003 01 12 | 704 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.3+ | | |
| 2001 09 18 | 699 | 0.7+ | 0.4+ | 2003 01 13 | 704 | 0.5+ | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | | |
| 2001 09 18 | 699 | 1.4− | 0.2+ | 2003 01 13 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 0.0 | 1.1+ | | |
| 2001 09 20 | 333 | 0.6+ | 1.0+ | 2003 01 13 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.1+ | | |
| 2001 09 20 | 333 | 0.0 | 0.5− | 2003 01 13 | 704 | 0.7+ | 0.5+ | 2006 09 27 | 704 | 0.5− | 0.8+ | | |
| 2001 09 20 | 333 | 0.7+ | 0.2+ | 2003 01 13 | 704 | 0.7− | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.7+ | | |
| 2001 09 20 | 704 | 0.6+ | 0.1+ | 2003 01 31 | 704 | 0.2− | 0.9− | 2006 09 29 | 704 | 0.2+ | 0.8+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2003 01 31 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.7+ | 0.4+ | 2003 01 31 | 704 | 0.3− | 0.6− | 2006 09 29 | 704 | 0.4− | 0.2+ | | |
| 2001 09 20 | 704 | 0.5+ | 0.5+ | 2004 03 19 | 704 | (0.6− | 1.8+) | 2006 09 29 | 704 | 0.3+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.6+ | 0.4+ | 2004 03 19 | 704 | (0.1+ | 2.4+) | 2006 09 29 | 608 | 1.1+ | 0.0 | | |
| 2001 09 23 | 704 | 0.2− | 0.2+ | 2004 03 19 | 704 | (0.3+ | 2.4+) | 2006 09 29 | 608 | 1.2+ | 0.0 | | |
| 2001 09 23 | 704 | 0.2− | 0.2− | 2004 03 27 | 699 | 0.4+ | 1.2+ | 2006 09 29 | 608 | 1.0+ | 0.4− | | |
| 2001 09 23 | 704 | 0.5− | 0.1− | 2004 03 27 | 699 | 0.3+ | 1.2+ | 2006 10 01 | 703 | 0.2− | 0.6− | | |
| 2001 09 23 | 704 | 0.1− | 0.3− | 2004 03 27 | 699 | 0.2+ | 0.7+ | 2006 10 01 | 703 | 0.1− | 1.1− | | |
| 2001 09 25 | 699 | 0.7− | 1.2+ | 2004 03 27 | 699 | 1.1+ | 0.6+ | 2006 10 01 | 703 | 0.1+ | 0.0 | | |
| 2001 09 25 | 699 | 0.2− | 0.1+ | 2004 03 31 | 704 | 1.0+ | 0.2+ | 2006 10 01 | 703 | 0.4− | 0.1+ | | |
| 2001 09 25 | 699 | 0.9− | 0.1+ | 2004 03 31 | 704 | (0.2+ | 1.7+) | 2006 10 01 | 704 | 0.2− | 0.5− | | |
| 2001 09 25 | 699 | 0.7− | 0.0 | 2004 03 31 | 704 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.7− | 0.3+ | | |
| 2001 09 28 | 644 | 0.4− | 0.5+ | 2004 04 16 | 644 | 0.6+ | 1.0+ | 2006 10 01 | 704 | 0.5+ | 0.4− | | |
| 2001 09 28 | 644 | 0.3− | 0.3+ | 2004 04 16 | 644 | 0.8+ | 1.2+ | 2006 10 01 | 704 | 1.1− | 1.2+ | | |
| 2001 09 28 | 644 | 0.2− | 0.4+ | 2004 04 16 | 644 | 0.4+ | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2001 10 06 | 644 | 0.7− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.3− | | |
| 2001 10 06 | 644 | 0.5− | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2001 10 06 | 644 | 0.4− | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 2001 10 13 | 699 | 0.3− | 0.1+ | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.1− | | |
| 2001 10 13 | 699 | 0.5− | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.0 | | |
| 2001 10 13 | 699 | 0.6− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2001 10 13 | 699 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3− | | |
| 2001 10 14 | 704 | 0.4+ | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.1− | | |
| 2001 10 14 | 704 | 0.3+ | 0.1− | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.5− | 0.4+ | 2006 08 25 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2001 10 14 | 704 | 0.6− | 0.3+ | 2006 08 25 | 704 | 1.4+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2001 10 15 | 704 | 1.0+ | 0.7+ | 2006 08 25 | 704 | 0.6− | 1.1+ | 2006 10 16 | 703 | 0.5− | 1.0− | | |
| 2001 10 15 | 704 | 0.4− | 0.5+ | 2006 08 25 | 704 | 0.6− | 0.9+ | 2006 10 16 | 703 | 0.3− | 1.1− | | |
| 2001 10 15 | 704 | 0.4− | 0.3+ | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.2+ | | |
| 2001 10 15 | 704 | 0.6− | 0.8+ | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.4+ | | |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.1− | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2001 10 17 | 704 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.4− | 1.4− | | |
| 2001 10 17 | 704 | 0.1− | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2001 10 19 | 704 | 0.8+ | 0.7− | 2006 09 17 | 704 | 0.4+ | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.8− | | |
| 2001 10 19 | 704 | 0.8+ | 0.7− | 2006 09 17 | 704 | 0.8+ | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.6− | | |
| 2001 10 19 | 704 | 1.2+ | 0.7− | 2006 09 17 | 704 | 0.5− | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 19 | 704 | 0.7+ | 0.6− | 2006 09 20 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.7− | | |
| 2001 10 21 | 704 | 0.7+ | 1.3+ | 2006 09 20 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.6− | | |
| 2001 10 21 | 704 | 0.4+ | 0.3− | 2006 09 20 | 691 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.0 | 0.1+ | | |
| 2001 10 21 | 704 | (1.6+ | 1.3+) | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.0 | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.2− | | |
| 2001 10 21 | 704 | 0.8+ | 0.3+ | 2006 09 20 | 704 | 0.7+ | 0.2+ | | | | | | |
| 2001 11 10 | 704 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.1− | | | | | | |

**(139886)∗ 2001 RG$_{88}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.56917 | (2000.0) | | | | |
| $n$ | 0.19109630 | $\omega$ | 331.18125 | | +0.33418393 | −0.94140471 |
| $a$ | 2.9851617 | $\Omega$ | 99.26496 | | +0.87334953 | +0.29111382 |
| $e$ | 0.2830416 | $i$ | 2.64747 | | +0.35437507 | +0.17032295 |
| $P$ | 5.16 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 14 | 691 | 0.0 | 0.1+ | 2001 09 24 | 704 | 0.4− | 1.0+ | 2004 05 13 | 691 | 0.1+ | 0.2+ | | |
| 1991 12 14 | 691 | 0.3− | 0.3− | 2001 09 24 | 704 | 0.7− | 1.1+ | 2004 05 13 | 691 | 0.2− | 0.3+ | | |
| 1991 12 14 | 691 | 0.6+ | 0.2+ | 2001 09 24 | 704 | 0.4− | 1.3+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | | |
| 1991 12 29 | 691 | 0.2− | 0.3− | 2001 09 24 | 704 | 0.2+ | 1.5+ | 2006 08 22 | 644 | 0.4+ | 0.3− | | |
| 1991 12 29 | 691 | 0.1− | 0.4− | 2001 09 26 | 704 | 0.5− | 1.0+ | 2006 08 22 | 644 | 0.4+ | 0.0 | | |
| 1991 12 29 | 691 | 0.1− | 0.4− | 2001 09 26 | 704 | 0.3− | 0.8+ | 2006 08 27 | 699 | 0.5+ | 0.4+ | | |
| 1996 10 18 | 566 | 0.0 | 0.3+ | 2001 09 26 | 704 | 0.6− | 0.7+ | 2006 08 27 | 699 | 0.4+ | 0.6+ | | |
| 1996 10 18 | 566 | 0.1− | 0.0 | 2001 09 26 | 704 | 0.0 | 1.0+ | 2006 08 27 | 699 | 0.2− | 0.1+ | | |
| 1996 10 18 | 566 | 0.1+ | 0.1− | 2001 09 26 | 704 | 0.0 | 1.4+ | 2006 08 27 | 699 | 0.6+ | 0.6+ | | |
| 2001 09 11 | 699 | 0.2+ | 1.3− | 2001 10 13 | 704 | 0.8+ | 1.4− | 2006 09 14 | 703 | 0.7− | 0.2− | | |
| 2001 09 11 | 699 | 0.0 | 0.7− | 2001 10 13 | 704 | 0.2+ | 0.3− | 2006 09 14 | 703 | 0.1− | 1.4− | | |
| 2001 09 11 | 699 | 0.2− | 0.5− | 2001 10 13 | 704 | 1.1− | 0.8− | 2006 09 14 | 703 | 1.3− | 0.9− | | |
| 2001 09 11 | 699 | 0.9+ | 0.6− | 2001 10 13 | 704 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.7− | | |
| 2001 09 14 | 644 | 0.5− | 0.5− | 2001 10 13 | 704 | 0.2− | 0.3− | 2006 09 16 | 704 | 0.5+ | 1.1+ | | |
| 2001 09 14 | 644 | 1.0− | 0.2+ | 2001 10 16 | 704 | (1.4− | 2.4+) | 2006 09 16 | 704 | 0.2− | 0.1+ | | |
| 2001 09 14 | 644 | 0.1− | 0.2+ | 2001 10 16 | 704 | (1.6− | 2.0+) | 2006 09 16 | 704 | 0.8− | 0.8+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.9+ | 2001 10 16 | 704 | (1.3− | 2.0+) | 2006 09 16 | 704 | 0.4− | 0.6+ | | |
| 2001 09 16 | 704 | 0.0 | 0.8+ | 2001 10 16 | 704 | (0.5− | 2.1+) | 2006 09 19 | 699 | 0.1+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.9+ | 0.8+ | 2001 10 16 | 704 | (1.5− | 1.7+) | 2006 09 19 | 699 | 0.4+ | 0.4+ | | |
| 2001 09 16 | 704 | 0.2− | 0.8+ | 2001 10 19 | 699 | 0.0 | 0.5− | 2006 09 19 | 699 | 0.1− | 0.4− | | |
| 2001 09 16 | 704 | 0.2− | 0.8+ | 2001 10 19 | 699 | 0.6− | 0.4− | 2006 09 19 | 699 | 0.2− | 1.3− | | |
| 2001 09 18 | 699 | 0.2+ | 1.0+ | 2001 10 19 | 699 | 0.4+ | 0.0 | 2006 09 22 | 704 | 0.7+ | 0.0 | | |
| 2001 09 18 | 699 | 0.7+ | 0.4+ | 2001 10 19 | 699 | 0.8+ | 0.8− | 2006 09 22 | 704 | (1.7− | 0.7−) | | |
| 2001 09 18 | 699 | (0.7+ | 1.6+) | 2001 10 20 | 704 | 0.2− | 0.0 | 2006 09 22 | 704 | 1.5− | 1.2− | | |
| 2001 09 18 | 699 | 0.5− | 1.1+ | 2001 10 20 | 704 | 1.1− | 0.6+ | 2006 09 22 | 704 | (1.8− | 0.9−) | | |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2001 10 20 | 704 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.8− | 0.4− | | |
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2001 10 20 | 704 | 0.0 | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.5− | | |
| 2001 09 19 | 704 | 0.6+ | 0.5+ | 2001 10 20 | 704 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.7+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.5+ | 2001 10 24 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.2− | | |
| 2001 09 19 | 704 | 0.1− | 1.3+ | 2001 10 24 | 704 | 0.7− | 0.3− | 2006 09 25 | 699 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.7− | 2001 10 24 | 704 | (1.7− | 0.2−) | 2006 09 26 | 704 | 0.6+ | 0.9+ | | |
| 2001 09 19 | 704 | (0.8+ | 1.6+) | 2001 10 24 | 704 | 0.3− | 0.7− | 2006 09 26 | 704 | 0.4+ | 0.2− | | |
| 2001 09 19 | 704 | 0.7+ | 0.1− | 2001 10 24 | 704 | 0.4+ | 1.2+ | 2006 09 26 | 704 | 0.2+ | 0.0 | | |
| 2001 09 19 | 704 | 0.7+ | 0.9+ | 2001 10 24 | 704 | 0.0 | 1.0− | 2006 09 26 | 704 | 0.3+ | 1.0− | | |
| 2001 09 19 | 704 | 0.2+ | 1.4+ | 2001 10 24 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.3− | | |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2001 10 24 | 704 | 0.6− | 0.2+ | 2006 09 30 | 703 | (1.2− | 2.2+) | | |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2001 10 24 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | 0.7− | 0.9+ | 2003 02 22 | 644 | 0.6+ | 1.2+ | 2006 09 30 | 703 | 1.5− | 0.6+ | | |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2003 02 22 | 644 | 1.0+ | 1.4+ | 2006 10 02 | G96 | 0.2+ | 0.6− | | |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2003 02 22 | 644 | 0.9+ | 1.1+ | 2006 10 02 | G96 | 0.4− | 0.3+ | | |
| 2001 09 21 | 704 | 0.1− | 0.8+ | 2003 03 25 | 608 | 0.1− | 0.7− | 2006 10 02 | G96 | 0.4+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2003 03 25 | 608 | 0.2+ | 0.4− | 2006 10 09 | 644 | 0.4− | 0.5+ | | |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2003 03 25 | 608 | 0.4− | 1.0+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2003 03 31 | 691 | 0.4− | 0.8+ | 2006 10 09 | 644 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.2− | 1.0+ | 2003 03 31 | 691 | 0.4− | 1.0+ | 2006 11 25 | G96 | 0.3+ | 0.6− | | |
| 2001 09 23 | 704 | (1.5− | 1.4+) | 2003 03 31 | 691 | 0.2− | 0.9+ | 2006 11 25 | G96 | 0.2+ | 0.7− | | |
| 2001 09 23 | 704 | 0.7− | 0.8+ | 2003 04 09 | 691 | 1.0+ | 0.8+ | 2006 11 25 | G96 | 0.5+ | 0.1− | | |
| 2001 09 23 | 704 | 0.3− | 0.8+ | 2003 04 09 | 691 | 1.0+ | 0.8+ | 2006 11 25 | G96 | 0.3− | 0.5− | | |
| 2001 09 23 | 704 | 0.2− | 0.8+ | 2003 04 09 | 691 | 0.9+ | 0.6+ | | | | | | |
| 2001 09 23 | 704 | 1.3− | 0.6+ | 2004 05 13 | 691 | 0.0 | 0.2+ | | | | | | |

**(139887)∗ 2001 RS$_{88}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.08101 | | (2000.0) | | | |
| $n$ | 0.20098286 | $\omega$ | 258.38969 | | +0.99323393 | −0.10433191 |
| $a$ | 2.8864456 | $\Omega$ | 107.58316 | | +0.11592805 | +0.91670450 |
| $e$ | 0.0578147 | $i$ | 3.06689 | | −0.00685958 | +0.38570417 |
| $P$ | 4.90 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.2+ | 0.8+ | 2001 09 23 | 704 | 0.5− | 0.6+ | 2004 04 23 | 691 | 0.1+ | 0.9+ |
| 1994 03 10 | 691 | 0.4− | 0.7+ | 2001 09 23 | 704 | 0.1+ | 0.1+ | 2004 04 23 | 691 | 0.3+ | 0.7+ |
| 1996 10 07 | 809 | (1.2+ | 2.3+) | 2001 09 24 | 644 | 0.2− | 1.1− | 2004 04 23 | 691 | 0.4+ | 0.7+ |
| 1996 10 07 | 809 | 0.8+ | 1.3+ | 2001 09 24 | 644 | 0.0 | 0.8− | 2006 09 06 | 644 | 0.0 | 0.2+ |
| 1996 10 07 | 809 | 0.6+ | 1.6+ | 2001 09 24 | 644 | 0.3− | 1.0− | 2006 09 06 | 644 | 0.3+ | 0.0 |
| 2001 08 27 | 699 | 0.1− | 1.0+ | 2001 10 19 | 699 | 0.1+ | 0.4+ | 2006 09 06 | 644 | 0.4+ | 0.0 |
| 2001 08 27 | 699 | 0.3+ | 0.0 | 2001 10 19 | 699 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.3− |
| 2001 08 27 | 699 | 1.2− | 0.2− | 2001 10 19 | 699 | 0.4− | 0.5− | 2006 09 25 | 699 | 0.1+ | 0.1− |
| 2001 08 27 | 699 | 0.6− | 0.0 | 2001 10 19 | 699 | 0.1− | 1.1+ | 2006 09 25 | 699 | 0.5+ | 0.4+ |
| 2001 09 11 | 699 | 0.6+ | 0.8+ | 2001 10 20 | 704 | 0.4− | 0.3− | 2006 09 25 | 699 | 0.4− | 1.0+ |
| 2001 09 11 | 699 | 1.2+ | 0.1− | 2001 10 20 | 704 | (1.9− | 0.1−) | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 2001 09 11 | 699 | 0.9+ | 0.7+ | 2001 10 20 | 704 | 0.6− | 0.3− | 2006 09 26 | 704 | (0.2− | 1.9+) |
| 2001 09 11 | 699 | 0.9+ | 0.5− | 2001 10 20 | 704 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.8− | 1.0+ |
| 2001 09 16 | 704 | 0.2− | 0.8+ | 2001 10 20 | 704 | 0.2− | 1.1+ | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.2− | 0.4+ | 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 0.2− | 0.7+ | 2002 12 05 | 704 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.1+ | 1.3+ | 2002 12 05 | 704 | 0.6− | 0.6+ | 2006 10 01 | 704 | 0.3+ | 0.3− |
| 2001 09 18 | 699 | 0.8− | 0.1+ | 2002 12 06 | 645 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.8+ |
| 2001 09 18 | 699 | 0.4− | 0.3+ | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 01 | 704 | 1.0+ | 0.1+ |
| 2001 09 18 | 699 | 0.7− | 0.1− | 2003 01 08 | 704 | 0.5+ | 0.3− | 2006 10 01 | 704 | 0.9+ | 0.3− |
| 2001 09 18 | 699 | 0.7− | 0.6+ | 2003 01 08 | 704 | 0.2− | 0.8+ | 2006 10 01 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.7− | 1.4+ | 2003 01 08 | 704 | 0.2+ | 1.5+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.6− | 1.1+ | 2003 01 08 | 704 | (0.9− | 1.6+) | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.7− | 1.1+ | 2004 03 19 | 704 | 0.3+ | 1.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 0.9+ | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.8− | 1.1+ | 2004 03 19 | 704 | 1.0+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2004 03 19 | 704 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2001 09 21 | 704 | 0.5− | 0.9+ | 2004 03 19 | 704 | (0.7+ | 1.7+) | 2006 10 16 | 703 | 1.0− | 0.0 |
| 2001 09 21 | 704 | 1.2+ | 0.4− | 2004 03 22 | 704 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 1.0− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2004 03 22 | 704 | (0.0 | 2.3+) | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.5− | 2004 03 22 | 704 | (1.9+ | 1.5+) | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 1.2+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 03 24 | 699 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2004 03 24 | 699 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2004 03 24 | 699 | (0.1+ | 2.8+) | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2004 03 24 | 699 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2001 09 21 | 704 | 0.5− | 0.8+ | 2004 03 28 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 03 28 | 704 | 0.7+ | 1.1+ | 2006 10 22 | 703 | 0.1− | 0.8+ |
| 2001 09 21 | 704 | 0.6− | 1.2+ | 2004 03 28 | 704 | 0.8+ | 0.9+ | 2006 10 22 | 703 | 0.1+ | 1.3− |
| 2001 09 23 | 704 | 0.1− | 0.4+ | 2004 03 28 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.9− |
| 2001 09 23 | 704 | 0.2+ | 0.3+ | 2004 03 28 | 704 | 0.1− | 1.1+ | 2006 11 11 | 703 | 0.7+ | 0.3− |
| 2001 09 23 | 704 | 0.2− | 0.0 | 2004 04 19 | 704 | (1.7+ | 0.6+) | 2006 11 11 | 703 | 0.2− | 1.4− |
| 2001 09 23 | 704 | 0.2+ | 1.4+ | 2004 04 19 | 704 | 1.0+ | 1.0+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2004 04 19 | 704 | 0.8+ | 0.5− | | | | |
| 2001 09 23 | 704 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.8+ | 0.3+ | | | | |

**(139888)∗ 2001 RC$_{89}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.36014 | | (2000.0) | | | |
| $n$ | 0.19979541 | $\omega$ | 220.44246 | | +0.99877026 | +0.03493118 |
| $a$ | 2.8978710 | $\Omega$ | 137.51571 | | −0.01984361 | +0.93197018 |
| $e$ | 0.0672138 | $i$ | 2.98598 | | −0.04543342 | +0.36084815 |
| $P$ | 4.93 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.0 | 0.6+ | 2002 12 31 | 704 | 0.1− | 0.3− | 2004 04 21 | 691 | 0.1+ | 0.3+ |
| 2001 08 27 | 699 | 0.5− | 0.4+ | 2002 12 31 | 704 | 0.1+ | 0.5− | 2006 08 24 | 644 | 0.4− | 0.2+ |
| 2001 08 27 | 699 | 0.3+ | 0.3+ | 2003 01 02 | 858 | (1.8+ | 0.3+) | 2006 08 24 | 644 | 0.2− | 0.3+ |
| 2001 08 27 | 699 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.2− | 0.2− | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.1− | 0.9+ | 2003 01 08 | 704 | 0.2− | 0.6− | 2006 09 06 | 644 | 0.1+ | 0.0 |
| 2001 09 11 | 699 | 0.5+ | 0.9− | 2003 01 08 | 704 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.1+ | 0.0 |
| 2001 09 11 | 699 | 1.4+ | 0.4− | 2003 01 08 | 704 | 0.3+ | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.2+ |
| 2001 09 11 | 699 | 0.3+ | 0.2+ | 2003 01 10 | 704 | (2.3+ | 1.0+) | 2006 09 18 | 699 | 0.1− | 0.3+ |
| 2001 09 16 | 704 | 0.6+ | 0.8+ | 2003 01 10 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.6+ | 0.6+ |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2003 01 10 | 704 | 0.4− | 0.3− | 2006 09 18 | 699 | 1.0+ | 0.9+ |
| 2001 09 16 | 704 | 0.3+ | 1.0+ | 2003 01 10 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.9+ | 0.5− |
| 2001 09 16 | 704 | 0.3+ | 0.8+ | 2003 01 10 | 704 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.2+ | 0.7− |
| 2001 09 18 | 699 | 1.1+ | 0.2− | 2003 01 10 | 704 | 1.0+ | 0.4− | 2006 09 22 | 704 | 0.0 | 0.1− |
| 2001 09 18 | 699 | 0.0 | 1.1+ | 2003 01 10 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.9− | 0.1+ |
| 2001 09 18 | 699 | 0.3+ | 0.7+ | 2004 03 12 | 644 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.2+ |
| 2001 09 18 | 699 | 0.1− | 1.2+ | 2004 03 12 | 644 | 0.3+ | 0.9+ | 2006 09 22 | 704 | 0.5− | 0.4− |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2004 03 12 | 644 | 0.3+ | 0.6+ | 2006 09 27 | 704 | 0.6+ | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2004 03 19 | 704 | (0.2+ | 1.7+) | 2006 09 27 | 704 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.5− | 2004 03 19 | 704 | 0.2+ | 1.1+ | 2006 09 27 | 704 | 0.4+ | 0.3+ |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2004 03 19 | 704 | 0.9+ | 1.3+ | 2006 09 28 | 704 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2004 03 19 | 704 | (2.1+ | 0.6+) | 2006 09 28 | 704 | 0.6− | 0.3+ |
| 2001 09 21 | 704 | 0.1+ | 0.6− | 2004 03 20 | 704 | 0.9+ | 1.3+ | 2006 09 28 | 704 | 0.5− | 0.3+ |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2004 03 20 | 704 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.5+ |
| 2001 09 21 | 704 | 0.0 | 0.7− | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 704 | 0.6+ | 0.8+ |
| 2001 09 21 | 704 | 0.1− | 0.7− | 2004 03 20 | 704 | 0.1− | 1.1+ | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 2001 09 24 | 644 | 0.5− | 0.0 | 2004 03 20 | 704 | 0.1− | 1.2+ | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 2001 09 24 | 644 | 0.4− | 0.5+ | 2004 03 22 | 704 | 0.5+ | 1.1+ | 2006 09 30 | 703 | 0.8− | 0.4+ |
| 2001 09 24 | 644 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.6− | 1.0+ |
| 2001 09 26 | 704 | 0.1− | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.6+ | 2006 10 01 | 704 | 0.3− | 0.2+ |
| 2001 09 26 | 704 | 0.3− | 0.9+ | 2004 03 22 | 704 | 0.7+ | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.2+ |
| 2001 09 26 | 704 | 0.2+ | 1.3+ | 2004 03 22 | 704 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.2− | 0.0 |
| 2001 09 26 | 704 | 0.0 | 0.9+ | 2004 03 24 | 699 | 0.0 | 0.9− | 2006 10 01 | 704 | 0.5− | 0.1+ |
| 2001 10 06 | 644 | 0.1− | 0.3+ | 2004 03 24 | 699 | 1.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 10 06 | 644 | 0.1− | 0.5+ | 2004 03 24 | 699 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 10 06 | 644 | 0.0 | 0.2+ | 2004 03 24 | 699 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 10 16 | 704 | 1.3− | 0.7+ | 2004 03 28 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.0− | 0.1− |
| 2001 10 16 | 704 | 0.4− | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2001 10 16 | 704 | 1.1− | 0.4− | 2004 03 28 | 704 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.1− |
| 2001 10 16 | 704 | 0.4− | 0.9− | 2004 03 28 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | (1.7− | 0.1−) |
| 2001 10 16 | 704 | 1.3− | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.8+ | 2006 10 19 | 291 | 0.0 | 0.2+ |
| 2001 10 17 | 644 | 0.1− | 0.5+ | 2004 03 29 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 291 | 0.0 | 0.1+ |
| 2001 10 17 | 644 | 0.2+ | 0.4+ | 2004 03 29 | 704 | 0.0 | 0.2+ | 2006 10 19 | 291 | 0.1− | 0.2+ |
| 2001 10 17 | 644 | 0.1+ | 0.6+ | 2004 03 29 | 704 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 10 20 | 704 | 0.8− | 0.4+ | 2004 03 29 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.6− | 0.0 | 2004 03 29 | 704 | 1.0− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 10 20 | 704 | 0.4− | 0.5+ | 2004 03 30 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2004 03 30 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2004 03 30 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2001 10 24 | 704 | 0.2− | 0.4− | 2004 03 30 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.0 | 2004 03 30 | 704 | 1.1+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.6+ | 0.2+ | 2004 04 10 | 644 | (0.2+ | 1.6+) | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 12 14 | 858 | 0.0 | 0.1+ | 2004 04 10 | 644 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 12 14 | 858 | 0.6− | 0.5+ | 2004 04 10 | 644 | 0.4+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 12 14 | 858 | 0.3+ | 0.1− | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | 0.4+ | 0.6− | 2004 04 21 | 691 | 0.2+ | 0.1+ | | | | |

**(139889)∗ 2001 RM$_{91}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.86043 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21441001 | $\omega$ | 243.94654 | | +0.92779870 | −0.36796609 | |
| $a$ | 2.7646448 | $\Omega$ | 137.56754 | | +0.36653830 | +0.86825981 | |
| $e$ | 0.1607742 | $i$ | 5.23544 | | +0.06956466 | +0.33275496 | |
| $P$ | 4.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 21 | 691 | 0.2+ | 0.4+ | 2001 10 13 | 704 | (2.3− | 0.4−) | 2006 11 14 | 704 | (1.6+ | 1.2+) |
| 1999 02 21 | 691 | 0.3+ | 0.2− | 2001 10 13 | 704 | 1.4− | 0.2− | 2006 11 14 | 704 | (0.3− | 1.7+) |
| 1999 02 21 | 691 | 0.3− | 0.3+ | 2001 10 13 | 704 | (1.8− | 0.2−) | 2006 11 14 | 704 | (0.3+ | 1.9+) |
| 1999 02 21 | 691 | 0.1− | 0.1− | 2001 10 16 | 644 | 0.0 | 0.1+ | 2006 11 14 | 704 | (1.0+ | 1.7−) |
| 1999 02 21 | 691 | 0.1− | 0.6+ | 2001 10 16 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.8− |
| 1999 02 21 | 691 | 0.1+ | 0.2+ | 2001 10 16 | 644 | 0.0 | 0.0 | 2006 11 15 | 703 | (0.1− | 2.0−) |
| 2001 08 25 | 704 | 0.1− | 0.0 | 2001 10 17 | 644 | 0.3+ | 0.6+ | 2006 11 15 | 683 | 0.0 | 1.2− |
| 2001 08 25 | 704 | 0.2− | 0.7− | 2001 10 17 | 644 | 0.3+ | 0.5+ | 2006 11 15 | 703 | (1.5+ | 2.6−) |
| 2001 08 25 | 704 | 0.1+ | 0.9− | 2001 10 17 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.4− | 1.2− |
| 2001 09 09 | 644 | 0.2+ | 1.4+ | 2001 10 23 | 699 | 0.3− | 0.2+ | 2006 11 15 | 683 | 0.2+ | 0.8− |
| 2001 09 09 | 644 | 0.9+ | 0.9+ | 2001 10 23 | 699 | 0.3− | 0.2+ | 2006 11 15 | 683 | 0.5− | 0.2+ |
| 2001 09 09 | 644 | 0.6+ | 0.8+ | 2001 10 23 | 699 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2001 09 11 | 699 | (0.0 | 1.5−) | 2001 10 23 | 699 | 0.2− | 1.2+ | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2001 09 11 | 699 | 0.5− | 0.2+ | 2001 10 24 | 644 | 0.3+ | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2001 09 11 | 699 | 0.0 | 0.3+ | 2001 10 24 | 644 | 0.6+ | 0.9+ | 2006 11 17 | 704 | 0.4+ | 0.1+ |
| 2001 09 11 | 699 | 0.0 | 0.4+ | 2001 10 24 | 644 | 0.4+ | 0.9+ | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2001 09 12 | 704 | 0.6+ | 0.1− | 2002 12 28 | 291 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.7+ | 0.3− | 2002 12 28 | 291 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.6+ | 0.2+ | 2002 12 28 | 291 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.9+ | 0.5+ | 2003 01 26 | 291 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2001 09 12 | 704 | 0.9+ | 0.7+ | 2003 01 26 | 291 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.0 |
| 2001 09 18 | 699 | 0.4− | 0.4+ | 2003 01 26 | 291 | 0.4− | 1.1− | 2006 11 19 | 704 | 1.1− | 0.3+ |
| 2001 09 18 | 699 | 0.4− | 0.9+ | 2003 01 27 | 704 | 0.2− | 1.2+ | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2001 09 18 | 699 | 1.1− | 0.6+ | 2003 01 27 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 1.4− | 0.2− |
| 2001 09 18 | 699 | 0.1+ | 1.2+ | 2003 01 27 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2003 01 27 | 704 | 0.7+ | 1.0+ | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.4− | 0.5+ | 2003 01 27 | 704 | 0.9+ | 0.5+ | 2006 11 20 | 704 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.4+ | 0.3+ | 2003 01 27 | 608 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2003 01 27 | 608 | 0.6+ | 0.3− | 2006 11 20 | 704 | 0.6− | 0.4+ |
| 2001 09 19 | 704 | 0.4+ | 0.3+ | 2003 01 27 | 608 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2003 01 30 | 699 | (1.6+ | 0.3+) | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2003 01 30 | 699 | 0.7+ | 0.8+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2001 09 21 | 704 | 0.7− | 0.4+ | 2003 01 30 | 699 | 0.9+ | 0.9+ | 2006 11 22 | G96 | 0.4+ | 0.5− |
| 2001 09 21 | 704 | 0.3− | 0.3+ | 2003 01 30 | 699 | 0.1+ | 0.8+ | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2001 09 25 | 644 | 0.9− | 0.3+ | 2003 01 31 | 704 | 0.1+ | 0.4− | 2006 11 22 | 683 | 0.9+ | 0.7− |
| 2001 09 25 | 644 | 0.7− | 0.1+ | 2003 01 31 | 704 | 0.0 | 0.4− | 2006 11 22 | 683 | 0.0 | 0.6+ |
| 2001 09 25 | 644 | 0.5− | 0.1− | 2003 01 31 | 704 | 0.5+ | 0.4− | 2006 11 22 | 683 | 0.6+ | 0.1− |
| 2001 09 27 | 644 | 0.2+ | 1.1− | 2003 01 31 | 704 | 0.6+ | 0.5+ | 2006 11 23 | 683 | 0.9+ | 1.0− |
| 2001 09 27 | 644 | 0.2+ | 1.2− | 2006 09 16 | 703 | 0.2− | 1.2− | 2006 11 23 | 683 | 0.9+ | 0.3+ |
| 2001 09 27 | 644 | 0.2+ | 1.1− | 2006 09 16 | 703 | (1.6+ | 1.1−) | 2006 11 23 | 683 | 0.3− | 0.5− |
| 2001 10 08 | 644 | 0.3− | 0.2+ | 2006 09 16 | 703 | (0.8− | 1.9−) | 2006 11 25 | 683 | 0.4− | 0.3+ |
| 2001 10 08 | 644 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.1− | 0.0 | 2006 11 25 | 704 | 0.5+ | 1.0− |
| 2001 10 08 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | (1.2− | 1.5−) | 2006 11 25 | 683 | 0.0 | 1.2+ |
| 2001 10 10 | 644 | 0.1+ | 0.9− | 2006 09 19 | 699 | (0.4− | 2.0−) | 2006 11 25 | 704 | 0.4− | 0.7− |
| 2001 10 10 | 644 | 0.1+ | 0.9− | 2006 09 19 | 699 | 0.7− | 0.2− | 2006 11 25 | 683 | 0.2− | 0.3+ |
| 2001 10 10 | 644 | 0.0 | 1.0− | 2006 09 19 | 699 | 0.1− | 0.5− | 2006 11 25 | 704 | 0.5+ | 0.2+ |
| 2001 10 11 | 704 | (1.8− | 0.4+) | 2006 11 05 | 644 | 0.0 | 0.3− | 2006 11 25 | 704 | 0.5+ | 0.7+ |
| 2001 10 11 | 704 | 1.0− | 0.5+ | 2006 11 05 | 644 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.3+ | 0.9− |
| 2001 10 11 | 704 | (1.7− | 0.7+) | 2006 11 05 | 644 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.7+ | 0.9− |
| 2001 10 11 | 704 | 0.8− | 0.8+ | 2006 11 13 | 683 | (2.2+ | 1.1−) | 2006 11 28 | 704 | 0.5+ | 0.9− |
| 2001 10 11 | 704 | 0.7− | 1.3+ | 2006 11 13 | 683 | (0.9+ | 1.6−) | 2006 11 28 | 704 | 1.1+ | 0.9− |
| 2001 10 13 | 704 | 1.4− | 0.8− | 2006 11 13 | 683 | 0.2+ | 0.3− | 2006 11 28 | 704 | 1.0+ | 0.9− |

**(139890)∗ 2001 RU$_{91}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.18689 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20420749 | $\omega$ | 186.70229 | | +0.97853140 | +0.20571172 | |
| $a$ | 2.8559786 | $\Omega$ | 161.41203 | | −0.18720714 | +0.91276330 | |
| $e$ | 0.0676589 | $i$ | 2.26708 | | −0.08619625 | +0.35291054 | |
| $P$ | 4.83 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 691 | 0.4− | 0.2− | 2002 12 31 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 644 | 0.4− | 0.2+ |
| 1999 02 12 | 691 | 0.2− | 0.2− | 2002 12 31 | 704 | 0.9+ | 0.4− | 2006 09 16 | 644 | 0.1− | 0.5+ |
| 1999 02 12 | 691 | 0.6− | 0.5− | 2003 01 01 | 704 | (1.0+ | 1.8+) | 2006 09 16 | 644 | 0.5− | 0.0 |
| 2001 08 24 | 704 | (2.3− | 0.9+) | 2003 01 01 | 704 | (1.8+ | 0.5−) | 2006 09 18 | 699 | 0.3− | 0.4+ |
| 2001 08 24 | 704 | (2.1− | 0.8+) | 2003 01 01 | 704 | 1.2− | 0.2+ | 2006 09 18 | 699 | 1.0− | 0.3− |
| 2001 08 24 | 704 | (2.0− | 0.2−) | 2003 01 01 | 704 | (1.6− | 1.6−) | 2006 09 18 | 699 | 0.6+ | 0.4+ |
| 2001 09 11 | 699 | 0.9− | 0.2+ | 2003 01 02 | 704 | 0.5− | 1.0− | 2006 09 18 | 699 | 1.1− | 0.7+ |
| 2001 09 11 | 699 | 0.1+ | 0.4− | 2003 01 02 | 704 | 0.2+ | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.4− | 0.1− | 2003 01 02 | 704 | 0.7+ | 0.5− | 2006 09 20 | 704 | 0.1− | 1.0− |
| 2001 09 11 | 699 | 0.6− | 1.0+ | 2003 01 02 | 704 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.7− |
| 2001 09 16 | 704 | 0.4− | 1.0+ | 2003 01 04 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 1.1− | 0.9+ | 2003 01 04 | 704 | 0.3+ | 1.2− | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | 0.3+ | 0.9+ | 2003 01 04 | 704 | 1.0− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.8− | 0.1− | 2003 01 04 | 704 | 0.7− | 0.9− | 2006 10 15 | 703 | 0.6+ | 1.0+ |
| 2001 09 18 | 699 | 0.3+ | 0.8+ | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 10 15 | 703 | 1.2− | 0.6+ |
| 2001 09 18 | 699 | 1.1+ | 0.1− | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 10 15 | 703 | 0.2− | 1.0+ |
| 2001 09 18 | 699 | 0.2− | 0.3+ | 2004 03 17 | 691 | 0.3+ | 0.6+ | 2006 10 15 | 703 | 0.9− | 0.1− |
| 2001 09 18 | 699 | 0.1+ | 0.3− | 2004 03 18 | 704 | 0.1+ | 1.4+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 1.0+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.6+ |
| 2001 09 19 | 704 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2004 03 18 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 291 | 0.7+ | 0.6+ |
| 2001 09 19 | 704 | 0.0 | 0.6− | 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 291 | 0.2+ | 0.4+ |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2004 03 24 | 699 | 0.2+ | 0.3+ | 2006 10 21 | 291 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 03 24 | 699 | 0.7− | 0.8− | 2006 10 21 | 703 | 0.8− | 1.2+ |
| 2001 09 21 | 704 | 0.2+ | 0.9+ | 2004 03 24 | 699 | 0.8− | 0.7− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2004 03 24 | 699 | 0.3− | 1.3− | 2006 10 21 | G96 | 1.1− | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2004 03 26 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.1− | 0.5+ |
| 2001 09 21 | 704 | 0.0 | 0.8+ | 2004 03 26 | 691 | 0.4+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.8+ | 2004 03 27 | 704 | 1.3+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.7+ | 2004 03 27 | 704 | (0.7+ | 1.7+) | 2006 10 21 | 703 | (1.3− | 1.5+) |
| 2001 09 23 | 704 | 0.0 | 0.9+ | 2004 03 27 | 704 | (1.5+ | 0.5+) | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 25 | 644 | (0.1+ | 1.7+) | 2004 03 27 | 704 | (2.2+ | 0.6−) | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 09 25 | 644 | 0.5+ | 1.4+ | 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 09 25 | 644 | (0.2+ | 1.5+) | 2004 03 29 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 09 26 | 704 | 0.2− | 0.1− | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2001 09 26 | 704 | 0.1+ | 0.1+ | 2004 04 15 | 691 | 0.2− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 09 26 | 704 | 0.1− | 0.4+ | 2004 04 15 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2001 09 26 | 704 | 0.8− | 0.0 | 2004 04 15 | 691 | 0.3+ | 0.7+ | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2001 09 26 | 704 | 0.1+ | 0.2+ | 2004 04 22 | 691 | 0.0 | 0.7+ | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2001 10 17 | 644 | 0.9− | 0.5+ | 2004 04 22 | 691 | 0.4+ | 0.6+ | 2006 11 06 | 644 | 0.6− | 0.7+ |
| 2001 10 17 | 644 | 0.7− | 0.8+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2001 10 17 | 644 | 0.2− | 0.6+ | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | (1.8+ | 0.7−) |
| 2001 10 23 | 704 | 0.3+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.3− | 1.0− |
| 2001 10 23 | 704 | 0.6+ | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.9+ | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2006 09 14 | 703 | 1.0− | 0.6− | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.4− | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 10 24 | 704 | (0.8− | 1.6+) | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 12 31 | 704 | 1.3+ | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.6+ | 0.8+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.1− |

**(139891)*** **2001 RT$_{92}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.37856 | | | (2000.0) | | |
| $n$ | 0.17575862 | $\omega$ | 156.09857 | | +0.93859990 | −0.34096083 |
| $a$ | 3.1563970 | $\Omega$ | 223.94849 | | +0.30304261 | +0.88775861 |
| $e$ | 0.0588023 | $i$ | 4.35390 | | +0.16491028 | +0.30924159 |
| $P$ | 5.61 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 1.0− | 0.1+ | 2001 09 26 | 704 | 0.7+ | 1.3− | 2003 01 07 | 704 | 0.4− | 0.1− |
| 2001 09 11 | 699 | 1.1− | 1.3− | 2001 09 26 | 704 | 0.6+ | 1.8− | 2003 01 07 | 704 | 0.4− | 0.5+ |
| 2001 09 11 | 699 | 0.4− | 0.4− | 2001 09 26 | 704 | 0.9+ | 1.4− | 2004 03 18 | 704 | 0.4− | 1.0+ |
| 2001 09 11 | 699 | 0.2+ | 0.8+ | 2001 09 26 | 704 | 1.9+ | 1.7− | 2004 03 18 | 704 | 0.2+ | 0.8+ |
| 2001 09 17 | 704 | 0.9+ | 0.3+ | 2001 09 26 | 704 | (0.8+ | 2.1−) | 2004 03 18 | 704 | 0.0 | 1.0+ |
| 2001 09 17 | 704 | 0.3+ | 0.5+ | 2001 09 28 | 644 | 1.8− | 1.5+ | 2004 03 18 | 704 | 0.0 | 1.5+ |
| 2001 09 17 | 704 | 0.5+ | 0.6+ | 2001 09 28 | 644 | 1.7− | 1.3+ | 2004 03 18 | 704 | 1.4+ | 0.2− |
| 2001 09 17 | 704 | 0.7+ | 0.4+ | 2001 09 28 | 644 | 1.6− | 1.5+ | 2004 03 27 | 704 | (2.2+ | 0.1−) |
| 2001 09 18 | 699 | 0.0 | 1.3+ | 2001 10 11 | 644 | 0.0 | 0.8− | 2004 03 27 | 704 | 0.6+ | 0.0 |
| 2001 09 18 | 699 | 0.1+ | 0.4+ | 2001 10 11 | 644 | 0.2+ | 0.7− | 2004 03 27 | 704 | 1.0+ | 1.3+ |
| 2001 09 18 | 699 | 0.4− | 1.6+ | 2001 10 11 | 644 | 0.2+ | 0.6− | 2005 02 16 | 809 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.1− | 0.9+ | 2001 10 14 | 704 | 0.3− | 0.7+ | 2005 02 16 | 809 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.5− | 1.1+ | 2001 10 14 | 704 | 0.6+ | 0.0 | 2005 02 16 | 809 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.4− | 0.7+ | 2001 10 14 | 704 | 1.0− | 0.6+ | 2005 06 06 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.5+ | 2001 10 14 | 704 | 0.8− | 0.3+ | 2005 06 06 | 691 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 0.7− | 0.6+ | 2001 10 14 | 704 | 0.6− | 0.1− | 2005 06 06 | 691 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2001 10 17 | 704 | 0.3− | 0.3+ | 2006 08 14 | 644 | 0.2+ | 0.3+ |
| 2001 09 23 | 704 | 1.1− | 0.9+ | 2001 10 17 | 704 | 1.1+ | 0.4+ | 2006 08 14 | 644 | 0.1+ | 0.2+ |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2001 10 17 | 704 | 0.3+ | 0.3− | 2006 08 14 | 644 | 0.1− | 0.3+ |
| 2001 09 23 | 704 | 0.8− | 0.6+ | 2001 10 17 | 704 | 0.6+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.0 |
| 2001 09 23 | 704 | 0.7− | 0.8+ | 2001 10 17 | 704 | 0.7+ | 0.5− | 2006 08 28 | 699 | (2.2+ | 0.9+) |
| 2001 09 23 | 704 | 1.1− | 0.9+ | 2001 10 18 | 291 | 0.0 | 0.2− | 2006 08 28 | 699 | 1.1+ | 0.8+ |
| 2001 09 24 | 704 | 1.3− | 0.1− | 2001 10 18 | 291 | 0.3+ | 0.2− | 2006 08 28 | 699 | 1.4+ | 0.7+ |
| 2001 09 24 | 704 | 1.0− | 0.2+ | 2001 10 18 | 644 | 0.2+ | 0.1− | 2006 08 29 | 703 | (2.6+ | 1.5−) |
| 2001 09 24 | 704 | 0.5− | 0.3+ | 2001 10 18 | 644 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.9− | 0.4+ |
| 2001 09 24 | 704 | 0.4+ | 0.2+ | 2001 10 18 | 291 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.2− |
| 2001 09 25 | 699 | 1.0+ | 0.1− | 2001 10 18 | 644 | 0.0 | 0.2− | 2006 08 29 | 703 | 1.1− | 0.5+ |
| 2001 09 25 | 699 | 1.2− | 0.4+ | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2006 09 03 | 941 | 0.2+ | 0.6+ |
| 2001 09 25 | 699 | 1.1− | 0.1+ | 2001 10 21 | 704 | 0.3+ | 0.4+ | 2006 09 03 | 941 | 0.2+ | 0.5+ |
| 2001 09 25 | 699 | 0.7− | 0.3+ | 2001 10 21 | 704 | 0.8+ | 0.3+ | 2006 09 03 | 941 | 0.1− | 0.3+ |
| 2001 09 25 | 691 | 0.1− | 0.2− | 2001 10 21 | 704 | 0.2+ | 0.9+ | 2006 09 14 | 644 | 0.6+ | 0.0 |
| 2001 09 25 | 691 | 0.1− | 0.2− | 2001 10 21 | 704 | 0.6+ | 0.7+ | 2006 09 14 | 644 | 0.3+ | 0.5+ |
| 2001 09 25 | 691 | 0.1+ | 0.4− | 2001 11 09 | 704 | 1.3+ | 1.0+ | 2006 09 14 | 644 | 0.4+ | 0.4+ |
| 2001 09 26 | 704 | 0.9+ | 1.4− | 2001 11 09 | 704 | 0.4+ | 1.0+ | 2006 09 14 | 703 | 0.0 | 1.1− |
| 2001 09 26 | 704 | 0.0 | 0.8− | 2001 11 09 | 704 | 1.2+ | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.8− |
| 2001 09 26 | 704 | 0.4+ | 1.1− | 2001 11 09 | 704 | 0.5+ | 0.2− | 2006 09 14 | 703 | 1.7− | 0.7− |
| 2001 09 26 | 704 | 1.2+ | 0.8− | 2003 01 07 | 704 | 0.2+ | 0.1− | 2006 09 14 | 703 | 1.0− | 1.9− |

**(139892)*** **2001 RK$_{93}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.97636 | | | (2000.0) | | |
| $n$ | 0.19656364 | $\omega$ | 293.52974 | | +0.96352123 | +0.26563932 |
| $a$ | 2.9295478 | $\Omega$ | 51.08152 | | −0.22772511 | +0.87773273 |
| $e$ | 0.0858625 | $i$ | 2.40122 | | −0.14059915 | +0.39877438 |
| $P$ | 5.01 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 05 | 691 | 0.0 | 0.1+ | 2001 10 07 | 644 | 0.8− | 0.4+ | 2006 08 23 | 644 | 0.2− | 0.4+ |
| 1994 04 05 | 691 | 0.0 | 0.1+ | 2001 10 13 | 704 | 0.3+ | 0.3− | 2006 08 28 | 703 | 1.2+ | 0.1+ |
| 2001 09 11 | 699 | 0.5+ | 0.8+ | 2001 10 13 | 704 | 1.4− | 0.3+ | 2006 08 28 | 703 | 1.1+ | 1.5− |
| 2001 09 11 | 699 | 1.4− | 0.5+ | 2001 10 13 | 704 | 0.5− | 0.4− | 2006 08 28 | 703 | (1.8− | 0.2−) |
| 2001 09 11 | 699 | 0.3− | 0.8− | 2001 10 13 | 704 | 0.5− | 0.7− | 2006 08 28 | 703 | 0.3− | 0.2− |
| 2001 09 11 | 699 | (0.5− | 1.6+) | 2001 10 16 | 291 | (1.8+ | 0.3+) | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2001 09 14 | 644 | 0.1− | 0.5+ | 2001 10 16 | 291 | 1.1+ | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2001 09 14 | 644 | 0.7− | 0.2+ | 2001 10 16 | 291 | (2.2+ | 0.3+) | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2001 09 14 | 644 | 0.7− | 0.2+ | 2001 10 17 | 644 | 0.1− | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2001 09 16 | 704 | 0.1− | 0.8+ | 2001 10 17 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 1.0+ | 0.8− | 2001 10 17 | 644 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.9− | 0.8− | 2001 10 17 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.4+ | 0.1− |
| 2001 09 16 | 704 | 0.2+ | 0.5− | 2001 10 17 | 644 | 0.1+ | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.1− |
| 2001 09 18 | 699 | 0.5+ | 1.2− | 2001 10 17 | 644 | 0.1+ | 0.9+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2001 09 18 | 699 | 0.7+ | 0.4+ | 2001 10 23 | 704 | 0.1− | 1.2+ | 2006 09 19 | 703 | 1.0+ | 0.6− |
| 2001 09 18 | 699 | 0.4+ | 0.7+ | 2001 10 23 | 704 | (0.6+ | 1.6+) | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2001 09 18 | 699 | 0.4+ | 0.2+ | 2001 10 23 | 704 | 0.5+ | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.4+ |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2001 10 24 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2001 10 24 | 704 | 1.0− | 0.9+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2001 09 19 | 704 | 0.6+ | 0.1− | 2001 10 24 | 704 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2001 11 12 | 645 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 0.3+ | 0.2− | 2001 11 12 | 645 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.0 | 1.2− |
| 2001 09 20 | 704 | 0.2− | 1.0+ | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.9+ | 1.0− |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2003 01 08 | 704 | 0.9− | 0.6− | 2006 09 28 | 704 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.5+ | 0.0 | 2003 01 08 | 704 | 0.6+ | 0.5+ | 2006 10 01 | 704 | 0.5− | 1.1+ |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2003 01 08 | 704 | 0.7+ | 0.4− | 2006 10 01 | 704 | 0.8− | 0.4+ |
| 2001 09 26 | 704 | 0.0 | 0.7+ | 2004 03 15 | 703 | (0.3− | 2.1+) | 2006 10 01 | 704 | 0.8− | 0.6+ |
| 2001 09 26 | 704 | 0.2− | 0.8+ | 2004 03 15 | 703 | (0.6+ | 1.7+) | 2006 10 01 | 704 | 0.5+ | 0.9+ |
| 2001 09 26 | 704 | 0.8− | 0.1− | 2004 03 15 | 703 | (2.3+ | 0.8+) | 2006 10 01 | 704 | 0.3+ | 0.7+ |
| 2001 09 26 | 704 | 0.2− | 0.1− | 2004 03 15 | 703 | 0.0 | 1.2+ | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2001 10 06 | 644 | 0.4− | 0.0 | 2004 03 22 | 704 | (1.6+ | 0.7−) | 2006 10 16 | 703 | (1.6− | 0.7−) |
| 2001 10 06 | 644 | 0.6− | 0.9+ | 2004 03 22 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2001 10 06 | 644 | 0.2− | 0.3− | 2004 03 22 | 704 | (0.1− | 1.9+) | 2006 10 16 | 703 | 0.5+ | 0.4− |
| 2001 10 06 | 644 | 0.6− | 1.1+ | 2004 04 25 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 10 06 | 644 | 0.5− | 0.1+ | 2004 04 25 | 691 | 0.7+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 06 | 644 | 0.4− | 0.9+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 10 07 | 644 | 0.7− | 0.0 | 2006 08 23 | 644 | 0.3− | 0.2+ | | | | |
| 2001 10 07 | 644 | 0.7− | 0.2+ | 2006 08 23 | 644 | 0.3− | 0.4+ | | | | |

**(139893)*** **2001 RT$_{93}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.67188 | | | (2000.0) | | |
| $n$ | 0.19868130 | $\omega$ | 243.10606 | | +0.96265695 | +0.26473423 |
| $a$ | 2.9086941 | $\Omega$ | 101.49875 | | −0.22333862 | +0.89482130 |
| $e$ | 0.0853133 | $i$ | 3.31319 | | −0.15300805 | +0.35945880 |
| $P$ | 4.96 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.7− | 1.0+ | 2003 01 04 | 704 | 0.4− | 0.0 | 2004 04 19 | 704 | 0.2+ | 0.9+ |
| 2001 08 27 | 699 | 0.7− | 0.5+ | 2003 01 04 | 704 | 0.1− | 0.4+ | 2004 04 19 | 704 | 0.4− | 0.4+ |
| 2001 08 27 | 699 | 0.7− | 1.2+ | 2003 01 04 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 0.5− | 0.2+ |
| 2001 08 27 | 699 | 0.3− | 1.0+ | 2003 01 08 | 704 | 0.4+ | 0.2+ | 2004 04 19 | 704 | 0.1+ | 0.8+ |
| 2001 09 11 | 699 | 0.0 | 0.4+ | 2003 01 08 | 704 | 0.1− | 0.1− | 2004 04 25 | 699 | (0.4− | 2.2+) |
| 2001 09 11 | 699 | 0.3− | 0.8+ | 2003 01 08 | 704 | 0.0 | 0.5+ | 2004 04 25 | 699 | 0.6− | 0.3− |
| 2001 09 11 | 699 | 0.2− | 0.7+ | 2003 01 08 | 704 | 0.5− | 0.0 | 2004 04 25 | 699 | 0.7− | 0.8+ |
| 2001 09 11 | 699 | 0.4− | 0.5+ | 2003 01 08 | 704 | 0.1− | 0.3+ | 2004 04 25 | 699 | (1.7− | 0.6+) |
| 2001 09 16 | 704 | 1.4− | 1.0+ | 2003 01 09 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 704 | 0.4+ | 1.3+ |
| 2001 09 16 | 704 | 1.0− | 0.9+ | 2003 01 09 | 704 | 0.7+ | 0.2+ | 2006 09 16 | 704 | 0.7+ | 0.7+ |
| 2001 09 16 | 704 | 0.7− | 0.8+ | 2003 01 09 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 704 | 0.3− | 1.1+ |
| 2001 09 16 | 704 | 1.3− | 1.2+ | 2003 01 09 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 704 | 0.3− | 0.3− |
| 2001 09 16 | 704 | 0.8− | 1.4+ | 2003 01 09 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 704 | 0.1− | 0.6− |
| 2001 09 18 | 699 | 0.2− | 0.3+ | 2003 01 23 | 735 | 0.2+ | 0.2− | 2006 09 19 | 704 | 0.5+ | 0.6− |
| 2001 09 18 | 699 | 0.1+ | 1.2+ | 2003 01 23 | 735 | 0.2− | 0.0 | 2006 09 19 | 704 | 0.3− | 0.6+ |
| 2001 09 18 | 699 | 0.0 | 0.4+ | 2003 01 23 | 735 | 0.3− | 0.4+ | 2006 09 19 | 704 | 0.4− | 0.3− |
| 2001 09 18 | 699 | 0.5− | 0.7− | 2003 01 24 | 735 | 0.3− | 0.1+ | 2006 09 20 | 608 | 1.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.5+ | 0.6+ | 2003 01 24 | 735 | 0.5− | 0.1+ | 2006 09 20 | 608 | (1.5+ | 0.6+) |
| 2001 09 19 | 704 | 0.6+ | 0.5+ | 2003 01 24 | 735 | 0.9+ | 1.2− | 2006 09 20 | 608 | 1.3+ | 0.6+ |
| 2001 09 19 | 704 | 0.4+ | 0.0 | 2003 01 31 | 704 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.1+ | 0.8+ |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2003 01 31 | 704 | 0.7− | 0.6− | 2006 09 22 | 704 | 0.5+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2003 01 31 | 704 | 0.7− | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2003 01 31 | 704 | 0.3− | 0.6+ | 2006 09 22 | 704 | 0.4+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2003 02 01 | 735 | 0.8− | 0.2− | 2006 09 22 | 704 | 0.2+ | 0.9+ | | |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2003 02 01 | 735 | 0.5+ | 0.1− | 2006 09 25 | 699 | 0.4− | 0.1+ | | |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2003 02 01 | 735 | 0.3+ | 0.5− | 2006 09 25 | 699 | 0.7+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.0 | 0.6+ | 2003 02 02 | 735 | 1.1+ | 0.3− | 2006 09 25 | 699 | 0.0 | 0.6+ | | |
| 2001 09 28 | 644 | 0.9− | 0.7+ | 2003 02 02 | 735 | 0.8+ | 0.6+ | 2006 09 25 | 699 | 0.1− | 0.4+ | | |
| 2001 09 28 | 644 | 0.6− | 0.8+ | 2003 02 02 | 735 | 0.0 | 0.0 | 2006 09 26 | 704 | 1.5− | 0.1+ | | |
| 2001 09 28 | 644 | 0.4− | 0.9+ | 2003 02 04 | 735 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.5+ | | |
| 2001 10 06 | 644 | 0.1− | 0.4+ | 2003 02 04 | 735 | 0.5+ | 0.5+ | 2006 09 26 | 704 | 0.6+ | 0.2+ | | |
| 2001 10 06 | 644 | 0.2+ | 0.2+ | 2003 02 04 | 735 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.4+ | | |
| 2001 10 06 | 644 | 0.1+ | 0.2+ | 2004 02 18 | 703 | 1.3− | 0.8+ | 2006 09 26 | 704 | 0.2− | 0.4+ | | |
| 2001 10 13 | 704 | 1.0+ | 0.1− | 2004 02 18 | 703 | 0.2− | 0.8+ | 2006 09 26 | 704 | 1.0− | 0.6+ | | |
| 2001 10 13 | 704 | 0.1+ | 0.0 | 2004 02 18 | 703 | 1.1+ | 0.5+ | 2006 09 26 | 704 | 0.4− | 0.3+ | | |
| 2001 10 13 | 704 | 0.0 | 0.2+ | 2004 02 18 | 703 | 0.9+ | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.4+ | | |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2004 02 19 | 704 | 1.0+ | 1.1+ | 2006 09 26 | 704 | 1.0− | 0.1+ | | |
| 2001 10 14 | 645 | 0.1+ | 0.2− | 2004 02 19 | 704 | 0.2+ | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.0 | | |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2004 02 19 | 704 | 0.2+ | 0.9+ | 2006 09 28 | 691 | 0.3− | 0.3+ | | |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2004 02 19 | 704 | 0.5+ | 0.7+ | 2006 09 28 | 691 | 0.3− | 0.3+ | | |
| 2001 10 16 | 704 | 0.3− | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.4− | 0.3+ | | |
| 2001 10 16 | 704 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.6+ | 0.6+ | 2006 09 29 | 699 | 0.3− | 0.1+ | | |
| 2001 10 16 | 704 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 09 29 | 699 | 0.4− | 0.9+ | | |
| 2001 10 16 | 704 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.1− | | |
| 2001 10 16 | 704 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 10 01 | 704 | 0.0 | 0.1− | | |
| 2001 10 17 | 644 | 0.2− | 0.9+ | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 10 01 | 704 | 0.7− | 0.1+ | | |
| 2001 10 17 | 644 | 0.2− | 0.8+ | 2004 02 23 | 704 | 1.1+ | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.1− | | |
| 2001 10 17 | 644 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.1− | | |
| 2001 10 17 | 644 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.9+ | 0.3+ | 2006 10 01 | 704 | 0.5+ | 0.7+ | | |
| 2001 10 17 | 644 | 0.3+ | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.3+ | | |
| 2001 10 17 | 644 | 0.2+ | 0.7+ | 2004 03 15 | 703 | 0.5+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.3+ | | |
| 2001 10 19 | 699 | 0.3− | 0.1+ | 2004 03 15 | 703 | 0.7+ | 1.0+ | 2006 10 02 | 691 | 0.0 | 0.3+ | | |
| 2001 10 19 | 699 | 0.0 | 0.2+ | 2004 03 15 | 703 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.5− | | |
| 2001 10 19 | 699 | 0.2− | 0.4− | 2004 03 15 | 703 | 1.4− | 1.3+ | 2006 10 16 | 703 | 0.2− | 0.1− | | |
| 2001 10 19 | 699 | 1.0− | 0.0 | 2004 03 15 | 333 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2004 03 15 | 333 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.7− | | |
| 2001 10 20 | 704 | 0.5− | 0.2+ | 2004 03 16 | 704 | 0.7+ | 1.2+ | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 2001 10 20 | 704 | 1.1− | 0.8+ | 2004 03 16 | 704 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 2001 10 20 | 704 | 0.5− | 0.8+ | 2004 03 16 | 704 | 1.0+ | 0.8+ | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2001 10 20 | 704 | (0.6− | 1.8+) | 2004 03 16 | 704 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2001 10 24 | 704 | 0.2− | 0.9+ | 2004 03 16 | 704 | 0.6− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2001 10 24 | 704 | (1.7− | 1.4+) | 2004 03 16 | 333 | (0.3− | 1.9+) | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2001 10 24 | 704 | 1.3− | 1.2+ | 2004 03 16 | 333 | 0.1+ | 0.5+ | 2006 10 22 | 704 | 0.0 | 0.7+ | | |
| 2001 10 24 | 704 | 1.2− | 0.8+ | 2004 03 19 | 704 | 0.9+ | 0.6+ | 2006 10 22 | 704 | (1.6− | 1.0+) | | |
| 2001 10 24 | 704 | (1.7− | 0.8+) | 2004 03 19 | 704 | 0.7+ | 1.1+ | 2006 10 22 | 704 | 0.2+ | 0.2− | | |
| 2001 11 08 | 644 | 0.1− | 0.4+ | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 704 | 0.6− | 0.3+ | | |
| 2001 11 08 | 644 | 0.1− | 0.4+ | 2004 03 19 | 704 | 0.6+ | 0.9+ | 2006 10 22 | 704 | 0.8− | 0.1+ | | |
| 2001 11 08 | 644 | 0.3− | 0.0 | 2004 03 19 | 704 | (0.0 | 1.9+) | 2006 10 22 | 703 | 0.2+ | 0.3− | | |
| 2001 12 07 | 704 | 1.2+ | 0.4− | 2004 03 22 | 704 | 0.6+ | 1.3+ | 2006 10 22 | 703 | 0.2+ | 0.6− | | |
| 2001 12 07 | 704 | 0.2+ | 0.4+ | 2004 03 22 | 704 | 0.1+ | 0.9+ | 2006 10 22 | 703 | 0.2− | 0.3− | | |
| 2001 12 07 | 704 | 1.3− | 1.0+ | 2004 03 22 | 704 | 0.6+ | 0.9+ | 2006 10 22 | 703 | 0.2− | 0.1− | | |
| 2001 12 07 | 704 | 0.7+ | 0.5− | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 10 27 | 704 | 0.8+ | 0.4+ | | |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2004 03 22 | 704 | 0.7+ | 1.2+ | 2006 10 27 | 704 | 0.1+ | 0.3− | | |
| 2002 11 07 | 645 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.4+ | 1.0+ | 2006 10 27 | 704 | 0.3+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.8+ | 2006 10 27 | 704 | 0.3+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.5− | 2004 03 23 | 704 | 0.2+ | 0.9+ | 2006 10 27 | 704 | 0.3− | 0.6+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.2− | 0.8+ | 2006 11 06 | 644 | 0.2− | 0.0 | | |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.7+ | 0.7+ | 2006 11 06 | 644 | 0.2− | 0.5+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2004 03 24 | 699 | 0.8− | 1.0+ | 2006 11 06 | 644 | 0.4− | 0.1− | | |
| 2002 12 25 | 461 | 0.0 | 0.2− | 2004 03 24 | 699 | 1.3+ | 0.2+ | 2006 11 10 | 704 | (0.2− | 1.7+) | | |
| 2002 12 25 | 461 | 0.3− | 0.3− | 2004 03 24 | 699 | 0.9− | 0.1+ | 2006 11 10 | 704 | (0.5− | 1.6−) | | |
| 2002 12 29 | 461 | 0.2− | 0.2− | 2004 03 24 | 699 | 0.3− | 0.8+ | 2006 11 10 | 704 | 0.0 | 0.3+ | | |
| 2002 12 29 | 461 | 0.0 | 0.0 | 2004 04 15 | 704 | 0.6+ | 1.4+ | 2006 11 10 | 704 | 0.9− | 0.7− | | |
| 2002 12 29 | 461 | 0.2− | 0.8− | 2004 04 15 | 704 | (1.5+ | 1.4+) | 2006 11 17 | G96 | 0.0 | 0.0 | | |
| 2002 12 31 | 704 | 0.7− | 0.3+ | 2004 04 15 | 704 | 0.5+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.1− | | |
| 2002 12 31 | 704 | (1.5− | 0.1−) | 2004 04 15 | 704 | 0.5+ | 0.9+ | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2002 12 31 | 704 | 0.1− | 0.8− | 2004 04 15 | 704 | 1.3+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2002 12 31 | 704 | 0.5− | 0.0 | 2004 04 19 | 704 | 0.2− | 0.2+ | | | | | | |

**(139894)∗ 2001 RS$_{94}$ = 1997 YS$_{20}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 18057)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.42523 | | (2000.0) | | | |
| $n$ | 0.20031405 | $\omega$ | 122.24248 | | +0.68345996 | −0.72688614 |
| $a$ | 2.8928669 | $\Omega$ | 284.48760 | | +0.64422076 | +0.64390534 |
| $e$ | 0.0688994 | $i$ | 3.98133 | | +0.34331049 | +0.23879372 |
| $P$ | 4.92 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 28 | 691 | 1.2+ | 1.7− | 2001 10 17 | 704 | 0.3− | 1.4+ | 2006 09 18 | 703 | 0.5+ | 0.4− | | |
| 1997 12 28 | 691 | 0.5− | 0.0 | 2001 10 17 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.1− | | |
| 1997 12 28 | 691 | 0.4− | 0.1+ | 2001 10 17 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.2+ | | |
| 1998 01 02 | 704 | 0.4− | 0.5− | 2001 10 21 | 704 | 0.2− | 0.8+ | 2006 09 18 | 704 | 0.2+ | 1.2+ | | |
| 1998 01 02 | 704 | 0.3+ | 0.2+ | 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 09 18 | 704 | 1.0− | 0.0 | | |
| 1998 01 02 | 704 | 0.4+ | 0.7+ | 2001 10 21 | 704 | 0.4− | 0.1− | 2006 09 18 | 704 | 0.3− | 1.1+ | | |
| 1998 01 02 | 704 | 1.3− | 0.0 | 2001 10 21 | 704 | 0.4+ | 0.2− | 2006 09 18 | 704 | 0.2− | 0.2− | | |
| 2001 08 27 | 699 | 0.9− | 0.6− | 2001 10 23 | 333 | 0.5+ | 1.0+ | 2006 09 18 | 699 | 0.5+ | 0.8− | | |
| 2001 08 27 | 699 | 1.2− | 0.5+ | 2001 10 23 | 333 | 0.8− | 0.4+ | 2006 09 18 | 699 | 1.0+ | 0.4− | | |
| 2001 08 27 | 699 | 0.6− | 0.7+ | 2001 10 23 | 333 | 0.6− | 0.7+ | 2006 09 18 | 699 | 0.1+ | 0.1− | | |
| 2001 08 27 | 699 | 0.5− | 0.1− | 2002 12 18 | 608 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.4− | 0.2+ | | |
| 2001 08 28 | 644 | 1.0− | 0.3+ | 2002 12 18 | 608 | 0.9+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.2+ | | |
| 2001 08 28 | 644 | 0.9− | 0.4+ | 2002 12 18 | 608 | 0.9+ | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.3+ | | |
| 2001 08 28 | 644 | 0.6− | 0.1+ | 2003 01 04 | 704 | 0.4+ | 0.8+ | 2006 09 19 | 703 | 0.5− | 0.1+ | | |
| 2001 09 11 | 699 | 0.1− | 0.1− | 2003 01 04 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.4− | | |
| 2001 09 11 | 699 | 0.1− | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 224 | 0.0 | 0.3+ | | |
| 2001 09 11 | 699 | 0.3+ | 0.3− | 2003 01 08 | 704 | 1.1− | 0.8+ | 2006 09 22 | 224 | 0.4+ | 0.5+ | | |
| 2001 09 11 | 699 | 0.9+ | 0.2+ | 2003 01 08 | 704 | 0.6− | 0.4+ | 2006 09 22 | 224 | 0.9+ | 0.1+ | | |
| 2001 09 17 | 704 | 0.2− | 0.1+ | 2003 01 08 | 704 | 1.3− | 0.9+ | 2006 09 29 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 17 | 704 | 0.4+ | 0.1+ | 2003 01 08 | 704 | 0.6− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.1+ | | |
| 2001 09 17 | 704 | 0.2− | 0.5+ | 2003 01 08 | 704 | 0.5+ | 1.0+ | 2006 09 29 | 704 | 0.3− | 0.9− | | |
| 2001 09 17 | 704 | 0.4− | 0.1− | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.6− | 0.6− | | |
| 2001 09 18 | 699 | 0.2+ | 0.2+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.1− | 0.4+ | | |
| 2001 09 18 | 699 | 0.3− | 0.2+ | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.8− | 0.2− | | |
| 2001 09 18 | 699 | 0.7− | 0.3+ | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.0 | 0.5− | | |
| 2001 09 18 | 699 | 0.9− | 0.3+ | 2003 01 30 | 608 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.7− | | |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2003 01 30 | 608 | 0.6+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.3− | | |
| 2001 09 20 | 704 | 0.5− | 0.8+ | 2003 01 30 | 608 | 0.7+ | 0.2− | 2006 10 03 | 704 | (2.1− | 2.4+) | | |
| 2001 09 20 | 704 | 0.6− | 0.6+ | 2003 01 31 | 704 | 0.2+ | 1.1+ | 2006 10 03 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 704 | 0.5+ | 1.2+ | 2006 10 03 | 704 | (1.8− | 2.1+) | | |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2003 01 31 | 704 | 0.6+ | 0.6+ | 2006 10 03 | 704 | (2.4− | 1.9+) | | |
| 2001 09 22 | 704 | 0.9+ | 0.5+ | 2003 01 31 | 704 | 0.4+ | 0.9+ | 2006 10 03 | G96 | 0.4+ | 0.4− | | |
| 2001 09 22 | 704 | 0.3+ | 0.1+ | 2003 01 31 | 704 | 0.0 | 1.4+ | 2006 10 03 | G96 | 0.1− | 0.3− | | |
| 2001 09 22 | 704 | 0.5− | 0.5+ | 2003 02 03 | 704 | (0.9+ | 1.6+) | 2006 10 03 | 704 | 0.3− | 0.5+ | | |
| 2001 09 22 | 704 | 0.4+ | 0.3+ | 2003 02 03 | 704 | (0.8+ | 1.7+) | 2006 10 03 | G96 | 0.4+ | 0.3− | | |
| 2001 09 23 | 704 | 0.6+ | 0.7+ | 2003 02 03 | 704 | 1.0− | 1.0+ | 2006 10 03 | G96 | 0.1+ | 0.5− | | |
| 2001 09 23 | 704 | 1.3+ | 1.1+ | 2003 02 03 | 704 | (0.8+ | 2.4+) | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2001 09 23 | 704 | (2.0+ | 0.2+) | 2003 02 05 | 608 | 0.4− | 0.8− | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 1.3+ | 1.5+ | 2003 02 05 | 608 | 0.4− | 1.3− | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 0.4+ | 1.0+ | 2003 02 05 | 608 | 0.2− | 1.3− | 2006 10 17 | 703 | 0.5− | 0.1+ | | |
| 2001 09 25 | 699 | 0.1+ | 0.8+ | 2003 02 08 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.4+ | 0.4− | | |
| 2001 09 25 | 699 | 0.2− | 0.1+ | 2003 02 08 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.1+ | | |
| 2001 09 25 | 699 | 0.2− | 0.2− | 2003 02 08 | 704 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.5− | 0.6− | | |
| 2001 09 25 | 699 | 0.2− | 0.1+ | 2003 02 08 | 704 | 0.7+ | 1.3+ | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 2001 09 27 | 704 | 0.1− | 0.3+ | 2004 04 14 | 699 | 1.3− | 1.1− | 2006 10 19 | 644 | 0.4+ | 0.2+ | | |
| 2001 09 27 | 704 | 0.7− | 0.3+ | 2004 04 14 | 699 | 0.2− | 1.3+ | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2001 09 27 | 704 | 0.9− | 0.5+ | 2004 04 14 | 699 | 0.3+ | 0.0 | 2006 10 27 | 683 | 0.7+ | 0.2+ | | |
| 2001 09 27 | 704 | 0.2− | 0.3− | 2004 04 14 | 699 | 0.2− | 1.2+ | 2006 10 27 | 683 | 0.5− | 0.1− | | |
| 2001 09 27 | 704 | 0.1− | 0.0 | 2004 04 17 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 683 | 1.4− | 1.0− | | |
| 2001 09 27 | 704 | 0.6− | 0.9+ | 2004 04 17 | 704 | 0.9+ | 0.6+ | 2006 10 28 | 683 | 0.4− | 0.3+ | | |
| 2001 09 27 | 704 | 0.9− | 0.1+ | 2004 04 17 | 704 | 1.0+ | 0.9+ | 2006 10 28 | 683 | (1.8− | 0.0 ) | | |
| 2001 09 27 | 704 | 0.1+ | 0.4+ | 2004 04 17 | 704 | 0.1+ | 1.0+ | 2006 10 28 | 683 | (0.4+ | 1.6−) | | |
| 2001 09 27 | 704 | 0.6− | 0.7+ | 2004 04 19 | 704 | 1.0+ | 0.5+ | 2006 10 31 | 683 | 1.3+ | 0.8+ | | |
| 2001 09 27 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 0.6+ | 1.2+ | 2006 10 31 | 683 | (0.3+ | 1.6+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.2+ | 0.1+ | 2004 04 19 | 704 | 1.1+ | 0.4+ | 2006 10 31 | 683 | (0.8+ | 1.7+) | | |
| 2001 09 28 | 644 | 0.2− | 0.1+ | 2004 04 20 | 704 | 1.4+ | 1.2+ | 2006 11 06 | 644 | 0.2+ | 0.0 | | |
| 2001 09 28 | 644 | 0.3− | 0.1+ | 2004 04 20 | 704 | 1.4+ | 0.6+ | 2006 11 06 | 644 | 0.4− | 0.1+ | | |
| 2001 10 06 | 644 | 0.5+ | 1.2− | 2004 04 20 | 704 | 0.1− | 1.3+ | 2006 11 06 | 644 | 0.4+ | 0.1+ | | |
| 2001 10 06 | 644 | 0.5+ | 1.0− | 2004 04 20 | 704 | 0.4+ | 1.5+ | 2006 11 15 | 704 | 0.3+ | 0.6+ | | |
| 2001 10 06 | 644 | 0.3+ | 1.2− | 2004 04 20 | 704 | 0.2+ | 1.0+ | 2006 11 15 | 704 | 0.0 | 0.4+ | | |
| 2001 10 13 | 699 | 0.4− | 0.3+ | 2004 04 21 | 704 | 0.3+ | 1.2+ | 2006 11 15 | 704 | 0.1+ | 0.1+ | | |
| 2001 10 13 | 699 | 0.6+ | 0.0 | 2004 04 21 | 704 | 0.4+ | 0.7+ | 2006 11 18 | G96 | 0.4+ | 0.1− | | |
| 2001 10 13 | 699 | 0.4+ | 0.3− | 2004 04 21 | 704 | 0.3+ | 0.7+ | 2006 11 18 | G96 | 0.5+ | 0.2− | | |
| 2001 10 13 | 699 | 0.5+ | 0.4+ | 2004 04 21 | 704 | 0.4+ | 0.7+ | 2006 11 18 | G96 | 0.5+ | 0.3− | | |
| 2001 10 14 | 704 | 0.6− | 0.0 | 2004 04 21 | 704 | 0.8− | 1.3+ | 2006 11 18 | G96 | 0.6+ | 0.1− | | |
| 2001 10 14 | 704 | 0.4− | 0.2− | 2006 08 06 | 699 | 1.1− | 0.9+ | 2006 11 19 | 704 | 0.4+ | 0.4+ | | |
| 2001 10 14 | 704 | 0.8− | 0.1+ | 2006 08 06 | 699 | 0.2+ | 0.8− | 2006 11 19 | 704 | 0.8+ | 0.4+ | | |
| 2001 10 14 | 704 | 0.5− | 0.1+ | 2006 08 06 | 699 | 0.5+ | 0.6− | 2006 11 19 | 704 | 1.1− | 1.4+ | | |
| 2001 10 14 | 704 | 0.4− | 0.5+ | 2006 08 06 | 699 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.9− | | |
| 2001 10 17 | 704 | 0.6+ | 0.2− | 2006 09 18 | 703 | 0.3− | 0.8+ | | | | | | |

**(139895)∗ 2001 RX$_{94}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.27049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18009067 | $\omega$ | 36.62993 | | +0.98098357 | −0.18202865 | |
| $a$ | 3.1055741 | $\Omega$ | 333.61800 | | +0.12158569 | +0.84683602 | |
| $e$ | 0.0775511 | $i$ | 8.71860 | | +0.15128835 | +0.49973426 | |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.5+ | 0.4+ | 2001 10 13 | 699 | (1.7− | 0.2+) | 2006 08 18 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 27 | 644 | 0.3+ | 0.5+ | 2001 10 14 | 704 | 0.2+ | 0.2− | 2006 08 18 | 644 | 0.3+ | 0.2+ | | |
| 2001 08 27 | 644 | 0.6+ | 0.7+ | 2001 10 14 | 704 | 0.3− | 0.3− | 2006 08 20 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 11 | 699 | 0.3+ | 0.1+ | 2001 10 14 | 704 | 0.3+ | 0.8− | 2006 08 20 | 644 | 0.2+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.9− | 0.2+ | 2001 10 14 | 704 | 0.8+ | 0.0 | 2006 08 20 | 644 | 0.3+ | 0.3+ | | |
| 2001 09 11 | 699 | 0.4− | 0.2+ | 2001 10 14 | 704 | 0.2− | 0.7− | 2006 08 28 | 699 | 0.9+ | 0.2− | | |
| 2001 09 11 | 699 | 0.2− | 1.2+ | 2001 10 17 | 704 | 1.0+ | 0.4+ | 2006 08 28 | 699 | 0.1+ | 0.2+ | | |
| 2001 09 17 | 704 | 0.2− | 0.1+ | 2001 10 17 | 704 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.2− | | |
| 2001 09 17 | 704 | 0.3+ | 0.8− | 2001 10 17 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.9+ | | |
| 2001 09 17 | 704 | 0.4− | 0.0 | 2001 10 17 | 704 | 0.8− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.4+ | | |
| 2001 09 17 | 704 | 0.3− | 1.2+ | 2001 10 17 | 704 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.6− | 0.3− | | |
| 2001 09 18 | 699 | 0.4+ | 0.8+ | 2003 01 04 | 704 | 0.4− | 0.5− | 2006 08 28 | 703 | 0.2+ | 1.3− | | |
| 2001 09 18 | 699 | 0.1− | 0.0 | 2003 01 04 | 704 | 0.7− | 0.2− | 2006 08 28 | 699 | 0.1− | 1.5+ | | |
| 2001 09 18 | 699 | 0.5+ | 0.3+ | 2003 01 04 | 704 | 0.2− | 0.0 | 2006 08 29 | 704 | 0.4+ | 0.1− | | |
| 2001 09 18 | 699 | 0.2− | 0.4+ | 2003 01 10 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 704 | 0.7− | 0.4+ | | |
| 2001 09 22 | 704 | 0.3− | 0.5+ | 2003 01 10 | 704 | 0.6+ | 0.4+ | 2006 08 29 | 704 | 0.4− | 0.8+ | | |
| 2001 09 22 | 704 | (1.9− | 0.3−) | 2003 01 10 | 704 | 0.2+ | 0.3− | 2006 09 14 | 703 | 0.3− | 0.8+ | | |
| 2001 09 22 | 704 | (2.3− | 0.5−) | 2003 01 10 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 1.4− | 0.6− | | |
| 2001 09 22 | 704 | (1.8− | 1.6−) | 2004 03 18 | 704 | 0.4+ | 1.0+ | 2006 09 14 | 703 | 0.1+ | 1.2+ | | |
| 2001 09 23 | 704 | 1.3− | 0.6− | 2004 03 18 | 704 | 0.2+ | 1.2+ | 2006 09 14 | 703 | 0.5− | 0.2− | | |
| 2001 09 23 | 704 | 1.1− | 0.1− | 2004 03 18 | 704 | 0.9+ | 1.5+ | 2006 09 30 | G96 | 0.6− | 0.0 | | |
| 2001 09 23 | 704 | 0.0 | 0.5− | 2004 03 18 | 704 | (0.1+ | 1.7+) | 2006 09 30 | G96 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.8− | 0.2− | 2004 03 18 | 704 | (0.3− | 2.2+) | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2001 09 25 | 699 | 0.5+ | 0.3+ | 2004 04 12 | 691 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.4− | | |
| 2001 09 25 | 699 | 0.1− | 0.3+ | 2004 04 12 | 691 | 0.9+ | 0.3− | 2006 10 17 | G96 | 0.2− | 1.4− | | |
| 2001 09 25 | 699 | 0.5− | 1.1+ | 2004 04 12 | 691 | 0.2− | 0.6+ | 2006 10 17 | G96 | 0.5+ | 0.6− | | |
| 2001 09 25 | 699 | 0.5− | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.5− | | |
| 2001 09 28 | 644 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.3− | | |
| 2001 09 28 | 644 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2001 09 28 | 644 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.1− | | |
| 2001 10 13 | 699 | 0.1+ | 0.9+ | 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2001 10 13 | 699 | 0.4+ | 0.7− | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.7− | | |
| 2001 10 13 | 699 | 0.8− | 0.5+ | 2006 08 18 | 644 | 0.3+ | 0.2+ | | | | | | |

**(139896)∗ 2001 RA$_{95}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.02289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19149153 | $\omega$ | 303.11069 | | +0.16865886 | +0.98403791 | |
| $a$ | 2.9810528 | $\Omega$ | 336.40218 | | −0.85049063 | +0.11617069 | |
| $e$ | 0.0617055 | $i$ | 8.15375 | | −0.49821670 | +0.13481008 | |
| $P$ | 5.15 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.2− | 0.5+ | 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 08 28 | 704 | 0.4+ | 1.2− | | |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2002 12 05 | 704 | 0.2+ | 0.5− | 2006 08 28 | 704 | 0.9− | 0.1− | | |
| 2001 09 11 | 699 | 0.6− | 0.1+ | 2002 12 05 | 704 | 0.0 | 0.7− | 2006 08 28 | 704 | 0.6− | 0.3− | | |
| 2001 09 11 | 699 | 0.1− | 0.4+ | 2002 12 05 | 704 | 0.2− | 1.4− | 2006 08 28 | 704 | (1.2+ | 1.8−) | | |
| 2001 09 17 | 704 | 0.3− | 0.4+ | 2002 12 05 | 704 | 0.6+ | 1.2− | 2006 08 28 | 704 | 0.0 | 0.5+ | | |
| 2001 09 17 | 704 | 0.0 | 0.2− | 2002 12 15 | 704 | 0.7− | 0.6+ | 2006 08 30 | 704 | 0.3− | 0.6+ | | |
| 2001 09 17 | 704 | 0.4− | 0.1+ | 2002 12 15 | 704 | 0.6− | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.0 | | |
| 2001 09 17 | 704 | 0.2+ | 0.2+ | 2002 12 15 | 704 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.5+ | 0.0 | | |
| 2001 09 18 | 699 | 0.2+ | 0.0 | 2004 02 14 | 703 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.6− | 0.3− | | |
| 2001 09 18 | 699 | 0.5− | 0.8+ | 2004 02 14 | 703 | 0.5+ | 0.2− | 2006 09 01 | 704 | 1.2− | 0.4+ | | |
| 2001 09 18 | 699 | 0.7+ | 0.2+ | 2004 02 14 | 703 | 0.1+ | 0.4+ | 2006 09 01 | 704 | 0.1− | 0.4+ | | |
| 2001 09 18 | 699 | 0.1+ | 0.3− | 2004 02 14 | 703 | (1.9− | 0.5−) | 2006 09 01 | 704 | 0.4− | 0.8+ | | |
| 2001 09 20 | 704 | 1.1− | 0.1+ | 2004 02 18 | 704 | 0.1− | 0.2+ | 2006 09 01 | 704 | 0.4− | 0.3− | | |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2004 02 18 | 704 | 0.0 | 0.3+ | 2006 09 01 | 704 | 0.5− | 0.7+ | | |
| 2001 09 20 | 704 | 0.4− | 0.6− | 2004 02 18 | 704 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.2+ | | |
| 2001 09 20 | 704 | 0.8− | 0.8− | 2004 02 18 | 704 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.9− | 0.2+ | | |
| 2001 09 20 | 704 | 0.1− | 1.0− | 2004 02 18 | 704 | 0.5− | 0.2+ | 2006 09 12 | 703 | 0.6− | 0.2+ | | |
| 2001 09 22 | 704 | 0.3+ | 0.5− | 2004 02 19 | 608 | 0.1− | 0.6− | 2006 09 12 | 703 | 0.3− | 0.4+ | | |
| 2001 09 22 | 704 | 0.6+ | 0.3+ | 2004 02 19 | 608 | 0.1− | 0.3− | 2006 09 13 | 644 | 0.1+ | 0.0 | | |
| 2001 09 22 | 704 | 0.5− | 0.2+ | 2004 02 19 | 608 | 0.4− | 1.2− | 2006 09 13 | 644 | 0.0 | 0.0 | | |
| 2001 09 22 | 704 | 0.1+ | 0.4− | 2004 02 26 | 704 | 0.4− | 0.7+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 23 | 704 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.1− | 0.6+ | 2006 09 16 | 699 | 0.2− | 0.5+ | | |
| 2001 09 23 | 704 | 0.4+ | 0.7− | 2004 02 26 | 704 | 0.0 | 0.6+ | 2006 09 16 | 699 | 0.6− | 0.1+ | | |
| 2001 09 23 | 704 | 0.6+ | 0.4+ | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.7− | 0.1+ | | |
| 2001 09 23 | 704 | 0.8+ | 0.3− | 2004 02 26 | 704 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.2+ | | |
| 2001 09 23 | 704 | 0.0 | 0.7+ | 2004 03 01 | 704 | 1.2+ | 0.0 | 2006 09 18 | 704 | 0.3+ | 0.8+ | | |
| 2001 09 28 | 644 | 0.4− | 0.2+ | 2004 03 01 | 704 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.7− | 1.1+ | | |
| 2001 09 28 | 644 | 0.6− | 0.2+ | 2004 03 01 | 704 | 1.1+ | 0.1+ | 2006 09 18 | 704 | (0.7− | 1.7+) | | |
| 2001 09 28 | 644 | 0.5− | 0.1+ | 2004 03 01 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.6+ | | |
| 2001 10 06 | 644 | 0.1+ | 0.9+ | 2004 03 01 | 704 | 1.2+ | 0.6+ | 2006 09 18 | 704 | 0.5+ | 0.7+ | | |
| 2001 10 06 | 644 | 0.3+ | 0.7+ | 2004 03 15 | 704 | 0.7+ | 0.7+ | 2006 09 19 | 699 | 0.2− | 0.2+ | | |
| 2001 10 06 | 644 | 0.4+ | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.2− | | |
| 2001 10 13 | 699 | 0.6− | 0.5+ | 2004 03 15 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 699 | 0.5+ | 0.3+ | | |
| 2001 10 13 | 699 | (2.2− | 0.7−) | 2004 03 15 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.0 | | |
| 2001 10 13 | 699 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | | |
| 2001 10 13 | 699 | 0.7− | 0.2− | 2004 03 18 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.4+ | | |
| 2001 10 14 | 704 | 0.5+ | 0.9+ | 2004 03 18 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.1− | 0.1− | | |
| 2001 10 14 | 704 | 0.5+ | 0.6+ | 2004 03 18 | 704 | 0.7+ | 1.1+ | 2006 09 19 | 699 | 0.1+ | 0.2− | | |
| 2001 10 14 | 704 | 0.3+ | 0.7+ | 2004 03 18 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 691 | 0.2− | 0.2+ | | |
| 2001 10 14 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.8+ | 2006 09 20 | 691 | 0.1− | 0.2+ | | |
| 2001 10 14 | 704 | 0.5− | 0.5− | 2004 03 27 | 704 | 0.2+ | 0.3− | 2006 09 20 | 691 | 0.2− | 0.2+ | | |
| 2001 10 15 | 704 | 0.0 | 0.1+ | 2004 03 27 | 704 | 1.2− | 0.1+ | 2006 09 25 | 704 | 0.8+ | 0.4+ | | |
| 2001 10 15 | 704 | 0.6− | 0.4+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 0.6+ | 0.3− | | |
| 2001 10 15 | 704 | 0.5− | 0.4− | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 09 25 | 699 | 1.0− | 0.2− | | |
| 2001 10 15 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.1+ | 1.4+ | 2006 09 25 | 704 | 0.2− | 0.6+ | | |
| 2001 10 15 | 704 | 0.4− | 0.5− | 2004 04 14 | 699 | 0.9+ | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.9− | | |
| 2001 10 17 | 704 | 0.7+ | 0.2− | 2004 04 14 | 699 | 1.2+ | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.3− | 0.1− | 2004 04 14 | 699 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 1.1− | 0.5+ | | |
| 2001 10 17 | 704 | 0.7+ | 0.3− | 2004 04 14 | 699 | 0.0 | 0.8+ | 2006 09 25 | 699 | 0.3+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.2− | 1.2+ | | |
| 2001 10 17 | 704 | 0.0 | 0.7− | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | (2.3+ | 1.4+) | | |
| 2001 10 17 | 704 | 0.7+ | 0.6+ | 2006 08 17 | 644 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.8+ | | |
| 2001 10 17 | 704 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.9+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.2− | 2006 08 24 | 704 | 1.1+ | 0.1+ | 2006 09 26 | 704 | 1.4+ | 0.1− | | |
| 2001 10 17 | 704 | 0.9+ | 0.1+ | 2006 08 24 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 2.0− | | |
| 2001 10 17 | 704 | 0.3+ | 0.5+ | 2006 08 24 | 704 | 1.1− | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.6− | | |
| 2001 10 21 | 704 | 0.8− | 0.6− | 2006 08 24 | 644 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.3− | | |
| 2001 10 21 | 704 | 0.6− | 1.0− | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.5− | | |
| 2001 10 21 | 704 | 0.5− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 699 | 0.6+ | 0.5+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 2001 11 11 | 699 | 0.6+ | 0.4+ | 2006 08 27 | 699 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.5+ |
| 2001 11 11 | 699 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.4− | 0.7− | | | | |
| 2001 11 11 | 699 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.4− | 0.2− | | | | |

**(139897)∗ 2001 RK$_{95}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.70120 | | (2000.0) | | | |
| $n$ | 0.19913812 | $\omega$ | 235.33134 | | +0.99207620 | −0.11647297 |
| $a$ | 2.9042441 | $\Omega$ | 131.30874 | | +0.12562548 | +0.92483871 |
| $e$ | 0.0792649 | $i$ | 3.59533 | | −0.00174887 | +0.36208758 |
| $P$ | 4.95 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.2− | 0.5+ | 2005 06 06 | 691 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.5+ | 0.0 |
| 2001 08 23 | 699 | 0.4− | 0.0 | 2005 06 10 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.7− |
| 2001 08 23 | 699 | 0.4− | 0.6− | 2005 06 10 | 691 | 0.1+ | 0.4− | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 2001 08 23 | 699 | 0.2− | 0.1+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2005 06 27 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.2− |
| 2001 09 12 | 704 | 0.8− | 0.6+ | 2005 06 27 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.4− | 0.5+ |
| 2001 09 12 | 704 | 0.2− | 0.9+ | 2005 06 27 | 691 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.9− |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2005 06 27 | 644 | 0.3− | 0.4− | 2006 08 30 | 699 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 0.4+ | 2005 06 27 | 644 | 0.2− | 0.1+ | 2006 08 30 | 699 | 1.3+ | 0.3+ |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2005 06 27 | 644 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.3− | 0.4− |
| 2001 09 19 | 704 | 1.1+ | 0.6+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.0 |
| 2003 01 04 | 704 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2003 01 04 | 704 | 1.0+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 1.0− | 0.1+ |
| 2003 01 04 | 704 | 0.4+ | 0.7+ | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.3+ |
| 2003 01 04 | 704 | 0.6− | 1.4+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.2+ |
| 2004 02 27 | 695 | 0.1+ | 0.4+ | 2006 08 18 | 644 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.8+ | 0.1+ |
| 2004 02 27 | 695 | 0.9− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.5+ |
| 2004 03 21 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2004 03 21 | 691 | 0.2+ | 0.5+ | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 09 30 | 703 | (0.0 | 2.1+) |
| 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.3+ |
| 2004 03 28 | 691 | 0.2+ | 0.6+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | (5.1− | 0.8−) |
| 2004 03 28 | 691 | 0.0 | 0.7+ | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.4− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.3+ |
| 2005 06 06 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.8+ | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.8+ |

**(139898)∗ 2001 RN$_{95}$ = 2003 BZ**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40514)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.30298 | | (2000.0) | | | |
| $n$ | 0.22693568 | $\omega$ | 279.72466 | | +0.55789781 | −0.82981460 |
| $a$ | 2.6619559 | $\Omega$ | 136.35702 | | +0.76838463 | +0.51076035 |
| $e$ | 0.1502661 | $i$ | 1.04281 | | +0.31358426 | +0.22479233 |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.2+ | 0.9+ | 2003 01 27 | 699 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | 0.5− | 1.3+ | 2003 01 27 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 08 16 | 704 | 0.3+ | 1.0+ | 2003 01 27 | 704 | 0.6+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 08 23 | 699 | 0.5− | 0.2+ | 2003 01 27 | 704 | 0.4+ | 1.0+ | 2006 11 15 | 703 | 0.2+ | 0.5− |
| 2001 08 23 | 699 | 0.6− | 0.4+ | 2003 01 27 | 704 | (0.7+ | 1.7+) | 2006 11 15 | 703 | 0.5− | 0.4− |
| 2001 08 23 | 699 | 0.1− | 1.3+ | 2003 01 27 | 699 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.4− | 0.8− |
| 2001 08 23 | 699 | 0.4− | 1.1+ | 2003 01 27 | 704 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2001 08 28 | 644 | 0.2+ | 0.8+ | 2003 01 27 | 699 | 0.6− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 08 28 | 644 | 0.3+ | 0.6+ | 2003 01 29 | 644 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 08 28 | 644 | 0.1− | 0.5+ | 2003 01 29 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.1− | 1.1+ | 2003 01 29 | 644 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2001 09 12 | 704 | (1.0+ | 1.8+) | 2003 01 31 | 704 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2001 09 12 | 704 | 0.8− | 1.4+ | 2003 01 31 | 704 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.4− |
| 2001 09 12 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 704 | 0.1− | 0.7− | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2003 01 31 | 704 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 704 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.4− | 2003 02 03 | 704 | (1.8+ | 0.7−) | 2006 11 19 | 691 | 0.7− | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.4− | 2003 02 03 | 704 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2003 01 08 | 704 | (1.3− | 2.4+) | 2003 02 03 | 704 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2003 01 08 | 704 | (0.8− | 1.6+) | 2003 02 03 | 704 | 0.5+ | 0.1− | 2006 11 21 | 704 | 0.9− | 0.8+ |
| 2003 01 08 | 704 | 0.2+ | 1.1+ | 2003 02 08 | 704 | 0.2+ | 0.7+ | 2006 11 21 | 704 | 0.4+ | 0.8+ |
| 2003 01 23 | 291 | 0.2− | 0.2+ | 2003 02 08 | 704 | 0.2+ | 0.5+ | 2006 11 23 | 691 | 0.4+ | 0.0 |
| 2003 01 23 | 291 | 0.3− | 0.2+ | 2003 02 08 | 704 | 0.1+ | 1.2+ | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2003 01 23 | 291 | 0.4− | 0.1+ | 2004 05 14 | 691 | 0.4+ | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2003 01 25 | 699 | 0.2+ | 0.2+ | 2004 05 14 | 691 | 0.5+ | 0.7+ | 2006 12 01 | 704 | 0.6− | 1.7+ |
| 2003 01 25 | 699 | (2.1− | 0.7+) | 2004 05 14 | 691 | 0.6+ | 0.9+ | 2006 12 01 | 704 | 0.9− | 1.1− |
| 2003 01 25 | 699 | 0.3− | 0.4+ | 2005 07 06 | 291 | 0.6− | 0.3+ | 2006 12 01 | 704 | 1.4+ | 0.6+ |
| 2003 01 25 | 699 | 0.8− | 0.4+ | 2005 07 06 | 291 | 0.3− | 0.1+ | 2006 12 01 | 691 | 0.3+ | 0.0 |
| 2003 01 26 | 608 | 0.4+ | 0.8− | 2005 07 06 | 291 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.3+ |
| 2003 01 26 | 608 | 0.9+ | 0.2+ | 2005 07 15 | G96 | 0.2+ | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2003 01 26 | 608 | 0.1− | 0.4− | 2005 07 15 | G96 | 0.3+ | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2003 01 27 | 699 | 0.4+ | 0.0 | 2005 07 15 | G96 | (2.0− | 0.3−) | | | | |

**(139899)∗ 2001 RS$_{95}$**

Discovered 2001 Sept. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.76039 | | (2000.0) | | | |
| $n$ | 0.21710911 | $\omega$ | 184.02061 | | +0.97452960 | +0.22338372 |
| $a$ | 2.7416837 | $\Omega$ | 163.03213 | | −0.20381565 | +0.91905328 |
| $e$ | 0.2049760 | $i$ | 3.88900 | | −0.09354809 | +0.32471646 |
| $P$ | 4.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 06 07 | 691 | 0.0 | 0.2+ | 2001 09 25 | 699 | 0.1− | 0.5+ | 2001 10 24 | 704 | 0.2+ | 0.3+ |
| 1991 06 07 | 691 | 0.1+ | 0.1+ | 2001 09 25 | 699 | 0.3+ | 0.9+ | 2001 10 24 | 704 | 0.1+ | 0.7+ |
| 1991 06 07 | 691 | 0.6+ | 0.2+ | 2001 09 25 | 699 | 0.5+ | 0.6+ | 2001 10 24 | 704 | 0.2− | 0.3+ |
| 1994 01 12 | 691 | 0.3− | 0.5− | 2001 09 25 | 699 | 0.3+ | 0.0 | 2001 12 07 | 704 | (2.7− | 1.0+) |
| 1994 01 12 | 691 | 0.1− | 0.5− | 2001 09 26 | 704 | 0.2+ | 0.1− | 2001 12 07 | 704 | 1.1+ | 1.2+ |
| 1994 01 12 | 691 | 0.8− | 1.7− | 2001 09 26 | 704 | 0.3+ | 0.3− | 2001 12 07 | 704 | 0.4− | 0.0 |
| 2000 04 25 | 691 | 0.4− | 0.1+ | 2001 09 26 | 704 | 0.3+ | 0.7+ | 2001 12 07 | 704 | 0.4+ | 0.7+ |
| 2000 04 25 | 691 | 0.3− | 0.2+ | 2001 09 26 | 704 | 0.7+ | 0.8+ | 2001 12 07 | 704 | 0.0 | 0.3+ |
| 2000 04 25 | 691 | 0.5− | 0.2+ | 2001 09 26 | 704 | 0.0 | 0.3+ | 2001 12 21 | 209 | 0.7− | 0.2− |
| 2001 08 16 | 704 | 0.8− | 0.1+ | 2001 10 06 | 704 | 0.2− | 0.4+ | 2001 12 21 | 209 | 0.3− | 0.6+ |
| 2001 08 16 | 704 | 0.5− | 0.7− | 2001 10 06 | 704 | 0.3− | 0.6+ | 2001 12 21 | 209 | 1.1− | 0.0 |
| 2001 08 16 | 704 | 0.5− | 0.5+ | 2001 10 06 | 704 | 1.1− | 0.9+ | 2003 01 27 | 704 | 0.4+ | 0.1+ |
| 2001 08 16 | 704 | 0.6− | 1.0− | 2001 10 12 | 699 | 0.4− | 0.5− | 2003 01 27 | 704 | 0.7+ | 0.7+ |
| 2001 08 16 | 704 | 0.1− | 0.0 | 2001 10 12 | 699 | 0.2− | 0.3+ | 2003 01 27 | 704 | 0.2+ | 0.5+ |
| 2001 08 27 | 699 | 0.2+ | 0.4+ | 2001 10 12 | 699 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.7+ | 0.1+ |
| 2001 08 27 | 699 | 0.1+ | 0.3+ | 2001 10 12 | 699 | 0.6− | 0.5+ | 2003 02 04 | 644 | 0.2+ | 0.8+ |
| 2001 08 27 | 699 | 0.1− | 0.1− | 2001 10 13 | 704 | 0.6− | 0.0 | 2003 02 04 | 644 | 0.1− | 0.4+ |
| 2001 08 27 | 699 | 0.2+ | 0.3+ | 2001 10 13 | 704 | 0.0 | 0.2− | 2003 02 04 | 644 | 1.0+ | 0.7+ |
| 2001 09 11 | 691 | 0.0 | 0.3− | 2001 10 13 | 704 | 0.3− | 0.2− | 2004 03 29 | 691 | 0.5+ | 0.5+ |
| 2001 09 11 | 691 | 0.0 | 0.4− | 2001 10 13 | 704 | 0.1+ | 1.1− | 2004 03 29 | 691 | 0.5+ | 0.6+ |
| 2001 09 11 | 699 | 0.1− | 0.7− | 2001 10 13 | 704 | (1.7− | 0.9−) | 2004 03 29 | 691 | 0.4+ | 0.4+ |
| 2001 09 11 | 691 | 0.1− | 0.3− | 2001 10 15 | 704 | 0.3− | 0.2− | 2006 09 22 | 704 | 1.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.2− | 0.5− | 2001 10 15 | 704 | 0.5− | 0.9− | 2006 09 22 | 704 | 0.1− | 0.4+ |
| 2001 09 11 | 699 | 0.1− | 0.3+ | 2001 10 15 | 704 | 0.3− | 0.4− | 2006 09 22 | 704 | 0.2+ | 0.3− |
| 2001 09 11 | 699 | (1.8+ | 0.1−) | 2001 10 15 | 704 | 0.6− | 0.6− | 2006 11 14 | 704 | (1.2+ | 1.7+) |
| 2001 09 16 | 704 | 0.7− | 0.7+ | 2001 10 15 | 704 | 0.6− | 0.7− | 2006 11 14 | 704 | 0.1− | 1.1+ |
| 2001 09 16 | 704 | 0.2− | 0.3+ | 2001 10 16 | 704 | 0.5− | 1.2+ | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 2001 09 16 | 704 | 0.3− | 0.0 | 2001 10 16 | 704 | 1.0− | 0.1− | 2006 11 14 | 704 | 1.1− | 0.7+ |
| 2001 09 16 | 704 | 0.2− | 0.1+ | 2001 10 16 | 704 | 0.6− | 0.2− | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2001 10 16 | 704 | 0.5− | 0.8− | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2001 09 18 | 691 | 0.5+ | 0.3− | 2001 10 16 | 704 | 0.9− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2001 09 18 | 691 | 0.5+ | 0.2− | 2001 10 20 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2001 09 18 | 691 | 0.6+ | 0.2− | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.0 | 1.1− |
| 2001 09 19 | 704 | 0.5− | 1.4+ | 2001 10 20 | 704 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 1.1+ | 2001 10 20 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.2+ | 1.0+ | 2001 10 20 | 704 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2001 09 19 | 704 | 0.1+ | 1.1+ | 2001 10 22 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2001 09 19 | 704 | 0.2+ | 1.0+ | 2001 10 22 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2001 09 21 | 691 | 0.1+ | 0.5− | 2001 10 22 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2001 10 22 | 704 | 0.6− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 691 | 0.2+ | 0.5− | 2001 10 22 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 1.4− |
| 2001 09 21 | 704 | 0.1− | 0.0 | 2001 10 22 | 704 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.9+ |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2001 10 22 | 704 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.6+ |
| 2001 09 21 | 691 | 0.2+ | 0.5− | 2001 10 22 | 704 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.9+ |
| 2001 09 21 | 704 | 0.2− | 0.1− | 2001 10 23 | 704 | 0.1+ | 1.0+ | 2006 11 20 | 704 | 0.5+ | 0.8+ |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2001 10 23 | 704 | (0.8− | 2.6+) | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2001 09 24 | 704 | 1.4+ | 0.1+ | 2001 10 23 | 704 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 0.7+ | 0.1+ | 2001 10 23 | 704 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.5+ | 0.8− |
| 2001 09 24 | 704 | 0.8+ | 0.3+ | 2001 10 24 | 704 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2001 09 24 | 704 | 1.2+ | 0.1+ | 2001 10 24 | 704 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.6+ |

**(139900)∗ 2001 RP$_{98}$**

Discovered 2001 Sept. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 155.55149 | | (2000.0) | | | |
| $n$ | 0.21641975 | $\omega$ | 63.05198 | | −0.30638467 | +0.95187727 |
| $a$ | 2.7475027 | $\Omega$ | 189.11637 | | −0.88953088 | −0.28914969 |
| $e$ | 0.0217116 | $i$ | 2.75761 | | −0.33891482 | −0.10159786 |
| $P$ | 4.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 19 | 691 | 0.1− | 0.4+ | 2001 10 15 | 291 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 1994 01 19 | 691 | 0.0 | 0.2+ | 2003 01 25 | 645 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 1994 01 19 | 691 | 0.1+ | 0.0 | 2003 01 25 | 645 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 1995 05 25 | 691 | 0.2+ | 0.4− | 2003 01 26 | 291 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.4+ | 0.4− |
| 1995 05 25 | 691 | 0.4+ | 0.1+ | 2003 01 26 | 291 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 1995 05 25 | 691 | 0.1− | 0.4− | 2003 01 26 | 291 | 0.2+ | 0.8− | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 1999 03 09 | 691 | (2.3− | 2.2−) | 2004 05 16 | 621 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.3− | 0.6− |
| 1999 03 09 | 691 | 0.2+ | 0.4− | 2004 05 16 | 621 | 0.1− | 0.6+ | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 1999 03 09 | 691 | 0.1+ | 0.3− | 2004 05 16 | 621 | 0.6− | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.2− |
| 1999 03 21 | 691 | 0.2− | 0.3+ | 2005 07 29 | 644 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 1999 03 21 | 691 | 0.2− | 0.4+ | 2005 07 29 | 644 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1999 03 21 | 691 | 0.7− | 0.2+ | 2005 07 29 | 644 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.4+ | 0.3− |
| 2001 09 12 | 691 | 0.6− | 0.1− | 2005 07 29 | 644 | 0.1− | 0.5+ | 2006 11 27 | 691 | 0.4+ | 0.4− |
| 2001 09 12 | 691 | 0.3− | 0.3− | 2005 07 29 | 644 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 12 | 691 | 0.3− | 0.3− | 2005 07 29 | 644 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 09 18 | 691 | 0.1− | 0.1− | 2005 08 06 | 644 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.7− | 2.0+ |
| 2001 09 18 | 691 | 0.5− | 0.2− | 2005 08 06 | 644 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 0.6− | 0.6− |
| 2001 09 18 | 691 | 0.3− | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.4+ | 0.4+ |
| 2001 09 24 | 691 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.6− | 0.0 |
| 2001 09 24 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 12 01 | 691 | 0.2− | 1.6+ |
| 2001 09 24 | 691 | 0.4+ | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.0 | 0.5+ |
| 2001 10 15 | 291 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 12 01 | 691 | 1.2− | 0.3+ |
| 2001 10 15 | 291 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.5− | | | | |

**(139901)∗ 2001 RE$_{99}$ = 2005 GR$_{92}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75092)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.44648 | | (2000.0) | | | |
| $n$ | 0.19261236 | $\omega$ | 165.82537 | | +0.76841300 | +0.63964581 |
| $a$ | 2.9694769 | $\Omega$ | 154.37621 | | −0.59153069 | +0.72177320 |
| $e$ | 0.0938569 | $i$ | 2.63308 | | −0.24419850 | +0.26437983 |
| $P$ | 5.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.6− | 0.4+ | 2004 02 11 | 644 | 0.6+ | 0.9+ | 2006 07 25 | G96 | 0.2− | 0.3+ |
| 2001 08 16 | 704 | 1.4− | 0.6+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 07 25 | G96 | 0.0 | 0.2− |
| 2001 08 16 | 704 | 0.5− | 0.4− | 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.3+ | 0.1+ |
| 2001 08 16 | 704 | 0.7+ | 0.3+ | 2005 04 06 | G96 | 0.7− | 0.2+ | 2006 08 16 | 644 | 0.3+ | 0.2+ |
| 2001 08 16 | 704 | 1.0− | 0.5+ | 2005 04 06 | G96 | 0.3− | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 2001 08 23 | 699 | 1.2+ | 0.8+ | 2005 04 06 | G96 | 0.2− | 0.1− | 2006 08 17 | 644 | 0.3+ | 0.5+ |
| 2001 08 23 | 699 | 0.5+ | 0.3+ | 2005 04 11 | G96 | 0.3− | 0.1− | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 2001 08 23 | 699 | 0.5+ | 0.4− | 2005 04 11 | G96 | 0.4− | 0.2− | 2006 08 17 | 644 | 0.2+ | 0.2+ |
| 2001 08 23 | 699 | 0.2+ | 0.0 | 2005 04 11 | G96 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2005 04 11 | G96 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.4+ | 0.3+ |
| 2001 09 12 | 704 | 1.0− | 0.6+ | 2005 04 30 | 691 | 0.3+ | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.1+ | 0.9+ | 2005 04 30 | 691 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 2001 09 12 | 704 | 0.9− | 0.6+ | 2005 05 13 | 704 | 0.1+ | 0.6+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | (1.8− | 0.0 ) | 2005 05 13 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 0.4− | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2005 05 13 | 704 | 1.1+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.7− |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 08 28 | 703 | 1.3− | 0.6− |
| 2001 09 19 | 704 | 0.3+ | 1.0+ | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.3+ | 0.4− |
| 2004 01 30 | 691 | 0.0 | 0.5+ | 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2004 01 30 | 691 | 0.2+ | 0.6+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2004 01 30 | 691 | 0.3+ | 0.4+ | 2006 07 25 | G96 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.3− | 1.1+ | 2006 07 25 | G96 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.2+ |

**(139902)∗ 2001 RH$_{100}$ = 2002 XO$_{55}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 40516)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 221.53357 | | (2000.0) | | | |
| $n$ | 0.21798951 | $\omega$ | 37.77840 | | −0.94349703 | −0.32519299 |
| $a$ | 2.7342968 | $\Omega$ | 123.12796 | | +0.28246412 | −0.88978698 |
| $e$ | 0.0333444 | $i$ | 4.36515 | | +0.17328407 | −0.32020095 |
| $P$ | 4.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.0 | 1.1− | 2004 03 21 | 704 | 1.0+ | 0.0 | 2004 04 21 | 691 | 0.2− | 0.4+ |
| 1995 03 25 | 691 | 0.8− | 1.1− | 2004 03 21 | 704 | 1.0+ | 0.1+ | 2004 04 21 | 691 | 0.1− | 0.4+ |
| 1995 03 25 | 691 | 0.6− | 0.6− | 2004 03 21 | 699 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.6− | 0.3+ |
| 2001 09 12 | 704 | 0.0 | 0.8+ | 2004 03 21 | 699 | 0.8− | 1.0− | 2004 04 22 | 704 | 0.9+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2004 03 21 | 699 | 0.3+ | 0.0 | 2004 04 22 | 704 | 0.5+ | 0.8− |
| 2001 09 12 | 704 | 0.5− | 1.1+ | 2004 03 22 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 704 | 0.0 | 0.7+ |
| 2001 09 19 | 704 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.8+ | 0.9− | 2004 04 25 | 699 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2004 03 22 | 704 | 0.0 | 0.3+ | 2004 04 25 | 699 | (1.6+ | 1.5+) |
| 2001 09 19 | 704 | 0.2+ | 1.1+ | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2004 04 25 | 699 | 0.8+ | 0.1− |
| 2002 11 11 | 704 | 0.9− | 0.2+ | 2004 03 22 | 704 | 0.1− | 0.4− | 2004 04 25 | 699 | 0.5− | 0.6− |
| 2002 11 11 | 704 | 0.8− | 0.9+ | 2004 03 22 | 704 | 0.7+ | 0.5+ | 2005 06 03 | 691 | 0.2− | 0.2+ |
| 2002 11 11 | 704 | (1.0+ | 2.3+) | 2004 03 22 | 704 | 0.3+ | 0.0 | 2005 06 03 | 691 | 0.2− | 0.2+ |
| 2002 12 10 | 644 | 0.7+ | 0.1+ | 2004 03 22 | 704 | 0.1− | 0.6+ | 2005 06 03 | 691 | 0.1+ | 0.2+ |
| 2002 12 10 | 644 | 1.0+ | 0.6+ | 2004 03 22 | 704 | 0.4+ | 0.0 | 2005 07 10 | E12 | (2.5− | 3.0+) |
| 2002 12 10 | 644 | 0.4+ | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2005 07 10 | E12 | 0.2− | 0.6+ |
| 2002 12 11 | 704 | 1.0− | 1.2+ | 2004 03 22 | 704 | (2.4+ | 0.8+) | 2005 07 10 | E12 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.6+ | 0.6+ | 2004 03 22 | 704 | 0.3− | 0.8+ | 2005 07 10 | E12 | (4.2− | 0.9+) |
| 2002 12 11 | 704 | 1.0− | 0.9+ | 2004 03 22 | 704 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.4+ |
| 2002 12 11 | 704 | 0.1− | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.1− |
| 2002 12 11 | 704 | 0.6+ | 0.7− | 2004 03 22 | 704 | 0.8− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 2002 12 12 | 644 | 0.3+ | 0.7− | 2004 03 24 | 699 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.0 | 1.4+ |
| 2002 12 12 | 644 | 0.2+ | 0.8− | 2004 03 24 | 699 | 0.5− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2+ |
| 2002 12 12 | 644 | 0.1+ | 0.7− | 2004 03 24 | 699 | (0.5+ | 1.9+) | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.1− | 0.1+ | 2004 03 24 | 699 | 0.2+ | 0.9− | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.1− | 0.7+ | 2004 03 25 | 704 | 1.0+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2004 02 23 | 704 | 1.1− | 1.3+ | 2004 03 25 | 704 | 0.7+ | 0.3+ | 2006 10 10 | 644 | 0.9− | 0.3+ |
| 2004 02 23 | 704 | 0.5− | 1.1+ | 2004 03 25 | 704 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2004 02 23 | 704 | 0.3+ | 1.2+ | 2004 03 25 | 704 | 1.0+ | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.4+ |
| 2004 03 15 | 683 | (0.1+ | 2.5+) | 2004 03 26 | 704 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2004 03 15 | 683 | 0.2+ | 0.0 | 2004 03 26 | 704 | 0.8− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.9+ |
| 2004 03 15 | 683 | 0.2+ | 1.4+ | 2004 03 26 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.5+ |
| 2004 03 15 | 703 | 0.2− | 1.5+ | 2004 03 26 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 03 15 | 703 | 1.0− | 0.3+ | 2004 03 26 | 704 | 0.9+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.1− | 1.0+ | 2004 03 30 | 703 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.6+ | | |
| 2004 03 15 | 703 | 0.6+ | 0.5+ | 2004 03 30 | 703 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.3− | 0.5+ | | |
| 2004 03 16 | 704 | 0.4+ | 0.1+ | 2004 03 30 | 703 | 1.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2004 03 16 | 704 | 0.2+ | 0.9+ | 2004 03 30 | 703 | 0.9+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2004 03 16 | 704 | 0.5− | 0.3+ | 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1+ | | |
| 2004 03 16 | 704 | 0.3− | 0.3+ | 2004 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1+ | | |
| 2004 03 20 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.1+ | | |
| 2004 03 20 | 704 | 0.5+ | 0.5+ | 2004 04 20 | 704 | 0.5+ | 1.1+ | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2004 03 20 | 704 | 0.0 | 0.4+ | 2004 04 20 | 704 | 0.7+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2004 03 20 | 704 | 0.7+ | 0.2+ | 2004 04 20 | 704 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2004 03 20 | 704 | 0.6+ | 0.2+ | 2004 04 20 | 704 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.2− | | |
| 2004 03 21 | 704 | 1.0+ | 1.3− | 2004 04 20 | 704 | 0.2+ | 0.6+ | 2006 11 24 | G96 | 0.3− | 0.1− | | |
| 2004 03 21 | 699 | 0.0 | 0.1− | 2004 04 21 | 691 | 0.0 | 0.5+ | | | | | | |

**(139903)∗ 2001 RS$_{100}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.38107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20856839 | $\omega$ | 279.07159 | | +0.63828694 | +0.76818096 | |
| $a$ | 2.8160285 | $\Omega$ | 30.77196 | | −0.66243751 | +0.58111853 | |
| $e$ | 0.1017711 | $i$ | 5.59463 | | −0.39213049 | +0.26869921 | |
| $P$ | 4.73 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 699 | 0.1+ | 0.7− | 2001 09 19 | 704 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 04 25 | 699 | 1.2+ | 0.7− | 2001 09 19 | 704 | 0.6− | 0.3+ | 2006 10 10 | 644 | 0.4+ | 0.2+ | | |
| 2000 04 25 | 699 | 1.0+ | 0.9+ | 2001 09 19 | 704 | 1.0+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2000 04 25 | 699 | 1.0+ | 1.5+ | 2001 09 19 | 704 | 0.2− | 1.2− | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 2000 05 11 | 691 | 0.1− | 0.0 | 2004 02 18 | 691 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.3+ | 0.4− | | |
| 2000 05 11 | 691 | 0.9− | 0.0 | 2004 02 18 | 691 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.4+ | 0.3+ | | |
| 2000 05 11 | 691 | 0.0 | 0.3− | 2004 02 18 | 691 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 08 25 | 644 | 0.8− | 0.8+ | 2006 09 20 | 704 | 1.2− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2001 08 25 | 704 | 0.2− | 1.0+ | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2001 08 25 | 644 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.9− | 1.4+ | 2006 10 22 | G96 | 0.2+ | 0.4− | | |
| 2001 08 25 | 704 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.3− | 1.5− | 2006 10 22 | G96 | 0.1+ | 0.5− | | |
| 2001 08 25 | 644 | 0.6− | 0.5+ | 2006 09 27 | 704 | (1.1− | 1.9+) | 2006 10 22 | G96 | 0.1− | 0.4− | | |
| 2001 08 25 | 704 | 0.3+ | 0.8+ | 2006 09 27 | 704 | 0.6+ | 0.4− | 2006 10 22 | G96 | 0.2+ | 0.5− | | |
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 1.0+ | 0.1− | 2006 11 14 | G96 | 0.3− | 0.2− | | |
| 2001 09 12 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 1.1+ | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.1+ | | |
| 2001 09 12 | 704 | 0.3− | 0.5+ | 2006 10 01 | 704 | (1.6− | 0.7+) | 2006 11 14 | G96 | 0.3− | 0.3− | | |
| 2001 09 12 | 704 | 1.0− | 0.6+ | 2006 10 01 | 704 | 0.7− | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.4− | | |
| 2001 09 12 | 704 | 0.1− | 0.8+ | 2006 10 01 | 704 | 0.6− | 0.3− | | | | | | |

**(139904)∗ 2001 RV$_{102}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.74039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21586930 | $\omega$ | 188.72666 | | +0.57838115 | +0.81300008 | |
| $a$ | 2.7521713 | $\Omega$ | 116.63700 | | −0.74384602 | +0.55938408 | |
| $e$ | 0.0725988 | $i$ | 4.30686 | | −0.33491544 | +0.16161780 | |
| $P$ | 4.57 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.2− | 0.7− | 2004 02 25 | 704 | 0.6+ | 1.5+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | | |
| 1995 03 26 | 691 | 0.2+ | 0.2− | 2004 03 11 | 644 | 0.2− | 0.5+ | 2004 04 09 | 644 | 0.6+ | 0.7+ | | |
| 1995 03 26 | 691 | 0.3− | 0.3− | 2004 03 11 | 644 | 0.4− | 0.2+ | 2004 04 09 | 644 | 0.5+ | 0.4+ | | |
| 2001 08 25 | 704 | 0.3+ | 0.0 | 2004 03 11 | 644 | 0.1+ | 0.4+ | 2004 04 09 | 644 | 0.2+ | 0.4+ | | |
| 2001 08 25 | 704 | 0.4− | 0.2+ | 2004 03 15 | 703 | 0.9+ | 0.1− | 2006 09 29 | 699 | 0.1− | 0.5− | | |
| 2001 08 25 | 704 | 0.4+ | 0.2+ | 2004 03 15 | 704 | 0.4− | 0.5+ | 2006 09 29 | 699 | 0.3+ | 0.9+ | | |
| 2001 08 25 | 704 | 1.1+ | 1.1+ | 2004 03 15 | 703 | 0.6+ | 1.2+ | 2006 09 29 | 699 | 0.8+ | 1.2− | | |
| 2001 08 28 | 644 | 0.9− | 0.7+ | 2004 03 15 | 704 | 0.2− | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.6+ | | |
| 2001 08 28 | 644 | 0.7− | 1.0+ | 2004 03 15 | 703 | 0.2− | 1.4+ | 2006 09 30 | 703 | 0.6− | 0.4+ | | |
| 2001 08 28 | 644 | 0.6− | 0.5+ | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 09 30 | 703 | 0.2+ | 0.3+ | | |
| 2001 09 11 | 699 | 1.1+ | 1.2+ | 2004 03 15 | 703 | 0.5− | 1.1+ | 2006 09 30 | 703 | 0.1− | 0.6− | | |
| 2001 09 11 | 699 | 0.0 | 0.3− | 2004 03 15 | 704 | 0.6+ | 1.1+ | 2006 09 30 | 703 | 0.7+ | 0.0 | | |
| 2001 09 11 | 699 | 1.1− | 1.4+ | 2004 03 15 | 704 | 0.2− | 0.9+ | 2006 10 16 | 703 | (0.1− | 1.9+) | | |
| 2001 09 11 | 699 | 0.4+ | 0.8+ | 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.3+ | | |
| 2001 09 12 | 704 | 1.5− | 0.9+ | 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | 0.7− | 0.5+ | 2004 03 17 | 691 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.5− | | |
| 2001 09 12 | 704 | 0.8− | 0.4+ | 2004 03 20 | 699 | 1.0− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.6− | | |
| 2001 09 12 | 704 | 1.2− | 1.0+ | 2004 03 20 | 704 | 0.9+ | 1.0+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2004 03 20 | 699 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 2001 09 19 | 704 | 0.6− | 1.0+ | 2004 03 20 | 704 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 2001 09 19 | 704 | 0.8− | 0.6+ | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2004 03 20 | 699 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.5− | 0.1− | | |
| 2001 09 19 | 704 | 0.9+ | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.6+ | | |
| 2001 09 21 | 704 | 1.4− | 1.2+ | 2004 03 20 | 704 | 1.1+ | 0.4+ | 2006 11 13 | 644 | 0.3− | 0.1+ | | |
| 2001 09 21 | 704 | (0.1+ | 1.6+) | 2004 03 20 | 699 | 0.9+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.5+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.3− | 2004 03 22 | 704 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.3− | 0.0 | | |
| 2001 09 21 | 704 | 0.3+ | 0.9+ | 2004 03 22 | 704 | 1.0+ | 1.0− | 2006 11 22 | G96 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 0.5− | 1.0+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.0 | | |
| 2004 02 25 | 704 | (0.5+ | 1.6+) | 2004 03 27 | 691 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.4− | 0.1+ | | |
| 2004 02 25 | 704 | 0.5+ | 1.0+ | 2004 03 27 | 691 | 0.2− | 0.3+ | | | | | | |

**(139905)∗ 2001 RA$_{104}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.17574 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22205251 | $\omega$ | 266.54855 | | +0.11687793 | +0.99210961 | |
| $a$ | 2.7008404 | $\Omega$ | 10.49409 | | −0.78328013 | +0.12016702 | |
| $e$ | 0.0865030 | $i$ | 14.42307 | | −0.61058315 | +0.03575480 | |
| $P$ | 4.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 24 | 699 | 0.2− | 0.4− | 2004 03 01 | 291 | 0.1− | 0.0 | 2004 03 22 | 704 | 0.8+ | 0.9+ | | |
| 2000 05 24 | 699 | 0.2− | 0.9− | 2004 03 01 | 291 | 0.2− | 0.2+ | 2004 03 22 | 704 | 1.1+ | 0.6+ | | |
| 2000 05 24 | 699 | 0.6+ | 0.1− | 2004 03 01 | 291 | 0.0 | 0.2+ | 2004 03 22 | 704 | 1.0+ | 1.1+ | | |
| 2000 05 24 | 699 | 1.0+ | 0.0 | 2004 03 15 | 704 | (0.9− | 1.8+) | 2004 04 12 | 291 | 0.3+ | 0.0 | | |
| 2001 08 11 | 608 | 0.4− | 0.7+ | 2004 03 15 | 704 | 0.0 | 0.2+ | 2004 04 12 | 291 | 0.3+ | 0.1− | | |
| 2001 08 11 | 608 | 0.2− | 0.1+ | 2004 03 15 | 704 | 1.0+ | 0.6− | 2004 04 12 | 291 | 0.5+ | 0.1− | | |
| 2001 08 11 | 608 | 0.4− | 0.2+ | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2004 04 13 | 291 | 0.1+ | 0.1+ | | |
| 2001 09 12 | 704 | 1.2− | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 291 | 0.4+ | 0.2+ | | |
| 2001 09 12 | 704 | 1.0− | 0.4+ | 2004 03 17 | 704 | (1.8+ | 0.4−) | 2004 04 13 | 291 | 0.6+ | 0.4+ | | |
| 2001 09 12 | 704 | 0.8− | 0.7+ | 2004 03 17 | 704 | 0.7+ | 0.1+ | 2005 07 04 | E12 | 0.1− | 1.0+ | | |
| 2001 09 12 | 704 | 0.2− | 0.7+ | 2004 03 17 | 704 | 0.1− | 0.1− | 2005 07 04 | E12 | 0.8− | 1.0+ | | |
| 2001 09 12 | 704 | 0.9− | 0.5+ | 2004 03 17 | 704 | 0.2− | 0.1+ | 2005 07 04 | E12 | 0.4− | 0.3+ | | |
| 2001 09 17 | 699 | (1.0− | 1.6+) | 2004 03 17 | 691 | 0.2− | 0.1+ | 2005 07 04 | E12 | 0.7− | 0.3+ | | |
| 2001 09 17 | 699 | 0.1− | 0.6+ | 2004 03 17 | 704 | 0.4− | 0.4+ | 2005 07 27 | E12 | 0.4− | 0.5+ | | |
| 2001 09 17 | 699 | 0.7− | 0.3+ | 2004 03 17 | 704 | 0.3+ | 0.0 | 2005 07 27 | E12 | 0.0 | 0.1+ | | |
| 2001 09 17 | 699 | 0.8− | 0.2+ | 2004 03 17 | 704 | 0.1+ | 0.2− | 2005 07 27 | E12 | 1.0+ | 0.1− | | |
| 2001 09 19 | 704 | (0.6+ | 2.0+) | 2004 03 17 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.4− | | |
| 2001 09 19 | 704 | 0.0 | 0.8+ | 2004 03 17 | 704 | 0.0 | 0.7− | 2006 09 28 | 703 | 0.8+ | 0.4+ | | |
| 2001 09 19 | 704 | (0.9− | 2.0+) | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.4− | 1.1+ | | |
| 2001 09 19 | 704 | 0.2− | 1.5+ | 2004 03 17 | 704 | 0.2− | 0.2− | 2006 09 28 | 703 | (2.5− | 2.4+) | | |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2004 03 17 | 691 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.9− | 0.8+ | | |
| 2001 09 21 | 704 | 1.1− | 1.2+ | 2004 03 17 | 291 | 0.0 | 0.2+ | 2006 09 28 | 703 | 1.2− | 1.4+ | | |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2004 03 17 | 291 | 0.0 | 0.2+ | 2006 09 28 | 703 | (1.5− | 1.5+) | | |
| 2001 09 21 | 704 | 1.1− | 0.8+ | 2004 03 17 | 291 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.6+ | 0.6+ | | |
| 2001 09 21 | 704 | 1.1− | 1.4+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.4+ | | |
| 2001 09 23 | 608 | 0.8+ | 0.7− | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.7+ | | |
| 2001 09 23 | 608 | 0.2− | 0.6+ | 2004 03 18 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.3− | | |
| 2001 09 23 | 608 | 0.7− | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 703 | (0.8− | 1.5+) | | |
| 2004 02 17 | 703 | 0.6+ | 1.1− | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 10 27 | 703 | 0.5+ | 0.2+ | | |
| 2004 02 17 | 703 | 0.3− | 0.9+ | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.5− | 0.2+ | | |
| 2004 02 17 | 703 | 1.3− | 0.8+ | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.9+ | 0.3+ | | |
| 2004 02 17 | 703 | 0.1+ | 1.2+ | 2004 03 20 | 704 | 0.0 | 0.4+ | 2006 10 27 | 703 | (0.9+ | 1.6+) | | |
| 2004 02 25 | 704 | 1.0+ | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.7+ | 2006 11 15 | 703 | 0.2− | 0.6+ | | |
| 2004 02 25 | 704 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.4+ | | |
| 2004 02 25 | 704 | 0.1− | 1.0+ | 2004 03 22 | 704 | 0.8− | 0.6+ | 2006 11 15 | 703 | 0.6− | 0.5+ | | |

**(139906)∗ 2001 RZ$_{104}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.87040 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23464453 | $\omega$ | 258.58954 | | +0.99667970 | +0.01196648 | |
| $a$ | 2.6033292 | $\Omega$ | 100.68734 | | +0.01981709 | +0.92374554 | |
| $e$ | 0.1759192 | $i$ | 4.70122 | | −0.07897372 | +0.38281977 | |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.5− | 0.7+ | 2001 09 27 | 644 | 0.3+ | 0.2− | 2005 07 26 | 644 | 0.2− | 0.4+ | | |
| 2001 08 25 | 704 | 0.2− | 0.1− | 2001 09 27 | 644 | 0.1+ | 0.0 | 2005 07 26 | 644 | 0.2− | 0.2+ | | |
| 2001 08 25 | 704 | 0.9− | 0.3+ | 2001 10 10 | 644 | 0.2− | 0.5+ | 2005 07 31 | E12 | 0.5− | 1.2− | | |
| 2001 08 25 | 704 | 0.7− | 1.2+ | 2001 10 10 | 644 | 0.4− | 0.3+ | 2005 07 31 | E12 | 0.1− | 0.0 | | |
| 2001 08 25 | 699 | 0.6− | 0.1− | 2001 10 10 | 644 | 0.4− | 0.4+ | 2005 07 31 | E12 | 0.1+ | 0.0 | | |
| 2001 08 25 | 699 | 0.4− | 0.4− | 2001 10 16 | 644 | 0.8− | 0.4− | 2005 07 31 | E12 | 0.4− | 0.4− | | |
| 2001 08 25 | 699 | 0.4− | 0.3+ | 2001 10 16 | 644 | 0.8− | 0.4− | 2005 08 06 | 704 | 0.4+ | 0.6− | | |
| 2001 08 25 | 699 | 0.2− | 0.2− | 2001 10 16 | 644 | 0.7− | 0.7− | 2005 08 06 | 704 | 1.0+ | 0.4− | | |
| 2001 09 07 | 644 | 0.3+ | 0.0 | 2001 10 24 | 644 | 0.2− | 0.4+ | 2005 08 06 | 704 | 0.5+ | 0.5− | | |
| 2001 09 07 | 644 | 0.4+ | 0.1− | 2001 10 24 | 644 | 0.2+ | 0.3− | 2005 08 06 | 704 | 1.0+ | 0.3− | | |
| 2001 09 07 | 644 | 0.3+ | 0.7+ | 2001 10 24 | 644 | 0.1− | 0.6+ | 2005 08 22 | E12 | 0.8+ | 0.0 | | |
| 2001 09 12 | 704 | 0.5+ | 0.4− | 2003 01 30 | 644 | 0.6+ | 1.5+ | 2005 08 22 | E12 | 0.1+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.6+ | 2003 01 30 | 644 | (0.6+ | 1.8+) | 2005 08 22 | E12 | 0.6− | 0.4− | | |
| 2001 09 12 | 704 | 0.3+ | 0.5+ | 2003 01 30 | 644 | (0.4+ | 1.9+) | 2005 08 22 | E12 | 0.1+ | 0.6− | | |
| 2001 09 12 | 704 | 0.3+ | 0.5+ | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2005 08 31 | 699 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2004 04 14 | 691 | 0.4+ | 0.5+ | 2005 08 31 | 699 | 0.1− | 0.9− | | |
| 2001 09 19 | 699 | 0.2+ | 0.7− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2005 08 31 | 699 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2005 07 04 | 644 | 0.2− | 0.4+ | 2005 08 31 | 699 | 0.3+ | 0.1− | | |
| 2001 09 19 | 699 | 0.2+ | 0.3+ | 2005 07 04 | 644 | 0.1+ | 0.0 | 2005 09 08 | E12 | 0.2− | 0.4+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.3+ | 2005 07 04 | 644 | 0.1− | 0.0 | 2005 09 08 | E12 | 0.3+ | 0.3− | | |
| 2001 09 19 | 699 | 0.2− | 0.6+ | 2005 07 04 | 644 | 0.1+ | 0.1+ | 2005 09 08 | E12 | 0.2+ | 0.3− | | |
| 2001 09 19 | 704 | 0.5+ | 0.4+ | 2005 07 04 | 644 | 0.2+ | 0.3+ | 2005 09 08 | E12 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 699 | 0.1+ | 0.5+ | 2005 07 04 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2001 09 19 | 704 | 0.2+ | 1.3+ | 2005 07 10 | 703 | (4.5+ | 1.8−) | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.7+ | 0.5+ | 2005 07 10 | 703 | 0.2+ | 0.8− | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2001 09 25 | 704 | 0.8− | 0.2− | 2005 07 10 | 703 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2001 09 25 | 704 | (1.6− | 0.2+) | 2005 07 10 | 703 | 0.1− | 0.3− | 2006 10 29 | G96 | 0.0 | 0.1+ | | |
| 2001 09 25 | 704 | 1.3− | 0.1+ | 2005 07 26 | 644 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.4+ | 0.1− | | |
| 2001 09 25 | 704 | (1.6− | 0.6+) | 2005 07 26 | 644 | 0.2− | 0.2− | 2006 10 29 | G96 | 0.2+ | 0.4− | | |
| 2001 09 25 | 704 | (2.2− | 0.8+) | 2005 07 26 | 644 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.6− | 0.3− | | |
| 2001 09 27 | 644 | 0.1+ | 0.2+ | 2005 07 26 | 644 | 0.5− | 0.1− | | | | | | |

**(139907)∗ 2001 RR$_{105}$ = 1999 FU$_{22}$ = 2003 BH$_{26}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 43007)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.42706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22543564 | $\omega$ | 315.87452 | | −0.49667724 | −0.86610380 | |
| $a$ | 2.6737513 | $\Omega$ | 163.64440 | | +0.84141108 | −0.49641195 | |
| $e$ | 0.2025081 | $i$ | 11.54438 | | +0.21292984 | −0.05864623 | |
| $P$ | 4.37 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 704 | 0.2− | 0.2− | 2003 01 01 | 704 | 0.5+ | 0.8+ | 2006 09 29 | 699 | 0.3− | 0.2+ | | |
| 1999 03 19 | 699 | 0.3− | 1.3+ | 2003 01 26 | 644 | 0.1− | 0.9+ | 2006 09 29 | 699 | 0.6+ | 0.2+ | | |
| 1999 03 19 | 704 | 0.9+ | 0.7+ | 2003 01 26 | 644 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.1− | 0.1+ | | |
| 1999 03 19 | 704 | 0.0 | 0.3− | 2003 01 26 | 644 | 0.2− | 0.7+ | 2006 10 01 | 704 | 0.3− | 0.2+ | | |
| 1999 03 19 | 699 | 0.1+ | 1.4+ | 2003 01 28 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 704 | 1.1− | 0.6+ | | |
| 1999 03 19 | 699 | 0.8+ | 0.2+ | 2003 01 28 | 704 | 0.7− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 1999 03 19 | 704 | 0.6− | 0.4− | 2003 01 28 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 1999 03 20 | 704 | 0.8+ | 0.7− | 2003 01 28 | 704 | 0.9+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 1999 03 20 | 704 | 0.8− | 0.1− | 2003 02 04 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.9− | | |
| 1999 03 20 | 704 | 0.9− | 0.1+ | 2003 02 04 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 1.4− | | |
| 1999 03 20 | 704 | 0.7+ | 0.4+ | 2003 02 04 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 1.3− | | |
| 1999 03 20 | 704 | 1.0− | 0.4− | 2004 04 16 | 644 | 0.1− | 0.6+ | 2006 10 16 | 703 | (1.8− | 1.2−) | | |
| 2001 09 12 | 704 | 0.8+ | 0.7− | 2004 04 16 | 644 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.9+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2004 04 16 | 644 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.1+ | | |
| 2001 09 12 | 704 | 0.6− | 0.8+ | 2004 04 20 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.1− | | |
| 2001 09 12 | 704 | 0.3+ | 0.4− | 2004 04 20 | 691 | 0.1− | 0.7+ | 2006 10 17 | 703 | 1.0− | 0.2+ | | |
| 2001 09 19 | 704 | 0.4− | 1.0+ | 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 0.1− | 1.0+ | 2004 05 24 | 704 | 0.5+ | 1.2+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2004 05 24 | 704 | 0.8+ | 1.2− | 2006 10 22 | 644 | 0.3+ | 0.1− | | |
| 2001 09 19 | 704 | 0.4+ | 0.7+ | 2004 05 24 | 704 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.4− | 0.6− | | |
| 2001 09 19 | 704 | 0.3+ | 1.1+ | 2004 05 24 | 704 | 0.2+ | 0.5− | 2006 10 28 | 703 | 0.9+ | 0.5− | | |
| 2001 09 21 | 704 | 1.3− | 0.5+ | 2006 09 16 | 699 | 1.0− | 0.2+ | 2006 10 28 | 703 | 0.3− | 0.5− | | |
| 2001 09 21 | 704 | 0.6− | 1.3+ | 2006 09 16 | 699 | 0.4+ | 1.3+ | 2006 10 28 | 703 | 0.1+ | 0.1− | | |
| 2001 09 21 | 704 | 0.4− | 1.2+ | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.5+ | 0.4+ | | |
| 2002 11 30 | 704 | 0.4− | 0.8+ | 2006 09 16 | 699 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2002 11 30 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | (1.7− | 0.2+) | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 2002 11 30 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.8− | 0.2− | 2006 11 16 | 703 | 0.5+ | 1.0+ | | |
| 2002 11 30 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.8− | 2006 11 16 | 703 | 0.4− | 0.5+ | | |
| 2003 01 01 | 704 | (0.3− | 1.9+) | 2006 09 18 | 703 | 0.5− | 0.7+ | 2006 11 16 | 703 | 0.1− | 0.7+ | | |
| 2003 01 01 | 704 | 0.3+ | 0.0 | 2006 09 29 | 699 | 1.1+ | 0.9+ | 2006 11 16 | 703 | 0.4− | 0.1+ | | |
| 2003 01 01 | 704 | 1.2− | 0.4+ | 2006 09 29 | 699 | 0.4+ | 1.1+ | | | | | | |

**(139908)∗ 2001 RD$_{107}$ = 2000 JG$_{78}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.61730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21685006 | $\omega$ | 307.68570 | | +0.86201326 | +0.50428905 | |
| $a$ | 2.7438667 | $\Omega$ | 22.17179 | | −0.41174627 | +0.75559083 | |
| $e$ | 0.0944239 | $i$ | 7.80377 | | −0.29563179 | +0.41806106 | |
| $P$ | 4.55 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.1− | 0.1+ | 2001 10 23 | 699 | 0.2− | 0.7+ | 2004 04 19 | 691 | 0.5+ | 0.7+ | | |
| 1992 09 27 | 691 | 0.3− | 0.2+ | 2001 10 23 | 704 | 0.3+ | 0.8+ | 2004 04 19 | 691 | 0.4+ | 0.6+ | | |
| 1992 09 27 | 691 | 0.4− | 0.3+ | 2001 10 23 | 704 | 0.4− | 0.8+ | 2004 04 19 | 704 | (1.0+ | 1.7+) | | |
| 2000 05 09 | 704 | 1.4+ | 0.9+ | 2001 10 23 | 699 | 0.1− | 0.3+ | 2004 04 19 | 704 | (1.4+ | 2.0+) | | |
| 2000 05 09 | 704 | 0.4+ | 0.7+ | 2001 10 23 | 704 | 0.2+ | 0.9+ | 2004 04 19 | 704 | (0.4+ | 1.7+) | | |
| 2000 05 09 | 704 | 1.3+ | 1.2+ | 2001 10 23 | 699 | 0.3− | 0.3+ | 2004 04 19 | 704 | 1.3+ | 1.0+ | | |
| 2000 05 09 | 704 | 0.8− | 0.1− | 2001 10 23 | 704 | 0.2− | 1.3+ | 2004 04 22 | 704 | 0.3− | 0.9+ | | |
| 2000 05 09 | 704 | 0.2− | 1.2+ | 2001 10 23 | 699 | 0.0 | 0.8+ | 2004 04 22 | 704 | (0.4− | 1.9+) | | |
| 2000 05 10 | 704 | 0.3− | 1.7+ | 2001 10 24 | 704 | 0.2+ | 0.3− | 2004 04 22 | 704 | (0.8+ | 1.6+) | | |
| 2000 05 10 | 704 | 0.6− | 0.2+ | 2001 10 24 | 704 | 0.8+ | 0.2+ | 2005 06 07 | E12 | 0.6− | 0.3− | | |
| 2000 05 10 | 704 | 0.5− | 1.0− | 2001 10 24 | 704 | 0.3− | 1.0− | 2005 06 07 | E12 | 0.1+ | 0.2+ | | |
| 2001 08 25 | 704 | (0.7− | 1.5+) | 2001 10 24 | 704 | 1.0+ | 1.1− | 2005 06 07 | E12 | 0.7− | 0.2+ | | |
| 2001 08 25 | 704 | 1.2− | 0.6+ | 2001 10 24 | 704 | 1.1+ | 0.3− | 2005 06 07 | E12 | 0.3− | 0.1− | | |
| 2001 08 25 | 704 | 1.0+ | 1.3+ | 2001 11 20 | 704 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.3− | 0.2− | | |
| 2001 08 25 | 704 | 0.7− | 0.5+ | 2001 11 20 | 704 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.2− | | |
| 2001 08 25 | 704 | 1.4− | 1.1+ | 2001 11 20 | 704 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.1− | | |
| 2001 09 11 | 699 | 0.8− | 0.9+ | 2001 11 20 | 704 | 0.4+ | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.1− | | |
| 2001 09 11 | 699 | 0.6− | 0.8+ | 2002 12 15 | 704 | (0.9+ | 1.7+) | 2006 10 04 | G96 | 0.1− | 0.1− | | |
| 2001 09 11 | 699 | 1.0− | 0.8+ | 2002 12 15 | 704 | (0.5+ | 1.6+) | 2006 10 04 | G96 | 0.3− | 0.3− | | |
| 2001 09 11 | 699 | 0.4− | 0.3+ | 2002 12 15 | 704 | 0.0 | 1.3+ | 2006 10 04 | G96 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.4− | 0.2+ | 2003 02 01 | 704 | 1.0+ | 0.5− | 2006 10 04 | G96 | 0.3− | 0.1− | | |
| 2001 09 12 | 704 | 1.2− | 0.4+ | 2003 02 01 | 704 | 0.3+ | 0.6− | 2006 10 19 | G96 | 0.4+ | 0.3− | | |
| 2001 09 12 | 704 | 0.4− | 1.5− | 2003 02 01 | 704 | 0.7+ | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.4− | | |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2004 02 23 | 704 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.1− | | |
| 2001 09 12 | 704 | 1.2− | 0.1+ | 2004 02 23 | 704 | 1.1+ | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2001 09 12 | 704 | 0.3− | 1.4− | 2004 02 23 | 704 | (1.7+ | 0.9+) | 2006 10 19 | G96 | 0.5+ | 0.3− | | |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2004 02 23 | 704 | 0.6+ | 0.9+ | 2006 10 19 | G96 | 0.4− | 0.3− | | |
| 2001 09 12 | 704 | 0.3− | 0.8+ | 2004 02 23 | 704 | 0.3− | 1.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2001 09 12 | 704 | 0.2+ | 1.5− | 2004 03 16 | 704 | 0.5− | 1.0+ | 2006 10 19 | 691 | 0.2− | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2004 03 16 | 704 | 1.1+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2004 03 16 | 704 | 1.1+ | 1.3+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2001 09 12 | 704 | (0.3− | 1.9−) | 2004 03 16 | 704 | 1.3+ | 1.4+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 1.0− | 0.7+ | 2004 03 19 | 704 | (2.8+ | 0.7+) | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2001 09 12 | 704 | 0.3+ | 1.3− | 2004 03 19 | 704 | 0.2+ | 0.9+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 09 18 | 699 | 0.2− | 0.7+ | 2004 03 19 | 704 | (1.9+ | 0.4+) | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2001 09 18 | 699 | 0.4− | 0.3+ | 2004 03 19 | 704 | (0.7+ | 1.8+) | 2006 10 23 | 691 | 0.6− | 0.3+ |
| 2001 09 18 | 699 | 0.1+ | 0.6+ | 2004 03 19 | 704 | (2.4+ | 0.0 ) | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 2001 09 18 | 699 | 0.6+ | 1.1+ | 2004 03 19 | 704 | 0.6+ | 1.4+ | 2006 10 27 | 703 | 0.4+ | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | (2.4+ | 0.6+) | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2004 03 19 | 704 | 0.0 | 1.4+ | 2006 10 27 | 703 | 0.3+ | 0.3− |
| 2001 09 19 | 704 | 0.7− | 1.0+ | 2004 03 20 | 704 | 1.3+ | 1.1+ | 2006 10 27 | 703 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2004 03 20 | 704 | (1.8+ | 1.0+) | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2004 03 20 | 704 | (2.4+ | 0.4+) | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.8− | 0.3+ | 2004 03 20 | 704 | (1.6+ | 1.1+) | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 1.1+ | 2004 03 20 | 704 | (1.7+ | 0.9+) | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 1.0+ | 2004 03 22 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 03 24 | 699 | 0.0 | 0.7+ | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2004 03 24 | 699 | 0.9+ | 0.5+ | 2006 11 14 | 703 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2004 03 24 | 699 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2001 09 21 | 704 | 0.3+ | 0.8+ | 2004 03 24 | 699 | 0.5+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.6− | 0.3+ | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 1.0+ | 2004 03 28 | 704 | 0.5+ | 0.8+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2004 03 28 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2004 03 28 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 704 | 0.4− | 0.2+ |
| 2001 09 25 | 644 | 0.2+ | 0.4+ | 2004 03 29 | 704 | 0.5− | 0.4+ | 2006 11 15 | 704 | 0.4− | 0.6+ |
| 2001 09 25 | 644 | 0.2− | 0.3+ | 2004 03 29 | 704 | 0.5+ | 1.4+ | 2006 11 15 | 704 | 0.7− | 0.8+ |
| 2001 09 25 | 644 | 0.0 | 0.4+ | 2004 03 29 | 704 | 0.9+ | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.3+ |
| 2001 10 11 | 704 | 0.3+ | 0.9+ | 2004 03 29 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.2+ |
| 2001 10 11 | 704 | 0.0 | 0.1− | 2004 03 29 | 704 | 0.9− | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2001 10 11 | 704 | 0.1+ | 0.9+ | 2004 03 30 | 704 | 0.7+ | 0.2+ | 2006 11 16 | 704 | 0.8− | 1.4+ |
| 2001 10 11 | 704 | 0.8− | 0.5+ | 2004 03 30 | 704 | 0.5+ | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.5+ |
| 2001 10 11 | 704 | 0.1− | 0.7+ | 2004 03 30 | 704 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.1− | 0.1− |
| 2001 10 13 | 704 | 0.0 | 0.2− | 2004 03 30 | 704 | 0.4+ | 0.8+ | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 2001 10 13 | 704 | 0.1− | 0.3− | 2004 03 30 | 704 | 0.7+ | 0.3− | 2006 11 16 | 704 | 0.4− | 0.1− |
| 2001 10 13 | 704 | 0.2− | 0.8+ | 2004 04 12 | 699 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.6− | 0.3+ |
| 2001 10 13 | 704 | 0.9+ | 0.7− | 2004 04 12 | 691 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.8− | 0.5+ |
| 2001 10 13 | 704 | 1.0− | 0.2+ | 2004 04 12 | 699 | 1.1− | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.4− |
| 2001 10 17 | 644 | 0.2− | 1.2+ | 2004 04 12 | 699 | 0.4+ | 0.9+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2001 10 17 | 644 | 0.0 | 1.2+ | 2004 04 12 | 691 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2001 10 17 | 644 | 0.0 | 1.1+ | 2004 04 12 | 699 | 1.2+ | 1.3+ | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2001 10 17 | 644 | 0.2− | 0.8+ | 2004 04 12 | 691 | 0.5+ | 0.7+ | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2001 10 17 | 644 | 0.5− | 0.8+ | 2004 04 15 | 621 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2001 10 17 | 644 | 0.3− | 0.8+ | 2004 04 15 | 621 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.5+ |
| 2001 10 20 | 704 | 0.3− | 0.6+ | 2004 04 15 | 621 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.3− |
| 2001 10 20 | 704 | 0.1+ | 0.7+ | 2004 04 16 | 621 | 0.1− | 0.1+ | 2006 12 01 | 704 | 1.5+ | 0.6+ |
| 2001 10 20 | 704 | 0.1+ | 0.5+ | 2004 04 16 | 621 | 0.5+ | 0.5− | 2006 12 01 | 704 | 0.5+ | 0.1− |
| 2001 10 23 | 704 | 0.4− | 1.0+ | 2004 04 19 | 691 | 0.5+ | 0.7+ | 2006 12 01 | 704 | 0.5+ | 0.9+ |

**(139909)∗ 2001 RH$_{107}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.48484 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21858599 | $\omega$ | 303.08688 | | +0.84859835 | | +0.52610950 |
| $a$ | 2.7293203 | $\Omega$ | 25.30357 | | −0.43163439 | | +0.74927852 |
| $e$ | 0.0899108 | $i$ | 7.47238 | | −0.30589639 | | +0.40223189 |
| $P$ | 4.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 31 | 691 | 0.2+ | 0.1− | 2001 09 21 | 704 | 0.3− | 0.4+ | 2004 04 19 | 704 | 0.7− | 0.4+ |
| 1997 12 31 | 691 | 0.2− | 0.1− | 2001 09 21 | 704 | 0.6− | 0.3+ | 2004 04 19 | 704 | 0.9+ | 1.1+ |
| 1997 12 31 | 691 | 0.3+ | 0.0 | 2001 09 21 | 704 | 0.7− | 0.3+ | 2004 04 19 | 704 | 1.2+ | 0.7+ |
| 2001 07 20 | 644 | 0.5− | 0.1− | 2001 09 21 | 704 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.2+ | 0.7+ |
| 2001 07 20 | 644 | 0.5− | 0.5+ | 2001 09 21 | 704 | 0.7− | 0.2+ | 2004 04 28 | 691 | 0.3+ | 1.0+ |
| 2001 07 20 | 644 | 0.3− | 0.1+ | 2001 09 21 | 704 | 0.6− | 0.2− | 2004 04 28 | 691 | 0.0 | 0.8+ |
| 2001 07 20 | 644 | 0.3− | 0.6+ | 2001 09 21 | 704 | 0.4− | 0.1+ | 2004 04 28 | 691 | 0.3+ | 0.7+ |
| 2001 07 20 | 644 | 0.5− | 0.4+ | 2001 09 21 | 704 | 0.6− | 0.1+ | 2005 07 05 | E12 | 0.1− | 0.4− |
| 2001 07 20 | 644 | 0.4− | 0.2+ | 2001 09 21 | 704 | 0.6− | 0.4− | 2005 07 05 | E12 | 0.2+ | 0.2− |
| 2001 08 26 | 644 | 0.4− | 0.6+ | 2001 09 27 | 644 | 0.3− | 0.4+ | 2005 07 05 | E12 | 0.5+ | 0.0 |
| 2001 08 26 | 644 | 0.3− | 0.8+ | 2001 09 27 | 644 | 0.0 | 0.4+ | 2005 07 05 | E12 | 0.3+ | 0.7− |
| 2001 08 26 | 644 | 0.2− | 1.0+ | 2001 09 27 | 644 | 0.7− | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.1− |
| 2001 09 11 | 699 | 1.3− | 1.1+ | 2001 10 17 | 644 | 0.4+ | 0.5+ | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2001 09 11 | 699 | 0.2− | 0.7+ | 2001 10 17 | 644 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.1+ |
| 2001 09 11 | 699 | 0.3+ | 0.3+ | 2001 10 17 | 644 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.5+ | 0.2− |
| 2001 09 11 | 699 | 0.0 | 0.5+ | 2001 10 17 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2001 09 12 | 704 | 0.3+ | 0.2+ | 2001 10 17 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2001 09 12 | 704 | 0.5− | 0.7+ | 2001 10 17 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2001 10 20 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.9− | 0.5− |
| 2001 09 12 | 704 | 0.0 | 0.3+ | 2001 10 20 | 704 | 0.3− | 0.1+ | 2006 10 19 | A50 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2001 10 20 | 704 | 0.6+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.5− | 0.6− | 2001 10 23 | 704 | 0.4+ | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.4+ | 0.2− | 2001 10 23 | 704 | 0.8+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2001 10 23 | 704 | 0.6− | 0.6+ | 2006 11 15 | 704 | 0.3− | 0.8+ |
| 2001 09 12 | 704 | 0.1− | 1.4− | 2001 10 23 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.1+ | 0.6− |
| 2001 09 12 | 704 | 0.5− | 0.0 | 2001 10 24 | 704 | 0.4+ | 0.1− | 2006 11 15 | 704 | 0.4+ | 1.0+ |
| 2001 09 12 | 704 | 0.3+ | 0.4− | 2001 10 24 | 704 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 0.4− | 2001 10 24 | 704 | 1.0+ | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.4− |
| 2001 09 12 | 704 | 0.1− | 0.6− | 2001 10 24 | 704 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.8− | 0.7+ |
| 2001 09 12 | 704 | 0.7− | 0.5− | 2001 10 24 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.8+ | 0.5+ |
| 2001 09 18 | 699 | 0.2+ | 0.3+ | 2004 03 18 | 704 | (1.8+ | 1.5+) | 2006 11 16 | 704 | 0.5+ | 0.8+ |
| 2001 09 18 | 699 | 0.6− | 0.9+ | 2004 03 18 | 704 | 0.8+ | 0.7+ | 2006 11 19 | 704 | 0.7− | 0.8− |
| 2001 09 18 | 699 | 0.4+ | 0.6+ | 2004 03 18 | 704 | (1.7+ | 1.1+) | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 2001 09 18 | 699 | 0.6+ | 0.1− | 2004 03 18 | 704 | 0.2+ | 1.3+ | 2006 11 19 | 704 | 0.3+ | 1.5+ |
| 2001 09 19 | 704 | 0.4− | 0.6+ | 2004 03 18 | 704 | 0.2+ | 1.4+ | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2004 03 19 | 704 | (1.9+ | 1.7+) | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2001 09 19 | 704 | 0.6+ | 0.8+ | 2004 03 19 | 704 | 0.6+ | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.8+ | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 1.2+ | 2004 03 19 | 704 | 1.2+ | 1.2+ | 2006 11 22 | 704 | 0.3+ | 0.4− |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2004 03 22 | 704 | 1.0+ | 1.2+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.9− | 0.1− | 2004 03 22 | 704 | (1.9+ | 0.4+) | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2004 03 22 | 704 | 1.2+ | 0.9+ | 2006 12 01 | G96 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2004 03 22 | 704 | (0.6+ | 2.1+) | 2006 12 01 | G96 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2004 03 22 | 704 | (2.0+ | 2.0+) | | | | |

**(139910)∗ 2001 RJ$_{108}$ = 2004 FD$_{34}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60973)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.25841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22096007 | $\omega$ | 215.23651 | | −0.37746103 | | +0.92585736 |
| $a$ | 2.7097352 | $\Omega$ | 32.59731 | | −0.84191839 | | −0.33518118 |
| $e$ | 0.0473459 | $i$ | 1.87687 | | −0.38561197 | | −0.17447559 |
| $P$ | 4.46 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 06 | 691 | 0.1+ | 0.0 | 2004 03 16 | 704 | (1.6+ | 0.9+) | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 1995 02 06 | 691 | 1.2+ | 0.8− | 2004 03 16 | 704 | (1.8+ | 0.8+) | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 1995 02 06 | 691 | 0.5+ | 0.3− | 2004 03 16 | 704 | 0.9+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 1995 02 23 | 691 | 0.4+ | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.0 |
| 1995 02 23 | 691 | 0.0 | 1.0+ | 2004 03 19 | 704 | 0.9+ | 0.8+ | 2006 10 12 | 691 | 0.6+ | 0.2− |
| 1995 02 23 | 691 | 0.5− | 0.9+ | 2004 03 19 | 704 | 1.4+ | 0.0 | 2006 10 12 | 691 | 0.0 | 0.3− |
| 1995 04 04 | 691 | 0.3− | 0.3− | 2004 03 19 | 704 | 1.3+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 1995 04 04 | 691 | 0.8− | 0.3− | 2004 03 19 | 704 | 0.0 | 0.8− | 2006 10 16 | 691 | 0.1− | 0.0 |
| 1995 04 04 | 691 | 1.4− | 0.2− | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 1999 01 10 | 691 | 0.3+ | 0.5− | 2004 03 19 | 704 | 0.8− | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 |
| 1999 01 10 | 691 | 0.1− | 0.4− | 2004 03 19 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 691 | 0.1+ | 0.8− | 2004 03 19 | 704 | 0.1− | 1.2+ | 2006 10 20 | 691 | 0.3− | 0.1+ | | |
| 2000 05 28 | 704 | 0.0 | 1.1+ | 2004 03 19 | 704 | 0.2+ | 0.7+ | 2006 10 27 | G96 | 0.2− | 0.3− | | |
| 2000 05 28 | 704 | 0.9− | 1.2+ | 2004 03 20 | 699 | 1.1+ | 1.2+ | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2000 05 28 | 704 | 0.6+ | 1.5+ | 2004 03 20 | 699 | 0.6− | 1.2+ | 2006 10 27 | G96 | 0.0 | 0.5− | | |
| 2000 05 28 | 704 | 0.6− | 1.2+ | 2004 03 20 | 699 | 0.5− | 0.5− | 2006 10 29 | G96 | 0.1+ | 0.4− | | |
| 2001 09 12 | 704 | (1.8− | 0.0 ) | 2004 03 20 | 699 | (0.9+ | 2.1+) | 2006 10 29 | G96 | 0.1+ | 0.5− | | |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 10 29 | G96 | 0.2+ | 0.5− | | |
| 2001 09 12 | 704 | 0.4+ | 1.0+ | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.5− | | |
| 2001 09 12 | 704 | 1.4− | 0.1− | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.8− | 0.4− | 2004 03 27 | 704 | 0.6+ | 1.0+ | 2006 10 29 | 691 | 0.2− | 0.2− | | |
| 2001 09 19 | 704 | (2.3− | 0.4+) | 2004 03 27 | 704 | 0.2+ | 0.3− | 2006 10 29 | 691 | 0.2− | 0.0 | | |
| 2001 09 19 | 291 | 1.0+ | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 704 | 1.4− | 0.1− | 2004 03 27 | 704 | 0.4+ | 1.2+ | 2006 11 09 | 691 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | 0.8− | 0.8− | 2004 03 31 | 691 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.3− | 0.1− | | |
| 2001 09 19 | 291 | 1.1+ | 0.6+ | 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.5− | 0.1− | | |
| 2001 09 19 | 291 | 0.4− | 0.9+ | 2004 04 21 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.2− | 1.0+ | | |
| 2001 09 21 | 704 | 0.7− | 0.7+ | 2004 04 21 | 691 | 0.4+ | 0.5+ | 2006 11 13 | 691 | 0.2− | 0.5+ | | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 04 21 | 691 | 0.4+ | 0.6+ | 2006 11 13 | 691 | 0.3− | 0.4+ | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2006 07 21 | G96 | 0.8− | 0.0 | 2006 11 22 | 691 | 0.3− | 0.1+ | | |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.4+ | | |
| 2004 02 26 | 695 | 0.0 | 0.4+ | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.5+ | | |
| 2004 02 26 | 695 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.4+ | | |
| 2004 03 15 | 703 | 0.6+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.8+ | | |
| 2004 03 15 | 703 | (1.2+ | 2.1+) | 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 11 27 | 691 | 0.3− | 0.1+ | | |
| 2004 03 15 | 703 | 0.8− | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.4− | | | | | | |
| 2004 03 15 | 703 | (3.4− | 1.8−) | 2006 09 26 | G96 | 0.1+ | 0.4− | | | | | | |

**(139911)**∗ **2001 RU$_{108}$ = 2003 AU$_{19}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46600)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.33457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22092670 | $\omega$ | 38.88710 | | +0.73346450 | −0.67970195 | |
| $a$ | 2.7100081 | $\Omega$ | 3.94877 | | +0.60019059 | +0.64352487 | |
| $e$ | 0.0374206 | $i$ | 4.93376 | | +0.31906281 | +0.35196733 | |
| $P$ | 4.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.2+ | 0.3+ | 2002 12 11 | 704 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.2− | 0.4− | | |
| 2001 09 11 | 699 | 0.3− | 0.1− | 2002 12 11 | 704 | 0.4− | 0.5− | 2006 10 17 | 691 | 0.1− | 0.1+ | | |
| 2001 09 11 | 699 | 0.8− | 0.4− | 2003 01 05 | 704 | 0.5− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2001 09 11 | 699 | 0.6− | 0.6+ | 2003 01 05 | 704 | 0.1− | 0.6+ | 2006 10 17 | 691 | 0.4− | 0.0 | | |
| 2001 09 12 | 704 | 0.4+ | 1.0+ | 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.0 | 0.2+ | | |
| 2001 09 12 | 704 | 0.0 | 1.4+ | 2003 01 05 | 704 | 0.0 | 0.7− | 2006 10 21 | 691 | 0.3− | 0.1+ | | |
| 2001 09 12 | 704 | 0.4− | 1.3+ | 2003 01 07 | 704 | 0.3− | 1.2+ | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.9− | 0.4− | 2003 01 07 | 704 | 0.8+ | 0.5+ | 2006 10 27 | 703 | 1.0+ | 0.0 | | |
| 2001 09 19 | 704 | 0.8− | 1.1− | 2003 01 07 | 704 | 0.5+ | 1.0+ | 2006 10 27 | 703 | 1.1+ | 0.2− | | |
| 2001 09 19 | 704 | 0.1+ | 0.0 | 2003 01 07 | 704 | 1.2+ | 1.0+ | 2006 10 27 | 703 | (1.6+ | 0.3+) | | |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2004 04 09 | E12 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.7+ | 0.0 | | |
| 2001 09 19 | 704 | 0.9+ | 0.3− | 2004 04 09 | E12 | 0.9− | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2001 09 19 | 704 | 0.8+ | 0.2+ | 2004 04 09 | E12 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2001 09 21 | 704 | 0.7− | 1.0+ | 2004 04 09 | E12 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.6− | 0.6+ | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 1.3− | | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.0 | | |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.2+ | | |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.0+ | 0.2− | | |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.3− | | | | | | |
| 2002 12 11 | 704 | 0.6− | 0.2− | 2006 10 02 | G96 | 0.5+ | 0.4− | | | | | | |

**(139912)**∗ **2001 RW$_{108}$ = 1999 CM$_{148}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.99325 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21581607 | $\omega$ | 171.46470 | | +0.73845486 | +0.67370841 | |
| $a$ | 2.7526238 | $\Omega$ | 146.12619 | | −0.62162073 | +0.69642844 | |
| $e$ | 0.0556377 | $i$ | 2.91134 | | −0.26128929 | +0.24719304 | |
| $P$ | 4.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 691 | 0.3+ | 0.4− | 2004 03 19 | 704 | 0.8+ | 0.4− | 2006 10 17 | G96 | 0.9+ | 0.2− | | |
| 1999 02 10 | 691 | 0.5+ | 0.5− | 2004 03 19 | 704 | 0.6+ | 0.9− | 2006 10 17 | G96 | 0.0 | 0.4− | | |
| 1999 02 10 | 691 | 0.1+ | 1.6+ | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.3+ | | |
| 1999 02 14 | 691 | 0.2− | 0.6− | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.4− | 0.3+ | | |
| 1999 02 14 | 691 | 0.3− | 0.5− | 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | | |
| 1999 02 14 | 691 | 0.6− | 0.5− | 2004 03 29 | 291 | 0.3+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 2001 09 12 | 704 | 0.6+ | 1.0+ | 2004 03 29 | 291 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.0 | | |
| 2001 09 12 | 704 | 0.4+ | 0.9+ | 2004 03 29 | 291 | 0.4− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.5+ | 0.6+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 2001 09 19 | 704 | 0.3− | 0.2− | 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.5− | 0.4+ | 2006 09 30 | 703 | 1.0− | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.6− | 0.4− | 2006 09 30 | 703 | (2.5− | 0.4−) | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.7+ | 0.5− | 2006 09 30 | 703 | 0.8+ | 1.0+ | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.5− | | |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 11 01 | G96 | 0.2− | 0.4− | | |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2004 03 12 | 644 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2004 03 12 | 644 | 0.4+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2004 03 12 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1+ | | |
| 2004 03 19 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 19 | 704 | 0.5− | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 19 | 704 | (1.7+ | 0.6+) | 2006 10 17 | G96 | 0.4− | 0.9− | 2006 11 11 | 691 | 0.3+ | 0.1+ | | |

**(139913)**∗ **2001 RB$_{109}$ = 2004 GS$_{28}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68929)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.79357 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22039359 | $\omega$ | 302.79150 | | −0.37337011 | −0.92642981 | |
| $a$ | 2.7143765 | $\Omega$ | 168.81663 | | +0.91236466 | −0.37611075 | |
| $e$ | 0.0648670 | $i$ | 14.38773 | | +0.16788535 | −0.01638644 | |
| $P$ | 4.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 21 | 699 | 0.3+ | 0.0 | 2001 09 20 | 704 | 0.1+ | 1.2+ | 2004 05 13 | 704 | 0.8+ | 1.0+ | | |
| 1999 02 21 | 699 | 0.2+ | 0.6− | 2001 09 20 | 704 | 0.0 | 0.1− | 2004 05 13 | 704 | 0.6+ | 0.7+ | | |
| 1999 02 21 | 699 | 0.6+ | 1.5+ | 2001 09 20 | 704 | 0.2+ | 0.1− | 2004 05 13 | 704 | 0.0 | 0.2+ | | |
| 2001 08 27 | 691 | 0.2− | 0.2− | 2001 09 21 | 704 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.1− | 1.0− | | |
| 2001 08 27 | 691 | 0.7− | 0.7− | 2001 09 21 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.1− | 1.3− | | |
| 2001 08 27 | 691 | 0.0 | 0.2− | 2001 09 21 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.9− | | |
| 2001 09 12 | 704 | 0.4+ | 0.9+ | 2001 09 21 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.5− | | |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2001 09 21 | 704 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.4+ | 1.0+ | 2003 01 02 | 704 | 0.6− | 1.0+ | 2006 10 17 | 703 | 0.1− | 0.8+ | | |
| 2001 09 12 | 704 | (0.4+ | 1.6+) | 2003 01 02 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 1.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2003 01 02 | 704 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.2− | 0.6− | | |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2003 01 02 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.6+ | 0.0 | | |
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2003 01 02 | 704 | 0.6+ | 0.2− | 2006 10 28 | 703 | 0.6+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.5+ | 2003 01 28 | 704 | 1.2− | 0.9+ | 2006 10 28 | 703 | 0.2+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2003 01 28 | 704 | 0.5− | 0.6+ | 2006 10 28 | 703 | 0.9− | 0.1+ | | |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2003 01 28 | 704 | 0.3− | 0.5+ | 2006 11 08 | 644 | 0.4+ | 0.1+ | | |
| 2001 09 19 | 704 | (0.7+ | 3.2−) | 2004 04 13 | 683 | (1.6+ | 2.2+) | 2006 11 08 | 644 | 0.4+ | 0.0 | | |
| 2001 09 19 | 291 | 0.6+ | 0.1+ | 2004 04 13 | 683 | 0.9− | 1.0+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 683 | (1.2+ | 2.5+) | 2006 11 16 | 703 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2004 04 14 | 683 | 0.5− | 1.1− | 2006 11 16 | 703 | 0.1+ | 0.2− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 291 | 0.2+ | 0.2+ | 2004 04 14 | 683 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.4− | 0.8− |
| 2001 09 19 | 291 | 0.4− | 0.5+ | 2004 04 14 | 683 | (0.1− | 1.5+) | 2006 11 16 | 703 | 1.4− | 0.1− |
| 2001 09 20 | 704 | 0.0 | 1.1+ | 2004 05 13 | 704 | 0.0 | 0.2+ | | | | |

**(139914)∗ 2001 RV$_{110}$ = 1995 FQ$_5$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 18062)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.88470 | | (2000.0) | | | |
| $n$ | 0.21761252 | $\omega$ | 164.95112 | | +0.61215448 | +0.78860352 |
| $a$ | 2.7374538 | $\Omega$ | 142.74184 | | −0.73503369 | +0.59456689 |
| $e$ | 0.1192655 | $i$ | 5.50360 | | −0.29153450 | +0.15682700 |
| $P$ | 4.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.6− | 0.9+ | 2001 09 12 | 704 | 1.0+ | 0.0 | 2004 03 19 | 291 | 0.0 | 0.4+ |
| 1995 03 23 | 691 | 0.7− | 0.7+ | 2001 09 19 | 704 | 0.6+ | 0.4+ | 2004 03 28 | 691 | 0.1− | 0.0 |
| 1995 03 23 | 691 | 0.9− | 0.4+ | 2001 09 19 | 704 | (0.2− | 1.9+) | 2004 03 28 | 691 | 0.0 | 0.2+ |
| 1995 03 29 | 691 | 0.3− | 0.4+ | 2001 09 19 | 704 | (0.1+ | 2.0+) | 2004 03 28 | 691 | 0.2− | 0.2+ |
| 1995 03 29 | 691 | 0.4+ | 0.1+ | 2001 09 19 | 645 | 0.0 | 0.0 | 2006 11 01 | 703 | (1.8− | 0.3−) |
| 1995 03 29 | 691 | 0.8− | 0.3− | 2001 09 19 | 645 | 0.0 | 0.0 | 2006 11 01 | 703 | 1.0+ | 0.9− |
| 1995 04 04 | 691 | 0.5+ | 1.1− | 2001 09 22 | 704 | 0.8+ | 0.3+ | 2006 11 01 | 703 | 0.1− | 1.1+ |
| 1995 04 04 | 691 | 0.3+ | 0.9− | 2001 09 22 | 704 | (1.6+ | 0.0 ) | 2006 11 01 | 703 | 0.6− | 0.4− |
| 1995 04 04 | 691 | 0.6+ | 1.2− | 2001 09 22 | 704 | 0.3+ | 1.3− | 2006 11 13 | 703 | 0.6− | 0.2− |
| 1999 03 13 | 691 | 0.3+ | 0.6− | 2001 09 22 | 704 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.6+ |
| 1999 03 13 | 691 | 0.4+ | 0.1− | 2001 09 23 | 704 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.6+ |
| 1999 03 13 | 691 | 0.5+ | 0.5− | 2001 09 23 | 704 | 1.2− | 1.3+ | 2006 11 13 | 703 | 0.4− | 0.0 |
| 2001 08 24 | 704 | 1.1− | 1.2+ | 2001 09 23 | 704 | 0.9+ | 0.9− | 2006 11 19 | 703 | (0.8+ | 2.7+) |
| 2001 08 24 | 704 | 0.3+ | 0.3− | 2001 09 23 | 704 | 0.2− | 1.2− | 2006 11 19 | 703 | 0.5− | 0.8+ |
| 2001 08 24 | 704 | 0.5− | 0.7+ | 2004 02 23 | 704 | 1.0+ | 0.5− | 2006 11 19 | 703 | (1.7− | 0.7+) |
| 2001 09 11 | 699 | 0.3+ | 1.1+ | 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 11 19 | 703 | (2.4− | 0.4+) |
| 2001 09 11 | 699 | 0.9− | 1.2+ | 2004 02 23 | 704 | (1.7+ | 1.0+) | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2001 09 11 | 699 | 0.4− | 0.3+ | 2004 03 14 | 691 | 0.1+ | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2001 09 11 | 699 | 1.0− | 1.4+ | 2004 03 14 | 691 | 0.4+ | 0.3+ | 2006 11 24 | G96 | 0.9− | 0.3− |
| 2001 09 12 | 704 | 1.3+ | 0.0 | 2004 03 14 | 691 | 0.3+ | 0.4+ | 2006 11 24 | G96 | 0.7− | 0.2− |
| 2001 09 12 | 704 | 0.8+ | 0.3− | 2004 03 19 | 291 | 0.1+ | 0.4+ | | | | |
| 2001 09 12 | 704 | 1.1+ | 0.3+ | 2004 03 19 | 291 | 0.3+ | 0.3+ | | | | |

**(139915)∗ 2001 RO$_{117}$ = 2004 CZ$_{13}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 134.85737 | | (2000.0) | | | |
| $n$ | 0.20935655 | $\omega$ | 231.75755 | | −0.68095996 | +0.73230162 |
| $a$ | 2.8089565 | $\Omega$ | 355.31325 | | −0.65008796 | −0.60779828 |
| $e$ | 0.1423697 | $i$ | 3.70495 | | −0.33716343 | −0.30710845 |
| $P$ | 4.71 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 704 | 0.0 | 0.0 | 2004 02 12 | 691 | 0.3− | 0.2− | 2004 03 20 | 691 | 0.0 | 0.1+ |
| 2000 05 10 | 704 | 0.2− | 1.3+ | 2004 02 15 | 608 | 0.9+ | 0.3− | 2004 03 20 | 691 | 0.2− | 0.1+ |
| 2000 05 10 | 704 | 0.2− | 1.1+ | 2004 02 15 | 608 | 0.9+ | 0.9+ | 2004 03 20 | 691 | 0.0 | 0.0 |
| 2000 05 10 | 704 | 0.1− | 0.5+ | 2004 02 15 | 608 | 0.2− | 0.3− | 2004 04 22 | 704 | 0.2+ | 0.1+ |
| 2000 06 01 | 608 | 0.6+ | 0.7− | 2004 02 17 | 704 | 0.2+ | 0.1+ | 2004 04 22 | 704 | 0.2+ | 0.3− |
| 2000 06 01 | 608 | 0.2+ | 0.5− | 2004 02 17 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 704 | 0.1+ | 0.5+ |
| 2000 06 01 | 608 | 0.3+ | 0.3+ | 2004 02 17 | 704 | 0.3+ | 0.1+ | 2004 04 22 | 704 | (1.5+ | 0.8+) |
| 2001 08 21 | 807 | 0.4− | 0.9+ | 2004 02 17 | 704 | 0.5+ | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.7+ |
| 2001 08 21 | 807 | 0.6− | 0.9+ | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2004 04 22 | 704 | (1.3+ | 2.0+) |
| 2001 09 12 | 704 | 0.5+ | 0.7+ | 2004 02 19 | 704 | 0.6+ | 0.2− | 2004 04 22 | 704 | 1.0+ | 0.5+ |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2004 02 19 | 704 | 0.7+ | 0.4− | 2004 04 22 | 704 | 1.1+ | 1.2+ |
| 2001 09 12 | 704 | 0.0 | 0.5+ | 2004 02 19 | 704 | 0.5+ | 0.4− | 2006 07 21 | G96 | 0.5− | 0.3+ |
| 2001 09 12 | 704 | 0.4− | 0.8+ | 2004 02 19 | 704 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.5+ | 0.2+ | 2006 07 21 | G96 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2004 02 23 | 704 | 0.6+ | 0.4+ | 2006 09 15 | 691 | 0.3+ | 0.1− |
| 2001 09 19 | 704 | 0.9− | 0.7− | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.7− | 0.9− | 2004 02 23 | 704 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2004 02 25 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2004 02 25 | 704 | 0.7+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.7+ | 2004 02 25 | 704 | 0.5+ | 0.2+ | 2006 09 21 | 621 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | (1.6− | 0.4+) | 2004 02 25 | 704 | 0.1+ | 0.1− | 2006 09 21 | 621 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2004 02 25 | 704 | 0.3+ | 0.4− | 2006 09 21 | 621 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2004 02 26 | 704 | 0.2+ | 0.7+ | 2006 09 21 | 621 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2004 02 26 | 704 | 0.8+ | 0.3− | 2006 09 21 | 621 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.5+ | 0.7+ | 2004 02 26 | 704 | 0.9+ | 0.4+ | 2006 09 22 | 621 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.8+ | 0.9+ | 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 09 28 | 291 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | (1.5+ | 2.3+) | 2004 02 26 | 704 | 0.7+ | 0.4− | 2006 09 28 | 291 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.8− | 0.3+ | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 09 28 | 291 | 0.2+ | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.2+ | 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2004 01 22 | 704 | 0.4− | 0.7+ | 2004 02 29 | 691 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2004 01 22 | 704 | 0.2+ | 0.2− | 2004 03 01 | 291 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 0.5− | 0.2+ | 2004 03 01 | 291 | 0.1− | 0.5− | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2004 01 22 | 704 | 0.1− | 0.3− | 2004 03 01 | 291 | 0.8− | 0.5− | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2004 01 22 | 704 | 0.7− | 0.6+ | 2004 03 14 | 703 | (1.7− | 0.6+) | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2004 01 30 | 704 | 0.3− | 0.4− | 2004 03 14 | 703 | (0.4− | 3.4+) | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2004 01 30 | 704 | 0.2+ | 0.2+ | 2004 03 14 | 703 | 1.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 01 30 | 704 | 0.4+ | 0.0 | 2004 03 14 | 703 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2004 03 14 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2004 03 14 | 704 | 1.1+ | 0.4− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2004 02 11 | 699 | 0.1+ | 0.1− | 2004 03 14 | 704 | 0.8− | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.3− |
| 2004 02 11 | 644 | 0.0 | 0.4+ | 2004 03 14 | 704 | 0.6+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 02 11 | 699 | 0.3− | 0.9+ | 2004 03 14 | 704 | 0.5+ | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2004 03 19 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2004 02 11 | 699 | 0.7+ | 0.2− | 2004 03 19 | 644 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.7− | 0.2− |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.5− | 0.0 |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 03 19 | 644 | 0.9− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 02 11 | 699 | 0.5− | 0.5− | 2004 03 19 | 704 | 0.9− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.6− |
| 2004 02 12 | 691 | 0.2− | 0.3− | 2004 03 19 | 704 | 0.7− | 0.9+ | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2004 02 12 | 691 | 0.2− | 0.2− | 2004 03 19 | 704 | (0.6− | 2.3+) | 2006 11 15 | G96 | 0.0 | 0.5− |

**(139916)∗ 2001 RB$_{118}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.69721 | | (2000.0) | | | |
| $n$ | 0.20333795 | $\omega$ | 307.30100 | | +0.83497210 | +0.55016331 |
| $a$ | 2.8641148 | $\Omega$ | 19.32970 | | −0.49281142 | +0.75721277 |
| $e$ | 0.0616561 | $i$ | 2.06257 | | −0.24486425 | +0.35206412 |
| $P$ | 4.85 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.3− | 0.3+ | 2004 03 11 | 644 | 0.5+ | 0.3+ | 2006 09 12 | 703 | 0.0 | 0.3+ |
| 2001 08 16 | 704 | (0.5− | 1.8+) | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 09 16 | 644 | 0.2− | 0.1− |
| 2001 08 16 | 704 | (2.2− | 1.7+) | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 644 | 0.4− | 0.2− |
| 2001 08 16 | 704 | 0.2+ | 1.1+ | 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 644 | 0.4− | 0.2− |
| 2001 08 16 | 704 | 0.4− | 0.7+ | 2004 03 15 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.5+ |
| 2001 08 24 | 704 | (3.8− | 1.2+) | 2004 03 15 | 704 | 0.4+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.4− |
| 2001 08 24 | 704 | 1.1− | 0.7+ | 2004 03 15 | 704 | 0.3+ | 0.8+ | 2006 09 17 | 704 | 0.3+ | 0.8− |
| 2001 08 24 | 704 | (2.2− | 2.5−) | 2004 03 15 | 704 | 0.2+ | 1.3+ | 2006 09 17 | 704 | 0.3+ | 0.7− |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2004 03 18 | 704 | (1.5+ | 1.0+) | 2006 09 17 | 704 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.0 | 0.3+ | 2004 03 18 | 704 | 1.1+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2004 03 18 | 704 | 0.7+ | 1.2+ | 2006 09 25 | G96 | 0.8− | 0.1+ |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2004 03 18 | 704 | 1.1+ | 0.1+ | 2006 09 25 | G96 | 0.8+ | 0.6+ |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 699 | 0.4− | 0.8+ | 2004 03 20 | 699 | 1.0− | 0.1− | 2006 09 27 | 704 | (1.9+ | 1.2+) |
| 2001 09 19 | 699 | 0.7− | 0.3+ | 2004 03 20 | 699 | 0.5− | 1.2− | 2006 09 27 | 704 | 1.5+ | 1.0+ |
| 2001 09 19 | 699 | 0.1− | 0.4+ | 2004 03 20 | 699 | 0.2− | 0.7+ | 2006 09 27 | 704 | 0.9+ | 1.4+ |
| 2001 09 19 | 699 | 1.1+ | 0.2− | 2004 03 20 | 699 | 0.3− | 0.3+ | 2006 09 27 | 704 | 1.0+ | 0.5+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2004 03 27 | 704 | 1.0− | 0.8− | 2006 09 27 | 704 | 0.7+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 704 | (2.5+ | 0.0 ) | | |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2004 03 27 | 704 | 1.1+ | 1.1+ | 2006 09 28 | 704 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.7− | 2006 09 28 | 704 | 0.0 | 0.6− | | |
| 2001 09 19 | 704 | 1.0− | 0.5+ | 2004 03 30 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.7− | 0.8+ | | |
| 2001 09 21 | 704 | (1.6− | 1.2+) | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.7+ | | |
| 2001 09 21 | 704 | 0.3− | 1.1+ | 2004 03 30 | 691 | 0.0 | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.6+ | | |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2004 03 31 | 691 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | 0.4− | 1.1+ | 2004 03 31 | 691 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 0.5− | 1.0+ | 2004 03 31 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.5+ | | |
| 2001 10 13 | 704 | 0.7− | 0.9+ | 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.2+ | | |
| 2001 10 13 | 704 | (0.1+ | 1.6+) | 2004 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.5+ | | |
| 2001 10 13 | 704 | 0.5+ | 0.4+ | 2004 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.3− | 0.9+ | 2004 04 24 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.8− | 0.3− | | |
| 2001 10 17 | 644 | 0.0 | 0.4− | 2004 04 24 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2− | 1.3+ | | |
| 2001 10 17 | 644 | 0.3+ | 0.2− | 2004 04 24 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.6+ | | |
| 2001 10 17 | 644 | 0.2+ | 0.5− | 2005 01 24 | 809 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.4+ | | |
| 2001 10 17 | 644 | 0.3+ | 0.3− | 2005 01 24 | 809 | 0.1+ | 1.0+ | 2006 10 16 | 703 | 0.6− | 0.1− | | |
| 2001 10 17 | 644 | 0.2+ | 0.4− | 2005 01 24 | 809 | 0.1+ | 0.9+ | 2006 10 17 | G96 | 0.2+ | 1.1− | | |
| 2001 10 17 | 644 | 0.3+ | 0.4− | 2005 01 24 | 809 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.5+ | 0.6− | | |
| 2004 02 19 | 704 | 1.2− | 0.7+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.4− | | |
| 2004 02 19 | 704 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.5− | 0.1+ | 2006 10 17 | G96 | (3.0+ | 0.8+) | | |
| 2004 02 19 | 704 | 0.2− | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2004 02 19 | 704 | 0.3+ | 0.8+ | 2006 09 12 | 703 | (2.5− | 0.8−) | 2006 10 27 | G96 | 0.2− | 0.6− | | |
| 2004 03 11 | 644 | 0.5+ | 0.3+ | 2006 09 12 | 703 | (1.9− | 0.4−) | 2006 10 27 | G96 | 0.1+ | 0.6− | | |
| 2004 03 11 | 644 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 0.8− | 0.2+ | | | | | | |

**(139917)∗ 2001 RM$_{118}$ = 2002 XN$_{106}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.01727 | | (2000.0) | | | |
| $n$ | 0.19695697 | $\omega$ | 228.39875 | | −0.19460190 | +0.98071272 |
| $a$ | 2.9256462 | $\Omega$ | 30.39415 | | −0.88887915 | −0.16845599 |
| $e$ | 0.0432696 | $i$ | 2.06591 | | −0.41475771 | −0.09912182 |
| $P$ | 5.00 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6− | 0.2+ | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 699 | 0.2+ | 0.3− | | |
| 2001 09 12 | 704 | 0.1− | 0.8+ | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.1+ | 1.5+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.0 | 1.3+ | 2006 09 16 | 699 | (1.8− | 2.1+) | | |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2004 03 11 | 644 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.8+ | 0.7− | | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2004 03 11 | 644 | 0.6+ | 0.5+ | 2006 09 19 | 703 | 0.1− | 0.1− | | |
| 2001 09 19 | 704 | 0.5− | 0.6+ | 2004 03 11 | 644 | 0.7+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.3− | | |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 699 | (2.1− | 0.9−) | | |
| 2001 09 19 | 704 | 0.4− | 0.1− | 2004 03 19 | 704 | 0.3+ | 1.0+ | 2006 09 19 | 703 | 0.2+ | 0.6− | | |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.9+ | 0.4+ | 2006 09 19 | 703 | 0.7− | 0.2+ | | |
| 2001 09 21 | 704 | 0.6+ | 0.4+ | 2004 03 30 | 691 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 1.4+ | | |
| 2001 09 21 | 704 | 0.3− | 0.8+ | 2004 03 30 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 0.0 | 0.9+ | 2006 08 23 | 644 | 0.5− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.3+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.2− | | |
| 2002 12 05 | 704 | 1.0+ | 0.5− | 2006 08 23 | 644 | 0.8− | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.7+ | | |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2006 08 23 | 644 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.1− | | |
| 2002 12 11 | 704 | 0.6− | 0.1− | 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | (0.6+ | 1.8+) | | |
| 2002 12 11 | 704 | 0.7− | 0.3− | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 09 30 | G96 | 0.4− | 0.3− | | |
| 2002 12 11 | 704 | (0.2− | 2.2−) | 2006 08 28 | 703 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.2− | | |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 08 28 | 703 | 1.2+ | 1.4+ | 2006 09 30 | 703 | 0.5+ | 0.1− | | |
| 2002 12 11 | 704 | 0.7+ | 0.7− | 2006 08 28 | 703 | 0.3− | 1.4+ | 2006 09 30 | 703 | 1.2− | 0.7+ | | |
| 2002 12 11 | 704 | 0.3+ | 0.4− | 2006 09 12 | 703 | 0.5− | 0.9− | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.1+ | 0.9+ | 2006 10 21 | G96 | 0.2− | 0.2− | | |
| 2004 02 16 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 09 12 | 703 | (2.2− | 1.4+) | 2006 10 21 | G96 | 0.6− | 0.1+ | | |
| 2004 02 18 | 704 | 0.8+ | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.4+ | | |
| 2004 02 18 | 704 | 0.2+ | 0.0 | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2+ | | |
| 2004 02 18 | 704 | 0.5+ | 0.7+ | 2006 09 13 | 644 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2004 02 23 | 704 | 0.2− | 0.5+ | 2006 09 16 | 699 | 1.2+ | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.5− | | |

**(139918)∗ 2001 RU$_{120}$ = 1996 TB**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20155)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.00820 | | (2000.0) | | | |
| $n$ | 0.19062179 | $\omega$ | 103.91309 | | −0.34389165 | −0.93882759 |
| $a$ | 2.9901136 | $\Omega$ | 6.29395 | | +0.78328772 | −0.29765709 |
| $e$ | 0.0668095 | $i$ | 9.70148 | | +0.51787921 | −0.17321380 |
| $P$ | 5.17 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 01 | 817 | 0.7− | 1.2− | 2004 03 12 | 644 | 0.1− | 0.3+ | 2004 03 30 | 704 | 1.0+ | 0.1+ | | |
| 1996 10 01 | 817 | 0.4− | 0.3+ | 2004 03 12 | 644 | 0.1+ | 0.1+ | 2004 03 30 | 704 | 0.7+ | 0.0 | | |
| 1996 10 01 | 817 | 0.2− | 0.4− | 2004 03 12 | 644 | 0.4+ | 0.2+ | 2004 03 30 | 704 | 0.4+ | 0.2− | | |
| 1996 10 02 | 817 | 0.1+ | 0.2− | 2004 03 16 | 704 | 0.0 | 0.3− | 2004 03 30 | 704 | 1.0+ | 0.9+ | | |
| 1996 10 02 | 817 | 0.6+ | 0.1+ | 2004 03 16 | 704 | 0.3− | 0.5+ | 2004 03 30 | 704 | 0.2− | 0.0 | | |
| 1996 10 02 | 817 | (1.5+ | 3.1−) | 2004 03 16 | 704 | 0.6+ | 0.4− | 2004 04 21 | 704 | 0.4− | 0.2− | | |
| 2001 09 12 | 704 | 0.8− | 1.3+ | 2004 03 16 | 704 | 0.2+ | 0.3− | 2004 04 21 | 704 | 0.1+ | 0.3+ | | |
| 2001 09 12 | 704 | 0.1− | 1.4+ | 2004 03 16 | 704 | 0.3+ | 0.4+ | 2004 04 21 | 704 | 0.0 | 0.2− | | |
| 2001 09 12 | 704 | (0.8− | 1.6+) | 2004 03 18 | 704 | 0.4+ | 0.4+ | 2004 04 21 | 704 | 0.2+ | 0.0 | | |
| 2001 09 12 | 704 | (0.1+ | 2.5+) | 2004 03 18 | 704 | 0.1− | 0.2+ | 2004 04 21 | 704 | 0.9− | 0.8+ | | |
| 2001 09 12 | 704 | 0.2− | 1.5+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.0 | | |
| 2001 09 19 | 704 | 0.1+ | 1.1+ | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2004 04 25 | 691 | 0.0 | 0.3+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2004 03 18 | 704 | 0.5+ | 0.7+ | 2004 04 25 | 691 | 0.1+ | 0.0 | | |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.3+ | | |
| 2001 09 19 | 704 | 0.7+ | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 08 16 | 644 | 0.5− | 0.4+ | | |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2004 03 18 | 704 | (0.3+ | 1.6+) | 2006 08 16 | 644 | 0.4− | 0.4+ | | |
| 2001 09 21 | 704 | 1.0− | 0.6+ | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 08 17 | 644 | 0.6− | 0.5+ | | |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2004 03 18 | 704 | 0.9+ | 0.8+ | 2006 08 17 | 644 | 0.2− | 0.1+ | | |
| 2001 09 21 | 704 | 1.3− | 0.7+ | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 1.0− | 0.5+ | | |
| 2002 12 05 | 704 | 0.0 | 0.8+ | 2004 03 20 | 704 | 0.4+ | 0.0 | 2006 08 20 | 644 | 0.5− | 0.2+ | | |
| 2002 12 05 | 704 | 0.0 | 1.0+ | 2004 03 20 | 704 | 0.4− | 1.3− | 2006 08 20 | 644 | 0.2− | 0.8+ | | |
| 2002 12 05 | 704 | 0.1− | 1.5+ | 2004 03 20 | 704 | 0.1+ | 0.7+ | 2006 08 20 | 644 | 0.3− | 0.8+ | | |
| 2002 12 05 | 704 | 0.1+ | 1.0+ | 2004 03 20 | 704 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.1+ | 1.1+ | | |
| 2004 02 17 | 291 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 703 | (2.2+ | 1.9−) | | |
| 2004 02 17 | 291 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.5− | 1.5+ | | |
| 2004 02 17 | 291 | 0.3− | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.8+ | 2006 09 14 | 703 | 0.4− | 0.6− | | |
| 2004 02 23 | 704 | 0.7+ | 0.0 | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2004 02 23 | 704 | 0.3− | 0.2+ | 2004 03 27 | 704 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.4− | 0.0 | | |
| 2004 02 23 | 704 | 0.1+ | 0.8− | 2004 03 29 | 691 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1− | | |
| 2004 02 23 | 704 | 0.8+ | 0.2− | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2+ | | |
| 2004 02 23 | 704 | 1.4+ | 0.1+ | 2004 03 29 | 691 | 0.2− | 0.3+ | | | | | | |

**(139919)∗ 2001 RF$_{121}$ = 2001 QL$_{322}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 254.14657 | | (2000.0) | | | |
| $n$ | 0.18487655 | $\omega$ | 71.78813 | | +0.13013034 | −0.99094437 |
| $a$ | 3.0517444 | $\Omega$ | 10.89501 | | +0.83062634 | +0.09072871 |
| $e$ | 0.0441261 | $i$ | 10.08460 | | +0.54141110 | +0.09898260 |
| $P$ | 5.33 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | 0.7− | 0.6+ | 2004 01 30 | 691 | 0.2− | 0.2+ | 2004 03 20 | 699 | 1.0+ | 1.5+ | | |
| 2001 08 25 | 644 | 1.1− | 1.4+ | 2004 01 30 | 691 | 0.0 | 0.3+ | 2004 03 30 | 691 | 0.1+ | 0.3− | | |
| 2001 08 25 | 644 | 0.5− | 0.9+ | 2004 01 30 | 691 | 0.3+ | 0.4+ | 2004 03 30 | 691 | 0.2+ | 0.2− | | |
| 2001 09 12 | 704 | 0.8+ | 0.3+ | 2004 02 25 | 704 | 1.2+ | 0.7− | 2004 03 30 | 691 | 0.4+ | 0.2− | | |
| 2001 09 12 | 704 | 0.1+ | 1.0+ | 2004 02 25 | 704 | 1.2+ | 0.7+ | 2004 03 31 | 691 | 0.5+ | 0.2− | | |
| 2001 09 12 | 704 | 0.8+ | 0.8+ | 2004 02 25 | 704 | 0.9− | 0.5− | 2004 03 31 | 691 | 0.4+ | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 1.1+ | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2004 03 31 | 691 | 0.5+ | 0.3− |
| 2001 09 12 | 704 | 0.8+ | 0.1− | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 08 16 | E12 | 1.1− | 0.7+ |
| 2001 09 19 | 704 | 0.8− | 0.8+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 08 16 | E12 | 0.5− | 0.4+ |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2004 03 11 | 644 | 0.3+ | 1.0+ | 2006 08 16 | E12 | 0.4− | 1.1+ |
| 2001 09 19 | 704 | 1.3+ | 0.9+ | 2004 03 11 | 644 | 0.1+ | 0.9+ | 2006 08 16 | E12 | 0.2+ | 0.5− |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2004 03 11 | 644 | 0.4+ | 0.6+ | 2006 08 20 | 644 | 0.2− | 0.3+ |
| 2001 09 19 | 704 | 0.6− | 0.2− | 2004 03 15 | 704 | 1.9− | 1.3+ | 2006 08 20 | 644 | 0.3− | 0.5+ |
| 2001 09 24 | 644 | 1.2− | 0.3+ | 2004 03 15 | 704 | 0.9− | 0.3+ | 2006 08 20 | 644 | 0.1− | 0.4+ |
| 2001 09 24 | 644 | 1.0− | 0.7+ | 2004 03 15 | 704 | 0.6− | 0.3+ | 2006 08 23 | 644 | 0.1− | 0.0 |
| 2001 09 24 | 644 | 1.4− | 0.4+ | 2004 03 15 | 704 | 0.6− | 0.8+ | 2006 08 23 | 644 | 0.2− | 0.5+ |
| 2001 10 17 | 644 | (2.1− | 0.2−) | 2004 03 15 | 704 | 0.7− | 0.9+ | 2006 08 23 | 644 | 0.2− | 0.4+ |
| 2001 10 17 | 644 | 1.7− | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 644 | 0.3− | 0.5+ |
| 2001 10 17 | 644 | 1.7− | 0.4− | 2004 03 19 | 704 | 0.9+ | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.5+ |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.5+ |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 644 | 0.4− | 0.7+ |
| 2002 12 05 | 704 | 0.3+ | 1.5+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.3+ |
| 2004 01 27 | 691 | 0.0 | 0.4+ | 2004 03 20 | 699 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.6+ |
| 2004 01 27 | 691 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.0 | 0.7+ | | | | |
| 2004 01 27 | 691 | 0.1− | 0.3+ | 2004 03 20 | 699 | 0.1+ | 0.6+ | | | | |

**(139920)∗ 2001 RQ$_{122}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.68962 | | (2000.0) | | +0.75268523 | +0.65734134 |
| $n$ | 0.19648993 | $\omega$ | 180.42101 | | −0.60388943 | +0.71167189 |
| $a$ | 2.9302805 | $\Omega$ | 138.40317 | | −0.26226419 | +0.24784166 |
| $e$ | 0.0683999 | $i$ | 3.19292 | | | |
| $P$ | 5.02 | $H$ | 15.5 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2+ | 0.5+ | 2001 10 17 | 644 | 0.1+ | 0.6+ | 2005 06 30 | 691 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2004 04 14 | 621 | 0.8+ | 0.1+ | 2005 06 30 | 691 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.6+ | 0.5− | 2004 04 14 | 621 | 1.0+ | 0.2− | 2005 07 04 | 691 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2004 04 14 | 621 | 0.6+ | 0.1+ | 2005 07 04 | 691 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.2− | 0.7− | 2004 04 15 | 621 | 0.6− | 0.3+ | 2005 07 04 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2004 04 15 | 621 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.1− | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2004 04 15 | 621 | 0.3− | 0.5+ | 2006 08 23 | 644 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2004 04 16 | 621 | 0.4− | 0.6+ | 2006 08 23 | 644 | 0.5+ | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2004 04 16 | 621 | 0.5− | 0.9+ | 2006 09 16 | 699 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.5− | 0.1+ | 2005 05 20 | G96 | 0.1+ | 0.4− | 2006 09 16 | 699 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2005 05 20 | G96 | 0.2+ | 0.2− | 2006 09 16 | 699 | 0.8+ | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2005 05 20 | G96 | 0.2− | 0.0 | 2006 09 16 | 699 | 1.3− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2005 05 20 | G96 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.8− |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.7− |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.6− |
| 2001 10 17 | 644 | 0.0 | 0.1+ | 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2001 10 17 | 644 | 0.1− | 0.2+ | 2005 06 30 | 691 | 0.1− | 0.1+ | | | | |

**(139921)∗ 2001 RR$_{123}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.96524 | | (2000.0) | | +0.52591602 | −0.85025950 |
| $n$ | 0.21423205 | $\omega$ | 355.55690 | | +0.78110267 | +0.47272633 |
| $a$ | 2.7661756 | $\Omega$ | 62.71179 | | +0.33658721 | +0.23149214 |
| $e$ | 0.1343835 | $i$ | 1.39951 | | | |
| $P$ | 4.60 | $H$ | 16.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 20 | 691 | 0.3+ | 0.3+ | 2003 01 31 | 704 | 0.5+ | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1999 04 20 | 691 | 0.5− | 0.5− | 2003 01 31 | 704 | 0.9+ | 1.3+ | 2006 11 11 | 703 | 0.3− | 1.0+ |
| 1999 04 20 | 691 | 0.2− | 0.4− | 2003 01 31 | 704 | (2.0+ | 1.5+) | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 09 12 | 704 | 0.5− | 0.0 | 2003 02 02 | 608 | 0.2+ | 0.9+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 09 12 | 704 | 0.2− | 0.3− | 2003 02 02 | 608 | 0.4− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2003 02 02 | 608 | 0.4+ | 0.8+ | 2006 11 12 | 703 | 0.1− | 0.3− |
| 2001 09 12 | 704 | 0.3− | 0.7+ | 2004 05 23 | 691 | 1.0+ | 0.3+ | 2006 11 12 | 703 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2004 05 23 | 691 | 0.5+ | 0.4+ | 2006 11 12 | 703 | 0.2− | 0.2− |
| 2001 09 19 | 699 | 0.6+ | 1.1− | 2004 05 23 | 691 | 0.3+ | 0.7+ | 2006 11 12 | 703 | 0.1− | 0.4− |
| 2001 09 19 | 699 | 0.9+ | 0.2+ | 2005 06 08 | 691 | 0.1+ | 0.4− | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2001 09 19 | 699 | 0.0 | 0.2+ | 2005 06 08 | 691 | 0.5− | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2001 09 19 | 699 | 1.4+ | 0.3+ | 2005 06 08 | 691 | 0.5− | 0.4− | 2006 11 13 | G96 | 0.4+ | 0.6− |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2006 07 22 | G96 | (1.4+ | 1.8−) | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 07 22 | G96 | 0.4− | 0.4− | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2006 07 22 | G96 | 0.6− | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2006 07 22 | G96 | 0.5+ | 0.3+ | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.8+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 11 18 | 704 | 1.2− | 0.0 |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2006 08 28 | 703 | 0.9+ | 0.9− | 2006 11 18 | 704 | 0.9− | 0.9+ |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 703 | (2.3+ | 0.5+) | 2006 11 18 | 704 | 0.2− | 1.3+ |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 0.5+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.2+ |
| 2001 09 25 | 704 | 0.5− | 0.6+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2001 09 25 | 704 | 0.8− | 0.6+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | (0.6+ | 1.9+) |
| 2001 09 25 | 704 | (0.8− | 1.6+) | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 1.0− | 0.4+ |
| 2001 09 25 | 704 | 0.4− | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2001 09 25 | 704 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2001 09 25 | 704 | 1.2− | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.1− | 0.3− |
| 2001 09 25 | 704 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 0.5− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 10 17 | 644 | 0.0 | 0.9+ | 2006 10 28 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.6− |
| 2001 10 17 | 644 | 0.7− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2001 10 17 | 644 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2003 01 01 | 291 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2003 01 01 | 291 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.6− |
| 2003 01 01 | 291 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.1− | 0.8+ |
| 2003 01 27 | 699 | (3.5+ | 1.4+) | 2006 11 08 | 644 | 0.1− | 0.4− | 2006 11 27 | 703 | 1.1+ | 2.1+ |
| 2003 01 27 | 699 | (1.7+ | 0.2−) | 2006 11 08 | 644 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2003 01 27 | 699 | (3.4+ | 1.5+) | 2006 11 08 | 644 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.2− | 1.0+ |
| 2003 01 27 | 699 | (2.0+ | 0.2+) | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.6− |
| 2003 01 30 | 699 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.4− |
| 2003 01 30 | 699 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.2+ |
| 2003 01 30 | 699 | 0.1− | 1.1+ | 2006 11 11 | 703 | (3.8+ | 1.7+) | 2006 11 29 | 704 | 0.6+ | 0.5+ |
| 2003 01 30 | 699 | (0.4+ | 1.6+) | 2006 11 11 | 703 | (1.6+ | 0.4−) | | | | |
| 2003 01 31 | 704 | (0.1− | 1.7+) | 2006 11 11 | 703 | 1.1− | 0.7+ | | | | |

**(139922)∗ 2001 RV$_{123}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 285.56346 | | (2000.0) | | −0.21198077 | −0.97693011 |
| $n$ | 0.21289862 | $\omega$ | 29.32103 | | +0.89126719 | −0.20413581 |
| $a$ | 2.7777137 | $\Omega$ | 72.92752 | | +0.40088272 | −0.06273867 |
| $e$ | 0.0274608 | $i$ | 1.55361 | | | |
| $P$ | 4.63 | $H$ | 14.9 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.4− | 0.0 | 2003 01 04 | 704 | 1.0+ | 1.1+ | 2006 09 25 | 683 | (1.9+ | 1.0−) |
| 2001 08 24 | 704 | 0.3− | 0.2+ | 2003 01 04 | 704 | 1.4+ | 1.2+ | 2006 09 25 | 683 | (3.8+ | 3.2+) |
| 2001 08 24 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.9+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.1− |
| 2001 08 24 | 704 | 0.3+ | 0.2− | 2003 01 08 | 704 | 0.9− | 1.1+ | 2006 09 30 | 683 | 0.1+ | 0.4− |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2003 01 08 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2001 09 12 | 704 | 0.6+ | 0.1+ | 2003 01 08 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 683 | 0.4− | 0.9+ |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.6+ | 0.3− |
| 2001 09 12 | 704 | 0.7− | 0.9+ | 2004 03 15 | 703 | 0.9− | 0.0 | 2006 09 30 | 683 | 0.7− | 1.5+ |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2004 03 15 | 703 | (2.1− | 0.4+) | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2004 03 15 | 703 | (0.4− | 3.1−) | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2004 03 15 | 703 | (4.6− | 1.5+) | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.9+ | 2004 03 16 | 704 | 1.2+ | 1.0+ | 2006 10 11 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2004 03 16 | 704 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 09 19 | 644 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 644 | 0.2− | 0.9+ | 2004 03 18 | 704 | 0.1− | 0.7− | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2001 09 19 | 644 | 0.5− | 0.8+ | 2004 03 18 | 704 | 0.7+ | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2004 03 18 | 704 | 0.4+ | 1.2+ | 2006 10 12 | 644 | 0.4+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.9− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.9+ | 2006 10 15 | 691 | 0.3+ | 0.0 | | |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2004 03 18 | 704 | (0.1+ | 1.5+) | 2006 10 15 | 691 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2004 03 23 | 691 | 0.1− | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.5− | 0.1+ | | |
| 2001 09 24 | 704 | 0.2− | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.7+ | 2006 10 19 | 691 | 0.2− | 0.2+ | | |
| 2001 09 24 | 704 | 0.0 | 0.2+ | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ | | |
| 2001 09 24 | 704 | 0.2− | 0.2+ | 2004 03 31 | 704 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.4− | 0.5+ | 2004 03 31 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2− | | |
| 2001 09 24 | 704 | 0.1+ | 0.7+ | 2004 03 31 | 704 | 0.6+ | 1.4+ | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2001 09 25 | 704 | 1.4− | 0.1+ | 2004 03 31 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.1− | | |
| 2001 09 25 | 704 | 1.0− | 0.7+ | 2004 04 09 | E12 | (0.1− | 1.8+) | 2006 10 21 | 644 | 0.4+ | 0.1− | | |
| 2001 09 25 | 704 | 0.2− | 0.6+ | 2004 04 09 | E12 | (1.2− | 1.6+) | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 09 25 | 704 | 1.2− | 0.7+ | 2004 04 09 | E12 | (0.6− | 2.3+) | 2006 10 23 | 691 | 0.7− | 0.1+ | | |
| 2001 09 25 | 704 | 1.1− | 0.2+ | 2004 04 09 | E12 | (1.0− | 1.7+) | 2006 10 23 | 691 | 0.5− | 0.1+ | | |
| 2001 09 25 | 704 | 0.5− | 0.6+ | 2004 04 10 | 703 | 1.1+ | 0.9+ | 2006 10 23 | 691 | 0.7− | 0.0 | | |
| 2001 09 25 | 704 | 0.8− | 0.7+ | 2004 04 10 | 703 | 0.0 | 1.4+ | 2006 10 28 | 691 | 0.4+ | 0.2+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.5+ | 2004 04 10 | 703 | 0.9+ | 0.6− | 2006 10 28 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 11 | 704 | 1.3+ | 0.2+ | 2004 04 10 | 703 | (0.4+ | 1.6+) | 2006 10 28 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 11 | 704 | 0.5+ | 0.9+ | 2004 04 12 | 699 | 0.5− | 0.3+ | 2006 10 28 | 704 | 0.5− | 0.5− | | |
| 2001 10 11 | 704 | 0.4− | 1.0+ | 2004 04 12 | 699 | 0.1+ | 0.6+ | 2006 10 28 | 704 | 1.4+ | 1.2− | | |
| 2001 10 13 | 704 | (2.9+ | 0.9+) | 2004 04 12 | 699 | 0.3+ | 0.2+ | 2006 10 28 | 704 | 0.4− | 0.7− | | |
| 2001 10 13 | 704 | 0.7− | 1.0+ | 2004 04 12 | 699 | 0.4− | 0.3+ | 2006 10 28 | 704 | 0.2+ | 0.9− | | |
| 2001 10 13 | 704 | 0.2− | 0.5− | 2004 04 15 | 699 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.2− | 0.1− | | |
| 2001 10 13 | 704 | 0.1+ | 1.0+ | 2004 04 15 | 699 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.1− | | |
| 2001 10 17 | 644 | 0.3+ | 0.7+ | 2004 04 15 | 699 | 0.2− | 0.8+ | 2006 11 11 | 703 | 0.7− | 0.4+ | | |
| 2001 10 17 | 644 | 0.4+ | 0.7+ | 2004 04 15 | 699 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.3− | | |
| 2001 10 17 | 644 | 0.4+ | 0.3+ | 2004 04 16 | 704 | 0.9+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.3− | | |
| 2001 10 17 | 644 | 0.6+ | 0.5+ | 2004 04 16 | 704 | (1.5+ | 0.6−) | 2006 11 14 | G96 | 0.1+ | 0.6− | | |
| 2001 10 17 | 644 | 0.5+ | 0.7+ | 2004 04 16 | 704 | 0.9+ | 0.4− | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2001 10 17 | 644 | 0.1+ | 0.5+ | 2004 04 16 | 704 | 0.9+ | 0.4− | 2006 11 14 | G96 | 0.0 | 0.4− | | |
| 2001 10 24 | 704 | (2.3+ | 2.1+) | 2004 04 16 | 704 | 0.1+ | 0.9+ | 2006 11 17 | 703 | 0.5− | 0.6− | | |
| 2001 10 24 | 704 | 0.9+ | 0.2+ | 2004 04 16 | 644 | 0.5+ | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.2− | | |
| 2001 10 24 | 704 | 0.3− | 1.1+ | 2004 04 16 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.5− | | |
| 2001 10 24 | 704 | (1.0+ | 2.0−) | 2004 04 16 | 644 | 0.5+ | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.6− | | |
| 2001 10 24 | 704 | 1.1+ | 1.3− | 2005 06 08 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.9+ | | |
| 2002 12 02 | 704 | 0.2+ | 0.1+ | 2005 06 08 | 691 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.6+ | 0.5− | | |
| 2002 12 02 | 704 | 0.7+ | 0.7+ | 2005 06 08 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.2+ | 1.6+ | | |
| 2002 12 02 | 704 | 0.7− | 0.7+ | 2005 06 26 | G96 | 0.3− | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.1+ | | |
| 2002 12 05 | 704 | 0.0 | 1.2+ | 2005 06 26 | 644 | 0.7− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 1.1− | | |
| 2002 12 05 | 704 | 0.5− | 0.6+ | 2005 06 26 | G96 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2002 12 05 | 704 | 0.4− | 0.1+ | 2005 06 26 | G96 | 0.9− | 0.6+ | 2006 11 19 | 704 | 0.8+ | 0.4− | | |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2005 06 26 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2005 06 26 | G96 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.3− | | |
| 2002 12 31 | 704 | 0.8− | 0.3− | 2005 06 26 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.2+ | | |
| 2002 12 31 | 704 | 1.0− | 0.2− | 2006 07 25 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.1− | | |
| 2002 12 31 | 704 | 1.3− | 0.0 | 2006 07 25 | G96 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.4− | 0.3− | | |
| 2002 12 31 | 704 | 0.4− | 0.2+ | 2006 07 25 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2002 12 31 | 704 | 0.8− | 0.1+ | 2006 07 25 | G96 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2003 01 04 | 704 | (1.9+ | 0.0 ) | 2006 09 25 | 683 | 0.5+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |

**(139923)∗ 2001 RX$_{124}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.75368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19504590 | $\omega$ | 357.58719 | | +0.91671763 | −0.39851950 | |
| $a$ | 2.9447256 | $\Omega$ | 25.95637 | | +0.36764782 | +0.81350292 | |
| $e$ | 0.1131039 | $i$ | 3.73058 | | +0.15640931 | +0.42355072 | |
| $P$ | 5.05 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | (0.7+ | 1.8+) | 2001 09 25 | 704 | (0.7+ | 1.6+) | 2004 03 26 | 691 | 0.3+ | 0.0 | | |
| 2001 08 16 | 704 | 0.1− | 0.5+ | 2001 09 25 | 704 | 0.8− | 0.9+ | 2004 04 12 | 691 | 0.1+ | 0.6+ | | |
| 2001 08 16 | 704 | 0.7− | 0.5+ | 2001 09 25 | 704 | 0.4− | 0.5+ | 2004 04 12 | 691 | 0.4+ | 0.5+ | | |
| 2001 08 16 | 704 | 1.5− | 1.1+ | 2001 09 25 | 704 | 0.9− | 0.4+ | 2004 04 12 | 691 | 0.1+ | 0.9+ | | |
| 2001 08 24 | 704 | 1.1− | 0.6− | 2001 09 25 | 704 | 0.2− | 0.5+ | 2006 08 27 | 699 | 0.8− | 0.6+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.5+ | 2001 09 25 | 704 | 1.2− | 0.4+ | 2006 08 27 | 699 | 0.8− | 0.1− | | |
| 2001 08 24 | 704 | 0.7− | 1.1+ | 2001 09 25 | 704 | 0.1− | 0.6+ | 2006 08 27 | 699 | 0.4+ | 0.4+ | | |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2001 09 25 | 704 | 0.7− | 0.1+ | 2006 08 27 | 699 | 0.3− | 0.1+ | | |
| 2001 09 12 | 704 | 0.4+ | 0.0 | 2001 09 25 | 704 | 0.1− | 0.9+ | 2006 08 28 | 704 | 1.1+ | 0.5− | | |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2001 10 11 | 704 | 0.3− | 1.2+ | 2006 08 28 | 704 | 0.6− | 0.4− | | |
| 2001 09 12 | 704 | 0.8− | 0.3+ | 2001 10 11 | 704 | (1.6− | 1.3+) | 2006 08 28 | 704 | 0.8+ | 0.2− | | |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2001 10 11 | 704 | (1.5− | 2.0+) | 2006 08 28 | 704 | 0.2+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.2− | 2001 10 11 | 704 | 0.9− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.4− | | |
| 2001 09 19 | 704 | 0.7+ | 0.9− | 2001 10 17 | 644 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.4+ | 1.2− | | |
| 2001 09 19 | 704 | 0.3+ | 0.6− | 2001 10 17 | 644 | 0.6+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.8+ | | |
| 2001 09 19 | 704 | 0.0 | 0.4− | 2001 10 17 | 644 | 0.5+ | 0.2− | 2006 09 14 | 703 | 1.2− | 1.2− | | |
| 2001 09 19 | 644 | 0.3− | 0.1+ | 2001 10 17 | 644 | 0.7+ | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.0 | | |
| 2001 09 19 | 644 | 0.7− | 0.3+ | 2001 10 17 | 644 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.4+ | | |
| 2001 09 19 | 644 | 0.7− | 0.3+ | 2001 10 17 | 644 | 0.4+ | 0.1− | 2006 09 25 | 699 | 0.3− | 0.3+ | | |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2001 10 23 | 704 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.5+ | 1.1+ | 2001 10 23 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5− | | |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2001 10 23 | 704 | 1.1+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.0 | | |
| 2001 09 21 | 704 | 0.4− | 0.8+ | 2001 10 23 | 704 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 1.0+ | 0.3− | | |
| 2001 09 21 | 704 | 0.5− | 1.4+ | 2003 01 05 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | (0.6− | 1.7+) | | |
| 2001 09 24 | 704 | 0.2− | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.6+ | | |
| 2001 09 24 | 704 | 0.4+ | 0.1+ | 2003 01 05 | 704 | 0.5+ | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 24 | 704 | 0.4− | 1.0+ | 2003 01 05 | 704 | 0.8+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 24 | 704 | (1.9− | 0.6+) | 2003 01 09 | 704 | 0.5− | 1.3+ | 2006 11 17 | G96 | 0.0 | 0.5− | | |
| 2001 09 24 | 704 | 0.2+ | 1.2+ | 2003 01 09 | 704 | 0.9− | 1.1+ | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2001 09 24 | 704 | (0.3− | 2.2+) | 2003 01 09 | 704 | (1.8− | 2.1+) | 2006 11 17 | G96 | 0.4+ | 0.2− | | |
| 2001 09 24 | 704 | 0.0 | 0.1+ | 2004 03 26 | 691 | 0.1+ | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.5− | | |
| 2001 09 25 | 704 | 0.6− | 0.1+ | 2004 03 26 | 691 | 0.6+ | 0.6+ | | | | | | |

**(139924)∗ 2001 RQ$_{125}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.36601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19162068 | $\omega$ | 333.25479 | | +0.11628162 | −0.99078492 | |
| $a$ | 2.9797132 | $\Omega$ | 110.00093 | | +0.92397785 | +0.08225901 | |
| $e$ | 0.2293973 | $i$ | 4.23869 | | +0.36433984 | +0.10760440 | |
| $P$ | 5.14 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 22 | 566 | 0.5+ | 0.5+ | 2003 01 05 | 704 | 0.5+ | 0.8+ | 2003 02 21 | 699 | 0.6+ | 0.4− | | |
| 1998 02 22 | 566 | 0.5+ | 0.2+ | 2003 01 05 | 704 | 0.3− | 0.5+ | 2003 02 21 | 699 | 0.1− | 0.0 | | |
| 1998 02 22 | 566 | 0.6+ | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.7+ | 2003 02 21 | 699 | 0.6+ | 1.0+ | | |
| 1998 03 04 | 704 | (2.5− | 0.1+) | 2003 01 08 | 608 | 0.5+ | 0.7+ | 2003 03 06 | 704 | 0.2− | 0.8+ | | |
| 1998 03 04 | 704 | 1.4− | 0.1+ | 2003 01 08 | 608 | 0.6+ | 0.6+ | 2003 03 06 | 704 | 0.4− | 0.6+ | | |
| 1998 03 04 | 704 | 0.4− | 1.3− | 2003 01 08 | 608 | 0.8+ | 0.8+ | 2003 03 06 | 704 | 0.3− | 0.7+ | | |
| 1998 03 04 | 704 | (6.2− | 1.2−) | 2003 01 09 | 704 | 0.0 | 0.6− | 2003 03 06 | 704 | (0.4− | 1.7+) | | |
| 2001 08 25 | 644 | 0.4+ | 0.2− | 2003 01 09 | 704 | 0.6+ | 0.5− | 2003 03 06 | 704 | 0.4− | 0.6+ | | |
| 2001 08 25 | 644 | 0.3+ | 0.0 | 2003 01 09 | 704 | 0.3+ | 1.0− | 2003 03 08 | 704 | 0.7+ | 0.4+ | | |
| 2001 08 25 | 704 | 0.6− | 0.1+ | 2003 01 09 | 704 | 0.2+ | 0.2− | 2003 03 08 | 704 | 0.1+ | 1.3+ | | |
| 2001 08 25 | 704 | 0.2− | 0.3+ | 2003 01 09 | 704 | 0.8+ | 0.1+ | 2003 03 08 | 704 | (1.8− | 0.9−) | | |
| 2001 08 25 | 644 | 0.4+ | 0.2− | 2003 01 17 | 644 | 0.0 | 0.3− | 2003 03 08 | 704 | (1.7− | 0.7+) | | |
| 2001 08 25 | 704 | 0.0 | 0.1− | 2003 01 17 | 644 | 0.1− | 0.4− | 2003 03 08 | 704 | (0.7− | 1.7+) | | |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2003 01 17 | 644 | 0.3− | 0.4− | 2003 03 08 | 704 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2003 01 27 | 704 | 0.6+ | 0.3− | 2003 03 08 | 704 | 1.1− | 1.5+ | | |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2003 01 27 | 704 | 1.2− | 0.0 | 2003 03 08 | 704 | (2.1− | 0.6−) | | |
| 2001 09 12 | 704 | 0.3+ | 0.1− | 2003 01 27 | 704 | 0.3− | 0.5+ | 2006 08 16 | 644 | 0.0 | 0.2+ | | |
| 2001 09 12 | 704 | 0.2− | 0.4− | 2003 01 27 | 704 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.2+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2003 01 27 | 704 | 0.7+ | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.3+ | | |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2003 01 28 | 608 | 0.3− | 0.9− | 2006 08 16 | 644 | 0.3+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2003 01 28 | 608 | 0.2− | 0.9− | 2006 08 16 | 644 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2003 01 28 | 608 | 0.0 | 0.7− | 2006 08 16 | 644 | 0.2+ | 0.0 | | |
| 2001 09 19 | 644 | 0.0 | 0.2− | 2003 01 30 | 699 | 1.3+ | 0.4+ | 2006 08 17 | 644 | 0.3− | 0.1+ | | |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2003 01 30 | 699 | 0.6+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 19 | 644 | 0.2− | 0.1+ | 2003 01 30 | 699 | 0.3+ | 0.1+ | 2006 08 17 | 644 | 0.4− | 0.3+ | | |
| 2001 09 19 | 644 | 0.3+ | 0.0 | 2003 01 30 | 699 | 1.2+ | 0.3− | 2006 08 18 | 644 | 0.5− | 0.3+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2003 02 01 | 704 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2003 02 01 | 704 | 0.5− | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2003 02 01 | 704 | 0.3− | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | (2.0+ | 0.3+) | 2003 02 01 | 704 | 0.6− | 0.7− | 2006 08 22 | 644 | 0.5+ | 0.2− |
| 2001 09 21 | 704 | 0.5− | 0.2− | 2003 02 01 | 704 | 0.8− | 0.5− | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2001 10 10 | 644 | 0.5+ | 0.4− | 2003 02 02 | 644 | 0.2+ | 0.8− | 2006 08 28 | 704 | 0.4− | 0.6− |
| 2001 10 10 | 644 | 0.5+ | 0.3− | 2003 02 02 | 644 | 0.0 | 0.9− | 2006 08 28 | 704 | 0.1+ | 1.5− |
| 2001 10 10 | 644 | 0.3+ | 0.6− | 2003 02 02 | 644 | 0.3+ | 0.8− | 2006 08 28 | 704 | (0.4− | 1.9−) |
| 2001 10 16 | 644 | 0.7+ | 0.1− | 2003 02 04 | 704 | 0.2− | 0.2+ | 2006 08 28 | 704 | 0.5− | 1.2+ |
| 2001 10 16 | 644 | 0.4+ | 0.1+ | 2003 02 04 | 704 | 0.5− | 0.0 | 2006 08 30 | 699 | 1.0+ | 0.5+ |
| 2001 10 16 | 644 | 0.8+ | 0.1+ | 2003 02 04 | 704 | 0.6− | 0.5+ | 2006 08 30 | 699 | 0.2− | 0.4+ |
| 2001 10 24 | 644 | 0.3− | 0.5− | 2003 02 04 | 704 | 0.4− | 0.3− | 2006 08 30 | 699 | (1.3− | 1.5+) |
| 2001 10 24 | 644 | 0.5− | 0.5− | 2003 02 04 | 704 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.2− | 0.1+ |
| 2001 10 24 | 644 | 0.1+ | 0.2− | 2003 02 09 | 608 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.9+ |
| 2002 12 05 | 704 | 0.2− | 0.5− | 2003 02 09 | 608 | 0.4− | 0.3+ | 2006 09 14 | 703 | 1.4− | 0.2+ |
| 2002 12 05 | 704 | 0.6− | 0.5− | 2003 02 09 | 608 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2003 02 19 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.2− | 0.7− | 2003 02 19 | 644 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | 0.2− | 0.4− | 2003 02 19 | 644 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.4+ | 0.3+ |
| 2002 12 31 | 704 | 0.7− | 0.5− | 2003 02 20 | 185 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.6+ | 0.2+ |
| 2002 12 31 | 704 | 0.4− | 0.2− | 2003 02 20 | 185 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.2+ | 2003 02 20 | 185 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2003 01 05 | 704 | 0.2+ | 0.3+ | 2003 02 21 | 699 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.4− | 0.2− |

**(139925)∗ 2001 RV$_{126}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 327.80846 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21577114 | $\omega$ | 3.71366 | | +0.33014135 | | −0.93990518 | | |
| $a$ | 2.7530060 | $\Omega$ | 67.02522 | | +0.86358482 | | +0.26350215 | | |
| $e$ | 0.0878638 | $i$ | 5.42802 | | +0.38108784 | | +0.21712870 | | |
| $P$ | 4.57 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 25 | 691 | 0.3+ | 0.2+ | 2004 03 31 | 704 | 1.1+ | 1.2+ | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 1995 05 25 | 691 | 0.0 | 0.3+ | 2004 04 19 | 704 | 0.6+ | 0.3− | 2006 11 10 | 644 | 0.5− | 0.0 |
| 1995 05 25 | 691 | 0.1+ | 0.0 | 2004 04 19 | 704 | 0.9+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2001 08 25 | 644 | 0.4− | 0.1+ | 2004 04 19 | 704 | 0.7− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2001 08 25 | 644 | 0.6− | 0.1− | 2004 04 19 | 704 | 0.4+ | 0.7+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2001 08 25 | 644 | 0.7− | 0.3+ | 2004 04 20 | 691 | 0.1− | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2001 09 12 | 704 | (1.6+ | 0.0 ) | 2004 04 20 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2004 04 20 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.6+ | 0.4− |
| 2001 09 12 | 704 | 0.3+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 0.8+ | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2001 09 12 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.6− | 2006 11 13 | 683 | (1.0− | 2.1−) |
| 2001 09 19 | 704 | 0.8− | 1.1+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 13 | 683 | 0.3− | 0.1− |
| 2001 09 19 | 704 | 0.6+ | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 683 | (2.7− | 1.2−) |
| 2001 09 19 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 1.1− | 0.9+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.9+ | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.7− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 10 10 | 644 | 0.4− | 0.7− | 2006 10 16 | 703 | 0.6+ | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2001 10 10 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2001 10 10 | 644 | 0.1− | 0.9− | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2001 10 24 | 644 | 0.2− | 0.5− | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2001 10 24 | 644 | 0.6− | 1.2− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2001 10 24 | 644 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2003 01 05 | 704 | (0.2+ | 2.5−) | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1+ | 1.0− |
| 2003 01 05 | 704 | (0.0 | 2.3−) | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.7− | 1.5+ |
| 2003 01 05 | 704 | (0.5− | 1.7−) | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.6− | 1.4+ |
| 2003 01 09 | 704 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | (1.9− | 0.1−) |
| 2003 01 09 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2003 01 09 | 704 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 28 | 683 | 0.3− | 0.0 |
| 2003 01 09 | 704 | 0.6+ | 0.8− | 2006 10 27 | 691 | 0.2− | 0.3− | 2006 11 28 | 683 | 0.4− | 0.1− |
| 2003 01 09 | 704 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.5+ | 1.1+ |
| 2003 02 01 | 704 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.3+ | 0.1− | 2006 11 28 | 683 | 1.7+ | 1.6+ |
| 2003 02 01 | 704 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.1− | 2006 11 28 | 704 | 0.6+ | 1.2+ |
| 2003 02 01 | 704 | 0.4− | 1.0+ | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 28 | 704 | 1.1+ | 0.4+ |
| 2003 02 01 | 704 | 0.3+ | 0.7+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2004 03 31 | 704 | 0.5+ | 1.2+ | 2006 11 08 | 644 | 0.2− | 0.2− | | | | |
| 2004 03 31 | 704 | 1.0+ | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.1− | | | | |

**(139926)∗ 2001 RO$_{128}$ = 2003 AU$_{33}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40529)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 342.16137 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22938048 | $\omega$ | 348.12323 | | +0.17610026 | | −0.98265153 | | |
| $a$ | 2.6430076 | $\Omega$ | 91.71377 | | +0.90784189 | | +0.13927775 | | |
| $e$ | 0.0508189 | $i$ | 3.33673 | | +0.38054146 | | +0.12246500 | | |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 01 | 691 | 0.4− | 0.1− | 2003 01 05 | 291 | 0.0 | 0.3+ | 2004 05 19 | 691 | 0.4+ | 0.2+ |
| 1995 03 01 | 691 | 0.2+ | 0.3− | 2003 01 08 | 704 | 0.4+ | 0.6+ | 2004 05 19 | 691 | 0.3+ | 0.3+ |
| 1995 03 01 | 691 | 0.4− | 0.8− | 2003 01 08 | 704 | 0.8+ | 0.0 | 2004 05 28 | 691 | 0.2+ | 0.4+ |
| 2001 09 12 | 704 | 0.3− | 1.3+ | 2003 01 08 | 704 | 0.5− | 0.4+ | 2004 05 28 | 691 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2003 01 08 | 704 | 0.9+ | 0.6+ | 2004 05 28 | 691 | 0.0 | 0.7+ |
| 2001 09 12 | 704 | 0.2− | 0.7+ | 2003 01 08 | 704 | 0.9+ | 0.1+ | 2005 08 30 | 644 | 0.2− | 0.0 |
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2003 01 25 | 699 | 0.2− | 0.1+ | 2005 08 30 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | (0.3+ | 1.9+) | 2003 01 25 | 699 | (0.8+ | 1.7+) | 2005 08 30 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | (0.1− | 1.6+) | 2003 01 25 | 699 | 0.8+ | 0.9+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.7+ | 0.0 | 2003 01 25 | 699 | 0.2+ | 1.0+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2004 04 25 | 691 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 1.0+ | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 1.1+ | 2004 04 25 | 691 | 0.1− | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.8− | 1.1+ | 2004 05 18 | 599 | 0.8+ | 0.8+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.7− | 0.5+ | 2004 05 18 | 599 | 0.3+ | 0.6+ | 2006 11 25 | 691 | 0.1+ | 0.3+ |
| 2003 01 05 | 291 | 0.4− | 0.4+ | 2004 05 18 | 599 | 0.3+ | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.2+ |
| 2003 01 05 | 291 | 0.1− | 0.5+ | 2004 05 19 | 691 | 0.5+ | 0.4+ | 2006 11 25 | 691 | 0.2+ | 0.3+ |

**(139927)∗ 2001 RC$_{129}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 328.34450 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22442366 | $\omega$ | 297.69456 | | +0.04172602 | | −0.99796919 | | |
| $a$ | 2.6817829 | $\Omega$ | 149.79685 | | +0.94707852 | | +0.02416109 | | |
| $e$ | 0.0715571 | $i$ | 5.48998 | | +0.31827852 | | +0.05893840 | | |
| $P$ | 4.39 | $H$ | 15.5 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | (0.3+ | 1.7+) | 2003 01 27 | 704 | 0.4+ | 0.1− | 2005 08 06 | 644 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.7+ | 0.2− | 2003 01 27 | 704 | (0.7+ | 1.7+) | 2005 08 06 | 644 | 0.3− | 0.2− |
| 2001 09 12 | 704 | 0.3+ | 0.6− | 2003 01 27 | 704 | 0.0 | 0.8+ | 2005 08 06 | 644 | 0.3− | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.8+ | 2003 01 27 | 704 | 0.3+ | 0.2+ | 2006 11 02 | 703 | (1.4− | 1.7−) |
| 2001 09 12 | 704 | 0.3+ | 0.5+ | 2003 01 28 | 704 | 0.6+ | 0.9+ | 2006 11 02 | 703 | 0.7− | 0.4− |
| 2001 09 12 | 704 | 0.7− | 0.7+ | 2003 01 28 | 704 | 0.3+ | 0.7+ | 2006 11 02 | 703 | 0.6− | 0.9− |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2003 01 28 | 704 | (0.1+ | 1.6+) | 2006 11 02 | 703 | (0.4− | 2.3−) |
| 2001 09 19 | 704 | 0.8− | 0.3− | 2003 01 28 | 704 | 0.5+ | 1.4+ | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 1.1+ | 2004 05 18 | 704 | 0.1+ | 0.9+ | 2006 11 15 | 703 | 0.4− | 0.5+ |
| 2001 09 19 | 704 | 0.3+ | 0.4− | 2004 05 18 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 1.0− | 1.6− |
| 2001 09 19 | 704 | 1.4− | 1.2+ | 2004 05 18 | 704 | 1.0+ | 0.9+ | 2006 11 15 | 703 | 0.1− | 0.6− |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2004 05 18 | 704 | (0.2+ | 2.1+) | 2006 11 20 | 704 | (2.1+ | 0.1−) |
| 2001 09 21 | 704 | 0.9+ | 0.6+ | 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.6− |
| 2001 09 21 | 704 | 0.9+ | 0.4+ | 2005 07 05 | 644 | 0.5− | 0.4− | 2006 11 20 | 704 | 1.1+ | 0.4− |
| 2001 09 21 | 704 | 0.4+ | 0.0 | 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.8− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 695 | 0.1− | 0.1− | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.7+ | 0.0 |
| 2001 10 20 | 695 | 0.1− | 0.1− | 2005 07 18 | 644 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.0 |
| 2003 01 07 | 704 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.8+ |
| 2003 01 07 | 704 | 0.2− | 0.2+ | 2005 07 28 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.7+ | 0.5+ |
| 2003 01 07 | 704 | 0.8− | 0.2+ | 2005 07 28 | 644 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.6+ | 0.2+ |
| 2003 01 07 | 704 | 1.1− | 0.4+ | 2005 07 28 | 644 | 0.2+ | 0.3+ | | | | |

**(139928)∗ 2001 RL$_{129}$ = 1992 SM$_9$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.28214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22011565 | $\omega$ | 282.43891 | | +0.52872724 | | +0.84827807 |
| $a$ | 2.7166609 | $\Omega$ | 19.56660 | | −0.74048782 | | +0.47798702 |
| $e$ | 0.0944297 | $i$ | 5.05806 | | −0.41487986 | | +0.22793141 |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.5− | 0.4− | 2001 09 24 | 704 | 0.2+ | 0.3− | 2005 07 06 | E12 | 0.1− | 0.2+ |
| 1992 09 27 | 691 | 0.7− | 0.0 | 2001 10 19 | 644 | 0.5− | 0.3+ | 2005 07 06 | E12 | 0.1+ | 0.4+ |
| 1992 09 27 | 691 | 0.7− | 0.5− | 2001 10 19 | 644 | 0.1− | 0.2+ | 2005 07 06 | E12 | 0.8− | 0.6+ |
| 1992 09 28 | 691 | 1.1+ | 1.2+ | 2001 10 19 | 644 | 0.3− | 0.2+ | 2005 08 04 | 644 | 0.3− | 0.4+ |
| 1992 09 28 | 691 | 0.3+ | 0.1+ | 2001 10 20 | 704 | 0.3+ | 0.4+ | 2005 08 04 | 644 | 0.2− | 0.4+ |
| 1992 09 28 | 691 | 0.1+ | 0.1− | 2001 10 20 | 704 | 0.1+ | 0.5− | 2005 08 04 | 644 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2001 10 20 | 704 | 0.5+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.0 | 0.0 | 2001 10 20 | 704 | 0.4− | 0.2− | 2006 10 13 | 691 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.7+ | 0.7+ | 2004 03 15 | 703 | (0.0 | 1.9+) | 2006 10 13 | 691 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.2− | 1.0+ | 2004 03 15 | 703 | (0.0 | 1.5+) | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2001 09 12 | 704 | 0.2+ | 0.8+ | 2004 03 15 | 703 | (1.9+ | 1.9+) | 2006 10 27 | 691 | 0.4− | 0.1− |
| 2001 09 19 | 699 | 0.1− | 0.1− | 2004 03 15 | 703 | (0.0 | 2.3+) | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 699 | 0.1+ | 1.0− | 2004 03 16 | 599 | 0.3+ | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 699 | (1.5− | 0.1−) | 2004 03 16 | 599 | 0.5+ | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 699 | 0.5− | 0.6+ | 2004 03 16 | 599 | 0.4+ | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.7+ | 2004 03 16 | 599 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.7+ | 0.5+ | 2004 03 19 | 704 | (2.5+ | 0.0 ) | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.8+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.2− | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 1.2+ | 2004 03 19 | 704 | 0.7+ | 1.1+ | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2004 03 19 | 704 | 0.0 | 0.8+ | 2006 11 09 | 644 | 0.5− | 0.3− |
| 2001 09 21 | 704 | 0.7− | 0.8+ | 2004 03 31 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.8− | 0.6+ | 2004 03 31 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.8+ | 0.5+ | 2004 03 31 | 691 | 0.3+ | 0.6+ | 2006 11 13 | 691 | 0.3+ | 0.1+ |
| 2001 09 24 | 704 | 0.0 | 0.3− | 2004 04 25 | 691 | 0.4+ | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2001 09 24 | 704 | 0.2− | 0.3+ | 2004 04 25 | 691 | 0.3+ | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.4+ |
| 2001 09 24 | 704 | 1.4+ | 0.7+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2001 09 24 | 704 | 0.0 | 0.2− | 2005 07 06 | E12 | 0.4− | 0.4+ | | | | |

**(139929)∗ 2001 RA$_{130}$ = 2004 EN$_5$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 60981)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.60826 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19242362 | $\omega$ | 357.28904 | | −0.95813318 | | −0.28212963 |
| $a$ | 2.9714183 | $\Omega$ | 166.02588 | | +0.26635336 | | −0.94081984 |
| $e$ | 0.0888385 | $i$ | 11.66442 | | +0.10505570 | | −0.18777885 |
| $P$ | 5.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 704 | 0.8− | 0.8− | 2004 03 15 | 703 | 0.8− | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.3+ |
| 1999 04 12 | 704 | (0.7+ | 3.6−) | 2004 03 15 | 704 | 0.2+ | 0.1− | 2004 03 28 | 703 | 0.3+ | 0.6− |
| 1999 04 12 | 704 | (0.4− | 3.6−) | 2004 03 15 | 703 | 0.0 | 0.1+ | 2004 04 12 | 703 | 0.2+ | 0.0 |
| 1999 04 12 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2004 04 12 | 703 | 1.2− | 0.5+ |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2004 04 12 | 703 | 0.9+ | 0.3+ |
| 2001 09 12 | 704 | (1.5− | 0.1−) | 2004 03 15 | 703 | 0.0 | 0.4+ | 2004 04 12 | 703 | 0.3− | 0.3− |
| 2001 09 12 | 704 | 0.0 | 0.5+ | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2004 04 25 | 699 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2004 03 16 | 333 | 0.3− | 0.6+ | 2004 04 25 | 699 | 1.0− | 1.2− |
| 2001 09 19 | 704 | 0.0 | 1.2+ | 2004 03 16 | 333 | 0.7− | 0.4+ | 2004 04 25 | 699 | 1.2+ | 0.1− |
| 2001 09 19 | 704 | (1.8+ | 1.6+) | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2004 04 25 | 699 | 1.4− | 0.2+ |
| 2001 09 19 | 704 | 0.4+ | 1.2+ | 2004 03 19 | 704 | 1.1+ | 0.7+ | 2006 08 19 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.9+ | 1.5+ | 2004 03 19 | 704 | 0.2+ | 0.7− | 2006 08 19 | 691 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.4+ | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.0 | 2006 08 19 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | (0.9− | 1.5+) | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 0.6− | 0.3− |
| 2001 09 21 | 704 | 0.4− | 1.5+ | 2004 03 22 | 704 | 0.2+ | 0.1− | 2006 08 27 | 699 | 1.5+ | 0.9+ |
| 2001 09 21 | 704 | (0.8− | 1.8+) | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.9− | 0.0 |
| 2001 09 21 | 704 | 1.2− | 0.8+ | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 1.1+ | 1.3+ |
| 2001 09 21 | 704 | 1.2− | 0.9+ | 2004 03 22 | 704 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.8+ |
| 2001 09 24 | 704 | 0.1− | 1.5+ | 2004 03 22 | 704 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.7− | 0.2− |
| 2001 09 24 | 704 | 0.7− | 0.9+ | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.1+ |
| 2001 09 24 | 704 | (0.5+ | 1.9+) | 2004 03 23 | 691 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.0 |
| 2001 09 24 | 704 | 0.0 | 1.1+ | 2004 03 23 | 691 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.7− | 0.8− |
| 2004 02 16 | 703 | (0.3− | 2.6+) | 2004 03 25 | 704 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.4− |
| 2004 02 16 | 703 | 0.6− | 0.3+ | 2004 03 25 | 704 | 0.7+ | 0.1− | 2006 09 12 | 703 | 1.1+ | 0.9+ |
| 2004 02 16 | 703 | 1.3− | 1.1+ | 2004 03 25 | 704 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.1− | 0.9+ |
| 2004 02 16 | 703 | 0.7− | 0.5− | 2004 03 26 | 704 | 0.4+ | 0.0 | 2006 09 16 | 699 | 0.2− | 0.6− |
| 2004 02 19 | 704 | 0.6+ | 1.4+ | 2004 03 26 | 704 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.3− | 0.5+ |
| 2004 02 19 | 704 | (1.6+ | 0.2−) | 2004 03 26 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.7+ |
| 2004 02 19 | 704 | 0.3+ | 0.6+ | 2004 03 26 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 699 | 0.7− | 0.1+ |
| 2004 02 19 | 704 | 0.7+ | 0.4+ | 2004 03 26 | 704 | 0.5+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2004 02 19 | 704 | 0.0 | 0.9+ | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2004 02 29 | 683 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 1.2− | 0.1+ |
| 2004 02 29 | 683 | 1.3+ | 1.4+ | 2004 03 27 | 704 | 0.4+ | 1.2+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2004 02 29 | 683 | 1.3+ | 0.7+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.9− |
| 2004 03 11 | 644 | 0.6− | 0.1+ | 2004 03 28 | 704 | (0.9+ | 1.5+) | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2004 03 11 | 644 | 0.4− | 0.3+ | 2004 03 28 | 703 | 0.6− | 0.4− | 2006 09 30 | 703 | 0.3− | 0.1− |
| 2004 03 11 | 644 | 0.2− | 0.1+ | 2004 03 28 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 1.2− |
| 2004 03 15 | 333 | 0.4− | 0.5+ | 2004 03 28 | 703 | 0.2+ | 0.8+ | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2004 03 15 | 703 | 0.3+ | 0.5+ | 2004 03 28 | 704 | 0.1+ | 0.9+ | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2004 03 15 | 333 | 0.7− | 0.2− | 2004 03 28 | 704 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.8+ |
| 2004 03 15 | 704 | 0.0 | 0.4+ | 2004 03 28 | 703 | 0.1− | 1.2− | 2006 11 27 | G96 | 0.3− | 0.2− |

**(139930)∗ 2001 RB$_{131}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.29599 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20422703 | $\omega$ | 43.04519 | | −0.17284649 | | −0.98405266 |
| $a$ | 2.8557963 | $\Omega$ | 56.94999 | | +0.88952108 | | −0.17427084 |
| $e$ | 0.0262866 | $i$ | 2.87253 | | +0.42293774 | | −0.03563754 |
| $P$ | 4.83 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.3− | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 2001 07 20 | 644 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.9+ |
| 2001 07 20 | 644 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.5− | 0.3+ |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2003 01 08 | 704 | 0.6− | 0.7+ | 2006 09 20 | 704 | 0.6+ | 0.6+ |
| 2001 09 12 | 704 | 1.0− | 0.3+ | 2003 01 08 | 704 | 1.1+ | 0.9− | 2006 09 20 | 704 | 1.4+ | 0.9+ |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.7− | 0.6+ | 2003 01 08 | 704 | 1.3+ | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.4+ |
| 2001 09 12 | 704 | 0.8− | 1.1− | 2003 01 08 | 704 | 0.5− | 0.9+ | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2001 09 18 | 699 | 0.4+ | 0.4+ | 2004 03 13 | 644 | 0.1+ | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2001 09 18 | 699 | (1.6− | 0.7+) | 2004 03 13 | 644 | 0.2+ | 0.9+ | 2006 10 02 | 691 | 0.3− | 0.0 |
| 2001 09 18 | 699 | 0.5− | 0.3− | 2004 03 13 | 644 | 0.2+ | 1.0+ | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.6− | 0.3− | 2004 03 19 | 704 | 0.8+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.9− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.1− | 2004 03 19 | 704 | 1.1+ | 0.7− | 2006 10 10 | 644 | 0.3− | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.6− | 2004 03 19 | 704 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.6− | 0.4+ |
| 2001 09 19 | 704 | 0.4− | 0.5+ | 2004 03 22 | 704 | 0.7+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | (0.1+ | 1.5+) | 2006 10 19 | 644 | 0.5− | 0.3+ |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2004 03 22 | 704 | (0.1+ | 1.7+) | 2006 10 19 | 644 | 0.3− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.8− | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.8+ | 2006 10 19 | 644 | 0.7− | 0.6+ | | |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 0.2− | 0.1− | 2004 03 28 | 704 | (1.8+ | 0.8+) | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2001 09 24 | 704 | 0.5+ | 0.9+ | 2004 03 28 | 704 | 1.1+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 24 | 704 | 0.4+ | 0.3+ | 2004 03 28 | 704 | (1.9+ | 0.6+) | 2006 10 20 | 644 | 0.3+ | 0.5+ | | |
| 2001 09 24 | 704 | 1.4+ | 0.4+ | 2004 04 20 | 691 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.5+ | 0.6+ | 2004 04 20 | 691 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2001 09 24 | 704 | 0.3+ | 1.3+ | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.4− | | |
| 2001 09 26 | 704 | 0.2− | 0.7+ | 2004 04 20 | 704 | 1.4− | 1.0+ | 2006 10 22 | 703 | 0.8− | 0.2+ | | |
| 2001 09 26 | 704 | 0.3− | 0.3+ | 2004 04 20 | 704 | 0.7− | 0.6+ | 2006 10 22 | 703 | 0.7− | 0.6− | | |
| 2001 09 26 | 704 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.1+ | 1.2+ | 2006 10 22 | 703 | 0.4− | 1.5+ | | |
| 2001 09 27 | 704 | 0.4− | 1.0+ | 2004 04 20 | 704 | 0.7− | 1.0+ | 2006 10 22 | G96 | 0.3+ | 0.1− | | |
| 2001 09 27 | 704 | 0.8− | 1.2+ | 2004 04 20 | 704 | 0.4+ | 0.8+ | 2006 10 22 | G96 | 0.2− | 0.1− | | |
| 2001 09 27 | 704 | 0.5− | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.2− | | |
| 2001 10 24 | 704 | 1.0+ | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.0 | 1.2− | | |
| 2001 10 24 | 704 | 0.6+ | 0.6− | 2006 09 06 | 644 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.2− | | |
| 2001 10 24 | 704 | 0.5+ | 1.0− | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.6− | | |
| 2001 10 24 | 704 | 0.2+ | 1.1− | 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.4− | | |
| 2003 01 04 | 704 | 0.3− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.1− | | |
| 2003 01 04 | 704 | 0.9− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 | | | | | | |
| 2003 01 04 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1− | | | | | | |

**(139931)∗ 2001 RL$_{131}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.98157 | | (2000.0) | | | |
| $n$ | 0.21202108 | $\omega$ | 156.91720 | | +0.66128846 | +0.74820525 |
| $a$ | 2.7853729 | $\Omega$ | 154.38075 | | −0.70615729 | +0.64508550 |
| $e$ | 0.0430781 | $i$ | 7.13766 | | −0.25306017 | +0.15509224 |
| $P$ | 4.65 | $H$ | 15.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 691 | 0.1− | 0.1+ | 2001 10 17 | 644 | 0.6− | 0.5+ | 2004 03 28 | 704 | 0.2− | 0.5+ | | |
| 1999 03 20 | 691 | 0.4− | 0.3− | 2001 10 24 | 644 | 0.0 | 1.4+ | 2004 03 30 | 703 | 1.1− | 0.9+ | | |
| 1999 03 20 | 691 | 0.7+ | 0.1− | 2001 10 24 | 644 | 0.1+ | 1.5+ | 2004 03 30 | 703 | 1.1− | 0.7+ | | |
| 2001 08 20 | 704 | 1.2− | 0.9+ | 2001 10 24 | 644 | (0.5− | 1.6+) | 2004 03 30 | 703 | (0.5− | 1.7+) | | |
| 2001 08 20 | 704 | 1.1− | 0.1− | 2004 03 15 | 703 | 0.5− | 0.4+ | 2004 03 30 | 703 | 0.1− | 0.3− | | |
| 2001 08 20 | 704 | 0.3− | 0.5− | 2004 03 15 | 703 | 0.3+ | 0.3− | 2004 04 21 | 691 | 0.4+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2004 03 15 | 703 | (1.1− | 2.3+) | 2004 04 21 | 691 | 0.0 | 0.4+ | | |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2004 03 15 | 703 | (1.7+ | 4.1+) | 2004 04 21 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2004 03 19 | 704 | 1.0+ | 0.5+ | 2006 09 30 | 703 | 0.7+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.5− | 1.1+ | 2004 03 19 | 704 | 0.8+ | 1.4+ | 2006 09 30 | 703 | 0.2− | 1.2− | | |
| 2001 09 12 | 704 | 0.8− | 1.0+ | 2004 03 19 | 704 | 0.9+ | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.0 | | |
| 2001 09 18 | 699 | 0.7− | 1.3+ | 2004 03 19 | 704 | 1.2+ | 0.1+ | 2006 09 30 | 703 | 0.9+ | 0.4− | | |
| 2001 09 18 | 699 | 0.3+ | 0.8+ | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.4+ | | |
| 2001 09 18 | 699 | 1.1− | 0.6− | 2004 03 22 | 704 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 18 | 699 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2004 03 22 | 704 | 0.9+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.3+ | | |
| 2001 09 19 | 704 | 0.6+ | 0.7+ | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.6+ | 2004 03 24 | 699 | 0.2− | 0.1+ | 2006 10 16 | 703 | (0.0 | 1.6+) | | |
| 2001 09 19 | 704 | 0.8+ | 1.0+ | 2004 03 24 | 699 | 0.1+ | 1.5+ | 2006 10 22 | 703 | 0.1− | 0.5+ | | |
| 2001 09 21 | 704 | 0.4− | 0.7+ | 2004 03 24 | 699 | (1.7− | 0.3−) | 2006 10 22 | 703 | 0.4− | 0.1− | | |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2004 03 24 | 699 | (0.3− | 1.6+) | 2006 10 22 | 703 | 0.2+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2004 03 25 | 704 | (1.9+ | 0.3+) | 2006 10 22 | 703 | 0.8− | 0.4− | | |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2004 03 25 | 704 | 0.7− | 1.4+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.6− | 0.3+ | 2004 03 25 | 704 | 0.7+ | 1.1+ | 2006 10 22 | 644 | 0.5+ | 0.2+ | | |
| 2001 09 26 | 699 | 1.1+ | 0.6+ | 2004 03 25 | 704 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 26 | 699 | (1.0+ | 1.8+) | 2004 03 26 | 704 | 0.2+ | 1.1+ | 2006 11 19 | 703 | 0.1+ | 0.1− | | |
| 2001 09 26 | 699 | 0.7+ | 0.7+ | 2004 03 26 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.8− | 0.3+ | | |
| 2001 09 26 | 699 | 1.2+ | 0.4+ | 2004 03 26 | 704 | 0.1+ | 1.1+ | 2006 11 19 | 703 | 0.6− | 0.7+ | | |
| 2001 10 16 | 644 | 0.6− | 0.1+ | 2004 03 26 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 1.0− | 0.5+ | | |
| 2001 10 16 | 644 | 0.3− | 0.0 | 2004 03 28 | 704 | 0.4+ | 1.3+ | 2006 11 24 | G96 | 0.3+ | 0.0 | | |
| 2001 10 16 | 644 | 0.2− | 0.1+ | 2004 03 28 | 704 | 0.6+ | 1.3+ | 2006 11 24 | G96 | 0.1+ | 0.4+ | | |
| 2001 10 17 | 644 | 0.2− | 0.2+ | 2004 03 28 | 704 | (0.1+ | 1.6+) | 2006 11 24 | G96 | 0.5− | 0.2+ | | |
| 2001 10 17 | 644 | 0.0 | 0.0 | 2004 03 28 | 704 | (1.4+ | 1.6+) | 2006 11 24 | G96 | 0.1− | 0.4+ | | |

**(139932)∗ 2001 RT$_{131}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.61971 | | (2000.0) | | | |
| $n$ | 0.18106871 | $\omega$ | 90.99737 | | −0.30443347 | +0.95096198 |
| $a$ | 3.0943809 | $\Omega$ | 161.00004 | | −0.92705298 | −0.28260845 |
| $e$ | 0.0364989 | $i$ | 9.67154 | | −0.21884478 | −0.12571305 |
| $P$ | 5.44 | $H$ | 14.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 23 | 691 | 0.1+ | 0.2− | 2004 02 11 | 703 | 1.5− | 0.2− | 2005 05 20 | G96 | 0.1− | 0.0 | | |
| 1995 06 23 | 691 | 0.1+ | 0.1− | 2004 02 11 | 703 | (1.7− | 0.3+) | 2005 05 20 | G96 | 0.2+ | 0.0 | | |
| 1995 06 23 | 691 | 0.1− | 0.2− | 2004 02 11 | 703 | (2.1− | 1.5+) | 2005 06 04 | 703 | 0.6− | 0.2− | | |
| 2001 07 20 | 644 | 0.2− | 1.0+ | 2004 02 11 | 703 | 0.7− | 0.1− | 2005 06 04 | 703 | 0.6− | 0.0 | | |
| 2001 07 20 | 644 | 0.4− | 0.0 | 2004 02 22 | 691 | 0.3+ | 0.1− | 2005 06 04 | 703 | 0.6− | 0.1+ | | |
| 2001 07 20 | 644 | 0.5− | 0.1+ | 2004 02 22 | 691 | 0.1+ | 0.1− | 2005 06 04 | 703 | 0.5+ | 0.3+ | | |
| 2001 08 27 | 699 | (0.2+ | 1.7−) | 2004 02 22 | 691 | 0.2+ | 0.1− | 2005 06 23 | 644 | 0.2+ | 0.4+ | | |
| 2001 08 27 | 699 | (1.5− | 0.1−) | 2004 02 26 | 012 | 0.8− | 0.2+ | 2005 06 23 | 644 | 0.1+ | 0.0 | | |
| 2001 08 27 | 699 | 0.0 | 0.4− | 2004 02 26 | 012 | 0.7− | 0.6+ | 2005 06 23 | 644 | 0.1+ | 0.3+ | | |
| 2001 08 27 | 699 | 0.1− | 1.1+ | 2004 02 26 | 012 | 0.1− | 0.1+ | 2005 06 29 | 644 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.5+ | 1.4+ | 2004 02 26 | 012 | 1.5− | 0.6+ | 2005 06 29 | 644 | 0.1− | 0.2+ | | |
| 2001 09 12 | 704 | 0.9− | 0.9+ | 2004 02 26 | 012 | 0.4+ | 0.4+ | 2005 06 29 | 644 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.3+ | 0.5+ | 2004 03 11 | 644 | 0.4+ | 0.4+ | 2005 07 10 | 699 | 1.4− | 0.1+ | | |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2004 03 11 | 644 | 0.0 | 0.6+ | 2005 07 10 | 699 | 0.3− | 0.1− | | |
| 2001 09 12 | 704 | 0.6− | 0.0 | 2004 03 11 | 644 | 1.0+ | 0.1+ | 2005 07 10 | 699 | 0.3+ | 0.2− | | |
| 2001 09 18 | 699 | 0.1+ | 0.1+ | 2004 03 14 | 703 | 0.9+ | 0.4+ | 2005 07 10 | 699 | (1.8− | 0.1−) | | |
| 2001 09 18 | 699 | (1.4+ | 2.0+) | 2004 03 14 | 703 | 0.4− | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.3+ | | |
| 2001 09 18 | 699 | 1.0+ | 0.2+ | 2004 03 14 | 703 | 0.4− | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 18 | 699 | 0.6− | 0.6+ | 2004 03 14 | 703 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.4+ | | |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2004 03 15 | 704 | 0.4+ | 1.5+ | 2006 08 18 | 644 | 0.0 | 0.3+ | | |
| 2001 09 19 | 704 | 0.8− | 0.5+ | 2004 03 15 | 704 | 0.3+ | 0.1− | 2006 08 18 | 644 | 0.3− | 0.2+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.5+ | 2004 03 15 | 704 | 0.3+ | 0.7+ | 2006 08 18 | 644 | 0.1− | 0.4+ | | |
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2006 08 19 | 699 | 1.4− | 0.3+ | | |
| 2001 09 19 | 704 | 1.0+ | 1.0+ | 2004 03 18 | 691 | 0.2− | 0.4+ | 2006 08 19 | 699 | 0.8+ | 0.0 | | |
| 2001 09 21 | 704 | 1.3− | 0.6+ | 2004 03 18 | 691 | 0.2+ | 0.4+ | 2006 08 19 | 699 | 0.2− | 0.6+ | | |
| 2001 09 21 | 704 | 0.0 | 1.2+ | 2004 03 18 | 691 | 0.2+ | 0.4+ | 2006 08 19 | 699 | 0.8+ | 0.8+ | | |
| 2001 09 21 | 704 | 0.5− | 1.1+ | 2004 03 18 | 704 | 0.0 | 0.8+ | 2006 08 28 | 703 | 0.0 | 0.2+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.6+ | 2004 03 18 | 704 | 0.6+ | 1.0+ | 2006 08 28 | 703 | 0.0 | 0.3− | | |
| 2001 09 21 | 704 | 0.6− | 1.2+ | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.0 | 1.0− | | |
| 2001 09 26 | 704 | 0.1− | 0.6+ | 2004 03 18 | 704 | 1.0+ | 0.9+ | 2006 08 28 | 703 | 0.4+ | 0.1+ | | |
| 2001 09 26 | 704 | 0.5− | 0.7+ | 2004 03 18 | 704 | 0.5+ | 1.5+ | 2006 09 13 | 644 | 0.3− | 0.3+ | | |
| 2001 09 26 | 704 | 0.6− | 0.4+ | 2004 03 27 | 691 | 0.4+ | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.4+ | | |
| 2001 09 26 | 704 | 0.0 | 0.4− | 2004 03 27 | 691 | 0.0 | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.3+ | | |
| 2001 09 26 | 704 | 0.2− | 0.4− | 2004 03 27 | 691 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.1− | | |
| 2001 09 27 | 644 | 0.1− | 1.0+ | 2005 04 16 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.3− | | |
| 2001 09 27 | 644 | 0.6− | 0.6+ | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.1+ | | |
| 2001 09 27 | 644 | 0.7− | 0.5+ | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.2− | | |
| 2001 10 16 | 644 | 1.2+ | 0.1− | 2005 04 30 | 691 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.1− | | |
| 2001 10 16 | 644 | 0.9+ | 0.2− | 2005 04 30 | 691 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.9+ | | |
| 2001 10 16 | 644 | 0.8+ | 0.5− | 2005 04 30 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.1− | | |
| 2001 10 17 | 644 | 0.1− | 0.6+ | 2005 05 09 | 703 | 0.1− | 1.1+ | 2006 10 21 | G96 | 0.4+ | 0.2− | | |
| 2001 10 17 | 644 | 0.6− | 0.4+ | 2005 05 09 | 703 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2001 10 17 | 644 | 0.4− | 0.8+ | 2005 05 09 | 703 | 1.5− | 1.0+ | 2006 10 21 | G96 | 0.2+ | 0.0 | | |
| 2003 12 19 | 291 | 0.7− | 0.6+ | 2005 05 09 | 703 | (1.6− | 0.8+) | 2006 10 21 | G96 | 0.2− | 0.2+ | | |
| 2003 12 19 | 291 | 0.2+ | 0.7− | 2005 05 20 | G96 | 0.3− | 0.2+ | | | | | | |
| 2003 12 19 | 291 | 0.4− | 0.0 | 2005 05 20 | G96 | 0.0 | 0.2− | | | | | | |

**(139933)∗ 2001 RH$_{132}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.34875 | | (2000.0) | | | |
| $n$ | 0.19758407 | $\omega$ | 208.29228 | | +0.56712030 | +0.82165339 |
| $a$ | 2.9194526 | $\Omega$ | 96.31151 | | −0.74442654 | +0.54101117 |
| $e$ | 0.0338653 | $i$ | 3.29329 | | −0.35242544 | +0.17942303 |
| $P$ | 4.99 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.7− | 0.8+ | 2004 02 26 | 704 | 0.7+ | 0.9+ | 2006 08 24 | 644 | 0.4− | 0.3+ |
| 2001 07 20 | 644 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.5+ | 2006 08 27 | 691 | 0.5− | 0.5+ |
| 2001 07 20 | 644 | 0.7− | 0.3+ | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.0 | 0.9+ | 2004 02 26 | 704 | 0.2+ | 0.7+ | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.1+ | 0.4+ | 2004 02 29 | 691 | 0.2− | 0.3+ | 2006 08 28 | 699 | (1.8+ | 1.4+) |
| 2001 09 12 | 704 | 0.1+ | 0.6+ | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 08 28 | 699 | 0.9− | 0.8− |
| 2001 09 12 | 704 | 0.5+ | 0.9+ | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.4+ | 1.0+ |
| 2001 09 12 | 704 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 0.0 | 0.5+ | 2006 08 28 | 699 | (0.7+ | 1.6+) |
| 2001 09 18 | 699 | 0.2− | 1.0+ | 2004 03 15 | 704 | 0.8+ | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.6+ |
| 2001 09 18 | 699 | 0.6− | 0.7+ | 2004 03 15 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.2+ |
| 2001 09 18 | 699 | 1.0+ | 0.8+ | 2004 03 15 | 704 | 0.8+ | 1.4+ | 2006 09 18 | 703 | 0.4− | 0.3+ |
| 2001 09 18 | 699 | 0.2− | 0.5− | 2004 03 15 | 704 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2004 03 16 | 704 | (0.4+ | 1.5+) | 2006 09 18 | 703 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.3+ | 1.1+ | 2004 03 16 | 704 | (1.8− | 2.7+) | 2006 09 18 | 703 | 0.5+ | 0.4− |
| 2001 09 19 | 704 | 0.1+ | 1.3+ | 2004 03 16 | 704 | 1.2+ | 1.5+ | 2006 09 18 | 703 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | (2.7+ | 1.1+) | 2004 03 16 | 704 | (0.7+ | 1.8+) | 2006 09 18 | 703 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.9− | 0.4+ | 2004 03 17 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | (2.5+ | 2.1+) | 2004 03 17 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 703 | (1.7− | 0.6−) |
| 2001 09 21 | 704 | 1.3− | 0.8+ | 2004 03 17 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | (3.0+ | 2.1+) | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.8− | 0.6+ |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2004 03 17 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | (2.5+ | 2.5+) | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | (0.6+ | 2.0+) |
| 2001 09 21 | 704 | (2.9+ | 2.6+) | 2004 03 18 | 704 | 0.9+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.9− |
| 2001 09 21 | 704 | 1.2− | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.8− |
| 2001 09 26 | 699 | 1.0+ | 0.3+ | 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 09 30 | 703 | 0.9+ | 0.6+ |
| 2001 09 26 | 699 | 0.3+ | 0.4− | 2004 03 18 | 704 | 0.2− | 1.2+ | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2001 09 26 | 699 | 0.7− | 1.2+ | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2001 09 26 | 699 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2001 10 17 | 644 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2001 10 17 | 644 | 0.1+ | 0.8+ | 2004 03 19 | 704 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2001 10 17 | 644 | 0.1+ | 0.9+ | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.3− |
| 2001 10 20 | 704 | 0.9+ | 1.5− | 2004 03 19 | 704 | 0.7+ | 0.2− | 2006 10 16 | 703 | 1.1− | 0.8− |
| 2001 10 20 | 704 | (1.2+ | 1.8−) | 2004 03 20 | 699 | 0.6− | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2001 10 20 | 704 | 0.4+ | 0.6− | 2004 03 20 | 699 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.6+ |
| 2001 10 24 | 704 | 0.7− | 0.0 | 2004 03 20 | 699 | 0.5+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 1.4− | 0.7+ | 2004 03 20 | 699 | 0.1+ | 1.1+ | 2006 10 20 | 644 | 0.4+ | 0.3+ |
| 2001 10 24 | 704 | 1.0− | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 10 24 | 704 | 0.8− | 0.6+ | 2004 03 22 | 704 | 0.6− | 0.6− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 0.4− | 0.3+ | 2004 03 22 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.5− | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.8− | 0.4− | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.5− |
| 2002 12 31 | 291 | 0.2+ | 0.7− | 2004 03 23 | 704 | 0.9− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 12 31 | 291 | 0.2+ | 0.2− | 2004 03 23 | 704 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2002 12 31 | 291 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.4− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2003 11 20 | 691 | 0.7+ | 0.1+ | 2004 03 23 | 704 | 0.6− | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2003 11 20 | 691 | 0.1− | 0.5+ | 2004 04 09 | 644 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2003 11 20 | 691 | 0.0 | 0.7+ | 2004 04 09 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2004 02 23 | 704 | 0.3+ | 0.9+ | 2004 04 09 | 644 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 08 18 | 691 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.7+ |
| 2004 02 23 | 704 | 1.3+ | 0.6+ | 2006 08 18 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 08 18 | 691 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 1.4+ | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2004 02 26 | 704 | 0.0 | 0.9+ | 2006 08 24 | 644 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.2+ |

**(139934)∗ 2001 RT$_{132}$ = 1999 FJ$_{59}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18068)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 119.12088 | | (2000.0) | | | |
| $n$ | 0.19496038 | $\omega$ | 74.60970 | | −0.61366757 | +0.78093301 |
| $a$ | 2.9455867 | $\Omega$ | 156.31845 | | −0.78868207 | −0.59931089 |
| $e$ | 0.0354608 | $i$ | 16.85047 | | −0.03731897 | −0.17598320 |
| $P$ | 5.06 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 704 | 1.4− | 0.4− | 2001 09 25 | 704 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.7+ |
| 1999 03 20 | 704 | 0.2+ | 1.1+ | 2001 09 25 | 704 | 0.4+ | 1.2+ | 2004 03 22 | 704 | 0.2− | 0.8+ |
| 1999 03 20 | 704 | 0.1− | 1.5− | 2001 09 25 | 704 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.2− | 1.4+ |
| 1999 03 20 | 704 | 0.1+ | 0.3− | 2001 10 10 | 644 | 0.1− | 0.6+ | 2004 03 22 | 704 | 1.1+ | 0.6+ |
| 1999 03 21 | 910 | 0.4− | 0.9− | 2001 10 10 | 644 | 0.7− | 0.7+ | 2005 06 09 | G92 | 0.7+ | 0.8+ |
| 1999 03 21 | 910 | 0.2+ | 0.9− | 2001 10 10 | 644 | 0.4− | 0.6+ | 2005 06 09 | G92 | 0.3− | 0.7+ |
| 1999 03 21 | 910 | 0.1+ | 1.2− | 2001 10 11 | 644 | 0.5− | 0.3+ | 2005 06 09 | G92 | 0.2− | 0.5+ |
| 1999 03 23 | 704 | 1.0− | 0.5− | 2001 10 11 | 644 | 0.2− | 0.5− | 2006 08 24 | 644 | 0.1− | 0.6+ |
| 1999 03 23 | 704 | 1.1+ | 0.8+ | 2001 10 11 | 644 | 0.5− | 0.1− | 2006 08 24 | 644 | 0.4+ | 0.2+ |
| 1999 03 23 | 704 | (1.1+ | 2.1+) | 2004 02 16 | 333 | 0.3+ | 0.5+ | 2006 08 24 | 644 | 0.2+ | 0.1+ |
| 2001 08 25 | 644 | 0.1+ | 0.2+ | 2004 02 16 | 333 | 0.2− | 1.2+ | 2006 08 30 | 699 | 0.8− | 0.3− |
| 2001 08 25 | 644 | 0.6+ | 0.4+ | 2004 02 17 | 333 | 0.2+ | 0.8+ | 2006 08 30 | 699 | 0.1− | 0.2− |
| 2001 08 25 | 644 | 0.2+ | 0.2+ | 2004 02 17 | 333 | 0.1− | 0.6+ | 2006 08 30 | 699 | 0.2− | 0.6− |
| 2001 09 12 | 704 | 0.4+ | 0.9− | 2004 02 18 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 0.9− | 1.2+ |
| 2001 09 12 | 704 | 0.1+ | 1.1− | 2004 02 18 | 704 | 0.2+ | 0.9+ | 2006 09 14 | 703 | 0.9− | 0.8+ |
| 2001 09 12 | 704 | 0.1− | 0.9− | 2004 02 18 | 704 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.4− |
| 2001 09 12 | 704 | 0.3− | 0.5− | 2004 02 18 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | (2.1− | 3.0−) |
| 2001 09 12 | 704 | 0.1+ | 0.5− | 2004 03 15 | 704 | 0.7+ | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.5− |
| 2001 09 18 | 699 | 0.1− | 1.2+ | 2004 03 15 | 704 | 0.1− | 0.7− | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2001 09 18 | 699 | (0.2− | 1.8+) | 2004 03 15 | 704 | 0.0 | 0.5− | 2006 09 26 | 703 | 0.1+ | 0.7+ |
| 2001 09 18 | 699 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 0.3− | 0.5− | 2006 09 26 | 703 | 1.0− | 0.4+ |
| 2001 09 18 | 699 | 0.3+ | 0.1+ | 2004 03 15 | 704 | 0.9− | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.9+ |
| 2001 09 19 | 704 | 0.7+ | 1.1+ | 2004 03 19 | 704 | (0.6− | 1.6+) | 2006 10 24 | 644 | 0.9+ | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.7− | 2004 03 19 | 704 | 0.4+ | 1.3+ | 2006 10 24 | 644 | 0.5+ | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.9+ | 2004 03 19 | 704 | 0.2− | 1.1+ | 2006 10 24 | 644 | 1.1+ | 0.5+ |
| 2001 09 19 | 704 | 0.6− | 0.5− | 2004 03 19 | 704 | 0.1+ | 1.1+ | | | | |
| 2001 09 25 | 704 | 0.2+ | 0.7+ | 2004 03 19 | 704 | 0.1+ | 0.6+ | | | | |

**(139935)∗ 2001 RW$_{133}$ = 2002 YL$_{25}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40531)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.97597 | | (2000.0) | | | |
| $n$ | 0.20065083 | $\omega$ | 338.50530 | | +0.37390516 | −0.92588347 |
| $a$ | 2.8896289 | $\Omega$ | 89.50479 | | +0.85863548 | +0.32348321 |
| $e$ | 0.0573191 | $i$ | 3.10553 | | +0.35062808 | +0.19518814 |
| $P$ | 4.91 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.6− | 0.0 |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | (1.9− | 0.0 ) |
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2003 01 04 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | 1.0− | 1.3+ |
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2003 01 08 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.9+ | 0.3+ |
| 2001 09 10 | 644 | 0.5− | 0.5+ | 2003 01 08 | 704 | 0.2− | 0.5− | 2006 09 18 | 699 | 0.0 | 0.3− |
| 2001 09 10 | 644 | 0.2− | 0.1+ | 2003 01 08 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.8+ |
| 2001 09 10 | 644 | 0.6− | 0.5+ | 2003 01 08 | 704 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.3− | 0.4+ |
| 2001 09 12 | 704 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.3+ | 0.0 | 2006 09 22 | 704 | 0.3− | 1.1+ |
| 2001 09 12 | 704 | 0.1− | 0.3− | 2003 01 31 | 704 | 1.2+ | 0.4+ | 2006 09 22 | 704 | 0.4− | 0.7− |
| 2001 09 12 | 704 | 0.6− | 0.0 | 2003 01 31 | 704 | 0.5+ | 0.6+ | 2006 09 22 | 704 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.1+ | 0.3− | 2003 01 31 | 704 | 0.5+ | 0.0 | 2006 09 22 | 704 | 0.4− | 0.5− |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2003 01 31 | 704 | 0.2+ | 0.4− | 2006 09 26 | 704 | (0.2+ | 1.6+) |
| 2001 09 19 | 704 | 0.0 | 0.8+ | 2004 03 22 | 704 | (0.1+ | 1.5+) | 2006 09 26 | 704 | 0.6+ | 0.6+ |
| 2001 09 19 | 704 | (0.3+ | 1.6+) | 2004 03 22 | 704 | (1.1+ | 2.2+) | 2006 09 26 | 704 | 0.8− | 0.8+ |
| 2001 09 19 | 704 | 0.5+ | 1.2+ | 2004 03 22 | 704 | 0.9+ | 0.3+ | 2006 09 28 | 704 | 0.7− | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2004 03 22 | 704 | (0.2+ | 2.3+) | 2006 09 28 | 704 | 0.2+ | 1.0+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2004 03 26 | 691 | 0.5+ | 0.0 | 2006 09 28 | 704 | 0.2− | 0.1+ | |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2004 03 26 | 691 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 0.3− | 0.6− | |
| 2001 09 21 | 704 | 0.1− | 0.9+ | 2004 03 26 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.2− | |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2004 03 28 | 704 | (0.0 | 1.6+) | 2006 09 30 | 703 | 0.6− | 0.9+ | |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2004 03 28 | 704 | (1.7+ | 0.5−) | 2006 09 30 | 703 | (1.5− | 2.5−) | |
| 2001 09 21 | 704 | 0.1− | 1.1+ | 2004 03 28 | 704 | 0.9− | 0.9+ | 2006 09 30 | 703 | (1.9+ | 1.3−) | |
| 2001 09 27 | 704 | 0.4− | 1.3+ | 2004 03 28 | 704 | 0.8+ | 1.4+ | 2006 09 30 | 704 | 0.5+ | 0.2− | |
| 2001 09 27 | 704 | 0.7+ | 1.0+ | 2004 04 19 | 704 | (1.7+ | 1.5+) | 2006 09 30 | 704 | 1.0+ | 0.0 | |
| 2001 09 27 | 704 | 0.9+ | 0.4+ | 2004 04 19 | 704 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.1+ | |
| 2001 09 27 | 704 | 1.3+ | 0.0 | 2004 04 19 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 1.1− | 0.1− | |
| 2002 12 05 | 704 | 0.5− | 0.3+ | 2004 04 19 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 704 | 0.2− | 1.3+ | |
| 2002 12 05 | 704 | 1.0− | 0.1− | 2004 07 16 | 807 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | |
| 2002 12 05 | 704 | 0.2− | 0.8+ | 2004 07 17 | 807 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | |
| 2002 12 05 | 704 | 0.2− | 0.8+ | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ | |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 1.4− | 0.4+ | |
| 2002 12 31 | 704 | 0.9+ | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.5− | 0.4+ | |
| 2002 12 31 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.6− | 0.0 | |
| 2003 01 04 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 10 21 | 703 | 1.4− | 2.3− | |

**(139936)∗ 2001 RX$_{133}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.02093 | | (2000.0) | | | |
| $n$ | 0.19651659 | $\omega$ | 197.89201 | | +0.98961470 | +0.13426254 |
| $a$ | 2.9300154 | $\Omega$ | 154.22460 | | −0.11318532 | +0.94800780 |
| $e$ | 0.0796594 | $i$ | 6.78113 | | −0.08861057 | +0.28853904 |
| $P$ | 5.02 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.7− | 0.7+ | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 09 16 | 704 | 1.2− | 0.3+ | |
| 2001 08 27 | 699 | 0.0 | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.9− | 0.1− | |
| 2001 08 27 | 699 | 0.5+ | 0.3− | 2004 03 26 | 704 | (1.6+ | 0.7+) | 2006 09 18 | 703 | 0.7− | 0.8+ | |
| 2001 08 27 | 699 | 0.1+ | 1.4− | 2004 03 26 | 704 | (1.1+ | 1.9+) | 2006 09 18 | 703 | 0.5− | 1.0+ | |
| 2001 09 12 | 704 | 0.4− | 0.4− | 2004 03 26 | 704 | 0.9+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.1− | |
| 2001 09 12 | 704 | 0.1+ | 0.1− | 2004 03 26 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.8+ | 0.1− | |
| 2001 09 12 | 704 | 0.6− | 0.6− | 2004 04 13 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.1− | |
| 2001 09 12 | 704 | 0.2+ | 0.4− | 2004 04 13 | 691 | 0.0 | 0.5+ | 2006 09 19 | 699 | 1.3+ | 0.5+ | |
| 2001 09 12 | 704 | 0.5− | 0.6− | 2004 04 13 | 691 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.2− | |
| 2001 09 18 | 699 | 0.1− | 0.4− | 2005 06 10 | 691 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.3− | |
| 2001 09 18 | 699 | 0.2− | 0.3− | 2005 06 10 | 691 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 0.1− | 0.5+ | |
| 2001 09 18 | 699 | 0.9− | 0.7+ | 2005 06 10 | 691 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.2+ | 0.5− | |
| 2001 09 18 | 699 | (1.8− | 0.1+) | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.7+ | 0.6+ | |
| 2001 09 19 | 704 | 0.6+ | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.4+ | 1.2+ | |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2006 08 16 | 644 | 0.7+ | 0.1− | 2006 09 25 | 699 | 0.9+ | 1.0+ | |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.7+ | |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.0 | |
| 2001 09 19 | 704 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.3− | |
| 2001 09 21 | 704 | 0.7− | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.2− | 0.4− | |
| 2001 09 21 | 704 | 0.3− | 1.5+ | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 26 | 704 | (0.6− | 1.6+) | |
| 2001 09 21 | 704 | 0.9− | 1.1+ | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.4− | |
| 2001 09 21 | 704 | 0.3+ | 1.1+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.2+ | |
| 2001 09 27 | 704 | (0.3+ | 2.4+) | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.7+ | |
| 2001 09 27 | 704 | 0.6− | 1.4+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.2+ | |
| 2001 09 27 | 704 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.2+ | 1.3− | 2006 09 30 | 703 | 0.0 | 0.5+ | |
| 2001 09 27 | 704 | 0.3+ | 1.3+ | 2006 08 28 | 699 | 1.3+ | 0.6− | 2006 09 30 | 703 | 0.5− | 0.2+ | |
| 2001 10 17 | 644 | 0.0 | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.4− | 2006 10 09 | 644 | 0.3+ | 0.5+ | |
| 2001 10 17 | 644 | 0.0 | 0.5+ | 2006 08 28 | 699 | 0.5− | 0.9+ | 2006 10 09 | 644 | 0.1− | 0.2+ | |
| 2001 10 17 | 644 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.2+ | |
| 2001 10 24 | 644 | 0.6+ | 0.0 | 2006 09 12 | 703 | 0.4− | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.0 | |
| 2001 10 24 | 644 | 0.8+ | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.6+ | 0.3+ | |
| 2001 10 24 | 644 | 0.5+ | 0.3+ | 2006 09 12 | 703 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.1+ | |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.1+ | |
| 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.5− | |
| 2004 03 15 | 704 | 0.4+ | 0.4− | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.5− | 1.1− | |
| 2004 03 15 | 704 | 1.0+ | 1.1+ | 2006 09 16 | 704 | (0.9− | 2.0+) | 2006 10 16 | 703 | 0.8− | 0.0 | |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 704 | 0.3+ | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.0 | |
| 2004 03 15 | 704 | 0.8+ | 0.9+ | 2006 09 16 | 704 | 1.0− | 1.2+ | 2006 10 23 | 644 | 0.4+ | 0.1− | |
| 2004 03 22 | 704 | 0.2+ | 1.2+ | 2006 09 16 | 704 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.3+ | 0.1− | |
| 2004 03 22 | 704 | 0.8+ | 0.1− | 2006 09 16 | 704 | 0.9+ | 0.2− | 2006 10 24 | 644 | 0.0 | 0.0 | |
| 2004 03 22 | 704 | 0.6− | 0.0 | 2006 09 16 | 704 | 0.7− | 0.5+ | 2006 10 24 | 644 | 0.1+ | 0.4+ | |
| 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.0 | 0.6+ | 2006 10 24 | 644 | 0.3+ | 0.1+ | |

**(139937)∗ 2001 RO$_{134}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.04624 | | (2000.0) | | | |
| $n$ | 0.22282288 | $\omega$ | 317.57139 | | +0.30825836 | −0.94775340 |
| $a$ | 2.6946117 | $\Omega$ | 114.32365 | | +0.89519870 | +0.25979693 |
| $e$ | 0.1524912 | $i$ | 5.16917 | | +0.32186344 | +0.18511900 |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | (1.6− | 2.2−) | 2001 10 12 | 649 | 0.5+ | 0.2+ | 2003 03 08 | 704 | 0.1− | 1.4+ | |
| 1997 11 29 | 704 | 0.1+ | 0.9− | 2001 10 12 | 649 | 0.1+ | 0.0 | 2003 03 08 | 704 | 0.3+ | 0.7+ | |
| 1997 11 29 | 704 | 1.0+ | 0.2− | 2001 10 12 | 649 | 0.6− | 0.5− | 2003 03 08 | 704 | 0.4− | 0.5+ | |
| 1997 11 29 | 704 | 0.5− | 0.1− | 2001 10 16 | 644 | 0.3+ | 0.4+ | 2005 07 04 | 644 | 0.3− | 0.7+ | |
| 2001 09 12 | 704 | 1.0+ | 0.5− | 2001 10 16 | 644 | 0.3− | 0.3+ | 2005 07 04 | 644 | 0.1− | 0.6+ | |
| 2001 09 12 | 704 | 0.5+ | 0.1+ | 2001 10 16 | 644 | 0.1− | 0.2+ | 2005 07 04 | 644 | 0.2− | 0.2+ | |
| 2001 09 12 | 704 | 0.6+ | 0.1− | 2001 10 17 | 644 | 0.2+ | 0.4+ | 2005 07 27 | 644 | 0.1− | 0.6+ | |
| 2001 09 12 | 704 | 0.6+ | 0.6+ | 2001 10 17 | 644 | 0.3+ | 0.3+ | 2005 07 27 | 644 | 0.2+ | 0.7+ | |
| 2001 09 19 | 704 | 1.1− | 1.2+ | 2001 10 17 | 644 | 0.9− | 0.6+ | 2005 07 27 | 644 | 0.4− | 0.6+ | |
| 2001 09 19 | 704 | 1.0− | 1.3+ | 2003 01 30 | 699 | 1.1+ | 0.0 | 2006 11 20 | 704 | (1.6+ | 0.5+) | |
| 2001 09 19 | 704 | 1.2− | 0.1− | 2003 01 30 | 699 | 0.4+ | 0.5+ | 2006 11 20 | 704 | 0.9+ | 0.1− | |
| 2001 09 21 | 704 | 0.3+ | 0.9+ | 2003 01 30 | 699 | (2.2+ | 0.4+) | 2006 11 20 | 704 | 0.5+ | 0.2+ | |
| 2001 09 21 | 704 | (0.1+ | 1.9+) | 2003 01 30 | 699 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 1.0− | 0.3− | |
| 2001 09 21 | 704 | 0.3− | 1.1+ | 2003 02 01 | 704 | 0.9+ | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.5− | |
| 2001 09 21 | 704 | 0.8+ | 0.5+ | 2003 02 01 | 704 | 1.3+ | 1.0+ | 2006 11 23 | 691 | 0.1+ | 0.3− | |
| 2001 10 08 | 644 | 0.6− | 0.6+ | 2003 02 01 | 704 | 0.5+ | 0.9+ | 2006 11 23 | 691 | 0.2− | 0.3− | |
| 2001 10 08 | 644 | 0.3− | 0.3− | 2003 02 04 | 699 | 0.9− | 1.0+ | 2006 11 29 | 704 | 0.0 | 0.1+ | |
| 2001 10 08 | 644 | 0.6− | 0.1+ | 2003 02 04 | 699 | 0.3− | 0.2+ | 2006 11 29 | 704 | 1.0+ | 0.3+ | |
| 2001 10 11 | 704 | (0.3+ | 1.6+) | 2003 02 04 | 699 | 0.1− | 0.9− | 2006 11 29 | 704 | 0.3+ | 0.6+ | |
| 2001 10 11 | 704 | (0.0 | 2.0+) | 2003 02 04 | 699 | (0.4− | 1.8+) | 2006 11 29 | 704 | 0.7− | 0.1− | |
| 2001 10 11 | 704 | (0.7+ | 1.7+) | 2003 02 21 | 644 | 0.1+ | 1.5+ | 2006 11 29 | 704 | 0.3− | 0.3− | |
| 2001 10 11 | 644 | 0.0 | 0.4+ | 2003 02 21 | 644 | 0.0 | 1.4+ | 2006 12 01 | 704 | 0.7+ | 0.4+ | |
| 2001 10 11 | 704 | 0.7− | 1.0+ | 2003 02 21 | 644 | (0.2− | 1.6+) | 2006 12 01 | 704 | 0.0 | 0.2− | |
| 2001 10 11 | 644 | 0.1− | 0.3+ | 2003 03 07 | 644 | 0.1+ | 0.8+ | 2006 12 01 | 691 | 0.1+ | 0.0 | |
| 2001 10 11 | 704 | (0.1+ | 1.7+) | 2003 03 07 | 644 | 0.0 | 0.8+ | 2006 12 01 | 691 | 0.2+ | 0.1− | |
| 2001 10 11 | 644 | 0.1− | 0.2+ | 2003 03 07 | 644 | 0.3− | 0.6+ | 2006 12 01 | 704 | 1.2− | 0.9+ | |
| 2001 10 12 | 649 | 0.7− | 0.7− | 2003 03 08 | 704 | 0.2− | 0.1+ | 2006 12 01 | 691 | (2.6+ | 2.9+) | |

**(139938)∗ 2001 RQ$_{134}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.45570 | | (2000.0) | | | |
| $n$ | 0.19772976 | $\omega$ | 320.01741 | | +0.13430951 | −0.98687776 |
| $a$ | 2.9180184 | $\Omega$ | 122.08723 | | +0.93406648 | +0.09588126 |
| $e$ | 0.0842503 | $i$ | 6.07260 | | +0.33087879 | +0.12991947 |
| $P$ | 4.98 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.1+ | 1.5+ | 2001 10 17 | 644 | 0.1+ | 0.2+ | 2004 04 09 | E12 | 0.9+ | 1.3+ | |
| 2001 08 26 | 644 | 0.1+ | 1.5+ | 2002 12 08 | 608 | 0.0 | 1.3+ | 2004 04 09 | E12 | 0.6+ | 0.4− | |
| 2001 08 26 | 644 | 0.0 | 1.3+ | 2002 12 08 | 608 | 0.5− | 1.3+ | 2004 04 09 | E12 | 0.2+ | 0.1+ | |
| 2001 09 12 | 704 | 0.5+ | 0.2− | 2002 12 08 | 608 | 0.2− | 1.3+ | 2004 04 09 | E12 | 0.5+ | 0.1− | |
| 2001 09 12 | 704 | 0.1+ | 0.3− | 2002 12 31 | 704 | 0.7+ | 0.4+ | 2004 04 14 | 691 | 0.0 | 0.7+ | |
| 2001 09 12 | 704 | 0.7+ | 0.6− | 2002 12 31 | 704 | 1.5+ | 0.6+ | 2004 04 14 | 691 | 0.0 | 0.5+ | |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.9+ | 0.4+ | 2004 04 14 | 691 | 0.1+ | 0.6+ | |
| 2001 09 12 | 704 | 0.5+ | 0.0 | 2003 01 04 | 704 | 0.7+ | 1.1+ | 2006 09 12 | 703 | 0.3+ | 0.1+ | |
| 2001 09 19 | 704 | 0.9− | 0.8+ | 2003 01 04 | 704 | 0.8+ | 0.9+ | 2006 09 12 | 703 | 1.1− | 0.1− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.3− | 0.6+ | 2003 01 04 | 704 | (0.3+ | 2.4−) | 2006 09 12 | 703 | 0.1+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2003 01 08 | 704 | 0.3− | 0.3− | 2006 09 12 | 703 | 0.8− | 0.2− | | |
| 2001 09 19 | 704 | 0.6− | 0.9+ | 2003 01 08 | 704 | 0.6− | 0.4− | 2006 09 22 | 704 | 0.3+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.9− | 0.5− | 2003 01 08 | 704 | 0.7− | 0.3− | 2006 09 22 | 704 | 0.5− | 1.3+ | | |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2003 01 08 | 704 | 0.8− | 0.4− | 2006 09 22 | 704 | 0.0 | 0.9− | | |
| 2001 09 21 | 704 | 0.6− | 0.9+ | 2003 01 08 | 704 | 0.6− | 0.0 | 2006 09 22 | 704 | 0.3− | 0.1− | | |
| 2001 09 21 | 704 | 0.7− | 1.0+ | 2003 01 08 | 017 | 0.9+ | 0.5− | 2006 09 26 | 704 | 0.4+ | 1.4+ | | |
| 2001 09 21 | 704 | 0.8− | 0.5+ | 2003 01 08 | 017 | 1.2+ | 0.4− | 2006 09 26 | 704 | 0.2− | 0.6+ | | |
| 2001 09 25 | 644 | 0.4− | 0.4+ | 2003 01 31 | 704 | 1.4− | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.5+ | | |
| 2001 09 25 | 644 | 0.1− | 0.2+ | 2003 01 31 | 704 | 0.5− | 0.5+ | 2006 09 26 | 704 | (0.1+ | 1.9+) | | |
| 2001 09 25 | 644 | 0.6− | 0.3+ | 2003 01 31 | 704 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.9+ | | |
| 2001 10 11 | 704 | (0.1− | 2.4+) | 2004 03 13 | 644 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.1+ | | |
| 2001 10 11 | 704 | 0.4+ | 1.2+ | 2004 03 13 | 644 | 0.1+ | 1.0+ | 2006 09 30 | 703 | 0.5+ | 1.2+ | | |
| 2001 10 11 | 704 | 0.1− | 0.8+ | 2004 03 13 | 644 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.3+ | | |
| 2001 10 11 | 704 | (0.6− | 1.8+) | 2004 03 20 | 699 | 1.2+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1+ | | |
| 2001 10 11 | 644 | 0.2− | 1.2− | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.3+ | | |
| 2001 10 11 | 704 | 0.3− | 1.0+ | 2004 03 20 | 704 | 0.1+ | 1.1+ | 2006 10 09 | 644 | 0.2+ | 0.1− | | |
| 2001 10 11 | 704 | (1.2− | 2.3+) | 2004 03 20 | 699 | 0.2+ | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 11 | 644 | 0.1− | 1.1− | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 703 | 1.2+ | 1.2+ | | |
| 2001 10 11 | 704 | (1.7− | 2.1+) | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.4− | | |
| 2001 10 11 | 704 | (0.8− | 2.3+) | 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.7− | 1.9− | | |
| 2001 10 11 | 644 | 0.1+ | 1.1− | 2004 03 20 | 704 | 0.3− | 0.9+ | 2006 10 21 | 703 | 0.4− | 1.2− | | |
| 2001 10 16 | 644 | 0.1+ | 0.1+ | 2004 03 20 | 699 | 1.1+ | 0.2− | 2006 10 22 | 644 | 0.4+ | 0.1+ | | |
| 2001 10 16 | 644 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.5+ | 0.7+ | | |
| 2001 10 16 | 644 | 0.4+ | 0.2+ | 2004 03 20 | 704 | 0.3+ | 1.5+ | 2006 10 22 | 644 | 0.3− | 0.5+ | | |
| 2001 10 17 | 644 | 0.2+ | 0.0 | 2004 03 20 | 704 | 0.7+ | 0.6+ | | | | | | |
| 2001 10 17 | 644 | 0.3+ | 0.1+ | 2004 03 20 | 699 | 1.1− | 0.1− | | | | | | |

**(139939)∗ 2001 RX$_{134}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.62577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19210563 | $\omega$ | 301.27161 | | −0.02822561 | −0.99453378 | |
| $a$ | 2.9746964 | $\Omega$ | 149.84799 | | +0.97163176 | −0.05092038 | |
| $e$ | 0.0455108 | $i$ | 11.54497 | | +0.23480849 | +0.09115744 | |
| $P$ | 5.13 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.9+ | 0.3+ | 2002 12 14 | 704 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.2+ | | |
| 2001 08 26 | 644 | 0.5+ | 0.4+ | 2003 01 05 | 704 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.5+ | 0.2+ | | |
| 2001 08 26 | 644 | 0.8+ | 0.4+ | 2003 01 05 | 704 | 0.1− | 0.4+ | 2004 03 28 | 703 | 0.4− | 0.4+ | | |
| 2001 09 11 | 699 | 0.0 | 0.6+ | 2003 01 05 | 704 | 0.1− | 0.3− | 2004 03 28 | 703 | 0.5+ | 0.5+ | | |
| 2001 09 11 | 699 | 0.1− | 0.5+ | 2004 02 25 | 704 | 0.9+ | 0.6− | 2004 03 28 | 703 | 0.6− | 0.9+ | | |
| 2001 09 11 | 699 | 1.1− | 0.3+ | 2004 02 25 | 704 | 0.4+ | 0.7+ | 2004 03 28 | 703 | 0.5− | 0.6+ | | |
| 2001 09 11 | 699 | 0.2− | 0.0 | 2004 02 25 | 704 | 1.6+ | 0.2− | 2004 04 15 | 644 | 0.2− | 0.5+ | | |
| 2001 09 12 | 704 | 0.5+ | 1.0+ | 2004 02 25 | 704 | 0.0 | 1.0− | 2004 04 15 | 644 | 0.2− | 0.3+ | | |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2004 03 15 | 704 | 0.1+ | 0.1− | 2004 04 15 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.7+ | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2004 04 25 | 699 | 0.3− | 0.4− | | |
| 2001 09 12 | 704 | 0.4+ | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.2− | 2004 04 25 | 699 | 1.0− | 0.4+ | | |
| 2001 09 12 | 704 | 0.2+ | 1.2+ | 2004 03 15 | 704 | 0.0 | 0.2+ | 2004 04 25 | 699 | 0.4+ | 1.4+ | | |
| 2001 09 18 | 699 | 1.1− | 1.0+ | 2004 03 15 | 704 | 0.3+ | 0.4− | 2004 04 25 | 699 | 0.4+ | 0.5+ | | |
| 2001 09 18 | 699 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 08 22 | 644 | 0.1+ | 0.3− | | |
| 2001 09 18 | 699 | 0.9− | 0.7− | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.0 | | |
| 2001 09 18 | 699 | (0.5+ | 2.2+) | 2004 03 20 | 704 | 1.2− | 0.4− | 2006 08 22 | 644 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.6− | 0.4+ | 2006 09 14 | 703 | 0.5+ | 0.3+ | | |
| 2001 09 19 | 704 | 1.5− | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 703 | 0.4+ | 1.0− | | |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2004 03 21 | 699 | 0.3+ | 0.6− | 2006 09 14 | 703 | 0.3+ | 1.0− | | |
| 2001 10 24 | 644 | (1.7− | 2.1+) | 2004 03 21 | 699 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.4− | | |
| 2001 10 24 | 644 | (1.2− | 2.2+) | 2004 03 21 | 699 | 2.0− | 1.0− | 2006 09 26 | 703 | 0.1− | 1.0+ | | |
| 2001 10 24 | 644 | (1.1− | 2.3+) | 2004 03 21 | 699 | 0.8+ | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.4− | | |
| 2002 12 14 | 704 | 0.7+ | 0.0 | 2004 03 23 | 704 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.5− | | |
| 2002 12 14 | 704 | 0.3+ | 0.9+ | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 1.0+ | | |
| 2002 12 14 | 704 | 0.3− | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.4+ | | | | | | |

**(139940)∗ 2001 RR$_{135}$ = 2003 CY$_{17}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40532)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.20782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21290599 | $\omega$ | 261.90388 | | +0.48179711 | −0.87423284 | |
| $a$ | 2.7776497 | $\Omega$ | 158.96687 | | +0.85527975 | +0.45427170 | |
| $e$ | 0.1604722 | $i$ | 9.60801 | | +0.19070421 | +0.17133059 | |
| $P$ | 4.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.1− | 0.2+ | 2001 09 25 | 704 | 0.7+ | 1.0+ | 2005 06 11 | 691 | 0.0 | 0.6+ | | |
| 1999 03 22 | 645 | 0.1− | 0.2+ | 2001 09 25 | 704 | 0.6− | 0.0 | 2005 06 11 | 691 | 0.4+ | 0.4+ | | |
| 2001 09 12 | 704 | 0.4− | 0.0 | 2001 09 25 | 704 | 0.0 | 0.7+ | 2005 06 11 | 691 | 0.1+ | 0.2− | | |
| 2001 09 12 | 704 | 0.7− | 0.0 | 2001 09 26 | 704 | 0.4+ | 1.1+ | 2006 09 18 | 703 | 0.5− | 0.1− | | |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2001 09 26 | 704 | 0.3+ | 1.2+ | 2006 09 18 | 703 | 0.6+ | 0.3− | | |
| 2001 09 12 | 704 | 0.4+ | 0.7+ | 2001 09 26 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 703 | 1.0− | 0.1− | | |
| 2001 09 12 | 704 | 0.0 | 1.1+ | 2001 09 26 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.3− | | |
| 2001 09 18 | 699 | 0.5+ | 0.7+ | 2001 09 26 | 704 | 0.3− | 0.8+ | 2006 09 30 | 703 | (0.7+ | 1.7+) | | |
| 2001 09 18 | 699 | 0.3+ | 0.7− | 2001 09 27 | 644 | 0.1+ | 0.6− | 2006 09 30 | 703 | (1.0+ | 2.0+) | | |
| 2001 09 18 | 699 | 0.2+ | 0.5− | 2001 09 27 | 644 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.8+ | 0.1− | | |
| 2001 09 18 | 699 | 0.7− | 0.6+ | 2001 09 27 | 644 | 0.5− | 0.8− | 2006 09 30 | 703 | 0.6− | 0.6− | | |
| 2001 09 19 | 704 | 0.6− | 0.6− | 2001 10 08 | 644 | 0.4− | 0.9− | 2006 10 16 | 703 | 0.1+ | 0.7− | | |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2001 10 08 | 644 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.4− | 0.3− | | |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2001 10 08 | 644 | 0.0 | 1.1− | 2006 10 16 | 703 | 0.0 | 0.2− | | |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2001 10 11 | 704 | 0.5− | 1.4− | 2006 10 16 | 703 | 0.5+ | 0.2− | | |
| 2001 09 21 | 704 | 0.3+ | 0.6− | 2001 10 11 | 704 | (0.7− | 1.8−) | 2006 10 22 | 703 | 0.8− | 0.4+ | | |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2001 10 11 | 704 | (0.6+ | 2.2−) | 2006 10 22 | 703 | 0.9− | 0.1− | | |
| 2001 09 21 | 704 | 0.3− | 1.0+ | 2001 10 11 | 704 | (0.9− | 1.8−) | 2006 10 22 | 703 | 0.6+ | 0.2− | | |
| 2001 09 21 | 704 | 1.1− | 0.3+ | 2001 10 24 | 644 | 0.8− | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2001 10 24 | 644 | 0.8− | 0.4+ | 2006 10 30 | 703 | 0.4− | 0.7+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.2+ | 2001 10 24 | 644 | 1.0− | 0.8+ | 2006 10 30 | 703 | 0.1− | 1.1+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.6+ | 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.2− | 0.1+ | | |
| 2001 09 25 | 704 | 0.3+ | 0.4+ | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.9− | 0.8+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.3+ | 2003 01 31 | 704 | (1.3+ | 1.6+) | 2006 11 13 | 703 | (0.3− | 2.6−) | | |
| 2001 09 25 | 704 | 0.3+ | 1.3+ | 2003 01 31 | 704 | (1.0+ | 2.0+) | 2006 11 13 | 703 | 1.5+ | 1.1− | | |
| 2001 09 25 | 704 | 0.5+ | 0.3+ | 2003 01 31 | 704 | 1.4+ | 0.5− | 2006 11 13 | 703 | 0.5+ | 0.0 | | |
| 2001 09 25 | 704 | 0.8+ | 0.3− | 2003 01 31 | 704 | 0.9+ | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.0 | | |
| 2001 09 25 | 704 | 0.3+ | 1.1+ | 2003 02 07 | 644 | 0.3+ | 0.7+ | 2006 11 19 | 703 | 0.2− | 0.4− | | |
| 2001 09 25 | 704 | 0.1+ | 1.4− | 2003 02 07 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 703 | 0.1− | 0.3− | | |
| 2001 09 25 | 704 | 0.5+ | 0.3+ | 2003 02 07 | 644 | 0.6+ | 0.6+ | 2006 11 19 | 703 | 0.2− | 0.3− | | |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2003 02 09 | 608 | 0.0 | 0.6− | 2006 11 19 | 703 | 0.7− | 0.2+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2003 02 09 | 608 | 0.1+ | 0.8− | 2006 11 20 | 703 | 0.4+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2003 02 09 | 608 | 0.4− | 0.6− | 2006 11 20 | 703 | 0.3− | 0.2+ | | |
| 2001 09 25 | 704 | 0.5− | 0.2+ | 2003 02 22 | 644 | 0.6+ | 1.3+ | 2006 11 20 | 703 | 0.6− | 0.2+ | | |
| 2001 09 25 | 704 | (0.9+ | 1.8+) | 2003 02 22 | 644 | 0.7+ | 1.3+ | 2006 11 20 | 703 | 0.3+ | 0.4+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2003 02 22 | 644 | 1.2+ | 1.2+ | | | | | | |

**(139941)∗ 2001 RM$_{136}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.83630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21100714 | $\omega$ | 304.62460 | | +0.86446156 | −0.49427035 | |
| $a$ | 2.7942888 | $\Omega$ | 85.15542 | | +0.48607046 | +0.77533881 | |
| $e$ | 0.1261264 | $i$ | 5.27848 | | +0.12822525 | +0.39312409 | |
| $P$ | 4.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 644 | 0.2− | 0.1+ | 2003 01 27 | 699 | 0.7− | 0.1− | 2006 10 31 | 683 | (2.5+ | 0.5−) | | |
| 2001 08 28 | 644 | 0.0 | 0.5− | 2003 01 27 | 699 | 0.1− | 0.8+ | 2006 11 02 | 703 | 0.2− | 0.3− | | |
| 2001 08 28 | 644 | 0.3+ | 0.1− | 2003 01 27 | 608 | 0.1+ | 1.1+ | 2006 11 02 | 703 | 0.5− | 0.5− | | |
| 2001 09 11 | 699 | 0.5− | 0.5+ | 2003 01 27 | 608 | 0.2+ | 0.8+ | 2006 11 02 | 703 | 0.3− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.5+ | 1.3+ | 2003 01 27 | 608 | 0.2+ | 1.4+ | 2006 11 02 | 703 | 0.2− | 0.5− |
| 2001 09 11 | 699 | 0.1− | 1.3+ | 2003 01 30 | 699 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 699 | 0.4− | 1.4+ | 2003 01 30 | 699 | 0.6− | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.7− | 0.6+ | 2003 01 30 | 699 | 0.6+ | 0.6− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.5− | 0.9+ | 2003 01 30 | 699 | 0.7− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2003 01 30 | 699 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.5− | 1.3+ | 2003 01 30 | 699 | 0.6− | 1.4+ | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2003 01 30 | 699 | 1.0+ | 0.5+ | 2006 11 11 | 683 | 0.1− | 1.2− |
| 2001 09 19 | 704 | 0.5− | 0.8+ | 2003 01 30 | 699 | (1.0− | 1.9+) | 2006 11 11 | 683 | 0.4+ | 0.4+ |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2003 02 04 | 704 | (1.8+ | 0.5+) | 2006 11 11 | 683 | 0.2− | 0.3+ |
| 2001 09 19 | 704 | 0.2+ | 0.8+ | 2003 02 04 | 704 | (3.7+ | 0.0 ) | 2006 11 11 | 644 | 0.2+ | 0.2− |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2003 02 04 | 704 | 1.1+ | 0.4− | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2001 09 21 | 704 | 0.2+ | 1.1+ | 2003 02 04 | 704 | 0.9+ | 0.9− | 2006 11 11 | 644 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2003 02 04 | 704 | 1.0+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2003 02 07 | 704 | 0.4− | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.9− |
| 2001 09 21 | 704 | 0.1− | 1.3+ | 2003 02 07 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 644 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | (0.9− | 1.9+) | 2003 02 07 | 704 | 0.1− | 0.2+ | 2006 11 13 | 683 | 0.9+ | 1.0− |
| 2001 09 27 | 644 | 0.5− | 0.2+ | 2003 03 07 | 644 | 0.0 | 0.2+ | 2006 11 13 | 683 | 1.1+ | 0.5+ |
| 2001 09 27 | 644 | 0.6− | 0.2+ | 2003 03 07 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 683 | 1.1+ | 0.7+ |
| 2001 09 27 | 644 | 0.5− | 0.2+ | 2003 03 07 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.0 | 0.1− |
| 2001 10 08 | 644 | 0.0 | 0.4− | 2004 03 16 | 691 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.4+ | 0.0 |
| 2001 10 08 | 644 | 0.3+ | 0.3− | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 11 14 | 704 | 0.1+ | 0.2+ |
| 2001 10 08 | 644 | 0.0 | 0.4− | 2004 03 16 | 691 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 0.5+ | 0.8+ |
| 2001 10 11 | 704 | 0.3− | 0.4− | 2004 03 22 | 704 | 0.4+ | 1.3+ | 2006 11 15 | 683 | 0.0 | 0.4− |
| 2001 10 11 | 704 | 0.4− | 0.5+ | 2004 03 22 | 704 | 0.1+ | 0.7+ | 2006 11 15 | 683 | 1.1− | 0.9+ |
| 2001 10 11 | 704 | 0.1+ | 0.6− | 2004 03 22 | 704 | 0.5+ | 1.2+ | 2006 11 15 | 683 | 0.7− | 0.6+ |
| 2001 10 11 | 704 | 0.5− | 0.2− | 2004 04 17 | 699 | 0.4− | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2001 10 16 | 644 | 0.3− | 0.6+ | 2004 04 17 | 699 | 0.3+ | 0.9+ | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2001 10 16 | 644 | 0.3− | 0.5+ | 2004 04 17 | 699 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2001 10 16 | 644 | 0.3− | 0.4+ | 2004 04 17 | 699 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.2+ | 0.2+ |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2004 04 20 | 704 | 0.7+ | 1.1+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2001 10 20 | 704 | 0.9− | 0.5+ | 2004 04 20 | 704 | 1.4+ | 1.1+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2001 10 20 | 704 | 0.8− | 0.2+ | 2004 04 20 | 704 | 0.4+ | 1.4+ | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2001 10 20 | 704 | 0.8− | 0.3+ | 2004 04 20 | 704 | 1.1+ | 1.4+ | 2006 11 20 | 704 | 1.1− | 0.8+ |
| 2001 10 20 | 704 | 1.4− | 0.5+ | 2004 04 25 | 704 | 0.9+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2001 10 24 | 644 | 0.0 | 0.4+ | 2004 04 25 | 704 | 0.4− | 1.5+ | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2001 10 24 | 644 | 0.3− | 0.7+ | 2004 04 25 | 704 | (0.6+ | 1.6+) | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2001 10 24 | 644 | 0.1− | 0.5+ | 2004 04 25 | 704 | 0.4+ | 0.9+ | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2001 12 05 | 704 | 0.3+ | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 11 22 | 683 | 0.4− | 0.4− |
| 2001 12 05 | 704 | 1.1+ | 1.2+ | 2006 10 03 | G96 | 0.4+ | 0.3− | 2006 11 22 | 683 | (0.1+ | 1.6+) |
| 2001 12 05 | 704 | 0.8+ | 1.3+ | 2006 10 03 | G96 | 0.5+ | 0.5− | 2006 11 22 | 683 | 0.3− | 0.0 |
| 2001 12 05 | 704 | 0.4− | 1.2+ | 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 11 23 | 683 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.3+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 23 | 683 | 0.9+ | 0.6+ |
| 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 23 | 683 | 0.5− | 1.0+ |
| 2002 12 31 | 704 | 0.3+ | 0.3− | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 25 | 683 | 1.4+ | 1.2− |
| 2002 12 31 | 704 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.1− | 2006 11 25 | 683 | 2.7+ | 1.3− |
| 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.4− | 0.1− | 2006 11 25 | 683 | 2.3+ | 0.1− |
| 2003 01 09 | 704 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 28 | 683 | 0.8+ | 0.2+ |
| 2003 01 09 | 704 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.1− | 2006 11 28 | 704 | 2.2− | 0.8+ |
| 2003 01 09 | 704 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.4− | 2006 11 28 | 683 | 1.3+ | 0.7+ |
| 2003 01 09 | 704 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 1.9− | 1.0+ |
| 2003 01 09 | 704 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 28 | 683 | 1.2− | 0.3− |
| 2003 01 14 | 608 | 0.1+ | 0.5− | 2006 10 28 | 683 | (1.1+ | 2.3−) | 2006 11 28 | 704 | 2.0− | 0.2− |
| 2003 01 14 | 608 | 0.1+ | 0.1− | 2006 10 28 | 683 | 1.0+ | 0.3− | 2006 11 28 | 704 | 2.0− | 0.1+ |
| 2003 01 14 | 608 | 0.3− | 0.5+ | 2006 10 28 | 683 | (3.1+ | 0.6−) | 2006 11 28 | 704 | 2.1− | 0.9+ |
| 2003 01 27 | 699 | 0.9− | 0.2+ | 2006 10 31 | 683 | 1.2+ | 0.5− | | | | |
| 2003 01 27 | 699 | 0.7− | 0.1− | 2006 10 31 | 683 | (2.1+ | 1.3−) | | | | |

**(139942)∗ 2001 RN$_{136}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.83459 | | (2000.0) | | | |
| $n$ | 0.18464081 | $\omega$ | 274.90438 | | +0.99230290 | −0.08402724 |
| $a$ | 3.0543415 | $\Omega$ | 89.93609 | | +0.11347370 | +0.91111609 |
| $e$ | 0.2205600 | $i$ | 5.21905 | | −0.04958506 | +0.40349337 |
| $P$ | 5.34 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.3+ | 2001 09 27 | 644 | 0.1− | 0.7+ | 2005 05 17 | G96 | 0.2− | 0.1− |
| 1999 03 20 | 645 | 0.1+ | 0.3+ | 2001 09 27 | 644 | 0.2− | 0.5+ | 2005 05 17 | G96 | 0.1− | 0.2+ |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 09 27 | 644 | 0.3− | 0.6+ | 2005 05 17 | G96 | 0.3− | 0.2+ |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 10 08 | 644 | 1.0− | 0.6+ | 2005 05 17 | G96 | 0.1+ | 0.1− |
| 2001 07 19 | 644 | 0.1+ | 0.3+ | 2001 10 08 | 644 | 0.5− | 0.7+ | 2005 05 19 | G96 | 0.2+ | 0.2+ |
| 2001 07 19 | 644 | 0.3− | 0.5+ | 2001 10 08 | 644 | 0.0 | 0.7+ | 2005 05 19 | G96 | 0.5− | 0.0 |
| 2001 07 19 | 644 | 0.3− | 0.6+ | 2001 10 11 | 704 | 0.5− | 0.6+ | 2005 05 19 | G96 | 0.2− | 0.2+ |
| 2001 08 03 | 644 | 0.1− | 0.3+ | 2001 10 11 | 704 | 0.2+ | 0.8+ | 2005 05 19 | G96 | 0.2+ | 0.2+ |
| 2001 08 03 | 644 | 0.7+ | 0.1− | 2001 10 11 | 704 | 1.1+ | 0.1− | 2006 08 12 | 644 | 0.2− | 0.2+ |
| 2001 08 03 | 644 | 0.1+ | 0.1− | 2001 10 11 | 704 | 0.3+ | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.1+ |
| 2001 08 28 | 644 | 0.4+ | 0.1− | 2001 10 11 | 704 | 1.3− | 0.5− | 2006 08 12 | 644 | 0.4− | 0.1+ |
| 2001 08 28 | 644 | 0.1+ | 0.2− | 2001 10 16 | 644 | 0.7− | 0.6+ | 2006 08 12 | 644 | 0.0 | 0.1+ |
| 2001 08 28 | 644 | 0.3+ | 0.4+ | 2001 10 16 | 644 | 0.6− | 0.4+ | 2006 08 12 | 644 | 0.0 | 0.1− |
| 2001 09 11 | 699 | 0.2+ | 0.3+ | 2001 10 16 | 644 | 0.7− | 0.7+ | 2006 08 12 | 644 | 0.2− | 0.0 |
| 2001 09 11 | 699 | 1.0− | 0.5+ | 2001 10 19 | 699 | 0.9− | 0.5+ | 2006 08 12 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 699 | 0.2− | 1.0+ | 2001 10 19 | 699 | 0.6− | 0.9+ | 2006 08 12 | 644 | 0.2+ | 0.1+ |
| 2001 09 11 | 699 | (2.2− | 0.7+) | 2001 10 19 | 699 | 0.7− | 1.7+ | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 0.3+ | 2001 10 19 | 699 | 1.4− | 1.0+ | 2006 08 13 | 644 | 0.3− | 0.4− |
| 2001 09 12 | 704 | 0.5− | 0.4+ | 2001 10 20 | 704 | 1.0− | 1.1+ | 2006 08 13 | 644 | 0.2− | 0.1− |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2001 10 20 | 704 | 0.5− | 0.4+ | 2006 08 13 | 644 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 1.0+ | 2001 10 20 | 704 | 1.4− | 1.9+ | 2006 08 14 | 644 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.5+ | 0.7+ | 2001 10 20 | 704 | 0.4− | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2001 09 18 | 699 | 0.0 | 1.0+ | 2002 12 31 | 645 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2002 12 31 | 645 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.1− |
| 2001 09 18 | 699 | 0.4− | 1.3+ | 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 08 23 | 644 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.4− | 2004 03 15 | 691 | 0.4+ | 0.1+ | 2006 08 23 | 644 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.0 | 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2005 04 16 | 691 | 0.4+ | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.7+ | 1.8+ | 2005 04 16 | 691 | 0.2− | 0.7+ | 2006 08 24 | 644 | 0.5+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.9+ | 2005 04 16 | 691 | 0.5+ | 0.5+ | | | | |

**(139943)∗ 2001 RQ$_{136}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.17363 | | (2000.0) | | | |
| $n$ | 0.22211092 | $\omega$ | 67.58490 | | −0.11837483 | −0.98737442 |
| $a$ | 2.7003669 | $\Omega$ | 29.81493 | | +0.81531419 | −0.15715518 |
| $e$ | 0.0371258 | $i$ | 12.22203 | | +0.56678936 | +0.01984964 |
| $P$ | 4.44 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 644 | 0.4− | 0.1+ | 2001 10 16 | 644 | 0.4+ | 0.9+ | 2004 04 25 | 704 | 0.6+ | 0.8+ |
| 2001 09 10 | 644 | 0.7− | 0.5+ | 2001 10 16 | 644 | 0.2+ | 1.0+ | 2004 04 25 | 704 | 0.1+ | 0.1+ |
| 2001 09 10 | 644 | 0.6− | 0.2+ | 2001 10 19 | 699 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 1.0− | 0.4+ |
| 2001 09 11 | 699 | 0.7+ | 0.4− | 2001 10 19 | 699 | 0.0 | 0.7− | 2004 04 30 | 608 | 0.3+ | 1.2− |
| 2001 09 11 | 699 | 1.1− | 0.6− | 2001 10 19 | 699 | 0.0 | 1.1+ | 2004 04 30 | 608 | 0.1+ | 0.5− |
| 2001 09 11 | 699 | 0.9− | 0.0 | 2001 10 19 | 699 | 0.4+ | 0.2− | 2004 04 30 | 608 | 0.2− | 0.3− |
| 2001 09 11 | 699 | 0.4− | 0.3+ | 2001 10 24 | 644 | 0.2− | 0.8− | 2005 07 03 | 644 | 0.5+ | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.3− | 2001 10 24 | 644 | 0.2+ | 0.4− | 2005 07 03 | 644 | 0.3+ | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.2− | 2001 10 24 | 644 | 0.2+ | 1.0− | 2005 07 03 | 644 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.2+ | 0.4− | 2003 01 10 | 704 | 0.6− | 1.4+ | 2005 07 26 | 644 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.5− | 0.8− | 2003 01 10 | 704 | (0.8+ | 2.2+) | 2005 07 26 | 644 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2003 01 10 | 704 | (0.7+ | 1.8+) | 2005 07 26 | 644 | 0.3− | 0.5+ |
| 2001 09 18 | 699 | 1.0− | 0.6+ | 2003 01 10 | 704 | (0.7+ | 2.2+) | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 2001 09 18 | 699 | 0.7− | 0.3+ | 2003 01 13 | 704 | 0.6+ | 0.8− | 2006 10 19 | 703 | 1.0+ | 0.4+ |
| 2001 09 18 | 699 | 0.7− | 0.3+ | 2003 01 13 | 704 | (2.0+ | 1.2+) | 2006 10 19 | 703 | 1.2− | 0.4+ |
| 2001 09 18 | 699 | 1.1+ | 0.3− | 2003 01 13 | 704 | (1.9+ | 0.8+) | 2006 10 19 | 703 | 0.5− | 1.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6+ | 0.1+ | 2003 01 13 | 704 | 1.5+ | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 0.4− | 0.8+ | 2003 01 31 | 699 | (2.6+ | 1.4+) | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | (1.2− | 2.1+) | 2003 01 31 | 699 | 0.5+ | 1.5+ | 2006 10 27 | 703 | 0.6− | 0.7+ |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2003 01 31 | 699 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.9+ |
| 2001 09 21 | 704 | 0.0 | 0.6+ | 2003 01 31 | 699 | 0.6+ | 0.9+ | 2006 11 14 | 704 | 0.5+ | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2003 02 06 | 699 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.6+ | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2003 02 06 | 699 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 2001 09 21 | 704 | 1.0+ | 0.6+ | 2003 02 06 | 699 | (0.0 | 1.7+) | 2006 11 14 | 704 | 0.7+ | 0.1− |
| 2001 09 21 | 704 | 1.1− | 0.2+ | 2003 02 06 | 699 | 0.8− | 0.5+ | 2006 11 14 | 704 | 0.4− | 0.5+ |
| 2001 10 08 | 644 | 0.4− | 0.3− | 2004 04 20 | 704 | 0.5− | 0.4+ | 2006 11 15 | 704 | 0.8+ | 1.3− |
| 2001 10 08 | 644 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2006 11 15 | 704 | 0.4+ | 1.1− |
| 2001 10 08 | 644 | 0.4− | 0.3− | 2004 04 20 | 704 | 0.5− | 0.2+ | 2006 11 15 | 704 | 0.3+ | 0.0 |
| 2001 10 11 | 704 | 0.4− | 0.0 | 2004 04 20 | 704 | (1.6− | 0.7+) | 2006 11 22 | 703 | 0.3− | 0.1+ |
| 2001 10 11 | 704 | 1.0+ | 0.4+ | 2004 04 22 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.6− |
| 2001 10 11 | 704 | 0.1+ | 0.1+ | 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.6− |
| 2001 10 11 | 704 | 0.4+ | 0.6+ | 2004 04 22 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.5− |
| 2001 10 16 | 644 | 0.3+ | 0.9+ | 2004 04 25 | 704 | 0.5+ | 0.5− | | | | |

**(139944)∗ 2001 RZ$_{136}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.01971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21796071 | $\omega$ | 137.67917 | | +0.35981505 | +0.92962973 | |
| $a$ | 2.7345376 | $\Omega$ | 153.11865 | | −0.89620758 | +0.36806192 | |
| $e$ | 0.1310503 | $i$ | 10.12806 | | −0.25950934 | +0.01786018 | |
| $P$ | 4.52 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 03 | 644 | 0.1+ | 0.4+ | 2001 10 08 | 644 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.7+ | 0.1+ |
| 2001 08 03 | 644 | 0.2+ | 0.4+ | 2001 10 08 | 644 | 0.2− | 0.6+ | 2004 03 20 | 704 | 0.9+ | 0.7+ |
| 2001 08 03 | 644 | 0.7+ | 0.3+ | 2001 10 08 | 644 | 0.5− | 0.7+ | 2004 03 20 | 699 | 0.7− | 1.3+ |
| 2001 08 25 | 704 | 0.4+ | 0.8+ | 2001 10 16 | 644 | 0.9− | 0.3+ | 2004 03 20 | 704 | 0.8+ | 0.7+ |
| 2001 08 25 | 704 | 0.4+ | 0.7+ | 2001 10 16 | 644 | 0.7− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.3+ |
| 2001 08 25 | 704 | 0.2− | 0.9− | 2001 10 16 | 644 | 0.7− | 0.1+ | 2004 03 20 | 699 | 0.1+ | 0.6+ |
| 2001 08 25 | 704 | 0.7− | 0.6+ | 2001 10 19 | 699 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.2+ |
| 2001 09 11 | 699 | 0.8+ | 0.6− | 2001 10 19 | 699 | 0.5− | 0.4+ | 2004 03 22 | 704 | 0.9+ | 1.3+ |
| 2001 09 11 | 699 | 0.5+ | 0.2+ | 2001 10 19 | 699 | 0.4− | 0.8+ | 2004 03 22 | 704 | 1.1+ | 0.3+ |
| 2001 09 11 | 699 | (0.6+ | 1.8−) | 2001 10 19 | 699 | 0.7− | 0.0 | 2004 03 22 | 704 | 0.5+ | 0.5+ |
| 2001 09 11 | 699 | 0.4+ | 0.2+ | 2004 02 18 | 704 | 0.6+ | 0.7+ | 2005 06 11 | 691 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 0.5+ | 2004 02 18 | 704 | 0.0 | 0.9+ | 2005 06 11 | 691 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.6+ | 0.2+ | 2004 02 18 | 704 | (0.4+ | 1.7+) | 2005 06 11 | 691 | (0.2+ | 1.8+) |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2004 02 18 | 704 | 0.1− | 0.8+ | 2005 07 04 | 608 | 0.7− | 0.1− |
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.4+ | 2005 07 04 | 608 | 0.5− | 0.3− |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2004 02 23 | 704 | 0.7− | 0.9+ | 2005 07 04 | 608 | 0.5− | 0.3− |
| 2001 09 18 | 699 | 1.1− | 0.1− | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2005 07 05 | 704 | 0.1+ | 1.1+ |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2005 07 05 | 704 | 0.2+ | 0.3+ |
| 2001 09 18 | 699 | 0.9− | 0.9+ | 2004 02 23 | 704 | 0.7+ | 0.6+ | 2005 07 05 | 704 | 0.5+ | 0.5+ |
| 2001 09 18 | 699 | 0.1− | 0.4+ | 2004 03 11 | 644 | 0.5+ | 0.8+ | 2005 07 05 | 704 | 0.2+ | 0.5+ |
| 2001 09 19 | 704 | 0.5+ | 0.5+ | 2004 03 11 | 644 | 0.2+ | 0.9+ | 2006 10 30 | 703 | 0.8+ | 0.4+ |
| 2001 09 19 | 704 | 0.0 | 1.0+ | 2004 03 11 | 644 | 0.0 | 1.1+ | 2006 10 30 | 703 | 0.3+ | 0.7+ |
| 2001 09 19 | 704 | 0.3+ | 0.4+ | 2004 03 15 | 703 | (0.1− | 2.5+) | 2006 10 30 | 703 | 0.8+ | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2004 03 15 | 703 | (0.7+ | 1.9+) | 2006 10 30 | 703 | (2.5− | 0.1−) |
| 2001 09 19 | 704 | 0.4− | 0.5+ | 2004 03 15 | 704 | 0.7− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 03 15 | 703 | (1.3− | 2.8+) | 2006 11 13 | 703 | 0.1− | 0.8− |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.3+ | 1.2+ | 2006 11 13 | 703 | 0.1+ | 0.8+ |
| 2001 09 21 | 704 | 0.3− | 1.0+ | 2004 03 15 | 703 | 0.5+ | 0.7+ | 2006 11 13 | 703 | 0.3+ | 0.7− |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 11 19 | 703 | 1.2− | 0.5+ |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.5− | 0.6+ | 2006 11 19 | 703 | 0.4+ | 0.6+ |
| 2001 09 24 | 644 | 0.2+ | 0.6+ | 2004 03 20 | 699 | 0.6− | 0.7+ | 2006 11 19 | 703 | 1.1− | 0.6+ |
| 2001 09 24 | 644 | 0.3+ | 0.7+ | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 1.6− |
| 2001 09 24 | 644 | 0.0 | 0.3+ | 2004 03 20 | 699 | 1.0− | 0.2+ | | | | |

**(139945)∗ 2001 RG$_{137}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.68253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21029603 | $\omega$ | 70.82910 | | −0.06309552 | −0.99693585 | |
| $a$ | 2.8005844 | $\Omega$ | 22.93768 | | +0.86528900 | −0.07773105 | |
| $e$ | 0.1354117 | $i$ | 6.81354 | | +0.49728654 | +0.00876283 | |
| $P$ | 4.69 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 13 | 691 | 0.5− | 0.6− | 2001 10 24 | 704 | 0.4− | 0.9+ | 2006 10 27 | 703 | 1.3− | 0.0 |
| 1994 03 13 | 691 | 0.3− | 0.2− | 2001 10 24 | 704 | 0.1+ | 1.4+ | 2006 10 27 | 703 | 0.5− | 1.0− |
| 1994 03 13 | 691 | 0.1− | 0.1+ | 2001 10 24 | 704 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2001 12 10 | 645 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 695 | 0.0 | 0.1+ | 2001 12 10 | 645 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2001 09 12 | 704 | 0.7− | 0.1+ | 2003 01 10 | 704 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 09 12 | 704 | 0.2− | 0.4+ | 2003 01 10 | 704 | 0.7+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.5+ | 0.4+ | 2003 01 10 | 704 | (0.2+ | 2.4+) | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2001 09 12 | 695 | 0.2− | 0.1+ | 2003 01 31 | 704 | 0.5− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2003 01 31 | 704 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.8− | 0.6− |
| 2001 09 19 | 704 | 0.4− | 0.4− | 2003 01 31 | 704 | 0.6+ | 1.0+ | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2001 09 19 | 704 | 0.8+ | 0.1+ | 2003 01 31 | 704 | 1.0+ | 0.9− | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | (1.5+ | 1.6−) | 2003 03 07 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.4− |
| 2001 09 23 | 704 | 0.6+ | 0.4+ | 2003 03 07 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2001 09 23 | 704 | 0.4+ | 0.5− | 2003 03 07 | 644 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2001 09 23 | 704 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2001 09 23 | 704 | 0.5+ | 0.3− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 09 23 | 704 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2001 09 26 | 704 | 0.2+ | 0.7− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 1.0− |
| 2001 09 26 | 704 | 0.6+ | 0.4+ | 2006 10 13 | 691 | 0.2+ | 1.0+ | 2006 11 19 | 704 | 0.4− | 0.7− |
| 2001 09 26 | 704 | 0.5− | 1.1− | 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2001 09 26 | 704 | (1.9+ | 0.7+) | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.4− | 0.0 |
| 2001 10 17 | 644 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.9+ | 0.4− |
| 2001 10 17 | 644 | 0.5− | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.6+ |
| 2001 10 17 | 644 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.0 |
| 2001 10 19 | 699 | 0.8− | 1.1− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.7+ |
| 2001 10 19 | 699 | (2.2+ | 1.1+) | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.9− | 0.8+ |
| 2001 10 19 | 699 | 0.3− | 1.3− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 1.0+ | 0.6− |
| 2001 10 19 | 699 | 0.0 | 1.3+ | 2006 10 27 | 703 | 0.4− | 0.6− | 2006 11 29 | 704 | 1.2+ | 0.1+ |
| 2001 10 24 | 704 | 0.9+ | 0.1+ | 2006 10 27 | 703 | 0.9− | 0.2− | 2006 11 29 | 704 | 0.3− | 0.4− |

**(139946)∗ 2001 RR$_{138}$ = 1997 SS$_{34}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18069)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.58655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22321584 | $\omega$ | 178.12161 | | −0.99969018 | +0.02213713 | |
| $a$ | 2.6914483 | $\Omega$ | 3.21371 | | −0.02465222 | −0.81747518 | |
| $e$ | 0.1287608 | $i$ | 11.71140 | | −0.00343624 | −0.57553825 | |
| $P$ | 4.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2004 04 30 | 608 | 0.3+ | 0.3+ |
| 1997 09 28 | 691 | 0.2+ | 0.3− | 2004 03 18 | 704 | 0.3− | 0.9+ | 2005 07 03 | 644 | 0.2+ | 0.6+ |
| 1997 09 28 | 691 | 0.2+ | 0.2− | 2004 03 18 | 704 | 0.5− | 0.3+ | 2005 07 03 | 644 | 0.4+ | 0.2+ |
| 1997 09 30 | 691 | 0.4+ | 0.3− | 2004 03 18 | 704 | 0.0 | 0.1+ | 2005 07 03 | 644 | 0.3+ | 0.4+ |
| 1997 09 30 | 691 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.3− | 0.3− | 2005 07 26 | 644 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 1.0− | 0.8+ | 2004 03 20 | 704 | (1.5+ | 0.4+) | 2005 07 26 | 644 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 0.8− | 0.1− | 2005 07 26 | 644 | 0.3+ | 0.6+ |
| 2001 09 12 | 704 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 1.2− | 0.2+ | 2004 03 31 | 704 | 0.7− | 0.9+ | 2006 10 11 | 644 | 0.4− | 0.7+ |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2004 03 31 | 704 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.7+ |
| 2001 09 19 | 704 | 1.2+ | 0.7− | 2004 03 31 | 704 | 0.8− | 1.0+ | 2006 10 19 | A50 | 0.3+ | 0.9+ |
| 2001 09 19 | 704 | 0.7+ | 0.2− | 2004 03 31 | 704 | 0.3− | 1.0+ | 2006 10 19 | A50 | 0.1− | 0.5+ |
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2004 03 31 | 704 | 0.7− | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.5− | 0.3− | 2004 04 08 | E12 | 0.7+ | 1.5− | 2006 10 22 | 644 | 0.3− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1− | 0.4− | 2004 04 08 | E12 | 0.0 | 1.0− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2001 09 21 | 704 | 0.8− | 0.4− | 2004 04 08 | E12 | 0.5+ | 1.1− | 2006 10 23 | 644 | 0.3− | 0.6+ |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2004 04 08 | E12 | 0.6+ | 1.2− | 2006 10 23 | 644 | 0.3− | 0.5+ |
| 2001 09 21 | 704 | 0.7− | 0.4− | 2004 04 09 | E12 | 0.6+ | 1.5− | 2006 10 23 | 644 | 0.5− | 0.9+ |
| 2001 10 17 | 644 | 0.8− | 0.2+ | 2004 04 09 | E12 | 0.4+ | 1.0− | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2001 10 17 | 644 | 0.8− | 0.5+ | 2004 04 09 | E12 | (0.1− | 1.9−) | 2006 10 27 | 703 | 0.9+ | 0.5− |
| 2001 10 17 | 644 | 1.1− | 0.5+ | 2004 04 09 | E12 | 0.3+ | 1.4− | 2006 10 27 | 703 | 0.4− | 0.4− |
| 2002 12 06 | 704 | 1.0− | 0.4+ | 2004 04 17 | 704 | 0.2− | 0.4+ | 2006 10 27 | 703 | (1.9− | 1.2+) |
| 2002 12 06 | 704 | 0.4+ | 0.6+ | 2004 04 17 | 704 | 0.2− | 0.6+ | 2006 11 23 | 703 | 2.5+ | 2.1− |
| 2002 12 06 | 704 | (0.9+ | 1.8+) | 2004 04 17 | 704 | 0.3− | 0.4+ | 2006 11 23 | 703 | 0.3− | 0.1+ |
| 2004 03 14 | 644 | 0.1+ | 0.5+ | 2004 04 17 | 704 | 0.2+ | 0.4+ | 2006 11 23 | 703 | 0.0 | 0.5+ |
| 2004 03 14 | 644 | 0.2− | 0.4+ | 2004 04 30 | 608 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 1.7− | 0.1+ |
| 2004 03 14 | 644 | 0.1− | 0.6+ | 2004 04 30 | 608 | 0.5+ | 0.1+ | | | | |

**(139947)∗ 2001 RT$_{139}$ = 2003 BD$_{28}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40535)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.95698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21661125 | $\omega$ | 262.67466 | | +0.78572639 | −0.61608553 | |
| $a$ | 2.7458831 | $\Omega$ | 135.33588 | | +0.59408693 | +0.72662212 | |
| $e$ | 0.1110025 | $i$ | 4.52280 | | +0.17232169 | +0.30407058 | |
| $P$ | 4.55 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2003 01 29 | 291 | 0.1+ | 0.6+ | 2005 07 06 | 691 | 0.2− | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.0 | 2003 01 29 | 291 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.6− |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2003 01 31 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2001 09 18 | 699 | (1.8− | 0.8+) | 2003 01 31 | 704 | (1.5− | 1.3+) | 2006 11 09 | 644 | 0.4− | 0.3− |
| 2001 09 18 | 699 | 0.4− | 0.9+ | 2003 01 31 | 704 | 0.2− | 1.4+ | 2006 11 09 | 644 | 0.4− | 0.3− |
| 2001 09 18 | 699 | 1.0− | 0.3+ | 2004 03 31 | 691 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2001 09 18 | 699 | 1.2− | 1.4+ | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 11 13 | 703 | 1.2− | 0.7− |
| 2001 09 19 | 704 | 0.1− | 0.8+ | 2004 03 31 | 691 | 0.1+ | 0.8+ | 2006 11 13 | 703 | 0.6− | 0.8− |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2004 04 21 | 599 | 1.5+ | 1.4+ | 2006 11 13 | 703 | 0.6− | 0.6+ |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2004 04 21 | 599 | 0.4+ | 1.0+ | 2006 11 14 | 704 | 0.1− | 0.1− |
| 2001 09 19 | 704 | (2.0− | 1.8+) | 2004 04 21 | 599 | 0.8+ | 0.7+ | 2006 11 14 | 704 | 0.1− | 0.6− |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2005 06 05 | 691 | 0.2+ | 1.1+ | 2006 11 14 | 704 | 0.9+ | 0.3− |
| 2001 09 19 | 704 | (1.1− | 1.8+) | 2005 06 05 | 691 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 2001 09 19 | 704 | 1.3+ | 0.4+ | 2005 06 05 | 691 | 0.1+ | 0.7+ | 2006 11 14 | 704 | 0.4+ | 0.3− |
| 2001 09 19 | 704 | (0.3+ | 2.3+) | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.7+ | 1.0+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2005 06 10 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.1− |
| 2001 09 21 | 704 | 0.7− | 0.5+ | 2005 06 10 | 691 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.4+ | 0.0 |
| 2001 09 21 | 704 | 1.1− | 0.9+ | 2005 06 14 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.7− | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 1.3+ | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 1.0+ | 0.3+ |
| 2001 09 21 | 704 | (2.8− | 2.1+) | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.8+ |
| 2001 09 21 | 704 | 0.1+ | 1.0+ | 2005 06 15 | G96 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2003 01 26 | 608 | 0.4+ | 0.1+ | 2005 06 15 | G96 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2003 01 26 | 608 | 0.8+ | 0.1+ | 2005 06 15 | G96 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.8− | 0.5+ |
| 2003 01 26 | 608 | 0.7+ | 0.2+ | 2005 06 15 | G96 | 0.6− | 0.4+ | 2006 11 23 | 683 | 0.2− | 0.1− |
| 2003 01 28 | 704 | 0.5+ | 0.9+ | 2005 07 04 | G96 | 0.1− | 0.1+ | 2006 11 23 | 683 | 0.6− | 0.8+ |
| 2003 01 28 | 704 | 0.2+ | 0.3+ | 2005 07 04 | G96 | 0.1− | 0.2+ | 2006 11 23 | 683 | (1.1+ | 1.6+) |
| 2003 01 28 | 704 | 0.0 | 1.0+ | 2005 07 04 | G96 | 0.1− | 0.0 | 2006 11 28 | 683 | 0.5− | 0.2− |
| 2003 01 28 | 704 | 0.4− | 0.9+ | 2005 07 04 | G96 | (2.2− | 0.3−) | 2006 11 28 | 683 | 0.8+ | 0.9+ |
| 2003 01 28 | 704 | (1.7+ | 0.1+) | 2005 07 06 | 691 | 0.7+ | 0.9− | 2006 11 28 | 683 | 0.3− | 2.3+ |
| 2003 01 29 | 291 | 0.3+ | 0.6+ | 2005 07 06 | 691 | 0.2− | 0.1+ | | | | |

**(139948)∗ 2001 RU$_{140}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.77182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18999043 | $\omega$ | 158.91271 | | +0.79320256 | +0.60666321 | |
| $a$ | 2.9967343 | $\Omega$ | 163.40664 | | −0.58183070 | +0.78060997 | |
| $e$ | 0.1707831 | $i$ | 10.65775 | | −0.17972962 | +0.15035902 | |
| $P$ | 5.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 1.2− | 0.9− | 2005 05 15 | 644 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.6− |
| 2001 08 27 | 699 | 0.0 | 0.6+ | 2006 07 21 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 1.1− | 0.2+ |
| 2001 08 27 | 699 | (2.1− | 0.1+) | 2006 07 21 | 644 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2001 08 27 | 699 | 0.5+ | 0.5+ | 2006 07 21 | 644 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.8− |
| 2001 09 12 | 704 | 0.0 | 0.1− | 2006 08 13 | 644 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.0 | 0.8+ | 2006 08 13 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.6− | 0.0 |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2006 08 13 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.2− | 1.2− |
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.4− |
| 2001 09 19 | 704 | 0.1+ | 0.9+ | 2006 08 19 | 699 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2006 08 19 | 699 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.5+ | 2006 08 19 | 699 | 0.9+ | 1.5+ | 2006 09 20 | 704 | 0.6+ | 0.4+ |
| 2001 09 21 | 704 | (2.3− | 0.4−) | 2006 08 19 | 699 | 0.5+ | 0.1− | 2006 09 20 | 704 | 0.9− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.9+ | 2006 08 21 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 1.2+ | 0.1− |
| 2001 09 21 | 704 | 1.1+ | 0.1− | 2006 08 21 | 644 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.8− | 0.0 | 2006 08 21 | 644 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.7− | 0.4+ | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.7− | 0.9+ |
| 2001 09 21 | 704 | 0.2+ | 0.6+ | 2006 08 21 | 644 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2001 09 21 | 704 | 0.5− | 0.1− | 2006 08 24 | 704 | 0.7− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2001 09 24 | 704 | 0.2− | 0.5− | 2006 08 24 | 704 | 0.4− | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 09 24 | 704 | 0.0 | 0.3− | 2006 08 24 | 704 | 1.0− | 1.4+ | 2006 09 26 | G96 | 0.2− | 0.6− |
| 2001 09 24 | 704 | 0.6− | 0.3− | 2006 08 24 | 704 | 0.6− | 0.9+ | 2006 10 17 | G96 | 0.0 | 0.7− |
| 2001 09 24 | 704 | 1.4− | 0.2+ | 2006 08 28 | 703 | (2.9− | 0.2−) | 2006 10 17 | G96 | 0.6+ | 0.2− |
| 2001 10 16 | 644 | 0.5+ | 1.0+ | 2006 08 28 | 703 | (0.6− | 1.6+) | 2006 10 17 | G96 | 1.1+ | 0.3− |
| 2001 10 16 | 644 | 0.8+ | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.9− | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2001 10 16 | 644 | 0.4+ | 0.9+ | 2006 08 28 | 703 | 1.2− | 0.2+ | 2006 10 28 | G96 | 0.7− | 0.7− |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 704 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.2− | 0.8− |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 704 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2004 02 12 | 691 | 0.2− | 0.4+ | 2006 08 29 | 704 | 0.6+ | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2004 02 22 | 691 | 0.0 | 0.7+ | 2006 08 29 | 704 | 0.0 | 0.8+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2004 02 22 | 691 | 0.1+ | 0.5+ | 2006 09 12 | 699 | (0.7+ | 2.6+) | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2004 02 22 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 699 | 0.7+ | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2005 05 15 | 644 | 0.2+ | 0.9+ | 2006 09 12 | 699 | (1.6− | 1.1+) | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2005 05 15 | 644 | 0.3+ | 0.8+ | 2006 09 12 | 699 | (0.2+ | 2.5+) | | | | |

**(139949)∗ 2001 RL$_{141}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.11963 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23131190 | $\omega$ | 268.15473 | | +0.99129975 | +0.09579538 | |
| $a$ | 2.6282745 | $\Omega$ | 86.34059 | | −0.05181081 | +0.91441725 | |
| $e$ | 0.1412308 | $i$ | 5.18955 | | −0.12099772 | +0.39327388 | |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 1.0− | 1.2− | 2001 10 08 | 644 | 0.6− | 0.2+ | 2005 08 01 | E12 | 0.5+ | 0.2− |
| 1997 11 06 | 704 | 1.4− | 1.3+ | 2001 10 08 | 644 | 0.4− | 0.4+ | 2005 08 22 | 644 | 0.2+ | 0.2− |
| 1997 11 06 | 704 | 0.3+ | 0.9− | 2001 10 08 | 644 | 0.5− | 0.2+ | 2005 08 22 | 644 | 0.1+ | 0.1− |
| 1997 11 06 | 704 | 1.5+ | 1.7+ | 2001 10 11 | 704 | 0.2+ | 0.1+ | 2005 08 22 | 644 | 0.1+ | 0.4− |
| 1997 11 06 | 704 | 0.6+ | 0.4− | 2001 10 11 | 704 | 0.1− | 0.3+ | 2005 08 28 | E12 | 0.5+ | 0.3+ |
| 1997 11 08 | 910 | 1.4+ | 0.0 | 2001 10 11 | 704 | 0.2+ | 0.2+ | 2005 08 28 | E12 | 0.4+ | 0.1− |
| 1997 11 08 | 910 | 1.2+ | 0.1+ | 2001 10 11 | 704 | 0.6− | 0.2− | 2005 08 28 | E12 | 0.1− | 1.4− |
| 1997 11 08 | 910 | 1.5+ | 0.0 | 2001 10 11 | 704 | 0.6− | 0.2− | 2005 08 28 | E12 | 0.4+ | 0.8− |
| 2001 07 19 | 644 | 0.4− | 0.0 | 2001 10 16 | 644 | 0.7− | 0.6+ | 2005 09 01 | 644 | 0.3+ | 0.2− |
| 2001 07 19 | 644 | 0.4− | 0.4+ | 2001 10 16 | 644 | 0.6− | 0.3+ | 2005 09 01 | 644 | 0.3+ | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.2− | 0.2+ | 2001 10 16 | 644 | 0.6− | 0.4+ | 2005 09 01 | 644 | 0.1+ | 0.2− |
| 2001 08 27 | 699 | 0.2+ | 0.4+ | 2001 10 19 | 699 | 0.6− | 0.6+ | 2005 09 08 | E12 | 0.2− | 1.1− |
| 2001 08 27 | 699 | 0.2− | 0.8+ | 2001 10 19 | 699 | 0.4+ | 0.1+ | 2005 09 08 | E12 | 0.9+ | 0.1− |
| 2001 08 27 | 699 | 0.4− | 0.3+ | 2001 10 19 | 699 | 0.1− | 0.5+ | 2005 09 08 | E12 | 0.8+ | 0.3− |
| 2001 08 27 | 699 | 0.1− | 0.3+ | 2001 10 19 | 699 | 1.0− | 0.5+ | 2005 09 08 | E12 | 0.7+ | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2001 10 24 | 644 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.7− |
| 2001 09 12 | 704 | 0.2− | 0.4− | 2001 10 24 | 644 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2001 10 24 | 644 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2004 04 20 | 704 | 0.5+ | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.7− |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2004 04 20 | 704 | 0.4− | 1.1+ | 2006 11 27 | G96 | 0.2+ | 0.7− |
| 2001 09 19 | 704 | 1.0− | 0.0 | 2004 04 20 | 704 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.4− | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.4− | 2004 04 20 | 704 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2004 04 20 | 704 | 0.0 | 1.2+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.8− | 0.4− | 2005 07 27 | 644 | 0.5+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.6− | 0.1+ | 2005 07 27 | 644 | 0.4+ | 0.2− | 2006 12 01 | G96 | 0.4− | 0.3− |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2005 07 27 | 644 | 0.4+ | 0.0 | 2006 12 01 | G96 | 0.5− | 0.2− |
| 2001 09 27 | 644 | 0.2− | 0.3− | 2005 08 01 | E12 | 0.6+ | 0.1− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2001 09 27 | 644 | 0.3− | 0.0 | 2005 08 01 | E12 | 0.3+ | 0.0 | | | | |
| 2001 09 27 | 644 | 0.3− | 0.1− | 2005 08 01 | E12 | 1.0− | 0.3− | | | | |

**(139950)∗ 2001 RP$_{141}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.47721 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21310825 | $\omega$ | 10.90548 | | +0.54269373 | −0.83028391 | |
| $a$ | 2.7758918 | $\Omega$ | 46.37196 | | +0.75682296 | +0.41783676 | |
| $e$ | 0.1493225 | $i$ | 10.09977 | | +0.36428357 | +0.36883744 | |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3− | 0.7+ | 2003 02 21 | 644 | 0.4+ | 0.7+ | 2006 11 16 | 704 | (1.8− | 0.7+) |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2003 02 21 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 704 | (1.5− | 0.4−) |
| 2001 09 12 | 704 | 0.5− | 0.2+ | 2003 03 03 | 644 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 2001 09 19 | 704 | 0.8− | 0.6+ | 2003 03 03 | 644 | 0.4+ | 0.6+ | 2006 11 16 | 704 | 0.5− | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.7− | 2003 03 03 | 644 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 1.0+ |
| 2001 09 19 | 704 | 0.8− | 0.4− | 2003 03 08 | 699 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.8+ | 0.2− | 2003 03 08 | 699 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | (0.6+ | 1.9+) | 2003 03 08 | 699 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.5+ | 1.2+ |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2003 03 08 | 699 | 0.7− | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2003 03 08 | 644 | 0.6+ | 0.8+ | 2006 11 17 | 691 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.7− | 1.2+ | 2003 03 08 | 644 | 0.5+ | 1.0+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2003 03 08 | 644 | 0.5+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2004 05 28 | 691 | 0.5+ | 0.8+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2004 05 28 | 691 | 0.3+ | 0.5+ | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2004 05 28 | 691 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.7+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2001 09 25 | 704 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 1.0− | 0.2− | 2006 10 20 | G96 | 0.2− | 0.5− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.8− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.5− | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2001 10 08 | 644 | 0.4− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.6− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 10 08 | 644 | 0.5− | 0.4+ | 2006 10 29 | 704 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2001 10 08 | 644 | 0.4− | 0.3+ | 2006 10 29 | 704 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2001 10 11 | 704 | (0.6+ | 1.8+) | 2006 10 29 | 704 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 10 11 | 704 | (0.4− | 1.8+) | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.8− |
| 2001 10 11 | 704 | (0.1+ | 1.8+) | 2006 11 10 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.5− |
| 2001 10 11 | 704 | 0.1− | 1.3+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | (1.6− | 0.9−) |
| 2001 10 11 | 704 | 0.7− | 1.0+ | 2006 11 10 | 644 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.4− | 0.5− |
| 2001 10 16 | 644 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 1.1− | 0.9− |
| 2001 10 16 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.4− | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2001 10 16 | 644 | 0.1− | 0.8+ | 2006 11 13 | 691 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.4+ | 0.3+ |
| 2001 10 19 | 699 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2001 10 19 | 699 | (1.6+ | 1.1+) | 2006 11 13 | 691 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.7− | 0.4+ |
| 2001 10 19 | 699 | 0.3+ | 1.0+ | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.8− | 1.2+ |
| 2001 10 19 | 699 | 0.4− | 1.0+ | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 704 | 0.8− | 1.0+ |
| 2001 10 24 | 644 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.4+ | 2006 11 27 | 704 | 0.6− | 0.3+ |
| 2001 10 24 | 644 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 2001 10 24 | 644 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.8+ | 2006 11 28 | 704 | 1.2− | 1.1+ |
| 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 1.0− | 0.4− |
| 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.5+ | 1.2+ | | | | |
| 2003 02 21 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.5+ | | | | |

**(139951)∗ 2001 RA$_{142}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.94309 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18480523 | $\omega$ | 111.45451 | | +0.43030049 | −0.84862553 | |
| $a$ | 3.0525296 | $\Omega$ | 309.23001 | | +0.60849479 | +0.52447087 | |
| $e$ | 0.0938740 | $i$ | 23.40475 | | +0.66676501 | +0.06902909 | |
| $P$ | 5.33 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.0 | 0.4+ | 2001 12 22 | 704 | 0.2+ | 0.7+ | 2003 02 07 | 699 | 0.2+ | 0.3− |
| 1995 07 03 | 691 | 0.2− | 0.0 | 2002 12 11 | 644 | 1.0+ | 1.3+ | 2003 02 07 | 699 | 0.0 | 0.1− |
| 1995 07 03 | 691 | 0.2− | 0.4+ | 2002 12 11 | 644 | 0.6+ | 1.2+ | 2003 02 07 | 699 | 0.3− | 0.5− |
| 2001 08 23 | 704 | 0.0 | 1.1− | 2002 12 11 | 644 | 0.9+ | 1.3+ | 2003 02 08 | 704 | 1.0− | 0.8+ |
| 2001 08 23 | 704 | 0.6− | 0.6− | 2002 12 31 | 704 | 0.3− | 0.0 | 2003 02 08 | 704 | 0.4+ | 0.5− |
| 2001 08 23 | 704 | 0.7− | 1.1− | 2002 12 31 | 704 | 0.3+ | 0.2+ | 2003 02 08 | 699 | 0.0 | 0.3− |
| 2001 08 23 | 704 | (0.2+ | 1.6−) | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2003 02 08 | 704 | 1.0+ | 0.7− |
| 2001 09 08 | 704 | 0.3− | 0.7+ | 2002 12 31 | 704 | 0.4− | 0.4+ | 2003 02 08 | 699 | 0.0 | 0.2− |
| 2001 09 08 | 704 | 1.2+ | 0.8− | 2002 12 31 | 704 | 0.3− | 0.2+ | 2003 02 08 | 704 | 0.4+ | 0.3+ |
| 2001 09 08 | 704 | 0.9+ | 0.5− | 2003 01 05 | 704 | 0.3+ | 0.2− | 2003 02 08 | 699 | 0.4− | 1.2− |
| 2001 09 22 | 699 | 0.3+ | 0.7− | 2003 01 05 | 704 | 0.0 | 0.0 | 2003 02 10 | 644 | 0.1− | 0.1− |
| 2001 09 22 | 699 | 0.5− | 0.4+ | 2003 01 05 | 704 | 0.2+ | 0.3− | 2003 02 10 | 644 | 0.1+ | 0.1+ |
| 2001 09 22 | 699 | 0.8− | 0.5+ | 2003 01 05 | 704 | 0.2+ | 0.2+ | 2003 02 10 | 644 | 0.3+ | 0.4− |
| 2001 09 22 | 699 | 0.7− | 0.4+ | 2003 01 05 | 704 | 0.2− | 0.1+ | 2003 02 21 | 699 | 0.9+ | 0.5− |
| 2001 09 24 | 704 | 0.4− | 0.0 | 2003 01 09 | 704 | 0.1+ | 0.3− | 2003 02 21 | 699 | 1.1− | 0.2+ |
| 2001 09 24 | 704 | 0.3− | 0.1− | 2003 01 09 | 704 | 0.5+ | 0.9+ | 2003 02 21 | 699 | 0.3− | 0.5− |
| 2001 09 24 | 704 | 0.2− | 0.4− | 2003 01 09 | 704 | 0.2+ | 0.5+ | 2003 02 21 | 699 | 0.5+ | 0.4+ |
| 2001 09 24 | 704 | 0.3+ | 1.0+ | 2003 01 09 | 704 | 0.3− | 0.8+ | 2003 03 05 | 704 | 0.4+ | 0.5− |
| 2001 09 24 | 704 | 0.3− | 0.5+ | 2003 01 09 | 704 | 0.2+ | 0.7+ | 2003 03 05 | 704 | 0.5− | 0.1− |
| 2001 09 26 | 704 | 0.1− | 0.2+ | 2003 01 14 | 608 | 0.2+ | 0.2− | 2003 03 05 | 704 | 0.2− | 0.5− |
| 2001 09 26 | 704 | 0.1+ | 0.2− | 2003 01 14 | 608 | 0.7+ | 0.6+ | 2003 03 05 | 704 | 0.0 | 0.8− |
| 2001 09 26 | 704 | 0.1− | 0.2− | 2003 01 14 | 608 | 0.1+ | 0.2+ | 2003 03 08 | 704 | 0.4+ | 0.4− |
| 2001 09 26 | 704 | 0.0 | 1.4− | 2003 01 27 | 699 | 0.0 | 0.4+ | 2003 03 08 | 704 | 0.5+ | 0.0 |
| 2001 09 28 | 704 | 1.2+ | 0.4+ | 2003 01 27 | 699 | 0.4− | 0.5+ | 2003 03 08 | 704 | 0.1− | 0.2− |
| 2001 09 28 | 704 | 0.4− | 0.2+ | 2003 01 27 | 699 | 0.0 | 0.0 | 2004 04 15 | E12 | 0.9+ | 0.7+ |
| 2001 09 28 | 704 | 0.3− | 0.7+ | 2003 01 27 | 699 | 1.0− | 0.1+ | 2004 04 15 | E12 | 0.1+ | 1.1+ |
| 2001 09 28 | 704 | 0.2− | 0.4+ | 2003 01 27 | 608 | 0.4+ | 1.1+ | 2004 04 15 | E12 | 0.2+ | 1.4+ |
| 2001 09 28 | 704 | 0.3+ | 0.8+ | 2003 01 27 | 608 | 0.0 | 1.3+ | 2004 04 15 | E12 | 0.1+ | 1.0+ |
| 2001 10 21 | 699 | 0.2+ | 0.8− | 2003 01 27 | 608 | 0.2+ | 1.0+ | 2006 08 10 | 644 | 0.4− | 0.1+ |
| 2001 10 21 | 699 | 0.8+ | 0.3+ | 2003 01 30 | 699 | 0.6+ | 0.1− | 2006 08 10 | 644 | 0.2− | 0.1+ |
| 2001 10 21 | 699 | 0.2− | 0.2+ | 2003 01 30 | 699 | 0.1− | 0.6+ | 2006 08 10 | 644 | 0.0 | 0.1+ |
| 2001 10 21 | 699 | 0.8− | 0.2+ | 2003 01 30 | 699 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.5+ |
| 2001 10 25 | 704 | 0.2− | 0.6+ | 2003 01 30 | 699 | 1.1− | 0.9+ | 2006 09 16 | 703 | 0.3+ | 1.2+ |
| 2001 10 25 | 704 | 0.1− | 0.5+ | 2003 01 31 | 704 | 0.0 | 0.3− | 2006 09 16 | 703 | 0.3− | 0.1+ |
| 2001 10 25 | 704 | 0.7− | 0.4− | 2003 01 31 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.8+ |
| 2001 10 25 | 704 | 0.2+ | 0.3+ | 2003 01 31 | 704 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.1− | 0.5+ |
| 2001 11 12 | 699 | 0.3− | 0.2+ | 2003 01 31 | 704 | 0.4− | 0.2− | 2006 09 21 | 699 | 0.2+ | 0.2− |
| 2001 11 12 | 699 | 0.6− | 0.2+ | 2003 01 31 | 704 | 0.4+ | 0.1− | 2006 09 21 | 699 | 0.3− | 1.1+ |
| 2001 11 12 | 699 | 0.1− | 0.5+ | 2003 02 02 | 608 | (0.7− | 2.1−) | 2006 09 21 | 699 | 0.2+ | 0.3+ |
| 2001 11 12 | 699 | 0.1− | 0.3− | 2003 02 02 | 608 | (0.7− | 1.7−) | 2006 09 27 | 703 | 0.3− | 0.2+ |
| 2001 12 09 | 704 | 0.4+ | 0.7− | 2003 02 02 | 608 | 0.0 | 1.2− | 2006 09 27 | 703 | 0.6+ | 0.7+ |
| 2001 12 09 | 704 | 0.1− | 0.3− | 2003 02 02 | 608 | 0.5+ | 1.5− | 2006 09 27 | 703 | 0.3+ | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 0.5− | 2003 02 02 | 608 | 0.8+ | 1.3− | 2006 09 27 | 703 | 0.2+ | 0.8+ |
| 2001 12 09 | 704 | 0.2− | 0.3− | 2003 02 02 | 608 | (0.7− | 1.7−) | 2006 10 20 | 703 | 0.5+ | 1.1− |
| 2001 12 09 | 704 | 0.1+ | 0.8− | 2003 02 03 | 704 | 0.0 | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.6− |
| 2001 12 22 | 704 | 1.1+ | 0.9+ | 2003 02 03 | 704 | 0.4− | 0.2− | 2006 10 20 | 703 | 0.4− | 0.9− |
| 2001 12 22 | 704 | 0.5+ | 0.0 | 2003 02 03 | 704 | 0.1− | 0.4− | 2006 10 20 | 703 | 0.9− | 1.2− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 0.3− | 0.4+ | 2003 02 03 | 704 | (0.1+ | 1.9−) | |
| 2001 12 22 | 704 | 0.1+ | 0.9− | 2003 02 03 | 704 | 0.8− | 0.2− | |

**(139952)∗ 2001 RS$_{142}$**

Discovered 2001 Sept. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.05260 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19236835 | $\omega$ | 250.26151 | | +0.90873816 | −0.36113927 | |
| $a$ | 2.9719875 | $\Omega$ | 130.30273 | | +0.40355511 | +0.88818422 | |
| $e$ | 0.1126538 | $i$ | 15.92260 | | −0.10648115 | +0.28409018 | |
| $P$ | 5.12 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.3− | 0.4+ | 2001 11 12 | 608 | 0.3− | 0.5− | 2003 03 08 | 704 | 0.1+ | 0.1+ | |
| 2001 08 20 | 644 | 0.0 | 0.1+ | 2001 11 12 | 608 | 0.4− | 0.4− | 2003 03 08 | 704 | 0.3+ | 0.6+ | |
| 2001 08 20 | 644 | 0.3− | 0.5+ | 2003 01 27 | 704 | 0.8+ | 0.8+ | 2004 04 25 | 699 | 0.3+ | 0.6+ | |
| 2001 09 11 | 644 | 0.1− | 0.9+ | 2003 01 27 | 704 | 1.1+ | 0.5+ | 2004 04 25 | 699 | 0.8− | 0.9+ | |
| 2001 09 11 | 644 | 0.5+ | 0.6+ | 2003 01 27 | 699 | 0.7+ | 0.6− | 2004 04 25 | 699 | 0.0 | 0.4− | |
| 2001 09 11 | 644 | 0.1− | 0.5+ | 2003 01 27 | 704 | 0.3+ | 0.5+ | 2004 04 25 | 699 | 0.7+ | 0.6− | |
| 2001 09 18 | 644 | 0.0 | 0.0 | 2003 01 27 | 699 | 1.0+ | 0.1− | 2006 09 24 | 699 | 0.3− | 0.4+ | |
| 2001 09 18 | 644 | 0.1− | 0.1− | 2003 01 27 | 704 | 1.0− | 1.3+ | 2006 09 24 | 699 | 0.5− | 0.6− | |
| 2001 09 18 | 644 | 0.2+ | 0.0 | 2003 01 27 | 699 | 0.8+ | 0.3+ | 2006 09 24 | 699 | 0.1+ | 0.6+ | |
| 2001 09 22 | 699 | 0.9+ | 0.9+ | 2003 01 27 | 699 | 0.6+ | 0.1− | 2006 09 24 | 699 | 0.4+ | 0.4+ | |
| 2001 09 22 | 699 | 0.3− | 0.1− | 2003 01 28 | 608 | 0.6− | 0.0 | 2006 09 25 | 703 | 0.2− | 0.2− | |
| 2001 09 22 | 699 | 1.0+ | 0.1− | 2003 01 28 | 608 | 0.5− | 0.1− | 2006 09 25 | 703 | 0.5− | 1.4− | |
| 2001 09 22 | 699 | 1.3+ | 0.4+ | 2003 01 28 | 608 | 0.1− | 1.3− | 2006 10 04 | 703 | 0.0 | 0.5+ | |
| 2001 10 11 | 704 | 0.2− | 0.8+ | 2003 01 30 | 699 | 0.1+ | 0.3+ | 2006 10 04 | 703 | 0.1− | 0.8+ | |
| 2001 10 11 | 704 | 0.3+ | 0.1− | 2003 01 30 | 699 | 0.3+ | 0.0 | 2006 10 04 | 703 | 0.2− | 0.7− | |
| 2001 10 11 | 704 | 0.4+ | 0.9− | 2003 01 30 | 699 | 0.3− | 0.4− | 2006 10 04 | 703 | 0.2+ | 0.4− | |
| 2001 10 11 | 704 | 0.5+ | 0.3− | 2003 01 30 | 699 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.1− | |
| 2001 10 11 | 704 | 0.7+ | 0.4− | 2003 01 31 | 704 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.9+ | 0.9+ | |
| 2001 10 20 | 608 | 0.3+ | 0.5+ | 2003 01 31 | 704 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.3+ | |
| 2001 10 20 | 608 | 0.1+ | 0.2+ | 2003 01 31 | 704 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.4+ | |
| 2001 10 20 | 608 | 0.0 | 0.1+ | 2003 01 31 | 704 | 0.2− | 0.1+ | 2006 10 31 | 703 | 0.1− | 0.3− | |
| 2001 10 23 | 699 | 1.4− | 0.6+ | 2003 02 03 | 704 | 0.6− | 0.1− | 2006 10 31 | 703 | 0.5− | 0.2− | |
| 2001 10 23 | 699 | 0.4− | 0.5+ | 2003 02 03 | 704 | 0.4+ | 0.6− | 2006 10 31 | 703 | 0.4− | 0.1− | |
| 2001 10 23 | 699 | 0.5− | 0.3− | 2003 02 03 | 704 | (0.4+ | 1.7−) | 2006 10 31 | 703 | 0.2+ | 0.6+ | |
| 2001 10 23 | 699 | 0.2+ | 0.2+ | 2003 02 03 | 704 | 0.4+ | 0.6− | 2006 11 18 | 703 | 0.7− | 0.3− | |
| 2001 10 30 | 608 | 0.3− | 0.3− | 2003 02 03 | 704 | 0.2+ | 0.6− | 2006 11 18 | 703 | 0.5− | 0.3− | |
| 2001 10 30 | 608 | 0.5+ | 0.5− | 2003 02 21 | 699 | (0.0 | 1.5+) | 2006 11 18 | 703 | 0.1+ | 0.8− | |
| 2001 10 30 | 608 | 0.3− | 0.4− | 2003 02 21 | 699 | 0.3+ | 0.6+ | 2006 11 18 | 703 | 0.2− | 0.2+ | |
| 2001 11 07 | 704 | 0.5+ | 0.8− | 2003 02 21 | 699 | 0.2− | 0.6+ | 2006 11 18 | 703 | 1.0+ | 0.2+ | |
| 2001 11 07 | 704 | 0.1− | 0.4− | 2003 02 21 | 699 | 1.2− | 0.1− | 2006 11 18 | 703 | 0.2+ | 0.1+ | |
| 2001 11 07 | 704 | 0.0 | 0.7− | 2003 02 25 | 049 | (1.7− | 0.1−) | 2006 11 18 | 703 | 0.3+ | 0.4− | |
| 2001 11 07 | 704 | 0.5− | 0.9+ | 2003 02 25 | 049 | 1.3− | 0.5− | 2006 11 18 | 703 | 0.5+ | 0.1+ | |
| 2001 11 07 | 704 | 1.1− | 0.2+ | 2003 02 25 | 049 | 1.3− | 0.2− | | | | | |
| 2001 11 12 | 608 | 0.5− | 0.5− | 2003 03 08 | 704 | 0.4− | 0.7+ | | | | | |

**(139953)∗ 2001 RF$_{145}$**

Discovered 2001 Sept. 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.50805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18113933 | $\omega$ | 11.84428 | | +0.74490773 | −0.65937704 | |
| $a$ | 3.0935767 | $\Omega$ | 30.18725 | | +0.59442269 | +0.58674837 | |
| $e$ | 0.0900944 | $i$ | 11.66406 | | +0.30294246 | +0.47005134 | |
| $P$ | 5.44 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 21 | 816 | 0.5− | 0.2+ | 2001 09 25 | 704 | 0.1+ | 0.8+ | 2004 03 19 | 644 | 0.4+ | 0.2+ | |
| 1996 09 21 | 816 | 0.3+ | 0.5+ | 2001 09 25 | 704 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.7+ | |
| 1996 09 21 | 816 | 0.6− | 0.1+ | 2001 09 25 | 704 | 0.1+ | 0.8+ | 2004 03 23 | 704 | 0.1+ | 0.7+ | |
| 1996 09 21 | 816 | 0.1+ | 0.7+ | 2001 09 25 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.6+ | 0.9+ | |
| 1996 10 13 | 566 | 0.6− | 0.7− | 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.8+ | |
| 1996 10 13 | 566 | 0.2− | 0.8− | 2002 12 05 | 704 | 0.4− | 0.5+ | 2004 03 23 | 704 | 0.1− | 0.7+ | |
| 1996 10 13 | 566 | 0.2− | 0.1− | 2002 12 05 | 704 | 0.0 | 0.2+ | 2004 03 25 | 704 | 2.0+ | 0.8+ | |
| 1996 11 12 | 589 | 0.3+ | 0.6+ | 2002 12 05 | 704 | 0.2− | 0.5+ | 2004 03 25 | 704 | 0.2− | 0.8+ | |
| 1996 11 12 | 589 | 0.3− | 0.2+ | 2002 12 15 | 704 | 0.3+ | 0.3+ | 2004 03 25 | 704 | 0.3− | 0.8+ | |
| 1996 11 12 | 589 | 0.4+ | 0.2− | 2002 12 15 | 704 | 0.5+ | 0.2+ | 2004 03 25 | 704 | 0.3− | 0.7+ | |
| 1996 11 12 | 589 | 0.1− | 0.5− | 2002 12 15 | 704 | 0.3+ | 0.5+ | 2004 03 25 | 704 | 0.0 | 0.7+ | |
| 1996 11 12 | 589 | 0.3− | 0.6− | 2002 12 15 | 704 | 0.4+ | 0.5+ | 2004 03 26 | 703 | (2.5+ | 4.2+) | |
| 2001 08 25 | 699 | 0.2− | 0.4+ | 2003 01 04 | 704 | 0.4− | 0.5− | 2004 03 26 | 703 | 0.3− | 0.5+ | |
| 2001 08 25 | 699 | 0.3− | 0.6+ | 2003 01 04 | 704 | 0.4+ | 0.1− | 2004 03 26 | 703 | 0.3− | 0.6+ | |
| 2001 08 25 | 699 | (0.4− | 2.2+) | 2003 01 04 | 704 | 0.3− | 0.3+ | 2004 03 26 | 703 | 0.2− | 1.0+ | |
| 2001 08 25 | 699 | 1.0− | 0.9+ | 2003 01 04 | 704 | 0.2− | 0.6− | 2006 07 26 | E12 | 0.3− | 0.9+ | |
| 2001 09 07 | 644 | 0.2+ | 1.4+ | 2003 01 04 | 704 | 0.2− | 0.2+ | 2006 07 26 | E12 | 1.4− | 0.8+ | |
| 2001 09 07 | 644 | 0.3− | 1.0+ | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2006 07 26 | E12 | 0.1− | 0.8− | |
| 2001 09 07 | 644 | 0.4− | 1.2+ | 2004 03 15 | 704 | 1.2+ | 0.0 | 2006 07 26 | E12 | 0.1− | 0.2+ | |
| 2001 09 11 | 704 | 0.0 | 0.9+ | 2004 03 15 | 704 | 0.7+ | 0.4+ | 2006 08 26 | E12 | 0.9− | 0.3+ | |
| 2001 09 11 | 704 | 0.7− | 0.5+ | 2004 03 15 | 704 | 1.2+ | 0.1− | 2006 08 26 | E12 | 0.0 | 0.2− | |
| 2001 09 11 | 704 | 0.4+ | 0.7+ | 2004 03 15 | 704 | 0.0 | 1.4− | 2006 08 26 | E12 | 0.1− | 0.1− | |
| 2001 09 11 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 08 26 | E12 | 0.2− | 0.3+ | |
| 2001 09 11 | 704 | 0.2− | 0.0 | 2004 03 19 | 644 | 0.3+ | 0.5+ | | | | | |

**(139954)∗ 2001 RW$_{145}$**

Discovered 2001 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.90861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21555434 | $\omega$ | 178.74704 | | −0.69155123 | −0.70727183 | |
| $a$ | 2.7548515 | $\Omega$ | 314.97932 | | +0.66090539 | −0.53759864 | |
| $e$ | 0.0587989 | $i$ | 11.97018 | | +0.29148063 | −0.45907980 | |
| $P$ | 4.57 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 699 | 1.7− | 0.1+ | 2002 12 06 | 704 | 0.3− | 1.3+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | |
| 1999 02 12 | 699 | 0.5+ | 0.9+ | 2004 03 15 | 644 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.0 | |
| 1999 02 12 | 699 | (0.6− | 2.4+) | 2004 03 15 | 644 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | |
| 1999 02 17 | 910 | 0.6+ | 0.5+ | 2004 03 15 | 644 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.8+ | |
| 1999 02 17 | 910 | 1.2+ | 0.2− | 2004 03 26 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 703 | (0.4+ | 2.6+) | |
| 1999 02 17 | 910 | 1.1+ | 0.2− | 2004 03 26 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.2+ | |
| 2001 08 25 | 704 | 0.2− | 0.5+ | 2004 03 26 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | (0.5− | 2.3+) | |
| 2001 08 25 | 704 | 0.9+ | 1.2+ | 2004 03 26 | 704 | (0.8− | 2.5−) | 2006 10 22 | 644 | 0.1− | 0.4+ | |
| 2001 08 25 | 704 | 0.0 | 0.9+ | 2004 04 16 | 699 | 0.4+ | 1.1+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | |
| 2001 08 25 | 704 | 0.5+ | 0.2+ | 2004 04 16 | 699 | 0.7− | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.3+ | |
| 2001 09 08 | 704 | 1.1− | 0.0 | 2004 04 16 | 699 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.4+ | |
| 2001 09 08 | 704 | 0.3− | 0.9+ | 2004 04 16 | 699 | 0.4+ | 1.4+ | 2006 10 23 | 644 | 0.2− | 0.3+ | |
| 2001 09 08 | 704 | 0.5− | 0.4− | 2004 04 17 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.4+ | |
| 2001 09 08 | 704 | 0.4− | 0.1− | 2004 04 17 | 704 | 0.7+ | 0.6− | 2006 11 15 | 703 | 0.1− | 0.3+ | |
| 2001 09 11 | 699 | 0.7− | 0.4− | 2004 04 17 | 704 | 0.1+ | 1.0+ | 2006 11 15 | 703 | 0.3− | 0.7− | |
| 2001 09 11 | 699 | (1.4− | 2.3−) | 2004 04 17 | 644 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.2− | 0.9− | |
| 2001 09 11 | 699 | 0.1+ | 0.6+ | 2004 04 17 | 704 | (0.4+ | 1.9−) | 2006 11 15 | 703 | 0.0 | 0.0 | |
| 2001 09 11 | 699 | (1.7− | 1.3−) | 2004 04 17 | 704 | 0.9− | 0.6− | 2006 11 22 | 703 | 0.0 | 0.4− | |
| 2001 09 16 | 704 | 0.1− | 0.4− | 2004 04 17 | 644 | 0.5+ | 0.3+ | 2006 11 22 | 703 | 1.0+ | 0.0 | |
| 2001 09 16 | 704 | 0.7− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.3− | |
| 2001 09 16 | 704 | 0.3− | 0.7+ | 2006 09 28 | 703 | 0.4+ | 0.7+ | 2006 11 22 | 703 | 0.7− | 0.2− | |
| 2002 12 06 | 704 | (1.5− | 0.7−) | 2006 09 28 | 703 | (2.0+ | 0.3−) | | | | | |
| 2002 12 06 | 704 | 0.7− | 0.3+ | 2006 09 28 | 703 | 0.7+ | 1.0− | | | | | |

**(139955)∗ 2001 RY$_{147}$**

Discovered 2001 Sept. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.62332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22458028 | $\omega$ | 265.69981 | | +0.91822803 | −0.33043205 | |
| $a$ | 2.6805359 | $\Omega$ | 113.47522 | | +0.38529627 | +0.87289189 | |
| $e$ | 0.2122168 | $i$ | 13.77095 | | −0.09167368 | +0.35899083 | |
| $P$ | 4.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2001 10 08 | 644 | 0.5+ | 0.4+ | 2004 03 15 | 704 | 1.5+ | 0.5+ | |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2001 10 08 | 644 | 0.5+ | 0.3+ | 2004 03 15 | 704 | (2.2+ | 0.5+) | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 608 | 0.4+ | 0.8− | 2001 10 08 | 644 | 0.4+ | 0.6+ | 2004 03 15 | 704 | (1.8+ | 0.5+) | | |
| 2001 07 21 | 608 | 0.3+ | 0.6− | 2002 12 10 | 644 | 0.1− | 1.2+ | 2004 03 21 | 691 | 0.3+ | 0.1+ | | |
| 2001 07 21 | 608 | 0.7+ | 0.6− | 2002 12 10 | 644 | 0.1− | 1.1+ | 2004 03 21 | 691 | 0.2+ | 0.1− | | |
| 2001 07 31 | 644 | 0.5+ | 0.8+ | 2002 12 10 | 644 | 0.0 | 1.5+ | 2004 03 21 | 691 | 0.2+ | 0.1+ | | |
| 2001 07 31 | 644 | 0.1+ | 0.8+ | 2002 12 13 | 291 | 0.5− | 0.4+ | 2006 09 19 | 703 | 1.0+ | 0.7+ | | |
| 2001 07 31 | 644 | 0.5+ | 0.8+ | 2002 12 13 | 291 | 0.1− | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.1+ | | |
| 2001 08 28 | 644 | 0.4− | 0.2+ | 2002 12 13 | 291 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.2− | | |
| 2001 08 28 | 644 | 0.4− | 0.8+ | 2003 01 08 | 704 | 0.5+ | 0.5− | 2006 09 19 | 703 | 0.9+ | 0.8+ | | |
| 2001 08 28 | 644 | 0.4− | 0.2+ | 2003 01 08 | 704 | 0.0 | 0.8+ | 2006 11 19 | 703 | 0.4+ | 1.2+ | | |
| 2001 09 10 | 699 | 0.9− | 0.4+ | 2003 01 08 | 704 | 0.1+ | 1.1+ | 2006 11 19 | 703 | 0.2− | 0.2− | | |
| 2001 09 10 | 699 | 0.5− | 0.4− | 2003 01 08 | 704 | 0.4+ | 0.5− | 2006 11 19 | 703 | 0.3− | 0.2− | | |
| 2001 09 10 | 699 | 0.7− | 0.3− | 2003 01 08 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.2+ | 0.3− | | |
| 2001 09 10 | 699 | 0.1− | 0.1− | 2003 01 25 | 699 | (1.7+ | 0.4+) | 2006 11 20 | 704 | 1.0− | 0.4− | | |
| 2001 09 11 | 704 | 0.7+ | 0.6+ | 2003 01 25 | 699 | 1.0− | 0.7+ | 2006 11 20 | 704 | 0.3+ | 0.8− | | |
| 2001 09 11 | 704 | 0.3+ | 0.6+ | 2003 01 25 | 699 | 0.2− | 0.1− | 2006 11 20 | 704 | (1.8+ | 1.9+) | | |
| 2001 09 11 | 704 | 0.0 | 1.0+ | 2003 01 25 | 699 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.7− | 0.4− | | |
| 2001 09 11 | 704 | 0.1− | 1.3+ | 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 12 01 | 703 | 0.3− | 0.2+ | | |
| 2001 09 11 | 704 | 0.3− | 1.1+ | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 12 01 | 703 | 0.4− | 0.2− | | |
| 2001 09 22 | 644 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.1+ | 0.2+ | 2006 12 01 | 703 | 1.0− | 0.6+ | | |
| 2001 09 22 | 644 | 0.2− | 0.0 | 2003 02 01 | 704 | 0.4− | 0.3+ | 2006 12 01 | 703 | 0.0 | 0.3+ | | |
| 2001 09 22 | 644 | 0.0 | 0.2+ | 2003 02 01 | 704 | 0.7+ | 0.2+ | | | | | | |

**(139956)∗ 2001 RD$_{152}$ = 2004 HV$_{49}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 60989)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.10054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21660442 | $\omega$ | 348.27259 | | +0.88319326 | −0.44184915 | |
| $a$ | 2.7459409 | $\Omega$ | 39.19961 | | +0.44791824 | +0.69519522 | |
| $e$ | 0.0903358 | $i$ | 14.41014 | | +0.13906445 | +0.56698583 | |
| $P$ | 4.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 644 | 0.9− | 1.1+ | 2004 04 23 | 691 | 0.3+ | 0.7+ | 2006 11 16 | 704 | 1.0+ | 0.5+ | | |
| 2001 08 28 | 644 | 0.5− | 1.0+ | 2004 04 25 | 704 | 0.9+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.5+ | | |
| 2001 08 28 | 644 | 0.8− | 1.2+ | 2004 04 25 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.6+ | | |
| 2001 09 11 | 699 | 0.1− | 1.0+ | 2004 04 25 | 704 | 1.1+ | 0.9+ | 2006 11 16 | 704 | 0.4+ | 0.9+ | | |
| 2001 09 11 | 699 | (0.1− | 1.6+) | 2004 04 25 | 704 | 0.8+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 1.2+ | | |
| 2001 09 11 | 699 | 0.3+ | 1.0+ | 2004 05 15 | 691 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.6− | 0.7+ | | |
| 2001 09 11 | 699 | 1.0− | 1.0+ | 2004 05 15 | 691 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.5+ | | |
| 2001 09 12 | 704 | 0.4− | 0.3− | 2004 05 15 | 691 | 0.7+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.2+ | | |
| 2001 09 12 | 704 | 0.8− | 0.3+ | 2004 05 23 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.3+ | | |
| 2001 09 12 | 704 | 0.7+ | 0.2− | 2004 05 23 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.2+ | | |
| 2001 09 12 | 704 | 0.9− | 0.1+ | 2004 05 23 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 1.0− | 0.4+ | | |
| 2001 09 18 | 699 | 1.2− | 0.2+ | 2004 05 28 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.2− | 0.7− | | |
| 2001 09 18 | 699 | 0.1− | 0.3− | 2004 05 28 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 1.2− | 0.2+ | | |
| 2001 09 18 | 699 | 1.0− | 0.2− | 2004 05 28 | 691 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.7+ | | |
| 2001 09 18 | 699 | 1.2− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.0 | | |
| 2001 09 25 | 704 | 1.0− | 1.5+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2001 09 25 | 704 | (0.5+ | 1.7+) | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2001 09 25 | 704 | 0.6− | 0.6+ | 2006 10 16 | 703 | 0.7+ | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2001 10 11 | 704 | 0.8+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.6+ | 2006 11 21 | G96 | 0.2+ | 0.3− | | |
| 2001 10 11 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.4+ | | |
| 2001 10 11 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.5+ | | |
| 2001 10 19 | 699 | 1.1+ | 0.4+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.0 | | |
| 2001 10 19 | 699 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 1.0+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.5+ | | |
| 2001 10 19 | 699 | 1.0− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.1+ | | |
| 2001 10 19 | 699 | 0.0 | 0.1− | 2006 10 23 | 691 | (1.7− | 1.9−) | 2006 11 21 | G96 | 0.2− | 0.0 | | |
| 2001 10 24 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.0 | | |
| 2001 10 24 | 644 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.1− | | |
| 2001 10 24 | 644 | 0.3− | 0.9+ | 2006 10 27 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.1− | | |
| 2002 11 07 | 645 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.3− | | |
| 2002 11 07 | 645 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.3− | | |
| 2003 01 13 | 704 | 0.7+ | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.5+ | 2006 11 22 | G96 | 0.2− | 0.3− | | |
| 2003 01 13 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 703 | 0.8− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.4− | | |
| 2003 01 13 | 704 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 1.0− | 0.7− | 2006 11 22 | 704 | 0.5+ | 0.3+ | | |
| 2003 01 13 | 704 | 1.0+ | 1.2+ | 2006 11 14 | 703 | 0.8+ | 0.1+ | 2006 11 22 | 704 | 2.0− | 0.3− | | |
| 2003 01 13 | 704 | 0.7+ | 1.4+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.3− | | |
| 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.3− | | |
| 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.1− | | |
| 2004 03 16 | 691 | 0.8+ | 0.3+ | 2006 11 15 | 704 | 0.4− | 0.6+ | 2006 11 22 | G96 | 0.2− | 0.3− | | |
| 2004 04 14 | 691 | 0.6− | 0.9+ | 2006 11 15 | 704 | 0.2+ | 0.6+ | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.1− | | |
| 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.3− | | |
| 2004 04 23 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.1+ | 1.0+ | | | | | | |
| 2004 04 23 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | (1.7+ | 1.1+) | | | | | | |

**(139957)∗ 2001 RG$_{153}$ = 2001 UJ$_{197}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.31248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24502444 | $\omega$ | 353.85145 | | +0.21012897 | −0.97138080 | |
| $a$ | 2.5292773 | $\Omega$ | 83.97981 | | +0.90167584 | +0.14875978 | |
| $e$ | 0.1067341 | $i$ | 6.39385 | | +0.37792392 | +0.18517522 | |
| $P$ | 4.02 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.5− | 1.4+ | 2001 12 05 | 704 | 0.0 | 0.8+ | 2005 08 27 | 699 | 0.6− | 0.4+ | | |
| 2001 07 19 | 644 | 0.3− | 0.9+ | 2003 01 18 | 644 | 0.7+ | 0.4+ | 2005 08 27 | 699 | 0.5− | 0.9+ | | |
| 2001 07 19 | 644 | 0.2− | 1.1+ | 2003 01 18 | 644 | 0.0 | 0.3− | 2005 08 27 | 699 | 0.5− | 0.6+ | | |
| 2001 09 12 | 704 | 0.6− | 0.0 | 2003 01 18 | 644 | 0.1+ | 0.1+ | 2005 08 27 | 699 | 0.4− | 0.3+ | | |
| 2001 09 12 | 704 | 0.6− | 0.2− | 2003 01 27 | 704 | 0.7+ | 0.4+ | 2005 09 03 | 703 | 0.4+ | 0.3− | | |
| 2001 09 12 | 704 | 1.0− | 0.2+ | 2003 01 27 | 704 | 0.4+ | 0.2− | 2005 09 03 | 703 | 0.2+ | 0.3+ | | |
| 2001 09 12 | 704 | 0.9− | 0.1− | 2003 01 27 | 704 | 0.0 | 0.1− | 2005 09 03 | 703 | 0.5+ | 0.0 | | |
| 2001 09 12 | 704 | 0.9− | 0.1+ | 2003 01 27 | 704 | 0.0 | 0.1− | 2005 09 03 | 703 | 0.9+ | 1.2− | | |
| 2001 09 13 | 644 | 1.1+ | 0.3− | 2003 01 27 | 704 | 0.2+ | 0.4+ | 2005 09 13 | 703 | 0.3− | 0.4+ | | |
| 2001 09 13 | 644 | 0.7+ | 0.4− | 2003 01 31 | 704 | 0.3+ | 0.1+ | 2005 09 13 | 703 | (2.1− | 1.1+) | | |
| 2001 09 13 | 644 | 1.1+ | 0.0 | 2003 01 31 | 704 | 0.8+ | 0.0 | 2005 09 13 | 703 | (0.3+ | 2.6+) | | |
| 2001 09 18 | 699 | 0.9+ | 0.0 | 2003 01 31 | 704 | (1.8+ | 0.1−) | 2005 09 13 | 703 | 0.1+ | 0.0 | | |
| 2001 09 18 | 699 | 0.2+ | 0.8+ | 2003 01 31 | 704 | 1.3+ | 0.3+ | 2005 09 23 | 703 | 0.1− | 0.9− | | |
| 2001 09 18 | 699 | 0.8− | 1.0− | 2003 02 06 | 704 | 0.3+ | 0.8+ | 2005 09 23 | 703 | 0.7− | 0.2+ | | |
| 2001 09 18 | 699 | 1.4+ | 0.5+ | 2003 02 06 | 704 | 0.2− | 0.3+ | 2005 09 23 | 703 | 1.2− | 0.4− | | |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2003 02 06 | 704 | 0.6+ | 0.8+ | 2005 09 23 | 703 | 0.8− | 0.2+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.2+ | 2003 02 06 | 704 | 0.0 | 0.2+ | 2005 09 28 | 644 | 0.2+ | 0.2− | | |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2003 02 06 | 704 | 0.6− | 0.0 | 2005 09 28 | 644 | 0.1− | 0.1− | | |
| 2001 09 25 | 704 | 0.9− | 1.4+ | 2003 02 08 | 699 | (1.5− | 0.7+) | 2005 09 28 | 644 | 0.0 | 0.1− | | |
| 2001 09 25 | 704 | 0.1− | 0.4+ | 2003 02 08 | 699 | 1.1− | 0.3− | 2005 10 08 | 699 | 0.1− | 0.7+ | | |
| 2001 10 11 | 704 | 0.2− | 0.4− | 2003 02 08 | 699 | (1.5− | 0.6+) | 2005 10 08 | 699 | 0.3+ | 0.6+ | | |
| 2001 10 11 | 704 | 0.3+ | 0.4− | 2003 02 08 | 699 | 1.1− | 0.7− | 2005 10 08 | 699 | 0.4+ | 0.7+ | | |
| 2001 10 11 | 704 | 0.8− | 0.3− | 2003 03 05 | 704 | 0.2− | 1.0+ | 2005 10 08 | 699 | 0.0 | 0.0 | | |
| 2001 10 11 | 704 | 0.6− | 0.4− | 2003 03 05 | 704 | 0.1+ | 0.2− | 2005 10 10 | 703 | 0.2− | 0.5− | | |
| 2001 10 11 | 704 | 0.1− | 0.5− | 2003 03 05 | 704 | (0.6− | 1.8+) | 2005 10 10 | 703 | 0.7− | 0.2+ | | |
| 2001 10 16 | 644 | 0.4+ | 0.3+ | 2003 03 05 | 704 | 0.1+ | 0.4+ | 2005 10 10 | 703 | 0.8− | 0.0 | | |
| 2001 10 16 | 644 | 0.3+ | 0.3+ | 2003 03 05 | 704 | 0.5− | 0.1+ | 2005 10 10 | 703 | (0.8− | 3.1+) | | |
| 2001 10 16 | 644 | 0.0 | 0.1− | 2003 03 05 | 704 | 0.2+ | 0.7+ | 2005 10 25 | 704 | 0.2+ | 0.4+ | | |
| 2001 10 19 | 699 | 0.1− | 0.6− | 2003 03 05 | 704 | 0.1+ | 0.7+ | 2005 10 25 | 704 | 0.7+ | 0.9+ | | |
| 2001 10 19 | 699 | 0.3− | 0.1− | 2003 03 08 | 704 | 0.0 | 0.0 | 2005 10 25 | 704 | 0.2+ | 0.4+ | | |
| 2001 10 19 | 699 | 1.1− | 1.0− | 2003 03 08 | 704 | 0.2+ | 0.6+ | 2005 10 25 | 704 | 0.3+ | 0.3+ | | |
| 2001 10 19 | 699 | 0.5− | 0.2− | 2003 03 08 | 704 | 0.6− | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.3− | | |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2003 03 08 | 704 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.5+ | 0.4− | | |
| 2001 10 20 | 704 | 0.9+ | 0.9− | 2003 03 08 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.2− | | |
| 2001 10 20 | 704 | 1.0− | 0.1+ | 2003 03 19 | 644 | 0.1− | 1.4+ | 2006 10 28 | 691 | 0.1+ | 0.2− | | |
| 2001 10 20 | 704 | 0.7+ | 0.5+ | 2003 03 19 | 644 | 0.7+ | 0.8+ | 2006 10 28 | 691 | 0.0 | 0.3− | | |
| 2001 10 24 | 644 | 0.2+ | 0.5+ | 2003 03 19 | 644 | 0.1− | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.2− | | |
| 2001 10 24 | 644 | 0.7+ | 0.4+ | 2003 03 26 | 704 | 0.6+ | 0.7+ | 2006 11 27 | G96 | 0.6− | 0.7− | | |
| 2001 10 24 | 644 | 0.5+ | 0.6+ | 2003 03 26 | 704 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.6− | 0.9− | | |
| 2001 12 05 | 704 | (2.0+ | 0.5+) | 2003 03 26 | 704 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.8− | | |
| 2001 12 05 | 704 | 1.1+ | 0.5+ | 2003 03 26 | 704 | 0.1+ | 0.6+ | 2006 11 27 | G96 | 0.3− | 0.7− | | |

**(139958)∗ 2001 RL$_{153}$**

Discovered 2001 Sept. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.56647 | | | (2000.0) | | |
| $n$ | 0.21311906 | $\omega$ | 281.33359 | | +0.98279039 | +0.13731946 |
| $a$ | 2.7757980 | $\Omega$ | 70.86588 | | −0.07098463 | +0.89826113 |
| $e$ | 0.0649536 | $i$ | 7.51481 | | −0.17054097 | +0.41745695 |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.5+ | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.7+ | 2006 11 02 | 703 | 0.2− | 0.0 | |
| 2001 07 19 | 644 | 0.2− | 0.3+ | 2004 03 23 | 704 | (0.2+ | 1.6+) | 2006 11 02 | 703 | 0.3− | 0.5+ | |
| 2001 07 19 | 644 | 0.1+ | 0.0 | 2004 03 23 | 704 | (0.1− | 1.5+) | 2006 11 08 | 644 | 0.0 | 0.1+ | |
| 2001 09 11 | 699 | 0.8+ | 0.3+ | 2004 03 23 | 704 | 0.4− | 1.2+ | 2006 11 08 | 644 | 0.3− | 0.1− | |
| 2001 09 11 | 699 | 1.2+ | 0.5+ | 2004 03 23 | 704 | 0.3+ | 1.3+ | 2006 11 08 | 644 | 0.0 | 0.1− | |
| 2001 09 11 | 699 | 0.9+ | 0.0 | 2004 04 12 | 703 | 0.7+ | 1.0+ | 2006 11 10 | 644 | 0.5− | 0.1+ | |
| 2001 09 11 | 699 | 0.2+ | 0.1− | 2004 04 12 | 703 | (1.1+ | 1.6+) | 2006 11 10 | 644 | 0.2− | 0.1+ | |
| 2001 09 12 | 704 | 0.1+ | 1.3+ | 2004 04 12 | 703 | (0.4− | 2.5+) | 2006 11 10 | 644 | 0.0 | 0.2+ | |
| 2001 09 12 | 704 | 0.9− | 0.7+ | 2004 04 12 | 703 | 1.0+ | 0.5− | 2006 11 11 | 703 | 0.8− | 0.1− | |
| 2001 09 12 | 704 | 0.5− | 0.1+ | 2004 04 20 | E12 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.9− | |
| 2001 09 12 | 704 | 0.4− | 0.8+ | 2004 04 20 | E12 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.8− | 0.1− | |
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2004 04 20 | E12 | (1.5− | 2.2+) | 2006 11 11 | 703 | 0.3− | 1.1− | |
| 2001 09 13 | 644 | 1.0− | 0.2− | 2004 04 20 | E12 | 0.3− | 0.2+ | 2006 11 14 | 704 | 1.2+ | 1.2+ | |
| 2001 09 13 | 644 | 1.1− | 0.1− | 2006 10 17 | 683 | 0.6+ | 1.1+ | 2006 11 14 | 704 | 0.9+ | 0.7+ | |
| 2001 09 13 | 644 | 0.7− | 0.1− | 2006 10 17 | 683 | 0.5+ | 0.3+ | 2006 11 14 | 704 | 0.4− | 0.0 | |
| 2001 09 18 | 699 | 0.8− | 0.3+ | 2006 10 17 | 683 | (0.8+ | 1.6+) | 2006 11 14 | 704 | 0.3− | 0.7+ | |
| 2001 09 18 | 699 | 0.6− | 0.5+ | 2006 10 22 | 683 | 1.2+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.3− | |
| 2001 09 18 | 699 | 0.3− | 0.0 | 2006 10 22 | 683 | 1.0+ | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.5− | |
| 2001 09 18 | 699 | 0.4− | 0.9− | 2006 10 22 | 683 | 0.6− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.2− | |
| 2001 09 25 | 704 | 0.6+ | 0.3− | 2006 10 23 | 683 | 0.6− | 0.7− | 2006 11 16 | G96 | 0.3− | 0.4− | |
| 2001 09 25 | 704 | 0.7+ | 0.0 | 2006 10 23 | 683 | 0.4+ | 0.4+ | 2006 11 17 | 704 | 1.1+ | 1.3+ | |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2006 10 23 | 683 | 1.3+ | 0.2− | 2006 11 17 | 704 | (1.0+ | 1.6+) | |
| 2001 09 25 | 704 | 0.1− | 0.8− | 2006 10 24 | 644 | 0.2− | 0.2+ | 2006 11 17 | 704 | (0.1− | 1.6+) | |
| 2001 10 08 | 644 | 0.1+ | 0.1− | 2006 10 24 | 644 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.6− | 0.2+ | |
| 2001 10 08 | 644 | 0.3+ | 0.6+ | 2006 10 24 | 644 | 0.8− | 0.6+ | 2006 11 17 | 704 | 0.2− | 0.6− | |
| 2001 10 08 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 683 | (1.9+ | 0.7−) | 2006 11 20 | 704 | 0.4+ | 0.0 | |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 10 27 | 683 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.2− | |
| 2003 01 05 | 704 | 0.2− | 0.4+ | 2006 10 27 | 683 | 0.5− | 0.6− | 2006 11 20 | 704 | 0.7+ | 0.6+ | |
| 2003 01 05 | 704 | 0.0 | 0.4− | 2006 11 02 | 703 | 0.4− | 0.7− | | | | | |
| 2003 01 05 | 704 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 1.1− | 0.7+ | | | | | |

**(139959)∗ 2001 RT$_{153}$**

Discovered 2001 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.34482 | | | (2000.0) | | |
| $n$ | 0.24226707 | $\omega$ | 170.83719 | | −0.06362035 | −0.97766966 |
| $a$ | 2.5484325 | $\Omega$ | 282.62054 | | +0.90213158 | +0.02947802 |
| $e$ | 0.2263903 | $i$ | 11.84384 | | +0.42674472 | −0.20806990 |
| $P$ | 4.07 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.5+ | 0.2+ | 2003 02 07 | 644 | 0.2+ | 0.5+ | 2005 09 26 | 703 | 1.0− | 0.5+ | |
| 2001 08 24 | 699 | 0.3− | 0.4+ | 2003 02 07 | 644 | 0.2+ | 0.6+ | 2005 09 26 | 703 | 1.4− | 0.8− | |
| 2001 08 24 | 699 | 0.5+ | 0.2− | 2003 03 10 | 704 | 1.2+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.8− | |
| 2001 08 24 | 699 | 0.3− | 0.2− | 2003 03 10 | 704 | 1.5+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.4− | |
| 2001 09 09 | 699 | 0.1− | 0.7+ | 2003 03 10 | 704 | (2.0+ | 0.2+) | 2006 10 27 | G96 | 0.1− | 0.4− | |
| 2001 09 09 | 699 | 1.3− | 0.2− | 2003 03 10 | 704 | 0.6+ | 0.5+ | 2006 10 27 | G96 | 0.5− | 0.4− | |
| 2001 09 09 | 699 | 1.4+ | 0.4+ | 2003 03 14 | 608 | 0.4− | 0.6+ | 2006 10 28 | G96 | 0.4+ | 0.5− | |
| 2001 09 09 | 699 | 0.6+ | 1.2− | 2003 03 14 | 608 | 0.5− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.2− | |
| 2001 09 14 | 644 | 0.3+ | 0.4+ | 2003 03 14 | 608 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.5+ | 0.0 | |
| 2001 09 14 | 644 | 0.1+ | 0.4+ | 2005 08 05 | 644 | 0.1+ | 0.8+ | 2006 10 28 | G96 | 0.6− | 0.5− | |
| 2001 09 14 | 644 | 0.8+ | 0.6+ | 2005 08 05 | 644 | 0.4+ | 0.7+ | 2006 11 15 | 703 | 0.7+ | 0.4− | |
| 2001 09 16 | 704 | 0.4− | 0.4− | 2005 08 05 | 644 | 0.5+ | 0.7+ | 2006 11 15 | 703 | 0.3− | 1.1− | |
| 2001 09 16 | 704 | 1.0− | 0.5+ | 2005 08 29 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.5+ | 0.3− | |
| 2001 09 16 | 704 | 0.8− | 1.1− | 2005 08 29 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | (1.6− | 0.1+) | |
| 2001 09 16 | 704 | 0.2− | 0.6− | 2005 08 29 | 644 | 0.2+ | 0.4+ | 2006 11 23 | 291 | 0.1− | 0.2+ | |
| 2001 09 16 | 704 | 1.2− | 0.5− | 2005 09 09 | 704 | 0.3− | 0.2− | 2006 11 23 | 291 | 0.2− | 0.0 | |
| 2001 09 25 | 704 | 0.5− | 1.4+ | 2005 09 09 | 704 | 0.9+ | 0.5− | 2006 11 23 | 291 | 0.2− | 0.3+ | |
| 2001 09 25 | 704 | 0.7− | 0.5+ | 2005 09 09 | 704 | (2.5+ | 2.3−) | 2006 11 24 | 291 | 0.1− | 0.3+ | |
| 2001 09 25 | 704 | 0.0 | 0.2+ | 2005 09 26 | 703 | 0.3+ | 0.8+ | 2006 11 24 | 291 | 0.1+ | 0.2+ | |
| 2003 02 07 | 644 | 0.4+ | 0.8+ | 2005 09 26 | 703 | (2.2− | 1.8+) | 2006 11 24 | 291 | 0.1− | 0.4+ | |

**(139960)∗ 2001 RR$_{154}$**

Discovered 2001 Sept. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 110.40476 | | | (2000.0) | | |
| $n$ | 0.22778279 | $\omega$ | 241.24981 | | +0.31610304 | +0.94047413 |
| $a$ | 2.6553521 | $\Omega$ | 47.74012 | | −0.80096681 | +0.33507893 |
| $e$ | 0.1638933 | $i$ | 9.71175 | | −0.50845947 | +0.05683763 |
| $P$ | 4.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.5− | 0.6+ | 2004 03 23 | 704 | 0.2+ | 0.8− | 2005 09 06 | E12 | (0.3+ | 2.1+) | |
| 2001 09 11 | 699 | 0.4− | 0.7− | 2004 03 23 | 704 | 0.3+ | 1.1+ | 2005 09 06 | E12 | 0.7+ | 1.1+ | |
| 2001 09 11 | 699 | (2.5− | 1.7+) | 2004 03 23 | 704 | 1.0+ | 0.2+ | 2005 09 06 | E12 | 0.7+ | 0.2+ | |
| 2001 09 11 | 699 | (3.1− | 1.8−) | 2004 03 23 | 704 | (1.7+ | 0.6−) | 2005 09 06 | E12 | 0.4− | 0.6+ | |
| 2001 09 18 | 699 | 0.7− | 1.0+ | 2004 03 27 | 691 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.3+ | |
| 2001 09 18 | 699 | 0.4− | 0.5+ | 2004 03 27 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.0 | |
| 2001 09 18 | 699 | 1.2+ | 0.6− | 2004 03 27 | 691 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.2− | |
| 2001 09 18 | 699 | 0.5+ | 0.0 | 2005 07 10 | E12 | 0.7− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.3− | |
| 2001 09 25 | 704 | 0.4− | 0.2− | 2005 07 10 | E12 | 0.5− | 0.5− | 2006 11 10 | 691 | 0.1+ | 0.2+ | |
| 2001 09 25 | 704 | 0.7− | 0.1+ | 2005 07 10 | E12 | 0.3− | 0.8+ | 2006 11 10 | 691 | 0.1+ | 0.1− | |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2005 07 27 | E12 | 0.3+ | 0.4− | 2006 11 10 | 691 | 0.4− | 0.4+ | |
| 2001 10 24 | 644 | 0.2− | 0.8+ | 2005 07 27 | E12 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.2− | |
| 2001 10 24 | 644 | 0.0 | 0.1− | 2005 07 27 | E12 | 0.3− | 0.5− | 2006 11 14 | 691 | 0.1+ | 0.0 | |
| 2001 10 24 | 644 | 0.3− | 1.1+ | 2005 07 27 | E12 | 0.4− | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.0 | |

**(139961)∗ 2001 SR$_3$ = 3112 P-L**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.61736 | | | (2000.0) | | |
| $n$ | 0.21560112 | $\omega$ | 114.78211 | | +0.98467882 | +0.06493758 |
| $a$ | 2.7544530 | $\Omega$ | 241.85505 | | −0.11342755 | +0.94342286 |
| $e$ | 0.1734653 | $i$ | 10.57588 | | +0.13244549 | +0.32517137 |
| $P$ | 4.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.0 | 0.4− | 2001 09 25 | 704 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ | |
| 1960 09 25 | 675 | 0.4+ | 1.1+ | 2001 09 25 | 644 | 0.6+ | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.1+ | |
| 1960 09 25 | 675 | 1.1− | 2.4− | 2001 09 25 | 704 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.1− | |
| 1960 09 26 | 675 | 0.1− | 1.0+ | 2001 09 25 | 644 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.0 | |
| 1960 09 26 | 675 | 0.5+ | 0.3+ | 2001 09 25 | 704 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.0 | |
| 1992 11 17 | 691 | 0.2+ | 0.3+ | 2001 09 25 | 644 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | |
| 1992 11 17 | 691 | 0.1+ | 0.2+ | 2001 09 25 | 704 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | |
| 1992 11 17 | 691 | 0.1− | 0.2+ | 2001 09 25 | 704 | 0.6− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | |
| 2001 08 03 | 644 | 0.0 | 0.2+ | 2001 10 06 | 644 | 0.4− | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | |
| 2001 08 03 | 644 | 0.3− | 0.1− | 2001 10 06 | 644 | 0.4− | 0.9+ | 2006 11 13 | 691 | 0.4+ | 0.1+ | |
| 2001 08 03 | 644 | 0.3− | 0.0 | 2001 10 06 | 644 | 0.5− | 0.6+ | 2006 11 13 | 691 | 0.4+ | 0.3+ | |
| 2001 08 18 | 699 | 0.2− | 0.8+ | 2001 10 13 | 644 | 0.7− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.1− | |
| 2001 08 18 | 699 | 0.5− | 0.3+ | 2001 10 13 | 644 | 0.4− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.2+ | |
| 2001 08 18 | 699 | 0.4− | 0.5− | 2001 10 13 | 644 | 0.6− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.0 | |
| 2001 08 18 | 699 | 0.1− | 0.1− | 2001 10 15 | 691 | 0.3− | 0.3− | 2006 11 15 | 704 | 0.9+ | 0.4+ | |
| 2001 09 15 | 644 | 0.4− | 0.4− | 2001 10 15 | 691 | 0.3− | 0.3− | 2006 11 15 | 704 | (0.7+ | 1.8+) | |
| 2001 09 15 | 644 | 0.1− | 0.2− | 2001 10 15 | 691 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.6+ | 1.2+ | |
| 2001 09 15 | 644 | 0.4− | 0.2− | 2001 10 16 | 691 | 0.3+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.1+ | |
| 2001 09 16 | 704 | 0.6− | 0.4+ | 2001 10 16 | 691 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.0 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2001 10 16 | 691 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.1− |
| 2001 09 16 | 704 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2001 09 17 | 704 | 0.2+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2001 09 17 | 704 | 0.6+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2001 09 17 | 704 | 0.3+ | 0.5− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.7+ | 0.0 | 2006 10 19 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.7− | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 27 | 703 | 1.1− | 1.0− |
| 2001 09 19 | 704 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.7+ | 0.4− |
| 2001 09 21 | 699 | 0.4+ | 0.7− | 2006 10 27 | 703 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.6− |
| 2001 09 21 | 699 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 0.8− | 0.6+ | 2006 11 27 | 703 | 0.3− | 0.8− |
| 2001 09 21 | 699 | (0.6+ | 3.1−) | 2006 10 27 | 703 | 0.5+ | 0.7− | | | | |
| 2001 09 21 | 699 | 0.4+ | 0.7− | 2006 10 27 | 691 | 0.1+ | 0.0 | | | | |

**(139962)∗ 2001 SG$_4$**

Discovered 2001 Sept. 17 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.79847 | | (2000.0) | | +0.95778172 | +0.28510585 |
| $n$ | 0.18917997 | $\omega$ | 152.22558 | | −0.28604067 | +0.93207447 |
| $a$ | 3.0052870 | $\Omega$ | 191.39402 | | −0.02889481 | +0.22349907 |
| $e$ | 0.1109237 | $i$ | 10.79397 | | | |
| $P$ | 5.21 | $H$ | 15.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 13 | 566 | 1.0+ | 0.6+ | 2001 09 23 | 704 | 0.3− | 0.2− | 2005 06 17 | 691 | 0.1− | 0.0 |
| 1996 10 13 | 566 | 0.7+ | 0.2+ | 2001 09 23 | 704 | 0.9+ | 0.0 | 2005 06 29 | 644 | 0.1+ | 0.3− |
| 1996 10 13 | 566 | 0.1+ | 1.0+ | 2001 09 23 | 704 | 0.6− | 0.4− | 2005 06 29 | 644 | 0.4+ | 0.1− |
| 2001 07 22 | 699 | (0.0 | 1.7+) | 2001 09 23 | 704 | 0.1+ | 0.5+ | 2005 06 29 | 644 | 0.1+ | 0.2+ |
| 2001 07 22 | 699 | 0.5− | 0.1+ | 2001 09 28 | 704 | 0.0 | 1.3+ | 2006 08 27 | 699 | 0.2+ | 0.5+ |
| 2001 07 22 | 699 | 0.5+ | 0.2+ | 2001 09 28 | 704 | (1.7+ | 1.7+) | 2006 08 27 | 699 | 0.6− | 0.8− |
| 2001 07 22 | 699 | 0.1− | 0.2− | 2001 09 28 | 704 | (1.4+ | 1.9+) | 2006 08 27 | 699 | 0.3− | 0.2+ |
| 2001 08 17 | 704 | 0.4− | 1.0+ | 2001 09 28 | 704 | (1.2+ | 2.0+) | 2006 08 27 | 699 | 0.1− | 0.3+ |
| 2001 08 17 | 704 | 0.2+ | 0.1+ | 2001 10 13 | 704 | 1.2− | 0.7+ | 2006 08 30 | 699 | 1.0− | 0.3+ |
| 2001 08 17 | 704 | 1.0+ | 0.6+ | 2001 10 13 | 704 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.5− | 0.0 |
| 2001 08 17 | 704 | 0.6+ | 0.4− | 2001 10 13 | 704 | 0.2− | 0.0 | 2006 08 30 | 699 | 0.2+ | 0.8+ |
| 2001 09 08 | 704 | 0.4+ | 0.0 | 2001 10 13 | 704 | 0.5− | 0.6+ | 2006 08 30 | 699 | 0.4− | 0.1+ |
| 2001 09 08 | 704 | 0.5− | 0.2+ | 2001 10 14 | 645 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.6+ | 1.3+ |
| 2001 09 08 | 704 | 0.0 | 0.8+ | 2001 10 14 | 645 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.6+ | 0.6+ |
| 2001 09 08 | 704 | 0.4− | 0.7+ | 2001 10 15 | 645 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.1+ | 0.2− |
| 2001 09 08 | 704 | 0.4− | 1.3+ | 2001 10 15 | 645 | 0.1− | 0.2− | 2006 09 11 | 703 | 0.3− | 0.8− |
| 2001 09 10 | 699 | 0.8− | 0.0 | 2001 10 21 | 704 | 0.0 | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.5− |
| 2001 09 10 | 699 | 0.9− | 0.2+ | 2001 10 21 | 704 | 0.0 | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.3− |
| 2001 09 10 | 699 | 0.3− | 1.0+ | 2001 10 21 | 704 | 0.1+ | 1.1+ | 2006 09 15 | 691 | 0.3− | 0.1+ |
| 2001 09 10 | 699 | (0.4− | 2.3+) | 2001 10 21 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2001 09 12 | 333 | 0.8− | 1.0− | 2001 10 21 | 704 | 0.6+ | 1.4+ | 2006 09 17 | 691 | 0.1+ | 0.2− |
| 2001 09 12 | 333 | 0.3+ | 0.4− | 2004 03 16 | 691 | 0.2− | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.3− | 0.8+ | 2004 03 16 | 691 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.8− |
| 2001 09 16 | 704 | 0.0 | 0.6+ | 2004 03 16 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 1.2+ | 0.3− | 2004 03 16 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 699 | 0.7− | 0.5+ |
| 2001 09 16 | 704 | 0.1− | 0.1+ | 2004 03 16 | 691 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.7− | 0.2+ | 2004 03 16 | 704 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.5+ |
| 2001 09 17 | 683 | 0.6− | 0.5+ | 2004 03 16 | 704 | 0.3+ | 0.9− | 2006 09 19 | 691 | 0.3− | 0.2+ |
| 2001 09 17 | 683 | (0.7− | 1.8−) | 2005 05 04 | 691 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.7− | 1.0+ |
| 2001 09 17 | 683 | 0.8+ | 0.8− | 2005 05 04 | 691 | 0.2+ | 0.2− | 2006 09 22 | 691 | 0.0 | 0.3− |
| 2001 09 18 | 699 | 0.4− | 1.0+ | 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 09 22 | 691 | 0.1+ | 0.2+ |
| 2001 09 18 | 699 | 1.1+ | 0.4− | 2005 05 14 | 644 | 0.1− | 0.0 | 2006 09 22 | 691 | 0.2− | 0.0 |
| 2001 09 18 | 699 | 0.3+ | 0.9+ | 2005 05 14 | 644 | 0.5− | 0.3− | 2006 09 23 | 691 | 0.2+ | 0.1+ |
| 2001 09 18 | 699 | 0.0 | 0.9+ | 2005 05 14 | 644 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.0 |
| 2001 09 18 | 683 | 0.9− | 0.0 | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2001 09 18 | 683 | (1.6− | 0.2−) | 2005 06 01 | 691 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2001 09 18 | 683 | (0.4− | 1.7−) | 2005 06 01 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2005 06 04 | 703 | 1.3− | 0.8− | 2006 09 25 | 691 | 1.3+ | 1.5− |
| 2001 09 20 | 704 | 0.2− | 1.0+ | 2005 06 04 | 703 | 1.4+ | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 0.4+ | 2005 06 04 | 703 | 0.8+ | 0.4− | 2006 09 25 | 704 | 0.1− | 0.7+ |
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2005 06 04 | 703 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.7− | 0.9+ | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.4− | 0.3+ |
| 2001 09 21 | 644 | 0.3+ | 0.9+ | 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 644 | 0.0 | 1.1+ | 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2001 09 21 | 644 | 0.4+ | 0.7+ | 2005 06 13 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2001 09 22 | 704 | 0.2+ | 0.4+ | 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.4− | 0.1− |
| 2001 09 22 | 704 | 0.0 | 0.2+ | 2005 06 13 | 691 | 0.2− | 0.2+ | 2006 10 20 | 703 | 0.6− | 0.8− |
| 2001 09 22 | 704 | 0.0 | 0.1+ | 2005 06 17 | 691 | 0.2− | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.6− |
| 2001 09 22 | 704 | 0.1− | 0.3+ | 2005 06 17 | 691 | 0.4− | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.3+ |

**(139963)∗ 2001 SD$_6$**

Discovered 2001 Sept. 18 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.17684 | | (2000.0) | | −0.14474549 | −0.98932573 |
| $n$ | 0.22142911 | $\omega$ | 255.93345 | | +0.92400582 | −0.12906458 |
| $a$ | 2.7059073 | $\Omega$ | 202.40997 | | +0.35392371 | −0.06765304 |
| $e$ | 0.1776320 | $i$ | 2.53065 | | | |
| $P$ | 4.45 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 1.0+ | 0.8− | 2003 01 07 | 704 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.7− |
| 1997 10 30 | 704 | (2.2+ | 0.5+) | 2003 01 07 | 704 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 1997 10 30 | 704 | 0.8+ | 1.2− | 2003 01 07 | 704 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 1997 10 30 | 704 | (3.6− | 0.3−) | 2003 01 07 | 704 | 0.8− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.5− |
| 1997 11 06 | 704 | 1.5− | 1.7+ | 2003 01 08 | 704 | 0.1+ | 0.8− | 2006 10 12 | 691 | 0.1− | 0.0 |
| 1997 11 06 | 704 | 0.5+ | 0.6− | 2003 01 08 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.2− |
| 1997 11 06 | 704 | (2.9+ | 0.0 ) | 2003 01 08 | 704 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.0 |
| 1997 11 06 | 704 | 0.7+ | 0.1+ | 2003 01 08 | 704 | 0.3− | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 1997 11 06 | 704 | 0.4+ | 0.5+ | 2003 01 08 | 704 | 0.1− | 0.0 | 2006 10 28 | G96 | (2.1+ | 1.7+) |
| 2001 08 24 | 704 | 0.0 | 0.1+ | 2003 01 14 | 608 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.7− |
| 2001 08 24 | 704 | 0.1− | 0.1+ | 2003 01 14 | 608 | 0.5+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2001 08 24 | 704 | 0.1− | 0.6+ | 2003 01 14 | 608 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 09 11 | 699 | 1.3+ | 0.4+ | 2003 01 26 | 699 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2001 09 11 | 699 | 1.3+ | 1.1− | 2003 01 26 | 699 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2001 09 11 | 699 | (2.2+ | 0.8+) | 2003 01 26 | 699 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 1.2− |
| 2001 09 11 | 699 | 0.6+ | 0.7+ | 2003 01 26 | 699 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2001 09 12 | 704 | 0.6− | 0.1− | 2003 01 27 | 704 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2003 01 27 | 704 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2003 01 27 | 704 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2001 09 18 | 691 | 0.3− | 0.3+ | 2003 01 27 | 704 | 0.1+ | 0.6+ | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2001 09 18 | 691 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2001 09 18 | 691 | 0.5− | 0.2+ | 2003 01 30 | 699 | 0.2− | 0.7+ | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2001 09 19 | 691 | 0.3+ | 0.3+ | 2003 01 30 | 699 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2001 09 19 | 691 | 0.5+ | 0.2+ | 2003 01 30 | 699 | 0.1+ | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2001 09 19 | 691 | 0.3+ | 0.4+ | 2003 01 30 | 699 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.8− | 0.6+ | 2003 02 02 | 704 | 0.7+ | 1.2+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.9− | 0.2+ | 2003 02 02 | 704 | (0.5+ | 2.3+) | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.9+ | 2003 02 02 | 704 | (0.4+ | 1.6+) | 2006 11 17 | 703 | 0.5+ | 0.1− |
| 2001 09 20 | 704 | 0.7− | 0.5+ | 2003 02 02 | 704 | (0.4− | 2.6+) | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2001 09 22 | 704 | 0.9− | 0.4− | 2003 02 02 | 704 | 0.5+ | 1.4+ | 2006 11 17 | 703 | 0.2+ | 0.1+ |
| 2001 09 22 | 704 | 1.2− | 1.4+ | 2003 02 03 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 2001 09 22 | 704 | 0.8− | 1.1+ | 2003 02 03 | 644 | 0.1+ | 0.4+ | 2006 11 18 | 704 | (0.3− | 2.1+) |
| 2001 09 23 | 704 | 0.8− | 0.1− | 2003 02 03 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | (0.1− | 2.5+) |
| 2001 09 23 | 704 | 1.4− | 0.7+ | 2003 02 08 | 704 | 0.7+ | 1.1+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2001 09 23 | 704 | 1.4− | 0.4− | 2003 02 08 | 704 | 0.3+ | 0.6+ | 2006 11 18 | 704 | (0.3+ | 1.8+) |
| 2001 09 23 | 704 | 1.5− | 0.2+ | 2003 02 08 | 704 | (2.1+ | 1.0+) | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2003 01 01 | 704 | 0.2− | 1.2+ | 2003 02 08 | 704 | 0.5+ | 1.0+ | 2006 11 18 | 704 | 0.1− | 1.0+ |
| 2003 01 01 | 704 | 0.3+ | 1.2+ | 2003 02 21 | 644 | 0.8+ | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.0 |
| 2003 01 01 | 704 | 0.1− | 0.2+ | 2003 02 21 | 644 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2003 01 01 | 704 | 0.6+ | 1.2+ | 2003 02 21 | 644 | 0.3+ | 0.9+ | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2003 01 02 | 704 | 0.2+ | 0.3+ | 2005 07 10 | 691 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2003 01 02 | 704 | 0.3+ | 0.1+ | 2005 07 10 | 691 | 0.0 | 1.0+ | 2006 11 21 | 704 | 0.7+ | 0.1+ |
| 2003 01 02 | 704 | 0.2− | 0.4+ | 2005 07 10 | 691 | 0.1+ | 0.7+ | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2003 01 02 | 704 | 0.1− | 0.3+ | 2005 07 11 | G96 | 0.6+ | 0.5+ | 2006 11 21 | 704 | 1.3+ | 0.7+ |
| 2003 01 02 | 704 | 0.3− | 0.2+ | 2005 07 11 | G96 | 0.5− | 0.7− | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2003 01 03 | 704 | 0.9− | 0.1+ | 2005 07 11 | G96 | 0.6− | 0.6+ | 2006 11 29 | 704 | 0.3− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 03 | 704 | 0.1+ | 0.8+ | 2005 07 11 | G96 | 0.4+ | 0.5+ | 2006 11 29 | 704 | 0.9− | 0.2− |
| 2003 01 03 | 704 | 0.5+ | 1.1+ | 2005 08 05 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.9+ |
| 2003 01 03 | 704 | 0.4− | 0.1− | 2005 08 05 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.9− | 0.3+ |
| 2003 01 03 | 704 | 0.5− | 0.0 | 2005 08 05 | 644 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.5− |

**(139964)∗ 2001 $SH_7$ = 2002 $VW_{82}$**

Discovered 2001 Sept. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.58730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18145706 | $\omega$ | 349.55610 | | −0.59266292 | −0.80517462 | |
| $a$ | 3.0899644 | $\Omega$ | 136.78592 | | +0.74118889 | −0.55543658 | |
| $e$ | 0.1315714 | $i$ | 1.76443 | | +0.31526129 | −0.20780770 | |
| $P$ | 5.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.9− | 0.6+ | 2002 11 11 | 704 | 0.3− | 0.1− | 2003 01 02 | 291 | 0.5+ | 0.2+ |
| 2001 08 24 | 704 | 0.1+ | 0.6+ | 2002 11 11 | 704 | 0.4+ | 0.9+ | 2003 01 02 | 291 | 0.9+ | 0.1− |
| 2001 08 24 | 704 | 0.3+ | 0.3+ | 2002 11 12 | 704 | 0.4− | 0.3− | 2004 02 12 | 644 | 0.5+ | 0.6+ |
| 2001 09 12 | 704 | (0.6+ | 1.5+) | 2002 11 12 | 704 | 0.1− | 0.4− | 2004 02 12 | 644 | 0.1+ | 0.8+ |
| 2001 09 12 | 704 | 0.1− | 1.0+ | 2002 11 12 | 704 | 1.1− | 1.5− | 2004 02 12 | 644 | 0.2− | 0.9+ |
| 2001 09 12 | 704 | 1.2+ | 0.3+ | 2002 11 12 | 704 | 0.3+ | 0.8− | 2004 02 18 | 704 | 0.2− | 0.8+ |
| 2001 09 18 | 291 | 0.5+ | 0.3+ | 2002 11 12 | 704 | 0.2− | 0.1− | 2004 02 18 | 704 | 0.1− | 0.6+ |
| 2001 09 18 | 291 | 0.0 | 0.1− | 2002 11 12 | 704 | 0.0 | 0.5− | 2004 02 18 | 704 | 0.1+ | 0.4+ |
| 2001 09 18 | 291 | 0.1+ | 0.0 | 2002 11 12 | 704 | 0.2− | 0.4+ | 2004 02 18 | 704 | 0.4− | 0.6+ |
| 2001 09 19 | 704 | 1.3− | 0.4+ | 2002 11 12 | 704 | 0.1− | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.4+ |
| 2001 09 19 | 704 | 1.0− | 0.8+ | 2002 12 01 | 704 | 0.2− | 0.5+ | 2004 02 26 | 704 | 0.8+ | 0.9+ |
| 2001 09 19 | 291 | 1.3+ | 0.0 | 2002 12 01 | 704 | 0.4− | 1.2+ | 2004 02 26 | 704 | 0.8+ | 0.4+ |
| 2001 09 19 | 704 | 0.4− | 0.8+ | 2002 12 01 | 704 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.6+ | 0.3− |
| 2001 09 19 | 291 | 1.4+ | 0.0 | 2002 12 01 | 704 | 0.3− | 0.9+ | 2005 06 16 | G96 | 0.5+ | 0.6+ |
| 2001 09 19 | 704 | 0.2+ | 1.3− | 2002 12 05 | 704 | 0.3+ | 1.1+ | 2005 06 16 | G96 | 0.2− | 0.6+ |
| 2001 09 19 | 645 | 0.4− | 0.0 | 2002 12 05 | 704 | 0.5− | 0.2− | 2005 06 16 | G96 | 0.2− | 0.1+ |
| 2001 09 19 | 645 | 0.3− | 0.0 | 2002 12 05 | 704 | 0.0 | 0.5+ | 2005 06 16 | G96 | 0.1+ | 0.6+ |
| 2001 09 19 | 291 | 0.1+ | 0.1+ | 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 06 19 | G96 | 0.4− | 0.1+ |
| 2002 10 30 | 608 | 1.1− | 0.4− | 2002 12 05 | 704 | 0.2− | 0.3+ | 2006 06 19 | G96 | 0.5+ | 0.7+ |
| 2002 10 30 | 608 | 0.7− | 1.0− | 2002 12 10 | 704 | 1.3+ | 1.0+ | 2006 06 19 | G96 | 0.2+ | 0.9+ |
| 2002 10 30 | 608 | 0.5− | 0.1− | 2002 12 10 | 704 | 1.1− | 0.4+ | 2006 06 19 | G96 | 0.1− | 0.4+ |
| 2002 11 07 | 704 | 0.6− | 0.3− | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.8− | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.1+ | 2002 12 10 | 704 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.0 | 0.1+ | 2002 12 10 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.5− | 1.2+ | 2002 12 10 | 704 | 0.9+ | 0.6− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2002 11 11 | 704 | 0.1+ | 0.3+ | 2002 12 10 | 644 | 0.2− | 0.3+ | | | | |
| 2002 11 11 | 704 | 0.3− | 0.8− | 2003 01 02 | 291 | 0.4+ | 0.0 | | | | |

**(139965)∗ 2001 $SN_{10}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.66629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22302268 | $\omega$ | 322.39371 | | +0.88595835 | +0.46372207 | |
| $a$ | 2.6930021 | $\Omega$ | 9.98460 | | −0.41619506 | +0.80099910 | |
| $e$ | 0.0632192 | $i$ | 2.08111 | | −0.20459588 | +0.37863212 | |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 910 | 0.8− | 0.3− | 2001 09 21 | 691 | 0.4+ | 0.7+ | 2004 04 23 | 691 | 0.2+ | 0.7+ |
| 1997 10 01 | 910 | 0.4− | 0.5− | 2001 09 21 | 691 | 0.2+ | 0.9+ | 2004 04 23 | 691 | 0.1+ | 0.6+ |
| 1997 10 01 | 910 | 0.1− | 0.7− | 2001 09 21 | 704 | (0.8+ | 2.8−) | 2004 04 23 | 291 | 0.1− | 0.7+ |
| 2001 08 16 | 704 | (3.3− | 1.4−) | 2001 09 21 | 704 | 1.2− | 0.7+ | 2004 04 23 | 691 | 0.3+ | 0.5+ |
| 2001 08 16 | 704 | (0.6− | 1.8−) | 2001 09 21 | 704 | 0.3− | 0.9+ | 2004 04 23 | 291 | 0.1− | 0.9+ |
| 2001 08 16 | 704 | 0.2+ | 1.1− | 2001 09 21 | 704 | (1.9− | 2.2+) | 2004 04 23 | 291 | 0.0 | 0.9+ |
| 2001 08 16 | 704 | 0.2+ | 1.4− | 2001 09 21 | 704 | (1.5− | 1.7+) | 2005 07 07 | 691 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.6− | 1.2− | 2001 10 11 | 644 | 0.1+ | 0.2+ | 2005 07 07 | 691 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | (2.3− | 0.8−) | 2001 10 11 | 644 | 0.3+ | 0.1+ | 2005 07 07 | 691 | 0.2− | 0.1+ |
| 2001 08 23 | 699 | 0.8− | 0.6+ | 2001 10 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2001 08 23 | 699 | 0.9− | 0.3+ | 2001 10 17 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.2− |
| 2001 08 23 | 699 | 0.2− | 1.2+ | 2001 10 17 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 0.1+ | 2001 10 17 | 644 | 0.3+ | 0.5+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.8− | 0.3+ | 2003 01 08 | 704 | 0.3− | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.4− | 0.2− | 2003 01 08 | 704 | 0.9+ | 1.2+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2001 09 16 | 704 | 0.5− | 0.3+ | 2003 01 08 | 704 | 0.4+ | 0.7− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 0.3− | 0.1+ | 2003 01 08 | 704 | 0.8+ | 1.1+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 699 | (2.0− | 0.5−) | 2004 03 27 | 704 | 1.2+ | 0.8+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 699 | 0.6+ | 0.4+ | 2004 03 27 | 704 | 0.6+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2001 09 19 | 699 | 0.0 | 0.3− | 2004 03 27 | 704 | 1.4+ | 1.0+ | 2006 11 19 | 704 | 0.2+ | 1.7+ |
| 2001 09 19 | 699 | 0.6+ | 1.1+ | 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2004 03 29 | 704 | 1.0+ | 0.9+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2004 03 29 | 704 | 1.2+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.9− | 0.7+ | 2004 03 29 | 704 | 1.1+ | 0.6+ | 2006 11 20 | 704 | 0.6+ | 0.0 |
| 2001 09 19 | 704 | (1.6+ | 0.2−) | 2004 03 29 | 704 | 0.6+ | 0.6+ | 2006 11 20 | 704 | 1.6+ | 0.7+ |
| 2001 09 20 | 691 | 0.4− | 0.5+ | 2004 03 30 | 704 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2001 09 20 | 691 | 0.4− | 0.4+ | 2004 03 30 | 704 | 0.4+ | 1.1+ | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2001 09 20 | 691 | 0.6− | 0.3+ | 2004 03 30 | 704 | 0.3+ | 0.8+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2001 09 21 | 691 | 0.2+ | 0.7+ | 2004 03 30 | 704 | (0.2+ | 1.6+) | 2006 11 22 | 691 | 0.0 | 0.0 |

**(139966)∗ 2001 $SQ_{11}$ = 2003 $AQ_{61}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40549)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.36821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21065856 | $\omega$ | 304.37197 | | −0.39057178 | −0.92024580 | |
| $a$ | 2.7973704 | $\Omega$ | 168.54009 | | +0.87994441 | −0.38102841 | |
| $e$ | 0.2188524 | $i$ | 7.08988 | | +0.27046536 | −0.08924700 | |
| $P$ | 4.68 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1− | 0.1+ | 2003 01 27 | 704 | 0.6− | 0.5− | 2003 03 07 | 704 | 0.4− | 1.5+ |
| 2001 09 16 | 704 | 0.4− | 0.2+ | 2003 01 27 | 644 | 0.1− | 0.0 | 2003 03 11 | 644 | 0.1+ | 0.5+ |
| 2001 09 16 | 704 | 0.1− | 0.8+ | 2003 01 27 | 704 | 0.7+ | 0.5− | 2003 03 11 | 644 | 0.1− | 0.8+ |
| 2001 09 16 | 704 | 0.2− | 0.3+ | 2003 01 27 | 699 | 0.0 | 0.1− | 2003 03 11 | 644 | 0.1+ | 0.7+ |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2003 01 27 | 699 | 1.0− | 0.2+ | 2003 03 31 | 699 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 1.2− | 1.2+ | 2003 01 27 | 644 | 0.7− | 0.0 | 2003 03 31 | 699 | 0.4+ | 0.0 |
| 2001 09 19 | 704 | 1.0− | 0.1− | 2003 01 27 | 699 | 0.0 | 0.2+ | 2003 03 31 | 699 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | (0.0 | 1.6+) | 2003 01 27 | 699 | 1.0+ | 1.1+ | 2003 03 31 | 704 | 0.0 | 0.5+ |
| 2001 09 19 | 704 | 0.2− | 1.5+ | 2003 01 27 | 644 | 0.1+ | 0.0 | 2003 03 31 | 704 | 0.2+ | 0.1+ |
| 2001 09 20 | 691 | 0.0 | 0.3+ | 2003 01 30 | 699 | 0.2− | 0.0 | 2003 03 31 | 699 | 0.2− | 0.7− |
| 2001 09 20 | 704 | 1.0+ | 0.8− | 2003 01 30 | 699 | 0.0 | 0.7− | 2003 03 31 | 704 | 0.1+ | 0.3+ |
| 2001 09 20 | 691 | 0.1− | 0.5+ | 2003 01 30 | 699 | 0.2− | 0.0 | 2003 03 31 | 704 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.5+ | 0.2− | 2003 01 30 | 699 | 0.8− | 0.1− | 2003 03 31 | 704 | 1.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.4+ | 1.3− | 2003 02 01 | 608 | 1.2+ | 0.1− | 2005 07 15 | 691 | 0.1+ | 0.6+ |
| 2001 09 20 | 691 | 0.0 | 0.5+ | 2003 02 01 | 608 | (1.7+ | 0.2−) | 2005 07 15 | 691 | 0.3− | 0.4+ |
| 2001 09 20 | 704 | (2.0+ | 0.6−) | 2003 02 01 | 608 | (1.6+ | 0.4−) | 2005 07 15 | 691 | 0.1− | 0.4+ |
| 2002 11 11 | 704 | 0.9+ | 0.7− | 2003 02 02 | 704 | 0.7− | 0.8+ | 2006 09 17 | 691 | 0.2− | 0.1− |
| 2002 11 11 | 704 | 0.4− | 0.5− | 2003 02 02 | 704 | 0.1− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.6+ | 0.6+ | 2003 02 02 | 704 | 0.4− | 0.5− | 2006 09 17 | 691 | 0.2+ | 0.1− |
| 2002 11 11 | 704 | 0.1+ | 1.2+ | 2003 02 02 | 704 | 0.5− | 0.7− | 2006 09 27 | 691 | 0.1+ | 0.3− |
| 2002 11 19 | 644 | 0.0 | 0.1− | 2003 02 02 | 704 | 0.4− | 0.9− | 2006 09 27 | 691 | 0.6+ | 0.1+ |
| 2002 11 19 | 644 | 0.1− | 0.2− | 2003 02 03 | 699 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2002 11 19 | 644 | 0.0 | 0.2+ | 2003 02 03 | 699 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 12 06 | 644 | 1.2+ | 0.2− | 2003 02 03 | 699 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 644 | 0.7+ | 0.7+ | 2003 02 03 | 644 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2002 12 06 | 644 | 0.3− | 1.2+ | 2003 02 03 | 699 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2003 01 01 | 704 | 0.1+ | 0.6− | 2003 02 03 | 644 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2003 01 01 | 704 | 0.2+ | 0.1− | 2003 02 03 | 644 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2003 01 01 | 704 | 0.2+ | 0.5− | 2003 02 28 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.9− | 0.3+ |
| 2003 01 01 | 704 | 0.2+ | 0.6− | 2003 02 28 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.8+ |
| 2003 01 01 | 704 | 0.4+ | 0.1+ | 2003 02 28 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.2− | 1.3+ |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2003 02 28 | 704 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.9+ |
| 2003 01 07 | 704 | 0.2− | 0.0 | 2003 02 28 | 704 | 0.7+ | 1.0+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2003 01 07 | 704 | 0.2− | 0.1− | 2003 02 28 | 608 | 0.8+ | 1.4+ | 2006 10 19 | 644 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 0.1+ | 0.1− | 2003 02 28 | 608 | 1.0+ | 1.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 2003 01 07 | 704 | 0.2− | 0.5− | 2003 02 28 | 608 | 1.0+ | 1.1+ | 2006 10 22 | 703 | 1.3− | 0.3+ | | |
| 2003 01 09 | 704 | 0.7− | 0.4− | 2003 03 06 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.9− | | |
| 2003 01 09 | 704 | 0.8− | 0.0 | 2003 03 06 | 704 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.1+ | | |
| 2003 01 09 | 704 | 0.5− | 0.6+ | 2003 03 06 | 704 | 0.1− | 1.5+ | 2006 10 22 | 703 | 0.3− | 0.4− | | |
| 2003 01 09 | 704 | 0.6− | 0.7− | 2003 03 06 | 704 | 0.4+ | 0.6+ | 2006 11 20 | 704 | 0.6− | 0.1− | | |
| 2003 01 26 | 608 | 0.4− | 0.5− | 2003 03 06 | 704 | 0.1+ | 1.0+ | 2006 11 20 | 704 | 0.0 | 1.0− | | |
| 2003 01 26 | 608 | 0.3− | 0.7− | 2003 03 07 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.2− | | |
| 2003 01 26 | 608 | 0.5− | 0.6− | 2003 03 07 | 704 | 0.8− | 0.8+ | 2006 11 20 | 704 | 0.3− | 1.1− | | |
| 2003 01 27 | 704 | 0.2− | 0.4− | 2003 03 07 | 704 | 0.2− | 0.8+ | | | | | | |
| 2003 01 27 | 704 | 0.1− | 0.8− | 2003 03 07 | 704 | 0.7− | 1.1+ | | | | | | |

**(139967)∗ 2001 SF$_{12}$ = 2000 GV$_{156}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18075)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.59415 | | (2000.0) | | | |
| $n$ | 0.21841141 | $\omega$ | 84.15870 | | +0.40853561 | +0.90962946 |
| $a$ | 2.7307745 | $\Omega$ | 210.30764 | | −0.88533115 | +0.37484388 |
| $e$ | 0.1188357 | $i$ | 8.58355 | | −0.22200768 | +0.17907069 |
| $P$ | 4.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.8+ | 0.0 | 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.2− | | |
| 2000 04 06 | 704 | 0.0 | 0.8+ | 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.4− | | |
| 2000 04 06 | 704 | 0.5+ | 0.8+ | 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.1− | 0.4− | | |
| 2000 04 06 | 704 | 0.1+ | 0.1+ | 2001 09 21 | 704 | 0.3+ | 0.4+ | 2006 10 29 | G96 | 0.0 | 0.3− | | |
| 2000 04 06 | 704 | 0.9+ | 0.8+ | 2001 09 21 | 704 | 0.4+ | 1.0+ | 2006 11 09 | 691 | 0.3+ | 0.1− | | |
| 2000 04 07 | 691 | 0.3− | 0.3+ | 2001 09 21 | 704 | 0.4+ | 0.9+ | 2006 11 09 | 691 | 0.2− | 0.1+ | | |
| 2000 04 07 | 691 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.1+ | | |
| 2000 04 07 | 691 | 0.3− | 0.2+ | 2004 03 19 | 704 | 0.1− | 0.7− | 2006 11 11 | 691 | 0.2+ | 0.1− | | |
| 2000 04 29 | 704 | 0.2+ | 0.6+ | 2004 03 19 | 704 | 0.9+ | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2000 04 29 | 704 | 1.3+ | 0.3+ | 2004 03 19 | 704 | 0.6− | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | | |
| 2000 04 29 | 704 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 1.4− | 1.2+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.9− | 0.5− | | |
| 2000 04 30 | 699 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.8− | 0.1− | | |
| 2000 04 30 | 699 | 0.7− | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.7− | | |
| 2000 04 30 | 699 | 0.0 | 0.9+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.0 | | |
| 2000 04 30 | 699 | (0.8− | 2.9+) | 2006 10 04 | G96 | 0.2+ | 0.6− | 2006 11 13 | 691 | 0.0 | 0.1− | | |
| 2001 08 25 | 704 | 1.2+ | 1.5+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.9+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 13 | 691 | 0.0 | 0.0 | | |
| 2001 08 25 | 704 | 0.4+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 13 | 644 | 0.1+ | 0.0 | | |
| 2001 08 25 | 704 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2001 09 09 | 699 | 0.5+ | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 17 | G92 | 0.4+ | 0.3− | | |
| 2001 09 09 | 699 | 1.1− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 17 | G92 | 0.0 | 0.4− | | |
| 2001 09 09 | 699 | (1.9− | 2.2+) | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G92 | 1.2− | 0.7− | | |
| 2001 09 09 | 699 | 0.2+ | 0.5− | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.3+ | 1.3+ | | |
| 2001 09 16 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.9− | 0.0 | | |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.6+ | 0.0 | | |
| 2001 09 16 | 704 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.9− | | |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 18 | G92 | 0.8+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 18 | G92 | 0.8− | 1.6+ | | |
| 2001 09 19 | 704 | (0.4+ | 2.1+) | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | G92 | 0.1− | 0.8+ | | |
| 2001 09 19 | 704 | 0.7− | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 19 | G92 | 0.1+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 19 | G92 | 0.1+ | 0.5+ | | |
| 2001 09 19 | 704 | (0.2+ | 2.1+) | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 19 | G92 | 0.4− | 0.2+ | | |
| 2001 09 20 | 704 | 0.9− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.3− | 2006 11 21 | 704 | 1.1− | 0.4+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 27 | 683 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.4− | 0.1− | | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2006 10 27 | 683 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.9+ | | |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 10 27 | 683 | (1.6− | 0.8+) | 2006 11 21 | 704 | 0.2+ | 1.2+ | | |

**(139968)∗ 2001 SQ$_{12}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.51992 | | (2000.0) | | | |
| $n$ | 0.19113055 | $\omega$ | 189.07733 | | +0.99641719 | −0.08258314 |
| $a$ | 2.9848051 | $\Omega$ | 175.53663 | | +0.08449410 | +0.98141900 |
| $e$ | 0.1844503 | $i$ | 13.55731 | | −0.00367709 | +0.17319573 |
| $P$ | 5.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 09 21 | 704 | 0.9+ | 0.8+ | 2004 03 15 | 691 | 0.0 | 0.4+ | | |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 09 21 | 704 | 0.2+ | 0.1+ | 2004 03 15 | 691 | 0.6+ | 0.3+ | | |
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2001 09 21 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 691 | 0.0 | 0.7+ | | |
| 1999 03 22 | 645 | 0.0 | 0.2+ | 2001 09 21 | 704 | 0.5+ | 1.0+ | 2004 03 23 | 691 | 0.0 | 0.1+ | | |
| 2001 08 23 | 691 | 0.1− | 0.1+ | 2001 09 24 | 644 | 0.4− | 0.3+ | 2004 03 23 | 691 | 0.4+ | 0.6+ | | |
| 2001 08 23 | 691 | 0.2− | 0.1+ | 2001 09 24 | 644 | 0.1− | 0.8+ | 2004 03 23 | 691 | 0.1− | 0.2+ | | |
| 2001 08 23 | 691 | 0.0 | 0.0 | 2001 09 24 | 644 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.5− | 0.4− | | |
| 2001 09 11 | 699 | 0.2+ | 0.1− | 2001 09 28 | 704 | 0.0 | 0.5+ | 2006 08 16 | 644 | 0.4− | 0.1+ | | |
| 2001 09 11 | 699 | 0.1+ | 0.5+ | 2001 09 28 | 704 | 0.2− | 0.9+ | 2006 08 16 | 644 | 0.6− | 0.2− | | |
| 2001 09 11 | 699 | 1.0+ | 0.5+ | 2001 09 28 | 704 | 0.1− | 0.8+ | 2006 08 29 | 703 | 0.1+ | 0.8+ | | |
| 2001 09 11 | 699 | 0.4+ | 0.3+ | 2001 10 17 | 644 | 0.9− | 0.6+ | 2006 08 29 | 703 | 1.0+ | 0.4− | | |
| 2001 09 16 | 704 | 0.0 | 0.8+ | 2001 10 17 | 644 | 0.7− | 1.0+ | 2006 08 29 | 703 | 0.1+ | 0.1− | | |
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2001 10 17 | 644 | 0.7− | 0.9+ | 2006 08 29 | 703 | 0.6− | 0.7+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.6− | 2001 10 23 | 704 | 1.2− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2001 10 23 | 704 | 1.3− | 1.3+ | 2006 09 26 | 691 | 0.2− | 0.5− | | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2001 10 23 | 704 | 1.1− | 1.3+ | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.5+ | 0.9+ | 2001 10 24 | 704 | 0.6− | 1.0+ | 2006 09 28 | 691 | 0.2+ | 0.2− | | |
| 2001 09 19 | 704 | 0.2+ | 0.9+ | 2001 10 24 | 704 | (2.1− | 1.3+) | 2006 09 28 | 691 | 0.1+ | 0.0 | | |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2001 10 24 | 704 | 0.7− | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.2+ | | |
| 2001 09 21 | 704 | 0.5+ | 1.0+ | 2001 10 24 | 704 | (2.1− | 0.6+) | | | | | | |

**(139969)∗ 2001 SB$_{13}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.26006 | | (2000.0) | | | |
| $n$ | 0.21258084 | $\omega$ | 272.71612 | | +0.13733301 | −0.99038862 |
| $a$ | 2.7804812 | $\Omega$ | 169.34805 | | +0.94045201 | +0.12516475 |
| $e$ | 0.1390979 | $i$ | 5.10030 | | +0.31094962 | +0.05885717 |
| $P$ | 4.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | (1.8− | 0.7+) | 2002 11 14 | 644 | 0.2+ | 0.8+ | 2003 03 06 | 704 | 0.7+ | 1.1+ | | |
| 2001 08 25 | 691 | 0.5− | 0.1− | 2002 11 14 | 644 | 0.2− | 0.9+ | 2003 03 06 | 704 | 0.9− | 0.2− | | |
| 2001 08 25 | 691 | 0.3− | 0.1+ | 2002 11 14 | 644 | 0.0 | 0.9+ | 2005 06 28 | 691 | 0.1− | 0.1+ | | |
| 2001 09 16 | 704 | 1.1+ | 0.1+ | 2003 01 01 | 704 | 0.3− | 0.3+ | 2005 06 28 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2003 01 01 | 704 | 0.8+ | 0.6+ | 2005 06 28 | 691 | 0.2− | 0.2+ | | |
| 2001 09 16 | 704 | 0.5+ | 0.6− | 2003 01 01 | 704 | 0.4− | 0.2+ | 2005 06 29 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 699 | 0.6+ | 0.7− | 2003 01 01 | 704 | 0.7+ | 0.5+ | 2005 06 29 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 699 | 1.0− | 0.3− | 2003 01 03 | 704 | (0.4+ | 1.8+) | 2005 06 29 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 699 | (0.9− | 1.6+) | 2003 01 03 | 704 | 0.3+ | 1.4+ | 2005 07 08 | 691 | 0.2− | 0.4+ | | |
| 2001 09 19 | 699 | 0.2+ | 0.2+ | 2003 01 03 | 704 | (0.4+ | 1.5+) | 2005 07 08 | 691 | 0.2− | 0.4+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.6+ | 2003 01 07 | 704 | 0.3+ | 0.6+ | 2005 07 08 | 691 | 0.4− | 0.3+ | | |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2003 01 07 | 704 | 0.4+ | 0.9+ | 2005 07 11 | G96 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2003 01 07 | 704 | 0.3− | 0.9+ | 2005 07 11 | G96 | 0.6+ | 0.0 | | |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2003 01 07 | 704 | 0.2+ | 0.1+ | 2005 07 11 | G96 | 0.0 | 0.3+ | | |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2003 01 07 | 704 | 0.0 | 0.6+ | 2005 07 11 | G96 | 0.5+ | 0.2+ | | |
| 2001 09 19 | 644 | 1.3− | 0.4+ | 2003 01 14 | 608 | 0.7+ | 0.5− | 2006 09 30 | 703 | 0.6+ | 0.1− | | |
| 2001 09 19 | 644 | 1.1− | 0.5+ | 2003 01 14 | 608 | 1.0+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.3− | | |
| 2001 09 19 | 644 | 0.8− | 0.5+ | 2003 01 14 | 608 | 0.7+ | 0.5− | 2006 09 30 | 703 | (1.6+ | 0.3−) | | |
| 2001 09 21 | 704 | 0.1− | 0.9+ | 2003 01 26 | 699 | 0.9+ | 0.8+ | 2006 09 30 | 703 | 0.2− | 1.4− | | |
| 2001 09 21 | 704 | 0.3− | 1.2+ | 2003 01 26 | 699 | 0.5+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.6− | | |
| 2001 09 21 | 704 | 0.2− | 1.1+ | 2003 01 26 | 699 | 0.4+ | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.4− | | |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2003 01 26 | 699 | 0.4− | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.4− | | |
| 2001 09 21 | 704 | 0.5− | 1.0+ | 2003 01 26 | 699 | 0.0 | 0.9+ | 2006 10 03 | G96 | 0.2− | 0.4− | | |
| 2001 09 22 | 704 | 0.1− | 0.8− | 2003 01 26 | 699 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.2+ | | |
| 2001 09 22 | 704 | 0.8+ | 0.5− | 2003 01 26 | 699 | 0.2− | 0.6+ | 2006 10 16 | 703 | 1.1− | 0.2− | | |
| 2001 09 22 | 704 | 0.2− | 1.3− | 2003 01 26 | 699 | 0.3− | 1.2+ | 2006 10 16 | 703 | 0.6− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.5+ | 0.6+ | 2003 01 27 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.0 | | |
| 2001 09 23 | 704 | 0.3+ | 1.0+ | 2003 01 27 | 704 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.3− | | |
| 2001 09 23 | 704 | 0.1− | 0.9+ | 2003 01 27 | 644 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.2− | | |
| 2001 09 23 | 704 | 0.6+ | 1.2+ | 2003 01 27 | 704 | 0.1+ | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.0 | | |
| 2001 09 23 | 704 | 0.3− | 1.2+ | 2003 01 27 | 704 | (2.6− | 1.2+) | 2006 10 22 | 691 | 0.1− | 0.2− | | |
| 2001 09 24 | 704 | 0.9+ | 1.0+ | 2003 01 27 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.2− | | |
| 2001 09 24 | 704 | 0.6− | 0.4− | 2003 01 27 | 644 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.2+ | 1.1− | | |
| 2001 09 24 | 704 | 0.8− | 1.2+ | 2003 02 02 | 608 | (1.4+ | 1.9+) | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 24 | 704 | 0.1− | 0.1− | 2003 02 02 | 608 | (1.6+ | 1.6+) | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 09 24 | 704 | 0.5− | 0.3− | 2003 02 02 | 608 | (1.4+ | 2.0+) | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 09 24 | 704 | 0.6+ | 0.6+ | 2003 02 02 | 704 | 0.8− | 0.8− | 2006 11 09 | 644 | 0.2+ | 0.1− | | |
| 2001 09 24 | 704 | 0.1+ | 0.1− | 2003 02 02 | 704 | 0.5− | 0.7− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.1− | 2003 02 02 | 704 | 0.3− | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.2− | | |
| 2001 09 24 | 704 | 0.3− | 0.2+ | 2003 02 02 | 704 | 0.3+ | 1.1− | 2006 11 13 | 703 | (0.2+ | 1.7−) | | |
| 2001 09 24 | 704 | 0.4+ | 1.0+ | 2003 02 02 | 704 | 0.6− | 0.3+ | 2006 11 13 | 703 | 0.7+ | 0.3− | | |
| 2001 09 24 | 704 | 0.3− | 0.4− | 2003 02 03 | 644 | 0.0 | 0.8+ | 2006 11 13 | 703 | 0.8+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.8+ | 0.7+ | 2003 02 03 | 644 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.7+ | | |
| 2001 09 24 | 704 | 0.3− | 0.8+ | 2003 02 03 | 644 | 0.2− | 0.9+ | 2006 11 20 | 704 | 0.7+ | 0.5+ | | |
| 2001 09 24 | 704 | 0.7− | 0.3− | 2003 02 21 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.4− | | |
| 2001 09 24 | 704 | 0.1− | 0.7+ | 2003 02 21 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.3− | | |
| 2001 10 17 | 644 | 0.2+ | 0.3+ | 2003 02 21 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.8− | 1.0+ | | |
| 2001 10 17 | 644 | 0.1− | 0.2+ | 2003 03 06 | 644 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.1− | | |
| 2001 10 17 | 644 | 0.0 | 0.3+ | 2003 03 06 | 644 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.4− | | |
| 2001 10 17 | 644 | 0.1+ | 0.5+ | 2003 03 06 | 644 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.3− | | |
| 2001 10 17 | 644 | 0.1+ | 0.2+ | 2003 03 06 | 704 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.4− | | |
| 2001 10 17 | 644 | 0.0 | 0.8+ | 2003 03 06 | 704 | 0.8+ | 0.5+ | 2006 11 23 | G96 | 0.4+ | 0.5− | | |

**(139970)∗ 2001 SM$_{13}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.52188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21874471 | $\omega$ | 19.23572 | | +0.95046227 | −0.31083558 | |
| $a$ | 2.7279999 | $\Omega$ | 358.86994 | | +0.27310979 | +0.83761556 | |
| $e$ | 0.1250360 | $i$ | 4.79654 | | +0.14843356 | +0.44920086 | |
| $P$ | 4.51 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 1.2+ | 0.9+ | 2001 10 13 | 704 | 0.5+ | 0.2+ | 2003 02 04 | 699 | 0.4− | 0.6+ | | |
| 2001 08 16 | 704 | 0.4+ | 0.2+ | 2001 10 13 | 704 | 0.8− | 0.2− | 2003 02 04 | 644 | 0.6− | 0.4+ | | |
| 2001 08 16 | 704 | 1.1+ | 0.6+ | 2001 10 16 | 704 | 1.2− | 1.0+ | 2003 02 04 | 644 | 0.1− | 0.2+ | | |
| 2001 08 16 | 704 | 1.1− | 1.1− | 2001 10 16 | 704 | 0.7− | 0.1− | 2003 02 04 | 644 | 0.4+ | 0.3+ | | |
| 2001 08 24 | 704 | 0.5+ | 0.6+ | 2001 10 16 | 704 | 0.3+ | 1.1+ | 2004 04 12 | 691 | 0.3+ | 0.6+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.2+ | 2001 10 19 | 644 | 0.3− | 1.0+ | 2004 04 12 | 691 | 0.2+ | 0.6+ | | |
| 2001 08 24 | 704 | 0.4− | 0.3− | 2001 10 19 | 644 | 0.6− | 0.9+ | 2004 04 12 | 691 | 0.1+ | 0.5+ | | |
| 2001 08 24 | 704 | 0.2+ | 0.6− | 2001 10 19 | 644 | 0.5− | 1.0+ | 2004 04 25 | 691 | 0.6+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.1+ | 0.4+ | 2001 10 21 | 704 | 0.1+ | 0.1− | 2004 04 25 | 691 | 0.3+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.6+ | 0.5+ | 2001 10 21 | 704 | 0.0 | 0.7+ | 2004 04 25 | 691 | 0.2+ | 0.5+ | | |
| 2001 09 11 | 699 | 0.2+ | 0.3+ | 2001 10 21 | 704 | 0.1− | 1.0+ | 2004 05 10 | 691 | 0.3+ | 1.0+ | | |
| 2001 09 11 | 699 | 0.2+ | 0.3+ | 2001 10 21 | 704 | 0.2− | 0.1+ | 2004 05 10 | 691 | 0.4+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.3+ | 2001 10 21 | 704 | 0.4− | 1.1+ | 2004 05 10 | 691 | 0.2+ | 0.7+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.5+ | 2001 10 23 | 699 | 0.4+ | 0.0 | 2005 08 04 | 644 | 0.0 | 0.3+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.1+ | 2001 10 23 | 699 | 0.1− | 1.3+ | 2005 08 04 | 644 | 0.3− | 0.3+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.0 | 2001 10 23 | 699 | 1.1− | 1.2+ | 2005 08 04 | 644 | 0.1− | 0.4+ | | |
| 2001 09 19 | 704 | 0.8− | 0.7+ | 2001 10 23 | 699 | (0.3− | 1.7+) | 2006 11 15 | 704 | 0.1− | 0.3+ | | |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2001 12 10 | 645 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.8+ | | |
| 2001 09 19 | 704 | 0.5− | 0.2+ | 2001 12 10 | 645 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.9− | 0.1+ | 2002 12 31 | 704 | 0.8+ | 0.1− | 2006 11 15 | 704 | 0.2− | 0.3+ | | |
| 2001 09 19 | 704 | 1.1− | 0.3+ | 2002 12 31 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.3+ | 0.7+ | | |
| 2001 09 19 | 644 | 0.1− | 0.5− | 2002 12 31 | 704 | 0.6+ | 1.1+ | 2006 11 16 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 19 | 644 | 0.1+ | 0.6− | 2003 01 05 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.4+ | | |
| 2001 09 19 | 644 | 0.1− | 0.6− | 2003 01 05 | 704 | 0.4− | 0.7− | 2006 11 16 | 704 | 0.4+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2003 01 05 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.3− | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2003 01 05 | 704 | 0.9− | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.7+ | | |
| 2001 09 21 | 704 | 0.2− | 0.5+ | 2003 01 09 | 704 | (1.8+ | 1.6+) | 2006 11 19 | 704 | 0.1− | 0.2+ | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2003 01 09 | 704 | 0.7− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.2+ | | |
| 2001 09 21 | 704 | 0.3− | 0.6+ | 2003 01 09 | 704 | 0.3− | 1.5+ | 2006 11 19 | 704 | 0.4+ | 0.3+ | | |
| 2001 09 22 | 691 | 0.4− | 0.2+ | 2003 01 09 | 704 | 0.2+ | 0.7+ | 2006 11 21 | 691 | 0.0 | 0.3− | | |
| 2001 09 22 | 691 | 0.4− | 0.2+ | 2003 01 25 | 699 | 1.2− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.2− | | |
| 2001 09 22 | 691 | 0.5− | 0.1+ | 2003 01 25 | 699 | 0.3+ | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.2− | | |
| 2001 09 23 | 691 | 0.3+ | 0.5+ | 2003 01 25 | 699 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.6+ | | |
| 2001 09 23 | 691 | 0.4+ | 0.3+ | 2003 01 25 | 699 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.7+ | | |
| 2001 09 23 | 691 | 0.3+ | 0.4+ | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3− | 0.8+ | | |
| 2001 09 24 | 644 | 0.6− | 0.2− | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.1+ | | |
| 2001 09 24 | 644 | 0.9− | 0.4− | 2003 01 30 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.4+ | | |
| 2001 09 24 | 644 | 0.7− | 0.4− | 2003 01 30 | 644 | 0.2+ | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.3− | | |
| 2001 09 26 | 699 | 0.7− | 0.3+ | 2003 01 30 | 644 | 0.4+ | 0.4+ | 2006 11 25 | 691 | 0.4− | 0.2− | | |
| 2001 09 26 | 699 | 0.1+ | 0.2+ | 2003 02 01 | 704 | 0.1+ | 0.2+ | 2006 11 25 | 691 | 0.2− | 0.2− | | |
| 2001 09 26 | 699 | 0.4− | 0.4− | 2003 02 01 | 704 | 0.5+ | 0.0 | 2006 11 27 | 704 | 0.4− | 0.5+ | | |
| 2001 09 26 | 699 | 0.2+ | 0.4+ | 2003 02 01 | 704 | 0.3− | 0.0 | 2006 11 27 | 704 | 0.6− | 0.2+ | | |
| 2001 10 11 | 644 | 0.6− | 0.2+ | 2003 02 01 | 704 | 0.5+ | 1.2+ | 2006 11 27 | 704 | 0.2− | 1.3+ | | |
| 2001 10 11 | 644 | 0.8− | 0.2+ | 2003 02 01 | 704 | 0.4+ | 0.6+ | 2006 11 27 | 704 | 0.3+ | 1.4+ | | |
| 2001 10 11 | 644 | 0.3− | 0.1+ | 2003 02 04 | 699 | 1.2+ | 0.0 | 2006 11 29 | 704 | 1.0+ | 0.5− | | |
| 2001 10 13 | 704 | 1.1− | 0.5− | 2003 02 04 | 699 | 0.3− | 0.6+ | 2006 11 29 | 704 | 0.2+ | 0.3− | | |
| 2001 10 13 | 704 | 0.7− | 0.6− | 2003 02 04 | 699 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.8+ | | |

**(139971)∗ 2001 SM$_{14}$ = 2004 BO$_3$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56307)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.15682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18045941 | $\omega$ | 59.08016 | | −0.69670414 | +0.71731478 | |
| $a$ | 3.1013423 | $\Omega$ | 166.74727 | | −0.66940113 | −0.64611505 | |
| $e$ | 0.1202150 | $i$ | 1.98172 | | −0.25788653 | −0.26075822 | |
| $P$ | 5.46 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 11 | 691 | 0.2+ | 0.2+ | 2004 01 16 | 644 | 0.0 | 0.5+ | 2005 05 12 | 691 | (1.7+ | 0.2+) | | |
| 1999 03 11 | 691 | 0.2+ | 0.2+ | 2004 01 16 | 644 | 0.1+ | 0.6+ | 2005 05 12 | 691 | 0.1+ | 0.2+ | | |
| 1999 03 11 | 691 | 0.1+ | 0.3+ | 2004 01 17 | 644 | 0.1+ | 0.7+ | 2005 05 12 | 691 | 0.3+ | 0.1+ | | |
| 2001 09 11 | 699 | 0.1− | 1.0+ | 2004 01 17 | 644 | 0.1− | 0.8+ | 2005 06 04 | 703 | 0.5− | 0.2+ | | |
| 2001 09 11 | 699 | (1.6+ | 1.2+) | 2004 01 17 | 644 | 0.3+ | 0.4+ | 2005 06 04 | 703 | 0.5− | 0.6− | | |
| 2001 09 11 | 699 | 0.6− | 0.3+ | 2004 01 24 | 704 | 0.1− | 0.0 | 2005 06 04 | 703 | 0.5+ | 0.6− | | |
| 2001 09 11 | 699 | 0.2− | 0.1− | 2004 01 24 | 704 | 0.1− | 0.6+ | 2005 06 04 | 703 | 0.1− | 0.2+ | | |
| 2001 09 16 | 704 | 0.7− | 0.2+ | 2004 01 24 | 704 | 0.4− | 0.1+ | 2006 07 18 | G96 | 0.5+ | 0.2+ | | |
| 2001 09 16 | 704 | 1.0− | 1.1− | 2004 01 24 | 704 | 0.5− | 0.3+ | 2006 07 18 | G96 | 0.5− | 0.6+ | | |
| 2001 09 16 | 704 | 1.4− | 0.6− | 2004 01 24 | 704 | 0.1− | 0.3+ | 2006 07 18 | G96 | 0.1+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.1− | 0.9+ | 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 07 18 | G96 | 0.7− | 0.0 | | |
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 07 18 | G96 | 0.3+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.8− | 0.2− | 2004 01 28 | 691 | 0.5+ | 0.2− | 2006 07 18 | G96 | 0.5− | 0.5+ | | |
| 2001 09 19 | 704 | 0.5− | 0.6+ | 2005 03 12 | G96 | 0.5− | 0.0 | 2006 07 18 | G96 | 0.1+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.5− | 1.3+ | 2005 03 12 | G96 | 0.4− | 0.4− | 2006 07 18 | G96 | 0.3− | 0.3+ | | |
| 2001 09 21 | 704 | 1.2+ | 1.2+ | 2005 03 12 | G96 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.8+ | 0.3− | | |
| 2001 09 21 | 704 | 0.8+ | 1.0+ | 2005 03 12 | G96 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.9+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.0 | 2005 05 03 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.3− | 0.7+ | | |
| 2001 09 21 | 704 | (2.8+ | 0.8+) | 2005 05 03 | 691 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.1− | | |
| 2001 09 22 | 704 | 0.7− | 0.6+ | 2005 05 03 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.2+ | | |
| 2001 09 22 | 704 | 0.1+ | 0.7− | 2005 05 08 | 691 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.6+ | 0.0 | | |
| 2001 09 22 | 704 | 1.2+ | 1.2+ | 2005 05 08 | 691 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.1+ | | |
| 2001 09 22 | 704 | 0.2− | 0.5− | 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.1+ | | |
| 2002 11 24 | 644 | 0.1− | 0.7+ | 2005 05 08 | G96 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2002 11 24 | 644 | 0.3− | 0.7+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.3+ | | |
| 2002 11 24 | 644 | 0.0 | 0.5+ | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 11 17 | G96 | 1.0− | 0.2− | | |
| 2004 01 16 | 644 | 0.2+ | 0.5+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.7+ | 0.7− | | |

**(139972)∗ 2001 SQ$_{15}$ = 2000 HK$_{17}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18076)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.29151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21446067 | $\omega$ | 194.39151 | | +0.86466864 | +0.50128775 | |
| $a$ | 2.7642095 | $\Omega$ | 135.47480 | | −0.45618129 | +0.81068628 | |
| $e$ | 0.2321681 | $i$ | 2.65961 | | −0.21034918 | +0.30248694 | |
| $P$ | 4.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 05 13 | 691 | 0.1+ | 0.3+ | 2001 09 26 | 704 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.5+ | |
| 1991 05 13 | 691 | 0.3− | 0.4+ | 2001 09 26 | 704 | 0.2− | 0.7− | 2006 11 12 | G96 | 0.2− | 0.2− | |
| 1991 05 13 | 691 | 0.1+ | 0.3+ | 2001 09 26 | 704 | 0.1− | 0.6− | 2006 11 12 | G96 | 0.2+ | 0.3− | |
| 1999 02 07 | 691 | 0.0 | 0.3− | 2001 10 05 | 644 | 0.7− | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.3− | |
| 1999 02 07 | 691 | 0.0 | 0.0 | 2001 10 05 | 644 | 0.7− | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.2− | |
| 1999 02 07 | 691 | 0.2− | 0.0 | 2001 10 05 | 644 | 0.5− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.2+ | |
| 1999 02 12 | 691 | 0.5− | 0.2− | 2001 10 11 | 704 | 0.1− | 1.3+ | 2006 11 16 | 691 | 0.3− | 0.1+ | |
| 1999 02 12 | 691 | 0.3− | 0.2+ | 2001 10 11 | 704 | 0.2− | 0.7+ | 2006 11 16 | 691 | 0.4− | 0.3+ | |
| 1999 02 12 | 691 | 0.3+ | 0.0 | 2001 10 11 | 704 | 0.2+ | 0.6+ | 2006 11 16 | 113 | 0.3− | 0.8− | |
| 2000 04 24 | 691 | 0.5+ | 1.4+ | 2001 10 11 | 704 | 0.5− | 0.5+ | 2006 11 16 | 113 | 0.3− | 0.9− | |
| 2000 04 24 | 691 | 0.4+ | 0.7+ | 2001 10 11 | 704 | 0.1− | 0.7+ | 2006 11 16 | 113 | 0.0 | 1.0− | |
| 2000 04 24 | 691 | 0.3+ | 0.7+ | 2001 10 20 | 704 | 0.6− | 1.3+ | 2006 11 16 | 113 | 0.2− | 1.1− | |
| 2000 04 30 | 691 | 0.4+ | 0.7+ | 2001 10 20 | 704 | (0.2− | 1.7+) | 2006 11 16 | 113 | 0.3− | 1.1− | |
| 2000 04 30 | 691 | 0.2+ | 0.6+ | 2001 10 20 | 704 | 0.2+ | 1.4+ | 2006 11 16 | 113 | 0.3− | 0.9− | |
| 2000 04 30 | 691 | 0.9+ | 0.7+ | 2001 10 20 | 704 | 0.0 | 0.9+ | 2006 11 16 | 113 | 0.2− | 0.3− | |
| 2001 07 08 | 644 | 0.7− | 0.4+ | 2001 10 20 | 704 | 0.6+ | 1.2+ | 2006 11 16 | 246 | 0.0 | 0.2+ | |
| 2001 07 08 | 644 | 0.1+ | 0.3+ | 2001 10 23 | 704 | 0.3− | 0.6+ | 2006 11 16 | 246 | 0.6− | 0.1+ | |
| 2001 07 08 | 644 | 0.2− | 0.5+ | 2001 10 23 | 704 | 0.3+ | 0.7+ | 2006 11 16 | 246 | 1.2− | 0.4− | |
| 2001 08 27 | 699 | 0.0 | 0.1− | 2001 10 23 | 704 | 0.5+ | 0.1+ | 2006 11 17 | 704 | (1.7+ | 0.1−) | |
| 2001 08 27 | 699 | 0.2− | 0.3− | 2001 10 23 | 704 | 0.5− | 1.1+ | 2006 11 17 | 704 | 0.3+ | 0.9+ | |
| 2001 08 27 | 699 | 0.5− | 0.2− | 2001 10 23 | 704 | 0.7− | 1.0+ | 2006 11 17 | 704 | 0.0 | 0.7+ | |
| 2001 08 27 | 699 | 0.4− | 0.5+ | 2001 10 24 | 704 | (0.2+ | 1.5+) | 2006 11 18 | 704 | 0.3+ | 0.2+ | |
| 2001 09 16 | 704 | 0.5− | 0.3+ | 2001 10 24 | 704 | (0.3− | 1.8+) | 2006 11 18 | 704 | 0.6− | 0.7+ | |
| 2001 09 16 | 704 | 0.5− | 0.6+ | 2001 10 24 | 704 | 0.3+ | 0.6+ | 2006 11 18 | 704 | 1.0+ | 0.2+ | |
| 2001 09 16 | 704 | 0.7− | 0.6+ | 2001 10 24 | 704 | 0.1− | 1.3+ | 2006 11 18 | 704 | 0.3− | 0.5− | |
| 2001 09 16 | 704 | 1.1− | 0.3+ | 2001 10 24 | 704 | 0.1+ | 1.4+ | 2006 11 20 | 704 | 0.5+ | 0.9+ | |
| 2001 09 16 | 704 | 0.0 | 0.7+ | 2004 03 14 | 691 | 0.6+ | 0.8+ | 2006 11 20 | 704 | 0.6+ | 1.2+ | |
| 2001 09 18 | 699 | 0.2+ | 0.3+ | 2004 03 14 | 691 | 0.5+ | 0.7+ | 2006 11 20 | 704 | 0.3+ | 0.6+ | |
| 2001 09 18 | 699 | (3.1− | 1.0+) | 2004 03 14 | 691 | 0.0 | 1.0+ | 2006 11 20 | 704 | 0.0 | 0.4+ | |
| 2001 09 18 | 699 | 0.4+ | 0.2+ | 2004 03 21 | 691 | 0.6+ | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.4+ | |
| 2001 09 18 | 699 | 0.2− | 0.4+ | 2004 03 21 | 691 | 0.4+ | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.3+ | |
| 2001 09 19 | 704 | 0.1− | 0.9+ | 2004 03 21 | 691 | 0.3+ | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.3+ | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2005 06 04 | 704 | (3.9− | 2.9+) | 2006 11 27 | 691 | 0.2+ | 0.2+ | |
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2005 06 04 | 704 | 1.0− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.3+ | |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2005 06 04 | 704 | 0.3− | 1.1+ | 2006 11 27 | 691 | 0.0 | 0.3+ | |
| 2001 09 19 | 704 | 0.1+ | 0.9+ | 2005 06 04 | 704 | (3.2− | 3.1+) | 2006 11 29 | 704 | 0.1− | 0.6+ | |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2005 06 04 | 704 | 0.8− | 1.4+ | 2006 11 29 | 704 | 0.5− | 0.8+ | |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.8+ | 0.8+ | |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.1+ | |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.3− | 2006 12 01 | 691 | 0.1− | 0.4+ | |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.1+ | |
| 2001 09 26 | 704 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 12 01 | 691 | 0.5− | 0.1+ | |
| 2001 09 26 | 704 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.4+ | | | | | |

**(139973)∗ 2001 SR$_{15}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.27355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21416466 | $\omega$ | 359.92781 | | +0.97582558 | −0.21649771 | |
| $a$ | 2.7667559 | $\Omega$ | 12.69544 | | +0.20058449 | +0.83289711 | |
| $e$ | 0.1441412 | $i$ | 7.81578 | | +0.08677728 | +0.50932421 | |
| $P$ | 4.60 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 08 | 644 | 0.1− | 0.5+ | 2001 10 20 | 704 | 0.3− | 0.7+ | 2004 04 13 | 691 | 0.2+ | 0.4+ | |
| 2001 07 08 | 644 | 0.2− | 1.0+ | 2001 10 23 | 704 | 0.0 | 0.3+ | 2005 05 19 | 644 | 0.3− | 0.8+ | |
| 2001 07 08 | 644 | 0.1− | 1.2+ | 2001 10 23 | 704 | 0.2− | 0.7− | 2005 05 19 | 644 | 0.5− | 0.5+ | |
| 2001 08 25 | 704 | 0.6+ | 0.1+ | 2001 10 23 | 704 | 0.4− | 0.3− | 2005 05 19 | 644 | 0.7− | 0.7+ | |
| 2001 08 25 | 704 | 0.3− | 0.2+ | 2001 10 23 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 1.4− | 0.1− | |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2001 10 23 | 704 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.2− | 0.3− | |
| 2001 08 25 | 704 | 0.4+ | 0.2+ | 2001 10 24 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.9− | 0.1− | |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2001 10 24 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.2+ | |
| 2001 09 11 | 699 | 0.7− | 0.4+ | 2001 10 24 | 704 | 0.1− | 0.7+ | 2006 10 01 | 704 | (1.8+ | 0.6+) | |
| 2001 09 11 | 699 | 0.2− | 1.1+ | 2001 10 24 | 704 | 0.0 | 0.6+ | 2006 10 01 | 704 | 1.3+ | 0.4− | |
| 2001 09 11 | 699 | 0.4− | 1.0+ | 2001 10 24 | 704 | 0.4+ | 1.2+ | 2006 10 01 | 704 | 1.2+ | 0.9+ | |
| 2001 09 11 | 699 | 0.4− | 1.0+ | 2001 11 16 | 644 | 0.1− | 1.2+ | 2006 10 01 | 704 | 1.3+ | 0.2+ | |
| 2001 09 16 | 704 | 0.0 | 0.9+ | 2001 11 16 | 644 | 0.0 | 0.5+ | 2006 10 01 | 704 | (1.9+ | 0.3+) | |
| 2001 09 16 | 704 | 0.0 | 0.8+ | 2001 11 16 | 644 | 0.3− | 0.6+ | 2006 10 19 | 704 | 0.8+ | 0.1− | |
| 2001 09 16 | 704 | 0.6− | 0.8+ | 2001 11 17 | 699 | 0.6+ | 0.5− | 2006 10 19 | 704 | 0.1− | 1.1+ | |
| 2001 09 16 | 704 | 0.2− | 1.3+ | 2001 11 17 | 699 | 0.3+ | 0.1+ | 2006 10 19 | 704 | 1.0+ | 0.3+ | |
| 2001 09 19 | 704 | 0.1− | 0.9− | 2001 11 17 | 699 | 0.4− | 0.7+ | 2006 10 19 | 704 | 0.2− | 0.3− | |
| 2001 09 19 | 704 | 0.4− | 1.5− | 2001 11 17 | 699 | 0.0 | 0.7+ | 2006 10 20 | 704 | 0.7+ | 0.3+ | |
| 2001 09 19 | 704 | 0.0 | 0.8− | 2001 11 18 | 704 | 0.8+ | 0.8− | 2006 10 20 | 704 | 0.2+ | 0.6+ | |
| 2001 09 19 | 704 | 0.1− | 0.7− | 2001 11 18 | 704 | 0.2− | 0.2+ | 2006 10 20 | 704 | 0.0 | 1.0+ | |
| 2001 09 19 | 704 | 0.3− | 1.0− | 2001 11 18 | 704 | 0.1− | 0.0 | 2006 10 20 | 704 | 0.2− | 0.7− | |
| 2001 09 21 | 704 | 0.9+ | 0.8+ | 2001 11 18 | 704 | 1.4− | 0.1+ | 2006 10 22 | 644 | 0.4− | 0.0 | |
| 2001 09 21 | 704 | 0.8+ | 0.9+ | 2001 11 18 | 704 | 0.9− | 0.6− | 2006 10 22 | 644 | 0.4− | 0.2− | |
| 2001 09 21 | 704 | 0.8+ | 1.0+ | 2001 12 07 | 704 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.1− | |
| 2001 09 21 | 704 | 0.8+ | 1.0+ | 2001 12 07 | 704 | 0.5+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.2− | |
| 2001 09 21 | 704 | 0.9+ | 1.1+ | 2001 12 07 | 704 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.2− | |
| 2001 09 25 | 644 | 0.6− | 0.2+ | 2001 12 07 | 704 | 0.8+ | 0.9+ | 2006 10 23 | 644 | 0.2− | 0.2− | |
| 2001 09 25 | 644 | 0.5− | 0.0 | 2001 12 07 | 704 | 0.6− | 0.7− | 2006 10 28 | D35 | 0.2− | 0.3− | |
| 2001 09 25 | 644 | 0.4− | 0.2+ | 2003 01 10 | 704 | 0.1+ | 0.4+ | 2006 10 28 | D35 | 0.3− | 0.3− | |
| 2001 09 26 | 704 | 0.0 | 0.0 | 2003 01 10 | 704 | 0.8− | 0.5+ | 2006 10 28 | D35 | 0.3− | 0.1− | |
| 2001 09 26 | 704 | 0.0 | 0.1+ | 2003 01 10 | 704 | 0.1− | 0.9+ | 2006 11 02 | 703 | 0.3− | 0.5− | |
| 2001 09 26 | 704 | 0.2+ | 0.0 | 2003 01 10 | 704 | 0.2− | 1.1+ | 2006 11 02 | 703 | 0.0 | 0.3− | |
| 2001 09 26 | 704 | 0.1+ | 0.2− | 2003 01 12 | 106 | 0.5+ | 1.0+ | 2006 11 02 | 703 | 0.0 | 0.6− | |
| 2001 09 26 | 704 | 0.3+ | 0.7− | 2003 01 13 | 106 | 0.4+ | 1.1+ | 2006 11 02 | 703 | 0.2+ | 0.1+ | |
| 2001 10 05 | 644 | 0.2+ | 0.4− | 2003 01 13 | 106 | (4.3− | 0.3+) | 2006 11 15 | 703 | 0.2+ | 0.7− | |
| 2001 10 05 | 644 | 0.1+ | 0.2− | 2003 01 31 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.3− | 0.4− | |
| 2001 10 05 | 644 | 0.7− | 0.3− | 2003 01 31 | 704 | 0.6+ | 0.4+ | 2006 11 15 | 703 | 0.4− | 0.8− | |
| 2001 10 06 | 704 | 0.4− | 1.1− | 2003 01 31 | 704 | 0.6+ | 0.5+ | 2006 11 15 | 703 | 0.5− | 0.4− | |
| 2001 10 06 | 704 | 1.2+ | 0.7+ | 2003 01 31 | 704 | (1.8+ | 1.0+) | 2006 11 15 | 704 | 0.2+ | 1.1+ | |
| 2001 10 06 | 704 | 1.4+ | 0.5− | 2003 01 31 | 704 | 0.0 | 0.9+ | 2006 11 15 | 704 | (0.9+ | 1.6+) | |
| 2001 10 06 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2006 11 15 | 704 | 0.0 | 1.1+ | |
| 2001 10 11 | 644 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.9+ | 0.9+ | 2006 11 15 | 704 | 0.0 | 0.2+ | |
| 2001 10 11 | 644 | 0.0 | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.0 | |
| 2001 10 11 | 644 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.9+ | 0.5+ | 2006 11 20 | G96 | 0.5+ | 0.4− | |
| 2001 10 13 | 704 | 0.4− | 0.7− | 2004 03 23 | 704 | 0.9+ | 1.1+ | 2006 11 20 | G96 | 0.1+ | 0.4− | |
| 2001 10 13 | 704 | 0.3− | 1.0− | 2004 03 27 | 704 | 1.1+ | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.4− | |
| 2001 10 13 | 704 | 1.1− | 1.2− | 2004 03 27 | 704 | 0.7+ | 0.6+ | 2006 11 20 | G96 | 0.0 | 0.5− | |
| 2001 10 13 | 704 | 0.7− | 1.0− | 2004 03 27 | 704 | 0.2+ | 0.1− | 2006 11 21 | 703 | 0.0 | 0.6+ | |
| 2001 10 13 | 704 | 1.2− | 0.6− | 2004 03 27 | 704 | 0.9+ | 0.7+ | 2006 11 21 | 703 | 1.3+ | 0.3+ | |
| 2001 10 17 | 644 | 0.5− | 1.0− | 2004 03 27 | 704 | 0.2− | 0.4+ | 2006 11 21 | 703 | 0.1− | 0.7− | |
| 2001 10 17 | 644 | 0.3− | 1.1− | 2004 04 09 | E12 | 1.4− | 1.0+ | 2006 11 21 | 703 | 0.5− | 0.4− | |
| 2001 10 17 | 644 | 0.5− | 1.0− | 2004 04 09 | E12 | (1.4− | 1.6+) | 2006 11 29 | 704 | 0.2+ | 0.2− | |
| 2001 10 20 | 704 | 0.9− | 0.8+ | 2004 04 09 | E12 | (0.8− | 1.9+) | 2006 11 29 | 704 | 0.1+ | 0.5+ | |
| 2001 10 20 | 704 | 0.4− | 0.7+ | 2004 04 09 | E12 | (0.5− | 1.5+) | 2006 11 29 | 704 | 0.2− | 0.7+ | |
| 2001 10 20 | 704 | 0.4− | 0.8+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.4+ | 0.8− | |
| 2001 10 20 | 704 | 0.5− | 0.7+ | 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.7+ | |

**(139974)∗ 2001 SU$_{16}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.98034 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19656416 | $\omega$ | 309.52359 | | +0.98729453 | +0.15657642 | |
| $a$ | 2.9295427 | $\Omega$ | 41.48862 | | −0.13034717 | +0.89550342 | |
| $e$ | 0.0434403 | $i$ | 2.34276 | | −0.09087974 | +0.41660226 | |
| $P$ | 5.01 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 14 | 691 | 0.2− | 0.4− | 2003 01 08 | 704 | 0.4+ | 0.0 | 2006 09 17 | 704 | 0.2− | 0.0 | |
| 1994 03 14 | 691 | 0.3− | 0.7− | 2003 01 08 | 704 | 0.4+ | 0.1− | 2006 09 17 | 704 | 0.1− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 14 | 691 | 0.1− | 0.2− | 2003 01 08 | 704 | 0.6− | 0.2+ | 2006 09 17 | 704 | (2.2− | 0.7+) | | |
| 2001 09 11 | 699 | 0.2+ | 0.2− | 2004 02 23 | 704 | 0.5− | 1.1+ | 2006 09 17 | 704 | 0.4− | 0.2− | | |
| 2001 09 11 | 699 | 0.8+ | 0.4+ | 2004 02 23 | 704 | 1.1− | 0.6+ | 2006 09 18 | 699 | (0.5− | 1.7+) | | |
| 2001 09 11 | 699 | 1.3+ | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 09 18 | 699 | 1.0− | 0.7+ | | |
| 2001 09 11 | 699 | 0.5+ | 0.9+ | 2004 02 26 | 695 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.7− | 1.0+ | | |
| 2001 09 14 | 644 | 1.4− | 0.4+ | 2004 02 26 | 695 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.6+ | | |
| 2001 09 14 | 644 | (1.5− | 0.2+) | 2004 03 12 | 644 | 0.4+ | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.2+ | | |
| 2001 09 14 | 644 | (1.6− | 0.5+) | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.2+ | | |
| 2001 09 16 | 704 | (0.4+ | 1.9+) | 2004 03 12 | 644 | 0.4+ | 0.6+ | 2006 09 20 | 644 | 0.5− | 0.1− | | |
| 2001 09 16 | 704 | 0.0 | 0.9+ | 2004 03 15 | 703 | (1.9+ | 1.1+) | 2006 09 26 | 704 | 0.3+ | 0.2− | | |
| 2001 09 16 | 704 | 1.1− | 0.2− | 2004 03 15 | 703 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.0 | 2004 03 15 | 703 | 0.1+ | 0.8+ | 2006 09 26 | 704 | 0.0 | 0.3+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2004 03 15 | 703 | 0.3+ | 1.4+ | 2006 09 26 | 704 | 0.3− | 0.1+ | | |
| 2001 09 19 | 704 | 0.6+ | 0.1+ | 2004 03 16 | 704 | 1.5+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2− | | |
| 2001 09 19 | 704 | 0.6+ | 0.5+ | 2004 03 16 | 704 | 1.5+ | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.2− | | |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2004 03 16 | 704 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.5+ | 0.3− | | |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2004 03 16 | 704 | 0.9+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− | | |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.7− | 2006 09 30 | 703 | 0.4− | 0.7− | | |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2004 03 19 | 704 | 0.7− | 1.0− | 2006 09 30 | G96 | 0.3− | 0.3− | | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 03 19 | 704 | 0.0 | 0.5− | 2006 09 30 | G96 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.8+ | 0.6+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.8+ | 2004 03 19 | 704 | 0.7+ | 0.7− | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 2001 09 24 | 704 | 0.4− | 0.5− | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.4− | | |
| 2001 09 24 | 704 | 0.5+ | 0.7+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.1+ | | |
| 2001 09 24 | 704 | 1.1− | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.1− | | |
| 2001 09 24 | 704 | 0.7− | 0.1− | 2004 03 31 | 691 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.4+ | | |
| 2001 09 26 | 704 | 0.1+ | 1.1+ | 2004 03 31 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.3+ | | |
| 2001 09 26 | 704 | 0.3− | 1.2+ | 2004 03 31 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.7+ | | |
| 2001 09 26 | 704 | 0.1+ | 0.3+ | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | (1.8+ | 0.3−) | | |
| 2001 10 13 | 704 | (0.5− | 2.0−) | 2004 04 25 | 691 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.7− | 1.1+ | | |
| 2001 10 13 | 704 | 0.9− | 1.3− | 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 1.4+ | 1.2+ | | |
| 2001 10 13 | 704 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2001 10 13 | 704 | 1.0− | 0.5− | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.1− | | |
| 2001 10 17 | 644 | 0.1+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.0 | | |
| 2001 10 17 | 644 | 0.3+ | 0.2+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.2− | | |
| 2001 10 17 | 644 | 0.4+ | 0.3+ | 2006 08 22 | 644 | 0.4− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.3− | | |
| 2001 10 17 | 644 | 0.2+ | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.3− | | |
| 2001 10 17 | 644 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2001 10 17 | 644 | 0.5+ | 0.6+ | 2006 08 27 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.4+ | | |
| 2001 10 20 | 704 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.6− | 0.2− | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 10 20 | 704 | 0.2− | 0.3− | 2006 09 14 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 10 24 | 704 | 1.0− | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2001 10 24 | 704 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 24 | 704 | 1.4− | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | | | | | | |
| 2001 10 24 | 704 | 0.1− | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.1− | | | | | | |

**(139975)∗ 2001 SH$_{18}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.13435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21081773 | $\omega$ | 333.48024 | | +0.99599167 | +0.07917445 | |
| $a$ | 2.7959622 | $\Omega$ | 22.09739 | | −0.04876638 | +0.87070531 | |
| $e$ | 0.0756575 | $i$ | 6.35167 | | −0.07498288 | +0.48539023 | |
| $P$ | 4.68 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.3+ | 0.7+ | 2001 10 23 | 704 | 0.7+ | 0.0 | 2005 06 27 | 644 | 0.0 | 0.6+ | | |
| 2001 07 19 | 644 | 0.4+ | 0.4+ | 2001 10 23 | 704 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.3− | 0.6+ | | |
| 2001 07 19 | 644 | 0.4+ | 0.7+ | 2001 10 23 | 704 | 0.0 | 0.4+ | 2005 06 27 | 644 | 0.1− | 0.7+ | | |
| 2001 08 27 | 699 | 0.5+ | 1.4+ | 2001 10 23 | 704 | 1.0+ | 0.0 | 2005 07 03 | 644 | 0.1− | 0.6+ | | |
| 2001 08 27 | 699 | 0.2− | 0.6+ | 2001 10 23 | 704 | 0.1− | 0.2+ | 2005 07 03 | 644 | 0.1− | 0.6+ | | |
| 2001 08 27 | 699 | 0.1− | 0.7+ | 2001 10 24 | 704 | 0.3+ | 0.5− | 2005 07 03 | 644 | 0.1+ | 0.7+ | | |
| 2001 08 27 | 699 | 0.1+ | 0.7+ | 2001 10 24 | 704 | 0.2+ | 0.7− | 2006 09 28 | G96 | 0.1+ | 0.3− | | |
| 2001 09 13 | 644 | 0.3+ | 0.5+ | 2001 10 24 | 704 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.2− | | |
| 2001 09 13 | 644 | 0.7+ | 1.0+ | 2001 10 24 | 704 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.0 | 0.3− | | |
| 2001 09 13 | 644 | 0.3+ | 0.2+ | 2001 10 24 | 704 | 0.3− | 0.4− | 2006 09 28 | G96 | 0.2− | 0.4− | | |
| 2001 09 16 | 704 | 0.5− | 0.6+ | 2001 11 02 | 644 | 0.8− | 0.8+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.3− | 1.3+ | 2001 11 02 | 644 | 0.2− | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 16 | 704 | 0.2+ | 0.0 | 2001 11 02 | 644 | 0.2− | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2001 12 10 | 645 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | | |
| 2001 09 18 | 699 | 0.0 | 0.2+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 18 | 699 | 0.3+ | 0.7+ | 2003 01 09 | 704 | 0.2− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 18 | 699 | 0.8+ | 0.2+ | 2003 01 09 | 704 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.6− | 0.3− | | |
| 2001 09 18 | 699 | 0.1− | 0.1− | 2003 01 09 | 704 | 0.7+ | 1.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.0 | 2003 01 09 | 704 | 0.3− | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2003 01 09 | 636 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2003 01 09 | 636 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2003 01 09 | 636 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3− | | |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2003 01 09 | 636 | 0.5+ | 0.9+ | 2006 10 29 | 704 | 0.4− | 0.9+ | | |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2003 01 10 | 636 | 1.1+ | 0.5+ | 2006 10 29 | 704 | 1.1− | 0.4+ | | |
| 2001 09 21 | 704 | 0.0 | 0.0 | 2003 01 10 | 636 | 0.3− | 0.4− | 2006 10 29 | 704 | 0.5− | 0.2− | | |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2003 01 10 | 636 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.7− | 0.1+ | | |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2003 01 10 | 636 | 0.7− | 0.9− | 2006 11 01 | H07 | 0.8+ | 0.8− | | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 03 13 | 644 | 0.5+ | 0.5+ | 2006 11 01 | H07 | 0.1− | 0.4+ | | |
| 2001 09 25 | 644 | 0.8− | 0.3+ | 2004 03 13 | 644 | 0.5+ | 0.6+ | 2006 11 01 | H07 | 0.0 | 0.5− | | |
| 2001 09 25 | 644 | 0.4− | 0.3+ | 2004 03 13 | 644 | 0.6+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 09 25 | 644 | 0.5− | 0.3+ | 2004 03 17 | 704 | (1.9+ | 0.0 ) | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2001 09 26 | 704 | 0.1− | 0.1+ | 2004 03 17 | 704 | 0.7+ | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 26 | 704 | 1.0− | 0.4− | 2004 03 17 | 704 | 1.0+ | 0.9+ | 2006 11 16 | 704 | 0.7+ | 1.0+ | | |
| 2001 09 26 | 704 | 0.3− | 0.2+ | 2004 03 17 | 704 | 0.1+ | 1.4+ | 2006 11 16 | 704 | 0.2− | 0.7+ | | |
| 2001 09 26 | 704 | 0.4− | 0.0 | 2004 03 24 | 699 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.4− | 0.0 | | |
| 2001 09 26 | 704 | 0.6− | 0.5− | 2004 03 24 | 699 | (0.0 | 1.8+) | 2006 11 16 | 704 | 1.2− | 1.4+ | | |
| 2001 10 11 | 704 | 0.4+ | 0.6+ | 2004 03 24 | 699 | 1.2+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 1.0+ | | |
| 2001 10 11 | 704 | 0.4− | 0.1+ | 2004 03 24 | 699 | 0.7+ | 0.1− | 2006 11 18 | 704 | 1.1+ | 0.0 | | |
| 2001 10 11 | 704 | 0.1− | 0.7− | 2004 03 27 | 704 | 0.5+ | 1.4+ | 2006 11 18 | 704 | 0.7+ | 0.5+ | | |
| 2001 10 11 | 704 | 0.9+ | 0.2+ | 2004 03 27 | 704 | 1.2+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.4+ | | |
| 2001 10 13 | 704 | 0.4− | 0.2+ | 2004 03 27 | 704 | 0.7+ | 1.0+ | 2006 11 19 | 704 | 0.0 | 0.9+ | | |
| 2001 10 13 | 704 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2001 10 13 | 704 | 0.8− | 0.1− | 2004 03 27 | 704 | (0.1+ | 2.3+) | 2006 11 19 | 704 | 0.4− | 1.1+ | | |
| 2001 10 13 | 704 | 0.0 | 0.5+ | 2004 04 11 | 703 | 1.2− | 0.8+ | 2006 11 19 | 704 | 0.8− | 0.9+ | | |
| 2001 10 13 | 704 | 0.1+ | 0.3+ | 2004 04 11 | 703 | (2.1− | 0.8+) | 2006 11 20 | 704 | 0.4+ | 0.1− | | |
| 2001 10 16 | 704 | 0.0 | 0.4+ | 2004 04 11 | 703 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.8+ | 0.2− | | |
| 2001 10 16 | 704 | 0.8− | 0.1− | 2004 04 11 | 703 | (0.1− | 2.1+) | 2006 11 20 | 704 | 0.3− | 0.7− | | |
| 2001 10 16 | 704 | 0.3− | 0.2+ | 2004 04 15 | 699 | 0.9− | 0.6− | 2006 11 22 | 704 | 0.7+ | 0.1+ | | |
| 2001 10 16 | 704 | 0.2− | 0.3− | 2004 04 15 | 699 | (2.3+ | 0.4−) | 2006 11 22 | 704 | 0.5− | 0.4+ | | |
| 2001 10 17 | 644 | 0.5− | 0.3+ | 2004 04 15 | 699 | 0.8+ | 0.8+ | 2006 11 22 | 704 | 0.2+ | 0.7+ | | |
| 2001 10 17 | 644 | 0.6− | 0.3+ | 2004 04 15 | 699 | 0.2− | 0.6− | 2006 11 22 | 704 | 0.6− | 0.2− | | |
| 2001 10 17 | 644 | 0.4− | 0.1+ | 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.5+ | | |
| 2001 10 20 | 704 | 0.8− | 0.6+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.8− | | |
| 2001 10 20 | 704 | 0.3− | 0.2− | 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.4− | 0.3− | | |
| 2001 10 20 | 704 | 0.4− | 0.1− | 2004 04 20 | 291 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.2+ | 1.1− | | |
| 2001 10 20 | 704 | 0.7− | 0.3− | 2004 04 20 | 291 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.2− | 0.3+ | | |
| 2001 10 20 | 704 | 0.3− | 0.1− | 2004 04 20 | 291 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.2− | 0.1+ | | |

**(139976)∗ 2001 SX$_{18}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.24154 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19034708 | $\omega$ | 47.22900 | | +0.48352832 | −0.87450651 | |
| $a$ | 2.9929898 | $\Omega$ | 13.99858 | | +0.75033806 | +0.39177940 | |
| $e$ | 0.0948094 | $i$ | 9.02143 | | +0.45076952 | +0.28591478 | |
| $P$ | 5.18 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.1+ | 1.1− | 2001 10 11 | 644 | 0.7− | 0.7+ | 2003 01 10 | 704 | 0.2+ | 0.9− | | |
| 2001 07 19 | 644 | 0.1− | 1.2− | 2001 10 13 | 704 | 0.5− | 0.3− | 2003 01 10 | 704 | 0.7+ | 0.5− | | |
| 2001 07 19 | 644 | 0.3+ | 1.2− | 2001 10 13 | 704 | 0.1− | 0.9+ | 2003 01 10 | 704 | 0.3+ | 0.1− | | |
| 2001 08 24 | 704(27.9− | 2.4−) | | 2001 10 13 | 704 | 0.4− | 0.9+ | 2003 01 10 | 704 | 0.8+ | 0.7− | | |
| 2001 08 24 | 704(28.0− | 2.1−) | | 2001 10 13 | 704 | 0.3− | 0.6+ | 2003 01 10 | 704 | (1.6+ | 0.3−) | | |
| 2001 08 24 | 704(28.5− | 3.0−) | | 2001 10 14 | 704 | 0.6+ | 0.4+ | 2003 01 31 | 704 | 0.6− | 0.9+ | | |
| 2001 09 16 | 704 (2.2− | 1.4+) | | 2001 10 14 | 704 | (1.0+ | 2.0+) | 2003 01 31 | 704 | 1.0− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | (2.2− | 0.4+) | 2001 10 14 | 704 | 0.3− | 1.4+ | 2003 01 31 | 704 | 0.6− | 1.0+ | | |
| 2001 09 16 | 704 | 1.1− | 0.5+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2003 01 31 | 704 | 1.4+ | 1.3− | | |
| 2001 09 16 | 704 | 1.4− | 1.2+ | 2001 10 14 | 645 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.8+ | 0.6+ | | |
| 2001 09 18 | 699 | 0.3− | 1.0+ | 2001 10 15 | 704 | 0.4− | 0.1− | 2004 03 27 | 704 | 0.3+ | 0.1+ | | |
| 2001 09 18 | 699 | 0.7− | 0.9− | 2001 10 15 | 704 | 0.7− | 0.2− | 2004 03 27 | 704 | 0.8+ | 1.3+ | | |
| 2001 09 18 | 699 | 0.6− | 0.2+ | 2001 10 15 | 704 | 0.4− | 0.3+ | 2004 03 27 | 704 | 0.5+ | 1.2+ | | |
| 2001 09 18 | 699 | 0.2− | 0.4− | 2001 10 15 | 704 | 1.4− | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.4+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2004 04 11 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 19 | 704 | (1.1+ | 1.6+) | 2001 10 15 | 645 | 0.0 | 0.1− | 2004 04 11 | 644 | 0.2+ | 0.9+ | | |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2001 10 17 | 644 | 0.5− | 0.4+ | 2004 04 11 | 644 | 1.0+ | 0.7+ | | |
| 2001 09 19 | 704 | 1.0+ | 0.8+ | 2001 10 17 | 644 | 0.4− | 0.4+ | 2004 04 21 | 704 | 0.9+ | 0.2− | | |
| 2001 09 19 | 704 | 0.2− | 0.6+ | 2001 10 17 | 644 | 0.7− | 0.5+ | 2004 04 21 | 704 | 0.0 | 0.7+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2001 10 20 | 704 | 0.5− | 0.7− | 2004 04 21 | 704 | 0.2+ | 1.5+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2001 10 20 | 704 | 0.4− | 0.6− | 2004 04 21 | 704 | 0.1+ | 0.8+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2001 10 20 | 704 | 0.7− | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.1− | | |
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2001 10 20 | 704 | 0.0 | 0.3− | 2006 08 23 | 644 | 0.3+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.3+ | 2001 10 20 | 704 | 0.5− | 0.8− | 2006 08 23 | 644 | 0.3+ | 0.0 | | |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2001 10 24 | 704 | 0.6+ | 0.8+ | 2006 09 14 | 644 | 0.3− | 0.0 | | |
| 2001 09 23 | 704 | 0.9− | 0.3+ | 2001 10 24 | 704 | 1.1+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.3+ | | |
| 2001 09 23 | 704 | 0.4− | 0.2+ | 2001 10 24 | 704 | 0.2− | 1.4+ | 2006 09 14 | 703 | 0.1− | 0.5+ | | |
| 2001 09 23 | 704 | 0.1− | 0.3− | 2001 10 24 | 704 | (0.4− | 1.9+) | 2006 09 14 | 703 | 0.3− | 0.1− | | |
| 2001 09 23 | 704 | 0.0 | 0.2+ | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.3− | 0.3+ | | |
| 2001 09 23 | 704 | 0.1− | 0.5− | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.5+ | 1.0− | | |
| 2001 09 23 | 704 | 0.4+ | 0.2− | 2001 11 20 | 291 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.4− | | |
| 2001 09 23 | 704 | 0.2+ | 0.5+ | 2001 11 20 | 291 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.4− | 0.9+ | | |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2001 11 20 | 291 | 0.4+ | 0.6+ | 2006 09 26 | 704 | 0.6− | 0.6+ | | |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2002 12 05 | 704 | 0.1− | 0.5− | 2006 09 26 | 704 | 0.1− | 0.0 | | |
| 2001 09 26 | 704 | 0.3+ | 0.6+ | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.3+ | | |
| 2001 09 26 | 704 | 1.0− | 0.6+ | 2002 12 05 | 704 | 0.6+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.3+ | | |
| 2001 10 06 | 644 | 0.0 | 0.7+ | 2002 12 05 | 704 | 0.1+ | 0.9+ | 2006 10 09 | 644 | 0.2− | 0.4+ | | |
| 2001 10 06 | 644 | 0.2− | 0.4+ | 2002 12 31 | 699 | 0.2+ | 0.9+ | 2006 10 19 | 703 | 0.5+ | 1.1− | | |
| 2001 10 06 | 644 | 0.2− | 0.3+ | 2002 12 31 | 699 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.0 | | |
| 2001 10 11 | 644 | 0.4− | 0.5+ | 2002 12 31 | 699 | 1.1− | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.9− | | |
| 2001 10 11 | 644 | 0.7− | 0.7+ | 2002 12 31 | 699 | 0.5− | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.2− | | |

**(139977)∗ 2001 SP$_{19}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.02230 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20322816 | $\omega$ | 239.15718 | | +0.68599643 | −0.72755213 | |
| $a$ | 2.8651462 | $\Omega$ | 167.51678 | | +0.68064545 | +0.63741931 | |
| $e$ | 0.0801258 | $i$ | 2.32340 | | +0.25715884 | +0.25370162 | |
| $P$ | 4.85 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.2+ | 0.4+ | 2001 10 17 | 644 | 0.9− | 0.6− | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2001 09 11 | 699 | 0.7+ | 1.2− | 2001 10 17 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.1− | | |
| 2001 09 11 | 699 | 0.1− | 0.9− | 2001 10 23 | 704 | (0.9− | 1.8−) | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2001 09 11 | 699 | 0.1+ | 0.5− | 2001 10 23 | 704 | (0.7− | 1.9−) | 2006 09 26 | G96 | 0.4+ | 0.1− | | |
| 2001 09 16 | 704 | 1.0− | 0.4+ | 2001 10 23 | 704 | 0.9+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− | | |
| 2001 09 16 | 704 | 0.3− | 1.2+ | 2001 10 23 | 704 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2001 09 16 | 704 | 0.7− | 0.7+ | 2001 10 24 | 704 | (0.3− | 1.9−) | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2001 10 24 | 704 | 0.6− | 0.9− | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 10 24 | 704 | 0.0 | 0.4− | 2006 10 03 | 691 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.0 | 0.8+ | 2001 10 24 | 704 | (2.9− | 0.2−) | 2006 10 03 | 691 | 0.1+ | 0.1− | | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.5− | 0.4− | 2006 10 03 | 691 | 0.2− | 0.5+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.6+ | 2003 01 08 | 704 | 0.2+ | 0.8+ | 2006 10 15 | 703 | 0.3− | 0.5+ | | |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2003 01 08 | 704 | 0.1+ | 1.0+ | 2006 10 15 | 703 | 0.6− | 0.1+ | | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2003 01 08 | 704 | 0.9− | 1.0+ | 2006 10 15 | 703 | 0.1− | 0.3+ | | |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2003 01 08 | 704 | 0.7+ | 0.5+ | 2006 10 15 | 703 | (2.0− | 0.2−) | | |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.3+ | 0.5− | 2006 10 21 | 703 | 0.5− | 0.4− | | |
| 2001 09 21 | 704 | 0.7− | 1.3+ | 2003 01 27 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.8+ | | |
| 2001 09 23 | 704 | 0.2+ | 0.5− | 2003 01 27 | 704 | 0.3+ | 1.1+ | 2006 10 21 | 703 | 0.1+ | 0.1− | | |
| 2001 09 23 | 704 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.8+ | 0.7+ | | |
| 2001 09 23 | 704 | 0.1− | 1.2+ | 2004 03 27 | 704 | 1.0− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.4− | | |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.7− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.4− | | |
| 2001 09 23 | 704 | 0.0 | 1.0+ | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.5+ | 0.6− | | |
| 2001 09 23 | 704 | 0.5+ | 0.8+ | 2004 04 20 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.4− | | |
| 2001 09 23 | 704 | (1.9+ | 0.4+) | 2004 04 20 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 23 | 704 | 0.8+ | 0.8+ | 2004 05 24 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 09 26 | 704 | 0.4− | 0.4+ | 2004 05 24 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2001 09 26 | 704 | 0.4− | 0.7− | 2004 05 24 | 691 | 0.4+ | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2001 09 26 | 704 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2001 09 26 | 704 | 0.6− | 0.8− | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.3− | | |
| 2001 09 26 | 704 | 0.6− | 1.2− | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2001 10 11 | 644 | 0.3− | 1.2+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 1.5− | | |
| 2001 10 11 | 644 | 0.3+ | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3+ | | |
| 2001 10 11 | 644 | 0.4− | 1.1+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.2+ | 0.6− | | |
| 2001 10 13 | 704 | 1.0+ | 0.4− | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.5− | 1.2+ | | |
| 2001 10 13 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.6− | 0.3+ | 2006 11 15 | A44 | 0.2+ | 0.3− | | |
| 2001 10 13 | 704 | 0.6− | 0.4+ | 2006 09 18 | 699 | (2.1− | 1.1+) | 2006 11 15 | A44 | 0.1− | 0.2− | | |
| 2001 10 14 | 704 | 1.4+ | 0.7− | 2006 09 18 | 699 | 1.0− | 1.4+ | 2006 11 15 | A44 | 0.3+ | 0.1− | | |
| 2001 10 14 | 704 | (2.7+ | 0.1+) | 2006 09 18 | 699 | (1.8− | 0.2+) | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2001 10 14 | 704 | (2.0+ | 0.3+) | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2001 10 14 | 704 | (2.0+ | 2.8−) | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2001 10 17 | 644 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.4− | | |

**(139978)∗ 2001 SO$_{20}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.85326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21243172 | $\omega$ | 310.57891 | | +0.99918417 | −0.02897651 | |
| $a$ | 2.7817823 | $\Omega$ | 51.10052 | | +0.03809540 | +0.90749003 | |
| $e$ | 0.1507688 | $i$ | 2.07150 | | −0.01340655 | +0.41907303 | |
| $P$ | 4.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 23 | 691 | 0.2+ | 0.5+ | 2001 10 16 | 704 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 1992 11 23 | 691 | 0.1− | 0.3− | 2001 10 16 | 704 | (1.8− | 0.2+) | 2006 10 27 | G96 | 0.1+ | 0.5− | | |
| 1992 11 23 | 691 | 0.1− | 0.2− | 2001 10 20 | 704 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2001 09 16 | 704 | 0.6− | 0.7+ | 2001 10 20 | 704 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.4− | | |
| 2001 09 16 | 704 | 0.0 | 0.8+ | 2001 10 20 | 704 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.6− | | |
| 2001 09 16 | 704 | 0.1− | 0.1− | 2001 10 23 | 704 | 0.9− | 0.6− | 2006 10 31 | G96 | 0.1− | 0.7− | | |
| 2001 09 16 | 704 | (1.7− | 1.4+) | 2001 10 23 | 704 | 0.7− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 1.4+ | 1.0+ | 2001 10 23 | 704 | (1.7− | 0.7−) | 2006 11 11 | 691 | 0.2− | 0.1− | | |
| 2001 09 19 | 704 | 1.1+ | 0.3+ | 2001 10 23 | 704 | 1.3− | 0.5− | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | (1.7+ | 0.3+) | 2001 10 23 | 704 | 1.1− | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.3− | 0.6− | 2001 10 24 | 704 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.9− | 0.4+ | | |
| 2001 09 19 | 291 | 0.1+ | 0.7+ | 2001 10 24 | 704 | 0.7− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.2+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.4− | 2001 10 24 | 704 | 0.8− | 0.2+ | 2006 11 15 | 703 | 0.6− | 1.0− | | |
| 2001 09 19 | 291 | 0.0 | 0.6+ | 2001 10 24 | 704 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.3− | 0.0 | | |
| 2001 09 19 | 291 | 0.2+ | 0.6+ | 2001 10 24 | 704 | 0.3− | 0.2+ | 2006 11 15 | 703 | 1.0− | 0.1+ | | |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2003 01 31 | 644 | 0.5+ | 1.2+ | 2006 11 15 | 703 | 1.1− | 0.1+ | | |
| 2001 09 23 | 704 | 0.1− | 0.2− | 2003 01 31 | 644 | 0.2+ | 1.1+ | 2006 11 18 | 704 | 0.9+ | 0.6+ | | |
| 2001 09 23 | 704 | 1.0+ | 0.5− | 2003 01 31 | 644 | 0.6+ | 1.3+ | 2006 11 18 | 704 | 1.1+ | 1.5+ | | |
| 2001 09 23 | 704 | 0.2− | 0.0 | 2004 03 16 | 691 | 0.5+ | 0.4+ | 2006 11 18 | 704 | 1.3+ | 1.2− | | |
| 2001 09 24 | 704 | 0.5+ | 0.5− | 2004 03 16 | 691 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.5− | 0.2− | | |
| 2001 09 24 | 704 | 0.8+ | 0.7+ | 2004 03 16 | 691 | 0.3− | 0.7+ | 2006 11 21 | 704 | 1.1+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.1− | 0.4− | 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.2+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.3+ | | |
| 2001 09 24 | 704 | 0.4− | 1.1+ | 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.1− | | |
| 2001 09 25 | 699 | 1.2+ | 0.4+ | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.2+ | | |
| 2001 09 25 | 699 | 1.4+ | 0.4− | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2001 09 25 | 699 | 1.4− | 1.1+ | 2004 04 20 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 25 | 699 | 0.1− | 0.4+ | 2004 05 09 | 691 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2001 09 26 | 704 | 0.6− | 0.2+ | 2004 05 09 | 691 | 0.6+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 26 | 704 | 0.5− | 0.6+ | 2004 05 09 | 691 | 0.4+ | 0.4+ | 2006 11 27 | 703 | 0.1− | 0.4− | | |
| 2001 09 26 | 704 | 0.4− | 0.4+ | 2006 09 27 | G96 | (0.0 | 1.7−) | 2006 11 27 | 703 | 0.5− | 0.2− | | |
| 2001 09 26 | 704 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.9+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.3− | 0.2− | | |
| 2001 10 13 | 704 | 1.3− | 0.6− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2001 10 13 | 704 | 0.2− | 0.5− | 2006 10 19 | G96 | 0.3+ | 0.5− | 2006 11 27 | 703 | 0.7− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.9− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.7− | 2006 12 01 | 691 | 0.1− | 0.3− | | |
| 2001 10 13 | 704 | 0.2− | 0.3+ | 2006 10 19 | G96 | 1.1+ | 0.5− | 2006 12 01 | 691 | 0.4− | 0.3− | | |
| 2001 10 16 | 704 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 12 01 | 691 | 0.1+ | 0.0 | | |
| 2001 10 16 | 704 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.3− | | | | | | |
| 2001 10 16 | 704 | 0.7− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.4− | | | | | | |

**(139979)∗ 2001 SH$_{23}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.77576 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20660984 | $\omega$ | 42.57613 | | +0.65828687 | −0.75276025 | |
| $a$ | 2.8337968 | $\Omega$ | 6.25698 | | +0.68244221 | +0.59497479 | |
| $e$ | 0.0721217 | $i$ | 1.69573 | | +0.31769645 | +0.28170374 | |
| $P$ | 4.77 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.3− | 0.6− | 2002 12 31 | 291 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | | |
| 1994 03 10 | 691 | (8.9− | 0.9−) | 2002 12 31 | 291 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 1994 03 10 | 691 | 0.4+ | 0.5− | 2002 12 31 | 291 | 0.5− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.2− | | |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2002 12 31 | 291 | 0.6− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.0 | | |
| 2001 09 16 | 704 | 0.5− | 0.1− | 2002 12 31 | 291 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.0 | | |
| 2001 09 16 | 704 | 0.4− | 1.2+ | 2003 01 13 | 291 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.1− | | |
| 2001 09 16 | 704 | 0.8− | 0.3− | 2003 01 13 | 291 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.2− | | |
| 2001 09 19 | 704 | 0.8− | 1.0+ | 2003 01 13 | 291 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.9− | 0.3+ | 2004 04 12 | 691 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 1.2+ | 0.6− | | |
| 2001 09 19 | 704 | 0.8− | 0.6+ | 2004 04 12 | 691 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.8− | 0.6+ | | |
| 2001 09 19 | 704 | 1.0− | 0.2− | 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.3+ | | |
| 2001 09 19 | 704 | (0.1+ | 1.6+) | 2004 04 16 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.6+ | | |
| 2001 09 24 | 704 | 0.1− | 0.6+ | 2004 04 16 | 644 | 0.7+ | 0.8+ | 2006 10 21 | 703 | 0.5− | 0.6− | | |
| 2001 09 24 | 704 | 1.1− | 0.7+ | 2004 04 16 | 644 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2001 09 24 | 704 | (1.7− | 0.3−) | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1− | | |
| 2001 09 26 | 704 | (2.0− | 0.5+) | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 09 26 | 704 | 0.4− | 1.3+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2001 09 26 | 704 | 0.7− | 1.0+ | 2006 07 21 | G96 | 0.4+ | 0.5− | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2001 09 26 | 704 | 0.3− | 0.6+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2001 10 11 | 644 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2001 10 11 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 11 | 644 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.4+ | 0.2+ | | |
| 2002 02 07 | 695 | 0.6+ | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 29 | 691 | 0.3+ | 0.4+ | | |
| 2002 02 07 | 695 | 0.7+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− | | | | | | |
| 2002 12 31 | 291 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3+ | | | | | | |

**(139980)∗ 2001 SS$_{23}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.16178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19081281 | $\omega$ | 2.42359 | | +0.91184300 | −0.41038935 | |
| $a$ | 2.9881177 | $\Omega$ | 21.81609 | | +0.37615863 | +0.82435713 | |
| $e$ | 0.1091606 | $i$ | 1.70969 | | +0.16445984 | +0.38989218 | |
| $P$ | 5.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.1+ | 0.4− | 2001 09 26 | 704 | 0.0 | 0.7+ | 2004 03 27 | 704 | (1.0+ | 2.4+) | | |
| 1996 11 07 | 691 | 0.2+ | 0.4− | 2001 10 06 | 644 | (0.8+ | 2.2+) | 2004 03 27 | 704 | (1.8+ | 2.3+) | | |
| 1996 11 07 | 691 | 0.2+ | 0.3− | 2001 10 06 | 644 | (0.9+ | 1.7+) | 2004 03 27 | 704 | (2.3+ | 0.1+) | | |
| 1999 03 13 | 691 | 0.9+ | 0.0 | 2001 10 06 | 644 | (0.8+ | 1.8+) | 2006 08 27 | 691 | 0.1+ | 0.0 | | |
| 1999 03 13 | 691 | 0.2+ | 0.0 | 2001 10 13 | 704 | (0.2+ | 1.8−) | 2006 08 27 | 691 | 0.0 | 0.0 | | |
| 1999 03 13 | 691 | 1.0+ | 0.1+ | 2001 10 13 | 704 | 0.1− | 0.9+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | | |
| 1999 04 09 | 691 | 1.0− | 0.3+ | 2001 10 13 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.1+ | | |
| 1999 04 09 | 691 | 0.6− | 0.3+ | 2001 10 13 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.2+ | | |
| 1999 04 09 | 691 | 0.9− | 0.0 | 2001 10 14 | 704 | 1.0− | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.0 | | |
| 2001 08 27 | 644 | 0.1− | 0.1+ | 2001 10 14 | 704 | 1.2− | 0.7− | 2006 09 14 | 703 | 0.1+ | 0.8− | | |
| 2001 08 27 | 644 | 0.5− | 0.3+ | 2001 10 14 | 704 | 0.4− | 0.4− | 2006 09 16 | 699 | 0.3− | 0.1− | | |
| 2001 08 27 | 644 | 0.1− | 0.1+ | 2001 10 14 | 704 | 1.2− | 0.6+ | 2006 09 16 | 699 | 0.4+ | 0.2+ | | |
| 2001 09 16 | 704 | 1.3+ | 0.4− | 2001 10 14 | 704 | 0.4− | 0.2+ | 2006 09 16 | 699 | (0.2− | 1.6−) | | |
| 2001 09 16 | 704 | (1.6+ | 0.8−) | 2001 10 17 | 644 | 0.2− | 0.7+ | 2006 09 16 | 699 | 0.7+ | 0.8+ | | |
| 2001 09 16 | 704 | (1.7+ | 0.6−) | 2001 10 17 | 644 | 0.1− | 1.0+ | 2006 09 17 | 704 | 0.7− | 0.3+ | | |
| 2001 09 16 | 704 | (1.4+ | 1.7−) | 2001 10 17 | 644 | 0.0 | 0.8+ | 2006 09 17 | 704 | 0.1− | 0.4+ | | |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2001 10 19 | 699 | 0.3+ | 0.9+ | 2006 09 17 | 704 | 0.7− | 0.9− | | |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2001 10 19 | 699 | (0.4+ | 2.1+) | 2006 09 17 | 704 | 0.8− | 1.4+ | | |
| 2001 09 19 | 704 | 0.4− | 0.6+ | 2001 10 19 | 699 | 0.3− | 0.9+ | 2006 09 17 | 704 | 0.9− | 0.0 | | |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2001 10 19 | 699 | 0.3− | 0.7+ | 2006 09 20 | 644 | 0.1+ | 0.4− | | |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2001 10 20 | 704 | 0.6+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.6− | | |
| 2001 09 25 | 699 | 0.9+ | 0.1+ | 2001 10 20 | 704 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.6− | 0.5− | | |
| 2001 09 25 | 699 | 0.9− | 0.1+ | 2001 10 20 | 704 | 0.1− | 1.2+ | 2006 09 20 | 704 | 0.3− | 0.2− | | |
| 2001 09 25 | 704 | 1.1+ | 0.3+ | 2001 10 20 | 704 | 0.6− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.1− | | |
| 2001 09 25 | 704 | (1.1+ | 2.0+) | 2001 10 20 | 704 | 0.7− | 0.6− | 2006 09 20 | 704 | 0.8+ | 0.7+ | | |
| 2001 09 25 | 699 | 0.3+ | 0.3+ | 2001 10 24 | 704 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.7− | | |
| 2001 09 25 | 704 | (0.1− | 1.9+) | 2001 10 24 | 704 | 0.4+ | 0.6− | 2006 09 30 | G96 | 0.3− | 0.5− | | |
| 2001 09 25 | 704 | (0.5− | 1.5+) | 2001 10 24 | 704 | 0.5+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.4− | | |
| 2001 09 25 | 704 | 0.4+ | 0.1− | 2001 10 24 | 704 | 0.4+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.4− | | |
| 2001 09 25 | 699 | 0.2− | 0.8+ | 2001 10 24 | 704 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.8− | | |
| 2001 09 25 | 704 | (0.2+ | 2.6+) | 2001 12 10 | 645 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.5+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.2− | 1.3+ | 2001 12 10 | 645 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.0 | | |
| 2001 09 25 | 704 | (1.5+ | 1.4+) | 2003 01 04 | 704 | 0.7− | 1.6+ | 2006 10 09 | 644 | 0.5+ | 0.1+ | | |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2003 01 04 | 704 | (0.4− | 1.9+) | 2006 10 20 | G96 | 0.4+ | 0.1− | | |
| 2001 09 26 | 704 | 0.1− | 0.8+ | 2003 01 04 | 704 | (0.1+ | 1.7+) | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2001 09 26 | 704 | 0.0 | 0.9+ | 2004 03 23 | 291 | 0.5+ | 0.6+ | 2006 10 20 | G96 | 0.3+ | 0.4− | | |
| 2001 09 26 | 704 | 0.1+ | 0.7+ | 2004 03 23 | 291 | 0.6+ | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.3− | | |
| 2001 09 26 | 704 | 0.2+ | 0.6+ | 2004 03 23 | 291 | 0.6+ | 0.5+ | | | | | | |

**(139981)∗ 2001 ST$_{25}$ = 1999 FM$_{71}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 72404)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.94122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18775593 | $\omega$ | 146.79558 | | +0.84107501 | +0.54091673 | |
| $a$ | 3.0204636 | $\Omega$ | 180.46514 | | −0.52599056 | +0.81726339 | |
| $e$ | 0.0959988 | $i$ | 9.82423 | | −0.12620127 | +0.19872000 | |
| $P$ | 5.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.1+ | 0.2− | 2001 10 13 | 704 | 1.2− | 0.3− | 2006 08 29 | 703 | 0.0 | 0.1− | | |
| 1999 03 19 | 691 | 0.2+ | 0.4− | 2001 10 13 | 704 | 1.1− | 0.8− | 2006 08 29 | 703 | 0.6− | 0.7− | | |
| 1999 03 19 | 691 | 0.0 | 0.3− | 2001 10 13 | 704 | 0.0 | 1.0− | 2006 08 29 | 703 | 0.3− | 0.2− | | |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.2− | | |
| 1999 03 20 | 645 | 0.1− | 0.1+ | 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.1− | 0.5+ | | |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.1− | 0.7+ | | |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.2+ | 1.3− | | |
| 2001 08 27 | 644 | 0.2− | 0.9+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 11 | 703 | 1.0+ | 0.5− | | |
| 2001 08 27 | 644 | 0.5− | 0.8+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.0 | 0.3− | | |
| 2001 08 27 | 644 | 0.1+ | 0.5+ | 2001 10 24 | 704 | 0.6− | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.4− | | |
| 2001 09 16 | 704 | 0.4− | 0.6+ | 2001 10 24 | 704 | 0.6− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.0 | | |
| 2001 09 16 | 704 | 0.6− | 0.2− | 2001 10 24 | 704 | 0.1− | 1.3− | 2006 09 16 | 644 | 0.2+ | 0.3− | | |
| 2001 09 16 | 704 | 0.8− | 0.4+ | 2001 10 24 | 704 | 0.5− | 0.3− | 2006 09 16 | 644 | 0.3− | 0.0 | | |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2005 05 09 | 691 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.3+ | 0.0 | | |
| 2001 09 19 | 704 | (1.9− | 0.2−) | 2005 05 09 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.9+ | | |
| 2001 09 19 | 704 | (1.6− | 0.4+) | 2005 05 09 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | (1.8+ | 0.5−) | | |
| 2001 09 19 | 704 | (1.6− | 0.9+) | 2005 05 13 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.9+ | | |
| 2001 09 19 | 704 | 1.4− | 0.2+ | 2005 05 13 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.3+ | | |
| 2001 09 19 | 704 | 1.0− | 0.5+ | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.4− | 1.0+ | | |
| 2001 09 21 | 704 | 0.1− | 0.8− | 2005 05 20 | G96 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.5− | 0.4− | | |
| 2001 09 21 | 704 | 0.1+ | 0.4− | 2005 05 20 | G96 | 0.1− | 0.6− | 2006 09 28 | G96 | 0.1− | 0.3− | | |
| 2001 09 21 | 704 | 0.2+ | 0.1− | 2005 05 20 | G96 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.0 | 0.2− | | |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2005 05 20 | G96 | 0.3− | 0.4− | 2006 10 14 | 122 | 0.2− | 0.5− | | |
| 2001 09 21 | 704 | 0.6− | 0.3− | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 10 14 | 122 | 0.2− | 0.3− | | |
| 2001 09 26 | 704 | 0.7+ | 0.5+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 10 14 | 122 | 0.3− | 0.0 | | |
| 2001 09 26 | 704 | 0.6+ | 0.7+ | 2006 08 18 | 644 | 0.1− | 0.2− | 2006 10 14 | 122 | 0.1+ | 0.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.1− | 0.5+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2001 09 26 | 704 | 0.2+ | 1.2+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2001 09 26 | 704 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2001 10 06 | 644 | 0.7− | 0.1+ | 2006 08 24 | 704 | 0.2+ | 1.0+ | 2006 11 21 | G96 | 0.6− | 0.3− |
| 2001 10 06 | 644 | 0.6− | 0.3+ | 2006 08 24 | 704 | 1.0+ | 0.0 | | | | |
| 2001 10 06 | 644 | 0.6− | 0.3+ | 2006 08 24 | 704 | 0.5+ | 0.1− | | | | |

**(139982)∗ 2001 SM$_{26}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.39148 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.20641171 | $\omega$ | 353.64270 | | +0.99721967 | −0.07206447 |
| $a$ | 2.8356099 | $\Omega$ | 10.54612 | | +0.07211736 | +0.86924475 |
| $e$ | 0.2166889 | $i$ | 5.94728 | | +0.01876191 | +0.48910150 |
| $P$ | 4.77 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 06 | 691 | 0.4+ | 0.0 | 2001 10 13 | 704 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.5− | 0.2− |
| 1994 03 06 | 691 | 0.2+ | 0.4+ | 2001 10 13 | 699 | (0.2+ | 1.7+) | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 1994 03 06 | 691 | 0.0 | 0.6+ | 2001 10 13 | 683 | 0.5+ | 0.9+ | 2006 10 13 | 691 | 0.0 | 0.1+ |
| 2001 07 19 | 644 | 0.6− | 0.8+ | 2001 10 13 | 704 | 0.1+ | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.1− |
| 2001 07 19 | 644 | 0.1+ | 1.0+ | 2001 10 13 | 683 | 0.7− | 1.2− | 2006 10 13 | 691 | 0.1− | 0.0 |
| 2001 07 19 | 644 | 0.2− | 1.1+ | 2001 10 13 | 699 | 0.0 | 0.4+ | 2006 10 19 | 704 | 0.2− | 0.4+ |
| 2001 08 27 | 699 | 0.5− | 1.4+ | 2001 10 13 | 704 | 0.1− | 0.1− | 2006 10 19 | 704 | 0.4− | 0.2− |
| 2001 08 27 | 699 | 0.1+ | 0.9+ | 2001 10 13 | 683 | (3.3+ | 0.1+) | 2006 10 19 | 704 | 0.7− | 1.2+ |
| 2001 08 27 | 699 | 0.7− | 0.8+ | 2001 10 13 | 699 | 0.9− | 0.0 | 2006 10 21 | 704 | 0.8− | 0.0 |
| 2001 08 27 | 699 | 1.3− | 0.5+ | 2001 10 13 | 699 | 0.6− | 0.9+ | 2006 10 21 | 704 | 0.3+ | 0.0 |
| 2001 09 11 | 699 | 0.1+ | 1.2+ | 2001 10 14 | 683 | 0.4− | 1.1+ | 2006 10 21 | 704 | 0.0 | 0.4+ |
| 2001 09 11 | 699 | 0.0 | 0.6+ | 2001 10 14 | 683 | 1.1+ | 1.3− | 2006 10 21 | 704 | 0.9− | 0.1+ |
| 2001 09 11 | 699 | 0.4− | 0.3+ | 2001 10 14 | 683 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 2001 09 11 | 699 | (1.6− | 1.1−) | 2001 10 14 | 691 | 0.1− | 0.1+ | 2006 10 21 | 704 | 0.4+ | 0.7+ |
| 2001 09 16 | 704 | (0.0 | 2.3+) | 2001 10 14 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.3− |
| 2001 09 16 | 704 | (0.5+ | 1.9+) | 2001 10 14 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2001 09 16 | 704 | (0.4+ | 1.7+) | 2001 10 15 | 691 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 2001 09 16 | 704 | (0.2+ | 2.0+) | 2001 10 15 | 691 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2001 09 17 | 644 | 0.5− | 0.1− | 2001 10 15 | 691 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.3− |
| 2001 09 17 | 644 | 0.3− | 0.0 | 2001 10 16 | 683 | (0.3+ | 2.4+) | 2006 10 27 | 703 | 0.5+ | 0.1+ |
| 2001 09 17 | 644 | 0.8− | 0.6− | 2001 10 16 | 683 | 0.1− | 0.4− | 2006 10 29 | 704 | 0.9− | 0.6+ |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2001 10 16 | 683 | (2.0− | 0.3−) | 2006 10 29 | 704 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.1− | 2001 10 16 | 704 | (2.2− | 0.3+) | 2006 10 29 | 704 | 0.8+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2001 10 16 | 704 | 0.1− | 0.9+ | 2006 10 29 | 704 | 0.2− | 0.8+ |
| 2001 09 19 | 704 | 0.3− | 0.1− | 2001 10 16 | 704 | 0.0 | 1.2+ | 2006 10 29 | 704 | 0.5− | 0.4− |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2001 10 16 | 704 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2001 10 18 | 644 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2001 10 18 | 644 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2001 10 18 | 644 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.4− | 0.3− | 2001 10 21 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.6+ |
| 2001 09 21 | 704 | 0.9− | 0.1− | 2001 10 21 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2001 09 22 | 291 | (2.0− | 1.8−) | 2001 10 21 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2001 09 22 | 291 | 0.2− | 0.1+ | 2001 10 21 | 704 | 0.8+ | 1.2+ | 2006 11 16 | 704 | 1.1− | 0.4+ |
| 2001 09 22 | 291 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.6− | 0.3+ | 2006 11 16 | 704 | 0.8− | 0.0 |
| 2001 09 25 | 699 | 1.1− | 0.6+ | 2003 02 02 | 644 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.7− | 0.5+ |
| 2001 09 25 | 699 | 0.3− | 0.5+ | 2003 02 02 | 644 | 0.3+ | 0.9+ | 2006 11 16 | 704 | 0.1− | 1.0+ |
| 2001 09 25 | 699 | 0.4+ | 0.9+ | 2003 02 02 | 644 | 0.4+ | 0.8+ | 2006 11 17 | 704 | 0.5+ | 0.4+ |
| 2001 09 25 | 699 | 0.0 | 0.3+ | 2004 03 29 | 691 | 0.3+ | 0.7+ | 2006 11 17 | 704 | 0.5+ | 0.4+ |
| 2001 09 26 | 704 | 0.2+ | 0.4+ | 2004 03 29 | 691 | 0.4+ | 0.6+ | 2006 11 17 | 704 | 0.0 | 1.4− |
| 2001 09 26 | 704 | 0.5+ | 0.2+ | 2004 03 29 | 691 | 0.6+ | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2001 09 26 | 704 | 0.4+ | 0.4+ | 2004 04 23 | 691 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.5+ |
| 2001 09 26 | 704 | 0.2+ | 0.1− | 2004 04 23 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2001 09 26 | 704 | 0.2+ | 0.3+ | 2004 04 23 | 291 | 0.0 | 1.0+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2001 09 28 | 704 | 0.2+ | 0.0 | 2004 04 23 | 691 | 0.6+ | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2001 09 28 | 704 | 0.7+ | 0.5+ | 2004 04 23 | 291 | 0.0 | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2001 09 28 | 704 | 0.5+ | 0.8+ | 2004 04 23 | 291 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2001 09 28 | 704 | 0.6+ | 0.6+ | 2006 07 22 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2001 09 28 | 704 | 0.5+ | 0.7+ | 2006 07 22 | G96 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2001 10 06 | 644 | 0.3− | 0.7− | 2006 07 22 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2001 10 06 | 644 | 0.4− | 0.6− | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 10 06 | 644 | 0.5− | 0.5− | 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.7+ | 0.9− |
| 2001 10 11 | 644 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.5− |
| 2001 10 11 | 644 | 0.3+ | 0.4+ | 2006 08 29 | 703 | (1.7+ | 2.0+) | 2006 11 22 | 704 | 0.5+ | 1.2− |
| 2001 10 11 | 644 | 0.5+ | 0.5+ | 2006 08 29 | 703 | 0.2− | 1.5+ | 2006 11 22 | 704 | 0.8+ | 1.1− |
| 2001 10 13 | 704 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.7− |
| 2001 10 13 | 704 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.5− | 0.1− | | | | |

**(139983)∗ 2001 SA$_{28}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.95764 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19443035 | $\omega$ | 285.69692 | | +0.19147630 | −0.98130015 |
| $a$ | 2.9509375 | $\Omega$ | 153.23997 | | +0.91640713 | +0.17156620 |
| $e$ | 0.1732489 | $i$ | 2.50363 | | +0.35147518 | +0.08726430 |
| $P$ | 5.07 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 17 | 691 | 0.2− | 0.3+ | 2001 10 24 | 704 | (1.8− | 0.8−) | 2003 02 11 | 704 | 0.0 | 0.8− |
| 1993 02 17 | 691 | 0.2− | 0.4+ | 2001 10 24 | 704 | (1.8− | 0.3−) | 2003 02 21 | 644 | 0.1+ | 0.4+ |
| 1993 02 17 | 691 | 0.1+ | 0.1+ | 2001 10 24 | 704 | (1.9− | 0.1+) | 2003 02 21 | 644 | 0.1+ | 0.4+ |
| 2001 09 16 | 704 | 1.1− | 0.2+ | 2001 10 24 | 704 | (1.6− | 0.2−) | 2003 02 21 | 644 | 0.1+ | 0.5+ |
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2001 12 10 | 645 | 0.0 | 0.2− | 2003 03 12 | 644 | 0.1+ | 0.7+ |
| 2001 09 16 | 704 | 0.1+ | 0.5− | 2001 12 10 | 645 | 0.1+ | 0.3− | 2003 03 12 | 644 | 0.6+ | 0.9+ |
| 2001 09 16 | 704 | 0.5+ | 0.6− | 2003 01 17 | 644 | 0.3+ | 0.5+ | 2003 03 12 | 644 | 0.3+ | 0.6+ |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2003 01 17 | 644 | 0.4− | 0.1+ | 2004 04 01 | 291 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2003 01 17 | 644 | 0.7+ | 0.3+ | 2004 04 01 | 291 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2003 01 30 | 699 | (1.8+ | 0.1+) | 2004 04 01 | 291 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2003 01 30 | 699 | 1.5+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2003 01 30 | 699 | 0.5+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2003 01 30 | 699 | 0.6+ | 0.6+ | 2006 08 17 | 644 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.1+ | 0.7+ | 2003 01 31 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2003 01 31 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 699 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2003 01 31 | 704 | 0.2+ | 1.1− | 2006 09 18 | 699 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.3− | 0.8+ | 2003 01 31 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | (1.4+ | 1.8+) |
| 2001 09 26 | 704 | 0.1− | 0.7+ | 2003 01 31 | 704 | 0.0 | 0.7+ | 2006 09 20 | 704 | 0.6− | 0.6− |
| 2001 09 26 | 704 | 0.1− | 0.4+ | 2003 02 02 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.7− |
| 2001 09 26 | 704 | 1.1− | 0.2+ | 2003 02 02 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 1.0− | 0.4+ |
| 2001 09 26 | 704 | 0.1+ | 0.6+ | 2003 02 02 | 644 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 1.3− | 0.2− |
| 2001 09 26 | 704 | 0.8+ | 0.1− | 2003 02 07 | 333 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 10 06 | 644 | 0.0 | 0.5+ | 2003 02 07 | 333 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2001 10 06 | 644 | 0.1− | 0.5+ | 2003 02 07 | 333 | 0.4− | 1.5− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 10 06 | 644 | 0.2+ | 0.6+ | 2003 02 07 | 333 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2001 10 07 | 644 | 0.3+ | 0.4+ | 2003 02 08 | 704 | 0.7− | 0.2+ | 2006 09 28 | 704 | 0.7+ | 0.3+ |
| 2001 10 07 | 644 | 0.0 | 0.7+ | 2003 02 08 | 704 | 0.0 | 0.7− | 2006 09 28 | 704 | 0.4− | 0.9+ |
| 2001 10 07 | 644 | 0.4+ | 0.7+ | 2003 02 08 | 704 | 0.3+ | 1.1+ | 2006 09 28 | 704 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.2+ | 1.0+ | 2003 02 08 | 704 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.6+ | 1.0+ | 2003 02 09 | 333 | 0.7− | 0.8− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.1+ | 0.5+ | 2003 02 09 | 333 | 0.6− | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2001 10 13 | 704 | 0.5− | 0.1− | 2003 02 09 | 333 | 0.7− | 0.5− | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2001 10 19 | 699 | 0.9+ | 0.5+ | 2003 02 09 | 333 | 1.0− | 0.6− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 10 19 | 699 | 0.5+ | 0.6+ | 2003 02 11 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 10 19 | 699 | 1.1− | 0.2+ | 2003 02 11 | 704 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 10 19 | 699 | (1.5+ | 1.0+) | 2003 02 11 | 704 | 0.6+ | 0.0 | | | | |

**(139984)∗ 2001 SQ$_{28}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.80440 | | (2000.0) | | | |
| $n$ | 0.23373940 | $\omega$ | 288.09093 | | +0.01978107 | −0.99952697 |
| $a$ | 2.6100456 | $\Omega$ | 160.72980 | | +0.94216953 | +0.01075418 |
| $e$ | 0.1469854 | $i$ | 4.09183 | | +0.33455236 | +0.02881298 |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | 0.4+ | 0.9+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2003 03 27 | 691 | 0.6+ | 0.2+ |
| 1997 10 29 | 704 | (2.9+ | 1.2−) | 2001 10 17 | 644 | 0.3+ | 0.2− | 2004 07 16 | 807 | 0.5− | 0.1+ |
| 1997 10 29 | 704 | 0.8− | 1.4+ | 2001 10 17 | 644 | 0.1+ | 0.2− | 2004 07 16 | 807 | 0.1− | 0.2+ |
| 1997 10 29 | 704 | 1.1+ | 0.5− | 2001 10 17 | 644 | 0.2+ | 0.1− | 2005 09 01 | 691 | 0.1+ | 0.6+ |
| 2001 09 16 | 704 | 0.5− | 0.5+ | 2003 03 07 | 291 | 0.1− | 0.4+ | 2005 09 01 | 691 | 0.0 | 0.8+ |
| 2001 09 16 | 704 | 0.5+ | 0.2− | 2003 03 07 | 291 | 0.1− | 0.4+ | 2005 09 01 | 691 | 0.2− | 0.7+ |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2003 03 07 | 291 | 0.1+ | 0.4+ | 2005 09 07 | A50 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.5− | 0.2+ | 2003 03 07 | 699 | (1.0− | 2.0+) | 2005 09 07 | A50 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2003 03 07 | 699 | (0.4+ | 1.7+) | 2005 09 11 | 691 | 0.1+ | 0.6+ |
| 2001 09 19 | 704 | 1.4− | 0.4+ | 2003 03 07 | 699 | 0.3− | 0.3+ | 2005 09 11 | 691 | 0.1− | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2003 03 07 | 699 | (1.1+ | 1.8−) | 2005 09 11 | 691 | 0.2− | 0.6+ |
| 2001 09 19 | 704 | 0.7− | 0.3− | 2003 03 08 | 699 | 0.3− | 0.5+ | 2005 09 23 | 703 | (1.9− | 0.3−) |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2003 03 08 | 699 | (0.8+ | 1.8+) | 2005 09 23 | 703 | 0.5− | 0.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2003 03 08 | 699 | 0.6+ | 0.0 | 2005 09 23 | 703 | 0.7− | 0.3− |
| 2001 09 21 | 704 | 1.0− | 0.0 | 2003 03 08 | 699 | 1.4+ | 0.3+ | 2005 09 23 | 703 | 0.3− | 0.4− |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2003 03 09 | 704 | (1.0+ | 2.5+) | 2005 10 06 | G96 | 0.3+ | 0.2+ |
| 2001 09 21 | 704 | 0.7− | 0.0 | 2003 03 09 | 704 | (2.4+ | 1.4+) | 2005 10 06 | G96 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 1.0+ | 0.4+ | 2003 03 09 | 704 | 1.3+ | 0.3+ | 2005 10 06 | G96 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.6+ | 0.8+ | 2003 03 09 | 704 | (0.7+ | 1.7+) | 2005 10 06 | G96 | 0.1+ | 0.0 |
| 2001 09 26 | 704 | 0.3+ | 0.2− | 2003 03 25 | 291 | 0.1− | 0.5− | 2006 11 22 | G96 | 0.3− | 0.2+ |
| 2001 10 13 | 704 | 1.0− | 0.0 | 2003 03 25 | 291 | 0.2− | 0.5+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2001 10 13 | 704 | 0.0 | 1.3+ | 2003 03 25 | 291 | 0.0 | 0.7+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2001 10 13 | 704 | 0.4− | 1.5+ | 2003 03 26 | 291 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2001 10 13 | 704 | (1.8− | 0.5+) | 2003 03 26 | 291 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2003 03 26 | 291 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2003 03 27 | 691 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2003 03 27 | 691 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.4− |

**(139985)∗ 2001 SS$_{29}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 85.37889 | | (2000.0) | | | |
| $n$ | 0.20660789 | $\omega$ | 275.45063 | | +0.38133057 | +0.92407178 |
| $a$ | 2.8338147 | $\Omega$ | 17.03708 | | −0.80906116 | +0.34723471 |
| $e$ | 0.0783660 | $i$ | 5.09996 | | −0.44722147 | +0.15974793 |
| $P$ | 4.77 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.1− | 0.5+ | 2001 10 20 | 704 | 0.1+ | 0.6+ | 2004 03 29 | 691 | 0.3− | 0.3+ |
| 2001 08 27 | 699 | 1.1+ | 0.3+ | 2001 10 20 | 704 | 0.5+ | 0.3+ | 2004 03 29 | 691 | 0.3− | 0.2+ |
| 2001 08 27 | 699 | 1.2− | 0.7+ | 2001 10 20 | 704 | 0.2− | 0.2+ | 2005 07 03 | 644 | 0.2− | 1.0+ |
| 2001 08 27 | 699 | 0.8− | 0.3+ | 2001 10 23 | 704 | (2.9− | 0.3+) | 2005 07 03 | 644 | 0.0 | 1.1+ |
| 2001 09 14 | 644 | 0.1+ | 0.1+ | 2001 10 23 | 704 | 1.5− | 1.1+ | 2005 07 03 | 644 | 0.1+ | 0.9+ |
| 2001 09 14 | 644 | 0.0 | 0.5+ | 2001 10 23 | 704 | 1.4− | 0.6+ | 2006 07 21 | G96 | 0.0 | 0.1− |
| 2001 09 14 | 644 | 0.2− | 0.1+ | 2001 10 23 | 704 | 1.2− | 0.9+ | 2006 07 21 | G96 | 0.4+ | 0.3− |
| 2001 09 16 | 704 | 0.5− | 1.4+ | 2001 10 24 | 704 | 0.7− | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.3− | 0.2− | 2001 10 24 | 704 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | 1.3− | 0.0 | 2001 10 24 | 704 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.5− | 0.1+ | 2001 10 24 | 704 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2001 10 24 | 704 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2003 01 05 | 704 | 0.2+ | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2003 01 05 | 704 | 0.6+ | 0.3− | 2006 10 04 | 703 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2003 01 05 | 704 | 0.5+ | 0.9+ | 2006 10 04 | 703 | 0.7+ | 0.6− |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 10 04 | 703 | 0.5− | 0.6− |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2003 01 09 | 704 | 0.2− | 0.4− | 2006 10 04 | 703 | 0.7− | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.8+ | 2003 01 09 | 704 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.8+ | 2003 01 09 | 704 | 0.5+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2003 01 09 | 704 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2004 02 23 | 704 | 0.1− | 1.0+ | 2006 10 16 | 691 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 0.0 | 0.0 | 2004 02 23 | 704 | 1.1+ | 1.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2001 09 26 | 704 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.3− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2001 09 26 | 704 | 0.2− | 0.4+ | 2004 03 15 | 703 | 0.0 | 1.0+ | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2001 09 26 | 704 | 0.4− | 0.1− | 2004 03 15 | 703 | 1.2+ | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 10 06 | 644 | 0.4− | 0.7+ | 2004 03 15 | 703 | (1.6+ | 1.2+) | 2006 10 20 | 644 | 0.2− | 0.3− |
| 2001 10 06 | 644 | 0.1− | 0.6+ | 2004 03 15 | 703 | (0.6+ | 1.6+) | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 10 06 | 644 | 0.1+ | 0.9+ | 2004 03 16 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 10 07 | 644 | 0.4− | 0.3+ | 2004 03 16 | 704 | (1.2+ | 1.6+) | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2001 10 07 | 644 | 0.1− | 0.2+ | 2004 03 16 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 10 07 | 644 | 0.3− | 0.2+ | 2004 03 16 | 704 | 0.9+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2001 10 08 | 644 | 0.3− | 0.7+ | 2004 03 17 | 683 | 1.5− | 1.0+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2001 10 08 | 644 | 0.3− | 0.6+ | 2004 03 17 | 683 | (1.7− | 1.8+) | 2006 10 29 | 691 | 0.1− | 0.2− |
| 2001 10 08 | 644 | 0.5− | 0.6+ | 2004 03 17 | 683 | (1.7+ | 3.0+) | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2001 10 11 | 644 | 0.1− | 0.8+ | 2004 03 19 | 704 | 0.3+ | 1.2+ | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2001 10 11 | 644 | 0.2− | 0.8+ | 2004 03 19 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.3− |
| 2001 10 11 | 644 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.3+ | 1.1+ | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2001 10 13 | 704 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2001 10 13 | 704 | 0.6+ | 0.4− | 2004 03 19 | 704 | 0.5+ | 1.3+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2001 10 13 | 699 | (0.4+ | 1.8+) | 2004 03 21 | 608 | 0.9+ | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.3− |
| 2001 10 13 | 704 | 0.8− | 0.9− | 2004 03 21 | 608 | 0.4+ | 0.3− | 2006 11 14 | 703 | 0.9+ | 0.0 |
| 2001 10 13 | 699 | 0.0 | 0.6+ | 2004 03 21 | 608 | 1.0+ | 0.5+ | 2006 11 14 | 703 | 1.3− | 0.4+ |
| 2001 10 13 | 704 | 0.4+ | 0.4− | 2004 03 21 | 699 | 1.2+ | 0.3+ | 2006 11 14 | 703 | 0.7− | 1.0− |
| 2001 10 13 | 699 | 0.4− | 1.2+ | 2004 03 21 | 699 | 1.2+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.0 |
| 2001 10 13 | 699 | (1.3− | 1.7+) | 2004 03 21 | 699 | 0.2+ | 0.8+ | 2006 11 15 | 691 | 0.5+ | 0.1− |
| 2001 10 14 | 691 | 0.2− | 0.4+ | 2004 03 21 | 699 | (1.6− | 0.8+) | 2006 11 15 | 691 | 0.3+ | 0.3+ |
| 2001 10 14 | 691 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.4+ | 1.0+ | 2006 11 15 | 691 | 0.5+ | 0.2− |
| 2001 10 14 | 691 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.7− | 0.7+ | 2006 11 17 | 703 | (1.9− | 0.9+) |
| 2001 10 17 | 644 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2001 10 17 | 644 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.3− | 0.9+ | 2006 11 17 | 703 | (0.8− | 1.8+) |
| 2001 10 17 | 644 | 0.3− | 0.2+ | 2004 03 28 | 704 | 0.8+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.2+ |
| 2001 10 17 | 644 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.5+ | 0.0 | 2006 11 19 | 704 | 0.8− | 0.1− |
| 2001 10 17 | 644 | 0.1− | 0.1− | 2004 03 28 | 704 | 1.2+ | 1.1+ | 2006 11 19 | 704 | 0.4− | 1.3+ |
| 2001 10 17 | 644 | 0.7+ | 0.9+ | 2004 03 28 | 704 | 0.5+ | 0.1− | 2006 11 19 | 704 | 1.1+ | 0.4− |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2004 03 28 | 704 | 1.2+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.4+ | 0.4+ | 2004 03 29 | 691 | 0.1− | 0.3+ | | | | |

**(139986)∗ 2001 SE$_{31}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.25166 | | (2000.0) | | | |
| $n$ | 0.20263941 | $\omega$ | 276.02156 | | +0.98736636 | +0.14977848 |
| $a$ | 2.8706932 | $\Omega$ | 75.37275 | | −0.11581533 | +0.90488780 |
| $e$ | 0.0821712 | $i$ | 3.06355 | | −0.10814100 | +0.39842749 |
| $P$ | 4.86 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.3− | 0.4− | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 1994 04 02 | 691 | 0.2+ | 0.4− | 2004 03 14 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 0.1+ |
| 1994 04 02 | 691 | 0.2− | 0.2− | 2004 03 14 | 691 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.2+ | 0.7+ | 2004 03 14 | 691 | 0.6+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2001 09 16 | 704 | 1.2+ | 1.3+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.6+ | 0.9+ |
| 2001 09 19 | 704 | 0.3+ | 0.0 | 2004 03 22 | 704 | (1.8+ | 2.1+) | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2001 09 19 | 704 | 0.5+ | 0.4− | 2004 04 23 | 691 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 1.1− | 2004 04 23 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | (1.9− | 0.1+) | 2004 04 23 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.5− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.4− | 0.9− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.6+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.8− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.8− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.8− | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 645 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.4− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2001 10 17 | 644 | 0.4+ | 1.0+ | 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.9+ |
| 2001 10 17 | 644 | 0.2+ | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2001 10 17 | 644 | 0.1+ | 1.2+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 10 20 | 704 | 0.3− | 0.9+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2001 10 20 | 704 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 10 20 | 704 | 0.1+ | 1.2+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 12 10 | 645 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.6− | | | | |

**(139987)∗ 2001 SJ$_{32}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.37180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20077199 | $\omega$ | 24.90233 | | +0.23477807 | −0.97184420 | |
| $a$ | 2.8884663 | $\Omega$ | 51.52544 | | +0.88751446 | +0.20594309 | |
| $e$ | 0.1441304 | $i$ | 1.46039 | | +0.39648119 | +0.11448270 | |
| $P$ | 4.91 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.4− | 0.8+ | 2001 10 16 | 704 | 0.1− | 0.6+ | 2006 09 23 | 691 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.5+ | 2001 10 16 | 704 | 1.2− | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2001 09 16 | 704 | 0.2+ | 0.5+ | 2001 10 16 | 704 | 0.6− | 0.8+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2001 09 19 | 704 | 0.2− | 1.4+ | 2001 10 17 | 644 | 0.1+ | 1.0− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 0.6+ | 1.4+ | 2001 10 17 | 644 | 0.2+ | 0.9− | 2006 09 25 | G96 | 0.3− | 0.4− |
| 2001 09 19 | 704 | (0.9+ | 1.6+) | 2001 10 17 | 644 | 0.2+ | 1.0− | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2001 09 19 | 704 | 1.1+ | 0.7+ | 2001 10 17 | 644 | 0.0 | 1.2− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2001 10 17 | 644 | 0.2+ | 1.1− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 10 17 | 644 | 0.3− | 1.4− | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.5− | 2001 10 20 | 704 | (1.8− | 1.2+) | 2006 10 18 | H07 | 0.5− | 1.5+ |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2001 10 20 | 704 | (1.9− | 0.1+) | 2006 10 18 | H07 | 0.3− | 0.4− |
| 2001 09 20 | 704 | 0.9− | 0.2− | 2001 10 20 | 704 | (1.8− | 0.0 ) | 2006 10 18 | H07 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2001 10 20 | 704 | (2.2− | 0.7+) | 2006 10 18 | H07 | 0.4− | 0.3− |
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2001 10 20 | 704 | (1.5− | 0.7+) | 2006 10 20 | H07 | (1.5+ | 1.1+) |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2003 02 03 | 644 | 0.2+ | 1.2+ | 2006 10 20 | H07 | (2.3+ | 0.9+) |
| 2001 09 20 | 704 | 0.1− | 0.1− | 2003 02 03 | 644 | 0.0 | 1.1+ | 2006 10 20 | H07 | 1.0+ | 0.9+ |
| 2001 09 23 | 704 | 1.3+ | 0.9− | 2003 02 03 | 644 | 0.5+ | 1.3+ | 2006 10 20 | H07 | 1.1+ | 0.1+ |
| 2001 09 23 | 704 | (1.5+ | 0.8−) | 2003 02 04 | 699 | 0.2− | 0.9+ | 2006 10 20 | 703 | 0.4− | 0.1+ |
| 2001 09 23 | 704 | (1.8+ | 0.3−) | 2003 02 04 | 699 | 1.2− | 0.5− | 2006 10 20 | 703 | 0.6− | 0.3− |
| 2001 09 23 | 704 | (1.9+ | 0.1+) | 2003 02 04 | 699 | 0.7− | 0.8+ | 2006 10 20 | 703 | (5.0− | 0.1+) |
| 2001 09 24 | 704 | 1.4− | 0.2+ | 2003 02 04 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 703 | 0.9− | 1.4+ |
| 2001 09 24 | 704 | 1.0− | 0.1+ | 2003 02 04 | 699 | (0.4− | 1.6+) | 2006 10 21 | 703 | 0.0 | 0.4− |
| 2001 09 24 | 704 | 1.3− | 1.3+ | 2003 02 04 | 704 | 0.7+ | 0.9+ | 2006 10 21 | 703 | 0.3− | 0.5− |
| 2001 09 26 | 704 | 0.5− | 0.4+ | 2003 02 04 | 704 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.6− | 0.6+ |
| 2001 09 26 | 704 | (1.7− | 1.5+) | 2003 02 04 | 704 | 0.1− | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 2001 09 26 | 704 | 0.3+ | 0.9+ | 2003 02 04 | 704 | 1.3+ | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 09 26 | 704 | 0.0 | 0.5+ | 2003 03 12 | 644 | 0.7+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 09 26 | 704 | 0.4+ | 0.9+ | 2003 03 12 | 644 | 0.2+ | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.2− | 1.1+ | 2003 03 12 | 644 | 0.3+ | 1.3+ | 2006 10 28 | 691 | 0.4− | 0.3+ |
| 2001 09 26 | 704 | 0.2− | 0.5+ | 2004 04 26 | 291 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.1− | 1.2+ | 2004 04 26 | 291 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | (1.2− | 3.2+) | 2004 04 26 | 291 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 10 11 | 644 | 0.2+ | 0.1− | 2004 05 16 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 10 11 | 644 | 0.1− | 0.8+ | 2004 05 16 | 691 | 0.5+ | 0.4+ | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2001 10 11 | 644 | 0.2+ | 0.1+ | 2004 05 16 | 691 | 0.3+ | 0.4+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2001 10 11 | 644 | 0.3− | 0.8+ | 2004 05 19 | 691 | 0.1+ | 0.6+ | 2006 11 07 | 644 | 0.4− | 0.1+ |
| 2001 10 11 | 644 | 0.0 | 0.0 | 2004 05 19 | 691 | 0.3+ | 0.6+ | 2006 11 07 | 644 | 0.5− | 0.2+ |
| 2001 10 11 | 644 | 0.3− | 0.9+ | 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2001 10 13 | 699 | 0.7+ | 1.4+ | 2005 06 03 | 691 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 10 13 | 699 | 0.3− | 0.6+ | 2005 06 03 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2001 10 13 | 704 | (0.2+ | 2.2−) | 2005 06 03 | 691 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 10 13 | 699 | 0.0 | 0.9+ | 2005 07 07 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2001 10 13 | 704 | 0.2− | 0.6+ | 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2001 10 13 | 704 | 0.0 | 0.1− | 2005 07 07 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.7− |
| 2001 10 13 | 699 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2001 10 13 | 704 | (0.3+ | 1.6+) | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2001 10 13 | 704 | 1.0+ | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2001 10 16 | 704 | 0.1− | 0.9− | 2006 09 18 | 699 | 1.1− | 0.6+ | 2006 11 11 | 703 | 1.0+ | 0.6+ |
| 2001 10 16 | 704 | 0.7− | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.0 | | | | |

**(139988)∗ 2001 SR$_{32}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.17042 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20350339 | $\omega$ | 278.48657 | | −0.22962677 | −0.97303064 | |
| $a$ | 2.8625624 | $\Omega$ | 184.95411 | | +0.96270687 | −0.22375573 | |
| $e$ | 0.1142527 | $i$ | 14.74226 | | +0.14306305 | −0.05607809 | |
| $P$ | 4.84 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.5+ | 0.0 | 2001 10 13 | 704 | 0.3− | 0.4− | 2006 09 20 | 644 | 0.4− | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.0 | 2001 10 14 | 645 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2001 09 16 | 704 | 0.2− | 0.9+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | (2.1+ | 0.6+) |
| 2001 09 16 | 704 | 0.2− | 1.2+ | 2001 10 20 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.3+ |
| 2001 09 19 | 704 | 0.2+ | 0.6+ | 2001 10 20 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2001 10 20 | 704 | 0.5+ | 0.9+ | 2006 10 16 | 703 | 0.8+ | 1.1− |
| 2001 09 19 | 704 | 0.6− | 0.2+ | 2001 10 20 | 704 | (0.1− | 1.7+) | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 10 25 | 645 | 0.0 | 0.1− | 2006 10 16 | 703 | 1.0+ | 0.3+ |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2001 10 25 | 645 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.2+ |
| 2001 09 21 | 704 | 0.3+ | 0.4+ | 2003 01 08 | 699 | 0.0 | 1.0− | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2003 01 08 | 699 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 1.2− | 0.6+ |
| 2001 09 21 | 704 | 0.7+ | 0.3+ | 2003 01 08 | 699 | 0.2− | 0.9+ | 2006 10 22 | 703 | 1.3− | 0.4+ |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2003 01 08 | 699 | (1.7+ | 1.0+) | 2006 10 22 | 703 | 1.5− | 0.4+ |
| 2001 09 23 | 704 | 0.1+ | 0.2+ | 2003 01 28 | 704 | 1.5+ | 0.2− | 2006 10 23 | 644 | 0.5+ | 0.2+ |
| 2001 09 23 | 704 | 0.3− | 0.0 | 2003 01 28 | 704 | 1.4+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 09 23 | 704 | 0.3+ | 0.0 | 2003 01 28 | 704 | 1.5+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 09 26 | 704 | 0.3− | 0.2+ | 2003 01 28 | 704 | (1.8+ | 0.5−) | 2006 10 28 | 703 | 0.7+ | 0.7+ |
| 2001 09 26 | 704 | 0.5+ | 0.1+ | 2003 03 30 | 645 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.2− | 1.3− |
| 2001 09 26 | 704 | 1.1+ | 1.1+ | 2003 03 30 | 645 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.4− | 0.3− |
| 2001 09 26 | 704 | 0.5+ | 0.1+ | 2004 05 24 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.6+ |
| 2001 09 26 | 704 | 0.0 | 0.1+ | 2004 05 24 | 704 | 0.1+ | 0.9+ | 2006 11 16 | 703 | 1.3+ | 0.1+ |
| 2001 10 13 | 704 | 0.5− | 1.2− | 2004 05 24 | 704 | (0.7+ | 1.7+) | 2006 11 16 | 703 | 1.5− | 1.3+ |
| 2001 10 13 | 704 | 0.0 | 0.4− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.5+ |
| 2001 10 13 | 704 | 0.3+ | 0.3− | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.4+ | 0.4+ |

**(139989)∗ 2001 SJ$_{33}$ = 4705 P-L**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20200)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.28193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19254643 | $\omega$ | 133.63902 | | +0.73804240 | +0.67465509 | |
| $a$ | 2.9701547 | $\Omega$ | 183.98556 | | −0.65705507 | +0.71467480 | |
| $e$ | 0.1657537 | $i$ | 9.58457 | | −0.15353192 | +0.18460888 | |
| $P$ | 5.12 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2+ | 0.6− | 2001 10 23 | 704 | 0.6− | 1.5− | 2006 09 20 | 704 | (0.4+ | 2.4−) |
| 1960 09 24 | 675 | 0.4+ | 0.8− | 2001 10 24 | 704 | 0.5+ | 1.2− | 2006 09 20 | 704 | 0.2− | 1.1− |
| 1960 09 26 | 675 | 0.9− | 0.5− | 2001 10 24 | 704 | 0.1− | 0.4− | 2006 09 20 | 704 | (0.3+ | 1.6−) |
| 1960 09 27 | 675 | 0.2+ | 1.7+ | 2001 10 24 | 704 | 0.4− | 0.9− | 2006 09 24 | 106 | 0.3+ | 0.3− |
| 1960 09 27 | 675 | 0.4+ | 1.6+ | 2001 10 24 | 704 | (0.6+ | 1.6−) | 2006 09 24 | 106 | 0.8+ | 0.5+ |
| 1960 09 28 | 675 | 0.6− | 0.3+ | 2001 10 25 | 645 | 0.1− | 0.1− | 2006 09 24 | 106 | 0.2+ | 0.5− |
| 1960 09 28 | 675 | 0.1− | 0.3− | 2001 10 25 | 645 | 0.2− | 0.3− | 2006 09 24 | 106 | 0.6− | 0.4+ |
| 2001 09 16 | 704 | 0.3+ | 0.5+ | 2005 04 30 | 691 | 0.0 | 0.7− | 2006 09 25 | 699 | 0.3− | 0.5− |
| 2001 09 16 | 704 | 0.0 | 0.2− | 2005 04 30 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.1− |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2005 04 30 | 691 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | (2.0− | 0.5+) | 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.3− | 1.0+ | | |
| 2001 09 19 | 704 | 0.4+ | 1.2+ | 2005 05 14 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.4− | 0.1+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2005 05 14 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.8+ | 2005 05 16 | 691 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.8+ | 0.0 | | |
| 2001 09 19 | 704 | 0.0 | 1.2+ | 2005 05 16 | 691 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.8+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.3+ | 1.2+ | 2005 05 16 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.3− | 0.9+ | | |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2005 06 01 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.2− | | |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2005 06 01 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.2− | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2005 06 01 | 691 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− | | |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.1− | | |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.0 | | |
| 2001 09 23 | 704 | (2.3+ | 0.9+) | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.2− | 0.5+ | | |
| 2001 09 23 | 704 | 1.4+ | 0.2+ | 2006 08 24 | 644 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.7− | 0.6+ | | |
| 2001 09 23 | 704 | 0.7+ | 0.6− | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.1− | | |
| 2001 09 26 | 704 | 1.3+ | 1.5− | 2006 08 24 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.3− | | |
| 2001 09 26 | 704 | (1.2+ | 1.8−) | 2006 08 28 | 703 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.9− | 0.0 | | |
| 2001 09 26 | 704 | 0.9+ | 1.0− | 2006 08 28 | 703 | 0.8− | 0.5− | 2006 10 16 | 703 | 0.5− | 0.6− | | |
| 2001 09 26 | 704 | (1.2+ | 1.5−) | 2006 08 28 | 703 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.2− | 0.3− | | |
| 2001 09 26 | 704 | (0.9+ | 1.8−) | 2006 08 28 | 703 | (1.8− | 0.1−) | 2006 10 19 | 644 | 0.1− | 0.6+ | | |
| 2001 10 12 | 699 | (1.6− | 0.4+) | 2006 08 30 | 704 | (1.7− | 8.1+) | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 12 | 699 | 0.7− | 0.0 | 2006 08 30 | 704 | (0.5+ | 1.6+) | 2006 10 19 | 644 | 0.6− | 0.4− | | |
| 2001 10 12 | 699 | 0.5− | 1.5+ | 2006 08 30 | 704 | 1.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 12 | 699 | 1.3− | 0.6+ | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2001 10 15 | 704 | 0.6+ | 0.7+ | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.4− | 0.1+ | | |
| 2001 10 15 | 704 | 0.7+ | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.1− | | |
| 2001 10 15 | 704 | 0.5+ | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.3− | | |
| 2001 10 16 | 704 | 0.2+ | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.4− | | |
| 2001 10 16 | 704 | 0.2+ | 1.2− | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2001 10 16 | 704 | 0.4− | 0.4− | 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 16 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2001 10 20 | 704 | 0.6+ | 1.2+ | 2006 09 17 | 704 | 0.6− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2001 10 20 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 704 | 0.1+ | 0.4− | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2001 10 20 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.4− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.1− | 1.0+ | 2006 09 18 | 699 | 0.1− | 1.2+ | 2006 10 23 | 644 | 0.1+ | 0.4+ | | |
| 2001 10 20 | 704 | 0.5− | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1+ | | |
| 2001 10 23 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2001 10 23 | 704 | 0.1− | 0.6− | 2006 09 18 | 699 | 0.4− | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.2− | | |
| 2001 10 23 | 704 | (0.9+ | 2.1−) | 2006 09 20 | 704 | 0.9+ | 1.2− | 2006 11 15 | G96 | 0.2+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.1− | 1.0− | 2006 09 20 | 704 | (0.0 | 2.0−) | | | | | | |

**(139990)∗ 2001 SS$_{33}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.29413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21462762 | $\omega$ | 83.07156 | | −0.18111711 | −0.98308271 | |
| $a$ | 2.7627758 | $\Omega$ | 17.43533 | | +0.86251570 | −0.17211631 | |
| $e$ | 0.0276845 | $i$ | 5.22650 | | +0.47250742 | −0.06264470 | |
| $P$ | 4.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 104 | 0.1− | 0.6+ | 2001 10 11 | 644 | 0.2− | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | | |
| 1996 09 08 | 104 | 0.2− | 0.0 | 2001 10 16 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.6+ | | |
| 1996 09 08 | 104 | 1.2− | 1.0− | 2001 10 16 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.2− | 0.0 | | |
| 1996 09 08 | 104 | 1.5− | 0.5− | 2001 10 16 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 10 17 | 644 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.1− | 0.2− | | |
| 1999 03 21 | 645 | 0.0 | 0.2+ | 2001 10 17 | 644 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2001 10 17 | 644 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− | | |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2001 10 18 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.3− | | |
| 2001 09 12 | 695 | 0.1+ | 0.0 | 2001 10 18 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.1− | | |
| 2001 09 12 | 695 | 0.0 | 0.2+ | 2001 10 18 | 644 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 0.2+ | 0.1+ | 2001 10 20 | 704 | 0.1− | 0.8+ | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2001 09 16 | 704 | 0.5− | 0.2− | 2001 10 20 | 704 | 0.7+ | 0.9+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2001 09 16 | 704 | 0.0 | 0.4− | 2001 10 20 | 704 | 0.6+ | 1.0+ | 2006 11 17 | 691 | 0.2− | 0.0 | | |
| 2001 09 16 | 704 | 0.2+ | 1.5+ | 2001 10 20 | 704 | 0.5+ | 0.9+ | 2006 11 17 | 691 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.3− | 1.3+ | 2001 10 20 | 704 | 0.1+ | 0.7+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | (0.7+ | 1.5+) | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.0− | 0.1+ | | |
| 2001 09 19 | 704 | (0.4+ | 1.6+) | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2003 01 29 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.4+ | | |
| 2001 09 20 | 691 | 0.0 | 0.1+ | 2003 01 29 | 644 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.5− | | |
| 2001 09 20 | 691 | 0.0 | 0.1+ | 2003 01 29 | 644 | 0.2+ | 0.9+ | 2006 11 22 | 691 | 0.3+ | 0.2+ | | |
| 2001 09 20 | 691 | 0.2+ | 0.2+ | 2003 02 01 | 704 | (2.2− | 3.4+) | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.3+ | 0.0 | 2003 02 01 | 704 | 0.1− | 0.7+ | 2006 11 22 | 691 | 0.3+ | 0.2+ | | |
| 2001 09 23 | 704 | 0.0 | 0.4− | 2003 02 01 | 704 | (0.3− | 2.4+) | 2006 11 23 | 703 | 0.5− | 0.2+ | | |
| 2001 09 23 | 704 | 0.0 | 0.2− | 2003 02 01 | 704 | 1.2− | 0.6+ | 2006 11 23 | 703 | 0.2+ | 0.6− | | |
| 2001 09 23 | 704 | 0.1− | 0.9− | 2003 02 01 | 704 | 0.8− | 0.5+ | 2006 11 23 | 703 | 0.3+ | 1.2− | | |
| 2001 09 24 | 704 | 0.7− | 1.2+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 23 | 703 | 0.1− | 0.6+ | | |
| 2001 09 24 | 704 | 0.7− | 1.1+ | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 24 | 703 | 2.1+ | 2.2+ | | |
| 2001 09 24 | 704 | 1.4− | 0.5+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 24 | 703 | 0.3− | 0.6+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.8+ | 2005 07 26 | 644 | 0.1− | 0.1+ | 2006 11 24 | 703 | 0.3− | 0.0 | | |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2005 07 26 | 644 | 0.2− | 0.1+ | 2006 11 24 | 703 | 0.6− | 1.1+ | | |
| 2001 09 26 | 704 | 0.7+ | 0.1+ | 2005 07 26 | 644 | 0.3+ | 0.4+ | 2006 12 01 | G96 | 0.5− | 0.7− | | |
| 2001 09 26 | 704 | 0.3+ | 0.9+ | 2005 09 01 | 644 | 0.4− | 0.6+ | 2006 12 01 | G96 | 0.4− | 0.6− | | |
| 2001 10 11 | 644 | 0.1− | 0.4+ | 2005 09 01 | 644 | 0.2− | 0.5+ | 2006 12 01 | G96 | 0.1+ | 1.0− | | |
| 2001 10 11 | 644 | 0.0 | 0.5+ | 2005 09 01 | 644 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.7− | | |

**(139991)∗ 2001 SU$_{35}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.16419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19007513 | $\omega$ | 24.23039 | | +0.63544955 | −0.76727607 | |
| $a$ | 2.9958440 | $\Omega$ | 26.57323 | | +0.67308476 | +0.49550881 | |
| $e$ | 0.0733236 | $i$ | 11.15604 | | +0.37836593 | +0.40713444 | |
| $P$ | 5.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.5+ | 1.3+ | 2001 10 20 | 704 | 0.8− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 11 | 699 | 1.0− | 0.1+ | 2001 10 20 | 704 | 0.7− | 0.2− | 2004 03 23 | 691 | 0.2+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.1+ | 0.9+ | 2001 10 20 | 704 | 0.8− | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 11 | 699 | 0.1− | 0.4+ | 2001 10 22 | 704 | 0.3− | 0.7− | 2004 03 28 | 704 | (2.2+ | 0.1+) | | |
| 2001 09 16 | 704 | 0.6+ | 0.6− | 2001 10 22 | 704 | 0.3+ | 0.7+ | 2004 03 28 | 704 | 0.6+ | 1.0+ | | |
| 2001 09 16 | 704 | 0.2− | 0.2− | 2001 10 22 | 704 | 0.1− | 0.4− | 2004 03 28 | 704 | 0.3+ | 0.2− | | |
| 2001 09 16 | 704 | 0.1− | 0.5− | 2001 10 23 | 704 | 0.9− | 0.3− | 2004 03 28 | 704 | 1.1+ | 0.9+ | | |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2001 10 23 | 704 | 0.3− | 0.1+ | 2004 03 28 | 704 | 0.2− | 0.5− | | |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2001 10 23 | 704 | 0.4− | 0.1+ | 2004 03 28 | 704 | 0.6+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2001 10 23 | 704 | 0.0 | 0.4+ | 2004 03 28 | 704 | 0.0 | 0.3+ | | |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2001 10 23 | 704 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.5− | 1.4+ | | |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2001 11 18 | 704 | 0.3− | 0.7+ | 2006 09 14 | 703 | 0.7+ | 1.6+ | | |
| 2001 09 21 | 691 | 0.2− | 0.1+ | 2001 11 18 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.2+ | 0.3+ | | |
| 2001 09 21 | 691 | 0.2− | 0.0 | 2001 11 18 | 704 | 0.4− | 0.1+ | 2006 09 14 | 703 | 1.0+ | 0.2+ | | |
| 2001 09 21 | 691 | 0.2− | 0.1+ | 2001 11 18 | 704 | 0.4− | 0.3− | 2006 09 17 | 699 | 0.6− | 0.0 | | |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2001 11 21 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 699 | (1.8− | 1.5+) | | |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2001 11 21 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 699 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.9+ | 0.7+ | 2001 11 21 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2001 11 21 | 704 | 0.6+ | 0.7+ | 2006 09 26 | 649 | 0.2+ | 0.2− | | |
| 2001 09 21 | 704 | 0.3+ | 0.0 | 2001 11 21 | 704 | 0.6+ | 1.4+ | 2006 09 26 | 649 | 0.1+ | 0.2+ | | |
| 2001 09 26 | 704 | 0.1− | 0.5+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.1+ | | |
| 2001 09 26 | 704 | 0.1+ | 0.6+ | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 09 26 | 649 | 0.2+ | 0.1− | | |
| 2001 09 26 | 704 | 0.2− | 0.0 | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | (0.2− | 1.9+) | | |
| 2001 09 26 | 704 | 0.1− | 0.2− | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.6+ | | |
| 2001 10 14 | 699 | (1.5+ | 0.3−) | 2003 01 13 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | (0.0 | 1.8+) | | |
| 2001 10 14 | 699 | 0.6+ | 1.3+ | 2003 01 13 | 704 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.3− | 1.1+ | | |
| 2001 10 14 | 699 | 1.2+ | 0.0 | 2003 01 13 | 704 | 0.4+ | 0.0 | 2006 09 26 | 701 | 0.0 | 0.1+ | | |
| 2001 10 14 | 699 | 0.6+ | 0.3+ | 2003 01 31 | 699 | 0.5− | 0.3− | 2006 09 26 | 701 | 0.1− | 0.1− | | |
| 2001 10 14 | 608 | 0.3− | 0.8− | 2003 01 31 | 699 | 0.8+ | 0.7+ | 2006 09 26 | 701 | 0.1+ | 0.2− | | |
| 2001 10 14 | 608 | 0.8− | 1.4− | 2003 01 31 | 699 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.1+ | | |
| 2001 10 14 | 608 | 0.8− | 0.9− | 2003 01 31 | 699 | 1.0+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.5− | | |
| 2001 10 16 | 704 | (2.7− | 1.3−) | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.1+ | | |
| 2001 10 16 | 704 | (2.1+ | 1.5+) | 2004 03 16 | 691 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.3− | | |
| 2001 10 16 | 704 | 0.5− | 1.2+ | 2004 03 16 | 691 | 0.1+ | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.1− | | |
| 2001 10 16 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.1− | | |
| 2001 10 16 | 704 | 0.3− | 0.8+ | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.1− | | |
| 2001 10 17 | 644 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.4+ | 2006 10 03 | G96 | 0.3− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 644 | 0.3− | 0.2− | 2004 03 22 | 704 | 1.0+ | 1.2− | 2006 10 16 | 703 | 0.8− | 0.9− |
| 2001 10 17 | 644 | 0.4− | 0.0 | 2004 03 22 | 704 | 1.3+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2001 10 20 | 704 | 0.7− | 0.3+ | 2004 03 22 | 704 | 1.4+ | 1.0+ | 2006 10 16 | 703 | 1.0− | 0.1− |
| 2001 10 20 | 704 | 0.5− | 0.3− | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5− | 1.2− |

**(139992)∗ 2001 SD$_{36}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.30375 | | (2000.0) | | | |
| $n$ | 0.17371133 | $\omega$ | 355.18277 | | +0.91944655 | −0.38612743 |
| $a$ | 3.1811485 | $\Omega$ | 27.89913 | | +0.36586585 | +0.77081873 |
| $e$ | 0.1041043 | $i$ | 9.13925 | | +0.14408408 | +0.50669921 |
| $P$ | 5.67 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.3− | 0.7+ | 2001 10 16 | 704 | 0.2− | 0.2+ | 2003 01 10 | 704 | 0.2+ | 0.0 |
| 2001 09 11 | 699 | 0.7− | 0.0 | 2001 10 16 | 704 | 0.2− | 0.8+ | 2003 01 31 | 704 | 1.2− | 0.8+ |
| 2001 09 11 | 699 | 0.1− | 0.9+ | 2001 10 20 | 704 | 0.6− | 0.6+ | 2003 01 31 | 704 | 1.7− | 0.6− |
| 2001 09 11 | 699 | 0.3− | 0.7+ | 2001 10 20 | 704 | 0.9− | 0.3− | 2003 01 31 | 704 | 1.1− | 0.8− |
| 2001 09 16 | 704 | 0.0 | 0.9+ | 2001 10 20 | 704 | 1.0− | 0.1− | 2004 03 17 | 704 | 0.8+ | 0.1+ |
| 2001 09 16 | 704 | 0.6− | 1.2+ | 2001 10 20 | 704 | 0.3− | 0.1+ | 2004 03 17 | 704 | 0.8+ | 0.2+ |
| 2001 09 16 | 704 | 0.7− | 0.8+ | 2001 10 20 | 704 | 0.3− | 0.1− | 2004 03 17 | 704 | (2.1+ | 0.1+) |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2001 10 23 | 291 | 0.3− | 0.0 | 2004 03 18 | 691 | 0.3+ | 0.6+ |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2001 10 23 | 704 | 0.1− | 0.2+ | 2004 03 18 | 691 | 0.1+ | 0.7+ |
| 2001 09 19 | 704 | 0.0 | 0.1− | 2001 10 23 | 291 | 0.8+ | 0.2− | 2004 03 18 | 704 | 1.2+ | 1.0+ |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2001 10 23 | 704 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.5+ | 1.3+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2001 10 23 | 704 | 0.2− | 0.2− | 2004 03 18 | 691 | 0.2+ | 0.5+ |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2001 10 23 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 1.6+ | 1.2+ |
| 2001 09 26 | 704 | 0.1+ | 0.6+ | 2001 10 23 | 291 | 0.9+ | 0.1+ | 2004 03 20 | 704 | 0.8+ | 0.4+ |
| 2001 09 26 | 704 | 0.3− | 0.5+ | 2001 10 23 | 704 | 0.4− | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.3+ |
| 2001 09 26 | 704 | 0.5− | 0.2− | 2001 10 24 | 704 | 0.8− | 0.2− | 2004 03 20 | 704 | 1.1− | 1.5+ |
| 2001 09 26 | 704 | 0.3− | 1.0− | 2001 10 24 | 704 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.2+ | 1.2+ |
| 2001 10 12 | 699 | 0.0 | 0.8+ | 2001 10 24 | 704 | 0.0 | 0.0 | 2004 07 15 | 807 | 0.1− | 0.3+ |
| 2001 10 12 | 699 | 0.7+ | 0.2+ | 2001 10 24 | 704 | 0.2− | 0.4+ | 2004 07 16 | 807 | 0.1+ | 0.0 |
| 2001 10 12 | 699 | 0.0 | 0.3− | 2001 10 24 | 704 | 0.3+ | 0.1− | 2006 07 31 | E12 | 0.0 | 0.5+ |
| 2001 10 12 | 699 | 0.8+ | 2.0+ | 2001 11 20 | 704 | 0.4− | 0.1+ | 2006 07 31 | E12 | 0.9− | 0.3− |
| 2001 10 13 | 704 | 0.0 | 0.4− | 2001 11 20 | 704 | 0.1− | 0.6− | 2006 07 31 | E12 | 0.4+ | 0.4+ |
| 2001 10 13 | 704 | 0.2+ | 0.4+ | 2001 11 20 | 704 | 0.4− | 0.6+ | 2006 07 31 | E12 | 0.2− | 0.7+ |
| 2001 10 13 | 704 | 0.5+ | 0.2− | 2003 01 10 | 704 | 1.1+ | 0.0 | 2006 08 14 | 644 | 0.3+ | 0.3+ |
| 2001 10 13 | 704 | 0.4− | 0.2− | 2003 01 10 | 704 | 0.8+ | 0.8− | 2006 08 14 | 644 | 0.1− | 0.8+ |
| 2001 10 14 | 699 | 0.4− | 0.2+ | 2003 01 10 | 704 | 0.8+ | 0.3+ | 2006 08 14 | 644 | 0.4− | 0.6+ |
| 2001 10 14 | 699 | 0.9− | 0.5+ | 2003 01 10 | 704 | 0.7+ | 0.3+ | 2006 08 26 | E12 | 0.4− | 0.7+ |
| 2001 10 14 | 699 | 1.0− | 0.2− | 2003 01 10 | 704 | 0.3− | 0.4+ | 2006 08 26 | E12 | 0.2− | 0.4+ |
| 2001 10 14 | 699 | 1.0− | 0.1− | 2003 01 10 | 704 | 0.4+ | 0.3+ | 2006 08 26 | E12 | 0.1+ | 0.8+ |
| 2001 10 16 | 704 | 0.0 | 0.0 | 2003 01 10 | 704 | 0.3+ | 0.3+ | 2006 08 26 | E12 | 0.2− | 0.4+ |
| 2001 10 16 | 704 | 0.7− | 0.2− | 2003 01 10 | 704 | 0.7+ | 0.0 | | | | |

**(139993)∗ 2001 SN$_{36}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.20328 | | (2000.0) | | | |
| $n$ | 0.22636464 | $\omega$ | 160.67300 | | +0.85919581 | +0.51152229 |
| $a$ | 2.6664308 | $\Omega$ | 168.54151 | | −0.47659251 | +0.80816336 |
| $e$ | 0.1152821 | $i$ | 3.25853 | | −0.18612400 | +0.29191939 |
| $P$ | 4.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 02 | 691 | 0.7+ | 0.0 | 2001 10 14 | 699 | (0.3− | 1.7+) | 2005 08 06 | 704 | 0.3+ | 0.5+ |
| 1998 01 02 | 691 | 0.6+ | 0.0 | 2001 10 14 | 608 | 0.0 | 0.8+ | 2005 08 06 | 644 | 0.0 | 0.2− |
| 1998 01 02 | 691 | 0.5+ | 0.1− | 2001 10 14 | 608 | 0.5− | 0.7+ | 2005 08 06 | 644 | 0.1+ | 0.2− |
| 1998 01 22 | 691 | 0.0 | 0.7− | 2001 10 14 | 608 | 1.1− | 0.6+ | 2005 08 06 | 644 | 0.0 | 0.2− |
| 1998 01 22 | 691 | 0.5+ | 0.2+ | 2001 10 16 | 704 | 0.9+ | 0.4+ | 2005 08 22 | 644 | 0.3− | 0.4− |
| 1998 01 22 | 691 | 0.5+ | 0.4+ | 2001 10 16 | 704 | 0.2+ | 0.9+ | 2005 08 22 | 644 | 0.4− | 0.3− |
| 1998 01 26 | 691 | 0.8− | 0.5− | 2001 10 16 | 704 | 0.3+ | 0.3+ | 2005 08 22 | 644 | 0.1− | 0.3− |
| 1998 01 26 | 691 | 0.3− | 0.4− | 2001 10 16 | 704 | 0.6+ | 1.2+ | 2005 08 26 | 699 | 0.3+ | 0.2+ |
| 1998 01 26 | 691 | 0.4− | 0.4− | 2001 10 16 | 704 | 0.3+ | 0.3− | 2005 08 26 | 699 | 0.0 | 0.1− |
| 1999 03 20 | 691 | 0.8− | 0.6+ | 2001 10 18 | 644 | 0.1− | 0.1− | 2005 08 26 | 699 | 0.4+ | 1.5− |
| 1999 03 20 | 691 | 0.3+ | 0.0 | 2001 10 18 | 644 | 0.3− | 0.3+ | 2005 08 26 | 699 | 0.2+ | 1.1− |
| 1999 03 20 | 691 | 0.3− | 0.4− | 2001 10 18 | 644 | 0.2− | 0.2+ | 2005 08 29 | 699 | 0.7− | 0.4+ |
| 2001 09 16 | 704 | 0.2− | 0.1− | 2001 10 19 | 644 | 0.3− | 0.0 | 2005 08 29 | 699 | 0.0 | 1.0+ |
| 2001 09 16 | 704 | 0.7− | 1.0− | 2001 10 19 | 644 | 0.8− | 0.1+ | 2005 08 29 | 699 | 0.2+ | 0.9+ |
| 2001 09 16 | 704 | 0.4+ | 1.4+ | 2001 10 19 | 644 | 0.7− | 0.1− | 2005 08 29 | 699 | 0.5+ | 0.2+ |
| 2001 09 19 | 704 | 0.7− | 0.7+ | 2001 10 20 | 704 | (0.8− | 1.7+) | 2005 09 05 | 703 | 0.8+ | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 0.6+ | 2001 10 20 | 704 | 0.7− | 1.2+ | 2005 09 05 | 703 | 0.5− | 0.2− |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2001 10 20 | 704 | 0.6− | 0.5+ | 2005 09 05 | 703 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2001 10 20 | 704 | (1.2− | 1.8+) | 2005 09 05 | 703 | 0.8− | 0.2+ |
| 2001 09 19 | 704 | 0.9− | 0.7+ | 2001 10 20 | 704 | (0.8− | 2.4+) | 2005 09 07 | 699 | 0.4+ | 0.6+ |
| 2001 09 21 | 704 | 1.2− | 0.3+ | 2001 10 20 | 644 | 0.1− | 0.9+ | 2005 09 07 | 699 | 0.0 | 0.3− |
| 2001 09 21 | 691 | 0.4− | 0.1− | 2001 10 20 | 644 | 0.2− | 1.1+ | 2005 09 07 | 699 | 0.5+ | 0.3− |
| 2001 09 21 | 704 | 1.1− | 0.8+ | 2001 10 20 | 644 | 0.1− | 0.9+ | 2005 09 07 | 699 | 0.6− | 0.1− |
| 2001 09 21 | 704 | 1.0− | 1.1+ | 2001 10 23 | 704 | 0.7− | 0.1+ | 2005 09 28 | 644 | 0.2+ | 0.1+ |
| 2001 09 21 | 691 | 0.5− | 0.1− | 2001 10 23 | 704 | 0.1+ | 0.4+ | 2005 09 28 | 644 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | (2.6+ | 0.1+) | 2001 10 23 | 704 | 0.3− | 0.3− | 2005 09 28 | 644 | 0.5− | 0.1+ |
| 2001 09 21 | 691 | 0.2− | 0.2− | 2001 10 23 | 704 | 0.1+ | 0.4− | 2005 10 25 | G96 | 0.3+ | 0.3− |
| 2001 09 25 | 333 | 0.1− | 0.2− | 2001 10 24 | 704 | 0.3− | 0.9− | 2005 10 25 | G96 | 0.1+ | 0.3− |
| 2001 09 25 | 333 | 0.3+ | 0.3− | 2001 10 24 | 704 | 0.4− | 0.2− | 2005 10 25 | G96 | 0.3+ | 0.1− |
| 2001 09 25 | 333 | 0.4+ | 0.3− | 2001 10 24 | 704 | (1.2− | 1.8−) | 2005 10 25 | G96 | 0.1− | 0.4− |
| 2001 09 26 | 333 | 0.6+ | 0.8− | 2001 10 24 | 704 | (0.2− | 2.1−) | 2005 11 25 | G96 | 0.2+ | 0.2+ |
| 2001 09 26 | 333 | 0.2+ | 0.1− | 2001 10 25 | 691 | 0.6+ | 0.1− | 2005 11 25 | G96 | 0.3− | 0.5− |
| 2001 09 26 | 704 | (1.5+ | 0.4−) | 2001 10 25 | 691 | 0.3+ | 0.2− | 2005 11 25 | G96 | 0.3− | 0.6− |
| 2001 09 26 | 333 | 0.5+ | 0.2− | 2001 10 25 | 691 | 0.4+ | 0.0 | 2005 11 25 | G96 | 0.4+ | 0.1− |
| 2001 09 26 | 704 | 1.0+ | 0.8− | 2004 04 19 | 704 | 1.0+ | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2001 09 26 | 704 | (1.7+ | 0.4−) | 2004 04 19 | 704 | 1.0+ | 0.0 | 2006 11 20 | 691 | 0.4+ | 0.4+ |
| 2001 09 26 | 704 | 1.0+ | 1.4− | 2004 04 19 | 704 | 0.9+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 09 26 | 704 | 0.5− | 1.1− | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.3+ | 0.4+ |
| 2001 10 13 | 704 | (1.6+ | 1.1+) | 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2001 10 13 | 704 | (0.2− | 1.8+) | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2001 10 13 | 704 | 0.7+ | 0.8− | 2005 07 31 | 644 | 0.1+ | 0.2− | 2006 11 28 | 691 | 0.1− | 0.0 |
| 2001 10 13 | 704 | 0.4+ | 1.0+ | 2005 07 31 | 644 | 0.3+ | 0.2− | 2006 11 28 | 691 | 1.0− | 0.4− |
| 2001 10 14 | 699 | 0.1+ | 1.0+ | 2005 07 31 | 644 | 0.1+ | 0.2− | 2006 11 28 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 699 | (0.1− | 2.0+) | 2005 08 06 | 704 | 0.1− | 0.7− | | | | |
| 2001 10 14 | 699 | (0.0 | 1.7+) | 2005 08 06 | 704 | 0.7+ | 0.0 | | | | |

**(139994)∗ 2001 SQ$_{36}$ = 1998 DW$_{13}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20204)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 255.85052 | | (2000.0) | | | |
| $n$ | 0.18080430 | $\omega$ | 87.90870 | | −0.36630079 | −0.93020688 |
| $a$ | 3.0973971 | $\Omega$ | 23.62038 | | +0.82902890 | −0.33758402 |
| $e$ | 0.1926276 | $i$ | 3.32141 | | +0.42253379 | −0.14405620 |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 27 | 910 | 0.8+ | 0.5+ | 2001 10 16 | 704 | 0.4+ | 0.8− | 2003 02 22 | 644 | 0.1− | 0.1+ |
| 1998 02 27 | 910 | 0.3+ | 0.7+ | 2001 10 18 | 644 | 0.7+ | 1.0+ | 2003 02 22 | 644 | 0.1+ | 0.0 |
| 1998 02 27 | 910 | 0.2+ | 0.1+ | 2001 10 18 | 644 | 0.9+ | 1.0+ | 2003 02 22 | 644 | 0.4+ | 0.2+ |
| 1998 02 27 | 910 | 0.7+ | 1.5− | 2001 10 18 | 644 | 0.8+ | 1.3+ | 2003 02 23 | 699 | 0.2− | 0.3− |
| 1998 02 27 | 910 | 0.4+ | 0.0 | 2001 10 19 | 644 | 0.1− | 0.1+ | 2003 02 23 | 699 | 0.3− | 0.1+ |
| 1998 02 28 | 910 | 0.4+ | 0.5+ | 2001 10 19 | 644 | 0.3− | 0.1+ | 2003 02 23 | 699 | 0.0 | 0.2− |
| 1998 03 22 | 704 | 0.2− | 1.1+ | 2001 10 19 | 644 | 0.2− | 0.0 | 2003 02 23 | 699 | 0.3+ | 0.0 |
| 1998 03 22 | 704 | 0.6− | 1.2− | 2001 10 21 | 704 | 0.3+ | 0.0 | 2003 03 08 | 704 | 0.2+ | 0.5+ |
| 1998 03 22 | 704 | 1.3− | 0.9+ | 2001 10 21 | 704 | 0.4− | 0.1+ | 2003 03 08 | 704 | 0.1− | 0.3+ |
| 1998 03 22 | 704 | (0.1− | 3.2−) | 2001 10 21 | 704 | 0.4− | 0.2+ | 2003 03 08 | 704 | 0.5− | 0.9− |
| 1998 03 22 | 704 | (5.9− | 0.7+) | 2001 10 21 | 704 | 0.1− | 0.3− | 2003 03 08 | 704 | 0.7− | 0.5+ |
| 2001 09 16 | 704 | (1.7− | 0.4+) | 2001 10 21 | 704 | 0.4− | 0.2− | 2003 03 08 | 704 | 0.4− | 0.8+ |
| 2001 09 16 | 704 | 0.1− | 0.7+ | 2001 10 25 | 704 | 0.5+ | 1.5− | 2003 03 08 | 704 | 0.6− | 0.2− |
| 2001 09 16 | 704 | 0.6− | 0.3+ | 2001 10 25 | 704 | (1.5+ | 1.3−) | 2003 03 08 | 704 | 0.9+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.4+ | 0.5− | 2001 10 25 | 704 | 0.3+ | 0.6− | 2003 03 08 | 704 | 0.0 | 1.0− | | |
| 2001 09 19 | 704 | 0.6+ | 0.4+ | 2001 10 25 | 704 | (1.5+ | 1.1−) | 2003 03 08 | 704 | 0.2+ | 0.3− | | |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2001 11 19 | 704 | 0.9− | 0.4− | 2003 03 08 | 704 | 0.5− | 0.0 | | |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2001 11 19 | 704 | 1.5− | 1.2+ | 2004 05 12 | E12 | (0.4− | 2.2+) | | |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2001 11 19 | 704 | 1.5− | 0.9+ | 2004 05 12 | E12 | (1.4− | 3.2+) | | |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2003 01 05 | 704 | 0.5+ | 1.1− | 2004 05 12 | E12 | (0.6+ | 1.8+) | | |
| 2001 09 20 | 691 | 0.2− | 0.1+ | 2003 01 05 | 704 | 0.8− | 0.1+ | 2004 05 12 | E12 | 0.0 | 1.1+ | | |
| 2001 09 20 | 691 | 0.2− | 0.1+ | 2003 01 05 | 704 | 1.0+ | 0.6− | 2004 05 15 | 704 | 0.7+ | 0.8+ | | |
| 2001 09 20 | 691 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.1+ | 1.4− | 2004 05 15 | 704 | 0.2+ | 0.7+ | | |
| 2001 09 23 | 333 | 0.4+ | 0.4− | 2003 01 27 | 699 | 0.1− | 1.2+ | 2004 05 15 | 704 | 0.1+ | 1.4+ | | |
| 2001 09 23 | 333 | (1.6+ | 0.4−) | 2003 01 27 | 699 | 0.9+ | 0.1+ | 2004 05 21 | 691 | 0.3+ | 0.4+ | | |
| 2001 09 23 | 333 | 0.8+ | 0.1− | 2003 01 27 | 699 | 0.9+ | 0.3+ | 2004 05 21 | 691 | 0.2+ | 0.6+ | | |
| 2001 09 28 | 704 | 0.2− | 0.6− | 2003 01 27 | 699 | 0.2+ | 0.4+ | 2004 05 21 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 28 | 704 | 0.2− | 0.2+ | 2003 01 30 | 699 | 0.4+ | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.3− | | |
| 2001 09 28 | 704 | 0.5− | 0.9+ | 2003 01 30 | 699 | 1.3+ | 1.1+ | 2006 08 28 | 703 | 0.0 | 0.3− | | |
| 2001 09 28 | 704 | 0.2− | 0.2− | 2003 01 30 | 699 | 0.2+ | 1.1+ | 2006 08 28 | 703 | 1.1− | 0.4+ | | |
| 2001 09 28 | 704 | 0.2− | 0.9+ | 2003 01 30 | 699 | 1.0+ | 0.6+ | 2006 08 28 | 703 | (1.0+ | 1.9+) | | |
| 2001 10 11 | 644 | 0.3− | 0.4+ | 2003 02 01 | 704 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.4− | | |
| 2001 10 11 | 644 | 0.2− | 0.5+ | 2003 02 01 | 704 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.6− | 1.3+ | | |
| 2001 10 11 | 644 | 0.4− | 0.3+ | 2003 02 01 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 0.5+ | 1.2+ | | |
| 2001 10 12 | 699 | 1.5− | 0.3− | 2003 02 01 | 704 | 0.3+ | 1.2+ | 2006 09 14 | 703 | (0.9− | 1.7+) | | |
| 2001 10 12 | 699 | (0.5− | 1.8+) | 2003 02 01 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | (1.9+ | 1.6+) | | |
| 2001 10 12 | 699 | (1.8− | 1.1+) | 2003 02 02 | 644 | 0.3− | 0.4+ | 2006 09 19 | 699 | (2.2− | 0.2+) | | |
| 2001 10 12 | 699 | 0.1− | 1.2+ | 2003 02 02 | 644 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.6+ | | |
| 2001 10 13 | 704 | 0.1− | 0.1− | 2003 02 02 | 644 | 0.6− | 0.5+ | 2006 09 19 | 699 | (2.5− | 1.0−) | | |
| 2001 10 13 | 704 | 0.5+ | 0.4− | 2003 02 04 | 704 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.3+ | | |
| 2001 10 13 | 704 | (1.6+ | 0.9−) | 2003 02 04 | 704 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.3− | 0.3+ | 2003 02 04 | 704 | 0.1− | 0.5− | 2006 09 30 | G96 | 0.3+ | 0.3+ | | |
| 2001 10 15 | 291 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.1− | | |
| 2001 10 15 | 291 | 0.6− | 0.1+ | 2003 02 04 | 704 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2001 10 15 | 291 | (1.6− | 0.0 ) | 2003 02 07 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3+ | | |
| 2001 10 16 | 704 | 1.2+ | 0.3+ | 2003 02 07 | 704 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.1+ | | |
| 2001 10 16 | 704 | 0.7+ | 0.5+ | 2003 02 07 | 704 | 0.1− | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.0 | | |
| 2001 10 16 | 704 | 1.1+ | 0.2− | 2003 02 07 | 704 | 0.1− | 0.9+ | | | | | | |
| 2001 10 16 | 704 | 1.0+ | 0.1+ | 2003 02 07 | 704 | 0.8− | 0.2+ | | | | | | |

**(139995)∗ 2001 ST$_{36}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.61640 | | (2000.0) | | +0.93497540 | −0.34913025 |
| $n$ | 0.18389596 | $\omega$ | 0.70724 | | +0.32453945 | +0.77065947 |
| $a$ | 3.0625833 | $\Omega$ | 20.08009 | | +0.14316127 | +0.53309666 |
| $e$ | 0.0602783 | $i$ | 10.51948 | | | |
| $P$ | 5.36 | $H$ | 14.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.1+ | 0.6− | 2001 10 15 | 291 | 0.4+ | 0.4+ | 2004 03 23 | 704 | 0.6+ | 0.5+ |
| 1996 12 13 | 691 | 0.1+ | 0.4− | 2001 10 16 | 704 | 1.2+ | 0.2− | 2004 03 23 | 704 | 0.8+ | 0.1− |
| 1996 12 13 | 691 | 0.0 | 0.6− | 2001 10 16 | 704 | 0.4+ | 0.2− | 2004 03 23 | 704 | 1.1+ | 0.3− |
| 2001 08 27 | 699 | 1.2− | 0.1+ | 2001 10 16 | 704 | 0.8+ | 0.2+ | 2004 03 24 | 699 | 0.5+ | 0.7+ |
| 2001 08 27 | 699 | 0.5− | 0.8− | 2001 10 16 | 704 | 0.4+ | 0.5+ | 2004 03 24 | 699 | 0.4− | 0.6− |
| 2001 08 27 | 699 | (0.7+ | 2.0+) | 2001 10 16 | 704 | 0.2+ | 0.7+ | 2004 03 24 | 699 | 0.8+ | 0.2+ |
| 2001 08 27 | 699 | 0.4− | 1.4+ | 2001 10 19 | 644 | 0.1+ | 0.6+ | 2004 03 24 | 699 | 0.4+ | 0.0 |
| 2001 09 16 | 704 | (0.1− | 1.6−) | 2001 10 19 | 644 | 0.1− | 0.5+ | 2004 03 28 | 704 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | (0.8− | 1.6−) | 2001 10 19 | 644 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.9− | 0.4− | 2001 10 21 | 704 | 0.4− | 0.4+ | 2004 03 28 | 704 | 0.3− | 0.2+ |
| 2001 09 16 | 704 | 0.3− | 1.2− | 2001 10 21 | 704 | 0.2− | 0.3+ | 2004 03 28 | 704 | 0.7+ | 0.5+ |
| 2001 09 19 | 704 | 0.3− | 0.7− | 2001 10 21 | 704 | 0.0 | 0.2+ | 2004 03 29 | 704 | 0.8+ | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2001 10 21 | 704 | 0.6− | 0.8+ | 2004 03 29 | 704 | 0.3+ | 1.1+ |
| 2001 09 19 | 704 | 0.4− | 0.8− | 2001 10 21 | 704 | 0.3− | 0.6+ | 2004 03 29 | 704 | 0.5+ | 0.8+ |
| 2001 09 19 | 704 | 0.7− | 0.9− | 2001 10 25 | 704 | 0.7− | 0.8+ | 2004 03 29 | 704 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.9− | 2001 10 25 | 704 | 0.4+ | 0.7+ | 2004 03 29 | 704 | 0.0 | 0.2+ |
| 2001 09 20 | 691 | 0.3− | 0.3+ | 2001 10 25 | 704 | 0.1+ | 0.0 | 2004 03 30 | 704 | 1.0+ | 0.3+ |
| 2001 09 20 | 691 | 0.4− | 0.3+ | 2001 10 25 | 704 | 1.4+ | 1.4+ | 2004 03 30 | 704 | (1.6+ | 1.3+) |
| 2001 09 20 | 691 | 0.3− | 0.2+ | 2001 11 21 | 704 | 0.9− | 0.1− | 2004 03 30 | 704 | 0.8+ | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2001 11 21 | 704 | 1.3− | 0.8+ | 2004 03 30 | 704 | 0.5+ | 0.7+ |
| 2001 09 21 | 333 | 0.6− | 0.3+ | 2001 11 21 | 704 | 0.1+ | 0.6− | 2004 03 30 | 704 | 0.9+ | 0.7+ |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2001 11 21 | 704 | 1.3− | 0.3− | 2004 04 12 | 691 | 0.0 | 0.2+ |
| 2001 09 21 | 333 | 0.8− | 0.6+ | 2003 01 13 | 704 | 0.4− | 0.5− | 2004 04 12 | 691 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2003 01 13 | 704 | 0.6+ | 0.5+ | 2004 04 12 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 333 | 0.7− | 1.1+ | 2003 01 13 | 704 | 0.6+ | 0.4+ | 2004 04 14 | 621 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.7− | 0.6+ | 2004 02 23 | 704 | (1.1+ | 2.5+) | 2004 04 14 | 621 | 0.5− | 0.2− |
| 2001 09 21 | 704 | 0.8− | 0.5+ | 2004 02 23 | 704 | 1.5+ | 0.3+ | 2004 04 14 | 621 | 0.1− | 0.5− |
| 2001 09 23 | 333 | 1.2− | 0.1− | 2004 02 23 | 704 | 0.2− | 1.3+ | 2004 04 15 | 621 | 0.5+ | 0.4+ |
| 2001 09 23 | 333 | 0.7− | 0.2+ | 2004 02 23 | 704 | 0.4− | 0.1− | 2004 04 15 | 621 | 0.4− | 0.1+ |
| 2001 09 23 | 333 | 0.1− | 1.2− | 2004 03 12 | 644 | 0.6+ | 0.1+ | 2004 04 15 | 621 | 0.1+ | 0.2+ |
| 2001 09 26 | 704 | 0.1+ | 1.2+ | 2004 03 12 | 644 | 0.0 | 0.2+ | 2004 04 16 | 621 | 0.8− | 0.9+ |
| 2001 09 26 | 704 | 0.3+ | 0.8+ | 2004 03 12 | 644 | 0.4+ | 0.4+ | 2004 04 16 | 621 | 0.9− | 0.1+ |
| 2001 09 26 | 704 | 0.0 | 1.0+ | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2004 04 19 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.5− | 0.5+ | 2004 03 12 | 644 | 0.2− | 0.5+ | 2004 04 19 | 691 | 0.1+ | 0.4+ |
| 2001 09 28 | 704 | 0.6− | 0.0 | 2004 03 12 | 644 | 0.5+ | 0.4+ | 2004 04 19 | 691 | 0.0 | 0.5+ |
| 2001 09 28 | 704 | 0.0 | 0.2+ | 2004 03 15 | 703 | (0.6− | 2.0+) | 2006 08 29 | 703 | 0.6+ | 0.5+ |
| 2001 09 28 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 703 | (0.4+ | 2.0+) | 2006 08 29 | 703 | 0.7+ | 0.3− |
| 2001 09 28 | 704 | 0.2+ | 0.4+ | 2004 03 15 | 703 | (0.9+ | 2.7+) | 2006 08 29 | 703 | (2.4− | 0.1+) |
| 2001 10 11 | 644 | 0.4− | 0.6+ | 2004 03 15 | 703 | 0.8+ | 1.4+ | 2006 08 29 | 703 | 0.9− | 0.0 |
| 2001 10 11 | 644 | 0.3− | 0.9+ | 2004 03 20 | 704 | (0.3− | 1.6+) | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2001 10 11 | 644 | 0.1− | 0.4+ | 2004 03 20 | 704 | (0.2+ | 1.9+) | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 2001 10 12 | 699 | 0.5− | 0.1− | 2004 03 20 | 704 | (0.8+ | 1.9+) | 2006 09 14 | 703 | (0.3− | 1.6+) |
| 2001 10 12 | 699 | 0.6− | 0.8+ | 2004 03 20 | 704 | (0.6+ | 2.7+) | 2006 09 14 | 703 | 0.6+ | 0.4+ |
| 2001 10 12 | 699 | 0.2+ | 0.0 | 2004 03 20 | 704 | (0.4− | 2.1+) | 2006 09 20 | 703 | 0.3− | 0.3+ |
| 2001 10 12 | 699 | 0.1− | 0.2− | 2004 03 22 | 704 | 1.2+ | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.3− |
| 2001 10 13 | 704 | 0.7− | 0.5− | 2004 03 22 | 704 | 0.5+ | 1.5+ | 2006 09 20 | 703 | 1.0− | 0.1+ |
| 2001 10 13 | 704 | 0.0 | 1.2+ | 2004 03 22 | 704 | (1.8+ | 0.3+) | 2006 09 20 | 703 | 0.3− | 0.2+ |
| 2001 10 13 | 704 | 0.0 | 0.1+ | 2004 03 22 | 704 | 1.3+ | 1.2+ | 2006 09 21 | 699 | 1.5− | 1.1+ |
| 2001 10 13 | 704 | 0.4+ | 0.1+ | 2004 03 22 | 704 | 0.6− | 1.2+ | 2006 09 21 | 699 | (2.8− | 0.6+) |
| 2001 10 13 | 704 | 0.4− | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.1+ | 2006 09 21 | 699 | (2.2− | 1.1+) |
| 2001 10 14 | 699 | (1.1− | 1.6+) | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2006 09 21 | 699 | 0.8− | 0.8+ |
| 2001 10 14 | 699 | 0.3+ | 1.4+ | 2004 03 22 | 704 | 0.8+ | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2001 10 14 | 699 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.7+ | 0.7+ | 2006 11 27 | G96 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.2+ | 1.0+ | 2004 03 22 | 704 | 0.0 | 0.6− | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2001 10 15 | 291 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.8+ | 1.0+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2001 10 15 | 291 | 0.9+ | 0.3+ | 2004 03 23 | 704 | (2.3+ | 1.8+) | | | | |

**(139996)∗ 2001 SC$_{37}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.75292 | | (2000.0) | | +0.42402901 | −0.90501908 |
| $n$ | 0.23563212 | $\omega$ | 28.08956 | | +0.82001641 | +0.36784522 |
| $a$ | 2.5960500 | $\Omega$ | 36.84955 | | +0.38441186 | +0.21361263 |
| $e$ | 0.1342011 | $i$ | 3.22725 | | | |
| $P$ | 4.18 | $H$ | 16.5 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 0.3+ | 0.7+ | 2001 10 12 | 621 | 0.3+ | 0.3− | 2003 03 25 | 699 | 0.6+ | 0.0 |
| 1997 11 06 | 704 | (0.4− | 3.2+) | 2001 10 12 | 621 | 0.3− | 0.1− | 2003 03 25 | 699 | 0.3+ | 0.3− |
| 1997 11 06 | 704 | (3.2+ | 1.3+) | 2001 10 12 | 621 | 0.3+ | 0.8+ | 2003 03 25 | 699 | 0.5+ | 0.4+ |
| 1997 11 06 | 704 | 1.2+ | 0.0 | 2001 10 12 | 699 | 0.4− | 0.2+ | 2003 03 31 | 645 | 0.2+ | 0.1+ |
| 1997 11 06 | 704 | 0.4+ | 1.8+ | 2001 10 12 | 699 | 0.5+ | 0.3+ | 2003 03 31 | 645 | 0.2+ | 0.1+ |
| 1999 03 20 | 645 | 0.1+ | 0.3+ | 2001 10 12 | 699 | 0.5+ | 0.0 | 2005 08 25 | 644 | 0.2− | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.3+ | 2001 10 12 | 699 | 0.6− | 0.5+ | 2005 08 25 | 644 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.7− | 0.7+ | 2001 10 13 | 621 | 0.2− | 0.4− | 2005 08 25 | 644 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 1.3− | 1.5+ | 2001 10 13 | 621 | 0.1+ | 0.2+ | 2005 08 29 | 691 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 1.2− | 1.3+ | 2001 10 13 | 704 | 0.0 | 1.3− | 2005 08 29 | 691 | 0.0 | 0.3+ |
| 2001 09 18 | 333 | 0.7− | 0.0 | 2001 10 13 | 704 | 1.0+ | 0.4+ | 2005 08 29 | 691 | 0.1− | 0.4+ |
| 2001 09 18 | 333 | 0.3− | 0.7+ | 2001 10 13 | 704 | 0.7+ | 0.3− | 2005 09 12 | 691 | 0.2+ | 0.4+ |
| 2001 09 18 | 333 | 0.0 | 0.2+ | 2001 10 13 | 704 | 0.6− | 0.6+ | 2005 09 12 | 691 | 0.1− | 0.3+ |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2001 10 13 | 704 | 0.5− | 0.5+ | 2005 09 12 | 691 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.4+ | 0.5+ | 2001 10 14 | 699 | 1.0− | 1.0+ | 2005 09 24 | 644 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2001 10 14 | 699 | 0.5− | 0.4+ | 2005 09 24 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2001 10 14 | 699 | 0.1+ | 0.2− | 2005 09 24 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.6− | 0.2+ | 2001 10 14 | 699 | 0.6− | 0.7+ | 2005 10 01 | 704 | 0.9− | 0.6+ |
| 2001 09 21 | 691 | 0.2+ | 0.1− | 2001 10 16 | 704 | 1.2+ | 0.3− | 2005 10 01 | 704 | 1.3− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 333 | 0.6− | 0.5+ | 2001 10 16 | 704 | 0.2− | 1.4− | 2005 10 01 | 704 | 0.5+ | 1.0+ | | |
| 2001 09 21 | 333 | 0.3+ | 0.7− | 2001 10 16 | 691 | 0.2+ | 0.0 | 2005 10 01 | 704 | 1.1− | 0.3+ | | |
| 2001 09 21 | 691 | 0.2− | 0.1− | 2001 10 16 | 704 | 0.2+ | 0.6− | 2005 10 06 | G96 | 0.1+ | 0.0 | | |
| 2001 09 21 | 333 | 1.1− | 0.3− | 2001 10 16 | 691 | 0.6+ | 0.2− | 2005 10 06 | G96 | 0.2+ | 0.0 | | |
| 2001 09 21 | 691 | 0.1+ | 0.1− | 2001 10 16 | 691 | 0.3+ | 0.2− | 2005 10 06 | G96 | 0.2− | 0.0 | | |
| 2001 09 26 | 333 | 1.3− | 0.1− | 2001 10 16 | 704 | 0.2+ | 0.5− | 2005 10 06 | G96 | 0.0 | 0.1+ | | |
| 2001 09 26 | 333 | 0.7− | 1.4− | 2001 10 18 | 644 | 0.1− | 0.7+ | 2005 12 01 | G96 | 0.0 | 0.1− | | |
| 2001 09 26 | 704 | 0.1− | 0.1− | 2001 10 18 | 644 | 0.3− | 0.7+ | 2005 12 01 | G96 | 0.2+ | 0.2+ | | |
| 2001 09 26 | 333 | 0.3− | 0.7− | 2001 10 18 | 644 | 0.5− | 0.6+ | 2005 12 01 | G96 | 0.1+ | 0.1+ | | |
| 2001 09 26 | 704 | 0.4− | 0.9+ | 2001 10 20 | 704 | 0.1+ | 0.1+ | 2005 12 01 | G96 | 0.2+ | 0.0 | | |
| 2001 09 26 | 704 | 0.5− | 0.1+ | 2001 10 20 | 704 | 0.3− | 0.5+ | 2005 12 01 | G96 | 0.5+ | 0.2− | | |
| 2001 09 26 | 704 | 0.8− | 0.5+ | 2001 10 20 | 704 | 0.0 | 0.8+ | 2005 12 01 | G96 | 0.1+ | 0.2+ | | |
| 2001 09 26 | 704 | 0.7− | 0.3+ | 2001 10 20 | 704 | 0.1− | 0.8+ | 2005 12 01 | G96 | 0.0 | 0.1− | | |
| 2001 09 28 | 704 | 1.0− | 0.7+ | 2001 10 23 | 704 | 0.3+ | 0.3+ | 2005 12 01 | G96 | 0.2+ | 0.0 | | |
| 2001 09 28 | 704 | 0.3− | 0.1− | 2001 10 23 | 704 | 0.2+ | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2001 09 28 | 704 | 0.1+ | 0.2− | 2001 10 23 | 704 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.7− | 0.2− | | |
| 2001 09 28 | 704 | 0.4+ | 0.0 | 2001 10 23 | 704 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1− | | |
| 2001 10 11 | 644 | 0.1+ | 0.3+ | 2001 10 23 | 704 | 0.7+ | 0.1− | 2006 11 25 | G96 | 0.1− | 0.3− | | |
| 2001 10 11 | 644 | 0.6− | 0.6+ | 2001 10 24 | 704 | 0.4− | 0.3− | 2006 11 25 | G96 | 0.3− | 0.3− | | |
| 2001 10 11 | 644 | 0.2+ | 0.7+ | 2001 10 24 | 704 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.6− | 0.2− | | |
| 2001 10 11 | 644 | 0.5− | 0.6+ | 2001 10 24 | 704 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.7+ | 0.0 | | |
| 2001 10 11 | 644 | 0.3+ | 0.6+ | 2001 10 24 | 704 | 0.2− | 1.2− | 2006 11 27 | G96 | 0.3+ | 0.1− | | |
| 2001 10 11 | 644 | 0.6− | 0.4+ | 2001 10 24 | 704 | 1.2− | 0.4− | 2006 11 27 | G96 | 0.2+ | 0.7− | | |
| 2001 10 11 | 621 | 0.1+ | 0.1+ | 2003 03 13 | 291 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.4− | 0.6− | | |
| 2001 10 11 | 621 | 0.1− | 0.1− | 2003 03 13 | 291 | 0.4+ | 0.3+ | 2006 11 27 | G96 | 0.9− | 0.3− | | |
| 2001 10 12 | 621 | 0.2− | 0.0 | 2003 03 13 | 291 | 0.2+ | 0.5+ | | | | | | |
| 2001 10 12 | 621 | 0.8+ | 0.1+ | 2003 03 25 | 699 | 0.8− | 0.2− | | | | | | |

**(139997)∗ 2001 SO$_{38}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.58767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21226743 | $\omega$ | 249.56221 | | +0.30707682 | +0.95051550 | |
| $a$ | 2.7832174 | $\Omega$ | 38.42207 | | −0.84242640 | +0.29454278 | |
| $e$ | 0.0681347 | $i$ | 4.35225 | | −0.44274326 | +0.09881723 | |
| $P$ | 4.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.6− | 0.6+ | 2003 01 05 | 704 | 0.5− | 0.5+ | 2005 08 10 | E12 | 0.3− | 0.5+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2003 01 05 | 704 | 0.6+ | 0.2− | 2005 08 10 | E12 | 0.3− | 0.1− | | |
| 2001 09 16 | 704 | 0.5− | 1.1+ | 2003 01 05 | 704 | 1.2− | 0.2− | 2006 10 17 | G96 | 0.6+ | 0.3− | | |
| 2001 09 19 | 704 | 0.8+ | 0.8+ | 2004 03 16 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.2− | | |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.3− | | |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.6− | 0.7+ | 2004 03 20 | 699 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.7− | 0.0 | | |
| 2001 10 12 | 699 | 0.0 | 1.2+ | 2004 03 20 | 699 | 1.3− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.0 | | |
| 2001 10 12 | 699 | 0.9− | 1.5+ | 2004 03 20 | 699 | 0.1− | 0.2+ | 2006 10 17 | 691 | 1.0− | 0.2− | | |
| 2001 10 12 | 699 | 1.4− | 0.5+ | 2004 03 20 | 699 | (0.3+ | 2.3+) | 2006 10 21 | 691 | 0.2− | 0.1− | | |
| 2001 10 12 | 699 | (2.0+ | 1.1−) | 2004 03 22 | 704 | 0.2+ | 0.7− | 2006 10 21 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.3− | 0.0 | 2004 03 22 | 704 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.1+ | | |
| 2001 10 13 | 704 | 0.9− | 1.2+ | 2004 03 22 | 704 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.8+ | 0.1+ | | |
| 2001 10 13 | 704 | 0.5− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.6+ | 2006 10 31 | G96 | 0.5+ | 0.2− | | |
| 2001 10 16 | 704 | 0.3+ | 0.5+ | 2004 03 28 | 704 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.0 | | |
| 2001 10 16 | 704 | 1.3+ | 0.6− | 2004 03 28 | 704 | 0.5− | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2001 10 16 | 704 | (0.2+ | 1.9+) | 2004 03 28 | 704 | 0.3+ | 0.6+ | 2006 11 09 | 691 | 0.1+ | 0.5+ | | |
| 2001 10 16 | 704 | 1.3− | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.5+ | | |
| 2001 10 18 | 644 | 0.0 | 0.3+ | 2004 04 11 | 644 | 0.3+ | 0.8+ | 2006 11 09 | 691 | 0.5+ | 0.5+ | | |
| 2001 10 18 | 644 | 0.1− | 0.3+ | 2004 04 11 | 644 | 0.5+ | 0.7+ | 2006 11 18 | A13 | 0.0 | 0.3− | | |
| 2001 10 18 | 644 | 0.1− | 0.5+ | 2004 04 11 | 644 | 0.3+ | 0.6+ | 2006 11 18 | A13 | 0.1− | 0.0 | | |
| 2001 10 23 | 704 | 0.8− | 0.5+ | 2004 04 13 | 691 | 0.1+ | 0.7+ | 2006 11 18 | A13 | 0.3− | 0.0 | | |
| 2001 10 23 | 704 | 0.5− | 0.3+ | 2004 04 13 | 691 | 0.4+ | 0.7+ | 2006 12 01 | G96 | 0.8+ | 0.5− | | |
| 2001 10 23 | 704 | 0.0 | 0.7+ | 2004 04 13 | 691 | 0.3+ | 0.5+ | 2006 12 01 | G96 | 0.2+ | 0.4− | | |
| 2001 10 23 | 704 | (2.9− | 0.4+) | 2005 07 03 | 644 | 0.1+ | 0.9+ | 2006 12 01 | G96 | 0.9+ | 0.5− | | |
| 2003 01 05 | 704 | 0.5+ | 0.0 | 2005 07 03 | 644 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.2− | | |
| 2003 01 05 | 704 | 0.6+ | 0.1− | 2005 07 03 | 644 | 0.2− | 0.5+ | | | | | | |

**(139998)∗ 2001 SK$_{39}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.36101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18090681 | $\omega$ | 8.59480 | | +0.78838259 | −0.60443041 | |
| $a$ | 3.0962268 | $\Omega$ | 29.55780 | | +0.54972159 | +0.60860301 | |
| $e$ | 0.1901766 | $i$ | 13.42471 | | +0.27615044 | +0.51406834 | |
| $P$ | 5.45 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.7+ | 0.4− | 2001 10 22 | 704 | 0.4− | 0.2+ | 2003 01 29 | 644 | 0.9+ | 1.4+ | | |
| 2001 08 25 | 704 | 1.0+ | 0.5+ | 2001 10 22 | 704 | 0.1− | 0.6+ | 2003 01 29 | 644 | 0.7+ | 1.3+ | | |
| 2001 08 25 | 704 | 0.3+ | 0.7+ | 2001 10 22 | 704 | 0.3− | 0.6+ | 2003 01 29 | 644 | 0.7+ | 1.0+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.0 | 2001 10 23 | 704 | (2.1− | 0.0 ) | 2003 02 01 | 645 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 1.2+ | 0.2− | 2001 10 23 | 704 | (1.8− | 0.2+) | 2003 02 01 | 645 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 1.4− | 0.5+ | 2001 10 23 | 704 | (1.9− | 0.3+) | 2003 02 01 | 644 | 0.1+ | 0.7+ | | |
| 2001 09 16 | 704 | 0.2− | 0.3− | 2001 10 23 | 704 | (2.1− | 0.3−) | 2003 02 01 | 644 | 0.5+ | 0.2+ | | |
| 2001 09 17 | 699 | 0.4− | 0.2+ | 2001 10 24 | 691 | 0.0 | 0.1+ | 2003 02 01 | 644 | 0.7+ | 0.2+ | | |
| 2001 09 17 | 699 | 0.1+ | 0.1+ | 2001 10 24 | 691 | (1.4+ | 2.2−) | 2003 02 01 | 645 | 0.0 | 0.1− | | |
| 2001 09 17 | 699 | 0.1− | 0.3− | 2001 10 24 | 704 | 0.6− | 0.9+ | 2003 02 01 | 645 | 0.0 | 0.1− | | |
| 2001 09 17 | 699 | 0.1− | 0.3+ | 2001 10 24 | 704 | 0.4− | 0.5+ | 2003 03 03 | 644 | 0.2+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.4+ | 1.2+ | 2001 10 24 | 704 | 0.7− | 0.8+ | 2003 03 03 | 644 | 0.6+ | 0.6+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.8− | 2001 10 24 | 704 | 0.5− | 0.3+ | 2003 03 03 | 644 | 0.1− | 0.4+ | | |
| 2001 09 19 | 704 | 0.3− | 1.1+ | 2001 10 24 | 691 | 0.1+ | 0.1− | 2003 03 08 | 644 | 0.1+ | 0.6+ | | |
| 2001 09 19 | 704 | 0.3− | 1.3+ | 2001 10 24 | 704 | 0.3− | 0.1+ | 2003 03 08 | 644 | 0.1− | 0.3+ | | |
| 2001 09 19 | 704 | 0.9− | 1.2+ | 2001 10 24 | 691 | 0.1+ | 0.0 | 2003 03 08 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 21 | 704 | 1.3− | 0.1+ | 2001 10 24 | 691 | 0.3+ | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.7+ | 0.3+ | 2001 11 09 | 704 | 0.9+ | 0.3+ | 2004 03 16 | 691 | 0.3+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2001 11 09 | 704 | 0.1− | 0.5+ | 2004 03 16 | 691 | 0.5+ | 0.2+ | | |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2001 11 09 | 704 | 0.2+ | 1.0+ | 2004 03 19 | 704 | 1.0+ | 0.5+ | | |
| 2001 09 26 | 704 | 0.4− | 0.3− | 2001 11 09 | 704 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.2− | | |
| 2001 09 26 | 704 | 0.5− | 0.5− | 2001 11 09 | 704 | 0.8+ | 0.5− | 2004 03 19 | 704 | 0.4+ | 0.7+ | | |
| 2001 09 26 | 704 | 0.7− | 0.4− | 2001 11 17 | 704 | 0.5+ | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.4+ | | |
| 2001 09 26 | 704 | 0.6− | 0.1− | 2001 11 17 | 704 | 0.4− | 0.4+ | 2004 03 28 | 704 | 0.1− | 0.2+ | | |
| 2001 09 27 | 644 | 0.4− | 0.7− | 2001 11 17 | 704 | 0.4− | 0.8+ | 2004 03 28 | 704 | 0.3+ | 0.4+ | | |
| 2001 09 27 | 644 | 0.2− | 0.8− | 2001 11 19 | 704 | 0.2+ | 0.3− | 2004 03 28 | 704 | (1.7− | 0.6−) | | |
| 2001 09 27 | 644 | 0.3− | 0.7− | 2001 11 19 | 704 | 0.1+ | 0.4+ | 2004 04 13 | 691 | 0.3+ | 0.3+ | | |
| 2001 10 12 | 699 | 0.3− | 0.2+ | 2001 11 19 | 704 | 0.0 | 0.4+ | 2004 04 13 | 691 | 0.1− | 1.1+ | | |
| 2001 10 12 | 699 | 0.6− | 0.3+ | 2001 11 19 | 704 | 0.3+ | 0.5+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | | |
| 2001 10 12 | 699 | 0.5− | 0.3+ | 2001 11 20 | 608 | 0.0 | 0.3− | 2004 04 20 | 691 | 0.4+ | 0.6+ | | |
| 2001 10 12 | 699 | 0.6− | 0.8+ | 2001 11 20 | 608 | 0.2− | 0.7− | 2004 04 20 | 691 | 0.3+ | 0.6+ | | |
| 2001 10 13 | 704 | 0.0 | 0.0 | 2001 11 20 | 608 | 0.2− | 0.1− | 2004 04 20 | 691 | 0.4+ | 0.6+ | | |
| 2001 10 13 | 704 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.1− | 0.2− | 2006 07 30 | E12 | 0.1− | 0.6+ | | |
| 2001 10 13 | 704 | 0.2− | 0.3+ | 2001 11 21 | 704 | 0.5− | 0.1+ | 2006 07 30 | E12 | 0.2− | 0.2+ | | |
| 2001 10 13 | 704 | 0.2− | 0.1+ | 2001 11 21 | 704 | 0.6+ | 1.0− | 2006 07 30 | E12 | 0.4− | 0.2+ | | |
| 2001 10 13 | 704 | 0.3− | 0.1+ | 2001 11 21 | 704 | 0.8+ | 1.0− | 2006 07 30 | E12 | 0.1+ | 0.0 | | |
| 2001 10 14 | 699 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.7− | 2006 08 25 | E12 | 0.2− | 0.6+ | | |
| 2001 10 14 | 699 | 0.1− | 0.1− | 2001 12 11 | 704 | 0.8− | 0.7+ | 2006 08 25 | E12 | 0.3− | 0.9+ | | |
| 2001 10 14 | 699 | 0.5− | 0.1− | 2001 12 11 | 704 | 0.6+ | 0.5+ | 2006 08 25 | E12 | 0.2+ | 0.9+ | | |
| 2001 10 14 | 699 | 0.8− | 0.4+ | 2001 12 11 | 704 | 0.2+ | 0.1+ | 2006 08 25 | E12 | 0.3− | 0.1− | | |
| 2001 10 16 | 704 | 0.0 | 0.3+ | 2001 12 11 | 704 | (2.2+ | 1.4−) | 2006 09 26 | 703 | 0.7+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.0 | 0.1− | 2001 12 11 | 704 | 1.4+ | 1.2+ | 2006 09 26 | 703 | 0.6+ | 0.3+ | | |
| 2001 10 16 | 704 | 0.2− | 0.3+ | 2001 12 19 | 699 | 0.9− | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.7+ | | |
| 2001 10 16 | 704 | 0.1+ | 0.4+ | 2001 12 19 | 699 | 0.8− | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.1+ | | |
| 2001 10 18 | 644 | 0.1− | 0.2− | 2001 12 19 | 699 | 0.7− | 0.2− | 2006 10 11 | E12 | 0.3− | 0.5+ | | |
| 2001 10 18 | 644 | 0.0 | 0.1− | 2001 12 19 | 699 | 1.3− | 0.2+ | 2006 10 11 | E12 | 0.2− | 0.1− | | |
| 2001 10 18 | 644 | 0.1− | 0.2− | 2001 12 20 | 704 | 1.1− | 0.9− | 2006 10 11 | E12 | 0.0 | 0.2+ | | |
| 2001 10 20 | 704 | 0.0 | 0.7+ | 2001 12 20 | 704 | 1.3+ | 0.9+ | 2006 10 11 | E12 | 0.3− | 0.1+ | | |
| 2001 10 20 | 704 | 0.0 | 0.6+ | 2001 12 20 | 704 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.0 | | |
| 2001 10 20 | 704 | 0.2− | 0.5+ | 2001 12 20 | 704 | 0.4− | 0.6− | 2006 10 28 | 703 | 0.9+ | 0.6− | | |
| 2001 10 20 | 704 | 0.4+ | 0.8+ | 2003 01 24 | 644 | 0.4+ | 0.4+ | 2006 10 28 | 703 | 1.6− | 1.4− | | |
| 2001 10 20 | 704 | 0.0 | 0.6+ | 2003 01 24 | 644 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.3− | 0.7+ | | |
| 2001 10 22 | 704 | 0.2− | 0.1+ | 2003 01 24 | 644 | 0.7+ | 0.4+ | | | | | | |

**(139999)∗ 2001 SY$_{40}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.02802 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19738186 | $\omega$ | 301.99118 | | +0.91946554 | −0.38969830 | |
| $a$ | 2.9214462 | $\Omega$ | 80.98994 | | +0.37618979 | +0.83343392 | |
| $e$ | 0.1079912 | $i$ | 3.02600 | | +0.11429942 | +0.39182028 | |
| $P$ | 4.99 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 566 | 1.0− | 0.2− | 2001 10 20 | 704 | 0.4− | 0.4+ | 2004 05 24 | 691 | 0.3+ | 0.3+ |
| 1996 10 11 | 566 | 0.4− | 0.3− | 2001 10 20 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 1996 10 11 | 566 | 1.4− | 0.1+ | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.3− | 0.8+ | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.6+ | 2001 10 20 | 704 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.2− | 1.1− |
| 2001 09 16 | 704 | 0.3− | 0.7+ | 2001 10 22 | 704 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.3+ |
| 2001 09 16 | 704 | 0.1− | 0.7+ | 2001 10 22 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2001 10 22 | 704 | 0.6− | 0.7+ | 2006 09 18 | 699 | (0.8+ | 1.9−) |
| 2001 09 19 | 704 | 0.8+ | 0.6+ | 2001 10 22 | 704 | 0.8− | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.4+ |
| 2001 09 19 | 704 | 1.2+ | 0.3− | 2001 10 23 | 704 | 0.2+ | 0.1− | 2006 09 26 | 704 | (1.6+ | 0.3+) |
| 2001 09 19 | 704 | (1.7+ | 0.7−) | 2001 10 23 | 704 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.2+ | 1.0+ |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2001 10 23 | 704 | 0.3+ | 0.7+ | 2006 09 26 | 704 | 0.4+ | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2001 10 23 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2001 10 23 | 704 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.6+ | 0.3− | 2001 10 24 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.5− | 2001 10 24 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 2001 09 25 | 333 | 0.2+ | 0.7− | 2001 10 24 | 704 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.5− | 0.7− |
| 2001 09 25 | 333 | 0.7+ | 0.2− | 2001 10 24 | 704 | 0.6+ | 0.7+ | 2006 09 30 | 703 | 0.9− | 0.7− |
| 2001 09 25 | 333 | 0.0 | 1.3− | 2001 10 24 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 0.9− | 0.8− |
| 2001 09 26 | 333 | 0.0 | 0.2− | 2001 10 25 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2001 09 26 | 333 | 0.0 | 0.5− | 2001 10 25 | 691 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.5+ | 0.2+ | 2001 10 25 | 691 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 09 26 | 333 | 0.6+ | 0.7− | 2001 11 18 | 704 | 0.4− | 0.5− | 2006 10 15 | 703 | 0.7− | 0.4− |
| 2001 09 26 | 704 | 0.5− | 0.1− | 2001 11 18 | 704 | 0.6+ | 0.4+ | 2006 10 15 | 703 | 0.8− | 0.1− |
| 2001 09 26 | 704 | 1.0+ | 0.6+ | 2001 11 18 | 704 | 0.5− | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.6+ |
| 2001 09 26 | 704 | 0.5+ | 0.5+ | 2001 11 20 | 704 | 0.4+ | 0.7+ | 2006 10 15 | 703 | 0.7− | 0.6− |
| 2001 09 26 | 704 | 0.3+ | 0.4+ | 2001 11 20 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.5− |
| 2001 10 12 | 699 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 2001 10 12 | 699 | 0.2+ | 0.1+ | 2001 11 20 | 704 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2001 10 12 | 699 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.6+ | 0.5− |
| 2001 10 12 | 699 | 0.0 | 0.5− | 2001 12 14 | 704 | 0.5+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.4− | 1.0+ | 2001 12 14 | 704 | 0.3− | 1.0− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2001 10 13 | 704 | 0.6− | 0.9+ | 2001 12 14 | 704 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 10 13 | 704 | 0.8− | 1.0+ | 2001 12 14 | 704 | 0.5+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 10 13 | 704 | 0.7− | 0.7+ | 2003 01 27 | 699 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.2− |
| 2001 10 13 | 704 | 0.5− | 1.1+ | 2003 01 27 | 699 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 10 14 | 699 | 0.3+ | 0.6− | 2003 01 27 | 699 | 0.7− | 1.2+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2001 10 14 | 699 | 0.7+ | 0.4+ | 2003 01 27 | 699 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 699 | 0.1+ | 0.4+ | 2003 01 30 | 644 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2001 10 14 | 699 | 0.9+ | 0.6+ | 2003 01 30 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 1.1− |
| 2001 10 15 | 704 | 0.4+ | 0.5− | 2003 01 30 | 644 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.5− |
| 2001 10 15 | 704 | 0.8+ | 0.7− | 2003 02 01 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 703 | 0.4+ | 1.0+ |
| 2001 10 15 | 704 | 0.7+ | 0.6− | 2003 02 01 | 704 | 0.7− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.1+ | 0.7− | 2003 02 01 | 704 | 1.0− | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | 0.7+ | 1.2− | 2003 02 04 | 704 | 0.0 | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 10 16 | 704 | 1.2− | 0.4− | 2003 02 04 | 704 | 1.1+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2001 10 16 | 704 | (1.3− | 2.3−) | 2003 02 04 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.9− | 2.0+ |
| 2001 10 16 | 704 | 0.3− | 1.0− | 2003 02 04 | 704 | 1.1+ | 0.2+ | 2006 11 11 | 703 | (1.9+ | 3.1+) |
| 2001 10 16 | 704 | (1.7− | 0.4−) | 2004 05 09 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.1− |
| 2001 10 16 | 704 | (1.5− | 0.9−) | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.3+ |
| 2001 10 18 | 644 | 0.9− | 0.7+ | 2004 05 09 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5− | 1.0− |
| 2001 10 18 | 644 | 0.7− | 0.7+ | 2004 05 24 | 691 | 0.4+ | 0.4+ | 2006 11 17 | 703 | 0.0 | 1.1− |
| 2001 10 18 | 644 | 1.2− | 0.8+ | 2004 05 24 | 691 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.1− | 0.7− |

**(140000)∗ 2001 SN$_{41}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.34214 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19787718 | $\omega$ | 178.59961 | | +0.60379423 | −0.79679774 | |
| $a$ | 2.9165689 | $\Omega$ | 234.25768 | | +0.73108173 | +0.56520287 | |
| $e$ | 0.0396805 | $i$ | 1.64954 | | +0.31772949 | +0.21367985 | |
| $P$ | 4.98 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.5+ | 0.9− | 2002 12 31 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.8− | 0.1− |
| 2001 09 16 | 704 | 0.4+ | 0.8− | 2002 12 31 | 704 | 0.3+ | 0.7+ | 2006 09 19 | 699 | 1.0+ | 0.8+ |
| 2001 09 16 | 704 | 0.1− | 1.4− | 2002 12 31 | 704 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.6− | 0.2+ |
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2003 01 04 | 704 | 0.8− | 0.9+ | 2006 09 21 | A50 | 0.5+ | 0.1− |
| 2001 09 19 | 704 | 0.5− | 0.1− | 2003 01 04 | 704 | 0.3− | 0.2+ | 2006 09 21 | A50 | 0.6+ | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2003 01 04 | 704 | 0.0 | 0.7+ | 2006 09 27 | 704 | (0.1+ | 1.6+) |
| 2001 09 19 | 704 | (0.7− | 1.6+) | 2003 01 04 | 704 | 0.4− | 0.9− | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 2001 09 20 | 704 | 0.6+ | 1.4+ | 2003 01 08 | 704 | (2.2+ | 0.4+) | 2006 09 27 | 704 | 0.9− | 0.6− |
| 2001 09 20 | 704 | 0.0 | 1.2+ | 2003 01 08 | 704 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.1− | 0.7+ |
| 2001 09 20 | 704 | 0.3+ | 1.3+ | 2003 01 08 | 704 | 0.5+ | 0.4− | 2006 09 29 | 704 | 0.4+ | 1.1+ |
| 2001 09 20 | 704 | 0.6+ | 1.2+ | 2003 01 08 | 704 | 0.9+ | 1.0+ | 2006 09 29 | 704 | 0.3+ | 1.3+ |
| 2001 09 24 | 704 | (0.8− | 2.0+) | 2004 03 27 | 704 | 0.4+ | 1.0+ | 2006 09 29 | 704 | 1.2+ | 0.3− |
| 2001 09 24 | 704 | 0.7+ | 0.2+ | 2004 03 27 | 704 | 0.3+ | 1.0+ | 2006 09 29 | 704 | 0.2+ | 0.9+ |
| 2001 09 24 | 704 | 1.0− | 1.0+ | 2004 03 27 | 704 | 0.5+ | 1.3+ | 2006 10 01 | 704 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | 0.5+ | 0.5+ | 2004 03 27 | 704 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.3+ | 1.0+ |
| 2001 09 24 | 704 | 0.1− | 1.2+ | 2004 03 29 | 691 | 0.4+ | 0.5+ | 2006 10 01 | 704 | 0.5+ | 1.1+ |
| 2001 10 11 | 644 | 0.9− | 0.1− | 2004 03 29 | 691 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.4+ | 1.1+ |
| 2001 10 11 | 644 | 0.7− | 0.1− | 2004 03 29 | 691 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2001 10 11 | 644 | 1.1− | 0.1+ | 2004 04 21 | 704 | 0.3− | 0.9+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2001 10 13 | 704 | (1.5+ | 0.8+) | 2004 04 21 | 704 | 0.1+ | 0.9+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2001 10 13 | 704 | 0.2− | 0.5− | 2004 04 21 | 704 | (1.7− | 1.2+) | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 10 13 | 704 | 1.1+ | 0.6+ | 2004 04 21 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 10 13 | 704 | 0.9+ | 0.1+ | 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 10 16 | 704 | 0.9+ | 0.1+ | 2004 04 23 | 691 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2001 10 16 | 704 | 0.0 | 0.1+ | 2004 04 23 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 10 16 | 704 | (0.6− | 2.0+) | 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 10 16 | 704 | 0.9+ | 0.7− | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 1.3− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.6− | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.9− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 0.9− | 0.8+ | 2006 09 15 | 704 | 0.6− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.2− | 0.9+ | 2006 09 15 | 704 | 1.2− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.7− | 0.1− | 2006 09 15 | 704 | (2.3− | 1.4−) | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.7− | 0.5+ | 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.6− | 0.8− | 2006 09 17 | 691 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.7− | 0.9+ | 2006 09 17 | 691 | 0.5− | 0.0 | | | | |
| 2002 12 31 | 704 | (1.7+ | 1.3+) | 2006 09 19 | 699 | 1.0+ | 0.2− | | | | |

**(140001)∗ 2001 SO$_{41}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.79366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19001810 | $\omega$ | 137.32939 | | +0.91350285 | +0.40276723 | |
| $a$ | 2.9964434 | $\Omega$ | 199.15177 | | −0.40421553 | +0.88259008 | |
| $e$ | 0.1169830 | $i$ | 10.07078 | | −0.04606897 | +0.24251456 | |
| $P$ | 5.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 13 | 691 | 0.0 | 2.0+ | 2001 10 11 | 644 | 0.3+ | 1.5+ | 2005 05 14 | 691 | 0.1+ | 0.5+ |
| 1991 11 13 | 691 | (0.0 | 2.4+) | 2001 10 11 | 644 | 0.3+ | 1.3+ | 2005 05 14 | 691 | 0.1+ | 0.3+ |
| 1991 11 13 | 691 | 0.5− | 1.5+ | 2001 10 13 | 704 | (2.6+ | 0.6+) | 2005 05 14 | 644 | 0.1+ | 0.2+ |
| 2001 08 27 | 699 | (4.0− | 0.6+) | 2001 10 13 | 704 | 0.3+ | 0.9− | 2005 05 14 | 644 | 0.4+ | 0.2+ |
| 2001 08 27 | 644 | 0.8− | 0.5+ | 2001 10 13 | 704 | 1.2+ | 0.5+ | 2005 05 14 | 644 | 0.4+ | 0.2+ |
| 2001 08 27 | 699 | (3.7− | 1.6−) | 2001 10 13 | 704 | 0.1+ | 1.5+ | 2005 05 17 | G96 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.7− | 0.3+ | 2001 10 16 | 704 | 0.4− | 0.5− | 2005 05 17 | G96 | 0.2− | 0.2+ |
| 2001 08 27 | 644 | 0.5− | 0.1+ | 2001 10 16 | 704 | 0.9− | 0.4− | 2005 05 17 | G96 | 0.2− | 0.3+ |
| 2001 08 27 | 699 | (3.3− | 0.5−) | 2001 10 16 | 704 | 0.0 | 1.3− | 2005 05 17 | G96 | 0.4− | 0.2+ |
| 2001 08 27 | 699 | 1.9− | 0.0 | 2001 10 16 | 704 | 0.4− | 0.4− | 2005 05 20 | G96 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 0.0 | 0.7− | 2001 10 18 | 644 | 0.4+ | 0.2+ | 2005 05 20 | G96 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.5− | 0.8− | 2001 10 18 | 644 | 0.1+ | 0.1+ | 2005 05 20 | G96 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | 0.3− | 0.3− | 2001 10 18 | 644 | 0.4+ | 0.5+ | 2005 05 20 | G96 | 0.2− | 0.4+ |
| 2001 09 18 | 699 | 0.3− | 0.2− | 2001 10 21 | 704 | 0.5− | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.3− |
| 2001 09 18 | 699 | 0.4+ | 0.4− | 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.1+ |
| 2001 09 18 | 699 | 0.3− | 0.6− | 2001 10 21 | 704 | 0.4− | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.9− |
| 2001 09 18 | 699 | 0.8− | 0.7+ | 2001 10 21 | 704 | 0.8− | 0.9+ | 2006 08 29 | 703 | 1.1− | 1.2− |
| 2001 09 19 | 704 | 1.7+ | 1.4+ | 2001 10 21 | 704 | 1.0− | 0.7+ | 2006 08 30 | 699 | 0.6− | 0.9+ |
| 2001 09 19 | 704 | 0.4+ | 0.8+ | 2001 11 18 | 645 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.5− | 0.2− |
| 2001 09 19 | 704 | 0.1− | 1.5+ | 2001 11 18 | 645 | 0.1+ | 0.2− | 2006 08 30 | 699 | 1.1+ | 0.7+ |
| 2001 09 19 | 704 | 0.2− | 1.2+ | 2001 11 20 | 291 | 0.6+ | 0.2+ | 2006 08 30 | 699 | 0.7+ | 0.3− |
| 2001 09 20 | 704 | 0.4− | 0.1− | 2001 11 20 | 291 | 0.5+ | 0.3+ | 2006 09 11 | 703 | 0.8− | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2001 11 20 | 291 | 0.6+ | 0.3+ | 2006 09 11 | 703 | 0.5− | 0.6+ |
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2004 03 13 | 644 | 0.0 | 0.3+ | 2006 09 11 | 703 | 0.9− | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 0.0 | 2004 03 13 | 644 | 0.2+ | 0.5+ | 2006 09 11 | 703 | 0.6− | 1.0+ |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2004 03 13 | 644 | 0.1+ | 1.0+ | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 2001 09 24 | 704 | 0.4− | 0.1− | 2004 03 16 | 691 | 0.1+ | 0.7+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2001 09 24 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 691 | 0.1− | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.1+ |
| 2001 09 24 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 691 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.8− |
| 2001 09 24 | 704 | 0.1− | 0.5+ | 2004 03 27 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 1.0− | 0.6+ |
| 2001 09 24 | 704 | 0.1− | 0.1+ | 2004 03 27 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.9+ |
| 2001 09 25 | 699 | 1.4− | 1.5+ | 2004 03 27 | 691 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.8− |
| 2001 09 25 | 699 | 0.7− | 1.0+ | 2005 05 10 | 691 | 0.2+ | 0.6+ | 2006 09 18 | 704 | 1.4+ | 0.8+ |
| 2001 09 25 | 699 | (0.7− | 2.1+) | 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.8+ | 0.6+ |
| 2001 09 25 | 699 | 0.1− | 0.2− | 2005 05 10 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.8+ | 0.1− |
| 2001 10 11 | 644 | 0.2+ | 1.4+ | 2005 05 14 | 691 | 0.1− | 0.7+ | | | | |

**(140002)∗ 2001 SF$_{42}$ = 2000 KT$_{47}$ = 2005 GZ$_{33}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75107)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.52285 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18093788 | $\omega$ | 110.66117 | | +0.16462865 | | +0.98563946 |
| $a$ | 3.0958724 | $\Omega$ | 168.61827 | | −0.96095160 | | +0.16886341 |
| $e$ | 0.1521846 | $i$ | 10.97779 | | −0.22241723 | | −0.00002283 |
| $P$ | 5.45 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 1.3+ | 0.5+ | 2005 04 01 | 699 | 0.6+ | 0.1+ | 2005 05 16 | 644 | 0.2− | 0.0 |
| 2000 05 28 | 704 | 0.3+ | 0.1+ | 2005 04 01 | 699 | 0.7− | 0.2− | 2005 05 16 | 644 | 0.1− | 0.2+ |
| 2000 05 28 | 704 | 0.0 | 0.2− | 2005 04 01 | 699 | 0.5− | 0.8− | 2005 05 16 | 644 | 0.0 | 0.1+ |
| 2000 05 28 | 704 | (2.3− | 2.0+) | 2005 04 04 | 400 | 0.3− | 0.1+ | 2006 05 27 | E12 | (1.5+ | 0.3−) |
| 2000 06 04 | 704 | 0.1+ | 0.2+ | 2005 04 04 | 400 | 0.6− | 0.1− | 2006 05 27 | E12 | (0.8− | 2.9−) |
| 2000 06 04 | 704 | 0.6− | 0.2+ | 2005 04 05 | 400 | (0.5+ | 1.7+) | 2006 05 27 | E12 | 0.5− | 0.4− |
| 2000 06 04 | 704 | 0.1− | 0.5− | 2005 04 05 | 400 | 0.1− | 0.6− | 2006 05 27 | E12 | 0.0 | 0.2− |
| 2000 06 04 | 704 | 0.1− | 0.0 | 2005 04 09 | 704 | 0.4+ | 0.3+ | 2006 07 21 | 703 | 0.0 | 0.6− |
| 2001 08 24 | 704 | (22.3− | 3.2+) | 2005 04 09 | 704 | 0.2+ | 0.8+ | 2006 07 21 | 703 | 0.3+ | 0.9− |
| 2001 08 24 | 704 | (22.4− | 3.2+) | 2005 04 09 | 704 | 0.6− | 0.9+ | 2006 07 21 | 703 | 0.0 | 0.0 |
| 2001 08 24 | 704 | (22.6− | 3.8+) | 2005 04 09 | 704 | 0.0 | 0.3+ | 2006 07 21 | 703 | 0.7− | 0.2+ |
| 2001 09 11 | 699 | 0.3− | 0.0 | 2005 04 13 | 704 | 0.3− | 0.7+ | 2006 08 21 | 644 | 0.1+ | 0.2− |
| 2001 09 11 | 699 | 0.0 | 1.0+ | 2005 04 13 | 704 | 0.6+ | 0.7− | 2006 08 21 | 644 | 0.0 | 0.0 |
| 2001 09 11 | 699 | (1.9+ | 0.4+) | 2005 04 13 | 704 | 0.6+ | 1.0− | 2006 08 21 | 644 | 0.1− | 0.0 |
| 2001 09 11 | 699 | 1.2+ | 0.1− | 2005 04 13 | 704 | 0.3+ | 0.4− | 2006 08 29 | 703 | 0.3+ | 0.4+ |
| 2001 09 13 | 644 | 0.3− | 0.1+ | 2005 04 13 | 704 | 0.9+ | 0.1+ | 2006 08 29 | 703 | 0.9+ | 0.6+ |
| 2001 09 13 | 644 | 0.4− | 0.4+ | 2005 04 15 | 699 | 0.7+ | 0.5+ | 2006 08 29 | 703 | 0.3− | 1.2+ |
| 2001 09 13 | 644 | 0.0 | 0.8+ | 2005 04 15 | 699 | 1.0+ | 0.6+ | 2006 08 29 | 703 | 0.3− | 1.4+ |
| 2001 09 16 | 704 | 0.2− | 1.3+ | 2005 04 15 | 699 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 0.6− | 2005 04 15 | 699 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.8− | 1.1− |
| 2001 09 16 | 704 | 0.1− | 0.6+ | 2005 05 04 | 703 | 0.8− | 0.5− | 2006 08 30 | 704 | 0.6+ | 1.2− |
| 2001 09 16 | 704 | 0.1+ | 0.8− | 2005 05 04 | 703 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.6− |
| 2001 09 19 | 704 | 1.0− | 1.3+ | 2005 05 04 | 703 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 0.8+ | 1.4− |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2005 05 04 | 703 | 0.9− | 0.8+ | 2006 09 12 | 704 | 0.7+ | 0.5− |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2005 05 04 | 703 | 1.0− | 0.6+ | 2006 09 12 | 704 | 0.5− | 0.9+ |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2005 05 04 | 703 | 1.3− | 0.4− | 2006 09 12 | 704 | 0.6− | 0.9+ |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2005 05 04 | 703 | 0.4− | 0.5− | 2006 09 12 | 704 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.7− | 2005 05 04 | 703 | 1.1− | 1.0+ | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2001 09 19 | 704 | (1.8− | 1.7+) | 2005 05 06 | 704 | 0.0 | 0.8+ | 2006 09 14 | 644 | 0.2+ | 0.4− |
| 2001 09 19 | 704 | 1.2− | 0.8+ | 2005 05 06 | 704 | 0.4+ | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2005 05 06 | 704 | 0.8+ | 0.2− | 2006 09 18 | 699 | 0.9+ | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2005 05 06 | 704 | (1.3+ | 2.0+) | 2006 09 18 | 699 | 0.6− | 1.2+ |
| 2001 09 21 | 704 | 0.2− | 0.5+ | 2005 05 06 | 704 | 1.3+ | 0.8+ | 2006 09 18 | 699 | 0.6+ | 0.6+ |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2005 05 11 | 703 | 0.6− | 0.9− | 2006 09 18 | 699 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2005 05 11 | 703 | 0.0 | 0.1− | 2006 09 24 | 699 | 0.3+ | 0.4+ |
| 2001 10 16 | 644 | 0.2− | 0.5+ | 2005 05 11 | 703 | 0.4− | 0.5+ | 2006 09 24 | 699 | 0.4+ | 0.3+ |
| 2001 10 16 | 644 | 0.1+ | 0.2+ | 2005 05 11 | 703 | (1.6− | 0.3+) | 2006 09 24 | 699 | 0.4+ | 0.2− |
| 2001 10 16 | 644 | 0.0 | 0.2+ | 2005 05 12 | 691 | 0.2+ | 0.2+ | 2006 09 24 | 699 | 0.6− | 0.4− |
| 2004 02 23 | 704 | 0.8+ | 1.2+ | 2005 05 12 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2004 02 23 | 704 | 0.6+ | 0.5+ | 2005 05 12 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2004 02 23 | 704 | 0.8+ | 1.0+ | 2005 05 13 | 683 | (0.4− | 3.1−) | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2005 03 10 | 699 | 1.4+ | 1.4− | 2005 05 13 | 683 | (0.9+ | 2.5−) | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2005 03 10 | 699 | 0.6+ | 0.0 | 2005 05 13 | 683 | 1.3− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2005 03 10 | 699 | (1.1+ | 1.6+) | 2005 05 14 | 683 | (0.2− | 1.6+) | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2005 03 10 | 699 | 1.4− | 1.5+ | 2005 05 14 | 683 | (2.6− | 0.9+) | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2005 04 01 | 699 | 0.7+ | 0.3− | 2005 05 14 | 683 | 0.6− | 0.9+ | | | | |

**(140003)∗ 2001 SM$_{42}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.43408 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18589124 | $\omega$ | 308.45245 | | +0.57679378 | | −0.81585064 |
| $a$ | 3.0406290 | $\Omega$ | 106.27362 | | +0.76221418 | | +0.51936610 |
| $e$ | 0.0890370 | $i$ | 2.45932 | | +0.29383412 | | +0.25425694 |
| $P$ | 5.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 30 | 691 | 0.5− | 0.0 | 2001 09 26 | 704 | 0.6+ | 1.6+ | 2004 03 19 | 704 | 0.6+ | 0.8+ |
| 1998 01 30 | 691 | 0.3− | 0.2− | 2001 10 06 | 644 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 1.0− | 0.8+ |
| 1998 01 30 | 691 | 0.3− | 0.0 | 2001 10 06 | 644 | 0.5+ | 0.8+ | 2004 03 28 | 704 | 0.2+ | 0.1− |
| 2001 09 13 | 644 | 0.4− | 0.0 | 2001 10 06 | 644 | 0.5+ | 0.6+ | 2004 03 28 | 704 | 0.7− | 0.1+ |
| 2001 09 13 | 644 | 0.2− | 0.2+ | 2001 10 19 | 699 | 0.6− | 0.3− | 2004 03 28 | 704 | 0.3+ | 0.1− |
| 2001 09 13 | 644 | 0.0 | 0.6+ | 2001 10 19 | 699 | 1.3− | 0.4+ | 2004 03 29 | 691 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.4− | 0.6+ | 2001 10 19 | 699 | 0.0 | 0.4+ | 2004 03 29 | 691 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 0.5+ | 1.0+ | 2001 10 19 | 699 | 1.1− | 0.2+ | 2004 03 29 | 691 | 0.0 | 0.4+ |
| 2001 09 16 | 704 | 0.8+ | 0.9+ | 2001 10 20 | 704 | 0.2− | 1.4+ | 2004 04 23 | 691 | 0.3+ | 0.4+ |
| 2001 09 16 | 704 | 0.3− | 0.0 | 2001 10 20 | 704 | 1.3− | 0.2− | 2004 04 23 | 691 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 0.4− | 2001 10 20 | 704 | 0.8− | 0.8+ | 2004 04 23 | 691 | 0.4+ | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.8− | 2001 10 20 | 704 | 0.2− | 0.4+ | 2006 07 29 | A13 | 0.2+ | 0.6− |
| 2001 09 19 | 704 | 0.2+ | 0.9− | 2001 10 20 | 704 | 0.8− | 0.5+ | 2006 07 30 | A13 | 0.2− | 0.5− |
| 2001 09 19 | 704 | 0.6− | 0.8− | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 07 30 | A13 | 0.4− | 0.5− |
| 2001 09 19 | 704 | 0.1− | 1.4− | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 07 30 | A13 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 0.3− | 1.1+ | 2002 12 31 | 704 | 0.4+ | 1.9+ | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 1.5+ | 2002 12 31 | 704 | 0.2+ | 0.8+ | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2002 12 31 | 704 | (0.6+ | 2.2+) | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.8+ | 2003 01 08 | 704 | 0.4+ | 0.2− | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 1.2+ | 2003 01 08 | 704 | 0.0 | 0.7− | 2006 08 28 | 691 | 1.3− | 0.2− |
| 2001 09 24 | 644 | 0.2− | 1.3+ | 2003 01 08 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 691 | 0.2− | 0.3+ |
| 2001 09 24 | 644 | 0.8+ | 1.5+ | 2003 01 08 | 704 | 0.7+ | 0.4− | 2006 09 14 | 703 | 2.5+ | 1.0+ |
| 2001 09 24 | 644 | 0.4+ | 1.2+ | 2004 03 14 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.3+ |
| 2001 09 26 | 704 | 0.7+ | 0.6+ | 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.0 |
| 2001 09 26 | 704 | 0.3+ | 0.5+ | 2004 03 14 | 691 | 0.7+ | 0.6+ | 2006 09 14 | 703 | 1.1− | 0.2− |
| 2001 09 26 | 704 | 0.7+ | 0.4+ | 2004 03 19 | 704 | 0.8+ | 1.5+ | | | | |
| 2001 09 26 | 704 | 0.1+ | 0.0 | 2004 03 19 | 704 | 1.2+ | 1.3+ | | | | |

**(140004)∗ 2001 SN$_{42}$ = 2003 AU$_{59}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40568)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.32940 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21575728 | $\omega$ | 69.73401 | | −0.12045083 | −0.99184348 | |
| $a$ | 2.7531238 | $\Omega$ | 27.28697 | | +0.87349893 | −0.12584633 | |
| $e$ | 0.1014109 | $i$ | 5.21760 | | +0.47168974 | −0.02022885 | |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2003 01 31 | 699 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.5− |
| 2001 09 16 | 704 | 0.5+ | 0.5+ | 2003 01 31 | 699 | 0.9+ | 1.2+ | 2006 10 17 | 691 | 0.3+ | 0.4− |
| 2001 09 16 | 704 | 0.3− | 0.5+ | 2003 01 31 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 1.0+ | 0.3+ | 2003 01 31 | 699 | 0.6− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2003 01 31 | 699 | 0.9− | 0.7− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 644 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 1.2− | 0.2+ | 2003 02 01 | 704 | 0.8+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.9− | 0.4+ | 2003 02 01 | 704 | 0.7− | 0.8+ | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2003 02 01 | 704 | 0.8+ | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2003 02 01 | 704 | 0.2− | 0.5+ | 2006 11 09 | 691 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.5− | 0.2− | 2003 02 01 | 704 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2003 02 04 | 699 | (1.9+ | 0.5+) | 2006 11 09 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.4− | 1.1+ | 2003 02 04 | 699 | 1.4+ | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2003 02 04 | 699 | (0.2+ | 1.7+) | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.5− | 0.7+ | 2003 02 04 | 699 | (1.8+ | 0.0 ) | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2001 09 23 | 704 | (1.1− | 2.1+) | 2003 02 04 | 704 | 0.5− | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2001 09 23 | 704 | 0.3+ | 1.3+ | 2003 02 04 | 704 | 0.2− | 1.3+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2001 09 26 | 704 | (1.1+ | 3.1+) | 2003 02 04 | 704 | 0.3− | 0.8+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 0.9− | 1.1− | 2003 02 04 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 1.0− | 0.9− |
| 2001 09 26 | 704 | (1.2− | 1.6−) | 2003 02 04 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 1.1− |
| 2001 10 13 | 704 | 0.9− | 0.4+ | 2003 03 07 | 644 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2001 10 13 | 704 | 0.2+ | 1.3+ | 2003 03 07 | 644 | 0.3+ | 0.5+ | 2006 11 14 | 703 | 0.2− | 0.6− |
| 2001 10 13 | 704 | 0.5+ | 1.4+ | 2003 03 07 | 644 | 0.1+ | 0.6+ | 2006 11 15 | 704 | 0.5+ | 0.7+ |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.3− | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2003 03 07 | 644 | 0.0 | 0.6+ | 2006 11 15 | 704 | 0.2+ | 0.1+ |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2003 03 07 | 644 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.3− |
| 2001 10 15 | 645 | 0.1− | 0.1− | 2004 04 21 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2001 10 20 | 704 | 1.0+ | 0.5− | 2004 04 21 | 691 | 0.1+ | 0.7− | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2001 10 20 | 704 | 0.5+ | 0.5+ | 2004 04 21 | 691 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 1.0+ | 0.1− | 2004 04 28 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4− | 1.1+ |
| 2001 10 20 | 704 | 0.7+ | 0.1+ | 2004 04 28 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | (1.2− | 1.9−) |
| 2001 10 24 | 704 | (1.4+ | 1.6+) | 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | (1.5− | 1.5+) |
| 2001 10 24 | 704 | (2.6+ | 1.5+) | 2004 06 13 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.1+ | 0.5− | 2004 06 13 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.9+ | 1.1− |
| 2001 10 24 | 704 | 0.7+ | 0.8+ | 2004 06 13 | 691 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2005 08 04 | 644 | 0.0 | 0.9+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2003 01 05 | 704 | 1.1− | 0.7− | 2005 08 04 | 644 | 0.0 | 0.9+ | 2006 11 19 | 704 | 0.9+ | 0.5+ |
| 2003 01 05 | 704 | 0.1+ | 1.1− | 2005 08 04 | 644 | 0.1− | 0.6+ | 2006 11 19 | 704 | (0.6+ | 1.8−) |
| 2003 01 05 | 704 | 0.4+ | 0.9− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2003 01 05 | 704 | 0.3+ | 0.9− | 2006 09 27 | G96 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2003 01 09 | 704 | 1.0+ | 0.7− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.9+ | 1.1+ |
| 2003 01 09 | 704 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.7+ | 1.5+ |
| 2003 01 09 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2003 01 09 | 704 | 0.8− | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.8− | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2003 01 09 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.5+ | | | | |
| 2003 01 31 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.5− | | | | |

**(140005)∗ 2001 SR$_{42}$ = 1999 FD$_5$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29706)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.12334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20679333 | $\omega$ | 148.61667 | | +0.85763212 | +0.51426362 | |
| $a$ | 2.8321203 | $\Omega$ | 180.43534 | | −0.47865434 | +0.79806122 | |
| $e$ | 0.0611508 | $i$ | 1.96749 | | −0.18803500 | +0.31405608 | |
| $P$ | 4.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 15 | 691 | 0.8− | 0.5− | 2001 10 06 | 644 | 0.3+ | 1.2+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 1999 02 15 | 691 | 0.3+ | 0.7− | 2001 10 15 | 704 | (2.3− | 0.7+) | 2006 09 26 | G96 | 0.2− | 0.4− |
| 1999 02 15 | 691 | 0.1+ | 0.3− | 2001 10 15 | 704 | 0.5− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 1999 03 16 | 691 | 0.3− | 0.7+ | 2001 10 15 | 704 | 1.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1999 03 16 | 691 | 0.1+ | 0.0 | 2001 10 15 | 704 | (0.6− | 1.7+) | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 1999 03 16 | 691 | 0.0 | 0.5+ | 2001 10 15 | 704 | 0.5− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1999 03 18 | 691 | 0.6+ | 0.1− | 2001 10 16 | 291 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 1999 03 18 | 691 | 0.8+ | 0.7− | 2001 10 16 | 291 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 1999 03 18 | 691 | 0.5+ | 0.1+ | 2001 10 16 | 291 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 1999 03 19 | 691 | 0.5− | 0.1+ | 2004 03 18 | 704 | 1.2+ | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.5+ |
| 1999 03 19 | 691 | 0.7− | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1− |
| 1999 03 19 | 691 | 0.5− | 0.2− | 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.0 |
| 2001 09 16 | 704 | (1.4− | 5.4+) | 2004 03 27 | 704 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2001 09 16 | 704 | (1.1− | 6.1+) | 2004 03 27 | 704 | 0.0 | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.6− |
| 2001 09 16 | 704 | (1.4− | 6.5+) | 2004 03 27 | 704 | 0.5+ | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.6− |
| 2001 09 19 | 704 | 0.8− | 0.5− | 2004 03 27 | 704 | 0.5+ | 0.8+ | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 1.2− | 0.1+ | 2004 03 27 | 704 | 0.9+ | 0.7+ | 2006 11 22 | 691 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 1.3− | 0.4+ | 2004 03 29 | 291 | 0.2− | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2004 03 29 | 291 | 0.5+ | 0.6+ | 2006 11 25 | 703 | 0.6− | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 03 29 | 291 | 0.0 | 0.5+ | 2006 11 25 | 703 | 0.6− | 0.2+ |
| 2001 09 26 | 704 | 0.3− | 0.7− | 2004 04 19 | 691 | 0.0 | 0.5+ | 2006 11 25 | 703 | 0.1− | 1.0− |
| 2001 09 26 | 704 | 0.4+ | 0.8+ | 2004 04 19 | 691 | 0.0 | 0.7+ | 2006 11 25 | 703 | 0.6− | 0.7+ |
| 2001 09 26 | 704 | 0.2+ | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.6+ | 2006 11 27 | 691 | 0.3+ | 0.4+ |
| 2001 09 26 | 704 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.4+ |
| 2001 09 26 | 704 | 0.2− | 0.6+ | 2006 07 21 | G96 | 0.6− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2001 10 06 | 644 | 0.1− | 1.0+ | 2006 07 21 | G96 | 0.1− | 0.3− | | | | |
| 2001 10 06 | 644 | 0.2− | 1.2+ | 2006 07 21 | G96 | 0.2− | 0.0 | | | | |

**(140006)∗ 2001 SE$_{43}$ = 1990 SD$_9$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 64996)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.68474 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18076204 | $\omega$ | 53.04180 | | +0.38138590 | −0.92068851 | |
| $a$ | 3.0978798 | $\Omega$ | 15.20359 | | +0.71531955 | +0.23710412 | |
| $e$ | 0.0725189 | $i$ | 18.43492 | | +0.58554482 | +0.31002307 | |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 22 | 809 | 0.6− | 1.5− | 2001 11 18 | 704 | 1.0− | 0.5− | 2004 03 28 | 683 | 0.3+ | 1.7+ |
| 1990 09 22 | 809 | 1.2+ | 0.8− | 2001 11 18 | 704 | 0.5− | 0.5+ | 2004 03 28 | 704 | 0.3+ | 0.2+ |
| 1990 09 22 | 809 | 1.6+ | 0.5− | 2001 11 18 | 704 | 0.3− | 1.0+ | 2004 03 28 | 704 | 0.3+ | 0.4+ |
| 2001 09 16 | 704 | 0.0 | 0.8− | 2001 11 18 | 704 | (2.0+ | 0.6+) | 2004 03 28 | 704 | 0.7+ | 0.8+ |
| 2001 09 16 | 704 | 0.5− | 0.5+ | 2004 02 18 | 703 | 0.7+ | 0.4+ | 2004 03 28 | 704 | 0.2− | 0.7+ |
| 2001 09 16 | 704 | 0.8+ | 0.6− | 2004 02 18 | 703 | 1.5+ | 0.2+ | 2004 03 28 | 704 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | 0.1+ | 0.2− | 2004 02 18 | 703 | 1.0+ | 0.2+ | 2004 03 29 | 683 | 0.5− | 0.0 |
| 2001 09 16 | 704 | 0.2− | 0.0 | 2004 02 18 | 703 | 1.5+ | 0.4− | 2004 03 29 | 683 | 0.3+ | 0.6+ |
| 2001 09 18 | 699 | 0.1+ | 1.1+ | 2004 02 20 | 608 | 0.2+ | 0.2− | 2004 03 29 | 683 | 0.2− | 1.0+ |
| 2001 09 18 | 699 | 0.2− | 1.3+ | 2004 02 20 | 608 | 0.3+ | 0.3− | 2004 04 12 | 691 | 0.2+ | 0.5+ |
| 2001 09 18 | 699 | 0.1− | 0.4+ | 2004 02 20 | 608 | 0.1+ | 0.4− | 2004 04 12 | 691 | 0.1+ | 0.3+ |
| 2001 09 18 | 699 | 0.2− | 0.5+ | 2004 02 25 | 704 | 0.5+ | 0.0 | 2004 04 12 | 691 | 0.3+ | 0.3+ |
| 2001 09 19 | 704 | 1.1− | 1.5+ | 2004 02 25 | 704 | 0.4+ | 0.6+ | 2004 04 13 | 683 | 0.6− | 0.7− |
| 2001 09 19 | 704 | 0.7− | 0.3+ | 2004 02 25 | 704 | 0.5− | 0.7+ | 2004 04 13 | 683 | 0.5+ | 1.0− |
| 2001 09 19 | 704 | 0.3− | 1.1+ | 2004 02 25 | 704 | 0.3+ | 0.0 | 2004 04 13 | 683 | 1.5− | 1.1+ |
| 2001 09 19 | 704 | 1.2− | 0.3+ | 2004 02 25 | 704 | 0.1+ | 0.9+ | 2004 04 14 | 683 | (0.7+ | 3.0−) |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2004 03 16 | 704 | 1.1+ | 1.8− | 2004 04 14 | 683 | 0.3+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2004 03 16 | 704 | 0.1− | 1.6− | 2004 04 14 | 683 | 0.2+ | 0.4− | | |
| 2001 09 21 | 704 | 0.0 | 1.2+ | 2004 03 16 | 704 | 0.9+ | 1.4− | 2004 04 15 | 621 | 0.6− | 0.3− | | |
| 2001 09 21 | 704 | 0.0 | 0.9+ | 2004 03 16 | 704 | 0.3+ | 1.0− | 2004 04 15 | 621 | 0.2+ | 0.0 | | |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.9+ | 0.1− | 2004 04 15 | 621 | 0.2+ | 0.1+ | | |
| 2001 09 24 | 644 | 0.8− | 0.6+ | 2004 03 18 | 683 | 0.7+ | 0.1− | 2004 04 16 | 621 | 0.5− | 0.3+ | | |
| 2001 09 24 | 644 | 0.7− | 0.7+ | 2004 03 18 | 683 | 0.0 | 0.7+ | 2004 04 16 | 621 | 0.3− | 0.3− | | |
| 2001 09 24 | 644 | 0.5− | 0.4+ | 2004 03 18 | 683 | 0.7− | 1.1+ | 2004 04 19 | 691 | 0.0 | 0.4+ | | |
| 2001 09 26 | 704 | 1.3− | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.4+ | 2004 04 19 | 691 | 0.1− | 0.5+ | | |
| 2001 09 26 | 704 | 1.0− | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.0 | 2004 04 19 | 691 | 0.1− | 0.3+ | | |
| 2001 09 26 | 704 | 1.0− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2004 04 19 | 704 | 0.6+ | 0.6+ | | |
| 2001 09 26 | 704 | 0.6− | 0.1− | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2004 04 19 | 704 | 0.3+ | 0.5+ | | |
| 2001 09 26 | 704 | 0.8− | 0.2− | 2004 03 20 | 704 | (2.2+ | 1.5−) | 2004 04 19 | 704 | 0.0 | 0.6+ | | |
| 2001 10 06 | 644 | 0.5− | 1.2+ | 2004 03 20 | 704 | 0.6+ | 1.0+ | 2004 04 19 | 704 | 0.6+ | 0.9+ | | |
| 2001 10 06 | 644 | 0.6− | 1.0+ | 2004 03 20 | 704 | 0.5+ | 0.9+ | 2004 04 19 | 704 | 0.6+ | 1.5+ | | |
| 2001 10 06 | 644 | 0.3− | 0.9+ | 2004 03 20 | 704 | 0.3− | 0.3+ | 2004 04 24 | 683 | 0.2− | 0.3− | | |
| 2001 10 13 | 704 | 0.9− | 0.0 | 2004 03 20 | 704 | 0.1− | 0.6+ | 2004 04 24 | 683 | 1.0+ | 0.0 | | |
| 2001 10 13 | 704 | 0.8− | 0.3+ | 2004 03 22 | 704 | 0.9+ | 0.6+ | 2004 04 24 | 683 | 0.5− | 0.1+ | | |
| 2001 10 13 | 704 | 0.8− | 0.4+ | 2004 03 22 | 704 | 1.5+ | 0.7+ | 2006 08 16 | E12 | 0.1− | 0.4− | | |
| 2001 10 13 | 704 | 1.4− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.2+ | 2006 08 16 | E12 | 0.6+ | 0.3− | | |
| 2001 10 13 | 704 | 0.3− | 0.9+ | 2004 03 22 | 704 | 1.1+ | 0.6+ | 2006 08 16 | E12 | (0.3+ | 4.2+) | | |
| 2001 10 17 | 644 | 0.8− | 1.1+ | 2004 03 22 | 704 | 1.1+ | 0.7+ | 2006 08 16 | E12 | (4.6− | 0.3+) | | |
| 2001 10 17 | 644 | 0.5− | 1.2+ | 2004 03 23 | 683 | 1.1+ | 0.8− | 2006 08 25 | E12 | 0.6− | 0.3+ | | |
| 2001 10 17 | 644 | 0.6− | 1.2+ | 2004 03 23 | 683 | 0.1+ | 0.2+ | 2006 08 25 | E12 | 0.7− | 0.2+ | | |
| 2001 10 20 | 704 | 0.4− | 0.4+ | 2004 03 23 | 683 | 0.3+ | 0.3+ | 2006 08 25 | E12 | 0.9− | 0.6+ | | |
| 2001 10 20 | 704 | 0.6− | 0.3+ | 2004 03 24 | 699 | 0.4− | 0.6+ | 2006 08 25 | E12 | 0.3− | 0.2− | | |
| 2001 10 20 | 704 | 0.7− | 0.8+ | 2004 03 24 | 699 | 1.6− | 0.3+ | 2006 09 12 | E12 | 0.0 | 0.2+ | | |
| 2001 10 20 | 704 | 0.3− | 0.3+ | 2004 03 24 | 699 | 0.4+ | 0.3− | 2006 09 12 | E12 | 0.4+ | 0.5− | | |
| 2001 10 20 | 704 | 0.2+ | 0.8+ | 2004 03 24 | 699 | 1.2− | 0.1− | 2006 09 12 | E12 | 0.2− | 0.1+ | | |
| 2001 10 24 | 704 | 0.7+ | 0.5− | 2004 03 27 | 683 | 0.6+ | 1.1− | 2006 09 12 | E12 | 0.2− | 0.3+ | | |
| 2001 10 24 | 704 | 0.1− | 0.6+ | 2004 03 27 | 683 | 0.2+ | 0.7− | 2006 09 27 | E12 | 0.4− | 0.2− | | |
| 2001 10 24 | 704 | 1.1+ | 0.6− | 2004 03 27 | 683 | 0.2− | 0.1− | 2006 09 27 | E12 | 0.2+ | 0.4+ | | |
| 2001 10 24 | 704 | (1.0+ | 2.0−) | 2004 03 28 | 683 | (2.2+ | 0.0 ) | 2006 09 27 | E12 | 0.0 | 1.3+ | | |
| 2001 10 24 | 704 | 1.1+ | 0.8+ | 2004 03 28 | 683 | 0.3+ | 1.7+ | 2006 09 27 | E12 | 0.1+ | 0.5+ | | |

**(140007)∗ 2001 SG$_{43}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.71276 | | (2000.0) | | | |
| $n$ | 0.20567716 | $\omega$ | 196.46012 | | +0.75037850 | +0.65865357 |
| $a$ | 2.8423573 | $\Omega$ | 122.20823 | | −0.59879569 | +0.71305094 |
| $e$ | 0.0651616 | $i$ | 3.77762 | | −0.27995683 | +0.24027867 |
| $P$ | 4.79 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 26 | 691 | 0.4− | 0.7− | 2003 01 08 | 704 | 0.2− | 0.5− | 2006 09 26 | 704 | 0.8− | 0.8+ | | |
| 1995 06 26 | 691 | 1.0− | 0.5+ | 2003 01 08 | 704 | (0.6+ | 2.0−) | 2006 09 26 | 704 | 0.2+ | 0.0 | | |
| 1995 06 26 | 691 | 0.3− | 0.5+ | 2004 02 19 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.2+ | 0.7− | | |
| 2001 07 19 | 644 | (0.7+ | 1.5+) | 2004 02 19 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 1.3− | 0.6+ | | |
| 2001 07 19 | 644 | (0.5+ | 1.6+) | 2004 02 19 | 704 | 0.3+ | 1.4+ | 2006 09 30 | 703 | 0.9− | 0.1− | | |
| 2001 07 19 | 644 | (0.6+ | 1.8+) | 2004 02 19 | 704 | (0.7+ | 1.5+) | 2006 09 30 | 703 | 0.2+ | 0.6− | | |
| 2001 08 27 | 699 | 0.6+ | 1.0+ | 2004 02 23 | 704 | 0.3− | 1.1− | 2006 09 30 | 703 | 0.4− | 0.3+ | | |
| 2001 08 27 | 699 | 0.1+ | 1.4+ | 2004 02 23 | 704 | (2.1− | 0.7−) | 2006 10 02 | G96 | 0.0 | 0.4− | | |
| 2001 08 27 | 699 | 0.6+ | 1.2+ | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2− | | |
| 2001 08 27 | 699 | 0.7+ | 1.0+ | 2004 02 23 | 704 | 0.7+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.3− | | |
| 2001 09 11 | 699 | 0.2− | 1.2+ | 2004 03 16 | 704 | 0.1+ | 1.3+ | 2006 10 02 | G96 | 0.1− | 0.4− | | |
| 2001 09 11 | 699 | 0.4+ | 0.3+ | 2004 03 16 | 704 | 0.7− | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.2− | | |
| 2001 09 11 | 699 | 0.7− | 0.3+ | 2004 03 16 | 704 | 0.9+ | 1.2+ | 2006 10 11 | 644 | 0.2− | 0.1− | | |
| 2001 09 11 | 699 | 0.3+ | 0.2+ | 2004 03 16 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.1− | | |
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2004 03 16 | 704 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.9− | 0.3− | | |
| 2001 09 16 | 704 | 0.7+ | 0.1+ | 2004 03 19 | 704 | 0.8+ | 1.2+ | 2006 10 15 | 703 | 0.1+ | 0.6− | | |
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2004 03 19 | 704 | 0.7+ | 1.3+ | 2006 10 15 | 703 | 0.7− | 0.5− | | |
| 2001 09 16 | 704 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.7+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 2001 09 16 | 704 | 0.5+ | 0.7+ | 2004 03 19 | 704 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 2001 09 19 | 704 | 0.7+ | 1.0+ | 2004 03 19 | 704 | 0.4+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2001 09 19 | 704 | 0.9− | 1.2+ | 2004 03 20 | 691 | (2.9+ | 1.0−) | 2006 10 21 | G96 | 0.0 | 0.4− | | |
| 2001 09 19 | 704 | 0.1+ | 0.9+ | 2004 03 20 | 691 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2001 09 19 | 704 | 0.6− | 0.9+ | 2004 03 20 | 691 | (0.3+ | 1.9+) | 2006 10 21 | G96 | 0.3+ | 0.4− | | |
| 2001 09 21 | 704 | (2.3+ | 0.8+) | 2004 03 22 | 704 | 1.4+ | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.3− | | |
| 2001 09 21 | 704 | (1.5+ | 0.2−) | 2004 03 22 | 704 | 1.5+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 09 21 | 704 | (2.6+ | 0.2+) | 2004 03 22 | 704 | 1.0+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 09 21 | 704 | (2.6+ | 0.1−) | 2004 03 22 | 704 | 1.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2001 09 24 | 644 | 0.5− | 0.0 | 2004 03 22 | 704 | (1.8+ | 0.3+) | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 24 | 644 | 0.5− | 0.1+ | 2004 03 22 | 704 | 0.5+ | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2001 09 24 | 644 | 0.6− | 0.2+ | 2004 03 22 | 704 | 0.4+ | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 08 | 644 | 0.1− | 0.7+ | 2004 03 22 | 704 | 0.6+ | 1.1+ | 2006 10 22 | 704 | 0.7− | 0.9+ | | |
| 2001 10 08 | 644 | 0.2− | 0.6+ | 2004 03 22 | 704 | 0.3+ | 1.4+ | 2006 10 22 | 704 | 0.4− | 0.4− | | |
| 2001 10 08 | 644 | 0.1− | 0.7+ | 2004 03 22 | 704 | (0.1+ | 1.7+) | 2006 10 22 | 704 | 0.8− | 1.0+ | | |
| 2001 10 13 | 704 | 0.1+ | 0.2+ | 2004 03 24 | 699 | 0.1+ | 0.3− | 2006 10 22 | 704 | 1.1− | 0.4+ | | |
| 2001 10 13 | 704 | 0.9+ | 0.6+ | 2004 03 24 | 699 | 0.8− | 0.5+ | 2006 10 22 | 704 | 0.4− | 0.5+ | | |
| 2001 10 13 | 704 | 0.3+ | 0.1+ | 2004 03 24 | 699 | 0.0 | 0.0 | 2006 10 27 | 704 | (0.2− | 2.8+) | | |
| 2001 10 13 | 704 | 0.4− | 0.8+ | 2004 03 24 | 699 | 0.4+ | 0.1− | 2006 10 27 | 704 | 0.6+ | 0.1− | | |
| 2001 10 16 | 704 | (0.2− | 2.0+) | 2004 03 25 | 704 | 1.4+ | 0.1+ | 2006 10 27 | 704 | (1.1− | 2.0+) | | |
| 2001 10 16 | 704 | 0.2+ | 1.2+ | 2004 03 25 | 704 | 1.4+ | 0.1+ | 2006 10 27 | 704 | (0.2− | 2.3+) | | |
| 2001 10 16 | 704 | 1.0+ | 1.4+ | 2004 03 25 | 704 | 1.5+ | 0.2+ | 2006 11 13 | 703 | 0.9− | 0.1− | | |
| 2001 10 16 | 704 | (0.2+ | 1.7+) | 2004 04 15 | 704 | (0.4+ | 1.5+) | 2006 11 13 | 703 | 0.2− | 0.7− | | |
| 2001 10 24 | 704 | 0.8+ | 0.1+ | 2004 04 15 | 704 | 0.1− | 0.5− | 2006 11 13 | 703 | 0.6− | 0.9− | | |
| 2001 10 24 | 704 | 0.8+ | 1.0+ | 2004 04 15 | 704 | 0.6− | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.3− | | |
| 2001 10 24 | 704 | 0.2+ | 1.0+ | 2004 04 15 | 704 | (2.0+ | 0.9+) | 2006 11 17 | 704 | 0.0 | 0.8+ | | |
| 2002 12 31 | 704 | 0.1− | 0.0 | 2004 04 15 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.5− | 0.2− | | |
| 2002 12 31 | 704 | 0.1+ | 0.3− | 2006 09 16 | 699 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.4− | | |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.6+ | | |
| 2002 12 31 | 704 | 0.0 | 0.7− | 2006 09 16 | 699 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.0 | | |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.5− | 0.4+ | 2006 11 20 | 704 | 1.1+ | 0.5+ | | |
| 2003 01 08 | 704 | 0.6− | 0.5− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.5+ | | |
| 2003 01 08 | 704 | 0.0 | 1.0− | 2006 09 19 | 691 | 0.0 | 0.0 | | | | | | |
| 2003 01 08 | 704 | 0.2− | 0.9− | 2006 09 26 | 704 | 0.1− | 0.2+ | | | | | | |

**(140008)∗ 2001 SS$_{43}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 165.27118 | | (2000.0) | | | |
| $n$ | 0.25959000 | $\omega$ | 223.17672 | | +0.42672252 | +0.90360259 |
| $a$ | 2.4337581 | $\Omega$ | 72.11516 | | −0.81864466 | +0.40358217 |
| $e$ | 0.1827836 | $i$ | 2.26149 | | −0.38435505 | +0.14360989 |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 23 | 691 | 0.0 | 0.3+ | 2001 10 20 | 704 | 0.1+ | 0.6− | 2005 10 28 | 704 | 0.3+ | 1.0+ | | |
| 1996 03 23 | 691 | 0.3+ | 0.3− | 2001 10 20 | 704 | 1.1− | 0.1+ | 2005 10 31 | 691 | 0.1+ | 0.1− | | |
| 1996 03 23 | 691 | 0.2− | 0.0 | 2001 10 20 | 704 | 0.5− | 0.2+ | 2005 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2001 08 27 | 699 | 0.8− | 0.7+ | 2001 10 20 | 704 | 0.5− | 0.3+ | 2005 10 31 | 691 | 0.0 | 0.1+ | | |
| 2001 08 27 | 699 | 1.6− | 0.7+ | 2001 10 24 | 704 | 0.1− | 0.3+ | 2005 11 03 | 704 | 0.0 | 0.6+ | | |
| 2001 08 27 | 699 | (2.9− | 2.0+) | 2001 10 24 | 704 | 0.1+ | 0.0 | 2005 11 03 | 704 | 0.6− | 1.3+ | | |
| 2001 08 27 | 699 | 0.7− | 0.2+ | 2001 10 24 | 704 | 0.7+ | 0.1− | 2005 11 03 | 704 | 0.7− | 0.9+ | | |
| 2001 09 10 | 644 | 0.1− | 0.1+ | 2001 10 24 | 704 | 0.5+ | 0.2+ | 2005 11 28 | 691 | 0.0 | 0.3+ | | |
| 2001 09 10 | 644 | 0.4− | 0.3+ | 2004 03 24 | 699 | 0.5+ | 0.3− | 2005 11 28 | 691 | 0.4+ | 0.3+ | | |
| 2001 09 10 | 644 | 0.7− | 0.3− | 2004 03 24 | 699 | (2.5+ | 0.9+) | 2005 11 28 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.4− | 0.0 | 2004 03 24 | 699 | 0.2+ | 1.6+ | 2005 11 28 | G96 | 0.2+ | 0.1+ | | |
| 2001 09 11 | 699 | 0.8− | 0.9+ | 2004 03 24 | 699 | 1.4+ | 0.1− | 2005 11 28 | G96 | 0.0 | 0.3− | | |
| 2001 09 11 | 699 | 0.9− | 0.5− | 2004 03 28 | 704 | 0.2+ | 0.6+ | 2005 11 28 | G96 | 0.2+ | 0.0 | | |
| 2001 09 11 | 699 | 0.0 | 0.4− | 2004 03 28 | 704 | 0.3+ | 0.6+ | 2005 11 28 | G96 | 0.3+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.7+ | 1.0+ | 2004 03 28 | 704 | 0.7+ | 0.2+ | 2005 11 29 | 703 | 0.0 | 0.6− | | |
| 2001 09 16 | 704 | 1.5+ | 0.6+ | 2004 03 28 | 704 | 0.2− | 0.4− | 2005 11 29 | 703 | 0.3− | 0.5+ | | |
| 2001 09 16 | 704 | 0.7+ | 2.0+ | 2004 04 21 | 704 | 0.1+ | 1.0+ | 2005 11 29 | 703 | 0.1− | 0.6− | | |
| 2001 09 16 | 704 | 1.2+ | 2.0+ | 2004 04 21 | 704 | 0.7− | 0.5+ | 2005 11 29 | 703 | 1.0− | 0.6+ | | |
| 2001 09 16 | 704 | 1.2+ | 1.2+ | 2004 04 21 | 704 | 1.4+ | 0.2+ | 2005 11 29 | G96 | 0.3− | 0.2− | | |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.4+ | 2005 11 29 | G96 | 0.2+ | 0.2− | | |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.7+ | 2005 11 29 | G96 | 0.1+ | 0.2− | | |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2005 11 29 | G96 | 0.1− | 0.2− | | |
| 2001 09 19 | 704 | 0.7+ | 1.1+ | 2004 05 23 | 691 | 0.1+ | 0.4+ | 2005 11 30 | 691 | 0.3+ | 0.0 | | |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2004 05 23 | 691 | 0.1+ | 0.3+ | 2005 11 30 | 691 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | 1.6− | 0.4− | 2004 05 23 | 691 | 0.0 | 0.1+ | 2005 11 30 | 691 | 0.0 | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.2− | 0.5+ | 2005 10 22 | 691 | 0.1+ | 0.1+ | 2005 12 01 | 691 | 0.6− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2005 10 22 | 691 | 0.0 | 0.0 | 2005 12 01 | 691 | 0.9− | 0.5− |
| 2001 09 21 | 704 | 0.4+ | 1.0+ | 2005 10 22 | 691 | 0.2+ | 0.2+ | 2005 12 01 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2005 10 24 | 699 | 0.4+ | 1.5− | 2005 12 02 | 691 | 0.2− | 0.2+ |
| 2001 09 26 | 704 | (2.9− | 0.2−) | 2005 10 24 | 699 | 0.4− | 0.6+ | 2005 12 02 | 691 | 0.4− | 0.2+ |
| 2001 09 26 | 704 | 0.4− | 0.8+ | 2005 10 24 | 683 | 1.7+ | 0.5+ | 2005 12 02 | 691 | 0.1+ | 0.1+ |
| 2001 09 26 | 704 | 0.8− | 1.1+ | 2005 10 24 | 699 | 0.4+ | 0.1− | 2005 12 04 | G96 | 0.5− | 0.1− |
| 2001 09 26 | 704 | 0.6− | 0.7+ | 2005 10 24 | 683 | 1.5− | 1.0+ | 2005 12 04 | G96 | 0.7− | 0.3+ |
| 2001 09 26 | 704 | 1.2− | 0.8+ | 2005 10 24 | 683 | 1.9− | 1.7+ | 2005 12 04 | G96 | 0.2+ | 0.2− |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2005 10 24 | 699 | 1.1+ | 0.1+ | 2005 12 04 | G96 | 0.4+ | 0.1− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2005 10 25 | 699 | 1.0+ | 0.4+ | 2006 01 04 | G96 | 0.2− | 0.4+ |
| 2001 10 14 | 645 | 0.0 | 0.2− | 2005 10 25 | 699 | 0.4− | 0.4+ | 2006 01 04 | G96 | 0.1+ | 0.1+ |
| 2001 10 14 | 645 | 0.0 | 0.2− | 2005 10 25 | 699 | 0.4− | 0.4− | 2006 01 04 | G96 | 1.3− | 0.7− |
| 2001 10 15 | 645 | 0.1+ | 0.2− | 2005 10 27 | 691 | 0.2− | 0.3+ | 2006 01 04 | G96 | 0.4+ | 0.6− |
| 2001 10 15 | 645 | 0.1+ | 0.2− | 2005 10 27 | 691 | 0.1− | 0.1− | 2006 01 22 | G96 | 1.2+ | 0.8− |
| 2001 10 17 | 644 | 0.1− | 0.3+ | 2005 10 27 | 691 | 0.0 | 0.1+ | 2006 01 22 | G96 | 0.2+ | 0.3− |
| 2001 10 17 | 644 | 0.5+ | 0.1− | 2005 10 28 | 704 | 0.1+ | 0.2+ | 2006 01 22 | G96 | 0.2+ | 0.3− |
| 2001 10 17 | 644 | 0.1+ | 0.0 | 2005 10 28 | 704 | 0.3+ | 1.5+ | 2006 01 22 | G96 | 0.1+ | 0.4− |
| 2001 10 20 | 704 | 0.7− | 0.3− | 2005 10 28 | 704 | 0.4− | 1.6+ | | | | |

**(140009)∗ 2001 SU$_{44}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 95.96522 | | (2000.0) | | | |
| $n$ | 0.27612275 | $\omega$ | 328.99595 | | +0.27347414 | −0.96034522 |
| $a$ | 2.3356150 | $\Omega$ | 105.08605 | | +0.89363048 | +0.23277813 |
| $e$ | 0.1950347 | $i$ | 3.22416 | | +0.35586017 | +0.15346465 |
| $P$ | 3.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.3− | 0.2+ | 2003 04 07 | 691 | 0.5+ | 0.4+ | 2006 01 08 | 691 | 0.4+ | 0.2+ |
| 1996 04 18 | 691 | 0.1+ | 0.2+ | 2003 04 07 | 691 | 0.9+ | 0.7+ | 2006 01 08 | 691 | (3.1+ | 2.8−) |
| 1996 04 18 | 691 | 0.5+ | 0.1− | 2005 10 29 | G96 | 0.3+ | 0.3− | 2006 01 10 | G96 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.9− | 0.7+ | 2005 10 29 | G96 | 0.3+ | 0.3− | 2006 01 10 | G96 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.5− | 0.4− | 2005 10 29 | G96 | 0.0 | 0.2− | 2006 01 10 | G96 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 1.8− | 1.2+ | 2005 11 25 | 703 | 0.6− | 0.4− | 2006 01 10 | G96 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 1.3− | 0.6+ | 2005 11 25 | 703 | 0.3− | 0.7+ | 2006 01 18 | 703 | 0.5− | 0.7− |
| 2001 09 16 | 704 | 1.5− | 1.4+ | 2005 11 25 | 703 | 1.1− | 0.5+ | 2006 01 18 | 703 | 0.7− | 0.7− |
| 2001 09 19 | 704 | 0.8− | 0.9+ | 2005 11 25 | 703 | 0.7− | 0.0 | 2006 01 18 | 703 | 0.5− | 0.9− |
| 2001 09 19 | 704 | 0.3+ | 0.6+ | 2005 11 29 | G96 | 0.1+ | 0.4− | 2006 01 18 | 703 | 0.7− | 0.5− |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2005 11 29 | G96 | 0.0 | 0.2− | 2006 01 23 | G96 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2005 11 29 | G96 | 0.0 | 0.2− | 2006 01 23 | G96 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.6+ | 0.0 | 2005 11 29 | G96 | 0.3+ | 0.2+ | 2006 01 23 | G96 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2005 12 21 | 703 | 1.3+ | 1.2− | 2006 01 23 | G96 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2005 12 21 | 703 | 0.2− | 1.4− | 2006 01 24 | 703 | 0.0 | 0.3− |
| 2001 09 23 | 704 | 1.6+ | 0.2− | 2005 12 21 | 703 | 0.0 | 0.1− | 2006 01 24 | 703 | 0.4− | 0.1+ |
| 2001 09 23 | 704 | 1.0+ | 0.2+ | 2005 12 22 | 691 | 0.1+ | 0.1+ | 2006 01 24 | 703 | 0.7− | 0.4− |
| 2001 09 23 | 704 | 1.0+ | 0.4+ | 2005 12 22 | 691 | 0.0 | 0.1+ | 2006 01 24 | 703 | 0.8− | 0.1− |
| 2001 09 23 | 704 | 1.4+ | 0.4+ | 2005 12 22 | 691 | 0.1+ | 0.2+ | 2006 01 24 | 704 | 0.5+ | 0.0 |
| 2001 09 23 | 704 | (2.9+ | 2.6−) | 2005 12 25 | G96 | 0.0 | 0.3− | 2006 01 24 | 704 | 0.5+ | 0.1− |
| 2001 09 27 | 644 | 0.0 | 0.3− | 2005 12 25 | G96 | 0.1− | 0.3− | 2006 01 24 | 704 | 0.3+ | 0.1+ |
| 2001 09 27 | 644 | 0.2− | 0.2+ | 2005 12 25 | G96 | 0.2− | 0.3− | 2006 01 24 | 704 | 0.0 | 0.2+ |
| 2001 09 27 | 644 | 0.1− | 0.2+ | 2005 12 25 | G96 | 0.3+ | 0.4− | 2006 01 24 | 704 | 0.3+ | 0.1+ |
| 2001 10 08 | 644 | 0.6− | 1.3+ | 2005 12 28 | 704 | 0.4+ | 0.1+ | 2006 01 27 | 704 | 0.2+ | 0.4− |
| 2001 10 08 | 644 | 0.8− | 1.1+ | 2005 12 28 | 704 | 0.4+ | 0.7+ | 2006 01 27 | 704 | 0.3− | 0.9+ |
| 2001 10 08 | 644 | 0.8− | 1.2+ | 2005 12 28 | 704 | 0.8+ | 0.2+ | 2006 01 27 | 704 | 0.4− | 0.6+ |
| 2001 10 16 | 644 | 0.5− | 0.3+ | 2005 12 28 | 704 | 1.0+ | 0.2+ | 2006 02 01 | 691 | 0.1+ | 0.1+ |
| 2001 10 16 | 644 | 0.6− | 0.4+ | 2005 12 31 | 704 | 0.4− | 0.9− | 2006 02 01 | 691 | 0.1+ | 0.8+ |
| 2001 10 16 | 644 | 0.6− | 0.2+ | 2005 12 31 | 704 | 0.3+ | 1.0− | 2006 02 01 | 691 | 0.2+ | 0.0 |
| 2001 10 19 | 699 | 0.7− | 0.1+ | 2005 12 31 | 704 | 0.0 | 0.3+ | 2006 02 02 | 703 | 0.5− | 0.4− |
| 2001 10 19 | 699 | 0.2− | 0.8+ | 2005 12 31 | 704 | 1.0+ | 1.1+ | 2006 02 02 | 703 | 0.6− | 0.1+ |
| 2001 10 19 | 699 | 0.5− | 0.6+ | 2005 12 31 | 704 | 1.1+ | 0.8− | 2006 02 02 | 703 | 1.0− | 0.0 |
| 2001 10 19 | 699 | 0.4− | 0.5+ | 2006 01 05 | 699 | 0.0 | 0.8− | 2006 02 02 | 703 | 1.1− | 0.6− |
| 2001 12 07 | 704 | 0.1− | 0.5− | 2006 01 05 | 704 | 0.7+ | 0.7+ | 2006 02 07 | G96 | 0.4− | 0.6+ |
| 2001 12 07 | 704 | 0.9+ | 0.9− | 2006 01 05 | 704 | 0.0 | 0.5+ | 2006 02 07 | G96 | 0.2+ | 0.3+ |
| 2001 12 07 | 704 | 0.7+ | 0.8+ | 2006 01 05 | 704 | (3.2+ | 0.9+) | 2006 02 07 | G96 | 0.3− | 0.1+ |
| 2001 12 07 | 704 | 0.5− | 0.3− | 2006 01 05 | 704 | 1.3− | 1.5+ | 2006 03 26 | G96 | 0.4− | 0.5− |
| 2003 03 12 | 291 | 0.0 | 0.5+ | 2006 01 05 | 699 | 0.1+ | 0.1+ | 2006 03 26 | G96 | 0.5− | 0.3− |
| 2003 03 12 | 291 | 0.3− | 0.8+ | 2006 01 05 | 704 | 0.5+ | 0.9+ | 2006 03 26 | G96 | 0.3− | 0.1− |
| 2003 03 12 | 291 | 0.4− | 0.8+ | 2006 01 05 | 699 | 0.3+ | 0.3− | 2006 03 26 | G96 | 0.7− | 0.0 |
| 2003 04 07 | 691 | 0.4+ | 0.5+ | 2006 01 08 | 691 | 0.3+ | 0.2+ | | | | |

**(140010)∗ 2001 SA$_{45}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.03185 | | (2000.0) | | | |
| $n$ | 0.22543803 | $\omega$ | 241.15799 | | +0.32193848 | +0.94470835 |
| $a$ | 2.6737323 | $\Omega$ | 47.76148 | | −0.83667678 | +0.31468675 |
| $e$ | 0.0292420 | $i$ | 4.82738 | | −0.44308868 | +0.09218667 |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.5− | 0.2− | 2003 01 05 | 704 | 0.3− | 0.1+ | 2004 05 11 | 699 | 0.6− | 0.5+ |
| 2001 09 16 | 704 | 0.3− | 0.7+ | 2003 01 05 | 704 | 0.5+ | 0.1+ | 2004 05 27 | 691 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | (1.8− | 1.3+) | 2003 01 05 | 704 | 0.6+ | 0.3+ | 2004 05 27 | 691 | 0.4+ | 0.2− |
| 2001 09 19 | 704 | 0.3− | 1.5+ | 2003 01 05 | 704 | 1.5+ | 0.2+ | 2004 05 27 | 691 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.3− | 0.2− | 2003 01 05 | 704 | 0.1− | 0.1− | 2005 08 05 | 644 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2003 01 09 | 704 | 0.1− | 1.1+ | 2005 08 05 | 644 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2003 01 09 | 704 | 0.0 | 1.0+ | 2005 08 05 | 644 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2003 01 09 | 704 | 0.2+ | 0.7+ | 2005 08 28 | E12 | 0.4− | 0.1− |
| 2001 09 21 | 704 | 1.0− | 0.7+ | 2003 01 09 | 704 | 0.1− | 0.9+ | 2005 08 28 | E12 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.6− | 0.1+ | 2003 02 01 | 704 | 0.8− | 0.1+ | 2005 08 28 | E12 | 0.1− | 1.1+ |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2003 02 01 | 704 | 0.2+ | 0.5− | 2005 08 28 | E12 | 0.3− | 0.7+ |
| 2001 09 21 | 704 | 0.8− | 0.1− | 2003 02 01 | 704 | 1.1+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2001 10 08 | 644 | 1.0− | 0.7+ | 2004 04 15 | 699 | 0.3− | 0.6− | 2006 11 10 | 691 | 0.3− | 0.2− |
| 2001 10 08 | 644 | 0.8− | 0.8+ | 2004 04 15 | 699 | 1.0− | 1.1+ | 2006 11 10 | 691 | 0.0 | 0.5+ |
| 2001 10 08 | 644 | 1.1− | 0.5+ | 2004 04 15 | 699 | 0.5− | 0.7− | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2004 04 15 | 699 | 0.2− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2004 04 17 | 704 | 1.0+ | 1.1− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 04 17 | 704 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.5+ | 0.8+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 04 17 | 704 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2001 10 17 | 644 | (1.4− | 1.7+) | 2004 04 21 | 704 | 1.2+ | 0.9+ | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2001 10 17 | 644 | (1.4− | 1.7+) | 2004 04 21 | 704 | 1.0+ | 0.9− | 2006 11 19 | 704 | 0.8− | 0.5+ |
| 2001 10 17 | 644 | (1.3− | 1.5+) | 2004 04 21 | 704 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2001 10 17 | 644 | (1.6− | 1.6+) | 2004 04 24 | 691 | 0.1+ | 0.7+ | 2006 11 22 | 704 | 0.5− | 1.3+ |
| 2001 10 17 | 644 | (1.6− | 1.9+) | 2004 04 24 | 691 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.8+ |
| 2001 10 17 | 644 | (1.8− | 1.8+) | 2004 04 24 | 691 | 0.0 | 0.6+ | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2001 10 24 | 704 | 0.9− | 0.6+ | 2004 04 25 | 703 | 0.7+ | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2001 10 24 | 704 | 0.7− | 0.4− | 2004 04 25 | 703 | 0.1− | 0.2+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 1.4− | 1.4+ | 2004 04 25 | 703 | 0.5+ | 0.6+ | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 04 25 | 703 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 05 11 | 699 | 0.3+ | 0.3+ | 2006 11 27 | 704 | 0.4+ | 0.9+ |
| 2002 12 06 | 645 | 0.1− | 0.1− | 2004 05 11 | 699 | 0.7− | 0.7− | 2006 11 27 | 704 | 0.8+ | 0.9+ |
| 2002 12 06 | 645 | 0.0 | 0.1− | 2004 05 11 | 699 | 0.6+ | 0.8+ | 2006 11 27 | 704 | 0.6+ | 0.2+ |

**(140011)∗ 2001 SA$_{46}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.57623 | | (2000.0) | | | |
| $n$ | 0.19084058 | $\omega$ | 255.36948 | | +0.58831165 | −0.80650395 |
| $a$ | 2.9878278 | $\Omega$ | 158.27195 | | +0.78943509 | +0.55711727 |
| $e$ | 0.0850609 | $i$ | 9.11690 | | +0.17516176 | +0.19791848 |
| $P$ | 5.16 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.5+ | 1.2+ | 2001 10 24 | 644 | 0.6− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2001 08 27 | 699 | 0.1− | 0.1+ | 2001 10 24 | 644 | 0.3− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2001 08 27 | 699 | 0.2− | 0.9+ | 2001 10 24 | 644 | 0.5− | 0.0 | 2006 09 16 | 699 | 0.3+ | 0.7+ |
| 2001 08 27 | 699 | 1.1+ | 0.7+ | 2002 12 28 | 699 | 0.3− | 0.2− | 2006 09 16 | 699 | 0.4− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2002 12 28 | 699 | 0.7− | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.5+ |
| 2001 09 16 | 704 | 0.9− | 0.1− | 2002 12 28 | 699 | 1.0− | 0.4− | 2006 09 16 | 699 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.8+ | 0.5+ | 2002 12 28 | 699 | (0.8− | 2.1+) | 2006 09 19 | 699 | 0.1− | 0.3+ |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2003 01 07 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.2− |
| 2001 09 16 | 704 | 1.1− | 0.1+ | 2003 01 07 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 704 | 0.5+ | 0.6− |
| 2001 09 18 | 699 | 0.6+ | 0.9+ | 2003 01 07 | 704 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.2+ |
| 2001 09 18 | 699 | 0.8+ | 0.4+ | 2003 01 07 | 704 | 0.5− | 0.1− | 2006 09 19 | 704 | 0.6− | 0.4− |
| 2001 09 18 | 699 | 0.3+ | 0.9+ | 2003 02 02 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 704 | (1.5− | 0.7+) |
| 2001 09 18 | 699 | 0.4+ | 0.9+ | 2003 02 02 | 704 | 0.5+ | 0.5− | 2006 09 19 | 699 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.8+ | 0.6− | 2003 02 02 | 704 | 0.7+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.3+ | 0.5− | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | (0.3− | 1.6+) | 2006 09 22 | 704 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.5+ | 0.6+ | 2006 09 22 | 704 | 1.4+ | 0.1+ |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.7+ | 0.7+ | 2006 09 26 | 704 | (2.2+ | 0.2+) |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 704 | 0.3− | 1.0+ | 2006 09 26 | 704 | 1.2+ | 0.5+ |
| 2001 09 21 | 704 | (2.0+ | 0.7−) | 2004 04 20 | E12 | 0.3+ | 1.5+ | 2006 09 26 | 704 | (3.3+ | 0.2−) |
| 2001 09 21 | 704 | 0.2+ | 1.0+ | 2004 04 20 | E12 | 0.2+ | 0.9+ | 2006 09 26 | 704 | (1.9+ | 0.1−) |
| 2001 09 25 | 644 | 0.5− | 0.6− | 2004 04 20 | E12 | 0.3− | 0.4+ | 2006 09 28 | 704 | 0.5− | 0.0 |
| 2001 09 25 | 644 | 0.9− | 0.3− | 2004 04 20 | E12 | (0.1+ | 2.6+) | 2006 09 28 | 704 | 0.4− | 0.3+ |
| 2001 09 25 | 644 | 0.7− | 0.9− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 28 | 704 | 1.1+ | 1.1+ |
| 2001 10 13 | 704 | 0.7− | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.5− |
| 2001 10 13 | 704 | 0.2− | 0.8− | 2006 08 16 | 644 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.3− |
| 2001 10 13 | 704 | 0.8− | 0.8− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2001 10 13 | 704 | 0.6+ | 0.3− | 2006 08 22 | 644 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.3− | 0.6− |
| 2001 10 16 | 644 | 0.4− | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2001 10 16 | 644 | 0.0 | 0.4+ | 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 10 16 | 644 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 10 19 | 699 | 0.5+ | 1.4+ | 2006 08 24 | 644 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.1− |
| 2001 10 19 | 699 | (0.2− | 1.7+) | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2001 10 19 | 699 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 10 19 | 699 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 10 24 | 644 | 0.4− | 0.1− |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2006 08 28 | 699 | 0.7− | 0.0 | 2006 10 24 | 644 | 0.2− | 0.0 |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.3− | 2006 10 24 | 644 | 0.3− | 0.3− |
| 2001 10 20 | 704 | 0.6+ | 0.7− | 2006 08 28 | 699 | 0.5− | 0.1− | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.2− | 0.4+ | 2006 08 28 | 699 | 0.8+ | 0.2− | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.6− | 1.1− | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 10 24 | 644 | 0.2+ | 0.1− |

**(140012)∗ 2001 SG$_{47}$ = 1999 EF$_{7}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22825)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.54365 | | (2000.0) | | | |
| $n$ | 0.21956905 | $\omega$ | 260.90790 | | +0.98873981 | −0.13240208 |
| $a$ | 2.7211676 | $\Omega$ | 106.67730 | | +0.14901227 | +0.91391937 |
| $e$ | 0.0586679 | $i$ | 4.17479 | | −0.01374531 | +0.38369398 |
| $P$ | 4.49 | $H$ | 16.5 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 07 | 691 | 0.3+ | 0.0 | 2001 10 08 | 644 | 0.2− | 0.5+ | 2005 06 30 | 691 | 0.3+ | 0.3+ |
| 1994 01 07 | 691 | 0.5− | 0.2+ | 2001 10 08 | 644 | 0.3− | 0.7+ | 2005 06 30 | 691 | 0.0 | 0.4+ |
| 1994 01 07 | 691 | 0.2− | 0.1− | 2001 10 24 | 644 | 0.1− | 0.2+ | 2005 06 30 | 691 | 0.1− | 0.5+ |
| 1999 03 15 | 621 | 0.1− | 0.3− | 2001 10 24 | 644 | 0.2− | 0.6+ | 2005 09 08 | E12 | 0.7− | 0.7+ |
| 1999 03 15 | 621 | 0.4+ | 0.4− | 2001 10 24 | 644 | 0.2− | 0.1+ | 2005 09 08 | E12 | 0.4− | 0.1+ |
| 1999 03 15 | 621 | 0.2+ | 0.2+ | 2003 01 26 | 608 | 0.8+ | 0.0 | 2005 09 08 | E12 | 0.3− | 0.2− |
| 1999 03 18 | 621 | 0.3+ | 0.1+ | 2003 01 26 | 608 | 0.3+ | 0.4+ | 2005 09 08 | E12 | 0.5− | 0.3− |
| 1999 03 18 | 621 | 0.8+ | 0.6− | 2003 01 26 | 608 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.4− | 0.1+ |
| 1999 03 18 | 621 | 0.4+ | 0.1− | 2003 02 01 | 645 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.1+ |
| 2001 09 16 | 704 | 0.3− | 1.2+ | 2003 02 01 | 645 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2001 09 16 | 704 | 0.4+ | 0.7+ | 2004 04 20 | 704 | 0.6− | 0.2− | 2006 11 12 | G96 | 0.6− | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.2+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 11 12 | D35 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 0.0 | 1.1+ | 2006 11 12 | D35 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.0 | 2004 04 20 | 704 | 0.0 | 0.1− | 2006 11 12 | D35 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2004 04 20 | 691 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2001 10 08 | 644 | 0.3− | 0.1+ | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 18 | 691 | 0.1− | 0.6− |

**(140013)∗ 2001 SA$_{49}$ = 2004 DM$_{41}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.25765 | | (2000.0) | | | |
| $n$ | 0.18350412 | $\omega$ | 235.15194 | | −0.11295548 | +0.99015824 |
| $a$ | 3.0669415 | $\Omega$ | 28.70117 | | −0.84619006 | −0.05227674 |
| $e$ | 0.0227944 | $i$ | 9.90757 | | −0.52077197 | −0.12982216 |
| $P$ | 5.37 | $H$ | 14.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 22 | 691 | 0.1+ | 0.8+ | 2001 10 23 | 704 | 0.3− | 0.1− | 2004 03 23 | 704 | 0.7+ | 0.1− |
| 1999 04 22 | 691 | 0.5+ | 0.4+ | 2002 12 03 | 644 | 0.2− | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.1− |
| 1999 04 22 | 691 | 0.2+ | 0.4+ | 2002 12 03 | 644 | 0.2+ | 0.8+ | 2004 03 23 | 704 | 1.0+ | 0.4− |
| 2001 09 16 | 704 | 0.4+ | 0.8+ | 2002 12 03 | 644 | 0.5+ | 1.2− | 2004 03 23 | 704 | 0.1− | 0.4− |
| 2001 09 16 | 704 | 0.1+ | 0.7+ | 2004 02 18 | 608 | 0.0 | 0.0 | 2004 03 23 | 704 | 1.5+ | 0.1+ |
| 2001 09 16 | 704 | (0.6+ | 1.9+) | 2004 02 18 | 608 | 0.1+ | 0.3− | 2004 03 28 | 703 | (0.0 | 1.8+) |
| 2001 09 19 | 704 | 0.6+ | 0.6+ | 2004 02 18 | 608 | 0.2+ | 0.2+ | 2004 03 28 | 703 | 0.9+ | 0.0 |
| 2001 09 19 | 704 | 0.4+ | 0.1+ | 2004 02 25 | 704 | 0.7+ | 1.0+ | 2004 03 28 | 703 | 0.2− | 0.7+ |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2004 02 25 | 704 | 0.2− | 0.5+ | 2004 03 28 | 703 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2004 02 25 | 704 | 0.4− | 0.8+ | 2004 04 10 | 644 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2004 02 25 | 704 | 1.1− | 0.2+ | 2004 04 10 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2004 03 12 | 644 | 0.1+ | 0.2+ | 2004 04 10 | 644 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2004 03 12 | 644 | 0.1− | 0.5+ | 2004 04 15 | 644 | 0.2+ | 0.6+ |
| 2001 09 21 | 704 | 0.4− | 0.4− | 2004 03 12 | 644 | 0.1+ | 0.2+ | 2004 04 15 | 644 | 0.3− | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2004 03 15 | 703 | 1.0+ | 0.7+ | 2004 04 15 | 644 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.8− | 0.2− | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 08 16 | 644 | 1.5− | 0.3+ |
| 2001 09 25 | 333 | 0.8− | 0.0 | 2004 03 15 | 703 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.6− | 0.5+ |
| 2001 09 25 | 333 | 0.2+ | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.7− | 0.4+ |
| 2001 09 25 | 333 | 0.5− | 0.4+ | 2004 03 15 | 703 | 0.3− | 0.1− | 2006 08 25 | F84 | 0.8+ | 0.2− |
| 2001 09 26 | 333 | 0.6− | 0.6− | 2004 03 15 | 704 | 0.6+ | 0.8+ | 2006 08 25 | F84 | 0.1− | 0.5+ |
| 2001 09 26 | 333 | 0.6− | 0.6+ | 2004 03 15 | 703 | 0.8− | 0.9+ | 2006 08 29 | F84 | 0.1+ | 0.7+ |
| 2001 09 26 | 333 | 0.2− | 0.2− | 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 08 29 | F84 | 0.2− | 0.3+ |
| 2001 10 13 | 704 | 0.6− | 0.2− | 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.1+ | 0.9+ |
| 2001 10 13 | 704 | 0.7− | 0.4+ | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.6+ | 1.3+ |
| 2001 10 13 | 704 | 0.3− | 0.8+ | 2004 03 18 | 691 | 0.2− | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.2+ |
| 2001 10 14 | 699 | 0.2− | 0.7+ | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.7− | 0.7+ |
| 2001 10 14 | 699 | 0.1+ | 0.4+ | 2004 03 20 | 699 | 0.7− | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.9+ |
| 2001 10 14 | 699 | 0.3− | 1.0+ | 2004 03 20 | 699 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.5− | 0.6+ |
| 2001 10 14 | 699 | 0.6− | 0.9+ | 2004 03 20 | 699 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.2+ | 0.3− |
| 2001 10 16 | 704 | 0.1− | 0.2+ | 2004 03 20 | 699 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.0 |
| 2001 10 16 | 704 | 0.1+ | 0.8+ | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.4− | 0.8+ |
| 2001 10 16 | 704 | 0.1+ | 1.1+ | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2001 10 16 | 704 | 0.8− | 0.9+ | 2004 03 20 | 704 | (1.8+ | 0.8+) | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2001 10 16 | 704 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.5− |
| 2001 10 18 | 644 | 0.6− | 0.1+ | 2004 03 20 | 704 | 0.4+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.6− | 0.3+ | 2004 03 22 | 704 | 1.3+ | 1.0+ | 2006 09 26 | 703 | 0.5− | 0.3+ |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.9+ | 2006 09 26 | 703 | 1.0− | 1.0+ |
| 2001 10 20 | 704 | 0.3+ | 0.6+ | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2006 10 02 | 703 | 1.4− | 0.7− |
| 2001 10 20 | 704 | 0.4− | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 10 02 | 703 | 0.7+ | 0.2− |
| 2001 10 20 | 704 | 1.2− | 0.3+ | 2004 03 22 | 704 | 1.0+ | 0.9+ | 2006 10 02 | 703 | 0.1+ | 0.3− |
| 2001 10 20 | 704 | 0.3+ | 1.0+ | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 10 02 | 703 | (2.5− | 0.2+) |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.9+ | 2006 10 09 | 644 | 0.0 | 0.8+ |
| 2001 10 23 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.7+ | 0.9+ | 2006 10 09 | 644 | 0.3− | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.1− | 2006 10 09 | 644 | 0.2− | 0.8+ |

**(140014)∗ 2001 SG$_{49}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.70354 | | (2000.0) | | | |
| $n$ | 0.19853161 | $\omega$ | 245.24451 | | +0.80136412 | −0.59782259 |
| $a$ | 2.9101560 | $\Omega$ | 151.45633 | | +0.56320224 | +0.74246879 |
| $e$ | 0.0573906 | $i$ | 2.46892 | | +0.20154100 | +0.30223871 |
| $P$ | 4.96 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1+ | 0.1− | 2001 10 23 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.4+ |
| 2001 09 16 | 704 | 0.2+ | 0.3+ | 2001 10 23 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.3+ | 0.4+ | 2001 10 23 | 704 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.9− | 0.9+ |
| 2001 09 19 | 704 | 1.4+ | 1.2− | 2001 10 24 | 704 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.8+ |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2001 10 24 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2001 10 24 | 704 | 0.2− | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.8− | 1.0+ | 2001 10 24 | 704 | 0.1− | 0.6− | 2006 10 01 | 691 | 0.3+ | 0.1− |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2001 10 24 | 704 | 0.7+ | 1.1+ | 2006 10 01 | 691 | 0.3+ | 0.1− |
| 2001 09 26 | 333 | 0.9+ | 0.8+ | 2002 12 07 | 291 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.9− | 1.2+ | 2002 12 07 | 291 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.6+ |
| 2001 09 26 | 333 | 0.6− | 0.6+ | 2002 12 07 | 291 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2001 09 26 | 704 | 0.4− | 0.5+ | 2004 04 12 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2001 09 26 | 333 | 0.5+ | 0.0 | 2004 04 12 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 09 26 | 704 | 0.7− | 1.2+ | 2004 04 12 | 691 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 2001 09 26 | 704 | 1.3− | 1.0+ | 2004 04 15 | 699 | 0.9− | 0.5+ | 2006 10 21 | 703 | 0.4− | 1.3− |
| 2001 10 12 | 699 | (0.0 | 2.5+) | 2004 04 15 | 699 | 1.3+ | 0.6− | 2006 10 21 | 703 | (1.5+ | 3.0−) |
| 2001 10 12 | 699 | 0.4− | 0.4− | 2004 04 15 | 699 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.7− | 0.0 |
| 2001 10 12 | 699 | 0.6− | 0.2− | 2004 04 15 | 699 | (1.1− | 1.6+) | 2006 10 21 | 703 | 0.9− | 0.2+ |
| 2001 10 12 | 699 | 0.5− | 1.1− | 2004 04 22 | 599 | (2.6− | 1.4+) | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2001 10 16 | 704 | 0.5− | 0.3+ | 2004 04 22 | 599 | (1.6+ | 0.2+) | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 10 16 | 704 | 0.1+ | 0.0 | 2004 04 22 | 599 | 0.9− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 10 16 | 704 | 0.3− | 1.2− | 2004 04 25 | 691 | 0.0 | 0.5+ | 2006 10 28 | 691 | (1.7+ | 0.0 ) |
| 2001 10 16 | 704 | (1.0− | 1.7+) | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2001 10 16 | 704 | 0.6− | 0.4+ | 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2001 10 18 | 644 | 0.6− | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2001 10 18 | 644 | 0.7− | 0.1− | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2001 10 18 | 644 | 0.5− | 0.2+ | 2006 09 23 | 691 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2001 10 22 | 704 | 0.6+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2001 10 22 | 704 | 0.5+ | 1.0+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2001 10 22 | 704 | 0.7+ | 1.4+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2001 10 22 | 704 | (0.6− | 1.5+) | 2006 09 30 | 703 | 0.4+ | 1.0− | | | | |
| 2001 10 23 | 704 | 1.2− | 0.0 | 2006 09 30 | 703 | 0.8+ | 1.2+ | | | | |

**(140015)∗ 2001 SE$_{50}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.17461 | | (2000.0) | | | |
| $n$ | 0.19089836 | $\omega$ | 316.59735 | | +0.99290315 | −0.00400331 |
| $a$ | 2.9872248 | $\Omega$ | 44.05802 | | +0.06387837 | +0.86097520 |
| $e$ | 0.1479572 | $i$ | 9.84155 | | −0.10031393 | +0.50863117 |
| $P$ | 5.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 23 | 327 | (2.3+ | 0.0 ) | 2001 11 08 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.2+ |
| 1996 10 23 | 327 | 0.9+ | 0.4− | 2001 11 08 | 644 | 0.1− | 0.0 | 2006 09 21 | 699 | 0.6+ | 0.1− |
| 1996 10 23 | 327 | 0.3+ | 0.0 | 2001 11 08 | 644 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.1+ | 1.3+ |
| 1996 10 23 | 327 | 0.3+ | 0.3+ | 2001 11 09 | 704 | 1.5+ | 0.0 | 2006 09 21 | 699 | 0.0 | 0.4+ |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 11 09 | 704 | 0.4− | 1.2− | 2006 09 21 | 699 | 0.3− | 0.3+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 11 09 | 704 | 1.2− | 0.3− | 2006 09 25 | 703 | 0.3+ | 0.0 |
| 2001 09 11 | 699 | 0.5+ | 0.9+ | 2001 11 09 | 704 | 0.1+ | 0.2− | 2006 09 25 | 703 | 0.3− | 0.2− |
| 2001 09 11 | 699 | 0.6+ | 0.3+ | 2001 11 09 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.6− |
| 2001 09 11 | 699 | 0.6+ | 0.8+ | 2001 11 18 | 704 | 0.1− | 0.6+ | 2006 09 25 | 703 | 0.6− | 0.1− |
| 2001 09 11 | 699 | 0.0 | 0.6+ | 2001 11 18 | 704 | 0.0 | 0.9+ | 2006 10 02 | 703 | 0.6+ | 0.5+ |
| 2001 09 16 | 704 | 0.8− | 0.4+ | 2001 11 18 | 704 | 0.3− | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.3+ |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2001 11 18 | 704 | 0.7− | 0.1+ | 2006 10 02 | 703 | 0.5− | 0.4+ |
| 2001 09 16 | 704 | 0.1+ | 0.6− | 2001 11 18 | 704 | 0.6− | 0.5+ | 2006 10 02 | 703 | 0.3− | 0.3+ |
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2001 11 20 | 704 | 0.5− | 0.1− | 2006 10 02 | 703 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.4− | 0.9+ | 2001 11 20 | 704 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.4+ | 0.1− |
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2001 11 20 | 704 | 0.3− | 0.0 | 2006 10 02 | 703 | 0.8− | 1.0− |
| 2001 09 19 | 704 | (0.3− | 1.9+) | 2001 11 20 | 704 | 0.1+ | 0.7+ | 2006 10 02 | 703 | 0.1+ | 0.7− |
| 2001 09 19 | 704 | (2.2− | 0.3−) | 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.5+ | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2001 12 07 | 704 | 0.8+ | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.1− | 2001 12 07 | 704 | 0.0 | 1.3+ | 2006 10 03 | G96 | 0.4+ | 0.2− |
| 2001 09 21 | 704 | 0.6− | 0.4+ | 2001 12 07 | 704 | 1.5+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2001 12 07 | 704 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.5+ | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2001 12 07 | 704 | 0.7+ | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2001 10 10 | 644 | 0.4− | 0.3+ | 2001 12 19 | 704 | 0.5− | 0.6− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2001 10 10 | 644 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.2+ |
| 2001 10 10 | 644 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2001 10 13 | 704 | 0.2− | 0.6− | 2002 12 06 | 645 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.7+ | 0.4+ |
| 2001 10 13 | 704 | 0.1− | 0.7− | 2002 12 06 | 645 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.1− | 0.6+ |
| 2001 10 13 | 704 | 0.3+ | 1.0− | 2002 12 13 | 645 | 0.1+ | 0.0 | 2006 10 19 | 958 | 0.0 | 0.7− |
| 2001 10 14 | 645 | 0.0 | 0.3− | 2002 12 13 | 645 | 0.1+ | 0.0 | 2006 10 19 | 958 | 0.4+ | 0.5− |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2003 01 07 | 704 | 0.4− | 0.2− | 2006 10 19 | 958 | 0.8− | 0.7− |
| 2001 10 16 | 704 | 0.3+ | 0.7+ | 2003 01 07 | 704 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 10 16 | 704 | 0.3− | 0.7+ | 2003 01 07 | 704 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2001 10 16 | 704 | 0.3− | 0.0 | 2003 01 07 | 704 | 0.4− | 0.9+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 10 16 | 644 | 0.2+ | 0.7− | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.3+ |
| 2001 10 16 | 704 | 0.4+ | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.8− | 0.4+ |
| 2001 10 16 | 644 | (0.1− | 1.8+) | 2004 03 15 | 704 | 0.4− | 0.2+ | 2006 10 28 | 703 | 0.9− | 0.6+ |
| 2001 10 16 | 644 | 0.2+ | 0.7− | 2004 03 15 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 1.2− | 0.6+ |
| 2001 10 16 | 704 | 0.5− | 0.2+ | 2004 03 15 | 704 | 0.9+ | 0.2+ | 2006 11 07 | 644 | 0.3+ | 0.1− |
| 2001 10 16 | 644 | (0.2− | 1.8+) | 2004 04 20 | 704 | (0.1+ | 1.7+) | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2001 10 16 | 644 | 0.2+ | 0.5− | 2004 04 20 | 704 | (1.6+ | 1.4+) | 2006 11 07 | 644 | 0.4+ | 0.2− |
| 2001 10 16 | 644 | (0.1+ | 1.8+) | 2004 04 20 | 704 | 1.0+ | 0.7+ | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2001 10 22 | 704 | 0.2− | 1.3+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.1− |
| 2001 10 22 | 704 | (0.1− | 1.8+) | 2006 08 21 | 644 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 2001 10 22 | 704 | 0.3− | 1.1+ | 2006 08 21 | 644 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2001 10 24 | 644 | 0.4− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 2001 10 24 | 644 | 0.7− | 0.0 | 2006 09 14 | 644 | 0.3− | 0.0 | 2006 11 27 | 703 | 1.0− | 0.6+ |
| 2001 10 24 | 644 | 0.5− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.8− | 2.3+ |
| 2001 11 05 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 11 27 | 703 | 1.6+ | 0.5+ |
| 2001 11 05 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.3− | 1.6+ |
| 2001 11 05 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.3+ | | | | |

**(140016)∗ 2001 SL$_{50}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.96832 | | (2000.0) | | | |
| $n$ | 0.21595199 | $\omega$ | 321.67028 | | +0.80940860 | −0.57532603 |
| $a$ | 2.7514687 | $\Omega$ | 73.85105 | | +0.56448931 | +0.70698730 |
| $e$ | 0.0524181 | $i$ | 7.03954 | | +0.16189359 | +0.41130149 |
| $P$ | 4.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 1.2− | 1.2+ | 2001 10 20 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.7− | 0.2+ | 2001 10 20 | 704 | 0.3− | 1.3+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.4+ | 0.2− | 2001 10 20 | 704 | 0.0 | 0.8+ | 2006 11 15 | 703 | 0.8+ | 0.4− |
| 2001 09 17 | 699 | 0.6+ | 0.1− | 2001 10 22 | 704 | 1.4+ | 0.3− | 2006 11 15 | 703 | 0.9+ | 0.3− |
| 2001 09 17 | 699 | 1.4− | 1.1+ | 2001 10 22 | 704 | 1.1+ | 0.9− | 2006 11 15 | 703 | 0.2− | 0.6+ |
| 2001 09 17 | 699 | 0.3+ | 0.0 | 2001 10 22 | 704 | 0.1+ | 0.5− | 2006 11 15 | 703 | 0.3− | 0.3+ |
| 2001 09 17 | 699 | (1.8− | 1.1−) | 2001 10 24 | 644 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | (1.1− | 2.0+) | 2001 10 24 | 644 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.5− | 0.3+ |
| 2001 09 19 | 704 | (3.0− | 0.4+) | 2001 10 24 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.5− | 0.7− |
| 2001 09 19 | 704 | 0.9− | 0.8+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.5+ |
| 2001 09 19 | 704 | 0.4− | 0.1+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 11 18 | 704 | (0.8− | 1.6−) |
| 2001 09 19 | 704 | 0.6− | 0.4− | 2003 02 02 | 644 | 0.4+ | 0.6+ | 2006 11 18 | 704 | (1.6− | 0.5−) |
| 2001 09 21 | 704 | 0.2− | 1.4+ | 2003 02 02 | 644 | 0.6+ | 0.8+ | 2006 11 18 | 704 | 0.8− | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2003 02 02 | 644 | 0.7+ | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.6− |
| 2001 09 21 | 704 | 0.2− | 0.3− | 2003 04 26 | 645 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 10 10 | 644 | 0.1+ | 0.4+ | 2003 04 26 | 645 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2001 10 10 | 644 | 0.0 | 0.4+ | 2004 04 23 | 704 | 0.6+ | 1.0+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2001 10 10 | 644 | 0.1+ | 0.3+ | 2004 04 23 | 704 | 0.4+ | 0.8+ | 2006 11 21 | 704 | (1.7+ | 0.9+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.0 | 0.4+ | 2004 04 23 | 704 | 0.9− | 1.2+ | 2006 11 21 | 704 | (2.8+ | 0.1+) | | |
| 2001 10 16 | 704 | 0.6− | 0.1− | 2004 05 21 | 704 | 0.8+ | 0.4+ | 2006 11 21 | 704 | (1.9+ | 0.8+) | | |
| 2001 10 16 | 704 | 1.2− | 0.7− | 2004 05 21 | 704 | 0.8+ | 1.1+ | 2006 11 21 | 704 | (1.8+ | 1.1+) | | |
| 2001 10 16 | 704 | (2.2+ | 1.9−) | 2004 05 21 | 704 | 0.2+ | 0.2− | 2006 11 21 | 704 | (2.8+ | 0.0 ) | | |
| 2001 10 16 | 644 | 0.3− | 0.3+ | 2004 05 21 | 704 | 0.7− | 1.2+ | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 16 | 644 | 0.5− | 0.5+ | 2005 08 04 | 644 | 0.2+ | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 16 | 644 | 0.2− | 0.2+ | 2005 08 04 | 644 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2001 10 19 | 699 | 0.5− | 0.5+ | 2005 08 04 | 644 | 0.2+ | 0.4+ | 2006 12 01 | 704 | 0.9+ | 0.2+ | | |
| 2001 10 19 | 699 | 0.1− | 0.9+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.0 | 0.8+ | | |
| 2001 10 19 | 699 | (0.3− | 2.5+) | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.2− | 0.1+ | | |
| 2001 10 19 | 699 | (0.9− | 1.8+) | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.8− | 0.4+ | | |
| 2001 10 20 | 704 | 0.6+ | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.3− | | | | | | |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | | | | | | |

**(140017)∗ 2001 SE$_{51}$ = 2000 JM$_{25}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20218)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.06782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21574071 | $\omega$ | 259.86738 | | +0.17109038 | +0.98251047 | |
| $a$ | 2.7532647 | $\Omega$ | 20.43203 | | −0.80129492 | +0.18216086 | |
| $e$ | 0.1696746 | $i$ | 12.15309 | | −0.57328400 | +0.03860831 | |
| $P$ | 4.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.1+ | 0.3− | 2001 09 23 | 704 | 0.2− | 0.2− | 2004 03 23 | 704 | (0.1− | 1.6+) | | |
| 2000 05 07 | 704 | 0.6+ | 0.4+ | 2001 09 23 | 704 | (0.3+ | 2.0+) | 2004 03 23 | 704 | 0.8+ | 0.3+ | | |
| 2000 05 07 | 704 | 0.7− | 0.4+ | 2001 09 24 | 644 | (0.8+ | 1.6+) | 2004 03 23 | 704 | 0.2− | 1.0+ | | |
| 2000 05 09 | 704 | 0.8+ | 0.3− | 2001 09 24 | 644 | 0.4+ | 1.4+ | 2004 03 23 | 704 | 0.9+ | 1.0+ | | |
| 2000 05 09 | 704 | 0.2+ | 0.2+ | 2001 09 24 | 644 | (0.0 | 1.6+) | 2005 07 04 | E12 | 0.4− | 0.0 | | |
| 2000 05 09 | 704 | 1.1− | 0.6+ | 2001 10 06 | 644 | 0.1+ | 0.2+ | 2005 07 04 | E12 | 0.1− | 0.2+ | | |
| 2000 05 09 | 704 | 0.5− | 0.0 | 2001 10 06 | 644 | 0.4− | 0.0 | 2005 07 04 | E12 | 0.2+ | 0.0 | | |
| 2000 05 09 | 704 | 0.1+ | 0.3+ | 2001 10 06 | 644 | 0.3+ | 0.2+ | 2005 07 04 | E12 | 0.2+ | 0.1− | | |
| 2000 05 24 | 699 | 0.2− | 1.3+ | 2001 10 19 | 699 | 0.4+ | 1.4+ | 2006 10 04 | G96 | 0.2− | 0.2− | | |
| 2000 05 24 | 699 | 0.4− | 0.7− | 2001 10 19 | 699 | (0.2− | 1.6+) | 2006 10 04 | G96 | 0.2+ | 0.0 | | |
| 2000 05 24 | 699 | 0.7+ | 0.5− | 2001 10 19 | 699 | 1.0− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.0 | | |
| 2000 05 24 | 699 | 0.0 | 1.2+ | 2001 10 19 | 699 | 1.1− | 1.2+ | 2006 10 04 | G96 | 0.1− | 0.1− | | |
| 2001 08 27 | 699 | 1.0− | 0.5+ | 2001 10 20 | 704 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.6− | | |
| 2001 08 27 | 699 | 0.3− | 0.3+ | 2001 10 20 | 704 | 0.6− | 0.6+ | 2006 10 19 | 703 | 0.8+ | 0.9+ | | |
| 2001 08 27 | 699 | 0.3− | 0.2+ | 2001 10 20 | 704 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.4− | | |
| 2001 08 27 | 699 | 1.1− | 0.1+ | 2001 10 20 | 704 | 0.2− | 1.1+ | 2006 10 19 | 703 | 0.1− | 0.1+ | | |
| 2001 09 11 | 699 | 0.2+ | 0.2− | 2001 10 24 | 704 | (1.6+ | 0.2+) | 2006 11 11 | G96 | 0.1− | 0.0 | | |
| 2001 09 11 | 699 | 0.9− | 0.1+ | 2001 10 24 | 704 | 0.6− | 1.3− | 2006 11 11 | G96 | 0.1+ | 0.1+ | | |
| 2001 09 11 | 699 | 0.0 | 0.8+ | 2001 10 24 | 704 | 0.6− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.2− | | |
| 2001 09 11 | 699 | 0.0 | 0.2+ | 2001 10 24 | 704 | 0.3− | 0.8− | 2006 11 11 | G96 | 0.2+ | 0.1− | | |
| 2001 09 16 | 704 | 0.1− | 0.8+ | 2001 11 12 | 645 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.8+ | 2001 11 12 | 645 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.4− | 1.1− | | |
| 2001 09 16 | 704 | 0.5− | 0.9+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.5− | 0.6+ | | |
| 2001 09 16 | 704 | 1.3− | 1.1+ | 2001 12 10 | 645 | 0.1+ | 0.3− | 2006 11 22 | 703 | 0.3+ | 0.4− | | |
| 2001 09 19 | 704 | 0.7− | 0.9+ | 2004 02 02 | 699 | 1.1+ | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.2− | | |
| 2001 09 19 | 704 | 0.5− | 0.6+ | 2004 02 02 | 699 | (2.6+ | 1.6−) | 2006 11 25 | G96 | 0.4− | 0.1− | | |
| 2001 09 19 | 704 | 1.1− | 1.4+ | 2004 02 02 | 699 | 0.2+ | 1.3+ | 2006 11 25 | G96 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.9− | 0.8+ | 2004 02 02 | 699 | (0.9+ | 1.9+) | 2006 11 25 | G96 | 0.2− | 0.1− | | |
| 2001 09 21 | 704 | (0.6+ | 1.6+) | 2004 02 16 | 704 | 1.1+ | 0.6+ | 2006 11 25 | G96 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.6+ | 0.7+ | 2004 02 16 | 704 | 1.3+ | 0.9+ | 2006 11 25 | G96 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | (1.1+ | 1.6+) | 2004 02 16 | 704 | (1.6+ | 1.5+) | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2001 09 21 | 704 | 1.0+ | 1.1+ | 2004 02 16 | 704 | 0.8+ | 0.9+ | 2006 11 25 | G96 | 0.3+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.9+ | 0.9+ | 2004 03 19 | 644 | 0.6+ | 0.6+ | 2006 11 25 | G96 | 0.1− | 0.4+ | | |
| 2001 09 23 | 704 | (0.4− | 1.6+) | 2004 03 19 | 644 | 0.5+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.2+ | | |
| 2001 09 23 | 704 | 0.0 | 1.1+ | 2004 03 19 | 644 | 0.7+ | 0.7+ | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2001 09 23 | 704 | (0.3+ | 1.5+) | 2004 03 23 | 704 | 0.1− | 0.5− | 2006 11 25 | G96 | 0.0 | 0.0 | | |

**(140018)∗ 2001 ST$_{51}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.90385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18015282 | $\omega$ | 296.33077 | | +0.81342268 | +0.56612938 | |
| $a$ | 3.1048599 | $\Omega$ | 29.75122 | | −0.38965237 | +0.70083032 | |
| $e$ | 0.1009185 | $i$ | 15.61475 | | −0.43187334 | +0.43397510 | |
| $P$ | 5.47 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | (2.1− | 0.9+) | 2001 10 24 | 644 | 0.2− | 0.1+ | 2005 05 12 | 644 | 0.2− | 0.2+ | | |
| 2001 08 27 | 699 | (0.5− | 2.5+) | 2001 10 24 | 644 | 0.3− | 0.2+ | 2006 07 18 | E12 | (2.4− | 1.0+) | | |
| 2001 08 27 | 699 | 0.9− | 0.0 | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.4− | 0.4− | | |
| 2001 08 27 | 699 | 0.6− | 0.8+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 07 18 | E12 | 0.2− | 0.2+ | | |
| 2001 09 16 | 704 | 0.1− | 0.7− | 2001 11 20 | 704 | 0.7− | 0.7− | 2006 07 18 | E12 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 0.3+ | 0.1− | 2001 11 20 | 704 | 0.1+ | 0.4+ | 2006 08 14 | E12 | 0.1− | 0.3+ | | |
| 2001 09 16 | 704 | 0.5+ | 0.2− | 2001 11 20 | 704 | 0.3+ | 0.1− | 2006 08 14 | E12 | 0.4− | 0.1− | | |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2001 11 20 | 704 | 0.7+ | 0.4− | 2006 08 14 | E12 | 0.1+ | 0.2− | | |
| 2001 09 19 | 704 | 0.5+ | 1.1+ | 2004 02 15 | 704 | 0.5+ | 1.3+ | 2006 08 14 | E12 | 0.2− | 0.1+ | | |
| 2001 09 19 | 704 | 0.2+ | 1.3+ | 2004 02 15 | 704 | 0.7+ | 0.6+ | 2006 09 12 | E12 | 0.0 | 1.7+ | | |
| 2001 09 25 | 644 | 0.2− | 0.5+ | 2004 02 15 | 704 | 0.9+ | 0.8+ | 2006 09 12 | E12 | 0.2− | 0.6+ | | |
| 2001 09 25 | 644 | 0.0 | 0.1+ | 2004 02 15 | 704 | 1.6+ | 1.5+ | 2006 09 12 | E12 | 0.3+ | 0.2− | | |
| 2001 09 25 | 644 | 0.5− | 0.4+ | 2005 05 04 | 644 | 0.1+ | 0.5+ | 2006 09 12 | E12 | 0.1+ | 1.0+ | | |
| 2001 10 08 | 644 | 0.1− | 0.8+ | 2005 05 04 | 644 | 0.1+ | 0.2+ | 2006 09 27 | E12 | 0.1− | 0.3+ | | |
| 2001 10 08 | 644 | 0.1+ | 0.7+ | 2005 05 04 | 644 | 0.1+ | 0.5+ | 2006 09 27 | E12 | 0.2+ | 0.4+ | | |
| 2001 10 08 | 644 | 0.1− | 0.5+ | 2005 05 04 | 644 | 0.1+ | 0.4+ | 2006 09 27 | E12 | 0.8+ | 0.8− | | |
| 2001 10 24 | 644 | 0.2− | 0.0 | 2005 05 12 | 644 | 0.0 | 0.2+ | 2006 09 27 | E12 | 0.4− | 0.7− | | |

**(140019)∗ 2001 SO$_{52}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.02044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17184331 | $\omega$ | 241.68017 | | +0.65076223 | −0.75907801 | |
| $a$ | 3.2041608 | $\Omega$ | 167.67255 | | +0.72228028 | +0.61174324 | |
| $e$ | 0.1102810 | $i$ | 4.72347 | | +0.23413609 | +0.22264497 | |
| $P$ | 5.74 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2+ | 0.1− | 2001 10 18 | 644 | 0.1− | 0.1+ | 2003 01 07 | 704 | 0.8− | 0.8+ | | |
| 2001 09 16 | 704 | 0.1− | 0.3+ | 2001 10 18 | 644 | 0.1− | 0.1+ | 2003 01 07 | 704 | 0.1+ | 0.9+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2001 10 18 | 644 | 0.3− | 0.3+ | 2003 01 07 | 704 | 0.1+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.6+ | 2001 10 20 | 704 | 0.2+ | 0.4+ | 2003 01 07 | 704 | 0.5− | 0.3+ | | |
| 2001 09 17 | 699 | 1.4− | 0.3+ | 2001 10 20 | 704 | 0.2+ | 1.1− | 2003 01 07 | 704 | 0.7− | 0.3+ | | |
| 2001 09 17 | 699 | 1.0− | 0.3− | 2001 10 20 | 704 | 1.1+ | 0.1− | 2003 02 05 | 608 | 0.7+ | 0.3+ | | |
| 2001 09 17 | 699 | 0.2− | 0.1− | 2001 10 20 | 704 | 0.6+ | 0.1+ | 2003 02 05 | 608 | 0.7+ | 0.1− | | |
| 2001 09 17 | 699 | 0.1− | 0.1+ | 2001 10 20 | 704 | 0.4+ | 0.3+ | 2003 02 05 | 608 | 0.4+ | 0.2+ | | |
| 2001 09 18 | 333 | 0.4+ | 0.4+ | 2001 10 22 | 704 | 0.9− | 0.9+ | 2004 03 28 | 704 | 0.8+ | 0.5+ | | |
| 2001 09 18 | 333 | 0.8+ | 1.2+ | 2001 10 22 | 704 | 0.4− | 0.2+ | 2004 03 28 | 704 | 0.7+ | 0.4− | | |
| 2001 09 18 | 333 | 0.4+ | 0.1+ | 2001 10 22 | 704 | 0.2+ | 0.6+ | 2004 03 28 | 704 | 1.1− | 1.4+ | | |
| 2001 09 19 | 704 | 0.2+ | 1.4+ | 2001 10 22 | 704 | 0.3− | 0.9+ | 2004 03 28 | 704 | 0.7+ | 0.5+ | | |
| 2001 09 19 | 704 | (0.2+ | 1.7+) | 2001 10 23 | 704 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.6+ | | |
| 2001 09 19 | 704 | 0.0 | 1.3+ | 2001 10 23 | 704 | 0.5− | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.5+ | | |
| 2001 09 19 | 704 | (0.3− | 1.8+) | 2001 10 23 | 704 | 0.0 | 0.4− | 2004 03 29 | 691 | 0.2+ | 0.6+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.9+ | 2001 10 23 | 704 | 0.0 | 0.1− | 2005 05 20 | G96 | 0.4− | 0.8+ | | |
| 2001 09 26 | 704 | 0.4+ | 0.7+ | 2001 10 24 | 704 | 1.2− | 0.1+ | 2005 05 20 | G96 | 0.2− | 0.6+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.7+ | 2001 10 24 | 704 | 0.6− | 0.1− | 2005 05 20 | G96 | 0.1− | 0.9+ | | |
| 2001 09 26 | 704 | 0.0 | 0.6+ | 2001 10 24 | 704 | 0.1− | 0.2− | 2005 05 20 | G96 | 0.0 | 0.6+ | | |
| 2001 09 26 | 704 | 0.1− | 0.4+ | 2001 10 24 | 704 | 0.6− | 0.0 | 2006 07 20 | A50 | 0.5− | 0.1− | | |
| 2001 10 12 | 699 | 0.2− | 0.4− | 2001 10 24 | 704 | (1.7− | 0.3−) | 2006 08 14 | E12 | (1.7− | 0.4+) | | |
| 2001 10 12 | 699 | 0.3− | 1.2+ | 2001 10 25 | 691 | 0.2− | 0.0 | 2006 08 14 | E12 | 0.4+ | 0.3+ | | |
| 2001 10 12 | 699 | 0.1− | 0.0 | 2001 10 25 | 691 | 0.2− | 0.0 | 2006 08 14 | E12 | 0.6− | 0.4+ | | |
| 2001 10 12 | 699 | 0.5− | 0.0 | 2001 10 25 | 691 | 0.1− | 0.1+ | 2006 08 14 | E12 | 0.0 | 0.3+ | | |
| 2001 10 13 | 704 | 0.2− | 0.7− | 2001 11 18 | 704 | 0.1− | 0.7+ | 2006 08 14 | E12 | 0.5+ | 0.3+ | | |
| 2001 10 13 | 704 | 0.5+ | 0.2− | 2001 11 18 | 704 | 0.7+ | 0.9+ | 2006 08 24 | 644 | 0.1+ | 0.6+ | | |
| 2001 10 13 | 704 | 0.0 | 0.3− | 2001 11 18 | 704 | 0.1+ | 0.9+ | 2006 08 24 | 644 | 0.3− | 0.8+ | | |
| 2001 10 13 | 704 | 0.3− | 1.0− | 2001 11 18 | 704 | 0.5− | 0.6+ | 2006 08 24 | 644 | 0.4+ | 0.4+ | | |
| 2001 10 13 | 704 | 0.9− | 0.3+ | 2001 11 18 | 704 | (1.7− | 2.2+) | 2006 10 19 | G96 | 0.3− | 0.4+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.9+ | 1.2− | 2001 11 20 | 704 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2001 10 16 | 704 | 0.7+ | 1.3− | 2001 11 20 | 704 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2001 10 16 | 704 | 1.3+ | 1.3− | 2001 11 20 | 704 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 10 16 | 704 | 0.5+ | 0.9− | 2001 11 20 | 704 | 0.1− | 0.6+ | | | | |
| 2001 10 16 | 704 | 0.2+ | 1.4− | 2001 11 20 | 704 | 0.1− | 0.3+ | | | | |

**(140020)∗ 2001 SQ$_{52}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.51846 | | (2000.0) | | −0.53605064 | −0.84415071 |
| $n$ | 0.22694113 | $\omega$ | 299.59251 | | +0.81807874 | −0.51720047 |
| $a$ | 2.6619133 | $\Omega$ | 182.85799 | | +0.20831920 | −0.14111433 |
| $e$ | 0.1030438 | $i$ | 8.88360 | | | |
| $P$ | 4.34 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 31 | 691 | 0.2+ | 0.9+ | 2001 11 21 | 645 | 0.0 | 0.1− | 2005 08 27 | 644 | 0.0 | 0.1+ |
| 1995 05 31 | 691 | 1.2+ | 1.5+ | 2001 11 21 | 645 | 0.1+ | 0.1− | 2005 08 27 | 644 | 0.1+ | 0.3+ |
| 1995 05 31 | 691 | 0.6− | 1.8+ | 2001 12 17 | 209 | 0.0 | 0.6+ | 2005 08 27 | 644 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 1.2− | 0.1+ | 2001 12 17 | 209 | 0.1+ | 0.7+ | 2005 08 31 | 691 | 0.1+ | 0.4+ |
| 2001 09 16 | 704 | 0.8− | 0.2+ | 2001 12 17 | 209 | 0.2− | 0.6+ | 2005 08 31 | 691 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2001 12 18 | 209 | 0.4+ | 0.6+ | 2005 08 31 | 691 | (0.0 | 2.6−) |
| 2001 09 16 | 704 | 0.8− | 0.2− | 2001 12 18 | 209 | 0.3+ | 0.1− | 2005 09 06 | 699 | 0.5− | 0.1+ |
| 2001 09 17 | 699 | 0.2+ | 0.4+ | 2001 12 18 | 209 | 0.2+ | 0.1− | 2005 09 06 | 699 | 1.2+ | 1.0+ |
| 2001 09 17 | 699 | 1.2− | 0.7+ | 2003 01 28 | 704 | 0.1+ | 1.0+ | 2005 09 06 | 699 | 0.4+ | 0.3− |
| 2001 09 17 | 699 | 1.0+ | 1.2+ | 2003 01 28 | 704 | 0.6+ | 1.3+ | 2005 09 06 | 699 | 0.9+ | 0.3+ |
| 2001 09 17 | 699 | 0.8+ | 0.1+ | 2003 01 28 | 704 | 0.0 | 0.7+ | 2005 09 06 | 704 | 0.0 | 0.7+ |
| 2001 09 19 | 704 | 0.9− | 0.6+ | 2003 01 28 | 704 | 0.1+ | 1.2+ | 2005 09 06 | 704 | 2.1− | 1.0+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2003 01 28 | 704 | 0.8+ | 1.6+ | 2005 09 06 | 704 | 0.1− | 0.3+ |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2003 02 02 | 704 | 1.1− | 1.2+ | 2005 09 06 | 704 | 0.7+ | 1.2+ |
| 2001 09 19 | 704 | 0.9− | 0.8+ | 2003 02 02 | 704 | 0.4− | 1.5+ | 2005 09 08 | 704 | 0.8− | 0.6− |
| 2001 09 19 | 704 | 0.7− | 0.7+ | 2003 02 02 | 704 | 0.2− | 1.2+ | 2005 09 08 | 704 | 0.1+ | 0.4+ |
| 2001 09 21 | 704 | 1.0− | 1.9+ | 2003 02 02 | 704 | 0.5+ | 0.7+ | 2005 09 08 | 704 | 0.8− | 1.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.1− | 2003 02 02 | 704 | 0.7+ | 1.7+ | 2005 09 13 | 691 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2003 02 22 | 333 | 0.7− | 0.7+ | 2005 09 13 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 333 | 0.5− | 0.3+ | 2003 02 22 | 333 | 0.9+ | 0.2+ | 2005 09 13 | 691 | 0.0 | 0.2+ |
| 2001 09 26 | 333 | 0.3+ | 0.5+ | 2003 02 22 | 683 | (2.3− | 0.7+) | 2005 09 13 | 691 | 0.2+ | 0.2+ |
| 2001 09 26 | 704 | 0.6+ | 0.7+ | 2003 02 22 | 333 | 0.0 | 0.4+ | 2005 09 13 | 691 | 0.2+ | 0.1+ |
| 2001 09 26 | 333 | 0.1+ | 0.3+ | 2003 02 22 | 683 | 0.7+ | 0.1+ | 2005 09 13 | 691 | 0.2+ | 0.2+ |
| 2001 09 26 | 704 | 0.1+ | 0.5+ | 2003 02 22 | 683 | (1.4− | 4.0−) | 2005 09 28 | 644 | 0.0 | 0.2+ |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2003 02 24 | 608 | 0.2− | 0.7− | 2005 09 28 | 644 | 0.0 | 0.2+ |
| 2001 09 26 | 704 | 0.0 | 0.6+ | 2003 02 24 | 608 | 0.1+ | 1.3− | 2005 09 28 | 644 | 0.3+ | 0.4+ |
| 2001 09 26 | 704 | 0.9− | 0.4− | 2003 02 24 | 608 | 0.2+ | 0.8− | 2005 09 28 | A50 | 0.1+ | 0.4+ |
| 2001 10 07 | 644 | 1.1− | 1.0+ | 2003 03 06 | 699 | 0.1+ | 0.4+ | 2005 09 28 | A50 | 0.4− | 0.7− |
| 2001 10 07 | 644 | 1.3− | 1.4+ | 2003 03 06 | 699 | 0.7+ | 0.9+ | 2005 09 28 | A50 | (1.4− | 3.4+) |
| 2001 10 07 | 644 | 1.3− | 1.1+ | 2003 03 06 | 699 | 0.1+ | 0.2+ | 2005 09 29 | 699 | 0.2+ | 0.3− |
| 2001 10 12 | 699 | 0.1− | 0.6− | 2003 03 06 | 704 | 0.0 | 0.7+ | 2005 09 29 | 699 | 0.9− | 0.7+ |
| 2001 10 12 | 699 | 0.7− | 0.2+ | 2003 03 06 | 699 | 0.4+ | 1.0+ | 2005 09 29 | 699 | 1.2− | 0.6+ |
| 2001 10 12 | 699 | 0.1+ | 0.5+ | 2003 03 06 | 704 | 0.1+ | 0.6+ | 2005 09 29 | 699 | 0.5− | 0.5+ |
| 2001 10 12 | 699 | 0.3− | 0.3− | 2003 03 06 | 704 | 1.1+ | 1.4+ | 2005 09 30 | 691 | 0.1− | 0.3+ |
| 2001 10 16 | 704 | 0.6− | 0.0 | 2003 03 07 | 704 | 0.1− | 0.1+ | 2005 09 30 | 691 | 0.1− | 0.1+ |
| 2001 10 16 | 704 | 0.3+ | 0.4+ | 2003 03 07 | 704 | 0.1+ | 0.1− | 2005 09 30 | 691 | 0.1− | 0.1+ |
| 2001 10 16 | 704 | 0.1− | 0.3+ | 2003 03 07 | 704 | 0.1− | 0.4+ | 2005 10 01 | 703 | 0.2+ | 0.5+ |
| 2001 10 16 | 704 | 0.3− | 0.4+ | 2003 03 07 | 704 | 0.0 | 0.1− | 2005 10 01 | 703 | 0.6− | 0.8+ |
| 2001 10 16 | 704 | 0.2+ | 0.2+ | 2003 03 07 | 704 | 0.1+ | 0.6+ | 2005 10 01 | 703 | 1.0− | 0.6+ |
| 2001 10 20 | 704 | 1.3+ | 0.3− | 2003 03 09 | 704 | 0.9+ | 0.8+ | 2005 10 01 | 703 | 2.0− | 1.0+ |
| 2001 10 20 | 704 | 0.6+ | 1.1− | 2003 03 09 | 704 | 0.5+ | 1.5+ | 2005 10 07 | 704 | 0.2− | 0.7+ |
| 2001 10 20 | 704 | 0.8+ | 0.3− | 2003 03 09 | 704 | 0.8+ | 0.5+ | 2005 10 07 | 704 | 0.7− | 0.0 |
| 2001 10 20 | 704 | 0.2+ | 0.6− | 2003 03 09 | 704 | 0.6+ | 0.8+ | 2005 10 07 | 704 | 0.2− | 0.6− |
| 2001 10 20 | 704 | 0.7+ | 1.0− | 2003 03 09 | 704 | 0.7+ | 1.2+ | 2005 10 22 | 703 | 0.8− | 0.4− |
| 2001 10 25 | 644 | 0.2− | 0.2+ | 2003 03 26 | 699 | 1.3− | 0.4− | 2005 10 22 | 703 | (2.2− | 0.3+) |
| 2001 10 25 | 644 | 0.2− | 0.2+ | 2003 03 26 | 699 | 0.1+ | 0.1− | 2005 10 22 | 703 | 1.3+ | 0.5− |
| 2001 10 25 | 644 | 0.2− | 0.1+ | 2003 03 26 | 699 | 0.3− | 0.8+ | 2005 10 22 | 703 | 0.8− | 0.9− |
| 2001 11 18 | 704 | 0.1− | 1.2+ | 2003 03 26 | 699 | 0.6− | 0.3+ | 2005 12 02 | G96 | 0.4+ | 0.1− |
| 2001 11 18 | 704 | 0.3+ | 1.8+ | 2003 04 29 | 704 | 0.2− | 1.3+ | 2005 12 02 | G96 | 0.5+ | 0.0 |
| 2001 11 18 | 704 | 0.3+ | 0.4+ | 2003 04 29 | 704 | 0.2+ | 1.3+ | 2005 12 02 | G96 | 0.2− | 0.2+ |
| 2001 11 18 | 704 | 0.8+ | 1.0+ | 2003 04 29 | 704 | 0.2− | 1.2+ | 2005 12 02 | G96 | 0.0 | 0.2+ |
| 2001 11 18 | 704 | 0.1+ | 1.5+ | 2003 04 29 | 704 | 0.1− | 1.1+ | | | | |

**(140021)∗ 2001 SW$_{52}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.14372 | | (2000.0) | | +0.78416212 | −0.61180405 |
| $n$ | 0.18147152 | $\omega$ | 11.73190 | | +0.54913415 | +0.60617476 |
| $a$ | 3.0898002 | $\Omega$ | 26.85148 | | +0.28903539 | +0.50818104 |
| $e$ | 0.0641163 | $i$ | 13.29282 | | | |
| $P$ | 5.43 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.0 | 1.4+ | 2001 10 17 | 704 | 0.2+ | 0.4+ | 2003 01 13 | 704 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 0.8− | 0.9+ | 2001 10 17 | 704 | 0.4− | 0.4+ | 2003 01 13 | 704 | 0.2− | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2001 10 17 | 704 | 0.5+ | 0.2− | 2004 03 14 | 691 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2001 10 17 | 704 | 1.0− | 0.2− | 2004 03 14 | 691 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | (1.7− | 0.6+) | 2001 10 18 | 704 | 0.3− | 0.3− | 2004 03 14 | 691 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 1.3− | 0.1+ | 2001 10 18 | 704 | 0.7− | 0.2− | 2004 03 22 | 704 | 0.5+ | 0.3+ |
| 2001 09 19 | 704 | 0.8− | 0.9+ | 2001 10 18 | 704 | 0.0 | 0.8+ | 2004 03 22 | 704 | 0.2+ | 1.2+ |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2001 10 18 | 704 | 0.2+ | 0.6+ | 2004 03 22 | 704 | 0.7− | 1.4+ |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2001 10 20 | 704 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.8− | 0.4+ |
| 2001 09 21 | 704 | 0.8+ | 0.1+ | 2001 10 20 | 704 | 0.3+ | 0.4+ | 2004 03 22 | 704 | (0.6− | 2.3+) |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2001 10 20 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 0.8+ | 0.2− |
| 2001 09 21 | 704 | 0.1+ | 0.2− | 2001 10 20 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 704 | 0.5+ | 0.3+ |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2001 10 20 | 704 | 0.4+ | 0.4+ | 2004 03 28 | 704 | 0.8− | 0.5+ |
| 2001 09 26 | 704 | 0.8+ | 0.5+ | 2001 10 22 | 704 | 0.0 | 0.3+ | 2004 03 28 | 691 | 0.0 | 0.4+ |
| 2001 09 26 | 704 | 1.0+ | 0.8+ | 2001 10 22 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 704 | 0.6+ | 0.6+ |
| 2001 09 26 | 704 | 0.4+ | 1.1+ | 2001 10 22 | 704 | 0.1− | 0.4+ | 2004 03 28 | 691 | 0.1+ | 0.1+ |
| 2001 10 07 | 644 | 0.2+ | 0.1− | 2001 10 23 | 704 | 0.5− | 0.0 | 2004 03 28 | 691 | 0.4+ | 0.5+ |
| 2001 10 07 | 644 | 0.0 | 0.0 | 2001 10 23 | 704 | 0.6− | 0.4+ | 2004 04 20 | 691 | 0.3+ | 0.0 |
| 2001 10 07 | 644 | 0.0 | 0.1− | 2001 10 23 | 704 | 0.1+ | 0.1+ | 2004 04 20 | 691 | 0.4+ | 0.6+ |
| 2001 10 13 | 704 | 0.4− | 0.1+ | 2001 10 23 | 704 | 0.1+ | 0.9+ | 2004 04 20 | 691 | 0.2+ | 0.5+ |
| 2001 10 13 | 704 | 0.8+ | 0.2+ | 2001 10 23 | 704 | 0.3+ | 0.6+ | 2004 04 23 | 291 | 0.6+ | 0.2+ |
| 2001 10 13 | 704 | 0.1+ | 0.5− | 2001 10 24 | 704 | 1.1− | 0.1− | 2004 04 23 | 291 | 0.8+ | 0.4+ |
| 2001 10 13 | 704 | 0.7− | 0.6− | 2001 10 24 | 704 | 0.3− | 0.1+ | 2004 04 23 | 291 | 0.6+ | 0.3+ |
| 2001 10 13 | 704 | 0.0 | 0.4− | 2001 10 24 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 1.3− | 1.0+ |
| 2001 10 14 | 699 | 0.2− | 0.7− | 2001 10 24 | 704 | 0.1− | 0.1+ | 2006 09 20 | 703 | (0.1+ | 1.8+) |
| 2001 10 14 | 699 | (2.7+ | 1.3+) | 2001 10 25 | 704 | 0.1− | 0.6− | 2006 09 20 | 703 | 0.2− | 0.5+ |
| 2001 10 14 | 699 | (1.5+ | 1.3+) | 2001 10 25 | 704 | 0.3− | 0.0 | 2006 09 20 | 703 | 0.1+ | 1.2+ |
| 2001 10 14 | 699 | 0.4+ | 0.4− | 2001 10 25 | 704 | 0.6− | 0.7− | 2006 09 26 | 703 | 0.0 | 0.3− |
| 2001 10 14 | 291 | 0.4− | 0.2+ | 2001 10 25 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.9+ |
| 2001 10 14 | 291 | 1.1− | 0.2+ | 2001 10 25 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.7+ |
| 2001 10 14 | 291 | (1.8− | 0.1+) | 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2001 10 17 | 704 | 0.7− | 1.0+ | 2001 11 21 | 704 | 0.3− | 0.5+ | 2006 10 21 | 703 | 1.7− | 1.5+ |
| 2001 10 17 | 704 | 0.4+ | 0.4+ | 2001 11 21 | 704 | 0.5− | 0.5− | 2006 10 21 | 703 | 0.7− | 1.2+ |
| 2001 10 17 | 704 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.1+ | 1.0− |
| 2001 10 17 | 704 | 0.1+ | 0.4− | 2001 11 21 | 704 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.7+ |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2003 01 13 | 704 | 0.4+ | 0.4+ | | | | |
| 2001 10 17 | 704 | 0.0 | 0.5− | 2003 01 13 | 704 | 0.7+ | 0.1− | | | | |

**(140022)∗ 2001 SH$_{53}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.45441 | | (2000.0) | | +0.51814734 | +0.85135019 |
| $n$ | 0.21683236 | $\omega$ | 265.48364 | | −0.71913611 | +0.48556313 |
| $a$ | 2.7440161 | $\Omega$ | 36.10818 | | −0.46299738 | +0.19857316 |
| $e$ | 0.1295658 | $i$ | 7.99971 | | | |
| $P$ | 4.55 | $H$ | 15.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.8+ | 0.6+ | 2001 10 23 | 704 | 0.4− | 0.8+ | 2004 04 20 | E12 | (1.8+ | 1.2+) |
| 2001 09 16 | 704 | 0.9− | 0.2− | 2001 10 23 | 704 | 0.5− | 1.2+ | 2004 04 20 | E12 | (2.4+ | 0.2+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.8+ | 0.5+ | 2001 10 24 | 704 | 0.6+ | 0.5− | 2004 04 23 | 691 | 0.1− | 0.2+ | | |
| 2001 09 16 | 704 | 0.9− | 0.1− | 2001 10 24 | 704 | 0.0 | 0.7− | 2004 04 23 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2001 10 24 | 704 | 0.3− | 0.5− | 2004 04 23 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 19 | 704 | 1.0− | 0.3− | 2001 10 25 | 704 | 0.4− | 0.4+ | 2005 07 19 | 644 | 0.3+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2001 10 25 | 644 | 0.1+ | 0.0 | 2005 07 19 | 644 | 0.4+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2001 10 25 | 704 | 0.5− | 0.3− | 2005 07 19 | 644 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2001 10 25 | 644 | 0.2− | 0.3+ | 2005 07 26 | 644 | 0.3− | 0.3+ | | |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2001 10 25 | 704 | 0.1− | 0.7+ | 2005 07 26 | 644 | 0.2− | 0.3+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.4+ | 2001 10 25 | 644 | 0.3− | 0.2+ | 2005 07 26 | 644 | 0.2− | 0.5+ | | |
| 2001 09 21 | 704 | 0.2− | 1.2+ | 2001 10 25 | 704 | 0.2+ | 0.3− | 2005 08 10 | E12 | 0.1− | 0.3− | | |
| 2001 09 21 | 704 | 0.8+ | 0.5+ | 2001 10 25 | 704 | 0.5− | 0.4+ | 2005 08 10 | E12 | 0.2+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.7+ | 2001 10 27 | 704 | 0.3+ | 1.4+ | 2005 08 10 | E12 | 0.7− | 0.1− | | |
| 2001 09 26 | 704 | 0.2+ | 0.2+ | 2001 10 27 | 704 | 0.3− | 0.0 | 2005 08 10 | E12 | 0.3− | 0.0 | | |
| 2001 09 26 | 704 | 0.0 | 0.8+ | 2001 10 27 | 704 | (1.7− | 1.5+) | 2006 09 17 | 291 | 0.5− | 0.4+ | | |
| 2001 09 26 | 704 | 0.2− | 0.5+ | 2001 11 14 | 691 | 0.2+ | 0.3− | 2006 09 17 | 291 | 0.6− | 0.3+ | | |
| 2001 10 13 | 704 | 0.5+ | 0.3− | 2001 11 14 | 691 | 0.0 | 0.2− | 2006 09 17 | 291 | 0.5− | 0.2+ | | |
| 2001 10 13 | 704 | 0.4− | 1.2− | 2001 11 14 | 691 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.7− | | |
| 2001 10 13 | 704 | 0.1− | 0.6− | 2001 11 20 | 704 | 0.6+ | 1.3+ | 2006 10 20 | G96 | 0.2− | 0.4− | | |
| 2001 10 13 | 704 | 0.5− | 0.8− | 2001 11 20 | 704 | 0.4− | 0.9+ | 2006 10 20 | G96 | 0.1− | 0.5− | | |
| 2001 10 16 | 704 | 0.2− | 1.2+ | 2001 11 20 | 704 | (0.4+ | 3.2+) | 2006 10 20 | G96 | 0.5+ | 0.5− | | |
| 2001 10 16 | 704 | 0.1− | 0.7+ | 2001 11 20 | 704 | 0.4− | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.2+ | | |
| 2001 10 16 | 704 | 1.0+ | 0.8+ | 2001 11 21 | 704 | (2.0+ | 1.6+) | 2006 11 13 | 691 | 0.2− | 0.0 | | |
| 2001 10 16 | 704 | 0.6− | 0.4+ | 2001 11 21 | 704 | (3.0+ | 0.6+) | 2006 11 13 | 691 | 0.1− | 0.1+ | | |
| 2001 10 16 | 704 | 0.7+ | 0.5+ | 2001 11 21 | 704 | (2.3+ | 1.1+) | 2006 11 13 | G96 | 0.5+ | 0.3− | | |
| 2001 10 17 | 691 | 0.2− | 0.3+ | 2004 03 14 | 691 | 0.4+ | 0.8+ | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2001 10 17 | 691 | 0.3− | 0.2+ | 2004 03 14 | 691 | 0.3+ | 0.5+ | 2006 11 13 | G96 | 0.1− | 0.3− | | |
| 2001 10 17 | 691 | 0.2− | 0.2+ | 2004 03 14 | 691 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.1− | | |
| 2001 10 18 | 644 | 0.2− | 0.3+ | 2004 03 22 | 704 | (2.0− | 1.4+) | 2006 11 17 | 691 | 0.3+ | 0.3− | | |
| 2001 10 18 | 644 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.8+ | 0.2+ | 2006 11 17 | 691 | 0.5+ | 0.7− | | |
| 2001 10 18 | 644 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 691 | 0.2+ | 0.2− | | |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2004 03 22 | 704 | 0.3− | 1.5+ | 2006 11 21 | 691 | 0.2+ | 0.2− | | |
| 2001 10 20 | 704 | 0.1− | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 11 21 | 691 | 0.2+ | 0.1− | | |
| 2001 10 20 | 704 | 0.2+ | 0.1− | 2004 04 10 | 644 | 0.5+ | 0.7+ | 2006 11 21 | 691 | 0.1+ | 0.2− | | |
| 2001 10 20 | 704 | 0.3− | 0.2+ | 2004 04 10 | 644 | 0.3+ | 0.5+ | 2006 11 22 | 704 | (1.9− | 1.6+) | | |
| 2001 10 20 | 704 | 0.0 | 0.2− | 2004 04 10 | 644 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 0.8− | 1.2+ | | |
| 2001 10 22 | 704 | 0.6− | 0.8+ | 2004 04 19 | 704 | 0.8+ | 0.6+ | 2006 11 22 | 704 | (1.2− | 2.4+) | | |
| 2001 10 22 | 704 | 0.6− | 0.9+ | 2004 04 19 | 704 | 0.6+ | 0.9+ | 2006 11 25 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 22 | 704 | 0.7− | 1.1+ | 2004 04 19 | 704 | 0.5+ | 0.4+ | 2006 11 25 | 691 | 0.0 | 0.3+ | | |
| 2001 10 23 | 704 | 0.9− | 1.0+ | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 11 25 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.4− | 0.6+ | 2004 04 20 | E12 | (1.7+ | 1.3+) | | | | | | |
| 2001 10 23 | 704 | 0.6− | 0.6+ | 2004 04 20 | E12 | 1.2+ | 0.4+ | | | | | | |

**(140023)∗ 2001 SL$_{54}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.51087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19141931 | $\omega$ | 265.53812 | | +0.71711884 | +0.68162388 | |
| $a$ | 2.9818026 | $\Omega$ | 51.40809 | | −0.54264471 | +0.67694796 | |
| $e$ | 0.0791275 | $i$ | 10.71799 | | −0.43735258 | +0.27772351 | |
| $P$ | 5.15 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 566 | 0.4+ | 0.4− | 2001 11 08 | 644 | 0.1+ | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.6+ | | |
| 1996 10 12 | 566 | 0.1− | 0.3− | 2001 11 08 | 644 | 0.7+ | 0.0 | 2004 03 25 | 704 | 0.5+ | 0.5+ | | |
| 1996 10 12 | 566 | 0.1+ | 0.1+ | 2001 11 08 | 644 | 0.1− | 1.0+ | 2004 03 25 | 704 | 0.3+ | 0.4+ | | |
| 2001 09 12 | 644 | 0.0 | 0.1− | 2001 11 18 | 704 | 1.0− | 0.7+ | 2004 03 25 | 704 | 0.8+ | 0.6+ | | |
| 2001 09 12 | 644 | 0.8− | 0.1+ | 2001 11 18 | 704 | 0.0 | 0.1+ | 2004 03 30 | 691 | 0.3− | 0.4+ | | |
| 2001 09 12 | 644 | 0.3− | 0.3− | 2001 11 18 | 704 | 0.4− | 0.2− | 2004 03 30 | 691 | 0.3− | 0.5+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.0 | 2001 11 18 | 704 | 0.4− | 0.7+ | 2004 03 30 | 691 | 0.3− | 0.5+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.3+ | 2001 11 18 | 704 | 0.9− | 0.5+ | 2004 04 23 | 704 | 1.4+ | 0.2− | | |
| 2001 09 16 | 704 | 0.8+ | 0.7+ | 2001 11 20 | 704 | 0.7− | 0.7+ | 2004 04 23 | 704 | 1.1+ | 1.0+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.0 | 2001 11 20 | 704 | 0.2− | 0.2+ | 2004 04 23 | 704 | 1.3+ | 0.0 | | |
| 2001 09 19 | 704 | 0.6+ | 0.5− | 2001 11 20 | 704 | 0.2− | 0.3− | 2004 04 23 | 704 | 0.7+ | 0.1− | | |
| 2001 09 19 | 704 | 1.3+ | 0.4− | 2001 11 20 | 704 | 0.9− | 0.1− | 2006 08 28 | 699 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2001 11 20 | 704 | 1.0+ | 0.2− | 2006 08 28 | 699 | 0.5− | 0.2− | | |
| 2001 09 19 | 704 | 0.3− | 0.5− | 2001 12 14 | 704 | 0.2+ | 0.7− | 2006 08 28 | 699 | 0.3− | 0.5+ | | |
| 2001 09 19 | 704 | 0.7+ | 0.0 | 2001 12 14 | 704 | 0.5− | 0.0 | 2006 08 28 | 699 | 0.3− | 0.2+ | | |
| 2001 09 21 | 704 | 0.4+ | 1.0− | 2001 12 14 | 704 | 0.8+ | 0.0 | 2006 09 18 | 699 | 0.6− | 0.0 | | |
| 2001 09 21 | 704 | 0.6− | 0.5− | 2001 12 14 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.5+ | | |
| 2001 09 21 | 704 | 0.9− | 0.1+ | 2001 12 14 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.4+ | | |
| 2001 09 21 | 704 | 1.4− | 0.6− | 2003 01 13 | 704 | 0.2− | 0.7− | 2006 09 18 | 699 | 0.1− | 0.5+ | | |
| 2001 09 21 | 704 | 0.4− | 1.0− | 2003 01 13 | 704 | 0.5− | 0.5− | 2006 09 19 | 703 | 0.1− | 0.8+ | | |
| 2001 10 10 | 644 | 0.1+ | 0.4+ | 2003 01 13 | 704 | 0.7+ | 1.3− | 2006 09 19 | 703 | 0.5− | 0.3+ | | |
| 2001 10 10 | 644 | 0.0 | 0.4+ | 2003 01 13 | 704 | 1.2+ | 0.3− | 2006 09 19 | 703 | 0.3− | 0.0 | | |
| 2001 10 10 | 644 | 0.1+ | 0.4+ | 2003 01 13 | 704 | (0.4+ | 1.6−) | 2006 09 19 | 703 | 0.1− | 0.4+ | | |
| 2001 10 12 | 699 | 0.6− | 0.7+ | 2003 01 13 | 704 | 0.2− | 0.4− | 2006 09 26 | 703 | 0.3− | 0.1+ | | |
| 2001 10 12 | 699 | 0.3− | 0.1− | 2003 01 13 | 704 | 0.7+ | 0.1− | 2006 09 26 | 703 | 0.2− | 0.2+ | | |
| 2001 10 12 | 699 | 0.4− | 0.1+ | 2003 01 13 | 704 | 0.7− | 0.9− | 2006 09 26 | 703 | 0.2− | 0.0 | | |
| 2001 10 12 | 699 | 0.4− | 0.8+ | 2004 03 15 | 704 | 1.0+ | 0.9+ | 2006 09 26 | 703 | 0.3+ | 0.3+ | | |
| 2001 10 13 | 704 | 0.4+ | 0.5− | 2004 03 15 | 704 | 1.4+ | 0.4+ | 2006 10 02 | 703 | 0.0 | 0.7+ | | |
| 2001 10 13 | 704 | 0.2+ | 0.4− | 2004 03 15 | 704 | 1.2+ | 0.2+ | 2006 10 02 | 703 | 0.1+ | 0.4+ | | |
| 2001 10 13 | 704 | 0.4+ | 0.5− | 2004 03 15 | 704 | 1.1− | 0.5+ | 2006 10 02 | 703 | 0.6− | 0.1+ | | |
| 2001 10 13 | 704 | 0.7+ | 0.5− | 2004 03 15 | 704 | 0.9+ | 0.9+ | 2006 10 02 | 703 | 0.4− | 0.1+ | | |
| 2001 10 16 | 704 | 0.7− | 0.3+ | 2004 03 23 | 113 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.7+ | | |
| 2001 10 16 | 704 | 0.4− | 0.0 | 2004 03 23 | 113 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.5+ | | |
| 2001 10 16 | 704 | 0.0 | 0.5+ | 2004 03 23 | 113 | (1.4+ | 1.7+) | 2006 10 17 | 703 | 0.5+ | 0.8+ | | |
| 2001 10 16 | 704 | 0.1− | 0.5+ | 2004 03 23 | 113 | (0.4+ | 2.1+) | 2006 10 17 | 703 | 1.2− | 1.1+ | | |
| 2001 10 16 | 704 | 0.8− | 0.3− | 2004 03 23 | 704 | 0.6+ | 0.1+ | 2006 10 28 | 703 | 1.2+ | 0.4− | | |
| 2001 10 24 | 644 | 0.1+ | 1.2+ | 2004 03 23 | 704 | 0.5+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.4− | | |
| 2001 10 24 | 644 | 0.2+ | 1.2+ | 2004 03 23 | 704 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.8− | 0.2− | | |
| 2001 10 24 | 644 | 0.2+ | 1.2+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.0 | 0.5+ | | |

**(140024)∗ 2001 SC$_{57}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.55714 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18355951 | $\omega$ | 199.75981 | | +0.93756129 | −0.34781447 | |
| $a$ | 3.0663246 | $\Omega$ | 180.60466 | | +0.33899109 | +0.91502137 | |
| $e$ | 0.0822319 | $i$ | 10.80834 | | +0.07787084 | +0.20435504 | |
| $P$ | 5.37 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.1− | 0.5+ | 2003 02 04 | 644 | 0.5+ | 0.3+ | 2006 08 30 | 704 | (0.2− | 3.0+) | | |
| 2001 08 27 | 644 | 0.1− | 0.3+ | 2003 02 04 | 644 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.2− | | |
| 2001 08 27 | 644 | 0.0 | 0.5+ | 2003 02 04 | 644 | 0.3+ | 0.6+ | 2006 09 12 | 703 | 0.9− | 0.2− | | |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.1− | 2006 09 12 | 703 | (1.7− | 1.4+) | | |
| 2001 09 16 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.6+ | 1.0+ | 2006 09 12 | 703 | 1.4− | 0.4− | | |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.6+ | 2006 09 12 | 703 | 0.1− | 0.7+ | | |
| 2001 09 17 | 699 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.6+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.3+ | | |
| 2001 09 17 | 699 | (1.6− | 0.1+) | 2004 03 18 | 704 | 0.2+ | 1.3+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 17 | 699 | 0.4+ | 1.3+ | 2004 03 22 | 704 | 0.7+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 17 | 699 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.7+ | 2006 09 16 | 699 | 0.6+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2004 03 22 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.2− | 0.7+ | | |
| 2001 09 19 | 704 | 0.7− | 0.5− | 2004 03 28 | 704 | 0.8+ | 1.3+ | 2006 09 16 | 699 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 0.3+ | 0.7− | 2004 03 28 | 704 | (2.2+ | 0.4−) | 2006 09 16 | 699 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 1.1− | 0.2+ | 2004 03 28 | 704 | 0.7+ | 0.8+ | 2006 09 17 | 704 | 0.0 | 0.9+ | | |
| 2001 09 21 | 704 | 0.7− | 0.1− | 2004 03 28 | 704 | 1.4+ | 0.3+ | 2006 09 17 | 704 | 0.9+ | 0.5+ | | |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2004 04 11 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.8+ | | |
| 2001 09 21 | 704 | 0.2− | 1.0+ | 2004 04 11 | 644 | 0.3− | 0.6+ | 2006 09 17 | 704 | 0.5− | 0.2+ | | |
| 2001 10 10 | 644 | 0.2− | 0.1+ | 2004 04 11 | 644 | 0.2+ | 1.4+ | 2006 09 17 | 704 | 1.0− | 0.3+ | | |
| 2001 10 10 | 644 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 1.0− | 1.4+ | | |
| 2001 10 10 | 644 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.4+ | 1.2+ | 2006 09 19 | 699 | 0.3− | 0.6+ | | |
| 2001 10 16 | 704 | 0.2− | 1.1+ | 2004 04 19 | 704 | 0.6− | 0.9+ | 2006 09 19 | 699 | 0.0 | 0.8+ | | |
| 2001 10 16 | 704 | 0.8− | 0.8+ | 2004 04 19 | 704 | 0.5+ | 0.9+ | 2006 09 19 | 699 | 0.2+ | 1.4+ | | |
| 2001 10 16 | 704 | 0.4− | 1.1+ | 2004 04 20 | 691 | 0.2− | 0.7+ | 2006 09 20 | 704 | (2.1+ | 0.1+) | | |
| 2001 10 16 | 704 | 0.5− | 1.5+ | 2004 04 20 | 691 | 0.2− | 0.6+ | 2006 09 20 | 704 | 0.4− | 1.4+ | | |
| 2001 10 16 | 644 | (1.2+ | 1.8+) | 2004 04 20 | 691 | 0.4− | 1.0+ | 2006 09 20 | 704 | 1.0+ | 0.7+ | | |
| 2001 10 16 | 644 | (1.3+ | 1.9+) | 2004 04 20 | 704 | 0.7− | 0.7+ | 2006 09 20 | 704 | 0.3− | 0.2+ | | |
| 2001 10 16 | 644 | (1.3+ | 1.9+) | 2004 04 20 | 704 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.5+ | 0.8+ | | |
| 2001 10 18 | 704 | 1.1− | 0.3+ | 2004 04 20 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.4− | 0.7+ | | |
| 2001 10 18 | 704 | 0.2− | 0.9+ | 2004 04 20 | 704 | 0.3+ | 0.9+ | 2006 09 25 | 699 | 0.1− | 0.8+ | | |
| 2001 10 18 | 704 | 0.9− | 0.1− | 2004 04 20 | 704 | 0.4+ | 0.1− | 2006 09 25 | 699 | 0.3− | 0.9+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.4− | 1.4+ | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 699 | 0.4+ | 0.3+ |
| 2001 10 24 | 644 | 0.5− | 0.1+ | 2004 04 20 | 704 | 0.3+ | 1.1+ | 2006 09 27 | 704 | 1.0− | 0.1+ |
| 2001 10 24 | 644 | 0.5− | 0.1+ | 2004 04 20 | 704 | 0.4− | 1.1+ | 2006 09 27 | 704 | 0.6− | 1.0+ |
| 2001 10 24 | 644 | 0.5− | 0.2+ | 2004 04 20 | 704 | 0.1+ | 1.3+ | 2006 09 27 | 704 | (1.7+ | 1.7+) |
| 2001 11 15 | 644 | 0.4+ | 1.5+ | 2004 04 20 | 704 | 0.8+ | 1.1+ | 2006 09 27 | 704 | (0.3− | 2.0+) |
| 2001 11 15 | 644 | 0.2− | 0.9+ | 2004 04 20 | 704 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.7+ | 0.6+ |
| 2001 11 15 | 644 | (0.2+ | 1.7+) | 2004 04 20 | 704 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.1− | 0.6+ |
| 2001 11 18 | 704 | (0.3+ | 2.4−) | 2004 04 20 | 704 | 1.1+ | 1.4+ | 2006 09 29 | 704 | 0.0 | 0.9+ |
| 2001 11 18 | 704 | (0.2+ | 2.1−) | 2004 04 20 | 704 | 0.9+ | 0.5+ | 2006 09 29 | 704 | 0.4+ | 0.5+ |
| 2001 11 18 | 704 | (0.1+ | 2.6−) | 2004 04 22 | 704 | (0.8+ | 1.7+) | 2006 09 29 | 704 | 0.4+ | 0.3+ |
| 2001 11 18 | 704 | (0.9− | 1.8−) | 2004 04 22 | 704 | 0.6+ | 0.9+ | 2006 09 30 | 704 | 0.0 | 0.6+ |
| 2001 11 18 | 704 | (0.7− | 2.5−) | 2004 04 22 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 704 | 0.1− | 1.4+ |
| 2001 11 21 | 645 | 0.2+ | 0.1− | 2004 04 22 | 704 | 0.9+ | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.4+ |
| 2001 11 21 | 645 | 0.2+ | 0.1− | 2006 08 23 | 644 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.9+ |
| 2001 11 21 | 608 | 0.7− | 0.6+ | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2001 11 21 | 608 | 0.7− | 0.5+ | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.6− |
| 2001 11 21 | 608 | 0.5− | 1.2+ | 2006 08 24 | 704 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.4− | 1.0− |
| 2002 01 17 | 209 | (2.8− | 0.1−) | 2006 08 24 | 704 | 0.7− | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.7− |
| 2002 01 17 | 209 | 1.3− | 0.3− | 2006 08 24 | 704 | 0.0 | 0.9+ | 2006 10 16 | G96 | 0.5− | 0.2− |
| 2002 01 17 | 209 | (1.4− | 1.7−) | 2006 08 24 | 704 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.7− | 0.4+ |
| 2002 01 18 | 209 | 0.4− | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.5+ |
| 2002 01 18 | 209 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.3− | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2002 01 18 | 209 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.3− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2003 01 01 | 704 | 0.5+ | 1.4+ | 2006 08 28 | 703 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2003 01 01 | 704 | 0.0 | 1.3+ | 2006 08 28 | 703 | 0.8+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2003 01 01 | 704 | (0.5+ | 2.2+) | 2006 08 30 | 704 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.4+ | | | | |

**(140025)∗ 2001 SD$_{57}$ = 2004 HH$_{35}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61012)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.99570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18305036 | $\omega$ | 197.55521 | | +0.95520331 | −0.29594843 | |
| $a$ | 3.0720079 | $\Omega$ | 179.65369 | | +0.28838681 | +0.92996805 | |
| $e$ | 0.1073364 | $i$ | 10.25902 | | +0.06648065 | +0.21811455 | |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 09 | 691 | 0.2− | 0.1+ | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.6+ | 0.1+ |
| 1994 06 09 | 691 | 0.1+ | 0.7− | 2004 04 20 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.3+ | 0.6− |
| 1994 06 09 | 691 | 0.1− | 0.1+ | 2004 04 20 | 691 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2001 09 16 | 704 | (0.2− | 2.4+) | 2004 04 20 | 691 | 0.4+ | 0.8+ | 2006 09 19 | 699 | 0.5+ | 0.1− |
| 2001 09 16 | 704 | (0.2+ | 2.0+) | 2004 04 23 | 291 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 2001 09 16 | 704 | (0.4+ | 1.8+) | 2004 04 23 | 291 | 0.5+ | 0.4+ | 2006 09 20 | 704 | (1.2− | 2.1+) |
| 2001 09 19 | 704 | 0.6+ | 0.4− | 2004 04 23 | 291 | 0.1− | 0.6+ | 2006 09 20 | 704 | (1.5− | 1.6+) |
| 2001 09 19 | 704 | 1.1+ | 0.6+ | 2006 08 23 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.8− | 1.1+ |
| 2001 09 19 | 704 | 0.8+ | 0.1+ | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.8+ |
| 2001 10 10 | 644 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.5− | 0.3+ |
| 2001 10 10 | 644 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.5+ | 0.3− | 2006 09 25 | 699 | 0.4− | 0.5+ |
| 2001 10 10 | 644 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.7+ | 0.2− | 2006 09 25 | 699 | 0.6− | 0.2+ |
| 2001 10 14 | 699 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 0.9+ | 0.8− | 2006 09 25 | 699 | 0.0 | 0.2− |
| 2001 10 14 | 699 | 0.1+ | 0.1+ | 2006 08 29 | 703 | (2.1− | 6.4+) | 2006 09 25 | 699 | 0.7+ | 0.6+ |
| 2001 10 14 | 699 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.6+ |
| 2001 10 14 | 699 | 0.4− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.7+ | 0.6+ |
| 2001 10 16 | 704 | 1.2+ | 0.1− | 2006 08 29 | 703 | (0.2+ | 1.6−) | 2006 09 27 | 704 | 0.3+ | 0.5+ |
| 2001 10 16 | 704 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.5+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.1+ |
| 2001 10 16 | 704 | 0.8+ | 0.8+ | 2006 08 30 | 704 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.8− | 0.0 |
| 2001 10 16 | 704 | 0.9− | 0.8− | 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 2001 10 16 | 704 | 0.6+ | 0.2− | 2006 08 30 | 704 | 0.6+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2001 10 16 | 644 | 0.1− | 1.0− | 2006 08 30 | 704 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.4− | 0.0 |
| 2001 10 16 | 644 | 0.1− | 1.0− | 2006 09 01 | 704 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2001 10 16 | 644 | 0.1− | 1.3− | 2006 09 01 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 704 | 0.4+ | 0.5+ |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2006 09 01 | 704 | 0.6− | 1.1+ | 2006 09 30 | 704 | 0.6+ | 0.6+ |
| 2001 10 17 | 704 | 0.1− | 1.4+ | 2006 09 01 | 704 | 0.2− | 0.7+ | 2006 09 30 | 704 | 0.8− | 1.2+ |
| 2001 10 17 | 704 | 0.0 | 0.4+ | 2006 09 01 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2001 10 17 | 704 | 0.1+ | 0.9+ | 2006 09 12 | 703 | 0.9− | 0.2− | 2006 10 16 | 703 | 0.5+ | 1.0+ |
| 2001 10 18 | 704 | 0.8− | 0.0 | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 10 16 | G96 | 0.3− | 0.2− |
| 2001 10 18 | 704 | 0.2− | 0.3+ | 2006 09 12 | 703 | 0.3− | 0.7+ | 2006 10 16 | 703 | 1.1− | 0.9+ |
| 2001 10 18 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.5− | 0.5+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.8− | 1.0+ | 2006 09 13 | 644 | 0.4− | 0.1+ | 2006 10 16 | 703 | 1.4− | 0.1+ |
| 2001 10 24 | 644 | 0.4− | 0.6+ | 2006 09 13 | 644 | 0.5− | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 644 | 0.7− | 0.6+ | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2001 10 24 | 644 | 0.4− | 0.6+ | 2006 09 17 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2003 01 26 | 644 | 0.1+ | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2003 01 26 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2003 01 26 | 644 | 0.9+ | 0.5+ | 2006 09 17 | 704 | 0.1+ | 1.0− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | | | | |

**(140026)∗ 2001 SK$_{58}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.34646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26944963 | $\omega$ | 322.05350 | | −0.78254363 | −0.62259548 | |
| $a$ | 2.3740197 | $\Omega$ | 179.43959 | | +0.58471167 | −0.73524578 | |
| $e$ | 0.0633792 | $i$ | 3.39064 | | +0.21386382 | −0.26793377 | |
| $P$ | 3.66 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.1− | 0.1+ | 2001 10 23 | 704 | 0.2− | 0.7− | 2003 03 25 | 699 | 0.2− | 0.3+ |
| 1996 04 14 | 691 | 0.1+ | 0.2+ | 2001 10 23 | 704 | 0.1+ | 0.1− | 2003 03 25 | 699 | 0.1+ | 0.8− |
| 1996 04 14 | 691 | 0.0 | 0.1+ | 2001 10 23 | 704 | 0.7− | 0.5+ | 2003 03 26 | 644 | (0.7+ | 2.3+) |
| 1997 09 23 | 691 | 0.3− | 0.1+ | 2001 10 24 | 704 | 1.0− | 0.2+ | 2003 03 26 | 644 | 0.4+ | 0.4+ |
| 1997 09 23 | 691 | 0.4− | 0.3+ | 2001 10 24 | 704 | 0.6− | 1.0+ | 2003 03 26 | 644 | 0.0 | 0.4+ |
| 1997 09 23 | 691 | 0.2− | 0.1+ | 2001 10 24 | 704 | 0.5− | 1.0+ | 2003 03 29 | 683 | (1.4+ | 3.7+) |
| 2001 09 17 | 704 | (0.1− | 2.1+) | 2001 10 24 | 704 | 0.2− | 0.9+ | 2003 03 29 | 683 | 0.2+ | 0.7+ |
| 2001 09 17 | 704 | (0.8− | 2.4+) | 2001 10 24 | 704 | 0.7− | 0.3+ | 2003 03 29 | 683 | (5.7− | 1.2−) |
| 2001 09 17 | 704 | 0.2+ | 1.2+ | 2001 10 25 | 704 | 1.8+ | 0.1+ | 2003 04 01 | 704 | 0.4− | 0.2− |
| 2001 09 17 | 704 | 0.8− | 1.6+ | 2001 10 25 | 704 | 0.7+ | 0.8+ | 2003 04 01 | 704 | 0.3+ | 0.3− |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2001 10 25 | 704 | 1.0+ | 0.4− | 2003 04 01 | 704 | 1.0+ | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2001 10 25 | 704 | 0.3− | 0.8+ | 2003 04 01 | 704 | 0.4+ | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2001 10 25 | 704 | 0.8− | 1.2− | 2003 04 01 | 704 | 0.3+ | 0.4+ |
| 2001 09 19 | 704 | 0.3− | 0.8+ | 2001 10 25 | 704 | 0.8+ | 0.6+ | 2003 04 06 | 691 | 0.7+ | 1.0+ |
| 2001 09 19 | 704 | 0.3+ | 0.8+ | 2001 10 25 | 704 | 0.3− | 1.8− | 2003 04 06 | 691 | 0.6+ | 0.8+ |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2001 10 25 | 704 | 1.0+ | 0.4+ | 2003 04 06 | 691 | 0.4+ | 0.7+ |
| 2001 09 21 | 704 | 0.4+ | 0.0 | 2001 10 25 | 704 | 0.3+ | 1.1− | 2003 04 09 | 704 | 1.2+ | 0.1− |
| 2001 09 21 | 704 | 0.8− | 0.5+ | 2001 10 25 | 704 | 0.4+ | 1.3+ | 2003 04 09 | 704 | 0.5+ | 0.3− |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2001 11 09 | 704 | 0.7+ | 0.6+ | 2003 04 09 | 704 | 1.0+ | 0.5− |
| 2001 09 21 | 704 | 0.3+ | 0.0 | 2001 11 09 | 704 | 0.8+ | 0.9+ | 2003 04 09 | 704 | 1.0+ | 0.6− |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2001 11 09 | 704 | (0.1+ | 2.6+) | 2003 04 09 | 704 | 0.7+ | 0.5− |
| 2001 09 21 | 704 | 0.2+ | 0.9+ | 2001 11 09 | 704 | 0.4+ | 0.4+ | 2005 11 01 | G96 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2001 11 18 | 704 | 1.5− | 0.2+ | 2005 11 01 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2001 11 18 | 704 | 0.3− | 0.3− | 2005 11 01 | G96 | 0.1+ | 0.5− |
| 2001 09 21 | 704 | 0.6+ | 0.2+ | 2001 11 18 | 704 | 0.0 | 0.2+ | 2005 11 30 | 704 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2001 11 20 | 704 | (0.1+ | 2.0+) | 2005 11 30 | 704 | 0.6− | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2001 11 20 | 704 | 0.6− | 0.6+ | 2005 11 30 | 704 | 0.5− | 0.3− |
| 2001 09 21 | 704 | 0.3+ | 0.8+ | 2001 11 20 | 704 | 0.0 | 0.3+ | 2005 11 30 | 704 | 0.0 | 1.0+ |
| 2001 10 07 | 644 | 0.2− | 0.2+ | 2001 11 20 | 704 | 0.4− | 0.8+ | 2005 12 07 | 691 | 0.3− | 0.3− |
| 2001 10 07 | 644 | 0.2− | 0.4+ | 2001 11 20 | 704 | 0.8− | 1.1+ | 2005 12 07 | 691 | 0.1− | 0.3− |
| 2001 10 07 | 644 | 0.6− | 0.4+ | 2001 11 21 | 704 | 1.0− | 0.9+ | 2005 12 07 | 691 | 0.2− | 0.3− |
| 2001 10 11 | 644 | 0.3+ | 0.1− | 2001 11 21 | 704 | 0.9+ | 0.1+ | 2005 12 07 | 704 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.5+ | 0.5+ | 2005 12 07 | 704 | 0.2+ | 0.1− |
| 2001 10 11 | 644 | 0.1− | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.6+ | 2005 12 07 | 704 | 0.9+ | 1.3+ |
| 2001 10 13 | 704 | 1.4+ | 0.0 | 2001 11 21 | 704 | 0.5− | 0.3+ | 2005 12 07 | 704 | 0.8+ | 0.4+ |
| 2001 10 13 | 704 | 0.3+ | 0.7− | 2003 02 12 | 608 | 0.1+ | 0.2− | 2005 12 07 | 704 | 1.0+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.3+ | 2.0− | 2003 02 12 | 608 | 0.1+ | 0.2− | 2005 12 09 | 704 | 0.0 | 0.1− |
| 2001 10 13 | 704 | 0.2+ | 1.7− | 2003 02 12 | 608 | 0.4+ | 0.1+ | 2005 12 09 | 704 | 0.3+ | 0.9− |
| 2001 10 17 | 704 | 0.2+ | 0.2− | 2003 03 06 | 699 | 0.0 | 1.4+ | 2005 12 09 | 704 | 0.5− | 0.5− |
| 2001 10 17 | 704 | 0.2+ | 0.9+ | 2003 03 06 | 699 | 0.4+ | 0.5+ | 2005 12 21 | 699 | 1.1+ | 0.5+ |
| 2001 10 17 | 704 | 0.3+ | 1.0+ | 2003 03 06 | 699 | 0.6+ | 0.9+ | 2005 12 21 | 699 | 0.5− | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2003 03 06 | 699 | 0.6+ | 0.1− | 2005 12 21 | 699 | 0.0 | 0.0 |
| 2001 10 17 | 704 | 0.5+ | 1.1+ | 2003 03 07 | 699 | 0.0 | 0.2− | 2005 12 21 | 699 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.4+ | 1.2− | 2003 03 07 | 699 | 0.8− | 1.4+ | 2005 12 27 | 699 | 0.8− | 1.3− |
| 2001 10 20 | 704 | 0.4+ | 0.3− | 2003 03 07 | 699 | 0.1+ | 0.1+ | 2005 12 27 | 699 | 0.1− | 0.7+ |
| 2001 10 20 | 704 | 0.6+ | 0.2+ | 2003 03 07 | 699 | 1.0+ | 0.2− | 2005 12 27 | 699 | 1.3− | 0.1− |
| 2001 10 20 | 704 | 0.4− | 0.9− | 2003 03 24 | 691 | 0.7− | 0.0 | 2005 12 27 | 699 | 0.2− | 0.2+ |
| 2001 10 22 | 704 | 1.1− | 0.5− | 2003 03 24 | 691 | 0.8− | 0.0 | 2006 01 28 | G96 | 0.2+ | 0.4− |
| 2001 10 22 | 704 | 0.9− | 0.2− | 2003 03 24 | 691 | 0.6− | 0.1− | 2006 01 28 | G96 | 0.4+ | 0.4− |
| 2001 10 22 | 704 | 0.3− | 0.8− | 2003 03 25 | 699 | 0.8− | 0.2+ | 2006 01 28 | G96 | 0.0 | 0.4− |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2003 03 25 | 699 | 0.2− | 0.3+ | 2006 01 28 | G96 | 0.2+ | 0.4− |

**(140027)∗ 2001 SU$_{59}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 330.60191 | | (2000.0) | **P** | **Q** |
| $n$ | 0.18596369 | $\omega$ | 1.41613 | +0.81221512 | −0.56087111 |
| $a$ | 3.0398392 | $\Omega$ | 34.32745 | +0.53238540 | +0.60026318 |
| $e$ | 0.0484366 | $i$ | 16.52584 | +0.23847930 | +0.57018218 |
| $P$ | 5.30 | $H$ | 14.1 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.0 | 0.6− | 2001 11 16 | 644 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.5+ | 0.3+ |
| 2001 09 17 | 704 | 0.3+ | 1.0+ | 2001 11 17 | 704 | (2.3− | 0.7+) | 2004 03 28 | 704 | 0.1+ | 1.2+ |
| 2001 09 17 | 704 | 0.5− | 0.3− | 2001 11 17 | 704 | (2.3− | 1.1+) | 2004 03 29 | 704 | (1.9+ | 0.2+) |
| 2001 09 17 | 704 | 0.7− | 0.4− | 2001 11 17 | 704 | (2.5− | 1.5+) | 2004 03 29 | 704 | 0.1+ | 1.0+ |
| 2001 09 19 | 704 | 0.5− | 0.6− | 2001 11 17 | 704 | (2.1− | 2.0+) | 2004 03 29 | 704 | 0.5+ | 0.6+ |
| 2001 09 19 | 704 | 0.5− | 0.2− | 2001 11 17 | 704 | (2.8− | 1.3+) | 2004 03 29 | 704 | 0.1− | 0.7+ |
| 2001 09 19 | 704 | 0.7− | 0.3− | 2001 11 18 | 691 | 0.2− | 0.1+ | 2004 03 29 | 704 | 0.6+ | 0.6+ |
| 2001 09 19 | 704 | 0.1+ | 0.9− | 2001 11 18 | 691 | 0.3− | 0.0 | 2004 04 09 | E12 | 0.5+ | 0.3− |
| 2001 09 19 | 704 | 0.5− | 0.4− | 2001 11 18 | 691 | 0.3− | 0.0 | 2004 04 09 | E12 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.8− | 0.3+ | 2001 11 19 | 704 | 0.3− | 0.5+ | 2004 04 09 | E12 | 0.6+ | 1.0− |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2001 11 19 | 704 | 0.7− | 0.2+ | 2004 04 09 | E12 | 0.2− | 0.5− |
| 2001 09 21 | 704 | 0.1− | 0.5− | 2001 11 19 | 704 | 0.3− | 0.2− | 2004 04 16 | 704 | 0.6− | 0.5+ |
| 2001 09 21 | 704 | 0.4− | 0.5− | 2001 11 19 | 704 | 0.4+ | 0.2+ | 2004 04 16 | 704 | 0.4+ | 1.5+ |
| 2001 09 26 | 704 | 0.2− | 0.3+ | 2001 11 19 | 704 | 0.1− | 0.6− | 2004 04 16 | 704 | 0.7− | 0.3− |
| 2001 09 26 | 704 | 0.1− | 0.3− | 2001 11 20 | 699 | 0.3+ | 0.9+ | 2004 04 16 | 704 | 1.3+ | 0.8+ |
| 2001 09 26 | 704 | 0.2− | 0.5+ | 2001 11 20 | 699 | 0.7+ | 1.1+ | 2004 04 17 | 699 | 0.2+ | 0.4+ |
| 2001 09 26 | 704 | (2.1+ | 1.1+) | 2001 11 20 | 699 | (1.1+ | 1.6+) | 2004 04 17 | 699 | 0.8+ | 0.2+ |
| 2001 09 26 | 704 | (0.5− | 2.8+) | 2001 11 20 | 699 | 0.9+ | 0.9+ | 2004 04 17 | 699 | 0.3− | 0.0 |
| 2001 10 11 | 644 | 0.2+ | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.8− | 2004 04 17 | 699 | 0.5− | 0.5− |
| 2001 10 11 | 644 | 0.1+ | 0.4+ | 2001 11 21 | 704 | 0.3+ | 1.0− | 2004 04 19 | 704 | 0.9+ | 0.3+ |
| 2001 10 11 | 644 | 0.1+ | 0.2+ | 2001 11 21 | 704 | 0.3+ | 0.9− | 2004 04 19 | 704 | 0.8+ | 0.6+ |
| 2001 10 13 | 704 | (0.1− | 2.0−) | 2001 11 21 | 704 | 0.4+ | 0.9− | 2004 04 19 | 704 | 0.8+ | 0.7+ |
| 2001 10 13 | 704 | 0.4− | 1.5− | 2001 11 21 | 704 | 0.1+ | 0.8− | 2004 04 19 | 704 | 0.7+ | 0.1+ |
| 2001 10 13 | 704 | (0.3− | 2.3−) | 2001 12 15 | 704 | 0.8− | 1.3+ | 2004 04 19 | 704 | 0.7+ | 0.0 |
| 2001 10 13 | 704 | 0.8− | 1.1− | 2001 12 15 | 704 | 0.9− | 1.3+ | 2004 04 20 | 704 | 0.4+ | 0.0 |
| 2001 10 13 | 704 | (1.5− | 1.4−) | 2001 12 15 | 704 | 0.8− | 1.3+ | 2004 04 20 | 704 | 1.1+ | 0.5+ |
| 2001 10 14 | 699 | 0.6− | 0.3+ | 2001 12 15 | 704 | 1.0+ | 1.5+ | 2004 04 20 | 704 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.1− | 0.2− | 2001 12 15 | 704 | (0.3− | 1.9+) | 2004 04 20 | 704 | 0.8+ | 0.1+ |
| 2001 10 14 | 699 | 0.2− | 0.5+ | 2001 12 18 | 704 | 0.0 | 0.2− | 2004 04 20 | 704 | 0.8+ | 0.6+ |
| 2001 10 14 | 699 | 0.3− | 0.1− | 2001 12 18 | 704 | 0.1− | 0.1+ | 2004 04 22 | 704 | 1.1+ | 0.8+ |
| 2001 10 17 | 704 | 0.1+ | 0.5+ | 2001 12 18 | 704 | (1.7+ | 0.5+) | 2004 04 22 | 704 | 0.5+ | 0.2+ |
| 2001 10 17 | 704 | 0.2+ | 0.9+ | 2001 12 18 | 704 | 0.5− | 0.7+ | 2004 04 22 | 704 | 0.7+ | 1.1+ |
| 2001 10 17 | 704 | 0.2+ | 0.9+ | 2001 12 18 | 704 | (0.5+ | 1.6+) | 2004 04 22 | 704 | 0.7+ | 0.5+ |
| 2001 10 17 | 704 | 0.0 | 0.9+ | 2002 01 09 | 704 | 0.3− | 0.1− | 2004 04 22 | 704 | 0.0 | 0.7+ |
| 2001 10 17 | 704 | 0.6+ | 0.3+ | 2002 01 09 | 704 | 0.3+ | 0.1+ | 2004 05 10 | 608 | 1.3+ | 1.1− |
| 2001 10 18 | 644 | 0.2− | 0.4+ | 2002 01 09 | 704 | 0.8+ | 0.7+ | 2004 05 10 | 608 | 1.4+ | 0.6− |
| 2001 10 18 | 644 | 0.4− | 0.4+ | 2002 12 15 | 704 | 0.1− | 0.9+ | 2004 05 10 | 608 | (1.7+ | 0.9−) |
| 2001 10 18 | 644 | 0.4− | 0.5+ | 2002 12 15 | 704 | 0.8− | 0.5+ | 2004 05 24 | 691 | 0.2+ | 0.4+ |
| 2001 10 20 | 704 | 0.0 | 0.3+ | 2002 12 15 | 704 | 0.2− | 0.8+ | 2004 05 24 | 691 | 0.2+ | 0.6+ |
| 2001 10 20 | 704 | 0.1+ | 0.7+ | 2002 12 15 | 704 | 0.3− | 0.6+ | 2004 05 24 | 691 | 0.4+ | 0.4+ |
| 2001 10 20 | 704 | 0.2− | 0.5+ | 2002 12 15 | 704 | 0.6+ | 0.9+ | 2005 06 01 | E12 | 0.5− | 0.1− |
| 2001 10 20 | 704 | 0.3+ | 1.3+ | 2003 01 05 | 699 | 0.4+ | 0.7− | 2005 06 01 | E12 | 0.5− | 0.4+ |
| 2001 10 20 | 704 | 0.1+ | 0.3+ | 2003 01 05 | 699 | 0.2+ | 0.5− | 2005 06 01 | E12 | 0.7− | 0.8+ |
| 2001 10 22 | 704 | 0.5+ | 0.4+ | 2003 01 05 | 699 | 0.7− | 0.7− | 2005 06 01 | E12 | (0.1− | 1.6+) |
| 2001 10 22 | 704 | 0.7+ | 0.0 | 2003 01 05 | 699 | 0.4− | 0.8+ | 2006 08 29 | D35 | 1.1− | 0.4+ |
| 2001 10 22 | 704 | 0.8+ | 0.6− | 2003 01 14 | 704 | (0.0 | 2.4−) | 2006 08 29 | D35 | 1.0− | 0.4+ |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2003 01 14 | 704 | 0.8+ | 0.8− | 2006 08 29 | D35 | 1.4− | 0.3+ |
| 2001 10 23 | 704 | 0.3+ | 0.3− | 2003 01 14 | 704 | (2.0+ | 1.8−) | 2006 09 17 | 699 | 0.5− | 0.2+ |
| 2001 10 23 | 704 | 0.4− | 0.5− | 2004 03 16 | 704 | 0.5+ | 0.3+ | 2006 09 17 | 699 | 1.0− | 0.6+ |
| 2001 10 23 | 704 | 0.3+ | 0.4− | 2004 03 16 | 704 | 0.6+ | 0.2− | 2006 09 17 | 699 | 0.0 | 0.5− |
| 2001 10 23 | 704 | 0.6+ | 0.5− | 2004 03 16 | 704 | 1.1+ | 0.9+ | 2006 09 17 | 699 | 0.3− | 0.6+ |
| 2001 10 24 | 704 | 1.3− | 0.7+ | 2004 03 20 | 699 | 0.0 | 0.4− | 2006 09 19 | 703 | 1.0− | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.3− | 1.0+ | 2006 09 19 | 703 | 0.8− | 0.0 |
| 2001 10 24 | 704 | 0.6− | 0.2+ | 2004 03 20 | 699 | 1.0− | 1.2+ | 2006 09 19 | 703 | 1.3− | 0.7+ |
| 2001 10 24 | 704 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.1− | 1.0+ | 2006 09 19 | 703 | 0.6− | 1.1+ |
| 2001 10 24 | 704 | 1.1− | 0.5+ | 2004 03 20 | 704 | 0.2− | 1.2+ | 2006 09 25 | 703 | 0.2− | 1.3+ |
| 2001 10 24 | 704 | 0.4− | 0.2+ | 2004 03 20 | 699 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.8− | 0.7+ |
| 2001 10 24 | 704 | 1.3− | 0.3+ | 2004 03 20 | 704 | 0.0 | 0.9+ | 2006 09 25 | 703 | 0.7− | 1.0+ |
| 2001 10 24 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 699 | 0.5− | 1.4+ | 2006 09 25 | 703 | 0.5+ | 1.0+ |
| 2001 10 24 | 704 | 0.6− | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.0 | 2006 10 04 | 703 | 0.2+ | 0.6− |
| 2001 10 24 | 704 | 0.4+ | 0.3− | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2006 10 04 | 703 | 0.4+ | 0.6− |
| 2001 10 25 | 704 | 0.0 | 0.4+ | 2004 03 22 | 704 | 1.2+ | 0.6+ | 2006 10 04 | 703 | 0.4− | 0.6+ |
| 2001 10 25 | 704 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.8+ | 1.3+ | 2006 10 04 | 703 | 0.6− | 0.4+ |
| 2001 10 25 | 704 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 10 21 | 703 | 0.6+ | 1.0+ |
| 2001 10 25 | 704 | 0.3+ | 0.9+ | 2004 03 24 | 699 | 0.4− | 0.9− | 2006 10 21 | 703 | 0.1− | 1.1+ |
| 2001 10 25 | 704 | 0.2− | 0.7+ | 2004 03 24 | 699 | 0.1− | 1.3− | 2006 10 21 | 703 | 0.2+ | 0.7+ |
| 2001 10 26 | 704 | 0.5− | 0.5+ | 2004 03 24 | 699 | 0.8− | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.3+ |
| 2001 10 26 | 704 | 0.5− | 0.7+ | 2004 03 24 | 699 | 1.1− | 0.4− | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2001 10 26 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 704 | 0.6+ | 0.9+ | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2001 10 26 | 644 | 0.2− | 0.3+ | 2004 03 28 | 704 | 1.0+ | 0.2− | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2001 10 26 | 704 | 0.2− | 0.8+ | 2004 03 28 | 704 | 0.2+ | 0.9+ | 2006 11 20 | 704 | 0.6+ | 0.4− |
| 2001 10 26 | 644 | 0.1− | 0.3+ | 2004 03 28 | 704 | (0.5+ | 1.5+) | 2006 11 20 | 704 | 1.1+ | 1.5+ |
| 2001 10 26 | 704 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2001 10 26 | 644 | 0.2− | 0.4+ | 2004 03 28 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 1.0+ |
| 2001 11 16 | 644 | 0.1− | 0.6+ | 2004 03 28 | 704 | 0.1+ | 1.0+ | | | | |
| 2001 11 16 | 644 | 0.2− | 0.3+ | 2004 03 28 | 704 | 0.4+ | 0.8+ | | | | |

**(140028)∗ 2001 SZ$_{61}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 335.10857 | | (2000.0) | **P** | **Q** |
| $n$ | 0.18320562 | $\omega$ | 190.89217 | +0.94857503 | −0.31556259 |
| $a$ | 3.0702720 | $\Omega$ | 187.64338 | +0.30273075 | +0.92741512 |
| $e$ | 0.1029795 | $i$ | 10.83961 | +0.09251763 | +0.20080199 |
| $P$ | 5.38 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 09 | 691 | 0.3+ | 0.5− | 2001 10 20 | 704 | 0.9− | 0.1+ | 2006 08 24 | 704 | 0.7+ | 0.2− |
| 1994 06 09 | 691 | 0.4− | 0.6− | 2001 10 20 | 704 | 1.0− | 1.0+ | 2006 08 24 | 704 | 0.7+ | 0.4− |
| 1994 06 09 | 691 | 0.1− | 0.0 | 2001 10 20 | 704 | 1.0− | 0.8+ | 2006 08 24 | 704 | 0.5+ | 1.2+ |
| 2001 09 17 | 704 | 0.7+ | 0.1+ | 2001 10 22 | 704 | 0.6+ | 0.5+ | 2006 08 27 | 699 | 0.1+ | 0.2+ |
| 2001 09 17 | 704 | 0.1+ | 0.1− | 2001 10 22 | 704 | 0.0 | 1.2+ | 2006 08 27 | 699 | 0.0 | 0.1+ |
| 2001 09 17 | 704 | (1.7+ | 1.7−) | 2001 10 22 | 704 | 0.3+ | 0.3− | 2006 08 27 | 699 | 0.3− | 1.0− |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2001 10 25 | 644 | 0.0 | 0.3+ | 2006 08 27 | 699 | (1.3+ | 3.4−) |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2001 10 25 | 644 | 0.1− | 0.6+ | 2006 08 29 | 703 | (0.7− | 2.2−) |
| 2001 09 19 | 704 | 0.2+ | 0.2− | 2001 10 25 | 691 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2001 10 25 | 691 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.8+ | 0.5− |
| 2001 09 19 | 704 | 0.1+ | 0.3− | 2001 10 25 | 644 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.4+ | 0.7− |
| 2001 09 21 | 704 | 0.7+ | 0.0 | 2001 10 25 | 691 | 0.3− | 0.1+ | 2006 09 04 | 143 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.6+ | 2001 11 18 | 704 | 0.0 | 0.9+ | 2006 09 04 | 143 | 0.4+ | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.9+ | 2001 11 18 | 704 | 0.0 | 0.5+ | 2006 09 04 | 143 | 0.3+ | 0.8− |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2001 11 18 | 704 | 0.2− | 0.1− | 2006 09 13 | 644 | 0.4− | 0.2+ |
| 2001 09 26 | 704 | 0.5+ | 0.1− | 2001 11 18 | 704 | 0.4− | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 2001 09 26 | 704 | 0.6+ | 0.2− | 2001 11 18 | 704 | 0.3+ | 0.5+ | 2006 09 13 | 644 | 0.4− | 0.1+ |
| 2001 09 26 | 704 | 0.3+ | 0.0 | 2002 12 14 | 645 | 0.2− | 0.0 | 2006 09 18 | 704 | 1.2+ | 0.4+ |
| 2001 09 26 | 704 | 1.2+ | 0.7+ | 2002 12 14 | 645 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.3+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.5+ | 0.7+ | 2004 03 27 | 704 | 0.3− | 1.0+ | 2006 09 18 | 704 | 0.7− | 0.1− |
| 2001 10 07 | 644 | 0.7+ | 0.4+ | 2004 03 27 | 704 | 0.1− | 1.2+ | 2006 09 18 | 704 | 0.1+ | 0.1− |
| 2001 10 07 | 644 | 0.8+ | 0.7+ | 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 1.4− | 0.7+ |
| 2001 10 07 | 644 | 0.4+ | 0.5+ | 2004 03 27 | 704 | (0.2+ | 1.5+) | 2006 09 20 | 699 | 1.2+ | 1.0+ |
| 2001 10 12 | 699 | 0.3− | 0.4+ | 2004 03 27 | 704 | (1.7+ | 2.8+) | 2006 09 20 | 699 | (1.8− | 1.4+) |
| 2001 10 12 | 699 | 0.6+ | 0.9+ | 2004 03 30 | 291 | 0.8+ | 0.4+ | 2006 09 20 | 699 | 1.1+ | 1.1+ |
| 2001 10 12 | 699 | 0.1+ | 0.7+ | 2004 03 30 | 291 | 1.5+ | 0.8+ | 2006 09 25 | 704 | 0.3− | 0.8− |
| 2001 10 12 | 699 | 0.0 | 0.9+ | 2004 03 30 | 291 | 1.0+ | 0.6+ | 2006 09 25 | 704 | 0.7− | 0.1+ |
| 2001 10 13 | 704 | 0.3+ | 0.6− | 2004 04 21 | 704 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.2− | 0.4+ |
| 2001 10 13 | 704 | (0.6+ | 2.1−) | 2004 04 21 | 704 | 0.0 | 0.5+ | 2006 09 25 | 704 | 0.7− | 0.1+ |
| 2001 10 13 | 704 | 0.7− | 0.1− | 2004 04 21 | 704 | 1.0− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 0.9+ | 1.4− | 2005 07 11 | 691 | 0.7− | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 10 16 | 704 | 0.3− | 0.6− | 2005 07 11 | 691 | 0.3− | 0.6+ | 2006 10 21 | G96 | 0.6− | 0.2− |
| 2001 10 16 | 704 | 0.1− | 0.3+ | 2005 07 11 | 691 | 0.7− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2001 10 16 | 704 | 0.1− | 1.0+ | 2006 08 22 | 644 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2001 10 16 | 704 | 0.7+ | 0.1+ | 2006 08 22 | 644 | 0.8− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2001 10 16 | 704 | 0.3− | 0.0 | 2006 08 22 | 644 | 0.6− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2001 10 20 | 704 | 0.9− | 0.1+ | 2006 08 24 | 704 | 1.5+ | 0.6+ | | | | |
| 2001 10 20 | 704 | 0.7− | 0.5− | 2006 08 24 | 704 | 0.3+ | 0.3+ | | | | |

**(140029)∗ 2001 SV$_{63}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.72714 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23244097 | $\omega$ | 51.79197 | | −0.26458236 | −0.96377455 |
| $a$ | 2.6197565 | $\Omega$ | 53.58310 | | +0.87118674 | −0.25385268 |
| $e$ | 0.0398548 | $i$ | 2.39918 | | +0.41355754 | −0.08183784 |
| $P$ | 4.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.6+ | 0.7− | 2001 11 20 | 704 | 0.1− | 0.2− | 2005 09 03 | 644 | 0.0 | 0.4− |
| 2001 09 17 | 704 | 0.8+ | 0.9− | 2001 11 20 | 704 | 0.4+ | 0.1− | 2005 09 03 | 644 | 0.1+ | 0.2− |
| 2001 09 17 | 704 | 0.9− | 0.4− | 2001 11 20 | 704 | 0.1− | 0.4− | 2005 09 03 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.5− | 2001 11 20 | 704 | 0.2+ | 0.2− | 2005 09 03 | 644 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.8− | 2001 11 20 | 704 | 0.1+ | 0.6− | 2005 09 08 | 704 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.9− | 2001 11 21 | 704 | 0.3+ | 0.0 | 2005 09 08 | 704 | 0.2− | 1.0+ |
| 2001 09 19 | 704 | 0.3− | 1.2− | 2001 11 21 | 704 | 0.2+ | 0.1− | 2005 09 08 | 704 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 0.9− | 2001 11 21 | 704 | 0.5+ | 0.0 | 2005 09 08 | 704 | 0.8− | 1.2+ |
| 2001 09 26 | 704 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.3+ | 0.2− | 2005 09 08 | 704 | 0.1− | 0.3+ |
| 2001 09 26 | 704 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.3+ | 0.2− | 2005 09 23 | 703 | 0.9+ | 1.2+ |
| 2001 09 26 | 704 | 0.1− | 0.1− | 2002 12 28 | 291 | 0.5− | 0.0 | 2005 09 23 | 703 | 0.7+ | 0.9+ |
| 2001 09 26 | 704 | 0.2− | 0.1− | 2002 12 28 | 291 | 0.5− | 0.0 | 2005 09 23 | 703 | (2.1+ | 0.8+) |
| 2001 09 26 | 704 | 0.2− | 0.1+ | 2002 12 28 | 291 | 0.4− | 0.3+ | 2005 09 23 | 703 | 1.5+ | 0.7+ |
| 2001 10 11 | 644 | 0.1− | 0.4+ | 2003 01 26 | 608 | 1.3+ | 0.4+ | 2005 09 23 | 703 | 0.0 | 0.4− |
| 2001 10 11 | 644 | 0.3− | 0.4+ | 2003 01 26 | 608 | 1.0+ | 0.3+ | 2005 09 23 | 703 | 1.1− | 0.1− |
| 2001 10 11 | 644 | 0.6+ | 0.8+ | 2003 01 26 | 608 | 1.4+ | 0.6+ | 2005 09 23 | 703 | 0.1− | 0.7− |
| 2001 10 13 | 704 | 0.6− | 1.2− | 2003 01 30 | 699 | (0.0 | 1.5−) | 2005 09 23 | 703 | 0.8− | 1.0− |
| 2001 10 13 | 704 | (1.1− | 1.5−) | 2003 01 30 | 699 | 0.8+ | 0.1− | 2005 09 25 | A50 | 0.0 | 0.1− |
| 2001 10 13 | 704 | 0.7− | 1.0− | 2003 01 30 | 699 | 1.2+ | 0.9+ | 2005 09 25 | A50 | 0.1+ | 0.3− |
| 2001 10 13 | 704 | 0.7+ | 0.2+ | 2003 01 30 | 699 | 0.6+ | 1.1− | 2005 10 01 | 704 | 0.0 | 1.2+ |
| 2001 10 14 | 699 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.2+ | 0.1− | 2005 10 01 | 704 | 0.1− | 1.4+ |
| 2001 10 14 | 699 | 0.4+ | 0.2+ | 2003 02 01 | 704 | 0.1+ | 1.2+ | 2005 10 01 | 704 | 0.3− | 0.4+ |
| 2001 10 14 | 699 | 0.4+ | 0.7+ | 2003 02 01 | 704 | 1.1− | 0.2+ | 2005 10 01 | 704 | 0.4− | 0.5+ |
| 2001 10 14 | 699 | 0.5+ | 0.9+ | 2003 02 01 | 704 | 0.6+ | 0.1+ | 2005 10 01 | 704 | 0.4− | 0.6+ |
| 2001 10 17 | 704 | 0.2− | 0.5− | 2003 02 01 | 704 | (1.8+ | 0.1+) | 2005 10 04 | 644 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.3+ | 0.0 | 2003 02 04 | 704 | (1.7+ | 1.1−) | 2005 10 04 | 644 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.4+ | 1.0− | 2003 02 04 | 704 | (2.4+ | 0.7−) | 2005 10 04 | 644 | 0.1− | 0.3+ |
| 2001 10 18 | 644 | 0.5+ | 0.6+ | 2003 02 04 | 704 | 0.4+ | 0.5− | 2005 10 06 | G96 | 0.3+ | 0.0 |
| 2001 10 18 | 644 | 0.7+ | 0.7+ | 2003 02 04 | 704 | 1.5+ | 0.1− | 2005 10 06 | G96 | 0.2+ | 0.0 |
| 2001 10 18 | 644 | 0.6+ | 0.7+ | 2003 02 04 | 704 | 0.6+ | 0.4− | 2005 10 06 | G96 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | 0.4− | 0.1− | 2003 02 21 | 049 | 0.7− | 0.3+ | 2005 10 06 | G96 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 0.4− | 0.4− | 2003 02 21 | 049 | 0.9− | 0.6+ | 2005 10 07 | 704 | 0.6− | 0.4+ |
| 2001 10 20 | 704 | 0.4− | 0.3− | 2003 02 21 | 049 | 0.6− | 0.6+ | 2005 10 07 | 704 | (1.6− | 0.3+) |
| 2001 10 20 | 704 | 0.1− | 0.9− | 2003 02 26 | 608 | 0.4+ | 1.3+ | 2005 10 07 | 704 | 0.6− | 0.2+ |
| 2001 10 22 | 704 | 0.8+ | 0.3− | 2003 02 26 | 608 | 0.4+ | 0.8+ | 2005 10 08 | 704 | 0.2+ | 0.2− |
| 2001 10 22 | 704 | 0.4+ | 0.0 | 2003 02 26 | 608 | 0.2+ | 1.0+ | 2005 10 08 | 704 | 1.4− | 0.5+ |
| 2001 10 22 | 704 | 1.1+ | 0.2− | 2003 02 27 | 608 | 0.1+ | 0.4− | 2005 10 08 | 704 | 1.0− | 1.2− |
| 2001 10 23 | 704 | 0.2− | 0.2+ | 2003 02 27 | 608 | 0.1+ | 0.6− | 2005 10 08 | 704 | 0.2− | 0.7+ |
| 2001 10 23 | 704 | 0.5− | 0.1+ | 2003 02 27 | 608 | 0.4+ | 0.6− | 2005 10 08 | 704 | 0.7− | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 0.2+ | 2003 02 28 | 704 | 0.4+ | 0.6+ | 2005 10 29 | G96 | 0.0 | 0.5− |
| 2001 10 23 | 704 | 0.0 | 0.5+ | 2003 02 28 | 704 | 0.2+ | 0.7+ | 2005 10 29 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.5− | 0.3+ | 2003 02 28 | 704 | 0.3− | 1.0+ | 2005 10 29 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.4− | 0.6+ | 2003 03 06 | 704 | (2.6+ | 2.0+) | 2005 10 29 | G96 | 0.2− | 0.2− |
| 2001 10 24 | 704 | 0.8− | 0.0 | 2003 03 06 | 704 | (2.2+ | 4.2+) | 2005 12 01 | G96 | 0.4− | 0.1− |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2003 03 06 | 704 | 0.1+ | 0.5+ | 2005 12 01 | G96 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.2− | 0.9+ | 2003 03 06 | 704 | 0.8− | 0.2− | 2005 12 01 | G96 | 0.2− | 0.1− |
| 2001 10 24 | 704 | 0.0 | 1.4+ | 2003 03 06 | 704 | (0.1+ | 1.7+) | 2005 12 01 | G96 | 0.1+ | 0.2− |
| 2001 10 26 | 704 | 0.8− | 0.4+ | 2003 03 07 | 699 | 0.6+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.7− |
| 2001 10 26 | 704 | 0.1+ | 0.3+ | 2003 03 07 | 699 | 0.3− | 1.4+ | 2006 09 28 | G96 | 0.1+ | 0.7− |
| 2001 10 26 | 704 | 0.6− | 0.7+ | 2003 03 07 | 699 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2001 10 26 | 704 | 0.8− | 0.4+ | 2003 03 07 | 699 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 10 26 | 704 | 0.7− | 0.1− | 2005 08 27 | 644 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.6− |
| 2001 11 09 | 704 | 0.8+ | 0.7− | 2005 08 27 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2001 11 09 | 704 | 0.5+ | 0.2− | 2005 08 27 | 644 | 0.4− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2001 11 09 | 704 | 0.1− | 0.2+ | 2005 08 30 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2001 11 09 | 704 | 0.7+ | 0.1− | 2005 08 30 | 691 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2001 11 16 | 691 | 0.1+ | 0.1− | 2005 08 30 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2001 11 16 | 691 | 0.2+ | 0.1+ | 2005 09 03 | 644 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2001 11 16 | 691 | 0.1+ | 0.0 | 2005 09 03 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.5− | 0.4− |

**(140030)∗ 2001 SA$_{64}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.36348 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19592125 | $\omega$ | 203.90167 | | +0.89616188 | −0.44367682 |
| $a$ | 2.9359480 | $\Omega$ | 182.46762 | | +0.42803906 | +0.86835362 |
| $e$ | 0.1099954 | $i$ | 8.94069 | | +0.11694635 | +0.22161424 |
| $P$ | 5.03 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | 0.5− | 0.6+ | 2001 10 24 | 644 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2001 08 28 | 699 | 0.5+ | 0.3+ | 2001 11 18 | 704 | 0.2+ | 0.8+ | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2001 08 28 | 699 | 0.0 | 1.0+ | 2001 11 18 | 704 | 0.4+ | 0.3− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2001 08 28 | 699 | 0.8+ | 0.7+ | 2001 11 18 | 704 | (1.5+ | 0.8+) | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 09 17 | 704 | 0.2− | 0.4− | 2001 11 18 | 704 | 0.9+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | 1.2+ | 0.2− | 2001 11 18 | 704 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 09 17 | 704 | 0.0 | 0.0 | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.8+ | 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 10 15 | 703 | 1.1− | 0.1− |
| 2001 09 19 | 704 | 0.3+ | 0.4+ | 2004 04 14 | 691 | 0.1− | 0.6+ | 2006 10 15 | 703 | 0.5+ | 0.8+ |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.5− | 0.6+ |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2004 04 14 | 691 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2004 04 19 | 704 | 0.4+ | 1.3+ | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.2− | 2004 04 19 | 704 | 1.0+ | 0.1+ | 2006 10 21 | 703 | (1.8− | 2.7−) |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 704 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.8+ | 1.0− |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2004 04 19 | 704 | 0.2+ | 1.4+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2004 04 19 | 704 | 1.0+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2004 04 19 | 704 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | (0.3− | 2.8+) | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 0.5− | 0.9+ | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 22 | 704 | (1.8− | 0.6+) |
| 2001 09 26 | 704 | (1.7+ | 1.5+) | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 22 | 704 | 0.2+ | 0.6− |
| 2001 09 26 | 704 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 10 22 | 704 | 0.6+ | 0.3− |
| 2001 09 27 | 644 | 0.3+ | 0.3− | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 22 | 704 | 0.7+ | 0.1+ |
| 2001 09 27 | 644 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.3− | 2006 10 22 | 704 | 0.3+ | 0.2− |
| 2001 09 27 | 644 | 0.3− | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.5− | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2001 10 14 | 699 | (1.1− | 1.6+) | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.6+ | 0.3− |
| 2001 10 14 | 699 | 0.3+ | 1.1+ | 2006 09 18 | 699 | 1.0− | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2001 10 14 | 699 | 0.6− | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.6+ | 0.3− |
| 2001 10 14 | 699 | 0.0 | 1.4+ | 2006 09 18 | 699 | 0.5− | 0.6+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2001 10 16 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 1.1− | 0.8+ | 2006 11 07 | 644 | 0.0 | 0.2− |
| 2001 10 16 | 704 | 0.9− | 0.2− | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 11 07 | 644 | 0.0 | 0.2− |
| 2001 10 16 | 704 | 0.4− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.3− |
| 2001 10 16 | 704 | 0.9− | 0.1− | 2006 09 20 | 644 | 0.4+ | 0.7+ | 2006 11 16 | 703 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.8− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.1+ | 0.6+ | | |
| 2001 10 16 | 644 | 0.6− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.5+ | 0.0 | | |
| 2001 10 16 | 644 | 0.7− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2001 10 16 | 644 | 0.8− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.6− | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2001 10 24 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.6− | 2006 11 24 | G96 | 0.5+ | 0.2− | | |
| 2001 10 24 | 644 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 11 24 | G96 | 0.4+ | 0.3− | | |

**(140031)∗ 2001 SP$_{64}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.26027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19870992 | $\omega$ | 4.46524 | | +0.73627169 | −0.66148872 | |
| $a$ | 2.9084148 | $\Omega$ | 38.22966 | | +0.61349228 | +0.56359635 | |
| $e$ | 0.1084062 | $i$ | 13.32364 | | +0.28553672 | +0.49476443 | |
| $P$ | 4.96 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.4− | 0.3+ | 2001 11 09 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.4− | 1.1− | | |
| 2001 09 14 | 644 | 0.6− | 1.0+ | 2001 11 16 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.1− | | |
| 2001 09 14 | 644 | 0.4+ | 0.9+ | 2001 11 16 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.3− | 0.9− | | |
| 2001 09 17 | 699 | 0.0 | 0.9+ | 2001 11 16 | 644 | 0.4− | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.0 | | |
| 2001 09 17 | 699 | 0.6+ | 0.0 | 2001 11 17 | 704 | 0.9+ | 0.6+ | 2006 10 03 | 704 | 1.1+ | 0.4+ | | |
| 2001 09 17 | 699 | 1.1− | 0.3+ | 2001 11 17 | 704 | 0.2+ | 0.2+ | 2006 10 03 | 704 | 0.9+ | 0.4+ | | |
| 2001 09 17 | 704 | 0.2+ | 0.2+ | 2001 11 17 | 704 | 0.1+ | 0.4+ | 2006 10 03 | 704 | 0.2− | 0.6− | | |
| 2001 09 17 | 699 | 0.8− | 0.1+ | 2001 11 17 | 704 | 0.4+ | 0.1+ | 2006 10 03 | 704 | 0.8+ | 0.2+ | | |
| 2001 09 17 | 704 | 1.0− | 0.1+ | 2001 11 17 | 704 | 0.3+ | 0.2+ | 2006 10 04 | 703 | 0.0 | 1.3− | | |
| 2001 09 17 | 704 | 0.3− | 0.9+ | 2001 11 19 | 704 | 0.0 | 0.3− | 2006 10 04 | 703 | 0.3− | 0.6− | | |
| 2001 09 17 | 704 | 0.2+ | 0.4+ | 2001 11 19 | 704 | 0.1+ | 0.6− | 2006 10 04 | 703 | 0.6+ | 0.2− | | |
| 2001 09 17 | 704 | 1.0− | 0.1− | 2001 11 19 | 704 | 0.2+ | 0.5− | 2006 10 04 | 703 | 0.4+ | 0.5− | | |
| 2001 09 19 | 704 | 0.7+ | 0.0 | 2001 11 19 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.0 | | |
| 2001 09 19 | 704 | 0.6+ | 0.7+ | 2001 11 19 | 704 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.0 | | |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2001 11 20 | 699 | (1.9+ | 0.1−) | 2006 10 12 | 691 | 0.2+ | 0.0 | | |
| 2001 09 19 | 704 | 0.4− | 0.0 | 2001 11 20 | 699 | 0.1− | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.8− | 0.1+ | 2001 11 20 | 699 | 1.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 2001 09 21 | 704 | 0.1+ | 0.7− | 2001 11 20 | 699 | (2.0+ | 0.7−) | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.8− | 2001 11 21 | 704 | 1.3+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.1− | | |
| 2001 09 21 | 704 | 0.1+ | 0.8− | 2001 11 21 | 704 | 0.9+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.2− | | |
| 2001 09 21 | 704 | 0.1− | 0.8− | 2001 11 21 | 704 | 1.0+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.0 | | |
| 2001 09 21 | 704 | 0.3− | 0.7− | 2001 11 22 | 608 | 0.2− | 1.0− | 2006 10 20 | 691 | 0.9− | 0.1− | | |
| 2001 09 26 | 704 | 0.2+ | 0.1− | 2001 11 22 | 608 | 0.4+ | 1.2− | 2006 10 20 | 691 | 0.4− | 0.2− | | |
| 2001 09 26 | 704 | 0.4+ | 0.2+ | 2001 11 22 | 608 | 0.2+ | 0.7− | 2006 10 20 | 691 | 0.4− | 0.3− | | |
| 2001 09 26 | 704 | 0.4+ | 0.2− | 2001 11 24 | 644 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2001 09 26 | 704 | 0.5+ | 0.2+ | 2001 11 24 | 644 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 26 | 704 | 0.4− | 0.4+ | 2001 11 24 | 644 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2001 09 27 | 644 | 0.7− | 0.2+ | 2001 12 15 | 704 | 0.5+ | 0.2− | 2006 10 23 | 704 | 0.3− | 0.5+ | | |
| 2001 09 27 | 644 | 1.3− | 0.0 | 2001 12 15 | 704 | 0.3+ | 0.0 | 2006 10 23 | 704 | 0.8+ | 0.6− | | |
| 2001 09 27 | 644 | 0.9− | 0.5+ | 2001 12 15 | 704 | 0.9− | 0.2+ | 2006 10 23 | 704 | 0.8+ | 0.3+ | | |
| 2001 10 13 | 704 | 0.2− | 0.5− | 2001 12 15 | 704 | (1.8+ | 0.3−) | 2006 10 23 | 704 | 0.2− | 0.7− | | |
| 2001 10 13 | 704 | 0.4− | 0.3− | 2001 12 15 | 704 | (0.8+ | 1.6+) | 2006 10 23 | 704 | 0.1+ | 0.9+ | | |
| 2001 10 13 | 704 | 0.4− | 0.9− | 2001 12 18 | 704 | 0.8− | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.4− | | |
| 2001 10 13 | 704 | 0.1+ | 0.8− | 2001 12 18 | 704 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.4− | | |
| 2001 10 13 | 704 | 0.5− | 0.3+ | 2001 12 18 | 704 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.5− | | |
| 2001 10 17 | 704 | 0.3+ | 0.5+ | 2001 12 18 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2001 10 17 | 704 | 0.0 | 0.4+ | 2001 12 18 | 704 | 0.2− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.2− | 2003 01 29 | 644 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2001 10 17 | 704 | 0.4+ | 0.1+ | 2003 01 29 | 644 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.0 | | |
| 2001 10 17 | 704 | 0.4− | 0.2− | 2003 01 29 | 644 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2001 10 20 | 704 | 0.0 | 0.0 | 2003 02 01 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− | | |
| 2001 10 20 | 704 | 0.1− | 0.0 | 2003 02 01 | 644 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.3− | | |
| 2001 10 20 | 704 | 0.4− | 0.1− | 2003 02 01 | 644 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.1− | | |
| 2001 10 20 | 704 | 0.2+ | 0.3− | 2003 02 08 | 699 | 0.1+ | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 22 | 704 | 0.7− | 0.7− | 2003 02 08 | 699 | 1.4− | 0.7+ | 2006 11 13 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 22 | 704 | 1.1− | 0.0 | 2003 02 08 | 699 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4− | | |
| 2001 10 22 | 704 | 0.7− | 0.1− | 2003 02 08 | 699 | 1.4− | 1.0+ | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 2001 10 23 | 704 | (0.5− | 2.0−) | 2003 02 19 | 644 | 0.6+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.5− | | |
| 2001 10 23 | 704 | (0.1+ | 2.2−) | 2003 02 19 | 644 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.5− | | |
| 2001 10 23 | 704 | (0.3− | 2.2−) | 2003 02 19 | 644 | 0.8+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.4+ | | |
| 2001 10 23 | 704 | (0.0 | 1.5−) | 2003 03 08 | 644 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 23 | 704 | (0.2+ | 1.5−) | 2003 03 08 | 644 | 0.4+ | 0.8− | 2006 11 18 | 704 | 0.8+ | 0.1+ | | |
| 2001 10 23 | 691 | 0.0 | 0.4+ | 2003 03 08 | 644 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.8− | 1.1+ | | |
| 2001 10 23 | 691 | 0.1− | 0.5+ | 2003 03 08 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.4+ | | |
| 2001 10 23 | 691 | 0.3− | 0.5+ | 2003 03 08 | 644 | 0.5+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 1.3+ | | |
| 2001 10 24 | 704 | 0.3− | 0.5+ | 2003 03 08 | 644 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.3− | | |
| 2001 10 24 | 704 | 0.2− | 0.3+ | 2004 04 12 | 644 | 0.0 | 1.0+ | 2006 11 18 | 704 | 0.3− | 0.2− | | |
| 2001 10 24 | 704 | 0.6− | 0.3+ | 2004 04 12 | 644 | 0.7+ | 0.8+ | 2006 11 18 | 704 | 0.1− | 0.7− | | |
| 2001 10 24 | 704 | 0.3− | 0.3− | 2004 04 12 | 644 | 0.7+ | 0.9+ | 2006 11 18 | 704 | 0.6+ | 0.1+ | | |
| 2001 10 25 | 644 | 0.1− | 1.2+ | 2004 04 21 | 704 | 0.7+ | 0.8+ | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2001 10 25 | 644 | 0.1+ | 1.1+ | 2004 04 21 | 704 | 1.0+ | 1.2+ | 2006 11 21 | 704 | 0.4+ | 1.0+ | | |
| 2001 10 25 | 644 | 0.2+ | 1.0+ | 2004 04 21 | 704 | 0.4+ | 1.4+ | 2006 11 21 | 704 | 0.2− | 0.8+ | | |
| 2001 10 26 | 704 | 0.1+ | 0.5+ | 2004 04 21 | 704 | 1.1+ | 1.5+ | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2001 10 26 | 704 | 0.1− | 0.0 | 2004 05 14 | 691 | 0.4+ | 0.7+ | 2006 11 21 | 704 | 0.3− | 0.7+ | | |
| 2001 10 26 | 704 | 0.0 | 0.1+ | 2004 05 14 | 691 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 1.0+ | 1.0+ | | |
| 2001 10 26 | 704 | 0.0 | 0.0 | 2004 05 14 | 691 | 0.4+ | 0.4+ | 2006 11 29 | 704 | 0.7+ | 0.7+ | | |
| 2001 10 26 | 704 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.8+ | | |
| 2001 11 09 | 704 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.7+ | 0.6+ | | |
| 2001 11 09 | 704 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.7+ | | |
| 2001 11 09 | 704 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.3− | | | | | | |
| 2001 11 09 | 704 | 0.3− | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.1− | | | | | | |

**(140032)∗ 2001 SM$_{65}$ = 1999 JG$_{17}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20242)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.82361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17706343 | $\omega$ | 229.08309 | | +0.49960613 | −0.86569712 | |
| $a$ | 3.1408712 | $\Omega$ | 191.06896 | | +0.83540270 | +0.49097586 | |
| $e$ | 0.0684896 | $i$ | 9.29792 | | +0.22912016 | +0.09752539 | |
| $P$ | 5.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 15 | 691 | 0.4− | 0.3+ | 2001 10 22 | 704 | 1.0− | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.4+ | | |
| 1999 05 15 | 691 | 0.1− | 0.3+ | 2001 10 22 | 704 | 0.3− | 0.2+ | 2004 04 19 | 691 | 0.3+ | 0.4+ | | |
| 1999 05 20 | 691 | 0.3+ | 0.1+ | 2001 10 22 | 704 | 0.9− | 0.4+ | 2004 04 19 | 691 | 0.3+ | 0.4+ | | |
| 1999 05 20 | 691 | 0.1− | 0.1+ | 2001 10 23 | 704 | 0.4− | 0.7+ | 2004 04 19 | 704 | 1.3+ | 0.5− | | |
| 1999 05 20 | 691 | 0.2+ | 0.1− | 2001 10 23 | 704 | 0.7+ | 1.0+ | 2004 04 19 | 704 | 0.1− | 1.0+ | | |
| 1999 05 22 | 691 | 0.2− | 0.1− | 2001 10 23 | 704 | 0.5+ | 1.1+ | 2004 04 19 | 704 | 1.4+ | 1.0+ | | |
| 1999 05 22 | 691 | 0.2− | 0.5− | 2001 10 23 | 704 | (1.5+ | 1.6+) | 2004 04 19 | 704 | 1.1+ | 0.6+ | | |
| 1999 05 22 | 691 | 0.1− | 0.6− | 2001 10 24 | 704 | 0.6+ | 0.3+ | 2004 04 25 | 691 | 0.3+ | 0.4+ | | |
| 2001 09 17 | 704 | 0.1− | 0.0 | 2001 10 24 | 704 | 0.8+ | 0.5− | 2004 04 25 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 17 | 704 | 0.2+ | 0.0 | 2001 10 24 | 704 | 0.7+ | 0.3− | 2004 04 25 | 691 | 0.0 | 0.4+ | | |
| 2001 09 17 | 704 | 0.5− | 0.4+ | 2001 10 24 | 704 | 0.1− | 1.2+ | 2006 08 27 | 699 | (2.1+ | 1.4+) | | |
| 2001 09 17 | 704 | (2.0+ | 0.6−) | 2001 10 25 | 644 | 0.4− | 0.6+ | 2006 08 27 | 699 | 0.2− | 1.3+ | | |
| 2001 09 17 | 704 | 0.3+ | 1.0− | 2001 10 25 | 644 | 0.7− | 0.3+ | 2006 08 27 | 699 | 1.1+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 10 25 | 644 | 0.3− | 0.3+ | 2006 08 27 | 699 | (1.6+ | 2.2+) | | |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2003 01 26 | 644 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 1.0− | 1.4+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2003 01 26 | 644 | 0.0 | 0.0 | 2006 08 27 | 699 | 0.1− | 1.0+ | | |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2003 01 26 | 644 | 0.1− | 0.2− | 2006 08 27 | 699 | (1.5− | 0.1−) | | |
| 2001 10 14 | 699 | 0.2− | 0.1+ | 2003 01 28 | 645 | 0.1+ | 0.1− | 2006 08 27 | 699 | (0.4− | 2.8+) | | |
| 2001 10 14 | 699 | 0.1+ | 1.4+ | 2003 01 28 | 645 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.6+ | | |
| 2001 10 14 | 699 | 1.5+ | 0.4+ | 2004 03 20 | 699 | 0.2− | 0.9+ | 2006 08 29 | 703 | 0.1− | 0.3+ | | |
| 2001 10 14 | 699 | 0.2+ | 0.6+ | 2004 03 20 | 699 | (2.2− | 2.0+) | 2006 08 29 | 703 | 0.2+ | 0.4+ | | |
| 2001 10 17 | 704 | 0.5+ | 1.1+ | 2004 03 20 | 699 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.2+ | 0.2− | | |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2004 03 20 | 699 | (1.2− | 1.7+) | 2006 09 17 | 703 | (1.8− | 1.2+) | | |
| 2001 10 17 | 704 | 0.9+ | 0.2+ | 2004 04 10 | 703 | 0.9+ | 0.9+ | 2006 09 17 | 703 | 1.0− | 1.4+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.4+ | 2004 04 10 | 703 | 0.3+ | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.2+ | | |
| 2001 10 17 | 704 | 0.4− | 0.1+ | 2004 04 10 | 703 | 0.5− | 0.6+ | 2006 09 17 | 703 | 0.8− | 0.5+ | | |
| 2001 10 18 | 644 | 0.1+ | 0.7+ | 2004 04 10 | 703 | 0.5− | 0.4+ | 2006 09 30 | 699 | (0.1− | 1.7+) | | |
| 2001 10 18 | 644 | 0.4+ | 0.4+ | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 09 30 | 699 | 0.3− | 0.8+ | | |
| 2001 10 18 | 644 | 0.3− | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 0.8− | 0.2+ | | |
| 2001 10 20 | 704 | 0.1+ | 0.7+ | 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 699 | (2.3+ | 1.8+) | | |
| 2001 10 20 | 704 | 0.2− | 0.2+ | 2004 04 15 | 699 | 0.0 | 0.8+ | 2006 11 16 | G96 | 0.3− | 0.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.2− | 0.6+ | 2004 04 15 | 699 | 0.5+ | 0.0 | 2006 11 16 | G96 | 0.7− | 0.2− |
| 2001 10 20 | 704 | 0.1− | 0.7+ | 2004 04 15 | 699 | 0.8− | 1.5+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 10 22 | 704 | 0.9− | 0.3− | 2004 04 15 | 699 | 0.3− | 0.5− | 2006 11 16 | G96 | 0.4− | 0.7− |

**(140033)∗ 2001 SK$_{66}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.85692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18550143 | $\omega$ | 157.92018 | | −0.95624659 | +0.25907926 | |
| $a$ | 3.0448872 | $\Omega$ | 37.93309 | | −0.29042017 | −0.78450197 | |
| $e$ | 0.0805701 | $i$ | 12.77238 | | −0.03533545 | −0.56341335 | |
| $P$ | 5.31 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 1.1+ | 1.3+ | 2003 01 31 | 699 | 0.1+ | 0.4− | 2004 04 25 | 704 | 0.1+ | 0.2− |
| 2001 09 17 | 704 | 0.6+ | 1.1+ | 2003 01 31 | 699 | 0.2+ | 0.2+ | 2004 04 25 | 704 | 0.9+ | 0.2+ |
| 2001 09 17 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 703 | 0.0 | 0.7+ | 2004 04 25 | 704 | 0.6+ | 0.3− |
| 2001 09 17 | 704 | 0.2+ | 0.3+ | 2004 03 15 | 703 | 0.6− | 0.5+ | 2004 04 28 | 608 | 0.7+ | 0.8− |
| 2001 09 19 | 704 | (0.4− | 1.8+) | 2004 03 15 | 703 | 0.8+ | 1.4+ | 2004 04 28 | 608 | 0.3+ | 0.3− |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2004 03 15 | 703 | 0.9− | 1.3+ | 2004 04 28 | 608 | 0.8+ | 0.7− |
| 2001 09 19 | 704 | 0.8− | 1.3+ | 2004 03 17 | 704 | 0.1+ | 0.7+ | 2004 05 09 | 703 | 1.1− | 1.0− |
| 2001 09 19 | 704 | 0.3− | 1.4+ | 2004 03 17 | 704 | 0.2− | 0.2− | 2004 05 09 | 703 | 0.1+ | 0.6+ |
| 2001 09 19 | 704 | 0.3− | 0.8+ | 2004 03 17 | 704 | 0.8+ | 0.7− | 2004 05 09 | 703 | 1.3+ | 1.5− |
| 2001 10 11 | 644 | 0.4+ | 0.2− | 2004 03 17 | 704 | 0.7− | 0.6− | 2004 05 09 | 703 | 0.1− | 0.6+ |
| 2001 10 11 | 644 | 0.1+ | 0.3+ | 2004 03 19 | 704 | 0.6− | 0.3− | 2004 05 11 | 699 | 0.2+ | 0.1− |
| 2001 10 11 | 644 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.2+ | 2004 05 11 | 699 | 0.4+ | 0.1− |
| 2001 10 16 | 291 | 0.4− | 0.8+ | 2004 03 19 | 704 | 1.2− | 0.4− | 2004 05 11 | 699 | 1.0+ | 0.9+ |
| 2001 10 16 | 291 | 0.2− | 0.8+ | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2004 05 11 | 699 | 0.0 | 0.1− |
| 2001 10 16 | 291 | 0.1− | 0.8+ | 2004 03 19 | 704 | (1.1− | 1.8−) | 2004 05 15 | 691 | 0.4+ | 0.3+ |
| 2001 10 17 | 704 | 1.4+ | 0.2+ | 2004 03 19 | 704 | 1.1− | 1.1− | 2004 05 15 | 691 | 0.5+ | 0.5+ |
| 2001 10 17 | 704 | 0.5− | 0.3− | 2004 03 19 | 704 | 0.9+ | 0.2+ | 2004 05 15 | 704 | 0.2+ | 0.4− |
| 2001 10 17 | 704 | 1.1− | 0.4+ | 2004 03 19 | 704 | (1.6− | 0.5−) | 2004 05 15 | 704 | 0.4− | 0.9+ |
| 2001 10 18 | 644 | (0.1+ | 1.7+) | 2004 03 19 | 704 | 0.7− | 0.0 | 2004 05 15 | 704 | 0.3− | 0.8+ |
| 2001 10 18 | 644 | (0.5+ | 1.6+) | 2004 03 22 | 704 | 0.1+ | 1.3+ | 2004 05 15 | 691 | 0.4+ | 0.3+ |
| 2001 10 18 | 644 | (0.5+ | 1.7+) | 2004 03 22 | 704 | 0.9+ | 0.6+ | 2004 05 15 | 704 | 0.0 | 0.4− |
| 2001 10 20 | 704 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.9+ | 0.8+ | 2004 05 16 | 704 | 1.5− | 1.5+ |
| 2001 10 20 | 704 | 0.2+ | 0.1+ | 2004 03 22 | 704 | 0.1− | 0.5− | 2004 05 16 | 704 | 0.3− | 0.4+ |
| 2001 10 20 | 704 | 0.2+ | 0.7− | 2004 03 22 | 699 | 0.4+ | 0.6+ | 2004 05 16 | 704 | 0.4− | 0.6+ |
| 2001 10 25 | 644 | 0.3− | 0.9+ | 2004 03 22 | 704 | 0.0 | 0.5+ | 2004 05 16 | 704 | 0.1− | 1.1+ |
| 2001 10 25 | 644 | 0.1− | 1.3+ | 2004 03 22 | 699 | 0.9− | 0.2− | 2004 05 16 | 704 | (1.7− | 1.6+) |
| 2001 10 25 | 644 | 0.4− | 1.2+ | 2004 03 22 | 699 | 0.4− | 0.0 | 2004 05 19 | 704 | 0.5+ | 0.0 |
| 2001 10 26 | 704 | 1.2− | 0.2+ | 2004 03 22 | 699 | 0.8− | 0.9− | 2004 05 19 | 704 | 0.1+ | 0.7+ |
| 2001 10 26 | 704 | 0.3+ | 0.4− | 2004 03 27 | 699 | 0.3− | 0.9+ | 2004 05 19 | 704 | 0.0 | 0.2+ |
| 2001 10 26 | 704 | 0.7− | 0.4+ | 2004 03 27 | 699 | 0.2− | 0.9− | 2004 05 19 | 704 | 0.0 | 0.1− |
| 2001 10 26 | 704 | 0.1− | 0.2− | 2004 03 27 | 699 | (0.9+ | 1.7+) | 2004 05 23 | 691 | 0.1+ | 0.2+ |
| 2001 10 26 | 704 | 0.3+ | 1.0− | 2004 03 27 | 699 | 1.0+ | 1.1+ | 2004 05 23 | 691 | 0.1+ | 0.3+ |
| 2001 10 26 | 704 | 0.0 | 0.1− | 2004 03 28 | 704 | 0.6+ | 0.3− | 2004 05 23 | 691 | 0.1+ | 0.3+ |
| 2001 10 26 | 704 | 0.1+ | 0.3− | 2004 03 28 | 704 | 0.4+ | 0.5− | 2004 06 11 | 699 | 0.1+ | 0.1+ |
| 2001 10 26 | 704 | 1.4− | 0.0 | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2004 06 11 | 699 | 0.9− | 0.1− |
| 2001 10 26 | 704 | 0.4− | 0.5− | 2004 03 28 | 704 | 0.5+ | 0.1− | 2004 06 11 | 699 | 0.4+ | 0.4+ |
| 2001 11 16 | 691 | 0.4− | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.2− | 2004 06 11 | 699 | 0.0 | 0.5− |
| 2001 11 16 | 691 | 0.3− | 0.2+ | 2004 03 31 | 704 | 0.4+ | 0.4+ | 2005 08 24 | E12 | 0.4+ | 0.7+ |
| 2001 11 16 | 691 | 0.4− | 0.3+ | 2004 03 31 | 704 | 0.4+ | 0.1− | 2005 08 24 | E12 | 0.6− | 0.8+ |
| 2001 11 17 | 704 | 0.3+ | 0.2+ | 2004 03 31 | 704 | 0.6+ | 0.3+ | 2005 08 24 | E12 | 0.5+ | 0.5− |
| 2001 11 17 | 704 | 0.4− | 0.1+ | 2004 03 31 | 704 | 1.1+ | 0.1− | 2005 08 24 | E12 | 0.7− | 0.4+ |
| 2001 11 17 | 704 | 0.0 | 0.7+ | 2004 03 31 | 704 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.6− | 0.9+ |
| 2001 11 17 | 704 | 0.7− | 0.1+ | 2004 03 31 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.9− |
| 2001 11 18 | 704 | 0.2− | 0.1− | 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.2+ |
| 2001 11 18 | 704 | 0.1+ | 0.4− | 2004 03 31 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 1.1+ | 1.0− |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2004 04 11 | 703 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.3− | 0.0 |
| 2001 11 18 | 704 | 0.0 | 0.3+ | 2004 04 11 | 703 | 0.4+ | 0.2+ | 2006 09 29 | 699 | (1.9− | 1.5+) |
| 2001 11 18 | 704 | 0.0 | 0.3+ | 2004 04 11 | 703 | 0.4+ | 0.9+ | 2006 09 29 | 699 | 0.5+ | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.5+ | 2004 04 11 | 703 | 0.0 | 0.8+ | 2006 09 29 | 699 | 0.0 | 0.4+ |
| 2001 11 19 | 704 | 0.3− | 0.3+ | 2004 04 12 | 644 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.9− | 1.3+ |
| 2001 11 19 | 704 | 0.2− | 0.0 | 2004 04 12 | 644 | 0.4+ | 0.5+ | 2006 09 30 | 703 | (0.2− | 1.9+) |
| 2001 11 19 | 704 | 0.0 | 0.2+ | 2004 04 12 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 703 | (0.7− | 1.7+) |
| 2001 11 21 | 704 | 0.8− | 0.3− | 2004 04 16 | 644 | 0.4+ | 0.6+ | 2006 09 30 | 703 | (0.3− | 1.7+) |
| 2001 11 21 | 704 | 0.5− | 0.0 | 2004 04 16 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2004 04 16 | 644 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.7− | 1.1+ |
| 2001 11 21 | 704 | 0.4− | 0.4+ | 2004 04 16 | 644 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.7+ | 0.2+ |
| 2001 11 21 | 704 | 0.7− | 0.4+ | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 1.3− | 1.1+ |
| 2002 12 31 | 699 | 0.3+ | 0.0 | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 16 | 291 | 0.0 | 0.4+ |
| 2002 12 31 | 699 | 0.1− | 0.0 | 2004 04 16 | 644 | 0.6+ | 0.4+ | 2006 10 16 | 291 | 0.1− | 0.4+ |
| 2002 12 31 | 699 | 0.0 | 0.0 | 2004 04 16 | 644 | 0.4+ | 0.3+ | 2006 10 16 | 291 | 0.4− | 0.2− |
| 2002 12 31 | 699 | 0.2+ | 0.9+ | 2004 04 16 | 644 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.7+ |
| 2003 01 10 | 704 | 0.1− | 1.1+ | 2004 04 17 | 704 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2003 01 10 | 704 | 0.6− | 0.8+ | 2004 04 17 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2003 01 10 | 704 | 0.6− | 0.6+ | 2004 04 17 | 704 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.6+ | 0.7− |
| 2003 01 10 | 704 | 0.2+ | 0.4+ | 2004 04 21 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2003 01 13 | 704 | 0.5− | 0.2− | 2004 04 21 | 704 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2003 01 13 | 704 | 0.1− | 0.1+ | 2004 04 21 | 704 | (2.0− | 1.0−) | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2003 01 13 | 704 | 0.5+ | 0.4− | 2004 04 22 | 691 | (0.5+ | 2.0+) | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2003 01 13 | 704 | 0.1− | 0.3− | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2003 01 13 | 704 | 0.8− | 1.0− | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2003 01 31 | 699 | 1.1+ | 0.1− | 2004 04 25 | 704 | 1.2+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.3+ |
| 2003 01 31 | 699 | 1.0+ | 0.6− | 2004 04 25 | 704 | 0.6− | 0.4+ | | | | |

**(140034)∗ 2001 SO$_{66}$ = 1976 UK$_{10}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.01642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19766606 | $\omega$ | 332.29145 | | +0.98718083 | −0.06739487 | |
| $a$ | 2.9186453 | $\Omega$ | 32.58023 | | +0.14082863 | +0.79438131 | |
| $e$ | 0.2841220 | $i$ | 15.58572 | | −0.07510856 | +0.60366900 | |
| $P$ | 4.99 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 10 22 | 381 | 0.6+ | 0.3− | 2001 10 26 | 644 | 0.5− | 0.2+ | 2006 10 03 | 704 | 0.9+ | 0.3− |
| 1976 10 22 | 381 | 0.5− | 0.3− | 2001 10 26 | 644 | 0.5− | 0.1− | 2006 10 03 | 704 | 1.3+ | 0.7+ |
| 1976 10 24 | 381 | 0.2+ | 0.0 | 2001 10 26 | 644 | 0.4− | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.3− |
| 1991 11 08 | 691 | 0.3+ | 0.1− | 2001 11 10 | 644 | 0.6+ | 0.2− | 2006 10 03 | 704 | 1.1+ | 0.0 |
| 1991 11 08 | 691 | 0.4+ | 0.6− | 2001 11 10 | 644 | 0.4+ | 0.2− | 2006 10 04 | 703 | 0.3− | 0.2+ |
| 1991 11 08 | 691 | 0.0 | 0.5− | 2001 11 10 | 644 | 0.4+ | 0.1− | 2006 10 04 | 703 | 0.4+ | 1.3− |
| 1996 10 14 | 691 | 0.6− | 0.6+ | 2001 11 12 | 704 | 1.2+ | 0.6− | 2006 10 04 | 703 | 0.6− | 1.5− |
| 1996 10 14 | 691 | 0.5+ | 0.1+ | 2001 11 12 | 704 | 0.4+ | 0.2− | 2006 10 04 | 703 | 0.6+ | 0.8− |
| 1996 10 14 | 691 | 0.5− | 0.3+ | 2001 11 12 | 704 | 0.9+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 1996 10 15 | 691 | 0.1− | 0.3+ | 2001 11 12 | 704 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 1996 10 15 | 691 | 0.0 | 0.3− | 2001 11 14 | 644 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1996 10 15 | 691 | 0.0 | 0.3− | 2001 11 14 | 644 | 0.2+ | 1.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2001 11 14 | 644 | 1.0+ | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 11 21 | 704 | 0.9+ | 0.5− | 2006 10 12 | 691 | 0.2+ | 0.1+ |
| 2001 09 14 | 644 | 0.3+ | 0.9− | 2001 11 21 | 704 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 2001 09 14 | 644 | 0.5+ | 1.0− | 2001 11 21 | 704 | 0.6+ | 0.7+ | 2006 10 15 | 691 | 0.3− | 0.0 |
| 2001 09 14 | 644 | 0.1+ | 1.1− | 2001 11 21 | 704 | 0.2+ | 0.9+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2001 09 17 | 704 | 0.4− | 0.3+ | 2001 11 21 | 704 | 0.8− | 0.5− | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2001 09 17 | 704 | 0.5+ | 0.0 | 2001 11 24 | 704 | 0.1+ | 1.4+ | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2001 09 17 | 704 | 0.0 | 0.0 | 2001 11 24 | 704 | 1.0+ | 1.1+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2001 09 17 | 704 | 0.8− | 0.3− | 2001 11 24 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2001 09 17 | 704 | 0.8− | 0.1+ | 2001 11 24 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2001 11 25 | 704 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 1.3+ | 0.3− | 2001 11 25 | 704 | 0.3− | 0.2+ | 2006 10 21 | H07 | 0.2− | 0.2− |
| 2001 09 19 | 704 | 0.7− | 0.1− | 2001 11 25 | 704 | 0.4− | 0.4− | 2006 10 21 | H07 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.4+ | 0.2− | 2001 11 25 | 704 | 0.3− | 0.1+ | 2006 10 21 | H07 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2001 12 10 | 704 | 0.3− | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2001 09 21 | 699 | 0.1− | 0.9+ | 2001 12 10 | 704 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 09 21 | 699 | 0.2− | 0.3+ | 2001 12 10 | 704 | 0.6− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2001 09 21 | 699 | 0.0 | 0.6+ | 2001 12 10 | 704 | 0.4− | 0.1− | 2006 10 29 | 704 | 0.3− | 1.1+ |
| 2001 09 21 | 699 | 0.4+ | 0.4+ | 2001 12 10 | 704 | 1.1− | 0.7+ | 2006 10 29 | 704 | 0.4− | 0.1− |
| 2001 09 22 | 699 | 0.4− | 0.1− | 2001 12 18 | 699 | (1.6− | 0.4−) | 2006 10 29 | 704 | 0.1+ | 0.6+ |
| 2001 09 22 | 699 | 0.9− | 0.1− | 2001 12 18 | 699 | 0.6+ | 0.6+ | 2006 10 29 | 704 | 0.0 | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | (1.9− | 1.1−) | 2001 12 18 | 699 | 0.1+ | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.3− | | |
| 2001 09 22 | 699 | 1.2− | 1.1+ | 2001 12 18 | 699 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.4− | | |
| 2001 09 26 | 704 | 0.6− | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.4− | | |
| 2001 09 26 | 704 | (0.5+ | 1.9+) | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.2− | | |
| 2001 09 26 | 704 | 0.8− | 0.0 | 2006 09 14 | 703 | (2.6− | 1.4+) | 2006 11 13 | 644 | 0.1+ | 0.2− | | |
| 2001 09 26 | 704 | 0.6− | 0.8+ | 2006 09 14 | 703 | (3.8− | 0.6−) | 2006 11 13 | 644 | 0.2+ | 0.3− | | |
| 2001 09 26 | 704 | 0.2− | 1.4+ | 2006 09 16 | 699 | 0.2− | 0.7+ | 2006 11 14 | 703 | 0.4+ | 0.3− | | |
| 2001 10 13 | 704 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.4+ | 0.6+ | 2006 11 14 | 703 | 0.4− | 0.4− | | |
| 2001 10 13 | 704 | (0.7− | 1.7−) | 2006 09 16 | 699 | (1.5− | 0.6+) | 2006 11 14 | 703 | 0.4− | 0.4+ | | |
| 2001 10 13 | 704 | (0.4+ | 1.7−) | 2006 09 16 | 699 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.2+ | | |
| 2001 10 13 | 704 | 0.1− | 0.4− | 2006 09 20 | 644 | 0.4+ | 0.4+ | 2006 11 16 | 704 | (0.2+ | 2.1+) | | |
| 2001 10 13 | 704 | 0.7− | 0.3− | 2006 09 20 | 644 | 0.3− | 0.2− | 2006 11 16 | 704 | (0.5+ | 1.8+) | | |
| 2001 10 14 | 699 | 0.7− | 0.7+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | (0.6+ | 2.1+) | | |
| 2001 10 14 | 699 | 0.1+ | 0.6+ | 2006 09 22 | 699 | 0.6− | 0.7− | 2006 11 16 | 704 | 0.9+ | 0.5+ | | |
| 2001 10 14 | 699 | 0.5+ | 0.4− | 2006 09 22 | 699 | 0.2+ | 1.4+ | 2006 11 16 | 704 | (0.5− | 3.3+) | | |
| 2001 10 14 | 699 | 0.3+ | 0.1− | 2006 09 22 | 699 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.6+ | | |
| 2001 10 16 | 333 | 0.5+ | 0.7+ | 2006 09 22 | 699 | 0.2− | 0.9− | 2006 11 17 | 704 | 1.4+ | 0.0 | | |
| 2001 10 16 | 333 | 0.3− | 1.2+ | 2006 09 27 | 704 | 0.6+ | 0.4− | 2006 11 17 | 704 | 0.8+ | 0.8+ | | |
| 2001 10 16 | 333 | 0.7+ | 0.3− | 2006 09 27 | 704 | 0.0 | 0.8+ | 2006 11 18 | G96 | 0.2+ | 0.6− | | |
| 2001 10 17 | 704 | 0.7+ | 0.7− | 2006 09 27 | 704 | 1.0− | 1.2− | 2006 11 18 | G96 | 0.4+ | 0.5− | | |
| 2001 10 17 | 704 | 0.2+ | 0.8− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.6− | | |
| 2001 10 17 | 704 | 0.1− | 0.6− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 18 | G96 | 0.1− | 0.5− | | |
| 2001 10 17 | 704 | 0.1− | 0.8− | 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.5+ | | |
| 2001 10 17 | 704 | 1.0− | 1.3− | 2006 09 30 | 703 | (3.3− | 5.1−) | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.0 | 0.5+ | | |
| 2001 10 21 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.8− | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.1− | 0.1+ | | |
| 2001 10 21 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.4− | | | | | | |
| 2001 10 21 | 704 | 0.0 | 1.1+ | 2006 10 03 | 704 | 1.3+ | 0.2− | | | | | | |

**(140035)∗ 2001 SO$_{67}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.56130 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27697719 | $\omega$ | 244.11143 | | +0.79399128 | −0.60746254 |
| $a$ | 2.3308091 | $\Omega$ | 153.27496 | | +0.57499881 | +0.73768848 |
| $e$ | 0.2373116 | $i$ | 3.03545 | | +0.19736821 | +0.29462682 |
| $P$ | 3.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.0 | 0.5+ | 2001 10 25 | 644 | 0.2+ | 0.2+ | 2003 04 08 | 691 | 0.0 | 0.4+ | | |
| 1996 04 12 | 691 | 0.1+ | 0.0 | 2001 10 25 | 644 | 0.1+ | 0.2+ | 2003 04 08 | 691 | 0.1− | 0.3+ | | |
| 1996 04 12 | 691 | 0.2− | 0.1− | 2001 10 25 | 644 | 0.3+ | 0.2+ | 2003 04 26 | 691 | 0.3+ | 0.5+ | | |
| 2001 09 17 | 704 | 0.4− | 0.3− | 2001 10 30 | 644 | 0.4− | 0.8+ | 2003 04 26 | 691 | 0.4+ | 0.4+ | | |
| 2001 09 17 | 704 | 0.4− | 0.7− | 2001 10 30 | 644 | 0.4− | 0.8+ | 2003 04 26 | 691 | 0.1− | 0.9+ | | |
| 2001 09 17 | 704 | 0.3− | 0.4− | 2001 10 30 | 644 | 0.2− | 0.9+ | 2003 04 30 | 691 | 1.1+ | 0.1− | | |
| 2001 09 17 | 704 | 0.8− | 0.2− | 2001 11 09 | 704 | 0.3− | 0.2− | 2003 04 30 | 691 | 0.0 | 0.7+ | | |
| 2001 09 17 | 704 | 0.2− | 0.8− | 2001 11 09 | 704 | 0.0 | 0.0 | 2003 04 30 | 691 | 0.5+ | 0.4+ | | |
| 2001 09 19 | 699 | 0.1− | 0.6+ | 2001 11 09 | 704 | 0.0 | 0.5− | 2003 05 30 | 807 | 0.3− | 0.4+ | | |
| 2001 09 19 | 699 | 0.9− | 0.6+ | 2001 11 09 | 704 | 0.2− | 0.2− | 2003 05 30 | 807 | 0.1− | 0.4+ | | |
| 2001 09 19 | 704 | 0.7− | 0.4+ | 2001 11 09 | 704 | 0.4− | 0.5− | 2005 10 06 | G96 | 0.2+ | 0.5− | | |
| 2001 09 19 | 704 | 0.4− | 0.1+ | 2001 11 15 | 644 | 0.2+ | 0.4+ | 2005 10 06 | G96 | 0.6+ | 0.3− | | |
| 2001 09 19 | 699 | 1.4− | 1.1+ | 2001 11 15 | 644 | 0.3+ | 0.4+ | 2005 10 06 | G96 | 0.4+ | 0.6− | | |
| 2001 09 19 | 704 | 0.5− | 0.2+ | 2001 11 15 | 644 | 0.5+ | 0.5+ | 2005 10 06 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2001 11 17 | 704 | 0.1+ | 0.4+ | 2006 01 06 | 699 | 0.0 | 1.8+ | | |
| 2001 09 19 | 699 | 1.4− | 0.8+ | 2001 11 17 | 704 | 0.0 | 0.5+ | 2006 01 06 | 699 | 0.8− | 0.3+ | | |
| 2001 09 19 | 704 | 0.3− | 0.4− | 2001 11 17 | 704 | 0.2+ | 0.5+ | 2006 01 06 | 699 | 0.7− | 0.2− | | |
| 2001 09 21 | 704 | 0.7+ | 0.4− | 2001 11 17 | 704 | 0.1− | 0.4− | 2006 01 06 | G96 | 0.2+ | 0.4− | | |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2001 11 17 | 704 | 1.4+ | 0.3+ | 2006 01 06 | G96 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | 0.5− | 0.3− | 2001 11 18 | 704 | 0.2− | 0.1− | 2006 01 06 | G96 | 0.3− | 0.9− | | |
| 2001 10 13 | 704 | 0.8− | 0.2− | 2001 11 18 | 704 | 0.1− | 0.0 | 2006 01 06 | 699 | 1.0− | 0.3− | | |
| 2001 10 13 | 704 | 1.0− | 0.2+ | 2001 11 18 | 704 | 0.2+ | 0.1− | 2006 01 06 | G96 | 0.6− | 0.4− | | |
| 2001 10 13 | 704 | 1.6− | 0.3+ | 2001 11 18 | 704 | 0.1− | 0.1− | 2006 01 08 | 703 | 0.7+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.8− | 0.1− | 2001 11 18 | 704 | 0.6+ | 0.0 | 2006 01 08 | 703 | 0.4− | 0.8+ | | |
| 2001 10 13 | 699 | 0.0 | 0.6+ | 2001 11 18 | 704 | 0.2− | 0.1+ | 2006 01 08 | 703 | 1.0− | 0.9− | | |
| 2001 10 13 | 699 | 0.6+ | 0.9+ | 2001 11 18 | 704 | 0.3+ | 0.1+ | 2006 01 08 | 703 | 0.1+ | 0.8+ | | |
| 2001 10 13 | 699 | 0.5+ | 1.0+ | 2001 11 18 | 704 | 0.2− | 0.2− | 2006 01 22 | 691 | 0.1− | 0.1+ | | |
| 2001 10 13 | 699 | 0.5− | 1.5+ | 2001 11 18 | 704 | 0.1− | 0.1− | 2006 01 22 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.1− | 0.7+ | 2001 11 18 | 704 | 0.3+ | 0.2+ | 2006 01 22 | 691 | 0.0 | 0.2+ | | |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2001 11 18 | 608 | 0.6− | 1.9+ | 2006 01 23 | G96 | 0.4− | 0.6− | | |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2001 11 18 | 608 | (1.1− | 2.1+) | 2006 01 23 | G96 | 0.2− | 0.4− | | |
| 2001 10 17 | 704 | 0.2− | 0.6+ | 2001 11 18 | 608 | (1.1− | 2.1+) | 2006 01 23 | G96 | 0.5− | 0.2− | | |
| 2001 10 17 | 704 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.2− | 0.1+ | 2006 01 23 | G96 | 0.2− | 0.5− | | |
| 2001 10 18 | 644 | 0.2+ | 0.5+ | 2001 11 20 | 704 | 0.1+ | 0.2+ | 2006 01 24 | 704 | 0.2+ | 1.0+ | | |
| 2001 10 18 | 644 | 0.2+ | 0.4+ | 2001 11 20 | 704 | 0.3− | 0.3+ | 2006 01 24 | 704 | 0.0 | 1.1− | | |
| 2001 10 18 | 644 | 0.3+ | 0.5+ | 2001 11 20 | 704 | 0.3+ | 0.3+ | 2006 01 24 | 704 | 0.3− | 0.2+ | | |
| 2001 10 22 | 704 | 1.5+ | 0.0 | 2001 11 20 | 704 | 0.2− | 0.1+ | 2006 01 24 | 704 | 0.5− | 0.3− | | |
| 2001 10 22 | 704 | 0.3− | 0.2+ | 2001 11 24 | 704 | 0.2+ | 0.9− | 2006 01 24 | 704 | 0.6− | 1.1+ | | |
| 2001 10 22 | 704 | 0.8+ | 0.5+ | 2001 11 24 | 704 | 0.2+ | 0.4− | 2006 02 01 | 691 | 0.0 | 0.2+ | | |
| 2001 10 22 | 704 | 0.2+ | 0.2+ | 2001 11 24 | 704 | 1.3− | 0.1+ | 2006 02 01 | 691 | 0.0 | 0.2+ | | |
| 2001 10 23 | 704 | 0.2+ | 0.0 | 2001 11 24 | 704 | 0.2− | 0.7+ | 2006 02 01 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.3+ | 0.3+ | 2001 11 24 | 704 | 0.4− | 0.3+ | 2006 02 01 | G96 | 0.3− | 0.2− | | |
| 2001 10 23 | 704 | 0.5+ | 0.6− | 2001 11 24 | 644 | 0.3+ | 0.0 | 2006 02 01 | G96 | 0.1+ | 0.2− | | |
| 2001 10 23 | 704 | 0.2+ | 0.3− | 2001 11 24 | 644 | 0.1+ | 0.2− | 2006 02 01 | G96 | 0.0 | 0.4− | | |
| 2001 10 23 | 704 | 0.0 | 1.0+ | 2001 11 24 | 644 | 0.2+ | 0.1− | 2006 02 01 | G96 | 0.2− | 0.0 | | |
| 2001 10 24 | 704 | 0.1− | 0.7+ | 2001 12 18 | 704 | (0.3− | 2.1−) | 2006 02 03 | 704 | (2.3− | 0.4−) | | |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2001 12 18 | 704 | (0.5− | 2.0−) | 2006 02 03 | 704 | 0.7+ | 0.1+ | | |
| 2001 10 24 | 704 | 0.5− | 0.3+ | 2001 12 18 | 704 | 0.6− | 1.8− | 2006 02 03 | 704 | 0.8+ | 1.1+ | | |
| 2001 10 24 | 704 | 0.3− | 0.1+ | 2001 12 18 | 704 | (0.2+ | 2.6−) | 2006 02 03 | 704 | 1.3+ | 0.5− | | |
| 2001 10 24 | 704 | 0.0 | 0.2− | 2001 12 18 | 704 | 0.2+ | 1.7− | 2006 02 07 | G96 | 0.4− | 0.1− | | |
| 2001 10 24 | 704 | 0.2+ | 0.4+ | 2001 12 20 | 704 | 1.2+ | 1.3− | 2006 02 07 | G96 | 0.3− | 0.0 | | |
| 2001 10 24 | 704 | 0.8+ | 0.3+ | 2001 12 20 | 704 | 0.8+ | 1.8− | 2006 02 07 | G96 | 0.2− | 0.1− | | |
| 2001 10 24 | 704 | 0.6− | 0.9+ | 2001 12 20 | 704 | 1.0+ | 1.5− | 2006 02 20 | 703 | 1.4+ | 1.0− | | |
| 2001 10 24 | 704 | 0.1+ | 0.0 | 2001 12 20 | 704 | 1.3+ | 1.1− | 2006 02 20 | 703 | (4.1+ | 0.1+) | | |
| 2001 10 24 | 704 | 0.0 | 0.2− | 2002 01 09 | 704 | 0.6+ | 1.4+ | 2006 02 20 | 703 | 0.5+ | 1.6− | | |
| 2001 10 24 | 644 | 0.0 | 0.3− | 2002 01 09 | 704 | 0.4− | 0.3+ | 2006 02 20 | 703 | 0.0 | 0.5− | | |
| 2001 10 24 | 644 | 0.0 | 0.1− | 2002 01 09 | 704 | 0.5+ | 0.2+ | | | | | | |
| 2001 10 24 | 644 | 0.1− | 0.3− | 2003 04 08 | 691 | 0.1− | 0.3+ | | | | | | |

**(140036)∗ 2001 SB$_{71}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.61460 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21471573 | $\omega$ | 327.86399 | | +0.62534742 | −0.75979220 |
| $a$ | 2.7620199 | $\Omega$ | 82.79732 | | +0.74853004 | +0.51960882 |
| $e$ | 0.1553841 | $i$ | 10.33118 | | +0.22055243 | +0.39079726 |
| $P$ | 4.59 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.2+ | 1.0+ | 2001 12 11 | 704 | 1.4+ | 0.1+ | 2003 03 25 | 644 | 0.3+ | 0.7− | | |
| 2001 08 24 | 699 | 0.0 | 0.5+ | 2001 12 11 | 704 | 1.4+ | 0.1+ | 2003 03 25 | 644 | 0.4+ | 0.7− | | |
| 2001 08 24 | 699 | 0.0 | 0.0 | 2001 12 11 | 704 | 1.3+ | 0.4− | 2003 03 26 | 049 | 0.2+ | 0.3− | | |
| 2001 08 24 | 699 | 0.6+ | 0.4+ | 2001 12 11 | 704 | 0.8+ | 0.1+ | 2003 03 26 | 049 | 0.1+ | 0.0 | | |
| 2001 09 17 | 704 | 0.3+ | 0.4+ | 2001 12 14 | 704 | 0.1− | 0.3− | 2003 03 26 | 049 | 0.1+ | 0.3− | | |
| 2001 09 17 | 704 | 0.2− | 0.2− | 2001 12 14 | 704 | 0.0 | 0.1− | 2003 04 04 | 704 | 0.7+ | 1.2+ | | |
| 2001 09 17 | 704 | 0.1+ | 0.0 | 2001 12 14 | 704 | 0.0 | 0.1+ | 2003 04 04 | 704 | 1.3+ | 1.5+ | | |
| 2001 09 17 | 704 | 0.3+ | 0.1− | 2001 12 14 | 704 | 0.1+ | 0.1+ | 2003 04 04 | 704 | 0.6+ | 1.1+ | | |
| 2001 09 17 | 704 | 0.3+ | 0.2− | 2001 12 14 | 704 | 0.4+ | 0.0 | 2003 04 04 | 704 | 0.7+ | 1.2+ | | |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2001 12 17 | 704 | 0.1+ | 0.8− | 2003 04 05 | 699 | 0.5− | 0.9+ | | |
| 2001 09 19 | 704 | 0.6+ | 1.1+ | 2001 12 17 | 704 | 0.1+ | 0.4− | 2003 04 05 | 699 | 0.6− | 1.1+ | | |
| 2001 09 19 | 704 | 0.1− | 1.0+ | 2001 12 17 | 704 | 0.2− | 0.3− | 2003 04 05 | 699 | 0.8+ | 0.9+ | | |
| 2001 09 19 | 704 | 0.9− | 0.3+ | 2001 12 17 | 704 | 0.2− | 0.5− | 2003 04 05 | 699 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.3− | 1.2+ | 2001 12 17 | 704 | 0.3− | 0.2− | 2003 04 05 | 049 | 0.3+ | 0.1− | | |
| 2001 10 13 | 699 | 0.1+ | 0.1− | 2001 12 18 | 644 | 0.1− | 0.1− | 2003 04 05 | 049 | 0.4+ | 0.4+ | | |
| 2001 10 13 | 699 | 0.4+ | 0.2− | 2001 12 18 | 644 | 0.2− | 0.1− | 2003 04 05 | 049 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 699 | 0.1− | 0.1+ | 2001 12 18 | 644 | 0.2− | 0.1+ | 2003 04 06 | 699 | 0.1+ | 0.3+ | | |
| 2001 10 13 | 699 | 0.2+ | 0.0 | 2001 12 20 | 704 | 0.2+ | 0.1− | 2003 04 06 | 699 | 0.8− | 0.2+ | | |
| 2001 10 17 | 704 | 1.3+ | 0.1+ | 2001 12 20 | 704 | 0.3− | 0.5− | 2003 04 06 | 699 | 0.1+ | 0.5+ | | |
| 2001 10 17 | 704 | 0.1− | 0.1− | 2001 12 20 | 704 | 0.8− | 0.7− | 2003 04 06 | 699 | 0.2− | 0.3+ | | |
| 2001 10 17 | 704 | 0.1+ | 1.0+ | 2001 12 20 | 704 | 0.5− | 0.1+ | 2003 04 21 | 049 | 0.9+ | 1.1− | | |
| 2001 10 17 | 704 | 0.4+ | 0.5+ | 2001 12 20 | 704 | 0.5+ | 0.4+ | 2003 04 21 | 049 | 0.6+ | 1.2− | | |
| 2001 10 17 | 704 | 0.7− | 0.5+ | 2002 01 05 | 699 | 0.8− | 0.3− | 2003 04 21 | 049 | 0.4+ | 0.8− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.1+ | 0.1− | 2002 01 05 | 699 | 0.2− | 0.1+ | 2005 08 10 | 608 | (1.9− | 0.5+) | | |
| 2001 10 24 | 704 | 0.2+ | 0.0 | 2002 01 05 | 699 | 0.5+ | 0.5+ | 2005 08 10 | 608 | (1.7− | 0.4+) | | |
| 2001 10 24 | 704 | 0.2+ | 0.1− | 2002 01 05 | 699 | 0.4− | 0.5+ | 2005 08 10 | 608 | (2.0− | 0.1+) | | |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2002 01 09 | 704 | 0.1+ | 0.4+ | 2005 08 28 | E12 | 0.3− | 0.2+ | | |
| 2001 10 24 | 704 | 0.3− | 0.8− | 2002 01 09 | 704 | 0.2− | 0.5+ | 2005 08 28 | E12 | 0.4+ | 0.3+ | | |
| 2001 10 25 | 644 | 0.4− | 0.3+ | 2002 01 09 | 704 | 0.1+ | 0.8+ | 2005 08 28 | E12 | 0.6− | 0.4+ | | |
| 2001 10 25 | 644 | 0.4− | 0.3+ | 2002 01 09 | 704 | 0.1− | 0.2+ | 2005 08 28 | E12 | 0.3− | 0.6+ | | |
| 2001 10 25 | 644 | 0.3− | 0.3+ | 2002 01 09 | 704 | 0.6− | 0.4+ | 2005 10 08 | 699 | 0.5+ | 0.5− | | |
| 2001 11 09 | 704 | 0.3− | 0.0 | 2002 01 13 | 704 | 0.1− | 0.6+ | 2005 10 08 | 699 | 0.1− | 0.4+ | | |
| 2001 11 09 | 704 | 0.5− | 0.3+ | 2002 01 13 | 704 | 0.4+ | 0.9+ | 2005 10 08 | 699 | 0.5− | 1.1+ | | |
| 2001 11 09 | 704 | 0.0 | 0.1+ | 2002 01 13 | 704 | 0.2+ | 0.8+ | 2005 10 08 | 699 | 0.8− | 0.6+ | | |
| 2001 11 09 | 704 | 0.8− | 0.7− | 2002 01 13 | 704 | 0.3− | 0.7+ | 2005 10 25 | 644 | 0.1− | 0.7+ | | |
| 2001 11 16 | 644 | 0.7− | 0.0 | 2002 01 13 | 704 | 0.2+ | 1.1+ | 2005 10 25 | 644 | 0.3− | 0.8+ | | |
| 2001 11 16 | 644 | 0.2− | 0.2+ | 2002 01 15 | 704 | 0.4− | 0.2− | 2005 10 25 | 644 | 0.3− | 1.0+ | | |
| 2001 11 16 | 644 | 0.1+ | 0.0 | 2002 01 15 | 704 | 0.2− | 1.0− | 2006 09 18 | 691 | 0.2− | 0.2− | | |
| 2001 11 17 | 704 | 0.8− | 0.1− | 2002 01 15 | 704 | 0.7− | 0.9+ | 2006 09 18 | 691 | 0.1− | 0.1− | | |
| 2001 11 17 | 704 | 0.6− | 0.2+ | 2002 01 15 | 704 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.9+ | 0.3+ | | |
| 2001 11 17 | 704 | 0.5− | 0.3+ | 2002 01 15 | 704 | 0.3+ | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 2001 11 17 | 704 | 0.4− | 0.4+ | 2002 02 03 | 699 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.5− | | |
| 2001 11 17 | 704 | 0.3− | 0.5+ | 2002 02 03 | 699 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.7− | | |
| 2001 11 19 | 699 | 0.1− | 0.2− | 2002 02 03 | 699 | 0.9− | 0.6− | 2006 09 28 | G96 | 0.1− | 0.3− | | |
| 2001 11 19 | 699 | 0.3− | 0.1+ | 2002 02 03 | 699 | 1.4− | 1.2+ | 2006 10 28 | 704 | 0.4− | 0.3− | | |
| 2001 11 19 | 699 | 0.0 | 0.1+ | 2002 02 10 | 691 | 0.2− | 0.1− | 2006 10 28 | 704 | 0.2+ | 0.7+ | | |
| 2001 11 19 | 699 | 0.3+ | 0.3− | 2002 02 10 | 691 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.6− | 1.0+ | | |
| 2001 11 20 | 704 | 0.4+ | 0.3− | 2002 02 10 | 691 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.6− | 0.7− | | |
| 2001 11 20 | 704 | 0.5+ | 0.4− | 2003 02 27 | 608 | (0.5− | 2.1+) | 2006 11 15 | 703 | 0.6− | 0.8− | | |
| 2001 11 20 | 704 | 0.7+ | 0.2− | 2003 02 27 | 608 | 0.1− | 0.2+ | 2006 11 15 | 703 | 1.1− | 0.6− | | |
| 2001 11 20 | 704 | 0.6+ | 0.3− | 2003 02 27 | 608 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.9+ | | |
| 2001 11 20 | 704 | 0.8+ | 0.1+ | 2003 02 28 | 704 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.7+ | | |
| 2001 11 24 | 704 | 1.3− | 0.6− | 2003 02 28 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 1.1+ | | |
| 2001 11 24 | 704 | 0.6+ | 0.6− | 2003 02 28 | 704 | 0.1+ | 0.2− | 2006 11 16 | 704 | 1.0+ | 0.4+ | | |
| 2001 11 24 | 704 | 0.4− | 1.0− | 2003 02 28 | 704 | 0.1− | 0.7+ | 2006 11 17 | 644 | 0.5− | 0.2− | | |
| 2001 11 24 | 704 | 0.5− | 1.2− | 2003 02 28 | 704 | 0.3− | 0.5+ | 2006 11 17 | 644 | 0.5− | 0.3− | | |
| 2001 11 24 | 644 | 0.3+ | 0.1+ | 2003 03 12 | 704 | 0.5+ | 0.8+ | 2006 11 17 | 644 | 0.3− | 0.1− | | |
| 2001 11 24 | 644 | 0.1+ | 0.0 | 2003 03 12 | 704 | 0.6+ | 0.5− | 2006 11 19 | 704 | 1.2+ | 1.0− | | |
| 2001 11 24 | 644 | 0.0 | 0.0 | 2003 03 12 | 704 | 0.3+ | 0.3− | 2006 11 19 | 704 | 1.3+ | 0.5− | | |
| 2001 11 25 | 704 | 0.3− | 1.1− | 2003 03 12 | 704 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.1− | | |
| 2001 11 25 | 704 | 0.1+ | 0.4− | 2003 03 12 | 704 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.1+ | | |
| 2001 11 25 | 704 | 0.3+ | 0.4− | 2003 03 13 | 608 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.7+ | 0.1− | | |
| 2001 11 25 | 704 | 0.5+ | 0.4− | 2003 03 13 | 608 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.9− | 0.2− | | |
| 2001 12 08 | 699 | 0.0 | 0.0 | 2003 03 13 | 608 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.2− | | |
| 2001 12 08 | 699 | 0.2+ | 0.3+ | 2003 03 23 | 049 | (2.0− | 0.2−) | 2006 11 22 | 704 | 0.1+ | 0.9− | | |
| 2001 12 08 | 699 | 0.2+ | 0.4+ | 2003 03 23 | 049 | 1.2− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.4− | | |
| 2001 12 08 | 699 | 0.1+ | 0.5+ | 2003 03 23 | 049 | 1.0− | 0.2− | | | | | | |
| 2001 12 11 | 704 | 1.0+ | 0.2+ | 2003 03 25 | 644 | 0.3+ | 0.9− | | | | | | |

**(140037)∗ 2001 SA$_{72}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.76833 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18818487 | $\omega$ | 250.20962 | | +0.16053781 | −0.98654179 |
| $a$ | 3.0158721 | $\Omega$ | 190.69494 | | +0.95658692 | +0.16325727 |
| $e$ | 0.1596063 | $i$ | 9.62561 | | +0.24324695 | +0.00907509 |
| $P$ | 5.24 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.3− | 0.0 | 2001 11 24 | 704 | (2.1+ | 1.6+) | 2006 09 06 | 644 | 0.3− | 0.1+ | | |
| 2001 09 17 | 704 | 0.4+ | 0.5+ | 2001 11 24 | 704 | 0.9+ | 0.6− | 2006 09 06 | 644 | 0.0 | 0.1+ | | |
| 2001 09 17 | 704 | 0.7+ | 0.3+ | 2001 11 24 | 704 | 1.1+ | 1.4− | 2006 09 06 | 644 | 0.4− | 0.1+ | | |
| 2001 09 17 | 704 | 0.0 | 0.2+ | 2001 11 24 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 1.4+ | | |
| 2001 09 19 | 704 | (0.0 | 1.9+) | 2001 11 24 | 704 | (1.3+ | 2.5−) | 2006 09 14 | 703 | 0.3+ | 0.0 | | |
| 2001 09 19 | 704 | 0.2+ | 0.9+ | 2001 11 24 | 704 | 1.1+ | 0.5− | 2006 09 14 | 703 | 1.0+ | 0.8+ | | |
| 2001 09 19 | 704 | 0.4+ | 1.3+ | 2001 11 24 | 704 | (0.8+ | 1.9−) | 2006 09 14 | 703 | 1.4+ | 1.4+ | | |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2001 11 24 | 704 | 0.9+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.3+ | | |
| 2001 09 26 | 704 | 1.3+ | 0.5+ | 2001 11 24 | 704 | 0.1+ | 0.3− | 2006 09 15 | 691 | 0.2− | 0.3+ | | |
| 2001 09 26 | 704 | 0.5+ | 0.7− | 2001 11 24 | 704 | 0.5+ | 0.9− | 2006 09 15 | 691 | 0.2+ | 0.3+ | | |
| 2001 09 26 | 704 | 1.1+ | 0.1+ | 2001 11 24 | 704 | 0.0 | 0.1+ | 2006 09 16 | 644 | 1.1− | 0.2− | | |
| 2001 09 26 | 704 | 0.3− | 0.5+ | 2001 11 24 | 644 | 0.2+ | 0.0 | 2006 09 16 | 644 | 1.0− | 0.2− | | |
| 2001 10 10 | 644 | 0.0 | 0.8+ | 2001 11 24 | 644 | 0.1+ | 0.0 | 2006 09 16 | 644 | 0.8− | 0.1− | | |
| 2001 10 10 | 644 | 0.2+ | 0.7+ | 2001 11 24 | 644 | 0.6+ | 0.0 | 2006 09 18 | 699 | 1.1− | 0.4+ | | |
| 2001 10 10 | 644 | 0.1+ | 0.6+ | 2001 11 27 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.6+ | | |
| 2001 10 13 | 704 | 0.2− | 0.3− | 2001 11 27 | 704 | 0.3+ | 0.9− | 2006 09 18 | 699 | 0.6+ | 0.1− | | |
| 2001 10 13 | 704 | 0.8− | 0.3+ | 2001 11 27 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.1+ | | |
| 2001 10 13 | 704 | 0.7+ | 0.5− | 2001 11 27 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.6+ | 2001 11 27 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | | |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2001 12 07 | 704 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.9− | 0.5− | | |
| 2001 10 17 | 704 | 0.4− | 0.9+ | 2001 12 07 | 704 | (1.8− | 0.4−) | 2006 09 20 | 704 | 1.4+ | 0.3− | | |
| 2001 10 17 | 704 | 0.2− | 0.3+ | 2001 12 07 | 704 | 0.7− | 0.2− | 2006 09 20 | 704 | 0.7+ | 1.3− | | |
| 2001 10 17 | 704 | 0.7− | 0.6+ | 2001 12 07 | 704 | 0.1− | 0.4− | 2006 09 20 | 704 | 0.4+ | 0.6+ | | |
| 2001 10 17 | 644 | 0.5− | 0.0 | 2001 12 09 | 699 | 0.7+ | 0.2− | 2006 09 20 | 644 | 0.4− | 0.1+ | | |
| 2001 10 17 | 644 | 0.5− | 0.0 | 2001 12 09 | 699 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.5− | 0.1− | | |
| 2001 10 17 | 644 | 0.5− | 0.2− | 2001 12 09 | 699 | 0.5+ | 0.1− | 2006 09 20 | 644 | 0.3− | 0.1+ | | |
| 2001 10 22 | 704 | 0.0 | 0.2− | 2001 12 09 | 699 | 0.5+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1− | | |
| 2001 10 22 | 704 | 0.8− | 0.4− | 2003 02 08 | 608 | 1.0+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.3− | | |
| 2001 10 22 | 704 | 0.5− | 0.4+ | 2003 02 08 | 608 | 0.8+ | 0.7− | 2006 09 25 | G96 | 0.1+ | 0.3− | | |
| 2001 10 22 | 704 | 0.4− | 0.3− | 2003 02 08 | 608 | 0.6+ | 0.8− | 2006 09 25 | G96 | 0.0 | 0.4− | | |
| 2001 10 24 | 704 | 1.2− | 0.8− | 2003 02 23 | 608 | 0.7− | 1.2+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 24 | 704 | 1.2− | 0.7+ | 2003 02 23 | 608 | 1.2− | 1.0+ | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2001 10 24 | 704 | (2.1− | 0.3+) | 2003 02 23 | 608 | 1.0− | 0.5− | 2006 09 26 | 691 | 0.2+ | 0.1− | | |
| 2001 10 24 | 704 | (2.0− | 1.8−) | 2003 03 07 | 704 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.8+ | | |
| 2001 10 24 | 644 | 0.5− | 0.3+ | 2003 03 07 | 704 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.4− | 0.5+ | | |
| 2001 10 24 | 644 | 0.6− | 0.0 | 2003 03 07 | 704 | 0.6− | 0.7+ | 2006 09 27 | 704 | 0.5− | 0.5+ | | |
| 2001 10 24 | 644 | 0.5− | 0.1+ | 2003 03 07 | 704 | 0.3− | 0.5+ | 2006 09 29 | 704 | 1.2+ | 0.6− | | |
| 2001 10 30 | 644 | 0.6− | 0.1+ | 2003 03 07 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 704 | 0.4+ | 0.0 | | |
| 2001 10 30 | 644 | 0.3− | 0.1+ | 2003 03 07 | 704 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.5+ | 0.2− | | |
| 2001 10 30 | 644 | 0.1− | 0.2− | 2003 03 07 | 704 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.4+ | 1.2+ | | |
| 2001 11 09 | 704 | 0.6+ | 0.2+ | 2003 03 07 | 704 | 0.7+ | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.1− | | |
| 2001 11 09 | 704 | 0.3− | 1.0− | 2003 03 07 | 704 | 0.2− | 0.6− | 2006 10 15 | 703 | 0.4− | 0.0 | | |
| 2001 11 09 | 704 | 0.3− | 0.3+ | 2003 03 07 | 704 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.6− | 0.9+ | | |
| 2001 11 09 | 704 | 1.0− | 1.1+ | 2003 03 07 | 704 | 0.5+ | 0.9+ | 2006 10 15 | 703 | 0.1− | 0.0 | | |
| 2001 11 12 | 608 | 0.0 | 1.3− | 2003 03 07 | 704 | 0.9+ | 1.1+ | 2006 10 15 | 703 | 0.3− | 0.2+ | | |
| 2001 11 12 | 608 | 0.2− | 0.9− | 2003 03 07 | 704 | 0.9+ | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2001 11 12 | 608 | 0.2− | 1.0− | 2003 03 07 | 704 | 1.4+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 11 17 | 704 | 1.1− | 0.0 | 2003 03 07 | 704 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 17 | 704 | 0.6− | 0.7− | 2003 03 10 | 699 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2001 11 17 | 704 | 0.5− | 0.1+ | 2003 03 10 | 699 | 1.0− | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.4− | | |
| 2001 11 17 | 704 | 0.2+ | 0.4− | 2003 03 10 | 699 | (0.1− | 2.4+) | 2006 10 21 | G96 | 0.3+ | 0.3− | | |
| 2001 11 20 | 704 | 0.0 | 0.4+ | 2003 03 10 | 699 | 0.5− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2001 11 20 | 704 | 0.3+ | 0.4− | 2003 03 24 | 608 | 0.1+ | 0.8− | 2006 11 16 | G96 | 0.2− | 0.5− | | |
| 2001 11 20 | 704 | 0.1− | 0.7+ | 2003 03 24 | 608 | 0.0 | 0.7− | 2006 11 16 | G96 | 0.2− | 0.5− | | |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2003 03 24 | 608 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2004 05 13 | 699 | 0.3− | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.6− | | |
| 2001 11 24 | 704 | (3.9+ | 1.7+) | 2004 05 13 | 699 | 0.1− | 1.0+ | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2001 11 24 | 704 | 0.3+ | 0.7+ | 2004 05 13 | 699 | 1.2+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2001 11 24 | 704 | (2.7+ | 1.9+) | 2004 05 13 | 699 | 0.0 | 1.1+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2001 11 24 | 704 | 0.5+ | 0.7+ | 2006 09 06 | 644 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2001 11 24 | 704 | (2.3+ | 0.8+) | 2006 09 06 | 644 | 0.1− | 0.2+ | | | | | | |
| 2001 11 24 | 704 | 0.6+ | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.3+ | | | | | | |

**(140038)∗ 2001 SN$_{73}$**

Discovered 2001 Sept. 18 by A. Nakamura at Kuma Kogen.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.69103 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21568429 | $\omega$ | 245.15468 | | +0.92951075 | −0.35797725 |
| $a$ | 2.7537449 | $\Omega$ | 135.67577 | | +0.36725117 | +0.87649241 |
| $e$ | 0.0527242 | $i$ | 7.29057 | | +0.03370975 | +0.32189026 |
| $P$ | 4.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 360 | 0.2− | 0.3+ | 2001 11 22 | 360 | 0.1− | 0.1+ | 2005 07 04 | G96 | 0.4+ | 0.5+ | | |
| 2001 09 18 | 360 | 0.1+ | 0.7+ | 2001 11 22 | 360 | 0.0 | 0.0 | 2005 08 15 | E12 | 0.9− | 0.2− | | |
| 2001 09 18 | 360 | 0.1+ | 0.5+ | 2001 11 22 | 360 | 0.5− | 0.3+ | 2005 08 15 | E12 | 0.8+ | 0.0 | | |
| 2001 09 20 | 360 | 0.3− | 0.5+ | 2003 01 08 | 360 | 0.3− | 0.4− | 2005 08 15 | E12 | 0.5− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 360 | 0.1+ | 1.0+ | 2003 01 08 | 360 | 0.6− | 0.1− | 2005 08 15 | E12 | 0.8+ | 0.3− |
| 2001 09 20 | 360 | 0.3+ | 0.3+ | 2003 01 27 | 704 | 0.0 | 0.4− | 2005 11 03 | G96 | 0.2+ | 0.1+ |
| 2001 10 16 | 644 | 0.6− | 0.4+ | 2003 01 27 | 704 | 0.3+ | 1.0+ | 2005 11 03 | G96 | 0.0 | 0.1+ |
| 2001 10 16 | 644 | 0.7− | 0.5+ | 2003 01 27 | 704 | 1.3− | 1.1+ | 2005 11 03 | G96 | 0.3− | 0.1+ |
| 2001 10 16 | 644 | 0.8− | 0.4+ | 2003 01 27 | 704 | 0.5− | 0.1− | 2005 11 03 | G96 | 0.5− | 0.2+ |
| 2001 10 20 | 704 | 0.5− | 0.2− | 2003 02 02 | 360 | 0.2+ | 0.0 | 2006 10 22 | D35 | 0.5− | 0.2+ |
| 2001 10 20 | 704 | 0.8− | 0.2− | 2003 02 02 | 360 | 0.3+ | 0.3+ | 2006 10 22 | D35 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | (1.6− | 0.0 ) | 2003 02 03 | 360 | 0.2− | 0.1− | 2006 10 22 | D35 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2003 02 03 | 360 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2003 02 03 | 360 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2003 02 08 | 704 | 0.4+ | 1.3+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2003 02 08 | 704 | 0.2− | 0.8+ | 2006 11 18 | G96 | 0.7− | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 02 08 | 704 | (2.3+ | 0.6+) | 2006 11 27 | 704 | 0.1+ | 1.1+ |
| 2001 11 17 | 360 | 0.5− | 0.1+ | 2003 02 08 | 704 | 0.7+ | 0.2− | 2006 11 27 | 704 | 0.7− | 1.2+ |
| 2001 11 17 | 360 | 0.1− | 0.0 | 2003 02 09 | 608 | 0.6+ | 0.7− | 2006 11 27 | 704 | 0.4+ | 0.4+ |
| 2001 11 17 | 360 | 0.4− | 0.1− | 2003 02 09 | 608 | 0.1+ | 0.6− | 2006 11 28 | 704 | 0.9+ | 0.4− |
| 2001 11 18 | 645 | 0.1+ | 0.1− | 2003 02 09 | 608 | 0.8+ | 0.9− | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2005 07 04 | G96 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2005 07 04 | G96 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2005 07 04 | G96 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.3+ | 0.2− |

**(140039)∗ 2001 SO$_{73}$**

Discovered 2001 Sept. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 94.60301 | | (2000.0) | | | |
| $n$ | 0.40150623 | $\omega$ | 30.58724 | | −0.67025995 | +0.74169502 |
| $a$ | 1.8197338 | $\Omega$ | 197.36782 | | −0.69689239 | −0.64076066 |
| $e$ | 0.5688804 | $i$ | 4.86203 | | −0.25513252 | −0.19827829 |
| $P$ | 2.45 | $H$ | 18.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 04 | 260 | (11.3− | 7.0−) | 2001 09 25 | 691 | 0.1− | 0.1− | 2002 12 31 | 291 | 0.3− | 1.2− |
| 1991 09 04 | 260 | (9.0− | 4.7−) | 2001 09 25 | 691 | 0.3− | 0.2− | 2004 11 04 | 291 | 0.8− | 1.1+ |
| 2001 09 19 | 691 | 0.7− | 0.4− | 2001 09 26 | 568 | 0.0 | 0.0 | 2004 11 04 | 291 | 0.6+ | 0.9+ |
| 2001 09 19 | 691 | 0.6− | 0.2− | 2001 10 10 | 696 | 0.0 | 0.7+ | 2004 11 04 | 291 | 0.0 | 0.1+ |
| 2001 09 19 | 691 | 0.4− | 0.1− | 2001 10 10 | 696 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.7+ |
| 2001 09 19 | 046 | 0.4− | 0.7+ | 2001 10 10 | 696 | 0.2+ | 0.6+ | 2006 09 15 | 691 | 0.5+ | 0.4− |
| 2001 09 19 | 046 | (1.3+ | 1.5+) | 2001 10 10 | 696 | (1.7− | 0.5−) | 2006 09 15 | 691 | 0.8− | 0.0 |
| 2001 09 20 | 691 | 0.3+ | 0.3+ | 2001 10 14 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.2− | 0.1− |
| 2001 09 20 | 691 | 0.4+ | 1.5+ | 2001 10 14 | 691 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 691 | 0.3+ | 0.5− | 2001 10 14 | 691 | 0.4+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 649 | 0.0 | 0.5+ | 2001 10 15 | 691 | 0.4+ | 0.5− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 649 | 0.6− | 0.6− | 2001 10 15 | 691 | 0.1+ | 0.6− | 2006 09 25 | G96 | 0.5− | 0.0 |
| 2001 09 20 | 649 | 1.5− | 0.1− | 2001 10 15 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2001 09 21 | 691 | 0.5− | 1.5+ | 2001 10 17 | 691 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.4+ | 0.4− |
| 2001 09 21 | 691 | 0.1− | 0.7+ | 2001 10 17 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.7− |
| 2001 09 23 | 291 | (0.6+ | 1.8+) | 2001 10 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2001 09 23 | 291 | 0.8+ | 0.4− | 2001 10 25 | 291 | (1.0+ | 1.5−) | 2006 09 25 | 691 | 0.9+ | 0.5+ |
| 2001 09 23 | 691 | 0.7− | 0.4+ | 2001 10 25 | 291 | (1.8+ | 1.6−) | 2006 10 15 | 941 | 0.4− | 0.3− |
| 2001 09 23 | 691 | 0.2− | 0.4− | 2002 11 28 | 696 | 0.9− | 0.6− | 2006 10 15 | 941 | 0.5− | 0.4− |
| 2001 09 23 | 291 | 0.7+ | 0.1− | 2002 11 28 | 696 | 0.4+ | 0.4− | 2006 10 15 | 941 | 0.3− | 0.3− |
| 2001 09 23 | 691 | 0.1− | 0.6− | 2002 12 28 | 291 | 0.2− | 0.5+ | 2006 10 15 | 941 | 0.2− | 0.7− |
| 2001 09 24 | 691 | 0.1− | 0.2− | 2002 12 28 | 291 | 0.1− | 0.6+ | 2006 10 16 | G96 | 0.1− | 0.6− |
| 2001 09 24 | 691 | 0.2− | 0.3− | 2002 12 28 | 291 | 0.8+ | 0.1− | 2006 10 16 | G96 | 0.6− | 0.7− |
| 2001 09 24 | 691 | 0.3+ | 0.2+ | 2002 12 31 | 291 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.8− |
| 2001 09 25 | 691 | 0.0 | 0.5− | 2002 12 31 | 291 | 0.1− | 0.4− | 2006 10 16 | G96 | 0.4− | 0.2+ |

**(140040)∗ 2001 SA$_{76}$**

Discovered 2001 Sept. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.68106 | | (2000.0) | | | |
| $n$ | 0.22583761 | $\omega$ | 248.96364 | | +0.85532172 | −0.51770530 |
| $a$ | 2.6705776 | $\Omega$ | 142.20685 | | +0.48671727 | +0.78958004 |
| $e$ | 0.0850655 | $i$ | 1.88418 | | +0.17756985 | +0.32946103 |
| $P$ | 4.36 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 10 | 566 | 0.2+ | 0.0 | 2001 11 17 | 704 | 0.9+ | 1.0+ | 2005 09 06 | 704 | 0.0 | 0.6+ |
| 1996 08 10 | 566 | 0.4− | 0.4− | 2001 11 20 | 704 | 0.1+ | 0.6− | 2005 09 06 | 704 | 0.6+ | 0.3− |
| 1996 08 10 | 566 | 0.4− | 0.2− | 2001 11 20 | 704 | 0.1+ | 0.8− | 2005 09 06 | 704 | 0.3+ | 0.2− |
| 2001 09 19 | 699 | 0.9− | 1.4+ | 2001 11 20 | 704 | 0.3+ | 0.9− | 2005 09 06 | 704 | 0.6− | 0.8− |
| 2001 09 19 | 699 | (1.5− | 0.8+) | 2001 11 20 | 704 | 0.4+ | 0.7− | 2005 09 06 | 704 | 0.8− | 1.0+ |
| 2001 09 19 | 699 | 1.0− | 0.1− | 2001 11 20 | 704 | 0.3+ | 1.4− | 2005 09 08 | 704 | 0.4− | 1.3+ |
| 2001 09 19 | 699 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.1− | 0.1− | 2005 09 08 | 704 | 1.3+ | 0.2− |
| 2001 09 21 | 699 | 0.5− | 1.0+ | 2001 11 21 | 704 | 0.2+ | 0.1− | 2005 09 08 | 704 | 0.3+ | 0.6+ |
| 2001 09 21 | 699 | 0.6− | 0.5+ | 2001 11 21 | 704 | 0.1− | 0.1+ | 2005 09 08 | 704 | (2.2+ | 0.5−) |
| 2001 09 21 | 699 | 0.3− | 0.4+ | 2001 11 21 | 704 | 0.2+ | 0.1− | 2005 09 12 | 691 | 0.4+ | 0.1+ |
| 2001 09 21 | 699 | 0.3+ | 0.5− | 2001 11 21 | 704 | 0.1+ | 0.1− | 2005 09 12 | 691 | 0.3+ | 0.2+ |
| 2001 09 26 | 704 | 0.8+ | 0.5+ | 2003 01 26 | 608 | 0.8+ | 1.4+ | 2005 09 12 | 691 | 0.4+ | 0.1+ |
| 2001 09 26 | 704 | 0.5− | 0.4+ | 2003 01 26 | 608 | 0.3− | 0.9+ | 2005 09 23 | 703 | (3.2+ | 0.3−) |
| 2001 09 26 | 704 | 0.2+ | 0.9+ | 2003 01 26 | 608 | 0.3+ | 0.5+ | 2005 09 23 | 703 | 0.1− | 0.8− |
| 2001 09 26 | 704 | 0.2+ | 0.6+ | 2003 02 22 | 644 | 0.6+ | 0.9+ | 2005 09 23 | 703 | 0.2− | 0.1− |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2003 02 22 | 644 | 0.2+ | 1.0+ | 2005 09 23 | 703 | 0.2+ | 1.5− |
| 2001 10 13 | 704 | 1.3− | 0.3+ | 2003 02 22 | 644 | 0.3+ | 0.7+ | 2005 09 28 | 644 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 1.3− | 0.4+ | 2003 02 25 | 608 | (1.8+ | 3.2+) | 2005 09 28 | 644 | 0.1+ | 0.2− |
| 2001 10 13 | 704 | (1.7− | 1.1−) | 2003 02 25 | 608 | (1.7+ | 3.0+) | 2005 09 28 | 704 | 0.0 | 0.9+ |
| 2001 10 13 | 704 | (2.2− | 1.1+) | 2003 02 25 | 608 | (1.5+ | 3.2+) | 2005 09 28 | 704 | 1.2− | 1.4+ |
| 2001 10 13 | 704 | 1.1− | 0.6+ | 2003 02 28 | 704 | 0.9+ | 1.4− | 2005 09 28 | 644 | 0.1+ | 0.2− |
| 2001 10 14 | 699 | 0.2+ | 0.4− | 2003 02 28 | 704 | 0.3− | 0.3− | 2005 09 28 | 704 | 0.9− | 0.2+ |
| 2001 10 14 | 699 | 0.3− | 0.4− | 2003 02 28 | 704 | 1.1+ | 1.1− | 2005 09 28 | 704 | 0.4+ | 0.7− |
| 2001 10 14 | 699 | 0.2+ | 0.1+ | 2003 02 28 | 704 | 1.1+ | 0.3− | 2005 09 29 | 699 | 0.5+ | 0.4+ |
| 2001 10 14 | 699 | 0.4− | 0.1− | 2003 03 05 | 704 | 0.2− | 0.9+ | 2005 09 29 | 699 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.5+ | 0.2− | 2003 03 05 | 704 | 0.1− | 0.0 | 2005 09 29 | 699 | 0.9+ | 0.2+ |
| 2001 10 17 | 704 | 0.7+ | 1.1− | 2003 03 05 | 704 | 0.1+ | 0.8+ | 2005 09 29 | 699 | 0.0 | 1.1+ |
| 2001 10 17 | 704 | 0.3+ | 0.2− | 2003 03 05 | 704 | 0.2− | 0.7+ | 2005 10 01 | 704 | 0.0 | 0.6+ |
| 2001 10 17 | 704 | 1.1+ | 0.6− | 2003 03 06 | 699 | 0.0 | 1.3+ | 2005 10 01 | 704 | 0.5− | 0.6+ |
| 2001 10 17 | 704 | 0.2+ | 0.0 | 2003 03 06 | 699 | (0.4− | 1.6+) | 2005 10 01 | 704 | 0.1− | 0.9+ |
| 2001 10 18 | 644 | 0.0 | 0.1− | 2003 03 06 | 699 | (0.4+ | 1.6+) | 2005 10 01 | 704 | 0.2− | 0.9+ |
| 2001 10 18 | 644 | 0.0 | 0.1+ | 2003 03 06 | 699 | 0.4+ | 1.0+ | 2005 10 01 | 704 | 0.9− | 1.0+ |
| 2001 10 18 | 644 | 0.1+ | 0.0 | 2003 03 06 | 644 | 1.0+ | 1.0+ | 2005 10 03 | G96 | 0.3+ | 0.2− |
| 2001 10 20 | 704 | 0.4+ | 0.4+ | 2003 03 06 | 644 | 0.8+ | 0.8+ | 2005 10 03 | G96 | 0.5+ | 0.3− |
| 2001 10 20 | 704 | 0.3− | 0.1− | 2003 03 06 | 644 | 0.3+ | 0.8+ | 2005 10 03 | G96 | 0.3+ | 0.3− |
| 2001 10 20 | 704 | 0.8− | 0.0 | 2003 03 07 | 699 | 0.5− | 0.2+ | 2005 10 03 | G96 | 0.6+ | 0.3− |
| 2001 10 20 | 704 | 0.4− | 0.3− | 2003 03 07 | 699 | 0.6− | 0.2− | 2005 10 05 | 704 | 0.1+ | 0.1+ |
| 2001 10 22 | 704 | 0.1− | 0.1− | 2003 03 07 | 699 | 1.4− | 0.3+ | 2005 10 05 | 704 | 0.9+ | 1.0+ |
| 2001 10 22 | 704 | 0.1− | 0.2− | 2003 03 07 | 699 | 0.1+ | 0.3− | 2005 10 05 | 704 | 0.6+ | 0.9+ |
| 2001 10 22 | 704 | 0.4− | 0.2− | 2005 08 25 | 644 | 0.2+ | 0.1− | 2005 10 05 | 704 | 0.1+ | 0.4− |
| 2001 10 22 | 704 | 0.3− | 0.2+ | 2005 08 25 | 644 | 0.1+ | 0.0 | 2005 10 05 | 704 | 1.2− | 0.2+ |
| 2001 10 22 | 704 | 0.0 | 0.7+ | 2005 08 25 | 644 | 0.1+ | 0.0 | 2005 10 06 | G96 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 0.2− | 0.5− | 2005 08 26 | 699 | 0.3+ | 1.0+ | 2005 10 06 | G96 | 0.0 | 0.3− |
| 2001 10 23 | 704 | 0.1− | 0.6+ | 2005 08 26 | 699 | 0.2− | 0.1− | 2005 10 06 | G96 | 0.4+ | 0.2− |
| 2001 10 23 | 704 | 0.0 | 0.2+ | 2005 08 26 | 699 | 1.2+ | 0.6− | 2005 10 06 | G96 | 0.4+ | 0.2− |
| 2001 10 23 | 704 | 0.0 | 0.1+ | 2005 08 26 | 699 | 0.4− | 0.1− | 2005 11 28 | 703 | (1.6+ | 0.2−) |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2005 08 26 | 608 | 1.1− | 0.0 | 2005 11 28 | 703 | 0.3+ | 0.5+ |
| 2001 10 24 | 704 | 0.0 | 0.3+ | 2005 08 26 | 608 | 0.7− | 0.4+ | 2005 11 28 | 703 | 0.3− | 1.4+ |
| 2001 10 24 | 704 | 0.0 | 0.1+ | 2005 08 26 | 608 | 0.6− | 0.1− | 2005 11 28 | 703 | 1.0− | 0.5− |
| 2001 10 24 | 704 | 0.1+ | 0.3+ | 2005 08 29 | 704 | 0.7− | 0.0 | 2005 12 01 | G96 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.1− | 0.3+ | 2005 08 29 | 704 | 1.2− | 0.8+ | 2005 12 01 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.1+ | 1.0+ | 2005 08 29 | 704 | 0.7− | 0.3− | 2005 12 01 | G96 | 0.3+ | 0.3− |
| 2001 10 26 | 704 | 0.3+ | 0.0 | 2005 08 29 | 704 | 0.5− | 0.4+ | 2005 12 01 | G96 | 0.2+ | 0.2− |
| 2001 10 26 | 704 | (1.7+ | 0.4−) | 2005 08 29 | 691 | 0.8− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2001 10 26 | 704 | 1.2+ | 1.4− | 2005 08 29 | 691 | 0.0 | 1.1− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2001 10 26 | 704 | 0.5+ | 0.6− | 2005 08 29 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2001 10 26 | 704 | 0.3+ | 0.7− | 2005 08 29 | 699 | 0.0 | 0.6− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 11 09 | 704 | 0.1− | 0.4− | 2005 08 29 | 699 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 1.2− | 0.2− | 2005 08 29 | 699 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.0 | 0.4+ | 2005 09 02 | 608 | 0.4− | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2001 11 09 | 704 | 0.5− | 0.5+ | 2005 09 02 | 608 | 0.1− | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 11 15 | 644 | 0.1+ | 0.2− | 2005 09 02 | 608 | 0.3− | 0.6+ | 2006 11 15 | G96 | 0.6− | 0.2− |
| 2001 11 15 | 644 | 0.1− | 0.3− | 2005 09 05 | A50 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2001 11 15 | 644 | 0.2+ | 0.3− | 2005 09 05 | A50 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2001 11 17 | 704 | 1.3+ | 0.5− | 2005 09 06 | 699 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.6− | 0.2− |
| 2001 11 17 | 704 | 1.1+ | 0.0 | 2005 09 06 | 699 | 0.8− | 0.2+ | | | | |
| 2001 11 17 | 704 | 1.0+ | 0.6+ | 2005 09 06 | 699 | 0.1+ | 0.2− | | | | |

**(140041)∗ 2001 SZ$_{77}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.11224 | | (2000.0) | | | |
| $n$ | 0.20418210 | $\omega$ | 176.04719 | | +0.89693942 | −0.44200934 |
| $a$ | 2.8562153 | $\Omega$ | 210.19304 | | +0.40504991 | +0.83164163 |
| $e$ | 0.0838861 | $i$ | 1.28615 | | +0.17729707 | +0.33615464 |
| $P$ | 4.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.5+ | 0.1+ | 2001 10 17 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 1994 03 05 | 691 | 0.2+ | 0.6+ | 2001 10 17 | 644 | 0.4− | 0.6− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1994 03 05 | 691 | 0.2− | 0.1+ | 2001 10 17 | 644 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1999 03 19 | 691 | 0.0 | 0.2− | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 1999 03 19 | 691 | 0.4+ | 0.5− | 2002 11 07 | 645 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 1999 03 19 | 691 | 0.4− | 0.2+ | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 1999 03 20 | 645 | 0.1− | 0.1+ | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 1999 03 20 | 645 | 0.1− | 0.2+ | 2004 03 29 | 691 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 08 24 | 704 | 0.0 | 0.0 | 2004 03 29 | 691 | 0.6+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2001 08 24 | 704 | 0.6+ | 1.3+ | 2004 03 29 | 691 | 0.5+ | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2001 08 24 | 704 | 0.2− | 0.1− | 2006 07 22 | G96 | 0.7− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.6− |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2006 07 22 | G96 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.7+ | 0.5− |
| 2001 09 19 | 704 | 0.8− | 0.5+ | 2006 07 22 | G96 | 0.5− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2006 07 22 | G96 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.3+ | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.4+ | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.7− | 0.1− |
| 2001 09 21 | 691 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 09 21 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 09 21 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 09 22 | 704 | (0.5− | 1.7+) | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2001 09 22 | 704 | 0.5+ | 1.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2001 09 22 | 704 | 0.9− | 0.6− | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2001 09 23 | 704 | 0.7− | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.6− | 0.0 |
| 2001 09 23 | 704 | 0.2− | 0.6− | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2001 09 23 | 704 | 1.3− | 1.2− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.8− | 0.5− |

**(140042)∗ 2001 SV$_{78}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 205.73718 | | (2000.0) | | | |
| $n$ | 0.22841466 | $\omega$ | 39.30778 | | −0.89381540 | +0.44831836 |
| $a$ | 2.6504528 | $\Omega$ | 167.31624 | | −0.42228065 | −0.83378766 |
| $e$ | 0.0770365 | $i$ | 2.67079 | | −0.15090753 | −0.32219370 |
| $P$ | 4.31 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 493 | 0.3− | 0.4+ | 2004 03 24 | 699 | 0.6+ | 0.4+ | 2005 08 29 | 704 | 0.6+ | 0.6+ |
| 2001 08 16 | 493 | 0.0 | 0.4+ | 2004 03 24 | 699 | 0.2+ | 0.2+ | 2005 08 29 | 704 | 0.2+ | 0.0 |
| 2001 08 16 | 493 | 0.2− | 0.6+ | 2004 03 25 | 699 | 0.6− | 1.4+ | 2005 08 29 | 704 | 0.7+ | 0.4+ |
| 2001 09 14 | 644 | 0.0 | 0.8+ | 2004 03 25 | 699 | 0.1+ | 0.0 | 2005 10 03 | G96 | 0.3− | 0.6+ |
| 2001 09 14 | 644 | 0.4− | 0.4+ | 2004 03 25 | 699 | 0.3+ | 0.0 | 2005 10 03 | G96 | 0.3− | 0.2+ |
| 2001 09 14 | 644 | 0.6− | 0.9+ | 2004 03 25 | 699 | 1.3− | 1.4+ | 2005 10 03 | G96 | 0.2− | 0.3+ |
| 2001 09 18 | 699 | 0.7− | 0.3− | 2004 03 27 | 704 | (1.5+ | 2.3+) | 2005 10 03 | G96 | 0.3− | 0.2+ |
| 2001 09 18 | 699 | 1.1− | 0.5+ | 2004 03 27 | 704 | (0.4+ | 1.7+) | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.1+ | 1.3+ | 2004 03 27 | 704 | (1.2+ | 2.2+) | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.0 | 0.9+ | 2004 03 27 | 704 | (1.5+ | 3.0+) | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 03 27 | 704 | (0.9+ | 2.7+) | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2004 03 28 | 704 | 0.4− | 0.0 | 2006 10 16 | 703 | (2.8+ | 0.4+) |
| 2001 09 19 | 704 | 0.5− | 0.9+ | 2004 03 28 | 704 | 0.2+ | 1.2+ | 2006 10 16 | 703 | 0.8+ | 1.2+ |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.5− |
| 2001 09 19 | 704 | 0.7− | 0.6+ | 2004 03 28 | 704 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.9+ | 0.7− |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2004 03 31 | 704 | 0.7+ | 0.0 | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2004 03 31 | 704 | 0.3− | 0.7+ | 2006 11 11 | 691 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.2− | 0.3− | 2004 03 31 | 704 | (0.4− | 1.9+) | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.5+ | 0.6+ | 2004 04 11 | 703 | 1.3+ | 1.1+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 04 11 | 703 | 0.3+ | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2001 09 22 | 704 | 0.2+ | 1.1− | 2004 04 11 | 703 | 0.6+ | 1.0+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2001 09 22 | 704 | 0.7+ | 1.1− | 2004 04 11 | 703 | 0.7+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2001 09 22 | 704 | 1.3+ | 0.1− | 2004 04 12 | 644 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 1.4+ |
| 2001 09 23 | 704 | 0.8− | 1.4− | 2004 04 12 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.5+ |
| 2001 09 23 | 704 | 0.5− | 0.5+ | 2004 04 12 | 644 | 0.0 | 0.7+ | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2001 09 23 | 704 | 0.4− | 0.6− | 2004 04 17 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.1+ | 0.1− | 2004 04 17 | 704 | 0.0 | 0.7+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2001 09 26 | 704 | 0.1+ | 0.5+ | 2004 04 17 | 704 | 1.5+ | 1.2+ | 2006 11 20 | 704 | 0.4− | 0.1+ |
| 2001 09 26 | 704 | 0.3+ | 0.8+ | 2004 04 19 | 704 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.9+ | 0.7+ |
| 2001 09 26 | 704 | 0.1+ | 0.1− | 2004 04 19 | 704 | 0.3− | 1.2+ | 2006 11 20 | 704 | 0.2+ | 0.3− |
| 2001 09 26 | 704 | 0.7+ | 0.9+ | 2004 04 19 | 704 | 0.0 | 0.8+ | 2006 11 20 | 704 | 1.5+ | 1.0− |
| 2001 10 11 | 644 | 0.7− | 1.1+ | 2004 04 19 | 704 | 0.1− | 1.1+ | 2006 11 20 | 704 | 0.4− | 0.4− |
| 2001 10 11 | 644 | 0.3− | 0.7+ | 2004 04 19 | 704 | 0.8+ | 0.5+ | 2006 11 20 | 704 | 0.6− | 0.1− |
| 2001 10 11 | 644 | 0.5− | 0.9+ | 2004 05 21 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2001 10 17 | 644 | 0.1− | 0.3− | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.7− |
| 2001 10 17 | 644 | 0.1− | 0.7− | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2001 10 17 | 644 | 0.3− | 0.4− | 2005 08 24 | 644 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.9+ | 0.6+ | 2005 08 24 | 644 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.1− | 0.1+ | 2005 08 24 | 644 | 0.3− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2001 10 20 | 704 | 0.2− | 0.1− | 2005 08 27 | 644 | 0.5− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.7+ |
| 2004 03 24 | 699 | 0.6+ | 0.2+ | 2005 08 27 | 644 | 0.4− | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.5+ |
| 2004 03 24 | 699 | 0.4+ | 0.7+ | 2005 08 27 | 644 | 0.5− | 0.5+ | | | | |

**(140043)∗ 2001 SE$_{80}$ = 1996 PB**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29707)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.17139 | | (2000.0) | | | |
| $n$ | 0.20463839 | $\omega$ | 263.64434 | | +0.26579362 | −0.96308401 |
| $a$ | 2.8519680 | $\Omega$ | 170.60559 | | +0.95512168 | +0.25707212 |
| $e$ | 0.1325278 | $i$ | 15.16323 | | +0.13075292 | +0.07989440 |
| $P$ | 4.82 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 06 | 684 | 0.5+ | 0.1− | 2004 03 20 | 704 | 1.4+ | 0.4+ | 2006 09 17 | 704 | 0.2− | 1.1− |
| 1996 08 06 | 684 | 0.3− | 1.2− | 2004 03 20 | 704 | 1.3+ | 0.8+ | 2006 09 17 | 704 | 0.1+ | 0.1− |
| 1996 08 07 | 684 | 0.4− | 0.9− | 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 1.1+ | 0.6+ |
| 1996 08 07 | 684 | 0.3− | 0.6− | 2004 03 20 | 704 | 0.9− | 0.1− | 2006 09 17 | 704 | 0.4+ | 0.9+ |
| 2001 09 12 | 704 | 0.0 | 0.5− | 2004 03 20 | 704 | (0.3+ | 1.7+) | 2006 09 20 | 704 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.1+ | 0.7− | 2004 03 22 | 699 | 1.2+ | 1.1+ | 2006 09 20 | 644 | 0.2− | 0.3− |
| 2001 09 12 | 704 | 0.1+ | 0.3+ | 2004 03 22 | 699 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.3+ |
| 2001 09 12 | 704 | 0.5+ | 0.1+ | 2004 03 22 | 699 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 0.5− | 2004 03 22 | 699 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2004 03 23 | 704 | 0.5− | 1.0+ | 2006 09 20 | 704 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.5− | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.3+ |
| 2001 09 20 | 704 | 0.9− | 0.6+ | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 1.0+ | 2004 03 23 | 704 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.5− | 2004 03 23 | 704 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2001 09 22 | 704 | 0.3+ | 0.2− | 2004 03 30 | 703 | (1.7+ | 0.4+) | 2006 09 25 | G96 | 0.5− | 0.2− |
| 2001 09 22 | 704 | 0.5− | 0.7+ | 2004 03 30 | 703 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2001 09 22 | 704 | 0.4+ | 0.9+ | 2004 03 30 | 703 | 0.2− | 1.2+ | 2006 09 25 | 699 | 0.1− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 704 | 1.5+ | 0.3+ | 2004 03 30 | 703 | 0.6+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.4+ | 0.1+ | 2006 08 15 | 644 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2003 01 02 | 704 | 0.0 | 1.3+ | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.0− | 0.9+ |
| 2003 01 02 | 704 | (1.8− | 0.2−) | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.5− | 1.1+ |
| 2003 01 02 | 704 | 0.1+ | 0.4+ | 2006 08 21 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.0 |
| 2003 01 02 | 704 | 0.4− | 0.6+ | 2006 08 21 | 704 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.4+ |
| 2003 01 02 | 704 | 0.0 | 0.6+ | 2006 08 21 | 704 | 0.2− | 1.2+ | 2006 10 19 | 703 | 0.0 | 0.6+ |
| 2003 01 28 | 704 | 0.3− | 0.3+ | 2006 08 21 | 704 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2003 01 28 | 704 | 0.3− | 0.3− | 2006 08 23 | 644 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2003 01 28 | 704 | 0.3+ | 0.1− | 2006 08 23 | 644 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2003 01 28 | 704 | 0.6+ | 0.4− | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2003 01 28 | 704 | 0.2+ | 0.1− | 2006 08 27 | 699 | (1.6+ | 0.7−) | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2004 03 16 | 704 | (0.6− | 1.9+) | 2006 08 27 | 699 | 0.9− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2004 03 16 | 704 | 0.4+ | 0.2− | 2006 08 27 | 699 | 0.9+ | 0.5− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2004 03 16 | 704 | 0.5− | 0.3+ | 2006 08 27 | 699 | 0.4− | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.2+ |
| 2004 03 16 | 704 | (0.9− | 1.7+) | 2006 09 16 | 699 | 1.3+ | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2004 03 16 | 704 | 1.0− | 0.2+ | 2006 09 16 | 699 | 1.2+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.9+ | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2004 03 18 | 691 | 0.1− | 0.4+ | 2006 09 16 | 699 | (0.7+ | 3.6−) | | | | |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.5+ | | | | |

**(140044)∗ 2001 SJ$_{80}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.70234 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21083465 | $\omega$ | 292.10937 | | −0.41473948 | +0.90376019 | |
| $a$ | 2.7958126 | $\Omega$ | 312.93797 | | −0.77246001 | −0.41118103 | |
| $e$ | 0.1430104 | $i$ | 8.31496 | | −0.48093315 | −0.11894405 | |
| $P$ | 4.67 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 704 | 0.7+ | 1.2+ | 2001 09 22 | 704 | 1.3− | 0.8+ | 2004 02 16 | 704 | 0.6− | 0.0 |
| 2000 04 28 | 704 | 0.8− | 0.5+ | 2001 09 22 | 704 | 0.1+ | 0.7+ | 2004 02 16 | 704 | 0.4− | 0.8− |
| 2000 04 28 | 704 | (1.6+ | 2.4+) | 2001 09 22 | 704 | 0.9− | 0.8+ | 2004 02 22 | 704 | 0.2+ | 0.6+ |
| 2000 04 28 | 704 | 1.6+ | 1.1+ | 2004 01 13 | 699 | (0.0 | 2.3−) | 2004 02 22 | 704 | 0.2+ | 0.4+ |
| 2001 06 23 | 644 | 0.3− | 0.7+ | 2004 01 13 | 699 | 0.7+ | 1.0+ | 2004 02 22 | 704 | (1.7+ | 1.1+) |
| 2001 06 23 | 644 | 0.1− | 1.3+ | 2004 01 13 | 699 | 0.8+ | 0.5− | 2004 02 26 | 704 | 0.2+ | 0.1+ |
| 2001 06 23 | 644 | 1.0− | 0.7+ | 2004 01 13 | 699 | (2.4+ | 0.6+) | 2004 02 26 | 704 | 0.5+ | 0.2− |
| 2001 06 23 | 644 | (0.9− | 1.7+) | 2004 01 16 | 644 | 0.4+ | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.1− |
| 2001 06 23 | 644 | 0.4− | 0.7+ | 2004 01 16 | 644 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.0 | 0.8− |
| 2001 06 23 | 644 | (1.1− | 1.6+) | 2004 01 16 | 644 | 0.3+ | 0.4+ | 2004 04 13 | 645 | 0.0 | 0.0 |
| 2001 07 19 | 699 | 0.5+ | 0.7+ | 2004 01 17 | 644 | 0.4+ | 0.2+ | 2004 04 13 | 645 | 0.1+ | 0.0 |
| 2001 07 19 | 699 | 0.7− | 0.1+ | 2004 01 17 | 644 | 0.2+ | 0.4+ | 2005 05 30 | E12 | (1.3+ | 3.1+) |
| 2001 07 19 | 699 | 0.2− | 1.3+ | 2004 01 17 | 644 | 0.2+ | 0.3+ | 2005 05 30 | E12 | (0.5+ | 1.7+) |
| 2001 07 19 | 699 | 1.2− | 0.7+ | 2004 01 19 | 691 | 0.1− | 0.2+ | 2005 05 30 | E12 | (0.3+ | 1.8+) |
| 2001 08 23 | 699 | 0.6− | 0.7+ | 2004 01 19 | 691 | 0.2+ | 0.4+ | 2005 05 30 | E12 | 0.2+ | 1.1+ |
| 2001 08 23 | 699 | 0.4− | 0.0 | 2004 01 19 | 691 | 0.2− | 0.1+ | 2006 08 29 | 699 | 0.5+ | 0.9+ |
| 2001 08 23 | 699 | 1.0− | 0.3− | 2004 01 24 | 704 | 1.5− | 0.7+ | 2006 08 29 | 699 | 0.6+ | 0.5+ |
| 2001 08 23 | 699 | (1.4− | 1.9−) | 2004 01 24 | 704 | 0.5+ | 1.3+ | 2006 08 29 | 699 | (1.6+ | 0.0 ) |
| 2001 08 27 | 699 | 1.0+ | 1.0+ | 2004 01 24 | 704 | (0.5+ | 1.9+) | 2006 08 29 | 699 | 0.1+ | 0.4+ |
| 2001 08 27 | 699 | 0.0 | 1.0+ | 2004 01 24 | 704 | (0.3− | 1.8+) | 2006 09 06 | 644 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.4+ | 0.0 | 2004 01 26 | 699 | 0.4+ | 0.4− | 2006 09 06 | 644 | 0.2+ | 0.3− |
| 2001 08 27 | 699 | 0.6+ | 0.1− | 2004 01 26 | 699 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.0 |
| 2001 09 08 | 704 | 0.3+ | 0.3+ | 2004 01 26 | 699 | 0.4+ | 0.4− | 2006 09 17 | 703 | 0.6+ | 0.7+ |
| 2001 09 08 | 704 | 0.2− | 0.5+ | 2004 01 26 | 699 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.1+ |
| 2001 09 08 | 704 | 0.4− | 0.3+ | 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 09 17 | 703 | 1.0− | 0.2+ |
| 2001 09 08 | 704 | (9.2− | 1.8−) | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.7− | 0.2− |
| 2001 09 09 | 699 | 0.2− | 0.4+ | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.7+ | 0.1+ |
| 2001 09 09 | 699 | 0.5− | 0.3+ | 2004 01 30 | 704 | 0.4+ | 0.6− | 2006 09 20 | 703 | 0.4+ | 0.8− |
| 2001 09 09 | 699 | 1.3− | 0.2+ | 2004 01 30 | 704 | 1.0− | 0.7+ | 2006 09 20 | 703 | 0.7+ | 0.4− |
| 2001 09 09 | 699 | 0.4− | 0.4+ | 2004 01 30 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 703 | 1.1− | 0.3− |
| 2001 09 12 | 704 | 0.4+ | 0.5+ | 2004 01 30 | 704 | 0.3+ | 1.3+ | 2006 09 27 | 703 | 0.7− | 0.7− |
| 2001 09 12 | 704 | 0.5− | 0.2+ | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.7+ |
| 2001 09 12 | 704 | 0.5− | 0.4+ | 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.9+ | 0.9− |
| 2001 09 12 | 704 | 0.8− | 0.5+ | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.2− |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2004 02 12 | 691 | 0.2− | 0.2+ | 2006 10 03 | 703 | 0.7− | 0.7− |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2004 02 14 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 703 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 10 03 | 703 | (1.8− | 1.8−) |
| 2001 09 20 | 704 | (0.4− | 1.7−) | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.5+ | 0.8− | 2004 02 16 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 0.0 | 0.6+ | 2004 02 16 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.1+ | 0.4+ | 2004 02 16 | 704 | 0.7+ | 0.9+ | 2006 10 11 | 644 | 0.4+ | 0.4− |

**(140045)∗ 2001 SZ$_{80}$ = 2004 ES$_{12}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61022)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.65107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22084379 | $\omega$ | 125.55086 | | +0.45522229 | +0.89017622 | |
| $a$ | 2.7106863 | $\Omega$ | 171.46483 | | −0.85264224 | +0.44195971 | |
| $e$ | 0.0441404 | $i$ | 7.33412 | | −0.25646417 | +0.11071545 | |
| $P$ | 4.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.4+ | 0.6− | 2004 02 26 | 704 | 1.2− | 0.5+ | 2004 03 18 | 704 | 1.1+ | 0.2+ |
| 2000 04 27 | 699 | 0.6− | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.8+ | 2004 03 18 | 704 | 0.4+ | 0.4+ |
| 2000 04 27 | 699 | 0.4+ | 0.6− | 2004 02 26 | 704 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.0 | 0.4+ |
| 2000 04 27 | 704 | 0.0 | 1.3+ | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2004 03 23 | 704 | 0.6+ | 0.7+ |
| 2000 04 27 | 699 | 0.3+ | 0.7+ | 2004 03 11 | 644 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.3+ |
| 2000 04 27 | 704 | 0.5− | 0.2+ | 2004 03 11 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.8+ | 1.1+ |
| 2000 04 27 | 704 | 1.2− | 0.2+ | 2004 03 11 | 644 | 0.0 | 0.5+ | 2004 03 23 | 704 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.2− | 1.5+ | 2004 03 15 | 691 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.8+ | 0.8+ |
| 2001 09 12 | 704 | 0.3+ | 0.8+ | 2004 03 15 | 691 | 0.2+ | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 0.9+ | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.5+ |
| 2001 09 12 | 704 | 0.3+ | 1.1+ | 2004 03 15 | 704 | 0.8+ | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.3+ |
| 2001 09 12 | 704 | 0.4+ | 0.0 | 2004 03 15 | 704 | 0.7+ | 1.0− | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 2001 09 19 | 645 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.7− | 0.9+ |
| 2001 09 19 | 645 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.5− | 2006 09 30 | 703 | 1.0+ | 0.8+ |
| 2001 09 20 | 704 | 0.7+ | 1.1− | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 1.4+ | 0.4+ | 2004 03 16 | 704 | 1.1+ | 0.2− | 2006 10 03 | G96 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.5+ | 0.5− | 2004 03 16 | 704 | 0.1+ | 1.1− | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | (1.9+ | 1.2−) | 2004 03 16 | 704 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2001 09 22 | 704 | 1.2+ | 1.5− | 2004 03 17 | 291 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.4− | 0.5+ | 2004 03 17 | 291 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2001 09 22 | 704 | 0.9− | 0.9+ | 2004 03 17 | 704 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.0 | 1.2− |
| 2001 09 22 | 704 | 1.0+ | 0.8− | 2004 03 17 | 704 | 0.7− | 0.5− | 2006 10 16 | 703 | 0.5− | 0.6− |
| 2001 10 11 | 644 | 0.7− | 0.4+ | 2004 03 17 | 291 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2001 10 11 | 644 | 0.5− | 0.6+ | 2004 03 17 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.7+ |
| 2001 10 11 | 644 | 0.9− | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2002 12 01 | 704 | 0.4+ | 1.0+ | 2004 03 17 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2002 12 01 | 704 | 0.3− | 1.2+ | 2004 03 17 | 704 | 0.3− | 0.5− | 2006 11 24 | G96 | 0.4− | 0.1+ |
| 2002 12 01 | 704 | 0.5+ | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.8+ | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2002 12 13 | 644 | 0.3− | 0.1− | 2004 03 17 | 704 | 0.1− | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2002 12 13 | 644 | 0.1− | 0.2− | 2004 03 18 | 704 | 1.2+ | 0.6+ | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2002 12 13 | 644 | 0.2− | 0.3− | 2004 03 18 | 704 | (1.6+ | 2.2+) | | | | |

**(140046)∗ 2001 SQ$_{81}$ = 2004 BM$_{30}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56310)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.03358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18959762 | $\omega$ | 194.71255 | | −0.96476337 | −0.25162769 | |
| $a$ | 3.0008719 | $\Omega$ | 330.36871 | | +0.25438522 | −0.81731756 | |
| $e$ | 0.0314479 | $i$ | 8.94910 | | +0.06722948 | −0.51833919 | |
| $P$ | 5.20 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 1.2− | 0.9− | 2004 01 18 | 644 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.3− | 0.0 |
| 2001 08 16 | 704 | 0.3− | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.5+ | 2004 02 23 | 704 | 0.3+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.1+ | 1.3+ | 2004 01 22 | 704 | 0.0 | 0.4+ | 2004 02 23 | 704 | 0.2− | 0.1− |
| 2001 08 16 | 704 | 1.1− | 0.1− | 2004 01 22 | 704 | 0.4+ | 0.2+ | 2004 03 18 | 704 | 0.7+ | 1.2+ |
| 2001 08 27 | 699 | 0.2− | 0.8− | 2004 01 22 | 704 | 0.4+ | 0.1− | 2004 03 18 | 704 | 0.2− | 0.8+ |
| 2001 08 27 | 699 | 0.4+ | 1.0+ | 2004 01 22 | 704 | 0.1+ | 0.4− | 2004 03 18 | 704 | 0.3− | 0.5+ |
| 2001 08 27 | 699 | 0.3− | 0.3+ | 2004 01 30 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.0 | 0.7+ |
| 2001 08 27 | 699 | 0.6+ | 0.1+ | 2004 01 30 | 704 | 0.9+ | 0.4+ | 2006 07 25 | 644 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | (1.0− | 2.5+) | 2004 01 30 | 704 | 0.7+ | 0.3+ | 2006 07 25 | 644 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | (0.8− | 2.0+) | 2004 01 30 | 704 | 1.4+ | 1.1+ | 2006 07 25 | 644 | 0.2− | 0.7+ |
| 2001 09 12 | 704 | (0.5+ | 2.4+) | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 08 12 | 644 | 0.2− | 0.5+ |
| 2001 09 20 | 704 | 0.6− | 1.0+ | 2004 02 10 | 703 | 1.0− | 0.0 | 2006 08 12 | 644 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.4− | 0.9+ | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 08 12 | 644 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.5− | 1.1+ | 2004 02 10 | 703 | 0.7− | 0.4+ | 2006 09 30 | G96 | 0.6− | 0.1− |
| 2001 09 20 | 704 | 0.6− | 1.3+ | 2004 02 10 | 703 | 1.0− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | (0.1− | 2.0+) | 2004 02 10 | 644 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.5− | 0.1+ |
| 2001 09 22 | 704 | 0.6+ | 0.6+ | 2004 02 10 | 703 | 0.9− | 0.2− | 2006 09 30 | G96 | 0.4− | 0.1+ |
| 2001 09 22 | 704 | (0.7− | 1.8+) | 2004 02 11 | 049 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2001 09 22 | 704 | (0.8− | 2.1+) | 2004 02 11 | 049 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2002 11 13 | 644 | 0.1+ | 0.5− | 2004 02 11 | 049 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2002 11 13 | 644 | 0.1+ | 0.0 | 2004 02 16 | 704 | 1.1+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2002 11 13 | 644 | 0.2− | 0.3− | 2004 02 16 | 704 | 0.9+ | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2002 12 03 | 644 | 0.1+ | 0.2− | 2004 02 16 | 704 | 0.8+ | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.4+ |
| 2002 12 03 | 644 | 0.3+ | 0.2− | 2004 02 16 | 704 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2002 12 03 | 644 | 0.0 | 0.2− | 2004 02 16 | 704 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.6+ | 0.4− |
| 2004 01 18 | 644 | 0.5+ | 0.1− | 2004 02 23 | 704 | 0.3− | 0.5+ | | | | |
| 2004 01 18 | 644 | 0.4+ | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.6− | | | | |

**(140047)∗ 2001 SR$_{83}$ = 2001 RQ$_{22}$ = 2003 EY$_1$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24065), G. V. Williams (*MPO* 43028)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.47150 | | (2000.0) | | | |
| $n$ | 0.23638617 | $\omega$ | 114.59005 | | +0.35207590 | −0.93573806 |
| $a$ | 2.5905263 | $\Omega$ | 314.77848 | | +0.84773530 | +0.32827054 |
| $e$ | 0.1954510 | $i$ | 1.68731 | | +0.39672084 | +0.12896799 |
| $P$ | 4.17 | $H$ | 16.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 704 | 0.8− | 0.7+ | 2002 12 07 | 645 | 0.1− | 0.0 | 2003 03 30 | 645 | 0.0 | 0.1+ |
| 2001 09 07 | 704 | 0.3+ | 1.2− | 2002 12 07 | 645 | 0.1− | 0.0 | 2005 07 28 | 644 | 0.0 | 0.5+ |
| 2001 09 07 | 704 | 0.0 | 0.6− | 2003 01 31 | 704 | 0.3− | 0.0 | 2005 07 28 | 644 | 0.2− | 0.6+ |
| 2001 09 11 | 699 | 0.1+ | 0.0 | 2003 01 31 | 704 | 0.0 | 0.0 | 2005 07 28 | 644 | 0.2+ | 0.7+ |
| 2001 09 11 | 699 | 0.7− | 0.7+ | 2003 01 31 | 704 | 0.8− | 0.3− | 2005 08 10 | 599 | 0.3+ | 0.6+ |
| 2001 09 11 | 699 | 1.4− | 0.1− | 2003 02 10 | 291 | 0.2+ | 0.5+ | 2005 08 10 | 599 | 0.2− | 0.5+ |
| 2001 09 11 | 699 | 0.5− | 0.2+ | 2003 02 10 | 291 | 0.0 | 0.3+ | 2005 08 10 | 599 | 0.7− | 0.4+ |
| 2001 09 11 | 699 | 0.7− | 0.2+ | 2003 02 10 | 291 | 0.2− | 0.5+ | 2005 09 29 | G96 | 0.2− | 0.6− |
| 2001 09 11 | 699 | 0.5− | 0.2− | 2003 02 21 | 049 | 0.5+ | 0.8+ | 2005 09 29 | G96 | 0.3− | 0.2− |
| 2001 09 11 | 699 | 0.1+ | 0.5+ | 2003 02 21 | 049 | 1.2+ | 1.0+ | 2005 09 29 | G96 | 0.1+ | 0.4− |
| 2001 09 11 | 699 | 0.9− | 1.0+ | 2003 02 21 | 049 | 0.6+ | 1.1+ | 2005 09 29 | G96 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2003 02 22 | 644 | 0.8+ | 1.2+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.2+ | 0.7+ | 2003 02 22 | 644 | 0.7+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.7− |
| 2001 09 12 | 704 | 0.1+ | 0.9+ | 2003 02 22 | 644 | 0.7+ | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.7+ | 0.6+ | 2003 02 26 | 209 | 0.5− | 0.5+ | 2006 09 28 | G96 | 1.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 1.3+ | 2003 02 26 | 209 | 0.1− | 0.8+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2003 02 26 | 209 | 0.5− | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.5+ | 0.6+ | 2003 03 04 | 209 | 0.7+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.8+ | 0.2+ | 2003 03 04 | 209 | 0.9+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2003 03 04 | 209 | 0.8+ | 0.6− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 0.2+ | 1.1+ | 2003 03 06 | 644 | 0.8+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2001 09 22 | 704 | 0.4− | 0.9+ | 2003 03 06 | 644 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 09 22 | 704 | 0.5− | 0.2+ | 2003 03 06 | 644 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2001 09 22 | 704 | 0.9− | 0.8+ | 2003 03 07 | 699 | 0.9+ | 0.2− | 2006 11 28 | G96 | 0.4− | 0.1− |
| 2001 09 22 | 704 | 0.6+ | 0.3− | 2003 03 07 | 699 | 0.6+ | 0.0 | 2006 11 28 | G96 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.7− | 0.6+ | 2003 03 07 | 699 | 0.1− | 0.2+ | 2006 11 28 | G96 | 0.0 | 0.2− |
| 2001 09 23 | 704 | 0.8− | 1.0+ | 2003 03 07 | 699 | 0.9+ | 0.4− | 2006 11 28 | G96 | 0.1− | 0.1− |
| 2001 09 23 | 704 | 0.0 | 0.9+ | 2003 03 30 | 645 | 0.0 | 0.1+ | | | | |

**(140048)∗ 2001 SF$_{84}$ = 1998 XV$_{68}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18092)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.62214 | | (2000.0) | | | |
| $n$ | 0.23966723 | $\omega$ | 199.35450 | | −0.98929390 | −0.11403740 |
| $a$ | 2.5668290 | $\Omega$ | 333.58454 | | +0.14553338 | −0.81728444 |
| $e$ | 0.2084826 | $i$ | 11.81192 | | −0.01084499 | −0.56483769 |
| $P$ | 4.11 | $H$ | 14.5 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | (1.1− | 2.2−) | 2001 09 23 | 704 | 0.6− | 0.2− | 2005 08 30 | 704 | 0.7+ | 0.5− |
| 1998 12 14 | 704 | (1.9− | 2.3−) | 2001 09 23 | 704 | 0.5− | 0.1− | 2005 08 31 | 185 | 0.3+ | 1.0− |
| 1998 12 14 | 704 | (1.8− | 2.3−) | 2001 10 19 | 644 | 0.2− | 0.4+ | 2005 08 31 | 185 | 0.0 | 0.2− |
| 1998 12 14 | 704 | (4.2− | 2.3−) | 2001 10 19 | 644 | 0.7− | 0.4+ | 2005 08 31 | 185 | 0.2+ | 0.9− |
| 1998 12 14 | 704 | (2.7− | 2.2−) | 2001 10 19 | 644 | 0.4− | 0.3+ | 2005 08 31 | 185 | 0.8+ | 0.3− |
| 1998 12 17 | 704 | 1.7− | 0.6+ | 2002 10 05 | 704 | 0.0 | 0.4+ | 2005 09 11 | 691 | 0.2+ | 0.1+ |
| 1998 12 17 | 704 | 0.6+ | 0.8+ | 2002 10 05 | 704 | 0.2− | 0.3+ | 2005 09 11 | 691 | 0.1+ | 0.0 |
| 1998 12 17 | 704 | 1.1+ | 1.2− | 2002 10 05 | 704 | 0.7− | 0.4+ | 2005 09 11 | 691 | 0.1+ | 0.0 |
| 1998 12 17 | 704 | 0.2− | 0.1− | 2002 11 07 | 704 | 0.2− | 0.2+ | 2005 09 22 | 644 | 0.4− | 0.1− |
| 2001 08 14 | 608 | 0.5+ | 0.5− | 2002 11 07 | 704 | 0.3− | 0.3+ | 2005 09 22 | 644 | 0.0 | 0.1+ |
| 2001 08 14 | 608 | 0.1− | 0.5− | 2002 11 07 | 704 | 0.3− | 0.1− | 2005 09 22 | 644 | 0.0 | 0.1+ |
| 2001 08 14 | 608 | 0.6+ | 0.4− | 2002 11 07 | 704 | 0.3− | 0.1− | 2005 09 23 | 703 | 0.7+ | 0.4− |
| 2001 08 19 | 807 | 0.1− | 0.1+ | 2002 11 07 | 704 | 1.3− | 0.1− | 2005 09 23 | 703 | 0.0 | 1.4− |
| 2001 08 19 | 807 | 0.1− | 0.1− | 2002 11 15 | 704 | 0.5+ | 0.6− | 2005 09 23 | 703 | 0.3− | 1.4− |
| 2001 08 23 | 699 | 0.3− | 0.3+ | 2002 11 15 | 704 | (0.2+ | 2.3−) | 2005 09 23 | 703 | 0.2− | 1.1+ |
| 2001 08 23 | 699 | (1.6− | 0.2−) | 2002 11 15 | 704 | 1.4+ | 0.2− | 2005 09 25 | 691 | 0.2− | 0.2+ |
| 2001 08 23 | 699 | 0.7+ | 0.1− | 2002 11 15 | 704 | 0.5+ | 0.6− | 2005 09 25 | 691 | 0.2− | 0.3+ |
| 2001 08 23 | 699 | 0.9− | 0.2+ | 2002 11 15 | 704 | 0.6+ | 0.8− | 2005 09 25 | 691 | 0.1− | 0.1+ |
| 2001 09 08 | 704 | 1.0− | 0.4+ | 2002 12 07 | 704 | 0.2+ | 0.2+ | 2005 09 30 | 699 | 0.3− | 0.7− |
| 2001 09 08 | 704 | 0.0 | 0.5+ | 2002 12 07 | 704 | 0.3+ | 0.1− | 2005 09 30 | 699 | 0.3+ | 0.2− |
| 2001 09 08 | 704 | (1.3− | 1.6+) | 2002 12 07 | 704 | 1.0+ | 0.0 | 2005 09 30 | 699 | 0.7− | 1.1+ |
| 2001 09 08 | 704 | 0.5− | 0.4+ | 2002 12 07 | 704 | 0.9+ | 0.1− | 2005 09 30 | 699 | 0.6− | 0.7+ |
| 2001 09 08 | 704 | 0.8− | 0.0 | 2002 12 07 | 704 | 0.4+ | 0.2+ | 2005 10 06 | 691 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 0.7+ | 0.4+ | 2002 12 15 | 704 | 0.2− | 0.3+ | 2005 10 06 | 691 | 0.2− | 0.2+ |
| 2001 09 11 | 699 | 0.5+ | 0.2− | 2002 12 15 | 704 | 0.1− | 0.6+ | 2005 10 06 | 691 | 0.1− | 0.2+ |
| 2001 09 11 | 699 | 1.0+ | 0.2+ | 2002 12 15 | 704 | 0.4− | 0.2+ | 2006 10 02 | 704 | 0.3− | 0.2+ |
| 2001 09 11 | 699 | 1.1+ | 0.7− | 2002 12 15 | 704 | 0.2+ | 0.6− | 2006 10 02 | 704 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2003 01 22 | 644 | 0.6− | 0.5− | 2006 10 02 | 704 | 0.6+ | 0.3+ |
| 2001 09 20 | 704 | 0.1− | 0.0 | 2003 01 22 | 644 | 0.6− | 0.6− | 2006 10 02 | 704 | 1.0− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.5− | 2003 01 22 | 644 | 0.3− | 0.1+ | 2006 10 02 | 704 | 1.4+ | 0.1− |
| 2001 09 20 | 704 | 0.7+ | 0.4− | 2005 08 06 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.7− | 0.2− | 2005 08 06 | 644 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.4− | 0.4+ |
| 2001 09 22 | 704 | 0.2+ | 0.8+ | 2005 08 06 | 644 | 0.5+ | 0.2− | 2006 11 14 | 704 | 0.6− | 0.4+ |
| 2001 09 22 | 704 | 0.5+ | 0.5− | 2005 08 28 | 691 | 0.1+ | 0.1− | 2006 11 21 | 703 | 0.2− | 0.2− |
| 2001 09 22 | 704 | 0.2− | 0.6− | 2005 08 28 | 691 | 0.2− | 0.1+ | 2006 11 21 | 703 | 0.2− | 0.1+ |
| 2001 09 22 | 704 | 0.2+ | 0.5− | 2005 08 28 | 691 | 0.0 | 0.0 | 2006 11 21 | 703 | 0.2− | 0.1+ |
| 2001 09 22 | 704 | 0.8+ | 0.4− | 2005 08 30 | 704 | 0.7− | 0.5+ | 2006 11 21 | 703 | 0.2− | 0.3− |
| 2001 09 23 | 704 | 0.2− | 0.2− | 2005 08 30 | 704 | 0.8+ | 0.5+ | | | | |

**(140049)∗ 2001 SW$_{85}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.32925 | | (2000.0) | | | |
| $n$ | 0.22767441 | $\omega$ | 197.63928 | | +0.61243703 | −0.78939027 |
| $a$ | 2.6561947 | $\Omega$ | 214.62930 | | +0.73395171 | +0.58764768 |
| $e$ | 0.0365894 | $i$ | 4.26242 | | +0.29365928 | +0.17757591 |
| $P$ | 4.33 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.3− | 0.3− | 2004 05 23 | 691 | 0.2+ | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2001 09 11 | 699 | 0.3− | 0.0 | 2004 05 23 | 691 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.3− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.4− | 0.5− | 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.3− | 0.0 |
| 2001 09 11 | 699 | 0.1+ | 0.7+ | 2005 06 29 | 691 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.7− | 0.4+ |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2005 06 29 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.4− | 0.2− | 2005 06 29 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.8+ | 1.1+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2005 06 30 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.6− | 2005 06 30 | 644 | 0.3− | 0.3− | 2006 11 18 | 704 | 1.2+ | 0.2+ |
| 2001 09 20 | 704 | 0.4− | 0.3− | 2005 06 30 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.7− |
| 2001 09 22 | 704 | 0.3+ | 1.4+ | 2005 07 04 | 691 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2001 09 22 | 704 | 0.2+ | 1.3+ | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.6− | 0.5− |
| 2001 09 22 | 704 | (0.6− | 1.9+) | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 09 23 | 704 | 0.2− | 0.9+ | 2005 07 08 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | (0.9− | 1.5+) |
| 2001 09 23 | 704 | 0.4− | 1.0+ | 2005 07 08 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | (0.7+ | 1.9+) |
| 2001 09 23 | 704 | 0.1− | 1.1+ | 2005 07 08 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.5+ | 1.4+ |
| 2001 09 23 | 704 | 0.5− | 1.4+ | 2005 07 30 | 644 | 0.1+ | 0.4− | 2006 11 24 | 691 | 0.1− | 0.6+ |
| 2001 09 23 | 704 | 0.8− | 1.1+ | 2005 07 30 | 644 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.1− | 0.4+ |
| 2001 10 11 | 644 | 0.1− | 0.0 | 2005 07 30 | 644 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.1− | 0.5+ |
| 2001 10 11 | 644 | 0.1− | 1.3+ | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.8+ | 0.2− |
| 2001 10 11 | 644 | 0.1+ | 1.1+ | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.1− | 1.1+ |
| 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.5+ | 0.5+ |
| 2004 04 22 | 691 | 0.3− | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.1+ | 2006 12 01 | G96 | 2.5+ | 0.4− |
| 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.2− | 0.2+ |
| 2004 05 13 | 691 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.5− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.1+ |

**(140050)∗ 2001 SN$_{86}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.86729 | | (2000.0) | | | |
| $n$ | 0.22869773 | $\omega$ | 79.80597 | | +0.98966872 | +0.14051298 |
| $a$ | 2.6482653 | $\Omega$ | 272.11234 | | −0.14016072 | +0.90636042 |
| $e$ | 0.0238888 | $i$ | 1.63394 | | −0.03017944 | +0.39845563 |
| $P$ | 4.31 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.6+ | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 1999 01 13 | 691 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 1999 01 13 | 691 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 08 16 | 704 | (1.1− | 1.5+) | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 08 16 | 704 | 0.7− | 0.6+ | 2004 03 29 | 691 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 08 16 | 704 | 0.5− | 1.3+ | 2004 03 29 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2001 08 16 | 704 | 0.0 | 0.5+ | 2004 04 11 | 644 | 1.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.7+ |
| 2001 08 16 | 704 | 0.8− | 0.8+ | 2004 04 11 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 09 12 | 704 | (1.5+ | 1.9+) | 2004 04 11 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.8+ |
| 2001 09 12 | 704 | 0.4+ | 0.5+ | 2004 04 20 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.6− | 1.4+ | 2004 04 20 | 704 | 1.3+ | 0.8+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.5+ | 2004 04 20 | 704 | 1.4+ | 0.9+ | 2006 11 18 | 691 | 0.4+ | 0.1+ |
| 2001 09 12 | 704 | 1.0− | 0.4+ | 2004 04 20 | 704 | 0.8+ | 0.5+ | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 1.0− | 1.1+ | 2004 04 20 | 704 | 0.7+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2001 09 20 | 704 | 0.2− | 0.8+ | 2004 04 23 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 2001 09 20 | 704 | 0.4− | 0.7+ | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.9+ |
| 2001 09 20 | 704 | (0.4− | 1.9+) | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.3+ | 0.6+ |
| 2001 10 11 | 644 | 0.0 | 1.1+ | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2001 10 11 | 644 | 0.2+ | 1.1+ | 2005 06 13 | G96 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2001 10 11 | 644 | 0.1+ | 1.0+ | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.2+ | 0.6+ | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.2− | 0.3− | 2005 07 15 | G96 | 0.1− | 0.6− | 2006 11 24 | G96 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 1.1− | 0.1− | 2005 07 15 | G96 | 0.1+ | 0.6− | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | 0.4− | 0.6+ | 2005 07 15 | G96 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2+ |
| 2004 03 27 | 699 | 0.1+ | 0.8+ | 2005 11 25 | G96 | 0.7+ | 0.7− | 2006 11 24 | G96 | 0.2− | 0.2+ |
| 2004 03 27 | 699 | 0.1− | 1.3+ | 2005 11 25 | G96 | 0.6+ | 0.3− | 2006 12 01 | G96 | 0.5− | 0.2− |
| 2004 03 27 | 699 | 0.2− | 0.3− | 2005 11 25 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2004 03 27 | 699 | (0.2+ | 1.7−) | 2005 11 25 | G96 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.6− | 0.2− |
| 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.4− | 0.0 |

**(140051)∗ 2001 SJ$_{90}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.13647 | | (2000.0) | | | |
| $n$ | 0.18494563 | $\omega$ | 81.53893 | | −0.12760945 | +0.99181926 |
| $a$ | 3.0509845 | $\Omega$ | 181.14454 | | −0.96159242 | −0.12451500 |
| $e$ | 0.2335460 | $i$ | 9.28201 | | −0.24301408 | −0.02811702 |
| $P$ | 5.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.1− | 1.2+ | 2005 03 08 | 704 | 0.6+ | 1.1+ | 2006 07 25 | 941 | 0.4+ | 0.7+ |
| 2000 04 05 | 699 | 0.1+ | 0.6+ | 2005 03 08 | 704 | 0.3+ | 1.3+ | 2006 07 25 | 941 | 0.4+ | 0.6+ |
| 2000 04 05 | 699 | 0.1+ | 1.1+ | 2005 03 11 | G96 | 0.1− | 0.4+ | 2006 07 25 | 941 | 0.2+ | 0.4+ |
| 2000 04 05 | 699 | 0.5+ | 0.1+ | 2005 03 11 | G96 | 0.3− | 0.2+ | 2006 07 25 | 941 | 0.2+ | 0.3− |
| 2001 09 11 | 699 | 0.4+ | 0.2− | 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 07 25 | 941 | 0.1+ | 0.4− |
| 2001 09 11 | 699 | 0.1+ | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 07 25 | 941 | 0.2− | 0.4− |
| 2001 09 11 | 699 | 0.1+ | 0.4+ | 2005 03 14 | 704 | 0.5+ | 0.3− | 2006 07 25 | 941 | 0.2− | 0.5− |
| 2001 09 11 | 699 | 0.1+ | 0.9+ | 2005 03 14 | 704 | 0.7+ | 0.1− | 2006 08 02 | 941 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 1.7+ | 2005 03 14 | 704 | 1.7+ | 0.0 | 2006 08 02 | 941 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 1.7+ | 2005 03 14 | 704 | 1.2+ | 0.2− | 2006 08 02 | 941 | 0.0 | 0.0 |
| 2001 09 20 | 704 | (0.1− | 2.1+) | 2005 03 17 | 704 | 0.1+ | 0.5+ | 2006 08 02 | 941 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.2− | 1.8+ | 2005 03 17 | 704 | 1.2+ | 0.2+ | 2006 08 02 | 941 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.5− | 1.5+ | 2005 03 17 | 704 | 0.9+ | 1.2+ | 2006 08 14 | 644 | 0.1+ | 0.1+ |
| 2001 09 22 | 704 | 0.2− | 1.4+ | 2005 04 01 | 699 | 1.0− | 0.3− | 2006 08 14 | 644 | 0.1+ | 0.1+ |
| 2001 09 22 | 704 | 0.1− | 0.6+ | 2005 04 01 | 699 | 0.9+ | 1.0− | 2006 08 14 | 644 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | 0.1+ | 0.1− | 2005 04 01 | 699 | 0.5+ | 0.2+ | 2006 08 14 | E12 | 0.5+ | 0.1+ |
| 2001 09 22 | 704 | 0.3− | 0.6+ | 2005 04 01 | 699 | 0.3− | 0.5+ | 2006 08 14 | E12 | 0.3− | 0.0 |
| 2001 09 22 | 704 | 0.0 | 0.5+ | 2005 04 02 | G96 | 0.2− | 0.0 | 2006 08 14 | E12 | 0.1+ | 0.4+ |
| 2001 09 23 | 704 | 0.5− | 0.5+ | 2005 04 02 | G96 | 0.4− | 0.0 | 2006 08 14 | E12 | 0.2− | 0.2+ |
| 2001 09 23 | 704 | 0.1− | 0.7+ | 2005 04 02 | G96 | 0.3− | 0.0 | 2006 08 14 | E12 | 0.2+ | 0.4− |
| 2001 09 23 | 704 | 0.2− | 0.9+ | 2005 04 02 | G96 | 0.2− | 0.0 | 2006 08 15 | 941 | 0.0 | 0.4− |
| 2001 09 23 | 704 | 0.3− | 1.0+ | 2005 04 04 | 703 | 0.6− | 0.4+ | 2006 08 15 | 941 | 0.0 | 0.2− |
| 2001 09 23 | 704 | 0.6− | 1.3+ | 2005 04 04 | 703 | 1.8− | 0.2+ | 2006 08 15 | 941 | 0.0 | 0.1− |
| 2001 10 17 | 644 | 0.5− | 0.9+ | 2005 04 04 | 703 | 0.4− | 0.2− | 2006 08 15 | 941 | 0.2− | 0.0 |
| 2001 10 17 | 644 | 0.8− | 0.7+ | 2005 05 06 | G96 | 0.0 | 0.2+ | 2006 08 21 | 941 | 0.1+ | 0.7− |
| 2001 10 17 | 644 | 0.6− | 0.7+ | 2005 05 06 | G96 | 0.1− | 0.3+ | 2006 08 21 | 941 | 0.0 | 0.6− |
| 2005 03 04 | 691 | 0.1+ | 0.7+ | 2005 05 06 | G96 | 0.2− | 0.4+ | 2006 08 21 | 941 | 0.0 | 0.7− |
| 2005 03 04 | 691 | 0.1+ | 0.4+ | 2005 05 06 | G96 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2005 03 04 | 691 | 0.1+ | 0.5+ | 2006 07 23 | 941 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2005 03 08 | 704 | 0.0 | 0.8+ | 2006 07 23 | 941 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.3− | 0.0 |
| 2005 03 08 | 704 | 0.1+ | 0.8+ | 2006 07 23 | 941 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2005 03 08 | 704 | 0.0 | 0.1− | 2006 07 23 | 941 | 0.2− | 0.4− | | | | |

**(140052)∗ 2001 SS$_{91}$ = 2003 AR$_{11}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40594)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.25091 | | (2000.0) | | | |
| $n$ | 0.21868427 | $\omega$ | 250.96514 | | −0.49573666 | −0.86394912 |
| $a$ | 2.7285025 | $\Omega$ | 229.07827 | | +0.83435796 | −0.44549324 |
| $e$ | 0.1647917 | $i$ | 6.72827 | | +0.24102274 | −0.23479288 |
| $P$ | 4.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 07 | 910 | 0.2+ | 0.5+ | 2003 01 26 | 644 | 0.3+ | 1.3+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 1997 12 07 | 910 | 0.0 | 0.6+ | 2003 01 26 | 644 | 0.3+ | 1.3+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 1997 12 07 | 910 | 0.1+ | 0.7+ | 2003 01 26 | 644 | 0.2+ | 1.3+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 08 25 | 704 | (1.6− | 0.1+) | 2003 01 26 | 608 | 1.1+ | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 08 25 | 704 | 0.4− | 0.0 | 2003 01 26 | 608 | 1.1+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2001 08 25 | 704 | 1.1− | 0.1− | 2003 01 26 | 608 | 0.7+ | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 09 10 | 699 | 0.1− | 0.9+ | 2003 01 28 | 704 | 1.2− | 0.5+ | 2006 11 12 | 703 | 0.2+ | 0.1− |
| 2001 09 10 | 699 | 0.4+ | 1.2+ | 2003 01 28 | 704 | 1.1− | 0.1+ | 2006 11 12 | 703 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 699 | 0.0 | 0.5+ | 2003 01 28 | 704 | 0.9− | 0.3− | 2006 11 12 | 703 | 0.6+ | 0.5− |
| 2001 09 10 | 699 | 1.2− | 0.3− | 2003 01 28 | 704 | 0.4− | 0.8+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2003 01 28 | 704 | 1.2− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.6− | 2003 02 01 | 704 | 0.3− | 0.9− | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.7+ | 0.1+ | 2003 02 01 | 704 | 0.6− | 1.5− | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.6− | 2003 02 01 | 704 | (0.0 | 1.9−) | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2001 09 22 | 704 | 0.4− | 1.0+ | 2003 02 03 | 699 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.1+ |
| 2001 09 22 | 704 | 0.5+ | 1.4+ | 2003 02 03 | 699 | 0.7− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.5+ |
| 2001 09 22 | 704 | 0.2+ | 0.3− | 2003 02 03 | 699 | 0.1+ | 0.4+ | 2006 11 18 | 704 | (1.7− | 0.2−) |
| 2001 09 22 | 704 | 0.4+ | 0.7+ | 2003 02 03 | 699 | 0.2− | 0.9+ | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 1.3+ | 0.5+ | 2003 02 04 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2001 09 23 | 704 | 0.8− | 1.2+ | 2003 02 04 | 644 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 0.8− | 0.9+ | 2003 02 04 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2001 09 23 | 704 | (0.3− | 1.6+) | 2003 02 06 | 608 | (1.5+ | 2.9+) | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2001 09 28 | 644 | 0.7− | 0.3− | 2003 02 06 | 608 | (2.1+ | 4.0+) | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2001 09 28 | 644 | 0.5− | 0.3− | 2003 02 06 | 608 | (1.5+ | 2.3+) | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2001 09 28 | 644 | 0.8− | 0.2− | 2005 07 30 | 644 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.6− |
| 2003 01 01 | 704 | 0.1+ | 0.4− | 2005 07 30 | 644 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2003 01 01 | 704 | 0.3− | 0.6− | 2005 07 30 | 644 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2003 01 01 | 704 | 0.2+ | 0.5− | 2005 08 11 | A50 | (2.3+ | 1.1−) | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2003 01 01 | 704 | 0.1+ | 0.3− | 2005 08 11 | A50 | 0.5+ | 1.2− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2003 01 01 | 704 | 0.4− | 0.4− | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2003 01 05 | 704 | 0.7− | 0.5− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.3− |
| 2003 01 05 | 704 | 0.7− | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.7− | 0.5− | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.0− | 0.1+ |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.1− |
| 2003 01 09 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2003 01 09 | 704 | 0.8+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.8+ | 0.7+ |
| 2003 01 09 | 704 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.0 |
| 2003 01 09 | 704 | 1.1+ | 0.9+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.7− | 0.8+ |
| 2003 01 09 | 704 | 1.3+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2003 01 26 | 699 | 0.9+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.2− | 0.3− |
| 2003 01 26 | 699 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.2− | 1.2− |
| 2003 01 26 | 699 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.4− | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2003 01 26 | 699 | 0.9+ | 0.5− | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.5− | 0.1+ |

**(140053)∗ 2001 SU$_{95}$ = 2004 FR$_{161}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68931)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.20641 | | (2000.0) | | | |
| $n$ | 0.19848705 | $\omega$ | 42.82277 | | +0.90430042 | +0.42666732 |
| $a$ | 2.9105915 | $\Omega$ | 291.91608 | | −0.39563464 | +0.82531679 |
| $e$ | 0.0888439 | $i$ | 0.86410 | | −0.16035577 | +0.36987457 |
| $P$ | 4.97 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 10 | 691 | 0.4− | 1.0+ | 2004 02 27 | 695 | 0.1+ | 0.5+ | 2006 09 16 | 691 | 0.1+ | 0.1− |
| 1991 09 10 | 691 | 0.3− | 1.4+ | 2004 02 27 | 695 | 0.1+ | 0.5+ | 2006 09 16 | 691 | 0.1+ | 0.0 |
| 1991 09 10 | 691 | 0.5− | 0.7+ | 2004 03 18 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.0 |
| 2001 08 24 | 691 | 0.5− | 0.4− | 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 1.3− | 0.3+ |
| 2001 08 24 | 691 | 0.4− | 0.2− | 2004 03 18 | 691 | 0.1− | 0.8+ | 2006 09 20 | 704 | 0.7− | 0.0 |
| 2001 08 24 | 691 | 0.7− | 0.2− | 2004 03 28 | 691 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.9+ | 0.0 | 2004 03 28 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 699 | (2.1− | 0.5+) |
| 2001 09 20 | 704 | 1.0+ | 0.3+ | 2004 03 28 | 691 | 0.0 | 0.5+ | 2006 09 25 | 699 | 1.2− | 1.2− |
| 2001 09 20 | 704 | 0.6+ | 0.7+ | 2005 06 14 | G96 | 0.1+ | 0.2+ | 2006 09 25 | 699 | (0.0 | 1.6+) |
| 2001 09 20 | 704 | 0.9+ | 0.1+ | 2005 06 14 | G96 | 0.2+ | 0.0 | 2006 09 25 | 699 | 1.3+ | 1.2+ |
| 2001 09 20 | 704 | 0.6+ | 0.3+ | 2005 06 14 | G96 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 691 | 0.2− | 0.2+ | 2005 06 14 | G96 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.0 |
| 2001 09 21 | 691 | 0.3− | 0.1− | 2006 07 22 | G96 | 0.3+ | 0.3− | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2001 09 21 | 691 | 0.0 | 0.0 | 2006 07 22 | G96 | 0.4+ | 0.3− | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2001 09 22 | 691 | 0.2+ | 0.1+ | 2006 07 22 | G96 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 09 22 | 704 | 0.9− | 0.1+ | 2006 07 22 | G96 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.6+ | 0.4− |
| 2001 09 22 | 691 | 0.2− | 0.9+ | 2006 08 19 | 691 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 0.6− | 0.9+ | 2006 08 19 | 691 | 0.2+ | 0.5− | 2006 10 23 | G96 | 0.5+ | 0.4− |
| 2001 09 22 | 691 | 0.3+ | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.6− | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 691 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2001 09 22 | 704 | 0.6− | 0.4+ | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2002 12 06 | 695 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.3+ | 0.2+ | | | | |
| 2002 12 06 | 695 | 0.1+ | 0.3+ | 2006 09 16 | 691 | 0.0 | 0.0 | | | | |

**(140054)∗ 2001 SV$_{95}$ = 2004 CO$_{97}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61027)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 151.10075 | | (2000.0) | | | |
| $n$ | 0.18058850 | $\omega$ | 353.22159 | | −0.99581382 | −0.09126554 |
| $a$ | 3.0998641 | $\Omega$ | 181.56876 | | +0.09010395 | −0.97087113 |
| $e$ | 0.0331102 | $i$ | 10.61562 | | +0.01536589 | −0.22153974 |
| $P$ | 5.46 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4+ | 0.7+ | 2004 01 29 | 699 | 0.2− | 0.6− | 2004 03 19 | 704 | 0.3− | 1.3+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2004 02 14 | 644 | 0.0 | 0.3+ | 2005 05 03 | 691 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.8+ | 2004 02 14 | 644 | 0.0 | 0.3+ | 2005 05 03 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.3+ | 0.8+ | 2004 02 14 | 644 | 0.9+ | 0.4+ | 2005 05 03 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 691 | 0.1− | 0.5+ | 2004 02 15 | 703 | 0.4+ | 0.5+ | 2005 05 13 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 691 | 0.0 | 0.3+ | 2004 02 15 | 703 | 0.6− | 0.6+ | 2005 05 13 | 691 | 0.2+ | 0.2+ |
| 2001 09 21 | 691 | 0.1− | 0.4+ | 2004 02 15 | 703 | 0.4− | 0.1− | 2005 05 13 | 691 | 0.2+ | 0.3+ |
| 2001 09 22 | 704 | 0.3− | 0.3+ | 2004 02 15 | 703 | 0.3− | 0.9+ | 2005 06 03 | 691 | (1.7+ | 0.1+) |
| 2001 09 22 | 704 | 0.1− | 0.6+ | 2004 02 19 | 704 | 0.6+ | 0.3+ | 2005 06 03 | 691 | 0.2− | 0.6+ |
| 2001 09 22 | 704 | 0.7+ | 0.1− | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2005 06 03 | 691 | 0.5− | 0.6− |
| 2001 09 23 | 704 | 0.3− | 1.0+ | 2004 02 19 | 704 | 0.3+ | 0.3+ | 2005 06 23 | 644 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.6− | 0.6+ | 2004 02 19 | 704 | 0.5+ | 0.9+ | 2005 06 23 | 644 | 0.1− | 0.3− |
| 2001 09 23 | 704 | 0.7− | 1.0+ | 2004 02 19 | 704 | 0.1+ | 0.9+ | 2005 06 23 | 644 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.8− | 0.9+ | 2004 02 23 | 704 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.3+ |
| 2002 12 10 | 644 | 0.4− | 0.3+ | 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.8+ | 0.7+ |
| 2002 12 10 | 644 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 1.1− | 0.4− |
| 2002 12 10 | 644 | 0.4− | 0.7+ | 2004 02 23 | 704 | 0.8+ | 1.1− | 2006 09 14 | 703 | (0.1− | 1.6−) |
| 2004 01 23 | 704 | 0.7+ | 1.1+ | 2004 02 26 | 704 | (2.1− | 1.0+) | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2004 01 23 | 704 | (0.4+ | 2.2+) | 2004 02 26 | 704 | 0.7− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2004 01 23 | 704 | 0.0 | 0.6+ | 2004 02 26 | 704 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2004 01 29 | 699 | (1.8− | 1.0+) | 2004 03 19 | 704 | 0.7− | 0.6+ | 2006 11 18 | G96 | 0.5+ | 0.4+ |
| 2004 01 29 | 699 | 0.3− | 0.6− | 2004 03 19 | 704 | 0.1− | 0.9+ | | | | |
| 2004 01 29 | 699 | 0.3− | 0.7+ | 2004 03 19 | 704 | 0.6+ | 0.5+ | | | | |

**(140055)∗ 2001 SU$_{96}$ = 2004 DG$_{19}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61028)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.59040 | | (2000.0) | | | |
| $n$ | 0.19695319 | $\omega$ | 279.13166 | | −0.18887676 | +0.98043356 |
| $a$ | 2.9256837 | $\Omega$ | 339.72370 | | −0.82637980 | −0.18919962 |
| $e$ | 0.0994980 | $i$ | 9.20865 | | −0.53049222 | −0.05434646 |
| $P$ | 5.00 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 691 | 0.3− | 0.4− | 2001 09 24 | 704 | 0.7+ | 0.8+ | 2004 02 23 | 704 | 0.3− | 1.0+ |
| 1999 02 13 | 691 | 0.1+ | 0.1− | 2001 09 24 | 704 | 0.2+ | 0.4+ | 2004 02 23 | 704 | 0.8− | 1.0+ |
| 1999 02 13 | 691 | 0.2− | 0.3− | 2001 09 24 | 704 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.3− | 0.3+ |
| 2001 08 27 | 699 | 0.4− | 1.2− | 2001 09 24 | 704 | 0.6+ | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.0 |
| 2001 08 27 | 699 | 0.8− | 1.0− | 2001 09 24 | 704 | 0.5+ | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.1− |
| 2001 08 27 | 699 | 0.5+ | 0.8+ | 2001 09 24 | 704 | 1.3+ | 0.2+ | 2004 03 18 | 691 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.0 | 1.2+ | 2001 09 24 | 704 | 1.2+ | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.0 |
| 2001 09 11 | 691 | 0.1+ | 0.3− | 2001 09 24 | 704 | 1.1+ | 0.8+ | 2006 09 12 | 703 | (2.0− | 0.5−) |
| 2001 09 11 | 691 | 0.1+ | 0.5− | 2001 10 19 | 644 | 0.5− | 0.4− | 2006 09 12 | 703 | 0.6− | 0.2− |
| 2001 09 11 | 691 | 0.2+ | 0.5− | 2001 10 19 | 644 | 0.4− | 0.2− | 2006 09 12 | 703 | (1.9+ | 0.7+) |
| 2001 09 12 | 333 | 1.2− | 0.5− | 2001 10 19 | 644 | 0.4− | 0.0 | 2006 09 16 | 699 | (2.0+ | 0.1+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 333 | 0.7− | 0.4− | 2001 10 21 | 704 | 0.9+ | 1.0+ | 2006 09 16 | 699 | 0.1+ | 0.5+ |
| 2001 09 12 | 333 | 0.4− | 0.0 | 2001 10 21 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 699 | 0.0 | 1.0+ |
| 2001 09 12 | 333 | 0.8− | 0.3− | 2001 10 21 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 699 | 0.1− | 1.1− |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2001 10 23 | 644 | 0.5− | 0.0 | 2006 09 18 | 704 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2001 10 23 | 644 | 0.7− | 0.2− | 2006 09 18 | 704 | 0.6− | 0.7+ |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2001 10 23 | 644 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.4− | 2004 01 22 | 704 | 0.7+ | 0.1− | 2006 09 18 | 704 | 1.0− | 0.0 |
| 2001 09 20 | 704 | 0.5+ | 0.4− | 2004 01 22 | 704 | 0.0 | 0.6− | 2006 09 19 | 699 | (0.2+ | 1.9+) |
| 2001 09 21 | 704 | 0.9+ | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 1.0+ | 0.5− |
| 2001 09 21 | 704 | 0.2− | 0.7− | 2004 01 22 | 704 | 0.0 | 0.9+ | 2006 09 19 | 699 | 0.2− | 0.7+ |
| 2001 09 21 | 704 | 0.3+ | 0.0 | 2004 01 22 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.6− |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2004 02 11 | 699 | 0.6+ | 0.4− | 2006 09 19 | 703 | 0.2+ | 0.3− |
| 2001 09 21 | 644 | 0.9− | 0.0 | 2004 02 11 | 699 | 0.9− | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.5− |
| 2001 09 21 | 644 | 0.3− | 0.2+ | 2004 02 11 | 699 | 0.9+ | 0.8− | 2006 09 19 | 703 | 0.5+ | 0.7− |
| 2001 09 21 | 644 | 0.7− | 0.2− | 2004 02 11 | 699 | (1.7− | 1.9+) | 2006 09 19 | 699 | 0.8− | 0.3+ |
| 2001 09 22 | 704 | 0.5+ | 0.3+ | 2004 02 17 | 704 | 0.7+ | 0.6+ | 2006 09 20 | 691 | 0.1+ | 0.3+ |
| 2001 09 22 | 704 | 0.4+ | 0.1+ | 2004 02 17 | 704 | 0.2− | 1.3+ | 2006 09 20 | 691 | 0.2− | 0.1+ |
| 2001 09 22 | 704 | 0.3− | 0.5+ | 2004 02 17 | 704 | 0.5− | 0.6− | 2006 09 20 | 691 | 0.2− | 0.1+ |
| 2001 09 22 | 704 | 0.1− | 0.2+ | 2004 02 17 | 704 | 0.2− | 0.6− | 2006 09 25 | 704 | 0.4+ | 0.5+ |
| 2001 09 23 | 704 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.1− | 0.4− | 2006 09 25 | 704 | 0.3− | 0.2+ |
| 2001 09 23 | 704 | 0.0 | 0.2+ | 2004 02 22 | 691 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.9+ | 0.2+ |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2004 02 22 | 691 | 0.6+ | 0.1+ | 2006 09 25 | 704 | 0.6+ | 0.6+ |
| 2001 09 23 | 704 | 0.2+ | 0.2− | 2004 02 22 | 691 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3− |
| 2001 09 24 | 704 | 0.1+ | 0.4− | 2004 02 23 | 704 | 0.4− | 0.9+ | 2006 10 11 | 644 | 0.4+ | 0.2− |
| 2001 09 24 | 704 | 0.9− | 0.3− | 2004 02 23 | 704 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.2− |

**(140056)∗ 2001 SY$_{96}$ = 2004 FU$_{20}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61028)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.96028 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18343256 | $\omega$ | 270.20954 | | −0.37110274 | | −0.92667163 |
| $a$ | 3.0677392 | $\Omega$ | 201.87135 | | +0.90292075 | | −0.34508839 |
| $e$ | 0.1016180 | $i$ | 9.21974 | | +0.21683374 | | −0.14897547 |
| $P$ | 5.37 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.7+ | 2004 03 16 | 703 | 1.0+ | 0.7+ | 2004 04 20 | 704 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2004 03 16 | 703 | 0.7− | 0.2+ | 2004 04 20 | 704 | 1.1− | 1.0+ |
| 2001 09 20 | 704 | 0.5+ | 0.3+ | 2004 03 16 | 703 | 0.5+ | 0.6− | 2004 04 20 | 704 | 0.3− | 1.4+ |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2004 03 18 | 704 | 1.0+ | 0.3− | 2004 04 20 | 704 | 0.7− | 0.8+ |
| 2001 09 20 | 704 | 0.7+ | 0.6+ | 2004 03 18 | 704 | 0.9+ | 0.1+ | 2006 05 25 | G96 | 0.3+ | 0.3− |
| 2001 09 22 | 704 | 0.3+ | 0.4+ | 2004 03 18 | 704 | 1.3+ | 0.1+ | 2006 05 25 | G96 | 0.5− | 0.1− |
| 2001 09 22 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 704 | 0.0 | 1.2+ | 2006 05 25 | G96 | 0.2− | 0.5− |
| 2001 09 22 | 704 | 0.5+ | 0.1− | 2004 03 20 | 704 | 0.6+ | 1.4+ | 2006 05 25 | G96 | 0.1+ | 0.1− |
| 2001 09 22 | 704 | 0.2+ | 0.8+ | 2004 03 20 | 704 | 0.9+ | 0.5+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | 0.6+ | 0.2+ | 2004 03 20 | 704 | 0.5+ | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.0 |
| 2001 09 23 | 704 | 0.6+ | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.1− | 1.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.5+ | 0.7+ | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.2+ |
| 2001 12 10 | 645 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.2− | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2001 12 10 | 645 | 0.4− | 0.1+ | 2004 03 27 | 704 | 0.4− | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2003 01 11 | 644 | 0.0 | 1.0+ | 2004 03 31 | 704 | 1.1− | 1.1− | 2006 09 23 | 691 | 0.1− | 0.2+ |
| 2003 01 11 | 644 | 0.1+ | 1.3+ | 2004 03 31 | 704 | 0.6+ | 1.2− | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2003 01 11 | 644 | 0.2− | 1.1+ | 2004 03 31 | 704 | 0.3− | 1.0− | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 2003 01 28 | 704 | 0.2+ | 0.0 | 2004 03 31 | 704 | 1.9+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2003 01 28 | 704 | 0.0 | 0.1+ | 2004 04 19 | 691 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.6− | 0.4− |
| 2003 01 28 | 704 | 0.2+ | 0.3+ | 2004 04 19 | 691 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2004 03 16 | 703 | 0.5+ | 0.3+ | 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.1+ |

**(140057)∗ 2001 SR$_{98}$ = 1997 TQ$_{15}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 18094)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.90194 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24468637 | $\omega$ | 131.03985 | | −0.34828303 | | −0.93707538 |
| $a$ | 2.5316064 | $\Omega$ | 339.30404 | | +0.83812728 | | −0.29970652 |
| $e$ | 0.2217336 | $i$ | 3.93661 | | +0.41981137 | | −0.17906908 |
| $P$ | 4.03 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.0 | 0.1− | 2001 10 11 | 644 | 0.2− | 0.0 | 2003 04 08 | 704 | 0.1− | 1.3+ |
| 1997 10 04 | 691 | 0.0 | 0.0 | 2001 10 11 | 644 | 0.0 | 0.8− | 2003 04 08 | 704 | 0.8− | 1.5+ |
| 1997 10 04 | 691 | 0.2+ | 0.1+ | 2001 10 19 | 644 | 0.0 | 0.9+ | 2005 08 25 | 644 | 0.2− | 0.6+ |
| 1997 10 09 | 691 | 0.8− | 0.3− | 2001 10 19 | 644 | 0.4+ | 0.8+ | 2005 08 25 | 644 | 0.0 | 0.5+ |
| 1997 10 09 | 691 | 0.3+ | 0.1+ | 2001 10 19 | 644 | 0.3+ | 0.7+ | 2005 08 25 | 644 | 0.1− | 0.5+ |
| 1997 10 09 | 691 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.3− | 0.2+ | 2005 08 30 | 291 | 0.1− | 0.4+ |
| 1999 03 22 | 699 | 0.1+ | 0.8+ | 2001 10 21 | 704 | 0.1+ | 0.4− | 2005 08 30 | 291 | 0.1+ | 0.4+ |
| 1999 03 22 | 699 | 1.4+ | 1.2+ | 2001 10 21 | 704 | 0.1− | 1.2+ | 2005 08 30 | 291 | 0.2− | 0.4+ |
| 1999 03 22 | 699 | (2.2+ | 0.3−) | 2001 10 21 | 704 | 0.1− | 0.7+ | 2005 09 22 | 644 | 0.0 | 0.5+ |
| 2001 08 24 | 704 | 0.1− | 0.3− | 2001 10 21 | 704 | 0.0 | 0.9+ | 2005 09 22 | 644 | 0.1+ | 0.7+ |
| 2001 08 24 | 704 | 0.6+ | 0.5+ | 2003 03 05 | 704 | 0.6+ | 0.9+ | 2005 09 22 | 644 | 0.0 | 0.6+ |
| 2001 08 24 | 704 | 0.2+ | 0.0 | 2003 03 05 | 704 | 0.6+ | 0.6+ | 2005 09 23 | 703 | 0.9− | 1.4− |
| 2001 09 11 | 699 | 0.2− | 0.6+ | 2003 03 05 | 704 | 0.2− | 1.0+ | 2005 09 23 | 703 | 0.9− | 0.7+ |
| 2001 09 11 | 699 | 0.9+ | 0.3+ | 2003 03 05 | 704 | 0.6− | 0.2− | 2005 09 23 | 703 | 0.9− | 1.0− |
| 2001 09 11 | 699 | 1.2+ | 0.9+ | 2003 03 10 | 699 | 0.0 | 0.6+ | 2005 09 23 | 703 | 1.1− | 1.0+ |
| 2001 09 11 | 699 | (0.4− | 2.6+) | 2003 03 10 | 699 | 0.4− | 1.0+ | 2005 10 01 | 703 | 0.2+ | 0.5+ |
| 2001 09 20 | 704 | 0.9− | 0.3− | 2003 03 10 | 699 | 0.1+ | 0.9+ | 2005 10 01 | 703 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.6− | 0.1− | 2003 03 10 | 699 | 0.2− | 0.6+ | 2005 10 01 | 703 | 0.3+ | 1.1+ |
| 2001 09 20 | 704 | 1.0− | 0.1+ | 2003 03 10 | 704 | (0.9+ | 1.6+) | 2005 10 01 | 703 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.6− | 0.5+ | 2003 03 10 | 704 | 1.1+ | 0.1+ | 2005 10 30 | G96 | 0.4− | 0.1− |
| 2001 09 20 | 704 | 1.0− | 0.2− | 2003 03 10 | 704 | 1.0+ | 0.6− | 2005 10 30 | G96 | 0.3− | 0.0 |
| 2001 09 22 | 704 | 1.0− | 0.5− | 2003 03 11 | 644 | 0.3+ | 0.0 | 2005 10 30 | G96 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 0.7− | 0.2− | 2003 03 11 | 644 | 0.1+ | 0.1+ | 2005 10 30 | G96 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | (2.9− | 1.2+) | 2003 03 11 | 644 | 0.4+ | 0.1+ | 2005 11 30 | G96 | (2.0− | 0.1+) |
| 2001 09 23 | 704 | 0.7+ | 0.7+ | 2003 03 25 | 699 | 0.3+ | 0.4+ | 2005 11 30 | G96 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2003 03 25 | 699 | 0.8+ | 0.2+ | 2005 11 30 | G96 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.3+ | 0.1− | 2003 03 25 | 699 | 0.3+ | 0.4+ | 2005 11 30 | G96 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2003 03 25 | 699 | 0.6+ | 0.1+ | 2006 11 01 | G96 | 0.6− | 0.2+ |
| 2001 09 23 | 704 | 0.8− | 0.2− | 2003 04 03 | 699 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.6− | 0.0 |
| 2001 09 24 | 704 | 0.5+ | 0.6+ | 2003 04 03 | 699 | 0.4− | 0.4+ | 2006 11 01 | G96 | 1.0− | 0.1− |
| 2001 09 24 | 704 | 0.7− | 0.9+ | 2003 04 03 | 699 | 1.0− | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2001 09 24 | 704 | (2.2− | 0.4+) | 2003 04 03 | 699 | 0.8+ | 0.5− | 2006 11 17 | 691 | 0.2+ | 0.6+ |
| 2001 09 24 | 704 | 0.5+ | 0.6+ | 2003 04 05 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.3+ |
| 2001 09 24 | 704 | (0.8+ | 2.8+) | 2003 04 05 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 2001 09 24 | 704 | 0.0 | 0.2+ | 2003 04 05 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 691 | 0.1− | 0.3− |
| 2001 09 24 | 704 | 0.3− | 0.6+ | 2003 04 08 | 704 | 1.1+ | 0.3+ | 2006 11 25 | 691 | 0.3+ | 0.1+ |
| 2001 10 11 | 644 | 0.3+ | 0.2− | 2003 04 08 | 704 | 0.1+ | 0.8+ | 2006 11 25 | 691 | 0.2+ | 0.1− |

**(140058)∗ 2001 SA$_{101}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.48406 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21726896 | $\omega$ | 203.48009 | | −0.82572606 | | +0.56370432 |
| $a$ | 2.7403388 | $\Omega$ | 10.90212 | | −0.49898105 | | −0.71314746 |
| $e$ | 0.0149094 | $i$ | 6.17520 | | −0.26304825 | | −0.41672310 |
| $P$ | 4.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2001 05 24 | 807 | 0.1− | 0.3+ | 2004 03 18 | 704 | 1.0+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 09 11 | 699 | 0.8− | 0.0 | 2004 03 18 | 704 | 1.1+ | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2001 09 11 | 699 | 0.4+ | 0.0 | 2004 03 21 | 704 | 0.4+ | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2001 09 11 | 699 | 0.4− | 1.0+ | 2004 03 21 | 704 | 0.7+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 1.0− | 0.3+ | 2004 03 21 | 704 | 0.9+ | 0.2− | 2006 10 03 | 691 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2004 03 21 | 704 | (2.4+ | 0.0 ) | 2006 10 12 | 691 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.1+ | 0.3− | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.9− | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.8− | 0.1− | 2004 03 22 | 704 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.3− | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.5− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2004 03 24 | 699 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2004 03 24 | 699 | 0.2− | 0.9+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2004 03 24 | 699 | 0.2+ | 0.7− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2004 03 24 | 699 | 1.1+ | 0.7− | 2006 10 19 | 644 | 0.4− | 0.3− |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2004 03 26 | 291 | 0.0 | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.7− | 0.7+ | 2004 03 26 | 291 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.6− | 2004 03 26 | 291 | 0.2− | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.5− | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 09 22 | 704 | 0.2+ | 0.9+ | 2004 03 27 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 09 22 | 704 | 0.1+ | 1.1+ | 2004 04 12 | 699 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 09 22 | 704 | (0.2+ | 1.7+) | 2004 04 12 | 699 | 0.6+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 09 22 | 704 | (0.5− | 2.0+) | 2004 04 12 | 699 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.4+ |
| 2001 10 17 | 644 | 0.4− | 0.5+ | 2004 04 12 | 699 | 0.4+ | 1.0+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 10 17 | 644 | 0.2+ | 0.6+ | 2004 04 13 | 644 | 0.6+ | 0.6+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2001 10 17 | 644 | 0.2+ | 1.0+ | 2004 04 13 | 644 | 0.5+ | 0.7+ | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2002 12 15 | 704 | 0.4+ | 0.0 | 2004 04 13 | 644 | 0.4+ | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 2002 12 15 | 704 | 0.9+ | 0.2− | 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2002 12 15 | 704 | 0.1− | 0.0 | 2004 04 22 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2002 12 15 | 704 | 0.7− | 0.9− | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2004 02 26 | 704 | 0.8+ | 0.6+ | 2005 07 06 | E12 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 02 26 | 704 | 0.4+ | 0.1+ | 2005 07 06 | E12 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2004 02 26 | 704 | 0.2− | 1.2+ | 2005 07 06 | E12 | 0.6− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2004 02 26 | 704 | 0.2− | 0.5+ | 2005 07 06 | E12 | 0.7+ | 1.1+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2004 02 26 | 704 | 0.4+ | 0.5+ | 2005 07 26 | 644 | 0.2− | 0.5+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2004 03 15 | 703 | 0.2+ | 1.4+ | 2005 07 26 | 644 | 0.0 | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 703 | 0.0 | 0.4+ | 2005 07 26 | 644 | 0.3− | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2004 03 15 | 703 | 0.7− | 0.4+ | 2006 09 20 | 699 | 0.4+ | 0.8− | 2006 11 20 | 691 | 0.4− | 0.3+ |
| 2004 03 15 | 703 | 0.7+ | 0.7− | 2006 09 20 | 699 | 0.2+ | 0.8+ | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.7+ | | | | |
| 2004 03 18 | 704 | 0.7+ | 0.2+ | 2006 09 20 | 699 | 0.4+ | 0.2+ | | | | |

**(140059)∗ 2001 SZ$_{101}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.82677 | | (2000.0) | | | |
| $n$ | 0.21086339 | $\omega$ | 197.45518 | | +0.89684068 | −0.44192987 |
| $a$ | 2.7955586 | $\Omega$ | 188.84646 | | +0.41939034 | +0.86338681 |
| $e$ | 0.0886353 | $i$ | 7.23180 | | +0.14067175 | +0.24343626 |
| $P$ | 4.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.1+ | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 10 20 | 704 | 1.0− | 0.5+ | 2006 10 02 | G96 | 0.5+ | 0.0 |
| 2001 09 12 | 691 | 0.3+ | 0.3+ | 2001 10 20 | 704 | 0.5− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 09 12 | 691 | 0.4+ | 0.4+ | 2001 10 20 | 704 | 1.3− | 1.5+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 09 12 | 691 | 0.2+ | 0.2+ | 2001 10 20 | 704 | 0.6− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 1.2− | 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.8− | 2004 04 13 | 691 | 0.2+ | 0.6− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.6− | 2004 04 13 | 691 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.1+ | 1.2− | 2004 04 19 | 691 | 0.3− | 0.5+ | 2006 11 13 | 703 | (2.7+ | 1.6+) |
| 2001 09 20 | 704 | 0.0 | 1.0− | 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 11 13 | 703 | (0.8+ | 2.2+) |
| 2001 09 22 | 704 | 0.2− | 1.2+ | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 11 13 | 703 | (0.7+ | 2.1+) |
| 2001 09 22 | 704 | 0.3− | 0.5+ | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.7+ | 1.5+ |
| 2001 09 22 | 704 | 0.0 | 0.8+ | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2001 09 22 | 704 | (0.8− | 1.8+) | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2001 09 23 | 704 | 0.0 | 0.5+ | 2006 07 21 | G96 | 0.7− | 0.3− | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2001 09 23 | 704 | 1.1− | 0.0 | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.4− | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.5− | | | | |
| 2001 09 23 | 704 | 0.8− | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.4− | | | | |

**(140060)∗ 2001 SD$_{102}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.14623 | | (2000.0) | | | |
| $n$ | 0.18391777 | $\omega$ | 132.48251 | | +0.98075799 | −0.15188335 |
| $a$ | 3.0623412 | $\Omega$ | 236.60841 | | +0.10590746 | +0.94172383 |
| $e$ | 0.0815524 | $i$ | 8.44787 | | +0.16400421 | +0.30014610 |
| $P$ | 5.36 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.4− | 0.2− | 2001 09 23 | 644 | 0.1− | 0.4+ | 2005 06 17 | 691 | 0.2+ | 0.6+ |
| 2001 08 27 | 644 | 0.6− | 0.3− | 2001 09 25 | 704 | 0.1+ | 0.2− | 2005 06 17 | 691 | 0.0 | 0.4+ |
| 2001 08 27 | 644 | 0.5− | 0.3− | 2001 09 25 | 704 | 0.0 | 0.3− | 2005 06 17 | 691 | 0.0 | 0.0 |
| 2001 08 28 | 699 | 0.2− | 1.1+ | 2001 09 25 | 704 | 0.3− | 0.2− | 2005 06 27 | 691 | 1.2− | 0.7− |
| 2001 08 28 | 699 | 0.5+ | 0.4+ | 2001 09 25 | 704 | 0.6+ | 0.6− | 2005 06 27 | 691 | 0.5+ | 0.2+ |
| 2001 08 28 | 699 | 0.8+ | 0.1− | 2001 09 28 | 644 | 0.3− | 1.0+ | 2005 06 27 | 691 | 0.6+ | 0.2+ |
| 2001 08 28 | 699 | 0.5+ | 1.8− | 2001 09 28 | 644 | 0.2+ | 1.1+ | 2006 08 22 | 644 | 0.2− | 0.3− |
| 2001 09 10 | 704 | 0.0 | 0.8− | 2001 09 28 | 644 | 0.3+ | 1.0+ | 2006 08 22 | 644 | 0.2− | 0.0 |
| 2001 09 10 | 704 | 0.1− | 0.5+ | 2001 10 13 | 699 | 0.1− | 0.7+ | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2001 09 10 | 704 | 0.3− | 0.4− | 2001 10 13 | 699 | 0.8+ | 1.1+ | 2006 08 27 | 699 | 0.6+ | 0.4+ |
| 2001 09 10 | 704 | 0.7− | 0.7− | 2001 10 13 | 699 | 0.5+ | 0.9− | 2006 08 27 | 699 | 0.5− | 0.1− |
| 2001 09 10 | 704 | 0.3− | 0.6− | 2001 10 13 | 699 | 0.7− | 0.5+ | 2006 08 27 | 699 | 0.2− | 0.8− |
| 2001 09 11 | 699 | 0.5− | 0.1+ | 2001 10 14 | 704 | 1.6+ | 1.3+ | 2006 08 27 | 699 | 0.6+ | 0.2− |
| 2001 09 11 | 699 | (0.5+ | 2.5+) | 2001 10 14 | 704 | 0.3+ | 0.8+ | 2006 09 11 | 703 | 0.5+ | 0.7− |
| 2001 09 11 | 699 | 0.3+ | 0.4+ | 2001 10 14 | 704 | 0.8+ | 0.2+ | 2006 09 11 | 703 | 0.2− | 0.8− |
| 2001 09 11 | 699 | 0.6− | 0.1+ | 2001 10 14 | 704 | 0.8+ | 0.7+ | 2006 09 11 | 703 | 0.3+ | 0.6− |
| 2001 09 20 | 704 | 1.1− | 0.4+ | 2001 10 14 | 704 | 1.2+ | 0.2+ | 2006 09 11 | 703 | 1.1− | 0.3− |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2001 10 17 | 704 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2001 10 17 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.2+ |
| 2001 09 20 | 704 | 1.0− | 0.4− | 2001 10 17 | 704 | 0.4− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.8− | 0.6− | 2001 10 17 | 704 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2001 09 21 | 699 | 1.3− | 0.7− | 2001 10 17 | 704 | 0.1− | 0.7+ | 2006 09 26 | 703 | 0.4+ | 0.9+ |
| 2001 09 21 | 699 | 0.4− | 0.5+ | 2001 10 21 | 704 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.7+ | 0.5+ |
| 2001 09 21 | 699 | 0.1− | 1.1+ | 2001 10 21 | 704 | 0.5− | 0.1− | 2006 09 26 | 703 | 0.5− | 0.4− |
| 2001 09 21 | 699 | 0.2− | 0.3+ | 2001 10 21 | 704 | 1.0− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.0 | 0.2+ | 2004 03 17 | 704 | 0.8+ | 1.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2001 09 22 | 704 | 0.6+ | 1.4− | 2004 03 17 | 704 | 0.3− | 0.9+ | 2006 09 27 | 691 | 0.2− | 0.1− |
| 2001 09 22 | 704 | 0.3− | 0.4− | 2004 03 17 | 704 | 1.1+ | 0.6+ | 2006 09 30 | 691 | 0.3+ | 0.2− |
| 2001 09 22 | 704 | 0.9+ | 1.5+ | 2004 03 18 | 704 | 0.1− | 1.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 09 23 | 644 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2001 09 23 | 644 | 0.4− | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.4+ | | | | |

**(140061)∗ 2001 SO$_{102}$ = 1997 WU$_9$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22835)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.17341 | | (2000.0) | | | |
| $n$ | 0.22118294 | $\omega$ | 176.62457 | | +0.89976651 | −0.43365147 |
| $a$ | 2.7079146 | $\Omega$ | 209.22925 | | +0.39799371 | +0.86123479 |
| $e$ | 0.0348376 | $i$ | 5.71766 | | +0.17894480 | +0.26499252 |
| $P$ | 4.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 21 | 691 | 0.2− | 0.0 | 2001 10 21 | 704 | 0.1− | 0.6+ | 2005 08 06 | 644 | 0.0 | 0.4− |
| 1997 11 21 | 691 | 0.3− | 0.1− | 2001 10 21 | 704 | 0.9− | 0.8+ | 2005 08 06 | 644 | 0.2− | 0.3− |
| 1997 11 21 | 691 | 0.2− | 0.4+ | 2001 11 18 | 645 | 0.1− | 0.0 | 2005 08 06 | 644 | 0.1− | 0.0 |
| 1997 11 28 | 691 | 0.3− | 0.3+ | 2001 11 18 | 645 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.1− | 0.1− |
| 1997 11 28 | 691 | 1.0+ | 1.0− | 2004 03 23 | 291 | 0.2+ | 0.5+ | 2005 08 29 | 691 | 0.2− | 0.1− |
| 1997 11 28 | 691 | 0.2− | 0.0 | 2004 03 23 | 291 | 0.2− | 0.5+ | 2005 08 29 | 691 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | 0.2+ | 0.0 | 2004 03 23 | 291 | 0.3− | 0.2+ | 2005 08 29 | 691 | 0.3+ | 0.0 |
| 2001 09 18 | 699 | 0.1− | 0.4− | 2004 04 21 | 704 | 0.4− | 0.1− | 2005 09 12 | 691 | 0.1− | 0.0 |
| 2001 09 18 | 699 | 0.1− | 0.5− | 2004 04 21 | 704 | 0.1+ | 0.3− | 2005 09 12 | 691 | 0.1+ | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 1.2+ | 0.2+ | 2004 04 21 | 704 | 0.6+ | 0.8− | 2005 09 12 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2004 05 23 | 691 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 1.0+ | 2004 05 23 | 691 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.1+ | 0.6+ | 2005 07 08 | 691 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.5+ | 1.1+ | 2005 07 08 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.4+ |
| 2001 09 22 | 704 | (2.2+ | 0.5−) | 2005 07 08 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.3+ |
| 2001 09 22 | 704 | (1.7+ | 0.5−) | 2005 07 26 | 644 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2001 09 22 | 704 | (2.3+ | 0.5−) | 2005 07 26 | 644 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.4+ |
| 2001 09 24 | 704 | 0.2+ | 0.4− | 2005 07 26 | 644 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.3+ |
| 2001 09 24 | 704 | 0.9− | 1.4+ | 2005 07 30 | 644 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2001 09 24 | 704 | 0.1+ | 0.2− | 2005 07 30 | 644 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | 0.3− | 0.3− | 2005 07 30 | 644 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.4− | 0.0 |
| 2001 09 24 | 704 | 0.8+ | 0.6+ | 2005 08 06 | 644 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.8− | 0.8− |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.1− | 0.4− |

**(140062)∗ 2001 SU$_{103}$ = 2002 XU$_{99}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43029)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 153.16297 | | (2000.0) | | | |
| $n$ | 0.18260159 | $\omega$ | 201.58864 | | −0.99874234 | +0.04944801 |
| $a$ | 3.0770390 | $\Omega$ | 341.23998 | | −0.04140045 | −0.90656844 |
| $e$ | 0.0985837 | $i$ | 1.47607 | | −0.02827967 | −0.41915219 |
| $P$ | 5.40 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 691 | 0.2− | 0.2+ | 2004 02 11 | 644 | 0.3− | 0.3+ | 2004 03 22 | 608 | 0.6+ | 1.3− |
| 1999 04 11 | 691 | 0.1− | 0.5+ | 2004 02 18 | 704 | 0.6+ | 0.9+ | 2004 03 22 | 608 | 0.3+ | 0.2− |
| 1999 04 11 | 691 | 0.2+ | 0.3+ | 2004 02 18 | 704 | 0.3+ | 0.6+ | 2004 03 22 | 608 | 0.3+ | 0.8− |
| 2001 09 12 | 691 | 0.3+ | 0.4+ | 2004 02 18 | 704 | 0.4+ | 0.7+ | 2004 03 27 | 704 | 0.1+ | 0.4+ |
| 2001 09 12 | 691 | 0.1+ | 0.5+ | 2004 02 18 | 704 | (1.4+ | 1.7+) | 2004 03 27 | 704 | 0.3+ | 0.1− |
| 2001 09 12 | 691 | 0.2+ | 0.5+ | 2004 02 18 | 608 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.4− |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2004 02 18 | 608 | 0.4+ | 0.7− | 2004 03 27 | 704 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.0 | 2004 02 18 | 608 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2004 02 26 | 704 | 0.1− | 0.8+ | 2004 03 29 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2004 03 29 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.1+ | 2004 03 29 | 691 | 0.0 | 0.3− |
| 2001 09 22 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.1+ | 2005 01 26 | 809 | 0.5+ | 0.2+ |
| 2001 09 22 | 704 | 0.1+ | 1.0+ | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2005 01 26 | 809 | 0.1+ | 0.2+ |
| 2001 09 22 | 704 | 0.2+ | 0.3+ | 2004 03 11 | 644 | 0.2+ | 0.5+ | 2005 01 26 | 809 | 0.6+ | 0.5+ |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2004 03 11 | 644 | 0.1+ | 0.5+ | 2005 01 26 | 809 | 0.1+ | 0.6+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 11 | 644 | 0.4+ | 0.1+ | 2006 08 06 | A50 | 0.6− | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2004 03 15 | 703 | 0.3+ | 1.2+ | 2006 08 06 | A50 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.8− | 1.1+ | 2004 03 15 | 703 | (0.2+ | 2.3+) | 2006 08 19 | 691 | 0.6− | 0.9+ |
| 2002 12 05 | 704 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2006 08 19 | 691 | 0.5− | 0.4+ |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2006 08 19 | 691 | 0.4− | 0.5+ |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2004 03 15 | 703 | 0.5+ | 0.5+ | 2006 08 27 | 691 | 0.4− | 0.3+ |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2002 12 10 | 704 | 0.0 | 0.6− | 2004 03 15 | 703 | 0.9+ | 1.2+ | 2006 08 27 | 691 | 0.5− | 0.4+ |
| 2002 12 10 | 704 | 1.4− | 0.8+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.5+ |
| 2003 11 30 | 691 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.9+ | 2006 08 28 | 703 | 0.2+ | 0.4− |
| 2003 11 30 | 691 | 0.4− | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 703 | (0.3+ | 1.8+) |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 1.0+ | 1.1+ |
| 2004 02 11 | 644 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.2− | 0.4+ | | | | |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.7− | 1.3+ | | | | |

**(140063)∗ 2001 SB$_{105}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.45920 | | (2000.0) | | | |
| $n$ | 0.18371425 | $\omega$ | 76.95060 | | +0.88007724 | +0.46001610 |
| $a$ | 3.0646025 | $\Omega$ | 255.55664 | | −0.46898206 | +0.80333836 |
| $e$ | 0.1197870 | $i$ | 6.98004 | | −0.07429581 | +0.37819659 |
| $P$ | 5.36 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | 0.1+ | 1.3+ | 2001 09 29 | 644 | 0.0 | 0.4− | 2004 03 16 | 691 | 0.1+ | 0.6+ |
| 2001 08 28 | 699 | 0.9− | 0.2+ | 2001 09 29 | 644 | 0.1− | 0.4− | 2005 05 11 | 644 | 0.4+ | 0.4+ |
| 2001 08 28 | 699 | 0.9− | 0.7+ | 2001 09 29 | 644 | 0.0 | 0.3− | 2005 05 11 | 644 | 0.3+ | 0.7+ |
| 2001 08 28 | 699 | 1.5− | 1.5− | 2001 10 13 | 699 | 0.9+ | 0.4− | 2005 05 11 | 644 | 0.3+ | 0.4+ |
| 2001 09 10 | 704 | 1.4− | 0.6− | 2001 10 13 | 699 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.1+ |
| 2001 09 10 | 704 | 0.1+ | 0.1+ | 2001 10 13 | 699 | 0.6+ | 0.1− | 2006 08 22 | 644 | 0.2− | 0.1+ |
| 2001 09 10 | 704 | 0.2− | 0.9+ | 2001 10 13 | 699 | 0.9+ | 0.3− | 2006 08 22 | 644 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.8+ | 2001 10 15 | 608 | 0.3− | 0.9− | 2006 08 27 | 699 | 0.3− | 0.3+ |
| 2001 09 20 | 704 | 1.7+ | 0.1+ | 2001 10 15 | 608 | 0.5− | 0.9− | 2006 08 27 | 699 | 0.5+ | 0.3+ |
| 2001 09 20 | 704 | 1.7+ | 0.5+ | 2001 10 15 | 608 | 0.5− | 0.7− | 2006 08 27 | 699 | 0.4+ | 0.3− |
| 2001 09 20 | 704 | 1.6+ | 0.1+ | 2001 10 20 | 644 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.6+ | 0.6− |
| 2001 09 20 | 704 | 1.4+ | 0.4+ | 2001 10 20 | 644 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.5− |
| 2001 09 22 | 704 | 0.1− | 0.2+ | 2001 10 20 | 644 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.7− |
| 2001 09 22 | 704 | 1.5+ | 0.4+ | 2001 10 21 | 704 | 1.1+ | 0.7− | 2006 08 29 | 703 | 1.0− | 0.8− |
| 2001 09 22 | 704 | 0.8− | 0.5+ | 2001 10 21 | 704 | 0.5− | 0.0 | 2006 08 30 | 699 | 0.2− | 0.0 |
| 2001 09 22 | 704 | 0.1+ | 0.3− | 2001 10 21 | 704 | 0.5− | 0.1− | 2006 08 30 | 699 | 0.0 | 0.8+ |
| 2001 09 23 | 704 | 0.5− | 0.5+ | 2001 10 21 | 704 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.7− | 0.8+ |
| 2001 09 23 | 704 | 0.4− | 0.9+ | 2001 10 21 | 704 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.8+ | 1.1+ |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2001 11 17 | 704 | 0.1− | 1.0+ | 2006 09 11 | 703 | 0.3+ | 0.1+ |
| 2001 09 23 | 704 | 0.3− | 0.6+ | 2001 11 17 | 704 | 1.0− | 0.5+ | 2006 09 11 | 703 | 0.2− | 0.5+ |
| 2001 09 24 | 644 | 0.3− | 0.2+ | 2001 11 17 | 704 | (0.5+ | 2.9+) | 2006 09 11 | 703 | 0.3+ | 1.6+ |
| 2001 09 24 | 644 | 0.3− | 0.1+ | 2001 11 17 | 704 | 0.6− | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2001 09 24 | 644 | 0.1− | 0.2+ | 2001 12 11 | 704 | 0.6− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.5+ | 1.5+ | 2001 12 11 | 704 | 1.1− | 0.3− | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.6− | 2001 12 11 | 704 | 0.1+ | 0.7− | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2004 02 17 | 703 | (2.5+ | 0.4−) | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.3+ | 0.6− | 2004 02 17 | 703 | 1.8+ | 0.8+ | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.5+ | 1.1− | 2004 02 17 | 703 | 1.0− | 1.8+ | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2001 09 28 | 644 | 0.4− | 0.4+ | 2004 02 17 | 703 | 1.6+ | 1.7+ | 2006 09 19 | 703 | 1.3− | 0.6+ |
| 2001 09 28 | 644 | 0.3− | 0.4+ | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.2+ | 0.0 |
| 2001 09 28 | 644 | 0.3− | 0.0 | 2004 03 16 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 1.0− | 0.2+ |

**(140064)∗ 2001 SG$_{105}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.03672 | | (2000.0) | | | |
| $n$ | 0.20030731 | $\omega$ | 327.16456 | | +0.83989142 | +0.54275444 |
| $a$ | 2.8929317 | $\Omega$ | 359.96335 | | −0.44468259 | +0.68799363 |
| $e$ | 0.0921972 | $i$ | 11.55658 | | −0.31119093 | +0.48174929 |
| $P$ | 4.92 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.4− | 0.5− | 2001 10 21 | 704 | 0.7− | 0.1+ | 2004 04 23 | 291 | 0.8+ | 0.2+ |
| 1999 03 10 | 691 | 0.3− | 0.5− | 2001 10 21 | 704 | 0.5− | 0.7− | 2006 09 20 | 699 | 0.1− | 0.1+ |
| 1999 03 10 | 691 | 0.3− | 0.4− | 2001 10 21 | 704 | 0.7+ | 0.7− | 2006 09 20 | 699 | 0.4+ | 0.8+ |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2001 11 17 | 704 | 0.8− | 0.4+ | 2006 09 20 | 699 | 1.5− | 0.4+ |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2001 11 17 | 704 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.4− | 0.3+ |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 11 17 | 704 | 0.2+ | 0.3− | 2006 09 26 | 691 | 0.4− | 0.4+ |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 11 17 | 704 | 0.1+ | 0.4− | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1999 03 25 | 691 | 0.2+ | 0.8− | 2001 11 17 | 704 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 1999 03 25 | 691 | 0.2+ | 0.8− | 2001 11 20 | 699 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.7+ | 0.2+ |
| 1999 03 25 | 691 | 0.5+ | 0.4− | 2001 11 20 | 699 | 0.6+ | 0.7+ | 2006 09 30 | 691 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2001 11 20 | 699 | 1.2+ | 0.7− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.5− | 2001 11 20 | 699 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.5− | 0.4− | 2004 03 15 | 703 | (3.1+ | 3.1+) | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2001 09 22 | 704 | 0.1− | 0.6+ | 2004 03 15 | 703 | 0.3+ | 0.5− | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 1.1+ | 0.4+ | 2004 03 15 | 703 | 1.2− | 1.2+ | 2006 10 20 | 644 | 0.4− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 704 | 1.1+ | 0.9− | 2004 03 15 | 703 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2001 10 07 | 644 | 0.2− | 1.0− | 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 10 07 | 644 | 0.3− | 0.5− | 2004 03 18 | 704 | (1.8+ | 0.1+) | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 10 07 | 644 | 0.7− | 0.5− | 2004 03 18 | 704 | 1.2+ | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2001 10 14 | 704 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 0.9+ | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 10 14 | 704 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 10 25 | 106 | 0.4− | 0.1− |
| 2001 10 14 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 704 | 0.4− | 0.3+ | 2006 10 25 | 106 | 0.3+ | 0.1− |
| 2001 10 14 | 704 | 0.2− | 0.9+ | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 10 25 | 106 | 0.5+ | 0.3− |
| 2001 10 14 | 704 | 0.5+ | 1.4+ | 2004 03 27 | 704 | 1.1+ | 0.3+ | 2006 10 25 | 106 | 0.1+ | 0.1+ |
| 2001 10 15 | 704 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.4− | 0.7− |
| 2001 10 15 | 704 | (0.2− | 1.5+) | 2004 03 27 | 704 | 0.6+ | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.2+ |
| 2001 10 15 | 704 | 0.0 | 0.8+ | 2004 04 12 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 1.1− | 1.4− |
| 2001 10 15 | 704 | 1.0− | 1.2+ | 2004 04 12 | 691 | 0.3+ | 0.0 | 2006 10 27 | 703 | (1.7− | 0.7−) |
| 2001 10 17 | 704 | 0.3− | 0.4+ | 2004 04 12 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.5+ |
| 2001 10 17 | 704 | 0.4− | 0.6+ | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 1.0+ | 0.1− |
| 2001 10 17 | 704 | 0.2− | 0.8− | 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.8+ | 0.4+ |
| 2001 10 20 | 644 | 0.6+ | 0.3− | 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.5+ | 1.1+ |
| 2001 10 20 | 644 | 0.2− | 0.1− | 2004 04 23 | 291 | 0.0 | 0.4+ | | | | |
| 2001 10 20 | 644 | 0.2+ | 0.1+ | 2004 04 23 | 291 | 1.1+ | 0.7+ | | | | |

**(140065)∗ 2001 SZ$_{105}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.95665 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18419188 | $\omega$ | 136.95948 | | +0.36212517 | −0.93053262 | |
| $a$ | 3.0593023 | $\Omega$ | 291.74251 | | +0.83848081 | +0.35074530 | |
| $e$ | 0.1895334 | $i$ | 3.36607 | | +0.40720425 | +0.10529379 | |
| $P$ | 5.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 14 | 691 | 0.1− | 0.1− | 2001 10 17 | 704 | 0.3− | 0.2+ | 2003 01 30 | 699 | 0.3− | 0.6+ |
| 1991 12 14 | 691 | 0.1− | 0.3+ | 2001 10 17 | 704 | 0.1− | 0.8+ | 2003 02 08 | 704 | 0.1+ | 1.2− |
| 1991 12 14 | 691 | 0.2+ | 0.1− | 2001 10 19 | 644 | 0.1+ | 0.2+ | 2003 02 08 | 704 | 1.1+ | 0.1− |
| 2001 09 10 | 704 | 0.3+ | 0.7− | 2001 10 19 | 644 | 0.0 | 0.2+ | 2003 02 08 | 704 | 0.0 | 0.6+ |
| 2001 09 10 | 704 | 0.9+ | 1.1+ | 2001 10 19 | 644 | 0.1+ | 0.2+ | 2003 02 08 | 704 | 0.4+ | 0.9+ |
| 2001 09 10 | 704 | 0.7+ | 0.1+ | 2001 10 21 | 704 | 0.8− | 0.0 | 2003 02 09 | 644 | 0.5+ | 0.1− |
| 2001 09 10 | 704 | 0.7− | 0.1− | 2001 10 21 | 704 | 0.1− | 0.5+ | 2003 02 09 | 644 | 0.5+ | 0.2+ |
| 2001 09 20 | 704 | (1.8− | 0.1+) | 2001 10 21 | 704 | 0.8− | 0.1+ | 2003 02 09 | 644 | 0.3+ | 0.2+ |
| 2001 09 20 | 704 | (1.8− | 0.5+) | 2001 10 21 | 704 | 0.0 | 0.6− | 2003 02 11 | 608 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.9− | 0.2− | 2001 10 25 | 704 | (1.5− | 1.5−) | 2003 02 11 | 608 | 0.2+ | 0.6+ |
| 2001 09 20 | 704 | (1.7− | 0.2+) | 2001 10 25 | 704 | 0.0 | 1.4− | 2003 02 11 | 608 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.3− | 2001 10 25 | 704 | 0.5+ | 1.5− | 2003 02 19 | 608 | 0.5+ | 0.2− |
| 2001 09 20 | 704 | (1.8− | 0.8+) | 2001 10 25 | 704 | 0.2− | 1.2− | 2003 02 19 | 608 | 0.3+ | 0.3− |
| 2001 09 20 | 704 | 0.6− | 0.9+ | 2001 11 10 | 704 | 0.4+ | 0.3+ | 2003 02 19 | 608 | 0.3+ | 0.4+ |
| 2001 09 22 | 704 | 0.7+ | 0.5+ | 2001 11 10 | 704 | 0.3+ | 0.9− | 2003 02 22 | 644 | 0.3+ | 0.2− |
| 2001 09 22 | 704 | 0.5+ | 0.3+ | 2001 11 10 | 704 | 0.2− | 0.5− | 2003 02 22 | 644 | 0.3+ | 0.4− |
| 2001 09 22 | 704 | 0.1− | 0.8− | 2001 11 10 | 704 | 0.1+ | 0.9− | 2003 02 22 | 644 | 0.5+ | 0.1− |
| 2001 09 23 | 704 | 0.3+ | 0.5− | 2001 11 18 | 704 | 0.6− | 0.1+ | 2003 02 24 | 608 | 0.4+ | 1.1− |
| 2001 09 23 | 704 | 0.8+ | 0.4− | 2001 11 18 | 704 | 0.1− | 0.3− | 2003 02 24 | 608 | 1.0+ | 0.7− |
| 2001 09 23 | 704 | 0.1+ | 0.5+ | 2001 11 18 | 704 | 0.3− | 0.4− | 2003 02 24 | 608 | 0.4+ | 0.8− |
| 2001 09 23 | 704 | 0.3+ | 0.1+ | 2001 11 18 | 704 | 0.6− | 0.8+ | 2006 08 19 | A50 | 0.1− | 0.0 |
| 2001 09 28 | 644 | 0.5+ | 0.0 | 2001 11 19 | 704 | 0.5+ | 0.7+ | 2006 08 19 | A50 | 0.1− | 0.1+ |
| 2001 09 28 | 644 | 0.3+ | 0.1− | 2001 11 19 | 704 | 0.8+ | 0.1+ | 2006 08 29 | 703 | (3.5+ | 1.3−) |
| 2001 09 28 | 644 | 0.2+ | 0.2− | 2001 11 19 | 704 | 0.1− | 1.4+ | 2006 08 29 | 703 | 0.0 | 0.5+ |
| 2001 10 07 | 644 | 0.3− | 0.3+ | 2001 11 19 | 704 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.0 |
| 2001 10 07 | 644 | 0.4− | 0.6+ | 2001 11 20 | 699 | 0.1+ | 0.6+ | 2006 08 29 | 703 | 0.1+ | 0.2− |
| 2001 10 07 | 644 | 0.0 | 0.3+ | 2001 11 20 | 699 | 0.0 | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.0 |
| 2001 10 12 | 699 | 0.7+ | 0.2+ | 2001 11 20 | 699 | 0.5+ | 1.0− | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 2001 10 12 | 699 | 0.5− | 0.2+ | 2001 11 20 | 699 | 1.5− | 1.3− | 2006 08 29 | 691 | 0.3− | 0.0 |
| 2001 10 12 | 699 | 1.0+ | 0.3+ | 2002 12 14 | 645 | 0.2− | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2001 10 12 | 699 | 0.0 | 0.2− | 2002 12 14 | 645 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2003 01 05 | 291 | 0.3− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.1− | 0.0 | 2003 01 05 | 291 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.3+ |
| 2001 10 14 | 704 | 0.1+ | 0.4− | 2003 01 05 | 291 | 0.0 | 0.2+ | 2006 09 16 | 644 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.2− | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | 0.2+ | 0.0 | 2003 01 28 | 645 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2003 01 30 | 699 | 0.8− | 0.6− | 2006 09 17 | 703 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.1+ | 0.6+ | 2003 01 30 | 699 | 0.0 | 1.0+ | 2006 09 17 | 703 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 0.3− | 0.5+ | 2003 01 30 | 699 | 0.6+ | 0.8+ | 2006 09 17 | 703 | (2.3− | 0.9+) |

**(140066)∗ 2001 SR$_{108}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.11970 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17601323 | $\omega$ | 128.52843 | | +0.06778644 | −0.99500565 | |
| $a$ | 3.1533523 | $\Omega$ | 317.40598 | | +0.87837848 | +0.09434573 | |
| $e$ | 0.2853352 | $i$ | 6.21515 | | +0.47313448 | −0.03259827 | |
| $P$ | 5.60 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.4+ | 0.1− | 2001 12 22 | 704 | 0.7− | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.1− |
| 2000 08 26 | 704 | 0.2− | 0.7+ | 2001 12 22 | 704 | 0.7− | 0.0 | 2006 08 29 | 703 | 0.6− | 0.1− |
| 2000 08 26 | 704 | 0.1+ | 0.8+ | 2002 01 05 | 628 | (1.6+ | 1.4+) | 2006 08 29 | 703 | 0.2− | 0.4− |
| 2001 07 27 | 699 | 0.7− | 0.6− | 2002 01 05 | 628 | 1.2+ | 1.1+ | 2006 08 30 | 704 | 0.2+ | 0.4+ |
| 2001 07 27 | 699 | 0.7− | 0.2+ | 2002 01 05 | 628 | 1.0+ | 1.1+ | 2006 08 30 | 704 | 0.3− | 0.7+ |
| 2001 07 27 | 699 | 0.5− | 0.3+ | 2002 01 05 | 628 | (1.5+ | 1.8+) | 2006 08 30 | 704 | 0.5+ | 0.3− |
| 2001 07 27 | 699 | 0.2− | 0.4+ | 2002 01 08 | 704 | 1.3+ | 0.3+ | 2006 08 30 | 704 | 0.4− | 1.0+ |
| 2001 08 22 | 704 | 0.9− | 0.3+ | 2002 01 08 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.3− | 0.7+ |
| 2001 08 22 | 704 | 0.6− | 0.2+ | 2002 01 08 | 704 | 0.4+ | 0.6− | 2006 09 01 | 704 | 0.2− | 1.2− |
| 2001 08 22 | 704 | 0.2+ | 0.4+ | 2002 01 08 | 704 | 0.5+ | 0.6− | 2006 09 01 | 704 | 0.9− | 0.2+ |
| 2001 08 22 | 704 | 0.2− | 0.7+ | 2002 01 08 | 704 | 1.2+ | 1.2− | 2006 09 01 | 704 | 0.1+ | 0.7− |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2002 01 15 | 704 | 0.3+ | 0.6+ | 2006 09 01 | 704 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.2− | 2002 01 15 | 704 | 0.2+ | 0.3− | 2006 09 12 | 703 | 0.5− | 0.8+ |
| 2001 09 20 | 704 | 0.3+ | 0.3+ | 2002 01 15 | 704 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.5+ | 0.4− | 2002 01 15 | 704 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.7− | 0.3+ |
| 2001 09 22 | 704 | 0.5− | 0.3− | 2002 01 15 | 704 | 0.4+ | 1.2− | 2006 09 12 | 703 | 0.6− | 0.4− |
| 2001 09 22 | 704 | 0.5− | 0.3+ | 2002 01 19 | 704 | 0.4− | 0.9+ | 2006 09 16 | 699 | 0.9+ | 0.6+ |
| 2001 09 22 | 704 | 0.8+ | 0.2+ | 2002 01 19 | 704 | 0.2− | 0.4+ | 2006 09 16 | 699 | 0.4+ | 0.3− |
| 2001 09 22 | 704 | 0.5+ | 0.2− | 2002 01 19 | 704 | 0.4− | 0.2− | 2006 09 16 | 699 | 0.2− | 0.1− |
| 2001 09 22 | 704 | 0.6+ | 0.1− | 2002 01 19 | 704 | 0.2− | 1.2+ | 2006 09 16 | 699 | 0.4− | 0.0 |
| 2001 09 24 | 704 | 0.0 | 0.8− | 2002 01 19 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.4+ | 0.1− |
| 2001 09 24 | 704 | 0.2+ | 0.6− | 2002 02 06 | 704 | 0.3− | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.1+ |
| 2001 09 24 | 704 | 0.3− | 0.7− | 2002 02 06 | 704 | 0.9− | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.3+ |
| 2001 09 24 | 704 | 0.1+ | 0.4− | 2002 02 06 | 704 | 0.5− | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.5− |
| 2001 10 14 | 704 | 0.2− | 0.4− | 2002 02 06 | 704 | 0.6− | 0.1+ | 2006 09 18 | 704 | 0.4− | 0.4+ |
| 2001 10 14 | 704 | 0.1+ | 0.4− | 2002 02 06 | 704 | 0.4− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.5+ |
| 2001 10 14 | 704 | 0.0 | 0.1− | 2002 02 07 | 704 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 2001 10 14 | 704 | 0.4+ | 0.2− | 2002 02 07 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.4+ | 0.4+ | 2002 02 07 | 704 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.2+ |
| 2001 10 15 | 704 | (0.3− | 2.2−) | 2002 02 07 | 704 | 0.5− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.1− |
| 2001 10 15 | 704 | (0.1+ | 2.2−) | 2002 02 07 | 704 | 0.8+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | (0.0 | 2.4−) | 2002 02 20 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.0 |
| 2001 10 15 | 704 | (0.2− | 2.8−) | 2002 02 20 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.9+ |
| 2001 10 21 | 704 | 0.5+ | 0.7− | 2002 02 20 | 704 | 0.1+ | 0.5− | 2006 09 20 | 691 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.6− | 0.6− | 2002 02 20 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 691 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2002 02 20 | 704 | 0.3+ | 0.6− | 2006 09 20 | 691 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.5− | 0.5+ | 2003 03 29 | 699 | 0.2+ | 1.1+ | 2006 09 23 | 106 | 0.1+ | 0.5− |
| 2001 11 10 | 704 | 0.3− | 0.1+ | 2003 03 29 | 699 | 0.4+ | 0.5+ | 2006 09 23 | 106 | 0.3+ | 0.1− |
| 2001 11 10 | 704 | 0.2− | 0.2+ | 2003 03 29 | 699 | 0.3+ | 0.5+ | 2006 09 23 | 106 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.4− | 0.1+ | 2003 03 29 | 699 | 0.1+ | 0.7+ | 2006 09 23 | 106 | 0.5+ | 0.1− |
| 2001 11 10 | 704 | 0.2+ | 0.3+ | 2003 03 31 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 704 | 0.6− | 0.1+ |
| 2001 11 11 | 704 | 0.6− | 0.1+ | 2003 03 31 | 704 | 0.0 | 1.3+ | 2006 09 25 | 704 | 0.3− | 0.3− |
| 2001 11 11 | 704 | 0.5− | 0.3+ | 2003 03 31 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 699 | 0.4− | 0.4+ |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2003 04 07 | 704 | 1.2+ | 0.8+ | 2006 09 25 | 704 | 0.3− | 0.2+ |
| 2001 11 11 | 704 | 0.5− | 0.2+ | 2003 04 07 | 704 | 0.5+ | 0.9+ | 2006 09 25 | 699 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.6− | 0.2+ | 2003 04 07 | 704 | 0.8+ | 0.8+ | 2006 09 25 | 704 | 0.3− | 0.6+ |
| 2001 11 21 | 704 | 0.1+ | 0.0 | 2003 04 07 | 704 | 1.2+ | 0.6+ | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2003 04 07 | 704 | 0.9+ | 0.1− | 2006 09 26 | 704 | 0.2− | 0.5+ |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2003 04 26 | 608 | 0.2+ | 1.0+ | 2006 09 26 | 704 | 0.4− | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.0 | 2003 04 26 | 608 | 0.0 | 1.1+ | 2006 09 26 | 704 | 0.5− | 0.5+ |
| 2001 11 21 | 704 | 0.0 | 0.2− | 2003 04 26 | 608 | (0.0 | 1.6+) | 2006 09 26 | 704 | 0.2− | 0.2+ |
| 2001 11 24 | 704 | 0.4− | 0.6+ | 2003 04 28 | 704 | (0.6+ | 2.1+) | 2006 09 27 | 704 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 704 | 1.0− | 1.1+ | 2003 04 28 | 704 | (0.6+ | 2.1+) | 2006 09 27 | 704 | 0.3− | 0.1− |
| 2001 11 24 | 704 | (0.4− | 1.6+) | 2003 04 28 | 704 | (0.9− | 2.6+) | 2006 09 27 | 704 | 0.3− | 0.2+ |
| 2001 11 24 | 704 | 0.5− | 0.5+ | 2003 05 01 | 704 | 0.6− | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.1− |
| 2001 11 24 | 704 | (0.3+ | 2.3+) | 2003 05 01 | 704 | 0.4− | 1.4+ | 2006 09 29 | 704 | 0.2+ | 0.5− |
| 2001 12 09 | 704 | 0.5+ | 0.5+ | 2003 05 01 | 704 | 0.5+ | 0.8+ | 2006 09 29 | 704 | 0.6− | 1.1− |
| 2001 12 09 | 704 | 0.3+ | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.7+ | 0.5− |
| 2001 12 09 | 704 | 0.5+ | 0.5− | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.1− |
| 2001 12 09 | 704 | 0.1+ | 0.4+ | 2006 08 23 | 644 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.5+ | 0.8+ |
| 2001 12 09 | 704 | 0.1+ | 0.5+ | 2006 08 24 | 704 | 1.3+ | 0.1+ | 2006 10 01 | 704 | 0.7− | 1.1+ |
| 2001 12 13 | 939 | 0.6− | 0.4− | 2006 08 24 | 704 | 0.4+ | 0.3− | 2006 10 01 | 704 | (1.6+ | 0.2+) |
| 2001 12 13 | 939 | 0.0 | 0.6− | 2006 08 24 | 704 | 0.7+ | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2001 12 13 | 939 | 0.2+ | 0.4− | 2006 08 24 | 704 | 0.2− | 0.7+ | 2006 10 01 | 704 | 0.3+ | 1.3+ |
| 2001 12 17 | 704 | 0.5+ | 0.2+ | 2006 08 26 | 704 | 0.2− | 1.0+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 0.6+ | 0.1− | 2006 08 26 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.6+ | 0.3− | 2006 08 26 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.7− |
| 2001 12 17 | 704 | 0.4+ | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.6− |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 08 27 | 699 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2001 12 22 | 704 | 0.3− | 0.3+ | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 12 22 | 704 | 0.4− | 0.4+ | 2006 08 27 | 699 | 0.1+ | 1.3+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2001 12 22 | 704 | 0.5− | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.4+ | | | | |

**(140067)∗ 2001 SA$_{111}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.44479 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17480670 | $\omega$ | 212.78172 | | −0.33563023 | −0.91418960 |
| $a$ | 3.1678456 | $\Omega$ | 257.71344 | | +0.90658490 | −0.24797937 |
| $e$ | 0.2553285 | $i$ | 13.44448 | | +0.25584402 | −0.32056762 |
| $P$ | 5.64 | $H$ | 14.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.0 | 0.4+ | 2001 12 18 | 704 | (1.1− | 1.5−) | 2003 03 12 | 704 | 0.4− | 0.1+ |
| 2000 09 24 | 704 | 0.5− | 0.0 | 2001 12 18 | 704 | 1.2− | 0.4− | 2003 03 12 | 704 | 0.2+ | 0.4+ |
| 2000 09 24 | 704 | 0.7− | 0.1+ | 2001 12 18 | 704 | 0.4− | 0.6+ | 2003 03 12 | 704 | 0.7− | 0.0 |
| 2000 09 24 | 704 | 0.5+ | 0.9+ | 2001 12 18 | 704 | 0.1− | 0.5+ | 2003 03 12 | 704 | 0.1− | 1.3− |
| 2001 09 18 | 644 | 0.3+ | 0.0 | 2001 12 18 | 704 | 0.1− | 0.8+ | 2003 03 30 | 699 | 0.1− | 1.5+ |
| 2001 09 18 | 644 | 0.3+ | 0.1+ | 2001 12 18 | 704 | 0.5− | 0.7+ | 2003 03 30 | 699 | 0.0 | 0.6+ |
| 2001 09 18 | 644 | 0.3+ | 0.0 | 2001 12 18 | 704 | 0.1+ | 0.7+ | 2003 03 30 | 699 | 0.3+ | 1.0+ |
| 2001 09 20 | 704 | 0.6− | 0.9− | 2001 12 19 | 704 | 0.2− | 0.6+ | 2003 03 30 | 699 | 0.5− | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.3− | 2001 12 19 | 704 | 0.1− | 0.6+ | 2003 04 29 | 608 | 0.5− | 1.0− |
| 2001 09 20 | 704 | 0.6+ | 0.3− | 2001 12 19 | 704 | 0.2− | 0.7+ | 2003 04 29 | 608 | 0.2− | 1.1− |
| 2001 09 22 | 704 | 0.7− | 0.5− | 2001 12 19 | 704 | 0.1+ | 0.8+ | 2003 04 29 | 608 | 0.1− | 0.7− |
| 2001 09 22 | 704 | 0.8− | 0.3− | 2001 12 19 | 704 | 0.1− | 0.7+ | 2003 04 30 | 704 | 0.4− | 0.2+ |
| 2001 09 22 | 704 | 0.1− | 0.5+ | 2001 12 20 | 704 | 1.0+ | 0.1+ | 2003 04 30 | 704 | 0.3− | 0.7+ |
| 2001 09 22 | 704 | 0.4+ | 0.2− | 2001 12 20 | 704 | 0.1+ | 0.1+ | 2003 04 30 | 704 | 0.1− | 0.9+ |
| 2001 09 22 | 704 | 0.3+ | 0.6− | 2001 12 20 | 704 | 0.1+ | 0.2+ | 2003 04 30 | 704 | 0.9− | 0.6+ |
| 2001 10 21 | 704 | 0.5+ | 0.2+ | 2001 12 20 | 704 | 0.2+ | 0.7+ | 2003 04 30 | 704 | 0.6+ | 0.5+ |
| 2001 10 21 | 704 | 0.9+ | 0.6− | 2001 12 21 | 704 | 0.2+ | 0.5− | 2003 05 04 | 608 | 1.4+ | 0.5+ |
| 2001 10 21 | 704 | 0.2− | 0.8+ | 2001 12 21 | 704 | 0.3+ | 0.1− | 2003 05 04 | 608 | 0.9+ | 0.3− |
| 2001 10 21 | 704 | (1.7+ | 0.2+) | 2001 12 21 | 704 | 0.7+ | 0.2− | 2003 05 04 | 608 | 0.5+ | 0.2+ |
| 2001 10 21 | 704 | 0.3+ | 0.4+ | 2002 01 02 | 608 | 0.3− | 0.8+ | 2003 05 05 | 608 | 0.2+ | 0.3− |
| 2001 11 10 | 704 | 0.5− | 0.3+ | 2002 01 02 | 608 | (0.1− | 1.8−) | 2003 05 05 | 608 | 0.2+ | 0.4− |
| 2001 11 10 | 704 | 0.2− | 0.7+ | 2002 01 02 | 608 | (0.5− | 2.9−) | 2003 05 05 | 608 | 0.1− | 0.4− |
| 2001 11 10 | 704 | 0.2+ | 0.1+ | 2002 01 05 | 699 | 0.4+ | 0.1− | 2003 05 19 | 699 | 0.3− | 0.3− |
| 2001 11 11 | 704 | 0.4− | 0.2+ | 2002 01 05 | 699 | 0.1− | 0.1+ | 2003 05 19 | 699 | (1.7+ | 1.0−) |
| 2001 11 11 | 704 | 0.8− | 0.5+ | 2002 01 05 | 699 | 0.1+ | 0.5− | 2003 05 19 | 699 | 0.4+ | 0.4+ |
| 2001 11 11 | 704 | 0.8− | 0.0 | 2002 01 05 | 699 | 0.4− | 0.4+ | 2003 05 19 | 699 | 0.7+ | 0.7+ |
| 2001 11 11 | 704 | 1.1− | 1.5+ | 2002 01 09 | 704 | 0.8− | 0.4− | 2005 06 27 | 644 | 0.4− | 0.7+ |
| 2001 11 11 | 704 | 1.3− | 0.1+ | 2002 01 09 | 704 | 0.4− | 0.7− | 2005 06 27 | 644 | 0.2+ | 0.8+ |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2002 01 09 | 704 | 0.4− | 0.3− | 2005 06 27 | 644 | 0.0 | 0.6+ |
| 2001 11 12 | 704 | 0.4− | 0.3+ | 2002 01 09 | 704 | 0.1− | 0.2− | 2005 06 27 | 644 | 0.3− | 0.7+ |
| 2001 11 12 | 704 | 0.3− | 0.5+ | 2002 01 09 | 704 | 0.4− | 0.9− | 2005 06 27 | 644 | 0.0 | 0.7+ |
| 2001 11 12 | 704 | 0.2− | 0.5+ | 2002 01 14 | 704 | 0.3− | 0.8+ | 2005 06 27 | 644 | 0.5− | 0.4+ |
| 2001 11 12 | 704 | 0.0 | 0.7+ | 2002 01 14 | 704 | 0.1+ | 0.8− | 2006 09 06 | 644 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | (2.0− | 1.1−) | 2002 01 14 | 704 | 0.1+ | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.1− |
| 2001 11 21 | 704 | (1.7− | 0.9−) | 2002 01 14 | 704 | 0.1− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | (1.9− | 0.5−) | 2002 01 14 | 704 | 0.2− | 0.5− | 2006 09 16 | 703 | 0.6+ | 0.1− |
| 2001 11 21 | 704 | (1.9− | 0.2−) | 2002 01 14 | 291 | 0.5+ | 0.2− | 2006 09 16 | 703 | 0.9+ | 0.8+ |
| 2001 11 21 | 704 | 0.1+ | 1.5− | 2002 01 14 | 291 | 0.5+ | 0.1− | 2006 09 16 | 703 | 0.2+ | 0.0 |
| 2001 11 24 | 704 | 0.6− | 0.5− | 2002 01 14 | 291 | 0.7+ | 0.1− | 2006 09 16 | 703 | 0.2− | 0.6+ |
| 2001 11 24 | 704 | 0.5− | 0.4− | 2002 01 15 | 704 | (2.8− | 4.4+) | 2006 09 21 | 699 | 0.3− | 0.6− |
| 2001 11 24 | 704 | 0.3− | 0.6− | 2002 01 15 | 691 | 0.2+ | 0.2− | 2006 09 21 | 699 | 0.5− | 0.3+ |
| 2001 11 24 | 704 | 0.4− | 0.7+ | 2002 01 15 | 704 | (2.7− | 3.6+) | 2006 09 21 | 699 | 0.2− | 0.8− |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2002 01 15 | 704 | (2.5− | 3.4+) | 2006 09 21 | 699 | 0.2− | 0.2− |
| 2001 12 07 | 644 | 0.3− | 0.5− | 2002 01 15 | 691 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.4− | 0.3− |
| 2001 12 07 | 644 | 0.2− | 0.5− | 2002 01 15 | 704 | (2.8− | 3.6+) | 2006 09 28 | 703 | 0.3− | 0.6− |
| 2001 12 07 | 644 | 0.0 | 0.5− | 2002 01 15 | 691 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.1− | 0.4− |
| 2001 12 07 | 628 | 1.2+ | 0.9+ | 2002 01 15 | 704 | (2.3− | 3.2+) | 2006 09 28 | 703 | 0.4− | 0.3− |
| 2001 12 07 | 628 | 1.3+ | 1.3+ | 2002 01 18 | 704 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.2− | 1.3+ |
| 2001 12 07 | 628 | 1.5+ | 1.4+ | 2002 01 18 | 704 | 0.7− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.4− |
| 2001 12 07 | 628 | 1.2+ | 1.4+ | 2002 01 18 | 704 | 0.6− | 0.8+ | 2006 09 29 | 704 | 0.8+ | 0.0 |
| 2001 12 10 | 704 | (1.6+ | 1.0−) | 2002 01 19 | 704 | 0.1− | 0.6+ | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 2001 12 10 | 704 | (1.6+ | 1.4−) | 2002 01 19 | 704 | 1.4+ | 0.8+ | 2006 10 16 | 106 | 0.2+ | 0.3− |
| 2001 12 10 | 704 | 1.5+ | 1.4− | 2002 01 19 | 704 | 0.5+ | 0.1− | 2006 10 16 | 106 | 0.6+ | 0.0 |
| 2001 12 10 | 704 | (2.0+ | 1.4−) | 2002 01 19 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 106 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | (1.7+ | 1.7−) | 2002 01 19 | 704 | 0.6+ | 0.7− | 2006 10 16 | 106 | 0.3+ | 0.1− |
| 2001 12 15 | 704 | 0.1− | 0.3− | 2002 01 21 | 704 | 0.1− | 1.0+ | 2006 10 20 | 703 | 0.1− | 0.3+ |
| 2001 12 15 | 704 | 0.4− | 0.2− | 2002 01 21 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 703 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 0.5− | 0.0 | 2002 01 21 | 704 | 0.1− | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.0 |
| 2001 12 15 | 704 | 0.6− | 0.1− | 2002 01 21 | 704 | 0.5+ | 0.3− | 2006 10 20 | 703 | 0.2+ | 0.5− |
| 2001 12 15 | 704 | (0.7+ | 2.2+) | 2002 02 07 | 704 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 0.9− | 0.7− |
| 2001 12 18 | 704 | 1.3− | 1.0− | 2002 02 07 | 704 | 0.1− | 0.4+ | 2006 10 31 | 703 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 1.4− | 1.2− | 2002 02 07 | 704 | 0.3− | 0.8+ | 2006 10 31 | 703 | (0.5− | 1.7−) |
| 2001 12 18 | 704 | 0.9− | 1.4− | 2002 02 07 | 704 | 1.0− | 1.0+ | 2006 10 31 | 703 | 0.5+ | 0.7− |

**(140068)∗ 2001 SK$_{111}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.80595 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17214026 | $\omega$ | 71.64163 | | −0.35953472 | −0.88290105 |
| $a$ | 3.2004748 | $\Omega$ | 43.55386 | | +0.60085082 | −0.46668657 |
| $e$ | 0.2256740 | $i$ | 25.99758 | | +0.71394193 | −0.05185936 |
| $P$ | 5.73 | $H$ | 13.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.4+ | 0.9+ | 2002 02 21 | 704 | 0.1+ | 0.4− | 2003 04 28 | 699 | 0.1+ | 0.4− |
| 2000 09 23 | 704 | 0.1+ | 0.2+ | 2002 02 21 | 704 | 0.2− | 0.5+ | 2003 04 29 | 608 | 0.1+ | 0.6− |
| 2000 09 23 | 704 | 1.1− | 0.1− | 2002 02 21 | 704 | 0.2+ | 0.4− | 2003 04 29 | 608 | 0.2+ | 0.4− |
| 2000 09 23 | 704 | 1.3− | 1.3− | 2002 02 21 | 704 | 0.4+ | 0.5− | 2003 04 29 | 608 | 0.1+ | 0.4− |
| 2001 07 27 | 699 | (1.7− | 1.2+) | 2002 02 25 | 704 | 0.1+ | 1.0+ | 2003 04 30 | 608 | 0.2+ | 0.1− |
| 2001 07 27 | 699 | 0.2+ | 0.7+ | 2002 02 25 | 704 | 0.6+ | 0.4− | 2003 04 30 | 608 | 0.3+ | 0.0 |
| 2001 07 27 | 699 | 0.5− | 0.4+ | 2002 02 25 | 704 | 0.6+ | 0.1+ | 2003 04 30 | 608 | 0.0 | 0.1+ |
| 2001 07 27 | 699 | 0.0 | 1.0+ | 2003 01 04 | 699 | 0.9+ | 0.7+ | 2003 05 02 | 704 | 0.2+ | 0.2+ |
| 2001 08 25 | 644 | 1.0− | 0.4+ | 2003 01 04 | 699 | 0.4− | 0.1− | 2003 05 02 | 704 | 0.5+ | 0.5+ |
| 2001 08 25 | 644 | 0.8− | 0.5+ | 2003 01 04 | 699 | 0.3− | 1.0+ | 2003 05 02 | 704 | 0.6+ | 0.5+ |
| 2001 08 25 | 644 | 0.4− | 0.2+ | 2003 01 04 | 699 | 0.8+ | 0.1+ | 2003 05 02 | 704 | 0.1+ | 0.7+ |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2003 01 07 | 704 | 0.8+ | 0.5+ | 2003 05 02 | 704 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2003 01 07 | 704 | 0.4+ | 0.4− | 2003 05 06 | 703 | (2.9+ | 2.9−) |
| 2001 09 20 | 704 | 0.2− | 0.4− | 2003 01 07 | 704 | 0.1+ | 0.5− | 2003 05 06 | 703 | (2.9+ | 2.6−) |
| 2001 09 20 | 704 | 0.5+ | 0.2− | 2003 01 28 | 704 | (0.2+ | 2.0+) | 2003 05 06 | 703 | (1.8+ | 2.6−) |
| 2001 09 22 | 704 | 0.5+ | 0.2+ | 2003 01 28 | 704 | 0.4+ | 1.2+ | 2003 05 06 | 703 | (1.8+ | 3.2−) |
| 2001 09 22 | 704 | 0.4− | 0.2− | 2003 01 28 | 704 | (0.1− | 1.9+) | 2003 05 09 | 704 | (1.6+ | 1.2+) |
| 2001 09 22 | 704 | 1.3− | 0.9− | 2003 01 28 | 704 | 0.1− | 1.1+ | 2003 05 09 | 704 | 1.2+ | 1.3− |
| 2001 09 24 | 704 | 0.5− | 0.4+ | 2003 03 09 | 704 | 0.4+ | 0.9+ | 2003 05 09 | 704 | 0.3+ | 0.3− |
| 2001 09 24 | 704 | 0.7− | 1.1+ | 2003 03 09 | 704 | 0.5+ | 0.4+ | 2003 05 09 | 704 | 1.3+ | 0.0 |
| 2001 09 24 | 704 | 1.0− | 0.5+ | 2003 03 09 | 704 | 0.8+ | 0.7+ | 2003 05 09 | 704 | 0.7+ | 0.7+ |
| 2001 09 24 | 704 | 1.2− | 1.0+ | 2003 03 09 | 704 | 0.3+ | 0.8+ | 2003 05 25 | 699 | 0.7+ | 0.1+ |
| 2001 09 25 | 704 | 0.6− | 0.4+ | 2003 03 09 | 704 | 0.2+ | 0.7+ | 2003 05 25 | 699 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.4− | 0.1+ | 2003 03 12 | 704 | 0.6+ | 1.1+ | 2003 05 25 | 699 | 1.2+ | 0.7− |
| 2001 09 25 | 704 | 0.7− | 0.0 | 2003 03 12 | 704 | 0.7+ | 0.9+ | 2003 05 25 | 699 | (2.4+ | 1.6−) |
| 2001 09 25 | 704 | 0.1+ | 1.4+ | 2003 03 12 | 704 | 0.3+ | 0.6+ | 2003 05 28 | 703 | (0.7− | 1.5−) |
| 2001 09 25 | 704 | 0.6− | 0.1+ | 2003 03 12 | 704 | 0.3+ | 1.1+ | 2003 05 28 | 703 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.8− | 0.6+ | 2003 03 12 | 704 | 0.1+ | 0.9+ | 2003 05 28 | 703 | 0.2− | 0.8− | | |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2003 03 14 | 608 | 0.2− | 1.1− | 2003 05 28 | 703 | 1.3− | 1.0− | | |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2003 03 14 | 608 | 0.2− | 1.2− | 2003 05 30 | 704 | 1.0+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.6− | 0.6+ | 2003 03 14 | 608 | 0.2− | 0.9− | 2003 05 30 | 704 | (1.8+ | 0.9+) | | |
| 2001 09 25 | 704 | 0.7+ | 0.6+ | 2003 03 24 | 608 | 0.5+ | 1.0+ | 2003 05 30 | 704 | 0.1− | 0.4+ | | |
| 2001 10 15 | 704 | 0.8− | 0.7+ | 2003 03 24 | 608 | 0.8+ | 0.9+ | 2003 05 30 | 704 | 0.9+ | 0.6+ | | |
| 2001 10 15 | 704 | 0.8− | 0.2+ | 2003 03 24 | 608 | 0.8+ | 1.0+ | 2003 05 30 | 704 | 1.0+ | 0.1+ | | |
| 2001 10 15 | 704 | 0.5− | 0.6+ | 2003 03 26 | 644 | 0.3+ | 0.6− | 2003 06 04 | 704 | 0.3+ | 0.6+ | | |
| 2001 10 15 | 704 | 1.1− | 0.9+ | 2003 03 26 | 644 | 0.1+ | 0.6− | 2003 06 04 | 704 | 0.3+ | 0.3+ | | |
| 2001 10 15 | 704 | 0.8− | 0.1− | 2003 03 26 | 644 | 0.2+ | 0.5− | 2003 06 04 | 704 | 0.3− | 0.7+ | | |
| 2001 10 15 | 704 | 0.1+ | 0.1+ | 2003 03 27 | 704 | 0.2+ | 0.5+ | 2003 06 04 | 704 | 0.2+ | 1.0+ | | |
| 2001 10 15 | 704 | 0.1− | 0.1− | 2003 03 27 | 704 | 0.0 | 0.6+ | 2003 06 04 | 704 | 0.1− | 0.9+ | | |
| 2001 10 15 | 704 | 0.1+ | 0.6− | 2003 03 27 | 704 | 0.0 | 0.4+ | 2006 09 22 | 703 | 1.4− | 1.0+ | | |
| 2001 10 15 | 704 | 0.1− | 0.8− | 2003 03 27 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 703 | 0.2− | 0.3+ | | |
| 2001 10 15 | 704 | 0.5− | 0.9− | 2003 03 27 | 704 | 0.4+ | 0.6+ | 2006 09 22 | 703 | 1.0+ | 0.8+ | | |
| 2001 10 25 | 704 | (1.8+ | 1.3−) | 2003 04 01 | 645 | 0.2− | 0.1− | 2006 09 22 | 703 | 0.2+ | 0.3+ | | |
| 2001 10 25 | 704 | (1.7+ | 1.1−) | 2003 04 01 | 645 | 0.1− | 0.1− | 2006 09 24 | 699 | 0.1+ | 0.3+ | | |
| 2001 10 25 | 704 | (1.6+ | 1.3−) | 2003 04 03 | 608 | 0.5− | 0.5− | 2006 09 24 | 699 | 0.2− | 0.6+ | | |
| 2001 10 25 | 704 | (2.6+ | 0.8−) | 2003 04 03 | 608 | 0.4− | 0.2+ | 2006 09 24 | 699 | 0.2− | 0.5+ | | |
| 2001 10 25 | 704 | (2.2+ | 1.6−) | 2003 04 03 | 608 | 0.2+ | 0.2+ | 2006 09 24 | 699 | 0.0 | 0.1− | | |
| 2001 11 10 | 704 | 0.5+ | 0.5+ | 2003 04 04 | 699 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.7− | 0.3+ | | |
| 2001 11 10 | 704 | 0.6+ | 0.0 | 2003 04 04 | 699 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.6− | 0.2+ | | |
| 2001 11 10 | 704 | 1.1+ | 0.3+ | 2003 04 04 | 699 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.6− | 0.6+ | | |
| 2001 11 10 | 704 | 0.3+ | 0.1− | 2003 04 04 | 699 | 0.4− | 0.2− | 2006 10 11 | 644 | 1.0− | 0.1+ | | |
| 2001 11 10 | 704 | 0.9+ | 0.2− | 2003 04 09 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.7− | 0.3+ | | |
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2003 04 09 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.7− | 0.2+ | | |
| 2001 11 11 | 704 | 0.1+ | 0.2+ | 2003 04 09 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.8− | 0.3+ | | |
| 2001 11 11 | 704 | 0.1+ | 0.1− | 2003 04 09 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.7− | 0.4+ | | |
| 2001 11 11 | 704 | 0.1+ | 0.2− | 2003 04 09 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.8− | 0.5+ | | |
| 2001 11 11 | 704 | 0.8+ | 0.4− | 2003 04 10 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.2+ | | |
| 2001 12 08 | 704 | 0.9− | 0.4− | 2003 04 10 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.3+ | | |
| 2001 12 08 | 704 | 0.2− | 0.3− | 2003 04 10 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.5− | 0.4+ | | |
| 2001 12 08 | 704 | 0.6+ | 0.0 | 2003 04 10 | 704 | 0.3+ | 0.1+ | 2006 10 24 | 644 | 0.7− | 0.3+ | | |
| 2001 12 08 | 704 | 0.1− | 0.5− | 2003 04 10 | 704 | 0.2+ | 0.2+ | 2006 10 24 | 644 | 0.6− | 0.3+ | | |
| 2001 12 08 | 704 | 0.2+ | 0.7− | 2003 04 26 | 704 | 0.3+ | 0.5+ | 2006 10 24 | 644 | 0.4− | 0.3+ | | |
| 2001 12 23 | 704 | 0.2+ | 1.2− | 2003 04 26 | 704 | 0.3+ | 0.7+ | 2006 10 31 | 703 | 0.1+ | 0.5+ | | |
| 2001 12 23 | 704 | (2.6− | 1.3−) | 2003 04 26 | 704 | 0.1+ | 0.7+ | 2006 10 31 | 703 | 0.5− | 0.0 | | |
| 2001 12 23 | 704 | 0.5− | 0.0 | 2003 04 26 | 704 | 0.1− | 1.0+ | 2006 10 31 | 703 | 0.9+ | 0.7+ | | |
| 2001 12 23 | 704 | 0.2− | 0.2+ | 2003 04 26 | 704 | 0.4+ | 0.9+ | 2006 10 31 | 703 | 0.4+ | 0.6+ | | |
| 2001 12 23 | 704 | 0.4+ | 0.7+ | 2003 04 26 | 608 | 0.5+ | 1.0− | 2006 11 23 | 703 | 0.2+ | 0.8− | | |
| 2002 01 06 | 704 | 0.7+ | 0.9+ | 2003 04 26 | 608 | 0.7+ | 0.3− | 2006 11 23 | 703 | 0.2+ | 0.1+ | | |
| 2002 01 06 | 704 | 0.4+ | 0.3+ | 2003 04 26 | 608 | 0.7+ | 1.0− | 2006 11 23 | 703 | 0.1+ | 1.0+ | | |
| 2002 01 06 | 704 | 0.6+ | 0.1+ | 2003 04 28 | 699 | 0.3− | 0.2+ | 2006 11 23 | 703 | 1.5− | 0.5+ | | |
| 2002 01 06 | 704 | 0.5+ | 0.5+ | 2003 04 28 | 699 | 0.1− | 0.0 | | | | | | |
| 2002 01 06 | 704 | 0.9+ | 0.0 | 2003 04 28 | 699 | 0.2+ | 0.2− | | | | | | |

**(140069)∗ 2001 SO$_{111}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.44857 | | (2000.0) | | | |
| $n$ | 0.19301760 | $\omega$ | 330.47197 | | +0.87801752 | +0.47861594 |
| $a$ | 2.9653192 | $\Omega$ | 0.95369 | | −0.38810106 | +0.71616887 |
| $e$ | 0.1357960 | $i$ | 12.01795 | | −0.28011212 | +0.50796548 |
| $P$ | 5.11 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.1+ | 0.6− | 2003 01 07 | 704 | 0.0 | 0.3− | 2004 04 20 | 704 | 0.9+ | 0.4+ | | |
| 2001 09 10 | 704 | 1.0+ | 0.1+ | 2003 01 07 | 704 | 0.1− | 1.0− | 2004 04 20 | 704 | 0.5− | 0.5− | | |
| 2001 09 10 | 704 | 1.3+ | 0.4− | 2003 01 07 | 704 | 1.0− | 0.4− | 2006 08 30 | 704 | 0.2+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.8+ | 0.4+ | 2003 01 31 | 699 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.0 | 0.2− | | |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2003 01 31 | 699 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.5+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2003 01 31 | 699 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 0.4+ | 0.4− | | |
| 2001 09 22 | 704 | 0.7+ | 1.0+ | 2003 01 31 | 699 | 0.5− | 0.5− | 2006 09 20 | 699 | 0.5− | 0.6+ | | |
| 2001 09 22 | 704 | 0.4+ | 0.2+ | 2004 03 13 | 644 | 0.6+ | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.3+ | | |
| 2001 09 22 | 704 | 0.1+ | 0.6+ | 2004 03 13 | 644 | 0.4+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 2001 09 22 | 704 | 1.5+ | 1.4+ | 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 2001 09 23 | 704 | 0.5− | 0.3− | 2004 03 15 | 703 | 0.9− | 0.7− | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 2001 09 23 | 704 | 0.8− | 0.0 | 2004 03 15 | 703 | 0.2− | 0.1+ | 2006 09 28 | 703 | (2.5+ | 0.9+) | | |
| 2001 09 23 | 704 | 1.4− | 0.4+ | 2004 03 15 | 703 | 1.2+ | 0.8+ | 2006 09 28 | 703 | 0.1− | 0.0 | | |
| 2001 09 23 | 704 | 0.2+ | 0.9+ | 2004 03 15 | 703 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.2− | 0.5+ | | |
| 2001 09 23 | 704 | 0.3− | 0.9+ | 2004 03 18 | 704 | 0.7+ | 0.7+ | 2006 09 28 | 703 | 0.1− | 0.2− | | |
| 2001 10 13 | 644 | 1.0− | 0.7+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.1+ | | |
| 2001 10 13 | 644 | 1.4− | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.4− | 2006 10 19 | 703 | 0.0 | 0.2+ | | |
| 2001 10 13 | 644 | 1.1− | 0.8+ | 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.3− | | |
| 2001 10 19 | 704 | 0.4− | 0.8− | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.6− | | |
| 2001 10 19 | 704 | 0.1− | 0.5− | 2004 03 20 | 704 | 0.1− | 0.3− | 2006 10 21 | 704 | 0.6− | 0.2− | | |
| 2001 10 19 | 704 | 0.8+ | 1.4+ | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 704 | 0.4− | 0.3+ | | |
| 2001 10 19 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 704 | 0.5+ | 1.0+ | | |
| 2001 10 19 | 704 | 0.3− | 0.1− | 2004 03 20 | 704 | 0.3− | 0.0 | 2006 10 21 | 704 | 0.2− | 0.3+ | | |
| 2001 10 27 | 699 | 0.3− | 0.2+ | 2004 03 27 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 704 | 0.1+ | 0.0 | | |
| 2001 10 27 | 699 | 0.1+ | 0.0 | 2004 03 27 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2001 10 27 | 699 | 0.4− | 0.0 | 2004 03 27 | 704 | 0.8+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.0 | | |
| 2001 10 27 | 699 | 0.8− | 0.8− | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.4+ | | |
| 2001 11 10 | 704 | 0.0 | 0.5+ | 2004 03 30 | 704 | 0.6− | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 11 10 | 704 | 0.5+ | 0.6+ | 2004 03 30 | 704 | 0.3− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 11 10 | 704 | 0.0 | 0.0 | 2004 03 30 | 704 | 0.2− | 1.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 10 | 704 | 0.1− | 0.3+ | 2004 03 30 | 704 | 0.4− | 1.1+ | 2006 10 27 | 703 | 0.3+ | 0.5+ | | |
| 2001 11 10 | 704 | 0.6− | 0.3− | 2004 03 30 | 704 | 0.2− | 0.8+ | 2006 10 27 | 703 | 0.2− | 0.2− | | |
| 2001 11 12 | 704 | 0.2− | 0.1− | 2004 04 12 | 699 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.2− | 0.2+ | | |
| 2001 11 12 | 704 | 0.2− | 0.2− | 2004 04 12 | 699 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.2− | | |
| 2001 11 12 | 704 | 0.7− | 0.2− | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.1− | | |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2004 04 12 | 699 | 0.7+ | 0.6− | 2006 11 07 | 644 | 0.1− | 0.0 | | |
| 2001 11 12 | 704 | 0.1− | 0.0 | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.0 | | |
| 2001 12 07 | 644 | 0.5− | 0.4− | 2004 04 12 | 699 | 0.4+ | 0.0 | 2006 11 07 | 644 | 0.0 | 0.3+ | | |
| 2001 12 07 | 644 | 0.1− | 0.2− | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.0 | | |
| 2001 12 07 | 644 | 0.2− | 0.3− | 2004 04 15 | 699 | 0.4+ | 0.7+ | 2006 11 07 | 644 | 0.0 | 0.1+ | | |
| 2002 01 08 | 704 | 0.9+ | 0.2− | 2004 04 15 | 699 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.3− | | |
| 2002 01 08 | 704 | 0.4+ | 0.8− | 2004 04 15 | 699 | 0.7− | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.7− | | |
| 2002 01 08 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 699 | 0.7+ | 0.5− | 2006 11 15 | 703 | 0.1− | 0.8− | | |
| 2002 01 08 | 704 | 1.1+ | 0.1+ | 2004 04 20 | 704 | 0.8− | 1.1− | 2006 11 15 | 703 | 0.4− | 0.5− | | |
| 2002 01 08 | 704 | 1.3+ | 0.3− | 2004 04 20 | 704 | 0.6− | 0.8− | | | | | | |
| 2003 01 07 | 704 | 0.3− | 1.3− | 2004 04 20 | 704 | 0.1− | 0.2+ | | | | | | |

**(140070)∗ 2001 SY$_{111}$ = 1995 SA$_{22}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20272)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.41892 | | (2000.0) | | | |
| $n$ | 0.17787239 | $\omega$ | 27.15704 | | +0.75970063 | −0.64877465 |
| $a$ | 3.1313409 | $\Omega$ | 13.57313 | | +0.55726656 | +0.61457802 |
| $e$ | 0.2237243 | $i$ | 10.83539 | | +0.33512526 | +0.44875975 |
| $P$ | 5.54 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.5− | 0.3+ | 2003 03 10 | 644 | 0.7+ | 0.4+ | 2006 09 19 | 704 | 0.8− | 0.5− | | |
| 1995 09 19 | 691 | 0.4− | 0.2+ | 2003 03 10 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.2+ | | |
| 1995 09 19 | 691 | 0.3− | 0.1+ | 2003 03 11 | 644 | 0.5+ | 0.3+ | 2006 09 19 | 704 | 0.3+ | 1.0− | | |
| 1995 09 25 | 691 | 0.3+ | 0.6+ | 2003 03 11 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 704 | 0.7− | 0.1+ | | |
| 1995 09 25 | 691 | 0.1− | 0.2+ | 2003 03 11 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.3+ | | |
| 1995 09 25 | 691 | 0.1− | 0.2+ | 2003 03 25 | 644 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 20 | 704 | 1.0+ | 0.3− | 2003 03 25 | 644 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.1− | | |
| 2001 09 20 | 704 | 0.6+ | 0.5− | 2003 03 25 | 644 | 0.1+ | 0.7+ | 2006 09 20 | 644 | 0.0 | 0.1− | | |
| 2001 09 20 | 704 | 0.4+ | 0.5− | 2003 03 26 | 691 | (1.1+ | 1.9+) | 2006 09 22 | 704 | 0.0 | 0.5+ | | |
| 2001 09 22 | 704 | 0.0 | 0.1+ | 2003 03 26 | 691 | 1.0+ | 1.2+ | 2006 09 22 | 704 | 0.7+ | 0.2+ | | |
| 2001 09 22 | 704 | 0.5− | 0.1+ | 2003 03 26 | 691 | 1.1+ | 1.3+ | 2006 09 22 | 704 | 0.0 | 0.2+ | | |
| 2001 09 22 | 704 | 0.3+ | 0.1+ | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.0 | | |
| 2001 09 22 | 704 | 0.3− | 1.2+ | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.6+ | | |
| 2001 09 23 | 704 | 0.3− | 0.3− | 2003 04 09 | 735 | 0.6+ | 0.5+ | 2006 09 25 | 699 | 0.4− | 0.4+ | | |
| 2001 09 23 | 704 | 1.3+ | 0.7+ | 2003 04 09 | 735 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.2+ | | |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2003 04 09 | 735 | 0.2− | 0.6+ | 2006 09 25 | 699 | 0.0 | 0.4+ | | |
| 2001 10 14 | 704 | 0.5+ | 0.6− | 2003 04 10 | 691 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3+ | 0.5− | 2003 04 10 | 691 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.2− | 0.2+ | | |
| 2001 10 14 | 704 | 0.1+ | 0.2− | 2003 04 10 | 691 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.1− | | |
| 2001 10 14 | 704 | 0.6+ | 0.4− | 2006 08 10 | 644 | 0.4− | 0.6+ | 2006 09 26 | 704 | 0.5− | 0.3+ | | |
| 2001 10 14 | 704 | 1.0+ | 0.1− | 2006 08 10 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.4− | 0.5+ | | |
| 2001 10 15 | 704 | 1.3− | 0.9− | 2006 08 10 | 644 | 0.1− | 0.5+ | 2006 09 28 | 704 | 0.4+ | 0.5+ | | |
| 2001 10 15 | 704 | 1.2− | 0.7− | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.2+ | 0.2+ | | |
| 2001 10 15 | 704 | 1.0− | 1.2− | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.2− | 0.0 | | |
| 2001 10 15 | 704 | (1.5− | 1.6−) | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.3+ | 0.2+ | | |
| 2001 10 15 | 704 | (1.6− | 1.2−) | 2006 08 22 | 644 | 0.5− | 0.0 | 2006 09 28 | 704 | 0.2− | 0.4+ | | |
| 2001 10 19 | 704 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.3− | | |
| 2001 10 19 | 704 | 0.4− | 0.3− | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.2+ | | |
| 2001 10 19 | 704 | 0.3− | 0.6− | 2006 08 23 | 704 | 0.9+ | 0.1− | 2006 09 30 | 703 | 0.7− | 0.4− | | |
| 2001 10 19 | 704 | 0.0 | 0.2− | 2006 08 23 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.3− | | |
| 2001 12 09 | 704 | 0.0 | 0.9+ | 2006 08 23 | 704 | 0.3+ | 0.8− | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2001 12 09 | 704 | 0.1+ | 0.8+ | 2006 08 23 | 704 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 2001 12 09 | 704 | (3.4− | 0.2+) | 2006 08 28 | 704 | 1.1+ | 0.3− | 2006 10 10 | 644 | 0.1− | 0.3+ | | |
| 2001 12 09 | 704 | 0.0 | 0.6+ | 2006 08 28 | 704 | (0.2− | 1.9+) | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2001 12 09 | 704 | 0.1− | 0.7+ | 2006 08 28 | 704 | 0.7+ | 1.2+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2001 12 14 | 704 | 0.8− | 1.5− | 2006 08 28 | 704 | 0.8− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2001 12 14 | 704 | 1.0− | 1.3− | 2006 08 28 | 704 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.2− | 0.2+ | | |
| 2001 12 14 | 704 | 1.0− | 1.3− | 2006 08 30 | 699 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.1+ | | |
| 2001 12 14 | 704 | 0.3− | 1.3− | 2006 08 30 | 699 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.2− | | |
| 2001 12 22 | 704 | 0.7+ | 0.6+ | 2006 08 30 | 699 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.3− | | |
| 2001 12 22 | 704 | 0.4+ | 0.6+ | 2006 08 30 | 699 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.2+ | | |
| 2001 12 22 | 704 | 0.4+ | 1.0+ | 2006 08 31 | 704 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2001 12 22 | 704 | 0.5+ | 0.4+ | 2006 08 31 | 704 | 0.7− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 12 22 | 704 | 0.3+ | 0.4+ | 2006 08 31 | 704 | 0.5− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 2002 01 07 | 704 | 0.9+ | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2002 01 07 | 704 | 1.4+ | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 2002 01 07 | 704 | (1.8+ | 0.9−) | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.4− | | |
| 2002 01 07 | 704 | 0.5+ | 1.4− | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.4+ | | |
| 2003 02 09 | 608 | 0.1+ | 1.4+ | 2006 09 16 | 704 | 0.5− | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.1+ | | |
| 2003 02 09 | 608 | 0.1− | 0.6+ | 2006 09 16 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2+ | | |
| 2003 02 09 | 608 | 0.3+ | 0.8+ | 2006 09 16 | 704 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.1+ | | |
| 2003 02 28 | 704 | 0.8+ | 0.3+ | 2006 09 16 | 704 | 0.5− | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2003 02 28 | 704 | 0.6− | 0.8+ | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2003 02 28 | 704 | (1.8+ | 1.3+) | 2006 09 19 | 704 | 0.6− | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.1− | | |
| 2003 02 28 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.8− | 0.4+ | | | | | | |
| 2003 03 10 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 704 | 0.2+ | 0.8+ | | | | | | |

**(140071)∗ 2001 SX$_{113}$**

Discovered 2001 Sept. 20 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.90541 | | (2000.0) | | | |
| $n$ | 0.22625720 | $\omega$ | 129.20541 | | +0.99564876 | +0.06663344 |
| $a$ | 2.6672749 | $\Omega$ | 227.07931 | | −0.08495107 | +0.93635497 |
| $e$ | 0.0627228 | $i$ | 5.10356 | | +0.03829966 | +0.34467283 |
| $P$ | 4.36 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 26 | 691 | 0.1+ | 1.1− | 2001 10 11 | 691 | 0.1− | 0.1+ | 2003 01 27 | 644 | 0.4+ | 0.9+ | | |
| 1998 01 26 | 691 | 0.1+ | 0.8− | 2001 10 11 | 691 | 0.2− | 0.0 | 2003 01 27 | 644 | 0.3+ | 0.6+ | | |
| 1998 01 26 | 691 | 0.1+ | 0.9− | 2001 10 11 | 691 | 0.1− | 0.0 | 2003 01 27 | 644 | 0.5+ | 0.9+ | | |
| 2001 09 18 | 699 | 0.5+ | 0.1+ | 2001 10 14 | 704 | 0.1+ | 0.8+ | 2004 04 24 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 18 | 699 | 0.5+ | 1.2+ | 2001 10 14 | 704 | 0.1+ | 0.4− | 2004 04 24 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 18 | 699 | 0.3− | 0.8+ | 2001 10 14 | 704 | 0.3− | 0.9− | 2004 04 24 | 691 | 0.0 | 0.2+ | | |
| 2001 09 18 | 699 | 0.3+ | 0.2+ | 2001 10 14 | 704 | 0.1+ | 0.5+ | 2004 05 12 | 699 | 1.1− | 0.2− | | |
| 2001 09 20 | 333 | 0.4− | 0.1+ | 2001 10 14 | 704 | 0.1+ | 0.4− | 2004 05 12 | 699 | 0.1+ | 0.0 | | |
| 2001 09 20 | 333 | 0.6− | 0.2+ | 2001 10 15 | 608 | 0.6− | 0.9+ | 2004 05 12 | 699 | (0.1+ | 2.2+) | | |
| 2001 09 20 | 333 | 0.2+ | 0.3+ | 2001 10 15 | 608 | 1.1− | 0.9+ | 2004 05 12 | 699 | 0.5+ | 1.0+ | | |
| 2001 09 21 | 333 | 1.2+ | 0.1+ | 2001 10 15 | 608 | 0.7− | 0.9+ | 2004 05 27 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 21 | 333 | 0.9+ | 0.1− | 2001 10 17 | 704 | 1.2− | 0.5+ | 2004 05 27 | 691 | 0.0 | 0.1+ | | |
| 2001 09 21 | 333 | 0.6+ | 0.4− | 2001 10 17 | 704 | 0.8− | 0.4− | 2004 05 27 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 23 | 704 | 0.7+ | 0.8− | 2001 10 17 | 704 | 1.5− | 0.3+ | 2005 07 30 | 644 | 0.2− | 0.2− | | |
| 2001 09 23 | 704 | 0.3+ | 0.4− | 2001 10 17 | 704 | 0.2− | 0.5+ | 2005 07 30 | 644 | 0.4− | 0.1− | | |
| 2001 09 23 | 704 | 0.4+ | 0.0 | 2001 10 18 | 644 | 0.7− | 0.3+ | 2005 07 30 | 644 | 0.2− | 0.0 | | |
| 2001 09 25 | 699 | 0.9+ | 1.0+ | 2001 10 18 | 644 | 0.6− | 0.1− | 2005 08 29 | A50 | 0.2+ | 0.1− | | |
| 2001 09 25 | 699 | 0.7+ | 0.8+ | 2001 10 18 | 644 | 0.8− | 0.1+ | 2005 08 29 | A50 | 0.6+ | 0.6+ | | |
| 2001 09 25 | 699 | 0.7+ | 0.7+ | 2001 10 20 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.3+ | | |
| 2001 09 25 | 699 | 0.3− | 0.3+ | 2001 10 20 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.6+ | | |
| 2001 09 28 | 644 | 0.1+ | 0.1+ | 2001 10 20 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.4+ | | |
| 2001 09 28 | 644 | 0.3− | 0.2+ | 2001 10 21 | 704 | 0.1− | 0.6− | 2006 11 28 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 28 | 644 | 0.3+ | 0.0 | 2001 10 21 | 704 | 0.8+ | 1.2+ | 2006 11 28 | 691 | 0.1− | 0.4+ | | |
| 2001 10 09 | 333 | 0.4− | 0.1+ | 2001 10 21 | 704 | (1.9− | 2.5+) | 2006 11 28 | 691 | 0.2− | 0.1+ | | |
| 2001 10 09 | 333 | 0.1− | 0.3− | 2001 10 21 | 704 | (0.2+ | 1.6+) | | | | | | |
| 2001 10 09 | 333 | 0.8− | 0.8− | 2001 10 21 | 704 | (1.3− | 1.9+) | | | | | | |

**(140072)∗ 2001 SP$_{114}$**

Discovered 2001 Sept. 20 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 142.79178 | | (2000.0) | | | |
| $n$ | 0.17918406 | $\omega$ | 186.73511 | | −0.95813009 | +0.27422141 |
| $a$ | 3.1160407 | $\Omega$ | 10.36597 | | −0.23668038 | −0.59652388 |
| $e$ | 0.0764726 | $i$ | 27.25357 | | −0.16114940 | −0.75429562 |
| $P$ | 5.50 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.4− | 0.7+ | 2001 10 17 | 704 | 0.6+ | 0.9− | 2004 03 23 | 704 | 0.3− | 0.2+ | | |
| 2001 08 24 | 704 | 0.1− | 0.2+ | 2001 10 18 | 644 | 0.7− | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.0 | | |
| 2001 08 24 | 704 | 0.7+ | 0.0 | 2001 10 18 | 644 | 0.6− | 0.1+ | 2004 03 23 | 704 | 0.1− | 0.7− | | |
| 2001 08 24 | 704 | 0.3− | 0.4+ | 2001 10 18 | 644 | 0.5− | 0.2+ | 2004 03 23 | 704 | 0.8+ | 0.2− | | |
| 2001 09 18 | 691 | 0.2+ | 0.1− | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.1− | | |
| 2001 09 18 | 691 | 0.2+ | 0.0 | 2001 10 21 | 704 | 0.1+ | 0.8+ | 2004 03 25 | 704 | 0.4+ | 1.1+ | | |
| 2001 09 18 | 691 | 0.3+ | 0.1− | 2001 10 21 | 704 | 0.1− | 0.5+ | 2004 03 25 | 704 | 0.0 | 0.6+ | | |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2001 10 21 | 704 | 0.7+ | 0.4+ | 2004 03 25 | 704 | 0.4− | 1.1+ | | |
| 2001 09 20 | 333 | 0.7+ | 0.7− | 2001 10 25 | 644 | 0.0 | 0.1+ | 2004 03 26 | 703 | 0.7− | 0.3+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2001 10 25 | 644 | 0.1− | 0.7+ | 2004 03 26 | 703 | 0.3− | 0.3− | | |
| 2001 09 20 | 704 | 0.1− | 0.4− | 2001 10 25 | 644 | 0.3+ | 0.4+ | 2004 03 26 | 703 | 0.1− | 0.1+ | | |
| 2001 09 20 | 333 | 0.1+ | 0.8− | 2003 03 27 | 696 | 0.1− | 0.5− | 2004 03 26 | 703 | 0.3− | 0.3+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2003 03 27 | 696 | 0.2− | 0.4− | 2004 03 27 | 691 | 0.0 | 0.1− | | |
| 2001 09 20 | 333 | 0.1+ | 0.0 | 2004 01 28 | 645 | 0.1− | 0.1− | 2004 03 27 | 691 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2004 01 28 | 645 | 0.1− | 0.0 | 2004 03 27 | 691 | 0.0 | 0.2− | | |
| 2001 09 21 | 333 | 1.0+ | 1.4− | 2004 02 17 | 704 | 0.0 | 0.3+ | 2004 03 28 | 691 | 0.1+ | 0.1− | | |
| 2001 09 21 | 333 | 0.1− | 1.2− | 2004 02 17 | 704 | 0.6− | 0.2+ | 2004 03 28 | 691 | 0.1− | 0.2− | | |
| 2001 09 21 | 333 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.8− | 0.8+ | 2004 03 28 | 691 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 0.3− | 0.4− | 2004 02 17 | 704 | 0.7− | 1.2+ | 2004 04 15 | 704 | 0.4+ | 0.4+ | | |
| 2001 09 23 | 704 | 0.1− | 0.0 | 2004 02 18 | 201 | 0.4+ | 0.3+ | 2004 04 15 | 704 | 0.7+ | 0.4− | | |
| 2001 09 23 | 704 | 0.5− | 0.3− | 2004 02 18 | 201 | 0.1+ | 0.4+ | 2004 04 15 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 23 | 704 | 0.0 | 0.2+ | 2004 02 18 | 201 | 0.0 | 0.5+ | 2004 04 15 | 704 | 0.4+ | 0.3+ | | |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2004 02 23 | 608 | 0.1+ | 0.0 | 2004 04 20 | 704 | 1.0+ | 0.6+ | | |
| 2001 09 24 | 704 | 0.9− | 0.8+ | 2004 02 23 | 608 | 0.4+ | 0.1+ | 2004 04 20 | 704 | 0.8+ | 1.2+ | | |
| 2001 09 24 | 704 | 0.7− | 0.0 | 2004 02 23 | 608 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.2+ | | |
| 2001 09 24 | 704 | 1.2− | 1.2+ | 2004 02 27 | 704 | 0.3+ | 0.1+ | 2004 04 20 | 704 | 0.9+ | 0.2+ | | |
| 2001 09 24 | 704 | 0.2− | 1.3+ | 2004 02 27 | 704 | 0.8+ | 0.1+ | 2004 04 20 | 704 | 1.0+ | 0.1− | | |
| 2001 09 24 | 704 | 0.2+ | 0.9+ | 2004 02 27 | 704 | 0.0 | 0.5+ | 2004 04 22 | 704 | 0.4+ | 0.5− | | |
| 2001 09 26 | 704 | 0.7− | 0.5+ | 2004 03 15 | 704 | 1.0+ | 0.1− | 2004 04 22 | 704 | 0.4+ | 0.0 | | |
| 2001 09 26 | 704 | 0.4+ | 0.3− | 2004 03 15 | 704 | 0.8− | 0.9− | 2004 04 22 | 704 | 0.8+ | 0.5− | | |
| 2001 09 26 | 704 | 0.8− | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.0 | 2004 04 22 | 704 | 0.4+ | 1.1− | | |
| 2001 09 26 | 704 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.6+ | 0.1+ | 2004 05 17 | 704 | 0.4+ | 0.3− | | |
| 2001 09 26 | 704 | 0.9− | 0.7− | 2004 03 17 | 704 | 0.2− | 0.7+ | 2004 05 17 | 704 | 1.4+ | 1.2+ | | |
| 2001 10 09 | 333 | 0.5− | 1.1− | 2004 03 17 | 704 | 0.0 | 0.5+ | 2004 05 17 | 704 | 1.4+ | 0.4+ | | |
| 2001 10 09 | 333 | 0.4− | 0.7− | 2004 03 17 | 704 | 0.0 | 0.4+ | 2004 05 17 | 704 | (1.8+ | 0.1+) | | |
| 2001 10 14 | 704 | 0.2− | 0.9+ | 2004 03 17 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.1+ | 0.5+ | | |
| 2001 10 14 | 704 | 0.6− | 0.3+ | 2004 03 17 | 704 | 0.2− | 0.3+ | 2006 09 20 | 703 | (2.6− | 1.0−) | | |
| 2001 10 14 | 704 | 0.1+ | 0.1− | 2004 03 17 | 704 | 0.2− | 0.3+ | 2006 09 20 | 703 | 0.3+ | 1.3− | | |
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2004 03 17 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.8− | 0.3+ | | |
| 2001 10 14 | 704 | 0.2− | 0.6+ | 2004 03 17 | 704 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.3+ | | |
| 2001 10 15 | 608 | 0.6− | 0.4+ | 2004 03 17 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.4+ | | |
| 2001 10 15 | 608 | 0.7− | 0.6+ | 2004 03 17 | 704 | 0.4− | 0.4+ | 2006 09 26 | 703 | 1.2− | 1.4− | | |
| 2001 10 15 | 608 | 1.0− | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.2− | 2006 09 26 | 703 | 0.1− | 0.3+ | | |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.3+ | 0.5− | 2006 10 12 | E12 | 0.3+ | 0.6+ | | |
| 2001 10 17 | 704 | 1.0+ | 0.3− | 2004 03 20 | 704 | 0.9+ | 0.2− | 2006 10 12 | E12 | 1.9− | 1.2+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.4− | 2006 10 12 | E12 | 0.7+ | 0.9+ | | |
| 2001 10 17 | 704 | 0.8+ | 0.1− | 2004 03 20 | 704 | 0.3− | 0.8− | 2006 10 12 | E12 | 0.0 | 1.6+ | | |

**(140073)∗ 2001 SC$_{115}$**

Discovered 2001 Sept. 20 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.70089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20125703 | $\omega$ | 254.53115 | | +0.40068460 | | −0.91617877 |
| $a$ | 2.8838235 | $\Omega$ | 171.83337 | | +0.86134195 | | +0.37359635 |
| $e$ | 0.1458846 | $i$ | 3.33562 | | +0.31231697 | | +0.14505941 |
| $P$ | 4.90 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 03 | 691 | 0.3+ | 0.7+ | 2001 10 27 | 704 | 0.9+ | 0.7− | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 1991 10 03 | 691 | 0.0 | 0.6+ | 2001 11 18 | 704 | 0.9− | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 1991 10 03 | 691 | 0.4− | 0.8+ | 2001 11 18 | 704 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 1996 09 21 | 327 | 0.2+ | 0.9− | 2001 11 18 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1996 09 21 | 327 | 0.5+ | 0.2− | 2001 11 18 | 704 | 0.3− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 1996 09 21 | 327 | 0.7− | 1.1− | 2001 11 20 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.2− | 1.4+ | 2001 11 20 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.7− | 1.1+ | 2001 11 20 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.8− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.6− | 1.0+ | 2001 11 20 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.8− | 1.0+ | 2001 11 21 | 704 | 1.1+ | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 333 | 0.2+ | 0.8− | 2001 11 21 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2001 09 20 | 333 | 0.6+ | 0.4− | 2001 11 21 | 704 | 0.5+ | 0.1− | 2006 10 23 | 704 | 0.2+ | 0.8+ |
| 2001 09 20 | 333 | 0.3+ | 0.7− | 2001 11 21 | 704 | 0.3− | 0.4+ | 2006 10 23 | 704 | 0.7+ | 0.5+ |
| 2001 09 20 | 333 | 0.4− | 0.9− | 2001 11 21 | 704 | 0.2+ | 0.1− | 2006 10 23 | 704 | 1.2+ | 0.1+ |
| 2001 09 20 | 333 | (1.8+ | 1.3−) | 2001 12 14 | 704 | 0.3− | 0.8+ | 2006 10 23 | 704 | 1.2− | 0.6− |
| 2001 09 20 | 333 | 0.2− | 1.0− | 2001 12 14 | 704 | 0.5− | 1.3+ | 2006 10 23 | 704 | 1.2+ | 0.0 |
| 2001 09 21 | 333 | 0.1+ | 0.4− | 2001 12 14 | 704 | 0.7+ | 0.4− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 333 | 0.4+ | 1.2− | 2001 12 14 | 704 | 0.4+ | 1.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 333 | 0.4+ | 0.9− | 2002 12 07 | 645 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.7− | 0.6+ | 2002 12 07 | 645 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2003 01 28 | 704 | 0.9+ | 1.5+ | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.4− | 0.7+ | 2003 01 28 | 704 | 1.0+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.1− | 2003 01 28 | 704 | 0.5+ | 0.7+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.7− | 0.9+ | 2003 01 28 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2001 09 26 | 704 | 0.8− | 0.1− | 2003 02 03 | 699 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2001 09 26 | 704 | 0.5+ | 0.4− | 2003 02 03 | 699 | 0.3+ | 1.4+ | 2006 11 11 | 703 | 0.5+ | 0.5− |
| 2001 09 26 | 704 | 0.4+ | 0.1− | 2003 02 03 | 699 | (0.3+ | 1.5+) | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2001 09 26 | 704 | 0.7+ | 0.9− | 2003 02 03 | 699 | (0.2+ | 1.7+) | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2001 10 07 | 644 | 0.0 | 0.8+ | 2003 02 22 | 644 | 0.6+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 10 07 | 644 | 0.5+ | 0.1− | 2003 02 22 | 644 | 0.5+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2001 10 07 | 644 | 0.2+ | 0.3+ | 2003 02 22 | 699 | 0.5+ | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.9− |
| 2001 10 13 | 704 | 0.1− | 0.2+ | 2003 02 22 | 699 | 0.4+ | 0.4− | 2006 11 14 | 704 | 0.9+ | 0.3− |
| 2001 10 13 | 704 | 0.2− | 0.7+ | 2003 02 22 | 699 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.5− | 0.1− |
| 2001 10 13 | 704 | 0.7− | 1.0+ | 2003 02 22 | 699 | 0.5+ | 0.5+ | 2006 11 14 | 704 | 1.2+ | 0.7− |
| 2001 10 13 | 704 | 1.4+ | 0.4+ | 2003 02 22 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.3+ |
| 2001 10 13 | 704 | 0.1− | 0.5+ | 2003 02 24 | 608 | 1.0+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 10 18 | 644 | 0.3+ | 0.1− | 2003 02 24 | 608 | 0.3+ | 1.1− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 10 18 | 644 | 0.3+ | 0.0 | 2003 02 24 | 608 | 0.3+ | 1.2− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2001 10 18 | 644 | 0.4+ | 0.0 | 2003 03 06 | 644 | 0.6+ | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | 0.6− | 0.4− | 2003 03 06 | 644 | 0.7+ | 0.5+ | 2006 11 17 | 704 | 1.7+ | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.4− | 2003 03 06 | 644 | 0.5+ | 0.7+ | 2006 11 17 | 704 | 0.6+ | 0.7− |
| 2001 10 20 | 704 | 0.7− | 0.4− | 2003 03 30 | 645 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.9− | 0.4− |
| 2001 10 20 | 704 | 0.5− | 0.5− | 2003 03 30 | 645 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.9− | 0.4+ |
| 2001 10 20 | 704 | 0.6+ | 0.6− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2001 10 21 | 691 | 0.5− | 0.5− | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.8+ | 0.5− |
| 2001 10 21 | 691 | 0.5− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.6− |
| 2001 10 21 | 691 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2001 10 22 | 704 | (1.7− | 0.3+) | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 1.1− |
| 2001 10 22 | 704 | (1.5− | 0.6+) | 2006 09 30 | 703 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 2001 10 22 | 704 | (1.7− | 1.1+) | 2006 09 30 | 703 | (0.8+ | 2.1−) | 2006 11 19 | 704 | 0.7− | 1.3+ |
| 2001 10 24 | 704 | 1.2+ | 0.4− | 2006 09 30 | 703 | (2.0+ | 2.7−) | 2006 11 19 | 704 | 1.3+ | 0.9+ |
| 2001 10 24 | 704 | 0.3+ | 1.0− | 2006 10 14 | D35 | 0.6+ | 0.2+ | 2006 11 20 | 704 | 0.8+ | 0.4− |
| 2001 10 24 | 704 | (1.5+ | 0.2−) | 2006 10 14 | D35 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 1.3− | 0.8− |
| 2001 10 24 | 704 | (0.8+ | 1.7−) | 2006 10 14 | D35 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.2+ |
| 2001 10 27 | 704 | (1.7+ | 1.2+) | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.7− |
| 2001 10 27 | 704 | 0.7+ | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.1− | | | | |
| 2001 10 27 | 704 | 0.8− | 1.2− | 2006 10 18 | 691 | 0.3− | 0.0 | | | | |

**(140074)∗ 2001 SM$_{117}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.78152 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22838702 | $\omega$ | 134.69375 | | +0.58046760 | | −0.80963388 |
| $a$ | 2.6506666 | $\Omega$ | 279.63068 | | +0.71995374 | | +0.56014789 |
| $e$ | 0.1994960 | $i$ | 5.05631 | | +0.38042605 | | +0.17529208 |
| $P$ | 4.32 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | (1.7+ | 0.9+) | 2001 09 23 | 683 | 0.7+ | 1.1+ | 2005 07 18 | 644 | 0.2+ | 0.1+ |
| 2001 08 25 | 704 | 0.6+ | 0.2+ | 2001 09 23 | 704 | 0.6+ | 0.1+ | 2005 07 18 | 644 | 0.3+ | 0.2+ |
| 2001 08 25 | 704 | 0.3+ | 0.6+ | 2001 09 23 | 683 | 0.6+ | 0.3− | 2005 08 05 | 644 | 1.0− | 0.8− |
| 2001 08 25 | 704 | 0.8+ | 0.3+ | 2001 09 23 | 704 | 0.9+ | 0.4+ | 2005 08 05 | 644 | 0.1+ | 0.0 |
| 2001 09 08 | 704 | 0.6− | 0.8+ | 2001 09 23 | 683 | 0.4+ | 1.2+ | 2005 08 05 | 644 | 0.3+ | 0.0 |
| 2001 09 08 | 704 | 0.5− | 0.8+ | 2001 09 26 | 699 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 09 08 | 704 | 0.1+ | 0.7+ | 2001 09 26 | 699 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2001 09 08 | 704 | 0.7− | 0.7+ | 2001 09 26 | 699 | 0.3− | 1.0+ | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 2001 09 08 | 704 | 0.2− | 0.6+ | 2001 09 26 | 699 | 0.1− | 0.6+ | 2006 10 22 | G96 | 0.8− | 0.5− |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2001 11 18 | 645 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.4+ | 0.7− | 2001 11 18 | 645 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2001 09 16 | 704 | 0.3+ | 1.0− | 2003 03 07 | 704 | 0.9+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.2− | 0.1− | 2003 03 07 | 704 | 1.1− | 1.2− | 2006 10 29 | G96 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.5− | 0.6− | 2003 03 07 | 704 | 0.2+ | 0.7+ | 2006 10 29 | G96 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 1.4− | 0.4+ | 2003 03 07 | 704 | (0.5+ | 1.6+) | 2006 10 29 | G96 | 0.8+ | 0.3+ |
| 2001 09 20 | 704 | 0.3+ | 0.2− | 2005 07 11 | G96 | (0.2+ | 2.1+) | 2006 10 29 | G96 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2005 07 11 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2005 07 11 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.1+ | 0.5+ | 2005 07 18 | 644 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.1− |

**(140075)∗ 2001 SH$_{118}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.81157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19030133 | $\omega$ | 82.78783 | | +0.22686544 | | +0.97211008 |
| $a$ | 2.9934695 | $\Omega$ | 200.61991 | | −0.94686616 | | +0.20586227 |
| $e$ | 0.0799608 | $i$ | 9.71843 | | −0.22798366 | | +0.11235090 |
| $P$ | 5.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.3+ | 0.3− | 2001 10 21 | 704 | 0.0 | 0.2+ | 2005 06 13 | 691 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.3+ | 0.7− | 2001 10 21 | 704 | 0.1+ | 0.8− | 2005 06 17 | 691 | 0.4+ | 0.1+ |
| 2001 08 25 | 704 | 0.5+ | 0.5+ | 2001 10 21 | 704 | 0.8− | 0.1− | 2005 06 17 | 691 | 0.4+ | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 0.0 | 2004 02 18 | 691 | 0.1+ | 0.2+ | 2005 06 17 | 691 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.0 | 0.1− | 2004 02 18 | 691 | 0.1+ | 0.3+ | 2005 06 23 | 644 | 0.2+ | 0.2+ |
| 2001 09 16 | 704 | 0.2− | 0.3− | 2004 02 18 | 691 | 0.0 | 0.5+ | 2005 06 23 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 1.1− | 0.4− | 2005 05 08 | 691 | 0.0 | 0.2+ | 2005 06 23 | 644 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 1.0− | 0.6− | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2005 06 28 | 644 | 0.5− | 0.2− |
| 2001 09 16 | 704 | 0.0 | 0.2− | 2005 05 08 | 691 | 0.1+ | 0.1+ | 2005 06 28 | 644 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.5− | 2005 05 13 | 691 | (0.6− | 1.6−) | 2005 06 28 | 644 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.7− | 2005 05 13 | 691 | 0.2− | 0.1+ | 2005 06 29 | 644 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 1.0− | 2005 05 13 | 691 | 0.1− | 0.0 | 2005 06 29 | 644 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 1.0− | 2005 05 31 | 699 | (0.2+ | 2.2+) | 2005 06 29 | 644 | 0.2− | 0.1+ |
| 2001 09 24 | 704 | 0.5+ | 0.1+ | 2005 05 31 | 699 | 0.4+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.0 |
| 2001 09 24 | 704 | 0.4− | 1.0+ | 2005 05 31 | 699 | 0.9+ | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.6+ |
| 2001 09 24 | 704 | 0.2+ | 0.1+ | 2005 05 31 | 699 | 1.4− | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 2001 09 24 | 704 | 0.9+ | 0.5+ | 2005 06 01 | 691 | 0.3− | 0.0 | 2006 08 25 | A50 | 0.6+ | 0.6+ |
| 2001 09 24 | 704 | 0.8+ | 0.6+ | 2005 06 01 | 691 | 0.3− | 0.3− | 2006 08 29 | 703 | (0.5+ | 1.9−) |
| 2001 09 28 | 644 | 0.6− | 0.8+ | 2005 06 01 | 691 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.7+ | 0.9− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.0 | 1.1+ | 2005 06 04 | 703 | 0.6+ | 0.6+ | 2006 08 29 | 703 | 0.7+ | 0.2+ |
| 2001 09 28 | 644 | 0.2− | 0.6+ | 2005 06 04 | 703 | 0.6+ | 0.5− | 2006 08 29 | 703 | (1.9− | 0.6+) |
| 2001 10 14 | 704 | 0.6− | 0.3+ | 2005 06 04 | 703 | 0.6+ | 0.8+ | 2006 09 11 | 703 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.5− | 1.3+ | 2005 06 04 | 703 | 0.5− | 0.2− | 2006 09 11 | 703 | 1.5− | 1.3+ |
| 2001 10 14 | 704 | 0.8− | 0.5+ | 2005 06 05 | 691 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.7− | 0.1+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 06 05 | 691 | 0.4− | 0.1+ | 2006 09 11 | 703 | (0.5− | 1.7+) |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2005 06 05 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.9+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 1.2− | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 06 09 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | (0.1+ | 2.2+) |
| 2001 10 19 | 644 | 0.0 | 0.5+ | 2005 06 09 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | 1.0+ | 0.3− |
| 2001 10 19 | 644 | 0.0 | 0.6+ | 2005 06 13 | 691 | 0.3+ | 0.1− | | | | |
| 2001 10 19 | 644 | 0.5− | 0.4+ | 2005 06 13 | 691 | 0.2+ | 0.3− | | | | |

**(140076)∗ 2001 SR$_{118}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 189.87682 | | (2000.0) | | | |
| $n$ | 0.21912132 | $\omega$ | 329.39484 | | −0.92092730 | +0.38598005 |
| $a$ | 2.7248731 | $\Omega$ | 233.40685 | | −0.34258127 | −0.86772978 |
| $e$ | 0.0462821 | $i$ | 3.85402 | | −0.18582514 | −0.31315242 |
| $P$ | 4.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.1− | 0.2− | 2004 03 18 | 704 | (1.0+ | 1.7+) | 2005 07 12 | G96 | 0.1− | 0.2− |
| 1997 11 22 | 691 | 0.1+ | 0.3− | 2004 03 20 | 704 | 0.4+ | 0.7+ | 2005 07 12 | G96 | 0.2+ | 0.1− |
| 1997 11 22 | 691 | 0.3+ | 0.3− | 2004 03 20 | 699 | (1.1− | 1.7+) | 2005 07 12 | G96 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.6− | 0.1+ | 2004 03 20 | 704 | 0.3− | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.0 |
| 2001 09 16 | 704 | (1.5− | 2.3+) | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 1.0+ | 0.1− |
| 2001 09 16 | 704 | 1.4− | 0.7+ | 2004 03 20 | 699 | 0.7+ | 1.3+ | 2006 09 28 | G96 | 0.6+ | 0.1+ |
| 2001 09 16 | 704 | 0.9+ | 0.8+ | 2004 03 20 | 704 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 1.3− | 1.3+ | 2004 03 20 | 699 | 1.0+ | 1.4+ | 2006 09 28 | G96 | 0.5+ | 0.2+ |
| 2001 09 20 | 704 | 0.9− | 0.1− | 2004 03 20 | 699 | 0.5− | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2004 03 27 | 704 | (0.7+ | 1.7+) | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 1.1+ | 2004 03 27 | 704 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | (0.6+ | 1.7+) | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.7+ | 0.1+ | 2004 04 11 | 703 | 0.1+ | 1.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 0.5+ | 0.5− | 2004 04 11 | 703 | 0.9− | 1.5+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2001 09 23 | 704 | (0.1+ | 1.8+) | 2004 04 11 | 703 | 1.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 09 23 | 704 | 1.0+ | 0.9+ | 2004 04 11 | 703 | (0.6− | 2.3+) | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2001 09 23 | 704 | 1.3+ | 1.2+ | 2005 06 30 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2001 09 23 | 704 | (0.0 | 1.9+) | 2005 06 30 | 691 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2005 06 30 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2005 07 05 | 644 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2001 12 10 | 645 | 0.1− | 0.0 | 2005 07 05 | 644 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 12 10 | 645 | 0.3− | 0.0 | 2005 07 05 | 644 | 0.3− | 1.0− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2004 03 18 | 704 | 0.5− | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.2+ | 1.3− | 2005 07 11 | 691 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2004 03 18 | 704 | 0.5− | 0.4− | 2005 07 11 | 691 | 0.1+ | 0.2− | 2006 11 27 | G96 | 2.2− | 0.5− |

**(140077)∗ 2001 SO$_{119}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.01892 | | (2000.0) | | | |
| $n$ | 0.17956936 | $\omega$ | 313.73657 | | +0.19588250 | +0.97659631 |
| $a$ | 3.1115818 | $\Omega$ | 327.24993 | | −0.84591039 | +0.12245866 |
| $e$ | 0.0781961 | $i$ | 9.45032 | | −0.49605005 | +0.17681497 |
| $P$ | 5.49 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.2− | 0.1− | 2001 09 26 | 704 | 0.2− | 0.6+ | 2004 02 12 | 691 | 0.0 | 0.2+ |
| 1993 01 29 | 691 | 0.3− | 0.4− | 2001 09 26 | 704 | 0.2+ | 0.2+ | 2004 02 12 | 691 | 0.0 | 0.3+ |
| 1993 01 29 | 691 | 0.1+ | 0.2− | 2001 09 28 | 644 | 0.0 | 0.3+ | 2004 02 16 | 704 | 1.4+ | 1.3+ |
| 2001 09 16 | 704 | 0.7− | 0.0 | 2001 09 28 | 644 | 0.1+ | 0.0 | 2004 02 16 | 704 | 0.3+ | 0.4+ |
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2001 09 28 | 704 | 0.9+ | 0.2+ | 2004 02 16 | 704 | 0.3+ | 0.6+ |
| 2001 09 16 | 704 | 0.8− | 0.4− | 2001 09 28 | 644 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.6+ | 0.6+ |
| 2001 09 16 | 704 | 0.8− | 0.0 | 2001 09 28 | 704 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.4− | 0.7+ |
| 2001 09 16 | 704 | 0.1+ | 0.2+ | 2001 09 28 | 704 | 0.5− | 0.3− | 2004 02 23 | 704 | 0.9− | 0.5+ |
| 2001 09 18 | 699 | (2.0− | 0.9+) | 2002 12 05 | 704 | 0.1− | 0.7+ | 2005 04 07 | 644 | 0.2+ | 0.4+ |
| 2001 09 18 | 699 | 1.1− | 0.6+ | 2002 12 05 | 704 | 0.3+ | 0.4+ | 2005 04 07 | 644 | 0.3+ | 0.6+ |
| 2001 09 18 | 699 | 0.2+ | 0.2+ | 2002 12 05 | 704 | 0.1− | 0.3+ | 2005 04 07 | 644 | 0.1+ | 1.0+ |
| 2001 09 18 | 699 | 0.4− | 1.1+ | 2002 12 10 | 644 | 0.3− | 0.9− | 2006 07 25 | 644 | 0.3− | 0.7+ |
| 2001 09 20 | 704 | 0.8+ | 1.2− | 2002 12 10 | 644 | 0.4− | 0.8− | 2006 07 25 | 644 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.4+ | 0.0 | 2002 12 10 | 644 | 0.0 | 0.7− | 2006 07 25 | 644 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2004 01 18 | 644 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.9− | 0.2+ | 2004 01 18 | 644 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.2+ |
| 2001 09 22 | 704 | 1.1− | 0.7+ | 2004 01 18 | 644 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.4+ |
| 2001 09 22 | 704 | 0.2+ | 1.3+ | 2004 01 22 | 704 | 0.8+ | 0.4− | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.0 | 2004 01 22 | 704 | 0.8+ | 0.9+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 09 22 | 704 | 0.4+ | 1.1+ | 2004 01 22 | 704 | (1.6+ | 0.5−) | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 09 23 | 704 | 0.5+ | 0.6+ | 2004 01 22 | 704 | 0.7+ | 0.6− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.3− | 0.4− | 2004 02 11 | 699 | (1.6− | 0.8+) | 2006 10 21 | G96 | 0.5− | 0.2+ |
| 2001 09 23 | 704 | 0.5+ | 0.6− | 2004 02 11 | 699 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2001 09 26 | 704 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 0.5− | 0.7− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2001 09 26 | 704 | 0.7− | 0.7− | 2004 02 11 | 699 | 0.8+ | 1.2+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 09 26 | 704 | 0.7+ | 0.8+ | 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.1+ |

**(140078)∗ 2001 SU$_{119}$ = 2004 DU$_{11}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61034)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 226.36681 | | (2000.0) | | | |
| $n$ | 0.17948516 | $\omega$ | 128.77671 | | −0.16592844 | −0.98228342 |
| $a$ | 3.1125549 | $\Omega$ | 330.42377 | | +0.84119072 | −0.09488915 |
| $e$ | 0.0073437 | $i$ | 10.16437 | | +0.51465126 | −0.16160241 |
| $P$ | 5.49 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.4+ | 0.0 | 2001 09 28 | 644 | 0.1− | 1.1+ | 2004 03 18 | 704 | 0.0 | 0.3+ |
| 2001 08 22 | 691 | 0.2− | 0.2− | 2001 09 28 | 704 | 0.1− | 0.7− | 2004 03 18 | 704 | 0.0 | 0.1+ |
| 2001 08 22 | 691 | 0.1− | 0.0 | 2001 09 28 | 644 | 0.3− | 1.4+ | 2004 03 18 | 704 | 1.0+ | 0.1+ |
| 2001 09 10 | 699 | 0.9− | 0.5+ | 2002 12 06 | 704 | (0.0 | 1.9−) | 2004 03 18 | 704 | 0.0 | 0.5+ |
| 2001 09 10 | 699 | 0.3+ | 0.7+ | 2002 12 06 | 704 | 0.8− | 0.5− | 2004 03 18 | 704 | 0.7+ | 0.3+ |
| 2001 09 10 | 699 | 0.8+ | 0.2+ | 2002 12 06 | 704 | 0.5+ | 0.6+ | 2004 03 18 | 704 | 0.2− | 0.2+ |
| 2001 09 10 | 699 | 0.6− | 0.2− | 2004 02 17 | 691 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.2− | 0.8+ |
| 2001 09 16 | 704 | 0.3+ | 0.2− | 2004 02 17 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.9+ |
| 2001 09 16 | 704 | 0.1+ | 1.0+ | 2004 02 17 | 691 | 0.2− | 0.3+ | 2004 03 27 | 704 | 0.7+ | 0.3− |
| 2001 09 16 | 704 | (1.5+ | 1.8+) | 2004 02 18 | 704 | 0.0 | 0.1− | 2006 08 12 | 644 | 0.3− | 0.6+ |
| 2001 09 16 | 704 | 0.1+ | 0.8+ | 2004 02 18 | 704 | 0.3+ | 0.8+ | 2006 08 12 | 644 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 0.6− | 1.2+ | 2004 02 18 | 704 | 0.4− | 1.0+ | 2006 08 12 | 644 | 0.3− | 0.2+ |
| 2001 09 18 | 699 | 0.4− | 0.2+ | 2004 02 18 | 704 | 0.5− | 0.0 | 2006 08 14 | 644 | 0.2− | 0.5+ |
| 2001 09 18 | 699 | 0.4+ | 0.2+ | 2004 02 26 | 333 | 0.4− | 1.0+ | 2006 08 14 | 644 | 0.5− | 0.8+ |
| 2001 09 18 | 699 | 0.3+ | 0.5+ | 2004 02 26 | 333 | 0.5+ | 0.0 | 2006 08 14 | 644 | 0.3− | 0.6+ |
| 2001 09 18 | 699 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.7+ |
| 2001 09 20 | 704 | 0.8− | 0.2− | 2004 02 26 | 704 | 0.4+ | 0.8+ | 2006 08 15 | 644 | 0.1− | 0.5+ |
| 2001 09 20 | 704 | 0.1+ | 0.2− | 2004 02 26 | 704 | 0.0 | 0.6+ | 2006 08 15 | 644 | 0.2− | 0.7+ |
| 2001 09 20 | 704 | 0.6− | 1.0+ | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.8− | 0.3− |
| 2001 09 23 | 704 | 0.2+ | 0.4− | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.3− |
| 2001 09 23 | 704 | (0.2+ | 1.7+) | 2004 02 26 | 333 | 0.7− | 0.9− | 2006 08 28 | 703 | 0.9+ | 0.7− |
| 2001 09 23 | 704 | (0.9+ | 1.9+) | 2004 03 12 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 1.4+ |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2004 03 12 | 644 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.3+ |
| 2001 09 25 | 704 | (0.4− | 1.7−) | 2004 03 12 | 644 | 0.6+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.1+ | 0.7− | 2004 03 15 | 704 | 1.0+ | 1.0+ | 2006 09 30 | G96 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 0.2+ | 0.3− | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.1+ | 1.3− | 2004 03 15 | 704 | 0.6+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2001 09 26 | 704 | 1.0− | 0.2+ | 2004 03 17 | 704 | 1.2+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.4+ |
| 2001 09 26 | 704 | 0.3+ | 0.1+ | 2004 03 17 | 704 | 1.1+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.3+ |
| 2001 09 26 | 704 | 0.2+ | 0.3+ | 2004 03 17 | 704 | 0.1+ | 0.5− | 2006 10 28 | G96 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.6− | 0.1+ | 2004 03 17 | 704 | 1.0+ | 0.6+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2001 09 28 | 644 | 0.4− | 1.2+ | 2004 03 18 | 704 | 0.7+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2001 09 28 | 704 | 0.2− | 0.6− | 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2001 09 28 | 704 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.2+ | | | | |

**(140079)∗ 2001 SY$_{119}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.62229 | | (2000.0) | | | |
| $n$ | 0.21414917 | $\omega$ | 238.83198 | | +0.10265870 | −0.99251706 |
| $a$ | 2.7668893 | $\Omega$ | 205.52712 | | +0.95687001 | +0.11669387 |
| $e$ | 0.1494481 | $i$ | 8.82511 | | +0.27177377 | −0.03595031 |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 18 | 691 | 0.6+ | 0.2− | 2003 01 02 | 699 | 0.2+ | 1.3− | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 1992 10 18 | 691 | 0.7+ | 0.4+ | 2003 01 02 | 704 | 0.0 | 0.8− | 2006 09 30 | G96 | 0.3− | 0.2− |
| 1992 10 18 | 691 | 0.5+ | 0.4− | 2003 01 02 | 704 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.5− |
| 1992 10 18 | 691 | 0.8− | 0.6− | 2003 01 02 | 704 | 1.5+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 1992 10 18 | 691 | 0.4− | 0.5− | 2003 01 05 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.6+ |
| 2001 09 16 | 704 | (1.1+ | 1.9+) | 2003 01 05 | 704 | (1.5+ | 0.5−) | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.9+ | 2003 01 05 | 704 | 0.7+ | 0.9+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 09 16 | 704 | 0.6+ | 0.7+ | 2003 01 05 | 704 | (0.8+ | 1.7+) | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 09 16 | 704 | 0.1− | 0.4+ | 2003 01 28 | 704 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 09 16 | 704 | 1.2+ | 0.1− | 2003 01 28 | 704 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 1.2+ | 0.5+ | 2003 01 28 | 704 | 0.3+ | 0.2+ | 2006 11 02 | 703 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 1.1+ | 0.8− | 2003 01 28 | 704 | 0.3+ | 0.3+ | 2006 11 02 | 703 | 0.3− | 0.8− |
| 2001 09 20 | 704 | 0.3+ | 0.3− | 2003 01 31 | 683 | (0.4− | 1.6+) | 2006 11 02 | 703 | 0.5− | 0.2− |
| 2001 09 20 | 704 | 1.2+ | 0.2+ | 2003 01 31 | 683 | (1.6+ | 1.2+) | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.8− | 1.0− | 2003 01 31 | 683 | (1.6+ | 0.9+) | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2003 02 01 | 699 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2003 02 01 | 699 | 0.8− | 0.5+ | 2006 11 10 | 644 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2003 02 01 | 683 | (0.8− | 2.0+) | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2003 02 01 | 683 | 0.8− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2003 02 01 | 699 | 0.4+ | 0.6− | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2001 09 21 | 704 | 1.3− | 0.3+ | 2003 02 01 | 683 | (2.5− | 0.2−) | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2003 02 01 | 699 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.7− |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2003 02 02 | 683 | (0.5− | 1.8+) | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2003 02 02 | 683 | 0.8− | 1.0+ | 2006 11 11 | 703 | 0.2− | 1.0+ |
| 2001 09 21 | 704 | 0.6− | 1.2+ | 2003 02 02 | 683 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 1.3+ |
| 2001 10 14 | 704 | 0.1− | 0.7+ | 2003 02 02 | 608 | 0.1− | 0.7− | 2006 11 11 | 703 | 0.7+ | 0.6+ |
| 2001 10 14 | 704 | 0.4+ | 0.0 | 2003 02 02 | 608 | 0.2− | 0.7− | 2006 11 11 | 703 | 0.4+ | 0.9+ |
| 2001 10 14 | 704 | (2.1− | 1.1+) | 2003 02 02 | 608 | 0.3− | 0.7− | 2006 11 14 | 704 | (0.0 | 1.6+) |
| 2001 10 18 | 561 | 0.4+ | 0.6+ | 2003 02 22 | 644 | 0.2− | 0.9+ | 2006 11 14 | 704 | 1.0+ | 0.6+ |
| 2001 10 18 | 561 | 0.3− | 0.3+ | 2003 02 22 | 644 | 0.1− | 1.0+ | 2006 11 14 | 704 | (3.7− | 1.1+) |
| 2001 10 18 | 561 | 0.4+ | 0.1− | 2003 02 22 | 644 | 0.1− | 1.1+ | 2006 11 14 | 704 | (3.6− | 1.4+) |
| 2001 10 19 | 644 | 0.4− | 0.5+ | 2003 03 09 | 704 | 1.5+ | 0.4− | 2006 11 17 | 704 | 0.2+ | 0.7+ |
| 2001 10 19 | 644 | 0.3− | 0.6+ | 2003 03 09 | 704 | 0.5+ | 1.1− | 2006 11 17 | 704 | 0.1− | 1.0+ |
| 2001 10 19 | 644 | 0.2− | 0.6+ | 2003 03 09 | 704 | 1.1+ | 0.3+ | 2006 11 17 | 704 | 0.6− | 0.3+ |
| 2001 10 21 | 704 | 0.7+ | 0.7+ | 2003 03 09 | 704 | 0.7+ | 0.4− | 2006 11 17 | 704 | 0.9+ | 1.1− |
| 2001 10 21 | 704 | 0.3+ | 1.0+ | 2003 03 09 | 704 | 0.6+ | 0.3− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 1.1− | 0.4+ | 2003 03 30 | 645 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.4+ | 1.0+ | 2003 03 30 | 645 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.6+ | 0.6+ | 2004 04 12 | 691 | 0.1− | 0.5− | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2001 10 25 | 644 | 0.4+ | 0.6− | 2004 04 12 | 691 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2001 10 25 | 644 | 0.3+ | 0.7− | 2004 04 12 | 691 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2001 10 25 | 644 | 0.3+ | 0.7− | 2006 08 28 | 703 | 0.5− | 0.9− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 11 12 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.9− | 1.0− | 2006 11 19 | 704 | 0.9+ | 0.2+ |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.7− | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2001 12 10 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2001 12 10 | 645 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.0 | 1.1− | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2002 11 13 | 645 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.6+ |
| 2002 11 13 | 645 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.5+ |
| 2003 01 02 | 699 | 1.1+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.7+ |
| 2003 01 02 | 699 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2003 01 02 | 699 | 0.2− | 1.2− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.5+ | 0.6+ |

**(140080)∗ 2001 SA$_{120}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.65019 | | (2000.0) | | | |
| $n$ | 0.21724633 | $\omega$ | 168.32876 | | +0.50489750 | −0.86088522 |
| $a$ | 2.7405291 | $\Omega$ | 251.31862 | | +0.78651355 | +0.48884886 |
| $e$ | 0.0982860 | $i$ | 3.80653 | | +0.35563317 | +0.14107949 |
| $P$ | 4.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 1.6− | 1.0+ | 2002 12 27 | 699 | 1.1+ | 0.7+ | 2004 05 14 | 691 | 0.0 | 0.7+ |
| 1997 11 29 | 704 | 0.9+ | 0.3− | 2002 12 27 | 699 | 0.9− | 0.2+ | 2004 05 14 | 691 | 0.0 | 0.9+ |
| 1997 11 29 | 704 | 1.7− | 0.2+ | 2002 12 27 | 699 | 0.1− | 1.1− | 2004 05 14 | 691 | 0.3+ | 0.7+ |
| 1997 11 29 | 704 | 0.6+ | 0.5+ | 2003 01 07 | 704 | 0.1+ | 0.1− | 2005 06 18 | G96 | 0.6− | 0.2+ |
| 2001 09 10 | 699 | 0.5− | 0.5+ | 2003 01 07 | 704 | 0.5+ | 0.9+ | 2005 06 18 | G96 | 0.3− | 0.1+ |
| 2001 09 10 | 699 | 0.4+ | 1.1− | 2003 01 07 | 704 | 0.2+ | 1.0+ | 2005 06 18 | G96 | 0.3+ | 0.4+ |
| 2001 09 10 | 699 | 0.1− | 0.5+ | 2003 01 07 | 704 | 0.0 | 0.1+ | 2005 06 18 | G96 | 0.1+ | 0.3+ |
| 2001 09 10 | 699 | (2.6− | 1.7−) | 2003 01 07 | 704 | 0.6+ | 0.2+ | 2005 06 29 | 691 | 0.0 | 0.9+ |
| 2001 09 16 | 704 | (0.6+ | 1.6+) | 2003 01 08 | 704 | 0.1+ | 0.5− | 2005 06 29 | 691 | 0.4− | 0.5+ |
| 2001 09 16 | 704 | 0.1− | 0.8+ | 2003 01 08 | 704 | 0.5+ | 0.3− | 2005 06 29 | 691 | 0.1− | 0.5+ |
| 2001 09 16 | 704 | 0.2+ | 0.2− | 2003 01 08 | 704 | 1.1+ | 0.6− | 2006 10 21 | 691 | 0.1+ | 0.3− |
| 2001 09 16 | 704 | 0.9− | 0.7+ | 2003 01 08 | 704 | 0.8+ | 0.9− | 2006 10 21 | 691 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 1.2+ | 0.1+ | 2003 01 08 | 704 | 0.5− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.3− |
| 2001 09 18 | 699 | 0.2+ | 0.5− | 2003 01 26 | 699 | 1.0− | 0.6− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 09 18 | 699 | 0.1− | 0.4+ | 2003 01 26 | 699 | 0.2+ | 1.0+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 09 18 | 699 | 0.3− | 0.5+ | 2003 01 26 | 699 | 0.4− | 0.4− | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2001 09 18 | 699 | 0.9+ | 0.9+ | 2003 01 26 | 699 | 0.6+ | 1.0+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2003 01 26 | 699 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2003 01 26 | 699 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2003 01 26 | 699 | 0.9− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2003 01 26 | 699 | 0.6− | 1.2+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2003 01 26 | 608 | 0.6− | 1.1+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2003 01 26 | 608 | 0.4− | 1.2+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2003 01 26 | 608 | 0.1− | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2003 01 27 | 704 | 0.2+ | 1.4+ | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2003 01 27 | 704 | (0.1− | 1.8+) | 2006 11 17 | 704 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2003 01 27 | 704 | 0.1+ | 0.7+ | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.5− | 0.1+ | 2003 01 27 | 704 | 0.2+ | 1.2+ | 2006 11 17 | 704 | 0.7+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2003 01 27 | 704 | 0.5− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2003 01 27 | 644 | 0.2+ | 0.8+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2003 01 27 | 699 | (0.5− | 1.8+) | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2003 01 27 | 699 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2001 09 21 | 644 | 0.4− | 0.7+ | 2003 01 27 | 699 | 0.4+ | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 2001 09 21 | 644 | 0.3− | 1.0+ | 2003 01 27 | 644 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 09 21 | 644 | 0.5− | 1.1+ | 2003 01 27 | 699 | 1.3+ | 0.4− | 2006 11 18 | 704 | 1.2+ | 0.1+ |
| 2001 09 23 | 704 | 0.3+ | 0.7+ | 2003 01 27 | 644 | 0.1+ | 0.8+ | 2006 11 18 | 704 | 0.7+ | 1.0+ |
| 2001 09 23 | 704 | 0.9+ | 1.2+ | 2003 01 30 | 699 | 0.7+ | 0.9+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2001 09 23 | 704 | 0.2+ | 0.9+ | 2003 01 30 | 699 | 1.2+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.8− | 1.3+ | 2003 01 30 | 699 | 0.2+ | 0.7+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.6− | 0.5+ | 2003 01 30 | 699 | 1.0+ | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2001 10 21 | 704 | 0.7+ | 0.1+ | 2003 02 02 | 704 | 0.4+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2001 10 21 | 704 | 1.2+ | 1.5+ | 2003 02 02 | 704 | 0.5+ | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.6− |
| 2001 10 21 | 704 | 0.0 | 0.7+ | 2003 02 02 | 704 | 0.1− | 0.5− | 2006 11 27 | 704 | 0.4− | 1.1− |
| 2001 10 24 | 644 | 0.5− | 1.0+ | 2003 02 02 | 704 | 0.7− | 0.0 | 2006 11 27 | 704 | 0.4− | 0.4+ |
| 2001 10 24 | 644 | 0.7− | 0.2+ | 2003 02 03 | 644 | 0.2− | 0.5+ | 2006 11 27 | 704 | 0.9− | 2.3+ |
| 2001 10 24 | 644 | 0.6− | 0.3+ | 2003 02 03 | 644 | 0.1+ | 0.7+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2001 11 18 | 645 | 0.1+ | 0.1− | 2003 02 03 | 644 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2003 02 21 | 699 | 0.4+ | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.9− |
| 2001 12 10 | 645 | 0.1− | 0.1− | 2003 02 21 | 699 | (1.6+ | 0.6+) | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2001 12 10 | 645 | 0.1− | 0.1− | 2003 02 21 | 699 | 0.7+ | 0.7+ | | | | |
| 2002 12 27 | 699 | 0.6− | 0.8− | 2003 02 21 | 699 | 0.3+ | 0.1+ | | | | |

**(140081)∗ 2001 SB$_{120}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.27034 | | | (2000.0) | | |
| $n$ | 0.21810704 | $\omega$ | 336.18643 | | +0.19582345 | +0.97841025 |
| $a$ | 2.7333144 | $\Omega$ | 305.04340 | | −0.88625905 | +0.14773073 |
| $e$ | 0.0496852 | $i$ | 4.62946 | | −0.41975954 | +0.14453031 |
| $P$ | 4.52 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.4+ | 0.2− | 2001 10 14 | 704 | 0.3− | 0.1+ | 2005 07 15 | G96 | 0.2+ | 0.2+ |
| 2001 09 08 | 704 | 0.7+ | 0.5+ | 2001 10 14 | 704 | 0.2− | 0.0 | 2006 10 19 | 703 | 1.3− | 0.3+ |
| 2001 09 08 | 704 | 0.4+ | 0.1+ | 2001 10 14 | 704 | (2.3− | 0.0 ) | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2001 09 10 | 699 | (1.9− | 0.1−) | 2001 10 14 | 704 | 0.2− | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.6− |
| 2001 09 10 | 699 | 0.6− | 0.5+ | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2006 10 19 | 703 | 0.6− | 1.1+ |
| 2001 09 10 | 699 | (1.7− | 1.4+) | 2004 03 19 | 704 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.3+ | 1.0− |
| 2001 09 10 | 699 | 0.9+ | 0.4+ | 2004 03 19 | 704 | (0.0 | 1.7+) | 2006 10 27 | 703 | 0.9+ | 1.4− |
| 2001 09 12 | 333 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2006 10 27 | 703 | (1.8+ | 0.4−) |
| 2001 09 12 | 333 | 0.0 | 0.1− | 2004 04 11 | 644 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.4+ | 1.0− |
| 2001 09 16 | 704 | 0.7− | 0.0 | 2004 04 11 | 644 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 1.1− | 0.4+ | 2004 04 11 | 644 | 0.8+ | 0.6+ | 2006 11 11 | 703 | 1.2− | 0.6+ |
| 2001 09 16 | 704 | 0.9− | 0.3+ | 2005 07 07 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.3− | 1.1+ | 2005 07 07 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.5+ | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.7+ | 2005 07 07 | 691 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.4− | 1.1− |
| 2001 09 20 | 704 | 0.8+ | 0.9+ | 2005 07 15 | G96 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2001 09 20 | 704 | 0.4− | 0.6− | 2005 07 15 | G96 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.9+ | 1.2+ |
| 2001 09 20 | 704 | 1.1− | 0.0 | 2005 07 15 | G96 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |

**(140082)∗ 2001 SO$_{120}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.36270 | | | (2000.0) | | |
| $n$ | 0.21459514 | $\omega$ | 204.32832 | | +0.69572849 | −0.71750038 |
| $a$ | 2.7630546 | $\Omega$ | 201.63794 | | +0.67321415 | +0.66782436 |
| $e$ | 0.0262864 | $i$ | 5.28839 | | +0.25048869 | +0.19799955 |
| $P$ | 4.59 | $H$ | 16.5 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.4+ | 0.5− | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.2+ | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.6+ | 2004 03 16 | 691 | 0.3+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.6− | 0.5− | 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 09 16 | 704 | 0.8− | 0.7+ | 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 1.0+ | 1.2+ | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 1.3+ | 1.0+ | 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.1+ | 0.8+ | 2004 04 20 | 691 | 0.4− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.8+ |
| 2001 09 20 | 704 | 0.9+ | 0.8+ | 2004 05 09 | 691 | 0.1+ | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.6+ | 1.3+ | 2004 05 09 | 691 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.4+ |
| 2001 09 24 | 704 | (0.3+ | 1.5+) | 2004 05 09 | 691 | 0.4+ | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | 0.4− | 0.9+ | 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2001 09 24 | 704 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.5+ | 0.1+ |
| 2001 09 24 | 704 | 0.7− | 0.3+ | 2005 06 13 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.8− |
| 2001 10 11 | 644 | 0.2− | 1.0+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2001 10 11 | 644 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | (0.6− | 1.7+) |
| 2001 10 11 | 644 | 0.4+ | 1.2+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 10 14 | 645 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2001 10 14 | 645 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2003 01 07 | 704 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2003 01 07 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 01 07 | 704 | 0.3− | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.1+ | | | | |
| 2004 03 16 | 691 | 0.6+ | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.1− | | | | |

**(140083)∗ 2001 SR$_{120}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 168.62159 | | | (2000.0) | | |
| $n$ | 0.21000410 | $\omega$ | 352.14069 | | −0.86925268 | +0.49300811 |
| $a$ | 2.8031792 | $\Omega$ | 217.46989 | | −0.45023450 | −0.82008774 |
| $e$ | 0.0427984 | $i$ | 3.45333 | | −0.20417801 | −0.29051523 |
| $P$ | 4.69 | $H$ | 15.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 0.2+ | 0.1+ | 2004 03 18 | 704 | (1.0+ | 1.6+) | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1993 12 16 | 691 | 0.8− | 1.6+ | 2004 03 18 | 704 | 0.4+ | 1.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 1993 12 16 | 691 | 0.3− | 0.7+ | 2004 03 18 | 704 | 0.0 | 1.4+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 1994 02 12 | 691 | 0.0 | 0.4− | 2004 03 18 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 691 | 0.4+ | 0.1− |
| 1994 02 12 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.9+ | 1.3+ | 2006 09 26 | 691 | 0.3+ | 0.0 |
| 1994 02 12 | 691 | 0.3+ | 0.3− | 2004 03 20 | 704 | (2.1+ | 0.1−) | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 1999 02 16 | 910 | 1.1+ | 0.6− | 2004 03 20 | 704 | 0.5− | 1.0+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 1999 02 16 | 910 | 1.3+ | 0.9− | 2004 03 20 | 704 | 1.2+ | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 1999 02 16 | 910 | 1.0+ | 0.7− | 2004 03 20 | 704 | (1.8+ | 0.7+) | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.0 | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.5+ | 2006 10 15 | 691 | (1.9− | 1.5+) |
| 2001 09 16 | 704 | 1.3− | 0.9− | 2004 03 24 | 699 | 1.3− | 0.8+ | 2006 10 15 | 691 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.2+ | 2004 03 24 | 699 | (1.6+ | 0.1−) | 2006 10 15 | 691 | 0.5− | 0.7+ |
| 2001 09 16 | 704 | 0.4− | 0.9− | 2004 03 24 | 699 | 0.9+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2004 03 24 | 699 | 1.5+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2004 03 27 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.8+ | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 1.2+ | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.1+ | 1.4+ | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 691 | 0.4− | 0.2− |
| 2001 09 20 | 704 | 0.3+ | 1.0+ | 2004 03 27 | 704 | 0.2+ | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.5− |
| 2001 09 22 | 704 | 0.2− | 0.7+ | 2004 03 28 | 704 | 1.0+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.6− |
| 2001 09 22 | 704 | 0.7+ | 0.6+ | 2004 03 28 | 704 | 1.0+ | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2001 09 22 | 704 | 0.2+ | 0.6+ | 2004 03 28 | 704 | 1.0+ | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 0.6+ | 1.2+ | 2004 03 28 | 704 | 0.4+ | 0.5+ | 2006 10 31 | 691 | 0.6− | 0.8+ |
| 2001 09 23 | 704 | 0.1− | 0.7+ | 2004 03 28 | 704 | 1.3+ | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.0 | 1.3+ | 2004 04 11 | 644 | 0.4+ | 0.8+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2001 09 23 | 704 | 0.3− | 0.2+ | 2004 04 11 | 644 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 0.3− | 0.8+ | 2004 04 11 | 644 | 0.2− | 0.8+ | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2001 09 24 | 704 | 0.8+ | 0.6+ | 2004 04 15 | 691 | 0.2− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | 1.0+ | 1.1+ | 2004 04 15 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.8− |
| 2001 09 24 | 704 | 0.7− | 0.2+ | 2004 04 15 | 691 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.8− |
| 2001 10 11 | 644 | 0.8− | 0.2+ | 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.7− | 0.7− |
| 2001 10 11 | 644 | 1.1− | 0.2+ | 2004 04 22 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.7− |
| 2001 10 11 | 644 | 0.4− | 0.4+ | 2004 04 22 | 691 | 0.3− | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2001 10 19 | 644 | 0.6− | 0.8+ | 2005 06 14 | 691 | 0.2− | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2001 10 19 | 644 | 0.4− | 0.7+ | 2005 06 14 | 691 | 0.3− | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2001 10 19 | 644 | 0.5− | 0.6+ | 2005 06 14 | 691 | 0.3− | 0.5+ | 2006 11 22 | G96 | 0.2− | 0.0 |

**(140084)∗ 2001 ST$_{121}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.39061 | | | (2000.0) | | |
| $n$ | 0.22674972 | $\omega$ | 175.22702 | | +0.54485426 | −0.83346581 |
| $a$ | 2.6634112 | $\Omega$ | 241.73086 | | +0.76583726 | +0.53931011 |
| $e$ | 0.0848013 | $i$ | 5.99760 | | +0.34150715 | +0.12033020 |
| $P$ | 4.35 | $H$ | 16.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.2+ | 0.0 | 2002 12 05 | 291 | 0.1+ | 0.2+ | 2005 07 30 | 644 | 0.1− | 0.2+ |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2002 12 05 | 291 | 0.0 | 0.2+ | 2005 07 30 | 599 | 0.0 | 0.8+ |
| 2001 09 08 | 704 | 0.2+ | 0.1+ | 2002 12 05 | 291 | 0.4− | 0.1+ | 2005 07 30 | 599 | 0.1+ | 0.4+ |
| 2001 09 08 | 704 | 0.0 | 0.3− | 2002 12 05 | 291 | 0.5− | 0.8+ | 2005 07 30 | 599 | 0.4+ | 0.2+ |
| 2001 09 08 | 704 | 0.3− | 0.0 | 2002 12 05 | 291 | 0.7− | 0.6+ | 2005 07 30 | 599 | 0.2+ | 0.2+ |
| 2001 09 08 | 704 | 0.2+ | 0.6− | 2002 12 05 | 291 | 0.3− | 0.4+ | 2005 08 24 | 644 | 0.4− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2+ | 0.3+ | 2003 01 07 | 704 | 0.5+ | 1.0+ | 2005 08 24 | 644 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2003 01 07 | 704 | 1.3− | 0.7+ | 2005 08 24 | 644 | 0.2− | 0.2+ |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2003 01 07 | 704 | 1.1− | 0.7− | 2005 09 03 | 644 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.3+ | 0.3+ | 2003 01 07 | 704 | 0.2+ | 0.5+ | 2005 09 03 | 644 | 0.5− | 0.0 |
| 2001 09 16 | 704 | 0.7− | 0.3− | 2004 05 09 | 691 | 0.0 | 0.2+ | 2005 09 03 | 644 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.7− | 1.5+ | 2004 05 09 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2004 05 09 | 691 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | (1.9− | 0.6+) | 2004 05 16 | 691 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.4+ |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2004 05 16 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2001 09 23 | 704 | 0.1+ | 0.4+ | 2004 05 16 | 691 | 0.0 | 0.4+ | 2006 11 17 | 691 | 0.2+ | 1.0− |
| 2001 09 23 | 704 | 0.8+ | 0.1− | 2004 05 19 | 691 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2001 09 23 | 704 | 0.0 | 0.9+ | 2004 05 19 | 691 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.3+ | 0.1− |
| 2001 09 28 | 644 | 0.6− | 0.5+ | 2004 05 19 | 691 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2001 09 28 | 644 | 0.5− | 0.9+ | 2005 07 30 | 644 | 0.3− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.3− |
| 2001 09 28 | 644 | 0.9− | 0.8+ | 2005 07 30 | 644 | 0.1− | 0.0 | | | | |

**(140085)∗ 2001 SZ$_{121}$ = 1996 VT$_{23}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20284)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 269.46208 | | (2000.0) | | +0.38131118 | −0.91993404 |
| $n$ | 0.17955741 | $\omega$ | 199.69911 | | +0.86377288 | +0.38970894 |
| $a$ | 3.1117199 | $\Omega$ | 228.00335 | | +0.32939065 | +0.04299189 |
| $e$ | 0.0980365 | $i$ | 7.05126 | | +0.04299189 | |
| $P$ | 5.49 | $H$ | 14.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 10 | 691 | 0.4− | 0.1− | 2001 09 23 | 704 | 0.8− | 1.8+ | 2004 03 19 | 704 | 0.3− | 0.3+ |
| 1996 11 10 | 691 | 0.2− | 0.0 | 2001 09 23 | 704 | (0.4− | 2.1+) | 2004 03 19 | 704 | 0.5+ | 0.1− |
| 1996 11 10 | 691 | 0.3− | 0.1− | 2001 10 14 | 704 | 0.6− | 1.8− | 2004 03 19 | 704 | 0.2− | 0.2+ |
| 1996 11 18 | 691 | 0.3+ | 0.0 | 2001 10 14 | 704 | 0.3− | 0.1− | 2004 03 19 | 704 | 0.6+ | 0.9+ |
| 1996 11 18 | 691 | 0.1+ | 0.2+ | 2001 10 14 | 704 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.3− | 0.4+ |
| 1996 11 18 | 691 | 0.3+ | 0.2+ | 2001 10 14 | 704 | 0.0 | 0.3− | 2004 03 27 | 703 | 0.1+ | 0.5+ |
| 2001 08 25 | 704 | 0.2+ | 1.3+ | 2001 10 16 | 704 | 1.3− | 1.6− | 2004 03 27 | 703 | 1.0+ | 1.3+ |
| 2001 08 25 | 704 | 0.6+ | 0.8+ | 2001 10 16 | 704 | (0.2+ | 2.9−) | 2004 03 27 | 703 | 0.2+ | 0.4− |
| 2001 08 25 | 704 | 0.6+ | 1.0+ | 2001 10 16 | 704 | 0.0 | 1.0− | 2004 03 27 | 703 | 0.8+ | 0.3+ |
| 2001 08 25 | 704 | 0.4+ | 1.2+ | 2001 10 16 | 704 | 1.7− | 0.6− | 2004 04 19 | 704 | 1.1+ | 0.2+ |
| 2001 09 10 | 699 | 0.9+ | 0.7+ | 2001 10 16 | 704 | 1.4− | 0.2+ | 2004 04 19 | 704 | 0.1− | 0.8+ |
| 2001 09 10 | 699 | 0.4+ | 1.1+ | 2001 10 21 | 704 | 0.6+ | 0.9− | 2004 04 19 | 704 | 0.3− | 0.4+ |
| 2001 09 10 | 699 | 0.2− | 0.3+ | 2001 10 21 | 704 | 0.4+ | 0.2+ | 2004 04 19 | 704 | 1.8+ | 1.4+ |
| 2001 09 10 | 699 | 0.3+ | 1.0+ | 2001 10 21 | 704 | 0.6+ | 0.0 | 2005 05 19 | G96 | 0.7− | 0.3+ |
| 2001 09 16 | 704 | 0.4+ | 0.5+ | 2002 12 11 | 704 | 0.1− | 1.7+ | 2005 05 19 | G96 | 0.1− | 0.6+ |
| 2001 09 16 | 704 | 0.2+ | 0.9+ | 2002 12 11 | 704 | 1.1− | 0.8+ | 2005 05 19 | G96 | 0.3− | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.7+ | 2002 12 11 | 704 | 0.6− | 0.8+ | 2005 05 19 | G96 | 0.3− | 0.2+ |
| 2001 09 16 | 704 | 0.1+ | 0.0 | 2003 01 07 | 704 | 0.2+ | 0.4+ | 2006 08 14 | 644 | 0.1+ | 0.5+ |
| 2001 09 16 | 704 | 0.1+ | 0.3− | 2003 01 07 | 704 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.7+ | 0.5+ |
| 2001 09 18 | 699 | 0.1+ | 0.8+ | 2003 01 07 | 704 | 0.1− | 0.0 | 2006 08 14 | 644 | 0.6+ | 0.5+ |
| 2001 09 18 | 699 | 0.2+ | 0.5+ | 2003 01 07 | 704 | 1.0+ | 0.8+ | 2006 08 15 | 644 | 0.4+ | 0.5+ |
| 2001 09 18 | 699 | 0.6+ | 0.8+ | 2003 02 02 | 704 | 0.4+ | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2001 09 18 | 699 | 1.6− | 1.4+ | 2003 02 02 | 704 | 0.2− | 0.1− | 2006 08 15 | 644 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.5− | 0.6+ | 2003 02 02 | 704 | 0.6− | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.7+ |
| 2001 09 20 | 704 | 0.1+ | 0.7+ | 2004 03 16 | 703 | 0.4− | 1.9+ | 2006 08 29 | 703 | 0.0 | 0.6+ |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2004 03 16 | 703 | 0.5− | 0.9+ | 2006 08 29 | 703 | 1.0− | 0.6+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2004 03 16 | 703 | 0.2− | 0.8+ | 2006 08 29 | 703 | 0.2− | 0.8+ |
| 2001 09 20 | 704 | 0.5− | 0.6+ | 2004 03 16 | 703 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.8+ |
| 2001 09 22 | 704 | 0.6− | 0.1− | 2004 03 17 | 704 | 1.1+ | 0.8+ | 2006 09 14 | 703 | 0.9− | 0.5− |
| 2001 09 22 | 704 | 0.4− | 0.3+ | 2004 03 17 | 704 | 1.0+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 1.4− |
| 2001 09 22 | 704 | 0.2− | 0.1− | 2004 03 17 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.9− | 0.8− |
| 2001 09 22 | 704 | 0.9+ | 0.3− | 2004 03 17 | 704 | 0.0 | 0.6+ | | | | |
| 2001 09 23 | 704 | 0.1+ | 1.3+ | 2004 03 17 | 704 | 1.3+ | 1.1+ | | | | |

**(140086)∗ 2001 SD$_{122}$ = 2001 UC$_{210}$ = 2003 AT$_{39}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 38538; *MPO* 40606)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.35968 | | (2000.0) | | +0.73754429 | −0.67249670 |
| $n$ | 0.21323908 | $\omega$ | 151.76663 | | +0.60667118 | +0.69981285 |
| $a$ | 2.7747563 | $\Omega$ | 250.63024 | | +0.29661171 | +0.24085298 |
| $e$ | 0.0706119 | $i$ | 3.73496 | | | |
| $P$ | 4.62 | $H$ | 15.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.1− | 0.1+ | 2001 09 26 | 704 | 0.4+ | 0.4− | 2005 06 10 | 691 | 0.1+ | 0.4+ |
| 1994 02 10 | 691 | 0.2− | 0.1+ | 2001 09 26 | 704 | 0.6+ | 0.2− | 2005 06 10 | 691 | 0.3− | 0.2+ |
| 1994 02 10 | 691 | 0.2− | 0.4+ | 2001 09 26 | 704 | 0.5+ | 0.6+ | 2005 06 10 | 691 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.4− | 0.9− | 2001 10 14 | 704 | 0.2− | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 1.2+ | 0.6+ | 2001 10 14 | 704 | 0.2− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.6− | 1.0− | 2001 10 14 | 704 | 0.7− | 1.1− | 2006 10 13 | 691 | 0.2+ | 0.4+ |
| 2001 09 16 | 704 | 0.6+ | 0.9− | 2001 10 14 | 704 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | 0.3− | 0.8+ | 2001 10 14 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 2001 09 18 | 699 | 0.2− | 0.9− | 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 2001 09 18 | 699 | 1.3− | 0.1+ | 2001 10 21 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 09 18 | 699 | 0.1− | 0.6+ | 2001 10 21 | 704 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2001 09 18 | 699 | 0.5− | 1.0+ | 2001 10 21 | 704 | 0.6+ | 1.4+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.9+ | 0.3+ | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2001 10 25 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.5− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 1.1+ | 2001 10 25 | 644 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2001 10 25 | 644 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2001 09 21 | 644 | (1.7+ | 2.2+) | 2001 11 18 | 645 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 644 | (1.6+ | 1.8+) | 2003 01 07 | 704 | (2.0+ | 0.5+) | 2006 11 19 | 704 | 0.1− | 0.7− |
| 2001 09 21 | 644 | (1.0+ | 2.3+) | 2003 01 07 | 704 | 1.2+ | 0.5− | 2006 11 19 | 704 | 0.7+ | 0.4+ |
| 2001 09 22 | 704 | 0.1− | 0.0 | 2003 01 07 | 704 | 0.6+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2001 09 22 | 704 | 0.3− | 0.4− | 2003 01 08 | 704 | (1.7+ | 0.3+) | 2006 11 19 | 704 | 0.4+ | 1.0+ |
| 2001 09 22 | 704 | 0.1+ | 0.7+ | 2003 01 08 | 704 | 1.1+ | 1.1+ | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2001 09 25 | 704 | 1.1− | 0.7+ | 2003 01 26 | 291 | 0.4+ | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2001 09 25 | 704 | 0.4− | 0.4+ | 2003 01 26 | 291 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2001 09 25 | 704 | 1.1+ | 0.3+ | 2003 01 26 | 291 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.6− |
| 2001 09 25 | 704 | 0.4+ | 0.4+ | 2004 05 10 | 691 | 0.3+ | 0.5+ | 2006 11 27 | 703 | 1.1− | 0.6+ |
| 2001 09 25 | 704 | 0.2+ | 0.6+ | 2004 05 10 | 691 | 0.0 | 0.7+ | 2006 11 27 | 703 | 0.4+ | 0.3+ |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2004 05 10 | 691 | 0.0 | 0.3− | 2006 11 27 | 703 | 1.2− | 0.4+ |
| 2001 09 25 | 704 | 0.3+ | 0.5+ | 2004 05 19 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 1.4− | 0.3− |
| 2001 09 25 | 704 | 0.5+ | 0.4+ | 2004 05 19 | 691 | 0.2+ | 0.9+ | | | | |
| 2001 09 25 | 704 | 0.0 | 0.0 | 2004 05 19 | 691 | 0.1+ | 0.5+ | | | | |

**(140087)∗ 2001 SM$_{123}$ = 1996 TY$_{57}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20285)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.69208 | | (2000.0) | | −0.08361064 | +0.99295463 |
| $n$ | 0.19261036 | $\omega$ | 293.77050 | | −0.83945284 | −0.11558754 |
| $a$ | 2.9694974 | $\Omega$ | 331.04714 | | −0.53696200 | +0.02608884 |
| $e$ | 0.0433123 | $i$ | 9.98860 | | | |
| $P$ | 5.12 | $H$ | 14.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 02 | 809 | 0.3+ | 0.0 | 2004 01 19 | 703 | 0.6+ | 0.7− | 2006 08 19 | 691 | 0.3− | 0.1+ |
| 1996 10 02 | 809 | 0.7+ | 1.2− | 2004 01 22 | 704 | 0.1+ | 1.2+ | 2006 08 21 | 704 | 0.2+ | 0.7+ |
| 1996 10 02 | 809 | 0.7+ | 0.0 | 2004 01 22 | 704 | 0.3+ | 1.3+ | 2006 08 21 | 704 | 0.4+ | 0.3− |
| 1996 10 03 | 809 | 0.0 | 0.4− | 2004 01 22 | 704 | 0.2− | 1.2+ | 2006 08 21 | 704 | 0.2− | 0.3− |
| 1996 10 03 | 809 | 1.0+ | 0.5+ | 2004 01 22 | 704 | 0.6− | 1.4+ | 2006 08 21 | 704 | 0.1+ | 0.9+ |
| 1996 10 03 | 809 | 0.9− | 0.3− | 2004 01 22 | 704 | (0.7− | 1.9+) | 2006 08 21 | 704 | 0.4− | 0.1+ |
| 2001 08 14 | 608 | 0.6− | 0.7− | 2004 01 23 | 699 | 0.6− | 0.4− | 2006 08 21 | 644 | 0.6− | 0.1+ |
| 2001 08 14 | 608 | 0.9− | 0.7− | 2004 01 23 | 699 | 0.1− | 0.3+ | 2006 08 21 | 644 | 0.4− | 0.4+ |
| 2001 08 14 | 608 | 0.4− | 0.3− | 2004 01 23 | 699 | 0.2+ | 0.8− | 2006 08 21 | 644 | 0.3− | 0.2+ |
| 2001 08 23 | 699 | 0.8− | 0.1− | 2004 01 23 | 699 | 0.2+ | 1.1− | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 2001 08 23 | 699 | 1.0− | 0.1+ | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.7− | 0.3+ | 2004 02 11 | 644 | 0.7+ | 0.4+ | 2006 08 27 | 691 | 0.3− | 0.2+ |
| 2001 08 23 | 699 | 0.3− | 0.1− | 2004 02 11 | 644 | 0.6+ | 0.5+ | 2006 08 28 | 703 | 0.3+ | 0.3− |
| 2001 09 11 | 699 | 0.9− | 1.2+ | 2004 02 11 | 291 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.0 |
| 2001 09 11 | 699 | 0.7+ | 0.3+ | 2004 02 11 | 291 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.1− |
| 2001 09 11 | 699 | 0.8+ | 0.2+ | 2004 02 11 | 291 | 0.6+ | 0.2+ | 2006 08 28 | 699 | 0.6− | 0.3− |
| 2001 09 11 | 699 | 1.1+ | 1.0+ | 2004 02 12 | 291 | 0.7− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.3− |
| 2001 09 16 | 704 | 0.1+ | 0.2+ | 2004 02 12 | 291 | 0.6− | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | 0.4+ | 0.8+ | 2004 02 12 | 291 | 0.6− | 0.3+ | 2006 08 28 | 699 | 1.2− | 0.4− |
| 2001 09 16 | 704 | 0.2− | 0.3− | 2004 02 17 | 704 | 0.8+ | 1.0+ | 2006 08 28 | 699 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.0 | 1.0− | 2004 02 17 | 704 | 0.9+ | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.6+ |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2004 02 17 | 704 | 0.1+ | 1.2+ | 2006 08 28 | 699 | 0.5− | 0.6+ |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2004 02 17 | 704 | 0.4+ | 1.1+ | 2006 08 28 | 699 | 0.3+ | 0.8+ |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2004 02 17 | 704 | 0.6+ | 0.9+ | 2006 08 29 | 704 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.5− | 2004 02 26 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 704 | 0.3+ | 0.2+ |
| 2001 09 22 | 704 | 0.4+ | 0.2+ | 2004 02 26 | 704 | 0.9+ | 0.2− | 2006 08 29 | 704 | 0.2+ | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.6− | 2006 08 29 | 704 | 0.5+ | 0.2+ |
| 2001 09 22 | 704 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.5− | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.5+ | 0.1− | 2006 08 30 | 704 | 0.5− | 0.0 |
| 2001 09 22 | 704 | 0.1+ | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | (0.4+ | 1.5+) |
| 2001 09 23 | 704 | 0.4− | 0.5+ | 2004 02 29 | 691 | 0.4+ | 0.0 | 2006 08 30 | 704 | (0.3− | 1.6+) |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2004 02 29 | 691 | 0.5+ | 0.3+ | 2006 09 12 | 699 | 0.3− | 1.0+ |
| 2001 09 23 | 704 | 0.1− | 0.3+ | 2004 03 14 | 703 | 0.7− | 0.2+ | 2006 09 12 | 699 | (2.4− | 0.1−) |
| 2001 09 23 | 704 | 0.1− | 0.4+ | 2004 03 14 | 703 | 1.3− | 0.4+ | 2006 09 12 | 699 | 0.5+ | 0.8+ |
| 2001 09 26 | 699 | 0.9+ | 0.0 | 2004 03 14 | 703 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.9+ |
| 2001 09 26 | 699 | (2.6+ | 0.5+) | 2004 03 14 | 703 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.6+ |
| 2001 09 26 | 699 | 0.5+ | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.8− | 2006 09 14 | 703 | 0.1− | 1.1+ |
| 2001 09 26 | 699 | 1.4+ | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.6− | 2006 09 14 | 703 | 1.0− | 0.2+ |
| 2001 10 19 | 644 | 0.6− | 0.9− | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.9+ | 0.1+ |
| 2001 10 19 | 644 | 0.2− | 0.6− | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.6− |
| 2001 10 19 | 644 | 0.1− | 0.9− | 2004 03 18 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.5+ |
| 2001 10 23 | 644 | 0.7− | 0.1+ | 2004 03 18 | 704 | 0.1− | 1.5+ | 2006 09 17 | 704 | 0.7− | 0.2+ |
| 2001 10 23 | 644 | 0.6− | 0.1− | 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.4− |
| 2001 10 23 | 644 | 0.5− | 0.4+ | 2004 03 18 | 704 | 1.1+ | 0.0 | 2006 09 18 | 699 | (1.4− | 1.8+) |
| 2002 11 06 | 704 | 0.3− | 1.2− | 2004 03 18 | 704 | (1.8+ | 0.3+) | 2006 09 18 | 699 | 0.2+ | 0.4+ |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2004 03 20 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.1+ |
| 2002 11 06 | 704 | 1.4− | 0.7+ | 2004 03 20 | 691 | 0.5+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.5+ |
| 2002 11 06 | 704 | 0.8+ | 0.0 | 2004 03 20 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.5+ | 0.8+ |
| 2002 12 06 | 704 | 0.1− | 1.0− | 2006 07 25 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.8+ |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2006 07 25 | 644 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.9− | 2006 07 25 | 644 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.9− | 1.4+ |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | (2.8+ | 0.0 ) |
| 2002 12 15 | 704 | 0.0 | 0.4− | 2006 08 16 | 644 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.9+ |
| 2002 12 15 | 704 | 0.1+ | 0.4− | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | (1.6+ | 0.6+) |
| 2002 12 15 | 704 | 0.3− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2002 12 15 | 704 | 0.3+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.1+ |
| 2003 01 04 | 704 | 1.0+ | 0.0 | 2006 08 16 | 644 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.4− |
| 2003 01 04 | 704 | 0.1− | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2003 01 04 | 704 | 0.2+ | 0.3− | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2004 01 19 | 703 | 0.6+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 10 21 | 291 | 0.1+ | 0.6+ |
| 2004 01 19 | 703 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.4− | 0.2+ | 2006 10 21 | 291 | 0.0 | 0.5+ |
| 2004 01 19 | 703 | 0.5+ | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 10 21 | 291 | 0.1+ | 0.7+ |

**(140088)∗ 2001 SQ$_{124}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.86379 | | (2000.0) | | | |
| $n$ | 0.21450140 | $\omega$ | 118.75196 | | +0.99186131 | +0.11908982 |
| $a$ | 2.7638595 | $\Omega$ | 234.44310 | | −0.12730241 | +0.92121850 |
| $e$ | 0.0660403 | $i$ | 3.17381 | | −0.00228758 | +0.37037020 |
| $P$ | 4.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 17 | 910 | 0.3− | 0.2− | 2001 09 22 | 704 | 0.8− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.4− |
| 1999 02 17 | 910 | 0.0 | 0.0 | 2001 09 22 | 704 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.1− |
| 1999 02 17 | 910 | 0.1+ | 0.3+ | 2001 09 23 | 704 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.1− |
| 2001 08 23 | 699 | 0.6− | 0.6+ | 2001 09 23 | 704 | 0.8+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.1− |
| 2001 08 23 | 699 | 0.8+ | 0.1+ | 2001 09 23 | 704 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.5− | 0.1+ |
| 2001 08 23 | 699 | 0.8− | 0.3− | 2001 09 23 | 704 | 0.1+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2001 08 23 | 699 | 0.5+ | 0.1− | 2001 09 23 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2001 09 08 | 704 | (1.9− | 0.5+) | 2001 09 23 | 704 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2001 09 08 | 704 | 0.1− | 0.5+ | 2001 09 23 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.6+ | 0.1+ |
| 2001 09 08 | 704 | 0.6− | 0.7+ | 2001 09 23 | 704 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 09 08 | 704 | (0.7− | 1.8+) | 2001 09 23 | 704 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2001 09 16 | 704 | 0.8− | 0.2+ | 2001 09 23 | 704 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2001 09 16 | 704 | 1.1− | 0.1+ | 2001 10 11 | 644 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.9+ | 1.1+ |
| 2001 09 16 | 704 | 0.1+ | 0.4+ | 2001 10 11 | 644 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.6+ | 2001 10 11 | 644 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.1− | 1.0+ | 2001 10 19 | 644 | 0.6+ | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.9+ | 2001 10 19 | 644 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 0.6+ | 2001 10 19 | 644 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.7+ | 2004 03 30 | 704 | (0.0 | 2.0+) | 2006 11 11 | 703 | 0.8− | 1.3− |
| 2001 09 20 | 704 | 0.1− | 1.0+ | 2004 03 30 | 704 | 0.1+ | 1.2+ | 2006 11 11 | 703 | (0.2− | 2.3−) |
| 2001 09 21 | 704 | 0.5− | 0.5− | 2004 03 30 | 704 | (1.4+ | 1.8+) | 2006 11 11 | 703 | 1.3− | 0.9− |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2004 04 19 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 1.2− |
| 2001 09 21 | 704 | 0.0 | 0.9− | 2004 04 19 | 691 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 0.1− | 1.1+ |
| 2001 09 21 | 704 | 0.6− | 0.5− | 2004 04 19 | 691 | 0.4+ | 0.8+ | 2006 11 17 | 703 | 2.7+ | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.5− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 1.2+ | 2.3+ |
| 2001 09 22 | 704 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 2.0+ | 2.4+ |
| 2001 09 22 | 704 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.6− | 2006 11 21 | 704 | 1.7− | 1.3+ |
| 2001 09 22 | 704 | 0.7− | 0.4− | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.6+ | 0.6+ |
| 2001 09 22 | 704 | 0.4+ | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2001 09 22 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2001 09 22 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 691 | 0.2+ | 0.2− | | | | |

**(140089)∗ 2001 SG$_{127}$ = 2000 KD$_{79}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 22839)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.37646 | | (2000.0) | | | |
| $n$ | 0.18036793 | $\omega$ | 67.93614 | | −0.06532877 | +0.99769249 |
| $a$ | 3.1023908 | $\Omega$ | 198.34705 | | −0.93581212 | −0.06768767 |
| $e$ | 0.1465203 | $i$ | 3.36734 | | −0.34639258 | −0.00529771 |
| $P$ | 5.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.6+ | 0.1− | 2001 09 23 | 704 | 1.0+ | 0.4+ | 2005 04 07 | 704 | 1.4+ | 0.4+ |
| 1996 09 08 | 691 | 0.6+ | 0.3− | 2001 09 23 | 704 | 0.1+ | 0.8+ | 2005 04 07 | 704 | 0.1− | 0.6+ |
| 1996 09 08 | 691 | 0.5+ | 0.4− | 2001 09 23 | 704 | 0.0 | 0.1+ | 2005 04 07 | 704 | 0.3− | 0.1+ |
| 1996 09 13 | 691 | 1.0− | 0.0 | 2001 09 23 | 704 | 0.3− | 0.6+ | 2005 04 12 | 704 | 0.3+ | 0.3+ |
| 1996 09 13 | 691 | 0.0 | 0.1− | 2001 10 21 | 695 | 0.0 | 0.4+ | 2005 04 12 | 704 | 0.7+ | 0.0 |
| 1996 09 13 | 691 | 0.2− | 0.1+ | 2001 10 21 | 695 | 0.0 | 0.5+ | 2005 04 12 | 704 | 0.7+ | 0.5− |
| 2000 05 27 | 704 | 0.3− | 0.3− | 2004 04 13 | 645 | 0.1− | 0.0 | 2005 04 12 | 704 | (0.1+ | 1.6+) |
| 2000 05 27 | 704 | 0.4− | 0.5+ | 2004 04 13 | 645 | 0.0 | 0.0 | 2005 05 04 | G96 | 0.7− | 0.0 |
| 2000 05 27 | 704 | 0.2+ | 0.4+ | 2004 04 16 | 645 | 0.0 | 0.1+ | 2005 05 04 | G96 | 0.4− | 0.0 |
| 2000 05 27 | 704 | 0.3− | 0.4+ | 2004 04 16 | 645 | 0.1+ | 0.0 | 2005 05 04 | G96 | 0.4− | 0.3− |
| 2000 06 01 | 608 | 0.4− | 0.6− | 2005 03 13 | 691 | 0.4+ | 0.3+ | 2005 05 04 | G96 | 0.5− | 0.0 |
| 2000 06 01 | 608 | 0.8− | 0.9− | 2005 03 13 | 691 | 0.2+ | 0.3+ | 2005 05 13 | G96 | 0.6− | 0.2− |
| 2000 06 01 | 608 | 0.3+ | 1.4− | 2005 03 13 | 691 | 0.0 | 0.3+ | 2005 05 13 | G96 | 0.4− | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2005 04 04 | 691 | 0.2+ | 0.2− | 2005 05 13 | G96 | 0.5− | 0.2− |
| 2001 09 16 | 704 | (1.2− | 1.8+) | 2005 04 04 | 691 | 0.4+ | 0.2− | 2005 05 13 | G96 | 0.8− | 0.1− |
| 2001 09 16 | 704 | 0.3− | 1.0+ | 2005 04 04 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.5− | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.8+ | 2005 04 04 | 704 | 0.6− | 1.0− | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.7− | 0.9+ | 2005 04 04 | 704 | 1.0+ | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2005 04 04 | 704 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.6− | 0.3− |
| 2001 09 20 | 704 | 0.2− | 0.6+ | 2005 04 04 | 704 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.3+ | 0.7+ | 2005 04 04 | 704 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 0.3− | 0.1+ | 2005 04 05 | 699 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 1.0− | 0.8+ | 2005 04 05 | 699 | 0.5+ | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.6+ | 2005 04 05 | 699 | 0.6+ | 1.0+ | | | | |
| 2001 09 22 | 704 | (0.6− | 1.6+) | 2005 04 05 | 699 | 1.0− | 0.2+ | | | | |

**(140090)∗ 2001 SL$_{127}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.01846 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20028277 | $\omega$ | 105.29545 | | +0.78857332 | −0.61477096 | |
| $a$ | 2.8931680 | $\Omega$ | 292.64200 | | +0.55801998 | +0.72525621 | |
| $e$ | 0.0782512 | $i$ | 0.89705 | | +0.25839084 | +0.30993563 | |
| $P$ | 4.92 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.6− | 1.1+ | 2001 12 10 | 645 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.6+ |
| 2001 09 16 | 704 | 0.7+ | 0.7+ | 2001 12 10 | 645 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.5− | 0.7+ |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2003 01 02 | 704 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.1− | 2003 01 02 | 704 | 0.2− | 0.1+ | 2006 09 25 | 691 | 1.4− | 0.3− |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2003 01 02 | 704 | 0.2− | 1.4+ | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2003 01 02 | 704 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.6− | 2004 03 29 | 691 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.3− | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 09 22 | 704 | 0.1+ | 0.1− | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 09 22 | 704 | 0.0 | 0.2+ | 2004 04 23 | 691 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.6+ | 1.4+ |
| 2001 09 22 | 704 | 0.7− | 0.5− | 2004 04 23 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2001 09 22 | 704 | 0.0 | 0.0 | 2004 04 23 | 691 | 0.6+ | 1.1+ | 2006 09 29 | 704 | (1.8+ | 1.0+) |
| 2001 09 23 | 704 | 0.3− | 0.0 | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.9+ | 0.4− |
| 2001 09 23 | 704 | 0.1+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2001 09 23 | 704 | 0.4+ | 0.2+ | 2006 07 22 | G96 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.1− |
| 2001 09 23 | 704 | 0.0 | 1.0+ | 2006 07 22 | G96 | 0.3+ | 0.1− | 2006 10 17 | G96 | 1.5− | 0.7− |
| 2001 09 23 | 704 | (1.6− | 0.1−) | 2006 09 17 | 691 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 10 11 | 644 | 0.0 | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2001 10 11 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.9− |
| 2001 10 11 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2001 10 21 | 704 | 1.2− | 0.5+ | 2006 09 19 | 699 | 0.7− | 0.4− | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 1.1− | 0.8+ | 2006 09 19 | 699 | 0.7+ | 0.6+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 1.1− | 1.1+ | 2006 09 19 | 699 | 1.2+ | 0.5− | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.2+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.1+ |

**(140091)∗ 2001 SN$_{128}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.60294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18219021 | $\omega$ | 159.59772 | | −0.39837970 | −0.90899100 | |
| $a$ | 3.0816692 | $\Omega$ | 313.65160 | | +0.81629180 | −0.29040986 | |
| $e$ | 0.0856543 | $i$ | 9.75480 | | +0.41828377 | −0.29899410 | |
| $P$ | 5.41 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | (2.4− | 4.1−) | 2001 09 28 | 644 | 0.2+ | 0.7+ | 2004 03 17 | 704 | 1.1+ | 1.0+ |
| 2001 08 24 | 699 | 0.0 | 0.3− | 2001 09 28 | 644 | 0.0 | 0.6+ | 2004 03 28 | 691 | 0.1+ | 0.2+ |
| 2001 08 24 | 699 | 0.2+ | 0.8− | 2001 09 28 | 644 | 0.2+ | 0.6+ | 2004 03 28 | 691 | 0.0 | 0.2+ |
| 2001 08 24 | 699 | (1.9− | 0.3−) | 2002 12 05 | 704 | 0.2+ | 0.4− | 2004 03 28 | 691 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.6+ | 0.1+ | 2002 12 05 | 704 | 0.5+ | 0.6+ | 2004 04 16 | 644 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.7+ | 0.0 | 2002 12 05 | 704 | 0.1+ | 1.4+ | 2004 04 16 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.4− | 1.2− | 2002 12 05 | 704 | 0.2− | 0.9+ | 2004 04 16 | 644 | 0.5+ | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 1.2+ | 2002 12 05 | 704 | 0.2+ | 1.2+ | 2006 06 20 | G96 | 0.8− | 0.4− |
| 2001 09 20 | 704 | (0.2− | 2.0+) | 2002 12 15 | 704 | 0.1− | 0.5− | 2006 06 20 | G96 | 0.0 | 0.6+ |
| 2001 09 20 | 704 | (0.1+ | 2.6+) | 2002 12 15 | 704 | 0.3− | 0.5− | 2006 06 20 | G96 | 0.3− | 0.6+ |
| 2001 09 20 | 704 | 0.7+ | 1.1+ | 2002 12 15 | 704 | 0.5− | 1.3+ | 2006 06 20 | G96 | 0.6− | 0.5+ |
| 2001 09 21 | 704 | 0.2+ | 0.8+ | 2004 03 16 | 703 | 0.9+ | 0.3− | 2006 07 28 | A50 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 03 16 | 703 | 1.2− | 0.5+ | 2006 08 16 | A50 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.9− | 1.0− | 2004 03 16 | 703 | 0.2+ | 0.2− | 2006 08 16 | A50 | 0.4+ | 0.1+ |
| 2001 09 21 | 704 | 0.7− | 0.5− | 2004 03 16 | 703 | 0.2− | 0.9+ | 2006 08 22 | 644 | 0.5− | 0.8+ |
| 2001 09 21 | 704 | 0.5− | 0.1+ | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.8+ |
| 2001 09 25 | 704 | (1.6− | 2.8+) | 2004 03 16 | 691 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.5− | 0.9+ |
| 2001 09 25 | 704 | (1.3− | 3.3+) | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.9+ |
| 2001 09 25 | 704 | 0.9− | 1.4+ | 2004 03 17 | 704 | 0.4+ | 0.5+ | 2006 08 22 | 644 | 0.4− | 0.8+ |
| 2001 09 25 | 704 | 0.6− | 0.4+ | 2004 03 17 | 704 | 1.2+ | 0.6+ | 2006 08 22 | 644 | 0.2− | 0.6+ |
| 2001 09 25 | 704 | 0.8− | 0.9+ | 2004 03 17 | 704 | 1.4+ | 1.0+ | | | | |

**(140092)∗ 2001 SR$_{128}$ = 1999 CP$_{67}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20290)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.22598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21382620 | $\omega$ | 344.95513 | | −0.99231825 | −0.12170032 | |
| $a$ | 2.7696748 | $\Omega$ | 188.15223 | | +0.12337134 | −0.96020178 | |
| $e$ | 0.1252890 | $i$ | 9.01320 | | +0.00916497 | −0.25139921 | |
| $P$ | 4.61 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.2− | 0.2+ | 2004 03 25 | 699 | 0.3− | 0.0 | 2004 04 27 | 704 | 0.7+ | 0.6+ |
| 1999 02 12 | 704 | 0.8+ | 0.3+ | 2004 03 25 | 699 | 0.5− | 0.8+ | 2004 04 27 | 704 | (1.4+ | 1.6+) |
| 1999 02 12 | 704 | 0.0 | 0.8− | 2004 03 25 | 699 | 0.1+ | 0.6+ | 2004 04 27 | 704 | 1.2+ | 0.2− |
| 1999 02 12 | 704 | 0.3+ | 1.1+ | 2004 03 25 | 699 | 0.7+ | 0.5+ | 2004 04 27 | 704 | 1.2+ | 1.2+ |
| 1999 02 12 | 704 | 0.0 | 1.3+ | 2004 03 27 | 704 | 0.2+ | 0.0 | 2004 04 30 | 608 | 0.4+ | 0.3− |
| 1999 02 16 | 704 | 0.4− | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2004 04 30 | 608 | 0.8+ | 0.1− |
| 1999 02 16 | 704 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2004 04 30 | 608 | 0.4+ | 0.1− |
| 1999 02 16 | 704 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.0 | 0.7+ | 2004 05 09 | 608 | 0.6+ | 0.1− |
| 1999 02 16 | 704 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2004 05 09 | 608 | 0.7+ | 0.5− |
| 2001 09 08 | 704 | 1.1+ | 0.3+ | 2004 03 31 | 704 | 0.2+ | 0.0 | 2004 05 09 | 608 | 0.8+ | 0.4− |
| 2001 09 08 | 704 | 0.0 | 1.0+ | 2004 03 31 | 704 | 0.6+ | 0.2+ | 2005 06 27 | 644 | 0.0 | 0.4− |
| 2001 09 08 | 704 | (0.4+ | 1.9+) | 2004 03 31 | 704 | 0.3+ | 0.0 | 2005 06 27 | 644 | 0.4− | 0.4− |
| 2001 09 16 | 704 | 0.6− | 0.6+ | 2004 03 31 | 704 | 0.3− | 0.5+ | 2005 06 27 | 644 | 0.4− | 0.0 |
| 2001 09 16 | 704 | 0.3+ | 0.2+ | 2004 03 31 | 704 | 0.4− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.5+ |
| 2001 09 16 | 704 | 0.1+ | 0.9+ | 2004 04 08 | 608 | 1.4+ | 0.5+ | 2006 09 14 | 691 | 0.2+ | 0.5+ |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2004 04 08 | 608 | 1.3+ | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 0.6+ | 2004 04 08 | 608 | 1.2+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2004 04 13 | 691 | 0.0 | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.5+ |
| 2001 09 22 | 704 | 0.2− | 0.1− | 2004 04 16 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2001 09 22 | 704 | 0.0 | 0.8+ | 2004 04 16 | 704 | 0.0 | 0.9+ | 2006 09 25 | 691 | 0.2+ | 0.4+ |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2004 04 16 | 704 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.3− | 0.1+ |
| 2001 09 22 | 704 | 0.7− | 0.1+ | 2004 04 16 | 704 | 0.1− | 0.1+ | 2006 10 03 | 691 | 0.3− | 0.1+ |
| 2001 09 22 | 704 | 0.1− | 0.3+ | 2004 04 16 | 704 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.2− | 0.2+ | 2004 04 19 | 704 | (1.5+ | 2.2+) | 2006 10 15 | 703 | (0.2− | 1.8+) |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.6− | 1.2+ |
| 2001 09 23 | 704 | 0.6− | 0.0 | 2004 04 19 | 704 | 0.5+ | 0.5+ | 2006 10 15 | 703 | 0.8+ | 1.0+ |
| 2001 09 23 | 704 | 0.5− | 0.4+ | 2004 04 19 | 704 | 0.0 | 0.3+ | 2006 10 15 | 703 | (1.5+ | 1.8+) |
| 2001 09 23 | 704 | 0.1+ | 0.4+ | 2004 04 19 | 704 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.2+ |
| 2004 03 18 | 704 | 0.1− | 1.0+ | 2004 04 22 | 704 | (2.1+ | 1.5−) | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.3− | 0.1+ | 2004 04 22 | 704 | (2.0+ | 2.0−) | 2006 10 21 | G96 | 0.5− | 0.1− |
| 2004 03 18 | 704 | 0.5− | 1.2+ | 2004 04 22 | 704 | (2.5+ | 1.1−) | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2004 03 18 | 704 | 1.0− | 0.6+ | 2004 04 22 | 704 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | 0.2− | 0.7+ | 2004 04 22 | 704 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 03 20 | 699 | 0.5− | 0.2− | 2004 04 22 | 704 | (0.6− | 1.9+) | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2004 03 20 | 699 | 0.2− | 0.0 | 2004 04 22 | 704 | 1.1− | 0.8+ | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2004 03 20 | 699 | 0.5− | 0.7− | 2004 04 22 | 704 | 1.1− | 0.0 | 2006 11 23 | G96 | 0.5− | 0.0 |
| 2004 03 20 | 699 | 0.2− | 0.3+ | 2004 04 22 | 704 | (1.0− | 1.6+) | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 03 24 | 699 | 0.2− | 0.3+ | 2004 04 22 | 704 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 03 24 | 699 | 0.4− | 0.1+ | 2004 04 27 | 704 | 0.2+ | 1.0+ | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2004 03 24 | 699 | 0.8− | 0.1− | 2004 04 27 | 704 | 0.8+ | 0.4+ | | | | |
| 2004 03 24 | 699 | 0.6− | 0.1− | 2004 04 27 | 704 | (2.7+ | 0.4+) | | | | |

**(140093)∗ 2001 SE$_{129}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.03333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20972562 | $\omega$ | 126.41962 | | +0.80992296 | −0.58535057 | |
| $a$ | 2.8056602 | $\Omega$ | 269.43731 | | +0.52550010 | +0.75240266 | |
| $e$ | 0.2048687 | $i$ | 2.13636 | | +0.26052723 | +0.30208433 | |
| $P$ | 4.70 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.4+ | 0.1− | 2001 10 19 | 644 | 0.8− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.5− |
| 1994 04 02 | 691 | 0.6− | 0.1− | 2001 10 19 | 644 | 0.9− | 0.0 | 2006 10 21 | 691 | 0.5− | 0.0 |
| 1994 04 02 | 691 | 0.0 | 0.5+ | 2001 10 21 | 704 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.1− |
| 2001 08 27 | 699 | 0.2+ | 0.6+ | 2001 10 21 | 704 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 08 27 | 699 | 0.5+ | 0.3− | 2001 10 21 | 704 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2001 08 27 | 699 | 0.2− | 0.4+ | 2001 10 21 | 704 | 1.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 08 27 | 699 | 0.2+ | 0.2− | 2001 10 21 | 704 | 0.5− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2001 08 31 | 644 | 0.1+ | 0.5+ | 2001 10 23 | 699 | 1.0− | 0.5+ | 2006 10 29 | 704 | 0.4+ | 0.1+ |
| 2001 08 31 | 644 | 0.4− | 0.6+ | 2001 10 23 | 699 | 0.6− | 0.7+ | 2006 10 29 | 704 | 0.5+ | 0.3− |
| 2001 08 31 | 644 | 0.3− | 0.5+ | 2001 10 23 | 699 | 0.7− | 0.6+ | 2006 10 29 | 704 | 0.1− | 0.7− |
| 2001 09 10 | 699 | 0.4+ | 0.2+ | 2001 10 23 | 699 | 0.8− | 0.1− | 2006 10 29 | 704 | 0.2+ | 0.0 |
| 2001 09 10 | 699 | 0.1− | 0.5− | 2001 11 18 | 704 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 09 10 | 699 | 0.4+ | 0.3+ | 2001 11 18 | 704 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2001 09 10 | 699 | 0.2+ | 0.1− | 2001 11 18 | 704 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2001 09 14 | 644 | 0.4− | 0.2+ | 2001 11 18 | 704 | (1.6− | 1.1−) | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 09 14 | 644 | 0.5− | 0.1+ | 2001 11 18 | 704 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2001 09 14 | 644 | 0.2− | 0.0 | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 1.0− | 0.4+ | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 1.1− | 0.4− | 2003 01 31 | 704 | 1.0+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2001 09 16 | 704 | 1.0− | 0.3− | 2003 01 31 | 704 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2001 09 18 | 699 | 0.4− | 0.0 | 2003 01 31 | 704 | 1.1+ | 1.0− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 09 18 | 699 | 0.9− | 0.0 | 2003 01 31 | 704 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 09 18 | 699 | 0.4− | 0.3+ | 2003 02 03 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2001 09 18 | 699 | 0.1− | 0.0 | 2003 02 03 | 699 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2003 02 03 | 699 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.8− |
| 2001 09 20 | 704 | 0.3− | 0.5+ | 2003 02 03 | 699 | (1.8− | 0.4−) | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2003 02 03 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2003 02 03 | 699 | 0.4+ | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.9+ | 2003 02 03 | 644 | 0.5+ | 1.1+ | 2006 11 15 | 704 | 0.1+ | 0.6− |
| 2001 09 22 | 704 | 0.2− | 1.3+ | 2003 02 07 | 644 | 1.0+ | 0.9+ | 2006 11 15 | 704 | 0.6+ | 0.2+ |
| 2001 09 22 | 704 | 0.3− | 1.4+ | 2003 02 07 | 644 | 0.4+ | 1.4+ | 2006 11 15 | 704 | 1.2+ | 0.6+ |
| 2001 09 22 | 704 | (0.3− | 1.6+) | 2003 02 07 | 644 | 0.9+ | 1.2+ | 2006 11 15 | 704 | 0.0 | 1.2+ |
| 2001 09 23 | 704 | 0.4+ | 0.1− | 2003 02 21 | 644 | 0.5+ | 0.5+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | 0.3+ | 0.1+ | 2003 02 21 | 644 | 0.5+ | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.7+ | 0.3− | 2003 02 21 | 644 | 0.0 | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.6+ | 0.2− | 2003 03 06 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 704 | (1.8+ | 0.0 ) |
| 2001 09 23 | 704 | 1.3+ | 0.8− | 2003 03 06 | 644 | 0.7+ | 0.5+ | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | 0.1− | 0.2+ | 2003 03 06 | 644 | 0.1+ | 0.9+ | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2001 09 24 | 704 | 0.2− | 0.4+ | 2003 03 08 | 926 | 0.0 | 0.7+ | 2006 11 16 | 704 | (1.0+ | 1.6+) |
| 2001 09 24 | 704 | 0.1− | 0.0 | 2003 03 08 | 926 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.5+ | 0.1− |
| 2001 09 24 | 704 | 0.2+ | 0.0 | 2003 03 08 | 926 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 0.9+ | 0.5+ |
| 2001 09 24 | 704 | 0.5− | 0.3+ | 2004 04 22 | 691 | 0.4+ | 0.7+ | 2006 11 17 | 704 | 0.3+ | 1.3+ |
| 2001 09 25 | 699 | 0.6− | 0.2− | 2004 04 22 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.6− | 0.0 |
| 2001 09 25 | 699 | 0.2− | 0.1− | 2004 04 22 | 691 | 0.4+ | 0.8+ | 2006 11 17 | 704 | 0.4+ | 1.1+ |
| 2001 09 25 | 699 | 0.2− | 0.2+ | 2004 05 13 | 691 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2001 09 25 | 699 | 0.2− | 0.6+ | 2004 05 13 | 691 | 0.2+ | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.8+ |
| 2001 10 05 | 644 | 0.0 | 0.5+ | 2004 05 13 | 691 | 0.3− | 0.7+ | 2006 11 21 | 704 | 0.1+ | 1.4+ |
| 2001 10 05 | 644 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2001 10 05 | 644 | 0.0 | 0.5+ | 2006 08 28 | 703 | 1.1− | 0.2− | 2006 11 21 | 704 | 0.3− | 1.3+ |
| 2001 10 11 | 644 | 0.6− | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2001 10 11 | 644 | 0.4− | 0.8+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2001 10 11 | 644 | 0.3− | 0.6+ | 2006 09 16 | 703 | 0.2+ | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2001 10 14 | 704 | 1.0+ | 0.6+ | 2006 09 16 | 703 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2001 10 14 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.6+ | 0.7− | 2006 11 27 | 704 | 0.7+ | 0.8+ |
| 2001 10 14 | 704 | 0.7+ | 1.3+ | 2006 09 16 | 703 | 0.5− | 0.8+ | 2006 11 27 | 704 | 0.8+ | 0.8− |
| 2001 10 14 | 704 | 0.5+ | 0.8+ | 2006 09 17 | 699 | 1.0+ | 1.4− | 2006 11 27 | 704 | 0.1− | 0.7+ |
| 2001 10 16 | 704 | 0.7+ | 0.3− | 2006 09 17 | 699 | (1.7− | 0.5+) | 2006 11 27 | 704 | 0.6+ | 0.2+ |
| 2001 10 16 | 704 | 0.7+ | 0.2+ | 2006 09 17 | 699 | 0.3− | 0.4− | 2006 11 27 | 704 | 0.5+ | 0.6+ |
| 2001 10 16 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 699 | 0.5+ | 0.7+ | 2006 12 01 | G96 | 0.2− | 0.7− |
| 2001 10 16 | 704 | 0.9+ | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.5− | 2006 12 01 | G96 | 0.3+ | 0.8− |
| 2001 10 16 | 704 | 0.4− | 0.7+ | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2001 10 19 | 644 | 0.6− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 12 01 | G96 | 0.1− | 0.5− |

**(140094)∗ 2001 SH$_{129}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.10248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21259952 | $\omega$ | 206.28148 | | +0.50657544 | −0.86025130 | |
| $a$ | 2.7803183 | $\Omega$ | 213.37231 | | +0.80842318 | +0.49724352 | |
| $e$ | 0.1218722 | $i$ | 6.03896 | | +0.29972202 | +0.11276780 | |
| $P$ | 4.64 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.3+ | 0.2+ | 2003 01 07 | 704 | (0.9+ | 1.6−) | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2001 08 27 | 699 | 0.5+ | 0.0 | 2003 01 08 | 704 | 1.1− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 08 27 | 699 | 0.1− | 0.2+ | 2003 01 08 | 704 | (0.1+ | 1.5+) | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2001 08 27 | 699 | 0.2+ | 0.3− | 2003 01 08 | 704 | 0.7− | 0.4+ | 2006 10 23 | 704 | 0.4− | 0.4− |
| 2001 09 10 | 699 | 0.0 | 0.4+ | 2003 01 08 | 704 | 1.2+ | 0.1− | 2006 10 23 | 704 | (0.1− | 1.6−) |
| 2001 09 10 | 699 | 0.2+ | 0.2+ | 2003 01 26 | 699 | 1.5+ | 0.2− | 2006 10 23 | 704 | 0.0 | 0.6+ |
| 2001 09 10 | 699 | 0.1+ | 0.2− | 2003 01 26 | 699 | 1.2+ | 0.2+ | 2006 10 23 | 704 | 0.3+ | 0.6− |
| 2001 09 10 | 699 | 0.2+ | 0.7+ | 2003 01 26 | 699 | 0.8+ | 0.1+ | 2006 10 23 | 704 | 0.5− | 0.3+ |
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2003 01 26 | 699 | 0.6+ | 1.1+ | 2006 10 28 | 704 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.1+ | 2003 01 26 | 644 | 0.6+ | 0.5+ | 2006 10 28 | 704 | 1.4− | 0.3− |
| 2001 09 16 | 704 | 0.0 | 0.9+ | 2003 01 26 | 644 | 0.5+ | 0.7+ | 2006 10 28 | 704 | 0.5+ | 0.5+ |
| 2001 09 16 | 704 | 0.1− | 1.1+ | 2003 01 26 | 644 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.2+ | 0.9+ |
| 2001 09 18 | 699 | 0.5+ | 0.2+ | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2001 09 18 | 699 | 0.3− | 0.3+ | 2003 01 28 | 704 | 0.2− | 0.7− | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2001 09 18 | 699 | 0.3− | 0.7+ | 2003 01 28 | 704 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2001 09 20 | 704 | 0.2− | 0.1+ | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.8+ | 0.6+ | 2003 01 28 | 704 | 1.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2003 01 28 | 704 | 0.9+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2003 02 01 | 699 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.2+ | 0.7+ | 2003 02 01 | 699 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.6+ | 0.7+ | 2003 02 01 | 699 | 0.2− | 0.9+ | 2006 11 02 | 703 | 0.7− | 0.2− |
| 2001 09 22 | 704 | 0.2+ | 0.6+ | 2003 02 01 | 699 | 0.0 | 0.5+ | 2006 11 02 | 703 | 1.0− | 0.3− |
| 2001 09 22 | 704 | 0.1+ | 0.8+ | 2003 02 02 | 704 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 0.0 | 0.9− |
| 2001 09 23 | 704 | 0.4+ | 0.5+ | 2003 02 02 | 704 | 0.1− | 0.4+ | 2006 11 02 | 703 | 0.3+ | 0.2− |
| 2001 09 23 | 704 | 0.2+ | 0.5+ | 2003 02 02 | 704 | 0.1− | 0.8+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2001 09 23 | 704 | 0.0 | 0.5+ | 2003 02 02 | 704 | 0.1− | 1.1+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 0.6+ | 2003 02 02 | 704 | 0.1− | 0.9+ | 2006 11 10 | 644 | 0.2− | 0.2− |
| 2001 09 24 | 704 | 0.0 | 0.2+ | 2003 02 03 | 699 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2001 09 24 | 704 | 0.3+ | 0.4+ | 2003 02 03 | 699 | 0.7− | 1.3+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 0.1+ | 0.2− | 2003 02 03 | 699 | 0.1+ | 0.9+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2001 09 24 | 704 | 0.5+ | 0.1− | 2003 02 03 | 699 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2001 09 24 | 704 | 0.8+ | 0.8+ | 2003 02 04 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 644 | 0.1− | 0.2− |
| 2001 09 25 | 699 | 1.2+ | 1.2+ | 2003 02 04 | 644 | 0.4+ | 0.6+ | 2006 11 11 | 644 | 0.0 | 0.1− |
| 2001 09 25 | 699 | 0.6− | 0.3+ | 2003 02 04 | 644 | 0.4+ | 0.6+ | 2006 11 11 | 644 | 0.0 | 0.1+ |
| 2001 09 25 | 699 | 1.1+ | 1.3+ | 2003 02 19 | 644 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2001 09 25 | 699 | (1.8+ | 0.6+) | 2003 02 19 | 644 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.3− | 0.3− |
| 2001 10 05 | 644 | 1.1− | 0.5+ | 2003 02 19 | 644 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2001 10 05 | 644 | 1.3− | 0.2+ | 2004 04 26 | 699 | (1.7− | 1.0−) | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2001 10 05 | 644 | 0.7− | 0.0 | 2004 04 26 | 699 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.6+ | 0.4− |
| 2001 10 14 | 704 | 0.8+ | 0.5+ | 2004 04 26 | 699 | (0.5+ | 2.1+) | 2006 11 17 | 703 | 0.7+ | 0.6− |
| 2001 10 14 | 704 | 0.1+ | 0.3+ | 2004 04 26 | 699 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2004 05 13 | 333 | 0.5− | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.7− |
| 2001 10 14 | 704 | 0.5+ | 0.0 | 2004 05 13 | 333 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2001 10 14 | 704 | 0.4+ | 0.5+ | 2004 05 13 | 333 | 0.3− | 0.1− | 2006 11 18 | 704 | 1.4+ | 0.5+ |
| 2001 10 16 | 704 | 0.2− | 0.7+ | 2004 05 14 | 691 | 0.1+ | 1.0+ | 2006 11 18 | 704 | 1.3+ | 0.8+ |
| 2001 10 16 | 704 | 0.5− | 0.4+ | 2004 05 14 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 2001 10 16 | 704 | 0.5− | 0.9+ | 2004 05 14 | 691 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2001 10 16 | 704 | 0.8− | 0.9+ | 2004 05 23 | 691 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.9+ | 0.2+ |
| 2001 10 16 | 704 | 0.6− | 0.7+ | 2004 05 23 | 691 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.5+ | 0.9+ |
| 2001 10 21 | 704 | 1.3− | 0.3+ | 2004 05 23 | 691 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.9− | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.9+ | 0.2+ |
| 2001 10 21 | 704 | 1.0− | 0.8− | 2006 08 28 | 703 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 0.6+ | 0.8+ |
| 2001 10 21 | 704 | (1.5− | 0.6+) | 2006 08 28 | 703 | 1.0+ | 0.8+ | 2006 11 21 | 704 | 0.5− | 0.4+ |
| 2001 10 21 | 704 | 1.0− | 0.7− | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2001 10 25 | 644 | 0.3− | 0.3+ | 2006 09 16 | 703 | 1.0− | 0.7+ | 2006 11 21 | 704 | (2.3− | 1.1+) |
| 2001 10 25 | 644 | 0.4− | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.9− | 0.7+ |
| 2001 10 25 | 644 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.8− | 0.4+ |
| 2001 12 10 | 645 | 0.1− | 0.1− | 2006 09 16 | 703 | (2.0+ | 0.1+) | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2001 12 10 | 645 | 0.2− | 0.2− | 2006 10 12 | 691 | 0.7− | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.6+ |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.5+ |
| 2003 01 07 | 704 | 1.4+ | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.7+ |
| 2003 01 07 | 704 | 0.4+ | 1.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | | | | |
| 2003 01 07 | 704 | 0.8+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.5+ | | | | |

**(140095)∗ 2001 $SO_{129}$ = 1999 $CH_{49}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20291)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.91575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21886438 | $\omega$ | 187.90568 | | −0.99908896 | −0.01604119 | |
| $a$ | 2.7270053 | $\Omega$ | 350.89033 | | +0.03689359 | −0.79042426 | |
| $e$ | 0.1225491 | $i$ | 14.46456 | | −0.02145019 | −0.61234971 | |
| $P$ | 4.50 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.5− | 0.7− | 2001 09 23 | 704 | 0.7+ | 0.3+ | 2005 07 29 | 644 | 0.2− | 0.1+ |
| 1999 02 10 | 704 | 0.7+ | 0.7− | 2001 10 21 | 704 | (0.1− | 1.7−) | 2005 07 29 | 644 | 0.0 | 0.0 |
| 1999 02 10 | 704 | 0.5+ | 0.0 | 2001 10 21 | 704 | (1.5+ | 1.7−) | 2005 09 01 | 644 | 0.2+ | 0.1− |
| 1999 02 10 | 704 | 0.1− | 1.4+ | 2001 10 21 | 704 | 0.3+ | 1.4− | 2005 09 01 | 644 | 0.0 | 0.1+ |
| 1999 02 13 | 704 | 0.7+ | 0.4+ | 2001 10 21 | 704 | 0.4− | 1.3− | 2005 09 01 | 644 | 0.1+ | 0.1+ |
| 1999 02 13 | 704 | 0.2+ | 0.1+ | 2002 12 07 | 704 | (0.4− | 1.7+) | 2005 11 03 | G96 | 0.1− | 0.1− |
| 1999 02 13 | 704 | (0.4− | 2.3+) | 2002 12 07 | 704 | 0.3− | 0.4+ | 2005 11 03 | G96 | 0.0 | 0.2− |
| 1999 02 13 | 704 | 1.1− | 0.8− | 2002 12 07 | 704 | 0.8− | 0.1− | 2005 11 03 | G96 | 0.8− | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.0 | 2002 12 07 | 704 | 0.8− | 0.8+ | 2005 11 03 | G96 | 0.1− | 0.3− |
| 2001 09 16 | 704 | 0.2+ | 0.2+ | 2004 03 25 | E12 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.9+ | 0.5+ | 2004 03 25 | E12 | 0.6− | 0.3+ | 2006 09 19 | 703 | (1.7− | 0.5+) |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2004 03 25 | E12 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.4+ | 0.3+ |
| 2001 09 20 | 704 | 0.1+ | 0.3+ | 2004 03 25 | E12 | (1.1− | 2.1+) | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2004 04 13 | E12 | 0.4+ | 0.3− | 2006 10 23 | 703 | 0.6− | 0.2− |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2004 04 13 | E12 | 0.5+ | 0.8− | 2006 10 23 | 703 | (2.0+ | 0.4−) |
| 2001 09 22 | 704 | 0.0 | 0.0 | 2004 04 13 | E12 | 0.9+ | 0.7− | 2006 10 23 | 703 | 0.6− | 0.6− |
| 2001 09 22 | 704 | 0.3− | 0.5+ | 2004 04 13 | E12 | 0.6+ | 0.3− | 2006 10 23 | 703 | 0.4− | 0.8+ |
| 2001 09 22 | 704 | 0.7− | 0.8− | 2004 04 30 | E12 | 0.2− | 1.3+ | 2006 11 21 | 703 | 0.2− | 1.0+ |
| 2001 09 22 | 704 | 0.1− | 0.5+ | 2004 04 30 | E12 | 0.1+ | 1.1+ | 2006 11 21 | 703 | 0.1+ | 0.8+ |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2004 04 30 | E12 | 0.1+ | 1.5+ | 2006 11 21 | 703 | 0.9+ | 0.0 |
| 2001 09 23 | 704 | 0.4− | 0.2+ | 2004 04 30 | E12 | 0.3− | 0.9+ | 2006 11 21 | 703 | 0.7+ | 0.7+ |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2005 07 29 | 644 | 0.0 | 0.1+ | | | | |

**(140096)∗ 2001 $SQ_{129}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.52962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23214907 | $\omega$ | 123.07133 | | +0.35716876 | −0.93341367 | |
| $a$ | 2.6219521 | $\Omega$ | 305.96509 | | +0.84226548 | +0.33768500 | |
| $e$ | 0.1661410 | $i$ | 2.42149 | | +0.40375654 | +0.12127552 | |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 0.1+ | 0.3+ | 2001 09 23 | 704 | 0.6+ | 0.1+ | 2005 08 29 | 699 | 0.1− | 1.2+ |
| 1997 11 06 | 704 | 1.8− | 1.2+ | 2001 09 24 | 704 | 0.2+ | 0.4+ | 2005 08 29 | 699 | 0.4+ | 1.1+ |
| 1997 11 06 | 704 | (1.1+ | 2.2−) | 2001 09 24 | 704 | 1.4+ | 0.3+ | 2005 08 29 | 699 | 1.0+ | 1.5− |
| 1997 11 06 | 704 | 0.7− | 1.2− | 2001 09 24 | 704 | 0.8+ | 0.2+ | 2005 10 01 | G96 | 0.0 | 0.5− |
| 1997 11 06 | 704 | 1.6+ | 0.1− | 2001 09 24 | 704 | 0.3+ | 0.1− | 2005 10 01 | G96 | 0.3− | 0.2− |
| 2001 07 22 | 644 | 0.3+ | 0.2+ | 2001 10 11 | 644 | 0.6+ | 1.2+ | 2005 10 01 | G96 | 0.1− | 0.4− |
| 2001 07 22 | 644 | 0.3+ | 0.2+ | 2001 10 11 | 644 | 0.3+ | 0.8+ | 2005 10 01 | G96 | 0.3+ | 0.5− |
| 2001 07 22 | 644 | 0.3+ | 0.1+ | 2001 10 11 | 644 | 0.3+ | 1.1+ | 2005 10 25 | G96 | 0.2− | 0.1− |
| 2001 09 16 | 704 | 1.2− | 0.0 | 2001 10 14 | 704 | 0.1+ | 0.4+ | 2005 10 25 | G96 | 0.4− | 0.1− |
| 2001 09 16 | 704 | (2.5− | 0.8−) | 2001 10 14 | 704 | 0.5+ | 0.8+ | 2005 10 25 | G96 | 0.1+ | 0.4− |
| 2001 09 16 | 704 | 1.2− | 0.7− | 2001 10 14 | 704 | 0.8− | 1.2− | 2005 10 25 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.9− | 0.3+ | 2001 10 21 | 704 | 0.2+ | 0.3− | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2001 09 20 | 704 | 0.2− | 0.4− | 2001 10 21 | 704 | 0.5− | 0.2− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 0.6− | 2001 10 21 | 704 | 0.3+ | 0.5− | 2006 10 23 | G96 | 0.8− | 0.1− |
| 2001 09 20 | 704 | 0.4+ | 0.6− | 2001 10 21 | 704 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.5− | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.7− | 2001 10 21 | 704 | 0.3− | 1.3− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.9− | 2005 06 17 | G96 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2001 09 22 | 704 | 0.6− | 0.0 | 2005 06 17 | G96 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2001 09 22 | 704 | 0.3+ | 0.8+ | 2005 06 17 | G96 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2001 09 22 | 704 | 0.3+ | 0.8+ | 2005 06 17 | G96 | 0.2+ | 0.3− | 2006 11 28 | G96 | 0.0 | 0.4− |
| 2001 09 22 | 704 | 0.5+ | 0.9+ | 2005 08 24 | 644 | 0.0 | 0.4− | 2006 11 28 | G96 | 0.5+ | 0.1− |
| 2001 09 23 | 704 | 0.4− | 0.2+ | 2005 08 24 | 644 | 0.4− | 0.2− | 2006 11 28 | G96 | 0.3+ | 0.0 |
| 2001 09 23 | 704 | 0.2+ | 0.3− | 2005 08 24 | 644 | 0.0 | 0.3− | 2006 11 28 | G96 | 0.2+ | 0.1+ |
| 2001 09 23 | 704 | 0.5− | 0.3+ | 2005 08 29 | 699 | 1.1− | 0.1+ | | | | |

**(140097)∗ 2001 $SL_{130}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.07893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21149286 | $\omega$ | 298.69691 | | −0.24420135 | +0.96959028 | |
| $a$ | 2.7900088 | $\Omega$ | 317.15852 | | −0.88121946 | −0.22882826 | |
| $e$ | 0.0309476 | $i$ | 1.35985 | | −0.40474431 | −0.08678896 | |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.2+ | 0.2+ | 2001 12 10 | 645 | 0.1− | 0.0 | 2005 06 12 | 691 | 0.2− | 0.3− |
| 2001 09 12 | 691 | 0.4+ | 0.3+ | 2001 12 10 | 645 | 0.3− | 0.0 | 2005 06 12 | 691 | 0.0 | 0.3− |
| 2001 09 12 | 691 | 0.3+ | 0.3+ | 2004 03 18 | 704 | (0.7+ | 1.5+) | 2005 06 26 | G96 | 0.2− | 0.2+ |
| 2001 09 16 | 704 | 1.2− | 1.4+ | 2004 03 18 | 704 | 0.6− | 0.7+ | 2005 06 26 | G96 | 1.0+ | 0.3+ |
| 2001 09 16 | 704 | 1.2− | 0.2+ | 2004 03 18 | 704 | 0.4− | 0.2+ | 2005 06 26 | G96 | 0.2− | 0.6+ |
| 2001 09 16 | 704 | 0.7− | 0.6+ | 2004 03 18 | 704 | 0.9+ | 0.6+ | 2005 06 26 | G96 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2004 03 27 | 704 | 1.3+ | 0.6+ | 2005 06 28 | G96 | 0.5− | 0.3+ |
| 2001 09 20 | 704 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.4+ | 0.8+ | 2005 06 28 | G96 | 0.5− | 0.5+ |
| 2001 09 20 | 704 | 0.5+ | 1.1+ | 2004 03 27 | 704 | 0.7+ | 0.6+ | 2005 06 28 | G96 | 0.4− | 0.6+ |
| 2001 09 20 | 704 | 0.9+ | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.0 | 2005 06 28 | G96 | 0.1+ | 0.8+ |
| 2001 09 20 | 704 | 0.4+ | 0.9+ | 2004 03 27 | 704 | 0.7− | 0.8+ | 2005 07 07 | 691 | 0.1+ | 0.1− |
| 2001 09 22 | 704 | 0.7− | 0.7+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2005 07 07 | 691 | 0.1+ | 0.2− |
| 2001 09 22 | 704 | 0.4− | 0.8+ | 2004 04 14 | 691 | 0.2+ | 0.1+ | 2005 07 07 | 691 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | (0.0 | 2.0+) | 2004 04 14 | 691 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | 0.1− | 1.0+ | 2004 04 19 | 691 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2001 09 23 | 704 | 0.1+ | 0.7+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2001 09 23 | 704 | 0.1− | 0.8+ | 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.0 | 0.8+ | 2004 04 23 | 291 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2001 09 23 | 704 | 0.6− | 1.2+ | 2004 04 23 | 291 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 2001 09 24 | 704 | 0.1+ | 0.2− | 2004 04 23 | 291 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2001 09 24 | 704 | 0.4− | 0.4+ | 2004 04 28 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2001 09 24 | 704 | 0.6− | 0.1− | 2004 04 28 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2001 10 11 | 644 | 0.8+ | 0.8+ | 2004 04 28 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2001 10 11 | 644 | (0.8+ | 1.6+) | 2005 06 08 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2001 10 11 | 644 | (0.5+ | 1.6+) | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.5− |
| 2001 10 14 | 645 | 0.1− | 0.0 | 2005 06 08 | 691 | 0.0 | 0.2− | | | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 06 12 | 691 | 0.1+ | 0.1− | | | | |

**(140098)∗ 2001 $SP_{130}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.21067 | | (2000.0) | | | |
| $n$ | 0.19336445 | $\omega$ | 78.62718 | | +0.27451359 | −0.96149091 |
| $a$ | 2.9617720 | $\Omega$ | 355.37504 | | +0.80519094 | +0.23741873 |
| $e$ | 0.0323825 | $i$ | 9.51083 | | +0.52565183 | +0.13844698 |
| $P$ | 5.10 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.3+ | 0.3+ | 2001 10 19 | 644 | 0.0 | 0.3+ | 2004 04 12 | 691 | 0.4+ | 0.5+ |
| 2001 09 12 | 691 | 0.3+ | 0.2+ | 2001 10 19 | 644 | 0.1+ | 0.1+ | 2004 04 12 | 691 | 0.2+ | 0.4+ |
| 2001 09 12 | 691 | 0.3+ | 0.3+ | 2001 10 21 | 704 | 0.3− | 0.3+ | 2006 08 23 | 644 | 0.3− | 0.0 |
| 2001 09 14 | 644 | 1.0− | 0.1+ | 2001 10 21 | 704 | (1.2− | 1.8+) | 2006 08 23 | 644 | 0.1− | 0.2− |
| 2001 09 14 | 644 | 0.7− | 0.1+ | 2001 10 21 | 704 | 0.8− | 0.5− | 2006 08 23 | 644 | 0.0 | 0.0 |
| 2001 09 14 | 644 | 0.6− | 0.2+ | 2001 10 21 | 704 | 0.1− | 0.3+ | 2006 08 27 | 699 | 0.8− | 0.4− |
| 2001 09 16 | 704 | (1.9− | 0.0 ) | 2001 10 21 | 704 | 0.3− | 0.5− | 2006 08 27 | 699 | 0.8− | 0.9+ |
| 2001 09 16 | 704 | (1.8− | 0.1+) | 2002 12 03 | 644 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 1.4− | 0.4+ |
| 2001 09 16 | 704 | (2.1− | 0.2+) | 2002 12 03 | 644 | 0.3+ | 0.2+ | 2006 08 27 | 699 | 0.4+ | 0.7+ |
| 2001 09 16 | 704 | (1.9− | 1.0−) | 2002 12 03 | 644 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 2001 09 18 | 699 | 0.6− | 0.3+ | 2002 12 03 | 644 | 0.5+ | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2001 09 18 | 699 | 0.5− | 0.1− | 2002 12 03 | 644 | 0.7+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.1+ |
| 2001 09 18 | 699 | (2.1− | 0.0 ) | 2002 12 03 | 644 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.1− | 0.6+ |
| 2001 09 18 | 699 | 0.9− | 0.3− | 2002 12 15 | 704 | 0.3+ | 0.9+ | 2006 09 16 | 699 | 0.8− | 0.3− |
| 2001 09 20 | 704 | 0.6− | 0.1− | 2002 12 15 | 704 | 1.1− | 0.0 | 2006 09 16 | 699 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.2− | 2002 12 15 | 704 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.5− | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2002 12 15 | 704 | 0.6− | 0.5+ | 2006 09 17 | 704 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2002 12 15 | 704 | 0.1− | 1.1− | 2006 09 17 | 704 | 0.5+ | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.9− | 2004 02 26 | 704 | (0.5− | 1.5+) | 2006 09 17 | 704 | 0.5+ | 0.4+ |
| 2001 09 22 | 704 | 0.9+ | 0.2− | 2004 02 26 | 704 | 0.3− | 0.7− | 2006 09 18 | 704 | 1.2+ | 0.6+ |
| 2001 09 22 | 704 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 704 | 0.4+ | 0.4− |
| 2001 09 22 | 704 | 0.4+ | 0.2+ | 2004 02 26 | 704 | 0.6+ | 0.6− | 2006 09 18 | 704 | 0.3− | 0.1− |
| 2001 09 22 | 704 | 0.0 | 0.1+ | 2004 02 26 | 704 | 1.5− | 0.5− | 2006 09 18 | 704 | 0.5+ | 0.9+ |
| 2001 09 23 | 704 | 0.5− | 0.7+ | 2004 03 18 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 699 | 0.1+ | 0.8+ |
| 2001 09 23 | 704 | 0.0 | 0.8+ | 2004 03 18 | 704 | (0.3− | 1.9+) | 2006 09 19 | 699 | 0.3− | 0.0 |
| 2001 09 23 | 704 | 0.3− | 1.1+ | 2004 03 18 | 704 | 0.9+ | 1.4+ | 2006 09 19 | 699 | 0.6+ | 0.9+ |
| 2001 09 23 | 704 | 0.3− | 0.7+ | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.6+ | 0.2+ |
| 2001 09 23 | 704 | 0.5− | 0.7+ | 2004 03 18 | 704 | 1.0− | 0.8+ | 2006 09 20 | 704 | 0.7+ | 1.0+ |
| 2001 09 24 | 704 | 0.8− | 0.1+ | 2004 03 20 | 704 | 1.4− | 0.2+ | 2006 09 20 | 704 | 1.3+ | 0.7+ |
| 2001 09 24 | 704 | 0.6− | 0.3− | 2004 03 20 | 704 | 0.8− | 0.7+ | 2006 09 20 | 704 | 1.2+ | 0.7− |
| 2001 09 24 | 704 | (1.5− | 0.2+) | 2004 03 20 | 704 | 1.1+ | 0.2− | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2001 09 24 | 704 | 1.0− | 0.5+ | 2004 03 20 | 704 | 0.7+ | 0.6+ | 2006 09 25 | 699 | 0.6− | 0.4− |
| 2001 09 25 | 699 | (1.2+ | 1.7+) | 2004 03 24 | 699 | 1.1+ | 0.2− | 2006 09 25 | G96 | 0.4− | 0.0 |
| 2001 09 25 | 699 | 1.0+ | 0.5+ | 2004 03 24 | 699 | 0.2+ | 1.1+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2001 09 25 | 699 | 0.3− | 0.5+ | 2004 03 24 | 699 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2001 09 25 | 699 | 1.1+ | 0.3+ | 2004 03 24 | 699 | 0.0 | 0.9− | 2006 09 25 | G96 | 0.2− | 0.2+ |
| 2001 10 11 | 644 | 0.7− | 0.6+ | 2004 03 27 | 704 | 0.8+ | 1.0+ | 2006 09 25 | 699 | 0.2− | 0.5− |
| 2001 10 11 | 644 | 0.8− | 0.4+ | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.8+ |
| 2001 10 11 | 644 | 0.7− | 0.6+ | 2004 03 27 | 704 | 0.9+ | 0.3+ | 2006 10 16 | 703 | 1.3− | 1.3− |
| 2001 10 13 | 704 | 0.8− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 10 16 | 703 | 1.5− | 0.4− |
| 2001 10 13 | 704 | 0.1− | 0.9+ | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2001 10 13 | 704 | (0.2− | 2.6+) | 2004 03 28 | 704 | 0.0 | 1.1+ | 2006 10 16 | 703 | 0.6− | 1.6− |
| 2001 10 13 | 704 | 0.1+ | 0.3− | 2004 03 28 | 704 | (1.5+ | 1.1−) | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2001 10 16 | 704 | 0.6− | 0.4+ | 2004 03 28 | 704 | (2.2+ | 0.8+) | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2001 10 16 | 704 | 0.2− | 0.5+ | 2004 03 28 | 704 | (1.0+ | 1.8+) | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2001 10 16 | 704 | (1.6+ | 0.5−) | 2004 03 28 | 704 | 1.1+ | 0.5+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2001 10 19 | 644 | 0.0 | 0.1− | 2004 04 12 | 691 | 0.3+ | 0.4+ | | | | |

**(140099)∗ 2001 SE$_{131}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.30057 | | (2000.0) | | | |
| $n$ | 0.22998710 | $\omega$ | 252.51251 | | −0.23831741 | −0.97080867 |
| $a$ | 2.6383580 | $\Omega$ | 211.31458 | | +0.90967108 | −0.21335574 |
| $e$ | 0.1725965 | $i$ | 2.99073 | | +0.34015193 | −0.10958943 |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.4+ | 0.7+ | 2001 12 10 | 645 | 0.3− | 0.1− | 2003 03 07 | 704 | 0.3+ | 0.4+ |
| 2001 09 16 | 704 | 0.3− | 0.0 | 2001 12 10 | 645 | 0.2− | 0.1− | 2003 03 07 | 704 | 0.7+ | 0.3+ |
| 2001 09 16 | 704 | 0.2+ | 0.6+ | 2003 01 28 | 704 | 0.4+ | 0.6+ | 2003 03 07 | 704 | 0.6+ | 0.6+ |
| 2001 09 20 | 704 | 0.7+ | 0.6+ | 2003 01 28 | 704 | 0.8+ | 0.0 | 2003 03 09 | 704 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | (1.1+ | 1.9+) | 2003 01 28 | 704 | 0.9+ | 0.4+ | 2003 03 09 | 704 | 0.1− | 0.7+ |
| 2001 09 20 | 704 | (0.4+ | 1.7+) | 2003 01 28 | 704 | 0.6+ | 0.7+ | 2003 03 09 | 704 | 0.4+ | 0.9+ |
| 2001 09 20 | 704 | 1.3+ | 1.0+ | 2003 01 28 | 704 | 1.5+ | 1.2+ | 2003 03 09 | 704 | 1.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.9+ | 1.4+ | 2003 02 06 | 683 | 0.9− | 1.1+ | 2005 07 30 | 644 | 0.1− | 0.6+ |
| 2001 09 23 | 704 | 0.4+ | 0.2− | 2003 02 06 | 683 | 0.4− | 1.1+ | 2005 07 30 | 644 | 0.2+ | 0.5+ |
| 2001 09 23 | 704 | 0.7+ | 0.9− | 2003 02 06 | 683 | 1.3− | 0.3− | 2005 07 30 | 644 | 0.1+ | 0.4+ |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2003 02 07 | 683 | 0.1+ | 0.6+ | 2005 09 23 | 691 | 0.4− | 0.5+ |
| 2001 09 23 | 704 | 0.4+ | 0.2− | 2003 02 07 | 683 | 0.9− | 0.1+ | 2005 09 23 | 691 | 0.2+ | 0.5+ |
| 2001 09 24 | 704 | 0.2− | 1.2+ | 2003 02 07 | 683 | 0.6− | 0.5− | 2005 09 23 | 691 | 0.5− | 0.0 |
| 2001 09 24 | 704 | 0.0 | 0.9+ | 2003 02 23 | 699 | 0.9+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.4− |
| 2001 09 24 | 704 | 0.2− | 0.9+ | 2003 02 23 | 699 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.2− |
| 2001 09 24 | 704 | 0.6− | 1.3+ | 2003 02 23 | 699 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 683 | 0.7+ | 0.0 | 2003 02 23 | 699 | 0.2− | 0.5+ | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2001 09 26 | 683 | (0.8− | 2.1−) | 2003 03 06 | 699 | 0.8+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.6− |
| 2001 10 19 | 644 | 0.0 | 0.2+ | 2003 03 06 | 699 | 1.4− | 0.9+ | 2006 11 01 | G96 | 0.1− | 0.6− |
| 2001 10 19 | 644 | 0.3− | 0.4+ | 2003 03 06 | 699 | 1.1+ | 0.2+ | 2006 11 01 | G96 | 0.5− | 0.5− |
| 2001 10 19 | 644 | 0.0 | 0.1+ | 2003 03 06 | 699 | 0.3+ | 0.6+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2001 10 21 | 704 | 0.6− | 0.6+ | 2003 03 06 | 704 | (0.7− | 1.6+) | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2001 10 21 | 704 | 0.4+ | 0.6+ | 2003 03 06 | 704 | 0.8− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2001 10 21 | 704 | 0.3− | 0.2+ | 2003 03 06 | 704 | 1.0+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2001 10 21 | 704 | (1.6+ | 0.1−) | 2003 03 07 | 704 | 0.5− | 0.3+ | | | | |

**(140100)∗ 2001 ST$_{131}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.21845 | | (2000.0) | | | |
| $n$ | 0.18222398 | $\omega$ | 27.12607 | | +0.92770670 | −0.37304636 |
| $a$ | 3.0812886 | $\Omega$ | 354.71849 | | +0.30888937 | +0.78817145 |
| $e$ | 0.0535584 | $i$ | 8.76377 | | +0.20963691 | +0.48951219 |
| $P$ | 5.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.3− | 1.1+ | 2002 12 05 | 704 | 0.9− | 0.7− | 2004 03 27 | 704 | (1.0+ | 1.7+) |
| 2001 09 16 | 704 | 0.3− | 0.6+ | 2002 12 05 | 704 | 0.0 | 0.5+ | 2004 03 27 | 704 | 0.2+ | 0.5+ |
| 2001 09 16 | 704 | 0.2− | 0.6+ | 2002 12 05 | 704 | 1.1+ | 1.1+ | 2004 03 27 | 704 | 0.3− | 0.6+ |
| 2001 09 16 | 704 | 0.7+ | 0.9+ | 2004 02 26 | 704 | 1.1+ | 0.1+ | 2004 03 27 | 704 | 0.8+ | 0.5+ |
| 2001 09 18 | 699 | 1.2+ | 1.0+ | 2004 02 26 | 704 | 0.5+ | 0.7− | 2004 03 27 | 704 | 0.2+ | 0.7+ |
| 2001 09 18 | 699 | 1.5+ | 0.2− | 2004 02 26 | 704 | 0.8+ | 0.8+ | 2004 03 29 | 291 | 0.0 | 0.3+ |
| 2001 09 18 | 699 | 1.0+ | 0.5+ | 2004 02 26 | 704 | 0.1+ | 0.1− | 2004 03 29 | 291 | 0.3− | 1.5+ |
| 2001 09 18 | 699 | 0.0 | 1.3+ | 2004 02 26 | 704 | 0.1− | 0.3+ | 2004 03 29 | 291 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 1.5− | 1.5+ | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 03 30 | 691 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.9− | 0.4+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.6− | 0.4+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2004 03 30 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.8− | 0.4+ | 2004 03 15 | 704 | 0.6+ | 0.8+ | 2004 04 12 | 691 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | 1.0− | 0.4+ | 2004 03 15 | 704 | 0.7− | 0.1+ | 2004 04 12 | 691 | 0.3− | 0.1− |
| 2001 09 22 | 704 | 0.1− | 0.3+ | 2004 03 15 | 704 | 1.0+ | 0.7+ | 2004 04 12 | 691 | 0.4− | 0.1− |
| 2001 09 22 | 704 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.0 | 1.4+ | 2004 04 24 | 691 | 0.1− | 0.1+ |
| 2001 09 22 | 704 | 0.5− | 0.0 | 2004 03 16 | 704 | 1.0− | 0.2− | 2004 04 24 | 691 | 0.2+ | 0.4+ |
| 2001 09 22 | 704 | 0.4− | 0.2+ | 2004 03 16 | 704 | (1.6+ | 2.1+) | 2004 04 24 | 691 | 0.1+ | 0.4+ |
| 2001 09 22 | 704 | 1.0− | 0.2− | 2004 03 16 | 704 | 0.4− | 0.5− | 2006 07 28 | D35 | 0.1− | 0.9+ |
| 2001 09 24 | 704 | (1.5− | 1.9+) | 2004 03 16 | 704 | 0.8+ | 0.9− | 2006 07 28 | D35 | 1.0− | 0.9+ |
| 2001 09 24 | 704 | 0.4− | 0.9+ | 2004 03 17 | 291 | 0.2+ | 0.0 | 2006 07 28 | D35 | (1.5− | 1.6+) |
| 2001 09 24 | 704 | 0.4− | 0.4+ | 2004 03 17 | 291 | 0.2+ | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.7+ |
| 2001 09 24 | 704 | 0.3+ | 0.8+ | 2004 03 17 | 704 | (0.9+ | 1.6−) | 2006 08 15 | 644 | 0.5− | 0.7+ |
| 2001 09 24 | 704 | 0.0 | 1.0+ | 2004 03 17 | 291 | 0.2+ | 0.0 | 2006 08 15 | 644 | 0.2− | 0.8+ |
| 2001 10 11 | 644 | (0.0 | 1.6+) | 2004 03 17 | 704 | (0.6− | 1.5+) | 2006 08 17 | 644 | 0.6− | 0.5+ |
| 2001 10 11 | 644 | 0.0 | 1.4+ | 2004 03 17 | 704 | 1.4− | 0.4− | 2006 08 17 | 644 | 0.4− | 0.5+ |
| 2001 10 11 | 644 | 0.1− | 1.4+ | 2004 03 17 | 704 | 0.8+ | 0.4+ | 2006 08 17 | 644 | 0.4− | 1.0+ |
| 2001 10 13 | 704 | 0.3+ | 0.4+ | 2004 03 18 | 704 | 1.2+ | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.3+ |
| 2001 10 13 | 704 | 0.6− | 0.4− | 2004 03 18 | 704 | 1.0+ | 0.6− | 2006 09 14 | 644 | 0.2− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 1.1− | 0.7− | 2004 03 18 | 704 | 1.3+ | 0.4− | 2006 09 14 | 644 | 0.3− | 0.4+ |
| 2001 10 13 | 704 | 0.5+ | 1.0+ | 2004 03 18 | 704 | 0.4+ | 0.5− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 1.3− | 0.3+ | 2004 03 18 | 704 | 1.2+ | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2001 10 21 | 704 | 0.5− | 0.2− | 2004 03 20 | 704 | 0.9+ | 0.6+ | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2001 10 21 | 704 | 0.5− | 0.2− | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 0.9− | 1.5− | 2004 03 20 | 704 | 0.8+ | 0.4+ | | | | |
| 2001 10 21 | 704 | 0.8− | 0.4− | 2004 03 20 | 704 | 1.0+ | 0.2− | | | | |

**(140101)∗ 2001 SV$_{131}$ = 1992 EN$_{15}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20293)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.76251 | | (2000.0) | | | |
| $n$ | 0.26393922 | $\omega$ | 199.16508 | | −0.98292155 | −0.18328840 |
| $a$ | 2.4069483 | $\Omega$ | 330.25854 | | +0.17287407 | −0.88902269 |
| $e$ | 0.1107779 | $i$ | 1.90018 | | +0.06308547 | −0.41957600 |
| $P$ | 3.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 1.7− | 0.5+ | 2003 01 27 | 704 | 1.2+ | 0.2+ | 2005 09 29 | 691 | 0.2− | 0.1− |
| 1992 03 03 | 809 | 0.6− | 0.0 | 2003 01 27 | 704 | 0.8+ | 0.7+ | 2005 10 02 | G96 | 0.2+ | 0.5− |
| 1992 03 06 | 809 | 0.8+ | 0.2− | 2003 01 27 | 704 | 0.9+ | 0.6+ | 2005 10 02 | G96 | 0.1+ | 0.7− |
| 2001 09 16 | 704 | 0.8− | 1.3+ | 2003 01 27 | 704 | 0.9+ | 0.7+ | 2005 10 02 | G96 | 0.1+ | 0.5− |
| 2001 09 16 | 704 | 0.5+ | 1.5+ | 2003 01 30 | 699 | 0.6+ | 0.3− | 2005 10 02 | G96 | 0.1+ | 0.4− |
| 2001 09 16 | 704 | 0.1− | 0.9+ | 2003 01 30 | 699 | 0.0 | 0.1− | 2005 10 03 | 703 | 0.7− | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 0.3+ | 2003 01 30 | 699 | 0.1− | 0.4− | 2005 10 03 | 703 | 1.0− | 0.6− |
| 2001 09 20 | 704 | (0.2+ | 1.7+) | 2003 01 30 | 699 | 0.6+ | 0.1+ | 2005 10 03 | 703 | 0.7− | 0.2− |
| 2001 09 20 | 704 | (0.7− | 1.6+) | 2003 01 31 | 644 | 0.0 | 1.2+ | 2005 10 03 | 703 | 0.0 | 0.7+ |
| 2001 09 20 | 704 | 0.4+ | 0.6+ | 2003 01 31 | 704 | 0.9− | 1.0− | 2005 10 06 | 703 | 0.8− | 0.9+ |
| 2001 09 20 | 704 | 0.1+ | 1.4+ | 2003 01 31 | 704 | 1.1− | 1.0− | 2005 10 06 | 703 | 0.2+ | 0.7− |
| 2001 09 20 | 704 | 0.1− | 0.9+ | 2003 01 31 | 644 | 0.1+ | 1.1+ | 2005 10 06 | 703 | 0.9− | 0.9− |
| 2001 09 22 | 704 | 0.3− | 0.5+ | 2003 01 31 | 704 | 1.2− | 0.8− | 2005 10 06 | 703 | 0.6+ | 1.0+ |
| 2001 09 22 | 704 | 0.8− | 1.2+ | 2003 01 31 | 704 | 0.3− | 1.0− | 2005 10 08 | 152 | 0.5− | 0.8− |
| 2001 09 22 | 704 | (0.3+ | 1.7+) | 2003 01 31 | 704 | 0.3− | 0.4− | 2005 10 08 | 152 | 0.9− | 0.6− |
| 2001 09 22 | 704 | 0.3− | 1.4+ | 2003 01 31 | 644 | 0.1+ | 1.0+ | 2005 10 09 | 152 | 0.7+ | 1.2− |
| 2001 09 23 | 704 | (0.7− | 1.7+) | 2003 02 02 | 608 | 0.4+ | 0.4+ | 2005 10 09 | 691 | 0.9+ | 0.0 |
| 2001 09 23 | 704 | 0.2− | 0.9+ | 2003 02 02 | 608 | 0.2+ | 0.2− | 2005 10 09 | 691 | 0.1+ | 0.2− |
| 2001 09 23 | 704 | 1.0− | 1.4+ | 2003 02 02 | 608 | 0.5+ | 0.3+ | 2005 10 09 | 691 | 0.0 | 0.3− |
| 2001 09 23 | 704 | 0.4+ | 0.4+ | 2003 02 03 | 704 | (1.5− | 0.0 ) | 2005 10 13 | 691 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.1+ | 0.4+ | 2003 02 03 | 704 | 0.2− | 1.0+ | 2005 10 13 | 691 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 1.1− | 0.1− | 2003 02 03 | 704 | 0.6+ | 0.1− | 2005 10 13 | 691 | 0.2− | 0.1− |
| 2001 09 24 | 704 | 0.1+ | 0.3− | 2003 02 03 | 704 | 0.3+ | 0.2− | 2005 10 22 | 703 | 0.1− | 1.3− |
| 2001 09 24 | 704 | 0.3+ | 0.7− | 2003 02 03 | 704 | 0.5+ | 0.6+ | 2005 10 22 | 703 | 0.0 | 1.4− |
| 2001 09 24 | 704 | 0.1− | 0.9− | 2003 02 07 | 704 | 0.7− | 0.9+ | 2005 10 22 | 703 | 0.5+ | 0.4− |
| 2001 10 11 | 644 | 0.5+ | 0.9+ | 2003 02 07 | 704 | 0.1− | 0.3+ | 2005 10 22 | 703 | 0.6+ | 0.6− |
| 2001 10 11 | 644 | 0.5+ | 0.6+ | 2003 02 07 | 704 | 0.1− | 0.0 | 2005 10 30 | 703 | 0.3− | 0.4− |
| 2001 10 11 | 644 | 0.2+ | 0.7+ | 2003 02 07 | 704 | 0.2− | 0.2+ | 2005 10 30 | 703 | 0.4− | 0.4+ |
| 2003 01 08 | 704 | 1.1+ | 1.0− | 2003 02 08 | 704 | 0.5+ | 1.2+ | 2005 10 30 | 703 | (1.6− | 0.1+) |
| 2003 01 08 | 704 | 1.4− | 0.7− | 2003 02 08 | 704 | 0.6+ | 0.7+ | 2005 10 30 | 703 | 0.8− | 1.3+ |
| 2003 01 08 | 704 | 0.3− | 0.0 | 2003 02 08 | 704 | 0.1− | 1.5+ | 2006 10 27 | G96 | 0.2+ | 0.8− |
| 2003 01 08 | 704 | 0.6+ | 0.0 | 2003 02 08 | 704 | 0.3+ | 1.2+ | 2006 10 27 | G96 | 0.7− | 1.2− |
| 2003 01 08 | 704 | 0.1+ | 0.2− | 2003 02 21 | 699 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.6− |
| 2003 01 14 | 608 | 0.0 | 0.7− | 2003 02 21 | 699 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2003 01 14 | 608 | 0.4+ | 0.1− | 2003 02 21 | 699 | 0.2− | 0.4+ | 2006 11 20 | G96 | 0.8− | 0.3− |
| 2003 01 14 | 608 | 0.2+ | 0.5− | 2003 02 21 | 699 | 0.3+ | 0.2− | 2006 11 20 | G96 | 0.6− | 0.3− |
| 2003 01 27 | 699 | 0.4− | 0.1− | 2003 03 06 | 644 | 0.1− | 0.8− | 2006 11 20 | G96 | 0.9− | 0.2− |
| 2003 01 27 | 699 | 0.4− | 0.1− | 2003 03 06 | 644 | 0.0 | 0.6− | 2006 11 20 | G96 | 0.5− | 0.3+ |
| 2003 01 27 | 699 | 0.2− | 0.2− | 2003 03 06 | 644 | 0.2− | 0.8− | 2006 11 21 | 691 | 0.1+ | 0.5+ |
| 2003 01 27 | 704 | 1.1+ | 0.8+ | 2005 09 29 | 691 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.4+ |
| 2003 01 27 | 699 | 0.1− | 0.2− | 2005 09 29 | 691 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.3+ |

**(140102)∗ 2001 SB$_{132}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.22981 | | (2000.0) | | | |
| $n$ | 0.19629229 | $\omega$ | 104.98854 | | +0.60311855 | +0.79753430 |
| $a$ | 2.9322470 | $\Omega$ | 202.12228 | | −0.74507764 | +0.55716180 |
| $e$ | 0.1007777 | $i$ | 2.08130 | | −0.28479347 | +0.23132177 |
| $P$ | 5.02 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 691 | 0.1− | 0.4− | 2001 09 23 | 704 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 1.2− | 0.9− |
| 1991 10 06 | 691 | 0.1− | 0.1− | 2001 09 27 | 704 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.0 |
| 1991 10 06 | 691 | 0.7+ | 0.7− | 2001 09 27 | 704 | 0.0 | 0.9+ | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 1994 03 10 | 691 | (2.8+ | 0.5−) | 2001 09 27 | 704 | 0.8+ | 1.3+ | 2006 09 13 | 644 | 0.3− | 0.3+ |
| 1994 03 10 | 691 | 1.9− | 0.4− | 2001 10 11 | 644 | 0.7− | 0.3− | 2006 09 13 | 644 | 0.4− | 0.3+ |
| 2001 09 12 | 691 | 0.3+ | 0.0 | 2001 10 11 | 644 | 0.2− | 0.6− | 2006 09 16 | 691 | 0.5− | 0.0 |
| 2001 09 12 | 691 | 0.1+ | 0.2+ | 2001 10 11 | 644 | 1.0− | 0.6− | 2006 09 16 | 691 | 0.2− | 0.1− |
| 2001 09 12 | 691 | 0.3+ | 0.2+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 09 16 | 691 | 0.5− | 0.0 |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.0 | 0.5− |
| 2001 09 16 | 704 | 0.1− | 0.9+ | 2004 03 29 | 691 | 0.7+ | 0.3+ | 2006 09 18 | 699 | 0.9− | 0.7+ |
| 2001 09 16 | 704 | 0.4+ | 1.0+ | 2004 03 29 | 691 | 0.6+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2004 03 29 | 691 | 0.7+ | 0.3+ | 2006 09 18 | 699 | 1.1− | 1.0+ |
| 2001 09 20 | 704 | 0.4+ | 0.4− | 2005 02 16 | 809 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.4− | 0.8+ |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2005 02 16 | 809 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.4− | 2005 02 16 | 809 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.5− | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2001 09 22 | 704 | 0.4+ | 0.6+ | 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2001 09 22 | 704 | 0.2− | 0.7+ | 2005 06 27 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.5− | 0.4− |
| 2001 09 22 | 704 | 0.4+ | 0.3− | 2006 08 19 | 691 | 1.0+ | 0.4− | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 0.5− | 0.3+ | 2006 08 19 | 691 | 1.3+ | 0.3− | 2006 11 21 | G96 | 0.3− | 0.5− |
| 2001 09 23 | 704 | 0.0 | 0.4− | 2006 08 19 | 691 | 0.6− | 0.2− | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2001 09 23 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.8+ | 0.4− | 2006 11 21 | G96 | 0.4− | 0.0 |

**(140103)∗ 2001 SH$_{132}$ = 2004 GR$_{7}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.02615 | | (2000.0) | | | |
| $n$ | 0.21433141 | $\omega$ | 172.15730 | | +0.99666011 | −0.06740233 |
| $a$ | 2.7653207 | $\Omega$ | 192.00197 | | +0.05755779 | +0.98030638 |
| $e$ | 0.0020011 | $i$ | 12.80951 | | +0.05792859 | +0.18562418 |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 09 25 | 704 | 0.2+ | 0.8+ | 2004 04 22 | 704 | 1.1+ | 1.5+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 09 25 | 704 | 0.7+ | 0.3+ | 2004 04 22 | 704 | 0.4− | 0.8+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 09 25 | 704 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 09 25 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.9− |
| 2001 09 16 | 704 | 1.5− | 0.9− | 2001 09 25 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 1.1− | 0.3+ |
| 2001 09 16 | 704 | 1.0− | 1.2− | 2001 09 25 | 704 | 1.2+ | 0.6+ | 2006 09 30 | 703 | 0.6+ | 1.1+ |
| 2001 09 16 | 704 | 0.8− | 0.1+ | 2001 09 25 | 704 | 0.2− | 0.9+ | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2001 09 16 | 704 | 0.3− | 0.4− | 2001 10 21 | 704 | (0.5+ | 1.8+) | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2001 09 18 | 699 | 0.4+ | 0.7+ | 2001 10 21 | 704 | 0.8− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.8− |
| 2001 09 18 | 699 | 0.3+ | 1.4+ | 2001 10 21 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 1.1− | 1.2− |
| 2001 09 18 | 699 | 0.1+ | 0.3+ | 2001 10 21 | 704 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.8+ |
| 2001 09 18 | 699 | 0.6+ | 0.3+ | 2001 10 21 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2004 03 20 | 699 | 0.1+ | 1.1− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2004 03 20 | 699 | 0.5− | 1.4+ | 2006 10 22 | 703 | (1.7− | 1.1+) |
| 2001 09 20 | 704 | 0.5− | 0.3+ | 2004 03 20 | 699 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2004 03 20 | 699 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.9+ | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2004 04 12 | 699 | 1.1− | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.6− |
| 2001 09 22 | 704 | 0.1− | 0.6+ | 2004 04 12 | 699 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2001 09 22 | 704 | 0.2− | 0.9+ | 2004 04 12 | 699 | 0.5+ | 1.0+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 09 22 | 704 | 0.6− | 1.0+ | 2004 04 12 | 699 | 0.8− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.3− |
| 2001 09 22 | 704 | 0.6− | 0.9+ | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.5+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 703 | (1.7− | 0.2−) | | |
| 2001 09 23 | 704 | 0.8− | 0.9+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 1.4+ | 0.9+ | | |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2004 04 16 | 704 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.8− | 0.8+ | | |
| 2001 09 23 | 704 | 0.6− | 0.7+ | 2004 04 16 | 704 | 0.8+ | 0.7+ | 2006 11 13 | 644 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.6− | 0.3+ | 2004 04 16 | 704 | 0.5− | 1.1− | 2006 11 13 | 644 | 0.1+ | 0.0 | | |
| 2001 09 24 | 704 | 0.1+ | 0.3− | 2004 04 16 | 704 | 0.4+ | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2001 09 24 | 704 | 0.1− | 0.2+ | 2004 04 16 | 704 | 0.2− | 0.9− | 2006 11 19 | 703 | 0.5− | 0.1− | | |
| 2001 09 24 | 704 | 0.1+ | 0.1+ | 2004 04 16 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.5+ | 0.5− | | |
| 2001 09 24 | 704 | 0.7+ | 0.1− | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.2− | 0.1− | | |
| 2001 09 25 | 704 | 0.8+ | 0.3+ | 2004 04 16 | 644 | 0.6+ | 0.5+ | 2006 11 19 | 703 | 0.9+ | 0.3− | | |
| 2001 09 25 | 704 | 0.4+ | 0.7+ | 2004 04 22 | 704 | 0.3+ | 0.1+ | | | | | | |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2004 04 22 | 704 | 0.3+ | 0.0 | | | | | | |

**(140104)∗ 2001 SW$_{132}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.91938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21210931 | $\omega$ | 69.43890 | | +0.67083314 | −0.74106898 | |
| $a$ | 2.7846005 | $\Omega$ | 338.35114 | | +0.64867062 | +0.60482022 | |
| $e$ | 0.0619297 | $i$ | 4.39614 | | +0.35945699 | +0.29156348 | |
| $P$ | 4.65 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.0 | 0.3− | 2001 10 14 | 704 | 0.9+ | 0.0 | 2004 04 25 | 704 | 0.6− | 0.8+ | | |
| 2001 08 27 | 699 | 0.2+ | 0.5+ | 2001 10 14 | 704 | 1.1+ | 1.4+ | 2004 04 25 | 704 | 0.4+ | 0.0 | | |
| 2001 08 27 | 699 | 0.3− | 0.2+ | 2001 10 14 | 704 | 0.2− | 0.3− | 2005 08 06 | 704 | 0.1− | 1.1+ | | |
| 2001 08 27 | 699 | 0.5− | 0.0 | 2001 10 14 | 704 | 0.3+ | 0.5+ | 2005 08 06 | 704 | 0.1− | 0.5− | | |
| 2001 09 10 | 699 | 0.2− | 0.5+ | 2001 10 16 | 704 | 0.6+ | 0.2+ | 2005 08 06 | 704 | 0.3+ | 0.4+ | | |
| 2001 09 10 | 699 | 0.6+ | 0.5+ | 2001 10 16 | 704 | 0.4− | 0.2+ | 2005 08 06 | 704 | 0.6+ | 0.9+ | | |
| 2001 09 10 | 699 | 0.9− | 0.1+ | 2001 10 16 | 704 | 0.5− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.3− | | |
| 2001 09 10 | 699 | 0.0 | 0.3+ | 2001 10 16 | 704 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.5− | | |
| 2001 09 16 | 644 | 0.5− | 0.2+ | 2001 10 16 | 704 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.4− | | |
| 2001 09 16 | 644 | 0.3− | 0.4+ | 2001 10 19 | 644 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.5− | | |
| 2001 09 16 | 644 | 0.4− | 0.2+ | 2001 10 19 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.5− | | |
| 2001 09 16 | 704 | 0.0 | 1.0+ | 2001 10 19 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.7− | | |
| 2001 09 16 | 704 | 0.3− | 0.0 | 2001 10 21 | 704 | 0.2− | 0.8+ | 2006 10 19 | 703 | 0.1+ | 0.6− | | |
| 2001 09 16 | 704 | 0.2− | 0.4+ | 2001 10 21 | 704 | 0.4− | 1.1+ | 2006 10 19 | 703 | 0.5+ | 0.4− | | |
| 2001 09 16 | 704 | 0.2+ | 0.1+ | 2001 10 21 | 704 | 0.3− | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2001 09 18 | 699 | 0.3− | 1.1+ | 2001 10 21 | 704 | 0.4− | 1.2+ | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2001 09 18 | 699 | 0.4− | 0.3− | 2001 10 21 | 704 | 0.1− | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2001 09 18 | 699 | 0.3− | 0.6+ | 2001 10 25 | 644 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.6− | | |
| 2001 09 18 | 699 | 0.8− | 1.2+ | 2001 10 25 | 644 | 0.5− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.6− | | |
| 2001 09 20 | 704 | 0.7− | 0.2− | 2001 10 25 | 644 | 0.9− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.2− | | |
| 2001 09 20 | 704 | 0.9− | 0.1+ | 2002 12 31 | 704 | 0.0 | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.4− | | |
| 2001 09 20 | 704 | 1.1− | 0.1− | 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.8+ | 0.6+ | | |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2002 12 31 | 704 | 1.0+ | 0.3− | 2006 10 29 | 704 | (1.0+ | 1.6+) | | |
| 2001 09 20 | 704 | 0.8− | 0.2+ | 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | (1.5− | 0.2−) | 2002 12 31 | 704 | 0.6− | 0.0 | 2006 10 29 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.5− | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 704 | 0.7+ | 0.0 | | |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2003 01 05 | 704 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2003 01 05 | 704 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2001 09 21 | 704 | 0.7+ | 0.1− | 2003 01 05 | 704 | 0.5+ | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2001 09 23 | 704 | 0.9+ | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | (0.8− | 1.8−) | | |
| 2001 09 23 | 704 | 0.3+ | 0.1− | 2003 01 09 | 704 | 0.1+ | 0.9+ | 2006 11 11 | 703 | 0.5+ | 0.9− | | |
| 2001 09 23 | 704 | 0.7+ | 0.4− | 2003 01 09 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.1+ | | |
| 2001 09 23 | 704 | 0.2+ | 0.6− | 2003 01 09 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.0 | | |
| 2001 09 23 | 704 | 0.2+ | 0.0 | 2003 01 09 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 704 | (0.6+ | 2.3+) | | |
| 2001 09 24 | 704 | 0.1− | 0.3− | 2003 01 09 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.5+ | | |
| 2001 09 24 | 704 | 0.5− | 0.1− | 2003 01 10 | 704 | 0.8+ | 0.6+ | 2006 11 16 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 24 | 704 | 0.6− | 0.1+ | 2003 01 10 | 704 | 0.8+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.6+ | | |
| 2001 09 24 | 704 | 0.4− | 0.4− | 2003 01 10 | 704 | 0.0 | 0.8+ | 2006 11 16 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 25 | 699 | 0.0 | 0.6+ | 2003 01 10 | 704 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.6− | | |
| 2001 09 25 | 333 | 0.6+ | 0.8− | 2003 01 25 | 699 | 0.1− | 0.4+ | 2006 11 17 | 704 | (2.1− | 0.1−) | | |
| 2001 09 25 | 699 | 0.2− | 0.1+ | 2003 01 25 | 699 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.5− | | |
| 2001 09 25 | 333 | 1.2+ | 0.0 | 2003 01 25 | 699 | 0.6− | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.8− | | |
| 2001 09 25 | 704 | 0.1+ | 0.3+ | 2003 01 25 | 699 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.5− | | |
| 2001 09 25 | 699 | 0.4− | 0.5+ | 2003 02 01 | 704 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.5− | | |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2003 02 01 | 704 | 0.2+ | 1.2+ | 2006 11 18 | G96 | 0.4+ | 0.5− | | |
| 2001 09 25 | 333 | 1.5+ | 0.4− | 2003 02 01 | 704 | 1.1− | 0.8+ | 2006 11 18 | G96 | 0.4+ | 0.5− | | |
| 2001 09 25 | 699 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.6+ | 0.9+ | 2006 11 19 | 704 | 0.1+ | 0.8+ | | |
| 2001 09 25 | 704 | 0.0 | 0.2+ | 2003 02 04 | 699 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.3− | | |
| 2001 09 25 | 704 | 0.4+ | 0.1− | 2003 02 04 | 699 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.6− | | |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2003 02 04 | 699 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.2− | 0.9− | | |
| 2001 10 11 | 644 | 0.4− | 0.1+ | 2003 02 04 | 704 | 0.1+ | 1.3+ | 2006 11 19 | 704 | 0.2+ | 0.8+ | | |
| 2001 10 11 | 644 | 0.5− | 0.0 | 2003 02 04 | 699 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.1− | | |
| 2001 10 11 | 644 | 0.2− | 0.1+ | 2003 02 04 | 704 | (1.3− | 2.2+) | 2006 11 22 | 704 | 0.2− | 0.4− | | |
| 2001 10 13 | 699 | 0.5− | 0.4+ | 2003 02 04 | 704 | (0.0 | 1.6+) | 2006 11 22 | 704 | 0.2− | 0.7+ | | |
| 2001 10 13 | 699 | 0.3− | 0.3− | 2003 02 04 | 704 | (0.4+ | 2.0+) | 2006 11 22 | 704 | 0.5+ | 0.3− | | |
| 2001 10 13 | 699 | 0.2− | 0.6+ | 2004 04 21 | 704 | (0.2+ | 1.8+) | 2006 11 22 | 704 | 0.2− | 0.5− | | |
| 2001 10 13 | 699 | 0.1− | 0.1+ | 2004 04 21 | 704 | 0.1+ | 1.3+ | 2006 11 27 | 185 | 0.4− | 0.0 | | |
| 2001 10 14 | 704 | 0.0 | 0.4+ | 2004 04 21 | 704 | 0.0 | 1.3+ | 2006 11 27 | 185 | 0.0 | 0.6− | | |
| 2001 10 14 | 704 | 0.0 | 0.3− | 2004 04 21 | 704 | 0.6+ | 1.0+ | 2006 11 27 | 185 | 0.7− | 0.1+ | | |
| 2001 10 14 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.4+ | 1.4+ | | | | | | |
| 2001 10 14 | 704 | 0.9+ | 0.1− | 2004 04 25 | 704 | 1.0+ | 1.2+ | | | | | | |

**(140105)∗ 2001 SN$_{133}$ = 2004 DL$_{45}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.68569 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21733549 | $\omega$ | 306.75155 | | −0.01239356 | +0.99824181 | |
| $a$ | 2.7397795 | $\Omega$ | 322.41161 | | −0.88446300 | −0.03798473 | |
| $e$ | 0.1236012 | $i$ | 5.45267 | | −0.46644571 | +0.04550223 | |
| $P$ | 4.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.4+ | 0.3− | 2004 03 13 | 644 | 0.4+ | 0.4+ | 2005 07 30 | E12 | 0.5− | 0.2+ | | |
| 2001 09 16 | 704 | 0.9+ | 1.0+ | 2004 03 13 | 644 | 0.3+ | 0.3+ | 2005 07 30 | E12 | 0.7− | 0.1− | | |
| 2001 09 16 | 704 | 0.4+ | 0.4+ | 2004 03 13 | 644 | 0.4+ | 0.4+ | 2005 08 02 | 704 | (0.1+ | 1.8+) | | |
| 2001 09 16 | 704 | 0.4+ | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.2+ | 2005 08 02 | 704 | 0.4− | 0.1+ | | |
| 2001 09 18 | 699 | 0.3− | 1.0− | 2004 03 16 | 704 | 0.4+ | 0.3− | 2005 08 02 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 18 | 699 | 1.1− | 0.2+ | 2004 03 16 | 704 | 0.7+ | 0.1+ | 2005 08 02 | 704 | 1.1+ | 0.7+ | | |
| 2001 09 18 | 699 | 0.7+ | 0.3+ | 2004 03 16 | 704 | 0.0 | 0.5− | 2006 10 19 | 703 | 0.2+ | 1.2− | | |
| 2001 09 18 | 699 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.8− | 0.0 | | |
| 2001 09 20 | 704 | (0.8+ | 1.7+) | 2004 03 18 | 704 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.4+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.5− | 2004 03 18 | 704 | 1.0+ | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.2+ | | |
| 2001 09 20 | 704 | 1.1− | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.9+ | 2006 10 20 | A50 | 0.3− | 0.1+ | | |
| 2001 09 20 | 704 | 0.1− | 1.1+ | 2004 03 18 | 704 | 1.2+ | 0.1− | 2006 11 08 | 644 | 0.5+ | 0.2+ | | |
| 2001 09 28 | 644 | 0.3+ | 0.2+ | 2004 03 20 | 699 | 1.2− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 28 | 644 | 0.4+ | 0.4+ | 2004 03 20 | 699 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2001 09 28 | 644 | 0.4+ | 0.4+ | 2004 03 20 | 699 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2001 10 14 | 704 | 0.7− | 0.2− | 2004 03 20 | 699 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2001 10 14 | 704 | 0.8− | 0.0 | 2004 03 27 | 704 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2001 10 14 | 704 | 1.1− | 0.2+ | 2004 03 27 | 704 | 0.6− | 1.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ | | |
| 2001 10 14 | 704 | 0.8− | 0.1− | 2004 03 27 | 704 | 0.9+ | 0.3+ | 2006 11 09 | 644 | 0.4+ | 0.1− | | |
| 2001 10 14 | 704 | 0.2+ | 0.5+ | 2004 03 27 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.2− | | |
| 2004 02 26 | 649 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 0.2− | 0.1− | 2006 11 14 | 703 | (1.7+ | 0.7+) | | |
| 2004 02 26 | 649 | 0.3− | 0.5− | 2004 04 08 | 644 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.7+ | | |
| 2004 02 26 | 649 | 0.4− | 0.6− | 2004 04 08 | 644 | 0.6+ | 0.3+ | 2006 11 14 | 703 | 1.4− | 0.2+ | | |
| 2004 02 27 | 649 | 0.4− | 0.2− | 2004 04 08 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 703 | (0.5+ | 1.6+) | | |
| 2004 02 27 | 649 | 0.1− | 0.1− | 2005 07 30 | E12 | 0.5− | 0.2+ | | | | | | |
| 2004 02 27 | 649 | 0.1− | 0.0 | 2005 07 30 | E12 | 0.3+ | 0.0 | | | | | | |

**(140106)∗ 2001 SV$_{133}$ = 2004 FG$_{33}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61041)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.72880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18042912 | $\omega$ | 293.19106 | | −0.55463600 | −0.82883472 | |
| $a$ | 3.1016893 | $\Omega$ | 191.39830 | | +0.83200334 | −0.55370303 | |
| $e$ | 0.0540003 | $i$ | 21.85402 | | −0.01222113 | −0.08028674 | |
| $P$ | 5.46 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 01 | 691 | 0.0 | 0.1+ | 2001 10 16 | 704 | 0.7+ | 0.6+ | 2004 03 19 | 704 | 0.3− | 0.3− |
| 1994 06 01 | 691 | 0.1+ | 0.3+ | 2001 10 16 | 704 | 0.8+ | 0.8+ | 2004 03 19 | 704 | 0.5+ | 0.3+ |
| 1994 06 01 | 691 | 0.1− | 0.4+ | 2001 10 16 | 704 | 0.6+ | 1.3+ | 2004 03 19 | 704 | 0.1− | 0.3+ |
| 2001 09 16 | 704 | (0.8− | 2.4+) | 2001 10 16 | 704 | 0.5+ | 1.5+ | 2004 03 28 | 691 | 0.1− | 0.6+ |
| 2001 09 16 | 704 | 1.3− | 1.8+ | 2001 10 21 | 704 | 0.1− | 1.0+ | 2004 03 28 | 691 | 0.2− | 0.6+ |
| 2001 09 16 | 704 | (1.6− | 2.2+) | 2001 10 21 | 704 | 0.9− | 0.8+ | 2004 03 28 | 691 | 0.2− | 0.7+ |
| 2001 09 16 | 704 | (1.8− | 3.7+) | 2001 10 21 | 704 | 0.5+ | 0.7+ | 2004 04 16 | 704 | (1.1+ | 2.1+) |
| 2001 09 18 | 699 | 1.1− | 0.5+ | 2001 10 21 | 704 | 0.6− | 1.0+ | 2004 04 16 | 704 | 0.3+ | 1.0+ |
| 2001 09 18 | 699 | 0.1+ | 0.1− | 2004 02 17 | 608 | 0.4+ | 0.5+ | 2004 04 16 | 704 | 0.5− | 1.8+ |
| 2001 09 18 | 699 | 0.5− | 0.3+ | 2004 02 17 | 608 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.6− | 0.0 |
| 2001 09 18 | 699 | 0.7− | 0.2+ | 2004 02 17 | 608 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.8+ | 0.6− |
| 2001 09 20 | 704 | 0.2+ | 0.9+ | 2004 03 16 | 703 | 0.1+ | 0.7+ | 2006 08 30 | 699 | 0.8− | 0.5+ |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2004 03 16 | 703 | 0.0 | 1.1+ | 2006 08 30 | 699 | 1.7+ | 1.5− |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2004 03 16 | 703 | 0.6+ | 0.5+ | 2006 09 11 | 703 | 0.3+ | 0.8− |
| 2001 09 20 | 704 | 0.4+ | 0.1+ | 2004 03 16 | 703 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.8+ | 0.2+ | 2004 03 16 | 704 | 0.2− | 0.8+ | 2006 09 11 | 703 | 0.5− | 0.8+ |
| 2001 09 24 | 704 | 0.1− | 1.0+ | 2004 03 16 | 704 | 0.5+ | 0.6+ | 2006 09 11 | 703 | 0.9− | 0.5− |
| 2001 09 24 | 704 | 0.9− | 0.8+ | 2004 03 16 | 704 | 1.1+ | 0.2− | 2006 09 19 | 703 | 0.5+ | 0.8− |
| 2001 09 24 | 704 | 0.2+ | 1.7+ | 2004 03 16 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.2+ |
| 2001 09 24 | 704 | 0.2− | 1.5+ | 2004 03 19 | 704 | 0.8+ | 0.7− | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2001 10 16 | 704 | 0.5+ | 0.9+ | 2004 03 19 | 704 | 0.7− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.6+ |

**(140107)∗ 2001 SZ$_{133}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.49635 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19321747 | $\omega$ | 77.76110 | | +0.15371176 | +0.98666419 | |
| $a$ | 2.9632738 | $\Omega$ | 201.30581 | | −0.95418043 | +0.13413670 | |
| $e$ | 0.0291390 | $i$ | 8.47346 | | −0.25673411 | +0.09220153 | |
| $P$ | 5.10 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.0 | 0.5− | 2004 03 18 | 704 | 0.5− | 0.9+ | 2006 09 22 | 703 | 0.8− | 0.3− |
| 1991 10 13 | 691 | 0.4+ | 0.6− | 2004 03 27 | 704 | 0.1− | 0.7− | 2006 09 22 | 703 | 0.8− | 0.4+ |
| 1991 10 13 | 691 | 0.1+ | 0.5− | 2004 03 27 | 704 | 0.2− | 0.9+ | 2006 09 25 | 704 | 0.2− | 0.6+ |
| 2001 08 27 | 644 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.6− | 0.7+ | 2006 09 25 | 704 | 0.1− | 1.0− |
| 2001 08 27 | 644 | 0.4− | 0.4+ | 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.1− | 0.1+ |
| 2001 08 27 | 644 | 0.6− | 0.3+ | 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.5+ | 0.6+ |
| 2001 09 16 | 704 | 0.9+ | 0.1+ | 2004 04 12 | 691 | 0.3− | 0.4+ | 2006 09 25 | 704 | (2.0− | 1.7+) |
| 2001 09 16 | 704 | 0.5+ | 0.4+ | 2004 04 24 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.6+ | 0.1− |
| 2001 09 16 | 704 | 0.6+ | 0.7− | 2004 04 24 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.0 |
| 2001 09 16 | 704 | 0.7− | 0.5− | 2004 04 24 | 691 | 0.3+ | 0.1+ | 2006 10 01 | 703 | 0.3− | 0.6+ |
| 2001 09 20 | 704 | 1.0− | 0.1− | 2006 08 21 | 691 | 0.0 | 0.4+ | 2006 10 01 | 703 | 0.5+ | 0.5− |
| 2001 09 20 | 704 | 1.0− | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 01 | 703 | 1.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.7− | 0.4+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.6+ | 1.1− |
| 2001 09 20 | 704 | 1.0− | 0.3+ | 2006 08 29 | 703 | 0.7− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2006 08 29 | 703 | 1.0+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2001 10 11 | 644 | 0.1+ | 1.3+ | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 10 11 | 644 | 0.1+ | 1.5+ | 2006 08 29 | 703 | 0.1− | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 2001 10 11 | 644 | (0.2− | 1.6+) | 2006 09 12 | 703 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 10 13 | 704 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.8− | 0.1− | 2006 10 16 | 703 | (2.0− | 0.4−) |
| 2001 10 13 | 704 | 0.1+ | 0.8− | 2006 09 12 | 703 | (0.2+ | 1.6+) | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2001 10 13 | 704 | 0.8− | 0.6− | 2006 09 12 | 703 | 0.7+ | 0.7+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2001 10 13 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 0.7+ | 1.1− | 2006 10 23 | 644 | 0.2− | 0.8+ |
| 2001 10 18 | 644 | 0.1− | 0.5+ | 2006 09 18 | 704 | (1.9+ | 0.9+) | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2001 10 18 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 0.4+ | 1.1− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2001 10 18 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.6+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.7− | 0.1+ | 2006 09 19 | 703 | 1.5+ | 1.1− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.9− | 0.5+ | 2006 09 19 | 699 | 1.0− | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.5+ |
| 2001 11 18 | 291 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 24 | 644 | 0.0 | 0.5+ |
| 2001 11 18 | 291 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.3+ |
| 2001 11 18 | 291 | 0.7+ | 0.5+ | 2006 09 19 | 699 | 1.0+ | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2004 02 14 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.3− | 1.4− | 2006 10 27 | 691 | 0.3− | 0.3+ |
| 2004 02 14 | 644 | 0.7+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2004 02 14 | 644 | 1.1+ | 0.6+ | 2006 09 20 | 691 | (0.3+ | 2.9+) | 2006 11 14 | G96 | 0.4− | 0.5+ |
| 2004 03 18 | 704 | 0.5− | 0.1− | 2006 09 20 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.4− | 0.6− |
| 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2004 03 18 | 704 | 0.6− | 0.5− | 2006 09 22 | 703 | 0.5− | 0.5− | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2004 03 18 | 704 | 0.1+ | 0.1− | 2006 09 22 | 703 | 0.1− | 0.2− | | | | |

**(140108)∗ 2001 SA$_{135}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.10444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20159995 | $\omega$ | 120.62131 | | +0.58674518 | +0.80951769 | |
| $a$ | 2.8805523 | $\Omega$ | 185.43880 | | −0.79672842 | +0.57263680 | |
| $e$ | 0.0760393 | $i$ | 12.35362 | | −0.14475466 | +0.12949212 | |
| $P$ | 4.89 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 04 | 608 | 0.0 | 1.1+ | 2001 09 25 | 704 | 0.2+ | 0.2+ | 2004 03 27 | 704 | 1.1+ | 0.6+ |
| 2000 06 04 | 608 | 0.1− | 0.5+ | 2001 09 26 | 704 | 0.6− | 1.1+ | 2004 03 27 | 704 | 0.3− | 1.2− |
| 2000 06 04 | 608 | 0.2+ | 0.6+ | 2001 09 26 | 704 | 0.2− | 1.0+ | 2004 03 27 | 704 | 0.6+ | 0.8− |
| 2001 08 27 | 699 | 0.7− | 0.8+ | 2001 09 26 | 704 | (0.3+ | 1.6+) | 2004 03 30 | 691 | 0.1− | 0.4+ |
| 2001 08 27 | 699 | 1.1+ | 0.6− | 2001 09 26 | 704 | 0.3+ | 1.2+ | 2004 03 30 | 691 | 0.3− | 0.3+ |
| 2001 08 27 | 699 | 0.5− | 0.9+ | 2001 09 26 | 704 | (0.7− | 2.0+) | 2004 03 30 | 691 | 0.4− | 0.2+ |
| 2001 08 27 | 699 | 0.3+ | 1.2− | 2001 10 13 | 704 | 0.5+ | 0.7+ | 2004 03 31 | 691 | 0.3− | 0.8+ |
| 2001 09 10 | 699 | 0.6− | 0.2− | 2001 10 13 | 704 | 0.7+ | 0.6+ | 2004 03 31 | 691 | 0.3− | 0.3+ |
| 2001 09 10 | 699 | 0.7− | 0.3− | 2001 10 13 | 704 | 1.0− | 0.4− | 2004 03 31 | 691 | 0.1− | 0.5+ |
| 2001 09 10 | 699 | 0.5− | 0.8+ | 2001 10 13 | 704 | 1.1− | 0.2+ | 2004 04 12 | 691 | 1.3− | 0.8− |
| 2001 09 10 | 699 | 0.9+ | 0.9− | 2001 10 13 | 704 | 0.3+ | 1.3+ | 2004 04 12 | 691 | 0.3− | 0.3+ |
| 2001 09 16 | 704 | 0.0 | 0.9+ | 2001 10 19 | 699 | (0.8− | 1.5+) | 2004 04 12 | 691 | 0.3− | 0.3+ |
| 2001 09 16 | 704 | 0.6+ | 0.5+ | 2001 10 19 | 699 | (0.4+ | 1.7+) | 2006 09 14 | 691 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.8+ | 0.6+ | 2001 10 19 | 699 | (1.6− | 0.6+) | 2006 09 14 | 691 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.9+ | 0.6+ | 2001 10 19 | 699 | 0.6− | 0.6+ | 2006 09 14 | 703 | 0.2− | 1.0− |
| 2001 09 18 | 699 | 0.2− | 0.4+ | 2001 10 20 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | (1.7+ | 1.0+) |
| 2001 09 18 | 699 | (2.5− | 2.6+) | 2001 10 20 | 704 | 0.5+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.3− | 0.9+ | 2001 10 20 | 704 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.4− |
| 2001 09 18 | 699 | 0.0 | 0.3+ | 2001 10 24 | 704 | 0.8+ | 0.4+ | 2006 09 14 | 703 | 0.3+ | 0.8− |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2001 10 24 | 704 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2001 10 24 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.4− |
| 2001 09 20 | 704 | 0.2− | 0.0 | 2001 10 24 | 704 | 0.9+ | 0.5− | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.3− | 1.3− |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 09 16 | 644 | 0.2− | 0.1− |
| 2001 09 22 | 683 | (1.4+ | 2.0+) | 2004 02 23 | 704 | 1.1+ | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.3+ |
| 2001 09 22 | 683 | (2.0− | 0.8−) | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 644 | 0.6+ | 0.7− |
| 2001 09 22 | 683 | 0.7− | 0.3− | 2004 02 23 | 704 | (1.6+ | 0.0 ) | 2006 09 17 | 704 | 0.7− | 0.2+ |
| 2001 09 23 | 704 | (1.8− | 0.1+) | 2004 02 25 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.6− | 0.2+ | 2004 02 25 | 704 | 1.2+ | 0.3+ | 2006 09 17 | 704 | 1.1− | 0.1− |
| 2001 09 23 | 704 | 1.3− | 0.3+ | 2004 02 25 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 1.5+ | 0.5− | 2004 02 25 | 704 | 0.2+ | 1.2− | 2006 09 18 | 691 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 0.7− | 0.4− | 2004 03 16 | 704 | 0.2− | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.1− |
| 2001 09 24 | 704 | 0.5+ | 0.4+ | 2004 03 16 | 704 | 1.5+ | 1.0− | 2006 09 18 | 699 | 0.2− | 0.4+ |
| 2001 09 24 | 704 | 0.1+ | 0.3− | 2004 03 16 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.2− |
| 2001 09 24 | 704 | 0.4+ | 0.0 | 2004 03 16 | 704 | 1.1+ | 0.7− | 2006 09 18 | 699 | 0.3− | 0.0 |
| 2001 09 24 | 704 | 0.1+ | 0.9+ | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 09 18 | 699 | 1.2+ | 0.4− |
| 2001 09 24 | 704 | (0.1+ | 1.7+) | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 09 20 | 644 | 0.3− | 0.6+ |
| 2001 09 25 | 699 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.3− | 0.8+ |
| 2001 09 25 | 699 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.9+ | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.8+ | 0.6+ | 2004 03 18 | 704 | 0.4+ | 0.5− | 2006 10 01 | 704 | 0.2+ | 1.3+ |
| 2001 09 25 | 704 | 0.2+ | 0.0 | 2004 03 20 | 704 | 0.0 | 0.7− | 2006 10 01 | 704 | 0.6+ | 0.4+ |
| 2001 09 25 | 704 | 0.4− | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 699 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.9+ | 0.5+ |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2004 03 20 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.4+ | 2004 03 23 | 704 | 1.4+ | 0.4+ | 2006 10 16 | 703 | 0.9+ | 0.1+ |
| 2001 09 25 | 699 | 0.3+ | 0.8+ | 2004 03 23 | 704 | 1.0+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.6− |
| 2001 09 25 | 704 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2001 09 25 | 704 | 0.7+ | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.5− | 0.7+ | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.0 |

**(140109)∗ 2001 SE$_{135}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.37781 | | (2000.0) | | | |
| $n$ | 0.17746434 | $\omega$ | 179.90794 | | −0.99976313 | −0.02145466 |
| $a$ | 3.1361392 | $\Omega$ | 358.84353 | | +0.01985085 | −0.82994366 |
| $e$ | 0.1655907 | $i$ | 10.44571 | | +0.00892390 | −0.55743450 |
| $P$ | 5.55 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1− | 0.6+ | 2003 12 23 | 704 | 1.1+ | 0.1+ | 2004 03 19 | 704 | 0.7+ | 0.6+ |
| 2001 09 16 | 704 | 0.4− | 0.5+ | 2003 12 23 | 704 | 0.1+ | 0.9+ | 2004 03 19 | 704 | (0.8− | 2.2+) |
| 2001 09 16 | 704 | 1.1− | 0.3+ | 2003 12 28 | 704 | 0.6− | 0.2− | 2004 03 19 | 704 | 0.3+ | 1.3+ |
| 2001 09 16 | 704 | 0.4+ | 0.8+ | 2003 12 28 | 704 | 0.2+ | 1.5+ | 2004 03 22 | 704 | 1.0+ | 1.1+ |
| 2001 09 20 | 704 | 0.5+ | 0.0 | 2003 12 28 | 704 | 0.2+ | 1.1+ | 2004 03 22 | 704 | 0.8+ | 1.0+ |
| 2001 09 20 | 704 | 0.7+ | 0.4+ | 2003 12 28 | 704 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 1.2+ | 1.6+ |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2004 01 23 | 704 | 1.6+ | 0.5+ | 2004 03 22 | 704 | 0.7+ | 1.0+ |
| 2001 09 20 | 704 | 0.0 | 0.3− | 2004 01 23 | 704 | 0.4− | 0.9+ | 2004 03 22 | 704 | 0.7+ | 1.5+ |
| 2001 09 20 | 704 | 0.8+ | 0.0 | 2004 01 23 | 704 | 0.6+ | 1.0+ | 2004 03 26 | 703 | 0.2+ | 0.6+ |
| 2001 10 11 | 644 | 1.0− | 1.4+ | 2004 01 23 | 704 | 0.2+ | 0.1− | 2004 03 26 | 703 | 1.0+ | 0.6+ |
| 2001 10 11 | 644 | 0.8− | 1.6+ | 2004 01 23 | 704 | 0.5+ | 0.6+ | 2004 03 26 | 703 | 0.3+ | 0.7+ |
| 2001 10 11 | 644 | 0.7− | 1.8+ | 2004 01 29 | 704 | 0.7+ | 0.1+ | 2004 03 26 | 703 | 0.4+ | 0.0 |
| 2001 10 13 | 704 | 1.7+ | 0.2+ | 2004 01 29 | 704 | 0.4+ | 0.9+ | 2004 03 28 | 704 | 0.5+ | 0.6+ |
| 2001 10 13 | 704 | 0.0 | 1.2− | 2004 01 29 | 704 | 0.2− | 1.0+ | 2004 03 28 | 704 | 0.0 | 0.5+ |
| 2001 10 13 | 704 | 1.3− | 1.1+ | 2004 02 11 | 703 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 0.2+ | 0.7+ |
| 2001 10 13 | 704 | 0.0 | 0.5+ | 2004 02 11 | 703 | 1.5− | 0.1− | 2004 03 28 | 704 | 0.6+ | 0.8+ |
| 2001 10 18 | 644 | 0.9− | 0.2+ | 2004 02 11 | 703 | 0.3− | 0.0 | 2004 03 28 | 704 | 0.4− | 0.5+ |
| 2001 10 18 | 644 | 0.7− | 0.3+ | 2004 02 11 | 703 | 0.4− | 0.0 | 2004 04 12 | 703 | 0.0 | 1.0− |
| 2001 10 18 | 644 | 0.7− | 0.1− | 2004 02 11 | 644 | 0.0 | 0.0 | 2004 04 12 | 703 | 0.3− | 0.8− |
| 2001 10 21 | 704 | 1.2− | 0.3+ | 2004 02 11 | 644 | 0.2− | 0.0 | 2004 04 12 | 703 | 0.7− | 0.4+ |
| 2001 10 21 | 704 | 0.3− | 0.6+ | 2004 02 11 | 644 | 0.1+ | 0.0 | 2004 04 12 | 703 | 0.3+ | 1.1+ |
| 2001 10 21 | 704 | 0.9− | 0.1+ | 2004 02 13 | 854 | 0.5− | 0.1+ | 2004 05 07 | 703 | 0.5− | 0.4− |
| 2001 10 21 | 704 | 0.7− | 0.1+ | 2004 02 13 | 854 | 0.3− | 0.1− | 2004 05 07 | 703 | 1.2+ | 0.6+ |
| 2001 10 21 | 704 | 1.0− | 1.2+ | 2004 02 13 | 854 | 0.1− | 0.4+ | 2004 05 07 | 703 | 0.1+ | 0.9+ |
| 2002 12 06 | 704 | 0.8+ | 1.4− | 2004 02 14 | 854 | 0.2− | 0.2− | 2004 05 07 | 703 | 0.2− | 0.9+ |
| 2002 12 06 | 704 | 0.6− | 0.1− | 2004 02 14 | 854 | 0.2+ | 0.4− | 2004 05 13 | 704 | (0.2+ | 2.9+) |
| 2002 12 06 | 704 | 0.7+ | 0.4− | 2004 02 14 | 854 | 0.2+ | 0.2− | 2004 05 13 | 704 | 0.5+ | 1.8+ |
| 2002 12 06 | 704 | 0.1− | 0.5− | 2004 02 17 | 704 | 0.1− | 0.3− | 2004 05 13 | 704 | 1.8+ | 0.2− |
| 2002 12 06 | 704 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.0 | 0.0 | 2004 05 13 | 704 | 0.0 | 0.7− |
| 2002 12 06 | 704 | 0.7− | 0.9− | 2004 02 17 | 704 | 0.2− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.9+ |
| 2002 12 06 | 704 | 0.3− | 0.2− | 2004 02 17 | 704 | 0.2− | 0.1− | 2006 08 16 | 644 | 0.0 | 0.5+ |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2004 02 17 | 704 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2002 12 06 | 704 | 0.3+ | 0.1+ | 2004 02 18 | 691 | 0.2+ | 1.2− | 2006 08 23 | 644 | 0.1− | 0.6+ |
| 2002 12 12 | 644 | 0.2+ | 0.2+ | 2004 02 18 | 691 | 0.2− | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.7+ |
| 2002 12 12 | 644 | 0.4+ | 0.2+ | 2004 02 18 | 691 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.4+ |
| 2002 12 12 | 644 | 0.2+ | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 1.8− | 1.5− |
| 2003 12 18 | 703 | (0.5+ | 2.5−) | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 1.7− | 0.4+ |
| 2003 12 18 | 703 | 0.2+ | 0.9− | 2004 03 15 | 704 | 0.4− | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.8− |
| 2003 12 18 | 703 | 1.8− | 0.9− | 2004 03 15 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.4− |
| 2003 12 18 | 703 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.2− | 2006 09 30 | 291 | 0.1− | 1.0+ |
| 2003 12 23 | 704 | 0.7+ | 0.2− | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 291 | 0.3− | 0.9+ |
| 2003 12 23 | 704 | 0.5+ | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 291 | 0.0 | 0.9+ |

**(140110)∗ 2001 SD$_{136}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.24797 | | (2000.0) | | | |
| $n$ | 0.18683065 | $\omega$ | 263.37533 | | −0.04658046 | +0.99874202 |
| $a$ | 3.0304280 | $\Omega$ | 4.09473 | | −0.78260382 | −0.02493803 |
| $e$ | 0.0605387 | $i$ | 15.06910 | | −0.62077494 | −0.04350250 |
| $P$ | 5.28 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 691 | 0.1+ | 0.4− | 2001 09 24 | 704 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.2− | 0.2+ |
| 1999 03 13 | 691 | 0.7+ | 0.6− | 2001 09 24 | 704 | 0.0 | 1.1− | 2004 03 20 | 704 | 0.5+ | 0.3+ |
| 1999 03 13 | 691 | 0.2+ | 0.3− | 2001 09 24 | 704 | 0.8− | 0.3− | 2004 03 23 | 704 | (1.5+ | 1.4+) |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 09 24 | 704 | 0.1+ | 0.7− | 2004 03 23 | 704 | 0.4− | 0.3+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.2− | 0.5− | 2004 03 23 | 704 | 0.4+ | 1.0+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.3− | 0.5− | 2004 03 23 | 704 | 0.7+ | 1.0+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.4− | 0.8− | 2006 08 16 | 644 | 1.3− | 0.4+ |
| 2001 09 11 | 699 | 1.3+ | 0.4+ | 2001 10 18 | 644 | 0.0 | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.4+ |
| 2001 09 11 | 699 | 0.3− | 0.3+ | 2001 10 18 | 644 | 0.2− | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.5+ |
| 2001 09 11 | 699 | 0.2− | 1.0+ | 2001 10 18 | 644 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.0 | 0.5+ |
| 2001 09 11 | 699 | 0.4+ | 0.2+ | 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.1− | 0.4− |
| 2001 09 16 | 704 | 0.7+ | 0.4+ | 2001 10 21 | 704 | 0.7− | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 1.4+ | 0.1− |
| 2001 09 16 | 704 | 1.2+ | 0.8− | 2001 10 21 | 704 | 0.5+ | 0.5− | 2006 08 29 | 703 | 0.9+ | 1.2+ |
| 2001 09 16 | 704 | 0.7+ | 0.2+ | 2001 10 21 | 704 | 1.0− | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.0 |
| 2001 09 20 | 704 | (0.1+ | 1.6+) | 2003 12 25 | 645 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.1− | 1.3+ |
| 2001 09 20 | 704 | (0.2− | 2.2+) | 2003 12 25 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.5− | 0.5+ |
| 2001 09 20 | 704 | 0.1+ | 1.1+ | 2004 02 16 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 1.3− |
| 2001 09 20 | 704 | 0.3− | 1.5+ | 2004 02 16 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.6− |
| 2001 09 20 | 704 | 0.7− | 1.1+ | 2004 02 16 | 704 | 0.1− | 0.6− | 2006 09 14 | 703 | 0.9+ | 0.0 |
| 2001 09 21 | 291 | 0.1− | 0.1− | 2004 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.6− |
| 2001 09 21 | 291 | 0.2− | 0.0 | 2004 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 21 | 699 | (1.9− | 1.8+) |
| 2001 09 21 | 291 | 0.1− | 0.2+ | 2004 03 13 | 691 | 0.2− | 0.3+ | 2006 09 21 | 699 | 1.2− | 0.3− |
| 2001 09 23 | 704 | 0.4− | 0.9− | 2004 03 19 | 644 | 0.4+ | 0.4+ | 2006 09 21 | 699 | 0.3− | 1.1+ |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2004 03 19 | 644 | 0.5+ | 0.6+ | 2006 09 21 | 699 | 0.9− | 0.2− |
| 2001 09 23 | 704 | 0.8− | 0.1+ | 2004 03 19 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 09 23 | 704 | 0.3− | 0.3+ | 2004 03 19 | 644 | 0.2+ | 0.6+ | 2006 11 17 | G96 | 0.7− | 0.0 |
| 2001 09 23 | 704 | 0.6− | 0.9+ | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.7− | 0.4+ | 2004 03 19 | 644 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2004 03 20 | 704 | 0.9+ | 0.6+ | | | | |
| 2001 09 24 | 704 | 0.1+ | 0.8− | 2004 03 20 | 704 | 0.2+ | 0.1− | | | | |

**(140111)∗ 2001 SN$_{136}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.92343 | | (2000.0) | | | |
| $n$ | 0.21483843 | $\omega$ | 151.68179 | | +0.99650939 | +0.07288619 |
| $a$ | 2.7609682 | $\Omega$ | 204.24071 | | −0.08198939 | +0.94624629 |
| $e$ | 0.0711240 | $i$ | 5.68935 | | +0.01570915 | +0.31512786 |
| $P$ | 4.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 05 | 704 | (0.6+ | 2.2+) | 2001 10 14 | 691 | 0.6+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2000 06 05 | 704 | 0.2+ | 0.5+ | 2001 10 14 | 691 | 0.4− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.1− |
| 2000 06 05 | 704 | 0.4+ | 0.2+ | 2001 10 14 | 691 | 0.5+ | 0.3− | 2006 11 02 | 703 | 0.8+ | 1.0+ |
| 2001 08 27 | 644 | 0.1+ | 0.1+ | 2001 10 16 | 704 | 0.9− | 1.4+ | 2006 11 02 | 703 | 0.2− | 0.3− |
| 2001 08 27 | 644 | 0.2+ | 0.5+ | 2001 10 16 | 704 | 0.4− | 0.3− | 2006 11 02 | 703 | (1.7− | 0.2−) |
| 2001 08 27 | 644 | 0.3+ | 0.3+ | 2001 10 16 | 704 | 0.6− | 0.6+ | 2006 11 02 | 703 | (1.9− | 1.6+) |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2001 10 16 | 704 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2001 09 16 | 704 | 0.7+ | 0.1+ | 2001 10 21 | 704 | 1.4− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.1+ | 0.8+ | 2001 10 21 | 704 | 1.3− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 0.9+ | 2001 10 21 | 704 | 1.2− | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.8+ |
| 2001 09 18 | 699 | 0.8− | 0.3+ | 2001 10 21 | 704 | 0.6− | 0.2− | 2006 11 14 | 704 | 0.2− | 1.1+ |
| 2001 09 18 | 699 | 0.2− | 0.4+ | 2001 10 21 | 704 | 0.8− | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2001 09 18 | 699 | 1.0+ | 0.3− | 2001 11 17 | 291 | 0.1+ | 0.2+ | 2006 11 14 | 704 | (0.3− | 2.2+) |
| 2001 09 18 | 699 | 1.0− | 0.3+ | 2001 11 17 | 291 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 1.2− | 0.3+ |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2001 11 17 | 291 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.4+ | 2004 03 23 | 691 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.5+ | 0.7+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.8+ | 2006 11 17 | 704 | 0.8− | 0.1+ | | |
| 2001 09 20 | 704 | 0.4+ | 0.7+ | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.7− | 0.2+ | | |
| 2001 09 20 | 704 | 0.4− | 0.7+ | 2004 03 27 | 704 | (0.4+ | 1.6+) | 2006 11 17 | 703 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | (3.1+ | 0.4+) | 2004 03 27 | 704 | 0.9+ | 1.0+ | 2006 11 17 | 703 | 0.7− | 0.3− | | |
| 2001 09 23 | 704 | (3.1+ | 0.1+) | 2004 03 27 | 704 | 0.7+ | 1.2+ | 2006 11 17 | 703 | (1.7− | 2.2+) | | |
| 2001 09 23 | 704 | (3.5+ | 0.8+) | 2004 03 27 | 704 | (1.7+ | 1.3+) | 2006 11 17 | 703 | 0.2− | 1.1+ | | |
| 2001 09 24 | 704 | 0.1− | 0.4− | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 24 | 704 | 0.1− | 0.0 | 2004 04 13 | 691 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.6+ | 0.9− | | |
| 2001 09 24 | 704 | 0.3− | 0.0 | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.5+ | | |
| 2001 09 24 | 704 | 0.4− | 0.1+ | 2004 05 24 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | (2.8+ | 0.4+) | | |
| 2001 09 24 | 704 | 0.1+ | 0.1+ | 2004 05 24 | 691 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.1+ | | |
| 2001 10 13 | 704 | (1.7+ | 0.1−) | 2004 05 24 | 691 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.0 | | |
| 2001 10 13 | 704 | 0.8+ | 0.8+ | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1+ | | |
| 2001 10 13 | 704 | 1.0+ | 1.2− | 2005 06 11 | 691 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.1+ | | |
| 2001 10 13 | 704 | 0.9+ | 0.7+ | 2005 06 11 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.5− | 2.0+ | | |
| 2001 10 13 | 704 | 0.8+ | 0.6+ | 2005 06 15 | 691 | 0.0 | 0.2− | 2006 11 28 | 704 | 2.4− | 0.7+ | | |
| 2001 10 13 | 691 | 0.1− | 0.0 | 2005 06 15 | 691 | 0.0 | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.5+ | | |
| 2001 10 13 | 691 | 0.2− | 0.0 | 2005 06 15 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 2.2+ | 1.5+ | | |
| 2001 10 13 | 691 | 0.3− | 0.5− | 2006 10 12 | 691 | 0.1+ | 0.2+ | | | | | | |

**(140112)∗ 2001 SK$_{137}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.64649 | | (2000.0) | | | |
| $n$ | 0.19434752 | $\omega$ | 295.73681 | | −0.51643319 | +0.85619995 |
| $a$ | 2.9517758 | $\Omega$ | 303.16202 | | −0.77920391 | −0.47700934 |
| $e$ | 0.0474942 | $i$ | 1.01155 | | −0.35515914 | −0.19845338 |
| $P$ | 5.07 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 1.1− | 0.7− | 2001 11 16 | 291 | (2.4+ | 2.1+) | 2004 03 27 | 704 | 0.2+ | 0.1− | | |
| 1999 03 19 | 691 | 0.7− | 0.8− | 2001 11 17 | 291 | (1.8+ | 0.0 ) | 2004 03 27 | 704 | 0.1+ | 0.5+ | | |
| 1999 03 19 | 691 | 0.9− | 0.8− | 2001 11 17 | 291 | (1.9+ | 0.3+) | 2004 03 27 | 704 | 0.0 | 0.4+ | | |
| 1999 03 21 | 645 | 0.1+ | 0.1− | 2001 11 17 | 291 | 1.3+ | 0.0 | 2004 03 27 | 704 | 0.1− | 0.6− | | |
| 1999 03 21 | 645 | 0.1+ | 0.1− | 2004 02 19 | 704 | (1.7+ | 0.1+) | 2004 03 30 | 691 | 0.1+ | 0.2− | | |
| 2001 09 16 | 704 | 0.1+ | 1.2+ | 2004 02 19 | 704 | 0.2+ | 0.4− | 2004 03 30 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.6− | 0.1− | 2004 02 19 | 704 | 0.5+ | 0.2− | 2004 03 30 | 691 | 0.2+ | 0.0 | | |
| 2001 09 16 | 704 | 0.5− | 0.1+ | 2004 02 26 | 704 | 0.8+ | 0.8+ | 2004 03 31 | 691 | 0.2+ | 0.0 | | |
| 2001 09 16 | 704 | 0.2+ | 1.2+ | 2004 02 26 | 704 | 0.6− | 0.8− | 2004 03 31 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.8− | 0.3− | 2004 02 26 | 704 | 0.6+ | 0.4+ | 2004 03 31 | 691 | 0.2− | 0.4+ | | |
| 2001 09 20 | 704 | 0.4− | 0.7+ | 2004 03 15 | 691 | 0.2− | 0.0 | 2004 04 24 | 691 | 0.0 | 0.1+ | | |
| 2001 09 20 | 704 | 0.2− | 0.5− | 2004 03 15 | 691 | 0.3− | 0.1+ | 2004 04 24 | 691 | 0.3− | 0.2+ | | |
| 2001 09 20 | 704 | 0.5− | 0.1+ | 2004 03 15 | 683 | 0.9− | 0.1− | 2004 04 24 | 691 | 0.2− | 0.7+ | | |
| 2001 09 20 | 704 | 0.3− | 0.4− | 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.0 | | |
| 2001 09 25 | 704 | 0.5− | 0.7− | 2004 03 15 | 683 | 1.1+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.6− | | |
| 2001 09 25 | 704 | 0.3− | 0.9− | 2004 03 15 | 683 | 0.1+ | 1.2+ | 2006 09 17 | 703 | 0.6− | 0.1− | | |
| 2001 09 25 | 704 | 0.2− | 0.5+ | 2004 03 16 | 704 | (0.2+ | 3.2+) | 2006 09 17 | 703 | 0.2− | 0.3− | | |
| 2001 09 25 | 704 | 0.3+ | 0.1+ | 2004 03 16 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 699 | 1.2+ | 0.9− | | |
| 2001 09 25 | 704 | 0.5− | 0.0 | 2004 03 16 | 704 | 0.7+ | 0.8+ | 2006 09 18 | 699 | 0.3+ | 0.9+ | | |
| 2001 10 11 | 644 | 0.6+ | 0.0 | 2004 03 16 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.5+ | | |
| 2001 10 11 | 644 | 0.3+ | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 09 18 | 699 | 0.7− | 0.0 | | |
| 2001 10 11 | 644 | 0.3+ | 0.3+ | 2004 03 18 | 704 | (1.6+ | 0.6+) | 2006 09 28 | G96 | 0.0 | 0.2− | | |
| 2001 10 14 | 691 | 0.2− | 0.2− | 2004 03 18 | 704 | (2.3+ | 1.6+) | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2001 10 14 | 691 | 0.1− | 0.0 | 2004 03 18 | 704 | (2.6+ | 0.2+) | 2006 09 28 | G96 | 0.2+ | 0.2− | | |
| 2001 10 14 | 691 | 0.1+ | 0.1− | 2004 03 18 | 704 | 1.4+ | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.1− | | |
| 2001 10 21 | 704 | 0.0 | 0.6+ | 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.5− | 1.2− | 2004 03 21 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 0.4− | 0.4+ | 2004 03 21 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.6+ | | |
| 2001 10 21 | 704 | 0.6− | 0.2− | 2004 03 27 | 291 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.3− | | |
| 2001 10 21 | 704 | 0.6+ | 0.1− | 2004 03 27 | 291 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.6− | | |
| 2001 11 16 | 291 | (2.2+ | 0.3+) | 2004 03 27 | 291 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 2001 11 16 | 291 | (2.2+ | 0.9+) | 2004 03 27 | 704 | 0.5− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.1− | | |

**(140113)∗ 2001 SM$_{137}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 290.02521 | | (2000.0) | | | |
| $n$ | 0.18359043 | $\omega$ | 65.15436 | | +0.50248150 | −0.86456956 |
| $a$ | 3.0659803 | $\Omega$ | 354.67101 | | +0.76970509 | +0.45029973 |
| $e$ | 0.1014500 | $i$ | 3.48237 | | +0.39378474 | +0.22304626 |
| $P$ | 5.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.3+ | 0.1− | 2001 10 11 | 644 | 0.3+ | 0.5+ | 2004 04 11 | 644 | 0.5+ | 0.5+ | | |
| 2001 08 27 | 699 | 0.1− | 1.6+ | 2001 10 11 | 644 | 0.4+ | 0.4+ | 2004 04 16 | 644 | 0.8+ | 0.9+ | | |
| 2001 08 27 | 699 | 0.4− | 0.1− | 2001 10 13 | 704 | (0.4− | 4.2+) | 2004 04 16 | 644 | 1.0+ | 0.4+ | | |
| 2001 08 27 | 699 | (0.1− | 2.5+) | 2001 10 13 | 704 | (0.6+ | 2.7+) | 2004 04 16 | 644 | 0.7+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2001 10 13 | 704 | (0.6+ | 3.1+) | 2004 04 20 | 691 | 0.4+ | 0.4+ | | |
| 2001 09 16 | 704 | 0.5+ | 0.4+ | 2001 10 14 | 691 | 0.1+ | 0.5+ | 2004 04 20 | 691 | 0.4+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.4+ | 1.0+ | 2001 10 14 | 691 | 0.1− | 0.0 | 2004 04 20 | 691 | 0.3+ | 0.4+ | | |
| 2001 09 16 | 704 | 0.5+ | 0.7+ | 2001 10 14 | 691 | 0.1− | 0.1+ | 2004 04 23 | 691 | 0.2+ | 0.6+ | | |
| 2001 09 20 | 704 | 0.4− | 0.1− | 2001 10 16 | 704 | 0.7− | 1.1− | 2004 04 23 | 691 | 0.5+ | 0.6+ | | |
| 2001 09 20 | 704 | 0.4− | 0.3− | 2001 10 16 | 704 | 0.5− | 0.4+ | 2004 04 23 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 20 | 704 | 0.4− | 0.2− | 2001 10 16 | 704 | 0.0 | 0.3+ | 2006 08 14 | 644 | 0.1− | 0.3+ | | |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2001 10 18 | 644 | 1.0− | 0.9+ | 2006 08 14 | 644 | 0.1− | 0.6+ | | |
| 2001 09 20 | 704 | 0.3− | 0.3− | 2001 10 18 | 644 | 0.7− | 1.2+ | 2006 08 14 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 23 | 704 | 0.5− | 0.6− | 2001 10 18 | 644 | 0.8− | 1.3+ | 2006 08 21 | 704 | 0.1− | 0.7+ | | |
| 2001 09 23 | 704 | 0.2− | 0.2+ | 2001 10 21 | 704 | 1.2− | 0.1− | 2006 08 21 | 704 | 0.2− | 1.1+ | | |
| 2001 09 23 | 704 | 0.3+ | 0.2− | 2001 10 21 | 704 | 1.5− | 0.2− | 2006 08 21 | 704 | 0.8+ | 1.1+ | | |
| 2001 09 23 | 704 | 0.2− | 0.0 | 2001 10 21 | 704 | 0.8− | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 24 | 704 | 0.4− | 0.0 | 2001 10 21 | 704 | 1.6− | 0.9+ | 2006 08 24 | 644 | 0.1− | 0.2+ | | |
| 2001 09 24 | 704 | 0.4− | 0.4+ | 2001 10 21 | 704 | 1.3− | 0.5+ | 2006 08 24 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 24 | 704 | 0.1− | 0.3+ | 2002 12 06 | 645 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.0 | 0.5+ | | |
| 2001 09 24 | 704 | 0.2− | 0.3+ | 2002 12 06 | 645 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.4+ | 2002 12 14 | 704 | 1.3− | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.3+ | | |
| 2001 09 24 | 704 | 0.4+ | 0.2− | 2002 12 14 | 704 | (2.1− | 0.4+) | 2006 08 28 | 703 | 0.4+ | 0.5+ | | |
| 2001 09 24 | 704 | 0.2+ | 1.1+ | 2002 12 14 | 704 | 0.7− | 0.3− | 2006 08 28 | 703 | 0.8− | 0.1+ | | |
| 2001 09 24 | 704 | 0.1− | 0.5+ | 2003 01 05 | 704 | 0.7+ | 0.0 | 2006 08 28 | 703 | 0.4− | 0.2+ | | |
| 2001 09 24 | 704 | 0.7− | 0.9+ | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.5+ | | |
| 2001 09 24 | 704 | 0.9+ | 0.1− | 2003 01 05 | 704 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.4− | | |
| 2001 09 25 | 699 | 0.4+ | 0.1+ | 2003 01 05 | 704 | 1.5+ | 0.1− | 2006 08 28 | 699 | 0.1+ | 0.8− | | |
| 2001 09 25 | 699 | 0.2− | 0.7+ | 2003 01 09 | 704 | 1.5− | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.1+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2003 01 09 | 704 | 1.8− | 1.9+ | 2006 08 28 | 699 | 0.7− | 0.0 | | |
| 2001 09 25 | 704 | 0.6+ | 0.9+ | 2003 01 09 | 704 | 0.9− | 1.5+ | 2006 09 14 | 703 | 0.5− | 0.7− | | |
| 2001 09 25 | 699 | 0.3− | 0.7+ | 2003 01 09 | 704 | 0.6− | 1.6+ | 2006 09 14 | 703 | 1.3+ | 0.1− | | |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2003 01 09 | 704 | 1.7− | 1.6+ | 2006 09 14 | 644 | 0.4− | 0.5− | | |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2004 03 27 | 704 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.9− | 1.2− | | |
| 2001 09 25 | 699 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 644 | 0.3− | 0.2+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.9+ | 2004 03 27 | 704 | 0.9− | 1.3+ | 2006 09 14 | 644 | 0.3+ | 0.4+ | | |
| 2001 09 25 | 704 | 0.2− | 0.2+ | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.0 | | |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2004 03 29 | 691 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 2001 09 25 | 704 | 0.2− | 0.6+ | 2004 03 29 | 691 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.8+ | 0.1+ | 2004 04 11 | 644 | 0.8+ | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.1+ | | |
| 2001 10 11 | 644 | 0.2+ | 0.3+ | 2004 04 11 | 644 | 0.3+ | 0.8+ | | | | | | |

**(140114)∗ 2001 SO$_{137}$ = 2001 SC$_{351}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 61044)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.62946 | | (2000.0) | | | |
| $n$ | 0.19655842 | $\omega$ | 20.67875 | | +0.95005300 | +0.31180436 |
| $a$ | 2.9295997 | $\Omega$ | 321.14527 | | −0.28923484 | +0.86365195 |
| $e$ | 0.1132758 | $i$ | 1.21634 | | −0.11722845 | +0.39608503 |
| $P$ | 5.01 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.2+ | 0.5+ | 2001 10 13 | 704 | (1.6+ | 0.8+) | 2006 09 19 | 699 | 0.2− | 1.1− |
| 1991 10 08 | 691 | 0.1+ | 0.6+ | 2001 10 14 | 691 | 0.1+ | 0.3− | 2006 09 21 | A50 | 0.4+ | 0.3− |
| 1991 10 08 | 691 | 0.1+ | 0.2− | 2001 10 14 | 691 | 0.0 | 0.2− | 2006 09 26 | 291 | 0.1− | 0.1+ |
| 1991 10 08 | 691 | 0.0 | 0.1− | 2001 10 14 | 691 | 0.1− | 0.4− | 2006 09 26 | 291 | 0.1− | 0.1+ |
| 1991 10 08 | 691 | 0.5− | 0.7+ | 2001 10 18 | 644 | 0.2− | 0.4+ | 2006 09 26 | 291 | 0.5− | 0.4− |
| 1999 03 21 | 645 | 0.1− | 0.1+ | 2001 10 18 | 644 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 1999 03 21 | 645 | 0.1− | 0.2+ | 2001 10 18 | 644 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 10 21 | 704 | 1.0− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 10 21 | 704 | 0.9− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2001 08 27 | 699 | (4.3− | 1.1−) | 2001 10 21 | 704 | 0.5− | 0.7+ | 2006 09 27 | 704 | 0.7− | 1.4+ |
| 2001 08 27 | 699 | 0.8− | 0.0 | 2001 10 21 | 704 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.8− | 0.9+ |
| 2001 08 27 | 699 | (2.9+ | 1.5+) | 2003 01 04 | 704 | 0.0 | 0.6− | 2006 09 27 | 704 | 0.2− | 1.0+ |
| 2001 08 27 | 699 | (6.1+ | 2.5+) | 2003 01 04 | 704 | 0.5+ | 0.3− | 2006 09 27 | 704 | 0.6− | 0.5+ |
| 2001 09 16 | 704 | 0.1− | 0.4+ | 2003 01 04 | 704 | 0.7− | 1.0− | 2006 09 29 | 704 | 0.7+ | 0.8− |
| 2001 09 16 | 704 | 1.0+ | 0.8+ | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.6+ | 1.5+ |
| 2001 09 16 | 704 | 0.2− | 1.0+ | 2004 03 18 | 704 | 1.3+ | 0.6+ | 2006 09 29 | 704 | 0.4+ | 0.2− |
| 2001 09 16 | 704 | 0.2− | 0.2− | 2004 03 18 | 704 | 1.1+ | 0.8+ | 2006 09 29 | 704 | 0.9+ | 1.2+ |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.8+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.8+ | 1.1− |
| 2001 09 20 | 704 | 0.3+ | 0.5+ | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | (0.9− | 1.5+) |
| 2001 09 20 | 704 | 0.5+ | 0.7+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2004 04 13 | 691 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 0.6− | 0.6+ |
| 2001 09 23 | 704 | (1.9+ | 2.7+) | 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.7+ | 1.0+ |
| 2001 09 23 | 704 | 0.8+ | 0.1+ | 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 0.5− | 2004 04 21 | 691 | 0.3+ | 0.3− | 2006 10 02 | 691 | 0.5− | 0.1+ |
| 2001 09 23 | 691 | 0.3− | 0.6− | 2004 04 21 | 691 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 691 | 0.2− | 0.1− | 2004 04 21 | 691 | 0.7+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 09 23 | 691 | 0.4+ | 0.3+ | 2005 02 09 | 809 | 0.8+ | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 09 24 | 704 | 0.0 | 0.7+ | 2005 02 09 | 809 | 0.5+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 09 24 | 704 | 0.6+ | 0.6+ | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.4− |
| 2001 09 24 | 704 | 0.3− | 0.2+ | 2006 07 22 | G96 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2001 09 24 | 704 | 0.2+ | 0.7+ | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.6− |
| 2001 09 24 | 704 | 0.9− | 0.4+ | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2001 10 11 | 644 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 10 11 | 644 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.5− |
| 2001 10 11 | 644 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.5− |
| 2001 10 13 | 704 | 1.0+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.6+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 10 13 | 704 | 0.7+ | 0.4− | 2006 09 19 | 699 | 0.8− | 0.4− | | | | |
| 2001 10 13 | 704 | 0.0 | 1.2+ | 2006 09 19 | 699 | 0.4− | 0.1− | | | | |

**(140115)∗ 2001 ST$_{137}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.82750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19858716 | $\omega$ | 56.01150 | | +0.67334924 | −0.73931556 | |
| $a$ | 2.9096132 | $\Omega$ | 351.65946 | | +0.66975303 | +0.61206820 | |
| $e$ | 0.0759964 | $i$ | 1.44101 | | +0.31310011 | +0.28068671 | |
| $P$ | 4.96 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.2− | 0.4+ | 2001 10 21 | 704 | 0.1+ | 0.9− | 2006 09 24 | 691 | 0.1− | 0.0 |
| 2001 08 27 | 644 | 0.5− | 0.4+ | 2001 10 21 | 704 | 0.3− | 1.0− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2001 08 27 | 644 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.9+ | 0.6− | 2006 09 25 | 691 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.7− | 0.3+ | 2001 10 21 | 704 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 0.6+ | 0.5− | 2001 11 16 | 291 | 1.1+ | 0.4− | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2001 09 16 | 704 | 0.6− | 0.2− | 2001 11 16 | 291 | 1.0+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2001 11 16 | 291 | 1.1+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2002 12 31 | 704 | (1.8+ | 0.4+) | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2002 12 31 | 704 | 0.5+ | 0.0 | 2006 09 27 | 699 | 0.2+ | 1.3+ |
| 2001 09 20 | 704 | 0.7− | 0.5+ | 2002 12 31 | 704 | (0.2+ | 1.7+) | 2006 09 27 | 699 | 0.7+ | 0.0 |
| 2001 09 24 | 704 | 0.7− | 1.1+ | 2003 01 08 | 704 | 0.8+ | 0.6− | 2006 09 27 | 699 | (0.4+ | 1.5−) |
| 2001 09 24 | 704 | 1.2− | 0.9+ | 2003 01 08 | 704 | 0.3+ | 1.5+ | 2006 09 27 | 699 | 1.0+ | 0.3+ |
| 2001 09 24 | 704 | 0.7− | 0.2+ | 2003 01 08 | 704 | (0.3+ | 1.8+) | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 1.2− | 0.5− | 2003 01 13 | 291 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2001 09 24 | 704 | 0.8+ | 0.7− | 2003 01 13 | 291 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2001 10 06 | 644 | 0.2+ | 0.7+ | 2003 01 13 | 291 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.1+ |
| 2001 10 06 | 644 | 0.7− | 1.2+ | 2004 03 16 | 691 | 0.3+ | 0.7+ | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2001 10 06 | 644 | 0.0 | 1.1+ | 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2001 10 06 | 644 | 0.9− | 1.2+ | 2004 03 16 | 691 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.7+ | 0.3+ |
| 2001 10 06 | 644 | 0.5+ | 0.8+ | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2001 10 06 | 644 | 1.0− | 0.9+ | 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2001 10 11 | 644 | 0.0 | 0.2+ | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.6+ | 0.9− |
| 2001 10 11 | 644 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.7− | 1.2− |
| 2001 10 11 | 644 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | (1.6+ | 0.6−) |
| 2001 10 14 | 691 | 0.6− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.7− |
| 2001 10 14 | 691 | 0.5− | 0.0 | 2006 09 19 | 699 | 1.2− | 1.0+ | 2006 11 01 | G96 | 0.3− | 0.1− |
| 2001 10 14 | 691 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.0 | 1.2+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2001 10 16 | 704 | 0.8+ | 1.2+ | 2006 09 19 | 699 | 0.7− | 1.4+ | 2006 11 01 | G96 | 0.2+ | 0.2+ |
| 2001 10 16 | 704 | 0.7+ | 0.3+ | 2006 09 19 | 699 | 1.1+ | 0.4− | 2006 11 01 | G96 | 0.7+ | 0.2+ |
| 2001 10 16 | 704 | 0.6+ | 0.2− | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 10 17 | 691 | 0.2− | 0.5− | 2006 09 20 | 704 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2001 10 17 | 691 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.4− |
| 2001 10 17 | 691 | 0.2− | 0.3− | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.7+ | 2006 09 24 | 691 | 0.0 | 0.3+ | | | | |

**(140116)∗ 2001 SX$_{137}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.16008 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24388199 | $\omega$ | 139.82611 | | +0.78310179 | −0.62185861 | |
| $a$ | 2.5371700 | $\Omega$ | 258.62712 | | +0.56883692 | +0.72053543 | |
| $e$ | 0.1069376 | $i$ | 0.38524 | | +0.25134864 | +0.30679075 | |
| $P$ | 4.04 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 809 | (3.0+ | 0.4+) | 2001 10 13 | 699 | 1.1− | 0.1− | 2005 09 14 | 703 | (1.3+ | 1.6+) |
| 1993 10 12 | 809 | (3.0+ | 0.6−) | 2001 10 13 | 704 | 0.7+ | 0.3+ | 2005 09 14 | 703 | (1.2+ | 2.0+) |
| 1993 10 12 | 809 | 2.0+ | 0.2− | 2001 10 13 | 699 | 0.7− | 0.4+ | 2005 09 14 | 703 | 0.0 | 1.1+ |
| 1993 10 22 | 809 | (4.0+ | 3.6−) | 2001 10 13 | 704 | 0.1+ | 0.2− | 2005 09 22 | 644 | 0.1+ | 0.0 |
| 1993 10 22 | 809 | (3.1+ | 2.4−) | 2001 10 13 | 699 | 0.5+ | 0.8+ | 2005 09 22 | 644 | 0.0 | 0.1+ |
| 1993 10 22 | 809 | 0.0 | 0.4+ | 2001 10 13 | 699 | 1.4+ | 1.3+ | 2005 09 22 | 644 | 0.1− | 0.1+ |
| 1997 10 23 | 691 | 0.1− | 0.6− | 2001 10 16 | 704 | 0.4+ | 0.1+ | 2005 09 23 | 644 | 0.2− | 0.2+ |
| 1997 10 23 | 691 | 0.2+ | 0.1− | 2001 10 16 | 704 | 0.3+ | 0.2+ | 2005 09 23 | 644 | 0.0 | 0.1+ |
| 1997 10 23 | 691 | 0.1+ | 0.1− | 2001 10 16 | 704 | 0.8+ | 0.5− | 2005 09 23 | 644 | 0.4− | 0.0 |
| 1997 11 01 | 691 | 0.4− | 0.3+ | 2001 10 16 | 704 | 0.2+ | 0.2− | 2005 09 23 | 703 | 0.2− | 0.4− |
| 1997 11 01 | 691 | 0.4− | 0.1− | 2001 10 17 | 691 | 0.1+ | 0.4− | 2005 09 23 | 703 | 0.8− | 0.7− |
| 1997 11 01 | 691 | 0.6− | 0.3− | 2001 10 17 | 691 | 0.0 | 0.4− | 2005 09 23 | 703 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.0 | 0.8+ | 2001 10 17 | 691 | 0.7− | 0.1+ | 2005 09 23 | 703 | 0.2+ | 0.3− |
| 2001 09 16 | 704 | 0.7− | 0.7+ | 2001 10 17 | 644 | 0.8+ | 0.9− | 2005 09 25 | 703 | 0.4− | 0.9+ |
| 2001 09 16 | 704 | 0.2− | 0.8+ | 2001 10 17 | 644 | (1.7+ | 0.8−) | 2005 09 25 | 703 | 0.6+ | 0.5+ |
| 2001 09 16 | 704 | 0.3− | 0.5+ | 2001 10 17 | 644 | 1.4+ | 0.7− | 2005 09 25 | 703 | 0.5+ | 0.9+ |
| 2001 09 17 | 644 | 0.9− | 0.2+ | 2001 10 18 | 644 | 0.9− | 1.0− | 2005 09 25 | 703 | (0.5+ | 1.7+) |
| 2001 09 17 | 644 | 0.5− | 0.2+ | 2001 10 18 | 644 | (1.4− | 1.8+) | 2005 09 29 | 699 | 0.1+ | 0.0 |
| 2001 09 17 | 644 | 0.6− | 0.3− | 2001 10 18 | 644 | 0.7− | 0.9− | 2005 09 29 | 699 | (2.3+ | 0.1+) |
| 2001 09 18 | 699 | 1.4+ | 0.6+ | 2001 10 18 | 644 | (1.5− | 1.9+) | 2005 09 29 | 699 | 0.2− | 0.5+ |
| 2001 09 18 | 699 | 0.2− | 0.4+ | 2001 10 18 | 644 | 0.6− | 0.8− | 2005 09 29 | 699 | 0.3+ | 0.2− |
| 2001 09 18 | 699 | 1.2+ | 0.5+ | 2001 10 18 | 644 | (1.4− | 2.0+) | 2005 10 05 | G96 | 0.1− | 0.4− |
| 2001 09 18 | 699 | 1.2+ | 0.6+ | 2001 10 21 | 704 | 0.3+ | 0.0 | 2005 10 05 | G96 | 0.2− | 0.4− |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2001 10 21 | 704 | 0.0 | 0.3− | 2005 10 05 | G96 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 0.4− | 0.2+ | 2001 10 21 | 704 | 0.4+ | 0.5− | 2005 10 05 | G96 | 0.1+ | 0.5− |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2001 10 21 | 704 | 0.3+ | 0.3− | 2005 10 20 | 644 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.4− | 2001 10 21 | 704 | 0.6+ | 0.2− | 2005 10 20 | 644 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.3− | 2003 03 12 | 644 | 0.3+ | 0.8+ | 2005 10 20 | 644 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.1− | 0.8+ | 2003 03 12 | 644 | 0.0 | 1.0+ | 2005 10 20 | 644 | 0.3− | 0.2+ |
| 2001 09 23 | 704 | 0.1+ | 0.6+ | 2003 03 12 | 644 | 0.1+ | 0.9+ | 2005 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.0 | 0.5+ | 2005 08 25 | 644 | 0.1+ | 0.1+ | 2005 10 20 | 644 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.2− | 1.0+ | 2005 08 25 | 644 | 0.2+ | 0.2− | 2005 10 25 | G96 | 0.1− | 0.0 |
| 2001 09 24 | 704 | 0.3+ | 0.3+ | 2005 08 25 | 644 | 0.1+ | 0.3− | 2005 10 25 | G96 | 0.0 | 0.1− |
| 2001 09 24 | 704 | 0.4+ | 0.7+ | 2005 08 29 | 699 | (0.3− | 1.7−) | 2005 10 25 | G96 | 0.1+ | 0.2− |
| 2001 09 24 | 704 | 0.1+ | 0.2+ | 2005 08 29 | 699 | 0.5− | 0.3− | 2005 10 25 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 24 | 704 | 0.1+ | 0.6+ | 2005 08 29 | 699 | 0.1− | 0.7+ | 2005 10 27 | 644 | 0.3+ | 0.0 | |
| 2001 09 24 | 704 | 0.4− | 1.4+ | 2005 08 29 | 699 | 0.2− | 0.7− | 2005 10 27 | 644 | 0.2− | 0.1+ | |
| 2001 10 06 | 644 | 0.1+ | 0.0 | 2005 08 30 | 704 | 0.5+ | 0.5+ | 2005 10 27 | 644 | 0.1+ | 0.0 | |
| 2001 10 06 | 644 | 0.0 | 0.2+ | 2005 08 30 | 704 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.1+ | |
| 2001 10 06 | 644 | 0.1+ | 0.0 | 2005 08 30 | 704 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | |
| 2001 10 11 | 644 | 0.1+ | 0.3+ | 2005 08 30 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.3− | |
| 2001 10 11 | 644 | 0.0 | 0.2+ | 2005 08 30 | 704 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.1− | |
| 2001 10 11 | 644 | 0.1+ | 0.1+ | 2005 08 30 | 691 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.5+ | 0.1+ | |
| 2001 10 13 | 704 | 0.5+ | 0.3+ | 2005 08 30 | 691 | 0.1+ | 0.5− | 2006 12 01 | G96 | 0.1− | 0.0 | |
| 2001 10 13 | 704 | 0.3+ | 0.4+ | 2005 08 30 | 691 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.3+ | 0.5− | |
| 2001 10 13 | 704 | 0.2+ | 0.6+ | 2005 09 14 | 703 | 0.8+ | 1.3+ | 2006 12 01 | G96 | 0.4− | 0.4− | |

**(140117)∗ 2001 SD$_{138}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 290.91218 | | (2000.0) | | | |
| $n$ | 0.17952578 | $\omega$ | 238.29738 | | +0.42761300 | −0.90394315 |
| $a$ | 3.1120854 | $\Omega$ | 186.39466 | | +0.84605588 | +0.40248084 |
| $e$ | 0.2363131 | $i$ | 2.99657 | | +0.31833405 | +0.14455431 |
| $P$ | 5.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | (1.9− | 1.7+) | 2001 10 13 | 699 | 0.9+ | 0.7+ | 2003 01 26 | 699 | 1.0+ | 0.6− | |
| 2001 08 27 | 699 | 0.0 | 0.0 | 2001 10 13 | 704 | 1.0+ | 0.7− | 2003 01 30 | 699 | (1.7+ | 0.3−) | |
| 2001 08 27 | 699 | (0.7+ | 1.8+) | 2001 10 13 | 699 | 1.2+ | 1.0+ | 2003 01 30 | 699 | (0.8+ | 1.8+) | |
| 2001 08 27 | 699 | (1.9+ | 2.4−) | 2001 10 13 | 704 | 0.9+ | 1.2− | 2003 01 30 | 699 | (2.2+ | 1.3+) | |
| 2001 08 27 | 699 | 0.5− | 0.2+ | 2001 10 13 | 699 | 1.0+ | 0.5+ | 2003 01 30 | 699 | (1.6+ | 0.6+) | |
| 2001 08 27 | 699 | 0.4+ | 1.3− | 2001 10 13 | 699 | 0.8+ | 0.2+ | 2003 01 31 | 704 | 0.3+ | 0.1− | |
| 2001 08 27 | 699 | (0.6+ | 1.7+) | 2001 10 15 | 704 | 0.0 | 0.2− | 2003 01 31 | 704 | 0.6+ | 0.1+ | |
| 2001 08 27 | 699 | 1.2− | 0.2− | 2001 10 15 | 704 | 0.0 | 0.1− | 2003 01 31 | 704 | 0.0 | 0.2+ | |
| 2001 09 11 | 699 | 0.8+ | 1.4+ | 2001 10 15 | 704 | 0.7− | 0.2+ | 2003 01 31 | 704 | 0.3+ | 0.5− | |
| 2001 09 11 | 699 | 0.6− | 0.8+ | 2001 10 15 | 704 | 0.1− | 0.1− | 2003 01 31 | 704 | 0.8+ | 0.4+ | |
| 2001 09 11 | 699 | 0.0 | 0.1− | 2001 10 15 | 704 | 0.2− | 0.5− | 2003 02 09 | 644 | 0.2− | 0.4+ | |
| 2001 09 11 | 699 | 0.2− | 0.3− | 2001 10 15 | 608 | 0.5− | 0.2− | 2003 02 09 | 644 | 0.3− | 0.5+ | |
| 2001 09 16 | 704 | (0.8− | 2.9+) | 2001 10 15 | 608 | 0.2− | 0.3− | 2003 02 09 | 644 | 0.4− | 0.7+ | |
| 2001 09 16 | 704 | (0.9− | 2.5+) | 2001 10 15 | 608 | 0.2− | 0.3− | 2003 02 11 | 608 | 0.0 | 0.9− | |
| 2001 09 16 | 704 | (1.4− | 2.0+) | 2001 10 16 | 704 | 0.1− | 0.3+ | 2003 02 11 | 608 | 0.2− | 1.1− | |
| 2001 09 16 | 704 | (1.4− | 2.1+) | 2001 10 16 | 704 | 0.0 | 0.2− | 2003 02 11 | 608 | 0.3− | 0.4− | |
| 2001 09 18 | 699 | (1.7+ | 0.6+) | 2001 10 16 | 704 | 0.3− | 0.0 | 2003 02 22 | 644 | 0.2+ | 0.8+ | |
| 2001 09 18 | 699 | (2.7− | 0.4−) | 2001 10 16 | 704 | 0.1− | 0.4− | 2003 02 22 | 644 | 0.1+ | 0.8+ | |
| 2001 09 18 | 699 | 0.7− | 0.4− | 2001 10 16 | 704 | 0.3− | 0.1+ | 2003 02 22 | 644 | 0.5+ | 1.1+ | |
| 2001 09 18 | 699 | 0.1+ | 0.9+ | 2001 10 17 | 644 | 0.1+ | 0.2− | 2003 02 22 | 699 | 0.7+ | 0.7+ | |
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2001 10 17 | 644 | 0.1− | 0.1+ | 2003 02 22 | 699 | 0.0 | 0.6+ | |
| 2001 09 20 | 704 | 0.6− | 0.3− | 2001 10 17 | 644 | 0.1+ | 0.1+ | 2003 02 22 | 699 | 0.4+ | 0.8+ | |
| 2001 09 20 | 704 | 0.5− | 0.1+ | 2001 10 17 | 644 | 0.1+ | 0.2+ | 2003 02 22 | 699 | 0.7+ | 0.5+ | |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2001 10 17 | 644 | 0.3− | 0.1− | 2003 03 12 | 644 | 0.0 | 0.3+ | |
| 2001 09 20 | 704 | 0.6− | 0.1+ | 2001 10 17 | 644 | 0.2+ | 0.6+ | 2003 03 12 | 644 | 0.2+ | 0.4+ | |
| 2001 09 25 | 699 | 0.2− | 0.2+ | 2001 10 18 | 691 | 0.2− | 0.2+ | 2003 03 12 | 644 | 0.0 | 0.5+ | |
| 2001 09 25 | 699 | 0.3− | 0.1− | 2001 10 18 | 691 | 0.2− | 0.3+ | 2004 05 21 | 691 | 0.2+ | 0.4+ | |
| 2001 09 25 | 699 | 0.1+ | 0.5− | 2001 10 18 | 691 | 0.3− | 0.2+ | 2004 05 21 | 691 | 0.1− | 0.6+ | |
| 2001 09 25 | 699 | 0.5− | 0.7+ | 2001 10 20 | 704 | 0.7− | 0.7+ | 2004 05 21 | 691 | 0.4+ | 0.3+ | |
| 2001 09 26 | 704 | 0.4− | 0.5+ | 2001 10 20 | 704 | 0.7− | 0.3+ | 2006 08 21 | 644 | 0.3+ | 0.4+ | |
| 2001 09 26 | 704 | 0.1− | 0.4+ | 2001 10 20 | 704 | 0.7− | 0.8+ | 2006 08 21 | 644 | 0.4+ | 0.2+ | |
| 2001 09 26 | 704 | 0.1+ | 0.1+ | 2001 10 20 | 704 | 0.5− | 0.5+ | 2006 08 21 | 644 | 0.6+ | 0.3+ | |
| 2001 09 26 | 704 | 0.1− | 0.1− | 2001 10 20 | 704 | 0.6− | 0.8+ | 2006 09 14 | 703 | 0.9− | 0.2− | |
| 2001 09 26 | 704 | 0.9− | 0.1− | 2001 10 23 | 704 | 0.0 | 1.2+ | 2006 09 14 | 703 | 0.3− | 0.9− | |
| 2001 09 28 | 704 | 0.3− | 0.5+ | 2001 10 23 | 704 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.1− | 1.3+ | |
| 2001 09 28 | 704 | 0.3+ | 0.3+ | 2001 10 23 | 704 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.4− | 0.5− | |
| 2001 09 28 | 704 | 0.4+ | 0.2+ | 2001 10 24 | 704 | 0.4+ | 0.8+ | 2006 09 27 | G96 | 0.3+ | 0.6+ | |
| 2001 09 28 | 704 | 0.1+ | 0.4+ | 2001 10 24 | 704 | 0.1+ | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.1− | |
| 2001 09 28 | 704 | 0.1+ | 0.2+ | 2001 10 24 | 704 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.6− | 0.1+ | |
| 2001 10 06 | 644 | 0.4+ | 1.1+ | 2001 10 24 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | (2.7− | 1.2+) | |
| 2001 10 06 | 644 | 0.1+ | 1.4+ | 2001 10 24 | 704 | 0.6+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1− | |
| 2001 10 06 | 644 | 0.6+ | 1.2+ | 2001 11 12 | 645 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.1− | |
| 2001 10 11 | 644 | 0.4− | 1.0+ | 2001 11 12 | 645 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.1− | 0.2− | |
| 2001 10 11 | 644 | 0.2− | 0.9+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1+ | |
| 2001 10 11 | 644 | 0.1− | 1.0+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.2− | |
| 2001 10 13 | 704 | 0.8+ | 0.9− | 2003 01 26 | 699 | 1.1− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.2− | |
| 2001 10 13 | 704 | 0.4+ | 0.1− | 2003 01 26 | 699 | 0.9− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.0 | |
| 2001 10 13 | 704 | 0.2+ | 0.4− | 2003 01 26 | 699 | 0.5− | 0.8+ | 2006 11 18 | G96 | 0.3+ | 0.1+ | |

**(140118)∗ 2001 SR$_{138}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.35231 | | (2000.0) | | | |
| $n$ | 0.21972415 | $\omega$ | 148.82692 | | +0.99868894 | +0.02516336 |
| $a$ | 2.7198869 | $\Omega$ | 209.82932 | | −0.03831038 | +0.94499047 |
| $e$ | 0.0315199 | $i$ | 5.14168 | | +0.03395157 | +0.32612852 |
| $P$ | 4.49 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 02 | 691 | 0.1− | 0.8− | 2001 09 24 | 704 | 1.0− | 0.5− | 2004 05 21 | 691 | 0.0 | 0.2+ | |
| 1992 10 02 | 691 | 0.0 | 0.0 | 2001 10 06 | 644 | 0.2+ | 0.7+ | 2005 06 29 | 691 | 0.0 | 0.0 | |
| 1992 10 02 | 691 | 0.1− | 0.2− | 2001 10 06 | 644 | 0.4+ | 0.1− | 2005 06 29 | 691 | 0.1− | 0.1+ | |
| 2001 08 27 | 644 | 0.6− | 0.1+ | 2001 10 06 | 644 | 0.1+ | 0.5+ | 2005 06 29 | 691 | 0.0 | 0.1− | |
| 2001 08 27 | 644 | 0.1− | 0.2+ | 2001 10 09 | 333 | 0.4− | 1.1− | 2005 07 04 | 691 | 0.1− | 0.0 | |
| 2001 08 27 | 644 | 0.1− | 0.4+ | 2001 10 09 | 333 | 0.5+ | 0.3− | 2005 07 04 | 691 | 0.4− | 0.1− | |
| 2001 09 14 | 644 | 0.2+ | 0.2+ | 2001 10 09 | 333 | 0.1+ | 0.2+ | 2005 07 04 | 691 | 0.1− | 0.1+ | |
| 2001 09 14 | 644 | 0.2− | 0.1+ | 2001 10 11 | 644 | 0.6− | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.1− | |
| 2001 09 14 | 644 | 0.6− | 0.3+ | 2001 10 11 | 644 | 0.2− | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.2− | |
| 2001 09 16 | 704 | 0.4+ | 0.7+ | 2001 10 11 | 644 | 0.2− | 0.5+ | 2005 08 06 | 644 | 0.1+ | 0.1− | |
| 2001 09 16 | 704 | 0.3+ | 0.7+ | 2001 10 13 | 704 | (1.7− | 1.2+) | 2005 08 24 | 644 | 0.0 | 0.3+ | |
| 2001 09 16 | 704 | 0.5+ | 1.4+ | 2001 10 13 | 704 | 0.3− | 1.0− | 2005 08 24 | 644 | 0.3− | 0.1+ | |
| 2001 09 16 | 704 | 0.5+ | 0.2+ | 2001 10 13 | 704 | 0.4+ | 0.3− | 2005 08 24 | 644 | 0.2− | 0.2+ | |
| 2001 09 18 | 333 | 0.2+ | 0.4− | 2001 10 16 | 704 | 0.9+ | 1.3+ | 2005 10 30 | G96 | 0.1− | 0.2− | |
| 2001 09 18 | 333 | (0.9+ | 1.9−) | 2001 10 16 | 704 | 0.4+ | 0.9+ | 2005 10 30 | G96 | 0.3− | 0.0 | |
| 2001 09 18 | 333 | 0.6+ | 0.7− | 2001 10 16 | 704 | 0.6− | 0.8+ | 2005 10 30 | G96 | 0.1+ | 0.7+ | |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2001 10 16 | 704 | 1.3+ | 1.0+ | 2005 10 30 | G96 | 0.5+ | 1.0− | |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2001 10 16 | 704 | 0.4− | 1.1+ | 2006 09 28 | G96 | 0.4+ | 0.1− | |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2001 10 18 | 644 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.4+ | 0.3+ | |
| 2001 09 20 | 704 | 0.4+ | 0.7+ | 2001 10 18 | 644 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.8+ | |
| 2001 09 20 | 704 | 1.2+ | 1.0− | 2001 10 18 | 644 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.5− | 0.4+ | |
| 2001 09 23 | 704 | 0.1+ | 1.2− | 2001 10 21 | 704 | 0.5+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.0 | |
| 2001 09 23 | 704 | 0.2− | 1.2− | 2001 10 21 | 704 | 0.7+ | 0.1− | 2006 10 22 | G96 | 0.3− | 0.0 | |
| 2001 09 23 | 704 | 0.4− | 1.1− | 2001 10 21 | 704 | 0.7+ | 0.6+ | 2006 10 22 | G96 | (2.1− | 1.0−) | |
| 2001 09 23 | 704 | 0.3− | 1.0− | 2001 10 21 | 704 | 1.2+ | 0.5+ | 2006 10 22 | G96 | 0.7− | 0.1− | |
| 2001 09 24 | 704 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.9+ | 0.0 | 2006 11 17 | H07 | 1.1− | 0.1− | |
| 2001 09 24 | 704 | (1.8− | 0.2+) | 2004 04 21 | 704 | 0.6+ | 1.2+ | 2006 11 17 | H07 | 0.4− | 0.0 | |
| 2001 09 24 | 704 | 0.9+ | 0.2+ | 2004 04 21 | 704 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.2+ | 0.0 | |
| 2001 09 24 | 704 | 0.4− | 0.4− | 2004 04 21 | 704 | (1.8+ | 0.4−) | 2006 12 01 | G96 | 0.2− | 0.5+ | |
| 2001 09 24 | 704 | 0.8− | 0.0 | 2004 04 21 | 704 | (1.2+ | 1.5+) | 2006 12 01 | G96 | 0.1− | 0.1+ | |
| 2001 09 24 | 704 | 0.7− | 0.3+ | 2004 04 21 | 704 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.1+ | |
| 2001 09 24 | 704 | 1.2− | 1.1+ | 2004 05 21 | 691 | 0.1+ | 0.1+ | | | | | |
| 2001 09 24 | 704 | 0.2− | 0.8− | 2004 05 21 | 691 | 0.3+ | 0.1− | | | | | |

**(140119)∗ 2001 SV$_{138}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.25065 | | (2000.0) | | | |
| $n$ | 0.21405121 | $\omega$ | 195.71117 | | +0.74727209 | −0.66316607 |
| $a$ | 2.7677334 | $\Omega$ | 205.98213 | | +0.61962726 | +0.71841007 |
| $e$ | 0.0575221 | $i$ | 5.54999 | | +0.24009681 | +0.20999460 |
| $P$ | 4.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.6− | 0.3+ | 2001 10 13 | 704 | 0.3− | 1.3− | 2006 10 12 | 691 | 0.2+ | 0.2+ | |
| 1992 10 25 | 691 | 0.7− | 0.1+ | 2001 10 13 | 699 | 0.9+ | 1.0+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | |
| 1992 10 25 | 691 | 0.2− | 0.1− | 2001 10 13 | 704 | 0.4+ | 0.8− | 2006 11 01 | 691 | 0.1− | 0.4+ | |
| 1995 06 01 | 691 | 1.2+ | 1.1− | 2001 10 13 | 704 | 1.1− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.5+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 01 | 691 | (3.0+ | 0.2−) | 2001 10 13 | 699 | 0.9+ | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.5+ | | |
| 1995 06 01 | 691 | 1.2+ | 0.7− | 2001 10 13 | 699 | 0.2− | 1.1− | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2001 09 16 | 704 | 0.3− | 1.0+ | 2001 10 18 | 644 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2001 09 16 | 704 | 0.0 | 0.7+ | 2001 10 18 | 644 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2001 10 18 | 644 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.2+ | | |
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2001 10 21 | 704 | 0.2+ | 1.0+ | 2006 11 10 | 644 | 0.3+ | 0.0 | | |
| 2001 09 20 | 704 | 1.2− | 0.1+ | 2001 10 21 | 704 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.6+ | 0.5− | 2001 10 21 | 704 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2001 09 20 | 704 | 0.5− | 0.9− | 2001 10 21 | 704 | 0.4+ | 0.6+ | 2006 11 15 | G96 | 0.4+ | 0.2− | | |
| 2001 09 20 | 704 | 0.5− | 0.6− | 2001 10 21 | 704 | 0.4+ | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.0 | | |
| 2001 09 20 | 704 | 0.2− | 0.5− | 2003 01 07 | 704 | 0.6+ | 0.9− | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 0.5+ | 1.1− | 2003 01 07 | 704 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.6+ | | |
| 2001 09 23 | 704 | 0.2+ | 1.0− | 2003 01 07 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.7− | | |
| 2001 09 23 | 704 | 0.0 | 1.3− | 2004 04 20 | 291 | 0.0 | 1.0+ | 2006 11 17 | 703 | 0.7− | 0.7− | | |
| 2001 09 23 | 704 | 0.5− | 0.8− | 2004 04 20 | 291 | 0.3+ | 1.0+ | 2006 11 17 | 703 | 0.7+ | 0.4+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.4+ | 2004 04 20 | 291 | 0.4+ | 1.1+ | 2006 11 20 | 704 | 0.3+ | 0.8+ | | |
| 2001 09 24 | 704 | 0.2− | 0.6− | 2004 05 21 | 691 | 0.6− | 0.7+ | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2001 09 24 | 704 | 0.7− | 0.3+ | 2004 05 21 | 691 | 0.8− | 0.5+ | 2006 11 20 | 704 | 0.4+ | 1.4+ | | |
| 2001 09 24 | 704 | 0.1− | 0.2− | 2004 05 21 | 691 | 0.6− | 0.7+ | 2006 11 20 | 704 | 0.1+ | 0.3+ | | |
| 2001 09 24 | 704 | 0.5− | 0.1− | 2005 07 06 | 691 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.9− | 0.2− | | |
| 2001 09 26 | 704 | 0.3+ | 0.5+ | 2005 07 06 | 691 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2001 09 26 | 704 | 0.6+ | 0.8+ | 2005 07 06 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2001 09 26 | 704 | 0.3− | 0.6+ | 2005 07 30 | E12 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2001 09 26 | 704 | 0.8+ | 0.5+ | 2005 07 30 | E12 | 0.5+ | 0.5+ | 2006 11 23 | G96 | 0.4+ | 0.2+ | | |
| 2001 09 26 | 704 | (1.0+ | 1.5+) | 2005 07 30 | E12 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.4− | 1.0+ | | |
| 2001 10 11 | 644 | 0.3+ | 0.4− | 2005 07 30 | E12 | 0.1− | 0.7+ | 2006 11 28 | 704 | 0.2− | 0.9+ | | |
| 2001 10 11 | 644 | 0.2+ | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.5− | 0.4− | | |
| 2001 10 11 | 644 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.3− | 0.6+ | | |
| 2001 10 13 | 704 | (0.8+ | 1.7+) | 2006 09 30 | G96 | (0.7− | 2.1−) | 2006 11 28 | 704 | 0.7+ | 0.0 | | |
| 2001 10 13 | 699 | 0.1− | 0.7+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | | | | | | |

**(140120)∗ 2001 SB$_{139}$ = 2001 TL$_{161}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.90970 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21610786 | $\omega$ | 310.76454 | | +0.51829514 | +0.85509879 | |
| $a$ | 2.7501455 | $\Omega$ | 350.42650 | | −0.75862317 | +0.45254282 | |
| $e$ | 0.0881730 | $i$ | 4.57794 | | −0.39479239 | +0.25300405 | |
| $P$ | 4.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.9− | 0.0 | 2001 10 13 | 699 | 1.2+ | 0.3− | 2004 04 12 | 691 | 0.3+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.5+ | 0.0 | 2001 10 13 | 704 | 0.2− | 0.5− | 2004 04 12 | 691 | 0.3+ | 0.4+ | | |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2001 10 13 | 699 | 0.2+ | 0.4− | 2004 04 19 | 691 | 0.3+ | 0.1+ | | |
| 2001 09 18 | 333 | 0.1− | 0.4+ | 2001 10 13 | 704 | 0.2− | 1.5− | 2004 04 19 | 691 | 0.2+ | 0.1− | | |
| 2001 09 18 | 333 | 0.3− | 1.4+ | 2001 10 13 | 704 | 0.6− | 0.4+ | 2004 04 19 | 691 | 0.2+ | 0.1− | | |
| 2001 09 18 | 333 | 0.2− | 0.2+ | 2001 10 13 | 699 | 0.0 | 0.4+ | 2004 04 23 | 291 | 0.0 | 0.5+ | | |
| 2001 09 20 | 704 | (0.3+ | 2.3+) | 2001 10 13 | 699 | 0.5− | 0.3+ | 2004 04 23 | 291 | 0.1+ | 0.2+ | | |
| 2001 09 20 | 704 | (0.1+ | 1.9+) | 2001 10 16 | 704 | 0.5− | 0.1− | 2004 04 23 | 291 | 0.0 | 0.2+ | | |
| 2001 09 20 | 704 | (0.5+ | 1.8+) | 2001 10 16 | 704 | (0.9+ | 1.9+) | 2005 07 29 | E12 | 0.6− | 0.3+ | | |
| 2001 09 20 | 704 | (0.0 | 2.3+) | 2001 10 16 | 704 | 0.0 | 1.0+ | 2005 07 29 | E12 | 0.1− | 0.9+ | | |
| 2001 09 20 | 704 | (0.8+ | 2.3+) | 2001 10 16 | 704 | 0.2− | 1.2+ | 2005 07 29 | E12 | 0.7+ | 0.8− | | |
| 2001 09 23 | 704 | (2.1+ | 0.9+) | 2001 10 18 | 644 | 0.1− | 0.7+ | 2005 07 29 | E12 | 0.1+ | 0.3− | | |
| 2001 09 23 | 704 | 1.3+ | 0.4− | 2001 10 18 | 644 | 0.2− | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.3− | | |
| 2001 09 23 | 704 | 0.4− | 0.8+ | 2001 10 18 | 644 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.2− | 0.3− | | |
| 2001 09 23 | 704 | 0.0 | 0.3+ | 2001 10 21 | 704 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.3− | | |
| 2001 09 24 | 704 | (0.4− | 1.7+) | 2001 10 21 | 704 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.1− | | |
| 2001 09 24 | 704 | 0.6− | 0.1+ | 2001 10 21 | 704 | 0.4+ | 0.8+ | 2006 11 15 | 691 | 0.2− | 0.0 | | |
| 2001 09 24 | 704 | 0.6− | 0.6+ | 2001 10 21 | 704 | 0.5− | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1− | | |
| 2001 09 24 | 704 | 0.1− | 0.2+ | 2001 10 21 | 704 | 0.0 | 1.1+ | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2001 09 24 | 704 | 0.4+ | 0.6+ | 2001 10 24 | 691 | 0.6− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.7+ | | |
| 2001 09 26 | 704 | 0.3− | 0.4+ | 2001 10 24 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 1.0+ | | |
| 2001 09 26 | 704 | 0.1+ | 0.6+ | 2001 10 24 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | (1.2− | 1.6+) | | |
| 2001 09 26 | 704 | 0.1− | 0.9+ | 2004 03 27 | 704 | 0.1+ | 1.0+ | 2006 11 30 | 291 | 0.1− | 0.1− | | |
| 2001 09 26 | 704 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 11 30 | 291 | 0.0 | 0.2+ | | |
| 2001 10 09 | 333 | 0.4+ | 0.5− | 2004 03 27 | 704 | 0.3− | 0.9+ | 2006 11 30 | 291 | 0.3+ | 0.2+ | | |
| 2001 10 09 | 333 | 0.8− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 12 01 | G96 | 0.3+ | 0.4− | | |
| 2001 10 09 | 333 | 0.8− | 0.9− | 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.4+ | 0.6− | | |
| 2001 10 11 | 644 | 0.2− | 0.9+ | 2004 03 30 | 704 | 0.4− | 1.3+ | 2006 12 01 | G96 | 0.3− | 0.2− | | |
| 2001 10 11 | 644 | 0.0 | 0.9+ | 2004 03 30 | 704 | 0.3− | 0.8+ | 2006 12 01 | G96 | 0.0 | 0.5− | | |
| 2001 10 11 | 644 | (0.7+ | 1.8+) | 2004 03 30 | 704 | (0.4− | 2.0+) | | | | | | |
| 2001 10 13 | 704 | 0.5+ | 0.2+ | 2004 04 12 | 691 | 0.2+ | 0.4+ | | | | | | |

**(140121)∗ 2001 SR$_{139}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.67739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19854761 | $\omega$ | 136.50189 | | +0.94359136 | −0.33077861 | |
| $a$ | 2.9099996 | $\Omega$ | 242.81962 | | +0.29903224 | +0.87058452 | |
| $e$ | 0.0734388 | $i$ | 0.95722 | | +0.14217967 | +0.36423633 | |
| $P$ | 4.96 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 20 | 691 | 0.4− | 0.1− | 2001 10 15 | 608 | 0.1+ | 0.4− | 2006 09 18 | 699 | 0.4− | 0.1− | | |
| 1996 09 20 | 691 | 0.6− | 0.1+ | 2001 10 15 | 608 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.6+ | 0.5+ | | |
| 1996 09 20 | 691 | 0.3− | 0.1+ | 2001 10 15 | 608 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.5− | 0.3+ | | |
| 2001 09 16 | 704 | 0.4− | 0.9+ | 2001 10 16 | 704 | 0.4− | 0.3− | 2006 09 19 | 691 | 0.4− | 0.1+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.7+ | 2001 10 16 | 704 | 0.8+ | 1.3− | 2006 09 19 | 691 | 0.2− | 0.0 | | |
| 2001 09 16 | 704 | 0.1− | 1.2+ | 2001 10 16 | 704 | 0.7+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1− | | |
| 2001 09 16 | 704 | 0.3+ | 1.0− | 2001 10 16 | 704 | (1.1− | 2.1−) | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 2001 09 18 | 699 | 0.1+ | 0.0 | 2001 10 18 | 644 | 0.7+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | | |
| 2001 09 18 | 699 | 1.3+ | 1.1+ | 2001 10 18 | 644 | 0.5+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1+ | | |
| 2001 09 18 | 699 | 0.2− | 0.9+ | 2001 10 18 | 644 | 0.7+ | 0.5+ | 2006 09 27 | 704 | 0.4+ | 0.3− | | |
| 2001 09 18 | 699 | 0.0 | 0.9+ | 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.8− | 0.4+ | | |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2001 10 21 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.6+ | | |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.1− | | |
| 2001 09 20 | 704 | 0.3− | 0.7+ | 2001 10 21 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.2+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.3+ | 2001 10 21 | 704 | 0.4− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.5+ | 1.2− | 2002 12 31 | 704 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 2001 09 22 | 691 | 0.5− | 0.1− | 2002 12 31 | 704 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2001 09 22 | 691 | 0.5− | 0.2− | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 22 | 691 | 0.4− | 0.2+ | 2003 01 04 | 291 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.1− | 0.7+ | 2003 01 04 | 291 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2001 09 23 | 704 | 0.3+ | 0.6+ | 2003 01 04 | 291 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.1− | 1.1+ | 2003 01 08 | 704 | 0.3+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.1− | | |
| 2001 09 23 | 704 | 0.1− | 1.1+ | 2003 01 08 | 704 | 0.9+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 0.2+ | 0.2+ | 2003 01 08 | 704 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2001 09 24 | 704 | 0.2+ | 0.6+ | 2003 01 08 | 704 | 1.3+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2001 09 24 | 704 | 0.6− | 1.1+ | 2003 01 09 | 704 | 0.7+ | 0.2− | 2006 10 15 | 106 | 0.2+ | 0.4− | | |
| 2001 09 24 | 704 | 0.2+ | 0.1+ | 2003 01 09 | 704 | 0.0 | 0.5+ | 2006 10 15 | 106 | 1.0+ | 0.5− | | |
| 2001 09 24 | 704 | 0.9− | 1.0+ | 2003 01 09 | 704 | 0.9+ | 0.4− | 2006 10 15 | 106 | 0.1− | 1.1− | | |
| 2001 09 24 | 704 | 0.1− | 0.9+ | 2003 01 09 | 704 | 0.5− | 1.2+ | 2006 10 16 | 106 | 0.1− | 0.3− | | |
| 2001 09 25 | 699 | 0.6− | 0.3− | 2004 03 18 | 704 | 0.3− | 1.2+ | 2006 10 17 | G96 | 0.1+ | 0.5− | | |
| 2001 09 25 | 699 | 1.4− | 0.3− | 2004 03 18 | 704 | (0.4+ | 1.9+) | 2006 10 17 | G96 | 0.6+ | 0.7− | | |
| 2001 09 25 | 699 | 0.6− | 0.6+ | 2004 03 18 | 704 | (1.3+ | 1.9+) | 2006 10 17 | 703 | 0.8− | 0.7− | | |
| 2001 09 25 | 699 | 1.2− | 0.8− | 2004 03 18 | 704 | 0.7+ | 1.2+ | 2006 10 17 | G96 | 0.4− | 0.1− | | |
| 2001 09 26 | 049 | 0.9+ | 0.4+ | 2004 03 27 | 704 | (1.3+ | 1.7+) | 2006 10 17 | 703 | 0.8+ | 0.5− | | |
| 2001 09 27 | 049 | 0.5+ | 0.4− | 2004 03 27 | 704 | (1.0+ | 1.7+) | 2006 10 17 | G96 | 0.8+ | 1.3− | | |
| 2001 09 27 | 049 | 0.2+ | 0.2+ | 2004 03 27 | 704 | (1.9+ | 0.4+) | 2006 10 17 | 703 | 0.8+ | 0.0 | | |
| 2001 10 06 | 644 | 0.2− | 0.1+ | 2004 03 27 | 704 | (3.5+ | 0.7−) | 2006 10 17 | 703 | 0.3+ | 0.8+ | | |
| 2001 10 06 | 644 | 0.4− | 0.2+ | 2004 04 20 | 691 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 10 06 | 644 | 0.1+ | 0.8+ | 2004 04 20 | 691 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 10 11 | 644 | 0.4+ | 0.3+ | 2004 04 20 | 691 | 0.4+ | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2001 10 11 | 644 | 0.5+ | 0.3+ | 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2001 10 11 | 644 | 0.8+ | 0.3+ | 2006 07 22 | G96 | 0.8− | 0.0 | 2006 10 31 | G96 | 0.4− | 0.4− | | |
| 2001 10 13 | 704 | 0.7− | 0.1− | 2006 07 22 | G96 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.4− | | |
| 2001 10 13 | 704 | 0.1+ | 0.0 | 2006 07 22 | G96 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.3− | | |
| 2001 10 13 | 704 | 0.3+ | 1.4+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.0 | 1.0+ | | |
| 2001 10 13 | 691 | 0.5+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.3− | | |
| 2001 10 13 | 691 | 0.6+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.8+ | 0.6− | | |

**(140122)∗ 2001 SG$_{140}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.34121 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18171538 | $\omega$ | 220.80349 | | +0.63127406 | −0.77484481 | |
| $a$ | 3.0870352 | $\Omega$ | 190.20456 | | +0.75143541 | +0.62169814 | |
| $e$ | 0.0868567 | $i$ | 10.83233 | | +0.19193199 | +0.11448556 | |
| $P$ | 5.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 03 | 691 | 0.1− | 0.5− | 2001 10 07 | 644 | 0.4+ | 1.1+ | 2001 12 10 | 645 | 0.0 | 0.0 | | |
| 1996 11 03 | 691 | 0.2+ | 0.3− | 2001 10 07 | 644 | 0.0 | 1.4+ | 2001 12 10 | 645 | 0.0 | 0.0 | | |
| 1996 11 03 | 691 | 0.3+ | 0.0 | 2001 10 08 | 644 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.1+ | 0.9+ | | |
| 2001 08 27 | 699 | 0.3− | 0.0 | 2001 10 08 | 644 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.4+ | | |
| 2001 08 27 | 699 | 0.1− | 1.6+ | 2001 10 08 | 644 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.7− | 0.5+ | | |
| 2001 08 27 | 699 | 1.0+ | 0.9+ | 2001 10 09 | 333 | 0.3+ | 0.1− | 2004 03 27 | 704 | 0.6− | 0.7+ | | |
| 2001 08 27 | 699 | 1.1− | 1.4− | 2001 10 09 | 333 | 0.1+ | 0.3− | 2004 03 27 | 704 | 0.2− | 0.3+ | | |
| 2001 09 16 | 704 | 0.1− | 1.6+ | 2001 10 09 | 333 | 0.6+ | 0.4− | 2004 03 27 | 704 | 0.3− | 0.3+ | | |
| 2001 09 16 | 704 | 0.2+ | 0.9+ | 2001 10 11 | 644 | 0.6− | 0.0 | 2004 03 27 | 704 | 0.6− | 1.2+ | | |
| 2001 09 16 | 704 | 0.0 | 1.0+ | 2001 10 11 | 644 | 0.6− | 0.1+ | 2004 03 27 | 704 | 0.1− | 0.5+ | | |
| 2001 09 16 | 704 | 0.3− | 0.3+ | 2001 10 11 | 644 | 0.8− | 0.1+ | 2004 03 31 | 291 | 0.3+ | 0.8+ | | |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2001 10 13 | 683 | 1.2+ | 0.2− | 2004 03 31 | 291 | 0.4+ | 0.9+ | | |
| 2001 09 20 | 704 | 0.6+ | 1.1+ | 2001 10 13 | 683 | 0.2− | 0.4− | 2004 03 31 | 291 | 0.1+ | 0.9+ | | |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2001 10 16 | 704 | 0.3+ | 0.2+ | 2004 04 14 | 691 | 0.0 | 0.3+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2001 10 16 | 704 | 0.2− | 0.7+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.4+ | 1.4+ | 2001 10 16 | 704 | 0.3− | 0.2+ | 2004 04 14 | 691 | 0.3+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2001 10 16 | 704 | 1.0− | 0.2− | 2004 04 23 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.8− | 2001 10 16 | 704 | 0.4− | 0.4+ | 2004 04 23 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2001 10 17 | 691 | 0.3− | 0.8+ | 2004 04 23 | 691 | 0.1− | 0.0 | | |
| 2001 09 21 | 704 | 0.4+ | 0.3− | 2001 10 17 | 691 | 0.3− | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 1.0+ | 1.1+ | 2001 10 17 | 691 | 0.2− | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.6+ | 0.5− | 2001 10 17 | 644 | (1.1+ | 2.5+) | 2006 08 17 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 23 | 691 | 0.5− | 0.3− | 2001 10 17 | 644 | (1.1+ | 2.5+) | 2006 08 22 | 644 | 0.1− | 0.1− | | |
| 2001 09 23 | 704 | 0.3+ | 0.2+ | 2001 10 17 | 644 | (1.8+ | 3.4+) | 2006 08 22 | 644 | 0.0 | 0.1− | | |
| 2001 09 23 | 691 | 0.3− | 0.2+ | 2001 10 17 | 644 | (0.6+ | 2.2+) | 2006 08 22 | 644 | 0.1− | 0.1− | | |
| 2001 09 23 | 704 | 0.1+ | 0.1+ | 2001 10 17 | 644 | (0.9+ | 2.4+) | 2006 08 29 | 703 | 0.9− | 0.3+ | | |
| 2001 09 23 | 691 | 0.1− | 0.1+ | 2001 10 17 | 644 | (1.6+ | 2.8+) | 2006 08 29 | 703 | 0.1+ | 0.6− | | |
| 2001 09 23 | 704 | 0.5+ | 0.3− | 2001 10 20 | 704 | 0.1+ | 0.1− | 2006 08 29 | 703 | 1.2+ | 0.1− | | |
| 2001 09 23 | 704 | 0.2− | 1.5− | 2001 10 20 | 704 | 0.9− | 0.4− | 2006 08 29 | 703 | 0.4+ | 0.0 | | |
| 2001 09 25 | 699 | 1.0− | 1.0+ | 2001 10 20 | 704 | 0.4− | 0.0 | 2006 08 29 | 703 | 0.5− | 0.1+ | | |
| 2001 09 25 | 699 | 0.7+ | 0.3+ | 2001 10 20 | 704 | 0.0 | 1.0+ | 2006 08 29 | 703 | 0.0 | 0.2+ | | |
| 2001 09 25 | 699 | 0.4+ | 0.5+ | 2001 10 20 | 704 | 1.8− | 1.7+ | 2006 08 29 | 703 | 0.1− | 0.3− | | |
| 2001 09 25 | 699 | 0.2+ | 0.6+ | 2001 10 23 | 704 | (0.2+ | 2.6+) | 2006 08 29 | 703 | 0.2− | 0.2+ | | |
| 2001 09 26 | 704 | 0.0 | 0.6+ | 2001 10 23 | 704 | 0.7+ | 1.8+ | 2006 09 17 | 691 | 0.1− | 0.2− | | |
| 2001 09 26 | 704 | 0.4− | 0.3+ | 2001 10 23 | 704 | (0.1− | 2.3+) | 2006 09 17 | 691 | 0.1− | 0.1− | | |
| 2001 09 26 | 704 | 0.3− | 0.1+ | 2001 10 24 | 704 | 0.4− | 0.5− | 2006 09 17 | 691 | 0.0 | 0.1− | | |
| 2001 09 26 | 704 | 0.3− | 0.2+ | 2001 10 24 | 704 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1− | | |
| 2001 09 26 | 704 | 0.2− | 0.0 | 2001 10 24 | 704 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.5+ | 0.3− | | |
| 2001 10 06 | 644 | 0.9− | 0.2+ | 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | | |
| 2001 10 06 | 644 | 0.6− | 0.2+ | 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | | |
| 2001 10 06 | 644 | 0.7− | 0.0 | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.0 | | |
| 2001 10 07 | 644 | 0.0 | 1.4+ | 2001 11 18 | 645 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1− | | |

**(140123)∗ 2001 SN$_{140}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.33535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19140424 | $\omega$ | 257.00596 | | −0.02305109 | −0.99854632 | |
| $a$ | 2.9819591 | $\Omega$ | 194.58071 | | +0.97578615 | −0.01186894 | |
| $e$ | 0.1404315 | $i$ | 11.15951 | | +0.21750871 | −0.05257739 | |
| $P$ | 5.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.3− | 0.1+ | 2001 10 16 | 704 | 0.6− | 0.8+ | 2006 09 25 | 699 | 0.2− | 0.1+ | | |
| 2001 09 16 | 704 | (1.5+ | 0.1−) | 2001 10 16 | 704 | 0.6− | 1.0+ | 2006 09 25 | 699 | 0.1− | 1.2+ | | |
| 2001 09 16 | 704 | (1.7+ | 0.3+) | 2001 10 17 | 644 | 0.5+ | 1.4+ | 2006 09 25 | 699 | (1.7+ | 1.5+) | | |
| 2001 09 16 | 704 | (1.1+ | 2.0−) | 2001 10 17 | 644 | 0.2+ | 1.4+ | 2006 09 25 | 699 | 0.2+ | 0.9− | | |
| 2001 09 20 | 704 | 0.4+ | 0.2− | 2001 10 17 | 644 | 0.5+ | 1.2+ | 2006 09 30 | 291 | 0.3+ | 0.3+ | | |
| 2001 09 20 | 704 | (1.6+ | 0.1−) | 2001 10 17 | 644 | 0.3+ | 1.3+ | 2006 09 30 | 291 | 0.3+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2001 10 17 | 644 | 0.5+ | 1.0+ | 2006 09 30 | 291 | 0.3+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.0 | 0.8− | 2001 10 17 | 644 | 0.4+ | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.3+ | | |
| 2001 09 20 | 704 | 0.1− | 0.6− | 2001 11 12 | 645 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2001 11 12 | 645 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.0 | | |
| 2001 09 23 | 704 | (1.0− | 2.4+) | 2003 01 02 | 704 | 0.4+ | 1.0+ | 2006 10 19 | 691 | 0.3− | 0.2− | | |
| 2001 09 23 | 704 | (0.2+ | 1.8+) | 2003 01 02 | 704 | (0.7− | 1.8+) | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2001 09 23 | 291 | 0.9− | 0.0 | 2003 01 02 | 704 | (0.8− | 2.1+) | 2006 10 19 | 691 | 0.0 | 0.2− | | |
| 2001 09 23 | 291 | 0.8− | 0.3− | 2003 01 28 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.2− | | |
| 2001 09 23 | 291 | 0.8− | 0.3− | 2003 01 28 | 704 | (0.7− | 2.5+) | 2006 10 21 | 691 | 0.1− | 0.1+ | | |
| 2001 09 25 | 691 | 0.1+ | 0.0 | 2003 01 28 | 704 | (0.6− | 2.0+) | 2006 10 21 | 691 | 0.3− | 0.2− | | |
| 2001 09 25 | 691 | 0.1+ | 0.1− | 2003 01 28 | 704 | (0.5− | 2.0+) | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2001 09 25 | 691 | 0.2− | 0.1− | 2003 01 28 | 704 | 0.2− | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.6− | | |
| 2001 10 08 | 644 | 0.4− | 0.5+ | 2004 04 26 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.2− | | |
| 2001 10 08 | 644 | 0.6− | 0.3+ | 2004 04 26 | 691 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2001 10 08 | 644 | 0.5− | 0.2+ | 2004 04 26 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.7− | | |
| 2001 10 09 | 333 | 0.1− | 0.7− | 2006 09 19 | 703 | 0.3− | 1.4+ | 2006 10 23 | 691 | 0.0 | 0.1+ | | |
| 2001 10 09 | 333 | 0.2− | 0.8− | 2006 09 19 | 703 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.1− | 0.1+ | | |
| 2001 10 09 | 333 | 0.3− | 0.5− | 2006 09 19 | 703 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.5+ | 0.1− | | |
| 2001 10 11 | 644 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.1− | | |
| 2001 10 11 | 644 | 0.5− | 0.4− | 2006 09 20 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2001 10 11 | 644 | 0.4− | 0.0 | 2006 09 20 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.4− | | |
| 2001 10 16 | 704 | 1.3− | 0.4+ | 2006 09 20 | 691 | 0.0 | 0.1+ | | | | | | |

**(140124)∗ 2001 SA$_{141}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.35894 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21290729 | $\omega$ | 170.83028 | | +0.99514222 | −0.09729266 | |
| $a$ | 2.7776383 | $\Omega$ | 194.77822 | | +0.08617515 | +0.93471586 | |
| $e$ | 0.1089402 | $i$ | 3.37948 | | +0.04760046 | +0.34181924 | |
| $P$ | 4.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 10 17 | 644 | 0.4− | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.6+ | | |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 10 17 | 644 | 0.5− | 0.2+ | 2005 06 14 | 691 | 0.4− | 0.6+ | | |
| 2001 09 12 | 695 | 0.1− | 0.4+ | 2001 10 17 | 644 | 0.4− | 0.0 | 2005 06 28 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 12 | 695 | 0.1+ | 0.4+ | 2001 10 17 | 644 | 0.2− | 0.7− | 2005 06 28 | 691 | 0.5+ | 0.8+ | | |
| 2001 09 16 | 704 | 0.4+ | 0.5+ | 2001 10 17 | 644 | 0.2− | 1.1− | 2005 06 28 | 691 | 0.4− | 0.0 | | |
| 2001 09 16 | 704 | 0.7+ | 0.9+ | 2001 10 17 | 644 | 0.1+ | 0.8− | 2006 09 28 | G96 | 0.3− | 0.1+ | | |
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2001 10 20 | 704 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.6− | 0.2+ | | |
| 2001 09 20 | 704 | 0.3− | 0.5− | 2001 10 20 | 704 | 0.1+ | 0.9+ | 2006 09 28 | G96 | 0.4− | 0.4− | | |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2001 10 20 | 704 | 0.5+ | 0.1− | 2006 09 28 | G96 | 0.7− | 0.1− | | |
| 2001 09 20 | 704 | 0.1− | 0.7− | 2001 10 20 | 704 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2001 09 20 | 704 | 0.8− | 0.8− | 2001 10 20 | 704 | 0.9+ | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.4− | 2001 10 23 | 704 | 0.2+ | 1.4+ | 2006 10 21 | G96 | 0.3− | 0.3− | | |
| 2001 09 20 | 691 | 0.5+ | 0.2+ | 2001 10 23 | 704 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.5− | | |
| 2001 09 20 | 691 | 0.5+ | 0.3+ | 2001 10 23 | 704 | (1.6− | 0.4+) | 2006 10 22 | G96 | (1.4+ | 1.9+) | | |
| 2001 09 20 | 691 | 0.3+ | 0.2+ | 2003 01 11 | 291 | 0.1+ | 0.7+ | 2006 10 22 | G96 | 0.6− | 0.0 | | |
| 2001 09 23 | 704 | 0.7+ | 0.6+ | 2003 01 11 | 291 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.6− | 0.4+ | | |
| 2001 09 23 | 704 | 0.1+ | 0.3+ | 2003 01 11 | 291 | 0.6+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2001 09 23 | 704 | 0.5+ | 0.8+ | 2004 04 12 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.4− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.6+ | 0.9+ | 2004 04 12 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 0.5+ | 2004 04 12 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 1.2+ | 0.5− |
| 2001 10 11 | 644 | 0.4− | 0.0 | 2004 04 13 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2001 10 11 | 644 | 0.4− | 0.2+ | 2004 04 13 | 691 | 0.3+ | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2001 10 11 | 644 | 0.6− | 0.0 | 2004 04 13 | 691 | 0.1− | 0.5+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2001 10 13 | 699 | 0.3− | 0.2+ | 2004 04 19 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2001 10 13 | 699 | 0.4− | 0.2− | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2001 10 13 | 699 | 0.4− | 0.1− | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2001 10 13 | 704 | 0.2+ | 0.5− | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 1.1+ |
| 2001 10 13 | 704 | 0.0 | 0.5− | 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 1.3− | 0.2− |
| 2001 10 13 | 699 | 0.1+ | 0.8− | 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.2− |
| 2001 10 13 | 704 | 0.2− | 1.0− | 2005 06 10 | 691 | 0.8− | 0.7+ | 2006 11 20 | 704 | 0.2+ | 1.0+ |
| 2001 10 16 | 691 | 0.4− | 0.1− | 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.6+ |
| 2001 10 16 | 691 | 0.5− | 0.1+ | 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.5+ |
| 2001 10 16 | 691 | 0.4− | 0.2− | 2005 06 14 | 691 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.4− | 0.5+ |

**(140125)∗ 2001 SD$_{141}$ = 2003 AB$_{91}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46651)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.81050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19886620 | $\omega$ | 26.70182 | | +0.50512363 | −0.86276878 | |
| $a$ | 2.9068909 | $\Omega$ | 32.97179 | | +0.78445944 | +0.44839445 | |
| $e$ | 0.0612963 | $i$ | 2.30755 | | +0.35982426 | +0.23360749 | |
| $P$ | 4.96 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 03 | 691 | 0.1− | 0.1+ | 2004 04 10 | 673 | 0.4+ | 0.7+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 1997 12 03 | 691 | 0.1− | 0.2− | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 1997 12 03 | 691 | 0.1− | 0.2− | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2004 04 12 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.3− | 0.0 | 2004 04 25 | 691 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2001 09 16 | 704 | 0.7+ | 0.5+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 1.0− | 0.5− | 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | (0.4− | 1.6+) | 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 1.0− | 1.2+ | 2004 05 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | (1.8− | 0.0 ) |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2004 05 19 | 691 | 0.5+ | 0.1− | 2006 10 21 | 703 | 0.8− | 0.8+ |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.7+ | 1.0+ |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | (1.6− | 0.8+) |
| 2001 09 21 | 704 | 0.7− | 0.7+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | (0.7− | 1.7+) | 2006 09 26 | 691 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 17 | 644 | 0.2+ | 1.3+ | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 10 17 | 644 | 0.2− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 10 17 | 644 | 0.1− | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2003 01 05 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2003 01 05 | 704 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2003 01 05 | 704 | 0.6+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2003 01 05 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.5− | 0.6− |
| 2003 01 10 | 704 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2003 01 10 | 704 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2003 01 10 | 704 | 0.2+ | 1.4+ | 2006 10 15 | 703 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2003 01 10 | 704 | 0.3+ | 1.2+ | 2006 10 15 | 703 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2003 01 10 | 704 | 0.2− | 0.6+ | 2006 10 15 | 703 | 0.9− | 0.7− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 04 10 | 673 | 0.2+ | 0.7+ | 2006 10 16 | G96 | 0.4− | 0.1− | | | | |
| 2004 04 10 | 673 | 0.1+ | 0.9+ | 2006 10 16 | G96 | 0.2− | 0.2− | | | | |

**(140126)∗ 2001 SV$_{141}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.16270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21902063 | $\omega$ | 88.76549 | | +0.99870698 | −0.01190789 | |
| $a$ | 2.7257082 | $\Omega$ | 271.91529 | | −0.00880188 | +0.91699271 | |
| $e$ | 0.0993664 | $i$ | 2.83443 | | +0.05006884 | +0.39872620 | |
| $P$ | 4.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.1− | 0.7− | 2001 09 22 | 704 | 0.3+ | 0.0 | 2005 07 03 | G96 | 0.4− | 0.3− |
| 1994 01 08 | 691 | 0.2− | 0.1− | 2001 09 22 | 704 | 0.1+ | 0.1− | 2005 07 03 | G96 | 0.2− | 0.5− |
| 1994 01 13 | 691 | 0.1+ | 0.0 | 2001 09 22 | 704 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.2− | 0.1− |
| 1994 01 13 | 691 | 0.5− | 0.4+ | 2001 09 22 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.4− | 0.2− |
| 1994 01 13 | 691 | (6.4+ | 2.8+) | 2001 09 23 | 704 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2001 08 22 | 691 | 0.5+ | 0.5+ | 2001 09 23 | 704 | 0.5+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 08 22 | 691 | 0.1+ | 0.0 | 2001 09 23 | 704 | 0.5− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2001 08 22 | 691 | 0.4+ | 0.2− | 2001 09 23 | 704 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.4− | 0.3+ | 2001 09 23 | 704 | 1.0− | 0.6− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | (0.1+ | 1.7+) | 2001 10 19 | 644 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2001 09 16 | 704 | 0.4+ | 0.6+ | 2001 10 19 | 644 | 0.4− | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 19 | 644 | 0.2− | 0.5+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 0.3+ | 1.0+ | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.0 | 2001 11 18 | 645 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2003 01 10 | 291 | 0.3+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.1− | 0.1− | 2003 01 10 | 291 | 0.2− | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.5− | 1.4+ | 2003 01 10 | 291 | 0.1− | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.3+ | 2004 04 13 | 691 | 0.4+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 0.6+ | 2004 04 13 | 691 | 0.6+ | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.2− | 2004 04 13 | 691 | 0.3+ | 0.5− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2005 06 08 | 691 | 0.5− | 0.3− | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.3+ | 0.6− | 2005 06 08 | 691 | 0.5− | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2005 07 03 | G96 | 0.3− | 0.2+ | | | | |
| 2001 09 21 | 704 | 0.5+ | 0.3− | 2005 07 03 | G96 | 0.1− | 0.2+ | | | | |

**(140127)∗ 2001 SW$_{141}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.99457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21365540 | $\omega$ | 327.57502 | | +0.40889543 | +0.91123740 | |
| $a$ | 2.7711506 | $\Omega$ | 326.48560 | | −0.81699050 | +0.34135432 | |
| $e$ | 0.0082892 | $i$ | 5.14418 | | −0.40660921 | +0.23048563 | |
| $P$ | 4.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 333 | 0.5+ | 0.9− | 2001 09 24 | 704 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.7+ | 0.3+ |
| 2001 09 10 | 333 | 0.3+ | 0.6+ | 2001 09 24 | 704 | 0.1+ | 0.1+ | 2003 01 05 | 704 | 0.8− | 0.3+ |
| 2001 09 16 | 704 | 0.8− | 0.2+ | 2001 09 24 | 704 | 0.4+ | 0.4+ | 2003 01 05 | 704 | 0.1− | 1.2+ |
| 2001 09 16 | 704 | 0.3− | 0.3+ | 2001 09 24 | 704 | 0.5+ | 0.5+ | 2004 03 20 | 704 | 0.1+ | 0.9+ |
| 2001 09 16 | 704 | (1.4− | 1.9+) | 2001 09 24 | 704 | 0.5− | 0.5+ | 2004 03 20 | 704 | 0.1− | 1.1+ |
| 2001 09 20 | 704 | 0.4− | 0.2+ | 2001 09 24 | 704 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.3+ | 1.2+ |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2001 09 24 | 704 | 0.8+ | 0.7+ | 2004 04 21 | 704 | 1.0+ | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2001 09 24 | 704 | 0.4− | 0.3+ | 2004 04 21 | 704 | 0.3+ | 0.3+ |
| 2001 09 20 | 704 | 0.5− | 0.6+ | 2001 09 24 | 704 | 0.9− | 0.6+ | 2004 04 21 | 704 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.6− | 1.1+ | 2001 09 24 | 704 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2001 09 20 | 704 | 0.2− | 0.6+ | 2001 09 26 | 699 | 0.8+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2001 09 26 | 699 | (1.1+ | 2.8+) | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.2− | 1.1+ | 2001 09 26 | 699 | 1.2− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2001 09 26 | 699 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.9+ | 1.3+ |
| 2001 09 21 | 704 | 0.6− | 0.8+ | 2001 10 19 | 644 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.8− | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2001 10 19 | 644 | 0.0 | 0.4+ | 2006 10 19 | 703 | 1.4+ | 0.3+ |
| 2001 09 21 | 704 | (1.9− | 0.6+) | 2001 10 19 | 644 | 0.1− | 0.3+ | 2006 10 19 | 703 | 1.2+ | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.6− | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.8− | 1.2− | 2002 12 06 | 704 | 0.8+ | 0.8− | 2006 10 21 | 691 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 1.3− | 1.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.8− | 0.1− | 2002 12 06 | 704 | 0.6+ | 1.4+ | 2006 10 27 | 703 | 1.0− | 0.0 | |
| 2001 09 22 | 704 | (1.5− | 0.4+) | 2003 01 05 | 704 | 0.5− | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.0 | |
| 2001 09 22 | 704 | 0.2− | 1.0+ | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.8− | |
| 2001 09 22 | 704 | 1.3+ | 1.0− | 2003 01 05 | 704 | (1.9− | 0.3−) | 2006 11 10 | 644 | 0.1− | 0.0 | |
| 2001 09 22 | 704 | 0.3+ | 0.4− | 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.0 | |
| 2001 09 23 | 704 | 0.8+ | 0.9+ | 2003 01 05 | 704 | 0.6− | 0.2− | 2006 11 10 | 644 | 0.2− | 0.1+ | |
| 2001 09 23 | 704 | 0.3− | 0.2+ | 2003 01 05 | 704 | 0.7+ | 0.4+ | | | | | |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.6− | 0.2− | | | | | |

**(140128)∗ 2001 SZ$_{141}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.73495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20953296 | $\omega$ | 168.05829 | | +0.19849825 | −0.97914111 | |
| $a$ | 2.8073797 | $\Omega$ | 270.48117 | | +0.89561768 | +0.19918392 | |
| $e$ | 0.0783170 | $i$ | 2.48590 | | +0.39807965 | +0.04010542 | |
| $P$ | 4.70 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.1− | 0.4+ | 2001 09 23 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | |
| 2001 08 27 | 699 | (1.7− | 0.0 ) | 2001 09 23 | 704 | 1.2+ | 0.2− | 2006 10 12 | 691 | 0.1− | 0.1− | |
| 2001 08 27 | 699 | 0.5− | 0.5+ | 2001 09 24 | 704 | 0.1− | 1.1+ | 2006 10 16 | 691 | 0.1− | 1.2+ | |
| 2001 08 27 | 699 | 0.8− | 0.4+ | 2001 09 24 | 704 | 0.5+ | 1.0+ | 2006 10 16 | 691 | 0.3+ | 0.7+ | |
| 2001 09 12 | 333 | 0.0 | 0.4− | 2001 09 24 | 704 | 0.9+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.3+ | |
| 2001 09 12 | 333 | 0.1+ | 0.5− | 2001 09 24 | 704 | 0.9+ | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.1− | |
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2001 09 24 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.3− | |
| 2001 09 16 | 704 | 0.0 | 0.2+ | 2001 10 15 | 645 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1+ | |
| 2001 09 16 | 704 | 0.1− | 0.5+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.2+ | |
| 2001 09 18 | 699 | 0.1− | 0.5+ | 2001 10 21 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.1+ | 0.1− | |
| 2001 09 18 | 699 | 0.2− | 0.6+ | 2001 10 21 | 704 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− | |
| 2001 09 18 | 699 | 0.9− | 0.3− | 2001 10 21 | 704 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.4− | 0.0 | |
| 2001 09 18 | 699 | 0.3− | 0.2+ | 2001 10 21 | 704 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.0 | 0.4− | |
| 2001 09 20 | 704 | 0.7+ | 1.0+ | 2001 10 21 | 704 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2− | |
| 2001 09 20 | 704 | 0.5− | 0.3+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.4− | 0.0 | |
| 2001 09 20 | 704 | 0.7− | 0.8+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− | |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2001 12 10 | 645 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2− | |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 12 10 | 645 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ | |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2003 01 04 | 291 | 0.2− | 0.7+ | 2006 10 29 | 691 | 0.1+ | 0.1+ | |
| 2001 09 20 | 704 | 0.2− | 0.5− | 2003 01 04 | 291 | 0.2+ | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.1+ | |
| 2001 09 20 | 704 | 0.6− | 0.3+ | 2003 01 04 | 291 | 0.4+ | 0.6+ | 2006 11 07 | 644 | 0.1− | 0.1+ | |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2006 11 07 | 644 | 0.1− | 0.0 | |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2004 04 20 | 704 | 1.3+ | 0.8+ | 2006 11 07 | 644 | 0.2− | 0.2− | |
| 2001 09 21 | 704 | 0.5− | 0.1+ | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− | |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2004 04 22 | 691 | 0.0 | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.1− | |
| 2001 09 21 | 704 | 0.2− | 1.0+ | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.7− | |
| 2001 09 21 | 704 | 0.5− | 0.2− | 2004 05 13 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | (2.2− | 0.5−) | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 05 13 | 691 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.4+ | 0.4− | |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 05 23 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.0 | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 05 23 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.1− | |
| 2001 09 21 | 644 | 0.8− | 0.3+ | 2004 05 23 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.0 | |
| 2001 09 21 | 644 | 0.6− | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.0 | |
| 2001 09 21 | 644 | 0.5− | 0.3+ | 2005 06 13 | G96 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.1+ | |
| 2001 09 22 | 704 | 0.1+ | 0.1− | 2005 06 13 | G96 | 0.2+ | 0.4− | 2006 11 18 | 691 | 0.2− | 0.0 | |
| 2001 09 22 | 683 | 0.2+ | 0.8− | 2005 06 13 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.6− | 1.0+ | |
| 2001 09 22 | 704 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.4+ | |
| 2001 09 22 | 683 | (3.0− | 1.4+) | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.6+ | |
| 2001 09 22 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.8− | 0.6− | |
| 2001 09 22 | 704 | 0.1− | 0.1− | 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.2− | 0.1− | |
| 2001 09 23 | 704 | 0.4+ | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2− | 0.2+ | |
| 2001 09 23 | 704 | 0.7+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1+ | |
| 2001 09 23 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | | | | | |

**(140129)∗ 2001 SG$_{143}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.01882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18629606 | $\omega$ | 174.11466 | | −0.92349313 | −0.37934785 | |
| $a$ | 3.0362226 | $\Omega$ | 343.24040 | | +0.34339648 | −0.75117838 | |
| $e$ | 0.1536879 | $i$ | 11.41266 | | +0.17099502 | −0.54020946 | |
| $P$ | 5.29 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.2+ | 0.3+ | 2003 11 29 | 704 | 1.2+ | 0.7+ | 2004 04 21 | 704 | 0.3− | 0.2+ | |
| 2001 08 16 | 704 | 0.2+ | 0.2− | 2004 01 28 | 704 | 0.1+ | 1.0+ | 2004 04 21 | 703 | 0.6− | 0.5+ | |
| 2001 08 16 | 704 | 0.1+ | 0.3− | 2004 01 28 | 704 | 0.6+ | 0.1− | 2004 04 21 | 703 | 1.0− | 0.4+ | |
| 2001 08 16 | 704 | 0.5− | 0.2+ | 2004 01 28 | 704 | 0.0 | 0.8+ | 2004 04 21 | 703 | 0.1− | 1.2+ | |
| 2001 08 16 | 704 | 0.5− | 1.1+ | 2004 01 28 | 704 | 0.1− | 0.1− | 2004 04 21 | 703 | 0.5− | 1.1+ | |
| 2001 08 27 | 333 | 0.7− | 0.3− | 2004 01 28 | 704 | 0.6+ | 0.1− | 2004 04 22 | 704 | 0.0 | 0.2− | |
| 2001 08 27 | 333 | 0.4− | 0.6+ | 2004 01 29 | 699 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.6+ | 0.1− | |
| 2001 09 10 | 699 | (1.7+ | 1.1+) | 2004 01 29 | 699 | 0.4+ | 0.1− | 2004 04 22 | 704 | 0.0 | 0.2− | |
| 2001 09 10 | 699 | 1.4+ | 0.3− | 2004 01 29 | 699 | 0.6− | 0.2+ | 2004 04 22 | 704 | 0.2+ | 0.0 | |
| 2001 09 10 | 699 | 0.5+ | 0.2+ | 2004 01 29 | 699 | 0.5− | 0.5+ | 2004 04 22 | 704 | 0.4− | 0.2− | |
| 2001 09 10 | 699 | 0.8+ | 1.1+ | 2004 02 16 | 703 | 0.3+ | 0.3+ | 2004 04 26 | 699 | 0.5− | 0.3+ | |
| 2001 09 14 | 644 | 0.1+ | 0.0 | 2004 02 16 | 703 | 0.1+ | 0.6+ | 2004 04 26 | 699 | 0.3− | 0.2+ | |
| 2001 09 14 | 644 | 0.3+ | 0.1+ | 2004 02 16 | 703 | 0.0 | 0.5+ | 2004 04 26 | 699 | 0.2− | 0.0 | |
| 2001 09 14 | 644 | 0.3+ | 0.2+ | 2004 02 16 | 703 | 0.3+ | 0.8+ | 2004 04 26 | 699 | 0.3− | 0.5− | |
| 2001 09 16 | 704 | 0.6− | 0.2+ | 2004 02 23 | 704 | 0.6+ | 1.3+ | 2004 04 26 | 608 | 0.6+ | 0.8− | |
| 2001 09 16 | 704 | 0.3− | 0.5+ | 2004 02 23 | 704 | 0.8+ | 0.8+ | 2004 04 26 | 608 | 0.5+ | 0.5− | |
| 2001 09 16 | 704 | 0.0 | 0.7+ | 2004 02 23 | 704 | 0.8+ | 1.3+ | 2004 04 26 | 608 | 0.6+ | 0.3− | |
| 2001 09 20 | 704 | 0.9− | 0.4+ | 2004 02 26 | 704 | 0.3+ | 1.2+ | 2006 08 15 | 644 | 0.3− | 0.1+ | |
| 2001 09 20 | 704 | 0.7− | 0.7+ | 2004 02 26 | 704 | 0.3+ | 1.2+ | 2006 08 15 | 644 | 0.7− | 0.2− | |
| 2001 09 20 | 704 | 0.6− | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.5+ | 2006 08 15 | 644 | 0.3− | 0.1+ | |
| 2001 09 20 | 704 | 0.9− | 0.9+ | 2004 02 26 | 704 | 0.9+ | 0.4+ | 2006 08 19 | 691 | 0.3− | 0.4+ | |
| 2001 09 20 | 704 | 0.8− | 0.2− | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 08 19 | 644 | 0.4− | 0.1+ | |
| 2001 09 20 | 704 | (0.2− | 1.5+) | 2004 03 16 | 703 | 0.9+ | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.4+ | |
| 2001 09 20 | 704 | (1.2+ | 1.8+) | 2004 03 16 | 703 | 0.5+ | 0.1+ | 2006 08 19 | 691 | 0.7+ | 0.3+ | |
| 2001 09 20 | 704 | (3.2− | 0.8+) | 2004 03 16 | 703 | 0.9+ | 0.4+ | 2006 08 19 | 644 | 0.5− | 0.1− | |
| 2001 09 20 | 704 | (1.1− | 1.7+) | 2004 03 16 | 703 | (2.8+ | 2.5+) | 2006 08 19 | 644 | 0.2− | 0.2+ | |
| 2001 09 20 | 704 | 0.1− | 1.1− | 2004 03 17 | 704 | 0.0 | 0.6− | 2006 08 20 | A50 | 0.9− | 0.4− | |
| 2001 09 21 | 644 | 0.3− | 0.3− | 2004 03 17 | 704 | 0.3+ | 0.4− | 2006 08 20 | A50 | 0.1− | 0.8+ | |
| 2001 09 21 | 644 | 0.3− | 0.3− | 2004 03 17 | 704 | 0.0 | 0.1− | 2006 08 25 | 704 | 1.0+ | 0.8+ | |
| 2001 09 21 | 644 | 0.3− | 0.4− | 2004 03 17 | 704 | 0.9+ | 0.8− | 2006 08 25 | 704 | 0.4− | 0.1+ | |
| 2001 09 28 | 644 | 0.7− | 1.2+ | 2004 03 17 | 704 | 0.4− | 0.3+ | 2006 08 25 | 704 | 0.7+ | 0.5+ | |
| 2001 09 28 | 644 | 1.0− | 1.0+ | 2004 03 19 | 704 | 1.2+ | 0.6+ | 2006 08 25 | 704 | 0.2+ | 1.4+ | |
| 2001 09 28 | 644 | 0.6− | 0.9+ | 2004 03 19 | 704 | 1.2+ | 0.6+ | 2006 08 27 | 691 | 0.2− | 0.4+ | |
| 2001 10 14 | 704 | 0.5− | 0.4+ | 2004 03 19 | 704 | 0.9+ | 0.5+ | 2006 08 27 | 691 | 0.3− | 0.3+ | |
| 2001 10 14 | 704 | 0.7+ | 0.4+ | 2004 03 19 | 704 | 1.2+ | 0.8+ | 2006 08 27 | 691 | 0.2− | 0.3+ | |
| 2001 10 14 | 704 | 0.3+ | 0.2+ | 2004 03 19 | 704 | 1.2+ | 0.6+ | 2006 08 28 | 703 | 0.8− | 0.1+ | |
| 2001 10 14 | 704 | 0.7− | 0.4+ | 2004 03 21 | 704 | 0.6+ | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.2− | |
| 2001 10 14 | 704 | 0.9− | 0.1− | 2004 03 21 | 704 | 0.3− | 0.8+ | 2006 08 28 | 703 | 0.3+ | 0.1+ | |
| 2001 10 16 | 704 | 1.1− | 0.6+ | 2004 03 21 | 704 | 0.5+ | 0.8+ | 2006 08 28 | 703 | 0.2− | 0.2− | |
| 2001 10 16 | 704 | 0.8+ | 0.6+ | 2004 03 21 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 1.3− | 1.1+ | |
| 2001 10 16 | 704 | 0.2− | 1.1+ | 2004 03 21 | 704 | 0.3− | 0.9+ | 2006 08 30 | 704 | 1.2− | 0.8+ | |
| 2001 10 16 | 704 | 0.1− | 0.2+ | 2004 03 26 | 699 | 0.2− | 0.3− | 2006 08 30 | 704 | 1.1− | 0.4− | |
| 2001 10 19 | 644 | 0.2− | 0.7+ | 2004 03 26 | 699 | 0.2+ | 0.3− | 2006 08 30 | 704 | 0.5− | 0.5+ | |
| 2001 10 19 | 644 | 0.1+ | 0.7+ | 2004 03 26 | 699 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.3− | 1.2+ | |
| 2001 10 19 | 644 | 0.2− | 0.7+ | 2004 03 26 | 699 | 0.4+ | 0.1− | 2006 09 17 | 704 | (1.7− | 2.2−) | |
| 2002 10 30 | 704 | (0.7+ | 2.1+) | 2004 03 31 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.4+ | 0.3− | |
| 2002 10 30 | 704 | (0.9+ | 1.6+) | 2004 03 31 | 704 | 0.6+ | 0.9+ | 2006 09 17 | 704 | 0.2+ | 0.9− | |
| 2002 10 30 | 704 | (1.6+ | 2.3+) | 2004 03 31 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 699 | (1.5− | 0.7+) | |
| 2002 12 06 | 704 | 0.1− | 0.7+ | 2004 03 31 | 704 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.3− | 0.4+ | |
| 2002 12 06 | 704 | 0.6− | 0.8+ | 2004 03 31 | 704 | 0.4− | 0.8+ | 2006 09 20 | 699 | (1.5− | 0.8+) | |
| 2002 12 06 | 704 | 0.5− | 0.8+ | 2004 04 08 | 608 | 0.4− | 0.6+ | 2006 09 20 | 699 | 0.3+ | 0.3+ | |
| 2002 12 06 | 704 | 0.1− | 0.5+ | 2004 04 08 | 608 | 0.2− | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.4− | |
| 2002 12 06 | 704 | 0.4− | 0.6+ | 2004 04 08 | 608 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.2− | |
| 2002 12 07 | 704 | 0.8+ | 0.2+ | 2004 04 12 | 644 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− | |
| 2002 12 07 | 704 | 0.2− | 0.7+ | 2004 04 12 | 644 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | (0.9− | 2.3+) | 2004 04 12 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 699 | 0.3+ | 0.9+ | | |
| 2002 12 15 | 704 | 0.1− | 0.1+ | 2004 04 16 | 644 | 0.4+ | 0.0 | 2006 09 30 | 699 | 0.2− | 0.5+ | | |
| 2002 12 15 | 704 | 0.5+ | 0.2− | 2004 04 16 | 644 | 0.3+ | 0.0 | 2006 09 30 | 699 | 0.0 | 0.5+ | | |
| 2002 12 15 | 704 | 0.5+ | 0.4− | 2004 04 16 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 699 | (1.8− | 0.0 ) | | |
| 2002 12 15 | 704 | 0.2− | 0.5− | 2004 04 17 | 704 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2002 12 15 | 704 | 0.3− | 0.2− | 2004 04 17 | 704 | 0.7+ | 1.0+ | 2006 10 19 | G96 | 0.3+ | 0.1− | | |
| 2002 12 29 | 704 | 0.0 | 0.7+ | 2004 04 17 | 704 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.4− | | |
| 2002 12 29 | 704 | 0.0 | 1.5+ | 2004 04 17 | 704 | 0.4+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.3− | | |
| 2002 12 29 | 704 | 0.6− | 0.9+ | 2004 04 21 | 704 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.1− | | |
| 2003 11 29 | 704 | (1.8+ | 1.8+) | 2004 04 21 | 704 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.1+ | | |
| 2003 11 29 | 704 | 0.5− | 1.5+ | 2004 04 21 | 704 | 0.7− | 0.1− | 2006 11 16 | G96 | 0.8− | 0.0 | | |
| 2003 11 29 | 704 | (1.7+ | 0.4+) | 2004 04 21 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.1+ | | |

**(140130)∗ 2001 SD$_{144}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.32468 | | (2000.0) | | | |
| $n$ | 0.27618021 | $\omega$ | 148.66678 | | −0.40724262 | −0.91278162 |
| $a$ | 2.3352910 | $\Omega$ | 325.33675 | | +0.82613813 | −0.35351353 |
| $e$ | 0.0931066 | $i$ | 3.16033 | | +0.38942167 | −0.20459203 |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.3− | 0.1+ | 2001 09 24 | 704 | 0.4− | 0.5+ | 2005 10 29 | 703 | 0.5− | 0.4− | | |
| 2001 09 12 | 691 | 0.1− | 0.4+ | 2001 09 24 | 704 | 0.9+ | 0.4+ | 2005 10 29 | 703 | 0.5+ | 0.2− | | |
| 2001 09 12 | 691 | 0.0 | 0.4+ | 2001 09 24 | 704 | 0.5+ | 1.4+ | 2005 11 21 | 703 | 0.7+ | 0.2− | | |
| 2001 09 16 | 704 | 0.2+ | 0.8− | 2001 10 11 | 644 | 0.5− | 0.6+ | 2005 11 21 | 703 | 0.0 | 0.3− | | |
| 2001 09 16 | 704 | 0.3+ | 1.0− | 2001 10 11 | 644 | 0.2− | 0.4+ | 2005 11 21 | 703 | 0.5− | 0.1+ | | |
| 2001 09 16 | 704 | 1.1− | 0.7− | 2001 10 11 | 644 | 0.0 | 0.2+ | 2005 11 21 | 703 | 0.6− | 0.8− | | |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2001 10 14 | 645 | 0.3− | 0.1− | 2005 11 28 | 704 | 0.1− | 0.5+ | | |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2001 10 14 | 645 | 0.2− | 0.1− | 2005 11 28 | 704 | 0.9− | 0.0 | | |
| 2001 09 20 | 704 | 0.4− | 0.2+ | 2001 10 19 | 644 | 0.5+ | 1.8+ | 2005 11 28 | 704 | 0.1+ | 0.5− | | |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2001 10 19 | 644 | 0.4+ | 1.3+ | 2005 11 28 | 704 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2001 10 19 | 644 | 0.4+ | 1.6+ | 2005 11 28 | 704 | 0.6− | 0.4− | | |
| 2001 09 22 | 704 | 0.3+ | 0.6+ | 2003 02 23 | 699 | 0.1+ | 0.6+ | 2005 11 28 | 703 | 1.1+ | 0.7− | | |
| 2001 09 22 | 704 | 1.2+ | 0.9+ | 2003 02 23 | 699 | 0.7+ | 0.4− | 2005 11 28 | 703 | 0.1− | 1.4− | | |
| 2001 09 22 | 704 | 1.1− | 0.1+ | 2003 02 23 | 699 | 0.9− | 0.4− | 2005 11 28 | 703 | 0.2+ | 0.2− | | |
| 2001 09 22 | 704 | 0.5− | 0.8+ | 2003 02 23 | 699 | 0.2− | 0.0 | 2005 11 28 | 703 | 0.1− | 0.6+ | | |
| 2001 09 23 | 704 | 0.7− | 1.3+ | 2003 03 06 | 699 | 0.9+ | 0.5+ | 2005 11 29 | 704 | 0.7− | 0.4+ | | |
| 2001 09 23 | 704 | 0.0 | 1.1+ | 2003 03 06 | 699 | 0.3− | 0.8+ | 2005 11 29 | 704 | 0.3− | 0.1+ | | |
| 2001 09 23 | 704 | 0.2− | 0.8+ | 2003 03 06 | 699 | 0.8+ | 1.1+ | 2005 11 29 | 704 | (0.2+ | 2.3+) | | |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2003 03 06 | 699 | 0.3− | 1.3+ | 2005 11 29 | 704 | 0.9− | 0.9+ | | |
| 2001 09 23 | 704 | 0.4− | 0.2− | 2003 03 09 | 704 | 0.4+ | 0.1− | 2005 11 29 | J95 | 0.3+ | 0.1− | | |
| 2001 09 24 | 704 | 0.9+ | 0.6+ | 2003 03 09 | 704 | (2.2+ | 1.1+) | 2005 11 29 | J95 | 0.3+ | 0.4− | | |
| 2001 09 24 | 704 | 0.6+ | 1.5+ | 2003 03 09 | 704 | (0.2− | 2.2+) | 2005 11 29 | J95 | 0.4+ | 0.8− | | |
| 2001 09 24 | 704 | 1.7+ | 0.6+ | 2003 03 09 | 704 | 1.8+ | 0.1− | 2005 12 02 | 704 | 1.0+ | 1.2+ | | |
| 2001 09 24 | 704 | 0.1− | 0.8− | 2003 03 24 | 691 | 0.6+ | 1.1+ | 2005 12 02 | 704 | 0.9+ | 0.9+ | | |
| 2001 09 24 | 704 | 0.8− | 0.9+ | 2003 03 24 | 691 | 0.1+ | 1.3+ | 2005 12 02 | 704 | 0.2− | 0.4+ | | |
| 2001 09 24 | 704 | 0.1− | 0.2+ | 2003 03 24 | 691 | 0.5+ | 1.0+ | 2005 12 02 | 704 | 0.9+ | 1.7+ | | |
| 2001 09 24 | 704 | 0.9+ | 0.2+ | 2004 06 20 | 691 | 0.2− | 0.1+ | 2005 12 05 | 704 | 0.6− | 1.1+ | | |
| 2001 09 24 | 704 | 0.6− | 0.6+ | 2004 06 20 | 691 | 0.1− | 0.1+ | 2005 12 05 | 704 | 0.5− | 0.1+ | | |
| 2001 09 24 | 704 | 1.3+ | 1.0+ | 2004 06 20 | 691 | 0.3+ | 0.1+ | 2005 12 05 | 704 | 1.0− | 0.3− | | |
| 2001 09 24 | 704 | 0.4− | 0.8+ | 2005 10 29 | 703 | 0.8− | 0.1− | 2005 12 05 | 704 | 0.3− | 0.1− | | |
| 2001 09 24 | 704 | 0.1− | 1.1+ | 2005 10 29 | 703 | 0.7− | 0.4− | 2005 12 05 | 704 | 0.6− | 0.5+ | | |

**(140131)∗ 2001 SB$_{145}$ = 2005 JN$_{43}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75122)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.72849 | | (2000.0) | | | |
| $n$ | 0.19160671 | $\omega$ | 78.56403 | | +0.07336660 | +0.99605519 |
| $a$ | 2.9798580 | $\Omega$ | 195.90157 | | −0.97125138 | +0.05999529 |
| $e$ | 0.0909562 | $i$ | 10.49661 | | −0.22646874 | +0.06538064 |
| $P$ | 5.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.6− | 1.3+ | 2004 02 19 | 704 | 0.2− | 1.1+ | 2006 08 29 | 703 | 0.8+ | 0.8− | | |
| 2001 09 16 | 704 | 0.4− | 0.6+ | 2004 02 19 | 704 | 0.6+ | 1.0+ | 2006 08 29 | 703 | 0.5+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.3− | 0.2+ | 2004 02 19 | 704 | (0.8+ | 2.2+) | 2006 09 12 | 703 | 0.4− | 0.2+ | | |
| 2001 09 18 | 699 | 0.6+ | 0.9+ | 2005 04 30 | 691 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.5+ | 1.0− | | |
| 2001 09 18 | 699 | 0.0 | 0.1+ | 2005 04 30 | 691 | 0.1− | 1.0− | 2006 09 12 | 703 | 0.6− | 0.1− | | |
| 2001 09 18 | 699 | 0.4+ | 0.8− | 2005 04 30 | 691 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.2− | 0.8− | | |
| 2001 09 18 | 699 | (1.0+ | 1.9−) | 2005 05 08 | 691 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.3− | | |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2005 05 08 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.4− | 0.9− | | |
| 2001 09 20 | 704 | 0.7+ | 0.3− | 2005 05 08 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 1.2− | 0.4+ | | |
| 2001 09 20 | 704 | 0.5+ | 0.3− | 2005 05 09 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.8− | 0.3− | | |
| 2001 09 20 | 704 | 0.8+ | 0.5+ | 2005 05 09 | 691 | 0.0 | 0.1+ | 2006 10 19 | 291 | 0.1+ | 0.1− | | |
| 2001 09 20 | 704 | 0.5+ | 0.3− | 2005 05 09 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 291 | 0.0 | 0.0 | | |
| 2001 09 22 | 704 | 0.7− | 0.6+ | 2005 06 02 | 703 | 0.8+ | 0.5+ | 2006 10 19 | 291 | 0.1+ | 0.3− | | |
| 2001 09 22 | 704 | 0.3+ | 1.1+ | 2005 06 02 | 703 | 0.2− | 0.4+ | 2006 10 20 | 291 | 0.3− | 0.1+ | | |
| 2001 09 22 | 704 | 0.7+ | 0.1− | 2005 06 02 | 703 | 0.1− | 0.5+ | 2006 10 20 | 291 | 0.1− | 0.0 | | |
| 2001 09 22 | 704 | (0.4+ | 1.5+) | 2005 06 02 | 703 | 1.0− | 0.9+ | 2006 10 20 | 291 | 0.0 | 0.0 | | |
| 2001 09 22 | 704 | 0.6+ | 0.1− | 2005 06 11 | 691 | 0.1+ | 0.1− | 2006 10 21 | 291 | 0.0 | 0.1+ | | |
| 2001 09 22 | 704 | 0.6+ | 0.9+ | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 291 | 0.2+ | 0.1+ | | |
| 2001 09 23 | 704 | 0.4+ | 0.0 | 2005 06 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 291 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2005 06 15 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 291 | 0.3+ | 0.2− | | |
| 2001 09 23 | 704 | (0.3+ | 1.6+) | 2005 06 15 | 691 | 0.0 | 0.1− | 2006 10 23 | 291 | 0.2+ | 0.1− | | |
| 2001 09 23 | 704 | 0.1+ | 1.0+ | 2005 06 15 | 691 | 0.0 | 0.0 | 2006 10 23 | 291 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 0.9− | 0.5+ | 2005 06 23 | 644 | 1.2+ | 0.8− | 2006 10 27 | 291 | 0.1+ | 0.1+ | | |
| 2001 09 23 | 704 | 0.1− | 1.1+ | 2005 06 23 | 644 | 0.6− | 0.1− | 2006 10 27 | 291 | 0.1+ | 0.0 | | |
| 2001 09 23 | 704 | 0.2+ | 1.3+ | 2005 06 23 | 644 | 0.0 | 0.1− | 2006 10 27 | 291 | 0.2+ | 0.0 | | |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2005 06 23 | 644 | 0.2− | 0.1− | 2006 10 27 | 291 | 0.2+ | 0.2− | | |
| 2001 09 23 | 704 | 1.0− | 1.2+ | 2005 06 23 | 644 | 0.2− | 0.2+ | 2006 10 27 | 291 | 0.1+ | 0.3− | | |
| 2001 09 24 | 704 | 0.5− | 0.4+ | 2005 06 23 | 644 | 0.3− | 0.1− | 2006 10 27 | 291 | 0.1− | 0.3− | | |
| 2001 09 24 | 704 | 0.9− | 0.4− | 2005 06 29 | 644 | 0.1− | 0.0 | 2006 10 28 | 291 | 0.1+ | 0.1− | | |
| 2001 09 24 | 704 | 0.4− | 0.3− | 2005 06 29 | 644 | 0.0 | 0.1− | 2006 10 28 | 291 | 0.0 | 0.3+ | | |
| 2001 09 24 | 704 | 0.0 | 0.3+ | 2005 06 29 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 291 | 0.3+ | 0.0 | | |
| 2001 09 24 | 704 | 0.1− | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 10 29 | 291 | 0.2− | 0.2+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.2+ | 2006 08 21 | 691 | 0.3− | 0.0 | 2006 10 29 | 291 | 0.3+ | 0.2+ | | |
| 2001 09 24 | 704 | 0.1− | 0.5+ | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 10 29 | 291 | 0.2− | 0.3+ | | |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.7− | | | | | | |
| 2001 11 18 | 645 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.5− | 0.4+ | | | | | | |

**(140132)∗ 2001 SZ$_{145}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 146.69924 | | (2000.0) | | | |
| $n$ | 0.20912013 | $\omega$ | 43.73161 | | −0.61102962 | +0.79135902 |
| $a$ | 2.8110732 | $\Omega$ | 188.67000 | | −0.75766610 | −0.59190778 |
| $e$ | 0.0411425 | $i$ | 7.56359 | | −0.22931392 | −0.15295775 |
| $P$ | 4.71 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | 0.1− | 0.8+ | 2001 10 20 | 704 | 0.4+ | 1.4+ | 2006 07 21 | G96 | 0.0 | 0.2+ | | |
| 1994 02 16 | 691 | 0.4+ | 0.7+ | 2004 03 15 | 703 | (2.4− | 1.9−) | 2006 07 21 | G96 | 0.5− | 0.2− | | |
| 1994 02 16 | 691 | 0.2− | 0.5− | 2004 03 15 | 703 | 0.6− | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.1− | | |
| 2001 09 12 | 691 | 0.1− | 0.5+ | 2004 03 15 | 703 | (0.1− | 1.5−) | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2001 09 12 | 691 | 0.1− | 0.4+ | 2004 03 15 | 703 | 0.3− | 1.3+ | 2006 09 19 | 691 | (2.4+ | 3.3−) | | |
| 2001 09 12 | 691 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.1+ | | |
| 2001 09 16 | 704 | 0.5− | 1.1+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.1− | | |
| 2001 09 16 | 704 | 0.1− | 0.8+ | 2004 03 18 | 704 | 0.7+ | 0.6+ | 2006 09 23 | 691 | 0.3+ | 0.0 | | |
| 2001 09 16 | 704 | 0.2− | 0.8+ | 2004 03 18 | 704 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.5− | 0.0 | | |
| 2001 09 20 | 704 | 0.3+ | 0.9+ | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.2− | 0.9+ | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.3+ | | |
| 2001 09 20 | 704 | 0.2− | 1.1+ | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 15 | 703 | 1.4+ | 1.1+ | | |
| 2001 09 20 | 704 | (0.0 | 2.1+) | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 10 15 | 703 | 1.1− | 0.7+ | | |
| 2001 09 20 | 704 | 0.4− | 1.3+ | 2004 03 27 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.4+ | | |
| 2001 09 22 | 704 | 0.1− | 1.3+ | 2004 04 12 | 699 | 0.4+ | 1.4− | 2006 10 15 | 703 | 0.6+ | 1.1− | | |
| 2001 09 22 | 704 | 0.2− | 1.4+ | 2004 04 12 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.4− | 1.3− | | |
| 2001 09 22 | 704 | 0.9+ | 0.7+ | 2004 04 12 | 699 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.8+ | | |
| 2001 09 24 | 704 | 0.3− | 0.7+ | 2004 04 12 | 699 | 0.5+ | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.4+ | | |
| 2001 09 24 | 704 | 0.2− | 0.3+ | 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2001 09 24 | 704 | 1.0− | 0.2+ | 2004 04 12 | 699 | 0.5− | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.1− | | |
| 2001 09 24 | 704 | 0.5+ | 0.2+ | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.4− | | |
| 2001 09 24 | 704 | 0.5− | 0.6− | 2004 04 13 | 644 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.4− | | |
| 2001 09 25 | 699 | 0.1+ | 0.3− | 2004 04 13 | 644 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2001 09 25 | 699 | 0.2− | 0.4+ | 2004 04 13 | 644 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2001 09 25 | 699 | 0.2+ | 0.1+ | 2004 04 15 | 699 | 0.3+ | 1.0+ | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2001 09 25 | 699 | 1.2− | 0.7− | 2004 04 15 | 699 | 0.7+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2001 10 11 | 644 | 0.0 | 0.9+ | 2004 04 15 | 699 | (2.1− | 1.4−) | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2001 10 11 | 644 | 0.3+ | 0.7+ | 2004 04 15 | 699 | 0.7− | 1.2+ | 2006 11 18 | G96 | 0.4+ | 0.5− | | |
| 2001 10 11 | 644 | 0.2+ | 0.3+ | 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.7− | | |
| 2001 10 20 | 704 | 0.3− | 0.5− | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.6− | | |
| 2001 10 20 | 704 | 0.9− | 0.9+ | 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.4− | | |
| 2001 10 20 | 704 | (0.6− | 1.9+) | 2006 07 21 | G96 | 0.6− | 0.0 | | | | | | |
| 2001 10 20 | 704 | 0.2+ | 0.9+ | 2006 07 21 | G96 | 0.0 | 0.1+ | | | | | | |

**(140133)∗ 2001 ST$_{146}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 63.13141 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19128577 | $\omega$ | 53.12212 | | +0.13846428 | | +0.99028366 | | |
| $a$ | 2.9831902 | $\Omega$ | 224.84231 | | −0.91435753 | | +0.12282965 | | |
| $e$ | 0.1329111 | $i$ | 1.04663 | | −0.38049697 | | +0.06520079 | | |
| $P$ | 5.15 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.0 | 0.1− | 2001 11 16 | 291 | 1.0+ | 0.3− | 2005 06 13 | G96 | 0.1+ | 0.4+ | | |
| 1996 10 06 | 691 | 0.0 | 0.1− | 2004 02 12 | 691 | 0.1− | 0.3+ | 2005 06 13 | G96 | 0.1− | 0.0 | | |
| 1996 10 06 | 691 | 0.1+ | 0.7− | 2004 02 12 | 691 | 0.1− | 0.6+ | 2006 09 12 | 703 | 0.5− | 0.7+ | | |
| 2001 09 16 | 704 | 0.6− | 0.8+ | 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 1.1− | 0.3+ | | |
| 2001 09 16 | 704 | 0.8− | 0.6+ | 2004 03 20 | 691 | 0.5+ | 0.3+ | 2006 09 12 | 703 | 0.9− | 0.0 | | |
| 2001 09 16 | 704 | 0.3− | 0.3+ | 2004 03 20 | 691 | 0.3+ | 0.2+ | 2006 09 12 | 703 | (1.5− | 0.1+) | | |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2004 03 20 | 691 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2005 05 04 | G96 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ | | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2005 05 04 | G96 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.5+ | | |
| 2001 09 20 | 704 | 0.3− | 0.4− | 2005 05 04 | G96 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.2+ | 0.4+ | | |
| 2001 09 23 | 704 | 0.8− | 0.6+ | 2005 05 04 | G96 | 0.2+ | 0.1+ | 2006 09 16 | 699 | 0.6− | 0.1+ | | |
| 2001 09 23 | 704 | 0.4− | 0.6+ | 2005 05 13 | G96 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.8+ | 0.7− | | |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.1− | 1.0+ | | |
| 2001 09 23 | 704 | 1.1− | 0.5+ | 2005 05 13 | G96 | 0.1+ | 0.1− | 2006 09 19 | 699 | (0.5− | 1.6−) | | |
| 2001 09 23 | 691 | 0.3− | 0.1− | 2005 05 13 | G96 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.4− | 0.9+ | | |
| 2001 09 23 | 691 | 0.2− | 0.1+ | 2005 05 16 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 1.3+ | 0.4+ | | |
| 2001 09 23 | 691 | 0.3− | 0.2+ | 2005 05 16 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | (1.6− | 0.1+) | | |
| 2001 09 24 | 704 | (0.5− | 1.9−) | 2005 05 16 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.3+ | | |
| 2001 09 24 | 704 | 0.6+ | 0.6− | 2005 05 18 | E12 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.6+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.2− | 2005 05 18 | E12 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.7− | | |
| 2001 09 24 | 704 | 0.4− | 0.4+ | 2005 05 18 | E12 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.7− | 0.3+ | | |
| 2001 10 11 | 644 | 0.2− | 0.2+ | 2005 05 18 | E12 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.0 | 0.1− | | |
| 2001 10 11 | 644 | 0.5− | 0.5+ | 2005 05 21 | 644 | 0.3− | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.4+ | | |
| 2001 10 11 | 644 | 0.6− | 0.7+ | 2005 05 21 | 644 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.1− | 0.3+ | | |
| 2001 10 14 | 691 | 0.2− | 0.3− | 2005 05 21 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.4− | | |
| 2001 10 14 | 691 | 0.0 | 0.1− | 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.7− | | |
| 2001 10 14 | 691 | 0.0 | 0.3− | 2005 06 01 | 691 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.5+ | 1.0− | | |
| 2001 10 15 | 691 | 0.1+ | 0.7+ | 2005 06 01 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.6− | | |
| 2001 10 15 | 691 | 0.1+ | 0.4+ | 2005 06 04 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.4− | 0.2− | | |
| 2001 10 15 | 691 | 0.0 | 0.3+ | 2005 06 04 | 704 | 0.2− | 0.6− | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2001 10 21 | 704 | 0.3+ | 0.4− | 2005 06 04 | 704 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.6− | 0.2− | | |
| 2001 10 21 | 704 | 0.8+ | 0.6+ | 2005 06 04 | 704 | 1.2− | 0.3+ | 2006 10 27 | G96 | 0.5− | 0.4− | | |
| 2001 10 21 | 704 | 0.6− | 0.6+ | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.6− | | |
| 2001 10 21 | 704 | 0.7− | 0.2− | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 2001 10 21 | 704 | 1.0− | 0.3+ | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.9− | 0.6− | | |
| 2001 11 16 | 291 | 0.8+ | 0.3− | 2005 06 13 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2001 11 16 | 291 | 0.9+ | 0.1− | 2005 06 13 | G96 | 0.3+ | 0.1− | | | | | | |

**(140134)∗ 2001 SS$_{148}$ = 2000 LY$_{34}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 20305)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 77.53735 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22136319 | $\omega$ | 111.15404 | | +0.81173417 | | +0.57788020 | | |
| $a$ | 2.7064444 | $\Omega$ | 213.70819 | | −0.57624249 | | +0.76893730 | | |
| $e$ | 0.0918898 | $i$ | 8.75920 | | −0.09503803 | | +0.27347742 | | |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 01 | 691 | 0.6− | 0.8+ | 2001 09 25 | 704 | 0.3+ | 0.4+ | 2003 01 05 | 704 | 0.5+ | 0.4− | | |
| 2000 06 01 | 691 | 0.1− | 0.3+ | 2001 09 25 | 704 | (1.7− | 0.0 ) | 2003 01 05 | 704 | 0.1− | 1.4+ | | |
| 2000 06 01 | 691 | 0.1− | 0.1+ | 2001 09 25 | 704 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.1− | | |
| 2000 06 09 | 691 | 0.2+ | 0.3+ | 2001 09 25 | 704 | 0.5− | 1.5+ | 2004 03 27 | 704 | 0.3+ | 1.0+ | | |
| 2000 06 09 | 691 | 0.1+ | 0.1+ | 2001 09 25 | 704 | 0.2− | 0.8+ | 2004 03 27 | 704 | 0.6+ | 0.1+ | | |
| 2000 06 09 | 691 | 0.1+ | 0.0 | 2001 09 25 | 704 | 1.2+ | 0.6+ | 2004 03 27 | 704 | 0.2− | 0.7+ | | |
| 2001 09 10 | 699 | (2.0+ | 0.5+) | 2001 09 25 | 704 | (0.9+ | 1.9+) | 2004 03 27 | 704 | 0.5+ | 1.4+ | | |
| 2001 09 10 | 699 | 0.9+ | 0.7− | 2001 09 25 | 704 | 0.2− | 0.6− | 2004 04 16 | 644 | 0.5+ | 0.6+ | | |
| 2001 09 10 | 699 | 1.2− | 0.0 | 2001 09 28 | 644 | 1.0− | 1.0+ | 2004 04 16 | 644 | 0.4+ | 0.7+ | | |
| 2001 09 10 | 699 | 0.7+ | 0.9+ | 2001 09 28 | 644 | 0.3+ | 0.0 | 2004 04 16 | 644 | 0.6+ | 0.3+ | | |
| 2001 09 17 | 704 | 0.7− | 0.1− | 2001 09 28 | 644 | 1.3− | 0.8+ | 2005 05 15 | G96 | 0.1+ | 0.2− | | |
| 2001 09 17 | 704 | 0.2− | 0.7+ | 2001 09 28 | 644 | 0.5+ | 0.0 | 2005 05 15 | G96 | 0.0 | 0.2− | | |
| 2001 09 17 | 704 | 0.0 | 0.1+ | 2001 09 28 | 644 | 1.3− | 0.9+ | 2005 05 15 | G96 | 0.2− | 0.3− | | |
| 2001 09 17 | 704 | 0.1+ | 0.7+ | 2001 09 28 | 644 | 0.5+ | 0.1− | 2005 05 15 | G96 | 0.1− | 0.2− | | |
| 2001 09 20 | 704 | 0.5− | 1.2− | 2001 10 14 | 704 | 0.1− | 0.1+ | 2005 06 21 | 644 | 0.2+ | 0.0 | | |
| 2001 09 20 | 704 | 0.6+ | 1.0+ | 2001 10 14 | 704 | 0.7+ | 0.2+ | 2005 06 21 | 644 | 0.4+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.3+ | 2001 10 14 | 704 | 0.0 | 0.3− | 2005 06 21 | 644 | 0.0 | 0.1− | | |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2001 10 14 | 704 | 0.4+ | 0.4+ | 2006 11 14 | 104 | 0.2+ | 0.1− | | |
| 2001 09 20 | 704 | 0.4− | 0.2− | 2001 10 21 | 704 | 0.7− | 0.4− | 2006 11 14 | 104 | 0.5− | 0.3+ | | |
| 2001 09 23 | 704 | 0.2+ | 1.3+ | 2001 10 21 | 704 | 0.5− | 0.2− | 2006 11 14 | 104 | 0.2− | 0.5+ | | |
| 2001 09 23 | 704 | 0.4+ | 0.3− | 2001 10 21 | 704 | 0.2− | 0.6− | 2006 11 28 | 704 | 0.2− | 2.0+ | | |
| 2001 09 23 | 704 | 0.6+ | 0.2− | 2001 10 21 | 704 | 0.7− | 0.1+ | 2006 11 28 | 704 | 0.4− | 1.3+ | | |
| 2001 09 23 | 704 | 0.1− | 0.2− | 2001 10 21 | 704 | 0.2+ | 0.5− | 2006 11 28 | 704 | 0.4− | 0.1+ | | |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.1− | 0.8+ | 2006 11 28 | 704 | 0.3− | 0.4− | | |
| 2001 09 25 | 704 | 0.7+ | 0.6+ | 2003 01 05 | 704 | 0.7+ | 0.5+ | | | | | | |

**(140135)∗ 2001 SH$_{149}$ = 1999 FP$_{58}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20306)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 16.14136 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21047749 | $\omega$ | 51.45886 | | +0.95682071 | | −0.28486340 | | |
| $a$ | 2.7989745 | $\Omega$ | 324.98296 | | +0.22532299 | | +0.85259047 | | |
| $e$ | 0.0174466 | $i$ | 5.78644 | | +0.18364009 | | +0.43811223 | | |
| $P$ | 4.68 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 704 | 0.8+ | 0.8+ | 2001 09 28 | 644 | 0.1− | 0.3+ | 2004 04 14 | 699 | 0.2+ | 0.1− | | |
| 1999 03 20 | 704 | 1.1− | 0.2− | 2001 09 28 | 644 | 0.1+ | 0.3+ | 2004 04 14 | 699 | 0.1− | 0.4− | | |
| 1999 03 20 | 704 | 0.9− | 1.2− | 2001 10 06 | 644 | 0.0 | 0.5− | 2004 04 14 | 699 | 0.8+ | 0.2− | | |
| 1999 03 20 | 704 | (2.3− | 0.7−) | 2001 10 06 | 644 | 0.3− | 0.2− | 2005 08 06 | 704 | 0.6− | 0.0 | | |
| 1999 03 20 | 704 | 1.6− | 0.4− | 2001 10 06 | 644 | 0.5− | 0.2− | 2005 08 06 | 704 | 0.3+ | 0.1− | | |
| 1999 03 23 | 704 | 1.0+ | 1.1+ | 2001 10 14 | 704 | 0.5− | 0.5− | 2005 08 06 | 704 | 0.0 | 0.1+ | | |
| 1999 03 23 | 704 | 1.0− | 1.9− | 2001 10 14 | 704 | 0.1− | 0.4− | 2005 08 06 | 704 | 0.4− | 0.6+ | | |
| 1999 03 23 | 704 | 0.9− | 0.7− | 2001 10 14 | 704 | 0.2− | 0.9− | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 1999 03 23 | 704 | 0.8− | 1.7− | 2001 10 14 | 704 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | (2.5+ | 3.5−) | 2001 10 14 | 704 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.2− | | |
| 2001 08 27 | 699 | 1.5+ | 0.1− | 2001 10 17 | 704 | 0.3− | 0.3+ | 2006 10 19 | 291 | 0.1+ | 0.1+ | | |
| 2001 08 27 | 699 | 0.6+ | 0.7+ | 2001 10 17 | 704 | 0.2− | 0.2− | 2006 10 19 | 291 | 0.0 | 0.1− | | |
| 2001 08 27 | 644 | 0.6+ | 0.1+ | 2001 10 17 | 704 | 0.1+ | 0.0 | 2006 10 19 | 291 | 0.1+ | 0.1− | | |
| 2001 08 27 | 699 | 0.4+ | 0.0 | 2001 10 17 | 704 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.6− | 0.6+ | | |
| 2001 08 27 | 644 | 0.7+ | 0.1− | 2001 10 17 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.8+ | 0.0 | | |
| 2001 08 27 | 644 | 0.4+ | 0.2+ | 2002 11 07 | 645 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.5− | | |
| 2001 09 17 | 704 | 0.9+ | 0.7+ | 2002 11 07 | 645 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.1− | 0.6+ | | |
| 2001 09 17 | 704 | 0.3− | 0.3− | 2003 01 05 | 704 | 0.8+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.4− | | |
| 2001 09 17 | 704 | 0.5− | 0.5+ | 2003 01 05 | 704 | 1.2+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2001 09 17 | 704 | 0.1+ | 0.1− | 2003 01 05 | 704 | 0.9+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2001 09 20 | 704 | 0.2− | 1.2− | 2003 01 05 | 704 | 0.5+ | 0.0 | 2006 10 27 | 703 | 1.4− | 1.3− | | |
| 2001 09 20 | 704 | 0.1− | 0.5− | 2003 01 09 | 704 | 0.8+ | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.4+ | | |
| 2001 09 20 | 704 | 0.9− | 0.5− | 2003 01 09 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 703 | (1.8+ | 0.9+) | | |
| 2001 09 20 | 333 | 0.4+ | 0.5− | 2003 01 09 | 704 | 0.3+ | 0.4− | 2006 10 27 | 703 | (2.3+ | 0.5+) | | |
| 2001 09 20 | 704 | 0.6+ | 0.8− | 2003 01 09 | 704 | 0.6+ | 0.4− | 2006 11 15 | 703 | 0.4− | 0.4+ | | |
| 2001 09 20 | 333 | 0.5+ | 0.3+ | 2003 01 09 | 704 | 0.8+ | 0.4+ | 2006 11 15 | 703 | 0.8+ | 0.7− | | |
| 2001 09 20 | 704 | 0.1− | 0.8− | 2003 02 01 | 704 | 0.5− | 1.0+ | 2006 11 15 | 703 | 0.2+ | 0.3− | | |
| 2001 09 20 | 333 | 0.2+ | 0.5− | 2003 02 01 | 704 | (0.2+ | 2.1+) | 2006 11 15 | 703 | 0.0 | 0.1+ | | |
| 2001 09 23 | 704 | 0.3+ | 0.6+ | 2003 02 01 | 704 | 0.4+ | 1.1+ | 2006 11 22 | 703 | 0.8− | 0.3+ | | |
| 2001 09 23 | 704 | 0.3+ | 1.2+ | 2004 04 09 | E12 | (1.4− | 3.4+) | 2006 11 22 | 703 | 0.0 | 0.4− | | |
| 2001 09 23 | 704 | 0.2+ | 1.0+ | 2004 04 09 | E12 | (1.7− | 2.8+) | 2006 11 22 | 703 | 0.1− | 1.0− | | |
| 2001 09 23 | 704 | 0.1+ | 0.3+ | 2004 04 09 | E12 | (0.8− | 2.6+) | 2006 11 22 | 703 | 0.6− | 1.1− | | |
| 2001 09 23 | 704 | 0.2− | 0.4+ | 2004 04 09 | E12 | (1.0− | 2.7+) | | | | | | |
| 2001 09 28 | 644 | 0.0 | 0.3+ | 2004 04 14 | 699 | 0.4+ | 0.4+ | | | | | | |

**(140136)∗ 2001 SQ$_{151}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 226.69902 | | (2000.0) | | −0.57024829 | −0.81456673 |
| $n$ | 0.17954811 | $\omega$ | 289.51538 | | +0.82106067 | −0.56926724 |
| $a$ | 3.1118273 | $\Omega$ | 196.61085 | | −0.02600509 | −0.11142650 |
| $e$ | 0.0961685 | $i$ | 21.82782 | | | |
| $P$ | 5.49 | $H$ | 14.1 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 704 | 1.2+ | 0.8− | 2001 10 17 | 644 | 0.4+ | 1.2+ | 2004 03 27 | 704 | 0.6− | 0.3+ | | |
| 1999 05 17 | 704 | 0.5+ | 1.1+ | 2001 10 20 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.1− | 0.1− | | |
| 1999 05 17 | 704 | (0.7+ | 3.6−) | 2001 10 20 | 704 | 0.2− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.8+ | | |
| 1999 05 17 | 704 | 0.8− | 0.4+ | 2001 10 20 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.1− | 0.7+ | | |
| 1999 05 17 | 704 | 1.7− | 0.0 | 2001 10 20 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.3− | 1.0+ | | |
| 1999 06 12 | 704 | 0.1+ | 0.2+ | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2004 03 31 | 704 | 1.1+ | 1.3+ | | |
| 1999 06 12 | 704 | 0.4+ | 0.1+ | 2001 10 22 | 704 | 0.2− | 0.9+ | 2004 03 31 | 704 | 1.0+ | 0.2− | | |
| 1999 06 12 | 704 | 0.5− | 1.0− | 2001 10 22 | 704 | 0.1+ | 0.4− | 2004 03 31 | 704 | 0.8+ | 0.5+ | | |
| 1999 06 12 | 704 | 0.6+ | 0.2+ | 2001 10 22 | 704 | 0.3− | 0.2+ | 2004 03 31 | 704 | 1.2− | 1.0+ | | |
| 1999 06 12 | 704 | 0.2− | 1.1+ | 2001 10 22 | 704 | 0.6− | 0.3+ | 2004 04 09 | E12 | 0.5+ | 1.8− | | |
| 2001 08 27 | 704 | 0.1+ | 0.9+ | 2001 10 23 | 704 | 0.0 | 0.3− | 2004 04 09 | E12 | 0.2+ | 1.3− | | |
| 2001 08 27 | 699 | 1.0+ | 0.8+ | 2001 10 23 | 704 | 0.3− | 0.3− | 2004 04 09 | E12 | 0.4+ | 1.8− | | |
| 2001 08 27 | 704 | 0.4− | 0.8+ | 2001 10 23 | 704 | 0.1+ | 0.0 | 2004 04 09 | E12 | 1.3+ | 1.6− | | |
| 2001 08 27 | 704 | 1.0+ | 0.5+ | 2001 10 24 | 704 | 0.5− | 0.2+ | 2004 04 13 | 691 | 0.5− | 0.1+ | | |
| 2001 08 27 | 699 | 1.9+ | 1.1+ | 2001 10 24 | 704 | 0.8+ | 0.5+ | 2004 04 13 | 691 | 0.3− | 0.0 | | |
| 2001 08 27 | 704 | 0.6− | 0.5+ | 2001 10 24 | 704 | 0.1− | 0.5− | 2004 04 13 | 691 | 0.4− | 0.2+ | | |
| 2001 08 27 | 699 | 1.6+ | 0.6+ | 2001 10 24 | 704 | 0.4+ | 0.5+ | 2004 04 15 | 699 | 0.1+ | 0.1− | | |
| 2001 08 27 | 704 | 0.4− | 0.3+ | 2001 10 24 | 704 | 0.7+ | 0.9+ | 2004 04 15 | 699 | 0.1− | 0.4+ | | |
| 2001 08 27 | 699 | 0.4+ | 0.1+ | 2001 11 09 | 704 | 0.7− | 0.5− | 2004 04 15 | 699 | 0.6− | 0.3+ | | |
| 2001 09 11 | 699 | 0.1+ | 0.2− | 2001 11 09 | 704 | 1.4− | 0.9+ | 2004 04 15 | 699 | 0.3− | 0.7+ | | |
| 2001 09 11 | 699 | 0.2− | 0.6+ | 2001 11 09 | 704 | (2.0− | 2.0+) | 2004 04 16 | 704 | 0.0 | 0.4+ | | |
| 2001 09 11 | 699 | 0.8+ | 0.4+ | 2001 11 18 | 704 | 0.6− | 1.2+ | 2004 04 16 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 11 | 699 | 0.6+ | 1.0+ | 2001 11 18 | 704 | 0.6− | 0.1+ | 2004 04 16 | 704 | 0.2+ | 0.1+ | | |
| 2001 09 17 | 704 | 0.1− | 0.0 | 2001 11 18 | 704 | 0.4+ | 0.6+ | 2004 04 16 | 704 | 0.2− | 0.3+ | | |
| 2001 09 17 | 704 | 0.1+ | 0.3+ | 2001 11 18 | 704 | 0.2− | 1.3+ | 2004 04 16 | 704 | 1.1+ | 0.2+ | | |
| 2001 09 17 | 704 | 0.5− | 0.4+ | 2001 11 19 | 608 | 0.5+ | 0.2− | 2004 04 19 | 704 | 0.4+ | 0.3+ | | |
| 2001 09 17 | 704 | 0.0 | 0.7+ | 2001 11 19 | 608 | 0.2+ | 0.1+ | 2004 04 19 | 704 | 0.1− | 0.7+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2001 11 19 | 608 | 0.3+ | 0.0 | 2004 04 19 | 704 | 0.2+ | 0.7+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2001 11 20 | 704 | 0.1+ | 0.6+ | 2004 04 19 | 704 | 0.6+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.2− | 2001 11 20 | 704 | 0.3− | 0.2+ | 2004 04 20 | 703 | 1.6− | 0.0 | | |
| 2001 09 20 | 333 | 0.9+ | 0.0 | 2001 11 20 | 704 | 0.1− | 0.2+ | 2004 04 20 | 703 | 0.1+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2001 11 20 | 704 | 0.4+ | 0.5+ | 2004 04 20 | 703 | 0.4− | 0.5+ | | |
| 2001 09 20 | 333 | 0.6− | 0.1+ | 2001 11 20 | 704 | 0.6− | 0.3+ | 2004 04 20 | 703 | 0.1− | 0.6+ | | |
| 2001 09 20 | 704 | 0.3− | 1.3+ | 2001 12 10 | 645 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.1+ | 0.7+ | | |
| 2001 09 24 | 704 | 1.4+ | 0.8− | 2001 12 10 | 645 | 0.0 | 0.1+ | 2004 04 22 | 704 | 0.8+ | 1.1+ | | |
| 2001 09 24 | 704 | 0.4+ | 0.6− | 2002 01 05 | 699 | 1.1− | 0.6+ | 2004 04 22 | 704 | 0.9+ | 0.5+ | | |
| 2001 09 24 | 704 | 1.9+ | 0.8+ | 2002 01 05 | 699 | (2.0− | 0.1+) | 2004 04 22 | 704 | 0.1− | 1.4+ | | |
| 2001 09 24 | 704 | 1.1+ | 0.5+ | 2002 01 05 | 699 | 0.9− | 1.8+ | 2004 05 08 | 703 | 1.1+ | 1.7+ | | |
| 2001 09 24 | 704 | 1.1+ | 0.2+ | 2002 01 05 | 699 | (1.6− | 2.1+) | 2004 05 08 | 703 | 0.3+ | 0.6+ | | |
| 2001 09 25 | 699 | 1.6− | 0.4+ | 2004 02 16 | 703 | 1.0− | 0.0 | 2004 05 08 | 703 | 0.2− | 0.6+ | | |
| 2001 09 25 | 699 | 0.9− | 0.1+ | 2004 02 16 | 703 | 0.4− | 1.4+ | 2004 05 08 | 703 | 0.3− | 0.3− | | |
| 2001 09 25 | 699 | 0.3− | 1.0+ | 2004 02 16 | 703 | 0.6+ | 0.4− | 2004 05 24 | 699 | 0.5+ | 0.1+ | | |
| 2001 09 25 | 699 | 1.4− | 0.9+ | 2004 02 16 | 703 | 1.2+ | 2.0+ | 2004 05 24 | 699 | 0.9− | 0.4− | | |
| 2001 10 11 | 644 | 0.7− | 0.3+ | 2004 02 25 | 704 | 0.7− | 0.7− | 2004 05 24 | 699 | 0.3− | 0.5+ | | |
| 2001 10 11 | 644 | 0.7− | 0.3+ | 2004 02 25 | 704 | 0.7+ | 0.8+ | 2004 05 24 | 699 | 0.8− | 0.0 | | |
| 2001 10 11 | 644 | 0.6− | 0.4+ | 2004 02 25 | 704 | 0.0 | 1.1+ | 2006 08 13 | 644 | 0.5− | 0.6− | | |
| 2001 10 13 | 704 | 0.8− | 1.1+ | 2004 02 25 | 704 | 0.1− | 1.3+ | 2006 08 13 | 644 | 0.3+ | 0.5− | | |
| 2001 10 13 | 704 | 0.6− | 0.6+ | 2004 03 17 | 704 | 0.0 | 0.8+ | 2006 08 13 | 644 | 0.2− | 0.3− | | |
| 2001 10 13 | 704 | 0.4− | 0.5+ | 2004 03 17 | 704 | 0.6+ | 0.7+ | 2006 08 17 | 683 | 0.1− | 0.8− | | |
| 2001 10 13 | 704 | 0.4− | 0.9+ | 2004 03 17 | 704 | 1.1+ | 1.7+ | 2006 08 17 | 683 | 1.4− | 0.8+ | | |
| 2001 10 13 | 704 | 1.0+ | 1.7+ | 2004 03 17 | 704 | 0.4+ | 0.9+ | 2006 08 17 | 683 | 0.6− | 0.8+ | | |
| 2001 10 14 | 699 | 0.6+ | 0.7+ | 2004 03 17 | 704 | (1.1+ | 2.3+) | 2006 08 26 | 704 | 0.4+ | 1.0+ | | |
| 2001 10 14 | 699 | 1.0+ | 0.8+ | 2004 03 18 | 678 | 1.0+ | 1.0+ | 2006 08 26 | 704 | 0.6+ | 0.1− | | |
| 2001 10 14 | 699 | 1.1− | 1.3+ | 2004 03 18 | 678 | 0.7+ | 0.7+ | 2006 08 26 | 704 | 0.0 | 0.7+ | | |
| 2001 10 14 | 699 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 0.2+ | 1.8+ | 2006 08 26 | 704 | 1.0− | 0.5− | | |
| 2001 10 14 | 608 | 0.0 | 1.0− | 2004 03 18 | 704 | 0.1− | 1.2+ | 2006 08 29 | 699 | 0.3+ | 0.2− | | |
| 2001 10 14 | 608 | 0.9− | 0.5− | 2004 03 18 | 704 | 0.1− | 1.3+ | 2006 08 29 | 699 | 0.0 | 0.1− | | |
| 2001 10 14 | 608 | 0.7− | 0.6− | 2004 03 18 | 704 | 0.4+ | 1.9+ | 2006 08 29 | 699 | 0.7+ | 0.2− | | |
| 2001 10 16 | 691 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.1+ | 1.4+ | 2006 08 29 | 699 | 0.5+ | 0.6− | | |
| 2001 10 16 | 704 | 0.4− | 0.2+ | 2004 03 24 | 699 | 0.6− | 0.1+ | 2006 09 11 | 703 | 0.8+ | 1.3− | | |
| 2001 10 16 | 704 | 0.2+ | 0.4− | 2004 03 24 | 699 | 0.5− | 1.0+ | 2006 09 11 | 703 | 0.2+ | 1.3+ | | |
| 2001 10 16 | 691 | 0.1− | 0.1+ | 2004 03 24 | 699 | 1.0− | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.6+ | | |
| 2001 10 16 | 704 | 0.2+ | 0.1+ | 2004 03 24 | 699 | 0.1+ | 0.4+ | 2006 09 11 | 703 | 0.3+ | 0.4− | | |
| 2001 10 16 | 691 | 0.2− | 0.1− | 2004 03 25 | 699 | 0.6− | 0.0 | 2006 09 16 | 644 | 0.0 | 0.5− | | |
| 2001 10 16 | 704 | 0.1+ | 0.3− | 2004 03 25 | 699 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.2− | 0.6− | | |
| 2001 10 17 | 644 | 0.3+ | 1.3+ | 2004 03 25 | 699 | 0.7− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.5− | | |
| 2001 10 17 | 644 | 0.3+ | 1.3+ | 2004 03 25 | 699 | 0.6− | 0.3+ | | | | | | |

**(140137)∗ 2001 SR$_{151}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.57913 | | (2000.0) | | +0.78428091 | −0.62021102 |
| $n$ | 0.19189349 | $\omega$ | 32.95789 | | +0.52790978 | +0.65397828 |
| $a$ | 2.9768884 | $\Omega$ | 5.45219 | | +0.32590601 | +0.43318667 |
| $e$ | 0.0625373 | $i$ | 9.41809 | | | |
| $P$ | 5.14 | $H$ | 14.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.5+ | 0.8+ | 2001 11 19 | 704 | 1.0+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.2+ | | |
| 2001 08 27 | 699 | 0.8− | 1.2+ | 2001 11 19 | 704 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 0.3+ | 0.7+ | | |
| 2001 08 27 | 699 | 0.1− | 0.1− | 2001 11 19 | 704 | 0.3+ | 1.1+ | 2006 09 17 | 704 | 0.2+ | 0.2− | | |
| 2001 08 27 | 699 | 0.1− | 0.2+ | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 09 17 | 704 | (1.7− | 0.1−) | | |
| 2001 09 11 | 699 | 0.1− | 0.4− | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 09 17 | 704 | 1.5− | 0.8− | | |
| 2001 09 11 | 699 | 0.4− | 0.2+ | 2002 12 13 | 645 | 0.0 | 0.1− | 2006 09 17 | 704 | (0.7+ | 1.7+) | | |
| 2001 09 11 | 699 | 0.5− | 0.3+ | 2002 12 13 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.1− | 0.4− | | |
| 2001 09 11 | 699 | 0.2+ | 0.1+ | 2003 01 10 | 704 | 0.2− | 0.4+ | 2006 09 18 | 699 | 1.0− | 0.1+ | | |
| 2001 09 17 | 704 | 0.1+ | 0.2+ | 2003 01 10 | 704 | 0.1− | 0.7+ | 2006 09 18 | 699 | 0.6− | 0.6+ | | |
| 2001 09 17 | 704 | 0.1+ | 0.2− | 2003 01 10 | 704 | 0.2− | 0.9+ | 2006 09 18 | 699 | 1.0− | 0.4− | | |
| 2001 09 17 | 704 | 0.1+ | 0.5+ | 2003 01 10 | 704 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.3+ | | |
| 2001 09 17 | 704 | 0.9+ | 0.2+ | 2003 01 10 | 704 | 0.3+ | 1.2+ | 2006 09 19 | 691 | 0.1− | 0.2+ | | |
| 2001 09 19 | 291 | 0.0 | 0.1+ | 2003 01 13 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 691 | 0.2− | 0.2+ | | |
| 2001 09 19 | 291 | 0.9− | 0.2+ | 2003 01 13 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 19 | 291 | (1.6− | 0.1+) | 2003 01 13 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.3+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 699 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.3− | 0.3+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.3+ | 2003 01 31 | 699 | 0.5− | 1.0+ | 2006 09 20 | 704 | 0.1+ | 0.0 | | |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2003 01 31 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2+ | 0.0 | 2003 01 31 | 699 | 1.1+ | 0.9+ | 2006 09 23 | 691 | 0.3− | 0.0 | | |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2003 01 31 | 704 | 0.4+ | 0.7+ | 2006 09 23 | 691 | 0.3− | 0.0 | | |
| 2001 09 23 | 704 | 0.7− | 1.3+ | 2003 01 31 | 699 | 0.3− | 1.2+ | 2006 09 23 | 691 | 0.2− | 0.1+ | | |
| 2001 09 23 | 704 | (2.9+ | 1.4−) | 2003 01 31 | 704 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.5− | | |
| 2001 09 23 | 704 | 0.5+ | 0.7− | 2003 01 31 | 704 | 0.1+ | 1.1+ | 2006 09 25 | G96 | 0.3− | 0.4− | | |
| 2001 09 23 | 704 | 0.6+ | 0.3− | 2003 01 31 | 704 | 0.6− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.5− | | |
| 2001 09 24 | 704 | 0.3+ | 0.1− | 2003 03 07 | 644 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.1− | 0.2+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.4− | 2003 03 07 | 644 | 0.3+ | 0.3− | 2006 09 26 | 704 | 0.8− | 0.8+ | | |
| 2001 09 24 | 704 | (1.7+ | 0.1+) | 2003 03 07 | 644 | 0.6+ | 0.0 | 2006 09 26 | 704 | 0.0 | 0.6+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.9− | 2004 03 20 | 704 | 1.0+ | 0.4− | 2006 09 26 | 704 | 0.1− | 0.6+ | | |
| 2001 09 24 | 704 | 0.2− | 0.6− | 2004 03 20 | 704 | 1.3+ | 0.0 | 2006 09 26 | 704 | 0.0 | 0.3+ | | |
| 2001 09 25 | 699 | 0.6− | 0.3− | 2004 03 20 | 704 | (0.9+ | 1.6+) | 2006 09 27 | 704 | 0.2+ | 0.4+ | | |
| 2001 09 25 | 699 | 0.3+ | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.7+ | 2006 09 27 | 704 | 0.6+ | 0.4+ | | |
| 2001 09 25 | 699 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.2+ | | |
| 2001 09 25 | 699 | 1.3+ | 0.1− | 2004 03 31 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.2− | | |
| 2001 09 25 | 691 | 0.3+ | 0.1− | 2004 03 31 | 704 | 0.5− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.0 | | |
| 2001 09 25 | 691 | 0.1+ | 0.0 | 2004 03 31 | 704 | 0.7+ | 0.5+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | | |
| 2001 09 25 | 691 | 0.2+ | 0.1− | 2004 04 08 | 608 | 0.4− | 0.7+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.3+ | 0.0 | 2004 04 08 | 608 | 0.1+ | 0.7+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.5+ | 0.3− | 2004 04 08 | 608 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 0.1+ | 0.6+ | | |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2004 04 17 | 704 | (0.8+ | 1.8+) | 2006 09 29 | 704 | 0.7− | 0.5+ | | |
| 2001 10 14 | 704 | 0.3+ | 0.1+ | 2004 04 17 | 704 | 0.5+ | 1.3+ | 2006 09 29 | 704 | 0.8− | 0.3− | | |
| 2001 10 14 | 704 | 0.5+ | 0.0 | 2004 04 17 | 704 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.7− | 0.3− | | |
| 2001 10 17 | 704 | 0.7− | 1.1− | 2004 04 20 | 704 | 0.8+ | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.7+ | | |
| 2001 10 17 | 704 | 0.2− | 1.3− | 2004 04 20 | 704 | 0.2+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2001 10 17 | 704 | 0.8− | 1.2− | 2004 04 20 | 704 | (2.9+ | 2.4+) | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2001 10 17 | 704 | 0.8− | 1.3− | 2004 04 20 | 704 | 1.1+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2001 10 17 | 704 | 0.9− | 1.2− | 2004 04 20 | 704 | (1.9+ | 1.2+) | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 10 19 | 644 | 0.4+ | 0.1− | 2006 08 25 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2001 10 19 | 644 | 0.2+ | 0.1− | 2006 08 25 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 19 | 644 | 0.4+ | 0.2− | 2006 08 25 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2001 10 21 | 704 | 1.2− | 0.1− | 2006 08 25 | 704 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 10 21 | 704 | (1.6− | 0.2+) | 2006 08 25 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2001 10 21 | 704 | 1.5− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2001 10 21 | 704 | (1.6− | 0.3+) | 2006 08 28 | 703 | 0.4+ | 1.1− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 11 05 | 049 | 1.0+ | 0.4− | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2001 11 05 | 049 | 0.9+ | 0.7− | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2001 11 05 | 049 | 1.0+ | 0.8− | 2006 09 13 | 644 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2001 11 10 | 704 | 0.4+ | 0.8− | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2001 11 10 | 704 | 0.3+ | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2001 11 10 | 704 | 0.6+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.3+ | | | | | | |
| 2001 11 10 | 704 | 0.1+ | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.2+ | | | | | | |

**(140138)∗ 2001 SE$_{152}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.64917 | | (2000.0) | | | |
| $n$ | 0.20392219 | $\omega$ | 48.00370 | | −0.34280065 | +0.93701860 |
| $a$ | 2.8586417 | $\Omega$ | 202.21934 | | −0.90573858 | −0.34858611 |
| $e$ | 0.0769855 | $i$ | 10.19944 | | −0.24924956 | −0.02199685 |
| $P$ | 4.83 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.8+ | 0.4− | 2004 03 14 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.3− | | |
| 2001 08 27 | 699 | (0.3− | 1.6+) | 2004 03 16 | 703 | 0.8+ | 1.3+ | 2006 09 20 | 699 | (1.9+ | 0.6+) | | |
| 2001 08 27 | 699 | 1.3+ | 0.7+ | 2004 03 16 | 704 | 0.2− | 0.3− | 2006 09 20 | 699 | 1.1+ | 0.5+ | | |
| 2001 08 27 | 699 | (1.0+ | 1.8+) | 2004 03 16 | 703 | 0.4− | 0.5+ | 2006 09 20 | 699 | 0.1− | 0.0 | | |
| 2001 09 17 | 704 | 0.7− | 0.8+ | 2004 03 16 | 704 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.0 | | |
| 2001 09 17 | 704 | 0.5− | 0.6+ | 2004 03 16 | 703 | 0.1− | 1.1+ | 2006 09 26 | G96 | 0.4+ | 0.2− | | |
| 2001 09 17 | 704 | 0.8− | 0.8+ | 2004 03 16 | 703 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.3− | | |
| 2001 09 17 | 704 | 0.9− | 1.0+ | 2004 03 16 | 704 | 1.0− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.1− | | |
| 2001 09 20 | 704 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.4+ | 0.1− | 2006 09 27 | 704 | 0.6− | 0.1− | | |
| 2001 09 20 | 704 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.6+ | | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.0 | 2006 09 27 | 704 | (0.6− | 2.2+) | | |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 1.3− | 0.6− | | |
| 2001 09 20 | 704 | (0.0 | 1.5+) | 2004 03 19 | 704 | 0.4− | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | (1.7+ | 0.9−) | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 1.2− | 0.6− | | |
| 2001 09 23 | 704 | 0.5+ | 0.6+ | 2004 03 19 | 704 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.5− | | |
| 2001 09 23 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.3+ | | |
| 2001 09 23 | 704 | 0.1− | 0.8+ | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.2+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.1+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.8+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.4− | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2001 09 24 | 704 | 0.1− | 0.5− | 2004 03 20 | 704 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2001 09 24 | 704 | 0.5− | 1.2− | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2001 10 12 | 699 | (0.4+ | 2.2+) | 2004 03 20 | 704 | 0.8+ | 0.4− | 2006 10 11 | 644 | 0.3+ | 0.3+ | | |
| 2001 10 12 | 699 | 0.5− | 0.9− | 2004 03 20 | 704 | (2.8− | 0.3−) | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2001 10 12 | 699 | 1.1− | 0.2− | 2004 03 20 | 704 | (2.4− | 0.1−) | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2001 10 12 | 699 | 0.8− | 0.2+ | 2004 03 20 | 704 | (2.8− | 0.5−) | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2001 10 15 | 691 | 0.0 | 0.3+ | 2004 03 20 | 704 | (2.8− | 0.2−) | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2001 10 15 | 691 | 0.1− | 0.3+ | 2004 03 20 | 704 | (2.6− | 0.0 ) | 2006 10 15 | 691 | 0.1− | 0.1− | | |
| 2001 10 15 | 691 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.5+ | | |
| 2001 10 17 | 704 | 0.1− | 1.1+ | 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | |
| 2001 10 17 | 704 | (0.6− | 1.7+) | 2004 03 27 | 704 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.2− | 0.7+ | 2004 03 27 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 691 | 0.5+ | 0.5+ | | |
| 2001 10 19 | 644 | 0.1+ | 0.5+ | 2004 03 31 | 704 | 0.9+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2001 10 19 | 644 | 0.1+ | 0.4+ | 2004 03 31 | 704 | 0.5+ | 0.6− | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2001 10 19 | 644 | 0.1− | 0.2+ | 2004 03 31 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.2− | 1.3+ | 2004 03 31 | 704 | 0.7+ | 0.4− | 2006 10 21 | 703 | 0.2− | 0.4+ | | |
| 2001 10 21 | 704 | 0.2− | 0.3+ | 2004 04 08 | 608 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.6+ | | |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2004 04 08 | 608 | 0.5+ | 0.5− | 2006 10 21 | 703 | 0.3+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2004 04 08 | 608 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.0 | | |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2004 04 12 | 699 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2001 10 25 | 704 | 0.4+ | 0.4+ | 2004 04 12 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2001 10 25 | 704 | 0.1− | 0.1− | 2004 04 12 | 699 | 0.2+ | 0.5− | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2001 10 25 | 644 | 1.2− | 0.8+ | 2004 04 12 | 699 | 1.2− | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2001 10 25 | 704 | 0.0 | 1.5+ | 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2001 10 25 | 644 | 0.9− | 0.7+ | 2004 04 12 | 699 | 1.3− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2001 10 25 | 644 | 1.0− | 0.6+ | 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.2+ | | |
| 2001 11 18 | 704 | 0.4+ | 1.1+ | 2004 04 15 | 691 | 0.6− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1+ | | |
| 2001 11 18 | 704 | 0.9+ | 0.5− | 2004 04 15 | 691 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.0 | | |
| 2001 11 18 | 704 | 0.8+ | 0.9− | 2004 04 15 | 699 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.6+ | | |
| 2001 11 18 | 704 | 0.4+ | 0.9− | 2004 04 15 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.3− | | |
| 2001 11 20 | 704 | 0.0 | 0.8− | 2004 04 15 | 699 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.6+ | | |
| 2001 11 20 | 704 | 0.2− | 0.0 | 2004 04 15 | 699 | 0.5− | 0.6+ | 2006 11 11 | 703 | 0.9+ | 0.3+ | | |
| 2001 11 20 | 704 | 0.6+ | 0.6− | 2004 04 15 | 699 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2004 04 16 | 704 | (0.8− | 1.7+) | 2006 11 16 | G96 | 0.1+ | 0.7− | | |
| 2001 11 20 | 704 | 0.2− | 0.6− | 2004 04 16 | 704 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.4− | | |
| 2001 11 21 | 704 | 1.5+ | 0.7− | 2004 04 16 | 704 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.8+ | 0.1− | | |
| 2001 11 21 | 704 | 0.3+ | 0.4− | 2004 04 16 | 704 | (0.3− | 1.7+) | 2006 11 17 | 704 | (0.7− | 4.2−) | | |
| 2001 11 21 | 704 | (1.7+ | 0.4−) | 2004 04 20 | 704 | 0.2− | 0.6+ | 2006 11 17 | 704 | 0.1− | 0.6− | | |
| 2001 11 21 | 704 | (1.6+ | 1.3−) | 2004 04 20 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 704 | 0.6+ | 0.8+ | | |
| 2001 11 21 | 704 | 1.4+ | 0.9− | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.5− | 0.7+ | | |
| 2003 01 05 | 704 | 0.2+ | 0.4− | 2004 04 20 | 704 | 1.1+ | 0.3+ | 2006 11 17 | 703 | 1.3− | 0.3− | | |
| 2003 01 05 | 704 | 0.3+ | 1.3− | 2004 04 20 | 704 | 0.3+ | 0.7+ | 2006 11 17 | 703 | 1.9− | 1.2− | | |
| 2003 01 05 | 704 | 0.2− | 1.3− | 2004 04 22 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.3+ | | |
| 2003 01 05 | 704 | 0.9− | 0.8− | 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.0 | 1.0− | | |
| 2004 02 26 | 704 | 0.0 | 0.2+ | 2004 04 22 | 691 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.8+ | | |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2004 06 09 | 699 | 1.5+ | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.2+ | | |
| 2004 02 26 | 704 | 0.1− | 0.4− | 2004 06 09 | 699 | 0.5+ | 0.7+ | 2006 11 21 | 704 | 0.0 | 0.3− | | |
| 2004 03 14 | 644 | (2.0+ | 0.1+) | 2004 06 09 | 699 | 0.4+ | 0.5+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | | |
| 2004 03 14 | 644 | 0.1+ | 0.1+ | 2004 06 09 | 699 | (1.6− | 1.5+) | | | | | | |

**(140139)∗ 2001 SS$_{154}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.26380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22344290 | $\omega$ | 245.28530 | | +0.07365985 | −0.99712995 | |
| $a$ | 2.6896246 | $\Omega$ | 200.51328 | | +0.93208363 | +0.07507267 | |
| $e$ | 0.0442794 | $i$ | 2.86179 | | +0.35467497 | +0.00979610 | |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 1.7+ | 0.3+ | 2001 10 17 | 704 | 0.8− | 0.4+ | 2003 02 03 | 699 | (0.2− | 2.0+) |
| 1995 05 29 | 691 | 0.1+ | 0.8+ | 2001 10 17 | 704 | 0.3+ | 1.3+ | 2003 02 03 | 699 | 1.4− | 1.1+ |
| 1995 05 29 | 691 | 0.2+ | 0.8+ | 2001 10 18 | 644 | 0.5− | 0.4+ | 2004 05 20 | 599 | 0.8− | 0.9+ |
| 1997 12 27 | 691 | 0.0 | 0.8− | 2001 10 18 | 644 | 0.5− | 0.4+ | 2004 05 20 | 599 | 0.5− | 0.8+ |
| 1997 12 27 | 691 | 0.1− | 0.6− | 2001 10 18 | 644 | 0.8− | 0.2+ | 2004 05 20 | 599 | 0.8− | 0.3+ |
| 1997 12 27 | 691 | 0.2+ | 0.5− | 2001 10 22 | 704 | 1.2− | 0.3− | 2004 05 20 | 599 | 0.7− | 0.4+ |
| 2001 09 17 | 704 | 0.2− | 0.3− | 2001 10 22 | 704 | 0.1+ | 0.0 | 2005 08 06 | 644 | 0.0 | 0.1− |
| 2001 09 17 | 704 | 0.6− | 0.0 | 2001 10 22 | 704 | 0.5+ | 0.7− | 2005 08 06 | 644 | 0.2+ | 0.3+ |
| 2001 09 17 | 704 | 0.0 | 0.2− | 2001 10 23 | 704 | 0.0 | 1.0+ | 2005 08 06 | 644 | 0.3+ | 0.3− |
| 2001 09 17 | 704 | 0.4− | 0.2− | 2001 10 23 | 704 | 0.4+ | 0.8+ | 2005 08 27 | 699 | 0.0 | 0.8− |
| 2001 09 20 | 704 | 0.2+ | 0.0 | 2001 10 23 | 704 | 0.4− | 0.6+ | 2005 08 27 | 699 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2001 10 23 | 704 | 0.6− | 0.4+ | 2005 08 27 | 699 | 0.1− | 0.5− |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2001 10 24 | 704 | 0.3+ | 0.6+ | 2005 08 27 | 699 | 0.3− | 0.6+ |
| 2001 09 24 | 704 | 1.3− | 0.2+ | 2001 10 24 | 704 | 0.2+ | 0.2− | 2005 09 22 | 644 | 0.2+ | 0.1− |
| 2001 09 24 | 704 | 0.7− | 0.8+ | 2001 10 24 | 704 | 1.4+ | 0.8+ | 2005 09 22 | 644 | 0.0 | 0.1− |
| 2001 09 24 | 704 | (1.9− | 1.6+) | 2001 10 24 | 704 | 0.5+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.2− |
| 2001 09 24 | 704 | 0.8+ | 0.1+ | 2001 10 25 | 644 | 1.2− | 0.3− | 2005 10 05 | 691 | 0.2− | 0.3+ |
| 2001 10 13 | 704 | 0.2− | 0.2+ | 2001 10 25 | 644 | 0.9− | 0.0 | 2005 10 05 | 691 | 0.2+ | 0.4+ |
| 2001 10 13 | 704 | 0.4+ | 0.3+ | 2001 10 25 | 644 | 0.9− | 0.1+ | 2005 10 05 | 691 | 0.1+ | 0.3+ |
| 2001 10 13 | 704 | 0.3+ | 0.2+ | 2003 01 27 | 644 | 0.2− | 1.1+ | 2006 11 20 | 691 | 0.2+ | 0.4+ |
| 2001 10 13 | 704 | (2.2− | 0.2+) | 2003 01 27 | 644 | 0.0 | 0.9+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2001 10 13 | 704 | 0.1− | 0.3− | 2003 01 27 | 644 | 0.4− | 0.8+ | 2006 11 20 | 691 | 0.3+ | 0.5+ |
| 2001 10 15 | 691 | 0.1− | 0.3+ | 2003 02 02 | 704 | 0.7− | 0.9+ | 2006 11 28 | 691 | 0.3+ | 0.1+ |
| 2001 10 15 | 691 | 0.0 | 0.2+ | 2003 02 02 | 704 | 0.1− | 0.8+ | 2006 11 28 | 691 | 0.2+ | 0.4+ |
| 2001 10 15 | 691 | 0.0 | 0.4+ | 2003 02 02 | 704 | 1.0− | 0.2+ | 2006 11 28 | 691 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 0.6− | 0.6− | 2003 02 02 | 704 | 0.4+ | 0.9+ | 2006 11 29 | 704 | 0.7+ | 0.0 |
| 2001 10 17 | 704 | 0.2− | 0.2− | 2003 02 03 | 699 | (0.6− | 2.0+) | 2006 11 29 | 704 | 0.7+ | 0.4− |
| 2001 10 17 | 704 | 0.2+ | 0.7+ | 2003 02 03 | 699 | (0.3+ | 1.6+) | 2006 11 29 | 704 | 0.1− | 0.5+ |

**(140140)∗ 2001 ST$_{154}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.51075 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20864132 | $\omega$ | 286.75089 | | +0.47062800 | +0.88181889 | |
| $a$ | 2.8153723 | $\Omega$ | 11.46659 | | −0.74090392 | +0.41347391 | |
| $e$ | 0.1333629 | $i$ | 8.70249 | | −0.47913534 | +0.22679233 | |
| $P$ | 4.72 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 1.3− | 0.8− | 2001 10 13 | 704 | 0.5− | 0.0 | 2004 03 30 | 291 | 0.4+ | 0.6+ |
| 2001 08 27 | 699 | 0.9+ | 0.9+ | 2001 10 17 | 704 | 0.3+ | 0.1− | 2004 03 30 | 291 | 0.0 | 0.5+ |
| 2001 08 27 | 699 | 1.1+ | 0.3− | 2001 10 17 | 704 | 0.1+ | 0.0 | 2004 03 31 | 691 | 0.2+ | 0.5+ |
| 2001 08 27 | 699 | 0.2− | 0.3+ | 2001 10 17 | 704 | 0.2− | 0.0 | 2004 03 31 | 691 | 0.4+ | 0.2+ |
| 2001 09 17 | 704 | (1.8+ | 0.5+) | 2001 10 17 | 704 | 0.1+ | 0.1− | 2004 03 31 | 691 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | 0.4+ | 0.8+ | 2001 10 17 | 704 | 0.0 | 0.7− | 2004 04 12 | 703 | 0.7− | 0.7+ |
| 2001 09 17 | 704 | 0.2+ | 0.6+ | 2001 10 19 | 644 | 0.4+ | 0.5+ | 2004 04 12 | 703 | 0.1+ | 0.2+ |
| 2001 09 17 | 704 | 0.2+ | 0.1− | 2001 10 19 | 644 | 0.2+ | 0.2+ | 2004 04 12 | 703 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2001 10 19 | 644 | 0.3+ | 0.5+ | 2004 04 12 | 703 | (0.8− | 2.1+) |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2001 10 21 | 704 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.9+ | 0.6+ |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.5+ |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.0 | 0.3+ | 2004 04 19 | 704 | (1.9+ | 0.1−) |
| 2001 09 23 | 704 | 0.7− | 1.2+ | 2001 10 21 | 704 | 0.2+ | 1.2+ | 2004 04 19 | 704 | 0.9+ | 0.3+ |
| 2001 09 23 | 704 | 1.1− | 1.4+ | 2001 10 21 | 704 | 0.3+ | 0.7+ | 2004 04 19 | 704 | 0.7+ | 0.1+ |
| 2001 09 23 | 704 | 0.2− | 1.0+ | 2001 10 21 | 704 | (0.2− | 3.0+) | 2005 06 06 | E12 | 0.7− | 0.5+ |
| 2001 09 24 | 704 | 0.2+ | 0.5+ | 2001 10 21 | 704 | 0.5+ | 0.6+ | 2005 06 06 | E12 | 0.1− | 0.7+ |
| 2001 09 24 | 704 | 0.9− | 0.6+ | 2001 10 21 | 704 | 0.3+ | 0.4+ | 2005 06 06 | E12 | 0.4− | 1.3+ |
| 2001 09 24 | 704 | 0.3− | 0.9+ | 2001 11 10 | 704 | 0.4+ | 1.0+ | 2005 06 06 | E12 | 0.2− | 0.7+ |
| 2001 09 24 | 704 | 0.5− | 0.3+ | 2001 11 10 | 704 | 0.4+ | 0.3+ | 2005 07 05 | E12 | 0.0 | 0.6+ |
| 2001 09 24 | 704 | 0.1+ | 0.3− | 2001 11 10 | 704 | 0.3+ | 0.3− | 2005 07 05 | E12 | 0.1− | 1.4+ |
| 2001 09 25 | 691 | 0.3− | 0.2+ | 2001 11 10 | 704 | 0.2− | 0.7+ | 2005 07 05 | E12 | 0.2+ | 1.1+ |
| 2001 09 25 | 691 | 0.1− | 0.1+ | 2001 11 10 | 704 | 0.4+ | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2001 09 25 | 691 | 0.0 | 0.2+ | 2001 11 19 | 704 | (0.7− | 4.2−) | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2001 09 26 | 704 | 0.4− | 0.6+ | 2001 11 19 | 704 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2001 09 26 | 704 | (1.9− | 1.7+) | 2001 11 19 | 704 | 0.0 | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2001 09 26 | 704 | 0.8− | 0.9+ | 2001 11 19 | 704 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.0 | 0.6− |
| 2001 09 26 | 704 | 0.3− | 1.0+ | 2001 11 19 | 704 | 0.2− | 0.8+ | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2001 09 28 | 704 | 0.2− | 0.5+ | 2004 02 23 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 703 | 0.8+ | 0.3− |
| 2001 09 28 | 704 | (1.8− | 0.4−) | 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.3− |
| 2001 09 28 | 704 | 0.4− | 0.3+ | 2004 02 23 | 704 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2001 09 28 | 704 | 1.2− | 0.2− | 2004 02 23 | 704 | 0.4− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 09 28 | 704 | 0.1+ | 0.8+ | 2004 02 23 | 704 | 0.1+ | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 09 28 | 704 | 1.0− | 0.5− | 2004 03 11 | 644 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.4+ |
| 2001 09 28 | 704 | 0.3− | 0.7+ | 2004 03 11 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2001 09 28 | 704 | 0.4− | 0.5− | 2004 03 11 | 644 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 2001 09 28 | 704 | 0.1− | 0.3+ | 2004 03 15 | 704 | 0.9+ | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.4+ |
| 2001 09 28 | 704 | 0.2− | 1.0− | 2004 03 15 | 704 | (0.2− | 1.6+) | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2001 10 07 | 644 | 0.5− | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.3− |
| 2001 10 07 | 644 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.3− | 0.7+ | 2006 11 10 | 644 | 0.4+ | 0.1− |
| 2001 10 07 | 644 | 0.6− | 0.1− | 2004 03 19 | 704 | 0.5+ | 0.1+ | 2006 11 14 | 703 | 0.0 | 1.2+ |
| 2001 10 12 | 699 | 0.8− | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.1+ |
| 2001 10 12 | 699 | 0.2+ | 0.5+ | 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.6− | 0.8− |
| 2001 10 12 | 699 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.9− | 0.9− |
| 2001 10 12 | 699 | 0.0 | 0.5+ | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2001 10 13 | 704 | 0.6− | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2001 10 13 | 704 | 1.3− | 0.4− | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2001 10 13 | 704 | (0.3+ | 1.6+) | 2004 03 30 | 291 | 0.1+ | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.0 |

**(140141)∗ 2001 SE$_{155}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.55730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19515024 | $\omega$ | 55.78287 | | +0.81152138 | −0.58427321 | |
| $a$ | 2.9436759 | $\Omega$ | 339.96544 | | +0.52853773 | +0.73953447 | |
| $e$ | 0.0984262 | $i$ | 1.27224 | | +0.24916040 | +0.33423581 | |
| $P$ | 5.05 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 461 | 0.2+ | 0.1− | 2001 10 24 | 704 | 0.9+ | 0.1+ | 2004 04 19 | 691 | 0.1− | 0.5+ |
| 1998 01 07 | 461 | 0.3+ | 0.2− | 2001 10 24 | 704 | 0.6+ | 0.0 | 2004 04 19 | 691 | 0.2+ | 0.3+ |
| 1998 01 07 | 461 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.8+ | 0.2− | 2006 07 21 | G96 | 0.2− | 0.0 |
| 1998 01 07 | 461 | 0.1+ | 0.0 | 2001 11 09 | 704 | 0.8+ | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.3+ |
| 1998 01 07 | 461 | 0.0 | 0.0 | 2001 11 09 | 704 | 0.9+ | 0.9− | 2006 07 21 | G96 | 0.4− | 0.4+ |
| 1998 01 07 | 461 | 0.1+ | 0.1+ | 2001 11 09 | 704 | 0.6+ | 0.3− | 2006 07 21 | G96 | 0.3− | 0.1+ |
| 1998 01 07 | 461 | 0.0 | 0.0 | 2001 11 19 | 704 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.1− |
| 1998 01 25 | 691 | 0.0 | 0.7− | 2001 11 19 | 704 | 0.5+ | 0.6+ | 2006 09 14 | 703 | 0.7− | 0.0 |
| 1998 01 25 | 691 | 0.1− | 0.5− | 2001 11 19 | 704 | 0.8+ | 1.4+ | 2006 09 14 | 703 | 0.2− | 0.8+ |
| 1998 01 25 | 691 | 0.2− | 0.4− | 2001 11 19 | 704 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.5− |
| 2001 09 11 | 699 | 0.3− | 0.4+ | 2001 11 21 | 704 | (1.0− | 1.7+) | 2006 09 17 | 704 | 0.2+ | 0.2+ |
| 2001 09 11 | 699 | 0.5− | 0.8+ | 2001 11 21 | 704 | 1.2− | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.7− |
| 2001 09 11 | 699 | 0.4+ | 0.7− | 2001 11 21 | 704 | (1.8− | 0.7+) | 2006 09 17 | 704 | 0.8− | 0.7+ |
| 2001 09 11 | 699 | 0.8− | 0.2+ | 2001 11 21 | 704 | (2.0− | 1.9+) | 2006 09 18 | 699 | 0.4− | 0.6+ |
| 2001 09 17 | 704 | 0.2− | 0.0 | 2001 11 21 | 704 | (2.1− | 1.4+) | 2006 09 18 | 699 | 0.5+ | 0.1− |
| 2001 09 17 | 704 | 0.1− | 0.1− | 2001 12 18 | 291 | 0.7− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.2− |
| 2001 09 17 | 704 | 0.2+ | 0.2− | 2001 12 18 | 291 | 0.7− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.1− |
| 2001 09 17 | 704 | 0.1− | 0.4− | 2001 12 18 | 291 | 0.4− | 0.0 | 2006 09 20 | 704 | 1.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.1+ | 0.9+ | 2001 12 19 | 291 | 0.4+ | 1.1− | 2006 09 20 | 704 | 1.2+ | 0.3− |
| 2001 09 20 | 704 | 0.1+ | 1.3+ | 2001 12 19 | 291 | 0.3− | 0.9− | 2006 09 20 | 704 | 1.1+ | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 0.9+ | 2001 12 19 | 291 | 0.8− | 1.1− | 2006 09 20 | 704 | 0.4+ | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 1.2+ | 2003 01 08 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.7+ | 0.3− |
| 2001 09 23 | 704 | (0.7− | 1.8+) | 2003 01 08 | 704 | 0.0 | 0.7+ | 2006 09 22 | A50 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | (1.2− | 2.0+) | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 09 22 | A50 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | (0.4− | 2.2+) | 2003 01 27 | 699 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | 1.0− | 0.9+ | 2003 01 27 | 699 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 24 | 704 | 1.2− | 0.1− | 2003 01 27 | 699 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.3− | 0.3+ |
| 2001 09 24 | 704 | 0.2+ | 0.6− | 2003 01 27 | 699 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.7− |
| 2001 09 24 | 704 | 0.9− | 0.9− | 2003 01 27 | 291 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.4− | 0.3− |
| 2001 09 28 | 704 | 0.4− | 0.7+ | 2003 01 27 | 291 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.3− | 0.6− |
| 2001 09 28 | 704 | 1.4− | 1.4+ | 2003 01 27 | 608 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.5− | 0.1− |
| 2001 09 28 | 704 | 0.4− | 0.4+ | 2003 01 27 | 608 | 0.2+ | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.4+ |
| 2001 09 28 | 704 | 0.1− | 1.0+ | 2003 01 27 | 291 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.2+ |
| 2001 09 28 | 704 | 1.0− | 1.1+ | 2003 01 27 | 608 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.6+ |
| 2001 10 13 | 704 | 0.0 | 0.4+ | 2003 01 30 | 699 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.4+ | 0.3+ |
| 2001 10 13 | 704 | 0.2+ | 0.3+ | 2003 01 30 | 699 | 0.1+ | 0.3− | 2006 09 30 | 691 | (1.4− | 3.1+) |
| 2001 10 13 | 704 | 0.2+ | 0.1+ | 2003 01 30 | 699 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 10 13 | 704 | 0.1+ | 0.7+ | 2003 01 30 | 699 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2001 10 13 | 704 | 0.3− | 0.1− | 2003 01 31 | 704 | 1.2+ | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 10 14 | 699 | 0.6+ | 0.9+ | 2003 01 31 | 704 | 0.4+ | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 10 14 | 699 | 1.3+ | 0.2− | 2003 01 31 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 10 14 | 699 | 0.4+ | 0.6+ | 2003 01 31 | 704 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.6− |
| 2001 10 14 | 699 | 0.3+ | 1.2+ | 2003 03 05 | 704 | 0.8− | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 2001 10 17 | 704 | 0.1+ | 0.1+ | 2003 03 05 | 704 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.6+ | 0.7− |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2003 03 05 | 704 | 1.3+ | 0.9+ | 2006 10 17 | G96 | 0.7+ | 0.4− |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2003 03 05 | 704 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 10 17 | 704 | 0.5− | 0.1+ | 2004 04 12 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.6− | 0.6+ | 2004 04 12 | 644 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.4+ |
| 2001 10 19 | 644 | 0.1+ | 0.7+ | 2004 04 12 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 10 19 | 644 | 0.1− | 0.8+ | 2004 04 12 | 291 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 10 19 | 644 | 0.1− | 0.6+ | 2004 04 12 | 291 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 10 21 | 695 | 0.4+ | 0.4− | 2004 04 12 | 291 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2001 10 21 | 695 | 0.4+ | 0.2− | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.0 | 0.5− | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 1.2+ | 0.0 | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | (2.2− | 1.1+) | 2004 04 15 | 699 | (1.7+ | 1.0+) | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2001 10 21 | 704 | 0.4− | 1.2− | 2004 04 15 | 699 | (1.9+ | 0.5+) | 2006 11 11 | 703 | 0.5− | 1.2+ |
| 2001 10 23 | 704 | 0.4+ | 0.6− | 2004 04 15 | 699 | (1.7+ | 1.9−) | 2006 11 11 | 703 | 0.9+ | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2004 04 15 | 699 | (1.5+ | 0.3+) | 2006 11 11 | 703 | 0.6− | 2.4+ |
| 2001 10 23 | 704 | 1.1+ | 0.8− | 2004 04 16 | 644 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 10 23 | 704 | 0.4+ | 0.8− | 2004 04 16 | 644 | 0.3+ | 0.8+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 1.2+ | 0.1− | 2004 04 16 | 644 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 0.9+ | 0.2− | 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− |

**(140142)∗ 2001 SH$_{155}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.50131 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21016868 | $\omega$ | 144.75204 | | +0.98244848 | −0.18491515 |
| $a$ | 2.8017156 | $\Omega$ | 225.92408 | | +0.16234864 | +0.91238536 |
| $e$ | 0.1563336 | $i$ | 1.95614 | | +0.09185805 | +0.36518398 |
| $P$ | 4.69 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 05 | 644 | 0.9− | 0.7+ | 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.0 |
| 2001 08 05 | 644 | 0.4− | 0.6+ | 2001 10 21 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 1.1+ | 0.8− |
| 2001 08 05 | 644 | 0.1− | 0.7+ | 2001 10 21 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.2− | 0.6− |
| 2001 08 16 | 704 | 0.1+ | 0.3+ | 2001 10 21 | 704 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.1− | 0.6− |
| 2001 08 16 | 704 | 0.9+ | 0.1− | 2001 10 23 | 704 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.5− |
| 2001 08 16 | 704 | 0.9+ | 0.3+ | 2001 10 23 | 704 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2001 08 27 | 699 | 0.8+ | 0.3− | 2001 10 23 | 704 | 0.4+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2001 08 27 | 699 | 0.3+ | 1.3+ | 2001 10 23 | 704 | 0.2+ | 1.3− | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2001 08 27 | 699 | 0.6+ | 1.1+ | 2001 10 23 | 704 | 0.3+ | 0.4− | 2006 10 17 | G96 | 0.6+ | 0.1− |
| 2001 08 27 | 699 | 0.9+ | 0.5+ | 2001 10 24 | 704 | 0.5− | 0.9− | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 2001 09 11 | 699 | 1.1+ | 0.2+ | 2001 10 24 | 704 | 0.1− | 0.6− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2001 09 11 | 699 | 0.9+ | 0.3+ | 2001 10 24 | 704 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 2001 09 11 | 699 | 1.0+ | 0.7+ | 2001 10 24 | 704 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 09 11 | 699 | 1.0+ | 1.1+ | 2001 10 24 | 704 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 09 16 | 644 | 0.6− | 0.1+ | 2001 11 09 | 704 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 09 16 | 644 | 0.6− | 0.1+ | 2001 11 09 | 704 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2001 09 16 | 644 | 0.5− | 0.2+ | 2001 11 09 | 704 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2001 09 17 | 704 | 1.1+ | 0.1+ | 2001 11 09 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 09 17 | 704 | 1.1+ | 0.8+ | 2001 11 09 | 644 | 0.2− | 0.6+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | 0.3+ | 0.1+ | 2001 11 09 | 704 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2001 09 17 | 704 | 1.1+ | 0.5− | 2001 11 09 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | 0.6− | 0.1− | 2001 11 09 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2001 11 14 | 608 | 0.3− | 0.5− | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2001 11 14 | 608 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.7− | 0.2− | 2001 11 14 | 608 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2001 09 23 | 704 | 0.2+ | 0.3+ | 2001 11 16 | 644 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 09 23 | 704 | 0.5+ | 0.4+ | 2001 11 16 | 644 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 09 23 | 704 | 0.4+ | 0.4+ | 2001 11 16 | 644 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.4− |
| 2001 09 24 | 704 | 0.6+ | 1.1+ | 2001 12 19 | 704 | 1.3+ | 0.9+ | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2001 09 24 | 704 | 0.6+ | 1.0+ | 2001 12 19 | 704 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.1+ | 0.6− |
| 2001 09 24 | 704 | 0.2+ | 1.4+ | 2001 12 19 | 704 | 0.5+ | 0.2− | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2001 09 24 | 704 | 0.2+ | 1.1+ | 2001 12 19 | 704 | 0.1+ | 0.5− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2001 09 24 | 704 | 0.4+ | 0.7+ | 2003 01 27 | 704 | 1.0+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2001 09 27 | 704 | 0.8− | 0.5− | 2003 01 27 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2001 09 27 | 704 | 1.0− | 0.6+ | 2003 01 27 | 704 | 0.5+ | 0.4+ | 2006 11 17 | 644 | 0.4− | 0.0 |
| 2001 09 27 | 704 | 0.9− | 0.1− | 2003 01 27 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2001 09 27 | 704 | 0.6− | 0.6+ | 2003 01 27 | 644 | 0.0 | 0.6+ | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2001 09 27 | 704 | 0.4− | 0.4+ | 2003 01 27 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.3− |
| 2001 09 27 | 704 | 0.5− | 0.6+ | 2003 01 31 | 704 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.7+ | 0.4− |
| 2001 09 27 | 704 | 1.3− | 0.5+ | 2003 01 31 | 704 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.2+ |
| 2001 09 27 | 704 | 0.2− | 0.5+ | 2003 01 31 | 704 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2001 09 27 | 704 | 1.0− | 0.2+ | 2003 01 31 | 704 | (0.2− | 2.0+) | 2006 11 18 | 704 | 0.1+ | 0.5− |
| 2001 09 27 | 704 | 0.5− | 1.2+ | 2003 02 03 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.1− |
| 2001 09 27 | 704 | 0.5− | 0.5+ | 2003 02 03 | 704 | 0.4+ | 1.0+ | 2006 11 19 | 691 | 0.4− | 0.4+ |
| 2001 09 27 | 704 | 0.1− | 0.2+ | 2003 02 03 | 704 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.4− |
| 2001 09 27 | 704 | 1.3− | 1.1+ | 2003 02 03 | 608 | 0.0 | 0.9+ | 2006 11 21 | 704 | 0.3− | 1.0+ |
| 2001 09 27 | 704 | 0.7− | 1.3+ | 2003 02 03 | 608 | 0.1− | 0.8+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2001 09 27 | 704 | 0.7− | 0.4− | 2003 02 03 | 608 | 0.0 | 0.7+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2001 09 27 | 704 | 0.0 | 0.4+ | 2003 02 08 | 704 | (2.4+ | 3.4+) | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2001 09 27 | 704 | 0.7− | 0.7+ | 2003 02 08 | 704 | 0.0 | 0.9+ | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2001 09 27 | 704 | 0.3− | 1.3+ | 2003 02 08 | 704 | 0.0 | 0.6+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 09 27 | 704 | 0.8− | 0.1+ | 2003 02 08 | 704 | 0.8+ | 1.1+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 09 27 | 704 | 0.1− | 0.3+ | 2003 02 08 | 608 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 10 07 | 644 | 0.5− | 0.1+ | 2003 02 08 | 608 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2001 10 07 | 644 | 0.5− | 0.1+ | 2003 02 08 | 608 | 0.1+ | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2001 10 07 | 644 | 0.6− | 0.0 | 2003 02 28 | 608 | 0.7− | 1.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2001 10 12 | 699 | 0.1+ | 0.4− | 2003 02 28 | 608 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2001 10 12 | 699 | 0.1− | 0.6− | 2003 02 28 | 608 | 0.5− | 0.1− | 2006 11 27 | 703 | 0.7− | 0.8− |
| 2001 10 12 | 699 | 0.2+ | 0.3− | 2004 04 12 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 12 | 699 | 0.7− | 0.4− | 2004 04 12 | 644 | 0.6+ | 0.3+ | 2006 11 27 | 703 | 0.5− | 0.3− |
| 2001 10 13 | 704 | 0.2− | 0.2− | 2004 04 12 | 644 | 0.6+ | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.7− |
| 2001 10 13 | 704 | 0.3− | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.7+ | 0.9+ | 2004 04 12 | 691 | 0.2+ | 0.8+ | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2001 10 13 | 704 | 0.3− | 0.6+ | 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2001 10 13 | 704 | 0.6− | 0.3+ | 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 11 27 | 704 | 0.0 | 0.7+ |
| 2001 10 14 | 699 | 0.6− | 1.1+ | 2004 04 25 | 691 | 0.4+ | 0.7+ | 2006 11 27 | 704 | 1.0− | 0.9+ |
| 2001 10 14 | 699 | 0.3+ | 0.3+ | 2004 04 25 | 691 | 0.0 | 0.6+ | 2006 11 27 | 704 | 0.2− | 0.5+ |
| 2001 10 14 | 699 | 0.1− | 0.4+ | 2004 05 10 | 691 | 0.1+ | 0.3+ | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.5− | 0.8+ | 2004 05 10 | 691 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2004 05 10 | 691 | 0.3+ | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.2+ |
| 2001 10 17 | 704 | 0.1+ | 0.1− | 2004 05 19 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.7− | 0.6+ |
| 2001 10 17 | 704 | 0.3− | 0.4− | 2004 05 19 | 691 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2001 10 19 | 644 | 0.1− | 0.2+ | 2004 05 19 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.3− |
| 2001 10 19 | 644 | 0.4− | 0.4− | 2004 05 24 | 691 | 0.3+ | 0.7+ | 2006 12 01 | 704 | 0.2− | 0.8+ |
| 2001 10 19 | 644 | 0.1− | 0.2+ | 2004 05 24 | 691 | 0.0 | 0.5+ | 2006 12 01 | 704 | 0.6− | 0.0 |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2004 05 24 | 691 | 0.1+ | 0.7+ | | | | |

**(140143)∗ 2001 SF$_{159}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.99313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18941831 | $\omega$ | 33.39251 | | +0.88481645 | −0.46572011 | |
| $a$ | 3.0027655 | $\Omega$ | 354.30828 | | +0.38966438 | +0.75645376 | |
| $e$ | 0.0859717 | $i$ | 8.29305 | | +0.25546334 | +0.45921944 | |
| $P$ | 5.20 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 01 | 327 | 0.4− | 0.2+ | 2001 10 25 | 704 | 0.3+ | 0.6− | 2006 09 06 | 644 | 0.1+ | 0.2− |
| 1998 02 01 | 327 | 0.0 | 0.2+ | 2001 10 25 | 704 | 0.8+ | 1.0− | 2006 09 12 | 703 | 0.4− | 0.2− |
| 1998 02 01 | 327 | 0.1− | 0.5+ | 2001 10 25 | 704 | (0.3+ | 1.5−) | 2006 09 12 | 703 | 0.4+ | 0.2− |
| 1998 03 02 | 327 | 0.2− | 0.5+ | 2001 10 25 | 704 | (0.1+ | 2.5−) | 2006 09 12 | 703 | 0.9− | 0.5− |
| 1998 03 02 | 327 | 0.6+ | 1.1+ | 2001 11 10 | 704 | 0.1+ | 0.5− | 2006 09 12 | 703 | (1.8− | 0.3−) |
| 1998 03 02 | 327 | 0.0 | 0.5+ | 2001 11 10 | 704 | 0.8− | 1.0− | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2001 08 28 | 699 | 1.0− | 0.4+ | 2001 11 10 | 704 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2001 08 28 | 699 | 1.5− | 1.2+ | 2001 11 10 | 704 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.7− |
| 2001 08 28 | 699 | 0.9− | 1.4+ | 2001 11 11 | 699 | 1.1+ | 0.0 | 2006 09 17 | 704 | 0.5− | 0.7+ |
| 2001 08 28 | 699 | 1.0+ | 0.5+ | 2001 11 11 | 699 | 1.3+ | 0.2+ | 2006 09 17 | 704 | (1.2− | 2.4+) |
| 2001 09 10 | 704 | (0.9+ | 2.5−) | 2001 11 11 | 699 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.1+ | 1.4+ |
| 2001 09 10 | 704 | 0.5− | 0.8− | 2001 11 11 | 699 | 0.4+ | 0.3− | 2006 09 17 | 704 | (0.9+ | 2.4+) |
| 2001 09 10 | 704 | 0.4− | 0.1+ | 2001 11 17 | 704 | 0.6− | 0.3− | 2006 09 17 | 704 | 0.6− | 1.0+ |
| 2001 09 17 | 704 | 0.8+ | 0.3+ | 2001 11 17 | 704 | 0.3+ | 0.6− | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2001 09 17 | 704 | 0.3− | 0.1− | 2001 11 17 | 704 | 0.7− | 1.0− | 2006 09 19 | 691 | 0.2+ | 0.2− |
| 2001 09 17 | 704 | 0.8− | 0.4+ | 2001 11 17 | 704 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | (2.3+ | 0.8−) | 2001 11 20 | 699 | 0.1+ | 0.7− | 2006 09 20 | 704 | 0.3− | 1.1+ |
| 2001 09 20 | 704 | (2.8+ | 1.6−) | 2001 11 20 | 699 | 0.5− | 0.5+ | 2006 09 20 | 704 | 0.5− | 1.0+ |
| 2001 09 20 | 704 | (2.4+ | 0.9−) | 2001 11 20 | 699 | 0.0 | 0.6− | 2006 09 20 | 704 | 0.5− | 1.0+ |
| 2001 09 20 | 704 | (2.7+ | 0.2−) | 2001 11 20 | 699 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.8+ |
| 2001 09 22 | 704 | 0.6+ | 0.6+ | 2001 11 24 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.4− | 0.9+ |
| 2001 09 22 | 704 | 0.3+ | 0.0 | 2001 11 24 | 704 | 0.6− | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.9+ |
| 2001 09 22 | 704 | 0.5− | 0.4+ | 2001 11 24 | 704 | 0.9− | 1.0− | 2006 09 25 | 704 | 0.8+ | 0.5+ |
| 2001 09 25 | 704 | 0.5+ | 0.2− | 2001 11 24 | 704 | 1.2− | 0.5− | 2006 09 25 | 704 | 0.1− | 0.9+ |
| 2001 09 25 | 704 | 0.4− | 0.7+ | 2003 01 10 | 704 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2001 09 25 | 704 | 1.0+ | 0.1− | 2003 01 10 | 704 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2001 09 25 | 704 | 0.6+ | 0.1+ | 2003 01 10 | 704 | 0.4− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2003 01 10 | 704 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.6− |
| 2001 09 25 | 704 | 1.2+ | 0.3− | 2003 01 10 | 704 | 0.5− | 0.3− | 2006 09 27 | 704 | 0.7− | 0.9+ |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2003 01 31 | 704 | 0.4+ | 0.7− | 2006 09 27 | 704 | 0.4− | 0.4+ |
| 2001 09 25 | 704 | 0.1+ | 0.1− | 2003 01 31 | 704 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.9− | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 0.3− | 2003 01 31 | 704 | 1.2+ | 0.7− | 2006 09 27 | 704 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2003 01 31 | 704 | 0.5+ | 0.5− | 2006 09 27 | 704 | 0.5− | 0.2+ |
| 2001 10 12 | 699 | 0.9+ | 0.4+ | 2003 01 31 | 704 | (2.5+ | 0.2+) | 2006 09 29 | 704 | 0.2− | 0.4+ |
| 2001 10 12 | 699 | 0.1+ | 0.8+ | 2003 02 04 | 704 | 0.4+ | 0.9+ | 2006 09 29 | 704 | 0.3− | 0.3− |
| 2001 10 12 | 699 | 0.5+ | 0.4+ | 2003 02 04 | 704 | 0.6+ | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.3+ |
| 2001 10 12 | 699 | 0.4+ | 0.6+ | 2003 02 04 | 704 | 0.5− | 0.6− | 2006 09 29 | 704 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.3+ | 2003 02 04 | 704 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.9− | 0.4− |
| 2001 10 14 | 704 | 0.3− | 0.1− | 2004 03 19 | 704 | 0.8+ | 1.0+ | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2004 03 19 | 704 | 1.0+ | 1.2+ | 2006 10 01 | 704 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2004 03 19 | 704 | (1.6+ | 1.5+) | 2006 10 01 | 704 | 0.9+ | 0.7+ |
| 2001 10 14 | 704 | 0.2− | 0.4− | 2004 03 19 | 704 | (0.3− | 1.6+) | 2006 10 01 | 704 | 0.3− | 0.8+ |
| 2001 10 15 | 704 | 0.2− | 0.7− | 2004 03 27 | 704 | 0.8+ | 0.5+ | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 2001 10 15 | 704 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2001 10 15 | 704 | 0.1+ | 1.0− | 2004 03 27 | 704 | 1.0+ | 0.6+ | 2006 10 02 | 691 | 0.5− | 1.2− |
| 2001 10 15 | 704 | 0.3+ | 0.0 | 2004 03 27 | 704 | 1.1− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 10 15 | 704 | 0.0 | 0.4− | 2006 08 21 | 704 | 0.0 | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2006 08 21 | 704 | 0.2− | 1.2− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.3− | 0.5+ | 2006 08 21 | 704 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 2001 10 17 | 704 | 0.4− | 0.0 | 2006 08 21 | 704 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.2− | 1.4+ |
| 2001 10 17 | 704 | 0.0 | 0.4+ | 2006 08 25 | 704 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2001 10 17 | 704 | 0.4− | 0.4+ | 2006 08 25 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 2001 10 20 | 644 | 0.3+ | 0.1− | 2006 08 25 | 704 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.5− |
| 2001 10 20 | 644 | 0.4+ | 0.3− | 2006 08 25 | 704 | 0.4− | 0.5− | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2001 10 20 | 644 | 0.0 | 0.1− | 2006 08 25 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.2− | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2001 10 21 | 704 | 0.2− | 0.5− | 2006 08 28 | 703 | 0.6+ | 0.3− | 2006 10 23 | G96 | 0.5+ | 0.5− |
| 2001 10 21 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2001 10 21 | 704 | 0.1+ | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.0 | | | | |
| 2001 10 25 | 704 | (1.6+ | 1.6−) | 2006 09 06 | 644 | 0.1− | 0.0 | | | | |

**(140144)∗ 2001 SM$_{159}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.83882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19571454 | $\omega$ | 194.72079 | | −0.02886082 | −0.99798832 | |
| $a$ | 2.9380149 | $\Omega$ | 256.95689 | | +0.92285717 | −0.00490555 | |
| $e$ | 0.0978456 | $i$ | 3.32174 | | +0.38405951 | −0.06320801 | |
| $P$ | 5.04 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.6− | 0.1+ | 2001 10 21 | 704 | 0.1− | 0.6− | 2006 09 17 | 703 | 0.3+ | 0.5+ |
| 2001 09 17 | 704 | 0.2+ | 0.0 | 2001 10 21 | 704 | 0.5− | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.4+ |
| 2001 09 17 | 704 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 703 | 0.6− | 0.0 |
| 2001 09 18 | 699 | 1.1− | 0.5+ | 2002 12 31 | 704 | 0.6− | 0.6+ | 2006 09 18 | 691 | 0.3+ | 0.1− |
| 2001 09 18 | 699 | 0.1− | 1.2+ | 2002 12 31 | 704 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.3+ | 0.0 |
| 2001 09 18 | 699 | 0.0 | 0.4+ | 2003 01 08 | 704 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | (1.9− | 0.8−) | 2003 01 08 | 704 | 0.5− | 1.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 1.1+ | 2003 01 08 | 704 | 1.3− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.9+ | 2003 01 26 | 608 | 1.0+ | 0.7+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 1.0+ | 2003 01 26 | 608 | 0.8+ | 0.3− | 2006 09 27 | 699 | (0.4+ | 1.7−) |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2003 01 26 | 608 | 1.1+ | 0.1+ | 2006 09 27 | 699 | 0.6− | 1.3− |
| 2001 09 28 | 644 | 0.3+ | 0.1− | 2003 01 27 | 704 | 1.2+ | 0.5− | 2006 09 27 | 699 | (1.6+ | 0.6+) |
| 2001 09 28 | 644 | 0.2+ | 0.3− | 2003 01 27 | 704 | 0.2− | 0.2+ | 2006 09 27 | 699 | (1.9+ | 2.3−) |
| 2001 09 28 | 644 | 0.2+ | 0.1− | 2003 01 27 | 704 | 0.5− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.4+ | 0.2+ | 2003 01 27 | 704 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 2001 10 14 | 704 | 0.5− | 0.1− | 2003 01 30 | 699 | 0.4− | 1.3+ | 2006 09 30 | 691 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.0 | 0.4− | 2003 01 30 | 699 | 0.0 | 0.4+ | 2006 10 17 | 703 | 1.3− | 1.1+ |
| 2001 10 14 | 704 | 0.0 | 0.6+ | 2003 01 30 | 699 | 1.3− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2001 10 17 | 704 | 0.5+ | 0.8− | 2003 01 30 | 699 | (1.6− | 1.6−) | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2001 10 17 | 704 | 0.9+ | 0.8+ | 2004 04 24 | 691 | 0.3+ | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2001 10 17 | 704 | (0.8− | 2.0+) | 2004 04 24 | 691 | 0.9+ | 0.5+ | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | (2.3− | 1.3+) | 2005 06 03 | 691 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.0 | 1.1+ | 2005 06 03 | 691 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2001 10 18 | 644 | 0.2− | 1.2+ | 2005 06 03 | 691 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2001 10 18 | 644 | 0.3− | 1.1+ | 2006 09 17 | 941 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.4− | 0.4− | 2006 09 17 | 941 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 10 21 | 704 | 0.8− | 0.2− | 2006 09 17 | 941 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2001 10 21 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.8− | 0.9− | | | | |

**(140145)∗ 2001 SS$_{160}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.06971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18007455 | $\omega$ | 124.01390 | | +0.95618605 | +0.26717515 | |
| $a$ | 3.1057595 | $\Omega$ | 220.85682 | | −0.29007789 | +0.91984098 | |
| $e$ | 0.1294716 | $i$ | 10.54246 | | +0.03953542 | +0.28724557 | |
| $P$ | 5.47 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.3− | 0.3+ | 2001 10 22 | 704 | 0.1− | 1.1+ | 2006 08 28 | 703 | 0.3− | 0.1− |
| 1995 09 21 | 691 | 0.2+ | 0.2+ | 2001 10 22 | 704 | 0.5− | 0.4+ | 2006 08 28 | 704 | 0.1+ | 0.7− |
| 1995 09 21 | 691 | 0.1− | 0.3+ | 2001 10 25 | 691 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.9− | 0.2− |
| 1995 09 30 | 691 | 0.0 | 0.4+ | 2001 10 25 | 691 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.5− | 0.2− |
| 1995 09 30 | 691 | 0.2− | 0.1+ | 2001 10 25 | 691 | 0.4− | 0.1+ | 2006 08 28 | 704 | 0.4+ | 0.1+ |
| 1995 09 30 | 691 | 0.1− | 0.3+ | 2001 10 26 | 691 | 0.1− | 0.4+ | 2006 08 28 | 704 | 0.6+ | 0.2+ |
| 2001 09 17 | 704 | 0.4− | 1.5− | 2001 10 26 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 0.7− | 0.6+ |
| 2001 09 17 | 704 | 0.6− | 0.2− | 2001 10 26 | 691 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.3− |
| 2001 09 17 | 704 | 0.9− | 0.3+ | 2001 10 26 | 644 | 0.3+ | 0.7+ | 2006 08 30 | 699 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.8− | 0.4+ | 2001 10 26 | 644 | 0.4+ | 0.6+ | 2006 08 30 | 699 | 0.3− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.7− | 0.1+ | 2001 10 26 | 644 | 0.0 | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.4+ | | |
| 2001 09 20 | 704 | 0.7− | 0.3+ | 2001 11 09 | 704 | 0.0 | 0.3+ | 2006 09 11 | 703 | 0.2− | 0.3+ | | |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2001 11 09 | 704 | 0.5+ | 0.3− | 2006 09 11 | 703 | 0.5+ | 1.2+ | | |
| 2001 09 22 | 704 | 0.1− | 0.3− | 2001 11 09 | 704 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.2+ | 0.3+ | | |
| 2001 09 22 | 704 | 0.1− | 0.3− | 2001 11 09 | 704 | 0.6− | 0.0 | 2006 09 16 | 691 | 0.0 | 0.1− | | |
| 2001 09 22 | 704 | 1.1− | 0.6− | 2001 11 09 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 691 | 0.1+ | 0.1− | | |
| 2001 09 23 | 704 | 0.2− | 0.5+ | 2001 11 11 | 699 | 1.3− | 0.4+ | 2006 09 16 | 691 | 0.1+ | 0.3− | | |
| 2001 09 23 | 704 | 1.1− | 0.1− | 2001 11 11 | 699 | 0.4− | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.2− | | |
| 2001 09 23 | 704 | 0.4− | 0.5+ | 2001 11 11 | 699 | 0.5− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1− | | |
| 2001 09 26 | 704 | 0.1− | 0.1− | 2001 11 11 | 699 | 0.6− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.1− | | |
| 2001 09 26 | 704 | 0.7+ | 0.1+ | 2001 11 19 | 704 | 0.1+ | 0.3− | 2006 09 19 | 699 | 0.7− | 0.8− | | |
| 2001 09 26 | 704 | 0.1− | 0.1+ | 2001 11 19 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.2+ | | |
| 2001 09 26 | 704 | 0.4+ | 0.1+ | 2001 11 19 | 704 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.4− | | |
| 2001 09 26 | 704 | 0.4+ | 0.2− | 2001 11 19 | 704 | 0.2+ | 0.7− | 2006 09 19 | 699 | 0.0 | 0.1+ | | |
| 2001 10 07 | 644 | 0.3− | 0.3+ | 2001 11 20 | 699 | 0.4− | 0.2− | 2006 09 20 | 691 | 0.1− | 0.1− | | |
| 2001 10 07 | 644 | 0.3− | 0.2+ | 2001 11 20 | 699 | 0.2+ | 0.0 | 2006 09 20 | 691 | 0.0 | 0.1− | | |
| 2001 10 07 | 644 | 0.4− | 0.1+ | 2001 11 20 | 699 | 0.2+ | 0.1+ | 2006 09 20 | 691 | 0.1+ | 0.0 | | |
| 2001 10 12 | 699 | 0.1− | 0.3+ | 2001 11 20 | 699 | 1.7− | 0.3− | 2006 09 22 | 691 | 0.1+ | 0.0 | | |
| 2001 10 12 | 699 | 1.6+ | 1.2− | 2001 11 21 | 704 | 0.2+ | 0.2− | 2006 09 22 | 691 | 0.0 | 0.1− | | |
| 2001 10 12 | 699 | 0.7+ | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.7− | 2006 09 22 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 12 | 699 | 1.4+ | 0.8+ | 2001 11 21 | 704 | 0.7+ | 0.5− | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2001 10 14 | 704 | 0.4+ | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.7− | 2006 09 26 | 691 | 0.2+ | 0.2− | | |
| 2001 10 14 | 704 | 0.5+ | 0.5− | 2001 11 21 | 704 | 0.3+ | 0.8− | 2006 09 26 | 703 | 0.3− | 0.3+ | | |
| 2001 10 14 | 704 | 0.2− | 0.5− | 2005 02 11 | 809 | 0.2− | 0.5+ | 2006 09 26 | 703 | 0.2+ | 0.3− | | |
| 2001 10 14 | 704 | 0.2+ | 0.2− | 2005 02 11 | 809 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1− | | |
| 2001 10 14 | 704 | 0.3− | 0.1− | 2005 02 11 | 809 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.4− | | |
| 2001 10 17 | 704 | 0.3− | 0.5+ | 2005 03 10 | G96 | 1.3− | 0.2− | 2006 09 26 | 703 | 0.3− | 0.2− | | |
| 2001 10 17 | 704 | 0.0 | 0.7+ | 2005 03 10 | G96 | 0.9− | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.1− | | |
| 2001 10 17 | 704 | 0.8− | 0.1− | 2005 03 10 | G96 | 0.5− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.2− | | |
| 2001 10 17 | 704 | 0.5− | 0.0 | 2005 03 10 | G96 | 0.9− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.2− | | |
| 2001 10 17 | 704 | 0.5− | 0.3+ | 2005 05 18 | 644 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.6+ | 0.3− | | |
| 2001 10 19 | 644 | 0.2+ | 1.0− | 2005 05 18 | 644 | 0.2− | 0.5+ | 2006 09 29 | 699 | 0.5+ | 1.3+ | | |
| 2001 10 19 | 644 | 0.1+ | 1.1− | 2005 05 18 | 644 | 0.3− | 0.5+ | 2006 09 29 | 699 | 1.2− | 1.5− | | |
| 2001 10 19 | 644 | 0.2+ | 1.0− | 2005 06 03 | 691 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.7− | 0.3− | | |
| 2001 10 21 | 704 | 1.2+ | 0.8+ | 2005 06 03 | 691 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.2− | | |
| 2001 10 21 | 704 | 1.1+ | 0.6+ | 2005 06 03 | 691 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.3+ | 0.2− | | |
| 2001 10 21 | 704 | 1.0+ | 0.9+ | 2005 06 14 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 1.6+ | 1.1+ | 2005 06 14 | 691 | 0.0 | 0.4+ | 2006 10 03 | 691 | 0.6+ | 0.2− | | |
| 2001 10 21 | 704 | 1.5+ | 1.1+ | 2005 06 14 | 691 | 0.0 | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.2− | | |
| 2001 10 22 | 704 | 0.4+ | 1.0+ | 2005 06 28 | 644 | 0.3+ | 0.6+ | 2006 10 03 | 691 | 1.0− | 0.2+ | | |
| 2001 10 22 | 704 | 0.9+ | 0.3+ | 2005 06 28 | 644 | 0.0 | 0.2+ | | | | | | |
| 2001 10 22 | 704 | 1.7+ | 1.7+ | 2005 06 28 | 644 | 0.1+ | 0.3+ | | | | | | |

**(140146)∗ 2001 SX$_{160}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.35665 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18902774 | $\omega$ | 330.87545 | | +0.75026876 | +0.66045233 | |
| $a$ | 3.0069003 | $\Omega$ | 347.64916 | | −0.57619132 | +0.63095716 | |
| $e$ | 0.1069042 | $i$ | 8.06034 | | −0.32419185 | +0.40705747 | |
| $P$ | 5.21 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.3+ | 1.3− | 2004 03 15 | 703 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.1+ | 1.4+ | | |
| 1993 01 26 | 691 | 0.5− | 0.3− | 2004 03 16 | 704 | 0.5+ | 1.1+ | 2006 08 30 | 704 | 1.0+ | 0.2+ | | |
| 1993 01 26 | 691 | 0.0 | 0.0 | 2004 03 16 | 704 | (0.4+ | 1.8+) | 2006 08 30 | 704 | 0.0 | 0.4− | | |
| 2001 08 28 | 644 | 1.0+ | 1.0− | 2004 03 16 | 704 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.1+ | | |
| 2001 08 28 | 644 | 0.7+ | 1.0− | 2004 03 16 | 704 | 1.2+ | 0.9+ | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 2001 08 28 | 644 | 0.8+ | 0.7− | 2004 03 18 | 704 | 0.3+ | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.3+ | | |
| 2001 09 17 | 704 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.2− | 0.1+ | | |
| 2001 09 17 | 704 | 0.5+ | 1.0+ | 2004 03 18 | 704 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.2+ | | |
| 2001 09 17 | 704 | 0.0 | 1.1+ | 2004 03 18 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 703 | 0.9− | 0.1− | | |
| 2001 09 17 | 704 | 0.9+ | 1.0+ | 2004 03 18 | 704 | 0.4+ | 1.2+ | 2006 09 17 | 703 | 0.5− | 0.6+ | | |
| 2001 09 20 | 704 | 1.3− | 0.7+ | 2004 03 20 | 699 | 0.8+ | 0.4− | 2006 09 18 | 704 | 0.5+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2004 03 20 | 699 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.5− | 0.5+ | | |
| 2001 09 20 | 704 | 1.0+ | 1.1+ | 2004 03 20 | 699 | 1.4− | 0.5− | 2006 09 18 | 704 | 0.2+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.3+ | 1.2+ | 2004 03 20 | 699 | 0.9− | 0.2+ | 2006 09 18 | 704 | 1.0− | 1.1+ | | |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2004 03 26 | 699 | (0.1+ | 3.2−) | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 2001 10 14 | 704 | 0.2− | 0.3− | 2004 03 26 | 699 | 1.1+ | 0.6− | 2006 09 25 | 691 | 0.0 | 0.8− | | |
| 2001 10 14 | 704 | 0.3− | 0.2− | 2004 03 26 | 699 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2001 10 14 | 704 | 0.4+ | 0.2+ | 2004 03 26 | 699 | (1.6− | 1.6+) | 2006 09 25 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | (0.2+ | 1.9+) | 2006 09 25 | 691 | 0.1− | 0.2+ | | |
| 2001 10 14 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.9+ | 1.2+ | 2006 09 25 | 704 | 0.3− | 0.7− | | |
| 2001 10 15 | 333 | 0.5− | 0.4− | 2004 03 27 | 704 | 0.8+ | 1.2+ | 2006 09 25 | 704 | 0.2+ | 0.4+ | | |
| 2001 10 15 | 333 | 0.3− | 0.6− | 2004 03 27 | 704 | (0.4+ | 1.7+) | 2006 09 25 | 691 | 0.1+ | 0.0 | | |
| 2001 10 15 | 333 | 0.5+ | 0.9− | 2004 03 27 | 704 | 1.2+ | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.3+ | | |
| 2001 10 18 | 704 | 1.4+ | 0.8− | 2004 04 08 | 413 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.4− | 0.6+ | | |
| 2001 10 18 | 704 | 0.3− | 0.6+ | 2004 04 08 | 413 | 0.2− | 0.0 | 2006 09 25 | 704 | (0.2+ | 1.6+) | | |
| 2001 10 18 | 704 | 0.0 | 0.1− | 2004 04 13 | 691 | 0.4+ | 0.7+ | 2006 09 27 | 691 | 0.2− | 0.0 | | |
| 2001 10 18 | 704 | 0.0 | 0.2− | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1− | | |
| 2001 10 20 | 644 | 0.3− | 0.2− | 2004 04 13 | 683 | 0.2+ | 0.2− | 2006 09 27 | 699 | 0.2− | 1.4+ | | |
| 2001 10 20 | 644 | 0.3− | 0.2− | 2004 04 13 | 683 | (1.6+ | 1.3−) | 2006 09 27 | 691 | 0.2− | 0.2+ | | |
| 2001 10 20 | 644 | 0.3− | 0.1− | 2004 04 13 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 699 | 0.6− | 0.3+ | | |
| 2001 10 21 | 704 | 1.0− | 0.1+ | 2004 04 13 | 683 | (1.5+ | 0.7+) | 2006 09 27 | 699 | 0.4− | 0.5+ | | |
| 2001 10 21 | 704 | (2.0− | 0.0 ) | 2004 04 17 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.4+ | | |
| 2001 10 21 | 704 | 0.4− | 0.2+ | 2004 04 17 | 691 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.4− | 1.3+ | | |
| 2001 10 21 | 704 | 1.0− | 0.1− | 2004 04 17 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.2+ | | |
| 2001 10 21 | 704 | 0.2− | 0.1+ | 2004 04 24 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.2+ | | |
| 2001 11 10 | 704 | 1.0− | 0.1+ | 2004 04 24 | 691 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.3+ | 0.2+ | | |
| 2001 11 10 | 644 | 0.1− | 1.1+ | 2004 04 24 | 691 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2001 11 10 | 704 | 0.6− | 0.3− | 2006 07 21 | G96 | 0.5+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.3+ | | |
| 2001 11 10 | 644 | 0.1− | 1.1+ | 2006 07 21 | G96 | 0.6+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2001 11 10 | 644 | 0.2− | 1.0+ | 2006 07 21 | G96 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.2− | 1.0− | | |
| 2001 11 10 | 704 | 0.5− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 1.0+ | 0.5− | | |
| 2001 11 10 | 704 | 0.4− | 0.3− | 2006 07 22 | G96 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.7+ | | |
| 2001 11 12 | 704 | (1.4− | 2.1−) | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.3− | 0.2+ | | |
| 2001 11 12 | 704 | 1.2− | 0.0 | 2006 07 22 | G96 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2001 11 12 | 704 | 0.2− | 0.8− | 2006 07 22 | G96 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2001 11 12 | 704 | 0.2− | 0.7− | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.3+ | | |
| 2004 02 26 | 704 | (0.2− | 1.6+) | 2006 08 17 | 644 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.6− | | |
| 2004 02 26 | 704 | 0.7+ | 0.6+ | 2006 08 17 | 644 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.4− | | |
| 2004 02 26 | 704 | 0.4+ | 1.1+ | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.2− | 0.7− | | |
| 2004 02 26 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− | | |
| 2004 03 15 | 703 | (4.1− | 0.6−) | 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2004 03 15 | 703 | 0.8− | 0.4− | 2006 08 28 | 703 | 0.9− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2004 03 15 | 703 | 1.0− | 0.3− | 2006 08 30 | 704 | 1.2− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.2+ | | |

**(140147)∗ 2001 SZ$_{160}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.24668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18208562 | $\omega$ | 110.69102 | | +0.72851901 | +0.68141048 | |
| $a$ | 3.0828492 | $\Omega$ | 206.50885 | | −0.67239157 | +0.69169494 | |
| $e$ | 0.0816792 | $i$ | 9.05999 | | −0.13095663 | +0.23924436 | |
| $P$ | 5.41 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 05 | 691 | 0.1+ | 0.3+ | 2001 10 17 | 704 | 0.3+ | 0.3− | 2005 05 16 | G96 | 0.8− | 0.1+ | | |
| 1995 07 05 | 691 | 0.0 | 0.1− | 2001 10 17 | 704 | 0.3− | 0.3+ | 2005 06 09 | 691 | 0.0 | 0.0 | | |
| 1995 07 05 | 691 | 0.1− | 0.0 | 2001 10 17 | 704 | 0.1− | 0.1+ | 2005 06 09 | 691 | 0.3+ | 0.1− | | |
| 2001 09 17 | 704 | 1.3+ | 0.5+ | 2001 10 17 | 704 | 0.3+ | 1.2+ | 2005 06 09 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 17 | 704 | 0.6+ | 0.4− | 2001 10 18 | 644 | 0.1− | 0.5+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 17 | 704 | 0.7− | 0.4− | 2001 10 18 | 644 | 0.1− | 0.2+ | 2005 06 14 | 691 | 0.3+ | 0.3+ | | |
| 2001 09 20 | 704 | 1.2+ | 1.0+ | 2001 10 18 | 644 | 0.2− | 0.1+ | 2005 06 14 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2001 10 21 | 704 | 0.4− | 0.4− | 2006 08 17 | 644 | 0.1+ | 0.0 | | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2001 10 21 | 704 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.4+ | 0.0 | | |
| 2001 09 20 | 704 | 0.5+ | 1.6+ | 2001 10 21 | 704 | 0.4+ | 0.8+ | 2006 08 17 | 644 | 0.1− | 0.1+ | | |
| 2001 09 20 | 704 | 0.2− | 1.0+ | 2001 10 21 | 704 | 0.5− | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.1+ | 0.7− | 2001 10 21 | 704 | 0.4− | 0.2− | 2006 08 17 | 644 | 0.2+ | 0.0 | | |
| 2001 09 23 | 704 | 0.5+ | 1.1− | 2001 10 23 | 704 | 0.8+ | 0.8− | 2006 08 17 | 644 | 0.7+ | 0.0 | | |
| 2001 09 23 | 704 | 2.0− | 0.4− | 2001 10 23 | 704 | 0.4+ | 0.6− | 2006 08 22 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 23 | 704 | 1.6+ | 0.3− | 2001 10 23 | 704 | 0.7+ | 0.3− | 2006 08 22 | 644 | 0.4+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 691 | 0.5+ | 0.2− | 2001 10 23 | 704 | 0.2− | 1.5+ | 2006 08 22 | 644 | 0.2+ | 0.3+ |
| 2001 09 25 | 691 | 0.2+ | 0.2− | 2001 11 20 | 704 | 0.8− | 0.8+ | 2006 09 11 | 703 | 0.2+ | 1.2− |
| 2001 09 25 | 691 | 0.3+ | 0.1− | 2001 11 20 | 704 | 1.9− | 0.0 | 2006 09 11 | 703 | 0.2− | 0.3− |
| 2001 10 11 | 644 | 0.1+ | 1.3+ | 2001 11 20 | 704 | 0.8+ | 0.9− | 2006 09 11 | 703 | 0.1− | 0.3+ |
| 2001 10 11 | 644 | 0.2+ | 1.2+ | 2001 11 20 | 704 | 1.5− | 0.0 | 2006 09 11 | 703 | 0.5− | 0.2+ |
| 2001 10 11 | 644 | 0.0 | 1.1+ | 2001 11 21 | 704 | 1.2− | 0.4+ | 2006 09 19 | 703 | 0.8+ | 0.7− |
| 2001 10 12 | 699 | (2.3− | 0.4+) | 2001 11 21 | 704 | (2.4− | 0.7−) | 2006 09 19 | 703 | 0.5+ | 0.5− |
| 2001 10 12 | 699 | 1.9− | 1.5+ | 2001 11 21 | 704 | 1.5− | 0.0 | 2006 09 19 | 703 | 0.3+ | 1.2− |
| 2001 10 12 | 699 | 0.2+ | 0.4− | 2001 11 21 | 704 | 1.2− | 0.7− | 2006 09 19 | 703 | 0.5− | 0.2− |
| 2001 10 12 | 699 | 0.6− | 0.2− | 2004 02 14 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.1− |
| 2001 10 13 | 699 | 0.6− | 0.5− | 2004 02 14 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2001 10 13 | 699 | 1.2+ | 0.4+ | 2004 02 14 | 644 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 1.1+ | 0.6− |
| 2001 10 13 | 699 | 0.8+ | 0.6− | 2005 05 16 | G96 | 0.9− | 0.1+ | 2006 09 26 | 703 | 2.0− | 0.5− |
| 2001 10 13 | 699 | 1.0− | 0.3+ | 2005 05 16 | G96 | 0.5− | 0.0 | | | | |
| 2001 10 17 | 704 | 0.5− | 0.3+ | 2005 05 16 | G96 | 0.5− | 0.4+ | | | | |

**(140148)∗ 2001 SA$_{161}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.53691 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18934597 | $\omega$ | 31.39012 | | +0.86380810 | −0.50380848 | |
| $a$ | 3.0035302 | $\Omega$ | 358.84437 | | +0.41810288 | +0.72075371 | |
| $e$ | 0.1053644 | $i$ | 10.12951 | | +0.28111483 | +0.47612089 | |
| $P$ | 5.21 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.8− | 0.0 | 2001 11 17 | 644 | 0.2+ | 0.0 | 2006 09 06 | 644 | 0.1− | 0.1+ |
| 2001 08 22 | 704 | 0.6− | 0.9+ | 2001 11 17 | 644 | 0.6+ | 0.0 | 2006 09 12 | 703 | 0.8− | 0.5+ |
| 2001 08 22 | 704 | 0.1+ | 0.5+ | 2001 11 20 | 699 | 0.7− | 0.4− | 2006 09 12 | 703 | 0.0 | 0.1+ |
| 2001 08 22 | 704 | 0.5+ | 0.1+ | 2001 11 20 | 699 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.9− | 0.2+ |
| 2001 08 22 | 704 | 0.3− | 0.3+ | 2001 11 20 | 699 | 0.1+ | 0.6+ | 2006 09 15 | 704 | 0.1− | 0.0 |
| 2001 08 28 | 699 | 0.2+ | 0.1+ | 2001 11 20 | 699 | 0.4+ | 0.5− | 2006 09 15 | 704 | 0.0 | 0.4− |
| 2001 08 28 | 644 | 0.6− | 0.0 | 2001 11 24 | 704 | 0.8+ | 0.3− | 2006 09 15 | 704 | 0.0 | 0.1+ |
| 2001 08 28 | 699 | 0.6+ | 1.0+ | 2001 11 24 | 704 | 0.2+ | 1.2− | 2006 09 15 | 704 | 0.4− | 0.0 |
| 2001 08 28 | 644 | 0.4− | 0.0 | 2001 11 24 | 704 | 0.1+ | 1.1− | 2006 09 17 | 704 | 0.0 | 0.4− |
| 2001 08 28 | 644 | 0.4− | 0.2− | 2001 11 24 | 704 | 0.4+ | 0.7− | 2006 09 17 | 704 | 0.6− | 0.2+ |
| 2001 08 28 | 699 | 0.1+ | 1.0+ | 2001 11 24 | 704 | 0.5− | 1.0− | 2006 09 17 | 704 | 0.5− | 0.6+ |
| 2001 08 28 | 699 | 0.3+ | 0.1+ | 2002 01 09 | 704 | (0.0 | 1.6+) | 2006 09 17 | 704 | 0.1+ | 0.0 |
| 2001 09 10 | 644 | 0.6− | 0.1− | 2002 01 09 | 704 | 0.4+ | 0.6− | 2006 09 17 | 704 | 0.2+ | 0.2− |
| 2001 09 10 | 644 | 0.9− | 0.2− | 2002 01 09 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2001 09 10 | 644 | 0.6− | 0.3− | 2002 01 09 | 704 | 0.3+ | 0.9− | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2001 09 17 | 704 | 0.3+ | 0.0 | 2003 01 05 | 699 | 0.4− | 1.2− | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2001 09 17 | 704 | 0.4+ | 0.9+ | 2003 01 05 | 699 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | 0.0 | 0.1+ | 2003 01 05 | 699 | 0.9+ | 0.6− | 2006 09 19 | 699 | 0.6− | 0.2− |
| 2001 09 17 | 704 | 1.0− | 0.5+ | 2003 01 05 | 699 | (1.7+ | 0.1+) | 2006 09 19 | 699 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2003 01 05 | 699 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.6− |
| 2001 09 20 | 704 | 0.0 | 0.3− | 2003 01 05 | 699 | 1.3+ | 0.8+ | 2006 09 20 | 704 | 0.4− | 0.2+ |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2003 01 05 | 699 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.0 | 0.3− | 2003 01 05 | 699 | 0.4− | 0.8+ | 2006 09 20 | 704 | 0.2− | 0.2− |
| 2001 09 23 | 704 | 0.4− | 0.1− | 2003 01 10 | 704 | 0.5+ | 0.3+ | 2006 09 20 | H07 | 0.1− | 0.2− |
| 2001 09 23 | 704 | 0.4− | 0.2+ | 2003 01 10 | 704 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2003 01 10 | 704 | 0.1+ | 0.0 | 2006 09 20 | H07 | 0.8− | 0.1− |
| 2001 10 13 | 699 | 0.0 | 0.2+ | 2003 01 10 | 704 | 0.9+ | 0.4− | 2006 09 20 | H07 | 0.5+ | 0.6− |
| 2001 10 13 | 699 | 0.2+ | 0.0 | 2003 01 10 | 704 | 0.1− | 0.7+ | 2006 09 21 | A50 | 0.0 | 0.2− |
| 2001 10 13 | 699 | 0.1+ | 0.4+ | 2003 01 10 | 644 | 0.5+ | 0.2+ | 2006 09 21 | A50 | 0.4− | 0.1+ |
| 2001 10 13 | 699 | 0.2+ | 0.5+ | 2003 01 10 | 644 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.0 | 0.2+ | 2003 01 10 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.1+ | 0.5− | 2003 03 03 | 644 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.7+ | 0.8− | 2003 03 03 | 644 | 0.0 | 0.1− | 2006 09 25 | 704 | (3.6+ | 0.4+) |
| 2001 10 14 | 704 | 0.6+ | 0.6− | 2003 03 03 | 644 | 0.0 | 0.2+ | 2006 09 25 | 704 | (3.7+ | 0.4+) |
| 2001 10 14 | 704 | 0.4+ | 0.6− | 2003 03 05 | 704 | 0.1− | 0.7− | 2006 09 25 | 704 | (5.0+ | 1.0−) |
| 2001 10 15 | 333 | 0.2− | 1.0− | 2003 03 05 | 704 | 0.5− | 0.5− | 2006 09 27 | 699 | 0.1− | 0.0 |
| 2001 10 15 | 333 | 1.1− | 0.6− | 2003 03 05 | 704 | 1.2− | 0.2+ | 2006 09 27 | 699 | 0.4− | 0.5+ |
| 2001 10 15 | 333 | 0.0 | 0.5− | 2003 03 06 | 704 | 1.1− | 1.0+ | 2006 09 27 | 704 | 0.3− | 1.1+ |
| 2001 10 16 | 333 | 0.2− | 0.2+ | 2003 03 06 | 704 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.1+ | 1.2+ |
| 2001 10 16 | 333 | 0.7+ | 1.1− | 2003 03 06 | 704 | 0.7+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.2+ |
| 2001 10 16 | 333 | 0.4− | 0.5− | 2003 03 06 | 704 | 0.3− | 1.3+ | 2006 09 27 | 699 | 0.2+ | 0.2− |
| 2001 10 18 | 333 | 0.4+ | 0.8+ | 2003 03 07 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 2001 10 18 | 704 | 0.1− | 0.4+ | 2003 03 07 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.6+ |
| 2001 10 18 | 704 | 0.3− | 0.3+ | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.2+ |
| 2001 10 18 | 333 | 0.2− | 0.7− | 2003 03 10 | 699 | 0.7− | 0.7+ | 2006 09 29 | 704 | 0.1+ | 0.9+ |
| 2001 10 18 | 704 | 0.0 | 0.5+ | 2003 03 10 | 699 | 1.0+ | 1.4+ | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2001 10 18 | 333 | 0.4+ | 0.6− | 2003 03 10 | 699 | 0.4+ | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.3+ |
| 2001 10 18 | 704 | 0.0 | 0.4+ | 2003 03 10 | 699 | (2.5+ | 0.7+) | 2006 09 29 | 704 | 0.1+ | 0.7+ |
| 2001 10 18 | 704 | 0.4− | 0.2+ | 2004 03 20 | 699 | 0.5− | 0.5+ | 2006 10 01 | 704 | 0.7+ | 0.9+ |
| 2001 10 20 | 644 | 0.5− | 0.6+ | 2004 03 20 | 699 | (1.0− | 2.1+) | 2006 10 01 | 704 | 0.4+ | 0.5+ |
| 2001 10 20 | 644 | 0.6− | 0.6+ | 2004 03 20 | 699 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.1− | 1.1+ |
| 2001 10 20 | 644 | 0.6− | 0.7+ | 2004 03 20 | 699 | 0.0 | 0.5− | 2006 10 01 | 704 | 0.2− | 1.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2004 03 25 | 699 | 0.4− | 1.2+ | 2006 10 01 | 704 | 0.1+ | 0.6+ |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2004 03 25 | 699 | 1.3+ | 0.6− | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2004 03 25 | 699 | 1.4− | 0.7+ | 2006 10 02 | 691 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.3+ | 0.4+ | 2004 03 25 | 699 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | 0.8+ | 0.2+ | 2004 04 09 | E12 | 0.5+ | 0.5− | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2001 10 22 | 704 | 0.4− | 0.4− | 2004 04 09 | E12 | 0.6+ | 0.4− | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 10 22 | 704 | 0.3− | 0.1− | 2004 04 09 | E12 | 1.0+ | 0.7− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 10 22 | 704 | 0.4+ | 0.1− | 2004 04 09 | E12 | 1.4+ | 0.7− | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2001 10 22 | 704 | 0.2+ | 0.4− | 2004 04 14 | 699 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 2001 10 22 | 704 | 0.2+ | 0.4− | 2004 04 14 | 699 | 0.5+ | 1.2+ | 2006 10 17 | 703 | 0.4+ | 0.5− |
| 2001 10 28 | 704 | 0.0 | 0.4+ | 2004 04 14 | 699 | 0.8+ | 0.9+ | 2006 10 17 | 703 | 0.4+ | 0.5− |
| 2001 10 28 | 704 | 0.0 | 0.7+ | 2004 04 14 | 699 | 0.8+ | 0.0 | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2001 10 28 | 704 | 0.3+ | 1.3+ | 2004 04 19 | 704 | 0.2− | 1.0+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2001 11 10 | 704 | 0.3+ | 0.6− | 2004 04 19 | 704 | 0.3− | 1.5+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2001 11 10 | 704 | 0.1+ | 0.6− | 2004 04 19 | 704 | 0.5+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2001 11 10 | 704 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.1+ | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2001 11 10 | 704 | 0.8+ | 0.7+ | 2004 04 21 | 704 | (0.2− | 1.6+) | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 11 10 | 704 | 0.2+ | 0.7− | 2004 04 21 | 704 | 0.1− | 1.0+ | 2006 10 22 | G96 | 0.4− | 0.4− |
| 2001 11 11 | 699 | 0.0 | 0.4+ | 2004 04 21 | 704 | 0.3− | 1.2+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2001 11 11 | 699 | 0.0 | 0.3+ | 2004 04 21 | 704 | (0.7+ | 1.6+) | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 11 11 | 699 | 0.1+ | 0.2+ | 2004 04 21 | 704 | (0.4+ | 1.5+) | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2001 11 11 | 699 | 0.2+ | 0.5+ | 2006 08 25 | 704 | 0.3− | 0.6− | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2001 11 11 | 644 | 0.3+ | 0.1− | 2006 08 25 | 704 | 0.3− | 0.6+ | 2006 11 06 | 644 | 0.3− | 0.1− |
| 2001 11 11 | 644 | 0.4+ | 0.0 | 2006 08 25 | 704 | (1.8− | 1.3+) | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2001 11 11 | 644 | 0.3+ | 0.1+ | 2006 08 25 | 704 | 1.0− | 0.6+ | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.9+ | 0.9− | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2001 11 12 | 704 | 0.5+ | 0.6− | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.1+ | 1.1− | 2006 08 28 | 703 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.1− | 2006 08 28 | 703 | 1.1− | 0.2− | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.1+ | 0.8− | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.5− | 0.0 |
| 2001 11 17 | 644 | 0.5+ | 0.2− | 2006 09 06 | 644 | 0.3− | 0.0 | | | | |

**(140149)∗ 2001 SZ$_{162}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.84340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19943679 | $\omega$ | 112.80252 | | +0.17914514 | −0.98377308 | |
| $a$ | 2.9013438 | $\Omega$ | 326.87272 | | +0.89588339 | +0.16727257 | |
| $e$ | 0.0771983 | $i$ | 1.03551 | | +0.40657099 | +0.06488767 | |
| $P$ | 4.94 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 18 | 566 | 0.2− | 0.6− | 2003 01 27 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 1996 10 18 | 566 | 0.3− | 0.2− | 2003 01 27 | 699 | 0.6+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1996 10 18 | 566 | 0.4− | 0.4− | 2003 01 27 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 683 | (2.2+ | 0.0 ) |
| 2001 09 11 | 699 | 1.3+ | 0.3+ | 2003 01 27 | 704 | 0.3− | 0.6+ | 2006 10 20 | 683 | (2.0+ | 0.8−) |
| 2001 09 11 | 699 | (0.5+ | 2.0+) | 2003 01 27 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2001 09 11 | 699 | 0.1+ | 0.4+ | 2003 01 27 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 683 | 1.1+ | 0.0 |
| 2001 09 11 | 699 | 0.7− | 0.2+ | 2003 01 27 | 608 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 09 17 | 704 | (8.9+ | 1.9+) | 2003 01 27 | 608 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 09 17 | 704 | (8.3+ | 0.6+) | 2003 01 27 | 608 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2001 09 17 | 704 | (9.2+ | 1.4+) | 2003 01 30 | 699 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.5+ | 2003 01 30 | 699 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2003 01 30 | 699 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.7+ | 1.0− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.8+ | 1.0+ | 2003 01 30 | 699 | 0.7+ | 0.2+ | 2006 10 21 | 703 | (3.0+ | 0.1−) | | |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2003 01 31 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.3+ | | |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2003 01 31 | 704 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.3− | 0.2− | | |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2003 01 31 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 683 | 0.6− | 0.5− | | |
| 2001 09 23 | 704 | 0.3− | 0.4+ | 2003 01 31 | 704 | 0.2+ | 0.3− | 2006 10 22 | 683 | 0.4− | 1.4− | | |
| 2001 09 24 | 704 | 0.0 | 0.9+ | 2003 01 31 | 704 | 0.1+ | 0.5− | 2006 10 22 | 683 | 0.3+ | 0.2+ | | |
| 2001 09 24 | 704 | 0.6− | 0.9+ | 2003 02 03 | 704 | 0.3− | 0.8+ | 2006 10 23 | 704 | (0.4− | 2.1+) | | |
| 2001 09 24 | 704 | 0.2− | 1.1+ | 2003 02 03 | 704 | 0.5− | 0.0 | 2006 10 23 | 704 | 0.6− | 0.2+ | | |
| 2001 09 24 | 704 | 0.1− | 0.0 | 2003 02 03 | 704 | 0.1− | 0.1− | 2006 10 23 | 704 | 0.9− | 1.4+ | | |
| 2001 09 24 | 704 | 0.0 | 0.6+ | 2003 02 03 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 683 | 1.0+ | 0.4− | | |
| 2001 10 07 | 644 | (1.0+ | 2.1+) | 2003 02 03 | 704 | 0.4+ | 0.6+ | 2006 10 27 | 683 | (1.6+ | 0.8−) | | |
| 2001 10 07 | 644 | (1.1+ | 2.0+) | 2003 02 08 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 683 | 0.1− | 0.5− | | |
| 2001 10 07 | 644 | (1.0+ | 2.0+) | 2003 02 08 | 704 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2001 10 13 | 704 | 0.8− | 0.6+ | 2003 02 08 | 704 | (1.7+ | 1.0+) | 2006 10 28 | 691 | 0.2− | 0.1+ | | |
| 2001 10 13 | 704 | 0.8− | 0.5+ | 2003 02 09 | 291 | 0.3− | 0.0 | 2006 10 28 | 704 | 0.2− | 1.1− | | |
| 2001 10 13 | 704 | 0.1− | 0.3+ | 2003 02 09 | 291 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2001 10 13 | 704 | 0.6+ | 1.4+ | 2003 02 09 | 291 | 0.4− | 0.1− | 2006 10 28 | 704 | 0.6− | 0.3+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.3− | 2003 02 21 | 699 | 0.6+ | 0.2− | 2006 10 28 | 704 | 0.9+ | 0.6+ | | |
| 2001 10 17 | 704 | 0.1− | 0.2+ | 2003 02 21 | 699 | 0.5− | 0.1+ | 2006 10 28 | 704 | 0.6+ | 1.0+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.4− | 2003 02 21 | 699 | 1.1+ | 0.4+ | 2006 10 28 | 683 | 0.8− | 0.5− | | |
| 2001 10 17 | 704 | 0.3− | 0.3− | 2003 02 21 | 699 | 0.5+ | 0.1− | 2006 10 28 | 704 | 1.0− | 0.3+ | | |
| 2001 10 17 | 704 | 0.2− | 0.3− | 2003 02 28 | 608 | 0.5+ | 0.6− | 2006 10 28 | 683 | 1.4− | 0.5+ | | |
| 2001 10 19 | 644 | 0.2− | 0.2− | 2003 02 28 | 608 | 0.0 | 0.3− | 2006 10 28 | 683 | (1.2− | 3.4+) | | |
| 2001 10 19 | 644 | 0.1+ | 0.2− | 2003 02 28 | 608 | 0.4+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2001 10 19 | 644 | 0.0 | 0.2− | 2003 03 06 | 644 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2− | | |
| 2001 10 21 | 704 | 0.0 | 0.1+ | 2003 03 06 | 644 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.5+ | | |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2003 03 06 | 644 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2004 05 12 | 699 | 0.2+ | 0.0 | 2006 11 07 | 644 | 0.0 | 0.1− | | |
| 2001 10 21 | 291 | 0.7+ | 0.1− | 2004 05 12 | 699 | 0.2+ | 0.6− | 2006 11 07 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.3+ | 0.2+ | 2004 05 12 | 699 | 0.8− | 1.4+ | 2006 11 07 | 644 | 0.1− | 0.1− | | |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2004 05 12 | 699 | 1.2+ | 0.7− | 2006 11 07 | 644 | 0.3+ | 0.1+ | | |
| 2001 10 21 | 291 | (1.8+ | 0.6−) | 2004 05 15 | 704 | 0.2+ | 1.1+ | 2006 11 07 | 644 | 0.1+ | 0.0 | | |
| 2001 10 21 | 291 | (2.0+ | 0.1+) | 2004 05 15 | 704 | 0.5− | 0.8+ | 2006 11 07 | 644 | 0.1− | 0.0 | | |
| 2001 10 23 | 704 | 0.1+ | 0.3− | 2004 05 15 | 704 | 0.3+ | 1.0+ | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.3+ | 0.3− | 2004 05 15 | 704 | 0.4+ | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.0 | 0.4− | 2004 05 16 | 704 | 0.4− | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2001 10 23 | 704 | 0.4+ | 0.3− | 2004 05 16 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2001 10 23 | 704 | 0.2− | 0.7− | 2004 05 16 | 704 | 0.2− | 1.1+ | 2006 11 11 | 691 | 0.5+ | 0.0 | | |
| 2001 10 24 | 704 | 0.0 | 0.0 | 2004 05 16 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.6+ | | |
| 2001 10 24 | 704 | 0.5+ | 0.0 | 2004 05 16 | 704 | 0.6− | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.4− | | |
| 2001 10 24 | 704 | 0.0 | 0.0 | 2004 05 23 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 703 | (1.5− | 1.4−) | | |
| 2001 10 24 | 704 | 0.1+ | 0.2+ | 2004 05 23 | 691 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.8+ | 0.0 | | |
| 2001 10 24 | 704 | 0.0 | 0.3− | 2004 05 23 | 691 | 0.4+ | 0.7+ | 2006 11 17 | 703 | 0.4+ | 0.1+ | | |
| 2001 10 25 | 704 | 0.3+ | 0.4+ | 2005 08 01 | E12 | 0.5+ | 0.5− | 2006 11 17 | 703 | 1.0− | 0.1− | | |
| 2001 10 25 | 704 | 1.0− | 0.0 | 2005 08 01 | E12 | 0.2− | 1.0+ | 2006 11 17 | 703 | 0.4+ | 0.7+ | | |
| 2001 10 25 | 704 | 0.0 | 0.1+ | 2005 08 01 | E12 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 0.2+ | 0.5+ | | |
| 2001 10 25 | 704 | 0.2+ | 0.2+ | 2005 11 25 | G96 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 25 | 704 | 0.0 | 0.5+ | 2005 11 25 | G96 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.1− | 0.2+ | | |
| 2001 10 26 | 644 | 0.3− | 0.4+ | 2005 11 25 | G96 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.1− | 0.3+ | | |
| 2001 10 26 | 644 | 0.1− | 0.2+ | 2005 11 25 | G96 | 0.0 | 0.9+ | 2006 11 18 | 704 | 1.0− | 1.1+ | | |
| 2001 10 26 | 644 | 0.1− | 0.4+ | 2006 08 12 | 644 | 0.5− | 0.2+ | 2006 11 18 | 704 | 0.4− | 1.2+ | | |
| 2001 11 09 | 704 | 0.3− | 0.4− | 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 1.0− | 0.6+ | | |
| 2001 11 09 | 704 | 0.7− | 0.5− | 2006 08 12 | 644 | 0.6− | 0.0 | 2006 11 18 | 704 | 0.7− | 0.3+ | | |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.1+ | 1.4+ | 2006 11 18 | 704 | 1.2− | 0.3+ | | |
| 2001 11 09 | 704 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.4+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2001 11 09 | 704 | 0.1+ | 0.7− | 2006 09 20 | 704 | 0.9− | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.1− | | |
| 2001 11 19 | 704 | 0.4− | 0.0 | 2006 10 03 | 704 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.5− | | |
| 2001 11 19 | 704 | 0.2− | 0.1− | 2006 10 03 | 704 | 0.5− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2001 11 19 | 704 | 0.6− | 0.4+ | 2006 10 03 | 704 | 0.5− | 0.4− | 2006 11 20 | G96 | 0.0 | 0.4− | | |
| 2001 11 19 | 704 | 0.1− | 0.4− | 2006 10 03 | 704 | 1.0+ | 0.7+ | 2006 11 20 | G96 | 0.2+ | 0.5− | | |
| 2001 11 21 | 704 | 0.1+ | 0.4+ | 2006 10 03 | 704 | 0.6+ | 0.0 | 2006 11 20 | G96 | 0.6− | 0.7− | | |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | (1.5− | 1.3−) | | |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.9− | 0.2− | | |
| 2001 11 21 | 704 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 21 | 704 | 1.0− | 0.3− | | |
| 2001 11 21 | 704 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.0 | | |
| 2003 01 27 | 699 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.1− | 0.1+ | | |
| 2003 01 27 | 699 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.5+ | | |
| 2003 01 27 | 699 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.4− | 0.4− | | |

**(140150)∗ 2001 SC$_{163}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.67966 | | (2000.0) | | | |
| $n$ | 0.18448891 | $\omega$ | 203.99972 | | +0.76991724 | −0.63559712 |
| $a$ | 3.0560177 | $\Omega$ | 195.87228 | | +0.61399705 | +0.76214691 |
| $e$ | 0.1407932 | $i$ | 12.01955 | | +0.17388233 | +0.12307882 |
| $P$ | 5.34 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 1.4− | 0.1− | 2001 10 14 | 699 | 0.7− | 0.8+ | 2001 11 20 | 704 | 0.3− | 1.0+ | |
| 2001 09 17 | 704 | 1.3− | 0.4− | 2001 10 14 | 699 | 1.1− | 0.0 | 2001 11 20 | 704 | 1.0+ | 0.4+ | |
| 2001 09 17 | 704 | (2.0− | 0.2+) | 2001 10 14 | 699 | 0.2+ | 0.9− | 2003 01 25 | 644 | 0.7+ | 0.8+ | |
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2001 10 18 | 644 | 0.2+ | 0.5+ | 2003 01 25 | 644 | 0.1+ | 0.8+ | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2001 10 18 | 644 | 0.1− | 0.3+ | 2003 01 25 | 644 | 0.3+ | 0.7+ | |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2001 10 18 | 644 | 0.1+ | 0.3+ | 2003 01 28 | 704 | (0.1+ | 1.7+) | |
| 2001 09 23 | 704 | 0.6+ | 0.9− | 2001 10 20 | 704 | 0.4+ | 0.4− | 2003 01 28 | 704 | 1.2+ | 0.1+ | |
| 2001 09 23 | 704 | 0.5+ | 0.6− | 2001 10 20 | 704 | 0.7+ | 0.3− | 2003 01 28 | 704 | 0.4+ | 0.2+ | |
| 2001 09 23 | 704 | 0.7+ | 0.6+ | 2001 10 20 | 704 | 0.2+ | 0.0 | 2003 01 28 | 704 | 0.3− | 0.2− | |
| 2001 09 24 | 704 | 0.8+ | 1.0+ | 2001 10 20 | 704 | 0.1+ | 0.4− | 2003 03 30 | 645 | 0.1− | 0.0 | |
| 2001 09 24 | 704 | 0.1− | 1.4+ | 2001 10 20 | 704 | 0.8+ | 0.0 | 2003 03 30 | 645 | 0.1− | 0.1− | |
| 2001 09 24 | 704 | 0.6− | 0.0 | 2001 10 22 | 704 | 0.1− | 0.0 | 2004 03 23 | 691 | 0.2+ | 0.4+ | |
| 2001 09 24 | 704 | 0.1− | 0.3+ | 2001 10 22 | 704 | 0.2+ | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.5+ | |
| 2001 09 24 | 704 | 0.2+ | 0.0 | 2001 10 22 | 704 | 0.4+ | 0.0 | 2004 03 23 | 691 | 0.0 | 0.5+ | |
| 2001 09 26 | 704 | (1.0− | 1.6−) | 2001 10 22 | 704 | 0.3+ | 0.1− | 2006 09 11 | 703 | 0.4+ | 0.5+ | |
| 2001 09 26 | 704 | 0.2+ | 1.1− | 2001 10 23 | 704 | 0.4+ | 0.3− | 2006 09 11 | 703 | 1.1+ | 0.3− | |
| 2001 09 26 | 704 | 0.4− | 0.9− | 2001 10 23 | 704 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 1.3− | 0.1− | |
| 2001 09 26 | 704 | 0.0 | 1.1+ | 2001 10 23 | 704 | 0.5+ | 0.6+ | 2006 09 11 | 703 | 0.6− | 1.2+ | |
| 2001 09 26 | 704 | 0.1+ | 0.6− | 2001 10 23 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.2− | |
| 2001 09 27 | 704 | 0.1− | 0.6− | 2001 10 23 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.3+ | |
| 2001 09 27 | 704 | 0.5+ | 0.7− | 2001 10 24 | 691 | 0.1− | 0.5− | 2006 09 18 | 703 | 0.4+ | 0.0 | |
| 2001 09 27 | 704 | 0.7− | 0.5− | 2001 10 24 | 691 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.3− | 0.3− | |
| 2001 09 27 | 704 | (0.0 | 1.9−) | 2001 10 24 | 691 | 0.3− | 0.6− | 2006 09 30 | 699 | 0.6− | 1.5+ | |
| 2001 09 27 | 704 | 0.1− | 0.0 | 2001 10 24 | 704 | 0.1+ | 0.1− | 2006 09 30 | 699 | 0.3+ | 0.4+ | |
| 2001 10 12 | 699 | 0.8− | 0.1+ | 2001 10 24 | 704 | 0.6+ | 0.5+ | 2006 09 30 | 699 | (2.0+ | 1.0+) | |
| 2001 10 12 | 699 | 0.5− | 0.7+ | 2001 10 24 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 699 | 0.8+ | 1.0− | |
| 2001 10 12 | 699 | 0.3− | 1.0+ | 2001 10 24 | 704 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.4+ | 0.3+ | |
| 2001 10 12 | 699 | 0.7− | 0.4− | 2001 10 24 | 704 | 0.5− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.6+ | |
| 2001 10 13 | 704 | (1.0+ | 1.5+) | 2001 11 18 | 704 | 1.0+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.5+ | |
| 2001 10 13 | 704 | 0.3− | 0.2+ | 2001 11 18 | 704 | 1.2+ | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2001 10 13 | 704 | 0.4+ | 0.3− | 2001 11 18 | 704 | (0.5+ | 1.6+) | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2001 10 13 | 704 | 0.9− | 0.8+ | 2001 11 20 | 704 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.3+ | |
| 2001 10 14 | 699 | 0.3− | 0.5− | 2001 11 20 | 704 | 0.2+ | 0.7+ | | | | | |

**(140151)∗ 2001 SS$_{164}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.41959 | | (2000.0) | | | |
| $n$ | 0.18648392 | $\omega$ | 96.62877 | | +0.49507927 | +0.86595276 |
| $a$ | 3.0341831 | $\Omega$ | 203.46352 | | −0.85080037 | +0.46664188 |
| $e$ | 0.0833769 | $i$ | 10.25257 | | −0.17616824 | +0.17991993 |
| $P$ | 5.29 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 699 | 0.3+ | 0.9+ | 2001 10 23 | 704 | 0.4+ | 1.3+ | 2006 08 24 | 704 | 1.1− | 0.5− | |
| 1999 04 11 | 699 | 1.0+ | 1.5+ | 2001 10 24 | 704 | 0.0 | 0.4− | 2006 08 24 | 704 | 0.3− | 0.7− | |
| 1999 04 11 | 699 | 0.3+ | 1.0+ | 2001 10 24 | 704 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 0.5− | 0.0 | |
| 2000 06 08 | 704 | 0.4+ | 1.8+ | 2001 10 24 | 704 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.1− | |
| 2000 06 08 | 704 | 0.1− | 0.1− | 2001 10 24 | 704 | 0.3− | 0.6+ | 2006 08 30 | 704 | 0.1+ | 0.9− | |
| 2000 06 08 | 704 | 0.3+ | 0.7+ | 2001 10 24 | 704 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.8+ | 1.2− | |
| 2000 06 08 | 704 | 0.5− | 1.1+ | 2001 10 25 | 644 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.7− | |
| 2001 09 17 | 704 | 0.3− | 0.9+ | 2001 10 25 | 644 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.5+ | 1.1− | |
| 2001 09 17 | 704 | 0.0 | 0.6+ | 2001 10 25 | 644 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.0 | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.8− | 0.3+ | 2001 10 26 | 704 | (0.5+ | 1.7−) | 2006 09 06 | 644 | 0.0 | 0.0 |
| 2001 09 20 | 704 | (2.0+ | 0.1−) | 2001 10 26 | 704 | 0.3+ | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | (1.9+ | 0.2−) | 2001 10 26 | 704 | 1.0+ | 0.7+ | 2006 09 15 | 704 | 0.3+ | 0.2+ |
| 2001 09 20 | 704 | 1.3+ | 0.1+ | 2001 10 26 | 704 | 0.8− | 0.9+ | 2006 09 15 | 704 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.7+ | 0.8− | 2001 10 26 | 704 | 1.1+ | 0.4+ | 2006 09 15 | 704 | 0.5− | 0.8+ |
| 2001 09 21 | 699 | 0.3− | 0.5− | 2001 11 09 | 704 | 1.4+ | 0.4+ | 2006 09 15 | 704 | 0.0 | 0.3+ |
| 2001 09 21 | 699 | 0.9− | 0.4+ | 2001 11 09 | 704 | 1.2+ | 0.6+ | 2006 09 17 | 703 | 0.1− | 0.5+ |
| 2001 09 21 | 699 | 0.4− | 0.7+ | 2001 11 09 | 704 | 0.9+ | 0.7+ | 2006 09 17 | 703 | 0.6− | 0.2+ |
| 2001 09 21 | 699 | 0.5− | 0.3− | 2001 11 09 | 704 | 0.9+ | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.5+ |
| 2001 09 22 | 699 | 0.1− | 0.3− | 2001 11 09 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 703 | 0.5+ | 0.3+ |
| 2001 09 22 | 699 | 0.2+ | 0.1+ | 2001 11 15 | 608 | 0.6− | 1.5− | 2006 09 18 | 704 | 0.7+ | 0.1+ |
| 2001 09 22 | 699 | 0.5+ | 0.2+ | 2001 11 15 | 608 | 1.1− | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.3− |
| 2001 09 22 | 699 | 0.5+ | 0.3+ | 2001 11 15 | 608 | 1.1− | 0.2+ | 2006 09 18 | 704 | 0.2+ | 0.1+ |
| 2001 09 26 | 704 | 0.6− | 0.1− | 2001 11 20 | 704 | 0.0 | 0.7+ | 2006 09 18 | 704 | 0.5+ | 0.3+ |
| 2001 09 26 | 704 | 0.3+ | 0.0 | 2001 11 20 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 704 | 0.1− | 0.2+ |
| 2001 09 26 | 704 | 0.1− | 0.6− | 2001 11 20 | 704 | 0.6+ | 0.0 | 2006 09 19 | 699 | 0.4− | 0.5+ |
| 2001 09 26 | 704 | 0.2− | 0.2− | 2001 11 20 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.5+ |
| 2001 09 26 | 704 | 0.7− | 0.2− | 2001 11 20 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.1+ |
| 2001 09 27 | 644 | 0.1− | 0.7+ | 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.3+ |
| 2001 09 27 | 644 | 0.2+ | 0.8+ | 2001 11 21 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 09 27 | 644 | 0.4+ | 0.8+ | 2001 11 21 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2001 10 13 | 704 | 1.1− | 0.7− | 2001 11 21 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.8− | 0.3− | 2001 11 21 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.6+ |
| 2001 10 13 | 704 | 0.3− | 0.3− | 2002 01 02 | 644 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.2− | 0.3− |
| 2001 10 13 | 704 | 0.3− | 0.9− | 2002 01 02 | 644 | 0.4− | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.5+ |
| 2001 10 13 | 704 | (2.3− | 1.1−) | 2002 01 02 | 644 | 0.0 | 0.6+ | 2006 09 25 | 704 | 0.2+ | 0.2− |
| 2001 10 14 | 699 | 1.0− | 0.1+ | 2004 02 26 | 704 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.2− |
| 2001 10 14 | 699 | 0.5− | 0.2+ | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 699 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.8+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 699 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | (0.3− | 1.9−) | 2004 02 26 | 704 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.4+ |
| 2001 10 17 | 704 | (0.5− | 2.1−) | 2004 03 16 | 703 | 0.9+ | 0.5+ | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 2001 10 17 | 704 | (0.1− | 1.8−) | 2004 03 16 | 703 | 0.4− | 0.9+ | 2006 09 29 | 704 | 0.4− | 1.2+ |
| 2001 10 17 | 704 | (0.1− | 1.8−) | 2004 03 16 | 703 | 0.4+ | 1.2+ | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 2001 10 17 | 704 | 0.6− | 1.4− | 2004 03 16 | 703 | 0.0 | 0.9+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2001 10 18 | 644 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.2− | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2001 10 18 | 644 | 0.5− | 0.1+ | 2004 03 19 | 704 | 0.3− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2004 03 19 | 704 | 0.4− | 1.0+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2001 10 20 | 704 | 0.6− | 0.2− | 2004 03 19 | 704 | 1.0+ | 0.7+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.8− | 0.2− | 2004 03 27 | 703 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 0.6− | 0.6− | 2004 03 27 | 703 | 0.2− | 1.3+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 1.0− | 0.5− | 2004 03 27 | 703 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 20 | 704 | 0.9− | 1.0− | 2004 03 27 | 703 | 0.0 | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | 0.6− | 0.1+ | 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2001 10 22 | 704 | 0.4− | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2001 10 22 | 704 | 0.7− | 0.1+ | 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.6+ | 1.2+ | 2005 06 03 | E12 | 0.1− | 1.0+ | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2001 10 23 | 704 | 0.5+ | 1.4+ | 2005 06 03 | E12 | 0.6− | 1.1+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.2+ | 1.2+ | 2005 06 03 | E12 | 0.7− | 1.4+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.5+ | 0.8+ | 2006 08 24 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.1− |

**(140152)∗ 2001 SS$_{165}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.38943 | | (2000.0) | | | |
| $n$ | 0.21530779 | $\omega$ | 139.74499 | | −0.49865575 | −0.86440746 |
| $a$ | 2.7569542 | $\Omega$ | 339.90666 | | +0.73932666 | −0.38538904 |
| $e$ | 0.1270869 | $i$ | 10.79741 | | +0.45248043 | −0.32291643 |
| $P$ | 4.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.3+ | 0.1− | 2001 09 28 | 644 | 0.8+ | 0.3+ | 2003 01 13 | 704 | 0.6+ | 0.2− |
| 2001 08 23 | 691 | 0.2+ | 0.1+ | 2001 10 19 | 644 | 0.3+ | 0.4+ | 2003 01 13 | 704 | 0.6+ | 0.6− |
| 2001 08 23 | 691 | 0.2+ | 0.1+ | 2001 10 19 | 644 | 0.3− | 1.0+ | 2003 01 13 | 704 | 0.4+ | 0.5− |
| 2001 09 10 | 333 | 0.5− | 0.2+ | 2001 10 19 | 644 | 0.5− | 0.5+ | 2003 01 31 | 704 | 1.0− | 0.4− |
| 2001 09 10 | 333 | 0.7− | 0.4− | 2001 10 21 | 704 | (0.6+ | 1.8+) | 2003 01 31 | 704 | 1.2− | 0.3− |
| 2001 09 10 | 333 | 1.0− | 0.1− | 2001 10 21 | 704 | 0.4+ | 0.2+ | 2003 01 31 | 704 | 1.1− | 0.3− |
| 2001 09 10 | 333 | 0.4− | 0.2− | 2001 10 21 | 704 | 0.9+ | 1.2+ | 2003 03 06 | 704 | 0.2+ | 0.4+ |
| 2001 09 18 | 699 | 0.2+ | 0.9+ | 2001 10 21 | 704 | 0.1− | 1.3+ | 2003 03 06 | 704 | 0.6+ | 0.6+ |
| 2001 09 18 | 699 | 0.5− | 0.1+ | 2001 11 18 | 645 | 0.1+ | 0.2− | 2003 03 06 | 704 | 0.1+ | 0.3+ |
| 2001 09 18 | 699 | 0.7− | 0.9+ | 2001 11 18 | 645 | 0.1+ | 0.2− | 2003 03 06 | 704 | 0.9+ | 0.4+ |
| 2001 09 18 | 699 | 0.7− | 0.7− | 2002 12 06 | 704 | (1.7+ | 1.2+) | 2003 03 06 | 704 | 0.9+ | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.6− | 2002 12 06 | 704 | 0.7+ | 0.6+ | 2003 03 07 | 644 | 0.5+ | 0.5+ |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2002 12 06 | 704 | 1.1+ | 0.7+ | 2003 03 07 | 644 | 0.2+ | 0.4+ |
| 2001 09 19 | 704 | (1.8− | 0.5−) | 2002 12 15 | 704 | 0.1− | 0.4− | 2003 03 07 | 644 | 0.3+ | 0.4+ |
| 2001 09 19 | 704 | 1.4− | 0.5+ | 2002 12 15 | 704 | 1.2+ | 0.0 | 2005 07 03 | 644 | 0.4− | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2002 12 15 | 704 | 0.5+ | 0.0 | 2005 07 03 | 644 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.6+ | 2002 12 15 | 704 | 0.5− | 0.3+ | 2005 07 03 | 644 | 0.4− | 0.6+ |
| 2001 09 20 | 704 | 0.3− | 0.5+ | 2003 01 07 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.0 | 0.8− |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2003 01 07 | 704 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.4− |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2003 01 07 | 704 | 0.7− | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.7− |
| 2001 09 22 | 704 | 0.1− | 0.0 | 2003 01 07 | 704 | 0.9− | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 0.3− | 0.8+ | 2003 01 07 | 704 | 0.5− | 0.0 | 2006 09 28 | 703 | 0.9+ | 0.5+ |
| 2001 09 22 | 704 | 0.7− | 0.9+ | 2003 01 10 | 704 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.3+ | 1.2− |
| 2001 09 22 | 704 | 0.5− | 0.2+ | 2003 01 10 | 704 | 0.2+ | 1.0+ | 2006 09 28 | 703 | 0.3− | 1.2− |
| 2001 09 22 | 704 | 0.2− | 0.0 | 2003 01 10 | 704 | 1.2− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.4− |
| 2001 09 23 | 704 | 0.3+ | 0.0 | 2003 01 10 | 704 | 0.2− | 0.4+ | 2006 10 15 | A24 | 0.8− | 0.8− |
| 2001 09 23 | 704 | 0.2+ | 0.2+ | 2003 01 10 | 704 | 0.0 | 0.6+ | 2006 10 15 | A24 | 0.3+ | 0.1+ |
| 2001 09 23 | 704 | 0.5+ | 0.2+ | 2003 01 10 | 704 | 0.2− | 0.8− | 2006 10 15 | A24 | 0.9+ | 0.5− |
| 2001 09 23 | 704 | 0.6+ | 0.2+ | 2003 01 10 | 704 | 0.1+ | 0.3+ | 2006 10 15 | A24 | 0.8+ | 0.1+ |
| 2001 09 23 | 704 | 0.5+ | 0.4+ | 2003 01 10 | 704 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.4− |
| 2001 09 24 | 704 | 0.1− | 0.2+ | 2003 01 10 | 704 | 1.0+ | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.4+ |
| 2001 09 24 | 704 | 0.5− | 0.5+ | 2003 01 10 | 704 | 0.1− | 0.6− | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2001 09 24 | 704 | 0.1− | 0.1− | 2003 01 10 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.0 |
| 2001 09 24 | 704 | 0.6− | 0.4− | 2003 01 10 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 704 | 0.0 | 0.4+ |
| 2001 09 24 | 704 | 0.2− | 0.5− | 2003 01 10 | 704 | 0.2− | 0.4− | 2006 10 20 | 704 | 0.3+ | 0.9− |
| 2001 09 25 | 704 | 0.0 | 0.4+ | 2003 01 10 | 704 | 0.5− | 0.1+ | 2006 10 20 | 704 | (2.3+ | 0.8+) |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2003 01 10 | 704 | 0.6+ | 1.0+ | 2006 10 20 | 704 | (1.7+ | 0.9−) |
| 2001 09 25 | 704 | 1.0− | 0.4+ | 2003 01 10 | 704 | 0.9− | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.9− |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2003 01 10 | 704 | 0.4+ | 0.7− | 2006 10 27 | 703 | 0.1+ | 0.4− |
| 2001 09 25 | 704 | 0.6− | 0.9− | 2003 01 10 | 704 | 0.1− | 0.4− | 2006 10 27 | 703 | 1.1− | 0.1− |
| 2001 09 25 | 704 | 0.4+ | 0.3− | 2003 01 10 | 704 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.6− | 0.2− | 2003 01 10 | 704 | 0.6− | 0.3− | 2006 11 15 | 703 | 0.5+ | 0.2+ |
| 2001 09 25 | 704 | 0.3+ | 0.0 | 2003 01 10 | 704 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.4+ | 0.1+ |
| 2001 09 25 | 704 | 0.9− | 0.5+ | 2003 01 10 | 704 | 0.5+ | 1.0+ | 2006 11 15 | 703 | 0.8+ | 0.4+ |
| 2001 09 28 | 644 | 1.2− | 1.3+ | 2003 01 13 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.7+ |
| 2001 09 28 | 644 | 0.3+ | 0.4+ | 2003 01 13 | 704 | 0.0 | 0.3− | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2001 09 28 | 644 | (1.7− | 1.5+) | 2003 01 13 | 704 | 0.2− | 0.3− | 2006 11 22 | 703 | 0.0 | 0.3+ |
| 2001 09 28 | 644 | 0.3+ | 0.4+ | 2003 01 13 | 704 | 0.3+ | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2001 09 28 | 644 | (1.5− | 1.7+) | 2003 01 13 | 704 | 0.8+ | 0.0 | 2006 11 22 | 703 | 0.2+ | 0.2− |

**(140153)∗ 2001 SX$_{166}$ = 1999 GN$_3$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31426)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.03374 | | (2000.0) | | | |
| $n$ | 0.20359958 | $\omega$ | 230.62564 | | +0.80678048 | −0.59077020 |
| $a$ | 2.8616606 | $\Omega$ | 165.57737 | | +0.55346334 | +0.74982524 |
| $e$ | 0.0737365 | $i$ | 2.25243 | | +0.20684193 | +0.29791386 |
| $P$ | 4.84 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 07 | 691 | 0.2+ | 0.0 | 2001 09 26 | 704 | 0.3− | 0.9+ | 2006 10 03 | 691 | 0.2+ | 0.1− |
| 1999 04 07 | 691 | 1.2+ | 1.1+ | 2001 09 26 | 704 | (0.3+ | 2.2+) | 2006 10 03 | 691 | 0.4− | 0.3− |
| 1999 04 07 | 691 | 0.1+ | 0.4+ | 2002 12 31 | 645 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.3− | 0.2− |
| 1999 04 09 | 691 | 0.9− | 0.8− | 2002 12 31 | 645 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.1+ | 0.1− |
| 1999 04 09 | 691 | 0.8− | 0.1+ | 2003 01 08 | 704 | 0.8+ | 0.2− | 2006 10 15 | 703 | (0.1− | 1.6−) |
| 1999 04 09 | 691 | 0.5− | 0.6− | 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.4+ |
| 1999 04 14 | 691 | 0.3+ | 0.9− | 2003 01 08 | 704 | 0.4− | 0.5− | 2006 10 15 | 703 | 0.2+ | 0.2− |
| 1999 04 14 | 691 | 0.4+ | 0.8− | 2004 03 16 | 691 | 0.8+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.7− |
| 1999 04 14 | 691 | 0.3+ | 0.7− | 2004 03 16 | 691 | 0.5+ | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 0.6− | 0.4− | 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.7+ | 0.3+ |
| 1999 04 17 | 691 | 1.5− | 1.0+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.5− | 0.2− |
| 1999 04 17 | 691 | 0.6− | 0.0 | 2004 04 13 | 691 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2004 04 13 | 691 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.8+ | 0.8+ | 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2001 09 20 | 704 | 0.8− | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2001 09 20 | 704 | 1.0− | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2001 09 21 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 691 | 0.8+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2001 09 21 | 704 | 0.9− | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.7+ | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 1.0+ | 0.5+ | 2006 09 25 | 691 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2001 09 21 | 704 | 0.5− | 1.2+ | 2006 09 29 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 691 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2001 09 26 | 704 | 0.6+ | 0.0 | 2006 09 29 | 691 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.5− |

**(140154)∗ 2001 SC$_{168}$ = 1999 CA$_{72}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20329)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.15624 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22040581 | $\omega$ | 334.73721 | | −0.92717883 | +0.36916915 |
| $a$ | 2.7142761 | $\Omega$ | 227.08186 | | −0.32725767 | −0.88089110 |
| $e$ | 0.0411521 | $i$ | 4.98751 | | −0.18232342 | −0.29621785 |
| $P$ | 4.47 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | (4.9− | 1.7−) | 2004 04 15 | 699 | 0.2− | 0.3− | 2005 08 24 | 644 | 0.2+ | 0.2− |
| 1997 11 06 | 704 | (3.5− | 0.8−) | 2004 04 15 | 699 | 0.1− | 0.8− | 2005 08 24 | 644 | 0.0 | 0.0 |
| 1997 11 06 | 704 | (3.5− | 1.1+) | 2004 04 15 | 333 | (1.5− | 0.3−) | 2005 08 24 | 644 | 0.2− | 0.0 |
| 1997 11 06 | 704 | (5.6− | 1.3−) | 2004 04 15 | 699 | 0.9+ | 1.0+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 1999 02 12 | 704 | 0.1− | 0.5+ | 2004 04 15 | 333 | 0.2− | 1.3+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1999 02 12 | 704 | 0.5+ | 0.5+ | 2004 04 15 | 699 | (1.6− | 0.5+) | 2006 10 27 | G96 | 0.5− | 0.1− |
| 1999 02 12 | 704 | 0.9+ | 1.9− | 2004 04 15 | 333 | (3.3− | 1.1+) | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 1999 02 12 | 704 | 0.8+ | 0.9+ | 2004 04 17 | 704 | 0.5+ | 1.2+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 1999 02 16 | 704 | 1.3+ | 1.5+ | 2004 04 17 | 704 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2+ |
| 1999 02 16 | 704 | 0.4+ | 0.1+ | 2004 04 17 | 704 | 0.3+ | 0.9+ | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 1999 02 16 | 704 | (4.7− | 0.1+) | 2004 04 19 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | (0.0 | 1.5+) |
| 2001 09 19 | 704 | (1.8− | 0.0 ) | 2004 04 19 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.3+ | 0.9+ |
| 2001 09 19 | 704 | 0.8− | 0.9+ | 2004 04 20 | 704 | 0.5+ | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.2− | 1.1+ | 2004 04 20 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 691 | 0.2+ | 0.5+ |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2004 04 20 | 704 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.6+ |
| 2001 09 20 | 704 | 0.7+ | 0.0 | 2004 05 12 | 699 | 1.0− | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.6− | 0.5+ | 2004 05 12 | 699 | 0.6+ | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.5− | 0.0 | 2004 05 12 | 699 | (1.6− | 0.1+) | 2006 11 16 | 703 | 1.0− | 0.4+ |
| 2001 09 23 | 704 | 1.1− | 1.2+ | 2004 05 12 | 699 | 0.1+ | 0.6+ | 2006 11 16 | 703 | 1.1− | 0.5− |
| 2001 09 23 | 704 | (1.8− | 1.2+) | 2004 05 15 | 691 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.1+ |
| 2001 09 23 | 704 | 1.1− | 0.2+ | 2004 05 15 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.8− |
| 2001 10 14 | 704 | 0.8− | 0.5− | 2004 05 15 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 1.4+ | 0.4− |
| 2001 10 14 | 704 | 0.3− | 1.1+ | 2004 05 19 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 2001 10 14 | 704 | 0.9− | 1.1+ | 2004 05 19 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 1.2− | 0.2+ |
| 2001 10 14 | 704 | 0.8− | 0.6− | 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | (0.0 | 1.7+) |
| 2001 10 14 | 704 | 0.3− | 0.5+ | 2005 06 29 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.5+ |
| 2001 10 19 | 644 | 0.4− | 0.9+ | 2005 06 29 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2001 10 19 | 644 | 0.6− | 0.6+ | 2005 06 29 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.3+ |
| 2001 10 19 | 644 | 0.3− | 1.1+ | 2005 06 29 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.8− | 0.6− |
| 2004 03 27 | 704 | 0.7+ | 0.2+ | 2005 06 29 | 644 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2004 03 27 | 704 | 0.7+ | 0.0 | 2005 06 29 | 644 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2004 03 27 | 704 | 0.8+ | 0.9+ | 2005 07 08 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2004 03 27 | 704 | (0.4+ | 1.6+) | 2005 07 08 | 691 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2004 04 12 | 699 | 0.3− | 0.5+ | 2005 07 08 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2004 04 12 | 699 | 0.2− | 0.6+ | 2005 07 29 | 644 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1− | 0.2+ |
| 2004 04 12 | 699 | 0.7− | 0.1− | 2005 07 29 | 644 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.3− | 0.2+ |
| 2004 04 12 | 699 | 0.2− | 0.2+ | 2005 07 29 | 644 | 0.1− | 0.1− | | | | |

**(140155)∗ 2001 SE$_{168}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.58973 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.20300468 | $\omega$ | 260.16067 | | +0.71970890 | +0.69303877 |
| $a$ | 2.8672486 | $\Omega$ | 55.95412 | | −0.61578402 | +0.66476534 |
| $e$ | 0.0536324 | $i$ | 2.86595 | | −0.32066985 | +0.27889838 |
| $P$ | 4.86 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.8+ | 0.3− | 2001 11 21 | 704 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.7− | 0.6− |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2001 11 21 | 704 | 0.5− | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.4+ | 0.4− | 2001 11 21 | 704 | 0.4− | 0.2− | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2003 01 26 | 644 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2003 01 26 | 644 | 0.4+ | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2003 01 26 | 644 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.5+ | 1.2+ | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 10 28 | G96 | 0.4− | 0.8− |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2004 03 19 | 704 | 0.5+ | 1.4+ | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2004 03 19 | 704 | (0.6+ | 2.0+) | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 09 21 | 704 | (1.6+ | 1.5+) | 2004 03 19 | 704 | 1.1+ | 1.0+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2001 09 21 | 704 | 0.9+ | 1.1+ | 2004 04 11 | 644 | 0.6+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | (0.3− | 2.1+) | 2004 04 11 | 644 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.6+ | 0.1− | 2004 04 11 | 644 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.5− | 0.5− | 2004 04 12 | 699 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.4− | 0.4− | 2004 04 12 | 699 | 0.8− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.4+ | 1.4+ | 2004 04 12 | 699 | 0.7− | 0.8− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 10 18 | 644 | (0.2+ | 1.8+) | 2004 04 12 | 699 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2001 10 18 | 644 | 0.0 | 1.4+ | 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.1+ | 0.3− | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 0.1− | 0.2− | 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.4− | 0.3+ |
| 2001 10 20 | 704 | 0.0 | 0.3− | 2004 04 16 | 644 | 0.5+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.3− | 0.1+ | 2004 04 16 | 644 | 0.5+ | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.3+ | 0.0 | 2004 04 16 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.2+ |
| 2001 10 23 | 704 | 0.1− | 0.3− | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.3+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.5+ |
| 2001 10 23 | 704 | 0.2+ | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2001 10 24 | 704 | 0.8− | 0.5+ | 2004 04 25 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 10 24 | 704 | 0.4− | 0.6− | 2004 04 25 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.9− | 0.6− |
| 2001 10 24 | 704 | 0.0 | 0.7− | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 10 24 | 704 | (1.8− | 2.0−) | 2005 07 07 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2001 10 24 | 704 | 0.6+ | 0.4− | 2005 07 07 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 10 26 | 704 | 0.8− | 0.6+ | 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.9− |
| 2001 10 26 | 704 | 1.1− | 0.4+ | 2005 07 11 | 699 | 0.9+ | 0.9+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2001 10 26 | 704 | 0.5− | 0.4+ | 2005 07 11 | 699 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.6+ |
| 2001 11 14 | 691 | 0.1− | 0.0 | 2005 07 11 | 699 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2001 11 14 | 691 | 0.4− | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.7+ |
| 2001 11 14 | 691 | 0.4− | 0.1+ | 2005 07 11 | 699 | 1.1− | 0.4− | 2006 11 17 | 703 | 1.0+ | 1.0+ |
| 2001 11 20 | 704 | 0.6+ | 0.2− | 2005 07 11 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2005 07 11 | 691 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.4+ | 0.4− |
| 2001 11 20 | 704 | 0.9+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 1.0+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2001 11 20 | 704 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.1− | | | | |

**(140156)∗ 2001 SH$_{168}$ = 2001 SU$_6$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. B. G. Marsden (d, *MPO* 21170)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.75436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19043201 | $\omega$ | 56.67267 | | +0.55995600 | −0.82851959 | |
| $a$ | 2.9920998 | $\Omega$ | 359.26424 | | +0.69410188 | +0.47051417 | |
| $e$ | 0.0847360 | $i$ | 9.57457 | | +0.45240674 | +0.30359793 | |
| $P$ | 5.18 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.3+ | 0.4− | 2001 10 14 | 704 | 0.1+ | 1.3+ | 2004 04 21 | 704 | 1.0+ | 1.1+ |
| 2001 09 10 | 704 | 0.1+ | 0.4− | 2001 10 14 | 104 | 0.4+ | 1.2+ | 2006 08 28 | 703 | (0.9− | 1.6+) |
| 2001 09 10 | 704 | 0.3− | 1.1+ | 2001 10 14 | 104 | 0.5− | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 2001 09 18 | 691 | 1.2− | 0.2+ | 2001 10 14 | 104 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.4− |
| 2001 09 18 | 691 | 1.1− | 0.2+ | 2001 10 15 | 704 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.6+ |
| 2001 09 18 | 691 | 1.1− | 0.4− | 2001 10 15 | 704 | 0.3+ | 0.1− | 2006 09 15 | 704 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2001 10 15 | 704 | 0.7+ | 0.1+ | 2006 09 15 | 704 | 1.3− | 1.1+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2001 10 15 | 704 | 0.4+ | 0.5− | 2006 09 15 | 704 | 0.1− | 0.8+ |
| 2001 09 19 | 704 | 0.5− | 0.1+ | 2001 10 15 | 704 | 0.3+ | 0.2+ | 2006 09 15 | 704 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2001 10 15 | 104 | 0.5+ | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.4+ |
| 2001 09 19 | 704 | 1.1− | 0.2− | 2001 10 15 | 104 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.8− | 0.5+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2001 10 15 | 104 | 0.1− | 0.9− | 2006 09 17 | 704 | 0.2− | 0.6+ |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2001 10 17 | 704 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.2− |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2001 10 17 | 704 | 0.8+ | 0.2+ | 2006 09 17 | 704 | 0.5+ | 0.6+ |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2001 10 17 | 704 | 0.6+ | 0.3− | 2006 09 17 | 291 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.6− | 2001 10 17 | 704 | 0.0 | 0.8− | 2006 09 17 | 291 | 0.0 | 0.1− |
| 2001 09 20 | 704 | (2.0− | 0.8−) | 2001 10 17 | 704 | 0.5+ | 0.3− | 2006 09 17 | 291 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2001 10 17 | 704 | 0.8+ | 0.8+ | 2006 09 19 | 699 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2001 10 17 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 699 | 0.8+ | 0.7− |
| 2001 09 25 | 704 | 0.3+ | 0.6+ | 2001 10 17 | 704 | 0.1− | 0.8+ | 2006 09 19 | 699 | 0.4− | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2001 10 17 | 704 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.2+ | 1.1+ | 2001 10 21 | 704 | 0.1− | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2001 09 25 | 704 | 1.0− | 1.3− | 2001 10 21 | 704 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 2001 09 25 | 704 | 0.7+ | 0.3+ | 2001 10 21 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.3− |
| 2001 09 25 | 704 | 0.3+ | 0.3− | 2001 10 21 | 704 | 0.5+ | 0.5− | 2006 09 27 | 704 | 1.1+ | 1.0− |
| 2001 09 25 | 704 | 0.7+ | 0.3+ | 2001 10 21 | 704 | 0.8− | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.4− |
| 2001 09 25 | 704 | 0.0 | 0.1+ | 2001 11 20 | 699 | 0.5+ | 0.5+ | 2006 09 29 | 704 | (1.9+ | 0.5+) |
| 2001 09 25 | 649 | 0.1+ | 0.1− | 2001 11 20 | 699 | 0.4− | 0.9+ | 2006 09 29 | 704 | 0.4+ | 0.7− |
| 2001 09 25 | 649 | 0.1+ | 0.0 | 2001 11 20 | 699 | 0.5+ | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.2+ |
| 2001 09 25 | 649 | 0.1+ | 0.2− | 2001 11 20 | 699 | 1.1− | 0.3+ | 2006 09 29 | 704 | 0.6− | 0.2+ |
| 2001 09 26 | 704 | 0.3+ | 0.0 | 2003 01 05 | 699 | (1.6− | 1.2+) | 2006 10 01 | 704 | 0.5− | 0.6+ |
| 2001 09 26 | 704 | 0.2+ | 0.4− | 2003 01 05 | 699 | 0.6− | 0.8+ | 2006 10 01 | 704 | 0.6+ | 0.3+ |
| 2001 09 26 | 704 | 0.5− | 0.4− | 2003 01 05 | 699 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.7+ | 0.2+ |
| 2001 09 26 | 704 | 0.0 | 0.7− | 2003 01 05 | 699 | 0.0 | 0.5− | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 2001 09 26 | 704 | 0.2+ | 0.2+ | 2003 01 10 | 704 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2001 09 29 | 046 | 0.1− | 0.3+ | 2003 01 10 | 704 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2001 09 29 | 046 | 0.4+ | 0.0 | 2003 01 10 | 704 | 0.4+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2001 09 29 | 046 | 0.2− | 0.1− | 2003 01 10 | 704 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3− |
| 2001 09 29 | 046 | 0.0 | 0.1− | 2003 01 10 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2001 09 29 | 046 | 0.5+ | 0.1+ | 2003 01 10 | 644 | 0.9+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2001 10 07 | 644 | 0.3+ | 0.7+ | 2003 01 10 | 644 | 0.8+ | 0.3+ | 2006 10 17 | 703 | 0.7− | 1.3− |
| 2001 10 07 | 644 | 0.4+ | 0.5+ | 2003 01 10 | 644 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 1.4− |
| 2001 10 07 | 644 | 0.6+ | 1.0+ | 2003 01 29 | 645 | 0.1− | 0.1− | 2006 10 17 | 703 | (1.4− | 2.6−) |
| 2001 10 12 | 699 | 0.3− | 0.8+ | 2003 01 29 | 645 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.2+ | 1.4− |
| 2001 10 12 | 699 | 0.3− | 0.7+ | 2003 01 31 | 699 | 0.1+ | 0.5− | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2001 10 12 | 699 | 0.4− | 0.3+ | 2003 01 31 | 699 | 1.0+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2001 10 12 | 699 | 1.4− | 0.3− | 2003 01 31 | 699 | 0.2− | 0.3− | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2001 10 13 | 104 | (1.7+ | 4.4−) | 2003 01 31 | 699 | 0.7− | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.7− |
| 2001 10 13 | 104 | (2.8− | 5.2+) | 2003 03 07 | 644 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2001 10 13 | 104 | (3.4− | 1.0−) | 2003 03 07 | 644 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.5+ | 0.7− |
| 2001 10 14 | 704 | 0.7+ | 0.0 | 2003 03 07 | 644 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.8− |
| 2001 10 14 | 704 | 0.8+ | 1.1+ | 2004 04 21 | 704 | 0.1− | 1.0+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2001 10 14 | 704 | 0.2+ | 1.1+ | 2004 04 21 | 704 | 0.1+ | 1.2+ | | | | |
| 2001 10 14 | 704 | 0.7+ | 0.6+ | 2004 04 21 | 704 | 1.3+ | 0.7+ | | | | |

**(140157)∗ 2001 SH$_{169}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.41042 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20292937 | $\omega$ | 301.10369 | | −0.11177062 | −0.99357032 | |
| $a$ | 2.8679580 | $\Omega$ | 155.29448 | | +0.92580116 | −0.11070851 | |
| $e$ | 0.0280040 | $i$ | 2.47343 | | +0.36110878 | −0.02369895 | |
| $P$ | 4.86 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5+ | 1.4+ | 2001 11 20 | 704 | 0.5− | 0.3− | 2004 05 21 | 704 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2001 11 20 | 704 | 0.4+ | 1.0+ | 2004 05 28 | 691 | 0.2+ | 0.6+ |
| 2001 09 19 | 704 | 0.6− | 0.3− | 2001 11 20 | 704 | (1.9− | 0.1−) | 2004 05 28 | 691 | 0.2+ | 0.4+ |
| 2001 09 19 | 704 | 0.4− | 0.7− | 2001 11 20 | 704 | 0.0 | 0.6− | 2004 05 28 | 691 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.1− | 0.1− | 2001 11 21 | 704 | 1.0− | 0.1− | 2005 05 19 | G96 | 0.4− | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.9+ | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2005 05 19 | G96 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 1.2+ | 2001 11 21 | 704 | 0.8− | 0.5− | 2005 05 19 | G96 | 0.4− | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2001 11 21 | 704 | 0.0 | 0.3− | 2005 05 19 | G96 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.7− | 0.4+ | 2003 01 27 | 704 | 0.3− | 0.1− | 2005 06 30 | 691 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2003 01 27 | 704 | 0.3− | 1.1+ | 2005 06 30 | 691 | 0.2− | 0.6+ |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2003 01 27 | 704 | 0.6− | 0.7− | 2005 06 30 | 691 | 0.3− | 0.4+ |
| 2001 10 17 | 704 | 0.9− | 0.2− | 2003 01 27 | 704 | (0.5+ | 2.2+) | 2006 09 30 | G96 | 0.3+ | 0.1+ |
| 2001 10 17 | 704 | 0.4− | 0.5+ | 2003 01 27 | 704 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.5+ | 0.2+ |
| 2001 10 17 | 704 | 0.3− | 1.1+ | 2003 01 29 | 291 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2001 10 17 | 704 | (1.2− | 1.6+) | 2003 01 29 | 291 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2001 10 18 | 704 | 0.2− | 0.6− | 2003 01 29 | 291 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.1+ | 0.4− |
| 2001 10 18 | 704 | 0.6− | 0.5− | 2003 01 30 | 704 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.4− |
| 2001 10 18 | 704 | 0.6− | 0.4− | 2003 01 30 | 704 | 0.5− | 0.6+ | 2006 11 02 | 703 | 0.4− | 0.3− |
| 2001 10 18 | 704 | 0.2+ | 0.6+ | 2003 01 30 | 704 | 0.7− | 0.2+ | 2006 11 02 | 703 | 0.5+ | 0.5− |
| 2001 10 18 | 644 | 0.2− | 0.0 | 2003 01 30 | 704 | (1.6− | 1.2+) | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2003 01 30 | 704 | 0.7+ | 1.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 10 18 | 644 | 0.4− | 0.1− | 2003 01 31 | 704 | 0.8− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2003 01 31 | 704 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.5− | 1.1+ | 2003 01 31 | 704 | 0.7− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 1.1+ | 2003 01 31 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2001 10 23 | 704 | 0.8− | 1.0+ | 2003 02 03 | 704 | 0.4+ | 1.2+ | 2006 11 09 | 644 | 0.3− | 0.6+ |
| 2001 10 24 | 704 | 0.1+ | 1.3+ | 2003 02 03 | 704 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.2+ | 2003 02 03 | 704 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.1+ | 0.9+ | 2003 02 03 | 704 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2001 10 24 | 704 | 0.3− | 0.7+ | 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2001 10 25 | 644 | 0.6− | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 1.1− | 1.1− |
| 2001 10 25 | 644 | 0.4− | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.6− |
| 2001 10 25 | 644 | 0.4− | 0.2− | 2004 05 12 | 699 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 2001 10 26 | 691 | 0.1+ | 0.1+ | 2004 05 12 | 699 | 0.2+ | 1.2+ | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2001 10 26 | 691 | 0.2+ | 0.2− | 2004 05 12 | 699 | 0.9− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.7− |
| 2001 10 26 | 691 | 0.1+ | 0.1+ | 2004 05 12 | 699 | 0.3+ | 1.0+ | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2001 11 11 | 291 | 0.0 | 0.0 | 2004 05 21 | 704 | (0.1+ | 1.6+) | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2001 11 11 | 291 | 0.4+ | 0.0 | 2004 05 21 | 704 | (0.7+ | 2.1+) | 2006 11 21 | 704 | 1.0+ | 0.7+ |
| 2001 11 11 | 291 | 1.0+ | 0.3+ | 2004 05 21 | 704 | 0.8+ | 0.6+ | 2006 11 21 | 704 | 0.4+ | 0.3+ |

**(140158)∗ 2001 SX$_{169}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.35073 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.63039019 | $\omega$ | 42.57911 | | −0.98281529 | −0.18123559 | |
| $a$ | 1.3470894 | $\Omega$ | 126.94618 | | +0.15535848 | −0.91464366 | |
| $e$ | 0.4608003 | $i$ | 2.51283 | | +0.09968871 | −0.36135943 | |
| $P$ | 1.56 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 644 | 0.6+ | 0.3− | 2003 11 29 | 291 | 0.1+ | 0.7+ | 2006 10 30 | 151 | 0.6+ | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2003 11 29 | 704 | 0.5+ | 0.1+ | 2006 10 30 | 151 | 0.3+ | 0.5− |
| 2001 09 19 | 704 | 0.5− | 0.9− | 2003 11 29 | 291 | 0.3+ | 0.2+ | 2006 10 30 | 151 | 0.5+ | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2003 11 29 | 291 | 0.2− | 0.7+ | 2006 10 30 | 151 | 0.8+ | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.9− | 2003 11 29 | 704 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.4− | 0.3− | 2003 11 29 | 704 | 0.8+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 649 | 0.5+ | 0.1+ | 2003 11 29 | 704 | 0.6+ | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 2001 09 20 | 649 | 0.2− | 0.9− | 2004 07 17 | 711 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 2001 09 20 | 704 | 0.4− | 0.9+ | 2004 07 17 | 711 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 09 20 | 649 | 0.5+ | 0.6+ | 2004 07 17 | 711 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.1− | | |
| 2001 09 20 | 704 | 0.5− | 0.6− | 2004 08 06 | 644 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2004 08 06 | 644 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 23 | 658 | 0.9− | 0.2+ | 2004 08 06 | 644 | (2.1+ | 1.5+) | 2006 11 13 | 703 | 0.3+ | 0.1+ | | |
| 2001 09 23 | 658 | 0.4+ | 0.7+ | 2004 09 17 | 291 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.3+ | | |
| 2001 09 23 | 658 | 0.3+ | 0.2+ | 2004 09 17 | 291 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.0 | | |
| 2001 09 25 | 649 | 0.9− | 0.4+ | 2004 09 17 | 291 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.5− | | |
| 2001 09 25 | 649 | 0.0 | 0.1+ | 2004 11 05 | 291 | 0.8− | 0.5+ | 2006 11 13 | 703 | 0.9− | 0.0 | | |
| 2001 10 11 | 696 | 0.2− | 0.1− | 2004 11 05 | 291 | 0.3− | 1.1+ | 2006 11 13 | 130 | 0.7+ | 0.5− | | |
| 2001 10 11 | 696 | 0.4+ | 0.3− | 2006 09 22 | 693 | 0.0 | 0.0 | 2006 11 13 | 130 | 0.2+ | 0.3− | | |
| 2001 10 12 | 474 | 0.7+ | 0.2− | 2006 09 22 | 693 | 0.1− | 0.1− | 2006 11 13 | 130 | 0.2− | 0.4− | | |
| 2001 10 12 | 474 | 0.2− | 0.5− | 2006 09 22 | 693 | 0.1+ | 0.1− | 2006 11 13 | 130 | 0.1+ | 0.4− | | |
| 2001 10 12 | 474 | 0.5− | 0.0 | 2006 09 22 | 693 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.3+ | 0.3− | | |
| 2001 10 12 | 474 | 0.2− | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 14 | 704 | 0.3+ | 0.2− | | |
| 2001 10 12 | 474 | 0.8− | 0.9+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 14 | 704 | 0.0 | 0.3− | | |
| 2003 10 24 | 704 | 0.4− | 1.3+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 14 | 644 | 0.0 | 0.0 | | |
| 2003 10 24 | 704 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 11 14 | 704 | 0.3+ | 0.1− | | |
| 2003 10 24 | 704 | 1.0− | 0.6− | 2006 10 12 | 644 | 0.4+ | 0.1+ | 2006 11 14 | 644 | 0.2+ | 0.1+ | | |
| 2003 10 24 | 704 | 0.6− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.2+ | 0.4− | | |
| 2003 10 25 | A50 | 1.2+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 14 | 644 | 0.2+ | 0.2− | | |
| 2003 10 25 | A50 | 0.8− | 0.6− | 2006 10 16 | 185 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.1+ | 1.0+ | | |
| 2003 10 25 | A50 | 0.0 | 0.2− | 2006 10 16 | 185 | 0.9− | 1.3− | 2006 11 17 | 704 | 0.4− | 0.8+ | | |
| 2003 10 25 | A50 | 0.2+ | 0.0 | 2006 10 16 | 185 | 0.0 | 0.6− | 2006 11 17 | 704 | 0.7+ | 0.6+ | | |
| 2003 10 25 | A50 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.4− | 0.4+ | 2006 11 17 | 704 | 0.3− | 1.1+ | | |
| 2003 10 25 | A50 | 1.0+ | 0.9− | 2006 10 16 | 693 | 0.4+ | 0.1− | 2006 11 18 | 151 | 0.2− | 0.2− | | |
| 2003 10 25 | 246 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.8+ | 2006 11 18 | 151 | 0.2− | 0.0 | | |
| 2003 10 25 | 246 | 0.6− | 0.5+ | 2006 10 16 | 693 | 0.2+ | 0.1− | 2006 11 18 | 151 | 0.0 | 0.0 | | |
| 2003 10 25 | 246 | (0.2− | 1.8+) | 2006 10 16 | 693 | 0.1+ | 0.1− | 2006 11 18 | 151 | 0.0 | 0.0 | | |
| 2003 10 25 | 246 | 0.2+ | 0.1− | 2006 10 16 | 693 | 0.1+ | 0.2− | 2006 11 18 | 151 | 0.1− | 0.2+ | | |
| 2003 10 25 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 18 | 151 | 0.1+ | 0.0 | | |
| 2003 10 25 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 18 | 151 | 0.1− | 0.3− | | |
| 2003 10 25 | 704 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.3+ | | |
| 2003 10 25 | 704 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.6+ | | |
| 2003 10 25 | 704 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.3+ | | |
| 2003 10 25 | 704 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.5+ | | |
| 2003 10 25 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3− | 2006 11 21 | 704 | 1.0+ | 0.1+ | | |
| 2003 10 25 | 926 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.2+ | | |
| 2003 10 25 | 926 | 0.3− | 0.5− | 2006 10 22 | 691 | 0.5− | 0.6− | 2006 11 21 | 704 | 0.3− | 0.4+ | | |
| 2003 10 25 | 926 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.6− | 0.5− | 2006 11 21 | 704 | 0.3+ | 0.2+ | | |
| 2003 10 25 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.6− | 2006 11 21 | 704 | 0.4+ | 0.0 | | |
| 2003 11 28 | 699 | 0.3− | 0.6− | 2006 10 26 | A41 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2003 11 28 | 699 | 1.1− | 0.5+ | 2006 10 27 | A41 | 1.0− | 1.1− | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2003 11 28 | 699 | 0.4+ | 0.5− | 2006 10 27 | A41 | 0.6+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2003 11 28 | 699 | 0.2− | 0.4+ | 2006 10 30 | 151 | 1.1+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.4− | | |
| 2003 11 29 | 704 | 0.5+ | 0.5+ | 2006 10 30 | 151 | 1.4+ | 0.2− | | | | | | |

**(140159)∗ 2001 SK$_{171}$ = 2003 AV$_{29}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40638)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.63899 | | (2000.0) | | | |
| $n$ | 0.23311549 | $\omega$ | 350.96102 | | −0.67285157 | −0.73897679 |
| $a$ | 2.6147006 | $\Omega$ | 141.31498 | | +0.68212665 | −0.63774684 |
| $e$ | 0.2348064 | $i$ | 3.15590 | | +0.28631102 | −0.21723782 |
| $P$ | 4.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 31 | 691 | 0.2+ | 0.1− | 2003 01 04 | 704 | 0.7+ | 0.6+ | 2003 01 31 | 704 | 0.2+ | 0.5+ | | |
| 1995 03 31 | 691 | 0.2+ | 0.3+ | 2003 01 04 | 704 | 0.8+ | 0.0 | 2003 02 03 | 704 | 0.6+ | 0.7+ | | |
| 1995 03 31 | 691 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 1.2+ | 0.5+ | 2003 02 03 | 704 | 0.5+ | 0.6+ | | |
| 1995 04 25 | 691 | 0.2− | 0.5− | 2003 01 08 | 704 | (1.3− | 1.7+) | 2003 02 03 | 704 | 0.5+ | 0.4+ | | |
| 1995 04 25 | 691 | 0.3− | 0.1+ | 2003 01 08 | 704 | 1.2− | 0.9+ | 2003 02 03 | 704 | 0.2− | 0.1+ | | |
| 1995 04 25 | 691 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.6− | 0.5+ | 2003 02 03 | 704 | 0.3+ | 0.2+ | | |
| 1999 03 19 | 699 | 0.4+ | 0.8+ | 2003 01 08 | 704 | 0.2+ | 0.0 | 2003 02 06 | 608 | 0.6+ | 1.0− | | |
| 1999 03 19 | 699 | 0.7+ | 1.4+ | 2003 01 08 | 704 | 0.5− | 0.4+ | 2003 02 06 | 608 | 0.6+ | 0.1+ | | |
| 1999 03 19 | 699 | 1.3+ | 0.3+ | 2003 01 13 | 291 | 0.3− | 0.3− | 2003 02 06 | 608 | 0.7+ | 0.7− | | |
| 2001 09 16 | 704 | (0.3− | 1.9+) | 2003 01 13 | 291 | 0.4− | 0.2− | 2003 02 08 | 704 | 1.2− | 0.8− | | |
| 2001 09 16 | 704 | 0.2+ | 1.0+ | 2003 01 13 | 291 | 0.4− | 0.2− | 2003 02 08 | 704 | 0.1+ | 0.4− | | |
| 2001 09 16 | 704 | 0.2− | 0.7+ | 2003 01 25 | 699 | 0.1+ | 0.2+ | 2003 02 08 | 704 | 0.2− | 0.7− | | |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2003 01 25 | 699 | 0.1+ | 0.1+ | 2003 02 08 | 704 | 0.3+ | 0.1− | | |
| 2001 09 21 | 704 | 0.1− | 0.6− | 2003 01 25 | 699 | 0.0 | 0.5+ | 2005 10 01 | G96 | 0.1− | 0.2+ | | |
| 2001 09 21 | 704 | 0.5− | 0.2− | 2003 01 25 | 699 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.3− | 0.3+ | | |
| 2001 09 25 | 691 | 0.1+ | 0.8+ | 2003 01 27 | 699 | 1.3− | 0.8+ | 2005 10 01 | G96 | 0.4− | 0.0 | | |
| 2001 09 25 | 691 | 0.3− | 0.6+ | 2003 01 27 | 699 | 0.3+ | 0.1− | 2005 10 06 | G96 | 0.1− | 0.2+ | | |
| 2001 09 25 | 691 | 0.1− | 0.3+ | 2003 01 27 | 704 | 0.2− | 0.3− | 2005 10 06 | G96 | 0.3− | 0.1+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.9+ | 2003 01 27 | 704 | 0.0 | 0.4− | 2005 10 06 | G96 | 0.2+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.8+ | 2003 01 27 | 704 | 0.2− | 0.6− | 2005 10 06 | G96 | 0.6+ | 0.5+ | | |
| 2002 12 05 | 704 | (0.9+ | 2.4+) | 2003 01 27 | 704 | 0.2+ | 0.6− | 2006 11 18 | 691 | (1.3− | 2.4−) | | |
| 2002 12 05 | 704 | 0.4+ | 0.3− | 2003 01 27 | 699 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2002 12 05 | 704 | (0.3+ | 1.5+) | 2003 01 27 | 704 | 0.2− | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.2− | | |
| 2002 12 10 | 704 | 0.4− | 0.4+ | 2003 01 27 | 699 | 0.4+ | 0.7+ | 2006 11 22 | 691 | 0.2− | 0.1− | | |
| 2002 12 10 | 704 | 0.0 | 0.6+ | 2003 01 27 | 608 | 0.5− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.2− | | |
| 2002 12 10 | 704 | 0.9− | 0.4− | 2003 01 27 | 608 | 0.5− | 0.5− | 2006 11 22 | 691 | 0.2− | 0.3− | | |
| 2002 12 10 | 644 | 0.5+ | 0.4+ | 2003 01 27 | 608 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.1+ | | |
| 2002 12 10 | 644 | 0.3+ | 0.3+ | 2003 01 30 | 699 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.2− | | |
| 2002 12 10 | 644 | 0.5+ | 0.5+ | 2003 01 30 | 699 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.4− | | |
| 2002 12 28 | 699 | 0.0 | 0.5− | 2003 01 30 | 699 | 0.8+ | 0.1+ | 2006 11 29 | 704 | 1.5− | 0.4+ | | |
| 2002 12 28 | 699 | 0.3− | 0.8+ | 2003 01 30 | 699 | 0.5+ | 0.3+ | 2006 12 01 | 704 | 0.8+ | 0.4− | | |
| 2002 12 28 | 699 | 0.5− | 0.9+ | 2003 01 31 | 704 | 0.5+ | 0.5+ | 2006 12 01 | 704 | 0.4− | 0.6− | | |
| 2002 12 28 | 699 | 0.4+ | 0.4+ | 2003 01 31 | 704 | 0.1+ | 1.3+ | 2006 12 01 | 704 | 0.5+ | 0.1+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.2+ | 2003 01 31 | 704 | 0.4+ | 0.7+ | 2006 12 01 | 704 | 0.3+ | 0.4− | | |
| 2003 01 04 | 704 | 0.4+ | 0.2+ | 2003 01 31 | 704 | 0.4+ | 0.7+ | 2006 12 01 | 704 | 0.2+ | 0.1− | | |

**(140160)∗ 2001 SY$_{173}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.85008 | | (2000.0) | | | |
| $n$ | 0.21600303 | $\omega$ | 315.98486 | | +0.98539684 | −0.14015236 |
| $a$ | 2.7510352 | $\Omega$ | 52.31863 | | +0.16918972 | +0.86989048 |
| $e$ | 0.0759463 | $i$ | 7.01803 | | −0.01918072 | +0.47291422 |
| $P$ | 4.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 27 | 691 | 0.1− | 0.4+ | 2001 10 14 | 683 | 0.4− | 0.0 | 2005 07 03 | 644 | 0.1+ | 0.5+ | | |
| 1995 05 27 | 691 | 0.0 | 0.4+ | 2001 10 14 | 683 | (2.6+ | 0.6+) | 2005 07 03 | 644 | 0.2+ | 0.4+ | | |
| 1995 05 27 | 691 | 0.5+ | 0.3+ | 2001 10 16 | 704 | 0.0 | 0.4− | 2005 07 10 | E12 | 1.5− | 0.6− | | |
| 2001 09 16 | 704 | 0.3+ | 0.7+ | 2001 10 16 | 704 | 0.3− | 0.4− | 2005 07 10 | E12 | 0.1− | 0.4− | | |
| 2001 09 16 | 704 | 0.1− | 0.4+ | 2001 10 16 | 704 | 0.4− | 0.1+ | 2005 07 10 | E12 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 0.3− | 0.7+ | 2001 10 16 | 704 | 0.2+ | 0.1+ | 2005 07 10 | E12 | 0.4+ | 0.4− | | |
| 2001 09 16 | 704 | 1.0+ | 0.8+ | 2001 10 16 | 704 | 0.1− | 0.2+ | 2005 07 26 | 644 | 0.2+ | 0.6+ | | |
| 2001 09 17 | 699 | 0.7+ | 0.6+ | 2001 10 18 | 644 | 0.5− | 0.2− | 2005 07 26 | 644 | 0.4+ | 0.3+ | | |
| 2001 09 17 | 699 | 1.1+ | 0.9+ | 2001 10 18 | 644 | 0.4− | 0.1− | 2005 07 26 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 17 | 699 | (0.2+ | 1.6+) | 2001 10 18 | 644 | 0.1+ | 0.1− | 2005 08 04 | 644 | 0.1− | 0.4+ | | |
| 2001 09 17 | 699 | 0.8+ | 0.7− | 2001 10 24 | 704 | (2.1− | 0.1+) | 2005 08 04 | 644 | 0.1− | 0.2+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2001 10 24 | 704 | (1.9− | 0.6−) | 2005 08 04 | 644 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | 1.0− | 1.0+ | 2001 10 24 | 704 | 1.2− | 0.2− | 2005 08 04 | 644 | 0.3− | 0.1+ | | |
| 2001 09 21 | 704 | 0.4+ | 1.2+ | 2001 10 24 | 704 | (1.8− | 0.7+) | 2005 08 04 | 644 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2001 10 24 | 704 | (1.8− | 0.5−) | 2005 08 04 | 644 | 0.3− | 0.4+ | | |
| 2001 10 10 | 644 | 0.1+ | 0.1+ | 2001 10 25 | 644 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.5− | | |
| 2001 10 10 | 644 | 0.0 | 0.0 | 2001 10 25 | 644 | 0.5+ | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.2− | | |
| 2001 10 10 | 644 | 0.1− | 0.1− | 2001 10 25 | 644 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3− | 0.6− | | |
| 2001 10 11 | 683 | 0.6+ | 1.3+ | 2001 11 18 | 704 | 1.1− | 1.4− | 2006 09 27 | G96 | 0.7− | 0.4− | | |
| 2001 10 11 | 683 | 0.4+ | 0.8− | 2001 11 18 | 704 | 1.3− | 1.3+ | 2006 11 16 | 691 | 0.2+ | 0.0 | | |
| 2001 10 11 | 683 | (0.8+ | 1.9−) | 2001 11 18 | 704 | 0.2− | 0.9+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 12 | 699 | 0.1− | 0.6− | 2001 11 18 | 704 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.2+ | | |
| 2001 10 12 | 699 | 0.4− | 0.1+ | 2001 11 20 | 704 | 0.1+ | 0.4− | 2006 11 19 | 704 | 1.2− | 0.0 | | |
| 2001 10 12 | 699 | 0.3− | 0.2− | 2001 11 20 | 704 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.9− | 1.0− | | |
| 2001 10 12 | 699 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.7+ | 0.7− | 2001 11 20 | 704 | 0.4+ | 0.9− | 2006 11 19 | 704 | 0.8+ | 0.9+ |
| 2001 10 13 | 683 | 0.2+ | 0.6− | 2001 11 20 | 704 | 0.8− | 0.5+ | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2001 10 13 | 704 | 0.5+ | 1.1− | 2003 02 04 | 699 | (0.9− | 1.8+) | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 683 | 0.6+ | 0.6− | 2003 02 04 | 699 | (1.6+ | 1.8+) | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 683 | 0.6+ | 0.6− | 2003 02 04 | 699 | 0.0 | 0.2+ | 2006 11 30 | 691 | 0.3+ | 0.4+ |
| 2001 10 13 | 704 | (1.7− | 0.2−) | 2003 02 04 | 699 | 0.8+ | 0.7+ | 2006 11 30 | 691 | 0.3− | 0.2+ |
| 2001 10 13 | 704 | 0.3+ | 0.9− | 2005 07 03 | 644 | 0.5+ | 0.4+ | 2006 11 30 | 691 | 0.2− | 0.1+ |

**(140161)∗ 2001 SE$_{175}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.69405 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23657407 | $\omega$ | 322.95195 | | +0.32837601 | −0.94261997 | |
| $a$ | 2.5891544 | $\Omega$ | 107.80793 | | +0.88107731 | +0.28267631 | |
| $e$ | 0.0767344 | $i$ | 3.63158 | | +0.34039973 | +0.17765613 | |
| $P$ | 4.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.2− | 0.8− | 2001 10 19 | 699 | 0.1− | 0.2+ | 2005 08 26 | 644 | 0.3− | 0.0 |
| 2001 08 27 | 699 | 0.3+ | 0.5− | 2001 10 19 | 699 | 0.5− | 0.3− | 2005 08 28 | 691 | 0.0 | 0.1− |
| 2001 08 27 | 699 | 0.2− | 1.2+ | 2001 10 19 | 699 | 0.1+ | 0.3+ | 2005 08 28 | 691 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.9+ | 0.2+ | 2001 10 19 | 699 | 0.6− | 0.7+ | 2005 08 28 | 691 | 0.1− | 0.1+ |
| 2001 09 14 | 644 | 0.3+ | 0.1+ | 2001 10 24 | 644 | 0.0 | 0.0 | 2005 08 29 | 704 | 0.5+ | 0.4+ |
| 2001 09 14 | 644 | 0.2+ | 0.0 | 2001 10 24 | 644 | 0.2+ | 0.2+ | 2005 08 29 | 704 | 0.1+ | 0.0 |
| 2001 09 14 | 644 | 0.4+ | 0.1+ | 2001 10 24 | 644 | 0.3+ | 0.1+ | 2005 08 29 | 704 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 0.2+ | 0.2− | 2003 01 26 | 699 | (0.6− | 1.8−) | 2005 09 01 | 691 | 0.4− | 0.1+ |
| 2001 09 16 | 704 | 0.9+ | 0.2+ | 2003 01 26 | 699 | 0.3+ | 0.2+ | 2005 09 01 | 691 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.5− | 0.0 | 2003 01 26 | 699 | 0.6− | 0.9+ | 2005 09 01 | 691 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 0.8+ | 0.8+ | 2003 01 26 | 699 | 0.2− | 0.9− | 2005 09 11 | 691 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.5+ | 1.3− | 2003 01 26 | 608 | 0.4+ | 0.2− | 2005 09 11 | 691 | 0.3+ | 0.1+ |
| 2001 09 18 | 699 | 0.3− | 0.6+ | 2003 01 26 | 608 | 0.3+ | 0.4− | 2005 09 11 | 691 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2003 01 26 | 608 | 0.5+ | 0.2− | 2005 09 22 | 644 | 0.1− | 0.1+ |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2003 01 27 | 704 | 0.9+ | 0.5+ | 2005 09 22 | 644 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.8− | 0.8+ | 2003 01 27 | 704 | 0.2− | 0.7+ | 2005 09 22 | 644 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 1.4+ | 0.4+ | 2003 01 27 | 704 | 0.3+ | 0.6+ | 2005 09 23 | 703 | 0.6+ | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2003 01 27 | 704 | 0.1− | 0.2+ | 2005 09 23 | 703 | 0.6+ | 0.1− |
| 2001 09 19 | 704 | (1.6− | 0.1−) | 2003 01 27 | 704 | 0.2+ | 0.5+ | 2005 09 23 | 703 | 0.3− | 1.0− |
| 2001 09 21 | 704 | 1.3− | 0.5+ | 2003 01 30 | 699 | 0.3− | 0.4+ | 2005 09 23 | 703 | 0.3− | 1.0− |
| 2001 09 21 | 704 | 1.1− | 0.5+ | 2003 01 30 | 699 | 0.1− | 0.0 | 2005 09 24 | 644 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.9− | 0.2− | 2003 01 30 | 699 | 0.6− | 0.5+ | 2005 09 24 | 644 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | (1.7− | 0.1+) | 2003 01 30 | 699 | 0.0 | 0.9+ | 2005 09 24 | 644 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.8− | 0.2− | 2003 02 01 | 704 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.5+ | 1.1− |
| 2001 09 25 | 644 | 0.2+ | 0.5− | 2003 02 01 | 704 | 0.6+ | 1.2+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2001 09 25 | 644 | 0.1− | 0.1− | 2003 02 01 | 704 | 0.5+ | 1.0+ | 2006 10 31 | G96 | 0.5+ | 0.8− |
| 2001 09 25 | 644 | 0.5+ | 0.2− | 2003 02 01 | 704 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.7− |
| 2001 10 08 | 644 | 0.4+ | 1.1+ | 2003 02 01 | 704 | 0.8+ | 1.1+ | 2006 11 01 | G96 | 0.2− | 0.7− |
| 2001 10 08 | 644 | 0.9+ | 1.1+ | 2003 02 04 | 704 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 10 08 | 644 | 0.5+ | 1.1+ | 2003 02 04 | 704 | 0.3− | 1.0+ | 2006 11 01 | G96 | 0.3+ | 0.8− |
| 2001 10 13 | 704 | (0.4+ | 1.7−) | 2003 02 04 | 704 | 0.6− | 0.9+ | 2006 11 01 | G96 | 0.6− | 0.6− |
| 2001 10 13 | 704 | 0.4− | 0.2− | 2003 02 04 | 704 | 0.1− | 1.5+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2001 10 13 | 704 | 0.0 | 0.8− | 2003 02 04 | 704 | (1.5+ | 1.8+) | 2006 11 15 | G96 | 0.0 | 0.9− |
| 2001 10 13 | 704 | 1.2− | 0.4+ | 2003 03 06 | 704 | 1.4+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2001 10 16 | 644 | 0.6− | 0.2+ | 2003 03 06 | 704 | 0.5− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2001 10 16 | 644 | 0.5− | 0.0 | 2003 03 06 | 704 | 0.6+ | 0.8+ | 2006 11 27 | 703 | 0.2− | 0.3+ |
| 2001 10 16 | 644 | 0.4− | 0.0 | 2003 03 06 | 704 | 1.0+ | 0.4+ | 2006 11 27 | 703 | 1.9− | 1.8− |
| 2001 10 17 | 644 | 0.0 | 0.0 | 2003 03 06 | 704 | 0.1+ | 0.6+ | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2001 10 17 | 644 | 0.1− | 0.3− | 2005 07 31 | 644 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.8− | 1.1− |
| 2001 10 17 | 644 | 0.1− | 0.1− | 2005 07 31 | 644 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.7− |
| 2001 10 17 | 644 | 0.5− | 0.8+ | 2005 07 31 | 644 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2001 10 17 | 644 | 0.1− | 0.1− | 2005 08 26 | 644 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2001 10 17 | 644 | 0.3+ | 0.2+ | 2005 08 26 | 644 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.4− |

**(140162)∗ 2001 SP$_{176}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.34768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18712192 | $\omega$ | 348.52568 | | +0.17857885 | −0.97993428 | |
| $a$ | 3.0272824 | $\Omega$ | 91.14182 | | +0.90959648 | +0.13011004 | |
| $e$ | 0.1807630 | $i$ | 5.08033 | | +0.37515841 | +0.15099728 | |
| $P$ | 5.27 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 24 | 691 | 0.3− | 0.7− | 2001 10 22 | 704 | 0.5+ | 0.1+ | 2003 03 07 | 644 | 0.1+ | 0.7+ |
| 1993 04 24 | 691 | 0.2− | 0.5− | 2001 10 22 | 704 | 0.5+ | 0.5− | 2003 03 07 | 644 | 0.2+ | 0.9+ |
| 1993 04 24 | 691 | 0.1− | 0.1− | 2001 10 24 | 704 | (1.9+ | 2.3+) | 2003 03 08 | 704 | 0.8+ | 1.1+ |
| 1997 02 07 | 691 | 0.3− | 0.5− | 2001 10 24 | 704 | 0.9+ | 0.9+ | 2003 03 08 | 704 | 1.3+ | 0.1+ |
| 1997 02 07 | 691 | 0.6− | 1.4− | 2001 10 24 | 704 | 1.1+ | 1.1+ | 2003 03 08 | 704 | (0.2− | 2.0+) |
| 1997 02 07 | 691 | 0.2− | 1.0− | 2001 10 24 | 704 | 0.8+ | 0.7+ | 2003 03 08 | 704 | 0.2− | 1.3+ |
| 2001 09 16 | 704 | 1.3+ | 1.2+ | 2001 10 24 | 704 | 0.8− | 0.3+ | 2003 03 08 | 704 | 0.6+ | 1.3+ |
| 2001 09 16 | 704 | 0.5+ | 1.0− | 2001 10 24 | 644 | 0.6+ | 1.2+ | 2006 08 16 | 644 | 0.4− | 0.6+ |
| 2001 09 16 | 704 | (1.2+ | 2.4−) | 2001 10 24 | 644 | 0.5+ | 1.2+ | 2006 08 16 | 644 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 1.0+ | 0.6− | 2001 10 24 | 644 | 0.5+ | 1.1+ | 2006 08 16 | 644 | 0.3− | 0.4+ |
| 2001 09 17 | 699 | 0.4+ | 0.6− | 2001 11 18 | 704 | 0.1− | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.6+ |
| 2001 09 17 | 699 | (0.1− | 2.6−) | 2001 11 18 | 704 | 0.4− | 0.0 | 2006 08 29 | 691 | 0.3− | 0.5+ |
| 2001 09 17 | 699 | (2.4+ | 0.2+) | 2001 11 18 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 691 | (3.6+ | 0.2+) |
| 2001 09 17 | 699 | 0.1− | 0.1+ | 2001 11 18 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.1− | 0.7− |
| 2001 09 21 | 704 | 0.4− | 0.8− | 2001 11 18 | 704 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.1− |
| 2001 09 21 | 704 | 1.2− | 1.2− | 2001 11 20 | 704 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.3− | 0.6− |
| 2001 09 21 | 704 | 1.4− | 0.1− | 2001 11 20 | 704 | 0.8− | 0.5+ | 2006 09 14 | 703 | 1.0− | 1.1+ |
| 2001 09 21 | 704 | 0.9− | 0.5+ | 2001 11 20 | 704 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.4− | 0.2+ | 2001 11 20 | 704 | 1.2+ | 0.9+ | 2006 09 18 | 703 | 0.1− | 0.3− |
| 2001 09 25 | 704 | 0.8+ | 0.7− | 2001 12 19 | 704 | 0.1+ | 0.7− | 2006 09 18 | 703 | 0.2− | 0.2− |
| 2001 09 25 | 704 | 0.9− | 0.3− | 2001 12 19 | 704 | 1.4+ | 0.4− | 2006 09 18 | 703 | 0.2− | 0.2− |
| 2001 09 25 | 704 | 1.4+ | 0.1− | 2001 12 19 | 704 | (1.6+ | 0.1−) | 2006 09 25 | 699 | 0.0 | 0.8+ |
| 2001 09 27 | 644 | 0.1− | 0.1− | 2003 01 27 | 704 | 0.1− | 1.3+ | 2006 09 25 | 699 | 1.3− | 0.1− |
| 2001 09 27 | 644 | 0.1− | 0.1+ | 2003 01 27 | 704 | 0.7+ | 0.7+ | 2006 09 25 | 699 | 0.1+ | 0.2− |
| 2001 09 27 | 644 | 0.2+ | 0.1− | 2003 01 27 | 704 | 0.7+ | 1.0+ | 2006 09 25 | 699 | 1.3− | 0.6+ |
| 2001 10 10 | 644 | 0.1+ | 1.3− | 2003 01 27 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 704 | (1.4− | 2.3+) |
| 2001 10 10 | 644 | 0.3+ | 1.2− | 2003 01 27 | 704 | 0.0 | 1.1+ | 2006 09 26 | 704 | 1.4− | 1.0+ |
| 2001 10 10 | 644 | 0.1+ | 1.5− | 2003 02 01 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.2− | 0.4+ |
| 2001 10 12 | 699 | 0.6+ | 0.3+ | 2003 02 01 | 704 | 0.2− | 0.4− | 2006 09 26 | 704 | 1.1− | 1.0+ |
| 2001 10 12 | 699 | 0.2+ | 0.2+ | 2003 02 01 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | (1.1+ | 1.7−) |
| 2001 10 12 | 699 | 0.1+ | 0.3+ | 2003 02 01 | 704 | 0.1+ | 1.0− | 2006 10 02 | 703 | 0.6− | 0.5+ |
| 2001 10 12 | 699 | 0.1+ | 1.1+ | 2003 02 04 | 699 | 0.8+ | 0.3− | 2006 10 02 | 703 | 0.3− | 1.4+ |
| 2001 10 13 | 704 | 1.1+ | 0.7− | 2003 02 04 | 699 | 0.0 | 0.4− | 2006 10 02 | 703 | 0.5− | 0.7+ |
| 2001 10 13 | 704 | (1.7+ | 2.1−) | 2003 02 04 | 699 | 1.0+ | 0.3+ | 2006 10 02 | 703 | 0.2− | 1.0+ |
| 2001 10 13 | 704 | (1.6+ | 0.8−) | 2003 02 04 | 699 | (1.6+ | 0.2−) | 2006 10 02 | 703 | 0.1− | 0.2+ |
| 2001 10 13 | 704 | (1.8+ | 0.9−) | 2003 02 21 | 644 | 0.2− | 0.1+ | 2006 10 02 | 703 | 0.2− | 1.1+ |
| 2001 10 14 | 683 | (0.3− | 1.6+) | 2003 02 21 | 644 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.3− | 0.4+ |
| 2001 10 14 | 683 | (0.4+ | 1.7−) | 2003 02 21 | 644 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.1+ |
| 2001 10 14 | 683 | (2.5+ | 0.8+) | 2003 02 28 | 608 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 16 | 704 | 0.1− | 0.2+ | 2003 02 28 | 608 | 0.5− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 10 16 | 704 | 0.6+ | 0.0 | 2003 02 28 | 608 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 10 16 | 683 | (1.8− | 0.1+) | 2003 03 06 | 704 | 0.1+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 10 16 | 683 | (4.6− | 1.4−) | 2003 03 06 | 704 | 0.1− | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2001 10 16 | 683 | 0.4+ | 0.2− | 2003 03 06 | 704 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.5+ | 0.2− |
| 2001 10 16 | 704 | 0.3+ | 0.3+ | 2003 03 06 | 704 | 0.2+ | 1.1+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 10 16 | 704 | 0.3+ | 0.6+ | 2003 03 07 | 699 | 0.5− | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2001 10 16 | 644 | 0.1+ | 0.0 | 2003 03 07 | 699 | 1.2+ | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 10 16 | 644 | 0.2+ | 0.1− | 2003 03 07 | 699 | 1.1+ | 0.7+ | 2006 10 24 | 644 | 0.4− | 0.0 |
| 2001 10 16 | 644 | 0.2+ | 0.0 | 2003 03 07 | 699 | 0.8+ | 0.5+ | 2006 10 24 | 644 | 0.3− | 0.4− |
| 2001 10 22 | 704 | 1.0+ | 0.9− | 2003 03 07 | 644 | 0.2+ | 0.6+ | 2006 10 24 | 644 | 0.1− | 0.4− |

**(140163)∗ 2001 SM$_{177}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.66200 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21099648 | $\omega$ | 214.65584 | | +0.99790933 | −0.04449330 | |
| $a$ | 2.7943829 | $\Omega$ | 147.79684 | | +0.05744772 | +0.94294707 | |
| $e$ | 0.0867097 | $i$ | 5.04622 | | −0.02960962 | +0.32995631 | |
| $P$ | 4.67 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 14 | 691 | 0.5− | 0.1− | 2003 01 31 | 704 | (0.5− | 2.1+) | 2005 09 30 | G96 | 0.9− | 0.7+ |
| 1996 09 14 | 691 | 0.7− | 0.3− | 2003 01 31 | 704 | 0.4− | 0.8+ | 2005 09 30 | G96 | 0.5− | 0.4− |
| 1996 09 14 | 691 | 0.5− | 0.8− | 2003 01 31 | 704 | 0.5− | 0.7+ | 2005 09 30 | G96 | 0.6− | 0.2− |
| 1996 09 21 | 691 | 0.6+ | 0.4− | 2005 06 28 | 691 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.6+ | 0.1− |
| 1996 09 21 | 691 | 0.9+ | 0.5− | 2005 06 28 | 691 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 1996 09 21 | 691 | 0.5+ | 0.9− | 2005 06 28 | 691 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 0.5− | 1.3+ | 2005 06 29 | 691 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2005 06 29 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.6+ |
| 2001 09 16 | 704 | 1.3− | 0.2+ | 2005 06 29 | 691 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.2− | 2005 07 04 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 1.2− | 0.2+ |
| 2001 09 21 | 704 | 0.7+ | 0.7+ | 2005 07 04 | G96 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2005 07 04 | G96 | 0.4+ | 0.6− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.5− | 0.3+ | 2005 07 04 | G96 | 0.3− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 1.0− | 0.3+ | 2005 07 05 | 691 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 10 16 | 704 | 0.1− | 1.2+ | 2005 07 05 | 691 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.2+ |
| 2001 10 16 | 704 | 0.5+ | 1.1+ | 2005 07 05 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2001 10 16 | 704 | 0.9+ | 1.0+ | 2005 07 05 | 644 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 10 16 | 704 | 1.4+ | 1.0+ | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.1− | 0.1− |
| 2001 10 16 | 644 | 0.0 | 0.3− | 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2001 10 16 | 644 | 0.1+ | 0.3− | 2005 07 05 | 644 | 0.4− | 0.5+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2001 10 16 | 644 | 0.6+ | 0.6− | 2005 07 05 | 644 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2001 10 24 | 644 | 0.0 | 0.4+ | 2005 07 05 | 644 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 644 | 0.2+ | 0.7+ | 2005 07 10 | 691 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2001 10 24 | 644 | 0.1− | 0.5+ | 2005 07 10 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2001 11 18 | 704 | 0.1+ | 0.5− | 2005 07 10 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 1.7+ | 0.3+ |
| 2001 11 18 | 704 | 0.3− | 0.0 | 2005 07 30 | E12 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.2− | 0.3− |
| 2001 11 18 | 704 | 0.2− | 0.5+ | 2005 07 30 | E12 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.2− | 0.8+ |
| 2003 01 28 | 704 | (2.3+ | 0.5+) | 2005 07 30 | E12 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.7− | 0.5+ |
| 2003 01 28 | 704 | 1.1+ | 0.2− | 2005 07 30 | E12 | (2.3− | 1.2+) | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2003 01 28 | 704 | 0.9+ | 0.2+ | 2005 09 30 | G96 | 0.1+ | 0.2+ | | | | |

**(140164)∗ 2001 SX$_{177}$ = 2004 HZ$_{35}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61058)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.41578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19313949 | $\omega$ | 196.52684 | | +0.98129624 | −0.19114470 | |
| $a$ | 2.9640714 | $\Omega$ | 174.34276 | | +0.19216030 | +0.96554837 | |
| $e$ | 0.0768538 | $i$ | 13.39334 | | +0.01149349 | +0.17657875 | |
| $P$ | 5.10 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2− | 0.1+ | 2004 04 20 | E12 | 0.2+ | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.4+ | 0.4+ | 2004 04 20 | E12 | 1.3+ | 1.0− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.1+ | 1.2+ | 2004 04 20 | E12 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2001 09 21 | 704 | (1.7− | 0.5+) | 2004 04 20 | E12 | (0.0 | 1.6+) | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | (2.5− | 0.4−) | 2004 04 23 | 704 | 0.5− | 0.8+ | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2001 09 21 | 704 | (2.2− | 0.0 ) | 2004 04 23 | 704 | 0.7+ | 1.4+ | 2006 10 16 | 703 | 0.9− | 0.1− |
| 2001 09 27 | 644 | 0.1+ | 0.1− | 2004 04 23 | 704 | 0.0 | 1.2+ | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2001 09 27 | 644 | 0.2− | 0.2− | 2004 04 23 | 704 | (0.1− | 1.6+) | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2001 09 27 | 644 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.1− | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 10 10 | 644 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2001 10 10 | 644 | 0.2+ | 0.3− | 2006 09 16 | 704 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.4− | 0.1− |
| 2001 10 10 | 644 | 0.0 | 0.1− | 2006 09 16 | 704 | 1.4+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 10 14 | 699 | 0.7− | 0.3+ | 2006 09 21 | 699 | 0.5− | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 10 14 | 699 | 0.4+ | 0.7+ | 2006 09 21 | 699 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 14 | 699 | 1.4+ | 0.8+ | 2006 09 21 | 699 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 14 | 699 | 1.1+ | 0.1+ | 2006 09 21 | 699 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 10 16 | 704 | 0.3− | 1.1+ | 2006 09 22 | 704 | (0.9− | 1.7+) | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 10 16 | 704 | 0.3+ | 1.1+ | 2006 09 22 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 703 | 1.0+ | 0.5− |
| 2001 10 16 | 704 | 0.3+ | 0.1− | 2006 09 22 | 704 | 1.2+ | 0.6+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2001 10 16 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.9+ | 0.8+ | 2006 10 22 | 703 | 0.1+ | 0.7− |
| 2001 10 16 | 704 | 0.2− | 1.3+ | 2006 09 22 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.9+ | 1.0− |
| 2001 10 20 | 704 | 0.4+ | 1.0− | 2006 09 29 | 699 | (1.9+ | 0.5−) | 2006 10 22 | 703 | 0.4+ | 0.3− |
| 2001 10 20 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.6+ | 1.0+ | 2006 10 22 | 703 | 0.3+ | 0.4− |
| 2001 10 20 | 704 | 0.2− | 0.6− | 2006 09 29 | 699 | 0.8+ | 0.6+ | 2006 10 22 | 703 | 0.8+ | 0.4− |
| 2001 10 20 | 704 | 0.1− | 0.5− | 2006 09 29 | 699 | 0.4− | 1.5+ | 2006 10 22 | 703 | 0.3+ | 0.9− |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.8− | 0.4− | 2006 10 23 | 644 | 0.1− | 0.4− |
| 2001 10 23 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 10 23 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2001 10 23 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 10 28 | 703 | 0.0 | 0.1+ |
| 2001 10 24 | 644 | 1.4− | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.4− | 0.6− |
| 2001 10 24 | 644 | 1.4− | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.6− | 0.3+ |
| 2001 10 24 | 644 | 1.2− | 0.4+ | 2006 10 01 | 704 | 0.6− | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2003 02 01 | 608 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.6− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2003 02 01 | 608 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.4+ | 0.1+ |
| 2003 02 01 | 608 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2004 03 20 | 699 | 1.2− | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.4− | 0.3− |
| 2004 03 20 | 699 | 0.5+ | 0.8− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.2+ | 1.0− |
| 2004 03 20 | 699 | 0.1+ | 1.4+ | 2006 10 10 | 644 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.2− | 0.2− |
| 2004 03 20 | 699 | 0.4− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.5+ | 0.2− |

**(140165)∗ 2001 SN$_{178}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.70088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22925407 | $\omega$ | 250.32444 | | +0.18148039 | −0.98253556 | |
| $a$ | 2.6439791 | $\Omega$ | 189.50445 | | +0.96947006 | +0.18576173 | |
| $e$ | 0.1315629 | $i$ | 14.41058 | | +0.16490203 | −0.01079125 | |
| $P$ | 4.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 23 | 691 | 0.2+ | 0.2− | 2001 12 11 | 209 | 0.1− | 0.3+ | 2005 09 09 | 704 | 0.1+ | 0.2+ |
| 1995 07 23 | 691 | 0.0 | 0.6− | 2002 01 08 | 645 | 0.0 | 0.0 | 2005 09 09 | 704 | 0.2+ | 0.2+ |
| 1995 07 23 | 691 | 0.1− | 0.3− | 2002 01 08 | 645 | 0.0 | 0.0 | 2005 09 09 | 704 | 0.6+ | 0.7+ |
| 2001 09 17 | 704 | 0.6− | 0.8+ | 2002 01 09 | 645 | 0.0 | 0.1− | 2005 09 09 | 704 | 0.6+ | 1.0+ |
| 2001 09 17 | 704 | 0.1− | 1.1+ | 2002 01 09 | 645 | 0.1− | 0.1− | 2005 09 09 | 704 | 0.7+ | 0.1− |
| 2001 09 17 | 704 | 1.1− | 1.0+ | 2002 01 13 | 645 | 0.0 | 0.0 | 2005 09 09 | 704 | 0.8− | 0.1− |
| 2001 09 21 | 704 | 0.4+ | 0.5− | 2002 01 13 | 645 | 0.1+ | 0.0 | 2005 09 09 | 704 | 0.4− | 0.3− |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2002 01 14 | 645 | 0.0 | 0.1− | 2005 09 09 | 704 | 1.1+ | 0.5+ |
| 2001 09 21 | 704 | 0.5+ | 1.4+ | 2002 01 14 | 645 | 0.1− | 0.0 | 2005 09 23 | 703 | 0.5+ | 0.2+ |
| 2001 09 21 | 704 | 0.2+ | 1.1+ | 2003 03 07 | 704 | 0.9+ | 0.3+ | 2005 09 23 | 703 | 0.0 | 0.4− |
| 2001 10 16 | 704 | 0.3+ | 1.0+ | 2003 03 07 | 704 | 0.5− | 0.4+ | 2005 09 23 | 703 | 0.5+ | 0.3− |
| 2001 10 16 | 704 | 0.7+ | 0.3+ | 2003 03 07 | 704 | (0.5+ | 2.0+) | 2005 09 23 | 703 | 0.2− | 0.5− |
| 2001 10 16 | 704 | 1.5+ | 0.4− | 2003 03 07 | 704 | 0.6− | 1.0+ | 2005 09 23 | 699 | 1.1− | 0.4− |
| 2001 10 16 | 704 | 0.4+ | 0.6+ | 2003 03 07 | 704 | (1.5+ | 3.2+) | 2005 09 23 | 699 | 0.6− | 1.4+ |
| 2001 10 16 | 704 | 0.5− | 0.2+ | 2003 03 12 | 644 | 0.3+ | 0.9+ | 2005 09 23 | 703 | 0.3+ | 1.1+ |
| 2001 10 20 | 704 | 0.9+ | 0.0 | 2003 03 12 | 644 | 0.3+ | 0.9+ | 2005 09 23 | 703 | 0.8− | 0.8+ |
| 2001 10 20 | 704 | 0.7− | 0.5− | 2003 03 12 | 644 | 0.3+ | 0.9+ | 2005 09 23 | 703 | 0.5− | 1.2+ |
| 2001 10 20 | 704 | 0.4− | 0.8− | 2003 03 23 | 703 | (1.1+ | 2.5−) | 2005 09 23 | 699 | 0.7+ | 0.2− |
| 2001 10 24 | 644 | 0.3− | 0.3+ | 2003 03 23 | 703 | (1.3+ | 2.5−) | 2005 09 23 | 703 | 1.5− | 0.6+ |
| 2001 10 24 | 644 | 0.3− | 0.3+ | 2003 03 23 | 703 | (0.4+ | 3.6−) | 2005 09 23 | 699 | 0.3− | 0.1+ |
| 2001 10 24 | 644 | 1.2− | 0.7− | 2003 03 23 | 703 | 0.1+ | 1.2− | 2005 09 24 | A50 | 0.2+ | 0.3+ |
| 2001 10 29 | 644 | 0.6− | 0.2+ | 2003 03 25 | 699 | 0.1− | 0.6+ | 2005 09 24 | A50 | 0.2− | 0.1− |
| 2001 10 29 | 644 | 0.6− | 0.0 | 2003 03 25 | 699 | 0.2− | 0.2− | 2005 10 07 | 704 | 0.4+ | 0.0 |
| 2001 10 29 | 644 | 0.5− | 0.1+ | 2003 03 25 | 699 | 0.4− | 0.5+ | 2005 10 07 | 704 | 0.5+ | 0.3+ |
| 2001 11 18 | 608 | 0.3− | 0.5− | 2003 03 25 | 699 | 0.8− | 0.8+ | 2005 10 07 | 704 | 0.5− | 0.4+ |
| 2001 11 18 | 608 | 0.2− | 0.6− | 2003 04 01 | 704 | 1.3+ | 0.2+ | 2005 10 07 | 704 | 1.0− | 0.5+ |
| 2001 11 18 | 608 | 0.3− | 0.2− | 2003 04 01 | 704 | 0.7+ | 0.0 | 2005 10 20 | 644 | 0.0 | 0.2+ |
| 2001 11 23 | 608 | 0.2+ | 0.5− | 2003 04 01 | 704 | 1.1+ | 1.4+ | 2005 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 11 23 | 608 | 0.2+ | 0.5− | 2003 04 05 | 691 | 0.2− | 0.6+ | 2005 10 20 | 644 | 0.2− | 0.0 |
| 2001 11 23 | 608 | 1.0+ | 0.0 | 2003 04 05 | 691 | 0.0 | 0.7+ | 2005 10 22 | 703 | 1.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 704 | 0.6+ | 0.2− | 2003 04 05 | 691 | 0.0 | 0.6+ | 2005 10 22 | 703 | 0.1− | 0.5+ |
| 2001 12 07 | 704 | 0.6+ | 0.1− | 2003 05 01 | 691 | (1.5− | 2.2+) | 2005 10 22 | 703 | 0.2+ | 0.1− |
| 2001 12 07 | 704 | 0.3+ | 0.4+ | 2003 05 01 | 691 | (1.6− | 2.1+) | 2005 10 22 | 703 | (2.3− | 1.2+) |
| 2001 12 07 | 704 | 0.5+ | 0.1+ | 2003 05 01 | 691 | (1.8− | 2.0+) | 2005 10 26 | 644 | 0.2+ | 0.3+ |
| 2001 12 07 | 704 | 0.3− | 0.3− | 2005 08 30 | 704 | 0.3+ | 1.0+ | 2005 10 26 | 644 | 0.1+ | 0.1+ |
| 2001 12 10 | 209 | 0.0 | 0.3+ | 2005 08 30 | 704 | 0.1+ | 0.2+ | 2005 10 26 | 644 | 0.3+ | 0.1− |
| 2001 12 10 | 209 | 0.2+ | 0.1+ | 2005 08 30 | 704 | 0.1+ | 0.1− | 2005 10 28 | 704 | 1.0− | 1.1+ |
| 2001 12 10 | 209 | 0.2+ | 0.1+ | 2005 08 30 | 704 | 0.1+ | 0.3+ | 2005 10 28 | 704 | 1.2− | 0.2+ |
| 2001 12 11 | 209 | 0.2+ | 0.1+ | 2005 09 09 | 704 | 0.2− | 0.2+ | 2005 10 28 | 704 | 0.0 | 0.7+ |
| 2001 12 11 | 209 | 0.3+ | 0.3+ | 2005 09 09 | 704 | 0.5+ | 0.0 | | | | |

**(140166)∗ 2001 SV$_{178}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.91673 | | (2000.0) | | | |
| $n$ | 0.18620955 | $\omega$ | 180.77513 | | +0.93017439 | −0.35272050 |
| $a$ | 3.0371629 | $\Omega$ | 200.79432 | | +0.33834845 | +0.93127031 |
| $e$ | 0.1264629 | $i$ | 16.66394 | | +0.14246382 | +0.09123515 |
| $P$ | 5.29 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.4+ | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 10 15 | 106 | 0.1− | 0.6− |
| 1995 10 17 | 691 | 0.7− | 0.3− | 2004 04 16 | 704 | 0.7+ | 1.1+ | 2006 10 16 | 621 | 0.1+ | 0.1− |
| 1995 10 17 | 691 | 0.3+ | 0.0 | 2004 04 16 | 704 | 0.4+ | 1.1+ | 2006 10 16 | 621 | 0.0 | 0.2− |
| 2001 09 17 | 704 | (0.6+ | 1.6+) | 2004 04 16 | 704 | 0.2+ | 0.2− | 2006 10 16 | 621 | 0.3+ | 0.1− |
| 2001 09 17 | 704 | 0.3+ | 0.5+ | 2004 04 16 | 704 | (0.2+ | 1.8+) | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2001 09 17 | 704 | 0.0 | 1.0+ | 2006 08 29 | 699 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2001 09 17 | 704 | 0.6+ | 0.0 | 2006 08 29 | 699 | 1.0− | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.3− |
| 2001 09 17 | 704 | 0.3+ | 0.4− | 2006 08 29 | 699 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.6− |
| 2001 09 21 | 704 | 0.3+ | 0.9+ | 2006 08 29 | 699 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 09 15 | 683 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2006 09 15 | 683 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 1.0+ | 0.6− | 2006 09 15 | 683 | 1.1− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 2001 10 17 | 704 | 1.0+ | 0.2+ | 2006 09 16 | 683 | 0.7− | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2001 10 17 | 704 | 0.2+ | 0.2− | 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2001 10 17 | 704 | 0.6+ | 0.2+ | 2006 09 16 | 703 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 0.2− | 2006 09 16 | 683 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2006 09 16 | 683 | (1.9− | 1.7+) | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.5+ | 0.9− | 2006 09 18 | 704 | (0.3+ | 1.9+) | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 10 17 | 704 | 0.5+ | 0.1− | 2006 09 18 | 704 | 0.3+ | 1.5+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.5− | 0.5− | 2006 09 18 | 704 | 0.3+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 10 17 | 704 | 0.8− | 0.1+ | 2006 09 18 | 704 | (0.1− | 2.0+) | 2006 11 01 | G96 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | 0.4+ | 0.8− | 2006 09 18 | 704 | 1.1+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2001 10 17 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.8+ | 0.1− |
| 2001 10 17 | 704 | 0.3− | 0.3− | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2001 10 17 | 704 | 0.2+ | 0.5− | 2006 09 19 | 699 | 0.2− | 0.4− | 2006 11 02 | G96 | 0.5+ | 0.9+ |
| 2001 10 19 | 608 | 0.5+ | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.1+ | 2006 11 02 | G96 | 0.3+ | 1.5+ |
| 2001 10 19 | 608 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.0 | 2006 11 02 | G96 | (0.1+ | 3.4+) |
| 2001 10 19 | 608 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.3+ | 0.8+ | 2006 11 02 | G96 | 0.5+ | 0.9+ |
| 2001 10 22 | 704 | 0.1− | 0.9+ | 2006 09 25 | 704 | 0.1− | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.4+ |
| 2001 10 22 | 704 | 0.9− | 0.8+ | 2006 09 25 | 704 | 0.6− | 0.1+ | 2006 11 02 | G96 | 0.4+ | 0.3+ |
| 2001 10 22 | 704 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.3+ | 0.1+ |
| 2001 10 22 | 704 | 0.5+ | 0.2− | 2006 09 27 | 699 | 0.0 | 0.2− | 2006 11 02 | G96 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 0.6− | 2006 09 27 | 699 | 1.3− | 0.5− | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | (1.7− | 1.1+) | 2006 09 29 | 704 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.9− | 0.5+ | 2006 09 29 | 704 | 0.4− | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 11 19 | 608 | 0.7− | 0.7+ | 2006 09 29 | 704 | (2.1+ | 0.5−) | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 11 19 | 608 | 1.2− | 1.1+ | 2006 09 29 | 704 | (0.8− | 1.6+) | 2006 11 11 | G96 | 0.5+ | 0.5− |
| 2001 11 19 | 608 | 0.9− | 0.8+ | 2006 10 15 | 106 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.6+ | 0.4− |
| 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 10 15 | 106 | 0.4+ | 0.6− | | | | |
| 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 10 15 | 106 | 0.3+ | 0.6− | | | | |

**(140167)∗ 2001 SA$_{179}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.67611 | | (2000.0) | | | |
| $n$ | 0.18735681 | $\omega$ | 145.39300 | | +0.96001253 | +0.26500603 |
| $a$ | 3.0247516 | $\Omega$ | 199.83676 | | −0.27634075 | +0.94866095 |
| $e$ | 0.2520831 | $i$ | 15.42639 | | +0.04485239 | +0.17266790 |
| $P$ | 5.26 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.0 | 0.4− | 2004 03 16 | 691 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.4+ |
| 2001 08 23 | 699 | 0.1+ | 1.1+ | 2005 04 30 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | 0.9− | 0.9+ | 2005 04 30 | 691 | 0.2− | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2001 08 23 | 699 | 0.6− | 0.7+ | 2005 04 30 | 691 | 0.2+ | 0.8+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 09 17 | 704 | 0.6+ | 0.2− | 2005 05 09 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2001 09 17 | 704 | 0.3+ | 0.2− | 2005 05 09 | 691 | 0.0 | 0.3+ | 2006 09 27 | 699 | 0.2+ | 0.3− |
| 2001 09 17 | 704 | 0.9+ | 0.9+ | 2005 05 09 | 691 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.1− | 0.3+ |
| 2001 09 17 | 704 | 0.4+ | 0.5+ | 2005 05 09 | 703 | 0.2− | 0.6+ | 2006 09 27 | 699 | 0.2+ | 0.0 |
| 2001 09 17 | 704 | 0.4+ | 1.1+ | 2005 05 09 | 703 | 0.2+ | 0.7− | 2006 09 27 | 699 | 0.2+ | 0.4− |
| 2001 09 19 | 699 | 1.0+ | 0.0 | 2005 05 09 | 703 | 0.2+ | 1.0+ | 2006 09 29 | 704 | (1.6− | 2.1+) |
| 2001 09 19 | 699 | 0.1− | 0.7+ | 2005 05 09 | 703 | 0.4− | 0.3+ | 2006 09 29 | 704 | (1.1− | 2.0+) |
| 2001 09 19 | 699 | 1.2+ | 0.6+ | 2005 05 20 | G96 | 0.6+ | 0.0 | 2006 09 29 | 704 | (0.9− | 1.7+) |
| 2001 09 19 | 699 | 0.6+ | 0.8+ | 2005 05 20 | G96 | 0.0 | 0.1+ | 2006 09 29 | 704 | (0.7− | 2.1+) |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2005 05 20 | G96 | 0.1− | 0.3+ | 2006 09 29 | 704 | (1.3− | 2.1+) |
| 2001 09 21 | 704 | 0.2− | 1.0+ | 2005 05 20 | G96 | 0.6− | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.4− | 2006 08 29 | 699 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2001 09 27 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 699 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2001 09 27 | 644 | 0.1− | 0.4+ | 2006 08 29 | 699 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.5+ |
| 2001 09 27 | 644 | 0.0 | 0.6+ | 2006 08 29 | 699 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.0 |
| 2001 10 13 | 699 | 0.6− | 0.0 | 2006 08 31 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 2001 10 13 | 699 | 0.4− | 0.3− | 2006 08 31 | 704 | 0.6− | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.2− |
| 2001 10 13 | 699 | 0.2− | 0.1+ | 2006 08 31 | 704 | 1.0− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 10 13 | 699 | (2.2− | 2.0−) | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2001 10 17 | 704 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2001 10 17 | 704 | 0.9− | 0.8− | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 19 | G96 | (1.0− | 1.9−) |
| 2001 10 17 | 704 | (0.5+ | 1.8+) | 2006 09 15 | 683 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | (2.2− | 2.6+) | 2006 09 15 | 683 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 10 19 | 608 | 0.1− | 1.2+ | 2006 09 15 | 683 | 0.8− | 1.2+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2001 10 19 | 608 | 0.0 | 0.6+ | 2006 09 16 | 683 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 10 19 | 608 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 10 20 | 704 | 0.6+ | 0.6+ | 2006 09 16 | 683 | 0.1− | 0.6+ | 2006 10 23 | 704 | 0.4+ | 0.0 |
| 2001 10 20 | 704 | 0.6− | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 10 23 | 704 | 1.0+ | 0.4− |
| 2001 10 20 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.4− | 2006 10 23 | 704 | (1.6+ | 0.1+) |
| 2001 10 29 | 608 | 0.6− | 0.2− | 2006 09 16 | 683 | 0.6− | 1.2+ | 2006 10 23 | 704 | 0.5+ | 0.0 |
| 2001 10 29 | 608 | 0.2− | 0.0 | 2006 09 16 | 644 | 0.3− | 0.2− | 2006 10 23 | 704 | 1.1+ | 0.2− |
| 2001 10 29 | 608 | 0.6− | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.2− | 2006 10 28 | 704 | 0.2+ | 0.2− |
| 2001 11 15 | 644 | 0.2− | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2001 11 15 | 644 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 11 15 | 644 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 10 28 | 704 | 0.3− | 0.3+ |
| 2001 11 18 | 704 | (1.7+ | 0.2+) | 2006 09 17 | 703 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2001 11 18 | 704 | (1.9+ | 0.4+) | 2006 09 17 | 703 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2001 11 18 | 704 | (1.3+ | 1.8−) | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.5+ | 0.1− |
| 2001 11 18 | 704 | 1.3+ | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2001 11 19 | 699 | 0.3− | 0.4− | 2006 09 18 | 703 | 0.5− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.5− | 1.2+ | 2006 09 18 | 703 | 0.5− | 0.6− | 2006 11 06 | 644 | 0.3+ | 0.2− |
| 2001 11 19 | 699 | 0.4− | 0.6+ | 2006 09 18 | 704 | 1.1+ | 0.7+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2001 11 19 | 699 | 0.5+ | 0.1+ | 2006 09 18 | 704 | 0.1+ | 0.8+ | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2001 12 07 | 704 | 0.1− | 0.8+ | 2006 09 18 | 704 | 1.0+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2001 12 07 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 704 | 0.8− | 0.7− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 12 07 | 704 | 0.9− | 0.5− | 2006 09 18 | 704 | (1.6+ | 0.1+) | 2006 11 18 | 704 | (0.4− | 2.3+) |
| 2001 12 07 | 704 | (1.7+ | 0.7+) | 2006 09 21 | 704 | 1.1+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2004 02 18 | I03 | 0.3+ | 0.4+ | 2006 09 21 | 704 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2004 02 18 | I03 | 0.0 | 0.5+ | 2006 09 21 | 704 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2004 02 18 | I03 | 0.3+ | 0.4+ | 2006 09 25 | 704 | 0.7+ | 0.6+ | 2006 11 21 | 704 | 1.2− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.8− | 0.8+ |

**(140168)∗ 2001 SC$_{179}$**

Discovered 2001 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.64758 | | (2000.0) | | | |
| $n$ | 0.22379609 | $\omega$ | 44.47027 | | −0.33858390 | −0.91894792 |
| $a$ | 2.6867941 | $\Omega$ | 66.28793 | | +0.78999150 | −0.39437808 |
| $e$ | 0.1774852 | $i$ | 12.76034 | | +0.51115005 | +0.00081064 |
| $P$ | 4.40 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 1.0− | 0.2+ | 2001 11 24 | 704 | 0.4− | 0.1+ | 2003 04 03 | 608 | 0.5+ | 0.2− |
| 2001 09 17 | 704 | 0.6− | 0.8+ | 2001 11 24 | 704 | 0.8− | 0.1+ | 2003 04 03 | 608 | 0.6+ | 0.0 |
| 2001 09 17 | 704 | 1.1− | 0.7+ | 2001 11 24 | 704 | 0.5− | 0.3+ | 2003 04 08 | 704 | 0.7+ | 0.3+ |
| 2001 09 19 | 704 | 0.2− | 1.5+ | 2001 11 24 | 704 | 0.4− | 0.1+ | 2003 04 08 | 704 | 1.0+ | 0.6+ |
| 2001 09 19 | 704 | 0.2− | 1.2+ | 2001 11 24 | 644 | 0.8+ | 0.3− | 2003 04 08 | 704 | 1.3+ | 0.3+ |
| 2001 09 19 | 704 | (1.0− | 4.6+) | 2001 11 24 | 644 | 0.4+ | 0.5− | 2003 04 08 | 704 | 0.7+ | 0.7+ |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2001 11 24 | 644 | 0.5+ | 0.3− | 2003 04 08 | 704 | 0.9+ | 0.9+ |
| 2001 09 19 | 704 | 0.1− | 1.4+ | 2001 12 09 | 691 | 0.4+ | 0.2− | 2003 04 08 | 608 | 0.8+ | 0.7− |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2001 12 09 | 699 | 0.3+ | 0.9+ | 2003 04 08 | 608 | 0.8+ | 0.5− |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2001 12 09 | 691 | 0.1+ | 0.3− | 2003 04 08 | 608 | 0.7+ | 0.6− |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2001 12 09 | 699 | 1.0+ | 0.0 | 2003 04 14 | 699 | 0.0 | 0.0 |
| 2001 09 21 | 704 | (2.0+ | 0.5+) | 2001 12 09 | 691 | 0.5+ | 0.2− | 2003 04 14 | 699 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 0.6+ | 0.5+ | 2001 12 09 | 699 | 0.3+ | 0.4+ | 2003 04 14 | 699 | 0.8− | 0.2− |
| 2001 10 13 | 704 | 1.1+ | 0.8+ | 2001 12 09 | 699 | 0.5+ | 0.0 | 2003 04 14 | 699 | 1.3− | 0.5+ |
| 2001 10 13 | 704 | 0.5− | 0.0 | 2001 12 11 | 704 | 0.2+ | 0.7− | 2003 04 21 | 049 | 1.1− | 0.6+ |
| 2001 10 13 | 704 | 0.1− | 0.8+ | 2001 12 11 | 704 | 0.1− | 1.0− | 2003 04 21 | 049 | 0.8− | 0.7+ |
| 2001 10 13 | 704 | 0.0 | 0.6+ | 2001 12 11 | 704 | 0.1+ | 0.9− | 2003 04 22 | 049 | 0.6− | 0.4+ |
| 2001 10 13 | 699 | 0.3+ | 0.3+ | 2001 12 11 | 704 | 0.5+ | 1.1− | 2003 04 25 | 699 | 0.2− | 0.5+ |
| 2001 10 13 | 699 | 0.2− | 0.2+ | 2001 12 11 | 704 | 0.1+ | 0.5− | 2003 04 25 | 699 | 0.5− | 0.1− |
| 2001 10 13 | 699 | 0.9− | 0.0 | 2001 12 14 | 704 | 0.3− | 0.0 | 2003 04 25 | 699 | 0.5− | 0.0 |
| 2001 10 13 | 699 | (0.4+ | 1.9−) | 2001 12 14 | 704 | 0.2− | 0.1+ | 2003 04 25 | 699 | 0.4+ | 0.1− |
| 2001 10 17 | 704 | 0.2+ | 0.1− | 2001 12 14 | 704 | 0.1− | 0.0 | 2003 04 25 | 049 | 0.3− | 0.2− |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2001 12 14 | 704 | 0.3− | 0.3+ | 2003 04 25 | 049 | 0.3− | 0.1+ |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2001 12 14 | 704 | 0.2− | 0.0 | 2003 04 25 | 049 | 0.5− | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 0.1+ | 2001 12 17 | 704 | 0.2+ | 0.2+ | 2003 04 25 | 049 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2001 12 17 | 704 | 0.5+ | 0.1+ | 2003 04 25 | 049 | 0.1+ | 0.1+ |
| 2001 10 22 | 704 | 1.3+ | 0.1− | 2001 12 17 | 704 | 0.3+ | 0.6+ | 2003 04 25 | 049 | 0.2− | 0.2+ |
| 2001 10 22 | 704 | (1.6+ | 0.6+) | 2001 12 17 | 704 | 0.1− | 0.9+ | 2003 04 26 | 704 | 0.7− | 0.3+ |
| 2001 10 22 | 704 | (1.6+ | 0.0 ) | 2001 12 17 | 704 | 0.1+ | 0.7+ | 2003 04 26 | 704 | 0.3+ | 0.1+ |
| 2001 10 22 | 704 | 1.4+ | 0.2+ | 2001 12 20 | 704 | 0.6+ | 0.9+ | 2003 04 26 | 704 | 0.5− | 0.2− |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2001 12 20 | 704 | 0.1− | 0.5+ | 2003 04 26 | 704 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.4+ | 0.3+ | 2001 12 20 | 704 | 0.5+ | 0.1+ | 2003 04 26 | 704 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | 0.3+ | 0.2+ | 2001 12 20 | 704 | 0.3− | 0.1+ | 2003 04 26 | 704 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.2− | 0.5+ | 2002 01 05 | 608 | 0.6+ | 0.5− | 2003 04 26 | 704 | 0.7+ | 0.0 |
| 2001 10 24 | 704 | 1.3− | 0.1− | 2002 01 05 | 608 | 0.5− | 0.0 | 2003 04 26 | 704 | 0.3+ | 0.5+ |
| 2001 10 29 | 608 | 0.4− | 1.3+ | 2002 01 05 | 608 | 0.1− | 0.0 | 2003 04 26 | 704 | 0.2+ | 0.8− |
| 2001 10 29 | 608 | 0.3− | 1.0+ | 2002 01 09 | 704 | 0.5− | 0.7− | 2003 04 30 | 608 | 0.4+ | 0.2− |
| 2001 10 29 | 608 | 0.3− | 0.7+ | 2002 01 09 | 704 | 0.3− | 0.8− | 2003 04 30 | 608 | 0.5+ | 0.0 |
| 2001 11 09 | 704 | 0.3− | 0.3+ | 2002 01 09 | 704 | 0.2− | 0.2− | 2003 04 30 | 608 | 0.0 | 0.4− |
| 2001 11 09 | 704 | 0.9− | 0.0 | 2002 01 09 | 704 | 0.2− | 0.5− | 2003 05 02 | 704 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2002 01 09 | 704 | 0.1− | 0.2− | 2003 05 02 | 704 | 0.2− | 0.0 |
| 2001 11 09 | 704 | 0.8− | 0.2− | 2002 01 11 | 608 | 0.0 | 1.4− | 2003 05 02 | 704 | 0.4+ | 0.1+ |
| 2001 11 09 | 704 | 0.4− | 0.2− | 2002 01 11 | 608 | (0.3+ | 1.8−) | 2003 05 02 | 704 | 0.2+ | 0.2+ |
| 2001 11 17 | 704 | 0.2− | 0.1+ | 2002 01 11 | 608 | (0.4+ | 1.6−) | 2003 05 02 | 704 | 0.0 | 0.4+ |
| 2001 11 17 | 704 | 0.3+ | 0.9+ | 2002 01 21 | 704 | 0.1+ | 0.1− | 2003 05 09 | 704 | 0.7+ | 0.1+ |
| 2001 11 17 | 704 | 0.0 | 0.1+ | 2002 01 21 | 704 | 0.1− | 0.2− | 2003 05 09 | 704 | 1.1+ | 0.8+ |
| 2001 11 17 | 704 | 0.0 | 0.1+ | 2002 01 21 | 704 | 0.1+ | 0.3+ | 2003 05 09 | 704 | 0.9+ | 0.4+ |
| 2001 11 17 | 704 | 0.0 | 0.2+ | 2002 01 21 | 704 | 0.1− | 0.4− | 2005 09 27 | 704 | (1.6− | 1.1+) |
| 2001 11 19 | 699 | 0.0 | 0.0 | 2002 02 07 | 704 | 0.5− | 0.7+ | 2005 09 27 | 704 | (1.8− | 1.3+) |
| 2001 11 19 | 699 | 0.1+ | 0.1+ | 2002 02 07 | 704 | 0.9− | 0.4− | 2005 09 27 | 704 | 0.5− | 0.3+ |
| 2001 11 19 | 699 | 0.2+ | 0.1+ | 2002 02 07 | 704 | 1.3− | 0.2− | 2005 09 27 | 704 | (0.7− | 1.6+) |
| 2001 11 19 | 699 | 0.1+ | 0.1+ | 2003 03 09 | 704 | 0.4+ | 1.2+ | 2005 09 27 | 704 | 0.3− | 1.3+ |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2003 03 09 | 704 | 0.2− | 1.3+ | 2005 10 05 | 703 | (2.7− | 1.0+) |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2003 03 09 | 704 | 0.1+ | 0.1+ | 2005 10 05 | 703 | 0.7− | 1.2+ |
| 2001 11 20 | 704 | 0.3− | 0.3+ | 2003 03 09 | 704 | 0.4− | 0.3+ | 2005 10 05 | 703 | 0.1− | 1.1+ |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2003 03 29 | 699 | 0.1− | 0.3− | 2005 10 05 | 703 | 0.6− | 0.9+ |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2003 03 29 | 699 | 0.2− | 0.0 | 2005 10 25 | 704 | 1.1− | 0.4− |
| 2001 11 20 | 608 | (0.2− | 2.5−) | 2003 03 29 | 699 | 0.5− | 0.2+ | 2005 10 25 | 704 | (0.8− | 1.7+) |
| 2001 11 20 | 608 | 0.2− | 0.1− | 2003 03 29 | 699 | 0.8− | 0.8+ | 2005 10 25 | 704 | 1.1− | 0.3+ |
| 2001 11 20 | 608 | 0.2− | 0.2+ | 2003 03 31 | 704 | 0.1+ | 0.7+ | 2005 10 25 | 704 | 0.1− | 1.4+ |
| 2001 11 21 | 704 | 0.8− | 0.7− | 2003 03 31 | 699 | 0.1− | 0.6+ | 2005 11 25 | 644 | 0.8− | 0.2+ |
| 2001 11 21 | 704 | 0.6− | 1.0− | 2003 03 31 | 704 | 0.7+ | 0.4+ | 2005 11 25 | 644 | 0.8− | 0.3+ |
| 2001 11 21 | 704 | 0.9− | 1.0− | 2003 03 31 | 704 | 0.6+ | 0.1+ | 2005 11 25 | 644 | 0.4− | 0.2+ |
| 2001 11 21 | 704 | 0.7− | 0.6− | 2003 03 31 | 699 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 1.4+ |
| 2001 11 21 | 704 | 0.7− | 1.1− | 2003 03 31 | 704 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.5− | 1.3− |
| 2001 11 24 | 704 | 0.0 | 0.1+ | 2003 03 31 | 699 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2001 11 24 | 704 | 0.6− | 0.1+ | 2003 03 31 | 704 | (0.4+ | 1.5+) | 2006 10 21 | 703 | 1.0+ | 0.8− |
| 2001 11 24 | 704 | 0.1+ | 0.7+ | 2003 03 31 | 699 | 0.0 | 0.2+ | 2006 11 23 | 703 | (0.3+ | 1.6−) |
| 2001 11 24 | 704 | 0.7+ | 0.1+ | 2003 04 03 | 704 | 0.8+ | 0.8+ | 2006 11 23 | 703 | 0.6+ | 1.4− |
| 2001 11 24 | 704 | 0.0 | 0.2+ | 2003 04 03 | 704 | 0.9+ | 0.3+ | 2006 11 23 | 703 | 0.8− | 0.2− |
| 2001 11 24 | 704 | 0.1+ | 0.3+ | 2003 04 03 | 704 | 0.6+ | 1.1+ | 2006 11 23 | 703 | (2.0− | 1.5−) |
| 2001 11 24 | 704 | 0.0 | 0.0 | 2003 04 03 | 704 | 0.1+ | 0.4+ | 2006 12 01 | 704 | 0.5+ | 1.0− |
| 2001 11 24 | 704 | 0.9+ | 0.9+ | 2003 04 03 | 704 | 0.4+ | 1.4+ | 2006 12 01 | 704 | 0.1+ | 0.3+ |
| 2001 11 24 | 704 | 0.2+ | 0.4+ | 2003 04 03 | 704 | 0.3− | 0.7+ | 2006 12 01 | 704 | 1.1+ | 0.1+ |
| 2001 11 24 | 704 | 0.6+ | 1.3+ | 2003 04 03 | 704 | 0.3− | 1.0+ | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2001 11 24 | 704 | 0.8− | 0.6− | 2003 04 03 | 608 | 0.8+ | 0.5+ | 2006 12 01 | 704 | 0.3− | 1.5+ |

**(140169)∗ 2001 SU$_{181}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.70601 | | (2000.0) | | | |
| $n$ | 0.26852232 | $\omega$ | 257.20922 | | +0.66782381 | −0.74290793 |
| $a$ | 2.3794822 | $\Omega$ | 150.72975 | | +0.71408328 | +0.62211395 |
| $e$ | 0.2187518 | $i$ | 5.37696 | | +0.20999150 | +0.24710735 |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.4+ | 0.6− | 2003 02 26 | 599 | 0.5+ | 0.8− | 2005 11 20 | 644 | 0.8+ | 0.3+ |
| 1996 04 14 | 691 | 0.3− | 0.0 | 2003 02 26 | 599 | 0.6− | 0.1+ | 2005 11 20 | 644 | 0.5+ | 0.1+ |
| 1996 04 14 | 691 | 0.3− | 0.2− | 2003 04 07 | 691 | 0.2+ | 1.4+ | 2005 11 20 | 644 | 0.4+ | 0.1− |
| 2001 08 19 | 704 | 0.3− | 0.9+ | 2003 04 07 | 691 | 0.4+ | 1.0+ | 2005 11 20 | 699 | 0.7+ | 0.3+ |
| 2001 08 19 | 704 | 1.1− | 1.0+ | 2003 04 07 | 691 | 0.2+ | 1.4+ | 2005 11 20 | 699 | 1.6− | 0.6+ |
| 2001 08 19 | 704 | 0.1− | 1.3+ | 2005 10 02 | 699 | 0.1+ | 1.9+ | 2005 11 20 | 699 | 0.4+ | 1.3− |
| 2001 08 19 | 704 | 0.8− | 0.5+ | 2005 10 02 | 699 | 0.1− | 0.8+ | 2005 11 20 | 699 | 0.2− | 0.3+ |
| 2001 08 28 | 644 | 0.7− | 1.6+ | 2005 10 02 | 699 | 0.9− | 1.7+ | 2005 11 21 | 699 | 0.5− | 0.3+ |
| 2001 08 28 | 644 | 0.5− | 1.1+ | 2005 10 02 | 699 | 0.8+ | 0.5+ | 2005 11 21 | 699 | 0.5− | 1.7+ |
| 2001 08 28 | 644 | 0.8− | 1.2+ | 2005 10 27 | 703 | 0.7− | 0.2+ | 2005 11 21 | 699 | 0.0 | 0.7+ |
| 2001 09 19 | 704 | 0.1+ | 0.3− | 2005 10 27 | 703 | 0.2− | 0.3+ | 2005 11 21 | 699 | 0.6− | 0.8− |
| 2001 09 19 | 704 | 0.2+ | 0.2− | 2005 10 27 | 703 | 0.2− | 0.3− | 2005 11 26 | 703 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.9+ | 0.7− | 2005 10 27 | 703 | 1.1− | 0.1− | 2005 11 26 | 703 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 1.5− | 2005 11 05 | 704 | 0.6+ | 0.7− | 2005 11 26 | 703 | 0.4+ | 0.1+ |
| 2001 09 19 | 704 | 0.7+ | 0.6− | 2005 11 05 | 704 | 1.4+ | 0.4− | 2005 11 26 | 703 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.2− | 0.5+ | 2005 11 05 | 704 | 0.2− | 0.3− | 2005 11 30 | 699 | 0.5+ | 0.5+ |
| 2001 09 21 | 704 | 0.0 | 1.0+ | 2005 11 05 | 704 | 0.4+ | 1.6− | 2005 11 30 | 699 | 0.5− | 0.2− |
| 2001 09 21 | 704 | 0.5− | 0.3+ | 2005 11 10 | 703 | 0.1+ | 0.2− | 2005 11 30 | 699 | 1.7+ | 0.9− |
| 2001 09 21 | 704 | 0.5+ | 0.6+ | 2005 11 10 | 703 | 0.8− | 0.4+ | 2005 11 30 | 699 | 0.7− | 1.1− |
| 2003 02 26 | 599 | 0.1+ | 0.3− | 2005 11 10 | 703 | 0.0 | 0.1− | | | | |
| 2003 02 26 | 599 | 0.7+ | 0.2− | 2005 11 10 | 703 | 0.2+ | 0.3+ | | | | |

**(140170)∗ 2001 SL$_{182}$ = 2003 AZ$_{77}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40644)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.98079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23174943 | $\omega$ | 66.39909 | | +0.54291202 | −0.83808889 | |
| $a$ | 2.6249655 | $\Omega$ | 350.18063 | | +0.60991787 | +0.43723025 | |
| $e$ | 0.1756067 | $i$ | 18.25386 | | +0.57727526 | +0.32624641 | |
| $P$ | 4.25 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.1− | 0.6− | 2003 01 13 | 704 | 0.3− | 0.6− | 2005 07 05 | E12 | 0.1− | 0.1+ |
| 2001 08 13 | 608 | 0.5− | 0.5− | 2003 01 13 | 704 | 0.1− | 0.1− | 2005 07 05 | E12 | 0.6− | 1.0+ |
| 2001 08 13 | 608 | 0.5− | 0.4+ | 2003 01 24 | 644 | 0.4− | 0.3− | 2005 07 05 | E12 | (2.6− | 1.1−) |
| 2001 08 21 | 608 | 0.0 | 0.5+ | 2003 01 24 | 644 | 0.2− | 0.1− | 2005 08 13 | E12 | 0.8− | 0.1− |
| 2001 08 21 | 608 | 0.6+ | 0.0 | 2003 01 24 | 644 | 0.2+ | 0.5− | 2005 08 13 | E12 | 0.2+ | 1.4+ |
| 2001 08 21 | 608 | 0.1− | 0.0 | 2003 01 29 | 644 | 0.6+ | 1.2+ | 2005 08 13 | E12 | 0.4− | 0.1− |
| 2001 09 11 | 704 | (1.9− | 0.4+) | 2003 01 29 | 644 | 0.6+ | 1.2+ | 2005 08 13 | E12 | 0.4− | 0.0 |
| 2001 09 11 | 704 | 0.1− | 0.9+ | 2003 01 29 | 644 | 0.3+ | 0.9+ | 2005 08 13 | E12 | 0.1+ | 0.2− |
| 2001 09 11 | 704 | 0.4− | 0.7+ | 2003 02 01 | 644 | 0.3+ | 1.2+ | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 2001 09 11 | 704 | 0.3+ | 0.9+ | 2003 02 01 | 644 | 0.1− | 1.0+ | 2006 10 21 | 703 | 0.8+ | 0.6− |
| 2001 09 19 | 704 | 0.6+ | 0.8− | 2003 02 01 | 644 | 0.1+ | 1.0+ | 2006 10 21 | 703 | (0.6− | 1.5−) |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2003 02 08 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 1.2+ |
| 2001 09 19 | 704 | 0.5− | 0.1− | 2003 02 08 | 699 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 1.4+ | 0.3− |
| 2001 09 19 | 704 | 0.4− | 0.7− | 2003 02 08 | 699 | 0.2+ | 1.0+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2001 09 19 | 704 | 0.7+ | 0.4+ | 2003 02 08 | 699 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.2+ |
| 2001 09 21 | 704 | 0.5− | 0.1− | 2003 02 26 | 704 | 0.6− | 0.4− | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 0.3− | 1.5+ | 2003 02 26 | 704 | 1.0− | 0.1− | 2006 11 18 | 703 | 0.7− | 0.2+ |
| 2001 09 21 | 704 | 0.6− | 0.8+ | 2003 02 26 | 704 | 0.1+ | 0.2− | 2006 11 18 | 703 | 0.9− | 0.7+ |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2003 02 26 | 704 | 0.4+ | 0.6− | 2006 11 18 | 703 | 0.1− | 0.1− |
| 2003 01 10 | 704 | 0.2− | 0.1+ | 2003 02 26 | 704 | 1.1+ | 0.4− | 2006 11 18 | 703 | 0.1+ | 0.5+ |
| 2003 01 10 | 704 | 0.0 | 0.4+ | 2003 03 03 | 644 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.0 | 1.7− |
| 2003 01 10 | 704 | 0.7+ | 0.0 | 2003 03 03 | 644 | 0.4+ | 0.3+ | 2006 11 27 | 703 | 0.5− | 0.8− |
| 2003 01 10 | 704 | 0.8+ | 0.9+ | 2003 03 03 | 644 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.2− | 0.7− |
| 2003 01 13 | 704 | 0.2− | 0.1− | 2005 07 05 | E12 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.6− | 0.5− |

**(140171)∗ 2001 SS$_{184}$ = 2005 NH$_{60}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 84935)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.97086 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22706304 | $\omega$ | 261.46463 | | −0.49275298 | +0.87012092 | |
| $a$ | 2.6609605 | $\Omega$ | 339.00604 | | −0.78795829 | −0.45064576 | |
| $e$ | 0.0093258 | $i$ | 1.46667 | | −0.36921028 | −0.19951940 | |
| $P$ | 4.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 22 | 691 | 0.2+ | 0.0 | 2004 03 27 | 704 | (1.5+ | 0.1−) | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1999 01 22 | 691 | 0.2− | 0.1− | 2004 04 20 | 691 | 0.6+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 1999 01 22 | 691 | 0.1− | 0.0 | 2004 04 20 | 691 | 0.5+ | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2001 09 11 | 699 | 1.4− | 1.0+ | 2004 04 20 | 691 | 0.5+ | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.5+ |
| 2001 09 11 | 699 | 0.6+ | 0.2− | 2004 05 09 | 291 | 0.5+ | 0.7+ | 2006 11 09 | 691 | 0.0 | 0.4+ |
| 2001 09 11 | 699 | 0.2− | 1.0+ | 2004 05 09 | 291 | 0.2− | 1.2+ | 2006 11 09 | 691 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.3− | 0.4+ | 2004 05 09 | 291 | 0.4− | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 09 16 | 691 | 0.0 | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2001 09 16 | 691 | 0.2− | 0.5+ | 2005 07 09 | 691 | 0.9− | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2001 09 16 | 691 | 0.1− | 0.2− | 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.7+ |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2005 07 12 | G96 | 0.4+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.5+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2005 07 12 | G96 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.0 | 0.9+ | 2005 07 12 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.8− | 1.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2005 07 12 | G96 | 0.3− | 0.0 | 2006 11 18 | 704 | (2.1− | 2.5+) |
| 2001 09 19 | 704 | 0.3+ | 1.0+ | 2005 07 30 | E12 | 0.7+ | 0.8+ | 2006 11 18 | 704 | (1.1− | 3.4+) |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2005 07 30 | E12 | 0.5+ | 0.9+ | 2006 11 18 | 704 | (0.5− | 2.9+) |
| 2001 09 21 | 704 | 0.1− | 1.1+ | 2005 07 30 | E12 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2005 07 30 | E12 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2006 10 21 | 691 | 0.5− | 0.0 | 2006 12 01 | G96 | 0.3− | 0.0 |
| 2004 03 27 | 704 | 1.3+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 12 01 | G96 | 0.5− | 0.5+ |
| 2004 03 27 | 704 | 1.3+ | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1+ | | | | |
| 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.3− | | | | |

**(140172)∗ 2001 SX$_{184}$ = 1997 SX$_{20}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20340)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.01975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22149053 | $\omega$ | 272.28135 | | +0.41410345 | +0.90953006 | |
| $a$ | 2.7054070 | $\Omega$ | 22.28739 | | −0.79325468 | +0.37983519 | |
| $e$ | 0.0205078 | $i$ | 5.39907 | | −0.44639147 | +0.16876106 | |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.4+ | 0.3− | 2001 09 21 | 704 | 0.4− | 1.3+ | 2006 09 28 | G96 | 0.3− | 0.0 |
| 1997 09 28 | 691 | 0.5+ | 0.2− | 2004 03 19 | 704 | (0.5+ | 2.4+) | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 1997 09 28 | 691 | 0.3+ | 0.1− | 2004 03 19 | 704 | 1.3+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.4+ |
| 1997 10 03 | 691 | 0.4+ | 0.4− | 2004 03 19 | 704 | 1.3+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 1997 10 03 | 691 | 0.4+ | 0.3− | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 1997 10 03 | 691 | 0.5+ | 0.4− | 2004 03 22 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 1997 10 10 | 691 | 0.4− | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.1+ |
| 1997 10 10 | 691 | 0.5− | 0.3− | 2004 03 22 | 704 | 0.1+ | 0.3− | 2006 10 23 | H07 | 0.0 | 0.4+ |
| 1997 10 10 | 691 | 0.5− | 0.2− | 2004 03 22 | 704 | 0.1− | 0.1+ | 2006 10 23 | H07 | 0.3+ | 0.0 |
| 2001 08 25 | 704 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.4− | 0.1+ | 2006 10 23 | H07 | 1.2+ | 0.2− |
| 2001 08 25 | 704 | 1.4− | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2001 08 25 | 704 | 1.3− | 0.4− | 2004 03 27 | 704 | 0.4− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2001 08 25 | 704 | 1.0− | 0.2+ | 2004 03 28 | 704 | (0.0 | 2.9+) | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 08 25 | 699 | 0.5+ | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 08 25 | 699 | 1.2+ | 0.1+ | 2004 03 28 | 704 | (2.9+ | 1.3+) | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 08 25 | 699 | 0.2− | 0.6+ | 2004 03 28 | 704 | 0.2− | 0.8− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2001 08 25 | 699 | 0.7+ | 0.5+ | 2004 03 28 | 704 | 0.8+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2001 09 11 | 699 | 0.5+ | 0.6+ | 2004 04 12 | 691 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.5+ |
| 2001 09 11 | 699 | (0.4− | 1.6+) | 2004 04 12 | 691 | 0.4+ | 0.8+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2001 09 11 | 699 | 0.2+ | 0.9+ | 2004 04 12 | 691 | 0.0 | 0.5+ | 2006 11 14 | 703 | 0.8− | 0.7+ |
| 2001 09 11 | 699 | 0.1− | 0.1− | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 0.3− | 0.5− |
| 2001 09 12 | 704 | (0.9− | 1.6+) | 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.6+ |
| 2001 09 12 | 704 | 1.5− | 0.7+ | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2004 04 24 | 184 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2001 09 12 | 704 | 1.2+ | 1.5+ | 2004 04 24 | 184 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2001 09 19 | 699 | 0.9− | 0.5+ | 2004 04 24 | 184 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2001 09 19 | 704 | 1.1− | 0.8+ | 2005 08 04 | 644 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 09 19 | 699 | 0.7+ | 0.7− | 2005 08 04 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2001 09 19 | 699 | 0.2+ | 0.8+ | 2005 08 04 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.6+ | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2001 09 19 | 704 | 0.9− | 1.4+ | 2005 08 27 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.1+ | 1.3+ |
| 2001 09 19 | 699 | 0.4− | 0.1+ | 2005 08 27 | 644 | 0.6− | 0.6+ | 2006 11 22 | 704 | 0.8− | 1.4− |
| 2001 09 19 | 704 | 0.3+ | 0.6− | 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 1.0+ |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.0 | | | | |

**(140173)∗ 2001 SY$_{187}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.01834 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22834506 | $\omega$ | 164.21533 | | +0.12082300 | +0.99081916 | |
| $a$ | 2.6509913 | $\Omega$ | 112.69293 | | −0.91772685 | +0.13478393 | |
| $e$ | 0.0735947 | $i$ | 3.76970 | | −0.37839032 | −0.01052112 | |
| $P$ | 4.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 07 | 691 | 0.1− | 0.5+ | 2004 03 15 | 703 | 0.6+ | 1.3+ | 2005 06 28 | G96 | 0.1− | 0.3+ |
| 1995 02 07 | 691 | 0.2+ | 0.1+ | 2004 03 15 | 704 | (2.0+ | 0.1+) | 2005 06 28 | G96 | 0.3− | 0.3+ |
| 1995 02 07 | 691 | 0.1+ | 0.2− | 2004 03 15 | 703 | (0.4+ | 2.4+) | 2005 07 04 | 691 | 0.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2005 07 04 | 691 | 0.1+ | 0.5− |
| 2000 04 27 | 699 | 0.5+ | 0.5+ | 2004 03 15 | 704 | 0.8+ | 0.3− | 2005 07 04 | 691 | 0.1− | 0.3+ |
| 2000 04 27 | 699 | 0.2+ | 0.6+ | 2004 03 15 | 691 | 0.1− | 0.3+ | 2005 07 15 | G96 | 0.0 | 0.3+ |
| 2000 04 27 | 699 | 1.2− | 0.4− | 2004 03 15 | 691 | 0.1− | 0.2+ | 2005 07 15 | G96 | 0.0 | 0.3+ |
| 2001 08 01 | 644 | 0.0 | 0.7+ | 2004 03 15 | 691 | 0.2− | 0.1+ | 2005 07 15 | G96 | 0.4− | 0.1+ |
| 2001 08 01 | 644 | 0.3− | 0.8+ | 2004 03 17 | 704 | 1.0+ | 0.1− | 2005 07 15 | G96 | 0.3− | 0.5+ |
| 2001 08 01 | 644 | 0.4− | 1.0+ | 2004 03 17 | 704 | 0.2+ | 0.0 | 2005 08 02 | 704 | 0.3− | 0.0 |
| 2001 08 25 | 704 | 0.2− | 1.0+ | 2004 03 17 | 704 | 0.7+ | 0.1− | 2005 08 02 | 704 | 0.2+ | 0.2+ |
| 2001 08 25 | 704 | 0.7− | 0.7+ | 2004 03 19 | 704 | 0.2+ | 0.4+ | 2005 08 02 | 704 | 1.5+ | 0.6+ |
| 2001 08 25 | 704 | 1.3+ | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.1− | 2006 10 16 | 703 | 1.4− | 1.3+ |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2001 09 19 | 704 | 1.0− | 0.8+ | 2004 03 19 | 704 | 0.6+ | 0.8− | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.8− | 1.3+ | 2004 03 19 | 704 | (0.2+ | 1.5+) | 2006 10 16 | 703 | 0.5+ | 1.2+ |
| 2001 09 19 | 704 | 0.9− | 0.6+ | 2004 03 22 | 704 | (0.5− | 1.8+) | 2006 11 02 | 703 | (2.2− | 0.8+) |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2004 03 22 | 704 | 0.7+ | 1.2+ | 2006 11 02 | 703 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | 1.1− | 0.9+ | 2006 11 02 | 703 | 1.6− | 0.4+ |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2004 03 26 | 691 | 0.1− | 0.4+ | 2006 11 02 | 703 | (2.5− | 0.9+) |
| 2004 02 23 | 704 | 0.1+ | 0.3+ | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.3+ |
| 2004 02 23 | 704 | 0.8+ | 1.3+ | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 1.3+ | 0.2− | 2005 06 17 | G96 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2004 02 23 | 704 | 0.4− | 0.1− | 2005 06 17 | G96 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2004 03 15 | 703 | (1.3− | 3.0+) | 2005 06 17 | G96 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2004 03 15 | 704 | (2.2+ | 2.0+) | 2005 06 17 | G96 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 03 15 | 703 | 0.8+ | 0.7+ | 2005 06 28 | G96 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.3+ |
| 2004 03 15 | 704 | 0.8+ | 0.3+ | 2005 06 28 | G96 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.4+ |

**(140174)∗ 2001 SK$_{188}$ = 1997 UQ$_{14}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 20340)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.09923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22354927 | $\omega$ | 311.24224 | | +0.97920072 | +0.19809401 | |
| $a$ | 2.6887714 | $\Omega$ | 37.39337 | | −0.15774813 | +0.87929390 | |
| $e$ | 0.0773103 | $i$ | 4.14279 | | −0.12759893 | +0.43312931 | |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 28 | 691 | 0.1− | 0.3− | 2001 09 21 | 704 | 0.6+ | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 1997 10 28 | 691 | 0.1− | 0.1− | 2001 09 21 | 704 | 0.4+ | 0.5+ | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 1997 10 28 | 691 | 0.3+ | 0.2− | 2001 09 21 | 704 | 0.5+ | 0.3− | 2006 11 09 | 691 | 0.3+ | 0.3+ |
| 1997 11 01 | 691 | 0.2− | 0.1− | 2001 09 22 | 291 | 0.1+ | 0.6+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 1997 11 01 | 691 | 0.3+ | 0.3+ | 2001 09 22 | 291 | 0.1+ | 0.6+ | 2006 11 13 | 691 | 0.3− | 0.1+ |
| 1997 11 01 | 691 | 0.2− | 0.0 | 2001 09 22 | 291 | 0.0 | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | (1.6− | 2.6+) | 2003 01 05 | 704 | 0.3+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2001 08 25 | 644 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 1.1− | 0.0 | 2003 01 05 | 704 | 0.7+ | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 1.3− | 1.2− | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2001 08 25 | 644 | 0.0 | 0.5+ | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2001 08 25 | 644 | 0.3+ | 0.9+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2001 08 25 | 704 | 0.9− | 0.5− | 2004 04 14 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2001 09 11 | 699 | 0.1− | 0.2− | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.8+ | 0.7− |
| 2001 09 11 | 699 | 0.2+ | 1.1+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 09 11 | 699 | (2.4− | 1.1+) | 2004 04 23 | 691 | 0.4+ | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2001 09 11 | 699 | 0.8− | 0.2− | 2004 04 23 | 691 | 0.3− | 0.6− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.4− |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2001 09 19 | 704 | (0.7− | 1.6−) | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.4+ | 0.9− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2001 09 19 | 704 | 1.2− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.9− | 0.1− |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 0.2+ | 0.3− | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1− | | | | |
| 2001 09 21 | 704 | 0.0 | 1.4− | 2006 10 21 | 691 | 0.5+ | 0.6+ | | | | |

**(140175)∗ 2001 SW$_{189}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.91757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23114186 | $\omega$ | 228.82013 | | −0.70533412 | +0.70886228 | |
| $a$ | 2.6295634 | $\Omega$ | 356.31477 | | −0.62898752 | −0.62859846 | |
| $e$ | 0.0755092 | $i$ | 3.78993 | | −0.32692273 | −0.31996602 | |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.2− | 0.4+ | 2004 03 18 | 704 | (1.0+ | 1.7+) | 2004 04 14 | 691 | 0.5+ | 0.5+ |
| 2001 08 20 | 807 | 0.2− | 0.1+ | 2004 03 18 | 704 | 1.1+ | 0.3+ | 2004 04 21 | 704 | 0.5− | 0.9+ |
| 2001 08 21 | 807 | 0.4− | 0.4+ | 2004 03 18 | 704 | 1.5+ | 0.5+ | 2004 04 21 | 704 | 0.1+ | 0.9+ |
| 2001 08 21 | 807 | 0.4− | 0.4+ | 2004 03 20 | 704 | (1.0+ | 1.6+) | 2004 04 21 | 704 | 1.2− | 1.5+ |
| 2001 09 19 | 704 | 0.9− | 1.1+ | 2004 03 20 | 704 | 0.5− | 1.0+ | 2004 04 21 | 704 | 0.0 | 0.8+ |
| 2001 09 19 | 704 | (1.6− | 0.9+) | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2005 07 27 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | (0.1+ | 2.0+) | 2004 03 20 | 704 | 0.4− | 0.8− | 2005 07 27 | 644 | 0.3+ | 0.1− |
| 2001 09 19 | 704 | 0.8− | 0.9+ | 2004 03 27 | 704 | (0.2− | 1.9+) | 2005 07 27 | 644 | 0.3− | 0.3+ |
| 2001 09 19 | 291 | 0.1+ | 0.4+ | 2004 03 27 | 704 | 0.7− | 0.0 | 2006 10 04 | G96 | 0.6− | 0.0 |
| 2001 09 19 | 704 | (1.7− | 1.2+) | 2004 03 27 | 704 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2001 09 19 | 291 | 0.0 | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 2001 09 19 | 291 | 0.1− | 0.4+ | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.4− | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.7− | 0.9+ |
| 2001 09 21 | 704 | 1.1− | 0.4+ | 2004 03 31 | 704 | 0.2− | 1.4− | 2006 10 19 | 691 | 0.6− | 0.7+ |
| 2001 09 21 | 704 | 0.7− | 0.2+ | 2004 03 31 | 704 | 0.9+ | 0.4+ | 2006 10 19 | 691 | 1.1+ | 0.2− |
| 2001 09 21 | 704 | 0.6− | 0.5+ | 2004 03 31 | 704 | (1.9+ | 1.2+) | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2004 03 31 | 704 | 1.1− | 1.2− | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.7+ | 0.5+ | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | 1.1+ | 0.7+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | | | | |

**(140176)∗ 2001 SA$_{192}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.74330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19148077 | $\omega$ | 80.01324 | | +0.34601921 | −0.93778966 | |
| $a$ | 2.9811645 | $\Omega$ | 349.60493 | | +0.78653928 | +0.30659314 | |
| $e$ | 0.0674183 | $i$ | 9.13878 | | +0.51149454 | +0.16294542 | |
| $P$ | 5.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.7+ | 1.5+ | 2006 08 22 | 644 | 0.6+ | 0.1+ |
| 2001 08 20 | 807 | (1.6− | 0.5+) | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 08 22 | 644 | 0.3+ | 0.3+ |
| 2001 08 23 | 699 | 1.0− | 0.3− | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 08 22 | 644 | 0.4+ | 0.3+ |
| 2001 08 23 | 699 | 1.1− | 0.7+ | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.2+ |
| 2001 08 23 | 699 | 0.6− | 1.4+ | 2004 03 13 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.2+ | 0.1+ |
| 2001 08 23 | 699 | (0.7− | 2.0+) | 2004 03 15 | 703 | 0.1+ | 0.8+ | 2006 08 28 | 691 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 0.6+ | 2004 03 15 | 703 | (2.6+ | 0.2+) | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.4+ | 1.4+ | 2004 03 15 | 703 | (1.7+ | 0.7+) | 2006 08 28 | 699 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2004 03 15 | 703 | (0.1+ | 1.7+) | 2006 08 28 | 703 | 0.7− | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.4− |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.5− | 1.1+ | 2006 08 28 | 699 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 03 18 | 704 | 0.6− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2004 03 18 | 704 | 0.1− | 1.1− | 2006 08 28 | 703 | 0.9− | 0.4− |
| 2001 09 21 | 704 | 0.5− | 0.3+ | 2004 03 18 | 704 | (0.4− | 1.6+) | 2006 08 28 | 699 | 0.1+ | 1.2+ |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.4+ | 0.1− | 2006 08 28 | 699 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.7− | 2006 09 14 | 703 | 0.3− | 0.0 |
| 2001 09 24 | 704 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.4− |
| 2001 09 24 | 704 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.4+ | 1.0+ | 2006 09 14 | 703 | 0.4− | 0.4+ |
| 2001 09 24 | 704 | (2.2− | 1.3−) | 2004 03 26 | 704 | 0.2+ | 1.3+ | 2006 09 14 | 703 | 1.0− | 0.3− |
| 2001 09 24 | 704 | (0.6+ | 1.8+) | 2004 03 26 | 704 | 0.7+ | 0.4− | 2006 09 30 | 703 | (1.0+ | 1.7+) |
| 2001 09 24 | 704 | 1.5+ | 0.7− | 2004 03 26 | 704 | (1.5+ | 1.6+) | 2006 09 30 | 703 | 1.4− | 0.9+ |
| 2001 10 11 | 644 | 0.3− | 0.8+ | 2004 03 26 | 704 | 0.6+ | 0.6+ | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 2001 10 11 | 644 | 0.7− | 0.6+ | 2004 03 26 | 704 | 0.7+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.1− | 0.5+ | 2004 03 26 | 704 | 0.9+ | 1.4+ | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2001 12 10 | 645 | 0.1− | 0.1+ | 2004 03 26 | 704 | 0.3+ | 1.3+ | 2006 09 30 | 703 | 1.0− | 0.3− |
| 2001 12 10 | 645 | 0.0 | 0.1+ | 2004 03 26 | 704 | 0.7+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.3+ | 2004 03 26 | 704 | 0.5+ | 1.3+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2002 12 05 | 704 | (0.5− | 1.7+) | 2004 04 25 | 691 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.7− | 1.2+ | 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 1.4+ | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2004 02 26 | 704 | 1.0+ | 1.2+ | 2006 08 22 | 644 | 0.7+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2004 02 26 | 704 | 0.9+ | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.2+ | | | | |

**(140177)∗ 2001 SC$_{192}$ = 1999 CP$_{146}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20341)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.13783 | | (2000.0) | | | |
| $n$ | 0.21222163 | $\omega$ | 102.63704 | | +0.39316789 | +0.91944855 |
| $a$ | 2.7836179 | $\Omega$ | 190.52028 | | −0.85539927 | +0.36346093 |
| $e$ | 0.0300928 | $i$ | 1.81314 | | −0.33721078 | +0.15003504 |
| $P$ | 4.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 09 | 691 | 0.4+ | 0.5+ | 2001 10 24 | 704 | (0.7− | 1.6+) | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1994 01 09 | 691 | 0.0 | 0.1+ | 2004 03 12 | 644 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 1994 01 09 | 691 | 0.4− | 1.4+ | 2004 03 12 | 644 | 0.2+ | 0.8+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 1999 02 09 | 691 | 0.7− | 0.2− | 2004 03 12 | 644 | 0.2+ | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 1999 02 09 | 691 | 0.4− | 0.1− | 2004 03 15 | 703 | (1.3− | 4.1+) | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 1999 02 09 | 691 | 0.5− | 0.3− | 2004 03 15 | 703 | (4.0+ | 1.0+) | 2006 10 02 | 691 | 0.2+ | 0.2+ |
| 1999 02 14 | 691 | 0.6+ | 0.0 | 2004 03 15 | 703 | 1.3+ | 1.5+ | 2006 10 11 | 691 | 0.3− | 0.4+ |
| 1999 02 14 | 691 | 0.9+ | 0.3− | 2004 03 15 | 703 | 0.1+ | 0.7+ | 2006 10 11 | 691 | 0.3− | 0.4+ |
| 1999 02 14 | 691 | 0.6+ | 0.2− | 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 10 11 | 691 | 0.2− | 0.2− |
| 1999 02 23 | 691 | 0.3− | 0.4− | 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.4− | 0.2+ |
| 1999 02 23 | 691 | 0.1− | 0.4− | 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.3− |
| 1999 02 23 | 691 | 0.3− | 0.4− | 2004 03 18 | 704 | 0.6+ | 0.5− | 2006 10 15 | 691 | 0.2− | 0.1− |
| 2001 08 26 | 691 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.5− | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.4− |
| 2001 08 26 | 691 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.7− | 0.7+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2001 08 26 | 691 | 0.1− | 0.6+ | 2004 03 18 | 704 | 0.2+ | 0.8− | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.2− | 1.3+ | 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2004 03 27 | 704 | (2.1+ | 0.0 ) | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2004 03 27 | 704 | (1.7+ | 0.5+) | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2001 09 19 | 704 | 0.7− | 0.7+ | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.4+ |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 1.3+ | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.5+ |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.7− | 0.6− |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2004 03 28 | 291 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.7− | 1.0+ | 2004 03 28 | 291 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2004 03 28 | 291 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.8− | 0.3+ | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2001 09 25 | 704 | 0.5− | 0.2+ | 2004 04 25 | 691 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2001 09 25 | 704 | 0.4+ | 1.3+ | 2004 04 25 | 691 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2001 09 25 | 704 | 0.4+ | 1.1+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2001 09 25 | 704 | (0.2− | 1.6+) | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 24 | 850 | 0.4+ | 0.0 |
| 2001 09 26 | 704 | (2.4− | 1.7+) | 2006 07 21 | G96 | 0.4− | 0.3− | 2006 10 24 | 850 | 0.2+ | 0.8− |
| 2001 09 26 | 704 | (0.8− | 2.3+) | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 24 | 850 | 0.3+ | 0.4− |
| 2001 09 26 | 704 | (0.9− | 2.5+) | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2001 09 26 | 704 | (0.5+ | 1.7+) | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.4+ |
| 2001 10 11 | 644 | 0.2− | 0.8+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.6+ |
| 2001 10 11 | 644 | 0.7− | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 10 11 | 644 | 0.4− | 0.4+ | 2006 09 24 | 691 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.6− |
| 2001 10 24 | 704 | (0.1− | 1.9+) | 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 1.0+ | 0.2− |
| 2001 10 24 | 704 | (0.3+ | 2.3+) | 2006 09 25 | G96 | 0.1+ | 0.0 | | | | |

**(140178)∗ 2001 SM$_{195}$ = 2003 AD$_{68}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40646)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.59761 | | (2000.0) | | | |
| $n$ | 0.21712196 | $\omega$ | 309.97144 | | +0.33787102 | −0.94070948 |
| $a$ | 2.7415755 | $\Omega$ | 120.25679 | | +0.87381780 | +0.30162307 |
| $e$ | 0.0887274 | $i$ | 2.00011 | | +0.34969361 | +0.15520693 |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.8− | 0.0 | 2003 01 10 | 291 | 0.5− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2001 08 24 | 704 | 0.3− | 0.9+ | 2003 01 10 | 291 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2001 08 24 | 704 | 0.8− | 0.0 | 2003 01 10 | 291 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2003 01 31 | 291 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.8+ | 0.9+ | 2003 01 31 | 291 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 2001 09 19 | 704 | 0.6+ | 0.2+ | 2003 01 31 | 291 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.7+ | 0.8+ |
| 2001 09 19 | 704 | 1.1+ | 0.2− | 2003 02 10 | 291 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 1.2+ | 1.0− | 2003 02 10 | 291 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.7+ | 2003 02 10 | 291 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2004 05 14 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 1.3− | 0.5− |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2004 05 14 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2004 05 14 | 691 | 0.1− | 0.9+ | 2006 11 11 | 703 | 0.4− | 1.1− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2004 05 23 | 691 | 0.7+ | 0.8+ | 2006 11 12 | G96 | 0.5+ | 0.3− |
| 2001 09 24 | 704 | 0.3− | 0.2+ | 2004 05 23 | 691 | 0.3+ | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2001 09 24 | 704 | 0.7− | 1.1+ | 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2001 09 24 | 704 | 0.3− | 0.2+ | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.5+ | 0.5− |
| 2001 09 24 | 704 | 0.0 | 1.0+ | 2005 07 04 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.0− | 0.3− |
| 2001 09 24 | 704 | 0.8− | 0.8+ | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 1.0+ | 0.5+ |
| 2001 09 24 | 704 | 0.3− | 0.1− | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2001 10 17 | 644 | 0.8− | 0.3+ | 2005 07 09 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 1.1+ | 0.5− |
| 2001 10 17 | 644 | 0.7− | 0.6+ | 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | (0.1+ | 1.8+) |
| 2001 10 17 | 644 | 1.1− | 0.7+ | 2005 07 15 | G96 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2003 01 05 | 699 | 0.2+ | 0.0 | 2005 07 15 | G96 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2003 01 05 | 699 | (2.8− | 0.4−) | 2005 07 15 | G96 | 0.1− | 0.4+ | 2006 11 18 | 704 | (0.4+ | 1.8+) |
| 2003 01 08 | 704 | 0.1− | 0.7+ | 2005 07 15 | G96 | 0.7− | 0.6+ | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2003 01 08 | 704 | 0.7+ | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 28 | 704 | 1.0+ | 0.2− |
| 2003 01 08 | 704 | 0.3− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.4+ |
| 2003 01 08 | 704 | 0.6+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2003 01 08 | 704 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.2− | 0.1− | | | | |

**(140179)∗ 2001 SK$_{196}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.05454 | | (2000.0) | | | |
| $n$ | 0.19863652 | $\omega$ | 262.77717 | | +0.17657133 | −0.98428650 |
| $a$ | 2.9091312 | $\Omega$ | 177.05123 | | +0.91509878 | +0.16354993 |
| $e$ | 0.0297149 | $i$ | 1.81406 | | +0.36251454 | +0.06656955 |
| $P$ | 4.96 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 10 | 691 | 0.4+ | 0.9− | 2001 10 17 | 644 | 0.6+ | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 1991 09 10 | 691 | 0.3+ | 0.8− | 2004 03 15 | 703 | (2.1− | 2.4−) | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 1991 09 10 | 691 | 0.4+ | 0.9− | 2004 03 15 | 703 | (0.1+ | 1.5−) | 2006 09 14 | 644 | 0.0 | 0.0 |
| 1999 03 19 | 691 | 0.5− | 0.2− | 2004 03 15 | 703 | 0.7− | 0.2+ | 2006 09 14 | 644 | 0.7− | 0.1− |
| 1999 03 19 | 691 | 0.8− | 0.6− | 2004 03 15 | 703 | (1.9− | 0.6+) | 2006 09 14 | 644 | 0.3− | 0.3+ |
| 1999 03 19 | 691 | 0.0 | 0.5− | 2004 03 18 | 704 | (3.2+ | 1.0−) | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2004 03 18 | 704 | (2.2+ | 0.4+) | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2004 03 18 | 704 | (2.0+ | 0.7+) | 2006 09 15 | 691 | 0.4+ | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2004 03 18 | 704 | (1.9+ | 0.5−) | 2006 09 17 | 704 | 0.2+ | 0.0 |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2004 03 18 | 704 | (0.6+ | 1.7+) | 2006 09 17 | 704 | 1.3+ | 1.0+ |
| 2001 08 25 | 691 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.1+ | 0.9+ |
| 2001 08 25 | 691 | 0.2− | 0.1+ | 2004 03 22 | 704 | 1.0+ | 0.6− | 2006 09 17 | 704 | 0.2− | 0.1− |
| 2001 08 25 | 691 | 0.4− | 0.0 | 2004 03 22 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.6+ | 0.8+ |
| 2001 08 25 | 691 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.5+ | 0.8− | 2006 09 18 | 699 | 0.2− | 0.4− |
| 2001 08 25 | 691 | 0.4+ | 0.5+ | 2004 03 23 | 704 | 0.1− | 1.0+ | 2006 09 18 | 699 | 1.4+ | 0.3+ |
| 2001 08 25 | 691 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.1− | 1.2+ | 2006 09 18 | 699 | 0.5+ | 0.9+ |
| 2001 09 19 | 704 | (0.1− | 1.7−) | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | (0.0 | 1.8−) | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.4− | 0.3+ | | |
| 2001 09 19 | 704 | (0.2+ | 1.5−) | 2004 03 26 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.3− | 0.4+ | | |
| 2001 09 19 | 704 | (1.5− | 2.3−) | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.1+ | | |
| 2001 09 19 | 704 | (0.1− | 2.1−) | 2004 03 27 | 704 | 0.6+ | 1.5+ | 2006 09 30 | 703 | 0.7− | 0.5+ | | |
| 2001 09 21 | 704 | 1.4− | 0.1− | 2004 03 27 | 704 | 0.5+ | 1.5+ | 2006 09 30 | 703 | 0.4− | 0.1− | | |
| 2001 09 21 | 704 | 1.4− | 0.2− | 2004 03 27 | 704 | (0.1− | 1.6+) | 2006 09 30 | 703 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | 0.5− | 0.4− | 2004 03 27 | 704 | (0.1− | 2.4+) | 2006 10 16 | 703 | 0.1+ | 0.3− | | |
| 2001 09 21 | 704 | 1.2− | 0.6− | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.3+ | | |
| 2001 09 23 | 691 | 0.3− | 0.3+ | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.7− | | |
| 2001 09 23 | 704 | 0.3− | 0.9− | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.2+ | | |
| 2001 09 23 | 691 | 0.1− | 0.5+ | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2001 09 23 | 704 | 0.1+ | 0.2+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.0 | | |
| 2001 09 23 | 704 | 0.1− | 0.6− | 2004 04 19 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.8+ | | |
| 2001 09 23 | 691 | 0.3− | 0.3+ | 2006 07 22 | G96 | 0.4− | 0.4− | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2001 09 23 | 704 | 0.2− | 0.2+ | 2006 07 22 | G96 | 0.4+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.3− | | |
| 2001 09 23 | 704 | 0.1+ | 0.6+ | 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.1− | 0.1− | | |
| 2001 10 17 | 644 | 0.3+ | 0.6+ | 2006 07 22 | G96 | 0.9+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.3− | | |
| 2001 10 17 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 691 | 0.3− | 0.1+ | | | | | | |

**(140180)∗ 2001 ST$_{200}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.21042 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18620931 | $\omega$ | 141.40162 | | −0.76830569 | | −0.64007784 |
| $a$ | 3.0371654 | $\Omega$ | 358.79142 | | +0.55251251 | | −0.66114134 |
| $e$ | 0.1219510 | $i$ | 7.06414 | | +0.32316605 | | −0.39139811 |
| $P$ | 5.29 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.3− | 0.3+ | 2004 03 13 | 644 | 0.4+ | 0.5+ | 2004 04 22 | 703 | (0.1+ | 1.9+) | | |
| 2001 08 25 | 691 | 0.1+ | 0.1+ | 2004 03 13 | 644 | 0.4+ | 0.5+ | 2004 04 22 | 703 | (2.7+ | 1.7+) | | |
| 2001 08 25 | 691 | 0.4− | 0.4+ | 2004 03 15 | 703 | 0.3+ | 0.7− | 2004 04 22 | 703 | 0.6− | 0.7− | | |
| 2001 09 19 | 704 | 0.7+ | 0.7+ | 2004 03 15 | 703 | 0.4− | 1.3− | 2004 04 22 | 703 | 1.0− | 1.3+ | | |
| 2001 09 19 | 704 | 0.1− | 1.2+ | 2004 03 15 | 703 | 0.4− | 0.2− | 2004 04 28 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 19 | 704 | (0.5− | 1.6+) | 2004 03 15 | 703 | 0.1+ | 0.1− | 2004 04 28 | 691 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.7+ | 2004 03 18 | 704 | 1.3+ | 0.8+ | 2004 04 28 | 691 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | (0.6+ | 1.9+) | 2004 03 18 | 704 | 1.2+ | 0.6+ | 2006 08 16 | 644 | 0.6+ | 0.3− | | |
| 2001 09 21 | 704 | 1.1− | 0.5+ | 2004 03 18 | 704 | 1.0+ | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 1.4− | 0.4+ | 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.1+ | | |
| 2001 09 21 | 704 | 1.3− | 0.3+ | 2004 03 18 | 704 | 0.7+ | 1.1+ | 2006 08 18 | 644 | 0.1+ | 0.1− | | |
| 2001 09 21 | 704 | 1.3− | 0.4+ | 2004 03 20 | 704 | 1.3+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | (1.6− | 0.8+) | 2004 03 20 | 704 | 0.1+ | 0.8+ | 2006 08 18 | 644 | 0.3+ | 0.0 | | |
| 2001 09 22 | 691 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.4− | 0.1+ | | |
| 2001 09 22 | 691 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.0 | | |
| 2001 09 22 | 691 | 0.1− | 0.1− | 2004 03 27 | 704 | (4.9− | 0.8+) | 2006 08 28 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 11 | 644 | 0.3+ | 1.0+ | 2004 03 27 | 704 | (2.7− | 0.7+) | 2006 08 28 | 699 | 0.5+ | 0.3+ | | |
| 2001 10 11 | 644 | (0.2− | 1.6+) | 2004 03 27 | 704 | 0.6− | 1.0− | 2006 08 28 | 703 | 0.1+ | 0.1− | | |
| 2001 10 11 | 644 | 0.0 | 1.2+ | 2004 03 27 | 704 | (2.0− | 0.5+) | 2006 08 28 | 703 | 0.2+ | 1.1− | | |
| 2001 10 17 | 644 | 0.1+ | 0.4+ | 2004 03 30 | 704 | 0.2+ | 1.0+ | 2006 08 28 | 699 | 0.1− | 0.7+ | | |
| 2001 10 17 | 644 | 0.3− | 0.9+ | 2004 03 30 | 704 | 0.6+ | 0.5+ | 2006 08 28 | 703 | 0.7− | 1.4+ | | |
| 2001 10 17 | 644 | 0.0 | 0.5+ | 2004 03 30 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.4− | | |
| 2002 12 05 | 704 | 0.5+ | 0.4+ | 2004 03 30 | 704 | 0.7+ | 0.5+ | 2006 08 28 | 699 | 0.2+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.7− | 1.1+ | 2004 04 15 | 699 | 0.5+ | 0.3− | 2006 08 28 | 699 | (0.2+ | 1.5+) | | |
| 2002 12 05 | 704 | 0.4− | 0.4+ | 2004 04 15 | 699 | 0.6− | 0.6+ | 2006 09 14 | 291 | 0.1+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.9+ | 0.4+ | 2004 04 15 | 699 | 0.2− | 0.7+ | 2006 09 14 | 291 | 0.1− | 0.5+ | | |
| 2002 12 15 | 704 | (0.6− | 1.8+) | 2004 04 15 | 699 | 0.0 | 0.5− | 2006 09 14 | 291 | 0.1− | 0.5+ | | |
| 2002 12 15 | 704 | 1.1− | 1.3+ | 2004 04 16 | 704 | 0.5− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.3− | | |
| 2002 12 15 | 704 | 0.1+ | 1.0+ | 2004 04 16 | 704 | 0.8− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− | | |
| 2003 01 04 | 704 | (2.4− | 0.7+) | 2004 04 16 | 704 | 0.7− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.4− | | |
| 2003 01 04 | 704 | (2.4− | 0.2+) | 2004 04 16 | 704 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.5− | | |
| 2003 01 04 | 704 | (2.4− | 0.6+) | 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.6− | | |
| 2004 02 26 | 704 | 0.5+ | 0.2+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2004 02 26 | 704 | 0.0 | 1.0+ | 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2004 02 26 | 704 | 0.4+ | 0.1− | 2004 04 20 | 704 | 0.6− | 1.0+ | 2006 11 16 | G96 | 0.4− | 0.5− | | |
| 2004 02 26 | 704 | 0.9− | 0.9+ | 2004 04 20 | 704 | 0.9+ | 0.9+ | | | | | | |
| 2004 03 13 | 644 | 0.4+ | 0.6+ | 2004 04 20 | 704 | 0.8+ | 0.4− | | | | | | |

**(140181)∗ 2001 SZ$_{201}$ = 2004 GU$_{80}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65023)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.10815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21116952 | $\omega$ | 103.46376 | | +0.15452127 | | +0.98795689 |
| $a$ | 2.7928561 | $\Omega$ | 175.40258 | | −0.94077198 | | +0.14961192 |
| $e$ | 0.0667148 | $i$ | 5.74438 | | −0.30178015 | | +0.03946466 |
| $P$ | 4.67 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.6+ | 0.6− | 2001 10 20 | 704 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.6+ | 0.2+ | | |
| 2000 05 27 | 704 | 0.4− | 0.3− | 2004 03 18 | 683 | 0.2+ | 0.3+ | 2006 09 20 | 699 | (2.9+ | 0.3+) | | |
| 2000 05 27 | 704 | 0.0 | 0.7+ | 2004 03 18 | 683 | 0.9+ | 0.9+ | 2006 09 20 | 699 | (0.4+ | 1.7+) | | |
| 2000 05 27 | 704 | 0.4− | 0.6− | 2004 03 18 | 683 | 0.5− | 1.4− | 2006 10 02 | G96 | 0.2− | 0.0 | | |
| 2001 09 19 | 704 | (0.5+ | 2.1+) | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 2001 09 19 | 704 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.1+ | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.8+ | 1.5+ | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.0 | | |
| 2001 09 19 | 704 | 0.4+ | 0.9+ | 2004 03 18 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2004 03 27 | 291 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.5− | 0.9+ | 2004 03 27 | 291 | 0.2− | 0.3+ | 2006 10 16 | 703 | 1.3− | 1.0− | | |
| 2001 09 21 | 704 | 0.4− | 0.6+ | 2004 03 27 | 291 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.5− | | |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.4− | | |
| 2001 10 17 | 644 | 0.2− | 0.2+ | 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.3− | | |
| 2001 10 17 | 644 | 0.9− | 0.4+ | 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.5− | | |
| 2001 10 17 | 644 | 0.7− | 0.4+ | 2004 04 21 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.3− | | |
| 2001 10 20 | 704 | 0.2+ | 0.6+ | 2004 04 21 | 691 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.1− | | |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2004 04 21 | 691 | 0.5+ | 0.3− | 2006 11 22 | G96 | 0.3− | 0.1− | | |
| 2001 10 20 | 704 | 0.5− | 1.0+ | 2006 09 20 | 699 | (0.0 | 2.1−) | 2006 11 22 | G96 | 0.1− | 0.3− | | |

**(140182)∗ 2001 SO$_{205}$ = 2005 NM$_{93}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 84939)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.43984 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21811470 | $\omega$ | 215.29395 | | +0.99167082 | | −0.12600442 |
| $a$ | 2.7332504 | $\Omega$ | 151.90915 | | +0.12731143 | | +0.92757625 |
| $e$ | 0.0928569 | $i$ | 3.24828 | | +0.01951367 | | +0.35174591 |
| $P$ | 4.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.1+ | 0.2+ | 2002 12 07 | 291 | 0.3− | 0.3+ | 2005 07 15 | 691 | 1.2− | 1.0+ | | |
| 1994 01 10 | 691 | 0.1+ | 0.3+ | 2002 12 07 | 291 | 0.3− | 0.5+ | 2005 07 15 | 691 | 0.7+ | 0.2− | | |
| 1994 01 10 | 691 | 0.4+ | 0.1+ | 2002 12 07 | 291 | 0.6− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.3− | | |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2003 02 01 | 645 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.3− | | |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2004 05 09 | 691 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.4+ | 0.7+ | 2004 05 09 | 691 | 0.0 | 0.9+ | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2004 05 09 | 691 | 0.4+ | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.4− | | |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2005 06 15 | G96 | 1.4− | 0.9+ | 2006 11 12 | G96 | 0.2+ | 0.2− | | |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2005 06 15 | G96 | 0.2− | 0.8+ | 2006 11 12 | G96 | 0.4− | 0.4− | | |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2005 06 15 | G96 | 0.5+ | 0.9+ | 2006 11 20 | 691 | 0.3+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2005 06 15 | G96 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.4+ | 0.0 | | |
| 2001 10 17 | 644 | 1.0− | 0.3− | 2005 07 06 | 691 | 0.2+ | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.6+ | | |
| 2001 10 17 | 644 | 0.7− | 0.4− | 2005 07 06 | 691 | 0.3+ | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.4+ | | |
| 2001 10 17 | 644 | 0.9− | 0.3− | 2005 07 15 | 691 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.1− | 0.1+ | | |

**(140183)∗ 2001 SP$_{205}$ = 2003 AP$_{19}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40648)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.20140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21114846 | $\omega$ | 276.79402 | | +0.64244304 | +0.76495858 | |
| $a$ | 2.7930418 | $\Omega$ | 33.32287 | | −0.66597754 | +0.58693149 | |
| $e$ | 0.0567331 | $i$ | 4.79106 | | −0.37913171 | +0.26523534 | |
| $P$ | 4.67 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.9+ | 0.5− | 2004 03 12 | 644 | 0.5+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 1992 10 25 | 691 | 0.4− | 0.0 | 2004 03 12 | 644 | 0.5+ | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.2+ |
| 1992 10 25 | 691 | 0.2− | 0.5− | 2004 03 12 | 644 | 0.7+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2001 09 11 | 699 | (1.9− | 0.6−) | 2004 03 19 | 704 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2001 09 11 | 699 | 1.4− | 0.1− | 2004 03 19 | 704 | 1.3+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 09 11 | 699 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.1+ | 1.0+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2001 09 11 | 699 | (1.2− | 2.4+) | 2004 03 19 | 704 | 1.0+ | 0.1− | 2006 10 12 | 691 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 1.4+ | 2004 03 19 | 704 | 1.2+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2004 03 22 | 704 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 1.2+ | 2004 03 22 | 704 | 0.2− | 0.0 | 2006 10 16 | 691 | 1.4− | 0.0 |
| 2001 09 19 | 704 | 0.4+ | 1.2+ | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 1.0+ | 2004 03 22 | 704 | 0.1− | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.9− | 0.6+ | 2004 03 24 | 699 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2004 03 24 | 699 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2004 03 24 | 699 | 1.5− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.6+ | 2004 03 24 | 699 | 0.3+ | 1.3+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2001 09 21 | 704 | 0.9− | 0.3+ | 2004 03 28 | 704 | 1.3+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.1+ | 0.5− | 2004 03 28 | 704 | 1.3+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 09 26 | 704 | 0.3+ | 1.1+ | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | (0.8+ | 2.4+) | 2004 03 28 | 704 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 09 27 | 704 | 0.3− | 0.3+ | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 10 27 | 683 | (0.4+ | 2.8−) |
| 2001 09 27 | 704 | 0.1− | 0.8+ | 2004 04 15 | 644 | 0.0 | 1.0+ | 2006 10 27 | 683 | 1.1− | 0.3− |
| 2001 09 27 | 704 | 0.7+ | 0.1+ | 2004 04 15 | 644 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2001 09 27 | 704 | 0.2+ | 0.6+ | 2004 04 25 | 691 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 09 27 | 704 | 0.2+ | 0.2− | 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2001 10 17 | 644 | (0.1− | 1.7+) | 2004 04 25 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 10 17 | 644 | 0.1− | 1.4+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2001 10 17 | 644 | (0.3+ | 1.6+) | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2003 01 05 | 704 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 2.4− | 0.4− |
| 2003 01 05 | 704 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2003 01 05 | 704 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.7+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2003 01 07 | 704 | 0.6+ | 0.4− | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 13 | G96 | 0.6+ | 0.2− |
| 2003 01 07 | 704 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.7− | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2003 01 07 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 11 15 | 691 | 0.4+ | 0.1− |
| 2003 01 07 | 704 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.4+ | 0.0 |
| 2003 01 07 | 704 | 1.0− | 0.3+ | 2006 10 04 | G96 | 0.6+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1− |

**(140184)∗ 2001 SO$_{206}$ = 1995 MT$_5$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. A. Doppler (*MPO* 20345)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.24610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18419156 | $\omega$ | 49.27441 | | −0.68104791 | +0.73221746 | |
| $a$ | 3.0593058 | $\Omega$ | 177.77594 | | −0.70776639 | −0.65630748 | |
| $e$ | 0.0565114 | $i$ | 8.29237 | | −0.18772448 | −0.18198373 | |
| $P$ | 5.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 23 | 691 | 0.4− | 0.3− | 2001 09 19 | 704 | 0.5+ | 0.6− | 2005 06 13 | 691 | 0.1+ | 0.1+ |
| 1995 06 23 | 691 | 0.1− | 0.3+ | 2001 09 21 | 704 | 0.4− | 0.8+ | 2005 06 13 | 691 | 0.1− | 0.1− |
| 1995 06 23 | 691 | 0.3− | 0.1− | 2001 09 21 | 704 | 1.7− | 0.8− | 2005 06 13 | 691 | 0.1− | 0.0 |
| 1995 06 29 | 691 | 0.2+ | 0.4− | 2001 09 21 | 704 | 0.8− | 0.6− | 2005 06 27 | 691 | 0.1+ | 0.3+ |
| 1995 06 29 | 691 | 0.4+ | 0.5− | 2001 09 21 | 704 | 0.7+ | 0.2+ | 2005 06 27 | 691 | 0.2+ | 0.2+ |
| 1995 06 29 | 691 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.8+ | 0.0 | 2005 06 27 | 691 | 0.0 | 0.4+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.1− | 0.5+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2001 09 18 | 291 | 0.1+ | 0.8+ | 2004 03 21 | 691 | 0.0 | 0.4+ | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2001 09 18 | 291 | 0.5+ | 0.4+ | 2004 03 21 | 691 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.5− | 0.2− |
| 2001 09 18 | 291 | 0.3+ | 0.4+ | 2004 03 21 | 691 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.6+ | 0.2+ | 2005 06 08 | 691 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2005 06 08 | 691 | 0.1− | 0.0 | | | | |

**(140185)∗ 2001 SV$_{206}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.35483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18325373 | $\omega$ | 203.28355 | | +0.93418825 | −0.35664827 | |
| $a$ | 3.0697347 | $\Omega$ | 177.54804 | | +0.35251120 | +0.91846915 | |
| $e$ | 0.0134973 | $i$ | 13.12112 | | +0.05502874 | +0.17092817 | |
| $P$ | 5.38 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.6− | 0.7+ | 2001 10 24 | 704 | (0.4− | 1.7+) | 2005 06 25 | 644 | 0.1− | 0.1+ |
| 2001 08 24 | 704 | 0.9− | 0.4− | 2001 10 24 | 704 | (0.6− | 1.8+) | 2005 06 25 | 644 | 0.0 | 0.0 |
| 2001 08 24 | 704 | 0.7− | 0.9+ | 2001 10 24 | 704 | 1.1− | 0.6+ | 2005 06 30 | 644 | 0.1− | 0.0 |
| 2001 09 18 | 291 | 0.0 | 0.2+ | 2001 10 24 | 704 | 0.4− | 1.5+ | 2005 06 30 | 644 | 0.2− | 0.0 |
| 2001 09 18 | 291 | 0.0 | 0.3+ | 2001 10 24 | 704 | 0.8− | 1.2+ | 2005 06 30 | 644 | 0.1− | 0.2+ |
| 2001 09 18 | 291 | 0.4− | 0.2+ | 2004 02 26 | 704 | 0.7+ | 0.0 | 2005 07 01 | 644 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2004 02 26 | 704 | 0.5+ | 0.8+ | 2005 07 01 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 0.8+ | 2004 02 26 | 704 | 0.5+ | 0.9+ | 2005 07 01 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | (0.0 | 2.0+) | 2004 02 26 | 704 | 0.6+ | 0.5− | 2005 07 05 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2004 03 16 | 599 | 0.2− | 0.8+ | 2005 07 05 | 691 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2004 03 16 | 599 | 0.1− | 0.4+ | 2005 07 05 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | (0.6+ | 1.8+) | 2004 03 16 | 599 | 0.3− | 0.8+ | 2006 09 15 | 691 | 0.3− | 0.0 |
| 2001 09 21 | 704 | (0.4+ | 1.8+) | 2004 03 16 | 599 | 0.2+ | 0.8+ | 2006 09 15 | 691 | 0.7− | 0.2− |
| 2001 09 21 | 704 | (0.4+ | 1.8+) | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | (0.9+ | 2.2+) | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 0.6− | 0.2+ | 2004 03 18 | 704 | 0.0 | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 0.4− | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.2− |
| 2001 09 23 | 704 | 0.8− | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.5− | 0.8+ | 2004 03 18 | 691 | 0.0 | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.4+ | 0.5+ | 2004 03 18 | 691 | 0.1− | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2001 09 26 | 704 | 0.3+ | 0.7+ | 2004 03 18 | 691 | 0.2+ | 0.6+ | 2006 10 23 | 291 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.3+ | 1.3+ | 2004 03 23 | 843 | (1.9− | 2.4+) | 2006 10 23 | 291 | 0.8+ | 0.3+ |
| 2001 09 26 | 704 | 0.0 | 1.0+ | 2004 03 23 | 843 | 0.3+ | 1.4+ | 2006 10 23 | 291 | 0.2+ | 0.2+ |
| 2001 09 26 | 704 | 0.7+ | 0.1− | 2004 03 23 | 843 | (1.0− | 2.0+) | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2001 10 13 | 704 | 1.2+ | 0.4− | 2005 06 04 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2001 10 13 | 704 | 1.1+ | 0.3+ | 2005 06 04 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.1+ |
| 2001 10 13 | 704 | (2.2+ | 0.0 ) | 2005 06 04 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.7+ | 0.2− |
| 2001 10 13 | 704 | 0.9+ | 0.4+ | 2005 06 25 | 644 | 0.3− | 0.0 | | | | |

**(140186)∗ 2001 SZ$_{206}$ = 2004 FK$_{109}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 61064)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.80154 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20294867 | $\omega$ | 300.08862 | | −0.11624739 | −0.99307557 | |
| $a$ | 2.8677761 | $\Omega$ | 156.56891 | | +0.92530780 | −0.11448684 | |
| $e$ | 0.0285145 | $i$ | 2.44369 | | +0.36095987 | −0.02633777 | |
| $P$ | 4.86 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 05 | 691 | 0.7+ | 0.6− | 2001 09 23 | 704 | 1.2+ | 0.5+ | 2004 03 27 | 704 | 0.9+ | 0.1+ |
| 1991 09 05 | 691 | 0.2+ | 0.3− | 2001 09 23 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 0.8+ | 0.4− |
| 1991 09 05 | 691 | 0.2− | 0.1+ | 2001 09 26 | 704 | 0.2− | 0.8+ | 2004 04 21 | 704 | 1.4+ | 0.0 |
| 1994 03 05 | 691 | 0.3+ | 0.1− | 2001 09 26 | 704 | 0.4− | 0.6− | 2004 04 21 | 704 | 0.2+ | 0.5+ |
| 1994 03 05 | 691 | 0.1+ | 0.2− | 2001 09 26 | 704 | 0.0 | 0.7− | 2004 04 21 | 704 | (0.6+ | 3.3+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.6+ | 0.1− | 2001 09 26 | 704 | 0.7− | 0.3− | 2006 09 14 | 703 | 0.2− | 0.8− |
| 1996 09 11 | 691 | 1.2− | 0.1− | 2001 10 11 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.9+ | 0.6− |
| 1996 09 11 | 691 | 0.7− | 0.1+ | 2001 10 11 | 644 | 0.1− | 0.6+ | 2006 09 14 | 703 | (1.9− | 0.2+) |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 10 11 | 644 | 0.4+ | 0.8+ | 2006 09 14 | 703 | 0.9− | 0.3− |
| 1999 03 22 | 645 | 0.2− | 0.2+ | 2003 01 04 | 704 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.8+ | 0.9+ | 2003 01 04 | 704 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 1.0+ | 2004 03 19 | 704 | 1.0+ | 0.4− | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.6+ | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2004 03 19 | 704 | 0.3+ | 1.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.7+ | 1.4+ | 2004 03 24 | 699 | 0.1− | 1.3+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 1.2+ | 2004 03 24 | 699 | (1.8+ | 1.0−) | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.6+ | 1.4+ | 2004 03 24 | 699 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.6+ | 1.4+ | 2004 03 24 | 699 | 0.3+ | 0.7− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.6+ | 0.9+ | 2004 03 27 | 704 | 0.4+ | 1.4+ | | | | |
| 2001 09 23 | 704 | 0.4+ | 0.6+ | 2004 03 27 | 704 | (0.3− | 1.9+) | | | | |

**(140187)∗ 2001 SF$_{211}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.21865 | | (2000.0) | | | |
| $n$ | 0.20909646 | $\omega$ | 53.25369 | | +0.50463605 | −0.86318369 |
| $a$ | 2.8112853 | $\Omega$ | 6.49962 | | +0.74015039 | +0.42301177 |
| $e$ | 0.0981460 | $i$ | 8.13181 | | +0.44443207 | +0.27563555 |
| $P$ | 4.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 07 | 691 | 0.5− | 0.3+ | 2001 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.4− |
| 1999 04 07 | 691 | 0.2− | 0.2− | 2001 10 21 | 704 | (1.8+ | 0.6−) | 2006 10 21 | 691 | 0.0 | 0.2− |
| 1999 04 07 | 691 | 0.3+ | 0.6− | 2001 10 21 | 704 | 0.9+ | 1.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 08 27 | 699 | 1.0− | 0.1+ | 2001 10 21 | 704 | 0.1− | 1.5− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 08 27 | 699 | 0.3− | 0.2+ | 2001 10 21 | 704 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 08 27 | 699 | (1.2+ | 1.9+) | 2001 11 18 | 291 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 08 27 | 699 | 0.4+ | 0.4− | 2001 11 18 | 291 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 09 18 | 699 | 0.3− | 0.7+ | 2001 11 18 | 291 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.8− | 0.3+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.3+ |
| 2001 09 18 | 699 | 1.2− | 0.6− | 2003 01 25 | 645 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 1.1− | 0.8− |
| 2001 09 19 | 704 | 0.1− | 1.4+ | 2003 01 31 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.6+ | 0.8+ |
| 2001 09 19 | 704 | 0.6− | 1.5+ | 2003 01 31 | 704 | 0.4− | 1.2+ | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2001 09 20 | 691 | 0.3− | 0.0 | 2003 01 31 | 704 | 1.2+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.5− |
| 2001 09 20 | 691 | 0.3− | 0.0 | 2003 01 31 | 704 | (0.8− | 1.8+) | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2001 09 20 | 691 | 0.0 | 0.0 | 2003 03 07 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2003 03 07 | 644 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.1− | 2003 03 07 | 644 | 0.1+ | 0.7+ | 2006 11 14 | 703 | 0.1+ | 0.9+ |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2006 10 04 | G96 | 0.3+ | 0.2+ | 2006 11 14 | 703 | (0.8+ | 1.6−) |
| 2001 09 21 | 704 | 0.7+ | 0.4− | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 14 | 703 | (2.1+ | 0.1+) |
| 2001 09 23 | 704 | 0.1+ | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.6+ |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2001 09 23 | 704 | 0.1+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2001 09 26 | 704 | (1.7+ | 1.6+) | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.8− |
| 2001 09 26 | 704 | 0.0 | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 09 26 | 704 | (0.4+ | 2.4+) | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2001 09 26 | 704 | (1.1+ | 1.7+) | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2001 09 27 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2001 09 27 | 704 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.6− |
| 2001 09 27 | 704 | (1.1+ | 2.1+) | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.1− | 0.6− |
| 2001 09 27 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.4+ | 1.3− |
| 2001 09 27 | 704 | 0.7+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.5+ | 1.2− |
| 2001 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.4+ |
| 2001 10 11 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2− | | | | |

**(140188)∗ 2001 SJ$_{211}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.54470 | | (2000.0) | | | |
| $n$ | 0.26673476 | $\omega$ | 281.57061 | | −0.15054361 | −0.98858803 |
| $a$ | 2.3901013 | $\Omega$ | 177.07093 | | +0.94383279 | −0.14538098 |
| $e$ | 0.0948996 | $i$ | 6.18621 | | +0.29413650 | −0.03947241 |
| $P$ | 3.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 21 | 691 | 0.2− | 0.0 | 2001 09 27 | 704 | 0.5+ | 0.4+ | 2003 03 27 | 691 | 0.6+ | 1.2+ |
| 1996 04 21 | 691 | 0.1+ | 0.2+ | 2001 09 27 | 704 | 0.4− | 0.7+ | 2005 10 25 | 703 | 0.4− | 0.3+ |
| 1996 04 21 | 691 | 0.1+ | 0.3+ | 2001 10 13 | 704 | 0.6+ | 0.3− | 2005 10 25 | 703 | 0.4+ | 0.5+ |
| 2001 08 27 | 644 | 0.7− | 0.8+ | 2001 10 13 | 704 | 0.4+ | 0.7+ | 2005 10 25 | 703 | 0.6− | 0.2− |
| 2001 08 27 | 644 | 0.8− | 0.9+ | 2001 10 13 | 704 | 1.4+ | 1.3+ | 2005 10 25 | 703 | 0.2+ | 0.7− |
| 2001 08 27 | 644 | 1.0− | 0.9+ | 2001 10 17 | 644 | 0.0 | 0.0 | 2005 10 31 | 703 | 1.5+ | 0.3+ |
| 2001 09 12 | 333 | 0.4+ | 0.6− | 2001 10 17 | 644 | 0.0 | 0.2− | 2005 10 31 | 703 | 0.7− | 0.7− |
| 2001 09 12 | 333 | 1.2− | 0.1− | 2001 10 17 | 644 | 0.2− | 0.1+ | 2005 10 31 | 703 | 0.2− | 0.5− |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2001 10 20 | 704 | 0.1− | 0.4+ | 2005 10 31 | 703 | 0.2− | 0.2− |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2001 10 20 | 704 | 0.6− | 0.5+ | 2005 11 05 | 703 | 0.4+ | 0.0 |
| 2001 09 19 | 704 | 0.4+ | 1.3+ | 2001 10 20 | 704 | 0.7+ | 0.5+ | 2005 11 05 | 703 | 0.4− | 0.5− |
| 2001 09 19 | 704 | 0.1+ | 1.4+ | 2001 10 24 | 704 | 0.8+ | 0.7+ | 2005 11 05 | 703 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.3− | 0.9+ | 2001 10 24 | 704 | 0.1+ | 0.8+ | 2005 11 05 | 703 | 0.4+ | 0.2− |
| 2001 09 20 | 691 | 0.4− | 0.3+ | 2001 10 24 | 704 | 0.1+ | 1.3+ | 2005 11 05 | 704 | 0.5− | 0.2− |
| 2001 09 20 | 691 | 0.4− | 0.1+ | 2003 02 27 | 599 | 0.0 | 0.1+ | 2005 11 05 | 704 | 0.0 | 0.5− |
| 2001 09 20 | 691 | 0.5− | 0.1+ | 2003 02 27 | 599 | 0.2− | 0.2+ | 2005 11 05 | 704 | 0.3+ | 1.5− |
| 2001 09 21 | 704 | 0.4− | 2.1+ | 2003 02 27 | 599 | 0.2+ | 0.2+ | 2005 11 05 | 704 | 0.5+ | 0.4+ |
| 2001 09 21 | 704 | 0.2− | 1.4+ | 2003 02 27 | 599 | 0.0 | 0.2+ | 2005 11 20 | 699 | 0.8− | 0.8− |
| 2001 09 21 | 704 | (1.0− | 3.4+) | 2003 03 06 | 699 | 0.1+ | 0.7+ | 2005 11 20 | 699 | 0.1+ | 0.5− |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2003 03 06 | 699 | 0.2+ | 0.1+ | 2005 11 20 | 644 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 1.0− | 2.1+ | 2003 03 06 | 699 | 0.2+ | 0.2+ | 2005 11 20 | 699 | 0.4+ | 1.1− |
| 2001 09 23 | 704 | 0.4− | 0.0 | 2003 03 06 | 699 | 1.4+ | 1.7+ | 2005 11 20 | 644 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.5− | 0.3+ | 2003 03 09 | 704 | 0.4− | 0.8+ | 2005 11 20 | 699 | 0.3+ | 0.6+ |
| 2001 09 23 | 704 | 0.3+ | 1.1+ | 2003 03 09 | 704 | 0.4− | 0.7+ | 2005 11 20 | 644 | 0.1− | 0.2+ |
| 2001 09 26 | 704 | 0.7− | 0.4+ | 2003 03 09 | 704 | 0.3− | 0.7+ | 2005 11 29 | 644 | 0.0 | 0.4− |
| 2001 09 26 | 704 | 0.2+ | 0.8+ | 2003 03 09 | 704 | 0.1+ | 1.1+ | 2005 11 29 | 644 | 0.2+ | 0.3− |
| 2001 09 26 | 704 | 0.1+ | 0.8+ | 2003 03 09 | 704 | 0.1+ | 0.2+ | 2005 11 29 | 644 | 0.0 | 0.3− |
| 2001 09 26 | 704 | 0.1− | 0.4+ | 2003 03 26 | 644 | 0.1+ | 0.4+ | 2005 11 30 | 704 | 0.0 | 0.7+ |
| 2001 09 26 | 704 | 0.7− | 1.4+ | 2003 03 26 | 644 | 0.3+ | 0.6+ | 2005 11 30 | 704 | 0.2+ | 0.2+ |
| 2001 09 27 | 704 | 0.8+ | 0.1+ | 2003 03 26 | 644 | 0.4+ | 0.4+ | 2005 11 30 | 704 | 0.1+ | 1.2− |
| 2001 09 27 | 704 | 0.4+ | 1.4+ | 2003 03 27 | 691 | 0.7+ | 1.6+ | | | | |
| 2001 09 27 | 704 | 0.2− | 0.3+ | 2003 03 27 | 691 | 0.1− | 0.7+ | | | | |

**(140189)∗ 2001 SC$_{213}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 198.38100 | | (2000.0) | | | |
| $n$ | 0.21728015 | $\omega$ | 181.87714 | | −0.94753379 | +0.31600261 |
| $a$ | 2.7402447 | $\Omega$ | 16.78872 | | −0.29106168 | −0.79059477 |
| $e$ | 0.0941842 | $i$ | 9.60356 | | −0.13214692 | −0.52450192 |
| $P$ | 4.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6− | 0.1− | 2004 03 27 | 704 | 0.3+ | 0.7+ | 2004 04 25 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.8− | 1.2+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2004 04 25 | 691 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2004 03 27 | 704 | 0.7+ | 0.7+ | 2004 05 11 | 699 | 0.9− | 0.3− |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.7+ | 2004 05 11 | 699 | (2.7− | 0.4+) |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2004 03 31 | 704 | (1.6+ | 0.5+) | 2004 05 11 | 699 | 0.3+ | 1.2+ |
| 2001 09 21 | 704 | 0.9+ | 0.4+ | 2004 03 31 | 704 | 1.2+ | 0.4+ | 2004 05 11 | 699 | 0.3− | 0.8+ |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2004 03 31 | 704 | 1.3+ | 0.3− | 2004 05 12 | 699 | 0.7− | 0.6− |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.0 | 0.0 | 2004 05 12 | 699 | 0.6− | 0.3+ |
| 2001 09 21 | 704 | 0.7− | 0.6+ | 2004 04 09 | E12 | 0.6− | 1.0+ | 2004 05 12 | 699 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 1.1+ | 2004 04 09 | E12 | 0.7− | 1.2+ | 2004 05 12 | 699 | 0.8+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.9− | 0.5+ | 2004 04 09 | E12 | 0.2+ | 0.9+ | 2004 05 16 | 704 | 0.9+ | 0.4− |
| 2001 09 26 | 704 | 1.4− | 0.5+ | 2004 04 09 | E12 | 0.2− | 0.5+ | 2004 05 16 | 704 | (2.0+ | 0.2−) |
| 2001 09 26 | 704 | 0.6− | 0.3+ | 2004 04 12 | 699 | 0.3+ | 0.1+ | 2004 05 16 | 704 | 0.6+ | 0.6− |
| 2001 09 26 | 704 | (1.7− | 0.5+) | 2004 04 12 | 699 | 1.0+ | 0.8− | 2005 07 03 | 644 | 0.2− | 0.6+ |
| 2001 10 17 | 644 | 0.1+ | 0.8+ | 2004 04 12 | 699 | 0.4− | 0.2− | 2005 07 03 | 644 | 0.2− | 0.4+ |
| 2001 10 17 | 644 | 0.1− | 0.7+ | 2004 04 12 | 699 | 0.5+ | 0.6+ | 2005 07 03 | 644 | 0.3− | 0.4+ |
| 2001 10 17 | 644 | 0.2− | 0.7+ | 2004 04 15 | 699 | 1.2− | 0.2− | 2006 10 21 | 691 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | 0.6+ | 0.3+ | 2004 04 15 | 699 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 0.3− | 0.0 | 2004 04 15 | 699 | 0.8+ | 0.3+ | 2006 10 21 | 691 | 0.7− | 0.3+ |
| 2001 10 24 | 704 | 0.2+ | 0.4+ | 2004 04 15 | 699 | 0.3− | 0.3− | 2006 10 27 | 703 | 1.1+ | 0.4− |
| 2004 03 16 | 703 | (0.9+ | 2.0+) | 2004 04 15 | 152 | 0.7− | 0.1− | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2004 03 16 | 703 | (0.1− | 1.5+) | 2004 04 15 | 152 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 2004 03 16 | 703 | 0.5+ | 1.2+ | 2004 04 16 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2004 03 16 | 703 | (0.7− | 2.2+) | 2004 04 16 | 644 | 0.1+ | 0.5+ | 2006 11 02 | 691 | 0.3− | 0.7+ |
| 2004 03 17 | 704 | 0.3− | 0.6+ | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 11 02 | 691 | 0.2− | 0.2+ |
| 2004 03 17 | 704 | 0.0 | 0.9+ | 2004 04 16 | 152 | 0.0 | 0.3− | 2006 11 02 | 691 | 0.2+ | 0.5+ |
| 2004 03 17 | 704 | 0.6+ | 0.3+ | 2004 04 16 | 152 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2004 03 17 | 704 | 0.2+ | 1.3+ | 2004 04 16 | 152 | (2.0− | 0.1+) | 2006 11 21 | 704 | 0.6+ | 1.7+ |
| 2004 03 17 | 704 | 0.3+ | 0.2+ | 2004 04 16 | 152 | 1.3+ | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2004 03 18 | 704 | (2.2+ | 0.8+) | 2004 04 20 | 704 | 0.9+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.5+ | 0.9+ | 2004 04 20 | 704 | 0.8+ | 0.4+ | 2006 11 23 | G96 | 0.4− | 0.3− |
| 2004 03 18 | 704 | 0.2− | 0.1+ | 2004 04 20 | 704 | 1.2+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2004 03 18 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 0.4+ | 0.5+ | 2004 04 25 | 691 | 0.1+ | 0.2+ | | | | |

**(140190)∗ 2001 SJ$_{214}$ = 2003 AZ$_{62}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40650)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.43362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18944433 | $\omega$ | 273.79700 | | +0.98252878 | −0.17911635 | |
| $a$ | 3.0024905 | $\Omega$ | 96.52625 | | +0.18447080 | +0.90129911 | |
| $e$ | 0.1177034 | $i$ | 2.91601 | | +0.02465209 | +0.39443282 | |
| $P$ | 5.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6+ | 0.0 | 2003 01 08 | 704 | 0.1+ | 0.8+ | 2006 08 21 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.3− | 1.0− | 2003 01 08 | 704 | 0.1− | 0.4+ | 2006 08 21 | F84 | 0.5− | 0.7− |
| 2001 09 19 | 704 | 1.0+ | 0.2− | 2003 01 08 | 704 | 0.5− | 0.5+ | 2006 08 21 | F84 | 0.3− | 0.5+ |
| 2001 09 19 | 704 | 0.1− | 1.0− | 2003 01 09 | 704 | 0.4− | 0.2+ | 2006 08 21 | F84 | 0.9− | 0.9− |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2003 01 09 | 704 | 0.0 | 0.2+ | 2006 08 30 | 699 | 1.0− | 1.0+ |
| 2001 09 21 | 704 | 0.7− | 0.1+ | 2003 01 09 | 704 | 0.2− | 0.3− | 2006 08 30 | 699 | 0.9− | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2003 01 10 | 704 | 0.1− | 0.3− | 2006 08 30 | 699 | 1.0+ | 1.5+ |
| 2001 10 06 | 644 | 0.1+ | 0.1+ | 2003 01 10 | 704 | 1.2+ | 0.6+ | 2006 08 30 | 699 | 0.5− | 0.7+ |
| 2001 10 06 | 644 | 0.3+ | 0.0 | 2003 01 10 | 704 | 1.1+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.3+ |
| 2001 10 06 | 644 | 0.2− | 0.1+ | 2003 01 10 | 704 | 1.1+ | 0.9+ | 2006 09 14 | 703 | 0.5+ | 0.6+ |
| 2001 10 20 | 704 | 0.3+ | 0.3+ | 2005 02 16 | 809 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.6− | 1.2− |
| 2001 10 20 | 704 | 0.1− | 0.8+ | 2005 02 16 | 809 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.5+ |
| 2001 10 20 | 704 | 0.1− | 0.3+ | 2005 02 16 | 809 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.9+ | 0.1− |
| 2001 10 20 | 704 | 0.1+ | 0.1+ | 2005 02 18 | 809 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.8+ |
| 2002 12 06 | 645 | 0.0 | 0.1− | 2005 02 18 | 809 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.3+ |
| 2002 12 06 | 645 | 0.0 | 0.1− | 2005 02 18 | 809 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.4− |
| 2003 01 08 | 704 | 1.6− | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.1− | | | | |
| 2003 01 08 | 704 | 0.6− | 0.5− | 2006 08 21 | 691 | 0.1+ | 0.0 | | | | |

**(140191)∗ 2001 ST$_{214}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.64668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19175250 | $\omega$ | 264.79979 | | +0.60263202 | −0.79358934 | |
| $a$ | 2.9783474 | $\Omega$ | 147.66586 | | +0.78016991 | +0.56375275 | |
| $e$ | 0.2160854 | $i$ | 9.03233 | | +0.16783789 | +0.22890783 | |
| $P$ | 5.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 01 | 691 | 0.4− | 0.2+ | 2001 10 19 | 699 | 0.5− | 0.2− | 2003 02 23 | 291 | 0.1+ | 0.2+ |
| 1998 03 01 | 691 | 0.2− | 0.1+ | 2001 10 20 | 704 | 0.7− | 0.1− | 2003 02 23 | 291 | 0.3+ | 0.3+ |
| 1998 03 01 | 691 | 0.1− | 0.3− | 2001 10 20 | 704 | 0.9− | 0.2− | 2004 04 13 | 691 | 0.3+ | 0.7+ |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2001 10 20 | 704 | 0.1− | 0.4+ | 2004 04 13 | 691 | 0.5+ | 1.0+ |
| 2001 09 19 | 704 | 0.9+ | 0.7− | 2001 10 24 | 644 | 0.3+ | 0.1+ | 2004 04 13 | 691 | 0.1− | 0.6+ |
| 2001 09 19 | 704 | 1.4+ | 0.1− | 2001 10 24 | 644 | 0.2+ | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2001 10 24 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.6+ |
| 2001 09 21 | 704 | 1.2− | 0.5+ | 2002 12 07 | 645 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.7− | 0.7+ | 2002 12 07 | 645 | 0.0 | 0.2− | 2006 08 27 | 699 | 0.3− | 0.8+ |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2003 01 31 | 704 | 0.9− | 1.1+ | 2006 08 27 | 699 | 0.0 | 0.9− |
| 2001 09 21 | 704 | 0.3+ | 0.5+ | 2003 01 31 | 704 | 0.2+ | 0.5+ | 2006 08 27 | 699 | 0.2+ | 0.9+ |
| 2001 09 25 | 704 | 1.2− | 0.4− | 2003 01 31 | 704 | 0.0 | 1.3+ | 2006 08 27 | 699 | 1.5− | 0.4− |
| 2001 09 25 | 704 | 1.0− | 0.2+ | 2003 02 03 | 704 | 0.3+ | 1.0+ | 2006 08 30 | 699 | 0.5− | 1.4+ |
| 2001 09 25 | 704 | 1.3+ | 0.3− | 2003 02 03 | 704 | 0.6− | 1.1+ | 2006 08 30 | 699 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 1.2− | 0.7− | 2003 02 03 | 704 | 0.3− | 1.2− | 2006 08 30 | 699 | 0.4+ | 0.2+ |
| 2001 09 25 | 704 | 0.4− | 0.8− | 2003 02 03 | 704 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.4− | 0.9+ |
| 2001 10 11 | 704 | 0.2− | 0.7+ | 2003 02 21 | 644 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.3+ |
| 2001 10 11 | 704 | 0.0 | 1.0+ | 2003 02 21 | 644 | 0.1+ | 0.9+ | 2006 09 14 | 703 | 0.6− | 1.5− |
| 2001 10 11 | 704 | 0.1+ | 1.9+ | 2003 02 21 | 644 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2001 10 11 | 704 | 0.3− | 1.2+ | 2003 02 22 | 644 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2001 10 11 | 704 | 0.2+ | 0.4+ | 2003 02 22 | 699 | 0.1+ | 1.2+ | 2006 09 16 | 704 | 0.0 | 0.0 |
| 2001 10 16 | 644 | 0.6+ | 0.3+ | 2003 02 22 | 699 | 0.5+ | 0.7+ | 2006 09 16 | 704 | 0.0 | 0.2+ |
| 2001 10 16 | 644 | 0.6+ | 0.5+ | 2003 02 22 | 699 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.0 | 1.1− |
| 2001 10 16 | 644 | 0.5+ | 0.4+ | 2003 02 22 | 699 | 0.9+ | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.6+ |
| 2001 10 19 | 699 | 1.0+ | 0.8+ | 2003 02 22 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 2001 10 19 | 699 | 0.4+ | 1.4+ | 2003 02 22 | 644 | 0.6+ | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.1+ |
| 2001 10 19 | 699 | 0.3− | 1.1+ | 2003 02 23 | 291 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.2− |

**(140192)∗ 2001 SM$_{215}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.08852 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21583253 | $\omega$ | 284.51552 | | +0.74666922 | −0.65926785 | |
| $a$ | 2.7524838 | $\Omega$ | 116.81281 | | +0.64213168 | +0.67958621 | |
| $e$ | 0.0947002 | $i$ | 5.69770 | | +0.17364326 | +0.32175842 | |
| $P$ | 4.57 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.2− | 0.4+ | 2003 01 30 | 699 | 1.3− | 1.2+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2001 09 18 | 699 | 0.4− | 0.3− | 2003 01 30 | 699 | 0.5− | 0.4+ | 2006 10 23 | G96 | 0.5+ | 0.2− |
| 2001 09 18 | 699 | (1.6− | 0.4+) | 2003 01 30 | 699 | 0.6− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2001 09 18 | 699 | 0.3− | 0.1+ | 2003 01 30 | 699 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.7+ | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2003 02 08 | 704 | (1.6+ | 0.8+) | 2006 11 02 | 703 | 0.0 | 0.6− |
| 2001 09 19 | 704 | (1.6+ | 0.3−) | 2003 02 08 | 704 | 1.3+ | 0.8+ | 2006 11 02 | 703 | 0.9− | 0.0 |
| 2001 09 19 | 704 | 0.2− | 1.0− | 2003 02 08 | 704 | 0.6+ | 0.5+ | 2006 11 02 | 703 | 0.3− | 0.7− |
| 2001 09 19 | 704 | (0.2+ | 2.0−) | 2004 04 20 | 704 | 0.7− | 1.3+ | 2006 11 02 | 703 | 0.4+ | 0.6− |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 1.0+ | 0.1+ | 2006 11 14 | 704 | 1.0+ | 1.4+ |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2006 11 14 | 704 | 0.5− | 0.2+ |
| 2001 09 21 | 704 | 1.0− | 0.4− | 2004 04 20 | 704 | 1.2+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.6− | 2004 04 22 | 599 | 0.6− | 0.3+ | 2006 11 14 | 704 | 0.6+ | 0.9+ |
| 2001 10 08 | 644 | 0.1+ | 0.3+ | 2004 04 22 | 599 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2001 10 08 | 644 | 0.0 | 0.1+ | 2004 04 22 | 599 | 0.3+ | 0.8+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2001 10 08 | 644 | 0.2+ | 0.1+ | 2004 04 22 | 599 | 0.8+ | 0.8+ | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2001 10 11 | 704 | 0.4+ | 0.2+ | 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2001 10 11 | 704 | 0.2+ | 1.0+ | 2005 06 30 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2001 10 11 | 704 | 0.9+ | 0.6+ | 2005 06 30 | 691 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2001 10 11 | 704 | 0.0 | 0.2+ | 2005 07 04 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.1+ | 0.5+ | 2005 07 04 | 644 | 0.5− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.0 | | |
| 2001 10 16 | 644 | 0.2− | 0.5+ | 2005 07 04 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.5− | 0.3− | | |
| 2001 10 16 | 644 | 0.3− | 0.4+ | 2005 07 05 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.7+ | 0.5− | | |
| 2001 10 16 | 644 | 0.2− | 0.3+ | 2005 07 05 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.4+ | | |
| 2001 10 20 | 704 | 0.4− | 0.2+ | 2005 07 05 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.9+ | | |
| 2001 10 20 | 704 | 0.6+ | 0.4+ | 2005 07 09 | 691 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.4− | 0.4− | | |
| 2001 10 20 | 704 | 0.7− | 1.1+ | 2005 07 09 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.2+ | | |
| 2001 10 20 | 704 | 0.2− | 0.7− | 2005 07 09 | 691 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.2− | | |
| 2001 10 20 | 704 | 0.3+ | 1.3+ | 2005 07 12 | G96 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.2− | 0.3− | | |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2005 07 12 | G96 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.4− | 1.0− | | |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2005 07 12 | G96 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.3− | 0.4− | | |
| 2001 10 24 | 644 | 0.3+ | 0.0 | 2005 07 12 | G96 | 1.4− | 0.5+ | 2006 11 28 | 704 | 0.1− | 0.3− | | |

**(140193)∗ 2001 SE$_{218}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.17467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21560754 | $\omega$ | 252.24877 | | +0.78161136 | −0.62208491 | |
| $a$ | 2.7543984 | $\Omega$ | 146.17775 | | +0.59891246 | +0.72794455 | |
| $e$ | 0.1032427 | $i$ | 4.71573 | | +0.17432028 | +0.28828300 | |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.0 | 0.1+ | 2001 10 08 | 644 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.2− | | |
| 2001 09 11 | 699 | (1.5+ | 0.4+) | 2001 10 08 | 644 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.2− | 0.5+ | | |
| 2001 09 11 | 699 | 0.1− | 0.2+ | 2001 10 08 | 644 | 0.1+ | 0.4− | 2006 11 14 | 704 | 0.3+ | 0.4− | | |
| 2001 09 11 | 699 | 0.4− | 0.5+ | 2001 10 16 | 644 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.1+ | 0.6− | | |
| 2001 09 19 | 704 | 0.9− | 0.5− | 2001 10 16 | 644 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.2+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.7+ | 2001 10 16 | 644 | 0.4+ | 0.0 | 2006 11 15 | 703 | 0.7− | 0.2− | | |
| 2001 09 19 | 704 | 0.7− | 0.4+ | 2001 10 24 | 644 | 1.0+ | 0.6− | 2006 11 15 | 703 | 1.0− | 0.1− | | |
| 2001 09 21 | 704 | 0.4− | 0.8+ | 2001 10 24 | 644 | 0.8+ | 1.1− | 2006 11 16 | 691 | 0.1+ | 0.1− | | |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2001 10 24 | 644 | 1.4+ | 1.0− | 2006 11 16 | 691 | 0.2+ | 0.0 | | |
| 2001 09 21 | 704 | 0.5+ | 0.8+ | 2003 01 27 | 644 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.0 | | |
| 2001 09 21 | 704 | 0.7− | 1.1− | 2003 01 27 | 644 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.5− | | |
| 2001 09 21 | 704 | 0.9− | 0.5+ | 2003 01 27 | 644 | 0.8+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.0 | | |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2003 01 31 | 704 | 1.0− | 0.7+ | 2006 11 17 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.5− | 0.7− | 2003 01 31 | 704 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.3+ | 0.1− | 2003 01 31 | 704 | 0.3+ | 0.6+ | 2006 11 20 | 691 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.5+ | 0.5+ | 2003 01 31 | 704 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.5− | | |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2005 06 18 | G96 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.3+ | 0.0 | 2005 06 18 | G96 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.8− | | |
| 2001 09 21 | 704 | 0.9− | 0.6− | 2005 06 18 | G96 | 0.5+ | 0.4+ | 2006 11 20 | 704 | (1.3− | 1.7+) | | |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2005 06 18 | G96 | 0.3+ | 0.4+ | 2006 11 20 | 704 | (1.3+ | 2.3+) | | |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2005 07 11 | G96 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2001 09 23 | 704 | 0.1+ | 0.7+ | 2005 07 11 | G96 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2001 09 23 | 704 | 0.0 | 0.4+ | 2005 07 11 | G96 | 0.5− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2005 07 11 | G96 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.5+ | 0.2− | | |
| 2001 09 23 | 704 | 0.5− | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.4− | 2006 11 28 | 704 | 1.3− | 1.9+ | | |
| 2001 09 23 | 704 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.6+ | 0.4− | 2006 11 28 | 704 | 1.4− | 2.3+ | | |
| 2001 09 24 | 644 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.4− | 2006 11 28 | 704 | 1.4− | 1.9+ | | |
| 2001 09 24 | 644 | 0.3− | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.4− | 2006 11 28 | 704 | 1.2+ | 0.4+ | | |
| 2001 09 24 | 644 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.8− | | | | | | |

**(140194)∗ 2001 SO$_{218}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.24526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21104365 | $\omega$ | 304.41065 | | +0.58204505 | −0.81304901 | |
| $a$ | 2.7939664 | $\Omega$ | 109.98944 | | +0.75059846 | +0.53094063 | |
| $e$ | 0.1216199 | $i$ | 0.80629 | | +0.31277070 | +0.23885846 | |
| $P$ | 4.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | (1.9− | 0.8+) | 2001 10 24 | 704 | 0.2+ | 1.5+ | 2006 11 11 | 703 | 0.4− | 0.1− | | |
| 2001 09 19 | 704 | 1.4− | 0.8+ | 2001 10 24 | 704 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.7− | 0.1− | | |
| 2001 09 19 | 704 | (1.8− | 0.6+) | 2001 10 24 | 704 | (0.2+ | 1.8+) | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2001 09 19 | 704 | (1.5− | 0.4+) | 2001 10 24 | 704 | 1.1+ | 0.7+ | 2006 11 11 | 703 | 0.5+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.9− | 1.4+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.1− | | |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.1− | | |
| 2001 09 21 | 704 | 0.6− | 0.1− | 2004 05 14 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.5− | | |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2004 05 14 | 691 | 0.1+ | 0.6+ | 2006 11 12 | 703 | (0.1+ | 1.7−) | | |
| 2001 09 21 | 704 | 0.9+ | 0.5− | 2004 05 14 | 691 | 0.2+ | 0.2+ | 2006 11 12 | 703 | 0.9+ | 1.0− | | |
| 2001 09 23 | 704 | 0.8+ | 0.2+ | 2005 06 18 | 701 | (1.9− | 1.7+) | 2006 11 12 | 703 | 0.1− | 0.3+ | | |
| 2001 09 23 | 704 | 0.4+ | 0.2+ | 2005 06 18 | 701 | 0.6+ | 0.3+ | 2006 11 12 | 703 | 0.3+ | 0.1− | | |
| 2001 09 23 | 704 | 0.4+ | 0.3+ | 2005 06 18 | 701 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.0 | | |
| 2001 09 23 | 704 | 0.1+ | 0.3− | 2005 07 15 | G96 | 0.5− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | |
| 2001 09 23 | 704 | 0.4− | 0.3+ | 2005 07 15 | G96 | (2.9− | 1.5−) | 2006 11 13 | 644 | 0.2− | 0.1+ | | |
| 2001 09 24 | 704 | 0.4− | 0.6− | 2005 07 15 | G96 | 0.4+ | 0.9+ | 2006 11 18 | 704 | 0.0 | 1.2+ | | |
| 2001 09 24 | 704 | 0.6+ | 1.1+ | 2005 07 15 | G96 | 0.8− | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.6+ | | |
| 2001 09 24 | 704 | 0.3+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.8− | 0.5− | | |
| 2001 09 24 | 704 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.6+ | | |
| 2001 09 26 | 704 | 0.1+ | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.3+ | | |
| 2001 09 26 | 704 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.7− | 1.4+ | | |
| 2001 09 26 | 704 | (0.9+ | 1.5+) | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.2+ | | |
| 2001 09 26 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.6+ | | |
| 2001 10 15 | 704 | 0.6− | 0.3− | 2006 10 28 | G96 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.4+ | 1.2+ | | |
| 2001 10 15 | 704 | (0.8− | 2.2−) | 2006 10 28 | G96 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.1− | | |
| 2001 10 15 | 704 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.9− | 0.9− | | |
| 2001 10 15 | 704 | 0.6− | 1.2− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 1.4− | 0.4− | | |
| 2001 10 15 | 645 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.6− | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.0 | | |
| 2001 10 15 | 645 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 27 | 703 | 1.0− | 0.0 | | |
| 2001 10 20 | 704 | 0.7+ | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.4+ | 1.5+ | | |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 1.0+ | 0.8+ | | |
| 2001 10 20 | 704 | 0.6+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.4+ | | |
| 2001 10 20 | 704 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.6+ | | |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.7+ | | |

**(140195)∗ 2001 SE$_{219}$ = 2001 QK$_{327}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 35668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.57998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21445050 | $\omega$ | 222.10139 | | −0.63645282 | +0.77101146 | |
| $a$ | 2.7642968 | $\Omega$ | 8.45067 | | −0.66253101 | −0.53209466 | |
| $e$ | 0.1362875 | $i$ | 8.47546 | | −0.39494363 | −0.34988083 | |
| $P$ | 4.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | (1.6+ | 0.6+) | 2004 02 23 | 704 | (0.7+ | 2.1+) | 2004 03 29 | 291 | 0.4+ | 0.3+ | | |
| 2001 08 27 | 699 | (1.9− | 0.4−) | 2004 02 23 | 704 | (1.6− | 0.3−) | 2004 03 29 | 291 | 0.7+ | 0.3+ | | |
| 2001 08 27 | 644 | 1.0+ | 0.8− | 2004 02 23 | 704 | 0.1− | 0.6− | 2004 04 12 | 703 | 0.1− | 0.5− | | |
| 2001 08 27 | 699 | 0.1− | 1.4+ | 2004 02 23 | 704 | 0.4− | 0.1− | 2004 04 12 | 703 | 0.2+ | 0.5+ | | |
| 2001 08 27 | 644 | 1.0+ | 0.8− | 2004 03 15 | 691 | 0.9− | 0.4− | 2004 04 12 | 703 | 0.6+ | 1.1+ | | |
| 2001 08 27 | 644 | 1.1+ | 0.8− | 2004 03 15 | 703 | 0.6+ | 1.3+ | 2004 04 12 | 703 | 0.9− | 0.2+ | | |
| 2001 08 27 | 699 | (1.0+ | 2.1+) | 2004 03 15 | 704 | 1.4+ | 0.9+ | 2004 04 21 | 691 | 0.0 | 0.2+ | | |
| 2001 09 19 | 704 | 1.2− | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.1+ | 2004 04 21 | 691 | 0.0 | 0.2+ | | |
| 2001 09 19 | 704 | 0.7− | 0.9+ | 2004 03 15 | 703 | 0.2− | 0.7+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 704 | 1.3− | 0.4+ | 2004 03 15 | 704 | 0.2− | 0.4+ | 2005 07 03 | 644 | 0.4− | 0.8+ | | |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2004 03 15 | 703 | 0.2+ | 0.3+ | 2005 07 03 | 644 | 0.4− | 0.7+ | | |
| 2001 09 21 | 704 | 0.5− | 0.8+ | 2004 03 15 | 704 | 0.1+ | 0.7+ | 2005 07 03 | 644 | 0.4− | 0.5+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.0 | 2005 07 26 | 644 | 0.3− | 0.7+ | | |
| 2001 09 21 | 704 | 0.8− | 0.9+ | 2004 03 15 | 704 | 0.4+ | 0.4+ | 2005 07 26 | 644 | 0.3− | 0.8+ | | |
| 2001 09 26 | 704 | 0.5+ | 0.3+ | 2004 03 15 | 703 | 0.4− | 0.6+ | 2005 07 26 | 644 | 0.3− | 0.8+ | | |
| 2001 09 26 | 704 | 0.4− | 0.7+ | 2004 03 15 | 704 | 1.4+ | 0.3+ | 2005 07 26 | 644 | 0.3− | 1.0+ | | |
| 2001 09 26 | 704 | 1.0− | 0.5+ | 2004 03 19 | 704 | 0.0 | 0.3+ | 2005 07 26 | 644 | 0.3− | 0.6+ | | |
| 2001 09 26 | 704 | 0.3− | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.0 | 2005 07 26 | 644 | 0.3− | 0.8+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.4− | 0.9+ | 2004 03 19 | 704 | 0.4+ | 0.5− | 2006 10 02 | G96 | 0.0 | 0.5− | | |
| 2001 10 21 | 704 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.2+ | 0.9+ | 2006 10 02 | G96 | 0.4− | 0.3− | | |
| 2001 10 21 | 704 | 1.3− | 0.7+ | 2004 03 20 | 699 | 0.6− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.4− | | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2004 03 20 | 699 | 0.3− | 0.9+ | 2006 10 13 | 691 | 0.1− | 0.4+ | | |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 03 20 | 608 | 1.0+ | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.4+ | | |
| 2004 02 16 | 703 | 0.7− | 0.5+ | 2004 03 20 | 699 | 1.2− | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.3+ | | |
| 2004 02 16 | 703 | 0.1+ | 0.0 | 2004 03 20 | 608 | 1.3+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 16 | 703 | 0.2− | 0.2+ | 2004 03 20 | 608 | 0.8+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.2+ | | |
| 2004 02 16 | 703 | (1.1− | 1.7−) | 2004 03 20 | 699 | 0.6− | 0.5− | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2004 02 19 | 704 | 0.7+ | 0.0 | 2004 03 22 | 704 | 0.8+ | 0.5− | 2006 10 21 | 691 | 0.5− | 0.1+ | | |
| 2004 02 19 | 704 | 0.3+ | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.3+ | | |
| 2004 02 19 | 704 | 0.1− | 0.5− | 2004 03 22 | 704 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.7− | 0.6+ | | |
| 2004 02 19 | 704 | 0.5+ | 0.4+ | 2004 03 22 | 704 | 0.5+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2004 02 19 | 704 | 0.5+ | 0.1+ | 2004 03 22 | 704 | 0.7+ | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.1+ | | |
| 2004 02 23 | 704 | 0.4− | 0.1+ | 2004 03 28 | 704 | 0.9+ | 0.2+ | 2006 10 31 | 691 | 0.4+ | 0.1− | | |
| 2004 02 23 | 704 | 0.6− | 0.4− | 2004 03 28 | 704 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2004 02 23 | 704 | 0.2− | 0.5+ | 2004 03 28 | 704 | 0.8+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2004 02 23 | 704 | 0.7− | 0.1+ | 2004 03 28 | 704 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.5− | | |
| 2004 02 23 | 704 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.8+ | 1.0+ | 2006 11 18 | G96 | 0.0 | 0.5− | | |
| 2004 02 23 | 704 | 1.1− | 0.0 | 2004 03 29 | 291 | 0.2+ | 0.3+ | | | | | | |

**(140196)∗ 2001 SM$_{219}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.41888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18944778 | $\omega$ | 143.82011 | | +0.63941672 | +0.76883828 | |
| $a$ | 3.0024540 | $\Omega$ | 165.92515 | | −0.71092289 | +0.59410286 | |
| $e$ | 0.0444948 | $i$ | 1.37306 | | −0.29280522 | +0.23649415 | |
| $P$ | 5.20 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 24 | 691 | 0.1− | 0.0 | 2001 09 25 | 704 | 0.7+ | 1.1− | 2006 08 27 | 691 | 0.3− | 0.3+ | | |
| 1992 12 24 | 691 | 0.2− | 0.1− | 2001 10 14 | 645 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.4− | 0.4− | | |
| 1992 12 24 | 691 | 0.1− | 0.5− | 2001 10 14 | 645 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.7− | 0.1+ | | |
| 1999 04 09 | 691 | 1.8− | 0.8− | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.2+ | 0.1− | | |
| 1999 04 09 | 691 | 0.1+ | 0.9− | 2001 10 15 | 645 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.9+ | 0.1+ | | |
| 1999 04 09 | 691 | 0.3− | 0.8− | 2001 10 17 | 644 | 0.6− | 0.7+ | 2006 09 19 | 703 | 1.2− | 1.0+ | | |
| 1999 04 17 | 691 | 0.3− | 1.1− | 2001 10 17 | 644 | 0.2− | 0.6+ | 2006 09 19 | 703 | (0.5+ | 3.1+) | | |
| 1999 04 17 | 691 | 0.1− | 0.6− | 2001 10 17 | 644 | 0.5− | 0.7+ | 2006 09 19 | 703 | 1.1− | 0.3− | | |
| 1999 04 17 | 691 | 0.1− | 0.7− | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− | | |
| 2001 09 19 | 704 | 0.4+ | 1.2+ | 2001 12 10 | 645 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1− | | |
| 2001 09 19 | 704 | 0.7+ | 0.7+ | 2004 03 14 | 691 | 0.2+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | (0.5+ | 1.9+) | 2004 03 14 | 691 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.0 | | |
| 2001 09 21 | 704 | 0.6+ | 0.1− | 2004 03 14 | 691 | 0.4+ | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.4− | 0.7+ | 2004 03 28 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.4+ | 0.0 | | |
| 2001 09 21 | 704 | 0.3+ | 0.7− | 2004 03 28 | 691 | 0.6+ | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.4+ | | |
| 2001 09 24 | 704 | 0.9+ | 0.7− | 2004 03 28 | 691 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.0 | | |
| 2001 09 24 | 704 | 1.4− | 0.1+ | 2005 06 16 | G96 | 0.5+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2001 09 24 | 704 | 0.7+ | 0.0 | 2005 06 16 | G96 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.5− | | |
| 2001 09 24 | 704 | 0.6+ | 1.2− | 2005 06 16 | G96 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.6− | | |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2005 06 16 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.3− | 0.1− | | |
| 2001 09 25 | 704 | 0.9+ | 0.8− | 2006 08 27 | 691 | 0.2− | 0.2+ | | | | | | |
| 2001 09 25 | 704 | 0.4+ | 0.1+ | 2006 08 27 | 691 | 0.4− | 0.1+ | | | | | | |

**(140197)∗ 2001 SC$_{220}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.33806 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18904447 | $\omega$ | 194.40308 | | +0.98840770 | −0.15102887 | |
| $a$ | 3.0067229 | $\Omega$ | 174.21609 | | +0.15002107 | +0.95587745 | |
| $e$ | 0.0320784 | $i$ | 8.85216 | | +0.02332164 | +0.25196939 | |
| $P$ | 5.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.3− | 0.1− | 2001 10 20 | 704 | 0.1− | 1.1+ | 2006 08 28 | 703 | 0.4− | 0.8− | | |
| 2001 08 27 | 644 | 0.6− | 0.3+ | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 1.0− | 1.2− | | |
| 2001 08 27 | 644 | 0.6− | 0.3+ | 2004 03 17 | 691 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.6+ | 0.5− | | |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2004 03 17 | 691 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.6+ | | |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.9+ | 1.0− | 2006 08 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.4− | 1.4+ | 2006 08 28 | 691 | 0.1− | 0.3+ | | |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2004 03 18 | 704 | 0.5+ | 1.0+ | 2006 08 28 | 691 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.0 | 1.4+ | 2006 09 12 | 703 | 0.4− | 0.4− | | |
| 2001 09 21 | 704 | 0.1+ | 1.2+ | 2004 03 18 | 704 | 0.3+ | 1.7+ | 2006 09 12 | 703 | 0.5− | 0.6+ | | |
| 2001 09 21 | 704 | 0.6− | 1.2+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 1.0+ | 1.2− | | |
| 2001 09 21 | 704 | 0.0 | 1.2+ | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.3− | | |
| 2001 09 21 | 704 | 0.5− | 0.8+ | 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 09 13 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.9+ | 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.1− | 0.2+ | | |
| 2001 09 23 | 704 | 0.2+ | 0.7− | 2004 03 31 | 691 | 0.4+ | 0.2+ | 2006 09 13 | 644 | 0.5+ | 0.1+ | | |
| 2001 09 23 | 704 | 1.0+ | 0.8− | 2004 03 31 | 691 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.8+ | | |
| 2001 09 23 | 704 | 0.2+ | 0.7− | 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.3+ | | |
| 2001 09 23 | 704 | 0.8+ | 0.4− | 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.8− | 0.1− | | |
| 2001 09 23 | 704 | 0.5+ | 0.2− | 2004 04 25 | 691 | 0.2− | 0.0 | 2006 09 17 | 704 | 1.5+ | 0.2− | | |
| 2001 09 26 | 704 | 0.1− | 0.8+ | 2005 06 15 | 291 | 0.0 | 0.1− | 2006 09 19 | 703 | 2.3− | 0.3+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.8+ | 2005 06 15 | 291 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.7+ | | |
| 2001 09 26 | 704 | 0.7− | 1.1+ | 2005 06 15 | 291 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.6+ | | |
| 2001 10 20 | 704 | 1.1− | 1.7+ | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 1.1− | 0.6+ | | |
| 2001 10 20 | 704 | 0.6− | 0.5+ | 2006 08 19 | 691 | 0.1+ | 0.3+ | | | | | | |
| 2001 10 20 | 704 | 0.3− | 0.9+ | 2006 08 19 | 691 | 0.3+ | 0.4+ | | | | | | |

**(140198)∗ 2001 SH$_{221}$ = 1999 EH$_{14}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20349)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.85864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19569330 | $\omega$ | 95.67962 | | −0.07492319 | +0.99715792 | |
| $a$ | 2.9382275 | $\Omega$ | 170.01325 | | −0.93201201 | −0.06720276 | |
| $e$ | 0.0378096 | $i$ | 2.61470 | | −0.35459854 | −0.03405676 | |
| $P$ | 5.04 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.4− | 1.3− | 2004 02 19 | 704 | 0.8+ | 0.5+ | 2004 04 21 | 691 | 0.2+ | 0.7+ | | |
| 1994 04 03 | 691 | 0.4− | 1.5− | 2004 02 19 | 704 | 1.0+ | 0.7+ | 2004 04 21 | 691 | 0.4+ | 0.4+ | | |
| 1994 04 03 | 691 | 0.3− | 1.4− | 2004 02 26 | 704 | (0.8+ | 2.0+) | 2004 04 21 | 691 | 0.5+ | 0.6+ | | |
| 1999 03 10 | 691 | 0.1− | 0.8− | 2004 02 26 | 704 | (1.9+ | 2.4+) | 2006 07 21 | G96 | 0.1+ | 0.3+ | | |
| 1999 03 10 | 691 | 0.4+ | 0.5− | 2004 02 26 | 704 | (1.2+ | 2.9+) | 2006 07 21 | G96 | 0.4− | 0.3+ | | |
| 1999 03 10 | 691 | 0.2− | 0.4− | 2004 02 26 | 704 | (0.3+ | 1.7+) | 2006 07 21 | G96 | 0.3− | 0.1+ | | |
| 1999 03 12 | 691 | 1.0− | 1.3− | 2004 02 26 | 704 | (1.9+ | 1.5+) | 2006 07 21 | G96 | 0.4− | 0.2+ | | |
| 1999 03 12 | 691 | 0.5− | 1.1− | 2004 03 15 | 683 | (1.9− | 1.1+) | 2006 09 18 | 699 | 1.0− | 0.0 | | |
| 1999 03 12 | 691 | 0.9− | 0.6− | 2004 03 15 | 683 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.7+ | 1.0+ | | |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.8+ | | |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2004 03 15 | 683 | 0.5+ | 0.8+ | 2006 09 18 | 699 | 0.1− | 0.1− | | |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2004 03 15 | 703 | 0.3+ | 1.2+ | 2006 09 19 | 691 | 0.1− | 0.3+ | | |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2004 03 15 | 703 | 0.3− | 1.2+ | 2006 09 19 | 691 | 0.2− | 0.3+ | | |
| 1999 03 22 | 699 | 0.4+ | 0.0 | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | | |
| 1999 03 22 | 699 | 1.6+ | 0.5+ | 2004 03 15 | 703 | 0.4+ | 0.8+ | 2006 09 19 | 703 | 1.5− | 1.3− | | |
| 1999 03 22 | 699 | 0.3− | 0.2− | 2004 03 15 | 703 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.3+ | 0.5− | | |
| 2001 09 14 | 644 | 0.8− | 0.2− | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.2+ | | |
| 2001 09 14 | 644 | 0.6− | 0.5− | 2004 03 16 | 683 | 0.4+ | 1.3− | 2006 09 19 | 703 | (3.6− | 4.2−) | | |
| 2001 09 14 | 644 | 0.5− | 0.1− | 2004 03 16 | 704 | 0.7+ | 0.5+ | 2006 09 20 | 704 | (1.1− | 1.6+) | | |
| 2001 09 19 | 704 | 0.6− | 0.0 | 2004 03 16 | 683 | 0.6− | 0.3+ | 2006 09 20 | 704 | (1.7− | 0.8+) | | |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2004 03 16 | 704 | (1.9+ | 0.3−) | 2006 09 20 | 704 | (2.0− | 1.0+) | | |
| 2001 09 19 | 704 | 1.2+ | 0.3− | 2004 03 16 | 683 | 0.2− | 0.4− | 2006 09 20 | 644 | 0.3− | 0.1− | | |
| 2001 09 19 | 704 | 0.2+ | 0.6− | 2004 03 16 | 704 | 0.1+ | 1.1+ | 2006 09 20 | 644 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.7− | 2004 03 16 | 704 | 1.2+ | 1.0+ | 2006 09 20 | 644 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 0.0 | 0.5− | 2004 03 16 | 704 | 0.5+ | 0.9+ | 2006 09 26 | G96 | 0.2− | 0.2− | | |
| 2001 09 21 | 704 | 0.6− | 0.2− | 2004 03 17 | 683 | (0.5− | 1.7+) | 2006 09 26 | G96 | 0.3− | 0.3− | | |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2004 03 17 | 683 | 0.2+ | 1.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2001 09 21 | 704 | 0.6− | 0.1− | 2004 03 17 | 683 | (0.3− | 1.8+) | 2006 09 26 | G96 | 0.0 | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.8− | 0.1− | 2004 03 18 | 683 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 09 22 | 291 | 0.6+ | 0.1− | 2004 03 18 | 683 | (2.3+ | 0.8+) | 2006 09 27 | 704 | 0.4+ | 0.3+ |
| 2001 09 22 | 291 | 0.1− | 0.3− | 2004 03 18 | 683 | 0.5− | 1.2+ | 2006 09 27 | 704 | (0.9− | 1.6+) |
| 2001 09 22 | 291 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.7+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 26 | 704 | 0.2+ | 0.3− | 2004 03 18 | 704 | (1.5+ | 1.7+) | 2006 09 27 | 704 | 0.0 | 0.7+ |
| 2001 09 26 | 704 | 0.0 | 0.8− | 2004 03 18 | 704 | 0.8+ | 1.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2001 09 26 | 704 | 1.3− | 0.2+ | 2004 03 18 | 704 | 0.4+ | 1.2+ | 2006 09 27 | 704 | 0.3+ | 0.7+ |
| 2001 09 26 | 704 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 09 27 | 704 | 1.2+ | 0.2− |
| 2001 10 06 | 644 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.4+ | 1.2+ | 2006 09 28 | 704 | 0.3+ | 0.7+ |
| 2001 10 06 | 644 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.5+ | 0.6− | 2006 09 28 | 704 | (0.1+ | 1.7+) |
| 2001 10 06 | 644 | 0.2+ | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.4− | 0.1− |
| 2001 10 11 | 644 | 0.3+ | 0.5+ | 2004 03 19 | 704 | 0.7+ | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2001 10 11 | 644 | 0.1− | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 10 11 | 644 | 0.0 | 0.4+ | 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.8+ | 0.0 |
| 2001 10 13 | 704 | (0.9+ | 1.6+) | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.2+ |
| 2001 10 13 | 704 | 0.3+ | 1.3− | 2004 03 27 | 291 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.2+ | 1.0+ |
| 2001 10 13 | 704 | 0.1+ | 0.9− | 2004 03 27 | 291 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3− | 0.3+ |
| 2001 10 15 | 704 | 1.1+ | 0.0 | 2004 03 27 | 291 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.5− |
| 2001 10 15 | 704 | (1.5+ | 0.2−) | 2004 03 27 | 704 | 0.7− | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2001 10 15 | 704 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2001 10 15 | 704 | 1.0+ | 0.6− | 2004 03 27 | 704 | 0.8− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2001 10 15 | 608 | 0.9− | 0.8+ | 2004 03 27 | 704 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 10 15 | 608 | 0.4− | 0.8+ | 2004 03 27 | 704 | 0.0 | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.5− |
| 2001 10 15 | 608 | 0.2− | 0.3+ | 2004 03 30 | 704 | 0.3+ | 1.4+ | 2006 10 16 | G96 | 0.4+ | 0.7− |
| 2001 10 16 | 291 | 0.1− | 0.3− | 2004 03 30 | 704 | 1.2+ | 1.4+ | 2006 10 16 | G96 | 0.5+ | 0.7− |
| 2001 10 16 | 291 | 0.5+ | 0.4− | 2004 03 30 | 704 | 0.3+ | 1.4+ | 2006 10 16 | G96 | 0.2+ | 0.7− |
| 2001 10 16 | 291 | 0.3− | 0.2− | 2004 03 30 | 704 | 0.1+ | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2001 10 20 | 704 | 0.7+ | 0.8+ | 2004 03 30 | 704 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2001 10 20 | 704 | 0.7+ | 0.2+ | 2004 04 15 | 644 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 2001 10 20 | 704 | 0.3+ | 0.0 | 2004 04 15 | 644 | 0.5+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 10 20 | 704 | 0.8+ | 1.5+ | 2004 04 15 | 644 | 0.5+ | 0.4+ | 2006 10 27 | 291 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 0.6+ | 0.7+ | 2004 04 15 | 644 | 0.3+ | 0.7+ | 2006 10 27 | 291 | 0.2+ | 0.1− |
| 2004 02 19 | 704 | 0.6+ | 0.5− | 2004 04 15 | 644 | 0.3+ | 0.5+ | 2006 10 27 | 291 | 0.3+ | 0.2− |
| 2004 02 19 | 704 | (1.6+ | 0.9−) | 2004 04 15 | 644 | 0.5+ | 0.6+ | | | | |

**(140199)∗ 2001 SV$_{222}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.85339 | | (2000.0) | | | |
| $n$ | 0.19238893 | $\omega$ | 84.18341 | | −0.19669277 | −0.97936258 |
| $a$ | 2.9717755 | $\Omega$ | 17.37197 | | +0.82665167 | −0.19114379 |
| $e$ | 0.0511408 | $i$ | 8.95691 | | +0.52721814 | −0.06567340 |
| $P$ | 5.12 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.4+ | 0.4− | 2001 10 18 | 691 | 0.6− | 0.3+ | 2006 09 18 | 703 | (1.8+ | 1.8+) |
| 1991 11 06 | 691 | 0.1+ | 0.1− | 2001 10 18 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | (0.9− | 1.6−) |
| 1991 11 06 | 691 | 0.6+ | 1.1+ | 2001 10 24 | 704 | 1.0− | 0.7+ | 2006 09 18 | 703 | 0.3+ | 1.0− |
| 1996 10 06 | 691 | 0.3− | 0.3− | 2001 10 24 | 704 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.0 |
| 1996 10 06 | 691 | 0.2− | 0.5− | 2001 10 24 | 704 | 0.8− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.7+ |
| 1996 10 06 | 691 | 0.3− | 0.7− | 2003 01 10 | 704 | (0.9+ | 1.7+) | 2006 09 18 | 703 | 0.0 | 0.0 |
| 1999 04 12 | 691 | 0.1− | 0.0 | 2003 01 10 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 699 | 0.5− | 0.2− |
| 1999 04 12 | 691 | 0.5+ | 0.2+ | 2003 01 10 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.2+ | 0.3− |
| 1999 04 12 | 691 | 0.0 | 0.0 | 2003 01 10 | 704 | 0.1+ | 1.1+ | 2006 09 18 | 699 | 0.1+ | 0.5+ |
| 2001 09 19 | 704 | 0.4− | 0.8+ | 2004 03 25 | 699 | 0.5− | 1.4− | 2006 09 18 | 699 | 0.8+ | 1.0+ |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2004 03 25 | 699 | 0.1− | 0.9− | 2006 09 19 | 703 | 0.7+ | 0.8− |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2004 03 25 | 699 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.8+ | 1.2− |
| 2001 09 19 | 704 | 0.4+ | 0.6+ | 2004 03 25 | 699 | 0.4+ | 1.2+ | 2006 09 19 | 703 | 0.3− | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.1− | 1.0+ | 2006 09 19 | 703 | 0.4+ | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.9+ | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.5− | 0.8− | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.5− | 0.9+ | 2004 03 27 | 704 | 1.1+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 0.1− | 0.5− | 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 2001 09 26 | 704 | 1.2− | 0.4− | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.7− | 0.1+ | 2006 08 18 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2001 09 26 | 704 | 0.0 | 0.4+ | 2006 08 18 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 09 26 | 704 | 0.2− | 0.3− | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 10 17 | 644 | 0.3− | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2001 10 17 | 644 | 0.0 | 0.5+ | 2006 08 27 | 691 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.7− | 0.2+ |
| 2001 10 17 | 644 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.5+ | | | | |
| 2001 10 18 | 691 | 0.2− | 0.2+ | 2006 09 18 | 703 | (2.0+ | 1.3+) | | | | |

**(140200)∗ 2001 SS$_{223}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.44782 | | (2000.0) | | | |
| $n$ | 0.21851812 | $\omega$ | 168.29107 | | +0.98969185 | +0.14298028 |
| $a$ | 2.7298854 | $\Omega$ | 183.51951 | | −0.13977797 | +0.95196722 |
| $e$ | 0.1385282 | $i$ | 7.64381 | | −0.03117944 | +0.27076753 |
| $P$ | 4.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.1+ | 0.1− | 2001 09 26 | 704 | 0.5+ | 1.0+ | 2001 10 23 | 704 | 0.7+ | 0.3+ |
| 1992 10 01 | 691 | 0.5− | 0.0 | 2001 09 26 | 704 | 0.6+ | 0.5+ | 2001 10 24 | 704 | 0.1+ | 0.3− |
| 1992 10 01 | 691 | 0.1+ | 0.2+ | 2001 09 26 | 704 | 0.5+ | 0.8+ | 2001 10 24 | 704 | 0.6− | 0.1+ |
| 1996 06 18 | 691 | (1.0− | 2.4+) | 2001 09 26 | 704 | 0.5+ | 0.2+ | 2001 10 24 | 704 | 0.4+ | 0.9+ |
| 1996 06 18 | 691 | 0.3− | 0.5+ | 2001 10 13 | 704 | 0.1− | 0.3− | 2001 10 24 | 704 | 0.5− | 0.1− |
| 2001 08 27 | 699 | (1.6− | 0.3+) | 2001 10 13 | 704 | 0.0 | 0.9− | 2002 12 14 | 645 | 0.0 | 0.1+ |
| 2001 08 27 | 699 | 1.3+ | 1.4+ | 2001 10 13 | 699 | 0.1+ | 0.6+ | 2002 12 14 | 645 | 0.0 | 0.1+ |
| 2001 08 27 | 699 | 0.0 | 0.1+ | 2001 10 13 | 704 | 0.3+ | 0.7− | 2004 03 23 | 691 | 0.3+ | 0.2+ |
| 2001 08 27 | 699 | 0.6− | 0.7+ | 2001 10 13 | 699 | 0.0 | 0.3− | 2004 03 23 | 691 | 0.5+ | 0.2+ |
| 2001 09 11 | 699 | 0.1− | 0.1+ | 2001 10 13 | 704 | 0.3+ | 0.8− | 2004 03 23 | 691 | 0.5+ | 0.3+ |
| 2001 09 11 | 699 | 0.6− | 0.0 | 2001 10 13 | 699 | 0.1+ | 0.5+ | 2004 04 13 | 691 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 0.3− | 0.4+ | 2001 10 13 | 699 | 0.4− | 0.1+ | 2004 04 13 | 691 | 0.2+ | 0.3+ |
| 2001 09 11 | 699 | 0.2− | 0.3+ | 2001 10 15 | 608 | 0.4− | 0.1− | 2004 04 13 | 691 | 0.1+ | 0.3+ |
| 2001 09 14 | 644 | 0.5+ | 0.1+ | 2001 10 15 | 608 | 0.4− | 0.2+ | 2005 06 06 | 691 | 0.2− | 0.1+ |
| 2001 09 14 | 644 | 0.1− | 0.3− | 2001 10 15 | 608 | 0.3+ | 0.2− | 2005 06 06 | 691 | 0.1− | 0.5+ |
| 2001 09 14 | 644 | 0.3+ | 0.1− | 2001 10 16 | 704 | 0.4− | 0.8+ | 2005 06 06 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2001 10 16 | 704 | 1.1+ | 0.2− | 2005 06 15 | 691 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2001 10 16 | 704 | 0.6+ | 0.2+ | 2005 06 15 | 691 | 0.2− | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2001 10 16 | 704 | 0.9+ | 0.3− | 2005 06 15 | 691 | 0.1− | 0.4+ |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2001 10 17 | 644 | 0.2− | 0.7+ | 2006 10 27 | D35 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.6− | 2001 10 17 | 644 | 0.2− | 0.6+ | 2006 10 27 | D35 | 0.7− | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2001 10 17 | 644 | 0.5+ | 0.7+ | 2006 10 27 | D35 | 0.5− | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2001 10 17 | 644 | 0.2+ | 0.6+ | 2006 11 15 | 703 | (1.6− | 0.1+) |
| 2001 09 21 | 704 | 0.4− | 0.1− | 2001 10 17 | 644 | 0.1+ | 0.7+ | 2006 11 15 | 703 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.5− | 2001 10 17 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 703 | (1.8− | 2.1−) |
| 2001 09 21 | 704 | 0.1− | 0.5− | 2001 10 20 | 704 | 0.3+ | 0.0 | 2006 11 15 | 703 | 1.1+ | 0.6− |
| 2001 09 25 | 699 | 0.2− | 1.0+ | 2001 10 20 | 704 | 0.3+ | 0.7− | 2006 11 28 | 704 | 0.8− | 1.0+ |
| 2001 09 25 | 699 | 1.4− | 0.5+ | 2001 10 20 | 704 | 0.7+ | 0.5− | 2006 11 28 | 704 | 1.3− | 0.6+ |
| 2001 09 25 | 699 | (1.2− | 2.4−) | 2001 10 20 | 704 | 1.5+ | 0.8− | 2006 11 28 | 704 | 0.0 | 0.5+ |
| 2001 09 25 | 699 | 1.0− | 0.6+ | 2001 10 23 | 704 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.0 | 1.5+ |
| 2001 09 26 | 704 | 0.1− | 0.4+ | 2001 10 23 | 704 | 0.1− | 0.4− | | | | |

**(140201)∗ 2001 SP$_{224}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.36213 | | (2000.0) | | | |
| $n$ | 0.20187940 | $\omega$ | 34.52612 | | +0.46814864 | −0.88119711 |
| $a$ | 2.8778935 | $\Omega$ | 27.73135 | | +0.77551584 | +0.37403102 |
| $e$ | 0.0402927 | $i$ | 8.12815 | | +0.42357059 | +0.28912358 |
| $P$ | 4.88 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 13 | 691 | 0.4+ | 0.0 | 2003 01 05 | 704 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 1994 03 13 | 691 | 0.1− | 0.3+ | 2004 04 12 | 644 | 0.1+ | 0.9+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 1994 03 13 | 691 | 0.2− | 0.0 | 2004 04 12 | 644 | 0.1− | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.9+ | 2004 04 12 | 644 | 0.3+ | 0.8+ | 2006 10 19 | 644 | 0.5+ | 0.3+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.5+ |
| 2001 09 19 | 704 | 0.5− | 0.8+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 695 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.7+ | 0.5+ | 2004 04 13 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 695 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 1.0− | 0.8+ | 2004 04 16 | 152 | 0.7− | 0.0 | 2006 10 21 | 703 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2004 04 16 | 152 | (0.7+ | 1.5+) | 2006 10 21 | 703 | 1.0− | 0.5+ |
| 2001 09 21 | 704 | (0.1+ | 1.5+) | 2004 04 16 | 152 | (1.6− | 0.1+) | 2006 10 21 | 703 | 0.2+ | 0.7+ |
| 2001 09 21 | 704 | 0.5+ | 0.7+ | 2004 04 19 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.8− | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2004 04 19 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 09 26 | 704 | 0.7− | 0.9+ | 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 09 26 | 704 | 0.9− | 0.8+ | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 09 26 | 704 | (0.8− | 1.5+) | 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2001 09 26 | 704 | 0.6− | 1.2+ | 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 09 26 | 704 | 1.1− | 0.5+ | 2004 05 24 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 10 08 | 644 | 0.1+ | 0.2− | 2004 05 24 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 10 08 | 644 | 0.3+ | 0.0 | 2004 05 24 | 691 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2001 10 08 | 644 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.7− | 0.5− | 2006 11 01 | 691 | 0.2− | 0.3− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 14 | 703 | 1.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 14 | 703 | (1.3− | 1.7−) | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.8− | 0.4− | 2006 11 13 | G96 | 0.5+ | 0.1− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2001 10 20 | 704 | 0.2− | 0.6+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.7− |
| 2001 10 20 | 704 | 0.2+ | 1.0+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.6− |
| 2001 10 20 | 704 | 0.5− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 1.3− | 0.2+ |
| 2001 10 20 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.1+ |
| 2001 10 20 | 704 | 0.3+ | 0.9+ | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 1.1− | 0.7− |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.6− | 1.4+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.3+ | 1.1+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2003 01 05 | 704 | 0.1− | 1.3+ | 2006 10 15 | 703 | 1.4− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2003 01 05 | 704 | 1.3+ | 0.9+ | 2006 10 15 | 703 | 0.1+ | 0.9+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2003 01 05 | 704 | 0.1+ | 0.8+ | 2006 10 16 | G96 | 0.2+ | 0.2− | | | | |
| 2003 01 05 | 704 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.1− | | | | |

**(140202)∗ 2001 SU$_{224}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.84757 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21043072 | $\omega$ | 226.18796 | | +0.89695260 | −0.44035861 |
| $a$ | 2.7993892 | $\Omega$ | 159.83852 | | +0.43138034 | +0.85207293 |
| $e$ | 0.0698140 | $i$ | 6.58090 | | +0.09688671 | +0.28294171 |
| $P$ | 4.68 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.5− | 0.3− | 2001 09 25 | 644 | 0.3+ | 1.1+ | 2004 04 14 | 691 | 0.1+ | 0.2+ |
| 2001 09 14 | 644 | 0.1− | 0.2− | 2001 09 25 | 644 | 0.8+ | 0.7+ | 2004 04 23 | 691 | 0.3− | 0.3+ |
| 2001 09 14 | 644 | 0.4− | 0.1+ | 2001 10 07 | 644 | 0.9− | 1.2+ | 2004 04 23 | 691 | 0.1− | 0.3+ |
| 2001 09 18 | 699 | 1.1+ | 0.8+ | 2001 10 07 | 644 | 0.8− | 0.7+ | 2004 04 23 | 691 | 0.3− | 0.6+ |
| 2001 09 18 | 699 | (1.5− | 1.7+) | 2001 10 07 | 644 | 1.3− | 0.9+ | 2005 06 13 | 691 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.4− | 0.1+ | 2001 10 08 | 644 | 0.0 | 0.5+ | 2005 06 13 | 691 | 0.1− | 0.4+ |
| 2001 09 18 | 699 | 0.7+ | 0.5+ | 2001 10 08 | 644 | 0.6+ | 0.3+ | 2005 06 13 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.3− | 0.2− | 2001 10 08 | 644 | 0.4+ | 0.3+ | 2005 06 17 | 691 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | (1.6+ | 0.3−) | 2001 10 16 | 644 | 0.9− | 0.0 | 2005 06 17 | 691 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2001 10 16 | 644 | 1.1− | 0.0 | 2005 06 17 | 691 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | (0.0 | 1.9+) | 2001 10 16 | 644 | 1.3− | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2001 10 24 | 644 | 0.1+ | 1.4+ | 2006 10 22 | 703 | 0.7− | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2001 10 24 | 644 | 0.2− | 1.3+ | 2006 10 22 | 703 | 0.6− | 0.6+ |
| 2001 09 19 | 704 | 0.9− | 0.3− | 2001 10 24 | 644 | 0.1+ | 1.4+ | 2006 10 22 | 703 | 0.6− | 0.7− |
| 2001 09 19 | 704 | 0.5− | 0.4− | 2003 01 27 | 704 | 1.4+ | 0.8+ | 2006 11 01 | 703 | 0.2− | 0.2− |
| 2001 09 19 | 704 | 1.0+ | 0.5+ | 2003 01 27 | 704 | 0.3+ | 0.9+ | 2006 11 01 | 703 | 0.9+ | 0.6+ |
| 2001 09 21 | 704 | 0.0 | 0.8+ | 2003 01 27 | 704 | 1.3+ | 0.1+ | 2006 11 01 | 703 | (1.5+ | 0.6+) |
| 2001 09 21 | 704 | 0.7+ | 0.4− | 2003 01 27 | 704 | (0.4− | 1.6+) | 2006 11 01 | 703 | 0.6− | 1.1− |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.8− | 0.1− |
| 2001 09 21 | 704 | 0.8+ | 1.2− | 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 1.2+ | 0.3+ |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2004 03 16 | 691 | 0.0 | 0.6+ | 2006 11 19 | 703 | (1.3− | 2.5−) |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 03 22 | 704 | (0.1− | 1.8+) | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.4+ | 1.1+ | 2006 11 24 | G96 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2004 03 22 | 704 | (0.9− | 1.7+) | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.5+ | 0.0 |
| 2001 09 25 | 644 | 0.0 | 1.1+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.2+ |

**(140203)∗ 2001 SC$_{226}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.71521 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25885942 | $\omega$ | 13.83248 | | −0.96699960 | −0.25367600 |
| $a$ | 2.4383352 | $\Omega$ | 151.43865 | | +0.22879339 | −0.90549606 |
| $e$ | 0.1348540 | $i$ | 2.83779 | | +0.11209534 | −0.34018431 |
| $P$ | 3.81 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 07 | 691 | 0.1+ | 0.0 | 2003 02 03 | 704 | 0.1+ | 0.1− | 2005 10 25 | 699 | (0.4+ | 2.7−) |
| 1992 05 07 | 691 | 0.0 | 0.2− | 2003 02 03 | 699 | 1.1+ | 0.1− | 2005 10 28 | 704 | 1.1− | 0.2− |
| 1992 05 07 | 691 | 0.2+ | 0.5+ | 2003 02 03 | 704 | 0.1− | 0.5+ | 2005 10 28 | 704 | 0.2− | 0.5+ |
| 2001 09 19 | 704 | (1.7− | 0.8+) | 2003 02 08 | 704 | 1.4+ | 0.9− | 2005 10 28 | 704 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 1.4− | 0.5− | 2003 02 08 | 704 | 0.4− | 0.9− | 2005 10 28 | 704 | 0.9+ | 1.0+ |
| 2001 09 19 | 704 | (2.3− | 0.4−) | 2003 02 08 | 704 | 1.4+ | 0.0 | 2005 10 28 | 703 | 0.2− | 0.4− |
| 2001 09 19 | 704 | (1.8− | 0.4−) | 2003 02 08 | 704 | 0.2+ | 0.1+ | 2005 10 28 | 703 | 1.0+ | 0.6− |
| 2001 09 19 | 704 | (2.6− | 0.5−) | 2003 02 12 | 608 | 0.4+ | 0.4− | 2005 10 28 | 703 | 1.0− | 0.8− |
| 2001 09 21 | 704 | 0.9− | 0.0 | 2003 02 12 | 608 | 0.7+ | 0.6− | 2005 10 28 | 703 | 0.8+ | 0.4− |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2003 02 12 | 608 | 0.5+ | 0.3− | 2005 10 31 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.7− | 0.3− | 2003 02 22 | 644 | 0.1− | 0.1+ | 2005 10 31 | 704 | 0.1+ | 0.4+ |
| 2001 09 21 | 704 | 0.7− | 1.0− | 2003 02 22 | 644 | 0.1− | 0.3+ | 2005 10 31 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 1.2− | 0.5− | 2003 02 22 | 699 | 0.1− | 0.6+ | 2005 10 31 | G96 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.2− | 0.1− | 2003 02 22 | 699 | 0.2− | 0.4+ | 2005 10 31 | 704 | 0.1+ | 0.5− |
| 2001 09 26 | 704 | 0.3− | 1.1+ | 2003 02 22 | 699 | 0.0 | 0.4+ | 2005 10 31 | G96 | 0.6+ | 0.1− |
| 2001 09 26 | 704 | (1.5− | 1.4+) | 2003 02 22 | 699 | 0.1+ | 0.5+ | 2005 10 31 | 704 | 0.6+ | 0.5+ |
| 2001 10 15 | 704 | 0.2− | 0.7+ | 2003 02 22 | 644 | 0.0 | 0.0 | 2005 10 31 | 704 | 0.0 | 0.2+ |
| 2001 10 15 | 704 | 0.1+ | 0.7+ | 2003 02 24 | 608 | 0.2− | 0.6− | 2005 10 31 | 704 | 0.0 | 0.4+ |
| 2001 10 15 | 704 | 0.4+ | 0.1+ | 2003 02 24 | 608 | 0.2− | 1.1− | 2005 11 01 | 704 | 0.3+ | 0.7+ |
| 2001 10 15 | 704 | 0.2+ | 0.3+ | 2003 02 24 | 608 | 0.2+ | 0.3− | 2005 11 01 | G96 | 0.0 | 0.1− |
| 2001 10 15 | 704 | 0.0 | 1.2+ | 2003 03 05 | 704 | 0.4+ | 0.5+ | 2005 11 01 | 704 | 0.3+ | 0.4+ |
| 2003 01 15 | 599 | 0.1− | 0.7+ | 2003 03 05 | 704 | 0.4+ | 0.4+ | 2005 11 01 | G96 | 0.2+ | 0.2− |
| 2003 01 15 | 599 | 0.3− | 0.0 | 2003 03 05 | 704 | 0.4+ | 0.5+ | 2005 11 01 | 704 | 0.4+ | 0.3+ |
| 2003 01 15 | 599 | 0.5− | 0.1− | 2003 03 05 | 704 | 0.5− | 0.5+ | 2005 11 01 | G96 | 0.3+ | 0.2− |
| 2003 01 15 | 599 | 0.2− | 0.7+ | 2003 03 06 | 644 | 0.3+ | 0.9+ | 2005 11 01 | G96 | 0.0 | 0.2− |
| 2003 01 26 | 699 | 0.4+ | 0.1− | 2003 03 06 | 644 | 0.2+ | 0.9+ | 2005 11 02 | 704 | 0.7− | 0.4− |
| 2003 01 26 | 699 | 0.3− | 1.2+ | 2003 03 06 | 644 | 0.1+ | 1.0+ | 2005 11 02 | 704 | 0.2+ | 0.6+ |
| 2003 01 26 | 699 | 0.3− | 1.1− | 2003 03 12 | 644 | 0.0 | 0.7+ | 2005 11 02 | 704 | 1.2+ | 0.1− |
| 2003 01 26 | 699 | 0.3− | 0.6+ | 2003 03 12 | 644 | 0.1+ | 0.6+ | 2005 11 02 | 704 | 0.5+ | 0.9+ |
| 2003 01 27 | 291 | 0.2− | 0.1− | 2003 03 12 | 644 | 0.0 | 0.4+ | 2005 11 02 | 704 | 0.4− | 0.0 |
| 2003 01 27 | 291 | 0.1− | 0.2− | 2004 07 18 | 704 | 0.4+ | 0.2− | 2005 11 02 | 704 | 0.5− | 0.2+ |
| 2003 01 27 | 291 | 0.3− | 0.1− | 2004 07 18 | 704 | 0.0 | 0.4− | 2005 11 02 | 704 | 0.9− | 0.3− |
| 2003 01 28 | 645 | 0.2− | 0.1− | 2004 07 18 | 704 | 0.3− | 1.0− | 2005 11 02 | 704 | 0.0 | 0.4+ |
| 2003 01 28 | 645 | 0.2− | 0.1− | 2005 10 01 | 699 | 1.0+ | 0.5− | 2005 11 02 | 704 | 1.1− | 0.5+ |
| 2003 01 30 | 699 | 0.7+ | 0.3+ | 2005 10 01 | 699 | 0.4− | 0.4+ | 2005 11 02 | 704 | 0.6+ | 0.4− |
| 2003 01 30 | 699 | 0.7+ | 0.4− | 2005 10 01 | 699 | 0.9+ | 0.0 | 2006 10 30 | G96 | 0.9− | 0.1− |
| 2003 01 30 | 699 | 0.4+ | 0.5+ | 2005 10 01 | 699 | 0.6+ | 1.1+ | 2006 10 30 | G96 | 0.4− | 0.0 |
| 2003 01 30 | 699 | 0.2+ | 0.4− | 2005 10 07 | 691 | 0.1− | 0.1− | 2006 10 30 | G96 | 0.6− | 0.2+ |
| 2003 02 03 | 699 | 0.4+ | 0.2+ | 2005 10 07 | 691 | 0.1+ | 0.1− | 2006 10 30 | G96 | 0.4− | 0.1− |
| 2003 02 03 | 699 | 0.6+ | 0.4+ | 2005 10 07 | 691 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2003 02 03 | 704 | 0.9+ | 0.8+ | 2005 10 25 | 699 | 1.2− | 0.4+ | 2006 12 01 | G96 | 0.4+ | 0.1+ |
| 2003 02 03 | 704 | 1.0+ | 0.2+ | 2005 10 25 | 699 | (1.5+ | 0.3−) | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2003 02 03 | 699 | 0.7+ | 0.1+ | 2005 10 25 | 699 | 0.4+ | 0.6− | 2006 12 01 | G96 | 0.2− | 0.3− |

**(140204)∗ 2001 SE$_{226}$ = 2004 JL$_{52}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68934)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.02367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18535762 | $\omega$ | 335.29251 | | −0.33069853 | −0.94325202 | |
| $a$ | 3.0464619 | $\Omega$ | 134.00254 | | +0.87269973 | −0.31784338 | |
| $e$ | 0.0748893 | $i$ | 2.40899 | | +0.35921256 | −0.09618323 | |
| $P$ | 5.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.4− | 0.1+ | 2001 12 10 | 645 | 0.2+ | 0.0 | 2004 05 24 | 691 | 0.2+ | 0.2+ |
| 1998 03 02 | 691 | 0.4− | 0.2− | 2001 12 10 | 645 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 1998 03 02 | 691 | 0.3− | 0.1+ | 2002 12 06 | 645 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2001 09 11 | 691 | 0.1− | 0.3+ | 2002 12 06 | 645 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.1+ |
| 2001 09 11 | 691 | 0.0 | 0.3+ | 2003 01 08 | 704 | (0.2+ | 1.8+) | 2006 09 14 | 703 | 0.7− | 0.6+ |
| 2001 09 11 | 691 | 0.0 | 0.1+ | 2003 01 08 | 704 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.8− | 0.3− |
| 2001 09 19 | 704 | 0.6− | 0.5− | 2003 01 08 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.5− | 0.3− | 2004 03 22 | 704 | 1.2+ | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2001 09 19 | 704 | 1.0− | 0.2+ | 2004 03 22 | 704 | 0.8− | 1.3+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.2− | 1.2+ | 2004 03 22 | 704 | 1.3+ | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.5− | 0.8+ | 2004 03 22 | 704 | 0.4+ | 1.3+ | 2006 09 30 | G96 | 1.2− | 0.6− |
| 2001 09 21 | 704 | 0.9+ | 0.5+ | 2004 05 09 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.8− | 2004 05 09 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2001 10 20 | 704 | 0.3+ | 0.3+ | 2004 05 09 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.0 | 0.5+ | 2004 05 24 | 691 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | 0.4− | 0.2− | 2004 05 24 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.2− | 0.2− |

**(140205)∗ 2001 SQ$_{226}$ = 1999 GY$_{15}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.70635 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22600095 | $\omega$ | 67.71351 | | −0.46121106 | −0.88558448 | |
| $a$ | 2.6692907 | $\Omega$ | 49.87017 | | +0.78530558 | −0.43626555 | |
| $e$ | 0.2092663 | $i$ | 4.12475 | | +0.41301271 | −0.15941298 | |
| $P$ | 4.36 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 15 | 691 | 0.4− | 0.3+ | 2003 02 04 | 644 | 0.2+ | 0.0 | 2003 03 26 | 644 | 0.3+ | 0.1− |
| 1999 04 15 | 691 | 0.5− | 0.3+ | 2003 02 04 | 644 | 0.2+ | 0.0 | 2003 03 26 | 699 | 0.9− | 0.6+ |
| 1999 04 19 | 691 | 0.1− | 0.9+ | 2003 02 04 | 644 | 0.4+ | 0.1+ | 2003 03 26 | 699 | 0.2− | 0.0 |
| 1999 04 19 | 691 | 0.0 | 0.3+ | 2003 02 12 | 608 | 0.0 | 0.1+ | 2003 03 26 | 699 | 0.1− | 0.5+ |
| 1999 04 19 | 691 | 0.2+ | 0.3+ | 2003 02 12 | 608 | 0.2− | 0.3+ | 2003 03 26 | 699 | 0.9− | 0.2− |
| 2001 09 19 | 704 | 0.4+ | 0.5+ | 2003 02 12 | 608 | 0.3− | 0.0 | 2003 03 30 | 704 | (0.5+ | 1.7+) |
| 2001 09 19 | 704 | (0.4− | 2.0+) | 2003 03 06 | 704 | 0.9+ | 0.4+ | 2003 03 30 | 704 | (1.8+ | 0.3−) |
| 2001 09 19 | 704 | 0.4+ | 0.8+ | 2003 03 06 | 704 | 0.2+ | 0.1+ | 2003 03 30 | 704 | 1.3+ | 0.6+ |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2003 03 06 | 704 | 0.9+ | 0.4− | 2003 03 30 | 704 | 0.1+ | 0.5+ |
| 2001 09 19 | 704 | 0.4+ | 0.7+ | 2003 03 06 | 704 | 0.1− | 1.3+ | 2003 04 05 | 699 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2003 03 07 | 699 | 0.4+ | 0.4+ | 2003 04 05 | 699 | 0.4− | 0.5+ |
| 2001 09 21 | 704 | 0.2− | 0.5+ | 2003 03 07 | 699 | 1.5+ | 0.6+ | 2003 04 05 | 699 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 1.2+ | 2003 03 07 | 699 | 0.5− | 0.4+ | 2003 04 05 | 699 | 0.0 | 0.3− |
| 2001 09 21 | 704 | (0.4+ | 1.8+) | 2003 03 07 | 699 | 0.8+ | 0.4+ | 2005 08 27 | 644 | 0.3− | 0.8+ |
| 2001 09 26 | 704 | 0.5− | 1.1+ | 2003 03 09 | 704 | 0.9+ | 0.9+ | 2005 08 27 | 644 | 0.5− | 1.0+ |
| 2001 09 26 | 704 | 1.1− | 0.9+ | 2003 03 09 | 704 | 0.6+ | 0.7+ | 2005 08 27 | 644 | 0.0 | 0.9+ |
| 2001 09 26 | 704 | 0.4− | 0.7+ | 2003 03 09 | 704 | 0.9+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2001 10 16 | 704 | 1.3− | 0.8+ | 2003 03 09 | 704 | 1.0+ | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2001 10 16 | 704 | 0.9− | 1.3+ | 2003 03 09 | 704 | 1.2+ | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.9− |
| 2001 10 16 | 704 | 0.1+ | 0.6+ | 2003 03 11 | 644 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.9− |
| 2001 10 17 | 644 | 0.6+ | 0.4+ | 2003 03 11 | 644 | 0.5+ | 0.3+ | 2006 10 27 | 291 | 0.2− | 0.1− |
| 2001 10 17 | 644 | 0.1− | 0.1− | 2003 03 11 | 644 | 0.9+ | 0.1− | 2006 10 27 | 291 | 0.2− | 0.0 |
| 2001 10 17 | 644 | 0.6+ | 0.2+ | 2003 03 12 | 644 | 1.2+ | 0.1+ | 2006 10 27 | 291 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 0.3+ | 0.5+ | 2003 03 12 | 644 | 0.7+ | 0.0 | 2006 10 27 | 291 | 0.4− | 0.3+ |
| 2001 10 20 | 704 | 0.1− | 0.5+ | 2003 03 12 | 644 | 0.8+ | 0.0 | 2006 10 27 | 291 | 0.3− | 0.1+ |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2003 03 13 | 636 | 1.4− | 1.5+ | 2006 10 27 | 291 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.3+ | 0.9+ | 2003 03 13 | 636 | 0.1− | 1.4+ | 2006 11 19 | 704 | 0.6+ | 0.4− |
| 2001 10 25 | 645 | 0.1− | 0.1+ | 2003 03 13 | 636 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2001 10 25 | 645 | 0.1− | 0.1+ | 2003 03 13 | 636 | 0.6+ | 1.1+ | 2006 11 19 | 704 | 1.1+ | 0.6+ |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2003 03 13 | 636 | 0.6− | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2003 03 25 | 644 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.7− |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 03 25 | 644 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.9− |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2003 03 25 | 644 | 0.5+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.7− |
| 2001 12 10 | 645 | 0.1+ | 0.0 | 2003 03 26 | 644 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.0 | 0.7− |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2003 03 26 | 644 | 0.2+ | 0.1− | | | | |

**(140206)∗ 2001 SB$_{228}$ = 2000 FT$_{67}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 84945)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.12278 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21430588 | $\omega$ | 282.50363 | | +0.66757144 | +0.74448592 | |
| $a$ | 2.7655403 | $\Omega$ | 29.38309 | | −0.67541902 | +0.61087735 | |
| $e$ | 0.2889371 | $i$ | 1.10233 | | −0.31330100 | +0.26938742 | |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.9+ | 0.5+ | 2001 10 16 | 704 | 1.0− | 0.3+ | 2005 06 04 | 704 | 0.9+ | 0.3+ |
| 2000 03 25 | 691 | 0.4− | 0.4+ | 2001 10 16 | 704 | 0.4− | 0.1+ | 2005 06 04 | 704 | 0.2− | 0.0 |
| 2000 03 25 | 691 | 0.2− | 0.5+ | 2001 10 16 | 704 | 0.9− | 0.2+ | 2005 06 04 | 704 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2001 10 16 | 704 | 1.0− | 0.4+ | 2005 06 04 | 704 | 0.2+ | 0.6+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2001 10 16 | 704 | 0.6− | 0.7− | 2005 06 26 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2001 10 17 | 644 | 0.3+ | 1.1+ | 2005 06 26 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.3+ | 0.0 | 2001 10 17 | 644 | 0.3+ | 1.0+ | 2005 06 26 | 644 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.0 | 0.1− | 2001 10 17 | 644 | 0.2+ | 1.0+ | 2006 09 27 | G96 | 0.5− | 0.2− |
| 2001 09 19 | 691 | 0.6− | 0.1+ | 2001 10 20 | 704 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.8− |
| 2001 09 19 | 691 | 0.7− | 0.1+ | 2001 10 20 | 704 | 0.5+ | 1.1+ | 2006 09 27 | G96 | 0.6− | 0.1− |
| 2001 09 19 | 691 | 0.6− | 0.1+ | 2001 10 20 | 704 | 0.4+ | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2001 10 20 | 704 | 0.5+ | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2001 10 22 | 704 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2001 10 22 | 704 | 0.6− | 1.0− | 2006 10 17 | G96 | 0.8− | 0.4− |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2001 10 22 | 704 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 1.1+ | 0.7+ | 2001 10 22 | 704 | 0.8+ | 1.0+ | 2006 10 29 | G96 | 0.0 | 0.3− |
| 2001 09 23 | 333 | 0.3− | 0.5− | 2001 10 23 | 704 | 0.3+ | 0.6+ | 2006 10 29 | G96 | 0.2− | 0.0 |
| 2001 09 23 | 333 | 1.3+ | 0.7− | 2001 10 23 | 704 | 0.1− | 0.3+ | 2006 10 29 | G96 | 0.4− | 0.3− |
| 2001 09 23 | 333 | 1.1+ | 0.3− | 2001 10 23 | 704 | 0.7+ | 1.0+ | 2006 10 29 | G96 | 0.5− | 0.2+ |
| 2001 09 26 | 704 | 0.0 | 0.3− | 2001 10 24 | 704 | 0.9− | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2001 09 26 | 704 | 0.7− | 0.1+ | 2001 10 24 | 704 | 0.4− | 1.1− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.7− | 0.6− | 2001 10 24 | 704 | 0.5+ | 1.5− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 09 26 | 704 | 0.5− | 0.1+ | 2001 10 24 | 704 | 0.1+ | 0.5+ | 2006 11 19 | 691 | 0.6+ | 0.4+ |
| 2001 09 26 | 704 | 0.3− | 0.8− | 2001 10 24 | 704 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2001 10 13 | 704 | 0.8+ | 0.0 | 2001 10 25 | 704 | 1.3− | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2001 10 13 | 704 | 0.5+ | 0.3− | 2001 10 25 | 704 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 704 | 0.5+ | 0.2+ | 2001 10 25 | 704 | 0.1− | 1.1− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 10 13 | 704 | 1.3+ | 0.1− | 2001 10 25 | 704 | 0.2+ | 1.0+ | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2001 10 14 | 699 | 0.5+ | 0.5+ | 2004 02 18 | 291 | 0.3+ | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.4− |
| 2001 10 14 | 699 | 1.1− | 1.4+ | 2004 02 18 | 291 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 10 14 | 699 | (1.5+ | 0.5−) | 2004 02 18 | 291 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.2− |
| 2001 10 14 | 699 | 0.1− | 0.3+ | 2005 05 29 | E12 | 0.2+ | 0.3+ | 2006 12 01 | 691 | 0.6− | 0.2+ |
| 2001 10 15 | 291 | 0.2+ | 0.1+ | 2005 05 29 | E12 | 0.2− | 0.4+ | 2006 12 01 | 691 | 0.0 | 0.3− |
| 2001 10 15 | 291 | 0.3+ | 0.2+ | 2005 05 29 | E12 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2001 10 15 | 291 | 0.4+ | 0.1+ | 2005 05 29 | E12 | 0.4− | 0.4+ | | | | |

**(140207)∗ 2001 SC$_{228}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.58660 | | (2000.0) | | +0.90029274 | +0.43471544 |
| $n$ | 0.20193906 | $\omega$ | 301.72141 | | −0.38405025 | +0.81735539 |
| $a$ | 2.8773266 | $\Omega$ | 32.52682 | | −0.20488628 | +0.37809080 |
| $e$ | 0.0631057 | $i$ | 2.37256 | | | |
| $P$ | 4.88 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.5− | 1.4+ | 2006 10 19 | 691 | 0.1+ | 0.4+ |
| 1994 03 10 | 691 | 0.4+ | 0.4+ | 2004 03 18 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1999 03 13 | 691 | 0.3− | 0.4− | 2004 03 27 | 704 | (1.4+ | 2.2+) | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 1999 03 13 | 691 | 1.1− | 0.1+ | 2004 03 27 | 704 | 1.2+ | 1.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1999 03 13 | 691 | 0.7− | 0.7− | 2004 03 27 | 704 | 1.1+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 1.2+ | 2004 03 27 | 704 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2004 03 27 | 704 | (1.7+ | 1.8+) | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2004 04 14 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.7+ | 0.3+ | 2004 04 14 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2004 04 23 | 691 | 0.7+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.9+ | 0.3− | 2004 04 23 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.3+ | 0.7+ | 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2001 10 13 | 704 | 1.1+ | 0.0 | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 1.1− | 1.3+ |
| 2001 10 13 | 704 | (2.1+ | 0.1−) | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2001 10 13 | 704 | 0.6− | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2001 10 13 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 10 16 | 691 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 10 16 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 10 16 | 691 | 0.1− | 0.0 | 2006 09 20 | 699 | 1.3− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.0 | 0.2− | 2006 09 20 | 699 | 1.0− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 699 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.4− | 0.7− |
| 2001 10 23 | 704 | 0.3− | 0.4− | 2006 09 20 | 699 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2001 10 23 | 704 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2001 10 23 | 704 | 0.2− | 0.7+ | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.6− | 0.3+ | 2006 09 25 | G96 | (2.2− | 1.4−) | 2006 11 15 | 691 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.0 |
| 2001 10 24 | 704 | (1.5− | 1.6+) | 2006 10 11 | 691 | 0.4− | 0.8− | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.5− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.9+ | 1.3+ | 2006 10 15 | 691 | 0.3− | 0.3+ | | | | |
| 2004 03 18 | 704 | 0.9− | 0.2+ | 2006 10 15 | 691 | 0.4− | 0.1− | | | | |

**(140208)∗ 2001 SV$_{228}$ = 2000 KS$_{81}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.30134 | | (2000.0) | | +0.51837710 | +0.85495882 |
| $n$ | 0.21457693 | $\omega$ | 133.17636 | | −0.80778426 | +0.49653115 |
| $a$ | 2.7632109 | $\Omega$ | 168.00816 | | −0.28065952 | +0.15000745 |
| $e$ | 0.1741458 | $i$ | 5.02048 | | | |
| $P$ | 4.59 | $H$ | 15.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 704 | 1.1− | 0.1+ | 2001 10 14 | 608 | 0.1+ | 1.4+ | 2004 03 18 | 704 | 0.6+ | 0.7+ |
| 2000 05 05 | 704 | 0.5+ | 0.9+ | 2001 10 14 | 608 | (0.2− | 1.5+) | 2004 03 20 | 699 | 0.7+ | 0.0 |
| 2000 05 05 | 704 | 1.2+ | 0.6+ | 2001 10 14 | 608 | 0.1+ | 1.0+ | 2004 03 20 | 699 | 0.1− | 0.0 |
| 2000 05 05 | 704 | 0.8+ | 0.6+ | 2001 10 16 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 699 | 0.5− | 0.4+ |
| 2000 05 05 | 704 | 0.7+ | 0.8+ | 2001 10 16 | 704 | 0.0 | 0.0 | 2004 03 20 | 699 | 0.7− | 0.2+ |
| 2000 05 25 | 699 | 0.1− | 0.4− | 2001 10 16 | 704 | 0.7− | 0.5+ | 2004 03 21 | 691 | 0.3+ | 0.1+ |
| 2000 05 25 | 699 | 1.3+ | 0.0 | 2001 10 16 | 704 | 0.1− | 0.2− | 2004 03 21 | 691 | 0.1+ | 0.4+ |
| 2000 05 25 | 699 | 1.2− | 0.9+ | 2001 10 16 | 704 | 1.0− | 0.4− | 2004 03 21 | 691 | 0.4+ | 0.3+ |
| 2000 05 25 | 699 | 0.3− | 0.2+ | 2001 10 18 | 644 | 0.4− | 0.7+ | 2004 03 27 | 704 | 0.1+ | 0.6+ |
| 2000 06 05 | 699 | 0.7+ | 0.8+ | 2001 10 18 | 644 | 0.0 | 0.9+ | 2004 03 27 | 704 | 0.0 | 0.9+ |
| 2000 06 05 | 699 | 1.6+ | 1.2+ | 2001 10 18 | 644 | 0.2− | 0.8+ | 2004 03 27 | 704 | 0.5+ | 0.3+ |
| 2000 06 05 | 699 | 0.3− | 0.1+ | 2001 10 20 | 704 | 0.7+ | 0.6+ | 2004 03 27 | 704 | 0.0 | 0.1+ |
| 2000 06 05 | 699 | 0.4+ | 1.9+ | 2001 10 20 | 704 | 1.2+ | 0.8+ | 2004 03 30 | 691 | 0.1+ | 0.3+ |
| 2001 09 11 | 699 | 0.3− | 0.0 | 2001 10 20 | 704 | 1.2+ | 1.0+ | 2004 03 30 | 691 | 0.3− | 0.3+ |
| 2001 09 11 | 699 | (0.8− | 1.9+) | 2001 10 20 | 704 | 1.4+ | 0.4+ | 2004 03 30 | 691 | 0.2+ | 0.6+ |
| 2001 09 11 | 699 | 0.7− | 0.9+ | 2001 10 23 | 704 | 0.9− | 1.1+ | 2004 04 12 | 691 | 0.2+ | 0.2+ |
| 2001 09 11 | 699 | 0.7− | 0.2+ | 2001 10 23 | 704 | 0.6− | 1.2+ | 2004 04 12 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2001 10 23 | 704 | 0.7− | 0.3+ | 2004 04 12 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.6+ | 0.6+ | 2001 10 23 | 704 | 0.8− | 0.0 | 2005 06 30 | 291 | 0.2− | 0.7+ |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2001 10 24 | 704 | 0.6+ | 0.8+ | 2005 06 30 | 291 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.4+ | 0.6+ | 2001 10 24 | 704 | 0.2− | 0.8+ | 2005 06 30 | 291 | 0.1− | 0.7+ |
| 2001 09 19 | 704 | 0.2+ | 0.1− | 2001 10 24 | 704 | 0.6− | 0.6+ | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2001 10 24 | 704 | 0.3− | 0.8− | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2001 10 24 | 704 | 0.7− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2001 11 12 | 645 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2001 11 12 | 645 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2001 09 26 | 704 | (2.0− | 1.7+) | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 0.7− | 0.2− | 2004 01 30 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2001 09 26 | 704 | 0.8− | 0.6+ | 2004 02 13 | 291 | 0.3− | 0.7+ | 2006 11 16 | 691 | 0.4− | 0.2+ |
| 2001 09 27 | 644 | 0.1− | 0.1+ | 2004 02 13 | 291 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2001 09 27 | 644 | 0.1+ | 0.6+ | 2004 02 13 | 291 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.6+ | 0.8+ |
| 2001 09 27 | 644 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 0.8+ | 0.9+ | 2006 11 17 | 704 | 1.7+ | 0.3− |
| 2001 10 11 | 683 | (1.4− | 1.8+) | 2004 02 26 | 704 | 1.2+ | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2001 10 11 | 683 | 0.2− | 0.7+ | 2004 02 26 | 704 | 1.0+ | 0.9+ | 2006 11 17 | 704 | 0.3+ | 1.4+ |
| 2001 10 11 | 683 | (3.3+ | 1.7+) | 2004 02 26 | 704 | 0.8+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2001 10 12 | 699 | 1.1+ | 0.3+ | 2004 02 26 | 704 | 1.5+ | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2001 10 12 | 699 | 1.1− | 0.3+ | 2004 03 18 | 704 | 1.2− | 0.3− | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2001 10 12 | 699 | 0.1− | 1.0− | 2004 03 18 | 704 | 0.9− | 1.2− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2001 10 12 | 699 | 0.2− | 1.5+ | 2004 03 18 | 704 | (1.8− | 0.6−) | | | | |

**(140209)∗ 2001 SC$_{230}$ = 2000 GP$_{185}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 193.80078 | | (2000.0) | | +0.23918258 | +0.97097219 |
| $n$ | 0.26770622 | $\omega$ | 105.64615 | | −0.91506055 | +0.22615563 |
| $a$ | 2.3843156 | $\Omega$ | 178.18792 | | −0.32473971 | +0.07788865 |
| $e$ | 0.2148225 | $i$ | 3.93294 | | | |
| $P$ | 3.68 | $H$ | 16.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.4− | 0.7− | 2001 10 16 | 704 | 0.6+ | 1.0+ | 2004 05 15 | 704 | 0.5− | 0.0 |
| 1994 12 01 | 691 | 0.2+ | 1.0− | 2001 10 16 | 704 | 0.9+ | 0.0 | 2004 05 15 | 704 | 0.2− | 0.2+ |
| 1994 12 01 | 691 | 0.1+ | 0.3− | 2001 10 16 | 704 | 0.1− | 0.7+ | 2004 05 17 | 704 | 0.2+ | 1.5+ |
| 2000 03 11 | 704 | 0.4+ | 1.6+ | 2001 10 18 | 644 | 0.2+ | 0.9+ | 2004 05 17 | 704 | 0.0 | 1.3+ |
| 2000 03 11 | 704 | 0.5+ | 0.1+ | 2001 10 18 | 644 | 0.3+ | 0.8+ | 2004 05 17 | 704 | 0.6+ | 0.4+ |
| 2000 03 11 | 704 | 0.0 | 0.1+ | 2001 10 18 | 644 | 0.3+ | 0.7+ | 2004 05 17 | 704 | 0.7− | 0.8+ |
| 2000 03 11 | 704 | 0.5− | 0.8+ | 2001 10 25 | 691 | 0.0 | 0.1+ | 2004 05 22 | 704 | 0.2− | 0.4+ |
| 2000 03 25 | 691 | 0.1− | 0.1+ | 2001 10 25 | 691 | 0.2− | 0.1+ | 2004 05 22 | 704 | 0.7+ | 0.4− |
| 2000 03 25 | 691 | 0.2− | 0.0 | 2001 10 25 | 691 | 0.1− | 0.0 | 2004 05 22 | 704 | 0.1+ | 0.5+ |
| 2000 03 25 | 691 | 0.4+ | 0.2+ | 2004 04 22 | 704 | 0.6+ | 1.1+ | 2004 05 22 | 704 | 0.1+ | 0.1+ |
| 2000 04 06 | 691 | 0.4+ | 0.1− | 2004 04 22 | 704 | 0.8+ | 1.2+ | 2004 05 22 | 704 | 0.4− | 1.4− |
| 2000 04 06 | 691 | 0.1− | 0.3− | 2004 04 22 | 704 | 0.1+ | 1.8+ | 2005 10 22 | 691 | 0.2+ | 0.6+ |
| 2000 04 06 | 691 | 0.3+ | 0.1− | 2004 04 22 | 704 | 0.3+ | 0.2− | 2005 10 22 | 691 | 0.1− | 0.5+ |
| 2001 09 19 | 704 | 0.4− | 0.1+ | 2004 05 01 | 703 | 0.4− | 0.7+ | 2005 10 22 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2004 05 01 | 703 | 2.1+ | 0.2+ | 2005 10 27 | 691 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2004 05 01 | 703 | 1.1− | 0.4+ | 2005 10 27 | 691 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.1+ | 0.7+ | 2004 05 01 | 703 | 0.1− | 0.1− | 2005 10 27 | 691 | 0.2− | 0.6+ |
| 2001 09 21 | 704 | 0.3+ | 0.5− | 2004 05 11 | 699 | 0.2− | 1.4+ | 2005 10 31 | 691 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2004 05 11 | 699 | 0.4− | 1.0+ | 2005 10 31 | 691 | 0.2− | 0.7+ |
| 2001 09 21 | 704 | 0.8− | 0.2+ | 2004 05 11 | 699 | 0.2+ | 0.5+ | 2005 10 31 | 691 | 0.0 | 0.5+ |
| 2001 09 21 | 704 | 0.7+ | 1.3− | 2004 05 11 | 699 | 0.2+ | 0.2+ | 2005 11 01 | G96 | 0.2− | 0.1− |
| 2001 10 11 | 644 | 0.6− | 0.4+ | 2004 05 12 | 699 | 0.4− | 0.6+ | 2005 11 01 | G96 | 0.5− | 0.4− |
| 2001 10 11 | 644 | 0.6− | 0.2+ | 2004 05 12 | 699 | 0.6− | 0.6+ | 2005 11 01 | G96 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.6− | 0.5+ | 2004 05 12 | 699 | 0.6+ | 1.0+ | 2005 11 01 | G96 | 0.4− | 0.1− | | |
| 2001 10 15 | 704 | 0.2+ | 0.2+ | 2004 05 12 | 699 | 0.8+ | 1.9+ | 2005 11 10 | 691 | 0.3− | 0.6+ | | |
| 2001 10 15 | 704 | 0.3− | 0.4− | 2004 05 15 | 704 | 0.3− | 0.6− | 2005 11 10 | 691 | 0.1− | 0.3+ | | |
| 2001 10 15 | 704 | 1.8+ | 0.5− | 2004 05 15 | 704 | 0.7+ | 0.5+ | 2005 11 10 | 691 | 0.1+ | 0.6+ | | |
| 2001 10 15 | 704 | 0.1− | 0.9+ | 2004 05 15 | 704 | 0.3− | 0.1− | | | | | | |

**(140210)∗ 2001 SU$_{230}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.99386 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19082624 | $\omega$ | 350.68524 | | +0.29812870 | −0.95356400 | |
| $a$ | 2.9879775 | $\Omega$ | 81.96051 | | +0.87852198 | +0.25656518 | |
| $e$ | 0.1519379 | $i$ | 2.47950 | | +0.37325383 | +0.15776568 | |
| $P$ | 5.16 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.3− | 0.1− | 2001 10 22 | 704 | 0.4+ | 0.8+ | 2003 02 21 | 644 | 0.2+ | 1.2+ | | |
| 1998 02 23 | 691 | 0.3− | 0.1+ | 2001 10 22 | 704 | 0.1− | 0.6+ | 2003 02 21 | 644 | 0.6+ | 1.0+ | | |
| 1998 02 23 | 691 | 0.3− | 0.2− | 2001 10 22 | 704 | 0.4+ | 0.6+ | 2003 03 06 | 704 | 0.4− | 0.4− | | |
| 1998 03 02 | 691 | 0.5− | 0.0 | 2001 10 22 | 704 | 0.5+ | 0.5+ | 2003 03 06 | 704 | 0.2+ | 0.4+ | | |
| 1998 03 02 | 691 | 0.5− | 0.5− | 2001 10 23 | 704 | 0.2+ | 0.4− | 2003 03 06 | 704 | 0.1− | 0.4+ | | |
| 1998 03 02 | 691 | 0.5− | 0.3+ | 2001 10 23 | 704 | 0.5− | 0.0 | 2003 03 06 | 704 | 0.1− | 0.6+ | | |
| 1998 03 04 | 691 | 0.3+ | 0.1+ | 2001 10 23 | 704 | 0.6− | 0.3− | 2003 03 06 | 704 | 0.4− | 0.7+ | | |
| 1998 03 04 | 691 | 0.1+ | 0.1− | 2001 10 23 | 704 | 0.2− | 1.4− | 2004 04 01 | 291 | 0.7+ | 0.5+ | | |
| 1998 03 04 | 691 | 0.4+ | 1.4+ | 2001 10 23 | 704 | 0.1+ | 0.5− | 2004 04 01 | 291 | 0.7+ | 0.9+ | | |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2001 10 24 | 704 | 0.4+ | 0.7− | 2004 04 01 | 291 | 0.6+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.3− | 0.1− | 2001 10 24 | 704 | 0.6+ | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.8− | 0.4+ | 2001 10 24 | 704 | 0.5+ | 0.8− | 2004 04 22 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2001 10 24 | 704 | 0.4+ | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.7+ | | |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2001 10 25 | 644 | 0.5+ | 0.6+ | 2006 09 20 | 644 | 1.0− | 0.0 | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2001 10 25 | 644 | 0.5+ | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.2− | | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2001 10 25 | 644 | 1.0+ | 0.9+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2003 01 26 | 699 | 0.3+ | 1.2− | 2006 09 26 | 704 | 0.8− | 0.0 | | |
| 2001 09 21 | 704 | (0.3+ | 1.5+) | 2003 01 26 | 699 | 0.0 | 0.6− | 2006 09 26 | 704 | 0.1− | 1.0+ | | |
| 2001 09 26 | 704 | 0.8+ | 0.2− | 2003 01 26 | 699 | 0.8+ | 0.0 | 2006 09 26 | 704 | 0.1− | 1.0+ | | |
| 2001 09 26 | 704 | 0.2− | 0.5− | 2003 01 26 | 699 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.8− | 0.5+ | | |
| 2001 09 26 | 704 | 0.4− | 0.1+ | 2003 01 27 | 704 | 0.7+ | 0.0 | 2006 09 26 | 704 | 0.4− | 1.4+ | | |
| 2001 10 14 | 699 | 0.5+ | 1.1+ | 2003 01 27 | 704 | 0.7+ | 0.4+ | 2006 09 28 | 691 | 0.4− | 0.2+ | | |
| 2001 10 14 | 699 | 0.1− | 0.0 | 2003 01 27 | 704 | 1.2+ | 0.2+ | 2006 09 28 | 691 | 0.5− | 0.2+ | | |
| 2001 10 14 | 699 | 0.1+ | 0.2− | 2003 01 27 | 704 | 1.3+ | 0.4+ | 2006 09 28 | 691 | 0.5− | 0.1+ | | |
| 2001 10 14 | 699 | 0.5− | 0.3+ | 2003 01 27 | 704 | 1.2+ | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 2001 10 16 | 704 | 0.7− | 0.9+ | 2003 02 04 | 699 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.5− | 0.1− | | |
| 2001 10 16 | 704 | 0.6− | 0.6+ | 2003 02 04 | 699 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.0 | | |
| 2001 10 16 | 704 | 0.3+ | 1.0+ | 2003 02 04 | 699 | 0.7− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 2001 10 16 | 704 | 0.4− | 1.0+ | 2003 02 04 | 704 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.0 | | |
| 2001 10 16 | 704 | 1.0− | 1.3+ | 2003 02 04 | 699 | 0.4+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 2001 10 18 | 644 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.9+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.0 | | |
| 2001 10 18 | 644 | 0.0 | 0.1+ | 2003 02 04 | 704 | (0.1+ | 1.7+) | 2006 10 16 | 703 | 0.5− | 0.8− | | |
| 2001 10 18 | 644 | 0.2− | 0.2+ | 2003 02 04 | 704 | 0.6+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.4− | | |
| 2001 10 20 | 704 | 0.4+ | 0.6+ | 2003 02 04 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.5− | 0.1− | | |
| 2001 10 20 | 704 | 0.2+ | 1.0+ | 2003 02 19 | 608 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.7+ | | |
| 2001 10 20 | 704 | 0.9+ | 0.2+ | 2003 02 19 | 608 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.0 | | |
| 2001 10 20 | 704 | 0.8+ | 0.2+ | 2003 02 19 | 608 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 10 20 | 704 | 1.0+ | 0.2+ | 2003 02 21 | 644 | 0.1+ | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |

**(140211)∗ 2001 SZ$_{230}$ = 1996 TY$_{67}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20353)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.95840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19592155 | $\omega$ | 221.44504 | | +0.99741112 | −0.06486794 | |
| $a$ | 2.9359450 | $\Omega$ | 142.24036 | | +0.07170109 | +0.92999801 | |
| $e$ | 0.1306853 | $i$ | 2.90515 | | −0.00547788 | +0.36179532 | |
| $P$ | 5.03 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 566 | 0.9− | 0.2− | 2001 10 20 | 704 | 0.0 | 0.5+ | 2006 09 16 | 644 | 0.3+ | 0.0 | | |
| 1996 10 12 | 566 | 0.1− | 0.3− | 2001 10 20 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.0 | | |
| 1996 10 12 | 566 | 0.8− | 0.4− | 2001 10 20 | 704 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1− | | |
| 1996 10 16 | 121 | 0.4− | 0.6− | 2001 10 20 | 704 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.3− | | |
| 1996 10 16 | 121 | 1.4− | 0.7− | 2001 10 23 | 704 | 0.4+ | 0.9− | 2006 09 18 | 699 | 0.2− | 0.0 | | |
| 2001 09 11 | 699 | (0.5− | 1.5+) | 2001 10 23 | 704 | 0.7+ | 0.9− | 2006 09 18 | 699 | 0.4− | 0.5+ | | |
| 2001 09 11 | 699 | (1.6+ | 0.1+) | 2001 10 23 | 704 | 0.3+ | 1.1− | 2006 09 18 | 699 | 0.1+ | 0.3+ | | |
| 2001 09 11 | 699 | (1.7+ | 0.4+) | 2001 10 23 | 704 | 0.1− | 1.5− | 2006 09 18 | 699 | 0.2+ | 1.2− | | |
| 2001 09 11 | 699 | (2.7+ | 1.0+) | 2001 10 24 | 704 | 0.4+ | 0.8− | 2006 09 22 | 704 | 0.0 | 0.9− | | |
| 2001 09 11 | 699 | (2.1− | 0.1−) | 2001 10 24 | 704 | 0.7+ | 0.1− | 2006 09 22 | 704 | 0.0 | 1.3+ | | |
| 2001 09 11 | 699 | 0.5+ | 0.7+ | 2001 10 24 | 704 | 0.7+ | 1.3+ | 2006 09 22 | 704 | 0.7− | 0.0 | | |
| 2001 09 11 | 699 | 0.1+ | 0.7+ | 2001 10 24 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.3+ | 1.1− | | |
| 2001 09 11 | 699 | (0.2− | 1.9+) | 2001 10 24 | 704 | (2.2+ | 0.8−) | 2006 09 28 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2001 10 25 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.0 | 0.6− | 2001 10 25 | 644 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.1+ | 2001 10 25 | 644 | 0.3+ | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.0 | | |
| 2001 09 19 | 704 | 0.2+ | 0.2− | 2001 11 09 | 704 | 0.6+ | 0.5+ | 2006 09 29 | 699 | 0.8+ | 0.3− | | |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2001 11 09 | 704 | 0.1+ | 1.0+ | 2006 09 29 | 699 | (2.2+ | 1.3+) | | |
| 2001 09 21 | 704 | 0.1− | 0.0 | 2001 11 09 | 704 | 0.2− | 0.4− | 2006 09 29 | 699 | 0.1− | 0.4+ | | |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2001 11 09 | 704 | 0.9− | 1.0+ | 2006 10 01 | 704 | 0.3− | 0.1− | | |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2001 11 20 | 704 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.3+ | 0.1− | | |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2001 11 20 | 704 | 0.0 | 0.8+ | 2006 10 01 | 704 | 0.0 | 0.4+ | | |
| 2001 09 21 | 704 | 0.6− | 0.4− | 2001 11 20 | 704 | 0.7− | 0.2− | 2006 10 01 | 704 | 1.0+ | 0.7− | | |
| 2001 09 26 | 704 | 0.5+ | 0.5+ | 2001 11 20 | 704 | 0.3− | 0.6+ | 2006 10 01 | 704 | (0.8− | 1.9−) | | |
| 2001 09 26 | 704 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.2− | 0.8+ | 2006 10 16 | 703 | 1.4− | 0.1− | | |
| 2001 09 26 | 704 | 0.9+ | 0.8+ | 2001 12 19 | 209 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.2+ | | |
| 2001 09 26 | 704 | 0.5+ | 0.8+ | 2001 12 19 | 209 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.0 | | |
| 2001 09 26 | 704 | 1.2+ | 0.9+ | 2001 12 19 | 209 | 0.9− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.2− | | |
| 2001 10 07 | 644 | 0.2− | 0.2+ | 2002 12 07 | 291 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 07 | 644 | 0.1− | 0.3+ | 2002 12 07 | 291 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2001 10 07 | 644 | 0.1+ | 0.3+ | 2002 12 07 | 291 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.4+ | 0.1+ | | |
| 2001 10 13 | 704 | 0.4+ | 0.4− | 2002 12 28 | 291 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2001 10 13 | 704 | 0.6+ | 0.1+ | 2002 12 28 | 291 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2001 10 13 | 704 | 0.2+ | 0.2+ | 2002 12 28 | 291 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.3− | | |
| 2001 10 13 | 704 | (1.8+ | 1.3+) | 2003 01 29 | 644 | 0.9+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 10 14 | 699 | 0.8− | 0.4− | 2003 01 29 | 644 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2001 10 14 | 699 | 0.8− | 0.4+ | 2003 01 29 | 644 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 14 | 699 | 1.1− | 0.1+ | 2004 03 29 | 691 | 0.3+ | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.5− | | |
| 2001 10 14 | 699 | 0.7− | 0.6+ | 2004 03 29 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 1.2− | 0.9− | | |
| 2001 10 16 | 704 | 0.7+ | 1.4+ | 2004 03 29 | 691 | 0.3+ | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.5− | | |
| 2001 10 16 | 704 | 0.6+ | 0.9+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2001 10 16 | 704 | 0.1+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2001 10 16 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2001 10 16 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2001 10 20 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | | | | | | |

**(140212)∗ 2001 SJ$_{232}$ = 1999 GW$_{11}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20354)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.57720 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18670265 | $\omega$ | 328.21963 | | +0.99285480 | +0.10005927 | |
| $a$ | 3.0318129 | $\Omega$ | 26.27277 | | −0.05258584 | +0.85599208 | |
| $e$ | 0.0609284 | $i$ | 8.44661 | | −0.10711712 | +0.50721366 | |
| $P$ | 5.28 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 691 | 0.2+ | 0.7+ | 2001 10 20 | 704 | 0.5− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.4+ |
| 1999 04 11 | 691 | 0.2+ | 0.3+ | 2001 10 20 | 704 | 0.9− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.4+ |
| 1999 04 11 | 691 | 0.0 | 0.5+ | 2001 10 20 | 704 | 0.1− | 0.2− | 2006 08 21 | 644 | 0.1− | 0.4+ |
| 1999 04 17 | 691 | 0.6+ | 0.2+ | 2001 10 25 | 704 | 0.1+ | 0.1− | 2006 08 21 | 644 | 0.1+ | 0.1+ |
| 1999 04 17 | 691 | 0.6+ | 0.3+ | 2001 10 25 | 704 | 0.2+ | 0.1− | 2006 08 21 | 644 | 0.1− | 0.2+ |
| 1999 04 17 | 691 | 1.2+ | 0.2− | 2001 10 25 | 704 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.3− | 1.3+ |
| 1999 04 22 | 691 | 0.5− | 0.9+ | 2001 10 25 | 704 | 0.6− | 0.5+ | 2006 08 28 | 699 | 0.1− | 1.2+ |
| 1999 04 22 | 691 | 0.6− | 0.5+ | 2001 10 25 | 704 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.8+ |
| 1999 04 22 | 691 | 0.2− | 0.3+ | 2001 11 09 | 704 | 0.1+ | 0.7− | 2006 08 28 | 699 | 0.6+ | 1.3− |
| 2001 09 17 | 699 | (0.3− | 1.6+) | 2001 11 09 | 704 | 0.5+ | 1.0+ | 2006 09 14 | 703 | 0.9− | 0.4+ |
| 2001 09 17 | 699 | 0.9− | 0.1+ | 2001 11 09 | 704 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.0 |
| 2001 09 17 | 699 | (0.5+ | 2.8+) | 2001 11 09 | 704 | 0.7− | 0.3− | 2006 09 14 | 703 | 0.8− | 0.1+ |
| 2001 09 17 | 699 | 0.5+ | 1.2+ | 2001 11 20 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 1.3− | 0.3− |
| 2001 09 19 | 704 | 0.9− | 0.6+ | 2001 11 20 | 691 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.6+ |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2001 11 20 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.1− |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2001 11 21 | 704 | 0.5− | 0.8− | 2006 09 18 | 703 | 0.6− | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2001 11 21 | 704 | 0.4− | 1.1− | 2006 09 18 | 703 | 1.1− | 0.8+ |
| 2001 09 19 | 704 | 0.5− | 0.4+ | 2001 11 21 | 704 | 0.8− | 0.6− | 2006 09 25 | 699 | 0.5− | 0.7+ |
| 2001 09 21 | 704 | 0.6− | 1.0+ | 2001 11 21 | 704 | 0.8− | 1.2− | 2006 09 25 | 699 | 0.2− | 0.9+ |
| 2001 09 21 | 704 | 0.8− | 1.1+ | 2001 11 21 | 704 | 0.4− | 0.7− | 2006 09 25 | 699 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2003 01 05 | 704 | 0.1− | 1.1+ | 2006 09 25 | 699 | 0.6− | 0.9+ |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2003 01 05 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 704 | (0.1+ | 2.0+) |
| 2001 09 21 | 704 | (1.8− | 0.1+) | 2003 01 05 | 704 | 0.5− | 0.5+ | 2006 09 26 | 704 | 0.9+ | 1.1+ |
| 2001 09 26 | 704 | (2.6+ | 0.7−) | 2003 01 05 | 704 | 0.0 | 0.8+ | 2006 09 26 | 704 | (1.8− | 1.4+) |
| 2001 09 26 | 704 | (0.9+ | 2.0+) | 2004 03 12 | 644 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.0 | 0.2− |
| 2001 09 26 | 704 | 0.4+ | 0.6+ | 2004 03 12 | 644 | 0.4+ | 0.7+ | 2006 09 26 | 704 | (0.5+ | 1.8+) |
| 2001 09 26 | 704 | 0.1− | 1.1+ | 2004 03 12 | 644 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.5− |
| 2001 10 07 | 644 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.9− | 2006 09 30 | 703 | 1.0− | 0.1+ |
| 2001 10 07 | 644 | 0.6+ | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2001 10 07 | 644 | 0.7+ | 0.0 | 2004 03 19 | 704 | 0.7+ | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.6− |
| 2001 10 12 | 699 | (0.5− | 1.9+) | 2004 03 19 | 704 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.4+ |
| 2001 10 12 | 699 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.3+ | 0.3− | 2006 10 03 | G96 | 0.2− | 0.4+ |
| 2001 10 12 | 699 | 0.4− | 0.1+ | 2004 03 22 | 704 | 0.5+ | 1.1+ | 2006 10 03 | G96 | 0.4+ | 0.3+ |
| 2001 10 12 | 699 | 0.1− | 1.1+ | 2004 03 22 | 704 | 0.5+ | 0.3− | 2006 10 03 | G96 | 0.4+ | 0.5+ |
| 2001 10 13 | 704 | 0.0 | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 1.0− | 0.8− |
| 2001 10 13 | 704 | 0.6+ | 0.1+ | 2004 03 27 | 621 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.6− |
| 2001 10 13 | 704 | 0.2− | 0.6+ | 2004 03 27 | 621 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2001 10 13 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 621 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2001 10 17 | 704 | 0.3− | 0.9+ | 2004 03 28 | 704 | 1.0+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.5+ | 1.3+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2004 03 28 | 704 | 1.3+ | 1.1+ | 2006 10 23 | 644 | 0.2+ | 0.5+ |
| 2001 10 17 | 704 | 0.3+ | 0.0 | 2004 03 28 | 704 | 0.4+ | 0.1− | 2006 10 24 | 644 | 0.5+ | 0.4+ |
| 2001 10 17 | 704 | 0.5+ | 0.2+ | 2004 03 28 | 704 | 1.0+ | 1.3+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2004 04 12 | 699 | 0.3− | 1.0+ | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2004 04 12 | 699 | 1.0− | 1.1+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 10 18 | 644 | 0.1+ | 0.5+ | 2004 04 12 | 699 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 2001 10 19 | 644 | 0.2− | 0.3+ | 2004 04 12 | 699 | 0.2− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 10 19 | 644 | 0.1− | 0.4+ | 2004 04 19 | 704 | 0.9+ | 0.8+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2001 10 19 | 644 | 0.1− | 0.3+ | 2004 04 19 | 704 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2001 10 20 | 704 | 0.3− | 0.8− | 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 10 20 | 704 | 0.6− | 0.3− | 2006 08 16 | 644 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.0 |

**(140213)∗ 2001 SQ$_{232}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.90119 | | (2000.0) | | | |
| $n$ | 0.18355240 | $\omega$ | 27.09420 | | −0.03344682 | −0.99896259 |
| $a$ | 3.0664038 | $\Omega$ | 64.83630 | | +0.91067177 | −0.04320132 |
| $e$ | 0.1294262 | $i$ | 1.95672 | | +0.41177449 | +0.01440133 |
| $P$ | 5.37 | $H$ | 15.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 17 | 691 | 0.4− | 0.4− | 2001 10 17 | 704 | (0.7+ | 2.0+) | 2003 01 30 | 699 | (0.2− | 2.0+) |
| 1996 12 17 | 691 | 0.2− | 0.1− | 2001 10 17 | 704 | 1.2− | 0.2− | 2003 02 01 | 704 | 0.5+ | 0.5+ |
| 1996 12 17 | 691 | 0.2− | 0.4− | 2001 10 18 | I03 | 0.2− | 0.7− | 2003 02 01 | 704 | 0.1+ | 0.5+ |
| 1997 02 03 | 691 | 0.2+ | 0.4− | 2001 10 18 | I03 | 0.2− | 0.4− | 2003 02 01 | 704 | 0.3+ | 1.5+ |
| 1997 02 03 | 691 | 0.7+ | 0.7− | 2001 10 18 | I03 | 0.3− | 0.1− | 2003 02 04 | 704 | 0.1+ | 0.0 |
| 1997 02 03 | 691 | 0.0 | 0.7− | 2001 10 20 | 704 | (0.0 | 1.5+) | 2003 02 04 | 704 | 0.2− | 0.2− |
| 2001 09 19 | 704 | (0.2− | 1.7+) | 2001 10 20 | 704 | 0.1− | 0.9+ | 2003 02 04 | 704 | 0.4+ | 0.6+ |
| 2001 09 19 | 704 | 1.2− | 0.5+ | 2001 10 20 | 704 | 0.4+ | 0.0 | 2003 02 04 | 704 | 0.7− | 0.7+ |
| 2001 09 19 | 704 | 0.8− | 1.0+ | 2001 10 20 | 704 | 0.5+ | 1.5+ | 2003 02 04 | 704 | 0.6− | 0.7+ |
| 2001 09 21 | 333 | 0.1+ | 0.7+ | 2001 10 24 | 704 | 0.1− | 0.2+ | 2004 05 23 | 691 | 0.2+ | 0.2+ |
| 2001 09 21 | 333 | 0.0 | 0.4− | 2001 10 24 | 704 | 0.4− | 0.3− | 2004 05 23 | 691 | 0.1+ | 0.4+ |
| 2001 09 21 | 333 | 0.8+ | 1.2− | 2001 10 24 | 704 | 1.3+ | 0.5− | 2004 05 23 | 691 | 0.2+ | 0.4+ |
| 2001 09 21 | 704 | 0.2− | 1.0+ | 2001 10 24 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.6+ |
| 2001 09 21 | 704 | 0.0 | 0.6+ | 2001 10 24 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 1.1− | 1.4+ |
| 2001 09 21 | 704 | 0.2+ | 1.0+ | 2001 11 21 | 704 | (1.7+ | 0.8−) | 2006 09 14 | 703 | 0.8+ | 1.1+ |
| 2001 09 21 | 704 | 1.0− | 1.2+ | 2001 11 21 | 704 | (1.8+ | 1.0−) | 2006 09 14 | 703 | 0.2− | 0.6+ |
| 2001 09 21 | 704 | 0.8− | 1.4+ | 2001 11 21 | 704 | 0.5+ | 0.1− | 2006 09 16 | 699 | 0.6− | 0.1− |
| 2001 09 26 | 704 | 0.7− | 0.9− | 2001 11 21 | 704 | (1.4+ | 1.7−) | 2006 09 16 | 699 | 0.4− | 1.3+ |
| 2001 09 26 | 704 | 0.0 | 0.3− | 2003 01 08 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 699 | 1.3− | 1.0+ |
| 2001 09 26 | 704 | 0.0 | 0.8− | 2003 01 08 | 704 | 1.0+ | 1.3+ | 2006 09 16 | 699 | 0.9− | 1.0+ |
| 2001 10 14 | 291 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.7+ | 1.1+ | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2001 10 14 | 291 | 0.4+ | 0.1+ | 2003 01 27 | 699 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2001 10 14 | 291 | 1.1+ | 0.2+ | 2003 01 27 | 699 | 0.1− | 0.6+ | 2006 10 02 | G96 | 0.4− | 0.3− |
| 2001 10 17 | 691 | 0.0 | 0.0 | 2003 01 27 | 699 | 0.7+ | 0.1− | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2001 10 17 | 704 | 0.5− | 0.0 | 2003 01 27 | 699 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2001 10 17 | 691 | 0.0 | 0.2+ | 2003 01 30 | 699 | 0.6+ | 1.5+ | 2006 10 21 | G96 | 0.5− | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 1.0+ | 2003 01 30 | 699 | 1.2− | 0.9+ | 2006 10 21 | G96 | 0.6− | 0.3− |
| 2001 10 17 | 691 | 0.1− | 0.0 | 2003 01 30 | 699 | 1.1+ | 1.5+ | 2006 10 21 | G96 | 0.2− | 0.4− |

**(140214)∗ 2001 SV$_{234}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.65344 | | (2000.0) | | | |
| $n$ | 0.21263326 | $\omega$ | 289.56599 | | −0.35243358 | −0.93583624 |
| $a$ | 2.7800242 | $\Omega$ | 181.07194 | | +0.87825649 | −0.33036174 |
| $e$ | 0.1637739 | $i$ | 3.21370 | | +0.32319670 | −0.12276663 |
| $P$ | 4.64 | $H$ | 15.6 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.3− | 0.7+ | 2003 02 09 | 608 | 0.3+ | 0.4+ | 2005 10 25 | G96 | 0.0 | 0.7+ |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2003 02 09 | 608 | 0.5+ | 0.2− | 2005 10 25 | G96 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.9− | 0.4+ | 2003 02 09 | 608 | 0.4+ | 0.1+ | 2006 10 21 | D35 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 0.9+ | 2003 02 22 | 333 | 0.7− | 0.2− | 2006 10 21 | D35 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.6− | 0.3+ | 2003 02 22 | 333 | 0.1− | 0.1+ | 2006 10 21 | D35 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2003 02 22 | 333 | 0.8− | 0.3− | 2006 11 02 | G96 | 0.1− | 0.7− |
| 2001 09 21 | 704 | 1.0− | 0.4+ | 2003 02 23 | 599 | 0.1+ | 0.2− | 2006 11 02 | G96 | 0.0 | 0.6− |
| 2001 09 21 | 704 | 0.4− | 1.0+ | 2003 02 23 | 599 | 0.1+ | 0.2− | 2006 11 02 | G96 | 0.4− | 0.5− |
| 2001 09 21 | 704 | 0.7− | 0.0 | 2003 02 24 | 599 | 0.2− | 0.1− | 2006 11 02 | G96 | 0.2− | 0.4− |
| 2001 10 07 | 644 | 0.5− | 0.3+ | 2003 02 24 | 599 | 0.1+ | 0.2− | 2006 11 12 | D35 | 0.0 | 0.0 |
| 2001 10 07 | 644 | 0.7− | 0.0 | 2003 03 06 | 699 | 0.2− | 0.6− | 2006 11 12 | D35 | 0.2+ | 0.1− |
| 2001 10 07 | 644 | 0.3− | 0.8+ | 2003 03 06 | 699 | 0.5− | 0.3− | 2006 11 12 | D35 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.5− | 0.5− | 2003 03 06 | 699 | 0.5− | 1.0+ | 2006 11 14 | 704 | 0.1+ | 0.3− |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2003 03 06 | 699 | 0.5− | 0.1+ | 2006 11 14 | 704 | 0.0 | 1.1− |
| 2001 10 17 | 704 | (2.0+ | 1.4+) | 2003 03 07 | 699 | 0.8+ | 0.8+ | 2006 11 14 | 704 | 0.2− | 0.6− |
| 2001 10 18 | 704 | 0.6+ | 1.1+ | 2003 03 07 | 699 | 0.7+ | 0.7+ | 2006 11 14 | 704 | 0.5+ | 0.4+ |
| 2001 10 18 | 704 | 1.1− | 0.1+ | 2003 03 07 | 699 | 0.9+ | 1.1+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2001 10 18 | 704 | 0.5− | 0.4+ | 2003 03 07 | 699 | 0.7+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2001 10 18 | 704 | 0.7+ | 0.0 | 2003 03 09 | 704 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2001 10 20 | 704 | 0.2+ | 0.2+ | 2003 03 09 | 704 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2001 10 20 | 704 | 0.2− | 0.4+ | 2003 03 09 | 704 | 0.6− | 0.0 | 2006 11 17 | 704 | (1.6+ | 0.8+) |
| 2001 10 20 | 704 | 0.2+ | 0.1− | 2003 03 09 | 704 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.4− |
| 2001 10 20 | 704 | 0.0 | 0.4+ | 2003 03 09 | 704 | 0.2− | 0.0 | 2006 11 17 | 704 | 1.2+ | 0.9+ |
| 2001 10 20 | 704 | 0.3+ | 0.0 | 2003 03 26 | 644 | 0.5+ | 1.2+ | 2006 11 17 | 704 | (1.8+ | 1.5+) |
| 2001 10 23 | 704 | 0.3+ | 0.0 | 2003 03 26 | 644 | 0.5+ | 1.3+ | 2006 11 18 | 691 | 0.0 | 0.4− |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2003 03 26 | 644 | 0.6+ | 0.9+ | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.8+ | 0.6+ | 2003 03 27 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.7+ | 1.0+ | 2003 03 27 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.7− |
| 2001 10 24 | 704 | 1.1+ | 0.8+ | 2003 03 27 | 691 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.3− | 0.6+ | 2003 04 01 | 704 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.4− | 0.6+ | 2003 04 01 | 704 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2001 10 24 | 704 | 0.0 | 1.2+ | 2003 04 01 | 704 | 0.7+ | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | (0.4− | 1.6+) | 2003 04 01 | 704 | 0.1+ | 0.2− | 2006 11 25 | 704 | 1.0− | 0.9+ |
| 2001 10 25 | 644 | 0.1+ | 0.7+ | 2003 04 01 | 704 | 0.0 | 0.8− | 2006 11 25 | 704 | 0.3− | 0.2+ |
| 2001 10 25 | 644 | 0.4− | 1.0+ | 2003 04 03 | 699 | 0.2+ | 0.9+ | 2006 11 25 | 704 | 0.0 | 0.4+ |
| 2001 10 25 | 644 | 0.3+ | 0.8+ | 2003 04 03 | 699 | 0.2− | 1.0+ | 2006 11 25 | 704 | 0.4− | 1.1+ |
| 2001 11 20 | 704 | 0.1+ | 0.3− | 2003 04 03 | 699 | (1.7+ | 0.3+) | 2006 11 25 | 704 | 0.7− | 0.5+ |
| 2001 11 20 | 704 | 0.7+ | 0.8+ | 2003 04 03 | 699 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.9+ | 0.1− |
| 2001 11 20 | 704 | 0.9− | 1.1+ | 2003 04 03 | 049 | (1.8− | 0.2+) | 2006 11 29 | 704 | 0.2− | 0.9− |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2003 04 03 | 049 | 0.9− | 0.2− | 2006 11 29 | 704 | 0.4− | 0.9− |
| 2003 01 31 | 704 | 1.0+ | 0.3+ | 2003 04 03 | 049 | 1.2− | 1.2− | 2006 11 29 | 704 | 0.3− | 0.5− |
| 2003 01 31 | 704 | 1.1+ | 0.8+ | 2003 04 09 | 691 | (1.0+ | 1.8+) | 2006 11 29 | 704 | 0.7+ | 0.5− |
| 2003 01 31 | 291 | 0.2− | 0.2+ | 2003 04 09 | 691 | (1.1+ | 2.2+) | 2006 12 03 | 644 | 0.1− | 0.1− |
| 2003 01 31 | 704 | 0.3+ | 0.1+ | 2003 04 09 | 691 | 1.1+ | 1.1+ | 2006 12 03 | 644 | 0.7− | 0.0 |
| 2003 01 31 | 291 | 0.0 | 0.1+ | 2005 10 25 | G96 | 0.3− | 0.1+ | 2006 12 03 | 644 | 0.4− | 0.2− |
| 2003 01 31 | 291 | 0.1− | 0.5+ | 2005 10 25 | G96 | 0.1+ | 0.4+ | | | | |

**(140215)∗ 2001 SY$_{234}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.67490 | | (2000.0) | | +0.98317971 | −0.17954765 |
| $n$ | 0.21103098 | $\omega$ | 322.91184 | | +0.17657008 | +0.88754706 |
| $a$ | 2.7940783 | $\Omega$ | 47.46691 | | +0.04669755 | +0.42429102 |
| $e$ | 0.1238718 | $i$ | 2.60338 | | | |
| $P$ | 4.67 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 13 | 704 | 1.3− | 0.7− | 2001 10 24 | 704 | 0.3+ | 0.8+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 13 | 704 | 1.5− | 0.3− | 2001 10 24 | 704 | 0.4+ | 0.6+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 10 13 | 704 | 1.1− | 0.8+ | 2001 10 24 | 704 | 0.8+ | 1.2+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 10 14 | 704 | 0.3+ | 0.3+ | 2001 10 25 | 644 | 0.5− | 0.0 |
| 2001 09 19 | 704 | 0.7− | 0.3− | 2001 10 14 | 704 | 0.0 | 0.4− | 2001 10 25 | 644 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.9− | 0.4+ | 2001 10 14 | 704 | 0.4+ | 0.6− | 2001 10 25 | 644 | 0.4− | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2001 10 17 | 704 | 0.9+ | 0.4− | 2004 04 16 | 691 | 0.0 | 0.6+ |
| 2001 09 19 | 704 | 0.1− | 0.6− | 2001 10 17 | 704 | 1.0+ | 0.2− | 2004 04 16 | 691 | 0.4+ | 0.5+ |
| 2001 09 19 | 704 | 1.2− | 0.4− | 2001 10 17 | 704 | 0.5+ | 0.0 | 2004 04 16 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.1− | 2001 10 17 | 704 | 0.8+ | 1.3− | 2004 04 22 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.7− | 0.8+ | 2001 10 17 | 704 | 0.5+ | 0.8− | 2004 04 22 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.2− | 2001 10 17 | 644 | 0.4+ | 1.0+ | 2004 04 22 | 691 | 0.2+ | 0.5+ |
| 2001 09 21 | 704 | 1.1− | 0.2+ | 2001 10 17 | 644 | 0.6+ | 1.1+ | 2006 09 27 | G96 | 0.5+ | 0.3+ |
| 2001 09 21 | 704 | 0.0 | 0.6+ | 2001 10 17 | 644 | (0.4+ | 1.6+) | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2001 10 18 | 704 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.5− | 0.3− |
| 2001 09 21 | 704 | 1.1− | 0.8+ | 2001 10 18 | 704 | 0.7+ | 1.0− | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2001 10 18 | 704 | 0.3+ | 1.4− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2001 09 21 | 704 | 1.1− | 0.0 | 2001 10 18 | 704 | (2.5+ | 2.5−) | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2001 10 18 | 704 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 704 | (1.6− | 0.2−) | 2001 10 18 | 644 | 0.0 | 0.7− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2001 09 21 | 704 | 0.7− | 0.8+ | 2001 10 18 | 644 | 0.1+ | 0.6− | 2006 10 28 | G96 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 1.1− | 0.3− | 2001 10 18 | 644 | 0.1+ | 0.8− | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2001 09 26 | 704 | 0.4− | 0.6+ | 2001 10 20 | 704 | 0.2+ | 0.5− | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.3− | 0.3+ | 2001 10 20 | 704 | 0.4+ | 0.3− | 2006 10 29 | G96 | 0.3− | 0.1+ |
| 2001 09 26 | 704 | 0.5− | 1.4+ | 2001 10 20 | 704 | 0.0 | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.0 |
| 2001 09 26 | 704 | 0.6− | 0.4+ | 2001 10 20 | 704 | 0.7+ | 0.1+ | 2006 10 29 | G96 | 0.3− | 0.4− |
| 2001 09 26 | 704 | 0.4+ | 0.4+ | 2001 10 20 | 704 | 0.1+ | 0.5− | 2006 10 29 | G96 | 0.2+ | 0.2+ |
| 2001 10 07 | 644 | 0.3− | 0.0 | 2001 10 22 | 704 | 0.8+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 10 07 | 644 | 0.3− | 0.3+ | 2001 10 22 | 704 | 0.0 | 1.2+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2001 10 07 | 644 | 0.8− | 0.4+ | 2001 10 22 | 704 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2001 10 11 | 644 | 0.4+ | 0.4+ | 2001 10 22 | 704 | (0.4− | 1.5+) | 2006 11 15 | 703 | 0.6− | 0.5− |
| 2001 10 11 | 644 | 0.3+ | 0.4+ | 2001 10 23 | 704 | 1.4+ | 1.2+ | 2006 11 15 | 703 | 0.0 | 0.9− |
| 2001 10 11 | 644 | 0.2+ | 0.4+ | 2001 10 23 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.7− |
| 2001 10 12 | 699 | 0.4− | 0.4+ | 2001 10 23 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.1+ |
| 2001 10 12 | 699 | (0.6− | 2.1+) | 2001 10 23 | 704 | 0.5+ | 1.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2001 10 12 | 699 | 0.6− | 0.9+ | 2001 10 24 | 704 | 0.2− | 0.5+ | 2006 11 22 | 691 | 0.6+ | 0.2+ |
| 2001 10 12 | 699 | 0.4− | 1.1+ | 2001 10 24 | 704 | 0.6+ | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.1+ |

**(140216)∗ 2001 SW$_{235}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.96226 | | (2000.0) | | +0.94535905 | +0.31979290 |
| $n$ | 0.21270962 | $\omega$ | 205.29888 | | −0.28148119 | +0.89880134 |
| $a$ | 2.7793589 | $\Omega$ | 135.89209 | | −0.16451326 | +0.29981436 |
| $e$ | 0.0755100 | $i$ | 5.23234 | | | |
| $P$ | 4.63 | $H$ | 15.5 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.2+ | 0.2+ | 2001 10 19 | 699 | 0.5− | 0.8+ | 2005 08 01 | E12 | 0.6+ | 0.0 |
| 2001 09 11 | 699 | 1.0+ | 0.1− | 2001 10 19 | 699 | (1.7+ | 1.0+) | 2005 08 01 | E12 | 1.3+ | 1.4− |
| 2001 09 11 | 699 | 1.4+ | 0.0 | 2001 10 24 | 644 | 0.5+ | 1.0− | 2005 08 01 | E12 | 0.4− | 0.1+ |
| 2001 09 11 | 699 | 0.6− | 0.4+ | 2001 10 24 | 644 | 0.7+ | 1.0− | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2001 09 16 | 704 | 1.1− | 0.2+ | 2001 10 24 | 644 | 0.3+ | 1.1− | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2001 09 16 | 704 | 0.1− | 0.8+ | 2003 01 25 | 645 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4− |
| 2001 09 16 | 704 | 0.3+ | 0.7− | 2003 01 25 | 645 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.7− | 0.7+ |
| 2001 09 16 | 704 | 1.0− | 0.9+ | 2003 01 29 | 645 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.7− | 0.5− |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2003 01 29 | 645 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.5− | 1.0+ |
| 2001 09 19 | 704 | (2.0+ | 0.0 ) | 2004 04 16 | 644 | 0.0 | 1.1+ | 2006 10 30 | 703 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2004 04 16 | 644 | 0.1+ | 1.4+ | 2006 11 14 | 704 | (1.6+ | 1.5+) |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2004 04 16 | 644 | 0.5+ | 1.1+ | 2006 11 14 | 704 | 0.4+ | 1.3+ |
| 2001 09 21 | 704 | (2.2− | 1.1+) | 2005 06 29 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.7+ | 0.3+ |
| 2001 09 21 | 704 | 1.3− | 0.4+ | 2005 06 29 | 691 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2001 09 21 | 704 | 0.8− | 0.5+ | 2005 06 29 | 691 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.5− |
| 2001 09 21 | 704 | 0.6− | 0.1− | 2005 07 04 | G96 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 2001 09 21 | 704 | (1.7− | 1.1+) | 2005 07 04 | G96 | 0.1− | 0.1+ | 2006 11 17 | 704 | (2.2+ | 3.4−) |
| 2001 10 10 | 644 | 0.2− | 0.1− | 2005 07 04 | G96 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.9+ |
| 2001 10 10 | 644 | 0.1+ | 0.0 | 2005 07 04 | G96 | 0.6− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2001 10 10 | 644 | 0.1− | 0.1− | 2005 07 06 | 691 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.1− |
| 2001 10 14 | 608 | 0.2+ | 0.3− | 2005 07 06 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.2− |
| 2001 10 14 | 608 | 0.1+ | 0.1+ | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2001 10 14 | 608 | 0.2+ | 0.4− | 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2001 10 16 | 644 | 0.3+ | 0.6+ | 2005 07 10 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.7− |
| 2001 10 16 | 644 | 0.4+ | 0.6+ | 2005 07 10 | 691 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.8+ | 1.3+ |
| 2001 10 16 | 644 | 0.2+ | 0.7+ | 2005 07 15 | G96 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.8− | 0.1+ |
| 2001 10 19 | 699 | 0.4+ | 0.1− | 2005 07 15 | G96 | 0.6− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2001 10 19 | 699 | 0.2+ | 0.3− | 2005 07 15 | G96 | 0.6− | 0.2− | 2006 11 28 | 704 | 0.5− | 0.3− |

**(140217)∗ 2001 SA$_{236}$ = 1996 VC$_{20}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20358)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.41116 | | (2000.0) | | +0.99778294 | +0.00408929 |
| $n$ | 0.18446075 | $\omega$ | 207.83975 | | +0.01475558 | +0.95967621 |
| $a$ | 3.0563287 | $\Omega$ | 151.68909 | | −0.06489588 | +0.28107802 |
| $e$ | 0.1445863 | $i$ | 8.05159 | | | |
| $P$ | 5.34 | $H$ | 15.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 1.0+ | 0.2− | 2001 10 16 | 644 | 0.4− | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.2− |
| 1996 11 08 | 691 | 0.4+ | 0.1− | 2001 10 16 | 704 | 0.5− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.1− |
| 1996 11 08 | 691 | 0.5+ | 0.3− | 2001 10 16 | 644 | 0.4− | 0.4+ | 2006 08 28 | 691 | 0.0 | 0.2− |
| 1996 11 13 | 691 | 0.2− | 0.0 | 2001 10 16 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.4+ |
| 1996 11 13 | 691 | 0.1− | 0.0 | 2001 10 16 | 644 | 0.5− | 0.4+ | 2006 08 28 | 699 | 0.3+ | 0.9+ |
| 1996 11 13 | 691 | 0.2− | 0.1+ | 2001 10 20 | 704 | 1.5− | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.3− |
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2001 10 20 | 704 | 1.8− | 1.1+ | 2006 08 28 | 699 | 1.0− | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2001 10 20 | 704 | 1.6− | 1.2+ | 2006 08 29 | 704 | 1.0+ | 0.8+ |
| 2001 08 27 | 699 | 0.5− | 0.3+ | 2001 10 20 | 704 | 0.9− | 0.6+ | 2006 08 29 | 704 | 0.1− | 1.0+ |
| 2001 08 27 | 699 | 0.0 | 1.0− | 2001 10 20 | 704 | (2.4− | 0.7+) | 2006 08 29 | 704 | 0.5+ | 0.9+ |
| 2001 08 27 | 699 | (0.9− | 2.1−) | 2005 04 30 | 691 | 0.3− | 0.1+ | 2006 08 29 | 704 | 1.9+ | 0.6− |
| 2001 08 27 | 699 | 1.9− | 0.3+ | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 08 31 | 704 | 1.0+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | (2.2− | 1.5+) | 2005 04 30 | 691 | 0.4− | 0.1+ | 2006 08 31 | 704 | 0.5− | 0.8− |
| 2001 09 11 | 699 | 1.4+ | 0.7+ | 2005 05 09 | 691 | 0.1− | 0.3− | 2006 08 31 | 704 | 0.5− | 0.4− |
| 2001 09 11 | 699 | 1.6− | 0.3− | 2005 05 09 | 691 | 0.0 | 0.1− | 2006 09 09 | 644 | 0.3− | 0.1− |
| 2001 09 11 | 699 | 0.1+ | 1.1+ | 2005 05 09 | 691 | 0.2− | 0.1+ | 2006 09 09 | 644 | 0.3− | 0.3− |
| 2001 09 16 | 704 | 0.3− | 0.4− | 2005 05 13 | 691 | 0.7+ | 1.0− | 2006 09 09 | 644 | 0.0 | 0.3− |
| 2001 09 16 | 704 | (1.0− | 3.2−) | 2005 05 13 | 691 | 0.1+ | 0.0 | 2006 09 12 | 699 | 1.1+ | 0.5+ |
| 2001 09 16 | 704 | 0.3− | 0.3− | 2005 05 13 | 691 | 0.0 | 0.4+ | 2006 09 12 | 699 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2005 05 28 | 599 | 0.1+ | 0.1+ | 2006 09 12 | 699 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.7+ | 0.5− | 2005 05 28 | 599 | 0.0 | 0.4+ | 2006 09 12 | 699 | 0.8− | 0.3+ |
| 2001 09 19 | 704 | 0.6+ | 0.2+ | 2005 05 28 | 599 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.1− |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2005 05 28 | 599 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.3− | 0.7− |
| 2001 09 19 | 704 | 1.0− | 1.2+ | 2005 06 05 | 691 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2005 06 05 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.6− | 1.0− |
| 2001 09 21 | 704 | 0.7+ | 0.9+ | 2005 06 05 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 0.9+ | 0.2+ | 2005 06 28 | 644 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 1.0+ | 2005 06 28 | 644 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 1.2+ | 0.7+ | 2005 06 28 | 644 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.6− | 0.6+ |
| 2001 09 27 | 644 | 0.6− | 0.2− | 2006 08 15 | 644 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.2− | 0.3− |
| 2001 09 27 | 644 | 0.3+ | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.8− | 0.4+ |
| 2001 09 27 | 644 | 0.1− | 0.6+ | 2006 08 15 | 644 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.3− | 0.5− |
| 2001 10 10 | 644 | 0.4− | 0.4+ | 2006 08 18 | 699 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.3+ |
| 2001 10 10 | 644 | 0.3− | 0.4+ | 2006 08 18 | 699 | 0.3− | 0.1− | 2006 09 18 | 699 | 1.1− | 0.9− |
| 2001 10 10 | 644 | 0.3− | 0.3+ | 2006 08 18 | 699 | 1.1− | 0.9+ | 2006 09 18 | 699 | 0.4+ | 0.3+ |
| 2001 10 12 | 608 | 0.1− | 1.0− | 2006 08 18 | 699 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.7− |
| 2001 10 12 | 608 | 0.5− | 0.4− | 2006 08 21 | 704 | 0.1+ | 0.8+ | 2006 09 25 | 699 | 1.0+ | 0.0 |
| 2001 10 12 | 608 | 0.6− | 0.5− | 2006 08 21 | 704 | 1.1+ | 0.3− | 2006 09 25 | 699 | 1.0+ | 0.8+ |
| 2001 10 16 | 704 | 0.9− | 0.9− | 2006 08 21 | 704 | 0.9+ | 0.1− | 2006 09 25 | 699 | 1.9+ | 0.1− |
| 2001 10 16 | 704 | 0.5+ | 0.7+ | 2006 08 21 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.8− | 0.5− |
| 2001 10 16 | 704 | 0.3− | 0.4+ | 2006 08 21 | 704 | 0.4+ | 0.1− | | | | |

**(140218)∗ 2001 SD$_{237}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.51381 | | (2000.0) | | | |
| $n$ | 0.20540392 | $\omega$ | 126.71566 | | +0.45921325 | +0.88823033 |
| $a$ | 2.8448775 | $\Omega$ | 170.59375 | | −0.83835149 | +0.43818722 |
| $e$ | 0.1434251 | $i$ | 4.57683 | | −0.29375153 | +0.13798133 |
| $P$ | 4.80 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 691 | 0.3− | 0.1+ | 2001 10 17 | 644 | 0.3− | 0.5+ | 2006 09 23 | 691 | 0.3− | 0.3+ |
| 2000 05 02 | 691 | 0.3− | 0.2+ | 2001 10 17 | 644 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 2000 05 02 | 691 | 0.0 | 0.1+ | 2001 10 17 | 644 | 0.4− | 1.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2000 05 28 | 691 | 0.2+ | 0.1+ | 2001 10 20 | 704 | 0.1+ | 1.2− | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2000 05 28 | 691 | 0.2+ | 0.1+ | 2001 10 20 | 704 | 0.1− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2000 05 28 | 691 | 0.3+ | 0.2+ | 2001 10 20 | 704 | 0.1− | 0.8− | 2006 10 01 | 691 | 0.0 | 0.6− |
| 2001 09 19 | 704 | 1.0+ | 0.1− | 2001 10 20 | 704 | 0.2− | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.7− | 2001 12 10 | 645 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.4+ |
| 2001 09 19 | 704 | 1.1+ | 0.7+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.7+ | 0.2− | 2004 03 11 | 735 | 0.2+ | 0.9− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2004 03 11 | 735 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2004 03 11 | 735 | 0.9− | 0.6− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2004 03 11 | 735 | 1.2+ | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.3+ | 2004 03 12 | 735 | 0.9− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.3− | 0.6+ | 2004 03 12 | 735 | (0.2− | 2.0+) | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2001 10 06 | 644 | 0.1− | 0.9+ | 2004 03 12 | 735 | 1.2− | 0.4− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2001 10 06 | 644 | 0.3− | 0.2+ | 2004 03 12 | 735 | 1.3+ | 0.7− | 2006 10 22 | 691 | 0.5− | 0.8+ |
| 2001 10 06 | 644 | 0.4− | 1.2+ | 2004 03 15 | 184 | 0.3+ | 0.8+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2004 03 15 | 184 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2004 03 15 | 184 | 0.4+ | 1.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.7+ | | | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.0 | 0.5+ | | | | |

**(140219)∗ 2001 SS$_{237}$ = 2005 JC$_{151}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 84949)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.58091 | | (2000.0) | | | |
| $n$ | 0.18808394 | $\omega$ | 91.38594 | | +0.02016821 | +0.99979638 |
| $a$ | 3.0169509 | $\Omega$ | 179.76659 | | −0.96978181 | +0.01972399 |
| $e$ | 0.1192524 | $i$ | 9.36534 | | −0.24313880 | +0.00426151 |
| $P$ | 5.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6+ | 0.6+ | 2004 02 18 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.8+ | 2005 05 03 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | (0.0 | 1.6+) | 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | (1.9− | 0.0 ) |
| 2001 09 19 | 704 | 0.0 | 0.8+ | 2005 05 03 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.6+ | 1.3− |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2005 05 20 | G96 | 0.5− | 0.0 | 2006 09 12 | 703 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.5+ | 1.1+ | 2005 05 20 | G96 | 0.5− | 0.3− | 2006 09 12 | 703 | 0.9+ | 0.2− |
| 2001 09 21 | 704 | 0.0 | 1.4+ | 2005 05 20 | G96 | 0.6− | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 1.2+ | 2005 05 20 | G96 | 0.6− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.6− | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2005 06 05 | 691 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2001 10 17 | 644 | 0.6− | 0.6+ | 2005 06 05 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2001 10 17 | 644 | 0.4− | 0.8+ | 2005 06 29 | 644 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.8+ | 0.3− |
| 2001 10 17 | 644 | 0.2+ | 0.5+ | 2005 06 29 | 644 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2004 02 18 | 691 | 0.1+ | 0.1+ | 2005 06 29 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.4+ |
| 2004 02 18 | 691 | 0.1− | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.2+ | | | | |

**(140220)∗ 2001 SH$_{238}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.24092 | | (2000.0) | | | |
| $n$ | 0.18296918 | $\omega$ | 282.30693 | | +0.19113992 | −0.97883411 |
| $a$ | 3.0729164 | $\Omega$ | 156.29095 | | +0.95637411 | +0.16894517 |
| $e$ | 0.1243134 | $i$ | 10.48022 | | +0.22093913 | +0.11550463 |
| $P$ | 5.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.3+ | 1.0+ | 2003 01 26 | 699 | 0.4+ | 1.5+ | 2003 03 12 | 644 | 0.0 | 0.5+ |
| 2001 08 26 | 644 | 0.1− | 0.3+ | 2003 01 26 | 699 | 0.3+ | 1.1+ | 2003 03 12 | 644 | 0.0 | 0.2+ |
| 2001 08 26 | 644 | 0.7− | 0.2+ | 2003 01 26 | 699 | 0.2+ | 0.7+ | 2003 03 12 | 644 | 0.1+ | 0.5+ |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2003 01 27 | 704 | 0.1+ | 0.5− | 2004 04 13 | 703 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2003 01 27 | 704 | 0.2− | 0.1+ | 2004 04 13 | 703 | 1.0− | 0.6− |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2003 01 27 | 699 | 1.2− | 0.1− | 2004 04 13 | 703 | 0.7− | 0.3+ |
| 2001 09 19 | 704 | 1.2− | 0.5− | 2003 01 27 | 704 | 1.0− | 0.3− | 2004 04 13 | 703 | 1.2− | 0.8+ |
| 2001 09 21 | 704 | 0.0 | 0.4− | 2003 01 27 | 699 | 0.2+ | 0.3+ | 2004 04 16 | 704 | 0.3+ | 0.5+ |
| 2001 09 21 | 704 | 0.6+ | 0.2+ | 2003 01 27 | 704 | 0.3− | 0.0 | 2004 04 16 | 704 | 0.3+ | 0.4+ |
| 2001 09 21 | 704 | 0.8− | 0.8+ | 2003 01 27 | 644 | 0.2+ | 0.4+ | 2004 04 16 | 704 | 0.7+ | 0.9+ |
| 2001 10 10 | 644 | 1.0− | 0.2+ | 2003 01 27 | 699 | 1.4− | 0.0 | 2004 04 20 | 691 | 0.5+ | 0.3+ |
| 2001 10 10 | 644 | 0.7− | 0.2+ | 2003 01 27 | 699 | 0.0 | 0.4− | 2004 04 20 | 691 | 0.3+ | 0.5+ |
| 2001 10 10 | 644 | 1.3− | 0.0 | 2003 01 27 | 644 | 0.2+ | 0.3+ | 2004 04 20 | 691 | 0.3+ | 0.5+ |
| 2001 10 16 | 704 | 0.3+ | 0.7+ | 2003 01 27 | 644 | 0.2+ | 0.4+ | 2006 08 18 | 691 | 0.2− | 0.7+ |
| 2001 10 16 | 704 | (0.0 | 2.7+) | 2003 01 28 | 645 | 0.1− | 0.2− | 2006 08 18 | 691 | 0.2− | 0.6+ |
| 2001 10 16 | 704 | 0.7− | 1.0+ | 2003 01 28 | 645 | 0.1− | 0.2− | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 2001 10 16 | 704 | (1.5− | 2.1+) | 2003 01 30 | 699 | 0.2− | 0.1− | 2006 08 19 | 941 | 0.1+ | 0.1− |
| 2001 10 16 | 644 | 0.1+ | 0.3+ | 2003 01 30 | 699 | 0.1+ | 1.0+ | 2006 08 19 | 941 | 0.2+ | 0.2− |
| 2001 10 16 | 644 | 0.2+ | 0.3+ | 2003 01 30 | 699 | 0.3− | 0.2+ | 2006 08 19 | 941 | 0.1+ | 0.1− |
| 2001 10 16 | 644 | 0.0 | 0.1+ | 2003 01 30 | 699 | 0.4− | 0.1− | 2006 08 19 | 941 | 0.0 | 0.2− |
| 2001 10 19 | 699 | 0.1− | 1.4+ | 2003 02 02 | 704 | 1.0+ | 0.4+ | 2006 08 19 | 941 | 0.1− | 0.1− |
| 2001 10 19 | 699 | 0.4− | 0.4+ | 2003 02 02 | 704 | 0.4− | 1.0+ | 2006 08 20 | 941 | 0.5− | 0.2+ |
| 2001 10 19 | 699 | 1.0− | 0.8+ | 2003 02 02 | 704 | 1.1+ | 1.0+ | 2006 08 20 | 941 | 0.2− | 0.3+ |
| 2001 10 19 | 699 | 0.3− | 1.0+ | 2003 02 02 | 608 | 0.3− | 0.0 | 2006 08 20 | 941 | 0.4+ | 0.0 |
| 2001 10 20 | 704 | 0.7− | 0.3− | 2003 02 02 | 608 | 0.8− | 0.3− | 2006 08 20 | 941 | 0.6+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.5− | 0.4+ | 2003 02 02 | 608 | 0.4− | 0.2+ | 2006 08 22 | 644 | 0.5− | 0.4+ | | |
| 2001 10 20 | 704 | 0.9− | 0.3+ | 2003 02 02 | 704 | 0.6+ | 0.7+ | 2006 08 22 | 644 | 0.3− | 0.3+ | | |
| 2001 10 23 | 644 | 0.7+ | 0.2+ | 2003 02 19 | 644 | 0.3+ | 1.1+ | 2006 08 22 | 644 | 0.5+ | 0.9+ | | |
| 2001 10 23 | 644 | 0.2+ | 0.1+ | 2003 02 19 | 644 | 0.3+ | 0.9+ | 2006 08 23 | 644 | 0.2− | 0.4+ | | |
| 2001 10 23 | 644 | 0.5+ | 0.1+ | 2003 02 19 | 644 | 0.7+ | 1.1+ | 2006 08 23 | 644 | 0.1− | 0.5+ | | |
| 2001 11 15 | 644 | 0.5− | 0.4+ | 2003 02 21 | 644 | 0.1− | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.5+ | | |
| 2001 11 15 | 644 | 0.3+ | 0.1+ | 2003 02 21 | 644 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 1.3+ | 0.3+ | | |
| 2001 11 15 | 644 | 0.2+ | 0.4+ | 2003 02 21 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.8− | 0.8+ | | |
| 2002 01 13 | 645 | 0.1+ | 0.1− | 2003 03 06 | 644 | 0.7+ | 0.8+ | 2006 08 27 | 699 | 0.3+ | 0.5+ | | |
| 2002 01 13 | 645 | 0.1+ | 0.1− | 2003 03 06 | 644 | 0.7+ | 1.1+ | 2006 08 27 | 699 | 0.9− | 0.7+ | | |
| 2002 01 14 | 645 | 0.2+ | 0.1− | 2003 03 06 | 644 | 0.5+ | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.2− | | |
| 2002 01 14 | 645 | 0.1+ | 0.1− | 2003 03 06 | 704 | 1.3+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.8+ | | |
| 2003 01 07 | 704 | (2.1+ | 0.7+) | 2003 03 06 | 704 | 0.9+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.2+ | | |
| 2003 01 07 | 704 | 0.4+ | 0.1− | 2003 03 06 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.4+ | 0.6− | | |
| 2003 01 07 | 704 | 1.1+ | 1.4− | 2003 03 06 | 704 | 0.2+ | 1.2+ | 2006 11 27 | G96 | 0.2− | 0.1− | | |
| 2003 01 16 | 644 | (0.3− | 1.6+) | 2003 03 07 | 704 | 0.9+ | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.1− | | |
| 2003 01 16 | 644 | 0.1+ | 1.0+ | 2003 03 07 | 704 | 0.4+ | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2003 01 16 | 644 | 0.6+ | 1.3+ | 2003 03 07 | 704 | 0.1− | 1.5+ | 2006 11 27 | G96 | 0.5− | 0.1+ | | |
| 2003 01 26 | 699 | 0.6− | 1.3+ | 2003 03 07 | 704 | 0.3+ | 0.7+ | | | | | | |

**(140221)∗ 2001 SC$_{239}$ = 2001 UG$_{224}$ = 2004 FT$_{117}$ = 2005 NA$_{99}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 88933)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.79812 | | (2000.0) | | | |
| $n$ | 0.21334705 | $\omega$ | 115.40049 | | −0.08112807 | +0.99633971 |
| $a$ | 2.7738201 | $\Omega$ | 149.90850 | | −0.93267581 | −0.06635950 |
| $e$ | 0.1472384 | $i$ | 3.07934 | | −0.35147414 | −0.05388509 |
| $P$ | 4.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 23 | 691 | 0.0 | 0.8− | 2001 11 12 | 645 | 0.0 | 0.2− | 2005 07 12 | 703 | 0.2− | 0.3− | | |
| 1995 04 23 | 691 | 0.1+ | 0.6− | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2005 07 12 | 703 | 0.2− | 1.2+ | | |
| 1995 04 23 | 691 | 0.8− | 0.4− | 2004 03 18 | 704 | 1.4+ | 0.5+ | 2005 07 12 | 703 | 0.3+ | 0.5− | | |
| 2001 09 18 | 691 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.3+ | 1.1+ | 2005 10 25 | G96 | 0.1+ | 0.7+ | | |
| 2001 09 18 | 691 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.5+ | 0.0 | 2005 10 25 | G96 | 0.9− | 0.4+ | | |
| 2001 09 18 | 691 | 0.3+ | 0.1− | 2004 03 18 | 704 | 0.3+ | 1.1− | 2005 10 25 | G96 | 0.7− | 0.3− | | |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | (1.1+ | 1.6+) | 2005 10 25 | G96 | 0.5− | 0.2+ | | |
| 2001 09 19 | 704 | 0.2− | 0.9+ | 2004 03 22 | 704 | (0.2+ | 1.8+) | 2006 09 30 | G96 | 0.2+ | 0.0 | | |
| 2001 09 19 | 704 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.5+ | 2004 03 28 | 704 | 1.2− | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2004 03 28 | 704 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.0 | | |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2004 03 28 | 704 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | 0.4− | 0.8+ | 2005 07 05 | 691 | (0.4− | 2.6+) | 2006 10 19 | 691 | 0.2− | 0.5+ | | |
| 2001 10 17 | 644 | 0.3+ | 0.2+ | 2005 07 05 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2001 10 17 | 644 | 0.0 | 0.0 | 2005 07 05 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.0 | | |
| 2001 10 17 | 644 | 0.0 | 0.3+ | 2005 07 10 | 691 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.1− | | |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2005 07 10 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2005 07 10 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2005 07 12 | 703 | 1.2− | 0.4+ | | | | | | |

**(140222)∗ 2001 SU$_{240}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.27042 | | (2000.0) | | | |
| $n$ | 0.20351422 | $\omega$ | 212.63673 | | +0.97544955 | −0.21977510 |
| $a$ | 2.8624608 | $\Omega$ | 160.04480 | | +0.20984737 | +0.90826474 |
| $e$ | 0.0854375 | $i$ | 2.35753 | | +0.06680015 | +0.35602538 |
| $P$ | 4.84 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.4+ | 0.2− | 2001 09 27 | 704 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.0 | 0.0 | | |
| 1999 03 10 | 691 | 0.3+ | 0.3− | 2001 10 11 | 644 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.3+ | | |
| 1999 03 10 | 691 | 0.3+ | 0.5− | 2001 10 11 | 644 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 1999 03 21 | 645 | 0.1− | 0.1+ | 2001 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 10 17 | 644 | 0.6− | 0.0 | 2006 10 17 | G96 | 0.5− | 0.5− | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 10 17 | 644 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.3− | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 10 17 | 644 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.5− | | |
| 2001 09 19 | 691 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.3− | | |
| 2001 09 19 | 704 | (0.6− | 1.7+) | 2004 03 29 | 691 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2001 09 19 | 691 | 0.4− | 0.4+ | 2004 03 29 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.3+ | | |
| 2001 09 19 | 704 | 0.5− | 1.0+ | 2004 03 30 | 291 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2001 09 19 | 691 | 0.4− | 0.4+ | 2004 03 30 | 291 | 0.7+ | 0.9+ | 2006 10 21 | 703 | 0.5− | 0.8+ | | |
| 2001 09 19 | 704 | 0.5− | 0.2− | 2004 03 30 | 291 | 0.3+ | 0.0 | 2006 10 21 | 703 | 1.1− | 0.4− | | |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2004 04 20 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.2− | | |
| 2001 09 21 | 704 | 0.9− | 0.4+ | 2004 04 20 | 691 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.5− | | |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 | | |
| 2001 09 21 | 704 | 1.0+ | 0.2− | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 24 | 704 | (1.5+ | 0.1+) | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 291 | 0.2− | 0.3+ | | |
| 2001 09 24 | 704 | 1.5+ | 1.3− | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 291 | 0.1− | 0.2+ | | |
| 2001 09 24 | 704 | 1.4+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 291 | 0.2− | 0.2+ | | |
| 2001 09 24 | 704 | 0.3+ | 1.4− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2001 09 24 | 704 | 0.8− | 0.7+ | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.5− | 0.5− | | |
| 2001 09 26 | 704 | 0.6− | 0.9+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.5− | 0.6− | | |
| 2001 09 26 | 704 | 0.7+ | 1.0+ | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2001 09 26 | 704 | 0.6− | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 1.1+ | 0.2− | | |
| 2001 09 26 | 704 | 0.5− | 1.4+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.5− | | |
| 2001 09 26 | 704 | 0.4+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2001 09 27 | 704 | 0.7− | 0.1− | 2006 10 15 | 703 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.1− | | |
| 2001 09 27 | 704 | 0.9− | 0.5+ | 2006 10 15 | 703 | 0.3− | 0.7− | | | | | | |
| 2001 09 27 | 704 | 0.5+ | 0.1− | 2006 10 15 | 703 | 0.1+ | 0.8+ | | | | | | |

**(140223)∗ 2001 SX$_{240}$ = 2005 NA$_{33}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 88933)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.42049 | | (2000.0) | | | |
| $n$ | 0.20606571 | $\omega$ | 312.48248 | | +0.15818176 | −0.98661582 |
| $a$ | 2.8387833 | $\Omega$ | 128.37333 | | +0.92010199 | +0.13272896 |
| $e$ | 0.0999013 | $i$ | 2.89494 | | +0.35831671 | +0.09472190 |
| $P$ | 4.78 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6− | 0.7+ | 2003 02 08 | 704 | 1.1+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.5− | | |
| 2001 09 19 | 704 | (0.5− | 1.7+) | 2003 02 21 | 644 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.2− | 0.2− | | |
| 2001 09 19 | 704 | 0.8− | 0.5+ | 2003 02 21 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.1− | | |
| 2001 09 21 | 704 | 1.1− | 0.3+ | 2003 02 21 | 644 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.4+ | 0.4+ | | |
| 2001 09 21 | 704 | 1.0− | 0.4− | 2005 07 03 | G96 | 0.4− | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.3+ | | |
| 2001 09 21 | 704 | 1.3− | 0.2− | 2005 07 03 | G96 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.9− | 0.3− | 2005 07 03 | G96 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 | | |
| 2001 09 26 | 704 | 0.1− | 0.3+ | 2005 07 03 | G96 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.1− | | |
| 2001 09 26 | 704 | 0.4+ | 1.1+ | 2005 07 05 | 691 | 0.6− | 0.6− | 2006 10 22 | 691 | 0.6− | 0.0 | | |
| 2001 09 26 | 704 | 0.1+ | 1.0+ | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.8+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.6+ | 0.6+ | 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.8+ | 0.0 | 2005 07 09 | 691 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 10 20 | 704 | 0.6− | 1.2+ | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 20 | 704 | 0.9+ | 0.3+ | 2005 07 09 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.2+ | | |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2005 07 16 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2001 11 12 | 645 | 0.1+ | 0.2− | 2005 07 16 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 2003 01 31 | 704 | 0.5− | 0.3+ | 2005 07 16 | 691 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.3+ | 0.2− | | |
| 2003 01 31 | 704 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 1.0+ | 1.2− | 2006 11 10 | 644 | 0.3+ | 0.1+ | | |
| 2003 01 31 | 704 | 0.5− | 1.1+ | 2006 10 16 | 703 | 0.4+ | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2003 02 08 | 704 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2003 02 08 | 704 | (0.6+ | 1.6+) | 2006 10 16 | 703 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2003 02 08 | 704 | 0.4+ | 1.1+ | 2006 10 17 | G96 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1− | | |

**(140224)∗ 2001 ST$_{241}$ = 2004 FG$_{28}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61074)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 49.63595 | | (2000.0) | | | |
| $n$ | 0.18926240 | $\omega$ | 218.99146 | | +0.51791972 | +0.85419421 |
| $a$ | 3.0044143 | $\Omega$ | 82.24629 | | −0.77277757 | +0.49023838 |
| $e$ | 0.0958933 | $i$ | 2.65800 | | −0.36684327 | +0.17325872 |
| $P$ | 5.21 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3+ | 0.7− | 2004 03 19 | 291 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.7− | 0.2− |
| 2001 09 19 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 291 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.6+ |
| 2001 09 19 | 704 | 0.9+ | 0.6+ | 2004 03 19 | 291 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 0.3− | 2004 03 28 | 691 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.3+ |
| 2001 09 21 | 704 | 0.5− | 1.0− | 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.4− |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2005 06 16 | G96 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.2− | 1.1+ |
| 2001 09 21 | 704 | 1.0− | 0.6+ | 2005 06 16 | G96 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.6− | 0.9+ | 2005 06 16 | G96 | 0.3− | 0.4+ | 2006 09 30 | 703 | (1.7− | 0.5−) |
| 2001 10 18 | 644 | 0.5+ | 0.6+ | 2005 06 16 | G96 | 0.1− | 0.7+ | 2006 09 30 | 703 | 1.3− | 0.4− |
| 2001 10 18 | 644 | 0.0 | 0.3+ | 2005 06 26 | G96 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.9+ | 0.2+ |
| 2001 10 18 | 644 | 0.1+ | 0.6+ | 2005 06 26 | G96 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2001 10 20 | 704 | 0.8− | 0.2− | 2005 06 26 | G96 | 0.6+ | 0.2− | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.3− | 0.8+ | 2005 06 26 | G96 | 0.2− | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2001 10 20 | 704 | 0.5− | 0.1− | 2006 08 18 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2001 10 20 | 704 | 0.5− | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 08 18 | 691 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.1+ |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.9+ | | | | |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.5+ | | | | |

**(140225)∗ 2001 SU$_{241}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 280.87464 | | (2000.0) | | | |
| $n$ | 0.20880342 | $\omega$ | 37.23072 | | −0.50282045 | −0.86279909 |
| $a$ | 2.8139150 | $\Omega$ | 83.01165 | | +0.77980730 | −0.47895296 |
| $e$ | 0.0308026 | $i$ | 3.02814 | | +0.37292382 | −0.16180789 |
| $P$ | 4.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.1− | 0.1− | 2003 01 29 | 645 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.5− |
| 1992 11 27 | 691 | (3.3+ | 3.9−) | 2003 01 29 | 645 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 1992 11 27 | 691 | 0.1+ | 0.3+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.0 | 0.5+ |
| 2001 09 19 | 704 | (0.7− | 1.8+) | 2003 02 01 | 645 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.0 | 0.6+ |
| 2001 09 19 | 704 | 1.2− | 0.7+ | 2003 02 01 | 704 | 0.5− | 1.1+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 0.5+ | 2003 02 01 | 704 | 1.4+ | 1.1+ | 2006 10 22 | 691 | 0.8− | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2003 02 01 | 704 | (5.4+ | 0.4−) | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2003 02 06 | 608 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2003 02 06 | 608 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 1.1− | 0.7− | 2003 02 06 | 608 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 0.9− | 1.1+ | 2004 03 26 | 291 | 0.9− | 1.0+ | 2006 11 11 | 703 | 1.1+ | 0.1− |
| 2001 10 18 | 644 | 0.7− | 0.5+ | 2004 03 26 | 291 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.8+ | 0.0 |
| 2001 10 18 | 644 | 0.4− | 0.7+ | 2004 03 26 | 291 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2001 10 18 | 644 | 0.4− | 0.7+ | 2004 04 22 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.1− |
| 2001 10 20 | 704 | 0.0 | 0.6+ | 2004 04 22 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 644 | 0.3+ | 0.4+ |
| 2001 10 20 | 704 | 0.3− | 0.1− | 2004 04 22 | 691 | 0.5+ | 0.1+ | 2006 11 11 | 644 | 0.3− | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 644 | 0.1+ | 0.3+ |
| 2001 10 20 | 704 | 0.1+ | 0.7+ | 2004 05 09 | 691 | 0.4+ | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.1− | 0.4+ | 2004 05 09 | 691 | 0.2+ | 0.7+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.3− | 2004 05 18 | 599 | 0.7+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.4+ | 1.0+ | 2004 05 18 | 599 | 0.8+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 1.4+ | 1.0+ | 2004 05 18 | 599 | 1.0+ | 0.5+ | 2006 11 17 | 703 | 1.3− | 0.3− |
| 2002 12 31 | 704 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.6− | 0.6− |
| 2002 12 31 | 704 | 1.3− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.2+ | 1.4− |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.0 | 1.0+ |
| 2003 01 08 | 704 | 0.6+ | 1.0+ | 2006 10 16 | 703 | (0.3− | 1.9+) | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2003 01 08 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.3+ | 1.1+ | 2006 11 18 | 704 | 0.7− | 0.3+ |
| 2003 01 08 | 704 | 0.1+ | 1.3+ | 2006 10 16 | 703 | (0.2− | 1.6+) | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 2003 01 08 | 704 | 0.5+ | 0.6− | 2006 10 16 | 703 | (1.0− | 2.4+) | 2006 11 21 | 704 | 1.2− | 1.2+ |
| 2003 01 26 | 608 | 0.6− | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 1.0− | 1.4+ |
| 2003 01 26 | 608 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.0 | 2006 11 21 | 704 | (1.0− | 1.7+) |
| 2003 01 26 | 608 | 0.8− | 0.5− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.0 | 1.0+ |

**(140226)∗ 2001 SX$_{241}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 296.24617 | | (2000.0) | | | |
| $n$ | 0.19107707 | $\omega$ | 313.71678 | | −0.02344748 | −0.99966980 |
| $a$ | 2.9853620 | $\Omega$ | 137.62339 | | +0.92165560 | −0.02568891 |
| $e$ | 0.1988814 | $i$ | 0.89367 | | +0.38729984 | +0.00061087 |
| $P$ | 5.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 11 | 691 | 0.2+ | 1.3− | 2001 10 23 | 704 | 0.7+ | 1.3− | 2003 03 06 | 699 | (0.3− | 1.7+) |
| 1991 11 11 | 691 | 0.4+ | 1.1− | 2001 10 24 | 704 | 0.9− | 0.4+ | 2003 03 06 | 644 | 1.0+ | 0.4+ |
| 1991 11 11 | 691 | 0.3− | 0.9− | 2001 10 24 | 704 | 0.3− | 0.3− | 2003 03 06 | 644 | 1.0+ | 0.1+ |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2001 10 24 | 704 | 0.2− | 0.4+ | 2003 03 06 | 644 | 0.6+ | 0.6+ |
| 2001 09 19 | 704 | 0.6+ | 1.2− | 2001 10 24 | 704 | 0.8− | 0.3+ | 2003 03 07 | 291 | 0.1− | 0.7+ |
| 2001 09 19 | 704 | 0.3+ | 0.0 | 2001 10 25 | 644 | 0.2+ | 1.4+ | 2003 03 07 | 291 | 0.6− | 0.5+ |
| 2001 09 19 | 704 | 1.3+ | 0.6− | 2001 10 25 | 644 | 0.0 | 1.1+ | 2003 03 07 | 291 | 0.5− | 0.6+ |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2001 10 25 | 644 | 0.5+ | 1.0+ | 2003 03 31 | 645 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.6+ | 0.4+ | 2001 11 16 | 644 | 0.0 | 0.5+ | 2003 03 31 | 645 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2001 11 16 | 644 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.6+ | 0.5+ | 2001 11 16 | 644 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2001 11 20 | 704 | 0.5− | 0.1+ | 2006 09 15 | 691 | 0.4− | 0.3+ |
| 2001 09 26 | 704 | 0.1− | 1.1+ | 2001 11 20 | 704 | 0.7− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 2001 09 26 | 704 | 0.9+ | 0.1+ | 2001 11 20 | 704 | 0.3− | 0.5− | 2006 09 19 | 691 | 0.3− | 0.4+ |
| 2001 09 26 | 704 | 1.1+ | 0.7+ | 2001 11 20 | 704 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2001 10 07 | 644 | 0.1+ | 0.2− | 2001 11 21 | 704 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.9− | 0.1− |
| 2001 10 07 | 644 | 0.1− | 0.5+ | 2001 11 21 | 704 | 1.2− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.8+ |
| 2001 10 07 | 644 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.5− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.1− |
| 2001 10 12 | 699 | 0.4− | 0.2− | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.3− |
| 2001 10 12 | 699 | (1.6+ | 0.3+) | 2003 02 08 | 608 | 0.3+ | 0.2− | 2006 09 23 | 691 | 0.4− | 0.0 |
| 2001 10 12 | 699 | 0.3+ | 0.3− | 2003 02 08 | 608 | 0.2+ | 0.3− | 2006 09 23 | 691 | 0.1− | 1.0− |
| 2001 10 12 | 699 | 0.2− | 0.2− | 2003 02 08 | 608 | 0.4+ | 0.5− | 2006 09 23 | 691 | 0.3− | 0.1+ |
| 2001 10 13 | 704 | 0.1+ | 0.3− | 2003 02 22 | 644 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2001 10 13 | 704 | 0.2+ | 0.1+ | 2003 02 22 | 644 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.6− |
| 2001 10 13 | 704 | 0.0 | 0.2+ | 2003 02 22 | 644 | 0.5+ | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.5− |
| 2001 10 13 | 704 | 0.3− | 0.0 | 2003 02 23 | 291 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2001 10 14 | 291 | 0.0 | 0.2+ | 2003 02 23 | 291 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 10 14 | 291 | 0.5− | 0.1+ | 2003 02 23 | 291 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2001 10 14 | 291 | 0.1− | 1.2+ | 2003 02 23 | 699 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 10 17 | 704 | 0.1− | 0.5− | 2003 02 23 | 699 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.7− | 0.1− |
| 2001 10 17 | 704 | 0.7− | 0.3− | 2003 02 23 | 699 | 0.4+ | 0.9+ | 2006 09 27 | 691 | 0.3+ | 0.6+ |
| 2001 10 17 | 704 | 0.2− | 0.0 | 2003 02 23 | 699 | (1.5+ | 0.4+) | 2006 09 27 | 691 | 0.2+ | 0.4+ |
| 2001 10 17 | 704 | 0.9− | 0.8− | 2003 02 23 | 608 | 0.0 | 1.1− | 2006 09 27 | 691 | 0.2− | 0.5+ |
| 2001 10 17 | 704 | 0.2− | 0.2− | 2003 02 23 | 608 | 1.1+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 1.2− | 0.1− | 2003 02 23 | 608 | 0.3+ | 0.4− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.1+ | 0.0 | 2003 02 28 | 704 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.6− | 0.1+ | 2003 02 28 | 704 | 0.6− | 0.5− | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2001 10 17 | 704 | 0.2− | 0.3− | 2003 02 28 | 704 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 0.8− | 0.0 | 2003 02 28 | 704 | 0.7− | 0.2+ | 2006 10 09 | 644 | 0.7+ | 0.1− |
| 2001 10 18 | 644 | 0.2+ | 1.0+ | 2003 02 28 | 704 | 0.6+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 10 18 | 644 | 0.3+ | 1.1+ | 2003 02 28 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2001 10 18 | 644 | 0.4+ | 1.1+ | 2003 02 28 | 608 | 1.4+ | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.2− | 2003 02 28 | 608 | 1.3+ | 0.3− | 2006 10 16 | 703 | (0.2− | 2.2+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2003 02 28 | 608 | 1.4+ | 0.2− | 2006 10 16 | 703 | 1.0− | 0.4+ | | |
| 2001 10 20 | 704 | 0.4+ | 0.6+ | 2003 03 05 | 704 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 1.1+ | 0.1− | | |
| 2001 10 20 | 704 | 0.3+ | 0.3+ | 2003 03 05 | 704 | 1.0+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 1.2+ | | |
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2003 03 05 | 704 | 0.9+ | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2001 10 23 | 704 | 1.1+ | 1.3+ | 2003 03 05 | 704 | 0.8+ | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2001 10 23 | 704 | 0.7+ | 0.3+ | 2003 03 06 | 699 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2001 10 23 | 704 | 1.1+ | 0.4+ | 2003 03 06 | 699 | 0.1+ | 0.3− | | | | | | |
| 2001 10 23 | 704 | 0.2+ | 0.3− | 2003 03 06 | 699 | 1.0+ | 0.3+ | | | | | | |

**(140227)∗ 2001 SC$_{242}$ = 2003 AZ$_{66}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40659)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.69569 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18326074 | $\omega$ | 28.28288 | | +0.47619210 | −0.87516595 | |
| $a$ | 3.0696564 | $\Omega$ | 33.48613 | | +0.77471813 | +0.37149656 | |
| $e$ | 0.1545224 | $i$ | 8.92427 | | +0.41599629 | +0.30995947 | |
| $P$ | 5.38 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.3− | 0.3− | 2001 10 19 | 699 | 0.2− | 1.0+ | 2003 01 13 | 704 | 0.9+ | 0.1+ | | |
| 1993 03 23 | 691 | 0.5− | 0.5− | 2001 10 20 | 704 | 0.8+ | 0.7+ | 2003 01 25 | 645 | 0.0 | 0.0 | | |
| 1993 03 23 | 691 | 0.2− | 0.5− | 2001 10 20 | 704 | 0.1+ | 0.1+ | 2003 01 25 | 645 | 0.0 | 0.0 | | |
| 2001 09 18 | 699 | 0.1− | 1.0+ | 2001 10 20 | 704 | 0.3− | 0.4+ | 2003 01 25 | 645 | 0.0 | 0.1− | | |
| 2001 09 18 | 699 | (2.4+ | 0.6+) | 2001 10 20 | 704 | 0.1− | 0.9+ | 2003 01 25 | 645 | 0.0 | 0.1− | | |
| 2001 09 18 | 699 | 0.5− | 1.9+ | 2001 10 20 | 704 | (1.7+ | 2.1+) | 2003 01 31 | 699 | 0.7− | 0.5+ | | |
| 2001 09 18 | 699 | 0.4− | 1.3+ | 2001 10 23 | 704 | 0.2+ | 0.1+ | 2003 01 31 | 699 | 0.3+ | 0.8+ | | |
| 2001 09 19 | 704 | 0.4− | 0.1− | 2001 10 23 | 704 | 0.4− | 0.0 | 2003 01 31 | 699 | 0.6− | 0.8+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2001 10 23 | 704 | 0.4− | 0.0 | 2003 01 31 | 699 | 0.4− | 0.6+ | | |
| 2001 09 19 | 704 | 1.1− | 0.6+ | 2001 10 23 | 704 | 0.3− | 0.8+ | 2003 02 02 | 704 | 1.2+ | 0.9− | | |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2001 10 23 | 704 | 0.2+ | 0.4+ | 2003 02 02 | 704 | 1.3+ | 0.7+ | | |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2001 10 24 | 704 | 1.7− | 0.4+ | 2003 02 02 | 704 | 0.8− | 0.4+ | | |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2001 10 24 | 704 | (2.1− | 0.1−) | 2003 02 02 | 704 | (2.7+ | 0.5+) | | |
| 2001 09 21 | 704 | 0.1+ | 1.1+ | 2001 10 24 | 704 | 1.6− | 1.3+ | 2004 04 12 | 691 | 0.2+ | 0.2− | | |
| 2001 09 21 | 704 | 0.7− | 0.6− | 2001 10 24 | 704 | 1.1− | 0.0 | 2004 04 12 | 691 | 0.6+ | 0.2− | | |
| 2001 10 14 | 645 | 0.0 | 0.2− | 2001 11 12 | 645 | 0.0 | 0.1− | 2004 04 12 | 691 | 0.3+ | 0.3+ | | |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2001 11 12 | 645 | 0.0 | 0.1− | 2004 04 25 | 691 | 0.2+ | 0.4+ | | |
| 2001 10 15 | 645 | 0.1+ | 0.2− | 2001 11 18 | 645 | 0.1+ | 0.1− | 2004 04 25 | 691 | 0.0 | 0.5+ | | |
| 2001 10 15 | 645 | 0.1+ | 0.2− | 2001 11 18 | 645 | 0.2+ | 0.1− | 2004 04 25 | 691 | 0.0 | 0.2+ | | |
| 2001 10 15 | 608 | 0.9− | 0.8+ | 2003 01 07 | 704 | 1.2+ | 0.7+ | 2004 04 26 | 568 | 0.1− | 0.5+ | | |
| 2001 10 15 | 608 | 1.3− | 0.6+ | 2003 01 07 | 704 | 0.6+ | 0.2+ | 2004 04 26 | 568 | 0.2− | 0.4+ | | |
| 2001 10 15 | 608 | 0.7− | 0.8+ | 2003 01 07 | 704 | 0.1+ | 0.3+ | 2004 04 26 | 568 | 0.1− | 0.5+ | | |
| 2001 10 16 | 704 | 0.3+ | 0.0 | 2003 01 07 | 704 | 0.2− | 0.6+ | 2004 04 27 | 568 | 0.2− | 0.5+ | | |
| 2001 10 16 | 704 | 0.4− | 0.0 | 2003 01 10 | 704 | 0.6− | 1.4+ | 2006 08 28 | E12 | 0.1− | 0.2+ | | |
| 2001 10 16 | 704 | 1.0− | 1.7+ | 2003 01 10 | 704 | 0.3− | 0.7+ | 2006 08 28 | E12 | 0.1− | 0.2+ | | |
| 2001 10 16 | 704 | 0.4− | 0.8+ | 2003 01 10 | 704 | 0.3− | 0.1+ | 2006 08 28 | E12 | 1.5− | 0.5+ | | |
| 2001 10 17 | 644 | 0.4+ | 0.4+ | 2003 01 10 | 644 | 0.9+ | 0.5+ | 2006 08 28 | E12 | 0.9+ | 1.3+ | | |
| 2001 10 17 | 644 | 0.2+ | 0.4+ | 2003 01 10 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.1− | | |
| 2001 10 17 | 644 | 0.1+ | 0.3+ | 2003 01 10 | 644 | 0.6+ | 0.4+ | 2006 09 20 | 703 | 1.4− | 0.7− | | |
| 2001 10 19 | 699 | 0.2+ | 0.3+ | 2003 01 13 | 704 | 0.1+ | 0.4− | 2006 09 20 | 703 | 1.2− | 1.1+ | | |
| 2001 10 19 | 699 | 0.3+ | 0.6+ | 2003 01 13 | 704 | 0.5+ | 1.2+ | 2006 09 20 | 703 | 0.1− | 1.5+ | | |
| 2001 10 19 | 699 | 0.5+ | 0.6+ | 2003 01 13 | 704 | 0.7− | 0.4+ | | | | | | |

**(140228)∗ 2001 SV$_{242}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.02959 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20655055 | $\omega$ | 258.70913 | | +0.68208296 | −0.73078752 | |
| $a$ | 2.8343392 | $\Omega$ | 148.23220 | | +0.68915542 | +0.63016004 | |
| $e$ | 0.0545041 | $i$ | 2.90604 | | +0.24459691 | +0.26238886 | |
| $P$ | 4.77 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.9− | 0.4− | 2003 01 13 | 291 | 0.3+ | 0.8+ | 2005 07 10 | 691 | 0.1− | 0.3+ | | |
| 2001 09 19 | 704 | 0.3− | 0.4− | 2003 01 27 | 704 | 0.9+ | 0.2− | 2005 07 15 | G96 | 0.4− | 0.0 | | |
| 2001 09 19 | 704 | 0.6− | 0.8+ | 2003 01 27 | 704 | 0.3− | 0.2+ | 2005 07 15 | G96 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2003 01 27 | 704 | (0.4− | 1.5+) | 2005 07 15 | G96 | 0.1− | 0.2+ | | |
| 2001 09 21 | 704 | 0.8− | 0.2+ | 2003 01 31 | 644 | 0.7− | 0.7+ | 2005 07 15 | G96 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | 0.9− | 0.6+ | 2003 01 31 | 644 | 0.4− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | 1.0− | 0.5− | 2003 01 31 | 704 | 0.9− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.5− | | |
| 2001 09 21 | 704 | 0.9− | 0.0 | 2003 01 31 | 704 | 0.1− | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.3− | | |
| 2001 09 21 | 704 | (2.2− | 0.9−) | 2003 01 31 | 704 | 0.7− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 2001 10 12 | 699 | 0.3− | 0.4+ | 2003 01 31 | 704 | 0.3− | 0.3+ | 2006 10 15 | D35 | 0.2+ | 0.2− | | |
| 2001 10 12 | 699 | 0.6+ | 1.0+ | 2003 01 31 | 644 | 0.5− | 0.3+ | 2006 10 15 | D35 | 0.2− | 0.3+ | | |
| 2001 10 12 | 699 | 1.1+ | 0.3+ | 2005 05 19 | G96 | 0.6− | 0.6− | 2006 10 15 | D35 | 0.1+ | 0.0 | | |
| 2001 10 12 | 699 | (1.8+ | 0.8+) | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.7+ | 0.5+ | 2005 05 19 | G96 | 0.0 | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.0 | | |
| 2001 10 20 | 704 | 0.6+ | 0.4− | 2005 05 19 | G96 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.2− | | |
| 2001 10 20 | 704 | 0.5+ | 0.1+ | 2005 06 15 | G96 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.4− | | |
| 2001 10 20 | 704 | 0.6+ | 0.4+ | 2005 06 15 | G96 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2001 10 20 | 704 | 0.4+ | 0.6+ | 2005 06 15 | G96 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1− | | |
| 2001 10 24 | 691 | 0.1+ | 0.8− | 2005 06 15 | G96 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.3− | | |
| 2001 10 24 | 691 | 0.1+ | 0.2− | 2005 07 02 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.1− | | |
| 2001 10 24 | 704 | 0.4− | 0.2+ | 2005 07 02 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.3+ | | |
| 2001 10 24 | 691 | 0.2+ | 0.1− | 2005 07 02 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2005 07 04 | G96 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.7+ | 1.7+ | | |
| 2001 10 24 | 704 | 0.6− | 0.4+ | 2005 07 04 | G96 | 0.2− | 0.6+ | 2006 11 14 | 704 | 0.6+ | 1.6+ | | |
| 2001 10 24 | 704 | (1.5− | 0.4+) | 2005 07 04 | G96 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.5− | 2.5+ | | |
| 2001 11 20 | 704 | 0.2+ | 0.8+ | 2005 07 07 | 691 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2005 07 07 | 691 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2001 11 20 | 704 | 0.2+ | 0.4− | 2005 07 07 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 2003 01 13 | 291 | 1.3+ | 0.4+ | 2005 07 10 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2003 01 13 | 291 | 0.2− | 0.6+ | 2005 07 10 | 691 | 0.1− | 0.2+ | | | | | | |

**(140229)∗ 2001 SC$_{243}$ = 2003 BQ$_{45}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40659)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.35777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18832433 | $\omega$ | 297.42310 | | +0.67239166 | −0.73926729 | |
| $a$ | 3.0143830 | $\Omega$ | 110.27464 | | +0.69230241 | +0.61038047 | |
| $e$ | 0.0638989 | $i$ | 2.26413 | | +0.26192906 | +0.28446364 | |
| $P$ | 5.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4+ | 0.5+ | 2003 01 08 | 704 | 0.1− | 1.0− | 2006 09 17 | 704 | 0.7+ | 1.3+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2003 01 29 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.8− | | |
| 2001 09 19 | 704 | (0.8+ | 1.5−) | 2003 01 29 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.5− | | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2003 01 29 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 1.2− | 0.2+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2003 01 31 | 291 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.6− | 1.0+ | | |
| 2001 09 21 | 704 | 0.8− | 0.7− | 2003 01 31 | 291 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.7− | 0.8+ | | |
| 2001 09 21 | 704 | 0.2− | 1.0− | 2003 01 31 | 291 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2003 01 31 | 704 | 0.4− | 0.2− | 2006 09 18 | 699 | (1.3− | 1.5+) | | |
| 2001 10 17 | 644 | 0.2− | 0.6+ | 2003 01 31 | 704 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.5− | 0.4+ | | |
| 2001 10 17 | 644 | 0.6− | 0.8+ | 2003 01 31 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.3+ | | |
| 2001 10 17 | 644 | 0.2+ | 1.0+ | 2003 01 31 | 704 | 0.7+ | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.3+ | | |
| 2001 10 21 | 691 | 0.1+ | 0.2− | 2003 01 31 | 704 | 0.7− | 0.1− | 2006 09 30 | G96 | 0.3− | 0.1− | | |
| 2001 10 21 | 691 | 0.2+ | 0.1− | 2003 02 03 | 704 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.7+ | 0.1+ | | |
| 2001 10 21 | 691 | 0.3+ | 0.3− | 2003 02 03 | 704 | 0.6− | 0.3+ | 2006 09 30 | G96 | 0.6+ | 0.4+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2003 02 03 | 704 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.0 | | |
| 2001 10 23 | 704 | 0.3+ | 0.2+ | 2003 02 10 | 291 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.5+ | 0.2+ | | |
| 2001 10 23 | 704 | 1.4− | 0.8+ | 2003 02 10 | 291 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ | | |
| 2001 10 24 | 704 | 0.2− | 0.3+ | 2003 02 10 | 291 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2001 10 24 | 704 | 1.2− | 0.5+ | 2004 04 19 | 691 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 1.2+ | 1.9+ | | |
| 2001 10 24 | 704 | 0.5− | 0.5− | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.9− | | |
| 2001 10 24 | 704 | 0.0 | 1.0+ | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 1.0+ | 0.2− | | |
| 2003 01 08 | 704 | (2.1+ | 1.4−) | 2004 05 24 | 691 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.9+ | 0.4+ | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | (1.3+ | 1.7+) | 2004 05 24 | 691 | 0.3+ | 0.3+ | |
| 2003 01 08 | 704 | (0.7+ | 1.7−) | 2004 05 24 | 691 | 0.1− | 0.6+ | |

**(140230)∗ 2001 SC$_{244}$ = 2001 UO$_{181}$ = 2003 BE$_{54}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 75138), T. B. Spahr (*MPO* 49932)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.38298 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18838213 | $\omega$ | 265.88935 | | +0.28544022 | | −0.95791551 |
| $a$ | 3.0137664 | $\Omega$ | 167.39886 | | +0.92525433 | | +0.26717251 |
| $e$ | 0.1400419 | $i$ | 7.99948 | | +0.24985657 | | +0.10496057 |
| $P$ | 5.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 0.4− | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.5+ | 1.3+ | |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2003 01 30 | 699 | 1.0+ | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.2+ | |
| 2001 09 19 | 704 | 0.7− | 0.0 | 2003 01 30 | 699 | 0.2− | 0.4+ | 2006 09 19 | 703 | 1.3− | 0.5+ | |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2003 01 30 | 699 | (1.6+ | 1.8+) | 2006 09 25 | 699 | 0.6+ | 0.9+ | |
| 2001 09 21 | 704 | 0.3+ | 0.1− | 2003 01 30 | 699 | 0.7+ | 0.2− | 2006 09 25 | 699 | 0.3− | 1.2+ | |
| 2001 09 21 | 704 | 0.2− | 0.2− | 2003 02 19 | 644 | 0.2+ | 0.7+ | 2006 09 25 | 699 | 0.9+ | 1.2+ | |
| 2001 09 21 | 704 | 0.2− | 0.3− | 2003 02 19 | 644 | 0.2+ | 0.9+ | 2006 09 25 | 699 | 0.0 | 0.4+ | |
| 2001 09 21 | 704 | 0.5− | 0.3− | 2003 02 19 | 644 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | |
| 2001 10 10 | 644 | 0.1− | 0.2+ | 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.6+ | |
| 2001 10 10 | 644 | 0.0 | 0.3+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.5+ | |
| 2001 10 10 | 644 | 0.4− | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.2− | |
| 2001 10 19 | 699 | 0.2+ | 0.2− | 2004 04 20 | 691 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.4− | 0.5− | |
| 2001 10 19 | 699 | 0.9+ | 0.7+ | 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.1+ | |
| 2001 10 19 | 699 | 0.2− | 0.7+ | 2004 04 20 | 691 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.2− | |
| 2001 10 19 | 699 | 0.0 | 0.8− | 2006 08 28 | 703 | 0.5− | 0.5− | 2006 11 17 | G96 | 0.2− | 0.7− | |
| 2001 10 24 | 644 | 0.0 | 1.2+ | 2006 08 28 | 703 | (1.6− | 1.7−) | 2006 11 17 | G96 | 0.2+ | 0.6− | |
| 2001 10 24 | 644 | 0.0 | 1.0+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.1+ | |
| 2001 10 24 | 644 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.4− | 0.6− | 2006 11 17 | G96 | 0.1− | 0.1− | |
| 2003 01 27 | 644 | 0.6+ | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.9+ | 2006 11 25 | G96 | 0.7+ | 0.6− | |
| 2003 01 27 | 644 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.5− | 0.7+ | 2006 11 25 | G96 | 0.2− | 0.6− | |
| 2003 01 27 | 644 | 0.3+ | 0.5+ | 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 11 25 | G96 | 0.5− | 0.7− | |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.7− | 2006 11 25 | G96 | 0.3− | 0.4− | |

**(140231)∗ 2001 SQ$_{245}$ = 1999 GN$_{11}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20364)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.52630 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19304137 | $\omega$ | 158.14506 | | +0.82559472 | | +0.56419812 |
| $a$ | 2.9650757 | $\Omega$ | 167.49733 | | −0.52340147 | | +0.77140853 |
| $e$ | 0.1316743 | $i$ | 2.27474 | | −0.21081804 | | +0.29429469 |
| $P$ | 5.11 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.1− | 0.7− | 2001 10 17 | 704 | 0.7+ | 0.6+ | 2004 03 23 | 691 | 0.0 | 0.5+ | |
| 1991 11 06 | 691 | 0.1+ | 1.1− | 2001 10 17 | 704 | 0.2− | 0.4− | 2004 03 23 | 691 | 0.2− | 0.8+ | |
| 1991 11 06 | 691 | 0.4+ | 0.4− | 2001 10 18 | 704 | 1.4+ | 0.0 | 2004 03 31 | 691 | 0.2+ | 0.1− | |
| 1999 04 07 | 691 | 0.3− | 0.4− | 2001 10 18 | 704 | (0.5− | 1.9+) | 2004 03 31 | 691 | 0.4+ | 0.0 | |
| 1999 04 07 | 691 | 0.4+ | 0.6− | 2001 10 18 | 704 | 0.4− | 0.2− | 2004 03 31 | 691 | 0.3+ | 0.6+ | |
| 1999 04 07 | 691 | 1.3− | 0.0 | 2001 10 18 | 704 | 0.6+ | 0.8+ | 2005 01 24 | 809 | 0.3+ | 0.0 | |
| 1999 04 09 | 691 | 0.4− | 1.1− | 2001 10 18 | 704 | 0.2+ | 0.2− | 2005 01 24 | 809 | 0.1+ | 0.1+ | |
| 1999 04 09 | 691 | 0.2− | 1.2− | 2001 10 18 | 704 | 0.3+ | 0.3+ | 2005 01 24 | 809 | 0.0 | 0.1− | |
| 1999 04 09 | 691 | 0.1− | 1.0− | 2001 10 18 | 704 | 0.4− | 0.9+ | 2006 07 21 | G96 | 0.5− | 0.3− | |
| 1999 04 11 | 691 | 0.0 | 0.6− | 2001 10 18 | 704 | (2.3+ | 1.3+) | 2006 07 21 | G96 | 0.1+ | 0.1+ | |
| 1999 04 11 | 691 | 0.0 | 0.6− | 2001 10 18 | 704 | 0.4+ | 0.7+ | 2006 07 21 | G96 | 0.3+ | 0.1− | |
| 1999 04 11 | 691 | 0.2+ | 0.6− | 2001 10 18 | 704 | 0.4+ | 0.9+ | 2006 07 21 | G96 | 0.1− | 0.1+ | |
| 1999 04 14 | 691 | 0.1− | 0.3− | 2001 10 18 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.0 | |
| 1999 04 14 | 691 | 0.2+ | 0.1− | 2001 10 18 | 644 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1− | |
| 1999 04 14 | 691 | 0.4− | 0.0 | 2001 10 18 | 644 | 0.4+ | 0.6+ | 2006 09 14 | 691 | 0.1+ | 0.0 | |
| 1999 04 17 | 691 | 0.2+ | 0.2+ | 2001 10 20 | 704 | 0.1− | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.1+ | |
| 1999 04 17 | 691 | 0.2− | 0.2− | 2001 10 20 | 704 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.8− | |
| 1999 04 17 | 691 | 0.8− | 0.5− | 2001 10 20 | 704 | 0.8− | 0.8+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2001 10 23 | 704 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | |
| 2001 09 19 | 704 | 0.3− | 0.8− | 2001 10 23 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.0 | |
| 2001 09 19 | 704 | 0.5+ | 0.5− | 2001 10 23 | 704 | 0.4− | 1.1− | 2006 09 18 | 699 | 0.6− | 0.2+ | |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2001 10 24 | 704 | 0.1+ | 1.2− | 2006 09 18 | 699 | 0.6− | 0.0 | |
| 2001 09 19 | 704 | 0.4− | 0.5− | 2001 10 24 | 704 | 0.5+ | 1.0− | 2006 09 25 | 691 | 0.2− | 0.0 | |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2001 10 24 | 704 | 0.0 | 0.8+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | |
| 2001 09 19 | 704 | 0.5− | 1.1− | 2001 10 24 | 704 | 0.0 | 0.5− | 2006 09 25 | 691 | 0.1− | 0.0 | |
| 2001 09 19 | 704 | 0.6− | 0.5− | 2001 10 25 | 644 | 0.7− | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.1− | |
| 2001 09 19 | 704 | 0.8− | 0.4− | 2001 10 25 | 644 | 0.8− | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.0 | |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2001 10 25 | 644 | 0.6− | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.0 | |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2001 10 26 | 704 | (0.3+ | 2.1+) | 2006 10 15 | 703 | 0.4+ | 0.7− | |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2001 10 26 | 704 | 0.1+ | 0.7+ | 2006 10 15 | 703 | 0.3− | 0.9− | |
| 2001 09 21 | 704 | 0.0 | 0.5− | 2001 10 26 | 704 | 1.4+ | 1.2+ | 2006 10 15 | 703 | 0.5− | 0.6− | |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2001 10 26 | 704 | 0.0 | 0.8+ | 2006 10 15 | 703 | 0.3− | 0.2− | |
| 2001 09 21 | 704 | 0.3+ | 0.0 | 2001 11 20 | 704 | 1.2+ | 1.0+ | 2006 10 17 | G96 | (1.7+ | 0.1+) | |
| 2001 09 21 | 704 | 0.2− | 0.4− | 2001 11 20 | 704 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.5+ | 0.4− | |
| 2001 09 21 | 704 | 0.2− | 1.3+ | 2001 11 20 | 704 | 0.9+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.2− | |
| 2001 09 21 | 704 | 0.7− | 0.6+ | 2001 11 20 | 704 | 1.0+ | 0.4+ | 2006 10 17 | G96 | 0.4− | 1.1− | |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2001 11 20 | 704 | (1.8+ | 0.1−) | 2006 10 21 | 291 | 0.2− | 0.3+ | |
| 2001 09 26 | 704 | 0.6− | 0.1+ | 2001 11 21 | 704 | 0.0 | 0.4+ | 2006 10 21 | 291 | 0.2− | 0.2+ | |
| 2001 09 26 | 704 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.3− | 0.2+ | 2006 10 21 | 291 | 0.1+ | 0.0 | |
| 2001 09 26 | 704 | 0.6− | 0.5− | 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 10 21 | 703 | 0.4+ | 0.5+ | |
| 2001 09 26 | 704 | 0.3− | 0.2+ | 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.8+ | |
| 2001 09 26 | 704 | 0.1+ | 0.9− | 2004 03 12 | 644 | 0.7+ | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.2+ | |
| 2001 10 11 | 644 | 0.3+ | 0.3+ | 2004 03 12 | 644 | 0.7+ | 0.6+ | 2006 10 21 | 703 | 0.5+ | 0.8− | |
| 2001 10 11 | 644 | 0.4+ | 0.6+ | 2004 03 12 | 644 | 0.8+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2001 10 11 | 644 | 0.3+ | 0.0 | 2004 03 17 | 691 | 0.3+ | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2001 10 13 | 704 | 0.4− | 0.1+ | 2004 03 17 | 691 | 0.5+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2001 10 13 | 704 | 0.5− | 0.5− | 2004 03 17 | 691 | 0.1+ | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.4− | |
| 2001 10 13 | 704 | 0.1+ | 0.7− | 2004 03 18 | 704 | (0.5+ | 2.4−) | 2006 10 31 | G96 | 0.2− | 0.3− | |
| 2001 10 13 | 704 | 0.1− | 0.8− | 2004 03 18 | 704 | 1.1+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.4− | |
| 2001 10 13 | 704 | 0.3+ | 1.1− | 2004 03 18 | 704 | 0.5+ | 1.3+ | 2006 10 31 | G96 | 0.4− | 0.3− | |
| 2001 10 17 | 704 | 0.9− | 0.0 | 2004 03 18 | 704 | (1.7− | 1.3+) | | | | | |
| 2001 10 17 | 704 | 0.2+ | 0.2+ | 2004 03 23 | 691 | 0.1− | 0.8+ | | | | | |

**(140232)∗ 2001 SY$_{245}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.59633 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19459512 | $\omega$ | 112.60925 | | +0.69538542 | | +0.71855375 |
| $a$ | 2.9492715 | $\Omega$ | 201.46072 | | −0.66982732 | | +0.64256683 |
| $e$ | 0.1063187 | $i$ | 1.71302 | | −0.26032763 | | +0.26606083 |
| $P$ | 5.06 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 691 | 0.6+ | 0.0 | 2001 11 09 | 704 | 0.1− | 1.5− | 2006 09 25 | G96 | 0.0 | 0.1− | |
| 1999 04 12 | 691 | 0.2− | 0.7− | 2001 11 16 | 691 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.3− | |
| 1999 04 12 | 691 | 0.1− | 0.3− | 2001 11 16 | 691 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.2− | 0.2+ | |
| 2001 09 19 | 704 | 0.7+ | 0.6+ | 2001 11 16 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.2− | 0.2− | |
| 2001 09 19 | 704 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.5+ | 1.1− | 2006 09 25 | G96 | 0.1− | 0.1− | |
| 2001 09 19 | 704 | 0.5+ | 0.4+ | 2001 11 21 | 704 | 1.2+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.1+ | |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.9+ | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.8− | |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2001 11 21 | 704 | 0.9− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.6+ | |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2001 11 21 | 704 | 0.5− | 0.4− | 2006 09 29 | 704 | 0.5+ | 0.9+ | |
| 2001 09 21 | 704 | 0.0 | 0.9+ | 2003 01 08 | 704 | 1.0+ | 0.6− | 2006 09 29 | 704 | (0.2+ | 1.5+) | |
| 2001 09 21 | 704 | 0.4+ | 0.6+ | 2003 01 08 | 704 | 0.6+ | 0.6− | 2006 10 13 | A50 | 0.7+ | 0.2+ | |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2003 01 08 | 704 | 0.7− | 0.7+ | 2006 10 13 | A50 | 0.8− | 0.8+ | |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2003 01 08 | 704 | 0.5− | 0.6− | 2006 10 16 | 691 | 0.3+ | 0.0 | |
| 2001 09 26 | 704 | 0.5− | 0.5+ | 2004 02 26 | 704 | 0.6+ | 1.3+ | 2006 10 16 | 691 | 0.1+ | 0.1− | |
| 2001 09 26 | 704 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.3− | 2006 10 16 | 691 | 0.4+ | 0.1− | |
| 2001 09 26 | 704 | 0.2+ | 0.5− | 2004 02 26 | 704 | 1.1+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− | |
| 2001 09 26 | 704 | 0.8− | 0.4− | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.2− | |
| 2001 10 11 | 644 | 0.3− | 0.1− | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.5+ | 0.2− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.4− | 0.0 | 2004 03 17 | 691 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 10 11 | 644 | 0.2− | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.1+ | 2006 10 19 | 695 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.4− | 1.0+ | 2004 03 18 | 704 | 1.0+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 0.7− | 0.8+ | 2004 03 18 | 704 | 0.3+ | 0.8− | 2006 10 19 | 644 | 0.3− | 0.6+ |
| 2001 10 17 | 704 | 1.1− | 1.1+ | 2004 03 18 | 704 | 0.5+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 695 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.3+ | 1.0+ | 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.9+ | 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.8+ | 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | (0.3+ | 1.6+) | 2004 03 31 | 691 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | (0.0 | 2.0+) | 2004 03 31 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2001 10 23 | 704 | 0.4− | 0.1− | 2004 03 31 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.7− | 0.4+ | 2004 04 25 | 691 | 0.6− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2001 10 23 | 704 | 0.0 | 0.4+ | 2004 04 25 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.8+ | 0.1+ | 2004 04 25 | 691 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2001 10 24 | 704 | 1.2− | 0.0 | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.3− | 0.5− |
| 2001 10 24 | 704 | 0.5− | 0.3+ | 2006 07 22 | G96 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 1.5+ | 0.4+ |
| 2001 10 24 | 704 | 1.0− | 1.0+ | 2006 07 22 | G96 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2001 10 24 | 704 | 0.6− | 1.0+ | 2006 07 22 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.5− | 1.0− |
| 2001 10 26 | 704 | 0.1+ | 1.0+ | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2001 10 26 | 704 | 0.5− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 1.0− | 1.3− |
| 2001 10 26 | 704 | 0.0 | 0.1+ | 2006 09 18 | 699 | 1.0+ | 0.5− | 2006 11 17 | 703 | (0.8+ | 1.9−) |
| 2001 10 26 | 704 | 0.5+ | 1.1− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.2− | 1.3− |
| 2001 11 09 | 704 | 0.4+ | 0.8− | 2006 09 18 | 699 | 0.7− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.7− |
| 2001 11 09 | 704 | (0.7− | 1.7−) | 2006 09 18 | 699 | 0.9− | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2001 11 09 | 704 | 0.0 | 0.6− | 2006 09 18 | 699 | 0.5− | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2001 11 09 | 704 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.6− |

**(140233)∗ 2001 SA$_{246}$ = 2001 UY$_{218}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.58166 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17160349 | $\omega$ | 349.81742 | | +0.84805841 | −0.52970524 | |
| $a$ | 3.2071453 | $\Omega$ | 42.17849 | | +0.48767884 | +0.76951286 | |
| $e$ | 0.1837737 | $i$ | 1.23458 | | +0.20728308 | +0.35673844 | |
| $P$ | 5.74 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.2+ | 0.4+ | 2001 10 19 | 644 | 0.0 | 0.5+ | 2003 01 31 | 704 | (2.0− | 1.8+) |
| 2001 09 19 | 704 | 0.1− | 0.7− | 2001 10 19 | 644 | 0.0 | 0.3+ | 2003 01 31 | 704 | 0.8− | 0.8+ |
| 2001 09 19 | 704 | 0.4+ | 0.8+ | 2001 10 21 | 704 | 0.2+ | 0.1+ | 2003 01 31 | 704 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2001 10 21 | 704 | 0.5− | 0.3− | 2003 02 09 | 291 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.8+ | 2001 10 21 | 704 | 0.2− | 0.1− | 2003 02 09 | 291 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 1.3+ | 1.0+ | 2001 10 21 | 704 | 0.2− | 0.4+ | 2003 02 09 | 291 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2001 10 21 | 704 | 0.6− | 0.1+ | 2004 03 29 | 691 | 0.4+ | 0.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2001 10 26 | 644 | 0.0 | 0.0 | 2004 03 29 | 691 | 0.9+ | 0.5+ |
| 2001 09 21 | 704 | 0.2+ | 0.6+ | 2001 10 26 | 644 | 1.0+ | 0.4+ | 2004 03 29 | 691 | 0.6+ | 0.6+ |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2001 10 26 | 644 | 0.1− | 0.1+ | 2004 03 30 | 291 | 0.2− | 0.6+ |
| 2001 09 27 | 704 | 0.4− | 0.8+ | 2001 10 26 | 704 | 0.5+ | 1.3+ | 2004 03 30 | 291 | 0.1− | 0.5+ |
| 2001 09 27 | 704 | 0.5+ | 0.6− | 2001 10 26 | 704 | 1.2+ | 1.3− | 2004 03 30 | 291 | 0.1− | 0.1− |
| 2001 09 27 | 704 | 0.0 | 0.4+ | 2001 10 26 | 704 | (1.7+ | 1.1−) | 2004 04 23 | 691 | 0.2− | 0.2+ |
| 2001 09 27 | 704 | 0.3+ | 0.3+ | 2001 11 16 | 291 | 0.8− | 0.1− | 2004 04 23 | 691 | 0.1+ | 0.1− |
| 2001 09 27 | 704 | 0.8+ | 0.1+ | 2001 11 16 | 291 | 0.9− | 0.1− | 2004 04 23 | 691 | 0.1− | 0.5+ |
| 2001 09 27 | 704 | 0.4+ | 0.8+ | 2001 11 16 | 291 | 0.9− | 0.1− | 2006 08 20 | 644 | 0.1− | 0.7+ |
| 2001 09 27 | 704 | 0.4− | 0.4− | 2001 11 20 | 704 | 0.4+ | 0.7+ | 2006 08 20 | 644 | 0.1+ | 0.6+ |
| 2001 10 13 | 704 | 0.4+ | 0.9+ | 2001 11 20 | 704 | 0.1− | 0.1− | 2006 08 20 | 644 | 0.0 | 0.5+ |
| 2001 10 13 | 704 | 0.1− | 0.1+ | 2001 11 20 | 704 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2001 10 13 | 704 | 0.6− | 0.4− | 2001 11 20 | 704 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.6+ |
| 2001 10 13 | 704 | 0.1+ | 0.3− | 2001 11 20 | 704 | 0.4+ | 0.2− | 2006 09 30 | G96 | 0.7− | 0.5+ |
| 2001 10 14 | 699 | 0.1+ | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.7+ |
| 2001 10 14 | 699 | 0.1− | 0.3+ | 2001 11 21 | 704 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2001 10 14 | 699 | 0.8+ | 1.2+ | 2001 11 21 | 704 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.3+ |
| 2001 10 14 | 699 | 0.3+ | 0.0 | 2001 11 21 | 704 | 0.4− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2001 10 19 | 644 | 0.0 | 0.6+ | 2001 11 21 | 704 | 0.6− | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.3+ |

**(140234)∗ 2001 SD$_{247}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.82933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21749673 | $\omega$ | 212.20483 | | −0.16451091 | +0.98369915 | |
| $a$ | 2.7384253 | $\Omega$ | 48.43566 | | −0.88316390 | −0.11411499 | |
| $e$ | 0.1138874 | $i$ | 5.56899 | | −0.43926949 | −0.13897393 | |
| $P$ | 4.53 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2001 11 21 | 704 | 0.3+ | 0.1− | 2004 04 19 | 704 | 1.3+ | 0.6+ |
| 2001 09 19 | 704 | 0.9− | 0.6+ | 2001 11 21 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 1.0+ | 0.8+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.2+ | 0.0 | 2004 04 19 | 704 | 1.2+ | 0.6+ |
| 2001 09 19 | 704 | 0.8− | 0.4+ | 2003 01 13 | 704 | 0.1+ | 0.3− | 2004 04 20 | 703 | 0.5− | 0.9+ |
| 2001 09 19 | 704 | 0.9− | 0.5+ | 2003 01 13 | 704 | 0.4+ | 0.7− | 2004 04 20 | 703 | 0.6+ | 1.0+ |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2003 01 13 | 704 | 0.0 | 0.1− | 2004 04 20 | 703 | 0.3+ | 0.9+ |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2004 03 15 | 703 | 1.1+ | 0.3+ | 2004 04 20 | 703 | 0.2− | 0.8+ |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2004 03 15 | 703 | (0.7− | 1.6+) | 2004 04 22 | 704 | 0.3+ | 0.5+ |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2004 03 15 | 703 | (1.0− | 1.6+) | 2004 04 22 | 704 | 0.0 | 1.0+ |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2004 03 15 | 703 | 0.5− | 1.2+ | 2004 04 22 | 704 | 0.7+ | 0.3+ |
| 2001 09 26 | 704 | (0.8+ | 2.2+) | 2004 03 16 | 704 | 0.8+ | 0.1+ | 2004 04 22 | 704 | 0.1+ | 0.5+ |
| 2001 09 26 | 704 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.9+ | 0.5− | 2004 04 22 | 704 | 1.1+ | 0.2+ |
| 2001 09 26 | 704 | 0.5− | 1.4+ | 2004 03 16 | 704 | 0.2+ | 0.1+ | 2004 05 09 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | (0.3+ | 1.8+) | 2004 03 16 | 704 | 1.3+ | 0.5+ | 2004 05 09 | 691 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.6+ | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2004 05 09 | 691 | 0.3− | 0.1+ |
| 2001 10 12 | 699 | (1.6− | 0.8+) | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2004 05 14 | 704 | 0.2+ | 0.1+ |
| 2001 10 12 | 699 | (1.6− | 0.4−) | 2004 03 19 | 704 | 0.6+ | 0.0 | 2004 05 14 | 704 | 0.7+ | 0.4− |
| 2001 10 12 | 699 | 0.7− | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.7+ | 2004 05 14 | 704 | 0.3+ | 0.1− |
| 2001 10 12 | 699 | 0.7− | 0.8+ | 2004 03 19 | 704 | 0.5+ | 0.6+ | 2004 05 14 | 704 | 0.3− | 0.2− |
| 2001 10 13 | 704 | 0.4− | 0.0 | 2004 03 20 | 699 | 0.3− | 0.3+ | 2004 05 17 | 704 | 0.7+ | 0.6+ |
| 2001 10 13 | 704 | (1.6− | 1.1+) | 2004 03 20 | 699 | 0.4− | 0.4+ | 2004 05 17 | 704 | 0.0 | 0.1− |
| 2001 10 13 | 704 | 0.9− | 1.3+ | 2004 03 20 | 699 | 0.0 | 0.2+ | 2004 05 17 | 704 | 0.6− | 0.0 |
| 2001 10 13 | 704 | 1.2− | 1.3+ | 2004 03 20 | 699 | 0.1− | 0.3+ | 2004 05 24 | 699 | 0.4+ | 0.8+ |
| 2001 10 13 | 704 | (1.1− | 1.6+) | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2004 05 24 | 699 | 0.2− | 1.4+ |
| 2001 10 17 | 704 | 0.3+ | 0.0 | 2004 03 22 | 704 | 0.5+ | 0.1+ | 2004 05 24 | 691 | 0.0 | 0.5+ |
| 2001 10 17 | 704 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.5+ | 0.1+ | 2004 05 24 | 699 | 0.8+ | 0.1− |
| 2001 10 17 | 704 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.0 | 0.3+ | 2004 05 24 | 691 | 0.2+ | 0.5+ |
| 2001 10 17 | 704 | 0.5− | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.0 | 2004 05 24 | 699 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.0 | 2004 03 24 | 699 | 0.6− | 1.2− | 2004 05 24 | 691 | 0.1+ | 0.5+ |
| 2001 10 17 | 644 | 0.7− | 1.1+ | 2004 03 24 | 699 | 0.0 | 0.6+ | 2004 06 17 | 704 | 0.3+ | 0.2+ |
| 2001 10 17 | 644 | 0.6− | 1.2+ | 2004 03 24 | 699 | 0.6− | 0.1+ | 2004 06 17 | 704 | 0.2+ | 0.2− |
| 2001 10 17 | 644 | 1.0− | 0.6+ | 2004 03 24 | 699 | 0.3− | 0.2+ | 2004 06 17 | 704 | 0.7+ | 0.2− |
| 2001 10 20 | 704 | 0.1− | 0.4− | 2004 03 25 | 699 | 0.1+ | 0.5+ | 2004 07 16 | 807 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.5− | 0.2+ | 2004 03 25 | 699 | 0.4− | 0.0 | 2004 07 17 | 807 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.1− | 0.2− | 2004 03 25 | 699 | 0.6− | 0.0 | 2005 07 27 | 644 | 0.5− | 0.4+ |
| 2001 10 20 | 704 | 1.2− | 0.9+ | 2004 03 25 | 699 | 0.6− | 0.3+ | 2005 07 27 | 644 | 0.3− | 0.5+ |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2004 03 28 | 704 | 0.6+ | 0.8+ | 2005 07 27 | 644 | 0.3+ | 1.4+ |
| 2001 10 23 | 704 | 0.3+ | 0.9+ | 2004 03 28 | 704 | 0.4+ | 0.7− | 2005 09 24 | 644 | 0.5− | 0.2+ |
| 2001 10 23 | 704 | 0.2+ | 0.6+ | 2004 03 28 | 704 | 0.4− | 0.3+ | 2005 09 24 | 644 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2004 03 28 | 704 | 0.7+ | 0.3+ | 2005 09 24 | 644 | 0.3− | 0.0 |
| 2001 10 23 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 704 | 0.2+ | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | 0.9+ | 0.8+ | 2004 03 31 | 704 | 0.8+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.0 | 0.9+ | 2004 03 31 | 704 | 1.0+ | 0.7+ | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2001 10 24 | 704 | 0.1+ | 0.7+ | 2004 03 31 | 704 | 0.4+ | 1.1+ | 2006 10 17 | G96 | 0.5+ | 0.1− |
| 2001 10 24 | 704 | 0.8+ | 0.8+ | 2004 03 31 | 704 | 0.4+ | 0.5+ | 2006 10 29 | G96 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 1.0+ | 0.8+ | 2004 03 31 | 704 | 0.2+ | 0.5+ | 2006 10 29 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2004 04 09 | E12 | 1.2− | 0.6+ | 2006 10 29 | G96 | 0.1− | 0.1− |
| 2001 10 25 | 704 | 0.2− | 0.0 | 2004 04 09 | E12 | 0.8− | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.1− |
| 2001 10 25 | 704 | 0.5− | 0.1+ | 2004 04 09 | E12 | 0.7− | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.8− |
| 2001 10 25 | 704 | 0.0 | 0.3+ | 2004 04 09 | E12 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.9− | 0.1− |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2004 04 11 | 644 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.6− | 0.5− |
| 2001 10 25 | 644 | 0.3− | 1.0+ | 2004 04 11 | 644 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.1− | 1.2− |
| 2001 10 25 | 644 | 0.4− | 0.3+ | 2004 04 11 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2001 10 25 | 644 | 0.3− | 1.0+ | 2004 04 12 | 699 | 0.1+ | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 2001 10 25 | 704 | 1.3− | 0.8+ | 2004 04 12 | 699 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.0 | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 644 | 0.4− | 0.3+ | 2004 04 12 | 699 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2001 10 25 | 644 | 0.1− | 1.1+ | 2004 04 12 | 699 | 0.3− | 0.6+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.5− | 0.0 | 2004 04 16 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.4+ | 0.5− | 2004 04 16 | 704 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2004 04 16 | 704 | 0.0 | 0.5+ | 2006 11 27 | 704 | 0.4+ | 0.3+ |
| 2001 11 20 | 704 | 0.6− | 0.3− | 2004 04 16 | 704 | 0.0 | 0.1− | 2006 11 27 | 704 | 0.1+ | 1.3+ |
| 2001 11 20 | 704 | 0.6− | 0.2− | 2004 04 16 | 704 | 0.3− | 0.0 | 2006 11 27 | 704 | 0.4+ | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.4− | 2004 04 19 | 704 | 1.2+ | 0.4+ | | | | |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2004 04 19 | 704 | (1.5+ | 0.6+) | | | | |

**(140235)∗ 2001 SF$_{247}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.30351 | | (2000.0) | | | |
| $n$ | 0.18612081 | $\omega$ | 200.32752 | | +0.70898650 | +0.70436261 |
| $a$ | 3.0381281 | $\Omega$ | 114.84384 | | −0.64161302 | +0.66473607 |
| $e$ | 0.1371592 | $i$ | 2.19816 | | −0.29269589 | +0.24899655 |
| $P$ | 5.30 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.0 | 0.7+ | 2001 10 20 | 704 | 0.3− | 0.9− | 2006 09 16 | 699 | 0.6− | 1.4− |
| 1993 01 29 | 691 | 0.0 | 0.2+ | 2001 10 23 | 704 | 0.5− | 0.4− | 2006 09 16 | 699 | 0.2− | 0.4+ |
| 1993 01 29 | 691 | 0.1+ | 0.9+ | 2001 10 23 | 704 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.3− | 1.1+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 10 23 | 704 | 1.0+ | 0.6− | 2006 09 16 | 699 | (0.1+ | 2.3+) |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 10 23 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 1.1+ |
| 1999 03 22 | 645 | 0.1+ | 0.2+ | 2001 10 23 | 704 | 1.1+ | 1.0+ | 2006 09 19 | 703 | 0.3+ | 0.2+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 10 24 | 704 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.6+ |
| 2001 09 19 | 704 | (0.1− | 1.8+) | 2001 10 24 | 704 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2001 10 24 | 704 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.0 | 0.6− |
| 2001 09 19 | 704 | 0.7− | 0.8+ | 2001 10 24 | 704 | 0.2− | 0.8− | 2006 09 19 | 703 | 0.9+ | 0.4+ |
| 2001 09 19 | 704 | 0.9− | 0.5+ | 2001 10 24 | 704 | 1.2+ | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2001 10 25 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.6− | 0.8+ |
| 2001 09 21 | 704 | 0.3+ | 0.9+ | 2001 10 25 | 704 | 0.5− | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.8+ | 2001 10 25 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.5− | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2001 10 25 | 704 | (1.8− | 0.7+) | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.3− | 1.0+ | 2001 11 20 | 704 | 0.4− | 0.1− | 2006 09 22 | 704 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.9− | 0.6+ | 2001 11 20 | 704 | 0.5− | 0.4− | 2006 09 22 | 704 | 0.1− | 1.0+ |
| 2001 09 27 | 704 | 0.5+ | 1.0+ | 2001 11 20 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.6+ |
| 2001 09 27 | 704 | 0.5+ | 1.0+ | 2001 11 20 | 704 | 0.3+ | 0.6− | 2006 09 22 | 704 | 0.4+ | 0.1+ |
| 2001 09 27 | 704 | 1.0+ | 1.1+ | 2001 11 21 | 704 | 0.4+ | 1.1+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2001 10 07 | 644 | 0.8− | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2001 10 07 | 644 | 0.4− | 0.8+ | 2001 11 21 | 704 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2001 10 07 | 644 | 0.6− | 0.6+ | 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 2001 10 13 | 704 | 0.5− | 0.6+ | 2005 03 17 | G96 | 0.7− | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.5+ |
| 2001 10 13 | 704 | 0.9− | 0.6− | 2005 03 17 | G96 | 0.9− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.0 |
| 2001 10 13 | 704 | 0.2+ | 0.7+ | 2005 03 17 | G96 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.4+ | 1.3− |
| 2001 10 13 | 704 | 0.5+ | 0.2+ | 2005 03 17 | G96 | 0.9− | 0.3+ | 2006 10 16 | 703 | (0.1− | 1.5+) |
| 2001 10 14 | 704 | 0.2− | 0.2− | 2005 05 19 | G96 | 0.6− | 0.3+ | 2006 10 16 | 703 | 1.4+ | 0.7+ |
| 2001 10 14 | 704 | 0.1− | 0.5+ | 2005 05 19 | G96 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2001 10 14 | 704 | 0.5− | 0.2− | 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.9− |
| 2001 10 17 | 704 | (0.3− | 2.8+) | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.5− | 0.2− |
| 2001 10 17 | 704 | (0.2+ | 1.8+) | 2005 06 01 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.3− |
| 2001 10 17 | 704 | (0.8− | 3.0+) | 2005 06 01 | 691 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2001 10 20 | 704 | 0.4− | 0.5− | 2005 06 01 | 691 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.5+ |
| 2001 10 20 | 704 | 0.4− | 0.4− | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.3+ |
| 2001 10 20 | 704 | (1.2− | 1.9−) | 2005 06 06 | 691 | 0.4+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2001 10 20 | 704 | 1.1− | 0.8− | 2005 06 06 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.5+ | 0.4+ |

**(140236)∗ 2001 SE$_{248}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 214.23978 | | (2000.0) | | | |
| $n$ | 0.24538833 | $\omega$ | 224.48651 | | −0.33541048 | +0.93458971 |
| $a$ | 2.5267762 | $\Omega$ | 26.59509 | | −0.77363573 | −0.20147680 |
| $e$ | 0.0416816 | $i$ | 15.34872 | | −0.53757564 | −0.29317090 |
| $P$ | 4.02 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | (2.3+ | 1.7−) | 2001 10 21 | 704 | 0.6− | 1.2− | 2005 10 06 | 703 | 0.2+ | 1.0− |
| 1999 02 18 | 704 | 0.8+ | 1.7+ | 2001 10 24 | 704 | 0.1+ | 1.7+ | 2005 10 06 | 703 | 1.5+ | 0.0 |
| 1999 02 18 | 704 | 0.4− | 0.9+ | 2001 10 24 | 704 | 0.0 | 0.3+ | 2005 10 06 | 703 | 0.2− | 0.0 |
| 1999 02 18 | 704 | 1.3+ | 1.4+ | 2001 10 24 | 704 | 0.5+ | 0.4− | 2005 10 06 | 703 | 0.4− | 1.2+ |
| 1999 02 18 | 704 | 0.6+ | 0.2− | 2001 10 24 | 704 | 0.7+ | 0.1+ | 2005 10 06 | 691 | 0.1− | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2001 10 24 | 704 | 0.1− | 0.9− | 2005 10 06 | 691 | 0.6− | 0.5+ |
| 2001 09 19 | 704 | 0.2− | 1.2− | 2003 02 01 | 645 | 0.0 | 0.1− | 2005 10 06 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2003 02 01 | 645 | 0.0 | 0.1− | 2005 10 12 | 152 | 0.4+ | 0.6− |
| 2001 09 19 | 704 | 0.4+ | 0.4− | 2003 02 01 | 645 | 0.1− | 0.1− | 2005 10 12 | 152 | 1.1+ | 1.3− |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2003 02 01 | 645 | 0.1− | 0.1− | 2005 10 12 | 152 | 0.1+ | 1.0− |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2003 03 03 | 644 | 0.4+ | 1.6+ | 2005 10 12 | 152 | 0.6+ | 1.4− |
| 2001 09 21 | 704 | 0.7+ | 0.5− | 2003 03 03 | 644 | 0.5+ | 1.1+ | 2005 10 25 | 691 | 0.3− | 0.1− |
| 2001 09 21 | 704 | 0.7+ | 0.0 | 2003 03 03 | 644 | 0.2− | 1.2+ | 2005 10 25 | 691 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | 0.9+ | 0.6− | 2005 08 30 | 644 | 0.4+ | 0.2+ | 2005 10 25 | 691 | 0.3− | 0.4+ |
| 2001 09 21 | 704 | 0.6+ | 0.2− | 2005 08 30 | 644 | 0.1− | 0.1+ | 2005 10 29 | 703 | 0.4− | 0.8− |
| 2001 09 21 | 704 | 0.7+ | 0.3+ | 2005 08 30 | 644 | 0.3+ | 0.1+ | 2005 10 29 | 703 | 0.5+ | 0.9− |
| 2001 09 21 | 704 | 0.3+ | 1.4+ | 2005 09 25 | 691 | 0.0 | 0.2+ | 2005 10 29 | 703 | 0.2+ | 0.4+ |
| 2001 09 21 | 704 | 0.3− | 0.9− | 2005 09 25 | 691 | 0.1− | 0.2+ | 2005 10 29 | 703 | 1.1− | 0.5+ |
| 2001 09 21 | 704 | (3.3+ | 0.7+) | 2005 09 25 | 691 | 0.0 | 0.2+ | 2005 11 04 | 704 | 0.7+ | 0.1− |
| 2001 10 19 | 644 | 0.0 | 0.5+ | 2005 10 01 | 691 | 0.0 | 0.4+ | 2005 11 04 | 704 | 0.3− | 0.7− |
| 2001 10 19 | 644 | 0.2+ | 0.5+ | 2005 10 01 | 691 | 0.2− | 0.4+ | 2005 11 04 | 704 | 0.6− | 0.3+ |
| 2001 10 19 | 644 | 0.3+ | 0.5+ | 2005 10 01 | 691 | 0.0 | 0.4+ | 2005 11 06 | G96 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.3+ | 1.1− | 2005 10 02 | G96 | 0.3− | 0.3− | 2005 11 06 | G96 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.0 | 1.0− | 2005 10 02 | G96 | 0.2− | 0.3− | 2005 11 06 | G96 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.3− | 1.4− | 2005 10 02 | G96 | 0.1− | 0.4− | 2005 11 06 | G96 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.5− | 0.7− | 2005 10 02 | G96 | 0.1+ | 0.4− | | | | |

**(140237)∗ 2001 SG$_{248}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.02792 | | (2000.0) | | | |
| $n$ | 0.18368985 | $\omega$ | 10.75675 | | +0.74292418 | −0.66179330 |
| $a$ | 3.0648739 | $\Omega$ | 31.41803 | | +0.59894430 | +0.59020896 |
| $e$ | 0.0777640 | $i$ | 11.11208 | | +0.29888023 | +0.46225859 |
| $P$ | 5.37 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 10 21 | 704 | 0.4+ | 0.6− | 2003 01 13 | 704 | 1.1− | 0.4+ |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2001 10 21 | 704 | 0.0 | 0.4+ | 2003 01 13 | 704 | 0.3− | 0.3− |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2001 10 21 | 704 | 0.7+ | 1.2− | 2003 01 31 | 699 | 1.9+ | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.3+ | 0.1+ | 2003 01 31 | 699 | 1.0+ | 1.4+ |
| 2001 09 19 | 704 | 0.2− | 0.4− | 2001 10 21 | 704 | 0.3− | 0.1− | 2003 01 31 | 699 | 1.6+ | 1.9+ |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2001 10 21 | 704 | 0.4+ | 0.5+ | 2003 01 31 | 699 | 1.1+ | 1.4+ |
| 2001 09 21 | 704 | 0.8− | 1.4+ | 2001 10 21 | 704 | 0.1+ | 1.0− | 2004 03 16 | 691 | 0.4+ | 0.5+ |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2001 10 21 | 704 | 0.8+ | 0.8+ | 2004 03 16 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 0.6+ | 0.6− | 2001 10 23 | 704 | 0.8+ | 0.1+ | 2004 03 16 | 691 | 0.2+ | 0.6+ |
| 2001 09 21 | 704 | 0.7− | 0.4− | 2001 10 23 | 704 | 0.9+ | 0.4+ | 2004 03 23 | 691 | 0.3+ | 0.3+ |
| 2001 09 21 | 704 | 0.4+ | 0.5− | 2001 10 23 | 704 | 0.7+ | 0.4+ | 2004 03 23 | 691 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 1.5+ | 2001 10 23 | 704 | 0.9+ | 0.5+ | 2004 03 23 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2001 10 23 | 704 | 0.7+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.6+ |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.5− | 0.4+ | 2006 08 22 | 644 | 0.5− | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 0.9+ | 2001 10 24 | 704 | 0.3− | 0.8+ | 2006 08 22 | 644 | 0.4− | 0.4+ |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2001 10 24 | 704 | 0.1− | 0.7+ | 2006 08 30 | 699 | 0.4+ | 1.6+ |
| 2001 09 21 | 704 | 0.5+ | 0.6− | 2001 10 24 | 704 | 0.2− | 0.6+ | 2006 08 30 | 699 | 1.3+ | 0.8+ |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2001 10 24 | 704 | 0.3− | 0.4+ | 2006 08 30 | 699 | 0.3− | 0.7+ |
| 2001 09 26 | 704 | 0.2− | 0.9+ | 2001 10 26 | 704 | 0.4+ | 0.1+ | 2006 08 30 | 699 | 0.7+ | 0.1+ |
| 2001 09 26 | 704 | 0.3+ | 1.1+ | 2001 10 26 | 704 | 0.2− | 0.1− | 2006 08 30 | F84 | 0.1− | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.1− | 1.2− | 2001 10 26 | 704 | 0.7+ | 0.2− | 2006 08 30 | F84 | 0.9− | 0.4− | |
| 2001 10 11 | 644 | 0.4+ | 0.2+ | 2001 11 09 | 704 | 0.4+ | 0.7− | 2006 08 30 | F84 | 0.4+ | 0.5+ | |
| 2001 10 11 | 644 | 0.4+ | 0.3+ | 2001 11 09 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.6− | 0.4+ | |
| 2001 10 11 | 644 | 0.2+ | 0.4+ | 2001 11 09 | 704 | 0.2− | 0.4− | 2006 09 14 | 703 | 1.0− | 0.0 | |
| 2001 10 13 | 704 | 0.0 | 0.7+ | 2001 11 10 | 704 | 1.2+ | 0.9+ | 2006 09 14 | 703 | 0.7− | 0.4+ | |
| 2001 10 13 | 704 | 0.7− | 0.4+ | 2001 11 10 | 704 | 1.2+ | 0.1− | 2006 09 14 | 703 | 0.8− | 0.7+ | |
| 2001 10 13 | 704 | 1.1+ | 0.9− | 2001 11 10 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.2+ | |
| 2001 10 13 | 704 | 0.4+ | 0.9+ | 2001 11 10 | 704 | 0.1+ | 1.2− | 2006 09 26 | 703 | 0.3− | 0.0 | |
| 2001 10 17 | 704 | 0.7− | 0.1+ | 2001 11 15 | 691 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.4− | 0.5+ | |
| 2001 10 17 | 704 | 0.2+ | 0.6+ | 2001 11 15 | 691 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.5− | 0.9+ | |
| 2001 10 17 | 704 | 0.6− | 0.2+ | 2001 11 15 | 691 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.5+ | 0.1− | |
| 2001 10 17 | 704 | 0.1+ | 0.0 | 2001 11 19 | 704 | 1.2− | 0.6+ | 2006 09 26 | 703 | 1.2+ | 0.1− | |
| 2001 10 17 | 704 | 0.4− | 0.0 | 2001 11 19 | 704 | 1.0− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.3− | |
| 2001 10 17 | 644 | 0.1− | 0.0 | 2001 11 19 | 704 | 1.0− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.0 | |
| 2001 10 17 | 644 | 0.3− | 0.0 | 2001 11 19 | 704 | 0.8− | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.7− | |
| 2001 10 17 | 644 | 0.2− | 0.2+ | 2001 11 21 | 704 | 0.4− | 0.5− | 2006 09 27 | 703 | 1.0− | 0.4− | |
| 2001 10 20 | 704 | 1.1− | 0.4+ | 2001 11 21 | 704 | 0.3− | 1.6− | 2006 09 27 | 703 | 0.3− | 0.3+ | |
| 2001 10 20 | 704 | 0.4− | 0.1− | 2001 11 21 | 704 | 1.9− | 0.4− | 2006 09 27 | 703 | 0.2− | 0.3+ | |
| 2001 10 20 | 704 | 1.0− | 0.5+ | 2001 11 21 | 704 | 1.0− | 0.5− | 2006 10 02 | 703 | 0.3+ | 0.6+ | |
| 2001 10 20 | 704 | 1.0− | 0.4− | 2001 11 21 | 704 | (0.3− | 2.1−) | 2006 10 02 | 703 | 0.3+ | 0.0 | |
| 2001 10 20 | 704 | 0.5− | 0.2− | 2003 01 13 | 704 | 1.0− | 0.0 | 2006 10 02 | 703 | 0.2+ | 0.2+ | |
| 2001 10 21 | 704 | 1.0− | 0.1− | 2003 01 13 | 704 | 0.9− | 0.4− | 2006 10 02 | 703 | 1.4− | 0.2+ | |
| 2001 10 21 | 704 | 0.1+ | 0.2− | 2003 01 13 | 704 | 0.5− | 0.5− | | | | | |

**(140238)∗ 2001 SJ$_{248}$ = 1998 BJ$_{38}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20366)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.88475 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18152957 | $\omega$ | 124.21070 | | −0.52715915 | +0.84919336 | |
| $a$ | 3.0891414 | $\Omega$ | 113.94586 | | −0.79044729 | −0.47654901 | |
| $e$ | 0.1236402 | $i$ | 1.95678 | | −0.31192357 | −0.22753390 | |
| $P$ | 5.43 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 27 | 691 | 0.1+ | 0.1+ | 2001 10 23 | 704 | 0.1+ | 0.8+ | 2006 08 27 | 691 | 0.1− | 0.3+ | |
| 1990 10 27 | 691 | 0.4− | 0.3− | 2001 10 23 | 704 | 1.3+ | 1.3− | 2006 08 27 | 691 | 0.3− | 0.2+ | |
| 1990 10 27 | 691 | 0.2+ | 0.0 | 2001 10 24 | 704 | 0.8− | 1.5+ | 2006 09 15 | 691 | 0.3− | 0.2+ | |
| 1998 01 29 | 691 | 0.6− | 0.3− | 2001 10 24 | 704 | 0.4+ | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.7− | |
| 1998 01 29 | 691 | 0.4− | 0.2− | 2001 10 24 | 704 | 0.9+ | 0.5− | 2006 09 15 | 691 | 0.1− | 0.2+ | |
| 1998 01 29 | 691 | 0.3− | 0.1− | 2001 10 24 | 704 | 0.1− | 0.8− | 2006 09 18 | 699 | 0.1− | 0.4− | |
| 1998 02 03 | 691 | 0.2+ | 0.1− | 2001 10 24 | 704 | 0.5+ | 0.3− | 2006 09 18 | 699 | (1.9+ | 0.7+) | |
| 1998 02 03 | 691 | 0.7+ | 0.3+ | 2001 11 20 | 704 | 0.0 | 1.3+ | 2006 09 18 | 699 | 0.5− | 0.1+ | |
| 1998 02 03 | 691 | 0.2− | 0.1+ | 2001 11 20 | 704 | 0.0 | 0.7+ | 2006 09 18 | 699 | 0.6+ | 0.9+ | |
| 2000 07 29 | 699 | 1.1+ | 1.6+ | 2001 11 20 | 704 | 1.4− | 0.4+ | 2006 09 20 | 704 | (2.2− | 0.1−) | |
| 2000 07 29 | 699 | 0.6+ | 1.6+ | 2001 11 20 | 704 | 0.6− | 0.8+ | 2006 09 20 | 704 | 1.0− | 1.4+ | |
| 2000 07 29 | 699 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.3+ | 0.5− | 2006 09 20 | 704 | 0.6+ | 1.2− | |
| 2000 07 29 | 699 | 0.8− | 0.7+ | 2001 11 21 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.4+ | |
| 2000 08 07 | 608 | 0.1− | 0.1− | 2001 11 21 | 704 | 0.5− | 1.0+ | 2006 09 26 | 704 | (1.6− | 1.1+) | |
| 2000 08 07 | 608 | 0.2− | 0.0 | 2001 11 21 | 704 | 1.0− | 1.1+ | 2006 09 26 | 704 | 0.4− | 0.4− | |
| 2000 08 07 | 608 | 0.3+ | 0.2− | 2001 11 21 | 704 | 0.6− | 1.0+ | 2006 09 26 | 704 | 0.5− | 0.8− | |
| 2000 08 24 | 704 | 0.4− | 0.5− | 2004 02 15 | 703 | 0.9− | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.2− | |
| 2000 08 24 | 704 | 0.8− | 0.3− | 2004 02 15 | 703 | 0.9+ | 0.6− | 2006 09 30 | 691 | (1.7+ | 1.1−) | |
| 2000 08 24 | 704 | 1.0+ | 0.6+ | 2004 02 15 | 703 | 1.4− | 0.2− | 2006 09 30 | 691 | 0.4+ | 0.1− | |
| 2001 09 19 | 704 | 0.9+ | 0.9+ | 2004 02 15 | 703 | 0.5− | 0.6− | 2006 09 30 | G96 | 0.2− | 0.2− | |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2004 02 16 | 333 | 0.7+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 1.0+ | |
| 2001 09 19 | 704 | 0.4+ | 0.3− | 2004 02 16 | 333 | 0.4+ | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.3− | |
| 2001 09 19 | 704 | 0.5+ | 0.6− | 2004 02 17 | 333 | 0.9+ | 0.7+ | 2006 09 30 | G96 | 0.4− | 0.1− | |
| 2001 09 19 | 704 | 0.0 | 0.4− | 2004 02 17 | 333 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.1+ | |
| 2001 09 21 | 704 | 0.9+ | 0.2+ | 2004 02 20 | 608 | 0.6+ | 0.8+ | 2006 09 30 | G96 | 0.3− | 0.2− | |
| 2001 09 21 | 704 | 0.3+ | 0.8+ | 2004 02 20 | 608 | 0.7+ | 0.9+ | 2006 09 30 | 703 | 0.4+ | 1.0+ | |
| 2001 09 21 | 704 | 0.8+ | 0.2+ | 2004 02 20 | 608 | 0.6+ | 1.0+ | 2006 09 30 | 703 | 0.0 | 0.8+ | |
| 2001 09 21 | 704 | 0.8+ | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | |
| 2001 10 20 | 704 | 0.1− | 0.2+ | 2004 02 23 | 704 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− | |
| 2001 10 20 | 704 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2− | |
| 2001 10 20 | 704 | 0.0 | 0.8− | 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 10 20 | G96 | 0.3+ | 0.4− | |
| 2001 10 20 | 704 | 0.1− | 0.0 | 2004 02 23 | 704 | 1.1+ | 0.8+ | 2006 10 20 | G96 | 0.1− | 0.2− | |
| 2001 10 20 | 704 | 0.3− | 0.3− | 2005 01 20 | 809 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.4− | |
| 2001 10 23 | 704 | 0.3+ | 0.1+ | 2005 01 20 | 809 | 0.7− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.3− | |
| 2001 10 23 | 704 | 0.3− | 0.8+ | 2005 01 20 | 809 | 0.4− | 0.2+ | | | | | |
| 2001 10 23 | 704 | 0.4− | 0.1− | 2006 08 27 | 691 | 0.3− | 0.1+ | | | | | |

**(140239)∗ 2001 SS$_{248}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.28700 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20876857 | $\omega$ | 228.39339 | | −0.13503161 | +0.98865278 | |
| $a$ | 2.8142282 | $\Omega$ | 34.01413 | | −0.87049311 | −0.08663816 | |
| $e$ | 0.0225849 | $i$ | 6.75711 | | −0.47329505 | −0.12271723 | |
| $P$ | 4.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.8− | 0.7+ | 2005 08 12 | 735 | (2.1− | 1.9−) | |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.1− | 0.5+ | 2005 08 12 | 735 | 0.6− | 1.2− | |
| 2001 09 19 | 704 | 0.8− | 0.2− | 2001 10 21 | 704 | 0.7+ | 0.6+ | 2005 08 12 | 735 | 0.2+ | 0.2+ | |
| 2001 09 19 | 704 | 0.8− | 0.0 | 2001 10 23 | 704 | 0.6− | 0.2− | 2005 09 01 | 644 | 0.4− | 0.7+ | |
| 2001 09 19 | 704 | 0.8− | 0.9+ | 2001 10 23 | 704 | 0.3− | 0.0 | 2005 09 01 | 644 | 0.4− | 0.7+ | |
| 2001 09 19 | 704 | 0.9− | 0.9− | 2001 10 23 | 704 | 1.1− | 0.0 | 2005 09 01 | 644 | 0.5− | 0.4+ | |
| 2001 09 19 | 704 | 1.2− | 0.1− | 2001 10 23 | 704 | 0.9− | 0.6− | 2006 09 27 | G96 | 0.5+ | 0.3− | |
| 2001 09 21 | 704 | 0.0 | 1.2− | 2001 11 16 | 291 | 1.1+ | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.3− | |
| 2001 09 21 | 704 | 0.6− | 0.3+ | 2001 11 16 | 291 | 0.4+ | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.1− | |
| 2001 09 21 | 704 | 1.1− | 0.0 | 2001 11 16 | 291 | 1.0+ | 0.4+ | 2006 09 27 | G96 | 0.5+ | 0.1− | |
| 2001 09 21 | 704 | 0.3+ | 0.1− | 2004 04 24 | 691 | 0.4+ | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 04 24 | 691 | 0.3+ | 0.7+ | 2006 10 17 | 691 | 0.2+ | 0.4+ | |
| 2001 09 21 | 704 | 0.0 | 0.0 | 2004 04 24 | 691 | 0.5+ | 0.7+ | 2006 10 17 | 691 | 0.0 | 0.3+ | |
| 2001 09 21 | 704 | (0.9− | 1.8−) | 2005 07 26 | 644 | 0.0 | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.3+ | |
| 2001 09 21 | 704 | 0.9− | 0.7+ | 2005 07 26 | 644 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.4+ | |
| 2001 09 21 | 704 | (1.7− | 0.2+) | 2005 07 26 | 644 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.2+ | |
| 2001 10 20 | 704 | 0.2− | 0.8+ | 2005 07 26 | 644 | 0.1− | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.1+ | |
| 2001 10 20 | 704 | 0.4− | 0.6− | 2005 07 26 | 644 | 0.1+ | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.0 | |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2005 07 26 | 644 | 0.6+ | 1.1+ | 2006 11 13 | 691 | 0.2− | 0.1− | |
| 2001 10 20 | 704 | 0.1+ | 1.0+ | 2005 08 07 | 735 | 0.0 | 0.8− | 2006 11 16 | 691 | 0.3− | 0.1− | |
| 2001 10 20 | 704 | 0.2+ | 0.7+ | 2005 08 07 | 735 | 0.5+ | 0.9− | 2006 11 16 | 691 | 0.2− | 0.1+ | |
| 2001 10 21 | 704 | 0.7− | 0.8+ | 2005 08 07 | 735 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.0 | |
| 2001 10 21 | 704 | 0.9− | 0.8+ | 2005 08 07 | 735 | 1.0− | 0.2− | | | | | |

**(140240)∗ 2001 SW$_{248}$ = 1996 VV$_{12}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20366)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.92334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19117922 | $\omega$ | 334.13965 | | +0.94515146 | −0.32486878 | |
| $a$ | 2.9842985 | $\Omega$ | 44.86240 | | +0.30739898 | +0.84960943 | |
| $e$ | 0.0949594 | $i$ | 2.75428 | | +0.11042907 | +0.41548056 | |
| $P$ | 5.16 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 02 | 691 | 0.4+ | 0.5+ | 2001 10 13 | 704 | 1.3+ | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.0 | |
| 1994 05 02 | 691 | 0.2− | 0.1+ | 2001 10 13 | 704 | (2.6+ | 0.6+) | 2001 11 21 | 704 | 0.0 | 0.7− | |
| 1994 05 02 | 691 | 0.1+ | 0.1+ | 2001 10 14 | 699 | 0.6− | 1.4+ | 2001 11 21 | 704 | 0.0 | 0.1− | |
| 1996 11 05 | 691 | 0.1+ | 0.2− | 2001 10 14 | 699 | 1.1− | 0.2− | 2001 11 21 | 704 | 0.1− | 0.2− | |
| 1996 11 05 | 691 | 0.3+ | 0.0 | 2001 10 14 | 699 | 0.1− | 0.6+ | 2001 11 21 | 704 | 0.3− | 0.5− | |
| 1996 11 05 | 691 | 0.1+ | 0.0 | 2001 10 14 | 699 | 0.8− | 0.4+ | 2004 03 27 | 704 | 0.6+ | 0.5+ | |
| 1996 11 10 | 691 | 0.6− | 0.1− | 2001 10 17 | 704 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.2+ | 0.3− | |
| 1996 11 10 | 691 | 0.3− | 0.1+ | 2001 10 17 | 704 | 0.4+ | 1.2+ | 2004 03 27 | 704 | 0.8+ | 0.9+ | |
| 1996 11 10 | 691 | 0.4− | 0.0 | 2001 10 17 | 704 | 1.3− | 0.1− | 2004 03 27 | 704 | (1.9+ | 0.1+) | |
| 1996 11 17 | 691 | 0.2+ | 0.0 | 2001 10 17 | 704 | 0.6− | 0.2+ | 2004 04 20 | 691 | 0.3+ | 0.6+ | |
| 1996 11 17 | 691 | 0.1+ | 0.1+ | 2001 10 17 | 704 | 0.6− | 0.3+ | 2004 04 20 | 691 | 0.4+ | 1.0+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.2− | 0.3− | 2001 10 17 | 644 | 0.3+ | 1.3+ | 2004 04 20 | 691 | 0.2+ | 0.3+ |
| 1999 05 16 | 691 | 0.4+ | 1.1+ | 2001 10 17 | 644 | (0.6+ | 1.7+) | 2006 08 24 | 644 | 0.1− | 0.3− |
| 1999 05 16 | 691 | 0.5+ | 0.9+ | 2001 10 17 | 644 | 0.0 | 1.2+ | 2006 08 24 | 644 | 0.0 | 0.4− |
| 1999 05 16 | 691 | 0.2+ | 0.9+ | 2001 10 20 | 704 | 0.9− | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | (1.0− | 2.2−) | 2001 10 20 | 704 | 0.8− | 0.3+ | 2006 09 12 | 703 | 1.2+ | 0.3+ |
| 2001 09 19 | 704 | (0.6− | 2.2−) | 2001 10 20 | 704 | 0.6− | 0.4+ | 2006 09 12 | 703 | 1.3− | 0.3− |
| 2001 09 19 | 704 | (0.7− | 2.9−) | 2001 10 20 | 704 | 0.4− | 0.5+ | 2006 09 12 | 703 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.9− | 1.3− | 2001 10 20 | 704 | 0.1+ | 1.4+ | 2006 09 12 | 703 | 0.7− | 0.5− |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2001 10 22 | 704 | (0.5− | 1.9+) | 2006 09 18 | 699 | 0.1+ | 0.6+ |
| 2001 09 21 | 704 | 0.9− | 0.0 | 2001 10 22 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2001 10 22 | 704 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.6+ | 2001 10 22 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.6− | 0.2− | 2001 10 22 | 704 | 0.2− | 1.0+ | 2006 09 20 | 704 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.2− | 1.0− | 2001 10 23 | 704 | 0.8− | 1.4+ | 2006 09 20 | 704 | 0.3+ | 0.3+ |
| 2001 09 21 | 704 | 0.7+ | 0.1− | 2001 10 23 | 704 | 0.6− | 1.3+ | 2006 09 20 | 704 | (1.7− | 0.2+) |
| 2001 09 21 | 704 | 1.0− | 0.2− | 2001 10 23 | 704 | 0.9− | 1.0+ | 2006 09 20 | 704 | 0.3− | 0.9+ |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2001 10 23 | 704 | 0.8− | 1.1+ | 2006 09 20 | 704 | 0.5− | 0.7− |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2001 10 23 | 704 | 0.7− | 0.9+ | 2006 09 25 | 691 | 0.3− | 0.4− |
| 2001 09 21 | 704 | 0.6− | 0.4+ | 2001 10 24 | 704 | (2.0− | 1.6+) | 2006 09 25 | 691 | 0.2− | 0.4− |
| 2001 09 21 | 704 | 0.9+ | 0.2− | 2001 10 24 | 704 | (2.1− | 1.5+) | 2006 09 25 | 691 | 0.4+ | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2001 10 24 | 704 | (1.2− | 1.8+) | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 1.2+ | 0.8− | 2001 10 24 | 704 | (2.4− | 1.4+) | 2006 10 01 | 704 | 0.0 | 0.4− |
| 2001 09 23 | 704 | 0.3+ | 0.3+ | 2001 10 24 | 704 | (1.8− | 2.0+) | 2006 10 01 | 704 | 1.0+ | 0.1− |
| 2001 09 23 | 704 | 0.3+ | 0.4+ | 2001 10 26 | 704 | 0.0 | 1.3+ | 2006 10 01 | 704 | 0.1+ | 0.6− |
| 2001 09 23 | 704 | 0.3+ | 0.4+ | 2001 10 26 | 704 | 0.8− | 0.6+ | 2006 10 01 | 704 | 0.1+ | 0.5+ |
| 2001 09 26 | 704 | 0.1+ | 0.1− | 2001 10 26 | 704 | 0.5− | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 09 26 | 704 | 0.1+ | 0.0 | 2001 10 26 | 704 | 0.3− | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2001 09 26 | 704 | 0.2+ | 0.0 | 2001 11 09 | 704 | 1.0− | 0.5+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2001 09 26 | 704 | 0.2+ | 0.2+ | 2001 11 09 | 704 | (1.6− | 0.0 ) | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2001 09 26 | 704 | 0.6+ | 0.1+ | 2001 11 09 | 704 | 1.1− | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 09 27 | 704 | 0.0 | 1.2+ | 2001 11 09 | 704 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.3− |
| 2001 09 27 | 704 | 0.2+ | 0.9+ | 2001 11 09 | 704 | 1.3− | 1.0+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2001 09 27 | 704 | 0.5− | 0.9+ | 2001 11 16 | 291 | 0.9+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2001 09 27 | 704 | 0.0 | 0.4+ | 2001 11 16 | 291 | 1.0+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2001 09 27 | 704 | 0.9+ | 0.7+ | 2001 11 16 | 291 | 1.3+ | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.6− |
| 2001 09 27 | 704 | (0.6− | 2.0+) | 2001 11 20 | 704 | 0.4− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2001 09 27 | 704 | 1.4− | 0.9+ | 2001 11 20 | 704 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2001 09 27 | 704 | 0.2− | 0.2− | 2001 11 20 | 704 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 10 13 | 704 | 0.2− | 0.2− | 2001 11 20 | 704 | 0.7− | 0.7− | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2001 10 13 | 704 | 0.5+ | 0.3− | 2001 11 20 | 704 | 0.7− | 0.3− | | | | |

**(140241)∗ 2001 SW$_{249}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.24578 | | (2000.0) | | | |
| $n$ | 0.20180301 | $\omega$ | 262.15208 | | +0.89508307 | +0.44325969 |
| $a$ | 2.8786197 | $\Omega$ | 71.52507 | | −0.38633385 | +0.82517418 |
| $e$ | 0.0867789 | $i$ | 2.92793 | | −0.22264871 | +0.35015484 |
| $P$ | 4.88 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 23 | 704 | 0.2+ | 0.7− | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 23 | 704 | 0.0 | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2001 10 23 | 704 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2001 10 23 | 704 | 0.4− | 1.2− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 704 | (1.5+ | 1.6−) | 2001 10 23 | 704 | 0.9− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2001 10 24 | 704 | (1.6+ | 0.5+) | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.3− | 2001 10 24 | 704 | (0.2+ | 2.0+) | 2006 10 21 | 644 | 1.0+ | 0.3+ |
| 2001 09 19 | 704 | 0.1+ | 0.7− | 2001 10 24 | 704 | 0.1− | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.5+ | 0.6+ | 2001 10 24 | 704 | (0.5+ | 2.3+) | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2002 12 28 | 291 | 0.7− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.9+ | 2002 12 28 | 291 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.5+ | 1.1+ | 2002 12 28 | 291 | 0.6− | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | (0.2− | 1.5+) | 2003 01 25 | 645 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2001 09 27 | 644 | 0.2− | 0.4+ | 2003 01 25 | 645 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2001 09 27 | 644 | 0.4− | 0.5+ | 2003 01 26 | 644 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2001 09 27 | 644 | 0.3− | 0.5+ | 2003 01 26 | 644 | 0.3+ | 0.8+ | 2006 10 31 | 691 | 0.3− | 0.3− |
| 2001 10 13 | 704 | 0.6+ | 0.9− | 2003 01 26 | 644 | 0.1− | 1.2+ | 2006 11 11 | 703 | 0.8+ | 0.1+ |
| 2001 10 13 | 704 | 0.1+ | 0.1+ | 2003 02 04 | 644 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 1.0+ | 1.9− |
| 2001 10 13 | 704 | 0.4+ | 0.1+ | 2003 02 04 | 644 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.7− |
| 2001 10 17 | 704 | 0.9+ | 1.3+ | 2003 02 04 | 644 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2001 10 17 | 704 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 10 17 | 704 | 0.1+ | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 10 18 | 644 | 0.6− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2001 10 18 | 644 | 0.6− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 10 18 | 644 | 1.2− | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2001 10 20 | 704 | 0.3− | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2001 10 20 | 704 | 0.3− | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.4+ | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.4+ | 0.0 | | | | |

**(140242)∗ 2001 SO$_{250}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.32669 | | (2000.0) | | | |
| $n$ | 0.28748958 | $\omega$ | 292.59671 | | +0.21570466 | −0.97574248 |
| $a$ | 2.2736380 | $\Omega$ | 144.88051 | | +0.91805929 | +0.18961106 |
| $e$ | 0.1990561 | $i$ | 3.72663 | | +0.33262386 | +0.10942692 |
| $P$ | 3.43 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.2+ | 0.2− | 2001 11 18 | 704 | 0.5− | 0.2+ | 2006 03 05 | 704 | 1.1+ | 0.7+ |
| 1996 03 27 | 691 | 0.6− | 0.8− | 2001 11 18 | 704 | 0.2− | 0.9+ | 2006 03 05 | 704 | 0.4+ | 0.3− |
| 1996 03 27 | 691 | 0.1+ | 0.4− | 2001 11 18 | 704 | 0.3− | 1.2+ | 2006 03 05 | 704 | (2.3+ | 0.8+) |
| 2001 09 19 | 704 | 0.2+ | 1.1+ | 2001 12 19 | 704 | 0.4− | 1.8+ | 2006 03 05 | 704 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.1− | 1.0+ | 2001 12 19 | 704 | 0.1+ | 0.5+ | 2006 03 05 | 704 | 0.9+ | 0.7+ |
| 2001 09 19 | 704 | 1.3− | 1.0+ | 2001 12 19 | 704 | 0.3− | 0.0 | 2006 03 06 | G96 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.8+ | 2003 03 31 | 691 | 0.2+ | 1.5+ | 2006 03 06 | G96 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2003 03 31 | 691 | 0.4+ | 1.4+ | 2006 03 06 | G96 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 1.2+ | 2003 03 31 | 691 | 0.1+ | 1.8+ | 2006 03 06 | G96 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2003 05 11 | 691 | 1.0+ | 0.8+ | 2006 03 06 | G96 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.4− | 0.8+ | 2003 05 11 | 691 | 0.1+ | 1.5+ | 2006 03 06 | G96 | 0.0 | 0.2+ |
| 2001 10 14 | 699 | 0.6+ | 0.2+ | 2003 05 11 | 691 | 0.2+ | 1.1+ | 2006 03 06 | G96 | 0.4− | 0.1+ |
| 2001 10 14 | 699 | 0.8+ | 1.0+ | 2006 01 04 | G96 | 0.4− | 0.0 | 2006 03 06 | G96 | 0.1− | 0.1+ |
| 2001 10 14 | 699 | 0.2− | 0.0 | 2006 01 04 | G96 | 0.5+ | 0.2− | 2006 03 08 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 699 | 0.1+ | 0.6+ | 2006 01 04 | G96 | 0.3+ | 0.3+ | 2006 03 08 | G96 | 0.9− | 0.0 |
| 2001 10 16 | 704 | 0.6− | 1.0+ | 2006 01 04 | G96 | 0.4− | 0.0 | 2006 03 08 | G96 | 0.1− | 0.2− |
| 2001 10 16 | 704 | 1.5− | 1.2+ | 2006 01 26 | G96 | 0.2+ | 0.1− | 2006 03 08 | G96 | 0.1+ | 0.0 |
| 2001 10 16 | 704 | 0.7− | 1.0+ | 2006 01 26 | G96 | 0.3+ | 0.1− | 2006 03 09 | G96 | 0.3− | 0.1+ |
| 2001 10 16 | 704 | 0.8− | 0.7+ | 2006 01 26 | G96 | 0.6+ | 0.0 | 2006 03 09 | G96 | 0.2− | 0.1+ |
| 2001 10 16 | 704 | 0.5− | 0.1+ | 2006 01 26 | G96 | 0.1+ | 0.0 | 2006 03 09 | G96 | 0.2− | 0.1+ |
| 2001 10 16 | 644 | 0.3− | 0.7+ | 2006 02 20 | 703 | 0.0 | 0.0 | 2006 03 09 | G96 | 0.2− | 0.1− |
| 2001 10 16 | 644 | 0.6− | 1.0+ | 2006 02 20 | 703 | 0.4+ | 1.4+ | 2006 04 07 | 691 | 0.1+ | 0.0 |
| 2001 10 16 | 644 | 0.6− | 0.9+ | 2006 02 20 | 703 | 0.7+ | 0.1+ | 2006 04 07 | 691 | 0.0 | 0.1− |
| 2001 11 15 | 644 | 0.4+ | 1.1+ | 2006 02 20 | 703 | 1.0− | 0.2− | 2006 04 07 | 691 | 0.1+ | 0.0 |
| 2001 11 15 | 644 | 0.3+ | 0.8+ | 2006 03 03 | 691 | 0.2+ | 0.4+ | 2006 05 05 | G96 | 0.1− | 0.1− |
| 2001 11 15 | 644 | 0.1+ | 1.3+ | 2006 03 03 | 691 | 0.1+ | 0.4+ | 2006 05 05 | G96 | 0.2− | 0.4− |
| 2001 11 18 | 704 | 0.1+ | 1.3+ | 2006 03 03 | 691 | 0.1+ | 0.3+ | 2006 05 05 | G96 | 0.3− | 0.3− |
| 2001 11 18 | 704 | 0.3− | 0.6+ | 2006 03 05 | 704 | 0.6+ | 0.5− | 2006 05 05 | G96 | 0.0 | 0.3− |

**(140243)∗ 2001 SP$_{250}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.36456 | | (2000.0) | | | |
| $n$ | 0.19136046 | $\omega$ | 237.42754 | | +0.16353043 | +0.97880093 |
| $a$ | 2.9824139 | $\Omega$ | 42.53984 | | −0.83293891 | +0.20396820 |
| $e$ | 0.0660047 | $i$ | 10.50904 | | −0.52864976 | −0.01859325 |
| $P$ | 5.15 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | (1.6+ | 1.3−) | 2001 10 24 | 704 | 0.1+ | 1.0− | 2004 04 20 | 704 | (2.1+ | 0.3+) | | | |
| 2001 09 17 | 704 | 0.3− | 1.1+ | 2001 10 24 | 704 | 0.3+ | 0.4− | 2004 04 20 | 704 | (2.2+ | 0.3+) | | | |
| 2001 09 17 | 704 | 0.1− | 0.5− | 2001 10 24 | 704 | 0.1− | 1.0− | 2004 04 20 | 704 | (0.6+ | 2.0+) | | | |
| 2001 09 17 | 704 | 1.0− | 1.1+ | 2001 10 24 | 704 | 0.1− | 0.5− | 2006 09 18 | 703 | 0.8− | 0.2− | | | |
| 2001 09 19 | 704 | 0.1+ | 1.0+ | 2001 10 24 | 704 | 0.1− | 0.6− | 2006 09 18 | 703 | 1.4− | 0.1+ | | | |
| 2001 09 19 | 704 | 0.7+ | 0.2+ | 2001 11 20 | 704 | 0.8+ | 0.1− | 2006 09 18 | 703 | 0.3− | 0.3+ | | | |
| 2001 09 19 | 704 | 0.4+ | 0.1− | 2001 11 20 | 691 | 0.1− | 0.7− | 2006 09 18 | 703 | 0.9− | 0.4+ | | | |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2001 11 20 | 704 | 0.9+ | 0.1+ | 2006 09 21 | 699 | (0.4− | 1.9−) | | | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2001 11 20 | 691 | 0.2− | 0.2− | 2006 09 21 | 699 | (1.6− | 0.4−) | | | |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2001 11 20 | 704 | 1.1+ | 0.4+ | 2006 09 21 | 699 | 0.8− | 0.8+ | | | |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2001 11 20 | 691 | 0.4− | 0.2− | 2006 09 21 | 699 | 0.2− | 0.5+ | | | |
| 2001 09 21 | 704 | 0.9+ | 0.2− | 2001 11 20 | 704 | 0.6+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.7+ | | | |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2001 11 20 | 704 | 0.4+ | 0.2− | 2006 09 25 | 699 | 0.2− | 0.4− | | | |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.4+ | | | |
| 2001 09 26 | 704 | 0.3+ | 0.6− | 2001 11 21 | 704 | 0.7+ | 0.1− | 2006 09 25 | 699 | (0.8+ | 3.0+) | | | |
| 2001 09 26 | 704 | (2.0+ | 0.2+) | 2001 11 21 | 704 | 0.4+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.3+ | | | |
| 2001 09 26 | 704 | 0.5+ | 0.3− | 2001 11 21 | 704 | 0.9+ | 1.1+ | 2006 09 28 | 691 | 0.0 | 0.3+ | | | |
| 2001 09 26 | 704 | 0.1− | 0.2− | 2001 11 21 | 704 | 1.0+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.4+ | | | |
| 2001 09 26 | 704 | 0.0 | 0.8− | 2003 01 10 | 704 | 0.7+ | 0.7− | 2006 10 02 | 691 | 0.2+ | 0.2+ | | | |
| 2001 10 17 | 704 | 0.8− | 0.6+ | 2003 01 10 | 704 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.0 | | | |
| 2001 10 17 | 704 | 0.7− | 0.7+ | 2003 01 10 | 704 | 0.8+ | 0.2− | 2006 10 02 | 691 | 0.2+ | 1.0+ | | | |
| 2001 10 17 | 704 | 0.6− | 0.2− | 2003 01 10 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.7− | | | |
| 2001 10 17 | 704 | 0.5− | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.4− | | | |
| 2001 10 17 | 704 | 1.4− | 1.0− | 2004 03 15 | 704 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.0 | | | |
| 2001 10 18 | 644 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.0 | 1.1+ | 2006 10 16 | 703 | 0.1− | 1.0− | | | |
| 2001 10 18 | 644 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.2− | | | |
| 2001 10 18 | 644 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.2− | | | |
| 2001 10 20 | 704 | 0.1− | 0.3− | 2004 03 21 | 699 | 0.6− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.4− | | | |
| 2001 10 20 | 704 | 1.0− | 0.8− | 2004 03 21 | 699 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.5+ | 0.0 | | | |
| 2001 10 20 | 704 | 0.9+ | 0.3+ | 2004 03 21 | 699 | 0.6+ | 1.4+ | 2006 10 22 | 703 | 0.0 | 0.3+ | | | |
| 2001 10 20 | 704 | 0.5+ | 0.3+ | 2004 03 21 | 699 | 0.9+ | 0.7+ | 2006 10 22 | 703 | 1.0− | 0.5− | | | |
| 2001 10 20 | 704 | 1.1+ | 0.8+ | 2004 03 23 | 704 | (0.6+ | 1.9+) | 2006 10 22 | 703 | 1.5− | 0.3+ | | | |
| 2001 10 20 | 704 | (1.7+ | 0.1−) | 2004 03 23 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 703 | 0.4+ | 1.4− | | | |
| 2001 10 20 | 704 | 1.4− | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.8− | | | |
| 2001 10 20 | 704 | (1.7+ | 1.0+) | 2004 03 23 | 704 | (0.2+ | 1.6+) | 2006 11 11 | 703 | 1.0+ | 0.6+ | | | |
| 2001 10 20 | 704 | 0.6+ | 1.0+ | 2004 03 23 | 704 | 0.5+ | 0.6+ | 2006 11 11 | 703 | (2.8− | 0.7−) | | | |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2004 03 28 | 703 | 0.5+ | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.5− | | | |
| 2001 10 23 | 704 | 0.1− | 0.3+ | 2004 03 28 | 703 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.6− | | | |
| 2001 10 23 | 704 | 0.4− | 0.1+ | 2004 03 28 | 703 | 0.3− | 0.7+ | 2006 11 23 | G96 | 0.5− | 1.5+ | | | |
| 2001 10 23 | 704 | 0.4− | 0.3+ | 2004 03 28 | 703 | 0.5+ | 0.3+ | | | | | | | |
| 2001 10 23 | 704 | 0.5− | 0.3+ | 2004 04 20 | 704 | 1.1+ | 0.7− | | | | | | | |

**(140244)∗ 2001 SA$_{251}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.19087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18862475 | $\omega$ | 257.86999 | | +0.84001495 | −0.54139701 | |
| $a$ | 3.0111815 | $\Omega$ | 134.89602 | | +0.51527121 | +0.77552328 | |
| $e$ | 0.1772155 | $i$ | 2.87697 | | +0.16991313 | +0.32473515 | |
| $P$ | 5.23 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 691 | 0.0 | 0.3− | 2001 10 23 | 704 | 0.7− | 0.6− | 2006 09 15 | 291 | 0.2− | 0.2+ | | | |
| 1998 03 20 | 691 | 0.1− | 0.3− | 2001 10 23 | 704 | 0.2+ | 0.7− | 2006 09 22 | 704 | 0.5+ | 0.4− | | | |
| 1998 03 20 | 691 | 0.2− | 0.3− | 2001 10 24 | 704 | 0.9− | 0.6− | 2006 09 22 | 704 | 0.5+ | 0.0 | | | |
| 2001 09 19 | 704 | 1.0+ | 1.3− | 2001 10 24 | 704 | 1.1− | 0.0 | 2006 09 22 | 704 | 0.6+ | 0.7+ | | | |
| 2001 09 19 | 704 | 0.4+ | 0.8− | 2001 10 24 | 704 | 0.8− | 0.8− | 2006 09 22 | 704 | 0.6+ | 0.5+ | | | |
| 2001 09 19 | 704 | 0.0 | 1.3− | 2001 10 24 | 704 | 1.0− | 0.8− | 2006 09 28 | 704 | 1.2− | 0.1− | | | |
| 2001 09 19 | 704 | 0.0 | 0.7− | 2001 10 24 | 704 | 1.2− | 0.3− | 2006 09 28 | 704 | 0.4+ | 0.4+ | | | |
| 2001 09 19 | 704 | 0.0 | 1.1− | 2001 10 25 | 704 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 1.1− | 1.0+ | | | |
| 2001 09 21 | 704 | 1.0+ | 0.1+ | 2001 10 25 | 704 | 0.1− | 0.8+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | | | |
| 2001 09 21 | 704 | 0.7+ | 0.2+ | 2001 10 25 | 704 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.2+ | | | |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2001 10 25 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | | | |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2001 11 20 | 704 | 0.5+ | 0.2− | 2006 09 30 | G96 | 0.0 | 0.1+ | | | |
| 2001 09 21 | 704 | 1.1− | 0.1− | 2001 11 20 | 704 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.3− | | | |
| 2001 10 13 | 704 | (0.1+ | 1.6−) | 2001 11 20 | 704 | 0.1+ | 0.7− | 2006 09 30 | G96 | 0.0 | 0.2− | | | |
| 2001 10 13 | 704 | 1.4+ | 1.3− | 2001 11 20 | 704 | 0.6− | 0.6− | 2006 09 30 | G96 | 0.1− | 0.0 | | | |
| 2001 10 13 | 704 | 1.5+ | 1.3− | 2003 01 28 | 291 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.3− | | | |
| 2001 10 13 | 704 | (2.3+ | 1.7−) | 2003 01 28 | 291 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.1− | | | |
| 2001 10 17 | 704 | 0.7+ | 0.7+ | 2003 01 28 | 291 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.5− | | | |
| 2001 10 17 | 704 | 0.3+ | 0.2+ | 2003 02 01 | 291 | 0.0 | 0.3+ | 2006 09 30 | 703 | 1.1− | 0.3− | | | |
| 2001 10 17 | 704 | 0.7− | 0.4− | 2003 02 01 | 291 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.1+ | | | |
| 2001 10 17 | 704 | 0.2+ | 0.3− | 2003 02 01 | 291 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.6− | | | |
| 2001 10 17 | 704 | 0.5+ | 0.2− | 2003 02 06 | 291 | 0.6− | 0.8+ | 2006 10 16 | 703 | 0.5− | 0.4+ | | | |
| 2001 10 18 | 704 | 0.5+ | 0.8+ | 2003 02 06 | 291 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.6+ | 1.0+ | | | |
| 2001 10 18 | 704 | 0.5+ | 0.0 | 2003 02 06 | 291 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | | |
| 2001 10 18 | 704 | 1.0+ | 0.5− | 2006 08 18 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | | | |
| 2001 10 18 | 704 | 0.1− | 0.3− | 2006 08 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | | |
| 2001 10 18 | 704 | 0.5+ | 0.7− | 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.5− | | | |
| 2001 10 20 | 704 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.4− | | | |
| 2001 10 20 | 704 | 0.5+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.6+ | 0.4− | | | |
| 2001 10 20 | 704 | 0.6+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.4− | | | |
| 2001 10 20 | 704 | 0.7+ | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | | |
| 2001 10 20 | 704 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | | | |
| 2001 10 23 | 704 | 0.4− | 0.2− | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | | |
| 2001 10 23 | 704 | 0.0 | 0.3− | 2006 09 15 | 291 | 0.2− | 0.4+ | | | | | | | |
| 2001 10 23 | 704 | 0.4− | 0.1+ | 2006 09 15 | 291 | 0.2− | 0.4+ | | | | | | | |

**(140245)∗ 2001 SM$_{252}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.56407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19277556 | $\omega$ | 181.48985 | | +0.95854412 | −0.28236948 | |
| $a$ | 2.9678007 | $\Omega$ | 195.08041 | | +0.26292687 | +0.92818474 | |
| $e$ | 0.0541022 | $i$ | 8.44704 | | +0.10982999 | +0.24236454 | |
| $P$ | 5.11 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2003 01 05 | 704 | 0.4− | 0.2− | 2004 05 19 | 691 | 0.1+ | 0.2+ | | | |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2003 01 05 | 704 | 1.0− | 0.1+ | 2004 05 19 | 691 | 0.0 | 0.4+ | | | |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2003 01 26 | 644 | 0.2+ | 0.5+ | 2004 05 19 | 691 | 0.2+ | 0.1+ | | | |
| 2001 09 19 | 704 | 0.4+ | 0.4+ | 2003 01 26 | 644 | 0.2+ | 0.7+ | 2006 09 14 | 691 | 0.6− | 0.2+ | | | |
| 2001 09 19 | 704 | 0.1+ | 0.8+ | 2003 01 26 | 644 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.2+ | | | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2003 01 28 | 704 | 0.6+ | 0.3− | 2006 09 14 | 691 | 0.1− | 0.1+ | | | |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2003 01 28 | 704 | 0.7− | 0.7− | 2006 09 18 | 691 | 0.0 | 0.4+ | | | |
| 2001 09 21 | 704 | 0.1− | 0.8+ | 2003 01 28 | 704 | 1.1− | 0.6− | 2006 09 18 | 691 | 0.0 | 0.0 | | | |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2003 01 28 | 704 | 0.3− | 1.4− | 2006 09 18 | 699 | 0.4+ | 0.2+ | | | |
| 2001 09 21 | 704 | 0.2− | 0.9+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2+ | | | |
| 2001 09 21 | 704 | 0.1+ | 0.8+ | 2003 01 28 | 645 | 0.1+ | 0.1− | 2006 09 18 | 699 | 1.1+ | 0.1+ | | | |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2003 02 01 | 608 | 1.4+ | 1.4+ | 2006 09 18 | 699 | 0.0 | 0.4− | | | |
| 2001 09 21 | 704 | 0.2+ | 1.5+ | 2003 02 01 | 608 | (1.7+ | 1.4+) | 2006 09 18 | 699 | 0.9+ | 0.2+ | | | |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2003 02 01 | 608 | (1.7+ | 1.7+) | 2006 09 20 | 644 | 0.3− | 0.3+ | | | |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2003 03 11 | 644 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.4+ | | | |
| 2001 09 26 | 704 | (4.0+ | 0.5+) | 2003 03 11 | 644 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.5+ | 0.6+ | | | |
| 2001 09 26 | 704 | (2.4+ | 0.2−) | 2003 03 11 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.5+ | 0.3+ | | | |
| 2001 09 26 | 704 | 1.4− | 0.2− | 2004 03 27 | 704 | 1.4+ | 0.6− | 2006 09 20 | 644 | 0.0 | 0.3+ | | | |
| 2001 10 13 | 704 | 1.1− | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 644 | 0.4+ | 0.7+ | | | |
| 2001 10 13 | 704 | 0.5− | 0.3+ | 2004 03 27 | 704 | 0.2− | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.0 | | | |
| 2001 10 13 | 704 | 0.3− | 0.9+ | 2004 03 27 | 704 | 0.4− | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.3− | | | |
| 2001 10 13 | 704 | 0.1− | 0.1− | 2004 03 31 | 704 | (0.8− | 1.6+) | 2006 09 25 | G96 | 0.1+ | 0.2− | | | |
| 2001 10 13 | 704 | 0.6− | 0.2+ | 2004 03 31 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.1− | | | |
| 2001 10 17 | 704 | 0.1+ | 0.6+ | 2004 03 31 | 704 | (0.9+ | 1.9+) | 2006 09 25 | G96 | 0.0 | 0.4− | | | |
| 2001 10 17 | 704 | 0.2− | 0.0 | 2004 04 10 | 703 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.4− | | | |
| 2001 10 17 | 704 | 1.1+ | 0.7+ | 2004 04 10 | 703 | 0.8+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.1− | | | |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2004 04 10 | 703 | (2.2+ | 1.1+) | 2006 09 27 | 704 | 0.0 | 0.3− | | | |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2004 04 10 | 703 | 1.1+ | 1.1+ | 2006 09 27 | 704 | 0.9− | 0.3+ | | | |
| 2001 10 18 | 644 | 0.4− | 0.2+ | 2004 04 12 | 699 | 0.7− | 1.1+ | 2006 09 27 | 704 | 0.2+ | 0.8+ | | | |
| 2001 10 18 | 644 | 0.1− | 0.1+ | 2004 04 12 | 699 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.1− | | | |
| 2001 10 18 | 644 | 0.2− | 0.3+ | 2004 04 12 | 691 | 0.1− | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.1− | | | |
| 2001 10 20 | 704 | 0.3+ | 0.5+ | 2004 04 12 | 699 | 0.2+ | 0.2− | 2006 10 03 | 691 | 0.3+ | 0.1+ | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.2+ | 0.5+ | 2004 04 12 | 691 | 0.1+ | 0.5+ | 2006 10 03 | 691 | 0.2+ | 0.0 |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2004 04 12 | 699 | 0.9+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.5+ | 2004 04 12 | 691 | 0.1+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.4− | 0.4+ | 2004 04 16 | 704 | 0.2+ | 0.5− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2001 10 20 | 704 | 0.1+ | 0.6+ | 2004 04 16 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.7− | 0.0 |
| 2001 10 20 | 704 | 0.3− | 0.8+ | 2004 04 16 | 704 | 0.3− | 0.0 | 2006 10 15 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 704 | 0.1− | 0.4− | 2004 04 16 | 704 | 0.4+ | 0.7+ | 2006 10 15 | 703 | 0.5− | 1.1− |
| 2001 10 23 | 704 | 0.4− | 0.2− | 2004 04 16 | 644 | 0.7+ | 0.6+ | 2006 10 15 | 703 | (2.2+ | 2.4−) |
| 2001 10 23 | 704 | 0.2+ | 0.6+ | 2004 04 16 | 644 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.5− | 1.2− | 2004 04 16 | 644 | 1.4+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.6− | 2004 04 19 | 691 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2004 04 19 | 691 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.2− |
| 2001 10 24 | 704 | 0.1− | 0.5− | 2004 04 19 | 691 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.1− | 0.4− | 2004 04 19 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.6− |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2004 04 19 | 704 | 0.1− | 1.2+ | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.1− | 0.1+ | 2004 04 19 | 704 | 0.3+ | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 10 25 | 644 | 0.3− | 0.1+ | 2004 04 19 | 704 | 1.1+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 10 25 | 644 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 10 25 | 644 | 0.3− | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.6+ | 0.2+ |
| 2001 10 26 | 691 | 0.0 | 0.3+ | 2004 04 20 | 704 | 1.0+ | 0.7+ | 2006 10 28 | 704 | 0.2− | 1.3+ |
| 2001 10 26 | 691 | 0.0 | 0.2+ | 2004 04 20 | 704 | 0.9+ | 0.2+ | 2006 10 28 | 704 | 0.4− | 0.6+ |
| 2001 10 26 | 691 | 0.1+ | 0.3+ | 2004 04 20 | 704 | 0.2− | 0.0 | 2006 10 28 | 704 | 1.3− | 0.4+ |
| 2001 11 09 | 704 | 0.4+ | 0.8+ | 2004 04 20 | 704 | 0.3− | 0.1− | 2006 10 29 | 291 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 0.2− | 0.2+ | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | (1.8+ | 0.0 ) | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 1.3+ | 0.2− | 2004 04 20 | 703 | 1.0− | 1.0+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2004 04 20 | 703 | (1.3− | 2.7+) | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2004 04 20 | 703 | 0.8− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.7+ | 0.1+ | 2004 04 20 | 703 | (1.5+ | 2.2+) | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 11 20 | 699 | (3.1+ | 0.8+) | 2004 04 21 | 704 | 1.2− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 11 20 | 699 | 0.1− | 0.7+ | 2004 04 21 | 704 | 0.7+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 699 | 0.1+ | 1.4+ | 2004 04 21 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 11 20 | 699 | 0.4− | 0.7+ | 2004 05 10 | 691 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.7+ | 0.3− | 2004 05 10 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.5− | 0.8− | 2004 05 10 | 691 | 0.1+ | 0.4+ | | | | |

**(140246)∗ 2001 SR$_{252}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.37917 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20907072 | $\omega$ | 202.37408 | | +0.77019108 | | −0.63338407 |
| $a$ | 2.8115161 | $\Omega$ | 197.57760 | | +0.61633389 | | +0.76935904 |
| $e$ | 0.1325557 | $i$ | 14.38665 | | +0.16412871 | | +0.08313419 |
| $P$ | 4.71 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.2+ | 0.1+ | 2001 10 17 | 704 | 0.0 | 1.0+ | 2002 01 18 | 209 | 0.6− | 0.2+ |
| 2001 08 16 | 704 | 0.9+ | 0.1− | 2001 10 17 | 704 | 0.3+ | 1.0+ | 2002 01 18 | 209 | 0.3− | 0.5+ |
| 2001 08 16 | 704 | 0.3− | 0.7− | 2001 10 17 | 704 | 0.1+ | 1.1+ | 2002 01 18 | 209 | 0.7− | 0.1− |
| 2001 08 16 | 704 | 0.1− | 0.3+ | 2001 10 18 | 644 | 0.2+ | 0.3+ | 2003 04 01 | 608 | 0.3− | 0.7+ |
| 2001 08 24 | 704 | 0.4− | 0.6+ | 2001 10 18 | 644 | 0.1+ | 0.1+ | 2003 04 01 | 608 | 0.2+ | 0.1+ |
| 2001 08 24 | 704 | 0.4− | 0.2− | 2001 10 18 | 644 | 0.1+ | 0.2+ | 2003 04 01 | 608 | 0.1+ | 0.2+ |
| 2001 08 24 | 704 | 0.4− | 0.2− | 2001 10 22 | 704 | (1.8+ | 1.1−) | 2003 04 04 | 699 | 0.0 | 0.7+ |
| 2001 08 28 | 699 | 1.3− | 0.6− | 2001 10 22 | 704 | (1.7+ | 0.8−) | 2003 04 04 | 699 | 0.2− | 0.0 |
| 2001 08 28 | 699 | 0.8− | 1.2+ | 2001 10 22 | 704 | 0.2+ | 0.4+ | 2003 04 04 | 699 | 0.0 | 1.5+ |
| 2001 08 28 | 699 | (0.8− | 1.9+) | 2001 10 22 | 704 | 1.4+ | 1.2− | 2003 04 04 | 699 | 0.4+ | 1.1+ |
| 2001 08 28 | 699 | 0.6− | 0.7+ | 2001 10 22 | 704 | 0.2+ | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.1+ |
| 2001 08 30 | 644 | 0.1+ | 0.8+ | 2001 10 22 | 704 | (1.2+ | 2.2−) | 2004 04 20 | 704 | 0.7+ | 0.8+ |
| 2001 08 30 | 644 | (0.0 | 1.7+) | 2001 10 22 | 704 | 0.2+ | 0.1− | 2004 04 20 | 704 | 0.6+ | 0.4+ |
| 2001 08 30 | 644 | 0.8+ | 1.3+ | 2001 10 24 | 704 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.4+ | 0.6+ |
| 2001 09 10 | 704 | 0.6− | 0.2+ | 2001 10 24 | 704 | 0.6− | 0.6+ | 2004 04 20 | 704 | 0.2− | 1.1− |
| 2001 09 10 | 704 | 0.5− | 0.2− | 2001 10 24 | 704 | 0.0 | 1.1+ | 2004 04 23 | 704 | 0.4− | 0.7+ |
| 2001 09 10 | 704 | 0.6− | 0.4− | 2001 10 24 | 704 | 0.2+ | 0.7+ | 2004 04 23 | 704 | 0.2− | 0.7+ |
| 2001 09 19 | 704 | 1.1+ | 0.4+ | 2001 10 24 | 704 | 0.2+ | 0.4+ | 2004 04 23 | 704 | 0.7− | 0.8+ |
| 2001 09 19 | 704 | 1.0+ | 0.3+ | 2001 10 24 | 644 | 0.6− | 0.2+ | 2004 04 23 | 704 | 0.4− | 1.4+ |
| 2001 09 19 | 704 | 0.9+ | 0.1− | 2001 10 24 | 644 | 0.5− | 0.2+ | 2004 05 13 | 699 | 0.6+ | 0.5− |
| 2001 09 19 | 704 | 0.6+ | 0.1− | 2001 10 24 | 644 | 0.4− | 0.2+ | 2004 05 13 | 699 | 0.3+ | 0.3− |
| 2001 09 19 | 704 | 0.9+ | 0.2− | 2001 11 09 | 704 | 0.7− | 0.3+ | 2004 05 13 | 699 | 0.2+ | 1.1+ |
| 2001 09 21 | 704 | 0.6− | 0.1+ | 2001 11 09 | 704 | 0.5− | 0.1− | 2004 05 13 | 699 | 0.3− | 0.6− |
| 2001 09 21 | 704 | 0.7− | 0.1− | 2001 11 09 | 704 | 0.7− | 0.1+ | 2004 05 23 | 704 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.5− | 0.2− | 2001 11 09 | 704 | 0.5− | 0.4+ | 2004 05 23 | 704 | 0.5+ | 0.6+ |
| 2001 09 21 | 704 | 1.0− | 0.2− | 2001 11 09 | 704 | 1.3− | 0.6− | 2004 05 23 | 704 | 0.8− | 0.3+ |
| 2001 09 21 | 704 | 1.0− | 0.8− | 2001 11 14 | 683 | 0.8− | 0.9+ | 2004 05 23 | 704 | 0.2− | 0.1+ |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2001 11 14 | 683 | (2.6− | 0.1−) | 2006 10 01 | 703 | 0.6− | 0.6− |
| 2001 09 26 | 704 | 0.0 | 0.1+ | 2001 11 14 | 683 | 0.7− | 0.9− | 2006 10 01 | 703 | 0.1+ | 0.3− |
| 2001 09 26 | 704 | 0.1− | 0.0 | 2001 11 15 | 683 | (0.1+ | 2.1+) | 2006 10 01 | 703 | 0.2− | 0.6− |
| 2001 09 26 | 704 | 0.3+ | 0.1− | 2001 11 15 | 683 | 0.4+ | 0.5− | 2006 10 01 | 703 | 0.5− | 0.2+ |
| 2001 09 26 | 704 | 0.1− | 0.8− | 2001 11 15 | 683 | 1.0− | 1.1− | 2006 11 13 | 703 | 0.2− | 1.2+ |
| 2001 09 27 | 644 | 0.5− | 0.2+ | 2001 11 15 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.5+ |
| 2001 09 27 | 644 | 0.5− | 0.4+ | 2001 11 15 | 644 | 0.5+ | 0.3+ | 2006 11 13 | 703 | 0.3+ | 0.1− |
| 2001 09 27 | 644 | 0.5− | 0.3+ | 2001 11 15 | 644 | 0.9+ | 0.9− | 2006 11 13 | 703 | 0.3+ | 0.4+ |
| 2001 10 13 | 704 | 0.4+ | 0.6− | 2001 11 17 | 608 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.8− | 1.3− |
| 2001 10 13 | 704 | 0.1+ | 0.5− | 2001 11 17 | 608 | 0.5+ | 0.3− | 2006 11 20 | 704 | 0.5+ | 0.3− |
| 2001 10 13 | 704 | 1.4+ | 0.2− | 2001 11 17 | 608 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2001 10 13 | 704 | 0.1− | 1.1− | 2001 11 18 | 704 | 0.3− | 0.7+ | 2006 11 20 | 704 | 1.4− | 0.1+ |
| 2001 10 14 | 699 | 0.6− | 0.5+ | 2001 11 18 | 704 | 0.3− | 0.1+ | 2006 12 01 | 703 | 1.0+ | 0.1+ |
| 2001 10 14 | 699 | 0.2+ | 0.2+ | 2001 11 18 | 704 | 0.2− | 0.2+ | 2006 12 01 | 703 | 0.2+ | 0.4− |
| 2001 10 14 | 699 | 0.5+ | 0.4+ | 2001 11 18 | 704 | 0.3+ | 1.0+ | 2006 12 01 | 703 | 0.6+ | 0.6− |
| 2001 10 14 | 699 | 0.6+ | 0.7+ | 2001 11 18 | 704 | 0.1− | 1.1+ | 2006 12 01 | 703 | 0.3− | 0.4+ |
| 2001 10 17 | 704 | 0.2− | 1.1+ | 2001 12 18 | 645 | 0.1+ | 0.1− | | | | |
| 2001 10 17 | 704 | 0.0 | 1.0+ | 2001 12 18 | 645 | 0.2+ | 0.1− | | | | |

**(140247)∗ 2001 SY$_{252}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.90210 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18410100 | $\omega$ | 263.74912 | | +0.90888883 | | +0.41335012 |
| $a$ | 3.0603090 | $\Omega$ | 71.82436 | | −0.35588724 | | +0.83793616 |
| $e$ | 0.2153159 | $i$ | 3.33929 | | −0.21740598 | | +0.35637714 |
| $P$ | 5.35 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.1+ | 0.2− | 2001 10 25 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.6+ | 0.1− | 2001 10 25 | 691 | 0.4+ | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.9+ | 0.2− | 2001 10 25 | 691 | 0.1− | 0.3− | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 1.1− | 2001 11 20 | 704 | (1.0+ | 2.1+) | 2006 08 20 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.6+ | 2001 11 20 | 704 | 0.1− | 0.4− | 2006 08 21 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.9+ | 0.3− | 2001 11 20 | 704 | 0.4− | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.4+ | 0.5− | 2001 11 20 | 704 | 0.7− | 0.6+ | 2006 08 21 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.3− | 2001 11 20 | 704 | 0.9− | 0.7− | 2006 08 22 | 644 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 0.4− | 2001 11 21 | 704 | 1.3− | 0.2− | 2006 08 22 | 644 | 0.3+ | 0.0 |
| 2001 09 26 | 704 | 0.1+ | 0.2+ | 2001 11 21 | 704 | 0.2+ | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.5− | 1.1+ | 2001 11 21 | 704 | 0.5− | 0.4− | 2006 08 23 | 704 | 0.1+ | 1.1+ |
| 2001 09 26 | 704 | 0.5+ | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.1− | 2006 08 23 | 704 | 0.0 | 0.4+ |
| 2001 09 26 | 704 | 0.3− | 0.3− | 2004 03 18 | 691 | 0.0 | 0.6+ | 2006 08 23 | 704 | 0.0 | 0.0 |
| 2001 10 13 | 704 | 1.3− | 0.0 | 2004 03 18 | 691 | 0.6+ | 0.5+ | 2006 08 23 | 704 | 0.7− | 0.4+ |
| 2001 10 13 | 704 | 0.6− | 1.2+ | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 08 23 | 704 | (1.6+ | 0.8+) |
| 2001 10 13 | 704 | 0.6− | 0.4+ | 2005 04 16 | 691 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.9− | 0.1− |
| 2001 10 17 | 704 | 0.0 | 0.2+ | 2005 04 16 | 691 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.7− | 0.3+ |
| 2001 10 17 | 704 | (1.5+ | 1.7+) | 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.5− |
| 2001 10 17 | 704 | 0.3+ | 0.3+ | 2005 05 03 | 691 | 0.3+ | 0.0 | 2006 08 30 | 699 | 0.7− | 0.1− |
| 2001 10 17 | 704 | 0.1− | 0.3− | 2005 05 03 | 691 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 1.2− | 0.6+ | 2005 05 03 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.1+ |
| 2001 10 18 | 644 | 0.5− | 0.6+ | 2005 05 08 | 691 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.5− |
| 2001 10 18 | 644 | 0.4− | 0.5+ | 2005 05 08 | 691 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.5− |
| 2001 10 18 | 644 | 0.6− | 0.6+ | 2005 05 08 | 691 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.2+ | 1.3+ |
| 2001 10 22 | 704 | 0.3− | 0.1− | 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.1− |
| 2001 10 22 | 704 | 0.5− | 0.5+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.2+ | 0.6+ |
| 2001 10 22 | 704 | 1.1− | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.4− |
| 2001 10 23 | 704 | 0.3+ | 1.5+ | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.5+ | 0.1+ | 2005 05 11 | G96 | 0.6− | 0.1− | 2006 09 25 | 699 | 0.6− | 1.0− | | |
| 2001 10 23 | 704 | 0.4+ | 0.3+ | 2005 05 11 | G96 | 0.3− | 0.1− | 2006 09 25 | 699 | 1.0+ | 0.2+ | | |
| 2001 10 23 | 704 | 0.6+ | 0.2+ | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.2+ | 1.3+ | | |
| 2001 10 23 | 704 | 1.2+ | 0.0 | 2005 05 11 | G96 | 0.4− | 0.1− | 2006 09 25 | 699 | 0.7+ | 1.4+ | | |
| 2001 10 24 | 704 | 0.3− | 0.5+ | 2005 06 12 | G96 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.4− | 1.2− | | |
| 2001 10 24 | 704 | 0.9− | 1.1+ | 2005 06 12 | G96 | 0.8− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.3+ | | |
| 2001 10 24 | 704 | 0.0 | 0.3+ | 2005 06 12 | G96 | 0.4− | 1.2+ | 2006 09 30 | 703 | 1.0+ | 0.0 | | |
| 2001 10 24 | 704 | 0.6− | 0.7+ | 2005 06 12 | G96 | 1.1− | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.0− | | |
| 2001 10 24 | 704 | 0.5− | 0.1− | 2005 06 13 | G96 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.6+ | 0.0 | | |
| 2001 10 25 | 704 | 0.4+ | 0.4+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.1− | | |
| 2001 10 25 | 704 | 0.1− | 0.8+ | 2005 06 13 | G96 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.5+ | 0.1+ | | |
| 2001 10 25 | 704 | 0.1+ | 0.7+ | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.5+ | 0.5− | | |
| 2001 10 25 | 704 | (0.8+ | 1.9+) | 2006 08 18 | 644 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.0 | | |
| 2001 10 25 | 644 | 0.1+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2− | 0.2+ | | |
| 2001 10 25 | 704 | (2.2− | 0.2+) | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2001 10 25 | 644 | 0.1− | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.1+ | | | | | | |
| 2001 10 25 | 644 | 0.0 | 0.6+ | 2006 08 18 | 644 | 0.1+ | 0.1− | | | | | | |

**(140248)∗ 2001 SH$_{253}$ = 2000 KD$_{28}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20371)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 38.48350 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.19084183 | $\omega$ | 222.90150 | | | +0.65973913 | | +0.74964922 | |
| $a$ | 2.9878148 | $\Omega$ | 88.45049 | | | −0.67444064 | | +0.62153224 | |
| $e$ | 0.2171505 | $i$ | 3.01820 | | | −0.33147262 | | +0.22742851 | |
| $P$ | 5.16 | $H$ | 15.5 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.3− | 0.3+ | 2001 10 24 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.4+ | | |
| 2000 05 28 | 704 | 0.4− | 0.2− | 2001 10 25 | 644 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.5+ | | |
| 2000 05 28 | 704 | 0.1− | 1.1− | 2001 10 25 | 644 | 1.1− | 0.2− | 2006 09 18 | 699 | 0.7− | 0.1− | | |
| 2000 05 29 | 704 | 0.1− | 0.1+ | 2001 10 25 | 644 | 0.9− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.2+ | | |
| 2000 05 29 | 704 | 0.5+ | 0.0 | 2001 11 20 | 704 | (1.9− | 1.6−) | 2006 09 26 | 704 | 0.3− | 0.3− | | |
| 2000 05 29 | 704 | 0.1+ | 0.8− | 2001 11 20 | 704 | (1.6− | 1.5−) | 2006 09 26 | 704 | 0.3+ | 0.6+ | | |
| 2000 05 29 | 704 | 0.1− | 1.1− | 2001 11 20 | 704 | (1.8− | 2.2−) | 2006 09 26 | 704 | (2.1+ | 0.6+) | | |
| 2000 05 29 | 704 | 0.1− | 0.2+ | 2001 11 20 | 704 | (1.4− | 1.9−) | 2006 09 26 | 704 | 0.3− | 0.3+ | | |
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2001 11 21 | 704 | 0.2− | 1.1− | 2006 09 26 | 704 | 0.4− | 0.3− | | |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2001 11 21 | 704 | (1.7+ | 0.5−) | 2006 09 30 | 703 | 0.8+ | 0.1− | | |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2001 11 21 | 704 | 0.7− | 0.8− | 2006 09 30 | 703 | 1.1+ | 1.2+ | | |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2001 11 21 | 704 | 0.7− | 1.0− | 2006 09 30 | 703 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2001 11 21 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.6− | 0.6− | | |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2005 05 08 | G96 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.6+ | 0.5+ | | |
| 2001 09 21 | 704 | 0.4− | 0.9− | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.3+ | | |
| 2001 09 21 | 704 | 0.1− | 0.9+ | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.1+ | | |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.8+ | | |
| 2001 10 17 | 704 | 0.6+ | 0.4+ | 2005 05 12 | 691 | 0.1− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.3− | | |
| 2001 10 17 | 704 | 0.5+ | 0.8+ | 2005 05 12 | 691 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.1− | | |
| 2001 10 17 | 704 | 1.1+ | 0.7− | 2005 05 12 | 691 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 2001 10 17 | 704 | 0.0 | 0.8− | 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2001 10 18 | 644 | 0.2− | 0.2− | 2005 05 14 | 644 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 2001 10 18 | 644 | 0.1− | 0.0 | 2005 05 14 | 644 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2001 10 18 | 644 | 0.3− | 0.1− | 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.5− | | |
| 2001 10 20 | 704 | 0.3+ | 0.3+ | 2005 05 14 | 644 | 0.4− | 0.6+ | 2006 10 16 | 703 | 1.0− | 0.7+ | | |
| 2001 10 20 | 704 | 0.8+ | 0.2+ | 2005 05 14 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.7− | | |
| 2001 10 20 | 704 | 0.7+ | 0.1+ | 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.4− | | |
| 2001 10 20 | 704 | 0.5+ | 0.0 | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.7+ | 0.2+ | 2005 05 19 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.5+ | 0.5− | | |
| 2001 10 23 | 704 | 0.2+ | 0.2+ | 2005 06 12 | G96 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.5+ | 0.3+ | | |
| 2001 10 23 | 704 | 1.1+ | 0.6+ | 2005 06 12 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.5− | | |
| 2001 10 23 | 704 | 1.4+ | 0.9+ | 2005 06 12 | G96 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2001 10 23 | 704 | (0.7+ | 1.9+) | 2005 06 12 | G96 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 2001 10 24 | 704 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.8− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2001 10 24 | 704 | (0.8+ | 2.0+) | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2001 10 24 | 704 | 0.2− | 0.1+ | 2006 09 18 | 703 | 1.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2001 10 24 | 704 | 0.5− | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.6− | | | | | | |

**(140249)∗ 2001 SL$_{253}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 65.65706 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.20998536 | $\omega$ | 268.36849 | | | +0.89547465 | | +0.43939488 | |
| $a$ | 2.8033460 | $\Omega$ | 65.56118 | | | −0.37099111 | | +0.82505078 | |
| $e$ | 0.0976252 | $i$ | 4.48013 | | | −0.24594869 | | +0.35527927 | |
| $P$ | 4.69 | $H$ | 15.9 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2001 11 20 | 704 | 0.0 | 0.6− | 2006 10 19 | G96 | 0.2− | 0.6− | | |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.3− | 0.5− | 2006 10 19 | G96 | 0.3− | 0.4− | | |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.6− | | |
| 2001 09 19 | 704 | 0.3− | 0.2− | 2001 11 21 | 704 | 0.6− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.4− | | |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2001 11 21 | 704 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.1− | | |
| 2001 09 21 | 704 | 1.1− | 0.0 | 2001 11 21 | 704 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− | | |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2001 11 21 | 704 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.3− | | |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− | | |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2003 01 30 | 644 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.4− | | |
| 2001 10 17 | 704 | 0.2+ | 0.5+ | 2003 01 30 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.2− | | |
| 2001 10 17 | 704 | 0.1− | 0.3+ | 2003 01 30 | 644 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.7− | 1.0+ | | |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.4− | 0.6+ | | |
| 2001 10 17 | 704 | 0.6− | 0.5+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 11 15 | 703 | 1.1− | 0.5+ | | |
| 2001 10 17 | 704 | 0.7+ | 0.9+ | 2004 03 23 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 703 | 0.7+ | 0.2− | | |
| 2001 10 18 | 644 | 0.2− | 0.3+ | 2004 03 23 | 704 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.0 | | |
| 2001 10 18 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 1.0+ | 1.1+ | 2006 11 15 | 691 | 0.0 | 0.2+ | | |
| 2001 10 18 | 644 | 0.3− | 0.1+ | 2004 03 23 | 704 | 0.7+ | 1.1+ | 2006 11 15 | 691 | 0.2− | 0.1+ | | |
| 2001 10 20 | 704 | 0.0 | 0.6− | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.4− | 0.1− | | |
| 2001 10 20 | 704 | 0.6− | 0.7− | 2004 04 14 | 691 | 1.2+ | 0.3− | 2006 11 17 | 644 | 0.1− | 0.4+ | | |
| 2001 10 20 | 704 | 0.2+ | 0.2+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.2+ | 0.6− | | |
| 2001 10 20 | 704 | 0.4+ | 0.7− | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1+ | | |
| 2001 10 20 | 704 | 0.6+ | 0.6− | 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.1+ | | |
| 2001 10 20 | 704 | 0.5+ | 0.4− | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.3+ | | |
| 2001 10 20 | 704 | 0.5+ | 0.2− | 2004 04 19 | 704 | 1.1− | 0.9+ | 2006 11 19 | 691 | 0.2− | 0.2+ | | |
| 2001 10 23 | 704 | 0.4+ | 0.1− | 2004 04 19 | 704 | 0.1+ | 1.0+ | 2006 11 19 | 691 | 0.1− | 0.3+ | | |
| 2001 10 23 | 704 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 23 | 704 | 0.4+ | 0.2− | 2004 04 19 | 704 | 0.2− | 0.8+ | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 2001 10 23 | 704 | 0.6+ | 0.1+ | 2004 05 24 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.0 | | |
| 2001 10 23 | 704 | 0.3+ | 0.3− | 2004 05 24 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 2001 10 24 | 704 | 1.1+ | 0.1+ | 2004 05 24 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.1+ | 0.4− | | |
| 2001 10 24 | 704 | 1.2+ | 1.2+ | 2004 07 15 | 807 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2+ | 1.0− | | |
| 2001 10 24 | 704 | 0.4+ | 0.8+ | 2004 07 15 | 807 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.3− | 0.1− | | |
| 2001 10 24 | 704 | 0.5+ | 0.5+ | 2004 07 16 | 807 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.0 | | |
| 2001 10 24 | 704 | 0.9+ | 0.4+ | 2004 07 17 | 807 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.3+ | 0.8+ | | |
| 2001 10 26 | 691 | 0.6− | 0.2+ | 2005 07 29 | E12 | 0.4− | 0.6+ | 2006 11 27 | 703 | 0.2− | 1.2+ | | |
| 2001 10 26 | 691 | 0.6− | 0.2+ | 2005 07 29 | E12 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 26 | 691 | 0.7− | 0.2+ | 2005 07 29 | E12 | (0.8+ | 1.5−) | 2006 11 27 | 703 | 0.7− | 0.5− | | |
| 2001 11 11 | 291 | 0.0 | 0.3+ | 2005 07 29 | E12 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.4+ | 0.1+ | | |
| 2001 11 11 | 291 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.4+ | | |
| 2001 11 11 | 291 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 12 01 | 691 | 0.2− | 0.0 | | |
| 2001 11 20 | 704 | 0.5− | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 12 01 | 691 | 0.1− | 0.3+ | | |
| 2001 11 20 | 704 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.4− | | | | | | |
| 2001 11 20 | 704 | 0.9− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.0 | | | | | | |

**(140250)∗ 2001 SC$_{255}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.03401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20636753 | $\omega$ | 172.86935 | | +0.99932724 | +0.03656524 | |
| $a$ | 2.8360146 | $\Omega$ | 185.03776 | | −0.03504170 | +0.92914382 | |
| $e$ | 0.0826982 | $i$ | 1.85068 | | −0.01082304 | +0.36790590 | |
| $P$ | 4.78 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2001 10 23 | 704 | 0.3+ | 1.3+ | 2005 07 15 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.4+ | 0.3− | 2001 10 24 | 704 | 1.3− | 0.3+ | 2005 07 15 | 691 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.9− | 0.1+ | 2001 10 24 | 704 | 0.6− | 0.7− | 2005 07 15 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.5− | 2001 10 24 | 704 | 0.4− | 0.4− | 2005 07 16 | E12 | 0.3+ | 0.2+ |
| 2001 09 21 | 704 | 0.5+ | 0.6+ | 2001 10 26 | 704 | 0.1− | 0.5− | 2005 07 16 | E12 | 0.6+ | 0.1− |
| 2001 09 21 | 704 | 0.5− | 1.0+ | 2001 10 26 | 704 | 0.5− | 0.6− | 2005 07 16 | E12 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.3+ | 0.7+ | 2001 10 26 | 704 | 0.5− | 1.0− | 2005 07 16 | E12 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2001 11 20 | 704 | 0.2− | 1.1− | 2005 08 01 | E12 | 0.2− | 1.2+ |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2001 11 20 | 704 | 0.5+ | 0.7− | 2005 08 01 | E12 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.1+ | 0.8+ | 2001 11 20 | 704 | 0.4+ | 0.6− | 2005 08 01 | E12 | 0.3+ | 0.1+ |
| 2001 09 23 | 704 | 0.5+ | 0.5+ | 2001 11 20 | 704 | 0.2+ | 0.5− | 2005 08 01 | E12 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.7+ | 0.2+ | 2001 11 20 | 704 | 0.0 | 0.8− | 2006 10 12 | 691 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | (0.5+ | 2.0+) | 2001 11 21 | 704 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1− |
| 2001 10 17 | 704 | (0.2− | 2.6+) | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.7+ | 0.5− |
| 2001 10 17 | 704 | (0.0 | 1.7+) | 2001 11 21 | 704 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 10 20 | 704 | 0.4− | 1.2+ | 2001 11 21 | 704 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.7− |
| 2001 10 20 | 704 | (0.4− | 1.7+) | 2001 11 21 | 704 | 0.2− | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 10 20 | 704 | 0.3− | 0.8+ | 2003 01 30 | 644 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 0.2− | 0.8+ | 2003 01 30 | 644 | 0.5+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 10 20 | 704 | (0.2+ | 1.6+) | 2003 01 30 | 644 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.1− | 1.0+ | 2004 03 24 | 807 | 0.1+ | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 0.3− | 2004 03 24 | 807 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.7− | 1.5− |
| 2001 10 21 | 704 | 0.6− | 0.7+ | 2004 03 24 | 807 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 1.1+ | 1.4− |
| 2001 10 21 | 704 | 0.7+ | 0.1+ | 2005 06 15 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2001 10 21 | 704 | 0.3− | 0.0 | 2005 06 15 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.2+ |
| 2001 10 21 | 704 | 0.5− | 0.4− | 2005 06 15 | G96 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 0.7− | 0.3+ | 2005 06 15 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2005 07 04 | G96 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.8− |
| 2001 10 22 | 704 | 0.1+ | 0.6+ | 2005 07 04 | G96 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.7+ | 1.1+ |
| 2001 10 22 | 704 | 0.0 | 0.6+ | 2005 07 04 | G96 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.8+ |
| 2001 10 22 | 704 | 0.1− | 0.2− | 2005 07 04 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2001 10 22 | 704 | 0.4− | 1.1+ | 2005 07 06 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.4− |
| 2001 10 22 | 704 | 0.5− | 0.1− | 2005 07 06 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 1.4+ | 0.8+ |
| 2001 10 23 | 704 | 0.4+ | 0.3+ | 2005 07 06 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.9− |
| 2001 10 23 | 704 | 0.7+ | 0.5+ | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.9− | 1.0+ |
| 2001 10 23 | 704 | 0.2+ | 0.7+ | 2005 07 10 | 691 | 0.0 | 0.0 | | | | |
| 2001 10 23 | 704 | 0.4+ | 0.6+ | 2005 07 10 | 691 | 0.2+ | 0.0 | | | | |

**(140251)∗ 2001 SN$_{255}$ = 2003 FW$_{59}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46677)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.34124 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28617691 | $\omega$ | 53.74209 | | −0.99893065 | +0.03561181 | |
| $a$ | 2.2805853 | $\Omega$ | 128.27997 | | −0.04409689 | −0.92550984 | |
| $e$ | 0.1011928 | $i$ | 2.15257 | | +0.01389323 | −0.37704553 | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.2− | 0.1− | 2001 10 21 | 704 | 0.4+ | 1.4+ | 2003 03 26 | 644 | 0.2+ | 0.4+ |
| 1996 03 12 | 691 | 0.5+ | 0.2+ | 2001 10 21 | 704 | 0.4− | 0.4+ | 2003 03 26 | 644 | 0.4+ | 0.4+ |
| 1996 03 12 | 691 | 0.1− | 0.3− | 2001 10 21 | 704 | 0.4− | 0.5− | 2003 03 26 | 644 | 0.3+ | 0.4+ |
| 1998 12 15 | 704 | 0.2− | 0.7− | 2001 10 21 | 704 | 1.0− | 0.2− | 2003 03 27 | 683 | 0.7− | 1.0+ |
| 1998 12 15 | 704 | 1.2+ | 0.6− | 2001 10 21 | 704 | 0.0 | 1.1+ | 2003 03 27 | 683 | 0.3− | 0.4− |
| 1998 12 15 | 704 | (2.5+ | 0.4−) | 2001 10 21 | 704 | 0.2− | 1.3+ | 2003 03 27 | 683 | 0.8− | 0.3+ |
| 1998 12 15 | 704 | 0.4− | 0.3− | 2001 10 21 | 704 | 0.7− | 0.5− | 2003 03 29 | 683 | 0.7+ | 0.1+ |
| 2001 09 19 | 704 | 1.1− | 0.5+ | 2001 10 21 | 704 | 0.9− | 0.6− | 2003 03 29 | 683 | 0.9+ | 0.7− |
| 2001 09 19 | 704 | 1.1− | 1.1+ | 2001 10 21 | 704 | 1.0− | 1.0+ | 2003 03 29 | 683 | 1.4+ | 1.6− |
| 2001 09 19 | 704 | 0.6+ | 1.3+ | 2001 10 21 | 704 | 0.4− | 0.2− | 2003 03 30 | 704 | 0.1+ | 0.7+ |
| 2001 09 21 | 704 | 0.6+ | 1.2+ | 2001 10 23 | 704 | 0.0 | 1.0+ | 2003 03 30 | 704 | 0.3+ | 0.5+ |
| 2001 09 21 | 704 | 0.9− | 0.7+ | 2001 10 23 | 704 | 0.3+ | 0.1− | 2003 03 30 | 704 | 0.6+ | 0.9+ |
| 2001 09 21 | 704 | 0.0 | 0.8+ | 2001 10 23 | 704 | 0.2+ | 0.3+ | 2003 03 30 | 704 | 0.4− | 1.3+ |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2001 10 23 | 704 | 0.8+ | 0.2+ | 2003 04 09 | 704 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2001 10 23 | 704 | 1.4+ | 0.3+ | 2003 04 09 | 704 | 1.1+ | 1.6+ |
| 2001 09 25 | 344 | 0.2− | 0.2+ | 2001 10 24 | 704 | 0.3− | 0.2+ | 2003 04 09 | 704 | 0.1+ | 1.1+ |
| 2001 09 25 | 344 | 0.3− | 0.3+ | 2001 10 24 | 704 | 0.4+ | 0.9+ | 2003 04 09 | 704 | 0.4− | 0.6+ |
| 2001 09 25 | 344 | 0.4− | 0.3+ | 2001 10 24 | 704 | 0.1+ | 0.7+ | 2003 04 09 | 704 | 0.3+ | 0.7+ |
| 2001 09 26 | 344 | (2.6+ | 2.2+) | 2001 10 24 | 704 | 0.9+ | 0.0 | 2004 09 07 | 704 | 0.6+ | 0.2+ |
| 2001 09 26 | 344 | (2.7+ | 2.1+) | 2003 01 31 | 704 | 0.0 | 0.7+ | 2004 09 07 | 704 | 0.3+ | 1.4+ |
| 2001 09 26 | 344 | 0.4− | 0.4+ | 2003 01 31 | 704 | 0.1− | 1.7+ | 2004 09 07 | 704 | 0.1+ | 1.0+ |
| 2001 09 26 | 344 | 0.7− | 0.5+ | 2003 01 31 | 704 | 0.5+ | 1.9+ | 2005 12 01 | 691 | 0.3+ | 0.3− |
| 2001 09 26 | 344 | (2.6+ | 2.1+) | 2003 01 31 | 704 | 1.0+ | 0.8+ | 2005 12 01 | 691 | 0.2+ | 0.2− |
| 2001 09 27 | 344 | 0.5− | 0.8+ | 2003 02 27 | 599 | 0.1− | 0.4+ | 2005 12 01 | 691 | 0.3+ | 0.1− |
| 2001 09 27 | 344 | 0.2− | 0.7+ | 2003 02 27 | 599 | 0.1− | 0.6+ | 2005 12 29 | 691 | 0.0 | 0.0 |
| 2001 09 27 | 344 | 0.9− | 0.4− | 2003 02 27 | 599 | 0.1− | 0.4+ | 2005 12 29 | 691 | 0.2− | 0.2− |
| 2001 09 27 | 344 | (7.2− | 3.4+) | 2003 02 27 | 599 | 0.3+ | 0.7+ | 2005 12 29 | 691 | 0.2− | 0.0 |
| 2001 09 27 | 344 | 1.0− | 0.5− | 2003 03 10 | 699 | 0.3− | 0.3+ | 2005 12 31 | 704 | 0.4− | 0.5+ |
| 2001 09 27 | 344 | (6.2− | 3.3+) | 2003 03 10 | 699 | 0.5− | 0.8+ | 2005 12 31 | 704 | 0.3+ | 0.2+ |
| 2001 10 17 | 704 | 0.8− | 0.7+ | 2003 03 10 | 699 | 0.0 | 0.4+ | 2005 12 31 | 704 | 0.4+ | 0.6− |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2003 03 10 | 699 | 0.2+ | 0.8+ | 2006 01 05 | 704 | 0.2− | 0.1− |
| 2001 10 17 | 704 | 1.1− | 0.5+ | 2003 03 25 | 683 | 0.8+ | 0.9+ | 2006 01 05 | 704 | 0.2− | 0.8+ |
| 2001 10 21 | 704 | 1.0+ | 1.4+ | 2003 03 25 | 683 | 0.9− | 0.0 | 2006 01 05 | 704 | 0.1− | 1.0− |
| 2001 10 21 | 704 | 0.8− | 0.1− | 2003 03 25 | 683 | 1.2+ | 0.1− | 2006 01 05 | 704 | 0.1+ | 0.8+ |
| 2001 10 21 | 704 | 0.1− | 0.8− | 2003 03 25 | 699 | 0.1+ | 0.2+ | 2006 01 06 | 691 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.3− | 0.5− | 2003 03 25 | 699 | 0.5+ | 0.2− | 2006 01 06 | 691 | 0.1+ | 0.4− |
| 2001 10 21 | 704 | 0.2+ | 1.3+ | 2003 03 25 | 699 | 0.6− | 0.2+ | 2006 01 06 | 691 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.5− | 0.6− | 2003 03 25 | 699 | 0.6− | 0.4+ | | | | |

**(140252)∗ 2001 SB$_{256}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.12316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18031940 | $\omega$ | 45.59944 | | +0.05987507 | −0.99049525 | |
| $a$ | 3.1029474 | $\Omega$ | 41.44704 | | +0.85442196 | −0.01328678 | |
| $e$ | 0.0959936 | $i$ | 10.78222 | | +0.51611830 | +0.13690366 | |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.5+ | 2001 10 23 | 704 | 0.1+ | 1.2+ | 2004 04 22 | 599 | 0.0 | 0.8+ |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2001 10 23 | 704 | 0.2+ | 0.7+ | 2004 04 22 | 599 | 0.9+ | 1.0+ |
| 2001 09 19 | 704 | 0.9− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.4− | 2004 04 22 | 599 | 0.2+ | 0.8+ |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2001 11 20 | 704 | 0.5− | 0.6− | 2004 05 21 | 691 | 0.4+ | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2001 11 20 | 704 | 0.7+ | 0.3− | 2004 05 21 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.6− | 0.5− | 2001 11 20 | 704 | 0.4+ | 0.4− | 2004 05 21 | 691 | 0.2+ | 0.4+ |
| 2001 09 21 | 704 | 0.2− | 0.1− | 2001 11 20 | 704 | 0.1+ | 0.4− | 2006 08 30 | 699 | 0.8− | 1.9+ |
| 2001 09 21 | 704 | 0.9− | 0.1+ | 2001 11 21 | 704 | 0.2+ | 0.7+ | 2006 08 30 | 699 | 1.1+ | 0.5− |
| 2001 10 17 | 704 | 1.1− | 0.2+ | 2001 11 21 | 704 | 0.2+ | 1.4+ | 2006 08 30 | 699 | 0.0 | 0.6+ |
| 2001 10 17 | 704 | 0.4− | 1.1+ | 2001 11 21 | 704 | 0.9+ | 0.7+ | 2006 08 30 | 699 | 0.9− | 0.8+ |
| 2001 10 17 | 704 | 1.2+ | 0.4− | 2001 11 21 | 704 | 0.5+ | 0.7+ | 2006 09 20 | 703 | 1.2+ | 0.3+ |
| 2001 10 17 | 704 | 1.5− | 1.4− | 2001 11 21 | 704 | 0.1− | 1.4+ | 2006 09 20 | 703 | 0.7− | 0.1− |
| 2001 10 20 | 704 | 0.7− | 0.2− | 2003 01 10 | 644 | 0.3+ | 0.2− | 2006 09 20 | 703 | 0.3− | 0.7+ |
| 2001 10 20 | 704 | 1.3− | 0.2+ | 2003 01 10 | 644 | 0.2− | 0.4− | 2006 09 20 | 703 | 0.0 | 0.8− |
| 2001 10 20 | 704 | 0.1+ | 0.4+ | 2003 01 10 | 644 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.4− | 1.3− |
| 2001 10 20 | 704 | 0.0 | 0.3+ | 2003 03 08 | 644 | 0.1− | 0.7+ | 2006 09 26 | 703 | 0.3+ | 0.4− |
| 2001 10 23 | 704 | 0.3− | 0.3+ | 2003 03 08 | 644 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.5+ | 1.0− |
| 2001 10 23 | 704 | 0.1+ | 0.1+ | 2003 03 08 | 644 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.9+ | 0.6+ | 2004 04 22 | 599 | 0.2+ | 0.6+ | | | | |

**(140253)∗ 2001 SV$_{256}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.95494 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23028457 | $\omega$ | 173.56601 | | −0.51863950 | +0.85363695 | |
| $a$ | 2.6360855 | $\Omega$ | 65.18336 | | −0.78678572 | −0.45447287 | |
| $e$ | 0.0349611 | $i$ | 3.03999 | | −0.33463608 | −0.25447667 | |
| $P$ | 4.28 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 28 | 691 | 0.0 | 0.3− | 2001 11 21 | 704 | 0.0 | 0.6+ | 2005 09 22 | 644 | 0.2− | 0.1− |
| 1992 09 28 | 691 | 0.2− | 0.3− | 2001 11 21 | 704 | 0.2− | 0.1+ | 2005 09 22 | 644 | 0.3+ | 0.0 |
| 1992 09 28 | 691 | 0.4+ | 0.2− | 2003 01 28 | 608 | 0.5+ | 0.4− | 2005 09 22 | 644 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.3+ | 0.9+ | 2003 01 28 | 608 | 0.6+ | 0.1− | 2005 09 23 | 691 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.7+ | 0.2+ | 2003 01 28 | 608 | 0.4+ | 0.3− | 2005 09 23 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.3+ | 0.9+ | 2004 06 14 | 704 | 0.3− | 0.9+ | 2005 09 23 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2004 06 14 | 704 | 0.0 | 1.0− | 2005 11 06 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.4− | 0.1− | 2004 06 14 | 704 | 0.2− | 0.4− | 2005 11 06 | G96 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.7+ | 0.6− | 2005 08 27 | 691 | 0.0 | 0.0 | 2005 11 06 | G96 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.4+ | 0.1+ | 2005 08 27 | 691 | 0.1+ | 0.1− | 2005 11 06 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.2− | 0.1− | 2005 08 27 | 691 | 0.4+ | 0.2+ | 2005 12 01 | G96 | 0.5+ | 0.4+ |
| 2001 10 18 | 644 | 0.2− | 0.4+ | 2005 08 27 | 644 | 0.7+ | 0.6− | 2005 12 01 | G96 | 0.2− | 0.4− |
| 2001 10 18 | 644 | 0.0 | 0.4+ | 2005 08 27 | 644 | 0.6+ | 0.0 | 2005 12 01 | G96 | 0.4+ | 0.2− |
| 2001 10 18 | 644 | 0.1− | 0.4+ | 2005 08 27 | 644 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.1− | 0.3− |
| 2001 10 24 | 704 | 0.5− | 1.1+ | 2005 08 28 | 691 | 0.0 | 0.0 | 2006 10 29 | G96 | 1.0− | 0.7− |
| 2001 10 24 | 704 | 1.4− | 0.3− | 2005 08 28 | 691 | 0.1+ | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 1.2− | 0.4+ | 2005 08 28 | 691 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.5− | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 0.8+ | 2005 09 03 | 644 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.8− | 0.1+ | 2005 09 03 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.6− |
| 2001 11 20 | 704 | (2.3+ | 0.9−) | 2005 09 03 | 644 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.5− | 0.2− |
| 2001 11 20 | 704 | 1.1+ | 0.2− | 2005 09 11 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.5− | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2005 09 11 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.8− |
| 2001 11 21 | 704 | 0.1− | 0.8− | 2005 09 11 | 691 | 0.1− | 0.0 | | | | |

**(140254)∗ 2001 SK$_{257}$ = 1999 GR$_{62}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.25945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20924962 | $\omega$ | 16.98892 | | +0.60230367 | −0.79714476 | |
| $a$ | 2.8099134 | $\Omega$ | 36.00798 | | +0.72377608 | +0.52297214 | |
| $e$ | 0.0949851 | $i$ | 4.12748 | | +0.33671720 | +0.30176210 | |
| $P$ | 4.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 691 | 0.1− | 0.8+ | 2001 10 23 | 704 | 0.1− | 0.8+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 1999 04 11 | 691 | 0.7+ | 0.3+ | 2001 10 23 | 704 | 0.5− | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 1999 04 11 | 691 | 0.6+ | 0.2+ | 2001 10 23 | 704 | 0.6− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 1999 04 12 | 691 | (1.2− | 3.7+) | 2001 10 23 | 704 | 0.2− | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1999 04 12 | 691 | (0.9− | 3.6+) | 2001 10 23 | 704 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 1999 04 12 | 691 | (0.9− | 3.9+) | 2001 10 23 | 704 | 1.0+ | 1.4+ | 2006 11 01 | G96 | 0.5+ | 0.6+ |
| 1999 04 18 | 691 | 0.9+ | 0.6+ | 2001 10 24 | 704 | 0.3+ | 0.9− | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 1999 04 18 | 691 | 0.2− | 0.7+ | 2001 10 24 | 704 | 1.0+ | 0.9+ | 2006 11 10 | 691 | 0.5+ | 0.1+ |
| 1999 04 18 | 691 | 0.2− | 0.9+ | 2001 10 24 | 704 | 0.5+ | 0.5− | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2001 10 24 | 704 | 0.1+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2001 10 24 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 1.0− | 0.3− | 2001 10 26 | 704 | 0.7+ | 0.4+ | 2006 11 14 | 691 | (3.3− | 0.5+) |
| 2001 09 21 | 704 | 0.1− | 1.2+ | 2001 10 26 | 704 | 0.9− | 1.4+ | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 1.0+ | 0.6+ | 2001 10 26 | 704 | (1.5− | 1.0−) | 2006 11 15 | 703 | 0.2− | 0.7− |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2001 10 26 | 704 | 0.0 | 0.7+ | 2006 11 15 | 703 | 1.0+ | 0.3+ |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2001 11 21 | 704 | 1.2− | 0.1− | 2006 11 15 | 703 | 0.8− | 0.8− |
| 2001 10 18 | 644 | (0.1+ | 1.8+) | 2001 11 21 | 704 | 1.3− | 0.5+ | 2006 11 18 | 691 | 0.3+ | 0.1+ |
| 2001 10 18 | 644 | (0.2+ | 1.7+) | 2001 11 21 | 704 | 0.0 | 0.5− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 10 18 | 644 | (0.1− | 2.1+) | 2001 11 21 | 704 | 1.2− | 1.0+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.9− | 0.4+ | 2004 04 28 | 691 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2001 10 20 | 704 | 0.3− | 0.0 | 2004 04 28 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 0.8− | 0.8+ | 2004 04 28 | 691 | 0.1− | 0.2− | 2006 11 22 | 691 | 1.1− | 0.1+ |
| 2001 10 20 | 704 | 0.6− | 0.1+ | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.7+ | 0.9− |
| 2001 10 23 | 704 | 0.5− | 0.3− | 2004 05 13 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.7− | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 0.8+ | 2004 05 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.0 |
| 2001 10 23 | 704 | (0.2− | 1.6+) | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2001 10 23 | 704 | 0.3+ | 1.1+ | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.3− | 0.3+ |

**(140255)∗ 2001 SN$_{257}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.82507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17353725 | $\omega$ | 208.50802 | | +0.89528876 | −0.44546326 | |
| $a$ | 3.1832757 | $\Omega$ | 177.92894 | | +0.42881988 | +0.85899471 | |
| $e$ | 0.1842729 | $i$ | 7.20046 | | +0.12071265 | +0.25236990 | |
| $P$ | 5.68 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.5+ | 0.5+ | 2001 12 15 | 704 | 0.3− | 0.4+ | 2006 08 30 | 704 | 0.0 | 1.1+ |
| 2000 08 02 | 704 | 0.2− | 0.4+ | 2002 01 05 | 699 | 0.7+ | 1.0− | 2006 08 30 | 704 | 0.3+ | 1.0+ |
| 2000 08 02 | 704 | 0.4− | 0.1+ | 2002 01 05 | 699 | 0.1− | 0.8− | 2006 08 30 | 704 | 0.1+ | 0.8+ |
| 2001 09 19 | 704 | 0.7+ | 0.0 | 2002 01 05 | 699 | (1.6+ | 0.2+) | 2006 08 30 | 704 | 0.3+ | 0.4+ |
| 2001 09 19 | 704 | 0.1+ | 1.1− | 2002 01 05 | 699 | 0.2+ | 0.8− | 2006 08 30 | 704 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 1.5− | 0.3− | 2002 01 14 | 704 | (0.4− | 1.9+) | 2006 08 30 | 704 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.6− | 2002 01 14 | 704 | (1.2− | 2.3+) | 2006 08 30 | 704 | 0.7− | 0.4+ |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2002 01 14 | 704 | (1.0+ | 2.4+) | 2006 08 30 | 704 | 0.5+ | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2002 01 14 | 704 | (0.7− | 2.1+) | 2006 08 30 | 704 | 1.1+ | 0.4+ |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2003 01 26 | 699 | 0.0 | 1.1+ | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2003 01 26 | 699 | 0.6− | 1.4+ | 2006 09 14 | 703 | 0.5+ | 0.2+ |
| 2001 09 21 | 704 | (1.7+ | 0.0 ) | 2003 01 26 | 699 | 0.6+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2001 10 13 | 699 | 0.7− | 0.5+ | 2003 01 26 | 699 | 0.3− | 0.8− | 2006 09 14 | 703 | 0.1+ | 0.2− |
| 2001 10 13 | 699 | 0.5− | 0.6+ | 2003 02 02 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 699 | 0.7− | 1.5+ |
| 2001 10 13 | 699 | 0.8− | 0.2+ | 2003 02 02 | 704 | 1.4+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.9+ |
| 2001 10 13 | 699 | 0.9− | 0.4+ | 2003 02 02 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 699 | 0.2− | 1.2+ |
| 2001 10 17 | 704 | 0.0 | 0.2+ | 2003 02 02 | 704 | (2.1+ | 0.1+) | 2006 09 20 | 704 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.2− | 0.3− | 2003 02 04 | 608 | (2.5+ | 2.5+) | 2006 09 20 | 704 | 0.3− | 0.5+ |
| 2001 10 17 | 704 | 0.4+ | 0.9− | 2003 02 04 | 608 | (2.0+ | 3.2+) | 2006 09 20 | 704 | 0.6− | 0.4+ |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2003 02 04 | 608 | (1.9+ | 2.8+) | 2006 09 20 | 704 | 0.2− | 0.4+ |
| 2001 10 17 | 704 | 0.0 | 0.3− | 2003 02 09 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 2001 10 23 | 608 | 0.4− | 0.8− | 2003 02 09 | 644 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 1.3+ |
| 2001 10 23 | 608 | 0.0 | 0.9− | 2003 02 09 | 644 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.5+ |
| 2001 10 23 | 608 | 0.2− | 0.5− | 2003 03 07 | 704 | 0.8+ | 0.7+ | 2006 09 25 | 699 | (0.2− | 1.7+) |
| 2001 10 24 | 704 | 1.1+ | 1.1− | 2003 03 07 | 704 | 0.5+ | 1.0+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2003 03 07 | 704 | 0.4+ | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 1.1− | 1.1− | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 0.5+ | 0.3− | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2001 11 09 | 704 | 0.9− | 0.6− | 2006 08 18 | 704 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 11 09 | 704 | (1.7− | 0.0 ) | 2006 08 18 | 699 | 0.5− | 0.5+ | 2006 09 29 | 704 | (1.5+ | 0.6−) |
| 2001 11 09 | 704 | 1.2− | 0.1− | 2006 08 18 | 704 | 0.2− | 0.4− | 2006 09 29 | 704 | 0.0 | 1.2− |
| 2001 11 09 | 704 | (3.0− | 0.3−) | 2006 08 18 | 699 | 0.1− | 0.5+ | 2006 09 29 | 704 | 1.3+ | 1.4− |
| 2001 11 09 | 704 | 0.1− | 0.1− | 2006 08 18 | 704 | 0.5− | 0.5+ | 2006 09 29 | 704 | 0.8+ | 0.6− |
| 2001 11 19 | 699 | 0.4+ | 0.0 | 2006 08 18 | 704 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.6− | 1.5+ |
| 2001 11 19 | 699 | 0.5+ | 0.5− | 2006 08 18 | 699 | 0.6− | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2001 11 19 | 699 | 0.6+ | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2001 11 19 | 699 | 1.0+ | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2001 11 20 | 704 | 0.0 | 1.3+ | 2006 08 19 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 11 20 | 704 | 0.0 | 1.3+ | 2006 08 24 | 704 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.3− | 1.2+ | 2006 08 24 | 704 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2001 11 20 | 704 | (0.5+ | 1.6+) | 2006 08 24 | 704 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 0.6+ | 2006 08 24 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 2001 11 24 | 644 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.0+ | 1.3− |
| 2001 11 24 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.2− | 0.0 |
| 2001 11 24 | 644 | 0.3+ | 1.1+ | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.5+ |
| 2001 12 11 | 704 | 0.5+ | 0.1− | 2006 08 28 | 699 | 0.5− | 0.6+ | 2006 11 13 | G96 | 0.6+ | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 11 13 | G96 | 0.3− | 0.5− |
| 2001 12 11 | 704 | 0.2+ | 0.0 | 2006 08 28 | 699 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.6+ | 0.2− |
| 2001 12 11 | 704 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.5+ | 0.3− | 2006 11 13 | G96 | 0.4− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.6+ | 0.1− | 2006 08 28 | 699 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.3+ |
| 2001 12 15 | 704 | 0.1− | 0.7+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.4− |
| 2001 12 15 | 704 | 0.8− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.2+ | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3− | 0.0 |

**(140256)∗ 2001 SB$_{258}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.41829 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18862463 | $\omega$ | 54.01549 | | +0.20904092 | −0.97457503 | |
| $a$ | 3.0111827 | $\Omega$ | 24.29655 | | +0.82223611 | +0.13051759 | |
| $e$ | 0.1089033 | $i$ | 11.30457 | | +0.52936724 | +0.18212268 | |
| $P$ | 5.23 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.1− | 0.5− | 2001 10 24 | 704 | 0.3− | 1.1+ | 2004 04 13 | 691 | 0.2+ | 0.3+ |
| 2001 09 11 | 699 | 1.5+ | 1.3+ | 2002 12 31 | 699 | 0.2+ | 1.5+ | 2004 04 16 | 644 | 0.3+ | 0.5+ |
| 2001 09 11 | 699 | 0.6− | 0.0 | 2002 12 31 | 699 | 0.6+ | 0.6+ | 2004 04 16 | 644 | 0.2+ | 0.7+ |
| 2001 09 11 | 699 | 0.2+ | 0.6+ | 2002 12 31 | 699 | 1.9+ | 0.3+ | 2004 04 16 | 644 | 0.6+ | 0.7+ |
| 2001 09 18 | 699 | 0.7− | 1.3+ | 2002 12 31 | 699 | 1.0+ | 0.7+ | 2004 05 09 | 691 | 0.4− | 0.2+ |
| 2001 09 18 | 699 | 0.8− | 0.1+ | 2003 01 07 | 704 | 0.3+ | 0.6− | 2004 05 09 | 691 | 0.1+ | 0.7+ |
| 2001 09 18 | 699 | 1.3− | 0.0 | 2003 01 07 | 704 | 0.0 | 0.1− | 2004 05 09 | 691 | 0.4+ | 0.7+ |
| 2001 09 18 | 699 | 1.2+ | 0.7− | 2003 01 07 | 704 | 0.8+ | 0.2− | 2006 08 30 | 699 | 1.1− | 1.4+ |
| 2001 09 20 | 704 | 0.5− | 0.7− | 2003 01 07 | 704 | 0.0 | 0.1+ | 2006 08 30 | 699 | 1.5+ | 0.8+ |
| 2001 09 20 | 704 | 1.0− | 0.4+ | 2003 01 10 | 704 | 0.6− | 0.1+ | 2006 08 30 | 699 | 1.9− | 0.6− |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2003 01 10 | 704 | 0.4− | 0.2+ | 2006 08 30 | 699 | 0.4− | 0.9− |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2003 01 10 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.1+ | 1.3+ |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2003 01 13 | 704 | 0.0 | 0.9+ | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2003 01 13 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.8− | 0.4+ | 2003 01 13 | 704 | 0.9− | 0.8+ | 2006 09 20 | 703 | 1.3+ | 1.0+ |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2003 01 13 | 704 | 1.0− | 0.0 | 2006 09 20 | 703 | 0.5+ | 0.0 |
| 2001 09 24 | 644 | 0.0 | 0.1+ | 2003 01 13 | 704 | 0.8− | 1.1+ | 2006 09 20 | 703 | 0.8+ | 0.5+ |
| 2001 09 24 | 644 | 0.4− | 0.3+ | 2004 04 11 | 644 | 0.8+ | 0.4+ | 2006 09 20 | 703 | 1.5− | 0.3− |
| 2001 09 24 | 644 | 0.0 | 0.1− | 2004 04 11 | 644 | 0.7+ | 0.5+ | 2006 09 26 | 703 | 0.7+ | 0.9+ |
| 2001 10 24 | 704 | 0.1− | 0.6+ | 2004 04 11 | 644 | 0.9+ | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.1− |
| 2001 10 24 | 704 | 0.6− | 1.2+ | 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 1.2− | 0.6− |
| 2001 10 24 | 704 | 0.3− | 1.3+ | 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.3+ |

**(140257)∗ 2001 SE$_{258}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.75528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23131336 | $\omega$ | 214.06977 | | −0.93599060 | +0.35166055 | |
| $a$ | 2.6282635 | $\Omega$ | 346.49129 | | −0.30577224 | −0.83470942 | |
| $e$ | 0.0826014 | $i$ | 3.93101 | | −0.17442744 | −0.42378656 | |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 09 | 691 | 0.1− | 0.2+ | 2004 03 20 | 699 | 0.7+ | 1.4+ | 2004 04 30 | 608 | 0.2+ | 0.2− |
| 1993 11 09 | 691 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.9+ | 1.3+ | 2004 04 30 | 608 | 0.9+ | 0.4+ |
| 1993 11 09 | 691 | 0.2+ | 0.0 | 2004 03 20 | 704 | (1.6+ | 1.3+) | 2004 04 30 | 608 | 0.3+ | 0.0 |
| 2001 08 17 | 644 | 0.0 | 0.5+ | 2004 03 27 | 704 | 0.7− | 0.7+ | 2005 07 27 | 644 | 0.2+ | 0.1+ |
| 2001 08 17 | 644 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.4− | 0.4+ | 2005 07 27 | 644 | 0.3+ | 0.5+ |
| 2001 08 17 | 644 | 0.1+ | 0.4+ | 2004 03 27 | 704 | 0.2+ | 0.0 | 2005 07 27 | 644 | 0.1+ | 0.3+ |
| 2001 08 27 | 691 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.2+ | 1.0+ | 2005 08 22 | 644 | 0.2− | 1.3− |
| 2001 08 27 | 691 | 0.4− | 0.5+ | 2004 03 31 | 704 | 0.4+ | 0.6+ | 2005 08 22 | 644 | 0.4− | 0.6− |
| 2001 08 27 | 691 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.8− | 0.5+ | 2005 08 22 | 644 | 0.3+ | 0.2− |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2004 03 31 | 704 | 0.9− | 0.1+ | 2005 10 25 | G96 | 0.5− | 0.1− |
| 2001 09 11 | 699 | 0.2+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2005 10 25 | G96 | 0.3− | 0.2− |
| 2001 09 11 | 699 | 0.8− | 0.7+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2005 10 25 | G96 | 0.1− | 0.5− |
| 2001 09 11 | 699 | 0.2+ | 0.3− | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2005 10 25 | G96 | 0.7+ | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2004 04 15 | 699 | 0.4− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 699 | 0.0 | 0.7+ | 2006 10 04 | G96 | 0.4− | 0.2− |
| 2001 09 20 | 704 | 0.1− | 0.0 | 2004 04 15 | 699 | 0.5− | 0.6+ | 2006 10 04 | G96 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2004 04 15 | 699 | 0.6− | 0.9+ | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2004 04 17 | 704 | (1.5+ | 0.6+) | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2001 09 21 | 691 | 0.1+ | 0.3+ | 2004 04 17 | 704 | 1.1+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2001 09 21 | 691 | 0.0 | 0.2+ | 2004 04 17 | 704 | 1.1+ | 0.4− | 2006 10 19 | 691 | 0.7+ | 0.1− |
| 2001 09 21 | 691 | 0.4+ | 0.1+ | 2004 04 17 | 704 | 1.0+ | 0.9+ | 2006 10 27 | 691 | 0.4− | 0.3+ |
| 2001 09 21 | 704 | 1.0− | 1.0+ | 2004 04 20 | 703 | 1.2− | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | (0.9− | 1.5+) | 2004 04 20 | 703 | 1.1+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | (1.2− | 2.5+) | 2004 04 20 | 703 | (0.1+ | 1.8+) | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | (0.6− | 1.7+) | 2004 04 20 | 703 | 0.2− | 1.3+ | 2006 11 15 | 691 | 0.2− | 0.5+ |
| 2002 12 11 | 704 | 0.4+ | 0.4− | 2004 04 20 | 704 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.2+ | 0.4+ | 2006 11 27 | 291 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | 0.8− | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.4+ | 2006 11 27 | 291 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.2− | 2004 04 20 | 704 | 0.4− | 0.9+ | 2006 11 27 | 291 | 0.1− | 0.2+ |
| 2004 03 20 | 699 | 0.7+ | 0.1− | 2004 04 20 | 704 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2004 03 20 | 699 | (1.8+ | 1.0+) | 2004 04 22 | 704 | 0.4+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.3+ | 0.2+ | 2004 04 22 | 704 | 0.4+ | 0.4− | 2006 12 01 | G96 | 0.0 | 0.3+ |
| 2004 03 20 | 699 | 0.4+ | 0.6− | 2004 04 22 | 704 | 0.1− | 0.6− | 2006 12 01 | G96 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 1.0+ | 0.4− | 2004 04 22 | 704 | 0.1+ | 0.5− | | | | |
| 2004 03 20 | 704 | 0.8+ | 0.9+ | 2004 04 22 | 704 | 0.8+ | 0.2+ | | | | |

**(140258)∗ 2001 SN$_{260}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.86327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20665250 | $\omega$ | 136.96911 | | +0.99932190 | −0.03093954 | |
| $a$ | 2.8334068 | $\Omega$ | 224.81572 | | +0.02106663 | +0.92508115 | |
| $e$ | 0.0875049 | $i$ | 1.62293 | | +0.03019816 | +0.37850708 | |
| $P$ | 4.77 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.3− | 0.1+ | 2001 10 13 | 699 | 0.1− | 0.7+ | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 1994 03 10 | 691 | 0.3− | 0.2+ | 2001 10 13 | 704 | 0.7+ | 1.3− | 2006 09 27 | G96 | 0.4+ | 0.3− |
| 1994 03 10 | 691 | 1.0+ | 0.7+ | 2001 10 13 | 704 | 0.8+ | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.0 |
| 2001 09 18 | 691 | 0.3+ | 0.1+ | 2001 10 15 | 291 | 0.9− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2001 09 18 | 691 | 0.1+ | 0.1+ | 2001 10 15 | 291 | 0.4− | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.6+ |
| 2001 09 18 | 691 | 0.4+ | 0.2+ | 2001 10 15 | 291 | 1.0− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 0.2+ | 2001 10 16 | 704 | 0.1+ | 0.8− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.7+ | 0.6− | 2001 10 16 | 704 | 0.7+ | 0.6− | 2006 10 16 | 691 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2001 10 16 | 704 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2001 10 16 | 704 | (2.0+ | 0.1−) | 2006 10 20 | 691 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.0 | 2001 10 18 | 644 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | (0.4− | 1.7−) | 2001 10 18 | 644 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2001 09 21 | 704 | 0.4− | 0.1− | 2001 10 18 | 644 | 0.5− | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2001 10 21 | 704 | 0.7− | 0.7+ | 2006 10 27 | G96 | 0.3− | 0.5− |
| 2001 09 23 | 704 | 0.4− | 0.2+ | 2001 10 21 | 704 | 1.2− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2001 09 23 | 704 | 0.1− | 0.7+ | 2001 10 21 | 704 | (1.9− | 0.1−) | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2001 09 23 | 704 | 0.1+ | 0.2+ | 2001 10 21 | 704 | 0.8− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 09 24 | 704 | 0.0 | 0.5− | 2001 10 21 | 704 | 1.3− | 0.3− | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 2001 09 24 | 704 | 1.0+ | 0.5+ | 2002 12 09 | 291 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 09 24 | 704 | 0.8− | 1.1+ | 2002 12 09 | 291 | 0.8− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2001 09 24 | 704 | 1.3+ | 0.4+ | 2002 12 09 | 291 | 0.3− | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 09 24 | 704 | 1.1+ | 0.2+ | 2002 12 28 | 291 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2001 10 11 | 644 | 0.0 | 0.2+ | 2002 12 28 | 291 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2001 10 11 | 644 | 0.1− | 0.4+ | 2002 12 28 | 291 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.6+ | 0.4− |
| 2001 10 11 | 644 | 0.1− | 0.2+ | 2003 01 29 | 645 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 2001 10 13 | 699 | (0.6− | 1.9+) | 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 10 13 | 699 | 0.7+ | 0.2+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 10 13 | 699 | (1.7− | 0.1+) | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.5− | 1.7− |
| 2001 10 13 | 704 | (0.2− | 1.8−) | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2001 10 13 | 704 | 0.1+ | 1.5+ | 2006 09 27 | G96 | 0.1− | 0.3− | | | | |

**(140259)∗ 2001 SQ$_{260}$ = 1998 EX**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.48814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17829761 | $\omega$ | 205.20226 | | +0.78091138 | −0.62429272 | |
| $a$ | 3.1263604 | $\Omega$ | 193.49021 | | +0.58719117 | +0.74508224 | |
| $e$ | 0.1633758 | $i$ | 5.13551 | | +0.21303511 | +0.23475745 | |
| $P$ | 5.53 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 28 | 691 | 0.5− | 0.1+ | 2001 10 13 | 704 | 0.1+ | 0.1+ | 2001 11 20 | 704 | 1.1− | 0.7− |
| 1992 01 28 | 691 | 0.1− | 0.1+ | 2001 10 14 | 699 | 0.7+ | 0.3+ | 2003 01 07 | 704 | 0.2+ | 0.6+ |
| 1992 01 28 | 691 | 0.2+ | 0.1+ | 2001 10 14 | 699 | 0.0 | 0.3− | 2003 01 07 | 704 | 0.2− | 0.4+ |
| 1998 03 02 | 910 | 0.2− | 1.2− | 2001 10 14 | 699 | 1.2− | 0.4+ | 2003 01 07 | 704 | 0.4− | 0.2+ |
| 1998 03 02 | 910 | 1.1+ | 0.3− | 2001 10 14 | 699 | 0.1− | 0.3+ | 2003 01 27 | 644 | 0.4− | 0.5+ |
| 1998 03 02 | 910 | 1.0+ | 0.5− | 2001 10 16 | 704 | 0.3+ | 1.6+ | 2003 01 27 | 644 | 0.1− | 0.4+ |
| 1998 03 02 | 910 | 1.0+ | 0.0 | 2001 10 16 | 704 | 0.0 | 0.6+ | 2003 01 27 | 644 | 0.8+ | 0.0 |
| 1998 03 02 | 910 | 0.6+ | 1.0− | 2001 10 16 | 704 | 0.4+ | 0.7+ | 2003 02 03 | 644 | 0.2− | 0.5+ |
| 1998 03 02 | 910 | 0.8+ | 0.8− | 2001 10 16 | 704 | 0.4− | 0.7+ | 2003 02 03 | 644 | 0.6− | 0.6+ |
| 2001 09 16 | 644 | 0.4− | 0.3+ | 2001 10 16 | 704 | 0.7+ | 0.7+ | 2003 02 03 | 644 | 0.1− | 1.2+ |
| 2001 09 16 | 644 | 0.0 | 0.3+ | 2001 10 18 | 644 | 0.0 | 0.3+ | 2005 05 20 | G96 | 0.8− | 0.1+ |
| 2001 09 16 | 644 | 0.2− | 0.6+ | 2001 10 18 | 644 | 0.0 | 0.0 | 2005 05 20 | G96 | 0.6− | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.0 | 2001 10 18 | 644 | 0.1− | 0.1+ | 2005 05 20 | G96 | 1.0− | 0.4+ |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 20 | 704 | 0.1− | 0.3+ | 2005 05 20 | G96 | 0.3− | 0.3+ |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2001 10 20 | 704 | 0.0 | 0.6− | 2006 08 14 | 644 | 0.2+ | 0.4+ |
| 2001 09 20 | 704 | 0.2− | 0.6− | 2001 10 20 | 704 | 0.3+ | 0.2− | 2006 08 14 | 644 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2001 10 20 | 704 | 0.7+ | 0.8− | 2006 08 14 | 644 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2001 10 20 | 704 | 0.1+ | 1.2− | 2006 08 19 | 699 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.7+ | 0.1+ | 2001 10 21 | 695 | 0.1− | 0.2+ | 2006 08 19 | 699 | 0.5+ | 0.2+ |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2001 10 21 | 695 | 0.0 | 0.3+ | 2006 08 19 | 699 | 0.1− | 1.1+ |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2001 10 23 | 704 | 0.1+ | 0.3+ | 2006 08 19 | 699 | 0.1− | 0.2+ |
| 2001 09 23 | 333 | 1.1+ | 0.5− | 2001 10 23 | 704 | 0.1− | 0.7− | 2006 08 21 | 644 | 0.1+ | 0.0 |
| 2001 09 23 | 333 | 0.3+ | 1.0− | 2001 10 23 | 704 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.0 | 0.2+ |
| 2001 09 23 | 333 | 1.1+ | 1.6− | 2001 10 23 | 704 | 0.1− | 0.3− | 2006 08 21 | 644 | 0.3+ | 0.3+ |
| 2001 09 26 | 704 | 0.2+ | 0.8− | 2001 10 24 | 704 | 0.0 | 0.1− | 2006 08 28 | 699 | 1.1− | 0.4+ |
| 2001 09 26 | 704 | 1.3− | 0.4− | 2001 10 24 | 704 | 0.5+ | 0.0 | 2006 08 28 | 699 | 0.4+ | 0.6+ |
| 2001 09 26 | 704 | 0.3− | 0.2− | 2001 10 24 | 704 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.2+ | 1.3+ |
| 2001 09 26 | 704 | 0.3+ | 1.5− | 2001 10 24 | 704 | 0.1+ | 0.1− | 2006 08 28 | 699 | 1.9+ | 0.6− |
| 2001 10 07 | 644 | 0.1+ | 0.2+ | 2001 10 24 | 704 | 0.1− | 0.2− | 2006 08 28 | 703 | 1.1− | 0.3+ |
| 2001 10 07 | 644 | 0.2+ | 0.0 | 2001 10 25 | 644 | 0.1− | 1.0+ | 2006 08 28 | 703 | 0.8− | 0.5− |
| 2001 10 07 | 644 | 0.4+ | 0.0 | 2001 10 25 | 644 | 0.0 | 1.1+ | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2001 10 12 | 699 | 0.1+ | 0.0 | 2001 10 25 | 644 | 0.2+ | 1.1+ | 2006 08 28 | 703 | 0.1− | 0.0 |
| 2001 10 12 | 699 | 0.3+ | 0.3+ | 2001 11 18 | 704 | 0.0 | 0.2− | 2006 09 13 | 644 | 0.2+ | 0.3− |
| 2001 10 12 | 699 | 0.3− | 0.3+ | 2001 11 18 | 704 | 0.4− | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.2− |
| 2001 10 12 | 699 | 0.1+ | 0.0 | 2001 11 18 | 704 | 0.4− | 1.2− | 2006 09 13 | 644 | 0.3+ | 0.4+ |
| 2001 10 13 | 704 | 0.2+ | 0.1− | 2001 11 18 | 704 | 1.0− | 0.6− | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2001 10 13 | 704 | 0.1− | 0.4+ | 2001 11 20 | 704 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2001 10 13 | 704 | 0.1+ | 0.3− | 2001 11 20 | 704 | 0.5− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2001 10 13 | 704 | 0.3+ | 0.2− | 2001 11 20 | 704 | 0.5− | 0.7− | 2006 09 28 | G96 | 0.1− | 0.5− |

**(140260)∗ 2001 SG$_{263}$**

Discovered 2001 Sept. 25 by G. Hug at Farpoint Observatory, Eskridge.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.64319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22607135 | $\omega$ | 328.11339 | | +0.70676294 | −0.70142298 | |
| $a$ | 2.6687365 | $\Omega$ | 76.72710 | | +0.66734357 | +0.61777933 | |
| $e$ | 0.1965732 | $i$ | 5.43296 | | +0.23481633 | +0.35546378 | |
| $P$ | 4.36 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | (2.5− | 1.5−) | 2001 09 25 | 734 | 0.3+ | 0.2+ | 2001 11 10 | 734 | 0.5+ | 0.4− |
| 1997 11 29 | 704 | (3.3− | 1.0−) | 2001 09 25 | 734 | 0.3+ | 0.2+ | 2001 11 10 | 734 | 1.0+ | 0.8− |
| 1997 11 29 | 704 | 1.3− | 1.0− | 2001 09 25 | 704 | (1.4+ | 2.7+) | 2003 01 28 | 645 | 0.1+ | 0.2+ |
| 1997 11 29 | 704 | (4.3− | 1.3+) | 2001 09 25 | 704 | (1.9+ | 1.8+) | 2003 01 28 | 645 | 0.2+ | 0.2+ |
| 1997 12 05 | 704 | 1.0− | 0.1+ | 2001 09 26 | 734 | 0.1+ | 0.1− | 2003 03 23 | 734 | 0.9+ | 1.1+ |
| 1997 12 05 | 704 | (2.2+ | 0.6+) | 2001 09 26 | 734 | 0.4+ | 0.6− | 2003 03 23 | 734 | 0.6− | 0.7+ |
| 1997 12 05 | 704 | 1.4+ | 0.1+ | 2001 09 26 | 734 | 0.5+ | 0.3− | 2003 03 23 | 734 | 0.1− | 0.6+ |
| 1997 12 05 | 704 | (4.5+ | 2.5+) | 2001 09 26 | 734 | 0.5+ | 0.2− | 2004 05 21 | 691 | 0.0 | 0.4+ |
| 1997 12 05 | 704 | (3.1+ | 0.7+) | 2001 09 27 | 644 | 0.2− | 0.4+ | 2004 05 21 | 691 | 0.2− | 0.3+ |
| 2001 07 19 | 644 | 0.4− | 0.1+ | 2001 09 27 | 644 | 0.2− | 0.3+ | 2004 05 21 | 691 | 0.3+ | 0.6+ |
| 2001 07 19 | 644 | 0.5− | 0.1+ | 2001 09 27 | 644 | 0.0 | 0.2+ | 2005 08 04 | 644 | 0.4− | 0.2+ |
| 2001 07 19 | 644 | 0.5− | 0.2− | 2001 09 28 | 734 | 0.6+ | 0.1− | 2005 08 04 | 644 | 0.3− | 0.3+ |
| 2001 09 11 | 699 | 0.2+ | 1.1+ | 2001 09 28 | 734 | 0.6+ | 0.2+ | 2005 08 04 | 644 | 0.3− | 0.3+ |
| 2001 09 11 | 699 | 0.2− | 0.7+ | 2001 09 28 | 734 | 0.2+ | 0.7+ | 2006 09 24 | 691 | 0.0 | 0.1− |
| 2001 09 11 | 699 | 0.5− | 0.6+ | 2001 09 28 | 734 | 0.5− | 0.7+ | 2006 09 24 | 691 | 0.2− | 0.3+ |
| 2001 09 11 | 699 | 0.2+ | 1.3+ | 2001 10 08 | 644 | 0.1− | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.4+ |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2001 10 08 | 644 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2001 09 12 | 704 | 0.2− | 0.4− | 2001 10 08 | 644 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.0 | 2001 10 11 | 704 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2001 09 12 | 704 | 0.4+ | 0.3− | 2001 10 11 | 704 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2001 10 11 | 704 | 0.8− | 0.6+ | 2006 10 22 | G96 | 0.1− | 1.2− |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2001 10 11 | 704 | 0.3− | 0.4− | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2001 10 11 | 704 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.1− | 2001 10 12 | 734 | 1.0− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2001 10 12 | 734 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.2− | 1.0+ | 2001 10 14 | 734 | 0.3+ | 1.1+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2001 09 24 | 644 | 0.2+ | 0.4− | 2001 10 14 | 734 | 0.2+ | 1.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 09 24 | 644 | 0.2− | 0.6− | 2001 10 19 | 699 | 0.1+ | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 24 | 644 | 0.2+ | 0.3− | 2001 10 19 | 699 | 1.3− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2001 09 25 | 704 | (2.0+ | 2.5+) | 2001 10 19 | 699 | 0.8− | 1.3+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | (2.1+ | 2.3+) | 2001 10 19 | 699 | 0.7− | 1.0+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 09 25 | 734 | 0.3+ | 0.2+ | 2001 11 10 | 734 | 0.1+ | 0.7− | 2006 11 21 | G96 | 0.3− | 0.2− |

**(140261)∗ 2001 SJ$_{263}$**

Discovered 2001 Sept. 25 by C. W. Juels and P. R. Holvorcem at Fountain Hills.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.40704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22722241 | $\omega$ | 111.47729 | | +0.77750212 | −0.60486622 | |
| $a$ | 2.6597161 | $\Omega$ | 286.15264 | | +0.49000007 | +0.75423027 | |
| $e$ | 0.2019854 | $i$ | 10.32316 | | +0.39419586 | +0.25548692 | |
| $P$ | 4.34 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 699 | 0.8− | 0.5+ | 2001 11 12 | 704 | 1.2− | 0.7+ | 2005 09 12 | 951 | 0.1− | 0.2+ |
| 2001 07 29 | 699 | 0.9− | 0.6+ | 2001 12 07 | 644 | 0.2− | 0.1− | 2005 09 12 | 951 | 1.3− | 0.3− |
| 2001 07 29 | 699 | 0.6− | 0.3+ | 2001 12 07 | 644 | 0.2− | 0.0 | 2005 09 12 | 951 | 0.7− | 0.1+ |
| 2001 07 29 | 699 | 1.2− | 0.5+ | 2001 12 07 | 644 | 0.1− | 0.0 | 2005 09 24 | 703 | 0.1+ | 0.5+ |
| 2001 08 22 | 704 | 0.8− | 1.0+ | 2001 12 10 | 704 | 0.0 | 0.0 | 2005 09 24 | 703 | 0.4+ | 0.4+ |
| 2001 08 22 | 704 | 0.6− | 0.2− | 2001 12 10 | 704 | 0.1− | 0.3+ | 2005 09 24 | 703 | 0.1+ | 0.7+ |
| 2001 08 22 | 704 | 0.0 | 1.0− | 2001 12 10 | 704 | 0.3+ | 0.4+ | 2005 09 24 | 703 | 0.0 | 0.2− |
| 2001 09 19 | 644 | 0.4− | 0.3+ | 2001 12 10 | 704 | 0.4+ | 0.4+ | 2005 09 29 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 644 | 0.4− | 0.2+ | 2001 12 10 | 704 | 0.2+ | 0.8+ | 2005 09 29 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 644 | 0.3− | 0.2+ | 2001 12 14 | 704 | 1.2+ | 0.3+ | 2005 09 29 | 644 | 0.2− | 0.4+ |
| 2001 09 22 | 699 | 0.1+ | 0.4+ | 2001 12 14 | 704 | 0.0 | 0.1+ | 2005 10 27 | 703 | 0.1− | 0.1+ |
| 2001 09 22 | 699 | 0.3− | 0.2+ | 2001 12 14 | 704 | 0.4+ | 0.7+ | 2005 10 27 | 703 | 0.6− | 0.0 |
| 2001 09 22 | 699 | 0.2+ | 0.9− | 2001 12 14 | 704 | 0.5+ | 0.0 | 2005 10 27 | 703 | 0.5− | 0.1− |
| 2001 09 22 | 699 | 0.2+ | 0.4− | 2001 12 21 | 704 | 0.3+ | 0.3+ | 2005 10 27 | 704 | 0.0 | 0.4+ |
| 2001 09 24 | 704 | 0.6+ | 0.6+ | 2001 12 21 | 704 | 0.2+ | 0.1+ | 2005 10 27 | 703 | 0.1+ | 0.1+ |
| 2001 09 24 | 704 | 0.2+ | 0.6+ | 2001 12 21 | 704 | 0.3− | 0.5+ | 2005 10 27 | 704 | 0.3+ | 0.5+ |
| 2001 09 24 | 704 | 0.1+ | 0.6+ | 2002 01 06 | 699 | 0.9− | 0.7− | 2005 10 27 | 704 | 0.5+ | 0.1+ |
| 2001 09 24 | 704 | 0.0 | 0.6+ | 2002 01 06 | 699 | 0.7− | 0.6+ | 2005 10 27 | 704 | 0.8+ | 0.8+ |
| 2001 09 24 | 704 | 0.1+ | 0.5+ | 2002 01 06 | 699 | 0.2− | 0.2− | 2005 11 01 | 644 | 0.2− | 0.1+ |
| 2001 09 25 | 678 | (3.3− | 4.6+) | 2002 01 06 | 699 | 1.5+ | 0.4− | 2005 11 01 | 644 | 0.1− | 0.1+ |
| 2001 09 25 | 678 | (1.6− | 1.1−) | 2002 01 09 | 704 | (1.7− | 1.1+) | 2005 11 01 | 644 | 0.2− | 0.2+ |
| 2001 09 26 | 678 | 0.2+ | 1.1− | 2002 01 09 | 704 | (1.8− | 0.9+) | 2005 11 19 | 644 | 0.1+ | 0.0 |
| 2001 09 26 | 678 | 1.1− | 0.5+ | 2002 01 09 | 704 | (1.6− | 0.7+) | 2005 11 19 | 644 | 0.0 | 0.3+ |
| 2001 09 26 | 678 | 0.2− | 0.2− | 2002 01 09 | 704 | (0.8− | 1.9+) | 2005 11 19 | 644 | 0.3+ | 0.4+ |
| 2001 09 26 | 678 | 1.2− | 0.5+ | 2002 01 09 | 704 | 1.3− | 1.1+ | 2005 12 02 | 703 | 0.2+ | 0.5− |
| 2001 09 28 | 678 | (2.0+ | 1.0+) | 2003 03 10 | 704 | 0.2− | 0.7+ | 2005 12 02 | 703 | 0.1+ | 0.0 |
| 2001 09 28 | 678 | (2.4+ | 0.6+) | 2003 03 10 | 704 | 0.2− | 0.4+ | 2005 12 02 | 703 | 0.1− | 0.7− |
| 2001 10 08 | 636 | 0.6+ | 0.2− | 2003 03 10 | 704 | (0.4+ | 2.1+) | 2005 12 02 | 703 | 0.4− | 0.5+ |
| 2001 10 08 | 636 | 1.0+ | 0.5− | 2003 03 10 | 704 | (0.9+ | 1.6+) | 2005 12 06 | 704 | 0.7− | 1.2+ |
| 2001 10 08 | 636 | 0.7+ | 0.8− | 2003 03 10 | 704 | 0.1+ | 0.0 | 2005 12 06 | 704 | 0.2+ | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 678 | (1.8+ | 0.1−) | 2003 03 27 | 644 | 0.5+ | 0.7+ | 2005 12 06 | 704 | 0.8− | 0.4+ | | |
| 2001 10 10 | 678 | 0.7+ | 0.2− | 2003 03 27 | 644 | 0.5+ | 1.1+ | 2005 12 06 | 704 | 1.0− | 0.5+ | | |
| 2001 10 10 | 678 | 1.3+ | 0.4− | 2003 03 27 | 644 | 0.6+ | 0.5+ | 2005 12 06 | 704 | 0.1− | 1.3+ | | |
| 2001 10 15 | 704 | 0.5− | 0.8− | 2003 03 28 | 699 | 1.1+ | 0.8+ | 2005 12 25 | 703 | 0.9− | 0.3+ | | |
| 2001 10 15 | 704 | 0.1− | 0.8− | 2003 03 28 | 699 | 0.1+ | 0.8+ | 2005 12 25 | 703 | (0.0 | 2.0+) | | |
| 2001 10 15 | 704 | 0.0 | 1.0− | 2003 03 28 | 699 | 0.2+ | 1.3+ | 2005 12 25 | 703 | 1.2− | 0.6+ | | |
| 2001 10 15 | 704 | 0.2− | 0.9− | 2003 03 28 | 699 | 0.8+ | 0.4+ | 2005 12 25 | 703 | 0.8− | 0.3− | | |
| 2001 10 15 | 704 | 0.1+ | 0.7− | 2005 06 30 | 703 | 0.7− | 0.2− | 2006 01 07 | 703 | (1.0+ | 1.6+) | | |
| 2001 10 18 | 704 | 0.5+ | 0.4− | 2005 06 30 | 703 | 0.2+ | 0.4− | 2006 01 07 | 703 | (0.6− | 1.6+) | | |
| 2001 10 18 | 704 | 0.7+ | 0.5− | 2005 06 30 | 703 | 0.4− | 0.6+ | 2006 01 07 | 703 | 0.6− | 0.1− | | |
| 2001 10 18 | 704 | 0.8+ | 0.6− | 2005 06 30 | 703 | 0.5− | 0.1+ | 2006 01 07 | 703 | 0.6− | 0.6+ | | |
| 2001 10 18 | 704 | 0.9+ | 1.0− | 2005 07 04 | 704 | 0.2− | 0.2+ | 2006 10 01 | 703 | 0.2+ | 0.0 | | |
| 2001 10 18 | 704 | 0.6+ | 1.1− | 2005 07 04 | 704 | 0.5− | 0.4+ | 2006 10 01 | 703 | 0.6− | 0.4− | | |
| 2001 10 20 | 699 | 0.1− | 0.4− | 2005 07 04 | 704 | 0.4+ | 0.6+ | 2006 10 01 | 703 | 0.5− | 0.1+ | | |
| 2001 10 20 | 699 | 0.7− | 0.1+ | 2005 07 04 | 704 | 0.7− | 0.7+ | 2006 10 01 | 703 | 0.7+ | 0.2− | | |
| 2001 10 20 | 699 | 0.2− | 0.0 | 2005 07 07 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 703 | (1.8− | 0.1−) | | |
| 2001 10 20 | 699 | 0.5− | 0.3− | 2005 07 07 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 703 | 1.2− | 0.8− | | |
| 2001 10 27 | 644 | 1.2+ | 1.3− | 2005 07 07 | 704 | 0.2− | 0.4+ | 2006 10 20 | 703 | 0.0 | 0.6− | | |
| 2001 10 27 | 644 | (1.1+ | 1.6+) | 2005 08 14 | 608 | 0.8− | 0.1− | 2006 10 20 | 703 | 1.1+ | 0.0 | | |
| 2001 10 27 | 644 | 1.2+ | 1.3− | 2005 08 14 | 608 | 0.7− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 27 | 644 | (1.3+ | 1.6+) | 2005 08 14 | 608 | 0.6− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 27 | 644 | 1.1+ | 1.4− | 2005 08 22 | 608 | 1.3+ | 0.7− | 2006 10 27 | 691 | 0.5+ | 0.1+ | | |
| 2001 10 27 | 644 | (1.4+ | 1.6+) | 2005 08 22 | 608 | 1.4+ | 0.9− | 2006 11 15 | 703 | 0.4− | 0.9+ | | |
| 2001 10 27 | 704 | 0.1+ | 0.1+ | 2005 08 22 | 608 | 0.7+ | 0.8− | 2006 11 15 | 703 | 0.5− | 0.9+ | | |
| 2001 10 27 | 704 | 0.3+ | 0.4+ | 2005 08 30 | 699 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.4− | 0.5− | | |
| 2001 10 27 | 704 | 0.4+ | 0.3+ | 2005 08 30 | 699 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.4− | | |
| 2001 10 27 | 704 | 0.3+ | 0.5+ | 2005 08 30 | 699 | (1.6− | 0.3+) | 2006 11 22 | G96 | 0.0 | 0.0 | | |
| 2001 10 27 | 704 | 0.3+ | 0.7+ | 2005 08 31 | 704 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.1− | | |
| 2001 11 11 | 699 | 0.2− | 0.4− | 2005 08 31 | 704 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.4− | 0.0 | | |
| 2001 11 11 | 699 | 0.1+ | 0.5− | 2005 08 31 | 704 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.5− | 0.0 | | |
| 2001 11 11 | 699 | 0.1− | 0.7− | 2005 09 06 | 704 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.4+ | | |
| 2001 11 11 | 699 | 0.1− | 0.5− | 2005 09 06 | 704 | 0.5− | 0.4+ | 2006 11 28 | 704 | 1.0+ | 0.6+ | | |
| 2001 11 12 | 704 | 1.2− | 1.4+ | 2005 09 06 | 704 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.2− | 0.4+ | | |
| 2001 11 12 | 704 | 1.1− | 1.4+ | 2005 09 11 | 699 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.5− | 0.2+ | | |
| 2001 11 12 | 704 | 1.0− | 1.2+ | 2005 09 11 | 699 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.8+ | | |
| 2001 11 12 | 704 | 1.1− | 0.8+ | 2005 09 11 | 699 | (1.6− | 0.5+) | | | | | | |

**(140262)∗ 2001 SZ$_{263}$**

Discovered 2001 Sept. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 262.46433 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17698552 | $\omega$ | 156.72312 | | +0.12114822 | | −0.93115392 | | |
| $a$ | 3.1417930 | $\Omega$ | 284.87322 | | +0.84560590 | | +0.27826741 | | |
| $e$ | 0.0825974 | $i$ | 20.84456 | | +0.51987860 | | −0.23562602 | | |
| $P$ | 5.57 | $H$ | 14.2 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.3− | 1.2+ | 2002 12 05 | 704 | 0.7− | 0.3+ | 2003 02 02 | 704 | 0.4+ | 0.7+ | | |
| 2001 08 23 | 704 | 0.2+ | 0.2+ | 2002 12 05 | 704 | 0.4+ | 0.7+ | 2003 02 02 | 704 | (3.7− | 0.8−) | | |
| 2001 08 23 | 704 | 0.3+ | 0.9+ | 2002 12 06 | 645 | 0.1− | 0.1− | 2003 02 02 | 704 | 1.8− | 1.4− | | |
| 2001 09 24 | 704 | 0.6− | 0.0 | 2002 12 06 | 645 | 0.1− | 0.1− | 2003 02 02 | 704 | (2.1− | 2.7−) | | |
| 2001 09 24 | 704 | 0.7− | 0.1+ | 2002 12 10 | 704 | 0.2+ | 1.0+ | 2003 02 02 | 704 | 1.5− | 1.3− | | |
| 2001 09 24 | 704 | 0.6− | 0.6+ | 2002 12 10 | 704 | 0.3+ | 0.7+ | 2004 03 18 | E12 | 0.2− | 0.8− | | |
| 2001 09 24 | 704 | 0.3− | 0.8+ | 2002 12 10 | 704 | 0.2+ | 0.3+ | 2004 03 18 | E12 | 0.7+ | 0.4+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.9− | 2002 12 31 | 704 | 0.4+ | 0.1+ | 2004 03 18 | E12 | 0.0 | 1.1− | | |
| 2001 09 26 | 704 | 0.8− | 0.7− | 2002 12 31 | 704 | 0.3+ | 0.1+ | 2004 03 18 | E12 | 0.1− | 0.4− | | |
| 2001 09 26 | 704 | 0.3− | 0.5+ | 2002 12 31 | 704 | 0.5+ | 0.6+ | 2004 04 13 | E12 | 0.5− | 0.5+ | | |
| 2001 09 26 | 704 | 0.7− | 0.4− | 2002 12 31 | 704 | 0.2+ | 0.0 | 2004 04 13 | E12 | 0.3+ | 0.6+ | | |
| 2001 09 26 | 704 | 1.2− | 0.1− | 2002 12 31 | 704 | 0.1− | 0.1+ | 2004 04 13 | E12 | 0.3− | 0.3+ | | |
| 2001 09 28 | 704 | 0.4− | 0.4− | 2003 01 04 | 704 | 0.1+ | 0.2+ | 2004 04 13 | E12 | 0.2+ | 0.0 | | |
| 2001 09 28 | 704 | 0.2+ | 1.1− | 2003 01 04 | 704 | 0.2− | 0.2− | 2006 05 31 | 703 | 0.6− | 0.7+ | | |
| 2001 09 28 | 704 | 0.1− | 0.2− | 2003 01 04 | 704 | 0.2+ | 1.8− | 2006 05 31 | 703 | 0.8− | 1.0− | | |
| 2001 09 28 | 704 | 1.2+ | 0.8− | 2003 01 04 | 704 | 0.4+ | 0.1+ | 2006 05 31 | 703 | 0.6+ | 1.4− | | |
| 2001 11 11 | 704 | 0.1− | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.2+ | 2006 05 31 | 703 | 1.1+ | 0.8− | | |
| 2001 11 11 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.1+ | 0.1− | 2006 06 21 | 703 | 0.4+ | 0.9− | | |
| 2001 11 11 | 704 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.8+ | 0.0 | 2006 06 21 | 703 | 0.3+ | 0.2− | | |
| 2001 11 11 | 704 | 0.2− | 0.7+ | 2003 01 08 | 704 | 0.2+ | 0.3− | 2006 06 21 | 703 | 0.3+ | 0.0 | | |
| 2001 11 11 | 704 | 0.5− | 0.2+ | 2003 01 08 | 704 | 0.7+ | 0.5− | 2006 06 21 | 703 | 0.4+ | 0.5− | | |
| 2001 11 12 | 699 | 1.9+ | 0.6+ | 2003 01 08 | 017 | 0.1+ | 0.5− | 2006 09 11 | 703 | 0.2− | 0.2− | | |
| 2001 11 12 | 699 | 0.1+ | 0.2+ | 2003 01 08 | 017 | 0.4− | 0.2− | 2006 09 11 | 703 | 0.1+ | 0.3+ | | |
| 2001 11 12 | 699 | 0.7+ | 1.3+ | 2003 01 27 | 704 | 0.1− | 0.3+ | 2006 09 11 | 703 | 0.3− | 1.0− | | |
| 2001 11 12 | 699 | 0.9+ | 0.6+ | 2003 01 27 | 704 | 0.3+ | 0.3+ | 2006 09 11 | 703 | 0.4+ | 0.5− | | |
| 2002 11 14 | 704 | 0.7− | 1.1− | 2003 01 27 | 704 | 0.2− | 0.1− | 2006 09 15 | 704 | 0.0 | 0.3+ | | |
| 2002 11 14 | 704 | 0.0 | 0.8− | 2003 01 27 | 704 | 0.2− | 0.0 | 2006 09 15 | 704 | 0.3+ | 0.1+ | | |
| 2002 11 14 | 704 | 1.5+ | 0.2− | 2003 01 27 | 704 | 0.2+ | 0.0 | 2006 09 15 | 704 | 0.3+ | 0.4− | | |
| 2002 12 05 | 704 | 0.6− | 0.1− | 2003 02 02 | 704 | 0.1− | 0.8+ | 2006 09 15 | 704 | 1.4+ | 1.2− | | |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2003 02 02 | 704 | 0.3+ | 0.9+ | 2006 09 15 | 704 | 0.1− | 1.1+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2003 02 02 | 704 | 0.9− | 0.9+ | | | | | | |

**(140263)∗ 2001 SO$_{265}$**

Discovered 2001 Sept. 25 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 351.19591 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18032147 | $\omega$ | 141.14224 | | +0.97227228 | | +0.19105298 | | |
| $a$ | 3.1029236 | $\Omega$ | 208.71998 | | −0.21124124 | | +0.96490629 | | |
| $e$ | 0.1968501 | $i$ | 16.29808 | | +0.10031820 | | +0.18015166 | | |
| $P$ | 5.47 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 08 | 691 | 0.1+ | 0.3+ | 2001 10 15 | 691 | 0.8− | 0.0 | 2001 11 09 | 691 | 0.1+ | 0.2− | | |
| 1994 05 08 | 691 | 0.0 | 0.8+ | 2001 10 15 | 691 | 0.7− | 0.2+ | 2001 11 09 | 691 | 0.0 | 0.2− | | |
| 1994 05 08 | 691 | 0.2− | 0.4+ | 2001 10 15 | 691 | 0.6− | 0.1− | 2001 11 11 | 291 | 0.1+ | 0.1− | | |
| 2001 09 20 | 704 | 0.7− | 1.6+ | 2001 10 16 | 691 | 1.1+ | 0.2+ | 2001 11 11 | 291 | 0.1+ | 0.1− | | |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 10 16 | 691 | 0.2+ | 0.2− | 2001 11 11 | 291 | 0.2+ | 0.2− | | |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2001 10 16 | 691 | 0.3+ | 0.1− | 2001 11 20 | 704 | 0.2+ | 1.3+ | | |
| 2001 09 20 | 704 | 0.4+ | 0.7+ | 2001 10 17 | 704 | 0.1+ | 1.4+ | 2001 11 20 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 21 | 699 | 1.2− | 0.9− | 2001 10 17 | 704 | 0.2− | 0.4+ | 2001 11 20 | 704 | 0.3− | 1.2+ | | |
| 2001 09 21 | 699 | 0.1− | 1.2+ | 2001 10 17 | 704 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.3− | 0.8+ | | |
| 2001 09 21 | 699 | 0.7− | 0.4+ | 2001 10 17 | 704 | 0.3+ | 0.8+ | 2001 11 20 | 704 | 0.0 | 0.9+ | | |
| 2001 09 21 | 699 | 0.8+ | 0.8+ | 2001 10 17 | 704 | 0.4− | 0.9+ | 2005 04 04 | G96 | 0.7− | 0.2− | | |
| 2001 09 24 | 704 | 0.5− | 1.4− | 2001 10 18 | 644 | (1.4+ | 2.1+) | 2005 04 04 | G96 | 0.0 | 0.1− | | |
| 2001 09 24 | 704 | 0.1+ | 0.7− | 2001 10 18 | 644 | 1.3+ | 2.0+ | 2005 04 04 | G96 | 0.4− | 0.1− | | |
| 2001 09 24 | 704 | 0.0 | 0.7− | 2001 10 18 | 644 | (1.5+ | 2.3+) | 2005 04 04 | G96 | 0.3− | 0.2+ | | |
| 2001 09 25 | 333 | 0.1− | 0.3+ | 2001 10 23 | 704 | 0.5− | 0.3− | 2005 05 14 | 691 | 0.1− | 0.5+ | | |
| 2001 09 25 | 333 | 1.0+ | 0.5− | 2001 10 23 | 704 | 0.2− | 0.4+ | 2005 05 14 | 691 | 0.3+ | 0.1+ | | |
| 2001 09 25 | 333 | 0.9+ | 0.2+ | 2001 10 23 | 704 | 0.4− | 0.3− | 2005 05 14 | 691 | 0.2+ | 0.5+ | | |
| 2001 09 25 | 333 | 0.2− | 0.7+ | 2001 10 23 | 704 | 0.1+ | 0.3− | 2006 08 27 | 691 | 0.2− | 0.0 | | |
| 2001 09 25 | 333 | 1.2+ | 0.7+ | 2001 10 24 | 704 | 0.2− | 0.5+ | 2006 08 27 | 691 | 0.3− | 0.6+ | | |
| 2001 09 25 | 333 | 0.3+ | 0.3+ | 2001 10 24 | 704 | 0.5− | 0.5+ | 2006 08 27 | 699 | 0.2+ | 0.4+ | | |
| 2001 09 26 | 333 | 1.6+ | 0.0 | 2001 10 24 | 704 | 0.7− | 0.2− | 2006 08 27 | 691 | 0.4+ | 1.2− | | |
| 2001 09 26 | 333 | 0.2+ | 0.5+ | 2001 10 24 | 704 | 0.4− | 0.2− | 2006 08 27 | 699 | 0.9+ | 0.8− | | |
| 2001 09 26 | 333 | 0.4+ | 0.1− | 2001 10 24 | 704 | 0.7− | 0.4+ | 2006 08 27 | 699 | 0.1+ | 0.4+ | | |
| 2001 10 13 | 704 | 0.4− | 0.6− | 2001 10 25 | 644 | 0.8+ | 0.9+ | 2006 08 27 | 699 | 0.1− | 0.1− | | |
| 2001 10 13 | 704 | 0.4− | 0.9− | 2001 10 25 | 644 | 1.2+ | 1.0+ | 2006 09 11 | 703 | 0.4− | 0.4− | | |
| 2001 10 13 | 704 | 0.8− | 0.2− | 2001 10 25 | 644 | 1.0+ | 1.0+ | 2006 09 11 | 703 | 0.8− | 1.2− | | |
| 2001 10 13 | 704 | 0.5− | 1.2− | 2001 10 26 | 704 | 0.1− | 0.9− | 2006 09 11 | 703 | 0.5+ | 0.3− | | |
| 2001 10 13 | 704 | (0.2− | 2.0−) | 2001 10 26 | 704 | 0.9− | 0.5− | 2006 09 11 | 703 | 0.5+ | 0.6− | | |
| 2001 10 14 | 699 | 0.5+ | 1.3+ | 2001 10 26 | 704 | 0.0 | 0.5− | 2006 09 20 | 699 | 1.3+ | 0.3+ | | |
| 2001 10 14 | 699 | 0.9− | 0.2− | 2001 10 26 | 704 | 0.3+ | 0.1− | 2006 09 20 | 699 | 0.8− | 0.2− | | |
| 2001 10 14 | 699 | 0.1− | 0.3− | 2001 10 26 | 704 | 0.2− | 0.3− | 2006 09 20 | 699 | 0.2+ | 0.5+ | | |
| 2001 10 14 | 699 | 0.3+ | 0.9+ | 2001 11 09 | 691 | 0.1+ | 0.2− | 2006 09 20 | 699 | 1.0− | 0.6+ | | |

**(140264)∗ 2001 SR$_{267}$ = 1995 HU$_4$ = 2000 KV$_{28}$**

Discovered 2001 Sept. 25 by W. K. Y. Yeung at Desert Eagle Observatory. Id. G. V. Williams (*MPO* 20386)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 70.62151 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20914930 | $\omega$ | 262.29225 | | +0.79373351 | | +0.59599617 | | |
| $a$ | 2.8108119 | $\Omega$ | 61.04283 | | −0.48883021 | | +0.74393961 | | |
| $e$ | 0.2155193 | $i$ | 7.98554 | | −0.36198363 | | +0.30222909 | | |
| $P$ | 4.71 | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.4+ | 0.2+ | 2001 11 09 | 704 | 0.1+ | 0.4+ | 2001 12 17 | 704 | 0.8− | 0.7+ |
| 1995 04 26 | 691 | 0.1+ | 0.5+ | 2001 11 09 | 704 | 0.3− | 0.4+ | 2004 03 23 | 704 | 0.4+ | 1.1+ |
| 1995 04 26 | 691 | 0.3+ | 0.2+ | 2001 11 09 | 704 | 0.1+ | 1.1+ | 2004 03 23 | 704 | 0.2− | 1.0+ |
| 2000 05 28 | 704 | 0.0 | 0.6+ | 2001 11 09 | 704 | 0.3− | 0.4− | 2004 03 23 | 704 | (0.7+ | 1.7+) |
| 2000 05 28 | 704 | 0.2+ | 0.6+ | 2001 11 09 | 704 | 0.3− | 0.5− | 2005 06 06 | E12 | 0.4− | 0.3+ |
| 2000 05 28 | 704 | 0.3+ | 1.1+ | 2001 11 15 | 644 | (0.3+ | 1.6+) | 2005 06 06 | E12 | 0.3+ | 0.4+ |
| 2000 05 28 | 704 | 0.1− | 1.3+ | 2001 11 15 | 644 | 0.8+ | 1.0+ | 2005 06 06 | E12 | 0.3− | 0.2+ |
| 2000 05 28 | 704 | 0.3+ | 1.2+ | 2001 11 15 | 644 | 0.0 | 1.2+ | 2005 06 06 | E12 | 0.4− | 0.3+ |
| 2000 05 29 | 704 | 0.2− | 0.8− | 2001 11 17 | 704 | 0.0 | 1.0+ | 2005 06 07 | E12 | 0.2− | 0.4+ |
| 2000 05 29 | 704 | 0.2− | 0.1+ | 2001 11 17 | 704 | 0.5− | 0.5+ | 2005 06 07 | E12 | 0.0 | 0.1− |
| 2000 05 29 | 704 | 0.8− | 0.2− | 2001 11 17 | 704 | 0.3− | 0.0 | 2005 06 07 | E12 | 0.1− | 0.0 |
| 2001 09 25 | 333 | 0.1− | 0.2+ | 2001 11 17 | 704 | 0.8− | 0.9+ | 2005 06 07 | E12 | 0.5− | 0.0 |
| 2001 09 25 | 333 | 0.5+ | 0.7+ | 2001 11 18 | 704 | 0.3− | 0.8+ | 2005 06 11 | 704 | 0.3+ | 0.7− |
| 2001 09 25 | 333 | 0.7+ | 1.4− | 2001 11 18 | 704 | 0.4− | 0.1+ | 2005 06 11 | 704 | 0.4− | 0.1− |
| 2001 09 27 | 333 | 0.7− | 0.9− | 2001 11 18 | 704 | 0.3− | 0.5+ | 2005 06 11 | 704 | (2.5+ | 0.7−) |
| 2001 09 27 | 333 | 0.9− | 0.3+ | 2001 11 18 | 704 | 0.1− | 0.8+ | 2005 06 11 | 704 | 0.9+ | 0.0 |
| 2001 09 27 | 333 | 0.9− | 0.2− | 2001 11 18 | 704 | 0.3− | 0.3+ | 2005 07 06 | 428 | 0.9+ | 0.1− |
| 2001 10 14 | 704 | 0.3+ | 0.0 | 2001 11 20 | 704 | 0.2− | 1.1− | 2005 07 06 | 428 | 0.4+ | 0.7− |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.2− | 1.2− | 2005 07 06 | E12 | 0.0 | 0.8+ |
| 2001 10 14 | 704 | 0.4+ | 0.4+ | 2001 11 20 | 704 | 0.2− | 0.9− | 2005 07 06 | E12 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | 0.1+ | 0.6+ | 2001 11 20 | 704 | 0.2− | 1.1− | 2005 07 06 | E12 | 0.5+ | 0.1+ |
| 2001 10 20 | 704 | 0.1− | 0.7+ | 2001 11 20 | 704 | 0.3− | 1.0− | 2005 07 06 | E12 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.4− | 0.1+ | 2001 11 21 | 704 | (1.8+ | 0.2+) | 2005 07 11 | E12 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.3+ | 2001 11 21 | 704 | 1.1− | 0.0 | 2005 07 11 | E12 | 0.6− | 0.2+ |
| 2001 10 22 | 704 | 0.1− | 0.7+ | 2001 11 21 | 704 | 0.6+ | 0.6− | 2005 07 11 | E12 | 0.5+ | 0.3+ |
| 2001 10 22 | 704 | 0.1+ | 0.2+ | 2001 11 21 | 704 | 0.1+ | 0.0 | 2005 07 11 | E12 | 0.3+ | 0.0 |
| 2001 10 22 | 704 | 1.0+ | 0.8+ | 2001 11 21 | 704 | 1.3+ | 0.4− | 2005 07 11 | E12 | 0.5− | 0.0 |
| 2001 10 22 | 704 | 0.4+ | 1.0+ | 2001 11 21 | 704 | 0.3− | 0.6− | 2005 07 11 | E12 | 0.8− | 0.4+ |
| 2001 10 23 | 704 | 0.2+ | 0.4+ | 2001 11 21 | 704 | 0.9+ | 0.4− | 2005 07 11 | E12 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | 0.0 | 1.4+ | 2001 11 21 | 704 | 0.4− | 0.3− | 2005 07 11 | E12 | 0.6+ | 1.0+ |
| 2001 10 23 | 704 | 0.1+ | 0.1+ | 2001 11 21 | 704 | 1.0+ | 0.5− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.5+ | 0.7+ | 2001 11 21 | 704 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 1.0− | 0.4− | 2001 12 14 | 704 | 0.3− | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.5+ | 0.6− | 2001 12 14 | 704 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | 0.9+ | 0.7− | 2001 12 14 | 704 | 0.9− | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2001 10 24 | 704 | 0.1+ | 0.6− | 2001 12 14 | 704 | 0.3+ | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.6+ | 0.5− | 2001 12 14 | 704 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.3− | 1.1+ |
| 2001 10 25 | 644 | 0.2− | 0.1+ | 2001 12 17 | 704 | 0.0 | 0.3− | 2006 11 24 | 691 | 0.3+ | 0.9+ |
| 2001 10 25 | 644 | 0.3− | 0.0 | 2001 12 17 | 704 | 0.6− | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2001 10 25 | 644 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.2− | 0.8+ | | | | |

**(140265)∗ 2001 SL$_{270}$**

Discovered 2001 Sept. 26 by C. W. Juels and P. R. Holvorcem at Fountain Hills.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.50982 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23866570 | $\omega$ | 225.09953 | | +0.88618190 | +0.39646840 |
| $a$ | 2.5740049 | $\Omega$ | 110.16371 | | −0.31938057 | +0.89760966 |
| $e$ | 0.3574816 | $i$ | 14.79938 | | −0.33567498 | +0.19263883 |
| $P$ | 4.13 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 05 | 608 | 0.2+ | 0.7− | 2002 01 12 | 704 | (0.6+ | 1.7+) | 2005 07 03 | 704 | 0.4+ | 1.0− |
| 2001 08 05 | 608 | 0.3+ | 0.2− | 2002 01 12 | 704 | 0.8+ | 0.8+ | 2005 07 03 | 644 | 0.2− | 0.1+ |
| 2001 08 05 | 608 | 0.0 | 0.1+ | 2002 01 12 | 699 | 0.6− | 0.8+ | 2005 07 03 | 644 | 0.3− | 0.0 |
| 2001 08 19 | 704 | 0.3+ | 0.7+ | 2002 01 12 | 699 | 0.2+ | 0.6+ | 2005 07 03 | 644 | 0.3− | 0.2− |
| 2001 08 19 | 704 | 0.5+ | 1.1+ | 2002 01 12 | 699 | 0.0 | 0.7+ | 2005 07 04 | 608 | 0.2+ | 0.3+ |
| 2001 08 19 | 704 | 0.5+ | 1.1+ | 2002 01 12 | 699 | (1.8− | 2.8+) | 2005 07 04 | 608 | 0.4+ | 0.2+ |
| 2001 08 19 | 704 | 1.0+ | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2005 07 04 | 608 | 0.3+ | 0.0 |
| 2001 08 19 | 704 | 0.5+ | 0.8+ | 2004 02 29 | 691 | 0.3+ | 0.2+ | 2005 07 11 | 699 | 0.0 | 0.0 |
| 2001 09 11 | 704 | 0.5− | 0.1− | 2004 02 29 | 691 | 0.3+ | 0.2+ | 2005 07 11 | 699 | 0.1+ | 0.7− |
| 2001 09 11 | 704 | 0.4− | 0.8+ | 2005 05 22 | 644 | 0.0 | 0.3+ | 2005 07 11 | 699 | 0.3− | 0.2− |
| 2001 09 11 | 704 | 0.0 | 0.3+ | 2005 05 22 | 644 | 0.1+ | 0.2+ | 2005 07 11 | 699 | 0.4− | 0.3− |
| 2001 09 11 | 704 | 0.2+ | 0.7+ | 2005 05 22 | 644 | 0.1+ | 0.3+ | 2005 08 15 | E12 | 0.5+ | 0.1− |
| 2001 09 11 | 704 | 0.0 | 0.5+ | 2005 06 01 | 703 | 0.0 | 0.4+ | 2005 08 15 | E12 | 0.4+ | 0.4− |
| 2001 09 24 | 644 | (1.5+ | 1.7+) | 2005 06 01 | 703 | 0.1− | 0.6+ | 2005 08 15 | E12 | 0.1+ | 0.0 |
| 2001 09 24 | 644 | (1.6+ | 1.6+) | 2005 06 01 | 703 | 1.2− | 0.4− | 2005 08 15 | E12 | 0.0 | 0.2− |
| 2001 09 24 | 644 | (1.4+ | 1.8+) | 2005 06 01 | 703 | 0.8− | 0.5+ | 2005 08 24 | E12 | 0.0 | 0.4− |
| 2001 09 25 | 699 | 0.0 | 0.1− | 2005 06 04 | 704 | 0.3− | 0.1+ | 2005 08 24 | E12 | 0.1+ | 0.2− |
| 2001 09 25 | 699 | 0.3+ | 0.1− | 2005 06 04 | 704 | 0.2+ | 0.4+ | 2005 08 24 | E12 | 0.1+ | 0.3− |
| 2001 09 25 | 699 | 0.2+ | 0.0 | 2005 06 04 | 704 | 0.1+ | 0.4+ | 2005 08 24 | E12 | 0.0 | 0.0 |
| 2001 09 25 | 699 | 0.1− | 0.1− | 2005 06 04 | 704 | 0.1− | 0.1+ | 2005 09 06 | E12 | 0.1+ | 0.2− |
| 2001 09 26 | 678 | 0.2+ | 1.0− | 2005 06 04 | 704 | 0.1− | 0.2− | 2005 09 06 | E12 | 0.0 | 0.3− |
| 2001 09 26 | 678 | (3.3− | 2.9+) | 2005 06 05 | 699 | 0.4− | 0.7+ | 2005 09 06 | E12 | 0.2+ | 0.2− |
| 2001 09 26 | 678 | 1.3+ | 0.8+ | 2005 06 05 | 699 | 0.2− | 0.2+ | 2005 09 23 | E12 | 0.3+ | 0.1+ |
| 2001 09 27 | 678 | 0.1+ | 0.2− | 2005 06 05 | 699 | 0.9− | 0.5+ | 2005 09 23 | E12 | 0.5− | 0.3− |
| 2001 09 27 | 678 | (1.3− | 3.6+) | 2005 06 11 | 703 | 0.4− | 0.1+ | 2005 09 23 | E12 | 0.1− | 0.1− |
| 2001 09 27 | 678 | (2.2+ | 1.0+) | 2005 06 11 | 703 | 0.0 | 0.3+ | 2005 09 23 | E12 | 0.2− | 0.5− |
| 2001 10 15 | 608 | 0.6− | 1.2− | 2005 06 11 | 703 | 0.0 | 0.1− | 2005 10 11 | I10 | (1.4+ | 2.2−) |
| 2001 10 15 | 608 | 0.6− | 0.8− | 2005 06 11 | 703 | 0.1+ | 0.3+ | 2005 10 11 | I10 | 0.1+ | 0.6+ |
| 2001 10 15 | 608 | 0.4− | 1.0− | 2005 06 13 | G96 | 0.4− | 0.0 | 2005 10 11 | I10 | 1.4+ | 0.2− |
| 2001 10 18 | 699 | 0.2+ | 0.3+ | 2005 06 13 | G96 | 0.2+ | 0.0 | 2005 10 11 | I10 | 0.4− | 0.9+ |
| 2001 10 18 | 699 | 0.2− | 0.3− | 2005 06 13 | G96 | 0.2+ | 0.0 | 2005 10 11 | I10 | (1.8+ | 1.0−) |
| 2001 10 18 | 699 | 0.3− | 0.5+ | 2005 06 13 | G96 | 0.1+ | 0.3− | 2005 10 11 | I10 | 1.1− | 0.1+ |
| 2001 10 18 | 699 | 0.1− | 0.0 | 2005 06 29 | 644 | 0.1− | 0.1− | 2005 11 14 | 644 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 0.8− | 0.4+ | 2005 06 29 | 644 | 0.2− | 0.2+ | 2005 11 14 | 644 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 1.0− | 0.2− | 2005 06 29 | 703 | 0.2− | 0.2+ | 2005 11 14 | 644 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.9− | 0.4+ | 2005 06 29 | 703 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2001 10 23 | 704 | (1.7− | 0.3−) | 2005 06 29 | 644 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2001 10 23 | 704 | (1.7− | 0.7−) | 2005 06 29 | 703 | 0.6− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | (1.7− | 0.1+) | 2005 06 29 | 703 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 1.5− | 0.3− | 2005 06 30 | 699 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 10 24 | 704 | (1.6− | 2.0+) | 2005 06 30 | 699 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2001 10 24 | 704 | 1.3− | 0.2+ | 2005 06 30 | 699 | 0.8+ | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.9− |
| 2001 11 22 | 644 | 0.0 | 0.1+ | 2005 06 30 | 699 | 1.1+ | 0.3− | 2006 11 15 | G96 | 0.5− | 0.3− |
| 2001 11 22 | 644 | 0.1− | 0.4+ | 2005 07 03 | 704 | 0.6+ | 0.3+ | 2006 11 28 | G96 | 0.0 | 0.1− |
| 2001 11 22 | 644 | 0.2− | 0.1+ | 2005 07 03 | 704 | 0.4− | 0.3− | 2006 11 28 | G96 | 0.0 | 0.1+ |
| 2002 01 12 | 704 | 1.3+ | 0.0 | 2005 07 03 | 704 | 0.5+ | 0.0 | 2006 11 28 | G96 | 0.1+ | 0.3+ |
| 2002 01 12 | 704 | 1.4+ | 0.3− | 2005 07 03 | 704 | 0.5+ | 0.1− | 2006 11 28 | G96 | 0.1+ | 0.1+ |

**(140266)∗ 2001 SW$_{270}$**

Discovered 2001 Sept. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.35350 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23083179 | $\omega$ | 154.15433 | | +0.43432589 | −0.89844627 |
| $a$ | 2.6319177 | $\Omega$ | 270.04557 | | +0.81484664 | +0.42239605 |
| $e$ | 0.1362781 | $i$ | 3.69596 | | +0.38390881 | +0.11989949 |
| $P$ | 4.27 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.2+ | 0.0 | 2001 12 18 | 704 | 0.4− | 0.1− | 2005 09 29 | 699 | 0.3− | 0.1+ |
| 2001 08 22 | 704 | 1.1− | 0.4+ | 2001 12 18 | 704 | (1.8+ | 1.0−) | 2005 09 29 | 699 | 0.1− | 0.0 |
| 2001 08 22 | 704 | 0.0 | 0.3+ | 2001 12 18 | 704 | (0.5− | 1.6−) | 2005 09 29 | 699 | 0.0 | 0.7+ |
| 2001 08 22 | 704 | 0.2− | 0.1+ | 2001 12 18 | 699 | 0.1− | 0.2+ | 2005 10 01 | 703 | 0.1+ | 0.4+ |
| 2001 08 22 | 704 | 0.1− | 0.1+ | 2001 12 18 | 699 | 0.4+ | 0.4+ | 2005 10 01 | 703 | 0.1− | 0.2+ |
| 2001 09 16 | 644 | 0.1− | 0.3+ | 2001 12 18 | 699 | 0.2+ | 0.8− | 2005 10 01 | 703 | 0.8− | 0.5+ |
| 2001 09 16 | 644 | 0.2+ | 0.1+ | 2001 12 18 | 699 | 1.2− | 1.0− | 2005 10 01 | 703 | 1.0− | 0.4+ |
| 2001 09 16 | 644 | 0.1− | 0.1+ | 2001 12 19 | 704 | 0.3+ | 0.9+ | 2005 10 01 | 703 | 0.6− | 0.2− |
| 2001 09 21 | 644 | 0.2− | 0.2− | 2001 12 19 | 704 | 1.3+ | 0.3− | 2005 10 01 | 703 | 0.7− | 0.6− |
| 2001 09 21 | 644 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.6+ | 0.5− | 2005 10 01 | 703 | 0.3− | 0.8− |
| 2001 09 21 | 644 | 0.4− | 0.2+ | 2001 12 20 | 644 | 0.3− | 0.1+ | 2005 10 01 | 703 | 0.4− | 0.1− |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2001 12 20 | 644 | 0.2− | 0.1+ | 2005 10 04 | 644 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.4+ | 0.3+ | 2001 12 20 | 644 | 0.2− | 0.1+ | 2005 10 04 | 644 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.2+ | 0.7+ | 2001 12 21 | 735 | 1.4− | 0.7+ | 2005 10 04 | 644 | 0.1+ | 0.3+ |
| 2001 10 14 | 704 | 0.1+ | 0.5+ | 2001 12 21 | 735 | 0.3+ | 0.2− | 2005 10 06 | 699 | 0.4− | 0.7+ |
| 2001 10 14 | 704 | 0.2+ | 0.7+ | 2001 12 21 | 735 | 0.9+ | 0.3+ | 2005 10 06 | 703 | 0.1− | 0.0 |
| 2001 10 17 | 291 | 0.1+ | 0.4− | 2002 01 06 | 644 | 0.1− | 0.4+ | 2005 10 06 | 703 | 0.6− | 0.3+ |
| 2001 10 17 | 291 | 0.1+ | 0.4− | 2002 01 06 | 644 | 0.3− | 0.3+ | 2005 10 06 | 699 | 0.0 | 0.5+ |
| 2001 10 17 | 291 | 0.5+ | 0.3− | 2002 01 06 | 644 | 0.3− | 0.5+ | 2005 10 06 | 703 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.5+ | 0.2+ | 2002 01 07 | 699 | (1.8− | 0.1+) | 2005 10 06 | 703 | 0.1− | 0.1+ |
| 2001 10 18 | 704 | 1.3− | 0.2− | 2002 01 07 | 699 | 0.4+ | 1.2+ | 2005 10 06 | 699 | 0.7− | 0.2+ |
| 2001 10 18 | 704 | 0.6− | 0.4− | 2002 01 07 | 699 | 1.1− | 0.5− | 2005 10 06 | 699 | 0.8− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 1.0− | 0.0 | 2002 01 07 | 699 | 0.4− | 0.6+ | 2005 10 07 | G96 | 0.2+ | 0.2+ |
| 2001 10 18 | 691 | 0.1− | 0.4− | 2002 01 09 | 704 | 0.4+ | 0.1− | 2005 10 07 | G96 | 0.1+ | 0.1+ |
| 2001 10 18 | 691 | 0.1+ | 0.2− | 2002 01 09 | 704 | 0.8+ | 0.1+ | 2005 10 07 | G96 | 0.1− | 0.0 |
| 2001 10 18 | 691 | 0.2+ | 0.2− | 2002 01 09 | 704 | 0.3+ | 0.1− | 2005 10 07 | G96 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.8− | 0.6+ | 2002 01 09 | 704 | 0.9+ | 0.1+ | 2005 10 08 | 704 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.8− | 0.7+ | 2002 01 09 | 704 | 0.6+ | 0.3− | 2005 10 08 | 704 | 0.0 | 0.5+ |
| 2001 10 21 | 704 | (1.6− | 1.1+) | 2003 02 12 | 608 | 0.4+ | 0.1+ | 2005 10 08 | 704 | 0.2− | 0.5+ |
| 2001 10 21 | 704 | 0.9− | 0.9+ | 2003 02 12 | 608 | 0.3+ | 0.2− | 2005 10 08 | 704 | 0.3+ | 0.6+ |
| 2001 10 21 | 704 | 0.9− | 0.8+ | 2003 02 12 | 608 | 0.4+ | 0.2− | 2005 10 08 | 704 | 0.2− | 0.3+ |
| 2001 10 26 | 644 | 0.4− | 0.1+ | 2003 03 07 | 704 | 0.0 | 0.0 | 2005 10 21 | 644 | 0.1− | 0.4+ |
| 2001 10 26 | 644 | 0.3− | 0.0 | 2003 03 07 | 704 | 0.6− | 0.3+ | 2005 10 21 | 644 | 0.3− | 0.4+ |
| 2001 10 26 | 644 | 0.4− | 0.2+ | 2003 03 07 | 704 | 0.9+ | 0.5− | 2005 10 21 | 644 | 0.1− | 0.4+ |
| 2001 10 28 | 704 | 0.1+ | 1.0+ | 2003 03 07 | 704 | (0.6− | 1.7+) | 2005 11 02 | 704 | 0.6− | 0.8+ |
| 2001 10 28 | 704 | 0.0 | 0.3+ | 2003 03 07 | 704 | 0.1+ | 0.7+ | 2005 11 02 | 704 | 0.8+ | 1.1+ |
| 2001 10 28 | 704 | 0.3− | 0.1+ | 2003 03 28 | 691 | 0.5+ | 0.7+ | 2005 11 02 | 704 | 0.9+ | 0.6+ |
| 2001 11 10 | 704 | 0.1+ | 0.8+ | 2003 03 28 | 691 | 0.5+ | 1.0+ | 2005 11 02 | 704 | 1.1+ | 0.3+ |
| 2001 11 10 | 704 | 0.3+ | 0.4+ | 2003 03 28 | 691 | 0.4+ | 1.2+ | 2005 11 02 | 704 | 0.1+ | 0.8+ |
| 2001 11 10 | 644 | 0.1+ | 0.1− | 2003 03 30 | 699 | 0.4− | 0.6+ | 2005 11 03 | G96 | 0.1− | 0.2− |
| 2001 11 10 | 704 | 0.1+ | 0.3+ | 2003 03 30 | 699 | 0.7− | 0.8− | 2005 11 03 | G96 | 0.1− | 0.1− |
| 2001 11 10 | 644 | 0.2+ | 0.1− | 2003 03 30 | 699 | 0.7− | 0.4+ | 2005 11 03 | G96 | 0.0 | 0.1− |
| 2001 11 10 | 704 | 0.8+ | 0.8− | 2003 03 30 | 699 | 0.3+ | 1.5+ | 2005 11 03 | G96 | 0.1+ | 0.0 |
| 2001 11 10 | 644 | 0.1+ | 0.2+ | 2003 03 31 | 704 | 0.5+ | 0.2+ | 2005 12 02 | 704 | (1.3− | 2.0+) |
| 2001 11 12 | 704 | 0.5− | 0.6+ | 2003 03 31 | 704 | 0.6+ | 0.3+ | 2005 12 02 | 704 | (2.5− | 1.5+) |
| 2001 11 12 | 704 | 0.1+ | 0.3− | 2003 03 31 | 704 | 0.6+ | 1.0+ | 2005 12 02 | 704 | (2.8− | 2.1+) |
| 2001 11 12 | 704 | 1.1− | 0.6+ | 2003 03 31 | 704 | 0.2+ | 0.6+ | 2005 12 02 | 704 | (2.3− | 2.4+) |
| 2001 11 12 | 704 | 1.1− | 0.2− | 2003 03 31 | 704 | 0.1+ | 1.0+ | 2005 12 02 | 704 | (2.0− | 2.1+) |
| 2001 11 12 | 704 | 1.0− | 0.0 | 2003 04 04 | 699 | 0.8+ | 1.3+ | 2005 12 02 | 703 | 1.0− | 0.2− |
| 2001 11 17 | 644 | 0.2+ | 0.1+ | 2003 04 04 | 699 | 0.8+ | 0.5− | 2005 12 02 | 703 | 1.0+ | 0.4+ |
| 2001 11 17 | 644 | 0.1− | 0.0 | 2003 04 04 | 699 | 0.1+ | 1.2+ | 2005 12 02 | 703 | 0.4− | 1.4− |
| 2001 11 17 | 644 | 0.0 | 0.1+ | 2003 04 04 | 699 | (0.0 | 1.6−) | 2005 12 02 | 703 | 0.4− | 0.3− |
| 2001 11 19 | 704 | 0.5+ | 0.6− | 2005 07 16 | 699 | 0.3+ | 0.3− | 2005 12 05 | 704 | (0.7− | 2.7+) |
| 2001 11 19 | 704 | 0.4+ | 0.7− | 2005 07 16 | 699 | (1.3− | 2.1+) | 2005 12 05 | 704 | (2.0− | 1.6+) |
| 2001 11 19 | 704 | 0.6+ | 0.8− | 2005 07 16 | 699 | (1.2+ | 2.3+) | 2005 12 05 | 704 | 1.1− | 1.5+ |
| 2001 11 19 | 704 | 0.5+ | 0.4− | 2005 07 16 | 699 | (1.9− | 0.4+) | 2005 12 05 | 704 | (0.2− | 1.7+) |
| 2001 11 19 | 704 | 0.6+ | 0.1− | 2005 08 29 | 644 | 0.1− | 0.3+ | 2006 01 09 | G96 | 0.8+ | 0.0 |
| 2001 11 24 | 704 | 0.3+ | 0.3− | 2005 08 29 | 644 | 0.1− | 0.4+ | 2006 01 09 | G96 | 0.4+ | 0.4− |
| 2001 11 24 | 704 | 0.1− | 0.5− | 2005 08 29 | 644 | 0.1− | 0.3+ | 2006 01 09 | G96 | 0.4− | 0.3− |
| 2001 11 24 | 704 | 0.2+ | 0.2− | 2005 08 30 | 704 | 0.2− | 0.6+ | 2006 01 09 | G96 | 0.2− | 0.5− |
| 2001 11 24 | 704 | 0.3− | 0.1+ | 2005 08 30 | 704 | 0.9− | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2001 11 24 | 704 | 0.0 | 0.2+ | 2005 08 30 | 704 | 0.1− | 0.8+ | 2006 10 22 | G96 | 0.4− | 0.4− |
| 2001 12 10 | 704 | 0.1− | 0.4+ | 2005 09 01 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2001 12 10 | 704 | 0.1− | 0.3+ | 2005 09 01 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2001 12 10 | 704 | 0.2− | 0.5+ | 2005 09 01 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.7− | 0.3− |
| 2001 12 10 | 704 | 0.5− | 0.5+ | 2005 09 11 | 704 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2001 12 10 | 704 | 0.2+ | 0.5+ | 2005 09 11 | 704 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 12 15 | 704 | 0.7+ | 0.7+ | 2005 09 11 | 704 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.5− | 0.1− |
| 2001 12 15 | 704 | 0.1+ | 0.0 | 2005 09 11 | 704 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.5− | 0.6− |
| 2001 12 15 | 704 | 0.4+ | 0.6− | 2005 09 11 | 704 | 0.8+ | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2001 12 15 | 704 | 0.6+ | 0.0 | 2005 09 23 | 699 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2001 12 15 | 704 | 0.2+ | 0.4− | 2005 09 23 | 699 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2001 12 18 | 704 | 0.5+ | 0.3+ | 2005 09 23 | 699 | 0.5− | 0.3+ | | | | |
| 2001 12 18 | 704 | 0.4− | 0.3− | 2005 09 23 | 699 | 0.1− | 0.1+ | | | | |

**(140267)∗ 2001 SK$_{271}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.40188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18042441 | $\omega$ | 77.24496 | | +0.09128113 | +0.99462254 | |
| $a$ | 3.1017433 | $\Omega$ | 198.20867 | | −0.96358957 | +0.07582011 | |
| $e$ | 0.0550525 | $i$ | 9.00810 | | −0.25132229 | +0.07055008 | |
| $P$ | 5.46 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1− | 1.3+ | 2001 11 20 | 704 | 0.2− | 1.4+ | 2005 06 14 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.3+ | 2001 11 20 | 704 | 1.4− | 0.7+ | 2005 06 27 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2001 11 21 | 704 | 0.2− | 0.2+ | 2005 06 27 | 691 | 0.1+ | 0.3+ |
| 2001 09 23 | 704 | 0.4− | 0.7+ | 2001 11 21 | 704 | (1.7− | 0.0 ) | 2005 06 27 | 691 | 0.0 | 0.2− |
| 2001 09 23 | 704 | 0.5− | 0.9+ | 2001 11 21 | 704 | 0.4− | 0.6− | 2005 06 30 | 691 | 0.1+ | 0.4+ |
| 2001 09 23 | 704 | 1.0− | 0.0 | 2001 11 21 | 704 | 1.0− | 1.0+ | 2005 06 30 | 691 | 0.0 | 0.2+ |
| 2001 09 27 | 704 | 0.1− | 0.3− | 2001 11 21 | 704 | 1.4− | 1.1+ | 2005 06 30 | 691 | 0.1− | 0.3+ |
| 2001 09 27 | 704 | 0.4+ | 0.4+ | 2004 02 14 | 644 | 0.1+ | 0.5+ | 2005 07 04 | 691 | 0.1+ | 0.3+ |
| 2001 09 27 | 704 | 1.2− | 0.9+ | 2004 02 14 | 644 | 0.0 | 0.4+ | 2005 07 04 | 691 | 0.2+ | 0.2+ |
| 2001 10 13 | 704 | 0.8+ | 0.9+ | 2004 02 14 | 644 | 0.1+ | 0.4+ | 2005 07 04 | 691 | 0.1+ | 0.3+ |
| 2001 10 13 | 704 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.2+ | 1.2+ | 2005 07 04 | 703 | 0.3+ | 0.3− |
| 2001 10 13 | 704 | 0.7+ | 0.5+ | 2004 02 26 | 704 | 0.2− | 0.6+ | 2005 07 04 | 703 | 0.9− | 0.8− |
| 2001 10 13 | 704 | 0.4+ | 1.2+ | 2004 02 26 | 704 | 0.1+ | 1.4+ | 2005 07 04 | 703 | 0.4− | 0.1− |
| 2001 10 14 | 699 | (2.3+ | 3.7−) | 2004 02 26 | 704 | (1.2+ | 1.7+) | 2005 07 04 | 703 | 1.4− | 0.1− |
| 2001 10 14 | 699 | (2.8+ | 0.4−) | 2004 03 13 | 644 | 0.1+ | 1.1+ | 2006 08 18 | 644 | 0.3+ | 0.1− |
| 2001 10 14 | 699 | 0.9− | 1.0− | 2004 03 13 | 644 | 0.2+ | 0.9+ | 2006 08 18 | 644 | 0.2+ | 0.3− |
| 2001 10 14 | 699 | 0.8− | 0.4− | 2004 03 13 | 644 | 0.2+ | 0.9+ | 2006 08 18 | 644 | 0.4+ | 0.1+ |
| 2001 10 17 | 691 | 0.1+ | 0.1− | 2004 03 16 | 704 | 1.1+ | 0.4+ | 2006 08 27 | 699 | 0.8− | 0.6+ |
| 2001 10 17 | 691 | 0.1+ | 0.1+ | 2004 03 16 | 704 | 0.8− | 1.3+ | 2006 08 27 | 699 | 0.0 | 0.4− |
| 2001 10 17 | 704 | 1.0+ | 0.2+ | 2004 03 16 | 704 | 0.8+ | 1.5+ | 2006 08 27 | 699 | 0.3− | 1.0+ |
| 2001 10 17 | 704 | 0.1− | 1.0− | 2004 03 16 | 704 | 1.5+ | 0.6+ | 2006 08 27 | 699 | 0.3− | 0.6− |
| 2001 10 17 | 691 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.2+ | 1.1+ | 2006 08 29 | 703 | 0.1− | 0.6− |
| 2001 10 17 | 704 | 0.8+ | 0.3− | 2005 06 01 | 691 | (0.8− | 2.7+) | 2006 08 29 | 703 | 0.9− | 0.4− |
| 2001 10 17 | 704 | 0.3− | 0.2− | 2005 06 01 | 691 | 0.1− | 0.1+ | 2006 08 29 | 703 | 1.1− | 0.2+ |
| 2001 10 18 | 644 | 0.6− | 0.1+ | 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.3+ | 0.1+ |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2005 06 02 | E12 | 0.2+ | 0.3− | 2006 08 30 | 699 | 0.7+ | 0.9+ |
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2005 06 02 | E12 | 0.4+ | 0.0 | 2006 08 30 | 704 | (0.5− | 2.2+) |
| 2001 10 20 | 704 | 0.2+ | 0.7+ | 2005 06 02 | E12 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.1+ | 0.9+ |
| 2001 10 20 | 704 | 0.4− | 0.9+ | 2005 06 02 | E12 | 0.2+ | 0.9− | 2006 08 30 | 699 | 0.3− | 0.2− |
| 2001 10 20 | 704 | 0.4− | 0.9+ | 2005 06 09 | 703 | 0.3+ | 0.7+ | 2006 08 30 | 699 | 0.5− | 0.0 |
| 2001 10 20 | 704 | 0.0 | 0.9+ | 2005 06 09 | 703 | 0.5− | 0.6+ | 2006 08 30 | 704 | (1.8+ | 0.7+) |
| 2001 10 20 | 704 | 0.5− | 1.1+ | 2005 06 09 | 703 | 1.2− | 0.5− | 2006 08 30 | 704 | 0.4+ | 0.7+ |
| 2001 10 22 | 704 | 0.9+ | 0.9+ | 2005 06 09 | 703 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 1.4+ | 1.2− |
| 2001 10 22 | 704 | 0.2+ | 0.6+ | 2005 06 10 | 691 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.3+ | 0.8− |
| 2001 10 22 | 704 | 0.4+ | 1.1+ | 2005 06 10 | 691 | 0.2− | 0.2+ | 2006 09 11 | 703 | (0.6+ | 1.7−) |
| 2001 10 24 | 704 | 1.0+ | 0.5+ | 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 0.3− | 0.3− |
| 2001 10 24 | 704 | (2.2+ | 0.2+) | 2005 06 14 | 691 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.5− | 0.4− |
| 2001 10 24 | 704 | 0.7+ | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2001 10 24 | 704 | 1.1+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.2+ |
| 2001 11 20 | 704 | (2.0− | 0.3+) | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.2+ |
| 2001 11 20 | 704 | 0.6− | 0.8− | 2005 06 14 | 691 | (2.8+ | 3.0−) | | | | |

**(140268)∗ 2001 SM$_{271}$ = 3358 T-2**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20392)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.70588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21246883 | $\omega$ | 349.65986 | | +0.98313708 | −0.18274362 | |
| $a$ | 2.7814583 | $\Omega$ | 20.87347 | | +0.16911343 | +0.89439838 | |
| $e$ | 0.1294897 | $i$ | 1.09370 | | +0.06958545 | +0.40823560 | |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | (2.3+ | 3.3−) | 2001 10 12 | 699 | 0.3− | 0.1+ | 2001 10 25 | 644 | 0.5+ | 0.6+ |
| 1973 09 19 | 675 | (4.5+ | 2.2−) | 2001 10 12 | 699 | 0.3− | 0.6− | 2001 12 20 | 291 | 0.4+ | 0.6+ |
| 1973 09 20 | 675 | 1.9+ | 2.2− | 2001 10 12 | 699 | 0.2− | 1.3+ | 2001 12 20 | 291 | 0.5+ | 0.7+ |
| 1973 09 24 | 675 | 0.5− | 2.5+ | 2001 10 13 | 704 | (1.7+ | 0.0 ) | 2001 12 20 | 291 | 0.5+ | 0.6+ |
| 1973 09 24 | 675 | 1.1+ | 2.2+ | 2001 10 13 | 704 | 0.6− | 0.4− | 2004 04 14 | 291 | 0.4+ | 0.6+ |
| 1992 11 24 | 691 | 0.4− | 0.4− | 2001 10 13 | 704 | 0.1+ | 0.7− | 2004 04 14 | 291 | 0.4+ | 0.6+ |
| 1992 11 24 | 691 | 0.3− | 0.4− | 2001 10 13 | 704 | 0.8+ | 0.5− | 2004 04 14 | 291 | 0.2+ | 0.8+ |
| 1992 11 24 | 691 | 0.5− | 0.2− | 2001 10 14 | 699 | 0.2+ | 1.2− | 2004 04 16 | 691 | 0.1− | 0.3+ |
| 1999 03 19 | 691 | 0.6− | 0.1+ | 2001 10 14 | 699 | 1.0− | 0.0 | 2004 04 16 | 691 | 0.1+ | 0.1− |
| 1999 03 19 | 691 | 2.0− | 0.6− | 2001 10 14 | 699 | 0.2+ | 0.0 | 2004 04 16 | 691 | 0.1+ | 0.6+ |
| 1999 03 19 | 691 | 1.0− | 0.3− | 2001 10 14 | 699 | 0.2− | 0.5+ | 2004 04 22 | 691 | 0.5+ | 0.6+ |
| 1999 04 11 | 691 | 0.0 | 0.7− | 2001 10 14 | 291 | 1.5− | 0.2− | 2004 04 22 | 691 | 0.4+ | 0.4+ |
| 1999 04 11 | 691 | 0.4+ | 0.8− | 2001 10 14 | 291 | 1.3− | 0.1− | 2004 04 22 | 691 | 0.6+ | 0.5+ |
| 1999 04 11 | 691 | 0.5+ | 0.6− | 2001 10 14 | 291 | 0.0 | 1.2− | 2005 07 07 | 691 | 0.2+ | 0.7− |
| 2001 09 20 | 704 | 0.5+ | 0.0 | 2001 10 17 | 704 | 0.1+ | 0.4+ | 2005 07 07 | 691 | 0.3+ | 0.6− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3+ | 0.6+ | 2001 10 17 | 704 | 0.4+ | 0.7+ | 2005 07 07 | 691 | 0.1+ | 0.6− |
| 2001 09 20 | 704 | 0.7+ | 0.6+ | 2001 10 17 | 704 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.8+ | 0.2− |
| 2001 09 20 | 704 | 0.1+ | 0.2− | 2001 10 17 | 704 | 0.2+ | 0.9+ | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2001 09 23 | 704 | 0.4+ | 0.4+ | 2001 10 17 | 704 | 0.2+ | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.8+ | 2001 10 18 | 644 | 0.5+ | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2001 09 23 | 704 | 0.1− | 0.3+ | 2001 10 18 | 644 | 0.4+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2001 09 24 | 704 | 0.6− | 0.1− | 2001 10 18 | 644 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2001 09 24 | 704 | 0.0 | 0.2− | 2001 10 20 | 704 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2001 09 24 | 704 | 0.9− | 0.4+ | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2001 09 24 | 704 | 0.4− | 0.6+ | 2001 10 20 | 704 | 0.1+ | 0.5− | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2001 09 27 | 704 | 0.9+ | 1.4− | 2001 10 22 | 704 | 1.4− | 0.5+ | 2006 11 16 | 691 | 0.4+ | 0.1+ |
| 2001 09 27 | 704 | 0.3− | 0.6+ | 2001 10 22 | 704 | 1.5− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2001 09 27 | 704 | 0.5− | 0.6− | 2001 10 22 | 704 | 1.4− | 0.5+ | 2006 11 20 | 691 | 0.3+ | 0.3+ |
| 2001 09 27 | 704 | 1.3+ | 0.3− | 2001 10 25 | 644 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.3+ |
| 2001 10 12 | 699 | 1.5− | 0.3− | 2001 10 25 | 644 | 0.4+ | 0.2+ | 2006 11 20 | 691 | 0.3+ | 0.1+ |

**(140269)∗ 2001 SR$_{271}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.56505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18075133 | $\omega$ | 68.13564 | | +0.98166071 | −0.18361015 | |
| $a$ | 3.0980021 | $\Omega$ | 302.41064 | | +0.14466033 | +0.89264731 | |
| $e$ | 0.1534328 | $i$ | 3.48234 | | +0.12415972 | +0.41166503 | |
| $P$ | 5.45 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 1.2− | 0.3+ | 2001 10 14 | 704 | 0.3− | 0.5+ | 2004 03 26 | 291 | 0.1+ | 0.6+ |
| 2001 09 11 | 699 | 0.8− | 0.5+ | 2001 10 14 | 704 | 1.3+ | 0.0 | 2004 03 26 | 291 | 0.2− | 0.8+ |
| 2001 09 11 | 699 | 0.4− | 0.7+ | 2001 10 14 | 704 | 0.8+ | 0.3+ | 2004 03 26 | 291 | 0.4− | 0.8+ |
| 2001 09 11 | 699 | 1.0− | 0.7− | 2001 10 14 | 704 | 0.2+ | 0.8− | 2004 03 26 | 291 | 0.3+ | 0.3+ |
| 2001 09 20 | 704 | 0.4− | 1.1+ | 2001 10 15 | 608 | 0.1+ | 0.5− | 2004 03 26 | 291 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 1.1+ | 2001 10 15 | 608 | 0.1+ | 0.4− | 2004 03 26 | 291 | 0.3+ | 0.3+ |
| 2001 09 20 | 704 | 0.7+ | 1.5+ | 2001 10 15 | 608 | 0.3− | 0.2− | 2004 03 26 | 291 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.6− | 0.5+ | 2001 10 17 | 704 | 0.4+ | 1.1+ | 2004 03 26 | 291 | 0.2+ | 0.3+ |
| 2001 09 27 | 704 | 0.2+ | 0.2− | 2001 10 17 | 704 | 0.2+ | 0.6+ | 2004 04 13 | 691 | 0.3+ | 0.2+ |
| 2001 09 27 | 704 | 0.7− | 0.5+ | 2001 10 17 | 704 | 0.3− | 0.3+ | 2004 04 13 | 691 | 0.5+ | 0.1+ |
| 2001 09 27 | 704 | 0.7+ | 0.2− | 2001 10 17 | 704 | 0.6− | 0.9+ | 2004 04 13 | 691 | 0.2+ | 0.0 |
| 2001 09 27 | 704 | 0.2+ | 0.1+ | 2001 10 17 | 704 | 0.7− | 0.4+ | 2006 08 14 | 644 | 0.3− | 0.4+ |
| 2001 09 27 | 704 | (0.7− | 1.5+) | 2001 10 21 | 704 | 0.2− | 0.5+ | 2006 08 14 | 644 | 0.3+ | 0.3+ |
| 2001 09 27 | 704 | 0.9− | 1.2− | 2001 10 21 | 704 | 0.3− | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.5+ |
| 2001 09 27 | 704 | 0.4− | 0.5+ | 2001 10 21 | 704 | 0.0 | 1.0+ | 2006 08 28 | 699 | 0.2+ | 1.2− |
| 2001 09 27 | 704 | 0.1− | 0.2− | 2001 10 21 | 704 | 0.2− | 0.8+ | 2006 08 28 | 699 | 0.5+ | 0.1− |
| 2001 09 27 | 704 | 0.2+ | 0.7+ | 2001 10 21 | 704 | 0.1+ | 0.7+ | 2006 08 28 | 699 | 0.3+ | 0.1− |
| 2001 09 28 | 644 | 0.2− | 1.0+ | 2002 12 31 | 645 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.5− | 0.8+ |
| 2001 09 28 | 644 | 0.3− | 0.8+ | 2002 12 31 | 645 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2001 09 28 | 644 | 0.4− | 0.9+ | 2003 01 08 | 704 | 1.0+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 10 06 | 644 | 0.4− | 0.5+ | 2003 01 08 | 704 | 1.2+ | 0.1− | 2006 10 22 | G96 | 0.9− | 0.3− |
| 2001 10 06 | 644 | 0.1− | 0.4+ | 2003 01 08 | 704 | 0.4− | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 10 06 | 644 | 0.0 | 0.7+ | 2003 01 08 | 704 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.5− | 0.4+ |
| 2001 10 13 | 699 | 0.3− | 0.2− | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2001 10 13 | 699 | 1.1+ | 0.1− | 2004 03 23 | 691 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2001 10 13 | 699 | 0.2− | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.4+ |
| 2001 10 13 | 699 | 1.2− | 0.9− | 2004 03 26 | 291 | 0.1+ | 0.2+ | | | | |

**(140270)∗ 2001 SZ$_{271}$ = 1995 SC$_{47}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20393)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.11241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17134637 | $\omega$ | 51.65421 | | +0.24490280 | −0.96904828 | |
| $a$ | 3.2103529 | $\Omega$ | 24.22445 | | +0.86421126 | +0.20363600 | |
| $e$ | 0.1603233 | $i$ | 4.34885 | | +0.43950144 | +0.13956294 | |
| $P$ | 5.75 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.1− | 0.1− | 2001 10 14 | 699 | 0.4− | 0.1− | 2001 11 19 | 704 | 0.1− | 0.8+ |
| 1995 09 26 | 691 | 0.1− | 0.3− | 2001 10 14 | 699 | 0.5− | 0.2+ | 2001 11 21 | 704 | 0.2− | 0.2− |
| 1995 09 26 | 691 | 0.1+ | 0.2− | 2001 10 15 | 691 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.1− | 0.1− |
| 1995 10 01 | 691 | 0.2+ | 0.4+ | 2001 10 15 | 691 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.4+ |
| 1995 10 01 | 691 | 0.1+ | 0.0 | 2001 10 15 | 691 | 0.1− | 0.2− | 2001 11 21 | 704 | 0.4− | 0.0 |
| 1995 10 01 | 691 | 0.1− | 0.0 | 2001 10 17 | 704 | 0.2− | 0.5− | 2001 11 21 | 704 | 0.5− | 0.5+ |
| 2001 09 20 | 704 | 0.7+ | 0.5− | 2001 10 17 | 704 | 0.3− | 0.1− | 2001 11 21 | 608 | 0.3− | 0.6+ |
| 2001 09 20 | 704 | 0.7+ | 0.2− | 2001 10 17 | 704 | 0.1− | 0.3− | 2001 11 21 | 608 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.6− | 2001 10 17 | 704 | 0.1+ | 0.2− | 2001 11 21 | 608 | 0.1− | 1.1+ |
| 2001 09 20 | 704 | 0.2− | 1.1− | 2001 10 17 | 704 | 0.3− | 0.0 | 2003 01 09 | 704 | 0.5+ | 0.1+ |
| 2001 09 22 | 699 | 1.0+ | 0.1+ | 2001 10 21 | 704 | 0.0 | 0.1+ | 2003 01 09 | 704 | 0.0 | 0.2+ |
| 2001 09 22 | 699 | 0.5− | 0.5+ | 2001 10 21 | 704 | 0.3+ | 0.1+ | 2003 01 09 | 704 | 0.1− | 1.0+ |
| 2001 09 22 | 699 | 0.6− | 0.0 | 2001 10 21 | 704 | 0.1+ | 0.0 | 2003 02 01 | 704 | 0.4+ | 0.1+ |
| 2001 09 22 | 699 | 0.3+ | 0.5+ | 2001 10 21 | 704 | 0.3− | 0.1+ | 2003 02 01 | 704 | 0.8+ | 0.5+ |
| 2001 09 24 | 704 | 0.6− | 0.3− | 2001 10 21 | 704 | 0.6+ | 0.0 | 2003 02 01 | 704 | 0.8+ | 1.0+ |
| 2001 09 24 | 704 | (0.1+ | 2.2+) | 2001 10 26 | 704 | 0.3+ | 0.3+ | 2003 02 01 | 704 | 0.0 | 0.0 |
| 2001 09 24 | 704 | 0.3− | 1.0+ | 2001 10 26 | 704 | 0.6+ | 0.0 | 2003 02 01 | 704 | 0.3+ | 0.5+ |
| 2001 09 24 | 704 | 1.2− | 0.0 | 2001 10 26 | 704 | 0.8+ | 0.6+ | 2003 02 02 | 644 | 0.1− | 0.2+ |
| 2001 09 27 | 704 | 0.3+ | 0.1+ | 2001 10 26 | 704 | 0.0 | 0.5+ | 2003 02 02 | 644 | 0.0 | 0.1− |
| 2001 09 27 | 704 | 0.1+ | 0.7− | 2001 10 26 | 704 | 0.3+ | 0.6+ | 2003 02 02 | 644 | 0.0 | 0.1− |
| 2001 09 27 | 704 | 0.1− | 0.2+ | 2001 11 09 | 704 | 0.4+ | 0.4+ | 2003 02 04 | 699 | 0.9− | 0.7− |
| 2001 09 27 | 704 | 0.4− | 1.1− | 2001 11 09 | 704 | 0.9+ | 0.6+ | 2003 02 04 | 699 | 0.5+ | 0.6− |
| 2001 09 27 | 704 | 0.2− | 0.8− | 2001 11 09 | 704 | 0.4+ | 0.5+ | 2003 02 04 | 699 | 0.3+ | 0.2+ |
| 2001 09 27 | 704 | 0.3− | 0.6+ | 2001 11 09 | 704 | 0.1− | 0.9+ | 2003 02 04 | 699 | 1.0− | 0.6− |
| 2001 09 27 | 704 | 0.0 | 0.5− | 2001 11 09 | 704 | 0.2+ | 1.4+ | 2003 02 19 | 644 | 0.3− | 0.0 |
| 2001 09 27 | 704 | 0.3+ | 0.6− | 2001 11 15 | 608 | 0.3− | 0.4+ | 2003 02 19 | 644 | 0.1− | 0.2+ |
| 2001 09 27 | 704 | 0.3− | 0.1− | 2001 11 15 | 608 | 0.6− | 0.9+ | 2003 02 19 | 644 | 0.2− | 0.3+ |
| 2001 10 11 | 644 | 0.1+ | 0.5+ | 2001 11 15 | 608 | 0.4− | 0.6+ | 2004 05 13 | 691 | 0.3+ | 0.8+ |
| 2001 10 11 | 644 | 0.5+ | 0.5+ | 2001 11 17 | 704 | 0.2+ | 0.7+ | 2004 05 13 | 691 | 0.4+ | 1.2+ |
| 2001 10 11 | 644 | 0.4+ | 0.5+ | 2001 11 17 | 704 | 0.1− | 0.1+ | 2004 05 13 | 691 | 0.6+ | 0.7+ |
| 2001 10 13 | 704 | 0.4+ | 0.5− | 2001 11 17 | 704 | 0.4− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.9+ |
| 2001 10 13 | 704 | 0.3− | 0.0 | 2001 11 17 | 704 | 0.5− | 0.5+ | 2006 08 16 | 644 | 0.5− | 0.5+ |
| 2001 10 13 | 704 | 0.5+ | 1.0− | 2001 11 17 | 704 | 0.6− | 0.3+ | 2006 08 16 | 644 | 0.3+ | 0.4+ |
| 2001 10 13 | 704 | 1.0− | 0.6+ | 2001 11 19 | 704 | 0.6+ | 0.6+ | 2006 08 18 | 644 | 0.0 | 0.5+ |
| 2001 10 13 | 704 | 0.8− | 0.0 | 2001 11 19 | 704 | 0.4+ | 0.5+ | 2006 08 18 | 644 | 0.5− | 0.4+ |
| 2001 10 14 | 699 | 0.8− | 0.6− | 2001 11 19 | 704 | 0.5− | 0.0 | 2006 08 18 | 644 | 0.3− | 0.7+ |
| 2001 10 14 | 699 | 0.4− | 0.1− | 2001 11 19 | 704 | 0.0 | 0.6+ | | | | |

**(140271)∗ 2001 SF$_{272}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.80866 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17820167 | $\omega$ | 128.45143 | | +0.93640822 | +0.34550678 | |
| $a$ | 3.1274824 | $\Omega$ | 211.47314 | | −0.34729480 | +0.88743491 | |
| $e$ | 0.1546471 | $i$ | 6.74901 | | −0.05025893 | +0.30509726 | |
| $P$ | 5.53 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 25 | 691 | 0.2− | 0.1+ | 2001 10 17 | 704 | 0.9− | 0.0 | 2005 05 08 | G96 | 0.3− | 0.1+ |
| 1990 10 25 | 691 | 0.2+ | 0.2+ | 2001 10 19 | 644 | 0.1− | 0.0 | 2005 05 12 | 691 | 0.4+ | 0.1+ |
| 1990 10 25 | 691 | 0.1− | 0.1+ | 2001 10 19 | 644 | 0.1+ | 0.1+ | 2005 05 12 | 691 | 0.2+ | 0.3+ |
| 2001 08 16 | 704 | 0.0 | 0.5+ | 2001 10 19 | 644 | 0.1+ | 0.2− | 2005 05 12 | 691 | 0.2+ | 0.5+ |
| 2001 08 16 | 704 | 0.7+ | 0.5+ | 2001 10 21 | 704 | 0.3− | 0.4− | 2005 05 20 | G96 | 0.1+ | 0.5+ |
| 2001 08 16 | 704 | 0.5− | 1.4− | 2001 10 21 | 704 | 0.0 | 0.2− | 2005 05 20 | G96 | 0.1+ | 0.5+ |
| 2001 08 28 | 699 | 0.0 | 0.8− | 2001 10 21 | 704 | 0.2+ | 0.0 | 2005 05 20 | G96 | 0.4− | 0.1+ |
| 2001 08 28 | 699 | 0.7− | 0.9+ | 2001 10 21 | 704 | 0.1+ | 0.2+ | 2005 05 20 | G96 | 0.5+ | 0.7+ |
| 2001 08 28 | 699 | 0.1− | 0.4− | 2001 10 21 | 704 | 0.1− | 0.3+ | 2005 05 20 | G96 | 0.0 | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | 1.5− | 0.8− | 2001 10 26 | 644 | 0.3+ | 0.0 | 2005 05 20 | G96 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 1.1+ | 2001 10 26 | 704 | 1.2− | 0.3− | 2005 05 20 | G96 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2001 10 26 | 644 | 0.7+ | 0.2+ | 2005 05 20 | G96 | 0.1− | 0.8+ |
| 2001 09 20 | 704 | 0.7− | 0.3+ | 2001 10 26 | 704 | 0.6− | 0.3+ | 2005 05 20 | G96 | 0.6− | 0.7+ |
| 2001 09 21 | 699 | 0.4− | 0.9+ | 2001 10 26 | 644 | 0.0 | 0.1− | 2005 05 20 | G96 | 0.3+ | 0.5+ |
| 2001 09 21 | 699 | 0.4+ | 1.3+ | 2001 10 26 | 704 | 0.2− | 0.2− | 2005 05 20 | G96 | 0.3− | 0.8+ |
| 2001 09 21 | 699 | 0.7− | 1.0+ | 2001 10 26 | 704 | 1.0− | 0.2+ | 2005 05 20 | G96 | 0.1− | 0.4+ |
| 2001 09 21 | 699 | 0.9− | 0.4+ | 2001 10 26 | 704 | 1.4− | 0.1+ | 2006 07 31 | 941 | 0.2+ | 0.1− |
| 2001 09 23 | 704 | 0.0 | 1.1− | 2001 11 09 | 704 | 0.5− | 0.1+ | 2006 07 31 | 941 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.6− | 0.7− | 2001 11 09 | 704 | 0.9− | 0.5+ | 2006 07 31 | 941 | 0.1+ | 0.2− |
| 2001 09 23 | 704 | 0.5− | 0.5− | 2001 11 09 | 704 | 0.4− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 0.0 | 0.1− | 2001 11 09 | 704 | 0.8− | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.1− |
| 2001 09 24 | 704 | 0.2+ | 0.5+ | 2001 11 09 | 704 | 0.5+ | 0.8+ | 2006 08 16 | 644 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 0.2− | 1.2+ | 2001 11 15 | 608 | 0.1− | 0.4+ | 2006 08 27 | 699 | (2.7+ | 0.3+) |
| 2001 09 24 | 704 | 0.0 | 0.9+ | 2001 11 15 | 608 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 0.3− | 0.3− |
| 2001 09 24 | 704 | 0.3− | 0.9+ | 2001 11 15 | 608 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.3− | 0.4− |
| 2001 09 27 | 704 | 0.2− | 0.2− | 2001 11 16 | 291 | 0.8+ | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.2+ |
| 2001 09 27 | 704 | 1.5− | 0.4+ | 2001 11 16 | 291 | 1.0+ | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.2− |
| 2001 09 27 | 704 | 0.4+ | 0.7+ | 2001 11 16 | 291 | 1.0+ | 0.3+ | 2006 08 28 | 699 | 0.2+ | 0.2+ |
| 2001 09 27 | 704 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.7− |
| 2001 09 28 | 704 | (0.2− | 2.1+) | 2001 11 20 | 704 | 0.3− | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.2− |
| 2001 09 28 | 704 | 1.5− | 1.1+ | 2001 11 20 | 704 | 0.4− | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.6− |
| 2001 09 28 | 704 | 1.2− | 1.1+ | 2001 11 20 | 704 | 0.4− | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.2− |
| 2001 09 28 | 704 | 0.0 | 1.4+ | 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.3− |
| 2001 10 11 | 644 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 08 30 | 704 | 0.6+ | 0.8+ |
| 2001 10 11 | 644 | 0.3− | 0.1− | 2001 11 21 | 704 | 0.4− | 0.4+ | 2006 08 30 | 704 | 0.2+ | 0.3− |
| 2001 10 11 | 644 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 09 01 | 704 | 0.5− | 0.1− |
| 2001 10 13 | 704 | 0.6+ | 0.3− | 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 09 01 | 704 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.9− | 0.6+ | 2006 09 01 | 704 | 0.2− | 0.1+ |
| 2001 10 13 | 704 | 0.0 | 0.3− | 2004 03 27 | 691 | 0.1+ | 0.8+ | 2006 09 11 | 703 | (2.4− | 0.2+) |
| 2001 10 13 | 704 | 0.3+ | 0.2+ | 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 09 11 | 703 | 1.9− | 0.3− |
| 2001 10 13 | 704 | 0.5+ | 0.9+ | 2004 03 27 | 691 | 0.0 | 0.3+ | 2006 09 11 | 703 | 0.9− | 0.5+ |
| 2001 10 14 | 704 | 0.2− | 0.7+ | 2005 04 11 | G96 | 0.5− | 0.2+ | 2006 09 11 | 703 | 0.6− | 0.8+ |
| 2001 10 14 | 704 | 0.1+ | 0.2+ | 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.1+ | 0.3+ | 2005 04 11 | G96 | 0.4− | 0.1− | 2006 09 15 | 691 | 0.8+ | 0.6− |
| 2001 10 14 | 704 | 0.0 | 0.6+ | 2005 04 11 | G96 | 0.5− | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.1− |
| 2001 10 14 | 704 | 0.0 | 0.9+ | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.8− | 0.0 |
| 2001 10 16 | 691 | 0.3+ | 0.2− | 2005 05 08 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.6− | 1.4+ |
| 2001 10 16 | 691 | 0.3+ | 0.1+ | 2005 05 08 | 691 | 0.7+ | 1.4+ | 2006 09 19 | 699 | 0.4− | 0.4+ |
| 2001 10 16 | 691 | 0.3+ | 0.0 | 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.1− |
| 2001 10 17 | 704 | 0.4− | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.2+ | | | | |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.1+ | | | | |

**(140272)∗ 2001 SL$_{272}$ = 1998 XC$_{60}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 20394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.54578 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25550171 | $\omega$ | 51.35988 | | −0.99616426 | −0.06819337 |
| $a$ | 2.4596511 | $\Omega$ | 124.66428 | | +0.04380881 | −0.93110734 |
| $e$ | 0.1280187 | $i$ | 3.82240 | | +0.07574670 | −0.35831381 |
| $P$ | 3.86 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 1.2− | 2.0− | 2003 01 04 | 704 | 0.7+ | 0.9+ | 2003 02 08 | 704 | 0.0 | 0.0 |
| 1998 12 15 | 704 | (1.1+ | 3.9−) | 2003 01 04 | 704 | 0.2− | 0.2+ | 2005 09 24 | 644 | 0.0 | 0.1+ |
| 1998 12 15 | 704 | 0.9− | 1.4− | 2003 01 04 | 704 | 0.2+ | 0.2+ | 2005 09 24 | 644 | 0.3+ | 0.2− |
| 1998 12 16 | 704 | 0.3− | 0.5− | 2003 01 04 | 704 | 0.1− | 0.7+ | 2005 09 24 | 644 | 0.5+ | 0.3− |
| 1998 12 16 | 704 | (0.2+ | 4.5−) | 2003 01 08 | 704 | 0.4+ | 0.3+ | 2005 09 30 | 699 | 0.9− | 0.9− |
| 1998 12 16 | 704 | 1.6− | 1.8− | 2003 01 08 | 704 | 1.2− | 1.0+ | 2005 09 30 | 699 | 1.0+ | 0.1+ |
| 1998 12 16 | 704 | (0.5− | 2.4−) | 2003 01 08 | 704 | 1.1+ | 0.7+ | 2005 09 30 | 699 | 0.8+ | 0.1+ |
| 2001 08 27 | 699 | 0.2+ | 0.4+ | 2003 01 08 | 704 | (1.0− | 1.8+) | 2005 09 30 | 699 | (1.3+ | 2.1+) |
| 2001 08 27 | 699 | 1.0− | 1.2+ | 2003 01 08 | 704 | 0.2+ | 0.2+ | 2005 10 01 | 704 | 0.6− | 0.5− |
| 2001 08 27 | 699 | 0.3+ | 0.4+ | 2003 01 09 | 704 | 0.2+ | 0.1+ | 2005 10 01 | 704 | 1.0− | 0.3− |
| 2001 08 27 | 699 | 0.6− | 0.0 | 2003 01 09 | 704 | 0.1+ | 0.3+ | 2005 10 01 | 704 | 0.7− | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 0.1− | 2003 01 09 | 704 | 0.0 | 0.4+ | 2005 10 01 | 704 | 0.9− | 0.4− |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2003 01 09 | 704 | 0.1+ | 0.1+ | 2005 10 01 | 704 | 0.6+ | 0.4− |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2003 01 09 | 704 | 0.1− | 0.6+ | 2005 10 05 | 704 | 0.7+ | 0.8− |
| 2001 09 12 | 704 | 0.3− | 0.2− | 2003 01 11 | 704 | 0.4+ | 0.5+ | 2005 10 05 | 704 | 0.3+ | 0.7+ |
| 2001 09 12 | 704 | 0.1+ | 0.2− | 2003 01 11 | 704 | 0.1+ | 0.2+ | 2005 10 05 | 704 | 0.4+ | 1.2+ |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2003 01 11 | 704 | 0.0 | 0.2+ | 2005 10 05 | 704 | 1.3+ | 1.2+ |
| 2001 09 21 | 704 | 0.2− | 0.2− | 2003 01 11 | 704 | 0.2+ | 0.4+ | 2005 10 07 | 703 | 1.2− | 0.1− |
| 2001 09 21 | 704 | 0.7− | 0.6+ | 2003 01 11 | 704 | (3.1+ | 0.3−) | 2005 10 07 | 703 | (0.3+ | 2.0+) |
| 2001 09 21 | 704 | 0.9+ | 1.0+ | 2003 01 14 | 704 | 0.3− | 0.1− | 2005 10 07 | 703 | (1.0− | 1.9−) |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2003 01 14 | 704 | 0.0 | 0.7− | 2005 10 07 | 703 | 0.5+ | 0.7− |
| 2001 09 27 | 704 | 0.1− | 0.0 | 2003 01 14 | 704 | 0.1− | 0.8− | 2005 10 27 | 699 | 0.2− | 0.4+ |
| 2001 09 27 | 704 | 0.2− | 0.0 | 2003 01 14 | 704 | 0.5− | 0.6− | 2005 10 27 | 699 | 0.7+ | 0.2+ |
| 2001 09 27 | 704 | 0.3+ | 0.1− | 2003 01 14 | 704 | 0.4+ | 0.7− | 2005 10 27 | 699 | 0.8+ | 0.9+ |
| 2002 12 05 | 704 | 0.8+ | 0.3− | 2003 01 31 | 704 | 1.2− | 0.9+ | 2005 10 27 | 699 | 0.4− | 1.0+ |
| 2002 12 05 | 704 | 0.5+ | 0.3+ | 2003 01 31 | 704 | (1.7− | 1.2+) | 2005 11 03 | 703 | (0.3+ | 1.9−) |
| 2002 12 05 | 704 | 0.7+ | 0.6− | 2003 01 31 | 704 | 0.9− | 1.2+ | 2005 11 03 | 703 | 0.2− | 0.8− |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2003 01 31 | 704 | (1.0− | 1.5+) | 2005 11 03 | 703 | 0.6− | 1.2− |
| 2002 12 10 | 704 | 0.7+ | 0.2+ | 2003 02 03 | 704 | 1.0+ | 0.7− | 2005 11 03 | 703 | 0.5− | 0.0 |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2003 02 03 | 704 | 0.8+ | 0.4− | 2005 11 17 | 644 | 0.3+ | 0.6− |
| 2002 12 27 | 699 | 1.0+ | 0.6− | 2003 02 03 | 704 | 0.5− | 1.0− | 2005 11 17 | 644 | 0.0 | 0.4+ |
| 2002 12 27 | 699 | 0.2+ | 0.3+ | 2003 02 03 | 704 | (1.8+ | 0.8−) | 2005 11 17 | 644 | 0.3+ | 0.1− |
| 2002 12 27 | 699 | 0.1+ | 0.8+ | 2003 02 03 | 704 | (1.1+ | 1.6−) | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 12 27 | 699 | 0.2+ | 0.7+ | 2003 02 07 | 333 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2002 12 28 | 699 | 0.1+ | 0.2+ | 2003 02 07 | 333 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2002 12 28 | 699 | 0.3+ | 0.5+ | 2003 02 07 | 333 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.6− | 0.1+ |
| 2002 12 28 | 699 | 0.3+ | 0.8+ | 2003 02 07 | 333 | (2.3− | 0.1−) | 2006 11 15 | G96 | 1.0− | 0.2− |
| 2002 12 28 | 699 | 0.8+ | 1.0+ | 2003 02 07 | 704 | 1.0+ | 0.4− | 2006 11 15 | G96 | 0.9− | 0.6− |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2003 02 07 | 704 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.5− | 0.3− |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2003 02 07 | 704 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.5− | 0.2− |
| 2002 12 31 | 704 | 1.2+ | 0.2+ | 2003 02 07 | 704 | 1.1+ | 0.0 | 2006 11 27 | 703 | 1.8− | 0.6− |
| 2002 12 31 | 704 | 1.2+ | 0.0 | 2003 02 08 | 704 | 0.0 | 0.6+ | 2006 11 27 | 703 | 0.1+ | 0.7+ |
| 2002 12 31 | 704 | 0.5+ | 0.3− | 2003 02 08 | 704 | 0.6+ | 0.2− | 2006 11 27 | 703 | 0.9− | 0.2− |
| 2003 01 04 | 704 | 0.3+ | 0.9+ | 2003 02 08 | 704 | 0.6+ | 0.4+ | 2006 11 27 | 703 | 1.0− | 0.3− |

**(140273)∗ 2001 ST$_{273}$**

Discovered 2001 Sept. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.54542 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19423699 | $\omega$ | 290.81029 | | +0.57323392 | +0.81929621 |
| $a$ | 2.9528956 | $\Omega$ | 14.18665 | | −0.73151572 | +0.51857812 |
| $e$ | 0.0917137 | $i$ | 2.92674 | | −0.36917155 | +0.24460262 |
| $P$ | 5.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 18 | 691 | 0.3+ | 0.4− | 2001 10 11 | 644 | 0.4− | 0.2+ | 2004 03 30 | 691 | 0.1− | 0.5+ |
| 1996 10 18 | 691 | 0.4+ | 0.2− | 2001 10 11 | 644 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 1996 10 18 | 691 | 0.1+ | 0.4− | 2001 10 12 | 557 | 0.8+ | 0.3− | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 1996 11 07 | 691 | 0.1− | 1.0− | 2001 10 12 | 557 | 0.5+ | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.2+ |
| 1996 11 07 | 691 | 0.4− | 0.7− | 2001 10 12 | 557 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 1996 11 07 | 691 | 0.2+ | 0.7− | 2001 10 13 | 557 | 0.8− | 1.4+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 1999 03 23 | 691 | 0.3− | 0.2+ | 2001 10 13 | 557 | 0.7+ | 1.3+ | 2006 09 19 | 691 | 0.1+ | 0.4+ |
| 1999 03 23 | 691 | 0.5+ | 0.1− | 2001 10 15 | 291 | 0.0 | 0.4+ | 2006 09 24 | 691 | 0.5− | 0.6− |
| 1999 03 23 | 691 | 0.3− | 0.3− | 2001 10 15 | 291 | 0.3− | 0.3+ | 2006 09 24 | 691 | 0.5− | 0.1+ |
| 2001 09 19 | 691 | 0.4+ | 0.0 | 2001 10 15 | 291 | 0.0 | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.0 |
| 2001 09 19 | 691 | 0.1+ | 0.0 | 2001 10 21 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 291 | 0.1− | 0.3+ |
| 2001 09 19 | 691 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 291 | 0.2− | 0.4+ |
| 2001 09 19 | 691 | 0.4− | 0.0 | 2001 10 21 | 704 | 0.0 | 0.9+ | 2006 09 28 | 291 | 0.4− | 0.3+ |
| 2001 09 19 | 691 | 0.2− | 0.1+ | 2001 10 21 | 704 | 1.1+ | 0.8− | 2006 09 28 | 691 | 0.2− | 0.9+ |
| 2001 09 19 | 691 | 0.5+ | 0.1+ | 2001 10 21 | 704 | 0.4− | 1.3+ | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.5− | 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.8− | 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.5+ | 0.3− |
| 2001 09 20 | 704 | 0.3− | 0.4− | 2004 03 21 | 691 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1− |
| 2001 09 21 | 691 | 0.0 | 0.0 | 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2001 09 21 | 691 | 0.2+ | 0.0 | 2004 03 21 | 691 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.4+ | 0.6− |
| 2001 09 21 | 691 | 0.2+ | 0.0 | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 10 11 | 644 | 0.3− | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.4− |

**(140274)∗ 2001 SX$_{275}$**

Discovered 2001 Sept. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.75966 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17848529 | $\omega$ | 255.19970 | | +0.61050311 | −0.79001244 | |
| $a$ | 3.1241684 | $\Omega$ | 156.89029 | | +0.77057937 | +0.57606306 | |
| $e$ | 0.2257603 | $i$ | 8.24262 | | +0.18301199 | +0.20983731 | |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.1− | 0.0 | 2001 12 15 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.9+ | |
| 1997 03 02 | 691 | 0.1+ | 0.4− | 2001 12 15 | 704 | 0.8− | 1.1+ | 2006 09 14 | 703 | 0.9− | 1.0+ | |
| 1997 03 02 | 691 | 0.1+ | 0.2− | 2001 12 15 | 704 | 0.1− | 1.6+ | 2006 09 16 | 704 | 1.0+ | 0.1− | |
| 1997 03 09 | 691 | 0.2− | 0.3− | 2003 03 12 | 291 | 0.3+ | 0.5+ | 2006 09 16 | 704 | 0.3+ | 0.7+ | |
| 1997 03 09 | 691 | (1.2− | 3.8+) | 2003 03 12 | 291 | 0.5+ | 0.4+ | 2006 09 16 | 699 | 0.6− | 1.8+ | |
| 1997 03 09 | 691 | (4.9+ | 4.3−) | 2003 03 12 | 291 | 0.4+ | 0.4+ | 2006 09 16 | 704 | 1.3+ | 0.1− | |
| 2001 09 17 | 704 | 1.1− | 0.0 | 2003 03 31 | 691 | 0.1− | 1.7+ | 2006 09 16 | 699 | 0.1− | 1.1+ | |
| 2001 09 17 | 704 | 0.0 | 0.1− | 2003 03 31 | 691 | 0.1+ | 1.7+ | 2006 09 16 | 699 | 0.6− | 1.2+ | |
| 2001 09 17 | 704 | 1.0− | 0.3− | 2003 03 31 | 691 | 0.1+ | 1.5+ | 2006 09 16 | 699 | 0.8+ | 0.4+ | |
| 2001 09 17 | 704 | 1.2− | 0.3+ | 2006 07 25 | G96 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.1+ | 0.5+ | |
| 2001 09 17 | 704 | 0.9− | 0.2+ | 2006 07 25 | G96 | 0.4− | 0.6+ | 2006 09 19 | 699 | 1.1− | 1.8+ | |
| 2001 09 21 | 691 | 0.1+ | 0.0 | 2006 07 25 | G96 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.3+ | 1.2+ | |
| 2001 09 21 | 691 | 0.3− | 0.3− | 2006 07 25 | G96 | 0.4− | 0.3+ | 2006 09 19 | 699 | 0.3− | 1.0+ | |
| 2001 09 21 | 691 | 0.1+ | 0.3− | 2006 08 17 | 644 | 0.3− | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.9− | |
| 2001 09 22 | 691 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.5− | 0.7+ | 2006 09 22 | 704 | 0.8− | 0.6− | |
| 2001 09 22 | 691 | 0.1− | 0.4− | 2006 08 17 | 644 | 0.0 | 0.6+ | 2006 09 22 | 704 | 0.6+ | 0.2− | |
| 2001 09 22 | 691 | 0.0 | 0.4− | 2006 08 22 | 644 | 0.4− | 0.8+ | 2006 09 25 | 699 | 1.2− | 0.4− | |
| 2001 10 17 | 704 | 1.2+ | 0.4− | 2006 08 22 | 644 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.6+ | 0.9+ | |
| 2001 10 17 | 704 | 0.0 | 0.4− | 2006 08 22 | 644 | 0.3− | 0.7+ | 2006 09 25 | 699 | 0.4+ | 0.9+ | |
| 2001 10 17 | 704 | 0.2− | 1.9+ | 2006 08 23 | 644 | 0.0 | 0.9+ | 2006 09 25 | 699 | 0.6+ | 1.8+ | |
| 2001 10 17 | 704 | 0.0 | 0.3− | 2006 08 23 | 644 | 0.8− | 0.6+ | 2006 09 26 | 704 | 0.9− | 0.8+ | |
| 2001 11 13 | 608 | 0.8+ | 0.6− | 2006 08 23 | 644 | 0.5− | 0.6+ | 2006 09 26 | 704 | 0.5− | 0.0 | |
| 2001 11 13 | 608 | 0.6+ | 0.1− | 2006 08 27 | 699 | 1.0− | 0.2− | 2006 09 26 | 704 | 1.5− | 0.8+ | |
| 2001 11 13 | 608 | 0.7+ | 0.5− | 2006 08 27 | 699 | 1.3+ | 0.0 | 2006 09 30 | 703 | 1.2− | 1.9− | |
| 2001 11 21 | 608 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.7+ | 0.9+ | 2006 09 30 | 703 | (3.4+ | 2.4−) | |
| 2001 11 21 | 608 | 0.2+ | 1.0− | 2006 08 27 | 699 | 0.3− | 1.2+ | 2006 09 30 | 703 | 0.1+ | 1.2− | |
| 2001 11 21 | 608 | 0.1+ | 0.5− | 2006 08 28 | 703 | 1.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.4+ | |
| 2001 12 07 | 704 | 0.4+ | 1.4+ | 2006 08 28 | 703 | 0.6+ | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.3+ | |
| 2001 12 07 | 704 | 0.1− | 1.5+ | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.4− | 0.4+ | |
| 2001 12 07 | 704 | (0.6+ | 2.1+) | 2006 08 28 | 703 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1+ | |
| 2001 12 07 | 704 | 0.8+ | 1.5+ | 2006 09 14 | 703 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.2+ | |
| 2001 12 07 | 704 | 0.1− | 1.7+ | 2006 09 14 | 703 | 0.2+ | 0.1+ | | | | | |

**(140275)∗ 2001 SL$_{276}$**

Discovered 2001 Sept. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.40861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21191350 | $\omega$ | 50.82389 | | +0.03438765 | −0.99456282 | |
| $a$ | 2.7863156 | $\Omega$ | 37.55995 | | +0.86001557 | −0.02065502 | |
| $e$ | 0.1373035 | $i$ | 9.27949 | | +0.50910775 | +0.10206939 | |
| $P$ | 4.65 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 644 | 0.0 | 0.5+ | 2001 11 19 | 704 | 0.1+ | 0.1− | 2003 04 01 | 704 | 0.7+ | 0.0 | |
| 2001 09 16 | 644 | 0.1+ | 0.6+ | 2001 11 19 | 704 | 0.4− | 0.3− | 2003 04 01 | 704 | 1.3− | 0.4+ | |
| 2001 09 16 | 644 | 0.1+ | 0.7+ | 2001 11 19 | 704 | 0.5+ | 0.2+ | 2003 04 01 | 704 | 0.4− | 0.5+ | |
| 2001 09 17 | 704 | 0.6+ | 1.1− | 2001 11 19 | 704 | 0.7− | 0.1− | 2003 04 01 | 704 | 0.1+ | 0.3+ | |
| 2001 09 17 | 704 | 0.5− | 0.3+ | 2001 11 19 | 704 | 0.3− | 0.4− | 2003 04 01 | 704 | 0.5+ | 0.1− | |
| 2001 09 17 | 704 | 0.7+ | 0.0 | 2001 11 19 | 704 | (1.8− | 0.1+) | 2003 04 01 | 704 | 0.1− | 1.1+ | |
| 2001 09 17 | 704 | 0.5+ | 1.5+ | 2001 11 19 | 704 | 0.4+ | 0.3− | 2003 04 01 | 704 | 0.6+ | 0.6− | |
| 2001 09 22 | 644 | 0.7+ | 0.9+ | 2001 11 19 | 704 | 0.6− | 0.2+ | 2003 04 01 | 704 | 0.2+ | 0.4+ | |
| 2001 09 22 | 644 | 0.6+ | 1.1+ | 2001 11 19 | 704 | 0.3+ | 0.3− | 2003 04 01 | 704 | 0.1+ | 0.2+ | |
| 2001 09 22 | 644 | 1.0+ | 0.7+ | 2001 11 19 | 704 | 0.7− | 0.4+ | 2003 04 01 | 704 | 0.1+ | 0.2+ | |
| 2001 10 12 | 699 | 0.2− | 0.2− | 2001 11 20 | 704 | 0.7− | 0.4+ | 2003 04 02 | 843 | 0.7− | 0.3+ | |
| 2001 10 12 | 699 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.1− | 0.2+ | 2003 04 02 | 843 | 0.5− | 0.7+ | |
| 2001 10 12 | 699 | 0.8+ | 0.3+ | 2001 11 20 | 704 | 0.6− | 0.2− | 2003 04 02 | 843 | 0.9+ | 0.6+ | |
| 2001 10 12 | 699 | 1.0− | 0.4− | 2001 11 20 | 704 | 0.4− | 0.1− | 2003 04 05 | 699 | 1.4− | 0.3− | |
| 2001 10 13 | 704 | 0.0 | 0.4− | 2001 11 20 | 704 | 0.5− | 0.1− | 2003 04 05 | 699 | 0.3+ | 0.3− | |
| 2001 10 13 | 704 | 0.3+ | 0.0 | 2001 11 24 | 704 | 0.6− | 0.9− | 2003 04 05 | 699 | 1.1+ | 0.2+ | |
| 2001 10 13 | 704 | 0.6+ | 0.5+ | 2001 11 24 | 704 | 1.0− | 1.0− | 2003 04 05 | 699 | 0.1+ | 0.6+ | |
| 2001 10 13 | 704 | (1.6+ | 0.7−) | 2001 11 24 | 704 | 1.1+ | 0.8− | 2003 04 09 | 704 | 0.1+ | 0.2− | |
| 2001 10 13 | 704 | 0.3− | 0.2+ | 2001 12 10 | 704 | 0.2− | 0.2+ | 2003 04 09 | 704 | 0.2+ | 0.1− | |
| 2001 10 19 | 644 | 0.4− | 0.1+ | 2001 12 10 | 704 | 0.3+ | 0.1− | 2003 04 09 | 704 | 0.3+ | 0.2+ | |
| 2001 10 19 | 644 | 0.6− | 0.1+ | 2001 12 10 | 704 | 0.1− | 0.0 | 2003 04 09 | 704 | 0.8+ | 1.1− | |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2001 12 10 | 704 | 0.1+ | 0.3+ | 2003 04 09 | 704 | 0.2+ | 0.2+ | |
| 2001 10 21 | 704 | (1.6− | 0.0 ) | 2001 12 10 | 704 | 0.4− | 0.5− | 2003 04 09 | 704 | 1.5− | 0.0 | |
| 2001 10 21 | 704 | (0.5− | 2.1−) | 2001 12 18 | 699 | 0.2− | 0.8− | 2003 04 09 | 704 | 0.4+ | 0.5+ | |
| 2001 10 21 | 704 | (0.2− | 1.6−) | 2001 12 18 | 699 | 0.6− | 0.4− | 2003 04 09 | 704 | 0.6+ | 0.4+ | |
| 2001 10 21 | 704 | (0.1− | 2.0−) | 2001 12 18 | 699 | 1.4− | 0.8− | 2003 04 09 | 704 | 1.3− | 1.1+ | |
| 2001 10 21 | 704 | (0.6− | 2.5−) | 2001 12 18 | 699 | 0.4+ | 1.3− | 2005 08 28 | E12 | 0.3+ | 0.4+ | |
| 2001 10 24 | 291 | 0.2− | 0.4− | 2001 12 20 | 644 | 0.2− | 0.4− | 2005 08 28 | E12 | 0.1− | 0.4+ | |
| 2001 10 24 | 291 | 0.3− | 0.4− | 2001 12 20 | 644 | 0.3− | 0.1− | 2005 08 28 | E12 | 0.9− | 0.1+ | |
| 2001 10 24 | 291 | 0.1− | 0.4− | 2001 12 20 | 644 | 0.1− | 0.0 | 2005 08 28 | E12 | 0.2− | 0.2+ | |
| 2001 10 26 | 704 | 0.0 | 0.4− | 2002 01 06 | 644 | 0.0 | 0.1+ | 2005 09 26 | 703 | 0.5+ | 0.7+ | |
| 2001 10 26 | 704 | 0.1+ | 0.4− | 2002 01 06 | 644 | 0.1+ | 0.1+ | 2005 09 26 | 704 | 0.1+ | 0.6− | |
| 2001 10 26 | 704 | 0.1+ | 0.3− | 2002 01 06 | 644 | 0.3+ | 0.0 | 2005 09 26 | 703 | 0.4− | 0.2+ | |
| 2001 10 26 | 704 | 0.3+ | 0.5− | 2002 01 09 | 704 | 0.1+ | 0.3− | 2005 09 26 | 703 | 1.2− | 0.4+ | |
| 2001 10 26 | 704 | 0.4+ | 0.1+ | 2002 01 09 | 704 | 0.1+ | 0.3− | 2005 09 26 | 704 | 0.7+ | 0.2− | |
| 2001 10 26 | 644 | 0.2+ | 0.4− | 2002 01 09 | 704 | 0.3+ | 0.1− | 2005 09 26 | 703 | 0.1+ | 0.0 | |
| 2001 10 26 | 644 | 0.1+ | 0.4− | 2002 01 09 | 704 | 0.8+ | 0.1+ | 2005 09 26 | 704 | 0.7+ | 0.3− | |
| 2001 10 26 | 644 | 0.0 | 0.4− | 2002 01 09 | 704 | 0.4+ | 0.8+ | 2005 09 26 | 704 | 0.0 | 0.0 | |
| 2001 11 09 | 644 | 0.3− | 1.4+ | 2002 02 08 | 704 | 0.1+ | 0.5− | 2005 10 02 | E12 | 0.6− | 1.0+ | |
| 2001 11 09 | 644 | 0.1− | 1.1+ | 2002 02 08 | 704 | 0.2+ | 1.1+ | 2005 10 02 | E12 | 0.1+ | 0.6+ | |
| 2001 11 09 | 644 | 0.0 | 1.2+ | 2002 02 08 | 704 | 0.2+ | 0.2+ | 2005 10 02 | E12 | 0.8− | 0.8+ | |
| 2001 11 10 | 704 | 0.2− | 0.0 | 2002 02 08 | 704 | 0.1− | 0.2− | 2005 10 02 | E12 | 0.8− | 1.3+ | |
| 2001 11 10 | 704 | 0.1− | 0.2− | 2003 03 15 | 636 | 0.3− | 0.1− | 2005 10 04 | 644 | 0.2− | 0.2+ | |
| 2001 11 10 | 704 | 0.8− | 0.2− | 2003 03 15 | 636 | 1.2− | 0.7− | 2005 10 04 | 644 | 0.3− | 0.0 | |
| 2001 11 10 | 704 | 0.9− | 0.1+ | 2003 03 15 | 636 | 0.1+ | 0.0 | 2005 10 04 | 644 | 0.1+ | 0.1+ | |
| 2001 11 10 | 704 | (0.6− | 1.5−) | 2003 03 16 | 608 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.8+ | 0.5− | |
| 2001 11 12 | 704 | 0.1+ | 0.6+ | 2003 03 16 | 608 | 0.8+ | 0.7− | 2006 10 29 | 704 | 0.1+ | 0.8+ | |
| 2001 11 12 | 704 | 0.6+ | 1.1+ | 2003 03 16 | 608 | 1.0+ | 0.2− | 2006 10 29 | 704 | 0.5− | 0.5+ | |
| 2001 11 12 | 704 | 1.4+ | 0.3+ | 2003 03 26 | 699 | 0.4+ | 0.2− | 2006 10 29 | 704 | 0.5− | 0.6+ | |
| 2001 11 12 | 704 | 0.6+ | 1.3+ | 2003 03 26 | 699 | 1.1+ | 0.2+ | 2006 11 15 | 704 | 0.3+ | 0.8− | |
| 2001 11 12 | 704 | 1.4+ | 0.9+ | 2003 03 26 | 699 | 0.8− | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.8− | |
| 2001 11 16 | 644 | 0.1− | 0.9+ | 2003 03 26 | 699 | 1.5+ | 0.2+ | 2006 11 15 | 704 | 0.3+ | 0.7+ | |
| 2001 11 16 | 644 | 0.0 | 0.6+ | 2003 03 27 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 704 | 0.3+ | 0.8+ | |
| 2001 11 16 | 644 | 0.1− | 1.1+ | 2003 03 27 | 704 | 0.5+ | 1.0+ | 2006 11 17 | 644 | 0.1− | 0.3− | |
| 2001 11 17 | 644 | 1.0+ | 0.5+ | 2003 03 27 | 704 | 0.3+ | 1.3+ | 2006 11 17 | 644 | 0.4− | 0.0 | |
| 2001 11 17 | 644 | 0.1+ | 0.3+ | 2003 03 27 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.7− | |
| 2001 11 17 | 644 | 0.2+ | 0.4+ | 2003 03 27 | 704 | (0.7+ | 1.8+) | | | | | |

**(140276)∗ 2001 SM$_{276}$**

Discovered 2001 Sept. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.70705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22991286 | $\omega$ | 297.69997 | | +0.40213326 | −0.88949023 | |
| $a$ | 2.6389260 | $\Omega$ | 126.91438 | | +0.90617007 | +0.35276109 | |
| $e$ | 0.2264520 | $i$ | 15.74927 | | +0.13093758 | +0.29045954 | |
| $P$ | 4.29 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 644 | 0.2− | 0.1+ | 2002 01 12 | 704 | 0.3− | 0.3− | 2005 09 01 | 644 | 0.0 | 0.4+ | |
| 2001 09 18 | 644 | 0.3− | 0.4+ | 2002 01 12 | 699 | 0.3− | 0.7+ | 2005 09 01 | 644 | 0.2− | 0.2+ | |
| 2001 09 18 | 644 | 0.1− | 0.6+ | 2002 01 12 | 699 | (0.5+ | 2.0+) | 2005 09 01 | 644 | 0.0 | 0.3+ | |
| 2001 09 22 | 644 | 0.2− | 0.1+ | 2003 02 04 | 608 | 0.7+ | 1.0+ | 2005 09 08 | I10 | 0.0 | 0.7+ | |
| 2001 09 22 | 644 | 0.2− | 0.4+ | 2003 02 04 | 608 | 0.7+ | 0.9+ | 2005 09 08 | I10 | 0.2− | 1.4+ | |
| 2001 09 22 | 644 | 0.0 | 0.0 | 2003 02 04 | 608 | 0.1+ | 0.9+ | 2005 09 08 | I10 | 0.4+ | 0.2− | |
| 2001 09 22 | 699 | 0.4+ | 0.4+ | 2003 02 28 | 704 | 0.9− | 1.4+ | 2005 09 14 | E12 | 0.2− | 0.7+ | |
| 2001 09 22 | 699 | 0.2− | 0.4+ | 2003 02 28 | 704 | 0.6− | 1.0+ | 2005 09 14 | E12 | 0.4− | 0.5+ | |
| 2001 09 22 | 699 | 0.4+ | 0.3+ | 2003 02 28 | 704 | 0.1− | 0.5+ | 2005 09 14 | E12 | 0.1− | 0.2− | |
| 2001 09 22 | 699 | 0.7− | 0.5+ | 2003 02 28 | 704 | 0.3+ | 0.8+ | 2005 09 14 | E12 | 0.2− | 0.4+ | |
| 2001 09 27 | 699 | 0.5− | 0.2− | 2003 02 28 | 704 | 0.1− | 0.6+ | 2005 09 26 | 704 | 0.3− | 0.3+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 27 | 699 | 0.3+ | 0.5+ | 2003 02 28 | 704 | 0.5− | 0.5+ | 2005 09 26 | 704 | 0.4− | 0.5+ |
| 2001 09 27 | 699 | 0.8− | 0.3− | 2003 02 28 | 704 | 0.7+ | 0.6+ | 2005 09 26 | 704 | 0.1+ | 0.2+ |
| 2001 09 27 | 699 | 0.6− | 0.5+ | 2003 02 28 | 704 | 0.5+ | 0.9+ | 2005 09 26 | 704 | 0.4− | 0.1− |
| 2001 10 11 | 704 | 0.5− | 0.4+ | 2003 02 28 | 704 | 1.4+ | 0.2− | 2005 09 26 | 704 | 0.2− | 0.3+ |
| 2001 10 11 | 704 | 0.1− | 0.2+ | 2003 03 25 | 644 | 0.8+ | 0.9+ | 2005 10 02 | E12 | 0.5− | 0.1+ |
| 2001 10 11 | 704 | 0.3− | 0.0 | 2003 03 25 | 644 | 0.1+ | 0.2+ | 2005 10 02 | E12 | 0.4− | 0.0 |
| 2001 10 11 | 704 | 0.1− | 0.3+ | 2003 03 25 | 644 | 0.4+ | 0.7+ | 2005 10 02 | E12 | 0.8+ | 0.4+ |
| 2001 10 11 | 704 | 0.6− | 0.4+ | 2003 03 25 | 644 | 0.3+ | 0.5+ | 2005 10 02 | E12 | 0.4− | 0.6+ |
| 2001 10 14 | 608 | 0.5− | 0.6− | 2003 03 25 | 644 | 0.8+ | 1.0+ | 2005 10 25 | 644 | 0.3+ | 0.5+ |
| 2001 10 14 | 608 | 0.4− | 0.8− | 2003 03 25 | 644 | 0.1− | 0.2+ | 2005 10 25 | 644 | 0.5+ | 0.8+ |
| 2001 10 14 | 608 | 0.7− | 0.7− | 2003 04 04 | 608 | 0.4− | 1.3+ | 2005 10 25 | 644 | 0.0 | 0.6+ |
| 2001 10 23 | 699 | 0.2− | 0.1+ | 2003 04 04 | 608 | (0.6+ | 1.7+) | 2005 11 05 | 699 | 0.9− | 0.2− |
| 2001 10 23 | 699 | 0.0 | 0.1+ | 2003 04 04 | 608 | (0.4+ | 2.0+) | 2005 11 05 | 699 | 0.9+ | 0.8− |
| 2001 10 23 | 699 | 0.1+ | 0.2+ | 2003 04 05 | 699 | 0.1+ | 0.3+ | 2005 11 05 | 699 | 0.6− | 0.4− |
| 2001 10 23 | 699 | 0.1+ | 0.5+ | 2003 04 05 | 699 | (1.6+ | 0.5−) | 2005 11 05 | 699 | 0.4+ | 0.5− |
| 2001 11 06 | 644 | 0.1+ | 0.4+ | 2003 04 05 | 699 | 1.2− | 1.2+ | 2006 10 20 | 703 | 0.1− | 0.4− |
| 2001 11 06 | 644 | 0.2+ | 0.1+ | 2003 04 05 | 699 | 0.4− | 0.9+ | 2006 10 20 | 703 | 0.3− | 0.3+ |
| 2001 11 06 | 644 | 0.2+ | 0.3+ | 2003 04 09 | 644 | 0.0 | 0.5+ | 2006 10 20 | 703 | (1.6− | 0.6+) |
| 2001 11 07 | 704 | 0.2− | 0.3+ | 2003 04 09 | 644 | 0.1− | 0.4+ | 2006 10 20 | 703 | 1.4− | 0.1− |
| 2001 11 07 | 704 | 0.1− | 0.1+ | 2003 04 09 | 644 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2001 11 07 | 704 | 0.3− | 0.3− | 2003 04 10 | 704 | (2.1+ | 0.8−) | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2001 11 07 | 704 | 0.9+ | 0.2+ | 2003 04 10 | 704 | 0.6+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2001 11 07 | 704 | 0.4− | 0.8− | 2003 04 10 | 704 | 1.0+ | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2001 11 12 | 608 | 1.0+ | 0.2+ | 2005 08 06 | E12 | 0.2− | 0.5+ | 2006 11 24 | 691 | 0.4+ | 0.1+ |
| 2001 11 12 | 608 | 0.8+ | 0.5+ | 2005 08 06 | E12 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.3+ | 0.0 |
| 2001 11 12 | 608 | 1.1+ | 0.4+ | 2005 08 06 | E12 | 0.0 | 0.7+ | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2001 11 18 | 608 | 0.3+ | 0.5+ | 2005 08 06 | E12 | 0.6− | 0.7+ | 2006 11 28 | 704 | 0.7− | 1.2+ |
| 2001 11 18 | 608 | 0.5+ | 0.7+ | 2005 08 26 | 644 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.5− |
| 2001 11 18 | 608 | 0.2+ | 0.9+ | 2005 08 26 | 644 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2002 01 12 | 699 | 0.7− | 0.1+ | 2005 08 26 | 644 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.3− |
| 2002 01 12 | 704 | 0.3+ | 0.5+ | 2005 08 30 | 699 | 0.3− | 0.7+ | 2006 12 01 | 691 | 0.1+ | 0.2+ |
| 2002 01 12 | 704 | 0.8+ | 0.8− | 2005 08 30 | 699 | 0.2− | 0.4+ | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2002 01 12 | 699 | 0.2− | 0.7+ | 2005 08 30 | 699 | 0.2+ | 0.0 | 2006 12 01 | 691 | 0.2− | 0.1+ |

**(140277)∗ 2001 SP$_{276}$**

Discovered 2001 Sept. 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.86519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22850941 | $\omega$ | 84.80760 | | −0.90171770 | | −0.36178297 |
| $a$ | 2.6497201 | $\Omega$ | 73.81782 | | +0.22890651 | | −0.86396098 |
| $e$ | 0.1335505 | $i$ | 14.26730 | | +0.36675196 | | −0.35026348 |
| $P$ | 4.31 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 10 | 704 | 1.3+ | 0.4+ | 2003 01 10 | 704 | 0.3+ | 0.1+ | 2003 03 24 | 704 | 0.7+ | 0.6+ |
| 1999 04 10 | 704 | 0.2+ | 0.4+ | 2003 01 10 | 704 | 0.4+ | 0.2− | 2003 03 24 | 704 | 0.2− | 0.2− |
| 1999 04 10 | 704 | (2.5+ | 0.7+) | 2003 01 13 | 704 | 0.1− | 0.0 | 2003 03 24 | 704 | 0.4+ | 1.1+ |
| 1999 04 10 | 704 | (2.8+ | 0.6+) | 2003 01 13 | 704 | 1.4+ | 0.0 | 2003 04 10 | 704 | 0.2− | 0.8+ |
| 2001 09 21 | 644 | 0.1− | 0.6+ | 2003 01 13 | 704 | 0.2+ | 0.2+ | 2003 04 10 | 704 | 1.3+ | 0.9+ |
| 2001 09 21 | 644 | 0.6− | 1.0+ | 2003 01 13 | 704 | 0.1+ | 0.1− | 2003 04 10 | 704 | 1.2+ | 0.5+ |
| 2001 09 21 | 644 | 0.3− | 0.5+ | 2003 01 25 | 704 | 0.2− | 0.4+ | 2003 04 10 | 704 | 1.0+ | 0.3+ |
| 2001 09 22 | 644 | 0.3− | 0.3+ | 2003 01 25 | 704 | 0.7− | 0.6+ | 2003 04 10 | 704 | 0.6+ | 0.2− |
| 2001 09 22 | 644 | 0.2− | 0.3− | 2003 01 25 | 704 | 0.9− | 0.2+ | 2003 05 28 | 704 | 0.2+ | 0.4+ |
| 2001 09 22 | 644 | 0.5− | 0.0 | 2003 01 25 | 704 | 0.4− | 0.7+ | 2003 05 28 | 704 | 0.3+ | 0.3− |
| 2001 10 11 | 704 | 0.0 | 1.1+ | 2003 01 25 | 704 | 0.3− | 1.2+ | 2003 05 28 | 704 | 0.1+ | 0.0 |
| 2001 10 11 | 704 | 0.1− | 1.0+ | 2003 01 29 | 644 | 0.2+ | 0.7+ | 2005 08 01 | E12 | 0.6− | 0.2+ |
| 2001 10 11 | 704 | 0.4+ | 0.3+ | 2003 01 29 | 644 | 0.3+ | 0.8+ | 2005 08 01 | E12 | 1.1− | 0.3− |
| 2001 10 11 | 704 | 0.0 | 0.6+ | 2003 01 29 | 644 | 0.1+ | 0.6+ | 2005 08 01 | E12 | 0.6− | 0.2− |
| 2001 10 11 | 704 | 0.0 | 0.4+ | 2003 02 11 | 704 | 0.6− | 0.6− | 2005 08 01 | E12 | 0.1− | 0.2+ |
| 2001 10 15 | 644 | 0.1− | 0.2− | 2003 02 11 | 704 | 0.5− | 0.1− | 2005 10 03 | E12 | 0.1+ | 0.2+ |
| 2001 10 15 | 644 | 0.1− | 0.2− | 2003 02 11 | 704 | 0.5− | 0.7− | 2005 10 03 | E12 | 0.5− | 0.3− |
| 2001 10 15 | 644 | 0.1− | 0.3− | 2003 02 11 | 704 | 0.5− | 0.3− | 2005 10 03 | E12 | 0.0 | 0.4+ |
| 2001 10 23 | 644 | 0.2+ | 0.1+ | 2003 02 19 | 644 | 0.0 | 0.8− | 2005 10 03 | E12 | 0.2− | 0.2+ |
| 2001 10 23 | 644 | 0.4+ | 0.4− | 2003 02 19 | 644 | 0.1− | 0.7− | 2006 11 15 | 704 | (3.3+ | 0.3−) |
| 2001 10 23 | 644 | 0.6+ | 0.1− | 2003 02 19 | 644 | 0.1+ | 0.6− | 2006 11 15 | 704 | (3.0+ | 0.1+) |
| 2002 11 06 | 704 | 0.3+ | 0.5+ | 2003 03 03 | 644 | 0.0 | 0.9+ | 2006 11 15 | 704 | (2.0+ | 0.7+) |
| 2002 11 06 | 704 | 1.2− | 0.3+ | 2003 03 03 | 644 | 0.1+ | 0.8+ | 2006 11 15 | 704 | 0.1− | 0.2− |
| 2002 11 06 | 704 | 0.6− | 0.3+ | 2003 03 03 | 644 | 0.3+ | 0.8+ | 2006 11 16 | 704 | 0.7+ | 0.1+ |
| 2002 12 06 | 704 | 0.8− | 0.2+ | 2003 03 09 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.1+ | 1.3− |
| 2002 12 06 | 704 | 0.4− | 0.1− | 2003 03 09 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.6− |
| 2002 12 06 | 704 | (0.7− | 2.5+) | 2003 03 09 | 644 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 2002 12 06 | 704 | 0.1− | 0.2+ | 2003 03 13 | 704 | 0.7+ | 1.3+ | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.5− | 0.0 | 2003 03 13 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2002 12 14 | 704 | 0.1+ | 0.2+ | 2003 03 13 | 704 | 1.4+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2002 12 14 | 704 | 0.0 | 0.7+ | 2003 03 13 | 704 | 1.1+ | 0.3− | 2006 11 22 | 704 | 0.7+ | 0.1+ |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2003 03 13 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 0.8+ | 0.3− |
| 2002 12 14 | 704 | 0.3+ | 0.3− | 2003 03 24 | 645 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.4− |
| 2002 12 30 | 704 | 0.7− | 0.3+ | 2003 03 24 | 645 | 0.2− | 0.2− | 2006 11 27 | 704 | 0.3− | 0.6− |
| 2002 12 30 | 704 | 0.2− | 0.5+ | 2003 03 24 | 704 | 0.1+ | 0.9+ | 2006 11 27 | 704 | 0.6− | 0.3− |
| 2002 12 30 | 704 | 0.5+ | 0.2− | 2003 03 24 | 704 | 1.0+ | 1.3+ | 2006 11 27 | 704 | 0.0 | 0.2− |
| 2003 01 10 | 704 | 0.0 | 0.2− | 2003 03 24 | 704 | 0.0 | 0.2+ | 2006 11 27 | 704 | 0.7− | 0.5− |
| 2003 01 10 | 704 | 0.5+ | 0.0 | 2003 03 24 | 704 | 0.9+ | 0.1− | | | | |
| 2003 01 10 | 704 | 0.3+ | 0.1+ | 2003 03 24 | 704 | 0.2+ | 0.3− | | | | |

**(140278)∗ 2001 SR$_{277}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.51581 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18257337 | $\omega$ | 131.25438 | | +0.46251510 | | −0.87791196 |
| $a$ | 3.0773561 | $\Omega$ | 290.79473 | | +0.76866508 | | +0.46669385 |
| $e$ | 0.1758911 | $i$ | 7.61580 | | +0.44185267 | | +0.10708611 |
| $P$ | 5.40 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 24 | 691 | 0.4+ | 0.0 | 2001 12 18 | 699 | 0.3+ | 0.4+ | 2003 03 09 | 704 | 0.2− | 0.2+ |
| 1990 10 24 | 691 | 0.2+ | 0.3− | 2001 12 18 | 699 | 0.1− | 0.7+ | 2003 03 09 | 704 | 0.9− | 0.0 |
| 1990 10 24 | 691 | 0.1− | 0.6− | 2001 12 20 | 644 | 0.2− | 0.3− | 2006 08 31 | 704 | 0.1+ | 0.2+ |
| 2001 09 21 | 699 | 0.5− | 0.5− | 2001 12 20 | 644 | 0.0 | 0.3− | 2006 08 31 | 704 | 0.1+ | 0.0 |
| 2001 09 21 | 699 | 0.6− | 0.8− | 2001 12 20 | 644 | 0.2+ | 0.1− | 2006 08 31 | 704 | 0.3+ | 0.0 |
| 2001 09 21 | 699 | 0.6− | 0.3− | 2002 01 09 | 704 | 0.5− | 0.2− | 2006 08 31 | 704 | 0.4+ | 0.1− |
| 2001 09 21 | 699 | 0.1+ | 0.3− | 2002 01 09 | 704 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.3+ |
| 2001 09 22 | 699 | 0.5− | 0.2− | 2002 01 09 | 704 | 0.9− | 0.1+ | 2006 09 06 | 644 | 0.3− | 0.4+ |
| 2001 09 22 | 699 | 0.1+ | 0.4+ | 2002 01 09 | 704 | 0.1− | 0.7+ | 2006 09 06 | 644 | 0.0 | 0.3+ |
| 2001 09 22 | 699 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.0 | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.4+ |
| 2001 09 22 | 699 | 0.1+ | 0.5+ | 2002 01 15 | 704 | (2.9+ | 0.3−) | 2006 09 17 | 703 | 1.0+ | 0.9+ |
| 2001 09 25 | 704 | 0.6+ | 0.6− | 2002 01 15 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 703 | 0.5+ | 0.1+ |
| 2001 09 25 | 704 | 0.1− | 0.5− | 2002 01 15 | 704 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.8− | 0.3− |
| 2001 09 25 | 704 | 0.4+ | 0.0 | 2002 01 15 | 704 | 1.0− | 0.8+ | 2006 09 17 | 703 | 0.9− | 0.1+ |
| 2001 09 25 | 704 | 0.8− | 0.0 | 2002 02 08 | 704 | 0.1− | 1.3− | 2006 09 20 | 699 | 0.2+ | 0.1+ |
| 2001 10 19 | 704 | 0.2+ | 0.4+ | 2002 02 08 | 704 | 0.0 | 1.2− | 2006 09 20 | 699 | 0.3− | 0.2+ |
| 2001 10 19 | 704 | 0.5+ | 0.1− | 2002 02 08 | 704 | (1.7− | 1.0−) | 2006 09 20 | 699 | 0.2+ | 0.3+ |
| 2001 10 19 | 704 | 0.4+ | 0.0 | 2002 02 08 | 704 | 0.6− | 0.6− | 2006 09 20 | 699 | 0.3− | 0.1+ |
| 2001 10 19 | 704 | 0.3− | 0.8+ | 2003 01 28 | 704 | 0.1+ | 0.3+ | 2006 09 22 | 703 | 0.5− | 1.0+ |
| 2001 10 19 | 704 | 1.3+ | 0.1− | 2003 01 28 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 703 | 0.1− | 0.2− |
| 2001 11 10 | 704 | 0.5− | 0.1− | 2003 01 28 | 704 | 0.8+ | 0.2+ | 2006 09 22 | 703 | 0.4− | 0.2− |
| 2001 11 10 | 704 | 0.4+ | 0.2+ | 2003 01 28 | 704 | 1.2+ | 0.2+ | 2006 09 22 | 703 | 0.0 | 0.5+ |
| 2001 11 10 | 704 | 0.1− | 0.1− | 2003 01 28 | 704 | 0.4+ | 0.5+ | 2006 09 23 | 106 | 0.2− | 0.2− |
| 2001 11 10 | 704 | 0.4− | 0.1+ | 2003 02 03 | 699 | 0.8+ | 0.2− | 2006 09 23 | 106 | 0.6+ | 0.6+ |
| 2001 11 10 | 704 | 0.7+ | 0.8+ | 2003 02 03 | 699 | 0.2+ | 1.2+ | 2006 09 23 | 106 | 0.6− | 0.4− |
| 2001 11 11 | 644 | 0.2+ | 0.1− | 2003 02 03 | 699 | 0.7+ | 0.9+ | 2006 09 23 | 106 | 0.1− | 0.2+ |
| 2001 11 11 | 644 | 0.2+ | 0.2− | 2003 02 03 | 699 | 0.3− | 1.0+ | 2006 10 01 | 703 | 0.5− | 0.1− |
| 2001 11 11 | 644 | 0.0 | 0.1− | 2003 02 12 | 608 | 0.2− | 0.2− | 2006 10 01 | 703 | 0.7− | 0.4− |
| 2001 11 12 | 704 | 0.8− | 0.1+ | 2003 02 12 | 608 | 0.3− | 0.1− | 2006 10 01 | 703 | 0.2− | 0.5− |
| 2001 11 12 | 704 | 0.3− | 0.2+ | 2003 02 12 | 608 | 0.1− | 0.1+ | 2006 10 01 | 703 | 0.9− | 0.0 |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2003 02 27 | 608 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 0.1− | 0.6+ | 2003 02 27 | 608 | 0.9− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.3− | 0.5+ | 2003 02 27 | 608 | 1.1− | 0.6− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 12 10 | 704 | 0.4+ | 0.2− | 2003 03 07 | 704 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 12 10 | 704 | 0.5+ | 0.1− | 2003 03 07 | 704 | (1.9+ | 1.0+) | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2001 12 10 | 704 | 1.0+ | 1.5− | 2003 03 07 | 704 | 1.1+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 12 10 | 704 | 0.5+ | 0.4− | 2003 03 07 | 704 | 1.0+ | 0.2+ | 2006 11 11 | 291 | 0.1+ | 0.2+ |
| 2001 12 18 | 699 | 0.3+ | 0.1+ | 2003 03 09 | 704 | (2.2− | 1.3+) | 2006 11 11 | 291 | 0.1+ | 0.3+ |
| 2001 12 18 | 699 | 0.8+ | 0.3− | 2003 03 09 | 704 | 0.4− | 0.6+ | 2006 11 11 | 291 | 0.1+ | 0.2+ |

**(140279)∗ 2001 SY$_{277}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.17900 | | (2000.0) | | | |
| $n$ | 0.19289399 | $\omega$ | 2.45590 | | +0.99924956 | +0.03583350 |
| $a$ | 2.9665858 | $\Omega$ | 355.41244 | | −0.03792865 | +0.82819873 |
| $e$ | 0.0988393 | $i$ | 10.59507 | | −0.00785669 | +0.55928778 |
| $P$ | 5.11 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.7− | 0.3− | 2001 11 18 | 704 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.4+ | 0.1+ |
| 2001 08 22 | 704 | 0.7− | 0.7+ | 2001 11 18 | 704 | 0.1+ | 0.5− | 2006 08 30 | 699 | 0.2+ | 1.3+ |
| 2001 08 22 | 704 | 0.3− | 0.6+ | 2001 11 18 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.1+ | 0.4+ |
| 2001 08 22 | 704 | 0.4+ | 0.2+ | 2001 11 18 | 704 | 0.2− | 0.4− | 2006 08 30 | 699 | 1.0+ | 0.6+ |
| 2001 08 22 | 704 | 0.4+ | 0.5+ | 2001 11 18 | 704 | 0.0 | 0.9− | 2006 09 20 | 699 | 1.1− | 0.4+ |
| 2001 09 20 | 704 | 0.6+ | 0.2+ | 2003 01 10 | 704 | 0.6+ | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2003 01 10 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.0 | 0.7+ |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2003 01 10 | 704 | 0.2− | 0.6+ | 2006 09 20 | 699 | 0.4− | 1.0+ |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2003 01 10 | 704 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.5+ |
| 2001 09 21 | 699 | 0.5+ | 0.5+ | 2003 01 10 | 704 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.0 | 0.0 |
| 2001 09 21 | 699 | 0.2− | 0.7+ | 2003 01 31 | 699 | 0.1+ | 0.5− | 2006 09 25 | 704 | 0.2− | 0.4− |
| 2001 09 21 | 699 | 0.2− | 0.3− | 2003 01 31 | 704 | 0.6− | 0.1+ | 2006 09 25 | 704 | 1.4+ | 0.8+ |
| 2001 09 21 | 699 | 0.7+ | 0.2− | 2003 01 31 | 699 | 0.7− | 0.2− | 2006 09 25 | 704 | 0.7+ | 0.6+ |
| 2001 09 22 | 699 | 0.1+ | 0.1− | 2003 01 31 | 704 | 0.1− | 1.0+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2001 09 22 | 699 | 0.0 | 0.2+ | 2003 01 31 | 699 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2001 09 22 | 699 | 0.1− | 0.9+ | 2003 01 31 | 704 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2001 09 22 | 699 | 0.0 | 0.4+ | 2003 01 31 | 699 | (1.7− | 1.2+) | 2006 09 27 | G96 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 0.1− | 0.7+ | 2003 02 04 | 699 | 0.2+ | 1.1− | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2001 09 23 | 704 | (0.9− | 2.7+) | 2003 02 04 | 699 | (1.7− | 0.4+) | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2001 09 23 | 704 | (2.5− | 0.2+) | 2003 02 04 | 699 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 09 23 | 704 | (0.8− | 2.1+) | 2003 02 04 | 699 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.5− |
| 2001 09 23 | 704 | 1.4− | 1.4+ | 2003 03 03 | 644 | 0.4+ | 0.1− | 2006 09 28 | 703 | 0.6− | 0.3− |
| 2001 09 25 | 704 | 0.6+ | 0.5− | 2003 03 03 | 644 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.5+ | 2003 03 03 | 644 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.1− | 0.3− |
| 2001 09 25 | 704 | 1.1+ | 0.4− | 2003 03 07 | 644 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.9+ | 1.2+ |
| 2001 09 25 | 704 | 0.4+ | 0.9− | 2003 03 07 | 644 | 0.5+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2001 09 25 | 704 | 0.1+ | 0.7− | 2003 03 07 | 644 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2001 10 13 | 644 | 0.8− | 0.5− | 2004 03 20 | 699 | 0.6− | 1.3+ | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2001 10 13 | 644 | 0.2− | 0.4− | 2004 03 20 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2001 10 13 | 644 | 0.5− | 0.4− | 2004 03 20 | 699 | 0.6− | 0.4+ | 2006 10 19 | 703 | 0.7− | 0.1+ |
| 2001 10 19 | 704 | 0.6− | 0.4+ | 2004 03 20 | 699 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.8− | 0.3+ |
| 2001 10 19 | 704 | 0.3− | 0.1+ | 2004 03 31 | 704 | 1.0+ | 0.6+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2001 10 19 | 704 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 1.0− | 0.4+ |
| 2001 10 19 | 704 | 0.3− | 0.3+ | 2004 03 31 | 704 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2001 10 19 | 704 | 0.6− | 0.4+ | 2004 03 31 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 27 | 704 | 0.1− | 0.8− | 2004 04 14 | 699 | 0.9− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 10 27 | 704 | 0.4+ | 1.2− | 2004 04 14 | 699 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 10 27 | 704 | 0.8+ | 0.1− | 2004 04 14 | 699 | 0.5+ | 0.1+ | 2006 10 25 | 106 | 1.4− | 0.5− |
| 2001 10 27 | 704 | 1.0+ | 0.2+ | 2004 04 14 | 699 | 0.3+ | 0.0 | 2006 10 25 | 106 | 0.2+ | 0.0 |
| 2001 10 27 | 704 | 0.6+ | 0.4+ | 2004 04 17 | 704 | 0.3+ | 0.6+ | 2006 10 25 | 106 | 0.7− | 0.1+ |
| 2001 11 10 | 704 | 0.4+ | 0.6− | 2004 04 17 | 704 | (1.7+ | 1.6+) | 2006 10 25 | 106 | 0.4− | 0.3− |
| 2001 11 10 | 704 | 0.3+ | 0.2− | 2004 04 17 | 704 | 0.6+ | 1.3+ | 2006 10 30 | 185 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 0.0 | 0.8− | 2004 04 17 | 704 | 0.3+ | 0.8+ | 2006 10 30 | 185 | 0.4+ | 0.0 |
| 2001 11 10 | 704 | 0.4+ | 0.1− | 2004 04 17 | 699 | 0.3− | 0.3− | 2006 10 30 | 185 | 0.2+ | 0.3+ |
| 2001 11 10 | 704 | 0.7+ | 0.9− | 2004 04 17 | 699 | 0.0 | 0.7+ | 2006 10 30 | 185 | 0.3+ | 0.2− |
| 2001 11 12 | 704 | 0.4+ | 0.7− | 2004 04 17 | 699 | 0.1+ | 0.6− | 2006 10 31 | 703 | 0.2+ | 0.7+ |
| 2001 11 12 | 704 | 0.4+ | 0.9− | 2004 04 17 | 699 | 0.0 | 1.0+ | 2006 10 31 | 703 | 0.8− | 0.3+ |
| 2001 11 12 | 704 | 0.5+ | 0.8− | 2004 04 19 | 704 | (1.5− | 0.6+) | 2006 10 31 | 703 | 0.4− | 0.3− |
| 2001 11 12 | 704 | 0.5+ | 0.9− | 2004 04 19 | 704 | 0.5+ | 0.7+ | 2006 10 31 | 703 | 0.5− | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.7− | 2004 04 19 | 704 | 0.3− | 0.5+ | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2001 11 17 | 704 | 0.2− | 0.0 | 2004 04 21 | 704 | 0.7+ | 0.2− | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2001 11 17 | 704 | 0.2− | 0.1+ | 2004 04 21 | 704 | 0.1+ | 0.7− | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2001 11 17 | 704 | 0.1+ | 0.3− | 2004 04 21 | 704 | 0.4+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.2− |
| 2001 11 17 | 704 | 0.1− | 0.3+ | 2004 04 22 | 704 | (1.0+ | 1.7+) | 2006 11 14 | 703 | 0.4− | 0.1− |
| 2001 11 18 | 704 | 0.2− | 0.2+ | 2004 04 22 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.2+ |
| 2001 11 18 | 704 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 1.3− | 0.2+ |
| 2001 11 18 | 704 | 0.7− | 0.4− | 2004 04 22 | 704 | 0.8+ | 0.8+ | | | | |
| 2001 11 18 | 704 | 0.1− | 0.1− | 2004 04 22 | 704 | 0.2− | 0.2− | | | | |

**(140280)∗ 2001 SF$_{278}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.06574 | | (2000.0) | | | |
| $n$ | 0.22195627 | $\omega$ | 218.40914 | | −0.26975692 | −0.95397801 |
| $a$ | 2.7016211 | $\Omega$ | 247.58573 | | +0.91478577 | −0.21141494 |
| $e$ | 0.1490633 | $i$ | 8.14564 | | +0.30066293 | −0.21267269 |
| $P$ | 4.44 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | 1.0− | 0.7+ | 2001 10 28 | 704 | 0.6− | 0.9− | 2003 04 04 | 699 | 0.4− | 0.8+ |
| 2001 08 28 | 699 | 0.7− | 0.3− | 2001 10 28 | 704 | 0.2− | 0.4+ | 2003 04 04 | 699 | 0.2+ | 0.5+ |
| 2001 08 28 | 699 | 0.8− | 1.1− | 2001 10 28 | 704 | 0.1− | 0.3+ | 2003 04 07 | 704 | 0.8+ | 0.0 |
| 2001 08 28 | 699 | 0.9− | 0.6+ | 2001 11 10 | 704 | 0.7+ | 0.4− | 2003 04 07 | 704 | 0.9+ | 0.1− |
| 2001 09 19 | 644 | 0.5− | 0.2− | 2001 11 10 | 704 | 0.2+ | 0.6− | 2003 04 07 | 704 | 0.7− | 1.1+ |
| 2001 09 19 | 644 | 0.5− | 0.3+ | 2001 11 10 | 704 | 0.3+ | 1.0− | 2003 04 07 | 704 | 0.8+ | 0.2+ |
| 2001 09 19 | 644 | 0.7− | 0.1− | 2001 11 10 | 644 | 0.2+ | 0.1+ | 2003 04 07 | 704 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 1.0+ | 0.4− | 2001 11 10 | 704 | 0.4+ | 0.4− | 2003 04 07 | 704 | 0.0 | 0.8− |
| 2001 09 20 | 704 | 0.4− | 0.3− | 2001 11 10 | 644 | 0.1− | 0.2+ | 2003 04 07 | 704 | 0.0 | 0.6+ |
| 2001 09 20 | 704 | 0.1+ | 0.6− | 2001 11 10 | 644 | 0.1− | 0.2+ | 2003 04 07 | 704 | 0.3+ | 0.4+ |
| 2001 09 21 | 699 | 1.0− | 0.7+ | 2001 11 10 | 704 | 0.3− | 0.8− | 2005 08 09 | 224 | 0.2− | 0.9+ |
| 2001 09 21 | 699 | 0.3− | 0.3+ | 2001 11 11 | 699 | 0.2+ | 0.4+ | 2005 08 09 | 224 | 0.0 | 0.1+ |
| 2001 09 21 | 699 | 0.6− | 0.7+ | 2001 11 11 | 699 | 0.3− | 0.3+ | 2005 08 09 | 224 | 0.1− | 0.8+ |
| 2001 09 21 | 699 | 0.1+ | 0.1+ | 2001 11 11 | 699 | 0.0 | 0.4+ | 2005 08 31 | 699 | 0.4− | 0.7− |
| 2001 09 22 | 699 | 0.1+ | 0.1− | 2001 11 11 | 699 | 0.2+ | 0.5+ | 2005 08 31 | 699 | 0.1+ | 0.9− |
| 2001 09 22 | 699 | 0.4+ | 1.0+ | 2001 11 12 | 704 | 1.0+ | 1.0− | 2005 08 31 | 699 | 0.1+ | 0.8− |
| 2001 09 22 | 699 | 0.9+ | 0.6+ | 2001 11 12 | 704 | 1.1+ | 0.1+ | 2005 08 31 | 699 | 0.8− | 0.2+ |
| 2001 09 22 | 699 | 0.4− | 1.3+ | 2001 11 12 | 704 | 0.7+ | 0.2− | 2005 09 09 | 704 | 0.6+ | 0.1− |
| 2001 09 23 | 704 | 0.7− | 0.5+ | 2001 11 12 | 704 | 0.5+ | 0.2+ | 2005 09 09 | 704 | 0.4+ | 0.5+ |
| 2001 09 23 | 704 | 0.1+ | 0.6− | 2001 11 12 | 704 | 0.7+ | 0.0 | 2005 09 09 | 704 | 0.2− | 0.8+ |
| 2001 09 23 | 704 | 0.4− | 0.1− | 2001 11 17 | 644 | 0.2+ | 0.1+ | 2005 09 09 | 704 | 0.3− | 1.1+ |
| 2001 09 23 | 704 | 0.4− | 0.4− | 2001 11 17 | 644 | 0.2− | 0.1+ | 2005 09 09 | 704 | 0.4+ | 0.5+ |
| 2001 10 13 | 699 | 0.7− | 0.7+ | 2001 11 17 | 644 | 0.0 | 0.2+ | 2005 10 01 | 703 | 0.2− | 0.1− |
| 2001 10 13 | 699 | 1.0− | 0.6− | 2001 11 21 | 608 | (1.0− | 2.3+) | 2005 10 01 | 703 | (0.0 | 1.8+) |
| 2001 10 13 | 699 | 0.7− | 0.4− | 2001 11 21 | 608 | 1.5− | 0.6+ | 2005 10 01 | 703 | 0.4− | 1.0+ |
| 2001 10 13 | 699 | 0.3− | 0.4− | 2001 11 21 | 608 | 0.1+ | 0.9− | 2005 10 01 | 703 | 0.8− | 0.4+ |
| 2001 10 14 | 704 | 0.3+ | 0.1+ | 2001 11 24 | 704 | 0.1− | 0.2+ | 2005 10 21 | 644 | 0.5− | 0.1+ |
| 2001 10 14 | 704 | 0.3+ | 0.1+ | 2001 11 24 | 704 | 0.1+ | 0.1− | 2005 10 21 | 644 | 0.3− | 0.3+ |
| 2001 10 14 | 704 | 0.3− | 0.0 | 2001 11 24 | 704 | 0.2− | 0.4− | 2005 10 21 | 644 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.3+ | 0.2+ | 2001 11 24 | 704 | 0.5+ | 0.2− | 2005 10 27 | 644 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 0.6+ | 0.2− | 2001 11 24 | 704 | 0.2+ | 0.0 | 2005 10 27 | 644 | 0.1− | 0.5+ |
| 2001 10 19 | 704 | 0.8− | 0.8+ | 2001 12 11 | 704 | 0.3+ | 1.4+ | 2005 10 27 | 644 | 0.2+ | 0.5+ |
| 2001 10 19 | 704 | 0.8− | 0.1+ | 2001 12 11 | 704 | 0.0 | 0.1− | 2005 10 30 | 699 | 0.1+ | 0.1+ |
| 2001 10 19 | 704 | (2.0− | 0.5+) | 2001 12 11 | 704 | 0.0 | 0.2+ | 2005 10 30 | 699 | 0.0 | 0.0 |
| 2001 10 19 | 704 | 0.9− | 0.3+ | 2001 12 15 | 704 | 1.2+ | 0.9+ | 2005 10 30 | 699 | 0.7+ | 0.2− |
| 2001 10 19 | 704 | 0.3− | 0.7+ | 2001 12 15 | 704 | 0.2− | 0.6+ | 2005 10 30 | 699 | 0.2+ | 0.5+ |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2001 12 15 | 704 | 0.1− | 0.6+ | 2006 09 26 | 691 | 0.3− | 0.4− |
| 2001 10 21 | 704 | 0.1+ | 0.4+ | 2001 12 15 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 691 | 0.3− | 0.1− |
| 2001 10 21 | 704 | 0.4− | 0.4+ | 2001 12 18 | 704 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.6+ |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2001 12 18 | 704 | 1.0+ | 0.6+ | 2006 11 02 | 703 | 1.2− | 0.8− |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2001 12 18 | 704 | 1.4+ | 0.9+ | 2006 11 02 | 703 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 0.3− | 2001 12 18 | 704 | 0.1− | 0.2− | 2006 11 02 | 703 | 1.3− | 0.1− |
| 2001 10 23 | 704 | 0.3− | 0.7− | 2003 02 27 | 608 | (0.3+ | 1.8−) | 2006 11 05 | 644 | 0.3− | 0.2− |
| 2001 10 24 | 333 | 0.6+ | 0.7− | 2003 02 27 | 608 | 0.8+ | 1.0− | 2006 11 05 | 644 | 0.3− | 0.3− |
| 2001 10 24 | 704 | (1.8− | 1.7−) | 2003 02 27 | 608 | 1.0+ | 0.5− | 2006 11 05 | 644 | 0.3− | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.3+ | 2003 03 09 | 699 | 0.6+ | 0.2+ | 2006 11 17 | 704 | 0.4− | 1.0− |
| 2001 10 24 | 704 | 0.1+ | 0.5+ | 2003 03 09 | 699 | 0.6+ | 0.2+ | 2006 11 17 | 704 | (2.8− | 0.6+) |
| 2001 10 24 | 704 | 0.0 | 0.1− | 2003 03 09 | 699 | 0.5+ | 0.8+ | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 2001 10 24 | 333 | 0.4+ | 0.1− | 2003 03 09 | 699 | 0.7+ | 0.6+ | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.6+ | 0.1+ | 2003 03 11 | 704 | 0.7− | 1.1+ | 2006 11 17 | 704 | 0.8+ | 0.0 |
| 2001 10 24 | 704 | 0.5− | 0.5− | 2003 03 11 | 704 | 0.6− | 1.2+ | 2006 11 25 | 704 | 1.5+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 333 | 0.5+ | 0.5− | 2003 03 11 | 704 | 1.3− | 0.4+ | 2006 11 25 | 704 | 0.3− | 0.8+ |
| 2001 10 24 | 704 | 0.2+ | 0.2− | 2003 03 11 | 704 | 0.2− | 0.9+ | 2006 11 25 | 704 | 0.9+ | 0.1+ |
| 2001 10 24 | 704 | 0.1− | 0.5− | 2003 03 11 | 704 | 0.4− | 0.9+ | 2006 11 25 | 704 | 0.7+ | 0.3− |
| 2001 10 24 | 704 | 0.2+ | 0.1+ | 2003 03 13 | 608 | (2.2+ | 2.3+) | 2006 11 28 | 704 | 0.6+ | 0.8+ |
| 2001 10 24 | 704 | 0.1+ | 0.8− | 2003 03 13 | 608 | (2.0+ | 1.8+) | 2006 11 28 | 704 | 0.4+ | 0.4+ |
| 2001 10 26 | 333 | 0.5− | 0.1+ | 2003 03 13 | 608 | (2.1+ | 2.1+) | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2001 10 26 | 333 | 0.5+ | 0.3− | 2003 04 04 | 699 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.3− |
| 2001 10 26 | 333 | 0.5+ | 0.5− | 2003 04 04 | 699 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.0 | 0.2+ |

**(140281)∗ 2001 SV$_{280}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.84972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19217621 | $\omega$ | 34.80775 | | +0.57948119 | −0.81283341 | |
| $a$ | 2.9739681 | $\Omega$ | 19.98517 | | +0.70289064 | +0.46169984 | |
| $e$ | 0.0901429 | $i$ | 9.97287 | | +0.41248794 | +0.35515504 | |
| $P$ | 5.13 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2− | 0.0 | 2001 11 17 | 704 | 0.2+ | 0.3− | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.8− | 0.2− | 2001 11 17 | 704 | 0.3+ | 0.2− | 2006 09 14 | 691 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 1.0− | 0.4− | 2001 11 17 | 644 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 699 | 0.7− | 0.4− | 2001 11 17 | 644 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.5+ | 1.1− |
| 2001 09 21 | 699 | 0.2− | 0.9− | 2001 11 17 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.4− |
| 2001 09 21 | 699 | 0.1− | 0.5− | 2001 11 19 | 704 | 0.3− | 0.4− | 2006 09 14 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 699 | 0.5− | 0.2+ | 2001 11 19 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.4− |
| 2001 09 22 | 699 | 0.5+ | 0.9− | 2001 11 19 | 704 | 0.2− | 0.3− | 2006 09 14 | 703 | 1.0− | 0.2− |
| 2001 09 22 | 699 | 0.7− | 0.3+ | 2001 11 19 | 704 | 0.3+ | 0.6− | 2006 09 16 | 644 | 0.1− | 0.3− |
| 2001 09 22 | 699 | 0.0 | 0.1+ | 2001 11 19 | 704 | 0.1− | 0.5− | 2006 09 16 | 644 | 0.2− | 0.2− |
| 2001 09 22 | 699 | 0.2− | 0.6+ | 2001 11 20 | 699 | 0.2+ | 1.2+ | 2006 09 16 | 644 | 0.1+ | 0.0 |
| 2001 09 24 | 704 | 0.4+ | 0.1+ | 2001 11 20 | 699 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.3− | 0.1− |
| 2001 09 24 | 704 | 1.0− | 0.4+ | 2001 11 20 | 699 | 0.1+ | 0.6− | 2006 09 17 | 704 | 0.2− | 0.6− |
| 2001 09 24 | 704 | 0.6− | 0.0 | 2001 11 20 | 699 | 0.6+ | 0.3− | 2006 09 17 | 704 | 0.4− | 0.3+ |
| 2001 09 24 | 704 | 0.6+ | 0.0 | 2003 01 10 | 704 | 0.5− | 0.3+ | 2006 09 17 | 704 | 0.4− | 0.0 |
| 2001 09 24 | 704 | 1.1− | 0.2− | 2003 01 10 | 704 | 0.6− | 1.0− | 2006 09 17 | 704 | 0.9− | 0.1− |
| 2001 10 13 | 704 | 0.0 | 1.0+ | 2003 01 10 | 704 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.7− | 0.8+ | 2003 01 10 | 704 | 0.7− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2001 10 13 | 704 | (2.4− | 0.7+) | 2003 01 10 | 704 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2001 10 13 | 704 | 1.1− | 0.5+ | 2003 01 10 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 1.0+ | 0.0 |
| 2001 10 14 | 699 | 0.7− | 0.1+ | 2003 01 10 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.9+ | 1.4− |
| 2001 10 14 | 699 | 0.2+ | 0.3− | 2003 01 10 | 644 | 0.0 | 0.9+ | 2006 09 20 | 704 | 0.8+ | 0.3− |
| 2001 10 14 | 704 | 0.4− | 0.7+ | 2003 01 24 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.7+ | 0.4+ |
| 2001 10 14 | 704 | 0.4− | 0.4+ | 2003 01 24 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.3+ |
| 2001 10 14 | 699 | 0.9− | 0.0 | 2003 01 24 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.5− | 0.7+ | 2003 01 29 | 644 | 0.4+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.6− | 0.9+ | 2003 01 29 | 644 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2001 10 14 | 699 | 0.3+ | 0.2+ | 2003 01 29 | 644 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.5− | 1.1+ | 2003 02 01 | 644 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 704 | 0.4− | 0.7+ | 2003 02 01 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 704 | 0.3− | 0.1+ | 2003 02 01 | 644 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2001 10 15 | 704 | 0.1+ | 0.9+ | 2003 02 02 | 704 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.5− |
| 2001 10 15 | 704 | 0.3− | 0.2+ | 2003 02 02 | 704 | 0.8+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2001 10 15 | 704 | 0.3− | 0.7+ | 2003 02 02 | 704 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.7+ | 0.5+ |
| 2001 10 15 | 704 | 0.4− | 0.5+ | 2003 02 02 | 704 | 0.6− | 0.5− | 2006 09 27 | 704 | 0.7− | 0.6+ |
| 2001 10 15 | 704 | 0.3− | 1.0+ | 2003 02 08 | 699 | 1.3+ | 0.4+ | 2006 09 27 | 704 | 0.4− | 0.2+ |
| 2001 10 15 | 704 | 0.5− | 0.4+ | 2003 02 08 | 699 | 0.2+ | 1.1+ | 2006 10 15 | 703 | 0.3− | 0.6− |
| 2001 10 15 | 704 | 0.1− | 1.1+ | 2003 02 08 | 699 | (2.0+ | 0.3+) | 2006 10 15 | 703 | 0.2+ | 0.7− |
| 2001 10 15 | 704 | 0.2− | 0.4+ | 2003 02 08 | 699 | (2.2+ | 1.3+) | 2006 10 15 | 703 | 0.5− | 0.4− |
| 2001 10 19 | 644 | 0.0 | 0.0 | 2003 02 19 | 644 | 0.3+ | 0.6+ | 2006 10 15 | 703 | 0.1− | 1.0− |
| 2001 10 19 | 644 | 0.2− | 0.1+ | 2003 02 19 | 644 | 0.5+ | 0.9+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 10 19 | 644 | 0.2− | 0.1+ | 2003 02 19 | 644 | 0.3+ | 0.9+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2003 03 03 | 644 | 0.6+ | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2003 03 03 | 644 | 0.6+ | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2003 03 03 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.3− | 0.4+ | 2003 03 07 | 645 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.7− | 0.5+ | 2003 03 07 | 645 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 10 26 | 644 | 0.4− | 0.3+ | 2003 04 25 | 291 | 0.4− | 1.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 26 | 644 | 0.4− | 0.3+ | 2003 04 25 | 291 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 26 | 644 | 0.4− | 0.5+ | 2003 04 25 | 291 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.4+ | 0.2+ | 2004 04 12 | 644 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 11 10 | 704 | 0.0 | 0.1− | 2004 04 12 | 644 | 0.8+ | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2001 11 10 | 704 | 0.3− | 0.2+ | 2004 04 12 | 644 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 11 10 | 644 | 0.1+ | 0.2+ | 2004 04 14 | 699 | 0.5+ | 1.4+ | 2006 10 28 | 704 | 1.2− | 0.1− |
| 2001 11 10 | 644 | 0.0 | 0.5+ | 2004 04 14 | 699 | 0.3+ | 0.4+ | 2006 10 28 | 704 | (1.1− | 2.5+) |
| 2001 11 10 | 704 | 0.0 | 0.0 | 2004 04 14 | 699 | 0.9+ | 0.2− | 2006 10 28 | 704 | 0.5+ | 0.6+ |
| 2001 11 10 | 644 | 0.1+ | 0.4+ | 2004 04 14 | 699 | 0.6+ | 1.2+ | 2006 10 28 | 704 | 0.0 | 0.7+ |
| 2001 11 10 | 704 | 0.5− | 0.2− | 2004 04 25 | 704 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 11 11 | 699 | 0.4− | 0.2− | 2004 04 25 | 704 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 11 11 | 699 | 0.4− | 0.2+ | 2004 04 25 | 704 | 0.7+ | 0.4+ | 2006 10 31 | G96 | 0.5− | 0.4+ |
| 2001 11 11 | 699 | 0.8+ | 0.8+ | 2004 04 25 | 704 | 0.9+ | 1.0+ | 2006 10 31 | G96 | 0.5+ | 0.5+ |
| 2001 11 11 | 699 | 0.5− | 1.0+ | 2004 04 25 | 704 | (1.6+ | 0.1−) | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2001 11 14 | 691 | (0.9+ | 1.7−) | 2004 04 25 | 703 | (1.9+ | 1.3+) | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 2001 11 14 | 691 | 0.8+ | 0.9− | 2004 04 25 | 703 | 1.2− | 0.5+ | 2006 11 11 | 703 | 1.0+ | 0.7− |
| 2001 11 14 | 691 | 0.8+ | 1.0− | 2004 04 25 | 703 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.6− |
| 2001 11 15 | 691 | 0.3+ | 0.1+ | 2004 04 25 | 703 | 0.2+ | 0.7+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 11 15 | 691 | 0.3+ | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 11 15 | 691 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 11 17 | 704 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 11 17 | 704 | 0.7+ | 0.7− | 2006 08 24 | 644 | 0.2+ | 0.2+ | | | | |
| 2001 11 17 | 704 | 0.0 | 0.4+ | 2006 08 24 | 644 | 0.3+ | 0.0 | | | | |

**(140282)∗ 2001 SO$_{281}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.57588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18485157 | $\omega$ | 28.65905 | | +0.86002411 | −0.51021411 | |
| $a$ | 3.0520194 | $\Omega$ | 2.05203 | | +0.42790288 | +0.71440850 | |
| $e$ | 0.1410131 | $i$ | 10.18511 | | +0.27795260 | +0.47885495 | |
| $P$ | 5.33 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | 0.1+ | 0.2− | 2001 11 20 | 699 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.0 | 0.2+ |
| 1998 04 27 | 691 | 0.1− | 0.1+ | 2001 11 20 | 699 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 1998 04 27 | 691 | 0.2+ | 0.2− | 2001 11 21 | 704 | 0.1− | 0.9− | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2001 07 28 | 699 | 0.9+ | 1.0− | 2001 11 21 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.0 |
| 2001 07 28 | 699 | 0.5− | 0.9− | 2001 11 21 | 704 | 0.8+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2001 07 28 | 699 | 1.2− | 0.6+ | 2001 11 21 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 699 | 0.8− | 0.4− |
| 2001 07 28 | 699 | 0.8+ | 0.2+ | 2001 11 21 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.4+ |
| 2001 08 22 | 704 | 1.0− | 1.1+ | 2002 02 08 | 704 | 1.3− | 0.9− | 2006 09 20 | 704 | 0.4− | 0.6+ |
| 2001 08 22 | 704 | 0.6− | 1.4+ | 2002 02 08 | 704 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2001 08 22 | 704 | 0.0 | 0.6+ | 2002 02 08 | 704 | 0.2+ | 1.4− | 2006 09 20 | 704 | 0.5− | 0.8+ |
| 2001 08 22 | 704 | 0.4− | 1.4+ | 2003 01 28 | 644 | 0.7+ | 0.8+ | 2006 09 20 | 704 | 0.7− | 0.4+ |
| 2001 08 28 | 699 | 0.2+ | 0.6− | 2003 01 28 | 644 | 0.7+ | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.1− |
| 2001 08 28 | 699 | 0.2+ | 0.4+ | 2003 01 28 | 644 | 0.8+ | 0.7+ | 2006 09 20 | 704 | 0.1+ | 0.0 |
| 2001 08 28 | 699 | 0.2+ | 0.2+ | 2003 02 19 | 644 | 0.2− | 1.0+ | 2006 09 20 | 644 | 0.0 | 0.0 |
| 2001 08 28 | 699 | 0.1+ | 0.3+ | 2003 02 19 | 644 | 0.3+ | 0.7+ | 2006 09 25 | 699 | 0.3+ | 0.4+ |
| 2001 09 19 | 644 | 0.0 | 0.2+ | 2003 02 19 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2001 09 19 | 644 | 0.0 | 0.2+ | 2003 03 03 | 644 | 0.3+ | 1.1+ | 2006 09 25 | 699 | 0.0 | 0.0 |
| 2001 09 19 | 644 | 0.2− | 0.2+ | 2003 03 03 | 644 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.4− | 0.3− | 2003 03 03 | 644 | 0.3+ | 0.7+ | 2006 09 26 | 691 | 0.9+ | 0.8+ |
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2004 04 16 | 644 | 0.5+ | 1.2+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.1− | 0.2− | 2004 04 16 | 644 | 0.3+ | 0.8+ | 2006 09 26 | G96 | 0.4− | 0.4− |
| 2001 09 20 | 704 | 0.5− | 0.1+ | 2004 04 16 | 644 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2001 09 21 | 699 | 1.3+ | 1.0+ | 2004 04 17 | 704 | 0.5− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 09 21 | 699 | 0.3+ | 0.3+ | 2004 04 17 | 704 | 0.5+ | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 699 | 0.0 | 0.6+ | 2004 04 17 | 704 | 0.8+ | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.0 |
| 2001 09 21 | 699 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.1− | 1.0+ | 2006 09 27 | 704 | 0.4+ | 0.8+ |
| 2001 09 22 | 699 | 0.1− | 0.6+ | 2004 04 19 | 704 | 0.5− | 0.2+ | 2006 09 27 | 704 | 0.7+ | 0.2+ |
| 2001 09 22 | 699 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.2+ |
| 2001 09 22 | 699 | 0.6− | 0.3− | 2004 04 19 | 704 | 0.3− | 1.1+ | 2006 09 27 | 704 | 0.5+ | 0.8+ |
| 2001 09 22 | 699 | 0.1− | 0.3+ | 2004 04 21 | 704 | 0.4+ | 0.2− | 2006 09 28 | 704 | 0.9+ | 0.3− |
| 2001 09 23 | 704 | 0.1− | 0.5− | 2004 04 21 | 704 | 0.8+ | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.9− | 0.3− | 2004 04 21 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.6+ | 0.2− |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2004 04 21 | 704 | (1.4+ | 2.8+) | 2006 09 28 | 704 | 0.3+ | 0.5− |
| 2001 09 23 | 704 | 0.4− | 0.1− | 2006 08 22 | 644 | 0.4− | 0.2− | 2006 09 30 | 704 | 0.4+ | 0.2+ |
| 2001 10 13 | 699 | 1.0+ | 0.2− | 2006 08 22 | 644 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.3− | 0.8+ |
| 2001 10 13 | 699 | 0.4+ | 0.2+ | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.7− | 0.1− |
| 2001 10 13 | 699 | 0.9+ | 0.3+ | 2006 08 23 | 704 | 0.3− | 0.8+ | 2006 09 30 | 704 | 0.5− | 0.0 |
| 2001 10 13 | 699 | 1.1+ | 0.0 | 2006 08 23 | 704 | 1.0− | 0.8+ | 2006 09 30 | 704 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 0.3− | 0.1+ | 2006 08 23 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.0 |
| 2001 10 14 | 704 | 0.4− | 0.1− | 2006 08 23 | 704 | (0.3− | 2.8+) | 2006 10 16 | 703 | 0.5− | 0.1− |
| 2001 10 14 | 704 | 0.2− | 0.1− | 2006 08 28 | 704 | 0.5− | 0.6− | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2001 10 14 | 704 | 0.3− | 0.2+ | 2006 08 28 | 704 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2006 08 28 | 704 | 0.6− | 0.5− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 10 18 | 704 | 0.3− | 0.1+ | 2006 08 28 | 704 | 0.3− | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2001 10 18 | 704 | 0.4− | 0.1− | 2006 08 28 | 704 | 0.2− | 0.5− | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2001 10 18 | 704 | 0.8− | 0.3− | 2006 08 28 | 699 | 0.6− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 0.7+ | 0.3− | 2006 08 28 | 699 | (1.5− | 1.0−) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2006 08 28 | 699 | 1.2+ | 1.4− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.4− | 2006 08 28 | 699 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.8− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 10 23 | 333 | 0.7+ | 0.8− | 2006 09 12 | 703 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 10 23 | 333 | 0.6+ | 1.0− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2001 10 23 | 333 | 0.5+ | 0.4− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1− | 0.3− |
| 2001 10 28 | 704 | 0.5− | 0.4− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.2− |
| 2001 10 28 | 704 | 0.3− | 0.3− | 2006 09 16 | 704 | (1.1− | 2.1+) | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2001 10 28 | 704 | 0.4− | 1.1− | 2006 09 16 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.7− |
| 2001 10 28 | 704 | 0.6− | 0.7− | 2006 09 16 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.5− |
| 2001 11 12 | 704 | 0.5− | 1.0+ | 2006 09 16 | 704 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.4− | 0.2− | 2006 09 16 | 699 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.9− | 0.2+ |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 704 | 0.2− | 0.5+ | 2006 11 21 | 704 | 1.1+ | 1.1+ |
| 2001 11 12 | 704 | 0.0 | 0.5+ | 2006 09 16 | 699 | 0.8+ | 0.9− | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2001 11 12 | 704 | 0.4+ | 0.7+ | 2006 09 16 | 699 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2001 11 20 | 699 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.9+ | 0.9+ |
| 2001 11 20 | 699 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.4− | 0.1+ | | | | |

**(140283)∗ 2001 ST$_{281}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.66884 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.20087067 | $\omega$ | 211.24360 | | +0.12458218 | −0.96956243 |
| $a$ | 2.8875202 | $\Omega$ | 232.45355 | | +0.95634976 | +0.17393422 |
| $e$ | 0.2170895 | $i$ | 15.41730 | | +0.26433768 | −0.17232409 |
| $P$ | 4.91 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 644 | 0.2+ | 0.5+ | 2001 11 19 | 704 | 0.7− | 0.0 | 2006 10 21 | 704 | 0.7− | 0.3+ |
| 2001 09 19 | 644 | 0.0 | 0.4+ | 2001 11 19 | 704 | 0.6− | 0.3+ | 2006 10 21 | 704 | 0.8− | 0.1+ |
| 2001 09 19 | 644 | 0.1− | 0.2+ | 2001 11 19 | 704 | 0.4− | 0.5+ | 2006 10 21 | 704 | 0.1− | 0.3− |
| 2001 09 21 | 699 | 0.4− | 0.6+ | 2001 11 19 | 704 | 0.6− | 0.5+ | 2006 10 21 | 704 | 0.5− | 0.4− |
| 2001 09 21 | 699 | 0.2− | 0.6+ | 2001 11 20 | 699 | 0.5− | 0.9− | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2001 09 21 | 699 | 0.8− | 0.2+ | 2001 11 20 | 699 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2001 09 21 | 699 | 0.8− | 0.4+ | 2001 11 20 | 699 | 0.6− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.2− |
| 2001 09 22 | 699 | 0.7− | 0.0 | 2001 11 20 | 699 | 0.7− | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.5− |
| 2001 09 22 | 699 | 1.0− | 0.7+ | 2001 11 24 | 704 | 0.1+ | 1.2+ | 2006 10 29 | 704 | 0.4+ | 0.9+ |
| 2001 09 22 | 699 | 0.5− | 0.5+ | 2001 11 24 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.3+ | 0.1+ |
| 2001 09 22 | 699 | 0.4− | 0.3+ | 2001 11 24 | 704 | 0.8+ | 1.1+ | 2006 10 29 | 704 | 0.4+ | 0.1+ |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2001 11 24 | 704 | 0.3+ | 0.0 | 2006 10 29 | 704 | 0.5+ | 0.2+ |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2001 11 24 | 704 | 0.6+ | 0.3+ | 2006 10 29 | 704 | 0.8+ | 0.2− |
| 2001 09 25 | 704 | 0.4+ | 0.3− | 2001 12 11 | 704 | 0.5+ | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.1+ | 0.0 | 2001 12 11 | 704 | 0.6+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2001 12 11 | 704 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.9− |
| 2001 10 13 | 699 | 0.1− | 0.5+ | 2001 12 11 | 704 | 0.0 | 0.9− | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2001 10 13 | 699 | 0.1+ | 0.1+ | 2001 12 11 | 704 | 0.4+ | 0.7− | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2001 10 13 | 699 | 0.3+ | 0.3+ | 2001 12 15 | 704 | (0.9− | 1.7+) | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2001 10 13 | 699 | 0.1+ | 0.0 | 2001 12 15 | 704 | (1.6− | 1.1+) | 2006 11 08 | 644 | 0.3− | 0.2− |
| 2001 10 18 | 704 | 0.2− | 0.3+ | 2001 12 15 | 704 | (1.3− | 1.7+) | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2001 10 18 | 704 | 0.1− | 0.6+ | 2001 12 15 | 704 | (1.0− | 2.2+) | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2001 10 18 | 704 | 0.0 | 0.8+ | 2001 12 15 | 704 | 1.5− | 1.4+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2001 10 18 | 704 | 0.6+ | 1.0+ | 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2001 10 21 | 704 | 0.2− | 0.2+ | 2001 12 18 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.1+ | 2001 12 18 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.5− | 0.2− | 2001 12 18 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.3− | 2001 12 18 | 704 | 0.4+ | 0.5+ | 2006 11 12 | 703 | 0.4− | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.1+ | 2001 12 19 | 699 | 0.5− | 0.5+ | 2006 11 12 | 703 | 0.4− | 0.1+ |
| 2001 10 24 | 333 | 0.7+ | 0.4+ | 2001 12 19 | 699 | 0.7− | 0.3+ | 2006 11 12 | 703 | 0.1+ | 0.3+ |
| 2001 10 24 | 333 | 0.9+ | 0.7+ | 2001 12 19 | 699 | 0.5− | 0.1− | 2006 11 12 | 703 | (3.4− | 4.7−) |
| 2001 10 24 | 333 | 1.2+ | 0.1− | 2001 12 19 | 699 | 1.1− | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2001 10 25 | 333 | 0.9+ | 0.3− | 2002 01 07 | 699 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2001 10 25 | 333 | 0.7+ | 0.3− | 2002 01 07 | 699 | 0.4− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2001 10 25 | 333 | 0.7− | 0.3− | 2002 01 07 | 699 | 0.1+ | 0.5+ | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2001 10 26 | 333 | 1.0− | 1.1− | 2002 01 07 | 699 | 0.2+ | 0.8+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2001 10 26 | 333 | 0.1+ | 0.5− | 2002 02 07 | 704 | 0.5+ | 0.3− | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2001 10 26 | 333 | 0.2− | 0.8− | 2002 02 07 | 704 | 0.2− | 1.1− | 2006 11 13 | 644 | 0.3− | 0.2− |
| 2001 10 26 | 333 | 0.1− | 0.2− | 2002 02 07 | 704 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2001 10 26 | 333 | 0.3+ | 0.1− | 2002 02 07 | 704 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2001 10 26 | 333 | 0.1+ | 0.8− | 2003 04 02 | 843 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2001 10 28 | 704 | 0.4− | 0.5− | 2003 04 02 | 843 | 0.8− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2001 10 28 | 704 | 0.1− | 0.1− | 2003 04 02 | 843 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2001 10 28 | 704 | 0.1− | 0.6− | 2003 04 03 | 843 | 0.8+ | 0.6+ | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2001 10 28 | 704 | 0.5− | 0.6− | 2003 04 03 | 843 | 0.6+ | 1.4+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2001 11 10 | 704 | 0.4+ | 0.0 | 2003 04 03 | 843 | 0.5− | 0.7+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2001 11 10 | 704 | 0.5+ | 0.1− | 2003 04 03 | 843 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2001 11 10 | 704 | 0.3+ | 0.6− | 2004 06 16 | 704 | 1.3− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.5− |
| 2001 11 10 | 644 | 0.2− | 0.4+ | 2004 06 16 | 704 | 1.0+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2001 11 10 | 704 | 0.7+ | 0.1+ | 2004 06 16 | 704 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2001 11 10 | 644 | 0.1− | 0.3+ | 2004 06 16 | 704 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2001 11 10 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.2− | 0.2− |
| 2001 11 10 | 704 | 0.0 | 0.8− | 2006 08 29 | 703 | 0.1− | 0.8+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2001 11 11 | 699 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2001 11 11 | 699 | 0.2− | 0.1+ | 2006 08 29 | 703 | 1.2− | 0.7− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2001 11 11 | 699 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.7+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 11 11 | 699 | 0.1− | 0.6+ | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2001 11 12 | 704 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 0.9+ | 0.9− | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2001 11 12 | 704 | 0.6+ | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2001 11 12 | 704 | 0.8+ | 0.5+ | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2001 11 12 | 704 | 0.6+ | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.6+ | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.2+ |
| 2001 11 17 | 704 | 0.2− | 0.4+ | 2006 10 19 | 704 | (2.3+ | 1.0+) | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2001 11 17 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 704 | 0.3+ | 1.1− | 2006 11 29 | 704 | 0.6+ | 0.4− |
| 2001 11 17 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 704 | 1.0+ | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2001 11 17 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 704 | 0.2− | 0.6+ | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 704 | 0.7− | 0.1+ | | | | |
| 2001 11 19 | 704 | 0.8− | 0.5+ | 2006 10 21 | 704 | 0.3− | 0.4− | | | | |

**(140284)∗ 2001 SO$_{282}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.49933 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19047381 | $\omega$ | 205.06211 | | +0.98736491 | −0.14917185 |
| $a$ | 2.9916620 | $\Omega$ | 163.25428 | | +0.15750669 | +0.96087358 |
| $e$ | 0.1334173 | $i$ | 10.69348 | | −0.01738297 | +0.23338751 |
| $P$ | 5.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.3+ | 0.8− | 2001 10 08 | 644 | 0.3− | 0.8+ | 2006 08 25 | 704 | 0.4+ | 0.4+ |
| 2001 08 01 | 644 | 0.3+ | 0.8− | 2001 10 17 | 644 | 0.3+ | 0.5+ | 2006 08 25 | 704 | 0.9+ | 1.5− |
| 2001 08 01 | 644 | 0.0 | 1.0− | 2001 10 17 | 644 | 0.2− | 0.9+ | 2006 08 25 | 704 | 0.9+ | 0.6+ |
| 2001 09 11 | 699 | 1.4− | 0.3+ | 2001 10 17 | 644 | 0.0 | 1.1+ | 2006 08 30 | 704 | 1.4+ | 0.5− |
| 2001 09 11 | 699 | 1.2− | 0.5− | 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.1+ |
| 2001 09 11 | 699 | 0.3− | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.3− | 0.2+ |
| 2001 09 11 | 699 | 0.2+ | 1.0+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.4− |
| 2001 09 12 | 704 | 0.1− | 0.4+ | 2004 03 18 | 691 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.9− | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.8+ | 1.4+ | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.5+ |
| 2001 09 12 | 704 | 0.8− | 0.3+ | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2005 05 13 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.2− | 0.7+ |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2005 05 13 | 691 | 0.1− | 0.2− | 2006 09 18 | 699 | 1.2− | 0.9+ |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2005 05 14 | G96 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.3− | 0.4− |
| 2001 09 21 | 704 | 0.5− | 1.1+ | 2005 05 14 | G96 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2005 05 14 | G96 | 0.3+ | 0.3− | 2006 09 25 | 699 | 1.4+ | 0.3+ |
| 2001 09 21 | 704 | 0.1− | 0.6− | 2005 05 14 | G96 | (2.6− | 0.2−) | 2006 09 25 | 699 | (0.1− | 1.8−) |
| 2001 09 27 | 644 | 0.1− | 0.1+ | 2005 06 05 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.8+ |
| 2001 09 27 | 644 | 0.2− | 0.5+ | 2005 06 05 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2001 09 27 | 644 | 0.2− | 0.1+ | 2005 06 05 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.6− | 0.3− |
| 2001 09 28 | 704 | 1.2+ | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 09 28 | 704 | 0.1− | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 09 28 | 704 | 0.6+ | 0.3+ | 2006 08 22 | 644 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 09 28 | 704 | 0.3− | 0.6− | 2006 08 24 | 644 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 09 28 | 704 | 0.3+ | 0.6+ | 2006 08 24 | 644 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2001 10 08 | 644 | 0.3+ | 0.6+ | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2001 10 08 | 644 | 0.0 | 0.7+ | 2006 08 25 | 704 | 0.6− | 0.1+ | | | | |

**(140285)**∗ **2001 SH$_{286}$**

Discovered 2001 Sept. 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.61508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19313791 | $\omega$ | 262.66856 | | +0.55460876 | −0.82407368 | |
| $a$ | 2.9640876 | $\Omega$ | 152.63664 | | +0.82750751 | +0.53164777 | |
| $e$ | 0.1544697 | $i$ | 14.53782 | | +0.08740964 | +0.19558431 | |
| $P$ | 5.10 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 16 | 691 | 0.6+ | 0.4− | 2003 01 07 | 704 | 1.1− | 0.6+ | 2003 03 08 | 291 | 0.6+ | 0.5− |
| 1993 02 16 | 691 | 0.3+ | 0.7− | 2003 01 26 | 699 | 0.6+ | 0.1− | 2003 03 08 | 291 | 0.2+ | 0.6− |
| 1993 02 16 | 691 | 0.0 | 0.3+ | 2003 01 26 | 699 | 0.3− | 0.2+ | 2003 03 12 | 644 | 0.1− | 0.5+ |
| 1998 03 01 | 691 | 0.2− | 0.5− | 2003 01 26 | 699 | 0.5+ | 0.1− | 2003 03 12 | 644 | 0.1+ | 0.4+ |
| 1998 03 01 | 691 | 0.1− | 0.4− | 2003 01 26 | 699 | 0.8+ | 0.2+ | 2003 03 12 | 644 | 0.1− | 0.6+ |
| 1998 03 01 | 691 | 0.0 | 0.4− | 2003 01 30 | 699 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.8+ | 0.5+ |
| 1998 03 03 | 704 | 0.6+ | 0.7− | 2003 01 30 | 699 | 0.0 | 0.6+ | 2006 08 28 | 699 | 0.3− | 0.3− |
| 1998 03 03 | 704 | 0.9+ | 0.2+ | 2003 01 30 | 699 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.2− |
| 1998 03 03 | 704 | 0.6− | 0.2− | 2003 01 30 | 699 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.8+ | 0.5+ |
| 1998 03 03 | 704 | 1.7− | 1.0− | 2003 02 03 | 704 | 1.1+ | 0.6− | 2006 09 20 | 703 | 0.5− | 0.2+ |
| 1998 03 04 | 704 | 1.3− | 1.3+ | 2003 02 03 | 704 | 0.5− | 0.2− | 2006 09 20 | 703 | 0.0 | 0.1+ |
| 1998 03 04 | 704 | 1.6− | 1.2+ | 2003 02 03 | 704 | (1.6− | 0.3+) | 2006 09 20 | 703 | 0.2+ | 0.2+ |
| 1998 03 04 | 704 | 1.8− | 0.2+ | 2003 02 03 | 704 | 0.4− | 0.3+ | 2006 09 20 | 703 | 0.4− | 0.3− |
| 1998 03 04 | 704 | (5.5− | 0.1+) | 2003 02 06 | 106 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.1− | 0.3− |
| 2001 09 21 | 644 | 0.5− | 0.2+ | 2003 02 06 | 106 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 0.1− | 0.8− |
| 2001 09 21 | 644 | 0.4− | 0.1+ | 2003 02 06 | 106 | 0.2+ | 0.3− | 2006 09 21 | 699 | 0.1+ | 0.4+ |
| 2001 09 21 | 644 | 0.3− | 0.2− | 2003 02 08 | 704 | 0.0 | 0.9+ | 2006 09 21 | 699 | 0.4− | 0.3+ |
| 2001 09 27 | 644 | 0.0 | 0.1− | 2003 02 08 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.7− |
| 2001 09 27 | 644 | 0.0 | 0.3+ | 2003 02 08 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.5− |
| 2001 09 27 | 644 | 0.2+ | 0.2+ | 2003 02 08 | 704 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2001 10 11 | 704 | 0.6+ | 0.6+ | 2003 02 09 | 644 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.5− |
| 2001 10 11 | 704 | 0.3− | 0.5− | 2003 02 09 | 644 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.8− |
| 2001 10 11 | 704 | 0.2+ | 0.2− | 2003 02 09 | 644 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.1+ |
| 2001 10 11 | 704 | 0.4+ | 0.0 | 2003 02 11 | 608 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.7+ | 0.1+ |
| 2001 10 11 | 704 | 0.5+ | 0.2+ | 2003 02 11 | 608 | 0.4− | 0.3+ | 2006 10 02 | 703 | 1.1+ | 0.2− |
| 2001 10 22 | 644 | 0.2− | 1.2− | 2003 02 11 | 608 | 0.3− | 0.0 | 2006 10 04 | 703 | 0.0 | 0.3+ |
| 2001 10 22 | 644 | 0.0 | 1.3− | 2003 02 19 | 608 | 0.7− | 0.3+ | 2006 10 04 | 703 | 0.0 | 0.6+ |
| 2001 10 22 | 644 | 0.0 | 1.2− | 2003 02 19 | 608 | 1.4− | 0.2+ | 2006 10 04 | 703 | 0.3+ | 0.6+ |
| 2001 10 23 | 699 | 0.3+ | 0.0 | 2003 02 19 | 608 | 0.7− | 0.3+ | 2006 10 04 | 703 | 0.3+ | 0.6+ |
| 2001 10 23 | 699 | 0.7+ | 0.2+ | 2003 02 22 | 644 | 0.0 | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.9− |
| 2001 10 23 | 699 | 0.3− | 0.1+ | 2003 02 22 | 644 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 2001 10 23 | 699 | 0.0 | 0.0 | 2003 02 22 | 644 | 0.3− | 0.9+ | 2006 10 21 | 703 | 0.2+ | 0.2− |
| 2002 01 12 | 704 | 0.2− | 0.2+ | 2003 02 22 | 699 | 0.1− | 0.5− | 2006 10 21 | 703 | 0.4+ | 0.1+ |
| 2002 01 12 | 704 | 0.2− | 1.2+ | 2003 02 22 | 699 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.4− |
| 2002 01 12 | 704 | 0.7− | 1.0+ | 2003 02 22 | 699 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 01 12 | 704 | 0.3− | 0.9+ | 2003 02 22 | 699 | 0.3− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2002 01 12 | 704 | 0.8− | 0.2+ | 2003 03 06 | 644 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2003 01 07 | 704 | 0.1+ | 0.6+ | 2003 03 06 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 01 07 | 704 | 0.2+ | 0.9+ | 2003 03 06 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.4− |
| 2003 01 07 | 704 | 0.3+ | 0.3+ | 2003 03 08 | 291 | 0.6+ | 0.5− | | | | |

**(140286)**∗ **2001 SV$_{286}$**

Discovered 2001 Sept. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.39107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19194894 | $\omega$ | 267.74142 | | +0.96911365 | +0.16906043 | |
| $a$ | 2.9763151 | $\Omega$ | 82.48782 | | −0.08173855 | +0.90709081 | |
| $e$ | 0.0802144 | $i$ | 10.43395 | | −0.23267475 | +0.38549297 | |
| $P$ | 5.13 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.0 | 0.7− | 2002 01 08 | 645 | 0.1+ | 0.2− | 2004 02 27 | 704 | 0.6+ | 0.8+ |
| 2001 08 20 | 644 | 0.1− | 0.9− | 2002 01 08 | 645 | 0.1+ | 0.2− | 2004 02 27 | 704 | 0.2+ | 0.2+ |
| 2001 08 20 | 644 | 0.1− | 1.0− | 2002 12 06 | 645 | 0.0 | 0.1− | 2004 03 12 | 644 | 0.0 | 0.7+ |
| 2001 09 10 | 644 | 0.5+ | 1.3+ | 2002 12 06 | 645 | 0.0 | 0.1− | 2004 03 12 | 644 | 0.2+ | 0.7+ |
| 2001 09 10 | 644 | 0.5+ | 1.3+ | 2002 12 11 | 704 | 0.4− | 0.7+ | 2004 03 12 | 644 | 0.1+ | 0.7+ |
| 2001 09 10 | 644 | 0.4+ | 1.4+ | 2002 12 11 | 704 | 0.4+ | 0.5+ | 2004 03 15 | 704 | 0.7− | 1.2− |
| 2001 09 16 | 704 | 0.0 | 0.2− | 2002 12 11 | 704 | 0.5+ | 0.5− | 2004 03 15 | 704 | 0.4− | 0.6+ |
| 2001 09 16 | 704 | 0.3+ | 0.3− | 2002 12 11 | 704 | 0.9− | 0.8+ | 2004 03 15 | 704 | 0.8+ | 0.6+ |
| 2001 09 16 | 704 | 0.3− | 0.2− | 2002 12 13 | 645 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.6+ | 1.1+ |
| 2001 09 16 | 704 | 0.9+ | 0.8− | 2002 12 13 | 645 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.7+ |
| 2001 09 16 | 704 | 0.4+ | 0.5− | 2002 12 27 | 699 | 0.5+ | 0.0 | 2004 03 23 | 704 | 0.5+ | 1.2+ |
| 2001 09 17 | 699 | 0.5− | 0.4+ | 2002 12 27 | 699 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.7+ | 1.1+ |
| 2001 09 17 | 699 | 0.1+ | 0.4+ | 2002 12 27 | 699 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.6+ | 1.4+ |
| 2001 09 17 | 699 | 0.2− | 1.2+ | 2002 12 27 | 699 | 1.2+ | 0.4− | 2004 03 25 | 704 | 0.2+ | 0.2+ |
| 2001 09 17 | 699 | 0.6+ | 0.1− | 2003 01 05 | 704 | 0.3− | 0.5+ | 2004 03 25 | 704 | 0.5+ | 0.7+ |
| 2001 09 22 | 644 | 0.5− | 0.2− | 2003 01 05 | 704 | 0.3− | 0.1+ | 2004 03 25 | 704 | 0.3+ | 0.6+ |
| 2001 09 22 | 644 | 0.6− | 0.0 | 2003 01 05 | 704 | 0.4− | 0.2− | 2004 03 25 | 704 | (0.5+ | 1.6+) |
| 2001 09 22 | 644 | 0.4− | 0.1− | 2003 01 07 | 704 | 0.7− | 1.0+ | 2004 03 28 | 703 | 1.4+ | 1.1+ |
| 2001 09 25 | 704 | 0.0 | 0.6+ | 2003 01 07 | 704 | 0.4+ | 0.1+ | 2004 03 28 | 703 | 0.0 | 0.6+ |
| 2001 09 25 | 704 | 0.3− | 0.4+ | 2003 01 07 | 704 | 0.6+ | 0.0 | 2004 03 28 | 703 | (0.6+ | 1.6+) |
| 2001 09 25 | 704 | 0.0 | 0.5+ | 2003 01 07 | 704 | 0.0 | 0.1+ | 2004 03 28 | 703 | 0.6− | 1.5+ |
| 2001 09 25 | 704 | 0.1− | 0.6+ | 2003 01 07 | 704 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.3− | 0.3+ |
| 2001 09 25 | 704 | 0.5+ | 0.4+ | 2003 01 09 | 704 | 0.0 | 0.2+ | 2006 09 17 | 699 | 0.1− | 0.3+ |
| 2001 09 27 | 644 | 0.2− | 0.5+ | 2003 01 09 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 699 | 0.2− | 0.2+ |
| 2001 09 27 | 644 | 0.2− | 0.4+ | 2003 01 09 | 704 | 0.0 | 0.3− | 2006 09 17 | 699 | 0.3+ | 0.7+ |
| 2001 09 27 | 644 | 0.1− | 0.2+ | 2003 01 09 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.5− |
| 2001 09 27 | 644 | 0.1+ | 0.5+ | 2003 01 10 | 704 | 0.1− | 1.4− | 2006 09 19 | 703 | 0.3+ | 0.0 |
| 2001 09 27 | 644 | 0.2− | 0.2+ | 2003 01 10 | 704 | 1.0+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 2001 09 27 | 644 | 0.0 | 0.8+ | 2003 01 10 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2001 10 15 | 644 | 0.5− | 0.3+ | 2003 01 10 | 704 | 1.4+ | 0.8+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2001 10 15 | 644 | 0.6− | 0.4+ | 2003 01 10 | 704 | 0.9+ | 0.8+ | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2001 10 15 | 644 | 0.4− | 0.4+ | 2003 01 11 | 704 | 0.1+ | 1.2+ | 2006 10 09 | 644 | 0.0 | 0.3− |
| 2001 10 19 | 699 | 0.9− | 0.3+ | 2003 01 11 | 704 | (0.1+ | 1.7+) | 2006 10 21 | 703 | 0.6+ | 0.9+ |
| 2001 10 19 | 699 | 0.2− | 0.3− | 2003 01 11 | 704 | (0.2− | 1.6+) | 2006 10 21 | 703 | 0.6− | 1.0+ |
| 2001 10 19 | 699 | 1.0− | 0.3+ | 2003 01 11 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.8− | 1.1+ |
| 2001 10 19 | 699 | 0.7− | 0.6+ | 2003 01 11 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 703 | 0.2+ | 1.1+ |
| 2001 10 20 | 704 | 0.2+ | 0.1+ | 2003 01 12 | 704 | 0.1− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.6− | 0.2+ | 2003 01 12 | 704 | 0.3− | 0.7− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.7− | 0.5+ | 2003 01 12 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.4− | 0.5+ | 2003 01 12 | 704 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.5− | 0.1− |
| 2001 10 20 | 704 | 0.2− | 0.5+ | 2003 02 01 | 704 | 0.7− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 12 07 | 704 | 0.2+ | 0.5+ | 2003 02 01 | 704 | 1.3− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 12 07 | 704 | 1.4− | 0.5− | 2003 02 01 | 704 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.6− | 0.1+ |
| 2001 12 07 | 704 | 0.7− | 0.6+ | 2003 02 01 | 704 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.7+ | 0.0 |
| 2001 12 07 | 704 | 0.3+ | 0.9+ | 2003 02 01 | 704 | 0.7− | 0.5− | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 2001 12 07 | 704 | 0.2− | 0.5+ | 2004 02 27 | 704 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.0 | 0.3+ |

**(140287)**∗ **2001 SC$_{287}$**

Discovered 2001 Sept. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.59576 | | (2000.0) | | | |
| $n$ | 0.18899399 | $\omega$ | 243.12708 | | +0.94661144 | +0.17596568 |
| $a$ | 3.0072583 | $\Omega$ | 105.71887 | | −0.08682635 | +0.94609114 |
| $e$ | 0.1281037 | $i$ | 16.29664 | | −0.31046411 | +0.27193315 |
| $P$ | 5.22 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 644 | 0.0 | 1.0− | 2003 01 05 | 704 | 0.4+ | 0.4− | 2004 04 14 | 704 | 1.0+ | 0.2+ |
| 2001 09 22 | 644 | 0.2− | 0.6− | 2003 01 05 | 704 | 0.1+ | 0.1− | 2004 04 14 | 704 | 0.7+ | 0.9+ |
| 2001 09 22 | 644 | 0.1+ | 0.4− | 2003 01 09 | 704 | 0.4− | 0.1+ | 2005 06 03 | E12 | 0.0 | 0.5+ |
| 2001 09 27 | 644 | 0.4− | 0.2+ | 2003 01 09 | 704 | 0.7− | 0.4− | 2005 06 03 | E12 | 0.0 | 0.6+ |
| 2001 09 27 | 644 | 0.1− | 0.2+ | 2003 01 09 | 704 | 0.6− | 0.5− | 2005 06 03 | E12 | 0.4− | 0.9+ |
| 2001 09 27 | 644 | 0.5− | 0.4+ | 2003 01 09 | 704 | 0.7− | 0.3+ | 2005 06 03 | E12 | 0.7+ | 1.2+ |
| 2001 10 11 | 704 | 0.1+ | 0.6+ | 2003 02 01 | 704 | (2.6+ | 5.7−) | 2005 06 09 | 703 | (1.9− | 1.7−) |
| 2001 10 11 | 704 | 0.1− | 0.3− | 2003 02 01 | 704 | (1.0+ | 2.4−) | 2005 06 09 | 703 | 1.4− | 1.0− |
| 2001 10 11 | 704 | 0.3+ | 0.5+ | 2003 02 01 | 704 | (0.4+ | 2.8−) | 2005 06 09 | 703 | 0.7+ | 0.8− |
| 2001 10 11 | 704 | 0.2+ | 0.1+ | 2003 02 01 | 704 | (1.2+ | 4.6−) | 2005 06 09 | 703 | (3.9+ | 0.3−) |
| 2001 10 11 | 704 | 0.3− | 0.4+ | 2003 02 01 | 704 | (1.7+ | 3.5−) | 2006 08 05 | E12 | 0.2− | 0.4− |
| 2001 10 23 | 699 | 0.3− | 0.0 | 2003 02 04 | 699 | 1.0− | 0.7+ | 2006 08 05 | E12 | 0.6+ | 1.1− |
| 2001 10 23 | 699 | 1.1+ | 1.4+ | 2003 02 04 | 699 | (1.1+ | 1.6−) | 2006 08 05 | E12 | 0.3+ | 0.0 |
| 2001 10 23 | 699 | 0.1− | 1.0+ | 2003 02 04 | 699 | (0.1+ | 1.6−) | 2006 08 05 | E12 | (2.1+ | 0.4+) |
| 2001 10 23 | 699 | 0.4+ | 0.2+ | 2003 02 04 | 699 | 0.8+ | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.2+ |
| 2001 11 17 | 608 | 0.9− | 0.1+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.1− |
| 2001 11 17 | 608 | 0.4− | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.7+ |
| 2001 11 17 | 608 | 0.3− | 0.3− | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.5+ |
| 2002 01 12 | 704 | 1.0− | 0.3+ | 2004 03 14 | 704 | 0.3+ | 0.8+ | 2006 10 03 | E12 | 0.5− | 0.5− |
| 2002 01 12 | 704 | 0.4+ | 0.8+ | 2004 03 14 | 704 | (0.5− | 1.9+) | 2006 10 03 | E12 | 0.4− | 0.0 |
| 2002 01 12 | 704 | (1.7+ | 2.0+) | 2004 03 14 | 704 | (0.0 | 2.1+) | 2006 10 03 | E12 | 0.3− | 0.5+ |
| 2002 12 11 | 644 | 0.2− | 0.0 | 2004 03 26 | 703 | 0.3+ | 0.2− | 2006 10 03 | E12 | 0.4− | 0.4+ |
| 2002 12 11 | 644 | 0.1+ | 0.4− | 2004 03 26 | 703 | (0.9− | 1.8+) | 2006 10 12 | E12 | 0.6+ | 0.1+ |
| 2002 12 11 | 644 | 0.1+ | 0.0 | 2004 03 26 | 703 | 0.5+ | 1.0− | 2006 10 12 | E12 | 0.3+ | 0.3− |
| 2002 12 31 | 704 | 0.0 | 0.3− | 2004 03 26 | 703 | (0.1− | 1.7+) | 2006 10 12 | E12 | 0.1+ | 0.2+ |
| 2002 12 31 | 704 | 0.8+ | 1.1− | 2004 03 28 | 704 | 0.4+ | 0.8+ | 2006 10 12 | E12 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.9+ | 0.2+ | 2004 03 28 | 704 | 0.5− | 0.8− | 2006 11 09 | E12 | 0.2+ | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.7+ | 2004 03 28 | 704 | 0.4− | 0.2− | 2006 11 09 | E12 | 0.0 | 0.3− |
| 2003 01 05 | 704 | 0.0 | 0.4− | 2004 03 28 | 704 | 0.1+ | 0.7+ | 2006 11 09 | E12 | 0.3− | 0.5+ |
| 2003 01 05 | 704 | 0.1+ | 0.1− | 2004 04 14 | 704 | 0.3+ | 0.4− | 2006 11 09 | E12 | 0.4+ | 0.1− |
| 2003 01 05 | 704 | 0.0 | 0.6− | 2004 04 14 | 704 | (0.5+ | 1.8−) | | | | |

**(140288)∗ 2001 SN$_{289}$**

Discovered 2001 Sept. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 134.54596 | | (2000.0) | | | |
| $n$ | 0.41363942 | $\omega$ | 225.57402 | | −0.72021425 | +0.69262371 |
| $a$ | 1.7839723 | $\Omega$ | 357.17150 | | −0.13210878 | −0.19288397 |
| $e$ | 0.5070143 | $i$ | 53.26181 | | −0.68105704 | −0.69503106 |
| $P$ | 2.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 14 | 260 | (3.8+ | 0.7+) | 2001 10 06 | 046 | 1.0+ | 0.3− | 2003 08 05 | 474 | 0.3− | 0.7− |
| 1996 08 14 | 260 | 1.8+ | 0.5− | 2001 10 06 | 046 | (1.7+ | 0.4−) | 2003 08 05 | 474 | 0.2− | 1.0− |
| 2001 08 05 | 644 | 0.2+ | 0.0 | 2001 10 06 | 046 | 0.8− | 0.3+ | 2003 09 11 | 474 | 0.4− | 0.2− |
| 2001 08 05 | 644 | 0.0 | 0.3+ | 2001 10 06 | 046 | 0.6− | 0.1− | 2003 09 11 | 474 | 0.2+ | 0.1− |
| 2001 08 05 | 644 | 0.2− | 0.7+ | 2001 10 09 | 649 | 0.2+ | 0.0 | 2003 09 11 | 474 | 0.1− | 0.1+ |
| 2001 09 09 | 644 | 0.0 | 0.3+ | 2001 10 09 | 649 | 0.0 | 0.4+ | 2003 10 20 | 474 | 0.1+ | 0.0 |
| 2001 09 09 | 644 | 1.1+ | 0.2+ | 2001 10 09 | 649 | 0.4+ | 0.2− | 2003 10 20 | 474 | 0.3− | 0.2− |
| 2001 09 29 | 644 | 0.0 | 0.8+ | 2001 10 10 | 696 | 0.2− | 0.6+ | 2003 10 20 | 474 | 0.4− | 0.7− |
| 2001 09 29 | 644 | 0.7+ | 0.7+ | 2001 10 10 | 696 | 0.2− | 0.5+ | 2003 10 20 | 474 | 0.2− | 0.1+ |
| 2001 09 29 | 644 | 0.3+ | 0.5+ | 2001 11 15 | 291 | (1.1+ | 1.8+) | 2003 12 18 | 291 | 0.8+ | 0.1+ |
| 2001 09 30 | 658 | 0.3− | 0.6+ | 2001 11 15 | 291 | (0.3+ | 2.4+) | 2003 12 18 | 291 | 0.9− | 0.6− |
| 2001 09 30 | 658 | 0.8− | 0.2+ | 2001 11 15 | 291 | (0.2+ | 2.4+) | 2003 12 18 | 291 | 0.0 | 0.3+ |
| 2001 09 30 | 649 | 0.6+ | 0.0 | 2001 11 15 | 540 | 0.4− | 1.0− | 2004 09 20 | 568 | 0.0 | 0.0 |
| 2001 09 30 | 649 | 0.4− | 0.1+ | 2001 11 15 | 540 | 0.2− | 0.4+ | 2004 09 20 | 568 | 0.1− | 0.2− |
| 2001 10 04 | 557 | 0.1− | 0.3− | 2001 11 15 | 540 | (2.2− | 1.4−) | 2006 09 03 | H55 | 1.2− | 0.4− |
| 2001 10 04 | 557 | 0.5− | 0.8+ | 2001 11 21 | 291 | (0.3+ | 2.9+) | 2006 09 03 | H55 | 1.4− | 0.1+ |
| 2001 10 04 | 557 | 0.5+ | 0.1− | 2001 11 21 | 291 | (0.0 | 2.9+) | 2006 09 03 | H55 | 0.8− | 0.7− |
| 2001 10 04 | 557 | 0.2+ | 0.1− | 2001 11 21 | 291 | (0.1− | 3.5+) | 2006 10 12 | 240 | 1.0+ | 1.0− |
| 2001 10 06 | 557 | 0.4− | 0.1− | 2003 02 15 | 540 | 0.3+ | 0.4+ | 2006 10 12 | 240 | 0.7+ | 0.9− |
| 2001 10 06 | 557 | 0.2− | 0.5+ | 2003 02 15 | 540 | 0.9+ | 0.2+ | 2006 10 12 | 240 | 0.1+ | 0.9− |
| 2001 10 06 | 557 | 1.2− | 0.6+ | 2003 02 18 | 540 | 0.8− | 0.6+ | 2006 10 12 | 240 | 0.3+ | 0.8− |
| 2001 10 06 | 649 | 0.2− | 1.1− | 2003 02 18 | 540 | 0.5− | 1.2− | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 10 06 | 649 | 1.5+ | 0.1− | 2003 02 18 | 540 | 0.0 | 1.1+ | 2006 11 01 | G96 | 0.0 | 0.2+ |
| 2001 10 06 | 649 | 0.9− | 0.8+ | 2003 04 24 | 926 | 0.5− | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.3+ |
| 2001 10 06 | 649 | 0.7− | 0.0 | 2003 04 24 | 926 | 0.4+ | 0.5− | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2001 10 06 | 649 | 1.2+ | 0.6+ | 2003 08 05 | 474 | (1.7+ | 1.3−) | | | | |

**(140289)∗ 2001 SW$_{289}$**

Discovered 2001 Sept. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 62.64941 | | (2000.0) | | | |
| $n$ | 0.21142715 | $\omega$ | 52.29481 | | +0.73531220 | +0.66383908 |
| $a$ | 2.7905869 | $\Omega$ | 265.67049 | | −0.65689453 | +0.64854491 |
| $e$ | 0.1503786 | $i$ | 7.86826 | | −0.16674993 | +0.37243412 |
| $P$ | 4.66 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 09 | 704 | 0.6+ | 1.5+ | 2001 10 13 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.5+ |
| 2000 05 09 | 704 | 0.2− | 0.4+ | 2001 10 13 | 644 | 0.2+ | 0.3+ | 2006 10 20 | A50 | 0.5− | 0.1− |
| 2000 05 09 | 704 | (0.6− | 2.1+) | 2001 10 13 | 644 | 0.3+ | 0.2+ | 2006 10 20 | A50 | 0.2− | 0.4+ |
| 2000 05 09 | 704 | 0.5− | 0.3− | 2001 10 17 | 704 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 05 28 | 699 | 0.9+ | 0.4+ | 2001 10 17 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 05 28 | 699 | 0.4− | 0.0 | 2001 10 17 | 704 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 05 28 | 699 | 0.3+ | 0.2+ | 2001 10 17 | 704 | 0.0 | 0.5− | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2000 05 28 | 699 | 0.4− | 0.2− | 2001 10 17 | 704 | 0.6+ | 0.3− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2001 08 28 | 699 | 0.7+ | 0.3− | 2001 10 19 | 704 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2001 08 28 | 699 | 1.0+ | 0.3+ | 2001 10 19 | 704 | 0.5− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2001 08 28 | 699 | 0.9+ | 0.5+ | 2001 10 19 | 704 | 0.3− | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2001 08 28 | 699 | 0.1+ | 0.5+ | 2001 10 26 | 644 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.3− | 0.6− |
| 2001 09 10 | 704 | 0.3− | 0.3+ | 2001 10 26 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.2+ |
| 2001 09 10 | 704 | 0.0 | 0.4− | 2001 10 26 | 644 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.6− | 0.2+ |
| 2001 09 10 | 704 | 0.8− | 0.3+ | 2001 11 11 | 644 | 0.3− | 0.2− | 2006 11 14 | 703 | 0.4− | 0.5+ |
| 2001 09 10 | 704 | 0.4− | 0.2− | 2001 11 11 | 644 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.3− | 0.8− |
| 2001 09 10 | 699 | 0.1+ | 0.4+ | 2001 11 11 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.3− |
| 2001 09 10 | 704 | 0.5− | 0.2+ | 2001 11 18 | 704 | 0.6− | 1.1+ | 2006 11 15 | 704 | 0.0 | 0.3+ |
| 2001 09 10 | 699 | 1.4+ | 0.0 | 2001 11 18 | 704 | 0.3− | 0.6+ | 2006 11 15 | 704 | 0.3+ | 0.0 |
| 2001 09 10 | 699 | 1.1+ | 0.5+ | 2001 11 18 | 704 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.5+ |
| 2001 09 10 | 699 | 0.9+ | 0.3+ | 2001 11 18 | 704 | 0.5− | 0.3+ | 2006 11 16 | 704 | 0.5+ | 0.0 |
| 2001 09 21 | 699 | 0.5− | 0.2− | 2001 11 24 | 704 | 1.4− | 0.8− | 2006 11 16 | 704 | 0.2− | 0.4− |
| 2001 09 21 | 699 | 0.9− | 1.1+ | 2001 11 24 | 704 | 0.0 | 0.8− | 2006 11 16 | 704 | 0.0 | 0.9− |
| 2001 09 21 | 699 | 0.6− | 0.2+ | 2001 11 24 | 704 | 0.5+ | 0.5+ | 2006 11 16 | 704 | 0.9+ | 0.5+ |
| 2001 09 21 | 699 | 0.5− | 0.2− | 2001 11 24 | 704 | 0.9− | 0.5− | 2006 11 19 | 704 | 0.7+ | 0.3− |
| 2001 09 23 | 644 | 0.1+ | 0.4+ | 2001 12 11 | 704 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.9+ |
| 2001 09 23 | 644 | 0.0 | 0.4+ | 2001 12 11 | 704 | 0.6+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2001 09 23 | 644 | 0.2+ | 0.5+ | 2001 12 11 | 704 | 0.0 | 0.8− | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.1+ | 2001 12 11 | 704 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2001 09 25 | 704 | 0.2− | 0.1− | 2002 12 05 | 704 | 0.0 | 0.9+ | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2001 09 25 | 704 | 0.4− | 0.2− | 2002 12 05 | 704 | 0.6+ | 0.8+ | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 0.5− | 2002 12 05 | 704 | (2.1+ | 1.4+) | 2006 11 22 | 704 | 0.4− | 0.5+ |
| 2001 09 25 | 704 | 0.5− | 0.3− | 2002 12 05 | 704 | (0.3− | 2.0+) | 2006 11 22 | 704 | 0.2+ | 0.8− |
| 2001 09 29 | 644 | 0.4+ | 0.0 | 2003 01 07 | 704 | 0.4− | 0.4+ | 2006 11 22 | 704 | (1.6+ | 0.3−) |
| 2001 09 29 | 644 | 0.2+ | 0.1− | 2003 01 07 | 704 | (0.1+ | 1.7+) | 2006 11 22 | 703 | 0.8+ | 1.3− |
| 2001 09 29 | 644 | 0.2+ | 0.1− | 2003 01 07 | 704 | 0.7+ | 0.9+ | 2006 11 22 | 703 | 0.4+ | 0.9+ |
| 2001 10 05 | 644 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.3− | 1.0− | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2001 10 05 | 644 | 0.2+ | 0.7− | 2006 10 19 | 703 | 0.8+ | 0.3− | 2006 11 22 | 703 | 0.1+ | 0.3− |
| 2001 10 05 | 644 | 0.6− | 0.0 | 2006 10 19 | 703 | 1.0− | 0.4− | | | | |

**(140290)∗ 2001 SO$_{290}$**

Discovered 2001 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.88455 | | (2000.0) | | | |
| $n$ | 0.21404537 | $\omega$ | 187.82014 | | +0.11837288 | −0.89044158 |
| $a$ | 2.7677837 | $\Omega$ | 256.20617 | | +0.93376840 | +0.25034258 |
| $e$ | 0.1844224 | $i$ | 26.90310 | | +0.33773428 | −0.38005577 |
| $P$ | 4.60 | $H$ | 13.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.2+ | 0.2− | 2001 11 18 | 704 | 0.4− | 0.0 | 2005 07 29 | 704 | 0.4− | 0.0 |
| 2001 08 23 | 704 | 0.2+ | 0.4− | 2001 11 18 | 704 | 0.9− | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.3− |
| 2001 08 23 | 704 | 0.0 | 0.4+ | 2001 11 18 | 704 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.3+ |
| 2001 08 23 | 704 | 0.2− | 0.0 | 2001 11 18 | 704 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.2− |
| 2001 08 23 | 704 | 0.5+ | 0.0 | 2001 11 18 | 704 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.4+ | 0.0 |
| 2001 09 26 | 704 | 0.2− | 1.1+ | 2001 11 18 | 704 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.6+ | 0.6− |
| 2001 09 26 | 704 | 0.0 | 0.6+ | 2001 11 18 | 704 | 0.3+ | 0.8+ | 2006 11 16 | 704 | 1.3+ | 0.1+ |
| 2001 09 26 | 704 | 0.1− | 0.3+ | 2001 11 18 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.0 |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2001 11 18 | 704 | 0.5+ | 0.3− | 2006 11 16 | 704 | 0.5+ | 0.1+ |
| 2001 10 06 | 704 | 1.5+ | 0.6− | 2002 01 08 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.5+ | 0.1+ |
| 2001 10 06 | 704 | 0.3− | 0.3− | 2002 01 08 | 704 | 0.2− | 1.0+ | 2006 11 16 | 704 | 0.5+ | 0.2− |
| 2001 10 06 | 704 | 1.2+ | 1.4− | 2002 01 08 | 704 | (0.1− | 1.6+) | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 10 06 | 704 | 0.3+ | 0.4− | 2002 01 08 | 704 | 0.2+ | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2001 10 06 | 704 | 0.4+ | 1.2− | 2002 01 08 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2001 10 25 | 704 | 0.2+ | 0.0 | 2002 12 14 | 608 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.8− | 0.3− |
| 2001 10 25 | 704 | 0.3+ | 0.0 | 2002 12 14 | 608 | 0.5− | 0.4− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2001 10 25 | 704 | 0.2− | 0.5− | 2002 12 14 | 608 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2001 10 25 | 704 | 0.0 | 0.3− | 2003 01 12 | 704 | 1.1+ | 1.0+ | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2001 10 25 | 704 | 0.4− | 0.4− | 2003 01 12 | 704 | 0.2+ | 0.7+ | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2001 11 11 | 704 | 0.5− | 0.2+ | 2003 01 12 | 704 | 0.6+ | 0.5+ | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2001 11 11 | 704 | 0.5− | 0.4+ | 2003 02 28 | 860 | 0.4+ | 0.7− | 2006 11 24 | H51 | (3.7− | 0.1+) |
| 2001 11 11 | 704 | 0.1+ | 0.3+ | 2003 02 28 | 860 | 0.0 | 0.9+ | 2006 11 24 | H51 | 0.5+ | 0.2+ |
| 2001 11 11 | 704 | 0.5− | 0.3+ | 2003 04 06 | 704 | 0.1+ | 0.4+ | 2006 11 24 | H51 | 0.1− | 0.6+ |
| 2001 11 11 | 704 | 0.3− | 0.4+ | 2003 04 06 | 704 | 0.5+ | 0.5+ | 2006 11 25 | 691 | (0.3− | 2.7+) |
| 2001 11 12 | 699 | 0.7+ | 0.1− | 2003 04 06 | 704 | 0.2− | 0.3+ | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2001 11 12 | 699 | 1.0+ | 0.0 | 2004 06 05 | 644 | 0.5− | 0.3+ | 2006 11 25 | 691 | 0.3− | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.1+ | 2004 06 05 | 644 | 0.1− | 0.0 | 2006 11 27 | 704 | 1.0− | 0.6+ |
| 2001 11 12 | 699 | 0.7+ | 0.1+ | 2004 06 05 | 644 | 0.0 | 0.6+ | 2006 11 27 | 704 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2005 06 08 | 703 | 0.7− | 0.3+ | 2006 11 27 | 704 | 0.0 | 0.0 |
| 2001 11 12 | 699 | 0.4+ | 0.2+ | 2005 06 08 | 703 | 0.9− | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2005 06 08 | 703 | (1.8− | 0.1−) | 2006 11 29 | 704 | 0.5+ | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.5+ | 2005 06 08 | 703 | 1.0− | 0.3+ | 2006 11 29 | 704 | 0.5+ | 0.0 |
| 2001 11 17 | 704 | 0.2+ | 0.2+ | 2005 07 29 | 704 | 1.2+ | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2001 11 17 | 704 | 0.9− | 0.8− | 2005 07 29 | 704 | 0.8− | 0.5+ | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2001 11 17 | 704 | 0.6− | 0.9− | 2005 07 29 | 704 | 0.8+ | 1.4+ | | | | |
| 2001 11 17 | 704 | 0.6− | 0.2− | 2005 07 29 | 704 | 0.0 | 0.7+ | | | | |

**(140291)∗ 2001 SO$_{292}$ = 2001 QN$_{155}$**

Discovered 2001 Sept. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.32375 | | (2000.0) | | | |
| $n$ | 0.21987491 | $\omega$ | 123.11028 | | +0.40721115 | −0.90593612 |
| $a$ | 2.7186435 | $\Omega$ | 302.43828 | | +0.78548245 | +0.41218596 |
| $e$ | 0.1634307 | $i$ | 7.90090 | | +0.46604334 | +0.09686321 |
| $P$ | 4.48 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 16 | 691 | 0.2− | 0.3− | 2002 12 31 | 704 | 0.9− | 0.8+ | 2003 02 08 | 704 | 0.6− | 0.8+ |
| 1994 01 16 | 691 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 0.6− | 1.3− | 2003 02 08 | 704 | 0.0 | 0.8+ |
| 1994 01 16 | 691 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.1− | 2003 02 21 | 644 | 0.3+ | 1.0+ |
| 2001 08 23 | 699 | (2.1− | 0.3−) | 2003 01 04 | 704 | 0.9+ | 0.2+ | 2003 02 21 | 644 | 0.0 | 1.1+ |
| 2001 08 23 | 699 | 0.1− | 0.2+ | 2003 01 04 | 704 | 0.0 | 1.4− | 2003 02 21 | 644 | 0.0 | 0.9+ |
| 2001 08 23 | 699 | (1.8− | 0.4+) | 2003 01 04 | 704 | 0.2+ | 0.3− | 2006 10 23 | 703 | 0.1+ | 0.6− |
| 2001 08 23 | 699 | 0.6− | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.9+ | 2006 10 23 | 703 | 0.1− | 0.0 |
| 2001 08 27 | 699 | 1.2+ | 0.1− | 2003 01 08 | 704 | 0.8+ | 0.7+ | 2006 10 23 | 703 | 0.2− | 0.6− |
| 2001 08 27 | 699 | 0.3− | 1.1+ | 2003 01 08 | 704 | 0.3+ | 0.6+ | 2006 10 23 | 703 | 1.0+ | 1.2− |
| 2001 08 27 | 699 | 0.3+ | 0.9+ | 2003 01 08 | 704 | 0.4+ | 0.3+ | 2006 10 23 | 703 | 0.4+ | 0.5− |
| 2001 08 27 | 699 | 0.0 | 0.5+ | 2003 01 08 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 703 | 0.2+ | 0.5− |
| 2001 09 08 | 704 | 0.2− | 1.0+ | 2003 01 14 | 608 | 0.2+ | 0.3− | 2006 10 23 | 703 | 0.0 | 0.3− |
| 2001 09 08 | 704 | 0.0 | 0.5+ | 2003 01 14 | 608 | 0.9+ | 0.4− | 2006 10 23 | 703 | 0.3+ | 0.0 |
| 2001 09 08 | 704 | 0.0 | 0.2+ | 2003 01 14 | 608 | 1.5+ | 0.8+ | 2006 10 29 | 703 | 0.1+ | 0.4− |
| 2001 09 08 | 704 | 0.7− | 0.2+ | 2003 01 26 | 291 | 0.3− | 0.0 | 2006 10 29 | 703 | 0.5− | 0.2− |
| 2001 09 08 | 704 | 0.1− | 1.0+ | 2003 01 26 | 291 | 0.6+ | 0.2+ | 2006 10 29 | 703 | 0.2− | 0.3− |
| 2001 09 09 | 699 | 0.1− | 0.6+ | 2003 01 26 | 291 | 0.5+ | 0.2− | 2006 10 29 | 703 | 0.1+ | 0.4− |
| 2001 09 09 | 699 | 0.6− | 0.6+ | 2003 01 27 | 699 | 0.5− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2001 09 09 | 699 | (1.8− | 1.0+) | 2003 01 27 | 699 | 0.7− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2001 09 09 | 699 | 0.0 | 0.8+ | 2003 01 27 | 699 | 1.1− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2001 09 16 | 704 | 0.1+ | 0.3+ | 2003 01 27 | 704 | 0.3− | 0.5− | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2001 09 16 | 704 | 0.5− | 0.5+ | 2003 01 27 | 699 | 0.9− | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.1− |
| 2001 09 16 | 704 | 0.6+ | 0.4+ | 2003 01 27 | 704 | 0.1− | 0.8− | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.6+ | 0.5+ | 2003 01 27 | 704 | 0.4− | 0.7− | 2006 11 15 | 703 | 0.1+ | 0.6− |
| 2001 09 16 | 704 | (0.5+ | 1.6+) | 2003 01 27 | 704 | 0.0 | 1.1− | 2006 11 15 | 704 | 0.2− | 0.4+ |
| 2001 09 18 | 699 | 0.3− | 0.6− | 2003 01 27 | 704 | 0.3− | 0.9− | 2006 11 15 | 703 | 0.1+ | 0.4− |
| 2001 09 18 | 699 | 0.4− | 0.1− | 2003 01 27 | 608 | 0.7− | 0.1+ | 2006 11 15 | 704 | 0.2− | 0.3+ |
| 2001 09 18 | 699 | 1.4− | 1.2+ | 2003 01 27 | 608 | 0.8− | 0.5− | 2006 11 15 | 704 | 0.1+ | 0.2+ |
| 2001 09 18 | 699 | 0.8− | 0.2+ | 2003 01 27 | 608 | 0.6− | 0.4− | 2006 11 15 | 704 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.9+ | 0.7+ | 2003 01 28 | 704 | 0.9+ | 1.3+ | 2006 11 15 | 704 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 0.7− | 0.3+ | 2003 01 28 | 704 | (0.4+ | 1.6+) | 2006 11 21 | 703 | 0.3+ | 0.9− |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2003 01 28 | 704 | 0.5+ | 1.2+ | 2006 11 21 | 703 | 0.6− | 0.4− |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2003 01 30 | 699 | 1.4+ | 0.6+ | 2006 11 21 | 703 | 0.5− | 0.4− |
| 2001 09 23 | 704 | (1.8− | 0.3−) | 2003 01 30 | 644 | 0.2− | 0.3+ | 2006 11 21 | 703 | 0.0 | 0.2− |
| 2001 09 23 | 704 | (2.1− | 0.2−) | 2003 01 30 | 699 | 0.6+ | 0.3+ | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2001 09 23 | 704 | (1.9− | 0.1+) | 2003 01 30 | 699 | 0.9+ | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.3− | 0.6+ | 2003 01 30 | 699 | 1.2+ | 0.5+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.8− | 0.2− | 2003 01 30 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2001 10 14 | 704 | 0.8− | 0.9+ | 2003 01 30 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2001 10 14 | 704 | 0.1+ | 0.8− | 2003 01 31 | 704 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.2+ |
| 2001 10 14 | 704 | 0.9− | 0.8− | 2003 01 31 | 704 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 11 21 | 644 | 0.0 | 0.1+ | 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.9− | 0.6+ |
| 2002 11 21 | 644 | 0.1+ | 0.5+ | 2003 01 31 | 704 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2002 11 21 | 644 | 0.0 | 0.4+ | 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.9+ | 0.4+ | 2003 02 03 | 704 | 1.4+ | 0.1− | 2006 11 29 | 704 | 1.5+ | 0.3− |
| 2002 12 05 | 704 | 1.1+ | 1.1+ | 2003 02 03 | 704 | 1.3− | 0.0 | 2006 11 29 | 704 | 1.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.1− | 0.9+ | 2003 02 03 | 704 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2002 12 05 | 704 | 0.5+ | 1.0+ | 2003 02 03 | 704 | 1.1− | 0.3− | 2006 11 29 | 704 | 0.5+ | 0.1− |
| 2002 12 31 | 704 | 0.5− | 0.1− | 2003 02 03 | 704 | (1.8− | 0.4−) | 2006 11 29 | 704 | 0.2− | 0.3− |
| 2002 12 31 | 704 | 0.6− | 0.7+ | 2003 02 08 | 704 | 0.5+ | 0.9+ | | | | |
| 2002 12 31 | 704 | 0.4+ | 0.5+ | 2003 02 08 | 704 | 0.7+ | 0.3+ | | | | |

**(140292)∗ 2001 SC$_{295}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.71694 | | (2000.0) | | | |
| $n$ | 0.22037959 | $\omega$ | 144.81680 | | +0.96708229 | +0.25407916 |
| $a$ | 2.7144914 | $\Omega$ | 200.47772 | | −0.24167070 | +0.89986481 |
| $e$ | 0.0388963 | $i$ | 2.29131 | | −0.07966884 | +0.35452378 |
| $P$ | 4.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1+ | 0.4+ | 2004 03 29 | 691 | 0.4+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.3+ |
| 2001 05 24 | 807 | 0.4+ | 0.5+ | 2004 03 29 | 691 | 0.3+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.6+ |
| 2001 09 12 | 704 | 0.7+ | 0.1+ | 2004 03 29 | 691 | 0.4+ | 0.4+ | 2006 10 28 | 691 | 0.5+ | 0.3+ |
| 2001 09 12 | 704 | 0.2+ | 0.2+ | 2004 04 23 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | 0.5+ | 0.1+ | 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.6− | 2004 04 23 | 691 | 0.1+ | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.6+ |
| 2001 09 19 | 691 | 0.1− | 0.1+ | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.6+ |
| 2001 09 19 | 691 | 0.1− | 0.1+ | 2005 06 10 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2001 09 19 | 691 | 0.1− | 0.4+ | 2005 06 10 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.5+ | 0.6+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2005 06 14 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2001 09 20 | 704 | 0.4− | 0.2+ | 2005 06 14 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.7− | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2006 10 20 | 691 | 1.2− | 1.4− | 2006 11 11 | 703 | 0.6− | 0.5− |
| 2001 09 23 | 704 | 0.4− | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.5− | 1.9−) |
| 2001 09 23 | 704 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2001 09 23 | 704 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.1+ |
| 2001 09 23 | 704 | (0.2− | 1.6+) | 2006 10 28 | G96 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.1− |

**(140293)∗ 2001 SQ$_{299}$ = 1997 TB$_3$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22864)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 235.58611 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23239530 | $\omega$ | 328.02086 | | −0.99346123 | | +0.10617100 | | |
| $a$ | 2.6200997 | $\Omega$ | 218.14360 | | −0.08508598 | | −0.93369601 | | |
| $e$ | 0.0559098 | $i$ | 3.89754 | | −0.07612591 | | −0.34196415 | | |
| $P$ | 4.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 910 | 0.9+ | 0.2+ | 2001 09 23 | 704 | 0.5+ | 0.4+ | 2005 08 06 | 644 | 0.3+ | 0.2+ |
| 1997 10 03 | 910 | 0.9+ | 0.3+ | 2001 09 23 | 704 | 0.1− | 1.2+ | 2005 08 06 | 644 | 0.4+ | 0.3+ |
| 1997 10 03 | 910 | 0.8+ | 0.3+ | 2001 09 23 | 704 | 0.6− | 0.1− | 2005 08 25 | 599 | 1.0+ | 0.4+ |
| 1997 10 04 | 910 | 1.0+ | 0.7+ | 2001 10 15 | 645 | 0.0 | 0.2− | 2005 08 25 | 599 | 0.7+ | 0.1+ |
| 1997 10 04 | 910 | 0.6+ | 0.5+ | 2001 10 15 | 645 | 0.1− | 0.2− | 2005 08 25 | 599 | 0.3+ | 0.1+ |
| 1997 10 04 | 910 | 1.0+ | 0.7+ | 2004 04 22 | 691 | 0.1+ | 0.6+ | 2005 08 26 | 599 | 0.9+ | 0.0 |
| 2001 08 22 | 691 | 0.2− | 0.2− | 2004 04 22 | 691 | 0.0 | 0.1+ | 2005 08 26 | 599 | 0.1+ | 0.6+ |
| 2001 08 22 | 691 | 0.8− | 0.0 | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2005 08 26 | 599 | 0.5+ | 0.4+ |
| 2001 08 22 | 691 | 1.4− | 0.0 | 2004 05 10 | 608 | 0.7− | 0.3+ | 2006 11 11 | 691 | 0.8− | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.7+ | 2004 05 10 | 608 | 0.1+ | 0.6− | 2006 11 11 | 691 | 0.8− | 0.2− |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2004 05 10 | 608 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.5− | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.0 | 2005 07 30 | 644 | 0.4+ | 0.5+ | 2006 11 22 | 691 | 0.7− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.2− | 2005 07 30 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 691 | 0.5− | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.8+ | 2005 07 30 | 644 | 0.4+ | 0.0 | 2006 11 22 | 691 | (3.1+ | 0.9+) |
| 2001 09 23 | 704 | 0.2+ | 0.3+ | 2005 08 06 | 644 | 0.3+ | 0.4+ | | | | |

**(140294)∗ 2001 SO$_{302}$ = 2004 GD$_{59}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 88942)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 324.30505 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21258979 | $\omega$ | 241.89662 | | +0.35911277 | | −0.93320735 | | |
| $a$ | 2.7804032 | $\Omega$ | 187.09329 | | +0.88837873 | | +0.34597894 | | |
| $e$ | 0.0198762 | $i$ | 5.91719 | | +0.28604414 | | +0.09707013 | | |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | 0.3− | 0.2+ | 2001 09 26 | 704 | 0.1+ | 0.9+ | 2006 10 17 | G96 | 0.0 | 0.0 |
| 1994 02 16 | 691 | 0.1− | 0.2+ | 2001 09 26 | 704 | 0.4+ | 0.6+ | 2006 10 17 | G96 | 0.6+ | 0.2− |
| 1994 02 16 | 691 | 0.6+ | 0.3+ | 2001 09 26 | 704 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2001 09 20 | 704 | 0.4+ | 1.1+ | 2001 10 14 | 645 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2001 10 14 | 645 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.5− | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 1.4+ | 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.7+ |
| 2001 09 20 | 704 | 0.2+ | 0.8+ | 2004 04 12 | 691 | 0.4+ | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2001 09 23 | 704 | 0.1− | 0.2− | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.2+ | 0.0 |
| 2001 09 23 | 704 | 0.9+ | 1.1− | 2004 04 19 | 704 | 0.6+ | 1.2+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.9+ | 0.1+ | 2004 04 19 | 704 | 0.6+ | 1.2+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 09 23 | 704 | (1.1− | 1.7+) | 2004 04 19 | 704 | 0.2− | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 09 23 | 704 | 0.1− | 0.3+ | 2004 05 10 | 691 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 09 23 | 704 | 0.8− | 0.5+ | 2004 05 10 | 691 | 0.3− | 0.7+ | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2001 09 23 | 704 | 1.0− | 1.0+ | 2004 05 10 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.7− | 0.1+ | 2006 09 30 | G96 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2001 09 26 | 704 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2001 09 26 | 704 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.0 |

**(140295)∗ 2001 SH$_{304}$ = 1996 RJ$_{15}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22864)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 33.39618 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20299851 | $\omega$ | 116.98365 | | +0.94688239 | | +0.32123428 | | |
| $a$ | 2.8673067 | $\Omega$ | 224.28313 | | −0.30209620 | | +0.87266381 | | |
| $e$ | 0.0717309 | $i$ | 1.22356 | | −0.11023444 | | +0.36778581 | | |
| $P$ | 4.86 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 07 | 691 | 1.2+ | 0.0 | 2001 10 13 | 691 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 1991 09 07 | 691 | 0.1+ | 0.9+ | 2001 10 13 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 1991 09 07 | 691 | 0.5+ | 0.3+ | 2001 10 21 | 704 | (3.2+ | 1.6−) | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1996 09 13 | 691 | 1.2− | 0.1− | 2001 10 21 | 704 | (2.3+ | 1.4−) | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 1996 09 13 | 691 | 0.8− | 0.1− | 2001 10 21 | 704 | (1.5+ | 3.1−) | 2006 10 10 | 644 | 0.5+ | 0.2+ |
| 1996 09 13 | 691 | 1.0− | 0.2− | 2001 10 21 | 704 | (2.9+ | 1.7−) | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 1996 09 15 | 691 | 0.1− | 0.1+ | 2001 10 21 | 704 | (2.3+ | 1.5−) | 2006 10 20 | 703 | 0.6− | 0.4− |
| 1996 09 15 | 691 | 0.1− | 0.9− | 2004 03 26 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 703 | 0.4− | 0.1− |
| 1996 09 15 | 691 | 0.2− | 0.0 | 2004 03 26 | 691 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.7− |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 04 12 | 691 | 0.1− | 0.0 | 2006 10 20 | 703 | 0.8− | 0.5+ |
| 2001 09 20 | 704 | 0.3+ | 0.9+ | 2004 04 12 | 691 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.8+ |
| 2001 09 20 | 704 | 0.1+ | 0.6+ | 2004 04 12 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 1.1− | 0.5+ |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2004 04 19 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.4+ |
| 2001 09 23 | 691 | 0.2+ | 0.2+ | 2004 04 19 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.1+ | 1.4+ |
| 2001 09 23 | 691 | 0.4+ | 0.1− | 2006 07 22 | G96 | 0.7− | 0.2− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2001 09 23 | 704 | 0.2− | 0.0 | 2006 07 22 | G96 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.6+ | 0.1− |
| 2001 09 23 | 704 | 0.5− | 0.1+ | 2006 07 22 | G96 | 0.5− | 1.4+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2001 09 23 | 691 | 0.4+ | 0.2+ | 2006 07 22 | G96 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.6− | 0.4− | 2006 09 24 | 691 | 0.4+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2001 09 23 | 704 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2001 09 23 | 704 | 0.1− | 1.0+ | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2001 10 11 | 644 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.8− |
| 2001 10 11 | 644 | 0.4− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.3− | 0.5− |
| 2001 10 11 | 644 | 0.1− | 0.7+ | 2006 09 28 | 691 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.8− | 0.3− |
| 2001 10 13 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.2− | 0.5− |

**(140296)∗ 2001 SR$_{305}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 79.70619 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19451453 | $\omega$ | 273.10531 | | +0.28470607 | | +0.95734609 | | |
| $a$ | 2.9500861 | $\Omega$ | 13.74488 | | −0.77629854 | | +0.26042849 | | |
| $e$ | 0.0137010 | $i$ | 11.97649 | | −0.56240825 | | +0.12516173 | | |
| $P$ | 5.07 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 06 | 691 | 0.6− | 0.2+ | 2001 10 15 | 291 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 1999 04 06 | 691 | 0.6+ | 0.3+ | 2001 10 21 | 704 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 1999 04 06 | 691 | 0.4+ | 0.3+ | 2001 10 21 | 704 | 0.6− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 1999 04 15 | 691 | 0.1− | 0.3− | 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 1999 04 15 | 691 | 0.4− | 0.2+ | 2001 10 21 | 704 | 1.3+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 695 | 0.1+ | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3+ |
| 2001 09 12 | 695 | 0.1+ | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2001 09 20 | 691 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 1.1+ | 0.8+ | 2004 03 19 | 704 | 0.7− | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2006 09 28 | 704 | 0.9− | 0.4− |
| 2001 09 20 | 691 | 0.5− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.1− | 2006 09 28 | 704 | 1.4− | 0.5− |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.2+ | 1.2+ | 2006 09 28 | 704 | (2.1− | 0.5−) |
| 2001 09 20 | 704 | 0.4+ | 0.7+ | 2004 03 24 | 699 | (1.6+ | 0.1−) | 2006 10 02 | 691 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 691 | 0.3− | 0.2+ | 2004 03 24 | 699 | (1.7+ | 0.7−) | 2006 10 02 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 23 | 704 | 1.2+ | 0.6+ | 2004 03 24 | 699 | 1.3+ | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.2+ | | |
| 2001 09 23 | 704 | (0.7+ | 1.9+) | 2004 03 24 | 699 | (1.8+ | 1.6+) | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2001 09 23 | 704 | 0.8− | 1.4+ | 2004 03 27 | 704 | 1.1+ | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.6− | | |
| 2001 09 23 | 704 | 0.5+ | 0.8+ | 2004 03 27 | 704 | 1.0+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.4− | | |
| 2001 09 23 | 704 | 0.2− | 1.3+ | 2004 03 27 | 704 | 0.9+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2001 10 11 | 644 | 0.5+ | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.8− | | |
| 2001 10 11 | 644 | 0.2+ | 0.1+ | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.6− | | |
| 2001 10 11 | 644 | 0.6+ | 0.3− | 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.5− | | |
| 2001 10 15 | 291 | 0.1− | 0.2− | 2004 04 14 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.6− | | |
| 2001 10 15 | 291 | 0.9− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2+ | | | | | | |

**(140297)∗ 2001 SW$_{305}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 259.52183 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17578015 | $\omega$ | 94.31301 | | | −0.14795227 | | −0.98877249 | |
| $a$ | 3.1561393 | $\Omega$ | 4.36522 | | | +0.76252618 | | −0.12754012 | |
| $e$ | 0.0877307 | $i$ | 15.98025 | | | +0.62981263 | | −0.07786196 | |
| $P$ | 5.61 | $H$ | 14.5 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.8− | 0.4− | 2001 11 12 | 704 | 0.1− | 0.1− | 2003 01 31 | 699 | 0.3+ | 0.0 | | |
| 2001 09 20 | 704 | 0.7+ | 1.4− | 2001 11 12 | 704 | 0.5− | 0.1− | 2003 01 31 | 699 | 0.4− | 0.1+ | | |
| 2001 09 20 | 704 | 0.0 | 0.6− | 2001 11 20 | 699 | 0.9− | 0.2+ | 2003 01 31 | 699 | 0.5− | 0.2− | | |
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2001 11 20 | 699 | 0.1+ | 0.5− | 2003 02 06 | 699 | 0.1+ | 1.3− | | |
| 2001 09 23 | 704 | 1.5− | 0.4− | 2001 11 20 | 699 | 0.3− | 0.2+ | 2003 02 06 | 699 | 0.5+ | 0.2+ | | |
| 2001 09 23 | 704 | (1.6− | 0.6−) | 2001 11 20 | 699 | 0.2− | 0.3+ | 2003 02 06 | 699 | 0.7− | 0.6+ | | |
| 2001 09 23 | 704 | 0.4− | 0.6− | 2003 01 05 | 699 | 0.1+ | 0.6+ | 2003 02 06 | 699 | 0.5− | 0.4+ | | |
| 2001 09 23 | 704 | 0.2− | 1.1− | 2003 01 05 | 699 | 0.3+ | 0.6+ | 2003 03 08 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 25 | 704 | 1.1+ | 0.8+ | 2003 01 05 | 699 | 0.8+ | 0.8− | 2003 03 08 | 644 | 0.2− | 0.2+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.2− | 2003 01 05 | 699 | 0.7− | 0.0 | 2003 03 08 | 644 | 0.0 | 0.3+ | | |
| 2001 09 25 | 704 | 0.6− | 0.0 | 2003 01 10 | 704 | 0.0 | 0.2+ | 2004 04 25 | 704 | 0.1− | 1.0+ | | |
| 2001 09 25 | 704 | 0.2− | 0.5+ | 2003 01 10 | 704 | 1.0− | 0.2− | 2004 04 25 | 704 | 0.2− | 0.8− | | |
| 2001 10 13 | 644 | 1.0− | 0.3+ | 2003 01 10 | 704 | 0.3− | 0.0 | 2004 04 25 | 704 | 0.0 | 0.1+ | | |
| 2001 10 13 | 644 | 1.3+ | 0.3− | 2003 01 13 | 704 | 0.2+ | 0.5− | 2004 05 15 | 704 | 0.6+ | 0.2+ | | |
| 2001 10 13 | 644 | 1.1− | 0.5+ | 2003 01 13 | 704 | 0.1+ | 0.6+ | 2004 05 15 | 704 | 0.1+ | 0.4− | | |
| 2001 10 13 | 644 | 1.3+ | 0.1− | 2003 01 13 | 704 | 0.6+ | 0.5− | 2004 05 15 | 704 | 0.4+ | 1.0+ | | |
| 2001 10 13 | 644 | 0.9− | 0.6+ | 2003 01 13 | 704 | 0.1− | 0.4− | 2006 08 30 | 699 | 0.0 | 0.2+ | | |
| 2001 10 13 | 644 | 1.0+ | 0.5− | 2003 01 13 | 704 | 1.0+ | 0.7+ | 2006 08 30 | 699 | (1.5− | 0.7−) | | |
| 2001 10 18 | 704 | 1.3+ | 0.1− | 2003 01 14 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 1.0+ | 0.7+ | | |
| 2001 10 18 | 704 | (0.4+ | 2.7−) | 2003 01 14 | 704 | 0.2+ | 0.7− | 2006 08 30 | 699 | 1.0+ | 0.4+ | | |
| 2001 10 18 | 704 | 0.2+ | 0.2− | 2003 01 14 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 703 | 1.0− | 1.2+ | | |
| 2001 10 18 | 704 | 0.2+ | 0.2+ | 2003 01 14 | 704 | 0.7+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.2− | | |
| 2001 11 11 | 644 | 0.1+ | 0.5+ | 2003 01 25 | 704 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.7− | 1.4+ | | |
| 2001 11 11 | 644 | 0.1+ | 0.9+ | 2003 01 25 | 704 | 1.0− | 0.0 | 2006 09 14 | 703 | 1.5− | 0.8+ | | |
| 2001 11 11 | 644 | 0.1+ | 0.1+ | 2003 01 25 | 704 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.8− | 0.5− | | |
| 2001 11 12 | 704 | 0.6+ | 0.6+ | 2003 01 25 | 704 | (1.0+ | 1.6+) | 2006 11 17 | G96 | 0.1− | 0.3− | | |
| 2001 11 12 | 704 | 0.1+ | 0.0 | 2003 01 25 | 704 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2001 11 12 | 704 | 0.1− | 0.4− | 2003 01 31 | 699 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.3− | | |

**(140298)∗ 2001 SO$_{307}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 343.89743 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21874512 | $\omega$ | 264.52823 | | | +0.42580391 | | −0.90366602 | |
| $a$ | 2.7279965 | $\Omega$ | 160.07692 | | | +0.87408871 | | +0.39780125 | |
| $e$ | 0.0299725 | $i$ | 7.68922 | | | +0.23379470 | | +0.15856194 | |
| $P$ | 4.51 | $H$ | 15.5 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 691 | 0.0 | 0.1− | 2001 10 08 | 644 | 0.5− | 0.6+ | 2005 10 01 | G96 | 0.1− | 0.3− | | |
| 1999 02 12 | 691 | 0.1− | 0.2+ | 2001 10 08 | 644 | 0.6− | 0.5+ | 2005 10 01 | G96 | 0.0 | 0.1− | | |
| 1999 02 12 | 691 | 0.1+ | 0.1− | 2001 10 08 | 644 | 0.7− | 0.6+ | 2005 10 01 | G96 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2001 10 24 | 644 | 0.4− | 0.8− | 2005 10 01 | G96 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.6− | 0.1− | 2001 10 24 | 644 | 0.7− | 1.0− | 2006 11 05 | 644 | 0.2+ | 0.5+ | | |
| 2001 09 21 | 704 | (1.9+ | 0.4−) | 2001 10 24 | 644 | 0.6− | 1.1− | 2006 11 05 | 644 | 0.7+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2003 01 07 | 704 | 0.6− | 0.4+ | 2006 11 05 | 644 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.8+ | 0.2+ | 2003 01 07 | 704 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.4− | 2003 01 07 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 703 | 0.4− | 0.9− | | |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2003 01 07 | 704 | 0.1+ | 0.8+ | 2006 11 15 | 703 | 0.7− | 0.7− | | |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2003 01 07 | 704 | (0.6− | 2.0+) | 2006 11 15 | 703 | (0.2− | 1.5−) | | |
| 2001 09 21 | 704 | 1.4+ | 0.8− | 2003 02 05 | 608 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2003 02 05 | 608 | 0.5+ | 0.8+ | 2006 11 25 | G96 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2003 02 05 | 608 | 0.1+ | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.6− | 0.1+ | 2005 07 28 | 644 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.6− | | |
| 2001 09 23 | 704 | 1.1+ | 0.8+ | 2005 07 28 | 644 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.0 | | |
| 2001 09 23 | 704 | 0.0 | 0.3+ | 2005 07 28 | 644 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.1− | | |
| 2001 09 23 | 704 | 0.2+ | 0.1− | 2005 09 01 | 691 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.3− | 0.1− | | |
| 2001 09 23 | 704 | 0.2− | 1.1+ | 2005 09 01 | 691 | 0.1+ | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.1+ | | |
| 2001 09 23 | 704 | 0.0 | 1.0+ | 2005 09 01 | 691 | 0.1+ | 0.1+ | | | | | | |

**(140299)∗ 2001 SU$_{311}$ = 2003 AS$_{13}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 61090)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 269.56709 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21054614 | $\omega$ | 295.02174 | | | −0.60814467 | | −0.79335976 | |
| $a$ | 2.7983660 | $\Omega$ | 192.54571 | | | +0.76598776 | | −0.57747543 | |
| $e$ | 0.1499281 | $i$ | 7.19591 | | | +0.20838143 | | −0.19261987 | |
| $P$ | 15.9 | $H$ | 15.9 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.5− | 0.1+ | 2003 01 05 | 704 | 0.4+ | 1.0+ | 2006 10 13 | D35 | 1.1+ | 0.3+ | | |
| 1999 03 10 | 691 | 0.3− | 0.4+ | 2003 01 05 | 704 | 1.0+ | 0.4+ | 2006 10 13 | D35 | 0.7+ | 0.1− | | |
| 1999 03 10 | 691 | 0.2− | 0.5+ | 2003 01 05 | 704 | 0.1+ | 1.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 1999 03 17 | 691 | 0.5+ | 1.1+ | 2004 04 23 | 599 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.5− | 0.4+ | | |
| 1999 03 17 | 691 | 0.2+ | 0.1− | 2004 04 23 | 599 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.7+ | | |
| 1999 03 17 | 691 | 0.6+ | 0.8+ | 2004 04 23 | 599 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.6− | 0.2+ | | |
| 1999 03 23 | 691 | 0.5+ | 0.8+ | 2004 04 23 | 599 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 1999 03 23 | 691 | 0.4− | 0.9+ | 2004 06 09 | 691 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.5+ | | |
| 1999 03 23 | 691 | (0.0 | 3.9+) | 2004 06 09 | 691 | 0.6− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6− | | |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2004 06 09 | 691 | 0.6+ | 0.9+ | 2006 10 21 | 703 | 0.2+ | 0.1+ | | |
| 2001 09 20 | 704 | (0.2+ | 1.6+) | 2005 07 04 | 691 | 0.5+ | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.9+ | 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.3− | | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.6+ | | |
| 2001 09 20 | 704 | 0.1+ | 1.1+ | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.7+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.3+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.9+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 1.0+ | | |
| 2001 09 25 | 704 | 0.3− | 0.7+ | 2006 09 23 | 691 | 0.3− | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.2+ | | |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.6− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.4− | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.3− | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 2003 01 01 | 704 | 0.8+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.0 | | |
| 2003 01 01 | 704 | 0.6+ | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.5− | 0.2− | | |
| 2003 01 01 | 704 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.2− | 0.1− | | |
| 2003 01 01 | 704 | 0.2− | 0.0 | 2006 10 13 | D35 | 0.0 | 0.6+ | | | | | | |

**(140300)∗ 2001 SW$_{311}$ = 2004 FH$_{153}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68936)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.51620 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17938234 | $\omega$ | 293.05328 | | −0.95361079 | | −0.26527800 |
| $a$ | 3.1137441 | $\Omega$ | 231.86513 | | +0.29634380 | | −0.91040213 |
| $e$ | 0.0377675 | $i$ | 10.42427 | | −0.05297938 | | −0.31748315 |
| $P$ | 5.49 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3+ | 1.1− | 2004 02 18 | 703 | 0.2− | 0.2+ | 2005 07 12 | G96 | 0.3+ | 0.8+ |
| 2001 09 20 | 704 | 0.3− | 1.3+ | 2004 02 18 | 703 | (2.9+ | 0.2−) | 2005 07 12 | G96 | 0.3+ | 0.3+ |
| 2001 09 20 | 704 | 1.0+ | 1.3+ | 2004 02 18 | 703 | 0.4+ | 0.8+ | 2006 08 18 | 644 | 0.3− | 1.9+ |
| 2001 09 25 | 704 | 0.5+ | 0.3+ | 2004 02 18 | 703 | (0.5+ | 2.2+) | 2006 08 18 | 644 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 0.5− | 0.3− | 2004 03 17 | 703 | 0.3+ | 1.6+ | 2006 08 18 | 644 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 0.7− | 0.1+ | 2004 03 17 | 703 | 0.5+ | 0.2+ | 2006 08 27 | 699 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2004 03 17 | 704 | 1.0+ | 1.0+ | 2006 08 27 | 699 | 0.5+ | 0.9− |
| 2001 09 25 | 704 | 0.5+ | 1.0− | 2004 03 17 | 703 | 0.0 | 1.4+ | 2006 08 27 | 699 | 1.2− | 0.4+ |
| 2001 09 25 | 704 | 0.4− | 0.5− | 2004 03 17 | 704 | 0.7+ | 0.9+ | 2006 08 27 | 699 | 1.8+ | 0.8− |
| 2001 09 25 | 704 | 0.5+ | 0.3+ | 2004 03 17 | 703 | 0.5− | 0.1+ | 2006 08 30 | 699 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.4+ | 0.7+ | 2004 03 17 | 704 | 0.2− | 1.4+ | 2006 08 30 | 699 | 1.1− | 0.4+ |
| 2001 09 25 | 704 | 0.9− | 0.7− | 2004 03 17 | 704 | 1.1+ | 1.5+ | 2006 08 30 | 699 | 0.2− | 1.0− |
| 2001 09 25 | 704 | 0.6+ | 1.4+ | 2004 03 17 | 704 | 0.2− | 0.7+ | 2006 08 30 | 699 | 0.7+ | 0.6+ |
| 2001 09 26 | 704 | 0.1− | 0.8+ | 2004 03 29 | 703 | 0.6− | 0.7+ | 2006 09 19 | 699 | 0.2− | 0.1− |
| 2001 09 26 | 704 | 0.7− | 1.8+ | 2004 03 29 | 703 | 0.9− | 0.6+ | 2006 09 19 | 699 | 0.3− | 0.9− |
| 2001 09 26 | 704 | 0.7− | 1.5+ | 2004 03 29 | 703 | 0.1+ | 1.4+ | 2006 09 19 | 699 | 0.8− | 0.2− |
| 2001 09 26 | 704 | 0.3− | 0.6+ | 2004 03 29 | 703 | 0.9+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.5+ |
| 2001 10 14 | 704 | 0.3− | 0.4+ | 2004 04 16 | 704 | 1.2+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.9+ |
| 2001 10 14 | 704 | 0.6− | 1.0+ | 2004 04 16 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.8− | 1.3+ | 2004 04 16 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 2001 10 14 | 704 | 0.5− | 1.0+ | 2005 07 12 | G96 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.6+ | 0.1− |
| 2001 10 14 | 704 | 0.3− | 0.7+ | 2005 07 12 | G96 | 0.3+ | 0.7+ | | | | |

**(140301)∗ 2001 SL$_{312}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.75882 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22126234 | $\omega$ | 317.84926 | | +0.99489382 | | +0.06919363 |
| $a$ | 2.7072667 | $\Omega$ | 38.36887 | | −0.02552391 | | +0.87682700 |
| $e$ | 0.0442401 | $i$ | 6.79803 | | −0.09764641 | | +0.47580107 |
| $P$ | 4.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.8− | 1.0+ | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.9+ | 0.3+ | 2004 04 10 | 644 | 1.0+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.7+ | 0.2− | 2004 04 10 | 644 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2001 09 17 | 699 | 0.3+ | 0.4+ | 2004 04 10 | 644 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2001 09 17 | 699 | 0.4+ | 0.2+ | 2004 04 11 | 644 | 0.7+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 09 17 | 699 | 0.3− | 1.0+ | 2004 04 11 | 644 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 09 17 | 699 | 0.0 | 0.5+ | 2004 04 11 | 644 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | (1.0+ | 2.0−) | 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2001 09 21 | 704 | 1.4+ | 1.1− | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2001 09 21 | 704 | (1.6+ | 2.2−) | 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 1.1+ | 1.0− | 2005 07 26 | 644 | 0.0 | 1.1+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2001 09 23 | 608 | 0.5− | 0.7− | 2005 07 26 | 644 | 0.0 | 1.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 09 23 | 608 | 0.9− | 1.4− | 2005 07 26 | 644 | 0.1− | 0.6+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2001 09 23 | 608 | 0.5− | 1.1− | 2005 07 26 | 644 | 0.1− | 0.6+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2001 09 25 | 704 | 0.1+ | 0.7+ | 2005 07 26 | 644 | 0.1− | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.3+ | 0.3− | 2005 07 26 | 644 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.6− | 1.0+ | 2005 08 04 | 644 | 0.3− | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2001 10 10 | 644 | 0.5− | 0.6+ | 2005 08 04 | 644 | 0.1− | 0.8+ | 2006 11 16 | 704 | (1.6− | 0.1+) |
| 2001 10 10 | 644 | 0.8− | 0.4+ | 2005 08 04 | 644 | 0.5− | 1.0+ | 2006 11 16 | 704 | 0.5− | 0.6+ |
| 2001 10 10 | 644 | 0.7− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.7− | 0.5+ |
| 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.8+ |
| 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.2− |
| 2004 03 19 | 704 | 0.6+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.4+ |
| 2004 03 19 | 704 | 0.6+ | 0.0 | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2004 03 19 | 704 | 0.8− | 0.7+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2004 03 19 | 704 | (2.6+ | 0.6−) | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | (1.8− | 0.8+) |
| 2004 03 19 | 704 | 1.1+ | 0.9− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | (0.1+ | 2.0+) |
| 2004 03 28 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2004 03 28 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2004 03 28 | 704 | 0.7+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ | | | | |
| 2004 03 28 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 691 | 0.5− | 0.6+ | | | | |

**(140302)∗ 2001 SQ$_{312}$ = 1999 FY$_{69}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 72409)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.42918 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20360711 | $\omega$ | 239.88412 | | +0.32738724 | | −0.94487223 |
| $a$ | 2.8615900 | $\Omega$ | 191.01029 | | +0.87709614 | | +0.30618964 |
| $e$ | 0.0501434 | $i$ | 1.75131 | | +0.35145406 | | +0.11603610 |
| $P$ | 4.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.2− | 0.4− | 2001 09 25 | 704 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1999 03 10 | 691 | 0.4− | 0.7− | 2001 09 25 | 704 | 1.3+ | 0.5+ | 2006 10 02 | 691 | 0.3+ | 0.6+ |
| 1999 03 10 | 691 | (0.5− | 5.6−) | 2001 09 25 | 704 | 1.3− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.4+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 03 29 | 691 | 0.1+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.6+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2004 04 23 | 691 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.5− | 0.3+ |
| 2001 08 26 | 691 | 0.4− | 0.1− | 2004 04 23 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2001 08 26 | 691 | 0.6− | 0.4− | 2004 04 23 | 691 | 0.5+ | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2001 08 26 | 691 | 0.4− | 0.0 | 2006 07 22 | G96 | 0.4− | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2001 08 26 | 691 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2001 08 26 | 691 | 0.2+ | 0.2− | 2006 07 22 | G96 | 0.3+ | 0.5− | 2006 10 16 | 703 | 1.1− | 0.5− |
| 2001 08 26 | 691 | 0.4+ | 0.1− | 2006 07 22 | G96 | 0.5− | 0.0 | 2006 10 16 | 703 | (2.1− | 0.2−) |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.5+ | 2006 10 16 | 703 | (1.9− | 2.1−) |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.4+ | 0.9− |
| 2001 09 21 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.6+ | 0.8+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2001 09 21 | 704 | 0.6+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.9− |
| 2001 09 25 | 704 | 0.1+ | 1.2+ | 2006 09 25 | G96 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− |

**(140303)∗ 2001 SK$_{313}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.81185 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18578604 | $\omega$ | 73.30610 | | −0.34052298 | | −0.92314797 |
| $a$ | 3.0417767 | $\Omega$ | 38.14762 | | +0.71437582 | | −0.37741548 |
| $e$ | 0.0998653 | $i$ | 16.79138 | | +0.61131930 | | −0.07318044 |
| $P$ | 5.31 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2002 12 28 | 704 | 0.2+ | 0.3+ | 2004 04 17 | 699 | 0.3+ | 1.1+ |
| 2001 09 12 | 704 | 0.8− | 1.4+ | 2002 12 28 | 704 | 1.0+ | 0.5+ | 2004 04 17 | 699 | 0.6− | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2002 12 28 | 704 | 0.3− | 0.6− | 2004 04 17 | 699 | 1.0− | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.2− | 2002 12 28 | 704 | 0.2+ | 0.1− | 2004 04 19 | 704 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2003 01 14 | 704 | 0.5− | 1.0+ | 2004 04 19 | 704 | 0.5+ | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.1− | 2003 01 14 | 704 | 0.5− | 0.5+ | 2004 04 19 | 704 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 1.0− | 0.2+ | 2003 01 14 | 704 | 1.3− | 0.6+ | 2004 04 19 | 704 | 0.2+ | 0.6+ |
| 2001 09 21 | 704 | 0.7− | 0.4− | 2003 01 14 | 704 | 0.7− | 0.0 | 2004 04 19 | 704 | 0.0 | 0.8+ |
| 2001 09 21 | 704 | 0.5− | 0.1− | 2003 01 14 | 704 | 0.7− | 0.8− | 2004 04 22 | 704 | (0.7− | 1.7+) |
| 2001 09 21 | 704 | 0.5− | 0.7− | 2003 01 31 | 644 | 0.5+ | 0.9+ | 2004 04 22 | 704 | 0.9+ | 0.5+ |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2003 01 31 | 644 | 0.5+ | 0.8+ | 2004 04 22 | 704 | 1.4+ | 0.1+ |
| 2001 09 23 | 699 | 0.7− | 1.2+ | 2003 01 31 | 644 | 0.6+ | 1.0+ | 2004 04 22 | 704 | 0.3+ | 0.5+ |
| 2001 09 23 | 699 | 0.7− | 0.7+ | 2003 01 31 | 644 | 0.5+ | 0.0 | 2004 05 11 | 699 | 0.4− | 1.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 699 | 0.9− | 1.1+ | 2003 01 31 | 644 | 0.6+ | 0.2− | 2004 05 11 | 699 | 0.1+ | 0.5− |
| 2001 09 23 | 699 | 1.0− | 0.3+ | 2003 01 31 | 644 | 0.6+ | 0.2− | 2004 05 11 | 699 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.3+ | 2004 05 11 | 699 | 0.9− | 1.2+ |
| 2001 09 25 | 704 | 0.5− | 1.2+ | 2004 03 16 | 704 | 0.1+ | 0.9− | 2004 05 14 | 704 | 1.3− | 1.2+ |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 704 | 0.2− | 0.3+ | 2004 05 14 | 704 | 0.3+ | 0.2− |
| 2001 09 25 | 704 | 0.0 | 1.5+ | 2004 03 16 | 704 | 0.3+ | 0.1+ | 2004 05 14 | 704 | 0.3+ | 0.7− |
| 2001 10 08 | 644 | 0.4− | 0.5+ | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2004 05 17 | 704 | 0.2− | 1.0+ |
| 2001 10 08 | 644 | 0.1+ | 0.2− | 2004 03 16 | 691 | 0.4+ | 0.0 | 2004 05 17 | 704 | 0.0 | 1.4+ |
| 2001 10 08 | 644 | 0.2− | 0.5+ | 2004 03 16 | 691 | 0.3+ | 0.1+ | 2004 05 17 | 704 | 0.7+ | 0.4− |
| 2001 10 11 | 704 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.4+ | 0.3− | 2004 05 19 | 691 | 0.1+ | 0.1+ |
| 2001 10 11 | 704 | 0.0 | 1.3+ | 2004 03 20 | 704 | 0.4+ | 1.1− | 2004 05 19 | 691 | 0.1+ | 0.1+ |
| 2001 10 11 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 704 | 0.1+ | 0.3− | 2004 05 19 | 691 | 0.0 | 0.1+ |
| 2001 10 11 | 704 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.1− | 2006 08 16 | 644 | 0.1− | 0.1+ |
| 2001 10 19 | 699 | 0.7− | 1.1+ | 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.3+ |
| 2001 10 19 | 699 | (1.2− | 1.6+) | 2004 03 22 | 704 | 1.2+ | 0.5+ | 2006 08 16 | 644 | 0.0 | 0.3+ |
| 2001 10 19 | 699 | 0.4− | 1.1+ | 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2001 10 19 | 699 | 0.9− | 0.9+ | 2004 03 22 | 704 | 0.1+ | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | (0.9− | 1.6+) | 2004 03 22 | 704 | 1.2+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 1.5− | 0.8+ | 2004 03 31 | 704 | 0.6+ | 0.9+ | 2006 09 20 | 703 | 0.6− | 0.3+ |
| 2001 10 20 | 704 | 0.7− | 0.8+ | 2004 03 31 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 703 | 0.2+ | 0.8− |
| 2002 11 16 | 699 | 1.2+ | 1.3+ | 2004 03 31 | 704 | 0.7+ | 0.9− | 2006 09 20 | 703 | 0.0 | 0.1− |
| 2002 11 16 | 699 | 0.9+ | 0.2− | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.2− |
| 2002 11 16 | 699 | 0.2+ | 1.3+ | 2004 03 31 | 704 | 0.5+ | 1.0+ | 2006 09 26 | 703 | 0.6− | 1.1+ |
| 2002 11 16 | 699 | 1.2− | 0.1− | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.4+ |
| 2002 12 07 | 704 | 0.9− | 0.2+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.4+ |
| 2002 12 07 | 704 | (0.6− | 1.7+) | 2004 04 14 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.4− | 1.0− |
| 2002 12 07 | 704 | 0.6− | 0.3− | 2004 04 16 | 704 | 0.6+ | 1.1+ | 2006 10 12 | E12 | 0.1+ | 1.2+ |
| 2002 12 07 | 704 | 0.7− | 0.6+ | 2004 04 16 | 704 | 0.4+ | 0.6+ | 2006 10 12 | E12 | 0.2− | 0.2+ |
| 2002 12 09 | 699 | 0.8+ | 0.8+ | 2004 04 16 | 704 | 0.0 | 0.4+ | 2006 10 12 | E12 | 0.7+ | 1.0− |
| 2002 12 09 | 699 | 0.7+ | 0.4+ | 2004 04 16 | 704 | 0.8− | 0.1+ | 2006 10 12 | E12 | 0.2− | 0.6+ |
| 2002 12 09 | 699 | (1.6+ | 0.3+) | 2004 04 16 | 704 | 0.1− | 0.5+ | | | | |
| 2002 12 09 | 699 | 0.5+ | 0.3− | 2004 04 17 | 699 | 0.3+ | 1.0+ | | | | |

**(140304)∗ 2001 SR$_{313}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.48631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18883105 | $\omega$ | 337.80200 | | +0.74685118 | −0.64135823 | |
| $a$ | 3.0089879 | $\Omega$ | 63.30848 | | +0.63585249 | +0.61138836 | |
| $e$ | 0.1786677 | $i$ | 11.34194 | | +0.19469188 | +0.46353413 | |
| $P$ | 5.22 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 15 | 566 | 0.6+ | 0.9− | 2001 10 23 | 644 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.8+ | 1.0+ |
| 1997 01 15 | 566 | 0.1− | 0.6− | 2001 11 08 | 644 | 0.0 | 0.1− | 2006 08 14 | 644 | 0.6− | 0.1+ |
| 1997 01 15 | 566 | 0.2− | 0.1+ | 2001 11 08 | 644 | 0.4+ | 0.3− | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2001 11 08 | 644 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.4− | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2001 11 19 | 608 | 0.7+ | 1.0+ | 2006 08 16 | 644 | 0.2− | 0.0 |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2001 11 19 | 608 | 0.6+ | 0.7+ | 2006 08 16 | 644 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.4+ | 2001 11 19 | 608 | 0.9+ | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.6− | 2003 01 10 | 704 | 0.0 | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2003 01 10 | 704 | 1.0+ | 1.2+ | 2006 08 17 | 644 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.1+ | 1.1− | 2003 01 10 | 704 | 0.8+ | 0.8+ | 2006 08 17 | 644 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2003 01 10 | 704 | 0.9+ | 1.1+ | 2006 08 28 | E12 | 0.5+ | 0.6− |
| 2001 09 21 | 704 | 0.2− | 0.4− | 2003 01 24 | 644 | 0.4+ | 0.3+ | 2006 08 28 | E12 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2003 01 24 | 644 | 0.3+ | 0.2+ | 2006 08 28 | E12 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 0.7− | 2003 01 24 | 644 | 0.2+ | 0.0 | 2006 08 28 | E12 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2003 01 25 | 704 | 0.1− | 0.7− | 2006 09 26 | 703 | 0.6+ | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.5− | 2003 01 25 | 704 | 0.6− | 0.1+ | 2006 09 26 | 703 | 0.9+ | 0.7+ |
| 2001 09 21 | 704 | 0.1+ | 0.7+ | 2003 01 25 | 704 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.8+ | 1.2+ |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2003 01 25 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | (0.8+ | 1.7+) |
| 2001 09 25 | 704 | 0.6− | 0.6− | 2003 01 25 | 704 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.7− | 0.4− | 2003 01 25 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.4− | 2003 01 25 | 704 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.6− | 0.2− | 2003 01 25 | 704 | 0.6− | 0.5− | 2006 10 12 | E12 | 0.3− | 0.4− |
| 2001 10 11 | 704 | 0.1+ | 0.1− | 2003 01 25 | 704 | 0.2− | 0.2− | 2006 10 12 | E12 | 0.0 | 0.5+ |
| 2001 10 11 | 704 | 0.3+ | 0.0 | 2003 01 25 | 704 | 0.4+ | 0.3+ | 2006 10 12 | E12 | 0.1− | 0.1+ |
| 2001 10 11 | 704 | 0.0 | 0.6+ | 2003 01 29 | 644 | 0.1− | 0.3+ | 2006 10 12 | E12 | 0.2+ | 0.1+ |
| 2001 10 15 | 644 | 0.4− | 0.7− | 2003 01 29 | 644 | 0.3− | 0.6+ | 2006 10 28 | 703 | 0.0 | 0.5− |
| 2001 10 15 | 644 | 0.4− | 0.5− | 2003 01 29 | 644 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.7− | 0.3− |
| 2001 10 15 | 644 | 0.5− | 0.4− | 2003 02 01 | 645 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.5− |
| 2001 10 19 | 699 | 0.1+ | 0.5+ | 2003 02 01 | 644 | 0.0 | 0.1+ | 2006 10 28 | 703 | 1.0− | 1.0+ |
| 2001 10 19 | 699 | 0.0 | 0.8+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 28 | E12 | 0.4+ | 0.2+ |
| 2001 10 19 | 699 | 0.7+ | 0.0 | 2003 02 01 | 644 | 0.1− | 0.5+ | 2006 10 28 | E12 | 0.2+ | 0.4− |
| 2001 10 19 | 699 | 0.5− | 0.2+ | 2003 02 01 | 644 | 0.2− | 0.2+ | 2006 10 28 | E12 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.7+ | 0.7+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 28 | E12 | 0.1+ | 0.8− |
| 2001 10 20 | 704 | 0.2+ | 0.9+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2001 10 20 | 704 | 0.0 | 1.0+ | 2003 03 08 | 644 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2001 10 20 | 704 | 0.3+ | 1.5+ | 2003 03 08 | 644 | 0.6+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 10 20 | 704 | 0.6− | 0.6+ | 2003 03 08 | 644 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.5− | 0.3− |
| 2001 10 23 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.6+ | 1.2+ | | | | |
| 2001 10 23 | 644 | 0.4− | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.6+ | | | | |

**(140305)∗ 2001 SA$_{314}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.69692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22044245 | $\omega$ | 336.89373 | | +0.53765664 | −0.83606903 | |
| $a$ | 2.7139753 | $\Omega$ | 80.42026 | | +0.78984007 | +0.45410965 | |
| $e$ | 0.0516526 | $i$ | 6.35535 | | +0.29508983 | +0.30785224 | |
| $P$ | 4.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | (0.5+ | 1.9+) | 2003 02 04 | 644 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2004 05 21 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 0.6+ | 1.2+ |
| 2001 09 21 | 704 | 1.1+ | 0.8+ | 2004 05 21 | 704 | 1.3+ | 1.3+ | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2001 09 25 | 704 | (1.7− | 0.3−) | 2004 05 21 | 704 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.4− | 0.1− |
| 2001 09 25 | 704 | (2.0− | 0.6+) | 2004 05 21 | 704 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2001 09 25 | 704 | 1.1− | 0.1+ | 2004 05 21 | 704 | (2.1+ | 0.2+) | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.6− | 0.6− | 2005 07 03 | 644 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2001 10 08 | 644 | 0.2+ | 0.4+ | 2005 07 03 | 644 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2001 10 08 | 644 | 0.0 | 0.2+ | 2005 07 03 | 644 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.6− | 0.0 |
| 2001 10 08 | 644 | 0.2+ | 0.0 | 2005 08 05 | 644 | 0.3− | 0.6+ | 2006 11 24 | G96 | 1.6+ | 0.1− |
| 2001 10 16 | 644 | 0.4− | 0.0 | 2005 08 05 | 644 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 10 16 | 644 | 0.3− | 0.8+ | 2005 08 05 | 644 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.3− |
| 2001 10 16 | 644 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.0 | 0.3− |
| 2003 01 09 | 704 | 0.8+ | 1.0+ | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 12 01 | 704 | 0.2− | 1.3− |
| 2003 01 09 | 704 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 12 01 | 704 | 0.1− | 0.1+ |
| 2003 01 09 | 704 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 12 01 | 704 | 0.8+ | 1.0− |
| 2003 01 09 | 704 | 0.7− | 0.8+ | 2006 11 18 | 704 | 1.2+ | 0.2+ | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2003 01 25 | 699 | 0.9+ | 1.1+ | 2006 11 18 | 704 | 0.4+ | 0.4− | 2006 12 01 | 704 | 0.8+ | 0.7− |
| 2003 01 25 | 699 | 1.0− | 1.0+ | 2006 11 18 | 704 | 1.1+ | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2003 01 25 | 699 | 0.4+ | 1.2− | 2006 11 18 | 704 | 1.0+ | 0.2+ | 2006 12 01 | 704 | 0.1− | 0.3+ |
| 2003 01 25 | 699 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.2− |
| 2003 02 04 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.7+ | 2006 12 01 | H07 | 0.4− | 0.0 |
| 2003 02 04 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.3− | 0.0 | 2006 12 01 | H07 | 0.7− | 0.5+ |

**(140306)∗ 2001 SB$_{314}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.59359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20233518 | $\omega$ | 176.43524 | | +0.84698354 | +0.52508433 | |
| $a$ | 2.8735700 | $\Omega$ | 151.40117 | | −0.49194403 | +0.83339088 | |
| $e$ | 0.0615746 | $i$ | 9.99726 | | −0.20151911 | +0.17247055 | |
| $P$ | 4.87 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.0 | 0.1+ | 2001 10 19 | 699 | 0.4− | 0.4− | 2006 09 29 | 699 | 0.6+ | 0.7+ |
| 1994 03 05 | 691 | 0.3− | 0.0 | 2001 10 24 | 644 | 0.1+ | 0.6+ | 2006 09 29 | 699 | 1.4− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.4+ | 0.2− | 2001 10 24 | 644 | 0.1− | 0.4+ | 2006 09 29 | 699 | (1.8+ | 0.0 ) | | |
| 2001 09 21 | 704 | (1.6+ | 0.8−) | 2001 10 24 | 644 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 0.7+ | 1.1+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.9+ | 2004 03 20 | 704 | 1.3+ | 0.3− | 2006 10 16 | 703 | 1.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2004 03 20 | 704 | 0.2− | 1.0+ | 2006 10 16 | 703 | 1.0− | 0.3− | | |
| 2001 09 25 | 704 | 0.5+ | 0.2− | 2004 03 20 | 704 | 1.3− | 1.3+ | 2006 10 16 | 703 | (0.9− | 3.5−) | | |
| 2001 09 25 | 704 | 0.1− | 1.2+ | 2004 03 20 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | (0.5+ | 2.8−) | | |
| 2001 09 25 | 704 | 0.3− | 1.3+ | 2004 03 20 | 704 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.4+ | | |
| 2001 10 08 | 644 | 0.3+ | 0.5+ | 2004 04 16 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.4− | 1.3+ | | |
| 2001 10 08 | 644 | 0.2+ | 0.7+ | 2004 04 16 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.4+ | 1.0+ | | |
| 2001 10 08 | 644 | 0.7+ | 0.1+ | 2004 04 16 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.4− | 1.3+ | | |
| 2001 10 11 | 704 | (1.5− | 1.7−) | 2004 04 21 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.6+ | 0.2− | | |
| 2001 10 11 | 704 | 0.2− | 1.1− | 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.4− | | |
| 2001 10 11 | 704 | 0.2+ | 1.0− | 2004 04 21 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.4+ | 0.2− | | |
| 2001 10 11 | 704 | (0.8+ | 1.6−) | 2006 09 25 | 699 | 0.8+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2001 10 11 | 704 | 0.4− | 0.4− | 2006 09 25 | 699 | 0.5− | 1.1− | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2001 10 16 | 644 | 0.8− | 0.1+ | 2006 09 25 | 699 | (2.4− | 0.7+) | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 10 16 | 644 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.0 | 1.0− | | |
| 2001 10 16 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.3+ | 0.8+ | 2006 11 16 | 703 | 0.1− | 1.2− | | |
| 2001 10 19 | 699 | 0.8− | 0.3− | 2006 09 26 | 703 | (2.2+ | 0.0 ) | 2006 11 16 | 703 | 0.5+ | 1.4− | | |
| 2001 10 19 | 699 | 0.9− | 1.0+ | 2006 09 26 | 703 | 1.4+ | 1.0+ | 2006 11 16 | 703 | 0.0 | 1.0− | | |
| 2001 10 19 | 699 | 0.5− | 0.6+ | 2006 09 26 | 703 | 1.1− | 0.1− | | | | | | |

**(140307)∗ 2001 SM$_{315}$**

Discovered 2001 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.28625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17736441 | $\omega$ | 68.44857 | | +0.44673876 | −0.89433661 | |
| $a$ | 3.1373170 | $\Omega$ | 354.81956 | | +0.68905297 | +0.36120870 | |
| $e$ | 0.2722036 | $i$ | 15.55803 | | +0.57064042 | +0.26398919 | |
| $P$ | 5.56 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 30 | 809 | (2.2− | 1.9−) | 2001 10 08 | 704 | 0.7− | 0.1− | 2002 01 07 | 704 | 0.1− | 0.2+ | | |
| 1995 08 30 | 809 | 0.4+ | 0.3− | 2001 10 08 | 704 | 0.0 | 0.8+ | 2002 01 07 | 704 | 0.8+ | 0.5+ | | |
| 1995 08 31 | 809 | 0.2+ | 0.6− | 2001 11 11 | 704 | 0.0 | 0.2− | 2003 04 07 | 691 | 0.1+ | 0.3+ | | |
| 1995 09 20 | 809 | 0.2− | 0.8+ | 2001 11 11 | 704 | 0.0 | 0.7− | 2003 04 07 | 691 | 0.5+ | 0.4+ | | |
| 1995 09 22 | 809 | 0.0 | 0.9+ | 2001 11 11 | 704 | 0.4− | 0.5+ | 2003 04 07 | 691 | 0.3+ | 0.5+ | | |
| 1995 09 22 | 809 | 0.7− | 0.1− | 2001 11 11 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 1.2+ | | |
| 2001 09 25 | 704 | 0.4− | 0.5− | 2001 11 11 | 704 | 0.1− | 1.3+ | 2006 09 14 | 703 | 1.5− | 1.2− | | |
| 2001 09 25 | 704 | 0.6+ | 0.0 | 2001 12 09 | 704 | 0.2− | 0.8+ | 2006 09 14 | 703 | (0.1+ | 2.2+) | | |
| 2001 09 25 | 704 | (1.0+ | 1.8−) | 2001 12 09 | 704 | 0.4+ | 1.1+ | 2006 09 14 | 703 | 0.3+ | 0.0 | | |
| 2001 09 25 | 704 | 0.3− | 1.0+ | 2001 12 09 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.6+ | 1.1+ | | |
| 2001 09 28 | 704 | 0.4− | 0.7− | 2001 12 09 | 704 | 0.8+ | 0.2− | 2006 09 25 | 699 | (1.8− | 0.3+) | | |
| 2001 09 28 | 704 | 0.4− | 1.0− | 2001 12 09 | 704 | 0.7+ | 0.3+ | 2006 09 25 | 699 | 0.4+ | 1.0+ | | |
| 2001 09 28 | 704 | 1.2− | 0.2+ | 2001 12 23 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | (0.8− | 1.8+) | | |
| 2001 09 28 | 704 | 0.3− | 1.2− | 2001 12 23 | 644 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.3− | 0.3+ | | |
| 2001 09 28 | 704 | 0.9− | 0.7− | 2001 12 23 | 644 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.4− | 0.3+ | | |
| 2001 10 08 | 704 | 0.7− | 0.2+ | 2002 01 07 | 704 | 0.2− | 1.0− | 2006 10 22 | G96 | 0.6− | 0.2+ | | |
| 2001 10 08 | 704 | 0.3− | 0.0 | 2002 01 07 | 704 | 1.0+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.3+ | | |

**(140308)∗ 2001 SK$_{316}$ = 2005 VU$_{98}$**

Discovered 2001 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 94116)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.79116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23924024 | $\omega$ | 56.43436 | | +0.95160466 | −0.28043896 | |
| $a$ | 2.5698823 | $\Omega$ | 319.44755 | | +0.17602531 | +0.83266226 | |
| $e$ | 0.0551294 | $i$ | 11.14861 | | +0.25191994 | +0.47752231 | |
| $P$ | 4.12 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2003 03 10 | 699 | (1.8+ | 0.1−) | 2005 11 12 | 703 | 0.8− | 0.5− | | |
| 2001 09 25 | 704 | 0.0 | 0.1+ | 2003 03 10 | 699 | 0.1+ | 0.5+ | 2005 11 12 | 703 | 0.2− | 0.5− | | |
| 2001 09 25 | 704 | 0.1+ | 0.8+ | 2003 03 10 | 704 | 0.0 | 0.9− | 2005 11 12 | 703 | 0.3+ | 0.1− | | |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2003 03 10 | 704 | 0.0 | 0.8− | 2005 12 01 | 644 | 0.1+ | 0.1− | | |
| 2001 09 25 | 704 | 0.3− | 0.4− | 2003 03 10 | 699 | 0.3+ | 0.1− | 2005 12 01 | 644 | 0.3+ | 0.1− | | |
| 2001 09 28 | 704 | 0.4− | 0.5− | 2003 03 10 | 704 | 0.4− | 0.9+ | 2005 12 01 | 644 | 0.4+ | 0.4− | | |
| 2001 09 28 | 704 | (1.6− | 0.5−) | 2003 03 10 | 699 | 0.3+ | 0.1− | 2005 12 24 | 704 | 1.3+ | 1.3+ | | |
| 2001 09 28 | 704 | 0.8− | 0.0 | 2003 03 10 | 704 | (0.4+ | 2.1−) | 2005 12 24 | 704 | (1.6+ | 0.2+) | | |
| 2001 09 28 | 704 | 1.1− | 0.5+ | 2003 03 27 | 644 | 0.1+ | 0.1+ | 2005 12 24 | 704 | 0.6+ | 0.3− | | |
| 2001 09 28 | 704 | 1.5− | 0.0 | 2003 03 27 | 644 | 0.2− | 0.0 | 2005 12 24 | 704 | 0.2− | 0.9+ | | |
| 2001 12 09 | 704 | 0.1+ | 0.2+ | 2003 03 27 | 644 | 0.2− | 0.2+ | 2005 12 24 | 704 | 0.0 | 0.9− | | |
| 2001 12 09 | 704 | 0.3+ | 0.4+ | 2005 10 31 | 703 | 0.2− | 0.1+ | 2006 10 30 | G96 | 0.1+ | 0.0 | | |
| 2001 12 09 | 704 | 0.2+ | 0.0 | 2005 10 31 | 703 | 1.1+ | 0.4+ | 2006 10 30 | G96 | 0.2− | 0.2− | | |
| 2001 12 09 | 704 | 0.6+ | 0.2+ | 2005 10 31 | 703 | 0.2− | 0.3− | 2006 10 30 | G96 | 0.6− | 0.6− | | |
| 2001 12 09 | 704 | 0.4+ | 0.0 | 2005 10 31 | 703 | 0.4− | 0.3− | 2006 10 30 | G96 | 0.3− | 0.3− | | |
| 2001 12 22 | 704 | 0.1− | 0.5+ | 2005 11 10 | 703 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.3− | 0.1− | | |
| 2001 12 22 | 704 | 1.1+ | 0.7− | 2005 11 10 | 703 | 0.0 | 0.6+ | 2006 11 20 | G96 | 0.6− | 0.0 | | |
| 2001 12 22 | 704 | 0.1+ | 0.0 | 2005 11 10 | 703 | 0.2+ | 0.6− | 2006 11 20 | G96 | 0.9− | 0.1− | | |
| 2001 12 22 | 704 | 0.4+ | 0.1+ | 2005 11 10 | 703 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.1+ | | |
| 2001 12 22 | 704 | 0.2− | 0.5+ | 2005 11 12 | 703 | 0.7− | 0.5− | 2006 11 21 | 691 | 0.1+ | 0.2+ | | |
| 2002 01 07 | 704 | 0.4− | 0.0 | 2005 11 12 | 703 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.3+ | 0.0 | | |
| 2002 01 07 | 704 | 0.4+ | 0.8+ | 2005 11 12 | 703 | 1.2+ | 1.2+ | 2006 11 21 | 691 | 0.2+ | 0.1+ | | |
| 2002 01 07 | 704 | 0.1− | 0.0 | 2005 11 12 | 703 | 0.1− | 0.1+ | | | | | | |
| 2002 01 07 | 704 | 0.4− | 0.4− | 2005 11 12 | 703 | 1.3− | 1.2− | | | | | | |

**(140309)∗ 2001 SL$_{318}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.95536 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28938648 | $\omega$ | 49.22138 | | −0.25473588 | −0.96494680 | |
| $a$ | 2.2636914 | $\Omega$ | 55.64509 | | +0.86258303 | −0.25625825 | |
| $e$ | 0.1037246 | $i$ | 4.38671 | | +0.43710428 | −0.05665136 | |
| $P$ | 3.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 24 | 691 | 0.1+ | 0.2− | 2003 03 07 | 683 | 0.9− | 1.5+ | 2005 11 10 | G96 | 0.4− | 0.3− | | |
| 1996 01 24 | 691 | 0.1− | 0.1− | 2003 03 09 | 704 | 0.6+ | 0.3+ | 2005 11 10 | G96 | 0.2− | 0.2− | | |
| 1996 01 24 | 691 | 0.2− | 0.4− | 2003 03 09 | 704 | 0.3+ | 0.1+ | 2005 12 21 | 703 | 0.9− | 0.8+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.9+ | 2003 03 09 | 704 | 0.7+ | 0.4+ | 2005 12 21 | 703 | 0.9− | 0.2− | | |
| 2001 09 12 | 704 | 0.6− | 1.5+ | 2003 03 09 | 704 | (2.3+ | 1.5+) | 2005 12 21 | 703 | 0.3− | 0.3+ | | |
| 2001 09 12 | 704 | 0.4+ | 0.6+ | 2003 03 14 | 608 | 0.8+ | 0.1+ | 2005 12 21 | 703 | 0.7− | 0.2+ | | |
| 2001 09 12 | 704 | 0.5+ | 1.3+ | 2003 03 14 | 608 | 1.3+ | 0.5+ | 2005 12 26 | 691 | 0.0 | 0.1− | | |
| 2001 09 12 | 704 | 0.5− | 1.1+ | 2003 03 14 | 608 | 0.9+ | 0.6+ | 2005 12 26 | 691 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.9− | 0.4+ | 2003 03 26 | 644 | 0.6+ | 0.7+ | 2005 12 26 | 691 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 0.6+ | 0.5+ | 2003 03 26 | 644 | 0.3+ | 0.7+ | 2005 12 29 | 704 | 0.7+ | 0.1+ | | |
| 2001 09 21 | 704 | 1.1− | 0.4+ | 2003 03 26 | 644 | 0.2+ | 0.5+ | 2005 12 29 | 704 | 0.6+ | 0.5− | | |
| 2001 09 21 | 704 | 0.8− | 0.9− | 2003 03 30 | 704 | 1.0+ | 0.7+ | 2005 12 29 | 704 | 0.6+ | 0.1− | | |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2003 03 30 | 704 | 1.0+ | 0.2− | 2005 12 29 | 704 | 0.4+ | 0.1− | | |
| 2001 09 26 | 704 | 0.3− | 1.1+ | 2003 03 30 | 704 | 0.5+ | 0.8+ | 2005 12 30 | 691 | 0.3− | 0.1+ | | |
| 2001 09 26 | 704 | 0.8+ | 1.0− | 2003 03 30 | 704 | 0.6+ | 0.6+ | 2005 12 30 | 691 | 0.1+ | 0.1− | | |
| 2001 09 26 | 704 | 0.2− | 0.8+ | 2003 03 31 | 699 | 0.5− | 0.3+ | 2005 12 30 | 691 | 0.1− | 0.2+ | | |
| 2001 09 26 | 704 | 0.5− | 0.2+ | 2003 03 31 | 699 | 1.3− | 1.8+ | 2006 01 06 | 704 | 0.1+ | 0.1− | | |
| 2001 10 08 | 644 | 0.7− | 0.5+ | 2003 03 31 | 699 | 0.0 | 0.1+ | 2006 01 06 | 704 | 0.3+ | 0.2+ | | |
| 2001 10 08 | 644 | 0.2− | 0.7+ | 2003 03 31 | 699 | 0.0 | 1.3+ | 2006 01 06 | 704 | 0.1+ | 0.1+ | | |
| 2001 10 08 | 644 | 0.8− | 1.0+ | 2005 10 30 | G96 | 0.0 | 0.3− | 2006 01 06 | 704 | 0.2+ | 0.2+ | | |
| 2001 10 17 | 644 | 0.5− | 0.6+ | 2005 10 30 | G96 | 0.0 | 0.5− | 2006 01 06 | 704 | 0.1+ | 0.3− | | |
| 2001 10 17 | 644 | 0.9− | 0.1+ | 2005 10 30 | G96 | 0.2− | 0.8− | 2006 01 07 | 704 | 0.0 | 0.3+ | | |
| 2001 10 17 | 644 | 0.4− | 0.8+ | 2005 10 30 | G96 | 0.4− | 0.5− | 2006 01 07 | 704 | 0.6+ | 1.1+ | | |
| 2003 03 07 | 683 | 1.1− | 0.8+ | 2005 11 10 | G96 | 0.1+ | 0.3− | 2006 01 07 | 704 | 0.2+ | 1.2+ | | |
| 2003 03 07 | 683 | (2.1− | 0.1−) | 2005 11 10 | G96 | 0.1− | 0.1− | 2006 01 07 | 704 | 1.2+ | 0.8+ | | |

**(140310)∗ 2001 SN$_{318}$ = 2003 AU$_{46}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40689)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.48322 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20527002 | $\omega$ | 13.61457 | | +0.40699424 | −0.91260437 | |
| $a$ | 2.8461145 | $\Omega$ | 52.38335 | | +0.83339764 | +0.35359034 | |
| $e$ | 0.0555867 | $i$ | 2.81091 | | +0.37390381 | +0.20524895 | |
| $P$ | 4.80 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 25 | 691 | 0.3− | 0.3+ | 2003 01 05 | 704 | 0.3+ | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | |
| 1992 11 25 | 691 | 0.1− | 0.1+ | 2003 01 05 | 704 | (0.3− | 1.7+) | 2006 10 11 | 644 | 0.2− | 0.3+ | |
| 1992 11 25 | 691 | 0.2− | 0.0 | 2003 01 09 | 704 | (0.3− | 2.5+) | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 1994 03 05 | 691 | 0.4− | 1.4− | 2003 01 09 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 1994 03 05 | 691 | 0.0 | 0.0 | 2003 01 09 | 704 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.6− | 0.2− | |
| 1994 03 05 | 691 | 0.2+ | 0.2− | 2004 04 11 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2001 09 12 | 704 | 0.3− | 1.0− | 2004 04 11 | 644 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.1− | |
| 2001 09 12 | 704 | 0.5− | 0.2− | 2004 04 11 | 644 | 0.4+ | 0.9+ | 2006 10 21 | 291 | 0.3+ | 0.6+ | |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2004 04 20 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 291 | 0.1+ | 0.5+ | |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2004 04 20 | 691 | 0.2− | 0.5+ | 2006 10 21 | 291 | 0.1− | 0.5+ | |
| 2001 09 12 | 704 | 0.1+ | 0.5− | 2004 04 20 | 691 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− | |
| 2001 09 21 | 704 | 0.1+ | 1.1+ | 2004 05 09 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2− | |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2004 05 09 | 691 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.1− | |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2004 05 09 | 691 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.1− | 0.3− | |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− | |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1+ | |
| 2001 09 26 | 704 | 0.0 | 0.9+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2− | 0.2− | |
| 2001 09 26 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− | |
| 2001 09 26 | 704 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.4− | 0.5− | |
| 2001 09 26 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2− | |
| 2003 01 05 | 704 | 0.0 | 1.1+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.3− | |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.3− | |

**(140311)∗ 2001 SR$_{319}$ = 1996 RW$_8$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25395)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.01306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20629211 | $\omega$ | 332.52500 | | −0.71815468 | −0.69577929 | |
| $a$ | 2.8367059 | $\Omega$ | 163.36771 | | +0.64593360 | −0.67294460 | |
| $e$ | 0.0168833 | $i$ | 2.41138 | | +0.25888925 | −0.25107118 | |
| $P$ | 4.78 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.4− | 0.3+ | 2004 04 25 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.1− | |
| 1996 09 06 | 691 | 1.0− | 0.4+ | 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.0 | |
| 1996 09 06 | 691 | 0.1− | 0.3+ | 2004 05 10 | 691 | 0.4− | 1.1+ | 2006 10 11 | 691 | 0.1− | 0.1+ | |
| 1996 09 08 | 691 | 0.0 | 0.2+ | 2004 05 10 | 691 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.6+ | 0.1− | |
| 1996 09 08 | 691 | 0.6+ | 0.2+ | 2004 05 10 | 691 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | |
| 1996 09 08 | 691 | 0.1+ | 0.0 | 2004 05 24 | 691 | 0.3+ | 0.5+ | 2006 10 15 | 691 | 0.2− | 0.3− | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2004 05 24 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.1+ | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2004 05 24 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 1.2− | 0.6+ | |
| 2001 09 21 | 704 | 0.0 | 0.9+ | 2005 06 15 | G96 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.3+ | |
| 2001 09 21 | 704 | 0.9− | 0.4− | 2005 06 15 | G96 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.4+ | |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2005 06 15 | G96 | 1.0− | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.8− | |
| 2001 09 21 | 704 | 0.9− | 0.2+ | 2005 06 15 | G96 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.4+ | |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2005 07 06 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.8+ | |
| 2001 09 26 | 704 | 0.1− | 0.2+ | 2005 07 06 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2+ | |
| 2001 09 26 | 704 | 1.2+ | 0.4+ | 2005 07 06 | 691 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2+ | |
| 2001 09 26 | 704 | 0.9+ | 0.4+ | 2005 07 10 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1+ | |
| 2001 10 20 | 704 | 0.8+ | 1.2+ | 2005 07 10 | 691 | 0.4+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1− | |
| 2001 10 20 | 704 | 0.6+ | 0.2− | 2005 07 10 | 691 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.5+ | 0.0 | |
| 2001 10 20 | 704 | 0.0 | 1.4+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.0 | |
| 2001 10 20 | 704 | 0.4+ | 1.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1+ | |
| 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 | |
| 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 09 24 | 691 | 0.3− | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.0 | |
| 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.2− | |
| 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− | |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.2− | |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.3− | |
| 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.5− | 0.2+ | | | | | |

**(140312)∗ 2001 SY$_{319}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.43045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18602634 | $\omega$ | 89.74268 | | −0.06133605 | +0.99807015 | |
| $a$ | 3.0391567 | $\Omega$ | 176.69376 | | −0.96951424 | −0.05726838 | |
| $e$ | 0.0427837 | $i$ | 9.67122 | | −0.23723412 | −0.02400656 | |
| $P$ | 5.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 02 | 691 | 0.1− | 0.9− | 2004 01 29 | 291 | 0.2− | 0.5+ | 2005 08 29 | 291 | 0.4+ | 0.6+ | |
| 1995 08 02 | 691 | 0.1+ | 0.8− | 2004 01 29 | 291 | 0.3− | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.5+ | |
| 1995 08 02 | 691 | 0.1+ | 1.2− | 2004 03 15 | 599 | 0.5− | 0.2+ | 2006 08 19 | 691 | 0.4− | 0.7+ | |
| 2001 09 18 | 691 | 0.2− | 0.2+ | 2004 03 15 | 599 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.5+ | |
| 2001 09 18 | 691 | 0.1− | 0.3+ | 2004 03 15 | 599 | 0.6− | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.3− | |
| 2001 09 18 | 691 | 0.1− | 0.2+ | 2004 03 15 | 599 | 0.5+ | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.4− | |
| 2001 09 21 | 704 | 0.4− | 1.3+ | 2004 03 18 | 704 | 0.7+ | 1.0+ | 2006 08 28 | 703 | 1.2+ | 1.1+ | |
| 2001 09 21 | 704 | (0.3+ | 1.6+) | 2004 03 18 | 704 | 0.1+ | 0.1− | 2006 08 28 | 703 | (2.1+ | 1.4+) | |
| 2001 09 21 | 704 | 0.4+ | 1.2+ | 2004 03 18 | 704 | 1.1+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ | |
| 2001 09 21 | 704 | 0.0 | 1.2+ | 2004 03 27 | 704 | 1.0+ | 0.5+ | 2006 08 28 | 691 | 0.2− | 0.3+ | |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.0 | 0.7+ | 2006 08 28 | 691 | 0.1− | 0.4+ | |
| 2001 09 26 | 704 | 0.3− | 1.2+ | 2004 03 27 | 704 | 1.0+ | 0.8+ | 2006 09 19 | 699 | 0.3+ | 0.3+ | |
| 2001 09 26 | 704 | 0.4− | 0.9+ | 2004 03 27 | 704 | (1.7+ | 0.5+) | 2006 09 19 | 699 | (1.4+ | 2.4+) | |
| 2001 09 26 | 704 | 0.0 | 0.5− | 2004 03 28 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.7+ | |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.4+ | |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2004 03 28 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.0 | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 31 | 291 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.3− | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 31 | 291 | 0.4+ | 0.3+ | 2006 10 16 | G96 | 0.4− | 0.1+ | |
| 2001 10 20 | 704 | (0.3− | 2.0+) | 2004 03 31 | 291 | 0.3+ | 0.8+ | 2006 10 16 | G96 | 0.0 | 0.3+ | |
| 2001 10 20 | 704 | (0.3− | 1.9+) | 2005 07 11 | 691 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.1− | |
| 2001 10 20 | 704 | (0.0 | 2.0+) | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1+ | |
| 2001 10 20 | 704 | 0.9− | 1.3+ | 2005 07 11 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.5− | 0.2+ | |
| 2001 10 20 | 704 | 0.0 | 0.9+ | 2005 08 29 | 291 | 0.4+ | 0.8+ | 2006 10 20 | G96 | 0.3+ | 0.3+ | |
| 2004 01 29 | 291 | 0.2− | 0.6+ | 2005 08 29 | 291 | 0.8+ | 1.0+ | | | | | |

**(140313)∗ 2001 SD$_{320}$ = 2004 EZ$_{10}$**

Discovered 2001 Sept. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61092)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.80036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18745832 | $\omega$ | 187.88658 | | −0.90165113 | +0.42914510 | |
| $a$ | 3.0236596 | $\Omega$ | 17.82291 | | −0.38663199 | −0.74450780 | |
| $e$ | 0.0663197 | $i$ | 10.06213 | | −0.19375486 | −0.51141237 | |
| $P$ | 5.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2004 03 16 | 704 | 0.7+ | 0.4+ | 2004 04 15 | 704 | (1.7+ | 1.8+) | |
| 2001 09 19 | 704 | 0.2− | 1.2+ | 2004 03 16 | 333 | 1.0+ | 0.1+ | 2004 04 19 | 704 | 0.7+ | 0.5+ | |
| 2001 09 19 | 704 | 0.5− | 1.0+ | 2004 03 16 | 333 | 1.0+ | 0.2+ | 2004 04 19 | 704 | 0.5+ | 0.2+ | |
| 2001 09 19 | 704 | 0.3+ | 1.2+ | 2004 03 17 | 333 | 0.5+ | 0.5+ | 2004 04 19 | 704 | 0.2− | 0.8+ | |
| 2001 09 20 | 691 | 0.1− | 0.3+ | 2004 03 17 | 333 | 0.6− | 0.8+ | 2004 04 19 | 704 | 0.4+ | 0.4+ | |
| 2001 09 20 | 691 | 0.3− | 0.3+ | 2004 03 17 | 333 | 0.2+ | 0.5+ | 2004 04 22 | 704 | 0.2+ | 0.7+ | |
| 2001 09 20 | 691 | 0.2− | 0.2+ | 2004 03 19 | 704 | 1.1+ | 0.2+ | 2004 04 22 | 704 | 0.9− | 1.4+ | |
| 2001 09 21 | 704 | (1.0− | 1.5+) | 2004 03 19 | 704 | (1.8+ | 0.8−) | 2004 04 22 | 704 | 0.6− | 0.5+ | |
| 2001 09 21 | 704 | 0.4+ | 0.9+ | 2004 03 19 | 704 | (1.8+ | 0.2−) | 2006 08 24 | 644 | 0.1− | 0.6+ | |
| 2001 09 21 | 704 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.8+ | 0.1− | 2006 08 24 | 644 | 0.1− | 0.5+ | |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.9+ | 0.5+ | 2006 08 24 | 644 | 0.7− | 0.6+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.6+ | 0.3+ | 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.7− | 0.8+ |
| 2001 09 26 | 704 | 0.4− | 0.5+ | 2004 03 20 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.6− | 0.8+ |
| 2001 09 26 | 704 | 1.0− | 0.1+ | 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.7+ |
| 2001 10 11 | 644 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 1.2− | 0.6+ |
| 2001 10 11 | 644 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.5− | 1.2+ |
| 2001 10 11 | 644 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.5+ |
| 2001 10 12 | 699 | (0.2− | 1.6+) | 2004 03 22 | 704 | (1.3+ | 2.9+) | 2006 09 18 | 703 | 0.3− | 0.5+ |
| 2001 10 12 | 699 | 1.1+ | 0.5− | 2004 03 22 | 704 | 0.9+ | 0.6+ | 2006 09 18 | 703 | 0.9− | 0.4− |
| 2001 10 12 | 699 | (2.4+ | 1.1−) | 2004 03 22 | 704 | (0.9+ | 1.9+) | 2006 09 18 | 703 | 0.2− | 0.1+ |
| 2001 10 12 | 699 | (1.7+ | 0.2−) | 2004 03 22 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 0.2+ | 0.1+ |
| 2001 10 15 | 291 | 0.6− | 0.5− | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.3− |
| 2001 10 15 | 291 | 0.4− | 0.4+ | 2004 03 24 | 699 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.0 | 1.4+ |
| 2001 10 15 | 291 | 0.4− | 0.4+ | 2004 03 24 | 699 | 0.3+ | 0.1− | 2006 09 18 | 699 | (2.2+ | 1.3+) |
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2004 03 24 | 699 | 0.1− | 0.1+ | 2006 09 18 | 699 | (0.3− | 1.7+) |
| 2001 10 21 | 704 | 0.5− | 0.8+ | 2004 03 24 | 699 | 0.7− | 0.2− | 2006 09 18 | 699 | (0.9− | 1.9+) |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2004 03 28 | 704 | 0.1+ | 0.3− | 2006 09 19 | 703 | (1.8− | 1.2−) |
| 2001 10 21 | 704 | 0.4+ | 1.0+ | 2004 03 28 | 704 | 0.8+ | 0.3+ | 2006 09 19 | 703 | 1.4+ | 0.7− |
| 2001 10 21 | 704 | 0.2− | 0.4+ | 2004 03 28 | 704 | 0.4+ | 0.0 | 2006 09 19 | 703 | (0.6+ | 4.0−) |
| 2003 01 04 | 704 | 0.4+ | 0.3− | 2004 03 28 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.3+ |
| 2003 01 04 | 704 | 0.5+ | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.7− | 1.3+ |
| 2003 01 04 | 704 | 0.7+ | 0.9− | 2004 04 12 | 699 | 1.0− | 1.0+ | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 2003 01 04 | 704 | 0.5− | 0.8− | 2004 04 12 | 699 | 0.5+ | 0.9+ | 2006 09 26 | 704 | (0.6+ | 1.6+) |
| 2004 02 23 | 704 | 0.8+ | 0.2+ | 2004 04 12 | 699 | 0.2− | 0.9+ | 2006 09 26 | 704 | 0.2+ | 1.2+ |
| 2004 02 23 | 704 | 0.5+ | 0.6− | 2004 04 12 | 699 | 0.7+ | 0.6+ | 2006 10 16 | 703 | (0.9+ | 1.6−) |
| 2004 02 23 | 704 | 0.1+ | 0.9+ | 2004 04 15 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | (1.7+ | 2.5−) |
| 2004 02 23 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | (1.4+ | 1.7−) |
| 2004 02 23 | 704 | 0.9+ | 1.0+ | 2004 04 15 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 1.3− |
| 2004 03 15 | 333 | 0.1− | 0.8+ | 2004 04 15 | 699 | 0.5− | 1.5+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2004 03 15 | 333 | 0.2− | 0.3+ | 2004 04 15 | 699 | 1.4+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2004 03 15 | 333 | 0.5− | 0.4+ | 2004 04 15 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.8+ |
| 2004 03 16 | 704 | 1.0+ | 1.2+ | 2004 04 15 | 704 | 0.8+ | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.3+ |
| 2004 03 16 | 704 | 0.9+ | 1.5+ | 2004 04 15 | 699 | 0.7+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.2+ |
| 2004 03 16 | 704 | 0.9+ | 0.7+ | 2004 04 15 | 704 | 0.2+ | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2004 03 16 | 704 | 0.2+ | 0.6+ | 2004 04 15 | 699 | 0.6− | 0.8+ | 2006 10 20 | G96 | 0.5− | 0.0 |
| 2004 03 16 | 333 | 0.6+ | 0.3+ | 2004 04 15 | 704 | 0.6− | 0.2+ | | | | |

**(140314)∗ 2001 SV$_{320}$**

Discovered 2001 Sept. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.02279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18169040 | $\omega$ | 139.79913 | | −0.41899357 | −0.90509290 | |
| $a$ | 3.0873182 | $\Omega$ | 334.71993 | | +0.78341184 | −0.32000689 | |
| $e$ | 0.0774538 | $i$ | 9.76984 | | +0.45903190 | −0.28000432 | |
| $P$ | 5.42 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.7+ | 0.3− | 2003 01 04 | 704 | 0.2− | 0.0 | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2001 09 23 | 704 | 0.0 | 0.3+ | 2003 01 04 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.3+ |
| 2001 09 23 | 704 | 0.1− | 0.4− | 2003 01 04 | 704 | 1.1+ | 0.6+ | 2006 08 19 | 691 | 0.2− | 0.5+ |
| 2001 09 26 | 704 | 0.2− | 0.1+ | 2004 03 14 | 644 | 0.5+ | 0.9+ | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 2001 09 26 | 704 | 0.4+ | 0.2+ | 2004 03 14 | 644 | 0.8+ | 0.6+ | 2006 08 27 | 691 | 0.3− | 0.2+ |
| 2001 09 26 | 704 | 1.1+ | 0.5− | 2004 03 14 | 644 | 0.5+ | 0.8+ | 2006 08 27 | 691 | 0.3− | 0.3+ |
| 2001 09 28 | 644 | 0.2− | 0.1− | 2004 03 17 | 703 | (0.1− | 2.6+) | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2001 09 28 | 644 | 0.1− | 0.1+ | 2004 03 17 | 703 | 1.8+ | 0.1+ | 2006 08 28 | 703 | 1.4+ | 0.4− |
| 2001 09 28 | 644 | 0.2− | 0.1+ | 2004 03 17 | 703 | 1.3− | 0.8+ | 2006 08 28 | 703 | 0.5− | 0.5− |
| 2001 10 14 | 704 | 0.3− | 0.4+ | 2004 03 17 | 703 | (2.3+ | 1.1+) | 2006 08 28 | 703 | 1.2− | 0.8+ |
| 2001 10 14 | 704 | 1.5− | 0.0 | 2004 04 25 | 703 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.0 |
| 2001 10 14 | 704 | 0.5+ | 0.7− | 2004 04 25 | 703 | 0.5+ | 0.7+ | 2006 09 14 | 703 | 1.2− | 0.5+ |
| 2001 10 14 | 704 | 0.5+ | 0.2+ | 2004 04 25 | 703 | 1.0+ | 1.9+ | 2006 09 14 | 703 | 0.5− | 1.2− |
| 2002 12 05 | 704 | 0.0 | 0.9+ | 2004 04 25 | 703 | 0.2+ | 1.1+ | 2006 09 14 | 703 | 0.9+ | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.5+ | 1.0+ |
| 2002 12 05 | 704 | 1.6− | 0.0 | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 09 17 | 941 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.6+ | 1.0+ | 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 941 | 0.3+ | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.4+ | 2006 08 17 | 644 | 0.2+ | 0.3+ | 2006 09 17 | 941 | 0.1− | 0.1− |
| 2002 12 15 | 704 | 0.9− | 1.0+ | 2006 08 17 | 644 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2002 12 15 | 704 | 0.8+ | 1.4+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2002 12 15 | 704 | 0.8+ | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2003 01 04 | 704 | 0.4+ | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.0 |

**(140315)∗ 2001 SG$_{321}$ = 1997 WW$_{53}$**

Discovered 2001 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 27255)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.73986 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21599446 | $\omega$ | 327.98682 | | +0.59235972 | −0.79354609 | |
| $a$ | 2.7511080 | $\Omega$ | 85.31905 | | +0.76552491 | +0.50048310 | |
| $e$ | 0.1326914 | $i$ | 8.03225 | | +0.25116046 | +0.34612320 | |
| $P$ | 4.56 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | (3.3− | 1.7−) | 2003 01 05 | 699 | 0.6− | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 1997 11 29 | 704 | 1.4− | 0.5− | 2003 01 05 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 1997 11 29 | 704 | (2.8− | 0.9−) | 2003 01 05 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.2− |
| 1997 11 29 | 704 | (2.9− | 0.5−) | 2003 01 05 | 704 | 0.8− | 0.0 | 2006 11 02 | 703 | 0.1+ | 1.1− |
| 1997 12 04 | 704 | 1.1+ | 0.6− | 2003 01 05 | 704 | 1.4− | 0.0 | 2006 11 02 | 703 | 0.6+ | 0.1− |
| 1997 12 04 | 704 | 0.9+ | 0.0 | 2003 01 05 | 704 | 0.7− | 0.5+ | 2006 11 02 | 703 | 0.0 | 0.7− |
| 1997 12 04 | 704 | (1.2+ | 3.4−) | 2003 01 09 | 704 | 0.1+ | 0.8− | 2006 11 02 | 703 | 0.5+ | 0.8− |
| 1997 12 04 | 704 | (3.2− | 1.5−) | 2003 01 09 | 704 | 0.5+ | 0.2− | 2006 11 13 | 703 | 0.3− | 0.9+ |
| 1997 12 05 | 704 | 0.4+ | 1.3− | 2003 01 09 | 704 | 0.0 | 0.7− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 1997 12 05 | 704 | 0.2+ | 0.3− | 2003 01 09 | 704 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.3− |
| 1997 12 05 | 704 | 0.0 | 0.6− | 2003 01 09 | 704 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.4+ |
| 1997 12 05 | 704 | 0.7+ | 0.4+ | 2003 01 31 | 704 | 0.3− | 0.3− | 2006 11 13 | 644 | 0.1− | 0.1− |
| 1997 12 05 | 704 | 0.0 | 0.2+ | 2003 01 31 | 704 | 0.1+ | 0.7+ | 2006 11 13 | 703 | 0.3− | 0.0 |
| 2001 08 25 | 644 | 0.8− | 1.1+ | 2003 01 31 | 704 | 0.2− | 0.6+ | 2006 11 14 | 704 | 0.4− | 0.6+ |
| 2001 08 25 | 644 | 0.7− | 0.7+ | 2003 01 31 | 699 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.3+ | 1.0− |
| 2001 08 25 | 644 | 0.5− | 0.8+ | 2003 01 31 | 704 | 0.3+ | 0.7− | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 2001 09 12 | 704 | (2.1− | 1.0+) | 2003 01 31 | 704 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.3+ |
| 2001 09 12 | 704 | (2.1− | 1.4+) | 2003 01 31 | 699 | 0.5− | 0.0 | 2006 11 14 | 704 | 0.2− | 0.6− |
| 2001 09 12 | 704 | (2.3− | 1.8+) | 2003 01 31 | 699 | 0.3− | 0.1+ | 2006 11 17 | 704 | 1.2+ | 0.0 |
| 2001 09 25 | 704 | 0.1+ | 1.0− | 2003 01 31 | 699 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.6+ | 0.4+ |
| 2001 09 25 | 704 | 0.2− | 1.1− | 2003 02 02 | 644 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.8− | 2003 02 02 | 644 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.2− | 1.0− | 2003 02 02 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.8+ |
| 2001 09 26 | 704 | 0.1+ | 0.5+ | 2003 02 04 | 699 | 0.6− | 0.1+ | 2006 11 19 | 704 | (5.3+ | 0.4+) |
| 2001 09 26 | 704 | (2.1− | 1.0+) | 2003 02 04 | 699 | (1.6− | 0.4+) | 2006 11 19 | 704 | 0.6− | 0.5+ |
| 2001 09 26 | 704 | 0.2+ | 0.6+ | 2003 02 04 | 699 | 0.8+ | 0.5− | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2001 09 26 | 704 | 0.6− | 1.0+ | 2003 02 04 | 699 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2001 09 26 | 704 | 0.4+ | 0.7+ | 2003 02 04 | 704 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2001 10 15 | 644 | (1.7− | 2.0+) | 2003 02 04 | 704 | 1.2+ | 0.3− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2001 10 15 | 644 | (1.6− | 1.5+) | 2003 02 04 | 704 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2001 10 15 | 644 | (1.7− | 1.6+) | 2003 02 04 | 704 | 0.5+ | 0.5+ | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2001 10 23 | 644 | 0.5− | 1.4+ | 2003 02 04 | 704 | 0.8+ | 1.1+ | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2001 10 23 | 644 | 0.4− | 1.4+ | 2003 03 07 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2001 10 23 | 644 | 0.5− | 1.1+ | 2003 03 07 | 644 | 0.4− | 0.1− | 2006 11 25 | 704 | 0.5− | 0.3+ |
| 2002 12 12 | 704 | 0.8+ | 0.0 | 2003 03 07 | 644 | 0.2− | 0.1+ | 2006 11 25 | 704 | 0.2− | 0.4+ |
| 2002 12 12 | 704 | 0.1+ | 0.9− | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2006 11 25 | 704 | 0.6− | 0.8+ |
| 2002 12 12 | 704 | 0.5− | 0.2− | 2004 04 20 | 704 | 0.2+ | 0.0 | 2006 11 25 | 704 | 0.6− | 0.6+ |
| 2002 12 31 | 704 | 0.1− | 0.8+ | 2004 04 20 | 704 | 0.4+ | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.1+ |
| 2002 12 31 | 704 | 0.9+ | 0.3+ | 2004 04 20 | 704 | 0.7+ | 1.0+ | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2002 12 31 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 1.1− | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2003 01 05 | 699 | (2.5− | 0.6+) | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 11 28 | 704 | 0.4+ | 0.3− |
| 2003 01 05 | 699 | 0.5+ | 1.4+ | 2006 09 18 | 703 | 0.7+ | 0.8− | | | | |
| 2003 01 05 | 699 | 0.9− | 0.5− | 2006 10 16 | 703 | 0.0 | 0.2− | | | | |

**(140316)∗ 2001 SE$_{322}$**

Discovered 2001 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.51286 | | | (2000.0) | | |
| $n$ | 0.23515010 | $\omega$ | 309.49774 | | +0.39090200 | −0.91527594 |
| $a$ | 2.5995965 | $\Omega$ | 117.23493 | | +0.87450588 | +0.33634465 |
| $e$ | 0.1704556 | $i$ | 6.28200 | | +0.28711512 | +0.22168049 |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | (1.7− | 2.9−) | 2001 09 26 | 704 | 0.6− | 0.8+ | 2003 03 10 | 644 | 0.1+ | 0.7+ |
| 1997 10 30 | 704 | (1.1+ | 2.4−) | 2001 09 26 | 704 | 0.1− | 0.1− | 2003 03 10 | 644 | 0.1+ | 0.5+ |
| 1997 10 30 | 704 | 0.7+ | 1.8− | 2001 09 26 | 704 | 0.5− | 0.8+ | 2003 03 11 | 644 | 0.0 | 1.0+ |
| 1997 10 30 | 704 | (0.3+ | 2.3−) | 2001 09 26 | 704 | 0.4− | 0.4+ | 2003 03 11 | 644 | 0.4+ | 0.3+ |
| 1997 11 06 | 704 | 0.5− | 0.6− | 2001 10 11 | 704 | 0.3+ | 0.4− | 2003 03 11 | 644 | 0.1+ | 0.6+ |
| 1997 11 06 | 704 | 0.7+ | 0.0 | 2001 10 11 | 704 | 0.3− | 0.0 | 2003 03 26 | 691 | 0.0 | 0.1+ |
| 1997 11 06 | 704 | 0.1+ | 0.7+ | 2001 10 11 | 704 | 0.4− | 0.3+ | 2003 03 26 | 691 | 0.1+ | 0.1+ |
| 1997 11 06 | 704 | 1.0+ | 0.7− | 2001 10 11 | 704 | 0.1+ | 0.4− | 2003 03 26 | 691 | 0.4+ | 0.1+ |
| 2001 07 19 | 644 | 0.1+ | 1.3+ | 2001 10 11 | 704 | 0.8+ | 0.5− | 2005 07 29 | 644 | 0.4+ | 0.3+ |
| 2001 07 19 | 644 | 0.3+ | 0.7+ | 2001 10 16 | 644 | 0.3− | 0.6+ | 2005 07 29 | 644 | 0.3+ | 0.4+ |
| 2001 07 19 | 644 | 0.1− | 0.9+ | 2001 10 16 | 644 | 0.2− | 0.4+ | 2005 07 29 | 644 | 0.4+ | 0.5+ |
| 2001 08 25 | 704 | 0.7− | 0.0 | 2001 10 16 | 644 | 0.1− | 0.2+ | 2005 07 30 | 644 | 0.2+ | 0.6+ |
| 2001 08 25 | 704 | 0.1+ | 0.0 | 2001 10 20 | 704 | 0.4− | 0.4− | 2005 07 30 | 644 | 0.3+ | 0.6+ |
| 2001 08 25 | 704 | 0.8+ | 0.4− | 2001 10 20 | 704 | 0.6− | 0.5+ | 2005 07 30 | 644 | 0.3+ | 0.4+ |
| 2001 09 11 | 699 | (1.9+ | 1.1+) | 2001 10 20 | 704 | 0.5− | 1.0+ | 2005 09 26 | 703 | 1.0− | 0.6− |
| 2001 09 11 | 699 | 0.1+ | 0.2− | 2001 10 20 | 704 | 0.7+ | 0.3+ | 2005 09 26 | 703 | 0.5− | 0.0 |
| 2001 09 11 | 699 | 0.0 | 1.0− | 2001 10 24 | 644 | 0.4+ | 0.6+ | 2005 09 26 | 703 | 0.1− | 0.0 |
| 2001 09 11 | 699 | 0.1+ | 1.5+ | 2001 10 24 | 644 | 0.3+ | 0.6+ | 2005 09 26 | 703 | 0.3+ | 0.3+ |
| 2001 09 12 | 704 | (0.9− | 1.8+) | 2001 10 24 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.6+ | 0.0 |
| 2001 09 12 | 704 | (0.4− | 2.0+) | 2003 02 01 | 704 | 0.6− | 0.9+ | 2006 10 20 | 691 | 0.4+ | 0.0 |
| 2001 09 12 | 704 | (2.5− | 2.8+) | 2003 02 01 | 704 | 0.6+ | 1.2+ | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 1.3− | 0.5+ | 2003 02 01 | 704 | (1.1+ | 2.8+) | 2006 10 27 | G96 | 0.0 | 0.4+ |
| 2001 09 25 | 704 | 0.6− | 0.3− | 2003 02 28 | 704 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2003 02 28 | 704 | 0.6− | 0.4+ | 2006 10 27 | G96 | 0.9− | 0.5− |
| 2001 09 25 | 704 | 0.3− | 0.4+ | 2003 02 28 | 704 | 0.9+ | 0.5+ | 2006 10 27 | G96 | 0.6− | 0.5− |
| 2001 09 25 | 704 | 0.6− | 0.0 | 2003 02 28 | 704 | 0.2− | 1.2+ | 2006 10 27 | 691 | 0.3− | 0.4− |
| 2001 09 25 | 704 | 0.5− | 0.0 | 2003 02 28 | 704 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2001 09 26 | 704 | 0.6− | 0.1− | 2003 03 10 | 644 | 0.0 | 0.5+ | 2006 10 27 | 691 | 0.4− | 0.2+ |

**(140317)∗ 2001 SO$_{323}$**

Discovered 2001 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.96726 | | | (2000.0) | | |
| $n$ | 0.21505295 | $\omega$ | 343.00096 | | +0.38897809 | −0.91333489 |
| $a$ | 2.7591318 | $\Omega$ | 83.97486 | | +0.85869143 | +0.31208193 |
| $e$ | 0.0508530 | $i$ | 6.95843 | | +0.33368409 | +0.26158030 |
| $P$ | 4.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.5+ | 0.5+ | 2003 01 26 | 644 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.4− |
| 2001 09 25 | 704 | 0.8+ | 0.7+ | 2003 01 26 | 644 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.4− |
| 2001 09 25 | 704 | 0.1+ | 1.1+ | 2003 02 01 | 704 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2001 09 26 | 704 | 0.3− | 1.1+ | 2003 02 01 | 704 | 0.2+ | 0.6+ | 2006 11 10 | 644 | 0.3+ | 0.4− |
| 2001 09 26 | 704 | 0.3+ | 0.5+ | 2003 02 01 | 704 | 0.3− | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.9− |
| 2001 09 26 | 704 | 0.6+ | 0.3− | 2003 02 01 | 704 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.6+ | 0.7+ |
| 2001 09 26 | 704 | 0.7+ | 0.4− | 2003 02 01 | 704 | 0.6+ | 0.7+ | 2006 11 13 | 703 | 0.2+ | 0.3+ |
| 2001 10 08 | 644 | 1.2− | 1.0+ | 2004 04 20 | 704 | (2.0+ | 1.1+) | 2006 11 13 | 703 | (1.6− | 0.2+) |
| 2001 10 08 | 644 | 1.0− | 0.9+ | 2004 04 20 | 704 | 0.8+ | 0.9+ | 2006 11 13 | 703 | 0.5− | 1.1− |
| 2001 10 08 | 644 | 0.7− | 0.9+ | 2004 04 20 | 704 | 0.2+ | 1.1+ | 2006 11 14 | 704 | 0.5− | 0.3− |
| 2001 10 11 | 704 | 0.4− | 1.0− | 2004 04 20 | 704 | 0.7+ | 1.0+ | 2006 11 14 | 704 | 0.1+ | 0.4− |
| 2001 10 11 | 704 | 0.9− | 0.1− | 2004 04 20 | 704 | 0.6+ | 1.4+ | 2006 11 14 | 704 | 0.2− | 0.1+ |
| 2001 10 11 | 704 | 1.1− | 0.5+ | 2004 04 22 | 704 | (0.9+ | 1.6+) | 2006 11 14 | 704 | 0.8+ | 1.1− |
| 2001 10 11 | 704 | 0.8− | 0.3+ | 2004 04 22 | 704 | 1.1+ | 1.3+ | 2006 11 14 | 704 | 0.4− | 0.2+ |
| 2001 10 16 | 644 | 0.2+ | 0.1+ | 2004 04 22 | 704 | (2.1+ | 1.7+) | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 10 16 | 644 | 0.1− | 0.2+ | 2004 04 22 | 704 | 1.0+ | 1.1+ | 2006 11 16 | G96 | 0.5+ | 0.9− |
| 2001 10 16 | 644 | 0.3+ | 0.0 | 2004 04 22 | 704 | 1.0− | 0.7− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2005 08 12 | E12 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2001 10 24 | 644 | 0.3+ | 0.2+ | 2005 08 12 | E12 | 0.5− | 1.2+ | 2006 11 17 | 704 | 0.3+ | 0.7+ |
| 2001 10 24 | 644 | 0.0 | 0.3+ | 2005 08 12 | E12 | 0.5− | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2002 12 31 | 704 | 0.4+ | 0.0 | 2005 08 12 | E12 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2002 12 31 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.8+ | 1.2− | 2006 11 19 | 704 | 0.4+ | 0.8+ |
| 2002 12 31 | 704 | 0.7+ | 0.1− | 2006 10 16 | 703 | 0.8+ | 1.0− | 2006 11 19 | 704 | 0.2− | 1.2+ |
| 2003 01 05 | 704 | 0.4− | 1.1+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.5− | 0.2− |
| 2003 01 05 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.4− | 2006 11 19 | 704 | 0.4+ | 1.1+ |
| 2003 01 05 | 704 | 1.0− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.3− | 1.1+ |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.3+ | 1.0+ |
| 2003 01 05 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.6− | 2006 11 20 | 704 | 0.6− | 0.8+ |
| 2003 01 16 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.1− | 1.3+ |
| 2003 01 16 | 644 | 0.5+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2003 01 16 | 644 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 20 | 704 | 1.1+ | 1.3+ |
| 2003 01 25 | 699 | 0.4− | 0.3− | 2006 11 02 | 703 | 0.9− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.1− |
| 2003 01 25 | 699 | 1.4− | 0.9+ | 2006 11 02 | 703 | 1.4− | 0.4+ | 2006 11 28 | 704 | 0.4+ | 0.5+ |
| 2003 01 25 | 699 | 0.4− | 0.7+ | 2006 11 02 | 703 | 1.1− | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.3+ |
| 2003 01 25 | 699 | 0.2− | 0.7− | 2006 11 02 | 703 | 0.5+ | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.5+ |
| 2003 01 26 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.2+ |

**(140318)∗ 2001 SQ$_{323}$**

Discovered 2001 Sept. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.07430 | | | (2000.0) | | |
| $n$ | 0.20899909 | $\omega$ | 104.34134 | | +0.78586867 | +0.60496520 |
| $a$ | 2.8121585 | $\Omega$ | 218.66877 | | −0.61632031 | +0.74926930 |
| $e$ | 0.1688654 | $i$ | 11.83722 | | −0.05059356 | +0.26946730 |
| $P$ | 4.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.2− | 0.2+ | 2005 02 16 | 809 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2000 04 25 | 691 | 0.1− | 0.2+ | 2005 06 01 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.2− |
| 2000 04 25 | 691 | 0.1− | 0.2+ | 2005 06 01 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2000 05 01 | 691 | 0.0 | 0.2+ | 2005 06 01 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 05 01 | 691 | 0.5− | 0.3+ | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2000 05 01 | 691 | 0.1+ | 0.0 | 2005 06 10 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2000 05 04 | 691 | 0.4+ | 0.1+ | 2005 06 10 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.8+ | 0.1+ |
| 2000 05 04 | 691 | 0.2+ | 0.3− | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2000 05 04 | 691 | 0.3+ | 0.2− | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 09 10 | 704 | 0.9+ | 1.1+ | 2005 06 14 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2001 09 10 | 704 | 0.6+ | 0.9+ | 2005 06 28 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 09 10 | 704 | 0.3+ | 0.8+ | 2005 06 28 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2001 09 10 | 704 | 0.2+ | 0.3+ | 2005 06 28 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 1.4− | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2001 09 25 | 704 | 0.1− | 1.5− | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2001 09 25 | 704 | (0.4+ | 2.4−) | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.5+ | 0.9− |
| 2001 09 26 | 704 | 1.1+ | 0.7− | 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 25 | H55 | 0.8+ | 0.4+ |
| 2001 09 26 | 704 | 0.5− | 0.5− | 2006 10 16 | 691 | 0.5− | 0.1+ | 2006 11 25 | H55 | 0.0 | 0.6+ |
| 2001 09 26 | 704 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 25 | H55 | 0.1− | 0.5+ |
| 2001 09 26 | 704 | 1.0− | 0.8− | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 25 | H55 | 0.6− | 0.3+ |
| 2005 02 16 | 809 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | | | | |

**(140319)∗ 2001 ST$_{327}$**

Discovered 2001 Sept. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 262.47713 | | | (2000.0) | | |
| $n$ | 0.19316706 | $\omega$ | 305.42824 | | −0.20735336 | −0.97549116 |
| $a$ | 2.9637894 | $\Omega$ | 156.21574 | | +0.94627950 | −0.21909414 |
| $e$ | 0.0690901 | $i$ | 10.51978 | | +0.24811227 | +0.02036548 |
| $P$ | 5.10 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3− | 1.4− | 2001 10 24 | 644 | 1.0− | 0.2+ | 2004 05 09 | 703 | 0.9+ | 0.3+ |
| 2001 09 12 | 704 | 0.7− | 0.0 | 2001 10 24 | 644 | 0.4− | 0.3+ | 2006 08 29 | 691 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3+ | 0.9+ | 2002 12 14 | 704 | 0.7+ | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 12 | 704 | (0.2+ | 2.1−) | 2002 12 14 | 704 | 0.1+ | 0.6+ | 2006 08 29 | 691 | 0.0 | 0.1+ | | |
| 2001 09 18 | 699 | 0.7+ | 0.5+ | 2002 12 14 | 704 | 0.1− | 0.7+ | 2006 09 14 | 703 | (1.7− | 3.3+) | | |
| 2001 09 18 | 699 | 0.8+ | 0.2+ | 2002 12 14 | 704 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.8+ | | |
| 2001 09 18 | 699 | 0.0 | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 09 14 | 703 | 0.8− | 0.6+ | | |
| 2001 09 18 | 699 | 0.6+ | 0.7+ | 2004 03 23 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.9+ | | |
| 2001 09 19 | 704 | (2.3+ | 0.4−) | 2004 03 23 | 704 | 0.1+ | 1.0+ | 2006 09 16 | 704 | 0.9+ | 0.1− | | |
| 2001 09 19 | 704 | 0.3+ | 0.5+ | 2004 03 23 | 704 | 1.2+ | 0.3+ | 2006 09 16 | 704 | 0.3− | 0.7− | | |
| 2001 09 19 | 704 | 0.3+ | 0.3+ | 2004 04 15 | 644 | 0.3+ | 0.7+ | 2006 09 16 | 704 | 0.9− | 0.5+ | | |
| 2001 09 19 | 704 | 0.7+ | 0.5+ | 2004 04 15 | 644 | 0.2+ | 0.8+ | 2006 09 28 | 704 | 0.4− | 0.2− | | |
| 2001 09 21 | 704 | (0.4− | 2.3−) | 2004 04 15 | 644 | 0.3+ | 0.6+ | 2006 09 28 | 704 | 0.2− | 1.1− | | |
| 2001 09 21 | 704 | 0.4+ | 0.7− | 2004 04 25 | 699 | 0.7− | 0.3− | 2006 09 28 | 704 | 0.6− | 0.3− | | |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2004 04 25 | 699 | 0.8− | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.6− | | |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2004 04 25 | 699 | 1.8− | 0.5− | 2006 09 30 | 703 | 0.4+ | 1.0+ | | |
| 2001 10 16 | 644 | 1.1− | 0.4+ | 2004 04 25 | 699 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.3− | | |
| 2001 10 16 | 644 | 0.9− | 0.4+ | 2004 05 09 | 703 | (3.5+ | 0.6−) | 2006 09 30 | 703 | 0.2− | 1.1− | | |
| 2001 10 16 | 644 | 0.8− | 0.2+ | 2004 05 09 | 703 | 0.0 | 0.6+ | | | | | | |
| 2001 10 24 | 644 | 0.7− | 0.2+ | 2004 05 09 | 703 | 0.7+ | 1.0+ | | | | | | |

**(140320)∗ 2001 SX$_{327}$ = 2001 TT$_{239}$ = 2001 UJ$_{183}$**

Discovered 2001 Sept. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 354.23634 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.18417758 | $\omega$ | 287.43499 | | +0.96894084 | | +0.21290375 |
| *a* | 3.0594607 | $\Omega$ | 60.43308 | | −0.13339064 | | +0.87832696 |
| *e* | 0.0400399 | *i* | 8.31610 | | −0.20823203 | | +0.42803475 |
| *P* | 5.35 | *H* | 15.3 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.6− | 2004 03 27 | 691 | 0.1− | 0.1− | | |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.6+ | 2004 03 27 | 691 | 0.1− | 0.0 | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 08 14 | 644 | 0.2+ | 0.1+ | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.3− | 0.1− | 2006 08 14 | 644 | 0.3+ | 0.7+ | | |
| 2001 09 18 | 699 | 0.4− | 0.2− | 2004 03 15 | 704 | 0.6− | 0.5+ | 2006 08 14 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 18 | 699 | 0.6+ | 0.0 | 2004 03 15 | 704 | 0.5+ | 1.1+ | 2006 08 20 | 644 | 0.3− | 0.4+ | | |
| 2001 09 18 | 699 | 0.7− | 0.7+ | 2004 03 15 | 704 | 0.2− | 0.6− | 2006 08 20 | 644 | 0.3− | 0.4+ | | |
| 2001 09 18 | 699 | 0.1− | 0.0 | 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 08 20 | 644 | 0.5− | 0.5+ | | |
| 2001 09 21 | 704 | 0.7− | 0.1− | 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 08 28 | E12 | 0.6+ | 0.3− | | |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 691 | 0.1− | 0.3+ | 2006 08 28 | E12 | 0.0 | 0.5+ | | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2004 03 19 | 644 | 0.4+ | 1.3+ | 2006 08 28 | E12 | 0.0 | 0.1+ | | |
| 2001 09 21 | 704 | 0.3− | 0.8+ | 2004 03 19 | 644 | 0.1− | 1.0+ | 2006 08 28 | E12 | 0.0 | 1.3+ | | |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2004 03 19 | 644 | 0.3+ | 0.7+ | 2006 09 17 | 699 | 0.9− | 0.6+ | | |
| 2001 10 08 | 644 | 0.0 | 0.2+ | 2004 03 20 | 704 | (1.0+ | 2.4+) | 2006 09 17 | 699 | (0.8− | 1.6+) | | |
| 2001 10 08 | 644 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 1.2+ | 0.8− | 2006 09 17 | 699 | 0.6− | 0.8− | | |
| 2001 10 08 | 644 | 0.1+ | 0.3+ | 2004 03 20 | 704 | (2.0+ | 1.2+) | 2006 09 17 | 699 | 0.5− | 0.6− | | |
| 2001 10 11 | 704 | 1.0+ | 0.0 | 2004 03 22 | 704 | 1.0+ | 0.7+ | 2006 09 20 | 703 | 0.3− | 0.1+ | | |
| 2001 10 11 | 704 | 0.7+ | 0.7+ | 2004 03 22 | 704 | 0.9+ | 0.2+ | 2006 09 20 | 703 | 1.4− | 0.5+ | | |
| 2001 10 11 | 704 | (1.6+ | 1.1+) | 2004 03 22 | 704 | 0.9+ | 0.8+ | 2006 09 20 | 703 | 0.7− | 0.8+ | | |
| 2001 10 11 | 704 | (1.7+ | 1.0+) | 2004 03 22 | 704 | 0.3+ | 0.3− | 2006 09 20 | 703 | (1.8− | 0.1+) | | |
| 2001 10 16 | 644 | 0.4− | 1.0+ | 2004 03 22 | 704 | 0.9+ | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.3− | | |
| 2001 10 16 | 644 | 0.5− | 0.7+ | 2004 03 23 | 704 | 0.7− | 0.5+ | 2006 09 26 | 703 | 0.8+ | 0.3− | | |
| 2001 10 16 | 644 | 0.5− | 0.9+ | 2004 03 23 | 704 | 0.8+ | 0.0 | 2006 09 26 | 703 | 1.0+ | 0.9+ | | |
| 2001 10 19 | 699 | 0.1− | 0.7+ | 2004 03 23 | 704 | 0.3+ | 0.6− | 2006 09 26 | 703 | 1.3− | 0.9+ | | |
| 2001 10 19 | 699 | 1.1− | 1.5+ | 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 10 11 | E12 | 0.3− | 0.5− | | |
| 2001 10 19 | 699 | 0.5− | 1.3+ | 2004 03 23 | 704 | 0.1− | 0.8− | 2006 10 11 | E12 | 0.2− | 0.2+ | | |
| 2001 10 19 | 699 | 0.2+ | 0.9+ | 2004 03 23 | 704 | 0.8− | 0.1+ | 2006 10 11 | E12 | 0.6− | 0.8+ | | |
| 2002 12 11 | 704 | 1.1+ | 0.4− | 2004 03 23 | 704 | 0.8+ | 0.3− | 2006 10 11 | E12 | 0.1− | 0.2− | | |
| 2002 12 11 | 704 | 0.6− | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.5+ | | |
| 2002 12 11 | 704 | 0.2+ | 1.0+ | 2004 03 23 | 704 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2003 01 05 | 704 | 1.0− | 0.2+ | 2004 03 23 | 704 | 0.8+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.7+ | | |
| 2003 01 05 | 704 | 0.1− | 0.4+ | 2004 03 27 | 691 | 0.1+ | 0.0 | | | | | | |

**(140321)∗ 2001 SD$_{330}$ = 2004 EF$_{41}$**

Discovered 2001 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61095)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 232.47612 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.19100965 | $\omega$ | 303.15180 | | −0.44340120 | | −0.89596349 |
| *a* | 2.9860645 | $\Omega$ | 173.02570 | | +0.87616334 | | −0.43922905 |
| *e* | 0.0623261 | *i* | 12.07105 | | +0.18903220 | | −0.06578189 |
| *P* | 5.16 | *H* | 15.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 691 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.4− | 0.2− | 2004 04 12 | 699 | 1.1+ | 0.9+ | | |
| 2001 08 26 | 691 | 0.3+ | 0.1+ | 2004 03 16 | 704 | 0.2− | 1.0− | 2004 04 12 | 699 | 0.3+ | 0.5+ | | |
| 2001 08 26 | 691 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.1− | 0.9+ | 2004 04 12 | 699 | 0.3+ | 0.7− | | |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2004 03 19 | 704 | 0.2+ | 1.2+ | 2004 04 12 | 699 | 0.2− | 0.5− | | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2004 03 19 | 704 | 0.1− | 0.8+ | 2004 04 19 | 704 | 0.4+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.4− | 0.8+ | 2004 03 19 | 704 | 0.1+ | 0.9+ | 2004 04 19 | 704 | 0.1+ | 0.6+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.8+ | 2004 03 19 | 704 | 0.1+ | 0.9+ | 2004 04 19 | 704 | 0.6+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.6− | 1.3+ | 2004 03 21 | 699 | 0.6− | 0.1+ | 2004 04 19 | 704 | 0.1− | 0.9+ | | |
| 2001 09 20 | 704 | 1.0− | 0.9+ | 2004 03 21 | 699 | 0.5+ | 0.3− | 2006 08 28 | 703 | 0.6− | 0.7+ | | |
| 2001 09 20 | 704 | 0.3+ | 1.2+ | 2004 03 21 | 699 | 0.3− | 1.1− | 2006 08 28 | 703 | 1.0+ | 0.6− | | |
| 2001 09 20 | 704 | (0.4− | 2.0+) | 2004 03 21 | 699 | 0.2− | 0.9+ | 2006 08 28 | 703 | 0.2+ | 0.9− | | |
| 2001 09 20 | 704 | 1.4+ | 1.1+ | 2004 03 22 | 704 | (4.8+ | 1.3−) | 2006 08 28 | 703 | 0.8− | 1.2+ | | |
| 2001 09 21 | 704 | (1.9− | 1.7−) | 2004 03 22 | 704 | 0.6− | 0.2− | 2006 08 29 | 691 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 0.8− | 0.9+ | 2004 03 22 | 704 | (1.6+ | 0.3+) | 2006 08 29 | 691 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 1.0− | 1.0− | 2004 03 22 | 704 | 0.5− | 1.1+ | 2006 08 29 | 691 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | 0.8− | 0.6− | 2004 03 22 | 704 | 0.4− | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.0 | | |
| 2001 09 21 | 704 | (1.9− | 0.5+) | 2004 03 22 | 704 | 0.6− | 1.1− | 2006 09 27 | G96 | 0.2+ | 0.3+ | | |
| 2003 01 02 | 704 | 0.1− | 0.1+ | 2004 03 22 | 704 | (2.6+ | 0.1+) | 2006 09 27 | G96 | 0.1+ | 0.1+ | | |
| 2003 01 02 | 704 | 1.2+ | 0.3+ | 2004 03 22 | 704 | (3.1+ | 0.9+) | 2006 09 27 | G96 | 0.3+ | 0.0 | | |
| 2003 01 02 | 704 | 0.3− | 0.4+ | 2004 03 28 | 704 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.5+ | 0.1− | | |
| 2003 01 02 | 704 | 0.8− | 0.8+ | 2004 03 28 | 704 | 0.3+ | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2004 03 15 | 703 | (0.7+ | 1.6+) | 2004 03 28 | 704 | 0.7+ | 0.7− | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2004 03 15 | 703 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 1.2+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 2004 03 15 | 703 | 0.3− | 0.8+ | 2004 03 28 | 704 | 0.8− | 0.8− | 2006 11 16 | G96 | 0.6+ | 0.8− | | |
| 2004 03 15 | 703 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− | | |
| 2004 03 16 | 704 | 0.8+ | 0.5− | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.6− | | |
| 2004 03 16 | 704 | 0.1− | 1.1+ | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.0 | | |

**(140322)∗ 2001 SD$_{334}$ = 1999 FK$_{87}$**

Discovered 2001 Sept. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 72409)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 137.38297 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.20032526 | $\omega$ | 267.39299 | | −0.55779230 | | +0.82995647 |
| *a* | 2.8927589 | $\Omega$ | 328.70110 | | −0.75657239 | | −0.51157679 |
| *e* | 0.0644299 | *i* | 0.69762 | | −0.34127110 | | −0.22239930 |
| *P* | 4.92 | *H* | 16.2 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2002 12 04 | 695 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.3+ | | |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2004 03 24 | 699 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.2+ | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 03 24 | 699 | (1.2− | 2.3+) | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 03 24 | 699 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2− | | |
| 2001 09 12 | 695 | 0.2+ | 0.2+ | 2004 03 24 | 699 | 0.5+ | 1.1− | 2006 09 26 | 691 | 0.1− | 0.1− | | |
| 2001 09 12 | 695 | 0.3+ | 0.3+ | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.4− | | |
| 2001 09 19 | 691 | 0.0 | 0.1+ | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.4− | | |
| 2001 09 19 | 691 | 0.2+ | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.1− | | |
| 2001 09 19 | 691 | 0.4+ | 0.1+ | 2005 06 08 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2001 09 20 | 691 | 0.3+ | 0.3− | 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.3+ | | |
| 2001 09 20 | 691 | 0.2+ | 0.2− | 2005 06 08 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 20 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.6− | 0.6− | 2006 10 27 | 691 | 0.1+ | 0.4+ | | |
| 2001 10 15 | 291 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.9− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.5+ | | |
| 2001 10 15 | 291 | 1.1− | 0.1+ | 2006 07 21 | G96 | 0.9+ | 0.1− | 2006 10 31 | 691 | 0.7+ | 0.6− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 291 | 0.9− | 1.0+ | 2006 07 21 | G96 | 0.4+ | 0.5− | 2006 10 31 | 691 | 0.1− | 0.2− | | |
| 2002 12 04 | 695 | 0.5+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1− | | | | | | |

**(140323)∗ 2001 SD$_{337}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.84740 | | (2000.0) | | | |
| $n$ | 0.21805717 | $\omega$ | 75.47902 | | +0.45234631 | +0.88939252 |
| $a$ | 2.7337312 | $\Omega$ | 221.62030 | | −0.85176535 | +0.40887768 |
| $e$ | 0.1176607 | $i$ | 5.70793 | | −0.26434562 | +0.20445046 |
| $P$ | 4.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.2+ | 0.3+ | 2001 10 18 | 644 | 0.9− | 0.5− | 2005 07 30 | E12 | 0.0 | 0.2+ | |
| 2000 05 07 | 704 | 0.6− | 0.7+ | 2001 10 20 | 691 | 0.3+ | 0.1+ | 2005 07 30 | E12 | 0.1− | 0.6+ | |
| 2000 05 07 | 704 | 0.7− | 0.3+ | 2001 10 20 | 691 | 0.2+ | 0.1− | 2005 07 30 | E12 | 0.3+ | 0.1+ | |
| 2000 05 28 | 704 | 0.1− | 0.8+ | 2001 10 20 | 691 | 0.4+ | 0.0 | 2005 07 30 | E12 | 0.9− | 0.7− | |
| 2000 05 28 | 704 | 0.2+ | 0.5+ | 2001 10 21 | 704 | 0.6− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.0 | |
| 2000 05 28 | 704 | 0.2+ | 0.0 | 2001 10 21 | 704 | 0.8+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.5− | |
| 2000 05 28 | 704 | 0.6+ | 0.2− | 2001 10 21 | 704 | 0.7− | 0.6+ | 2006 11 11 | G96 | 0.8− | 0.3− | |
| 2001 09 20 | 704 | 0.9− | 0.2+ | 2001 10 21 | 704 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− | |
| 2001 09 20 | 704 | 0.3+ | 0.3+ | 2001 10 21 | 704 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.1− | 0.2+ | |
| 2001 09 20 | 704 | 0.4− | 0.2− | 2004 04 25 | 691 | 0.4+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.5+ | |
| 2001 09 21 | 333 | 0.8+ | 0.6− | 2004 04 25 | 691 | 0.1+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.4+ | |
| 2001 09 21 | 333 | 0.5+ | 0.4− | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.3+ | |
| 2001 09 21 | 333 | 0.2+ | 0.2+ | 2005 07 05 | 644 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1+ | |
| 2001 10 11 | 691 | 0.0 | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.1+ | |
| 2001 10 11 | 691 | 0.1− | 0.3+ | 2005 07 05 | 644 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.0 | |
| 2001 10 11 | 691 | 0.1− | 0.0 | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.0 | |
| 2001 10 18 | 644 | 0.8− | 0.7− | 2005 07 06 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.6+ | |
| 2001 10 18 | 644 | 0.7− | 0.6− | 2005 07 06 | 691 | 0.1+ | 0.4+ | | | | | |

**(140324)∗ 2001 SK$_{337}$ = 2001 UP$_{187}$ = 2005 SB$_{148}$**

Discovered 2001 Sept. 20 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 34060), G. V. Williams (*MPO* 84983)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.55790 | | (2000.0) | | | |
| $n$ | 0.25234253 | $\omega$ | 295.91978 | | −0.17170239 | −0.98509464 |
| $a$ | 2.4801374 | $\Omega$ | 163.95692 | | +0.91670977 | −0.16360755 |
| $e$ | 0.1913410 | $i$ | 2.14337 | | +0.36077899 | −0.05311414 |
| $P$ | 3.91 | $H$ | 17.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 08 | 691 | 0.2+ | 0.1+ | 2001 10 18 | 691 | 0.2+ | 0.4+ | 2005 10 10 | 691 | 0.2+ | 0.3+ | |
| 1995 03 08 | 691 | 0.2+ | 0.3+ | 2001 10 18 | 691 | 0.3− | 0.3+ | 2005 10 10 | 691 | 0.2− | 0.4+ | |
| 1995 03 08 | 691 | 0.1− | 0.1− | 2001 10 18 | 691 | 0.2+ | 0.1+ | 2005 10 10 | 691 | 0.2− | 0.5+ | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 11 12 | 645 | 0.2− | 0.2− | 2005 10 12 | 291 | 0.2− | 0.1− | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 11 12 | 645 | 0.1− | 0.2− | 2005 10 12 | 291 | 0.1− | 0.2+ | |
| 1999 03 25 | 691 | 0.1+ | 0.0 | 2003 03 27 | 691 | 0.2− | 0.5+ | 2005 10 12 | 291 | 0.0 | 0.0 | |
| 1999 03 25 | 691 | 0.0 | 0.4− | 2003 03 27 | 691 | 0.7+ | 0.3+ | 2005 10 22 | 691 | 0.0 | 0.2+ | |
| 1999 03 25 | 691 | 0.5− | 0.7− | 2003 03 27 | 691 | 0.0 | 0.7+ | 2005 10 22 | 691 | 0.1+ | 0.3+ | |
| 2001 09 20 | 291 | 0.2− | 0.6+ | 2003 04 30 | 691 | 0.6+ | 0.8+ | 2005 10 22 | 691 | 0.3+ | 0.3+ | |
| 2001 09 20 | 291 | 0.3+ | 0.6+ | 2003 04 30 | 691 | 0.0 | 1.2+ | 2005 10 29 | G96 | 0.1− | 0.8− | |
| 2001 09 20 | 291 | 1.0+ | 1.1+ | 2003 04 30 | 691 | 0.5+ | 1.0+ | 2005 10 29 | G96 | 0.4+ | 0.4− | |
| 2001 09 20 | 649 | (2.3− | 0.5+) | 2005 09 25 | 691 | 0.1− | 0.2+ | 2005 10 29 | G96 | 0.3+ | 0.2− | |
| 2001 09 20 | 649 | 0.4− | 0.1− | 2005 09 25 | 691 | 0.3− | 0.3+ | 2005 10 29 | G96 | 0.3+ | 0.1+ | |
| 2001 09 20 | 649 | 0.6+ | 0.3+ | 2005 09 25 | 691 | 0.3− | 0.1− | 2005 10 30 | 691 | 0.2+ | 0.3+ | |
| 2001 09 20 | 649 | 0.5+ | 1.5+ | 2005 10 01 | G96 | 0.2+ | 0.2− | 2005 10 30 | 691 | 0.4− | 0.1− | |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2005 10 01 | G96 | 0.4+ | 0.0 | 2005 10 30 | 691 | 0.0 | 0.0 | |
| 2001 09 21 | 704 | 0.8− | 0.2+ | 2005 10 01 | 691 | 0.1− | 0.3+ | 2005 12 01 | G96 | 0.1− | 0.1+ | |
| 2001 09 21 | 704 | 1.1+ | 0.8+ | 2005 10 01 | G96 | 0.0 | 0.1− | 2005 12 01 | G96 | 0.0 | 0.1− | |
| 2001 10 17 | 644 | 1.0− | 0.3− | 2005 10 01 | G96 | 0.1+ | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.0 | |
| 2001 10 17 | 644 | 1.1− | 1.1− | 2005 10 01 | 691 | 0.1− | 0.2+ | 2005 12 01 | G96 | 0.0 | 0.0 | |
| 2001 10 17 | 644 | 1.4− | 0.8− | 2005 10 01 | 691 | 0.2− | 0.0 | | | | | |

**(140325)∗ 2001 SC$_{339}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.75680 | | (2000.0) | | | |
| $n$ | 0.21567263 | $\omega$ | 83.11552 | | +0.96756861 | −0.18374076 |
| $a$ | 2.7538442 | $\Omega$ | 287.36131 | | +0.09058718 | +0.89298046 |
| $e$ | 0.1079877 | $i$ | 10.46441 | | +0.23580703 | +0.41088347 |
| $P$ | 4.57 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 13 | 691 | 0.8+ | 0.1− | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 20 | 704 | 0.0 | 0.5− | |
| 1994 01 13 | 691 | 0.1+ | 1.4+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2006 10 20 | 704 | 0.5+ | 0.9+ | |
| 1994 01 13 | 691 | 0.3− | 0.1+ | 2002 12 11 | 704 | 0.4− | 0.7+ | 2006 10 20 | 704 | 0.2+ | 0.3− | |
| 2001 07 25 | 608 | 0.1+ | 1.0+ | 2002 12 11 | 704 | 0.6− | 0.9+ | 2006 10 20 | 704 | (0.3− | 1.8+) | |
| 2001 07 25 | 608 | 0.5+ | 0.6+ | 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 10 20 | 704 | 0.1− | 0.0 | |
| 2001 07 25 | 608 | 0.4+ | 0.5+ | 2002 12 14 | 704 | (1.8+ | 1.3−) | 2006 10 22 | 644 | 0.1+ | 0.1− | |
| 2001 08 25 | 704 | 0.7+ | 0.4+ | 2002 12 14 | 704 | 0.6+ | 0.6− | 2006 10 22 | 644 | 0.1− | 0.1+ | |
| 2001 08 25 | 704 | 0.2+ | 0.5+ | 2002 12 14 | 704 | 0.1− | 1.4− | 2006 10 22 | 644 | 0.3+ | 0.1+ | |
| 2001 08 25 | 704 | 0.3− | 0.7+ | 2002 12 14 | 704 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.0 | 0.2+ | |
| 2001 08 25 | 704 | 0.2− | 0.9+ | 2002 12 14 | 704 | 1.3+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.0 | |
| 2001 08 25 | 704 | 0.2− | 0.5+ | 2002 12 31 | 704 | 0.7− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2001 09 06 | 644 | 0.8− | 0.3+ | 2002 12 31 | 704 | 0.8− | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.1− | |
| 2001 09 06 | 644 | 0.6− | 0.7+ | 2002 12 31 | 704 | 0.6− | 0.4+ | 2006 10 27 | 703 | 0.7+ | 0.1− | |
| 2001 09 06 | 644 | 0.6− | 0.2+ | 2002 12 31 | 704 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.4+ | 1.1− | |
| 2001 09 17 | 644 | 0.5− | 0.2− | 2003 01 08 | 704 | 0.2+ | 0.6− | 2006 10 27 | 703 | 0.3+ | 0.6+ | |
| 2001 09 17 | 644 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.8− | 2006 11 15 | 703 | 0.2+ | 1.2− | |
| 2001 09 17 | 644 | 0.7− | 0.1− | 2003 01 08 | 704 | 0.5+ | 0.4− | 2006 11 15 | 703 | 0.5+ | 0.8− | |
| 2001 09 21 | 699 | 0.1+ | 0.5+ | 2003 01 08 | 704 | 0.4− | 0.2+ | 2006 11 15 | 703 | 1.2+ | 0.2− | |
| 2001 09 21 | 699 | 0.3+ | 0.1+ | 2003 01 08 | 704 | 0.1+ | 0.7− | 2006 11 15 | 703 | 1.3+ | 0.4+ | |
| 2001 09 21 | 699 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.0 | 0.3− | |
| 2001 09 21 | 699 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.8− | 2006 11 16 | 704 | 0.2+ | 0.2− | |
| 2001 09 25 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.5− | 0.2− | |
| 2001 09 25 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.8− | 0.5+ | |
| 2001 09 25 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.3− | 2006 11 22 | 703 | 0.5− | 0.3+ | |
| 2001 09 25 | 704 | 0.2− | 0.5− | 2006 10 19 | 703 | 0.1+ | 0.2− | 2006 11 22 | 703 | 0.2− | 0.5+ | |
| 2001 09 25 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.1+ | 2006 11 22 | 703 | 1.0− | 0.5+ | |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.6− | 0.2− | 2006 11 22 | 703 | 2.1− | 0.4− | |

**(140326)∗ 2001 SV$_{339}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 225.59200 | | (2000.0) | | | |
| $n$ | 0.20006183 | $\omega$ | 195.51675 | | −0.83473609 | −0.53213937 |
| $a$ | 2.8952977 | $\Omega$ | 311.44906 | | +0.52317958 | −0.68623932 |
| $e$ | 0.0204535 | $i$ | 10.88748 | | +0.17175212 | −0.49588636 |
| $P$ | 4.93 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 644 | 0.2− | 0.4+ | 2003 01 04 | 704 | 0.1+ | 0.6+ | 2004 04 17 | 644 | 0.2− | 0.4+ | |
| 2001 07 27 | 644 | 0.3− | 0.3+ | 2003 01 04 | 704 | 0.0 | 0.6+ | 2006 09 16 | 703 | 0.2− | 0.4+ | |
| 2001 07 27 | 644 | 0.2− | 0.9+ | 2003 01 04 | 704 | 0.0 | 0.8+ | 2006 09 16 | 703 | 0.0 | 0.6+ | |
| 2001 09 21 | 699 | 1.1− | 1.0+ | 2003 01 05 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.2− | 0.7− | |
| 2001 09 21 | 699 | 0.3− | 0.0 | 2003 01 05 | 704 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.2− | |
| 2001 09 21 | 699 | 1.0− | 0.3+ | 2003 01 05 | 704 | 0.1+ | 0.8+ | 2006 09 25 | 703 | 0.2+ | 0.6+ | |
| 2001 09 21 | 699 | 0.6+ | 0.4+ | 2003 01 05 | 704 | 0.4− | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.9+ | |
| 2001 09 25 | 704 | 0.1− | 0.1+ | 2003 01 07 | 704 | 1.4+ | 0.5− | 2006 09 25 | 703 | (1.6− | 0.4+) | |
| 2001 09 25 | 704 | 0.0 | 0.5− | 2003 01 07 | 704 | 0.0 | 1.0− | 2006 09 25 | 703 | 0.0 | 0.5+ | |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2003 01 07 | 704 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.5+ | 1.1+ | |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2003 01 07 | 704 | 0.2+ | 0.6− | 2006 09 28 | 703 | 0.8+ | 0.7+ | |
| 2001 09 25 | 704 | 0.5+ | 0.5+ | 2003 01 07 | 704 | 0.5− | 0.3− | 2006 09 28 | 703 | 0.3− | 0.6+ | |
| 2001 09 29 | 644 | 0.7+ | 0.0 | 2003 01 09 | 704 | (1.2− | 1.9−) | 2006 09 28 | 703 | 1.1− | 0.1− | |
| 2001 09 29 | 644 | 0.6+ | 0.3− | 2003 01 09 | 704 | 1.1− | 1.0− | 2006 10 12 | 644 | 0.2− | 0.2− | |
| 2001 09 29 | 644 | 0.4+ | 0.2− | 2003 01 09 | 704 | (2.3− | 1.8−) | 2006 10 12 | 644 | 0.1− | 0.0 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.4− | 0.1+ | 2003 01 09 | 704 | 0.5− | 0.7− | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 2001 10 13 | 644 | 0.5− | 0.4+ | 2004 03 26 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.3− | | |
| 2001 10 13 | 644 | 0.4− | 0.0 | 2004 03 26 | 704 | 0.6+ | 1.0+ | 2006 10 19 | 703 | 0.5− | 0.4− | | |
| 2001 10 26 | 644 | 0.1+ | 0.3− | 2004 03 26 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.7− | | |
| 2001 10 26 | 644 | 0.0 | 0.4+ | 2004 03 26 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.7+ | 0.8− | | |
| 2001 10 26 | 644 | 0.0 | 0.2− | 2004 04 17 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.8+ | 0.9+ | 2004 04 17 | 704 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2004 04 17 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2004 04 17 | 704 | 0.2+ | 0.1+ | | | | | | |
| 2003 01 04 | 704 | 0.0 | 0.9+ | 2004 04 17 | 644 | 0.1+ | 0.8+ | | | | | | |

**(140327)∗ 2001 SY$_{339}$ = 2005 JO$_{42}$**

Discovered 2001 Sept. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 75149)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.64084 | | (2000.0) | | | |
| $n$ | 0.18621362 | $\omega$ | 74.01866 | | +0.53254692 | +0.83614504 |
| $a$ | 3.0371186 | $\Omega$ | 228.91285 | | −0.82783694 | +0.48223013 |
| $e$ | 0.1221368 | $i$ | 10.03695 | | −0.17629458 | +0.26137246 |
| $P$ | 5.29 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.0 | 1.1+ | 2004 04 01 | 291 | 0.5+ | 0.7+ | 2006 08 27 | 699 | 0.4+ | 0.6− | | |
| 2001 08 27 | 644 | 0.0 | 0.9+ | 2005 05 08 | 699 | 0.6− | 1.2+ | 2006 08 27 | 699 | 0.4+ | 0.2+ | | |
| 2001 08 27 | 644 | 0.1+ | 1.0+ | 2005 05 08 | 699 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.7+ | 0.7+ | | |
| 2001 09 10 | 704 | 0.3− | 0.4+ | 2005 05 08 | 699 | 0.7+ | 0.0 | 2006 08 27 | 699 | 0.2− | 0.1+ | | |
| 2001 09 10 | 704 | 0.4− | 0.4+ | 2005 05 08 | 699 | 0.2+ | 0.2+ | 2006 09 11 | 703 | 1.7− | 1.6+ | | |
| 2001 09 10 | 704 | 1.1− | 0.1− | 2005 05 09 | 699 | 0.2+ | 0.0 | 2006 09 11 | 703 | 1.3− | 1.0− | | |
| 2001 09 10 | 704 | 0.5− | 0.2+ | 2005 05 09 | 699 | 0.1− | 1.3+ | 2006 09 11 | 703 | 1.2− | 0.2+ | | |
| 2001 09 10 | 704 | 0.8+ | 0.2− | 2005 05 09 | G96 | 0.5− | 0.1− | 2006 09 11 | 703 | 0.8− | 0.2+ | | |
| 2001 09 21 | 699 | 0.7+ | 0.2+ | 2005 05 09 | G96 | 0.7− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 21 | 699 | 0.5− | 1.0+ | 2005 05 09 | G96 | 0.7− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | | |
| 2001 09 21 | 699 | 0.9+ | 0.4+ | 2005 05 09 | 699 | 1.0− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 699 | 0.6− | 0.2− | 2005 05 09 | G96 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.6− | 0.6− | | |
| 2001 09 25 | 704 | 0.3+ | 0.2+ | 2005 05 09 | 699 | 0.6+ | 1.0+ | 2006 09 19 | 699 | 0.7+ | 1.5− | | |
| 2001 09 25 | 704 | 0.4+ | 0.6+ | 2005 05 11 | 691 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.9− | | |
| 2001 09 25 | 704 | 0.0 | 0.4+ | 2005 05 11 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.7+ | | |
| 2001 09 25 | 704 | 0.1− | 0.8+ | 2005 05 11 | 691 | 0.4+ | 0.0 | 2006 09 20 | 691 | 0.0 | 0.1+ | | |
| 2001 09 25 | 704 | 0.4− | 0.7+ | 2005 05 13 | G96 | (2.2+ | 1.7−) | 2006 09 20 | 691 | 0.0 | 0.0 | | |
| 2001 10 14 | 704 | 0.3+ | 0.1− | 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 09 20 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.9− | 0.7+ | 2005 05 13 | G96 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.8− | 0.1+ | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1− | | |
| 2001 10 14 | 704 | 0.2+ | 0.5+ | 2005 06 13 | G96 | 0.2− | 0.3+ | 2006 09 29 | 699 | 1.3− | 1.1− | | |
| 2004 02 19 | 704 | 1.0+ | 0.6+ | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.7− | | |
| 2004 02 19 | 704 | 0.0 | 0.4+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 09 29 | 699 | 1.2+ | 0.1− | | |
| 2004 02 19 | 704 | 0.2+ | 0.9+ | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 1.3− | 1.8+ | | |
| 2004 04 01 | 291 | 0.1− | 0.8+ | 2006 08 18 | 644 | 0.3+ | 0.1+ | | | | | | |
| 2004 04 01 | 291 | 0.1− | 0.6+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | | | | | | |

**(140328)∗ 2001 SD$_{343}$ = 2002 XH$_{90}$**

Discovered 2001 Sept. 22 by NEAT at Palomar.

Id. A. Doppler (*MPO* 40696)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 221.99283 | | (2000.0) | | | |
| $n$ | 0.19105838 | $\omega$ | 9.78569 | | −0.57387560 | −0.79964602 |
| $a$ | 2.9855567 | $\Omega$ | 115.44316 | | +0.73751350 | −0.59844852 |
| $e$ | 0.0564198 | $i$ | 11.28622 | | +0.35600651 | −0.04925046 |
| $P$ | 5.16 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 644 | 1.3− | 1.0+ | 2003 01 07 | 704 | 0.5+ | 0.6+ | 2004 03 25 | 704 | 1.1+ | 1.2+ | | |
| 2001 09 22 | 644 | 0.6− | 0.5+ | 2003 01 07 | 704 | 0.3+ | 0.0 | 2004 03 25 | 704 | 0.4+ | 0.6+ | | |
| 2001 09 22 | 644 | 0.9− | 0.5+ | 2003 01 07 | 704 | 0.3+ | 0.2− | 2004 03 26 | 703 | 0.6− | 1.1+ | | |
| 2001 09 25 | 704 | 0.1− | 0.9+ | 2003 01 07 | 704 | 0.7+ | 0.4+ | 2004 03 26 | 703 | 0.6− | 0.3+ | | |
| 2001 09 25 | 704 | 1.2+ | 0.2+ | 2003 01 07 | 704 | 0.2+ | 0.3+ | 2004 03 26 | 703 | 1.3− | 0.6+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.1+ | 2004 02 17 | 704 | 0.7+ | 0.5− | 2004 03 26 | 703 | 1.0− | 0.8+ | | |
| 2001 09 25 | 704 | 0.0 | 0.5− | 2004 02 17 | 704 | 0.4+ | 1.3+ | 2004 04 14 | 704 | 0.3+ | 0.4+ | | |
| 2001 10 15 | 644 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.5− | 0.6+ | 2004 04 14 | 704 | (2.3+ | 0.0 | ) | |
| 2001 10 15 | 644 | 0.1− | 0.1+ | 2004 02 17 | 704 | 0.6+ | 0.4− | 2004 04 14 | 704 | 0.1− | 0.4− | | |
| 2001 10 15 | 644 | 0.1− | 0.6+ | 2004 02 17 | 704 | 0.5+ | 0.6+ | 2004 04 14 | 704 | 1.3+ | 0.2− | | |
| 2002 12 01 | 704 | 0.5+ | 1.0+ | 2004 02 18 | 608 | 0.6− | 1.8+ | 2004 04 14 | 703 | 0.7+ | 0.1− | | |
| 2002 12 01 | 704 | 0.1+ | 1.4+ | 2004 02 18 | 608 | 0.5− | 1.9+ | 2004 04 14 | 703 | 0.0 | 0.1− | | |
| 2002 12 01 | 704 | (0.2+ | 2.2+) | 2004 02 18 | 608 | 0.2− | 1.1+ | 2004 04 14 | 703 | 0.6− | 1.0+ | | |
| 2002 12 01 | 704 | (0.7− | 3.0+) | 2004 02 23 | 608 | 0.5− | 1.2− | 2004 04 14 | 703 | 0.1− | 0.2+ | | |
| 2002 12 08 | 608 | 0.5+ | 0.0 | 2004 02 23 | 608 | 0.3− | 0.7− | 2006 08 24 | 644 | 0.2+ | 0.9+ | | |
| 2002 12 08 | 608 | 0.4+ | 0.0 | 2004 02 23 | 608 | 0.4− | 0.7− | 2006 08 24 | 644 | 0.1+ | 0.7+ | | |
| 2002 12 08 | 608 | 0.7+ | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.3− | 2006 08 24 | 644 | 0.1+ | 0.9+ | | |
| 2002 12 14 | 704 | 0.7+ | 0.1+ | 2004 03 15 | 704 | 0.9+ | 0.3− | 2006 08 28 | E12 | 0.3− | 0.4+ | | |
| 2002 12 14 | 704 | 1.0− | 0.8+ | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 08 28 | E12 | 0.6− | 0.5+ | | |
| 2002 12 14 | 704 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.3− | 0.8− | 2006 08 28 | E12 | 0.3− | 0.6+ | | |
| 2002 12 14 | 704 | 0.1− | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.5− | 2006 08 28 | E12 | 0.6− | 1.2+ | | |
| 2002 12 14 | 704 | 0.3− | 0.6+ | 2004 03 19 | 644 | 0.2+ | 0.3− | 2006 09 20 | 703 | 0.6+ | 0.9+ | | |
| 2002 12 16 | 608 | 1.0− | 1.2− | 2004 03 19 | 644 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 1.1+ | 0.3+ | | |
| 2002 12 16 | 608 | 1.1− | 1.1− | 2004 03 19 | 644 | 0.5+ | 0.0 | 2006 09 20 | 703 | 0.0 | 1.7+ | | |
| 2002 12 16 | 608 | 0.0 | 1.0− | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 703 | 1.1− | 0.1+ | | |
| 2003 01 02 | 704 | 0.3− | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.9+ | 2006 09 26 | 703 | 1.2− | 0.3− | | |
| 2003 01 02 | 704 | 0.5− | 0.4+ | 2004 03 23 | 704 | 0.3+ | 1.4+ | 2006 09 26 | 703 | 0.4− | 0.2− | | |
| 2003 01 02 | 704 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 09 26 | 703 | 0.2+ | 0.6− | | |
| 2003 01 02 | 704 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.9+ | 0.8+ | 2006 09 26 | 703 | 0.2− | 1.4+ | | |
| 2003 01 02 | 704 | 0.0 | 0.2+ | 2004 03 25 | 704 | 0.4+ | 0.1+ | | | | | | |

**(140329)∗ 2001 SM$_{344}$ = 2001 UO$_{218}$**

Discovered 2001 Sept. 23 by NEAT at Palomar.

Id. A. Doppler (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.84617 | | (2000.0) | | | |
| $n$ | 0.21944402 | $\omega$ | 46.81345 | | +0.63988338 | +0.75244691 |
| $a$ | 2.7222012 | $\Omega$ | 263.64374 | | −0.74274361 | +0.55343568 |
| $e$ | 0.0648186 | $i$ | 9.03768 | | −0.19718312 | +0.35711707 |
| $P$ | 4.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | (1.7+ | 0.5−) | 2004 03 18 | 704 | (0.8+ | 2.6+) | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2001 09 10 | 704 | 1.0+ | 0.3+ | 2004 03 18 | 704 | 1.2+ | 1.3+ | 2006 11 09 | 644 | 0.3− | 0.1+ | | |
| 2001 09 10 | 704 | (1.7+ | 0.7−) | 2004 03 18 | 704 | (1.5+ | 1.7+) | 2006 11 09 | 644 | 0.3− | 0.0 | | |
| 2001 09 10 | 704 | (1.7+ | 0.2+) | 2005 06 05 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.6− | | |
| 2001 09 23 | 644 | 0.2− | 0.1− | 2005 06 05 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.5− | 1.1− | | |
| 2001 09 23 | 644 | 0.1− | 0.3− | 2005 06 05 | 691 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.8− | | |
| 2001 09 23 | 644 | 0.3+ | 0.2− | 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.5− | 1.1− | | |
| 2001 09 25 | 704 | 0.3− | 0.1− | 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1− | | |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2005 07 11 | G96 | 0.5− | 0.5− | 2006 11 15 | 691 | 0.0 | 0.2+ | | |
| 2001 09 25 | 704 | 0.3− | 0.9− | 2005 07 11 | G96 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.0 | | |
| 2001 09 25 | 704 | 0.5− | 1.0+ | 2005 07 11 | G96 | 0.1− | 0.5− | 2006 11 15 | 704 | 0.5+ | 0.1− | | |
| 2001 10 13 | 644 | 0.3− | 0.2− | 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 11 15 | 704 | 1.4+ | 0.7+ | | |
| 2001 10 13 | 644 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 11 16 | 704 | (1.4+ | 1.6+) | | |
| 2001 10 13 | 644 | 0.3− | 0.3− | 2006 10 19 | 703 | 1.4− | 0.9− | 2006 11 16 | 704 | 0.4+ | 1.0+ | | |
| 2001 10 17 | 704 | 1.2− | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 11 16 | 704 | 1.1+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.7− | 1.4− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2− | 0.9+ | | |
| 2001 10 17 | 704 | 0.9− | 0.3− | 2006 10 27 | 703 | (1.6+ | 2.7−) | 2006 11 19 | 704 | 0.1+ | 0.3− | | |
| 2001 10 21 | 291 | 0.1− | 0.1− | 2006 10 27 | 703 | (2.1+ | 1.6−) | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2001 10 21 | 291 | 0.2+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.5− | 1.1+ | | |
| 2001 10 21 | 291 | 0.6+ | 1.1+ | 2006 10 27 | 703 | 0.5− | 0.5− | 2006 11 22 | 704 | 0.1− | 0.5− | | |
| 2004 03 17 | 704 | (2.1+ | 2.9+) | 2006 11 02 | 703 | 0.4+ | 0.6− | 2006 11 22 | 704 | 0.0 | 1.1+ | | |
| 2004 03 17 | 704 | 0.6+ | 1.4+ | 2006 11 02 | 703 | 0.7+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.5+ | | |
| 2004 03 17 | 704 | 0.6− | 0.4+ | 2006 11 02 | 703 | 1.4− | 0.1− | 2006 11 22 | 704 | 0.4− | 0.0 | | |
| 2004 03 18 | 704 | (1.1+ | 1.5+) | 2006 11 02 | 703 | 0.8+ | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.1− | | |

**(140330)∗ 2001 SY$_{347}$**

Discovered 2001 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.39791 | | | (2000.0) | | |
| $n$ | 0.20309938 | $\omega$ | 129.03001 | | +0.39468911 | −0.89280619 |
| $a$ | 2.8663573 | $\Omega$ | 296.42332 | | +0.75020731 | +0.44953651 |
| $e$ | 0.1293598 | $i$ | 14.02753 | | +0.53048044 | +0.02853130 |
| $P$ | 4.85 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.2+ | 0.5− | 2002 12 11 | 704 | 1.5+ | 0.1− | 2003 01 31 | 704 | 0.1+ | 0.6− |
| 1996 10 04 | 691 | 0.1+ | 0.2+ | 2002 12 11 | 704 | 0.6+ | 0.8− | 2003 01 31 | 704 | 0.1+ | 0.8− |
| 1996 10 04 | 691 | 0.2+ | 0.3− | 2002 12 11 | 704 | (1.7+ | 0.5−) | 2003 01 31 | 704 | 0.3+ | 0.6− |
| 1996 10 10 | 691 | 0.3− | 0.2+ | 2002 12 11 | 644 | 0.3+ | 0.5+ | 2003 01 31 | 704 | 1.1+ | 0.4− |
| 1996 10 10 | 691 | 0.1+ | 0.2− | 2002 12 11 | 644 | 0.5+ | 0.2+ | 2003 01 31 | 704 | 0.4+ | 0.4− |
| 1996 10 10 | 691 | 1.1− | 0.9+ | 2002 12 11 | 644 | 0.4+ | 0.1+ | 2003 02 03 | 704 | 0.2− | 1.1+ |
| 2001 08 17 | 644 | 0.3+ | 0.4+ | 2002 12 27 | 699 | 0.0 | 0.7+ | 2003 02 03 | 704 | 0.4+ | 0.6+ |
| 2001 08 17 | 644 | 0.1− | 0.1+ | 2002 12 27 | 699 | 0.1+ | 0.0 | 2003 02 03 | 704 | 0.2− | 1.0− |
| 2001 08 17 | 644 | 0.0 | 0.4+ | 2002 12 27 | 699 | 0.3+ | 0.3− | 2003 02 03 | 704 | 0.4− | 0.6+ |
| 2001 08 26 | 699 | 1.2+ | 0.7+ | 2002 12 27 | 699 | 1.2+ | 0.1+ | 2003 02 03 | 704 | 0.3+ | 0.0 |
| 2001 08 26 | 699 | 0.5+ | 0.9+ | 2003 01 08 | 704 | 0.7− | 0.2+ | 2003 02 06 | 608 | 0.2+ | 0.5+ |
| 2001 08 26 | 699 | 0.2− | 0.5+ | 2003 01 08 | 704 | 1.1− | 0.2− | 2003 02 06 | 608 | 0.0 | 0.3+ |
| 2001 08 26 | 699 | 1.0+ | 1.1+ | 2003 01 08 | 704 | 0.8− | 0.3− | 2003 02 06 | 608 | 0.6+ | 0.2+ |
| 2001 09 10 | 704 | 0.3− | 0.6+ | 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.4+ | 1.2− |
| 2001 09 10 | 704 | 0.2+ | 0.6− | 2003 01 08 | 704 | 0.9− | 0.3− | 2006 09 17 | 703 | 1.3+ | 0.4− |
| 2001 09 10 | 704 | 0.7+ | 0.2+ | 2003 01 11 | 291 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.1− | 0.8+ |
| 2001 09 10 | 704 | 0.8− | 0.6− | 2003 01 11 | 291 | 0.2+ | 0.2− | 2006 09 17 | 703 | 0.1− | 0.8+ |
| 2001 09 10 | 704 | 0.8− | 0.2+ | 2003 01 11 | 291 | 0.7+ | 0.3+ | 2006 09 22 | 699 | 0.4− | 0.8− |
| 2001 09 21 | 644 | 0.0 | 0.2+ | 2003 01 26 | 608 | (1.2− | 1.8+) | 2006 09 22 | 699 | 0.4− | 0.0 |
| 2001 09 21 | 644 | 0.7+ | 0.6+ | 2003 01 26 | 608 | (1.0− | 1.6+) | 2006 09 22 | 699 | 0.1+ | 0.7− |
| 2001 09 21 | 644 | 0.3+ | 0.3+ | 2003 01 26 | 608 | 1.0− | 1.2+ | 2006 09 22 | 699 | 1.2− | 0.1+ |
| 2001 09 26 | 704 | 0.9+ | 0.4− | 2003 01 27 | 704 | 0.9− | 0.6− | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2001 09 26 | 704 | 0.1+ | 0.1− | 2003 01 27 | 704 | 1.0− | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.7+ |
| 2001 09 26 | 704 | 0.3− | 0.9− | 2003 01 27 | 704 | 0.4− | 0.1− | 2006 09 28 | 703 | 1.3+ | 0.1+ |
| 2001 09 29 | 644 | 0.2− | 0.1+ | 2003 01 27 | 704 | 0.3− | 0.6+ | 2006 09 28 | 703 | 0.5− | 1.0− |
| 2001 09 29 | 644 | 0.2+ | 0.4+ | 2003 01 27 | 704 | 0.6− | 0.6+ | 2006 10 20 | 703 | 0.1− | 0.4− |
| 2001 09 29 | 644 | 0.2+ | 0.0 | 2003 01 30 | 699 | 0.9− | 0.8− | 2006 10 20 | 703 | 0.4+ | 0.0 |
| 2001 10 06 | 644 | 0.3− | 0.9− | 2003 01 30 | 699 | 1.0− | 0.5+ | 2006 10 20 | 703 | 0.0 | 0.0 |
| 2001 10 06 | 644 | 0.0 | 1.1− | 2003 01 30 | 699 | 0.2− | 0.3− | 2006 10 20 | 703 | 0.7− | 0.1+ |
| 2001 10 06 | 644 | 0.3− | 1.0− | 2003 01 30 | 699 | 1.2− | 0.6− | | | | |

**(140331)∗ 2001 SG$_{349}$**

Discovered 2001 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.36260 | | | (2000.0) | | |
| $n$ | 0.24070885 | $\omega$ | 288.39348 | | −0.50708525 | −0.85950326 |
| $a$ | 2.5594188 | $\Omega$ | 192.68317 | | +0.85903831 | −0.49794269 |
| $e$ | 0.1205182 | $i$ | 16.99564 | | +0.07012650 | −0.11535693 |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 22 | 691 | 0.2− | 0.5− | 2003 03 07 | 704 | 0.5− | 0.2− | 2003 05 01 | 691 | 0.1− | 0.3+ |
| 1995 04 22 | 691 | 0.3− | 0.7− | 2003 03 07 | 704 | 0.5− | 1.1− | 2003 05 01 | 691 | 0.1− | 0.4+ |
| 1995 04 22 | 691 | 0.4+ | 0.4+ | 2003 03 07 | 704 | 0.6− | 0.3+ | 2003 05 01 | 691 | 0.2+ | 0.6+ |
| 2001 09 26 | 704 | 0.5+ | 1.4+ | 2003 03 07 | 704 | 0.1+ | 0.3− | 2005 10 01 | 691 | 0.3− | 0.3+ |
| 2001 09 26 | 704 | 0.2− | 1.1+ | 2003 03 07 | 704 | 0.3− | 0.9− | 2005 10 01 | 691 | 0.1− | 0.3+ |
| 2001 09 26 | 704 | 0.4− | 1.2+ | 2003 03 10 | 699 | 0.7− | 0.3+ | 2005 10 01 | 691 | 0.3− | 0.2+ |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2003 03 10 | 699 | 0.1− | 0.7+ | 2005 10 06 | 699 | 0.2+ | 0.9+ |
| 2001 09 26 | 704 | 1.0+ | 0.9+ | 2003 03 10 | 699 | 0.9+ | 0.4+ | 2005 10 06 | 699 | 0.1− | 0.5+ |
| 2001 10 10 | 644 | 0.1− | 1.0+ | 2003 03 10 | 704 | 0.6+ | 0.2− | 2005 10 06 | 699 | 0.0 | 0.0 |
| 2001 10 10 | 644 | 0.4− | 0.5+ | 2003 03 10 | 704 | 0.5− | 0.1+ | 2005 10 06 | 699 | 0.3− | 0.7+ |
| 2001 10 10 | 644 | 0.5− | 0.8+ | 2003 03 10 | 699 | 0.6+ | 0.2+ | 2005 10 12 | 704 | 0.3+ | 0.3− |
| 2001 10 16 | 704 | 1.4− | 0.1− | 2003 03 10 | 704 | 0.5+ | 0.4+ | 2005 10 12 | 704 | 0.9+ | 0.2− |
| 2001 10 16 | 704 | 0.2+ | 0.6+ | 2003 03 10 | 704 | 0.3+ | 0.0 | 2005 10 12 | 704 | 0.2+ | 0.8+ |
| 2001 10 16 | 704 | 0.2− | 1.0+ | 2003 03 28 | 691 | 0.3− | 0.4+ | 2005 10 21 | 644 | 0.1+ | 0.5+ |
| 2001 10 16 | 704 | 1.1+ | 0.2+ | 2003 03 28 | 691 | 0.2− | 0.2+ | 2005 10 21 | 644 | 0.0 | 0.2+ |
| 2001 10 24 | 644 | 0.6− | 0.6+ | 2003 03 28 | 691 | 0.4− | 0.0 | 2005 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 24 | 644 | 1.0− | 0.4+ | 2003 03 31 | 704 | 0.7+ | 0.5− | 2005 10 22 | 703 | (1.1+ | 3.9+) |
| 2001 10 24 | 644 | 0.7− | 0.3+ | 2003 03 31 | 704 | 1.1− | 0.2− | 2005 10 22 | 703 | (2.5− | 1.1+) |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2003 03 31 | 704 | 1.0+ | 0.6+ | 2005 10 22 | 703 | 1.3− | 0.7− |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2003 03 31 | 704 | 1.7+ | 0.6+ | 2005 10 22 | 703 | 0.2− | 0.5+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 03 31 | 704 | 0.6+ | 0.5+ | 2005 10 27 | 644 | 0.0 | 0.4+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 04 08 | 704 | 0.8+ | 1.1+ | 2005 10 27 | 644 | 0.1+ | 0.3+ |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2003 04 08 | 704 | 0.9+ | 0.5+ | 2005 10 27 | 644 | 0.1+ | 0.3+ |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2003 04 08 | 704 | 0.4+ | 1.5+ | 2005 10 28 | 704 | 0.3+ | 0.2− |
| 2002 01 13 | 645 | 0.1− | 0.1− | 2003 04 08 | 704 | 0.1+ | 0.3+ | 2005 10 28 | 704 | 0.4+ | 0.9+ |
| 2002 01 13 | 645 | 0.2− | 0.2− | 2003 04 08 | 704 | 0.3− | 0.3+ | 2005 10 28 | 704 | 0.8+ | 0.8+ |

**(140332)∗ 2001 SK$_{350}$**

Discovered 2001 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 93.09363 | | | (2000.0) | | |
| $n$ | 0.19606383 | $\omega$ | 248.60210 | | +0.18576524 | +0.97794920 |
| $a$ | 2.9345244 | $\Omega$ | 32.56692 | | −0.82304307 | +0.20791690 |
| $e$ | 0.1288735 | $i$ | 10.21155 | | −0.53674144 | +0.01964521 |
| $P$ | 5.03 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.2+ | 0.1− | 2004 02 25 | 704 | (1.7+ | 0.2−) | 2006 10 04 | G96 | 0.4− | 0.1− |
| 1996 10 07 | 691 | 0.2+ | 0.0 | 2004 02 25 | 704 | 0.0 | 1.4+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 1996 10 07 | 691 | 0.1+ | 0.3− | 2004 02 25 | 704 | (1.7+ | 0.1+) | 2006 10 04 | G96 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.7+ | 2004 03 20 | 691 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.4− | 1.3+ | 2004 03 20 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.9− | 1.1+ | 2004 03 20 | 691 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.8+ | 2004 03 20 | 704 | (0.1+ | 1.6+) | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.6− | 0.7+ | 2004 03 20 | 704 | 0.3− | 0.1− | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.4+ | 0.9+ | 2004 03 20 | 704 | 0.9− | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2001 10 21 | 704 | 0.4− | 0.9+ | 2004 03 20 | 704 | 1.3− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2001 10 21 | 704 | (0.1− | 1.9+) | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2001 10 26 | 644 | 0.1− | 0.0 | 2004 03 30 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.6− |
| 2001 10 26 | 644 | 0.6− | 0.0 | 2004 03 30 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 10 26 | 644 | 0.1− | 0.6+ | 2004 03 30 | 691 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 11 12 | 691 | 0.1+ | 0.0 | 2005 07 05 | E12 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2001 11 12 | 691 | 0.8+ | 0.2− | 2005 07 05 | E12 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2001 11 12 | 691 | 0.7− | 0.9− | 2005 07 05 | E12 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 0.3+ | 2005 07 05 | E12 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2001 11 19 | 704 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.3− |
| 2001 11 19 | 704 | 0.6− | 0.3− | 2006 09 25 | G96 | 0.7− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 11 19 | 704 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2004 02 25 | 704 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.8+ | 0.1+ | | | | |

**(140333)∗ 2001 TD$_2$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.23969 | | | (2000.0) | | |
| $n$ | 1.04465425 | $\omega$ | 199.00970 | | −0.85279313 | +0.51714037 |
| $a$ | 0.9619541 | $\Omega$ | 12.90751 | | −0.42686596 | −0.60983679 |
| $e$ | 0.4814744 | $i$ | 19.03881 | | −0.30088091 | −0.60055385 |
| $P$ | 0.94 | $H$ | 19.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.1− | 0.0 | 2002 09 30 | 704 | 0.0 | 0.5− | 2003 09 21 | 704 | 1.0− | 0.3+ |
| 2001 10 10 | 644 | 0.3+ | 0.4− | 2002 09 30 | 704 | 0.3− | 0.3− | 2003 09 21 | 704 | (1.8+ | 0.6−) |
| 2001 10 10 | 644 | 0.5+ | 0.0 | 2002 09 30 | 704 | 0.1+ | 0.2− | 2003 09 21 | 704 | 0.6− | 0.1+ |
| 2001 10 10 | 046 | 0.4− | 0.9+ | 2002 09 30 | 215 | 0.7− | 0.3− | 2003 09 21 | 704 | 0.3+ | 0.5+ |
| 2001 10 10 | 046 | (1.2− | 2.0+) | 2002 09 30 | 215 | 0.9+ | 0.3+ | 2003 09 27 | 704 | 0.6− | 0.1+ |
| 2001 10 10 | 046 | 1.4− | 0.8− | 2002 09 30 | 215 | 1.1− | 0.1+ | 2003 09 27 | 704 | 0.6− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 046 | 0.4+ | 1.2− | 2002 10 01 | 699 | 0.6+ | 0.3+ | 2003 09 27 | 704 | 0.5+ | 0.0 | | |
| 2001 10 10 | 046 | 0.3− | 0.4+ | 2002 10 01 | 699 | 0.3+ | 0.1+ | 2003 09 27 | 704 | 0.3+ | 0.5+ | | |
| 2001 10 11 | 474 | 0.0 | 0.6− | 2002 10 01 | 699 | 0.3+ | 0.6+ | 2003 10 20 | 170 | 0.2+ | 0.1− | | |
| 2001 10 11 | 474 | 0.3+ | 0.5− | 2002 10 01 | 699 | 0.1+ | 0.1+ | 2003 10 20 | 170 | 0.0 | 0.2− | | |
| 2001 10 11 | 474 | 0.1+ | 0.5− | 2002 10 01 | 608 | 0.2− | 0.1+ | 2003 10 20 | 170 | 0.8+ | 0.2− | | |
| 2001 10 11 | 474 | 0.0 | 0.6− | 2002 10 01 | 608 | 0.3− | 0.1+ | 2003 11 02 | 704 | 0.5+ | 0.4− | | |
| 2001 10 11 | 046 | 0.7+ | 1.1− | 2002 10 01 | 608 | 0.2+ | 0.0 | 2003 11 02 | 704 | 0.7+ | 0.5+ | | |
| 2001 10 11 | 046 | (0.7+ | 2.2+) | 2002 10 02 | 704 | 0.1+ | 0.3+ | 2003 11 02 | 704 | 0.2+ | 0.8− | | |
| 2001 10 11 | 046 | 0.0 | 0.3− | 2002 10 02 | 704 | 0.1+ | 0.5+ | 2003 11 02 | 704 | 0.6− | 0.6− | | |
| 2001 10 11 | 046 | (1.0+ | 1.6−) | 2002 10 02 | 704 | 0.2+ | 0.4+ | 2003 11 02 | 704 | 0.3+ | 0.0 | | |
| 2001 10 11 | 046 | 0.9+ | 1.0+ | 2002 10 02 | 704 | 0.2− | 0.1+ | 2004 09 21 | 734 | (0.5+ | 2.8−) | | |
| 2001 10 12 | 474 | 0.3+ | 0.5− | 2002 10 03 | 704 | 0.5− | 0.3+ | 2004 09 21 | 734 | (1.4+ | 1.6−) | | |
| 2001 10 12 | 474 | 0.3− | 0.6− | 2002 10 03 | 704 | 0.3− | 0.7+ | 2004 10 08 | 704 | 0.2+ | 0.1+ | | |
| 2001 10 12 | 474 | 0.0 | 0.4− | 2002 10 03 | 704 | 0.6− | 0.2+ | 2004 10 08 | 704 | 1.4+ | 1.3+ | | |
| 2001 10 16 | 649 | 0.4+ | 0.6+ | 2002 10 03 | 704 | 0.5− | 1.1+ | 2004 10 08 | 704 | 0.3− | 0.4− | | |
| 2001 10 16 | 649 | 0.1− | 0.5− | 2002 10 03 | 704 | 0.0 | 0.5+ | 2004 10 08 | 704 | 0.1− | 0.3− | | |
| 2001 10 16 | 649 | 0.3− | 0.3− | 2002 10 05 | 670 | 0.3+ | 0.2+ | 2004 10 08 | 704 | 1.1+ | 0.0 | | |
| 2001 11 02 | 413 | 0.7+ | 0.0 | 2002 10 05 | 670 | 0.7+ | 0.3− | 2004 10 23 | 704 | 0.3+ | 0.6+ | | |
| 2001 11 02 | 413 | 1.1+ | 0.4+ | 2002 10 06 | 859 | 0.3− | 0.9+ | 2004 10 23 | 704 | 0.5+ | 0.2+ | | |
| 2001 11 02 | 413 | 0.6+ | 0.0 | 2002 10 06 | 859 | (2.7+ | 0.3+) | 2004 10 23 | 704 | 0.2− | 0.2− | | |
| 2001 11 03 | 413 | 0.1+ | 0.1− | 2002 10 06 | 859 | (1.7− | 0.2+) | 2004 10 23 | 704 | 0.0 | 1.0+ | | |
| 2001 11 03 | 413 | 0.4+ | 0.2+ | 2002 10 06 | 670 | 0.2+ | 0.1− | 2004 10 23 | 704 | 0.6+ | 0.5+ | | |
| 2001 11 03 | 413 | 0.2− | 0.1− | 2002 10 06 | 670 | 0.6+ | 0.2+ | 2004 11 06 | H41 | 0.6+ | 0.9+ | | |
| 2001 11 20 | 696 | 0.3+ | 0.6+ | 2002 10 07 | 704 | 0.1+ | 0.2+ | 2004 11 06 | H41 | 0.8+ | 0.4− | | |
| 2001 11 20 | 696 | 0.2+ | 0.3− | 2002 10 07 | 704 | 0.1− | 0.3+ | 2004 11 06 | H41 | 0.3− | 0.1+ | | |
| 2001 11 20 | 696 | 0.6+ | 0.7− | 2002 10 07 | 704 | 0.1+ | 0.9+ | 2004 11 10 | 704 | 0.0 | 0.8+ | | |
| 2002 07 31 | 413 | 0.6+ | 0.5+ | 2002 10 07 | 704 | 0.2− | 0.3+ | 2004 11 10 | 704 | 0.3+ | 0.7+ | | |
| 2002 07 31 | 413 | 0.4− | 0.3− | 2002 10 07 | 704 | 0.2− | 0.4+ | 2004 11 10 | 704 | 0.3+ | 0.7+ | | |
| 2002 07 31 | 413 | 0.5− | 0.0 | 2002 10 08 | 699 | 0.9+ | 0.3− | 2004 11 10 | 704 | 0.6+ | 0.4− | | |
| 2002 08 19 | 413 | 0.2− | 0.6− | 2002 10 08 | 699 | 0.1− | 0.1+ | 2004 12 10 | 246 | 0.6− | 0.5− | | |
| 2002 08 19 | 413 | 0.3− | 0.3− | 2002 10 08 | 699 | 0.2+ | 0.7+ | 2004 12 10 | 246 | 0.4− | 0.1− | | |
| 2002 08 19 | 413 | 0.2− | 0.6− | 2002 10 08 | 699 | 0.4+ | 0.2+ | 2004 12 10 | 246 | 0.5− | 0.0 | | |
| 2002 09 17 | 711 | 0.2− | 0.5− | 2002 10 11 | 704 | 0.6− | 0.7− | 2004 12 10 | 246 | 1.0− | 0.4− | | |
| 2002 09 17 | 711 | 0.4− | 0.6− | 2002 10 11 | 704 | 0.2− | 0.4− | 2004 12 10 | 246 | 0.4− | 0.2− | | |
| 2002 09 17 | 711 | 0.1+ | 0.4− | 2002 10 11 | 704 | 0.4− | 0.6− | 2005 10 30 | A74 | 0.9+ | 1.4+ | | |
| 2002 09 21 | 608 | (9.7− | 1.0+) | 2002 10 11 | 704 | 0.1− | 0.8− | 2005 10 30 | A74 | 0.3− | 0.9− | | |
| 2002 09 21 | 608 | (9.3− | 1.0+) | 2002 10 11 | 704 | 0.1− | 0.5− | 2005 10 31 | A74 | 1.2− | 0.1− | | |
| 2002 09 21 | 608 | (9.4− | 1.0+) | 2002 10 11 | 291 | 0.4− | 0.1+ | 2005 11 08 | A74 | 0.5+ | 0.3− | | |
| 2002 09 28 | 608 | (12.2− | 0.5+) | 2002 10 11 | 291 | 0.3− | 0.1+ | 2005 11 08 | A74 | 0.6+ | 0.1+ | | |
| 2002 09 28 | 608 | (12.2− | 0.5+) | 2002 10 11 | 291 | 0.1+ | 0.1+ | 2005 11 08 | A74 | 0.4+ | 0.3− | | |
| 2002 09 28 | 608 | (12.2− | 0.7+) | 2003 09 13 | 673 | 0.1− | 0.5− | 2005 11 21 | 704 | 0.4+ | 1.0− | | |
| 2002 09 28 | 151 | 0.7− | 0.1+ | 2003 09 13 | 673 | 0.0 | 0.5− | 2005 11 21 | 704 | 0.2− | 0.2− | | |
| 2002 09 28 | 151 | 0.5− | 0.4+ | 2003 09 13 | 673 | 0.8+ | 0.9− | 2005 11 21 | 704 | 0.8− | 1.3− | | |
| 2002 09 28 | 151 | (1.6− | 0.1+) | 2003 09 13 | 673 | 0.9+ | 1.0− | 2005 11 21 | 704 | 0.1− | 0.8− | | |
| 2002 09 28 | 151 | 0.3− | 0.7+ | 2003 09 18 | 673 | 0.2− | 0.1− | 2005 12 11 | 682 | (0.9− | 1.7−) | | |
| 2002 09 28 | 151 | 0.5− | 0.3− | 2003 09 18 | 673 | 0.3− | 0.0 | 2005 12 11 | 682 | 1.3− | 1.3− | | |
| 2002 09 30 | 704 | 0.1+ | 0.0 | 2003 09 18 | 673 | (2.0+ | 1.0−) | | | | | | |
| 2002 09 30 | 704 | 0.1− | 0.4− | 2003 09 18 | 673 | (2.3− | 1.1+) | | | | | | |

**(140334)∗ 2001 TU$_3$ = 2004 GL$_{29}$**

Discovered 2001 Oct. 7 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.19962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21519075 | $\omega$ | 23.13049 | | −0.54319957 | +0.82909960 | |
| $a$ | 2.7579538 | $\Omega$ | 214.38864 | | −0.80230230 | −0.55905159 | |
| $e$ | 0.1051570 | $i$ | 13.55664 | | −0.24747777 | −0.00742763 | |
| $P$ | 4.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (0.5− | 1.7+) | 2004 04 12 | 699 | 0.6+ | 0.5− | 2004 05 15 | 704 | 0.7− | 0.6+ | | |
| 2001 09 20 | 704 | 0.5− | 1.1+ | 2004 04 12 | 699 | 0.1+ | 0.7− | 2004 05 16 | 704 | 0.4+ | 1.0+ | | |
| 2001 09 20 | 704 | (0.8− | 2.0+) | 2004 04 12 | 699 | 0.6− | 0.7+ | 2004 05 16 | 704 | 0.7− | 0.1+ | | |
| 2001 09 20 | 704 | (2.0− | 1.5+) | 2004 04 15 | 699 | 0.5− | 0.4+ | 2004 05 16 | 704 | 0.0 | 0.1+ | | |
| 2001 10 07 | 644 | 1.3− | 1.1+ | 2004 04 15 | 699 | 1.2− | 0.2− | 2004 05 16 | 704 | 0.1− | 0.0 | | |
| 2001 10 07 | 644 | 0.4− | 1.0+ | 2004 04 15 | 699 | 0.4+ | 0.1+ | 2004 05 16 | 704 | 0.6− | 0.0 | | |
| 2001 10 07 | 644 | 0.4− | 1.0+ | 2004 04 15 | 699 | 0.7− | 0.1+ | 2004 05 21 | 691 | 0.1− | 0.1+ | | |
| 2001 10 11 | 644 | 0.3− | 0.1− | 2004 04 20 | 704 | 0.4+ | 0.1+ | 2004 05 21 | 691 | 0.2− | 0.3− | | |
| 2001 10 11 | 644 | 0.3− | 0.5− | 2004 04 20 | 704 | 0.9+ | 0.2− | 2004 05 21 | 691 | 0.2− | 0.2+ | | |
| 2001 10 11 | 644 | 0.2− | 0.1− | 2004 04 20 | 704 | 0.3+ | 0.1+ | 2004 05 21 | 704 | (1.5+ | 0.5+) | | |
| 2001 10 14 | 704 | 0.4+ | 0.7+ | 2004 04 20 | 704 | 0.2+ | 0.1− | 2004 05 21 | 704 | 0.7+ | 1.1+ | | |
| 2001 10 14 | 704 | 0.1− | 1.3+ | 2004 04 20 | 704 | 0.4− | 0.6+ | 2004 05 21 | 704 | 0.5+ | 0.8− | | |
| 2001 10 14 | 704 | 0.1− | 0.6+ | 2004 04 21 | 704 | 0.2+ | 0.4+ | 2005 09 26 | 703 | 0.1− | 0.3+ | | |
| 2001 10 19 | 644 | 0.2− | 0.4+ | 2004 04 21 | 704 | 0.0 | 0.2+ | 2005 09 26 | 703 | 0.4+ | 0.0 | | |
| 2001 10 19 | 644 | 0.3− | 0.6+ | 2004 04 21 | 704 | 0.3− | 0.4+ | 2005 09 26 | 703 | 0.7+ | 0.8− | | |
| 2001 10 19 | 644 | 1.1− | 1.1+ | 2004 04 21 | 704 | 0.4+ | 0.7+ | 2005 09 26 | 703 | 1.1− | 0.4+ | | |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2004 04 28 | 608 | 0.3+ | 1.4+ | 2006 10 23 | G96 | 0.1− | 0.2− | | |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2004 04 28 | 608 | 0.4+ | 1.4+ | 2006 10 23 | G96 | 0.1+ | 0.1− | | |
| 2001 10 21 | 704 | 0.3− | 0.4+ | 2004 04 28 | 608 | 0.2+ | 0.9+ | 2006 10 23 | G96 | 0.1− | 0.2− | | |
| 2001 10 21 | 704 | 0.1− | 0.4+ | 2004 04 30 | 291 | 0.0 | 0.6+ | 2006 10 23 | G96 | 0.5− | 0.1− | | |
| 2001 10 21 | 704 | 0.3− | 0.4+ | 2004 04 30 | 291 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.5+ | | |
| 2001 11 16 | 291 | 0.2+ | 0.2+ | 2004 04 30 | 291 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.6− | 1.2+ | | |
| 2001 11 16 | 291 | 0.3+ | 0.4+ | 2004 05 09 | 703 | 0.7+ | 0.9− | 2006 11 20 | 704 | 1.0− | 0.0 | | |
| 2001 11 16 | 291 | 0.5+ | 0.4+ | 2004 05 09 | 703 | (0.2− | 1.9−) | 2006 11 23 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 22 | 699 | 1.5+ | 0.4+ | 2004 05 09 | 703 | 0.8+ | 0.4− | 2006 11 23 | G96 | 0.3+ | 0.1+ | | |
| 2004 03 22 | 699 | 1.2− | 0.9+ | 2004 05 09 | 703 | (1.5− | 0.2−) | 2006 11 23 | G96 | 0.3+ | 0.3+ | | |
| 2004 03 22 | 699 | 0.9+ | 0.8− | 2004 05 11 | 699 | 0.7+ | 1.0− | 2006 11 23 | G96 | 0.1− | 0.2+ | | |
| 2004 03 22 | 699 | 0.4− | 1.0+ | 2004 05 11 | 699 | 0.9− | 1.5+ | 2006 11 28 | 704 | 1.3+ | 0.7+ | | |
| 2004 03 27 | 704 | 0.6+ | 0.9− | 2004 05 11 | 699 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.4+ | | |
| 2004 03 27 | 704 | 0.5− | 0.4− | 2004 05 11 | 699 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.9+ | | |
| 2004 03 27 | 704 | 0.3− | 0.0 | 2004 05 15 | 704 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.0 | 0.4+ | | |
| 2004 03 27 | 704 | 0.3+ | 0.7− | 2004 05 15 | 704 | 0.8− | 0.6+ | | | | | | |
| 2004 04 12 | 699 | 0.1+ | 0.3+ | 2004 05 15 | 704 | 0.7+ | 0.3+ | | | | | | |

**(140335)∗ 2001 TZ$_3$**

Discovered 2001 Oct. 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.30715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18599047 | $\omega$ | 33.17721 | | −0.33918266 | +0.93520185 | |
| $a$ | 3.0395474 | $\Omega$ | 217.28230 | | −0.89552755 | −0.35411498 | |
| $e$ | 0.1388021 | $i$ | 9.66993 | | −0.28807209 | −0.00029346 | |
| $P$ | 5.30 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.7− | 0.3− | 2001 11 12 | 691 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.0 | 0.0 | | |
| 1996 10 07 | 691 | 0.5− | 0.5− | 2001 11 12 | 691 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.0 | 0.1+ | | |
| 1996 10 07 | 691 | 0.2− | 0.8− | 2001 11 12 | 691 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.4+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.0 | 1.2+ | 2001 11 15 | 691 | 0.4+ | 0.4− | 2006 09 17 | 703 | 0.7+ | 0.1+ | | |
| 2001 09 20 | 704 | (0.2+ | 1.7+) | 2001 11 15 | 691 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.2− | 0.8+ | | |
| 2001 09 20 | 704 | (0.1− | 1.6+) | 2001 11 15 | 691 | 0.5+ | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.2+ | | |
| 2001 10 07 | 644 | 0.1+ | 0.8+ | 2001 11 21 | 704 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 | | |
| 2001 10 07 | 644 | 0.1− | 0.5+ | 2001 11 21 | 704 | 0.8+ | 0.4− | 2006 09 18 | 691 | 0.3− | 0.0 | | |
| 2001 10 07 | 644 | 0.5− | 0.6+ | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1+ | | |
| 2001 10 11 | 644 | 0.2− | 0.0 | 2004 01 30 | 699 | 0.5+ | 0.3− | 2006 09 25 | 704 | 0.2− | 0.6− | | |
| 2001 10 11 | 644 | 0.2+ | 0.2+ | 2004 01 30 | 699 | 1.0− | 0.1− | 2006 09 25 | 704 | 0.8+ | 0.4− | | |
| 2001 10 11 | 644 | 0.4− | 0.7+ | 2004 01 30 | 699 | 0.3− | 1.3+ | 2006 09 25 | 704 | 0.6+ | 0.9− | | |
| 2001 10 12 | 699 | 1.1+ | 0.0 | 2004 01 30 | 699 | 1.3− | 0.4− | 2006 09 25 | 704 | 0.1+ | 1.0+ | | |
| 2001 10 12 | 699 | 0.1+ | 0.5+ | 2004 02 19 | 704 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1− | | |
| 2001 10 12 | 699 | 0.4+ | 0.4+ | 2004 02 19 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 691 | 0.2− | 0.2− | | |
| 2001 10 12 | 699 | 1.1+ | 0.0 | 2004 02 19 | 704 | 0.7+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 2001 10 14 | 704 | 1.0+ | 0.0 | 2004 02 19 | 704 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.1− | 0.0 | | |
| 2001 10 14 | 704 | 0.2− | 0.2− | 2004 02 19 | 704 | 0.4+ | 0.0 | 2006 09 29 | 704 | 0.4− | 0.7+ | | |
| 2001 10 14 | 704 | 1.2+ | 0.2+ | 2004 03 16 | 704 | 1.0+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.6− | | |
| 2001 10 14 | 704 | 0.4+ | 0.5− | 2004 03 16 | 704 | 0.1− | 0.6+ | 2006 09 29 | 704 | 0.7− | 0.5− | | |
| 2001 10 14 | 704 | 0.9+ | 0.9− | 2004 03 16 | 704 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2001 10 17 | 704 | 0.1+ | 0.8+ | 2004 03 16 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 691 | 0.2− | 0.2+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.8+ | 2004 03 16 | 704 | 0.5+ | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 2001 10 17 | 704 | 0.5+ | 0.5+ | 2005 07 05 | 704 | 1.1− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1− | | |
| 2001 10 17 | 704 | 0.1− | 0.7+ | 2005 07 05 | 704 | 0.5+ | 1.5− | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2001 10 17 | 704 | 0.5+ | 0.5+ | 2005 07 05 | 704 | 0.2+ | 0.9− | 2006 10 09 | 644 | 0.1− | 0.2− | | |
| 2001 10 19 | 644 | 0.2+ | 0.2+ | 2005 07 05 | 704 | 0.6+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 19 | 644 | 0.1+ | 0.3+ | 2005 07 05 | 704 | 0.4+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 2001 10 19 | 644 | 0.1+ | 0.4+ | 2006 08 29 | 699 | 0.6+ | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2001 10 21 | 704 | 0.0 | 0.4− | 2006 08 29 | 699 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.5+ | 0.3− | 2006 08 29 | 699 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.1− | 1.2+ |
| 2001 10 21 | 704 | 0.1− | 0.5+ | 2006 08 29 | 699 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.1− |
| 2001 10 26 | 691 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2001 10 26 | 691 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.7− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 10 26 | 691 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.3− | | | | |

**(140336)∗ 2001 TP$_4$**

Discovered 2001 Oct. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.91289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18074110 | $\omega$ | 195.88708 | | +0.79566393 | −0.60555249 | |
| $a$ | 3.0981190 | $\Omega$ | 201.40290 | | +0.56013481 | +0.74496430 | |
| $e$ | 0.0623121 | $i$ | 2.35625 | | +0.23058166 | +0.27988279 | |
| $P$ | 5.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 333 | 0.6− | 0.3+ | 2001 10 11 | 644 | 0.5− | 0.1− | 2004 04 25 | 691 | 0.1− | 0.5+ |
| 2001 09 17 | 333 | 0.4− | 1.1− | 2001 10 11 | 644 | 0.6− | 0.3+ | 2005 06 16 | G96 | 0.0 | 0.2+ |
| 2001 09 17 | 333 | 0.1− | 0.4+ | 2001 10 11 | 644 | 0.5− | 0.2+ | 2005 06 16 | G96 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 1.1+ | 2001 10 13 | 704 | 0.4− | 0.5+ | 2005 06 16 | G96 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.8− | 0.0 | 2001 10 13 | 704 | 0.3− | 0.2+ | 2005 06 16 | G96 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2001 10 13 | 704 | 1.6− | 1.4+ | 2006 08 15 | 644 | 0.3+ | 0.3+ |
| 2001 09 20 | 704 | 0.4− | 0.5+ | 2001 10 13 | 691 | 0.3+ | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2001 10 13 | 691 | 0.2+ | 0.2+ | 2006 08 15 | 644 | 0.2+ | 0.5− |
| 2001 09 22 | 691 | 0.1+ | 0.1− | 2001 10 13 | 691 | 0.4+ | 0.5+ | 2006 08 28 | 699 | 1.0+ | 0.4+ |
| 2001 09 22 | 691 | 0.6− | 0.5+ | 2001 10 21 | 704 | 0.4+ | 0.7− | 2006 08 28 | 699 | 0.2+ | 0.3+ |
| 2001 09 22 | 691 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.6+ |
| 2001 09 23 | 704 | 0.1+ | 0.1− | 2001 10 21 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.2− |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.3− | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.6+ |
| 2001 09 23 | 704 | 0.5− | 0.7+ | 2001 10 21 | 704 | 0.5+ | 0.5+ | 2006 08 28 | 703 | 0.1+ | 1.5+ |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.8+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 1.0+ |
| 2001 09 23 | 704 | 0.4− | 0.2+ | 2004 03 19 | 704 | 0.0 | 0.7− | 2006 08 28 | 699 | 0.7+ | 0.2+ |
| 2001 09 24 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.5+ | 1.1+ | 2006 09 14 | 703 | 1.4− | 0.1− |
| 2001 09 24 | 704 | 0.1+ | 0.8+ | 2004 03 19 | 704 | 1.6+ | 1.2+ | 2006 09 14 | 703 | 0.6− | 0.1+ |
| 2001 09 24 | 704 | 0.8+ | 0.2+ | 2004 03 27 | 704 | (2.1+ | 0.4−) | 2006 09 14 | 703 | 0.3− | 0.4+ |
| 2001 09 24 | 704 | 1.7+ | 0.2− | 2004 03 27 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 1.2− |
| 2001 10 08 | 644 | 0.6− | 0.3+ | 2004 03 27 | 704 | 0.8− | 1.0+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2001 10 08 | 644 | 0.6− | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2001 10 08 | 644 | 0.2− | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 10 09 | 333 | 0.3+ | 0.7− | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.6− |
| 2001 10 09 | 333 | 0.3+ | 0.3+ | 2004 04 25 | 691 | 0.3+ | 0.8+ | | | | |
| 2001 10 09 | 333 | 0.7− | 0.5− | 2004 04 25 | 691 | 0.4+ | 0.5+ | | | | |

**(140337)∗ 2001 TS$_4$**

Discovered 2001 Oct. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.87269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20301550 | $\omega$ | 76.50056 | | +0.88379562 | −0.46767327 | |
| $a$ | 2.8671468 | $\Omega$ | 311.38093 | | +0.42190765 | +0.80926193 | |
| $e$ | 0.0790710 | $i$ | 1.04432 | | +0.20223560 | +0.35549521 | |
| $P$ | 4.85 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 291 | 0.1− | 0.3− | 2001 10 21 | 704 | 0.0 | 0.9+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2001 09 23 | 291 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2001 09 23 | 691 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 09 23 | 691 | 0.0 | 0.1+ | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.3− |
| 2001 09 23 | 291 | 0.3− | 0.2− | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.4− |
| 2001 09 23 | 691 | 0.3− | 0.3+ | 2004 04 20 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.1+ |
| 2001 09 24 | 691 | 0.1+ | 0.0 | 2004 04 20 | 691 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.4+ |
| 2001 09 24 | 691 | 0.1+ | 0.3− | 2004 04 20 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 1.2+ | 0.7+ |
| 2001 09 24 | 691 | 0.1+ | 0.2− | 2004 05 09 | 691 | 0.5+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2001 09 25 | 691 | 0.4+ | 0.4+ | 2004 05 09 | 691 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 09 25 | 691 | 0.4+ | 0.1+ | 2004 05 09 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2001 09 25 | 691 | 0.5+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2001 10 08 | 644 | 0.7− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2001 10 08 | 644 | 0.8− | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 10 08 | 644 | 0.4− | 0.3+ | 2006 09 26 | 152 | 0.7− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 10 08 | 644 | 1.3− | 0.4− | 2006 09 26 | 152 | 0.5− | 0.9+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2001 10 08 | 644 | 0.8− | 1.0− | 2006 09 27 | 152 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2001 10 08 | 644 | 0.5− | 0.2− | 2006 09 27 | 152 | 0.5+ | 0.2− | 2006 11 10 | 691 | 0.3− | 0.2− |
| 2001 10 11 | 644 | 0.4− | 0.2+ | 2006 09 27 | 152 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.4− | 0.3+ |
| 2001 10 11 | 644 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2001 10 11 | 644 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.4+ | 2006 11 18 | 691 | 0.6− | 0.0 |

**(140338)∗ 2001 TX$_4$**

Discovered 2001 Oct. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.27249 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21616494 | $\omega$ | 322.85367 | | −0.60369468 | −0.79413370 | |
| $a$ | 2.7496614 | $\Omega$ | 163.89239 | | +0.77856823 | −0.60618323 | |
| $e$ | 0.1148303 | $i$ | 14.62066 | | +0.17141833 | −0.04351507 | |
| $P$ | 4.56 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.5− | 0.2− | 2001 09 25 | 644 | 0.9+ | 0.7− | 2005 07 08 | 691 | 0.2+ | 0.1+ |
| 1995 07 03 | 691 | 0.4− | 0.2− | 2001 09 25 | 644 | 1.2+ | 0.9− | 2005 07 08 | 691 | 0.7− | 0.7+ |
| 1995 07 03 | 691 | 0.1− | 0.4− | 2001 09 25 | 644 | 0.6+ | 0.5− | 2005 07 30 | 644 | 0.5+ | 0.0 |
| 1999 03 23 | 699 | 0.7+ | 0.7+ | 2001 10 08 | 644 | 0.1− | 0.3+ | 2005 07 30 | 644 | 0.6+ | 0.1+ |
| 1999 03 23 | 699 | 1.5+ | 1.2+ | 2001 10 08 | 644 | 0.3+ | 0.1+ | 2005 07 30 | 644 | 0.8+ | 0.2+ |
| 1999 03 23 | 699 | 0.7+ | 1.6+ | 2001 10 08 | 644 | 0.1− | 0.4+ | 2005 10 30 | G96 | 0.0 | 0.4− |
| 1999 04 12 | 704 | 0.4+ | 0.7+ | 2001 10 11 | 644 | 0.1+ | 1.3+ | 2005 10 30 | G96 | 0.2+ | 0.0 |
| 1999 04 12 | 704 | 0.7+ | 1.2+ | 2001 10 11 | 644 | 0.2+ | 1.3+ | 2005 10 30 | G96 | 0.1− | 0.1− |
| 1999 04 12 | 704 | 0.6− | 1.4+ | 2001 10 11 | 644 | 0.3+ | 0.8+ | 2005 10 30 | G96 | 0.1+ | 0.7− |
| 1999 04 12 | 704 | (3.0− | 2.5+) | 2001 10 16 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2001 09 12 | 704 | 0.6− | 0.4+ | 2001 10 16 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2001 10 16 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2001 10 17 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2001 10 17 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.5− | 1.4− |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2001 10 17 | 644 | 0.7+ | 0.3+ | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2001 09 18 | 699 | 0.7− | 0.8+ | 2001 10 24 | 644 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2001 09 18 | 699 | 0.0 | 0.7+ | 2001 10 24 | 644 | 0.3− | 0.0 | 2006 10 28 | 703 | 1.0− | 0.9− |
| 2001 09 18 | 699 | 0.4+ | 0.2− | 2001 10 24 | 644 | 0.1− | 0.5− | 2006 11 16 | 703 | 0.5− | 0.5− |
| 2001 09 18 | 699 | 0.6− | 0.1− | 2003 01 02 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.6− | 0.2− |
| 2001 09 21 | 704 | 0.4− | 0.6+ | 2003 01 02 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.7+ | 2003 01 02 | 704 | 0.1+ | 1.2+ | 2006 11 16 | 703 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.7+ | 0.8+ | 2003 01 02 | 704 | 0.0 | 0.0 | | | | |
| 2001 09 21 | 704 | 0.8− | 0.8+ | 2005 07 08 | 691 | 0.2+ | 0.0 | | | | |

**(140339)∗ 2001 TP$_5$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.30555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21597616 | $\omega$ | 324.39004 | | +0.60591932 | −0.78408805 | |
| $a$ | 2.7512634 | $\Omega$ | 87.93314 | | +0.75748801 | +0.51702938 | |
| $e$ | 0.0723201 | $i$ | 7.72992 | | +0.24305079 | +0.34334611 | |
| $P$ | 4.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 0.3− | 0.6− | 2002 12 31 | 704 | 0.3+ | 1.1+ | 2004 04 24 | 704 | 0.6+ | 0.1+ |
| 1997 11 29 | 704 | 0.2+ | 0.1− | 2003 01 05 | 704 | 0.8+ | 0.4− | 2004 04 25 | 704 | (1.7+ | 0.2+) |
| 1997 11 29 | 704 | 0.7+ | 1.4− | 2003 01 05 | 704 | 0.7+ | 0.4+ | 2004 04 25 | 704 | 1.4+ | 0.1+ |
| 1997 11 29 | 704 | 0.2− | 1.7− | 2003 01 05 | 704 | 1.4+ | 0.0 | 2004 04 25 | 704 | 0.4+ | 1.0+ |
| 1998 01 30 | 327 | 0.7− | 0.8− | 2003 01 05 | 704 | 0.3+ | 0.1− | 2004 04 25 | 704 | 0.5− | 0.3+ |
| 1998 01 30 | 327 | 1.0− | 0.1− | 2003 01 09 | 704 | 0.1+ | 0.2− | 2004 04 25 | 704 | (1.3+ | 1.8+) |
| 1998 01 30 | 327 | 0.9− | 0.2− | 2003 01 09 | 704 | 0.1+ | 0.6+ | 2004 04 25 | 704 | 0.4+ | 0.2− |
| 2001 08 25 | 644 | 0.7− | 0.8+ | 2003 01 09 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.4+ |
| 2001 08 25 | 644 | 0.2− | 1.3+ | 2003 01 09 | 704 | 0.6− | 0.1+ | 2004 04 27 | 704 | 0.5+ | 0.0 |
| 2001 08 25 | 644 | 0.5− | 1.3+ | 2003 01 09 | 704 | 0.0 | 0.6+ | 2004 04 27 | 704 | 0.6+ | 0.2+ |
| 2001 09 12 | 704 | 0.6− | 0.5− | 2003 02 01 | 704 | 0.4+ | 0.5+ | 2004 04 27 | 704 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 1.0+ | 0.6− | 2003 02 01 | 704 | 0.3− | 1.4+ | 2005 09 01 | 644 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.4− | 0.3− | 2003 02 01 | 704 | 0.8+ | 0.0 | 2005 09 01 | 644 | 0.2+ | 0.3+ |
| 2001 09 12 | 704 | 0.5− | 0.8+ | 2003 02 01 | 704 | 0.4+ | 0.1− | 2005 09 01 | 644 | 0.1− | 0.0 |
| 2001 09 22 | 644 | 0.3+ | 0.4+ | 2003 02 01 | 704 | 0.8− | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2001 09 22 | 644 | 0.1+ | 0.3+ | 2003 02 04 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 1.0− | 0.3− |
| 2001 09 22 | 644 | 0.4+ | 0.4+ | 2003 02 04 | 704 | 0.6− | 0.6+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2001 10 10 | 644 | 0.2+ | 1.0+ | 2003 02 04 | 704 | 1.0+ | 0.5+ | 2006 10 22 | 703 | 0.7+ | 0.2+ |
| 2001 10 10 | 644 | 0.4+ | 0.7+ | 2003 02 04 | 704 | 0.3− | 1.0+ | 2006 11 01 | 703 | 1.2+ | 0.7− |
| 2001 10 10 | 644 | 0.1− | 0.5+ | 2004 04 17 | 926 | 0.8− | 0.4+ | 2006 11 01 | 703 | 1.0− | 1.3− |
| 2001 10 11 | 644 | 0.2− | 0.8+ | 2004 04 17 | 926 | 1.1− | 0.3+ | 2006 11 01 | 703 | 0.8− | 0.2− |
| 2001 10 11 | 644 | 0.4− | 1.0+ | 2004 04 18 | 926 | 0.3− | 0.6+ | 2006 11 01 | 703 | 0.8− | 0.1− |
| 2001 10 11 | 644 | 0.4− | 1.2+ | 2004 04 18 | 926 | 0.6− | 0.4+ | 2006 11 01 | 703 | 0.4+ | 0.2+ |
| 2001 10 15 | 644 | 0.4− | 0.5+ | 2004 04 18 | 926 | 1.1− | 0.7+ | 2006 11 01 | 703 | 0.2− | 0.9− |
| 2001 10 15 | 644 | 0.4− | 0.6+ | 2004 04 20 | 704 | 0.1− | 0.8+ | 2006 11 01 | 703 | 0.1+ | 1.0− |
| 2001 10 15 | 644 | 0.4− | 0.8+ | 2004 04 20 | 704 | (0.6− | 2.2+) | 2006 11 01 | 703 | (1.5+ | 0.4+) |
| 2001 10 16 | 644 | 0.3+ | 0.2+ | 2004 04 20 | 704 | (0.6− | 1.7+) | 2006 11 11 | 703 | 0.8− | 0.2+ |
| 2001 10 16 | 644 | 0.3− | 0.9+ | 2004 04 20 | 704 | (0.2+ | 1.6+) | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2001 10 16 | 644 | 0.2+ | 0.7+ | 2004 04 20 | 704 | (0.3− | 2.1+) | 2006 11 11 | 703 | 0.6− | 0.9− |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2001 10 24 | 644 | 0.4+ | 0.0 | 2004 04 20 | 704 | 0.3+ | 1.0+ | 2006 11 20 | 704 | 1.1− | 1.8+ |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 1.8+ |
| 2002 12 28 | 699 | 1.1− | 0.8+ | 2004 04 23 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.3+ | 1.5+ |
| 2002 12 28 | 699 | 1.2+ | 0.4− | 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2002 12 28 | 699 | 0.2+ | 0.8+ | 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2002 12 28 | 699 | 1.1− | 0.5+ | 2004 04 24 | 704 | (0.3− | 2.7+) | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2002 12 31 | 704 | 0.7+ | 0.4+ | 2004 04 24 | 704 | 1.3+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2002 12 31 | 704 | 1.0+ | 0.1− | 2004 04 24 | 704 | 0.7+ | 0.5+ | | | | |

**(140340)∗ 2001 TO$_7$**

Discovered 2001 Oct. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.68844 | | (2000.0) | | | |
| $n$ | 0.17701016 | $\omega$ | 23.51544 | | +0.52986062 | −0.84129364 |
| $a$ | 3.1415014 | $\Omega$ | 34.76175 | | +0.74524213 | +0.40159607 |
| $e$ | 0.2205401 | $i$ | 10.82788 | | +0.40479858 | +0.36186407 |
| $P$ | 5.57 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 10 | 691 | 0.3− | 0.7− | 2001 10 14 | 699 | 0.1− | 0.1+ | 2001 12 11 | 704 | 1.4+ | 0.4− |
| 1990 11 10 | 691 | 0.6+ | 0.3+ | 2001 10 14 | 691 | 0.3− | 0.3− | 2001 12 11 | 704 | 0.1− | 0.3+ |
| 1990 11 10 | 691 | 0.0 | 0.7− | 2001 10 14 | 691 | 0.3− | 0.4− | 2001 12 11 | 704 | 0.0 | 0.4+ |
| 2001 08 16 | 704 | 0.5− | 0.1− | 2001 10 14 | 691 | 0.3− | 0.3− | 2001 12 11 | 704 | 0.9− | 0.2+ |
| 2001 08 16 | 704 | 0.4− | 0.2+ | 2001 10 17 | 704 | 0.3− | 0.5+ | 2001 12 11 | 704 | 0.6− | 1.0+ |
| 2001 08 16 | 704 | 1.2− | 0.3− | 2001 10 17 | 704 | 0.1− | 0.1+ | 2001 12 15 | 704 | 0.1+ | 0.4+ |
| 2001 09 12 | 644 | 0.2+ | 0.3+ | 2001 10 17 | 704 | 0.3− | 0.1− | 2001 12 15 | 704 | 0.9− | 0.3+ |
| 2001 09 12 | 644 | 0.1+ | 0.4+ | 2001 10 17 | 704 | 0.1+ | 0.2+ | 2001 12 15 | 704 | 0.3+ | 1.0+ |
| 2001 09 12 | 644 | 0.2+ | 0.4+ | 2001 10 17 | 704 | 0.9− | 0.1+ | 2001 12 15 | 704 | (0.4+ | 3.9+) |
| 2001 09 17 | 704 | 0.5− | 1.1− | 2001 10 19 | 644 | 0.2+ | 0.3+ | 2001 12 15 | 704 | (0.5+ | 2.2+) |
| 2001 09 17 | 704 | 0.6− | 0.4+ | 2001 10 19 | 644 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 0.0 | 0.4− |
| 2001 09 17 | 704 | 1.4− | 0.0 | 2001 10 19 | 644 | 0.4+ | 0.4+ | 2001 12 18 | 704 | 1.2+ | 0.4+ |
| 2001 09 17 | 704 | 1.7+ | 0.2+ | 2001 10 21 | 704 | 0.8+ | 0.3− | 2001 12 18 | 704 | 0.3+ | 0.2− |
| 2001 09 17 | 704 | 1.3− | 1.0+ | 2001 10 21 | 704 | 0.5+ | 0.3− | 2001 12 18 | 704 | 1.0+ | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.5− | 2001 10 21 | 704 | 0.8+ | 0.1+ | 2001 12 18 | 704 | 0.3+ | 1.0+ |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2001 12 19 | 704 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2001 12 19 | 704 | 0.5− | 1.1+ |
| 2001 09 19 | 704 | 0.6+ | 0.1+ | 2001 10 26 | 704 | 0.1+ | 0.1+ | 2001 12 19 | 704 | 0.3− | 0.7+ |
| 2001 09 19 | 704 | 0.8+ | 0.2+ | 2001 10 26 | 704 | 0.3− | 0.5+ | 2001 12 19 | 704 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.7+ | 0.2− | 2001 10 26 | 704 | 0.0 | 0.2− | 2001 12 19 | 704 | 0.2+ | 1.5+ |
| 2001 09 19 | 704 | 0.6+ | 0.1+ | 2001 10 26 | 704 | 0.1+ | 0.1− | 2003 02 08 | 699 | 0.6+ | 1.5+ |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2001 10 26 | 704 | 0.4+ | 0.0 | 2003 02 08 | 699 | 1.8+ | 1.7+ |
| 2001 09 19 | 704 | 0.5+ | 1.8+ | 2001 11 09 | 704 | 0.2− | 0.0 | 2003 02 08 | 699 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.9+ | 2001 11 09 | 704 | 0.5− | 0.5+ | 2003 02 08 | 699 | 0.1+ | 1.7+ |
| 2001 09 21 | 699 | 0.8− | 1.2+ | 2001 11 09 | 704 | 0.9− | 0.1+ | 2003 03 23 | 644 | 0.4+ | 1.1+ |
| 2001 09 21 | 699 | 0.1− | 0.0 | 2001 11 09 | 704 | 0.8− | 0.2− | 2003 03 23 | 644 | 0.2+ | 1.6+ |
| 2001 09 21 | 699 | 0.7− | 0.1− | 2001 11 09 | 704 | 0.2− | 0.3+ | 2003 03 23 | 644 | 0.2+ | 1.5+ |
| 2001 09 21 | 699 | 1.2− | 0.4+ | 2001 11 11 | 691 | 0.2+ | 0.2− | 2004 05 14 | 691 | 0.1+ | 0.6+ |
| 2001 09 26 | 704 | 0.3+ | 0.3+ | 2001 11 11 | 691 | 0.1+ | 0.3− | 2004 05 14 | 691 | 0.5+ | 0.5+ |
| 2001 09 26 | 704 | 0.4+ | 1.0+ | 2001 11 11 | 691 | 0.0 | 0.4− | 2004 05 14 | 691 | 0.8+ | 0.4+ |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2001 11 16 | 644 | 0.1+ | 0.1+ | 2006 07 30 | E12 | 0.5− | 0.5− |
| 2001 09 26 | 704 | 0.1+ | 0.2+ | 2001 11 16 | 644 | 0.1+ | 0.1− | 2006 07 30 | E12 | 0.7− | 0.1+ |
| 2001 09 30 | 049 | 0.0 | 0.2− | 2001 11 16 | 644 | 0.1+ | 0.2+ | 2006 07 30 | E12 | 0.4− | 0.7+ |
| 2001 09 30 | 049 | 0.0 | 0.3− | 2001 11 17 | 704 | 0.0 | 0.4+ | 2006 07 30 | E12 | 0.1− | 0.1+ |
| 2001 09 30 | 049 | 0.1+ | 0.5− | 2001 11 17 | 704 | 0.3− | 0.7+ | 2006 08 17 | 644 | 0.3− | 0.5+ |
| 2001 10 11 | 333 | 0.4+ | 1.0− | 2001 11 17 | 704 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.4− | 0.7+ |
| 2001 10 11 | 333 | 0.8+ | 0.4− | 2001 11 17 | 704 | 0.0 | 0.6+ | 2006 08 17 | 644 | 0.5− | 0.9+ |
| 2001 10 11 | 333 | 0.7− | 0.8− | 2001 11 17 | 704 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.0 | 1.0+ |
| 2001 10 12 | 333 | 0.2− | 0.4+ | 2001 11 19 | 704 | 0.5− | 0.6+ | 2006 08 20 | 644 | 0.4− | 0.5+ |
| 2001 10 12 | 333 | 0.3− | 0.0 | 2001 11 19 | 704 | 0.6− | 0.6+ | 2006 08 20 | 644 | 0.5− | 0.5+ |
| 2001 10 12 | 333 | 0.8− | 0.4− | 2001 11 19 | 704 | 0.3− | 0.9+ | 2006 08 28 | E12 | 0.3+ | 0.3+ |
| 2001 10 13 | 704 | 0.7− | 0.4+ | 2001 11 19 | 704 | 0.4− | 0.9+ | 2006 08 28 | E12 | 0.5− | 0.2+ |
| 2001 10 13 | 704 | 1.2− | 0.3− | 2001 11 19 | 704 | 0.3− | 1.2+ | 2006 08 28 | E12 | 0.1− | 0.6+ |
| 2001 10 13 | 704 | 0.3− | 0.1+ | 2001 11 24 | 704 | 0.6+ | 0.0 | 2006 08 28 | E12 | 0.6+ | 0.3− |
| 2001 10 13 | 704 | 0.7− | 0.6+ | 2001 11 24 | 704 | 1.0+ | 0.1− | 2006 09 26 | 703 | 0.2− | 0.5− |
| 2001 10 14 | 699 | 0.6− | 0.4− | 2001 11 24 | 704 | 0.9+ | 0.2− | 2006 09 26 | 703 | 0.5+ | 0.7− |
| 2001 10 14 | 699 | 0.7− | 0.5− | 2001 11 24 | 704 | 0.5+ | 0.0 | 2006 09 26 | 703 | 1.6− | 0.8+ |
| 2001 10 14 | 699 | 0.3− | 0.0 | 2001 11 24 | 704 | 0.9+ | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.5+ |

**(140341)∗ 2001 TR$_7$**

Discovered 2001 Oct. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.58835 | | (2000.0) | | | |
| $n$ | 0.26222759 | $\omega$ | 192.53163 | | +0.60838522 | −0.79355499 |
| $a$ | 2.4174108 | $\Omega$ | 219.99721 | | +0.72971992 | +0.56514071 |
| $e$ | 0.1382344 | $i$ | 1.04682 | | +0.31205169 | +0.22558025 |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.3+ | 0.2− | 2001 10 21 | 704 | 0.5+ | 0.5+ | 2003 04 01 | 704 | 1.3− | 0.6+ |
| 1995 02 03 | 691 | 0.6− | 0.3− | 2001 10 26 | 704 | 0.9+ | 0.1+ | 2003 04 01 | 704 | 1.3− | 0.0 |
| 1995 02 03 | 691 | 0.1− | 0.7− | 2001 10 26 | 704 | 0.2+ | 0.2+ | 2003 04 26 | 691 | 0.0 | 1.1+ |
| 2001 08 24 | 704 | 0.6− | 0.3+ | 2001 10 26 | 644 | 0.6− | 0.6+ | 2003 04 26 | 691 | 0.2− | 1.2+ |
| 2001 08 24 | 704 | 0.1+ | 0.4+ | 2001 10 26 | 704 | 0.0 | 0.2− | 2003 04 26 | 691 | 0.0 | 1.3+ |
| 2001 08 24 | 704 | 1.1− | 0.0 | 2001 10 26 | 644 | 0.6− | 0.6+ | 2005 12 04 | 691 | 0.4+ | 0.2+ |
| 2001 09 22 | 699 | 0.2− | 1.7+ | 2001 10 26 | 704 | 0.2+ | 0.0 | 2005 12 04 | 691 | 0.0 | 0.1− |
| 2001 09 22 | 699 | 1.6− | 0.2− | 2001 10 26 | 644 | 0.5− | 0.4+ | 2005 12 04 | 691 | 0.0 | 0.1− |
| 2001 09 22 | 699 | 0.3− | 0.1− | 2001 11 09 | 704 | 0.5+ | 0.4+ | 2005 12 04 | 704 | 1.0− | 1.2+ |
| 2001 09 22 | 699 | 0.6− | 0.9+ | 2001 11 09 | 704 | 0.2+ | 0.3− | 2005 12 04 | 704 | 0.7− | 0.2− |
| 2001 09 25 | 333 | 0.1− | 0.0 | 2001 11 09 | 704 | 0.4− | 0.4+ | 2005 12 04 | 704 | 0.1+ | 0.4+ |
| 2001 09 25 | 333 | 0.7− | 0.4+ | 2001 11 16 | 644 | 0.2− | 0.4+ | 2005 12 04 | 704 | 0.1− | 0.2− |
| 2001 09 25 | 333 | 1.2− | 0.5+ | 2001 11 16 | 644 | 0.2− | 0.5+ | 2005 12 06 | 704 | 1.9− | 1.0+ |
| 2001 10 11 | 333 | 0.6+ | 0.9− | 2001 11 16 | 644 | 0.3− | 0.2+ | 2005 12 06 | 704 | 0.2+ | 1.1+ |
| 2001 10 11 | 333 | 0.3+ | 1.2− | 2001 11 17 | 704 | 0.2− | 1.2+ | 2005 12 06 | 704 | 0.2+ | 0.5+ |
| 2001 10 11 | 333 | 0.4+ | 0.5− | 2001 11 17 | 704 | 0.2+ | 0.6+ | 2005 12 10 | 704 | (0.6+ | 2.2−) |
| 2001 10 11 | 644 | 0.3− | 0.1+ | 2001 11 17 | 704 | 0.2+ | 1.0+ | 2005 12 10 | 704 | 1.0+ | 0.2− |
| 2001 10 11 | 644 | 0.3− | 0.1− | 2001 11 17 | 704 | 0.2+ | 0.8+ | 2005 12 10 | 704 | 0.8+ | 0.4+ |
| 2001 10 11 | 644 | 0.3− | 0.2− | 2001 11 17 | 704 | 0.4− | 0.5+ | 2005 12 21 | 703 | 0.3− | 0.2− |
| 2001 10 12 | 333 | 0.2− | 0.5− | 2001 11 20 | 691 | 0.0 | 0.2+ | 2005 12 21 | 703 | 0.2− | 0.1− |
| 2001 10 12 | 333 | 0.4− | 0.8− | 2001 11 20 | 704 | 0.2− | 0.4+ | 2005 12 21 | 703 | 1.1− | 1.2+ |
| 2001 10 12 | 333 | 0.5− | 0.3− | 2001 11 20 | 704 | 0.2− | 0.4+ | 2005 12 21 | 703 | 1.7+ | 1.0+ |
| 2001 10 13 | 704 | 0.0 | 0.5+ | 2001 11 20 | 691 | 0.1+ | 0.1+ | 2005 12 25 | G96 | 0.3+ | 1.0− |
| 2001 10 13 | 704 | 0.5+ | 0.3+ | 2001 11 20 | 704 | 0.0 | 0.7+ | 2005 12 25 | G96 | 0.1+ | 1.0− |
| 2001 10 13 | 704 | 0.4+ | 0.3+ | 2001 11 20 | 691 | 0.0 | 0.1+ | 2005 12 25 | G96 | 0.9+ | 1.0− |
| 2001 10 13 | 704 | 0.2− | 0.3+ | 2001 11 20 | 704 | 0.1− | 1.0+ | 2005 12 25 | G96 | 0.2+ | 1.0− |
| 2001 10 13 | 704 | 0.1+ | 0.2+ | 2001 11 20 | 704 | 0.1− | 0.6+ | 2005 12 26 | G96 | 0.0 | 0.7− |
| 2001 10 14 | 699 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.6+ | 0.8+ | 2005 12 26 | G96 | 0.1− | 0.6− |
| 2001 10 14 | 699 | 0.4+ | 0.6+ | 2001 11 21 | 704 | 0.7+ | 0.6+ | 2005 12 26 | G96 | 0.2− | 0.6− |
| 2001 10 14 | 699 | 0.5+ | 0.5+ | 2001 11 21 | 704 | 0.4+ | 0.7+ | 2005 12 26 | G96 | 0.2− | 0.6− |
| 2001 10 14 | 699 | 0.0 | 0.9+ | 2001 11 21 | 704 | 0.9+ | 0.2+ | 2005 12 27 | 703 | 0.3− | 0.1+ |
| 2001 10 14 | 691 | 0.1− | 0.1− | 2001 11 21 | 704 | 0.7+ | 0.1− | 2005 12 27 | 703 | (2.0− | 2.1+) |
| 2001 10 14 | 691 | 0.7− | 0.2+ | 2001 12 19 | 704 | 1.7− | 1.5− | 2005 12 27 | 703 | (1.5+ | 2.5+) |
| 2001 10 14 | 691 | 0.2− | 0.1− | 2001 12 19 | 704 | 0.5+ | 0.5+ | 2005 12 27 | 703 | 0.5+ | 0.2− |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 01 05 | 704 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 0.5− | 2001 12 19 | 704 | 0.5− | 0.0 | 2006 01 05 | 704 | 0.6− | 0.6− |
| 2001 10 17 | 704 | 0.6− | 0.5− | 2001 12 19 | 704 | 0.5− | 0.0 | 2006 01 05 | 704 | 0.9− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.8− | 0.2− | 2003 03 23 | 703 | 1.0+ | 0.5+ | 2006 01 05 | 704 | 0.2− | 0.1− |
| 2001 10 17 | 704 | 0.9− | 0.0 | 2003 03 23 | 703 | (4.4− | 1.5−) | 2006 01 06 | G96 | 0.4+ | 0.5− |
| 2001 10 19 | 644 | 0.4+ | 0.2+ | 2003 03 23 | 703 | 1.7+ | 1.3+ | 2006 01 06 | G96 | 0.0 | 0.7− |
| 2001 10 19 | 644 | 0.3+ | 0.1+ | 2003 03 23 | 703 | 0.7+ | 1.4+ | 2006 01 06 | G96 | 0.0 | 0.7− |
| 2001 10 19 | 644 | 0.5+ | 0.8+ | 2003 03 23 | 691 | 0.9+ | 0.4+ | 2006 01 06 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 0.5+ | 1.1+ | 2003 03 23 | 691 | 0.7+ | 0.6+ | 2006 02 24 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.5+ | 0.8+ | 2003 03 23 | 691 | 0.7+ | 0.4+ | 2006 02 24 | G96 | 0.4− | 0.2− |
| 2001 10 21 | 704 | 0.6+ | 0.4+ | 2003 04 01 | 704 | 0.6− | 0.4− | 2006 02 24 | G96 | 0.3+ | 0.3− |
| 2001 10 21 | 704 | 0.4+ | 0.5+ | 2003 04 01 | 704 | 0.1+ | 0.7− | 2006 02 24 | G96 | 0.2− | 0.4− |

**(140342)∗ 2001 TG$_8$**

Discovered 2001 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.90809 | | (2000.0) | | +0.97225926 | −0.19622224 |
| $n$ | 0.18979436 | $\omega$ | 89.84239 | | +0.12678837 | +0.89950350 |
| $a$ | 2.9987978 | $\Omega$ | 281.47240 | | +0.19656203 | +0.39037198 |
| $e$ | 0.1045535 | $i$ | 7.46434 | | | |
| $P$ | 5.19 | $H$ | 15.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 691 | 0.3− | 0.1− | 2001 10 27 | 704 | 0.5− | 0.5+ | 2002 01 06 | 644 | 0.3− | 1.2+ |
| 1995 08 29 | 691 | 0.2− | 0.1+ | 2001 11 11 | 699 | 0.4+ | 0.4− | 2002 01 06 | 644 | 0.2+ | 0.9+ |
| 1995 08 29 | 691 | 0.3− | 0.3+ | 2001 11 11 | 699 | 0.6+ | 0.2− | 2002 01 08 | 704 | 0.1+ | 0.5− |
| 2000 07 06 | 691 | 0.5+ | 0.3+ | 2001 11 11 | 699 | 1.0+ | 0.3+ | 2002 01 08 | 704 | 0.8+ | 1.5− |
| 2000 07 06 | 691 | 0.4+ | 0.2+ | 2001 11 11 | 699 | 1.2+ | 0.1+ | 2002 01 08 | 704 | 0.3− | 0.6− |
| 2000 07 06 | 691 | 0.5− | 0.1+ | 2001 11 12 | 704 | 0.8− | 0.0 | 2002 01 08 | 704 | 0.3+ | 1.0− |
| 2000 08 01 | 704 | 0.4− | 0.3+ | 2001 11 12 | 704 | 0.1+ | 0.9− | 2002 01 08 | 704 | (0.5+ | 1.7−) |
| 2000 08 01 | 704 | 0.8+ | 0.6+ | 2001 11 12 | 704 | 0.7+ | 1.1− | 2003 01 28 | 645 | 0.0 | 0.1+ |
| 2000 08 01 | 704 | 0.0 | 1.1− | 2001 11 12 | 704 | 0.1+ | 0.6− | 2003 01 28 | 645 | 0.0 | 0.1+ |
| 2001 10 09 | 704 | 0.2+ | 0.9− | 2001 11 12 | 704 | 0.4+ | 0.9− | 2003 01 28 | 608 | 0.2+ | 1.1− |
| 2001 10 09 | 704 | 0.4+ | 0.7− | 2001 11 17 | 644 | 0.2+ | 0.8+ | 2003 01 28 | 608 | 0.4+ | 0.7− |
| 2001 10 09 | 704 | 0.9+ | 0.9− | 2001 11 17 | 644 | 0.2+ | 0.9+ | 2003 01 28 | 608 | 0.4+ | 0.3+ |
| 2001 10 09 | 704 | 0.4+ | 0.2− | 2001 11 17 | 644 | 0.6+ | 0.7+ | 2003 02 19 | 644 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.5+ | 0.2+ | 2001 11 19 | 699 | 0.6+ | 0.6− | 2003 02 19 | 644 | 0.3+ | 0.9+ |
| 2001 10 14 | 704 | 0.8+ | 0.2− | 2001 11 19 | 699 | 0.2+ | 0.0 | 2003 02 19 | 644 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.1− | 0.2− | 2001 11 19 | 699 | 0.2+ | 0.3− | 2003 02 19 | 644 | 0.0 | 0.6+ |
| 2001 10 14 | 704 | 0.5+ | 0.1+ | 2001 11 19 | 699 | 0.2+ | 0.1+ | 2003 02 19 | 644 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.4− | 0.2+ | 2003 02 19 | 644 | 0.1+ | 0.8+ |
| 2001 10 15 | 704 | 0.3+ | 0.2+ | 2001 11 21 | 704 | 0.7− | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.1− |
| 2001 10 15 | 704 | 0.1+ | 0.6− | 2001 11 21 | 704 | 0.4− | 0.3− | 2006 09 17 | 703 | 0.1− | 0.3+ |
| 2001 10 15 | 704 | 0.1+ | 0.5− | 2001 11 21 | 704 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.4+ |
| 2001 10 15 | 704 | 0.6− | 0.4− | 2001 11 21 | 704 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.6− |
| 2001 10 15 | 704 | 0.4− | 0.0 | 2001 11 24 | 704 | 0.2− | 0.8+ | 2006 09 28 | 703 | 0.7− | 0.1+ |
| 2001 10 19 | 704 | 0.1+ | 1.4− | 2001 11 24 | 704 | 0.7− | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.0 |
| 2001 10 19 | 704 | 0.2− | 0.4+ | 2001 11 24 | 704 | 0.7− | 0.7+ | 2006 09 28 | 703 | 0.4− | 0.1+ |
| 2001 10 19 | 704 | 0.2+ | 0.4− | 2001 11 24 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.1− |
| 2001 10 19 | 704 | 0.4− | 0.1+ | 2001 11 24 | 704 | 0.7− | 0.2− | 2006 10 21 | 704 | 0.5+ | 0.5+ |
| 2001 10 19 | 704 | 0.2+ | 1.2+ | 2001 12 10 | 704 | 1.4+ | 1.1+ | 2006 10 21 | 704 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.4+ | 2001 12 10 | 704 | 0.3− | 0.6+ | 2006 10 21 | 704 | 0.4− | 1.2+ |
| 2001 10 21 | 704 | 0.3− | 0.8+ | 2001 12 10 | 704 | 1.2+ | 0.2− | 2006 10 21 | 704 | 0.2− | 1.2+ |
| 2001 10 21 | 704 | 0.6− | 0.3+ | 2001 12 10 | 704 | 0.0 | 0.1− | 2006 10 21 | 704 | 0.2− | 0.3+ |
| 2001 10 21 | 704 | 0.8− | 0.1+ | 2001 12 10 | 704 | 0.6+ | 0.1− | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.7+ | 0.2− | 2001 12 17 | 704 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.9+ | 0.5− |
| 2001 10 27 | 699 | (1.6− | 0.2+) | 2001 12 17 | 704 | 0.0 | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.7+ |
| 2001 10 27 | 699 | 0.9− | 0.0 | 2001 12 17 | 704 | 0.5− | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2001 10 27 | 699 | 0.4+ | 0.6+ | 2001 12 17 | 704 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.4− |
| 2001 10 27 | 704 | 0.3+ | 0.1− | 2001 12 17 | 704 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2001 10 27 | 699 | 0.4− | 0.7+ | 2001 12 20 | 644 | 0.3− | 0.3− | 2006 11 29 | 704 | 0.6− | 0.7− |
| 2001 10 27 | 704 | 0.0 | 1.0− | 2001 12 20 | 644 | 0.4− | 0.3− | 2006 11 29 | 704 | 0.4− | 0.8− |
| 2001 10 27 | 704 | 0.5− | 0.2− | 2001 12 20 | 644 | 0.2− | 1.3− | | | | |
| 2001 10 27 | 704 | 0.5− | 0.7− | 2002 01 06 | 644 | 0.1− | 1.0+ | | | | |

**(140343)∗ 2001 TX$_{10}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.12308 | | (2000.0) | | +0.12610301 | −0.99142102 |
| $n$ | 0.22266383 | $\omega$ | 191.44927 | | +0.91300010 | +0.12954548 |
| $a$ | 2.6958948 | $\Omega$ | 251.31343 | | +0.38798046 | +0.01738782 |
| $e$ | 0.1756137 | $i$ | 2.08027 | | | |
| $P$ | 4.43 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 04 | 644 | 1.0− | 0.3+ | 2001 11 11 | 699 | 0.1− | 0.3− | 2005 09 08 | 704 | 0.1− | 0.0 |
| 2001 08 04 | 644 | 0.1− | 0.2+ | 2001 11 11 | 699 | 0.1− | 0.3− | 2005 09 08 | 704 | 0.1+ | 0.4+ |
| 2001 08 04 | 644 | 0.1− | 0.1+ | 2001 11 15 | 608 | 1.0+ | 0.1− | 2005 09 08 | 704 | 0.0 | 0.4+ |
| 2001 08 28 | 699 | 0.0 | 0.6− | 2001 11 15 | 608 | 0.9+ | 0.3+ | 2005 09 13 | 691 | 0.0 | 0.1− |
| 2001 08 28 | 699 | 0.7− | 1.1+ | 2001 11 15 | 608 | 0.9+ | 0.0 | 2005 09 13 | 691 | 0.1+ | 0.0 |
| 2001 08 28 | 699 | 0.6− | 0.6+ | 2001 11 16 | 644 | 0.1− | 0.3− | 2005 09 13 | 691 | 0.1+ | 0.2− |
| 2001 08 28 | 699 | 0.4− | 0.1− | 2001 11 16 | 644 | 0.2− | 0.0 | 2005 09 22 | 644 | 0.1− | 0.2− |
| 2001 09 21 | 699 | 1.0− | 0.2+ | 2001 11 16 | 644 | 0.2− | 0.1− | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2001 09 21 | 699 | 1.1− | 0.1+ | 2001 11 17 | 704 | 0.3+ | 0.6+ | 2005 09 22 | 644 | 0.2− | 0.1− |
| 2001 09 21 | 699 | 0.7− | 0.5+ | 2001 11 17 | 704 | 0.3+ | 0.5+ | 2005 09 23 | 703 | 0.1− | 0.4+ |
| 2001 09 21 | 699 | 0.2− | 0.6+ | 2001 11 17 | 704 | 0.5+ | 0.3+ | 2005 09 23 | 703 | 0.3− | 0.2− |
| 2001 09 23 | 704 | 0.8+ | 0.3− | 2001 11 17 | 704 | 0.2+ | 0.3+ | 2005 09 23 | 703 | 0.1+ | 0.4+ |
| 2001 09 23 | 704 | 0.1− | 0.7− | 2001 11 17 | 704 | 0.2− | 0.9+ | 2005 09 23 | 703 | 0.7− | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 1.4− | 2001 11 19 | 704 | 0.6+ | 1.0− | 2005 09 25 | 691 | 0.0 | 0.5+ |
| 2001 09 24 | 704 | 0.8+ | 0.8− | 2001 11 19 | 704 | 0.6+ | 0.5− | 2005 09 25 | 691 | 0.1− | 0.5+ |
| 2001 09 24 | 704 | 0.6− | 1.1− | 2001 11 19 | 704 | 0.7+ | 0.5− | 2005 09 25 | 691 | 0.1+ | 0.4+ |
| 2001 09 24 | 704 | 1.0+ | 1.1− | 2001 11 19 | 704 | 0.5+ | 0.1+ | 2005 10 06 | 691 | 0.2− | 0.3+ |
| 2001 09 24 | 704 | 0.4+ | 0.9− | 2001 11 19 | 704 | 0.4+ | 0.0 | 2005 10 06 | 691 | 0.2− | 0.4+ |
| 2001 09 24 | 704 | 0.4+ | 1.0− | 2001 11 21 | 704 | 0.1+ | 0.1− | 2005 10 06 | 691 | 0.2− | 0.4+ |
| 2001 10 11 | 644 | 0.3− | 0.4+ | 2001 11 21 | 704 | 0.2− | 0.3+ | 2005 10 30 | G96 | 0.1+ | 0.3− |
| 2001 10 11 | 644 | 0.4− | 0.0 | 2001 11 21 | 704 | 0.3+ | 0.1+ | 2005 10 30 | G96 | 0.3− | 0.3− |
| 2001 10 11 | 644 | 0.4− | 0.4+ | 2001 11 21 | 704 | 0.3+ | 0.6− | 2005 10 30 | G96 | 0.1− | 0.3− |
| 2001 10 13 | 704 | 0.6− | 1.2− | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2005 10 30 | G96 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 0.2− | 0.2− | 2001 11 21 | 608 | 0.3− | 0.3+ | 2005 10 31 | G96 | 0.0 | 0.4− |
| 2001 10 13 | 704 | 0.4− | 0.4+ | 2001 11 21 | 608 | 0.7− | 0.7− | 2005 10 31 | G96 | 0.1+ | 0.3− |
| 2001 10 13 | 704 | 0.5− | 1.2− | 2001 11 21 | 608 | 0.3− | 0.9− | 2005 10 31 | G96 | 0.3+ | 0.2− |
| 2001 10 13 | 704 | 0.3− | 0.6− | 2001 12 15 | 704 | 0.9− | 0.7+ | 2005 10 31 | G96 | 0.3+ | 0.1+ |
| 2001 10 14 | 704 | 1.1− | 0.9+ | 2001 12 15 | 704 | 0.5+ | 1.1+ | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2001 10 14 | 704 | 1.2+ | 1.1+ | 2001 12 15 | 704 | 0.4− | 1.1− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 1.0− | 1.2+ | 2001 12 15 | 704 | 0.9+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2001 10 14 | 704 | (1.1− | 1.7+) | 2001 12 18 | 704 | 1.2− | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2001 10 14 | 704 | (1.4− | 1.6+) | 2001 12 18 | 704 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.9+ |
| 2001 10 15 | 704 | 0.2− | 1.0+ | 2001 12 18 | 704 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.5+ |
| 2001 10 15 | 704 | 0.2− | 0.8+ | 2001 12 18 | 704 | 0.2− | 0.9+ | 2006 10 16 | 703 | 1.2+ | 0.3+ |
| 2001 10 15 | 704 | 0.2− | 1.3+ | 2003 02 12 | 608 | 1.2+ | 1.0+ | 2006 10 20 | 703 | (0.8− | 1.6−) |
| 2001 10 15 | 704 | 0.1+ | 1.4+ | 2003 02 12 | 608 | 1.0+ | 0.2+ | 2006 10 20 | 703 | 0.7− | 0.2+ |
| 2001 10 15 | 704 | 0.1+ | 1.3+ | 2003 02 12 | 608 | 0.7+ | 0.5+ | 2006 10 20 | 703 | 0.6− | 0.3− |
| 2001 10 17 | 704 | 0.1+ | 0.1− | 2003 03 07 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 703 | 1.4− | 1.0− |
| 2001 10 17 | 704 | 0.2− | 0.3− | 2003 03 07 | 704 | 0.5+ | 0.8+ | 2006 11 01 | G96 | 0.6− | 0.1− |
| 2001 10 17 | 704 | 0.0 | 0.1− | 2003 03 07 | 704 | 0.8+ | 0.8+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2001 10 17 | 704 | 0.0 | 0.3− | 2003 03 07 | 704 | 0.3− | 0.6+ | 2006 11 01 | G96 | 0.6− | 0.2− |
| 2001 10 17 | 704 | 0.2+ | 0.4− | 2003 03 07 | 704 | 0.3+ | 0.6+ | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2001 10 19 | 704 | 0.7+ | 0.9+ | 2003 03 23 | 691 | 0.1+ | 0.8+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2001 10 19 | 704 | 0.8+ | 0.7+ | 2003 03 23 | 691 | 0.2+ | 0.8+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2001 10 19 | 704 | 1.0+ | 1.1+ | 2003 03 23 | 691 | 0.2+ | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2001 10 19 | 704 | 0.6+ | 1.4+ | 2005 07 30 | 644 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2001 10 19 | 644 | 0.2+ | 0.3+ | 2005 07 30 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.8− |
| 2001 10 19 | 644 | 0.1+ | 0.3+ | 2005 07 30 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2001 10 19 | 644 | 0.2+ | 0.4+ | 2005 08 27 | 699 | 0.4− | 1.3+ | 2006 11 18 | 704 | 0.0 | 1.0− |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2005 08 27 | 699 | 0.7− | 0.5+ | 2006 11 18 | 704 | 1.1+ | 1.3− |
| 2001 10 21 | 704 | 0.0 | 0.1+ | 2005 08 27 | 699 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2005 08 27 | 699 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2005 08 29 | 691 | 0.1− | 0.3− | 2006 11 21 | 704 | (0.0 | 2.1+) |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2005 08 29 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | (0.5+ | 1.6+) |
| 2001 11 09 | 704 | 0.3− | 0.5− | 2005 08 29 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.1− | 0.6− | 2005 08 30 | 704 | 0.1+ | 1.0+ | 2006 11 29 | 704 | 2.3+ | 1.7+ |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2005 08 30 | 704 | 0.3+ | 0.8+ | 2006 11 29 | 704 | 0.3+ | 0.1− |
| 2001 11 09 | 704 | (0.8+ | 1.5−) | 2005 08 30 | 704 | 0.8+ | 0.4− | 2006 11 29 | 704 | 1.0− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 699 | 0.1− | 0.1+ | 2005 09 08 | 704 | 0.8+ | 0.6− | 2006 11 29 | 704 | 0.8− | 0.6+ |
| 2001 11 11 | 699 | 0.1+ | 0.7− | 2005 09 08 | 704 | 0.3− | 0.2− | | | | |

**(140344)∗ 2001 TO$_{11}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.15342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19898448 | $\omega$ | 321.68697 | | +0.83691510 | +0.54732640 | |
| $a$ | 2.9057388 | $\Omega$ | 5.13132 | | −0.49463343 | +0.75838333 | |
| $e$ | 0.0739543 | $i$ | 1.68600 | | −0.23433072 | +0.35396121 | |
| $P$ | 4.95 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.2− | 0.5− | 2001 10 21 | 704 | 0.7− | 0.4− | 2006 07 21 | G96 | 0.0 | 0.2− |
| 1999 03 10 | 691 | 0.5− | 0.4− | 2001 10 21 | 704 | 0.6− | 0.6+ | 2006 07 21 | G96 | 0.3− | 0.1− |
| 1999 03 10 | 691 | 0.6− | 0.4− | 2001 10 21 | 704 | 0.6− | 0.7+ | 2006 07 21 | G96 | 0.1− | 0.0 |
| 1999 03 21 | 645 | 0.2− | 0.1− | 2001 10 21 | 704 | 0.7− | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 1999 03 21 | 645 | 0.2− | 0.1− | 2001 10 21 | 704 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 691 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.3− | 0.2+ |
| 2001 09 12 | 691 | 0.1− | 0.2− | 2003 01 08 | 704 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 2001 09 12 | 691 | 0.2− | 0.0 | 2003 01 08 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 09 17 | 704 | 0.5+ | 0.3− | 2003 01 08 | 704 | 0.6+ | 0.2− | 2006 09 19 | 691 | 0.4− | 0.2+ |
| 2001 09 17 | 704 | 0.3+ | 0.1+ | 2004 03 15 | 703 | (0.5− | 3.9−) | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2001 09 17 | 704 | 0.1− | 0.2+ | 2004 03 15 | 703 | 1.2+ | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2001 09 17 | 704 | 0.3+ | 0.1+ | 2004 03 15 | 703 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2001 09 18 | 691 | 0.2+ | 0.1+ | 2004 03 15 | 703 | 0.5+ | 0.8+ | 2006 09 30 | 691 | 0.2− | 0.2− |
| 2001 09 18 | 691 | 0.2+ | 0.1+ | 2004 03 17 | 691 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2001 09 18 | 691 | 0.3+ | 0.4− | 2004 03 17 | 691 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2001 09 23 | 333 | 0.3− | 0.4+ | 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.3− | 0.0 |
| 2001 09 23 | 333 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.3− | 0.0 |
| 2001 09 23 | 333 | 0.3+ | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 0.5+ | 1.1+ | 2004 03 18 | 704 | 0.9+ | 1.4+ | 2006 10 15 | 691 | 0.3− | 0.1− |
| 2001 09 24 | 704 | (0.0 | 1.6+) | 2004 03 18 | 704 | 0.1+ | 0.8− | 2006 10 15 | 691 | 0.2− | 0.0 |
| 2001 09 24 | 704 | 0.5− | 1.2+ | 2004 03 18 | 704 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.5− |
| 2001 09 24 | 704 | 0.0 | 0.3+ | 2004 03 23 | 704 | (0.6− | 1.7+) | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 09 24 | 704 | 0.8− | 0.9+ | 2004 03 23 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 11 | 644 | 0.0 | 0.6+ | 2004 03 23 | 704 | (1.4+ | 1.5+) | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2001 10 11 | 644 | 0.2+ | 0.7+ | 2004 03 23 | 704 | 0.6− | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2001 10 11 | 644 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.8+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2001 10 13 | 704 | 0.2+ | 1.3+ | 2004 03 24 | 699 | 0.6+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 0.8+ | 0.0 | 2004 03 24 | 699 | 0.4+ | 0.7− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2001 10 13 | 704 | 0.4+ | 0.5+ | 2004 03 24 | 699 | 0.5+ | 0.3− | 2006 10 21 | 703 | (1.2− | 1.7−) |
| 2001 10 13 | 704 | 0.0 | 0.6+ | 2004 03 24 | 699 | 0.2− | 0.6− | 2006 10 21 | 703 | (0.0 | 2.3−) |
| 2001 10 14 | 699 | 0.1− | 1.0− | 2004 03 27 | 704 | (2.6+ | 1.9+) | 2006 10 21 | 703 | 0.3− | 1.0− |
| 2001 10 14 | 699 | (1.9+ | 0.3−) | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 1.1− | 0.2+ |
| 2001 10 14 | 699 | 0.3+ | 0.6+ | 2004 03 27 | 704 | 0.7+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.2+ | 0.4+ | 2004 03 27 | 704 | (0.6+ | 1.7+) | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.1+ | 0.4− | 2004 03 27 | 704 | (2.8+ | 0.9−) | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.2+ | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.9− | 0.8− | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | 0.4− | 0.2+ | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2001 10 15 | 691 | 0.0 | 0.2+ | 2004 04 15 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 10 15 | 691 | 0.1+ | 0.1− | 2004 04 15 | 691 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2001 10 15 | 691 | 0.2+ | 0.0 | 2004 04 15 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 10 17 | 704 | 0.6+ | 0.7+ | 2004 04 22 | 691 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.5+ | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.5+ | 2004 04 22 | 691 | 0.0 | 0.8+ | 2006 10 31 | 691 | 0.5+ | 0.2− |
| 2001 10 17 | 704 | 0.1− | 0.7+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.0 |

**(140345)∗ 2001 TV$_{12}$ = 2000 KS$_{68}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 22868)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.51830 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37558294 | $\omega$ | 323.49137 | | +0.74276872 | −0.54164199 | |
| $a$ | 1.9025328 | $\Omega$ | 74.05189 | | +0.66909446 | +0.57883247 | |
| $e$ | 0.0956746 | $i$ | 24.16417 | | +0.02464213 | +0.60957110 | |
| $P$ | 2.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 29 | 691 | 0.1− | 0.3+ | 2001 12 19 | 699 | 0.5+ | 0.7+ | 2005 05 06 | 695 | 0.5− | 0.1+ |
| 2000 05 29 | 691 | 0.0 | 0.4+ | 2001 12 23 | 704 | 0.3− | 0.1− | 2005 05 06 | 695 | 0.4+ | 0.2− |
| 2000 05 29 | 691 | 0.0 | 0.3+ | 2001 12 23 | 704 | 0.5− | 0.2− | 2005 05 06 | 695 | 0.3− | 0.0 |
| 2000 06 06 | 699 | 0.3+ | 0.5+ | 2001 12 23 | 704 | 0.3− | 0.2− | 2005 05 10 | 704 | 0.5+ | 0.8+ |
| 2000 06 06 | 699 | 0.9+ | 0.1− | 2001 12 23 | 704 | 0.1− | 0.1− | 2005 05 10 | 704 | 0.1+ | 0.3+ |
| 2000 06 06 | 699 | 0.2+ | 0.2− | 2001 12 23 | 704 | 0.2− | 0.3− | 2005 05 10 | 704 | 0.5+ | 0.4+ |
| 2000 06 06 | 699 | 0.5+ | 0.5+ | 2002 01 05 | 699 | 0.2− | 1.1− | 2005 05 10 | 704 | 0.2+ | 1.2+ |
| 2001 10 13 | 704 | (1.5− | 0.8+) | 2002 01 05 | 699 | 0.4+ | 0.2− | 2005 05 10 | 704 | 0.6+ | 0.1+ |
| 2001 10 13 | 704 | 0.3− | 1.3+ | 2002 01 05 | 699 | 0.3+ | 0.2+ | 2005 05 10 | 703 | (2.2− | 1.7−) |
| 2001 10 13 | 704 | 0.6− | 1.1+ | 2002 01 05 | 699 | 0.7− | 0.1+ | 2005 05 10 | 703 | 0.1− | 0.6− |
| 2001 10 14 | 704 | 0.1+ | 0.4+ | 2002 01 21 | 699 | 0.7− | 0.3+ | 2005 05 10 | 703 | 0.1− | 0.5− |
| 2001 10 14 | 704 | 0.4+ | 0.5+ | 2002 01 21 | 699 | 0.2− | 0.3− | 2005 05 10 | 703 | 0.4− | 0.9− |
| 2001 10 14 | 704 | 0.1+ | 0.8+ | 2002 01 21 | 699 | 0.6− | 0.4− | 2005 05 16 | 703 | 1.3− | 0.2+ |
| 2001 10 14 | 704 | 0.0 | 0.4+ | 2002 01 21 | 699 | 0.1− | 0.7− | 2005 05 16 | 703 | 0.3− | 0.6+ |
| 2001 10 14 | 704 | 0.2+ | 0.7+ | 2002 03 03 | 704 | 0.3+ | 0.2+ | 2005 05 16 | 703 | 0.1+ | 0.5+ |
| 2001 11 11 | 704 | 0.2− | 0.1+ | 2002 03 03 | 704 | 0.9+ | 1.1+ | 2005 05 16 | 703 | (0.7+ | 2.4+) |
| 2001 11 11 | 704 | 0.5− | 0.6− | 2002 03 03 | 704 | 1.1+ | 1.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2001 11 11 | 704 | 0.4− | 0.1+ | 2002 03 03 | 704 | 0.4+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2001 11 11 | 704 | 1.0− | 0.2+ | 2002 03 03 | 704 | 1.1+ | 1.4+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 11 20 | 699 | 0.6− | 0.8+ | 2005 03 09 | 703 | 0.4− | 0.1− | 2006 10 20 | 703 | 0.7− | 0.6+ |
| 2001 11 20 | 699 | 1.3− | 0.8+ | 2005 03 09 | 703 | 0.5− | 0.5+ | 2006 10 20 | 703 | 0.2− | 0.6+ |
| 2001 11 20 | 699 | (1.9− | 0.3−) | 2005 03 09 | 703 | 0.3+ | 0.7− | 2006 10 20 | 703 | 0.1− | 0.4+ |
| 2001 11 20 | 699 | 0.8− | 0.8+ | 2005 03 09 | 703 | 1.0− | 0.4+ | 2006 10 20 | 703 | 0.5+ | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 0.3− | 2005 03 13 | 704 | 0.4− | 0.7+ | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2001 12 09 | 704 | 0.3− | 0.1+ | 2005 03 13 | 704 | (0.5+ | 2.2+) | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2001 12 09 | 704 | 0.2− | 1.1− | 2005 03 13 | 704 | 0.5+ | 0.8+ | 2006 10 28 | 703 | 0.3− | 0.2+ |
| 2001 12 09 | 704 | 0.1+ | 0.5− | 2005 03 13 | 704 | 0.2− | 0.8+ | 2006 10 28 | 703 | 0.6− | 0.0 |
| 2001 12 09 | 704 | 0.1+ | 1.0− | 2005 03 13 | 704 | 0.7+ | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2001 12 09 | 704 | 0.0 | 0.5+ | 2005 04 13 | 704 | 0.4+ | 0.4− | 2006 11 13 | 703 | 0.8− | 0.6+ |
| 2001 12 09 | 704 | 0.4+ | 1.4− | 2005 04 13 | 704 | 0.1+ | 1.2− | 2006 11 13 | 703 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 1.0+ | 0.7+ | 2005 04 13 | 704 | 1.2+ | 0.8+ | 2006 11 13 | 703 | (0.1− | 2.5−) |
| 2001 12 09 | 704 | 0.2− | 1.2+ | 2005 04 13 | 704 | 1.3+ | 0.0 | 2006 11 19 | 703 | 0.4+ | 0.4− |
| 2001 12 11 | 704 | 0.3+ | 0.0 | 2005 04 13 | 704 | (2.1+ | 0.2−) | 2006 11 19 | 703 | 0.1− | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.4− | 2005 04 30 | 703 | 0.2− | 0.8− | 2006 11 19 | 703 | 0.6+ | 0.2− |
| 2001 12 11 | 704 | 0.4− | 0.6− | 2005 04 30 | 703 | 0.8− | 0.4− | 2006 11 19 | 703 | 0.1+ | 0.4+ |
| 2001 12 11 | 704 | 0.2− | 0.1− | 2005 04 30 | 703 | 0.4− | 0.9− | 2006 11 20 | 704 | 0.3− | 0.0 |
| 2001 12 11 | 704 | 0.4− | 0.5− | 2005 05 05 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2001 12 19 | 699 | 0.5+ | 0.6− | 2005 05 05 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2001 12 19 | 699 | 0.8+ | 0.7− | 2005 05 05 | 644 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2001 12 19 | 699 | 0.9+ | 0.1− | 2005 05 06 | 695 | 1.3+ | 0.6− | 2006 11 20 | 704 | 0.6− | 0.2+ |

**(140346)∗ 2001 TO$_{14}$**

Discovered 2001 Oct. 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.78140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18781680 | $\omega$ | 355.80293 | | +0.98324097 | +0.18124997 | |
| $a$ | 3.0198110 | $\Omega$ | 353.65233 | | −0.16167013 | +0.81706338 | |
| $e$ | 0.0644792 | $i$ | 10.23120 | | −0.08426132 | +0.54731699 | |
| $P$ | 5.25 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2004 03 13 | 644 | 0.9+ | 0.7+ | 2006 09 17 | 704 | 0.6− | 0.8+ |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2004 03 13 | 644 | 0.5+ | 0.9+ | 2006 09 18 | 699 | 0.6+ | 0.5+ |
| 2001 09 20 | 704 | 0.8+ | 0.3− | 2004 03 13 | 644 | 0.5+ | 1.0+ | 2006 09 18 | 699 | 0.3+ | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.9+ | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 699 | 0.8+ | 0.3+ |
| 2001 09 20 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.5+ |
| 2001 09 26 | 704 | 1.0− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.9+ | 2006 09 20 | 704 | 0.7− | 0.7+ |
| 2001 09 26 | 704 | 1.4− | 0.3+ | 2004 03 18 | 704 | 1.3+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 1.3− | 0.7+ | 2004 03 18 | 704 | (1.8+ | 0.9+) | 2006 09 20 | 704 | 0.3− | 0.1− |
| 2001 09 26 | 704 | 1.4− | 0.0 | 2004 03 20 | 704 | 1.0+ | 0.7+ | 2006 09 20 | 704 | 0.5− | 0.4+ |
| 2001 09 26 | 704 | (1.6− | 0.6+) | 2004 03 20 | 704 | (1.6+ | 0.3+) | 2006 09 20 | 704 | 0.3+ | 0.2+ |
| 2001 10 07 | 644 | 1.0− | 0.5+ | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 704 | (0.4− | 1.5+) |
| 2001 10 07 | 644 | 0.2+ | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.3− | 0.6+ |
| 2001 10 07 | 644 | 0.2− | 0.5+ | 2004 03 26 | 691 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2001 10 07 | 644 | 0.5+ | 0.1+ | 2004 03 26 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 704 | (0.0 | 1.5+) |
| 2001 10 07 | 644 | 0.6− | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.6− |
| 2001 10 07 | 644 | 0.2+ | 0.2+ | 2004 03 27 | 704 | 0.0 | 1.2+ | 2006 09 27 | G96 | 0.0 | 0.4− |
| 2001 10 12 | 608 | 0.5− | 0.4− | 2004 03 27 | 704 | 0.5+ | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2001 10 12 | 608 | 0.7− | 0.3− | 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.7− | 0.8+ |
| 2001 10 12 | 608 | 0.5− | 0.1− | 2004 03 27 | 704 | 0.1− | 0.7+ | 2006 09 29 | 704 | (2.9− | 2.7+) |
| 2001 10 13 | 699 | 0.6− | 0.0 | 2004 03 31 | 704 | 1.0+ | 1.4+ | 2006 09 29 | 704 | 0.5− | 0.1− |
| 2001 10 13 | 699 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.4+ | 1.4+ | 2006 09 29 | 704 | 1.1+ | 0.5− |
| 2001 10 13 | 699 | 0.7− | 0.8+ | 2004 03 31 | 704 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.5+ |
| 2001 10 13 | 699 | 0.9+ | 0.3− | 2004 03 31 | 704 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.5+ | 0.6+ |
| 2001 10 14 | 704 | 0.1− | 0.4+ | 2004 04 19 | 691 | 0.2− | 1.3− | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 09 29 | 704 | (0.4− | 2.2−) |
| 2001 10 14 | 704 | 0.0 | 0.3− | 2004 04 19 | 691 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 0.6− | 0.5+ |
| 2001 10 14 | 704 | 0.1− | 0.7− | 2006 08 17 | 644 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.7+ |
| 2001 10 18 | 704 | 0.4+ | 0.4− | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2001 10 18 | 704 | 0.1+ | 0.3− | 2006 08 17 | 644 | 0.7− | 0.0 | 2006 10 01 | 704 | 0.9− | 1.3+ |
| 2001 10 18 | 704 | (1.7+ | 0.3+) | 2006 08 17 | 644 | 0.5− | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.7+ |
| 2001 10 20 | 644 | 0.1− | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.1− | 0.5+ |
| 2001 10 20 | 644 | 0.4− | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.7− | 1.1+ |
| 2001 10 20 | 644 | 0.4− | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.4+ |
| 2001 10 20 | 152 | 0.4− | 0.5− | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 2001 10 20 | 152 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.1− |
| 2001 10 21 | 704 | 0.9+ | 0.4+ | 2006 08 25 | 704 | (0.0 | 1.6+) | 2006 10 01 | 704 | 0.5− | 0.9+ |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2006 08 25 | 704 | 0.2− | 1.2+ | 2006 10 01 | 704 | 0.5− | 0.0 |
| 2001 10 21 | 704 | 0.8+ | 0.6+ | 2006 08 25 | 704 | 0.6+ | 1.0+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 1.0+ | 0.7+ | 2006 08 28 | 703 | 0.1+ | 0.5− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.3+ | 1.1+ | 2006 08 28 | 703 | 0.4+ | 0.5− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2001 10 21 | 152 | 0.4+ | 0.5− | 2006 08 28 | 703 | 0.7− | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2001 10 21 | 152 | 0.7+ | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.7− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2001 10 21 | 152 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.3− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 152 | (2.1+ | 1.3−) | 2006 09 12 | 703 | 0.9− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.6+ |
| 2001 10 24 | 152 | 1.2+ | 1.3− | 2006 09 12 | 703 | 0.9− | 1.1− | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2001 10 24 | 152 | (4.5− | 5.7−) | 2006 09 12 | 703 | 0.5− | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.5+ |
| 2001 11 10 | 704 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.2+ | 0.2+ |
| 2001 11 10 | 704 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 11 10 | 704 | 0.8− | 0.2− | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 11 | 699 | 0.5+ | 0.6+ | 2006 09 16 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 11 11 | 699 | 0.7+ | 0.1− | 2006 09 16 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2001 11 11 | 699 | 0.6− | 1.0+ | 2006 09 16 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2001 11 11 | 699 | 0.2− | 0.1+ | 2006 09 17 | 704 | (1.4− | 1.9+) | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2003 01 10 | 704 | 0.3− | 0.4− | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2003 01 10 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | (2.6− | 1.8+) | | | | |
| 2003 01 10 | 704 | 0.0 | 0.1+ | 2006 09 17 | 704 | (1.9− | 0.8+) | | | | |

**(140347)∗ 2001 TT$_{14}$ = 2005 KX$_{11}$**

Discovered 2001 Oct. 7 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75152)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.18843 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18316111 | $\omega$ | 58.22495 | | +0.24080908 | +0.95436313 | |
| $a$ | 3.0707695 | $\Omega$ | 226.80224 | | −0.95213463 | +0.19698323 | |
| $e$ | 0.0758748 | $i$ | 14.02276 | | −0.18828337 | +0.22447412 | |
| $P$ | 5.38 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.9+ | 2001 11 17 | 704 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 1.3+ | 0.6− | 2001 11 17 | 704 | 0.3− | 0.4− | 2006 09 21 | 699 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.1− | 0.0 | 2004 03 14 | 644 | 0.0 | 1.0+ | 2006 09 21 | 699 | 0.3− | 0.7+ |
| 2001 09 20 | 704 | 1.3+ | 0.2+ | 2004 03 14 | 644 | 0.3+ | 1.0+ | 2006 09 22 | 703 | (0.6+ | 3.0+) |
| 2001 10 07 | 644 | 0.2+ | 1.3+ | 2004 03 14 | 644 | 0.5+ | 0.9+ | 2006 09 22 | 703 | (1.3+ | 3.9+) |
| 2001 10 07 | 644 | 0.3+ | 1.4+ | 2005 05 29 | 599 | 0.0 | 0.8+ | 2006 09 22 | 703 | 0.0 | 0.1− |
| 2001 10 07 | 644 | 0.3+ | 0.9+ | 2005 05 29 | 599 | 0.4+ | 0.3+ | 2006 09 22 | 703 | 0.3− | 0.3− |
| 2001 10 12 | 608 | 0.5− | 0.4− | 2005 05 29 | 599 | 0.1+ | 0.4+ | 2006 09 26 | 683 | 0.4− | 0.6− |
| 2001 10 12 | 608 | 0.3− | 0.0 | 2005 05 29 | 599 | 0.2+ | 0.5+ | 2006 09 26 | 683 | 0.0 | 0.8− |
| 2001 10 12 | 608 | 0.2− | 0.5− | 2005 06 02 | E12 | 0.2+ | 0.5− | 2006 09 26 | 683 | 0.7− | 0.1+ |
| 2001 10 12 | 599 | 0.7− | 0.3− | 2005 06 02 | E12 | 0.9+ | 0.3− | 2006 09 27 | 703 | 0.7+ | 0.5− |
| 2001 10 12 | 599 | 0.1+ | 0.3+ | 2005 06 02 | E12 | 0.4+ | 0.7− | 2006 09 27 | 703 | 0.1+ | 0.6− |
| 2001 10 12 | 599 | 0.3− | 0.5+ | 2005 06 02 | E12 | 0.5+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.5− | 0.3− | 2005 06 03 | 703 | (2.4− | 2.1+) | 2006 09 27 | 703 | 0.1− | 0.8− |
| 2001 10 14 | 704 | 0.6− | 0.7− | 2005 06 03 | 703 | 0.4− | 0.5+ | 2006 09 27 | 683 | 0.2+ | 1.2− |
| 2001 10 14 | 704 | 0.7− | 0.5− | 2005 06 03 | 703 | 1.3− | 0.2− | 2006 09 27 | 683 | 0.5+ | 0.1− |
| 2001 10 14 | 704 | 0.3− | 0.6− | 2005 07 02 | 599 | 0.1+ | 0.3+ | 2006 09 27 | 683 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.5− | 0.9− | 2005 07 02 | 599 | (0.4− | 1.6+) | 2006 09 28 | 683 | 0.1+ | 0.5+ |
| 2001 10 21 | 704 | 0.1+ | 1.0+ | 2005 07 02 | 599 | 0.8+ | 0.9+ | 2006 09 28 | 683 | (1.4− | 2.0+) |
| 2001 10 21 | 704 | 0.5+ | 0.1− | 2005 07 04 | 703 | 0.6− | 0.2− | 2006 09 28 | 683 | (1.2− | 1.7+) |
| 2001 10 21 | 704 | 0.6− | 0.7+ | 2005 07 04 | 703 | 0.6− | 0.1− | 2006 09 29 | 699 | 0.1− | 0.8+ |
| 2001 11 10 | 704 | 0.3+ | 0.0 | 2005 07 04 | 703 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.5+ |
| 2001 11 10 | 704 | 0.7+ | 0.3+ | 2005 07 04 | 703 | 0.3− | 0.5+ | 2006 09 29 | 699 | 1.3+ | 1.2+ |
| 2001 11 10 | 704 | 0.2+ | 0.5+ | 2005 08 29 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.5+ | 0.6+ |
| 2001 11 10 | 704 | 0.3− | 1.2+ | 2005 08 29 | 644 | 0.4− | 0.5+ | 2006 10 03 | 703 | 0.3+ | 0.1− |
| 2001 11 11 | 699 | 0.8− | 0.3+ | 2005 08 29 | 644 | 0.0 | 0.1− | 2006 10 03 | 703 | 0.2+ | 0.9− |
| 2001 11 11 | 699 | 0.5+ | 0.8+ | 2006 08 25 | 704 | (2.1+ | 0.5−) | 2006 10 03 | 703 | 0.2+ | 0.6− |
| 2001 11 11 | 699 | 0.3+ | 0.8+ | 2006 08 25 | 704 | 0.8+ | 0.5− | 2006 10 03 | 703 | 0.3− | 0.3− |
| 2001 11 11 | 699 | 0.2− | 0.5+ | 2006 08 25 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 11 16 | 691 | 0.2+ | 0.2− | 2006 08 25 | 704 | 0.6+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2001 11 16 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 11 16 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.9− | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.4+ |
| 2001 11 17 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.7+ | 2006 10 17 | 703 | 1.1− | 0.0 |
| 2001 11 17 | 704 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2001 11 17 | 704 | 0.1− | 0.7+ | 2006 09 21 | 699 | 0.5− | 1.1+ | 2006 10 17 | 703 | 0.3− | 1.1− |

**(140348)∗ 2001 TK$_{15}$**

Discovered 2001 Oct. 13 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.04933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16260111 | $\omega$ | 357.95976 | | +0.37145189 | −0.89920828 | |
| $a$ | 3.3244543 | $\Omega$ | 70.17166 | | +0.85528071 | +0.23450920 | |
| $e$ | 0.1935709 | $i$ | 14.22666 | | +0.36127331 | +0.36936419 | |
| $P$ | 6.06 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.6+ | 0.8+ | 2001 11 15 | 644 | 0.3− | 0.2+ | 2003 02 11 | 704 | 0.2− | 0.3− |
| 1998 04 21 | 704 | 0.8− | 1.5− | 2001 11 18 | 704 | 0.3− | 0.4− | 2003 02 11 | 704 | 0.5+ | 0.8− |
| 1998 04 21 | 704 | 0.6− | 1.6− | 2001 11 18 | 704 | 0.1− | 0.6− | 2003 02 11 | 704 | 0.3+ | 0.6− |
| 1998 04 21 | 704 | 0.3+ | 0.2+ | 2001 11 18 | 704 | 0.4− | 0.1− | 2003 02 19 | 644 | 0.1+ | 0.2+ |
| 2001 08 20 | 644 | 0.8− | 0.9+ | 2001 11 18 | 704 | 0.0 | 0.0 | 2003 02 19 | 644 | 0.3+ | 0.7+ |
| 2001 08 20 | 644 | 0.7− | 0.7+ | 2001 11 18 | 704 | 0.3− | 0.1+ | 2003 02 19 | 644 | 0.9− | 0.9− |
| 2001 08 20 | 644 | 0.8− | 0.6+ | 2001 11 18 | 608 | 0.4+ | 0.0 | 2003 02 26 | 704 | 0.8+ | 0.2+ |
| 2001 09 23 | 699 | 2.0− | 1.9+ | 2001 11 18 | 608 | 0.6+ | 0.2+ | 2003 02 26 | 704 | 0.4− | 0.8+ |
| 2001 09 23 | 699 | 1.4− | 1.5+ | 2001 11 18 | 608 | 0.5+ | 0.2− | 2003 02 26 | 704 | 0.4− | 0.6+ |
| 2001 09 23 | 699 | (0.5− | 2.4+) | 2001 11 20 | 704 | 1.0+ | 0.3+ | 2003 02 26 | 704 | 0.5+ | 0.9+ |
| 2001 09 23 | 699 | 0.3− | 1.2+ | 2001 11 20 | 704 | 0.6+ | 0.3+ | 2003 02 26 | 704 | 0.9− | 0.3− |
| 2001 09 25 | 704 | 0.4− | 0.9+ | 2001 11 20 | 704 | 1.3+ | 0.5+ | 2003 02 26 | 704 | 1.2+ | 0.0 |
| 2001 09 25 | 704 | 0.5− | 0.2+ | 2001 11 20 | 704 | 1.0+ | 0.4+ | 2003 02 26 | 704 | 0.9− | 0.0 |
| 2001 09 25 | 704 | 0.6− | 0.3+ | 2001 11 20 | 704 | 1.1+ | 0.3− | 2003 02 26 | 704 | 1.2+ | 0.3− |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2001 12 07 | 704 | 0.0 | 0.4− | 2003 02 26 | 704 | 0.6+ | 0.7− |
| 2001 09 25 | 704 | 0.5− | 0.6− | 2001 12 07 | 704 | 0.0 | 0.4− | 2003 03 03 | 644 | 0.3+ | 0.0 |
| 2001 10 11 | 683 | 0.2− | 0.9− | 2001 12 07 | 704 | 0.1+ | 0.3− | 2003 03 03 | 644 | 0.4+ | 0.2+ |
| 2001 10 11 | 683 | 0.2− | 2.0− | 2001 12 07 | 704 | 0.0 | 0.5− | 2003 03 03 | 644 | 0.4+ | 0.2− |
| 2001 10 11 | 683 | 1.9+ | 0.4− | 2001 12 07 | 704 | 0.1− | 0.1− | 2003 03 08 | 699 | 0.2− | 0.0 |
| 2001 10 13 | 683 | 0.3− | 0.4+ | 2001 12 09 | 699 | 0.5+ | 0.1− | 2003 03 08 | 699 | 0.1− | 0.1+ |
| 2001 10 13 | 683 | 0.1+ | 1.0− | 2001 12 09 | 699 | 0.2− | 0.1− | 2003 03 08 | 699 | 0.6− | 0.1+ |
| 2001 10 13 | 683 | (2.4+ | 0.7+) | 2001 12 09 | 699 | 0.2− | 0.1− | 2003 03 08 | 699 | 0.5− | 0.0 |
| 2001 10 14 | 699 | 0.2− | 0.7+ | 2001 12 09 | 699 | 0.1+ | 0.2− | 2003 03 21 | 644 | 0.1− | 0.1+ |
| 2001 10 14 | 699 | 0.2− | 0.3+ | 2001 12 18 | 704 | 0.4− | 0.2− | 2003 03 21 | 644 | 0.1+ | 0.3+ |
| 2001 10 14 | 699 | 0.7− | 0.2+ | 2001 12 18 | 704 | 0.3− | 0.2− | 2003 03 21 | 644 | 0.0 | 0.2+ |
| 2001 10 14 | 699 | 0.2− | 0.5+ | 2001 12 18 | 704 | 0.7− | 0.3− | 2003 04 05 | 704 | 0.3+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 683 | 0.3+ | 0.5+ | 2001 12 18 | 704 | 0.3− | 0.1− | 2003 04 05 | 704 | 0.9+ | 0.4− |
| 2001 10 14 | 683 | 0.4+ | 1.0− | 2001 12 18 | 704 | 0.5− | 0.0 | 2003 04 05 | 704 | 1.0+ | 0.5+ |
| 2001 10 14 | 683 | (2.7+ | 0.0 ) | 2001 12 18 | 608 | 1.3+ | 0.3− | 2003 04 05 | 704 | 0.3− | 1.1+ |
| 2001 10 15 | 683 | 1.3+ | 0.1− | 2001 12 18 | 608 | 1.2+ | 0.9+ | 2003 04 05 | 704 | 0.3+ | 1.0− |
| 2001 10 15 | 683 | 0.5+ | 0.1− | 2001 12 18 | 608 | 0.4+ | 0.3+ | 2003 04 23 | 704 | 1.3+ | 0.9+ |
| 2001 10 15 | 683 | (0.8+ | 2.4−) | 2001 12 19 | 704 | 0.3− | 0.3− | 2003 04 23 | 704 | 0.8+ | 0.7+ |
| 2001 10 15 | 644 | 0.5− | 0.0 | 2001 12 19 | 704 | 0.2− | 0.3− | 2003 04 23 | 704 | 0.4+ | 0.2− |
| 2001 10 15 | 644 | 0.8− | 0.0 | 2001 12 19 | 704 | 0.4− | 0.0 | 2003 04 23 | 704 | 0.5− | 0.0 |
| 2001 10 15 | 644 | 0.6− | 0.1+ | 2001 12 19 | 704 | 0.6− | 0.0 | 2004 04 11 | 644 | 0.5+ | 0.2+ |
| 2001 10 16 | 683 | (2.1+ | 1.9+) | 2001 12 19 | 704 | 0.1− | 0.5+ | 2004 04 11 | 644 | 0.5+ | 0.3+ |
| 2001 10 16 | 704 | 0.4− | 0.0 | 2002 01 02 | 644 | 0.0 | 0.1+ | 2004 04 11 | 644 | 0.4+ | 0.7+ |
| 2001 10 16 | 683 | (2.2+ | 0.7−) | 2002 01 02 | 644 | 0.0 | 0.4+ | 2004 04 13 | 703 | 0.1+ | 1.1+ |
| 2001 10 16 | 704 | 0.8− | 0.3− | 2002 01 02 | 644 | 0.1+ | 0.1+ | 2004 04 13 | 703 | 0.3+ | 0.1+ |
| 2001 10 16 | 683 | 0.4− | 1.3− | 2002 01 07 | 699 | 1.7+ | 0.1+ | 2004 04 13 | 703 | 0.2− | 1.5+ |
| 2001 10 16 | 704 | 0.2+ | 0.2− | 2002 01 07 | 699 | 0.5+ | 1.1+ | 2004 04 13 | 703 | 0.3+ | 1.4+ |
| 2001 10 16 | 704 | 0.2− | 0.2− | 2002 01 07 | 699 | 0.6+ | 1.2+ | 2004 04 17 | 699 | 0.9− | 0.8+ |
| 2001 10 16 | 704 | 0.1− | 0.5− | 2002 01 07 | 699 | 0.4− | 0.4+ | 2004 04 17 | 699 | 0.0 | 0.8+ |
| 2001 10 20 | 704 | 0.3+ | 0.2+ | 2002 02 12 | 209 | 0.4− | 0.2+ | 2004 04 17 | 699 | 1.1− | 0.3− |
| 2001 10 20 | 704 | 0.5− | 0.6+ | 2002 02 12 | 209 | 0.8− | 0.3+ | 2004 04 17 | 699 | 0.9− | 0.6+ |
| 2001 10 20 | 704 | 0.4+ | 0.6+ | 2002 02 12 | 209 | 0.3− | 0.4+ | 2004 05 23 | 704 | 0.8+ | 0.6+ |
| 2001 10 21 | 683 | 0.7− | 0.1+ | 2002 03 10 | 049 | 1.1− | 0.6+ | 2004 05 23 | 704 | 0.6+ | 0.1+ |
| 2001 10 21 | 683 | 0.5− | 0.4− | 2002 03 10 | 049 | 0.4+ | 1.1− | 2004 05 23 | 704 | 0.6+ | 0.8+ |
| 2001 10 21 | 683 | (2.2− | 3.9−) | 2002 03 10 | 049 | 0.2+ | 0.0 | 2004 05 23 | 704 | 0.4+ | 0.1+ |
| 2001 11 08 | 683 | 1.3+ | 0.7− | 2003 01 10 | 704 | 0.4− | 0.9+ | 2006 08 13 | E12 | 0.3+ | 0.6+ |
| 2001 11 08 | 683 | 0.1− | 0.3+ | 2003 01 10 | 704 | 0.2− | 0.8+ | 2006 08 13 | E12 | 0.3+ | 1.1+ |
| 2001 11 08 | 683 | 1.1+ | 0.8− | 2003 01 10 | 704 | 0.0 | 1.0+ | 2006 08 13 | E12 | 0.2+ | 0.6+ |
| 2001 11 12 | 608 | 0.7− | 0.7+ | 2003 02 01 | 644 | 0.4− | 0.3+ | 2006 08 13 | E12 | 1.6− | 0.1− |
| 2001 11 12 | 608 | 0.8− | 0.6+ | 2003 02 01 | 644 | 0.4− | 0.3+ | 2006 08 26 | E12 | 0.3+ | 0.7+ |
| 2001 11 12 | 608 | 0.7− | 0.6+ | 2003 02 01 | 644 | 0.2− | 0.3+ | 2006 08 26 | E12 | 0.6+ | 1.3+ |
| 2001 11 15 | 644 | 0.4− | 0.3+ | 2003 02 11 | 704 | 0.1+ | 0.2+ | 2006 08 26 | E12 | 0.3− | 0.3+ |
| 2001 11 15 | 644 | 0.4− | 0.2+ | 2003 02 11 | 704 | 0.2+ | 0.8− | 2006 08 26 | E12 | 0.9+ | 1.1+ |

**(140349)∗ 2001 TU$_{15}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.15934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19668515 | $\omega$ | 182.43572 | | +0.80548278 | | +0.57883665 |
| $a$ | 2.9283412 | $\Omega$ | 141.27480 | | −0.54022615 | | +0.80533881 |
| $e$ | 0.1269774 | $i$ | 11.71914 | | −0.24362513 | | +0.12797477 |
| $P$ | 5.01 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.1+ | 0.4− | 2004 03 23 | 704 | 1.0− | 1.2+ | 2005 08 29 | 644 | 0.6− | 0.1− |
| 2001 08 27 | 699 | 0.0 | 0.6+ | 2004 03 23 | 704 | (1.1− | 2.2+) | 2006 08 10 | 644 | 0.2− | 0.2+ |
| 2001 08 27 | 699 | 0.2− | 0.0 | 2004 03 23 | 704 | (0.1+ | 2.7+) | 2006 08 10 | 644 | 0.1+ | 0.5+ |
| 2001 08 27 | 699 | 0.4− | 0.6+ | 2004 03 25 | 704 | 0.2+ | 0.0 | 2006 08 10 | 644 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.5− | 0.4+ | 2004 03 25 | 704 | 0.2+ | 1.2+ | 2006 08 28 | 699 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2004 03 25 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 699 | 0.4− | 0.2+ |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2004 03 25 | 704 | 0.1+ | 0.9+ | 2006 08 28 | 699 | 0.2+ | 0.7+ |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2004 03 25 | 704 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.9+ | 0.4+ |
| 2001 09 25 | 704 | 0.3− | 0.4+ | 2004 03 26 | 704 | 0.3+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2004 03 26 | 704 | 1.1+ | 1.3+ | 2006 08 30 | 704 | 1.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.7+ | 0.5+ | 2004 03 26 | 704 | (1.4− | 2.7+) | 2006 08 30 | 704 | 0.8− | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.9+ | 2004 03 29 | 704 | 1.0+ | 1.0+ | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2001 09 25 | 704 | 0.1+ | 0.8+ | 2004 03 29 | 704 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.3− |
| 2001 10 11 | 704 | 1.0− | 0.9+ | 2004 03 29 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.1− |
| 2001 10 11 | 704 | 1.0− | 0.1− | 2004 04 13 | 703 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.0 |
| 2001 10 11 | 704 | 0.8− | 0.0 | 2004 04 13 | 703 | (1.9− | 0.6−) | 2006 09 19 | F84 | 0.0 | 0.1− |
| 2001 10 11 | 704 | 0.3− | 0.3+ | 2004 04 13 | 703 | 0.6− | 0.9+ | 2006 09 19 | F84 | 0.2− | 0.2− |
| 2001 10 11 | 704 | 0.5− | 0.2+ | 2004 04 13 | 703 | 0.3− | 1.3+ | 2006 09 19 | F84 | 0.0 | 0.3− |
| 2001 10 13 | 704 | 0.5− | 0.3− | 2005 05 03 | 703 | 1.3− | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.7− |
| 2001 10 13 | 704 | 0.3− | 0.3+ | 2005 05 03 | 703 | 0.5− | 1.0+ | 2006 09 26 | 703 | 0.8+ | 0.4− |
| 2001 10 13 | 704 | 0.0 | 0.2+ | 2005 05 03 | 703 | 0.5− | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2001 10 13 | 704 | 0.3− | 1.2+ | 2005 05 03 | 703 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.6− |
| 2001 10 13 | 704 | 0.2− | 0.2+ | 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 10 04 | 703 | 0.5+ | 0.2+ |
| 2001 10 15 | 644 | 0.1+ | 0.2+ | 2005 05 14 | 691 | 0.0 | 0.2+ | 2006 10 04 | 703 | 0.4+ | 0.5+ |
| 2001 10 15 | 644 | 0.0 | 0.1+ | 2005 05 14 | 691 | 0.4+ | 0.5+ | 2006 10 04 | 703 | 0.3+ | 0.1+ |
| 2001 10 15 | 644 | 0.2+ | 0.1+ | 2005 06 04 | 691 | 0.1− | 0.2+ | 2006 10 04 | 703 | 0.4− | 0.1+ |
| 2001 10 19 | 699 | 0.1− | 0.8+ | 2005 06 04 | 691 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 10 19 | 699 | 0.3+ | 1.1+ | 2005 06 04 | 691 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2001 10 19 | 699 | (2.2− | 0.7+) | 2005 06 09 | 704 | 0.1+ | 0.4− | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 10 19 | 699 | (1.4+ | 1.8+) | 2005 06 09 | 704 | 0.4+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 10 23 | 644 | 0.2+ | 0.4+ | 2005 06 09 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 10 23 | 644 | 0.0 | 0.5+ | 2005 06 09 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2001 10 23 | 644 | 0.1+ | 0.4+ | 2005 06 09 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.6− | 0.1− |
| 2001 11 07 | 644 | 0.2+ | 0.5+ | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.5− |
| 2001 11 07 | 644 | 0.7+ | 0.5+ | 2005 06 17 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.6− |
| 2001 11 07 | 644 | 0.7+ | 0.8+ | 2005 06 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.7+ | 0.0 |
| 2003 11 20 | 691 | 0.3+ | 0.7+ | 2005 06 24 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2003 11 20 | 691 | 0.6+ | 0.7+ | 2005 06 24 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2003 11 20 | 691 | 0.3+ | 0.6+ | 2005 06 24 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2004 03 15 | 704 | 0.5− | 1.3− | 2005 06 28 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2004 03 15 | 704 | 0.2+ | 0.5+ | 2005 06 28 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2004 03 15 | 704 | (0.4− | 2.4−) | 2005 06 28 | 691 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2004 03 15 | 704 | (0.8− | 1.7+) | 2005 06 29 | 644 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.9− | 0.1+ |
| 2004 03 20 | 704 | 0.1+ | 0.9+ | 2005 06 29 | 644 | 0.5− | 0.1− | 2006 10 28 | 703 | 1.1− | 1.2+ |
| 2004 03 20 | 704 | (0.2− | 1.6+) | 2005 06 29 | 644 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.5− | 0.9+ |
| 2004 03 20 | 704 | 0.3− | 1.4+ | 2005 07 01 | 691 | 0.5+ | 0.3− | 2006 10 28 | 703 | 0.8− | 0.8+ |
| 2004 03 20 | 704 | (1.0+ | 2.7+) | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 644 | 0.1− | 0.3+ |
| 2004 03 20 | 704 | 0.5− | 0.9+ | 2005 07 01 | 691 | 0.1+ | 0.0 | 2006 11 11 | 644 | 0.1− | 0.1− |
| 2004 03 23 | 704 | (0.9− | 2.4+) | 2005 08 29 | 644 | 0.5− | 0.2− | 2006 11 11 | 644 | 0.5+ | 0.3+ |
| 2004 03 23 | 704 | (0.3− | 1.8+) | 2005 08 29 | 644 | 0.1− | 0.3− | | | | |

**(140350)∗ 2001 TL$_{16}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.63287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22967352 | $\omega$ | 46.08902 | | −0.54169576 | | −0.79545481 |
| $a$ | 2.6407590 | $\Omega$ | 78.61665 | | +0.66972006 | | −0.60375526 |
| $e$ | 0.0611574 | $i$ | 16.08990 | | +0.50797711 | | −0.05226118 |
| $P$ | 4.29 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 1.2+ | 0.3− | 2003 01 26 | 699 | 0.7− | 0.5+ | 2005 11 06 | 699 | 0.7− | 0.7+ |
| 1997 11 29 | 704 | (2.9+ | 0.2−) | 2003 01 26 | 699 | 0.3− | 0.8+ | 2005 11 06 | 699 | 0.2+ | 0.5+ |
| 1997 11 29 | 704 | 0.1+ | 1.8− | 2003 01 26 | 699 | 0.8− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.2− |
| 1997 11 29 | 704 | 0.6+ | 1.2− | 2003 02 19 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2− |
| 1997 11 29 | 704 | 0.3− | 0.2− | 2003 02 19 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 1999 03 21 | 699 | 0.5+ | 0.9+ | 2003 02 19 | 644 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.4− |
| 1999 03 21 | 699 | 0.6− | 0.5+ | 2003 03 09 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 1999 03 21 | 699 | 0.9+ | 0.4− | 2003 03 09 | 644 | 0.4+ | 0.6+ | 2006 09 25 | 691 | 0.3+ | 0.3− |
| 2001 09 22 | 644 | 0.2+ | 0.7+ | 2003 03 09 | 644 | 0.0 | 0.4+ | 2006 10 28 | 703 | 1.2+ | 0.2− |
| 2001 09 22 | 644 | 0.3− | 0.4+ | 2003 03 09 | 644 | 0.4+ | 0.4+ | 2006 10 28 | 703 | 0.6− | 1.4+ |
| 2001 09 22 | 644 | 0.3− | 0.8+ | 2003 03 09 | 644 | 0.2− | 0.4+ | 2006 10 28 | 703 | (3.2− | 0.1+) |
| 2001 10 11 | 704 | (2.2+ | 0.6+) | 2003 03 09 | 644 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.0 | 1.1− |
| 2001 10 11 | 704 | (0.4+ | 2.0+) | 2003 03 13 | 704 | (1.5+ | 0.4+) | 2006 11 02 | G96 | 0.6+ | 1.0− |
| 2001 10 11 | 704 | 1.4+ | 0.6+ | 2003 03 13 | 704 | 0.9+ | 0.1− | 2006 11 02 | G96 | (0.8− | 1.8−) |
| 2001 10 11 | 704 | 0.9+ | 1.3+ | 2003 03 13 | 704 | 0.5+ | 0.7+ | 2006 11 02 | G96 | 0.5− | 0.6− |
| 2001 10 11 | 704 | 1.0+ | 0.8+ | 2003 03 13 | 704 | 0.5+ | 0.8+ | 2006 11 02 | G96 | 0.3− | 0.8− |
| 2001 10 13 | 704 | 1.3− | 0.2+ | 2003 03 21 | 644 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.6− | 0.1− |
| 2001 10 13 | 704 | 0.4− | 0.6+ | 2003 03 21 | 644 | 0.0 | 0.6+ | 2006 11 15 | 703 | 1.2− | 0.3− |
| 2001 10 13 | 704 | 0.1+ | 0.8− | 2003 03 21 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.7− | 0.7− |
| 2001 10 13 | 704 | 0.3− | 0.3+ | 2003 04 01 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.1+ |
| 2001 10 17 | 608 | 0.5− | 0.4+ | 2003 04 01 | 644 | 0.0 | 0.4+ | 2006 11 19 | 704 | 1.3+ | 1.0− |
| 2001 10 17 | 608 | 0.6− | 0.5+ | 2003 04 01 | 644 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.9+ | 1.6+ |
| 2001 10 17 | 608 | 0.5− | 0.7+ | 2005 08 25 | 644 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.9+ |
| 2001 10 23 | 699 | 1.0− | 0.5+ | 2005 08 25 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2001 10 23 | 699 | 0.2− | 0.2− | 2005 08 25 | 644 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.9− | 0.6+ |
| 2001 10 23 | 699 | 0.4+ | 0.0 | 2005 10 02 | E12 | 0.7− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.2− |
| 2001 10 23 | 699 | 0.2− | 1.1+ | 2005 10 02 | E12 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2001 10 28 | 644 | 0.4− | 0.3+ | 2005 10 02 | E12 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2001 10 28 | 644 | 0.4− | 0.1+ | 2005 10 02 | E12 | 0.6− | 0.9+ | 2006 11 22 | 704 | 0.6+ | 0.2− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.6− | 0.2+ | | 2005 11 06 | 699 | 0.4+ | 0.0 |
| 2003 01 26 | 699 | 0.2+ | 0.2+ | | 2005 11 06 | 699 | 1.4− | 0.9− |

**(140351)∗ 2001 TD$_{18}$**

Discovered 2001 Oct. 14 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 14.46871 | | | (2000.0) | | | **P** | | **Q** | | |
| $n$ | 0.18432169 | | $\omega$ | 310.80143 | | | +0.98442695 | | +0.11730203 | | |
| $a$ | 3.0578658 | | $\Omega$ | 42.94075 | | | −0.03265576 | | +0.85387546 | | |
| $e$ | 0.1122014 | | $i$ | 11.08118 | | | −0.17273443 | | +0.50708671 | | |
| $P$ | 5.35 | | $H$ | 15.1 | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.8− | 0.2− | | 2001 11 24 | 704 | 0.2− | 0.4− | | 2006 09 21 | 699 | 0.5+ | 0.6− | |
| 2001 08 22 | 704 | 0.2+ | 1.2+ | | 2001 11 24 | 704 | 0.2− | 0.7+ | | 2006 09 21 | 699 | 0.1+ | 0.1+ | |
| 2001 08 22 | 704 | 0.9− | 0.1+ | | 2001 11 24 | 704 | 0.7− | 0.8+ | | 2006 09 21 | 699 | 1.0+ | 0.6+ | |
| 2001 09 18 | 333 | 0.4− | 0.6− | | 2001 11 24 | 704 | 0.8− | 0.1− | | 2006 09 21 | 699 | 0.2+ | 0.1+ | |
| 2001 09 18 | 333 | 0.1+ | 0.2+ | | 2001 11 24 | 704 | 0.9− | 0.6+ | | 2006 09 22 | 704 | 0.3+ | 1.4+ | |
| 2001 09 18 | 333 | 0.5+ | 0.2− | | 2001 12 10 | 704 | 0.3− | 0.2+ | | 2006 09 22 | 704 | 0.9− | 0.3+ | |
| 2001 09 24 | 704 | 0.1+ | 0.1+ | | 2001 12 10 | 704 | 0.3+ | 0.4+ | | 2006 09 22 | 704 | 1.3− | 0.1− | |
| 2001 09 24 | 704 | 0.1− | 0.2+ | | 2001 12 10 | 704 | 0.1− | 0.2+ | | 2006 09 22 | 704 | 0.1+ | 0.3+ | |
| 2001 09 24 | 704 | (1.9+ | 0.6+) | | 2001 12 10 | 704 | 1.1− | 0.4+ | | 2006 09 25 | 699 | 0.1− | 0.1+ | |
| 2001 09 24 | 704 | 0.2+ | 0.4+ | | 2001 12 15 | 704 | 0.9− | 0.9− | | 2006 09 25 | 699 | 0.1− | 0.3+ | |
| 2001 10 14 | 333 | 0.3− | 0.9− | | 2001 12 15 | 704 | (1.5− | 0.4−) | | 2006 09 25 | 699 | 0.3+ | 0.3− | |
| 2001 10 14 | 333 | 0.7+ | 0.7− | | 2001 12 15 | 704 | 1.0− | 0.1+ | | 2006 09 26 | 704 | 0.6− | 0.6− | |
| 2001 10 14 | 333 | 0.0 | 0.5− | | 2001 12 15 | 704 | (1.7− | 0.8+) | | 2006 09 26 | 704 | 0.7− | 0.1− | |
| 2001 10 15 | 333 | 0.8+ | 0.1− | | 2001 12 15 | 704 | (1.7− | 0.4+) | | 2006 09 26 | 704 | 0.1− | 0.7+ | |
| 2001 10 15 | 333 | 0.6− | 0.2− | | 2001 12 18 | 704 | 0.6− | 1.2− | | 2006 09 26 | 704 | 0.6− | 0.2− | |
| 2001 10 15 | 333 | 0.1+ | 0.4− | | 2001 12 18 | 704 | 0.5− | 1.3− | | 2006 09 26 | 703 | 0.5− | 0.4+ | |
| 2001 10 16 | 291 | 0.3+ | 0.5+ | | 2001 12 18 | 704 | (0.3+ | 2.7−) | | 2006 09 26 | 703 | 0.8− | 0.7+ | |
| 2001 10 16 | 291 | 0.3+ | 0.5+ | | 2001 12 18 | 704 | (0.7− | 3.0−) | | 2006 09 26 | 703 | (2.5− | 0.8+) | |
| 2001 10 16 | 291 | 0.0 | 0.5+ | | 2001 12 19 | 704 | 1.0+ | 1.5− | | 2006 09 26 | 703 | 0.7+ | 0.7+ | |
| 2001 10 21 | 704 | 1.3− | 0.2− | | 2001 12 19 | 704 | 0.2+ | 1.4− | | 2006 09 29 | 699 | 0.2+ | 0.1− | |
| 2001 10 21 | 704 | 0.1− | 0.7− | | 2001 12 19 | 704 | 0.5+ | 0.1+ | | 2006 09 29 | 699 | 0.2− | 0.1+ | |
| 2001 10 21 | 704 | (1.6− | 0.8−) | | 2001 12 19 | 704 | (0.2+ | 1.8−) | | 2006 09 29 | 699 | 0.4− | 1.0− | |
| 2001 10 21 | 704 | 0.6− | 0.3− | | 2001 12 19 | 704 | 0.7− | 0.7− | | 2006 09 30 | 704 | 0.1− | 0.7+ | |
| 2001 10 21 | 704 | 0.8− | 0.0 | | 2001 12 20 | 644 | 0.0 | 0.2− | | 2006 09 30 | 704 | 0.2− | 0.1+ | |
| 2001 11 09 | 704 | 1.4− | 0.5+ | | 2001 12 20 | 644 | 0.1− | 0.1− | | 2006 09 30 | 704 | 0.1+ | 0.3+ | |
| 2001 11 09 | 704 | 0.4− | 0.1− | | 2001 12 20 | 644 | 0.5+ | 0.4+ | | 2006 09 30 | 704 | 0.2+ | 0.2+ | |
| 2001 11 09 | 704 | 0.3− | 0.6− | | 2003 01 29 | 645 | 0.1+ | 0.0 | | 2006 09 30 | 704 | 0.8− | 0.1− | |
| 2001 11 09 | 644 | 0.1+ | 0.9+ | | 2003 01 29 | 645 | 0.0 | 0.0 | | 2006 10 16 | 703 | 0.4+ | 0.3− | |
| 2001 11 09 | 704 | 0.0 | 0.2− | | 2003 02 01 | 644 | (0.5+ | 1.7+) | | 2006 10 16 | 703 | 0.6− | 0.7+ | |
| 2001 11 09 | 644 | 0.8+ | 0.9+ | | 2003 02 01 | 644 | (0.6+ | 1.5+) | | 2006 10 16 | 703 | 0.1− | 0.6+ | |
| 2001 11 09 | 644 | 0.0 | 1.4+ | | 2003 02 01 | 644 | (0.4+ | 1.6+) | | 2006 10 16 | 703 | 0.0 | 0.1− | |
| 2001 11 12 | 704 | 0.5+ | 0.3− | | 2004 04 20 | 704 | 0.9+ | 1.2+ | | 2006 10 19 | 644 | 0.1+ | 0.2− | |
| 2001 11 12 | 704 | 0.4+ | 0.7− | | 2004 04 20 | 704 | 0.9+ | 0.7− | | 2006 10 19 | 644 | 0.7+ | 0.4− | |
| 2001 11 12 | 704 | (1.6+ | 0.9−) | | 2004 04 20 | 704 | 1.4+ | 0.5+ | | 2006 10 19 | 644 | 0.1+ | 0.1− | |
| 2001 11 12 | 704 | 0.2− | 0.9− | | 2004 04 20 | 704 | 0.4+ | 0.4+ | | 2006 10 20 | 644 | 0.0 | 0.1− | |
| 2001 11 12 | 704 | (1.0+ | 2.0−) | | 2004 04 26 | 691 | 0.1+ | 0.8+ | | 2006 10 20 | 644 | 0.0 | 0.2− | |
| 2001 11 17 | 644 | 0.1+ | 0.6+ | | 2004 04 26 | 691 | 0.3+ | 0.9+ | | 2006 10 20 | 644 | 0.1− | 0.3− | |
| 2001 11 17 | 644 | 0.1− | 0.2+ | | 2004 04 26 | 691 | 0.2+ | 0.7+ | | 2006 10 21 | 644 | 0.1+ | 0.3− | |
| 2001 11 17 | 644 | 0.0 | 0.3+ | | 2006 09 16 | 704 | 0.0 | 1.4+ | | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 2001 11 19 | 699 | 0.6+ | 0.8+ | | 2006 09 16 | 704 | 0.0 | 0.8+ | | 2006 10 21 | 644 | 0.1+ | 0.2− | |
| 2001 11 19 | 699 | 1.2+ | 0.6+ | | 2006 09 16 | 704 | 1.4− | 0.5+ | | 2006 10 22 | 703 | 0.1+ | 0.2+ | |
| 2001 11 19 | 699 | 0.7+ | 0.1− | | 2006 09 18 | 703 | 0.4− | 0.4+ | | 2006 10 22 | 703 | 0.4− | 0.0 | |
| 2001 11 19 | 699 | 0.6− | 0.8+ | | 2006 09 18 | 703 | 0.1+ | 0.8+ | | 2006 10 22 | 703 | 0.2− | 0.4+ | |
| 2001 11 19 | 704 | 0.8+ | 0.2− | | 2006 09 18 | 703 | 0.2+ | 0.8+ | | 2006 10 22 | 703 | 0.2− | 0.3+ | |
| 2001 11 19 | 704 | 0.9+ | 0.8− | | 2006 09 18 | 703 | 0.3+ | 0.1− | | 2006 11 23 | G96 | 0.2+ | 0.0 | |
| 2001 11 19 | 704 | 0.1− | 0.4− | | 2006 09 20 | 644 | 0.1− | 0.1− | | 2006 11 23 | G96 | 0.1+ | 0.2− | |
| 2001 11 19 | 704 | 1.1+ | 0.4+ | | 2006 09 20 | 644 | 0.1− | 0.0 | | 2006 11 23 | G96 | 0.2+ | 0.2− | |
| 2001 11 19 | 704 | (1.5+ | 0.1+) | | 2006 09 20 | 644 | 0.2− | 0.0 | | 2006 11 23 | G96 | 0.3+ | 0.5− | |

**(140352)∗ 2001 TK$_{18}$**

Discovered 2001 Oct. 14 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 52.55311 | | | (2000.0) | | | **P** | | **Q** | | |
| $n$ | 0.23384370 | | $\omega$ | 174.97989 | | | +0.55419042 | | −0.83101529 | | |
| $a$ | 2.6092695 | | $\Omega$ | 241.35728 | | | +0.76179377 | | +0.52950369 | | |
| $e$ | 0.1881358 | | $i$ | 3.12335 | | | +0.33547463 | | +0.17040961 | | |
| $P$ | 4.21 | | $H$ | 14.8 | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 10 08 | 261 | 0.6− | 0.4+ | | 2001 12 18 | 704 | (1.5+ | 2.2−) | | 2005 10 07 | 703 | 0.1+ | 0.1− | |
| 1988 10 08 | 261 | 0.3+ | 0.5+ | | 2001 12 18 | 704 | (1.2+ | 2.4−) | | 2005 10 07 | 703 | 0.1− | 0.1− | |
| 1990 04 15 | 261 | 0.5+ | 0.2+ | | 2001 12 18 | 704 | (0.2+ | 2.2−) | | 2005 10 07 | 703 | 0.2+ | 0.0 | |
| 1991 03 23 | 260 | 0.2− | 0.4− | | 2001 12 19 | 644 | 0.2− | 0.2+ | | 2005 10 07 | 703 | 0.0 | 0.2− | |
| 2001 08 16 | 704 | 0.7+ | 0.2+ | | 2001 12 19 | 644 | 0.2− | 0.2+ | | 2005 10 11 | 704 | 0.3+ | 0.3+ | |
| 2001 08 16 | 704 | 0.5− | 0.2+ | | 2001 12 19 | 644 | 0.2− | 0.2+ | | 2005 10 11 | 704 | 0.6+ | 0.4+ | |
| 2001 08 16 | 704 | 0.6+ | 0.9− | | 2002 01 05 | 699 | (2.0+ | 0.7+) | | 2005 10 11 | 704 | 0.5+ | 0.1+ | |
| 2001 08 16 | 704 | 0.2+ | 0.6+ | | 2002 01 05 | 699 | 0.7+ | 1.0+ | | 2005 10 11 | 704 | 0.5+ | 0.1+ | |
| 2001 08 22 | 704 | (2.2+ | 2.8+) | | 2002 01 05 | 699 | 0.5− | 1.2+ | | 2005 10 11 | 704 | 0.5+ | 0.2+ | |
| 2001 08 22 | 704 | (2.1+ | 1.4−) | | 2002 01 05 | 699 | 0.2− | 0.1− | | 2005 10 21 | 699 | 0.2− | 0.1− | |
| 2001 08 22 | 704 | (2.3+ | 2.3+) | | 2002 01 09 | 704 | 0.2− | 0.2+ | | 2005 10 21 | 699 | 0.1− | 0.0 | |
| 2001 08 22 | 704 | (2.2+ | 0.8−) | | 2002 01 09 | 704 | 0.1− | 0.3− | | 2005 10 21 | 699 | 0.6− | 0.0 | |
| 2001 08 23 | 699 | 0.1+ | 0.1− | | 2002 01 09 | 704 | 0.5− | 0.2+ | | 2005 10 21 | 699 | 0.1+ | 0.2+ | |
| 2001 08 23 | 699 | 0.5+ | 0.5+ | | 2002 01 09 | 704 | 0.4− | 0.4− | | 2005 10 21 | 699 | 0.7− | 0.2+ | |
| 2001 08 23 | 699 | 0.6+ | 0.4+ | | 2002 01 09 | 704 | 0.4− | 0.7+ | | 2005 10 21 | 699 | 0.4− | 0.2+ | |
| 2001 08 23 | 699 | 0.7− | 0.4+ | | 2002 01 11 | 699 | 0.6+ | 0.1+ | | 2005 10 21 | 644 | 0.1− | 0.1+ | |
| 2001 09 06 | 644 | 0.4− | 0.2+ | | 2002 01 11 | 699 | 0.7+ | 0.4+ | | 2005 10 21 | 699 | 0.5− | 0.3+ | |
| 2001 09 06 | 644 | 0.1− | 1.1+ | | 2002 01 11 | 699 | 0.6+ | 0.4+ | | 2005 10 21 | 644 | 0.0 | 0.1+ | |
| 2001 09 06 | 644 | 0.1− | 1.0+ | | 2002 01 11 | 699 | 0.1− | 0.1+ | | 2005 10 21 | 699 | 0.1+ | 0.4+ | |
| 2001 09 17 | 644 | 0.3− | 0.0 | | 2003 03 06 | 704 | 0.7− | 0.9− | | 2005 10 21 | 644 | 0.2− | 0.0 | |
| 2001 09 17 | 644 | 0.1− | 0.1+ | | 2003 03 06 | 704 | 0.4− | 0.8+ | | 2005 10 21 | 644 | 0.1− | 0.1+ | |
| 2001 09 17 | 644 | 0.0 | 0.1+ | | 2003 03 06 | 704 | 0.0 | 0.9+ | | 2005 10 21 | 644 | 0.1− | 0.1+ | |
| 2001 09 24 | 704 | 0.2+ | 0.6+ | | 2003 03 07 | 704 | 0.2+ | 0.0 | | 2005 10 21 | 644 | 0.0 | 0.1+ | |
| 2001 09 24 | 704 | 0.4− | 0.1+ | | 2003 03 07 | 704 | 1.1+ | 0.6+ | | 2005 10 22 | 699 | 0.3+ | 0.1+ | |
| 2001 09 24 | 704 | 0.2− | 0.9+ | | 2003 03 07 | 704 | 0.2+ | 1.1+ | | 2005 10 22 | 699 | 0.2− | 0.7+ | |
| 2001 09 24 | 704 | 0.2− | 0.4+ | | 2003 03 07 | 704 | 0.8− | 1.0+ | | 2005 10 22 | 699 | 0.6− | 0.3+ | |
| 2001 09 24 | 704 | 0.3+ | 0.0 | | 2003 03 10 | 704 | 0.7+ | 1.2+ | | 2005 10 22 | 699 | 1.2+ | 0.2+ | |
| 2001 10 12 | 699 | 0.8− | 0.5+ | | 2003 03 10 | 704 | 0.5+ | 0.0 | | 2005 10 27 | 691 | 0.0 | 0.1− | |
| 2001 10 12 | 699 | 0.5− | 0.6+ | | 2003 03 10 | 704 | 0.1+ | 1.1+ | | 2005 10 27 | 691 | 0.1− | 0.1− | |
| 2001 10 12 | 699 | 0.6− | 0.3− | | 2003 03 10 | 704 | 0.1− | 0.2− | | 2005 10 27 | 691 | 0.1+ | 0.0 | |
| 2001 10 12 | 699 | 0.7− | 0.1− | | 2003 03 10 | 704 | (1.6+ | 0.7+) | | 2005 10 27 | 699 | 0.3− | 0.0 | |
| 2001 10 13 | 704 | (1.1+ | 1.6+) | | 2003 03 13 | 704 | 0.9+ | 1.4+ | | 2005 10 27 | 699 | 0.1+ | 0.3− | |
| 2001 10 13 | 704 | 0.2+ | 1.2+ | | 2003 03 13 | 704 | 0.3− | 0.1+ | | 2005 10 27 | 699 | 0.0 | 0.2− | |
| 2001 10 13 | 704 | 0.3+ | 0.5− | | 2003 03 13 | 704 | 0.4+ | 0.9+ | | 2005 10 27 | 703 | 0.5+ | 0.2− | |
| 2001 10 13 | 704 | 0.4− | 1.0+ | | 2003 03 13 | 704 | 0.1+ | 0.2+ | | 2005 10 27 | 703 | 0.2− | 0.5− | |
| 2001 10 14 | 333 | 0.0 | 0.2+ | | 2003 03 13 | 704 | 0.5+ | 1.0+ | | 2005 10 27 | 699 | 0.2+ | 0.2− | |
| 2001 10 14 | 333 | 0.1+ | 0.3+ | | 2003 03 27 | 699 | 0.2− | 0.4− | | 2005 10 27 | 703 | 0.3+ | 0.3− | |
| 2001 10 14 | 333 | 0.4− | 0.3− | | 2003 03 27 | 699 | (0.6− | 1.7+) | | 2005 10 27 | 703 | 0.3+ | 0.3− | |
| 2001 10 15 | 333 | 0.1+ | 0.3+ | | 2003 03 27 | 699 | 0.5+ | 0.3+ | | 2005 11 01 | 704 | 0.4+ | 0.6+ | |
| 2001 10 15 | 333 | 0.2− | 0.0 | | 2003 03 27 | 699 | 0.3+ | 0.2− | | 2005 11 01 | 704 | 0.2− | 0.2− | |
| 2001 10 15 | 333 | 0.1− | 0.2+ | | 2003 03 31 | 704 | 0.3+ | 0.5+ | | 2005 11 01 | 704 | 0.1− | 0.6− | |
| 2001 10 18 | 704 | 0.2− | 0.1− | | 2003 03 31 | 704 | 0.2+ | 0.5+ | | 2005 11 01 | 704 | 0.4+ | 0.2− | |
| 2001 10 18 | 704 | 0.5− | 0.1+ | | 2003 03 31 | 704 | 0.3+ | 1.1+ | | 2005 11 01 | 704 | 0.3− | 0.3− | |
| 2001 10 18 | 704 | 0.5− | 0.1+ | | 2003 03 31 | 704 | 0.2+ | 1.1+ | | 2005 11 04 | 704 | 0.4+ | 0.1+ | |
| 2001 10 21 | 704 | 0.2+ | 1.1+ | | 2003 03 31 | 704 | 0.3+ | 0.5+ | | 2005 11 04 | 704 | 0.1− | 0.2+ | |
| 2001 10 21 | 704 | 0.3+ | 0.3+ | | 2003 04 03 | 699 | 0.3+ | 0.2− | | 2005 11 04 | 704 | 0.2+ | 0.0 | |
| 2001 10 21 | 704 | 0.5− | 0.6+ | | 2003 04 03 | 699 | 0.4− | 0.3+ | | 2005 11 04 | 704 | 0.2− | 0.2− | |
| 2001 10 21 | 704 | 0.0 | 0.5+ | | 2003 04 03 | 699 | 0.6+ | 0.4+ | | 2005 11 04 | 704 | 0.1− | 0.2− | |
| 2001 10 21 | 704 | 0.3− | 0.4+ | | 2003 04 03 | 699 | 0.1− | 0.7+ | | 2005 11 04 | 704 | 0.7+ | 0.1+ | |
| 2001 10 23 | 333 | 0.1− | 0.0 | | 2003 04 26 | 691 | 0.2+ | 0.6+ | | 2005 11 04 | 704 | 0.0 | 0.4+ | |
| 2001 10 23 | 333 | 0.0 | 0.7− | | 2003 04 26 | 691 | 0.4+ | 0.5+ | | 2005 11 04 | 704 | 0.3+ | 0.2+ | |
| 2001 10 23 | 333 | 0.4− | 0.2− | | 2003 04 26 | 691 | 0.2+ | 0.8+ | | 2005 11 04 | 704 | 0.8+ | 1.2− | |
| 2001 10 23 | 333 | 0.3− | 0.0 | | 2005 07 16 | 699 | 1.0+ | 0.2− | | 2005 11 18 | 644 | 0.1+ | 0.2+ | |
| 2001 10 23 | 333 | 0.2− | 0.1− | | 2005 07 16 | 699 | 1.2− | 0.1+ | | 2005 11 18 | 644 | 0.1− | 0.1− | |
| 2001 10 23 | 333 | 0.3+ | 0.1− | | 2005 07 16 | 699 | 0.5− | 0.0 | | 2005 11 18 | 644 | 0.0 | 0.1− | |
| 2001 10 26 | 704 | 0.3+ | 0.0 | | 2005 07 16 | 699 | 0.0 | 0.7− | | 2005 11 28 | G96 | 0.1− | 0.2− | |
| 2001 10 26 | 704 | 0.2− | 0.4− | | 2005 08 03 | 704 | 0.1− | 1.1+ | | 2005 11 28 | G96 | 0.1− | 0.3− | |
| 2001 10 26 | 704 | 0.1− | 0.3− | | 2005 08 03 | 704 | 0.2− | 0.4− | | 2005 11 28 | G96 | 0.0 | 0.3− | |
| 2001 10 26 | 704 | 0.2− | 0.0 | | 2005 08 03 | 704 | 0.8− | 0.7+ | | 2005 12 01 | 699 | 0.0 | 0.0 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.6+ | 0.1− | 2005 08 03 | 704 | 0.3− | 0.5− | 2005 12 01 | 699 | 0.0 | 0.2+ | |
| 2001 10 26 | 644 | 0.6+ | 0.1− | 2005 08 03 | 704 | 0.5− | 0.9+ | 2005 12 01 | 704 | 0.8− | 0.1+ | |
| 2001 10 26 | 644 | 0.7+ | 0.2− | 2005 08 29 | 644 | 0.1− | 0.4+ | 2005 12 01 | 704 | 0.5− | 0.4− | |
| 2001 10 28 | 704 | 0.0 | 0.0 | 2005 08 29 | 644 | 0.1+ | 0.3+ | 2005 12 01 | 699 | 0.1+ | 0.2− | |
| 2001 10 28 | 704 | 0.1− | 0.6+ | 2005 08 29 | 644 | 0.1+ | 0.4+ | 2005 12 01 | 704 | 0.4− | 0.4+ | |
| 2001 10 28 | 704 | 0.2− | 0.1+ | 2005 09 01 | 599 | 0.0 | 0.2+ | 2005 12 01 | 704 | 0.4− | 0.2− | |
| 2001 10 28 | 704 | 0.3− | 0.2+ | 2005 09 01 | 599 | 0.0 | 0.3+ | 2005 12 01 | 699 | 0.1− | 0.3+ | |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2005 09 01 | 599 | 0.1+ | 0.2+ | 2005 12 01 | 704 | 0.1− | 1.5+ | |
| 2001 11 09 | 704 | 0.1− | 0.3+ | 2005 09 10 | A50 | 0.1− | 0.4+ | 2005 12 04 | 704 | 0.6− | 0.9+ | |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2005 09 10 | A50 | 0.5+ | 0.3− | 2005 12 04 | 704 | 0.1− | 0.4+ | |
| 2001 11 09 | 704 | 0.1− | 0.4+ | 2005 09 10 | A50 | 0.2+ | 0.7+ | 2005 12 04 | 704 | 0.3+ | 0.7+ | |
| 2001 11 09 | 644 | 0.2− | 0.0 | 2005 09 10 | A50 | 0.3− | 0.5− | 2005 12 04 | 704 | 0.2− | 0.4+ | |
| 2001 11 09 | 704 | 0.0 | 0.0 | 2005 09 11 | 704 | 0.3+ | 0.8+ | 2005 12 04 | 704 | 0.4+ | 0.7+ | |
| 2001 11 09 | 644 | 0.1− | 0.0 | 2005 09 11 | 704 | 0.1− | 0.6+ | 2005 12 06 | 704 | 0.2− | 0.1− | |
| 2001 11 09 | 644 | 0.0 | 0.0 | 2005 09 11 | 704 | 0.1− | 0.2− | 2005 12 06 | 704 | 0.1+ | 0.0 | |
| 2001 11 11 | 691 | 0.2− | 0.1− | 2005 09 11 | 704 | 0.5− | 0.3+ | 2005 12 06 | 704 | 0.6− | 1.2+ | |
| 2001 11 11 | 691 | 0.5− | 0.1− | 2005 09 23 | 703 | 0.1− | 0.5+ | 2005 12 06 | 704 | 0.0 | 0.0 | |
| 2001 11 11 | 691 | 0.3− | 0.0 | 2005 09 23 | 703 | 0.4+ | 0.4+ | 2005 12 06 | 704 | 0.0 | 0.1− | |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2005 09 23 | 703 | 0.1− | 0.2+ | 2005 12 23 | 703 | 0.6+ | 0.6− | |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2005 09 23 | 703 | 0.0 | 0.3+ | 2005 12 23 | 703 | 0.1+ | 0.6− | |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2005 09 29 | 691 | 0.2+ | 0.2+ | 2005 12 23 | 703 | 0.8− | 0.6− | |
| 2001 11 12 | 704 | 0.1+ | 0.5+ | 2005 09 29 | 691 | 0.0 | 0.2+ | 2005 12 23 | 703 | 0.2− | 1.0− | |
| 2001 11 12 | 704 | 0.4+ | 0.2+ | 2005 09 29 | 691 | 0.1+ | 0.2+ | 2005 12 28 | 704 | 0.1+ | 0.8+ | |
| 2001 11 19 | 704 | 1.0− | 0.3− | 2005 09 29 | 699 | 0.3− | 0.3+ | 2005 12 28 | 704 | 0.5+ | 0.6+ | |
| 2001 11 19 | 704 | 0.8− | 0.3− | 2005 09 29 | 699 | 0.3+ | 0.2− | 2005 12 28 | 704 | 0.3− | 1.0+ | |
| 2001 11 19 | 704 | 0.7− | 0.1− | 2005 09 29 | 699 | 0.1− | 0.1+ | 2005 12 28 | 704 | 0.0 | 0.6+ | |
| 2001 11 19 | 704 | 0.5− | 0.0 | 2005 09 29 | 699 | 0.0 | 0.3+ | 2005 12 28 | 704 | 0.5− | 1.2+ | |
| 2001 11 19 | 704 | 0.4− | 0.1+ | 2005 10 01 | 703 | 0.1+ | 0.1− | 2005 12 31 | 704 | 0.7+ | 0.9+ | |
| 2001 11 20 | 691 | 0.5+ | 0.2− | 2005 10 01 | 703 | 0.3− | 0.2+ | 2005 12 31 | 704 | 0.3− | 0.4+ | |
| 2001 11 20 | 691 | 0.4+ | 0.4− | 2005 10 01 | 703 | 0.3− | 0.2− | 2005 12 31 | 704 | 1.0− | 0.3+ | |
| 2001 11 20 | 691 | 0.5+ | 0.3− | 2005 10 01 | 703 | 0.1− | 0.2+ | 2005 12 31 | 704 | 0.0 | 0.4+ | |
| 2001 11 20 | 608 | 0.3+ | 1.1− | 2005 10 03 | 691 | 0.0 | 0.0 | 2005 12 31 | 704 | 0.1+ | 0.2− | |
| 2001 11 20 | 608 | 0.3+ | 0.5− | 2005 10 03 | 691 | 0.0 | 0.0 | 2006 01 22 | 703 | 1.2− | 1.0− | |
| 2001 11 20 | 608 | 0.5+ | 1.2− | 2005 10 03 | 691 | 0.0 | 0.0 | 2006 01 22 | 703 | (0.4− | 1.7−) | |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2005 10 06 | 699 | 0.1− | 0.3+ | 2006 01 22 | 703 | 1.2− | 0.1+ | |
| 2001 11 21 | 704 | 0.0 | 0.2− | 2005 10 06 | 699 | 0.3− | 0.1− | 2006 01 22 | 703 | 1.0− | 0.1+ | |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2005 10 06 | 699 | 0.5+ | 0.3+ | 2006 01 24 | 699 | 0.1+ | 0.8+ | |
| 2001 11 21 | 704 | 0.0 | 0.5− | 2005 10 06 | 699 | 0.2− | 0.0 | 2006 01 24 | 704 | 0.0 | 0.2− | |
| 2001 11 21 | 704 | 0.1+ | 0.4− | 2005 10 06 | 699 | 0.1+ | 0.4+ | 2006 01 24 | 699 | 0.2− | 0.2+ | |
| 2001 12 08 | 691 | 0.2+ | 0.2− | 2005 10 06 | 699 | 1.3− | 0.1+ | 2006 01 24 | 704 | 0.3+ | 1.0+ | |
| 2001 12 08 | 691 | 0.3+ | 0.1− | 2005 10 06 | 699 | 0.5+ | 0.1+ | 2006 01 24 | 699 | 0.5− | 0.0 | |
| 2001 12 08 | 691 | 0.3+ | 0.2− | 2005 10 06 | 699 | 0.0 | 0.1− | 2006 01 24 | 704 | 1.4+ | 0.6+ | |
| 2001 12 11 | 704 | 0.3+ | 0.2+ | 2005 10 07 | 691 | 0.0 | 0.2+ | 2006 01 24 | 699 | 0.2− | 0.1+ | |
| 2001 12 11 | 704 | 0.2− | 0.0 | 2005 10 07 | 691 | 0.1− | 0.1+ | 2006 01 24 | 704 | 0.1+ | 0.3+ | |
| 2001 12 11 | 704 | 0.5− | 0.5+ | 2005 10 07 | 691 | 0.1− | 0.0 | 2006 01 24 | 704 | 0.3− | 0.2+ | |
| 2001 12 11 | 704 | 0.1+ | 0.2+ | 2005 10 07 | 704 | 0.3− | 0.1− | 2006 02 07 | G96 | 0.1+ | 0.1+ | |
| 2001 12 11 | 704 | 0.1− | 0.2− | 2005 10 07 | 704 | 0.3− | 0.1+ | 2006 02 07 | G96 | 0.4− | 0.0 | |
| 2001 12 15 | 704 | 0.8+ | 0.2− | 2005 10 07 | 704 | 0.1− | 0.3+ | 2006 02 07 | G96 | 0.1+ | 0.0 | |
| 2001 12 15 | 704 | 0.4+ | 1.1− | 2005 10 07 | 704 | 0.4− | 0.0 | 2006 02 07 | G96 | 0.2+ | 0.1− | |
| 2001 12 15 | 704 | 0.4+ | 1.1− | 2005 10 07 | 704 | 0.3− | 0.1+ | 2006 02 24 | G96 | 0.0 | 0.1− | |
| 2001 12 15 | 704 | 0.1− | 0.8− | 2005 10 07 | 703 | 0.1− | 0.0 | 2006 02 24 | G96 | 0.3+ | 0.3− | |
| 2001 12 15 | 704 | 0.4− | 1.2− | 2005 10 07 | 703 | 0.7− | 0.4− | 2006 02 24 | G96 | 0.1− | 0.2− | |
| 2001 12 18 | 704 | (1.7+ | 0.6−) | 2005 10 07 | 703 | 0.0 | 0.3− | 2006 02 24 | G96 | 0.0 | 0.2− | |
| 2001 12 18 | 704 | 1.2+ | 1.4− | 2005 10 07 | 703 | 0.2− | 0.5− | | | | | |

**(140353)∗ 2001 TX$_{18}$**

Discovered 2001 Oct. 15 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.50074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19127789 | $\omega$ | 336.80988 | | +0.22017120 | −0.94889461 | |
| $a$ | 2.9832721 | $\Omega$ | 99.86206 | | +0.92706700 | +0.13144627 | |
| $e$ | 0.1326578 | $i$ | 13.26744 | | +0.30343274 | +0.28691619 | |
| $P$ | 5.15 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.5− | 0.6+ | 2001 12 15 | 704 | 0.4− | 0.0 | 2003 04 07 | 644 | 0.5+ | 0.5+ | |
| 2001 08 20 | 644 | 0.6− | 1.1+ | 2001 12 15 | 704 | 1.0+ | 0.7+ | 2004 05 23 | 704 | 0.6+ | 0.3+ | |
| 2001 08 20 | 644 | 0.5− | 0.3+ | 2001 12 15 | 704 | 0.7+ | 0.0 | 2004 05 23 | 704 | 0.0 | 1.2+ | |
| 2001 09 14 | 644 | 0.0 | 0.2+ | 2001 12 19 | 704 | 0.1+ | 0.5− | 2004 05 23 | 704 | 0.2+ | 0.8+ | |
| 2001 09 14 | 644 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.2+ | 0.4− | 2004 05 23 | 704 | 0.3+ | 0.7+ | |
| 2001 09 14 | 644 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.3+ | 0.5− | 2005 07 10 | E12 | 1.2− | 0.6+ | |
| 2001 10 13 | 683 | (0.3+ | 2.1+) | 2001 12 19 | 704 | 0.4− | 0.3− | 2005 07 10 | E12 | 1.1+ | 1.3+ | |
| 2001 10 13 | 683 | (0.8− | 1.6−) | 2001 12 19 | 704 | 0.3+ | 0.2− | 2005 07 10 | E12 | 0.6− | 0.6+ | |
| 2001 10 13 | 683 | (3.0− | 4.6−) | 2002 01 11 | 608 | 0.3− | 0.1− | 2005 07 10 | E12 | 0.2+ | 0.0 | |
| 2001 10 14 | 699 | 1.3− | 1.0− | 2002 01 11 | 608 | 0.3− | 0.5− | 2006 09 29 | 699 | 0.2− | 0.4− | |
| 2001 10 14 | 699 | 0.0 | 0.6+ | 2002 01 11 | 608 | 0.5− | 0.6− | 2006 09 29 | 699 | 0.0 | 0.1− | |
| 2001 10 14 | 699 | 0.6+ | 0.2+ | 2002 01 14 | 704 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.6− | 0.0 | |
| 2001 10 14 | 699 | 0.1− | 1.0+ | 2002 01 14 | 704 | 0.5− | 0.8+ | 2006 09 29 | 699 | 0.3+ | 0.4+ | |
| 2001 10 15 | 683 | (0.4+ | 2.8+) | 2002 01 14 | 704 | 1.4+ | 0.4+ | 2006 10 20 | 703 | 0.0 | 0.1− | |
| 2001 10 15 | 683 | 0.4− | 0.0 | 2002 01 14 | 704 | 0.8− | 1.2+ | 2006 10 20 | 703 | 0.1− | 0.3− | |
| 2001 10 15 | 683 | 0.8+ | 0.6+ | 2003 01 27 | 704 | 0.1− | 0.0 | 2006 10 20 | 703 | 0.7− | 0.0 | |
| 2001 10 16 | 704 | 1.0+ | 0.0 | 2003 01 27 | 704 | 0.8+ | 0.4+ | 2006 10 20 | 703 | 1.4− | 0.3+ | |
| 2001 10 16 | 683 | (1.6+ | 0.0 ) | 2003 01 27 | 704 | 0.9+ | 0.3+ | 2006 10 28 | 703 | 0.7+ | 0.4− | |
| 2001 10 16 | 704 | 0.3+ | 0.2+ | 2003 01 27 | 704 | 0.8+ | 0.3+ | 2006 10 28 | 703 | 1.0+ | 0.4− | |
| 2001 10 16 | 683 | 1.0+ | 0.5+ | 2003 01 27 | 704 | 0.7+ | 0.5+ | 2006 10 28 | 703 | 0.6− | 0.2− | |
| 2001 10 16 | 704 | 0.7+ | 0.4+ | 2003 02 02 | 699 | 0.2− | 0.3− | 2006 10 28 | 703 | 0.9− | 0.6+ | |
| 2001 10 16 | 683 | 0.0 | 1.1+ | 2003 02 02 | 699 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.1+ | 0.1+ | |
| 2001 10 16 | 704 | 0.9+ | 1.2+ | 2003 02 02 | 699 | 1.0− | 0.5+ | 2006 11 07 | 644 | 0.1+ | 0.4+ | |
| 2001 10 20 | 608 | 0.1+ | 1.2− | 2003 02 02 | 699 | 1.2+ | 0.4− | 2006 11 07 | 644 | 0.3+ | 0.3+ | |
| 2001 10 20 | 608 | 0.2− | 0.9− | 2003 03 08 | 704 | 0.7− | 0.9− | 2006 11 08 | 644 | 0.4+ | 0.2+ | |
| 2001 10 20 | 608 | 0.5− | 0.7− | 2003 03 08 | 704 | 0.4− | 0.1+ | 2006 11 08 | 644 | 0.4+ | 0.2+ | |
| 2001 11 15 | 704 | 0.2− | 0.4− | 2003 03 08 | 704 | 1.3− | 0.2− | 2006 11 08 | 644 | 0.4+ | 0.2+ | |
| 2001 11 15 | 704 | 0.3− | 0.2− | 2003 03 08 | 704 | 0.0 | 1.4+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | |
| 2001 11 15 | 704 | 0.0 | 0.3− | 2003 03 08 | 704 | (2.8− | 1.2−) | 2006 11 09 | 644 | 0.2+ | 0.1− | |
| 2001 11 15 | 704 | 0.2− | 0.3− | 2003 03 08 | 704 | 0.1− | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 2001 11 15 | 704 | 0.5− | 0.3+ | 2003 03 08 | 704 | 0.4− | 0.4− | 2006 11 10 | 704 | (1.6+ | 1.0−) | |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2003 03 08 | 704 | 1.3− | 0.4+ | 2006 11 10 | 704 | 0.3− | 0.3+ | |
| 2001 11 18 | 704 | 0.2− | 0.0 | 2003 03 08 | 704 | 0.7− | 0.4− | 2006 11 10 | 704 | 0.1− | 0.6+ | |
| 2001 11 18 | 704 | 0.1− | 0.1+ | 2003 03 08 | 704 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.4+ | 1.5+ | |
| 2001 11 18 | 704 | 0.4− | 0.0 | 2003 03 22 | 644 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.1− | 0.8− | |
| 2001 11 20 | 699 | 0.2− | 0.2+ | 2003 03 22 | 644 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.4− | 0.1+ | |
| 2001 11 20 | 699 | 0.2− | 0.4+ | 2003 03 22 | 644 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.2− | |
| 2001 11 20 | 699 | 0.4+ | 0.1+ | 2003 03 26 | 704 | 0.6+ | 1.0+ | 2006 11 16 | 703 | 0.3− | 1.0− | |
| 2001 11 20 | 699 | 0.5− | 0.1+ | 2003 03 26 | 704 | (2.1+ | 0.7+) | 2006 11 17 | 644 | 0.1+ | 0.0 | |
| 2001 12 07 | 704 | 0.4− | 0.1+ | 2003 03 26 | 704 | 0.6+ | 0.2− | 2006 11 17 | 644 | 0.2+ | 0.4+ | |
| 2001 12 07 | 704 | 0.3+ | 0.2− | 2003 03 26 | 704 | 0.5+ | 0.2− | 2006 11 17 | 644 | 0.1+ | 0.0 | |
| 2001 12 07 | 704 | 0.4− | 0.1+ | 2003 04 07 | 644 | 0.4+ | 0.1+ | | | | | |
| 2001 12 07 | 704 | 0.5− | 0.1− | 2003 04 07 | 644 | 0.2+ | 0.3+ | | | | | |

**(140354)∗ 2001 TM$_{19}$**

Discovered 2001 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.55211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18223818 | $\omega$ | 91.47681 | | +0.29519650 | −0.95349144 | |
| $a$ | 3.0811285 | $\Omega$ | 341.00849 | | +0.78515075 | +0.27843167 | |
| $e$ | 0.0741789 | $i$ | 10.79212 | | +0.54442385 | +0.11545508 | |
| $P$ | 5.41 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.0 | 0.3+ | 2001 11 11 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.8− | 0.4− | |
| 1995 10 23 | 691 | 0.3− | 0.0 | 2001 11 11 | 704 | 0.0 | 0.6− | 2006 09 17 | 703 | 0.4− | 0.9− | |
| 1995 10 23 | 691 | 0.1− | 0.2+ | 2001 12 07 | 644 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.3+ | 1.1− | |
| 1998 03 20 | 704 | 0.4− | 1.6− | 2001 12 07 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.2− | 0.0 | |
| 1998 03 20 | 704 | 0.7− | 0.9− | 2001 12 07 | 644 | 0.2− | 0.6+ | 2006 09 18 | 704 | 0.3− | 0.8+ | |
| 1998 03 20 | 704 | 1.1− | 1.0+ | 2001 12 14 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.9− | 0.1+ | |
| 1998 03 20 | 704 | (5.4− | 0.7+) | 2001 12 14 | 704 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.8+ | |
| 2001 08 25 | 704 | 0.5− | 0.4− | 2001 12 14 | 704 | 1.1− | 0.1+ | 2006 09 19 | 699 | 0.8+ | 0.4− | |
| 2001 08 25 | 704 | 0.5− | 0.0 | 2002 01 08 | 704 | 0.1+ | 0.8− | 2006 09 19 | 699 | 0.0 | 0.4+ | |
| 2001 08 25 | 704 | 1.0− | 0.3+ | 2002 01 08 | 704 | 0.8+ | 0.7− | 2006 09 19 | 699 | (3.2− | 0.2−) | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 644 | (0.8+ | 1.7+) | 2002 01 08 | 704 | 0.8+ | 0.0 | 2006 09 25 | 704 | 0.9+ | 0.0 |
| 2001 09 21 | 644 | 1.0+ | 1.3+ | 2002 01 08 | 704 | 0.7− | 1.2− | 2006 09 25 | 704 | 0.1− | 0.7+ |
| 2001 09 21 | 644 | 1.0+ | 1.5+ | 2003 01 05 | 704 | 1.2− | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.2+ |
| 2001 09 22 | 699 | 0.8+ | 0.4+ | 2003 01 05 | 704 | 1.4− | 0.8+ | 2006 09 25 | 704 | 0.4+ | 0.0 |
| 2001 09 22 | 699 | 0.9+ | 1.2+ | 2003 01 05 | 704 | 0.2− | 0.3− | 2006 09 25 | 704 | 0.3+ | 0.3+ |
| 2001 09 22 | 699 | 0.5+ | 0.1+ | 2003 01 05 | 704 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.1+ |
| 2001 09 22 | 699 | 1.3+ | 1.0+ | 2003 01 05 | 704 | 0.6− | 1.0+ | 2006 09 26 | 691 | 0.2+ | 0.8+ |
| 2001 09 25 | 704 | 0.0 | 0.5− | 2003 02 01 | 704 | 0.5− | 0.8+ | 2006 09 26 | 691 | 0.4− | 0.2+ |
| 2001 09 25 | 704 | 0.3− | 0.7− | 2003 02 01 | 704 | 0.2+ | 0.1− | 2006 09 27 | 699 | 0.5− | 0.1+ |
| 2001 09 25 | 704 | 0.5+ | 0.4− | 2003 02 01 | 704 | 1.3+ | 0.7− | 2006 09 27 | 699 | 0.2+ | 0.2− |
| 2001 09 25 | 704 | 0.4− | 0.6− | 2003 02 01 | 704 | 0.0 | 1.1+ | 2006 09 27 | 699 | 0.0 | 0.9− |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2003 02 01 | 704 | (0.1+ | 1.8+) | 2006 09 29 | 704 | 1.0+ | 0.5− |
| 2001 10 09 | 704 | 0.8+ | 0.2− | 2003 02 03 | 644 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2001 10 09 | 704 | 0.7+ | 0.6− | 2003 02 03 | 644 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2001 10 09 | 704 | (0.3− | 1.9−) | 2003 02 03 | 644 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.5− |
| 2001 10 09 | 704 | 0.9− | 0.5+ | 2003 02 04 | 704 | (2.4− | 1.6+) | 2006 09 29 | 704 | 0.4+ | 0.6− |
| 2001 10 09 | 704 | 0.6+ | 0.8− | 2003 02 04 | 704 | 0.5+ | 1.0+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2001 10 15 | 704 | 1.1+ | 0.1− | 2003 02 04 | 704 | (1.6+ | 0.4+) | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2001 10 15 | 704 | 0.9+ | 0.5− | 2003 02 04 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 691 | 0.4− | 0.3+ |
| 2001 10 15 | 704 | 0.5+ | 0.6− | 2003 02 19 | 644 | 0.7+ | 0.4+ | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2001 10 15 | 704 | 0.3+ | 0.2− | 2003 02 19 | 644 | 0.8+ | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 10 15 | 704 | 0.5+ | 0.9− | 2003 02 19 | 644 | 1.1+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2001 10 19 | 704 | 0.0 | 0.4+ | 2003 02 21 | 699 | 0.8+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2001 10 19 | 704 | 0.0 | 0.2− | 2003 02 21 | 699 | (1.9+ | 0.2+) | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2001 10 19 | 704 | 0.6− | 1.0− | 2003 02 21 | 699 | 1.1+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.1− |
| 2001 10 19 | 704 | 0.1− | 0.0 | 2003 02 21 | 699 | 0.7+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 1.1+ |
| 2001 10 19 | 704 | (0.7− | 1.6−) | 2003 03 06 | 704 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.7+ | 0.1+ |
| 2001 10 19 | 704 | (1.1− | 2.1−) | 2003 03 06 | 704 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.7+ |
| 2001 10 19 | 704 | 0.2+ | 0.6− | 2003 03 06 | 704 | 0.4− | 0.5+ | 2006 10 17 | 703 | 0.5+ | 1.0+ |
| 2001 10 19 | 704 | 0.1+ | 1.3− | 2003 03 06 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 10 27 | 704 | 0.9− | 0.1+ | 2004 04 14 | E12 | 0.1− | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 10 27 | 704 | 0.4− | 0.1− | 2004 04 14 | E12 | (0.1+ | 1.8+) | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2001 10 27 | 704 | 0.0 | 0.1+ | 2004 04 14 | E12 | 0.9+ | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2001 10 27 | 704 | 0.8− | 0.0 | 2004 04 14 | E12 | 0.7+ | 1.0+ | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2001 10 27 | 704 | 0.9− | 0.6+ | 2004 04 22 | E12 | (2.2+ | 0.0 ) | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2001 11 10 | 704 | (1.8− | 0.2−) | 2004 04 22 | E12 | 0.7+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 11 10 | 704 | 0.4+ | 0.0 | 2004 04 22 | E12 | 0.7+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2001 11 10 | 704 | 0.1− | 0.4+ | 2004 04 22 | E12 | 0.8+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.4− |
| 2001 11 10 | 704 | 0.1− | 0.3− | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 11 10 | 704 | 0.6+ | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.5+ | 0.2+ |
| 2001 11 11 | 704 | 0.1− | 0.3− | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.5− | 0.0 |
| 2001 11 11 | 704 | 0.0 | 0.4− | 2006 09 17 | 703 | 0.6− | 0.2+ | | | | |
| 2001 11 11 | 704 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.7− | 0.4− | | | | |

**(140355)∗ 2001 TN$_{19}$**

Discovered 2001 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.93003 | | (2000.0) | | | |
| $n$ | 0.23364560 | $\omega$ | 280.56714 | | −0.92306353 | +0.31557225 |
| $a$ | 2.6107441 | $\Omega$ | 278.10236 | | −0.20365235 | −0.88600230 |
| $e$ | 0.0653061 | $i$ | 12.83502 | | −0.32631188 | −0.33972647 |
| $P$ | 4.22 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 29 | 327 | 0.0 | 0.6− | 2003 01 02 | 704 | 0.4+ | 0.1+ | 2005 10 29 | 703 | 0.3− | 0.3+ |
| 1997 12 29 | 327 | 0.4− | 1.3− | 2003 01 02 | 704 | 0.3− | 0.8+ | 2005 10 29 | 703 | 0.3− | 0.0 |
| 1997 12 29 | 327 | 0.4+ | 0.0 | 2003 01 25 | 644 | 0.8+ | 1.2+ | 2005 10 29 | 703 | 0.1+ | 0.9+ |
| 2001 08 23 | 704 | 0.2− | 1.1+ | 2003 01 25 | 644 | 0.2+ | 0.5+ | 2005 11 01 | 699 | 0.1− | 0.5− |
| 2001 08 23 | 704 | 0.2− | 0.2+ | 2003 01 25 | 644 | 0.2+ | 0.6+ | 2005 11 01 | 699 | 0.4+ | 0.7− |
| 2001 08 23 | 704 | 0.1− | 0.8+ | 2003 02 06 | 644 | 0.8+ | 0.9+ | 2005 11 01 | 699 | 1.1− | 0.2− |
| 2001 10 09 | 704 | 0.1+ | 0.2+ | 2003 02 06 | 644 | 0.9+ | 0.9+ | 2005 11 01 | 699 | 0.4− | 0.4+ |
| 2001 10 09 | 704 | 0.4+ | 0.2+ | 2003 02 06 | 644 | 1.0+ | 0.7+ | 2005 11 04 | 703 | 0.1+ | 0.3+ |
| 2001 10 09 | 704 | 0.4− | 0.1− | 2003 02 25 | 608 | 0.0 | 0.4− | 2005 11 04 | 703 | 0.1− | 0.0 |
| 2001 10 09 | 704 | 0.2+ | 0.1− | 2003 02 25 | 608 | 0.3+ | 0.8− | 2005 11 04 | 703 | (1.1+ | 1.6−) |
| 2001 10 13 | 644 | 0.8+ | 0.0 | 2003 02 25 | 608 | 0.3− | 0.2− | 2005 11 04 | 703 | 0.4+ | 0.1− |
| 2001 10 13 | 644 | 0.3+ | 0.1+ | 2003 03 10 | 699 | 1.0+ | 0.6+ | 2005 11 08 | 704 | 0.0 | 1.1+ |
| 2001 10 13 | 644 | 0.1+ | 0.5+ | 2003 03 10 | 699 | 0.5+ | 0.4+ | 2005 11 08 | 704 | 0.7− | 0.1− |
| 2001 10 15 | 704 | 1.1− | 0.2+ | 2003 03 10 | 699 | 0.3− | 0.7+ | 2005 11 08 | 704 | 1.1+ | 0.2+ |
| 2001 10 15 | 704 | 0.2− | 0.7+ | 2003 03 10 | 699 | 0.3− | 0.0 | 2005 11 08 | 704 | 0.4− | 0.5+ |
| 2001 10 15 | 704 | 0.5− | 0.2+ | 2003 03 21 | 608 | 0.1− | 0.8− | 2005 11 08 | 704 | 0.9+ | 0.8− |
| 2001 10 15 | 704 | 0.5− | 0.9+ | 2003 03 21 | 608 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.1+ |
| 2001 10 27 | 704 | (0.0 | 2.4−) | 2003 03 21 | 608 | 0.7− | 0.9− | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2001 10 27 | 704 | (0.2− | 2.4−) | 2003 03 27 | 608 | 0.1+ | 0.8− | 2006 09 25 | G96 | 0.4− | 0.5− |
| 2001 10 27 | 704 | 0.2− | 1.3− | 2003 03 27 | 608 | 0.3+ | 0.9− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2001 10 27 | 704 | 0.4+ | 1.4− | 2003 03 27 | 608 | 0.3− | 0.4− | 2006 10 17 | G96 | 0.3− | 0.4− |
| 2001 11 11 | 704 | 0.1+ | 0.4+ | 2003 03 29 | 699 | 0.0 | 0.8+ | 2006 10 17 | G96 | 0.3+ | 0.6− |
| 2001 11 11 | 704 | 0.2+ | 0.2− | 2003 03 29 | 699 | 1.3− | 0.5+ | 2006 10 17 | G96 | 0.7− | 0.9− |
| 2001 11 11 | 704 | 0.3+ | 0.4+ | 2003 03 29 | 699 | 0.5+ | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.2+ |
| 2001 11 11 | 704 | 0.3+ | 0.1− | 2003 03 29 | 699 | 1.1− | 0.4+ | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2001 11 11 | 704 | 0.1+ | 0.4− | 2005 09 11 | 699 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2001 12 07 | 644 | 0.2− | 0.2+ | 2005 09 11 | 699 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 12 07 | 644 | 0.0 | 0.4− | 2005 09 11 | 699 | (1.0− | 1.6−) | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 12 07 | 644 | 0.6− | 0.2+ | 2005 09 11 | 699 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2001 12 18 | 699 | 1.2− | 0.1− | 2005 09 29 | 703 | (0.6+ | 1.6+) | 2006 11 17 | G96 | 0.3− | 0.5− |
| 2001 12 18 | 699 | (1.6+ | 0.5+) | 2005 09 29 | 703 | (1.8− | 1.5+) | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2001 12 18 | 699 | 0.4+ | 0.6− | 2005 09 29 | 703 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2001 12 18 | 699 | 0.9+ | 0.6+ | 2005 09 29 | 703 | 0.3− | 0.8+ | | | | |
| 2003 01 02 | 704 | 0.5+ | 0.2+ | 2005 10 29 | 703 | 0.2− | 0.4+ | | | | |

**(140356)∗ 2001 TY$_{19}$**

Discovered 2001 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.13844 | | (2000.0) | | | |
| $n$ | 0.19719998 | $\omega$ | 40.26336 | | +0.82774630 | −0.56055958 |
| $a$ | 2.9232422 | $\Omega$ | 353.68327 | | +0.43966009 | +0.67529150 |
| $e$ | 0.1128499 | $i$ | 12.96165 | | +0.34861881 | +0.47932697 |
| $P$ | 5.00 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.1− | 0.4− | 2001 11 11 | 699 | 0.9+ | 0.3+ | 2004 04 25 | 704 | 0.6+ | 0.8+ |
| 1993 01 29 | 691 | 0.5− | 0.2− | 2001 11 19 | 644 | 0.2− | 0.4− | 2004 04 25 | 704 | 0.7− | 0.3+ |
| 1993 01 29 | 691 | 0.4− | 0.3− | 2001 11 19 | 644 | 0.2− | 0.4− | 2004 04 25 | 704 | 0.3+ | 0.6− |
| 2001 08 22 | 704 | 1.0+ | 0.9+ | 2001 11 19 | 644 | 0.0 | 0.5− | 2004 04 25 | 704 | 0.2− | 0.5+ |
| 2001 08 22 | 704 | 0.7+ | 0.6− | 2001 12 09 | 704 | 0.4− | 0.1+ | 2005 08 24 | E12 | 0.4− | 0.4+ |
| 2001 08 22 | 704 | 0.3+ | 0.1− | 2001 12 09 | 704 | 0.5− | 0.7− | 2005 08 24 | E12 | 0.1− | 0.0 |
| 2001 09 22 | 644 | 0.7− | 1.1− | 2001 12 09 | 704 | 0.0 | 0.2− | 2005 08 24 | E12 | 0.2− | 0.0 |
| 2001 09 22 | 644 | (0.5− | 1.6−) | 2001 12 09 | 704 | 0.1− | 0.4− | 2005 08 24 | E12 | 0.3+ | 0.2− |
| 2001 09 22 | 644 | 0.0 | 1.2− | 2001 12 18 | 699 | 0.6− | 1.0− | 2006 08 29 | 703 | 0.2− | 0.4− |
| 2001 09 24 | 704 | 0.8− | 0.8+ | 2001 12 18 | 699 | 0.9− | 0.2− | 2006 08 29 | 703 | 0.4− | 0.4− |
| 2001 09 24 | 704 | 0.4− | 0.3+ | 2001 12 18 | 699 | 0.6− | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.0 |
| 2001 09 24 | 704 | 0.4− | 1.2+ | 2001 12 18 | 699 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.5− | 0.1− |
| 2001 09 24 | 704 | 0.8− | 1.3+ | 2002 01 08 | 704 | 0.4− | 0.8+ | 2006 10 02 | 704 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.3+ | 0.3− | 2002 01 08 | 704 | 0.1− | 0.3+ | 2006 10 02 | 704 | 0.6− | 0.3− |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2002 01 08 | 704 | 0.4− | 0.3+ | 2006 10 02 | 704 | 0.0 | 0.4+ |
| 2001 09 25 | 704 | 0.7+ | 0.0 | 2002 01 08 | 704 | 0.6− | 1.2+ | 2006 10 02 | 704 | 0.3− | 0.3− |
| 2001 09 25 | 704 | 0.1+ | 0.3− | 2002 01 08 | 704 | 0.0 | 0.6+ | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.6+ | 0.4+ | 2003 01 26 | 608 | 0.2− | 0.4− | 2006 10 23 | 703 | 0.1− | 0.4+ |
| 2001 10 09 | 704 | 0.4+ | 0.6− | 2003 01 26 | 608 | 0.0 | 0.0 | 2006 10 23 | 703 | 0.4+ | 0.5+ |
| 2001 10 09 | 704 | 0.1+ | 0.0 | 2003 01 26 | 608 | 0.2− | 0.6− | 2006 10 23 | 703 | 0.5+ | 0.2+ |
| 2001 10 09 | 704 | 0.2+ | 0.5− | 2003 01 27 | 704 | 0.6+ | 0.3+ | 2006 10 29 | 703 | 0.3− | 0.2− |
| 2001 10 09 | 704 | 0.2− | 0.3+ | 2003 01 27 | 704 | 0.5+ | 0.9+ | 2006 10 29 | 703 | 0.5− | 0.2− |
| 2001 10 09 | 704 | 0.4+ | 0.7+ | 2003 01 27 | 704 | (0.5+ | 2.1+) | 2006 10 29 | 703 | 0.7− | 0.0 |
| 2001 10 15 | 704 | 0.6+ | 0.3+ | 2003 02 02 | 704 | (1.6+ | 0.6−) | 2006 10 29 | 703 | 0.1− | 0.3− |
| 2001 10 15 | 704 | 0.1+ | 0.1+ | 2003 02 02 | 704 | 0.9+ | 0.9+ | 2006 11 14 | 704 | 0.6+ | 0.6+ |
| 2001 10 15 | 704 | 0.4+ | 0.2+ | 2003 02 02 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 0.3+ | 0.1+ |
| 2001 10 15 | 704 | 1.1+ | 0.2+ | 2003 02 04 | 699 | (2.3+ | 3.3+) | 2006 11 14 | 704 | 0.7+ | 0.3− |
| 2001 10 15 | 704 | 0.8+ | 0.3− | 2003 02 04 | 699 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.9+ |
| 2001 10 27 | 704 | 0.3+ | 0.3+ | 2003 02 04 | 699 | 0.8+ | 0.6+ | 2006 11 15 | 703 | 0.5+ | 0.1+ |
| 2001 10 27 | 704 | 0.3+ | 0.5− | 2003 02 04 | 699 | 0.3− | 0.9+ | 2006 11 15 | 703 | 0.1+ | 0.4+ |
| 2001 10 27 | 704 | 0.2+ | 0.8− | 2004 04 14 | 644 | 0.1− | 0.9+ | 2006 11 15 | 703 | 0.2− | 0.4+ |
| 2001 10 27 | 704 | 0.9+ | 0.8− | 2004 04 14 | 644 | 0.0 | 0.7+ | 2006 11 15 | 703 | 0.2− | 0.4+ |
| 2001 10 27 | 704 | (0.2+ | 1.8−) | 2004 04 14 | 460 | 1.0+ | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 1.0− | 0.4+ | 2004 04 14 | 460 | 0.3− | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2001 11 11 | 699 | 0.9+ | 0.1+ | 2004 04 14 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.4+ |
| 2001 11 11 | 704 | 0.7− | 0.2+ | 2004 04 14 | 460 | (1.7+ | 0.2+) | 2006 11 21 | 703 | 0.2+ | 0.2+ |
| 2001 11 11 | 699 | 1.5+ | 0.4− | 2004 04 15 | 460 | 0.3+ | 0.1+ | 2006 11 21 | 703 | 0.6− | 0.1− |
| 2001 11 11 | 704 | 0.8− | 0.0 | 2004 04 15 | 460 | 0.6+ | 0.4− | 2006 11 21 | 703 | 1.6− | 0.4− |
| 2001 11 11 | 704 | 0.9− | 0.2+ | 2004 04 15 | 460 | 0.4+ | 0.5+ | 2006 11 21 | 703 | 0.9− | 0.1− |
| 2001 11 11 | 699 | 0.5+ | 0.3+ | 2004 04 25 | 704 | (1.7+ | 0.5+) | | | | |

**(140357)∗ 2001 TY$_{20}$**

Discovered 2001 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.34560 | | (2000.0) | | | |
| $n$ | 0.17873689 | $\omega$ | 115.35905 | | −0.31428485 | −0.94883725 |
| $a$ | 3.1212358 | $\Omega$ | 352.75398 | | +0.76049414 | −0.23238136 |
| $e$ | 0.1688109 | $i$ | 14.01396 | | +0.56821976 | −0.21379143 |
| $P$ | 5.51 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 29 | 809 | 1.6+ | 1.2+ | 2003 01 28 | 608 | 1.0+ | 0.4− | 2003 03 25 | 699 | 0.4− | 0.6+ |
| 1992 04 06 | 809 | 0.8− | 0.3− | 2003 01 28 | 608 | 0.6+ | 0.3− | 2003 03 31 | 645 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.3− | 0.1− | 2003 01 28 | 608 | 0.4+ | 0.6+ | 2003 03 31 | 645 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.4− | 1.0+ | 2003 02 01 | 704 | 0.5+ | 1.1− | 2003 04 05 | 691 | 0.1+ | 0.5+ |
| 2001 08 25 | 704 | 0.3− | 0.4+ | 2003 02 01 | 704 | 0.3+ | 0.4− | 2003 04 05 | 691 | 0.2− | 0.3+ |
| 2001 09 22 | 699 | 1.0− | 0.3− | 2003 02 01 | 704 | 0.2+ | 0.0 | 2003 04 05 | 691 | 0.3− | 0.4+ |
| 2001 09 22 | 699 | 0.6− | 1.3+ | 2003 02 01 | 704 | 0.8+ | 0.1+ | 2003 04 08 | 608 | 0.8+ | 0.2− |
| 2001 09 22 | 699 | 0.4− | 0.5− | 2003 02 01 | 704 | 0.8+ | 0.0 | 2003 04 08 | 608 | 0.8+ | 0.2+ |
| 2001 09 22 | 699 | 0.8− | 0.4+ | 2003 02 02 | 699 | 0.6− | 0.0 | 2003 04 08 | 608 | 0.2+ | 0.1+ |
| 2001 09 24 | 704 | 0.8+ | 0.5− | 2003 02 02 | 699 | 0.4+ | 0.8+ | 2006 08 24 | 644 | 0.4− | 0.3+ |
| 2001 09 24 | 704 | 0.1− | 0.8+ | 2003 02 02 | 699 | 0.9+ | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2001 09 24 | 704 | 0.3+ | 0.0 | 2003 02 02 | 699 | 0.2+ | 0.3− | 2006 08 24 | 644 | 0.6− | 0.5+ |
| 2001 09 24 | 704 | 0.3− | 0.1− | 2003 02 08 | 608 | 0.3+ | 0.5− | 2006 08 28 | 703 | (1.7− | 0.0 ) |
| 2001 09 24 | 704 | 0.2− | 0.9+ | 2003 02 08 | 608 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.3− | 1.1+ |
| 2001 09 25 | 704 | 1.0+ | 0.4+ | 2003 02 08 | 608 | 0.3+ | 0.1− | 2006 08 28 | 703 | 1.0− | 0.2− |
| 2001 09 25 | 704 | 0.4− | 0.0 | 2003 02 22 | 644 | 0.5+ | 0.4− | 2006 08 28 | 703 | (1.7− | 1.3+) |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2003 02 22 | 644 | 0.3+ | 0.6− | 2006 08 28 | 691 | 0.3− | 0.5+ |
| 2001 09 25 | 704 | 0.1− | 0.7− | 2003 02 22 | 644 | 0.4+ | 0.6− | 2006 08 28 | 691 | 0.3− | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2003 02 24 | 735 | 1.4− | 0.5+ | 2006 08 28 | 691 | 0.4− | 0.4+ |
| 2001 10 09 | 704 | (1.6+ | 1.3+) | 2003 02 24 | 735 | (1.1+ | 1.7+) | 2006 09 16 | 691 | 0.1+ | 0.4+ |
| 2001 10 09 | 704 | 0.0 | 0.4+ | 2003 02 28 | 704 | 0.0 | 0.6+ | 2006 09 16 | 691 | 0.2− | 0.5+ |
| 2001 10 09 | 704 | 0.2+ | 0.6+ | 2003 02 28 | 704 | 0.3+ | 0.1− | 2006 09 16 | 691 | 0.4− | 0.3+ |
| 2001 10 13 | 644 | 0.1− | 0.1− | 2003 02 28 | 704 | 0.5− | 0.5+ | 2006 09 20 | 704 | (1.0− | 1.7+) |
| 2001 10 13 | 644 | 0.2− | 0.2− | 2003 02 28 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 0.5− | 0.6+ |
| 2001 10 13 | 644 | 0.2− | 0.3− | 2003 02 28 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.9− | 0.7+ |
| 2001 10 15 | 704 | 1.4+ | 0.4− | 2003 02 28 | 608 | 0.1− | 0.7+ | 2006 09 20 | 704 | 0.1+ | 0.7+ |
| 2001 10 15 | 704 | (1.6+ | 0.7−) | 2003 02 28 | 608 | 0.5− | 1.0+ | 2006 09 20 | 704 | 0.3+ | 0.4+ |
| 2001 10 15 | 704 | 0.5+ | 0.9− | 2003 02 28 | 608 | 0.1+ | 0.7+ | 2006 09 25 | 699 | 0.5− | 1.0+ |
| 2001 10 15 | 704 | 1.1+ | 1.4− | 2003 03 06 | 699 | 1.1+ | 0.7+ | 2006 09 25 | 699 | 0.9− | 0.5+ |
| 2001 10 15 | 704 | 0.9+ | 1.0− | 2003 03 06 | 699 | 0.6+ | 0.2+ | 2006 09 25 | 699 | (2.1− | 0.1+) |
| 2001 10 27 | 704 | 0.5+ | 1.1− | 2003 03 06 | 699 | 0.6+ | 0.2+ | 2006 09 25 | 699 | 1.1− | 0.1+ |
| 2001 10 27 | 704 | 0.8+ | 1.0− | 2003 03 06 | 699 | 0.3− | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2001 10 27 | 704 | 0.0 | 1.3− | 2003 03 06 | 704 | 0.4+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.5+ |
| 2001 10 27 | 704 | 0.6+ | 1.0− | 2003 03 06 | 704 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.5+ |
| 2001 10 27 | 704 | 0.7+ | 1.3− | 2003 03 06 | 704 | (0.3+ | 1.8+) | 2006 10 01 | 703 | 0.7+ | 0.4+ |
| 2001 10 27 | 644 | 0.5+ | 0.2− | 2003 03 06 | 704 | 0.4+ | 0.5+ | 2006 10 01 | 703 | 1.3− | 1.1+ |
| 2001 10 27 | 644 | 0.5+ | 0.1− | 2003 03 06 | 704 | 0.1− | 0.3+ | 2006 10 01 | 703 | 0.7− | 0.1+ |
| 2001 10 27 | 644 | 0.4+ | 0.2− | 2003 03 14 | 608 | 0.7+ | 0.3+ | 2006 10 01 | 703 | 0.1+ | 0.4− |
| 2001 11 11 | 704 | 0.7+ | 0.3− | 2003 03 14 | 608 | 0.9+ | 0.9+ | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2001 11 11 | 704 | 0.4+ | 0.8− | 2003 03 14 | 608 | 0.8+ | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2001 11 11 | 704 | 0.3+ | 0.8− | 2003 03 21 | 608 | 0.7+ | 0.5− | 2006 10 03 | G96 | 0.3− | 0.0 |
| 2001 11 11 | 704 | 0.1− | 0.5− | 2003 03 21 | 608 | 1.2+ | 0.3− | 2006 10 03 | G96 | 0.3− | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.7− | 2003 03 21 | 608 | 0.4+ | 0.4− | 2006 10 11 | 691 | 0.0 | 0.4+ |
| 2001 11 11 | 699 | 0.5− | 0.1− | 2003 03 24 | 691 | 0.7+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.7+ |
| 2001 11 11 | 699 | 0.4− | 0.5− | 2003 03 24 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.6+ |
| 2001 11 11 | 699 | 0.2− | 0.1− | 2003 03 24 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.7+ | 0.4− |
| 2001 11 11 | 699 | 0.4− | 0.1− | 2003 03 24 | 608 | 1.0+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.3− |
| 2001 12 10 | 704 | 0.1− | 0.4− | 2003 03 24 | 608 | (1.8+ | 0.5+) | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2001 12 10 | 704 | 0.1− | 0.4− | 2003 03 24 | 608 | (1.7+ | 0.5−) | 2006 10 16 | 703 | 0.9− | 0.8+ |
| 2001 12 10 | 704 | 1.0+ | 1.0− | 2003 03 25 | 699 | 0.1+ | 0.8+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2001 12 10 | 704 | 0.2− | 0.4+ | 2003 03 25 | 699 | 0.1− | 1.3+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2002 01 23 | 704 | 0.5+ | 0.4+ | 2003 03 25 | 608 | 0.9+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2002 01 23 | 704 | 0.0 | 0.2− | 2003 03 25 | 608 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2002 01 23 | 704 | 0.1+ | 0.4+ | 2003 03 25 | 699 | 0.6− | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2002 01 23 | 704 | 0.2+ | 0.4+ | 2003 03 25 | 608 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.5− | 0.2+ |

**(140358)∗ 2001 TH$_{21}$**

Discovered 2001 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.45276 | | (2000.0) | | | |
| $n$ | 0.19828754 | $\omega$ | 315.45439 | | +0.64571908 | +0.76326600 |
| $a$ | 2.9125436 | $\Omega$ | 354.63080 | | −0.61967237 | +0.50719280 |
| $e$ | 0.0970530 | $i$ | 13.42356 | | −0.44615359 | +0.40022553 |
| $P$ | 4.97 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1+ | 0.2+ | 2004 03 26 | 704 | 0.6+ | 0.2− | 2005 08 08 | E12 | 0.2+ | 0.1+ |
| 2001 09 25 | 704 | 0.3+ | 0.4+ | 2004 03 26 | 704 | 0.5+ | 0.4− | 2005 08 08 | E12 | 0.1+ | 0.4+ |
| 2001 09 25 | 704 | 0.4+ | 0.1− | 2004 03 26 | 704 | 0.4+ | 1.3+ | 2005 08 12 | E12 | 0.2+ | 0.8− |
| 2001 09 25 | 704 | 0.2+ | 0.5− | 2004 04 09 | E12 | 0.2− | 0.0 | 2005 08 12 | E12 | 0.0 | 0.1− |
| 2001 09 25 | 704 | 1.3+ | 0.3− | 2004 04 09 | E12 | 0.3− | 0.3+ | 2005 08 12 | E12 | 0.3+ | 0.1+ |
| 2001 10 09 | 704 | 0.3+ | 0.1+ | 2004 04 09 | E12 | 0.3+ | 0.0 | 2005 08 12 | E12 | 0.2− | 0.1− |
| 2001 10 09 | 704 | 0.1+ | 1.0+ | 2004 04 09 | E12 | 0.2− | 0.4− | 2005 08 24 | E12 | 0.3− | 0.1− |
| 2001 10 09 | 704 | 0.9− | 0.5+ | 2004 04 17 | 704 | 0.7+ | 0.8+ | 2005 08 24 | E12 | 0.1+ | 0.6− |
| 2001 10 15 | 704 | 0.5+ | 0.4+ | 2004 04 17 | 704 | 0.0 | 0.0 | 2005 08 24 | E12 | 0.4− | 0.1+ |
| 2001 10 15 | 704 | 0.3− | 0.2+ | 2004 04 17 | 704 | 1.2+ | 0.5+ | 2005 08 24 | E12 | 0.4+ | 0.2− |
| 2001 10 15 | 704 | 0.2+ | 0.2+ | 2004 04 17 | 704 | 0.7+ | 1.0+ | 2005 09 09 | E12 | 0.4+ | 1.2− |
| 2001 10 15 | 704 | 0.5+ | 0.3+ | 2004 04 19 | 704 | 0.9+ | 0.6+ | 2005 09 09 | E12 | 0.9− | 0.2− |
| 2001 10 15 | 704 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.8+ | 2005 09 09 | E12 | 0.8− | 1.2+ |
| 2001 10 27 | 704 | 0.3+ | 0.4− | 2004 04 19 | 704 | 0.1− | 0.8+ | 2005 09 09 | E12 | 0.1+ | 0.4+ |
| 2001 10 27 | 704 | 0.3− | 0.6− | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 703 | 0.5+ | 0.9− |
| 2001 10 27 | 704 | 0.2+ | 1.0+ | 2004 04 19 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 703 | 0.2+ | 0.5− |
| 2001 10 27 | 704 | 0.4+ | 0.7+ | 2004 04 20 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 703 | (1.6+ | 0.2+) |
| 2001 11 11 | 704 | 0.4− | 0.8+ | 2004 04 20 | 704 | 0.1− | 0.3+ | 2006 09 25 | 703 | 0.3− | 0.3+ |
| 2001 11 11 | 704 | 0.3− | 0.1+ | 2004 04 20 | 704 | 0.4− | 0.9+ | 2006 09 25 | 703 | 0.5− | 1.3− |
| 2001 11 11 | 699 | 0.8− | 0.5+ | 2004 04 20 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 703 | 0.2− | 1.0− |
| 2001 11 11 | 704 | 0.7− | 0.3+ | 2004 04 20 | 704 | 0.4− | 0.1+ | 2006 09 25 | 703 | 0.3− | 0.1− |
| 2001 11 11 | 699 | 0.8− | 0.4+ | 2004 04 29 | 608 | 0.3− | 0.5+ | 2006 09 25 | 703 | 0.4− | 0.3+ |
| 2001 11 11 | 704 | 0.4− | 0.3+ | 2004 04 29 | 608 | 0.0 | 0.0 | 2006 10 23 | 703 | 0.5− | 0.5+ |
| 2001 11 11 | 704 | 0.1− | 1.0+ | 2004 04 29 | 608 | 0.5− | 0.3+ | 2006 10 23 | 703 | 0.1− | 0.1− |
| 2001 11 11 | 699 | 1.0− | 0.5+ | 2005 07 05 | E12 | 0.1+ | 0.7− | 2006 10 23 | 703 | 0.1− | 0.4+ |
| 2001 11 11 | 699 | 0.6+ | 0.5+ | 2005 07 05 | E12 | 0.7− | 0.3+ | 2006 10 23 | 703 | 0.6− | 0.1− |
| 2001 12 09 | 704 | 0.9− | 0.7− | 2005 07 05 | E12 | 0.5− | 0.8+ | 2006 10 29 | 703 | 0.1+ | 0.7+ |
| 2001 12 09 | 704 | (1.6− | 0.1−) | 2005 07 05 | E12 | 0.6+ | 0.8+ | 2006 10 29 | 703 | 0.3− | 0.5+ |
| 2001 12 09 | 704 | 1.1− | 0.5− | 2005 07 25 | E12 | 0.3− | 0.1+ | 2006 10 29 | 703 | 0.2+ | 0.0 |
| 2004 03 19 | 704 | 0.4+ | 0.4+ | 2005 07 25 | E12 | 0.9− | 0.3+ | 2006 10 29 | 703 | 0.2− | 0.3+ |
| 2004 03 19 | 704 | 1.0+ | 0.4− | 2005 07 25 | E12 | 1.0− | 0.6+ | 2006 11 14 | 644 | 0.2+ | 0.0 |
| 2004 03 19 | 704 | 0.4+ | 0.5+ | 2005 07 25 | E12 | 0.4− | 0.7+ | 2006 11 14 | 644 | 0.6+ | 0.7+ |
| 2004 03 19 | 704 | 0.3+ | 0.1+ | 2005 08 07 | E12 | 0.2+ | 0.7+ | 2006 11 14 | 644 | 0.2+ | 0.3+ |
| 2004 03 20 | 699 | 1.4− | 1.4− | 2005 08 07 | E12 | 0.5+ | 0.4+ | 2006 11 21 | 703 | 0.5− | 0.5+ |
| 2004 03 20 | 699 | 0.4− | 0.7+ | 2005 08 07 | E12 | 0.0 | 0.4+ | 2006 11 21 | 703 | 0.2− | 0.9+ |
| 2004 03 20 | 699 | 0.0 | 0.1− | 2005 08 07 | E12 | 0.6+ | 0.5+ | 2006 11 21 | 703 | 0.1+ | 0.9+ |
| 2004 03 20 | 699 | 0.9+ | 0.6− | 2005 08 08 | E12 | 0.4+ | 0.1+ | 2006 11 21 | 703 | 0.0 | 0.2+ |
| 2004 03 26 | 704 | 0.8+ | 0.4+ | 2005 08 08 | E12 | 0.3+ | 0.6+ | | | | |

**(140359)∗ 2001 TL$_{22}$ = 2001 SA$_{162}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.47097 | | (2000.0) | | | |
| $n$ | 0.19790294 | $\omega$ | 350.27784 | | +0.51351292 | +0.85781225 |
| $a$ | 2.9163159 | $\Omega$ | 310.61683 | | −0.78535912 | +0.45974607 |
| $e$ | 0.1195545 | $i$ | 1.62370 | | −0.34571019 | +0.22976443 |
| $P$ | 4.98 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.2− | 0.3+ | 2002 12 31 | 704 | 0.2+ | 0.2− | 2006 09 25 | 683 | (0.7− | 2.7−) | |
| 2001 09 11 | 699 | 0.8− | 0.4+ | 2002 12 31 | 704 | 0.3+ | 0.0 | 2006 09 26 | 683 | 0.6+ | 0.7− | |
| 2001 09 11 | 699 | 0.9+ | 0.8+ | 2002 12 31 | 704 | 0.2− | 1.2− | 2006 09 26 | 683 | 0.9− | 0.3+ | |
| 2001 09 11 | 699 | 0.0 | 0.2− | 2002 12 31 | 704 | 0.0 | 0.4− | 2006 09 26 | 683 | (1.0− | 2.1+) | |
| 2001 09 17 | 704 | 0.0 | 0.5+ | 2004 02 19 | 704 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | |
| 2001 09 17 | 704 | 0.1− | 0.5+ | 2004 02 19 | 704 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | |
| 2001 09 17 | 704 | 0.5− | 0.7+ | 2004 02 19 | 704 | 1.0+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.7+ | |
| 2001 09 20 | 704 | 0.4+ | 1.3+ | 2004 02 26 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 683 | 0.0 | 0.1− | |
| 2001 09 20 | 704 | 0.1+ | 1.1+ | 2004 02 26 | 704 | 0.5+ | 0.8+ | 2006 09 27 | 683 | 0.9− | 1.0+ | |
| 2001 09 20 | 704 | 0.3+ | 0.9+ | 2004 02 26 | 704 | 0.9+ | 0.0 | 2006 09 27 | 683 | 0.2− | 0.1− | |
| 2001 09 20 | 704 | 0.1+ | 1.3+ | 2004 02 26 | 704 | 0.2+ | 0.2− | 2006 09 28 | 683 | 0.6+ | 0.3+ | |
| 2001 09 23 | 704 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.1− | 0.4− | 2006 09 28 | 683 | 1.0+ | 1.2+ | |
| 2001 09 23 | 704 | 0.2+ | 0.4+ | 2004 03 16 | 704 | 0.8+ | 0.7+ | 2006 09 28 | 683 | 0.8+ | 0.0 | |
| 2001 09 23 | 704 | 0.1+ | 0.6+ | 2004 03 16 | 704 | 1.2+ | 0.8+ | 2006 09 29 | 704 | 0.5+ | 1.3+ | |
| 2001 09 24 | 704 | (1.7− | 0.6−) | 2004 03 16 | 704 | 0.8+ | 0.5+ | 2006 09 29 | 704 | (1.0− | 1.8+) | |
| 2001 09 24 | 704 | (1.7− | 0.6−) | 2004 03 16 | 704 | 1.0+ | 0.0 | 2006 09 29 | 704 | 1.2− | 1.3+ | |
| 2001 09 24 | 704 | 1.3− | 1.3− | 2004 03 18 | 704 | 0.1− | 1.2+ | 2006 09 30 | 683 | 0.7+ | 0.2− | |
| 2001 09 24 | 704 | (1.6− | 1.2−) | 2004 03 18 | 704 | 1.2+ | 0.2− | 2006 09 30 | 683 | (1.7+ | 1.6−) | |
| 2001 09 24 | 704 | 1.4− | 0.9− | 2004 03 18 | 704 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2− | |
| 2001 10 12 | 699 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.1− | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.1− | |
| 2001 10 12 | 699 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 691 | 0.2− | 0.1+ | |
| 2001 10 12 | 699 | 0.6− | 0.0 | 2004 03 20 | 699 | 0.3+ | 0.5− | 2006 10 11 | 691 | 0.2− | 0.1− | |
| 2001 10 12 | 699 | 0.2+ | 0.2− | 2004 03 20 | 699 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.1− | 0.0 | |
| 2001 10 13 | 704 | 0.8− | 1.4+ | 2004 03 20 | 699 | 0.7− | 0.1− | 2006 10 11 | 691 | 0.2− | 0.1− | |
| 2001 10 13 | 704 | 0.5− | 1.1+ | 2004 03 20 | 699 | 0.3− | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.0 | |
| 2001 10 13 | 704 | 0.5+ | 0.6+ | 2004 03 21 | 691 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.2− | |
| 2001 10 13 | 704 | 0.5+ | 0.8+ | 2004 03 21 | 691 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.3− | |
| 2001 10 13 | 704 | 0.6− | 0.2+ | 2004 03 21 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1− | |
| 2001 10 15 | 704 | 0.9− | 1.5+ | 2004 03 27 | 704 | 0.5+ | 1.0+ | 2006 10 19 | 644 | 0.7− | 0.3+ | |
| 2001 10 15 | 704 | (0.7− | 1.5+) | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.0 | |
| 2001 10 15 | 704 | 0.7+ | 1.3+ | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.6+ | |
| 2001 10 15 | 704 | (0.4− | 2.7+) | 2004 03 27 | 704 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.1− | |
| 2001 10 15 | 704 | 0.9− | 1.2+ | 2004 03 27 | 704 | (0.0 | 2.3+) | 2006 10 20 | 644 | 0.3+ | 0.5+ | |
| 2001 10 17 | 704 | 0.1+ | 0.2+ | 2004 03 28 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.8+ | |
| 2001 10 17 | 704 | 0.4+ | 0.1− | 2004 03 28 | 691 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.7+ | |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2004 03 28 | 691 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.8+ | 0.2− | |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2005 01 26 | 809 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.4+ | 0.0 | |
| 2001 10 17 | 704 | 0.2+ | 0.9+ | 2005 01 26 | 809 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 2001 10 19 | 644 | 0.1− | 0.7+ | 2005 01 26 | 809 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.1+ | |
| 2001 10 19 | 644 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2001 10 19 | 644 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.2+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2001 10 21 | 704 | (1.2+ | 1.8−) | 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2001 10 21 | 704 | (0.3+ | 1.5−) | 2006 09 14 | 703 | 0.8− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2001 10 21 | 704 | (0.0 | 1.5−) | 2006 09 17 | 704 | 0.5− | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.3− | |
| 2001 10 21 | 704 | 0.0 | 1.3− | 2006 09 17 | 704 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2− | |
| 2001 10 21 | 704 | (0.3− | 1.7−) | 2006 09 17 | 704 | 0.2+ | 0.9− | 2006 10 27 | 691 | 0.1+ | 0.2− | |
| 2001 10 23 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.1+ | |
| 2001 10 23 | 691 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.9− | 2006 10 29 | 704 | (0.6+ | 3.5+) | |
| 2001 10 23 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.9+ | 2006 10 29 | 704 | 0.4+ | 0.5+ | |
| 2001 10 26 | 644 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.3− | 1.2− | 2006 10 29 | 704 | 1.4− | 0.3+ | |
| 2001 10 26 | 644 | 0.3− | 0.2+ | 2006 09 21 | 683 | 0.5+ | 0.4− | 2006 10 31 | 691 | 0.0 | 0.6− | |
| 2001 10 26 | 644 | 0.3− | 0.0 | 2006 09 21 | 683 | (2.1+ | 1.0−) | 2006 10 31 | 691 | 0.1+ | 0.3− | |
| 2001 11 10 | 704 | (0.2− | 2.1−) | 2006 09 21 | 683 | 1.2+ | 1.3+ | 2006 10 31 | 691 | 0.2+ | 0.3− | |
| 2001 11 10 | 704 | (0.2− | 2.3−) | 2006 09 22 | 683 | 1.1+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.4− | |
| 2001 11 10 | 704 | (0.0 | 4.2−) | 2006 09 22 | 683 | 0.9+ | 0.8− | 2006 11 11 | 703 | 0.3+ | 1.2− | |
| 2001 11 19 | 704 | 0.1+ | 0.6− | 2006 09 22 | 683 | 0.5+ | 1.2+ | 2006 11 11 | 703 | 1.6+ | 0.9+ | |
| 2001 11 19 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.8− | 0.1− | 2006 11 11 | 703 | 1.2+ | 2.5− | |
| 2001 11 19 | 704 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.1− | 0.5− | |
| 2001 11 19 | 704 | 0.1− | 0.5− | 2006 09 25 | 704 | (1.6+ | 0.4+) | 2006 11 17 | G96 | 0.0 | 0.5− | |
| 2001 11 19 | 704 | 0.8− | 0.7+ | 2006 09 25 | 683 | 0.4− | 1.4− | 2006 11 17 | G96 | 0.1+ | 0.5− | |
| 2001 11 21 | 704 | 0.3+ | 0.0 | 2006 09 25 | 704 | 1.0+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− | |
| 2001 11 21 | 704 | 0.0 | 0.8− | 2006 09 25 | 683 | 0.9− | 0.7− | | | | | |
| 2001 11 21 | 704 | 0.5− | 0.3− | 2006 09 25 | 704 | 0.1− | 0.3− | | | | | |

**(140360)∗ 2001 TD$_{23}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.46108 | | (2000.0) | | | |
| $n$ | 0.23334816 | $\omega$ | 39.48275 | | −0.68332893 | −0.72920297 |
| $a$ | 2.6129622 | $\Omega$ | 93.65471 | | +0.66030148 | −0.63849578 |
| $e$ | 0.0711366 | $i$ | 2.09000 | | +0.31155022 | −0.24614258 |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 31 | 704 | (0.3+ | 2.0−) | 2003 01 26 | 699 | 1.3− | 1.1+ | 2003 03 06 | 704 | 0.7− | 0.5+ | |
| 1997 10 31 | 704 | (1.4+ | 2.1−) | 2003 01 26 | 699 | 0.5− | 0.6+ | 2003 03 06 | 704 | 0.2+ | 0.6+ | |
| 1997 10 31 | 704 | 1.4+ | 0.9− | 2003 01 26 | 699 | 0.5+ | 0.9+ | 2003 03 06 | 704 | 0.5− | 0.2+ | |
| 1997 10 31 | 704 | 1.6+ | 0.0 | 2003 01 27 | 704 | 0.1+ | 0.4+ | 2003 03 06 | 704 | 0.7− | 1.1+ | |
| 1997 11 01 | 557 | 0.5− | 1.1− | 2003 01 27 | 704 | 1.2− | 1.5+ | 2003 03 08 | 704 | 0.2− | 0.4+ | |
| 1997 11 01 | 557 | 0.4− | 0.5− | 2003 01 27 | 704 | 0.4+ | 0.7− | 2003 03 08 | 704 | 0.0 | 0.4+ | |
| 1997 11 06 | 704 | 0.8+ | 0.7+ | 2003 01 27 | 704 | 0.3+ | 0.7− | 2003 03 08 | 704 | 0.4+ | 0.9− | |
| 1997 11 06 | 704 | (2.6− | 0.1+) | 2003 01 30 | 699 | 0.3− | 0.2+ | 2003 03 08 | 704 | 0.1+ | 0.0 | |
| 1997 11 06 | 704 | 1.4− | 0.4+ | 2003 01 30 | 699 | 0.5− | 1.3+ | 2003 03 08 | 704 | 0.1+ | 0.6+ | |
| 1997 11 06 | 704 | (2.5− | 0.1+) | 2003 01 30 | 699 | 0.4+ | 1.4+ | 2005 08 28 | 691 | 0.2− | 0.2+ | |
| 2001 10 13 | 704 | 0.9− | 0.1− | 2003 01 30 | 699 | 0.1− | 0.9+ | 2005 08 28 | 691 | 0.1− | 0.2+ | |
| 2001 10 13 | 704 | (0.9− | 1.6−) | 2003 01 31 | 704 | 0.0 | 0.1+ | 2005 08 28 | 691 | 0.3− | 0.5+ | |
| 2001 10 13 | 704 | 0.6− | 1.0+ | 2003 01 31 | 704 | 0.1+ | 0.4+ | 2005 09 01 | 691 | 0.1− | 0.3+ | |
| 2001 10 13 | 704 | 0.6− | 0.4− | 2003 01 31 | 704 | 0.2+ | 0.1− | 2005 09 01 | 691 | 0.2− | 0.2+ | |
| 2001 10 14 | 699 | 0.4− | 0.0 | 2003 01 31 | 704 | 0.8+ | 0.1− | 2005 09 01 | 691 | 0.1− | 0.1+ | |
| 2001 10 14 | 699 | (0.3+ | 1.6+) | 2003 01 31 | 704 | 0.4+ | 0.1− | 2005 09 11 | 691 | 0.0 | 0.0 | |
| 2001 10 14 | 699 | (1.7+ | 1.1+) | 2003 02 03 | 644 | 0.2+ | 0.0 | 2005 09 11 | 691 | 0.1− | 0.0 | |
| 2001 10 14 | 699 | 1.0+ | 1.0+ | 2003 02 03 | 704 | 1.4+ | 0.6+ | 2005 09 11 | 691 | 0.1+ | 0.0 | |
| 2001 10 15 | 704 | 0.1+ | 0.2− | 2003 02 03 | 704 | 0.6+ | 0.1+ | 2005 09 22 | 644 | 0.0 | 0.1+ | |
| 2001 10 15 | 704 | 0.1− | 0.1− | 2003 02 03 | 704 | 0.3+ | 0.9− | 2005 09 22 | 644 | 0.1− | 0.5+ | |
| 2001 10 15 | 704 | 0.2− | 0.1+ | 2003 02 03 | 644 | 0.2+ | 0.1− | 2005 09 22 | 644 | 0.2+ | 0.6+ | |
| 2001 10 15 | 704 | 0.6− | 0.5− | 2003 02 03 | 704 | 0.6+ | 0.8− | 2005 10 29 | G96 | 0.6+ | 0.6− | |
| 2001 10 16 | 704 | 1.5− | 0.7+ | 2003 02 03 | 644 | 0.4+ | 0.5− | 2005 10 29 | G96 | 0.8+ | 0.3− | |
| 2001 10 16 | 704 | 0.9− | 0.4− | 2003 02 04 | 699 | 0.1− | 0.2− | 2005 10 29 | G96 | 0.6+ | 0.0 | |
| 2001 10 16 | 704 | 0.6+ | 0.2+ | 2003 02 04 | 699 | 0.5+ | 0.1+ | 2005 10 29 | G96 | 0.2+ | 0.3− | |
| 2001 10 18 | 644 | 0.3− | 0.1+ | 2003 02 04 | 699 | 0.6− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1− | |
| 2001 10 18 | 644 | 0.3− | 0.0 | 2003 02 04 | 704 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2− | |
| 2001 10 18 | 644 | 0.1− | 0.1+ | 2003 02 04 | 699 | 0.2+ | 0.8+ | 2006 09 18 | 691 | 0.2+ | 0.3− | |
| 2001 10 20 | 704 | 0.0 | 0.1+ | 2003 02 04 | 704 | 0.5− | 1.0+ | 2006 10 17 | G96 | 0.4− | 0.8− | |
| 2001 10 20 | 704 | 0.9+ | 0.5− | 2003 02 04 | 704 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.5− | |
| 2001 10 20 | 704 | 0.8+ | 0.0 | 2003 02 04 | 704 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 1.3− | |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2003 02 04 | 704 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.8− | |
| 2001 10 20 | 704 | 1.1+ | 0.0 | 2003 02 04 | 608 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.6− | |
| 2001 10 25 | 691 | 0.2− | 0.2+ | 2003 02 04 | 608 | 0.7− | 0.2− | 2006 10 28 | G96 | 0.3− | 0.8− | |
| 2001 10 25 | 691 | 0.1− | 0.2− | 2003 02 04 | 608 | 0.5− | 0.5− | 2006 10 28 | G96 | 0.3+ | 0.4− | |
| 2001 10 25 | 691 | 0.2− | 0.2+ | 2003 02 08 | 704 | 1.1+ | 0.3− | 2006 10 28 | G96 | 0.2− | 0.5− | |
| 2001 10 25 | 644 | 0.3+ | 0.6+ | 2003 02 08 | 704 | 0.9+ | 0.6− | 2006 11 15 | G96 | 0.2+ | 0.4− | |
| 2001 10 25 | 644 | 0.3+ | 1.1+ | 2003 02 08 | 704 | 0.9+ | 0.8− | 2006 11 15 | G96 | 0.1− | 0.8− | |
| 2001 10 25 | 644 | 0.0 | 0.4+ | 2003 02 08 | 704 | (2.9+ | 1.7−) | 2006 11 15 | G96 | 1.0− | 0.7− | |
| 2003 01 26 | 699 | 0.4+ | 1.1+ | 2003 03 06 | 704 | 0.3+ | 0.7+ | 2006 11 15 | G96 | 0.3− | 0.5− | |

**(140361)∗ 2001 TN$_{23}$ = 1996 FT$_{21}$ = 2000 JY$_{36}$ = 2003 AZ$_{92}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20439, *MPO* 75152, *MPO* 94131)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.18653 | | (2000.0) | | | |
| $n$ | 0.25447811 | $\omega$ | 240.30183 | | −0.60762766 | +0.79420813 |
| $a$ | 2.4662424 | $\Omega$ | 352.27486 | | −0.71607677 | −0.55039071 |
| $e$ | 0.1537544 | $i$ | 2.00273 | | −0.34354430 | −0.25749469 |
| $P$ | 3.87 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 809 | (2.3+ | 1.8+) | 2001 10 21 | 704 | 0.1+ | 0.5+ | 2005 10 04 | G96 | 0.0 | 0.0 |
| 1996 03 24 | 809 | 1.5+ | 1.0− | 2001 10 21 | 704 | 0.2+ | 0.6+ | 2005 10 06 | G96 | 0.2+ | 0.3− |
| 1996 03 24 | 809 | 0.4+ | 1.1− | 2001 10 21 | 704 | 0.5+ | 0.0 | 2005 10 06 | G96 | 0.4+ | 0.0 |
| 1996 03 27 | 809 | (2.6+ | 5.2+) | 2001 10 23 | 704 | 0.9− | 0.5− | 2005 10 06 | G96 | 0.1+ | 0.0 |
| 1996 03 27 | 809 | (2.3+ | 6.2+) | 2001 10 23 | 704 | 0.2− | 0.5+ | 2005 10 06 | G96 | 0.3+ | 0.2− |
| 1996 03 27 | 809 | (1.4+ | 5.8+) | 2001 10 23 | 704 | 0.2− | 0.5+ | 2005 10 09 | 691 | 0.3+ | 0.3+ |
| 2000 05 07 | 704 | 1.1− | 0.4+ | 2001 10 23 | 704 | 0.3− | 1.0+ | 2005 10 09 | 691 | 0.2− | 0.2+ |
| 2000 05 07 | 704 | 0.3− | 0.7+ | 2002 12 31 | 704 | 1.0− | 0.9+ | 2005 10 09 | 691 | 0.0 | 0.4+ |
| 2000 05 07 | 704 | 0.9− | 0.4+ | 2002 12 31 | 704 | 0.7+ | 0.0 | 2005 10 13 | 691 | 0.2+ | 0.1+ |
| 2000 05 07 | 704 | 1.1− | 1.1+ | 2002 12 31 | 704 | 0.2+ | 0.6+ | 2005 10 13 | 691 | 0.1+ | 0.2+ |
| 2000 05 07 | 704 | 0.1+ | 0.3+ | 2002 12 31 | 704 | 0.4− | 0.8+ | 2005 10 13 | 691 | 0.1+ | 0.1+ |
| 2000 05 09 | 704 | 0.1+ | 0.2+ | 2003 01 05 | 704 | 0.5+ | 0.8− | 2005 10 22 | 703 | 0.5+ | 0.4+ |
| 2000 05 09 | 704 | 0.4+ | 0.1+ | 2003 01 05 | 704 | (1.8+ | 2.6−) | 2005 10 22 | 703 | 0.8− | 0.1+ |
| 2000 05 09 | 704 | 0.3+ | 1.0+ | 2003 01 05 | 704 | 0.5− | 0.1+ | 2005 10 22 | 703 | 0.5− | 0.2+ |
| 2000 05 09 | 704 | 0.3+ | 0.7− | 2003 01 05 | 704 | 0.2− | 0.3+ | 2005 10 22 | 703 | 0.2− | 0.8+ |
| 2000 05 09 | 704 | 0.2+ | 0.5+ | 2003 01 05 | 704 | 0.3− | 0.6+ | 2005 10 27 | G96 | 0.1+ | 0.4− |
| 2000 05 09 | 704 | 0.3+ | 1.5− | 2003 01 08 | 704 | 0.5− | 0.3+ | 2005 10 27 | G96 | 0.2− | 0.3− |
| 2000 05 09 | 704 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.3+ | 0.3+ | 2005 10 27 | G96 | 0.1+ | 0.4− |
| 2000 05 09 | 704 | 0.2+ | 0.5− | 2003 01 08 | 704 | 1.0− | 1.0+ | 2005 10 27 | G96 | 0.3+ | 0.4− |
| 2000 05 09 | 704 | 0.8− | 1.3+ | 2003 01 08 | 704 | 1.1+ | 0.8+ | 2005 10 29 | 703 | 0.0 | 0.1+ |
| 2000 05 09 | 704 | 0.9+ | 0.9− | 2003 01 08 | 704 | 0.7− | 0.0 | 2005 10 29 | 703 | 0.0 | 0.8+ |
| 2001 09 20 | 704 | 1.2− | 0.4− | 2005 09 29 | 691 | 0.0 | 0.1+ | 2005 10 29 | 703 | 1.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 0.8+ | 2005 09 29 | 691 | 0.1− | 0.0 | 2005 10 29 | 703 | 0.6+ | 0.5+ |
| 2001 09 20 | 704 | (0.8− | 1.6+) | 2005 09 29 | 691 | 0.0 | 0.3+ | 2005 10 30 | 185 | 0.4− | 1.1− |
| 2001 10 11 | 644 | 0.3− | 0.1+ | 2005 10 02 | G96 | 0.2+ | 0.3− | 2005 10 30 | 185 | 0.4+ | 0.1− |
| 2001 10 11 | 644 | 0.1− | 0.0 | 2005 10 02 | G96 | 0.1− | 0.3− | 2005 10 30 | 185 | 0.6− | 0.2+ |
| 2001 10 11 | 644 | 0.0 | 0.1+ | 2005 10 02 | G96 | 0.4+ | 0.2− | 2005 10 30 | 185 | 0.2− | 0.5− |
| 2001 10 14 | 704 | 0.0 | 0.1+ | 2005 10 02 | G96 | 0.1+ | 0.2− | 2005 12 05 | G96 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.9− | 0.7− | 2005 10 03 | G96 | 0.2+ | 0.0 | 2005 12 05 | G96 | 0.2− | 0.3− |
| 2001 10 14 | 704 | 0.5+ | 0.8− | 2005 10 03 | G96 | 0.3+ | 0.1− | 2005 12 05 | G96 | 0.2+ | 0.3− |
| 2001 10 14 | 704 | 0.5+ | 0.5− | 2005 10 03 | G96 | 0.1− | 0.0 | 2005 12 05 | G96 | 0.1− | 0.4− |
| 2001 10 14 | 704 | 0.5− | 0.7− | 2005 10 03 | G96 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.4− | 0.2− |
| 2001 10 15 | 704 | 0.8− | 0.0 | 2005 10 03 | G96 | 0.6+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2001 10 15 | 704 | 0.1+ | 0.4− | 2005 10 03 | G96 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.7− |
| 2001 10 15 | 704 | 0.3− | 1.0− | 2005 10 03 | G96 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 2001 10 18 | 291 | 0.1+ | 0.2− | 2005 10 03 | G96 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.5− | 0.5− |
| 2001 10 18 | 291 | 0.6+ | 0.1− | 2005 10 03 | G96 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2001 10 18 | 291 | 0.2+ | 0.0 | 2005 10 03 | G96 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2001 10 19 | 644 | 0.4− | 0.1+ | 2005 10 03 | G96 | 0.4+ | 0.2− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2001 10 19 | 644 | 0.4− | 0.0 | 2005 10 03 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2001 10 19 | 644 | 1.0− | 0.1+ | 2005 10 04 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2005 10 04 | G96 | 1.4− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2005 10 04 | G96 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.5− |

**(140362)∗ 2001 TQ$_{23}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 106.75034 | | (2000.0) | | | |
| $n$ | 0.22119112 | $\omega$ | 357.22063 | | +0.47151118 | +0.88181404 |
| $a$ | 2.7078479 | $\Omega$ | 300.91165 | | −0.80888808 | +0.42840188 |
| $e$ | 0.1742945 | $i$ | 0.60181 | | −0.35125102 | +0.19716956 |
| $P$ | 4.46 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 14 | 691 | 0.2+ | 0.4+ | 2001 10 17 | 704 | 0.2− | 0.7+ | 2005 06 17 | G96 | 0.1− | 0.3+ |
| 1999 02 14 | 691 | 0.4− | 0.2− | 2001 10 17 | 704 | 0.3+ | 0.5+ | 2005 06 17 | G96 | 0.3+ | 0.3+ |
| 1999 02 14 | 691 | 0.1+ | 0.1+ | 2001 10 17 | 704 | 0.3+ | 0.4+ | 2005 06 17 | G96 | 0.0 | 0.5+ |
| 2000 05 29 | 704 | 0.2+ | 0.4+ | 2001 10 21 | 704 | 0.7+ | 0.0 | 2005 08 06 | 644 | 0.3− | 0.4+ |
| 2000 05 29 | 704 | 0.9− | 0.2+ | 2001 10 21 | 704 | 0.2+ | 0.4− | 2005 08 06 | 644 | 0.2− | 0.3+ |
| 2000 05 29 | 704 | 0.3+ | 0.5+ | 2001 10 21 | 704 | 0.3+ | 0.7− | 2005 08 06 | 644 | 0.3− | 0.0 |
| 2000 05 29 | 704 | 0.3− | 0.3− | 2001 10 21 | 704 | 1.0+ | 0.8− | 2005 08 10 | 599 | 0.0 | 0.5+ |
| 2000 05 29 | 704 | 0.4− | 1.5+ | 2001 10 21 | 704 | 0.2+ | 0.5− | 2005 08 10 | 599 | 0.1− | 0.6+ |
| 2001 09 23 | 291 | 1.1− | 0.0 | 2001 11 16 | 291 | 0.2− | 0.1− | 2005 08 10 | 599 | 0.3− | 0.6+ |
| 2001 09 23 | 291 | (1.6− | 0.2+) | 2001 11 16 | 291 | 0.6− | 0.1+ | 2005 08 15 | E12 | 0.7− | 0.8− |
| 2001 09 23 | 291 | (1.6− | 0.2+) | 2001 11 16 | 291 | 0.7− | 0.2+ | 2005 08 15 | E12 | 0.0 | 0.6+ |
| 2001 09 23 | 291 | 0.7+ | 0.5+ | 2004 03 17 | 691 | 0.3+ | 0.0 | 2005 08 15 | E12 | 0.9− | 0.3+ |
| 2001 09 23 | 291 | 0.6+ | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2005 08 15 | E12 | (0.1− | 3.2−) |
| 2001 09 23 | 291 | 0.2+ | 0.3+ | 2004 03 17 | 691 | 0.5+ | 0.3+ | 2005 10 25 | G96 | 0.5+ | 0.3+ |
| 2001 10 14 | 704 | 0.6− | 0.9+ | 2004 03 23 | 291 | 0.3+ | 0.4+ | 2005 10 25 | G96 | 0.3− | 0.3+ |
| 2001 10 14 | 704 | 0.2+ | 0.2+ | 2004 03 23 | 291 | 0.2+ | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.5+ |
| 2001 10 14 | 704 | 0.6− | 1.3+ | 2004 03 23 | 291 | 0.4+ | 0.0 | 2005 10 25 | G96 | 0.3− | 0.2+ |
| 2001 10 14 | 704 | 0.2− | 0.6+ | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | 0.5+ | 0.8+ | 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2001 10 15 | 704 | 0.2− | 0.3+ | 2004 03 26 | 691 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2001 10 15 | 704 | 0.2− | 0.4+ | 2004 04 22 | 691 | 1.0− | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.3− |
| 2001 10 15 | 704 | 0.2+ | 1.4+ | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 24 | 691 | 0.4− | 0.1+ |
| 2001 10 15 | 704 | (0.4− | 2.1+) | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.4+ | 0.7+ | 2005 06 17 | G96 | 0.7+ | 0.1+ | | | | |

**(140363)∗ 2001 TP$_{24}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.66699 | | (2000.0) | | | |
| $n$ | 0.17598945 | $\omega$ | 110.16797 | | +0.33224832 | −0.93990251 |
| $a$ | 3.1536365 | $\Omega$ | 320.14984 | | +0.81301082 | +0.32769371 |
| $e$ | 0.0199177 | $i$ | 7.05517 | | +0.47814690 | +0.09591717 |
| $P$ | 5.60 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 0.2+ | 1.4− | 2001 10 21 | 704 | 0.7+ | 0.4− | 2006 08 01 | A50 | 0.3+ | 0.2− |
| 1998 03 04 | 704 | 0.4+ | 0.6− | 2001 10 21 | 704 | 0.5− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.1− |
| 1998 03 04 | 704 | 0.4+ | 0.3+ | 2001 11 10 | 704 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.0 | 0.1+ |
| 1998 03 04 | 704 | (5.0− | 0.6+) | 2001 11 10 | 704 | 0.3− | 0.4− | 2006 08 19 | 691 | 0.3− | 0.1+ |
| 2000 08 07 | 608 | 0.5− | 0.4− | 2001 11 10 | 704 | 0.9− | 0.6+ | 2006 08 21 | 704 | 1.0− | 0.3− |
| 2000 08 07 | 608 | 0.8− | 0.7− | 2003 01 05 | 704 | 0.4+ | 0.4− | 2006 08 21 | 704 | 0.7+ | 0.8− |
| 2000 08 07 | 608 | 0.3− | 0.5− | 2003 01 05 | 704 | 0.1+ | 0.8− | 2006 08 21 | 704 | 0.6+ | 0.6− |
| 2001 09 23 | 704 | (3.4− | 1.0+) | 2003 01 05 | 704 | 0.3+ | 0.6− | 2006 08 21 | 704 | 0.3+ | 0.2+ |
| 2001 09 23 | 704 | 1.3− | 1.0+ | 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | (1.7− | 0.5+) | 2003 01 05 | 704 | 0.5+ | 1.1+ | 2006 08 27 | 691 | 0.6− | 0.9+ |
| 2001 09 28 | 644 | 0.8− | 0.0 | 2003 01 09 | 704 | 0.4+ | 0.7− | 2006 08 27 | 691 | 0.1− | 0.3− |
| 2001 09 28 | 644 | 0.9+ | 0.5− | 2003 01 09 | 704 | 0.6− | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.2− |
| 2001 09 28 | 644 | 0.8− | 0.0 | 2003 01 09 | 704 | 0.9+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.1− |
| 2001 09 28 | 644 | 1.2+ | 0.8− | 2003 01 09 | 704 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.3− |
| 2001 09 28 | 644 | 0.9− | 0.1+ | 2003 01 09 | 704 | 0.4− | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.5− |
| 2001 09 28 | 644 | 0.7+ | 0.6− | 2003 01 09 | 704 | 1.4− | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.4− |
| 2001 10 14 | 704 | 0.2+ | 0.3+ | 2003 01 09 | 704 | 0.5− | 0.2+ | 2006 08 28 | 699 | 1.3+ | 0.3+ |
| 2001 10 14 | 704 | 0.0 | 0.3+ | 2003 01 09 | 704 | 1.0− | 0.6+ | 2006 08 28 | 699 | 0.4+ | 0.9+ |
| 2001 10 14 | 704 | 0.3+ | 0.2+ | 2003 01 09 | 704 | 0.5+ | 0.2− | 2006 08 28 | 699 | 0.5+ | 0.5+ |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2003 01 12 | 644 | 0.9− | 0.8+ | 2006 08 29 | 704 | 0.3− | 1.0+ |
| 2001 10 14 | 704 | 0.3− | 0.5− | 2003 01 12 | 644 | 0.3− | 0.7+ | 2006 08 29 | 704 | 1.2+ | 0.5+ |
| 2001 10 15 | 704 | 0.2+ | 0.2+ | 2003 01 12 | 644 | 0.4+ | 0.4+ | 2006 08 29 | 704 | 0.2+ | 0.8+ |
| 2001 10 15 | 704 | 0.4+ | 0.4− | 2004 03 19 | 704 | 0.6+ | 0.1+ | 2006 08 29 | 704 | 0.2+ | 0.3+ |
| 2001 10 15 | 704 | 1.3+ | 0.4+ | 2004 03 19 | 704 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2001 10 15 | 704 | 0.8+ | 0.3− | 2004 03 19 | 704 | 1.5+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2001 10 15 | 704 | 0.7+ | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.3+ |
| 2001 10 17 | 704 | 0.5+ | 0.9− | 2004 03 19 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.6+ |
| 2001 10 17 | 704 | 0.1− | 0.1− | 2004 03 26 | 699 | 0.0 | 1.0+ | 2006 09 18 | 703 | 0.5+ | 0.3− |
| 2001 10 17 | 704 | 0.7− | 0.1− | 2004 03 26 | 699 | 0.4− | 0.7+ | 2006 09 18 | 703 | 0.9+ | 1.1− |
| 2001 10 17 | 704 | 0.9+ | 0.4+ | 2004 03 26 | 699 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.1+ |
| 2001 10 20 | 644 | (1.7+ | 2.5+) | 2004 03 26 | 699 | 0.1+ | 1.1− | 2006 09 18 | 703 | 1.0− | 0.1+ |
| 2001 10 20 | 644 | (1.8+ | 2.5+) | 2004 03 27 | 703 | 1.2− | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2001 10 20 | 644 | (1.2+ | 2.9+) | 2004 03 27 | 703 | 0.1+ | 1.1+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2004 03 27 | 703 | 0.9− | 1.0− | 2006 09 27 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2004 03 27 | 703 | 0.8+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.2− | | |
| 2001 10 21 | 704 | 0.7− | 0.6+ | 2006 08 01 | A50 | 0.2+ | 0.2+ | | | | | | |

**(140364)∗ 2001 TD$_{27}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.31484 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17744977 | $\omega$ | 67.76288 | | +0.10913113 | −0.99136132 | |
| $a$ | 3.1363107 | $\Omega$ | 16.47793 | | +0.79116704 | +0.04231687 | |
| $e$ | 0.0666788 | $i$ | 14.86221 | | +0.60178494 | +0.12414513 | |
| $P$ | 5.55 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1− | 0.1− | 2001 11 10 | 644 | 0.0 | 0.7+ | 2004 04 19 | 691 | 0.3+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.5+ | 0.4− | 2001 11 11 | 699 | 0.2− | 1.0+ | 2004 04 20 | 704 | 1.2+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2001 11 11 | 699 | 0.5+ | 0.1+ | 2004 04 20 | 704 | 0.4− | 0.6+ | | |
| 2001 10 14 | 704 | 0.6− | 1.3+ | 2001 11 11 | 699 | 0.7+ | 0.9+ | 2004 04 20 | 704 | 0.7+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.9− | 0.6+ | 2001 11 11 | 699 | 0.3− | 1.4+ | 2004 04 20 | 704 | 0.6+ | 0.4+ | | |
| 2001 10 14 | 704 | 0.6− | 1.1+ | 2001 11 17 | 704 | 0.9+ | 0.8− | 2004 04 20 | 704 | 0.3− | 0.1+ | | |
| 2001 10 14 | 704 | 1.1− | 0.8+ | 2001 11 17 | 704 | 0.8+ | 0.5− | 2004 04 22 | 704 | 0.0 | 1.3− | | |
| 2001 10 14 | 704 | 0.8− | 0.9+ | 2001 11 17 | 704 | 0.5+ | 0.7− | 2004 04 22 | 704 | 0.1+ | 0.1+ | | |
| 2001 10 15 | 704 | 0.8+ | 0.4− | 2001 11 17 | 704 | 0.3+ | 1.3− | 2004 04 22 | 704 | 0.8+ | 0.1− | | |
| 2001 10 15 | 704 | 0.3− | 0.8− | 2001 11 17 | 704 | 0.7+ | 1.0− | 2004 04 22 | 704 | 1.0+ | 0.8+ | | |
| 2001 10 15 | 333 | 0.9− | 0.3+ | 2001 11 20 | 699 | 0.4+ | 0.1+ | 2004 04 25 | 691 | 0.4+ | 0.2+ | | |
| 2001 10 15 | 704 | 0.5+ | 0.8− | 2001 11 20 | 699 | (0.3− | 2.0+) | 2004 04 25 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 15 | 333 | 1.1− | 0.8+ | 2001 11 20 | 699 | 0.0 | 0.2+ | 2004 04 25 | 691 | 0.3+ | 0.3+ | | |
| 2001 10 15 | 704 | 0.8+ | 0.0 | 2001 11 20 | 699 | (2.6− | 0.3+) | 2004 05 11 | 699 | (0.1+ | 1.7+) | | |
| 2001 10 15 | 333 | 0.9− | 1.1+ | 2003 01 13 | 704 | 0.1− | 0.1− | 2004 05 11 | 699 | 0.5− | 0.7+ | | |
| 2001 10 15 | 704 | 0.4+ | 0.8− | 2003 01 13 | 704 | 0.3+ | 0.7+ | 2004 05 11 | 699 | 0.0 | 1.1− | | |
| 2001 10 17 | 704 | (1.8− | 0.5+) | 2003 01 13 | 704 | 0.1− | 0.4+ | 2004 05 11 | 699 | (3.0+ | 1.5+) | | |
| 2001 10 17 | 704 | 1.4− | 0.4+ | 2003 01 13 | 704 | 0.6− | 0.8+ | 2006 08 16 | 644 | 0.6− | 0.7+ | | |
| 2001 10 17 | 704 | 1.4− | 0.5+ | 2003 01 13 | 704 | 0.1+ | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.7+ | | |
| 2001 10 17 | 704 | 1.0− | 1.1+ | 2003 03 08 | 644 | 0.7+ | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.7+ | | |
| 2001 10 19 | 644 | 0.6− | 0.4+ | 2003 03 08 | 644 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 1.1+ | | |
| 2001 10 19 | 644 | 0.3− | 0.5+ | 2003 03 08 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 1.0− | 0.9− | | |
| 2001 10 19 | 644 | 0.2− | 0.6+ | 2004 04 12 | 699 | 0.1− | 1.1+ | 2006 09 14 | 703 | 0.0 | 0.4+ | | |
| 2001 10 21 | 704 | 0.6− | 0.4+ | 2004 04 12 | 699 | 0.8+ | 0.7+ | 2006 09 14 | 703 | 0.2− | 1.2+ | | |
| 2001 10 21 | 704 | 0.7− | 0.4+ | 2004 04 12 | 699 | 0.6+ | 0.6+ | 2006 09 20 | 703 | 0.9− | 1.0+ | | |
| 2001 10 21 | 704 | 0.5− | 1.1+ | 2004 04 12 | 699 | 0.3− | 0.9+ | 2006 09 20 | 703 | 0.0 | 0.2− | | |
| 2001 10 21 | 704 | 0.4− | 0.5− | 2004 04 15 | 699 | 0.3− | 0.9+ | 2006 09 20 | 703 | 0.3+ | 0.2− | | |
| 2001 10 23 | 333 | 0.1− | 0.2− | 2004 04 15 | 699 | 0.5− | 0.7+ | 2006 09 20 | 703 | 1.0− | 0.8+ | | |
| 2001 10 23 | 333 | 0.1− | 0.8+ | 2004 04 15 | 699 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2+ | | |
| 2001 10 23 | 333 | 0.3− | 0.1− | 2004 04 15 | 699 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.0 | | |
| 2001 11 10 | 644 | 0.5+ | 1.0+ | 2004 04 19 | 691 | 0.4+ | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.2+ | | |
| 2001 11 10 | 644 | 0.1+ | 0.7+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.2− | | |

**(140365)∗ 2001 TL$_{27}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.62605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17524503 | $\omega$ | 51.95458 | | +0.55871934 | −0.82931509 | |
| $a$ | 3.1625610 | $\Omega$ | 4.10452 | | +0.71987035 | +0.47995604 | |
| $e$ | 0.0633100 | $i$ | 6.67326 | | +0.41184874 | +0.28614451 | |
| $P$ | 5.62 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | (0.1− | 1.6+) | 2001 11 17 | 704 | 0.4− | 0.1− | 2004 03 28 | 704 | (0.1− | 2.4−) | | |
| 2001 08 28 | 699 | 0.0 | 0.5+ | 2001 11 17 | 704 | 0.4− | 0.1+ | 2004 03 28 | 704 | 0.2+ | 0.3− | | |
| 2001 08 28 | 699 | 0.4− | 0.1− | 2001 11 17 | 704 | 0.2− | 0.2+ | 2004 04 11 | 644 | 0.1− | 0.9+ | | |
| 2001 08 28 | 699 | 0.8− | 0.3+ | 2001 11 17 | 644 | 0.1+ | 0.0 | 2004 04 11 | 644 | 0.4+ | 0.9+ | | |
| 2001 09 20 | 704 | 0.7+ | 0.3+ | 2001 11 17 | 644 | 0.4+ | 0.2+ | 2004 04 11 | 644 | 0.2+ | 0.7+ | | |
| 2001 09 20 | 704 | 0.4+ | 0.1+ | 2001 11 17 | 644 | 0.1+ | 0.1+ | 2004 04 20 | 704 | 0.2+ | 0.4− | | |
| 2001 09 20 | 704 | 0.2+ | 0.2− | 2001 11 19 | 704 | 0.4+ | 0.2− | 2004 04 20 | 704 | 1.1+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.0 | 0.3− | 2001 11 19 | 704 | 0.0 | 0.6− | 2004 04 20 | 704 | 0.0 | 0.8+ | | |
| 2001 09 20 | 704 | 0.5− | 0.1+ | 2001 11 19 | 704 | 0.3+ | 0.5− | 2004 04 20 | 704 | 0.5+ | 1.5+ | | |
| 2001 09 22 | 699 | 0.6− | 0.3+ | 2001 11 19 | 704 | 0.5+ | 0.2− | 2004 04 20 | 704 | 0.8− | 0.7+ | | |
| 2001 09 22 | 699 | 0.1− | 1.0+ | 2001 11 19 | 704 | 0.7+ | 0.1− | 2006 08 18 | 699 | 0.3− | 0.0 | | |
| 2001 09 22 | 699 | 0.4− | 0.6+ | 2001 11 20 | 699 | 1.2+ | 0.1+ | 2006 08 18 | 699 | 0.1− | 0.3+ | | |
| 2001 09 22 | 699 | 0.7− | 0.4+ | 2001 11 20 | 699 | 0.2+ | 0.5− | 2006 08 18 | 699 | 0.2− | 0.4− | | |
| 2001 09 24 | 704 | (2.3+ | 0.1+) | 2001 11 20 | 699 | 0.6+ | 0.2− | 2006 08 18 | 699 | 0.1− | 0.6+ | | |
| 2001 09 24 | 704 | 0.8+ | 0.2− | 2001 11 20 | 699 | 0.9+ | 0.4− | 2006 08 18 | 644 | 0.5− | 0.2+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.2+ | 2001 11 24 | 704 | 1.2+ | 0.3− | 2006 08 18 | 644 | 0.2+ | 0.4+ | | |
| 2001 09 24 | 704 | 0.6+ | 0.5+ | 2001 11 24 | 704 | 0.5+ | 0.0 | 2006 08 18 | 644 | 0.4− | 0.3+ | | |
| 2001 10 13 | 699 | 0.1− | 0.2+ | 2001 11 24 | 704 | 1.1+ | 0.5− | 2006 08 22 | 644 | 0.1+ | 0.0 | | |
| 2001 10 13 | 699 | 0.2+ | 0.3− | 2001 11 24 | 704 | 0.8+ | 1.0− | 2006 08 22 | 644 | 0.0 | 0.3+ | | |
| 2001 10 13 | 699 | 0.6− | 0.2− | 2001 11 24 | 704 | 0.6+ | 1.3− | 2006 08 22 | 644 | 0.1− | 0.2+ | | |
| 2001 10 13 | 699 | (1.9− | 0.2−) | 2002 11 12 | 704 | (0.9− | 1.8+) | 2006 08 24 | 644 | 0.2− | 0.1+ | | |
| 2001 10 14 | 704 | 0.8− | 0.2+ | 2002 11 12 | 704 | (0.6− | 1.7+) | 2006 08 24 | 644 | 0.2− | 0.3+ | | |
| 2001 10 14 | 704 | 0.4− | 0.7+ | 2002 11 12 | 704 | 0.1− | 0.1− | 2006 08 24 | 644 | 1.1+ | 1.2+ | | |
| 2001 10 14 | 704 | 0.9− | 0.4+ | 2002 12 28 | 699 | 0.1+ | 1.1+ | 2006 08 28 | 699 | 0.6+ | 0.3+ | | |
| 2001 10 14 | 704 | 0.7− | 0.4+ | 2002 12 28 | 699 | 0.1− | 1.1+ | 2006 08 28 | 699 | 0.1+ | 0.7+ | | |
| 2001 10 14 | 704 | 0.2+ | 0.2+ | 2002 12 28 | 699 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.2− | | |
| 2001 10 15 | 704 | 0.3− | 0.3+ | 2002 12 28 | 699 | 0.8− | 0.5+ | 2006 08 28 | 699 | 0.4− | 0.3− | | |
| 2001 10 15 | 704 | 0.5− | 0.2+ | 2002 12 31 | 645 | 0.0 | 0.1− | 2006 08 31 | 704 | 1.1− | 0.4− | | |
| 2001 10 15 | 704 | 0.7− | 0.1+ | 2002 12 31 | 645 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.5− | 0.2− | | |
| 2001 10 15 | 704 | 0.6− | 0.2+ | 2003 01 27 | 644 | 0.2+ | 0.2+ | 2006 08 31 | 704 | 0.4+ | 0.4− | | |
| 2001 10 15 | 704 | 1.0− | 0.6+ | 2003 01 27 | 644 | 0.2+ | 0.3+ | 2006 08 31 | 704 | 0.4+ | 0.1+ | | |
| 2001 10 16 | 333 | 0.9− | 0.4− | 2003 01 27 | 644 | 0.0 | 0.2+ | 2006 08 31 | 704 | 0.2+ | 0.1+ | | |
| 2001 10 16 | 333 | 0.0 | 0.7− | 2003 01 31 | 699 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.2+ | | |
| 2001 10 16 | 333 | 0.5− | 0.4− | 2003 01 31 | 699 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3+ | | |
| 2001 10 17 | 704 | 0.7− | 0.6+ | 2003 01 31 | 699 | 0.3+ | 1.0+ | 2006 09 14 | 703 | 0.9− | 0.1− | | |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2003 01 31 | 699 | 0.6− | 0.7+ | 2006 09 14 | 703 | 0.4+ | 1.1+ | | |
| 2001 10 17 | 704 | 0.0 | 0.5+ | 2003 02 01 | 704 | 0.2− | 0.9+ | 2006 09 14 | 703 | 0.5+ | 0.8− | | |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2003 02 01 | 704 | 0.7+ | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.1+ | | |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2003 02 01 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.4+ | | |
| 2001 10 18 | 333 | 0.2− | 0.1− | 2003 02 01 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 704 | 0.4− | 0.4+ | | |
| 2001 10 18 | 333 | 0.5+ | 0.9− | 2003 02 01 | 704 | 0.5+ | 0.9+ | 2006 09 16 | 704 | 0.2+ | 0.4− | | |
| 2001 10 18 | 333 | 0.3− | 0.2+ | 2003 02 04 | 699 | 0.7+ | 0.3+ | 2006 09 16 | 704 | 0.1− | 0.0 | | |
| 2001 10 19 | 704 | 0.6− | 0.6− | 2003 02 04 | 699 | 0.7+ | 1.1+ | 2006 09 16 | 704 | 0.1− | 0.6− | | |
| 2001 10 19 | 704 | 0.4+ | 0.0 | 2003 02 04 | 699 | 1.3+ | 0.5+ | 2006 09 16 | 704 | 1.1− | 0.1+ | | |
| 2001 10 19 | 704 | 0.2− | 0.2− | 2003 02 04 | 699 | 0.8+ | 0.9+ | 2006 09 18 | 699 | 0.3+ | 0.7+ | | |
| 2001 10 19 | 704 | 0.1− | 0.5− | 2004 03 17 | 704 | 1.0+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.0 | | |
| 2001 10 21 | 704 | 0.1− | 0.3− | 2004 03 17 | 704 | 0.1+ | 0.8− | 2006 09 18 | 699 | 0.3+ | 0.4+ | | |
| 2001 10 21 | 704 | 0.3− | 0.3− | 2004 03 17 | 704 | 0.5+ | 1.0+ | 2006 09 18 | 699 | 0.1− | 1.3+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.0 | 2004 03 17 | 704 | 0.2− | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.5+ | | |
| 2001 10 21 | 704 | 0.1− | 0.0 | 2004 03 17 | 704 | 1.0− | 1.2− | 2006 09 20 | 644 | 0.2+ | 0.4+ | | |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2004 03 18 | 704 | 1.1+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.0 | | |
| 2001 10 22 | 704 | 0.4− | 0.3− | 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 699 | 0.7+ | 0.5+ | | |
| 2001 10 22 | 704 | 0.8+ | 0.4+ | 2004 03 18 | 704 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.2− | 0.6+ | | |
| 2001 10 22 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | (2.1+ | 0.2+) | 2006 09 25 | 699 | 0.1+ | 0.5+ | | |
| 2001 10 22 | 704 | 0.5− | 1.2+ | 2004 03 20 | 704 | (2.4+ | 1.5+) | 2006 09 25 | 699 | (1.9− | 0.0 | ) | |
| 2001 10 22 | 704 | 0.8− | 0.3− | 2004 03 20 | 704 | (2.2+ | 1.3+) | 2006 09 26 | 704 | 0.6+ | 0.1− | | |
| 2001 10 23 | 333 | 0.1− | 0.5− | 2004 03 20 | 699 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.6+ | | |
| 2001 10 23 | 333 | 0.3− | 0.5+ | 2004 03 20 | 704 | (2.6+ | 1.3+) | 2006 09 26 | 704 | 0.3− | 0.6− | | |
| 2001 10 23 | 333 | 0.2− | 0.4− | 2004 03 20 | 699 | 0.9− | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.1− | | |
| 2001 11 10 | 704 | 0.6+ | 0.7+ | 2004 03 20 | 704 | (2.6+ | 1.4+) | 2006 09 30 | 703 | 0.2+ | 0.1− | | |
| 2001 11 10 | 704 | 0.2+ | 0.3+ | 2004 03 20 | 699 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.3− | | |
| 2001 11 10 | 704 | 0.5+ | 0.0 | 2004 03 20 | 699 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.2+ | 0.0 | | |
| 2001 11 10 | 644 | 0.4− | 0.0 | 2004 03 27 | 699 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.9− | 0.0 | | |
| 2001 11 10 | 644 | 0.4− | 0.1+ | 2004 03 27 | 699 | 0.7+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2001 11 10 | 704 | 1.4+ | 1.0+ | 2004 03 27 | 699 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.8+ | 0.3− | | |
| 2001 11 10 | 644 | 0.2− | 0.2+ | 2004 03 27 | 699 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.4+ | | |
| 2001 11 10 | 704 | 0.9+ | 0.3+ | 2004 03 27 | 704 | 0.7+ | 1.2+ | 2006 11 16 | G96 | 0.5− | 0.2− | | |
| 2001 11 15 | 608 | (0.0 | 1.5−) | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.8− | 1.6+ | | |
| 2001 11 15 | 608 | 0.1− | 0.9− | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 11 23 | G96 | 2.0− | 0.5+ | | |
| 2001 11 15 | 608 | 0.4+ | 0.0 | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1+ | | |
| 2001 11 17 | 704 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.9− | 0.6− | 2006 11 23 | G96 | 0.3− | 0.2+ | | |
| 2001 11 17 | 704 | 0.5− | 0.6+ | 2004 03 28 | 704 | 0.1− | 0.1− | | | | | | |

**(140366)∗ 2001 TK$_{28}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.70190 | | (2000.0) | | | |
| $n$ | 0.23737486 | $\omega$ | 227.78519 | | −0.89811478 | −0.43451567 |
| $a$ | 2.5833281 | $\Omega$ | 286.35801 | | +0.42140490 | −0.80633402 |
| $e$ | 0.0752112 | $i$ | 4.04711 | | +0.12572886 | −0.40127495 |
| $P$ | 4.15 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 25 | 691 | 0.1− | 0.6− | 2003 03 07 | 704 | 0.4+ | 0.1− | 2005 10 06 | 699 | 0.1− | 0.6+ |
| 1997 11 25 | 691 | 0.1+ | 0.5− | 2003 03 07 | 704 | 0.7+ | 0.4+ | 2005 10 08 | 704 | 0.9+ | 1.1+ |
| 1997 11 25 | 691 | 0.0 | 0.3− | 2003 03 07 | 704 | 0.2+ | 0.1+ | 2005 10 08 | 704 | 0.3+ | 0.6+ |
| 1999 03 24 | 699 | 0.8+ | 0.5+ | 2003 03 07 | 704 | 0.9+ | 0.2+ | 2005 10 08 | 703 | 0.6+ | 0.1− |
| 1999 03 24 | 699 | 0.6− | 0.2+ | 2003 03 07 | 704 | 0.7+ | 0.9+ | 2005 10 08 | 703 | 0.1− | 0.5− |
| 1999 03 24 | 699 | 0.7+ | 0.0 | 2003 03 09 | 704 | 1.0+ | 1.2+ | 2005 10 08 | 704 | 0.2− | 1.1+ |
| 2001 10 13 | 699 | 0.6− | 1.1− | 2003 03 09 | 704 | 1.4+ | 1.3+ | 2005 10 08 | 703 | 0.9+ | 0.2+ |
| 2001 10 13 | 699 | 0.9+ | 1.0− | 2003 03 09 | 704 | 1.0+ | 1.0+ | 2005 10 08 | 704 | 0.5+ | 1.0+ |
| 2001 10 13 | 699 | 0.3− | 0.9+ | 2003 03 09 | 704 | 0.9+ | 1.0+ | 2005 10 08 | 703 | (2.3+ | 0.6−) |
| 2001 10 13 | 699 | 0.2− | 0.8+ | 2003 03 14 | 608 | 0.7− | 0.6− | 2005 10 10 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.7+ | 0.1− | 2003 03 14 | 608 | 0.5− | 1.0− | 2005 10 10 | 691 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | 0.9+ | 0.1+ | 2003 03 14 | 608 | 0.4− | 0.6− | 2005 10 10 | 691 | 0.2− | 0.2+ |
| 2001 10 14 | 704 | 1.2− | 0.1+ | 2003 03 21 | 608 | 0.6− | 0.6+ | 2005 10 22 | 703 | 0.1− | 1.2+ |
| 2001 10 14 | 704 | 0.1+ | 0.1− | 2003 03 21 | 608 | 0.9− | 0.2+ | 2005 10 22 | 703 | 0.3+ | 0.5+ |
| 2001 10 14 | 704 | 0.6− | 0.2− | 2003 03 21 | 608 | 0.1+ | 0.9+ | 2005 10 22 | 703 | 1.1+ | 1.5+ |
| 2001 10 15 | 704 | 0.4+ | 0.3+ | 2003 03 24 | 608 | 0.2− | 0.7− | 2005 10 22 | 703 | 0.5+ | 1.2+ |
| 2001 10 15 | 704 | 0.6+ | 0.5+ | 2003 03 24 | 608 | 0.2− | 0.8− | 2005 10 28 | 703 | 0.7− | 0.2− |
| 2001 10 15 | 704 | 1.0+ | 0.4− | 2003 03 24 | 608 | 0.2+ | 0.2− | 2005 10 28 | 703 | 1.4− | 0.7− |
| 2001 11 10 | 704 | 0.1− | 0.0 | 2003 03 26 | 683 | 0.3− | 0.3− | 2005 10 28 | 703 | 0.0 | 0.7+ |
| 2001 11 10 | 704 | 0.0 | 0.1− | 2003 03 26 | 683 | 0.2+ | 1.2+ | 2005 10 28 | 703 | 0.8− | 0.9+ |
| 2001 11 10 | 704 | 0.2+ | 0.2+ | 2003 03 26 | 699 | 0.7− | 1.5+ | 2005 10 30 | 704 | 0.5− | 0.4+ |
| 2001 11 10 | 704 | 0.2− | 0.1+ | 2003 03 26 | 683 | 1.0− | 1.2+ | 2005 10 30 | 704 | 0.3+ | 0.5+ |
| 2003 01 27 | 608 | (0.8+ | 1.6−) | 2003 03 26 | 699 | 0.4+ | 0.1+ | 2005 10 30 | 704 | 0.2− | 0.1+ |
| 2003 01 27 | 608 | 0.8+ | 0.5− | 2003 03 26 | 699 | 1.3− | 0.1− | 2005 11 02 | 704 | 0.3+ | 1.0+ |
| 2003 01 27 | 608 | 0.8+ | 1.1− | 2003 03 26 | 699 | 0.3+ | 0.5− | 2005 11 02 | 704 | 0.1+ | 0.1− |
| 2003 01 28 | 704 | 0.6+ | 0.7+ | 2003 03 30 | 683 | 0.6+ | 0.9+ | 2005 11 02 | 704 | 0.3− | 0.8− |
| 2003 01 28 | 704 | (1.7+ | 0.4+) | 2003 03 30 | 683 | 0.7− | 0.3− | 2005 11 02 | 704 | 0.3+ | 0.1+ |
| 2003 01 28 | 704 | 0.5+ | 0.5− | 2003 03 30 | 683 | (1.7+ | 0.2+) | 2005 11 05 | 704 | 0.2− | 0.1− |
| 2003 01 28 | 704 | 0.0 | 0.4− | 2005 09 25 | 691 | 0.2− | 0.2+ | 2005 11 05 | 704 | 0.2+ | 1.5− |
| 2003 01 28 | 704 | 0.6− | 0.8+ | 2005 09 25 | 691 | 0.2− | 0.2+ | 2005 11 05 | 704 | 1.2− | 0.2− |
| 2003 01 31 | 699 | 0.3+ | 0.8+ | 2005 09 25 | 691 | 0.2− | 0.4+ | 2005 11 05 | 704 | 0.8− | 1.3+ |
| 2003 01 31 | 699 | (0.3+ | 2.3+) | 2005 09 30 | 691 | 0.1+ | 0.2− | 2005 11 05 | 704 | (1.3− | 1.7−) |
| 2003 01 31 | 699 | 0.1+ | 0.1− | 2005 09 30 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2003 01 31 | 699 | 0.1− | 0.3+ | 2005 09 30 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.4− | 0.5− |
| 2003 02 02 | 704 | 0.6− | 0.0 | 2005 10 01 | 703 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.6− |
| 2003 02 02 | 704 | 0.4+ | 0.9+ | 2005 10 01 | 703 | (2.3− | 2.8−) | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2003 02 02 | 704 | 0.1− | 0.8+ | 2005 10 01 | 703 | (0.9+ | 2.2−) | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2003 03 06 | 704 | 0.2+ | 0.0 | 2005 10 01 | 703 | 0.5− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2003 03 06 | 704 | 0.5− | 0.8+ | 2005 10 03 | 704 | (0.8− | 2.0+) | 2006 10 27 | 691 | 0.5− | 0.0 |
| 2003 03 06 | 704 | 0.8+ | 0.5+ | 2005 10 03 | 704 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.4− | 0.6− |
| 2003 03 06 | 704 | (3.2+ | 1.9+) | 2005 10 03 | 704 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.5− | 0.7− |
| 2003 03 06 | 704 | 0.8− | 0.1+ | 2005 10 06 | 699 | 0.7− | 0.9− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2003 03 06 | 704 | 0.5+ | 0.5+ | 2005 10 06 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2003 03 06 | 704 | 0.9+ | 1.0− | 2005 10 06 | 699 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2003 03 06 | 704 | (1.8− | 1.1+) | 2005 10 06 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2003 03 06 | 704 | 0.8− | 0.5+ | 2005 10 06 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2003 03 06 | 704 | 0.8+ | 0.7+ | 2005 10 06 | 699 | 1.0+ | 0.4− | 2006 11 21 | G96 | 0.5− | 0.4− |

**(140367)∗ 2001 TP$_{28}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.35681 | | (2000.0) | | | |
| $n$ | 0.18318131 | $\omega$ | 81.33654 | | +0.54759231 | −0.83541347 |
| $a$ | 3.0705437 | $\Omega$ | 335.28046 | | +0.71646783 | +0.49726544 |
| $e$ | 0.1900591 | $i$ | 6.47961 | | +0.43222277 | +0.23411840 |
| $P$ | 5.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 01 | 691 | 0.2− | 0.6− | 2001 11 20 | 699 | 0.6+ | 0.6+ | 2006 09 12 | 703 | 1.0− | 0.9+ |
| 1992 02 01 | 691 | 0.3− | 0.7− | 2001 11 20 | 699 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.7− | 0.3+ |
| 1992 02 01 | 691 | 0.4− | 0.2− | 2002 12 07 | 645 | 0.2− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.1+ |
| 2001 08 22 | 704 | 0.4+ | 0.1+ | 2002 12 07 | 645 | 0.1− | 0.1+ | 2006 09 12 | 703 | 0.8− | 0.2− |
| 2001 08 22 | 704 | 0.6− | 0.3− | 2003 01 26 | 608 | 1.4+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2− |
| 2001 08 22 | 704 | 0.2+ | 0.7+ | 2003 01 26 | 608 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1− |
| 2001 08 22 | 704 | 1.0− | 0.2− | 2003 01 26 | 608 | 1.3+ | 0.6+ | 2006 09 15 | 691 | 0.2+ | 0.2− |
| 2001 08 22 | 704 | 0.0 | 0.3+ | 2003 01 31 | 704 | 0.7+ | 1.1+ | 2006 09 16 | 699 | 0.5+ | 0.3+ |
| 2001 09 23 | 704 | 0.6+ | 1.2+ | 2003 01 31 | 704 | 0.0 | 1.3+ | 2006 09 16 | 699 | 0.3− | 0.6+ |
| 2001 09 23 | 704 | 0.0 | 0.6− | 2003 01 31 | 704 | 1.3+ | 1.2+ | 2006 09 16 | 699 | 0.2− | 0.5+ |
| 2001 09 23 | 704 | 0.8+ | 1.6+ | 2003 02 22 | 699 | 0.8+ | 0.5− | 2006 09 16 | 699 | 0.6+ | 0.1− |
| 2001 09 23 | 704 | 0.3− | 0.3+ | 2003 02 22 | 699 | 0.6+ | 0.6+ | 2006 09 17 | 704 | 0.0 | 1.0+ |
| 2001 10 13 | 699 | 0.3− | 0.5+ | 2003 02 22 | 699 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.7+ | 0.1+ |
| 2001 10 13 | 699 | 0.5− | 0.5+ | 2003 02 22 | 699 | 1.0+ | 0.6+ | 2006 09 17 | 704 | 1.8+ | 1.1− |
| 2001 10 13 | 699 | 0.0 | 0.6− | 2003 03 06 | 644 | 0.5+ | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.2+ |
| 2001 10 13 | 699 | 0.8+ | 1.2− | 2003 03 06 | 644 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.2− | 0.5+ | 2003 03 06 | 644 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2004 04 16 | E12 | 1.6+ | 0.6+ | 2006 09 19 | 699 | 0.4+ | 0.0 |
| 2001 10 14 | 704 | 0.1+ | 0.8+ | 2004 04 16 | E12 | 0.6− | 1.3+ | 2006 09 19 | 703 | 0.9− | 0.0 |
| 2001 10 14 | 704 | 0.5− | 0.5+ | 2004 04 16 | E12 | (2.3− | 0.6+) | 2006 09 19 | 703 | 0.4+ | 0.8+ |
| 2001 10 14 | 704 | 0.0 | 0.7+ | 2004 04 16 | E12 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.6− | 0.2+ |
| 2001 10 15 | 704 | 1.1− | 0.8+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.3+ |
| 2001 10 15 | 704 | 1.3− | 0.2+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.2+ |
| 2001 10 15 | 704 | 1.2− | 0.7+ | 2006 08 15 | 644 | 0.5− | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.1+ |
| 2001 10 15 | 704 | 1.5− | 0.6+ | 2006 08 15 | 644 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.5− | 0.4− |
| 2001 10 15 | 704 | 1.1− | 0.1+ | 2006 08 15 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.3+ |
| 2001 10 21 | 704 | 0.5+ | 0.4− | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.9+ | 0.7− | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.6+ | 0.0 | 2006 08 22 | 644 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.9+ | 0.5− |
| 2001 10 21 | 704 | 0.1− | 0.4− | 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.7+ |
| 2001 10 27 | 704 | 1.2− | 1.5+ | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.5− | 0.9− |
| 2001 10 27 | 704 | 0.8− | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.2+ |
| 2001 10 27 | 704 | 0.5− | 0.6+ | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.3− | 0.5− |
| 2001 10 27 | 704 | (1.2− | 2.7+) | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.5+ |
| 2001 11 10 | 704 | 0.4+ | 0.4− | 2006 08 23 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.8− |
| 2001 11 10 | 704 | 0.4+ | 0.2− | 2006 08 25 | 704 | 0.8− | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.9− |
| 2001 11 10 | 704 | 0.7+ | 0.3− | 2006 08 25 | 704 | 1.0− | 1.2+ | 2006 09 29 | 704 | 0.6− | 0.5− |
| 2001 11 10 | 704 | 0.7+ | 0.4− | 2006 08 25 | 704 | 0.9− | 0.5+ | 2006 09 29 | 704 | 0.8− | 1.5+ |
| 2001 11 10 | 704 | 0.4+ | 0.0 | 2006 08 27 | 699 | 1.2+ | 0.9+ | 2006 09 29 | 704 | 0.3− | 0.7+ |
| 2001 11 12 | 704 | 0.5+ | 0.3− | 2006 08 27 | 699 | 0.3+ | 0.3− | 2006 09 29 | 704 | 0.3+ | 0.5− |
| 2001 11 12 | 704 | 1.3+ | 1.0− | 2006 08 27 | 699 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.8− |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 1.0− | 1.0+ | 2006 10 02 | G96 | 0.5+ | 0.7− |
| 2001 11 12 | 704 | 0.3+ | 1.0− | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2001 11 12 | 704 | 1.5+ | 1.0− | 2006 08 28 | 703 | 0.6+ | 1.5− | 2006 10 02 | G96 | 0.1− | 0.7− |
| 2001 11 20 | 699 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.6− | | | | |
| 2001 11 20 | 699 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.1+ | | | | |

**(140368)∗ 2001 TC$_{29}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.67133 | | (2000.0) | | | |
| $n$ | 0.22692103 | $\omega$ | 34.93444 | | +0.96512532 | −0.26126204 |
| $a$ | 2.6620705 | $\Omega$ | 340.19074 | | +0.22765322 | +0.86888508 |
| $e$ | 0.1901454 | $i$ | 2.80617 | | +0.12925606 | +0.42045316 |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 07 23 | 599 | 1.4+ | 0.1+ | 2001 11 10 | 704 | 0.5− | 0.0 | 2005 08 29 | 699 | 0.6+ | 0.6− |
| 1996 07 23 | 599 | (1.2− | 2.8−) | 2001 11 10 | 704 | 0.0 | 0.1− | 2005 08 29 | 704 | 1.0− | 0.2+ |
| 1999 04 12 | 691 | 0.6− | 1.3− | 2001 11 10 | 704 | 0.2+ | 0.2+ | 2005 08 29 | 704 | 0.9+ | 0.2− |
| 1999 04 12 | 691 | 0.7− | 0.3− | 2001 11 10 | 704 | 0.8+ | 0.9− | 2005 08 29 | 699 | 0.2+ | 0.3− |
| 1999 04 12 | 691 | 0.1+ | 0.3− | 2001 11 10 | 704 | 0.2+ | 0.6− | 2005 08 29 | 699 | 0.8− | 0.2+ |
| 2001 09 21 | 699 | (1.9− | 1.3−) | 2001 11 10 | 644 | 0.2+ | 0.0 | 2005 09 07 | 699 | 1.4+ | 1.4+ |
| 2001 09 21 | 699 | 1.2+ | 0.7+ | 2001 11 10 | 644 | 0.1+ | 0.3+ | 2005 09 07 | 699 | 0.5+ | 0.1− |
| 2001 09 21 | 699 | 0.3− | 0.4+ | 2001 11 10 | 644 | 0.3− | 0.2+ | 2005 09 07 | 699 | 0.3− | 0.8− |
| 2001 09 21 | 699 | 0.8+ | 0.4+ | 2001 11 12 | 704 | 0.6− | 0.3− | 2005 09 07 | 699 | 0.1+ | 0.1+ |
| 2001 10 12 | 699 | 0.1+ | 1.1+ | 2001 11 12 | 704 | 0.3− | 0.2+ | 2005 09 11 | 691 | 0.1+ | 0.3− |
| 2001 10 12 | 699 | 0.5+ | 1.2+ | 2001 11 12 | 704 | 0.2+ | 0.6− | 2005 09 11 | 691 | 0.1+ | 0.1− |
| 2001 10 12 | 699 | 0.1− | 0.4+ | 2001 11 12 | 704 | 0.6− | 0.2+ | 2005 09 11 | 691 | 0.0 | 0.0 |
| 2001 10 12 | 699 | 1.2− | 0.3− | 2001 11 12 | 704 | 0.3+ | 0.3+ | 2005 09 22 | 644 | 0.4− | 0.1− |
| 2001 10 14 | 704 | 0.4+ | 1.0+ | 2001 11 19 | 704 | 0.5− | 0.2+ | 2005 09 22 | 644 | 0.2− | 0.2− |
| 2001 10 14 | 704 | 0.4− | 0.3+ | 2001 11 19 | 704 | 0.3− | 0.2− | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.2− | 0.4+ | 2001 11 19 | 704 | 0.5− | 0.0 | 2005 09 23 | 703 | 0.5− | 0.1− |
| 2001 10 14 | 704 | 0.3− | 0.9+ | 2001 11 19 | 704 | 0.3− | 0.1− | 2005 09 23 | 703 | 0.1+ | 0.5− |
| 2001 10 14 | 333 | 0.0 | 0.2− | 2001 11 19 | 704 | 0.2− | 0.3− | 2005 09 23 | 703 | (1.9− | 0.3+) |
| 2001 10 14 | 704 | 0.2− | 1.0+ | 2001 12 20 | 644 | 0.3− | 0.1+ | 2005 09 23 | 699 | 0.6+ | 0.2− |
| 2001 10 14 | 333 | 0.1− | 0.1+ | 2001 12 20 | 644 | 0.0 | 0.1− | 2005 09 23 | 703 | 0.3+ | 0.3+ |
| 2001 10 14 | 333 | 0.9− | 0.6− | 2001 12 20 | 644 | 0.2+ | 0.5+ | 2005 09 23 | 699 | 0.9+ | 0.5− |
| 2001 10 15 | 704 | 0.3+ | 0.6+ | 2004 04 25 | 691 | 0.2− | 0.4− | 2005 09 23 | 699 | 0.7+ | 0.1− |
| 2001 10 15 | 333 | (1.6− | 0.3−) | 2004 04 25 | 691 | 0.1+ | 0.3+ | 2005 09 23 | 699 | 0.2− | 0.1− |
| 2001 10 15 | 704 | 0.0 | 0.3− | 2004 04 25 | 691 | 0.2− | 0.2+ | 2005 09 29 | G96 | 0.3+ | 0.2− |
| 2001 10 15 | 704 | 0.8− | 0.4− | 2005 08 09 | 807 | 0.1+ | 0.2− | 2005 09 29 | G96 | 0.1+ | 0.1− |
| 2001 10 15 | 333 | 0.2+ | 0.8+ | 2005 08 10 | 807 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.4+ | 0.1− |
| 2001 10 15 | 704 | 0.3− | 0.8− | 2005 08 10 | 807 | 0.1− | 0.1− | 2005 09 29 | G96 | 0.1− | 0.2− |
| 2001 10 15 | 704 | 0.3+ | 0.4+ | 2005 08 25 | 644 | 0.1− | 0.2− | 2005 09 30 | 699 | 0.4+ | 0.3+ |
| 2001 10 19 | 644 | 0.0 | 1.1− | 2005 08 25 | 644 | 0.1− | 0.1− | 2005 09 30 | 699 | 0.3+ | 0.2+ |
| 2001 10 19 | 644 | 0.1− | 0.9− | 2005 08 25 | 644 | 0.0 | 0.0 | 2005 09 30 | 699 | 0.3+ | 0.3− |
| 2001 10 19 | 644 | 0.0 | 1.2− | 2005 08 25 | 599 | 0.2+ | 0.1+ | 2005 09 30 | 699 | 0.4− | 0.7+ |
| 2001 10 21 | 704 | 0.6+ | 0.1− | 2005 08 25 | 599 | 0.2+ | 0.2+ | 2005 10 27 | G96 | 0.1+ | 0.9− |
| 2001 10 21 | 704 | 1.0+ | 0.3− | 2005 08 26 | 599 | 0.2+ | 0.6+ | 2005 10 27 | G96 | 0.0 | 0.5− |
| 2001 10 21 | 704 | 0.8+ | 0.1+ | 2005 08 26 | 599 | 0.3+ | 0.0 | 2005 10 27 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 1.0+ | 0.1− | 2005 08 26 | 599 | 0.0 | 0.2+ | 2005 10 27 | G96 | 0.3+ | 0.2− |
| 2001 10 21 | 704 | 1.0+ | 0.0 | 2005 08 26 | 599 | 0.2− | 0.1− | 2005 11 29 | G96 | 0.2− | 0.1− |
| 2001 10 25 | 704 | 0.2− | 0.6− | 2005 08 26 | 599 | 0.0 | 0.0 | 2005 11 29 | G96 | 0.0 | 0.2− |
| 2001 10 25 | 704 | 0.2+ | 0.7− | 2005 08 26 | 599 | 0.3+ | 0.1− | 2005 11 29 | G96 | 0.3− | 0.2− |
| 2001 10 25 | 704 | 0.7+ | 0.7− | 2005 08 27 | 608 | 0.0 | 0.2+ | 2005 11 29 | G96 | 0.0 | 0.3+ |
| 2001 10 25 | 704 | 0.5+ | 0.1+ | 2005 08 27 | 608 | 0.1− | 0.7+ | 2006 10 23 | G96 | 0.7+ | 0.7− |
| 2001 10 25 | 704 | 0.1+ | 0.8− | 2005 08 27 | 608 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.4+ | 0.3− |
| 2001 10 26 | 704 | 0.3+ | 0.3− | 2005 08 28 | 691 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2001 10 26 | 644 | 1.0− | 0.1+ | 2005 08 28 | 691 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2001 10 26 | 704 | 0.4+ | 0.3− | 2005 08 28 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2001 10 26 | 644 | 0.8− | 0.2+ | 2005 08 29 | 699 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.7+ | 0.2− |
| 2001 10 26 | 644 | 0.8− | 0.1+ | 2005 08 29 | 704 | 0.1+ | 0.8− | 2006 11 27 | G96 | 0.4+ | 0.1+ |
| 2001 10 26 | 704 | 0.6− | 0.9− | 2005 08 29 | 704 | 0.4+ | 1.1− | 2006 11 27 | G96 | 0.0 | 0.6− |

**(140369)∗ 2001 TO$_{29}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.82637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21442162 | $\omega$ | 57.70731 | | +0.50429259 | +0.86314038 | |
| $a$ | 2.7645450 | $\Omega$ | 242.59851 | | −0.80180897 | +0.45684130 | |
| $e$ | 0.0471839 | $i$ | 1.68025 | | −0.32061091 | +0.21513882 | |
| $P$ | 4.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 04 23 | 704 | (1.5+ | 1.1+) | 2005 08 24 | 644 | 0.2− | 0.2+ |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2004 04 23 | 704 | (2.0+ | 1.0+) | 2005 08 24 | 644 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | (1.2+ | 2.3−) | 2004 04 23 | 704 | 0.4− | 0.3− | 2005 10 26 | G96 | 1.0− | 0.4− |
| 2001 09 20 | 704 | (0.8+ | 3.3−) | 2004 04 23 | 704 | 0.7+ | 0.7+ | 2005 10 26 | G96 | 0.1+ | 0.4− |
| 2001 09 20 | 704 | (0.7+ | 3.0−) | 2004 04 23 | 704 | 0.2− | 0.1− | 2005 10 26 | G96 | 0.5− | 0.1+ |
| 2001 10 14 | 704 | 0.9− | 0.1− | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2005 10 26 | G96 | 0.4− | 0.2+ |
| 2001 10 14 | 704 | 0.4− | 0.8+ | 2004 04 24 | 704 | (0.1+ | 1.7+) | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | 0.1+ | 0.8+ | 2004 04 24 | 704 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.8− | 0.9+ | 2004 04 24 | 704 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2001 10 15 | 704 | 0.7− | 0.5+ | 2004 04 24 | 691 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.3− | 0.2+ |
| 2001 10 15 | 704 | 0.5− | 0.8+ | 2004 04 24 | 704 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 10 15 | 704 | 0.5+ | 1.0+ | 2004 04 24 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2001 10 15 | 704 | 0.9− | 0.5− | 2004 04 25 | 291 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.5+ | 0.2− | 2004 04 25 | 291 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 291 | 0.4+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.0 | 0.9− | 2004 04 26 | 704 | 0.1+ | 1.3+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.1+ | 0.5− | 2004 04 26 | 704 | 0.2+ | 1.1+ | 2006 11 11 | 691 | 0.8+ | 0.0 |
| 2001 10 21 | 704 | 0.3+ | 0.5− | 2004 04 26 | 704 | 0.2+ | 1.4+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 10 26 | 704 | 0.2+ | 0.9+ | 2004 05 27 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2001 10 26 | 704 | 0.9+ | 1.0+ | 2004 05 27 | 691 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2001 10 26 | 704 | 0.3− | 0.4+ | 2004 05 27 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2001 11 17 | 704 | 0.7+ | 0.3− | 2005 07 29 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2001 11 17 | 704 | 0.7+ | 0.9+ | 2005 07 29 | 644 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2001 11 17 | 704 | 0.2− | 1.0+ | 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2004 04 21 | 704 | 0.2+ | 0.1+ | 2005 07 31 | 644 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2004 04 21 | 704 | 0.1− | 0.5− | 2005 07 31 | 644 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2004 04 21 | 704 | 0.2+ | 0.7+ | 2005 07 31 | 644 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 04 22 | 704 | 0.8− | 0.6− | 2005 08 09 | 185 | 1.4+ | 0.7+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2004 04 22 | 704 | 0.1− | 0.5− | 2005 08 10 | 185 | 0.9− | 0.1− | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2004 04 22 | 704 | (0.8− | 2.3−) | 2005 08 10 | 185 | 0.1− | 0.3− | | | | |
| 2004 04 22 | 704 | 1.0− | 1.0− | 2005 08 24 | 644 | 0.3− | 0.1+ | | | | |

**(140370)∗ 2001 TU$_{30}$ = 1996 WL**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22874)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.53983 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18970867 | $\omega$ | 13.72438 | | +0.38939295 | −0.89211338 | |
| $a$ | 2.9997008 | $\Omega$ | 53.84793 | | +0.81602427 | +0.21875807 | |
| $e$ | 0.0798077 | $i$ | 16.48626 | | +0.42717388 | +0.39532091 | |
| $P$ | 5.20 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.3+ | 0.3− | 2001 12 11 | 704 | 1.0+ | 0.8− | 2004 04 22 | 704 | 0.5+ | 0.3+ |
| 1996 11 08 | 691 | 0.2+ | 0.3− | 2001 12 11 | 704 | 0.3− | 0.0 | 2004 04 22 | 704 | 0.1+ | 0.8+ |
| 1996 11 08 | 691 | 0.2+ | 0.2− | 2001 12 11 | 704 | 0.8+ | 0.2+ | 2006 09 21 | 699 | (0.2− | 1.8−) |
| 1996 11 17 | 817 | 0.1+ | 0.1− | 2001 12 14 | 704 | 0.4+ | 0.4+ | 2006 09 21 | 699 | 1.3− | 1.0+ |
| 1996 11 17 | 817 | 0.5− | 0.2+ | 2001 12 14 | 704 | (1.6+ | 0.1−) | 2006 09 21 | 699 | 0.1+ | 0.1+ |
| 1996 11 18 | 817 | 1.8− | 0.1+ | 2001 12 14 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.8− | 0.6− |
| 1996 11 18 | 817 | 0.5− | 0.1+ | 2001 12 14 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2001 12 14 | 704 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.8+ | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.2− | 1.0+ | 2006 09 26 | 703 | 0.8+ | 0.1− |
| 2001 09 25 | 704 | 1.1− | 0.8+ | 2001 12 17 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2001 09 25 | 704 | 0.5− | 0.8− | 2001 12 17 | 704 | 0.5− | 0.0 | 2006 10 02 | 703 | 0.4+ | 0.2− |
| 2001 10 10 | 644 | 0.4+ | 0.3+ | 2001 12 17 | 704 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.4+ | 0.4+ |
| 2001 10 10 | 644 | 0.4+ | 0.9+ | 2001 12 17 | 704 | 0.4+ | 0.8+ | 2006 10 02 | 703 | 1.1− | 0.4+ |
| 2001 10 10 | 644 | 0.3+ | 0.6+ | 2003 01 13 | 704 | (0.6+ | 1.6+) | 2006 10 02 | 703 | 0.2+ | 0.5+ |
| 2001 10 14 | 704 | 0.1+ | 0.1+ | 2003 01 13 | 704 | 0.8− | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.1+ | 0.3− | 2003 01 13 | 704 | 0.3+ | 0.6− | 2006 10 10 | 644 | 0.2+ | 0.4− |
| 2001 10 14 | 704 | 0.3− | 0.1− | 2003 01 13 | 704 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.2− | 0.1− | 2003 01 13 | 704 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2001 10 14 | 704 | 0.3+ | 0.5− | 2003 01 24 | 644 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 10 15 | 704 | 0.1+ | 0.2− | 2003 01 24 | 644 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.1+ | 0.3− | 2003 01 24 | 644 | 0.4+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.4− |
| 2001 10 15 | 704 | 0.5− | 0.7− | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2001 10 15 | 704 | 0.2+ | 0.2− | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | 0.6− | 0.3− | 2003 01 27 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2001 10 16 | 704 | 0.4+ | 1.1+ | 2003 01 27 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.3− | 0.3− |
| 2001 10 16 | 704 | 0.8− | 0.8+ | 2004 04 20 | 704 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2001 10 16 | 704 | 0.6− | 0.3− | 2004 04 20 | 704 | 0.3− | 1.0+ | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2001 10 16 | 704 | 0.1+ | 0.3+ | 2004 04 20 | 704 | 0.7+ | 0.7− | 2006 10 22 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.4− | 0.7+ | 2004 04 20 | 704 | (2.9− | 2.3+) | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 2001 12 11 | 704 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2001 12 11 | 704 | 0.8+ | 0.2+ | 2004 04 22 | 704 | 0.9+ | 0.3− | | | | |

**(140371)∗ 2001 TY$_{30}$ = 2003 CQ$_{14}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40714)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.97580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18990482 | $\omega$ | 250.47580 | | +0.45759107 | −0.88891371 | |
| $a$ | 2.9976348 | $\Omega$ | 172.19278 | | +0.86279552 | +0.43817653 | |
| $e$ | 0.0919130 | $i$ | 8.91185 | | +0.21492862 | +0.13354305 | |
| $P$ | 5.19 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 691 | 0.1+ | 0.1+ | 2001 11 18 | 704 | 0.4− | 1.0+ | 2004 04 11 | 644 | 0.1+ | 0.4+ |
| 1993 03 20 | 691 | 0.2− | 0.2− | 2001 11 18 | 704 | 0.2− | 0.3+ | 2004 04 11 | 644 | 0.1+ | 0.8+ |
| 1993 03 20 | 691 | 0.2− | 0.3− | 2001 11 20 | 699 | 0.4+ | 0.2− | 2004 04 20 | 704 | 0.6+ | 0.7− |
| 1996 11 06 | 691 | 0.0 | 0.0 | 2001 11 20 | 699 | 0.3+ | 0.7+ | 2004 04 20 | 704 | 0.5+ | 0.5+ |
| 1996 11 06 | 691 | 0.0 | 0.3− | 2001 11 20 | 699 | 0.9+ | 0.1− | 2004 04 20 | 704 | 0.6+ | 0.6+ |
| 1996 11 06 | 691 | 0.0 | 0.3− | 2001 11 20 | 699 | 0.0 | 1.0− | 2004 04 20 | 704 | 0.1− | 0.1+ |
| 2001 10 10 | 644 | 0.1+ | 0.5+ | 2003 01 28 | 704 | 0.0 | 1.1+ | 2004 04 20 | 704 | 0.4− | 0.0 |
| 2001 10 10 | 644 | 0.2+ | 0.5+ | 2003 01 28 | 704 | 1.2− | 0.1+ | 2006 08 18 | 644 | 0.4− | 0.4+ |
| 2001 10 10 | 644 | 0.2+ | 0.7+ | 2003 01 28 | 704 | 0.2+ | 0.7− | 2006 08 18 | 644 | 0.5− | 0.3+ |
| 2001 10 14 | 704 | 0.1+ | 0.3+ | 2003 01 28 | 704 | 0.5− | 0.2− | 2006 08 18 | 644 | 0.3− | 0.8+ |
| 2001 10 14 | 704 | 0.1− | 0.3− | 2003 02 03 | 699 | (1.9− | 0.1−) | 2006 09 26 | 704 | (1.7− | 0.4+) |
| 2001 10 14 | 704 | 0.4− | 0.1− | 2003 02 03 | 699 | 0.8− | 0.1− | 2006 09 26 | 704 | 1.0+ | 0.4+ |
| 2001 10 14 | 704 | 0.8+ | 0.0 | 2003 02 03 | 699 | 1.0− | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.4− |
| 2001 10 14 | 704 | 0.2+ | 0.5+ | 2003 02 03 | 699 | 1.3+ | 0.6− | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2001 10 15 | 704 | 0.7− | 0.7+ | 2003 02 03 | 608 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2001 10 15 | 704 | 0.2+ | 0.2+ | 2003 02 03 | 608 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.9− |
| 2001 10 15 | 704 | 0.3+ | 0.7+ | 2003 02 03 | 608 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2001 10 15 | 704 | 0.7+ | 0.7− | 2003 02 07 | 644 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2001 10 15 | 704 | 0.7+ | 0.1− | 2003 02 07 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 10 16 | 704 | 1.0+ | 0.5− | 2003 02 07 | 644 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2001 10 16 | 704 | 0.3+ | 0.8− | 2003 02 09 | 608 | 1.0+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2001 10 16 | 704 | 0.8− | 0.7− | 2003 02 09 | 608 | (1.5+ | 1.6−) | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 16 | 704 | 0.3+ | 0.1+ | 2003 02 09 | 608 | 1.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 10 16 | 704 | 0.1− | 0.2− | 2003 02 19 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 11 12 | 683 | (2.4− | 1.8+) | 2003 02 19 | 644 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.6+ |
| 2001 11 12 | 683 | (3.0− | 0.5+) | 2003 02 19 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 1.2+ | 0.5− |
| 2001 11 12 | 683 | 1.2− | 0.0 | 2003 02 22 | 644 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.7+ |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2003 02 22 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 1.4− | 0.9+ |
| 2001 11 18 | 704 | 0.7− | 0.6+ | 2003 02 22 | 644 | 0.0 | 0.1− | | | | |
| 2001 11 18 | 704 | 0.0 | 0.6+ | 2004 04 11 | 644 | 0.1+ | 0.7+ | | | | |

**(140372)∗ 2001 TW$_{32}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.47934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18219688 | $\omega$ | 318.33557 | | +0.85149533 | +0.52330010 | |
| $a$ | 3.0815941 | $\Omega$ | 10.26858 | | −0.41787844 | +0.71563348 | |
| $e$ | 0.0975426 | $i$ | 10.78500 | | −0.31675433 | +0.46262915 | |
| $P$ | 5.41 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 1.1+ | 1.2− | 2004 03 28 | 704 | 1.2+ | 0.8+ | 2006 09 26 | 691 | 0.3− | 0.0 |
| 2001 09 23 | 704 | 0.5+ | 1.2− | 2004 03 28 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 691 | 0.4− | 0.1+ |
| 2001 09 23 | 704 | 0.3− | 0.8− | 2004 03 28 | 704 | 0.7+ | 1.5+ | 2006 09 27 | 704 | 0.7+ | 0.2− |
| 2001 10 14 | 704 | 0.0 | 0.1− | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.3− | 0.3+ | 2004 04 16 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.6+ |
| 2001 10 14 | 704 | 0.3+ | 1.0+ | 2004 04 16 | 644 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 0.7− | 0.6+ |
| 2001 10 15 | 704 | 0.1+ | 0.0 | 2004 04 20 | 691 | 0.6+ | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.0 |
| 2001 10 15 | 704 | 0.2+ | 0.8+ | 2004 04 20 | 691 | 0.7+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 704 | (1.1+ | 2.0+) | 2004 04 20 | 691 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2001 10 15 | 704 | 0.8+ | 0.7+ | 2004 04 20 | 704 | 0.5− | 1.3+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2001 10 15 | 704 | 0.0 | 0.8+ | 2004 04 20 | 704 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 1.1− | 0.5+ | 2004 04 20 | 704 | 1.2+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.4+ |
| 2001 11 11 | 704 | 0.0 | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.6− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 11 11 | 704 | 0.6+ | 0.2− | 2006 09 06 | 644 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.9+ | 0.3+ |
| 2001 11 11 | 704 | 0.5+ | 1.0− | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2001 12 09 | 704 | 0.7− | 0.6+ | 2006 09 14 | 703 | (1.8− | 0.0 ) | 2006 10 17 | 703 | 0.7+ | 0.8+ |
| 2001 12 09 | 704 | 1.1− | 0.5− | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 12 09 | 704 | 0.4− | 0.8− | 2006 09 14 | 703 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2001 12 09 | 704 | (0.2+ | 1.7−) | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2003 01 29 | 645 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2004 03 27 | 291 | 0.5− | 0.5+ | 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2004 03 27 | 291 | 0.1− | 0.2+ | 2006 09 16 | 644 | 0.2+ | 0.6+ | 2006 10 29 | 704 | 1.0− | 0.3− |
| 2004 03 27 | 291 | 0.6− | 0.2+ | 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 10 29 | 704 | 1.0− | 0.6+ |
| 2004 03 27 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 699 | 1.0− | 1.0+ | 2006 10 29 | 704 | 0.4− | 0.3+ |
| 2004 03 27 | 704 | 1.0+ | 0.0 | 2006 09 18 | 699 | (0.1− | 1.5+) | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 699 | 1.0+ | 0.4− | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 699 | 0.7+ | 0.7+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2004 03 28 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− |

**(140373)∗ 2001 TL$_{34}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.64429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19251190 | $\omega$ | 290.51274 | | −0.94492201 | +0.22267958 | |
| $a$ | 2.9705099 | $\Omega$ | 262.96042 | | −0.12684343 | −0.92475248 | |
| $e$ | 0.0666102 | $i$ | 13.98624 | | −0.30171697 | −0.30862057 | |
| $P$ | 5.12 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.1+ | 0.3− | 2002 01 06 | 644 | 0.4− | 0.4+ | 2005 08 29 | 644 | 0.0 | 0.4+ |
| 2001 10 14 | 704 | 0.9+ | 1.3− | 2002 01 06 | 644 | 0.2− | 0.4+ | 2005 08 29 | 644 | 0.2− | 0.3+ |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2002 01 14 | 704 | (0.4+ | 2.5+) | 2005 08 29 | 644 | 0.2− | 0.3+ |
| 2001 10 14 | 704 | 0.8− | 0.2+ | 2002 01 14 | 704 | (0.7− | 2.0+) | 2005 09 11 | 704 | (1.7+ | 0.1−) |
| 2001 10 15 | 704 | 0.6+ | 1.2− | 2002 01 14 | 704 | (0.3− | 1.8+) | 2005 09 11 | 704 | (0.0 | 1.8+) |
| 2001 10 15 | 704 | 0.0 | 0.2+ | 2002 01 14 | 704 | (0.2+ | 2.3+) | 2005 09 11 | 704 | (0.2− | 1.8+) |
| 2001 10 15 | 704 | 1.3− | 0.1− | 2002 01 14 | 704 | (0.4+ | 2.3+) | 2005 09 11 | 704 | 0.4− | 1.4+ |
| 2001 10 15 | 704 | 0.1+ | 0.3+ | 2003 02 06 | 644 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 2001 10 15 | 704 | 1.0− | 0.7− | 2003 02 06 | 644 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 1.1+ |
| 2001 11 11 | 704 | 0.4+ | 0.0 | 2003 02 06 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.8− | 0.2+ |
| 2001 11 11 | 704 | 0.0 | 0.1− | 2003 03 09 | 699 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.5+ |
| 2001 11 11 | 704 | 0.3− | 0.3+ | 2003 03 09 | 699 | 0.6− | 0.4+ | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2001 11 11 | 704 | 0.4+ | 0.4+ | 2003 03 09 | 699 | 0.1+ | 0.1− | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2001 11 11 | 704 | 0.6+ | 1.1+ | 2003 03 09 | 699 | 0.3+ | 0.4− | 2006 11 02 | G96 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.1− | 0.5+ | 2003 03 21 | 608 | 0.5− | 0.1− | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2001 11 12 | 704 | 0.1+ | 0.7− | 2003 03 21 | 608 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.2− | 0.9− | 2003 03 21 | 608 | 0.7− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 11 21 | 704 | (0.5+ | 2.1+) | 2003 03 29 | 699 | 1.3+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 1.0+ | 2003 03 29 | 699 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.3− | 0.0 | 2003 03 29 | 699 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 11 24 | 704 | (0.5− | 1.6+) | 2003 03 29 | 699 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.3− |
| 2001 11 24 | 704 | 0.0 | 1.1− | 2004 06 14 | 704 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.4− |
| 2001 11 24 | 704 | 0.6+ | 0.2− | 2004 06 14 | 704 | 0.5+ | 1.0− | 2006 11 15 | 703 | 0.9+ | 0.1+ |
| 2001 11 24 | 704 | (2.4+ | 0.9−) | 2004 06 14 | 704 | 0.3− | 1.0− | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2002 01 06 | 644 | 0.2− | 0.2+ | 2004 06 14 | 704 | 0.1+ | 0.7+ | 2006 11 15 | 703 | 0.5+ | 0.4− |

**(140374)∗ 2001 TM$_{36}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.44651 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17447515 | $\omega$ | 74.16557 | | −0.36144188 | −0.91857478 | |
| $a$ | 3.1718575 | $\Omega$ | 38.27042 | | +0.72571364 | −0.38485070 | |
| $e$ | 0.2532368 | $i$ | 14.96478 | | +0.58540541 | −0.09005724 | |
| $P$ | 5.65 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.5− | 0.5+ | 2001 12 14 | 704 | 0.7+ | 1.2+ | 2003 04 10 | 691 | 0.8+ | 0.3+ | |
| 1995 11 19 | 691 | 0.2− | 0.6+ | 2001 12 22 | 704 | 0.0 | 0.3− | 2003 04 25 | 699 | (1.2− | 1.7−) | |
| 1995 11 19 | 691 | 0.1− | 0.0 | 2001 12 22 | 704 | 0.1− | 0.3− | 2003 04 25 | 699 | 0.4− | 0.8− | |
| 2001 09 24 | 704 | 1.5+ | 0.4+ | 2001 12 22 | 704 | 0.1+ | 0.1− | 2003 04 25 | 699 | (0.4+ | 2.2−) | |
| 2001 09 24 | 704 | 0.3+ | 1.0− | 2001 12 22 | 704 | 0.4− | 0.6− | 2003 04 25 | 699 | 0.5− | 0.2− | |
| 2001 09 24 | 704 | 0.5− | 0.0 | 2001 12 22 | 704 | 0.2+ | 0.6− | 2003 04 28 | 691 | 0.3+ | 0.9+ | |
| 2001 09 24 | 704 | 0.2+ | 0.5− | 2003 03 14 | 097 | 0.1− | 0.3+ | 2003 04 28 | 691 | 0.3+ | 0.2+ | |
| 2001 09 24 | 704 | 0.4− | 0.3+ | 2003 03 14 | 097 | 0.6− | 0.3− | 2003 04 28 | 691 | 0.2+ | 0.4+ | |
| 2001 10 14 | 704 | 0.9− | 0.7− | 2003 03 14 | 097 | 0.1+ | 0.5+ | 2003 05 01 | 704 | 0.7+ | 0.1+ | |
| 2001 10 14 | 704 | (0.4− | 1.6−) | 2003 03 14 | 097 | 0.1+ | 0.7− | 2003 05 01 | 704 | 1.1+ | 0.0 | |
| 2001 10 14 | 704 | (0.2− | 1.6−) | 2003 03 14 | 608 | 0.0 | 1.2− | 2003 05 01 | 704 | 0.5+ | 0.4+ | |
| 2001 10 14 | 704 | 0.1− | 0.6− | 2003 03 14 | 608 | 0.4− | 1.2− | 2006 09 19 | 703 | 0.8− | 0.8+ | |
| 2001 10 14 | 704 | (0.7− | 1.7−) | 2003 03 14 | 608 | 0.0 | 1.0− | 2006 09 19 | 703 | (1.0+ | 2.3+) | |
| 2001 10 15 | 704 | 0.1+ | 1.0− | 2003 03 24 | 608 | 0.4− | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.5+ | |
| 2001 10 15 | 704 | 0.1− | 0.5− | 2003 03 24 | 608 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.8+ | |
| 2001 10 15 | 704 | 0.1− | 0.4− | 2003 03 24 | 608 | 0.0 | 0.3+ | 2006 09 26 | 703 | (1.7− | 0.1+) | |
| 2001 10 15 | 704 | 0.6− | 0.4− | 2003 03 29 | 699 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.1− | |
| 2001 10 15 | 704 | 0.1− | 1.1− | 2003 03 29 | 699 | 0.3− | 1.3+ | 2006 09 26 | 703 | 0.0 | 0.5+ | |
| 2001 10 21 | 704 | 0.3+ | 0.3+ | 2003 03 29 | 699 | 1.2− | 0.2− | 2006 09 26 | 703 | 0.5− | 0.0 | |
| 2001 10 21 | 704 | 1.0+ | 0.5+ | 2003 03 29 | 699 | 0.5− | 0.2+ | 2006 10 02 | 703 | 0.8− | 0.4+ | |
| 2001 10 21 | 704 | 0.1− | 0.5+ | 2003 03 31 | 699 | 0.4− | 0.3+ | 2006 10 02 | 703 | 0.5− | 0.7+ | |
| 2001 10 27 | 704 | 0.3+ | 0.5+ | 2003 03 31 | 699 | 0.6+ | 0.1+ | 2006 10 02 | 703 | 0.3+ | 0.6+ | |
| 2001 10 27 | 704 | 0.0 | 0.3+ | 2003 03 31 | 699 | (2.1− | 0.3−) | 2006 10 02 | 703 | 0.1+ | 0.5− | |
| 2001 10 27 | 704 | 0.3+ | 0.3+ | 2003 03 31 | 699 | 0.3+ | 0.2+ | 2006 10 02 | 703 | 0.4− | 0.7+ | |
| 2001 11 11 | 704 | 0.4− | 0.5+ | 2003 04 02 | 704 | 0.2+ | 0.9+ | 2006 10 02 | 703 | 0.0 | 0.5+ | |
| 2001 11 11 | 704 | 0.2− | 1.1+ | 2003 04 02 | 704 | 0.8+ | 0.3+ | 2006 10 02 | 703 | 1.1− | 0.7+ | |
| 2001 11 11 | 704 | 0.2+ | 0.7+ | 2003 04 02 | 704 | 0.8+ | 1.0+ | 2006 10 02 | 703 | 0.8− | 0.4+ | |
| 2001 11 11 | 704 | 0.2− | 0.9+ | 2003 04 02 | 704 | 0.8+ | 1.5+ | 2006 10 16 | 703 | 0.3− | 0.4+ | |
| 2001 11 11 | 704 | (2.3+ | 1.4−) | 2003 04 02 | 608 | 0.3+ | 1.5+ | 2006 10 16 | 703 | 0.3− | 0.8+ | |
| 2001 11 21 | 704 | 0.3+ | 0.3+ | 2003 04 02 | 608 | (0.7+ | 1.6+) | 2006 10 16 | 703 | 0.3+ | 0.5+ | |
| 2001 11 21 | 704 | 0.3+ | 0.2+ | 2003 04 02 | 608 | 0.8+ | 1.5+ | 2006 10 16 | 703 | 0.3+ | 1.1+ | |
| 2001 11 21 | 704 | 0.9+ | 0.2− | 2003 04 08 | 704 | 0.2− | 0.8+ | 2006 10 22 | 703 | 0.3− | 0.5+ | |
| 2001 11 21 | 704 | 0.3− | 0.3− | 2003 04 08 | 704 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.4+ | |
| 2001 12 09 | 704 | 0.6− | 0.8+ | 2003 04 08 | 704 | 0.8+ | 0.5− | 2006 10 22 | 703 | 0.1− | 0.1− | |
| 2001 12 09 | 704 | 0.6− | 0.2+ | 2003 04 08 | 704 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.2+ | |
| 2001 12 09 | 704 | 0.4− | 0.5+ | 2003 04 09 | 644 | 0.7− | 0.3+ | 2006 10 22 | 703 | 1.3− | 0.9+ | |
| 2001 12 09 | 704 | 0.2− | 0.2+ | 2003 04 09 | 644 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.4− | 0.2+ | |
| 2001 12 09 | 704 | 0.2− | 0.1+ | 2003 04 09 | 644 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.7+ | |
| 2001 12 14 | 704 | 0.2− | 1.1+ | 2003 04 10 | 691 | 0.5+ | 0.3+ | | | | | |
| 2001 12 14 | 704 | 0.6− | 0.2+ | 2003 04 10 | 691 | 0.7+ | 0.3+ | | | | | |

**(140375)∗ 2001 TN$_{36}$ = 1998 HO$_{36}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20448)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.17905 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18204833 | $\omega$ | 71.98103 | | +0.00709094 | −0.99856755 | |
| $a$ | 3.0832702 | $\Omega$ | 17.86436 | | +0.83957980 | −0.02286362 | |
| $e$ | 0.0740600 | $i$ | 9.95534 | | +0.54319009 | +0.04837462 | |
| $P$ | 5.41 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | 0.1− | 0.4+ | 2001 12 22 | 704 | 0.5+ | 0.0 | 2006 10 03 | 704 | 0.2+ | 0.4+ | |
| 1998 03 22 | 704 | 0.7+ | 0.1− | 2001 12 22 | 704 | 0.5− | 0.3− | 2006 10 03 | 704 | 0.1− | 0.0 | |
| 1998 03 22 | 704 | 1.3− | 1.3− | 2001 12 22 | 704 | 0.1− | 0.3− | 2006 10 03 | 691 | 0.3− | 0.3+ | |
| 1998 03 22 | 704 | (5.3− | 0.5−) | 2002 01 08 | 704 | 0.7+ | 0.1+ | 2006 10 03 | 691 | 0.3− | 0.3+ | |
| 1998 03 29 | 704 | 1.3+ | 1.0− | 2002 01 08 | 704 | 0.6+ | 0.2− | 2006 10 03 | 691 | 0.3− | 0.3+ | |
| 1998 03 29 | 704 | 0.4− | 0.0 | 2002 01 08 | 704 | 0.3+ | 0.5− | 2006 10 12 | 691 | 0.1− | 0.1− | |
| 1998 03 29 | 704 | 0.1− | 0.2− | 2002 01 08 | 704 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.1− | |
| 1998 03 29 | 704 | 1.5+ | 0.2− | 2002 01 08 | 704 | 0.1+ | 1.3− | 2006 10 12 | 691 | 0.2+ | 0.4− | |
| 1998 03 29 | 704 | (1.7− | 2.2−) | 2003 02 09 | 608 | 0.3+ | 0.4− | 2006 10 16 | 104 | 0.2− | 0.2− | |
| 1998 04 18 | 704 | 0.4− | 0.3+ | 2003 02 09 | 608 | 0.8+ | 0.1− | 2006 10 16 | 104 | 0.4+ | 0.1+ | |
| 1998 04 18 | 704 | 0.3− | 0.5+ | 2003 02 09 | 608 | 0.3+ | 0.6− | 2006 10 16 | 104 | 0.1− | 0.4+ | |
| 1998 04 18 | 704 | 1.6+ | 0.2− | 2003 02 28 | 704 | 0.4− | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.1− | |
| 1998 04 18 | 704 | 1.0− | 0.6− | 2003 02 28 | 704 | 0.2+ | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | |
| 1998 04 20 | 704 | 0.3− | 0.1− | 2003 02 28 | 704 | 0.4− | 1.4+ | 2006 10 16 | 691 | 0.0 | 0.1− | |
| 1998 04 20 | 704 | 0.6+ | 1.7+ | 2003 02 28 | 704 | 0.4− | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.2− | |
| 1998 04 20 | 704 | 1.5− | 1.4+ | 2003 02 28 | 704 | 0.2− | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.1− | |
| 1998 04 20 | 704 | (0.8+ | 2.3−) | 2003 03 26 | 691 | (0.2+ | 2.0+) | 2006 10 19 | 644 | 0.3− | 0.5− | |
| 1998 04 22 | 704 | 0.1+ | 1.3+ | 2003 03 26 | 691 | (0.0 | 1.9+) | 2006 10 29 | 691 | 0.1+ | 0.2+ | |
| 1998 04 22 | 704 | 0.5− | 0.6− | 2003 03 26 | 691 | (0.3+ | 2.0+) | 2006 10 29 | 691 | 0.1+ | 0.1+ | |
| 1998 04 22 | 704 | 1.1− | 0.9− | 2003 03 28 | 691 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 0.3+ | 0.6+ | |
| 1998 04 22 | 704 | 0.7+ | 0.1− | 2003 03 28 | 691 | 0.4+ | 0.5+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | |
| 1998 04 22 | 704 | (4.4− | 1.9−) | 2003 03 28 | 691 | 0.5+ | 0.3+ | 2006 10 29 | 704 | 0.3− | 0.1+ | |
| 2001 09 24 | 704 | 0.7− | 0.5+ | 2003 03 30 | 645 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.5+ | |
| 2001 09 24 | 704 | 0.1− | 0.1− | 2003 03 30 | 645 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.1− | 0.0 | |
| 2001 09 24 | 704 | 0.2+ | 0.6+ | 2003 04 09 | 608 | 0.6+ | 0.0 | 2006 10 29 | 704 | 0.2− | 0.0 | |
| 2001 10 14 | 704 | 0.1+ | 0.8− | 2003 04 09 | 608 | 0.4+ | 0.2+ | 2006 11 07 | 644 | 0.4− | 0.0 | |
| 2001 10 14 | 704 | 0.4− | 0.7− | 2003 04 09 | 608 | 0.9+ | 0.7+ | 2006 11 07 | 644 | 0.5− | 0.1− | |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2003 04 10 | 691 | 0.3+ | 0.2+ | 2006 11 07 | 644 | 0.4− | 0.1+ | |
| 2001 10 14 | 704 | 0.4+ | 0.7+ | 2003 04 10 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1+ | |
| 2001 10 14 | 704 | 0.2− | 0.1− | 2003 04 10 | 691 | 0.4+ | 0.1− | 2006 11 11 | 691 | 1.4+ | 1.0+ | |
| 2001 10 15 | 704 | 0.5+ | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1− | |
| 2001 10 15 | 704 | 0.3+ | 0.7+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.6− | 1.2− | |
| 2001 10 15 | 704 | 0.6+ | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.8− | 0.1− | |
| 2001 10 15 | 704 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.3− | 1.0− | |
| 2001 10 15 | 704 | 0.2+ | 0.6+ | 2006 07 25 | G96 | 0.3− | 0.6− | 2006 11 14 | 703 | 0.1− | 0.2− | |
| 2001 10 27 | 704 | 0.2− | 0.4+ | 2006 07 25 | G96 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.4+ | |
| 2001 10 27 | 704 | 0.1+ | 0.3− | 2006 07 25 | G96 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.0 | |
| 2001 10 27 | 704 | 0.4− | 0.0 | 2006 07 25 | G96 | 0.3− | 0.5− | 2006 11 16 | 691 | 0.3− | 0.5− | |
| 2001 10 27 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.5+ | 1.1− | 2006 11 18 | 704 | 0.9+ | 0.2+ | |
| 2001 10 27 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.5− | 2006 11 18 | 704 | 1.0+ | 0.1− | |
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.2− | 1.0− | |
| 2001 11 11 | 704 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.3+ | |
| 2001 11 11 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 704 | 0.5− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.3+ | |
| 2001 11 11 | 704 | 0.3− | 0.2− | 2006 09 20 | 699 | 0.2− | 0.9+ | 2006 11 19 | 704 | 0.5− | 0.3− | |
| 2001 11 11 | 704 | 0.7− | 0.2− | 2006 09 20 | 699 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.1− | |
| 2001 11 21 | 704 | 1.1+ | 0.3− | 2006 09 22 | 224 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.4− | |
| 2001 11 21 | 704 | 0.6− | 1.1− | 2006 09 22 | 224 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.3− | |
| 2001 11 21 | 704 | 1.4− | 0.4− | 2006 09 22 | 224 | 0.0 | 0.5− | 2006 11 20 | 691 | 0.1− | 0.2+ | |
| 2001 11 21 | 704 | 0.3− | 0.6− | 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1− | |
| 2001 12 09 | 704 | 0.5+ | 0.6− | 2006 09 25 | 691 | 0.4+ | 0.8+ | 2006 11 20 | 691 | 0.2− | 0.0 | |
| 2001 12 09 | 704 | 0.7+ | 0.8− | 2006 09 25 | 691 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.8− | |
| 2001 12 09 | 704 | 0.3− | 0.7− | 2006 09 27 | 291 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.7− | 0.5− | |
| 2001 12 09 | 704 | 0.4+ | 1.5− | 2006 09 27 | 291 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.2− | |
| 2001 12 14 | 704 | 0.8+ | 0.4− | 2006 09 27 | 291 | 0.2− | 0.3+ | 2006 11 22 | 704 | (0.6− | 1.8+) | |
| 2001 12 14 | 704 | 0.3− | 0.4− | 2006 09 29 | 691 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.2− | |
| 2001 12 14 | 704 | 0.1+ | 0.2− | 2006 09 29 | 691 | 0.6− | 0.3+ | 2006 11 28 | 704 | 0.3+ | 0.1+ | |
| 2001 12 14 | 704 | 0.3+ | 0.4− | 2006 09 29 | 691 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.2+ | |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.6+ | 0.3− | |
| 2001 12 22 | 704 | 0.4+ | 0.1+ | 2006 10 03 | 704 | 0.1− | 0.6+ | | | | | |
| 2001 12 22 | 704 | 0.0 | 0.3− | 2006 10 03 | 704 | 0.5+ | 0.2+ | | | | | |

**(140376)∗ 2001 TE$_{37}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.07821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18860488 | $\omega$ | 0.90329 | | +0.78613303 | −0.60272994 | |
| $a$ | 3.0113929 | $\Omega$ | 37.29397 | | +0.56563139 | +0.61240360 | |
| $e$ | 0.1236978 | $i$ | 13.04766 | | +0.24911039 | +0.51154516 | |
| $P$ | 5.23 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | (1.9− | 1.3−) | 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1− | | | |
| 2001 10 14 | 704 | 0.3− | 0.5− | 2004 04 28 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 | | | |
| 2001 10 14 | 704 | 0.4− | 0.7− | 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.1− | | | |
| 2001 10 14 | 704 | 0.5− | 0.3− | 2004 05 12 | E12 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.1− | | | |
| 2001 10 15 | 704 | (0.2+ | 2.0−) | 2004 05 12 | E12 | 0.6+ | 1.3+ | 2006 11 10 | 644 | 0.1+ | 0.0 | | | |
| 2001 10 15 | 704 | 0.1− | 0.5− | 2004 05 12 | E12 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.7− | 0.3− | | | |
| 2001 10 15 | 704 | 0.3− | 0.4− | 2004 05 12 | E12 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.5− | | | |
| 2001 10 15 | 704 | 0.3− | 0.4+ | 2004 05 20 | E12 | 0.0 | 0.9− | 2006 11 11 | 703 | 0.6− | 0.4− | | | |
| 2001 10 15 | 704 | 0.5− | 0.1+ | 2004 05 20 | E12 | 0.2+ | 1.4+ | 2006 11 11 | 703 | 0.7− | 0.4− | | | |
| 2001 10 27 | 704 | 1.4+ | 0.5+ | 2004 05 20 | E12 | (1.7− | 0.5−) | 2006 11 13 | 644 | 0.1+ | 0.2+ | | | |
| 2001 10 27 | 704 | (0.8+ | 1.6+) | 2004 05 20 | E12 | 0.9+ | 0.9− | 2006 11 13 | 644 | 0.0 | 0.1+ | | | |
| 2001 10 27 | 704 | (0.1− | 1.6−) | 2005 07 05 | E12 | 0.6− | 1.2+ | 2006 11 13 | 644 | 0.3+ | 0.1− | | | |
| 2001 10 27 | 704 | 0.9+ | 0.8+ | 2005 07 05 | E12 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.4− | | | |
| 2001 10 27 | 704 | 0.2− | 1.5− | 2005 07 05 | E12 | 0.9+ | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.3− | | | |
| 2001 10 27 | 704 | 0.2− | 1.1− | 2005 07 05 | E12 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.4− | | | |
| 2001 10 27 | 704 | 1.0+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.4− | | | |
| 2001 11 11 | 704 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 11 14 | G96 | 0.1+ | 0.3− | | | |
| 2001 11 11 | 704 | 0.3− | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.4+ | 0.3− | | | |
| 2001 11 11 | 704 | 0.3− | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.4− | | | |
| 2001 11 11 | 704 | 0.2+ | 1.0+ | 2006 09 26 | H07 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.3+ | 0.0 | | | |
| 2001 11 11 | 704 | 0.4− | 0.7+ | 2006 09 26 | H07 | 0.7+ | 0.3+ | 2006 11 15 | 704 | 0.7+ | 0.5+ | | | |
| 2001 12 09 | 704 | 0.1+ | 0.4− | 2006 09 26 | H07 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 0.5+ | 0.9+ | | | |
| 2001 12 09 | 704 | 0.1− | 0.4− | 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.6+ | | | |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.5+ | | | |
| 2001 12 09 | 704 | 0.2+ | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 1.0− | 0.0 | | | |
| 2001 12 14 | 704 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.8+ | | | |
| 2001 12 14 | 704 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 1.3− | 0.4+ | | | |
| 2001 12 14 | 704 | 0.0 | 0.7+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.8+ | | | |
| 2001 12 14 | 704 | 0.1− | 0.4+ | 2006 10 21 | 704 | 1.4− | 0.8− | 2006 11 16 | 704 | 1.0− | 0.2+ | | | |
| 2001 12 14 | 704 | 0.4− | 0.5+ | 2006 10 21 | 704 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.3+ | | | |
| 2001 12 14 | 704 | 0.3+ | 0.5− | 2006 10 21 | 704 | (0.4− | 1.7+) | 2006 11 16 | 704 | 0.9− | 0.2+ | | | |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 704 | 1.0− | 0.8− | 2006 11 16 | 704 | 0.1− | 0.4+ | | | |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 1.2− | 0.2+ | | | |
| 2001 12 22 | 704 | 0.5− | 1.2− | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.5+ | | | |
| 2001 12 22 | 704 | 0.4− | 1.4− | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.5+ | | | |
| 2001 12 22 | 704 | 0.0 | 1.3− | 2006 10 27 | 703 | 0.6− | 0.4− | 2006 11 17 | 704 | 0.2− | 0.7+ | | | |
| 2001 12 22 | 704 | 0.3− | 1.1− | 2006 10 27 | 703 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.7+ | | | |
| 2001 12 22 | 704 | 0.1− | 1.4− | 2006 10 27 | 703 | 0.6− | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.7+ | | | |
| 2002 01 07 | 704 | 1.4+ | 0.2− | 2006 10 27 | 703 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.2− | | | |
| 2002 01 07 | 704 | 0.8+ | 0.4− | 2006 10 29 | 704 | 0.1− | 1.1+ | 2006 11 19 | 704 | 0.7+ | 0.1− | | | |
| 2002 01 07 | 704 | 1.3+ | 0.7− | 2006 10 29 | 704 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.1− | | | |
| 2002 01 07 | 704 | 0.5+ | 0.9− | 2006 10 29 | 704 | 0.2− | 1.3+ | 2006 11 19 | 704 | 0.7+ | 0.1− | | | |
| 2003 03 08 | 644 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.4+ | | | |
| 2003 03 08 | 644 | 0.4+ | 0.6+ | 2006 10 29 | 704 | 1.5− | 0.3− | 2006 11 22 | 704 | 0.3− | 0.5+ | | | |
| 2003 03 08 | 644 | 0.2+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.6− | 2006 11 22 | 704 | 1.1− | 0.3+ | | | |
| 2003 03 23 | 644 | 0.6+ | 0.7+ | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 22 | 704 | 0.2− | 0.6+ | | | |
| 2003 03 23 | 644 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.5− | 0.0 | | | |
| 2003 03 23 | 644 | 0.3+ | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.6− | 2006 11 22 | 704 | 1.0− | 0.2− | | | |
| 2003 03 26 | 704 | 0.4+ | 0.9− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.2+ | 1.2+ | | | |
| 2003 03 26 | 704 | 0.7+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 12 01 | 704 | 0.3− | 1.6+ | | | |
| 2003 03 26 | 704 | 0.6+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.1+ | 0.3− | | | |
| 2003 03 26 | 704 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.0 | | | | | | | |

**(140377)∗ 2001 TN$_{37}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.43009 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18800306 | $\omega$ | 70.73225 | | +0.10878684 | −0.99333848 |
| $a$ | 3.0178161 | $\Omega$ | 13.19564 | | +0.83806021 | +0.07108770 |
| $e$ | 0.0671189 | $i$ | 9.58259 | | +0.53462183 | +0.09069286 |
| $P$ | 5.24 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | 0.2+ | 0.1+ | 2001 12 22 | 704 | 0.3− | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.2+ | | | |
| 1998 03 22 | 704 | 0.6+ | 1.4− | 2001 12 22 | 704 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.3− | 0.3+ | | | |
| 1998 03 22 | 704 | (2.2− | 0.6+) | 2002 01 07 | 704 | 0.1+ | 0.5− | 2006 10 19 | 703 | 0.0 | 0.0 | | | |
| 1998 03 22 | 704 | (3.0− | 1.0−) | 2002 01 07 | 704 | 0.1− | 0.8− | 2006 10 19 | 703 | 0.4+ | 0.4− | | | |
| 1998 03 29 | 704 | 0.5+ | 0.7+ | 2002 01 07 | 704 | 0.1− | 0.4− | 2006 10 27 | 703 | 0.2− | 0.1+ | | | |
| 1998 03 29 | 704 | 0.7− | 0.4− | 2002 01 07 | 704 | 0.2+ | 1.0− | 2006 10 27 | 703 | 0.0 | 0.1+ | | | |
| 1998 03 29 | 704 | 1.2− | 0.5− | 2002 02 08 | 704 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.0 | | | |
| 1998 03 29 | 704 | (0.6− | 3.0−) | 2002 02 08 | 704 | 0.5− | 0.6− | 2006 10 27 | 703 | 0.2− | 0.1− | | | |
| 1998 04 20 | 704 | 0.1− | 1.2− | 2002 02 08 | 704 | 0.5− | 0.2+ | 2006 11 02 | 703 | 0.4+ | 0.3− | | | |
| 1998 04 20 | 704 | 0.4− | 0.5+ | 2003 02 22 | 644 | 0.4− | 0.1− | 2006 11 02 | 703 | 0.2+ | 0.4− | | | |
| 1998 04 20 | 704 | 0.8− | 0.5− | 2003 02 22 | 644 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.1+ | | | |
| 1998 04 20 | 704 | 0.6− | 0.1+ | 2003 02 22 | 644 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.5+ | | | |
| 2001 10 14 | 704 | 1.4+ | 0.3+ | 2003 03 06 | 704 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.0 | | | |
| 2001 10 14 | 704 | 1.1+ | 0.4+ | 2003 03 06 | 704 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.7− | 0.0 | | | |
| 2001 10 14 | 704 | 1.1+ | 1.2+ | 2003 03 06 | 704 | 0.3− | 1.0+ | 2006 11 11 | 703 | 0.3+ | 0.1− | | | |
| 2001 10 14 | 704 | (1.9+ | 0.7+) | 2003 03 09 | 704 | 0.9+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.7+ | | | |
| 2001 10 15 | 704 | 0.0 | 0.9+ | 2003 03 09 | 704 | 0.2+ | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.0 | | | |
| 2001 10 15 | 704 | 0.2+ | 0.9+ | 2003 03 09 | 704 | 0.6+ | 0.3+ | 2006 11 13 | 644 | 0.2+ | 0.1+ | | | |
| 2001 10 15 | 704 | 0.2− | 1.3+ | 2003 03 09 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.5+ | 0.4+ | | | |
| 2001 10 15 | 704 | (0.5+ | 1.6+) | 2003 03 09 | 704 | 0.4+ | 1.2+ | 2006 11 14 | 703 | 0.5+ | 0.1+ | | | |
| 2001 10 15 | 704 | 0.5+ | 1.4+ | 2003 03 11 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.2− | | | |
| 2001 10 21 | 704 | 0.3+ | 0.2+ | 2003 03 11 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.2+ | 0.2− | | | |
| 2001 10 21 | 704 | 0.6− | 0.3+ | 2003 03 11 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.1− | | | |
| 2001 10 21 | 704 | 0.9+ | 0.1− | 2003 03 26 | 644 | 0.1+ | 1.1− | 2006 11 16 | 704 | (0.6+ | 2.1+) | | | |
| 2001 12 09 | 704 | 0.3− | 0.7− | 2003 03 26 | 644 | 0.2+ | 0.8− | 2006 11 16 | 704 | 0.1+ | 1.2+ | | | |
| 2001 12 09 | 704 | 0.2− | 0.9− | 2003 03 26 | 644 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.1− | 0.3− | | | |
| 2001 12 09 | 704 | (1.6− | 0.3+) | 2003 03 26 | 699 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.5− | 0.1− | | | |
| 2001 12 09 | 704 | 0.2− | 0.5− | 2003 03 26 | 699 | 1.4− | 0.5− | 2006 11 22 | 703 | 0.1− | 0.4− | | | |
| 2001 12 14 | 704 | 1.3− | 0.2+ | 2003 03 26 | 699 | 0.7− | 0.7− | 2006 11 22 | 703 | 0.2− | 0.1− | | | |
| 2001 12 14 | 704 | 0.2− | 0.7+ | 2003 03 26 | 699 | 0.6+ | 0.1− | 2006 11 22 | 703 | 0.3− | 0.3− | | | |
| 2001 12 14 | 704 | 0.2+ | 0.7+ | 2003 04 07 | 691 | 0.6+ | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.5− | | | |
| 2001 12 14 | 704 | 1.0− | 0.3− | 2003 04 07 | 691 | 0.2+ | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.2− | | | |
| 2001 12 14 | 704 | 0.0 | 0.8+ | 2003 04 07 | 691 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.2− | | | |
| 2001 12 17 | 704 | 1.5+ | 1.1− | 2006 08 30 | 704 | 0.3− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3− | | | |
| 2001 12 17 | 704 | 1.4+ | 0.1− | 2006 08 30 | 704 | 1.3− | 0.7+ | 2006 11 28 | 704 | 0.6− | 0.6+ | | | |
| 2001 12 17 | 704 | (2.0+ | 1.1−) | 2006 08 30 | 704 | 0.2− | 0.7+ | 2006 11 28 | 704 | 0.1+ | 0.8− | | | |
| 2001 12 17 | 704 | (1.5+ | 1.9−) | 2006 09 19 | 703 | 0.2− | 0.8+ | 2006 11 28 | 704 | 0.6+ | 0.5− | | | |
| 2001 12 22 | 704 | 0.2− | 0.8− | 2006 09 19 | 703 | 0.6+ | 0.3− | 2006 11 28 | 704 | 0.1− | 0.4− | | | |
| 2001 12 22 | 704 | 0.3− | 1.0− | 2006 09 19 | 703 | 0.2− | 0.1− | | | | | | | |
| 2001 12 22 | 704 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.2+ | | | | | | | |

**(140378)∗ 2001 TQ$_{39}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.09041 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17906252 | $\omega$ | 114.49571 | | −0.87164765 | −0.45235171 |
| $a$ | 3.1174506 | $\Omega$ | 39.37201 | | +0.26720622 | −0.76132274 |
| $e$ | 0.1786131 | $i$ | 17.30577 | | +0.41089075 | −0.46450579 |
| $P$ | 5.50 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.1− | 0.1+ | 2003 04 10 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | | |
| 2000 09 26 | 645 | 0.1− | 0.1+ | 2003 04 20 | 608 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.0 | | | |
| 2001 10 14 | 704 | 0.2+ | 1.4− | 2003 04 20 | 608 | 0.4− | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.2+ | | | |
| 2001 10 14 | 704 | 0.3+ | 0.7− | 2003 04 20 | 608 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ | | | |
| 2001 10 14 | 704 | 0.4+ | 1.0− | 2003 04 26 | 704 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.4+ | | | |
| 2001 10 14 | 704 | 0.1+ | 0.6− | 2003 04 26 | 704 | (2.4+ | 3.6−) | 2006 10 21 | 644 | 0.3+ | 0.3+ | | | |
| 2001 10 15 | 704 | 0.6− | 0.5− | 2003 04 26 | 704 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.2+ | | | |
| 2001 10 15 | 704 | 0.5− | 0.8− | 2003 04 26 | 704 | (2.3+ | 3.1−) | 2006 10 22 | 691 | 0.2− | 0.2+ | | | |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2003 04 26 | 704 | 1.0− | 0.2+ | 2006 10 22 | 683 | 0.8+ | 1.3− | | | |
| 2001 11 11 | 704 | 1.0+ | 1.3− | 2003 04 26 | 704 | (1.8+ | 2.3−) | 2006 10 22 | 691 | 0.3− | 0.4+ | | | |
| 2001 11 11 | 704 | 0.2+ | 1.0− | 2003 04 26 | 704 | 0.7+ | 0.1− | 2006 10 22 | 683 | 0.7+ | 1.3− | | | |
| 2001 11 11 | 704 | (1.1+ | 2.4−) | 2003 04 26 | 704 | (1.8+ | 3.2−) | 2006 10 22 | 683 | 0.2− | 1.4+ | | | |
| 2001 11 11 | 704 | 1.2+ | 0.4− | 2003 04 26 | 704 | 0.9− | 0.6+ | 2006 10 23 | 683 | (1.9− | 1.8−) | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2003 04 26 | 704 | (1.9+ | 3.8−) | 2006 10 23 | 683 | 0.5− | 0.1+ |
| 2001 12 09 | 704 | 0.4− | 0.5+ | 2003 04 30 | 683 | 0.3− | 0.6− | 2006 10 27 | 683 | (2.1− | 1.4−) |
| 2001 12 09 | 704 | 0.4− | 0.2+ | 2003 04 30 | 683 | 0.5+ | 0.5+ | 2006 10 27 | 683 | (1.9− | 2.5−) |
| 2001 12 09 | 704 | 1.0− | 0.4+ | 2003 04 30 | 683 | 1.1− | 1.3− | 2006 10 28 | 704 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | 0.4− | 0.4+ | 2003 05 01 | 683 | 0.4+ | 0.8+ | 2006 10 28 | 683 | 1.2+ | 0.2+ |
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2003 05 01 | 683 | 0.1+ | 0.3− | 2006 10 28 | 704 | (0.6− | 1.7−) |
| 2001 12 19 | 704 | 0.5+ | 0.0 | 2003 05 01 | 704 | 0.8+ | 0.6− | 2006 10 28 | 683 | 0.9+ | 0.3+ |
| 2001 12 19 | 704 | 0.6+ | 0.2+ | 2003 05 01 | 683 | 0.5+ | 0.3− | 2006 10 28 | 704 | 0.8− | 1.0+ |
| 2001 12 19 | 704 | 0.5+ | 0.2− | 2003 05 01 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 683 | 0.7+ | 0.1− |
| 2001 12 19 | 704 | 0.8+ | 0.3+ | 2003 05 01 | 704 | 0.2− | 0.0 | 2006 10 28 | 704 | 0.2+ | 0.2+ |
| 2001 12 22 | 704 | 0.3+ | 0.5− | 2003 05 01 | 704 | 0.1− | 0.7− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2001 12 22 | 704 | 0.0 | 0.6− | 2003 05 01 | 704 | (0.2− | 2.2−) | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 12 22 | 704 | 0.1− | 0.3− | 2003 05 02 | 691 | 0.4− | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2001 12 22 | 704 | 0.2+ | 0.1− | 2003 05 02 | 691 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2001 12 22 | 704 | 0.1− | 1.1− | 2003 05 02 | 691 | 0.3− | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 2002 01 07 | 704 | 0.4+ | 0.1+ | 2003 05 06 | 703 | 0.3+ | 0.0 | 2006 11 09 | 691 | 0.4− | 0.1− |
| 2002 01 07 | 704 | 0.3− | 1.0+ | 2003 05 06 | 703 | 1.1+ | 0.8+ | 2006 11 10 | 683 | 0.6− | 0.6− |
| 2002 01 07 | 704 | (2.7− | 2.9+) | 2003 05 06 | 703 | 0.6+ | 0.3− | 2006 11 10 | 683 | 0.0 | 1.0− |
| 2003 01 30 | 704 | 1.0− | 0.2+ | 2003 05 06 | 703 | 0.2+ | 0.4− | 2006 11 10 | 683 | 1.0+ | 0.4+ |
| 2003 01 30 | 704 | 0.9− | 0.5+ | 2003 05 07 | 608 | 0.9+ | 0.6− | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2003 01 30 | 704 | 0.3− | 0.2− | 2003 05 07 | 608 | 0.8+ | 1.1− | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2003 01 30 | 704 | (1.1− | 2.2−) | 2003 05 07 | 608 | 1.2+ | 0.5− | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2003 01 30 | 704 | 0.1+ | 0.4− | 2003 05 08 | 683 | 0.9+ | 1.4+ | 2006 11 11 | 683 | 0.8+ | 0.8− |
| 2003 03 03 | 704 | 0.4+ | 0.6+ | 2003 05 08 | 683 | 0.7+ | 0.4+ | 2006 11 11 | 683 | 1.0+ | 1.0− |
| 2003 03 03 | 704 | 0.3+ | 0.4+ | 2003 05 08 | 683 | 1.1+ | 0.1− | 2006 11 11 | 683 | (2.2+ | 0.3−) |
| 2003 03 03 | 704 | 0.8+ | 0.2+ | 2003 05 08 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2003 03 03 | 704 | 0.3+ | 0.3+ | 2003 05 08 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2003 03 03 | 704 | 0.7− | 0.6+ | 2003 05 08 | 704 | 0.7+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2003 03 09 | 704 | 1.1+ | 0.0 | 2003 05 08 | 704 | 0.7+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2003 03 09 | 704 | 0.2+ | 0.3+ | 2003 05 08 | 704 | 0.3− | 0.6+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2003 03 09 | 704 | 0.5+ | 0.5+ | 2003 05 30 | 699 | 0.9− | 1.5+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2003 03 09 | 704 | 0.6+ | 0.1+ | 2003 05 30 | 699 | 1.4+ | 0.2+ | 2006 11 13 | 691 | 0.6− | 0.1+ |
| 2003 03 09 | 704 | 0.6+ | 0.1− | 2003 05 30 | 699 | 0.4− | 0.4+ | 2006 11 13 | 683 | 0.3+ | 1.1− |
| 2003 03 31 | 699 | 0.8− | 0.0 | 2003 05 30 | 699 | 0.8− | 0.7+ | 2006 11 13 | 683 | 0.5+ | 0.1+ |
| 2003 03 31 | 699 | 0.8− | 0.2+ | 2003 06 16 | 644 | 0.1+ | 0.7+ | 2006 11 13 | 683 | 0.7− | 0.6− |
| 2003 03 31 | 699 | 0.3− | 0.2+ | 2003 06 16 | 644 | 0.2+ | 0.6+ | 2006 11 14 | 683 | (0.5+ | 2.4−) |
| 2003 03 31 | 699 | 0.5− | 0.4+ | 2003 06 16 | 644 | 0.2+ | 0.7+ | 2006 11 14 | 683 | (0.7− | 1.9−) |
| 2003 03 31 | 704 | 0.1+ | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 14 | 683 | 1.0− | 0.3+ |
| 2003 03 31 | 704 | 0.0 | 1.2+ | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.4− |
| 2003 03 31 | 704 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.9+ |
| 2003 03 31 | 704 | 0.1− | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.4+ |
| 2003 04 01 | 704 | 0.6+ | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2003 04 01 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.5+ | 2006 11 18 | 704 | 0.6− | 0.7+ |
| 2003 04 01 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 11 18 | 704 | (0.2− | 1.9+) |
| 2003 04 01 | 704 | 0.9+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2003 04 01 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 683 | 1.5− | 0.9− | 2006 11 18 | 704 | 0.6+ | 1.4+ |
| 2003 04 05 | 608 | 0.6+ | 0.6− | 2006 10 16 | 683 | (1.9− | 3.1−) | 2006 11 18 | 704 | 0.6− | 1.1+ |
| 2003 04 05 | 608 | 0.4+ | 0.9− | 2006 10 16 | 683 | 1.3− | 1.3− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2003 04 05 | 608 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.9+ |
| 2003 04 09 | 704 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.2+ |
| 2003 04 09 | 704 | 0.9+ | 0.4+ | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2003 04 09 | 704 | 0.6+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2003 04 09 | 704 | 0.5+ | 0.5+ | 2006 10 17 | 683 | 0.7+ | 0.6+ | 2006 11 22 | 683 | 1.0− | 0.3− |
| 2003 04 09 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 683 | 0.4+ | 0.4− | 2006 11 22 | 683 | (1.1+ | 1.9−) |
| 2003 04 10 | 704 | 0.3+ | 0.1− | 2006 10 17 | 683 | 1.3+ | 0.4+ | 2006 11 22 | 683 | 0.9− | 0.6− |
| 2003 04 10 | 704 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 23 | 683 | 1.1− | 1.0− |
| 2003 04 10 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 23 | 683 | (1.3− | 3.2−) |
| 2003 04 10 | 704 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.4+ | 2006 11 23 | 683 | (0.9− | 2.0−) |

**(140379)∗ 2001 TD$_{42}$ = 2000 SQ$_{311}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22878)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.34302 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16996913 | $\omega$ | 179.22602 | | −0.10265718 | | −0.92633769 |
| $a$ | 3.2276716 | $\Omega$ | 276.61290 | | +0.91066313 | | +0.05906708 |
| $e$ | 0.0959248 | $i$ | 21.39919 | | +0.40019267 | | −0.37203437 |
| $P$ | 5.80 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 0.2− | 0.2− | 2001 12 18 | 644 | 0.0 | 0.3+ | 2002 02 09 | 704 | 0.0 | 0.1− |
| 2000 09 27 | 704 | 0.7− | 0.1+ | 2001 12 18 | 644 | 0.1+ | 0.3+ | 2002 02 11 | 704 | 0.3+ | 0.0 |
| 2000 09 27 | 704 | 0.9+ | 0.1− | 2001 12 18 | 704 | 0.4+ | 0.3+ | 2002 02 11 | 704 | 0.4+ | 0.1+ |
| 2000 09 27 | 704 | 1.1+ | 0.9− | 2001 12 18 | 704 | 0.6− | 0.3+ | 2002 02 11 | 704 | 0.5+ | 0.5− |
| 2000 09 27 | 704 | 0.5− | 0.6− | 2001 12 18 | 704 | 0.3+ | 0.2+ | 2002 02 11 | 704 | 0.2+ | 0.1− |
| 2000 10 04 | 704 | 1.4− | 0.9+ | 2001 12 18 | 704 | (2.0+ | 0.0 ) | 2003 03 31 | 644 | 0.1+ | 0.2− |
| 2000 10 04 | 704 | 0.2+ | 0.1+ | 2001 12 18 | 704 | 1.1+ | 0.3+ | 2003 03 31 | 644 | 0.5+ | 0.0 |
| 2000 10 04 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.2+ | 0.0 | 2003 03 31 | 644 | 0.0 | 0.2+ |
| 2000 10 04 | 704 | 0.2+ | 0.5− | 2001 12 19 | 704 | 0.4+ | 1.2+ | 2005 06 21 | 644 | 0.1− | 0.2+ |
| 2000 10 04 | 704 | 1.1+ | 0.6+ | 2001 12 19 | 704 | 0.7+ | 0.5+ | 2005 06 21 | 644 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 0.4− | 0.6− | 2001 12 19 | 704 | (1.8+ | 1.3+) | 2005 06 21 | 644 | 0.1+ | 0.6+ |
| 2001 10 14 | 704 | 0.2− | 0.4+ | 2001 12 19 | 704 | 0.2− | 0.5+ | 2005 07 30 | 941 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 0.4− | 0.8+ | 2001 12 21 | 704 | 0.3− | 0.5− | 2005 07 30 | 941 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 0.4− | 0.1− | 2001 12 21 | 704 | 0.4− | 0.1+ | 2005 07 30 | 941 | 0.6− | 0.1− |
| 2001 10 14 | 704 | 0.5+ | 0.2− | 2001 12 21 | 704 | 0.2− | 0.4− | 2005 07 30 | 941 | 0.4− | 0.3− |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2001 12 21 | 704 | 0.2− | 0.4− | 2006 09 25 | 703 | 0.2− | 0.3+ |
| 2001 10 15 | 704 | 0.7− | 1.4− | 2001 12 21 | 704 | 0.7− | 0.3− | 2006 09 25 | 703 | 1.2− | 0.2− |
| 2001 10 15 | 704 | 0.1− | 0.2+ | 2002 01 08 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 703 | 0.4− | 0.1− |
| 2001 10 15 | 704 | 0.8− | 0.8− | 2002 01 08 | 704 | 0.5+ | 0.3− | 2006 09 25 | 703 | 0.1− | 0.1− |
| 2001 11 19 | 704 | 1.3− | 0.1− | 2002 01 08 | 704 | 0.7+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2001 11 19 | 704 | 0.3− | 0.0 | 2002 01 08 | 704 | 0.2+ | 0.5− | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.8− | 0.6− | 2002 01 08 | 704 | 0.4+ | 0.8− | 2006 10 23 | 644 | 0.4+ | 0.3+ |
| 2001 11 24 | 704 | 0.8+ | 1.0− | 2002 01 13 | 704 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.5+ | 0.3+ |
| 2001 11 24 | 704 | 0.7+ | 0.6− | 2002 01 13 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 0.1− | 0.6− | 2002 01 13 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.1+ |
| 2001 11 24 | 704 | 0.4− | 0.2− | 2002 01 22 | 704 | 1.4− | 0.8+ | 2006 11 16 | 703 | 0.2− | 0.3+ |
| 2001 12 15 | 704 | 0.6− | 0.2+ | 2002 01 22 | 704 | 0.8− | 0.5+ | 2006 11 22 | 703 | 0.5+ | 0.0 |
| 2001 12 15 | 704 | 0.1+ | 0.3− | 2002 01 22 | 704 | (1.6− | 1.5+) | 2006 11 22 | 703 | 0.2− | 0.1+ |
| 2001 12 15 | 704 | 0.1− | 0.5+ | 2002 02 09 | 704 | 0.8+ | 0.7+ | 2006 11 22 | 703 | 0.1− | 0.1− |
| 2001 12 15 | 704 | 1.1− | 0.7+ | 2002 02 09 | 704 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.3+ |
| 2001 12 18 | 644 | 0.3+ | 0.2+ | 2002 02 09 | 704 | 0.8+ | 0.2− | | | | |

**(140380)∗ 2001 TF$_{45}$**

Discovered 2001 Oct. 14 at George Observatory, Needville.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.83530 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18997776 | $\omega$ | 341.73813 | | +0.99983874 | | +0.00475672 |
| $a$ | 2.9968675 | $\Omega$ | 18.01573 | | +0.00346652 | | +0.89502373 |
| $e$ | 0.0162929 | $i$ | 3.20971 | | −0.01762039 | | +0.44599317 |
| $P$ | 5.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 644 | 1.5− | 1.2+ | 2001 12 14 | 735 | (5.3+ | 1.6−) | 2006 07 21 | G96 | 0.2− | 0.3− |
| 2001 10 14 | 735 | 1.2+ | 0.1− | 2001 12 14 | 735 | 0.4+ | 0.1− | 2006 07 21 | G96 | 0.4+ | 0.2+ |
| 2001 10 14 | 735 | 0.6− | 0.2− | 2001 12 14 | 735 | 0.3+ | 0.8+ | 2006 07 21 | G96 | 0.6− | 0.1− |
| 2001 10 14 | 735 | 0.5− | 1.3+ | 2001 12 19 | 644 | 0.6+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2001 10 15 | 735 | 0.2− | 0.1− | 2001 12 19 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2001 10 15 | 735 | 0.9− | 0.2− | 2001 12 19 | 644 | 0.2− | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 10 15 | 735 | 0.1− | 0.1− | 2002 01 06 | 644 | 0.8− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2+ |
| 2001 10 19 | 735 | (1.6+ | 0.2−) | 2002 01 06 | 644 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.4+ |
| 2001 10 19 | 735 | 0.5− | 0.2+ | 2002 11 21 | 644 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2001 10 26 | 644 | 0.2+ | 0.6+ | 2003 01 24 | 735 | 0.8+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.3− |
| 2001 10 26 | 644 | 0.1+ | 0.2+ | 2003 01 24 | 735 | 0.5− | 0.9+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 10 26 | 644 | 0.2+ | 0.2+ | 2003 01 24 | 735 | 0.3− | 0.6− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2001 11 09 | 704 | 0.5+ | 0.1− | 2004 04 29 | 735 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 11 09 | 704 | 0.4+ | 0.4− | 2004 04 29 | 735 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.3− |
| 2001 11 09 | 704 | 0.7+ | 0.7− | 2004 04 29 | 735 | 1.0+ | 0.9+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.8+ | 0.7− | 2004 05 21 | 735 | 1.3− | 0.8+ | 2006 10 29 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.2+ | 0.8+ | 2004 05 21 | 735 | 1.4+ | 1.2+ | 2006 10 29 | 691 | 0.3+ | 0.0 | |
| 2001 11 11 | 704 | (0.1− | 1.6+) | 2004 05 21 | 735 | 0.6+ | 1.3+ | 2006 11 07 | 644 | 0.6− | 0.1− | |
| 2001 11 11 | 704 | 1.1− | 0.7+ | 2005 07 01 | 735 | 0.3+ | 0.6+ | 2006 11 07 | 644 | 0.0 | 0.3+ | |
| 2001 11 11 | 704 | 0.3− | 0.4+ | 2005 07 01 | 735 | 0.0 | 0.6+ | 2006 11 07 | 644 | 0.3− | 0.1+ | |
| 2001 11 11 | 704 | 0.4+ | 0.2+ | 2005 07 01 | 735 | 0.9− | 0.2+ | | | | | |
| 2001 11 11 | 704 | 0.9− | 0.4+ | 2006 07 21 | G96 | 0.3+ | 0.4− | | | | | |

**(140381)∗ 2001 TR$_{46}$ = 1978 WH$_{11}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. S. Nakano (*MPO* 22881), T. B. Spahr (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.52471 | | (2000.0) | | | |
| $n$ | 0.39062435 | $\omega$ | 60.10853 | | −0.56403983 | −0.70353606 |
| $a$ | 1.8533745 | $\Omega$ | 70.80094 | | +0.50649630 | −0.70825499 |
| $e$ | 0.0259910 | $i$ | 27.24365 | | +0.65216606 | −0.05841124 |
| $P$ | 2.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 29 | 675 | 0.2− | 0.2− | 2002 02 03 | 699 | 0.4− | 0.7+ | 2003 11 18 | 704 | 0.2− | 0.7+ | |
| 1978 11 30 | 675 | 0.2− | 0.0 | 2002 03 03 | 704 | 0.5+ | 1.1− | 2003 11 18 | 704 | 0.2− | 0.6+ | |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2002 03 03 | 704 | 0.8+ | 0.4+ | 2003 11 18 | 704 | (0.5+ | 1.6+) | |
| 2001 10 15 | 704 | 0.0 | 0.0 | 2002 03 03 | 704 | 1.1+ | 0.6+ | 2003 11 26 | 704 | 0.0 | 0.3− | |
| 2001 10 15 | 704 | 0.0 | 0.5+ | 2002 03 03 | 704 | 0.9+ | 1.4+ | 2003 11 26 | 704 | 0.1− | 0.0 | |
| 2001 10 15 | 704 | 0.3+ | 0.1− | 2002 04 01 | 704 | 1.0− | 0.7+ | 2003 11 26 | 704 | 0.1− | 0.3− | |
| 2001 10 15 | 704 | 0.7− | 0.0 | 2002 04 01 | 704 | 1.0− | 0.6+ | 2003 11 26 | 704 | 0.2− | 0.0 | |
| 2001 10 17 | 704 | 0.3− | 0.1− | 2002 04 01 | 704 | (2.5− | 0.6+) | 2003 11 26 | 704 | 0.2− | 0.3− | |
| 2001 10 17 | 704 | 0.5− | 0.8− | 2002 04 01 | 704 | 1.3− | 0.0 | 2004 01 08 | 608 | 0.1+ | 1.4+ | |
| 2001 10 17 | 704 | 0.0 | 0.2− | 2002 04 01 | 704 | 1.2− | 0.0 | 2004 01 08 | 608 | 0.5+ | 0.7+ | |
| 2001 10 17 | 704 | 0.5− | 0.3+ | 2002 04 02 | 704 | 0.2+ | 0.8− | 2004 01 08 | 608 | 0.2+ | 1.2+ | |
| 2001 10 27 | 704 | 0.5+ | 0.5− | 2002 04 02 | 704 | 0.1− | 0.5− | 2004 01 10 | 699 | (0.9− | 1.8−) | |
| 2001 10 27 | 704 | 0.4+ | 0.3− | 2002 04 02 | 704 | 0.2+ | 0.7− | 2004 01 10 | 699 | 0.1+ | 0.5+ | |
| 2001 10 27 | 704 | 0.1+ | 0.3− | 2002 04 03 | 704 | 1.5+ | 1.4− | 2004 01 10 | 699 | 0.3+ | 0.8− | |
| 2001 10 27 | 704 | 0.2+ | 0.3− | 2002 04 03 | 704 | 0.3+ | 0.0 | 2004 01 10 | 699 | 0.2− | 1.4+ | |
| 2001 10 27 | 704 | 1.1+ | 0.4− | 2002 04 03 | 704 | 0.1− | 0.6− | 2004 01 17 | 608 | 0.4− | 0.0 | |
| 2001 12 09 | 704 | 1.0+ | 0.1+ | 2002 04 03 | 704 | 0.4+ | 0.0 | 2004 01 17 | 608 | 0.1− | 0.2− | |
| 2001 12 09 | 704 | 0.7+ | 0.3+ | 2002 04 05 | 704 | 0.0 | 0.2+ | 2004 01 17 | 608 | 0.3+ | 0.2+ | |
| 2001 12 09 | 704 | 1.1+ | 0.3+ | 2002 04 05 | 704 | 0.2+ | 0.5− | 2004 01 31 | 703 | 0.6− | 0.5− | |
| 2001 12 09 | 704 | 1.4+ | 0.6+ | 2002 04 05 | 704 | (1.5+ | 0.6−) | 2004 01 31 | 703 | 0.2− | 0.4− | |
| 2001 12 09 | 704 | 1.3+ | 0.9+ | 2002 04 05 | 704 | 1.1+ | 0.3− | 2004 01 31 | 703 | 0.0 | 0.1− | |
| 2001 12 23 | 704 | 0.2+ | 0.1− | 2002 05 03 | 704 | 0.2− | 0.5− | 2004 01 31 | 703 | 0.1− | 0.2− | |
| 2001 12 23 | 704 | 0.0 | 0.9+ | 2002 05 03 | 704 | 0.5+ | 0.3+ | 2004 02 14 | 703 | (1.0− | 1.6+) | |
| 2001 12 23 | 704 | 0.4+ | 0.5+ | 2002 05 03 | 704 | 0.2− | 0.1+ | 2004 02 14 | 703 | 0.1+ | 0.6+ | |
| 2001 12 23 | 704 | 0.5+ | 0.6+ | 2002 05 03 | 704 | 0.4+ | 0.1+ | 2004 02 14 | 703 | (1.9− | 0.3+) | |
| 2002 01 13 | 645 | 0.1− | 0.2− | 2002 05 16 | 704 | 0.2+ | 0.5+ | 2004 02 14 | 703 | (0.1− | 3.2+) | |
| 2002 01 13 | 645 | 0.1− | 0.3− | 2002 05 16 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 0.6− | 0.7− | |
| 2002 01 26 | 704 | 0.5− | 0.1+ | 2002 05 16 | 704 | 0.0 | 1.2+ | 2006 10 28 | 703 | 0.8+ | 0.4− | |
| 2002 01 26 | 704 | 0.1+ | 0.8+ | 2002 05 16 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.9− | 0.7+ | |
| 2002 01 26 | 704 | 0.3− | 0.2+ | 2003 09 22 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.9− | |
| 2002 01 26 | 704 | 0.3− | 0.8+ | 2003 09 22 | 644 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.0 | |
| 2002 01 26 | 704 | 0.2− | 0.9+ | 2003 09 22 | 644 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.0 | |
| 2002 02 01 | 704 | 0.4− | 1.2+ | 2003 09 26 | 644 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.1+ | |
| 2002 02 01 | 704 | 0.1− | 0.6+ | 2003 09 26 | 644 | 0.3+ | 0.4− | 2006 11 14 | 704 | 0.5− | 0.1− | |
| 2002 02 01 | 704 | (0.4− | 1.7+) | 2003 09 26 | 644 | 0.1+ | 0.1− | 2006 11 21 | 703 | 1.1− | 1.0− | |
| 2002 02 01 | 704 | 0.4+ | 0.6+ | 2003 09 26 | 644 | 0.3+ | 0.2− | 2006 11 21 | 703 | 1.2− | 0.4+ | |
| 2002 02 03 | 699 | 0.1− | 0.3+ | 2003 09 26 | 644 | 0.2+ | 0.1− | 2006 11 21 | 703 | 0.7− | 0.1+ | |
| 2002 02 03 | 699 | 0.4− | 0.5+ | 2003 09 26 | 644 | 0.3+ | 0.2− | 2006 11 21 | 703 | 0.8− | 0.4+ | |
| 2002 02 03 | 699 | 0.6− | 0.6+ | 2003 11 18 | 704 | 0.3− | 0.1+ | | | | | |

**(140382)∗ 2001 TV$_{47}$**

Discovered 2001 Oct. 14 by the Asiago-DLR Asteroid Survey at Cima Ekar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.20386 | | (2000.0) | | | |
| $n$ | 0.17743047 | $\omega$ | 132.16382 | | +0.26002154 | +0.96186053 |
| $a$ | 3.1365382 | $\Omega$ | 152.56060 | | −0.93135342 | +0.27304445 |
| $e$ | 0.0699001 | $i$ | 10.62067 | | −0.25489135 | −0.01646358 |
| $P$ | 5.55 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 31 | 809 | (1.8− | 2.6−) | 2004 03 15 | 704 | 0.0 | 0.7+ | 2006 07 25 | G96 | 0.4+ | 0.0 | |
| 2001 10 14 | 209 | 0.7+ | 0.5+ | 2004 03 15 | 704 | 0.5− | 0.4− | 2006 07 25 | G96 | 0.1+ | 0.1− | |
| 2001 10 15 | 209 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.6+ | |
| 2001 10 15 | 209 | 0.1− | 0.4+ | 2004 03 15 | 704 | 0.1+ | 0.2+ | 2006 08 21 | 691 | 0.1+ | 0.5+ | |
| 2001 10 15 | 644 | 0.2+ | 0.5− | 2004 03 19 | 291 | 0.1+ | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.7+ | |
| 2001 10 15 | 644 | 0.5+ | 0.6− | 2004 03 19 | 704 | 0.2+ | 0.2− | 2006 08 28 | 703 | (2.0− | 0.2+) | |
| 2001 10 15 | 644 | 0.0 | 0.7− | 2004 03 19 | 291 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.6+ | 0.3+ | |
| 2001 10 16 | 209 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.5+ | 1.5+ | 2006 08 28 | 703 | 0.0 | 0.4− | |
| 2001 10 16 | 209 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.5− | 1.3+ | 2006 08 28 | 703 | 0.5− | 0.5− | |
| 2001 10 17 | 209 | 0.2− | 0.5+ | 2004 03 19 | 291 | 0.3+ | 0.1+ | 2006 09 14 | 703 | (2.0+ | 2.1+) | |
| 2001 10 23 | 644 | 0.7− | 0.8+ | 2004 03 19 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.4− | |
| 2001 10 23 | 644 | 0.3− | 0.9+ | 2005 06 30 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.5− | |
| 2001 10 23 | 644 | 0.4− | 0.9+ | 2005 06 30 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.4− | |
| 2004 02 23 | 704 | 0.3+ | 0.8+ | 2005 06 30 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.8− | 0.8+ | |
| 2004 02 23 | 704 | 0.7− | 1.2+ | 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.5− | 1.5+ | |
| 2004 02 23 | 704 | 0.1− | 0.5+ | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.3− | |
| 2004 02 23 | 704 | 1.4+ | 0.6+ | 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3− | 1.3+ | |
| 2004 02 23 | 704 | 0.8− | 0.9+ | 2006 07 25 | G96 | 0.1− | 0.0 | | | | | |
| 2004 03 15 | 704 | (0.8− | 2.3+) | 2006 07 25 | G96 | 0.1+ | 0.5− | | | | | |

**(140383)∗ 2001 TP$_{48}$**

Discovered 2001 Oct. 14 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.31656 | | (2000.0) | | | |
| $n$ | 0.18260447 | $\omega$ | 5.70392 | | +0.82080824 | −0.56117701 |
| $a$ | 3.0770067 | $\Omega$ | 29.24737 | | +0.51506967 | +0.64650690 |
| $e$ | 0.1494053 | $i$ | 12.59704 | | +0.24693533 | +0.51682608 |
| $P$ | 5.40 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 14 | 691 | 0.1− | 0.1− | 2001 10 26 | 644 | 0.1− | 0.5+ | 2004 05 10 | 691 | 0.8+ | 0.1+ | |
| 1993 04 14 | 691 | 0.5− | 0.3+ | 2001 10 26 | 644 | 0.2− | 0.6+ | 2004 05 28 | 691 | 0.3− | 0.3+ | |
| 1993 04 14 | 691 | 0.3− | 0.3− | 2001 10 26 | 644 | 0.1− | 0.6+ | 2004 05 28 | 691 | 0.3+ | 0.2+ | |
| 2001 09 20 | 704 | 0.3+ | 0.9− | 2001 10 28 | 704 | 0.3+ | 0.2− | 2004 05 28 | 691 | 0.3+ | 0.2+ | |
| 2001 09 20 | 704 | 0.1− | 0.6− | 2001 10 28 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.4− | 0.2− | |
| 2001 09 20 | 704 | 0.1− | 0.4− | 2001 10 28 | 704 | 1.5+ | 0.0 | 2006 09 14 | 703 | 0.5+ | 0.4+ | |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2001 11 10 | 704 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.1+ | |
| 2001 09 21 | 644 | 0.4− | 0.2+ | 2001 11 10 | 704 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.9− | 0.0 | |
| 2001 09 21 | 644 | 0.5− | 0.2+ | 2001 11 10 | 704 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.5− | 0.0 | |
| 2001 09 21 | 644 | 0.7− | 0.5+ | 2001 11 10 | 704 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.5− | 0.2+ | |
| 2001 09 24 | 704 | 0.6+ | 0.3− | 2001 11 10 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 644 | 0.4− | 0.2+ | |
| 2001 09 24 | 704 | 0.2+ | 0.4+ | 2001 11 12 | 704 | 0.4− | 0.2+ | 2006 09 14 | F84 | 0.5− | 0.6− | |
| 2001 09 24 | 704 | 0.1+ | 0.1− | 2001 11 12 | 704 | 0.1− | 0.4+ | 2006 09 14 | F84 | 0.1− | 0.0 | |
| 2001 09 24 | 704 | 0.1− | 0.0 | 2001 11 12 | 704 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.8− | |
| 2001 10 12 | 699 | 1.2+ | 0.5+ | 2001 11 12 | 704 | 0.5− | 0.4+ | 2006 09 18 | 703 | (3.4− | 3.3−) | |
| 2001 10 12 | 699 | 1.3+ | 0.0 | 2001 11 12 | 704 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.1− | 0.9+ | |
| 2001 10 12 | 699 | (1.9+ | 0.3+) | 2001 11 17 | 644 | 0.7+ | 0.0 | 2006 09 21 | F84 | 0.0 | 0.1− | |
| 2001 10 12 | 699 | 0.5+ | 0.3+ | 2001 11 17 | 644 | 0.3+ | 0.1+ | 2006 09 21 | F84 | 0.9+ | 0.1− | |
| 2001 10 14 | 704 | 0.8− | 0.0 | 2001 11 17 | 644 | 0.3+ | 0.1− | 2006 09 21 | F84 | 0.7+ | 0.2− | |
| 2001 10 14 | 333 | 0.2− | 1.0− | 2001 11 21 | 704 | 0.3− | 0.7− | 2006 09 25 | 703 | 0.4− | 0.2− | |
| 2001 10 14 | 704 | 0.9− | 0.1− | 2001 11 21 | 704 | 0.6− | 0.5− | 2006 09 25 | 703 | 0.4− | 0.6+ | |
| 2001 10 14 | 704 | 1.2− | 0.1− | 2001 11 21 | 704 | 0.7− | 0.8− | 2006 09 25 | 703 | 0.4− | 0.0 | |
| 2001 10 14 | 333 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.7− | 0.6− | 2006 09 25 | 703 | 0.9− | 0.0 | |
| 2001 10 14 | 333 | 0.6+ | 0.4− | 2001 11 24 | 704 | 0.2+ | 0.0 | 2006 10 02 | 703 | (1.6− | 1.0+) | |
| 2001 10 15 | 333 | 0.6− | 0.1− | 2001 11 24 | 704 | 0.3− | 0.6− | 2006 10 02 | 703 | 0.5+ | 0.3+ | |
| 2001 10 15 | 333 | 0.4+ | 0.6+ | 2001 11 24 | 704 | 0.0 | 0.4− | 2006 10 02 | 703 | 0.1− | 0.8+ | |
| 2001 10 15 | 333 | 0.4− | 0.2+ | 2001 11 24 | 704 | 0.1− | 0.3− | 2006 10 02 | 703 | 0.8− | 0.7+ | |
| 2001 10 15 | 333 | 0.3− | 0.5+ | 2001 11 24 | 704 | 0.3− | 0.6− | 2006 10 02 | 703 | 0.0 | 1.0+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 333 | 0.3+ | 0.9− | 2001 12 10 | 704 | 0.1+ | 0.7− | 2006 10 02 | 703 | (0.3− | 1.7+) | | |
| 2001 10 15 | 333 | 0.4+ | 0.3+ | 2001 12 10 | 704 | 0.1− | 0.3− | 2006 10 02 | 703 | 0.3− | 1.2+ | | |
| 2001 10 18 | 704 | 0.5− | 0.2− | 2001 12 10 | 704 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.7− | 1.2+ | | |
| 2001 10 18 | 704 | 0.3− | 0.2− | 2001 12 10 | 704 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2001 10 18 | 704 | 0.9+ | 0.4− | 2001 12 10 | 704 | 1.1− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1− | | |
| 2001 10 18 | 704 | 0.7+ | 0.5− | 2001 12 20 | 644 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2001 10 19 | 644 | 0.3+ | 0.5+ | 2001 12 20 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.3− | 0.0 | | |
| 2001 10 19 | 644 | 0.2+ | 0.4+ | 2001 12 20 | 644 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.4− | | |
| 2001 10 19 | 644 | 0.2+ | 0.5+ | 2002 01 09 | 704 | 0.4− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.1+ | | |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2002 01 09 | 704 | 0.3+ | 0.5− | 2006 10 19 | 703 | 0.8− | 0.3− | | |
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2002 01 09 | 704 | 0.5− | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.1− | | |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2002 01 09 | 704 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2001 10 21 | 704 | 0.4+ | 0.6+ | 2002 01 09 | 704 | 0.6− | 1.1+ | 2006 10 19 | 703 | 0.5+ | 0.0 | | |
| 2001 10 21 | 704 | 0.3+ | 0.6+ | 2003 01 29 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 10 22 | 704 | 1.1− | 0.2− | 2003 01 29 | 644 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2001 10 22 | 704 | 0.1− | 0.5+ | 2003 01 29 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2001 10 22 | 704 | 1.0+ | 1.2+ | 2003 02 01 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.2− | | |
| 2001 10 23 | 704 | 0.4+ | 0.1+ | 2003 02 01 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2001 10 23 | 704 | 0.7+ | 0.8+ | 2003 02 01 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.7− | 0.2+ | | |
| 2001 10 23 | 704 | 1.0− | 0.2+ | 2003 03 03 | 644 | 0.3− | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2001 10 23 | 704 | 0.7+ | 0.4+ | 2003 03 03 | 644 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2003 03 03 | 644 | 0.4− | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2001 10 25 | 704 | 0.3+ | 0.8− | 2003 03 08 | 644 | 0.3− | 0.5+ | 2006 10 24 | 644 | 0.3− | 0.1+ | | |
| 2001 10 25 | 704 | 0.5+ | 0.3+ | 2003 03 08 | 644 | 0.0 | 0.8+ | 2006 10 24 | 644 | 0.0 | 0.0 | | |
| 2001 10 25 | 704 | 0.4+ | 0.1+ | 2003 03 08 | 644 | 0.3+ | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.0 | | |
| 2001 10 25 | 704 | 0.2+ | 0.3− | 2004 05 10 | 691 | 0.5+ | 0.2+ | | | | | | |
| 2001 10 25 | 704 | 0.9+ | 0.1− | 2004 05 10 | 691 | 0.6+ | 0.0 | | | | | | |

**(140384)∗ 2001 TA$_{49}$ = 2000 EO$_{182}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20456)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.35250 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.37789635 | $\omega$ | 231.96322 | | −0.46123288 | +0.88460470 |
| $a$ | 1.8947602 | $\Omega$ | 11.20894 | | −0.66184704 | −0.29133699 |
| $e$ | 0.0509335 | $i$ | 20.74019 | | −0.59095069 | −0.36413909 |
| $P$ | 2.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.3− | 0.1+ | 2001 10 27 | 704 | 0.8+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2000 03 04 | 704 | 1.0+ | 0.3− | 2001 11 11 | 704 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2000 03 04 | 704 | 1.4+ | 0.5− | 2001 11 11 | 704 | 1.0+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ | | |
| 2000 03 04 | 704 | 0.5+ | 0.7− | 2001 11 11 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2000 03 04 | 704 | 0.4+ | 0.0 | 2001 11 11 | 704 | 1.2+ | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.0 | | |
| 2000 03 12 | 704 | 0.5+ | 0.6+ | 2001 11 11 | 704 | 0.8+ | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2000 03 12 | 704 | 0.5− | 1.6+ | 2004 12 19 | 704 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.1− | | |
| 2000 03 12 | 704 | 0.2+ | 1.6+ | 2004 12 19 | 704 | 0.9− | 0.0 | 2006 10 16 | 703 | 0.9− | 1.0− | | |
| 2000 03 12 | 704 | 0.1− | 1.9+ | 2004 12 19 | 704 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.6− | 0.1− | | |
| 2001 09 25 | 704 | 0.3+ | 1.2− | 2005 01 29 | 704 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.2− | | |
| 2001 09 25 | 704 | (0.6+ | 1.7−) | 2005 01 29 | 704 | 0.8+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2001 09 25 | 704 | (0.1+ | 1.9−) | 2005 01 29 | 704 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.4− | 0.1− | | |
| 2001 10 15 | 704 | (2.5− | 2.3−) | 2006 09 17 | 699 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2001 10 15 | 704 | 1.1− | 0.2− | 2006 09 17 | 699 | 0.4− | 1.2+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2001 10 15 | 704 | 0.2− | 0.7− | 2006 09 17 | 699 | 0.5− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2001 10 15 | 704 | 0.2− | 0.7− | 2006 09 17 | 699 | 1.1− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2001 10 18 | 704 | 0.5− | 1.0− | 2006 09 21 | 699 | (0.1+ | 1.8+) | 2006 10 22 | 644 | 0.0 | 0.4− | | |
| 2001 10 18 | 704 | 0.1− | 1.2− | 2006 09 21 | 699 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2001 10 18 | 704 | 0.2− | 0.6− | 2006 09 21 | 699 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.2+ | | |
| 2001 10 27 | 704 | 0.4+ | 1.3+ | 2006 09 21 | 699 | 0.2− | 1.2+ | 2006 10 23 | 644 | 0.5− | 0.1+ | | |
| 2001 10 27 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | (2.2+ | 0.4+) | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2001 10 27 | 704 | 0.6+ | 1.0+ | 2006 09 26 | 704 | 0.7+ | 0.2− | 2006 10 23 | 644 | 0.3− | 0.1− | | |
| 2001 10 27 | 644 | 0.5− | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2001 10 27 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2001 10 27 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2001 10 27 | 704 | 0.9− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 | | |

**(140385)∗ 2001 TU$_{49}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.80732 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.20176966 | $\omega$ | 258.60217 | | +0.99088087 | −0.07069665 |
| $a$ | 2.8789369 | $\Omega$ | 105.37411 | | +0.10831511 | +0.92428359 |
| $e$ | 0.0874296 | $i$ | 6.83216 | | −0.08014323 | +0.37510241 |
| $P$ | 4.88 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 1.3+ | 0.2+ | 2001 10 20 | 704 | 0.3+ | 0.0 | 2004 04 26 | 691 | 0.0 | 0.3+ | | |
| 2001 08 27 | 699 | 0.3− | 1.1+ | 2001 10 20 | 704 | 0.8− | 1.5+ | 2006 09 30 | 703 | 0.1− | 0.8− | | |
| 2001 08 27 | 699 | 0.5+ | 0.9+ | 2001 10 24 | 644 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.2− | | |
| 2001 08 27 | 699 | 0.7+ | 0.4+ | 2001 10 24 | 644 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.0 | 0.3− | | |
| 2001 09 16 | 704 | 1.1− | 0.9+ | 2001 10 24 | 644 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.1− | | |
| 2001 09 16 | 704 | 0.9− | 0.5+ | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.7− | | |
| 2001 09 16 | 704 | (2.0− | 0.8+) | 2002 12 31 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.1+ | | |
| 2001 09 25 | 704 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.2+ | | |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.5− | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.4+ | | |
| 2001 09 25 | 704 | 0.6− | 0.6− | 2003 01 05 | 291 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.9+ | 0.5− | | |
| 2001 10 11 | 704 | 0.3+ | 0.7+ | 2003 01 05 | 291 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.2− | | |
| 2001 10 11 | 704 | 1.2+ | 0.6+ | 2003 01 05 | 291 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.2− | | |
| 2001 10 11 | 704 | 1.1− | 0.7+ | 2003 01 08 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.8+ | 0.2− | | |
| 2001 10 11 | 704 | 0.6− | 0.0 | 2003 01 08 | 704 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.8+ | | |
| 2001 10 16 | 704 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.6+ | 0.4+ | 2006 10 28 | 703 | 1.0− | 0.1+ | | |
| 2001 10 16 | 704 | 0.2+ | 0.1+ | 2003 01 08 | 704 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.2− | | |
| 2001 10 16 | 704 | 0.3− | 0.2− | 2004 03 23 | 704 | 0.7+ | 0.8+ | 2006 10 28 | 703 | 0.3+ | 0.4+ | | |
| 2001 10 16 | 704 | 0.7− | 0.0 | 2004 03 23 | 704 | 1.3+ | 0.0 | 2006 11 13 | 703 | 0.9+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.7+ | 1.2− | 2004 03 23 | 704 | 1.1+ | 0.5+ | 2006 11 13 | 703 | 0.8+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.5− | 0.4+ | 2004 03 23 | 704 | (0.6+ | 1.6+) | 2006 11 13 | 703 | 0.2+ | 0.4− | | |
| 2001 10 17 | 704 | 0.6− | 0.7+ | 2004 03 23 | 704 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.7+ | 0.5− | | |
| 2001 10 17 | 704 | 0.3− | 0.9+ | 2004 03 26 | 691 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.1− | 0.2+ | | |
| 2001 10 17 | 704 | 0.2− | 0.1− | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.5+ | 2.4− | | |
| 2001 10 17 | 704 | 0.5− | 0.5− | 2004 03 26 | 691 | 0.4− | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.6− | | |
| 2001 10 20 | 704 | 0.1+ | 1.0+ | 2004 04 26 | 691 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.0 | 1.3− | | |
| 2001 10 20 | 704 | 0.0 | 0.8+ | 2004 04 26 | 691 | 0.0 | 0.1+ | | | | | | |

**(140386)∗ 2001 TG$_{51}$ = 2001 SK$_{37}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.01994 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21396775 | $\omega$ | 70.30473 | | −0.15633771 | −0.98547717 |
| $a$ | 2.7684531 | $\Omega$ | 28.93885 | | +0.84714194 | −0.16829112 |
| $e$ | 0.1944096 | $i$ | 7.87318 | | +0.50784747 | −0.02264613 |
| $P$ | 4.61 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.7− | 0.3− | 2001 10 23 | 704 | 0.5− | 0.1+ | 2003 03 30 | 704 | 1.0+ | 0.7− | | |
| 2001 08 27 | 699 | (1.8+ | 0.1−) | 2001 10 23 | 291 | 0.2− | 0.1− | 2003 03 30 | 704 | 1.2+ | 0.1− | | |
| 2001 08 27 | 699 | 0.6− | 0.6+ | 2001 10 23 | 704 | 0.4+ | 0.1− | 2003 03 30 | 704 | 0.8+ | 0.3− | | |
| 2001 08 27 | 699 | 1.3− | 0.0 | 2001 10 23 | 704 | 0.0 | 0.8− | 2003 03 30 | 704 | 0.8+ | 0.1− | | |
| 2001 09 11 | 699 | 0.2+ | 0.0 | 2001 10 23 | 704 | 0.2+ | 0.1+ | 2003 03 31 | 645 | 0.1− | 0.0 | | |
| 2001 09 11 | 699 | 0.5− | 0.4+ | 2001 10 23 | 291 | 0.2− | 0.1− | 2003 03 31 | 645 | 0.0 | 0.1+ | | |
| 2001 09 11 | 699 | 0.2− | 0.0 | 2001 10 23 | 704 | 0.1+ | 0.0 | 2003 04 01 | 703 | 0.4+ | 0.9− | | |
| 2001 09 11 | 699 | 0.6+ | 0.0 | 2001 10 24 | 704 | 0.2− | 0.4− | 2003 04 01 | 703 | 0.4+ | 1.2− | | |
| 2001 09 16 | 704 | 0.6− | 0.6+ | 2001 10 24 | 704 | 0.3+ | 0.0 | 2003 04 01 | 703 | 0.1+ | 0.9− | | |
| 2001 09 16 | 704 | 0.3− | 0.2+ | 2001 10 24 | 704 | 0.3+ | 0.3− | 2003 04 01 | 703 | 0.3+ | 0.4− | | |
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2001 10 24 | 704 | 0.2+ | 0.1− | 2003 04 04 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 16 | 704 | 0.6− | 0.4+ | 2001 10 24 | 704 | 0.3− | 0.3− | 2003 04 04 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 19 | 704 | (0.1+ | 3.6+) | 2001 11 09 | 704 | 0.6+ | 0.3+ | 2003 04 04 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2001 11 09 | 704 | 0.4+ | 1.0+ | 2003 04 05 | 699 | 0.7− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.2+ | 0.2− | 2001 11 09 | 704 | 0.2− | 0.6− | 2003 04 05 | 699 | 1.2+ | 0.6+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2001 11 09 | 704 | 0.7− | 0.2+ | 2003 04 05 | 699 | 0.1− | 0.5+ | | |
| 2001 09 19 | 704 | 0.6+ | 0.4− | 2001 11 18 | 704 | 0.4+ | 0.7+ | 2003 04 05 | 699 | 0.5− | 0.4+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2001 11 18 | 704 | 0.0 | 0.1+ | 2003 04 10 | 644 | 0.7+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2001 11 18 | 704 | 0.9− | 0.3− | 2003 04 10 | 644 | 0.8+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2001 11 18 | 704 | 0.2− | 0.1+ | 2003 04 10 | 644 | 0.3+ | 0.5+ | | |
| 2001 09 21 | 704 | 0.2− | 0.3− | 2001 11 18 | 704 | 0.5− | 0.0 | 2005 08 28 | E12 | 0.2+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.7− | 0.5+ | 2005 08 28 | E12 | 0.5− | 0.1+ | | |
| 2001 09 26 | 704 | 0.4+ | 0.2+ | 2001 11 20 | 704 | 1.0− | 0.5+ | 2005 08 28 | E12 | 0.3− | 0.8+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.2+ | 2001 11 20 | 704 | 1.4− | 0.6+ | 2005 08 28 | E12 | 1.3− | 0.6+ | | |
| 2001 09 26 | 704 | 0.5+ | 0.1− | 2001 11 20 | 704 | 1.0− | 0.7+ | 2005 09 01 | 644 | 0.1+ | 0.9+ | | |
| 2001 09 26 | 704 | 0.7+ | 0.8+ | 2001 11 20 | 704 | 0.9− | 0.6+ | 2005 09 01 | 644 | 0.1− | 0.9+ | | |
| 2001 09 26 | 704 | 0.6+ | 0.4+ | 2001 11 21 | 704 | 0.4− | 0.2− | 2005 09 01 | 644 | 0.0 | 0.8+ | | |
| 2001 09 27 | 644 | 1.4+ | 1.2− | 2001 11 21 | 704 | 0.4+ | 0.5+ | 2005 09 08 | E12 | 0.4− | 0.4+ | | |
| 2001 09 27 | 644 | (1.5+ | 1.1−) | 2001 11 21 | 704 | 0.1− | 0.4+ | 2005 09 08 | E12 | 0.3− | 1.0+ | | |
| 2001 09 27 | 644 | 1.5+ | 1.2− | 2001 11 21 | 704 | 0.2− | 0.2+ | 2005 09 08 | E12 | 0.0 | 0.1+ | | |
| 2001 10 12 | 699 | 0.2− | 0.3+ | 2001 11 21 | 704 | 0.4− | 0.5+ | 2005 09 08 | E12 | 0.2− | 0.4+ | | |
| 2001 10 12 | 699 | 0.3− | 0.1− | 2001 12 19 | 704 | 0.9− | 0.8− | 2006 08 29 | 703 | 0.6− | 0.1− | | |
| 2001 10 12 | 699 | 0.0 | 0.4+ | 2001 12 19 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | (0.9+ | 1.6+) | | |
| 2001 10 12 | 699 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.1− | 0.3+ | 2006 08 29 | 703 | (0.2+ | 2.7−) | | |
| 2001 10 13 | 704 | 0.0 | 0.3+ | 2001 12 19 | 704 | 0.6+ | 0.1− | 2006 08 29 | 703 | 0.4− | 0.7− | | |
| 2001 10 13 | 704 | 0.7− | 1.1+ | 2003 02 04 | 608 | 0.1− | 1.0+ | 2006 11 15 | 704 | 0.3− | 0.4− | | |
| 2001 10 13 | 704 | 0.8+ | 0.6+ | 2003 02 04 | 608 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.6− | 0.1+ | | |
| 2001 10 13 | 704 | 0.1− | 1.3+ | 2003 02 04 | 608 | 0.1+ | 0.5+ | 2006 11 15 | 704 | 0.1− | 0.7− | | |
| 2001 10 13 | 704 | 0.3+ | 0.5+ | 2003 02 11 | 608 | 0.2+ | 0.7− | 2006 11 15 | 704 | 0.2− | 1.1− | | |
| 2001 10 14 | 699 | 0.4+ | 0.3+ | 2003 02 11 | 608 | 0.6+ | 0.4− | 2006 11 15 | 704 | 0.2+ | 0.3− | | |
| 2001 10 14 | 699 | 0.7+ | 1.1+ | 2003 02 11 | 608 | 0.2+ | 0.6− | 2006 11 15 | 704 | 0.9− | 0.4− | | |
| 2001 10 14 | 699 | 0.2+ | 0.7+ | 2003 02 22 | 644 | 0.7+ | 0.2+ | 2006 11 15 | 704 | 0.2+ | 0.6− | | |
| 2001 10 14 | 699 | 0.7+ | 0.6+ | 2003 02 22 | 644 | 0.8+ | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.7− | | |
| 2001 10 14 | 608 | (1.5+ | 1.9+) | 2003 02 22 | 644 | 0.8+ | 0.5+ | 2006 11 15 | 704 | 0.1− | 0.1− | | |
| 2001 10 14 | 608 | 1.5+ | 1.3+ | 2003 02 28 | 704 | 0.8+ | 0.9+ | 2006 11 16 | 704 | 0.0 | 0.2+ | | |
| 2001 10 14 | 608 | (1.2+ | 2.2+) | 2003 02 28 | 704 | 0.5+ | 1.2+ | 2006 11 16 | 704 | 0.6− | 0.5− | | |
| 2001 10 16 | 704 | 0.3+ | 0.9+ | 2003 02 28 | 704 | 0.6+ | 1.3+ | 2006 11 16 | 704 | 0.2+ | 0.5+ | | |
| 2001 10 16 | 704 | 0.2− | 0.9+ | 2003 03 05 | 704 | 0.0 | 0.4+ | 2006 11 16 | 704 | (0.1− | 1.7+) | | |
| 2001 10 16 | 704 | 0.0 | 0.9+ | 2003 03 05 | 704 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.0 | | |
| 2001 10 16 | 704 | 0.3− | 0.8+ | 2003 03 05 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.5− | | |
| 2001 10 16 | 704 | 0.9+ | 0.1− | 2003 03 15 | 608 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.5− | | |
| 2001 10 16 | 691 | 0.2− | 0.0 | 2003 03 15 | 608 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.5− | | |
| 2001 10 16 | 691 | 0.5− | 0.1− | 2003 03 15 | 608 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.4− | | |
| 2001 10 16 | 691 | 0.5− | 0.0 | 2003 03 23 | 645 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.3− | | |
| 2001 10 20 | 704 | 0.4− | 0.2+ | 2003 03 23 | 645 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.7+ | | |
| 2001 10 20 | 704 | 0.1+ | 0.0 | 2003 03 25 | 644 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.8+ | 1.0+ | | |
| 2001 10 20 | 704 | 0.2− | 0.1− | 2003 03 25 | 644 | 0.9+ | 0.3+ | 2006 11 22 | 704 | 0.5+ | 1.1+ | | |
| 2001 10 20 | 704 | 0.0 | 0.6− | 2003 03 25 | 644 | 0.8+ | 0.4+ | 2006 11 22 | 704 | 0.9+ | 1.3+ | | |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2003 03 26 | 699 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.3+ | 1.1+ | | |
| 2001 10 22 | 704 | 0.5− | 0.6− | 2003 03 26 | 699 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.2− | | |
| 2001 10 22 | 704 | 0.4− | 0.4− | 2003 03 26 | 699 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.0 | 1.0− | | |
| 2001 10 22 | 704 | 1.0− | 0.9− | 2003 03 26 | 699 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.2+ | 1.3− | | |
| 2001 10 23 | 291 | 0.1+ | 0.2− | 2003 03 30 | 704 | 1.1+ | 0.6+ | | | | | | |

**(140387)∗ 2001 TW$_{51}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.84944 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18479403 | $\omega$ | 283.41008 | | +0.99102674 | +0.07957912 | |
| $a$ | 3.0526529 | $\Omega$ | 72.10658 | | −0.02630151 | +0.90384627 | |
| $e$ | 0.2187809 | $i$ | 6.47970 | | −0.13105046 | +0.42039159 | |
| $P$ | 5.33 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 10 16 | 644 | 0.0 | 0.1− | 2005 05 08 | G96 | 0.2− | 0.1+ | | |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 10 16 | 644 | 0.1− | 0.0 | 2005 06 13 | G96 | 0.1− | 0.8+ | | |
| 2001 09 27 | 644 | 0.6+ | 0.4− | 2001 10 24 | 644 | 0.6− | 0.7− | 2005 06 13 | G96 | 0.2− | 0.8+ | | |
| 2001 09 27 | 644 | 0.6+ | 0.1+ | 2001 10 24 | 644 | 0.6− | 0.8− | 2005 06 13 | G96 | 0.3+ | 0.6+ | | |
| 2001 09 27 | 644 | 0.3+ | 0.2+ | 2001 10 24 | 644 | 0.6− | 0.9− | 2005 06 13 | G96 | 0.4− | 0.7+ | | |
| 2001 10 10 | 644 | 0.0 | 0.7+ | 2001 11 18 | 704 | 0.0 | 1.2+ | 2006 08 28 | E12 | 0.2+ | 0.2+ | | |
| 2001 10 10 | 644 | 0.0 | 0.8+ | 2001 11 18 | 704 | (0.4− | 3.1+) | 2006 08 28 | E12 | 0.2+ | 0.0 | | |
| 2001 10 10 | 644 | 0.4− | 0.6+ | 2001 11 18 | 704 | (1.0+ | 2.6+) | 2006 08 28 | E12 | 0.0 | 0.2+ | | |
| 2001 10 13 | 704 | 0.0 | 0.6− | 2001 11 18 | 704 | (0.0 | 1.7+) | 2006 08 28 | E12 | 0.1+ | 0.3− | | |
| 2001 10 13 | 704 | 0.3− | 0.2+ | 2001 11 20 | 704 | 0.1+ | 0.9+ | 2006 09 17 | 699 | 0.1− | 0.0 | | |
| 2001 10 13 | 704 | 0.4+ | 1.1+ | 2001 11 20 | 704 | 0.2+ | 0.9+ | 2006 09 17 | 699 | 0.6+ | 0.1− | | |
| 2001 10 14 | 699 | 0.5+ | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.9+ | 2006 09 17 | 699 | 0.6− | 0.2+ | | |
| 2001 10 14 | 699 | 0.2+ | 0.7+ | 2001 11 20 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.8− | 0.1− | | |
| 2001 10 14 | 699 | 0.2− | 0.1+ | 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 09 20 | 703 | 0.4+ | 0.0 | | |
| 2001 10 14 | 699 | 0.3+ | 0.4+ | 2001 12 17 | 704 | 0.8− | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.2− | | |
| 2001 10 16 | 704 | 0.3− | 0.0 | 2001 12 17 | 704 | 0.4− | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.5+ | | |
| 2001 10 16 | 704 | 0.4− | 1.0− | 2001 12 17 | 704 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.1− | 0.2+ | | |
| 2001 10 16 | 704 | 0.6− | 0.1− | 2001 12 17 | 704 | 0.4− | 1.0+ | 2006 10 12 | 644 | 0.4+ | 0.0 | | |
| 2001 10 16 | 704 | 0.3− | 0.4+ | 2005 05 08 | G96 | 0.3+ | 1.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 16 | 704 | 0.7− | 0.4− | 2005 05 08 | G96 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2001 10 16 | 644 | 0.1− | 0.1+ | 2005 05 08 | G96 | 0.0 | 0.5+ | | | | | | |

**(140388)∗ 2001 TZ$_{52}$ = 2001 SG$_{291}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24067), M. E. Sansaturio (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.57913 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21233683 | $\omega$ | 142.28066 | | +0.86548620 | +0.50085624 | |
| $a$ | 2.7826110 | $\Omega$ | 187.67771 | | −0.47407085 | +0.81330369 | |
| $e$ | 0.1056509 | $i$ | 3.75759 | | −0.16183469 | +0.29610830 | |
| $P$ | 4.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | 0.5− | 0.6− | 2001 10 18 | 644 | 0.2− | 0.7+ | 2005 07 11 | G96 | 0.4− | 0.3+ | | |
| 1994 02 16 | 691 | 0.2+ | 0.2+ | 2001 10 18 | 644 | 0.2− | 1.1+ | 2005 07 11 | G96 | 0.1− | 0.2+ | | |
| 1994 02 16 | 691 | 0.1+ | 0.2− | 2001 10 20 | 704 | 0.9+ | 1.3− | 2006 11 12 | G96 | 0.1− | 0.4− | | |
| 2001 09 20 | 704 | 0.2+ | 0.9− | 2001 10 20 | 704 | 0.2+ | 0.8− | 2006 11 12 | G96 | 0.2− | 0.4− | | |
| 2001 09 20 | 704 | 0.1+ | 1.2− | 2001 10 20 | 704 | 0.2− | 0.5− | 2006 11 12 | G96 | 0.6− | 0.6− | | |
| 2001 09 20 | 704 | 0.5− | 1.1− | 2001 10 20 | 704 | (2.1+ | 0.4−) | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2001 09 20 | 704 | (0.4− | 2.0−) | 2001 10 23 | 704 | 0.5− | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.5+ | | |
| 2001 09 26 | 704 | 0.3+ | 0.1− | 2001 10 23 | 704 | 0.3− | 1.0+ | 2006 11 14 | 704 | 0.3− | 0.6+ | | |
| 2001 09 26 | 704 | 0.6+ | 0.5+ | 2001 10 23 | 704 | 0.5− | 0.9+ | 2006 11 14 | 704 | 0.5+ | 0.1+ | | |
| 2001 09 26 | 704 | 0.4+ | 0.5+ | 2001 10 23 | 704 | 0.1+ | 1.3+ | 2006 11 16 | 691 | 0.3− | 0.2+ | | |
| 2001 09 26 | 704 | 0.3+ | 0.5− | 2001 10 24 | 704 | 1.0− | 1.1+ | 2006 11 16 | 691 | 0.3− | 0.1+ | | |
| 2001 10 12 | 699 | 0.1− | 0.7+ | 2001 10 24 | 704 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.2− | 0.0 | | |
| 2001 10 12 | 699 | (0.6− | 1.7−) | 2001 10 24 | 704 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 1.4− | 0.5+ | | |
| 2001 10 12 | 699 | 0.4− | 0.8+ | 2001 10 24 | 704 | (0.3+ | 1.6+) | 2006 11 18 | 704 | 1.4+ | 0.1− | | |
| 2001 10 12 | 699 | 0.2+ | 0.4− | 2004 03 29 | 691 | 0.4+ | 0.8+ | 2006 11 18 | 704 | (0.1− | 1.7+) | | |
| 2001 10 13 | 704 | 0.4+ | 0.2− | 2004 03 29 | 691 | 0.5+ | 0.8+ | 2006 11 18 | 704 | (0.6+ | 1.6+) | | |
| 2001 10 13 | 704 | 0.2− | 0.9+ | 2004 03 29 | 691 | 0.3+ | 0.8+ | 2006 11 20 | 704 | 0.5− | 0.1− | | |
| 2001 10 13 | 704 | 0.5− | 1.0+ | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.0− | | |
| 2001 10 14 | 699 | 0.7− | 1.0− | 2004 04 20 | 691 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 1.1− | 0.9+ | | |
| 2001 10 14 | 699 | 0.5− | 0.0 | 2004 04 20 | 691 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.4+ | 1.1+ | | |
| 2001 10 14 | 699 | 1.0− | 0.6− | 2005 06 09 | 691 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.6− | | |
| 2001 10 14 | 699 | 0.5− | 0.3+ | 2005 06 09 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.1+ | | |
| 2001 10 16 | 691 | 0.1+ | 0.0 | 2005 06 09 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2001 10 16 | 691 | 0.1+ | 0.2+ | 2005 06 17 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.2+ | | |
| 2001 10 16 | 691 | 0.3+ | 0.1+ | 2005 06 17 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2001 10 16 | 704 | 0.6− | 1.3+ | 2005 06 17 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.7− | 0.2− | 2005 07 09 | G92 | (2.9+ | 0.2+) | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2001 10 16 | 704 | 0.3− | 1.2+ | 2005 07 09 | G92 | 0.1− | 0.0 | 2006 11 29 | 704 | 2.0+ | 1.1+ | | |
| 2001 10 16 | 704 | (1.6− | 0.1+) | 2005 07 09 | G92 | 0.5− | 0.1− | 2006 11 29 | 704 | 1.1+ | 0.7− | | |
| 2001 10 16 | 704 | 0.1+ | 1.2+ | 2005 07 11 | G96 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.2− | | |
| 2001 10 18 | 644 | 0.0 | 1.1+ | 2005 07 11 | G96 | 0.2− | 0.1+ | | | | | | |

**(140389)∗ 2001 TM$_{54}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.87064 | | (2000.0) | | | |
| $n$ | 0.21124854 | $\omega$ | 205.89564 | | +0.41117298 | −0.90446000 |
| $a$ | 2.7921596 | $\Omega$ | 220.10232 | | +0.86396834 | +0.42638811 |
| $e$ | 0.0934320 | $i$ | 10.15114 | | +0.29068106 | +0.01205337 |
| $P$ | 4.67 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 09 | 704 | 0.2− | 0.0 | 2001 10 23 | 699 | 1.3− | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.2+ | |
| 2001 09 09 | 704 | 0.2+ | 0.1+ | 2001 10 23 | 699 | (1.7+ | 0.9+) | 2006 10 20 | 691 | 0.1− | 0.0 | |
| 2001 09 09 | 704 | 0.3− | 0.6+ | 2001 11 18 | 704 | 1.1− | 1.4+ | 2006 10 20 | 691 | 0.1− | 0.1− | |
| 2001 09 09 | 704 | 0.2+ | 0.2+ | 2001 11 18 | 704 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.0 | |
| 2001 09 09 | 704 | 0.1− | 0.4+ | 2001 11 18 | 704 | 0.3− | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.4− | |
| 2001 09 10 | 699 | 0.3+ | 0.1− | 2001 11 18 | 704 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.0 | 0.4− | |
| 2001 09 10 | 699 | 0.7− | 0.6+ | 2002 12 14 | 704 | (1.4− | 3.0+) | 2006 10 27 | G96 | 0.4+ | 0.4− | |
| 2001 09 10 | 699 | 0.7− | 1.0+ | 2002 12 14 | 704 | 0.3− | 0.9+ | 2006 10 27 | G96 | 0.4+ | 0.8− | |
| 2001 09 10 | 699 | 0.8− | 0.0 | 2002 12 14 | 704 | 0.2− | 0.7+ | 2006 10 28 | 704 | 0.7+ | 0.0 | |
| 2001 09 15 | 644 | 0.4+ | 1.1+ | 2003 01 01 | 704 | 0.8+ | 1.4+ | 2006 10 28 | 704 | 0.6− | 0.3+ | |
| 2001 09 15 | 644 | 0.3+ | 0.9+ | 2003 01 01 | 704 | (1.5+ | 0.3−) | 2006 10 28 | 704 | 0.4− | 0.7− | |
| 2001 09 15 | 644 | 0.1+ | 0.9+ | 2003 01 01 | 704 | 0.5+ | 1.2+ | 2006 10 28 | 704 | 0.5+ | 0.2− | |
| 2001 09 18 | 699 | 0.5− | 0.1− | 2003 01 01 | 704 | 0.9+ | 0.3− | 2006 10 28 | 704 | 0.9− | 0.4+ | |
| 2001 09 18 | 699 | 0.8+ | 0.1+ | 2003 01 01 | 704 | 1.0+ | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.2− | |
| 2001 09 18 | 699 | 0.5− | 0.3− | 2003 01 05 | 704 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2− | |
| 2001 09 18 | 699 | 0.6+ | 0.4− | 2003 01 05 | 704 | 0.6− | 1.0+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | |
| 2001 09 20 | 704 | 0.3− | 0.7+ | 2003 01 05 | 704 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.6+ | |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2003 01 05 | 704 | 0.3+ | 1.1− | 2006 11 11 | G96 | 0.1+ | 0.4− | |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2003 01 05 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 703 | 0.1− | 0.2+ | |
| 2001 09 20 | 704 | 0.1+ | 0.0 | 2003 01 30 | 704 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− | |
| 2001 09 20 | 704 | (2.1+ | 0.1−) | 2003 01 30 | 704 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.4+ | 0.5− | |
| 2001 09 23 | 704 | 0.8− | 0.2+ | 2003 01 30 | 704 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− | |
| 2001 09 23 | 704 | 0.3− | 0.8+ | 2004 04 17 | 704 | (0.7− | 1.9+) | 2006 11 11 | 703 | 0.3+ | 0.3+ | |
| 2001 09 23 | 704 | 0.4− | 0.5+ | 2004 04 17 | 704 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.3+ | |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2004 04 17 | 704 | 0.8− | 0.9+ | 2006 11 17 | 703 | 0.1+ | 0.4+ | |
| 2001 09 23 | 704 | 0.4− | 0.2+ | 2004 04 20 | 704 | 0.2+ | 0.8+ | 2006 11 17 | 703 | 0.2− | 0.0 | |
| 2001 09 25 | 704 | 0.8+ | 1.2+ | 2004 04 20 | 704 | 0.2+ | 1.2+ | 2006 11 17 | 703 | 0.0 | 0.1− | |
| 2001 09 25 | 704 | 0.2− | 0.5+ | 2004 04 20 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.2+ | |
| 2001 09 25 | 704 | 0.1− | 0.6+ | 2004 04 20 | 704 | 0.1− | 0.8+ | 2006 11 18 | 704 | 1.0− | 0.8+ | |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 0.9− | 0.8+ | 2006 11 18 | 704 | 1.1− | 1.0+ | |
| 2001 09 25 | 704 | 0.6+ | 0.5+ | 2004 04 25 | 704 | (0.1+ | 2.3+) | 2006 11 18 | 704 | 1.1− | 0.6+ | |
| 2001 09 25 | 704 | 0.0 | 0.4+ | 2004 04 25 | 704 | 0.3+ | 1.1+ | 2006 11 18 | 704 | 1.3− | 0.6+ | |
| 2001 09 25 | 704 | 0.6+ | 1.1+ | 2004 04 25 | 704 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 1.2− | 0.9+ | |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2004 04 25 | 704 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.7− | 1.3+ | |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2004 04 25 | 704 | 0.4+ | 1.0+ | 2006 11 19 | 704 | (1.9− | 0.9+) | |
| 2001 09 25 | 704 | 0.2+ | 0.1+ | 2004 04 26 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.7− | 0.2+ | |
| 2001 09 28 | 644 | 0.6− | 0.6− | 2004 04 26 | 704 | 0.5+ | 1.4+ | 2006 11 19 | 704 | 0.9− | 0.5− | |
| 2001 09 28 | 644 | 0.1+ | 0.6− | 2004 04 26 | 704 | 0.1+ | 0.8+ | 2006 11 19 | 704 | (1.7− | 0.9−) | |
| 2001 09 28 | 644 | 0.3− | 1.1− | 2004 04 26 | 704 | (0.2− | 1.7+) | 2006 11 21 | 704 | (0.8+ | 1.6−) | |
| 2001 10 05 | 644 | 0.1+ | 0.1+ | 2004 05 11 | 699 | 1.4+ | 0.4+ | 2006 11 21 | 704 | (0.4+ | 1.6−) | |
| 2001 10 05 | 644 | 0.3− | 0.3− | 2004 05 11 | 699 | (1.6+ | 0.5+) | 2006 11 21 | 704 | 0.2+ | 0.3− | |
| 2001 10 05 | 644 | 0.0 | 0.1− | 2004 05 11 | 699 | 1.2− | 1.2+ | 2006 11 21 | 704 | 0.6− | 0.7+ | |
| 2001 10 14 | 704 | 0.1+ | 0.3− | 2004 05 11 | 699 | (2.1− | 0.2+) | 2006 11 21 | 704 | 0.3+ | 0.5− | |
| 2001 10 14 | 704 | 0.1− | 0.2+ | 2004 05 15 | 704 | 0.2− | 1.4+ | 2006 11 22 | 683 | 0.0 | 0.1+ | |
| 2001 10 14 | 704 | 0.6+ | 0.2+ | 2004 05 15 | 704 | 1.1+ | 1.1+ | 2006 11 22 | 683 | 0.1− | 0.8+ | |
| 2001 10 14 | 704 | 0.1− | 0.0 | 2004 05 15 | 704 | 0.8+ | 1.1+ | 2006 11 23 | 683 | 0.0 | 0.0 | |
| 2001 10 14 | 704 | 0.3− | 0.1+ | 2004 05 27 | 691 | 0.4+ | 0.5+ | 2006 11 23 | 683 | 0.1+ | 1.0+ | |
| 2001 10 16 | 704 | 1.3− | 0.5+ | 2004 05 27 | 691 | 0.1+ | 0.8+ | 2006 11 23 | 683 | 1.2− | 0.9+ | |
| 2001 10 16 | 704 | 0.1− | 0.0 | 2004 05 27 | 691 | 0.0 | 0.8+ | 2006 11 25 | 683 | 1.1+ | 0.4+ | |
| 2001 10 16 | 704 | 0.2+ | 0.7− | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 25 | 683 | 0.8+ | 1.0+ | |
| 2001 10 16 | 704 | 0.3+ | 0.9− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 25 | 683 | 0.7+ | 2.2+ | |
| 2001 10 16 | 704 | 0.9+ | 0.8− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 26 | 704 | 0.4+ | 0.8+ | |
| 2001 10 21 | 704 | 0.5+ | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 26 | 704 | 0.3+ | 0.6+ | |
| 2001 10 21 | 704 | 1.1− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.0 | 0.8+ | |
| 2001 10 21 | 704 | 0.1+ | 0.9+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.5− | 0.2+ | |
| 2001 10 21 | 704 | 0.0 | 0.7− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.4+ | |
| 2001 10 23 | 699 | (3.3− | 0.3−) | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.7+ | |
| 2001 10 23 | 699 | 0.7+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.4− | |

**(140390)∗ 2001 TB$_{55}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.63199 | | (2000.0) | | | |
| $n$ | 0.18714911 | $\omega$ | 93.52299 | | +0.76042711 | +0.63851375 |
| $a$ | 3.0269892 | $\Omega$ | 226.84027 | | −0.64146931 | +0.71001631 |
| $e$ | 0.0604607 | $i$ | 9.35207 | | −0.10132980 | +0.29694615 |
| $P$ | 5.27 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 24 | 691 | 0.1− | 0.1+ | 2001 10 14 | 704 | 0.8− | 0.9− | 2006 09 11 | 703 | 0.6− | 0.4+ | |
| 1993 01 24 | 691 | 0.1− | 0.1+ | 2001 10 16 | 704 | 0.3− | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.1− | |
| 1993 01 24 | 691 | 0.3+ | 0.3+ | 2001 10 16 | 704 | 0.3+ | 0.4− | 2006 09 11 | 703 | 0.1+ | 0.1+ | |
| 2001 08 27 | 699 | 0.3+ | 0.2+ | 2001 10 16 | 704 | 0.3+ | 0.1− | 2006 09 11 | 703 | 0.6− | 0.8− | |
| 2001 08 27 | 699 | 0.2+ | 1.9+ | 2001 10 16 | 704 | 1.3+ | 1.1+ | 2006 09 14 | 691 | 0.5+ | 0.2− | |
| 2001 08 27 | 699 | 0.2+ | 0.2+ | 2001 10 16 | 704 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.2+ | 0.1− | |
| 2001 08 27 | 699 | 0.3+ | 0.7− | 2005 03 10 | G96 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.0 | |
| 2001 09 09 | 704 | 0.6− | 0.0 | 2005 03 10 | G96 | 0.1+ | 0.4+ | 2006 09 16 | 691 | 0.2+ | 0.0 | |
| 2001 09 09 | 704 | 0.8− | 0.3+ | 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 09 16 | 691 | 0.1+ | 0.1− | |
| 2001 09 09 | 704 | 0.2+ | 1.6+ | 2005 03 10 | G96 | 0.2− | 0.5+ | 2006 09 16 | 691 | 0.1+ | 0.1− | |
| 2001 09 18 | 699 | 0.3+ | 0.6+ | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.4+ | 0.1− | |
| 2001 09 18 | 699 | 0.9− | 0.4+ | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1− | |
| 2001 09 18 | 699 | 0.3+ | 0.4+ | 2005 05 08 | G96 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.4− | |
| 2001 09 18 | 699 | 0.7− | 0.1− | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.0 | |
| 2001 09 25 | 704 | 0.5− | 0.2− | 2005 05 20 | G96 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.4+ | 0.1− | |
| 2001 09 25 | 704 | 0.4+ | 0.1+ | 2005 05 20 | G96 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | |
| 2001 09 25 | 704 | 0.9− | 0.3+ | 2005 06 16 | G96 | 0.7+ | 0.5+ | 2006 09 26 | 703 | 1.2− | 0.5+ | |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2005 06 16 | G96 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.8− | 0.1− | |
| 2001 09 25 | 704 | 0.8+ | 0.2− | 2005 06 16 | G96 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.5− | |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2005 06 16 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 1.2− | 1.2+ | |
| 2001 09 25 | 704 | 0.2− | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.1− | |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2− | |
| 2001 09 25 | 704 | 0.8− | 0.5+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1− | |
| 2001 09 25 | 704 | 0.0 | 0.9+ | 2006 08 29 | 703 | 1.0− | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.1− | |
| 2001 09 25 | 704 | 0.8− | 0.9− | 2006 08 29 | 703 | 0.9− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 | |
| 2001 09 25 | 704 | (2.1+ | 1.4−) | 2006 08 29 | 703 | 0.1+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.0 | |
| 2001 09 25 | 704 | 0.0 | 0.9+ | 2006 08 29 | 703 | 0.9− | 0.7+ | 2006 10 03 | 691 | 0.0 | 0.2+ | |
| 2001 09 25 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.2− | |
| 2001 10 14 | 704 | 0.4+ | 0.1− | 2006 08 30 | 699 | 1.1− | 0.2+ | 2006 10 03 | 691 | 0.9− | 0.1− | |
| 2001 10 14 | 704 | 0.3− | 1.0− | 2006 08 30 | 699 | 1.1− | 0.1− | | | | | |
| 2001 10 14 | 704 | 0.7+ | 0.2− | 2006 08 30 | 699 | 1.0− | 0.8+ | | | | | |

**(140391)∗ 2001 TQ$_{55}$ = 2001 SN$_{172}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 25400)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.90360 | | (2000.0) | | | |
| $n$ | 0.19939357 | $\omega$ | 44.59407 | | +0.20724120 | −0.97828474 |
| $a$ | 2.9017631 | $\Omega$ | 33.44558 | | +0.89594942 | +0.18849593 |
| $e$ | 0.1284024 | $i$ | 0.32956 | | +0.39284312 | +0.08618730 |
| $P$ | 4.94 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 05 | 691 | 0.0 | 0.5+ | 2001 10 17 | 644 | 0.5+ | 0.6+ | 2006 09 18 | 699 | 1.5+ | 0.7− | |
| 1994 06 05 | 691 | 0.6+ | 1.1+ | 2001 10 17 | 644 | 0.0 | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.0 | |
| 1994 06 05 | 691 | 0.2+ | 0.3+ | 2001 10 18 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2+ | |
| 1998 01 25 | 566 | 0.1− | 1.4− | 2001 10 18 | 691 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2+ | |
| 1998 01 25 | 566 | 0.7− | 1.6− | 2001 10 18 | 691 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.3− | 0.3− | |
| 1998 01 25 | 566 | 0.0 | 1.3− | 2001 10 18 | 644 | 0.4− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.4− | |
| 1999 04 06 | 691 | 0.0 | 1.0+ | 2001 10 18 | 644 | 0.3− | 0.5+ | 2006 09 20 | 644 | 0.4− | 0.3− | |
| 1999 04 06 | 691 | 0.4− | 0.4+ | 2001 10 18 | 644 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.5− | |
| 1999 04 06 | 691 | 0.1− | 0.6+ | 2001 10 23 | 704 | (0.8− | 2.3+) | 2006 09 25 | G96 | 0.1+ | 0.5− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.8− | 0.8− | 2001 10 23 | 704 | 0.6− | 1.2+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2001 08 27 | 699 | 0.6− | 0.8+ | 2001 10 23 | 704 | 0.8− | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.6− |
| 2001 08 27 | 699 | 0.9− | 0.0 | 2001 10 24 | 704 | 0.4− | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.4− | 0.6+ | 2001 10 24 | 704 | 0.6− | 1.2+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2001 10 24 | 704 | 0.2− | 1.1+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 09 11 | 699 | 0.4− | 0.7+ | 2001 10 24 | 704 | (0.1− | 2.1+) | 2006 09 27 | 704 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.5− | 0.0 | 2001 10 24 | 704 | 0.1− | 1.5+ | 2006 09 27 | 704 | 0.2+ | 0.4− |
| 2001 09 11 | 699 | 0.6− | 0.3− | 2003 01 27 | 699 | 0.5+ | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.3+ |
| 2001 09 16 | 704 | (1.7− | 6.5+) | 2003 01 27 | 699 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 1.2+ | 0.1+ |
| 2001 09 16 | 704 | (1.0− | 6.1+) | 2003 01 27 | 699 | 0.1− | 0.7− | 2006 09 29 | 704 | 0.7− | 0.1+ |
| 2001 09 16 | 704 | (2.0− | 5.1+) | 2003 01 27 | 704 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | (1.0− | 6.1+) | 2003 01 27 | 699 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 0.5− | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.6− | 2003 01 27 | 704 | 0.1− | 0.8+ | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.1+ | 0.6− | 2003 01 27 | 704 | 0.1− | 0.8+ | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2003 01 27 | 704 | 0.1− | 0.7+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.4+ | 0.3− | 2003 01 27 | 608 | 0.9+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 0.3− | 2003 01 27 | 608 | 1.2+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 09 25 | 699 | 0.8− | 0.1+ | 2003 01 27 | 608 | 1.0+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 2001 09 25 | 699 | 1.3− | 0.4+ | 2003 01 31 | 704 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.5− |
| 2001 09 25 | 699 | 0.9− | 0.4+ | 2003 01 31 | 704 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2001 09 25 | 699 | 1.5− | 0.7+ | 2003 01 31 | 704 | 0.6+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2001 09 26 | 704 | 0.4− | 0.5+ | 2003 01 31 | 704 | 0.5+ | 0.7+ | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2001 09 26 | 704 | 0.1− | 0.6+ | 2003 01 31 | 704 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2001 09 26 | 704 | 1.0− | 0.4+ | 2003 02 02 | 608 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2001 09 26 | 704 | 0.2− | 0.6+ | 2003 02 02 | 608 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2001 09 26 | 704 | 1.0− | 0.1+ | 2003 02 02 | 608 | 0.5− | 0.9+ | 2006 10 17 | 703 | 0.9+ | 1.1+ |
| 2001 09 28 | 704 | 0.7+ | 0.3+ | 2003 02 03 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2001 09 28 | 704 | (1.6+ | 1.3+) | 2003 02 03 | 704 | 0.5+ | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2001 09 28 | 704 | 0.1+ | 0.0 | 2003 02 03 | 704 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2001 09 28 | 704 | 0.1+ | 0.6+ | 2003 02 03 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 09 28 | 704 | 0.6+ | 0.1+ | 2003 02 03 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2001 10 06 | 644 | 0.3+ | 0.0 | 2003 02 08 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2001 10 06 | 644 | 0.4+ | 0.0 | 2003 02 08 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2001 10 06 | 644 | 0.1+ | 0.1− | 2003 02 08 | 608 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2001 10 11 | 683 | 0.2+ | 1.4+ | 2003 02 08 | 704 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2001 10 11 | 683 | (2.1+ | 0.3−) | 2003 02 08 | 608 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.6− |
| 2001 10 11 | 683 | (2.0− | 2.5−) | 2003 02 08 | 608 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 10 13 | 704 | 0.3+ | 0.7− | 2003 02 09 | 291 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2001 10 13 | 704 | 0.5+ | 0.3+ | 2003 02 09 | 291 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2001 10 13 | 704 | 0.4− | 0.4+ | 2003 02 09 | 291 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.1+ | 0.3+ |
| 2001 10 13 | 699 | 1.0+ | 0.8+ | 2003 02 21 | 699 | 1.1+ | 0.3+ | 2006 11 02 | G96 | 0.3− | 0.6+ |
| 2001 10 13 | 704 | 0.5− | 0.7+ | 2003 02 21 | 699 | 1.1+ | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.1+ |
| 2001 10 13 | 699 | 0.2− | 0.0 | 2003 02 21 | 699 | 0.4+ | 0.2− | 2006 11 02 | G96 | 0.0 | 0.0 |
| 2001 10 13 | 704 | 0.2+ | 0.5+ | 2003 02 21 | 699 | (1.8+ | 0.4+) | 2006 11 02 | G96 | 0.0 | 0.6− |
| 2001 10 13 | 699 | 0.1+ | 0.8+ | 2003 03 06 | 644 | 0.2− | 0.0 | 2006 11 02 | G96 | 0.1− | 0.6− |
| 2001 10 13 | 699 | 1.2− | 0.3− | 2003 03 06 | 644 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.2− | 0.7− |
| 2001 10 15 | 704 | 0.9− | 0.1− | 2003 03 06 | 644 | 0.1− | 0.2− | 2006 11 02 | G96 | 0.3+ | 0.4− |
| 2001 10 15 | 704 | 0.2− | 0.4+ | 2005 06 03 | 691 | 0.7+ | 0.2+ | 2006 11 02 | G96 | 0.1− | 0.4− |
| 2001 10 15 | 704 | 0.5− | 0.5+ | 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2001 10 15 | 704 | 0.7− | 0.5+ | 2005 06 03 | 691 | 0.3+ | 0.4− | 2006 11 02 | G96 | 0.0 | 0.4− |
| 2001 10 15 | 704 | 0.2+ | 0.5+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 02 | G96 | 0.5− | 0.6− |
| 2001 10 16 | 704 | 0.4− | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2001 10 16 | 704 | 0.5− | 0.9+ | 2006 07 21 | G96 | 0.3+ | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2001 10 16 | 704 | 0.7− | 1.3+ | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2001 10 16 | 704 | 0.1− | 1.3+ | 2006 09 15 | 691 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2001 10 16 | 704 | 0.9+ | 1.0+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2001 10 17 | 644 | 0.4+ | 0.9+ | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2001 10 17 | 644 | 0.5+ | 0.7+ | 2006 09 18 | 699 | 0.5+ | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2001 10 17 | 644 | 0.5+ | 0.8+ | 2006 09 18 | 699 | 0.1− | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.6− |
| 2001 10 17 | 644 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 1.0+ | 1.2+ | | | | |

**(140392)∗ 2001 TS$_{57}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 89.50333 | | (2000.0) | | | | |
| $n$ | 0.21008922 | $\omega$ | 313.34812 | | +0.51767226 | | +0.85549302 |
| $a$ | 2.8024221 | $\Omega$ | 347.81115 | | −0.76742427 | | +0.45801951 |
| $e$ | 0.0789929 | $i$ | 3.29339 | | −0.37825313 | | +0.24155707 |
| $P$ | 4.69 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.3− | 2001 10 21 | 704 | (0.8− | 1.9+) | 2005 07 30 | E12 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2001 10 26 | 644 | 0.3− | 0.5+ | 2005 07 30 | E12 | 0.4− | 1.0+ |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2001 10 26 | 644 | 0.3− | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.4− | 0.6+ | 2001 10 26 | 644 | 0.4− | 0.8+ | 2006 10 13 | 691 | 0.1+ | 0.1+ |
| 2001 10 13 | 704 | 0.1− | 0.7+ | 2004 03 27 | 704 | 1.1+ | 0.8+ | 2006 10 13 | 691 | 0.1− | 0.1− |
| 2001 10 13 | 704 | 0.4− | 0.7+ | 2004 03 27 | 704 | 0.5+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2001 10 13 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 704 | (1.7− | 0.5+) | 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.3− | 0.1− |
| 2001 10 17 | 704 | 0.7− | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.5+ |
| 2001 10 17 | 704 | 0.6+ | 0.0 | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.2+ | 0.8+ | 2004 04 16 | 644 | 0.8+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.4− | 0.9+ | 2004 04 16 | 644 | 0.9+ | 0.0 | 2006 11 22 | 704 | (2.9− | 1.2+) |
| 2001 10 17 | 704 | 0.8+ | 1.3− | 2004 04 16 | 644 | 1.0+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.9+ |
| 2001 10 19 | 644 | 0.1+ | 0.2+ | 2004 04 23 | 691 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2001 10 19 | 644 | 0.3− | 0.2+ | 2004 04 23 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.8+ |
| 2001 10 19 | 644 | 0.1− | 0.1+ | 2004 04 23 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.8+ | 0.1− |
| 2001 10 21 | 704 | 1.3− | 1.2+ | 2005 07 30 | E12 | 0.3− | 0.7+ | | | | |
| 2001 10 21 | 704 | (1.6− | 1.6+) | 2005 07 30 | E12 | 0.2+ | 0.1+ | | | | |

**(140393)∗ 2001 TV$_{57}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 302.65349 | | (2000.0) | | | | |
| $n$ | 0.17855034 | $\omega$ | 187.52717 | | +0.68253378 | | −0.72949458 |
| $a$ | 3.1234095 | $\Omega$ | 219.44693 | | +0.67414668 | | +0.65195012 |
| $e$ | 0.1479668 | $i$ | 4.02133 | | +0.28226563 | | +0.20687847 |
| $P$ | 5.52 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.9+ | 0.1− | 2001 10 21 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 691 | 0.3+ | 0.3+ |
| 2001 09 10 | 704 | 1.1− | 0.3− | 2001 10 21 | 704 | 0.8+ | 0.4+ | 2004 03 16 | 691 | 0.1− | 0.2+ |
| 2001 09 10 | 704 | 0.5+ | 0.0 | 2001 10 23 | 704 | 0.3+ | 0.6− | 2004 03 16 | 691 | 0.4+ | 0.4+ |
| 2001 09 10 | 704 | 0.6+ | 1.4− | 2001 10 23 | 704 | 0.1+ | 0.3− | 2004 04 13 | 691 | 0.0 | 0.5+ |
| 2001 09 20 | 704 | 0.5+ | 0.4+ | 2001 10 23 | 704 | 0.1− | 0.0 | 2004 04 13 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2001 10 23 | 704 | 0.4+ | 0.6− | 2004 04 13 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2001 10 23 | 704 | 0.5+ | 0.2− | 2005 06 17 | G96 | 0.6− | 0.3+ |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 24 | 704 | 0.2+ | 1.1− | 2005 06 17 | G96 | 0.4− | 0.3+ |
| 2001 09 23 | 704 | 0.1+ | 1.0+ | 2001 10 24 | 704 | 0.3− | 0.6− | 2005 06 17 | G96 | 0.1+ | 0.3+ |
| 2001 09 23 | 704 | 0.5+ | 1.5+ | 2001 10 24 | 704 | 0.0 | 1.0− | 2005 06 17 | G96 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.0 | 1.0+ | 2001 10 24 | 704 | 0.3+ | 0.7− | 2006 08 22 | 644 | 0.1+ | 0.0 |
| 2001 09 24 | 704 | 0.1− | 0.7− | 2001 10 24 | 704 | 0.0 | 0.5− | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2001 09 24 | 704 | 1.1+ | 0.1− | 2001 10 26 | 644 | 1.1+ | 1.0− | 2006 08 22 | 644 | 0.2− | 0.1+ |
| 2001 09 24 | 704 | 0.8+ | 0.6− | 2001 10 26 | 644 | 1.1+ | 0.4− | 2006 08 24 | 704 | 1.1+ | 0.4+ |
| 2001 09 24 | 704 | 0.1+ | 0.1− | 2001 10 26 | 644 | (1.6+ | 0.3−) | 2006 08 24 | 704 | 0.5+ | 0.4+ |
| 2001 09 24 | 704 | 1.2+ | 0.2− | 2001 11 09 | 704 | 0.3+ | 0.2+ | 2006 08 24 | 704 | 1.3+ | 0.2+ |
| 2001 10 07 | 644 | 0.3+ | 0.6+ | 2001 11 09 | 704 | 0.6− | 0.2− | 2006 08 24 | 704 | 0.7+ | 0.4− |
| 2001 10 07 | 644 | 0.0 | 0.5+ | 2001 11 09 | 704 | 0.1− | 0.4− | 2006 08 28 | 699 | 0.8− | 0.2+ |
| 2001 10 07 | 644 | 0.0 | 0.1+ | 2001 11 09 | 644 | 0.9− | 0.0 | 2006 08 28 | 699 | 0.5− | 0.5+ |
| 2001 10 12 | 699 | 0.7+ | 0.1+ | 2001 11 09 | 704 | 0.5− | 0.9+ | 2006 08 28 | 699 | 0.7− | 1.1+ |
| 2001 10 12 | 699 | 0.4+ | 0.6+ | 2001 11 09 | 644 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.9+ |
| 2001 10 12 | 699 | 1.1+ | 0.6+ | 2001 11 09 | 644 | 0.7− | 0.9+ | 2006 08 30 | 704 | 0.7− | 1.2+ |
| 2001 10 12 | 699 | 0.0 | 0.8+ | 2001 11 14 | 691 | 0.7− | 0.3− | 2006 08 30 | 704 | (0.6+ | 1.7+) |
| 2001 10 13 | 704 | 0.1− | 0.2+ | 2001 11 14 | 691 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.3+ | 0.4+ |
| 2001 10 13 | 704 | 0.1+ | 0.8+ | 2001 11 14 | 691 | 0.5− | 0.5+ | 2006 08 30 | 704 | (1.9− | 1.4+) |
| 2001 10 13 | 704 | 0.5− | 1.4+ | 2001 11 16 | 644 | 0.1+ | 0.8+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2001 10 13 | 704 | 0.5− | 0.9+ | 2001 11 16 | 644 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.3− | 0.5+ |
| 2001 10 13 | 704 | 0.1− | 0.8+ | 2001 11 16 | 644 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.7− | 0.5− | 2003 01 27 | 699 | 0.8− | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2001 10 17 | 704 | 0.1− | 0.6− | 2003 01 27 | 704 | 0.6+ | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.6− | 0.6− | 2003 01 27 | 644 | 0.1+ | 0.9+ | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 0.6− | 2003 01 27 | 644 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.4− | 0.5− | 2003 01 27 | 699 | 0.7− | 1.3+ | 2006 09 28 | G96 | 0.9− | 0.0 |
| 2001 10 18 | 704 | 0.6− | 1.1− | 2003 01 27 | 704 | 0.9+ | 1.3+ | 2006 09 28 | G96 | 0.6− | 0.1+ |
| 2001 10 18 | 704 | (0.5− | 1.7−) | 2003 01 27 | 704 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.4+ |
| 2001 10 18 | 704 | (1.8− | 2.0−) | 2003 01 27 | 644 | 0.4+ | 1.0+ | 2006 09 28 | G96 | 0.6− | 0.4− |
| 2001 10 18 | 704 | (0.1− | 1.6−) | 2003 01 27 | 699 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.6− | 0.4− |
| 2001 10 18 | 704 | 0.4− | 1.1− | 2003 01 27 | 699 | 0.9+ | 0.5− | 2006 09 28 | G96 | 0.6− | 0.3− |
| 2001 10 18 | 704 | 0.2+ | 0.9− | 2003 01 27 | 644 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2001 10 18 | 704 | 0.3− | 0.9− | 2003 01 27 | 644 | 0.1− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2001 10 18 | 704 | (1.7− | 1.4−) | 2003 01 27 | 644 | 0.2− | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2001 10 19 | 644 | 0.1+ | 0.5+ | 2003 02 02 | 608 | 0.4+ | 1.4− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 10 19 | 644 | 0.3+ | 0.5+ | 2003 02 02 | 608 | 0.4− | 0.9− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2001 10 19 | 644 | 0.0 | 0.6+ | 2003 02 02 | 608 | (0.4+ | 1.5−) | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2003 02 03 | 644 | 0.0 | 0.8+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 0.0 | 0.1+ | 2003 02 03 | 644 | 0.2− | 1.0+ | 2006 11 17 | G96 | 0.1− | 0.4+ |
| 2001 10 21 | 704 | 0.3+ | 0.2+ | 2003 02 03 | 644 | 0.2− | 0.8+ | | | | |

**(140394)∗ 2001 TW$_{58}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 23.64443 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18331232 | $\omega$ | 344.91092 | | +0.71537689 | | +0.69861010 | | |
| $a$ | 3.0690805 | $\Omega$ | 330.75925 | | −0.63820412 | | +0.64546681 | | |
| $e$ | 0.1380204 | $i$ | 1.57309 | | −0.28448446 | | +0.30873373 | | |
| $P$ | 5.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.0 | 1.0− | 2001 10 25 | 704 | (1.6− | 0.1−) | 2006 08 22 | 644 | 0.6− | 0.0 |
| 1996 12 12 | 691 | 0.3+ | 0.7− | 2001 10 25 | 704 | 0.3− | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.1+ |
| 1996 12 12 | 691 | 0.8+ | 0.5− | 2001 10 25 | 704 | 0.4+ | 0.8+ | 2006 08 22 | 644 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.0 | 2001 10 26 | 644 | 0.3+ | 0.1+ | 2006 08 25 | 704 | 0.3− | 0.7+ |
| 2001 09 20 | 704 | 0.5+ | 0.4+ | 2001 10 26 | 644 | 0.0 | 0.2− | 2006 08 25 | 704 | 0.5+ | 0.6+ |
| 2001 09 20 | 704 | 0.7− | 0.3− | 2001 10 26 | 644 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.7− | 0.4− | 2001 11 21 | 704 | 0.4+ | 0.1+ | 2006 08 25 | 704 | 0.2+ | 0.2− |
| 2001 10 07 | 644 | 0.2− | 0.7+ | 2001 11 21 | 704 | 0.3− | 0.3− | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2001 10 07 | 644 | 0.2− | 0.5+ | 2001 11 21 | 704 | 0.8− | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2001 10 07 | 644 | 0.3+ | 0.4+ | 2001 11 21 | 704 | (1.7− | 0.5+) | 2006 08 27 | 691 | 0.1+ | 0.2− |
| 2001 10 13 | 704 | 0.7+ | 1.1− | 2004 02 16 | 691 | 0.0 | 0.7+ | 2006 08 28 | 703 | (1.7+ | 1.2−) |
| 2001 10 13 | 704 | 0.2− | 0.3+ | 2004 02 16 | 691 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 1.5+ | 0.3+ |
| 2001 10 13 | 704 | 1.1− | 1.5+ | 2004 02 16 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.2− |
| 2001 10 13 | 704 | 0.5− | 0.2+ | 2004 03 14 | 691 | 0.0 | 0.6+ | 2006 08 28 | 703 | (1.7+ | 1.3−) |
| 2001 10 13 | 704 | 0.2− | 0.6+ | 2004 03 14 | 691 | 0.0 | 0.5+ | 2006 09 01 | 704 | 0.4− | 0.5+ |
| 2001 10 17 | 704 | 1.1− | 1.1+ | 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.3+ | 0.5− |
| 2001 10 17 | 704 | (2.0− | 1.1+) | 2005 05 11 | 644 | 0.4− | 0.1− | 2006 09 01 | 704 | 0.5+ | 0.4− |
| 2001 10 17 | 704 | (1.7− | 1.0+) | 2005 05 11 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.8+ | 0.3+ |
| 2001 10 17 | 704 | 1.1− | 0.3+ | 2005 05 11 | 644 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 1.4− | 0.2+ | 2005 05 12 | G96 | 0.7− | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.6+ |
| 2001 10 19 | 644 | 0.1+ | 0.6+ | 2005 05 12 | G96 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 2001 10 19 | 644 | 0.2+ | 0.7+ | 2005 05 12 | G96 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.7− | 0.6+ |
| 2001 10 19 | 644 | 0.4+ | 0.5+ | 2005 05 12 | G96 | 0.6− | 0.1− | 2006 09 17 | 704 | 0.3− | 0.3+ |
| 2001 10 20 | 704 | (0.5+ | 2.1+) | 2005 05 16 | 644 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.1− | 0.2− |
| 2001 10 20 | 704 | 1.6− | 0.7+ | 2005 05 16 | 644 | 0.6+ | 0.2− | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2001 10 20 | 704 | 0.5+ | 0.8+ | 2005 05 16 | 644 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2001 10 20 | 704 | 0.3+ | 1.1+ | 2006 07 25 | G96 | 0.1− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.5+ | 0.9− | 2006 07 25 | G96 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.5− |
| 2001 10 21 | 704 | 0.6+ | 1.0− | 2006 07 25 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.3− | 0.5+ | 2006 07 25 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2001 10 21 | 704 | 0.9− | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.8− |
| 2001 10 25 | 704 | 0.6− | 1.0+ | 2006 08 19 | 691 | 0.3− | 0.3+ | | | | |

**(140395)∗ 2001 TJ$_{63}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 6.65235 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20359741 | $\omega$ | 346.01495 | | +0.81157571 | | −0.54510475 | | |
| $a$ | 2.8616810 | $\Omega$ | 49.02081 | | +0.55923982 | | +0.62063378 | | |
| $e$ | 0.1393166 | $i$ | 16.17058 | | +0.16910259 | | +0.56362622 | | |
| $P$ | 4.84 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.4− | 0.1+ | 2001 11 17 | 704 | (1.6− | 0.5+) | 2006 09 19 | 699 | 1.2− | 0.8− |
| 2001 08 20 | 644 | 0.3− | 0.2+ | 2001 11 18 | 704 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.0 |
| 2001 08 20 | 644 | 0.4− | 0.5+ | 2001 11 18 | 704 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.9+ |
| 2001 09 17 | 699 | 0.9− | 0.7+ | 2001 11 18 | 704 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.4− |
| 2001 09 17 | 699 | 1.0− | 0.6+ | 2001 11 18 | 704 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2001 09 17 | 699 | 1.4− | 0.2+ | 2001 11 18 | 704 | 0.5− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.5− |
| 2001 09 17 | 699 | 0.7− | 0.1− | 2001 11 20 | 704 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2001 09 27 | 644 | 1.2− | 0.6− | 2001 11 20 | 704 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2001 09 27 | 644 | 1.3− | 0.4− | 2001 11 20 | 704 | 0.1− | 1.2+ | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2001 09 27 | 644 | 1.0− | 0.3− | 2001 11 20 | 704 | (0.2− | 1.5+) | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2001 10 10 | 644 | 0.3− | 0.2− | 2001 11 20 | 704 | 0.4+ | 1.0+ | 2006 10 16 | 703 | 0.7+ | 0.3+ |
| 2001 10 10 | 644 | 0.1− | 0.2− | 2001 11 21 | 644 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2001 10 10 | 644 | 0.5− | 0.1− | 2001 11 21 | 704 | 0.4− | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2001 10 13 | 704 | 1.3+ | 0.2− | 2001 11 21 | 644 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.4− | 0.4− |
| 2001 10 13 | 704 | 0.6+ | 0.0 | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2001 10 13 | 704 | 0.8+ | 1.1+ | 2001 11 21 | 704 | 0.4− | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.3− |
| 2001 10 13 | 704 | (2.7+ | 0.2+) | 2001 11 21 | 704 | 0.3− | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 2001 10 14 | 699 | 0.8− | 0.1− | 2001 11 21 | 704 | 0.9− | 0.9+ | 2006 10 27 | 691 | 0.4+ | 0.1− |
| 2001 10 14 | 699 | 0.3+ | 0.4+ | 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2001 10 14 | 699 | 0.1+ | 0.2− | 2001 11 21 | 704 | 1.5− | 0.8+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2001 10 14 | 699 | 0.1+ | 1.4− | 2001 11 21 | 644 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.3− |
| 2001 10 17 | 704 | 1.3+ | 0.4+ | 2001 11 21 | 704 | 0.7− | 0.5+ | 2006 11 11 | 703 | 1.0− | 0.8− |
| 2001 10 17 | 704 | 0.1+ | 0.0 | 2001 11 21 | 704 | 1.2− | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.7+ |
| 2001 10 17 | 704 | 0.1− | 0.8+ | 2001 12 11 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2001 10 17 | 704 | 0.2+ | 0.9+ | 2001 12 11 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.0 | 0.7+ | 2001 12 11 | 704 | 1.2− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2001 10 22 | 704 | 0.1− | 1.1+ | 2001 12 15 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.6− | 0.9− |
| 2001 10 22 | 704 | 0.2+ | 0.5+ | 2001 12 15 | 704 | 0.7− | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.3− |
| 2001 10 22 | 704 | 0.1+ | 0.5+ | 2001 12 15 | 704 | 0.3− | 0.6− | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2001 10 22 | 704 | 0.0 | 0.5+ | 2001 12 15 | 704 | 0.2− | 0.6− | 2006 11 15 | 704 | 0.9+ | 0.0 |
| 2001 10 22 | 704 | 0.2− | 0.5+ | 2001 12 15 | 704 | 0.5− | 0.3+ | 2006 11 15 | 704 | 0.8+ | 0.8+ |
| 2001 10 23 | 704 | 0.0 | 0.5− | 2001 12 18 | 704 | 0.0 | 0.1+ | 2006 11 15 | 704 | (1.7+ | 1.7+) |
| 2001 10 23 | 704 | 0.1+ | 0.1+ | 2001 12 18 | 704 | 0.6+ | 0.5− | 2006 11 16 | 704 | 0.5+ | 0.3+ |
| 2001 10 23 | 704 | 0.0 | 0.5− | 2001 12 18 | 704 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.8+ | 0.6+ |
| 2001 10 23 | 704 | 0.1+ | 0.1− | 2001 12 18 | 704 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2001 10 24 | 704 | 0.3− | 0.2− | 2001 12 19 | 704 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.7+ | 0.9+ |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2001 12 19 | 704 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.4− |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 0.0 | 0.1+ | 2001 12 19 | 704 | 0.4− | 0.3− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 0.5− | 0.2+ | 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2001 10 25 | 704 | 0.2− | 0.1+ | 2003 02 01 | 644 | 0.2+ | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2001 10 25 | 704 | 0.3+ | 1.1+ | 2003 02 01 | 644 | 0.3+ | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2001 10 25 | 704 | 0.5+ | 0.3− | 2003 02 01 | 644 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2001 10 25 | 644 | 0.4+ | 0.4+ | 2003 03 09 | 644 | 0.7+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2001 10 25 | 644 | 0.4− | 0.4+ | 2003 03 09 | 644 | 0.5+ | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2001 10 25 | 644 | 0.4+ | 0.2+ | 2003 03 09 | 644 | 0.4+ | 0.9+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.4− | 0.3+ | 2004 05 09 | 691 | 0.5+ | 0.5+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.1− | 1.3− | 2004 05 09 | 691 | 0.5+ | 0.8+ | 2006 11 22 | 704 | 0.9− | 0.1− |
| 2001 11 09 | 704 | 0.0 | 1.0− | 2005 07 04 | E12 | 0.4− | 0.4+ | 2006 11 22 | 704 | 0.7+ | 0.1− |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2005 07 04 | E12 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6− | 0.4+ |
| 2001 11 15 | 644 | 0.7+ | 0.7+ | 2005 07 04 | E12 | 0.6− | 0.3− | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2001 11 15 | 644 | 0.4+ | 0.5+ | 2005 07 04 | E12 | 0.4+ | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.1− |
| 2001 11 15 | 644 | 1.0+ | 1.1+ | 2006 09 16 | 703 | 0.7− | 1.1+ | 2006 11 25 | 691 | 0.1+ | 0.4+ |
| 2001 11 17 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.8+ | 2006 11 25 | 691 | 0.4+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2001 11 17 | 704 | 0.3− | 0.2+ | 2006 09 16 | 703 | 1.0+ | 1.2+ | | | | |
| 2001 11 17 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | | | | |

**(140396)∗ 2001 TG$_{64}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.28367 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17840099 | $\omega$ | 240.60745 | | −0.31191041 | | −0.94832540 |
| $a$ | 3.1251525 | $\Omega$ | 227.68764 | | +0.89672553 | | −0.27357606 |
| $e$ | 0.1141123 | $i$ | 4.51643 | | +0.31399876 | | −0.16073291 |
| $P$ | 5.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.5− | 0.9+ | 2001 11 19 | 704 | 0.4− | 0.2+ | 2003 03 07 | 608 | 0.5− | 0.4+ |
| 2001 10 13 | 704 | 1.0− | 0.6+ | 2001 11 19 | 704 | 0.0 | 0.4+ | 2004 05 09 | 691 | 0.0 | 0.3+ |
| 2001 10 13 | 704 | 0.5+ | 0.2+ | 2001 11 19 | 704 | 0.8− | 1.1+ | 2004 05 09 | 691 | 0.2− | 0.4+ |
| 2001 10 13 | 704 | 0.6− | 1.2+ | 2001 11 19 | 704 | 1.0+ | 0.9+ | 2004 05 09 | 691 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.1+ | 0.4− | 2002 12 07 | 645 | 0.0 | 0.1+ | 2004 05 16 | 691 | 0.0 | 0.4+ |
| 2001 10 17 | 704 | 0.9+ | 0.1− | 2002 12 07 | 645 | 0.1+ | 0.1+ | 2004 05 16 | 691 | 0.1− | 0.5+ |
| 2001 10 17 | 704 | 0.2− | 0.7+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2004 05 16 | 691 | 0.4+ | 0.5+ |
| 2001 10 17 | 704 | 0.8+ | 0.9+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2004 05 19 | 691 | 0.2+ | 0.4+ |
| 2001 10 19 | 644 | 0.7− | 1.2+ | 2003 01 28 | 704 | 0.4− | 1.1+ | 2004 05 19 | 691 | 0.2+ | 0.6+ |
| 2001 10 19 | 644 | 1.0− | 1.2+ | 2003 01 28 | 704 | 0.6− | 0.1+ | 2004 05 19 | 691 | 0.3+ | 0.5+ |
| 2001 10 19 | 644 | 0.7− | 1.0+ | 2003 01 28 | 704 | 0.1− | 0.4− | 2004 05 28 | 691 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.8− | 2003 01 28 | 704 | 0.4− | 0.4+ | 2004 05 28 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.1− | 0.4− | 2003 01 28 | 608 | 1.3+ | 0.3− | 2004 05 28 | 691 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | 0.4− | 1.0− | 2003 01 28 | 608 | 1.4+ | 0.3+ | 2006 08 29 | 703 | 0.8− | 1.0+ |
| 2001 10 21 | 704 | 1.0+ | 0.7− | 2003 01 28 | 608 | 0.4+ | 0.2− | 2006 08 29 | 703 | (1.7− | 0.9+) |
| 2001 10 21 | 704 | 0.1− | 0.0 | 2003 02 02 | 704 | 0.4− | 1.3+ | 2006 08 29 | 703 | 0.2+ | 0.9− |
| 2001 10 26 | 644 | 0.7+ | 0.3+ | 2003 02 02 | 704 | (0.3− | 1.6+) | 2006 08 29 | 703 | (1.8− | 0.0 ) |
| 2001 10 26 | 644 | 0.3+ | 0.7+ | 2003 02 02 | 704 | 0.3− | 1.2+ | 2006 09 20 | 691 | 0.2− | 0.3+ |
| 2001 10 26 | 644 | 0.1+ | 0.8+ | 2003 02 02 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 691 | 0.1− | 0.3+ |
| 2001 11 09 | 704 | 0.6+ | 1.2− | 2003 02 03 | 699 | (1.6+ | 0.2−) | 2006 09 20 | 691 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.3− | 0.3− | 2003 02 03 | 699 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | (0.8− | 2.0−) | 2003 02 03 | 699 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.7− | 0.8− | 2003 02 03 | 699 | 1.1+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.6+ |
| 2001 11 17 | 704 | (0.7− | 1.7+) | 2003 02 22 | 644 | 0.1+ | 0.8+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2001 11 17 | 704 | (1.2− | 1.7+) | 2003 02 22 | 644 | 0.3− | 0.9+ | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2001 11 17 | 704 | 0.7− | 1.3+ | 2003 02 22 | 644 | 0.2− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 11 17 | 704 | (1.2− | 2.0+) | 2003 03 07 | 608 | 0.8− | 0.1+ | | | | |
| 2001 11 19 | 704 | 0.4+ | 1.3+ | 2003 03 07 | 608 | 0.0 | 0.2− | | | | |

**(140397)∗ 2001 TK$_{65}$ = 1995 OU$_{12}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20475)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.49811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18283637 | $\omega$ | 241.03820 | | +0.74586241 | | −0.66602305 |
| $a$ | 3.0744043 | $\Omega$ | 160.71688 | | +0.62131163 | | +0.69014957 |
| $e$ | 0.1581231 | $i$ | 1.75731 | | +0.24012729 | | +0.28303158 |
| $P$ | 5.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.1− | 0.9+ | 2001 10 25 | 644 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.5+ |
| 1995 07 22 | 691 | 0.8+ | 0.4− | 2001 10 25 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.4− |
| 1995 07 22 | 691 | 0.7+ | 0.4+ | 2001 10 26 | 704 | 0.9+ | 0.4− | 2006 09 19 | 703 | 0.3− | 0.4− |
| 1995 07 22 | 691 | 0.1− | 0.0 | 2001 10 26 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.5+ |
| 1995 07 27 | 691 | 0.2− | 0.6− | 2001 10 26 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 699 | 0.3− | 1.4+ |
| 1995 07 27 | 691 | 0.3− | 0.2− | 2001 10 26 | 704 | 0.7+ | 0.5− | 2006 09 20 | 644 | 0.1− | 0.3− |
| 1995 07 27 | 691 | 0.2− | 0.4− | 2001 10 26 | 704 | 0.4+ | 0.9− | 2006 09 20 | 704 | (0.3− | 1.9+) |
| 1999 05 17 | 691 | 0.2− | 0.4+ | 2001 11 20 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.2− | 0.5+ |
| 1999 05 17 | 691 | 0.3− | 0.2− | 2001 11 20 | 704 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.0 |
| 1999 05 17 | 691 | 0.4+ | 0.2− | 2001 11 20 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.4− | 0.8+ |
| 2001 10 11 | 333 | (2.1− | 0.5−) | 2001 11 20 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.7+ | 0.1+ |
| 2001 10 11 | 333 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.0 | 0.5− | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 2001 10 11 | 333 | 0.3− | 1.2− | 2001 11 21 | 704 | 0.5− | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.9+ |
| 2001 10 13 | 704 | (2.5− | 0.3−) | 2001 11 21 | 704 | 0.9− | 0.4− | 2006 09 25 | 699 | 0.5− | 0.1+ |
| 2001 10 13 | 704 | 0.1+ | 0.9+ | 2001 11 21 | 704 | 0.3− | 0.1− | 2006 09 25 | 699 | 0.6+ | 0.1− |
| 2001 10 13 | 704 | 0.8+ | 1.2+ | 2001 11 21 | 704 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.5+ |
| 2001 10 13 | 704 | 0.4− | 0.6+ | 2001 11 21 | 704 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.0 | 0.0 | 2002 02 12 | 209 | 1.3− | 1.0− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.4− | 0.2+ | 2002 02 12 | 209 | 0.8− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.5− | 0.4+ | 2002 02 12 | 209 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2001 10 17 | 704 | 1.4− | 0.1− | 2003 02 22 | 699 | 0.9+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.3− |
| 2001 10 17 | 704 | 0.6− | 0.2+ | 2003 02 22 | 699 | (1.4+ | 2.7+) | 2006 09 27 | 704 | 0.7− | 0.5+ |
| 2001 10 18 | 644 | 0.0 | 0.3− | 2003 02 22 | 699 | 1.0+ | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.7+ |
| 2001 10 18 | 644 | 0.1+ | 0.1+ | 2003 02 22 | 699 | 0.3− | 1.4+ | 2006 09 27 | 704 | 0.4+ | 1.3+ |
| 2001 10 18 | 644 | 0.0 | 0.2− | 2004 01 19 | 807 | 0.6+ | 0.9+ | 2006 09 27 | 704 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.2+ | 0.4+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2001 10 20 | 704 | 0.3− | 0.3− | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.2+ | 0.7+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.4+ | 0.0 |
| 2001 10 22 | 704 | 0.7+ | 0.6− | 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 10 19 | 695 | 0.1+ | 0.1+ |
| 2001 10 22 | 704 | 0.7− | 0.7− | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 695 | 0.0 | 0.1+ |
| 2001 10 22 | 704 | 0.5− | 0.7− | 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 10 22 | 704 | 0.5+ | 0.5+ | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2001 10 23 | 704 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.3− | 1.0− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.7+ | 0.4− | 2006 08 28 | 703 | 0.6− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | (0.8− | 2.0−) | 2006 08 28 | 703 | 0.8− | 0.4− | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2001 10 23 | 704 | (0.2+ | 1.9−) | 2006 09 12 | 703 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2001 10 24 | 704 | 0.1+ | 1.1− | 2006 09 12 | 703 | (1.7− | 0.4−) | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 10 24 | 704 | 0.5+ | 0.8+ | 2006 09 12 | 703 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 0.4+ | 0.6+ | 2006 09 12 | 703 | 0.7− | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.2− | 1.1+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2001 10 24 | 704 | 0.0 | 1.1− | 2006 09 17 | 704 | 1.2+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 10 24 | 704 | 0.5+ | 0.9− | 2006 09 17 | 704 | (1.7+ | 2.1−) | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2001 10 24 | 704 | 0.2− | 0.7− | 2006 09 19 | 703 | 0.3− | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2001 10 25 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.5− | 0.1+ |

**(140398)∗ 2001 TM$_{67}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.03882 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19008296 | $\omega$ | 153.32692 | | −0.98085015 | | +0.16736665 |
| $a$ | 2.9957617 | $\Omega$ | 36.74178 | | −0.19474138 | | −0.83499616 |
| $e$ | 0.0430057 | $i$ | 9.58480 | | −0.00296325 | | −0.52418492 |
| $P$ | 5.19 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 704 | 1.3+ | 0.3− | 2001 12 18 | 704 | 0.7+ | 0.4+ | 2004 06 17 | G92 | 0.1+ | 1.0+ |
| 1999 05 18 | 704 | 0.7− | 0.3− | 2001 12 18 | 704 | (0.1− | 2.0+) | 2004 07 06 | E12 | 0.4+ | 0.1− |
| 1999 05 18 | 704 | 1.2+ | 0.4− | 2002 01 09 | 704 | 0.2+ | 0.8− | 2004 07 06 | E12 | 0.3− | 0.5− |
| 1999 05 18 | 704 | 1.4− | 0.0 | 2002 01 09 | 704 | 0.6+ | 0.7+ | 2004 07 06 | E12 | 0.0 | 0.0 |
| 1999 06 15 | 704 | 0.2+ | 0.5+ | 2002 01 09 | 704 | 0.0 | 0.6+ | 2004 07 06 | E12 | 1.0+ | 0.3+ |
| 1999 06 15 | 704 | 0.1− | 0.5+ | 2002 01 09 | 704 | 0.2+ | 0.3+ | 2005 07 10 | E12 | 1.1− | 0.4+ |
| 1999 06 15 | 704 | 0.3− | 1.3+ | 2003 01 10 | 704 | 0.5− | 0.4+ | 2005 07 10 | E12 | 0.4− | 0.8− |
| 1999 06 15 | 704 | 0.8+ | 1.0+ | 2003 01 10 | 704 | 0.8− | 0.1+ | 2005 07 10 | E12 | (1.6− | 1.6+) |
| 1999 06 15 | 704 | 0.5+ | 1.0+ | 2003 01 10 | 704 | 0.0 | 0.5+ | 2005 07 10 | E12 | 0.2− | 0.1+ |
| 2001 09 26 | 704 | 0.1+ | 0.4− | 2003 01 10 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 699 | 1.2− | 0.0 |
| 2001 09 26 | 704 | 0.5+ | 0.0 | 2003 01 10 | 704 | (0.3+ | 1.8+) | 2006 09 16 | 699 | 0.4+ | 0.4− |
| 2001 09 26 | 704 | 0.1− | 0.4+ | 2004 03 01 | 291 | 0.0 | 0.5+ | 2006 09 16 | 699 | (1.8− | 0.2−) |
| 2001 09 26 | 704 | 0.0 | 0.0 | 2004 03 01 | 291 | 0.2− | 0.5+ | 2006 09 16 | 699 | (1.8− | 0.6+) |
| 2001 09 26 | 704 | 0.2+ | 0.1+ | 2004 03 01 | 291 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2001 10 13 | 704 | 1.1− | 0.7+ | 2004 03 24 | 699 | 0.3− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2001 10 13 | 704 | 0.6− | 1.0− | 2004 03 24 | 699 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.3− | 0.2+ |
| 2001 10 13 | 704 | 0.9+ | 0.2+ | 2004 03 24 | 699 | 0.1− | 0.9− | 2006 09 22 | 621 | 0.0 | 0.2+ |
| 2001 10 13 | 704 | 0.4− | 1.1− | 2004 03 24 | 699 | 0.8+ | 0.3+ | 2006 09 22 | 621 | 0.0 | 0.8− |
| 2001 10 17 | 704 | 0.9− | 0.3+ | 2004 03 25 | 699 | 0.5− | 0.6+ | 2006 09 22 | 621 | 0.2+ | 1.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.0− | 0.4+ | 2004 03 25 | 699 | 0.4− | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 10 17 | 704 | 0.3− | 1.4+ | 2004 03 25 | 699 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | 0.8− | 0.6+ | 2004 03 25 | 699 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 10 17 | 704 | (1.2− | 1.5+) | 2004 03 27 | 704 | 1.3+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 10 18 | 704 | (3.9+ | 1.5−) | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 10 18 | 704 | (4.2+ | 2.9−) | 2004 03 27 | 704 | 0.6+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 10 18 | 704 | (3.5+ | 2.1−) | 2004 03 27 | 704 | 0.7+ | 0.6+ | 2006 10 15 | 703 | 0.2− | 0.5+ |
| 2001 10 18 | 704 | (3.7+ | 2.8−) | 2004 03 27 | 704 | 0.5+ | 0.5− | 2006 10 15 | 703 | 0.1− | 0.3+ |
| 2001 10 19 | 644 | 0.3− | 0.6+ | 2004 03 31 | 704 | 0.1− | 0.3+ | 2006 10 15 | 703 | 0.1+ | 0.4+ |
| 2001 10 19 | 644 | 0.6− | 0.5+ | 2004 03 31 | 704 | 0.4+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.4+ |
| 2001 10 19 | 644 | 0.3− | 0.5+ | 2004 03 31 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.6− |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2004 03 31 | 704 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.2− |
| 2001 10 21 | 704 | 0.4− | 0.2+ | 2004 03 31 | 704 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.2+ |
| 2001 10 21 | 704 | 0.4− | 0.4+ | 2004 04 12 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 2001 10 21 | 704 | 0.8− | 0.4+ | 2004 04 12 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 10 21 | 704 | 0.4− | 0.9+ | 2004 04 12 | 699 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 10 21 | 691 | 0.6+ | 0.2+ | 2004 04 12 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2001 10 21 | 691 | 0.4+ | 0.3+ | 2004 04 12 | 699 | 0.5+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 10 21 | 691 | 0.5+ | 0.3+ | 2004 04 12 | 699 | 0.4+ | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 10 26 | 704 | 0.7− | 0.8+ | 2004 04 12 | 699 | 1.1− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 10 26 | 704 | 0.2− | 1.3+ | 2004 04 15 | 699 | 0.5+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.4+ |
| 2001 10 26 | 704 | 0.3+ | 0.6+ | 2004 04 15 | 699 | 0.7+ | 0.4− | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2001 10 26 | 704 | 0.6− | 0.4+ | 2004 04 15 | 699 | 0.7+ | 1.4+ | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2001 11 09 | 704 | 0.0 | 1.3− | 2004 04 15 | 699 | 0.5+ | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.2− |
| 2001 11 09 | 704 | 0.5− | 1.0− | 2004 04 17 | 704 | 0.2+ | 0.8− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.2− | 1.0− | 2004 04 17 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.5+ |
| 2001 11 09 | 704 | 0.3− | 0.7− | 2004 04 17 | 704 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.6+ | 0.4+ |
| 2001 11 09 | 704 | 0.3− | 0.4− | 2004 04 17 | 704 | 0.1− | 0.1+ | 2006 11 13 | 704 | 0.8+ | 0.2+ |
| 2001 11 17 | 704 | 0.4+ | 0.9+ | 2004 04 21 | 704 | 0.5+ | 0.8+ | 2006 11 13 | 704 | 0.8− | 0.5+ |
| 2001 11 17 | 704 | 0.3+ | 0.5+ | 2004 04 21 | 704 | 0.6+ | 0.7+ | 2006 11 13 | 704 | 1.3+ | 1.1+ |
| 2001 11 17 | 704 | 0.0 | 0.2+ | 2004 04 21 | 704 | 0.7+ | 0.5+ | 2006 11 13 | 704 | 0.3− | 0.6− |
| 2001 11 17 | 704 | 0.1− | 0.8+ | 2004 04 21 | 704 | 0.9− | 0.2+ | 2006 11 13 | 291 | 0.2+ | 0.1+ |
| 2001 11 19 | 704 | 0.0 | 0.6+ | 2004 04 21 | 704 | 0.3+ | 0.9+ | 2006 11 13 | 291 | 0.2+ | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.2+ | 2004 04 26 | 699 | 0.4+ | 0.7+ | 2006 11 13 | 291 | 0.3+ | 0.3+ |
| 2001 11 19 | 704 | 0.2− | 0.5+ | 2004 04 26 | 699 | 0.0 | 0.7+ | 2006 11 13 | 291 | 0.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.3− | 0.9+ | 2004 04 26 | 699 | 0.5+ | 0.1+ | 2006 11 13 | 291 | 0.2+ | 0.0 |
| 2001 11 19 | 704 | 0.5− | 1.0+ | 2004 04 26 | 699 | 0.4− | 0.8+ | 2006 11 13 | 291 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2004 05 11 | 699 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2001 11 21 | 704 | 0.9− | 0.6− | 2004 05 11 | 699 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.8− |
| 2001 11 21 | 704 | (0.9− | 1.5+) | 2004 05 11 | 699 | (1.8+ | 0.3−) | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2001 11 21 | 704 | (0.3− | 1.9+) | 2004 05 11 | 699 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.7− | 1.4+ | 2004 05 12 | 699 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.7− |
| 2001 11 24 | 704 | 0.4− | 0.2+ | 2004 05 12 | 699 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.2+ |
| 2001 11 24 | 704 | 0.5− | 0.4+ | 2004 05 12 | 699 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 2001 11 24 | 704 | 0.1− | 0.2− | 2004 05 12 | 699 | 1.0+ | 0.6− | 2006 11 18 | 704 | 0.7− | 0.7+ |
| 2001 11 24 | 704 | 0.8− | 0.1− | 2004 05 16 | 704 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 1.0+ |
| 2001 12 11 | 704 | 0.2+ | 0.3+ | 2004 05 16 | 704 | 0.4+ | 0.8+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2001 12 11 | 704 | 0.2− | 1.5+ | 2004 05 16 | 704 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.5− |
| 2001 12 11 | 704 | 0.7− | 0.3− | 2004 05 16 | 704 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2001 12 11 | 704 | 0.2+ | 0.0 | 2004 05 16 | 704 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.4+ |
| 2001 12 15 | 704 | 0.5− | 0.9+ | 2004 05 18 | 704 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.7+ | 0.1+ |
| 2001 12 15 | 704 | 1.4− | 0.2+ | 2004 05 18 | 704 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 1.0+ | 0.0 |
| 2001 12 15 | 704 | 0.9− | 0.5+ | 2004 05 18 | 704 | 0.2− | 0.8+ | 2006 11 27 | 703 | 0.3+ | 0.3+ |
| 2001 12 15 | 704 | (0.4− | 1.6+) | 2004 05 18 | 704 | 0.7+ | 0.3+ | 2006 11 27 | 703 | 0.0 | 0.2+ |
| 2001 12 15 | 704 | 1.0− | 1.3+ | 2004 06 17 | G92 | 0.8+ | 0.8+ | | | | |
| 2001 12 18 | 704 | 0.7+ | 0.6+ | 2004 06 17 | G92 | 0.6+ | 1.1+ | | | | |

**(140399)∗ 2001 TN$_{67}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.16076 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17651170 | $\omega$ | 23.97256 | | +0.28044506 | −0.95960256 |
| $a$ | 3.1474128 | $\Omega$ | 49.74883 | | +0.87579557 | +0.24614766 |
| $e$ | 0.1738685 | $i$ | 1.70138 | | +0.39285199 | +0.13628737 |
| $P$ | 5.58 | $H$ | 14.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 12 | 566 | 1.1− | 0.4− | 2001 11 09 | 704 | 0.5− | 0.1− | 2003 03 07 | 699 | 0.3+ | 0.2− |
| 1997 01 12 | 566 | 0.7− | 0.3− | 2001 11 09 | 704 | 0.6+ | 0.3+ | 2004 04 21 | 704 | 1.0+ | 0.4+ |
| 1997 01 12 | 566 | 1.1− | 0.1− | 2001 11 09 | 704 | 0.5− | 0.0 | 2004 04 21 | 704 | 0.3+ | 0.4+ |
| 2001 10 12 | 699 | 0.8+ | 0.0 | 2001 11 09 | 704 | 0.7− | 0.1+ | 2004 04 21 | 704 | (1.7+ | 2.4+) |
| 2001 10 12 | 699 | 0.7+ | 0.8+ | 2001 11 12 | 691 | 0.2− | 0.0 | 2004 04 28 | 291 | 0.1− | 0.6+ |
| 2001 10 12 | 699 | 0.5+ | 0.0 | 2001 11 12 | 691 | 0.1− | 0.2− | 2004 04 28 | 291 | 1.0+ | 0.9+ |
| 2001 10 12 | 699 | 0.9+ | 0.7+ | 2001 11 12 | 691 | 0.2− | 0.1− | 2004 04 28 | 291 | 0.2+ | 0.5+ |
| 2001 10 13 | 704 | 0.9− | 1.4+ | 2001 11 17 | 704 | 0.2+ | 0.7+ | 2006 08 16 | 644 | 0.2+ | 0.4+ |
| 2001 10 13 | 704 | 0.8− | 0.0 | 2001 11 17 | 704 | 0.1+ | 0.8+ | 2006 08 16 | 644 | 0.4− | 0.5+ |
| 2001 10 13 | 704 | (2.7− | 1.3−) | 2001 11 17 | 704 | 0.2+ | 0.8+ | 2006 08 16 | 644 | 0.3− | 0.3+ |
| 2001 10 13 | 704 | (1.8− | 0.4+) | 2001 11 17 | 704 | 0.3+ | 0.7+ | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2001 10 13 | 704 | 1.3− | 0.4+ | 2001 11 21 | 704 | 0.3− | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.6+ |
| 2001 10 17 | 704 | 1.2+ | 0.4− | 2001 11 21 | 704 | 0.4− | 0.4− | 2006 08 17 | 644 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 1.3+ | 1.1− | 2001 11 21 | 704 | 0.3+ | 0.3− | 2006 08 21 | 691 | 0.0 | 0.6+ |
| 2001 10 17 | 704 | 1.2+ | 0.6− | 2001 11 21 | 704 | 0.1+ | 0.5− | 2006 08 21 | 691 | 0.1+ | 0.7+ |
| 2001 10 17 | 704 | 0.9+ | 0.5− | 2001 11 21 | 704 | 1.4+ | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | 1.1+ | 0.7− | 2001 11 21 | 704 | 0.3− | 0.4− | 2006 08 23 | 704 | (1.6− | 0.2−) |
| 2001 10 18 | 644 | 0.1+ | 0.4+ | 2001 11 21 | 704 | 0.2+ | 1.2− | 2006 08 23 | 704 | 0.3− | 0.8− |
| 2001 10 18 | 644 | 0.1− | 0.8+ | 2001 11 21 | 704 | 0.6+ | 0.4+ | 2006 08 23 | 704 | 0.5− | 0.2− |
| 2001 10 18 | 644 | 0.0 | 0.6+ | 2001 12 09 | 699 | 0.5− | 0.7− | 2006 08 23 | 704 | 0.5− | 0.3+ |
| 2001 10 19 | 644 | 0.6− | 0.6+ | 2001 12 09 | 699 | 0.3+ | 0.2− | 2006 08 28 | 691 | 0.2− | 0.4+ |
| 2001 10 19 | 644 | 0.7− | 0.6+ | 2001 12 09 | 699 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.2+ |
| 2001 10 19 | 644 | 0.9− | 0.8+ | 2001 12 09 | 699 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.5+ |
| 2001 10 20 | 704 | 0.1+ | 0.5+ | 2001 12 11 | 704 | 0.6+ | 0.5+ | 2006 08 28 | 691 | 1.0− | 1.4− |
| 2001 10 20 | 704 | 0.2− | 0.6+ | 2001 12 11 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.3+ | 0.6− |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2001 12 11 | 704 | 0.1− | 0.3+ | 2006 08 28 | 703 | (2.0+ | 1.5−) |
| 2001 10 20 | 704 | 0.1+ | 0.1− | 2001 12 11 | 704 | 0.7− | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.4+ |
| 2001 10 20 | 704 | 0.3+ | 0.4+ | 2003 01 26 | 699 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.7− | 0.8+ |
| 2001 10 22 | 704 | 0.1+ | 0.2− | 2003 01 26 | 699 | 0.2+ | 0.9+ | 2006 08 29 | 704 | 0.8+ | 0.1− |
| 2001 10 22 | 704 | 0.1− | 1.5− | 2003 01 26 | 699 | 0.6+ | 0.6+ | 2006 08 29 | 704 | 0.1+ | 0.6+ |
| 2001 10 22 | 704 | 0.1− | 0.0 | 2003 01 26 | 699 | 0.0 | 1.1+ | 2006 08 30 | 699 | 0.3+ | 0.2+ |
| 2001 10 22 | 704 | 0.2+ | 0.7− | 2003 01 26 | 608 | 0.5− | 0.5+ | 2006 08 30 | 699 | 0.3+ | 0.4+ |
| 2001 10 22 | 704 | 0.2− | 0.1+ | 2003 01 26 | 608 | 0.2− | 0.6+ | 2006 08 30 | 699 | 0.1− | 0.2+ |
| 2001 10 22 | 704 | 0.3+ | 0.3+ | 2003 01 26 | 608 | 0.1− | 0.6− | 2006 09 14 | 703 | 0.9− | 0.7+ |
| 2001 10 22 | 704 | (0.9− | 1.6−) | 2003 01 31 | 704 | 0.9+ | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.1+ |
| 2001 10 22 | 704 | 0.6+ | 0.1+ | 2003 01 31 | 704 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.5+ | 0.9+ |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2003 01 31 | 704 | 0.8+ | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 0.3− | 0.1+ | 2003 02 01 | 704 | 1.0+ | 0.3− | 2006 09 30 | 703 | 0.3− | 1.1+ |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2003 02 01 | 704 | 0.7+ | 0.9+ | 2006 09 30 | 703 | 0.2+ | 0.6+ |
| 2001 10 23 | 704 | 0.3− | 0.5+ | 2003 02 01 | 704 | 0.2+ | 0.6+ | 2006 09 30 | G96 | 0.5− | 0.1− |
| 2001 10 23 | 704 | 0.2+ | 0.1+ | 2003 02 03 | 699 | 0.5+ | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.1+ | 2003 02 03 | 699 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.3− | 0.2+ | 2003 02 03 | 699 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.0 |
| 2001 10 24 | 704 | 0.2− | 0.3+ | 2003 02 03 | 699 | 0.2− | 1.2+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2003 02 22 | 644 | 0.1+ | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2001 10 24 | 704 | 0.2− | 0.6+ | 2003 02 22 | 644 | 0.2− | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2001 10 25 | 644 | 0.8+ | 0.8+ | 2003 02 22 | 644 | 0.3− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2001 10 25 | 644 | 0.8+ | 0.7+ | 2003 02 26 | 599 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.7+ |
| 2001 10 25 | 644 | 0.9+ | 0.8+ | 2003 02 26 | 599 | 0.1− | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2001 10 26 | 704 | 0.5+ | 1.0+ | 2003 02 26 | 599 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2001 10 26 | 704 | 0.6− | 0.3+ | 2003 02 26 | 599 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2001 10 26 | 704 | 0.1+ | 0.2− | 2003 03 06 | 699 | 0.4+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2001 10 26 | 704 | 0.3+ | 0.7− | 2003 03 06 | 699 | 0.6+ | 0.7+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2001 10 26 | 704 | 0.5+ | 0.4− | 2003 03 06 | 699 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2001 10 26 | 644 | 0.5− | 0.1− | 2003 03 06 | 699 | 0.6+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2001 10 26 | 644 | 0.4− | 0.1− | 2003 03 07 | 699 | 0.3+ | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2001 10 26 | 644 | 0.5− | 0.1− | 2003 03 07 | 699 | 0.6− | 1.0+ | | | | |
| 2001 11 09 | 704 | 0.1− | 0.5− | 2003 03 07 | 699 | 0.3− | 1.3+ | | | | |

**(140400)∗ 2001 TR$_{68}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.12113 | | (2000.0) | | | |
| $n$ | 0.21612016 | $\omega$ | 357.97845 | | +0.98252321 | +0.18610169 |
| $a$ | 2.7500411 | $\Omega$ | 351.29343 | | −0.17042779 | +0.89123333 |
| $e$ | 0.1050812 | $i$ | 1.43132 | | −0.07484987 | +0.41360526 |
| $P$ | 4.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.1+ | 0.1− | 2001 10 17 | 704 | (1.5+ | 0.5−) | 2005 07 11 | 691 | 0.0 | 0.3− |
| 2001 09 12 | 691 | 0.1− | 0.1+ | 2001 10 17 | 704 | (0.4+ | 1.6−) | 2005 07 30 | E12 | 0.5+ | 0.0 |
| 2001 09 12 | 691 | 0.1− | 0.2− | 2001 10 19 | 644 | 0.5− | 0.3+ | 2005 07 30 | E12 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2001 10 19 | 644 | 0.4+ | 0.3+ | 2005 07 30 | E12 | 0.5+ | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2001 10 19 | 644 | 0.3− | 0.4+ | 2005 07 30 | E12 | 0.5+ | 0.5− |
| 2001 09 20 | 704 | 0.7− | 0.4+ | 2001 10 21 | 704 | 0.5− | 0.5+ | 2005 08 31 | 701 | 0.8− | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.6+ | 2001 10 21 | 704 | 1.1+ | 0.2+ | 2005 08 31 | 701 | 0.6− | 1.2+ |
| 2001 09 21 | 333 | 0.1+ | 0.7− | 2001 10 21 | 704 | 0.2+ | 1.0+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2001 09 21 | 333 | 0.2+ | 0.1+ | 2001 10 21 | 704 | 0.2− | 0.8+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 333 | 0.6+ | 0.7− | 2001 10 25 | 644 | 0.2− | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2001 10 11 | 644 | 0.3+ | 0.1+ | 2001 10 25 | 644 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2001 10 11 | 644 | 0.2+ | 0.0 | 2001 10 25 | 644 | 1.1− | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2001 10 11 | 644 | 0.3+ | 0.2+ | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2001 10 13 | 704 | 0.2− | 0.1+ | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 10 13 | 704 | 0.7+ | 0.4− | 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.6− |
| 2001 10 13 | 704 | 0.2+ | 0.2+ | 2005 07 02 | 691 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2001 10 13 | 704 | 0.0 | 0.5+ | 2005 07 02 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.2+ |
| 2001 10 15 | 691 | 0.1− | 0.0 | 2005 07 02 | 691 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2001 10 15 | 691 | 0.1+ | 0.5− | 2005 07 07 | 691 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2001 10 15 | 691 | 0.1− | 0.3− | 2005 07 07 | 691 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.2+ | 0.2+ |
| 2001 10 17 | 704 | 0.6− | 0.3+ | 2005 07 07 | 691 | 0.9− | 0.8+ | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | (1.8+ | 0.2+) | 2005 07 11 | 691 | 0.6+ | 0.1− | | | | |
| 2001 10 17 | 704 | 0.2+ | 0.2− | 2005 07 11 | 691 | 0.1− | 0.1− | | | | |

**(140401)∗ 2001 TJ$_{70}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.88879 | | (2000.0) | | | |
| $n$ | 0.19887468 | $\omega$ | 143.81348 | | −0.90104775 | −0.43325709 |
| $a$ | 2.9068082 | $\Omega$ | 10.56836 | | +0.36785796 | −0.78787169 |
| $e$ | 0.1759768 | $i$ | 6.27012 | | +0.22976831 | −0.43766026 |
| $P$ | 4.96 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.3− | 0.2+ | 2003 01 10 | 704 | 0.6+ | 0.2+ | 2003 03 26 | 704 | 0.2− | 0.0 |
| 2001 09 23 | 704 | 0.4− | 0.8+ | 2003 01 10 | 704 | 0.3− | 0.4− | 2003 03 26 | 704 | 0.3+ | 1.0+ |
| 2001 09 23 | 704 | 0.1− | 1.5+ | 2003 01 10 | 704 | 0.4− | 0.0 | 2003 03 26 | 704 | 1.2+ | 0.8+ |
| 2001 10 13 | 704 | 0.6− | 1.0+ | 2003 01 10 | 704 | 0.1− | 0.4− | 2003 03 26 | 704 | 0.1− | 0.3− |
| 2001 10 13 | 704 | 0.8− | 0.1+ | 2003 01 28 | 644 | 0.1− | 0.0 | 2003 05 01 | 704 | 1.2+ | 0.3+ |
| 2001 10 13 | 704 | (0.1− | 1.7+) | 2003 01 28 | 644 | 0.1− | 0.0 | 2003 05 01 | 704 | 0.2− | 0.4− |
| 2001 10 17 | 704 | 1.0− | 0.4+ | 2003 01 28 | 644 | 0.2− | 0.0 | 2003 05 01 | 704 | 0.7+ | 0.3− |
| 2001 10 17 | 704 | 0.9+ | 0.1− | 2003 01 31 | 704 | 0.5− | 0.2+ | 2003 05 01 | 704 | 0.4+ | 0.2− |
| 2001 10 17 | 704 | 0.9+ | 0.0 | 2003 01 31 | 704 | 0.3+ | 0.1− | 2005 08 04 | 644 | 0.2− | 0.5+ |
| 2001 10 17 | 704 | 0.4− | 0.8− | 2003 01 31 | 704 | 0.2+ | 0.2− | 2005 08 04 | 644 | 0.4− | 0.9+ |
| 2001 10 19 | 644 | 0.1+ | 0.0 | 2003 01 31 | 704 | 0.0 | 0.2− | 2005 08 04 | 644 | 0.4− | 0.7+ |
| 2001 10 19 | 644 | 0.2+ | 0.1− | 2003 02 02 | 644 | 0.1− | 0.1+ | 2005 08 05 | 644 | 0.5− | 0.5+ |
| 2001 10 19 | 644 | 0.3+ | 0.1− | 2003 02 02 | 644 | 0.2+ | 0.1+ | 2005 08 05 | 644 | 0.4− | 0.6+ |
| 2001 10 21 | 704 | 0.4− | 0.2+ | 2003 02 02 | 644 | 0.1− | 0.3+ | 2005 08 05 | 644 | 0.0 | 0.3+ |
| 2001 10 21 | 704 | 0.2+ | 0.6+ | 2003 02 05 | 300 | 0.0 | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.6+ | 0.7+ | 2003 02 05 | 300 | 0.1+ | 0.8− | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2001 10 26 | 691 | 0.2+ | 0.1− | 2003 02 05 | 300 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.1− |
| 2001 10 26 | 691 | 0.2− | 0.1+ | 2003 02 07 | 704 | 0.9− | 1.5+ | 2006 10 16 | 691 | 0.3+ | 0.3− |
| 2001 10 26 | 691 | 0.1− | 0.1+ | 2003 02 07 | 704 | 0.3− | 1.1+ | 2006 10 16 | 691 | 0.2+ | 0.2− |
| 2001 10 26 | 644 | 0.1− | 0.1+ | 2003 02 07 | 704 | 0.9− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.3− |
| 2001 10 26 | 644 | 0.1+ | 0.0 | 2003 02 07 | 704 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2001 10 26 | 644 | 0.5+ | 0.5− | 2003 02 23 | 699 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 11 17 | 704 | (1.8+ | 0.5−) | 2003 02 23 | 699 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2001 11 17 | 704 | (2.9+ | 0.7+) | 2003 02 23 | 699 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 1.3+ | 0.1− | 2003 02 23 | 699 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2001 11 17 | 704 | (3.1+ | 0.1+) | 2003 03 06 | 704 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.5− |
| 2001 11 19 | 704 | 0.1− | 0.6− | 2003 03 06 | 704 | 0.6− | 0.3+ | 2006 11 07 | 644 | 0.3− | 0.3− |
| 2001 11 19 | 704 | 0.1− | 0.5− | 2003 03 06 | 704 | 0.2+ | 0.6− | 2006 11 07 | 644 | 0.3− | 0.4− |
| 2001 11 19 | 704 | 0.7− | 0.6− | 2003 03 06 | 704 | 0.0 | 1.3− | 2006 11 07 | 644 | 0.2− | 0.5− |
| 2001 11 20 | 699 | 1.0− | 1.3+ | 2003 03 06 | 704 | 0.5− | 0.6− | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2001 11 20 | 699 | 0.9− | 0.9− | 2003 03 07 | 644 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 699 | 0.6− | 1.4+ | 2003 03 07 | 644 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2001 11 20 | 699 | 0.7− | 1.4+ | 2003 03 07 | 644 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.1− |
| 2002 11 14 | 704 | 0.2+ | 0.2− | 2003 03 08 | 704 | 0.1− | 0.6+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 0.6− | 0.1+ | 2003 03 08 | 704 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.4+ | 0.1− |
| 2002 11 14 | 704 | 0.7+ | 0.6+ | 2003 03 08 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2002 11 21 | 644 | 0.3+ | 0.3+ | 2003 03 08 | 704 | 0.6− | 0.9+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 11 21 | 644 | 0.2+ | 0.1− | 2003 03 08 | 704 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.6− | 0.4− |
| 2002 11 21 | 644 | 0.2+ | 0.2− | 2003 03 08 | 704 | 0.7− | 0.8+ | 2006 11 19 | 704 | 0.4− | 1.3+ |
| 2002 12 31 | 704 | 0.9+ | 0.1+ | 2003 03 08 | 704 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2002 12 31 | 704 | 0.5+ | 0.3+ | 2003 03 08 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | 1.0+ | 0.4− | 2003 03 08 | 704 | 0.6− | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.7+ | 0.2− | 2003 03 08 | 704 | 0.8− | 0.6+ | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 1.2+ | 0.0 | 2003 03 10 | 699 | 0.4− | 0.4+ | 2006 11 22 | 704 | (1.9+ | 1.6+) |
| 2003 01 08 | 608 | 0.0 | 0.8− | 2003 03 10 | 699 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2003 01 08 | 608 | 0.2+ | 0.8− | 2003 03 10 | 699 | 0.7− | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2003 01 08 | 608 | 0.1− | 0.7− | 2003 03 10 | 699 | 1.0− | 0.5− | 2006 11 22 | 704 | 0.7− | 0.5+ |
| 2003 01 10 | 704 | 0.6+ | 0.5+ | 2003 03 26 | 704 | 0.2+ | 0.6+ | | | | |

**(140402)∗ 2001 TB$_{71}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.35137 | | (2000.0) | | | |
| $n$ | 0.18248931 | $\omega$ | 189.70480 | | +0.99233105 | −0.12348937 |
| $a$ | 3.0783011 | $\Omega$ | 177.37039 | | +0.11985561 | +0.95053627 |
| $e$ | 0.1745815 | $i$ | 6.79413 | | +0.03022771 | +0.28501085 |
| $P$ | 5.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.2+ | 0.4− | 2001 11 20 | 704 | 0.4+ | 1.4+ | 2006 09 01 | 704 | 0.4− | 0.3− |
| 2001 08 24 | 704 | 0.1+ | 0.2− | 2001 11 20 | 699 | 0.7− | 0.9+ | 2006 09 01 | 704 | 0.1+ | 1.4+ |
| 2001 08 24 | 704 | 0.6− | 0.5− | 2001 11 20 | 704 | 0.4+ | 0.9+ | 2006 09 01 | 704 | 0.7+ | 1.2− |
| 2001 08 24 | 704 | 0.6+ | 0.3+ | 2001 11 20 | 699 | 0.4− | 0.8+ | 2006 09 11 | 703 | 0.9− | 0.8− |
| 2001 09 17 | 704 | 1.1+ | 0.7+ | 2001 11 20 | 704 | 0.5− | 1.3+ | 2006 09 11 | 703 | 0.4+ | 0.4+ |
| 2001 09 17 | 704 | 0.2+ | 0.2− | 2002 12 14 | 645 | 0.1+ | 0.2+ | 2006 09 11 | 703 | 0.8+ | 0.1+ |
| 2001 09 17 | 704 | (1.5+ | 0.5−) | 2002 12 14 | 645 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 1.1+ | 0.1− |
| 2001 09 17 | 704 | (0.9+ | 2.2−) | 2004 04 14 | 691 | 0.0 | 0.6+ | 2006 09 16 | 644 | 0.3+ | 0.2− |
| 2001 09 19 | 704 | 0.4+ | 0.4+ | 2004 04 14 | 691 | 0.4+ | 0.6+ | 2006 09 16 | 644 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2004 04 14 | 691 | 0.2+ | 0.6+ | 2006 09 16 | 644 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.3− | 2005 06 15 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.4+ | 0.6− | 2005 06 15 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 1.0+ | 0.8+ |
| 2001 09 27 | 644 | (1.3+ | 2.3+) | 2005 06 15 | 691 | 0.7+ | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.8+ |
| 2001 09 27 | 644 | (1.8+ | 2.4+) | 2005 06 30 | 691 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.5− | 0.4− |
| 2001 09 27 | 644 | (1.3+ | 2.4+) | 2005 06 30 | 691 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.5− | 0.0 |
| 2001 10 13 | 704 | 0.2+ | 0.5+ | 2005 06 30 | 691 | 0.3− | 0.5+ | 2006 09 17 | 703 | 0.4− | 0.3+ |
| 2001 10 13 | 704 | 1.1− | 0.2+ | 2005 07 11 | 691 | 0.1+ | 0.7+ | 2006 09 17 | 703 | 0.2− | 1.0− |
| 2001 10 13 | 704 | 0.0 | 0.2+ | 2005 07 11 | 691 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.7− | 0.5− |
| 2001 10 13 | 704 | 0.3− | 0.5+ | 2005 07 11 | 691 | 0.1+ | 0.7+ | 2006 09 20 | 704 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | (2.0− | 0.6+) | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 1.5− | 0.1− | 2006 08 15 | 644 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.3+ |
| 2001 10 17 | 704 | (1.6− | 0.4+) | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.6− |
| 2001 10 17 | 704 | 1.5− | 0.2+ | 2006 08 19 | A50 | 0.5+ | 0.8+ | 2006 09 20 | 699 | 0.1+ | 0.4+ |
| 2001 10 17 | 704 | (2.0− | 0.1+) | 2006 08 19 | A50 | 0.6− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | 0.4+ | 1.1+ | 2006 08 25 | 704 | (1.9− | 0.6+) | 2006 09 20 | 699 | 0.0 | 0.6+ |
| 2001 10 22 | 704 | 0.9− | 0.4+ | 2006 08 25 | 704 | 0.8+ | 0.4− | 2006 09 20 | 699 | 0.4− | 1.3+ |
| 2001 10 22 | 704 | 1.2+ | 1.2+ | 2006 08 25 | 704 | 0.6− | 0.2− | 2006 09 20 | 699 | 0.2− | 0.5− |
| 2001 10 22 | 704 | (0.1− | 2.0+) | 2006 08 25 | 704 | 0.8− | 1.0+ | 2006 09 27 | 704 | 0.1+ | 0.9+ |
| 2001 10 22 | 704 | 0.4− | 0.2+ | 2006 08 25 | 704 | 0.8− | 0.4+ | 2006 09 27 | 704 | 1.0+ | 0.2− |
| 2001 10 24 | 644 | 0.2+ | 0.7− | 2006 08 28 | 699 | 1.1− | 0.4− | 2006 09 27 | 704 | 0.4+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 644 | 0.2+ | 0.6− | 2006 08 28 | 703 | 0.4+ | 0.6+ | 2006 09 27 | 704 | 0.4+ | 1.1+ |
| 2001 10 24 | 644 | 0.1+ | 0.8− | 2006 08 28 | 699 | 0.6− | 0.0 | 2006 09 27 | 704 | 0.9− | 0.3+ |
| 2001 11 18 | 704 | 0.5+ | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2001 11 18 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 703 | 0.2+ | 1.0+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2001 11 18 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.4+ | 2006 09 27 | G96 | 0.5− | 0.3− |
| 2001 11 18 | 704 | 0.7− | 0.3+ | 2006 08 28 | 699 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.4− | 0.4− |
| 2001 11 18 | 704 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2001 11 20 | 704 | 0.6− | 1.0+ | 2006 08 29 | 704 | 1.2+ | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2001 11 20 | 699 | 0.1+ | 1.4+ | 2006 08 29 | 704 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.9− | 1.4+ | 2006 08 29 | 704 | 0.5+ | 0.2+ | | | | |
| 2001 11 20 | 699 | 0.6− | 0.1− | 2006 09 01 | 704 | 0.0 | 0.1− | | | | |

**(140403)∗ 2001 TN$_{71}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.95531 | | (2000.0) | | | |
| $n$ | 0.23268960 | $\omega$ | 325.59046 | | −0.10002115 | −0.99445981 |
| $a$ | 2.6178900 | $\Omega$ | 130.12767 | | +0.92212346 | −0.10485426 |
| $e$ | 0.1069527 | $i$ | 2.42361 | | +0.37374335 | −0.00743411 |
| $P$ | 4.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.2+ | 0.4− | 2003 02 22 | 683 | 0.5+ | 0.5+ | 2005 09 25 | A50 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.9− | 2003 02 22 | 683 | (1.3− | 2.2−) | 2005 09 25 | A50 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.5+ | 0.2− | 2003 03 15 | 608 | 0.0 | 0.4+ | 2005 09 29 | 644 | 0.3− | 0.4+ |
| 2001 09 21 | 704 | 0.4− | 0.7− | 2003 03 15 | 608 | 0.6− | 0.2+ | 2005 09 29 | 699 | 0.4− | 0.1+ |
| 2001 09 26 | 704 | 1.4+ | 0.5− | 2003 03 15 | 608 | 0.0 | 0.8+ | 2005 09 29 | 644 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2003 03 24 | 691 | 0.0 | 0.7+ | 2005 09 29 | 644 | 0.6− | 0.1+ |
| 2001 09 26 | 704 | 0.0 | 1.0+ | 2003 03 24 | 691 | 0.3+ | 0.7+ | 2005 09 29 | 699 | (1.5− | 0.4−) |
| 2001 10 13 | 704 | 1.0− | 1.0+ | 2003 03 24 | 691 | 0.2+ | 0.2+ | 2005 09 29 | 699 | 0.3+ | 0.0 |
| 2001 10 13 | 704 | 1.4− | 1.0+ | 2003 03 26 | 644 | 0.3+ | 0.5+ | 2005 09 29 | 699 | 0.8− | 0.5+ |
| 2001 10 13 | 704 | (1.8− | 0.1+) | 2003 03 26 | 644 | 0.3+ | 0.7+ | 2005 10 01 | 704 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.4+ | 0.5+ | 2003 03 26 | 644 | 0.1+ | 0.8+ | 2005 10 01 | 704 | 0.5+ | 1.2+ |
| 2001 10 17 | 704 | 0.5+ | 0.2+ | 2003 04 07 | 691 | (0.0 | 2.3+) | 2005 10 01 | 704 | 0.1+ | 0.9− |
| 2001 10 17 | 704 | 0.5+ | 0.0 | 2003 04 07 | 691 | (0.5− | 2.3+) | 2005 10 01 | 704 | 0.1− | 0.2− |
| 2001 10 17 | 704 | 1.1+ | 1.2+ | 2003 04 07 | 691 | (0.1− | 2.1+) | 2005 10 01 | 704 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.5− | 0.0 | 2003 04 09 | 704 | 0.9+ | 1.0+ | 2005 10 06 | G96 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.3− | 0.0 | 2003 04 09 | 704 | 0.8+ | 0.9+ | 2005 10 06 | G96 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | (1.9− | 0.2+) | 2003 04 09 | 704 | 0.9+ | 0.6+ | 2005 10 06 | G96 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2005 08 27 | 644 | 0.3− | 0.1+ | 2005 10 06 | G96 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 1.4− | 0.1+ | 2005 08 27 | 644 | 0.1+ | 0.3+ | 2005 10 20 | 644 | 0.2− | 0.1− |
| 2001 10 20 | 704 | (1.7− | 0.6+) | 2005 08 27 | 644 | 0.2− | 0.4+ | 2005 10 20 | 644 | 0.1− | 0.3+ |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2005 08 27 | 644 | 0.2− | 0.4+ | 2005 10 20 | 644 | 0.3+ | 0.0 |
| 2001 10 23 | 704 | 0.7− | 0.9− | 2005 08 27 | 644 | 0.4− | 0.5+ | 2005 11 06 | G96 | 0.0 | 0.3− |
| 2001 10 23 | 704 | 0.7− | 0.9− | 2005 08 27 | 644 | 0.4− | 0.4+ | 2005 11 06 | G96 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.4− | 1.0− | 2005 08 30 | 691 | 0.1− | 0.1+ | 2005 11 06 | G96 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 0.2− | 0.8− | 2005 08 30 | 691 | 0.1+ | 0.3+ | 2005 11 06 | G96 | 0.2− | 0.4− |
| 2001 10 23 | 704 | 0.4− | 0.5− | 2005 08 30 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.5+ | 1.1+ | 2005 09 03 | 644 | 0.0 | 0.6+ | 2006 09 28 | G96 | 0.4− | 0.5− |
| 2001 10 24 | 704 | 0.4+ | 1.4+ | 2005 09 03 | 644 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 10 24 | 704 | 0.6+ | 1.3+ | 2005 09 03 | 644 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.3+ | 1.3+ | 2005 09 13 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.7− | 0.5− |
| 2001 10 24 | 704 | 0.9+ | 0.7+ | 2005 09 13 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 10 26 | 691 | 0.3− | 0.2+ | 2005 09 13 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.8− |
| 2001 10 26 | 691 | 0.3− | 0.1+ | 2005 09 23 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2001 10 26 | 691 | 0.2− | 0.1+ | 2005 09 23 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 11 20 | 704 | 0.6+ | 1.4− | 2005 09 23 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2001 11 20 | 704 | (0.3− | 1.5−) | 2005 09 23 | 703 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2001 11 20 | 704 | 1.2+ | 1.0− | 2005 09 23 | 703 | 1.4+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 11 20 | 704 | 0.9+ | 1.3− | 2005 09 23 | 703 | 0.0 | 1.2− | | | | |
| 2003 02 22 | 683 | 0.4− | 0.5+ | 2005 09 23 | 703 | 0.7− | 0.4+ | | | | |

**(140404)∗ 2001 TH$_{73}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 161.39308 | | (2000.0) | | | |
| $n$ | 0.27832030 | $\omega$ | 147.00120 | | +0.99095021 | −0.13275237 |
| $a$ | 2.3233044 | $\Omega$ | 220.64215 | | +0.11560110 | +0.91923203 |
| $e$ | 0.1256305 | $i$ | 1.74747 | | +0.06822079 | +0.37066060 |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 11 | 691 | 0.0 | 0.5− | 2001 11 17 | 704 | 0.2− | 1.0− | 2004 07 11 | 704 | 0.1+ | 0.4+ |
| 2000 05 11 | 691 | 0.2+ | 0.2+ | 2001 11 17 | 704 | 0.4− | 1.0− | 2004 07 11 | 704 | 0.0 | 0.4+ |
| 2000 05 11 | 691 | 0.1+ | 0.2− | 2001 11 17 | 704 | 0.3− | 0.3− | 2004 07 11 | 704 | 0.4+ | 0.4+ |
| 2000 06 02 | 691 | 0.5− | 0.4− | 2001 11 17 | 704 | 0.2− | 0.4− | 2004 07 16 | 704 | 1.2+ | 1.0+ |
| 2000 06 02 | 691 | 0.2− | 0.6− | 2001 11 18 | 691 | 0.2+ | 0.3− | 2004 07 16 | 704 | 0.5+ | 0.0 |
| 2000 06 02 | 691 | 0.1− | 0.7− | 2001 11 18 | 691 | 0.1+ | 0.4− | 2004 07 16 | 704 | 0.9− | 0.6− |
| 2001 10 13 | 704 | 0.0 | 0.2+ | 2001 11 18 | 691 | 0.1+ | 0.3− | 2004 07 16 | 704 | 0.1+ | 0.6+ |
| 2001 10 13 | 704 | 0.7− | 1.1+ | 2001 11 20 | 704 | 0.2− | 0.2− | 2005 10 29 | G96 | 0.1+ | 0.3− |
| 2001 10 13 | 704 | 0.8− | 1.2+ | 2001 11 20 | 704 | 0.2− | 0.3+ | 2005 10 29 | G96 | 0.3− | 0.4− |
| 2001 10 17 | 704 | 0.3− | 1.1− | 2001 11 20 | 704 | 0.0 | 0.6+ | 2005 10 29 | G96 | 0.3+ | 0.8− |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2001 11 20 | 704 | 0.1− | 1.0+ | 2005 10 29 | G96 | 0.1− | 0.8− |
| 2001 10 17 | 704 | 0.7− | 0.6− | 2001 11 20 | 704 | 0.1− | 0.7+ | 2005 12 25 | 691 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.2− | 0.7− | 2001 11 21 | 704 | 0.5− | 0.5− | 2005 12 25 | 691 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.2+ | 0.5− | 2005 12 25 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | (0.4+ | 2.8+) | 2001 11 21 | 704 | 0.1− | 0.2− | 2006 01 22 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 1.2+ | 1.9+ | 2001 11 21 | 704 | 0.1+ | 0.8− | 2006 01 22 | G96 | 0.2+ | 0.3− |
| 2001 10 21 | 704 | 1.4+ | 1.6+ | 2003 03 24 | 691 | 0.1+ | 0.6+ | 2006 01 22 | G96 | 0.3− | 0.4− |
| 2001 10 21 | 704 | 1.1+ | 1.4+ | 2003 03 24 | 691 | 0.1+ | 0.4+ | 2006 01 22 | G96 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.8+ | 0.8+ | 2003 03 24 | 691 | 0.4+ | 0.7+ | 2006 01 22 | G96 | 0.2− | 0.5− |
| 2001 10 26 | 644 | 0.1− | 0.3+ | 2004 06 20 | 691 | 0.4− | 0.0 | 2006 01 22 | G96 | 0.4− | 0.3− |
| 2001 10 26 | 644 | 0.0 | 0.1+ | 2004 06 20 | 691 | 0.1+ | 0.1− | 2006 01 22 | G96 | 0.5− | 0.6+ |
| 2001 10 26 | 644 | 0.3− | 0.1+ | 2004 06 20 | 691 | 0.1− | 0.2+ | | | | |
| 2001 11 17 | 704 | 0.3− | 0.7− | 2004 07 11 | 704 | 0.9− | 0.6+ | | | | |

**(140405)∗ 2001 TK$_{73}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.39782 | | (2000.0) | | | |
| $n$ | 0.20678399 | $\omega$ | 186.18496 | | +0.48923652 | −0.87199919 |
| $a$ | 2.8322056 | $\Omega$ | 234.52578 | | +0.80103730 | +0.45664934 |
| $e$ | 0.0601292 | $i$ | 1.14545 | | +0.34494473 | +0.17632011 |
| $P$ | 4.77 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.8+ | 1.2+ | 2003 01 27 | 291 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2001 10 13 | 704 | 0.3− | 0.3− | 2003 01 27 | 291 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2001 10 13 | 704 | 0.3+ | 0.3+ | 2003 01 27 | 291 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.8− | 1.1+ | 2003 01 27 | 291 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2001 10 17 | 704 | 0.0 | 1.2+ | 2003 01 27 | 291 | 0.3− | 0.1− | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2001 10 17 | 704 | 0.5− | 0.3+ | 2003 02 22 | 644 | 0.7+ | 1.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | (0.3− | 1.9+) | 2003 02 22 | 644 | 0.5+ | 1.4+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.6+ | 2003 02 22 | 699 | 0.6+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.4− | 0.5+ | 2003 02 22 | 644 | 0.7+ | 1.5+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2003 02 22 | 699 | 0.6+ | 0.5+ | 2006 11 11 | 691 | 0.6− | 0.2− |
| 2001 10 21 | 704 | 0.5+ | 0.1+ | 2003 02 22 | 699 | 0.3+ | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 10 26 | 644 | 0.3+ | 0.6+ | 2003 02 22 | 699 | 0.1+ | 0.6− | 2006 11 11 | G96 | 0.7+ | 0.2− |
| 2001 10 26 | 644 | 0.4+ | 0.4+ | 2003 03 06 | 644 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 10 26 | 644 | 0.4+ | 0.4+ | 2003 03 06 | 644 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 11 09 | 704 | 0.1− | 1.2− | 2003 03 06 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.5− | 0.4− | 2003 03 06 | 644 | 0.6+ | 0.5+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | (1.6− | 0.6−) | 2003 03 06 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 11 09 | 704 | (2.0− | 2.8−) | 2003 03 06 | 644 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2001 11 12 | 691 | 0.3− | 0.2− | 2003 03 12 | 644 | 0.3+ | 0.0 | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2001 11 12 | 691 | 0.4− | 0.1+ | 2003 03 12 | 644 | 0.0 | 0.5+ | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2001 11 12 | 691 | 0.3− | 0.1− | 2003 03 12 | 644 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.9+ | 0.5− |
| 2001 11 17 | 704 | 0.2+ | 1.4+ | 2004 05 15 | 704 | 0.1+ | 1.4+ | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2001 11 17 | 704 | 0.3+ | 0.6+ | 2004 05 15 | 704 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.3+ | 0.3− | 2004 05 15 | 704 | 0.7+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 2001 11 17 | 704 | 1.2+ | 0.5− | 2004 05 15 | 704 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2001 11 17 | 704 | 0.5+ | 0.6− | 2004 05 15 | 704 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2001 11 18 | 704 | 0.6− | 0.0 | 2004 05 17 | 185 | 0.2+ | 1.1+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2001 11 18 | 704 | 0.7− | 0.2+ | 2004 05 17 | 185 | (0.4− | 2.0+) | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 11 18 | 704 | 0.6− | 0.1− | 2005 07 04 | G96 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.8+ | 1.2− |
| 2001 11 18 | 704 | 0.6− | 0.6− | 2005 07 04 | G96 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.9+ | 0.1− |
| 2001 11 18 | 704 | 0.5− | 0.1+ | 2005 07 04 | G96 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.8+ |
| 2001 11 19 | 704 | 0.4+ | 0.6+ | 2005 07 04 | G96 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2001 11 19 | 704 | 0.5+ | 0.9+ | 2005 08 25 | 644 | 0.6− | 0.8+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2001 11 19 | 704 | 0.5+ | 0.2+ | 2005 08 25 | 644 | 0.1+ | 1.2+ | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2001 11 19 | 704 | 0.5+ | 0.6+ | 2005 08 25 | 644 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2001 11 19 | 704 | 0.2+ | 1.0+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.7+ | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 12 01 | 691 | 0.5− | 0.1− |
| 2001 11 21 | 704 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | (0.2+ | 1.5+) | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.9− | 0.2− |
| 2001 11 21 | 704 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2003 01 27 | 291 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 12 01 | 704 | 0.1− | 0.2− |

**(140406)∗ 2001 TV$_{73}$ = 2004 HL$_{75}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75158)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.52522 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18816120 | $\omega$ | 268.74537 | | +0.93546123 | −0.35319881 |
| $a$ | 3.0161250 | $\Omega$ | 111.93760 | | +0.32949124 | +0.85846857 |
| $e$ | 0.2192171 | $i$ | 0.78838 | | +0.12785858 | +0.37186331 |
| $P$ | 5.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.1− | 0.3+ | 2001 11 21 | 704 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.3− | 0.3− |
| 2001 10 13 | 704 | 0.3+ | 1.1+ | 2001 11 21 | 704 | 0.0 | 0.5− | 2006 09 20 | 704 | 0.3+ | 0.1− |
| 2001 10 13 | 704 | 0.7− | 0.3− | 2001 11 21 | 704 | 0.6− | 0.6− | 2006 09 20 | 704 | 0.3+ | 0.4− |
| 2001 10 13 | 704 | 0.1+ | 0.6+ | 2001 11 21 | 704 | 0.4− | 0.3− | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 2001 10 14 | 699 | 0.7− | 0.1+ | 2001 11 21 | 704 | (0.2− | 1.7−) | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2001 10 14 | 699 | (0.1− | 1.7−) | 2001 11 21 | 704 | 0.5− | 0.8− | 2006 09 20 | 644 | 0.1− | 0.0 |
| 2001 10 14 | 699 | 0.1− | 1.0− | 2001 11 21 | 704 | 0.4− | 0.5+ | 2006 09 23 | 691 | 0.5− | 0.2+ |
| 2001 10 14 | 699 | 0.4− | 0.1− | 2001 11 21 | 704 | 0.3− | 0.8− | 2006 09 23 | 691 | 0.4− | 0.1+ |
| 2001 10 17 | 704 | 0.2+ | 0.3+ | 2001 11 21 | 704 | 0.6− | 0.3+ | 2006 09 23 | 691 | 0.4− | 0.2+ |
| 2001 10 17 | 704 | 0.3+ | 0.1− | 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.5+ | 0.5− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.6+ |
| 2001 10 17 | 704 | 0.2+ | 0.1− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.0 | 0.5+ |
| 2001 10 17 | 704 | 0.6+ | 0.4+ | 2003 01 31 | 704 | 0.5+ | 1.2+ | 2006 09 26 | 704 | 0.1+ | 0.2+ |
| 2001 10 18 | 644 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 10 18 | 644 | 0.0 | 0.0 | 2003 01 31 | 704 | 1.0+ | 0.7− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2001 10 18 | 644 | 0.1− | 0.1+ | 2003 02 03 | 291 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 10 20 | 704 | 0.6+ | 0.4+ | 2003 02 03 | 291 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 10 20 | 704 | 0.3+ | 0.6+ | 2003 02 03 | 291 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 10 20 | 704 | 0.3+ | 0.6+ | 2003 02 21 | 644 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 10 20 | 704 | 0.6+ | 0.6+ | 2003 02 21 | 644 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 10 22 | 704 | 1.5+ | 0.3− | 2003 02 21 | 644 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 10 22 | 704 | (1.5+ | 0.5−) | 2004 03 16 | 691 | 0.8+ | 0.7+ | 2006 09 27 | 704 | 0.5+ | 0.8+ |
| 2001 10 22 | 704 | 1.2+ | 0.2+ | 2004 03 16 | 691 | 0.0 | 1.0+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2001 10 22 | 704 | (2.6+ | 0.3+) | 2004 03 16 | 691 | 0.3+ | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | 0.1+ | 0.3− | 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.7+ |
| 2001 10 23 | 704 | 0.2− | 0.2− | 2004 04 20 | 691 | 0.2− | 0.6+ | 2006 09 27 | 691 | 0.3+ | 0.3+ |
| 2001 10 23 | 704 | 0.2+ | 0.3− | 2004 04 20 | 691 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.3+ | 0.7+ |
| 2001 10 23 | 704 | 0.0 | 0.6− | 2004 05 24 | 691 | 0.4+ | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2001 10 23 | 704 | (0.8+ | 1.7−) | 2004 05 24 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.6+ |
| 2001 10 24 | 704 | 0.4− | 0.7− | 2004 05 24 | 691 | 0.3+ | 0.8+ | 2006 09 28 | 704 | 0.2+ | 0.7+ |
| 2001 10 24 | 704 | 0.3− | 0.7− | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.3+ |
| 2001 10 24 | 704 | 0.6− | 0.8− | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.1− | 0.4+ |
| 2001 10 24 | 704 | 0.6− | 0.5− | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.5+ |
| 2001 10 24 | 704 | 0.6− | 0.6− | 2006 08 25 | 704 | 0.3+ | 0.7+ | 2006 09 28 | 704 | 0.1− | 0.8+ |
| 2001 10 25 | 644 | 0.2− | 0.7+ | 2006 08 25 | 704 | 0.3− | 1.0+ | 2006 10 01 | 704 | 0.4− | 0.6+ |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2006 08 25 | 704 | 0.4− | 1.3+ | 2006 10 01 | 704 | 0.2+ | 0.3+ |
| 2001 10 25 | 644 | 0.3− | 0.5+ | 2006 08 25 | 704 | 1.4− | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 2001 10 26 | 704 | 0.3+ | 0.9+ | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.6+ |
| 2001 10 26 | 704 | 0.4+ | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.9− | 0.1− |
| 2001 10 26 | 704 | 0.2+ | 0.8+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 10 26 | 704 | 0.2+ | 0.7+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2001 10 26 | 704 | 0.4− | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 11 09 | 704 | 0.3+ | 0.8+ | 2006 09 15 | 691 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2001 11 09 | 704 | 0.2+ | 0.9+ | 2006 09 16 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.6− |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2006 09 16 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2001 11 09 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.1− | 0.9+ | 2006 10 23 | 704 | 0.4+ | 0.5+ |
| 2001 11 16 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 23 | 704 | 0.3+ | 0.2+ |
| 2001 11 16 | 691 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 23 | 704 | 1.4+ | 0.8+ |
| 2001 11 16 | 691 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.6+ | 0.7+ |
| 2001 11 17 | 704 | 0.8− | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.8+ | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.6− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.4− | 0.1− |
| 2001 11 17 | 704 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.4− | 2006 11 06 | 644 | 0.4− | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.3− |
| 2001 11 20 | 704 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.3− |
| 2001 11 20 | 704 | 0.6− | 0.4− | 2006 09 20 | 704 | 0.2− | 0.7− | 2006 11 21 | 704 | 1.4+ | 0.1+ |
| 2001 11 20 | 704 | 0.6− | 0.4− | 2006 09 20 | 704 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.4+ | 0.5+ |

**(140407)∗ 2001 TQ$_{74}$ = 1998 HX$_{154}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20487)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.97571 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18651206 | $\omega$ | 311.89483 | | −0.41082484 | −0.91155805 |
| $a$ | 3.0338779 | $\Omega$ | 162.33985 | | +0.85209123 | −0.39047714 |
| $e$ | 0.1497116 | $i$ | 3.18928 | | +0.32428921 | −0.12880030 |
| $P$ | 5.28 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.3− | 0.0 | 2001 11 20 | 704 | 0.4− | 0.6+ | 2003 03 25 | 699 | 0.4− | 0.1+ |
| 1995 10 02 | 691 | 0.8− | 0.0 | 2001 11 20 | 704 | 0.2− | 0.4− | 2003 03 25 | 699 | 0.6− | 0.0 |
| 1995 10 02 | 691 | 0.1− | 0.3+ | 2001 11 20 | 704 | 0.5− | 0.1+ | 2003 03 25 | 699 | 0.3− | 0.1+ |
| 1998 03 20 | 704 | 0.3− | 1.0− | 2001 11 20 | 704 | 0.1− | 0.3+ | 2003 03 25 | 699 | 0.0 | 0.0 |
| 1998 03 20 | 704 | 1.8+ | 0.5+ | 2001 11 21 | 704 | 0.0 | 0.8− | 2003 04 03 | 699 | 0.2+ | 1.2+ |
| 1998 03 20 | 704 | 0.0 | 1.8− | 2001 11 21 | 704 | (0.7− | 1.7−) | 2003 04 03 | 699 | 1.0− | 0.7+ |
| 1998 03 20 | 704 | 0.9− | 1.6− | 2001 11 21 | 704 | 0.0 | 0.8− | 2003 04 03 | 699 | 0.7− | 0.2− |
| 1998 04 19 | 704 | 0.1+ | 0.7+ | 2001 11 21 | 291 | 0.1− | 0.2− | 2003 04 03 | 699 | 1.1− | 0.5− |
| 1998 04 19 | 704 | (2.2+ | 2.2−) | 2001 11 21 | 291 | 0.1− | 0.3− | 2005 07 04 | G96 | 0.7+ | 0.5+ |
| 1998 04 19 | 704 | 1.1+ | 0.5− | 2001 11 21 | 291 | 0.1− | 0.3− | 2005 07 04 | G96 | 0.5− | 0.6+ |
| 1998 04 19 | 704 | 0.8− | 1.1− | 2001 12 11 | 704 | 0.6+ | 0.3+ | 2005 07 04 | G96 | 0.8+ | 0.1+ |
| 1998 04 20 | 704 | 1.1+ | 0.8− | 2001 12 11 | 704 | 0.5− | 0.6+ | 2005 07 04 | G96 | 0.1+ | 0.6+ |
| 1998 04 20 | 704 | (2.3− | 0.8−) | 2001 12 11 | 704 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.3+ |
| 1998 04 20 | 704 | 0.9− | 0.9− | 2001 12 11 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 691 | 0.2+ | 0.1+ |
| 1998 04 20 | 704 | 0.4+ | 1.3− | 2001 12 14 | 704 | 0.5+ | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.1+ |
| 1998 04 20 | 704 | (5.2− | 1.4−) | 2001 12 14 | 704 | 0.3+ | 0.6− | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.6+ | 0.7− | 2001 12 14 | 704 | 0.2+ | 0.6− | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2001 10 13 | 704 | 0.1+ | 1.2+ | 2001 12 14 | 704 | 0.2+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 704 | 0.1+ | 0.3+ | 2001 12 14 | 704 | 0.9− | 0.8+ | 2006 09 20 | 704 | 0.5− | 0.3+ |
| 2001 10 13 | 704 | 0.0 | 0.5+ | 2003 01 26 | 608 | 0.4+ | 0.9+ | 2006 09 20 | 704 | 1.5− | 0.4+ |
| 2001 10 17 | 704 | 1.2− | 1.0+ | 2003 01 26 | 608 | 0.1− | 0.8+ | 2006 09 20 | 704 | 0.9− | 0.8− |
| 2001 10 17 | 704 | 0.2− | 0.7− | 2003 01 26 | 608 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 1.1+ | 0.2− | 2003 01 31 | 704 | (2.5+ | 2.3+) | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2001 10 17 | 704 | 0.0 | 1.3+ | 2003 01 31 | 704 | (1.7+ | 0.9+) | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2003 01 31 | 704 | (1.6+ | 2.2+) | 2006 10 15 | 703 | 0.2+ | 0.5− |
| 2001 10 18 | 644 | 0.6+ | 0.8+ | 2003 01 31 | 704 | (2.1+ | 1.5+) | 2006 10 15 | 703 | 0.9+ | 0.5− |
| 2001 10 18 | 644 | 0.8+ | 0.7+ | 2003 02 22 | 644 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.7+ | 1.0+ | 2003 02 22 | 644 | 0.3+ | 0.2+ | 2006 10 15 | 703 | 1.1− | 1.3− |
| 2001 10 20 | 704 | 0.3+ | 0.1+ | 2003 02 22 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 10 20 | 704 | 0.0 | 0.1− | 2003 02 23 | 699 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 0.3+ | 0.4− | 2003 02 23 | 699 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2001 10 22 | 704 | 0.6+ | 0.6+ | 2003 02 23 | 699 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 10 22 | 704 | 0.8+ | 0.6− | 2003 02 23 | 699 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 22 | 704 | 1.1+ | 0.6− | 2003 02 23 | 608 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 10 22 | 704 | 0.8+ | 1.3− | 2003 02 23 | 608 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.7− | 0.8+ | 2003 02 23 | 608 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 1.5− | 0.5+ | 2003 02 28 | 608 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | (1.7− | 1.4+) | 2003 02 28 | 608 | 0.7− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2001 10 24 | 704 | 0.2− | 0.5+ | 2003 02 28 | 608 | 0.1− | 1.1− | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2003 03 05 | 704 | 0.6+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2001 10 24 | 704 | 0.1+ | 0.3− | 2003 03 05 | 704 | 0.4+ | 1.3+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2003 03 05 | 704 | 0.6+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2001 10 24 | 704 | 0.4+ | 0.6+ | 2003 03 05 | 704 | 0.7+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2001 11 18 | 608 | 0.0 | 0.6− | 2003 03 10 | 291 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2001 11 18 | 608 | 0.6+ | 1.0− | 2003 03 10 | 291 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 11 18 | 608 | 0.3+ | 0.7− | 2003 03 10 | 291 | 0.1− | 0.0 | | | | |

**(140408)∗ 2001 TC$_{76}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.74808 | | | | | |
| $n$ | 0.18765536 | $\omega$ | 24.06536 | | +0.23695845 | −0.95608064 |
| $a$ | 3.0215426 | $\Omega$ | 52.68250 | | +0.85246461 | +0.11944316 |
| $e$ | 0.1329404 | $i$ | 12.52808 | | +0.46599870 | +0.26766238 |
| $P$ | 5.25 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.7− | 0.5+ | 2001 11 17 | 704 | 0.3− | 0.2+ | 2004 05 21 | 691 | 0.5+ | 0.6+ |
| 2001 10 13 | 704 | 0.3+ | 0.5+ | 2001 11 17 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.1+ |
| 2001 10 13 | 704 | 0.5− | 0.7+ | 2001 11 17 | 704 | 0.0 | 0.6+ | 2006 09 18 | 703 | 1.2− | 1.2+ |
| 2001 10 13 | 704 | 0.4+ | 0.6− | 2001 11 17 | 704 | 0.7− | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.6+ | 0.9+ | 2001 11 20 | 704 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.2− | 0.3+ | 2001 11 20 | 704 | 0.4− | 0.2− | 2006 09 21 | 699 | 0.9+ | 0.7+ |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2001 11 20 | 704 | 0.6− | 0.0 | 2006 09 21 | 699 | 0.5− | 1.0+ |
| 2001 10 17 | 704 | 0.0 | 0.5+ | 2001 11 20 | 704 | 0.6− | 0.2− | 2006 09 21 | 699 | (1.8+ | 0.5+) |
| 2001 10 18 | 644 | 0.1− | 0.6+ | 2001 11 20 | 704 | 0.6− | 0.2− | 2006 09 21 | 699 | (1.6+ | 0.2−) |
| 2001 10 18 | 644 | 0.1− | 0.8+ | 2001 11 21 | 704 | 0.6− | 0.4− | 2006 09 25 | 699 | 0.7+ | 0.5+ |
| 2001 10 18 | 644 | 0.2− | 0.6+ | 2001 11 21 | 704 | 0.3− | 0.3− | 2006 09 25 | 699 | (2.2+ | 0.5+) |
| 2001 10 20 | 704 | 0.5+ | 0.5+ | 2001 11 21 | 704 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.8+ | 1.1+ | 2001 11 21 | 704 | 0.7− | 0.5− | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 0.4+ | 1.2+ | 2001 11 21 | 704 | 0.7− | 0.4− | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 2001 10 20 | 704 | 0.6+ | 1.3+ | 2001 12 11 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.1− |
| 2001 10 21 | 691 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.0 | 0.9− | 2006 09 26 | 703 | 0.7+ | 0.0 |
| 2001 10 21 | 691 | 0.1+ | 0.1− | 2001 12 11 | 704 | 1.2− | 0.8− | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2001 10 21 | 691 | 0.3+ | 0.2− | 2001 12 15 | 704 | 1.3+ | 0.0 | 2006 09 29 | 699 | 0.2− | 0.5+ |
| 2001 10 22 | 704 | 0.8− | 0.8− | 2001 12 15 | 704 | 1.3+ | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.5+ |
| 2001 10 22 | 704 | 0.3− | 0.5− | 2001 12 15 | 704 | 1.0+ | 0.6+ | 2006 09 29 | 699 | 0.3− | 0.6+ |
| 2001 10 22 | 704 | 0.5− | 0.5− | 2001 12 15 | 704 | (1.6+ | 0.4−) | 2006 09 29 | 699 | 1.4− | 0.5+ |
| 2001 10 22 | 704 | 0.4− | 0.8− | 2001 12 15 | 704 | (1.6+ | 1.0+) | 2006 10 16 | 703 | 1.3− | 0.6+ |
| 2001 10 22 | 704 | 0.4− | 1.1− | 2001 12 18 | 704 | (1.4+ | 2.7−) | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2001 10 23 | 704 | 0.2+ | 0.0 | 2001 12 18 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.4− | 0.8+ |
| 2001 10 23 | 704 | 0.2− | 0.7− | 2001 12 18 | 704 | (1.6+ | 0.8+) | 2006 10 16 | 703 | 0.1− | 0.6− |
| 2001 10 23 | 704 | 0.3− | 0.3− | 2001 12 18 | 704 | 0.4+ | 1.1− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.6− | 0.2+ | 2001 12 19 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 0.4− | 0.5− | 2001 12 19 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.9+ | 0.1+ | 2001 12 19 | 644 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 1.3− | 1.0− | 2003 02 26 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.4− | 2003 02 26 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.6− | 2003 02 26 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2001 10 25 | 704 | 0.4+ | 0.4− | 2003 03 08 | 644 | 0.7+ | 0.9+ | 2006 10 22 | 703 | 0.6+ | 0.7+ |
| 2001 10 25 | 704 | 0.5+ | 0.6− | 2003 03 08 | 644 | 0.7+ | 1.3+ | 2006 10 22 | 703 | 0.0 | 1.3+ |
| 2001 10 25 | 704 | 1.1+ | 0.2+ | 2003 03 08 | 644 | 0.4+ | 1.5+ | 2006 10 22 | 703 | 0.7− | 0.4+ |
| 2001 10 25 | 704 | 0.7+ | 0.6+ | 2003 03 22 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 10 25 | 704 | 0.7+ | 0.2+ | 2003 03 22 | 644 | 0.6+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2001 11 09 | 704 | 1.0− | 1.2+ | 2003 03 22 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.3− | 0.8+ | 2003 04 02 | 644 | 0.5− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.1− | 0.9+ | 2003 04 02 | 644 | 0.3+ | 1.0+ | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.4− | 0.8+ | 2003 04 02 | 644 | 0.7+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2001 11 09 | 704 | (0.2− | 1.9+) | 2003 04 08 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.9+ |
| 2001 11 10 | 704 | 1.1− | 0.4+ | 2003 04 08 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.9− | 1.1+ |
| 2001 11 10 | 704 | 0.0 | 0.2+ | 2003 04 08 | 644 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 1.4− | 0.4+ |
| 2001 11 10 | 704 | 0.7− | 0.8+ | 2004 04 21 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2001 11 10 | 704 | 0.1+ | 0.4− | 2004 04 21 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.5− |
| 2001 11 10 | 704 | 0.1+ | 1.0+ | 2004 04 21 | 691 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.4− | 0.1− | 2004 05 13 | 691 | 0.1+ | 0.7+ | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2001 11 10 | 704 | 0.7+ | 0.4+ | 2004 05 13 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.9+ |
| 2001 11 10 | 704 | 0.7+ | 1.3+ | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 1.0− | 1.1+ |
| 2001 11 10 | 704 | 0.3+ | 0.5+ | 2004 05 21 | 691 | 0.4+ | 0.6+ | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2001 11 17 | 704 | 0.2− | 0.4+ | 2004 05 21 | 691 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.9− | 0.2− |

**(140409)∗ 2001 TO$_{77}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.36512 | | | | | |
| $n$ | 0.19145357 | $\omega$ | 266.99289 | | +0.94494629 | −0.32166768 |
| $a$ | 2.9814469 | $\Omega$ | 111.76475 | | +0.32000584 | +0.87006407 |
| $e$ | 0.1701829 | $i$ | 3.70751 | | +0.06835775 | +0.37352163 |
| $P$ | 5.15 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.4− | 0.6+ | 2001 11 24 | 704 | 0.8+ | 0.9+ | 2006 09 26 | 704 | (2.0− | 2.8+) |
| 2001 09 17 | 704 | 0.8− | 0.2− | 2001 11 24 | 704 | 0.4+ | 1.4+ | 2006 09 26 | 704 | 1.4− | 0.4+ |
| 2001 09 17 | 704 | 0.4− | 0.0 | 2001 11 24 | 704 | (1.0+ | 1.6+) | 2006 09 26 | 704 | (0.5− | 2.3+) |
| 2001 09 17 | 704 | 0.6− | 0.3− | 2001 11 24 | 704 | 1.3+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.4+ |
| 2001 09 17 | 704 | 0.3+ | 0.4+ | 2001 11 24 | 704 | 0.8+ | 0.6+ | 2006 09 26 | 704 | (2.2− | 2.4+) |
| 2001 09 19 | 699 | 0.4− | 0.8− | 2001 12 09 | 699 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.8− |
| 2001 09 19 | 699 | 0.2− | 0.2− | 2001 12 09 | 699 | 1.0+ | 0.2+ | 2006 09 26 | 704 | (1.2− | 2.4+) |
| 2001 09 19 | 699 | 0.0 | 0.3+ | 2001 12 09 | 699 | 1.0+ | 0.3− | 2006 09 26 | 704 | (0.6− | 1.8+) |
| 2001 09 19 | 699 | 0.9− | 0.1+ | 2001 12 09 | 699 | 1.4+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2001 10 11 | 333 | 0.1+ | 0.3− | 2001 12 09 | 699 | 0.9− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 2001 10 11 | 333 | 0.4− | 0.2− | 2001 12 09 | 699 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 2001 10 11 | 333 | 0.1+ | 0.6− | 2001 12 09 | 699 | 0.4− | 0.2− | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2001 10 13 | 704 | 0.0 | 0.2+ | 2001 12 09 | 699 | 0.9+ | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 10 13 | 704 | 0.1− | 0.3− | 2001 12 11 | 704 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 10 13 | 704 | 0.3− | 0.4− | 2001 12 11 | 704 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2001 10 13 | 704 | 0.1− | 0.3+ | 2001 12 11 | 704 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2001 10 13 | 699 | 0.2− | 0.2− | 2001 12 11 | 704 | 0.4− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 10 13 | 699 | 0.0 | 0.1− | 2001 12 11 | 704 | 0.3− | 0.4− | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2001 10 13 | 699 | 0.4− | 0.1+ | 2001 12 14 | 704 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 10 13 | 699 | 0.8− | 0.4+ | 2001 12 14 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.6− | 1.3+ | 2001 12 14 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 10 17 | 704 | 1.1− | 0.2+ | 2001 12 14 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.8− | 0.4+ | 2001 12 14 | 704 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.6− | 0.4+ | 2001 12 17 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 1.2− | 1.1− | 2001 12 17 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.3− |
| 2001 10 19 | 608 | 0.3− | 0.9− | 2001 12 17 | 704 | 0.8+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 10 19 | 608 | 0.3− | 0.8− | 2001 12 17 | 704 | 0.2+ | 1.1+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2001 10 19 | 608 | 0.3− | 0.8− | 2001 12 17 | 704 | 0.7− | 1.2+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 10 24 | 704 | 1.2+ | 0.2+ | 2001 12 20 | 691 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 10 24 | 704 | 0.5+ | 1.0+ | 2001 12 20 | 691 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.7+ | 0.0 | 2001 12 20 | 691 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 1.4+ | 0.9+ | 2003 01 26 | 699 | 0.0 | 1.1+ | 2006 10 22 | 704 | (0.1+ | 1.6−) |
| 2001 10 25 | 644 | 0.7+ | 0.1+ | 2003 01 26 | 699 | 0.4+ | 0.1− | 2006 10 22 | 704 | 0.5− | 0.4+ |
| 2001 10 25 | 644 | 0.9+ | 0.0 | 2003 01 26 | 699 | 0.2+ | 1.3+ | 2006 10 22 | 704 | 0.6− | 1.1− |
| 2001 10 25 | 644 | 0.7+ | 0.0 | 2003 01 26 | 699 | 1.4+ | 0.2− | 2006 10 22 | 704 | 0.4− | 1.0+ |
| 2001 11 09 | 704 | 0.7+ | 0.2+ | 2003 01 26 | 608 | 0.1− | 1.3− | 2006 10 22 | 704 | 0.4− | 0.4− |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2003 01 26 | 608 | 0.1− | 1.1− | 2006 10 27 | 704 | 0.5− | 0.4+ |
| 2001 11 09 | 704 | 0.7− | 0.3+ | 2003 01 26 | 608 | 0.6− | 0.0 | 2006 10 27 | 704 | 0.2+ | 0.8+ |
| 2001 11 09 | 704 | 0.3+ | 0.2− | 2003 01 27 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 704 | 0.0 | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.3− | 0.8+ | 2003 01 27 | 704 | 1.5− | 0.8+ | 2006 10 27 | 704 | 0.4− | 0.7+ |
| 2001 11 10 | 704 | 0.1− | 0.8+ | 2003 01 27 | 704 | 0.8− | 0.9+ | 2006 10 27 | 704 | 0.5− | 0.5+ |
| 2001 11 10 | 704 | 0.2− | 0.7+ | 2003 01 27 | 704 | 0.0 | 0.9+ | 2006 10 31 | 704 | 0.2− | 0.7+ |
| 2001 11 10 | 704 | 0.1− | 0.4+ | 2003 01 27 | 704 | (0.8− | 1.7+) | 2006 10 31 | 704 | (2.1− | 0.1−) |
| 2001 11 10 | 704 | 0.2+ | 1.0+ | 2003 01 30 | 608 | 0.0 | 0.9− | 2006 10 31 | 704 | (3.1+ | 0.9−) |
| 2001 11 15 | 644 | 0.3+ | 0.4− | 2003 01 30 | 608 | 0.4− | 0.4− | 2006 10 31 | 704 | 0.4+ | 0.1− |
| 2001 11 15 | 644 | 0.0 | 0.2− | 2003 01 30 | 608 | 0.3+ | 1.3− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 11 15 | 644 | 0.5− | 0.1− | 2003 03 08 | 704 | 0.7+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.3− |
| 2001 11 17 | 704 | (1.7+ | 0.1−) | 2003 03 08 | 704 | 0.3− | 1.3− | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2001 11 17 | 704 | (1.8+ | 0.2−) | 2003 03 08 | 704 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.5− |
| 2001 11 17 | 704 | (1.8+ | 0.6−) | 2003 03 08 | 704 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.5+ | 0.2− |
| 2001 11 19 | 699 | 0.1− | 0.4+ | 2004 04 14 | 691 | 0.1+ | 0.7+ | 2006 11 13 | 703 | 0.4− | 0.2− |
| 2001 11 19 | 699 | 0.5− | 0.1− | 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 0.3− | 0.9− |
| 2001 11 19 | 699 | 0.5− | 0.0 | 2004 04 14 | 691 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 0.4+ | 0.2+ |
| 2001 11 19 | 699 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.5+ | 0.2− |
| 2001 11 19 | 608 | 1.0+ | 0.7+ | 2006 09 20 | 699 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2001 11 19 | 608 | 0.9+ | 0.4+ | 2006 09 20 | 699 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 1.2+ | 0.3− |
| 2001 11 19 | 608 | 0.8+ | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.7+ | 2006 11 14 | 704 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.4− |
| 2001 11 20 | 704 | 0.6− | 0.8− | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.5− | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2001 11 20 | 704 | 0.2− | 0.8− | 2006 09 22 | 704 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.1− | 0.7− |
| 2001 11 20 | 704 | 0.4− | 0.2+ | 2006 09 22 | 704 | 0.9+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 1.1− | 0.5− | 2006 09 22 | 704 | 0.7+ | 0.4− | 2006 11 20 | 704 | 1.4+ | 0.7− |
| 2001 11 20 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2001 11 20 | 704 | 0.7− | 1.0− | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | (0.7− | 3.2+) | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.1− | 0.7− | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.5− |

**(140410)∗ 2001 TJ$_{81}$ = 2005 GM$_{70}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75159)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 26.76846 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.19078845 | $\omega$ | 100.50329 | | | +0.52096917 | | +0.84278559 | |
| $a$ | 2.9883720 | $\Omega$ | 202.53692 | | | −0.85353582 | | +0.51588805 | |
| $e$ | 0.2512328 | $i$ | 20.66986 | | | +0.00823037 | | +0.15353168 | |
| $P$ | 5.17 | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 09 | 691 | 0.2+ | 0.1− | 2001 09 26 | 704 | 0.3+ | 0.4+ | 2005 05 04 | G96 | 0.1− | 0.4+ |
| 1995 05 09 | 691 | 0.1+ | 0.2+ | 2001 09 28 | 644 | 0.0 | 0.3+ | 2005 05 04 | G96 | 0.1− | 0.1+ |
| 1995 05 09 | 691 | 0.2− | 0.9− | 2001 09 28 | 644 | 0.2− | 0.6+ | 2005 05 04 | G96 | 0.1+ | 0.7+ |
| 2001 09 10 | 704 | 0.9+ | 0.1+ | 2001 09 28 | 644 | 0.3− | 0.3+ | 2006 09 01 | 151 | (1.7− | 0.3+) |
| 2001 09 10 | 704 | 0.4− | 0.1+ | 2001 10 14 | 704 | 0.1+ | 0.2+ | 2006 09 01 | 151 | 0.5− | 0.1+ |
| 2001 09 10 | 704 | 0.1− | 0.6+ | 2001 10 14 | 704 | 0.5− | 0.5+ | 2006 09 01 | 151 | 0.1− | 0.2+ |
| 2001 09 10 | 704 | 0.5− | 0.3+ | 2001 10 14 | 704 | (0.5+ | 1.6+) | 2006 09 11 | 703 | 1.1− | 0.1− |
| 2001 09 10 | 704 | 0.7− | 0.3+ | 2001 10 14 | 704 | 0.6+ | 0.5+ | 2006 09 11 | 703 | 0.2+ | 0.6+ |
| 2001 09 23 | 704 | 1.0+ | 1.1+ | 2001 10 14 | 704 | 0.3− | 0.5+ | 2006 09 11 | 703 | (1.5− | 0.8+) |
| 2001 09 23 | 704 | 0.2− | 0.2− | 2001 10 17 | 704 | 0.1− | 0.1− | 2006 09 11 | 703 | 0.5+ | 0.2− |
| 2001 09 23 | 644 | 0.5− | 0.0 | 2001 10 17 | 704 | 0.5− | 0.8+ | 2006 09 20 | 699 | 1.5+ | 0.7− |
| 2001 09 23 | 704 | 0.9+ | 0.4+ | 2001 10 17 | 704 | (1.1− | 1.8+) | 2006 09 20 | 699 | 1.6+ | 0.9− |
| 2001 09 23 | 704 | 0.4+ | 1.1+ | 2001 10 17 | 704 | 0.2− | 0.4− | 2006 09 20 | 699 | 1.0+ | 0.4+ |
| 2001 09 23 | 644 | 0.6− | 0.4+ | 2001 10 17 | 704 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.6+ | 0.0 |
| 2001 09 23 | 704 | 0.2− | 0.5+ | 2005 03 17 | G96 | 0.6− | 0.3+ | 2006 09 27 | 703 | (5.1+ | 3.2−) |
| 2001 09 23 | 644 | 0.2− | 0.5+ | 2005 03 17 | G96 | 0.4− | 0.4+ | 2006 09 27 | 703 | 1.2− | 0.5+ |
| 2001 09 26 | 704 | 0.3− | 0.1− | 2005 03 17 | G96 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.2− |
| 2001 09 26 | 704 | 0.2− | 0.4− | 2005 03 17 | G96 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 09 26 | 704 | 0.3− | 0.0 | 2005 04 04 | 691 | 0.0 | 1.0+ | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2001 09 26 | 704 | 0.3− | 0.1− | 2005 04 04 | 691 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2001 09 26 | 704 | 0.8+ | 0.4− | 2005 04 04 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 703 | 1.4− | 0.6+ |
| 2001 09 26 | 704 | 0.3+ | 0.6+ | 2005 04 09 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 703 | 0.9− | 0.1+ |
| 2001 09 26 | 704 | 0.1+ | 0.3− | 2005 04 09 | 691 | 0.0 | 0.1+ | 2006 10 29 | 703 | 1.9− | 0.8− |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2005 04 09 | 691 | 0.3− | 0.3+ | 2006 10 29 | 703 | 0.9+ | 0.1− |
| 2001 09 26 | 704 | 0.2+ | 0.2− | 2005 05 04 | G96 | 0.1− | 0.5+ | | | | |

**(140411)∗ 2001 TT$_{82}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 338.94470 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.23193567 | $\omega$ | 145.96604 | | | −0.40857440 | | −0.91223867 | |
| $a$ | 2.6235601 | $\Omega$ | 328.11973 | | | +0.82434946 | | −0.35480527 | |
| $e$ | 0.1666573 | $i$ | 3.23370 | | | +0.39180980 | | −0.20477751 | |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 0.8− | 0.1+ | 2001 10 18 | 644 | 0.3− | 0.4− | 2003 03 27 | 691 | 0.2+ | 0.3− |
| 1997 11 06 | 704 | 0.0 | 0.4+ | 2001 10 20 | 691 | 0.1+ | 0.5+ | 2003 03 27 | 691 | 0.0 | 0.1− |
| 1997 11 06 | 704 | 1.8+ | 0.7+ | 2001 10 20 | 691 | 0.1− | 0.3+ | 2003 04 01 | 704 | 0.6+ | 1.0+ |
| 1997 11 06 | 704 | 0.1− | 0.6+ | 2001 10 20 | 691 | 0.2+ | 0.4+ | 2003 04 01 | 704 | 0.3+ | 0.6+ |
| 1997 11 06 | 704 | 0.4− | 0.3+ | 2001 10 21 | 704 | 0.1+ | 0.0 | 2003 04 01 | 704 | 0.3+ | 0.6+ |
| 1997 11 23 | 691 | 0.1+ | 0.2− | 2001 10 21 | 704 | 0.3+ | 0.9− | 2003 04 01 | 704 | 0.0 | 0.5− |
| 1997 11 23 | 691 | 0.2+ | 0.1− | 2001 10 21 | 704 | 0.0 | 0.4− | 2003 04 01 | 704 | 0.4− | 0.2+ |
| 1997 11 23 | 691 | 0.0 | 0.1− | 2003 01 30 | 291 | 0.2− | 0.2+ | 2003 04 03 | 699 | 0.7− | 0.2+ |
| 1997 11 30 | 691 | 0.2+ | 0.3− | 2003 01 30 | 291 | 0.3− | 0.2+ | 2003 04 03 | 699 | 0.4+ | 0.3+ |
| 1997 11 30 | 691 | 0.0 | 0.4− | 2003 01 30 | 291 | 0.3− | 0.3+ | 2003 04 03 | 699 | 1.2+ | 0.4+ |
| 1997 11 30 | 691 | 0.0 | 1.8− | 2003 02 22 | 333 | 0.2− | 0.7− | 2003 04 03 | 699 | 0.8− | 0.3+ |
| 2001 09 20 | 704 | 0.8+ | 1.0+ | 2003 02 22 | 333 | 0.4− | 0.3− | 2003 04 04 | 704 | 0.6+ | 0.6+ |
| 2001 09 20 | 704 | 0.9+ | 1.2+ | 2003 02 22 | 333 | 0.3− | 0.1+ | 2003 04 04 | 704 | 0.6+ | 0.8+ |
| 2001 09 20 | 704 | 1.3+ | 1.3+ | 2003 03 05 | 704 | 0.4+ | 0.5− | 2003 04 04 | 704 | 1.2+ | 1.1+ |
| 2001 09 20 | 704 | (0.7+ | 2.0+) | 2003 03 05 | 704 | 0.8+ | 0.4+ | 2003 04 04 | 704 | 0.2+ | 0.8+ |
| 2001 09 21 | 333 | 0.8− | 0.5+ | 2003 03 05 | 704 | 0.9+ | 1.0+ | 2003 04 09 | 691 | 0.4+ | 0.1− |
| 2001 09 21 | 333 | 0.5− | 1.4+ | 2003 03 05 | 704 | 0.9+ | 0.8+ | 2003 04 09 | 691 | 0.6+ | 0.1+ |
| 2001 09 21 | 333 | 1.2+ | 0.1+ | 2003 03 05 | 704 | 0.5+ | 0.4+ | 2003 04 09 | 691 | 0.6+ | 0.1+ |
| 2001 09 23 | 704 | 1.5− | 0.6− | 2003 03 06 | 683 | (2.0+ | 0.6+) | 2005 08 24 | 644 | 0.1+ | 0.3+ |
| 2001 09 23 | 704 | 0.5− | 0.5− | 2003 03 06 | 683 | 0.1+ | 0.1− | 2005 08 24 | 644 | 0.7− | 0.4+ |
| 2001 09 23 | 704 | 0.4− | 0.7− | 2003 03 06 | 699 | 0.6+ | 0.3− | 2005 08 24 | 644 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 1.4− | 0.3− | 2003 03 06 | 683 | (2.4+ | 0.3+) | 2005 08 25 | 644 | 0.3− | 0.5+ |
| 2001 09 24 | 704 | 0.0 | 0.5+ | 2003 03 06 | 699 | 1.1+ | 0.1− | 2005 08 25 | 644 | 0.2− | 0.3+ |
| 2001 09 24 | 704 | 0.2+ | 0.5+ | 2003 03 06 | 699 | 0.9+ | 0.8+ | 2005 08 25 | 644 | 0.1− | 0.4+ |
| 2001 09 24 | 704 | 0.9+ | 0.8+ | 2003 03 06 | 699 | 0.6+ | 0.1+ | 2005 08 31 | 691 | 0.4− | 0.6+ |
| 2001 09 24 | 704 | (0.6− | 1.7+) | 2003 03 07 | 683 | 1.4− | 1.3+ | 2005 08 31 | 691 | 0.4− | 0.6+ |
| 2001 09 24 | 704 | 0.9+ | 1.2+ | 2003 03 07 | 683 | 0.8− | 0.0 | 2005 08 31 | 691 | 0.7− | 0.6+ |
| 2001 09 28 | 644 | 0.1− | 0.7+ | 2003 03 07 | 683 | 0.8− | 0.5+ | 2005 09 13 | 691 | 0.3− | 0.4+ |
| 2001 09 28 | 644 | 0.3− | 0.6+ | 2003 03 08 | 683 | 0.3− | 1.4+ | 2005 09 13 | 691 | 0.1− | 0.3+ |
| 2001 09 28 | 644 | 0.1− | 0.5+ | 2003 03 08 | 683 | 0.8− | 1.0+ | 2005 09 13 | 691 | 0.1− | 0.5+ |
| 2001 10 11 | 644 | 0.1+ | 0.5+ | 2003 03 08 | 683 | 0.2− | 0.8+ | 2005 09 22 | 644 | 0.2− | 0.4+ |
| 2001 10 11 | 644 | 0.1+ | 0.3+ | 2003 03 09 | 683 | (0.3− | 1.5+) | 2005 09 22 | 644 | 0.0 | 0.4+ |
| 2001 10 11 | 644 | 0.2− | 0.2+ | 2003 03 09 | 683 | 1.2− | 1.1+ | 2005 09 22 | 644 | 0.2+ | 0.2+ |
| 2001 10 13 | 699 | 0.2− | 0.6− | 2003 03 09 | 683 | 1.3− | 0.9+ | 2006 09 24 | 291 | 0.2+ | 0.1+ |
| 2001 10 13 | 699 | 0.8− | 0.1+ | 2003 03 09 | 704 | 0.3− | 0.1+ | 2006 09 24 | 291 | 0.2+ | 0.1+ |
| 2001 10 13 | 699 | 0.8− | 0.1+ | 2003 03 09 | 704 | 0.5+ | 0.7+ | 2006 09 24 | 291 | 0.1+ | 0.5+ |
| 2001 10 13 | 699 | 0.7− | 0.3+ | 2003 03 09 | 704 | 0.7+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2001 10 14 | 704 | 0.1+ | 1.1+ | 2003 03 09 | 704 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 10 14 | 704 | 0.3+ | 0.3− | 2003 03 09 | 704 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.7+ | 0.0 | 2003 03 11 | 683 | 1.0− | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2001 10 14 | 704 | 0.3− | 0.5− | 2003 03 11 | 683 | 0.6− | 0.5− | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2001 10 15 | 608 | 0.3− | 0.9− | 2003 03 11 | 683 | (4.8− | 1.9−) | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2001 10 15 | 608 | 0.2− | 0.6− | 2003 03 26 | 644 | 0.5+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2001 10 15 | 608 | 0.6− | 0.4− | 2003 03 26 | 644 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2001 10 17 | 704 | 0.3− | 0.4+ | 2003 03 26 | 644 | 0.7+ | 0.0 | 2006 12 01 | 704 | 0.7+ | 1.8+ |
| 2001 10 17 | 704 | 0.1− | 0.2− | 2003 03 26 | 644 | 0.4+ | 0.2− | 2006 12 01 | 704 | 0.1+ | 1.6+ |
| 2001 10 17 | 704 | 0.2+ | 0.5+ | 2003 03 26 | 644 | 0.7+ | 0.4+ | 2006 12 01 | 704 | 0.4− | 1.3+ |
| 2001 10 18 | 644 | 0.2− | 0.4− | 2003 03 26 | 644 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.4+ | 1.8+ |
| 2001 10 18 | 644 | 0.3− | 0.3− | 2003 03 27 | 691 | 0.0 | 0.3− | | | | |

**(140412)∗ 2001 TH$_{83}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.56070 | | (2000.0) | | | |
| $n$ | 0.21186608 | $\omega$ | 107.67190 | | +0.84827652 | −0.52308096 |
| $a$ | 2.7867313 | $\Omega$ | 283.93903 | | +0.44790054 | +0.79186505 |
| $e$ | 0.0596435 | $i$ | 4.87872 | | +0.28251026 | +0.31517621 |
| $P$ | 4.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.4+ | 0.0 | 2003 01 30 | 644 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 09 10 | 704 | 0.1− | 0.0 | 2005 06 15 | G96 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2001 09 10 | 704 | 0.1+ | 0.8− | 2005 06 15 | G96 | 0.6+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | (1.8− | 0.3−) | 2005 06 15 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | (2.3− | 0.8+) | 2005 06 15 | G96 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 1.3− | 1.1+ |
| 2001 09 25 | 704 | (1.6− | 0.2−) | 2005 07 04 | G96 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.8− |
| 2001 09 25 | 704 | (1.7− | 0.5+) | 2005 07 04 | G96 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.0 |
| 2001 09 25 | 704 | (2.6− | 0.1−) | 2005 07 04 | G96 | 0.8− | 0.3+ | 2006 11 14 | 703 | 1.4− | 0.5− |
| 2001 09 28 | 644 | 1.1+ | 0.9− | 2005 07 04 | G96 | 0.8− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 09 28 | 644 | 0.8+ | 0.8− | 2005 07 10 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2001 09 28 | 644 | 0.9+ | 0.8− | 2005 07 10 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 699 | 0.0 | 0.1+ | 2005 07 10 | 691 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2001 10 13 | 699 | 0.6+ | 0.1+ | 2005 07 15 | G96 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2001 10 13 | 699 | 0.2− | 0.3+ | 2005 07 15 | G96 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2001 10 13 | 699 | 0.4+ | 0.7− | 2005 07 15 | G96 | 0.5− | 0.0 | 2006 11 16 | 704 | (2.2+ | 1.0+) |
| 2001 10 14 | 704 | (0.4+ | 1.7+) | 2005 07 15 | G96 | 0.2− | 0.1− | 2006 11 16 | 704 | (0.3+ | 1.6+) |
| 2001 10 14 | 704 | 0.9+ | 1.1+ | 2006 10 19 | 691 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.0 | 0.6+ |
| 2001 10 14 | 704 | (2.4+ | 0.5−) | 2006 10 19 | 691 | 0.8+ | 0.4− | 2006 11 16 | 704 | 0.7+ | 0.2− |
| 2001 10 14 | 704 | 0.8+ | 0.6+ | 2006 10 19 | 691 | 0.4+ | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.3+ |
| 2001 10 15 | 608 | 0.7− | 0.5− | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2001 10 15 | 608 | 0.5− | 0.8− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 10 15 | 608 | 0.3− | 0.7− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2001 10 17 | 704 | (0.3− | 1.6−) | 2006 10 27 | 703 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.5− | 2006 10 27 | 703 | (0.8− | 1.6−) | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2001 10 17 | 704 | 0.1− | 1.3− | 2006 10 27 | 703 | (0.4− | 2.0−) | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2001 10 20 | 644 | 0.6− | 0.3+ | 2006 10 27 | 703 | (2.1+ | 1.8−) | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2001 10 20 | 644 | 0.6− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | (1.8+ | 1.8+) |
| 2001 10 20 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 1.3− | 0.2− |
| 2001 10 21 | 704 | (0.9− | 3.3+) | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3− | 1.2+ |
| 2001 10 21 | 704 | 0.7− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2001 10 21 | 704 | 0.4− | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.4− | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.4− | 0.3− |
| 2003 01 30 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.2− | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2003 01 30 | 644 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.4− |

**(140413)∗ 2001 TM$_{84}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.63158 | | (2000.0) | | | |
| $n$ | 0.21319979 | $\omega$ | 102.13549 | | −0.59304784 | −0.80497511 |
| $a$ | 2.7750972 | $\Omega$ | 24.26430 | | +0.72108416 | −0.54070841 |
| $e$ | 0.0220276 | $i$ | 2.45297 | | +0.35823442 | −0.24423245 |
| $P$ | 4.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7− | 0.5− | 2001 12 19 | 291 | 1.1+ | 1.2+ | 2004 06 08 | 691 | 0.4+ | 0.4+ |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2001 12 19 | 291 | (1.8+ | 1.2+) | 2004 06 08 | 691 | 0.5+ | 1.0+ |
| 2001 09 21 | 704 | 0.3− | 1.4− | 2001 12 20 | 291 | 0.1− | 0.3+ | 2004 06 08 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.7− | 2001 12 20 | 291 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.2+ | 0.4+ | 2001 12 20 | 291 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.8− | 0.3+ | 2003 01 27 | 608 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 10 14 | 704 | 1.3− | 0.1+ | 2003 01 27 | 608 | 0.2+ | 1.1+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.5+ | 1.3+ | 2003 01 27 | 608 | 0.5+ | 1.1+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2001 10 17 | 704 | 1.0− | 0.8− | 2003 01 30 | 644 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2001 10 17 | 704 | 0.7− | 0.2− | 2003 01 30 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.4− | 0.7− | 2003 01 30 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.5+ | 0.1− |
| 2001 10 17 | 704 | 0.6− | 0.0 | 2003 02 01 | 704 | 0.4− | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.2− | 0.5− | 2003 02 01 | 704 | 0.5+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.3− |
| 2001 10 19 | 644 | 0.7− | 0.6+ | 2003 02 01 | 704 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2001 10 19 | 644 | 1.0− | 0.6+ | 2003 02 01 | 704 | 0.4− | 1.2+ | 2006 11 18 | 691 | 0.3− | 0.2− |
| 2001 10 19 | 644 | 1.0− | 0.3+ | 2003 02 01 | 704 | 0.5+ | 0.8+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.4− | 0.8+ | 2003 02 01 | 704 | 0.5− | 0.0 | 2006 11 21 | 704 | 1.0+ | 2.1+ |
| 2001 10 21 | 704 | 0.0 | 0.9+ | 2004 04 25 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.9+ | 1.0+ |
| 2001 10 21 | 704 | 0.7+ | 0.2+ | 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.4+ | 0.3+ |
| 2001 12 18 | 291 | 0.7− | 0.7+ | 2004 04 25 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2001 12 18 | 291 | 0.0 | 1.1+ | 2004 05 19 | 691 | 0.1+ | 0.8+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 12 18 | 291 | 0.3− | 0.6+ | 2004 05 19 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.3− |
| 2001 12 19 | 291 | (1.7+ | 0.5+) | 2004 05 19 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.3− | 0.4− |

**(140414)∗ 2001 TO$_{85}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 277.99280 | | (2000.0) | | | |
| $n$ | 0.18769991 | $\omega$ | 212.67046 | | +0.05435347 | −0.99013429 |
| $a$ | 3.0210646 | $\Omega$ | 234.53293 | | +0.94680270 | +0.09219202 |
| $e$ | 0.0803923 | $i$ | 9.12412 | | +0.31719133 | −0.10552121 |
| $P$ | 5.25 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 28 | 691 | 0.0 | 0.3+ | 2001 10 18 | 704 | 1.2− | 1.1+ | 2004 04 21 | 704 | 0.2+ | 1.0+ |
| 1995 06 28 | 691 | 0.2− | 0.3− | 2001 10 20 | 704 | 0.3+ | 0.6+ | 2004 05 19 | 691 | 0.4+ | 0.4+ |
| 1995 06 28 | 691 | 0.2+ | 0.1+ | 2001 10 20 | 704 | (1.2− | 1.8+) | 2004 05 19 | 691 | 0.1+ | 0.8+ |
| 2001 09 10 | 704 | 1.2+ | 0.3− | 2001 10 20 | 704 | 1.1− | 0.4+ | 2004 05 19 | 691 | 0.3+ | 0.5+ |
| 2001 09 10 | 704 | 0.5+ | 0.4− | 2001 10 20 | 704 | 0.1− | 1.5+ | 2004 05 28 | 691 | 0.0 | 0.8+ |
| 2001 09 10 | 704 | 0.4− | 0.3+ | 2001 10 20 | 704 | 0.3+ | 1.0+ | 2004 05 28 | 691 | 0.0 | 0.6+ |
| 2001 09 19 | 699 | 1.3+ | 0.4+ | 2001 10 21 | 704 | 1.2− | 0.8+ | 2004 05 28 | 691 | 0.0 | 0.6+ |
| 2001 09 19 | 699 | 0.5+ | 0.2+ | 2001 10 21 | 704 | 0.1− | 1.0+ | 2006 08 29 | 699 | 0.0 | 0.6+ |
| 2001 09 19 | 699 | 0.0 | 0.2+ | 2001 10 21 | 704 | 0.6− | 0.5+ | 2006 08 29 | 699 | 0.5− | 1.1+ |
| 2001 09 19 | 699 | 0.0 | 1.1+ | 2001 10 21 | 704 | 0.3− | 0.3+ | 2006 08 29 | 699 | 0.5+ | 0.5+ |
| 2001 09 22 | 704 | 0.4− | 0.3+ | 2001 10 21 | 704 | 0.5− | 0.0 | 2006 08 29 | 699 | 1.0+ | 1.1− |
| 2001 09 22 | 704 | 0.5+ | 0.7+ | 2001 10 21 | 704 | (0.3− | 1.9+) | 2006 09 16 | 644 | 0.7+ | 0.0 |
| 2001 09 22 | 704 | 1.2+ | 0.6− | 2001 10 21 | 704 | 1.0− | 1.2+ | 2006 09 16 | 644 | 0.1− | 0.2+ |
| 2001 09 22 | 704 | 0.6− | 0.0 | 2001 10 21 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 644 | 0.2+ | 0.7+ |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2001 11 10 | 704 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.7+ | 0.9− |
| 2001 09 23 | 704 | 0.3− | 0.7+ | 2001 11 10 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.8− |
| 2001 09 23 | 704 | (1.5− | 1.7+) | 2001 11 10 | 704 | 0.8+ | 0.9+ | 2006 09 17 | 703 | 0.1− | 1.0− |
| 2001 09 23 | 704 | 0.7− | 0.8+ | 2001 11 10 | 704 | 1.4− | 1.2− | 2006 09 17 | 703 | 0.0 | 0.2− |
| 2001 10 14 | 704 | (0.8+ | 1.5−) | 2003 01 01 | 704 | (0.7+ | 1.8+) | 2006 09 20 | 699 | 0.9− | 0.2− |
| 2001 10 14 | 704 | (1.2+ | 3.6−) | 2003 01 01 | 704 | 0.2− | 0.6+ | 2006 09 20 | 699 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | (1.4+ | 2.4−) | 2003 01 01 | 704 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.3+ | 1.0+ |
| 2001 10 14 | 704 | (1.2+ | 2.9−) | 2003 01 01 | 704 | 0.3− | 1.1+ | 2006 09 20 | 699 | 0.3− | 0.1+ |
| 2001 10 14 | 704 | (0.6− | 2.9−) | 2003 01 01 | 704 | 0.1+ | 1.5+ | 2006 10 01 | 703 | 0.1− | 0.3− |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2003 01 05 | 704 | 0.0 | 0.4− | 2006 10 01 | 703 | 0.7− | 0.0 |
| 2001 10 17 | 704 | 0.6+ | 0.1+ | 2003 01 05 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 703 | 0.6− | 1.3− |
| 2001 10 17 | 704 | 0.2+ | 0.2+ | 2003 01 05 | 704 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 1.0+ | 0.6− |
| 2001 10 17 | 704 | 0.0 | 0.5+ | 2003 01 05 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2001 10 17 | 704 | 0.4+ | 1.2+ | 2004 04 21 | 704 | 0.6+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 10 18 | 704 | 0.6− | 0.5+ | 2004 04 21 | 704 | 0.7− | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2001 10 18 | 704 | 0.3− | 0.6+ | 2004 04 21 | 704 | 0.5+ | 0.5+ | | | | |
| 2001 10 18 | 704 | 0.5− | 0.3+ | 2004 04 21 | 704 | 0.4+ | 0.9+ | | | | |

**(140415)∗ 2001 TP$_{85}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 257.91427 | | (2000.0) | | | |
| $n$ | 0.18078917 | $\omega$ | 142.34442 | | −0.24235812 | −0.96835215 |
| $a$ | 3.0975699 | $\Omega$ | 321.57789 | | +0.86518208 | −0.18790380 |
| $e$ | 0.1609393 | $i$ | 5.50688 | | +0.43900171 | −0.16427499 |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.4− | 0.4− | 2003 02 07 | 704 | 0.6− | 0.4+ |
| 1998 03 20 | 704 | (2.6− | 0.3+) | 2002 12 31 | 704 | 0.4− | 0.1+ | 2003 02 08 | 704 | 0.1+ | 0.4− |
| 1998 03 20 | 704 | 1.2− | 0.6+ | 2003 01 05 | 460 | 0.4− | 0.2− | 2003 02 08 | 704 | 0.6+ | 0.1+ |
| 1998 03 20 | 704 | 0.3+ | 1.5− | 2003 01 05 | 460 | 0.5− | 0.2− | 2003 02 08 | 704 | 0.1+ | 0.0 |
| 1998 03 20 | 704 | (6.8− | 1.2−) | 2003 01 05 | 704 | 0.3− | 0.4+ | 2003 02 08 | 704 | 0.1− | 0.6− |
| 1998 03 29 | 704 | 0.2− | 1.4− | 2003 01 05 | 704 | 0.5− | 0.6+ | 2003 02 21 | 699 | 0.4− | 0.1+ |
| 1998 03 29 | 704 | 0.0 | 1.1+ | 2003 01 05 | 704 | 0.5− | 0.2− | 2003 02 21 | 699 | 0.5− | 0.4− |
| 1998 03 29 | 704 | 0.5+ | 1.1− | 2003 01 05 | 704 | 0.9− | 0.4+ | 2003 02 21 | 699 | 0.2+ | 0.4+ |
| 1998 03 29 | 704 | (3.9− | 2.9−) | 2003 01 05 | 704 | 0.4− | 0.5+ | 2003 02 21 | 699 | 0.2− | 0.3+ |
| 2001 09 17 | 704 | 0.2− | 0.1− | 2003 01 09 | 704 | 0.3− | 0.9+ | 2003 02 21 | 608 | 0.8+ | 0.3+ |
| 2001 09 17 | 704 | 0.2− | 0.3+ | 2003 01 09 | 704 | 0.1− | 0.7+ | 2003 02 21 | 608 | 0.6+ | 0.0 |
| 2001 09 17 | 704 | 0.4− | 0.7+ | 2003 01 09 | 704 | 0.4− | 0.2+ | 2003 02 21 | 608 | 0.3+ | 0.0 |
| 2001 09 24 | 691 | 0.1+ | 0.0 | 2003 01 09 | 704 | 0.2− | 0.6+ | 2003 03 05 | 704 | 1.6+ | 0.7− |
| 2001 09 24 | 691 | 0.2+ | 0.0 | 2003 01 09 | 704 | 0.6− | 1.0+ | 2003 03 05 | 704 | 0.5+ | 0.8− |
| 2001 09 24 | 691 | 0.0 | 0.2+ | 2003 01 13 | 106 | 0.2+ | 1.0+ | 2003 03 05 | 704 | 1.5+ | 1.2+ |
| 2001 09 28 | 644 | 0.1− | 0.3+ | 2003 01 13 | 106 | 0.3− | 0.1+ | 2004 04 16 | E12 | 0.6− | 1.6+ |
| 2001 09 28 | 644 | 0.2+ | 0.4+ | 2003 01 14 | 608 | 0.5+ | 0.2− | 2004 04 16 | E12 | 0.1− | 0.4− |
| 2001 09 28 | 644 | 0.1− | 0.4+ | 2003 01 14 | 608 | 0.8+ | 0.1− | 2004 04 16 | E12 | 0.3− | 0.2+ |
| 2001 10 13 | 699 | 0.3+ | 0.3+ | 2003 01 14 | 608 | 0.5+ | 0.1+ | 2004 04 16 | E12 | 0.6− | 0.6+ |
| 2001 10 13 | 699 | 0.1+ | 0.3− | 2003 01 27 | 699 | 0.3− | 0.2− | 2004 05 12 | E12 | 0.8+ | 0.8+ |
| 2001 10 13 | 699 | 0.3− | 0.2− | 2003 01 27 | 699 | 0.1+ | 0.4− | 2004 05 12 | E12 | 0.5+ | 1.5+ |
| 2001 10 13 | 699 | 0.2+ | 0.5− | 2003 01 27 | 699 | 0.0 | 0.0 | 2004 05 12 | E12 | 0.6+ | 1.0+ |
| 2001 10 14 | 704 | 0.5+ | 0.2+ | 2003 01 27 | 699 | 0.5− | 0.4+ | 2004 05 12 | E12 | 1.0+ | 0.4+ |
| 2001 10 14 | 704 | 0.2+ | 0.4+ | 2003 01 27 | 608 | 0.6+ | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.0 | 0.1+ | 2003 01 27 | 608 | 0.7+ | 0.1+ | 2006 08 19 | 691 | 0.1+ | 0.4+ |
| 2001 10 14 | 704 | 0.2+ | 0.5+ | 2003 01 27 | 608 | 0.8+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.1− | 0.7+ | 2003 01 30 | 699 | 0.7+ | 0.2+ | 2006 08 22 | 644 | 0.1+ | 0.3+ |
| 2001 10 15 | 608 | 1.3+ | 0.2− | 2003 01 30 | 699 | 0.1− | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.4+ |
| 2001 10 15 | 608 | 0.9+ | 0.6− | 2003 01 30 | 699 | 0.1+ | 0.6+ | 2006 08 22 | 644 | 0.4− | 0.3+ |
| 2001 10 15 | 608 | 0.5+ | 0.7+ | 2003 01 30 | 699 | 0.3+ | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.0 | 0.6− | 2003 02 01 | 704 | 0.5− | 0.8+ | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 0.4+ | 0.9− | 2003 02 01 | 704 | 0.4− | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.5+ |
| 2001 10 17 | 704 | 0.0 | 0.7− | 2003 02 01 | 704 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.5+ |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2003 02 01 | 704 | 0.9− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.1+ |
| 2001 10 17 | 704 | 0.8− | 0.7− | 2003 02 01 | 704 | 0.8− | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.1+ |
| 2001 10 20 | 644 | 0.6− | 1.5− | 2003 02 02 | 608 | 1.4+ | 1.2− | 2006 08 28 | 703 | 1.1− | 0.3+ |
| 2001 10 20 | 644 | 0.9− | 1.2− | 2003 02 02 | 608 | 1.0+ | 1.8− | 2006 09 17 | 703 | 0.7− | 0.2+ |
| 2001 10 20 | 644 | 1.1− | 1.3− | 2003 02 02 | 608 | 1.1+ | 1.1− | 2006 09 17 | 703 | 1.1− | 0.8− |
| 2001 10 21 | 704 | 0.6− | 0.7+ | 2003 02 03 | 704 | 0.8+ | 0.2+ | 2006 09 17 | 703 | 1.1+ | 0.5+ |
| 2001 10 21 | 704 | 0.4− | 1.0+ | 2003 02 03 | 704 | 0.0 | 1.1+ | 2006 09 17 | 703 | 1.0− | 0.6− |
| 2001 10 21 | 704 | 0.5+ | 0.3+ | 2003 02 03 | 704 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2001 10 21 | 704 | 0.1− | 0.8− | 2003 02 03 | 704 | 0.0 | 0.8+ | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2001 10 21 | 704 | 0.3− | 0.7+ | 2003 02 03 | 704 | 0.7− | 0.1+ | 2006 09 28 | G96 | 0.8− | 0.1+ |
| 2002 12 31 | 704 | 0.6− | 0.5+ | 2003 02 07 | 704 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.5− | 2003 02 07 | 704 | 0.2− | 0.2+ | | | | |
| 2002 12 31 | 704 | 0.3+ | 0.0 | 2003 02 07 | 704 | 0.3+ | 0.0 | | | | |

**(140416)∗ 2001 TF$_{87}$ = 2001 SH$_{152}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.64308 | | (2000.0) | | | |
| $n$ | 0.18011502 | $\omega$ | 258.66129 | | −0.03496789 | +0.99729786 |
| $a$ | 3.1052943 | $\Omega$ | 10.03298 | | −0.70943945 | +0.02076249 |
| $e$ | 0.0748824 | $i$ | 21.76827 | | −0.70389837 | −0.07046917 |
| $P$ | 5.47 | $H$ | 14.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 699 | 1.3+ | 0.8+ | 2001 10 20 | 644 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 1.5+ | 0.1+ |
| 1999 04 11 | 699 | 1.5+ | 1.2+ | 2001 10 21 | 691 | 1.4− | 0.8− | 2004 03 18 | 703 | 0.1+ | 0.4+ |
| 1999 04 11 | 699 | 0.1+ | 1.7+ | 2001 10 21 | 691 | 0.5− | 0.2− | 2004 03 18 | 703 | 0.3+ | 0.5+ |
| 2001 09 17 | 704 | 0.2+ | 0.0 | 2001 10 21 | 691 | 0.5− | 0.2− | 2004 03 18 | 703 | 0.5− | 1.1+ |
| 2001 09 17 | 704 | 0.0 | 0.1− | 2001 10 21 | 704 | 0.4+ | 1.0+ | 2004 03 18 | 703 | 1.2− | 0.3+ |
| 2001 09 17 | 704 | 0.2− | 0.1+ | 2001 10 21 | 704 | 0.6+ | 0.1+ | 2004 03 23 | 704 | 0.2+ | 0.3+ |
| 2001 09 17 | 704 | 0.3− | 0.3+ | 2001 10 21 | 704 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.9+ |
| 2001 09 20 | 704 | 0.4− | 1.1+ | 2001 10 23 | 691 | 0.3+ | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.3+ |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2001 10 23 | 691 | 0.3+ | 0.1+ | 2004 03 23 | 704 | 0.2+ | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2001 10 23 | 691 | 0.2+ | 0.3+ | 2004 03 23 | 704 | 0.7+ | 0.3+ |
| 2001 09 20 | 704 | 0.6− | 0.5+ | 2001 10 25 | 644 | 0.2− | 0.3+ | 2004 03 25 | 704 | 1.0+ | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.9+ | 2001 10 25 | 644 | 0.1− | 0.2+ | 2004 03 25 | 704 | 0.2− | 0.9+ |
| 2001 09 23 | 704 | 0.3+ | 0.1− | 2001 10 25 | 644 | 0.1− | 0.5+ | 2004 03 25 | 704 | 0.9+ | 0.1+ |
| 2001 09 23 | 704 | 0.3+ | 0.5− | 2001 11 10 | 704 | 0.7− | 0.5− | 2004 03 25 | 704 | 0.4− | 0.7− |
| 2001 09 23 | 704 | 0.8+ | 0.0 | 2001 11 10 | 704 | 0.2+ | 0.6− | 2004 04 13 | 703 | (1.7− | 0.1+) |
| 2001 09 23 | 704 | 0.2+ | 0.9− | 2001 11 10 | 704 | (1.2− | 1.5−) | 2004 04 13 | 703 | 0.4+ | 0.3− |
| 2001 09 23 | 704 | 0.7+ | 0.5− | 2004 01 28 | 703 | (3.3+ | 0.1+) | 2004 04 13 | 703 | 1.4− | 0.8− |
| 2001 09 24 | 704 | 0.1+ | 0.3− | 2004 01 28 | 703 | 0.6− | 0.3+ | 2004 04 13 | 703 | 0.0 | 0.8+ |
| 2001 09 24 | 704 | 0.1− | 0.0 | 2004 01 28 | 703 | 0.5− | 1.1− | 2006 08 14 | 644 | 0.6− | 0.4+ |
| 2001 09 24 | 704 | 0.4+ | 0.5− | 2004 01 28 | 703 | 0.1+ | 0.4− | 2006 08 14 | 644 | 0.4− | 0.5+ |
| 2001 09 24 | 704 | 0.2− | 0.4− | 2004 01 30 | 704 | 0.7− | 0.3+ | 2006 08 14 | 644 | 0.7− | 0.3+ |
| 2001 09 24 | 704 | 0.3− | 0.8− | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.4+ |
| 2001 09 27 | 704 | 0.6− | 0.2− | 2004 01 30 | 704 | 0.0 | 0.9+ | 2006 08 16 | 644 | 0.4− | 0.6+ |
| 2001 09 27 | 704 | 0.3− | 0.2+ | 2004 01 30 | 704 | 0.5− | 1.0+ | 2006 08 16 | 644 | 0.4− | 0.5+ |
| 2001 09 27 | 704 | 0.6− | 0.1+ | 2004 02 15 | 704 | 0.6+ | 0.8+ | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2001 09 27 | 704 | 0.6− | 0.3− | 2004 02 15 | 704 | 0.6+ | 0.8+ | 2006 08 16 | 644 | 0.3− | 0.5+ |
| 2001 09 27 | 704 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.6+ | 1.3+ | 2006 08 16 | 644 | 0.2− | 0.4+ |
| 2001 10 12 | 699 | 0.3+ | 0.6+ | 2004 02 15 | 704 | 1.1+ | 0.9+ | 2006 08 18 | 644 | 0.2− | 0.5+ |
| 2001 10 12 | 699 | 0.2+ | 0.6+ | 2004 03 14 | 704 | 0.2+ | 0.9+ | 2006 08 18 | 644 | 0.3− | 0.7+ |
| 2001 10 12 | 699 | 0.5− | 0.8+ | 2004 03 14 | 704 | 0.6+ | 0.4+ | 2006 08 18 | 644 | 0.6− | 0.3+ |
| 2001 10 12 | 699 | 0.1+ | 1.4+ | 2004 03 14 | 704 | 1.0+ | 0.3− | 2006 08 28 | E12 | 0.5− | 0.3+ |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.5+ | 0.7+ | 2006 08 28 | E12 | 0.2+ | 0.6+ |
| 2001 10 14 | 704 | 0.0 | 0.5− | 2004 03 15 | 704 | 0.3+ | 0.3− | 2006 08 28 | E12 | 0.4− | 0.1− |
| 2001 10 14 | 704 | 0.5+ | 0.0 | 2004 03 15 | 704 | 0.1− | 0.0 | 2006 08 28 | E12 | 0.1− | 0.8+ |
| 2001 10 14 | 704 | 0.5+ | 0.2− | 2004 03 15 | 704 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.8− | 0.3− |
| 2001 10 14 | 704 | 0.6+ | 0.3− | 2004 03 15 | 704 | 0.7+ | 0.4− | 2006 09 20 | 703 | 0.6− | 0.3+ |
| 2001 10 17 | 704 | 0.4+ | 0.0 | 2004 03 15 | 704 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.5− | 0.6+ |
| 2001 10 17 | 704 | 0.4+ | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.4− |
| 2001 10 17 | 704 | 0.1− | 0.5+ | 2004 03 15 | 704 | 0.3+ | 1.1− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.5+ | 0.2− | 2004 03 15 | 704 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 10 17 | 704 | 0.8+ | 0.4− | 2004 03 15 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 10 18 | 644 | 0.5+ | 1.2+ | 2004 03 15 | 704 | 0.4+ | 0.2− | 2006 10 21 | 703 | 1.0− | 0.7+ |
| 2001 10 18 | 644 | 0.4+ | 1.3+ | 2004 03 15 | 704 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2001 10 18 | 644 | (0.0 | 2.0+) | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.7+ |
| 2001 10 20 | 644 | 0.4+ | 0.4+ | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 1.3+ |
| 2001 10 20 | 644 | 0.2+ | 0.4+ | 2004 03 15 | 704 | 0.9+ | 0.2− | | | | |

**(140417)∗ 2001 TT$_{87}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.76521 | | (2000.0) | | | |
| $n$ | 0.18206413 | $\omega$ | 65.92547 | | +0.92342766 | +0.36891726 |
| $a$ | 3.0830918 | $\Omega$ | 272.28451 | | −0.37919609 | +0.83467295 |
| $e$ | 0.0855402 | $i$ | 6.07478 | | −0.05909050 | +0.40892679 |
| $P$ | 5.41 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.1+ | 0.5− | 2001 11 10 | 704 | 0.5− | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.5+ |
| 1995 08 22 | 691 | 0.1+ | 0.2− | 2003 01 04 | 704 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.6+ |
| 1995 08 22 | 691 | 0.2+ | 0.3− | 2003 01 04 | 704 | 0.6− | 0.3− | 2006 08 30 | 699 | 0.0 | 0.3+ |
| 2001 09 20 | 699 | 0.1+ | 0.3+ | 2003 01 04 | 704 | 0.5+ | 0.9+ | 2006 08 30 | 704 | 0.1− | 0.6+ |
| 2001 09 20 | 699 | 0.4− | 0.0 | 2003 01 04 | 704 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.0 | 0.4+ |
| 2001 09 20 | 699 | 0.2− | 0.4− | 2004 03 16 | 704 | 0.2− | 1.2+ | 2006 08 30 | 699 | 0.1+ | 0.7+ |
| 2001 09 20 | 699 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.9+ | 0.8+ | 2006 08 30 | 699 | 0.6− | 0.5+ |
| 2001 09 28 | 644 | 0.4− | 0.4+ | 2004 03 16 | 704 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.5− | 0.6+ |
| 2001 09 28 | 644 | 0.3− | 0.2+ | 2004 03 16 | 704 | 1.0+ | 0.7+ | 2006 09 11 | 703 | 0.7− | 2.0− |
| 2001 09 28 | 644 | 0.2− | 0.3+ | 2005 05 11 | 644 | 0.1+ | 0.7+ | 2006 09 11 | 703 | 0.0 | 0.9− |
| 2001 10 13 | 699 | 0.7− | 1.0+ | 2005 05 11 | 644 | 0.2− | 0.3+ | 2006 09 11 | 703 | 0.1− | 1.1− |
| 2001 10 13 | 699 | 0.1+ | 0.3+ | 2005 05 11 | 644 | 0.1− | 0.5+ | 2006 09 11 | 703 | 1.0− | 0.5+ |
| 2001 10 13 | 699 | 0.1+ | 0.6+ | 2005 05 21 | 644 | 0.1+ | 0.7+ | 2006 09 11 | 703 | 0.2+ | 0.1+ |
| 2001 10 13 | 699 | 0.0 | 0.1+ | 2005 05 21 | 644 | 0.3+ | 0.5+ | 2006 09 11 | 703 | 0.5+ | 0.5+ |
| 2001 10 14 | 704 | 0.0 | 0.3− | 2005 05 21 | 644 | 0.1− | 0.5+ | 2006 09 11 | 703 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3+ | 0.9+ | 2005 05 30 | E12 | 0.8+ | 0.6+ | 2006 09 19 | 703 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | 0.4+ | 0.5+ | 2005 05 30 | E12 | 0.0 | 0.4+ | 2006 09 19 | 703 | 1.5− | 0.7+ |
| 2001 10 14 | 704 | 0.3+ | 0.5+ | 2005 05 30 | E12 | 0.3− | 0.6− | 2006 09 19 | 703 | 0.4+ | 0.2+ |
| 2001 10 17 | 704 | 0.6+ | 0.9− | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.2− |
| 2001 10 17 | 704 | 0.1− | 0.5+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | 0.4+ | 0.3− | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | 0.2− | 0.2− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 1.2+ | 0.9− |
| 2001 10 21 | 704 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.8+ | 1.1+ |
| 2001 10 21 | 704 | 1.4+ | 0.7− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.7+ |
| 2001 10 21 | 704 | 0.4− | 0.2− | 2006 08 29 | 703 | 0.7− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2001 10 21 | 704 | 0.5− | 0.1− | 2006 08 29 | 703 | 1.0− | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.6− |
| 2001 11 10 | 704 | 0.6− | 0.4− | 2006 08 29 | 703 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2001 11 10 | 704 | 0.6− | 0.1+ | 2006 08 29 | 703 | 1.1− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.7− |
| 2001 11 10 | 704 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.0 | 0.1− | | | | |
| 2001 11 10 | 704 | 0.5+ | 0.7+ | 2006 08 30 | 704 | 0.6+ | 1.1+ | | | | |

**(140418)∗ 2001 TS$_{89}$ = 2143 T-3**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20503)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.09868 | | (2000.0) | | | |
| $n$ | 0.20537090 | $\omega$ | 316.23803 | | +0.71800635 | +0.69603571 |
| $a$ | 2.8451824 | $\Omega$ | 359.64665 | | −0.58054987 | +0.59801617 |
| $e$ | 0.1298595 | $i$ | 10.10473 | | −0.38396449 | +0.39738011 |
| $P$ | 4.80 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | (2.4+ | 2.8−) | 2001 10 12 | 699 | 0.2+ | 0.2− | 2004 03 23 | 704 | 0.2− | 1.1− |
| 1977 10 11 | 675 | 1.2− | 0.8− | 2001 10 12 | 699 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.5+ |
| 1977 10 11 | 675 | 1.2+ | 0.1− | 2001 10 12 | 699 | 0.3− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.2+ |
| 1977 10 12 | 675 | 1.5+ | 0.4+ | 2001 10 14 | 704 | (0.8− | 1.6+) | 2004 03 23 | 704 | 0.3− | 0.2+ |
| 1977 10 12 | 675 | 0.2+ | 0.0 | 2001 10 14 | 704 | 0.7− | 0.6+ | 2004 03 23 | 691 | 0.1+ | 0.4+ |
| 1977 10 16 | 675 | 0.3+ | 1.6− | 2001 10 14 | 704 | 0.1+ | 0.8+ | 2004 03 23 | 704 | 0.6+ | 0.4+ |
| 1977 10 16 | 675 | 0.4+ | 1.0− | 2001 10 14 | 704 | 0.5− | 0.4+ | 2004 03 23 | 704 | 0.2− | 0.8+ |
| 1977 10 17 | 675 | 1.5− | 0.1+ | 2001 10 14 | 704 | 0.5− | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.2+ |
| 1977 10 17 | 675 | 0.4− | 1.6− | 2001 10 17 | 704 | 1.4+ | 0.8+ | 2004 03 23 | 691 | 0.2− | 0.2+ |
| 1977 10 22 | 675 | 0.1+ | 1.9+ | 2001 10 17 | 704 | 1.4+ | 0.5− | 2004 03 23 | 691 | 0.1+ | 0.2+ |
| 1977 10 22 | 675 | 0.4− | 2.4+ | 2001 10 17 | 704 | (1.8+ | 0.1−) | 2004 03 23 | 691 | 0.1− | 0.3+ |
| 1996 09 12 | 691 | 0.1+ | 0.3+ | 2001 10 17 | 704 | (1.7+ | 0.6+) | 2004 03 26 | 699 | 0.8− | 0.2+ |
| 1996 09 12 | 691 | 0.1+ | 0.3+ | 2001 10 17 | 704 | (2.2+ | 0.5−) | 2004 03 26 | 699 | (1.6+ | 0.3−) |
| 1996 09 12 | 691 | 0.0 | 0.3+ | 2001 10 20 | 644 | 0.4− | 0.6+ | 2004 03 26 | 699 | 0.1+ | 0.7+ |
| 1996 09 19 | 691 | 0.8− | 0.1+ | 2001 10 20 | 644 | 0.4− | 0.5+ | 2004 03 26 | 699 | 0.7+ | 1.0+ |
| 1996 09 19 | 691 | 0.9− | 0.5+ | 2001 10 20 | 644 | 0.5− | 0.7+ | 2004 03 31 | 691 | 0.2+ | 0.2+ |
| 1996 09 19 | 691 | 0.5− | 0.1+ | 2001 10 21 | 704 | 0.4− | 0.0 | 2004 03 31 | 691 | 0.3+ | 0.0 |
| 2001 09 10 | 704 | 0.4− | 0.5+ | 2001 10 21 | 704 | 0.1− | 0.4+ | 2004 03 31 | 691 | 0.1+ | 0.2+ |
| 2001 09 10 | 704 | 0.3+ | 1.2+ | 2001 10 21 | 704 | 0.8+ | 0.4− | 2006 09 18 | 703 | 0.6+ | 0.8− |
| 2001 09 10 | 704 | 0.1+ | 0.8+ | 2001 10 21 | 704 | 0.6− | 0.0 | 2006 09 18 | 703 | 0.0 | 0.7− |
| 2001 09 20 | 704 | 0.5− | 0.3+ | 2001 10 25 | 704 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.8− | 0.3+ | 2001 10 25 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 0.3− | 2001 10 25 | 704 | 0.7+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.6+ |
| 2001 09 20 | 704 | 1.1− | 0.2+ | 2001 10 25 | 704 | 0.9+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 1.3+ |
| 2001 09 23 | 704 | 0.2− | 1.5+ | 2001 10 25 | 704 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.8− | 0.3− |
| 2001 09 23 | 704 | 1.3− | 1.1+ | 2001 11 17 | 704 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2001 09 23 | 704 | 1.1− | 0.5− | 2001 11 17 | 704 | 0.3− | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.6− | 0.2− | 2001 11 17 | 704 | 0.4− | 0.5− | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.0 | 2001 11 17 | 704 | 1.1− | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.7− |
| 2001 09 24 | 704 | 1.2− | 1.4+ | 2004 03 12 | 644 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2001 09 24 | 704 | 0.9− | 0.2+ | 2004 03 12 | 644 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.4− |
| 2001 09 24 | 704 | 0.2+ | 1.0+ | 2004 03 12 | 644 | 0.9+ | 0.1+ | 2006 10 27 | 703 | 0.8− | 0.0 |
| 2001 09 24 | 704 | 0.9+ | 0.5+ | 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2001 09 24 | 691 | 0.5+ | 0.3+ | 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.2− |
| 2001 09 24 | 704 | (0.2− | 1.6+) | 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.4+ | 0.4− |
| 2001 09 24 | 691 | 0.5+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 11 13 | 644 | 0.2+ | 0.4− |
| 2001 09 24 | 691 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 11 15 | 703 | 1.0+ | 0.2+ |
| 2001 10 07 | 644 | 0.5+ | 0.3− | 2004 03 18 | 704 | 0.7+ | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.9− |
| 2001 10 07 | 644 | (1.0+ | 1.6+) | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 11 15 | 703 | 0.2− | 1.2− |
| 2001 10 07 | 644 | 0.3+ | 0.4− | 2004 03 18 | 704 | 0.7+ | 1.0+ | 2006 11 15 | 703 | 0.2+ | 0.5− |
| 2001 10 07 | 644 | 0.3+ | 1.1+ | 2004 03 22 | 704 | 0.9+ | 0.1− | 2006 11 22 | 703 | 0.9+ | 0.0 |
| 2001 10 07 | 644 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.5− | 0.1− | 2006 11 22 | 703 | 0.4− | 1.0− |
| 2001 10 07 | 644 | 0.3+ | 1.3+ | 2004 03 22 | 704 | 0.2− | 0.4+ | 2006 11 22 | 703 | 0.5+ | 0.4− |
| 2001 10 12 | 699 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.3+ | 2006 11 22 | 703 | 0.7− | 0.7− |

**(140419)∗ 2001 TY$_{89}$ = 2000 KB$_{21}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20503), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 104.78676 | | (2000.0) | | | |
| $n$ | 0.21857822 | $\omega$ | 59.22613 | | +0.43112019 | +0.89561166 |
| $a$ | 2.7293849 | $\Omega$ | 236.70701 | | −0.86617754 | +0.37677117 |
| $e$ | 0.1255610 | $i$ | 7.53526 | | −0.25272880 | +0.23648094 |
| $P$ | 4.51 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.2− | 0.1− | 2004 03 31 | 704 | 0.1+ | 1.1− | 2005 09 23 | 644 | 0.1− | 0.0 |
| 2000 05 28 | 704 | 0.9− | 0.5− | 2005 06 21 | 644 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2000 05 28 | 704 | 0.1+ | 0.1+ | 2005 06 21 | 644 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2000 05 28 | 704 | 0.2+ | 0.1+ | 2005 06 21 | 644 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.6+ | 0.4− |
| 2000 05 28 | 704 | 0.1+ | 0.4+ | 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2000 05 29 | 704 | 0.0 | 0.2+ | 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.4− |
| 2000 05 29 | 704 | 0.2+ | 0.2+ | 2005 06 27 | 691 | 0.4+ | 0.1+ | 2006 10 29 | G96 | 0.4+ | 0.6− |
| 2000 05 29 | 704 | 0.3+ | 0.6+ | 2005 06 28 | 644 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.1− | 0.6− |
| 2000 05 29 | 704 | 0.2+ | 0.1+ | 2005 06 28 | 644 | 0.2+ | 0.3− | 2006 10 29 | G96 | 0.4+ | 0.4− |
| 2001 09 10 | 704 | 1.4+ | 0.1+ | 2005 06 28 | 644 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2001 09 10 | 704 | 0.8+ | 0.5− | 2005 07 10 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2001 09 10 | 704 | (1.1+ | 1.6−) | 2005 07 10 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2001 09 10 | 704 | 0.4+ | 0.8− | 2005 07 10 | 691 | (0.6+ | 1.5+) | 2006 11 19 | 691 | 0.4− | 0.7− |
| 2001 09 20 | 699 | 0.3− | 0.0 | 2005 07 11 | 703 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 699 | 0.0 | 0.3+ | 2005 07 11 | 703 | 1.1− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 699 | 0.4+ | 0.9+ | 2005 07 11 | 703 | 0.2− | 0.0 | 2006 11 22 | H07 | 0.4+ | 1.0− |
| 2001 09 20 | 699 | 0.4− | 1.2+ | 2005 07 11 | 703 | 0.0 | 0.2− | 2006 11 22 | H07 | 0.7− | 0.8− |
| 2001 10 14 | 704 | 0.0 | 0.7− | 2005 07 30 | 644 | 0.1− | 0.2− | 2006 11 22 | H07 | 0.2− | 0.7+ |
| 2001 10 14 | 704 | 0.7− | 0.3+ | 2005 07 30 | 644 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.1+ | 0.4+ | 2005 07 30 | 644 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.5− | 0.0 |
| 2001 10 14 | 704 | 0.4− | 0.3− | 2005 08 14 | 608 | (1.6+ | 0.3−) | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.0 | 1.0+ | 2005 08 14 | 608 | 1.5+ | 0.7− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2001 10 17 | 704 | 0.3− | 0.1− | 2005 08 14 | 608 | (1.5+ | 0.5−) | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2001 10 17 | 704 | 0.6+ | 0.3− | 2005 08 24 | 644 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2001 10 17 | 704 | 0.8− | 0.4+ | 2005 08 24 | 644 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2005 08 24 | 644 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 644 | 0.0 | 0.7+ | 2005 08 26 | 608 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 10 20 | 644 | 0.2− | 0.6+ | 2005 08 26 | 608 | 0.4− | 0.5− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 10 20 | 644 | 0.2− | 0.6+ | 2005 08 26 | 608 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2001 10 24 | 704 | 1.0− | 1.3+ | 2005 09 02 | 644 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2001 10 24 | 704 | 0.4− | 0.1− | 2005 09 02 | 644 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2001 10 24 | 704 | 0.5− | 0.6+ | 2005 09 02 | 644 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2004 03 31 | 704 | 0.6+ | 1.1+ | 2005 09 23 | 644 | 0.3− | 0.1− | | | | |
| 2004 03 31 | 704 | 0.4− | 0.8+ | 2005 09 23 | 644 | 0.1− | 0.1− | | | | |

**(140420)∗ 2001 TM$_{90}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 259.60439 | | (2000.0) | | | |
| $n$ | 0.18152379 | $\omega$ | 209.94304 | | −0.14211215 | −0.98056628 |
| $a$ | 3.0892071 | $\Omega$ | 248.51268 | | +0.93458742 | −0.08790180 |
| $e$ | 0.0690969 | $i$ | 8.35798 | | +0.32611423 | −0.17539396 |
| $P$ | 5.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 15 | 691 | 0.2− | 0.5− | 2001 11 17 | 704 | 0.7− | 0.0 | 2003 02 03 | 291 | 0.3+ | 0.1+ |
| 1996 12 15 | 691 | 0.1− | 0.6− | 2001 11 17 | 704 | 0.4+ | 0.3− | 2003 02 03 | 291 | 0.4+ | 0.4+ |
| 1996 12 15 | 691 | 0.8− | 0.9− | 2001 11 17 | 704 | 0.4− | 0.3+ | 2003 02 03 | 291 | 0.1− | 0.0 |
| 1996 12 17 | 691 | 0.3+ | 0.6− | 2001 11 17 | 704 | 0.1− | 0.4− | 2003 02 04 | 291 | 0.4− | 0.3+ |
| 1996 12 17 | 691 | 0.6+ | 0.6− | 2002 12 27 | 699 | 0.6+ | 0.4+ | 2003 02 04 | 291 | 0.0 | 0.3+ |
| 1996 12 17 | 691 | 0.4+ | 0.9− | 2002 12 27 | 699 | 0.1+ | 0.8+ | 2003 02 04 | 291 | 0.1− | 0.2+ |
| 2001 09 20 | 699 | 0.3+ | 0.5+ | 2002 12 27 | 699 | 0.3+ | 0.4+ | 2004 04 09 | E12 | 1.5+ | 1.0− |
| 2001 09 20 | 699 | 0.2− | 0.4+ | 2002 12 27 | 699 | 0.2+ | 0.2+ | 2004 04 09 | E12 | 0.4− | 1.4− |
| 2001 09 20 | 699 | (0.3+ | 1.6+) | 2003 01 01 | 704 | 1.1− | 0.6+ | 2004 04 09 | E12 | (0.6+ | 1.7−) |
| 2001 09 20 | 699 | 0.2− | 1.5+ | 2003 01 01 | 704 | 0.0 | 0.3+ | 2004 04 09 | E12 | 0.5− | 0.8− |
| 2001 09 28 | 644 | 0.3− | 0.6+ | 2003 01 01 | 704 | 0.5+ | 0.3+ | 2004 04 17 | 704 | 0.4+ | 0.6+ |
| 2001 09 28 | 644 | 0.1− | 0.6+ | 2003 01 01 | 704 | 1.0− | 0.5+ | 2004 04 17 | 704 | 0.0 | 0.6+ |
| 2001 09 28 | 644 | 0.5− | 0.7+ | 2003 01 01 | 704 | 0.5− | 0.6+ | 2004 04 17 | 704 | 0.3− | 0.7+ |
| 2001 10 14 | 704 | (0.3+ | 1.8+) | 2003 01 07 | 704 | 1.0+ | 0.7+ | 2004 04 17 | 704 | 0.4− | 0.1− |
| 2001 10 14 | 704 | 0.1− | 0.4+ | 2003 01 07 | 704 | 0.6+ | 0.2− | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2001 10 14 | 704 | 0.3− | 0.2− | 2003 01 07 | 704 | 0.8+ | 0.2− | 2006 09 14 | 703 | 0.4− | 0.5+ |
| 2001 10 14 | 704 | 0.2+ | 0.1− | 2003 01 07 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.9− | 0.0 |
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2003 01 07 | 704 | 0.2+ | 0.9− | 2006 09 14 | 703 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | (1.6− | 0.5−) | 2003 01 10 | 704 | (1.8− | 0.7+) | 2006 09 29 | 699 | 0.2− | 1.2+ |
| 2001 10 17 | 704 | 0.0 | 0.2+ | 2003 01 10 | 704 | 0.1− | 0.8+ | 2006 09 29 | 699 | 0.4+ | 1.1+ |
| 2001 10 17 | 704 | 0.5− | 0.6− | 2003 01 10 | 704 | 0.0 | 0.3− | 2006 09 29 | 699 | 0.6− | 0.6− |
| 2001 10 17 | 704 | 0.2+ | 0.6+ | 2003 01 10 | 704 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.1+ | 1.0+ |
| 2001 10 20 | 644 | 0.4+ | 0.9+ | 2003 01 31 | 291 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2001 10 20 | 644 | 0.5+ | 0.7+ | 2003 01 31 | 291 | 0.3+ | 0.5+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2001 10 20 | 644 | 0.7+ | 0.8+ | 2003 01 31 | 291 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.7+ |

**(140421)∗ 2001 TJ$_{92}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 296.20162 | | (2000.0) | | | |
| $n$ | 0.19722600 | $\omega$ | 242.73573 | | −0.11974321 | −0.98659700 |
| $a$ | 2.9229851 | $\Omega$ | 214.70088 | | +0.96578028 | −0.08988145 |
| $e$ | 0.1469164 | $i$ | 11.22820 | | +0.23006523 | −0.13618989 |
| $P$ | 5.00 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 07 | 691 | 0.3− | 0.3+ | 2001 10 23 | 691 | 0.1+ | 0.0 | 2006 10 16 | 683 | 0.0 | 0.9− |
| 1994 06 07 | 691 | 0.3+ | 0.4− | 2001 10 26 | 644 | 0.1− | 0.4+ | 2006 10 16 | 683 | 0.1− | 0.7+ |
| 1994 06 07 | 691 | 0.1+ | 0.2+ | 2001 10 26 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 683 | 0.4− | 0.2+ |
| 2001 09 23 | 704 | 0.6− | 0.2− | 2001 10 26 | 644 | 0.0 | 0.0 | 2006 10 17 | 683 | 0.7+ | 1.4− |
| 2001 09 23 | 704 | 0.4+ | 0.7− | 2001 11 19 | 704 | 0.8+ | 1.0+ | 2006 10 17 | 683 | 0.3+ | 0.3+ |
| 2001 09 23 | 704 | 0.9+ | 0.7+ | 2001 11 19 | 704 | 0.8+ | 0.3+ | 2006 10 17 | 683 | 0.6+ | 0.0 |
| 2001 09 23 | 704 | 0.1− | 0.1− | 2001 11 19 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2001 10 07 | 644 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.7+ | 1.3− | 2006 10 17 | 703 | 0.8+ | 0.3− |
| 2001 10 07 | 644 | 0.2− | 0.2+ | 2001 11 21 | 704 | (0.7+ | 2.3−) | 2006 10 17 | 703 | 0.2+ | 0.7− |
| 2001 10 07 | 644 | 0.3− | 0.1− | 2001 11 21 | 704 | (1.1+ | 1.7−) | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2001 10 14 | 704 | (1.7+ | 0.5+) | 2001 11 21 | 704 | (0.7+ | 1.6−) | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 10 14 | 704 | 0.2+ | 0.8+ | 2003 02 06 | 644 | 0.9+ | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | 1.1+ | 0.9+ | 2003 02 06 | 644 | 0.6+ | 1.2+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2001 10 14 | 704 | 1.0+ | 0.5+ | 2003 02 06 | 644 | 0.6+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.6+ | 0.9+ | 2003 03 10 | 699 | (0.7+ | 1.9+) | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 10 17 | 704 | (0.0 | 2.3+) | 2003 03 10 | 699 | (0.3+ | 1.7+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.4− | 1.5+ | 2003 03 10 | 699 | 0.0 | 0.8+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 1.3+ | 2003 03 10 | 699 | 0.8− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | (0.1− | 2.1+) | 2004 06 16 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.3− | 0.1− |
| 2001 10 17 | 704 | (0.0 | 2.0+) | 2004 06 16 | 691 | 0.3− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2001 10 19 | 644 | 0.3− | 0.2+ | 2004 06 16 | 691 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 10 19 | 644 | 0.3− | 0.1+ | 2004 06 16 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 10 19 | 644 | 0.4− | 0.2+ | 2004 06 16 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2001 10 20 | 704 | 0.0 | 0.6− | 2004 06 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 1.4− |
| 2001 10 20 | 704 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.1− | 1.2+ |
| 2001 10 20 | 704 | 0.1+ | 0.9− | 2006 09 18 | 699 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.8+ | 1.2+ |
| 2001 10 20 | 704 | 0.6− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 0.9− | 2006 09 18 | 699 | 0.1− | 0.9− | 2006 11 13 | 691 | 0.1− | 0.6+ |
| 2001 10 21 | 691 | 0.2− | 0.1− | 2006 09 25 | 704 | 1.4+ | 0.6− | 2006 11 13 | 691 | 0.1− | 0.6+ |
| 2001 10 21 | 704 | 0.2− | 0.2− | 2006 09 25 | 704 | (0.5+ | 1.8−) | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2001 10 21 | 691 | 0.2− | 0.0 | 2006 09 25 | 704 | 1.2+ | 0.7− | 2006 11 17 | 703 | (1.9− | 0.6−) |
| 2001 10 21 | 704 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.9+ | 2006 11 17 | 703 | 0.9− | 0.0 |
| 2001 10 21 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.8− | 2006 11 17 | 703 | 0.8− | 1.1+ |
| 2001 10 21 | 704 | 0.4− | 0.0 | 2006 09 30 | 703 | 1.0− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2001 10 21 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2001 10 23 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2001 10 23 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2+ | | | | |

**(140422)∗ 2001 TO$_{92}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.62930 | | (2000.0) | | | |
| $n$ | 0.21770853 | $\omega$ | 3.06341 | | +0.31728244 | +0.94769284 |
| $a$ | 2.7366489 | $\Omega$ | 285.43727 | | −0.87084213 | +0.27663798 |
| $e$ | 0.0810643 | $i$ | 2.06820 | | −0.37545417 | +0.15921594 |
| $P$ | 4.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2001 10 21 | 704 | 0.4+ | 0.7+ | 2006 09 28 | G96 | 0.4− | 0.8− |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2001 10 26 | 644 | 0.4− | 0.2− | 2006 09 28 | G96 | 0.6− | 0.2− |
| 2001 09 20 | 704 | 0.5− | 0.6− | 2001 10 26 | 644 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.5− | 0.7− |
| 2001 09 20 | 704 | 0.6+ | 0.3+ | 2001 10 26 | 644 | 0.7− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2001 09 24 | 704 | 0.1+ | 0.5+ | 2003 01 03 | 291 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2001 09 24 | 704 | (1.8+ | 0.3+) | 2003 01 03 | 291 | 0.5− | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2001 09 24 | 704 | (2.0− | 1.8+) | 2003 01 03 | 291 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2001 09 24 | 704 | 0.3+ | 0.7+ | 2004 04 17 | 704 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2001 10 14 | 704 | 0.6− | 0.4− | 2004 04 17 | 704 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2001 10 14 | 704 | 0.4− | 0.5− | 2004 04 17 | 704 | 0.9+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2001 10 14 | 704 | 0.4− | 0.1− | 2004 04 17 | 704 | 0.8− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2001 10 14 | 704 | 0.6− | 0.6− | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 1.0+ | 2004 04 20 | 691 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | 0.3+ | 0.7+ | 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.8+ | 1.4+ | 2004 04 20 | 704 | 1.4+ | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.5+ | 0.4+ | 2004 04 20 | 704 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2001 10 17 | 704 | 0.3+ | 1.3+ | 2004 04 20 | 704 | 0.1− | 1.4+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2001 10 19 | 644 | 0.5− | 0.4+ | 2004 04 20 | 704 | 0.8+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2005 07 29 | 644 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2001 10 19 | 644 | 0.5− | 0.4+ | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2001 10 21 | 704 | 0.0 | 0.1− | 2005 07 29 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2005 08 27 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 1.2+ | 0.6+ |
| 2001 10 21 | 704 | 0.3+ | 0.4+ | 2005 08 27 | 644 | 0.3− | 0.2+ | | | | |
| 2001 10 21 | 704 | 0.3+ | 0.3+ | 2005 08 27 | 644 | 0.3− | 0.1+ | | | | |

**(140423)∗ 2001 TM$_{93}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.68577 | | (2000.0) | | | |
| $n$ | 0.18497019 | $\omega$ | 43.12428 | | +0.22951517 | +0.96512028 |
| $a$ | 3.0507144 | $\Omega$ | 240.51320 | | −0.92771291 | +0.17778009 |
| $e$ | 0.0454785 | $i$ | 8.32004 | | −0.29440030 | +0.19219022 |
| $P$ | 5.33 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 699 | 0.1− | 0.6+ | 2001 11 10 | 704 | 0.9+ | 0.7+ | 2004 03 31 | 704 | 0.7+ | 0.2+ |
| 1999 04 11 | 699 | 0.3+ | 0.2− | 2001 11 11 | 699 | 0.4− | 0.4+ | 2004 04 16 | 704 | 1.2+ | 0.6− |
| 1999 04 11 | 699 | 0.1− | 0.3+ | 2001 11 11 | 699 | 0.9− | 1.3+ | 2004 04 16 | 704 | 0.3+ | 0.1− |
| 2000 06 07 | 691 | 0.1+ | 0.4+ | 2001 11 11 | 699 | 1.1− | 1.4+ | 2004 04 16 | 704 | 0.4+ | 0.0 |
| 2000 06 07 | 691 | 0.4− | 0.4+ | 2001 11 11 | 699 | 0.7− | 0.4+ | 2006 08 29 | 699 | 0.2− | 0.6− |
| 2000 06 07 | 691 | 0.2− | 0.5+ | 2001 11 15 | 691 | 0.1− | 0.6− | 2006 08 29 | 699 | 0.8+ | 0.4+ |
| 2001 10 07 | 644 | 0.3+ | 0.0 | 2001 11 15 | 691 | 0.1+ | 0.7− | 2006 08 29 | 699 | 0.9− | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 07 | 644 | 0.4+ | 0.3− | 2001 11 15 | 691 | 0.0 | 1.1− | 2006 08 29 | 699 | 0.3+ | 0.7+ |
| 2001 10 07 | 644 | 0.2+ | 0.2− | 2001 11 17 | 704 | 0.6− | 0.6+ | 2006 09 15 | 704 | 0.7− | 0.1+ |
| 2001 10 14 | 704 | 0.1+ | 0.8+ | 2001 11 17 | 704 | 0.5− | 0.5+ | 2006 09 15 | 704 | 0.1− | 0.7+ |
| 2001 10 14 | 704 | 0.0 | 0.4+ | 2001 11 17 | 704 | 0.2+ | 0.1− | 2006 09 15 | 704 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.3+ | 0.6+ | 2001 11 17 | 704 | 1.0− | 0.0 | 2006 09 15 | 704 | 1.1− | 0.3+ |
| 2001 10 14 | 704 | 0.4− | 0.2+ | 2001 11 17 | 704 | 0.5− | 0.5+ | 2006 09 15 | 704 | 0.4+ | 0.3− |
| 2001 10 14 | 704 | 0.2− | 0.7+ | 2001 11 24 | 704 | 0.4+ | 1.3+ | 2006 09 17 | 703 | 0.1− | 0.5+ |
| 2001 10 17 | 704 | 0.7+ | 0.2− | 2001 11 24 | 704 | (0.2+ | 2.5+) | 2006 09 17 | 703 | 0.6− | 0.0 |
| 2001 10 17 | 704 | 1.2+ | 0.2− | 2001 11 24 | 704 | 0.2− | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.2+ | 0.5− | 2001 11 24 | 704 | (0.2+ | 1.7+) | 2006 09 17 | 703 | 0.3− | 0.0 |
| 2001 10 17 | 704 | 1.0+ | 0.4− | 2003 01 07 | 704 | 0.7− | 0.3+ | 2006 09 20 | 699 | 0.8+ | 0.7+ |
| 2001 10 17 | 704 | 0.7+ | 0.6− | 2003 01 07 | 704 | 0.3− | 1.0+ | 2006 09 20 | 699 | 0.4+ | 0.6− |
| 2001 10 20 | 644 | 0.2+ | 0.9+ | 2003 01 07 | 704 | 0.3− | 0.8+ | 2006 09 20 | 699 | 0.3+ | 0.1+ |
| 2001 10 20 | 644 | 0.2− | 0.9+ | 2004 03 16 | 703 | (1.4+ | 1.6+) | 2006 09 20 | 699 | 0.1+ | 0.4+ |
| 2001 10 20 | 644 | 0.2− | 0.9+ | 2004 03 16 | 703 | (0.5+ | 1.5+) | 2006 09 27 | 703 | 0.3− | 0.0 |
| 2001 10 20 | 152 | (0.1+ | 1.6+) | 2004 03 16 | 703 | 0.5+ | 0.7+ | 2006 09 27 | 703 | 0.3− | 0.0 |
| 2001 10 20 | 152 | 1.0+ | 0.4+ | 2004 03 16 | 703 | 1.0+ | 0.8+ | 2006 09 27 | 703 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.9+ | 2004 03 17 | 704 | 0.2+ | 0.9+ | 2006 09 27 | 703 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | (0.8+ | 1.6+) | 2004 03 17 | 704 | 0.5+ | 1.0+ | 2006 09 29 | 699 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.0 | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.9+ | 2006 09 29 | 699 | 0.4+ | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 1.1+ | 2004 03 17 | 704 | 0.2+ | 1.0+ | 2006 09 29 | 699 | 0.1− | 1.0− |
| 2001 10 21 | 704 | 0.2− | 0.9+ | 2004 03 17 | 704 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2001 10 21 | 152 | 0.0 | 0.0 | 2004 03 26 | 699 | 0.8− | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2001 10 21 | 152 | (2.1− | 1.2+) | 2004 03 26 | 699 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2001 10 21 | 152 | 0.8− | 0.5+ | 2004 03 26 | 699 | 0.2+ | 0.1+ | 2006 10 23 | 703 | 0.4+ | 0.4− |
| 2001 11 10 | 704 | 0.3− | 0.2+ | 2004 03 26 | 699 | 0.9− | 0.7+ | 2006 10 23 | 703 | 0.6− | 0.8+ |
| 2001 11 10 | 704 | 0.7− | 0.8+ | 2004 03 31 | 704 | 0.3+ | 1.2+ | 2006 10 23 | 703 | 0.2− | 0.4− |
| 2001 11 10 | 704 | 0.3+ | 0.7+ | 2004 03 31 | 704 | 0.1− | 1.1+ | 2006 10 23 | 703 | 0.8− | 0.7− |

**(140424)∗ 2001 TO$_{93}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.11672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20134308 | $\omega$ | 348.34561 | | +0.77210884 | | +0.63406713 |
| $a$ | 2.8830018 | $\Omega$ | 332.16273 | | −0.57549235 | | +0.66927548 |
| $e$ | 0.0680779 | $i$ | 5.22275 | | −0.26954867 | | +0.38733604 |
| $P$ | 4.90 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.1+ | 0.8+ | 2001 11 17 | 704 | 0.9+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 09 26 | 704 | 0.2− | 0.7+ | 2001 11 17 | 704 | 1.4+ | 0.5− | 2006 10 20 | 644 | 0.4+ | 0.3+ |
| 2001 09 26 | 704 | 0.3− | 0.9− | 2001 11 17 | 704 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2001 09 26 | 704 | 0.5− | 0.2− | 2001 11 17 | 704 | 1.1− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.6− |
| 2001 09 26 | 704 | 0.4− | 1.5− | 2002 12 13 | 645 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 10 07 | 644 | 0.0 | 0.1− | 2002 12 13 | 645 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 07 | 644 | 0.2+ | 0.1+ | 2003 01 05 | 704 | 0.3− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2001 10 07 | 644 | 0.2− | 0.2− | 2003 01 05 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 12 | 104 | (0.7+ | 1.5+) | 2003 01 05 | 704 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 10 12 | 104 | 0.7+ | 0.6− | 2003 01 05 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 12 | 104 | (0.2− | 3.6−) | 2004 03 19 | 704 | (1.8+ | 1.3+) | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2001 10 14 | 704 | 0.6+ | 0.9+ | 2004 03 19 | 704 | (0.2− | 1.9+) | 2006 10 23 | 644 | 0.3− | 0.2− |
| 2001 10 14 | 704 | 0.6− | 0.6+ | 2004 03 19 | 704 | (1.4+ | 2.1+) | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.8− | 1.1+ | 2004 03 19 | 704 | (0.7+ | 3.4+) | 2006 10 27 | 703 | 0.4− | 0.8− |
| 2001 10 14 | 704 | 0.3− | 0.9+ | 2004 04 16 | 644 | 0.4+ | 0.8+ | 2006 10 27 | 703 | 0.8+ | 0.1+ |
| 2001 10 14 | 704 | 0.2− | 1.0+ | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 27 | 703 | (0.3+ | 1.9−) |
| 2001 10 17 | 704 | 0.7− | 0.6+ | 2004 04 16 | 644 | 0.2+ | 1.0+ | 2006 10 27 | 703 | (0.2− | 1.7−) |
| 2001 10 17 | 704 | 0.6− | 0.1+ | 2004 04 16 | 644 | 0.1+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.5+ |
| 2001 10 17 | 704 | 0.7− | 0.1+ | 2004 04 16 | 644 | 0.3+ | 0.9+ | 2006 11 10 | 644 | 0.1+ | 0.4+ |
| 2001 10 17 | 704 | 0.5+ | 0.2− | 2004 04 16 | 644 | 1.0+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.5− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 14 | 703 | 0.7− | 0.7+ |
| 2001 10 17 | 704 | 0.8+ | 1.1+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 14 | 703 | 0.1− | 0.7− |
| 2001 10 17 | 704 | 0.9− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 14 | 703 | 0.2− | 0.5+ |
| 2001 10 17 | 704 | 1.2+ | 0.7+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 14 | 703 | 1.2− | 0.2+ |
| 2001 10 17 | 704 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.7− |
| 2001 10 17 | 704 | 0.1− | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.4− |
| 2001 10 20 | 644 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.3+ | 0.3+ |
| 2001 10 20 | 644 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2001 10 20 | 644 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.6+ | 0.5+ |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.6− | 0.7+ | 2006 11 23 | 703 | 0.3− | 1.2+ |
| 2001 10 21 | 704 | 0.2+ | 0.7− | 2006 10 19 | 703 | 0.3+ | 0.3− | 2006 11 23 | 703 | 1.3− | 0.1− |
| 2001 10 21 | 704 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.4+ | 2006 11 23 | 703 | (0.3− | 1.6−) |
| 2001 10 21 | 704 | 0.6− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2001 10 21 | 704 | 0.6− | 0.7− | 2006 10 19 | 703 | 1.4+ | 1.0+ | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2001 11 10 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 703 | (1.6+ | 0.7+) | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2001 11 10 | 704 | 0.3+ | 0.7− | 2006 10 19 | 703 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2001 11 10 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.4+ | | | | |
| 2001 11 10 | 704 | 0.2+ | 0.4− | 2006 10 19 | 703 | 1.3− | 1.4+ | | | | |

**(140425)∗ 2001 TS$_{93}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.37040 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18984188 | $\omega$ | 159.32248 | | +0.42572179 | | −0.90244116 |
| $a$ | 2.9982973 | $\Omega$ | 265.43219 | | +0.82060493 | | +0.41580561 |
| $e$ | 0.1585829 | $i$ | 3.79849 | | +0.38127221 | | +0.11271930 |
| $P$ | 5.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2+ | 0.4− | 2001 10 25 | 704 | (2.1− | 3.3+) | 2006 09 18 | 704 | 0.5− | 0.4− |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2001 10 25 | 691 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.5− | 0.4− |
| 2001 09 20 | 704 | 1.2+ | 0.1− | 2001 10 25 | 704 | (2.5− | 2.1+) | 2006 09 18 | 704 | 0.7− | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2001 10 25 | 704 | (1.5− | 1.9+) | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.0 | 0.7− | 2001 10 25 | 704 | (2.4− | 0.6+) | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2001 09 25 | 704 | 0.6− | 0.7+ | 2001 10 26 | 644 | 0.6+ | 1.1+ | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.7− | 0.3+ | 2001 10 26 | 644 | 0.5+ | 1.4+ | 2006 09 25 | 704 | 0.7+ | 0.7− |
| 2001 09 25 | 704 | 0.3− | 1.4− | 2001 10 26 | 644 | 0.8+ | 0.9+ | 2006 09 25 | 704 | 0.5+ | 0.3− |
| 2001 09 25 | 704 | 0.3− | 0.2+ | 2001 11 10 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 1.0+ | 0.3+ |
| 2001 10 07 | 644 | 0.0 | 0.4− | 2001 11 10 | 704 | 0.1+ | 1.4+ | 2006 09 25 | 704 | 0.2+ | 0.5− |
| 2001 10 07 | 644 | 0.2− | 0.2− | 2001 11 10 | 704 | 0.7+ | 0.2− | 2006 09 25 | 704 | (0.6− | 1.5−) |
| 2001 10 07 | 644 | 0.1+ | 0.5− | 2001 11 17 | 704 | 0.1− | 0.7+ | 2006 09 29 | 704 | 0.7− | 0.2− |
| 2001 10 12 | 699 | (1.6− | 0.3−) | 2001 11 17 | 704 | 0.1− | 1.4+ | 2006 09 29 | 704 | 0.2+ | 0.4+ |
| 2001 10 12 | 699 | (1.8+ | 1.3+) | 2001 11 17 | 704 | (0.2+ | 1.6+) | 2006 09 29 | 704 | 0.4+ | 0.3+ |
| 2001 10 12 | 699 | 0.6+ | 0.4− | 2001 11 17 | 704 | (0.3+ | 1.8+) | 2006 09 29 | 704 | 0.5+ | 0.2− |
| 2001 10 12 | 699 | 1.0+ | 0.6− | 2001 11 19 | 704 | 1.0+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 0.5+ | 0.3− | 2001 11 19 | 704 | 0.3− | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.4− | 0.5+ | 2001 11 19 | 704 | 0.4− | 0.3+ | 2006 10 01 | 703 | 0.1− | 0.3+ |
| 2001 10 14 | 704 | 0.0 | 0.3+ | 2001 11 19 | 704 | 0.0 | 0.3+ | 2006 10 01 | 703 | (0.0 | 1.7−) |
| 2001 10 14 | 704 | 0.1− | 0.6+ | 2001 12 15 | 704 | (1.8− | 1.4−) | 2006 10 01 | 703 | 0.8− | 0.7− |
| 2001 10 14 | 704 | 0.3+ | 0.5+ | 2001 12 15 | 704 | 1.4− | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.5+ | 2001 12 15 | 704 | 0.9− | 0.0 | 2006 10 01 | 703 | 0.5− | 1.1− |
| 2001 10 17 | 704 | 0.5− | 0.0 | 2001 12 15 | 704 | 0.1− | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.4− | 0.5− | 2001 12 15 | 704 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.1− | 0.2− | 2002 12 07 | 645 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.2− | 0.2+ | 2002 12 07 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.9+ | 0.2− | 2003 02 07 | 644 | 0.4+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 10 20 | 704 | 0.1+ | 0.4− | 2003 02 07 | 644 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2001 10 20 | 704 | 0.3+ | 0.1− | 2003 02 07 | 644 | 0.8+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 1.3− | 0.3+ | 2004 05 14 | 691 | 0.5+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 20 | 691 | 0.1− | 0.0 | 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 10 20 | 691 | 0.3− | 0.1− | 2004 05 14 | 691 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.8− |
| 2001 10 20 | 691 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.5+ | 0.5− |
| 2001 10 21 | 704 | 0.2+ | 0.6+ | 2006 09 13 | 644 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.6+ |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2006 09 13 | 644 | 0.5+ | 0.1+ | 2006 10 17 | 703 | (0.9− | 2.1−) |
| 2001 10 21 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.1+ | 0.7+ | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.6+ | 0.4+ | 2006 10 23 | G96 | 0.7− | 0.4− |
| 2001 10 25 | 691 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.6− | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2001 10 25 | 691 | 0.5− | 0.2+ | 2006 09 18 | 704 | (1.8− | 0.2+) | | | | |

**(140426)∗ 2001 TU$_{93}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.80044 | | (2000.0) | | +0.82523334 | +0.56283024 |
| $n$ | 0.20844737 | $\omega$ | 21.26153 | | −0.52606145 | +0.73566717 |
| $a$ | 2.8171185 | $\Omega$ | 304.40000 | | −0.20554634 | +0.37685001 |
| $e$ | 0.1530742 | $i$ | 3.26771 | | | |
| $P$ | 4.73 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.2− | 0.6− | 2001 10 14 | 704 | 0.4+ | 0.3− | 2003 01 05 | 291 | 0.1− | 0.0 |
| 1994 02 10 | 691 | 0.2− | 0.1− | 2001 10 17 | 704 | 0.9− | 0.5+ | 2003 01 05 | 291 | 0.5− | 0.3+ |
| 1994 02 10 | 691 | 0.1− | 0.3− | 2001 10 17 | 704 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.8+ | 1.0+ |
| 1996 09 12 | 691 | (3.6− | 1.4+) | 2001 10 17 | 704 | 1.0− | 1.0+ | 2004 03 18 | 704 | 0.9+ | 1.4+ |
| 1996 09 12 | 691 | 0.5− | 0.2− | 2001 10 17 | 704 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.5− | 0.2+ |
| 1996 09 12 | 691 | 0.8− | 0.1− | 2001 10 17 | 704 | 0.9− | 0.4+ | 2004 03 18 | 704 | 0.4+ | 1.4+ |
| 1999 03 14 | 691 | 0.2+ | 0.3− | 2001 10 17 | 704 | 0.3+ | 0.5− | 2004 03 18 | 704 | 1.3+ | 0.3+ |
| 1999 03 14 | 691 | 0.0 | 0.4− | 2001 10 17 | 704 | 0.9− | 0.7+ | 2004 03 19 | 704 | (0.3+ | 1.6+) |
| 1999 03 14 | 691 | 0.2+ | 0.1− | 2001 10 17 | 704 | 0.5+ | 0.4+ | 2004 03 19 | 704 | 1.5+ | 0.5+ |
| 2001 09 18 | 691 | 0.1+ | 0.0 | 2001 10 17 | 704 | 0.5− | 0.6+ | 2004 03 19 | 704 | (2.6+ | 1.3+) |
| 2001 09 18 | 691 | 0.2+ | 0.0 | 2001 10 17 | 704 | 0.1+ | 0.0 | 2004 03 19 | 704 | (0.5+ | 1.6+) |
| 2001 09 18 | 691 | 0.4+ | 0.2+ | 2001 10 19 | 644 | 0.2− | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.8+ |
| 2001 09 19 | 704 | 0.4+ | 0.0 | 2001 10 19 | 644 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.8+ | 0.1− | 2001 10 19 | 644 | 0.4− | 0.2+ | 2004 03 27 | 704 | 0.1− | 1.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2001 10 20 | 704 | 0.3− | 0.3− | 2004 03 27 | 704 | (1.9+ | 1.3+) |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2001 10 20 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 704 | (0.3+ | 2.2−) |
| 2001 09 19 | 704 | 0.5+ | 0.1+ | 2001 10 20 | 704 | 1.1− | 0.4− | 2004 04 15 | 691 | 0.5+ | 0.3+ |
| 2001 09 24 | 704 | 0.6+ | 0.4+ | 2001 10 20 | 704 | 0.8+ | 0.1− | 2004 04 15 | 691 | 0.0 | 0.7+ |
| 2001 09 24 | 704 | 1.4− | 0.4+ | 2001 10 20 | 691 | 0.2+ | 0.2+ | 2004 04 15 | 691 | 0.3+ | 0.9+ |
| 2001 09 24 | 704 | 0.6+ | 0.2+ | 2001 10 20 | 691 | 0.1− | 0.1+ | 2006 08 27 | 291 | 0.1+ | 0.4+ |
| 2001 09 24 | 704 | 0.3− | 0.1+ | 2001 10 20 | 691 | 0.0 | 0.1+ | 2006 08 27 | 291 | 0.5− | 0.1+ |
| 2001 09 24 | 704 | 0.3+ | 0.1+ | 2001 10 20 | 608 | 0.1+ | 0.1+ | 2006 08 27 | 291 | 0.4− | 0.3+ |
| 2001 09 24 | 704 | 0.6− | 0.6− | 2001 10 20 | 608 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 0.4+ | 0.1− | 2001 10 20 | 608 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 2001 09 24 | 704 | 0.5− | 0.1− | 2001 10 20 | 644 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.5− |
| 2001 09 24 | 704 | 0.4− | 0.8+ | 2001 10 20 | 644 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2001 09 24 | 704 | 0.0 | 0.0 | 2001 10 20 | 644 | 0.3+ | 0.3− | 2006 10 19 | A50 | 0.2− | 0.2+ |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2001 10 21 | 704 | 0.9+ | 0.3+ | 2006 11 02 | 691 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.4− | 0.1+ | 2001 10 21 | 704 | 0.7+ | 0.0 | 2006 11 02 | 691 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 1.1− | 0.3+ | 2001 10 21 | 704 | 1.0+ | 0.2+ | 2006 11 02 | 691 | 0.1+ | 0.2− |
| 2001 09 25 | 704 | 0.4− | 0.2− | 2001 10 21 | 704 | 1.4+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.8+ | 0.8− | 2001 10 21 | 704 | 1.3+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.5− |
| 2001 09 25 | 704 | 0.4− | 0.0 | 2001 10 25 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2001 09 25 | 704 | 0.1− | 0.6+ | 2001 10 25 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.6− | 0.1+ |
| 2001 09 25 | 704 | 0.7− | 0.4+ | 2001 10 25 | 704 | 0.3+ | 0.5− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2001 10 25 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.4− |
| 2001 10 14 | 704 | 0.7+ | 0.3− | 2001 10 25 | 704 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.8+ | 0.2+ |
| 2001 10 14 | 704 | 0.5+ | 0.4+ | 2001 10 25 | 704 | 0.7+ | 0.9+ | 2006 11 22 | 704 | 0.8− | 0.1− |
| 2001 10 14 | 704 | 0.3+ | 0.6+ | 2001 10 25 | 704 | 0.6− | 0.4+ | 2006 11 22 | 704 | 1.2− | 0.7− |
| 2001 10 14 | 704 | 0.3+ | 0.3− | 2003 01 05 | 291 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.0 |

**(140427)∗ 2001 TE$_{94}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 185.77305 | | (2000.0) | | −0.78299776 | +0.60963353 |
| $n$ | 0.21368337 | $\omega$ | 5.93768 | | −0.57970172 | −0.78719262 |
| $a$ | 2.7709088 | $\Omega$ | 212.66278 | | −0.22552254 | −0.09313825 |
| $e$ | 0.1337402 | $i$ | 13.23247 | | | |
| $P$ | 4.61 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.3− | 0.5+ | 2004 03 26 | 704 | 0.2+ | 0.6+ | 2004 05 19 | 703 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 1.2+ | 0.2− | 2004 03 26 | 704 | 0.2− | 0.5+ | 2004 05 21 | 843 | 0.8− | 1.1+ |
| 2001 09 20 | 704 | (0.3− | 1.9+) | 2004 03 26 | 704 | (0.6− | 2.1+) | 2004 05 21 | 843 | 0.9− | 1.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2004 03 26 | 704 | 0.6− | 0.1− | 2004 05 21 | 843 | 0.8− | 1.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2004 03 26 | 704 | 0.0 | 0.1− | 2004 05 21 | 843 | 0.9− | 0.6+ |
| 2001 09 20 | 704 | 0.3− | 0.9− | 2004 04 12 | 644 | 0.1+ | 0.4+ | 2004 05 21 | 704 | 0.7+ | 0.4+ |
| 2001 09 20 | 704 | 0.9− | 0.4− | 2004 04 12 | 644 | 0.1+ | 0.5+ | 2004 05 21 | 704 | 0.7+ | 0.6+ |
| 2001 09 20 | 704 | 0.5− | 0.1− | 2004 04 12 | 644 | 0.2+ | 0.2+ | 2004 05 21 | 704 | 0.7+ | 1.0+ |
| 2001 09 20 | 291 | 0.2+ | 0.3+ | 2004 04 12 | 699 | 0.2+ | 0.2+ | 2004 05 21 | 704 | 0.8+ | 0.6+ |
| 2001 09 20 | 291 | 0.0 | 0.5+ | 2004 04 12 | 699 | 0.6+ | 1.2+ | 2004 05 21 | 704 | 0.4+ | 0.6+ |
| 2001 09 20 | 291 | 0.2+ | 0.4+ | 2004 04 12 | 699 | 0.2− | 0.4− | 2005 09 09 | 704 | 0.4+ | 0.8+ |
| 2001 09 20 | 691 | 0.2+ | 0.3− | 2004 04 12 | 699 | 0.9− | 0.3+ | 2005 09 09 | 704 | 0.6− | 1.1+ |
| 2001 09 20 | 691 | 0.3+ | 0.1+ | 2004 04 17 | 704 | (2.4− | 0.7−) | 2005 09 09 | 704 | 0.3+ | 0.2+ |
| 2001 09 20 | 691 | 0.1+ | 0.1− | 2004 04 17 | 704 | 0.1+ | 0.0 | 2005 09 09 | 704 | 0.0 | 0.6+ |
| 2001 10 07 | 644 | 0.2− | 0.7+ | 2004 04 17 | 704 | 0.1+ | 0.1+ | 2005 09 26 | 703 | 0.6+ | 0.6− |
| 2001 10 07 | 644 | 0.2− | 0.5+ | 2004 04 17 | 704 | 0.1− | 0.0 | 2005 09 26 | 703 | 0.5− | 0.7+ |
| 2001 10 07 | 644 | 0.3− | 0.6+ | 2004 04 21 | 704 | 0.1− | 0.4− | 2005 09 26 | 703 | 0.6− | 0.2− |
| 2001 10 14 | 704 | 0.2− | 1.0− | 2004 04 21 | 704 | 0.2+ | 0.2− | 2005 09 26 | 703 | 0.6− | 1.2− |
| 2001 10 14 | 704 | 0.6− | 0.5− | 2004 04 21 | 704 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.4+ | 0.0 | 2004 04 21 | 704 | 1.2− | 0.3− | 2006 09 30 | G96 | 0.5+ | 0.0 |
| 2001 10 14 | 704 | 0.7− | 0.5+ | 2004 04 21 | 704 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2001 10 17 | 704 | (4.0+ | 1.2−) | 2004 04 22 | 704 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.7− | 0.3+ |
| 2001 10 17 | 704 | (4.3+ | 0.9−) | 2004 04 22 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.6− |
| 2001 10 17 | 704 | (4.3+ | 0.3−) | 2004 04 22 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.4− |
| 2001 10 17 | 704 | (4.0+ | 1.1−) | 2004 04 22 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 1.5− | 0.6− |
| 2001 10 21 | 704 | 0.1+ | 0.2+ | 2004 04 22 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.8− |
| 2001 10 21 | 704 | 0.4+ | 0.5+ | 2004 04 25 | 703 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2004 04 25 | 703 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.2− | 0.4+ | 2004 04 25 | 703 | 0.6+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.6+ | 2004 04 25 | 703 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.8− |
| 2001 10 25 | 704 | 0.6− | 0.3− | 2004 05 07 | 608 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.5− |
| 2001 10 25 | 704 | 1.0− | 0.2− | 2004 05 07 | 608 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2001 10 25 | 704 | (2.2− | 0.2−) | 2004 05 07 | 608 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2001 11 21 | 704 | 0.1− | 0.1+ | 2004 05 11 | 699 | 0.6+ | 0.0 | 2006 11 13 | 683 | 1.0+ | 0.1− |
| 2001 11 21 | 704 | (0.7− | 1.7+) | 2004 05 11 | 699 | 0.3+ | 0.0 | 2006 11 13 | 683 | 1.0+ | 0.7+ |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2004 05 11 | 699 | 0.2− | 0.4+ | 2006 11 13 | 683 | 0.2+ | 1.1+ |
| 2001 11 21 | 704 | 0.2+ | 0.1+ | 2004 05 11 | 699 | 0.0 | 0.4− | 2006 11 14 | 683 | 0.6+ | 0.8− |
| 2004 03 20 | 704 | 0.5+ | 0.1− | 2004 05 12 | 699 | 0.1+ | 0.0 | 2006 11 14 | 683 | (2.2− | 1.2+) |
| 2004 03 20 | 704 | 0.0 | 0.2+ | 2004 05 12 | 699 | 0.0 | 0.1− | 2006 11 14 | 683 | 0.8+ | 1.4+ |
| 2004 03 20 | 704 | 0.5− | 0.1+ | 2004 05 12 | 699 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.4− | 0.2− |
| 2004 03 20 | 704 | 0.6− | 0.5+ | 2004 05 12 | 699 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.5− | 1.0+ |
| 2004 03 22 | 699 | 0.5− | 0.3− | 2004 05 15 | 704 | 1.0+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2004 03 22 | 699 | 0.3− | 0.1− | 2004 05 15 | 704 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2004 03 22 | 699 | 0.7− | 0.4+ | 2004 05 15 | 704 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2004 03 22 | 699 | 0.4− | 0.2− | 2004 05 15 | 704 | 0.3+ | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.2+ |
| 2004 03 24 | 699 | 0.1+ | 0.7− | 2004 05 15 | 704 | 0.6+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2004 03 24 | 699 | 0.4− | 0.6− | 2004 05 17 | 704 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.6− | 2.1+ |
| 2004 03 24 | 699 | 0.0 | 0.1+ | 2004 05 17 | 704 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 1.1+ | 0.6+ |
| 2004 03 24 | 699 | 0.6+ | 0.6+ | 2004 05 17 | 704 | 0.2− | 1.1+ | 2006 11 28 | 704 | 0.3− | 2.1+ |
| 2004 03 25 | 699 | 0.2− | 0.3+ | 2004 05 17 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.8− | 1.7+ |
| 2004 03 25 | 699 | 0.5+ | 0.3+ | 2004 05 19 | 703 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.9+ |
| 2004 03 25 | 699 | 0.1+ | 0.3+ | 2004 05 19 | 703 | 0.6− | 0.7− | | | | |
| 2004 03 25 | 699 | 0.8− | 0.7+ | 2004 05 19 | 703 | 0.0 | 0.9− | | | | |

**(140428)∗ 2001 TT$_{94}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.33175 | | (2000.0) | | −0.14052397 | +0.98199755 |
| $n$ | 0.18755878 | $\omega$ | 24.50889 | | −0.93125443 | −0.17438731 |
| $a$ | 3.0225799 | $\Omega$ | 237.64058 | | −0.33618179 | +0.07259392 |
| $e$ | 0.0590678 | $i$ | 8.59421 | | | |
| $P$ | 5.25 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 19 | 691 | 0.3+ | 0.0 | 2001 11 11 | 699 | 0.5+ | 0.5− | 2004 04 16 | 644 | 0.1+ | 0.5+ |
| 1990 09 19 | 691 | 0.3+ | 0.1− | 2001 11 14 | 691 | 0.1− | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.3+ |
| 1990 09 19 | 691 | 0.4+ | 0.0 | 2001 11 14 | 691 | 0.9− | 0.8+ | 2006 09 06 | 644 | 0.3+ | 0.6+ |
| 1995 07 19 | 691 | 0.6− | 0.3+ | 2001 11 14 | 691 | 0.1− | 0.4+ | 2006 09 06 | 644 | 0.0 | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 19 | 691 | 0.6− | 0.4+ | 2001 11 15 | 691 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.6+ |
| 1995 07 19 | 691 | 0.6− | 0.4+ | 2001 11 15 | 691 | 0.1− | 0.2+ | 2006 09 16 | 703 | 1.2− | 1.3− |
| 1999 04 11 | 699 | 0.2+ | 0.1+ | 2001 11 15 | 691 | 0.3− | 0.2− | 2006 09 16 | 703 | (0.2− | 2.4−) |
| 1999 04 11 | 699 | 1.5+ | 0.0 | 2001 11 16 | 691 | 0.1− | 0.1− | 2006 09 16 | 703 | (2.3+ | 1.6−) |
| 1999 04 11 | 699 | 1.8+ | 0.2+ | 2001 11 16 | 691 | 0.6+ | 0.2− | 2006 09 25 | 683 | 0.1+ | 0.9− |
| 2001 10 07 | 644 | 0.4− | 0.8+ | 2001 11 16 | 691 | 0.3+ | 0.1− | 2006 09 25 | 683 | (0.5− | 1.9−) |
| 2001 10 07 | 644 | 0.3− | 0.3+ | 2001 11 17 | 704 | 0.7− | 0.5− | 2006 09 25 | 683 | 1.4− | 0.4+ |
| 2001 10 07 | 644 | 0.4+ | 1.1+ | 2001 11 17 | 704 | 0.2− | 0.6− | 2006 09 27 | 699 | 0.1− | 0.6− |
| 2001 10 12 | 699 | 0.3− | 0.6+ | 2001 11 17 | 704 | 0.6− | 0.7− | 2006 09 27 | 699 | 1.0+ | 0.5+ |
| 2001 10 12 | 699 | 0.1− | 0.0 | 2001 11 17 | 704 | 0.6+ | 0.4− | 2006 09 27 | 699 | 0.6+ | 1.0+ |
| 2001 10 12 | 699 | 0.7− | 0.1+ | 2001 11 20 | 699 | 0.5− | 0.2− | 2006 09 27 | 699 | 0.2+ | 0.2+ |
| 2001 10 12 | 699 | 0.3− | 0.5− | 2001 11 20 | 699 | 1.2− | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.5− |
| 2001 10 14 | 704 | 0.1+ | 0.5− | 2001 11 20 | 699 | 0.6+ | 0.9+ | 2006 09 27 | 703 | 0.3+ | 1.0− |
| 2001 10 14 | 704 | 0.6− | 1.4− | 2001 11 20 | 699 | 0.9+ | 0.5+ | 2006 09 27 | 703 | 0.2+ | 1.0+ |
| 2001 10 14 | 704 | 0.4− | 1.1− | 2004 03 01 | 703 | 0.1− | 1.1+ | 2006 09 27 | 703 | 1.0− | 0.2+ |
| 2001 10 14 | 704 | (0.3− | 1.6−) | 2004 03 01 | 703 | 1.0+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.3− |
| 2001 10 14 | 704 | 1.1− | 1.5− | 2004 03 01 | 703 | 1.2+ | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.3+ | 0.7+ | 2004 03 01 | 703 | (0.3+ | 1.6+) | 2006 09 27 | 703 | 0.5+ | 0.1+ |
| 2001 10 17 | 704 | 0.4+ | 0.1− | 2004 03 16 | 703 | 0.3+ | 0.9− | 2006 09 27 | 703 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.2+ | 1.2+ | 2004 03 16 | 703 | 1.2− | 0.5− | 2006 10 03 | 704 | 1.0+ | 0.8+ |
| 2001 10 17 | 704 | 0.1+ | 0.6− | 2004 03 16 | 703 | 0.7− | 0.1− | 2006 10 03 | 704 | 0.3+ | 0.3+ |
| 2001 10 17 | 704 | 0.6− | 0.8+ | 2004 03 16 | 703 | 0.7− | 0.2− | 2006 10 03 | 704 | 0.4+ | 1.4− |
| 2001 10 17 | 704 | 0.7− | 0.1+ | 2004 03 16 | 691 | 0.0 | 0.5+ | 2006 10 17 | 703 | (1.2+ | 1.9−) |
| 2001 10 17 | 704 | 0.3+ | 0.6− | 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 703 | (2.2+ | 0.2−) |
| 2001 10 17 | 704 | 0.1+ | 0.7− | 2004 03 16 | 691 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 10 20 | 644 | 0.6+ | 0.6+ | 2004 03 17 | 704 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.6− |
| 2001 10 20 | 644 | 0.6+ | 0.7+ | 2004 03 17 | 704 | 0.5− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 10 20 | 644 | 0.8+ | 0.6+ | 2004 03 17 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.6+ | 0.2+ |
| 2001 10 21 | 704 | 0.1+ | 0.8+ | 2004 03 17 | 704 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2001 10 21 | 704 | 0.8− | 0.4− | 2004 03 17 | 704 | 0.2+ | 0.9+ | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.5− | 0.6+ | 2004 04 15 | 703 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.3+ | 0.5+ | 2004 04 15 | 703 | 1.1+ | 0.3+ | 2006 10 23 | 703 | 0.9+ | 0.9+ |
| 2001 10 21 | 704 | 1.4− | 1.0+ | 2004 04 15 | 703 | 0.3− | 0.8+ | 2006 10 23 | 703 | 0.9+ | 0.1− |
| 2001 11 11 | 699 | 0.1− | 0.3+ | 2004 04 15 | 703 | 0.6+ | 1.1+ | 2006 10 23 | 644 | 0.4+ | 0.5+ |
| 2001 11 11 | 699 | 1.0+ | 1.2+ | 2004 04 16 | 644 | 0.3− | 0.5+ | 2006 10 23 | 703 | 0.6− | 0.0 |
| 2001 11 11 | 699 | (1.9+ | 0.5+) | 2004 04 16 | 644 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 0.6+ | 0.2+ |

**(140429)∗ 2001 TQ$_{96}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.15546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18934869 | $\omega$ | 166.07535 | | +0.83359651 | −0.53865498 | |
| $a$ | 3.0035015 | $\Omega$ | 227.19740 | | +0.48949245 | +0.82298552 | |
| $e$ | 0.0530642 | $i$ | 9.59877 | | +0.25595704 | +0.18040412 | |
| $P$ | 5.21 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 25 | 691 | 0.5− | 0.3+ | 2001 11 15 | 691 | 0.4+ | 0.2+ | 2004 04 21 | 704 | 0.2− | 0.6+ |
| 1995 06 25 | 691 | 0.4− | 0.5+ | 2001 11 15 | 691 | 0.4+ | 0.2+ | 2004 04 21 | 704 | 0.6+ | 0.2− |
| 1995 06 25 | 691 | 0.5− | 0.2+ | 2001 11 15 | 691 | 0.6+ | 0.2+ | 2004 04 21 | 704 | 0.8+ | 0.5+ |
| 2001 08 31 | 333 | 0.6− | 0.7− | 2001 11 17 | 704 | 0.1+ | 0.4− | 2004 04 21 | 704 | 0.2+ | 0.6+ |
| 2001 08 31 | 333 | 0.4+ | 0.2− | 2001 11 17 | 704 | 0.1− | 0.3+ | 2004 05 10 | 691 | 0.0 | 0.5+ |
| 2001 08 31 | 333 | 0.3+ | 0.1+ | 2001 11 17 | 704 | 0.8− | 0.2+ | 2004 05 10 | 691 | 0.2+ | 0.5+ |
| 2001 09 21 | 699 | 1.0− | 0.3− | 2001 11 17 | 704 | 0.3− | 0.1− | 2004 05 10 | 691 | 0.5+ | 0.5+ |
| 2001 09 21 | 699 | 0.6− | 0.7+ | 2001 11 17 | 704 | 1.3− | 0.4+ | 2004 05 24 | 691 | 0.0 | 0.3+ |
| 2001 09 21 | 699 | 0.6− | 0.6+ | 2001 11 19 | 704 | 0.2+ | 0.8+ | 2004 05 24 | 691 | 0.1+ | 0.3+ |
| 2001 09 21 | 699 | 0.2+ | 1.0+ | 2001 11 19 | 704 | 0.1+ | 0.8+ | 2004 05 24 | 691 | 0.1− | 0.3+ |
| 2001 10 13 | 699 | 0.2− | 0.5+ | 2001 11 19 | 704 | 0.2− | 1.3+ | 2006 08 29 | 699 | 0.4+ | 1.5+ |
| 2001 10 13 | 699 | 0.9− | 0.3+ | 2001 11 19 | 704 | 0.8− | 0.2+ | 2006 08 29 | 699 | 0.7+ | 1.5+ |
| 2001 10 13 | 699 | 0.5− | 1.1− | 2001 11 19 | 704 | 0.3+ | 1.2+ | 2006 08 29 | 699 | 0.7− | 0.8+ |
| 2001 10 13 | 699 | 0.4+ | 0.2+ | 2001 11 21 | 704 | 1.2− | 0.9+ | 2006 08 29 | 699 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2001 11 21 | 704 | 1.2− | 1.2+ | 2006 09 19 | 699 | 0.6− | 0.3+ |
| 2001 10 14 | 704 | 0.5+ | 0.1− | 2001 11 21 | 704 | 1.0− | 0.9+ | 2006 09 19 | 699 | 0.4− | 0.4− |
| 2001 10 14 | 704 | 0.4+ | 0.1+ | 2001 11 21 | 704 | (1.1− | 1.5+) | 2006 09 19 | 699 | 0.6− | 0.3+ |
| 2001 10 14 | 704 | 0.3+ | 0.3+ | 2001 11 21 | 704 | 1.3− | 1.2+ | 2006 09 19 | 699 | 0.6− | 0.3+ |
| 2001 10 14 | 704 | 0.0 | 0.3+ | 2003 01 05 | 704 | 0.7+ | 0.5− | 2006 09 27 | 699 | 0.5− | 0.5− |
| 2001 10 17 | 704 | 0.6+ | 0.4− | 2003 01 05 | 704 | 0.5− | 0.3− | 2006 09 27 | 699 | 0.3− | 0.6+ |
| 2001 10 17 | 704 | (0.8+ | 1.8−) | 2003 01 05 | 704 | 0.6+ | 1.1+ | 2006 09 27 | 699 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 1.3+ | 1.5− | 2003 01 26 | 699 | 0.4+ | 0.7+ | 2006 09 27 | 699 | 0.4+ | 1.0+ |
| 2001 10 17 | 704 | (0.1+ | 1.9−) | 2003 01 26 | 699 | 0.4− | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 0.6+ | 0.6+ | 2003 01 26 | 699 | 0.2+ | 1.1+ | 2006 09 27 | 703 | 0.6− | 0.1− |
| 2001 10 21 | 704 | 1.0+ | 0.9+ | 2003 01 26 | 699 | 0.1− | 0.5+ | 2006 09 27 | 703 | 1.4− | 0.0 |
| 2001 10 21 | 704 | 0.7+ | 0.3− | 2003 01 26 | 644 | 0.5+ | 0.4+ | 2006 09 27 | 703 | 0.5− | 0.2− |
| 2001 10 21 | 704 | 1.0+ | 0.5+ | 2003 01 26 | 644 | 0.4− | 0.5+ | 2006 10 03 | 704 | (1.6− | 0.2−) |
| 2001 10 21 | 704 | 1.2− | 0.8+ | 2003 01 26 | 644 | 1.1− | 0.6+ | 2006 10 03 | 704 | 1.0− | 1.1+ |
| 2001 10 24 | 333 | 0.5+ | 1.5− | 2003 01 26 | 608 | 0.8+ | 0.2− | 2006 10 03 | 704 | 0.7+ | 0.8+ |
| 2001 10 24 | 333 | 0.8+ | 0.5+ | 2003 01 26 | 608 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 10 24 | 333 | 0.7+ | 0.5+ | 2003 01 26 | 608 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 10 25 | 333 | 0.5+ | 0.2+ | 2003 01 28 | 645 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.4− | 0.0 |
| 2001 10 25 | 333 | 0.1− | 0.6− | 2003 01 28 | 645 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.7− | 0.0 |
| 2001 10 25 | 704 | 0.6+ | 0.4+ | 2003 02 04 | 644 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2001 10 25 | 333 | 0.2− | 0.1+ | 2003 02 04 | 644 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.6− |
| 2001 10 25 | 333 | 0.4− | 0.2− | 2003 02 04 | 644 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.7− |
| 2001 10 25 | 704 | 1.1+ | 0.1− | 2004 04 14 | 699 | 1.3+ | 1.0+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2001 10 25 | 333 | 0.8+ | 0.5+ | 2004 04 14 | 699 | 0.9+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2001 10 25 | 333 | 0.2+ | 0.5+ | 2004 04 14 | 699 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 10 25 | 704 | 0.9+ | 0.4+ | 2004 04 14 | 699 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 10 25 | 704 | 1.5+ | 1.0− | 2004 04 19 | 704 | 1.4+ | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 10 26 | 333 | 0.0 | 0.2+ | 2004 04 19 | 704 | 1.2+ | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 26 | 333 | 0.4+ | 0.3+ | 2004 04 19 | 704 | 0.4− | 0.6+ | | | | |
| 2001 10 26 | 333 | 0.3− | 0.3− | 2004 04 19 | 704 | 0.6+ | 0.5+ | | | | |

**(140430)∗ 2001 TS$_{101}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.82367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20250194 | $\omega$ | 311.38011 | | +0.95301878 | +0.30226837 | |
| $a$ | 2.8719922 | $\Omega$ | 31.04099 | | −0.26524851 | +0.86419894 | |
| $e$ | 0.1194600 | $i$ | 2.19216 | | −0.14628207 | +0.40223627 | |
| $P$ | 4.87 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 04 | 691 | 0.6+ | 0.2+ | 2001 10 23 | 704 | 0.3+ | 0.5− | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 1994 03 04 | 691 | 0.3− | 0.2− | 2001 10 24 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2− |
| 1994 03 04 | 691 | 0.3− | 0.0 | 2001 10 24 | 704 | 0.6− | 0.9− | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | (2.0+ | 0.7+) | 2001 10 24 | 704 | 0.1− | 0.6− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | (2.3+ | 0.1+) | 2001 10 24 | 704 | 1.1+ | 1.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 1.1+ | 0.6+ | 2001 10 25 | 644 | 0.4− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2001 10 07 | 644 | 0.0 | 0.3− | 2001 10 25 | 704 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2− |
| 2001 10 07 | 644 | 0.5+ | 0.0 | 2001 10 25 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 10 07 | 644 | 0.1+ | 0.3+ | 2001 10 25 | 704 | 0.8+ | 0.9− | 2006 10 21 | 644 | 0.6+ | 0.1+ |
| 2001 10 14 | 704 | 0.4− | 1.0+ | 2001 10 25 | 704 | 0.2− | 1.0+ | 2006 10 23 | H07 | 0.4− | 0.9+ |
| 2001 10 14 | 291 | 0.6− | 0.3− | 2001 10 25 | 644 | 0.6− | 0.4+ | 2006 10 23 | H07 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.6+ | 0.5− | 2001 10 25 | 704 | 0.7− | 0.0 | 2006 10 23 | H07 | 0.7− | 0.4+ |
| 2001 10 14 | 704 | 0.3− | 1.2− | 2001 11 20 | 704 | 0.5+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 10 14 | 291 | 0.7− | 0.1+ | 2001 11 20 | 704 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2001 10 14 | 704 | 1.0− | 1.3+ | 2001 11 20 | 704 | 0.5+ | 0.9+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 10 14 | 291 | 0.4− | 0.3− | 2001 11 20 | 704 | 1.2+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | 0.0 | 1.4+ | 2001 11 20 | 704 | 0.7+ | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.3− |
| 2001 10 15 | 704 | 0.8− | 0.8+ | 2004 03 19 | 291 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.2− |
| 2001 10 15 | 704 | 0.1− | 0.4− | 2004 03 19 | 291 | 0.5+ | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.1− | 0.3− | 2004 03 19 | 291 | 0.6+ | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2001 10 15 | 704 | 0.5− | 1.1+ | 2004 03 29 | 291 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2001 10 17 | 704 | 0.5+ | 0.5+ | 2004 03 29 | 291 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2004 03 29 | 291 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 10 17 | 704 | 0.3− | 0.3+ | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2004 04 14 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 1.1− | 1.1+ |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2004 04 14 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.9+ |
| 2001 10 18 | 644 | 0.4+ | 1.1+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.1− | 3.0+ |
| 2001 10 18 | 644 | 0.3+ | 1.4+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 11 | 291 | 0.3+ | 0.2− |
| 2001 10 18 | 644 | 0.5+ | 1.2+ | 2006 09 25 | G96 | 0.1+ | 0.9− | 2006 11 11 | 291 | 0.5+ | 0.1− |
| 2001 10 20 | 704 | 0.5− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 11 | 291 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4+ | 0.6+ | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2001 10 20 | 704 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2001 10 20 | 704 | 0.3+ | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.7− |
| 2001 10 23 | 704 | 0.4− | 1.2+ | 2006 10 04 | 703 | (0.7+ | 2.3−) | 2006 11 17 | 703 | 0.6− | 1.5− |
| 2001 10 23 | 704 | 0.3+ | 0.6+ | 2006 10 04 | 703 | 0.6− | 1.2+ | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2001 10 23 | 704 | 0.8− | 0.7+ | 2006 10 04 | 703 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2001 10 23 | 704 | 0.2− | 0.0 | 2006 10 04 | 703 | (0.2− | 2.0+) | 2006 11 17 | 703 | 0.0 | 0.2− |

**(140431)∗ 2001 TU$_{101}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.55797 | | (2000.0) | | +0.80380738 | +0.59106062 |
| $n$ | 0.18077776 | $\omega$ | 119.24264 | | −0.58627112 | +0.76785120 |
| $a$ | 3.0977002 | $\Omega$ | 204.71450 | | −0.10089534 | +0.24708678 |
| $e$ | 0.0862242 | $i$ | 9.27517 | | | |
| $P$ | 5.45 | $H$ | 14.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 06 | 691 | 0.1− | 0.5− | 2001 10 22 | 704 | 0.6+ | 0.5− | 2004 03 20 | 704 | 0.4+ | 0.4+ |
| 1994 06 06 | 691 | 0.1− | 0.1+ | 2001 10 23 | 704 | 1.1− | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.4+ |
| 1994 06 06 | 691 | 0.1− | 0.5− | 2001 10 23 | 704 | 1.2− | 0.3+ | 2005 06 04 | 691 | 0.2+ | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2001 10 23 | 704 | 1.4− | 0.1+ | 2005 06 04 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2001 10 23 | 704 | 0.8− | 0.5+ | 2005 06 04 | 691 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2001 10 23 | 704 | 1.1− | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.5+ |
| 2001 10 07 | 644 | 0.7+ | 1.5+ | 2001 10 24 | 704 | 0.4+ | 0.2− | 2005 06 14 | 691 | 0.1− | 0.3+ |
| 2001 10 07 | 644 | 0.4+ | 0.8+ | 2001 10 24 | 704 | 0.1− | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.4+ |
| 2001 10 07 | 644 | 0.5+ | 1.2+ | 2001 10 24 | 704 | 0.0 | 1.1+ | 2005 06 28 | 644 | 0.2− | 0.1+ |
| 2001 10 12 | 699 | 0.5− | 0.7+ | 2001 10 24 | 704 | 0.2− | 1.0+ | 2005 06 28 | 644 | 0.1− | 0.2+ |
| 2001 10 12 | 699 | 1.3+ | 0.8+ | 2001 10 24 | 704 | 0.1− | 0.6+ | 2005 06 28 | 644 | 0.1− | 0.5+ |
| 2001 10 12 | 699 | 0.3+ | 0.7+ | 2001 10 25 | 704 | 0.2− | 0.5− | 2006 08 18 | 644 | 0.2− | 0.0 |
| 2001 10 12 | 699 | 0.9+ | 0.1− | 2001 10 25 | 644 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.4+ | 0.7+ | 2001 10 25 | 704 | 0.7− | 0.7+ | 2006 08 18 | 644 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | 0.0 | 0.2+ | 2001 10 25 | 644 | 0.4− | 0.0 | 2006 08 18 | 644 | 0.3+ | 0.0 |
| 2001 10 15 | 704 | 1.1+ | 0.7+ | 2001 10 25 | 644 | 0.5− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.2− |
| 2001 10 15 | 704 | 0.2+ | 1.0+ | 2001 10 25 | 704 | 0.1+ | 1.9+ | 2006 08 18 | 644 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.2− | 0.4+ | 2001 10 25 | 704 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.4− | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.9+ | 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.7+ | 0.6+ |
| 2001 10 17 | 704 | 0.4+ | 0.1+ | 2001 11 20 | 704 | 0.7+ | 0.5− | 2006 08 29 | 703 | 0.4− | 0.3+ |
| 2001 10 17 | 704 | 0.1− | 0.3+ | 2001 11 20 | 704 | 0.8+ | 0.7− | 2006 08 29 | 703 | 0.5+ | 0.8+ |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.8+ | 0.6− | 2006 08 30 | 699 | 0.1− | 0.1+ |
| 2001 10 18 | 644 | 0.2+ | 0.5+ | 2001 11 20 | 704 | 0.2− | 0.9− | 2006 08 30 | 699 | 0.5− | 0.1− |
| 2001 10 18 | 644 | 0.1+ | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 699 | 1.2− | 0.3+ |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2001 11 21 | 704 | 0.5+ | 0.7− | 2006 09 11 | 703 | 0.8− | 0.5− |
| 2001 10 20 | 704 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.7− | 0.8− | 2006 09 11 | 703 | 0.0 | 0.8− |
| 2001 10 20 | 704 | 0.7− | 0.4− | 2001 11 21 | 704 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.4− | 0.2− | 2004 03 14 | 703 | 1.1− | 0.9+ | 2006 09 11 | 703 | 0.9− | 1.1− |
| 2001 10 20 | 704 | 0.2+ | 0.6+ | 2004 03 14 | 703 | (2.8− | 2.0+) | 2006 09 18 | 703 | (0.7+ | 3.1−) |
| 2001 10 20 | 704 | 0.1− | 0.2− | 2004 03 14 | 703 | (2.0− | 2.8+) | 2006 09 18 | 703 | 2.5+ | 1.4− |
| 2001 10 22 | 704 | 0.0 | 0.5− | 2004 03 14 | 703 | 0.5− | 1.7+ | 2006 09 18 | 703 | 0.0 | 0.8+ |
| 2001 10 22 | 704 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.3− | 1.4− |
| 2001 10 22 | 704 | 0.4− | 0.3− | 2004 03 20 | 704 | 0.6+ | 0.2+ | | | | |

**(140432)∗ 2001 TC$_{102}$ = 2004 FB$_{58}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61119)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 107.60614 | | (2000.0) | | +0.23080859 | +0.96339837 |
| $n$ | 0.21073936 | $\omega$ | 22.51118 | | −0.91241288 | +0.16562488 |
| $a$ | 2.7966553 | $\Omega$ | 261.04677 | | −0.33797948 | +0.21078896 |
| $e$ | 0.1163474 | $i$ | 7.93390 | | | |
| $P$ | 4.68 | $H$ | 15.1 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 699 | (2.3− | 2.8−) | 2004 03 17 | 703 | 1.2+ | 0.2− | 2005 08 31 | 704 | 0.1+ | 0.2− |
| 2001 09 19 | 699 | 0.7+ | 0.2+ | 2004 03 17 | 704 | 0.1+ | 0.5+ | 2005 08 31 | 704 | 0.8+ | 1.2+ |
| 2001 09 19 | 699 | (1.0+ | 1.8−) | 2004 03 17 | 703 | 0.3− | 0.4+ | 2005 08 31 | 704 | 0.8+ | 0.0 |
| 2001 09 19 | 699 | 0.4− | 0.4+ | 2004 03 17 | 704 | 0.4+ | 0.3− | 2005 08 31 | 704 | 0.6− | 0.5+ |
| 2001 09 19 | 644 | 0.1− | 0.0 | 2004 03 17 | 704 | 0.5+ | 0.2− | 2006 10 19 | A50 | 0.2− | 0.2+ |
| 2001 09 19 | 644 | 0.1+ | 0.2− | 2004 03 17 | 704 | 0.2− | 0.8+ | 2006 10 19 | A50 | 0.2+ | 0.3+ |
| 2001 09 19 | 644 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.6− | 0.0 | 2004 03 22 | 704 | 0.2− | 1.0+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.2− | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.8+ |
| 2001 09 25 | 704 | 0.2− | 0.6− | 2004 03 22 | 704 | 0.7+ | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 09 25 | 704 | 0.8− | 0.1+ | 2004 03 22 | 704 | 0.9+ | 0.4+ | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.0 | 2004 03 26 | 699 | 0.6− | 1.3+ | 2006 10 22 | 644 | 0.6+ | 0.4+ |
| 2001 10 13 | 699 | 0.6− | 0.8+ | 2004 03 26 | 699 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.4− | 0.0 |
| 2001 10 13 | 699 | 0.2− | 1.1+ | 2004 03 26 | 699 | 0.3− | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.6− |
| 2001 10 13 | 699 | 0.5− | 0.1− | 2004 03 26 | 699 | 1.1− | 0.8+ | 2006 10 27 | 703 | 0.3+ | 0.3− |
| 2001 10 13 | 644 | 0.3− | 0.8+ | 2004 03 31 | 704 | 0.8+ | 1.3+ | 2006 10 27 | 703 | 0.5+ | 0.1− |
| 2001 10 13 | 699 | (1.1− | 1.6+) | 2004 03 31 | 704 | 0.1+ | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 10 13 | 644 | 0.2− | 0.5+ | 2004 03 31 | 704 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 10 13 | 644 | 0.1− | 0.3+ | 2004 04 17 | 704 | 0.3+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 10 15 | 704 | 0.3+ | 0.2+ | 2004 04 17 | 704 | 0.9+ | 1.1+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2001 10 15 | 704 | 0.5+ | 0.0 | 2004 04 17 | 704 | 1.1+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2001 10 15 | 704 | 0.7+ | 0.3− | 2004 04 17 | 704 | 0.4− | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2001 10 15 | 704 | 0.4+ | 0.6− | 2004 05 14 | 644 | 0.4+ | 0.6+ | 2006 11 14 | G96 | 0.5+ | 0.2− |
| 2001 10 15 | 704 | 0.0 | 0.4− | 2004 05 14 | 644 | 0.5+ | 0.8+ | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 10 17 | 704 | (1.8− | 0.9+) | 2004 05 14 | 644 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 10 17 | 704 | 0.2− | 1.0+ | 2005 07 02 | 703 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.4− | 0.4+ | 2005 07 02 | 703 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.1+ | 0.2− | 2005 07 02 | 703 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2001 10 20 | 644 | 0.6+ | 1.4+ | 2005 07 02 | 703 | 0.8− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2001 10 20 | 644 | 0.5+ | 1.1+ | 2005 07 03 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2001 10 20 | 644 | 0.5+ | 1.1+ | 2005 07 03 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2001 11 10 | 704 | 0.0 | 0.5+ | 2005 07 03 | 691 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.5− |
| 2001 11 10 | 704 | 0.0 | 0.2− | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.9− | 0.5+ |
| 2001 11 10 | 704 | 0.4− | 0.9− | 2005 07 04 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | 1.0+ | 0.5+ |
| 2001 11 10 | 704 | 0.1− | 0.7− | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2001 11 11 | 699 | 0.4+ | 0.6+ | 2005 07 08 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2001 11 11 | 699 | 0.0 | 0.4+ | 2005 07 08 | 691 | 0.5− | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2001 11 11 | 699 | 0.1− | 0.1− | 2005 07 08 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2001 11 11 | 699 | 1.4− | 0.2+ | 2005 07 18 | 621 | 0.1+ | 0.4− | 2006 11 22 | 704 | (2.4− | 0.1+) |
| 2001 11 17 | 704 | 0.0 | 0.2+ | 2005 07 18 | 621 | 0.5− | 0.5− | 2006 11 22 | 704 | 1.0− | 0.3+ |
| 2001 11 17 | 704 | 0.1+ | 0.8+ | 2005 07 18 | 621 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2001 11 17 | 704 | 0.0 | 0.5− | 2005 08 04 | 941 | 0.1− | 0.4− | 2006 11 22 | 704 | (2.0− | 0.3+) |
| 2001 11 17 | 704 | 0.5− | 0.5+ | 2005 08 04 | 941 | 0.1− | 0.6− | 2006 11 22 | 704 | 0.9− | 0.0 |
| 2004 03 17 | 703 | 0.5− | 0.5+ | 2005 08 04 | 941 | 0.0 | 0.6− | | | | |
| 2004 03 17 | 703 | 0.4+ | 0.2+ | 2005 08 04 | 941 | 0.1+ | 0.5− | | | | |

**(140433)∗ 2001 TK$_{102}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.24197 | | (2000.0) | | −0.03178805 | −0.97449451 |
| $n$ | 0.18400518 | $\omega$ | 319.97483 | | +0.97548296 | −0.07867395 |
| $a$ | 3.0613713 | $\Omega$ | 130.62180 | | +0.21776709 | +0.21016865 |
| $e$ | 0.1440424 | $i$ | 17.01827 | | | |
| $P$ | 5.36 | $H$ | 14.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 644 | 0.9− | 0.3− | 2003 01 27 | 704 | 0.5− | 0.1− | 2003 03 05 | 704 | 0.4+ | 0.7+ |
| 2001 09 22 | 644 | 1.1− | 0.2+ | 2003 01 27 | 704 | 0.7− | 0.1− | 2004 04 15 | 704 | 0.4+ | 0.9+ |
| 2001 09 22 | 644 | 1.0− | 0.3+ | 2003 01 27 | 704 | 0.4− | 0.4− | 2004 04 15 | 704 | (0.6+ | 1.9+) |
| 2001 09 25 | 699 | 0.7− | 0.6+ | 2003 01 27 | 699 | 0.1+ | 0.1+ | 2004 04 15 | 704 | 0.1− | 1.4+ |
| 2001 09 25 | 699 | 1.0− | 0.3+ | 2003 01 27 | 704 | 0.0 | 0.1+ | 2004 04 15 | 704 | 0.3+ | 0.1+ |
| 2001 09 25 | 699 | 0.2− | 0.2+ | 2003 01 27 | 699 | (0.6− | 2.2+) | 2004 04 15 | 704 | (1.8+ | 1.0+) |
| 2001 09 25 | 699 | 1.3− | 0.3− | 2003 01 28 | 704 | 0.0 | 0.6− | 2004 04 26 | 704 | 0.7+ | 0.6+ |
| 2001 10 15 | 704 | 1.4+ | 0.4− | 2003 01 28 | 704 | 0.1− | 0.6− | 2004 04 26 | 704 | (0.3+ | 1.9+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.1− | 0.7+ | 2003 01 28 | 704 | 0.0 | 0.6− | 2004 04 26 | 704 | 0.3− | 1.0+ | | |
| 2001 10 15 | 704 | 0.9− | 0.8+ | 2003 01 28 | 704 | 0.3+ | 0.4− | 2004 04 26 | 704 | 0.7+ | 1.4+ | | |
| 2001 10 15 | 704 | 0.5− | 0.7+ | 2003 01 28 | 704 | 0.1+ | 0.4− | 2004 04 26 | 704 | 0.1+ | 1.3+ | | |
| 2001 10 17 | 704 | 0.7+ | 0.8+ | 2003 01 30 | 644 | 0.2− | 0.2− | 2004 05 12 | 644 | 0.6+ | 0.9+ | | |
| 2001 10 17 | 704 | 0.6+ | 0.8+ | 2003 01 30 | 644 | 0.1− | 0.1+ | 2004 05 12 | 644 | 0.2+ | 0.9+ | | |
| 2001 10 17 | 704 | 0.7+ | 0.2+ | 2003 01 30 | 644 | 0.0 | 0.0 | 2004 05 12 | 644 | 0.6+ | 0.4+ | | |
| 2001 10 17 | 704 | 0.0 | 0.1− | 2003 01 31 | 704 | 0.3+ | 0.4+ | 2004 05 24 | 850 | 0.4− | 0.2+ | | |
| 2001 10 17 | 704 | 1.1+ | 0.7+ | 2003 01 31 | 704 | 0.1+ | 0.3− | 2004 05 24 | 850 | 0.1− | 0.8+ | | |
| 2001 10 17 | 704 | 0.1− | 0.9+ | 2003 01 31 | 704 | 0.2+ | 0.0 | 2004 05 24 | 850 | 0.2− | 0.5+ | | |
| 2001 10 17 | 704 | 0.0 | 1.1+ | 2003 01 31 | 704 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.0 | 0.4+ | | |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2003 01 31 | 704 | 0.4− | 0.0 | 2006 08 15 | 644 | 0.2− | 0.7+ | | |
| 2001 10 17 | 704 | 0.7+ | 0.6+ | 2003 01 31 | 704 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.4+ | | |
| 2002 11 14 | 644 | 0.4+ | 0.6+ | 2003 01 31 | 704 | 0.3− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.0 | | |
| 2002 11 14 | 644 | 0.8+ | 0.8+ | 2003 01 31 | 704 | 0.1+ | 0.4− | 2006 08 16 | 644 | 0.0 | 0.2+ | | |
| 2002 11 14 | 644 | 0.5+ | 0.8+ | 2003 02 03 | 704 | 0.2+ | 0.6+ | 2006 08 16 | 644 | 0.3− | 0.2+ | | |
| 2002 12 06 | 644 | 0.0 | 0.1+ | 2003 02 03 | 704 | 0.3− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.3+ | | |
| 2002 12 06 | 644 | 0.1+ | 0.1+ | 2003 02 03 | 704 | 0.3− | 0.1− | 2006 08 16 | 644 | 0.0 | 0.4+ | | |
| 2002 12 06 | 644 | 0.3− | 0.2+ | 2003 02 03 | 704 | 0.3+ | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.2+ | | |
| 2003 01 01 | 704 | (1.6+ | 0.1−) | 2003 02 03 | 704 | 0.3− | 0.7+ | 2006 08 16 | 644 | 0.1+ | 0.3+ | | |
| 2003 01 01 | 704 | 0.6− | 0.1+ | 2003 02 04 | 644 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.1+ | | |
| 2003 01 01 | 704 | 0.1+ | 0.2− | 2003 02 04 | 644 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.1+ | | |
| 2003 01 01 | 704 | 0.7− | 0.9− | 2003 02 04 | 644 | 0.0 | 0.2+ | 2006 08 23 | 644 | 0.1+ | 0.1+ | | |
| 2003 01 01 | 704 | 0.3+ | 0.9− | 2003 02 08 | 704 | 0.2+ | 0.5+ | 2006 08 23 | 644 | 0.3− | 0.3+ | | |
| 2003 01 07 | 704 | 0.3+ | 0.3+ | 2003 02 08 | 704 | 0.3+ | 0.4− | 2006 08 23 | 644 | 0.2+ | 0.0 | | |
| 2003 01 07 | 704 | 0.5+ | 0.3+ | 2003 02 08 | 704 | 0.0 | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.2+ | | |
| 2003 01 07 | 704 | 1.1+ | 1.3+ | 2003 02 08 | 704 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.2+ | | |
| 2003 01 07 | 704 | 0.3+ | 0.3− | 2003 02 08 | 704 | (1.7+ | 0.9+) | 2006 08 24 | 644 | 0.1+ | 0.4+ | | |
| 2003 01 07 | 704 | 0.8+ | 0.4− | 2003 02 21 | 699 | 0.4+ | 0.1+ | 2006 09 17 | 699 | 1.2− | 0.4+ | | |
| 2003 01 08 | 704 | 0.1− | 0.2+ | 2003 02 21 | 699 | 0.1− | 0.1+ | 2006 09 17 | 699 | 0.2+ | 0.7− | | |
| 2003 01 08 | 704 | 0.3− | 0.1+ | 2003 02 21 | 699 | 0.2+ | 0.2+ | 2006 09 17 | 699 | (1.0+ | 2.2−) | | |
| 2003 01 08 | 704 | 0.4+ | 0.6+ | 2003 02 21 | 699 | 0.1− | 0.5− | 2006 09 17 | 699 | 0.9+ | 0.4− | | |
| 2003 01 14 | 608 | 0.1− | 0.0 | 2003 02 21 | 608 | 0.1− | 1.0+ | 2006 09 20 | 703 | (0.3+ | 1.8−) | | |
| 2003 01 14 | 608 | 0.2+ | 0.1+ | 2003 02 21 | 608 | 0.7− | 0.6+ | 2006 09 20 | 703 | (0.2+ | 1.9−) | | |
| 2003 01 14 | 608 | 0.1− | 0.2+ | 2003 02 21 | 608 | 0.2+ | 0.8+ | 2006 09 20 | 703 | (1.8+ | 1.1−) | | |
| 2003 01 25 | 699 | 0.1+ | 0.9− | 2003 02 21 | 049 | (1.9− | 1.4−) | 2006 09 20 | 703 | 0.3− | 0.3+ | | |
| 2003 01 25 | 699 | 0.1− | 0.3− | 2003 02 21 | 049 | (1.7− | 1.1−) | 2006 09 26 | 703 | 0.2+ | 0.3− | | |
| 2003 01 25 | 699 | 0.1− | 0.2+ | 2003 02 21 | 049 | (2.7− | 1.3−) | 2006 09 26 | 703 | 1.4− | 1.0+ | | |
| 2003 01 25 | 699 | 0.1+ | 0.1− | 2003 02 28 | 608 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.4− | 0.6− | | |
| 2003 01 26 | 608 | 0.7− | 0.4+ | 2003 02 28 | 608 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.0 | | |
| 2003 01 26 | 608 | 0.2+ | 0.0 | 2003 02 28 | 608 | 0.2− | 0.1− | 2006 10 11 | E12 | 0.8+ | 0.6− | | |
| 2003 01 26 | 608 | 0.2− | 0.1+ | 2003 03 05 | 704 | 0.2− | 0.1+ | 2006 10 11 | E12 | 0.6+ | 0.8+ | | |
| 2003 01 27 | 699 | 0.3− | 0.1− | 2003 03 05 | 704 | 0.1− | 0.6+ | 2006 10 11 | E12 | 0.5+ | 0.3− | | |
| 2003 01 27 | 699 | 0.7− | 0.2+ | 2003 03 05 | 704 | 0.5+ | 0.9− | 2006 10 11 | E12 | 0.1+ | 0.8− | | |
| 2003 01 27 | 704 | 0.4− | 0.2+ | 2003 03 05 | 704 | 1.3+ | 0.0 | | | | | | |

**(140434)∗ 2001 TB$_{103}$ = 2000 PK$_{13}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75162)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.41577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17690076 | $\omega$ | 33.09110 | | +0.84297442 | +0.50155788 | |
| $a$ | 3.1427965 | $\Omega$ | 295.62063 | | −0.52843763 | +0.70433203 | |
| $e$ | 0.1289373 | $i$ | 12.45773 | | −0.10073626 | +0.50235056 | |
| $P$ | 5.57 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.2− | 0.6+ | 2001 11 11 | 704 | (2.5+ | 1.0+) | 2006 08 18 | 644 | 0.1− | 0.1+ | | |
| 2000 08 01 | 704 | 0.3− | 0.1− | 2001 11 11 | 704 | (2.0+ | 1.2+) | 2006 08 18 | 644 | 0.1− | 0.0 | | |
| 2000 08 01 | 704 | 0.8+ | 0.1− | 2001 11 11 | 704 | (2.4+ | 0.1+) | 2006 08 18 | 644 | 0.2− | 0.0 | | |
| 2000 08 06 | 608 | 0.3− | 0.8+ | 2001 11 12 | 704 | 0.0 | 0.5+ | 2006 09 11 | 703 | 0.6− | 0.1+ | | |
| 2000 08 06 | 608 | 0.6− | 0.5+ | 2001 11 12 | 704 | 0.2+ | 0.5+ | 2006 09 11 | 703 | 0.7+ | 0.7+ | | |
| 2000 08 06 | 608 | 0.2− | 0.5+ | 2001 11 12 | 704 | 0.3+ | 0.1− | 2006 09 11 | 703 | 0.5− | 0.4− | | |
| 2001 08 23 | 704 | 0.4+ | 0.3− | 2001 11 12 | 704 | 0.5+ | 0.2+ | 2006 09 11 | 703 | 0.7− | 0.8+ | | |
| 2001 08 23 | 704 | 0.8− | 0.4− | 2001 11 12 | 704 | 1.6+ | 0.1− | 2006 09 15 | 704 | 0.2+ | 0.1− | | |
| 2001 08 23 | 704 | 1.4− | 1.3− | 2002 12 31 | 645 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.1+ | 1.0+ | | |
| 2001 08 23 | 704 | 0.2+ | 0.9− | 2002 12 31 | 645 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.2+ | 0.3− | | |
| 2001 10 15 | 704 | 0.0 | 0.3− | 2003 01 25 | 291 | 0.0 | 0.7+ | 2006 09 15 | 704 | 0.3− | 0.5+ | | |
| 2001 10 15 | 704 | 0.0 | 0.3− | 2003 01 25 | 291 | 0.0 | 0.7+ | 2006 09 15 | 704 | 0.5+ | 0.2− | | |
| 2001 10 15 | 704 | 0.0 | 0.3− | 2003 01 25 | 291 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.8− | 0.1+ | | |
| 2001 10 15 | 704 | 0.4+ | 0.2+ | 2006 05 02 | G96 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.6+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.3− | 2006 05 02 | G96 | 0.5− | 0.5+ | 2006 09 20 | 699 | 0.1− | 0.2+ | | |
| 2001 10 17 | 704 | 0.5− | 0.8− | 2006 06 21 | 703 | (1.6+ | 0.4−) | 2006 09 20 | 699 | 0.4− | 0.0 | | |
| 2001 10 17 | 704 | 0.1+ | 0.2+ | 2006 06 21 | 703 | 0.4− | 0.8− | 2006 10 11 | 644 | 0.3− | 0.2− | | |
| 2001 10 17 | 704 | 1.0− | 0.9− | 2006 06 21 | 703 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.1+ | | |
| 2001 11 11 | 704 | (1.9+ | 3.5+) | 2006 06 21 | 703 | 0.3+ | 1.2+ | 2006 10 11 | 644 | 0.2− | 0.5+ | | |

**(140435)∗ 2001 TX$_{103}$**

Discovered 2001 Oct. 15 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.84343 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18387651 | $\omega$ | 53.66872 | | +0.65826299 | +0.74795918 | |
| $a$ | 3.0627994 | $\Omega$ | 257.72701 | | −0.71557889 | +0.58659883 | |
| $e$ | 0.0676136 | $i$ | 4.99793 | | −0.23374493 | +0.31057829 | |
| $P$ | 5.36 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 13 | 327 | 1.1+ | 0.6− | 2001 10 26 | 644 | 0.5+ | 1.4+ | 2006 09 18 | 704 | 0.0 | 0.1+ | | |
| 1996 11 13 | 327 | 1.1+ | 0.1+ | 2001 10 26 | 644 | (0.3+ | 1.7+) | 2006 09 20 | 699 | (2.5+ | 1.1−) | | |
| 1996 11 13 | 327 | (2.1+ | 0.6−) | 2001 11 15 | 608 | 1.2+ | 0.7− | 2006 09 20 | 699 | 0.9− | 0.9+ | | |
| 1996 12 31 | 691 | 1.1− | 0.3+ | 2001 11 15 | 608 | 0.3+ | 1.2− | 2006 09 20 | 699 | 1.0+ | 0.5− | | |
| 1996 12 31 | 691 | 0.5+ | 0.5− | 2001 11 15 | 608 | 0.6+ | 0.8− | 2006 09 20 | 699 | 0.3+ | 0.4− | | |
| 1996 12 31 | 691 | 0.2+ | 0.6− | 2001 11 19 | 704 | 0.4+ | 0.9− | 2006 09 25 | 704 | 0.3+ | 0.0 | | |
| 1997 02 04 | 691 | 0.5− | 0.2+ | 2001 11 19 | 704 | (1.6+ | 0.1−) | 2006 09 25 | 704 | 0.6− | 0.7+ | | |
| 1997 02 04 | 691 | 0.0 | 0.1+ | 2001 11 19 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | 1.0− | 0.4+ | | |
| 1997 02 04 | 691 | 0.3− | 0.2+ | 2001 11 19 | 704 | 0.9+ | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.3+ | | |
| 1998 01 07 | 691 | 0.3− | 0.1+ | 2004 03 16 | 703 | 1.0+ | 0.0 | 2006 09 25 | 704 | (2.2+ | 1.6+) | | |
| 1998 01 07 | 691 | 0.4− | 0.1+ | 2004 03 16 | 703 | 0.7+ | 0.7+ | 2006 09 25 | 704 | 0.3− | 0.0 | | |
| 1998 01 07 | 691 | 0.3− | 0.1+ | 2004 03 16 | 703 | 0.2+ | 1.2+ | 2006 09 25 | 704 | 0.3− | 0.0 | | |
| 2001 08 28 | 699 | 0.5+ | 0.2− | 2004 03 16 | 703 | 0.8+ | 0.6+ | 2006 09 25 | 704 | 0.3− | 0.1+ | | |
| 2001 08 28 | 699 | 1.0+ | 0.5+ | 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.6+ | 0.0 | | |
| 2001 08 28 | 699 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.1+ | 1.4− | 2006 09 29 | 704 | 0.6− | 0.1+ | | |
| 2001 08 28 | 699 | (2.6+ | 0.0 ) | 2004 03 19 | 704 | 1.1+ | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.6− | | |
| 2001 09 20 | 704 | 1.3+ | 0.8+ | 2004 03 19 | 704 | 0.4− | 0.8− | 2006 09 29 | 704 | 0.6− | 0.7− | | |
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2004 03 26 | 699 | 0.4+ | 0.5− | 2006 09 29 | 704 | 0.2− | 0.1+ | | |
| 2001 09 20 | 704 | 0.8+ | 0.3− | 2004 03 26 | 699 | 0.2− | 0.4+ | 2006 10 01 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.5+ | 1.2− | 2004 03 26 | 699 | 0.4− | 0.5+ | 2006 10 01 | 704 | 0.3− | 0.4− | | |
| 2001 10 13 | 699 | 0.1+ | 0.7+ | 2004 03 26 | 699 | 0.9+ | 0.4− | 2006 10 01 | 704 | 1.1+ | 0.2+ | | |
| 2001 10 13 | 699 | 1.2− | 0.7+ | 2006 08 18 | 699 | 0.6− | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.4− | | |
| 2001 10 13 | 699 | 0.3− | 0.9+ | 2006 08 18 | 699 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.3+ | 0.1− | | |
| 2001 10 13 | 699 | 1.0− | 1.2+ | 2006 08 18 | 699 | 0.8− | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 2001 10 14 | 704 | 0.2+ | 0.9+ | 2006 08 18 | 699 | 0.6− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2001 10 14 | 704 | 0.3− | 0.3+ | 2006 09 01 | 704 | 1.1+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.4− | | |
| 2001 10 14 | 704 | 0.6+ | 0.4+ | 2006 09 01 | 704 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.5− | | |
| 2001 10 14 | 704 | 0.0 | 0.6− | 2006 09 01 | 704 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2001 10 15 | 333 | 0.7+ | 0.1− | 2006 09 01 | 704 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.2+ | | |
| 2001 10 15 | 333 | 0.3+ | 0.4− | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 10 24 | 644 | 0.4+ | 0.1− | | |
| 2001 10 15 | 333 | 0.6+ | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.2− | | |
| 2001 10 21 | 704 | 0.2− | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 21 | 704 | (1.7− | 0.9+) | 2006 09 17 | 703 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2001 10 21 | 704 | 1.4− | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.1− | 0.1− | | |
| 2001 10 21 | 704 | 0.5− | 0.8+ | 2006 09 17 | 703 | (2.7+ | 5.1+) | 2006 10 28 | 691 | 0.4− | 0.1− | | |
| 2001 10 23 | 333 | 0.4− | 0.3+ | 2006 09 18 | 704 | 0.5− | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.3− | | |
| 2001 10 23 | 333 | 0.2− | 0.2− | 2006 09 18 | 704 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.2− | | |
| 2001 10 23 | 333 | 0.6+ | 1.4+ | 2006 09 18 | 704 | 0.2− | 0.3− | | | | | | |
| 2001 10 26 | 644 | 0.7+ | 1.3+ | 2006 09 18 | 704 | 0.7− | 0.1− | | | | | | |

**(140436)∗ 2001 TW$_{104}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.72913 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19271151 | $\omega$ | 274.77629 | | +0.60790955 | +0.78700559 | |
| $a$ | 2.9684582 | $\Omega$ | 33.39556 | | −0.63144845 | +0.55951769 | |
| $e$ | 0.0926546 | $i$ | 11.01920 | | −0.48137183 | +0.25992722 | |
| $P$ | 5.11 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 12 | 691 | 0.8− | 0.1+ | 2004 03 14 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1+ | |
| 1994 04 12 | 691 | 0.9+ | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.4− | 0.3+ | |
| 1994 04 12 | 691 | 0.1+ | 0.7+ | 2004 03 16 | 704 | 0.5− | 1.3− | 2006 10 11 | 644 | 0.3− | 0.1− | |
| 2001 09 19 | 704 | 0.6+ | 0.6− | 2004 03 16 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.2+ | |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2004 03 16 | 704 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1− | |
| 2001 09 19 | 704 | 0.0 | 0.8− | 2004 03 20 | 704 | 0.2+ | 1.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− | |
| 2001 10 13 | 704 | 0.4− | 0.8+ | 2004 03 20 | 704 | 0.8+ | 1.4+ | 2006 10 12 | 644 | 0.1− | 0.2+ | |
| 2001 10 13 | 704 | 0.8− | 1.1+ | 2004 03 20 | 704 | (0.8+ | 1.6+) | 2006 10 15 | 691 | 0.2− | 0.1+ | |
| 2001 10 13 | 704 | 0.3− | 0.5+ | 2004 03 20 | 704 | 0.6+ | 1.2+ | 2006 10 15 | 691 | 0.7− | 0.3− | |
| 2001 10 13 | 291 | 0.5+ | 0.3− | 2004 03 22 | 704 | 1.3+ | 1.1+ | 2006 10 15 | 691 | 0.2− | 0.0 | |
| 2001 10 13 | 291 | (1.4+ | 1.7−) | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 10 19 | 691 | 0.5− | 0.1+ | |
| 2001 10 13 | 291 | (1.8+ | 0.4−) | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 10 19 | 691 | 0.5− | 0.2+ | |
| 2001 10 18 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | (0.4+ | 1.7+) | 2006 10 19 | 691 | 0.5− | 0.1+ | |
| 2001 10 18 | 704 | 0.1+ | 0.8− | 2004 03 29 | 683 | (1.6+ | 0.9−) | 2006 10 21 | 703 | 0.5+ | 0.4+ | |
| 2001 10 18 | 704 | 0.7+ | 0.2− | 2004 03 29 | 683 | (1.8+ | 0.1+) | 2006 10 21 | 703 | 0.3− | 0.5+ | |
| 2001 10 18 | 704 | 0.2− | 0.2− | 2004 03 29 | 683 | 0.7+ | 1.4− | 2006 10 21 | 703 | (2.0+ | 0.4−) | |
| 2001 10 18 | 704 | 0.4+ | 0.1− | 2004 04 10 | 644 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.2+ | 1.3+ | |
| 2001 10 19 | 644 | 0.0 | 0.1+ | 2004 04 10 | 644 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1+ | |
| 2001 10 19 | 644 | 0.1− | 0.1+ | 2004 04 10 | 644 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.0 | |
| 2001 10 19 | 644 | 0.0 | 0.2+ | 2004 04 12 | 683 | 1.0+ | 0.1− | 2006 10 23 | 691 | 0.9+ | 1.4+ | |
| 2001 10 21 | 704 | 0.2− | 0.9+ | 2004 04 12 | 683 | 0.8− | 1.0− | 2006 10 28 | 691 | 0.8− | 0.2− | |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2004 04 12 | 683 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.7− | 0.1− | |
| 2001 10 21 | 704 | 1.4+ | 0.5+ | 2004 04 15 | 644 | 0.2+ | 0.5+ | 2006 10 28 | 691 | (1.9− | 0.1−) | |
| 2001 10 21 | 704 | 0.4+ | 0.1+ | 2004 04 15 | 644 | 0.1+ | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.0 | |
| 2001 10 21 | 704 | 0.3− | 0.6+ | 2004 04 15 | 644 | 0.3+ | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.1− | |
| 2001 11 10 | 704 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.0 | |
| 2001 11 10 | 704 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.7− | 1.1+ | |
| 2001 11 10 | 704 | 0.3− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.1+ | 0.3+ | |
| 2001 11 10 | 704 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.7− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.2− | |
| 2001 11 10 | 704 | 0.1− | 1.1+ | 2006 09 20 | 699 | 0.8− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.1− | |
| 2001 11 17 | 704 | 1.3+ | 0.4− | 2006 09 20 | 699 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.4− | |
| 2001 11 17 | 704 | (1.6+ | 1.3+) | 2006 09 20 | 699 | 0.2+ | 1.4− | 2006 11 13 | G96 | 0.3+ | 0.7− | |
| 2001 11 17 | 704 | (4.4+ | 1.4−) | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.3− | |
| 2001 11 17 | 704 | (2.5+ | 1.1−) | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.6− | |
| 2001 11 19 | 704 | 0.3− | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.5+ | 0.4− | |
| 2001 11 19 | 704 | 0.1+ | 0.4− | 2006 09 27 | 704 | (0.3+ | 1.7+) | 2006 11 15 | 691 | 0.1− | 0.1− | |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 1.0+ | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.2− | |
| 2001 11 19 | 704 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.4− | 1.1+ | 2006 11 17 | 703 | 0.1− | 0.6+ | |
| 2001 11 19 | 704 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.2− | |
| 2001 11 24 | 704 | 0.5+ | 0.5− | 2006 09 28 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.0 | |
| 2001 11 24 | 704 | 0.2+ | 1.5− | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.4+ | |
| 2001 11 24 | 704 | 0.7+ | 1.0− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.4+ | 0.1− | |
| 2003 01 10 | 704 | (1.9− | 0.9−) | 2006 10 02 | 691 | 0.8+ | 0.5− | 2006 11 20 | 691 | 0.3+ | 0.1− | |
| 2003 01 10 | 704 | 0.6− | 1.1− | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2− | |
| 2003 01 10 | 704 | 0.3− | 0.8− | 2006 10 03 | 704 | (0.9− | 1.8+) | 2006 11 21 | 704 | 0.5− | 0.2+ | |
| 2003 01 10 | 704 | 0.1− | 0.2− | 2006 10 03 | 704 | (1.0− | 2.0+) | 2006 11 21 | 704 | 0.2+ | 0.1+ | |
| 2003 01 10 | 704 | 0.5− | 0.2− | 2006 10 03 | 704 | (0.1− | 1.6+) | 2006 11 21 | 704 | 0.2+ | 0.4+ | |
| 2004 03 14 | 691 | 0.6+ | 0.9+ | 2006 10 11 | 691 | 1.3+ | 0.1+ | | | | | |

**(140437)**∗ **2001 TC**$_{106}$

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.69324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21724617 | $\omega$ | 353.30797 | | +0.62801769 | −0.76162431 | |
| $a$ | 2.7405304 | $\Omega$ | 57.65712 | | +0.72246257 | +0.49432580 | |
| $e$ | 0.2049524 | $i$ | 10.89980 | | +0.28920861 | +0.41901124 | |
| $P$ | 4.54 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.1+ | 0.3+ | 2001 12 10 | 704 | 0.8+ | 0.4+ | 2003 04 08 | 608 | 0.2+ | 1.0− | |
| 2001 08 23 | 699 | 0.3− | 0.2+ | 2001 12 10 | 704 | 1.1+ | 0.0 | 2003 04 09 | 704 | 0.7+ | 0.8+ | |
| 2001 08 23 | 699 | 0.3− | 1.0+ | 2001 12 17 | 704 | 0.4+ | 0.7− | 2003 04 09 | 704 | 0.3− | 0.5+ | |
| 2001 08 23 | 699 | 0.3− | 0.5+ | 2001 12 17 | 704 | 0.4+ | 0.5− | 2003 04 09 | 704 | 0.0 | 0.1+ | |
| 2001 09 26 | 704 | 0.4− | 0.2− | 2001 12 17 | 704 | 0.3+ | 0.5− | 2003 04 09 | 704 | 0.5+ | 0.1+ | |
| 2001 09 26 | 704 | 0.2− | 0.2− | 2001 12 17 | 704 | 0.6+ | 0.3− | 2003 04 09 | 704 | 0.2+ | 0.5+ | |
| 2001 09 26 | 704 | 0.2− | 0.3+ | 2001 12 17 | 704 | 0.4+ | 0.6− | 2005 08 24 | 644 | 0.3− | 0.3+ | |
| 2001 09 26 | 704 | 0.3− | 0.0 | 2001 12 21 | 704 | 0.5− | 0.4− | 2005 08 24 | 644 | 0.3− | 0.3+ | |
| 2001 10 13 | 704 | 0.6− | 0.1+ | 2001 12 21 | 704 | (0.3+ | 1.5+) | 2005 08 24 | 644 | 0.3− | 0.4+ | |
| 2001 10 13 | 704 | 0.7− | 0.7− | 2001 12 21 | 704 | 0.7− | 0.8+ | 2005 09 01 | 644 | 0.2− | 0.4+ | |
| 2001 10 13 | 704 | 0.9− | 0.3+ | 2001 12 21 | 704 | 0.6− | 0.6+ | 2005 09 01 | 644 | 0.1+ | 1.0+ | |
| 2001 10 13 | 704 | 0.3− | 0.7+ | 2001 12 21 | 704 | 0.7− | 0.0 | 2005 09 01 | 644 | 0.1− | 0.3+ | |
| 2001 10 13 | 704 | 0.2+ | 0.0 | 2002 01 08 | 704 | 0.6+ | 0.0 | 2005 09 14 | E12 | 0.1+ | 0.8+ | |
| 2001 10 18 | 704 | 0.5− | 0.1− | 2002 01 08 | 704 | 0.2+ | 0.4+ | 2005 09 14 | E12 | 0.5+ | 0.6− | |
| 2001 10 18 | 704 | 0.2− | 0.0 | 2002 01 08 | 704 | 0.1+ | 0.2− | 2005 09 14 | E12 | 0.6− | 0.3+ | |
| 2001 10 18 | 704 | 0.6− | 0.4− | 2002 01 08 | 704 | 0.0 | 0.1+ | 2005 09 14 | E12 | 0.3+ | 0.6+ | |
| 2001 10 18 | 704 | 1.0+ | 0.4− | 2002 01 08 | 704 | 0.6− | 0.1− | 2005 09 26 | 704 | 0.7− | 0.0 | |
| 2001 10 18 | 704 | 0.2− | 0.3+ | 2002 02 08 | 704 | (2.0− | 1.8+) | 2005 09 26 | 704 | 0.6− | 0.2− | |
| 2001 10 26 | 704 | 0.3+ | 0.5− | 2002 02 08 | 704 | 0.2− | 1.1+ | 2005 09 26 | 704 | 0.5− | 0.2− | |
| 2001 10 26 | 704 | 0.4− | 0.1− | 2002 02 08 | 704 | (0.1+ | 1.5+) | 2005 09 26 | 704 | 1.1− | 0.0 | |
| 2001 10 26 | 704 | 0.3− | 0.0 | 2002 02 08 | 704 | (0.1− | 2.2+) | 2005 09 26 | 704 | 0.7− | 0.2− | |
| 2001 10 26 | 704 | 0.4− | 0.1− | 2002 02 08 | 704 | (0.3+ | 1.6+) | 2005 09 29 | 428 | 0.0 | 0.2+ | |
| 2001 10 27 | 704 | 1.2+ | 0.7+ | 2002 02 12 | 704 | 0.4+ | 1.4+ | 2005 10 01 | 428 | 0.3+ | 0.3− | |
| 2001 10 27 | 704 | 0.7+ | 0.8+ | 2002 02 12 | 704 | 1.2+ | 0.1+ | 2005 10 02 | E12 | 0.3− | 0.3+ | |
| 2001 10 27 | 704 | 1.2+ | 0.7+ | 2002 02 12 | 704 | 0.5+ | 0.5+ | 2005 10 02 | E12 | 0.1+ | 0.1+ | |
| 2001 10 27 | 704 | 0.5+ | 0.1− | 2002 02 12 | 704 | 0.2+ | 0.5+ | 2005 10 02 | E12 | 0.5+ | 0.1+ | |
| 2001 10 27 | 704 | 0.5+ | 0.0 | 2002 02 12 | 704 | 0.8+ | 0.3+ | 2005 10 02 | E12 | 0.0 | 0.2+ | |
| 2001 11 09 | 704 | 0.1− | 0.1+ | 2003 03 09 | 704 | 0.7+ | 1.1+ | 2005 10 03 | 644 | 0.1+ | 0.6+ | |
| 2001 11 09 | 704 | 0.1+ | 0.4+ | 2003 03 09 | 704 | 0.6+ | 0.4+ | 2005 10 03 | 644 | 0.3+ | 0.7+ | |
| 2001 11 09 | 704 | 0.3− | 0.0 | 2003 03 09 | 704 | (1.6+ | 0.3+) | 2005 10 03 | 644 | 0.4+ | 0.6+ | |
| 2001 11 09 | 704 | 0.0 | 0.3+ | 2003 03 15 | 608 | 0.5− | 1.1+ | 2005 10 24 | 644 | 0.2− | 0.3+ | |
| 2001 11 09 | 704 | 0.2+ | 0.0 | 2003 03 15 | 608 | (0.6− | 1.9+) | 2005 10 24 | 644 | 0.1− | 0.3+ | |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2003 03 15 | 608 | 0.4+ | 1.0+ | 2005 10 24 | 644 | 0.1− | 0.3+ | |
| 2001 11 12 | 704 | 0.4+ | 0.3+ | 2003 03 27 | 704 | 0.7+ | 0.2− | 2005 11 15 | 644 | 0.1− | 0.3+ | |
| 2001 11 12 | 704 | 0.4− | 0.3+ | 2003 03 27 | 704 | 0.6+ | 0.1− | 2005 11 15 | 644 | 0.1− | 0.7+ | |
| 2001 11 12 | 704 | 0.0 | 0.8+ | 2003 03 27 | 704 | 0.1− | 0.1+ | 2005 11 15 | 644 | 0.2− | 0.2+ | |
| 2001 11 12 | 704 | 0.1− | 0.1+ | 2003 03 27 | 704 | 1.1+ | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.7− | |
| 2001 11 19 | 704 | 0.7− | 0.4− | 2003 03 27 | 704 | 0.4+ | 1.1+ | 2006 10 21 | 703 | 0.2+ | 0.7+ | |
| 2001 11 19 | 704 | 0.8− | 0.6− | 2003 03 31 | 699 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.4− | |
| 2001 11 19 | 704 | 0.8− | 0.5− | 2003 03 31 | 699 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1+ | |
| 2001 11 19 | 704 | 0.9− | 0.6− | 2003 03 31 | 699 | 0.4+ | 0.0 | 2006 11 23 | 703 | 0.5+ | 0.0 | |
| 2001 11 19 | 704 | 0.9− | 0.8− | 2003 03 31 | 699 | 0.2− | 0.7− | 2006 11 23 | 703 | 0.4− | 0.1+ | |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2003 03 31 | 704 | (0.6+ | 1.5+) | 2006 11 23 | 703 | 0.0 | 0.1− | |
| 2001 11 24 | 704 | 0.6− | 0.8− | 2003 03 31 | 704 | (1.8+ | 1.6+) | 2006 11 23 | 703 | 0.3− | 0.0 | |
| 2001 11 24 | 704 | 0.4− | 0.6− | 2003 03 31 | 704 | (1.5+ | 1.3+) | 2006 12 01 | 704 | 0.7+ | 0.7+ | |
| 2001 11 24 | 704 | 0.2+ | 1.0− | 2003 03 31 | 704 | (1.7+ | 1.8+) | 2006 12 01 | 704 | 0.9+ | 0.7+ | |
| 2001 11 24 | 704 | 0.2− | 0.4− | 2003 04 01 | 645 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.7+ | |
| 2001 12 10 | 704 | 0.2+ | 0.5+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.5+ | 0.3+ | |
| 2001 12 10 | 704 | 0.7+ | 0.4+ | 2003 04 08 | 608 | 0.5+ | 0.0 | | | | | |
| 2001 12 10 | 704 | 1.0+ | 0.4+ | 2003 04 08 | 608 | 0.4+ | 0.0 | | | | | |

**(140438)**∗ **2001 TJ**$_{108}$

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.92782 | | (2000.0) | | | |
| $n$ | 0.20038305 | $\omega$ | 159.52891 | | −0.68587069 | −0.72520572 |
| $a$ | 2.8922027 | $\Omega$ | 333.66127 | | +0.64727449 | −0.56995362 |
| $e$ | 0.1479362 | $i$ | 7.83494 | | +0.33259153 | −0.38630240 |
| $P$ | 4.92 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.5+ | 0.4− | 2003 01 05 | 704 | 0.1− | 0.1+ | 2003 03 08 | 704 | (0.1− | 2.6−) |
| 1996 11 07 | 691 | 0.7+ | 0.8− | 2003 01 10 | 704 | 0.4− | 0.4− | 2005 10 30 | G96 | 0.3− | 0.5+ |
| 1996 11 07 | 691 | 0.6+ | 0.4− | 2003 01 10 | 704 | 0.4+ | 0.2− | 2005 10 30 | G96 | 0.1− | 0.5+ |
| 2001 09 20 | 699 | 0.5− | 1.0+ | 2003 01 10 | 704 | 0.3− | 0.7+ | 2005 10 30 | G96 | 0.1+ | 0.5+ |
| 2001 09 20 | 699 | 0.3− | 0.6− | 2003 01 10 | 704 | 0.8− | 0.4+ | 2005 10 30 | G96 | 0.7− | 0.4+ |
| 2001 09 20 | 699 | 0.6− | 0.5+ | 2003 01 10 | 704 | 0.3− | 1.0+ | 2006 09 20 | 699 | (1.8+ | 0.2+) |
| 2001 09 20 | 699 | 1.1− | 0.9− | 2003 01 11 | 704 | 0.6− | 0.9+ | 2006 09 20 | 699 | 0.4− | 1.0+ |
| 2001 09 28 | 644 | 0.0 | 1.1+ | 2003 01 11 | 704 | (0.9− | 1.9+) | 2006 09 20 | 699 | 0.2− | 1.1+ |
| 2001 09 28 | 644 | 0.3− | 1.2+ | 2003 01 11 | 704 | 1.2+ | 0.0 | 2006 09 20 | 699 | 0.6− | 0.6− |
| 2001 09 28 | 644 | 0.1− | 1.1+ | 2003 01 11 | 704 | (0.2− | 2.3+) | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 2001 10 14 | 704 | 0.0 | 0.6+ | 2003 01 27 | 699 | 0.7+ | 0.7− | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 2001 10 14 | 704 | 0.4− | 0.5+ | 2003 01 27 | 699 | 0.0 | 0.4− | 2006 09 30 | 703 | (1.6− | 0.8+) |
| 2001 10 14 | 704 | 0.5+ | 1.1+ | 2003 01 27 | 699 | 1.3+ | 0.5− | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 2001 10 14 | 704 | 0.1− | 0.6+ | 2003 01 27 | 699 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 10 14 | 704 | 0.3− | 0.1+ | 2003 01 27 | 608 | 1.5+ | 0.7+ | 2006 10 10 | 644 | 0.3− | 0.1− |
| 2001 10 18 | 704 | 0.3− | 0.8− | 2003 01 27 | 608 | (1.7+ | 0.8+) | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2001 10 18 | 704 | 0.4− | 0.5− | 2003 01 27 | 608 | 1.1+ | 1.3+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2001 10 18 | 704 | 0.2+ | 1.2− | 2003 01 30 | 699 | 0.2+ | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 10 18 | 704 | 0.4− | 1.2− | 2003 01 30 | 699 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2001 10 20 | 644 | 0.9− | 0.0 | 2003 01 30 | 699 | 0.1− | 0.6− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2001 10 20 | 644 | 0.8− | 0.1+ | 2003 01 30 | 699 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 10 20 | 644 | 0.6− | 0.1− | 2003 01 31 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.7− | 1.0+ | 2003 01 31 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.8+ |
| 2001 10 21 | 704 | 0.7+ | 0.2+ | 2003 01 31 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.7− | 0.6− |
| 2001 10 21 | 704 | 0.2− | 0.6+ | 2003 02 01 | 704 | 0.9− | 1.4+ | 2006 10 17 | 703 | 0.5− | 0.2− |
| 2001 11 11 | 704 | 0.6− | 0.3− | 2003 02 01 | 704 | 0.7− | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2001 11 11 | 704 | 0.8− | 0.5+ | 2003 02 01 | 704 | 1.3− | 1.4+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2001 11 11 | 704 | 0.2+ | 0.2− | 2003 02 01 | 704 | (0.8− | 1.6+) | 2006 10 19 | 644 | 0.7+ | 0.1+ |
| 2001 11 11 | 704 | 0.2− | 0.3+ | 2003 02 01 | 704 | 1.0− | 1.1+ | 2006 10 19 | 644 | 0.3+ | 0.5− |
| 2002 12 31 | 704 | 0.2+ | 0.8+ | 2003 02 04 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.7− | 0.0 | 2003 02 04 | 704 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 2002 12 31 | 704 | 1.0− | 0.6− | 2003 02 04 | 704 | 0.6+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 12 31 | 704 | 0.3+ | 0.7− | 2003 02 04 | 704 | 0.3+ | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 01 05 | 699 | 0.3+ | 0.5− | 2003 02 04 | 704 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2003 01 05 | 699 | 0.9+ | 0.0 | 2003 02 07 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 01 05 | 699 | 0.7+ | 0.2+ | 2003 02 07 | 704 | 0.2− | 0.4− | 2006 10 31 | 703 | 0.2+ | 0.8+ |
| 2003 01 05 | 699 | 0.7+ | 0.1− | 2003 02 07 | 704 | 0.6− | 0.1+ | 2006 10 31 | 703 | 0.2− | 1.1− |
| 2003 01 05 | 704 | 0.1+ | 0.5− | 2003 02 07 | 704 | 0.9− | 0.5+ | 2006 10 31 | 703 | 1.9+ | 1.0− |
| 2003 01 05 | 704 | 0.2+ | 0.6− | 2003 03 08 | 704 | (0.0 | 1.7−) | 2006 10 31 | 703 | 0.5− | 0.5− |
| 2003 01 05 | 704 | (1.7+ | 0.5−) | 2003 03 08 | 704 | 0.4+ | 0.4− | | | | |
| 2003 01 05 | 704 | 0.0 | 0.3− | 2003 03 08 | 704 | 0.2− | 0.5− | | | | |

**(140439)∗ 2001 TY$_{109}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.56717 | | (2000.0) | | | |
| $n$ | 0.23246895 | $\omega$ | 173.67322 | | −0.29535993 | −0.95427456 |
| $a$ | 2.6195463 | $\Omega$ | 293.49825 | | +0.87433271 | −0.25054963 |
| $e$ | 0.1371535 | $i$ | 2.87961 | | +0.38510366 | −0.16304890 |
| $P$ | 4.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.6+ | 0.3+ | 2001 11 19 | 704 | 0.1+ | 0.6− | 2005 10 01 | 703 | 0.4+ | 0.6− |
| 2001 09 20 | 704 | 0.6− | 1.0+ | 2001 11 19 | 704 | 0.3+ | 0.0 | 2005 10 01 | 703 | (2.5+ | 3.1−) |
| 2001 09 20 | 704 | 0.4− | 1.0+ | 2001 11 19 | 704 | 0.4+ | 0.4+ | 2005 10 04 | 644 | 0.3− | 0.4+ |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2001 11 19 | 704 | 0.1+ | 0.0 | 2005 10 04 | 644 | 0.4− | 0.2+ |
| 2001 09 24 | 704 | 0.2+ | 0.7− | 2001 11 24 | 704 | 0.4+ | 0.5+ | 2005 10 04 | 644 | 0.2− | 0.4+ |
| 2001 09 24 | 704 | 0.7− | 0.9+ | 2001 11 24 | 704 | 0.7− | 1.2− | 2005 10 05 | G96 | 0.1+ | 0.4+ |
| 2001 09 24 | 704 | 0.0 | 0.9+ | 2001 11 24 | 704 | 1.0− | 0.8− | 2005 10 05 | G96 | 0.2+ | 0.3+ |
| 2001 09 24 | 704 | 0.2+ | 0.5+ | 2001 11 24 | 704 | 0.1− | 0.1− | 2005 10 05 | G96 | 0.1+ | 0.3+ |
| 2001 09 24 | 704 | 0.5− | 0.2+ | 2001 11 24 | 704 | 1.0+ | 0.1− | 2005 10 05 | G96 | 0.1+ | 0.3+ |
| 2001 10 14 | 704 | 0.2+ | 0.6− | 2003 03 06 | 704 | (0.0 | 2.1−) | 2005 10 06 | 699 | 0.9− | 0.4− |
| 2001 10 14 | 704 | 0.2+ | 0.1+ | 2003 03 06 | 704 | 0.0 | 1.1− | 2005 10 06 | 699 | 0.2− | 0.2+ |
| 2001 10 14 | 704 | 0.4+ | 0.5− | 2003 03 06 | 704 | 0.1+ | 1.0− | 2005 10 06 | 703 | 0.3− | 0.3− |
| 2001 10 14 | 704 | 0.5+ | 0.0 | 2003 03 06 | 704 | (0.2+ | 1.7−) | 2005 10 06 | 703 | 0.8− | 0.5− |
| 2001 10 14 | 704 | 0.4+ | 0.2− | 2003 03 07 | 704 | 0.2− | 0.3+ | 2005 10 06 | 703 | 0.1− | 0.2+ |
| 2001 10 18 | 704 | 0.0 | 0.5− | 2003 03 07 | 704 | 0.0 | 0.4− | 2005 10 06 | 703 | 1.1+ | 1.0+ |
| 2001 10 18 | 704 | 0.2− | 0.3− | 2003 03 07 | 704 | 0.5− | 0.8+ | 2005 10 06 | 699 | 0.8+ | 0.6+ |
| 2001 10 18 | 704 | 0.1+ | 0.4− | 2003 03 07 | 704 | 0.2+ | 0.5− | 2005 10 06 | 699 | 0.5− | 0.1− |
| 2001 10 18 | 704 | 0.2− | 0.1− | 2003 03 07 | 704 | 0.4− | 0.5+ | 2005 10 07 | G96 | 0.1+ | 0.3+ |
| 2001 10 19 | 644 | 0.0 | 0.9− | 2003 03 10 | 699 | 0.5+ | 0.2+ | 2005 10 07 | G96 | 0.0 | 0.4+ |
| 2001 10 19 | 644 | 0.3− | 0.7− | 2003 03 10 | 699 | 0.2+ | 0.8+ | 2005 10 07 | G96 | 0.0 | 0.3+ |
| 2001 10 19 | 644 | 0.2− | 0.7− | 2003 03 10 | 699 | 1.5+ | 0.2− | 2005 10 07 | G96 | 0.0 | 0.5+ |
| 2001 10 21 | 704 | (0.4− | 1.8+) | 2003 03 10 | 704 | 0.5− | 0.1− | 2005 10 27 | 703 | 0.4+ | 0.5− |
| 2001 10 21 | 704 | 0.4− | 0.4− | 2003 03 10 | 699 | 0.7+ | 0.2+ | 2005 10 27 | 703 | 0.3+ | 1.2+ |
| 2001 10 21 | 704 | 0.1+ | 0.2− | 2003 03 10 | 704 | 0.9+ | 1.0+ | 2005 10 27 | 703 | 0.7+ | 1.4+ |
| 2001 10 21 | 704 | 0.3− | 1.5+ | 2003 03 10 | 704 | 0.7+ | 1.2+ | 2005 10 27 | 703 | 0.2+ | 0.4+ |
| 2001 10 21 | 704 | 0.9− | 1.0+ | 2003 03 10 | 704 | (0.1+ | 2.0+) | 2005 11 01 | G96 | 0.3− | 0.1+ |
| 2001 10 23 | 704 | 1.0+ | 0.8+ | 2003 03 26 | 644 | 0.2− | 0.9+ | 2005 11 01 | G96 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 0.3+ | 2003 03 26 | 644 | 0.2− | 0.7+ | 2005 11 01 | G96 | 0.4− | 0.0 |
| 2001 10 23 | 704 | 0.5+ | 0.0 | 2003 03 26 | 608 | 1.1+ | 1.2+ | 2005 11 01 | G96 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 0.2+ | 0.3+ | 2003 03 26 | 608 | 0.8+ | 1.5+ | 2005 11 01 | G96 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2003 03 26 | 608 | (0.9+ | 1.8+) | 2005 11 01 | G96 | 0.4− | 0.0 |
| 2001 10 23 | 704 | 0.3− | 0.7+ | 2003 03 26 | 644 | 0.7− | 1.1+ | 2005 11 01 | G96 | 0.4+ | 0.8− |
| 2001 10 23 | 704 | 0.1+ | 0.6− | 2003 03 30 | 699 | 0.1+ | 0.0 | 2005 11 01 | G96 | 1.4+ | 0.3− |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2003 03 30 | 699 | 0.3− | 0.7+ | 2005 11 02 | G96 | 0.3− | 0.0 |
| 2001 10 23 | 704 | 0.4+ | 0.1− | 2003 03 30 | 699 | 0.2+ | 0.4+ | 2005 11 02 | G96 | 0.1− | 0.4− |
| 2001 10 23 | 704 | 0.0 | 0.5+ | 2003 03 30 | 699 | 0.4− | 0.1− | 2005 11 02 | G96 | 0.4+ | 0.0 |
| 2001 10 26 | 644 | 0.8+ | 0.6− | 2003 03 31 | 691 | 0.4+ | 0.6+ | 2005 11 02 | G96 | 0.6− | 0.0 |
| 2001 10 26 | 644 | 0.5+ | 0.6− | 2003 03 31 | 704 | 0.5− | 0.5+ | 2005 11 02 | G96 | 0.1− | 0.4− |
| 2001 10 26 | 644 | 0.6+ | 1.1− | 2003 03 31 | 704 | 0.4+ | 0.4+ | 2005 11 02 | G96 | 0.1+ | 0.0 |
| 2001 11 10 | 704 | 1.2− | 0.7+ | 2003 03 31 | 704 | 0.1− | 0.2− | 2005 11 02 | G96 | 0.1+ | 0.1− |
| 2001 11 10 | 704 | 0.5− | 0.4+ | 2003 03 31 | 691 | 0.3+ | 0.6+ | 2005 11 02 | G96 | 0.8− | 0.3− |
| 2001 11 10 | 704 | 0.6− | 0.6+ | 2003 03 31 | 704 | 0.2+ | 0.5+ | 2006 02 02 | G96 | 0.5− | 0.4− |
| 2001 11 10 | 644 | 0.1− | 0.1+ | 2003 03 31 | 691 | 0.3+ | 0.7+ | 2006 02 02 | G96 | 0.2− | 0.1+ |
| 2001 11 10 | 704 | 0.6− | 0.1+ | 2005 08 30 | 291 | 0.2− | 0.2+ | 2006 02 02 | G96 | 0.4+ | 0.4− |
| 2001 11 10 | 644 | 0.4− | 0.1− | 2005 08 30 | 291 | 0.3− | 0.3+ | 2006 02 02 | G96 | 0.3− | 0.4− |
| 2001 11 10 | 644 | 0.5− | 0.0 | 2005 08 30 | 291 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.7− |
| 2001 11 10 | 704 | 0.3− | 0.9+ | 2005 09 08 | A50 | (0.7− | 1.6+) | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2001 11 11 | 704 | 0.8− | 0.7+ | 2005 09 08 | A50 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 11 11 | 704 | 0.4+ | 0.4+ | 2005 09 23 | 703 | 0.9+ | 1.1+ | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2001 11 11 | 704 | 0.4− | 0.9+ | 2005 09 23 | 703 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.8− | 0.4− |
| 2001 11 11 | 704 | 0.5− | 0.0 | 2005 09 23 | 703 | 0.6− | 0.4+ | 2006 11 15 | G96 | 0.4− | 0.5− |
| 2001 11 11 | 704 | 0.0 | 1.1+ | 2005 09 23 | 703 | 0.8− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2001 11 17 | 704 | 0.3+ | 0.0 | 2005 09 29 | 644 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 11 17 | 704 | 0.2+ | 0.2+ | 2005 09 29 | 644 | 0.0 | 0.5+ | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2001 11 17 | 704 | 0.4− | 0.3+ | 2005 09 29 | 644 | 0.1− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 11 17 | 704 | 0.5+ | 0.6+ | 2005 10 01 | 703 | 0.6− | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 704 | 0.1+ | 0.4− | 2005 10 01 | 703 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.3− | 0.4− |

**(140440)∗ 2001 TK$_{112}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.49652 | | (2000.0) | | | |
| $n$ | 0.20616829 | $\omega$ | 174.51011 | | +0.65232044 | −0.73679312 |
| $a$ | 2.8378415 | $\Omega$ | 234.63106 | | +0.68683817 | +0.67383031 |
| $e$ | 0.1803680 | $i$ | 12.59424 | | +0.32051736 | +0.05557528 |
| $P$ | 4.78 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.5+ | 0.4+ | 2001 11 12 | 704 | 0.3− | 0.5+ | 2003 03 10 | 704 | (5.6+ | 0.9+) |
| 2001 08 23 | 704 | 0.9+ | 0.2+ | 2001 11 12 | 704 | 0.4− | 0.2+ | 2003 03 10 | 704 | 1.4+ | 1.2+ |
| 2001 08 23 | 704 | 0.4− | 0.2− | 2001 11 16 | 644 | 0.1− | 0.1+ | 2003 03 10 | 704 | 0.2+ | 1.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.5+ | 1.1+ | 2001 11 16 | 644 | 0.1− | 0.0 | 2003 03 10 | 704 | 1.1+ | 0.9+ | | |
| 2001 09 19 | 699 | 0.5− | 0.8+ | 2001 11 16 | 644 | 0.2− | 0.1− | 2004 05 12 | E12 | 0.8− | 1.2+ | | |
| 2001 09 19 | 699 | 0.0 | 1.2+ | 2001 11 19 | 704 | 0.2− | 0.6+ | 2004 05 12 | E12 | 0.2+ | 0.9+ | | |
| 2001 09 19 | 699 | 0.5− | 0.4+ | 2001 11 19 | 704 | 1.0− | 0.5+ | 2004 05 12 | E12 | 0.9− | 0.4− | | |
| 2001 09 19 | 699 | 0.8− | 0.3+ | 2001 11 19 | 704 | 0.2− | 0.8+ | 2004 05 12 | E12 | (0.7− | 2.1+) | | |
| 2001 09 21 | 644 | 0.7− | 1.3− | 2001 11 19 | 704 | 0.3− | 1.0+ | 2005 05 23 | 644 | 0.1− | 0.5+ | | |
| 2001 09 21 | 644 | (0.4− | 1.6−) | 2001 11 19 | 704 | 0.2+ | 1.1+ | 2005 05 23 | 644 | 0.3− | 0.3+ | | |
| 2001 09 21 | 644 | 0.5− | 1.1− | 2001 11 21 | 704 | 0.3− | 0.3+ | 2005 05 23 | 644 | 0.2+ | 0.8+ | | |
| 2001 10 14 | 704 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.2− | 0.1+ | 2005 06 27 | 644 | 0.3+ | 0.4+ | | |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2001 11 21 | 704 | 0.2− | 0.1− | 2005 06 27 | 644 | 0.1+ | 0.6+ | | |
| 2001 10 14 | 704 | 0.1− | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.1− | 2005 06 27 | 644 | 0.2+ | 0.6+ | | |
| 2001 10 14 | 704 | 0.1− | 0.3− | 2001 11 21 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.7− | 0.6− | | |
| 2001 10 14 | 704 | 0.3− | 0.4− | 2001 12 11 | 704 | 0.9+ | 0.4− | 2006 09 20 | 704 | (1.8+ | 0.5−) | | |
| 2001 10 18 | 704 | 0.3− | 0.0 | 2001 12 11 | 704 | 0.5+ | 0.6− | 2006 09 20 | 704 | 1.4+ | 0.6− | | |
| 2001 10 18 | 704 | 0.5− | 0.0 | 2001 12 11 | 704 | 0.8+ | 0.5− | 2006 09 20 | 704 | 1.1+ | 0.3+ | | |
| 2001 10 18 | 704 | 0.2− | 0.0 | 2001 12 11 | 704 | 0.6+ | 0.7− | 2006 11 14 | 704 | 1.2− | 0.5− | | |
| 2001 10 18 | 704 | 0.4− | 0.1+ | 2001 12 11 | 704 | 0.3+ | 0.6− | 2006 11 14 | 704 | 0.6+ | 0.5− | | |
| 2001 10 19 | 644 | 0.4+ | 0.6+ | 2001 12 14 | 704 | 0.4+ | 0.6− | 2006 11 14 | 704 | 0.0 | 0.2− | | |
| 2001 10 19 | 644 | 0.4+ | 0.6+ | 2001 12 14 | 704 | 0.6+ | 1.1− | 2006 11 14 | 704 | 0.7− | 0.1+ | | |
| 2001 10 19 | 644 | 0.4+ | 0.6+ | 2001 12 14 | 704 | (0.8+ | 1.9−) | 2006 11 17 | 704 | (0.5+ | 3.0+) | | |
| 2001 10 21 | 704 | 0.3− | 0.8+ | 2001 12 14 | 704 | (0.8+ | 1.8−) | 2006 11 17 | 704 | 0.7+ | 0.8+ | | |
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2001 12 14 | 704 | (1.2+ | 2.1−) | 2006 11 17 | 704 | 0.0 | 0.5+ | | |
| 2001 10 21 | 704 | 0.2− | 0.5+ | 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.5+ | 0.5− | | |
| 2001 10 21 | 704 | 0.1− | 0.5+ | 2001 12 17 | 704 | 0.8+ | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.3− | | |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2001 12 17 | 704 | 0.8+ | 0.5− | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2001 10 26 | 644 | 0.8+ | 0.9− | 2001 12 17 | 704 | 0.9+ | 0.5− | 2006 11 17 | G96 | 0.1− | 0.3− | | |
| 2001 10 26 | 644 | 1.2+ | 0.6− | 2001 12 17 | 704 | (0.9+ | 1.8−) | 2006 11 17 | G96 | 0.4− | 0.3− | | |
| 2001 10 26 | 644 | 1.2+ | 0.5− | 2001 12 19 | 704 | (1.3+ | 1.6+) | 2006 11 18 | 704 | 1.0+ | 0.4− | | |
| 2001 10 27 | 699 | 0.3+ | 0.3+ | 2001 12 19 | 704 | 1.2+ | 0.8+ | 2006 11 18 | 704 | 0.1− | 0.4+ | | |
| 2001 10 27 | 699 | 0.3− | 0.5+ | 2001 12 19 | 704 | (2.6+ | 1.0+) | 2006 11 18 | 704 | 0.9+ | 0.5− | | |
| 2001 10 27 | 699 | 0.7− | 0.5+ | 2001 12 19 | 704 | 1.1+ | 0.6+ | 2006 11 20 | 704 | 0.4+ | 0.6+ | | |
| 2001 10 27 | 699 | 0.3+ | 0.6+ | 2002 01 09 | 704 | 0.6− | 0.7+ | 2006 11 20 | 704 | 0.2+ | 0.6+ | | |
| 2001 11 10 | 704 | 0.3− | 0.7− | 2002 01 09 | 704 | 1.0− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.2+ | | |
| 2001 11 10 | 704 | 0.2− | 0.8− | 2002 01 09 | 704 | 0.8− | 0.3− | 2006 11 25 | 704 | 0.9+ | 0.4− | | |
| 2001 11 10 | 644 | 0.0 | 0.1− | 2002 01 09 | 704 | 1.2− | 0.8+ | 2006 11 25 | 704 | 0.1+ | 0.2− | | |
| 2001 11 10 | 704 | 0.5− | 0.8− | 2002 01 19 | 333 | (4.0+ | 0.6+) | 2006 11 25 | 704 | 0.2− | 0.4+ | | |
| 2001 11 10 | 644 | 0.1− | 0.2+ | 2002 01 19 | 333 | 1.1− | 0.9+ | 2006 11 25 | 704 | 1.0− | 1.0+ | | |
| 2001 11 10 | 704 | 0.5− | 0.2− | 2002 01 19 | 333 | 0.5+ | 1.3− | 2006 11 29 | 704 | 0.9− | 0.3− | | |
| 2001 11 10 | 644 | 0.4− | 0.3− | 2003 03 08 | 699 | 0.2− | 1.2+ | 2006 11 29 | 704 | 0.5− | 0.1− | | |
| 2001 11 12 | 704 | 0.9− | 0.0 | 2003 03 08 | 699 | 0.1+ | 0.8− | 2006 11 29 | 704 | 0.2− | 0.1+ | | |
| 2001 11 12 | 704 | 0.2− | 0.2+ | 2003 03 08 | 699 | 0.6+ | 0.3+ | 2006 11 29 | 704 | 0.4− | 0.0 | | |
| 2001 11 12 | 704 | 0.2+ | 0.2+ | 2003 03 08 | 699 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.2− | | |

**(140441)∗ 2001 TH$_{113}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.53686 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17281097 | $\omega$ | 38.96920 | | +0.46638428 | −0.87534986 | |
| $a$ | 3.1921884 | $\Omega$ | 24.06041 | | +0.71306937 | +0.28675839 | |
| $e$ | 0.1067019 | $i$ | 18.21925 | | +0.52346707 | +0.38927144 | |
| $P$ | 5.70 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 12 | 699 | 0.1− | 1.1+ | 2001 11 11 | 644 | 0.1+ | 0.4+ | 2004 04 15 | 699 | 1.3+ | 0.4+ | | |
| 2001 10 12 | 699 | 0.9− | 0.1− | 2001 11 11 | 644 | 0.2+ | 0.3+ | 2004 04 16 | 691 | 0.5+ | 0.3+ | | |
| 2001 10 12 | 699 | 1.0− | 0.5+ | 2001 11 12 | 704 | 0.1− | 0.2+ | 2004 04 16 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 12 | 699 | 0.2+ | 0.4− | 2001 11 12 | 704 | 0.3+ | 0.1+ | 2004 04 16 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.1− | 0.9+ | 2001 11 12 | 704 | 1.4− | 0.7+ | 2004 04 20 | 704 | 1.5+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.7− | 1.1+ | 2001 11 12 | 704 | 0.0 | 0.5− | 2004 04 20 | 704 | 0.3+ | 0.1− | | |
| 2001 10 14 | 704 | (0.1+ | 2.4+) | 2001 12 07 | 644 | 0.1− | 0.8+ | 2004 04 20 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 14 | 704 | 1.2− | 1.6+ | 2001 12 07 | 644 | 0.5− | 0.6+ | 2004 04 22 | 691 | 0.2− | 0.6+ | | |
| 2001 10 18 | 704 | 0.0 | 0.8+ | 2001 12 07 | 644 | 0.0 | 0.8+ | 2004 04 22 | 691 | 0.0 | 0.7+ | | |
| 2001 10 18 | 704 | 0.1+ | 0.2− | 2001 12 15 | 704 | 0.1+ | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.7+ | | |
| 2001 10 18 | 704 | 0.3− | 0.6− | 2001 12 15 | 704 | 0.5− | 0.5− | 2006 08 28 | E12 | 1.5+ | 0.2+ | | |
| 2001 10 21 | 704 | 1.6− | 0.3+ | 2001 12 15 | 704 | 0.2− | 0.3− | 2006 08 28 | E12 | 0.2+ | 1.4+ | | |
| 2001 10 21 | 704 | 0.2+ | 0.3+ | 2001 12 15 | 704 | 0.3− | 0.4− | 2006 08 28 | E12 | 0.6+ | 0.8+ | | |
| 2001 10 21 | 704 | 0.9− | 1.1+ | 2001 12 15 | 704 | 0.3− | 0.8− | 2006 08 28 | E12 | 0.2+ | 0.4+ | | |
| 2001 10 21 | 704 | 0.7+ | 0.1− | 2003 03 03 | 644 | 0.1− | 0.8+ | 2006 09 20 | 703 | 0.4+ | 0.5− | | |
| 2001 10 21 | 704 | 0.2− | 0.4+ | 2003 03 03 | 644 | 0.6+ | 0.7+ | 2006 09 20 | 703 | 0.7− | 1.0− | | |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2003 03 03 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.4− | 0.0 | | |
| 2001 10 21 | 704 | 0.4− | 0.2+ | 2003 03 07 | 645 | 0.0 | 0.0 | 2006 09 20 | 703 | 1.0− | 0.2− | | |
| 2001 10 21 | 704 | 0.9+ | 0.1+ | 2003 03 07 | 645 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.2− | 1.4+ | 2004 04 15 | 699 | 0.8+ | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.3− | | |
| 2001 10 21 | 704 | 0.8+ | 0.5+ | 2004 04 15 | 699 | 0.7+ | 0.6− | 2006 09 26 | 703 | 0.2+ | 0.5+ | | |
| 2001 11 11 | 644 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.7+ | 0.1− | 2006 09 26 | 703 | 0.7− | 1.5− | | |

**(140442)∗ 2001 TF$_{114}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.07156 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18112461 | $\omega$ | 105.49785 | | +0.97972600 | −0.09434390 | |
| $a$ | 3.0937443 | $\Omega$ | 260.16152 | | +0.02416963 | +0.93139590 | |
| $e$ | 0.0822838 | $i$ | 10.33340 | | +0.19887884 | +0.35156921 | |
| $P$ | 5.44 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 1.1+ | 0.4− | 2001 11 21 | 704 | 0.5− | 0.6+ | 2004 04 13 | 644 | 0.3+ | 0.2+ | | |
| 2000 08 02 | 704 | 0.2− | 0.6+ | 2001 11 21 | 704 | 0.0 | 0.7+ | 2006 09 06 | 644 | 0.1− | 0.2+ | | |
| 2000 08 02 | 704 | 0.4− | 1.4+ | 2001 11 21 | 704 | 0.1− | 0.4− | 2006 09 06 | 644 | 0.0 | 0.1+ | | |
| 2000 08 02 | 704 | 0.2− | 0.6+ | 2001 11 21 | 704 | 0.5− | 0.0 | 2006 09 06 | 644 | 0.3− | 0.2+ | | |
| 2000 08 02 | 704 | 0.5+ | 1.4+ | 2001 11 21 | 704 | 0.7− | 0.0 | 2006 09 21 | 106 | 0.2+ | 0.7− | | |
| 2000 08 21 | 699 | 1.5− | 0.5+ | 2001 11 24 | 704 | 0.5+ | 0.3+ | 2006 09 21 | 106 | 0.4− | 0.1− | | |
| 2000 08 21 | 699 | 0.7+ | 0.2+ | 2001 11 24 | 704 | 0.3+ | 0.1− | 2006 09 21 | 106 | 0.2+ | 0.1− | | |
| 2000 08 21 | 699 | 0.0 | 0.5− | 2001 11 24 | 704 | 0.0 | 0.0 | 2006 09 21 | 106 | 0.5+ | 0.6+ | | |
| 2000 08 21 | 699 | 1.1− | 0.2+ | 2001 11 24 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.5− | 0.4− | | |
| 2001 10 14 | 704 | 0.3− | 0.3− | 2001 11 24 | 704 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.3− | 0.6− | | |
| 2001 10 14 | 704 | 0.1− | 0.2− | 2001 12 10 | 704 | 0.4− | 0.6+ | 2006 09 22 | 704 | 0.7− | 0.2+ | | |
| 2001 10 14 | 704 | 0.5+ | 0.1− | 2001 12 10 | 704 | 0.6− | 0.7+ | 2006 09 22 | 699 | 0.5+ | 0.7− | | |
| 2001 10 14 | 704 | 0.1+ | 0.1+ | 2001 12 10 | 704 | 0.5− | 0.6+ | 2006 09 22 | 699 | 0.9+ | 0.5− | | |
| 2001 10 18 | 704 | 0.5+ | 0.1+ | 2001 12 10 | 704 | (1.1− | 1.5+) | 2006 09 22 | 704 | 0.3− | 0.4+ | | |
| 2001 10 18 | 704 | 0.1+ | 0.8− | 2001 12 18 | 704 | 0.7− | 0.2+ | 2006 09 22 | 699 | 0.5− | 0.1− | | |
| 2001 10 18 | 704 | 0.5+ | 0.1+ | 2001 12 18 | 704 | 0.7− | 0.1− | 2006 09 22 | 699 | 0.9− | 0.2+ | | |
| 2001 10 19 | 704 | 0.9− | 0.2+ | 2001 12 18 | 704 | 0.9− | 0.2+ | 2006 09 22 | 699 | 1.0+ | 0.2− | | |
| 2001 10 19 | 704 | 0.0 | 0.8− | 2001 12 18 | 704 | 0.9− | 0.4+ | 2006 09 22 | 699 | 0.1− | 0.2− | | |
| 2001 10 19 | 704 | 0.2− | 0.0 | 2001 12 18 | 704 | 0.2− | 0.1− | 2006 09 22 | 699 | 1.0+ | 0.6+ | | |
| 2001 10 21 | 704 | (2.1− | 0.4−) | 2001 12 19 | 704 | 0.3+ | 0.2− | 2006 09 22 | 699 | 0.1+ | 0.4+ | | |
| 2001 10 21 | 704 | 0.7− | 0.4− | 2001 12 19 | 704 | 0.3− | 0.1− | 2006 09 22 | 113 | 0.1+ | 0.4− | | |
| 2001 10 21 | 704 | 1.2− | 0.4− | 2001 12 19 | 704 | 0.4+ | 0.3− | 2006 09 22 | 113 | 0.2+ | 0.1+ | | |
| 2001 10 21 | 704 | (1.6− | 0.3−) | 2001 12 19 | 704 | 0.1− | 0.5+ | 2006 09 22 | 113 | 0.5+ | 0.1− | | |
| 2001 11 10 | 704 | 0.9+ | 0.3− | 2001 12 19 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.5+ | 0.2+ | | |
| 2001 11 10 | 704 | 0.6+ | 0.1− | 2003 01 26 | 699 | 0.8− | 0.8+ | 2006 09 28 | 703 | 0.6+ | 0.3+ | | |
| 2001 11 10 | 704 | 0.9+ | 0.1− | 2003 01 26 | 699 | 0.2− | 1.2+ | 2006 09 28 | 703 | 0.7− | 0.7− | | |
| 2001 11 10 | 704 | 0.7+ | 0.5− | 2003 01 26 | 699 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.0 | 0.3− | | |
| 2001 11 10 | 644 | 0.3+ | 0.2+ | 2003 01 26 | 699 | 0.1+ | 0.4− | 2006 09 28 | 703 | 0.0 | 0.7− | | |
| 2001 11 10 | 704 | (0.9+ | 1.6−) | 2003 01 28 | 704 | 0.6+ | 0.5− | 2006 09 28 | 703 | 0.6+ | 0.6− | | |
| 2001 11 10 | 644 | 0.2+ | 0.4+ | 2003 01 28 | 704 | 0.6− | 1.3− | 2006 09 28 | 703 | 0.3− | 0.4− | | |
| 2001 11 10 | 644 | 0.5+ | 0.3+ | 2003 01 28 | 704 | 0.6+ | 1.1− | 2006 09 28 | 703 | 0.3− | 0.4− | | |
| 2001 11 12 | 704 | 0.1− | 0.2− | 2003 01 28 | 704 | 0.5+ | 0.5− | 2006 10 24 | 644 | 0.1− | 0.3− | | |
| 2001 11 12 | 704 | 0.3− | 0.6+ | 2003 02 19 | 644 | 0.6+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.1− | | |
| 2001 11 12 | 704 | 0.2+ | 0.5+ | 2003 02 19 | 644 | 0.3+ | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2003 02 19 | 644 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 0.9+ | 0.3+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.5+ | 2004 03 26 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.7+ | 0.6− | | |
| 2001 11 19 | 699 | 0.0 | 0.0 | 2004 03 26 | 704 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.6− | 0.6− | | |
| 2001 11 19 | 699 | 0.4+ | 0.1+ | 2004 03 26 | 704 | 1.3− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.1+ | | |
| 2001 11 19 | 699 | 0.1+ | 0.4+ | 2004 04 13 | 644 | 0.2+ | 0.1+ | | | | | | |
| 2001 11 19 | 699 | 0.9+ | 0.8+ | 2004 04 13 | 644 | 0.2+ | 0.5+ | | | | | | |

**(140443)∗ 2001 TR$_{114}$ = 1984 UJ$_2$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 100068)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.27296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23485942 | $\omega$ | 345.55166 | | +0.99543619 | −0.09051462 | |
| $a$ | 2.6017410 | $\Omega$ | 19.71716 | | +0.09401125 | +0.87572571 | |
| $e$ | 0.1264468 | $i$ | 5.14087 | | +0.01639110 | +0.47424844 | |
| $P$ | 4.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 10 19 | 801 | 0.7+ | 0.6− | 2002 01 06 | 644 | 0.2+ | 0.2+ | 2005 09 29 | 699 | 0.1− | 0.1− |
| 1995 04 05 | 691 | 0.2− | 0.3− | 2002 01 09 | 704 | 0.1+ | 0.7− | 2005 09 29 | 699 | 0.0 | 0.2+ |
| 1995 04 05 | 691 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.7+ | 0.5− | 2005 09 29 | 699 | 0.5− | 0.1+ |
| 2001 08 16 | 704 | 0.8+ | 0.7+ | 2002 01 09 | 704 | 0.5− | 1.4+ | 2005 10 03 | 703 | 0.3− | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.9− | 0.5− | 2005 10 03 | 703 | 0.1− | 0.1− |
| 2001 08 16 | 704 | 0.2+ | 0.3+ | 2002 12 11 | 645 | 0.1− | 0.1− | 2005 10 03 | 703 | 0.1− | 0.6− |
| 2001 09 23 | 644 | 0.1+ | 0.1− | 2002 12 11 | 645 | 0.1− | 0.2− | 2005 10 03 | 703 | 0.1+ | 0.3− |
| 2001 09 23 | 644 | 0.1+ | 0.0 | 2003 01 27 | 608 | 0.3+ | 0.9+ | 2005 10 07 | 704 | 0.1+ | 0.5+ |
| 2001 09 23 | 644 | 0.2+ | 0.1+ | 2003 01 27 | 608 | 0.1+ | 1.1+ | 2005 10 07 | 704 | 0.3− | 0.4+ |
| 2001 09 24 | 704 | 0.0 | 0.7− | 2003 01 27 | 608 | 0.1+ | 1.1+ | 2005 10 07 | 704 | 0.1+ | 0.6+ |
| 2001 09 24 | 704 | 0.2− | 0.8+ | 2003 02 01 | 704 | 1.1+ | 0.3+ | 2005 10 07 | 691 | 0.1+ | 0.2+ |
| 2001 09 24 | 704 | 0.3+ | 0.2+ | 2003 02 01 | 704 | 0.7+ | 0.9+ | 2005 10 07 | 704 | 0.2− | 0.7+ |
| 2001 09 24 | 704 | 0.1+ | 0.4+ | 2003 02 01 | 704 | 0.1− | 1.3+ | 2005 10 07 | 704 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 1.0+ | 0.5+ | 2003 02 22 | 644 | 0.5+ | 0.0 | 2005 10 07 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.9− | 0.3− | 2003 02 22 | 644 | 0.7+ | 0.1+ | 2005 10 07 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.5− | 0.2− | 2003 02 22 | 644 | 0.8+ | 0.3+ | 2005 10 10 | A50 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.3+ | 0.1+ | 2003 02 25 | 599 | 0.3+ | 0.0 | 2005 10 10 | A50 | 0.2− | 0.7+ |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2003 02 25 | 599 | 0.3− | 0.1− | 2005 10 11 | 704 | 0.3− | 0.1+ |
| 2001 10 18 | 704 | 0.8+ | 1.0− | 2003 02 25 | 599 | 0.2+ | 0.1− | 2005 10 11 | 704 | 1.1− | 0.2+ |
| 2001 10 18 | 704 | 0.9− | 0.6− | 2003 02 25 | 599 | 0.5− | 0.2− | 2005 10 11 | 704 | 0.6− | 0.1+ |
| 2001 10 18 | 704 | 0.5− | 0.5+ | 2003 02 28 | 704 | 1.7+ | 1.3+ | 2005 10 11 | 704 | 0.6− | 0.6+ |
| 2001 10 19 | 644 | 0.3− | 0.1+ | 2003 02 28 | 704 | 0.3+ | 0.4− | 2005 10 11 | 704 | 0.6− | 0.2+ |
| 2001 10 19 | 644 | 0.5− | 0.3+ | 2003 02 28 | 704 | 0.1− | 0.1− | 2005 10 21 | 644 | 0.0 | 0.0 |
| 2001 10 19 | 644 | 0.7− | 0.3+ | 2003 02 28 | 704 | 0.3+ | 0.3+ | 2005 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 0.4− | 0.3− | 2003 02 28 | 704 | 0.7+ | 0.1− | 2005 10 21 | 644 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2003 02 28 | 608 | 0.4+ | 0.2+ | 2005 10 22 | 703 | 0.4+ | 0.2+ |
| 2001 10 21 | 704 | 0.6− | 0.2− | 2003 02 28 | 608 | 0.2+ | 0.4+ | 2005 10 22 | 703 | 0.4+ | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.4+ | 2003 02 28 | 608 | 0.2+ | 0.2+ | 2005 10 22 | 703 | 0.6+ | 0.3+ |
| 2001 10 21 | 704 | 0.4− | 0.2+ | 2003 03 06 | 704 | 0.8+ | 1.3+ | 2005 10 22 | 703 | 0.3− | 0.2+ |
| 2001 10 26 | 644 | 0.1+ | 0.2− | 2003 03 06 | 704 | 0.3+ | 1.3+ | 2005 10 24 | 699 | 0.0 | 0.1+ |
| 2001 10 26 | 644 | 0.2+ | 0.2− | 2003 03 06 | 704 | 0.1+ | 0.3+ | 2005 10 24 | 699 | 0.4+ | 0.5− |
| 2001 10 26 | 644 | 0.2+ | 0.2− | 2003 03 24 | 608 | 0.6+ | 0.5− | 2005 10 24 | 699 | 0.1+ | 0.0 |
| 2001 11 10 | 704 | 0.2− | 0.4− | 2003 03 24 | 608 | 0.6+ | 0.6− | 2005 10 25 | G96 | 0.4+ | 0.2− |
| 2001 11 10 | 704 | 0.1− | 0.7− | 2003 03 24 | 608 | 0.4+ | 0.4− | 2005 10 25 | G96 | 0.3+ | 0.1− |
| 2001 11 10 | 704 | 0.5− | 0.4− | 2003 03 30 | 645 | 0.2− | 0.1− | 2005 10 25 | G96 | 0.2+ | 0.1− |
| 2001 11 10 | 704 | 0.0 | 0.3− | 2003 03 30 | 645 | 0.1− | 0.0 | 2005 10 25 | G96 | 0.1+ | 0.1− |
| 2001 11 10 | 644 | 0.8+ | 0.3− | 2005 08 02 | 704 | 0.7− | 0.3+ | 2005 11 01 | 704 | 0.5+ | 1.7+ |
| 2001 11 10 | 704 | 0.6− | 1.0− | 2005 08 02 | 704 | 0.6− | 0.9+ | 2005 11 01 | 704 | 0.4− | 0.2+ |
| 2001 11 10 | 644 | 0.1+ | 0.9− | 2005 08 02 | 704 | 1.1− | 0.7+ | 2005 11 01 | 703 | 0.1− | 0.0 |
| 2001 11 10 | 644 | 0.4+ | 0.1+ | 2005 08 02 | 704 | 1.3− | 1.1+ | 2005 11 01 | 703 | 0.2+ | 0.3− |
| 2001 11 12 | 704 | 0.5+ | 0.8− | 2005 08 02 | 704 | 0.9− | 0.2+ | 2005 11 01 | 703 | 0.5− | 0.0 |
| 2001 11 12 | 704 | 0.1+ | 0.5− | 2005 08 30 | 644 | 0.0 | 0.2+ | 2005 11 01 | 704 | 0.2− | 1.1+ |
| 2001 11 12 | 704 | 0.4+ | 0.6− | 2005 08 30 | 644 | 0.4− | 0.3+ | 2005 11 01 | 703 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.6+ | 0.4− | 2005 08 30 | 644 | 0.1− | 0.3+ | 2005 11 01 | 704 | 0.4− | 0.5+ |
| 2001 11 12 | 704 | 0.3+ | 0.1− | 2005 08 30 | 644 | 0.3− | 0.4+ | 2005 11 01 | 704 | 0.1− | 0.8+ |
| 2001 11 19 | 704 | (0.2+ | 2.4+) | 2005 08 30 | 644 | 0.1− | 0.2+ | 2005 11 04 | 704 | 0.6+ | 0.0 |
| 2001 11 19 | 704 | 0.5+ | 0.5+ | 2005 08 30 | 644 | 0.3− | 0.4+ | 2005 11 04 | 704 | 0.8+ | 0.2− |
| 2001 11 19 | 704 | 0.6+ | 1.1+ | 2005 09 08 | 704 | 0.6− | 0.1+ | 2005 11 04 | 704 | 0.9+ | 0.2− |
| 2001 11 19 | 704 | 0.2+ | 0.8+ | 2005 09 08 | 704 | 0.2+ | 0.7+ | 2005 11 04 | 704 | 0.6+ | 0.4− |
| 2001 11 19 | 704 | 0.5+ | 0.7+ | 2005 09 08 | 704 | 1.0+ | 0.3+ | 2005 11 04 | 704 | 0.5+ | 0.4− |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2005 09 08 | 704 | 0.3+ | 0.5− | 2005 11 04 | 704 | 0.5+ | 0.3− |
| 2001 11 21 | 704 | 0.5+ | 0.5− | 2005 09 08 | 704 | 1.1− | 0.5+ | 2005 11 04 | 704 | 0.8+ | 0.8− |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2005 09 11 | 608 | 0.2+ | 0.8− | 2005 11 04 | 704 | 0.6+ | 0.3+ |
| 2001 11 21 | 704 | 0.2+ | 0.2− | 2005 09 11 | 608 | 0.2+ | 0.4− | 2005 11 04 | 704 | 0.9+ | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2005 09 11 | 608 | 0.0 | 0.6− | 2005 11 04 | 704 | (1.3+ | 2.5−) |
| 2001 11 24 | 704 | 0.3− | 0.5+ | 2005 09 12 | 608 | 0.2− | 0.5− | 2005 11 09 | 599 | 0.2+ | 0.1+ |
| 2001 11 24 | 704 | 0.2+ | 0.9+ | 2005 09 12 | 608 | 0.1+ | 0.7− | 2005 11 09 | 599 | 0.3+ | 0.1+ |
| 2001 11 24 | 704 | 0.4+ | 0.5+ | 2005 09 12 | 608 | 0.1+ | 0.6− | 2005 11 09 | 599 | 0.3+ | 0.0 |
| 2001 11 24 | 704 | 0.2+ | 0.3+ | 2005 09 15 | 703 | 0.3− | 1.1− | 2005 11 09 | 599 | 0.3+ | 0.1+ |
| 2001 11 24 | 704 | 0.4+ | 0.1+ | 2005 09 15 | 703 | 0.4+ | 0.1+ | 2005 11 19 | 185 | 0.2+ | 0.8− |
| 2001 12 10 | 704 | 0.1− | 0.0 | 2005 09 15 | 703 | 1.0+ | 0.8− | 2005 11 19 | 185 | 0.1− | 0.6− |
| 2001 12 10 | 704 | 0.7− | 0.0 | 2005 09 15 | 703 | 0.0 | 0.1− | 2005 11 19 | 185 | 0.9+ | 0.1− |
| 2001 12 10 | 704 | 0.5− | 0.3− | 2005 09 24 | 703 | 0.9− | 0.4− | 2005 12 05 | 704 | 0.4+ | 0.0 |
| 2001 12 10 | 704 | 0.4− | 0.7+ | 2005 09 24 | 703 | 0.3− | 1.1− | 2005 12 05 | 704 | 1.5+ | 0.1− |
| 2001 12 17 | 704 | 1.1+ | 0.7+ | 2005 09 24 | 703 | 1.2− | 0.3− | 2005 12 05 | 704 | (2.3+ | 0.3−) |
| 2001 12 17 | 704 | 0.1− | 0.6+ | 2005 09 24 | 703 | 0.5− | 0.6− | 2005 12 28 | 703 | 0.4− | 0.7+ |
| 2001 12 17 | 704 | 0.4− | 0.7− | 2005 09 26 | 691 | 0.1− | 0.1− | 2005 12 28 | 703 | 0.2− | 1.0− |
| 2001 12 17 | 704 | 0.6− | 0.4+ | 2005 09 26 | 691 | 0.0 | 0.1− | 2005 12 28 | 703 | 0.5+ | 0.1− |
| 2001 12 17 | 704 | 0.9− | 0.1− | 2005 09 26 | 691 | 0.2− | 0.2− | 2005 12 28 | 703 | 0.1+ | 0.2+ |
| 2001 12 20 | 644 | 0.5− | 0.0 | 2005 09 29 | G96 | 0.1− | 0.0 | 2006 01 23 | 703 | 0.4− | 0.2− |
| 2001 12 20 | 644 | 0.4− | 0.1− | 2005 09 29 | G96 | 0.3− | 0.0 | 2006 01 23 | 703 | 0.5− | 0.4+ |
| 2001 12 20 | 644 | 0.3− | 0.0 | 2005 09 29 | 699 | 0.2+ | 0.1− | 2006 01 23 | 703 | 0.7− | 0.0 |
| 2002 01 06 | 644 | 0.0 | 0.2+ | 2005 09 29 | G96 | 0.0 | 0.0 | 2006 01 23 | 703 | 1.2+ | 0.7− |
| 2002 01 06 | 644 | 0.4− | 0.0 | 2005 09 29 | G96 | 0.3− | 0.0 | | | | |

**(140444)∗ 2001 TR$_{115}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.93832 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18775211 | $\omega$ | 145.05691 | | +0.81719191 | −0.53814433 | |
| $a$ | 3.0205046 | $\Omega$ | 248.79901 | | +0.46541371 | +0.82734995 | |
| $e$ | 0.0624536 | $i$ | 12.78988 | | +0.33998155 | +0.16091222 | |
| $P$ | 5.25 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 05 | 699 | 0.2− | 0.2+ | 2001 12 10 | 704 | 1.0+ | 1.4− | 2004 04 27 | 704 | 0.6+ | 0.9+ |
| 2000 07 05 | 699 | 0.0 | 0.1+ | 2001 12 10 | 704 | 0.2+ | 0.0 | 2004 04 27 | 704 | 0.2− | 0.1+ |
| 2000 07 05 | 699 | 0.6− | 0.6+ | 2001 12 15 | 704 | 0.1+ | 0.8+ | 2004 05 12 | E12 | 1.2− | 0.4+ |
| 2000 07 05 | 699 | 0.2− | 0.4+ | 2001 12 15 | 704 | 0.1− | 0.7+ | 2004 05 12 | E12 | 0.2+ | 0.6+ |
| 2001 10 14 | 704 | 0.1+ | 0.4− | 2001 12 15 | 704 | 0.3+ | 0.8+ | 2004 05 12 | E12 | (1.7− | 1.0+) |
| 2001 10 14 | 704 | 0.7− | 0.4+ | 2001 12 15 | 704 | 0.7+ | 0.7+ | 2004 05 12 | E12 | 1.4− | 0.8+ |
| 2001 10 14 | 704 | 0.4+ | 0.3− | 2001 12 15 | 704 | 0.2+ | 0.6+ | 2004 05 19 | 704 | 0.1− | 0.5− |
| 2001 10 14 | 704 | 0.4− | 1.1+ | 2001 12 18 | 704 | 0.2+ | 0.0 | 2004 05 19 | 704 | 0.2− | 0.3+ |
| 2001 10 14 | 704 | 0.7− | 0.2+ | 2001 12 18 | 704 | 0.2+ | 0.2− | 2004 05 19 | 704 | 0.4− | 0.3− |
| 2001 10 18 | 704 | 0.5+ | 0.7− | 2001 12 18 | 704 | 0.4+ | 0.3+ | 2005 06 11 | 691 | 0.1− | 1.0+ |
| 2001 10 18 | 704 | 0.6+ | 0.7− | 2001 12 18 | 704 | 0.0 | 0.2+ | 2005 06 11 | 691 | 0.2+ | 0.4+ |
| 2001 10 18 | 704 | 0.5+ | 0.5− | 2001 12 18 | 704 | 0.2+ | 0.2+ | 2005 06 11 | 691 | 0.0 | 0.6+ |
| 2001 10 18 | 704 | 1.5+ | 1.3− | 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 09 28 | 703 | 0.9− | 0.7− |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2001 12 19 | 644 | 0.7− | 0.1+ | 2006 09 28 | 703 | 0.4− | 1.4− |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2001 12 19 | 644 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.0 | 0.4− | 2001 12 19 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.9− | 0.3− |
| 2001 10 21 | 704 | 0.4+ | 0.2− | 2001 12 19 | 644 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.3+ | 0.2+ | 2001 12 19 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 11 10 | 704 | 0.2− | 0.2− | 2001 12 19 | 644 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 11 10 | 704 | 0.1+ | 0.3− | 2001 12 19 | 644 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.7− | 0.4− |
| 2001 11 10 | 704 | 0.8− | 0.3− | 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 1.1− |
| 2001 11 10 | 704 | 0.4+ | 0.0 | 2001 12 19 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.3+ |
| 2001 11 10 | 704 | (1.7− | 0.2−) | 2001 12 19 | 704 | 1.1− | 1.1+ | 2006 10 19 | 703 | 0.9− | 0.7+ |
| 2001 11 12 | 704 | 0.0 | 1.1+ | 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 10 21 | 704 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.4− | 0.7+ | 2001 12 19 | 704 | 0.4+ | 1.2+ | 2006 10 21 | 704 | 0.4+ | 0.5− |
| 2001 11 12 | 704 | 0.2− | 0.7+ | 2001 12 19 | 704 | 0.2− | 0.1− | 2006 10 21 | 704 | 0.4+ | 0.5− |
| 2001 11 12 | 704 | 0.2− | 0.8+ | 2001 12 19 | 704 | 0.5− | 0.9+ | 2006 10 21 | 704 | (0.6+ | 1.7−) |
| 2001 11 12 | 704 | 0.4+ | 0.6+ | 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 10 21 | 704 | 0.2− | 0.2− |
| 2001 11 17 | 644 | 0.2+ | 0.4+ | 2001 12 19 | 704 | 0.3− | 1.2+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2001 11 17 | 644 | 0.5+ | 0.0 | 2001 12 19 | 704 | 0.6− | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2001 11 17 | 644 | 0.4+ | 0.2+ | 2001 12 19 | 704 | 0.4+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 11 19 | 699 | 0.4− | 0.1+ | 2001 12 19 | 704 | 0.4− | 0.3+ | 2006 10 27 | 703 | (0.3− | 3.0−) |
| 2001 11 19 | 699 | 0.5− | 0.0 | 2002 01 12 | 291 | 0.1− | 0.0 | 2006 10 27 | 703 | (1.8+ | 1.3−) |
| 2001 11 19 | 699 | 0.3− | 0.2− | 2002 01 12 | 291 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.1+ |
| 2001 11 19 | 699 | 0.1− | 0.0 | 2002 01 12 | 291 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.5− |
| 2001 11 19 | 704 | 0.2− | 0.0 | 2003 02 06 | 644 | 1.2+ | 0.1− | 2006 11 15 | 703 | 0.7− | 0.8− |
| 2001 11 19 | 704 | 0.3+ | 0.5+ | 2003 02 06 | 644 | 0.9+ | 0.2− | 2006 11 15 | 703 | 0.3+ | 0.4− |
| 2001 11 19 | 704 | 0.5− | 0.5− | 2003 02 06 | 644 | 0.9+ | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.7− |
| 2001 11 19 | 704 | 0.5− | 0.5− | 2004 04 14 | E12 | 0.6− | 0.7+ | 2006 11 15 | 703 | 0.3− | 0.5− |
| 2001 11 19 | 704 | 0.2− | 0.3− | 2004 04 14 | E12 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 0.1− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 704 | 0.9− | 0.0 | 2004 04 14 | E12 | 0.6+ | 0.8+ | 2006 11 23 | 703 | 0.5− | 0.3− |
| 2001 11 24 | 704 | 0.7− | 0.3+ | 2004 04 14 | E12 | 0.0 | 0.8+ | 2006 11 23 | 703 | 0.3− | 0.7+ |
| 2001 11 24 | 704 | 0.9− | 0.7+ | 2004 04 25 | 704 | 0.3+ | 0.8+ | 2006 11 23 | 703 | 0.7− | 0.5− |
| 2001 11 24 | 704 | 0.6− | 0.8+ | 2004 04 25 | 704 | 0.5− | 0.2+ | 2006 11 29 | 704 | 1.3+ | 0.4+ |
| 2001 12 08 | 699 | 0.7+ | 0.4− | 2004 04 25 | 704 | 0.8+ | 0.2− | 2006 11 29 | 704 | 0.9+ | 0.4+ |
| 2001 12 08 | 699 | 1.1− | 0.3+ | 2004 04 27 | 704 | 0.4− | 0.4+ | 2006 11 29 | 704 | 0.9+ | 0.9+ |
| 2001 12 08 | 699 | 0.1− | 1.4+ | 2004 04 27 | 704 | 0.4− | 0.1− | 2006 11 29 | 704 | 1.5+ | 1.2+ |
| 2001 12 08 | 699 | 0.6+ | 0.8+ | 2004 04 27 | 704 | 0.0 | 1.0+ | 2006 11 29 | 704 | 1.6+ | 0.5− |
| 2001 12 10 | 704 | 1.2+ | 0.5+ | 2004 04 27 | 704 | 0.5− | 0.7+ | | | | |
| 2001 12 10 | 704 | 0.4+ | 0.0 | 2004 04 27 | 704 | 0.8+ | 0.3+ | | | | |

**(140445)∗ 2001 TB$_{116}$ = 2001 QL$_{78}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.78241 | | (2000.0) | | | |
| $n$ | 0.18819816 | $\omega$ | 6.73896 | | +0.71711827 | −0.68308356 |
| $a$ | 3.0157301 | $\Omega$ | 37.59706 | | +0.62839019 | +0.54785579 |
| $e$ | 0.2117169 | $i$ | 13.10579 | | +0.30144180 | +0.48296055 |
| $P$ | 5.24 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.2+ | 1.1− | 2001 12 22 | 704 | (0.6− | 1.5+) | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 1993 04 19 | 691 | 0.8− | 0.2− | 2001 12 22 | 704 | 0.1− | 1.2+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 1993 04 19 | 691 | 0.6− | 0.5− | 2001 12 22 | 704 | (2.9− | 0.3+) | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | (0.2− | 1.9+) | 2002 01 15 | 644 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2001 08 16 | 704 | (0.7− | 1.6+) | 2002 01 15 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 08 16 | 704 | (0.7− | 2.2+) | 2002 01 15 | 644 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 08 16 | 704 | (0.6− | 1.6+) | 2002 02 08 | 704 | 1.0+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 08 22 | 704 | 0.4− | 0.5− | 2002 02 08 | 704 | 1.2+ | 0.9+ | 2006 10 15 | 703 | 0.5− | 0.1− |
| 2001 08 22 | 704 | 0.3+ | 0.0 | 2002 02 08 | 704 | 0.7+ | 0.4+ | 2006 10 15 | 703 | 0.1− | 0.2+ |
| 2001 08 22 | 704 | 0.9+ | 0.5+ | 2002 02 08 | 704 | 1.3+ | 1.3+ | 2006 10 15 | 703 | 0.5− | 0.2− |
| 2001 08 22 | 704 | 0.6+ | 0.8− | 2002 02 08 | 704 | (1.7+ | 1.1+) | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | 0.8+ | 0.3+ | 2003 02 04 | 644 | 0.8+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 08 23 | 699 | 0.1− | 0.5+ | 2003 02 04 | 644 | 0.7+ | 1.4+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 08 23 | 699 | 0.2− | 0.5− | 2003 02 04 | 644 | 0.6+ | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2001 08 23 | 699 | 0.2+ | 1.3− | 2003 03 08 | 644 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 2001 09 24 | 704 | 0.7+ | 1.2+ | 2003 03 08 | 644 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.7− |
| 2001 09 24 | 704 | 0.2+ | 0.9+ | 2003 03 08 | 644 | 0.8+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 09 24 | 704 | (2.6+ | 0.1−) | 2003 03 31 | 644 | 0.8+ | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 09 24 | 704 | 0.3+ | 0.8+ | 2003 03 31 | 644 | 0.7+ | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2001 09 24 | 704 | 1.1+ | 0.8+ | 2003 03 31 | 644 | 0.9+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 09 25 | 644 | 0.5− | 0.2+ | 2003 04 06 | 699 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 09 25 | 644 | 0.2− | 0.3+ | 2003 04 06 | 699 | 1.3− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2001 09 25 | 644 | 0.6− | 0.2+ | 2003 04 06 | 699 | 0.2+ | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.1+ | 2003 04 06 | 699 | (1.7− | 0.5−) | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.2+ | 0.2+ | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 691 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 0.4+ | 0.4+ | 2004 05 09 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 704 | 0.1+ | 0.4+ |
| 2001 10 18 | 704 | 0.1+ | 0.4+ | 2004 05 09 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 704 | 0.6+ | 0.6+ |
| 2001 10 18 | 704 | 0.7+ | 0.8− | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 704 | 0.1− | 0.4+ |
| 2001 10 18 | 704 | 0.0 | 0.8− | 2006 09 15 | A50 | 0.0 | 0.4+ | 2006 10 22 | 704 | 0.2− | 0.9+ |
| 2001 10 18 | 704 | 1.1− | 0.2− | 2006 09 15 | A50 | 0.3− | 0.2− | 2006 10 22 | 704 | 1.1− | 0.0 |
| 2001 10 18 | 704 | 0.3− | 0.9− | 2006 09 16 | 704 | 1.1+ | 1.0+ | 2006 10 27 | 704 | 0.6− | 0.6+ |
| 2001 10 21 | 704 | 0.2− | 0.3− | 2006 09 16 | 704 | (0.3− | 1.9+) | 2006 10 27 | 704 | 0.2− | 0.7+ |
| 2001 10 21 | 704 | 0.7− | 0.0 | 2006 09 16 | 704 | 0.4+ | 0.9− | 2006 10 27 | 704 | 0.5− | 0.7+ |
| 2001 10 21 | 704 | 0.5− | 0.2− | 2006 09 16 | 704 | 0.1+ | 1.1− | 2006 10 27 | 704 | 0.6− | 0.6+ |
| 2001 10 21 | 704 | 0.6− | 0.2− | 2006 09 16 | 699 | 0.3− | 0.1+ | 2006 10 27 | 704 | 0.7− | 0.4+ |
| 2001 10 21 | 704 | 0.5− | 0.2− | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | (0.6− | 1.8−) | 2006 09 16 | 699 | 0.4+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 0.7+ | 0.8− | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.8+ | 0.3− | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2001 10 27 | 704 | (1.6+ | 1.0−) | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2001 10 27 | 704 | (0.9+ | 1.6−) | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2001 10 27 | 704 | 0.9+ | 1.4− | 2006 09 18 | 699 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2001 10 27 | 704 | 1.0+ | 1.3− | 2006 09 19 | 704 | 0.7− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.6− |
| 2001 11 10 | 704 | 0.4− | 0.5− | 2006 09 19 | 704 | 1.3− | 0.6− | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2001 11 10 | 704 | 0.2− | 0.2− | 2006 09 19 | 704 | (0.3− | 2.6−) | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2001 11 10 | 704 | 1.0+ | 0.4+ | 2006 09 19 | 704 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.5− |
| 2001 11 10 | 704 | 0.5+ | 0.2− | 2006 09 19 | 704 | 1.0− | 0.3+ | 2006 11 18 | 704 | 1.1+ | 0.2+ |
| 2001 11 11 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.3− | 1.2− | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2001 11 11 | 704 | 0.5− | 0.0 | 2006 09 22 | 704 | (1.6− | 0.7−) | 2006 11 18 | 704 | 1.0+ | 0.2+ |
| 2001 11 11 | 704 | 0.5− | 0.2− | 2006 09 22 | 704 | 0.7− | 0.6+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2001 11 11 | 704 | 0.6− | 0.2+ | 2006 09 22 | 704 | 1.0− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 1.1+ |
| 2001 11 11 | 704 | 1.1− | 0.2+ | 2006 09 22 | 704 | 0.7− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.4− | 1.0− | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 1.3− | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.5− | 0.9− | 2006 09 26 | 704 | 1.0− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 1.4+ |
| 2001 11 21 | 704 | 0.3− | 1.3− | 2006 09 26 | 704 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2001 11 21 | 704 | 0.1− | 1.2− | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.4− | 1.0+ |
| 2001 11 24 | 704 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.7+ | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.4+ |
| 2001 11 24 | 704 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2001 11 24 | 704 | 0.2+ | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2001 11 24 | 704 | 0.1+ | 0.6− | 2006 09 30 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.7− | 0.5+ |
| 2001 11 24 | 704 | 0.4+ | 0.3− | 2006 10 01 | 704 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2001 12 10 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2001 12 10 | 704 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.8+ |
| 2001 12 10 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.6− | 0.7− |
| 2001 12 10 | 704 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.7− | 1.1+ |
| 2001 12 10 | 704 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.2+ |
| 2001 12 22 | 704 | (0.7+ | 1.7+) | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.1− | 0.2+ |
| 2001 12 22 | 704 | (1.6− | 3.2+) | 2006 10 02 | G96 | 0.3+ | 0.3− | | | | |

**(140446)∗ 2001 TU$_{118}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.71442 | | (2000.0) | | | |
| $n$ | 0.17573661 | $\omega$ | 113.95952 | | +0.35228968 | −0.91596810 |
| $a$ | 3.1566606 | $\Omega$ | 313.94597 | | +0.73204447 | +0.39756217 |
| $e$ | 0.1499055 | $i$ | 15.47267 | | +0.58309765 | +0.05428409 |
| $P$ | 5.61 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 644 | 0.3− | 0.3+ | 2003 02 08 | 608 | 0.5+ | 0.3− | 2006 08 28 | 699 | 0.2− | 0.3+ |
| 2001 09 18 | 644 | 0.2− | 0.3+ | 2003 02 08 | 608 | 0.0 | 0.0 | 2006 08 28 | 699 | 1.4− | 1.2− |
| 2001 09 18 | 644 | 0.1− | 0.6+ | 2003 02 21 | 644 | 0.2− | 0.7+ | 2006 08 28 | 699 | (2.4+ | 0.8−) |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2003 02 21 | 644 | 0.2− | 0.8+ | 2006 08 29 | 703 | 0.7− | 0.2− |
| 2001 10 15 | 704 | 0.0 | 0.1+ | 2003 02 21 | 699 | 1.3− | 0.7+ | 2006 08 29 | 703 | 0.8− | 0.7+ |
| 2001 10 15 | 704 | 0.4− | 0.2− | 2003 02 21 | 644 | 0.2− | 0.9+ | 2006 08 29 | 703 | 0.8− | 0.3+ |
| 2001 10 15 | 704 | 0.2+ | 0.7+ | 2003 02 21 | 699 | 0.6− | 0.5+ | 2006 08 29 | 703 | 1.3− | 0.2+ |
| 2001 10 15 | 704 | 0.4+ | 0.8+ | 2003 02 21 | 699 | 0.3− | 0.5+ | 2006 08 30 | 704 | 0.4− | 0.4− |
| 2001 10 18 | 704 | 0.3+ | 0.5− | 2003 02 21 | 699 | 0.3− | 1.4+ | 2006 08 30 | 704 | 0.7+ | 0.2− |
| 2001 10 18 | 704 | 0.3+ | 0.9− | 2003 02 28 | 608 | 0.6+ | 0.4+ | 2006 08 30 | 704 | 0.1+ | 0.8+ |
| 2001 10 18 | 704 | 0.0 | 0.2− | 2003 02 28 | 608 | 0.7+ | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.7+ |
| 2001 10 18 | 704 | 0.0 | 0.2+ | 2003 02 28 | 608 | 0.3+ | 0.8+ | 2006 08 30 | 704 | 0.8+ | 0.2+ |
| 2001 10 18 | 704 | 0.7− | 0.3− | 2003 03 05 | 704 | 0.0 | 0.5+ | 2006 08 30 | 704 | 0.2+ | 0.5+ |
| 2001 10 27 | 704 | 0.3− | 0.6− | 2003 03 05 | 704 | 0.1+ | 1.2+ | 2006 08 30 | 704 | 0.3+ | 0.3− |
| 2001 10 27 | 704 | 0.1+ | 0.1− | 2003 03 05 | 704 | 0.5+ | 0.1− | 2006 08 30 | 704 | 0.1− | 0.9+ |
| 2001 10 27 | 704 | 0.9+ | 0.5− | 2003 03 05 | 704 | 0.5− | 0.6− | 2006 08 30 | 704 | 0.3− | 0.2+ |
| 2001 10 27 | 704 | 0.7+ | 0.4− | 2003 03 12 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.7+ |
| 2001 11 12 | 704 | 0.3+ | 0.2− | 2003 03 12 | 644 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2001 11 12 | 704 | 0.1− | 0.5− | 2003 03 12 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.4− |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2003 04 28 | 699 | (0.2+ | 2.2+) | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2001 11 12 | 704 | 0.4− | 0.7− | 2003 04 28 | 699 | 0.4− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.0 | 0.6− | 2003 04 28 | 699 | 0.8− | 0.6− | 2006 09 15 | 691 | 0.5+ | 0.7− |
| 2001 12 10 | 704 | 0.6+ | 0.0 | 2003 04 28 | 699 | 1.1+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2001 12 10 | 704 | 0.2+ | 0.4+ | 2004 04 13 | E12 | 1.0+ | 1.0+ | 2006 09 17 | 691 | 0.0 | 0.6+ |
| 2001 12 10 | 704 | 0.5+ | 0.1+ | 2004 04 13 | E12 | 0.5+ | 1.0+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2002 11 21 | 644 | 0.3+ | 0.1+ | 2004 04 13 | E12 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2002 11 21 | 644 | 0.1+ | 0.8+ | 2004 04 13 | E12 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 1.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 21 | 644 | 0.1+ | 0.8+ | 2006 07 25 | 122 | 0.5− | 0.5+ | 2006 09 18 | 704 | 0.1+ | 1.2+ |
| 2002 12 31 | 704 | 2.0+ | 0.8− | 2006 07 25 | 122 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.7− | 0.4+ |
| 2002 12 31 | 704 | (2.3+ | 0.0 ) | 2006 07 25 | 122 | 0.2+ | 0.7+ | 2006 09 18 | 704 | 0.4− | 0.7+ |
| 2002 12 31 | 704 | (2.8+ | 0.4+) | 2006 07 25 | 644 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | (2.1+ | 0.1−) | 2006 07 25 | 644 | 0.6− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2002 12 31 | 704 | 1.1+ | 0.1− | 2006 07 25 | 644 | 0.5− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.2+ | 0.5+ | 2006 08 22 | 644 | 0.5− | 0.0 | 2006 09 29 | 699 | 0.5+ | 0.5+ |
| 2003 01 05 | 704 | 1.0+ | 0.4− | 2006 08 22 | 644 | 0.4− | 0.2+ | 2006 09 29 | 699 | 0.6− | 0.0 |
| 2003 01 05 | 704 | 0.4+ | 0.7+ | 2006 08 22 | 644 | 0.4− | 0.0 | 2006 09 29 | 699 | 0.9− | 0.7− |
| 2003 01 05 | 704 | 0.9+ | 0.2− | 2006 08 24 | 704 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.1+ | 0.5− |
| 2003 01 05 | 704 | 1.9+ | 0.2− | 2006 08 24 | 704 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2003 01 17 | 644 | 0.2+ | 1.0+ | 2006 08 24 | 704 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2003 01 17 | 644 | 0.4+ | 0.7+ | 2006 08 24 | 704 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2003 01 17 | 644 | 0.3+ | 0.6+ | 2006 08 24 | 704 | 0.3+ | 0.4+ | | | | |
| 2003 02 08 | 608 | 0.2− | 0.5+ | 2006 08 28 | 699 | 0.7− | 0.1+ | | | | |

**(140447)∗ 2001 TX$_{118}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.26693 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18012829 | $\omega$ | 92.06153 | | +0.63021170 | −0.75600858 | |
| $a$ | 3.1051417 | $\Omega$ | 317.12576 | | +0.56795628 | +0.60420711 | |
| $e$ | 0.1575704 | $i$ | 15.06760 | | +0.52939482 | +0.25176338 | |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 09 | 691 | 0.1+ | 0.2+ | 2001 11 12 | 704 | 0.5− | 0.4− | 2006 08 16 | 644 | 0.1− | 0.1− |
| 1992 02 09 | 691 | 0.2+ | 0.3+ | 2003 01 17 | 644 | 0.5+ | 0.4+ | 2006 08 18 | 699 | 0.9+ | 0.4− |
| 1992 02 09 | 691 | 0.1+ | 0.2− | 2003 01 17 | 644 | 0.5+ | 0.5+ | 2006 08 18 | 699 | 0.3− | 0.1+ |
| 2001 09 24 | 704 | 1.2+ | 0.1+ | 2003 01 17 | 644 | 0.5+ | 0.7+ | 2006 08 18 | 699 | 0.3− | 0.2− |
| 2001 09 24 | 704 | 0.6+ | 0.2+ | 2003 01 27 | 704 | 0.4− | 0.4− | 2006 08 18 | 699 | (1.0− | 2.6+) |
| 2001 09 24 | 704 | 1.0+ | 0.1− | 2003 01 27 | 704 | 0.8− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.4+ |
| 2001 09 24 | 704 | 1.2+ | 0.7− | 2003 01 27 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.7− |
| 2001 10 15 | 704 | 0.0 | 0.3− | 2003 01 27 | 704 | 0.7− | 0.9+ | 2006 08 28 | 703 | 0.4− | 0.0 |
| 2001 10 15 | 704 | 0.2+ | 0.6− | 2003 01 27 | 704 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2001 10 15 | 704 | 0.7− | 0.2− | 2003 01 30 | 699 | 0.6− | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.7− |
| 2001 10 15 | 704 | 0.2− | 0.2− | 2003 01 30 | 699 | 0.9+ | 0.4+ | 2006 08 30 | 704 | 1.1− | 0.1− |
| 2001 10 15 | 704 | 0.5− | 0.1+ | 2003 01 30 | 699 | 0.9+ | 1.0− | 2006 08 30 | 704 | 0.8− | 1.5+ |
| 2001 10 18 | 704 | 1.1− | 0.4− | 2003 01 30 | 699 | 0.8+ | 0.2− | 2006 08 30 | 704 | (0.4− | 3.0+) |
| 2001 10 18 | 704 | 0.2+ | 0.2− | 2003 01 31 | 644 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.6− | 0.1− |
| 2001 10 18 | 704 | 0.3+ | 0.4− | 2003 01 31 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 1.2− | 0.2+ |
| 2001 10 18 | 704 | 0.1+ | 0.3− | 2003 01 31 | 704 | 0.5+ | 0.2+ | 2006 08 30 | 704 | 1.8− | 0.2+ |
| 2001 10 18 | 704 | 0.2− | 0.6− | 2003 01 31 | 704 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 10 27 | 704 | 0.2− | 0.1− | 2003 01 31 | 704 | 0.1− | 1.0− | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2001 10 27 | 704 | 0.1− | 0.1+ | 2003 01 31 | 704 | 0.5− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2001 10 27 | 704 | 0.2+ | 0.1+ | 2003 01 31 | 644 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2001 10 27 | 704 | 0.4+ | 1.0− | 2003 01 31 | 644 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 10 27 | 704 | 0.0 | 0.5− | 2003 03 11 | 291 | 0.3+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2001 11 12 | 704 | 0.3− | 0.2− | 2003 03 11 | 291 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.9− | 0.2+ | 2003 03 11 | 291 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2001 11 12 | 704 | 0.6+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.5+ |
| 2001 11 12 | 704 | 0.7+ | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.0 | | | | |

**(140448)∗ 2001 TQ$_{120}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.67716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22804852 | $\omega$ | 115.28124 | | +0.85378499 | −0.49025620 | |
| $a$ | 2.6532889 | $\Omega$ | 274.51279 | | +0.39164876 | +0.82654380 | |
| $e$ | 0.1946632 | $i$ | 10.12284 | | +0.34301959 | +0.27653968 | |
| $P$ | 4.32 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 03 | 691 | 0.1+ | 0.0 | 2001 10 18 | 704 | 0.6+ | 0.2− | 2002 01 09 | 704 | 0.7+ | 0.6+ |
| 1994 02 03 | 691 | 0.0 | 0.4− | 2001 10 18 | 704 | 0.2+ | 0.1− | 2003 03 08 | 699 | (0.5+ | 1.6+) |
| 1994 02 03 | 691 | 0.1− | 0.3− | 2001 10 18 | 704 | 0.4+ | 0.0 | 2003 03 08 | 699 | (0.2+ | 1.7+) |
| 2001 08 22 | 704 | 0.3− | 0.4+ | 2001 10 18 | 704 | 0.4+ | 0.4+ | 2003 03 08 | 699 | 0.6+ | 1.2+ |
| 2001 08 22 | 704 | 0.2+ | 0.7+ | 2001 10 20 | 699 | 0.5− | 0.1+ | 2003 03 08 | 699 | 1.1− | 1.0+ |
| 2001 08 22 | 704 | 0.3+ | 0.4+ | 2001 10 20 | 699 | 0.4− | 0.3− | 2005 07 08 | 699 | 0.2− | 0.2+ |
| 2001 08 22 | 704 | 0.1+ | 0.4+ | 2001 10 20 | 699 | 0.5− | 0.0 | 2005 07 08 | 699 | 0.7− | 1.3− |
| 2001 08 22 | 704 | 0.7+ | 0.2− | 2001 10 20 | 699 | 0.1− | 0.3+ | 2005 07 08 | 699 | 0.6− | 0.6− |
| 2001 09 10 | 704 | 0.1− | 0.3− | 2001 10 27 | 704 | 0.0 | 0.3+ | 2005 07 08 | 699 | 0.0 | 1.0+ |
| 2001 09 10 | 704 | 0.5− | 0.2− | 2001 10 27 | 704 | 0.1+ | 0.5+ | 2005 08 22 | 608 | 0.5− | 0.3− |
| 2001 09 10 | 704 | 0.3+ | 0.2− | 2001 10 27 | 704 | 1.1− | 0.9+ | 2005 08 22 | 608 | 0.2− | 0.0 |
| 2001 09 10 | 704 | 0.8− | 0.4− | 2001 10 27 | 704 | 0.5− | 0.0 | 2005 08 22 | 608 | 0.4− | 0.3− |
| 2001 09 10 | 704 | 0.9− | 0.6− | 2001 10 27 | 704 | 0.3+ | 0.1+ | 2005 08 30 | 699 | 0.2+ | 0.5− |
| 2001 09 19 | 644 | 0.1− | 0.2+ | 2001 11 11 | 699 | 0.1− | 0.1− | 2005 08 30 | 699 | 0.4+ | 0.0 |
| 2001 09 19 | 644 | 0.1− | 0.1+ | 2001 11 11 | 699 | 0.6− | 0.3+ | 2005 08 30 | 699 | 0.4+ | 0.2+ |
| 2001 09 19 | 644 | 0.1− | 0.0 | 2001 11 11 | 699 | 0.0 | 0.4− | 2005 08 30 | 699 | 0.0 | 0.0 |
| 2001 09 22 | 699 | 0.5+ | 0.0 | 2001 11 11 | 699 | 0.1+ | 0.6− | 2005 09 09 | 704 | 0.5+ | 0.5− |
| 2001 09 22 | 699 | 0.7− | 0.0 | 2001 11 12 | 704 | 1.2− | 0.0 | 2005 09 09 | 704 | 0.4+ | 0.1+ |
| 2001 09 22 | 699 | 0.2+ | 0.5− | 2001 11 12 | 704 | 0.5− | 0.1+ | 2005 09 09 | 704 | 0.3+ | 0.1− |
| 2001 09 22 | 699 | 0.6+ | 0.0 | 2001 11 12 | 704 | 0.3− | 0.0 | 2005 09 09 | 704 | 0.6+ | 0.1− |
| 2001 09 24 | 704 | 0.3− | 0.0 | 2001 11 12 | 704 | 0.0 | 0.4− | 2005 09 09 | 704 | 0.3+ | 0.2+ |
| 2001 09 24 | 704 | 0.1− | 0.4+ | 2001 11 12 | 704 | 0.3+ | 0.3+ | 2005 09 11 | 699 | 0.2− | 0.3+ |
| 2001 09 24 | 704 | 0.3− | 0.0 | 2001 11 19 | 644 | 0.0 | 0.3− | 2005 09 11 | 699 | 0.1+ | 0.7− |
| 2001 09 24 | 704 | 0.2− | 0.6+ | 2001 11 19 | 644 | 0.3+ | 0.3− | 2005 09 11 | 699 | 0.4− | 0.3+ |
| 2001 09 24 | 704 | 0.8− | 0.0 | 2001 11 19 | 644 | 0.2+ | 0.2− | 2005 09 11 | 699 | 0.1+ | 0.2+ |
| 2001 09 27 | 704 | 0.4+ | 0.6− | 2001 11 20 | 699 | 0.4− | 0.1− | 2005 10 30 | 699 | 0.5+ | 0.6+ |
| 2001 09 27 | 704 | 0.4+ | 0.8− | 2001 11 20 | 699 | 0.1+ | 0.3− | 2005 10 30 | 699 | 0.4+ | 0.1− |
| 2001 09 27 | 704 | 0.2− | 0.2+ | 2001 11 20 | 699 | 0.4− | 0.7− | 2005 10 30 | 699 | 0.6+ | 0.2+ |
| 2001 09 27 | 704 | 0.2+ | 0.5− | 2001 11 20 | 699 | 0.4− | 0.2+ | 2005 10 30 | 699 | 0.2+ | 0.9+ |
| 2001 09 27 | 704 | 0.1− | 0.2− | 2001 12 10 | 704 | 0.4+ | 0.5+ | 2005 11 01 | 644 | 0.5+ | 0.1− |
| 2001 09 27 | 704 | 0.1− | 0.5− | 2001 12 10 | 704 | 0.4+ | 0.6+ | 2005 11 01 | 644 | 0.1− | 0.2+ |
| 2001 09 27 | 704 | 0.1− | 0.4− | 2001 12 10 | 704 | 0.7+ | 0.2+ | 2005 11 01 | 644 | 0.4− | 0.0 |
| 2001 09 27 | 704 | 0.1+ | 0.9− | 2001 12 10 | 704 | 0.7+ | 0.3+ | 2006 09 28 | G96 | 0.4+ | 0.1+ |
| 2001 09 27 | 704 | 0.2− | 0.0 | 2001 12 14 | 704 | (2.4+ | 0.9+) | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2001 09 27 | 704 | 0.3− | 0.1− | 2001 12 14 | 704 | (1.6+ | 0.8+) | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2001 10 15 | 704 | 0.2+ | 0.3+ | 2001 12 14 | 704 | (2.3+ | 0.9+) | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.0 | 0.2+ | 2001 12 14 | 704 | 1.0+ | 0.7+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2001 10 15 | 704 | 0.1+ | 0.1− | 2002 01 09 | 704 | 0.4+ | 0.8+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 10 15 | 704 | 0.0 | 0.2+ | 2002 01 09 | 704 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2001 10 15 | 704 | 0.1− | 0.2+ | 2002 01 09 | 704 | 0.1+ | 1.3+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2001 10 18 | 704 | 0.4+ | 0.4− | 2002 01 09 | 704 | 0.4+ | 0.2− | | | | |

**(140449)∗ 2001 TS$_{120}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.39451 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19629872 | $\omega$ | 105.56224 | | +0.29668357 | −0.94843477 | |
| $a$ | 2.9321830 | $\Omega$ | 326.51902 | | +0.78023501 | +0.30810829 | |
| $e$ | 0.1701822 | $i$ | 11.66940 | | +0.55064706 | +0.07443632 | |
| $P$ | 5.02 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 05 | 327 | 0.9− | 0.2+ | 2001 10 27 | 704 | 0.7+ | 0.1− | 2003 02 28 | 608 | 1.3+ | 0.6+ |
| 1998 03 05 | 327 | 0.4− | 0.4+ | 2001 10 27 | 704 | (0.1− | 1.7−) | 2003 02 28 | 608 | 0.9+ | 1.2+ |
| 1998 03 05 | 327 | 0.7− | 0.4+ | 2001 10 27 | 704 | 0.1+ | 0.8+ | 2003 03 07 | 704 | 0.7+ | 0.4− |
| 2000 09 20 | 695 | 0.1− | 0.5+ | 2001 10 27 | 704 | 0.6+ | 0.2+ | 2003 03 07 | 704 | 0.9+ | 0.4− |
| 2000 09 20 | 695 | 0.0 | 0.4+ | 2001 10 27 | 704 | 0.6− | 0.0 | 2003 03 07 | 704 | 0.1− | 0.5+ |
| 2001 09 22 | 699 | (1.7− | 0.0 ) | 2001 11 11 | 699 | 0.4− | 0.6− | 2003 03 07 | 704 | 0.5+ | 1.5+ |
| 2001 09 22 | 699 | 0.7− | 0.4+ | 2001 11 11 | 699 | (2.1+ | 0.4−) | 2003 03 07 | 704 | 0.6+ | 0.6+ |
| 2001 09 22 | 699 | 0.2+ | 1.0+ | 2001 11 11 | 699 | (1.9+ | 0.0 ) | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 2001 09 22 | 699 | 1.4− | 0.3+ | 2001 11 11 | 699 | 0.8+ | 0.7− | 2006 09 17 | 703 | (1.0+ | 1.6−) |
| 2001 09 25 | 704 | 0.2− | 0.6− | 2001 11 12 | 704 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2001 11 12 | 704 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.1− | 0.7− |
| 2001 09 25 | 704 | 0.5− | 0.3− | 2001 11 12 | 704 | 0.4+ | 0.2− | 2006 09 28 | 703 | 0.4− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4− | 0.2− | 2001 11 12 | 704 | 0.1− | 0.4− | 2006 09 28 | 703 | 0.7+ | 0.5− | | |
| 2001 09 25 | 704 | 0.3+ | 0.3+ | 2001 11 12 | 704 | 0.0 | 0.5− | 2006 09 28 | 703 | 0.6− | 0.1+ | | |
| 2001 10 15 | 704 | 0.3+ | 0.1− | 2003 01 01 | 291 | (1.7− | 0.7+) | 2006 09 28 | 703 | 0.0 | 0.3+ | | |
| 2001 10 15 | 704 | 0.5+ | 0.1+ | 2003 01 01 | 291 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.5+ | | |
| 2001 10 15 | 704 | 0.2+ | 0.4+ | 2003 01 01 | 291 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.2− | | |
| 2001 10 15 | 704 | 0.2− | 0.5− | 2003 01 28 | 291 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.1+ | | |
| 2001 10 15 | 704 | 0.2− | 0.3+ | 2003 01 28 | 291 | 0.5− | 0.0 | 2006 10 19 | 703 | 0.8+ | 0.3+ | | |
| 2001 10 18 | 704 | 0.4+ | 0.2+ | 2003 01 28 | 291 | 0.6− | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.1− | | |
| 2001 10 18 | 704 | 0.0 | 0.7+ | 2003 01 31 | 704 | 0.1− | 1.0− | 2006 10 27 | 703 | 0.0 | 0.2− | | |
| 2001 10 18 | 704 | 0.8+ | 0.0 | 2003 01 31 | 704 | 0.6+ | 0.9− | 2006 10 27 | 703 | 0.2− | 1.0+ | | |
| 2001 10 18 | 704 | 0.2− | 0.3+ | 2003 01 31 | 704 | 0.4+ | 0.6− | 2006 10 27 | 703 | 0.6− | 0.2− | | |
| 2001 10 18 | 704 | 0.5− | 0.9+ | 2003 02 08 | 608 | 0.4+ | 1.3− | 2006 11 22 | 703 | 1.1+ | 0.1+ | | |
| 2001 10 20 | 699 | 0.6− | 0.7+ | 2003 02 08 | 608 | 0.9+ | 1.1− | 2006 11 22 | 703 | 0.2+ | 0.8− | | |
| 2001 10 20 | 699 | 1.0− | 0.4+ | 2003 02 08 | 608 | 0.2+ | 0.4− | 2006 11 22 | 703 | 0.3+ | 0.0 | | |
| 2001 10 20 | 699 | (1.8− | 0.3−) | 2003 02 23 | 699 | 0.8+ | 0.8+ | 2006 11 22 | 703 | 0.2− | 1.5− | | |
| 2001 10 20 | 699 | 0.0 | 0.6+ | 2003 02 23 | 699 | 1.4+ | 1.2− | 2006 11 23 | G92 | 0.3+ | 0.2− | | |
| 2001 10 27 | 644 | 0.3+ | 0.4+ | 2003 02 23 | 699 | 1.2− | 0.2+ | 2006 11 23 | G92 | 0.8− | 0.0 | | |
| 2001 10 27 | 644 | 0.6+ | 0.2+ | 2003 02 23 | 699 | 0.1+ | 0.2+ | 2006 11 23 | G92 | 0.1+ | 0.2− | | |
| 2001 10 27 | 644 | 0.4+ | 0.3+ | 2003 02 28 | 608 | (1.2+ | 1.7+) | | | | | | |

**(140450)∗ 2001 TE$_{121}$ = 1995 QT$_4$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20529)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.87442 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18383144 | $\omega$ | 24.60966 | | +0.73512539 | +0.65827352 | |
| $a$ | 3.0633000 | $\Omega$ | 293.21755 | | −0.64754172 | +0.61103690 | |
| $e$ | 0.1691120 | $i$ | 10.15733 | | −0.20069974 | +0.43967020 | |
| $P$ | 5.36 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.0 | 0.1− | 2001 10 18 | 704 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.4+ | | |
| 1995 08 22 | 691 | 0.0 | 0.2− | 2001 10 18 | 704 | 0.1+ | 1.1+ | 2006 09 15 | 704 | 0.1− | 0.4+ | | |
| 1995 08 22 | 691 | 0.1+ | 0.2− | 2001 11 12 | 704 | 0.1+ | 0.5− | 2006 09 15 | 704 | 0.4− | 0.4+ | | |
| 1995 08 27 | 691 | 0.0 | 0.3− | 2001 11 12 | 704 | 0.0 | 0.8− | 2006 09 15 | 704 | 0.5− | 0.1− | | |
| 1995 08 27 | 691 | 0.1+ | 0.1− | 2001 11 12 | 704 | 0.3− | 1.2− | 2006 09 15 | 704 | 0.1+ | 0.5+ | | |
| 1995 08 27 | 691 | 0.2+ | 0.0 | 2001 11 12 | 704 | 0.0 | 1.2− | 2006 09 15 | 704 | 0.8− | 0.2− | | |
| 2001 09 25 | 704 | 0.3− | 0.3+ | 2001 11 12 | 704 | 0.3− | 0.5− | 2006 09 16 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 25 | 704 | 1.4− | 0.7+ | 2005 05 18 | E12 | 0.4− | 0.6+ | 2006 09 16 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.0 | 0.2− | 2005 05 18 | E12 | 0.2+ | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 25 | 704 | 0.2− | 1.0+ | 2005 05 18 | E12 | 0.9− | 0.9− | 2006 09 22 | 703 | 0.3− | 0.1− | | |
| 2001 09 25 | 704 | 0.6+ | 0.4+ | 2005 05 18 | E12 | 0.6+ | 1.0+ | 2006 09 22 | 703 | 0.4+ | 0.2− | | |
| 2001 10 13 | 644 | (0.7+ | 2.1+) | 2005 06 27 | 644 | 0.4+ | 1.0+ | 2006 09 22 | 703 | 1.0− | 0.4+ | | |
| 2001 10 13 | 644 | (0.7+ | 2.1+) | 2005 06 27 | 644 | 0.4+ | 0.6+ | 2006 09 22 | 703 | 0.2− | 0.0 | | |
| 2001 10 13 | 644 | (1.0+ | 2.2+) | 2005 06 27 | 644 | 0.4+ | 0.9+ | 2006 09 27 | 703 | 0.5+ | 0.3− | | |
| 2001 10 15 | 704 | 0.3+ | 0.4+ | 2006 08 31 | 704 | 0.4+ | 0.0 | 2006 09 27 | 703 | 0.6− | 0.1− | | |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2006 08 31 | 704 | 0.1+ | 1.2+ | 2006 09 27 | 703 | 0.1− | 0.0 | | |
| 2001 10 15 | 704 | 0.2− | 0.4+ | 2006 08 31 | 704 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.2− | 0.0 | | |
| 2001 10 15 | 704 | 0.4− | 0.3+ | 2006 08 31 | 704 | 0.5+ | 0.2+ | 2006 10 03 | G96 | 0.5+ | 0.6− | | |
| 2001 10 18 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.5− | | |
| 2001 10 18 | 704 | 0.6+ | 1.3+ | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.4− | | |
| 2001 10 18 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.6+ | 0.6− | | |

**(140451)∗ 2001 TQ$_{121}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.77431 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17908188 | $\omega$ | 91.36846 | | +0.80460813 | −0.57881703 | |
| $a$ | 3.1172259 | $\Omega$ | 304.01683 | | +0.46107619 | +0.74967883 | |
| $e$ | 0.1209700 | $i$ | 9.20389 | | +0.37418512 | +0.32086213 | |
| $P$ | 5.50 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 16 | 691 | 0.4+ | 1.0− | 2003 01 27 | 704 | 0.6+ | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.7+ | | |
| 1990 11 16 | 691 | 0.1+ | 0.8− | 2003 01 27 | 704 | 0.1− | 0.4+ | 2006 08 29 | 703 | 1.3− | 0.2− | | |
| 1990 11 16 | 691 | 0.3+ | 0.4− | 2003 01 27 | 699 | 0.0 | 1.4+ | 2006 08 30 | 699 | 0.4− | 0.3− | | |
| 2001 09 25 | 704 | 1.3− | 0.3− | 2003 01 27 | 704 | 0.9− | 0.3− | 2006 08 30 | 704 | 0.7+ | 0.9+ | | |
| 2001 09 25 | 704 | 1.1− | 0.2+ | 2003 01 27 | 699 | 0.8− | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.7+ | | |
| 2001 09 25 | 704 | 1.1− | 0.0 | 2003 01 27 | 704 | 0.7− | 0.3+ | 2006 08 30 | 699 | 0.2− | 0.6+ | | |
| 2001 09 25 | 704 | 1.3− | 0.2− | 2003 01 27 | 699 | 0.5+ | 0.9+ | 2006 08 30 | 704 | 0.5+ | 0.7+ | | |
| 2001 09 25 | 704 | 0.9− | 0.0 | 2003 01 27 | 699 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.7+ | 1.1+ | | |
| 2001 10 13 | 644 | 0.2+ | 0.1− | 2003 01 28 | 704 | 0.6+ | 1.1− | 2006 08 30 | 704 | 0.4+ | 0.9+ | | |
| 2001 10 13 | 644 | 0.2− | 0.1+ | 2003 01 28 | 704 | 0.2− | 0.3− | 2006 08 30 | 704 | 0.6+ | 0.7+ | | |
| 2001 10 13 | 644 | 0.1+ | 0.3− | 2003 01 28 | 704 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.7− | 0.1+ | | |
| 2001 10 15 | 704 | 1.2− | 0.9+ | 2003 01 28 | 704 | 0.8+ | 0.1+ | 2006 09 01 | 704 | (0.3+ | 1.6+) | | |
| 2001 10 15 | 704 | 0.5− | 0.1+ | 2003 01 28 | 704 | 1.1+ | 1.2+ | 2006 09 01 | 704 | 0.6− | 1.3+ | | |
| 2001 10 15 | 704 | 1.4− | 0.5+ | 2003 01 30 | 704 | 0.6+ | 1.2+ | 2006 09 01 | 704 | 0.2+ | 1.2+ | | |
| 2001 10 15 | 704 | 0.1− | 0.3+ | 2003 01 30 | 699 | 1.4+ | 0.2− | 2006 09 01 | 704 | 0.4+ | 1.2+ | | |
| 2001 10 18 | 704 | 0.1+ | 0.8+ | 2003 01 30 | 704 | 0.1+ | 1.4+ | 2006 09 01 | 704 | 0.8+ | 0.2+ | | |
| 2001 10 18 | 704 | 0.0 | 0.2+ | 2003 01 30 | 699 | 0.3+ | 0.4+ | 2006 09 11 | 703 | 0.1+ | 0.2+ | | |
| 2001 10 18 | 704 | 0.3− | 0.6− | 2003 01 30 | 704 | 0.4+ | 0.9+ | 2006 09 11 | 703 | 1.2− | 0.2+ | | |
| 2001 10 18 | 704 | 0.9− | 0.3+ | 2003 01 30 | 699 | 0.4+ | 0.2− | 2006 09 11 | 703 | (0.1− | 2.6+) | | |
| 2001 10 18 | 704 | 0.5+ | 0.6− | 2003 01 30 | 704 | 0.0 | 0.5+ | 2006 09 11 | 703 | 1.2− | 0.2+ | | |
| 2001 10 27 | 704 | 1.3+ | 0.7+ | 2003 01 30 | 704 | 0.8+ | 0.9+ | 2006 09 13 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 27 | 704 | (1.8+ | 1.1+) | 2003 01 30 | 699 | 0.1+ | 0.6+ | 2006 09 13 | 644 | 0.5− | 0.1+ | | |
| 2001 10 27 | 704 | 1.2+ | 0.2− | 2003 02 03 | 704 | 1.1+ | 1.2+ | 2006 09 13 | 644 | 0.5− | 0.1− | | |
| 2001 10 27 | 704 | 0.4+ | 0.5+ | 2003 02 03 | 704 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.0 | | |
| 2001 10 27 | 704 | 0.8− | 0.2+ | 2003 02 03 | 704 | (2.2− | 1.8−) | 2006 09 18 | 703 | 0.7+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2003 02 21 | 644 | 0.1− | 0.2+ | 2006 09 18 | 703 | 1.2− | 0.1− | | |
| 2001 11 12 | 704 | 0.4+ | 0.3+ | 2003 02 21 | 644 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.8− | 0.4− | | |
| 2001 11 12 | 704 | 0.9+ | 1.4+ | 2003 02 21 | 644 | 0.2− | 0.4+ | 2006 09 20 | 699 | 0.2− | 0.9− | | |
| 2001 11 12 | 704 | 1.2+ | 1.1+ | 2004 05 13 | 644 | 0.2+ | 1.3+ | 2006 09 20 | 699 | 1.4+ | 1.2− | | |
| 2001 11 18 | 704 | 0.1+ | 0.9− | 2004 05 13 | 644 | 0.8+ | 1.1+ | 2006 09 20 | 699 | 0.8− | 0.2− | | |
| 2001 11 18 | 704 | 1.1+ | 1.2− | 2004 05 13 | 644 | 0.9+ | 1.1+ | 2006 09 20 | 699 | 0.7− | 0.8+ | | |
| 2001 11 18 | 704 | 0.3+ | 1.0+ | 2006 08 22 | 644 | 0.7− | 0.4+ | 2006 09 30 | 699 | 0.4+ | 0.1+ | | |
| 2001 11 18 | 704 | 0.6+ | 0.4− | 2006 08 22 | 644 | 0.5− | 0.2+ | 2006 09 30 | 699 | 0.8+ | 0.7− | | |
| 2001 11 18 | 704 | 0.3+ | 0.9+ | 2006 08 22 | 644 | 0.5− | 0.2+ | 2006 09 30 | 699 | 0.1+ | 0.5+ | | |
| 2001 12 07 | 644 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.7− | 0.3+ | 2006 09 30 | 699 | 0.7− | 0.3+ | | |
| 2001 12 07 | 644 | 0.3+ | 0.3+ | 2006 08 27 | 699 | 0.5+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2001 12 07 | 644 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.3+ | 0.7+ | 2006 10 10 | 644 | 0.2− | 0.3+ | | |
| 2001 12 10 | 704 | 1.3− | 0.7+ | 2006 08 27 | 699 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.4+ | 0.1+ | | |
| 2001 12 10 | 704 | (1.6− | 0.5+) | 2006 08 29 | 703 | 0.8− | 0.3+ | | | | | | |
| 2001 12 10 | 704 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.7− | 0.2− | | | | | | |

**(140452)∗ 2001 TX$_{122}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.23507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19597029 | $\omega$ | 51.60219 | | +0.80405662 | −0.59215378 | |
| $a$ | 2.9354581 | $\Omega$ | 344.47098 | | +0.46420386 | +0.68131643 | |
| $e$ | 0.0683487 | $i$ | 11.49562 | | +0.37149392 | +0.43030434 | |
| $P$ | 5.03 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 327 | 0.2− | 0.2+ | 2001 11 11 | 699 | 0.5+ | 0.2+ | 2004 04 25 | 704 | 0.6+ | 0.0 | | |
| 1998 03 02 | 327 | 0.4− | 0.2+ | 2001 11 11 | 699 | 0.3− | 0.3+ | 2005 06 08 | E12 | 0.0 | 0.8+ | | |
| 1998 03 02 | 327 | 1.2− | 0.1+ | 2001 11 11 | 699 | 0.1+ | 0.3+ | 2005 06 08 | E12 | 0.5− | 0.3− | | |
| 2001 09 22 | 699 | 0.6+ | 0.2− | 2001 11 11 | 699 | 1.3− | 0.8− | 2005 06 08 | E12 | 0.9− | 0.1+ | | |
| 2001 09 22 | 699 | 1.0− | 0.2+ | 2001 12 07 | 644 | 0.2+ | 0.0 | 2005 06 08 | E12 | 1.0− | 0.5+ | | |
| 2001 09 22 | 699 | 0.2− | 1.0+ | 2001 12 07 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.3+ | | |
| 2001 09 22 | 699 | 0.6− | 1.0+ | 2001 12 07 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.5+ | 0.8+ | | |
| 2001 09 25 | 704 | 1.4− | 1.0− | 2003 01 26 | 699 | 0.5+ | 0.1+ | 2006 09 28 | 703 | 0.4+ | 0.3+ | | |
| 2001 09 25 | 704 | 1.3− | 0.1− | 2003 01 26 | 699 | 0.4− | 0.9+ | 2006 09 28 | 703 | 0.2+ | 0.3− | | |
| 2001 09 25 | 704 | 0.6− | 0.6− | 2003 01 26 | 699 | 1.0+ | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.3+ | | |
| 2001 10 13 | 644 | 0.3− | 0.6+ | 2003 01 26 | 699 | 0.9− | 0.4− | 2006 10 19 | 703 | 0.2+ | 0.5− | | |
| 2001 10 13 | 644 | 0.2+ | 0.5+ | 2003 01 27 | 704 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.5− | 0.3+ | | |
| 2001 10 13 | 644 | 0.0 | 0.6+ | 2003 01 27 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.8− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 1.2+ | 1.1+ | 2003 01 27 | 704 | 0.9− | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2001 10 15 | 704 | 0.3+ | 0.6+ | 2003 01 27 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 15 | 704 | (2.7+ | 0.3+) | 2003 02 02 | 644 | 0.4+ | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.2+ | | |
| 2001 10 15 | 704 | 0.3+ | 0.6− | 2003 02 02 | 644 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 10 18 | 704 | 0.2− | 0.2+ | 2003 02 02 | 644 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2001 10 18 | 704 | 0.1+ | 0.1− | 2003 02 04 | 699 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 18 | 704 | 0.2+ | 0.1− | 2003 02 04 | 699 | 0.1+ | 0.9+ | 2006 10 27 | 703 | 0.3+ | 0.7− | | |
| 2001 10 18 | 704 | 0.3+ | 0.2− | 2003 02 04 | 699 | 0.5+ | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.5+ | | |
| 2001 10 18 | 704 | 0.5+ | 0.9− | 2003 02 04 | 699 | 0.7− | 0.3− | 2006 10 27 | 703 | 0.5− | 0.1− | | |
| 2001 10 27 | 704 | 0.9+ | 0.3+ | 2003 02 19 | 644 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.3+ | | |
| 2001 10 27 | 704 | 0.8+ | 0.2+ | 2003 02 19 | 644 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.3− | | |
| 2001 10 27 | 704 | 0.9+ | 0.7− | 2003 02 19 | 644 | 0.6+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.3− | | |
| 2001 10 27 | 704 | (0.9+ | 1.6+) | 2003 02 23 | 699 | 0.5− | 1.2+ | 2006 11 15 | 703 | 0.4− | 0.1− | | |
| 2001 10 27 | 704 | 0.8+ | 0.5+ | 2003 02 23 | 699 | 0.4+ | 0.5+ | 2006 11 15 | 703 | 1.1− | 1.0− | | |
| 2001 11 11 | 704 | 0.6− | 0.9+ | 2003 02 23 | 699 | 0.6+ | 0.4+ | 2006 11 22 | 703 | 0.5− | 0.8− | | |
| 2001 11 11 | 704 | 0.1− | 0.3− | 2003 02 23 | 699 | 0.4− | 0.3− | 2006 11 22 | 703 | 0.1− | 0.5− | | |
| 2001 11 11 | 704 | 0.1− | 0.3+ | 2004 04 25 | 704 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.2− | 0.8− | | |
| 2001 11 11 | 704 | 0.4− | 0.7+ | 2004 04 25 | 704 | 0.8+ | 0.3+ | 2006 11 22 | 703 | 0.3+ | 0.1+ | | |
| 2001 11 11 | 704 | 0.5− | 0.9+ | 2004 04 25 | 704 | 1.2+ | 0.7+ | | | | | | |

**(140453)∗ 2001 TN$_{123}$ = 2004 DD$_{47}$**

Discovered 2001 Oct. 12 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 61123)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.53755 | | (2000.0) | | +0.56636743 | +0.81449300 |
| $n$ | 0.19263134 | $\omega$ | 344.47516 | | −0.73387991 | +0.42895242 |
| $a$ | 2.9692818 | $\Omega$ | 319.79213 | | −0.37503095 | +0.39064174 |
| $e$ | 0.0966122 | $i$ | 11.23830 | | | |
| $P$ | 5.12 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.5+ | 0.0 | 2004 02 26 | 704 | 0.6+ | 0.9− | 2006 09 19 | 699 | 0.8− | 0.2+ | | |
| 2001 08 22 | 704 | 0.3− | 0.2− | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.2+ | | |
| 2001 08 22 | 704 | 0.4+ | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.5+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.1+ | 2004 03 13 | 644 | 0.2− | 0.8+ | 2006 09 24 | 106 | 1.0− | 0.6− | | |
| 2001 09 25 | 704 | 0.4− | 0.1− | 2004 03 13 | 644 | 0.2+ | 1.0+ | 2006 09 24 | 106 | 0.3+ | 0.6+ | | |
| 2001 09 25 | 704 | 0.2− | 0.1− | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 09 24 | 106 | 0.8+ | 0.5− | | |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2004 03 13 | 644 | 0.4+ | 0.2+ | 2006 09 24 | 106 | 0.0 | 0.1+ | | |
| 2001 09 25 | 704 | 1.1+ | 1.2+ | 2004 03 13 | 644 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.2− | | |
| 2001 09 29 | 644 | 0.3− | 0.1− | 2004 03 13 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.5+ | | |
| 2001 09 29 | 644 | 0.3− | 0.0 | 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.3+ | 0.1− | | |
| 2001 09 29 | 644 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.6+ | 0.5+ | 2006 09 27 | 703 | 0.4− | 0.4+ | | |
| 2001 10 12 | 608 | 0.2+ | 1.1− | 2004 03 16 | 691 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.1+ | 0.5+ | | |
| 2001 10 12 | 608 | 0.3+ | 0.5− | 2004 03 16 | 704 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.6+ | | |
| 2001 10 12 | 608 | 0.1+ | 0.5− | 2004 03 16 | 704 | 0.0 | 1.2− | 2006 09 29 | 699 | 0.2+ | 0.9+ | | |
| 2001 10 13 | 699 | 0.3− | 0.3− | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.1+ | | |
| 2001 10 13 | 699 | 0.5+ | 0.3− | 2004 03 16 | 704 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 13 | 699 | 0.7+ | 0.1+ | 2004 03 16 | 704 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 13 | 699 | (0.1− | 1.9+) | 2006 08 27 | 683 | 0.5− | 0.6+ | 2006 10 17 | 691 | 0.3+ | 0.0 | | |
| 2001 10 13 | 644 | 0.2− | 1.5− | 2006 08 27 | 683 | (1.7+ | 1.8+) | 2006 10 19 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 13 | 644 | 0.1− | 1.1− | 2006 08 27 | 683 | (1.7− | 2.1+) | 2006 10 19 | 691 | 0.0 | 0.1− | | |
| 2001 10 13 | 644 | 0.2− | 1.1− | 2006 08 29 | 699 | 1.2+ | 0.9− | 2006 10 19 | 691 | 0.0 | 0.2+ | | |
| 2001 10 15 | 608 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.2+ | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.2− | | |
| 2001 10 15 | 608 | 0.8− | 0.3− | 2006 08 29 | 699 | (1.6+ | 0.5−) | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2001 10 15 | 608 | 0.4− | 0.6− | 2006 08 29 | 699 | 0.9+ | 1.4+ | 2006 10 21 | 691 | 0.4− | 0.0 | | |
| 2001 10 17 | 704 | 0.3+ | 0.7+ | 2006 09 06 | 644 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2001 10 17 | 704 | 0.5+ | 0.9+ | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2001 10 17 | 704 | 1.2+ | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.6− | | |
| 2001 10 17 | 704 | (0.3+ | 1.7+) | 2006 09 16 | 703 | 0.5− | 0.6− | 2006 10 23 | 703 | 0.3− | 0.3− | | |
| 2002 12 03 | 644 | 0.2+ | 0.1− | 2006 09 16 | 683 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 0.1+ | 0.3+ | | |
| 2002 12 03 | 644 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.5+ | 0.0 | 2006 10 23 | 703 | 0.1− | 0.2− | | |
| 2002 12 03 | 644 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.4+ | 0.1− | 2006 10 23 | 703 | 0.3+ | 0.1+ | | |
| 2004 02 19 | 704 | 1.5− | 0.9+ | 2006 09 16 | 683 | (2.5− | 2.6+) | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2004 02 19 | 704 | 1.3+ | 0.4− | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 10 28 | 691 | 0.4− | 0.5+ | | |
| 2004 02 19 | 704 | 0.5+ | 1.3+ | 2006 09 16 | 683 | (1.7− | 2.0+) | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2004 02 19 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.1− | 0.4+ | | | | | | |

**(140454)∗ 2001 TB$_{124}$**

Discovered 2001 Oct. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.00611 | | (2000.0) | | +0.45077976 | −0.88363994 |
| $n$ | 0.18320090 | $\omega$ | 114.32837 | | +0.74947550 | +0.45158781 |
| $a$ | 3.0703247 | $\Omega$ | 308.27718 | | +0.48485470 | +0.12348648 |
| $e$ | 0.1338084 | $i$ | 9.26610 | | | |
| $P$ | 5.38 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 11 | 691 | 0.1− | 0.3+ | 2001 10 15 | 608 | 0.8− | 0.3+ | 2003 01 31 | 704 | 1.3+ | 0.4− | | |
| 1990 09 11 | 691 | 0.4+ | 0.1+ | 2001 10 15 | 608 | 1.0− | 0.2− | 2003 01 31 | 704 | 0.3− | 0.6− | | |
| 1990 09 11 | 691 | 0.2+ | 0.3− | 2001 10 15 | 608 | 1.1− | 0.6− | 2003 02 07 | 699 | 0.1+ | 0.3− | | |
| 1998 03 22 | 691 | 0.3− | 0.0 | 2001 10 17 | 704 | 0.3+ | 0.5− | 2006 08 22 | 644 | 0.0 | 0.1+ | | |
| 1998 03 22 | 691 | 0.6− | 0.2− | 2001 10 17 | 704 | 0.4− | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.0 | | |
| 1998 03 22 | 691 | 0.4− | 0.0 | 2001 10 17 | 704 | 0.2− | 0.6− | 2006 08 22 | 644 | 0.1− | 0.1+ | | |
| 2000 07 29 | 807 | 0.0 | 0.4+ | 2001 10 17 | 704 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.4+ | | |
| 2000 07 29 | 807 | 0.3+ | 0.4+ | 2001 10 17 | 704 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.3+ | 1.0− | | |
| 2001 08 28 | 644 | 0.8− | 0.0 | 2001 11 17 | 704 | 0.9+ | 0.1− | 2006 08 28 | 699 | 0.3+ | 0.3− | | |
| 2001 08 28 | 644 | 0.3− | 0.2− | 2001 11 17 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 699 | 0.0 | 0.7− | | |
| 2001 08 28 | 644 | 0.2− | 0.2− | 2001 11 17 | 704 | 0.7+ | 0.0 | 2006 08 29 | 703 | 0.7+ | 0.2− | | |
| 2001 09 19 | 699 | 0.3+ | 0.3+ | 2003 01 08 | 704 | 0.4+ | 1.3+ | 2006 08 29 | 703 | 0.7− | 0.2+ | | |
| 2001 09 19 | 699 | 0.4− | 0.1− | 2003 01 08 | 704 | 1.5+ | 0.5+ | 2006 08 29 | 703 | 1.7− | 0.4+ | | |
| 2001 09 19 | 699 | 0.4+ | 0.2− | 2003 01 08 | 704 | 0.2+ | 0.2− | 2006 09 18 | 704 | 1.0+ | 0.2+ | | |
| 2001 09 19 | 699 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 704 | 0.3+ | 0.0 | | |
| 2001 09 24 | 644 | 0.5+ | 0.3+ | 2003 01 14 | 608 | 0.9+ | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.2− | | |
| 2001 09 24 | 644 | 0.1+ | 0.2+ | 2003 01 14 | 608 | 0.5+ | 0.5+ | 2006 09 18 | 704 | 0.4− | 0.4+ | | |
| 2001 09 24 | 644 | 0.3+ | 0.1+ | 2003 01 14 | 608 | 0.7+ | 0.0 | 2006 09 18 | 704 | 0.3− | 1.6+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.8− | 2003 01 27 | 704 | 0.0 | 0.4− | 2006 09 19 | 703 | 0.1− | 1.0+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.8− | 2003 01 27 | 704 | 0.1− | 0.8− | 2006 09 19 | 703 | 0.3+ | 0.4− | | |
| 2001 09 25 | 704 | 0.5+ | 0.4− | 2003 01 27 | 704 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.6− | | |
| 2001 09 25 | 704 | 0.1+ | 0.7− | 2003 01 27 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | (2.7− | 0.6+) | | |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2003 01 27 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.5− | | |
| 2001 10 12 | 608 | 1.0− | 0.1− | 2003 01 27 | 608 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.6− | 0.0 | | |
| 2001 10 12 | 608 | 0.8− | 0.9− | 2003 01 27 | 608 | 0.4− | 0.4− | 2006 09 25 | 704 | 0.2− | 0.7+ | | |
| 2001 10 12 | 608 | 0.7− | 0.1+ | 2003 01 27 | 608 | 0.6− | 0.2− | 2006 09 29 | 699 | 0.2− | 2.2+ | | |
| 2001 10 13 | 644 | 0.3+ | 0.0 | 2003 01 31 | 704 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.6− | 0.3+ | | |
| 2001 10 13 | 644 | 0.4+ | 0.0 | 2003 01 31 | 704 | 0.0 | 1.2+ | 2006 09 29 | 699 | 0.5− | 0.5+ | | |
| 2001 10 13 | 644 | 0.5+ | 0.0 | 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.9+ | 0.7− | | |

**(140455)∗ 2001 TY$_{124}$**

Discovered 2001 Oct. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.60058 | | (2000.0) | | +0.37629172 | −0.91349391 |
| $n$ | 0.19140007 | $\omega$ | 160.48418 | | +0.82813849 | +0.40649246 |
| $a$ | 2.9820024 | $\Omega$ | 267.16240 | | +0.41544096 | +0.01710988 |
| $e$ | 0.0754504 | $i$ | 8.91066 | | | |
| $P$ | 5.15 | $H$ | 14.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 699 | 0.5+ | 0.6− | 2002 12 28 | 699 | 1.3+ | 0.2+ | 2003 02 03 | 699 | 0.3+ | 0.1+ | | |
| 2001 09 19 | 699 | 0.1− | 0.8+ | 2002 12 28 | 699 | 0.9+ | 0.5− | 2003 02 03 | 699 | 0.4− | 0.7+ | | |
| 2001 09 19 | 699 | 0.5+ | 0.1+ | 2003 01 01 | 704 | (1.7+ | 0.1+) | 2003 02 28 | 704 | 0.2+ | 1.3− | | |
| 2001 09 19 | 699 | 0.5+ | 0.8+ | 2003 01 01 | 704 | 0.0 | 0.2+ | 2003 02 28 | 704 | 0.7+ | 0.4+ | | |
| 2001 09 19 | 644 | 0.3+ | 0.2+ | 2003 01 01 | 704 | 0.6− | 0.3+ | 2003 02 28 | 704 | 0.4− | 0.6+ | | |
| 2001 09 19 | 644 | 0.0 | 0.3+ | 2003 01 01 | 704 | 0.1− | 0.2+ | 2004 04 16 | E12 | 0.2+ | 1.0+ | | |
| 2001 09 19 | 644 | 0.1+ | 0.3+ | 2003 01 01 | 704 | 0.3+ | 0.6− | 2004 04 16 | E12 | (1.1− | 1.6+) | | |
| 2001 09 25 | 704 | 0.2− | 0.6+ | 2003 01 07 | 704 | (1.0+ | 1.6−) | 2004 04 16 | E12 | (0.6− | 2.9+) | | |
| 2001 09 25 | 704 | 0.0 | 0.5+ | 2003 01 07 | 704 | 0.5− | 0.2− | 2004 04 16 | E12 | 0.9+ | 0.2− | | |
| 2001 09 25 | 704 | 0.6− | 0.2− | 2003 01 07 | 704 | (0.9+ | 1.8−) | 2004 04 25 | 704 | 0.0 | 0.5+ | | |
| 2001 09 25 | 704 | 0.3− | 0.8− | 2003 01 07 | 704 | (0.4− | 2.2−) | 2004 04 25 | 704 | 0.1+ | 0.3− | | |
| 2001 09 25 | 704 | 0.5− | 0.2− | 2003 01 07 | 704 | 0.4+ | 0.5− | 2004 04 25 | 704 | 0.7+ | 0.4+ | | |
| 2001 10 12 | 608 | 0.1+ | 0.5− | 2003 01 08 | 704 | 0.3+ | 0.0 | 2004 04 26 | 704 | 0.0 | 1.1+ | | |
| 2001 10 12 | 608 | 0.4+ | 0.4− | 2003 01 08 | 704 | 0.9+ | 0.5+ | 2004 04 26 | 704 | 0.4− | 0.4+ | | |
| 2001 10 12 | 608 | 0.1+ | 0.5− | 2003 01 08 | 704 | 0.6+ | 0.0 | 2004 04 26 | 704 | 0.6+ | 0.6+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 699 | 0.6+ | 0.1− | 2003 01 08 | 704 | 0.5+ | 0.5+ | 2004 04 27 | 704 | 0.1− | 0.1+ | | |
| 2001 10 13 | 699 | 0.2− | 0.3+ | 2003 01 08 | 704 | 0.1+ | 0.3+ | 2004 04 27 | 704 | 0.5− | 0.1+ | | |
| 2001 10 13 | 699 | 0.3+ | 0.0 | 2003 01 14 | 608 | 0.2+ | 0.8− | 2004 04 27 | 704 | 1.0− | 0.7− | | |
| 2001 10 13 | 644 | 0.3− | 0.4+ | 2003 01 14 | 608 | 0.1− | 0.8− | 2004 04 27 | 704 | 0.4+ | 0.3+ | | |
| 2001 10 13 | 644 | 0.4− | 0.2+ | 2003 01 14 | 608 | 0.2+ | 1.3− | 2004 04 27 | 704 | 0.2+ | 0.1− | | |
| 2001 10 13 | 699 | 0.3− | 0.5+ | 2003 01 25 | 809 | 0.5− | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 644 | 0.4− | 0.2+ | 2003 01 25 | 809 | 0.5− | 0.1− | 2006 09 06 | 644 | 0.2− | 0.4+ | | |
| 2001 10 18 | 704 | 0.1+ | 0.4+ | 2003 01 25 | 809 | 0.5− | 0.0 | 2006 09 06 | 644 | 0.1− | 0.2+ | | |
| 2001 10 18 | 704 | 0.1+ | 0.0 | 2003 01 26 | 699 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.3− | | |
| 2001 10 18 | 704 | 0.5− | 0.0 | 2003 01 26 | 699 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.2− | 1.0+ | | |
| 2001 10 19 | 704 | 0.2− | 1.0− | 2003 01 26 | 699 | 0.9− | 0.3− | 2006 09 16 | 703 | 0.3+ | 0.2+ | | |
| 2001 10 19 | 704 | 0.2+ | 0.4− | 2003 01 26 | 699 | 0.7− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.7− | | |
| 2001 10 19 | 704 | 0.9+ | 0.3− | 2003 01 26 | 608 | 0.9+ | 1.4+ | 2006 09 22 | 699 | 0.1− | 0.5+ | | |
| 2001 10 19 | 704 | 0.5+ | 0.3− | 2003 01 26 | 608 | 0.8+ | 1.1+ | 2006 09 22 | 699 | 0.8+ | 0.1− | | |
| 2001 10 19 | 704 | 0.1+ | 0.0 | 2003 01 26 | 608 | 1.1+ | 0.8+ | 2006 09 22 | 699 | 0.6− | 0.9+ | | |
| 2001 11 10 | 704 | 0.7− | 0.1− | 2003 01 27 | 704 | 0.1+ | 0.5− | 2006 09 22 | 699 | 0.5− | 0.4+ | | |
| 2001 11 10 | 704 | 0.1+ | 0.0 | 2003 01 27 | 704 | 0.1− | 0.6− | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2001 11 10 | 704 | 0.8+ | 0.6− | 2003 01 27 | 704 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2001 12 11 | 704 | 0.4− | 0.2+ | 2003 01 27 | 699 | 0.6− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2001 12 11 | 704 | 0.9− | 0.6+ | 2003 01 27 | 644 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.9− | 1.1− | | |
| 2001 12 11 | 704 | 0.3− | 0.7+ | 2003 01 27 | 699 | 0.7− | 0.0 | 2006 10 19 | 703 | 0.2− | 1.0− | | |
| 2002 11 14 | 644 | 0.4+ | 0.3− | 2003 01 27 | 699 | 1.1− | 0.5− | 2006 10 19 | 703 | (1.6− | 0.6−) | | |
| 2002 11 14 | 644 | 0.0 | 0.1+ | 2003 01 27 | 699 | 1.0− | 1.2+ | 2006 10 19 | 703 | 1.0− | 1.0− | | |
| 2002 11 14 | 644 | 1.0− | 0.6− | 2003 01 27 | 644 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 06 | 644 | 0.2+ | 0.1+ | 2003 01 27 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 12 06 | 644 | 0.3+ | 0.1− | 2003 01 30 | 699 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 06 | 644 | 0.1+ | 0.1− | 2003 01 30 | 699 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2002 12 10 | 644 | 0.2+ | 0.2+ | 2003 01 30 | 699 | 0.1− | 0.2− | 2006 10 23 | 703 | 0.6+ | 1.0+ | | |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2003 01 30 | 699 | (1.5− | 0.0 ) | 2006 10 23 | 644 | 0.1− | 0.6− | | |
| 2002 12 10 | 644 | 0.1+ | 0.3+ | 2003 02 02 | 704 | 0.4+ | 0.3+ | 2006 10 23 | 703 | 0.4+ | 0.9+ | | |
| 2002 12 15 | 608 | 0.9+ | 0.1− | 2003 02 02 | 704 | 0.2− | 0.3− | 2006 10 23 | 703 | 0.4+ | 0.1+ | | |
| 2002 12 15 | 608 | 0.9+ | 0.1+ | 2003 02 02 | 704 | 0.8+ | 0.0 | 2006 10 23 | 703 | 0.9+ | 0.6+ | | |
| 2002 12 15 | 608 | 0.6+ | 0.3− | 2003 02 02 | 704 | 0.5+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2002 12 28 | 699 | 0.7− | 0.1+ | 2003 02 03 | 699 | 0.6− | 0.2+ | | | | | | |
| 2002 12 28 | 699 | 0.6− | 0.1− | 2003 02 03 | 699 | 1.1− | 0.5− | | | | | | |

**(140456)∗ 2001 TS$_{125}$ = 1996 XA$_{21}$**

Discovered 2001 Oct. 12 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 29713)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.62964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18781142 | $\omega$ | 104.24604 | | +0.89205399 | −0.42783249 | |
| $a$ | 3.0198686 | $\Omega$ | 281.25369 | | +0.33582397 | +0.84312762 | |
| $e$ | 0.0722887 | $i$ | 8.53730 | | +0.30242677 | +0.32572254 | |
| $P$ | 5.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 06 | 691 | 0.3+ | 0.6− | 2003 01 27 | 704 | 0.5+ | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.2+ | | |
| 1996 12 06 | 691 | 0.0 | 0.2− | 2003 01 27 | 704 | 0.1+ | 1.1+ | 2006 09 29 | 699 | 1.1+ | 0.1− | | |
| 1996 12 06 | 691 | 0.2+ | 0.4− | 2003 01 27 | 704 | 0.5+ | 0.0 | 2006 09 30 | 683 | (0.1+ | 1.7+) | | |
| 1996 12 07 | 691 | 0.3+ | 0.2− | 2006 09 06 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 683 | (0.2− | 1.8+) | | |
| 1996 12 07 | 691 | 0.2+ | 0.1− | 2006 09 06 | 644 | 0.5− | 0.0 | 2006 09 30 | 683 | (0.3+ | 2.3+) | | |
| 1996 12 07 | 691 | 0.3+ | 0.5− | 2006 09 06 | 644 | 0.3+ | 0.3− | 2006 10 03 | 703 | 0.8− | 0.8− | | |
| 1996 12 13 | 691 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.0 | 2006 10 03 | 703 | 0.6+ | 0.2+ | | |
| 1996 12 13 | 691 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.5+ | 0.2+ | 2006 10 03 | 703 | (0.4+ | 1.8−) | | |
| 1996 12 13 | 691 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.3+ | 0.1+ | 2006 10 03 | 703 | 0.2+ | 0.4− | | |
| 2001 09 25 | 704 | 1.1− | 1.3+ | 2006 09 16 | 703 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 25 | 704 | 1.1− | 0.9+ | 2006 09 21 | 699 | 0.1+ | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 25 | 704 | (1.7− | 0.3+) | 2006 09 21 | 699 | 1.0− | 0.7+ | 2006 10 17 | 691 | 0.0 | 0.4+ | | |
| 2001 09 25 | 704 | 1.4− | 0.4+ | 2006 09 21 | 699 | 0.3+ | 1.2+ | 2006 10 19 | 691 | 0.0 | 0.5+ | | |
| 2001 09 25 | 704 | (1.6− | 0.3−) | 2006 09 21 | 699 | 0.6+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1− | | |
| 2001 10 12 | 608 | 0.0 | 0.1+ | 2006 09 22 | 683 | (1.6− | 1.1+) | 2006 10 19 | 691 | 0.0 | 0.1− | | |
| 2001 10 12 | 608 | 0.2− | 0.1+ | 2006 09 22 | 683 | (1.2+ | 1.8−) | 2006 10 21 | 691 | 0.1− | 0.4− | | |
| 2001 10 12 | 608 | 0.1+ | 0.2+ | 2006 09 22 | 683 | 0.1− | 0.9− | 2006 10 21 | 691 | 0.0 | 0.3+ | | |
| 2001 10 13 | 699 | (0.0 | 1.7+) | 2006 09 25 | 683 | 0.6+ | 1.2− | 2006 10 21 | 691 | 0.0 | 0.2− | | |
| 2001 10 13 | 699 | 0.1− | 0.3+ | 2006 09 25 | 683 | (1.5+ | 1.2−) | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2001 10 13 | 699 | 0.4+ | 0.5+ | 2006 09 25 | 683 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.0 | | |
| 2001 10 13 | 644 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2001 10 13 | 699 | 0.2+ | 1.1+ | 2006 09 27 | 703 | 0.6− | 0.2− | 2006 10 24 | 644 | 0.0 | 0.2+ | | |
| 2001 10 13 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.4− | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.2+ | | |
| 2001 10 13 | 644 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.3+ | 0.1− | 2006 10 24 | 644 | 0.3+ | 0.3+ | | |
| 2002 12 07 | 291 | 0.2− | 0.3+ | 2006 09 28 | 683 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1− | 0.2− | | |
| 2002 12 07 | 291 | 0.0 | 0.3+ | 2006 09 28 | 683 | 0.7+ | 0.9+ | 2006 10 28 | 691 | 0.0 | 0.2− | | |
| 2002 12 07 | 291 | 0.1− | 0.4+ | 2006 09 28 | 683 | (1.2− | 1.6+) | 2006 10 28 | 691 | 0.3− | 0.0 | | |
| 2003 01 27 | 704 | 1.1+ | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.5− | | | | | | |
| 2003 01 27 | 704 | 0.6+ | 0.3− | 2006 09 29 | 699 | 0.5+ | 0.3+ | | | | | | |

**(140457)∗ 2001 TS$_{126}$**

Discovered 2001 Oct. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.83634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19638626 | $\omega$ | 113.50605 | | +0.99978370 | +0.01358291 | |
| $a$ | 2.9313115 | $\Omega$ | 245.71879 | | −0.01866321 | +0.92011686 | |
| $e$ | 0.1028714 | $i$ | 0.99002 | | +0.00917803 | +0.39140831 | |
| $P$ | 5.02 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.1− | 0.3− | 2001 10 21 | 704 | (1.4+ | 2.0+) | 2006 09 20 | 699 | (0.1+ | 1.9+) | | |
| 1991 11 06 | 691 | 0.5+ | 0.7− | 2001 10 23 | 049 | 1.3− | 1.0− | 2006 09 20 | 699 | 0.4− | 0.3+ | | |
| 1994 04 15 | 691 | 0.2+ | 1.1+ | 2001 10 23 | 049 | 1.3− | 0.9− | 2006 09 20 | 699 | 0.0 | 0.5+ | | |
| 1994 04 15 | 691 | 0.2− | 0.5+ | 2001 10 23 | 049 | (1.8− | 1.3−) | 2006 09 20 | 699 | 0.6− | 0.5− | | |
| 1994 04 15 | 691 | 0.1− | 0.3+ | 2001 10 26 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.5− | 0.0 | | |
| 1996 10 08 | 691 | 0.9+ | 0.5+ | 2001 10 26 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 1996 10 08 | 691 | 0.9+ | 0.4+ | 2001 10 26 | 704 | 0.6+ | 0.4− | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 1996 10 08 | 691 | 1.2+ | 0.3+ | 2001 11 16 | 691 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | | |
| 1996 10 18 | 691 | 0.4− | 0.4− | 2001 11 16 | 691 | 0.6− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | | |
| 1996 10 18 | 691 | 0.3− | 0.5− | 2001 11 16 | 691 | 0.5− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | | |
| 1996 10 18 | 691 | 0.4− | 0.4− | 2001 11 17 | 704 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2001 11 17 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2001 11 17 | 704 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2001 09 20 | 704 | 1.4− | 0.1+ | 2001 11 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 2001 10 11 | 644 | 0.3− | 0.6+ | 2001 11 18 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2001 10 11 | 644 | 0.4− | 0.6+ | 2001 11 18 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.2− | | |
| 2001 10 11 | 644 | 0.7− | 0.6+ | 2001 11 19 | 704 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2001 10 13 | 691 | 0.8− | 0.0 | 2001 11 19 | 704 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.1+ | 0.5− | | |
| 2001 10 13 | 691 | 0.7− | 0.2+ | 2001 11 19 | 704 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.4− | 0.5− | | |
| 2001 10 13 | 691 | 0.9− | 0.2+ | 2001 11 19 | 704 | 1.4+ | 0.8+ | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 2001 10 14 | 691 | 0.2+ | 0.1− | 2001 11 19 | 704 | 0.6− | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.2+ | | |
| 2001 10 14 | 691 | 0.4+ | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.4+ | 2006 11 15 | 691 | 0.4+ | 0.1− | | |
| 2001 10 14 | 691 | 0.3+ | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.3+ | | |
| 2001 10 17 | 704 | 0.1+ | 1.0+ | 2001 11 21 | 704 | 0.5− | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.4− | | |
| 2001 10 17 | 704 | (1.9+ | 0.2−) | 2001 11 21 | 704 | 0.5− | 0.4− | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.9− | 2003 01 30 | 644 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 17 | 704 | 1.0− | 1.0− | 2003 01 30 | 644 | 0.2− | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.2+ | | |
| 2001 10 21 | 704 | 0.8− | 0.1+ | 2003 01 30 | 644 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.3− | | |
| 2001 10 21 | 704 | 0.4− | 1.1+ | 2004 04 13 | 691 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.2+ | 0.3− | | |
| 2001 10 21 | 704 | 0.8+ | 0.3+ | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1− | | |
| 2001 10 21 | 704 | 0.9+ | 0.4+ | 2004 04 13 | 691 | 0.3+ | 0.4− | | | | | | |

**(140458)∗ 2001 TF$_{127}$ = 2005 LU$_{1}$**

Discovered 2001 Oct. 11 by W. Bickel at Bergisch Gladbach.

Id. G. V. Williams (*MPO* 75165)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.26344 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17859611 | $\omega$ | 77.14396 | | −0.01350036 | +0.99920230 | |
| $a$ | 3.1228758 | $\Omega$ | 192.26963 | | −0.97224088 | −0.02189827 | |
| $e$ | 0.0479933 | $i$ | 10.18643 | | −0.23359243 | +0.03339493 | |
| $P$ | 5.52 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.5+ | 0.2+ | 2001 10 23 | 291 | 0.4− | 0.1+ | 2005 07 01 | 691 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2001 10 23 | 704 | 1.0− | 1.9+ | 2005 07 01 | 691 | 0.1+ | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.7+ | 2005 07 05 | 644 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2005 07 05 | 644 | 0.1+ | 0.1− |
| 2001 10 11 | 621 | 0.7+ | 0.3+ | 2004 03 16 | 691 | 0.3+ | 0.6+ | 2005 07 05 | 644 | 0.4+ | 0.7− |
| 2001 10 12 | 621 | 0.1− | 0.6− | 2005 06 01 | G96 | 0.1− | 0.4− | 2006 08 17 | 644 | 0.2− | 0.3− |
| 2001 10 12 | 621 | 0.6− | 0.6− | 2005 06 01 | G96 | 0.0 | 0.4− | 2006 08 17 | 644 | 0.2− | 0.2− |
| 2001 10 12 | 621 | 0.4+ | 0.3+ | 2005 06 01 | G96 | 0.0 | 0.5− | 2006 08 17 | 644 | 0.2+ | 0.0 |
| 2001 10 12 | 621 | 0.2− | 0.1− | 2005 06 01 | G96 | 0.2− | 0.5− | 2006 08 29 | 703 | 0.3+ | 0.8− |
| 2001 10 12 | 621 | 0.7+ | 0.4+ | 2005 06 03 | 691 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.9− | 0.3− |
| 2001 10 12 | 621 | 0.5− | 0.2− | 2005 06 03 | 691 | 0.4− | 0.8+ | 2006 08 29 | 703 | 0.6+ | 0.1+ |
| 2001 10 13 | 621 | 0.1+ | 0.3+ | 2005 06 03 | 691 | 0.4+ | 0.2− | 2006 08 29 | 703 | 1.5+ | 0.1− |
| 2001 10 13 | 621 | 0.4+ | 0.1+ | 2005 06 08 | 691 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.6+ |
| 2001 10 18 | 644 | 0.4− | 0.0 | 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.2− | 1.9+ |
| 2001 10 18 | 644 | 0.4− | 0.0 | 2005 06 08 | 691 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.8+ |
| 2001 10 18 | 644 | 0.5− | 0.2− | 2005 06 13 | 691 | 0.2+ | 0.1− | 2006 08 30 | 704 | 1.1− | 0.8− |
| 2001 10 20 | 704 | 0.1− | 0.4+ | 2005 06 13 | 691 | 1.3− | 1.6+ | 2006 09 11 | 703 | 0.3− | 0.4− |
| 2001 10 20 | 704 | 0.3− | 0.9+ | 2005 06 13 | 691 | 0.3+ | 0.2+ | 2006 09 11 | 703 | 0.1+ | 0.2− |
| 2001 10 20 | 704 | 0.0 | 0.4+ | 2005 06 17 | 691 | 0.2− | 0.2+ | 2006 09 11 | 703 | 0.6− | 0.2− |
| 2001 10 20 | 704 | 0.4− | 0.5+ | 2005 06 17 | 691 | 0.2− | 0.0 | 2006 09 11 | 703 | 0.0 | 0.2− |
| 2001 10 23 | 291 | 0.6+ | 0.2+ | 2005 06 17 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.2+ |
| 2001 10 23 | 704 | 0.4− | 0.7+ | 2005 06 28 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.3+ |
| 2001 10 23 | 291 | 0.2− | 0.3+ | 2005 06 28 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.4+ |
| 2001 10 23 | 704 | 0.3+ | 0.5+ | 2005 06 28 | 691 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.1− | 1.0+ |
| 2001 10 23 | 704 | 0.5− | 0.7+ | 2005 07 01 | 691 | 0.3+ | 0.1− | | | | |

**(140459)∗ 2001 TO$_{127}$**

Discovered 2001 Oct. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.42681 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23318525 | $\omega$ | 298.86606 | | +0.74286485 | +0.66938985 |
| $a$ | 2.6141791 | $\Omega$ | 19.11788 | | −0.60502488 | +0.67664356 |
| $e$ | 0.0873602 | $i$ | 1.45368 | | −0.28652523 | +0.30670949 |
| $P$ | 4.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7− | 0.3− | 2004 04 24 | 691 | 0.3+ | 0.3+ | 2005 09 29 | 699 | 0.8+ | 0.6− |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2004 04 25 | 291 | 0.0 | 0.5+ | 2005 10 03 | G96 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 291 | 0.2+ | 0.5+ | 2005 10 03 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2004 04 25 | 291 | 0.1− | 0.4+ | 2005 10 03 | G96 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 0.5− | 0.1− | 2004 05 16 | 704 | 0.6+ | 0.2+ | 2005 10 03 | G96 | 0.0 | 0.1− |
| 2001 10 12 | 699 | 0.5− | 0.6+ | 2004 05 16 | 704 | 0.0 | 0.0 | 2005 12 01 | G96 | 0.4− | 0.6− |
| 2001 10 12 | 699 | 0.1− | 0.1− | 2004 05 16 | 704 | 0.2+ | 0.2+ | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2001 10 12 | 699 | 0.8− | 1.5+ | 2005 08 25 | 644 | 0.6− | 0.5− | 2005 12 01 | G96 | 0.2+ | 0.4− |
| 2001 10 12 | 699 | 0.7+ | 1.3+ | 2005 08 25 | 644 | 0.0 | 0.2− | 2005 12 01 | G96 | 0.1− | 0.3− |
| 2001 10 14 | 699 | 0.6− | 1.2+ | 2005 08 25 | 644 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2001 10 14 | 699 | 1.1− | 0.3+ | 2005 08 29 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 10 14 | 699 | 1.0+ | 0.2− | 2005 08 29 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2+ |
| 2001 10 14 | 699 | 0.5− | 0.2− | 2005 08 29 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2001 10 17 | 704 | 1.3− | 0.9+ | 2005 09 06 | 699 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.5+ |
| 2001 10 17 | 704 | 1.0− | 0.1− | 2005 09 06 | 699 | 0.4+ | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.4+ |
| 2001 10 17 | 704 | (0.2+ | 1.7−) | 2005 09 06 | 699 | (0.4− | 2.2+) | 2006 10 23 | G96 | 0.2+ | 1.0+ |
| 2001 10 17 | 704 | 0.0 | 0.7+ | 2005 09 06 | 699 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.3− | 0.1+ |
| 2001 10 17 | 704 | 1.1− | 0.5+ | 2005 09 12 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.3+ |
| 2001 10 18 | 644 | 0.6+ | 1.3+ | 2005 09 12 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.7+ |
| 2001 10 18 | 644 | 0.6+ | 1.0+ | 2005 09 12 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.0 | 1.0+ |
| 2001 10 18 | 644 | 0.8+ | 0.9+ | 2005 09 22 | 644 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.8− | 0.7+ |
| 2001 10 19 | 644 | 0.6− | 0.7+ | 2005 09 22 | 644 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.2+ |
| 2001 10 19 | 644 | 0.4− | 0.5+ | 2005 09 22 | 644 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2005 09 23 | 644 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 1.1+ | 0.0 | 2005 09 23 | 644 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.4+ | 0.2+ | 2005 09 23 | 644 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 1.1+ | 0.5− | 2005 09 23 | 461 | 0.3− | 0.6− | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.2− | 0.2− | 2005 09 23 | 461 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 1.2− | 2005 09 29 | 699 | (0.1+ | 1.6+) | 2006 12 01 | G96 | 0.1+ | 0.3+ |
| 2004 04 24 | 691 | 0.2+ | 0.3+ | 2005 09 29 | 699 | 1.4+ | 0.7+ | | | | |
| 2004 04 24 | 691 | 0.1+ | 0.5+ | 2005 09 29 | 699 | 0.9+ | 0.8+ | | | | |

**(140460)∗ 2001 TR$_{127}$**

Discovered 2001 Oct. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.65555 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18896274 | $\omega$ | 203.36739 | | +0.68793154 | −0.72254340 |
| $a$ | 3.0075897 | $\Omega$ | 203.35202 | | +0.69014951 | +0.68042272 |
| $e$ | 0.1089166 | $i$ | 9.93967 | | +0.22459706 | +0.12229451 |
| $P$ | 5.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.6+ | 0.1− | 2001 10 21 | 704 | 0.1− | 1.0+ | 2006 09 12 | 703 | 0.5+ | 0.9+ |
| 2001 09 20 | 704 | 1.2+ | 0.5− | 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | (0.3+ | 1.8+) |
| 2001 09 20 | 704 | 0.3+ | 1.3− | 2001 10 21 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 644 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.4+ | 0.3− | 2001 10 21 | 704 | 0.4− | 0.8+ | 2006 09 16 | 644 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.4− | 2001 10 21 | 704 | 0.5− | 0.8+ | 2006 09 16 | 644 | 0.1− | 0.0 |
| 2001 09 23 | 704 | (0.3− | 1.9+) | 2001 10 25 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.8− | 0.7+ |
| 2001 09 23 | 704 | 0.1− | 0.5+ | 2001 10 25 | 644 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 0.7− | 0.6+ | 2001 10 25 | 644 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.0 |
| 2001 09 24 | 704 | 0.0 | 1.3+ | 2001 11 21 | 704 | (0.5+ | 1.8−) | 2006 09 19 | 703 | 0.0 | 0.0 |
| 2001 09 24 | 704 | 0.9− | 1.4+ | 2001 11 21 | 704 | (0.3− | 2.4−) | 2006 09 25 | 699 | 0.9+ | 0.9+ |
| 2001 09 24 | 704 | 0.3− | 0.7+ | 2001 11 21 | 704 | (0.1− | 2.4−) | 2006 09 25 | 699 | 0.0 | 0.8+ |
| 2001 09 24 | 704 | 0.9− | 0.5+ | 2001 11 21 | 704 | (0.7+ | 3.0−) | 2006 09 25 | 699 | 1.1− | 0.2+ |
| 2001 10 12 | 699 | 0.3+ | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.6− |
| 2001 10 12 | 699 | 0.7+ | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 16 | 703 | 1.3+ | 0.7− |
| 2001 10 12 | 699 | 0.7− | 0.3+ | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 1.0− | 0.4− |
| 2001 10 12 | 699 | 0.4− | 0.7+ | 2004 03 16 | 691 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2001 10 14 | 699 | 0.2− | 0.8− | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.8+ |
| 2001 10 14 | 699 | 0.2− | 0.4− | 2004 04 20 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 699 | 0.7− | 0.7− | 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 699 | 0.1+ | 0.3− | 2004 04 20 | 691 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2001 10 15 | 691 | 0.2+ | 0.1+ | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2001 10 15 | 691 | 0.1+ | 0.3+ | 2004 05 09 | 691 | 0.3+ | 1.1+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2001 10 15 | 691 | 0.2+ | 0.3+ | 2004 05 09 | 691 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | (0.7+ | 2.4−) | 2006 08 29 | 703 | 0.8− | 1.1− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 10 17 | 704 | 0.1− | 0.7+ | 2006 08 29 | 703 | 0.6− | 0.9+ | 2006 11 14 | G96 | 0.7+ | 0.8− |
| 2001 10 17 | 704 | (2.0− | 1.5+) | 2006 08 29 | 703 | 0.0 | 0.6+ | 2006 11 14 | G96 | 0.6− | 0.5− |
| 2001 10 19 | 644 | 0.3− | 0.7+ | 2006 08 29 | 703 | 0.3+ | 1.2− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 10 19 | 644 | 0.4− | 0.5+ | 2006 09 12 | 703 | (1.6− | 1.1+) | | | | |
| 2001 10 19 | 644 | 0.7− | 0.6+ | 2006 09 12 | 703 | 0.0 | 0.9+ | | | | |

**(140461)∗ 2001 TS$_{127}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.19692 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.38008240 | $\omega$ | 282.64527 | | +0.25381132 | +0.96716821 |
| $a$ | 1.8874880 | $\Omega$ | 2.18703 | | −0.70372064 | +0.19376694 |
| $e$ | 0.0575225 | $i$ | 19.69956 | | −0.66359406 | +0.16443854 |
| $P$ | 2.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.8+ | 0.4+ | 2004 12 21 | 704 | 0.3+ | 1.0+ | 2006 09 25 | 699 | 0.1− | 0.2− |
| 2000 03 04 | 704 | 0.1− | 1.1+ | 2004 12 21 | 704 | 1.4+ | 1.1+ | 2006 09 26 | 704 | 0.1+ | 0.3− |
| 2000 03 04 | 704 | 1.2− | 0.9+ | 2004 12 21 | 704 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.8+ |
| 2000 04 07 | 608 | 0.6+ | 0.4− | 2004 12 21 | 704 | 0.3+ | 0.1− | 2006 09 26 | 704 | 0.4+ | 0.1− |
| 2000 04 07 | 608 | 0.6+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.2+ |
| 2000 04 07 | 608 | 0.8+ | 0.1− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.3+ |
| 2001 09 21 | 699 | 0.7+ | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 28 | 704 | 0.2− | 0.6+ |
| 2001 09 21 | 699 | 0.1+ | 0.8+ | 2006 08 21 | 644 | 0.4− | 0.1− | 2006 09 28 | 704 | 0.9− | 0.5− |
| 2001 09 21 | 699 | 1.0+ | 0.1+ | 2006 08 21 | 644 | 0.5− | 0.0 | 2006 09 28 | 704 | 0.9− | 0.5+ |
| 2001 09 21 | 699 | 0.1− | 0.5+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2006 09 12 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.6+ |
| 2001 09 25 | 704 | 0.0 | 0.8− | 2006 09 12 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.9+ | 0.3+ |
| 2001 09 25 | 704 | 0.4− | 0.0 | 2006 09 12 | 704 | (1.5+ | 0.5+) | 2006 09 30 | 703 | 0.6+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.3+ | 0.0 | 2006 09 12 | 704 | 0.9+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.3− |
| 2001 10 15 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 1.0− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2001 10 15 | 704 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.7+ | 2006 10 16 | 703 | 1.3− | 0.3+ |
| 2001 10 15 | 704 | 0.3− | 0.8− | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.7− |
| 2001 10 20 | 699 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.5− |
| 2001 10 20 | 699 | 0.6+ | 0.2+ | 2006 09 16 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 1.3− | 0.5− |
| 2001 10 20 | 699 | 0.7+ | 0.6− | 2006 09 16 | 704 | 0.1− | 0.9− | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2001 10 20 | 699 | 0.5+ | 0.0 | 2006 09 16 | 704 | 1.0− | 0.7+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2001 10 27 | 644 | 1.2+ | 0.3− | 2006 09 19 | 699 | 0.9− | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2001 10 27 | 644 | 1.2+ | 0.1− | 2006 09 19 | 699 | 0.5+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2001 10 27 | 644 | 1.2+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 10 27 | 704 | 0.2− | 0.8+ | 2006 09 20 | 644 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 10 27 | 704 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 10 27 | 704 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.3+ | 0.9− |
| 2001 10 27 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.5+ | 0.3+ | 2006 11 13 | 703 | 1.0− | 0.2+ |
| 2001 10 27 | 704 | 0.3− | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.8+ | 2006 11 13 | 703 | (1.7− | 0.5−) |
| 2001 11 11 | 704 | 0.4− | 0.5− | 2006 09 22 | 704 | 0.5− | 0.5+ | 2006 11 13 | 703 | (1.5+ | 1.0−) |
| 2001 11 11 | 704 | 0.8− | 0.8− | 2006 09 22 | 704 | 0.4− | 0.1− | 2006 11 22 | 291 | 0.9+ | 0.0 |
| 2001 11 11 | 704 | 1.1− | 0.5− | 2006 09 22 | 704 | 0.4− | 0.2+ | 2006 11 22 | 291 | 0.5+ | 0.2+ |
| 2001 11 11 | 704 | 1.0− | 0.5− | 2006 09 25 | 699 | 0.5− | 0.2+ | 2006 11 22 | 291 | 0.6+ | 0.2+ |
| 2001 11 11 | 704 | 1.0− | 0.7− | 2006 09 25 | 699 | 0.8+ | 0.2+ | | | | |
| 2004 12 21 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.3+ | | | | |

**(140462)∗ 2001 TF$_{128}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.51711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18482604 | $\omega$ | 286.74751 | | +0.17650416 | −0.98246169 | |
| $a$ | 3.0523005 | $\Omega$ | 152.86433 | | +0.94583421 | +0.15237958 | |
| $e$ | 0.0736965 | $i$ | 7.57534 | | +0.27247740 | +0.10746857 | |
| $P$ | 5.33 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2003 01 07 | 704 | 0.3− | 0.4+ | 2006 08 19 | 941 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2003 01 27 | 704 | 0.2+ | 0.3+ | 2006 08 19 | 941 | 0.4+ | 0.3− |
| 2001 09 19 | 704 | 0.5+ | 0.7− | 2003 01 27 | 704 | 0.5+ | 0.5+ | 2006 08 19 | 941 | 0.6+ | 0.1− |
| 2001 09 19 | 704 | (2.5+ | 0.5+) | 2003 01 27 | 704 | 0.9+ | 0.2− | 2006 08 19 | 644 | 0.4− | 0.3+ |
| 2001 10 10 | 644 | 0.1+ | 0.2+ | 2003 01 27 | 704 | 0.5+ | 0.3− | 2006 08 19 | 644 | 0.2− | 0.4+ |
| 2001 10 10 | 644 | 0.1+ | 0.2+ | 2003 01 27 | 704 | 0.5+ | 0.5+ | 2006 08 19 | 644 | 0.2− | 0.2+ |
| 2001 10 10 | 644 | 0.3+ | 0.2+ | 2003 02 03 | 704 | 0.6− | 1.6+ | 2006 08 23 | 644 | 0.2+ | 0.2+ |
| 2001 10 14 | 608 | 0.4− | 1.5− | 2003 02 03 | 704 | 1.2− | 0.7+ | 2006 08 23 | 644 | 0.2− | 0.5+ |
| 2001 10 14 | 608 | 0.6− | 0.7− | 2003 02 03 | 704 | (1.6− | 2.1+) | 2006 08 23 | 644 | 0.3− | 0.3+ |
| 2001 10 14 | 608 | 0.0 | 0.7− | 2003 02 03 | 704 | 0.5− | 1.0+ | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.3− | 1.0+ | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.1− | 1.6+ | 2006 08 24 | 644 | 0.2− | 0.1+ |
| 2001 10 19 | 699 | 1.0− | 1.3+ | 2004 03 20 | 704 | 0.7− | 1.6+ | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2001 10 19 | 699 | 2.0− | 0.5− | 2004 03 20 | 704 | 0.7− | 1.7+ | 2006 08 27 | 699 | 0.9− | 1.9+ |
| 2001 10 19 | 699 | 1.4− | 1.5+ | 2004 03 20 | 704 | 1.6− | 1.8+ | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2001 10 19 | 699 | (1.0− | 2.0+) | 2004 04 20 | 704 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 1.2− | 0.2− |
| 2001 10 20 | 704 | 0.2+ | 0.6− | 2004 04 20 | 704 | (3.1+ | 1.5−) | 2006 08 27 | 691 | 0.2− | 0.0 |
| 2001 10 20 | 704 | 0.0 | 0.9+ | 2004 04 20 | 704 | 1.6+ | 0.8+ | 2006 08 27 | 699 | 1.1− | 0.7− |
| 2001 10 20 | 704 | 0.1+ | 1.7+ | 2004 04 20 | 704 | 0.0 | 0.7+ | 2006 08 27 | 699 | 0.5+ | 0.2+ |
| 2001 10 24 | 644 | 0.2− | 0.5+ | 2004 04 20 | 704 | 0.8+ | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.7+ |
| 2001 10 24 | 644 | 0.3+ | 0.7+ | 2006 08 18 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.4− |
| 2001 10 24 | 644 | 0.0 | 0.7+ | 2006 08 18 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 1.6+ | 0.3− |
| 2003 01 07 | 704 | 0.4+ | 0.7+ | 2006 08 18 | 691 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.7− | 0.0 |
| 2003 01 07 | 704 | 0.0 | 0.3+ | 2006 08 19 | 941 | 0.3+ | 0.2+ | | | | |

**(140463)∗ 2001 TX$_{128}$**

Discovered 2001 Oct. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.57660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21760037 | $\omega$ | 65.18550 | | −0.04623816 | +0.99888431 | |
| $a$ | 2.7375557 | $\Omega$ | 202.17066 | | −0.92544139 | −0.04645268 | |
| $e$ | 0.0351588 | $i$ | 1.45783 | | −0.37605887 | −0.00850222 | |
| $P$ | 4.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2004 05 09 | 691 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 1.0+ | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.6+ | 2004 05 16 | 691 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2004 05 16 | 691 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.6− |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2004 05 16 | 691 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.6− | 0.1− |
| 2001 09 23 | 691 | 0.1− | 0.0 | 2005 07 01 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.7+ | 0.5− |
| 2001 09 23 | 691 | 0.2− | 0.1+ | 2005 07 01 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 1.2− | 0.5− |
| 2001 09 23 | 691 | 0.1− | 0.2+ | 2005 07 01 | 691 | 0.3− | 0.1+ | 2006 10 17 | G96 | 1.1+ | 0.6− |
| 2001 10 11 | 644 | 0.4− | 0.4+ | 2005 07 06 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.1− |
| 2001 10 11 | 644 | 0.4− | 0.3+ | 2005 07 06 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2001 10 11 | 644 | 0.3− | 0.3+ | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 10 14 | 691 | 0.1+ | 0.2+ | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 10 14 | 691 | 0.1− | 0.0 | 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 10 14 | 691 | 0.3− | 0.2+ | 2005 07 09 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.5+ |
| 2001 10 15 | 691 | 0.3− | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.4+ |
| 2001 10 15 | 691 | 0.2− | 0.1+ | 2005 07 15 | G96 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2001 10 15 | 691 | 0.2− | 0.0 | 2005 07 15 | G96 | 0.3+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.1+ |
| 2001 10 17 | 691 | 0.2+ | 0.0 | 2005 07 15 | G96 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2001 10 17 | 691 | 0.2+ | 0.1+ | 2005 07 18 | 644 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2001 10 17 | 691 | 0.2+ | 0.2+ | 2005 07 18 | 644 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.4− | 0.1− |
| 2001 10 21 | 704 | 0.8+ | 0.9+ | 2005 07 18 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2005 07 28 | 644 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.0 | 0.6+ | 2005 07 28 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.1+ | 0.0 | 2005 07 28 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.8− |
| 2004 03 27 | 704 | 0.3− | 1.2+ | 2005 10 26 | G96 | 0.7− | 0.4− | 2006 11 17 | 703 | 0.2− | 0.7+ |
| 2004 03 27 | 704 | 0.7+ | 0.3+ | 2005 10 26 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 0.6+ | 0.8+ | 2005 10 26 | G96 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2004 04 13 | 691 | 0.7+ | 0.1− | 2005 10 26 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | (0.9− | 1.6+) |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2005 11 25 | G96 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.4− | 1.2+ |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2005 11 25 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.7+ | 1.0+ |
| 2004 04 17 | 704 | 0.9+ | 0.9+ | 2005 11 25 | G96 | 0.7− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2004 04 17 | 704 | 0.2+ | 0.0 | 2005 11 25 | G96 | 0.1− | 0.5− | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 04 17 | 704 | 0.2+ | 1.5+ | 2006 10 12 | 691 | 0.7− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2004 05 09 | 691 | 0.2− | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 05 09 | 691 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.0 |

**(140464)∗ 2001 TF$_{129}$ = 1996 TN$_{47}$**

Discovered 2001 Oct. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 20532)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.49675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19364728 | $\omega$ | 62.06435 | | +0.02664680 | −0.99963018 | |
| $a$ | 2.9588875 | $\Omega$ | 26.41039 | | +0.91281548 | +0.02211895 | |
| $e$ | 0.0824771 | $i$ | 0.69904 | | +0.40750197 | +0.01581936 | |
| $P$ | 5.09 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 17 | 691 | 0.2− | 0.8+ | 2001 11 21 | 704 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.0 |
| 1993 02 17 | 691 | 0.1+ | 0.6+ | 2003 01 28 | 291 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.1+ | 0.3− |
| 1993 02 17 | 691 | 0.0 | 0.8+ | 2003 01 28 | 291 | 0.5− | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 1993 03 25 | 691 | 0.5− | 1.0− | 2003 01 28 | 291 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 1993 03 25 | 691 | 0.4+ | 1.0− | 2003 02 02 | 644 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 1993 03 25 | 691 | 0.1− | 1.0− | 2003 02 02 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 703 | 0.4− | 0.6− |
| 1996 10 10 | 691 | 0.4+ | 0.3− | 2003 02 02 | 644 | 0.4+ | 0.2+ | 2006 10 20 | 703 | 0.3+ | 0.1+ |
| 1996 10 10 | 691 | 0.2+ | 0.3− | 2003 02 21 | 644 | (1.6− | 2.2+) | 2006 10 20 | 703 | 0.6− | 0.4+ |
| 1996 10 10 | 691 | 0.3+ | 0.4− | 2003 02 21 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 703 | 1.0− | 0.2+ |
| 1996 10 11 | 691 | 0.4− | 0.3− | 2003 02 21 | 644 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 1.2− | 1.0+ |
| 1996 10 11 | 691 | 0.6− | 0.2− | 2004 04 25 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.6− | 0.6− |
| 1996 10 11 | 691 | 0.9− | 0.2− | 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 17 | 691 | 0.5+ | 0.0 | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | (0.0 | 1.8−) | | |
| 1996 10 17 | 691 | 0.6+ | 1.0+ | 2005 07 15 | G96 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 1998 01 28 | 691 | 0.0 | 0.5− | 2005 07 15 | G96 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.6+ | | |
| 1998 01 28 | 691 | 0.1+ | 0.2− | 2005 07 15 | G96 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 1998 01 28 | 691 | 0.1+ | 0.2− | 2005 07 15 | G96 | 0.5− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− | | |
| 2001 10 14 | 691 | (1.7− | 0.1−) | 2006 07 21 | G96 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.3− | | |
| 2001 10 14 | 691 | 0.7− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− | | |
| 2001 10 14 | 691 | 0.8− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 2001 10 15 | 691 | 0.4+ | 0.2− | 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.2− | | |
| 2001 10 15 | 691 | 0.5+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 2001 10 15 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2001 10 21 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2001 10 21 | 704 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.5+ | 1.2+ | 2006 10 27 | G96 | 0.2− | 0.3− | | |
| 2001 10 21 | 704 | 0.7− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.6− | 0.7− | | |
| 2001 10 21 | 704 | (0.2+ | 1.8−) | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.2− | 0.3− | | |
| 2001 10 21 | 704 | 0.9− | 0.6− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.4− | 0.3− | | |
| 2001 11 19 | 704 | 0.3− | 1.0+ | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.3− | | |
| 2001 11 19 | 704 | 0.7+ | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.5+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.2− | 0.9+ | 2006 09 28 | 691 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2001 11 21 | 704 | 0.5+ | 0.5+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.6− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.5+ | 0.9+ | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.6+ | | |
| 2001 11 21 | 704 | 0.4− | 1.3+ | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.4+ | 0.2− | | |

**(140465)∗ 2001 TF$_{130}$ = 1996 TB$_{48}$**

Discovered 2001 Oct. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 20533)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.15874 | | (2000.0) | | | |
| $n$ | 0.19486340 | $\omega$ | 157.92777 | | +0.99679542 | −0.07975798 |
| $a$ | 2.9465639 | $\Omega$ | 206.64912 | | +0.07119873 | +0.91952162 |
| $e$ | 0.2352077 | $i$ | 0.78281 | | +0.03646405 | +0.38486187 |
| $P$ | 5.06 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.2+ | 0.4− | 2001 10 26 | 704 | 1.2+ | 0.9+ | 2006 09 25 | 691 | 0.4− | 0.0 | | |
| 1996 10 05 | 691 | 0.4+ | 0.3− | 2001 10 26 | 704 | 0.5+ | 1.4+ | 2006 09 25 | 691 | 0.2− | 0.2− | | |
| 1996 10 05 | 691 | 0.3+ | 0.3− | 2001 11 19 | 704 | 0.5+ | 0.7− | 2006 09 26 | G96 | 0.2− | 0.2− | | |
| 1996 10 12 | 691 | 0.2+ | 0.2− | 2001 11 19 | 704 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 1996 10 12 | 691 | 0.3+ | 0.0 | 2001 11 19 | 704 | 0.2− | 0.8− | 2006 09 26 | G96 | 0.1+ | 0.4− | | |
| 1996 10 12 | 691 | 1.4+ | 0.3+ | 2001 11 21 | 704 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.6− | | |
| 1996 10 18 | 691 | 0.3− | 0.3− | 2001 11 21 | 704 | 0.4+ | 0.3− | 2006 09 27 | 704 | 0.5− | 0.3+ | | |
| 1996 10 18 | 691 | 0.1− | 0.3− | 2001 11 21 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.5− | | |
| 1996 10 18 | 691 | 0.4− | 0.2− | 2001 11 21 | 704 | 0.9+ | 0.3− | 2006 09 27 | 704 | 0.4− | 1.2+ | | |
| 1996 10 21 | 691 | 0.5− | 0.3+ | 2001 11 21 | 704 | 0.3+ | 0.5− | 2006 09 27 | 704 | 0.1+ | 0.0 | | |
| 1996 10 21 | 691 | 0.7− | 0.2+ | 2003 03 25 | 568 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.8+ | 0.0 | | |
| 1996 10 21 | 691 | 0.4− | 0.4+ | 2003 03 25 | 568 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.2− | 1.0− | | |
| 2001 10 11 | 644 | 0.3+ | 0.0 | 2003 03 25 | 568 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 1.0− | 0.2− | | |
| 2001 10 11 | 644 | 0.3+ | 0.1− | 2003 03 27 | 568 | 0.0 | 0.2+ | 2006 09 29 | 704 | 1.3− | 0.4− | | |
| 2001 10 11 | 644 | 0.4+ | 0.6+ | 2003 03 27 | 568 | 0.1− | 0.3+ | 2006 09 29 | 691 | 0.1− | 0.4− | | |
| 2001 10 15 | 691 | 0.4− | 0.2+ | 2003 03 27 | 568 | 0.0 | 0.3+ | 2006 09 29 | 691 | 0.3− | 0.3− | | |
| 2001 10 15 | 691 | 0.7− | 0.1+ | 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 09 29 | 691 | 0.2− | 0.3− | | |
| 2001 10 15 | 691 | 0.5− | 0.0 | 2005 06 13 | G96 | 0.4− | 0.9+ | 2006 10 03 | 691 | 0.1+ | 0.1− | | |
| 2001 10 16 | 691 | 0.4+ | 0.2+ | 2005 06 13 | G96 | 0.4+ | 0.9+ | 2006 10 03 | 691 | 0.2+ | 0.0 | | |
| 2001 10 16 | 691 | 0.4+ | 0.1+ | 2005 06 13 | G96 | 0.3+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.0 | | |
| 2001 10 16 | 691 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2001 10 17 | 704 | 0.7− | 0.5+ | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 | | |
| 2001 10 17 | 704 | 0.1− | 0.2− | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2001 10 17 | 704 | 1.4− | 0.6+ | 2006 07 22 | G96 | 0.3+ | 0.4+ | 2006 10 13 | A50 | 0.2− | 0.5+ | | |
| 2001 10 17 | 704 | 0.5− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 13 | A50 | 0.3− | 0.3+ | | |
| 2001 10 17 | 704 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 18 | 644 | 0.3+ | 1.0+ | 2006 09 18 | 699 | 0.8− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.3+ | | |
| 2001 10 18 | 644 | 0.4+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | | |
| 2001 10 18 | 644 | 0.4+ | 1.1+ | 2006 09 18 | 699 | (1.5− | 0.5+) | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 19 | 644 | 0.4+ | 0.9+ | 2006 09 18 | 699 | (0.9− | 1.9+) | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 19 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2006 09 20 | 012 | 0.2− | 0.5− | 2006 10 28 | 691 | 0.5+ | 0.0 | | |
| 2001 10 21 | 704 | 0.7− | 0.4+ | 2006 09 20 | 012 | 1.0+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 2001 10 21 | 704 | 0.6− | 0.3− | 2006 09 20 | 012 | 0.8+ | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.1− | | |
| 2001 10 21 | 704 | 0.4− | 0.1+ | 2006 09 20 | 012 | 0.2+ | 1.0− | 2006 11 01 | 691 | 0.3+ | 0.2− | | |
| 2001 10 21 | 704 | 1.3− | 0.5+ | 2006 09 20 | 012 | 0.1− | 0.6− | 2006 11 01 | 691 | 0.3+ | 0.1+ | | |
| 2001 10 21 | 704 | 1.0− | 0.1+ | 2006 09 22 | 012 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.0 | | |
| 2001 10 25 | 644 | 0.4+ | 1.5+ | 2006 09 22 | 012 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2− | 0.6− | | |
| 2001 10 25 | 644 | (0.1+ | 1.8+) | 2006 09 22 | 012 | 0.0 | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.7− | | |
| 2001 10 25 | 644 | (0.3+ | 1.7+) | 2006 09 22 | 012 | 0.9− | 0.4− | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2001 10 26 | 704 | 0.8− | 1.1+ | 2006 09 22 | 012 | 0.7+ | 1.2− | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2001 10 26 | 704 | 1.1− | 0.4− | 2006 09 25 | 691 | 0.3− | 0.1+ | | | | | | |

**(140466)∗ 2001 TU$_{130}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.81876 | | (2000.0) | | | |
| $n$ | 0.21079604 | $\omega$ | 233.07615 | | +0.96691910 | +0.22278969 |
| $a$ | 2.7961540 | $\Omega$ | 113.75170 | | −0.16864801 | +0.92372166 |
| $e$ | 0.1265555 | $i$ | 7.80038 | | −0.19137736 | +0.31161361 |
| $P$ | 4.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 691 | 0.1+ | 0.4+ | 2003 01 08 | 704 | 1.4− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2000 05 28 | 691 | 0.1− | 0.3+ | 2003 01 08 | 704 | 1.3− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.2− | | |
| 2000 05 28 | 691 | 0.2− | 0.3+ | 2003 01 08 | 704 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.1− | | |
| 2001 08 16 | 704 | 1.0+ | 0.4− | 2003 01 09 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1− | | |
| 2001 08 16 | 704 | 0.0 | 0.7− | 2003 01 09 | 704 | 0.9+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.0 | | |
| 2001 08 16 | 704 | 0.2− | 0.6− | 2003 01 09 | 704 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.0 | | |
| 2001 09 07 | 699 | 0.0 | 1.0+ | 2003 01 09 | 704 | 0.9− | 0.8− | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2001 09 07 | 699 | 0.1− | 0.5+ | 2003 01 09 | 704 | 0.5+ | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2001 09 07 | 699 | 1.1− | 0.7+ | 2003 01 09 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 07 | 699 | 0.3− | 1.1+ | 2003 01 09 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.1− | | |
| 2001 09 12 | 704 | 0.7− | 0.4− | 2003 01 09 | 704 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.2− | 0.9+ | 2004 03 15 | 704 | (0.4− | 1.6+) | 2006 10 16 | 703 | 1.3− | 0.7+ | | |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2004 03 15 | 704 | (2.1− | 0.8+) | 2006 10 16 | 703 | 0.4− | 0.4+ | | |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.9− | 0.9+ | | |
| 2001 09 12 | 704 | 1.2− | 0.3+ | 2004 03 15 | 704 | 0.2+ | 1.1+ | 2006 10 16 | 703 | 0.5+ | 0.0 | | |
| 2001 09 25 | 704 | 1.3+ | 0.2− | 2004 03 15 | 704 | 1.3+ | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.4+ | | |
| 2001 09 25 | 704 | 1.1+ | 0.2+ | 2004 03 23 | 704 | (0.8+ | 1.7+) | 2006 10 22 | 703 | 0.6+ | 1.1+ | | |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2004 03 23 | 704 | (1.2+ | 1.7+) | 2006 10 22 | 703 | 0.2− | 0.1+ | | |
| 2001 09 25 | 704 | 1.0+ | 0.3+ | 2004 03 23 | 704 | (1.1+ | 1.9+) | 2006 10 22 | 703 | 0.0 | 0.3+ | | |
| 2001 10 10 | 644 | 0.3+ | 0.2+ | 2004 03 23 | 704 | (1.5+ | 2.3+) | 2006 11 13 | 703 | 0.6− | 0.4− | | |
| 2001 10 10 | 644 | 0.6+ | 0.4+ | 2004 03 23 | 704 | 0.3+ | 1.2+ | 2006 11 13 | 703 | 0.6− | 0.1− | | |
| 2001 10 10 | 644 | 0.1− | 0.4+ | 2004 03 30 | 691 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.9− | | |
| 2001 10 15 | 644 | 0.3− | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.7− | | |
| 2001 10 15 | 644 | 0.1− | 0.0 | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.6+ | 0.6− | | |
| 2001 10 15 | 644 | 0.1+ | 0.1+ | 2005 02 13 | 809 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.6+ | 1.5− | | |
| 2001 10 16 | 644 | 0.0 | 0.1+ | 2005 02 13 | 809 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.5+ | 1.1− | | |
| 2001 10 16 | 644 | 0.1− | 0.2+ | 2005 02 13 | 809 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.7− | | |
| 2001 10 16 | 644 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.5− | 0.2+ | | |
| 2001 10 24 | 644 | 0.4− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 1.0− | 0.7+ | | |
| 2001 10 24 | 644 | 0.8− | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.5+ | | |
| 2001 10 24 | 644 | 0.4− | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.7+ | 2006 11 21 | 704 | 0.7+ | 1.8+ | | |
| 2002 12 05 | 704 | 0.7− | 0.7+ | 2006 09 29 | 699 | 0.1− | 0.7+ | 2006 11 23 | E14 | 1.4+ | 1.2+ | | |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.1− | 1.2+ | 2006 11 23 | E14 | 0.2+ | 0.6+ | | |
| 2002 12 05 | 704 | 0.4+ | 1.0+ | 2006 09 29 | 699 | 0.9+ | 0.3− | 2006 11 23 | E14 | 0.8− | 0.1+ | | |
| 2003 01 08 | 704 | 1.1+ | 1.1− | 2006 10 11 | 644 | 0.2− | 0.0 | | | | | | |

**(140467)∗ 2001 TN$_{131}$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.28899 | | (2000.0) | | | |
| $n$ | 0.18886108 | $\omega$ | 238.63120 | | +0.94738108 | +0.27026794 |
| $a$ | 3.0086690 | $\Omega$ | 105.21193 | | −0.19820480 | +0.91605672 |
| $e$ | 0.1066474 | $i$ | 10.23953 | | −0.25136417 | +0.29630276 |
| $P$ | 5.22 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | 0.5− | 0.0 | 2004 02 16 | 704 | 1.4+ | 0.3+ | 2005 06 13 | 691 | 0.1− | 0.0 |
| 2001 08 25 | 644 | 0.6− | 0.3+ | 2004 02 16 | 704 | 0.1+ | 0.5+ | 2005 06 13 | 691 | 0.3+ | 0.2− |
| 2001 08 25 | 644 | 0.2− | 0.3+ | 2004 02 16 | 704 | 0.8− | 1.1+ | 2006 08 16 | 428 | 0.4+ | 0.7− |
| 2001 09 12 | 704 | 0.2− | 0.4+ | 2004 03 23 | 704 | 1.4+ | 0.5+ | 2006 08 16 | 428 | 0.6− | 0.4− |
| 2001 09 12 | 704 | 0.7− | 0.5+ | 2004 03 23 | 704 | 0.3+ | 1.3+ | 2006 08 16 | E12 | 0.5− | 0.9− |
| 2001 09 12 | 704 | 1.3+ | 1.5+ | 2004 03 23 | 704 | 0.8− | 0.5+ | 2006 08 16 | E12 | 0.1+ | 0.0 |
| 2001 09 22 | 644 | 0.3− | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 08 16 | E12 | 0.4− | 0.4− |
| 2001 09 22 | 644 | 0.6− | 0.3+ | 2005 04 30 | 691 | 0.2+ | 0.1− | 2006 08 16 | E12 | 0.7− | 0.6− |
| 2001 09 22 | 644 | 0.8− | 0.0 | 2005 04 30 | 691 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.1− |
| 2001 10 11 | 644 | 0.2+ | 0.3+ | 2005 04 30 | 691 | 0.4+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.0 | 0.4+ | 2005 05 06 | 703 | 0.1+ | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.1− |
| 2001 10 11 | 644 | 0.0 | 0.2+ | 2005 05 06 | 703 | 1.9− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.3− |
| 2001 10 15 | 704 | 0.3− | 0.1− | 2005 05 06 | 703 | 1.1− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.1− |
| 2001 10 15 | 644 | 0.5− | 0.5+ | 2005 05 06 | 703 | 0.2+ | 0.6− | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2001 10 15 | 704 | 0.8+ | 0.6+ | 2005 05 14 | 644 | 0.2− | 0.2+ | 2006 08 23 | 644 | 0.5+ | 0.3+ |
| 2001 10 15 | 644 | 0.1+ | 0.5+ | 2005 05 14 | 644 | 0.4− | 0.1− | 2006 08 23 | 644 | 0.4+ | 0.3+ |
| 2001 10 15 | 644 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.2+ | 0.2+ |
| 2001 10 15 | 704 | 0.4+ | 0.1+ | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.5+ | 0.3+ |
| 2001 10 23 | 644 | 0.0 | 0.4+ | 2005 06 05 | 691 | 0.2− | 0.3+ | 2006 09 13 | 644 | 0.6+ | 0.2+ |
| 2001 10 23 | 644 | 0.6− | 0.6+ | 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.3+ |
| 2001 10 23 | 644 | 0.3− | 0.4+ | 2005 06 13 | 691 | 0.2+ | 0.1+ | | | | |

**(140468)∗ 2001 TU$_{132}$**

Discovered 2001 Oct. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.77436 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19288102 | $\omega$ | 51.78521 | | +0.88483398 | | +0.43860046 |
| $a$ | 2.9667188 | $\Omega$ | 281.69846 | | −0.46166577 | | +0.77998584 |
| $e$ | 0.0809806 | $i$ | 9.23541 | | −0.06271800 | | +0.44637621 |
| $P$ | 5.11 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.5− | 0.0 | 2001 11 11 | 644 | (0.2− | 1.7+) | 2006 08 29 | 699 | 0.1− | 0.8+ |
| 1996 12 07 | 691 | 1.0+ | 0.6− | 2001 11 13 | 704 | 0.5− | 0.0 | 2006 08 29 | 699 | 0.9+ | 0.6+ |
| 1996 12 07 | 691 | 0.4− | 0.6− | 2001 11 13 | 704 | 0.2− | 0.0 | 2006 08 29 | 699 | 0.8+ | 0.5+ |
| 2001 08 22 | 704 | 0.6− | 0.1− | 2001 11 13 | 704 | 0.6− | 0.2+ | 2006 08 29 | 699 | 0.1+ | 0.8+ |
| 2001 08 22 | 704 | 0.8+ | 0.3+ | 2001 11 13 | 704 | 0.3− | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.3+ |
| 2001 08 22 | 704 | 0.3− | 0.0 | 2001 12 19 | 699 | 1.0+ | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.2+ |
| 2001 08 22 | 704 | (0.1+ | 1.9+) | 2001 12 19 | 699 | 1.5+ | 0.4− | 2006 09 06 | 644 | 0.0 | 0.1+ |
| 2001 08 22 | 704 | 0.9− | 1.4+ | 2001 12 19 | 699 | 0.5− | 0.6+ | 2006 09 11 | A44 | 0.0 | 0.1+ |
| 2001 08 28 | 644 | 0.2− | 0.2− | 2001 12 19 | 699 | 0.8− | 0.3− | 2006 09 11 | A44 | 0.1+ | 0.1+ |
| 2001 08 28 | 644 | 0.1+ | 0.0 | 2002 12 05 | 704 | 1.2+ | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2001 08 28 | 644 | 0.4+ | 0.0 | 2002 12 05 | 704 | 0.9+ | 0.8+ | 2006 09 14 | 644 | 0.4− | 0.4+ |
| 2001 09 25 | 704 | 1.0+ | 0.0 | 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 0.1+ | 0.9− | 2006 09 16 | 703 | 0.3+ | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 0.2− | 2002 12 31 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.3− | 0.4− |
| 2001 09 25 | 704 | 0.7+ | 0.0 | 2002 12 31 | 704 | 0.3− | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.5− |
| 2001 09 25 | 704 | 0.3+ | 0.3+ | 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.2+ | 0.2− |
| 2001 09 29 | 644 | (1.2− | 1.9−) | 2002 12 31 | 704 | 0.2+ | 0.5− | 2006 09 19 | 699 | 1.0− | 0.1− |
| 2001 09 29 | 644 | 1.2+ | 1.3− | 2003 01 04 | 704 | 0.7+ | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 2001 09 29 | 644 | (1.1− | 1.9−) | 2003 01 04 | 704 | 0.6+ | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.5− |
| 2001 09 29 | 644 | 1.2+ | 1.0− | 2003 01 04 | 704 | 0.3− | 0.5− | 2006 09 29 | 699 | 0.7+ | 0.2+ |
| 2001 09 29 | 644 | (1.2− | 1.8−) | 2003 01 04 | 704 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.3+ | 0.3+ |
| 2001 09 29 | 644 | (1.8+ | 1.1−) | 2003 01 08 | 704 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.6+ | 0.2+ |
| 2001 10 12 | 608 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.6− | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.1+ |
| 2001 10 12 | 608 | 0.0 | 0.4− | 2003 01 08 | 704 | 0.4− | 0.2− | 2006 10 03 | 703 | 0.1+ | 1.0+ |
| 2001 10 12 | 608 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.9− | 0.5+ | 2006 10 03 | 703 | 0.1− | 0.4+ |
| 2001 10 15 | 608 | 0.3− | 0.6− | 2003 01 10 | 704 | 0.2− | 1.1+ | 2006 10 03 | 703 | (2.2− | 3.7+) |
| 2001 10 15 | 608 | 0.3− | 0.9− | 2003 01 10 | 704 | 0.3− | 0.5− | 2006 10 03 | 703 | (0.3+ | 1.7+) |
| 2001 10 15 | 608 | 0.4− | 0.5− | 2003 01 10 | 704 | 1.3− | 0.9+ | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2001 10 18 | 704 | 0.9− | 0.2+ | 2003 01 10 | 704 | 0.2− | 0.6− | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2001 10 18 | 704 | 0.0 | 0.1+ | 2004 03 17 | 703 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.3+ | 0.2+ |
| 2001 10 18 | 704 | 0.7+ | 0.5− | 2004 03 17 | 703 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.8− | 0.2− |
| 2001 10 18 | 704 | 0.5− | 0.1+ | 2004 03 17 | 704 | 0.6+ | 0.1− | 2006 10 19 | 683 | 0.9− | 0.1− |
| 2001 10 18 | 704 | 0.6− | 0.4+ | 2004 03 17 | 703 | 1.1+ | 1.1+ | 2006 10 19 | 683 | 0.2− | 0.4+ |
| 2001 10 19 | 704 | 0.5+ | 0.9+ | 2004 03 17 | 704 | 1.1+ | 0.3− | 2006 10 23 | 683 | 1.7− | 0.8+ |
| 2001 10 19 | 704 | 0.2− | 0.4+ | 2004 03 17 | 703 | 0.1+ | 0.9+ | 2006 10 23 | 683 | (3.0− | 2.5+) |
| 2001 10 19 | 704 | 1.0+ | 1.2− | 2004 03 17 | 704 | 0.2+ | 1.3+ | 2006 10 23 | 703 | 0.1+ | 0.1+ |
| 2001 10 19 | 704 | 0.2+ | 1.0+ | 2004 03 17 | 704 | 0.2− | 0.3+ | 2006 10 23 | 703 | 0.3− | 0.4− |
| 2001 10 26 | 644 | 0.3− | 0.7+ | 2004 03 17 | 704 | 1.1− | 0.1+ | 2006 10 23 | 683 | 1.5− | 1.4+ |
| 2001 10 26 | 644 | 0.2− | 0.6+ | 2004 03 29 | 703 | 1.2+ | 0.9+ | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2001 10 26 | 644 | 0.2− | 0.7+ | 2004 03 29 | 703 | 1.2+ | 1.1+ | 2006 10 23 | 703 | 0.1− | 0.3− |
| 2001 11 11 | 644 | (0.2+ | 1.9+) | 2004 03 29 | 703 | 0.6+ | 0.5+ | | | | |
| 2001 11 11 | 644 | 0.1+ | 1.4+ | 2004 03 29 | 703 | 0.3− | 0.7+ | | | | |

**(140469)∗ 2001 TY$_{133}$**

Discovered 2001 Oct. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.61576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17495317 | $\omega$ | 318.80260 | | +0.79745395 | | −0.56361753 |
| $a$ | 3.1660773 | $\Omega$ | 76.77296 | | +0.59517249 | | +0.67608616 |
| $e$ | 0.0768107 | $i$ | 12.78439 | | +0.09918118 | | +0.47459750 |
| $P$ | 5.63 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 31 | 644 | 0.1+ | 0.7+ | 2001 11 18 | 704 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 1.3+ | 1.1+ |
| 2001 08 31 | 644 | 0.2− | 0.9+ | 2001 11 18 | 704 | 0.0 | 0.5+ | 2004 03 15 | 704 | 0.6+ | 0.6+ |
| 2001 08 31 | 644 | 0.0 | 0.6+ | 2001 11 18 | 704 | 0.3− | 0.8+ | 2004 03 28 | 703 | 0.1− | 0.8+ |
| 2001 09 17 | 699 | 0.2+ | 0.2+ | 2001 11 18 | 704 | 0.0 | 0.2+ | 2004 03 28 | 703 | 1.1− | 0.4− |
| 2001 09 17 | 699 | 0.9+ | 0.3+ | 2001 11 20 | 699 | 0.7− | 0.1+ | 2004 03 28 | 703 | 0.3+ | 1.1+ |
| 2001 09 17 | 699 | 0.4− | 0.7+ | 2001 11 20 | 699 | 1.1− | 0.4+ | 2004 03 28 | 703 | 0.6− | 1.2− |
| 2001 09 17 | 699 | 0.8+ | 0.1+ | 2001 11 20 | 699 | 0.5− | 0.0 | 2004 04 12 | 703 | 0.3− | 1.0+ |
| 2001 09 25 | 704 | 0.5− | 0.3+ | 2001 11 20 | 699 | 0.0 | 0.6+ | 2004 04 12 | 703 | 1.1− | 0.4− |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2001 11 21 | 645 | 0.1+ | 0.2− | 2004 04 12 | 703 | 0.6− | 0.6+ |
| 2001 09 25 | 704 | 0.5− | 0.4+ | 2001 11 21 | 645 | 0.1+ | 0.2− | 2004 04 12 | 703 | 1.2+ | 0.3+ |
| 2001 09 25 | 704 | 0.2− | 0.9+ | 2001 12 07 | 704 | 0.2+ | 0.4+ | 2004 05 12 | 644 | 0.8+ | 0.8+ |
| 2001 09 25 | 704 | 0.5+ | 0.1+ | 2001 12 07 | 704 | 0.2− | 0.8+ | 2004 05 12 | 644 | 0.4+ | 0.1+ |
| 2001 10 12 | 608 | 0.4− | 0.0 | 2001 12 07 | 704 | 0.0 | 0.4+ | 2004 05 12 | 644 | 1.0+ | 0.9+ |
| 2001 10 12 | 608 | 0.8− | 0.2+ | 2001 12 07 | 704 | 0.6+ | 0.9+ | 2006 07 30 | E12 | 0.4− | 0.1+ |
| 2001 10 12 | 608 | 1.2− | 0.5+ | 2001 12 07 | 704 | 0.0 | 0.4+ | 2006 07 30 | E12 | 0.2+ | 0.7+ |
| 2001 10 15 | 644 | 1.0− | 0.3+ | 2002 12 05 | 704 | 0.9+ | 0.6+ | 2006 07 30 | E12 | 0.1− | 1.3+ |
| 2001 10 15 | 644 | 0.9− | 0.5+ | 2002 12 05 | 704 | 1.0+ | 0.0 | 2006 07 30 | E12 | 0.6+ | 0.3− |
| 2001 10 15 | 644 | 0.9− | 0.5+ | 2002 12 05 | 704 | 1.0+ | 0.5+ | 2006 08 28 | E12 | 0.0 | 0.3+ |
| 2001 10 23 | 644 | 0.2− | 0.5− | 2002 12 05 | 704 | 1.1+ | 0.0 | 2006 08 28 | E12 | 0.9− | 0.0 |
| 2001 10 23 | 644 | 0.1− | 0.3− | 2003 01 10 | 704 | 0.5− | 0.3− | 2006 08 28 | E12 | 0.2− | 0.2+ |
| 2001 10 23 | 644 | 0.2− | 0.5− | 2003 01 10 | 704 | 0.7+ | 1.2+ | 2006 08 28 | E12 | 0.1− | 0.8+ |
| 2001 10 29 | 644 | 0.6− | 0.2+ | 2003 01 10 | 704 | 0.3− | 0.5− | 2006 09 27 | E12 | 0.1− | 0.6+ |
| 2001 10 29 | 644 | 0.4− | 0.4+ | 2003 01 10 | 704 | 0.6− | 0.5+ | 2006 09 27 | E12 | 0.9− | 0.3+ |
| 2001 10 29 | 644 | 0.3− | 0.2+ | 2003 01 10 | 704 | 0.0 | 0.0 | 2006 09 27 | E12 | 0.2− | 0.4+ |
| 2001 11 04 | 209 | 0.5+ | 0.2+ | 2003 01 31 | 699 | 0.3− | 0.5+ | 2006 09 27 | E12 | 1.1+ | 0.3+ |
| 2001 11 04 | 209 | 0.4+ | 0.3+ | 2003 01 31 | 699 | 0.6− | 0.1+ | 2006 10 11 | E12 | 0.0 | 1.2+ |
| 2001 11 04 | 209 | 0.4+ | 0.3+ | 2003 01 31 | 699 | 0.0 | 0.2+ | 2006 10 11 | E12 | 0.9− | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 01 31 | 699 | 0.4− | 0.9+ | 2006 10 11 | E12 | 0.3− | 0.2+ |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.8+ | 2006 10 11 | E12 | 0.2+ | 0.5− |
| 2001 11 18 | 704 | 0.6+ | 0.5+ | 2004 03 15 | 704 | 0.8+ | 0.2+ | | | | |

**(140470)∗ 2001 TR$_{134}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.83532 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22657195 | $\omega$ | 324.08454 | | −0.81347185 | | +0.55199357 |
| $a$ | 2.6648041 | $\Omega$ | 250.42607 | | −0.47787777 | | −0.81391558 |
| $e$ | 0.1511301 | $i$ | 11.21255 | | −0.33150625 | | −0.18123058 |
| $P$ | 4.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 644 | 0.2+ | 0.0 | 2004 04 14 | E12 | 0.7− | 0.1+ | 2004 06 15 | 704 | 1.2+ | 0.0 |
| 2001 08 22 | 644 | 0.6− | 0.3+ | 2004 04 25 | 704 | 0.2− | 0.2+ | 2004 06 15 | 704 | 0.1+ | 0.4− |
| 2001 08 22 | 644 | 0.2− | 0.4+ | 2004 04 25 | 704 | 0.0 | 0.0 | 2004 06 15 | 704 | 0.9+ | 0.1+ |
| 2001 09 25 | 704 | 0.7+ | 1.0+ | 2004 04 25 | 704 | 0.3− | 0.4+ | 2004 06 15 | 704 | 0.6+ | 1.5+ |
| 2001 09 25 | 704 | 1.0+ | 0.4+ | 2004 04 25 | 704 | 0.2− | 0.4+ | 2005 08 05 | 644 | 0.6+ | 0.0 |
| 2001 09 25 | 704 | 0.5+ | 0.5+ | 2004 04 25 | 704 | 0.2− | 0.2+ | 2005 08 05 | 644 | 0.6+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4+ | 0.9+ | 2004 05 13 | 703 | 0.6+ | 0.1− | 2005 08 05 | 644 | 0.5+ | 0.0 |
| 2001 09 29 | 644 | 0.4− | 0.5+ | 2004 05 13 | 703 | 0.5+ | 0.1+ | 2005 09 11 | 704 | 0.3+ | 0.4− |
| 2001 09 29 | 644 | 0.4− | 0.3+ | 2004 05 13 | 703 | 0.2− | 0.3+ | 2005 09 11 | 704 | 0.3+ | 0.4+ |
| 2001 09 29 | 644 | 0.4− | 0.4+ | 2004 05 13 | 703 | 0.1− | 0.8+ | 2005 09 11 | 704 | 0.5− | 0.1+ |
| 2001 10 13 | 644 | 0.5− | 0.0 | 2004 05 14 | 699 | 0.0 | 0.2+ | 2005 09 26 | 703 | 0.0 | 0.3− |
| 2001 10 13 | 644 | 0.7− | 0.1+ | 2004 05 14 | 699 | 0.2+ | 0.6− | 2005 09 26 | 703 | (1.9+ | 0.3−) |
| 2001 10 13 | 644 | 0.6− | 0.3+ | 2004 05 14 | 699 | 0.3− | 0.0 | 2005 09 26 | 703 | (2.3+ | 0.1−) |
| 2001 10 15 | 644 | 0.3− | 0.3+ | 2004 05 14 | 699 | 0.6+ | 0.5− | 2005 09 26 | 703 | 1.1− | 1.4− |
| 2001 10 15 | 644 | 0.5− | 0.5+ | 2004 05 15 | 704 | 0.2+ | 0.1+ | 2005 11 04 | G96 | 0.1− | 0.2− |
| 2001 10 15 | 644 | 0.4− | 0.7+ | 2004 05 15 | 704 | (1.6+ | 0.3+) | 2005 11 04 | G96 | 0.2+ | 0.2− |
| 2004 03 26 | 704 | 0.7+ | 0.3− | 2004 05 15 | 704 | 0.8+ | 0.8+ | 2005 11 04 | G96 | 0.3+ | 0.2− |
| 2004 03 26 | 704 | (1.2+ | 1.6−) | 2004 05 15 | 704 | 0.3+ | 0.4+ | 2005 11 04 | G96 | 0.0 | 0.2− |
| 2004 03 26 | 699 | 0.2− | 0.4+ | 2004 05 20 | E12 | 1.3+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2004 03 26 | 704 | 0.2− | 0.6+ | 2004 05 20 | E12 | 0.7− | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.4+ |
| 2004 03 26 | 704 | 0.5+ | 0.0 | 2004 05 20 | E12 | 0.7+ | 0.5− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2004 03 26 | 699 | 0.6− | 0.8+ | 2004 05 20 | E12 | 0.6− | 0.3+ | 2006 11 22 | 704 | (2.0+ | 0.5−) |
| 2004 03 26 | 699 | 1.1− | 0.6+ | 2004 05 27 | 703 | 0.5− | 0.6+ | 2006 11 22 | 704 | 1.3+ | 0.8+ |
| 2004 03 26 | 699 | 0.0 | 0.1− | 2004 05 27 | 703 | 0.3+ | 0.6− | 2006 11 22 | 704 | (2.5+ | 0.8+) |
| 2004 04 12 | E12 | 0.3+ | 0.5− | 2004 05 27 | 703 | 0.1− | 0.8+ | 2006 11 22 | 704 | 1.6+ | 0.8+ |
| 2004 04 12 | E12 | 0.2+ | 0.1− | 2004 05 27 | 703 | 0.1+ | 1.4+ | 2006 11 22 | 704 | 1.2+ | 0.2− |
| 2004 04 12 | E12 | 0.2+ | 0.1− | 2004 06 09 | 703 | 1.1− | 0.8+ | 2006 11 23 | 703 | 0.5− | 0.1− |
| 2004 04 12 | E12 | 0.4+ | 0.5− | 2004 06 09 | 703 | 0.2− | 0.6− | 2006 11 23 | 703 | 0.8− | 0.2− |
| 2004 04 13 | 644 | 0.0 | 0.1+ | 2004 06 09 | 703 | 0.1+ | 0.5+ | 2006 11 23 | 703 | 0.5+ | 0.1+ |
| 2004 04 13 | 644 | 0.1− | 0.1+ | 2004 06 09 | 703 | 0.3+ | 0.7− | 2006 11 23 | 703 | 0.8+ | 0.0 |
| 2004 04 13 | 644 | 0.1− | 0.2− | 2004 06 12 | 699 | 0.1+ | 0.2− | 2006 11 24 | 703 | 0.2− | 0.0 |
| 2004 04 14 | E12 | 0.0 | 0.2− | 2004 06 12 | 699 | (1.6− | 1.2+) | 2006 11 24 | 703 | 0.8− | 0.8+ |
| 2004 04 14 | E12 | 0.3− | 0.1− | 2004 06 12 | 699 | 0.5− | 1.0+ | 2006 11 24 | 703 | 1.0− | 0.5+ |
| 2004 04 14 | E12 | 0.4− | 0.2+ | 2004 06 12 | 699 | 0.2− | 0.3+ | 2006 11 24 | 703 | 0.2− | 0.3+ |

**(140471)∗ 2001 TZ$_{134}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.15993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17741805 | $\omega$ | 256.00048 | | −0.37686867 | +0.92375965 | |
| $a$ | 3.1366846 | $\Omega$ | 350.92823 | | −0.59115457 | −0.29647515 | |
| $e$ | 0.1890472 | $i$ | 25.59040 | | −0.71309626 | −0.24242649 | |
| $P$ | 5.56 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.6− | 0.2− | 2001 10 26 | 644 | 0.4− | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2001 08 27 | 644 | 0.7− | 0.2− | 2001 10 26 | 644 | 0.7− | 0.4+ | 2006 08 20 | 644 | 0.1+ | 0.1− |
| 2001 08 27 | 644 | 0.8− | 0.2+ | 2004 03 25 | 704 | 0.1− | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.2− |
| 2001 09 10 | 704 | 0.5− | 0.5+ | 2004 03 25 | 704 | 0.5+ | 1.4+ | 2006 08 23 | 644 | 0.5+ | 0.1− |
| 2001 09 10 | 704 | 0.4− | 0.6− | 2004 03 25 | 704 | (0.1− | 1.7+) | 2006 08 23 | 644 | 0.2+ | 0.3− |
| 2001 09 10 | 704 | 0.4+ | 0.1+ | 2004 03 25 | 704 | 0.3− | 0.2− | 2006 08 23 | 644 | 0.1+ | 0.2+ |
| 2001 09 10 | 704 | 0.5− | 0.3+ | 2005 03 31 | E12 | 0.2+ | 0.6+ | 2006 08 24 | 644 | 0.4+ | 0.3+ |
| 2001 09 25 | 704 | 0.4+ | 0.3+ | 2005 03 31 | E12 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.3+ | 0.3− |
| 2001 09 25 | 704 | 0.1− | 0.5+ | 2005 03 31 | E12 | 0.4+ | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.2− |
| 2001 09 25 | 704 | 0.9+ | 0.6+ | 2005 03 31 | E12 | 0.5+ | 0.4− | 2006 08 28 | E12 | 0.6+ | 0.3− |
| 2001 09 25 | 704 | 0.8− | 0.7+ | 2005 04 19 | E12 | 0.3+ | 0.2+ | 2006 08 28 | E12 | 0.7− | 0.6+ |
| 2001 09 25 | 704 | 0.1+ | 0.2+ | 2005 04 19 | E12 | 0.8+ | 0.6+ | 2006 08 28 | E12 | 0.0 | 0.2− |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2005 04 19 | E12 | 0.3+ | 0.3+ | 2006 08 28 | E12 | 0.2+ | 0.1− |
| 2001 09 26 | 704 | 0.6+ | 0.1− | 2005 04 19 | E12 | 0.9+ | 0.0 | 2006 09 14 | 644 | 0.0 | 0.2− |
| 2001 09 26 | 704 | 0.2+ | 0.3− | 2005 04 27 | E12 | 0.9− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 0.4− | 0.8− | 2005 04 27 | E12 | 0.3+ | 0.1− | 2006 09 14 | 644 | 0.2− | 0.3− |
| 2001 09 26 | 704 | 0.2+ | 0.1− | 2005 04 27 | E12 | 0.4+ | 0.2+ | 2006 09 20 | 703 | 0.8+ | 0.3− |
| 2001 09 29 | 644 | 0.5− | 0.4+ | 2005 04 27 | E12 | 0.8+ | 0.2− | 2006 09 20 | 703 | 0.5− | 0.0 |
| 2001 09 29 | 644 | 0.7− | 0.3+ | 2005 05 01 | E12 | 0.1+ | 0.4+ | 2006 09 20 | 703 | 0.3− | 0.3+ |
| 2001 09 29 | 644 | 0.7− | 0.4+ | 2005 05 01 | E12 | 0.7+ | 0.2+ | 2006 09 20 | 703 | 1.1− | 0.5− |
| 2001 10 13 | 644 | 0.4+ | 0.2− | 2005 05 01 | E12 | 0.2− | 0.5+ | 2006 09 26 | 703 | (0.2+ | 1.6−) |
| 2001 10 13 | 644 | 0.2+ | 0.2− | 2005 05 01 | E12 | 0.1+ | 0.5+ | 2006 09 26 | 703 | (0.6− | 1.7+) |
| 2001 10 13 | 644 | 0.2+ | 0.2+ | 2005 05 14 | E12 | 0.4− | 0.1− | 2006 09 26 | 703 | 1.0− | 0.7+ |
| 2001 10 15 | 644 | 0.1− | 0.9− | 2005 05 14 | E12 | 0.6− | 0.3− | 2006 09 26 | 703 | (1.2− | 2.2−) |
| 2001 10 15 | 644 | 0.1+ | 0.9+ | 2005 05 14 | E12 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.5− |
| 2001 10 15 | 644 | 0.0 | 0.3− | 2005 05 14 | E12 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2001 10 15 | 644 | 0.1− | 0.4+ | 2006 08 16 | E12 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2001 10 15 | 644 | 0.3− | 0.4− | 2006 08 16 | E12 | 0.7+ | 0.6− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2001 10 15 | 644 | 0.2− | 0.8+ | 2006 08 16 | E12 | 0.7− | 0.6+ | | | | |
| 2001 10 26 | 644 | 0.1− | 0.7+ | 2006 08 16 | E12 | 1.0+ | 1.2+ | | | | |

**(140472)∗ 2001 TB$_{135}$ = 2003 AX$_{43}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 46753)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.37866 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19158453 | $\omega$ | 258.63561 | | −0.95490087 | +0.26385679 | |
| $a$ | 2.9800880 | $\Omega$ | 296.54144 | | −0.17615362 | −0.87260919 | |
| $e$ | 0.0407204 | $i$ | 8.75549 | | −0.23902767 | −0.41101436 | |
| $P$ | 5.14 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1+ | 0.7− | 2003 03 01 | 230 | 1.0− | 0.4+ | 2006 09 16 | 703 | 0.6− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 1.2+ | 2003 03 05 | 715 | 0.6− | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.0 |
| 2001 09 25 | 704 | 0.7+ | 0.7+ | 2003 03 05 | 715 | 0.4+ | 0.3+ | 2006 09 27 | 703 | 1.1+ | 1.0+ |
| 2001 09 25 | 704 | 0.8+ | 1.3+ | 2003 03 05 | 715 | 0.1− | 0.3− | 2006 09 27 | 703 | 0.2− | 0.5− |
| 2001 09 29 | 644 | 0.3− | 0.4+ | 2004 03 16 | 703 | 0.4+ | 0.4+ | 2006 09 27 | 703 | 0.0 | 0.4− |
| 2001 09 29 | 644 | 0.2− | 0.1+ | 2004 03 16 | 703 | 0.7− | 0.5+ | 2006 09 27 | 703 | (1.9− | 0.5+) |
| 2001 09 29 | 644 | 0.3− | 0.2+ | 2004 03 16 | 703 | 0.8− | 1.3+ | 2006 09 29 | 699 | 0.5− | 0.4− |
| 2001 10 13 | 644 | 0.4− | 0.3− | 2004 03 16 | 703 | 1.5+ | 0.9+ | 2006 09 29 | 699 | 0.0 | 0.7+ |
| 2001 10 13 | 644 | 0.6− | 0.2− | 2004 03 17 | 704 | 0.9+ | 0.5+ | 2006 09 29 | 699 | 1.2− | 1.1+ |
| 2001 10 13 | 644 | 0.1− | 0.0 | 2004 03 17 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 1.1− | 0.1+ |
| 2001 10 15 | 608 | 0.0 | 0.4− | 2004 03 17 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2001 10 15 | 608 | 0.1+ | 0.7− | 2004 03 17 | 704 | 0.7+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 15 | 608 | 0.3+ | 0.0 | 2004 03 17 | 704 | 0.9+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.7+ |
| 2003 01 05 | 704 | 1.0+ | 0.8− | 2004 03 26 | 699 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.6+ |
| 2003 01 05 | 704 | 0.9+ | 0.4− | 2004 03 26 | 699 | 1.4+ | 0.6+ | 2006 10 17 | 691 | 0.6+ | 0.3− |
| 2003 01 05 | 704 | (0.4+ | 2.2−) | 2004 03 26 | 699 | 0.7− | 0.7+ | 2006 10 17 | 691 | 0.5+ | 0.4+ |
| 2003 01 09 | 704 | 1.0− | 0.9+ | 2004 03 26 | 699 | 0.6+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2003 01 09 | 704 | 0.3+ | 0.5− | 2004 04 12 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.5− | 0.0 |
| 2003 01 09 | 704 | 0.8+ | 0.2− | 2004 04 12 | 644 | 0.0 | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2003 03 01 | 230 | 1.3− | 0.2+ | 2004 04 12 | 644 | 0.1+ | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 2003 03 01 | 230 | 0.9− | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2003 03 01 | 230 | (2.4− | 0.7+) | 2006 09 16 | 703 | (2.1− | 0.4+) | 2006 10 23 | 691 | 0.2− | 0.2+ |

**(140473)∗ 2001 TK$_{135}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.79919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20486828 | $\omega$ | 208.37486 | | −0.37762036 | −0.91712095 | |
| $a$ | 2.8498340 | $\Omega$ | 264.05354 | | +0.87196695 | −0.30582318 | |
| $e$ | 0.1232158 | $i$ | 7.37315 | | +0.31157103 | −0.25565866 | |
| $P$ | 4.81 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.2+ | 0.3− | 2003 01 28 | 704 | 0.7+ | 0.2+ | 2005 08 06 | 644 | 0.5− | 0.5+ |
| 2001 09 25 | 704 | 0.2+ | 0.1− | 2003 01 28 | 704 | 0.4+ | 0.5+ | 2005 08 06 | 644 | 0.4− | 0.4+ |
| 2001 09 25 | 704 | 0.5+ | 0.1− | 2003 01 28 | 704 | 0.4+ | 0.4+ | 2005 08 06 | 644 | 0.3− | 0.5+ |
| 2001 09 25 | 704 | 0.5− | 0.1− | 2003 01 30 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.5+ | 0.6− | 2003 01 30 | 704 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 10 13 | 699 | 0.4− | 0.5− | 2003 01 30 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 10 13 | 699 | (0.6− | 1.5+) | 2003 01 30 | 704 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.9+ | 0.3+ |
| 2001 10 13 | 699 | 1.2+ | 0.8− | 2003 01 30 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.9+ |
| 2001 10 13 | 699 | 0.6+ | 0.7+ | 2003 01 30 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.8+ |
| 2001 10 13 | 644 | 0.3− | 0.4+ | 2003 01 30 | 704 | 0.6+ | 0.2− | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2001 10 13 | 644 | 0.4− | 0.1− | 2003 01 30 | 704 | 0.1− | 1.0+ | 2006 10 19 | A50 | 0.6− | 0.1+ |
| 2001 10 13 | 644 | 0.3− | 0.2+ | 2003 01 30 | 704 | 0.5+ | 0.3− | 2006 10 19 | A50 | 0.3+ | 0.6− |
| 2001 10 15 | 608 | 0.6− | 1.0+ | 2003 01 30 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2001 10 15 | 608 | 1.0− | 0.8+ | 2003 02 02 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 15 | 608 | 0.8− | 1.2+ | 2003 02 02 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.5− | 0.3− | 2003 02 02 | 608 | 0.6+ | 0.2− | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2001 10 17 | 704 | 0.6+ | 0.9+ | 2003 02 02 | 608 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.4+ | 0.2+ | 2003 02 02 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.2+ | 0.4+ | 2003 02 02 | 608 | 0.1+ | 0.7− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.5+ | 1.1− | 2003 02 02 | 704 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 10 20 | 644 | 0.2+ | 0.8+ | 2003 02 02 | 704 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.5− | 0.1− |
| 2001 10 20 | 644 | 0.2+ | 0.6+ | 2003 02 03 | 699 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2001 10 20 | 644 | 0.5+ | 0.5+ | 2003 02 03 | 699 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2001 11 10 | 704 | 1.4− | 0.3+ | 2003 02 03 | 699 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2001 11 10 | 704 | 0.1+ | 0.1− | 2003 02 03 | 699 | 0.5− | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2001 11 10 | 704 | 0.8− | 0.9− | 2003 02 04 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2001 11 10 | 704 | 0.1− | 0.1+ | 2003 02 04 | 644 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.2+ |
| 2002 12 14 | 645 | 0.2− | 0.1− | 2003 02 04 | 644 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.8− | 0.2+ |
| 2002 12 14 | 645 | 0.2− | 0.2− | 2003 02 19 | 644 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2003 01 02 | 699 | (0.6− | 2.0−) | 2003 02 19 | 644 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2003 01 02 | 699 | 0.0 | 0.8− | 2003 02 19 | 644 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2003 01 02 | 699 | 0.4− | 0.6+ | 2003 02 28 | 704 | (3.4+ | 0.6+) | 2006 11 14 | 703 | 0.4− | 0.0 |
| 2003 01 02 | 699 | 0.4− | 0.2+ | 2003 02 28 | 704 | 0.6+ | 0.2− | 2006 11 14 | 703 | 0.5− | 1.1− |
| 2003 01 07 | 704 | 0.6+ | 0.4− | 2003 02 28 | 704 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.1− | 0.3− |
| 2003 01 07 | 704 | 0.5+ | 0.7− | 2003 02 28 | 704 | 0.2+ | 0.0 | 2006 11 14 | 703 | 1.2− | 0.1− |
| 2003 01 07 | 704 | 0.1− | 0.7− | 2003 03 07 | 704 | 0.8− | 1.1+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2003 01 07 | 704 | 0.3+ | 0.9+ | 2003 03 07 | 704 | 0.6− | 1.2+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2003 01 07 | 704 | 0.5+ | 0.3− | 2003 03 07 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 1.3+ | 0.6+ |
| 2003 01 16 | 644 | 0.4+ | 0.0 | 2003 03 07 | 704 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 2003 01 16 | 644 | 0.2+ | 0.2+ | 2003 03 07 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.8− | 0.2+ |
| 2003 01 16 | 644 | 0.4+ | 0.2+ | 2003 03 07 | 704 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2003 01 26 | 699 | 0.4+ | 1.0+ | 2003 03 07 | 704 | 0.3− | 0.9+ | 2006 11 22 | 704 | 0.2+ | 0.6− |
| 2003 01 26 | 699 | 0.4+ | 0.8+ | 2004 05 22 | 704 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2003 01 26 | 699 | 1.0+ | 0.1+ | 2004 05 22 | 704 | 1.4+ | 1.2+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2003 01 26 | 699 | 0.1+ | 0.9+ | 2004 05 22 | 704 | 0.1− | 1.4+ | 2006 11 29 | 704 | 0.3− | 0.5− |
| 2003 01 27 | 608 | 0.2− | 0.4− | 2004 05 22 | 704 | 0.1+ | 1.4+ | 2006 11 29 | 704 | 1.0+ | 1.0+ |
| 2003 01 27 | 608 | 0.0 | 0.4− | 2005 07 05 | 644 | 0.4− | 0.4+ | 2006 11 29 | 704 | 1.2+ | 0.8+ |
| 2003 01 27 | 608 | 0.0 | 0.4− | 2005 07 05 | 644 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2003 01 28 | 704 | 0.2+ | 0.2− | 2005 07 05 | 644 | 0.1− | 0.3+ | | | | |

**(140474)∗ 2001 TM$_{135}$ = 2004 DJ$_{77}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65074)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.21578 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18459793 | $\omega$ | 315.87256 | | −0.92639605 | | +0.34372821 |
| $a$ | 3.0548144 | $\Omega$ | 244.80898 | | −0.28092468 | | −0.90279649 |
| $e$ | 0.1292475 | $i$ | 9.78301 | | −0.25074225 | | −0.25847517 |
| $P$ | 5.34 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.3+ | 1.0+ | 2002 12 05 | 704 | 0.3− | 0.1− | 2004 04 21 | 703 | 0.5− | 0.1+ |
| 1999 05 13 | 704 | 0.6− | 1.3− | 2004 02 14 | 699 | 1.1+ | 0.1− | 2006 09 16 | G92 | 0.9− | 0.6+ |
| 1999 05 13 | 704 | 0.2+ | 1.0+ | 2004 02 14 | 699 | 0.6− | 0.5+ | 2006 09 16 | G92 | 0.1− | 0.4+ |
| 1999 05 13 | 704 | 0.2− | 0.9+ | 2004 02 14 | 699 | 0.9+ | 0.5− | 2006 09 16 | G92 | 0.2+ | 0.5+ |
| 1999 05 13 | 704 | 0.7− | 1.0− | 2004 02 14 | 699 | 0.4+ | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.3+ |
| 2001 09 24 | 644 | 0.1+ | 0.3+ | 2004 02 21 | 608 | (1.7+ | 1.0+) | 2006 09 16 | 644 | 0.4+ | 0.3+ |
| 2001 09 24 | 644 | 0.1− | 0.7+ | 2004 02 21 | 608 | 1.1+ | 0.4+ | 2006 09 16 | 644 | 0.5+ | 0.1+ |
| 2001 09 24 | 644 | 0.1+ | 0.1− | 2004 02 21 | 608 | 0.9+ | 1.3+ | 2006 09 22 | 703 | (1.5− | 0.6+) |
| 2001 09 25 | 704 | 0.3− | 0.5− | 2004 03 01 | 703 | 1.0− | 1.2+ | 2006 09 22 | 703 | 0.6− | 0.2+ |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2004 03 01 | 703 | 0.4− | 0.3+ | 2006 09 22 | 703 | 0.3+ | 0.7− |
| 2001 09 25 | 704 | 0.1+ | 0.3− | 2004 03 01 | 703 | 1.3− | 0.7+ | 2006 09 22 | 703 | 0.8+ | 0.3− |
| 2001 09 25 | 704 | 0.4+ | 0.0 | 2004 03 01 | 703 | 0.6− | 0.7+ | 2006 09 27 | 703 | 0.0 | 0.4− |
| 2001 10 13 | 644 | 0.4+ | 0.4+ | 2004 03 31 | 704 | 0.4+ | 0.4− | 2006 09 27 | 703 | 0.2− | 0.6− |
| 2001 10 13 | 644 | 0.7+ | 0.2+ | 2004 03 31 | 704 | 0.2− | 0.4+ | 2006 09 27 | 703 | 1.4− | 0.3− |
| 2001 10 13 | 644 | 0.5+ | 0.2− | 2004 03 31 | 704 | 1.2+ | 0.3− | 2006 09 27 | 703 | 1.0− | 0.0 |
| 2001 10 15 | 608 | 0.4− | 0.3− | 2004 03 31 | 704 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 10 15 | 608 | 0.3− | 0.8+ | 2004 03 31 | 704 | 1.2+ | 1.3+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2001 10 15 | 608 | 0.0 | 0.4+ | 2004 04 16 | 704 | (2.7+ | 1.0+) | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 20 | 644 | 0.1− | 0.5+ | 2004 04 16 | 704 | 0.2− | 0.9+ | 2006 10 18 | 691 | 0.2− | 0.7+ |
| 2001 10 20 | 644 | 0.2− | 0.4+ | 2004 04 16 | 704 | 0.8+ | 0.7+ | 2006 10 18 | 691 | 0.2+ | 1.1+ |
| 2001 10 20 | 644 | 0.3− | 0.1+ | 2004 04 16 | 704 | 0.5+ | 0.8+ | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.7− | 0.4− | 2004 04 21 | 703 | 0.4− | 1.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.6− | 0.1− | 2004 04 21 | 703 | (0.0 | 1.5+) | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.5− | 2004 04 21 | 703 | 0.9+ | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2+ |

**(140475)∗ 2001 TF$_{137}$**

Discovered 2001 Oct. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.89973 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18730516 | $\omega$ | 205.23770 | | +0.55872366 | | +0.80491845 |
| $a$ | 3.0253077 | $\Omega$ | 99.33432 | | −0.72243465 | | +0.59069556 |
| $e$ | 0.0995347 | $i$ | 11.68418 | | −0.40732793 | | +0.05643621 |
| $P$ | 5.26 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 0.0 | 2004 03 14 | 704 | 1.0− | 1.0+ | 2005 06 02 | 703 | 0.8+ | 0.7− |
| 2001 09 12 | 704 | 0.8− | 0.5+ | 2004 03 14 | 704 | 0.1− | 0.5+ | 2005 06 04 | 691 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.6− | 0.1+ | 2004 03 14 | 704 | 0.4− | 0.3+ | 2005 06 04 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 644 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.1+ | 0.4+ | 2005 06 04 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 644 | 0.5+ | 0.3− | 2004 03 15 | 704 | 0.2− | 0.0 | 2005 06 05 | 704 | 1.0+ | 0.9+ |
| 2001 09 21 | 644 | 0.4+ | 0.3− | 2004 03 15 | 704 | (0.0 | 1.7+) | 2005 06 05 | 704 | 0.7+ | 0.2− |
| 2001 09 25 | 704 | 0.4− | 1.3+ | 2004 03 15 | 704 | (0.6− | 3.0+) | 2005 06 05 | 704 | 0.6− | 1.2+ |
| 2001 09 25 | 704 | (1.9− | 0.1−) | 2004 03 15 | 704 | 0.6− | 0.4+ | 2005 06 05 | 704 | 0.6+ | 1.0− |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2004 03 18 | 703 | 1.2+ | 0.9+ | 2005 06 05 | 704 | 1.0+ | 0.1+ |
| 2001 09 25 | 704 | 0.5− | 0.7+ | 2004 03 18 | 703 | (2.8− | 0.3−) | 2005 06 09 | 691 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2004 03 18 | 703 | 1.1+ | 0.5− | 2005 06 09 | 691 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2004 03 18 | 703 | 1.1+ | 0.6− | 2005 06 09 | 691 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2004 04 14 | 644 | 0.0 | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.8+ | 2004 04 14 | 644 | 0.1+ | 0.5+ | 2005 06 14 | 691 | 0.2+ | 0.0 |
| 2001 10 14 | 644 | 0.1+ | 0.1+ | 2004 04 14 | 644 | 0.0 | 1.0+ | 2005 06 14 | 691 | 0.1+ | 0.2− |
| 2001 10 14 | 644 | 0.2+ | 0.1− | 2005 05 04 | 691 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.1+ |
| 2001 10 14 | 644 | 0.2− | 0.1+ | 2005 05 04 | 691 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.1+ | 0.1+ |
| 2001 10 15 | 644 | 0.5− | 1.0+ | 2005 05 04 | 691 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.2+ |
| 2001 10 15 | 644 | 0.6− | 1.4+ | 2005 05 08 | 691 | 0.2− | 0.2+ | 2006 08 28 | E12 | 0.5+ | 0.2− |
| 2001 10 15 | 644 | 0.5− | 1.2+ | 2005 05 08 | 691 | 0.1− | 0.5+ | 2006 08 28 | E12 | 0.6+ | 0.8− |
| 2001 10 19 | 699 | (0.9+ | 2.0+) | 2005 05 08 | 691 | 0.1− | 0.0 | 2006 08 28 | E12 | 0.3− | 0.1− |
| 2001 10 19 | 699 | 0.5− | 1.0+ | 2005 05 09 | 691 | 0.1− | 0.4+ | 2006 08 28 | E12 | 0.1+ | 0.7+ |
| 2001 10 19 | 699 | (0.4+ | 1.5+) | 2005 05 09 | 691 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2001 10 19 | 699 | 1.2− | 0.3+ | 2005 05 09 | 691 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2001 10 22 | 644 | (0.1+ | 2.2+) | 2005 05 16 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 0.0 | 0.9− |
| 2001 10 22 | 644 | (0.0 | 2.2+) | 2005 05 16 | 704 | (3.7+ | 1.4−) | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 2001 10 22 | 644 | (0.2− | 2.1+) | 2005 05 16 | 704 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.1− |
| 2004 02 16 | 704 | 0.0 | 1.1+ | 2005 05 16 | 704 | (2.9+ | 2.9−) | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2004 02 16 | 704 | 0.2+ | 0.2− | 2005 05 16 | 704 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2004 02 16 | 704 | 0.2+ | 0.1− | 2005 05 16 | 704 | (2.2+ | 2.3−) | 2006 10 12 | E12 | 0.4− | 0.6− |
| 2004 02 16 | 704 | 0.2+ | 0.1− | 2005 06 02 | 703 | 0.2− | 0.0 | 2006 10 12 | E12 | 0.1− | 0.1− |
| 2004 02 16 | 704 | 0.9+ | 0.2+ | 2005 06 02 | 703 | (1.6− | 0.4−) | 2006 10 12 | E12 | 0.4+ | 0.1+ |
| 2004 02 16 | 704 | 0.2+ | 1.2+ | 2005 06 02 | 703 | 0.4− | 0.4− | | | | |

**(140476)∗ 2001 TL$_{137}$**

Discovered 2001 Oct. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.94621 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21621560 | $\omega$ | 54.38827 | | −0.60413793 | | −0.76190837 |
| $a$ | 2.7492318 | $\Omega$ | 74.47646 | | +0.63006635 | | −0.63609297 |
| $e$ | 0.1059428 | $i$ | 14.02350 | | +0.48788704 | | −0.12198923 |
| $P$ | 4.56 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 1.3− | 0.9− | 2003 01 10 | 704 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.5− |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2003 01 10 | 644 | 0.6+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.5− |
| 2001 09 21 | 704 | 0.8− | 0.7− | 2003 01 10 | 644 | 0.7+ | 0.9+ | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2003 01 10 | 644 | 0.5+ | 1.1+ | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2001 09 21 | 704 | 0.8− | 1.4+ | 2003 01 13 | 704 | 0.8+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2003 01 13 | 704 | 0.5− | 0.8+ | 2006 11 02 | 703 | 0.5+ | 1.3− |
| 2001 09 21 | 704 | 0.4− | 1.2− | 2003 01 13 | 704 | 0.2+ | 0.8+ | 2006 11 02 | 703 | 0.1+ | 1.1− |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2003 01 13 | 704 | 0.6− | 1.0+ | 2006 11 02 | 703 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | 0.7− | 0.3− | 2003 01 13 | 704 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.3− | 0.3− |
| 2001 09 21 | 644 | 0.3− | 0.3− | 2003 01 25 | 704 | 1.6− | 0.1+ | 2006 11 05 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2003 01 25 | 645 | 0.1− | 0.3− | 2006 11 05 | 644 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 644 | 0.4− | 0.9− | 2003 01 25 | 645 | 0.2− | 0.2− | 2006 11 05 | 644 | 0.3+ | 0.5− |
| 2001 09 21 | 644 | 0.6− | 0.9− | 2003 01 25 | 704 | 0.5+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2001 09 23 | 699 | 0.4− | 1.0+ | 2003 01 25 | 704 | 0.4+ | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.6− |
| 2001 09 23 | 699 | (2.1− | 0.4+) | 2003 01 25 | 704 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2001 09 23 | 699 | 1.1− | 0.8+ | 2003 01 25 | 704 | 0.4+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.6− |
| 2001 09 23 | 699 | 0.7+ | 0.7+ | 2003 01 31 | 699 | 1.0+ | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.4+ |
| 2001 10 11 | 704 | (2.2+ | 0.4−) | 2003 01 31 | 699 | 0.6+ | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.5+ |
| 2001 10 11 | 704 | 1.5+ | 0.1+ | 2003 01 31 | 699 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.2− | 1.1+ |
| 2001 10 11 | 704 | 0.4+ | 1.3− | 2003 01 31 | 699 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.2− |
| 2001 10 11 | 704 | 0.1− | 0.8+ | 2003 03 08 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.8+ |
| 2001 10 11 | 704 | 0.0 | 0.1+ | 2003 03 08 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.9− | 0.7+ |
| 2001 10 14 | 644 | 0.5+ | 0.1+ | 2003 03 08 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.6+ |
| 2001 10 14 | 644 | 0.1+ | 0.4− | 2003 03 24 | 704 | 0.4− | 0.6+ | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2001 10 14 | 644 | 0.1− | 0.5− | 2003 03 24 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 704 | 1.1− | 0.1+ |
| 2001 10 15 | 644 | 0.3+ | 0.4+ | 2003 03 24 | 704 | 0.3+ | 0.8− | 2006 11 17 | 704 | 0.5− | 0.4− |
| 2001 10 15 | 644 | 0.6+ | 0.6+ | 2004 05 15 | 704 | (1.1+ | 2.2+) | 2006 11 18 | 704 | 0.5+ | 0.3− |
| 2001 10 15 | 644 | 0.3+ | 0.5+ | 2004 05 15 | 704 | 1.2+ | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2001 10 23 | 644 | 0.2+ | 1.0+ | 2004 05 15 | 704 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2001 10 23 | 644 | 0.3+ | 0.9+ | 2004 05 17 | 704 | 1.0− | 0.9+ | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2001 10 23 | 644 | 0.7+ | 0.9+ | 2004 05 17 | 704 | 0.1+ | 1.5+ | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.7− | 0.9+ | 2004 05 17 | 704 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.2+ | 0.7− |
| 2002 12 05 | 704 | 1.2− | 0.4− | 2004 05 17 | 704 | 0.4− | 0.7+ | 2006 11 20 | 704 | 0.3+ | 0.7− |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2004 06 14 | 704 | 1.1+ | 0.7− | 2006 11 20 | 704 | 0.1− | 0.5− |
| 2002 12 05 | 704 | 0.1− | 0.5+ | 2004 06 14 | 704 | 0.7+ | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.8− |
| 2002 12 14 | 704 | 1.2+ | 0.1+ | 2004 06 14 | 704 | 0.5+ | 0.4− | 2006 11 20 | 704 | 0.0 | 0.6− |
| 2002 12 14 | 704 | 0.8+ | 0.0 | 2004 06 14 | 704 | 0.2− | 0.4− | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 12 14 | 704 | 0.8+ | 0.7− | 2004 06 14 | 704 | 0.7+ | 0.6+ | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 2003 01 05 | 699 | 0.1+ | 0.2− | 2005 07 19 | 644 | 0.1− | 0.6+ | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 2003 01 05 | 699 | 0.3+ | 0.2+ | 2005 07 19 | 644 | 0.1− | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2003 01 05 | 699 | 0.4+ | 0.2+ | 2005 07 19 | 644 | 0.0 | 0.9+ | 2006 11 27 | 691 | 0.4+ | 0.3+ |
| 2003 01 05 | 699 | 0.1+ | 0.2+ | 2005 08 28 | E12 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2003 01 07 | 704 | 0.1+ | 1.0+ | 2005 08 28 | E12 | 0.4+ | 0.3− | 2006 11 29 | 704 | (2.9− | 3.8+) |
| 2003 01 07 | 704 | 0.2− | 0.9+ | 2005 08 28 | E12 | 0.8− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2003 01 07 | 704 | 0.5+ | 0.4+ | 2005 08 28 | E12 | 0.2− | 0.7− | 2006 11 29 | 704 | 0.4+ | 2.0+ |
| 2003 01 07 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.8− | 2006 11 29 | 704 | (1.7− | 3.3+) |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.5− | 2006 12 01 | 691 | 0.1+ | 0.3+ |
| 2003 01 10 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.6− | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2003 01 10 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.7+ | 0.1− | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2003 01 10 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3− | | | | |

**(140477)∗ 2001 TM$_{137}$**

Discovered 2001 Oct. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.99107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18327006 | $\omega$ | 264.62982 | | +0.95958242 | +0.18996378 | |
| $a$ | 3.0695523 | $\Omega$ | 84.29984 | | −0.09153055 | +0.90836602 | |
| $e$ | 0.1411916 | $i$ | 12.04467 | | −0.26612731 | +0.37253850 | |
| $P$ | 5.38 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 29 | 644 | 0.6− | 0.5+ | 2001 11 12 | 715 | (3.2− | 0.3−) | 2005 05 16 | 704 | 0.3+ | 0.5− |
| 2001 08 29 | 644 | 0.5− | 0.7+ | 2001 11 12 | 715 | 0.8− | 0.2− | 2005 06 03 | 691 | 0.0 | 0.3+ |
| 2001 08 29 | 644 | 0.6− | 0.6+ | 2001 11 12 | 715 | 0.8− | 0.6+ | 2005 06 03 | 691 | 0.0 | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2003 01 05 | 704 | 0.2+ | 0.6+ | 2005 06 03 | 691 | 0.2+ | 0.9+ |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.2+ | 0.1+ | 2005 06 08 | 691 | 0.2+ | 0.4+ |
| 2001 09 21 | 704 | 0.8+ | 0.4+ | 2003 01 05 | 704 | 0.1+ | 1.2+ | 2005 06 08 | 691 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2003 01 05 | 704 | (0.4+ | 2.6+) | 2005 06 08 | 691 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | 1.4+ | 0.2− | 2003 01 05 | 704 | (0.7+ | 3.1+) | 2005 06 12 | 691 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.3+ | 0.4+ | 2003 01 09 | 704 | 0.4− | 1.3+ | 2005 06 12 | 691 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.5+ | 0.4+ | 2003 01 09 | 704 | 0.1− | 0.2+ | 2005 06 12 | 691 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2003 01 09 | 704 | 1.0+ | 0.2+ | 2005 06 23 | 644 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2003 01 09 | 704 | 1.2− | 1.2+ | 2005 06 23 | 644 | 0.1− | 0.3− |
| 2001 09 21 | 644 | 0.3− | 0.2+ | 2003 01 09 | 704 | 0.2+ | 0.3+ | 2005 06 23 | 644 | 0.3− | 0.5− |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2003 01 09 | 704 | 0.2− | 0.8+ | 2005 06 28 | 644 | 0.3− | 0.1− |
| 2001 09 21 | 644 | 0.5− | 0.4+ | 2003 01 09 | 704 | 0.6− | 1.0+ | 2005 06 28 | 644 | 0.1− | 0.2+ |
| 2001 09 21 | 644 | 0.2− | 0.6+ | 2003 01 09 | 704 | 0.0 | 0.4+ | 2005 06 28 | 644 | 0.0 | 0.4+ |
| 2001 10 11 | 704 | 1.3− | 0.4+ | 2003 01 13 | 704 | 0.6− | 0.8+ | 2006 08 16 | E12 | 0.0 | 0.1− |
| 2001 10 11 | 704 | 0.1− | 0.2+ | 2003 01 13 | 704 | 1.0+ | 0.3+ | 2006 08 16 | E12 | 0.2− | 0.3− |
| 2001 10 11 | 704 | 0.5− | 0.4+ | 2003 01 13 | 644 | 0.8− | 0.9+ | 2006 08 16 | E12 | 0.1+ | 1.7− |
| 2001 10 11 | 704 | 0.7− | 0.2+ | 2003 01 13 | 704 | 1.2+ | 0.6− | 2006 08 16 | E12 | 0.1− | 0.3− |
| 2001 10 11 | 704 | 1.2− | 0.7− | 2003 01 13 | 644 | 0.0 | 0.7+ | 2006 08 25 | E12 | 0.3− | 0.3+ |
| 2001 10 14 | 644 | 0.3+ | 0.8+ | 2003 01 13 | 644 | 0.1+ | 1.0+ | 2006 08 25 | E12 | 0.9+ | 0.1− |
| 2001 10 14 | 644 | 0.1+ | 0.8+ | 2005 05 03 | 691 | 0.3+ | 0.3+ | 2006 08 25 | E12 | 0.0 | 0.1− |
| 2001 10 14 | 644 | 0.2+ | 1.2+ | 2005 05 03 | 691 | 0.4+ | 0.5+ | 2006 08 25 | E12 | 0.1+ | 0.2− |
| 2001 10 15 | 644 | 0.3− | 0.9+ | 2005 05 03 | 691 | 0.3+ | 0.5+ | 2006 09 12 | E12 | 0.3− | 0.3− |
| 2001 10 15 | 644 | 0.1− | 0.8+ | 2005 05 14 | 644 | 0.4− | 0.1− | 2006 09 12 | E12 | 0.2+ | 0.2− |
| 2001 10 15 | 644 | 0.2− | 0.9+ | 2005 05 14 | 644 | 0.2− | 0.1+ | 2006 09 12 | E12 | 1.1+ | 0.5− |
| 2001 10 19 | 699 | 0.3− | 0.2− | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 09 12 | E12 | 0.2+ | 0.3− |
| 2001 10 19 | 699 | 1.6− | 0.9+ | 2005 05 16 | 704 | (2.4+ | 0.2+) | 2006 09 27 | E12 | 0.7− | 0.8+ |
| 2001 10 19 | 699 | 0.3− | 1.4+ | 2005 05 16 | 704 | 1.4+ | 0.4+ | 2006 09 27 | E12 | 0.2+ | 0.2+ |
| 2001 10 19 | 699 | 1.1− | 0.2+ | 2005 05 16 | 704 | 0.4+ | 0.3− | 2006 09 27 | E12 | 0.4− | 0.7+ |

**(140478)∗ 2001 TN$_{138}$ = 2003 FO$_{118}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 46754)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.44908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24044869 | $\omega$ | 12.13316 | | +0.13665768 | −0.98583936 | |
| $a$ | 2.5612646 | $\Omega$ | 70.07358 | | +0.90001292 | +0.08256944 | |
| $e$ | 0.2538483 | $i$ | 5.93365 | | +0.41388575 | +0.14595563 | |
| $P$ | 4.10 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.5+ | 0.2− | 2001 10 20 | 704 | (0.3− | 1.5+) | 2003 04 01 | 704 | 0.6− | 1.2+ |
| 1995 03 28 | 691 | 0.1− | 0.0 | 2003 02 27 | 608 | (1.1+ | 1.6+) | 2003 04 05 | 699 | 0.6− | 0.2− |
| 1995 03 28 | 691 | 0.3− | 0.1+ | 2003 02 27 | 608 | 1.3+ | 1.4+ | 2003 04 05 | 699 | 0.7− | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2003 02 27 | 608 | 1.1+ | 1.5+ | 2003 04 05 | 699 | 1.4− | 1.4− |
| 2001 09 12 | 704 | 0.2− | 0.8+ | 2003 03 09 | 704 | (0.1− | 4.3+) | 2003 04 05 | 699 | 1.1− | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.5+ | 2003 03 09 | 704 | (0.1− | 2.1+) | 2003 04 09 | 704 | 0.2− | 1.4+ |
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2003 03 09 | 704 | 0.4+ | 0.6+ | 2003 04 09 | 704 | (1.2− | 1.7+) |
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2003 03 09 | 704 | (0.2+ | 1.7+) | 2003 04 09 | 704 | (1.8− | 0.9+) |
| 2001 09 17 | 699 | 0.5− | 0.2+ | 2003 03 09 | 704 | 0.9+ | 0.6− | 2005 08 30 | 644 | 0.1− | 0.6+ |
| 2001 09 17 | 699 | 0.2+ | 0.3+ | 2003 03 26 | 699 | 1.0+ | 0.4+ | 2005 08 30 | 644 | 0.2+ | 0.3+ |
| 2001 09 17 | 699 | 0.1− | 0.6+ | 2003 03 26 | 699 | (0.1+ | 1.8+) | 2005 08 30 | 644 | 0.1+ | 0.6+ |
| 2001 09 17 | 699 | 0.1− | 0.3+ | 2003 03 26 | 699 | 0.0 | 0.5+ | 2005 09 01 | 644 | 0.1+ | 0.4+ |
| 2001 09 23 | 608 | 0.1+ | 0.1− | 2003 03 26 | 699 | 0.0 | 0.9+ | 2005 09 01 | 644 | 0.1− | 0.5+ |
| 2001 09 23 | 608 | 0.1+ | 0.1+ | 2003 03 27 | 704 | 1.0+ | 0.4+ | 2005 09 01 | 644 | 0.1+ | 0.5+ |
| 2001 09 23 | 608 | 0.1− | 0.2− | 2003 03 27 | 704 | 0.9+ | 0.2+ | 2005 09 26 | 703 | 0.1− | 1.4− |
| 2001 09 25 | 704 | 0.6+ | 0.8+ | 2003 03 27 | 704 | 0.4− | 0.5− | 2005 09 26 | 703 | 0.5− | 0.6+ |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2003 03 27 | 704 | 0.8+ | 1.0+ | 2005 09 26 | 703 | 1.3− | 0.4− |
| 2001 09 25 | 704 | 0.4− | 1.1+ | 2003 03 27 | 704 | 1.0+ | 0.1− | 2005 09 26 | 703 | 0.3− | 0.0 |
| 2001 09 25 | 704 | 0.0 | 0.0 | 2003 04 01 | 704 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 10 10 | 644 | 0.4− | 0.5+ | 2003 04 01 | 704 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 10 10 | 644 | 0.4− | 0.5+ | 2003 04 01 | 704 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.4+ |
| 2001 10 10 | 644 | 0.5− | 0.5+ | 2003 04 01 | 704 | 0.6− | 0.5+ | 2006 11 28 | 704 | 1.3+ | 0.3− |
| 2001 10 16 | 644 | 0.0 | 0.8+ | 2003 04 01 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 1.0− | 0.1+ |
| 2001 10 16 | 644 | 0.0 | 0.5+ | 2003 04 01 | 704 | 0.4− | 0.7+ | 2006 11 28 | 704 | 0.8+ | 0.1− |
| 2001 10 16 | 644 | 0.1+ | 0.6+ | 2003 04 01 | 704 | 0.7+ | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | (0.6+ | 1.8+) | 2003 04 01 | 704 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.7+ | 0.7+ |
| 2001 10 20 | 704 | (0.6+ | 1.6+) | 2003 04 01 | 704 | 0.5+ | 0.5+ | | | | |

**(140479)∗ 2001 TQ$_{138}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.51321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21362689 | $\omega$ | 197.26509 | | +0.85092277 | +0.51698693 | |
| $a$ | 2.7713972 | $\Omega$ | 131.23459 | | −0.46616127 | +0.82483498 | |
| $e$ | 0.1092302 | $i$ | 7.10627 | | −0.24212417 | +0.22884880 | |
| $P$ | 4.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 13 | 691 | 0.6+ | 0.3− | 2004 01 21 | 245 | 0.1− | 0.5− | 2006 09 29 | 699 | 0.6− | 0.2+ |
| 1994 01 13 | 691 | 0.9− | 0.1+ | 2004 01 21 | 245 | 0.8− | 0.3− | 2006 09 29 | 699 | 0.5− | 0.2− |
| 1994 01 13 | 691 | 0.4+ | 0.1+ | 2004 01 21 | 245 | 0.4− | 0.3− | 2006 09 29 | 699 | 1.1− | 1.2+ |
| 1999 01 13 | 691 | 0.7− | 1.6− | 2004 01 27 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 1.0− | 0.1− |
| 1999 01 13 | 691 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.2− | 1.4+ |
| 1999 01 13 | 691 | 0.3+ | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 1.1+ | 0.5+ |
| 1999 01 18 | 691 | 0.2− | 0.9− | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.5+ |
| 1999 01 18 | 691 | 0.1− | 0.3− | 2004 01 27 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.8+ |
| 1999 01 18 | 691 | 0.1− | 0.7− | 2004 01 27 | 691 | 0.4+ | 0.4+ | 2006 09 30 | 682 | 0.3− | 0.1− |
| 2001 08 25 | 699 | 0.1+ | 0.3+ | 2004 01 30 | 568 | 0.3+ | 0.1+ | 2006 09 30 | 682 | 0.7+ | 0.3− |
| 2001 08 25 | 699 | 0.4+ | 0.3− | 2004 01 30 | 568 | 0.3+ | 0.1+ | 2006 09 30 | 682 | 0.0 | 0.3+ |
| 2001 08 25 | 699 | 0.4+ | 0.8+ | 2004 01 30 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 08 25 | 699 | 0.5− | 0.4− | 2004 01 30 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.7+ | 0.1− | 2004 01 30 | 691 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2004 01 30 | 691 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2004 01 30 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.4+ | 0.3+ | 2004 01 30 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2001 09 12 | 704 | 0.9+ | 0.7+ | 2004 01 30 | 568 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.0+ |
| 2001 09 19 | 704 | (2.2− | 0.7+) | 2004 01 30 | 568 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2004 01 30 | 568 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.8+ | 0.6+ | 2004 01 30 | 568 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2001 09 21 | 704 | 0.5− | 0.0 | 2004 02 25 | 704 | (0.0 | 2.1+) | 2006 10 22 | 703 | 0.2− | 0.6− |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2004 02 25 | 704 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2004 02 25 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.0 | 0.7− | 2004 02 25 | 704 | 0.7− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 09 23 | 608 | 0.4− | 0.6− | 2004 02 26 | 704 | (0.0 | 2.0+) | 2006 11 13 | 703 | 0.1+ | 0.4+ |
| 2001 09 23 | 608 | 0.2− | 0.5− | 2004 02 26 | 704 | 0.4− | 0.6+ | 2006 11 13 | 703 | 0.1+ | 0.7− |
| 2001 09 23 | 608 | 0.6− | 0.1− | 2004 02 26 | 704 | 0.7− | 0.2+ | 2006 11 13 | 703 | 0.6+ | 0.7+ |
| 2001 10 10 | 644 | 0.5− | 0.3− | 2004 03 15 | 704 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.8+ |
| 2001 10 10 | 644 | 0.4− | 0.2− | 2004 03 15 | 704 | (2.1− | 0.4+) | 2006 11 19 | 703 | 0.2+ | 0.3+ |
| 2001 10 10 | 644 | 0.3− | 0.0 | 2004 03 15 | 704 | 1.2− | 0.0 | 2006 11 19 | 703 | 0.3+ | 0.7+ |
| 2001 10 16 | 644 | 0.4− | 1.0+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.5− | 0.1+ |
| 2001 10 16 | 644 | 0.8− | 1.0+ | 2004 03 15 | 691 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2001 10 16 | 644 | 0.9− | 0.7+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | | | | |

**(140480)∗ 2001 TV$_{138}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 26.02859 | (2000.0) | +0.98895392 | −0.11216684 | |
| $n$ | 0.21742641 | $\omega$ | 254.46173 | +0.13988369 | +0.92245879 |
| $a$ | 2.7390157 | $\Omega$ | 111.90015 | −0.04901726 | +0.36944335 |
| $e$ | 0.1333814 | $i$ | 5.99443 | | |
| $P$ | 4.53 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 699 | 0.4+ | 1.3+ | 2002 12 31 | 291 | 0.2− | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2001 08 25 | 699 | 0.2− | 0.2+ | 2002 12 31 | 291 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2001 08 25 | 699 | 0.1+ | 1.1+ | 2003 01 25 | 291 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2001 08 25 | 699 | 0.1− | 0.7+ | 2003 01 25 | 291 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.6− |
| 2001 09 12 | 704 | 1.4+ | 0.2+ | 2003 01 25 | 291 | 0.8+ | 0.8+ | 2006 11 20 | G96 | 0.7+ | 0.2− |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2004 03 26 | 691 | 0.4+ | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2001 09 12 | 704 | 1.0− | 0.6− | 2004 03 26 | 691 | 0.1− | 0.5+ | 2006 11 20 | G96 | 0.4+ | 0.4− |
| 2001 09 19 | 699 | 0.8− | 0.8+ | 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.3− |
| 2001 09 19 | 699 | 0.3+ | 0.0 | 2006 10 17 | 683 | 0.4+ | 0.6− | 2006 11 25 | 704 | 0.2− | 0.2− |
| 2001 09 19 | 699 | 0.6− | 0.2+ | 2006 10 17 | 683 | 0.5+ | 0.4− | 2006 11 25 | 704 | 0.7− | 0.2+ |
| 2001 09 19 | 699 | 1.4− | 0.4+ | 2006 10 30 | 703 | (1.9− | 0.0 ) | 2006 11 25 | 704 | 0.3+ | 0.8+ |
| 2001 10 10 | 644 | 0.1− | 0.8+ | 2006 10 30 | 703 | 0.5− | 1.4− | 2006 11 28 | 704 | 0.4+ | 0.7− |
| 2001 10 10 | 644 | 0.5− | 0.8+ | 2006 10 30 | 703 | (1.8+ | 0.7−) | 2006 11 28 | 704 | 0.1+ | 0.7+ |
| 2001 10 10 | 644 | 0.2− | 1.0+ | 2006 10 30 | 703 | 0.7− | 1.1− | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2001 10 16 | 644 | 0.2− | 0.6+ | 2006 11 17 | 704 | 1.1− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2001 10 16 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.7+ | 0.4− |
| 2001 10 16 | 644 | 0.2− | 0.4+ | 2006 11 17 | 704 | 0.6+ | 0.6+ | | | | |
| 2002 12 31 | 291 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.1− | | | | |

**(140481)∗ 2001 TQ$_{140}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 15.63767 | (2000.0) | +0.94813667 | +0.29679560 | |
| $n$ | 0.19861842 | $\omega$ | 247.72839 | −0.23300291 | +0.89245797 |
| $a$ | 2.9093080 | $\Omega$ | 94.85806 | −0.21620940 | +0.33975159 |
| $e$ | 0.0641072 | $i$ | 6.55777 | | |
| $P$ | 4.96 | $H$ | 14.7 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.1− | 0.9− | 2004 02 25 | 704 | 0.1+ | 1.0+ | 2006 09 19 | 703 | 0.4+ | 0.1+ |
| 2001 07 20 | 644 | 0.0 | 0.5− | 2004 02 25 | 704 | (0.6+ | 1.8+) | 2006 09 25 | 703 | 0.1+ | 0.9+ |
| 2001 07 20 | 644 | 0.2− | 0.4− | 2004 02 25 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.2+ |
| 2001 08 26 | 644 | 0.7− | 0.6+ | 2004 02 25 | 704 | 0.4+ | 0.0 | 2006 09 25 | 703 | 0.1− | 0.3+ |
| 2001 08 26 | 644 | 1.0− | 0.6+ | 2004 03 15 | 704 | 0.8+ | 0.8+ | 2006 09 25 | 703 | 0.2− | 0.4+ |
| 2001 08 26 | 644 | 0.8− | 0.5+ | 2004 03 15 | 704 | 0.0 | 1.1+ | 2006 09 30 | F84 | 0.5+ | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2004 03 15 | 704 | (1.7+ | 1.1+) | 2006 09 30 | F84 | 1.1+ | 0.2− |
| 2001 09 12 | 704 | 0.2− | 1.1+ | 2004 03 15 | 704 | (1.6+ | 0.4+) | 2006 09 30 | F84 | 0.8+ | 0.2− |
| 2001 09 12 | 704 | 0.1+ | 0.8+ | 2004 03 23 | 704 | 0.8+ | 0.4+ | 2006 10 04 | 703 | 0.4− | 1.0− |
| 2001 09 12 | 704 | 0.2− | 0.8+ | 2004 03 23 | 704 | 0.7+ | 0.3+ | 2006 10 04 | 703 | 1.1+ | 0.6− |
| 2001 09 12 | 704 | 0.5− | 0.9+ | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 10 04 | 703 | 0.5+ | 1.0+ |
| 2001 09 25 | 704 | 1.1− | 0.6+ | 2004 03 23 | 704 | 1.1+ | 0.3+ | 2006 10 04 | 703 | 1.1− | 0.8+ |
| 2001 09 25 | 704 | 0.5+ | 0.6+ | 2004 03 26 | 703 | 0.7− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.0 | 1.1+ | 2004 03 26 | 703 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2001 10 10 | 644 | 0.1+ | 0.9+ | 2004 03 26 | 703 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 10 10 | 644 | 0.2− | 0.6+ | 2004 03 26 | 703 | 0.8+ | 1.4+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 10 10 | 644 | 0.3− | 0.6+ | 2004 03 27 | 691 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 10 16 | 644 | 0.5− | 0.5− | 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 10 16 | 644 | 0.2− | 0.1− | 2004 03 27 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2001 10 16 | 644 | 0.2− | 0.2− | 2006 09 17 | 699 | 0.4− | 0.9− | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2001 10 24 | 644 | 0.5+ | 0.1− | 2006 09 17 | 699 | 0.6+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2001 10 24 | 644 | 0.8+ | 0.3− | 2006 09 17 | 699 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 10 24 | 644 | 0.8+ | 0.2− | 2006 09 17 | 699 | 0.7− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2003 01 08 | 704 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.8+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 01 08 | 704 | 0.3+ | 0.5− | 2006 09 19 | 703 | 1.2− | 0.6+ | | | | |
| 2003 01 08 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.4− | 0.4+ | | | | |

**(140482)∗ 2001 TK$_{141}$ = 2003 AX$_{49}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 40769)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 200.25816 | (2000.0) | −0.60770857 | +0.78914987 | |
| $n$ | 0.23357128 | $\omega$ | 152.24924 | −0.74434492 | −0.52689995 |
| $a$ | 2.6112980 | $\Omega$ | 80.19113 | −0.27684100 | −0.31562466 |
| $e$ | 0.0624212 | $i$ | 5.18590 | | |
| $P$ | 4.22 | $H$ | 16.0 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1+ | 0.7+ | 2003 01 09 | 704 | 0.8+ | 0.2+ | 2004 06 13 | 691 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2003 01 09 | 704 | (2.1+ | 0.6−) | 2004 06 13 | 691 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | 0.6− | 0.9+ | 2003 01 09 | 704 | 0.2+ | 0.3+ | 2004 06 14 | 704 | 1.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2004 05 13 | 691 | 0.0 | 0.2+ | 2004 06 14 | 704 | (3.3+ | 0.6−) |
| 2001 10 10 | 644 | 0.2− | 0.4− | 2004 05 13 | 691 | 0.0 | 0.2+ | 2004 06 14 | 704 | 0.2− | 0.4+ |
| 2001 10 10 | 644 | 0.0 | 0.3− | 2004 05 13 | 691 | 0.0 | 0.2+ | 2005 09 27 | 704 | 1.2+ | 0.1− |
| 2001 10 10 | 644 | 0.3− | 0.3− | 2004 05 15 | 704 | 0.3− | 1.3+ | 2005 09 27 | 704 | 0.3− | 1.0+ |
| 2001 10 16 | 644 | 0.3− | 0.7+ | 2004 05 15 | 704 | 0.1− | 1.2+ | 2005 09 27 | 704 | 0.2− | 0.0 |
| 2001 10 16 | 644 | 0.3− | 0.8+ | 2004 05 15 | 704 | 0.1− | 1.1+ | 2005 09 27 | 704 | 0.3+ | 0.1+ |
| 2001 10 16 | 644 | 0.0 | 0.6+ | 2004 05 15 | 704 | 0.2− | 0.3+ | 2005 10 03 | 703 | 0.3− | 0.4+ |
| 2001 10 24 | 644 | (1.4− | 1.6+) | 2004 05 15 | 704 | 0.2+ | 0.7+ | 2005 10 03 | 703 | 0.2− | 1.1+ |
| 2001 10 24 | 644 | 1.1− | 1.4+ | 2004 05 17 | 704 | 0.1− | 0.4+ | 2005 10 03 | 703 | 0.5− | 0.7− |
| 2001 10 24 | 644 | (1.2− | 1.6+) | 2004 05 17 | 704 | 0.6+ | 0.8+ | 2005 10 03 | 703 | 0.2+ | 0.6− |
| 2002 12 13 | 645 | 0.1− | 0.1− | 2004 05 17 | 704 | 0.3− | 0.8+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 12 13 | 645 | 0.0 | 0.0 | 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.2− | 0.4+ |
| 2002 12 31 | 704 | 0.0 | 0.0 | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2004 05 21 | 704 | 0.4+ | 0.6− | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2002 12 31 | 704 | 0.4+ | 0.8+ | 2004 05 21 | 704 | 0.1+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2003 01 05 | 704 | 0.8+ | 1.1+ | 2004 05 21 | 691 | 0.1− | 0.8− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.7+ | 0.3+ | 2004 05 21 | 704 | 0.5+ | 0.5− | 2006 11 25 | 691 | 0.2− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.1− | 0.8+ | 2004 05 21 | 704 | 0.7+ | 0.6− | 2006 11 25 | 691 | 0.0 | 0.1+ | |
| 2003 01 05 | 704 | 0.9+ | 0.1+ | 2004 05 21 | 704 | 0.6+ | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.3+ | |
| 2003 01 09 | 704 | 0.7+ | 0.3+ | 2004 06 13 | 691 | 0.3+ | 0.3+ | | | | | |

**(140483)∗ 2001 TM$_{141}$ = 1997 WT$_{43}$ = 2003 FX$_{87}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 46754)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.39542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22293536 | $\omega$ | 53.45658 | | −0.40323769 | −0.90175024 | |
| $a$ | 2.6937053 | $\Omega$ | 61.02873 | | +0.77239077 | −0.42663973 | |
| $e$ | 0.2743598 | $i$ | 10.25231 | | +0.49072585 | −0.06946259 | |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | (3.8− | 0.5−) | 2003 03 23 | 683 | (1.8+ | 1.1−) | 2003 04 21 | 691 | 0.1+ | 0.1+ | |
| 1997 11 29 | 704 | 1.5− | 1.0− | 2003 03 23 | 683 | 1.4+ | 0.2− | 2003 05 02 | 704 | 0.6+ | 0.4+ | |
| 1997 11 29 | 704 | (2.5− | 0.8−) | 2003 03 23 | 683 | (2.6+ | 0.5−) | 2003 05 02 | 691 | (0.3− | 2.0+) | |
| 1997 11 29 | 704 | (4.3− | 2.2−) | 2003 03 24 | 683 | 1.5− | 0.7+ | 2003 05 02 | 704 | 0.3+ | 0.1− | |
| 1997 11 29 | 704 | (7.4− | 1.2+) | 2003 03 24 | 683 | 0.9+ | 0.3+ | 2003 05 02 | 704 | 0.0 | 0.6− | |
| 1997 12 04 | 704 | 0.8+ | 1.8− | 2003 03 24 | 683 | 0.2+ | 0.4− | 2003 05 02 | 691 | (0.6− | 1.6+) | |
| 1997 12 04 | 704 | 0.7− | 0.7+ | 2003 03 25 | 683 | 1.0− | 0.3+ | 2003 05 02 | 691 | (0.7− | 1.9+) | |
| 1997 12 04 | 704 | 0.7− | 1.0+ | 2003 03 25 | 683 | 0.5+ | 1.1− | 2003 05 05 | 704 | 1.0− | 0.9+ | |
| 1997 12 04 | 704 | 0.5+ | 1.2− | 2003 03 25 | 683 | 0.4+ | 0.1− | 2003 05 05 | 704 | 0.1+ | 0.7− | |
| 1997 12 04 | 704 | (2.6+ | 0.1+) | 2003 03 28 | 691 | 0.1− | 0.2+ | 2003 05 05 | 704 | 1.4− | 0.8+ | |
| 1997 12 05 | 704 | 0.4+ | 0.9− | 2003 03 28 | 691 | 0.0 | 0.0 | 2003 05 05 | 704 | 1.0+ | 0.7− | |
| 1997 12 05 | 704 | 0.5+ | 0.1+ | 2003 03 28 | 691 | 0.0 | 0.1− | 2003 05 05 | 704 | (2.5+ | 0.7+) | |
| 1997 12 05 | 704 | 0.2− | 0.2− | 2003 03 29 | 699 | 0.9− | 0.1− | 2006 10 28 | 703 | 1.0+ | 0.7+ | |
| 1997 12 05 | 704 | 0.3+ | 0.5+ | 2003 03 29 | 699 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.1− | 0.0 | |
| 1997 12 05 | 704 | 1.6+ | 0.1− | 2003 03 29 | 699 | 1.2− | 0.5− | 2006 10 28 | 703 | (1.3− | 3.2+) | |
| 2001 09 12 | 704 | (0.0 | 1.6+) | 2003 03 29 | 699 | (1.6+ | 0.5+) | 2006 10 28 | 703 | (0.5+ | 1.9+) | |
| 2001 09 12 | 704 | 1.1+ | 0.2+ | 2003 03 31 | 704 | 0.5+ | 0.3+ | 2006 11 02 | G96 | 0.3− | 0.2− | |
| 2001 09 12 | 704 | 0.5− | 1.3+ | 2003 03 31 | 699 | 0.6− | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.5− | |
| 2001 09 12 | 704 | 0.9− | 0.6− | 2003 03 31 | 704 | 0.0 | 0.7+ | 2006 11 02 | G96 | 0.1+ | 0.1− | |
| 2001 10 10 | 644 | (2.3− | 1.7+) | 2003 03 31 | 704 | 0.1− | 0.8+ | 2006 11 02 | G96 | 0.3− | 0.3− | |
| 2001 10 10 | 644 | (2.0− | 1.4+) | 2003 03 31 | 699 | 0.6− | 0.1− | 2006 11 16 | 704 | (0.6+ | 2.2−) | |
| 2001 10 10 | 644 | (1.7− | 1.6+) | 2003 03 31 | 704 | 1.4− | 0.6+ | 2006 11 16 | 704 | 0.9+ | 0.5+ | |
| 2001 10 11 | 704 | 0.7− | 1.4+ | 2003 03 31 | 699 | 0.6+ | 0.6− | 2006 11 16 | 704 | 0.2+ | 0.3− | |
| 2001 10 11 | 704 | 0.6+ | 1.1+ | 2003 03 31 | 699 | 0.3− | 1.0− | 2006 11 19 | 704 | 0.8+ | 0.8+ | |
| 2001 10 11 | 704 | 0.3− | 1.3+ | 2003 04 03 | 704 | 0.8+ | 0.3+ | 2006 11 19 | 704 | 1.3+ | 1.2− | |
| 2001 10 11 | 704 | (0.4+ | 1.9+) | 2003 04 03 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.4+ | 0.3+ | |
| 2001 10 11 | 704 | (1.2− | 2.4+) | 2003 04 03 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.0 | |
| 2001 10 16 | 644 | 0.4− | 0.1− | 2003 04 09 | 704 | 0.5+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.4+ | |
| 2001 10 16 | 644 | 0.4− | 0.2+ | 2003 04 09 | 704 | 0.8+ | 0.3− | 2006 11 21 | 703 | 0.7− | 0.4− | |
| 2001 10 16 | 644 | 0.1− | 0.2+ | 2003 04 09 | 704 | 0.1+ | 0.4− | 2006 11 21 | 703 | 0.4+ | 0.8− | |
| 2001 10 19 | 699 | 1.2− | 0.7+ | 2003 04 09 | 704 | 0.6+ | 0.3+ | 2006 11 21 | 703 | 0.5− | 0.1− | |
| 2001 10 19 | 699 | 0.8− | 0.9+ | 2003 04 09 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 703 | 0.3− | 0.2+ | |
| 2001 10 19 | 699 | 0.6− | 0.5+ | 2003 04 10 | 704 | 0.6+ | 0.6+ | 2006 11 22 | 704 | 0.4− | 0.9+ | |
| 2001 10 19 | 699 | 0.7− | 0.7+ | 2003 04 10 | 704 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.9+ | |
| 2003 03 09 | 704 | 1.3+ | 1.1+ | 2003 04 10 | 704 | 0.6+ | 0.8+ | 2006 11 22 | 704 | 0.5− | 0.7+ | |
| 2003 03 09 | 704 | (0.4+ | 1.8+) | 2003 04 10 | 704 | 0.8+ | 0.7+ | 2006 11 22 | 704 | 0.2− | 1.0+ | |
| 2003 03 09 | 704 | 0.3+ | 1.0+ | 2003 04 21 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.8+ | |
| 2003 03 09 | 704 | 0.1− | 0.5− | 2003 04 21 | 691 | 0.0 | 0.3+ | | | | | |

**(140484)∗ 2001 TH$_{142}$ = 2004 EF$_{66}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61128)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.09017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20523060 | $\omega$ | 222.51882 | | −0.09265439 | +0.97786602 | |
| $a$ | 2.8464789 | $\Omega$ | 43.18357 | | −0.82388737 | +0.03050645 | |
| $e$ | 0.1097360 | $i$ | 15.91026 | | −0.55912857 | −0.20699614 | |
| $P$ | 4.80 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2004 03 18 | 703 | 0.2− | 0.2− | 2006 10 03 | G96 | 0.6+ | 0.2− | |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2004 03 18 | 703 | 0.3− | 0.7+ | 2006 10 03 | G96 | 0.1+ | 0.0 | |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2004 03 18 | 703 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.5+ | |
| 2001 09 12 | 704 | 0.2+ | 0.1+ | 2004 03 18 | 703 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.4+ | |
| 2001 09 25 | 704 | (1.7− | 0.3+) | 2004 03 25 | 704 | 1.3+ | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.1+ | |
| 2001 09 25 | 704 | 0.7− | 0.4+ | 2004 03 25 | 704 | 1.0+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.3+ | |
| 2001 09 25 | 704 | 0.4− | 0.0 | 2004 03 25 | 704 | 0.7+ | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.2− | |
| 2001 09 25 | 704 | 1.0− | 1.0+ | 2004 03 25 | 704 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− | |
| 2001 10 10 | 644 | 0.4− | 0.4+ | 2004 03 30 | 703 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | |
| 2001 10 10 | 644 | 0.3− | 0.2+ | 2004 03 30 | 703 | 0.5+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.0 | |
| 2001 10 10 | 644 | 0.3− | 0.2+ | 2004 03 30 | 703 | 0.8− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1− | |
| 2001 10 16 | 644 | 0.5+ | 0.6+ | 2004 03 30 | 703 | 0.5+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 | |
| 2001 10 16 | 644 | 0.1+ | 0.5+ | 2004 04 14 | 644 | 0.7+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.0 | |
| 2001 10 16 | 644 | 0.4+ | 0.2+ | 2004 04 14 | 644 | 0.4+ | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.2− | |
| 2001 10 19 | 699 | 0.6+ | 0.6+ | 2004 04 14 | 644 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.1− | |
| 2001 10 19 | 699 | (1.6− | 1.2+) | 2004 04 14 | 703 | 0.5− | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.1− | |
| 2001 10 19 | 699 | 0.8− | 0.0 | 2004 04 14 | 703 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.0 | |
| 2001 10 19 | 699 | 0.7− | 1.4+ | 2004 04 14 | 703 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3− | |
| 2001 10 20 | 704 | 0.7− | 0.7+ | 2004 04 14 | 703 | 0.0 | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.9− | |
| 2001 10 20 | 704 | 0.4− | 0.5+ | 2005 05 13 | E12 | 0.2+ | 1.3+ | 2006 11 11 | 703 | 0.7− | 0.0 | |
| 2001 10 20 | 704 | 1.1− | 0.2− | 2005 05 13 | E12 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.7− | 0.8− | |
| 2001 10 20 | 704 | (1.4+ | 1.9+) | 2005 05 13 | E12 | 0.2+ | 1.1+ | 2006 11 16 | G96 | 0.4+ | 0.0 | |
| 2004 02 16 | 704 | 0.1+ | 0.1− | 2005 05 13 | E12 | 0.6− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.2− | |
| 2004 02 16 | 704 | 1.3+ | 0.2+ | 2005 06 30 | E12 | 0.1+ | 0.8+ | 2006 11 16 | G96 | 0.5+ | 0.2− | |
| 2004 02 16 | 704 | 0.1+ | 1.4+ | 2005 06 30 | E12 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.4− | |
| 2004 02 16 | 704 | 0.6+ | 0.5+ | 2005 06 30 | E12 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3− | |
| 2004 02 16 | 704 | 0.1− | 0.5+ | 2005 06 30 | E12 | 0.6− | 0.5+ | 2006 11 21 | 704 | 0.5+ | 1.2+ | |
| 2004 03 14 | 704 | 1.0+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.7− | 1.7+ | |
| 2004 03 14 | 704 | (0.5− | 2.9+) | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.4+ | |
| 2004 03 14 | 704 | (0.1+ | 1.9+) | 2006 09 30 | 703 | 0.0 | 0.2+ | | | | | |
| 2004 03 14 | 704 | (1.0+ | 1.7+) | 2006 10 03 | G96 | 0.3+ | 0.1− | | | | | |

**(140485)∗ 2001 TJ$_{142}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.13896 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23447349 | $\omega$ | 96.28305 | | −0.78249105 | −0.61464658 | |
| $a$ | 2.6045951 | $\Omega$ | 45.84590 | | +0.50220013 | −0.71753563 | |
| $e$ | 0.1396507 | $i$ | 7.97850 | | +0.36810702 | −0.32764647 | |
| $P$ | 4.20 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 1.0+ | 1.2+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2003 02 26 | 704 | 0.3− | 0.2− | |
| 1999 02 23 | 699 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.2− | 1.4+ | 2003 02 26 | 704 | 0.6− | 0.7− | |
| 1999 02 23 | 699 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.3+ | 1.4+ | 2003 02 26 | 704 | 0.2− | 0.4− | |
| 1999 04 07 | 699 | 1.1+ | 1.2+ | 2001 11 20 | 704 | 0.2+ | 0.4+ | 2003 02 26 | 704 | 0.3− | 1.0− | |
| 1999 04 07 | 699 | 0.6+ | 0.6+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2003 03 03 | 704 | 0.7+ | 0.6− | |
| 1999 04 07 | 699 | 0.2− | 1.3+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2003 03 03 | 704 | (0.7− | 1.8−) | |
| 1999 04 12 | 704 | 1.0+ | 1.5− | 2003 01 10 | 704 | 0.2+ | 0.4+ | 2003 03 03 | 704 | 0.7+ | 0.8− | |
| 1999 04 12 | 704 | 0.7− | 0.1− | 2003 01 10 | 704 | 0.3+ | 0.1− | 2003 03 03 | 704 | (1.1− | 1.7−) | |
| 1999 04 12 | 704 | 0.9− | 1.2+ | 2003 01 10 | 704 | 0.5+ | 0.1− | 2003 03 03 | 704 | 0.6+ | 0.1− | |
| 1999 04 12 | 704 | (1.6− | 2.3+) | 2003 01 10 | 704 | 0.6+ | 0.4+ | 2003 03 03 | 704 | (1.6− | 1.4−) | |
| 1999 04 12 | 704 | 0.1− | 0.5− | 2003 01 10 | 704 | 0.2+ | 0.8+ | 2003 03 03 | 644 | 0.0 | 0.1− | |
| 2001 10 10 | 644 | 0.3+ | 1.0+ | 2003 01 28 | 644 | 0.2− | 0.2+ | 2003 03 03 | 644 | 0.1− | 0.0 | |
| 2001 10 10 | 644 | 0.4+ | 1.2+ | 2003 01 28 | 644 | 0.7− | 0.3− | 2003 03 03 | 644 | 0.0 | 0.2− | |
| 2001 10 10 | 644 | 0.2+ | 0.9+ | 2003 01 28 | 644 | 0.3− | 0.3+ | 2003 03 19 | 185 | 0.2+ | 0.2+ | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2003 02 04 | 699 | 0.0 | 0.2− | 2003 03 19 | 185 | 0.2− | 0.1+ | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2003 02 04 | 699 | 0.6− | 0.0 | 2003 03 19 | 185 | 0.3− | 0.4− | |
| 2001 10 16 | 644 | 0.1− | 1.2+ | 2003 02 04 | 699 | 0.0 | 0.3− | 2005 08 26 | 644 | 0.4− | 0.5+ | |
| 2001 10 16 | 644 | 0.1− | 1.3+ | 2003 02 04 | 699 | 0.3− | 0.2− | 2005 08 26 | 644 | 0.3− | 0.6+ | |
| 2001 10 16 | 644 | 0.1+ | 1.4+ | 2003 02 06 | 704 | (1.0+ | 1.9+) | 2005 08 26 | 644 | 0.7− | 0.5+ | |
| 2001 10 24 | 644 | 0.8+ | 0.3+ | 2003 02 06 | 704 | (0.2+ | 1.6+) | 2006 11 06 | 644 | 0.2− | 0.4− | |
| 2001 10 24 | 644 | 0.3+ | 0.1+ | 2003 02 06 | 704 | (0.4+ | 1.7+) | 2006 11 06 | 644 | 0.0 | 0.2+ | |
| 2001 10 24 | 644 | 0.4+ | 0.4+ | 2003 02 06 | 704 | 0.3+ | 1.3+ | 2006 11 06 | 644 | 0.5− | 0.2− | |
| 2001 10 25 | 645 | 0.1− | 0.0 | 2003 02 06 | 704 | 0.4+ | 1.4+ | 2006 11 19 | 704 | (0.2+ | 1.7−) | |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 02 21 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.6+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.0 | 0.0 | 2003 02 21 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.3+ | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2003 02 21 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.6− | |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2003 02 26 | 704 | 0.2+ | 0.3+ | | | | | |

**(140486)∗ 2001 TZ$_{142}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.63209 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24201190 | $\omega$ | 42.57713 | | −0.69741659 | −0.71211587 | |
| $a$ | 2.5502235 | $\Omega$ | 91.81944 | | +0.63390794 | −0.66544843 | |
| $e$ | 0.0853376 | $i$ | 4.62707 | | +0.33432143 | −0.22376186 | |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.9− | 0.4+ | 2003 02 04 | 704 | 0.3− | 0.2+ | 2005 08 31 | 644 | 0.1− | 0.0 | |
| 2001 10 10 | 644 | 0.7− | 0.4+ | 2003 02 04 | 704 | 0.1+ | 0.8+ | 2005 09 24 | 644 | 0.5− | 0.3+ | |
| 2001 10 10 | 644 | 0.8− | 0.1+ | 2003 02 04 | 704 | 0.1− | 0.1+ | 2005 09 24 | 644 | 0.5− | 0.1+ | |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2003 02 20 | 151 | 0.7+ | 0.3+ | 2005 09 24 | 644 | 0.8− | 0.6+ | |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2003 02 20 | 151 | 0.4− | 0.3+ | 2005 09 30 | 699 | (1.8− | 0.8+) | |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2003 02 20 | 151 | 0.1− | 0.5+ | 2005 09 30 | 699 | 0.5+ | 0.8+ | |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2003 02 22 | 947 | 0.2− | 0.1− | 2005 09 30 | 699 | 0.6− | 0.4+ | |
| 2001 10 16 | 644 | 0.9− | 0.4+ | 2003 02 22 | 947 | 0.1− | 0.5− | 2005 09 30 | 699 | 0.7+ | 0.5− | |
| 2001 10 16 | 644 | 0.7− | 0.7+ | 2003 02 23 | 699 | 0.1+ | 0.6− | 2005 10 09 | 691 | 0.3− | 0.3+ | |
| 2001 10 16 | 644 | 0.7− | 0.5+ | 2003 02 23 | 699 | 0.2+ | 0.2− | 2005 10 09 | 691 | 0.3− | 0.4+ | |
| 2001 10 20 | 644 | 0.3− | 0.4+ | 2003 02 23 | 699 | 0.7+ | 0.3+ | 2005 10 09 | 691 | 0.3− | 0.4+ | |
| 2001 10 20 | 644 | 0.6− | 0.6+ | 2003 02 23 | 699 | 0.4+ | 0.0 | 2005 10 09 | 703 | 0.6− | 0.1+ | |
| 2001 10 20 | 644 | 0.6− | 0.1+ | 2003 02 23 | 599 | 0.3− | 0.1− | 2005 10 09 | 703 | 1.2− | 0.2+ | |
| 2001 10 24 | 644 | 0.1− | 0.2+ | 2003 02 23 | 599 | 0.3− | 0.2− | 2005 10 09 | 703 | 1.1+ | 0.7− | |
| 2001 10 24 | 644 | 0.0 | 0.6+ | 2003 02 23 | 599 | 0.3− | 0.2− | 2005 10 09 | 703 | 0.5− | 0.9+ | |
| 2001 10 24 | 644 | 1.1+ | 1.1+ | 2003 02 23 | 599 | 0.3− | 0.2− | 2005 10 09 | 703 | 0.7+ | 1.1+ | |
| 2003 01 09 | 704 | 0.3− | 0.5− | 2003 02 24 | 599 | 0.3− | 0.3− | 2005 10 09 | 703 | 1.1− | 1.3− | |
| 2003 01 09 | 704 | 0.2− | 0.8− | 2003 02 24 | 599 | 0.3− | 0.2− | 2005 10 09 | 703 | 1.4+ | 0.6+ | |
| 2003 01 09 | 704 | 0.8+ | 0.2− | 2003 02 24 | 599 | 0.2− | 0.3− | 2005 10 09 | 703 | 0.1+ | 1.4+ | |
| 2003 01 30 | 608 | 0.0 | 1.4− | 2003 02 24 | 599 | 0.4− | 0.2− | 2005 10 10 | 703 | 0.6+ | 0.0 | |
| 2003 01 30 | 608 | 0.8− | 1.2− | 2003 03 06 | 704 | 0.3+ | 0.5+ | 2005 10 10 | 703 | 0.1+ | 0.5+ | |
| 2003 01 30 | 608 | (0.7− | 1.5−) | 2003 03 06 | 704 | 0.6+ | 0.0 | 2005 10 10 | 703 | 0.6− | 0.9− | |
| 2003 02 01 | 704 | 0.2− | 0.6+ | 2003 03 06 | 704 | 0.1− | 0.2+ | 2005 10 10 | 703 | 0.3+ | 0.3+ | |
| 2003 02 01 | 704 | 0.4+ | 0.1− | 2003 03 06 | 704 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.6− | 0.8− | |
| 2003 02 01 | 704 | 0.6+ | 0.0 | 2003 03 06 | 704 | 0.5+ | 1.0+ | 2006 09 28 | G96 | 0.2+ | 0.5− | |
| 2003 02 01 | 704 | 0.2− | 0.4+ | 2003 03 07 | 644 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.4− | |
| 2003 02 01 | 704 | 0.2+ | 0.7+ | 2003 03 07 | 644 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.5+ | 0.7− | |
| 2003 02 01 | 704 | 0.1+ | 0.3+ | 2003 03 07 | 644 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.8− | |
| 2003 02 01 | 704 | 0.4+ | 0.3+ | 2003 03 08 | 704 | 1.2− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.3− | |
| 2003 02 01 | 704 | 0.4+ | 0.4− | 2003 03 08 | 704 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.2− | 0.5− | |
| 2003 02 01 | 704 | 0.2− | 1.1+ | 2003 03 08 | 704 | 1.1+ | 0.9+ | 2006 10 04 | G96 | 0.1+ | 0.3− | |
| 2003 02 04 | 699 | 0.3+ | 0.9+ | 2003 03 08 | 704 | 0.7+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.5− | |
| 2003 02 04 | 699 | 0.4+ | 0.6+ | 2003 03 13 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.6− | |
| 2003 02 04 | 699 | 0.0 | 0.8+ | 2003 03 13 | 644 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.4− | |
| 2003 02 04 | 704 | 0.4− | 0.5+ | 2003 03 13 | 644 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.7− | |
| 2003 02 04 | 699 | 0.1+ | 0.3+ | 2005 08 31 | 644 | 0.3− | 0.5+ | | | | | |
| 2003 02 04 | 704 | 0.1− | 0.2+ | 2005 08 31 | 644 | 0.0 | 0.4+ | | | | | |

**(140487)∗ 2001 TP$_{143}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.48934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21907823 | $\omega$ | 180.93467 | | −0.64404532 | +0.75314705 | |
| $a$ | 2.7252305 | $\Omega$ | 48.98587 | | −0.70070419 | −0.51047135 | |
| $e$ | 0.0714825 | $i$ | 10.23492 | | −0.30695157 | −0.41495606 | |
| $P$ | 4.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.2− | 0.8+ | 2004 04 16 | 644 | 0.4+ | 0.4+ | 2005 08 04 | 644 | 0.2− | 0.6+ | |
| 2001 10 10 | 644 | 0.2− | 0.7+ | 2004 04 16 | 644 | 0.5+ | 0.5+ | 2005 09 03 | 644 | 0.3− | 0.8+ | |
| 2001 10 10 | 644 | 0.1+ | 0.9+ | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2005 09 03 | 644 | 0.8− | 0.5+ | |
| 2001 10 16 | 644 | 0.8− | 1.0+ | 2004 04 16 | 644 | 0.5+ | 0.4+ | 2005 09 03 | 644 | 0.2− | 1.0+ | |
| 2001 10 16 | 644 | 0.4− | 0.8+ | 2004 04 16 | 644 | 0.5+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.5+ | |
| 2001 10 16 | 644 | 0.7− | 1.0+ | 2004 04 16 | 644 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.3+ | 0.5+ | |
| 2001 10 24 | 644 | 0.4− | 0.3− | 2004 04 20 | 704 | (0.9− | 1.6−) | 2006 10 17 | 691 | 0.3+ | 0.3+ | |
| 2001 10 24 | 644 | 0.4− | 0.1+ | 2004 04 20 | 704 | 0.7− | 0.2− | 2006 10 29 | G96 | 0.0 | 0.2− | |
| 2001 10 24 | 644 | 0.9− | 0.1− | 2004 04 20 | 704 | 0.9− | 1.0− | 2006 10 29 | G96 | 0.0 | 0.3− | |
| 2001 12 10 | 645 | 0.0 | 0.2+ | 2004 04 20 | 704 | 1.1− | 0.9+ | 2006 10 29 | G96 | 0.1− | 0.2− | |
| 2001 12 10 | 645 | 0.0 | 0.1+ | 2004 04 20 | 704 | 1.1− | 1.1+ | 2006 10 29 | G96 | 0.3− | 0.2− | |
| 2003 01 10 | 644 | 0.4+ | 0.0 | 2004 04 21 | 599 | 0.1− | 0.2+ | 2006 11 09 | D35 | 0.1+ | 0.1+ | |
| 2003 01 10 | 644 | 0.2+ | 0.1+ | 2004 04 21 | 599 | 0.0 | 0.2+ | 2006 11 09 | D35 | 0.5+ | 0.6+ | |
| 2003 01 10 | 644 | 0.1+ | 0.3− | 2004 04 21 | 599 | 0.1+ | 0.3+ | 2006 11 09 | D35 | 0.2+ | 0.3+ | |
| 2004 03 20 | 704 | 0.8+ | 1.5+ | 2004 04 21 | 599 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.9− | 0.2+ | |
| 2004 03 20 | 704 | 0.7+ | 0.3+ | 2004 04 22 | 704 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.1− | |
| 2004 03 20 | 704 | 1.3+ | 0.3+ | 2004 04 22 | 704 | 0.8+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2− | |
| 2004 03 20 | 704 | 0.4+ | 1.1+ | 2004 04 22 | 704 | 1.2+ | 0.8− | 2006 11 18 | 691 | 0.4− | 0.3+ | |
| 2004 03 20 | 704 | 0.3+ | 0.9+ | 2004 04 22 | 704 | 1.3+ | 0.4− | 2006 11 18 | 691 | 0.2− | 0.2+ | |
| 2004 03 20 | 704 | 0.4+ | 0.6− | 2004 04 22 | 704 | 0.1+ | 1.1+ | 2006 11 18 | 691 | 0.1− | 0.1+ | |
| 2004 03 20 | 704 | (0.7+ | 2.3+) | 2004 04 22 | 704 | 0.0 | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.6+ | |
| 2004 03 22 | 704 | 0.2+ | 0.7+ | 2004 04 22 | 704 | 0.5+ | 1.2+ | 2006 11 19 | 704 | 0.5+ | 0.1+ | |
| 2004 03 22 | 704 | 0.3+ | 1.5+ | 2004 04 22 | 704 | 0.1+ | 0.8+ | 2006 11 19 | 704 | 0.4+ | 0.5− | |
| 2004 03 22 | 699 | 0.1− | 0.1− | 2004 04 22 | 704 | 0.3− | 1.1+ | 2006 11 20 | 703 | 1.1− | 0.3− | |
| 2004 03 22 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 599 | 0.1+ | 0.9+ | 2006 11 20 | 703 | 0.4− | 0.3+ | |
| 2004 03 22 | 699 | 0.5+ | 0.2+ | 2004 04 22 | 599 | 0.2+ | 0.3+ | 2006 11 20 | 703 | 0.8− | 0.8+ | |
| 2004 03 22 | 699 | 1.1− | 0.4− | 2004 04 22 | 599 | 0.1+ | 0.2+ | 2006 11 20 | 703 | 0.4+ | 0.6+ | |
| 2004 03 22 | 699 | 0.5+ | 1.0+ | 2004 04 22 | 599 | 0.3+ | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.0 | |
| 2004 03 28 | 704 | 0.7+ | 0.4+ | 2004 04 25 | 703 | 0.2+ | 0.9− | 2006 11 22 | 691 | 0.2+ | 0.4+ | |
| 2004 03 28 | 704 | 0.1+ | 0.6+ | 2004 04 25 | 703 | 0.1− | 1.1+ | 2006 11 22 | 691 | 0.2+ | 0.0 | |
| 2004 03 28 | 704 | 1.1+ | 0.7− | 2004 04 25 | 703 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.9− | 1.2+ | |
| 2004 03 28 | 704 | 0.6+ | 0.8− | 2004 04 25 | 703 | 0.4− | 0.8+ | 2006 11 22 | 704 | 0.1− | 0.7+ | |
| 2004 03 28 | 704 | 0.4+ | 0.4− | 2004 05 13 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.8− | 0.0 | |
| 2004 03 31 | 704 | 0.3− | 0.2+ | 2004 05 13 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.8− | 0.0 | |
| 2004 03 31 | 704 | 0.5− | 0.1− | 2004 05 13 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.8+ | |
| 2004 03 31 | 704 | 1.0+ | 0.2− | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 11 24 | 703 | 0.3− | 0.3− | |
| 2004 04 16 | 704 | 0.9+ | 1.2− | 2004 05 21 | 691 | 0.1+ | 0.2+ | 2006 11 24 | 703 | 0.5− | 0.1+ | |
| 2004 04 16 | 704 | 0.0 | 0.6− | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 11 24 | 703 | 0.3− | 0.2− | |
| 2004 04 16 | 704 | 0.4+ | 0.0 | 2005 08 04 | 644 | 0.4− | 0.8+ | 2006 11 24 | 703 | 0.4+ | 0.3− | |
| 2004 04 16 | 704 | 1.0− | 0.2+ | 2005 08 04 | 644 | 0.2− | 0.9+ | | | | | |

**(140488)∗ 2001 TS$_{143}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.82959 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21041018 | $\omega$ | 242.43649 | | +0.30592562 | +0.93784477 | |
| $a$ | 2.7995714 | $\Omega$ | 46.38283 | | −0.77404718 | +0.34523355 | |
| $e$ | 0.1062207 | $i$ | 13.08314 | | −0.55431081 | +0.03551019 | |
| $P$ | 4.68 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.2+ | 0.7− | 2004 03 30 | 704 | (1.6+ | 1.4+) | 2006 10 28 | 691 | 0.8− | 0.6+ | |
| 1995 04 26 | 691 | 0.2+ | 0.2+ | 2004 03 30 | 704 | (1.7+ | 0.2−) | 2006 10 28 | 691 | 0.1− | 0.3+ | |
| 1995 04 26 | 691 | 0.1+ | 0.6+ | 2005 07 04 | E12 | 0.4+ | 0.8+ | 2006 10 28 | 691 | 0.1− | 0.2+ | |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2005 07 04 | E12 | 0.7− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | |
| 2001 09 25 | 704 | 0.6+ | 0.4+ | 2005 07 04 | E12 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.3+ | |
| 2001 09 25 | 704 | 0.6− | 1.4+ | 2005 07 04 | E12 | 0.6− | 0.8− | 2006 11 01 | 691 | 0.3+ | 0.1+ | |
| 2001 10 10 | 644 | 0.7− | 0.3+ | 2005 07 25 | E12 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.1− | |
| 2001 10 10 | 644 | 0.7− | 0.2+ | 2005 07 25 | E12 | 0.5+ | 0.7+ | 2006 11 08 | 644 | 0.5− | 0.1+ | |
| 2001 10 10 | 644 | 0.6− | 0.8+ | 2005 07 25 | E12 | 0.5− | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.4+ | |
| 2001 10 16 | 704 | 0.2+ | 0.1− | 2005 07 25 | E12 | 0.5+ | 1.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | |
| 2001 10 16 | 704 | 0.8+ | 0.4− | 2005 08 05 | E12 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2− | |
| 2001 10 16 | 704 | 0.7− | 0.1− | 2005 08 05 | E12 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ | |
| 2001 10 16 | 644 | 0.4− | 0.3+ | 2005 08 05 | E12 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.8+ | 0.0 | |
| 2001 10 16 | 704 | (1.8+ | 0.4−) | 2005 08 05 | E12 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.2− | |
| 2001 10 16 | 644 | 0.5− | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.8− | 0.2− | |
| 2001 10 16 | 644 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.4− | |
| 2001 10 21 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.4+ | 0.1− | |
| 2001 10 21 | 644 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.5− | |
| 2001 10 21 | 644 | 0.1+ | 0.2− | 2006 10 02 | 461 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 1.0+ | |
| 2001 10 24 | 644 | 0.9− | 0.2+ | 2006 10 02 | 461 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.0 | 1.4− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 644 | 0.9− | 0.1− | 2006 10 02 | 461 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.8− | 1.0+ | | |
| 2001 10 24 | 644 | 1.1− | 0.1− | 2006 10 02 | 291 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.6+ | | |
| 2001 12 10 | 645 | 0.1+ | 0.2− | 2006 10 02 | 291 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.6+ | 0.1− | | |
| 2001 12 10 | 645 | 0.0 | 0.1− | 2006 10 02 | 291 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.1− | | |
| 2004 03 11 | 644 | 0.1− | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.8+ | | |
| 2004 03 11 | 644 | 0.0 | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2004 03 11 | 644 | 0.1+ | 0.8+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.8− | 1.3+ | | |
| 2004 03 23 | 704 | (0.8− | 3.1+) | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.2− | 1.0+ | | |
| 2004 03 23 | 704 | (0.9− | 1.8+) | 2006 10 17 | G96 | 0.7+ | 0.5− | 2006 11 21 | 704 | 0.9− | 0.6+ | | |
| 2004 03 23 | 704 | 0.3+ | 1.3+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2004 03 23 | 704 | (0.7− | 2.3+) | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 21 | 704 | (1.1+ | 2.2+) | | |
| 2004 03 25 | 704 | 0.2+ | 1.4+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.3− | 1.2+ | | |
| 2004 03 25 | 704 | 0.5+ | 0.9+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.6+ | 0.6− | | |
| 2004 03 25 | 704 | 0.3+ | 1.2+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.5− | | |
| 2004 03 30 | 704 | 1.3+ | 0.9+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.5− | | |
| 2004 03 30 | 704 | (1.5+ | 2.0+) | 2006 10 28 | G96 | 0.3+ | 0.5− | | | | | | |

**(140489)∗ 2001 TU$_{145}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.71226 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21993271 | $\omega$ | 142.91261 | | −0.07779850 | | +0.99309231 |
| $a$ | 2.7181672 | $\Omega$ | 122.46646 | | −0.93785828 | | −0.04301566 |
| $e$ | 0.1220849 | $i$ | 5.97570 | | −0.33818521 | | −0.10916650 |
| $P$ | 4.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | 1.4− | 1.3+ | 2004 03 28 | 691 | 0.4− | 1.3− | 2005 08 28 | E12 | 0.2− | 0.1− | | |
| 2001 09 17 | 699 | 0.9+ | 0.1+ | 2004 03 28 | 691 | 0.3− | 0.5+ | 2005 08 30 | 644 | 0.0 | 0.5+ | | |
| 2001 09 17 | 699 | (2.4− | 1.5+) | 2004 03 28 | 691 | 0.4− | 0.2+ | 2005 08 30 | 644 | 0.2− | 0.2+ | | |
| 2001 09 17 | 699 | 0.4+ | 0.1+ | 2004 04 10 | 644 | 0.1− | 0.3+ | 2005 08 30 | 644 | 0.3− | 0.3+ | | |
| 2001 10 10 | 644 | 0.9− | 1.4+ | 2004 04 10 | 644 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.4− | | |
| 2001 10 10 | 644 | 0.8− | 1.4+ | 2004 04 10 | 644 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.6+ | 0.1+ | | |
| 2001 10 10 | 644 | 0.5− | 0.8+ | 2004 04 15 | 644 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.4+ | 0.3− | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2004 04 15 | 704 | 1.5+ | 0.0 | 2006 10 23 | G96 | 0.5+ | 0.1− | | |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2004 04 15 | 644 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2001 10 16 | 644 | 0.4− | 0.4+ | 2004 04 15 | 704 | 0.5+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.3+ | | |
| 2001 10 16 | 644 | 0.3− | 0.4+ | 2004 04 15 | 704 | 1.1+ | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.1− | | |
| 2001 10 16 | 644 | 0.5− | 0.8+ | 2004 04 15 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.2+ | | |
| 2004 03 16 | 704 | 0.9+ | 0.2+ | 2004 04 15 | 704 | 0.4+ | 0.7+ | 2006 11 15 | 703 | 0.3+ | 0.7+ | | |
| 2004 03 16 | 704 | 0.3− | 1.4+ | 2004 04 23 | 704 | 0.5− | 0.6+ | 2006 11 15 | 703 | 0.7+ | 0.1+ | | |
| 2004 03 16 | 704 | 0.5+ | 0.5+ | 2004 04 23 | 704 | 0.2− | 1.4− | 2006 11 15 | 703 | (1.8+ | 0.2+) | | |
| 2004 03 18 | 691 | 0.0 | 0.4+ | 2004 04 23 | 704 | 0.3+ | 1.1+ | 2006 11 15 | 703 | 0.3− | 0.6+ | | |
| 2004 03 18 | 691 | 0.2+ | 0.4+ | 2004 04 23 | 704 | 0.1+ | 0.2− | 2006 11 16 | 691 | 0.3− | 0.3+ | | |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2005 07 12 | G96 | 0.4− | 0.7+ | 2006 11 16 | 691 | 0.3− | 0.0 | | |
| 2004 03 22 | 699 | 0.1− | 0.4+ | 2005 07 12 | G96 | 0.1+ | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2004 03 22 | 704 | 0.4− | 0.1+ | 2005 07 12 | G96 | 0.4− | 0.7+ | 2006 11 20 | 691 | 0.2− | 0.2+ | | |
| 2004 03 22 | 704 | 0.2+ | 0.5+ | 2005 07 12 | G96 | 0.3− | 0.8+ | 2006 11 20 | 691 | 0.0 | 0.6+ | | |
| 2004 03 22 | 699 | 1.0+ | 0.4+ | 2005 07 28 | 644 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.3− | 0.0 | | |
| 2004 03 22 | 704 | 0.6+ | 0.8+ | 2005 07 28 | 644 | 0.1− | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.2+ | | |
| 2004 03 22 | 699 | 0.4− | 1.0+ | 2005 07 28 | 644 | 0.1− | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.2+ | | |
| 2004 03 22 | 704 | 1.3+ | 0.0 | 2005 08 05 | 644 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.2+ | | |
| 2004 03 22 | 699 | 0.1− | 0.2− | 2005 08 05 | 644 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.5− | | |
| 2004 03 23 | 704 | 0.5+ | 0.3+ | 2005 08 05 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.6+ | 0.2− | | |
| 2004 03 23 | 704 | 0.1+ | 0.4+ | 2005 08 28 | E12 | 0.8− | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2004 03 23 | 704 | 1.2+ | 0.1+ | 2005 08 28 | E12 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.4− | | |
| 2004 03 23 | 704 | 0.2− | 0.0 | 2005 08 28 | E12 | 0.4+ | 0.5+ | | | | | | |

**(140490)∗ 2001 TJ$_{148}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.83459 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21345547 | $\omega$ | 280.62647 | | +0.77542729 | | −0.62525778 |
| $a$ | 2.7728808 | $\Omega$ | 118.13443 | | +0.61134852 | | +0.70849024 |
| $e$ | 0.0763742 | $i$ | 5.73500 | | +0.15800479 | | +0.32725264 |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 11 12 | 645 | 0.1+ | 0.0 | 2005 08 29 | 704 | 0.4+ | 0.2+ | | |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 11 12 | 645 | 0.1+ | 0.0 | 2005 08 29 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.5+ | 1.4+ | 2001 11 18 | 645 | 0.1+ | 0.1− | 2005 08 29 | 704 | (0.7− | 1.7−) | | |
| 2001 09 16 | 704 | 0.4+ | 0.7+ | 2001 11 18 | 645 | 0.1+ | 0.1− | 2006 11 12 | D35 | 0.3− | 0.0 | | |
| 2001 09 16 | 704 | 0.1− | 0.2− | 2001 11 21 | 645 | 0.1+ | 0.0 | 2006 11 12 | D35 | 0.3− | 0.1+ | | |
| 2001 10 10 | 644 | 0.8− | 0.0 | 2001 11 21 | 645 | 0.0 | 0.0 | 2006 11 12 | D35 | 0.1− | 0.3+ | | |
| 2001 10 10 | 644 | 0.7− | 0.0 | 2003 01 30 | 699 | (0.9+ | 1.9+) | 2006 11 17 | 704 | 0.2+ | 0.1+ | | |
| 2001 10 10 | 644 | 0.4− | 0.1+ | 2003 01 30 | 699 | (2.0+ | 0.2+) | 2006 11 17 | 704 | 0.0 | 0.3+ | | |
| 2001 10 12 | 699 | 0.4− | 0.4+ | 2003 01 30 | 699 | 1.0+ | 0.8+ | 2006 11 17 | 704 | 1.0− | 0.9− | | |
| 2001 10 12 | 699 | 0.2− | 0.9+ | 2003 01 30 | 699 | 0.8+ | 0.7+ | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2001 10 12 | 699 | 0.5− | 0.6+ | 2003 02 01 | 704 | 0.9+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2001 10 12 | 699 | 0.3− | 0.8+ | 2003 02 01 | 704 | (1.7+ | 2.4+) | 2006 11 17 | G96 | 0.2− | 0.2− | | |
| 2001 10 16 | 704 | 1.0− | 0.5+ | 2003 02 01 | 704 | (0.0 | 1.8+) | 2006 11 17 | G96 | 0.2− | 0.2− | | |
| 2001 10 16 | 704 | 1.0− | 0.2− | 2003 02 01 | 704 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.8− | 0.6+ | | |
| 2001 10 16 | 704 | 0.9− | 0.4− | 2003 02 01 | 704 | (1.7+ | 0.3+) | 2006 11 20 | 704 | 0.9+ | 1.4+ | | |
| 2001 10 16 | 704 | 0.1− | 1.0− | 2003 02 02 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.6+ | | |
| 2001 10 16 | 644 | 0.7− | 0.9+ | 2003 02 02 | 644 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 0.3− | 1.3− | | |
| 2001 10 16 | 644 | 0.6− | 0.8+ | 2003 02 02 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.6+ | 1.3− | | |
| 2001 10 16 | 644 | 0.6− | 1.1+ | 2005 07 18 | 644 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.6− | 0.1− | | |
| 2001 10 19 | 699 | 0.5− | 0.9+ | 2005 07 18 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.5+ | | |
| 2001 10 19 | 699 | 0.7− | 0.2+ | 2005 07 18 | 644 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.4− | 0.3+ | | |
| 2001 10 19 | 699 | 0.5− | 0.5+ | 2005 07 27 | 644 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.3+ | | |
| 2001 10 19 | 699 | 0.8− | 0.6+ | 2005 07 27 | 644 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.1− | 1.0+ | | |
| 2001 10 20 | 704 | 1.1− | 0.4− | 2005 07 27 | 644 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.1− | | |
| 2001 10 20 | 704 | 1.2− | 0.9− | 2005 08 01 | E12 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.0 | | |
| 2001 10 20 | 704 | 0.4− | 0.2+ | 2005 08 01 | E12 | 0.0 | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.1− | | |
| 2001 10 20 | 704 | 1.0− | 0.9− | 2005 08 01 | E12 | 0.4− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.5+ | | |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2005 08 01 | E12 | 0.3− | 0.8+ | | | | | | |
| 2001 10 25 | 645 | 0.2+ | 0.0 | 2005 08 29 | 704 | (2.5+ | 2.5−) | | | | | | |

**(140491)∗ 2001 TA$_{149}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.47693 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23878493 | $\omega$ | 324.86288 | | −0.43784952 | | −0.89722843 |
| $a$ | 2.5731481 | $\Omega$ | 150.97992 | | +0.84949135 | | −0.43369941 |
| $e$ | 0.0727379 | $i$ | 6.76849 | | +0.29436752 | | −0.08298176 |
| $P$ | 4.13 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.3− | 0.8− | 2003 02 08 | 608 | 0.3+ | 1.1+ | 2005 09 24 | 703 | 0.7+ | 0.6+ | | |
| 1995 03 25 | 691 | 0.3− | 0.8− | 2003 02 08 | 608 | 0.2+ | 0.8+ | 2005 09 24 | 703 | (1.4+ | 2.2+) | | |
| 1995 03 25 | 691 | 0.2− | 1.3− | 2003 02 22 | 644 | 0.2+ | 0.4+ | 2005 09 24 | 703 | 0.1+ | 2.0− | | |
| 2001 10 10 | 644 | 0.4− | 0.3− | 2003 02 22 | 644 | 0.3+ | 0.6+ | 2005 09 24 | 703 | (2.3+ | 1.8−) | | |
| 2001 10 10 | 644 | 0.3− | 0.2− | 2003 02 22 | 644 | 0.2+ | 0.7+ | 2005 09 25 | 691 | 0.1− | 0.0 | | |
| 2001 10 10 | 644 | 0.5− | 0.2− | 2003 02 23 | 699 | 0.6+ | 1.0+ | 2005 09 25 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 14 | 699 | 0.3− | 0.5+ | 2003 02 23 | 699 | 0.1+ | 0.7+ | 2005 09 25 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 14 | 699 | (2.1− | 0.4−) | 2003 02 23 | 699 | 0.3+ | 0.9+ | 2005 10 01 | 691 | 0.0 | 0.2+ | | |
| 2001 10 14 | 699 | 0.0 | 0.6+ | 2003 02 23 | 699 | 0.5+ | 0.2+ | 2005 10 01 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 14 | 699 | 1.2+ | 0.3− | 2003 02 27 | 608 | 0.2+ | 0.2− | 2005 10 01 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 16 | 704 | (2.3+ | 1.8+) | 2003 02 27 | 608 | 0.0 | 1.0− | 2005 10 03 | 703 | 0.1+ | 0.2− | | |
| 2001 10 16 | 704 | 0.2− | 0.4+ | 2003 02 27 | 608 | 0.0 | 0.8− | 2005 10 03 | 703 | 0.3− | 0.3− | | |
| 2001 10 16 | 704 | 1.1− | 0.9− | 2003 02 28 | 704 | 1.2+ | 1.0+ | 2005 10 03 | 703 | (0.1− | 2.2−) | | |
| 2001 10 16 | 644 | 0.6− | 0.2+ | 2003 02 28 | 704 | 0.6− | 0.1− | 2005 10 03 | 703 | 0.5− | 0.5+ | | |
| 2001 10 16 | 644 | 0.2− | 0.4+ | 2003 02 28 | 704 | 0.7+ | 0.2+ | 2005 10 06 | 691 | 0.0 | 0.1+ | | |
| 2001 10 16 | 644 | 0.5− | 0.3+ | 2003 02 28 | 704 | 0.2− | 0.6− | 2005 10 06 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 24 | 644 | 0.5− | 0.9+ | 2003 02 28 | 704 | 0.1− | 0.8+ | 2005 10 06 | 691 | 0.2− | 0.3+ | | |
| 2001 10 24 | 644 | 0.5− | 1.0+ | 2003 02 28 | 704 | 0.2+ | 0.3+ | 2005 10 06 | 703 | 0.1− | 1.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 644 | 0.4− | 0.7+ | 2003 02 28 | 704 | 0.5+ | 0.9+ | 2005 10 06 | 703 | 0.4+ | 0.3− |
| 2001 10 25 | 645 | 0.1+ | 0.1− | 2003 02 28 | 704 | 0.1+ | 1.4+ | 2005 10 06 | 703 | 1.3+ | 0.4+ |
| 2001 10 25 | 645 | 0.1+ | 0.1− | 2003 02 28 | 608 | 0.3− | 0.8− | 2005 10 06 | 703 | 0.3− | 0.3− |
| 2001 11 18 | 645 | 0.0 | 0.2− | 2003 02 28 | 608 | 0.1− | 0.5− | 2005 10 27 | 699 | 0.8− | 0.2+ |
| 2001 11 18 | 645 | 0.0 | 0.2− | 2003 02 28 | 608 | 0.1− | 0.9− | 2005 10 27 | 699 | 1.0− | 0.3+ |
| 2001 11 21 | 645 | 0.1+ | 0.2− | 2003 03 05 | 704 | (0.4+ | 2.1+) | 2005 10 27 | 699 | 0.8− | 0.1− |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2003 03 05 | 704 | 1.2+ | 1.2+ | 2005 10 27 | 699 | (0.7− | 2.0−) |
| 2003 01 27 | 608 | 0.6+ | 0.8− | 2003 03 05 | 704 | 0.3− | 0.5+ | 2005 11 01 | 703 | 0.3− | 1.5+ |
| 2003 01 27 | 608 | 0.2+ | 0.8− | 2003 03 06 | 644 | 0.4+ | 0.2+ | 2005 11 01 | 703 | 0.5− | 0.9− |
| 2003 01 27 | 608 | 1.0+ | 0.1− | 2003 03 06 | 644 | 0.3+ | 0.2− | 2005 11 01 | 703 | 1.2− | 0.6− |
| 2003 01 31 | 704 | 0.4+ | 1.0+ | 2003 03 06 | 644 | 0.3+ | 0.1− | 2005 11 01 | 703 | 0.1+ | 0.1+ |
| 2003 01 31 | 704 | 0.2+ | 1.2+ | 2003 03 30 | 645 | 0.3− | 0.0 | 2005 11 02 | G96 | 0.3+ | 0.0 |
| 2003 01 31 | 704 | 0.7− | 1.3+ | 2003 03 30 | 645 | 0.2− | 0.0 | 2005 11 02 | G96 | 0.4+ | 0.3− |
| 2003 01 31 | 704 | 0.4+ | 0.3+ | 2005 08 31 | 644 | 0.0 | 0.4+ | 2005 11 02 | G96 | 0.1− | 0.2− |
| 2003 01 31 | 704 | 0.1+ | 0.2+ | 2005 08 31 | 644 | 0.2− | 0.3+ | 2005 11 02 | G96 | 0.0 | 0.1− |
| 2003 02 03 | 704 | 1.0+ | 0.7+ | 2005 08 31 | 644 | 0.1− | 0.3+ | 2005 11 03 | G96 | 0.1+ | 0.0 |
| 2003 02 03 | 704 | 0.8+ | 0.5− | 2005 09 09 | 704 | 0.3− | 1.0+ | 2005 11 03 | G96 | 0.2+ | 0.1− |
| 2003 02 03 | 704 | 0.2+ | 0.0 | 2005 09 09 | 704 | 0.3− | 0.0 | 2005 11 03 | G96 | 0.3+ | 0.0 |
| 2003 02 03 | 704 | 1.3+ | 1.4− | 2005 09 09 | 704 | 0.4+ | 0.8+ | 2005 11 03 | G96 | 0.2+ | 0.1+ |
| 2003 02 08 | 608 | 0.2+ | 0.7+ | 2005 09 09 | 704 | 0.9+ | 0.7+ | | | | |

**(140492)∗ 2001 TH$_{151}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.54368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24748264 | $\omega$ | 303.78797 | | +0.22637615 | −0.97147842 | |
| $a$ | 2.5125009 | $\Omega$ | 132.96131 | | +0.92252239 | +0.19058095 | |
| $e$ | 0.0497958 | $i$ | 5.53562 | | +0.31258004 | +0.14109778 | |
| $P$ | 3.98 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 12 | 675 | 1.1+ | 0.1+ | 2003 02 22 | 644 | 0.4+ | 0.0 | 2005 10 07 | 699 | 0.1+ | 0.5+ |
| 1977 10 12 | 675 | 0.5− | 1.9− | 2003 02 22 | 644 | 0.5+ | 0.2+ | 2005 10 07 | 703 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.7+ | 2003 02 28 | 704 | 0.6− | 0.4− | 2005 10 21 | 644 | 0.3− | 0.2+ |
| 2001 09 25 | 704 | 0.5− | 0.5+ | 2003 02 28 | 704 | 0.0 | 0.6+ | 2005 10 21 | 644 | 0.1− | 0.9+ |
| 2001 09 25 | 704 | 0.9− | 0.4+ | 2003 02 28 | 704 | 0.4− | 0.2+ | 2005 10 21 | 644 | 0.0 | 0.6+ |
| 2001 09 25 | 704 | 0.1− | 1.1+ | 2003 02 28 | 704 | 0.4+ | 0.0 | 2005 10 28 | 703 | 0.2− | 0.2− |
| 2001 09 25 | 704 | 1.3− | 0.9+ | 2003 02 28 | 704 | 0.0 | 0.0 | 2005 10 28 | 703 | 0.3+ | 0.5− |
| 2001 10 10 | 644 | 0.1− | 0.3+ | 2003 02 28 | 704 | 0.2− | 0.1+ | 2005 10 28 | 703 | 0.4+ | 0.2− |
| 2001 10 10 | 644 | 0.4− | 0.5+ | 2003 02 28 | 704 | 0.4+ | 0.7− | 2005 10 28 | 703 | 0.4+ | 0.8− |
| 2001 10 10 | 644 | 0.0 | 0.6+ | 2003 02 28 | 704 | 0.2+ | 0.5+ | 2005 10 28 | 703 | 0.6− | 0.4− |
| 2001 10 16 | 704 | 0.2+ | 0.8+ | 2003 03 06 | 704 | 0.5+ | 0.1− | 2005 10 28 | 703 | 0.6− | 0.7− |
| 2001 10 16 | 704 | 0.2+ | 0.2+ | 2003 03 06 | 704 | 0.4+ | 0.2+ | 2005 10 28 | 703 | 0.7− | 0.4− |
| 2001 10 16 | 704 | 0.3+ | 0.3+ | 2003 03 06 | 704 | 0.6− | 0.1+ | 2005 10 28 | 703 | 0.5+ | 1.1− |
| 2001 10 16 | 704 | 0.0 | 0.1− | 2003 03 06 | 704 | 0.0 | 0.0 | 2005 10 30 | 699 | 0.5− | 0.4+ |
| 2001 10 16 | 704 | 0.2− | 0.9− | 2003 03 06 | 704 | 0.5+ | 0.4− | 2005 10 30 | 699 | 0.2− | 0.2− |
| 2001 10 16 | 644 | 0.4− | 0.1− | 2003 03 07 | 699 | 1.2+ | 0.3− | 2005 10 30 | 699 | 0.0 | 0.1+ |
| 2001 10 16 | 644 | 0.3− | 0.1− | 2003 03 07 | 699 | 0.6+ | 0.7+ | 2005 10 30 | 699 | 1.3+ | 0.5− |
| 2001 10 16 | 644 | 0.4− | 0.0 | 2003 03 07 | 699 | 1.3+ | 0.6+ | 2005 11 03 | 703 | 0.3− | 0.3− |
| 2001 10 20 | 704 | 0.6+ | 0.3− | 2003 03 07 | 699 | 0.4− | 0.0 | 2005 11 03 | 703 | 0.2− | 0.3− |
| 2001 10 20 | 704 | 0.0 | 0.1− | 2003 03 30 | 645 | 0.2− | 0.2− | 2005 11 03 | 703 | 0.1− | 0.7− |
| 2001 10 20 | 704 | 0.2+ | 0.7− | 2003 03 30 | 645 | 0.2− | 0.2− | 2005 11 03 | 703 | 0.6− | 1.0− |
| 2001 10 20 | 704 | 0.3+ | 0.4+ | 2003 04 01 | 703 | 0.6+ | 0.3+ | 2005 11 06 | 699 | 0.3+ | 0.2− |
| 2001 10 20 | 704 | 0.5+ | 0.6− | 2003 04 01 | 703 | 0.2− | 0.4+ | 2005 11 06 | 699 | 0.9+ | 0.3+ |
| 2001 10 21 | 683 | 1.2+ | 1.1+ | 2003 04 01 | 703 | 0.7− | 0.5+ | 2005 11 06 | 699 | 0.5− | 0.1− |
| 2001 10 21 | 683 | 1.1+ | 0.6+ | 2003 04 01 | 703 | 0.1+ | 0.8− | 2005 11 06 | 699 | 0.1+ | 0.4+ |
| 2001 11 18 | 704 | 0.4− | 0.6+ | 2005 09 01 | 599 | 1.3+ | 0.1+ | 2005 11 17 | 644 | 0.2+ | 0.2+ |
| 2001 11 18 | 704 | 0.5− | 0.3+ | 2005 09 01 | 599 | 0.0 | 1.0+ | 2005 11 17 | 644 | 0.0 | 0.3+ |
| 2001 11 18 | 704 | 1.5− | 1.2− | 2005 09 01 | 599 | 0.1− | 0.0 | 2005 11 17 | 644 | 0.2+ | 0.0 |
| 2001 11 21 | 608 | 0.4+ | 1.4− | 2005 09 01 | 599 | 0.6− | 0.2+ | 2005 11 28 | 644 | 0.0 | 0.2− |
| 2001 11 21 | 608 | 0.4− | 1.1− | 2005 10 01 | 703 | 0.4− | 0.4+ | 2005 11 28 | 644 | 0.3+ | 0.1− |
| 2001 11 21 | 608 | 0.0 | 0.2− | 2005 10 01 | 703 | 1.0− | 0.3+ | 2005 11 28 | 644 | 0.6+ | 0.1− |
| 2003 02 01 | 704 | 0.5− | 0.7+ | 2005 10 01 | 703 | 0.0 | 0.8− | 2006 10 27 | G96 | 0.8− | 0.6− |
| 2003 02 01 | 704 | 0.5+ | 0.1+ | 2005 10 01 | 703 | 0.1− | 0.8− | 2006 10 27 | G96 | 0.7− | 0.1+ |
| 2003 02 01 | 704 | 0.5+ | 0.4+ | 2005 10 07 | 703 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.5− |
| 2003 02 01 | 704 | 0.2− | 1.2+ | 2005 10 07 | 699 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2003 02 04 | 704 | 0.3− | 0.2+ | 2005 10 07 | 703 | 0.1+ | 0.7+ | 2006 11 17 | 691 | 0.2− | 0.2+ |
| 2003 02 04 | 704 | 0.5+ | 0.8+ | 2005 10 07 | 703 | 1.5+ | 0.6− | 2006 11 17 | 691 | 0.4− | 0.2+ |
| 2003 02 04 | 704 | 0.1− | 1.0− | 2005 10 07 | 703 | 0.7− | 0.8+ | 2006 11 17 | 691 | 0.2− | 0.3+ |
| 2003 02 04 | 704 | 0.9+ | 0.2+ | 2005 10 07 | 699 | 1.5+ | 0.2+ | 2006 11 21 | 691 | 0.5+ | 0.2+ |
| 2003 02 09 | 608 | 0.4+ | 0.2+ | 2005 10 07 | 699 | 0.3+ | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.3+ |
| 2003 02 09 | 608 | 0.8+ | 0.3+ | 2005 10 07 | 703 | 0.6− | 0.5− | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2003 02 09 | 608 | 0.6+ | 0.4− | 2005 10 07 | 703 | 0.2+ | 0.0 | | | | |
| 2003 02 22 | 644 | 0.3+ | 0.2+ | 2005 10 07 | 703 | 0.1+ | 0.2− | | | | |

**(140493)∗ 2001 TL$_{151}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.26404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18798128 | $\omega$ | 127.75880 | | +0.30450090 | +0.95046831 | |
| $a$ | 3.0180492 | $\Omega$ | 159.70079 | | −0.92066204 | +0.31047681 | |
| $e$ | 0.0705174 | $i$ | 10.35586 | | −0.24425520 | +0.01463323 | |
| $P$ | 5.24 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.4− | 0.4+ | 2004 04 12 | 703 | (0.8+ | 1.6+) |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2004 03 15 | 703 | 0.5+ | 0.1+ | 2004 04 12 | 703 | (0.5− | 1.6+) |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2004 04 12 | 703 | 0.3− | 0.6+ |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2004 03 15 | 703 | 0.7+ | 1.1+ | 2004 04 12 | 703 | (1.9+ | 0.4+) |
| 2001 10 10 | 644 | 0.3− | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.0 | 2004 04 20 | 704 | 1.3+ | 1.0+ |
| 2001 10 10 | 644 | 0.5− | 0.2+ | 2004 03 15 | 703 | 1.1− | 1.2+ | 2004 04 20 | 704 | 1.0+ | 0.2+ |
| 2001 10 10 | 644 | 0.6− | 0.3+ | 2004 03 15 | 704 | 1.2+ | 0.5+ | 2004 04 20 | 704 | 0.1− | 0.8+ |
| 2001 10 16 | 704 | 0.4+ | 1.4+ | 2004 03 15 | 704 | 0.7+ | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.1− |
| 2001 10 16 | 704 | (1.4+ | 2.2−) | 2004 03 16 | 333 | 0.4− | 0.0 | 2006 09 12 | 703 | 0.9+ | 0.2+ |
| 2001 10 16 | 704 | 0.1+ | 0.9+ | 2004 03 16 | 333 | (1.7− | 0.4−) | 2006 09 12 | 703 | (1.3− | 2.2+) |
| 2001 10 16 | 704 | 0.5+ | 0.1− | 2004 03 16 | 333 | (1.6− | 0.2−) | 2006 09 12 | 703 | 0.4− | 0.3− |
| 2001 10 16 | 704 | 0.7− | 0.7+ | 2004 03 20 | 699 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.9− | 0.4+ |
| 2001 10 16 | 644 | 0.2− | 0.9+ | 2004 03 20 | 699 | 0.0 | 0.0 | 2006 09 18 | 703 | (0.2+ | 1.6−) |
| 2001 10 16 | 644 | 0.2− | 0.8+ | 2004 03 20 | 699 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.2− |
| 2001 10 16 | 644 | 0.2+ | 0.6+ | 2004 03 20 | 699 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.8− |
| 2001 10 20 | 704 | 0.3+ | 0.3− | 2004 03 20 | 704 | 0.9− | 0.1− | 2006 09 18 | 703 | 0.6− | 0.5+ |
| 2001 10 20 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 704 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.5+ | 1.0+ |
| 2001 10 20 | 704 | 0.8− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.2− | 2006 09 18 | 699 | (0.7+ | 1.7+) |
| 2001 10 20 | 704 | 0.2− | 0.6− | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 09 18 | 699 | 1.0+ | 0.4+ |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | (3.2+ | 0.7−) |
| 2001 11 11 | 645 | 0.0 | 0.1− | 2004 03 21 | 608 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2002 01 08 | 645 | 0.0 | 0.1− | 2004 03 21 | 608 | 0.1− | 0.7− | 2006 09 20 | 644 | 0.7− | 0.4+ |
| 2002 01 08 | 645 | 0.0 | 0.2− | 2004 03 21 | 608 | 0.3+ | 0.1+ | 2006 09 20 | 644 | 0.5− | 0.4+ |
| 2002 01 13 | 645 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2002 01 13 | 645 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2003 01 01 | 704 | 0.5+ | 1.0− | 2004 03 22 | 704 | 0.4− | 0.6− | 2006 10 02 | G96 | 0.7− | 1.1+ |
| 2003 01 01 | 704 | 0.7− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.4− | 0.1+ |
| 2003 01 01 | 704 | 1.1− | 0.3− | 2004 03 23 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | (2.3+ | 1.9+) |
| 2003 01 01 | 704 | 0.2+ | 1.4+ | 2004 03 23 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 1.2+ | 0.8− |
| 2004 02 18 | 608 | 0.2+ | 1.0− | 2004 03 23 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2004 02 18 | 608 | 0.0 | 0.9− | 2004 03 23 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 1.0− |
| 2004 02 18 | 608 | 0.1+ | 1.1− | 2004 03 23 | 704 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 02 19 | 704 | 0.3− | 0.2+ | 2004 03 28 | 703 | (0.6+ | 1.8−) | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2004 02 19 | 704 | 0.1− | 0.3− | 2004 03 28 | 703 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.5− |
| 2004 02 19 | 704 | 0.6+ | 0.0 | 2004 03 28 | 703 | 0.9+ | 0.6− | 2006 10 22 | 703 | 0.5+ | 0.4+ |
| 2004 02 19 | 704 | 0.7+ | 0.8+ | 2004 03 28 | 703 | 0.6− | 1.1− | 2006 10 22 | 703 | 0.3+ | 1.2+ |
| 2004 02 19 | 704 | 0.6− | 0.4+ | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2004 02 23 | 704 | 0.5+ | 0.2+ | 2004 03 30 | 691 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2004 02 23 | 704 | 0.3+ | 0.4+ | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 10 28 | 703 | (1.2− | 1.6+) |
| 2004 02 23 | 704 | 0.1+ | 0.7+ | 2004 04 08 | 608 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 1.0+ | 0.7+ |
| 2004 02 23 | 704 | 0.6− | 1.2+ | 2004 04 08 | 608 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.4− | 0.4+ |
| 2004 03 11 | 644 | 0.1+ | 0.2+ | 2004 04 08 | 608 | 0.7− | 0.7+ | 2006 10 28 | 703 | (0.6+ | 1.8+) |
| 2004 03 11 | 644 | 0.4+ | 0.3+ | 2004 04 10 | 644 | 0.6+ | 0.3+ | 2006 11 06 | 644 | 0.6− | 0.8+ |
| 2004 03 11 | 644 | 0.1+ | 0.3+ | 2004 04 10 | 644 | 0.1+ | 0.2− | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 0.4− | 0.6+ | 2004 04 10 | 644 | 0.2+ | 0.5+ | 2006 11 06 | 644 | 0.5− | 0.5+ |

**(140494)∗ 2001 TR$_{151}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.30453 | | (2000.0) | | +0.93862638 | +0.30828239 |
| $n$ | 0.18217176 | $\omega$ | 277.11857 | | −0.20831433 | +0.86416599 |
| $a$ | 3.0818773 | $\Omega$ | 65.02495 | | −0.27492847 | +0.39771737 |
| $e$ | 0.1388964 | $i$ | 9.82823 | | | |
| $P$ | 5.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 14 | 691 | 0.3+ | 0.2+ | 2001 10 16 | 644 | 0.0 | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.3+ |
| 1994 05 14 | 691 | 0.2− | 0.4+ | 2001 10 16 | 644 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.2+ | 0.3+ |
| 1994 05 14 | 691 | 0.2+ | 0.0 | 2001 10 16 | 644 | 0.2− | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 10 24 | 644 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.3− | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 10 24 | 644 | 0.0 | 0.3+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 10 24 | 644 | 0.1− | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 11 18 | 704 | 0.6+ | 0.2+ | 2006 08 18 | 644 | 0.2+ | 0.1+ |
| 2001 09 17 | 699 | 0.9− | 0.3+ | 2001 11 18 | 704 | 0.2− | 0.9+ | 2006 08 18 | 644 | 0.3+ | 0.1+ |
| 2001 09 17 | 699 | 0.1+ | 0.1+ | 2001 11 18 | 704 | 0.6+ | 0.7+ | 2006 08 20 | 644 | 0.4+ | 0.1+ |
| 2001 09 17 | 699 | 0.7− | 0.9+ | 2001 11 18 | 704 | 0.5+ | 0.0 | 2006 08 20 | 644 | 0.3+ | 0.2+ |
| 2001 09 17 | 699 | 0.3− | 0.4+ | 2001 12 14 | 704 | (1.6− | 0.5−) | 2006 08 20 | 644 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2001 12 14 | 704 | 0.5− | 0.7− | 2006 08 28 | E12 | 0.4− | 0.5+ |
| 2001 09 25 | 704 | 0.0 | 0.3− | 2001 12 14 | 704 | 0.9− | 0.9− | 2006 08 28 | E12 | 0.4− | 0.1+ |
| 2001 09 25 | 704 | 0.4+ | 0.1+ | 2002 12 06 | 645 | 0.1− | 0.1+ | 2006 08 28 | E12 | 0.0 | 0.2− |
| 2001 10 10 | 644 | 0.1− | 0.6+ | 2002 12 06 | 645 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.0 | 0.5+ |
| 2001 10 10 | 644 | 0.3− | 0.3+ | 2004 03 19 | 644 | 0.7+ | 0.6− | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 2001 10 10 | 644 | 0.1− | 0.9+ | 2004 03 19 | 644 | 0.7+ | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.1+ |
| 2001 10 14 | 699 | 0.6+ | 1.2− | 2004 03 19 | 644 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.4− |
| 2001 10 14 | 699 | 0.5− | 1.4+ | 2005 06 06 | 691 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.9− | 0.3− |
| 2001 10 14 | 699 | 1.1+ | 0.1− | 2005 06 06 | 691 | 0.1− | 0.4+ | 2006 10 11 | E12 | 0.3− | 0.2+ |
| 2001 10 14 | 699 | 0.5− | 0.6+ | 2005 06 06 | 691 | 0.0 | 0.1− | 2006 10 11 | E12 | 0.2+ | 0.0 |
| 2001 10 16 | 704 | 0.7− | 0.2− | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 10 11 | E12 | 0.4− | 0.1+ |
| 2001 10 16 | 704 | 0.4− | 0.9+ | 2005 06 10 | 691 | 0.0 | 0.1− | 2006 10 11 | E12 | 0.0 | 0.0 |
| 2001 10 16 | 704 | 0.1− | 0.6+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 16 | 704 | 0.2− | 0.9− | 2005 06 13 | G96 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2001 10 16 | 704 | 0.7− | 0.3+ | 2005 06 13 | G96 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |

**(140495)∗ 2001 TK$_{153}$ = 2004 EB$_2$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61129)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 134.71799 | | (2000.0) | | +0.09364850 | +0.99250634 |
| $n$ | 0.22391805 | $\omega$ | 177.17007 | | −0.91500037 | +0.11687455 |
| $a$ | 2.6858184 | $\Omega$ | 98.19461 | | −0.39243378 | −0.03565830 |
| $e$ | 0.1526456 | $i$ | 4.54848 | | | |
| $P$ | 4.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.9+ | 0.6+ | 2004 03 21 | 691 | 0.2+ | 0.5+ | 2005 08 27 | 644 | 0.2− | 0.7+ |
| 2000 05 27 | 704 | 0.9− | 0.5+ | 2004 03 21 | 691 | 0.5+ | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.7+ |
| 2000 05 27 | 704 | 0.4− | 0.5+ | 2004 03 22 | 704 | 0.3+ | 1.0+ | 2005 08 27 | 644 | 0.2− | 0.7+ |
| 2000 05 27 | 704 | 0.8+ | 1.5+ | 2004 03 22 | 704 | 0.2+ | 1.1+ | 2005 08 28 | 699 | 0.4− | 0.4+ |
| 2000 05 27 | 704 | 0.2− | 0.6+ | 2004 03 22 | 704 | 0.6− | 0.5+ | 2005 08 28 | 699 | 1.0− | 0.8− |
| 2001 10 11 | 644 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.9− | 0.2+ | 2005 08 28 | 699 | 0.3− | 0.8+ |
| 2001 10 11 | 644 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.3− | 0.6+ | 2005 08 28 | 699 | 0.3− | 1.2+ |
| 2001 10 11 | 644 | 0.1+ | 0.6+ | 2004 03 23 | 683 | 0.2+ | 0.8− | 2005 08 28 | E12 | 0.1+ | 0.1+ |
| 2001 10 16 | 683 | (1.6+ | 2.9+) | 2004 03 23 | 683 | 0.5+ | 0.7− | 2005 08 28 | E12 | 0.5+ | 0.7+ |
| 2001 10 16 | 683 | (1.8− | 1.4−) | 2004 03 23 | 683 | (1.3− | 1.5−) | 2005 08 28 | E12 | 0.3− | 0.1+ |
| 2001 10 16 | 644 | 0.8+ | 0.8+ | 2004 03 27 | 683 | (1.1− | 1.7−) | 2005 08 28 | E12 | 0.5− | 0.2+ |
| 2001 10 16 | 644 | 0.2− | 0.8+ | 2004 03 27 | 683 | (0.4− | 2.2−) | 2005 09 13 | 703 | 0.1+ | 0.4− |
| 2001 10 16 | 644 | 0.7− | 1.3+ | 2004 03 27 | 683 | 0.5− | 1.3− | 2005 09 13 | 703 | 0.1+ | 0.1− |
| 2001 10 24 | 644 | 0.1− | 0.6− | 2004 03 30 | 703 | (3.0− | 0.5−) | 2005 09 13 | 703 | (1.1− | 3.0−) |
| 2001 10 24 | 644 | 0.2+ | 0.3− | 2004 03 30 | 703 | 0.3− | 0.8− | 2005 09 13 | 703 | 0.2− | 0.3− |
| 2001 10 24 | 644 | 0.4− | 0.5− | 2004 03 30 | 703 | 0.4− | 0.7+ | 2005 09 22 | 644 | 0.2− | 0.4+ |
| 2004 03 12 | 644 | 0.5+ | 0.5+ | 2004 03 30 | 703 | 0.9− | 0.6+ | 2005 09 22 | 644 | 0.2− | 0.6+ |
| 2004 03 12 | 644 | 0.1+ | 0.7+ | 2004 04 20 | 704 | 0.5+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.5+ |
| 2004 03 12 | 644 | 0.1+ | 0.3+ | 2004 04 20 | 704 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2004 04 20 | 704 | 0.3− | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2004 04 20 | 704 | 1.0− | 0.6+ | 2006 11 23 | 691 | 0.3− | 0.1+ |
| 2004 03 14 | 691 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2004 03 16 | 704 | 0.6− | 0.4+ | 2004 04 21 | 704 | 0.8+ | 0.9− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 03 16 | 704 | 0.0 | 0.2− | 2004 04 21 | 704 | 0.3+ | 0.7− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 03 16 | 704 | 0.2+ | 0.2+ | 2004 04 21 | 704 | 0.9+ | 1.1− | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2004 03 16 | 704 | 0.3+ | 0.2− | 2005 07 29 | 644 | 0.0 | 0.7+ | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2004 03 16 | 704 | 0.8+ | 0.7+ | 2005 07 29 | 644 | 0.0 | 0.7+ | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2004 03 21 | 691 | 0.1+ | 0.5+ | 2005 07 29 | 644 | 0.0 | 0.5+ | | | | |

**(140496)∗ 2001 TT$_{153}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.27274 | | (2000.0) | | +0.94344806 | −0.30075091 |
| $n$ | 0.18138678 | $\omega$ | 83.92922 | | +0.21050145 | +0.86848212 |
| $a$ | 3.0907624 | $\Omega$ | 293.50571 | | +0.25611502 | +0.39406560 |
| $e$ | 0.0583456 | $i$ | 8.74872 | | | |
| $P$ | 5.43 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 1.4− | 0.2− | 2002 12 31 | 704 | 0.7− | 0.4+ | 2006 08 24 | 704 | 0.1− | 1.1+ |
| 2001 09 25 | 704 | 0.5− | 1.8+ | 2002 12 31 | 704 | 0.3+ | 0.8+ | 2006 08 24 | 704 | 0.5+ | 0.4+ |
| 2001 09 25 | 704 | 1.0− | 0.1− | 2003 01 08 | 704 | 0.4+ | 0.1− | 2006 08 24 | 704 | 1.1+ | 1.1+ |
| 2001 09 25 | 704 | 1.1− | 0.4+ | 2003 01 08 | 704 | 0.4+ | 0.3+ | 2006 08 24 | 704 | 1.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.5− | 0.5+ | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.9− | 0.4− |
| 2001 09 29 | 644 | 0.6− | 0.6− | 2003 01 08 | 704 | 0.3− | 0.8+ | 2006 08 29 | 703 | 0.7+ | 0.0 |
| 2001 09 29 | 644 | 0.6− | 0.4− | 2004 03 14 | 644 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 0.9− | 0.3− |
| 2001 09 29 | 644 | 0.8− | 0.7− | 2004 03 14 | 644 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 0.2+ | 0.2− |
| 2001 10 13 | 644 | 0.1− | 0.2+ | 2004 03 14 | 644 | 0.3+ | 0.5+ | 2006 08 30 | 699 | 0.1− | 0.9− |
| 2001 10 13 | 644 | 0.1+ | 0.0 | 2004 04 20 | 291 | 0.4+ | 0.6+ | 2006 08 30 | 699 | 0.4− | 0.6+ |
| 2001 10 13 | 644 | 0.4+ | 0.1− | 2004 04 20 | 291 | 0.4+ | 0.8+ | 2006 08 30 | 699 | 1.2− | 0.1− |
| 2001 10 16 | 644 | 0.7+ | 0.4+ | 2004 04 20 | 291 | 0.4+ | 0.5+ | 2006 08 30 | 699 | 0.1− | 1.0+ |
| 2001 10 16 | 644 | 0.6+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.8+ | 0.5+ |
| 2001 10 16 | 644 | 0.6+ | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 2001 10 16 | 644 | 0.7+ | 0.2+ | 2006 08 18 | 644 | 0.6− | 0.1+ | 2006 09 19 | 699 | 1.2− | 0.9+ |
| 2001 10 16 | 644 | 0.7+ | 0.6+ | 2006 08 19 | 644 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.2− |
| 2001 10 16 | 644 | 0.8+ | 0.3+ | 2006 08 19 | 644 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.6+ |
| 2001 10 26 | 644 | 0.3+ | 0.2+ | 2006 08 19 | 644 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.3+ |
| 2001 10 26 | 644 | 0.1+ | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 2001 10 26 | 644 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.4− | 0.3+ | 2006 09 19 | 703 | 1.1− | 1.2− |
| 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.0 | | | | |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.5+ | 0.0 | | | | |

**(140497)∗ 2001 TX$_{153}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.24660 | | (2000.0) | | +0.89113904 | −0.43152576 |
| $n$ | 0.17368144 | $\omega$ | 90.35724 | | +0.32961881 | +0.82804499 |
| $a$ | 3.1815136 | $\Omega$ | 295.21151 | | +0.31180547 | +0.35794834 |
| $e$ | 0.0739332 | $i$ | 8.91471 | | | |
| $P$ | 5.67 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 23 | 691 | 0.3− | 0.4− | 2001 10 20 | 699 | 0.4− | 0.9+ | 2004 03 26 | 699 | 0.3+ | 1.2+ |
| 1998 03 23 | 691 | 0.1− | 0.6− | 2001 10 26 | 644 | 0.4− | 0.1− | 2006 07 20 | A50 | 0.1+ | 0.1+ |
| 1998 03 23 | 691 | 0.3− | 0.4− | 2001 10 26 | 644 | 0.1− | 0.0 | 2006 07 20 | A50 | 0.2+ | 0.0 |
| 2001 09 19 | 699 | 1.3+ | 0.4− | 2001 10 26 | 644 | 0.4− | 0.1− | 2006 07 21 | 644 | 0.0 | 0.6+ |
| 2001 09 19 | 699 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 1.0+ | 0.0 | 2006 07 21 | 644 | 0.3− | 0.5+ |
| 2001 09 19 | 699 | 0.6+ | 0.5+ | 2002 12 31 | 704 | 0.3+ | 0.5+ | 2006 07 21 | 644 | 0.3− | 0.4+ |
| 2001 09 19 | 699 | 1.6+ | 0.9+ | 2002 12 31 | 704 | 0.2+ | 1.0+ | 2006 07 21 | A50 | 0.1+ | 0.2− |
| 2001 09 25 | 704 | 0.6− | 0.3− | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 08 14 | E12 | 0.5− | 0.1+ |
| 2001 09 25 | 704 | 0.5− | 0.5+ | 2002 12 31 | 704 | 0.1+ | 0.3− | 2006 08 14 | E12 | 0.4− | 0.1+ |
| 2001 09 25 | 704 | 0.0 | 0.7+ | 2003 01 01 | 704 | 0.5− | 0.2+ | 2006 08 14 | E12 | 0.4− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 0.3+ | 2003 01 01 | 704 | 0.9+ | 0.5− | 2006 08 14 | E12 | 0.2+ | 0.8+ |
| 2001 09 25 | 704 | 0.0 | 0.6+ | 2003 01 01 | 704 | 1.3− | 1.3+ | 2006 08 14 | E12 | 1.3+ | 0.3+ |
| 2001 10 13 | 644 | 0.1− | 0.3+ | 2003 01 01 | 704 | 0.3− | 0.7− | 2006 08 21 | 644 | 0.1+ | 0.2+ |
| 2001 10 13 | 644 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.1− | 2006 08 21 | 644 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.3− | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.5− | 2006 08 21 | 644 | 0.3− | 0.0 | | |
| 2001 10 16 | 644 | 0.3− | 0.5− | 2003 01 04 | 704 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.1+ | 0.6− | | |
| 2001 10 16 | 644 | 0.5− | 0.4− | 2003 01 04 | 704 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.2− | 1.0− | | |
| 2001 10 16 | 644 | 0.3− | 0.3− | 2003 01 08 | 704 | 0.7− | 0.4+ | 2006 08 29 | 703 | 0.4− | 0.3− | | |
| 2001 10 16 | 644 | 0.3− | 0.4− | 2003 01 08 | 704 | 0.1− | 0.9+ | 2006 08 29 | 703 | 0.4− | 0.5− | | |
| 2001 10 16 | 644 | 0.5− | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.2− | | |
| 2001 10 16 | 644 | 0.1− | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.4+ | 0.5+ | | |
| 2001 10 18 | 704 | 0.0 | 0.9+ | 2004 03 16 | 691 | 0.5+ | 0.5+ | 2006 08 30 | 704 | 0.2+ | 0.5+ | | |
| 2001 10 18 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 691 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.1− | | |
| 2001 10 18 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 691 | 0.1+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.4+ | | |
| 2001 10 20 | 699 | 0.6+ | 0.2+ | 2004 03 26 | 699 | 0.3− | 1.3+ | 2006 09 14 | 644 | 0.4− | 0.3+ | | |
| 2001 10 20 | 699 | 0.5− | 0.3− | 2004 03 26 | 699 | 1.4+ | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.3+ | | |
| 2001 10 20 | 699 | 0.3− | 0.1+ | 2004 03 26 | 699 | 1.3+ | 0.0 | | | | | | |

**(140498)∗ 2001 TO$_{155}$**

Discovered 2001 Oct. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.84720 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21491615 | $\omega$ | 326.71794 | | −0.99818004 | | −0.05636740 |
| $a$ | 2.7603025 | $\Omega$ | 210.07273 | | +0.06030160 | | −0.92965803 |
| $e$ | 0.0749915 | $i$ | 2.45125 | | +0.00056289 | | −0.36408607 |
| $P$ | 4.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 691 | 0.1− | 0.1− | 2001 11 17 | 291 | 0.5− | 0.4+ | 2005 07 28 | 644 | 0.0 | 0.2+ | | |
| 1999 03 21 | 691 | 0.0 | 0.3− | 2002 12 31 | 704 | 0.5+ | 0.3− | 2005 07 28 | 644 | 0.0 | 0.1+ | | |
| 1999 03 21 | 691 | 0.1− | 0.0 | 2002 12 31 | 704 | 0.6+ | 1.0+ | 2006 10 12 | 691 | 0.3− | 0.3+ | | |
| 2001 09 16 | 704 | 0.6+ | 0.2− | 2002 12 31 | 704 | 0.4− | 1.0+ | 2006 10 12 | 691 | 0.1− | 0.4+ | | |
| 2001 09 16 | 704 | 0.2− | 0.7+ | 2004 04 15 | 699 | 0.0 | 1.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.3− | 2004 04 15 | 699 | 1.2+ | 0.3− | 2006 10 20 | 691 | 0.5− | 0.0 | | |
| 2001 09 16 | 704 | 0.5+ | 0.8+ | 2004 04 15 | 699 | 0.6+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 23 | 691 | 0.3− | 0.0 | 2004 04 15 | 699 | 0.6− | 1.2− | 2006 10 20 | 691 | 0.0 | 0.1+ | | |
| 2001 09 23 | 691 | 0.0 | 0.1− | 2004 05 11 | 699 | 0.2+ | 1.0+ | 2006 10 29 | 291 | 0.0 | 0.5+ | | |
| 2001 09 23 | 691 | 0.6+ | 0.2− | 2004 05 11 | 699 | 0.9+ | 0.8− | 2006 10 29 | 291 | 0.1+ | 0.6+ | | |
| 2001 10 14 | 691 | 0.0 | 0.0 | 2004 05 11 | 699 | 1.4− | 0.1+ | 2006 10 29 | 291 | 0.4+ | 0.3+ | | |
| 2001 10 14 | 691 | 0.3− | 0.2− | 2004 05 11 | 699 | 0.5+ | 1.0+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2001 10 14 | 691 | 0.3− | 0.1− | 2004 05 14 | 691 | 0.1+ | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.6+ | | |
| 2001 10 17 | 691 | 1.1+ | 0.4− | 2004 05 14 | 691 | 0.1+ | 0.8+ | 2006 11 01 | 691 | 0.2+ | 0.4+ | | |
| 2001 10 17 | 691 | 0.6+ | 0.5− | 2004 05 14 | 691 | 0.2− | 0.6+ | 2006 11 13 | G96 | 0.0 | 0.4− | | |
| 2001 10 17 | 691 | 0.6+ | 0.2− | 2004 05 27 | 691 | 0.6+ | 0.9+ | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2001 10 21 | 704 | 1.1− | 0.7+ | 2004 05 27 | 691 | 0.2+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.3− | | |
| 2001 10 21 | 704 | 0.0 | 0.5+ | 2004 05 27 | 691 | 0.4+ | 0.6+ | 2006 11 13 | G96 | 0.3+ | 0.2− | | |
| 2001 10 21 | 704 | 0.4− | 0.4− | 2005 07 18 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.6+ | | |
| 2001 10 21 | 704 | 0.6− | 0.3+ | 2005 07 18 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 1.3− | 0.2− | | |
| 2001 11 17 | 291 | 0.9− | 0.6+ | 2005 07 18 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.9− | 0.9+ | | |
| 2001 11 17 | 291 | 0.9− | 0.7+ | 2005 07 28 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 2.0− | 0.4+ | | |

**(140499)∗ 2001 TW$_{156}$ = 2004 GN$_{52}$**

Discovered 2001 Oct. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61130)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.83723 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21303163 | $\omega$ | 138.68666 | | +0.84767459 | | +0.53039430 |
| $a$ | 2.7765574 | $\Omega$ | 189.30163 | | −0.50336661 | | +0.79732950 |
| $e$ | 0.0723796 | $i$ | 4.04008 | | −0.16754057 | | +0.28800618 |
| $P$ | 4.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.0 | 0.5+ | 2001 10 23 | 704 | 0.4+ | 0.6+ | 2005 07 27 | 644 | 0.0 | 0.3+ | | |
| 1994 02 10 | 691 | (2.8− | 4.9−) | 2001 10 24 | 704 | (1.8− | 1.0+) | 2005 07 27 | 644 | 0.1− | 0.3+ | | |
| 1994 02 10 | 691 | 0.3+ | 1.0+ | 2001 10 24 | 704 | 0.5− | 0.1+ | 2005 07 30 | E12 | 0.2+ | 0.0 | | |
| 2001 10 07 | 644 | 0.4+ | 0.4+ | 2001 10 24 | 704 | 0.6− | 0.8+ | 2005 07 30 | E12 | 0.3− | 0.2− | | |
| 2001 10 07 | 644 | 0.2+ | 0.5+ | 2001 10 24 | 704 | 0.1+ | 0.3+ | 2005 07 30 | E12 | 0.4− | 0.0 | | |
| 2001 10 07 | 644 | 0.0 | 0.5+ | 2004 04 13 | 691 | 0.0 | 0.2+ | 2005 07 30 | E12 | 0.5− | 0.3+ | | |
| 2001 10 14 | 699 | 0.6− | 0.5+ | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.5− | | |
| 2001 10 14 | 699 | 0.0 | 1.4− | 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.5− | 0.2− | | |
| 2001 10 14 | 699 | 0.9+ | 0.6+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.6+ | 0.0 | | |
| 2001 10 14 | 699 | 0.6− | 0.4+ | 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.4− | | |
| 2001 10 14 | 291 | 0.4+ | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.4+ | 0.2+ | | |
| 2001 10 14 | 291 | 0.9+ | 0.5+ | 2004 05 09 | 691 | 0.3− | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.3+ | | |
| 2001 10 14 | 291 | (1.9+ | 0.5+) | 2004 05 09 | 691 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.1+ | | |
| 2001 10 17 | 691 | 0.3− | 0.1− | 2004 05 09 | 691 | 0.1− | 0.5+ | 2006 11 20 | 691 | 0.4+ | 0.2− | | |
| 2001 10 17 | 704 | 0.6− | 0.5+ | 2005 07 01 | 691 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2001 10 17 | 691 | 0.3− | 0.1− | 2005 07 01 | 691 | 0.1+ | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.1− | | |
| 2001 10 17 | 691 | 0.3− | 0.2− | 2005 07 01 | 691 | 0.0 | 0.7+ | 2006 11 24 | 691 | 0.5− | 0.4+ | | |
| 2001 10 17 | 704 | 0.4− | 0.2+ | 2005 07 05 | 644 | 0.3+ | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.5+ | | |
| 2001 10 17 | 704 | 1.0− | 0.4+ | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 11 24 | 691 | 0.3− | 0.4+ | | |
| 2001 10 23 | 704 | 1.3− | 0.6+ | 2005 07 05 | 644 | 0.5− | 0.0 | | | | | | |
| 2001 10 23 | 704 | 0.1− | 1.2+ | 2005 07 27 | 644 | 0.2+ | 0.5+ | | | | | | |

**(140500)∗ 2001 TF$_{158}$**

Discovered 2001 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.98440 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17468893 | $\omega$ | 270.38691 | | +0.92075012 | | +0.36117468 |
| $a$ | 3.1692691 | $\Omega$ | 68.44562 | | −0.26392439 | | +0.85512364 |
| $e$ | 0.1189868 | $i$ | 9.12843 | | −0.28733802 | | +0.37190915 |
| $P$ | 5.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.2− | 0.6+ | 2004 03 23 | 704 | 1.0+ | 1.4+ | 2006 08 16 | E12 | 0.3+ | 0.9+ | | |
| 2001 10 10 | 644 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.0 | 1.2+ | 2006 08 20 | 644 | 0.1− | 0.2+ | | |
| 2001 10 10 | 644 | 0.5− | 0.4+ | 2004 03 23 | 704 | 1.3+ | 1.5+ | 2006 08 20 | 644 | 0.1− | 0.1+ | | |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | (2.2+ | 2.6+) | 2006 08 20 | 644 | 0.2− | 0.2+ | | |
| 2001 10 17 | 704 | 0.2+ | 1.3+ | 2004 03 23 | 704 | 0.3+ | 1.4+ | 2006 08 28 | E12 | 0.1+ | 0.5+ | | |
| 2001 10 17 | 704 | 0.6− | 0.8+ | 2005 06 06 | 691 | 0.0 | 0.4+ | 2006 08 28 | E12 | 0.2− | 0.1+ | | |
| 2001 10 17 | 704 | 0.7− | 1.1+ | 2005 06 06 | 691 | 0.0 | 0.4+ | 2006 08 28 | E12 | 0.2+ | 0.6− | | |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2005 06 06 | 691 | 0.1+ | 0.4+ | 2006 08 28 | E12 | 0.5+ | 0.1+ | | |
| 2001 10 17 | 644 | 0.4− | 0.5+ | 2005 06 10 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.3+ | | |
| 2001 10 17 | 644 | 0.6− | 0.4+ | 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.1− | | |
| 2001 10 17 | 644 | 0.3− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.4+ | | |
| 2001 11 18 | 608 | 0.1− | 0.2− | 2005 06 13 | G96 | 0.2− | 0.2+ | 2006 09 17 | 699 | 0.6− | 0.1+ | | |
| 2001 11 18 | 608 | 0.1− | 0.5− | 2005 06 13 | G96 | 0.5+ | 0.0 | 2006 09 17 | 699 | 0.6− | 0.0 | | |
| 2001 11 18 | 608 | 0.2+ | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 09 17 | 699 | 1.1+ | 0.3− | | |
| 2001 12 18 | 704 | 0.4− | 0.5+ | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 1.0+ | 0.4+ | | |
| 2001 12 18 | 704 | 0.2− | 1.4+ | 2005 06 17 | 691 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.8− | 0.4+ | | |
| 2001 12 18 | 704 | 0.2− | 0.6+ | 2005 06 17 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.4+ | | |
| 2001 12 18 | 704 | 0.6− | 1.9+ | 2005 06 17 | 691 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.0 | 0.2− | | |
| 2004 03 18 | 691 | 0.4+ | 0.2+ | 2006 08 16 | E12 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.1+ | | |
| 2004 03 18 | 691 | 0.2+ | 0.4+ | 2006 08 16 | E12 | 0.1− | 1.3+ | | | | | | |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 08 16 | E12 | 1.5− | 0.2+ | | | | | | |

**(140501)∗ 2001 TN$_{158}$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.56682 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22093000 | $\omega$ | 297.80764 | | +0.93771850 | | −0.32869648 |
| $a$ | 2.7099811 | $\Omega$ | 81.56358 | | +0.34508249 | | +0.84404277 |
| $e$ | 0.0867214 | $i$ | 6.52689 | | +0.04002603 | | +0.42373391 |
| $P$ | 4.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 29 | 691 | 0.5− | 0.6− | 2003 01 16 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1+ | | |
| 1995 03 29 | 691 | 0.6− | 1.7− | 2003 01 16 | 644 | 0.5+ | 0.9+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 1995 03 29 | 691 | 0.6− | 1.2− | 2003 01 16 | 644 | 0.7+ | 1.0+ | 2006 11 20 | 704 | 0.1+ | 0.3− | | |
| 2001 08 26 | 644 | 0.6+ | 0.4− | 2003 02 04 | 644 | 0.3+ | 0.8+ | 2006 11 20 | 704 | 0.8− | 0.3+ | | |
| 2001 08 26 | 644 | 0.7+ | 0.5− | 2003 02 04 | 644 | 0.2+ | 0.8+ | 2006 11 20 | 704 | 0.8+ | 0.0 | | |
| 2001 08 26 | 644 | 0.6+ | 0.3− | 2003 02 04 | 644 | 0.2+ | 0.7+ | 2006 11 21 | 704 | 0.7+ | 0.8− | | |
| 2001 09 11 | 699 | 0.9+ | 0.5+ | 2004 03 16 | 691 | (2.5+ | 0.4−) | 2006 11 21 | 704 | 0.0 | 0.1− | | |
| 2001 09 11 | 699 | 1.2− | 0.3− | 2004 03 16 | 691 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 1.0+ | 0.1− | | |
| 2001 09 11 | 699 | 1.4− | 0.6+ | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 11 21 | 704 | 0.6+ | 0.2+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 1.1− | 1.0+ | 2004 03 31 | 691 | 0.2+ | 0.4+ | 2006 11 24 | 691 | 0.0 | 0.1+ | |
| 2001 09 12 | 704 | 0.6− | 0.7+ | 2004 03 31 | 691 | 0.5+ | 0.7+ | 2006 11 24 | 691 | 0.2− | 0.0 | |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2004 03 31 | 691 | 0.5+ | 0.8+ | 2006 11 24 | 691 | 0.2− | 0.2+ | |
| 2001 09 12 | 704 | 1.0+ | 1.1+ | 2004 04 23 | 691 | 0.1+ | 0.8+ | 2006 11 28 | 704 | 1.4+ | 0.3− | |
| 2001 09 12 | 704 | 0.6+ | 0.8− | 2004 04 23 | 691 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.7+ | 0.3− | |
| 2001 10 11 | 644 | 0.0 | 0.1− | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.2− | |
| 2001 10 11 | 644 | 0.1− | 0.3− | 2005 07 10 | E12 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.4− | |
| 2001 10 11 | 644 | 0.2+ | 0.2+ | 2005 07 10 | E12 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 1.2+ | 0.8− | |
| 2001 10 17 | 644 | 0.1− | 0.5+ | 2005 07 10 | E12 | (0.3+ | 1.6+) | 2006 11 29 | 704 | 0.5− | 0.1− | |
| 2001 10 17 | 644 | 0.0 | 0.5+ | 2005 07 10 | E12 | 0.3+ | 0.9+ | 2006 11 29 | 704 | 0.4− | 0.5+ | |
| 2001 10 17 | 644 | 0.2− | 0.6+ | 2006 11 16 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.4− | |
| 2001 10 24 | 644 | 0.4− | 0.4+ | 2006 11 16 | 691 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.5− | |
| 2001 10 24 | 644 | 0.3− | 0.4+ | 2006 11 16 | 691 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.4+ | |
| 2001 10 24 | 644 | 0.5− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.2− | | | | | |

**(140502)∗ 2001 TK$_{160}$ = 2004 HT$_5$**

Discovered 2001 Oct. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61131)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 199.65986 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.18326758 | $\omega$ | 306.09784 | −0.97378005 | −0.17085666 | |
| $a$ | 3.0695800 | $\Omega$ | 224.62071 | +0.20449940 | −0.94668502 | |
| $e$ | 0.0145683 | $i$ | 12.34730 | −0.09966147 | −0.27312171 | |
| $P$ | 5.38 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.1+ | 0.0 | 2001 11 19 | 704 | 0.9− | 0.7+ | 2004 05 15 | 691 | 0.1+ | 0.3+ | |
| 2000 10 02 | 645 | 0.1− | 0.0 | 2001 11 19 | 704 | 1.4− | 0.1− | 2004 05 23 | 691 | 0.0 | 0.5+ | |
| 2001 10 15 | 291 | 0.2− | 0.2+ | 2001 11 20 | 704 | 0.0 | 0.6− | 2004 05 23 | 691 | 0.0 | 0.6+ | |
| 2001 10 15 | 291 | 0.1− | 0.3+ | 2001 11 20 | 704 | 0.3+ | 0.1− | 2004 05 23 | 691 | 0.6+ | 0.3+ | |
| 2001 10 15 | 291 | 0.1− | 0.3+ | 2001 11 20 | 704 | 0.1+ | 0.1− | 2006 09 16 | 703 | 1.5+ | 0.9+ | |
| 2001 10 18 | 691 | 0.1− | 0.3+ | 2001 11 20 | 704 | 0.3+ | 0.5− | 2006 09 16 | 703 | 0.9+ | 0.8+ | |
| 2001 10 18 | 691 | 0.0 | 0.5+ | 2001 11 21 | 704 | 0.4− | 0.3+ | 2006 09 16 | 703 | 0.3− | 1.0+ | |
| 2001 10 18 | 691 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.8− | 0.2+ | |
| 2001 10 19 | 644 | 0.2− | 0.6+ | 2001 11 21 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.3+ | |
| 2001 10 19 | 644 | 0.2− | 0.5+ | 2001 11 21 | 704 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.0 | |
| 2001 10 19 | 644 | 0.2+ | 0.3+ | 2001 11 21 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.2+ | |
| 2001 10 21 | 704 | 0.7+ | 0.7+ | 2001 12 11 | 704 | 0.3− | 0.2− | 2006 09 27 | 703 | 0.6− | 0.1− | |
| 2001 10 21 | 704 | 0.0 | 0.1− | 2001 12 11 | 704 | 0.3+ | 0.0 | 2006 09 27 | 703 | 0.4− | 0.2+ | |
| 2001 10 21 | 704 | 0.5+ | 0.4+ | 2001 12 11 | 704 | 0.0 | 1.0+ | 2006 09 27 | 703 | 0.2− | 0.1− | |
| 2001 10 21 | 704 | 0.5− | 1.2− | 2004 04 17 | 704 | 0.5+ | 0.8+ | 2006 09 27 | 703 | 0.9− | 0.1− | |
| 2001 10 23 | 291 | 0.8+ | 0.3+ | 2004 04 17 | 704 | 0.6+ | 0.9+ | 2006 10 10 | 644 | 0.3+ | 0.3+ | |
| 2001 10 23 | 291 | (1.7+ | 0.4+) | 2004 04 17 | 704 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.6+ | |
| 2001 10 23 | 291 | 1.1+ | 0.5+ | 2004 04 19 | 704 | 0.7− | 0.6+ | 2006 10 10 | 644 | 0.4+ | 0.2+ | |
| 2001 11 11 | 691 | 0.1− | 0.1+ | 2004 04 19 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ | |
| 2001 11 11 | 691 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 | |
| 2001 11 11 | 691 | 0.1+ | 0.3+ | 2004 04 19 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.5+ | |
| 2001 11 17 | 704 | 1.2− | 1.0− | 2004 04 19 | 704 | 0.1− | 1.2+ | 2006 10 17 | 703 | 0.5− | 1.1− | |
| 2001 11 17 | 704 | (1.6− | 1.1−) | 2004 04 19 | 704 | (0.0 | 2.4+) | 2006 10 17 | 703 | 1.0− | 0.6+ | |
| 2001 11 17 | 704 | 0.7− | 0.2+ | 2004 04 19 | 704 | (0.2− | 2.2+) | 2006 10 17 | 703 | 0.3− | 0.4− | |
| 2001 11 17 | 704 | 1.5− | 0.5− | 2004 04 19 | 704 | 0.5− | 0.8+ | 2006 10 17 | 703 | (1.9+ | 0.3+) | |
| 2001 11 19 | 704 | 1.0− | 0.4− | 2004 04 19 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | |
| 2001 11 19 | 704 | 0.5− | 0.3− | 2004 05 15 | 691 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.4+ | |
| 2001 11 19 | 704 | 1.0− | 0.3− | 2004 05 15 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |

**(140503)∗ 2001 TN$_{160}$**

Discovered 2001 Oct. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 32.26920 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.19423085 | $\omega$ | 73.69905 | +0.97717938 | +0.21151578 | |
| $a$ | 2.9529578 | $\Omega$ | 274.08661 | −0.20159965 | +0.89452307 | |
| $e$ | 0.0987350 | $i$ | 1.12208 | −0.06691816 | +0.39381411 | |
| $P$ | 5.07 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.2+ | 0.7− | 2001 11 21 | 704 | 0.2− | 0.6− | 2006 10 16 | 691 | 0.0 | 0.3− | |
| 1996 11 08 | 691 | 0.2+ | 0.4− | 2001 11 21 | 704 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.3− | 0.7+ | |
| 1996 11 08 | 691 | 0.0 | 0.6− | 2001 11 21 | 704 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.4− | |
| 2001 09 24 | 691 | 0.2− | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.7− | 2006 10 27 | G96 | 0.2− | 0.3− | |
| 2001 09 24 | 691 | 0.5− | 0.1+ | 2003 01 05 | 926 | 0.7+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2001 09 24 | 691 | 0.6− | 0.0 | 2003 01 05 | 926 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− | |
| 2001 10 15 | 291 | 0.4+ | 0.3+ | 2003 01 05 | 926 | 0.3+ | 0.3− | 2006 10 27 | 224 | 0.8+ | 0.6+ | |
| 2001 10 15 | 291 | 0.4+ | 0.1+ | 2003 01 30 | 644 | 0.5− | 0.2+ | 2006 10 27 | 224 | 0.5− | 0.2+ | |
| 2001 10 15 | 291 | 0.4+ | 0.2+ | 2003 01 30 | 644 | 0.5− | 0.1− | 2006 10 27 | 224 | 1.2+ | 0.2+ | |
| 2001 10 18 | 691 | 0.1+ | 0.1+ | 2003 01 30 | 644 | 0.7− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | |
| 2001 10 18 | 691 | 0.3− | 0.5+ | 2004 03 16 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.1+ | |
| 2001 10 18 | 691 | 0.2+ | 0.1− | 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | |
| 2001 10 22 | 644 | 0.1− | 0.4+ | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 691 | 0.1− | 0.2+ | |
| 2001 10 22 | 644 | 0.7− | 0.5+ | 2004 04 20 | 691 | 0.4− | 0.2− | 2006 11 17 | 691 | 0.0 | 0.3+ | |
| 2001 10 22 | 644 | 0.6− | 0.8+ | 2004 04 20 | 691 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.3+ | |
| 2001 10 23 | 291 | 0.0 | 0.1+ | 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 1.4− | |
| 2001 10 23 | 291 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.3− | 0.3− | |
| 2001 10 23 | 291 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.1− | |
| 2001 11 19 | 704 | 0.0 | 0.7+ | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.3+ | |
| 2001 11 19 | 704 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.6+ | |
| 2001 11 19 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.2+ | |
| 2001 11 19 | 704 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.3+ | 0.0 | |
| 2001 11 19 | 704 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ | | | | | |
| 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.4− | | | | | |

**(140504)∗ 2001 TO$_{161}$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 8.65750 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.21446154 | $\omega$ | 152.66642 | +0.82497842 | −0.56325103 | |
| $a$ | 2.7642019 | $\Omega$ | 241.69012 | +0.50841176 | +0.77553028 | |
| $e$ | 0.0843192 | $i$ | 3.02525 | +0.24683615 | +0.28513341 | |
| $P$ | 4.60 | $H$ | 16.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2004 05 21 | 691 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.3− | |
| 2001 09 20 | 704 | 0.1+ | 0.9+ | 2004 05 21 | 691 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.1+ | |
| 2001 09 20 | 704 | 0.6+ | 0.1− | 2005 06 18 | G96 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.2+ | |
| 2001 09 20 | 704 | 0.5+ | 0.0 | 2005 06 18 | G96 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.0 | |
| 2001 09 23 | 704 | 1.1− | 0.4− | 2005 06 18 | G96 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.5+ | |
| 2001 09 23 | 704 | 0.9+ | 1.1− | 2005 06 18 | G96 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.3+ | |
| 2001 09 23 | 704 | 0.4− | 0.8− | 2005 07 10 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.3+ | |
| 2001 09 23 | 704 | 0.5+ | 0.2− | 2005 07 10 | 691 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.0 | |
| 2001 10 11 | 644 | 0.0 | 0.8+ | 2005 07 10 | 691 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.3− | |
| 2001 10 11 | 644 | 0.3+ | 0.6+ | 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.1− | |
| 2001 10 11 | 644 | 0.1+ | 0.5+ | 2005 07 10 | 691 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2− | |
| 2001 10 14 | 704 | 0.2− | 0.4+ | 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1− | |
| 2001 10 14 | 704 | 0.8− | 0.3+ | 2005 07 11 | G96 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.0 | |
| 2001 10 14 | 704 | 0.2+ | 0.7+ | 2005 07 11 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.6− | 0.2+ | |
| 2001 10 18 | 644 | 1.0− | 0.1− | 2005 07 11 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.9+ | |
| 2001 10 18 | 644 | 1.2− | 0.0 | 2005 07 11 | G96 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.3− | 0.0 | |
| 2001 10 18 | 644 | 0.9− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.4− | 0.1− | |
| 2001 10 21 | 691 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.1− | 0.2+ | |
| 2001 10 21 | 691 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.3+ | |
| 2001 10 21 | 704 | (2.0+ | 0.4+) | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.2+ | |
| 2001 10 21 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.1− | |
| 2001 10 21 | 704 | 1.1+ | 1.1+ | 2006 10 17 | G96 | 0.6− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.1− | |
| 2001 10 21 | 704 | 0.0 | 1.3+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1− | |
| 2004 05 21 | 691 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.0 | |

**(140505)∗ 2001 TS$_{161}$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.24227 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21203703 | $\omega$ | 101.24696 | | +0.60741678 | | +0.79226755 |
| $a$ | 2.7852333 | $\Omega$ | 206.42443 | | −0.77014878 | | +0.56943943 |
| $e$ | 0.2800866 | $i$ | 7.48093 | | −0.19471956 | | +0.21920510 |
| $P$ | 4.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.2+ | 0.3+ | 2001 09 28 | 644 | 0.0 | 0.6+ | 2005 06 04 | 703 | (2.3− | 0.6+) |
| 2000 04 12 | 691 | 0.1+ | 0.4+ | 2001 09 28 | 644 | 0.2− | 0.4+ | 2005 06 04 | 703 | (2.1− | 1.3+) |
| 2000 04 12 | 691 | 0.1+ | 0.4+ | 2001 09 28 | 644 | 0.1− | 0.4+ | 2005 06 08 | 691 | 0.1+ | 0.1+ |
| 2001 08 27 | 644 | 0.6+ | 0.2+ | 2001 10 09 | 333 | 0.2− | 0.4+ | 2005 06 08 | 691 | 0.4+ | 0.1− |
| 2001 08 27 | 644 | 0.4+ | 0.0 | 2001 10 09 | 333 | 0.0 | 0.2− | 2005 06 08 | 691 | 0.1+ | 0.2+ |
| 2001 08 27 | 644 | 0.7+ | 0.2+ | 2001 10 09 | 333 | 0.2− | 0.5− | 2005 06 12 | 691 | 0.1+ | 0.1+ |
| 2001 09 17 | 644 | 0.9+ | 0.1− | 2001 10 11 | 644 | 0.6− | 0.3+ | 2005 06 12 | 691 | 0.1+ | 0.3+ |
| 2001 09 17 | 644 | 0.4+ | 0.5− | 2001 10 11 | 644 | 0.4− | 0.6+ | 2005 06 12 | 691 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | 0.4− | 0.4+ | 2001 10 11 | 644 | 0.4− | 0.8+ | 2005 06 28 | 644 | 0.2+ | 0.2+ |
| 2001 09 17 | 644 | 0.9+ | 0.1− | 2001 10 18 | 644 | 0.0 | 0.4+ | 2005 06 28 | 644 | 0.1+ | 0.1+ |
| 2001 09 17 | 704 | 0.5− | 0.3+ | 2001 10 18 | 644 | 0.1+ | 0.6+ | 2005 06 28 | 644 | 0.0 | 0.4− |
| 2001 09 17 | 704 | 0.8− | 0.1+ | 2001 10 18 | 644 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 333 | (1.6+ | 1.3+) | 2001 10 21 | 704 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2001 09 21 | 333 | 0.2+ | 0.4− | 2001 10 21 | 704 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.2− |
| 2001 09 21 | 333 | 1.0− | 1.2+ | 2001 10 21 | 704 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2001 09 21 | 333 | (0.4+ | 2.1−) | 2001 10 21 | 704 | 0.4− | 0.9+ | 2006 10 12 | 691 | 0.3− | 0.1+ |
| 2001 09 21 | 333 | (4.6+ | 3.7−) | 2001 10 21 | 704 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 333 | 0.4+ | 0.9− | 2005 05 14 | 644 | 0.3− | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.4+ |
| 2001 09 23 | 704 | 0.8+ | 0.4− | 2005 05 14 | 644 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.9+ | 0.3+ |
| 2001 09 23 | 704 | 0.4+ | 0.8− | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 1.2− |
| 2001 09 23 | 704 | 0.3+ | 0.4− | 2005 05 16 | G96 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.3+ | 0.6− |
| 2001 09 23 | 704 | 0.8− | 0.4− | 2005 05 16 | G96 | 0.9− | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 0.1− | 1.0+ | 2005 05 16 | G96 | 0.8− | 0.4− | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2001 09 24 | 704 | 0.5+ | 0.6− | 2005 05 16 | G96 | 0.8− | 0.7− | 2006 10 22 | 691 | 0.1+ | 0.4+ |
| 2001 09 24 | 704 | 0.1+ | 0.3− | 2005 05 31 | 699 | 0.4+ | 0.8− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 09 24 | 704 | 0.2+ | 0.1− | 2005 05 31 | 699 | 1.0+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2001 09 25 | 699 | (0.5− | 1.8−) | 2005 05 31 | 699 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2001 09 25 | 699 | 0.9− | 0.1− | 2005 05 31 | 699 | 0.9− | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2001 09 25 | 699 | (0.8− | 2.3−) | 2005 06 04 | 703 | 0.5− | 0.9− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2001 09 25 | 699 | 0.6− | 1.3− | 2005 06 04 | 703 | 0.9− | 0.7+ | | | | |

**(140506)∗ 2001 TJ$_{163}$ = 1995 FX$_1$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 20546)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.62216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21384448 | $\omega$ | 248.73315 | | −0.30271005 | | +0.95303080 |
| $a$ | 2.7695169 | $\Omega$ | 3.68972 | | −0.80710312 | | −0.25078107 |
| $e$ | 0.2512133 | $i$ | 8.89085 | | −0.50690353 | | −0.16982683 |
| $P$ | 4.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.5− | 0.4− | 2001 10 18 | 644 | 0.5− | 0.0 | 2005 08 10 | E12 | 0.0 | 0.2− |
| 1995 03 23 | 691 | 0.4− | 0.6− | 2001 10 18 | 644 | 0.2− | 0.1+ | 2005 08 31 | 699 | 1.1− | 0.1− |
| 1995 03 23 | 691 | 0.0 | 0.4− | 2001 10 20 | 291 | 0.6+ | 0.5+ | 2005 08 31 | 699 | 0.4− | 1.1+ |
| 1995 03 29 | 691 | 0.3+ | 0.4+ | 2001 10 20 | 291 | 0.9+ | 0.1+ | 2005 08 31 | 699 | 1.2+ | 1.0+ |
| 1995 03 29 | 691 | 0.0 | 0.5+ | 2001 10 20 | 291 | 0.8− | 0.3− | 2005 08 31 | 699 | 1.1+ | 1.2+ |
| 1995 03 29 | 691 | 0.2+ | 0.0 | 2001 10 25 | 644 | 0.9− | 0.1+ | 2005 09 05 | E12 | 1.0− | 0.1+ |
| 2000 05 10 | 704 | 1.1+ | 0.1+ | 2001 10 25 | 644 | 0.8− | 0.0 | 2005 09 05 | E12 | 1.0+ | 0.4− |
| 2000 05 10 | 704 | 0.8+ | 0.1+ | 2001 10 25 | 644 | 0.5− | 0.0 | 2005 09 05 | E12 | 0.3+ | 0.2+ |
| 2000 05 10 | 704 | 0.8− | 0.9+ | 2004 02 13 | 691 | 0.3+ | 0.8+ | 2005 09 05 | E12 | 0.5− | 0.8− |
| 2000 05 10 | 704 | 0.0 | 0.3+ | 2004 02 13 | 691 | 0.2+ | 0.3+ | 2005 11 06 | G96 | 0.2− | 0.0 |
| 2000 05 10 | 704 | 0.1− | 1.7+ | 2004 02 13 | 691 | 0.1+ | 0.4+ | 2005 11 06 | G96 | 0.3− | 0.0 |
| 2001 09 20 | 704 | (1.6− | 0.5−) | 2004 02 16 | 704 | 0.1− | 0.3+ | 2005 11 06 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.4− | 0.9+ | 2004 02 16 | 704 | 0.5+ | 0.4+ | 2005 11 06 | G96 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.2− | 1.3+ | 2004 02 16 | 704 | 0.8+ | 0.8− | 2006 10 04 | G96 | 0.2+ | 0.4− |
| 2001 09 25 | 691 | 0.1− | 0.1− | 2004 02 16 | 704 | 1.2+ | 0.1− | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2001 09 25 | 691 | 0.1− | 0.0 | 2005 07 10 | E12 | (0.6− | 1.8+) | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2001 09 25 | 691 | 0.1− | 0.2+ | 2005 07 10 | E12 | 0.4− | 0.4− | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2001 10 11 | 644 | 0.2+ | 0.4+ | 2005 07 10 | E12 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.7− |
| 2001 10 11 | 644 | 0.1+ | 0.7+ | 2005 08 10 | E12 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.3− | 0.7− |
| 2001 10 11 | 644 | 0.8+ | 1.1+ | 2005 08 10 | E12 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.6− | 0.3− |
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2005 08 10 | E12 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.5− | 0.2− |

**(140507)∗ 2001 TH$_{164}$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.24799 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18736074 | $\omega$ | 182.61206 | | +0.86463407 | | −0.50175384 |
| $a$ | 3.0247094 | $\Omega$ | 207.55066 | | +0.46193919 | | +0.81393939 |
| $e$ | 0.1025662 | $i$ | 3.16223 | | +0.19753508 | | +0.29282376 |
| $P$ | 5.26 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 19 | 691 | 0.2− | 0.5+ | 2001 10 25 | 644 | 0.3+ | 1.2+ | 2006 09 06 | 644 | 0.1+ | 0.2+ |
| 1999 04 19 | 691 | 0.4− | 0.4+ | 2001 10 25 | 644 | 0.1+ | 1.2+ | 2006 09 06 | 644 | 0.2+ | 0.3+ |
| 1999 04 19 | 691 | 0.0 | 0.5+ | 2001 10 26 | 704 | 0.4− | 0.2− | 2006 09 17 | 704 | 1.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 26 | 704 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.3+ | 0.5− |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2001 10 26 | 704 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.9+ | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.7− | 2001 10 26 | 704 | 0.4+ | 0.6− | 2006 09 17 | 704 | 0.9+ | 0.1+ |
| 2001 09 20 | 704 | 0.8− | 0.3+ | 2001 10 26 | 704 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2001 09 22 | 699 | 0.1+ | 0.5− | 2001 11 11 | 699 | 0.9+ | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2001 09 22 | 699 | 0.6+ | 0.6− | 2001 11 11 | 699 | 0.8+ | 0.8+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2001 09 22 | 699 | 0.5+ | 0.1+ | 2001 11 11 | 699 | 0.2− | 1.0+ | 2006 09 20 | 704 | 0.6+ | 0.1+ |
| 2001 09 22 | 699 | 0.2− | 0.5+ | 2001 11 11 | 699 | 0.0 | 1.1+ | 2006 09 20 | 704 | 0.1+ | 0.7+ |
| 2001 09 26 | 333 | 0.2+ | 0.1+ | 2001 11 17 | 704 | 0.5− | 0.5+ | 2006 09 20 | 704 | 0.1− | 0.0 |
| 2001 09 26 | 333 | 1.3+ | 0.6− | 2001 11 17 | 704 | (0.7− | 1.8+) | 2006 09 20 | 704 | 0.8+ | 0.8+ |
| 2001 09 26 | 333 | 1.1− | 0.3− | 2001 11 17 | 704 | (1.3− | 1.8+) | 2006 09 20 | 704 | 0.8+ | 0.0 |
| 2001 10 11 | 644 | 0.2− | 0.1+ | 2001 11 17 | 704 | (0.6− | 2.4+) | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2001 10 11 | 644 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.2− | 0.9+ | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2001 10 11 | 644 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.4− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 699 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 699 | 0.6− | 0.2+ | 2001 11 20 | 704 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 10 14 | 699 | 0.2− | 0.2− | 2001 11 20 | 704 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2001 10 14 | 699 | 0.6+ | 0.4− | 2001 11 21 | 704 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.5− | 0.7− | 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.5+ |
| 2001 10 17 | 704 | 0.6− | 0.6− | 2001 11 21 | 704 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.3− | 0.8+ |
| 2001 10 17 | 704 | 0.3− | 0.6− | 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.3+ | 1.1+ |
| 2001 10 17 | 704 | (2.1+ | 0.7−) | 2001 11 21 | 704 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.7− | 0.3+ |
| 2001 10 17 | 704 | 0.1+ | 0.8− | 2003 01 27 | 644 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.9+ |
| 2001 10 18 | 644 | 0.2+ | 1.1+ | 2003 01 27 | 644 | 0.6− | 0.5+ | 2006 09 29 | 704 | (1.7− | 0.2−) |
| 2001 10 18 | 644 | 0.4+ | 1.2+ | 2003 01 27 | 644 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.7− | 0.4− |
| 2001 10 18 | 644 | 0.5+ | 1.4+ | 2003 01 28 | 704 | (0.6− | 2.3+) | 2006 09 29 | 704 | 1.0− | 0.1− |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2003 01 28 | 704 | (0.1− | 2.1+) | 2006 09 29 | 704 | 0.8− | 0.3+ |
| 2001 10 20 | 704 | 0.2+ | 0.8− | 2003 01 28 | 704 | 0.5− | 0.7+ | 2006 09 29 | 704 | 1.5− | 0.7− |
| 2001 10 20 | 704 | 0.4− | 1.0− | 2003 01 28 | 704 | 0.4− | 1.3+ | 2006 10 01 | 704 | 1.3− | 0.2− |
| 2001 10 22 | 704 | 0.4+ | 0.0 | 2004 04 13 | 691 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 0.8− | 0.1+ |
| 2001 10 22 | 704 | 0.4− | 0.3+ | 2004 04 13 | 691 | 0.5+ | 0.2+ | 2006 10 01 | 704 | (2.1− | 0.3−) |
| 2001 10 22 | 704 | 0.4− | 0.5+ | 2004 04 13 | 691 | 0.6+ | 0.2+ | 2006 10 01 | 704 | 1.1− | 0.5− |
| 2001 10 23 | 704 | 0.2− | 0.0 | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.9− | 0.3− |
| 2001 10 23 | 704 | 0.1− | 0.6+ | 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.3+ | 0.6+ | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.1+ | 0.7+ | 2004 05 24 | 691 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 1.4+ | 2004 05 24 | 691 | 0.3+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2001 10 25 | 704 | 0.0 | 0.2+ | 2004 05 24 | 691 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.4+ | 0.0 |
| 2001 10 25 | 704 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 10 25 | 704 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2001 10 25 | 644 | 0.1+ | 1.1+ | 2006 08 28 | 703 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 10 25 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 1.0− | 0.7− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 10 25 | 704 | 0.5− | 0.2− | 2006 09 06 | 644 | 0.2+ | 0.2+ | | | | |

**(140508)∗ 2001 TN$_{165}$ = 1994 JC$_5$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20546)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.55260 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19162182 | $\omega$ | 147.36173 | | +0.98119756 | −0.14718089 | |
| $a$ | 2.9797013 | $\Omega$ | 221.67922 | | +0.11046462 | +0.95871506 | |
| $e$ | 0.1190229 | $i$ | 10.82241 | | +0.15826848 | +0.24331713 | |
| $P$ | 5.14 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 04 | 691 | 1.9− | 2.0+ | 2001 11 17 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 1994 05 04 | 691 | 0.0 | 0.4+ | 2001 11 17 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 1994 05 11 | 691 | 0.0 | 0.7+ | 2001 11 17 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 1994 05 11 | 691 | 0.0 | 0.4+ | 2001 11 19 | 699 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 1994 05 11 | 691 | 0.3− | 0.8+ | 2001 11 19 | 699 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.1+ | |
| 1994 05 16 | 691 | 0.6+ | 0.9+ | 2001 11 19 | 699 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 1994 05 16 | 691 | 0.3+ | 1.7+ | 2001 11 19 | 699 | 0.1+ | 0.0 | 2006 10 27 | 224 | 0.8+ | 0.2+ | |
| 1994 05 16 | 691 | 0.3+ | 1.8+ | 2001 11 19 | 608 | 0.6− | 0.6+ | 2006 10 27 | 224 | 0.0 | 0.5+ | |
| 1994 05 17 | 691 | 0.6− | 0.8− | 2001 11 19 | 608 | 0.0 | 0.9+ | 2006 10 27 | 224 | 0.3+ | 0.3+ | |
| 1994 05 17 | 691 | 0.2+ | 0.2+ | 2001 11 19 | 608 | 0.4− | 0.5+ | 2006 10 28 | 704 | 0.7+ | 1.2+ | |
| 1994 05 17 | 691 | 0.4− | 0.1+ | 2001 11 20 | 704 | 0.5+ | 0.0 | 2006 10 28 | 704 | 0.2+ | 0.3+ | |
| 1999 05 18 | 691 | 0.3+ | 0.6+ | 2001 11 20 | 704 | 0.5+ | 0.6+ | 2006 10 28 | 704 | 0.9− | 1.3+ | |
| 1999 05 18 | 691 | 0.8+ | 0.2− | 2001 11 20 | 704 | 0.1+ | 0.4− | 2006 10 28 | 704 | 0.0 | 0.1+ | |
| 1999 05 18 | 691 | 1.6+ | 1.0− | 2001 11 20 | 704 | 0.5+ | 0.5+ | 2006 10 28 | 704 | 0.3− | 0.7+ | |
| 2001 09 18 | 333 | 0.5+ | 0.6− | 2001 11 20 | 704 | 0.4+ | 0.2− | 2006 10 29 | 691 | 0.2− | 0.2+ | |
| 2001 09 18 | 333 | 0.1+ | 0.3− | 2001 11 21 | 704 | 0.9− | 1.3− | 2006 10 29 | 691 | 0.2− | 0.1+ | |
| 2001 09 18 | 333 | 0.3+ | 0.4− | 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 10 29 | 691 | 0.2− | 0.2+ | |
| 2001 09 22 | 691 | 0.1+ | 0.3+ | 2001 11 21 | 704 | 0.8− | 0.0 | 2006 11 07 | 644 | 0.4+ | 0.4− | |
| 2001 09 22 | 691 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.1− | |
| 2001 09 22 | 691 | 0.5+ | 0.1+ | 2001 11 21 | 704 | 0.8− | 0.2− | 2006 11 07 | 644 | 0.3− | 0.1− | |
| 2001 10 13 | 704 | 0.5+ | 0.1− | 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ | |
| 2001 10 13 | 704 | 0.3− | 0.6− | 2001 11 21 | 704 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.1− | |
| 2001 10 13 | 704 | 0.6− | 0.0 | 2001 11 21 | 704 | 0.1− | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.1− | |
| 2001 10 13 | 704 | 0.2+ | 0.3− | 2001 12 11 | 704 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.3− | 0.1+ | |
| 2001 10 18 | 644 | 0.2+ | 0.5− | 2001 12 11 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.1+ | |
| 2001 10 18 | 644 | 0.3+ | 0.4− | 2001 12 11 | 704 | 0.2+ | 1.0+ | 2006 11 10 | 691 | 0.1− | 0.1+ | |
| 2001 10 18 | 644 | 0.2+ | 0.0 | 2001 12 11 | 704 | 0.5− | 0.7+ | 2006 11 10 | 644 | 0.2− | 0.0 | |
| 2001 10 19 | 704 | (0.3+ | 1.5−) | 2001 12 11 | 704 | 1.0− | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.0 | |
| 2001 10 19 | 704 | 1.3+ | 0.7− | 2001 12 14 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.0 | |
| 2001 10 19 | 704 | (0.3− | 2.3−) | 2001 12 14 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.7− | 0.4− | |
| 2001 10 19 | 704 | 0.2− | 0.6− | 2001 12 14 | 691 | 0.2− | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.1+ | |
| 2001 10 22 | 704 | 0.3− | 0.3+ | 2001 12 14 | 704 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3+ | |
| 2001 10 22 | 704 | 0.2− | 0.2+ | 2001 12 14 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.6+ | |
| 2001 10 22 | 704 | 0.5− | 0.0 | 2001 12 14 | 704 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.3− | |
| 2001 10 22 | 704 | 0.1− | 0.7+ | 2001 12 14 | 704 | 0.6− | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.4− | |
| 2001 10 22 | 704 | 0.2− | 0.2+ | 2001 12 14 | 704 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.4− | |
| 2001 10 23 | 704 | 0.7+ | 0.6+ | 2001 12 17 | 704 | 0.4+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.4− | |
| 2001 10 23 | 704 | 0.5+ | 0.4+ | 2001 12 17 | 704 | 0.7+ | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.2+ | |
| 2001 10 23 | 704 | 0.8+ | 0.7+ | 2001 12 17 | 704 | 1.1+ | 0.7+ | 2006 11 17 | 703 | 0.9− | 0.3− | |
| 2001 10 23 | 704 | 0.7+ | 0.9+ | 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 1.0− | 0.2− | |
| 2001 10 24 | 704 | 0.5+ | 0.3+ | 2001 12 17 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 703 | 0.6− | 0.6− | |
| 2001 10 24 | 704 | 0.7+ | 0.4+ | 2001 12 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 1.2− | 0.8− | |
| 2001 10 24 | 704 | 0.4+ | 0.5+ | 2001 12 20 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.0 | |
| 2001 10 24 | 704 | 1.1+ | 1.3+ | 2001 12 20 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.1+ | |
| 2001 10 24 | 704 | 0.9+ | 1.3+ | 2003 01 25 | 644 | 0.4− | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.3+ | |
| 2001 10 25 | 644 | 0.5− | 0.3+ | 2003 01 25 | 644 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 1.0+ | |
| 2001 10 25 | 644 | 0.6− | 0.2+ | 2003 01 25 | 644 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.7+ | |
| 2001 10 25 | 644 | 0.7− | 0.3+ | 2003 03 11 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ | |
| 2001 10 26 | 704 | 0.2+ | 0.6− | 2003 03 11 | 644 | 0.7− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.9+ | |
| 2001 10 26 | 704 | (1.5− | 0.1−) | 2003 03 11 | 644 | 1.1− | 0.8+ | 2006 11 21 | 704 | 0.6+ | 0.6+ | |
| 2001 10 26 | 704 | 0.3+ | 0.2+ | 2004 05 19 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.5+ | |
| 2001 10 26 | 704 | 0.4+ | 1.2− | 2004 05 19 | 691 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.0 | |
| 2001 11 09 | 704 | 0.1+ | 0.9− | 2004 05 19 | 691 | 0.3+ | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.0 | |
| 2001 11 09 | 704 | 0.0 | 0.4− | 2006 09 25 | 704 | 0.9+ | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.1− | |
| 2001 11 09 | 704 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.9− | 0.6− | 2006 11 22 | G96 | 0.4+ | 0.1− | |
| 2001 11 09 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.9− | 0.9+ | 2006 11 27 | 691 | 0.3+ | 0.0 | |
| 2001 11 09 | 704 | 0.2− | 0.3− | 2006 09 25 | 704 | 0.7+ | 0.6+ | 2006 11 27 | 691 | 0.2+ | 0.1+ | |
| 2001 11 15 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.1+ | |
| 2001 11 15 | 644 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2+ | | | | | |
| 2001 11 15 | 644 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.3− | 0.2+ | | | | | |

**(140509)∗ 2001 TR$_{165}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.71162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17765847 | $\omega$ | 121.58779 | | +0.69660549 | −0.71391673 | |
| $a$ | 3.1338541 | $\Omega$ | 284.07884 | | +0.63089104 | +0.65676665 | |
| $e$ | 0.1701090 | $i$ | 4.20719 | | +0.34163913 | +0.24285894 | |
| $P$ | 5.55 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.3− | 0.1− | 2001 11 12 | 704 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.3− | 0.1+ | |
| 1995 10 23 | 691 | 0.2+ | 0.2+ | 2001 11 12 | 704 | 0.2− | 0.5+ | 2006 08 29 | 691 | 0.4− | 0.3+ | |
| 1995 10 23 | 691 | 0.1+ | 0.1− | 2001 11 17 | 644 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.4+ | 0.4− | |
| 2001 08 22 | 704 | 1.6− | 1.1+ | 2001 11 17 | 644 | 0.1+ | 0.7+ | 2006 08 30 | 704 | 0.4+ | 0.5+ | |
| 2001 08 22 | 704 | 0.2+ | 1.0+ | 2001 11 17 | 644 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.0 | 0.3+ | |
| 2001 08 22 | 704 | 0.1+ | 0.9+ | 2001 11 24 | 704 | 0.5− | 0.4+ | 2006 08 30 | 704 | 0.5+ | 0.6− | |
| 2001 10 13 | 699 | 0.4− | 0.2− | 2001 11 24 | 704 | 0.6+ | 0.3+ | 2006 08 30 | 704 | 0.1+ | 0.1+ | |
| 2001 10 13 | 699 | 0.3+ | 0.2− | 2001 11 24 | 704 | 0.6+ | 0.1− | 2006 09 18 | 704 | 0.6+ | 0.3− | |
| 2001 10 13 | 699 | 0.2+ | 0.6− | 2001 11 24 | 704 | 0.9+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.6− | |
| 2001 10 13 | 699 | 0.0 | 0.3+ | 2001 11 24 | 704 | 0.3− | 0.9− | 2006 09 18 | 704 | 0.6− | 0.6− | |
| 2001 10 14 | 704 | (1.2+ | 2.1−) | 2001 12 11 | 704 | 0.0 | 0.9+ | 2006 09 19 | 703 | 0.2+ | 0.8− | |
| 2001 10 14 | 704 | (1.2+ | 2.4−) | 2001 12 11 | 704 | 1.0− | 0.3+ | 2006 09 19 | 703 | 1.1− | 0.2− | |
| 2001 10 14 | 704 | (1.2+ | 2.6−) | 2001 12 11 | 704 | 0.5− | 0.3+ | 2006 09 19 | 703 | 1.0+ | 0.0 | |
| 2001 10 14 | 704 | (1.1+ | 2.2−) | 2001 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.3− | |
| 2001 10 14 | 704 | (2.0+ | 2.4−) | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.7+ | 0.8− | |
| 2001 10 19 | 704 | 0.3+ | 0.3− | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 09 25 | 704 | 1.5+ | 1.0+ | |
| 2001 10 19 | 704 | 0.0 | 0.0 | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 25 | 704 | (0.0 | 2.1+) | |
| 2001 10 19 | 704 | 0.1+ | 0.3− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.0 | |
| 2001 10 19 | 704 | 0.4+ | 0.9− | 2003 03 12 | 644 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 0.7− | 0.8+ | |
| 2001 10 19 | 704 | 0.4+ | 0.8− | 2003 03 12 | 644 | 0.3+ | 0.6+ | 2006 09 29 | 699 | 0.3− | 0.2− | |
| 2001 10 21 | 704 | 0.4+ | 0.0 | 2003 03 12 | 644 | 0.7+ | 0.7+ | 2006 09 29 | 699 | 1.3− | 0.7− | |
| 2001 10 21 | 704 | 0.6+ | 0.2+ | 2006 08 24 | 704 | 0.7− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ | |
| 2001 10 21 | 704 | 0.7+ | 0.3− | 2006 08 24 | 704 | 0.7+ | 0.9− | 2006 09 30 | 691 | 0.1− | 0.1+ | |
| 2001 10 21 | 704 | 0.5+ | 0.4− | 2006 08 24 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.2+ | |
| 2001 10 25 | 691 | 0.6− | 0.2− | 2006 08 24 | 704 | 0.0 | 0.7+ | 2006 10 02 | G96 | 1.8+ | 0.4+ | |
| 2001 10 25 | 691 | 0.4− | 0.4− | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.1+ | |
| 2001 10 25 | 691 | 0.6− | 0.3− | 2006 08 28 | 703 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− | |
| 2001 11 10 | 704 | 0.7+ | 0.2+ | 2006 08 28 | 699 | 0.2+ | 1.1+ | 2006 10 02 | G96 | 0.4− | 0.4− | |
| 2001 11 10 | 704 | 0.7+ | 0.0 | 2006 08 28 | 703 | 0.8− | 0.5− | 2006 10 02 | G96 | 0.2− | 1.1+ | |
| 2001 11 10 | 704 | 0.8+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.1− | 0.6− | |
| 2001 11 10 | 704 | 1.1+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.5− | |
| 2001 11 12 | 704 | 0.6+ | 0.4− | 2006 08 28 | 699 | 0.8− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.0 | |
| 2001 11 12 | 704 | 0.6− | 0.8+ | 2006 08 28 | 699 | 1.1+ | 0.0 | | | | | |
| 2001 11 12 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 691 | 0.3− | 0.2+ | | | | | |

**(140510)∗ 2001 TT$_{165}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.55366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17675321 | $\omega$ | 270.67371 | | −0.78593785 | −0.58286756 | |
| $a$ | 3.1445452 | $\Omega$ | 233.69607 | | +0.61820775 | −0.74670810 | |
| $e$ | 0.0621784 | $i$ | 14.83364 | | −0.01099387 | −0.32045658 | |
| $P$ | 5.58 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.8+ | 0.4+ | 2001 12 19 | 704 | (0.9− | 1.6+) | 2004 05 15 | 704 | (1.8+ | 0.3−) | |
| 2001 10 14 | 704 | 1.3+ | 1.1+ | 2001 12 19 | 704 | 0.4− | 0.2+ | 2004 05 15 | 704 | 1.0+ | 0.4+ | |
| 2001 10 14 | 704 | 0.4+ | 0.5+ | 2001 12 19 | 704 | 0.3− | 0.0 | 2004 05 15 | 704 | 1.0+ | 1.3+ | |
| 2001 10 14 | 704 | 0.7+ | 0.7+ | 2002 11 13 | 645 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.1− | 0.3+ | |
| 2001 10 19 | 704 | 0.7− | 0.7− | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.3+ | 0.6+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 704 | (0.5+ | 1.5−) | 2002 12 08 | 644 | 0.2+ | 0.7+ | 2006 09 06 | 644 | 0.1+ | 0.0 |
| 2001 10 19 | 704 | (0.3− | 2.4−) | 2002 12 08 | 644 | 0.2− | 0.2− | 2006 09 06 | 644 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.8+ | 0.2− | 2002 12 08 | 644 | 0.2+ | 0.3+ | 2006 09 06 | 644 | 0.4− | 0.1− |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2003 01 02 | 704 | 0.5+ | 1.2+ | 2006 09 06 | 644 | 1.0+ | 0.1− |
| 2001 10 21 | 704 | 0.3− | 0.4− | 2003 01 02 | 704 | (0.2+ | 1.8+) | 2006 09 16 | 703 | 1.0− | 0.2− |
| 2001 10 26 | 644 | 0.5+ | 1.3+ | 2003 01 02 | 704 | (0.2− | 1.5+) | 2006 09 16 | 703 | 0.6− | 1.0+ |
| 2001 10 26 | 644 | 0.2+ | 1.3+ | 2003 01 02 | 704 | 0.3− | 1.0+ | 2006 09 16 | 703 | 0.4+ | 0.4+ |
| 2001 10 26 | 644 | 0.7+ | 1.3+ | 2004 03 15 | 644 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.1− |
| 2001 11 10 | 704 | 0.2− | 0.3− | 2004 03 15 | 644 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.6+ | 0.5− |
| 2001 11 10 | 704 | 0.3+ | 0.2+ | 2004 03 15 | 644 | 0.0 | 0.6+ | 2006 09 27 | 703 | 0.8+ | 0.9− |
| 2001 11 10 | 704 | 0.0 | 0.3+ | 2004 04 14 | 699 | 0.7+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.4+ |
| 2001 11 10 | 704 | 0.2− | 0.4− | 2004 04 14 | 699 | 0.4− | 0.9− | 2006 09 27 | 703 | 0.3+ | 0.7− |
| 2001 11 17 | 644 | 0.1− | 0.2− | 2004 04 14 | 699 | 0.7+ | 0.1+ | 2006 09 29 | 699 | 0.6− | 1.3+ |
| 2001 11 17 | 644 | 0.1+ | 0.0 | 2004 04 14 | 699 | 0.8+ | 0.5+ | 2006 09 29 | 699 | 1.1+ | 0.3+ |
| 2001 11 17 | 644 | 0.2+ | 0.3+ | 2004 04 17 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.2− | 2004 04 17 | 704 | 0.4− | 0.5+ | 2006 09 29 | 699 | 0.1− | 0.6+ |
| 2001 11 19 | 704 | 0.1− | 0.2+ | 2004 04 17 | 704 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 1.1− | 1.5+ |
| 2001 11 19 | 704 | 0.0 | 0.2− | 2004 04 17 | 644 | 0.2+ | 0.5+ | 2006 10 03 | 703 | 0.6− | 0.5− |
| 2001 11 19 | 704 | 0.2+ | 0.1− | 2004 04 17 | 644 | 0.1+ | 0.4+ | 2006 10 03 | 703 | 0.2− | 0.3+ |
| 2001 11 19 | 704 | 0.0 | 0.5− | 2004 04 17 | 644 | 0.5− | 0.3+ | 2006 10 03 | 703 | (1.8+ | 0.4+) |
| 2001 11 24 | 704 | 0.3+ | 0.3+ | 2004 04 25 | 704 | 0.1− | 0.7+ | 2006 10 17 | 703 | (0.7− | 2.0+) |
| 2001 11 24 | 704 | 0.1− | 0.1− | 2004 04 25 | 704 | 0.4− | 0.8+ | 2006 10 17 | 703 | (1.5− | 0.6+) |
| 2001 11 24 | 704 | 0.8− | 0.3+ | 2004 04 25 | 704 | 0.7− | 1.0+ | 2006 10 17 | 703 | 0.8− | 0.8− |
| 2001 11 24 | 704 | 0.7− | 0.2+ | 2004 04 25 | 704 | 0.7− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.6+ |
| 2001 12 11 | 704 | (1.7− | 0.2+) | 2004 04 26 | 704 | 0.3− | 0.2− | 2006 10 23 | 703 | 0.7+ | 1.5+ |
| 2001 12 11 | 704 | 0.6− | 1.3− | 2004 04 26 | 704 | 0.0 | 0.4+ | 2006 10 23 | 703 | 1.0+ | 0.9− |
| 2001 12 11 | 704 | 0.1− | 0.9− | 2004 04 26 | 704 | 0.0 | 0.3+ | 2006 10 23 | 703 | 0.2− | 2.2− |
| 2001 12 15 | 704 | 0.3− | 0.5+ | 2004 04 26 | 704 | 0.2− | 1.1+ | 2006 10 23 | 703 | 0.1+ | 0.4− |
| 2001 12 15 | 704 | 0.7− | 0.8+ | 2004 04 26 | 704 | 0.0 | 0.0 | 2006 10 26 | 703 | 0.1− | 0.6+ |
| 2001 12 15 | 704 | 0.2− | 0.1+ | 2004 04 26 | 704 | 0.1− | 0.1− | 2006 10 26 | 703 | 0.3− | 0.7+ |
| 2001 12 15 | 704 | 0.9− | 0.7+ | 2004 04 26 | 704 | 0.7+ | 0.4+ | 2006 10 26 | 703 | 0.1− | 1.5+ |
| 2001 12 15 | 704 | 1.0− | 0.2+ | 2004 04 26 | 704 | 0.2+ | 0.1− | 2006 10 26 | 703 | 1.1− | 0.7− |
| 2001 12 19 | 704 | 0.2− | 1.1+ | 2004 04 26 | 704 | 0.3− | 0.3+ | | | | |
| 2001 12 19 | 704 | 0.6+ | 1.3+ | 2004 04 26 | 704 | 0.3+ | 0.7+ | | | | |

**(140511)∗ 2001 TF$_{166}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.35715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17899358 | $\omega$ | 201.74722 | | −0.07747035 | −0.95806755 | |
| $a$ | 3.1182510 | $\Omega$ | 253.55951 | | +0.95187538 | +0.01122222 | |
| $e$ | 0.1433618 | $i$ | 16.71619 | | +0.29653262 | −0.28632259 | |
| $P$ | 5.51 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.3− | 0.6− | 2001 11 12 | 704 | 0.4− | 0.1+ | 2004 04 14 | 644 | 0.7− | 0.5+ |
| 2001 10 13 | 644 | 0.3− | 0.6− | 2001 12 10 | 704 | 0.5− | 0.7− | 2004 04 14 | 644 | 0.0 | 0.3+ |
| 2001 10 13 | 644 | 0.2− | 0.7− | 2001 12 10 | 704 | 0.9− | 0.5− | 2004 04 14 | 644 | 0.1+ | 0.7+ |
| 2001 10 15 | 704 | 0.3+ | 0.4− | 2001 12 10 | 704 | 0.2− | 0.2− | 2004 06 12 | E12 | 0.4+ | 1.1− |
| 2001 10 15 | 704 | 0.5+ | 0.6− | 2001 12 10 | 704 | 0.0 | 0.3− | 2004 06 12 | E12 | 0.3+ | 0.3+ |
| 2001 10 15 | 704 | (1.6− | 1.0−) | 2002 01 09 | 704 | 0.3− | 0.6+ | 2004 06 12 | E12 | 0.5+ | 0.2+ |
| 2001 10 15 | 704 | (1.6+ | 0.7−) | 2002 01 09 | 704 | 0.5− | 0.8+ | 2004 06 12 | E12 | 0.6− | 0.1− |
| 2001 10 15 | 704 | 0.6+ | 0.7− | 2002 01 09 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.3− | 1.2+ |
| 2001 10 19 | 704 | 1.2− | 1.4+ | 2003 01 13 | 644 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.4+ | 0.3+ |
| 2001 10 19 | 704 | (1.8− | 1.0+) | 2003 01 13 | 644 | 0.5+ | 0.6+ | 2006 09 16 | 703 | 0.4− | 0.2+ |
| 2001 10 19 | 704 | 0.7− | 1.3+ | 2003 01 13 | 644 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.1+ |
| 2001 10 19 | 704 | 1.4− | 0.5+ | 2003 02 25 | 608 | 0.8− | 1.1− | 2006 09 28 | 703 | 0.7− | 0.1+ |
| 2001 10 19 | 704 | 0.9− | 0.8+ | 2003 02 25 | 608 | 0.4+ | 1.3− | 2006 09 28 | 703 | 0.1+ | 1.0+ |
| 2001 10 26 | 291 | 0.7+ | 0.6− | 2003 02 25 | 608 | 0.4+ | 0.7− | 2006 09 28 | 703 | 0.8+ | 0.4+ |
| 2001 10 26 | 291 | 0.9+ | 0.6− | 2003 02 26 | 608 | 0.4+ | 0.6− | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 2001 10 26 | 291 | 0.6+ | 0.6− | 2003 02 26 | 608 | 0.6+ | 0.5− | 2006 10 20 | 703 | 0.2+ | 0.1− |
| 2001 11 10 | 704 | 0.1+ | 0.3+ | 2003 02 26 | 608 | 0.1− | 0.5− | 2006 10 20 | 703 | 0.1− | 0.5+ |
| 2001 11 10 | 704 | 0.4− | 1.2+ | 2003 03 09 | 699 | 0.7+ | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.9+ |
| 2001 11 10 | 704 | 0.3− | 0.5+ | 2003 03 09 | 699 | 0.0 | 0.4+ | 2006 10 20 | 703 | 0.1− | 0.8+ |
| 2001 11 10 | 704 | 0.4− | 0.8+ | 2003 03 09 | 699 | 1.4+ | 0.8+ | 2006 10 26 | 703 | 0.9− | 0.2− |
| 2001 11 10 | 704 | (0.7− | 1.9+) | 2003 03 09 | 699 | 1.4− | 0.3+ | 2006 10 26 | 703 | 0.4+ | 0.1+ |
| 2001 11 11 | 644 | 0.5− | 0.4+ | 2003 03 10 | 704 | 0.4− | 1.3+ | 2006 10 26 | 703 | 0.7− | 0.2+ |
| 2001 11 11 | 644 | 0.7− | 0.5+ | 2003 03 10 | 704 | 1.3− | 0.6+ | 2006 10 26 | 703 | (0.5− | 1.9+) |
| 2001 11 11 | 644 | 0.6− | 0.8+ | 2003 03 10 | 704 | 0.1+ | 0.1− | 2006 11 25 | 703 | 0.6+ | 0.8− |
| 2001 11 12 | 704 | 0.1− | 0.2− | 2003 03 10 | 704 | 0.7− | 0.4+ | 2006 11 25 | 703 | 0.3− | 0.5+ |
| 2001 11 12 | 704 | 0.2+ | 0.9+ | 2003 03 27 | 608 | 0.2+ | 0.3+ | 2006 11 25 | 703 | 0.4− | 0.6− |
| 2001 11 12 | 704 | 0.3+ | 0.7+ | 2003 03 27 | 608 | 0.1+ | 1.3+ | 2006 11 25 | 703 | 0.3− | 0.9− |
| 2001 11 12 | 704 | 0.2− | 0.1+ | 2003 03 27 | 608 | 0.2+ | 0.6+ | | | | |

**(140512)∗ 2001 TN$_{166}$ = 1990 TT$_6$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20547)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.64740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18875342 | $\omega$ | 24.99876 | | +0.99711195 | +0.01741319 | |
| $a$ | 3.0098128 | $\Omega$ | 333.68116 | | −0.05402870 | +0.84669755 | |
| $e$ | 0.0797402 | $i$ | 9.59776 | | +0.05337275 | +0.53178947 | |
| $P$ | 5.22 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 09 | 413 | 0.4− | 0.3− | 2001 11 11 | 644 | 0.6+ | 0.8+ | 2003 02 02 | 644 | 0.0 | 0.1− |
| 1990 10 11 | 413 | 1.0+ | 1.3+ | 2001 11 11 | 644 | 0.6+ | 0.7+ | 2003 02 04 | 704 | 0.0 | 0.4+ |
| 2001 08 23 | 704 | (3.4− | 0.6−) | 2001 12 14 | 704 | 0.7− | 0.0 | 2003 02 04 | 704 | 0.3+ | 0.1− |
| 2001 08 23 | 704 | (4.2− | 0.6−) | 2001 12 14 | 704 | 0.2− | 0.8+ | 2003 02 04 | 704 | 0.4− | 0.6+ |
| 2001 08 23 | 704 | (3.7− | 0.2+) | 2001 12 14 | 704 | 0.2+ | 0.2+ | 2003 02 04 | 704 | 0.0 | 0.9+ |
| 2001 08 23 | 704 | (4.3− | 0.8+) | 2001 12 14 | 704 | 0.1+ | 0.6+ | 2003 02 04 | 704 | 0.4− | 1.1+ |
| 2001 09 25 | 704 | 0.2+ | 0.6− | 2001 12 14 | 704 | 1.0− | 0.1− | 2004 04 09 | E12 | 0.4+ | 1.3+ |
| 2001 09 25 | 704 | 0.3+ | 0.5− | 2002 01 08 | 704 | (1.9+ | 0.5+) | 2004 04 09 | E12 | 0.3+ | 1.0+ |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2002 01 08 | 704 | 1.1+ | 0.5+ | 2004 04 09 | E12 | 0.2− | 1.0+ |
| 2001 09 25 | 704 | 0.3+ | 0.5+ | 2002 01 08 | 704 | 1.4+ | 0.1+ | 2004 04 09 | E12 | 0.6− | 0.8+ |
| 2001 09 25 | 704 | 1.0+ | 0.7+ | 2002 01 08 | 704 | (2.6+ | 1.0−) | 2004 04 17 | 704 | 1.0+ | 1.3+ |
| 2001 10 13 | 644 | 0.1− | 0.4+ | 2002 12 31 | 704 | 0.2− | 1.0+ | 2004 04 17 | 704 | 0.4+ | 1.4+ |
| 2001 10 13 | 644 | 0.2− | 0.5+ | 2002 12 31 | 704 | 0.5+ | 0.9− | 2004 04 17 | 704 | 0.9+ | 0.7+ |
| 2001 10 13 | 644 | 0.4− | 0.4+ | 2002 12 31 | 704 | 0.5− | 1.4− | 2004 04 17 | 704 | 0.8+ | 0.4+ |
| 2001 10 15 | 704 | 0.8− | 0.6+ | 2002 12 31 | 704 | 0.6− | 0.3− | 2006 08 30 | 699 | 0.7+ | 0.4+ |
| 2001 10 15 | 704 | 0.5− | 0.1+ | 2002 12 31 | 704 | (1.3+ | 2.4−) | 2006 08 30 | 699 | 1.1− | 1.1+ |
| 2001 10 15 | 704 | 1.0− | 0.1− | 2003 01 09 | 704 | 0.6+ | 0.2− | 2006 08 30 | 699 | 0.8+ | 0.7− |
| 2001 10 15 | 704 | 0.4− | 0.8+ | 2003 01 09 | 704 | 0.2− | 0.5− | 2006 08 30 | 699 | 0.3+ | 1.0+ |
| 2001 10 15 | 704 | 0.8− | 0.8+ | 2003 01 09 | 704 | 0.7− | 0.6− | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 2001 10 19 | 704 | 0.1+ | 0.6− | 2003 01 09 | 704 | 0.3− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1− |
| 2001 10 19 | 704 | 0.6+ | 0.5− | 2003 01 09 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.4+ |
| 2001 10 19 | 704 | 0.3+ | 0.3+ | 2003 01 10 | 704 | 0.9+ | 0.6+ | 2006 09 28 | 703 | 0.6− | 0.2+ |
| 2001 10 19 | 704 | 0.3+ | 0.7− | 2003 01 10 | 704 | 0.8+ | 1.4+ | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2001 10 19 | 704 | 0.8+ | 1.2− | 2003 01 10 | 704 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.5− |
| 2001 10 26 | 291 | 0.8− | 0.4− | 2003 01 27 | 699 | 0.8+ | 0.7− | 2006 09 28 | 703 | 0.5− | 0.2+ |
| 2001 10 26 | 291 | 0.8− | 0.5− | 2003 01 27 | 699 | 0.9− | 0.3− | 2006 09 28 | 703 | (0.6+ | 1.8−) |
| 2001 10 26 | 291 | 0.8− | 0.4− | 2003 01 27 | 699 | 1.4+ | 0.6− | 2006 09 28 | 703 | 0.2− | 0.2+ |
| 2001 10 27 | 704 | (2.2+ | 0.3+) | 2003 01 27 | 699 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.0 | 0.5+ |
| 2001 10 27 | 704 | (2.0+ | 0.0 ) | 2003 01 30 | 699 | 0.1+ | 0.5− | 2006 09 28 | 703 | 0.1+ | 0.8+ |
| 2001 10 27 | 704 | (1.8+ | 0.3+) | 2003 01 30 | 699 | 0.0 | 0.3+ | 2006 10 04 | 703 | 0.4− | 0.3+ |
| 2001 10 27 | 704 | 1.0+ | 0.3− | 2003 01 30 | 699 | 0.4+ | 0.7− | 2006 10 04 | 703 | 0.5− | 0.1+ |
| 2001 10 27 | 704 | (1.8+ | 1.2−) | 2003 01 30 | 699 | 0.7+ | 0.1− | 2006 10 04 | 703 | 0.8+ | 0.3+ |
| 2001 11 10 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 644 | 0.2+ | 0.2− | 2006 10 04 | 703 | 1.0− | 0.4− |
| 2001 11 10 | 704 | 0.7+ | 0.1+ | 2003 01 31 | 644 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2001 11 10 | 704 | 0.8− | 0.1− | 2003 01 31 | 644 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 11 10 | 704 | 1.0− | 0.7− | 2003 02 01 | 704 | 0.7− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 11 11 | 704 | 0.2+ | 0.1+ | 2003 02 01 | 704 | 0.0 | 0.5− | 2006 10 31 | 703 | 0.9+ | 0.2+ |
| 2001 11 11 | 704 | 0.4+ | 0.2− | 2003 02 01 | 704 | (0.3+ | 1.9−) | 2006 10 31 | 703 | 0.2+ | 0.3+ |
| 2001 11 11 | 704 | 0.9+ | 0.2− | 2003 02 01 | 704 | 0.3− | 0.7+ | 2006 10 31 | 703 | 0.4− | 0.7+ |
| 2001 11 11 | 704 | 0.6+ | 0.2+ | 2003 02 01 | 704 | 0.4− | 0.4− | 2006 10 31 | 703 | 1.0+ | 0.5+ |
| 2001 11 11 | 704 | 0.5+ | 0.7+ | 2003 02 02 | 644 | 0.0 | 0.2− | | | | |
| 2001 11 11 | 644 | 0.7+ | 0.9+ | 2003 02 02 | 644 | 0.3− | 0.7+ | | | | |

**(140513)∗ 2001 TY$_{166}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.21687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18901461 | $\omega$ | 83.49883 | | +0.69473886 | −0.71285129 | |
| $a$ | 3.0070394 | $\Omega$ | 321.89936 | | +0.58317784 | +0.63624826 | |
| $e$ | 0.1480578 | $i$ | 8.93328 | | +0.42100063 | +0.29501050 | |
| $P$ | 5.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 24 | 691 | 0.5− | 0.6− | 2001 11 10 | 704 | 1.3− | 0.0 | 2003 03 12 | 644 | 0.9+ | 0.5+ |
| 1998 02 24 | 691 | 0.4− | 0.8− | 2001 11 10 | 704 | 0.4− | 0.2+ | 2003 03 12 | 644 | 0.5+ | 0.4+ |
| 1998 02 24 | 691 | 0.5− | 0.6− | 2001 11 10 | 704 | 0.7− | 0.2− | 2006 08 29 | 699 | (1.8− | 1.0+) |
| 2001 09 21 | 644 | 0.7+ | 0.3+ | 2001 11 10 | 704 | (0.3− | 1.5−) | 2006 08 29 | 699 | 1.1+ | 0.8+ |
| 2001 09 21 | 644 | 0.3+ | 0.2− | 2001 11 11 | 704 | 0.8+ | 0.1− | 2006 08 29 | 699 | 0.2− | 1.2+ |
| 2001 09 21 | 644 | 0.5+ | 0.1+ | 2001 11 11 | 704 | 0.2+ | 0.4+ | 2006 08 29 | 699 | 0.3+ | 0.7+ |
| 2001 09 24 | 704 | 0.7− | 0.2+ | 2001 11 11 | 704 | 0.9+ | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2001 09 24 | 704 | 1.0− | 0.8− | 2001 11 11 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.1− |
| 2001 09 24 | 704 | 0.0 | 1.3− | 2001 11 11 | 704 | 1.2+ | 1.2+ | 2006 09 14 | 644 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.0 | 0.6− | 2002 01 08 | 704 | 0.2+ | 1.3− | 2006 09 28 | 703 | 0.3− | 0.0 |
| 2001 09 25 | 704 | 0.1− | 1.0− | 2002 01 08 | 704 | 0.8+ | 0.2+ | 2006 09 28 | 703 | 0.5+ | 0.5+ |
| 2001 09 25 | 704 | 0.2− | 0.8− | 2002 01 08 | 704 | 0.5− | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 0.3+ | 0.6− | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.2− | 0.7+ |
| 2001 10 15 | 704 | 0.2+ | 0.0 | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.9− | 0.6− |
| 2001 10 15 | 704 | 0.1+ | 0.1+ | 2003 01 25 | 291 | 0.0 | 0.4+ | 2006 10 04 | 703 | 0.1− | 0.2+ |
| 2001 10 15 | 704 | 0.1− | 0.0 | 2003 01 25 | 291 | 0.0 | 0.4+ | 2006 10 04 | 703 | 0.3+ | 0.2− |
| 2001 10 15 | 704 | 0.2+ | 0.4+ | 2003 01 25 | 291 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.5− |
| 2001 10 15 | 704 | 0.6+ | 0.6+ | 2003 01 30 | 699 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 10 19 | 704 | 1.1+ | 0.4− | 2003 01 30 | 699 | 0.1− | 1.0+ | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2001 10 19 | 704 | 0.7+ | 0.2+ | 2003 01 30 | 699 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2001 10 19 | 704 | (1.7+ | 0.6+) | 2003 01 30 | 699 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2001 10 19 | 704 | (1.7+ | 0.7−) | 2003 02 12 | 608 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2001 10 19 | 704 | 0.6+ | 0.2+ | 2003 02 12 | 608 | 1.0+ | 0.5− | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2001 10 27 | 704 | 1.4− | 0.2− | 2003 02 12 | 608 | 0.9+ | 0.4− | 2006 10 31 | 703 | 0.4− | 0.3− |
| 2001 10 27 | 704 | 0.8− | 0.7− | 2003 02 22 | 644 | 0.4+ | 0.1+ | 2006 10 31 | 703 | 0.4+ | 0.4− |
| 2001 10 27 | 704 | 0.8− | 0.4− | 2003 02 22 | 644 | 0.7+ | 0.2+ | 2006 10 31 | 703 | 0.0 | 0.2− |
| 2001 10 27 | 704 | (1.6− | 0.0 ) | 2003 02 22 | 644 | 0.5+ | 0.1− | 2006 10 31 | 703 | 0.2+ | 0.2+ |
| 2001 10 27 | 704 | 0.8− | 0.0 | 2003 03 12 | 644 | 0.9+ | 0.6+ | | | | |

**(140514)∗ 2001 TF$_{167}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.18297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18042062 | $\omega$ | 88.53333 | | +0.13026650 | −0.99131253 | |
| $a$ | 3.1017867 | $\Omega$ | 353.89140 | | +0.82819109 | +0.11886911 | |
| $e$ | 0.1433375 | $i$ | 9.83065 | | +0.54509646 | +0.05629918 | |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 25 | 691 | 0.3− | 0.6+ | 2003 02 22 | 644 | 1.2+ | 0.2+ | 2006 09 17 | 704 | 0.5− | 0.3− |
| 1992 02 25 | 691 | 0.9+ | 0.8+ | 2003 02 22 | 644 | 1.4+ | 0.5+ | 2006 09 17 | 704 | (2.3− | 0.6−) |
| 1992 02 25 | 691 | 0.5− | 0.5− | 2003 02 22 | 644 | 1.3+ | 0.4+ | 2006 09 17 | 703 | 0.5+ | 0.3− |
| 1995 09 29 | 691 | 0.2− | 0.3+ | 2003 02 28 | 608 | 0.6+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.5+ |
| 1995 09 29 | 691 | 0.1+ | 0.3+ | 2003 02 28 | 608 | 0.3+ | 0.5− | 2006 09 17 | 703 | 0.1+ | 0.8− |
| 1995 09 29 | 691 | 0.0 | 0.3+ | 2003 02 28 | 608 | 0.4+ | 0.2− | 2006 09 17 | 703 | 0.3− | 0.7− |
| 2001 10 15 | 704 | 0.4− | 0.4+ | 2003 03 06 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.7− | 0.7+ |
| 2001 10 15 | 704 | 0.5+ | 0.0 | 2003 03 06 | 704 | 0.7+ | 0.1− | 2006 09 27 | 704 | 0.8− | 1.1+ |
| 2001 10 15 | 704 | 0.4+ | 0.6+ | 2003 03 06 | 704 | (0.1− | 1.6+) | 2006 09 27 | 704 | 0.7− | 1.3+ |
| 2001 10 15 | 704 | 0.2+ | 0.4+ | 2003 03 06 | 704 | 0.6− | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.5+ |
| 2001 10 19 | 704 | 0.3+ | 1.0− | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.9+ | 0.2− |
| 2001 10 19 | 704 | 0.5+ | 0.7− | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 10 16 | 703 | (1.5− | 0.6+) |
| 2001 10 19 | 704 | 0.7− | 0.3− | 2006 08 19 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2001 10 27 | 704 | 0.4+ | 0.6+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.3− |
| 2001 10 27 | 704 | 0.2− | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2001 10 27 | 704 | 1.5− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2001 11 11 | 704 | 0.2+ | 0.9− | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.2− | 0.3− |
| 2001 11 11 | 704 | 0.3− | 0.9− | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.4− |
| 2001 11 11 | 704 | 0.8+ | 0.7− | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2001 11 11 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2001 11 11 | 704 | 1.4+ | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.7− |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2002 12 14 | 645 | 0.2− | 0.0 | 2006 09 16 | 691 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2003 02 21 | 644 | 1.1+ | 0.2+ | 2006 09 16 | 691 | 0.2− | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.2− |
| 2003 02 21 | 644 | 1.2+ | 0.5+ | 2006 09 17 | 704 | 1.1− | 0.5− | 2006 10 24 | 644 | 0.2+ | 0.1− |
| 2003 02 21 | 644 | 1.0+ | 0.3+ | 2006 09 17 | 704 | (1.3− | 1.6−) | 2006 10 24 | 644 | 0.1+ | 0.2− |

**(140515)∗ 2001 TA$_{169}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.43372 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17959521 | $\omega$ | 74.81760 | | +0.72761429 | −0.68160115 | |
| $a$ | 3.1112832 | $\Omega$ | 328.03462 | | +0.55975139 | +0.65518395 | |
| $e$ | 0.0897616 | $i$ | 8.41149 | | +0.39655495 | +0.32581262 | |
| $P$ | 5.49 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.3− | 1.0+ | 2003 02 22 | 699 | 0.3− | 1.0+ | 2006 09 25 | 704 | 0.6+ | 0.1− |
| 2000 08 31 | 691 | 0.4− | 0.8+ | 2003 02 24 | 608 | 0.0 | 0.4− | 2006 09 25 | 291 | 0.3− | 0.1− |
| 2000 08 31 | 691 | 0.3− | 0.8+ | 2003 02 24 | 608 | 0.2+ | 0.6− | 2006 09 25 | 291 | 0.3− | 0.1− |
| 2001 10 15 | 704 | (1.8− | 0.4−) | 2003 02 24 | 608 | 0.7+ | 0.5− | 2006 09 25 | 704 | 0.0 | 0.6+ |
| 2001 10 15 | 704 | 1.2− | 0.1− | 2003 03 06 | 644 | 0.5+ | 0.6+ | 2006 09 25 | 291 | 0.4− | 0.1− |
| 2001 10 15 | 704 | (2.1− | 0.6−) | 2003 03 06 | 644 | 0.9+ | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.5+ |
| 2001 10 15 | 704 | (2.4− | 0.0 ) | 2003 03 06 | 644 | 0.6+ | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.5+ |
| 2001 10 15 | 704 | (2.3− | 0.2−) | 2003 03 08 | 291 | 0.0 | 0.3+ | 2006 09 25 | 683 | 0.7+ | 0.5+ |
| 2001 10 19 | 704 | 0.2+ | 0.3+ | 2003 03 08 | 291 | 0.5+ | 0.6+ | 2006 09 25 | 704 | 0.2+ | 0.7+ |
| 2001 10 19 | 704 | 0.1+ | 0.1+ | 2003 03 08 | 291 | 0.7+ | 0.6+ | 2006 09 25 | 683 | (0.3− | 1.9+) |
| 2001 10 19 | 704 | 0.8+ | 0.6− | 2004 04 22 | E12 | 0.3− | 0.8+ | 2006 09 25 | 683 | 0.4− | 0.7+ |
| 2001 10 19 | 704 | 0.7+ | 0.1− | 2004 04 22 | E12 | (0.2− | 2.5+) | 2006 09 27 | 699 | 0.0 | 0.2+ |
| 2001 10 19 | 704 | 0.6+ | 0.3+ | 2004 04 22 | E12 | 0.2+ | 0.6+ | 2006 09 27 | 699 | 0.5− | 0.2+ |
| 2001 10 27 | 704 | 1.0+ | 1.0− | 2004 04 22 | E12 | 0.8− | 0.7+ | 2006 09 27 | 699 | 0.0 | 0.4+ |
| 2001 10 27 | 704 | 0.1− | 1.2− | 2006 08 27 | 683 | 0.3+ | 0.9− | 2006 09 27 | 699 | (0.2+ | 1.6+) |
| 2001 10 27 | 704 | 0.5+ | 0.1− | 2006 08 27 | 683 | 0.3− | 0.5− | 2006 09 27 | 683 | (2.2+ | 1.5−) |
| 2001 10 27 | 704 | (0.6− | 1.6−) | 2006 08 27 | 683 | 0.4− | 0.3− | 2006 09 27 | 703 | 0.2− | 0.3− |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2006 08 28 | 683 | (0.5+ | 1.6−) | 2006 09 27 | 703 | 0.4− | 0.5− |
| 2001 11 11 | 704 | 0.3− | 0.1− | 2006 08 28 | 683 | 0.1− | 0.9+ | 2006 09 27 | 703 | 0.2− | 0.1− |
| 2001 11 11 | 704 | 0.1− | 0.3− | 2006 08 28 | 683 | 1.3− | 0.8− | 2006 09 27 | 683 | (1.7+ | 0.7+) |
| 2001 11 11 | 704 | 0.2+ | 0.0 | 2006 08 29 | 699 | 1.4− | 0.0 | 2006 09 27 | 703 | 0.3− | 0.1+ |
| 2001 11 11 | 704 | 0.4+ | 0.2− | 2006 08 29 | 699 | 1.2− | 0.1− | 2006 09 27 | 683 | (1.6+ | 0.5+) |
| 2001 12 09 | 704 | 0.1− | 0.5− | 2006 08 29 | 699 | 0.3− | 0.1− | 2006 09 28 | 683 | (1.6− | 0.2+) |
| 2001 12 09 | 704 | 0.0 | 0.6− | 2006 08 29 | 699 | 0.3+ | 1.1+ | 2006 09 28 | 683 | (1.1− | 1.5+) |
| 2001 12 09 | 704 | 0.3+ | 0.6− | 2006 09 06 | 644 | 0.5− | 0.1+ | 2006 09 28 | 683 | (1.9− | 1.2+) |
| 2001 12 09 | 704 | 0.1+ | 0.4− | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2001 12 09 | 704 | 0.2+ | 0.2− | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.3− | 1.2− | 2006 09 16 | 683 | 0.4− | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.2− | 1.2− | 2006 09 16 | 703 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2001 12 14 | 704 | 0.4− | 1.3− | 2006 09 16 | 683 | (0.4− | 1.9+) | 2006 10 03 | 704 | 0.3+ | 0.9+ |
| 2001 12 14 | 704 | 0.3+ | 1.1− | 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.1− |
| 2002 01 08 | 704 | 0.2− | 0.8+ | 2006 09 16 | 703 | 0.5− | 0.3− | 2006 10 03 | 704 | 0.3+ | 0.6+ |
| 2002 01 08 | 704 | 0.2+ | 1.0+ | 2006 09 16 | 683 | 1.0+ | 0.6+ | 2006 10 03 | 704 | 0.4+ | 0.1+ |
| 2002 01 08 | 704 | 0.9− | 0.9+ | 2006 09 16 | 703 | 0.2+ | 0.4− | 2006 10 03 | 704 | 0.1+ | 0.2+ |
| 2002 01 08 | 704 | 0.2− | 0.2− | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2002 01 15 | 644 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2002 01 15 | 644 | 0.5− | 0.9+ | 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2002 01 15 | 644 | 0.5− | 0.3+ | 2006 09 17 | 683 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2002 02 08 | 704 | 1.0− | 0.5− | 2006 09 17 | 683 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 02 08 | 704 | (1.8− | 1.2+) | 2006 09 17 | 683 | 0.3− | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2002 02 08 | 704 | (1.6− | 0.3−) | 2006 09 18 | 683 | 0.7− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 02 08 | 704 | 0.1− | 0.7+ | 2006 09 18 | 683 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 18 | 683 | 0.8+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 19 | 683 | 1.0+ | 0.7− | 2006 10 12 | 644 | 0.4+ | 0.3− |
| 2003 01 31 | 291 | 0.2− | 0.5+ | 2006 09 19 | 683 | 0.5+ | 0.9− | 2006 10 17 | 703 | 0.6+ | 0.5+ |
| 2003 01 31 | 291 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 2003 01 31 | 291 | 0.3+ | 0.5+ | 2006 09 19 | 683 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.5− | 1.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 21 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 1.0+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.8+ |
| 2003 02 21 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.5− | 1.1+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2003 02 21 | 644 | 0.1− | 0.5+ | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2003 02 22 | 644 | 0.4+ | 0.9+ | 2006 09 21 | 683 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2003 02 22 | 644 | 0.2+ | 0.0 | 2006 09 21 | 683 | 0.6− | 1.0+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2003 02 22 | 699 | 1.2+ | 0.7− | 2006 09 21 | 683 | (1.6− | 0.3−) | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2003 02 22 | 699 | 0.2+ | 0.0 | 2006 09 22 | 683 | 0.6+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2003 02 22 | 699 | (2.1+ | 0.8+) | 2006 09 22 | 683 | 0.2+ | 1.0+ | | | | |
| 2003 02 22 | 644 | 0.1− | 0.2+ | 2006 09 22 | 683 | 0.1− | 0.9+ | | | | |

**(140516)∗ 2001 TU$_{169}$ = 1995 QR$_{13}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20550)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.56730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18929458 | $\omega$ | 167.55390 | | +0.01993291 | −0.98460399 | |
| $a$ | 3.0040738 | $\Omega$ | 281.11264 | | +0.90145980 | +0.09281999 | |
| $e$ | 0.0542673 | $i$ | 10.19378 | | +0.43240364 | −0.14811964 | |
| $P$ | 5.21 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.3+ | 0.2+ | 2001 11 11 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 1995 08 25 | 691 | 0.1+ | 0.1− | 2001 11 11 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 1995 08 25 | 691 | 0.1− | 0.2− | 2001 11 11 | 704 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 1995 08 31 | 691 | 0.1− | 0.1− | 2001 11 11 | 704 | 0.1− | 0.2+ | 2006 10 27 | 703 | 1.0− | 0.1+ |
| 1995 08 31 | 691 | 0.5− | 0.5+ | 2001 11 11 | 704 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.2+ |
| 1995 08 31 | 691 | 0.1+ | 0.1− | 2003 01 25 | 644 | 0.0 | 0.8+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2001 10 15 | 704 | 0.1+ | 0.4+ | 2003 01 25 | 644 | 0.9− | 0.7+ | 2006 10 27 | 703 | 0.5+ | 0.7− |
| 2001 10 15 | 704 | 0.2+ | 0.6− | 2003 01 25 | 644 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.6− | 1.3− |
| 2001 10 15 | 704 | 1.0+ | 0.3− | 2003 02 11 | 608 | 1.0+ | 1.0+ | 2006 11 15 | 703 | 0.1− | 1.2− |
| 2001 10 15 | 704 | 0.4− | 0.2− | 2003 02 11 | 608 | 0.7+ | 0.7+ | 2006 11 15 | 703 | (0.5+ | 1.6−) |
| 2001 10 15 | 704 | 0.9+ | 0.4+ | 2003 02 11 | 608 | 1.0+ | 0.9+ | 2006 11 15 | 703 | 0.3− | 0.7+ |
| 2001 10 15 | 704 | 0.2− | 0.3− | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.7− | 0.4− |
| 2001 10 15 | 704 | 0.8+ | 0.7+ | 2005 07 01 | 691 | 0.0 | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.3− |
| 2001 10 19 | 704 | (1.2− | 1.9+) | 2005 07 01 | 691 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.3− |
| 2001 10 19 | 704 | 0.6− | 0.8+ | 2005 07 05 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2001 10 19 | 704 | 0.6− | 1.1+ | 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.6− |
| 2001 10 27 | 704 | 0.6− | 0.6+ | 2005 07 05 | 644 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.7+ | 0.3− |
| 2001 10 27 | 704 | 0.7+ | 0.6− | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.2− | 1.4+ |
| 2001 10 27 | 704 | 0.3− | 1.1+ | 2006 10 19 | 703 | 0.7+ | 0.2− | 2006 11 22 | 703 | 0.0 | 1.4− |
| 2001 10 27 | 704 | (0.2+ | 1.7+) | 2006 10 19 | 703 | 0.9+ | 0.2+ | | | | |

**(140517)∗ 2001 TV$_{169}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.12296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17921945 | $\omega$ | 73.10316 | | +0.96054214 | −0.23353100 | |
| $a$ | 3.1156306 | $\Omega$ | 300.17418 | | +0.13741408 | +0.87069197 | |
| $e$ | 0.1026101 | $i$ | 10.06398 | | +0.24181846 | +0.43284958 | |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 07 | 608 | 0.3− | 0.5+ | 2001 12 22 | 704 | 0.1+ | 0.5− | 2006 09 16 | 703 | 0.3− | 0.9− |
| 2000 08 07 | 608 | 0.3− | 0.5+ | 2001 12 22 | 704 | 0.5+ | 0.0 | 2006 09 16 | 703 | 0.9− | 0.8− |
| 2000 08 07 | 608 | 0.1− | 0.4+ | 2001 12 22 | 704 | 0.1+ | 0.3− | 2006 09 16 | 703 | 1.1− | 0.2+ |
| 2001 09 25 | 704 | 1.5+ | 0.0 | 2001 12 22 | 704 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.3− |
| 2001 09 25 | 704 | 0.8− | 0.2− | 2003 01 27 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 0.7− | 0.7− | 2003 01 27 | 644 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 0.6+ | 2003 01 27 | 644 | 0.8+ | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.4+ |
| 2001 10 15 | 704 | 0.2− | 0.0 | 2003 01 28 | 645 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.2+ | 0.7− |
| 2001 10 15 | 704 | 0.2+ | 0.3− | 2003 01 28 | 645 | 0.1− | 0.1− | 2006 09 27 | 699 | 0.0 | 0.7− |
| 2001 10 15 | 704 | 0.4+ | 0.4− | 2003 01 30 | 699 | 1.1+ | 0.5+ | 2006 09 27 | 699 | 0.5+ | 0.2− |
| 2001 10 15 | 704 | 0.8+ | 0.3+ | 2003 01 30 | 699 | 0.2+ | 0.2+ | 2006 09 27 | 699 | (3.6+ | 0.9−) |
| 2001 10 19 | 704 | 0.4− | 0.5+ | 2003 01 30 | 699 | 0.1− | 0.7+ | 2006 09 27 | 703 | 0.8− | 0.8− |
| 2001 10 19 | 704 | 1.2+ | 1.3+ | 2003 01 30 | 699 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.2− |
| 2001 10 19 | 704 | 0.5+ | 0.9+ | 2003 01 31 | 704 | 0.8+ | 0.3+ | 2006 09 27 | 703 | 0.6+ | 0.6− |
| 2001 10 27 | 704 | 0.3+ | 0.1− | 2003 01 31 | 704 | 0.3+ | 0.7− | 2006 09 27 | 703 | 0.1− | 0.3− |
| 2001 10 27 | 704 | 0.4+ | 0.3+ | 2003 01 31 | 704 | 0.0 | 0.4+ | 2006 10 03 | 704 | 0.7+ | 0.8+ |
| 2001 10 27 | 704 | 0.5− | 0.5+ | 2003 01 31 | 704 | 0.6+ | 0.2− | 2006 10 03 | 704 | 0.7+ | 0.7− |
| 2001 10 27 | 704 | 0.1+ | 0.3− | 2003 01 31 | 704 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.5+ | 0.5− |
| 2001 10 27 | 704 | 0.8+ | 0.6+ | 2003 02 03 | 704 | (1.8+ | 0.3−) | 2006 10 03 | 704 | 0.3+ | 0.9− |
| 2001 11 11 | 704 | 0.5− | 0.3+ | 2003 02 03 | 704 | 0.7− | 1.0− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.3− | 0.3− | 2003 02 03 | 699 | 0.7+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.5− | 0.1+ | 2003 02 03 | 704 | 0.4+ | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2001 11 11 | 704 | 0.9− | 0.1− | 2003 02 03 | 704 | 0.1+ | 0.4− | 2006 10 23 | 703 | 1.0− | 0.3− |
| 2001 11 11 | 704 | 0.2− | 0.1+ | 2003 02 03 | 699 | (0.4+ | 1.5−) | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2001 12 09 | 704 | 0.1− | 0.4− | 2003 02 03 | 699 | (1.0+ | 1.9+) | 2006 10 23 | 703 | 0.2− | 0.8− |
| 2001 12 09 | 704 | 0.6− | 0.2− | 2003 02 03 | 699 | 0.1+ | 0.4+ | 2006 10 23 | 703 | 0.6+ | 0.2+ |
| 2001 12 09 | 704 | 0.7− | 0.1+ | 2003 02 09 | 608 | 0.2− | 1.0− | 2006 10 26 | 704 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | 0.9− | 0.4+ | 2003 02 09 | 608 | 0.2+ | 1.2− | 2006 10 26 | 704 | 0.3+ | 0.1− |
| 2001 12 09 | 704 | 0.3− | 0.6+ | 2003 02 09 | 608 | 0.7− | 1.2− | 2006 10 26 | 704 | 0.9+ | 0.6− |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2006 08 26 | 104 | 0.4+ | 0.1+ | 2006 10 26 | 704 | 0.6− | 0.5+ |
| 2001 12 14 | 704 | 0.1+ | 0.6+ | 2006 08 26 | 104 | 0.2− | 0.5+ | 2006 11 25 | 703 | 0.5+ | 0.2+ |
| 2001 12 14 | 704 | 0.4− | 1.5+ | 2006 08 26 | 104 | 0.0 | 0.4+ | 2006 11 25 | 703 | 0.1+ | 0.7+ |
| 2001 12 18 | 699 | 0.5+ | 0.7+ | 2006 09 01 | 224 | 0.1+ | 0.3− | 2006 11 25 | 703 | 0.4+ | 0.5+ |
| 2001 12 18 | 699 | 0.4− | 0.1+ | 2006 09 01 | 224 | 0.4− | 0.3− | 2006 11 25 | 703 | 2.2+ | 0.1− |
| 2001 12 18 | 699 | 0.4− | 0.4− | 2006 09 01 | 224 | 0.1+ | 0.2− | | | | |
| 2001 12 18 | 699 | 0.4+ | 0.3− | 2006 09 16 | 703 | 0.1− | 0.1+ | | | | |

**(140518)∗ 2001 TY$_{169}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.86489 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21757683 | $\omega$ | 191.36301 | | −0.59757375 | −0.79294536 | |
| $a$ | 2.7377532 | $\Omega$ | 295.44414 | | +0.74558615 | −0.49495857 | |
| $e$ | 0.1810052 | $i$ | 7.56783 | | +0.29496933 | −0.35532193 | |
| $P$ | 4.53 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 15 | 691 | 0.1+ | 0.3− | 2002 01 15 | 704 | 1.2+ | 0.2+ | 2005 10 02 | 699 | 0.1+ | 0.6+ |
| 1996 10 15 | 691 | 0.2+ | 0.5− | 2002 01 15 | 704 | 0.9+ | 0.1− | 2005 10 02 | 699 | 0.6− | 0.7+ |
| 2001 09 20 | 704 | 0.4− | 0.9+ | 2002 01 15 | 704 | 0.4+ | 0.5− | 2005 10 08 | 704 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 1.2+ | 2002 01 15 | 704 | 0.4+ | 0.4− | 2005 10 08 | 704 | 1.0− | 0.1+ |
| 2001 09 20 | 704 | (0.1− | 1.5+) | 2002 02 03 | 699 | 0.7− | 0.4+ | 2005 10 08 | 704 | 0.3+ | 0.1− |
| 2001 09 23 | 644 | 0.5− | 0.1+ | 2002 02 03 | 699 | 1.2− | 0.2+ | 2005 10 08 | 704 | 0.1+ | 0.3+ |
| 2001 09 23 | 644 | 1.0− | 0.3+ | 2002 02 03 | 699 | 1.0− | 0.3+ | 2005 10 08 | 704 | 0.1− | 0.5+ |
| 2001 09 23 | 644 | 0.3− | 0.3+ | 2002 02 03 | 699 | 0.1+ | 0.3+ | 2005 10 22 | 644 | 0.3− | 0.0 |
| 2001 10 15 | 704 | (1.8− | 1.0−) | 2002 02 06 | 704 | 1.4+ | 0.2− | 2005 10 22 | 644 | 0.2− | 0.2− |
| 2001 10 15 | 704 | 1.1− | 0.7+ | 2002 02 06 | 704 | 0.9+ | 0.3− | 2005 10 22 | 644 | 0.2+ | 0.0 |
| 2001 10 15 | 704 | 0.7− | 0.6+ | 2002 02 06 | 704 | 0.6− | 1.2+ | 2005 10 28 | 703 | 1.1− | 0.6− |
| 2001 10 19 | 704 | 0.5− | 1.1− | 2002 02 06 | 704 | 0.5+ | 0.5− | 2005 10 28 | 703 | 0.7+ | 0.4+ |
| 2001 10 19 | 704 | 0.3− | 0.3− | 2003 03 12 | 704 | 0.5− | 0.7+ | 2005 10 28 | 703 | 0.9+ | 0.1+ |
| 2001 10 19 | 704 | 0.1− | 1.1+ | 2003 03 12 | 704 | 0.0 | 0.0 | 2005 10 28 | 703 | 1.4− | 1.1− |
| 2001 10 19 | 704 | 0.1− | 0.4− | 2003 03 12 | 704 | 1.1− | 0.8+ | 2005 10 30 | 704 | (0.3+ | 1.8+) |
| 2001 10 19 | 704 | 0.4− | 0.1− | 2003 03 12 | 704 | 0.1− | 1.1+ | 2005 10 30 | 704 | (0.3+ | 1.8+) |
| 2001 10 27 | 704 | 0.3+ | 0.3+ | 2003 03 12 | 704 | 0.4− | 0.1+ | 2005 10 30 | 704 | (0.4− | 2.0+) |
| 2001 10 27 | 704 | 0.3− | 0.3+ | 2003 03 25 | 608 | 0.4+ | 0.6− | 2005 10 30 | 704 | 0.9+ | 1.4+ |
| 2001 10 27 | 704 | 0.1− | 0.2+ | 2003 03 25 | 608 | 0.5+ | 0.1− | 2006 10 20 | 703 | 0.4− | 0.2+ |
| 2001 10 27 | 704 | 0.1+ | 0.3+ | 2003 03 25 | 608 | 0.7+ | 0.0 | 2006 10 20 | 703 | 0.8− | 1.0− |
| 2001 10 27 | 704 | 0.4− | 0.6+ | 2003 04 12 | 704 | (0.3− | 1.6+) | 2006 10 20 | 703 | 0.8+ | 0.2+ |
| 2001 11 10 | 704 | 0.8− | 0.3+ | 2003 04 12 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 703 | 0.5− | 0.0 |
| 2001 11 10 | 704 | 0.1− | 0.1− | 2003 04 12 | 704 | 1.0− | 0.3+ | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2001 11 10 | 704 | 0.3− | 0.0 | 2003 04 12 | 704 | 1.0+ | 0.2− | 2006 11 06 | 644 | 0.2− | 0.4− |
| 2001 11 10 | 704 | 0.7− | 0.4+ | 2003 04 30 | 704 | 0.1− | 0.6+ | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2001 11 10 | 704 | 0.6+ | 0.2+ | 2003 04 30 | 704 | 1.2+ | 0.8+ | 2006 11 06 | 644 | 0.4− | 0.7− |
| 2001 11 11 | 704 | 0.4− | 0.3− | 2003 04 30 | 704 | 0.2+ | 0.5+ | 2006 11 06 | 644 | 0.4+ | 0.3− |
| 2001 11 11 | 699 | 0.1+ | 0.4+ | 2003 04 30 | 704 | 1.1+ | 1.5+ | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.2− | 0.0 | 2005 08 29 | 644 | 0.2− | 0.1+ | 2006 11 14 | 703 | 1.5− | 0.3+ |
| 2001 11 11 | 699 | 0.3+ | 0.4− | 2005 08 29 | 644 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.5− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2− | 0.3− | 2005 08 29 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.4+ | | |
| 2001 11 11 | 704 | 0.2− | 0.4− | 2005 08 29 | 644 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.3− | | |
| 2001 11 11 | 699 | 0.4+ | 0.0 | 2005 08 29 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.1+ | | |
| 2001 11 11 | 704 | 0.5− | 0.6− | 2005 08 29 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.5+ | | |
| 2001 11 11 | 699 | 0.5+ | 0.2− | 2005 08 30 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.2+ | | |
| 2001 11 21 | 704 | 0.1− | 0.4+ | 2005 08 30 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.3+ | 0.8+ | 2005 08 30 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.2+ | | |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2005 08 31 | 704 | 0.3+ | 0.7+ | 2006 11 21 | G96 | 0.1+ | 0.4− | | |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2005 08 31 | 704 | 0.4− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.5− | | |
| 2001 11 21 | 704 | 0.3+ | 0.3− | 2005 08 31 | 704 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.7− | | |
| 2001 12 10 | 704 | 0.3− | 0.6− | 2005 08 31 | 704 | 0.6+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.6− | | |
| 2001 12 10 | 704 | 0.1− | 0.9− | 2005 08 31 | 704 | 0.2− | 1.1+ | 2006 11 22 | 704 | (1.6+ | 0.8+) | | |
| 2001 12 10 | 704 | 0.6− | 0.6− | 2005 09 06 | A50 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.2− | 1.3+ | | |
| 2001 12 10 | 704 | 0.3− | 1.1+ | 2005 09 06 | A50 | 0.4+ | 1.0− | 2006 11 22 | 704 | 0.9+ | 1.2+ | | |
| 2001 12 20 | 644 | 0.1− | 0.9+ | 2005 09 11 | 704 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.4− | | |
| 2001 12 20 | 644 | 0.0 | 0.9+ | 2005 09 11 | 704 | 0.7+ | 0.2− | 2006 11 27 | 703 | 0.0 | 0.3+ | | |
| 2001 12 20 | 644 | 0.5+ | 0.6+ | 2005 09 11 | 704 | 0.0 | 0.4+ | 2006 11 27 | 703 | 2.4− | 0.7+ | | |
| 2002 01 06 | 644 | 0.3+ | 0.9+ | 2005 09 11 | 704 | 0.0 | 1.0+ | 2006 11 27 | 703 | 0.2− | 0.5− | | |
| 2002 01 06 | 644 | 0.8+ | 0.7+ | 2005 09 11 | 704 | 0.4+ | 0.7+ | 2006 11 28 | G96 | 0.1+ | 0.5− | | |
| 2002 01 06 | 644 | 0.5+ | 1.1+ | 2005 09 24 | 703 | 0.1+ | 0.9− | 2006 11 28 | G96 | 0.0 | 0.5− | | |
| 2002 01 08 | 704 | 0.4+ | 0.1+ | 2005 09 24 | 703 | 0.2− | 0.6− | 2006 11 28 | G96 | 0.3+ | 0.6− | | |
| 2002 01 08 | 704 | 0.6+ | 0.2− | 2005 09 24 | 703 | 0.0 | 0.4− | 2006 11 28 | G96 | 0.0 | 0.6− | | |
| 2002 01 08 | 704 | 1.2+ | 0.1+ | 2005 09 24 | 703 | (0.1+ | 1.9−) | 2006 11 29 | 704 | 0.5+ | 0.0 | | |
| 2002 01 08 | 704 | 1.1+ | 0.4+ | 2005 10 01 | 703 | 0.2− | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.1+ | | |
| 2002 01 08 | 704 | 0.6+ | 0.7− | 2005 10 01 | 703 | 0.7− | 0.3− | 2006 11 29 | 704 | 0.9+ | 0.1+ | | |
| 2002 01 11 | 699 | (1.4− | 1.9−) | 2005 10 01 | 703 | 0.6+ | 0.8− | 2006 11 29 | 704 | 0.4+ | 1.4− | | |
| 2002 01 11 | 699 | 0.3− | 0.0 | 2005 10 01 | 703 | 0.6− | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.1+ | | |
| 2002 01 11 | 699 | 0.6− | 0.2+ | 2005 10 02 | 699 | 0.3+ | 0.4+ | | | | | | |
| 2002 01 11 | 699 | 0.4+ | 0.7− | 2005 10 02 | 699 | 0.6+ | 0.0 | | | | | | |

**(140519)∗ 2001 TZ$_{169}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.76822 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17722782 | $\omega$ | 138.91857 | | −0.05997084 | −0.99433339 |
| $a$ | 3.1389287 | $\Omega$ | 314.31574 | | +0.88077226 | −0.01133133 |
| $e$ | 0.2439632 | $i$ | 7.04666 | | +0.46972728 | −0.10570109 |
| $P$ | 5.56 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 327 | 0.4+ | 0.6− | 2002 01 08 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.0 | 0.2− | | |
| 1997 02 06 | 327 | 0.4− | 0.0 | 2002 01 08 | 704 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.8− | 0.6+ | | |
| 1997 02 06 | 327 | 1.3+ | 0.2− | 2002 01 08 | 704 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.5− | 0.3+ | | |
| 1997 02 11 | 691 | 0.1+ | 0.3− | 2002 01 08 | 704 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.6+ | 1.1− | | |
| 1997 02 11 | 691 | 0.7− | 0.4− | 2002 01 08 | 704 | 0.1+ | 0.1+ | 2006 09 12 | 703 | (2.1− | 0.8+) | | |
| 1997 02 11 | 691 | 0.2− | 0.3− | 2002 01 15 | 644 | 0.3− | 0.4+ | 2006 09 12 | 703 | (0.5− | 1.7+) | | |
| 1997 03 06 | 704 | (2.2+ | 2.0+) | 2002 01 15 | 644 | 0.4+ | 0.1+ | 2006 09 15 | 704 | 0.7+ | 0.4− | | |
| 1997 03 06 | 704 | (2.2+ | 0.5+) | 2002 01 15 | 644 | 0.1− | 0.3+ | 2006 09 15 | 704 | 0.2− | 0.1− | | |
| 2001 10 15 | 704 | 0.0 | 0.0 | 2002 01 15 | 644 | 0.4− | 0.4+ | 2006 09 15 | 704 | 0.3+ | 0.6+ | | |
| 2001 10 15 | 704 | 0.2+ | 0.1− | 2002 01 15 | 644 | 0.6+ | 0.4+ | 2006 09 15 | 704 | 0.1+ | 0.1+ | | |
| 2001 10 15 | 704 | 0.1+ | 0.7+ | 2002 01 15 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.9− | 1.5+ | | |
| 2001 10 19 | 704 | 0.9− | 0.4− | 2002 01 15 | 704 | 1.0− | 0.1− | 2006 09 16 | 644 | 0.3− | 0.3+ | | |
| 2001 10 19 | 704 | 0.7− | 0.3− | 2002 01 15 | 704 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.0 | | |
| 2001 10 19 | 704 | 0.9− | 0.2+ | 2002 01 15 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 644 | 0.1− | 0.2+ | | |
| 2001 10 19 | 704 | 0.5− | 0.2− | 2002 01 15 | 704 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.5− | 1.0− | | |
| 2001 10 19 | 704 | 1.3− | 0.4− | 2002 01 15 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.3+ | | |
| 2001 11 10 | 704 | 0.5− | 0.1+ | 2002 02 08 | 704 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.1− | | |
| 2001 11 10 | 704 | 0.1+ | 0.1+ | 2002 02 08 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.8+ | 0.7+ | | |
| 2001 11 10 | 704 | 0.4− | 0.4+ | 2002 02 08 | 704 | 0.9− | 0.0 | 2006 09 20 | 699 | 0.2− | 0.4+ | | |
| 2001 11 11 | 704 | 0.6+ | 0.0 | 2002 02 08 | 704 | 0.8− | 0.0 | 2006 09 20 | 699 | (0.5− | 1.7+) | | |
| 2001 11 11 | 704 | (2.0+ | 0.3+) | 2003 03 07 | 704 | 0.7+ | 1.1+ | 2006 09 20 | 699 | 0.4+ | 0.1− | | |
| 2001 11 11 | 704 | (2.5+ | 0.3−) | 2003 03 07 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.1+ | 0.2+ | | |
| 2001 11 11 | 704 | 0.6+ | 0.3− | 2003 03 07 | 704 | 0.2+ | 0.9+ | 2006 09 27 | 704 | 1.0+ | 1.1+ | | |
| 2001 11 11 | 704 | 0.7+ | 0.3− | 2003 03 07 | 704 | 0.6− | 1.0+ | 2006 09 27 | 704 | (0.4+ | 2.3−) | | |
| 2001 12 10 | 704 | 0.5+ | 0.6+ | 2003 03 07 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 1.1− | 0.2+ | | |
| 2001 12 10 | 704 | 0.3+ | 0.8+ | 2003 03 11 | 704 | 0.7+ | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.8+ | | |
| 2001 12 10 | 704 | 0.6+ | 1.1+ | 2003 03 11 | 704 | 0.9+ | 1.2+ | 2006 10 01 | 703 | 0.4− | 0.7− | | |
| 2001 12 10 | 704 | 0.3− | 1.0+ | 2003 03 11 | 704 | 0.2+ | 1.0+ | 2006 10 01 | 703 | 0.1− | 0.3+ | | |
| 2001 12 23 | 644 | 0.0 | 0.1− | 2003 03 30 | 699 | 0.7+ | 0.3+ | 2006 10 01 | 703 | 1.0− | 0.2− | | |
| 2001 12 23 | 644 | 0.5+ | 0.0 | 2003 03 30 | 699 | 0.3+ | 0.4+ | 2006 10 01 | 703 | 0.4− | 0.3+ | | |
| 2001 12 23 | 644 | 0.1+ | 0.1− | 2003 03 30 | 699 | (1.9+ | 0.5−) | 2006 10 23 | 703 | 0.6− | 0.2− | | |
| 2001 12 23 | 644 | 0.7+ | 0.1+ | 2003 03 30 | 699 | 0.2+ | 0.4+ | 2006 10 23 | 703 | 0.6+ | 1.1− | | |
| 2001 12 23 | 644 | 0.3− | 0.0 | 2006 08 27 | 699 | (0.8+ | 1.7+) | 2006 10 23 | 703 | 0.6+ | 0.7− | | |
| 2001 12 23 | 644 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.2+ | 0.3+ | 2006 10 23 | 703 | 0.7+ | 0.7− | | |

**(140520)∗ 2001 TN$_{170}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.23034 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19094035 | $\omega$ | 340.10352 | | +0.64889263 | +0.75692426 |
| $a$ | 2.9867870 | $\Omega$ | 330.19907 | | −0.67528834 | +0.52597912 |
| $e$ | 0.0463868 | $i$ | 8.96960 | | −0.35060521 | +0.38782939 |
| $P$ | 5.16 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 1.0+ | 0.1− | 2004 03 16 | 703 | 0.5+ | 0.6− | 2006 09 17 | 703 | (2.1− | 0.4+) | | |
| 2001 09 25 | 704 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.2+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.7− | 0.9+ | | |
| 2001 09 25 | 704 | 1.0+ | 0.5+ | 2004 03 19 | 704 | 1.1+ | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.2+ | | |
| 2001 10 13 | 644 | 1.5− | 1.2+ | 2004 03 19 | 704 | 0.7+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.3+ | | |
| 2001 10 13 | 644 | 1.3− | 0.7+ | 2004 03 26 | 699 | 0.6− | 1.3+ | 2006 09 18 | 691 | 0.3− | 0.3+ | | |
| 2001 10 13 | 644 | (1.6− | 0.2+) | 2004 03 26 | 699 | 0.4− | 0.7+ | 2006 09 19 | 699 | 0.2− | 1.0+ | | |
| 2001 10 20 | 644 | 0.5− | 0.0 | 2004 03 26 | 699 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.6− | | |
| 2001 10 20 | 644 | 0.4− | 0.3− | 2004 03 26 | 699 | 1.1− | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.5+ | | |
| 2001 10 20 | 644 | 0.3− | 0.0 | 2004 03 28 | 691 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3+ | | |
| 2001 10 26 | 644 | 0.1+ | 0.4− | 2004 03 28 | 691 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.3+ | | |
| 2001 10 26 | 644 | 0.1− | 0.1+ | 2004 03 28 | 691 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.5− | 0.2+ | | |
| 2001 10 26 | 644 | 0.2+ | 0.2− | 2004 04 16 | 644 | 0.8+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.7− | | |
| 2001 11 17 | 704 | (1.9+ | 0.7−) | 2004 04 16 | 644 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.8+ | | |
| 2001 11 17 | 704 | 0.8+ | 0.2+ | 2004 04 16 | 644 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 0.9− | 0.3− | | |
| 2001 11 17 | 704 | 0.4+ | 0.3− | 2004 04 19 | 704 | 1.1+ | 0.9+ | 2006 10 17 | 703 | 0.3+ | 0.3+ | | |
| 2003 01 09 | 704 | 0.4+ | 0.4− | 2004 04 19 | 704 | 1.2+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2003 01 09 | 704 | 0.5− | 0.7+ | 2004 04 19 | 704 | (1.8+ | 1.2+) | 2006 10 22 | 644 | 0.2− | 0.3+ | | |
| 2003 01 09 | 704 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.6− | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2003 01 09 | 704 | 0.7− | 0.6− | 2006 08 29 | 699 | 1.0+ | 0.8− | 2006 10 23 | 703 | 0.3+ | 0.9− | | |
| 2004 03 16 | 703 | (1.1+ | 2.2−) | 2006 08 29 | 699 | (1.6− | 0.5+) | 2006 10 23 | 703 | 0.5+ | 0.3+ | | |
| 2004 03 16 | 703 | 0.9+ | 1.2+ | 2006 08 29 | 699 | 0.0 | 1.1+ | 2006 10 23 | 703 | 0.2− | 0.1− | | |
| 2004 03 16 | 703 | 0.9+ | 0.9− | 2006 09 17 | 703 | (2.0− | 0.7−) | 2006 10 23 | 703 | 0.6− | 0.1+ | | |

**(140521)∗ 2001 TS$_{170}$ = 2003 AW$_{76}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 40781)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.27788 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18915256 | $\omega$ | 232.40246 | | −0.78925573 | +0.61244549 |
| $a$ | 3.0055773 | $\Omega$ | 345.19117 | | −0.49400234 | −0.67637171 |
| $e$ | 0.0711229 | $i$ | 10.04095 | | −0.36474247 | −0.40918435 |
| $P$ | 5.21 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 11 | 691 | 0.1− | 0.6+ | 2004 03 27 | 703 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.7+ | 1.4+ | | |
| 1990 09 11 | 691 | 0.6− | 0.7+ | 2004 03 31 | 704 | 0.7+ | 0.0 | 2006 09 25 | 704 | 0.8− | 0.8+ | | |
| 1990 09 11 | 691 | 0.7− | 0.8+ | 2004 03 31 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.9+ | | |
| 2001 10 13 | 644 | 0.5− | 0.4+ | 2004 03 31 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.8+ | | |
| 2001 10 13 | 644 | 0.5− | 0.4+ | 2004 03 31 | 704 | 0.4+ | 0.0 | 2006 09 26 | 683 | 0.7+ | 0.9− | | |
| 2001 10 13 | 644 | 0.4− | 0.2+ | 2004 03 31 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 683 | (1.3+ | 1.6−) | | |
| 2001 10 20 | 644 | 0.2+ | 0.0 | 2004 04 15 | 703 | 0.1+ | 0.6+ | 2006 09 26 | 683 | 1.0+ | 0.2+ | | |
| 2001 10 20 | 644 | 0.1+ | 0.1+ | 2004 04 15 | 703 | (1.1+ | 1.6+) | 2006 09 27 | 683 | 1.4− | 0.9− | | |
| 2001 10 20 | 644 | 0.1+ | 0.3+ | 2004 04 15 | 703 | 0.7− | 0.5+ | 2006 09 27 | 683 | (1.2+ | 1.6+) | | |
| 2001 11 11 | 699 | 0.2− | 0.3+ | 2004 04 15 | 703 | 1.2+ | 0.9+ | 2006 09 29 | 704 | (1.6− | 1.2+) | | |
| 2001 11 11 | 699 | (0.4− | 2.0+) | 2004 04 17 | 704 | 0.2− | 1.0+ | 2006 09 29 | 704 | 0.5+ | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 699 | 0.3− | 0.3+ | 2004 04 17 | 704 | 0.2+ | 0.9+ | 2006 09 29 | 704 | 0.3− | 0.8+ | | |
| 2001 11 11 | 699 | 0.0 | 0.7+ | 2004 04 17 | 704 | 0.3+ | 1.1+ | 2006 09 29 | 704 | (0.1+ | 1.8+) | | |
| 2003 01 10 | 704 | 0.1+ | 0.5+ | 2004 04 17 | 704 | 0.8+ | 0.8+ | 2006 09 30 | 683 | 1.3− | 0.2+ | | |
| 2003 01 10 | 704 | 0.2+ | 0.2+ | 2004 04 17 | 699 | 1.0− | 0.7+ | 2006 09 30 | 683 | 1.0+ | 0.4+ | | |
| 2003 01 10 | 704 | 0.0 | 1.0+ | 2004 04 17 | 699 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.2+ | | |
| 2003 01 10 | 704 | 0.2− | 0.5+ | 2004 04 17 | 699 | 1.2− | 0.2+ | 2006 09 30 | 683 | 0.9− | 0.1+ | | |
| 2003 01 13 | 704 | (0.2+ | 2.0+) | 2004 04 17 | 699 | 0.1− | 0.6+ | 2006 09 30 | 703 | 1.0− | 0.4− | | |
| 2003 01 13 | 704 | (0.6− | 1.8+) | 2004 04 25 | 703 | 0.7+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.3+ | | |
| 2003 01 13 | 704 | 0.5− | 1.2+ | 2004 04 25 | 703 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.9+ | | |
| 2004 03 17 | 703 | 0.4+ | 1.2+ | 2004 04 25 | 703 | 0.2+ | 0.8+ | 2006 10 04 | G96 | 0.5− | 0.1− | | |
| 2004 03 17 | 703 | 0.1− | 0.5+ | 2004 04 25 | 703 | 0.1− | 0.7+ | 2006 10 04 | G96 | 0.4− | 0.3− | | |
| 2004 03 17 | 704 | 0.1+ | 1.0+ | 2004 04 28 | 608 | 0.9+ | 1.2− | 2006 10 04 | G96 | 0.2− | 0.0 | | |
| 2004 03 17 | 703 | 0.5+ | 0.6+ | 2004 04 28 | 608 | 0.3+ | 0.5− | 2006 10 04 | G96 | 0.0 | 0.0 | | |
| 2004 03 17 | 704 | 0.3+ | 0.4+ | 2004 04 28 | 608 | 0.2+ | 0.3− | 2006 10 10 | 644 | 0.6− | 0.1+ | | |
| 2004 03 17 | 703 | 0.3+ | 0.0 | 2005 07 05 | E12 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.6− | 0.1+ | | |
| 2004 03 17 | 704 | 0.4− | 0.9+ | 2005 07 05 | E12 | 0.1+ | 0.6− | 2006 10 10 | 644 | 0.2− | 0.3+ | | |
| 2004 03 17 | 704 | 0.6+ | 0.1− | 2005 07 05 | E12 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.1+ | | |
| 2004 03 17 | 704 | 0.1− | 1.3+ | 2005 07 05 | E12 | 0.2− | 0.1+ | 2006 10 17 | 703 | (1.6− | 0.5−) | | |
| 2004 03 19 | 704 | 1.0+ | 0.0 | 2006 09 16 | 703 | 0.9+ | 0.3− | 2006 10 17 | 703 | 0.7+ | 0.0 | | |
| 2004 03 19 | 704 | 1.0+ | 0.4− | 2006 09 16 | 703 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 1.3− | 0.2+ | | |
| 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2004 03 19 | 704 | 0.8+ | 0.4+ | 2006 09 16 | 703 | 0.6− | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2004 03 27 | 699 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2004 03 27 | 699 | 0.2+ | 0.5− | 2006 09 19 | 699 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2004 03 27 | 699 | 0.6+ | 0.7+ | 2006 09 19 | 699 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2004 03 27 | 699 | (1.6+ | 0.9+) | 2006 09 22 | 683 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2004 03 27 | 703 | 1.0− | 0.4+ | 2006 09 22 | 683 | 0.8+ | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2004 03 27 | 703 | 1.4+ | 0.0 | 2006 09 22 | 683 | (2.8− | 0.5+) | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2004 03 27 | 703 | (0.7+ | 2.7+) | 2006 09 25 | 704 | 0.2+ | 0.1− | | | | | | |

**(140522)∗ 2001 TH$_{171}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.50726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18492368 | $\omega$ | 183.63929 | | +0.86441315 | +0.48773725 | |
| $a$ | 3.0512259 | $\Omega$ | 146.27490 | | −0.45556434 | +0.86252262 | |
| $e$ | 0.1330473 | $i$ | 12.70152 | | −0.21272290 | +0.13478539 | |
| $P$ | 5.33 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.1− | 0.6+ | 2004 03 20 | 704 | 1.1− | 0.7+ | 2005 07 04 | 691 | 0.0 | 0.0 | | |
| 2001 08 20 | 644 | 0.7− | 0.7+ | 2004 03 23 | 704 | 0.1+ | 0.8+ | 2005 07 04 | 691 | 0.1+ | 0.0 | | |
| 2001 08 20 | 644 | 0.6− | 0.5+ | 2004 03 23 | 704 | 0.0 | 0.6+ | 2005 07 04 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 17 | 699 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.7+ | 1.0+ | 2005 07 04 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 17 | 699 | 0.3− | 0.5+ | 2004 03 23 | 704 | 0.2− | 1.0+ | 2005 07 04 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 17 | 699 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.5+ | 0.6+ | 2006 08 23 | 704 | 0.3− | 0.0 | | |
| 2001 09 17 | 699 | 0.4− | 1.3+ | 2004 03 26 | 691 | 0.1− | 0.6+ | 2006 08 23 | 704 | 0.0 | 0.7+ | | |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.5+ | 2006 08 23 | 704 | 1.2− | 1.2+ | | |
| 2001 09 21 | 645 | 0.1+ | 0.0 | 2004 03 26 | 691 | 0.3− | 0.8+ | 2006 08 23 | 704 | 0.1− | 0.5+ | | |
| 2001 10 15 | 644 | 0.4− | 0.3+ | 2004 04 11 | 246 | 1.2+ | 0.9+ | 2006 08 28 | 704 | (0.1+ | 1.8+) | | |
| 2001 10 15 | 644 | 0.6− | 0.7+ | 2004 04 11 | 246 | 0.3+ | 0.7+ | 2006 08 28 | 704 | 0.3− | 0.7+ | | |
| 2001 10 15 | 644 | 0.8− | 0.5+ | 2004 04 11 | 246 | 0.8+ | 1.2+ | 2006 08 28 | 704 | 0.1+ | 0.7+ | | |
| 2001 10 20 | 608 | 1.1− | 0.1+ | 2004 04 11 | 246 | 0.8+ | 0.7+ | 2006 08 28 | 704 | 0.4+ | 0.2+ | | |
| 2001 10 20 | 608 | 0.8− | 0.1+ | 2005 05 16 | G96 | (0.4− | 8.0+) | 2006 08 28 | 699 | 0.2− | 0.6+ | | |
| 2001 10 20 | 608 | (1.6− | 0.9+) | 2005 05 16 | G96 | (0.7− | 7.3+) | 2006 08 28 | 699 | 0.1− | 0.4+ | | |
| 2001 10 23 | 644 | 0.4+ | 0.6+ | 2005 05 16 | G96 | (1.0− | 7.4+) | 2006 08 28 | 699 | 0.6− | 0.7+ | | |
| 2001 10 23 | 644 | 0.2+ | 0.5+ | 2005 05 16 | G96 | (0.6− | 7.5+) | 2006 08 28 | 699 | 0.3− | 0.0 | | |
| 2001 10 23 | 644 | 0.3+ | 0.6+ | 2005 06 09 | 703 | 0.5− | 0.2− | 2006 09 17 | 699 | 0.5− | 0.4+ | | |
| 2001 10 28 | 644 | 0.4− | 0.0 | 2005 06 09 | 703 | 1.2− | 0.3− | 2006 09 17 | 699 | 0.3− | 0.3− | | |
| 2001 10 28 | 644 | 0.6− | 0.1+ | 2005 06 09 | 703 | 0.7− | 0.3+ | 2006 09 17 | 699 | 0.1− | 0.6+ | | |
| 2001 10 28 | 644 | 0.6− | 0.3+ | 2005 06 09 | 703 | 0.6− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.6+ | | |
| 2001 10 29 | 644 | 0.0 | 0.4+ | 2005 06 13 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.3+ | | |
| 2001 10 29 | 644 | 0.4+ | 0.3+ | 2005 06 13 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.5+ | | |
| 2001 10 29 | 644 | 0.0 | 0.4+ | 2005 06 13 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.3+ | | |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2005 06 27 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.6+ | 0.4+ | | |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.4+ | 0.6− | | |
| 2004 02 25 | 704 | (1.7+ | 0.9+) | 2005 06 27 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.8− | 0.2− | | |
| 2004 02 25 | 704 | 0.5+ | 0.3+ | 2005 06 29 | 644 | 0.1+ | 0.0 | 2006 09 25 | 703 | 0.4− | 0.1+ | | |
| 2004 02 25 | 704 | (2.8+ | 1.4+) | 2005 06 29 | 644 | 0.1− | 0.2+ | 2006 10 04 | 703 | (0.6− | 1.9+) | | |
| 2004 02 25 | 704 | (2.3+ | 1.0+) | 2005 06 29 | 644 | 0.1− | 0.0 | 2006 10 04 | 703 | 0.4+ | 0.9+ | | |
| 2004 03 15 | 704 | 0.0 | 0.8+ | 2005 06 30 | 691 | 0.2+ | 0.3+ | 2006 10 04 | 703 | 0.1+ | 0.7+ | | |
| 2004 03 15 | 704 | 1.5+ | 0.6− | 2005 06 30 | 691 | 0.2− | 0.0 | 2006 10 04 | 703 | 0.1+ | 0.6+ | | |
| 2004 03 15 | 704 | 0.5+ | 0.5+ | 2005 06 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.5− | | |
| 2004 03 15 | 704 | 0.7+ | 0.5− | 2005 07 02 | 703 | (2.4− | 0.6−) | 2006 10 21 | 703 | 0.3− | 1.0− | | |
| 2004 03 20 | 704 | 1.2− | 1.3+ | 2005 07 02 | 703 | 1.3− | 0.1− | 2006 10 21 | 703 | 0.5− | 0.0 | | |
| 2004 03 20 | 704 | 0.6− | 0.5− | 2005 07 02 | 703 | 0.7− | 0.7− | 2006 10 21 | 703 | 1.9+ | 2.4+ | | |
| 2004 03 20 | 704 | 0.6+ | 0.7+ | 2005 07 02 | 703 | 1.3− | 0.6+ | | | | | | |
| 2004 03 20 | 704 | 1.0+ | 1.1+ | 2005 07 04 | 644 | 0.1+ | 0.1+ | | | | | | |

**(140523)∗ 2001 TK$_{171}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.04461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18024851 | $\omega$ | 275.58287 | | +0.91558147 | −0.34118070 | |
| $a$ | 3.1037609 | $\Omega$ | 104.50649 | | +0.39658608 | +0.85369955 | |
| $e$ | 0.1408608 | $i$ | 12.70093 | | −0.06655860 | +0.39343717 | |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.1+ | 0.1− | 2001 11 18 | 704 | 0.0 | 0.5− | 2003 02 04 | 704 | 0.4+ | 1.0− | | |
| 2001 09 19 | 645 | 0.1+ | 0.2− | 2001 11 18 | 704 | 0.0 | 0.4+ | 2003 02 04 | 704 | 1.0− | 0.7+ | | |
| 2001 10 15 | 644 | 0.2+ | 0.4+ | 2001 11 18 | 704 | 1.5+ | 0.6− | 2003 03 07 | 644 | 0.2+ | 0.4+ | | |
| 2001 10 15 | 644 | 0.1+ | 0.4+ | 2001 12 07 | 704 | 0.1− | 0.1+ | 2003 03 07 | 644 | 0.5− | 0.6+ | | |
| 2001 10 15 | 644 | 0.0 | 0.3+ | 2001 12 07 | 704 | 0.3− | 0.7+ | 2003 03 07 | 644 | 0.1− | 0.7+ | | |
| 2001 10 16 | 704 | 0.3+ | 0.4+ | 2001 12 07 | 704 | 0.2− | 0.4+ | 2005 05 29 | 599 | 0.1+ | 0.4+ | | |
| 2001 10 16 | 704 | 1.0− | 0.1− | 2001 12 07 | 704 | 0.5+ | 0.1+ | 2005 05 29 | 599 | 0.4− | 0.5+ | | |
| 2001 10 16 | 704 | 0.3− | 0.4− | 2001 12 07 | 704 | 0.0 | 0.9− | 2005 05 29 | 599 | 0.2+ | 0.2− | | |
| 2001 10 16 | 704 | 0.1+ | 1.0+ | 2001 12 15 | 704 | 1.5− | 0.7− | 2005 05 29 | 599 | 0.5+ | 0.8+ | | |
| 2001 10 16 | 704 | 0.6− | 0.3− | 2001 12 15 | 704 | (2.5− | 0.5−) | 2006 08 14 | 644 | 0.3+ | 0.1− | | |
| 2001 10 20 | 608 | 0.5− | 0.4+ | 2001 12 15 | 704 | 1.1− | 0.0 | 2006 08 14 | 644 | 0.4+ | 0.1+ | | |
| 2001 10 20 | 608 | 0.7− | 0.3+ | 2002 12 31 | 704 | 0.1− | 0.7+ | 2006 08 14 | 644 | 0.0 | 0.1− | | |
| 2001 10 20 | 608 | 0.6− | 0.6+ | 2002 12 31 | 704 | 0.7+ | 0.9+ | 2006 08 16 | 644 | 0.1+ | 0.1− | | |
| 2001 10 22 | 644 | 0.8+ | 0.6− | 2002 12 31 | 704 | 0.6− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.1− | | |
| 2001 10 22 | 644 | 0.3+ | 1.6+ | 2003 01 05 | 704 | 0.5+ | 0.7− | 2006 08 16 | 644 | 0.1+ | 0.1− | | |
| 2001 10 22 | 644 | 0.4+ | 1.1− | 2003 01 05 | 704 | 0.0 | 1.7+ | 2006 08 17 | 644 | 0.1+ | 0.2− | | |
| 2001 10 22 | 644 | 0.5+ | 1.6+ | 2003 01 05 | 704 | (1.1+ | 2.2+) | 2006 08 17 | 644 | 0.2+ | 0.1− | | |
| 2001 10 22 | 644 | 0.7+ | 1.2− | 2003 01 31 | 699 | 0.9+ | 0.7+ | 2006 08 17 | 644 | 0.2+ | 0.0 | | |
| 2001 10 22 | 644 | 0.5+ | 1.9+ | 2003 01 31 | 699 | 2.0+ | 0.3+ | 2006 08 28 | E12 | 0.2+ | 0.4+ | | |
| 2001 10 23 | 699 | 0.2+ | 0.1+ | 2003 01 31 | 699 | 1.2+ | 0.6+ | 2006 08 28 | E12 | 0.5+ | 0.5− | | |
| 2001 10 23 | 699 | 0.0 | 0.1+ | 2003 01 31 | 699 | 0.4− | 0.3− | 2006 08 28 | E12 | 0.0 | 0.2+ | | |
| 2001 10 23 | 699 | 0.6+ | 0.1+ | 2003 02 01 | 704 | 0.9− | 1.1− | 2006 08 28 | E12 | 0.5+ | 0.0 | | |
| 2001 10 23 | 699 | 0.3+ | 0.7+ | 2003 02 01 | 704 | 0.5− | 1.8− | 2006 09 26 | 703 | 0.7− | 0.2+ | | |
| 2001 10 28 | 644 | 0.5− | 0.0 | 2003 02 01 | 704 | (0.7+ | 2.8−) | 2006 09 26 | 703 | 0.2− | 0.1+ | | |
| 2001 10 28 | 644 | 0.0 | 0.1− | 2003 02 01 | 704 | (0.7− | 2.4−) | 2006 09 26 | 703 | 0.0 | 0.2− | | |
| 2001 10 28 | 644 | 0.3− | 0.4+ | 2003 02 01 | 704 | 1.1− | 1.7− | 2006 09 26 | 703 | 0.4− | 0.0 | | |
| 2001 11 12 | 608 | 0.8− | 1.0− | 2003 02 02 | 644 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.3− | 0.2+ | | |
| 2001 11 12 | 608 | 0.6− | 0.4− | 2003 02 02 | 644 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.5− | 0.5+ | | |
| 2001 11 12 | 608 | 0.7− | 0.1− | 2003 02 02 | 644 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.0 | | |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2003 02 04 | 704 | 0.6− | 0.4− | 2006 09 26 | 703 | 0.3− | 1.0+ | | |
| 2001 11 18 | 704 | 0.3− | 1.3+ | 2003 02 04 | 704 | 0.4+ | 0.7+ | | | | | | |

**(140524)∗ 2001 TT$_{171}$**

Discovered 2001 Oct. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.87154 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23775503 | $\omega$ | 37.15715 | | +0.51816702 | +0.83446507 | |
| $a$ | 2.5805735 | $\Omega$ | 264.77599 | | −0.82297882 | +0.42677247 | |
| $e$ | 0.1811506 | $i$ | 10.85485 | | −0.23282783 | +0.34861627 | |
| $P$ | 4.15 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 644 | 0.5− | 0.5+ | 2004 04 13 | 644 | 0.2+ | 0.0 | 2005 10 12 | 704 | 0.3− | 0.4+ |
| 2001 08 22 | 644 | 0.2− | 0.4+ | 2004 04 13 | 644 | 0.0 | 0.3+ | 2005 10 12 | 704 | 0.0 | 0.2− |
| 2001 08 22 | 644 | 0.2− | 0.5+ | 2005 08 09 | 704 | 0.1− | 0.3− | 2005 10 12 | 704 | 1.0+ | 0.5− |
| 2001 10 13 | 699 | 0.9− | 0.3+ | 2005 08 09 | 704 | 0.5− | 1.2+ | 2005 10 12 | 704 | 0.3+ | 0.4− |
| 2001 10 13 | 699 | 0.4+ | 0.5+ | 2005 08 09 | 704 | 0.7+ | 0.6+ | 2005 10 28 | 703 | 0.2+ | 0.0 |
| 2001 10 13 | 699 | 1.2− | 0.2+ | 2005 08 09 | 704 | 0.2− | 0.7+ | 2005 10 28 | 703 | 0.8− | 0.4− |
| 2001 10 13 | 699 | 1.0− | 0.7+ | 2005 08 09 | 704 | 0.3− | 0.6+ | 2005 10 28 | 703 | 0.4+ | 0.3− |
| 2001 10 18 | 704 | 0.1− | 0.4− | 2005 09 12 | 704 | 0.4+ | 0.8− | 2005 10 28 | 703 | 0.4+ | 0.1− |
| 2001 10 18 | 704 | 0.3− | 0.1− | 2005 09 12 | 704 | 0.4+ | 0.6− | 2005 11 03 | 703 | 0.4− | 0.7− |
| 2001 10 18 | 704 | 0.6− | 0.0 | 2005 09 12 | 704 | 0.6+ | 0.4− | 2005 11 03 | 703 | 1.1− | 0.0 |
| 2001 10 18 | 704 | 0.0 | 0.6+ | 2005 09 12 | 704 | 0.3− | 0.4+ | 2005 11 03 | 703 | (0.2− | 1.5−) |
| 2001 10 20 | 699 | 0.3+ | 0.8+ | 2005 09 12 | 704 | 0.5+ | 0.3− | 2005 11 03 | 703 | 0.5− | 0.8− |
| 2001 10 20 | 699 | 0.4+ | 0.3− | 2005 10 01 | 703 | 0.4− | 1.0− | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2001 10 20 | 699 | 1.0+ | 1.3+ | 2005 10 01 | 703 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2001 10 20 | 699 | 0.7− | 0.7+ | 2005 10 01 | 703 | 0.2+ | 0.8− | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2001 10 21 | 704 | (0.7+ | 1.6+) | 2005 10 01 | 703 | 0.3+ | 0.9− | 2006 11 01 | G96 | 0.1− | 0.6− |
| 2001 10 21 | 704 | 0.7+ | 0.3− | 2005 10 02 | 699 | 0.5+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.4+ |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2005 10 02 | 699 | 0.8− | 0.7− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.7+ | 0.4+ | 2005 10 02 | 699 | 1.0− | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2005 10 02 | 699 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2001 11 10 | 704 | 0.7+ | 0.2+ | 2005 10 06 | 703 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2001 11 10 | 704 | 0.7− | 0.2− | 2005 10 06 | 703 | 1.2+ | 0.1− | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2001 11 10 | 704 | (1.6− | 0.6−) | 2005 10 06 | 703 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2004 04 13 | 644 | 0.1+ | 0.5+ | 2005 10 06 | 703 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |

**(140525)∗ 2001 TF$_{172}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.38319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20392971 | $\omega$ | 273.32936 | | +0.79019450 | +0.58421579 | |
| $a$ | 2.8585714 | $\Omega$ | 51.01472 | | −0.42363415 | +0.73901588 | |
| $e$ | 0.0758075 | $i$ | 13.78080 | | −0.44286201 | +0.33548090 | |
| $P$ | 4.83 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3+ | 0.1+ | 2001 12 19 | 704 | 0.4− | 0.3− | 2004 03 30 | 704 | 0.0 | 0.6+ |
| 2001 09 12 | 704 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.4+ | 2004 03 30 | 704 | 0.1+ | 0.8+ |
| 2001 09 12 | 704 | 0.3− | 1.2+ | 2001 12 19 | 704 | 0.4+ | 1.4+ | 2006 09 30 | 703 | 0.3− | 0.2+ |
| 2001 09 17 | 699 | 0.1+ | 0.1+ | 2003 01 13 | 704 | 0.5+ | 0.9− | 2006 09 30 | 703 | 1.0+ | 0.2+ |
| 2001 09 17 | 699 | (1.1− | 1.9+) | 2003 01 13 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 2001 09 17 | 699 | 0.6+ | 1.1+ | 2003 01 13 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.5− | 0.6− |
| 2001 09 17 | 699 | 0.6− | 1.2+ | 2003 01 13 | 704 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 2001 09 21 | 644 | 0.5− | 0.9+ | 2003 01 13 | 704 | 1.0+ | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2001 09 21 | 644 | 0.6− | 0.6+ | 2004 03 15 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.0 |
| 2001 09 21 | 644 | 0.4− | 0.7+ | 2004 03 15 | 704 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2001 09 25 | 704 | 0.8− | 1.3+ | 2004 03 15 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2001 09 25 | 704 | 0.2− | 1.2+ | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2001 09 25 | 704 | 0.1− | 0.4− | 2004 03 23 | 704 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.5− | 0.4− | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 10 11 | 704 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 10 11 | 704 | 0.2− | 0.3− | 2004 03 25 | 704 | 0.9+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 10 11 | 704 | 0.2− | 0.2+ | 2004 03 25 | 704 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 10 11 | 704 | 0.7− | 0.4+ | 2004 03 25 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 10 11 | 704 | 0.1− | 0.7− | 2004 03 28 | 703 | 0.9− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 13 | 704 | (1.7− | 2.1−) | 2004 03 28 | 703 | 0.5+ | 1.2+ | 2006 10 21 | 644 | 0.3− | 0.4− |
| 2001 10 13 | 704 | 0.8− | 0.9− | 2004 03 28 | 703 | 0.3− | 1.1+ | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2001 10 13 | 704 | 0.8− | 1.1− | 2004 03 28 | 703 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2001 10 13 | 704 | 0.5− | 0.8+ | 2004 03 30 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.3+ |
| 2001 10 13 | 704 | 0.5− | 0.9− | 2004 03 30 | 704 | 0.8+ | 1.1+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2001 10 16 | 644 | 0.1− | 0.3− | 2004 03 30 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2001 10 16 | 644 | 0.1+ | 0.5+ | 2004 03 30 | 704 | 0.7+ | 0.9− | 2006 11 10 | 644 | 0.1+ | 0.3+ |
| 2001 10 16 | 644 | 0.1− | 0.5+ | 2004 03 30 | 704 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.6+ | 0.2+ |
| 2001 10 19 | 699 | 0.1− | 0.3− | 2004 03 30 | 704 | 0.4− | 0.7+ | 2006 11 13 | 644 | 0.3− | 0.2− |
| 2001 10 19 | 699 | 0.2− | 0.5+ | 2004 03 30 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.4− | 0.3+ |
| 2001 10 19 | 699 | (1.8+ | 0.8+) | 2004 03 30 | 704 | 0.7+ | 0.2− | 2006 11 13 | 703 | 0.6+ | 0.2+ |
| 2001 10 19 | 699 | 0.2+ | 0.5+ | 2004 03 30 | 704 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2001 10 20 | 704 | 1.5− | 1.5+ | 2004 03 30 | 704 | 0.8+ | 0.7+ | 2006 11 13 | 703 | 0.1+ | 0.6− |
| 2001 10 20 | 704 | 0.7− | 1.5+ | 2004 03 30 | 704 | 0.6− | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.4− |
| 2001 10 20 | 704 | 0.5− | 0.4+ | 2004 03 30 | 704 | 0.3+ | 0.4+ | 2006 11 13 | 703 | 0.7− | 0.7− |
| 2001 10 20 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 704 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.5+ | 0.7− |
| 2001 12 18 | 209 | 0.0 | 0.7− | 2004 03 30 | 704 | 0.6+ | 0.7+ | 2006 11 14 | 704 | 0.2+ | 0.0 |
| 2001 12 18 | 209 | 0.0 | 0.3+ | 2004 03 30 | 704 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.8+ | 0.3− |
| 2001 12 18 | 209 | 0.2+ | 0.5+ | 2004 03 30 | 704 | 1.2+ | 0.4+ | 2006 11 14 | 704 | 0.9+ | 0.9+ |
| 2001 12 19 | 704 | 0.5+ | 0.2− | 2004 03 30 | 704 | 0.3+ | 1.4+ | 2006 11 14 | 704 | 1.3+ | 0.7− |
| 2001 12 19 | 704 | 0.3+ | 0.9+ | 2004 03 30 | 704 | 0.6+ | 1.1+ | | | | |

**(140526)∗ 2001 TE$_{173}$**

Discovered 2001 Oct. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.14097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18821587 | $\omega$ | 233.61091 | | +0.65847915 | −0.75259796 | |
| $a$ | 3.0155409 | $\Omega$ | 175.20454 | | +0.69512675 | +0.60756651 | |
| $e$ | 0.1499372 | $i$ | 0.84394 | | +0.28845104 | +0.25388825 | |
| $P$ | 5.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.2− | 0.6+ | 2001 11 17 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.9− | 0.4− |
| 1999 05 15 | 691 | 0.4− | 0.4+ | 2001 11 19 | 608 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.3+ |
| 1999 05 15 | 691 | 0.4− | 0.3+ | 2001 11 19 | 608 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.0 | 0.2+ |
| 1999 05 15 | 691 | 0.0 | 0.1− | 2001 11 19 | 608 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 09 19 | 699 | (0.8+ | 2.1+) | 2001 11 20 | 704 | 0.1+ | 0.9− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2001 09 19 | 699 | 1.2+ | 1.1+ | 2001 11 20 | 704 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2001 09 19 | 699 | (1.9+ | 1.7+) | 2001 11 20 | 704 | 0.2− | 0.7− | 2006 09 25 | G96 | 0.1+ | 0.3+ |
| 2001 09 19 | 699 | (2.2+ | 0.5−) | 2001 11 20 | 704 | 0.2− | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 10 13 | 704 | (1.1− | 1.5−) | 2001 11 20 | 704 | 0.1− | 0.8− | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2001 10 13 | 704 | 0.1+ | 0.6+ | 2001 11 21 | 704 | 0.4− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 10 13 | 704 | 0.1+ | 1.3− | 2001 11 21 | 704 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2001 10 13 | 704 | 1.2+ | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.5− | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2001 10 13 | 704 | 0.4− | 0.7− | 2001 11 21 | 704 | 0.3− | 0.6− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2001 10 18 | 644 | 0.0 | 0.3− | 2001 11 21 | 704 | 0.2− | 0.7− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 10 18 | 644 | 0.1− | 0.7− | 2001 12 09 | 699 | 0.9+ | 0.6− | 2006 09 27 | 704 | 0.4− | 0.3+ |
| 2001 10 18 | 644 | 0.0 | 0.2− | 2001 12 09 | 699 | 1.0− | 0.5+ | 2006 09 27 | 704 | 0.2+ | 1.3+ |
| 2001 10 20 | 704 | 0.3+ | 0.1+ | 2001 12 09 | 699 | 0.7− | 1.0− | 2006 09 27 | 704 | 0.4− | 0.1+ |
| 2001 10 20 | 704 | 0.4+ | 0.1+ | 2001 12 09 | 699 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.1+ | 1.4+ |
| 2001 10 20 | 704 | 1.1+ | 0.4+ | 2001 12 11 | 704 | 1.4+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 1.3+ |
| 2001 10 20 | 704 | (0.1− | 1.5−) | 2001 12 11 | 704 | 0.0 | 1.1+ | 2006 09 29 | 704 | 0.4− | 0.9+ |
| 2001 10 22 | 704 | 1.0+ | 0.7− | 2001 12 11 | 704 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.6+ |
| 2001 10 22 | 704 | (1.2+ | 2.9−) | 2001 12 11 | 704 | 0.6− | 0.8+ | 2006 09 29 | 704 | (0.2+ | 1.9+) |
| 2001 10 22 | 704 | 0.1− | 1.0− | 2001 12 11 | 704 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 10 22 | 704 | 1.0+ | 0.5− | 2001 12 14 | 704 | (2.2+ | 0.9+) | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.5+ | 0.5+ | 2001 12 14 | 704 | 0.7+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | 0.6− | 0.4+ | 2001 12 14 | 704 | 0.3+ | 0.2− | 2006 10 15 | 703 | 0.2+ | 1.1− |
| 2001 10 23 | 704 | 0.4+ | 0.4− | 2001 12 14 | 704 | 0.8+ | 0.2− | 2006 10 15 | 703 | 0.6− | 0.6− |
| 2001 10 23 | 704 | 0.1− | 0.0 | 2001 12 14 | 704 | (0.2+ | 1.5−) | 2006 10 15 | 703 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.4− | 0.3+ | 2003 01 25 | 291 | 0.0 | 0.4+ | 2006 10 15 | 703 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.1+ | 0.3+ | 2003 01 25 | 291 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2001 10 24 | 704 | 0.3− | 0.5+ | 2003 01 25 | 291 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 0.0 | 2003 02 22 | 291 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.2+ | 0.0 | 2003 02 22 | 644 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 0.3+ | 0.2+ | 2003 02 22 | 291 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2001 10 25 | 644 | 0.3− | 0.7+ | 2003 02 22 | 644 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2003 02 22 | 291 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2003 02 22 | 644 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2001 10 26 | 704 | 0.4− | 0.7+ | 2003 03 06 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.8− | 0.1+ |
| 2001 10 26 | 704 | 0.4− | 0.3− | 2003 03 06 | 644 | 0.9+ | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.2+ |
| 2001 10 26 | 704 | 0.1− | 0.3− | 2003 03 06 | 644 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 10 26 | 704 | 0.4− | 0.5+ | 2004 05 23 | 691 | 0.7+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 10 26 | 704 | 0.7− | 0.3+ | 2004 05 23 | 691 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 11 09 | 704 | 0.0 | 0.0 | 2004 05 23 | 691 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 2001 11 09 | 704 | 0.6− | 0.4+ | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 10 21 | 703 | 1.0− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.3− | 0.4+ | 2006 07 22 | G96 | 0.3− | 0.1− | 2006 10 21 | 703 | 1.1− | 0.3+ |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.6− | 1.1− |
| 2001 11 09 | 704 | 0.3− | 0.2− | 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 11 09 | 644 | 0.6+ | 0.4+ | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 11 09 | 644 | 0.2+ | 0.4+ | 2006 09 06 | 644 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 09 | 644 | 0.1− | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2001 11 11 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 1.0− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 11 11 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | 1.2− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 11 11 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 11 11 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.6− | 1.3+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 11 06 | 644 | 0.4+ | 0.1− |
| 2001 11 12 | 704 | (0.9− | 1.6+) | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2001 11 12 | 704 | 0.6− | 1.1+ | 2006 09 16 | 644 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2001 11 12 | 704 | (0.7− | 2.2+) | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2001 11 12 | 704 | 0.6− | 1.0+ | 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.2− |
| 2001 11 16 | 644 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 11 16 | 644 | 0.0 | 0.2+ | 2006 09 18 | 699 | (1.6+ | 0.3+) | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2001 11 16 | 644 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.8+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 11 17 | 704 | 1.2+ | 0.2− | 2006 09 18 | 699 | 1.0+ | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 11 17 | 704 | 0.9+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.2+ | | | | |
| 2001 11 17 | 704 | 0.0 | 1.4− | 2006 09 20 | 704 | 0.2+ | 0.8− | | | | |

**(140527)∗ 2001 TN$_{174}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.10582 | | (2000.0) | | | |
| $n$ | 0.19607229 | $\omega$ | 340.52550 | | +0.60321071 | −0.79120025 |
| $a$ | 2.9344400 | $\Omega$ | 72.24635 | | +0.74507306 | +0.51393937 |
| $e$ | 0.1069809 | $i$ | 6.06910 | | +0.28461020 | +0.33146416 |
| $P$ | 5.03 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 23 | 691 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 1999 05 23 | 691 | 0.1− | 0.3+ | 2001 11 21 | 704 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 1999 05 23 | 691 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.4+ | 0.1− | 2006 10 18 | 691 | 0.6+ | 0.5+ |
| 2001 10 14 | 704 | 0.2+ | 0.2+ | 2001 11 21 | 704 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.6+ | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 1.0− | 0.3+ | 2001 11 21 | 704 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2001 10 14 | 704 | 0.5− | 0.2− | 2001 12 11 | 704 | 0.0 | 1.4− | 2006 10 27 | 683 | 0.3+ | 0.8+ |
| 2001 10 18 | 644 | 0.5+ | 0.2+ | 2001 12 11 | 704 | 0.1+ | 0.4− | 2006 10 27 | 683 | 0.6+ | 0.4+ |
| 2001 10 18 | 644 | 0.6+ | 0.3+ | 2001 12 11 | 704 | 0.1− | 0.5+ | 2006 10 27 | 683 | 1.3+ | 0.7− |
| 2001 10 18 | 644 | 0.1+ | 0.1− | 2001 12 11 | 704 | 0.6− | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2001 10 20 | 704 | 0.8− | 0.3− | 2001 12 11 | 704 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2001 10 20 | 704 | 0.1− | 0.4− | 2001 12 14 | 704 | 0.7+ | 0.7− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 0.2− | 2001 12 14 | 704 | 0.7+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.3− | 2001 12 14 | 704 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 10 22 | 704 | 0.3− | 0.3− | 2001 12 14 | 704 | 0.4+ | 0.8− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 10 22 | 704 | 0.2− | 0.6− | 2001 12 14 | 704 | 0.2+ | 1.0− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 10 22 | 704 | 1.1− | 0.5− | 2001 12 17 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 10 22 | 704 | 1.3− | 0.1+ | 2001 12 17 | 704 | 0.7+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 10 22 | 704 | (1.7− | 0.6+) | 2001 12 17 | 704 | 0.4+ | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2001 12 17 | 704 | 0.6+ | 0.9+ | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | 0.0 | 0.5+ | 2001 12 17 | 704 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.3+ | 0.4− |
| 2001 10 23 | 704 | (0.5− | 1.9+) | 2003 02 21 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.6− |
| 2001 10 23 | 704 | 0.6− | 0.9+ | 2003 02 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 704 | 0.4− | 1.3+ | 2003 02 21 | 644 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2001 10 24 | 704 | 0.1− | 0.4+ | 2003 03 08 | 704 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2001 10 24 | 704 | 0.3+ | 0.3+ | 2003 03 08 | 704 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 0.7+ | 2003 03 08 | 704 | 0.8+ | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2001 10 24 | 704 | (0.6+ | 1.8+) | 2006 10 02 | G96 | 0.4− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2001 10 24 | 704 | (0.5+ | 1.8+) | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 11 17 | 704 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 11 17 | 704 | 0.2− | 0.8+ |
| 2001 11 17 | 704 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.4− | 2006 11 17 | 704 | 0.8+ | 0.9+ |
| 2001 11 17 | 704 | 1.3− | 0.6− | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.5− |
| 2001 11 18 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.2− | 2006 11 17 | 703 | 0.0 | 1.3− |
| 2001 11 18 | 704 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.8− | 0.9− | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2001 11 18 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2001 11 18 | 704 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 1.1− | 1.1− |
| 2001 11 18 | 704 | 0.2− | 1.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.9+ | 0.8+ |
| 2001 11 20 | 704 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2001 11 20 | 704 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.1− | 0.9+ |

**(140528)∗ 2001 TY$_{174}$ = 2004 FO$_{147}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75171)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 175.26049 | | (2000.0) | | | |
| $n$ | 0.21411165 | $\omega$ | 188.80871 | | −0.73890332 | +0.66993287 |
| $a$ | 2.7672125 | $\Omega$ | 33.61473 | | −0.60999487 | −0.61955852 |
| $e$ | 0.0983393 | $i$ | 7.49300 | | −0.28623093 | −0.40906867 |
| $P$ | 4.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 691 | 0.0 | 0.5+ | 2004 03 25 | 699 | 0.7+ | 0.5+ | 2005 07 05 | 644 | 0.3− | 0.2+ |
| 2001 09 18 | 691 | 0.0 | 0.5+ | 2004 03 31 | 704 | 0.4+ | 0.2− | 2005 07 26 | 644 | 0.5+ | 0.6+ |
| 2001 09 18 | 691 | 0.0 | 0.3+ | 2004 03 31 | 704 | 1.5+ | 0.8− | 2005 07 26 | 644 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | (1.6− | 1.1+) | 2004 03 31 | 704 | 0.6+ | 0.4− | 2005 07 26 | 644 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 1.1− | 0.6+ | 2004 03 31 | 704 | 0.4+ | 0.0 | 2005 08 28 | E12 | 0.5− | 0.1− |
| 2001 09 19 | 704 | (1.8− | 0.8+) | 2004 03 31 | 704 | 0.6+ | 0.4− | 2005 08 28 | E12 | 1.1+ | 0.7+ |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2004 04 09 | E12 | 1.2− | 0.7+ | 2005 08 28 | E12 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.5+ | 2004 04 09 | E12 | 0.8− | 1.0+ | 2005 08 28 | E12 | 0.3− | 0.2− |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2004 04 09 | E12 | 1.2− | 0.6+ | 2005 09 08 | E12 | (5.9+ | 4.2+) |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2004 04 09 | E12 | 1.1− | 0.7+ | 2005 09 08 | E12 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2004 04 10 | 703 | 0.6+ | 0.1+ | 2005 09 08 | E12 | 0.5− | 0.2− |
| 2001 09 26 | 704 | 0.3− | 1.1+ | 2004 04 10 | 703 | 0.5+ | 1.0+ | 2005 09 08 | E12 | 0.4+ | 0.1− |
| 2001 09 26 | 704 | 0.5+ | 1.3+ | 2004 04 10 | 703 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 0.2+ | 1.0+ | 2004 04 10 | 703 | (1.2+ | 1.5+) | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2001 09 26 | 704 | 0.6+ | 0.8+ | 2004 04 12 | 699 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.2− | 0.4− | 2004 04 12 | 699 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2001 10 15 | 704 | 1.0− | 0.2− | 2004 04 12 | 699 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.4+ |
| 2001 10 15 | 704 | 0.9− | 0.3− | 2004 04 12 | 699 | 0.7− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2001 10 15 | 704 | 0.5− | 0.3− | 2004 04 15 | 699 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.4+ |
| 2001 10 15 | 704 | 1.4− | 0.2+ | 2004 04 15 | 699 | 1.0− | 0.4− | 2006 10 21 | 691 | 0.7− | 0.1+ |
| 2001 10 15 | 704 | 1.3− | 1.4+ | 2004 04 15 | 699 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.4+ | 0.2+ | 2004 04 15 | 699 | 1.0− | 0.6− | 2006 10 21 | 691 | 0.1− | 0.5+ |
| 2001 10 20 | 704 | 0.1− | 1.0+ | 2004 04 16 | 704 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.4− | 0.7+ | 2004 04 16 | 704 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.6+ | 0.3+ | 2004 04 16 | 704 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2001 10 20 | 704 | 0.0 | 0.4+ | 2004 04 16 | 704 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.7− | 0.4+ | 2004 04 16 | 704 | 0.5+ | 0.2− | 2006 11 08 | 644 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 0.8− | 0.1− | 2004 04 19 | 691 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.6+ |
| 2001 10 24 | 704 | 1.4− | 0.1+ | 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2004 03 14 | 644 | 0.3+ | 0.3+ | 2004 04 20 | 703 | (1.6− | 0.3+) | 2006 11 11 | 703 | 0.4− | 0.9+ |
| 2004 03 14 | 644 | 0.3+ | 0.5+ | 2004 04 20 | 703 | 0.2+ | 1.1+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2004 03 14 | 644 | 0.4+ | 0.4+ | 2004 04 20 | 703 | 0.3− | 1.3+ | 2006 11 11 | 703 | 0.7+ | 1.3+ |
| 2004 03 16 | 704 | 0.7+ | 0.4+ | 2004 04 20 | 703 | 0.7+ | 1.0+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2004 03 16 | 704 | 0.2+ | 1.3+ | 2004 04 21 | 704 | 1.2+ | 1.1+ | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2004 03 16 | 704 | (0.3− | 1.9+) | 2004 04 21 | 704 | 0.1+ | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2004 03 19 | 704 | 0.8+ | 0.5+ | 2004 04 21 | 704 | 0.7+ | 0.4− | 2006 11 13 | G96 | 0.4+ | 0.2+ |
| 2004 03 19 | 704 | 0.7+ | 1.0− | 2004 04 21 | 704 | 0.9+ | 0.7+ | 2006 11 13 | 644 | 0.4− | 0.1+ |
| 2004 03 19 | 704 | 0.3+ | 0.2+ | 2004 04 21 | 704 | 0.6+ | 1.3+ | 2006 11 13 | 644 | 0.4− | 0.4+ |
| 2004 03 19 | 704 | 0.4+ | 0.3+ | 2004 05 07 | 703 | 0.9+ | 1.5+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 0.3− | 0.6+ | 2004 05 07 | 703 | 0.3− | 1.5+ | 2006 11 13 | 644 | 0.3− | 0.5+ |
| 2004 03 20 | 704 | 0.3+ | 0.2+ | 2004 05 07 | 703 | 0.1− | 0.7+ | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2004 03 20 | 704 | 0.7+ | 0.1+ | 2004 05 07 | 703 | 0.4− | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 0.3+ | 1.3− | 2004 05 10 | 608 | 0.2+ | 0.2+ | 2006 11 13 | 104 | 0.1+ | 0.4+ |
| 2004 03 20 | 704 | 0.2+ | 0.3+ | 2004 05 10 | 608 | 0.3+ | 0.2− | 2006 11 13 | 104 | 0.0 | 0.4+ |
| 2004 03 20 | 704 | 0.1− | 0.5+ | 2004 05 10 | 608 | 0.8+ | 0.7+ | 2006 11 13 | 104 | 0.2+ | 0.7+ |
| 2004 03 22 | 704 | 0.3+ | 0.1+ | 2004 05 16 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 704 | (0.5+ | 1.7+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 704 | 0.5+ | 0.3+ | 2004 05 16 | 691 | 0.0 | 0.5+ | 2006 11 16 | 704 | (1.4+ | 3.1+) |
| 2004 03 22 | 704 | 0.1+ | 0.4+ | 2004 05 16 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 704 | 0.9+ | 0.2− |
| 2004 03 22 | 704 | 0.1+ | 0.5+ | 2004 05 16 | 704 | 1.3+ | 0.3+ | 2006 11 16 | 704 | 1.0− | 1.1+ |
| 2004 03 22 | 704 | 0.2+ | 0.1+ | 2004 05 16 | 704 | 0.8+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.4+ |
| 2004 03 24 | 699 | 0.2+ | 0.5− | 2004 05 16 | 704 | 0.6− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2+ |
| 2004 03 24 | 699 | (1.4+ | 1.6−) | 2004 05 16 | 704 | 0.2− | 0.5− | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2004 03 24 | 699 | 0.1+ | 0.2− | 2004 05 24 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.3+ |
| 2004 03 24 | 699 | 0.3+ | 0.3− | 2004 05 24 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | (1.6− | 0.2+) |
| 2004 03 25 | 699 | 0.6− | 0.3+ | 2004 05 24 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | (1.8− | 0.5+) |
| 2004 03 25 | 699 | 0.1− | 0.0 | 2005 07 05 | 644 | 0.7− | 0.4+ | 2006 11 22 | 704 | 0.7− | 1.2+ |
| 2004 03 25 | 699 | 0.8+ | 0.0 | 2005 07 05 | 644 | 0.2− | 0.0 | | | | |

**(140529)∗ 2001 TG$_{176}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.93400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17975613 | $\omega$ | 91.21986 | | +0.69728048 | | +0.71622984 |
| $a$ | 3.1094262 | $\Omega$ | 223.03711 | | −0.67316264 | | +0.64063178 |
| $e$ | 0.1344432 | $i$ | 2.39705 | | −0.24627626 | | +0.27677740 |
| $P$ | 5.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.4+ | 2001 10 15 | 691 | 0.4− | 0.1+ | 2006 05 02 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.4+ | 0.3− | 2001 10 21 | 704 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.1− | 0.0 |
| 2001 09 21 | 333 | 0.6+ | 0.1− | 2001 10 21 | 704 | 0.9− | 0.5− | 2006 08 14 | 644 | 0.0 | 0.4+ |
| 2001 09 21 | 333 | 0.6+ | 0.6− | 2001 10 21 | 704 | 0.1− | 0.3+ | 2006 08 19 | 699 | 0.6− | 0.2− |
| 2001 09 21 | 333 | 0.7+ | 0.5− | 2004 02 22 | 691 | 0.1− | 0.1+ | 2006 08 19 | 699 | 0.3+ | 1.0+ |
| 2001 09 23 | 704 | 0.1+ | 0.7+ | 2004 02 22 | 691 | 0.1− | 0.1− | 2006 08 19 | 699 | 0.6− | 0.6− |
| 2001 09 23 | 704 | 1.2+ | 0.1+ | 2004 02 22 | 691 | 0.4+ | 0.4+ | 2006 08 19 | 699 | (1.3+ | 2.0+) |
| 2001 09 23 | 704 | 0.5+ | 0.0 | 2005 04 11 | G96 | 0.2− | 0.3+ | 2006 08 21 | 644 | 0.4+ | 0.4+ |
| 2001 09 23 | 704 | 0.7+ | 0.5− | 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.2+ |
| 2001 10 11 | 644 | 0.2+ | 0.3+ | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 08 21 | 644 | 0.1+ | 0.3+ |
| 2001 10 11 | 644 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.0 | 0.4+ | 2006 08 21 | 644 | 0.1− | 0.3+ |
| 2001 10 11 | 644 | 0.1+ | 0.1+ | 2005 05 07 | G96 | 0.3+ | 0.1− | 2006 08 21 | 644 | 0.2+ | 0.4+ |
| 2001 10 14 | 704 | (2.1− | 0.3−) | 2005 05 07 | G96 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.4+ | 0.2+ |
| 2001 10 14 | 704 | 0.2+ | 0.3+ | 2005 05 07 | G96 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.6− | 1.0− |
| 2001 10 14 | 704 | 0.1+ | 1.1+ | 2005 05 07 | G96 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2001 10 14 | 704 | 0.2+ | 0.7+ | 2006 05 02 | G96 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.5− | 0.3− |
| 2001 10 15 | 691 | 0.5− | 0.0 | 2006 05 02 | G96 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2001 10 15 | 691 | 0.5− | 0.1− | 2006 05 02 | G96 | 0.1+ | 0.2− | | | | |

**(140530)∗ 2001 TY$_{176}$ = 2004 FS$_{151}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68942)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.75636 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18365640 | $\omega$ | 124.53854 | | −0.64400452 | | −0.76482576 |
| $a$ | 3.0652460 | $\Omega$ | 5.64730 | | +0.63153706 | | −0.54427140 |
| $e$ | 0.0677722 | $i$ | 10.13293 | | +0.43176280 | | −0.34468855 |
| $P$ | 5.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 291 | 0.1+ | 0.4+ | 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.8− | 0.4+ |
| 2001 09 19 | 291 | 0.5− | 0.3+ | 2003 01 13 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.7− | 1.0+ |
| 2001 09 19 | 291 | 0.9− | 0.2+ | 2003 01 13 | 704 | 0.5− | 0.4− | 2006 09 14 | 703 | 0.2− | 0.9+ |
| 2001 09 25 | 691 | 0.1− | 0.3+ | 2003 01 13 | 704 | 0.9+ | 0.8+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2001 09 25 | 691 | 0.0 | 0.1+ | 2003 01 13 | 704 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2001 09 25 | 691 | 0.0 | 0.4+ | 2004 03 16 | 691 | 0.5+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2001 10 14 | 704 | (3.3− | 0.3−) | 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 10 14 | 704 | (2.5− | 0.2−) | 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 10 14 | 704 | (3.5− | 0.4−) | 2004 03 27 | 704 | 0.3+ | 0.7− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | (3.3− | 1.8−) | 2004 03 27 | 704 | 0.5+ | 1.0+ | 2006 10 21 | G96 | 0.3+ | 0.6+ |
| 2001 10 20 | 291 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 10 20 | 291 | 0.1− | 0.5+ | 2004 04 13 | 691 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.7+ |
| 2001 10 20 | 291 | (2.1− | 0.1−) | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2001 10 21 | 704 | 0.3+ | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.8− | 0.4− |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− |

**(140531)∗ 2001 TC$_{180}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.85553 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18334538 | $\omega$ | 83.17635 | | +0.71213961 | | +0.68681747 |
| $a$ | 3.0687115 | $\Omega$ | 233.32035 | | −0.69417655 | | +0.65799251 |
| $e$ | 0.1027445 | $i$ | 10.44491 | | −0.10476689 | | +0.30875171 |
| $P$ | 5.38 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.2− | 0.8− | 2001 11 20 | 699 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.6+ | 0.1+ |
| 1995 09 25 | 691 | 0.3− | 0.8− | 2001 11 20 | 699 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.9+ |
| 1995 09 25 | 691 | 0.3− | 0.7− | 2001 11 20 | 699 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.8+ |
| 1995 09 30 | 691 | (2.7+ | 1.3+) | 2001 11 20 | 699 | 1.1− | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.8+ |
| 1995 09 30 | 691 | 0.9+ | 0.1− | 2004 03 18 | 704 | 0.3− | 0.5− | 2006 09 14 | 703 | 0.2− | 1.2+ |
| 1995 09 30 | 691 | 0.8+ | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.1− | 1.3+ |
| 2001 10 13 | 699 | 0.9− | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.8− | 2006 09 14 | 703 | 1.3+ | 0.6− |
| 2001 10 13 | 699 | (0.8− | 1.6−) | 2004 03 18 | 704 | 0.3− | 0.5− | 2006 09 14 | 703 | (1.2− | 1.8−) |
| 2001 10 13 | 699 | 0.6− | 1.3− | 2005 06 16 | 691 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.9− | 1.3− |
| 2001 10 13 | 699 | (1.8− | 1.1+) | 2005 06 16 | 691 | 0.2− | 0.0 | 2006 09 15 | 704 | 0.8− | 0.8+ |
| 2001 10 14 | 704 | 0.1+ | 0.3+ | 2005 06 16 | 691 | 0.0 | 0.2− | 2006 09 15 | 704 | (0.0 | 1.5+) |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2005 06 28 | 691 | 0.1− | 0.3+ | 2006 09 15 | 704 | 1.4− | 0.9− |
| 2001 10 14 | 704 | 0.2− | 0.4+ | 2005 06 28 | 691 | 0.0 | 0.3+ | 2006 09 15 | 704 | 0.6− | 0.2+ |
| 2001 10 14 | 704 | 0.3+ | 0.3+ | 2005 06 28 | 691 | 0.1− | 0.3+ | 2006 09 22 | 703 | 0.1+ | 0.4− |
| 2001 10 14 | 704 | 0.9+ | 0.5+ | 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 09 22 | 703 | 0.4+ | 0.3+ |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 09 22 | 703 | 1.1− | 0.2− |
| 2001 10 21 | 704 | 0.8+ | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.0 | 2006 09 22 | 703 | 0.3+ | 0.6− |
| 2001 10 21 | 704 | 0.1− | 0.6+ | 2006 08 31 | 704 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.3− | 2006 08 31 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.3+ |

**(140532)∗ 2001 TJ$_{180}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.62665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21588842 | $\omega$ | 61.15923 | | +0.60942931 | | +0.77962166 |
| $a$ | 2.7520088 | $\Omega$ | 247.11110 | | −0.77099024 | | +0.54035597 |
| $e$ | 0.0818249 | $i$ | 9.00356 | | −0.18485121 | | +0.31655252 |
| $P$ | 4.57 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2− | 1.1+ | 2004 04 14 | 699 | 1.5+ | 0.1+ | 2005 09 11 | 699 | 0.6+ | 1.2+ |
| 2001 10 14 | 704 | 0.2+ | 0.6+ | 2004 04 14 | 699 | 0.0 | 0.4+ | 2005 09 11 | 699 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.5+ | 0.3+ | 2004 04 14 | 699 | 0.8− | 0.3+ | 2005 09 11 | 699 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.4+ | 0.2+ | 2004 04 14 | 699 | 0.3− | 0.0 | 2005 09 11 | 699 | 0.2− | 0.5+ |
| 2001 10 14 | 704 | 0.1+ | 0.0 | 2004 04 24 | 704 | 0.9+ | 0.4+ | 2005 10 01 | 699 | 0.2− | 0.4+ |
| 2001 10 21 | 704 | 0.4+ | 1.5+ | 2004 04 24 | 704 | 0.5+ | 0.5+ | 2005 10 01 | 699 | 0.1− | 0.2− |
| 2001 10 21 | 704 | (0.3+ | 1.9+) | 2004 04 24 | 704 | 0.1− | 0.6+ | 2005 10 01 | 699 | 0.6+ | 0.6+ |
| 2001 10 21 | 704 | (0.3+ | 1.7+) | 2004 04 24 | 704 | 1.1− | 0.5+ | 2005 10 01 | 699 | 0.3− | 0.7− |
| 2001 10 21 | 704 | 0.1+ | 1.3+ | 2004 04 25 | 704 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | (0.1− | 1.6+) | 2004 04 25 | 704 | 1.0− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2001 10 23 | 333 | 0.1− | 0.8− | 2004 04 25 | 704 | 0.6+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2001 10 23 | 333 | 0.2− | 0.2+ | 2004 04 25 | 704 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2001 10 23 | 333 | 0.4+ | 0.1− | 2004 04 25 | 704 | 0.4− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2001 11 10 | 704 | 0.9− | 0.3+ | 2004 04 25 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 11 10 | 704 | 0.3+ | 0.1+ | 2004 04 25 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.6− | 0.2− |
| 2001 11 10 | 704 | 0.2+ | 0.8+ | 2004 04 25 | 704 | 0.7+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 1.1− | 0.2− | 2004 04 25 | 704 | 0.8+ | 0.7− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 11 10 | 704 | 0.4− | 0.6− | 2004 04 25 | 704 | 0.0 | 0.5− | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.5+ | 0.3+ | 2004 04 26 | 704 | 0.9+ | 0.9+ | 2006 11 15 | 691 | 0.3− | 0.2+ |
| 2001 11 12 | 704 | 0.7− | 0.2+ | 2004 04 26 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.4− | 0.6+ | 2004 04 26 | 704 | 0.5− | 0.8+ | 2006 11 18 | 704 | 0.9+ | 0.0 |
| 2001 11 17 | 704 | 0.6+ | 0.0 | 2004 04 26 | 704 | 0.3− | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.7− |
| 2001 11 17 | 704 | 0.3+ | 0.3− | 2004 04 26 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.1− |
| 2001 11 17 | 704 | 0.7+ | 0.7− | 2004 04 26 | 704 | 0.2+ | 1.2+ | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2001 11 17 | 704 | 0.5− | 0.2− | 2004 04 26 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 11 17 | 704 | 0.8+ | 0.7− | 2004 04 26 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 699 | 0.2− | 1.1+ | 2004 04 26 | 704 | 0.2− | 0.9+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 699 | 0.6− | 0.3+ | 2005 07 06 | 699 | 0.6− | 0.1− | 2006 11 21 | 704 | (0.0 | 2.8+) |
| 2001 11 20 | 699 | 0.4− | 0.6− | 2005 07 06 | 699 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.0 | 1.1+ |
| 2001 11 20 | 699 | 0.4− | 1.2+ | 2005 07 06 | 699 | 0.7− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2001 12 18 | 704 | 0.8− | 0.1− | 2005 07 06 | 699 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.1+ | 1.1+ |
| 2001 12 18 | 704 | 0.1− | 0.9+ | 2005 07 11 | 703 | 0.6− | 0.0 | 2006 11 21 | 704 | 0.3+ | 1.0− |
| 2001 12 18 | 704 | 0.7− | 0.3− | 2005 07 11 | 703 | 0.0 | 0.7− | 2006 11 27 | 704 | 1.1+ | 0.8+ |
| 2001 12 18 | 704 | 0.4− | 0.0 | 2005 07 11 | 703 | 0.6+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2001 12 18 | 704 | 0.0 | 1.0+ | 2005 07 11 | 703 | 0.0 | 0.9+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2004 04 13 | 644 | 0.1− | 0.2+ | 2005 08 29 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 2.1+ | 0.3+ |
| 2004 04 13 | 644 | 0.3− | 0.3+ | 2005 08 29 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2004 04 13 | 644 | 0.2+ | 0.5+ | 2005 08 29 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 1.3+ | 0.3+ |

**(140533)∗ 2001 TK$_{180}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.80215 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20457823 | $\omega$ | 66.73782 | | +0.68334913 | | −0.72899180 |
| $a$ | 2.8525271 | $\Omega$ | 339.98640 | | +0.61976279 | | +0.60821397 |
| $e$ | 0.1009253 | $i$ | 6.72220 | | +0.38591198 | | +0.31408076 |
| $P$ | 4.82 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 644 | 0.6− | 0.5+ | 2001 11 11 | 704 | 1.0− | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.7− |
| 2001 08 28 | 644 | 0.4− | 0.7+ | 2001 11 12 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2001 08 28 | 644 | 0.3− | 0.6+ | 2001 11 12 | 704 | 1.0− | 0.4− | 2006 10 27 | 703 | 0.5− | 1.1− |
| 2001 10 14 | 704 | 0.7− | 0.4+ | 2001 11 12 | 704 | 1.0− | 0.3+ | 2006 11 02 | G96 | 0.1+ | 0.4− |
| 2001 10 14 | 704 | 0.4− | 0.1− | 2001 11 24 | 704 | 0.6+ | 0.5− | 2006 11 02 | G96 | 0.1+ | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.3+ | 2001 11 24 | 704 | 0.5+ | 0.9+ | 2006 11 02 | G96 | 0.2+ | 0.2− |
| 2001 10 14 | 704 | 0.2− | 0.9+ | 2001 11 24 | 704 | 0.2+ | 0.7+ | 2006 11 02 | G96 | 0.5+ | 0.3− |
| 2001 10 14 | 704 | 0.4− | 0.4+ | 2001 11 24 | 704 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.0 | 0.8− |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2003 01 27 | 704 | (2.0+ | 0.4+) | 2006 11 02 | 703 | 0.6− | 0.2+ |
| 2001 10 21 | 704 | 0.4+ | 0.8+ | 2003 01 27 | 704 | 0.3+ | 0.1+ | 2006 11 02 | 703 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.3+ | 1.1+ | 2003 01 27 | 704 | 0.5+ | 0.7+ | 2006 11 02 | 703 | 0.1− | 1.0− |
| 2001 10 21 | 704 | 0.2− | 0.8+ | 2003 02 21 | 644 | 0.2+ | 0.9+ | 2006 11 13 | 644 | 0.5− | 0.1+ |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2003 02 21 | 644 | 0.4+ | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2001 10 28 | 704 | 0.4− | 0.2+ | 2003 02 21 | 644 | 0.2+ | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.3− |
| 2001 10 28 | 704 | 0.2− | 0.1+ | 2003 03 12 | 644 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2001 10 28 | 704 | (1.7− | 0.5+) | 2003 03 12 | 644 | 0.7+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2001 11 10 | 704 | 0.1+ | 0.2+ | 2003 03 12 | 644 | 0.0 | 1.1+ | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2001 11 10 | 704 | 0.4− | 0.3+ | 2005 07 10 | E12 | (0.2+ | 1.6+) | 2006 11 15 | 703 | (1.9− | 1.3+) |
| 2001 11 10 | 704 | 0.3− | 0.2− | 2005 07 10 | E12 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.9+ | 1.4+ |
| 2001 11 10 | 704 | 0.3− | 0.1+ | 2005 07 10 | E12 | 0.1− | 1.0+ | 2006 11 15 | 703 | 0.0 | 0.4+ |
| 2001 11 10 | 704 | 0.1+ | 0.3− | 2005 07 10 | E12 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.1+ | 1.2− |
| 2001 11 11 | 699 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.8− | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2001 11 11 | 699 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 11 11 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.5− | 2006 11 15 | G96 | 0.9+ | 0.5− |
| 2001 11 11 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.9− | 2006 11 15 | G96 | 1.3+ | 0.2− |
| 2001 11 11 | 704 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 703 | 0.2+ | 0.8− |
| 2001 11 11 | 704 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.3+ | 0.2− | 2006 11 21 | 703 | 0.8− | 0.2− |
| 2001 11 11 | 699 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.4− | 2006 11 21 | 703 | 0.3− | 0.7− |
| 2001 11 11 | 704 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.2− | 0.1+ | 2006 11 21 | 703 | 0.4− | 0.2− |

**(140534)∗ 2001 TT$_{180}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.52536 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19088336 | $\omega$ | 329.43623 | | −0.78107592 | | +0.62002051 |
| $a$ | 2.9873813 | $\Omega$ | 249.06690 | | −0.55565777 | | −0.74429125 |
| $e$ | 0.0485117 | $i$ | 4.55215 | | −0.28489447 | | −0.24820375 |
| $P$ | 5.16 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 27 | 691 | 0.1− | 0.7− | 2003 01 13 | 644 | 0.2+ | 1.0+ | 2005 06 14 | 691 | 0.2+ | 0.4+ |
| 1991 11 27 | 691 | 0.3− | 0.8− | 2004 03 19 | 704 | (2.0+ | 0.8+) | 2005 06 14 | 691 | 0.0 | 0.4+ |
| 1991 11 27 | 691 | 0.1− | 0.4− | 2004 03 19 | 704 | (2.2+ | 0.7+) | 2005 06 14 | 691 | 0.1− | 0.3+ |
| 1995 09 02 | 691 | 0.3+ | 0.4− | 2004 03 19 | 704 | (1.3+ | 2.4+) | 2006 09 17 | 691 | 0.3− | 0.1+ |
| 1995 09 02 | 691 | 0.3− | 0.2− | 2004 03 19 | 704 | 0.7+ | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.1+ |
| 1995 09 02 | 691 | 0.3+ | 0.3− | 2004 03 31 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.4+ | 2004 03 31 | 704 | 0.3+ | 0.4− | 2006 09 27 | 691 | 0.5− | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2004 03 31 | 704 | 0.7− | 0.2− | 2006 09 27 | 691 | 0.4− | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2004 03 31 | 704 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 10 14 | 704 | 0.6+ | 0.9+ | 2004 03 31 | 704 | 0.1+ | 0.8+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.5+ | 1.2+ | 2004 04 17 | 704 | 1.1+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2001 10 14 | 704 | (0.5+ | 1.7+) | 2004 04 17 | 704 | 0.5− | 0.8+ | 2006 10 01 | 691 | 0.2+ | 0.3− |
| 2001 10 19 | 644 | 0.3− | 0.6+ | 2004 04 17 | 704 | 0.0 | 1.3+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 10 19 | 644 | 1.0− | 0.9+ | 2004 04 17 | 704 | 0.3− | 1.3+ | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2001 10 19 | 644 | 0.4− | 0.6+ | 2004 04 17 | 699 | 0.7− | 0.7+ | 2006 10 11 | 644 | 0.6− | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.0 | 2004 04 17 | 699 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.5+ | 0.7+ |
| 2001 10 21 | 704 | 0.3+ | 0.2+ | 2004 04 17 | 699 | 1.3+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.2+ | 0.4+ | 2004 04 17 | 699 | 0.6− | 1.0+ | 2006 10 17 | 703 | (1.7− | 0.5+) |
| 2001 10 21 | 704 | 0.0 | 0.5+ | 2004 04 19 | 704 | 0.5+ | 1.0+ | 2006 10 17 | 703 | 0.1− | 1.0+ |
| 2001 10 21 | 704 | 0.7− | 0.2+ | 2004 04 19 | 704 | 1.0+ | 0.0 | 2006 11 18 | G96 | 0.4− | 0.0 |
| 2001 11 16 | 691 | 0.5+ | 0.8+ | 2004 04 19 | 704 | 0.9+ | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2001 11 16 | 691 | 0.6+ | 0.6+ | 2004 04 21 | 704 | 0.3+ | 1.2+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2001 11 16 | 691 | 0.5+ | 0.9+ | 2004 04 21 | 704 | 0.3− | 0.8+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2003 01 13 | 644 | 0.2+ | 1.1+ | 2004 04 21 | 704 | 0.0 | 0.9+ | | | | |
| 2003 01 13 | 644 | 1.0+ | 0.9+ | 2004 04 21 | 704 | (0.3− | 2.0+) | | | | |

**(140535)∗ 2001 TN$_{182}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.37553 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19101921 | $\omega$ | 99.64907 | | +0.59722682 | | −0.79911027 |
| $a$ | 2.9859648 | $\Omega$ | 313.44848 | | +0.69366792 | | +0.55770769 |
| $e$ | 0.1091254 | $i$ | 5.44334 | | +0.40267225 | | +0.22446583 |
| $P$ | 5.16 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.0 | 0.1+ | 2001 11 17 | 644 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.9+ | 0.1+ |
| 2000 07 29 | 807 | 0.0 | 0.0 | 2001 11 17 | 644 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.4− |
| 2001 09 21 | 699 | 0.6+ | 0.9+ | 2001 11 24 | 704 | (0.7+ | 2.8−) | 2006 09 25 | 704 | (0.7− | 1.5+) |
| 2001 09 21 | 699 | 0.9+ | 0.7− | 2001 11 24 | 704 | (0.5− | 1.7−) | 2006 09 30 | 703 | 0.3− | 0.2+ |
| 2001 09 21 | 699 | 0.3+ | 0.2+ | 2001 11 24 | 704 | (0.1+ | 1.8−) | 2006 09 30 | 703 | 1.1− | 0.4− |
| 2001 09 21 | 699 | 0.0 | 0.7+ | 2001 11 24 | 704 | (1.0+ | 1.6−) | 2006 09 30 | 703 | 0.7− | 0.2− |
| 2001 10 14 | 704 | (0.7− | 3.1−) | 2001 12 10 | 704 | 0.2− | 1.1+ | 2006 09 30 | 703 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 1.2+ | 0.7− | 2001 12 10 | 704 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2001 10 14 | 704 | 0.3+ | 1.2− | 2001 12 10 | 704 | 0.6+ | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | (0.6− | 1.6−) | 2001 12 10 | 704 | 0.5+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.4− |
| 2001 10 14 | 704 | 0.5− | 0.8− | 2001 12 10 | 704 | 0.4+ | 1.4+ | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.8− | 0.2+ | 2003 01 30 | 291 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 1.1− | 2003 01 30 | 291 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.6− | 2003 01 30 | 291 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.5− | 0.5+ | 2003 02 03 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.7+ | 0.4− |
| 2001 10 21 | 704 | 0.2− | 0.3− | 2003 02 03 | 644 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2001 11 10 | 704 | 0.4− | 0.2+ | 2003 02 03 | 644 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.2+ | 0.1+ | 2003 02 11 | 608 | 0.3− | 0.6− | 2006 10 17 | 703 | 0.7− | 0.1− |
| 2001 11 10 | 704 | 0.1− | 0.1− | 2003 02 11 | 608 | 0.3− | 0.8− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.5+ | 0.3+ | 2003 02 11 | 608 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2001 11 10 | 704 | 0.7+ | 0.6+ | 2003 02 22 | 699 | 1.2+ | 0.7− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 11 11 | 644 | 0.2− | 0.3− | 2003 02 22 | 699 | (1.2+ | 1.6−) | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 644 | 0.3− | 0.0 | 2003 02 22 | 699 | 0.7+ | 0.7− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 644 | 0.2− | 0.0 | 2003 02 22 | 699 | 0.3− | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.8− | 0.2− | 2003 03 06 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.3+ |
| 2001 11 12 | 704 | 0.4+ | 0.1+ | 2003 03 06 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.3− | 0.3− | 2003 03 06 | 644 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.9− |
| 2001 11 12 | 704 | 1.1− | 0.2− | 2003 03 12 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2001 11 12 | 704 | 1.3− | 0.8+ | 2003 03 12 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 11 17 | 644 | 0.2+ | 0.0 | 2003 03 12 | 644 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.3+ |

**(140536)∗ 2001 TO$_{182}$ = 1993 FV$_{70}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20553)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.30542 | | (2000.0) | | | |
| $n$ | 0.18975591 | $\omega$ | 65.72665 | | +0.39377236 | −0.91920151 |
| $a$ | 2.9992028 | $\Omega$ | 1.10166 | | +0.76479480 | +0.32553930 |
| $e$ | 0.1686865 | $i$ | 10.34101 | | +0.50993357 | +0.22156883 |
| $P$ | 5.19 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.2+ | 0.5+ | 2001 12 07 | 644 | 0.3+ | 0.1− | 2006 09 18 | 704 | (1.6− | 0.1+) |
| 1993 03 22 | 809 | 0.3+ | 0.5+ | 2001 12 07 | 644 | 0.9+ | 0.3− | 2006 09 18 | 699 | 0.7+ | 0.3+ |
| 2001 09 21 | 699 | 0.3+ | 0.5− | 2002 01 08 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | (1.3+ | 1.5+) |
| 2001 09 21 | 699 | 0.9− | 1.1− | 2002 01 08 | 704 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.4+ |
| 2001 09 21 | 699 | 0.5− | 1.1+ | 2002 01 08 | 704 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 699 | 1.2− | 0.4+ | 2002 01 08 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 699 | 0.2+ | 0.9+ | 2002 01 08 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 699 | (2.0− | 0.6+) | 2003 02 01 | 704 | 0.8+ | 0.3+ | 2006 09 21 | A50 | 0.2− | 0.5− |
| 2001 09 21 | 699 | 0.4+ | 0.6+ | 2003 02 01 | 704 | 0.1+ | 0.6+ | 2006 09 21 | A50 | 0.0 | 0.1− |
| 2001 09 21 | 699 | 0.1− | 0.4− | 2003 02 01 | 704 | 0.6+ | 1.1+ | 2006 09 25 | 704 | 0.7− | 0.3− |
| 2001 10 13 | 699 | (2.1+ | 0.3+) | 2003 02 25 | 599 | 0.9− | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.5+ |
| 2001 10 13 | 699 | (1.7+ | 0.3+) | 2003 02 25 | 599 | 0.6+ | 0.2+ | 2006 09 25 | 704 | 0.7+ | 0.5+ |
| 2001 10 13 | 699 | 1.0+ | 0.1+ | 2003 02 25 | 599 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.4− | 0.1+ |
| 2001 10 13 | 699 | 0.0 | 1.0+ | 2003 02 28 | 704 | 0.5+ | 1.0+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2001 10 14 | 704 | 0.5− | 0.2+ | 2003 02 28 | 704 | (0.6+ | 1.9+) | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.4− | 0.3− | 2003 02 28 | 704 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.2− | 0.4− | 2003 03 07 | 699 | 1.1+ | 0.8− | 2006 09 27 | 958 | 0.0 | 0.7+ |
| 2001 10 14 | 704 | 0.7− | 0.4− | 2003 03 07 | 699 | 0.1− | 0.3+ | 2006 09 27 | 958 | 0.3+ | 0.2+ |
| 2001 10 14 | 704 | 0.1− | 0.2+ | 2003 03 07 | 699 | 0.5+ | 0.1− | 2006 09 27 | 958 | 0.8+ | 0.1− |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2003 03 07 | 699 | 0.4− | 0.2+ | 2006 09 29 | 704 | 1.1− | 0.1− |
| 2001 10 21 | 704 | 0.2+ | 0.6− | 2003 03 25 | 699 | 0.1+ | 0.8+ | 2006 09 29 | 704 | 1.0− | 0.8+ |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2003 03 25 | 699 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.7− | 0.1− |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2003 03 25 | 699 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.7− | 1.1+ |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2003 03 25 | 699 | 0.1+ | 0.9+ | 2006 09 29 | 704 | 0.8− | 0.7+ |
| 2001 11 10 | 704 | 0.3− | 0.2− | 2003 03 30 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2001 11 10 | 704 | 0.4− | 0.4− | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2001 11 10 | 704 | 0.3− | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2001 11 10 | 704 | 0.4− | 0.2− | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2001 11 10 | 704 | 0.7+ | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2001 11 11 | 699 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.5− | 2006 10 17 | 703 | 0.2+ | 0.6+ |
| 2001 11 11 | 699 | (1.6+ | 0.3−) | 2006 09 14 | 703 | 1.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2001 11 11 | 699 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 11 11 | 699 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2001 11 11 | 644 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2001 11 11 | 644 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 11 11 | 644 | 0.3+ | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.3− | 0.6− | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.3− | 0.8− | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2001 11 12 | 704 | 0.1− | 0.6− | 2006 09 16 | 644 | 0.2+ | 0.3+ | 2006 11 06 | 644 | 0.3− | 0.2− |
| 2001 11 12 | 704 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.1− | 0.9+ | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.2+ | 0.2− | 2006 09 17 | 703 | 0.7− | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2001 11 20 | 699 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.2+ | 0.7− | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2001 11 20 | 699 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2001 11 20 | 699 | 0.4− | 0.8+ | 2006 09 18 | 704 | 1.3− | 1.4+ | 2006 11 11 | 703 | 0.9− | 0.5− |
| 2001 11 20 | 699 | 0.3+ | 0.4+ | 2006 09 18 | 704 | (0.5+ | 1.8+) | | | | |
| 2001 12 07 | 644 | 0.7+ | 0.6− | 2006 09 18 | 704 | 0.6+ | 0.4− | | | | |

**(140537)∗ 2001 TQ$_{182}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.61815 | | (2000.0) | | | |
| $n$ | 0.18880407 | $\omega$ | 324.66351 | | +0.74120837 | +0.67102267 |
| $a$ | 3.0092745 | $\Omega$ | 353.10097 | | −0.57524250 | +0.62080115 |
| $e$ | 0.0156033 | $i$ | 8.81343 | | −0.34598587 | +0.40538193 |
| $P$ | 5.22 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.1− | 0.6+ | 2004 04 09 | E12 | (0.9+ | 1.7−) | 2006 09 18 | 704 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | 0.8− | 0.5+ | 2004 04 09 | E12 | 0.5+ | 0.3+ | 2006 09 18 | 704 | (3.1+ | 0.2−) |
| 2001 10 14 | 704 | 0.3− | 0.7+ | 2004 04 14 | 699 | 0.0 | 0.2− | 2006 09 18 | 704 | (0.4+ | 1.5+) |
| 2001 10 14 | 704 | 0.5− | 1.3+ | 2004 04 14 | 699 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.3+ | 1.0+ |
| 2001 10 14 | 704 | 0.4− | 1.1+ | 2004 04 14 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.4− |
| 2001 10 21 | 704 | 0.1− | 0.6− | 2004 04 14 | 699 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.5− | 0.5+ |
| 2001 10 21 | 704 | 1.1− | 1.1+ | 2004 04 17 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.6+ |
| 2001 10 21 | 704 | 0.0 | 0.1+ | 2004 04 17 | 704 | 1.1+ | 0.6+ | 2006 09 18 | 699 | 0.2+ | 0.3− |
| 2001 10 21 | 704 | 0.1+ | 0.5+ | 2004 04 17 | 704 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2001 11 10 | 704 | 0.3− | 0.0 | 2004 04 17 | 704 | 0.8+ | 0.1− | 2006 09 19 | 703 | 0.1− | 0.5− |
| 2001 11 10 | 704 | 1.4− | 0.7− | 2004 04 19 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.6− |
| 2001 11 10 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 1.3+ | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2001 11 10 | 704 | 0.8+ | 0.2+ | 2004 04 19 | 704 | 0.5− | 0.4− | 2006 09 22 | 224 | 0.4+ | 0.8+ |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2004 04 19 | 704 | 0.8+ | 0.3− | 2006 09 22 | 224 | 0.5+ | 0.3+ |
| 2001 11 12 | 704 | 0.3− | 0.4− | 2004 04 19 | 704 | 0.5+ | 0.9− | 2006 09 22 | 224 | (1.6− | 1.1+) |
| 2001 11 12 | 704 | 0.5+ | 0.2+ | 2004 04 21 | 704 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.3+ | 0.2+ | 2004 04 21 | 704 | 0.2− | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2004 04 21 | 704 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 699 | 0.5+ | 0.2− | 2004 04 21 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 704 | 0.5− | 1.1+ |
| 2001 11 20 | 699 | 0.5− | 0.1+ | 2004 04 21 | 704 | 0.3+ | 0.8+ | 2006 09 29 | 704 | 0.1+ | 0.4+ |
| 2001 11 20 | 699 | 0.3+ | 0.5+ | 2004 05 09 | 703 | 0.0 | 0.7+ | 2006 09 29 | 704 | 0.1− | 0.8+ |
| 2001 11 20 | 699 | 0.1− | 1.2+ | 2004 05 09 | 703 | (0.4+ | 2.1+) | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2004 03 15 | 644 | 1.1− | 0.8+ | 2004 05 09 | 703 | 0.4− | 0.2− | 2006 09 29 | 704 | 1.1− | 0.7+ |
| 2004 03 15 | 644 | 0.6− | 1.0+ | 2004 05 09 | 703 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.6− |
| 2004 03 15 | 644 | 0.9− | 1.3+ | 2005 07 05 | E12 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 1.0− | 0.0 |
| 2004 03 25 | 699 | 0.2+ | 1.1+ | 2005 07 05 | E12 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2004 03 25 | 699 | 0.1− | 1.0+ | 2005 07 05 | E12 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.7− | 0.4+ |
| 2004 03 25 | 699 | 0.6+ | 0.9+ | 2005 07 05 | E12 | 0.1+ | 0.2− | 2006 10 22 | 682 | 0.4− | 0.6− |
| 2004 03 25 | 699 | 0.2− | 0.4− | 2006 08 30 | 699 | 0.2− | 0.3− | 2006 10 22 | 682 | 0.8− | 0.5− |
| 2004 03 26 | 704 | 0.9+ | 1.2+ | 2006 08 30 | 699 | 0.5+ | 0.4+ | 2006 10 22 | 682 | 0.2− | 0.3− |
| 2004 03 26 | 704 | (1.6+ | 1.3+) | 2006 08 30 | 699 | 0.2+ | 0.4+ | 2006 10 23 | 682 | 0.1− | 0.0 |
| 2004 03 26 | 704 | 0.9+ | 0.5+ | 2006 08 30 | 699 | 0.2− | 0.7+ | 2006 10 23 | 682 | 0.1− | 0.1+ |
| 2004 04 08 | E12 | 0.3+ | 1.0+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 23 | 682 | 0.1− | 0.3+ |
| 2004 04 08 | E12 | (1.0+ | 1.6+) | 2006 09 17 | 691 | 0.7− | 1.0+ | 2006 10 28 | 683 | 0.1+ | 0.3− |
| 2004 04 08 | E12 | (0.8+ | 1.5+) | 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 10 28 | 683 | 0.1− | 1.2− |
| 2004 04 08 | E12 | (1.3+ | 1.8+) | 2006 09 17 | 291 | 0.2+ | 0.2+ | 2006 10 28 | 683 | (1.7+ | 0.1+) |
| 2004 04 09 | E12 | (1.0+ | 1.6−) | 2006 09 17 | 291 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.6− |
| 2004 04 09 | E12 | 0.7+ | 0.6+ | 2006 09 17 | 291 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.4− |
| 2004 04 09 | E12 | (0.6+ | 1.8−) | 2006 09 18 | 703 | 0.5+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2004 04 09 | E12 | 0.4+ | 0.7+ | 2006 09 18 | 703 | 0.7+ | 0.4− | 2006 11 14 | 703 | 0.3− | 0.1+ |
| 2004 04 09 | E12 | (0.9+ | 2.7−) | 2006 09 18 | 703 | 0.1− | 0.2− | | | | |
| 2004 04 09 | E12 | 0.6+ | 1.1+ | 2006 09 18 | 703 | 0.6+ | 1.0− | | | | |

**(140538)∗ 2001 TX$_{182}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.07351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20523559 | $\omega$ | 125.87648 | | −0.77428056 | −0.62885419 | |
| $a$ | 2.8464328 | $\Omega$ | 15.56886 | | +0.46117883 | −0.63745419 | |
| $e$ | 0.0851827 | $i$ | 15.32529 | | +0.43336325 | −0.44519049 | |
| $P$ | 4.80 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 566 | 0.6+ | 0.5− | 2001 11 20 | 699 | (0.1− | 2.0+) | 2003 03 31 | 704 | 0.0 | 0.2+ |
| 1996 10 11 | 566 | 0.6+ | 0.2− | 2001 11 20 | 699 | 0.0 | 0.9+ | 2003 03 31 | 704 | 0.8− | 0.0 |
| 1996 10 11 | 566 | 0.3+ | 0.3− | 2001 11 20 | 699 | 0.8+ | 0.9+ | 2003 03 31 | 704 | 0.1+ | 0.3+ |
| 2001 09 22 | 699 | 0.2+ | 0.6+ | 2001 11 20 | 699 | 0.2+ | 0.9+ | 2003 03 31 | 704 | 0.7+ | 0.5− |
| 2001 09 22 | 699 | 0.1− | 0.9+ | 2001 12 07 | 644 | 0.3+ | 0.2− | 2003 04 03 | 704 | 0.2− | 0.1− |
| 2001 09 22 | 704 | 0.7+ | 0.1+ | 2001 12 07 | 644 | 0.5+ | 0.1− | 2003 04 03 | 704 | (0.0 | 1.9+) |
| 2001 09 22 | 704 | 0.4+ | 0.4− | 2001 12 07 | 644 | 0.4+ | 0.0 | 2003 04 03 | 704 | 0.1+ | 0.5− |
| 2001 09 22 | 699 | 0.4− | 0.8+ | 2001 12 10 | 704 | 0.4+ | 0.5− | 2003 04 03 | 704 | 0.9− | 1.0+ |
| 2001 09 22 | 704 | 0.1− | 0.5− | 2001 12 10 | 704 | 0.2− | 0.4− | 2003 04 03 | 704 | 0.2− | 0.3+ |
| 2001 09 22 | 699 | 0.0 | 0.3+ | 2001 12 10 | 704 | 0.7+ | 0.5− | 2003 04 03 | 704 | 0.2+ | 1.2+ |
| 2001 10 14 | 704 | 0.2− | 0.1− | 2001 12 10 | 704 | 0.5− | 0.1− | 2003 04 03 | 704 | 0.4+ | 0.2+ |
| 2001 10 14 | 704 | 0.1+ | 0.2− | 2001 12 10 | 704 | 0.1− | 0.8− | 2003 04 03 | 704 | 0.5− | 0.9+ |
| 2001 10 14 | 704 | 0.2− | 0.1− | 2001 12 14 | 704 | 1.4− | 0.8+ | 2003 04 24 | 704 | 0.6+ | 0.1+ |
| 2001 10 14 | 704 | 0.6− | 0.3− | 2001 12 14 | 704 | 1.0− | 0.4+ | 2003 04 24 | 704 | 0.2+ | 0.6+ |
| 2001 10 14 | 704 | 0.5− | 0.3− | 2001 12 14 | 704 | 0.1− | 0.5− | 2003 04 24 | 704 | 0.2+ | 0.6+ |
| 2001 10 21 | 704 | 0.9+ | 1.5+ | 2003 01 19 | 644 | 0.3+ | 0.7− | 2003 04 24 | 704 | 0.3+ | 0.7+ |
| 2001 10 21 | 704 | 0.6− | 0.1− | 2003 01 19 | 644 | 0.2− | 1.0− | 2003 04 24 | 704 | 0.5+ | 0.2+ |
| 2001 10 21 | 704 | 0.5+ | 0.2− | 2003 01 19 | 644 | 0.1− | 0.5− | 2003 05 05 | 704 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 1.6− | 0.1− | 2003 02 03 | 644 | 0.5− | 0.4− | 2003 05 05 | 704 | 0.3− | 0.9− |
| 2001 10 21 | 704 | (1.8− | 1.1+) | 2003 02 03 | 644 | 0.4− | 0.7− | 2003 05 05 | 704 | 0.8− | 0.0 |
| 2001 10 27 | 704 | 0.3− | 1.0− | 2003 02 03 | 644 | 0.3− | 0.4− | 2005 08 30 | 699 | 0.7− | 0.7+ |
| 2001 10 27 | 704 | 1.0− | 0.9− | 2003 02 21 | 644 | 0.0 | 0.0 | 2005 08 30 | 699 | 1.0− | 1.1+ |
| 2001 10 27 | 704 | (2.6− | 0.2+) | 2003 02 21 | 644 | 0.2+ | 0.0 | 2005 08 30 | 699 | 1.3− | 0.1− |
| 2001 11 10 | 704 | (2.3− | 0.9−) | 2003 02 21 | 644 | 0.1− | 0.1+ | 2005 08 30 | 699 | 0.9+ | 0.1+ |
| 2001 11 10 | 704 | 0.1− | 0.1− | 2003 02 26 | 704 | 1.0− | 0.0 | 2005 10 04 | 644 | 0.5− | 0.7+ |
| 2001 11 10 | 704 | 0.3− | 0.6+ | 2003 02 26 | 704 | 0.6− | 0.3− | 2005 10 04 | 644 | 0.4− | 0.7+ |
| 2001 11 10 | 704 | (0.5− | 2.6+) | 2003 02 26 | 704 | 0.1− | 0.3− | 2005 10 04 | 644 | 0.6− | 0.3+ |
| 2001 11 11 | 699 | 0.2+ | 0.4− | 2003 03 08 | 644 | 0.3+ | 0.1+ | 2005 10 08 | 699 | 0.3− | 0.9+ |
| 2001 11 11 | 699 | 0.5+ | 0.0 | 2003 03 08 | 644 | 0.4+ | 0.2+ | 2005 10 08 | 699 | 1.3+ | 0.3− |
| 2001 11 11 | 699 | 0.3− | 0.8− | 2003 03 08 | 644 | 0.3+ | 0.1+ | 2005 10 08 | 699 | (2.9− | 1.3−) |
| 2001 11 11 | 644 | 0.1+ | 0.1+ | 2003 03 12 | 704 | 0.4+ | 0.4+ | 2005 10 08 | 699 | (0.8− | 2.0−) |
| 2001 11 11 | 699 | (1.8− | 0.5−) | 2003 03 12 | 704 | 0.9+ | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.4+ |
| 2001 11 11 | 644 | 0.2+ | 0.0 | 2003 03 12 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.2− | 0.4− |
| 2001 11 11 | 644 | 0.0 | 0.1− | 2003 03 12 | 704 | 0.5+ | 0.4− | 2006 10 02 | 703 | 0.3− | 0.4+ |
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2003 03 12 | 704 | 1.1+ | 0.9+ | 2006 10 02 | 703 | 0.1+ | 0.7+ |
| 2001 11 12 | 704 | 0.2− | 0.3− | 2003 03 25 | 704 | 0.6+ | 0.8+ | 2006 11 21 | 703 | 0.3− | 0.3− |
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2003 03 25 | 704 | 0.4+ | 1.1+ | 2006 11 21 | 703 | 0.3+ | 0.1− |
| 2001 11 12 | 704 | 0.5− | 0.2+ | 2003 03 25 | 704 | 0.1+ | 0.6+ | 2006 11 21 | 703 | 0.3+ | 0.1− |
| 2001 11 12 | 704 | 0.5+ | 1.0+ | 2003 03 25 | 704 | 0.1+ | 0.2+ | 2006 11 21 | 703 | 0.8+ | 0.2− |

**(140539)∗ 2001 TJ**$_{184}$

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.03551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21347824 | $\omega$ | 95.88708 | | +0.97667378 | +0.19609152 | |
| $a$ | 2.7726836 | $\Omega$ | 252.82848 | | −0.21463790 | +0.90336496 | |
| $e$ | 0.0590117 | $i$ | 5.25471 | | +0.00623701 | +0.38141823 | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.3− | 0.4+ | 2005 07 01 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 09 28 | 644 | 0.4− | 1.0+ | 2005 07 18 | 644 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 09 28 | 644 | 0.4− | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 1.2− | 0.4− |
| 2001 09 28 | 644 | 0.7− | 1.1+ | 2005 07 18 | 644 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 09 28 | 644 | 0.3− | 0.1+ | 2005 07 26 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2001 09 28 | 644 | 0.4− | 1.0+ | 2005 07 26 | 644 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.1− | 1.0+ | 2005 07 26 | 644 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2001 10 14 | 704 | 0.6− | 0.2+ | 2005 08 29 | 691 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.4− | 0.3+ | 2005 08 29 | 691 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.4− | 0.1+ | 2005 08 29 | 691 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.8− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.7− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2001 11 17 | 695 | 0.7+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.4− | 2006 11 27 | 703 | 0.7+ | 0.1− |
| 2001 11 17 | 695 | 0.6+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2001 11 17 | 695 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.6− | 0.9− |
| 2001 11 17 | 695 | 0.5+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 2.2+ | 0.7+ |
| 2001 11 17 | 695 | 0.6+ | 0.6− | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2003 01 27 | 644 | 0.3+ | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.8− | 2006 11 27 | 703 | 0.5+ | 0.9+ |
| 2003 01 27 | 644 | 0.2+ | 1.5+ | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.2− | 0.2− |
| 2003 01 27 | 644 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2005 07 01 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2005 07 01 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2− | | | | |

**(140540)∗ 2001 TU**$_{184}$

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.06629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18529953 | $\omega$ | 216.81794 | | −0.64664697 | +0.76022852 | |
| $a$ | 3.0470985 | $\Omega$ | 13.28113 | | −0.61889428 | −0.47504059 | |
| $e$ | 0.0894994 | $i$ | 15.77449 | | −0.44588964 | −0.44315801 | |
| $P$ | 5.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 03 | 691 | 0.6− | 0.6+ | 2004 02 25 | 704 | 1.2− | 0.3− | 2004 03 22 | 704 | 0.0 | 0.1+ |
| 1995 09 03 | 691 | 0.4− | 0.7+ | 2004 02 25 | 704 | 0.0 | 0.2+ | 2004 03 26 | 691 | 0.1+ | 0.0 |
| 1995 09 03 | 691 | 0.6− | 0.7+ | 2004 02 25 | 704 | (0.9− | 2.1+) | 2004 03 26 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2004 03 12 | 644 | 0.4+ | 0.2+ | 2004 03 26 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.1+ | 0.8− | 2004 03 12 | 644 | 0.5+ | 0.2+ | 2004 04 19 | 704 | 0.3− | 0.7− |
| 2001 09 20 | 704 | 0.6+ | 0.2− | 2004 03 12 | 644 | 0.5+ | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.7+ |
| 2001 10 14 | 704 | (1.7− | 0.0 ) | 2004 03 15 | 703 | 0.3− | 0.9+ | 2004 04 19 | 704 | (1.1− | 2.2+) |
| 2001 10 14 | 704 | 0.0 | 0.4− | 2004 03 15 | 704 | (1.9+ | 1.0+) | 2004 04 21 | 691 | 0.4+ | 0.1− |
| 2001 10 14 | 704 | 0.2+ | 0.7+ | 2004 03 15 | 703 | 0.2+ | 1.5+ | 2004 04 21 | 691 | 0.4+ | 0.2+ |
| 2001 10 19 | 644 | 0.4− | 0.9+ | 2004 03 15 | 704 | 0.7+ | 0.2+ | 2004 04 21 | 691 | 0.3+ | 0.2+ |
| 2001 10 19 | 644 | 0.8− | 0.8+ | 2004 03 15 | 703 | (0.8+ | 1.6+) | 2006 09 28 | 691 | 0.6− | 0.3+ |
| 2001 10 19 | 644 | 0.5− | 0.5+ | 2004 03 15 | 704 | 1.3+ | 0.4+ | 2006 09 28 | 691 | 0.6− | 0.4+ |
| 2001 10 21 | 704 | 0.3+ | 0.3+ | 2004 03 15 | 703 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.5− | 0.2+ |
| 2001 10 21 | 704 | 0.6+ | 0.8+ | 2004 03 15 | 704 | 1.5+ | 0.2− | 2006 10 18 | 291 | 0.5+ | 0.3+ |
| 2001 10 21 | 704 | 0.8+ | 0.9+ | 2004 03 15 | 704 | 1.2+ | 0.7+ | 2006 10 18 | 291 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.0 | 0.5+ | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 10 18 | 291 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 0.2− | 0.4− | 2004 03 18 | 691 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.7− | 0.0 |
| 2001 10 25 | 691 | 0.1− | 0.0 | 2004 03 18 | 691 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.2+ |
| 2001 10 25 | 691 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 10 25 | 691 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.6+ | 0.1+ |
| 2001 12 17 | 695 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 0.1+ | 0.9+ | 2006 11 21 | G96 | 0.7− | 0.1− |
| 2001 12 17 | 695 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2001 12 17 | 695 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2001 12 17 | 695 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2004 02 25 | 704 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.5+ | 0.5+ | | | | |
| 2004 02 25 | 704 | 0.1− | 1.1+ | 2004 03 22 | 704 | 0.3+ | 0.9+ | | | | |

**(140541)∗ 2001 TO**$_{185}$

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.46035 | | (2000.0) | | | |
| $n$ | 0.21156154 | $\omega$ | 247.90827 | | −0.74889148 | −0.65976875 |
| $a$ | 2.7894049 | $\Omega$ | 250.75067 | | +0.62970110 | −0.67923085 |
| $e$ | 0.1043996 | $i$ | 3.77655 | | +0.20648990 | −0.32148197 |
| $P$ | 4.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 24 | 691 | 0.7+ | 0.3− | 2003 01 28 | 608 | 0.1+ | 1.0+ | 2006 10 17 | G96 | 0.3− | 0.1− |
| 1992 11 24 | 691 | 0.4+ | 0.1− | 2003 01 28 | 608 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.3+ |
| 1992 11 24 | 691 | 0.5+ | 0.2− | 2003 02 01 | 699 | 0.9+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 1992 11 24 | 691 | 0.5− | 0.7− | 2003 02 01 | 699 | 0.4− | 0.5+ | 2006 10 17 | G96 | 0.2− | 0.3+ |
| 1992 11 24 | 691 | 0.2− | 1.0− | 2003 02 01 | 699 | 0.7− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 1992 11 24 | 691 | 0.3− | 0.9− | 2003 02 01 | 699 | (1.5− | 1.4+) | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 1.3+ | 2003 02 02 | 704 | 0.0 | 0.7− | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 1.5+ | 2003 02 02 | 704 | (2.2− | 1.1+) | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.2− | 1.2+ | 2003 02 02 | 704 | 0.7− | 0.9+ | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.6+ | 0.3+ | 2003 02 02 | 704 | (1.8− | 1.4+) | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | (0.3− | 2.2+) | 2003 02 03 | 608 | 0.6+ | 0.4+ | 2006 11 11 | 703 | (2.9− | 2.4−) |
| 2001 10 14 | 704 | 1.0− | 0.5+ | 2003 02 03 | 608 | 1.0+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2001 10 14 | 704 | 0.4− | 0.0 | 2003 02 03 | 608 | 0.1+ | 0.4+ | 2006 11 11 | 703 | (1.7+ | 0.4+) |
| 2001 10 19 | 644 | 0.2+ | 0.8− | 2003 02 07 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.9− | 1.2− |
| 2001 10 19 | 644 | 0.3+ | 0.6− | 2003 02 07 | 644 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2001 10 19 | 644 | 0.2+ | 0.4− | 2003 02 07 | 644 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.9+ | 0.1− |
| 2001 10 21 | 704 | 0.2− | 1.3+ | 2003 02 19 | 644 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.4− | 1.0+ | 2003 02 19 | 644 | 0.4+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.4+ | 1.4+ | 2003 02 19 | 644 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.4− | 1.2+ | 2003 03 07 | 704 | 1.0+ | 0.8+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2001 10 25 | 691 | 0.5− | 0.5+ | 2003 03 07 | 704 | 0.1− | 1.1+ | 2006 11 21 | 704 | 0.8+ | 0.2− |
| 2001 10 25 | 691 | 0.4− | 0.3+ | 2003 03 07 | 704 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2001 10 25 | 691 | 0.8− | 0.4+ | 2003 03 07 | 704 | 0.5+ | 1.0+ | 2006 11 21 | 704 | 0.9+ | 0.6− |
| 2001 10 26 | 691 | 0.0 | 0.2+ | 2003 03 07 | 704 | 1.1+ | 1.1+ | 2006 11 21 | 704 | 0.5+ | 1.4+ |
| 2001 10 26 | 691 | 0.1+ | 0.2+ | 2005 07 29 | A50 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2001 10 26 | 691 | 0.0 | 0.4+ | 2005 07 29 | A50 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.2− | 0.3− |
| 2003 01 27 | 704 | 0.5+ | 0.2− | 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2003 01 27 | 704 | 0.1+ | 0.4− | 2005 07 30 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2003 01 27 | 704 | 1.2+ | 1.0− | 2005 07 30 | 644 | 0.3− | 0.4+ | 2006 12 01 | G96 | 0.5+ | 0.7− |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2005 08 24 | 644 | 0.4+ | 0.2− | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 08 24 | 644 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 01 28 | 608 | 0.1+ | 0.6+ | 2005 08 24 | 644 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.2− |

**(140542)∗ 2001 TP$_{185}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.31915 | | (2000.0) | | | |
| $n$ | 0.18706715 | $\omega$ | 71.74918 | | +0.60138473 | +0.79694196 |
| $a$ | 3.0278732 | $\Omega$ | 235.35352 | | −0.75661973 | +0.54526337 |
| $e$ | 0.2000574 | $i$ | 3.95513 | | −0.25663785 | +0.25994492 |
| $P$ | 5.27 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.7+ | 0.6− | 2005 01 20 | 809 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.3+ |
| 2000 05 28 | 704 | 0.0 | 0.2− | 2005 01 20 | 809 | 0.3− | 0.0 | 2006 09 18 | 704 | 0.0 | 0.2− |
| 2000 05 28 | 704 | 0.3+ | 1.1+ | 2005 01 20 | 809 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.1− |
| 2000 05 28 | 704 | 0.3− | 0.5+ | 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.7+ |
| 2000 05 28 | 704 | 0.6− | 0.2+ | 2005 05 07 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 1.2+ | 0.2− |
| 2001 09 20 | 704 | 0.7+ | 1.1+ | 2005 05 07 | G96 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.9− |
| 2001 09 20 | 704 | 0.7+ | 0.7+ | 2005 05 07 | G96 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 1.0+ | 0.7− |
| 2001 09 20 | 704 | 0.6+ | 1.1+ | 2005 06 01 | G96 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2001 09 20 | 704 | 1.0+ | 0.7+ | 2005 06 01 | G96 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.5− |
| 2001 10 07 | 644 | 0.6− | 0.8+ | 2005 06 01 | G96 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.6− |
| 2001 10 07 | 644 | 0.0 | 0.8+ | 2005 06 01 | G96 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.4+ | 0.2+ |
| 2001 10 07 | 644 | 0.4− | 0.4+ | 2006 08 27 | 699 | 0.7− | 0.4− | 2006 09 19 | 699 | 0.3− | 0.7− |
| 2001 10 14 | 704 | (0.5− | 2.2+) | 2006 08 27 | 699 | 0.7− | 0.9− | 2006 09 25 | 699 | 0.4− | 0.5− |
| 2001 10 14 | 704 | 1.0− | 0.9+ | 2006 08 27 | 699 | 1.4− | 0.3− | 2006 09 25 | 699 | 0.5− | 0.4− |
| 2001 10 14 | 704 | (0.8− | 1.8+) | 2006 08 27 | 699 | (2.1− | 0.1+) | 2006 09 25 | 699 | 0.5+ | 0.4− |
| 2001 10 14 | 704 | (1.1− | 2.1+) | 2006 08 29 | 703 | 0.9+ | 0.3− | 2006 09 25 | 699 | 0.4+ | 0.5− |
| 2001 10 19 | 644 | 0.2+ | 0.0 | 2006 08 29 | 703 | (1.9+ | 0.3+) | 2006 09 27 | 704 | 1.1− | 1.1+ |
| 2001 10 19 | 644 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.8+ | 1.4+ | 2006 09 27 | 704 | 0.3+ | 0.3+ |
| 2001 10 19 | 644 | 0.4+ | 0.1+ | 2006 08 29 | 703 | 1.0− | 0.3+ | 2006 09 27 | 704 | 0.9+ | 0.2+ |
| 2001 10 21 | 704 | 0.3− | 0.6+ | 2006 09 06 | 644 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.5− | 0.8+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.3− | 0.4− | 2006 09 12 | 703 | (0.8+ | 1.6−) | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 10 26 | 691 | 0.0 | 0.4− | 2006 09 12 | 703 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 10 26 | 691 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.1− | 0.9− | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2001 10 26 | 691 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 0.8+ | 2006 09 16 | 699 | 0.1+ | 1.0− | 2006 11 14 | G96 | 0.2− | 0.7− |
| 2001 11 21 | 704 | 1.0− | 0.0 | 2006 09 16 | 699 | 0.6− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 11 21 | 704 | (1.8− | 0.2−) | 2006 09 16 | 699 | 1.0+ | 0.9+ | 2006 11 14 | G96 | 0.1− | 1.1− |
| 2001 11 21 | 704 | 0.7− | 0.6+ | 2006 09 16 | 699 | 0.8− | 1.0+ | | | | |

**(140543)∗ 2001 TS$_{186}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.50364 | | (2000.0) | | | |
| $n$ | 0.25833910 | $\omega$ | 222.18955 | | −0.84545902 | +0.53392842 |
| $a$ | 2.4416081 | $\Omega$ | 350.06432 | | −0.47149020 | −0.75588977 |
| $e$ | 0.1322654 | $i$ | 3.63239 | | −0.25079084 | −0.37888137 |
| $P$ | 3.82 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5+ | 0.6− | 2003 01 31 | 644 | 0.0 | 0.1+ | 2005 10 29 | 691 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2003 02 01 | 704 | 0.2− | 0.6− | 2005 10 29 | 703 | 1.2+ | 0.6− |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2003 02 01 | 704 | 0.0 | 0.8+ | 2005 10 29 | 703 | 0.6+ | 0.6+ |
| 2001 10 14 | 704 | 0.0 | 0.5− | 2003 02 01 | 704 | 0.3+ | 1.3− | 2005 10 29 | 703 | 0.5+ | 0.6− |
| 2001 10 14 | 704 | 0.5+ | 0.4+ | 2003 02 01 | 704 | 0.0 | 0.3+ | 2005 10 29 | 703 | 0.4+ | 0.7− |
| 2001 10 14 | 704 | 0.2− | 0.4− | 2003 02 01 | 608 | 0.2− | 0.4+ | 2005 11 02 | 704 | (1.7− | 0.8+) |
| 2001 10 19 | 644 | 0.1− | 0.5+ | 2003 02 01 | 608 | 0.1− | 0.5+ | 2005 11 02 | 704 | 0.3− | 0.4− |
| 2001 10 19 | 644 | 0.1+ | 0.5+ | 2003 02 01 | 608 | 0.2− | 0.4+ | 2005 11 02 | 704 | (0.4− | 1.7+) |
| 2001 10 19 | 644 | 0.0 | 0.2+ | 2003 02 02 | 644 | 0.1+ | 0.0 | 2005 11 02 | 704 | 0.3− | 0.5+ |
| 2001 10 21 | 704 | 0.8− | 0.1+ | 2003 02 02 | 644 | 0.7+ | 0.2− | 2005 11 05 | 691 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.5+ | 0.2+ | 2003 02 02 | 644 | 0.0 | 0.2+ | 2005 11 05 | 691 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.3+ | 0.1− | 2003 02 04 | 704 | 0.4+ | 1.1+ | 2005 11 05 | 691 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.5+ | 0.6+ | 2003 02 04 | 704 | 0.6+ | 0.3+ | 2005 11 06 | 691 | 0.3− | 0.1+ |
| 2001 10 21 | 704 | 0.7− | 0.8+ | 2003 02 04 | 704 | 1.4+ | 0.2− | 2005 11 06 | 691 | 0.3− | 0.0 |
| 2001 10 26 | 691 | 0.0 | 0.2− | 2003 02 04 | 704 | 1.1− | 0.4+ | 2005 11 06 | 691 | 0.2− | 0.1+ |
| 2001 10 26 | 691 | 0.2+ | 0.3− | 2003 02 04 | 704 | (0.1− | 1.7+) | 2005 11 07 | 704 | 0.2+ | 0.3+ |
| 2001 10 26 | 691 | 0.2+ | 0.3− | 2003 03 06 | 704 | 1.0+ | 0.2+ | 2005 11 07 | 704 | 0.3− | 0.6+ |
| 2003 01 05 | 699 | 0.8+ | 0.6+ | 2003 03 06 | 704 | 0.7− | 0.8− | 2005 11 07 | 704 | 0.4+ | 0.7+ |
| 2003 01 05 | 699 | 0.4− | 0.1+ | 2003 03 06 | 704 | 0.0 | 0.5+ | 2005 11 07 | 704 | 0.6− | 0.9+ |
| 2003 01 05 | 699 | 0.1+ | 1.0− | 2003 03 06 | 704 | 0.3− | 0.1− | 2005 12 02 | 703 | (2.2− | 2.2−) |
| 2003 01 05 | 699 | 0.7+ | 0.7− | 2004 07 22 | 428 | 0.4− | 0.4− | 2005 12 02 | 703 | 0.3+ | 0.2+ |
| 2003 01 05 | 704 | 0.6+ | 0.0 | 2004 07 22 | 428 | 0.4+ | 0.6+ | 2005 12 02 | 703 | 0.3− | 0.3− |
| 2003 01 05 | 704 | 0.9+ | 0.1+ | 2004 08 07 | E12 | 0.3− | 0.3+ | 2005 12 02 | 703 | 0.7+ | 0.3− |
| 2003 01 05 | 704 | 0.9+ | 0.5+ | 2004 08 07 | E12 | 0.5− | 0.6+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2003 01 05 | 704 | 0.3+ | 0.2+ | 2004 08 07 | E12 | 0.0 | 0.7+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2003 01 09 | 704 | 0.7− | 0.1+ | 2004 08 07 | E12 | 0.1− | 0.5+ | 2006 11 24 | G96 | 0.6− | 0.7− |
| 2003 01 09 | 704 | 0.2+ | 0.4+ | 2004 08 14 | 807 | 0.0 | 0.6+ | 2006 11 24 | G96 | 0.3− | 0.7− |
| 2003 01 09 | 704 | 0.5− | 0.7+ | 2004 08 14 | 807 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.4− | 0.3− |
| 2003 01 27 | 608 | 0.2− | 0.1+ | 2005 10 25 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.7− |
| 2003 01 27 | 608 | 0.7− | 0.3+ | 2005 10 25 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2003 01 27 | 608 | 0.6− | 0.5+ | 2005 10 25 | 691 | 0.4+ | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2003 01 31 | 644 | 1.3− | 1.4+ | 2005 10 29 | 691 | 0.3− | 0.0 | | | | |
| 2003 01 31 | 644 | 0.1− | 0.3+ | 2005 10 29 | 691 | 0.2− | 0.1− | | | | |

**(140544)∗ 2001 TH$_{188}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.19604 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24165419 | $\omega$ | 63.40091 | | +0.21333241 | −0.97677398 | |
| $a$ | 2.5527395 | $\Omega$ | 14.32403 | | +0.86507327 | +0.17932116 | |
| $e$ | 0.0821042 | $i$ | 4.64767 | | +0.45402370 | +0.11728817 | |
| $P$ | 4.08 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 691 | 0.6+ | 1.0− | 2001 12 10 | 704 | 0.2+ | 0.2+ | 2005 10 06 | 703 | 0.2+ | 1.0+ |
| 1997 11 29 | 691 | 0.3+ | 0.3− | 2001 12 10 | 704 | 0.3− | 0.7− | 2005 10 07 | 704 | 0.8+ | 0.5− |
| 1997 11 29 | 691 | 0.2+ | 0.5− | 2001 12 10 | 704 | 0.4+ | 0.4− | 2005 10 07 | 704 | 0.2+ | 0.4− |
| 1997 12 27 | 691 | 0.2− | 0.6− | 2003 03 10 | 699 | (1.8+ | 0.5+) | 2005 10 07 | 704 | 0.3− | 0.6+ |
| 1997 12 27 | 691 | 0.0 | 0.5− | 2003 03 10 | 699 | 0.6+ | 0.3+ | 2005 10 07 | 704 | 0.1− | 0.0 |
| 1997 12 27 | 691 | 0.3− | 0.4− | 2003 03 10 | 699 | 0.9+ | 0.4+ | 2005 10 12 | 704 | 0.7− | 0.5+ |
| 1999 05 05 | 691 | 1.9− | 0.2− | 2003 03 10 | 699 | 1.0− | 0.8+ | 2005 10 12 | 704 | 0.1− | 0.3+ |
| 1999 05 05 | 691 | 0.3− | 0.1− | 2003 03 25 | 699 | 0.0 | 0.6+ | 2005 10 12 | 704 | 0.6+ | 0.7+ |
| 1999 05 05 | 691 | 0.1+ | 0.5− | 2003 03 25 | 699 | 0.1+ | 0.0 | 2005 10 13 | 691 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.1+ | 0.6+ | 2003 03 25 | 699 | 0.8+ | 0.2+ | 2005 10 13 | 691 | 0.3− | 0.0 |
| 2001 10 14 | 704 | 0.7− | 0.1− | 2003 03 25 | 699 | 1.1+ | 0.2− | 2005 10 13 | 691 | 0.3− | 0.0 |
| 2001 10 14 | 704 | 0.0 | 0.7+ | 2003 03 31 | 703 | 1.2− | 1.3− | 2005 10 22 | 703 | 1.0− | 0.5− |
| 2001 10 14 | 704 | 0.5− | 0.9+ | 2003 03 31 | 703 | (1.7− | 1.6+) | 2005 10 22 | 703 | 0.1+ | 0.9− |
| 2001 10 19 | 644 | 0.4+ | 0.3+ | 2003 03 31 | 703 | (0.1+ | 1.8+) | 2005 10 22 | 703 | 0.1+ | 0.6− |
| 2001 10 19 | 644 | 0.2+ | 0.4+ | 2003 03 31 | 703 | (0.6− | 2.0+) | 2005 10 22 | 703 | 0.2+ | 0.2− |
| 2001 10 19 | 644 | 0.2+ | 0.3+ | 2003 04 01 | 704 | (2.5+ | 0.6+) | 2005 10 25 | 699 | 0.7+ | 0.5+ |
| 2001 10 21 | 704 | (0.6+ | 1.6+) | 2003 04 01 | 704 | 1.0+ | 0.9+ | 2005 10 25 | 699 | 0.4− | 0.6+ |
| 2001 10 21 | 704 | 0.9+ | 0.8+ | 2003 04 01 | 704 | 0.2+ | 0.9+ | 2005 10 25 | 699 | 0.0 | 0.3+ |
| 2001 10 21 | 704 | 1.0+ | 1.3+ | 2003 04 01 | 704 | 1.5+ | 1.1+ | 2005 10 25 | 699 | 1.0+ | 0.3+ |
| 2001 10 21 | 704 | (0.2+ | 1.6+) | 2003 04 01 | 704 | (1.3+ | 2.2+) | 2005 11 01 | 704 | 1.0− | 0.4− |
| 2001 10 21 | 704 | 0.9+ | 0.7+ | 2003 04 09 | 704 | 0.0 | 0.6− | 2005 11 01 | 704 | 0.2− | 0.5+ |
| 2001 10 26 | 644 | 0.1− | 0.2+ | 2003 04 09 | 704 | 0.4+ | 0.6+ | 2005 11 01 | 704 | 0.3− | 0.5+ |
| 2001 10 26 | 644 | 0.0 | 0.3+ | 2003 04 09 | 704 | 0.1+ | 0.4+ | 2005 11 04 | 704 | (0.9+ | 1.6+) |
| 2001 10 26 | 644 | 0.2+ | 0.3+ | 2003 04 09 | 704 | 0.0 | 0.3+ | 2005 11 04 | 704 | 1.3+ | 0.6+ |
| 2001 11 10 | 704 | 0.1+ | 0.2+ | 2003 04 09 | 704 | 0.7+ | 0.7+ | 2005 11 04 | 704 | 0.3+ | 0.7+ |
| 2001 11 10 | 704 | 0.0 | 0.3+ | 2003 05 01 | 691 | 0.9+ | 0.5+ | 2005 11 04 | 704 | 1.0+ | 0.1+ |
| 2001 11 10 | 644 | 0.3+ | 0.0 | 2003 05 01 | 691 | 0.9+ | 0.6+ | 2005 11 05 | 699 | 0.6− | 0.7+ |
| 2001 11 10 | 704 | 0.2+ | 0.2+ | 2003 05 01 | 691 | 0.7+ | 0.6+ | 2005 11 05 | 699 | 0.5+ | 0.3− |
| 2001 11 10 | 644 | 0.2+ | 0.0 | 2005 09 18 | 644 | 0.1+ | 0.2+ | 2005 11 05 | 699 | 1.4+ | 0.1− |
| 2001 11 10 | 644 | 0.2+ | 0.1+ | 2005 09 18 | 644 | 0.2+ | 0.3− | 2005 11 05 | 699 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 1.4− | 1.4+ | 2005 09 18 | 644 | 0.3− | 0.2+ | 2005 11 06 | 704 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 1.3− | 1.2+ | 2005 09 29 | 691 | 0.1− | 0.2+ | 2005 11 06 | 704 | 1.2− | 0.6− |
| 2001 11 12 | 704 | 0.6− | 0.3+ | 2005 09 29 | 691 | 0.1− | 0.1+ | 2005 11 06 | 704 | 0.1+ | 0.2− |
| 2001 11 16 | 300 | 1.3+ | 0.6+ | 2005 09 29 | 691 | 0.1− | 0.1+ | 2005 11 06 | 704 | 0.3− | 0.3− |
| 2001 11 16 | 300 | 0.2− | 0.6− | 2005 10 01 | 699 | 0.2− | 0.7+ | 2005 11 06 | 704 | 0.3− | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.9+ | 2005 10 01 | 699 | 0.3− | 0.6+ | 2005 11 30 | 511 | 0.5+ | 0.2− |
| 2001 11 19 | 704 | 0.2+ | 1.1+ | 2005 10 01 | 699 | 0.6− | 0.3− | 2005 11 30 | 511 | 0.3+ | 0.5− |
| 2001 11 19 | 704 | 0.1+ | 0.6+ | 2005 10 01 | 699 | 0.5+ | 1.0+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.3+ | 0.7+ | 2005 10 02 | G96 | 0.4− | 0.4− | 2006 11 17 | 691 | 0.2− | 0.3+ |
| 2001 11 19 | 704 | 0.1+ | 0.9+ | 2005 10 02 | G96 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.4− | 0.1− |
| 2001 11 24 | 704 | 0.7− | 0.7− | 2005 10 02 | G96 | 0.5− | 0.1− | 2006 11 22 | 691 | 0.2− | 0.2− |
| 2001 11 24 | 704 | 0.9− | 0.0 | 2005 10 02 | G96 | 0.4− | 0.4− | 2006 11 22 | 691 | 0.3− | 0.5+ |
| 2001 11 24 | 704 | 0.4− | 0.7+ | 2005 10 06 | 703 | 1.2− | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.3− |
| 2001 11 24 | 704 | 0.8− | 0.1− | 2005 10 06 | 703 | 0.4− | 0.1− | | | | |
| 2001 12 10 | 704 | 0.7+ | 0.3− | 2005 10 06 | 703 | 0.4− | 1.1− | | | | |

**(140545)∗ 2001 TA$_{194}$ = 2003 AH$_{68}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.36770 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19178514 | $\omega$ | 150.47022 | | −0.98516818 | −0.15998086 | |
| $a$ | 2.9780095 | $\Omega$ | 20.60234 | | +0.10117567 | −0.83363050 | |
| $e$ | 0.0393443 | $i$ | 10.15601 | | +0.13858983 | −0.52864574 | |
| $P$ | 5.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.6− | 0.9+ | 2006 10 03 | 691 | 0.3− | 0.1+ |
| 2001 10 15 | 704 | 0.4− | 0.4+ | 2003 01 10 | 704 | 1.5+ | 1.4+ | 2006 10 03 | 691 | 0.1− | 0.1− |
| 2001 10 15 | 704 | 0.8− | 1.1− | 2003 01 10 | 704 | 0.1+ | 0.8+ | 2006 10 03 | 691 | 0.4− | 0.1+ |
| 2001 10 15 | 704 | (1.8− | 0.8+) | 2003 01 10 | 704 | 0.7− | 1.2+ | 2006 10 13 | A50 | 0.8+ | 0.3+ |
| 2001 10 15 | 704 | 1.4− | 0.4+ | 2004 04 20 | 704 | (1.6+ | 0.8+) | 2006 10 13 | A50 | 0.1+ | 0.0 |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2004 04 20 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2001 10 19 | 644 | 0.4− | 0.1+ | 2004 04 20 | 704 | (1.6+ | 0.5+) | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 2001 10 19 | 644 | 0.6− | 0.1+ | 2004 04 20 | 704 | 0.8+ | 1.5+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 0.5− | 2004 04 22 | 691 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 10 21 | 704 | 0.1+ | 0.4− | 2004 04 22 | 691 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 0.4− | 2004 04 22 | 691 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.3− | 0.4− | 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 10 21 | 704 | 0.3− | 0.8− | 2004 05 13 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.3− |
| 2001 10 26 | 644 | 0.3− | 0.1− | 2004 05 13 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 10 26 | 644 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 10 26 | 644 | 0.4− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 11 15 | 691 | 0.0 | 1.0+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 11 15 | 691 | 0.0 | 1.2+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 11 15 | 691 | 0.1− | 0.9+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 11 17 | 704 | (0.6+ | 1.7+) | 2006 09 18 | 691 | 0.6− | 0.4+ | 2006 11 15 | G96 | 0.5− | 0.3− |
| 2001 11 17 | 704 | 0.5+ | 0.8+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.0 | 0.8− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 27 | G96 | 0.2+ | 0.5− |
| 2002 12 13 | 645 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2002 12 13 | 645 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2003 01 08 | 704 | 0.9− | 1.2+ | 2006 09 29 | 691 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2003 01 08 | 704 | 0.7− | 0.3− | 2006 09 29 | 691 | 0.4− | 0.3+ | | | | |
| 2003 01 08 | 704 | 0.2+ | 0.5+ | 2006 09 29 | 691 | 0.1− | 0.5+ | | | | |

**(140546)∗ 2001 TZ$_{194}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.63795 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18078876 | $\omega$ | 268.28412 | | +0.42134888 | −0.89803857 | |
| $a$ | 3.0975745 | $\Omega$ | 155.54027 | | +0.90493795 | +0.40716623 | |
| $e$ | 0.2392878 | $i$ | 17.78323 | | +0.05960221 | +0.16656046 | |
| $P$ | 5.45 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 02 | 691 | 0.0 | 0.7+ | 2003 02 02 | 704 | 0.3+ | 0.4+ | 2003 03 12 | 291 | 0.3+ | 0.2+ |
| 1995 08 02 | 691 | 0.1− | 0.4+ | 2003 02 02 | 704 | 0.7− | 0.3+ | 2003 03 12 | 291 | 0.2+ | 0.2+ |
| 1995 08 02 | 691 | 0.1+ | 0.6+ | 2003 02 02 | 704 | 0.5− | 0.7+ | 2003 03 12 | 291 | 0.3+ | 0.3+ |
| 2001 08 29 | 644 | 0.2− | 0.1+ | 2003 02 09 | 644 | 0.1+ | 0.2+ | 2003 03 12 | 644 | 0.4+ | 0.4+ |
| 2001 08 29 | 644 | 0.4+ | 0.3− | 2003 02 09 | 644 | 0.1+ | 0.1+ | 2003 03 12 | 644 | 0.5+ | 0.2+ |
| 2001 08 29 | 644 | 0.1− | 0.5+ | 2003 02 09 | 644 | 0.0 | 0.2+ | 2003 03 12 | 644 | 0.2+ | 0.6+ |
| 2001 09 12 | 704 | 0.8+ | 0.3− | 2003 02 11 | 608 | 0.2+ | 0.3− | 2006 08 17 | 644 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | 0.6+ | 0.5+ | 2003 02 11 | 608 | 0.1+ | 0.3− | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.3+ | 0.3− | 2003 02 11 | 608 | 0.4+ | 0.2− | 2006 08 17 | 644 | 0.1− | 0.5+ |
| 2001 10 11 | 704 | 0.2− | 0.3+ | 2003 02 19 | 608 | 0.5− | 1.2+ | 2006 08 19 | 699 | 0.2− | 0.2+ |
| 2001 10 11 | 704 | 0.1− | 0.2+ | 2003 02 19 | 608 | (0.5− | 1.7+) | 2006 08 19 | 699 | 0.3+ | 0.6+ |
| 2001 10 11 | 704 | 1.0− | 0.1− | 2003 02 19 | 608 | 0.2− | 1.1+ | 2006 08 19 | 699 | 0.6− | 0.4+ |
| 2001 10 11 | 704 | 0.1− | 0.6− | 2003 02 22 | 644 | 0.4+ | 0.0 | 2006 08 19 | 699 | 0.3− | 0.8+ |
| 2001 10 11 | 704 | 0.1− | 0.2− | 2003 02 22 | 644 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.7+ | 1.0+ |
| 2001 10 15 | 644 | 0.2+ | 0.0 | 2003 02 22 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.8+ |
| 2001 10 15 | 644 | 0.2+ | 0.1+ | 2003 02 24 | 608 | 0.3− | 1.1+ | 2006 08 30 | 704 | 0.6+ | 1.1+ |
| 2001 10 15 | 644 | 0.3+ | 0.1+ | 2003 02 24 | 608 | 0.7− | 1.0+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2001 10 19 | 699 | 0.4− | 0.1− | 2003 02 24 | 608 | 0.6− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2001 10 19 | 699 | 0.1+ | 0.4+ | 2003 03 05 | 704 | 1.3− | 0.5+ | 2006 09 27 | G96 | 0.5− | 0.0 |
| 2001 10 19 | 699 | 1.2− | 0.5+ | 2003 03 05 | 704 | (2.6− | 0.6+) | 2006 09 27 | G96 | 0.3− | 0.3− |
| 2001 10 19 | 699 | 0.2− | 0.8+ | 2003 03 05 | 704 | (2.2− | 1.4+) | 2006 10 20 | G96 | 0.2− | 0.2+ |
| 2001 10 22 | 644 | 0.3+ | 0.0 | 2003 03 05 | 704 | (2.5− | 0.2−) | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2001 10 22 | 644 | 0.0 | 0.3+ | 2003 03 05 | 704 | (2.2− | 0.5+) | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2001 10 22 | 644 | 0.1+ | 0.2+ | 2003 03 06 | 644 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2003 02 02 | 704 | 0.3− | 0.9+ | 2003 03 06 | 644 | 0.1− | 0.4+ | | | | |
| 2003 02 02 | 704 | 0.4+ | 1.1+ | 2003 03 06 | 644 | 0.2− | 0.3+ | | | | |

**(140547)**∗ **2001 TA**$_{195}$

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.36244 | | | (2000.0) | | |
| $n$ | 0.19329559 | $\omega$ | 211.13017 | | +0.52258931 | +0.82756106 |
| $a$ | 2.9624754 | $\Omega$ | 91.11721 | | −0.73398478 | +0.55905072 |
| $e$ | 0.0786799 | $i$ | 11.83437 | | −0.43378192 | +0.05103910 |
| $P$ | 5.10 | $H$ | 14.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 0.6+ | 2003 01 08 | 704 | 1.1− | 0.6− | 2004 04 14 | 704 | (1.9+ | 0.1−) |
| 2001 09 12 | 704 | 0.7− | 1.2+ | 2003 01 08 | 704 | 0.3− | 0.3− | 2004 04 14 | 704 | 0.5+ | 1.0+ |
| 2001 09 12 | 704 | 0.8− | 0.5+ | 2003 01 08 | 704 | 0.4− | 0.3− | 2004 04 14 | 704 | (0.6− | 2.0+) |
| 2001 10 11 | 704 | 0.3+ | 0.1+ | 2003 01 08 | 704 | 0.5− | 0.0 | 2004 04 14 | 704 | 0.2+ | 1.3+ |
| 2001 10 11 | 704 | 0.0 | 0.0 | 2003 02 03 | 704 | 0.3+ | 0.9+ | 2004 04 14 | 703 | 0.4− | 1.3+ |
| 2001 10 11 | 704 | 0.2− | 0.4+ | 2003 02 03 | 704 | 0.1− | 0.6+ | 2004 04 14 | 703 | 1.0− | 1.5+ |
| 2001 10 11 | 704 | 0.9− | 1.1+ | 2003 02 03 | 704 | 0.6+ | 0.6+ | 2004 04 14 | 703 | 0.1− | 1.0+ |
| 2001 10 11 | 704 | 0.3+ | 0.2+ | 2003 02 03 | 704 | 0.3+ | 0.2− | 2004 04 14 | 703 | (0.8− | 2.6+) |
| 2001 10 15 | 644 | 0.7− | 0.1+ | 2004 02 02 | 699 | 0.1+ | 0.5+ | 2005 06 05 | 704 | 0.4+ | 0.8+ |
| 2001 10 15 | 644 | 0.7− | 0.1+ | 2004 02 02 | 699 | 0.1+ | 0.7− | 2005 06 05 | 704 | 0.4+ | 0.9+ |
| 2001 10 15 | 644 | 0.6− | 0.3+ | 2004 02 02 | 699 | (2.1− | 2.5+) | 2005 06 05 | 704 | 0.4+ | 0.9+ |
| 2001 10 22 | 644 | 0.7− | 0.7+ | 2004 02 02 | 699 | 0.3− | 1.1+ | 2005 06 05 | 704 | 0.8+ | 0.1+ |
| 2001 10 22 | 644 | 0.5− | 0.5+ | 2004 02 16 | 704 | 0.0 | 0.9+ | 2005 06 17 | G96 | 0.3+ | 0.7+ |
| 2001 10 22 | 644 | 0.7− | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.4+ | 2005 06 17 | G96 | 0.3+ | 0.6+ |
| 2001 10 23 | 644 | 0.1− | 0.4+ | 2004 02 16 | 704 | 0.1+ | 0.5+ | 2005 06 17 | G96 | 0.8+ | 0.1+ |
| 2001 10 23 | 644 | 0.5− | 0.9+ | 2004 02 21 | 608 | (0.1− | 2.5+) | 2005 06 17 | G96 | 0.1+ | 0.6+ |
| 2001 10 23 | 644 | 0.1+ | 0.4+ | 2004 02 21 | 608 | 0.9+ | 1.3+ | 2006 07 31 | E12 | 0.1− | 0.2− |
| 2001 10 23 | 644 | 0.3− | 1.1+ | 2004 02 21 | 608 | 0.4+ | 0.8+ | 2006 07 31 | E12 | 0.3+ | 0.3+ |
| 2001 10 23 | 644 | 0.0 | 0.3+ | 2004 03 10 | 703 | 0.6+ | 0.7+ | 2006 07 31 | E12 | 0.4− | 0.7+ |
| 2001 10 23 | 644 | 0.3− | 1.0+ | 2004 03 10 | 703 | 0.4− | 0.5+ | 2006 07 31 | E12 | 0.0 | 0.4+ |
| 2002 10 03 | 644 | 0.2+ | 0.1− | 2004 03 10 | 703 | (1.9− | 0.4+) | 2006 09 14 | 644 | 0.3− | 0.3+ |
| 2002 10 03 | 644 | 0.0 | 0.5+ | 2004 03 10 | 703 | 0.6− | 1.1+ | 2006 09 14 | 644 | 0.3− | 0.2− |
| 2002 10 03 | 644 | 0.0 | 0.1+ | 2004 03 14 | 704 | 0.2− | 0.6+ | 2006 09 14 | 644 | 0.3+ | 0.4+ |
| 2002 12 05 | 704 | 0.6+ | 0.6+ | 2004 03 14 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 699 | 0.5− | 1.4+ |
| 2002 12 05 | 704 | (1.9+ | 1.3+) | 2004 03 14 | 704 | (0.4+ | 1.8−) | 2006 09 17 | 699 | 1.2− | 0.0 |
| 2002 12 05 | 704 | 0.5+ | 0.6+ | 2004 03 14 | 704 | 1.4− | 0.8+ | 2006 09 17 | 699 | 0.9− | 1.1+ |
| 2002 12 05 | 704 | 1.0+ | 0.3+ | 2004 03 16 | 704 | 0.1− | 0.3− | 2006 09 20 | 703 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.4+ | 2004 03 16 | 704 | 0.2− | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 0.4− | 2004 03 16 | 704 | 0.4+ | 1.3+ | 2006 09 20 | 703 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2004 03 16 | 704 | 0.9− | 0.2− | 2006 09 20 | 703 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.5+ | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 2002 12 07 | 704 | 0.3+ | 1.1− | 2004 03 17 | 704 | 1.0+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.2− |
| 2002 12 07 | 704 | 0.2+ | 0.7− | 2004 03 17 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| 2002 12 07 | 704 | 0.4− | 0.6− | 2004 03 17 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2002 12 07 | 704 | 0.4− | 0.3− | 2004 03 17 | 704 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2002 12 07 | 704 | 0.3+ | 0.4− | 2004 03 17 | 704 | 1.0+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2002 12 10 | 704 | 0.8− | 0.2− | 2004 03 17 | 704 | 0.8+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 12 10 | 704 | 0.3+ | 0.3+ | 2004 03 17 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.5− | 0.4+ | 2004 03 17 | 704 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 12 11 | 291 | 0.0 | 0.3− | 2004 03 18 | 703 | 0.2− | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 12 11 | 291 | 0.4+ | 0.3− | 2004 03 18 | 703 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2002 12 11 | 291 | 0.4+ | 0.0 | 2004 03 18 | 703 | 1.3+ | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2002 12 31 | 704 | 0.8+ | 0.4− | 2004 03 18 | 703 | 0.1+ | 1.3+ | 2006 10 22 | 644 | 0.1− | 0.6+ |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2004 03 25 | 704 | 0.2− | 0.0 | 2006 11 09 | E12 | 0.5+ | 0.5+ |
| 2002 12 31 | 704 | (0.7+ | 1.9−) | 2004 03 25 | 704 | 0.0 | 0.6+ | 2006 11 09 | E12 | 0.9+ | 0.3+ |
| 2002 12 31 | 704 | (1.0+ | 2.0−) | 2004 03 25 | 704 | 0.1− | 0.5+ | 2006 11 09 | E12 | 0.8− | 1.4+ |
| 2003 01 04 | 704 | 0.5+ | 0.0 | 2004 03 25 | 704 | 0.2− | 0.6+ | 2006 11 09 | E12 | 0.4− | 0.6+ |
| 2003 01 04 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 703 | 0.3− | 0.7+ | 2006 11 27 | 703 | 0.2+ | 0.4+ |
| 2003 01 04 | 704 | 0.8+ | 0.0 | 2004 03 30 | 703 | 0.1− | 0.5− | 2006 11 27 | 703 | 1.6− | 0.1− |
| 2003 01 04 | 704 | 0.2+ | 0.0 | 2004 03 30 | 703 | 1.2+ | 0.1+ | 2006 11 27 | 703 | 1.2− | 2.6+ |
| 2003 01 04 | 704 | 0.6− | 0.2+ | 2004 03 30 | 703 | 0.9− | 0.5+ | 2006 11 27 | 703 | 0.8− | 0.2− |

**(140548)**∗ **2001 TB**$_{197}$

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.94132 | | | (2000.0) | | |
| $n$ | 0.24243151 | $\omega$ | 246.43056 | | +0.40410621 | −0.91471120 |
| $a$ | 2.5472799 | $\Omega$ | 179.72459 | | +0.90546842 | +0.39982605 |
| $e$ | 0.1465188 | $i$ | 15.25508 | | +0.12971165 | +0.05867334 |
| $P$ | 4.07 | $H$ | 15.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.2+ | 0.2− | 2003 03 25 | 291 | 0.1− | 0.2+ | 2005 09 27 | 644 | 0.1− | 0.2+ |
| 1995 03 28 | 691 | 0.0 | 0.2− | 2003 03 25 | 291 | 0.1− | 0.1+ | 2005 10 01 | 703 | 0.5+ | 0.1− |
| 1995 03 28 | 691 | 0.2− | 0.1− | 2003 03 26 | 291 | 0.4− | 0.1− | 2005 10 01 | 703 | 0.2− | 0.5− |
| 2001 08 27 | 644 | 1.0+ | 1.3+ | 2003 03 26 | 291 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.1+ | 0.5− |
| 2001 08 27 | 644 | 0.4+ | 1.6+ | 2003 03 26 | 291 | 0.2− | 0.2− | 2005 10 01 | 703 | 1.1+ | 0.1− |
| 2001 08 27 | 644 | 0.3+ | 1.4+ | 2003 03 26 | 691 | 0.5+ | 0.6+ | 2005 10 05 | 703 | 0.6+ | 0.7+ |
| 2001 09 17 | 699 | 0.6− | 0.3+ | 2003 03 26 | 691 | 0.1− | 0.6+ | 2005 10 05 | 703 | 0.1+ | 1.2+ |
| 2001 09 17 | 699 | 0.1+ | 0.0 | 2003 03 26 | 691 | 0.8+ | 0.8+ | 2005 10 05 | 703 | 0.2+ | 0.6+ |
| 2001 09 17 | 699 | 0.3+ | 1.2+ | 2003 03 27 | 699 | 0.4+ | 0.1− | 2005 10 05 | 703 | 0.3− | 0.4+ |
| 2001 09 17 | 699 | 0.4+ | 0.1+ | 2003 03 27 | 699 | 0.6− | 0.7+ | 2005 10 07 | 699 | 0.5− | 0.1+ |
| 2001 09 25 | 704 | 0.7+ | 0.3+ | 2003 03 27 | 699 | 0.4− | 0.5− | 2005 10 07 | 699 | 0.1+ | 0.7+ |
| 2001 09 25 | 704 | 0.7+ | 0.3− | 2003 03 27 | 699 | 0.8− | 0.2+ | 2005 10 07 | 699 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | 0.3+ | 0.1+ | 2003 03 27 | 152 | 0.1+ | 0.1− | 2005 10 07 | 699 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2003 03 27 | 152 | 0.1+ | 0.1− | 2005 10 27 | 704 | 0.2+ | 0.1+ |
| 2001 09 25 | 704 | 0.8− | 0.4+ | 2003 03 27 | 152 | 0.4+ | 0.5+ | 2005 10 27 | 704 | 0.6+ | 0.1− |
| 2001 10 14 | 699 | 1.0+ | 0.5− | 2003 03 30 | 704 | 0.9+ | 0.1− | 2005 10 27 | 704 | 0.5+ | 0.4− |
| 2001 10 14 | 699 | 0.5+ | 0.0 | 2003 03 30 | 704 | 0.1+ | 0.5+ | 2005 10 27 | 704 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.0 | 0.7− | 2003 03 30 | 704 | 0.3+ | 0.1− | 2005 10 27 | 704 | 0.3+ | 0.1− |
| 2001 10 14 | 699 | 0.0 | 0.1+ | 2003 04 03 | 699 | 1.0− | 0.2+ | 2005 10 27 | 703 | 0.3− | 0.6− |
| 2001 10 15 | 644 | 0.3+ | 0.1+ | 2003 04 03 | 699 | 0.1+ | 0.3+ | 2005 10 27 | 703 | 0.1+ | 0.4− |
| 2001 10 15 | 644 | 0.5+ | 0.2+ | 2003 04 03 | 699 | 0.3+ | 0.2+ | 2005 10 27 | 703 | 0.1− | 0.2− |
| 2001 10 15 | 644 | 0.4+ | 0.1+ | 2003 04 03 | 699 | 0.7+ | 1.8+ | 2005 10 27 | 703 | 0.3− | 0.6− |
| 2001 10 16 | 704 | 0.3+ | 0.5+ | 2003 04 08 | 704 | 0.0 | 0.0 | 2005 10 30 | 699 | 0.1+ | 0.3+ |
| 2001 10 16 | 704 | 1.1− | 0.6+ | 2003 04 08 | 704 | 0.5+ | 1.3+ | 2005 10 30 | 699 | 0.2− | 0.2+ |
| 2001 10 16 | 704 | 0.2+ | 0.6+ | 2003 04 08 | 608 | 0.1− | 0.8− | 2005 10 30 | 699 | 0.8+ | 0.3− |
| 2001 10 16 | 704 | 0.6− | 0.1+ | 2003 04 08 | 608 | 0.1+ | 1.1− | 2005 10 30 | 699 | 0.5− | 0.4− |
| 2001 10 16 | 704 | 0.0 | 0.2+ | 2003 04 08 | 704 | 0.8− | 0.6+ | 2005 11 06 | 699 | 0.2+ | 0.0 |
| 2001 10 19 | 608 | 1.1− | 1.2− | 2003 04 08 | 608 | 0.6+ | 0.6− | 2005 11 06 | 699 | 0.4− | 0.4+ |
| 2001 10 19 | 608 | 0.7− | 1.0− | 2005 08 29 | 704 | 0.1− | 0.6+ | 2005 11 06 | 699 | 1.0+ | 0.1− |
| 2001 10 19 | 608 | 0.5− | 1.3− | 2005 08 29 | 704 | 1.0+ | 0.1+ | 2005 11 06 | 699 | 0.2+ | 0.0 |
| 2001 10 28 | 644 | 0.1+ | 1.0+ | 2005 08 29 | 704 | 0.4− | 1.2+ | 2005 12 25 | 703 | 1.4− | 0.1− |
| 2001 10 28 | 644 | 0.1+ | 0.8+ | 2005 08 29 | 704 | 1.0− | 0.4+ | 2005 12 25 | 703 | 1.7− | 1.3− |
| 2001 10 28 | 644 | 0.4+ | 0.7+ | 2005 09 01 | 599 | 0.8− | 1.1+ | 2005 12 25 | 703 | 1.0− | 1.8− |
| 2001 11 13 | 608 | 0.0 | 0.0 | 2005 09 01 | 599 | 0.2+ | 0.9+ | 2005 12 25 | 703 | (2.4− | 2.6−) |
| 2001 11 13 | 608 | 0.1− | 0.4− | 2005 09 01 | 599 | 0.6− | 0.9+ | 2005 12 30 | 644 | 0.4+ | 0.5− |
| 2001 11 13 | 608 | 0.1+ | 0.0 | 2005 09 01 | 599 | 0.2+ | 0.8+ | 2005 12 30 | 644 | 0.4− | 0.3− |
| 2001 12 14 | 699 | 1.2− | 0.4− | 2005 09 27 | 644 | 0.2− | 0.1+ | 2005 12 30 | 644 | 0.0 | 0.3− |
| 2001 12 14 | 699 | 0.7− | 0.1+ | 2005 09 27 | 644 | 0.2+ | 0.1+ | 2006 01 28 | 703 | 0.2+ | 1.0+ |
| 2001 12 14 | 699 | 0.1− | 0.7− | 2005 09 27 | 644 | 0.2+ | 0.1+ | 2006 01 28 | 703 | 0.8− | 0.5− |
| 2001 12 14 | 699 | (2.7− | 2.9+) | 2005 09 27 | 644 | 0.2− | 0.2− | 2006 01 28 | 703 | 0.5+ | 0.2− |
| 2003 03 25 | 291 | 0.0 | 0.1+ | 2005 09 27 | 644 | 0.0 | 0.0 | 2006 01 28 | 703 | 0.1+ | 0.4− |

**(140549)**∗ **2001 TU**$_{198}$

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 254.44766 | | | (2000.0) | | |
| $n$ | 0.19178204 | $\omega$ | 333.36030 | | −0.35258547 | −0.92581839 |
| $a$ | 2.9780416 | $\Omega$ | 136.90932 | | +0.89018808 | −0.37670543 |
| $e$ | 0.0785261 | $i$ | 11.49798 | | +0.28852845 | +0.03087589 |
| $P$ | 5.14 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.1− | 0.2− | 2006 08 30 | 699 | 1.0+ | 1.1− |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.2+ | 0.3− | 2006 08 30 | 699 | 0.3− | 1.3+ |
| 2001 09 18 | 699 | (1.8+ | 1.0+) | 2003 01 27 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | 1.1− | 0.6− |
| 2001 09 18 | 699 | 0.3+ | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.7− | 0.4− |
| 2001 09 18 | 699 | 0.4− | 0.4+ | 2004 03 16 | 704 | (1.9+ | 1.6+) | 2006 09 14 | F84 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.1+ | 0.3+ | 2004 03 16 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 1.0− | 0.7− | 2004 03 16 | 704 | 0.4− | 0.9+ | 2006 09 14 | 703 | 1.0− | 0.7− |
| 2001 09 25 | 704 | 0.8− | 0.4+ | 2004 03 16 | 704 | 0.8+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.3+ |
| 2001 09 25 | 704 | 0.9+ | 0.2+ | 2004 03 23 | 704 | 0.9− | 1.3+ | 2006 09 14 | F84 | 0.2− | 0.7− |
| 2001 10 11 | 704 | 0.1− | 1.2+ | 2004 03 23 | 704 | 0.7− | 0.7+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2001 10 11 | 704 | 0.8+ | 0.5+ | 2004 03 23 | 704 | 0.3− | 0.6+ | 2006 09 14 | 644 | 0.4+ | 0.4+ |
| 2001 10 11 | 704 | 0.8+ | 1.1+ | 2004 03 23 | 704 | 1.0+ | 0.7+ | 2006 10 02 | 703 | 0.4− | 0.0 |
| 2001 10 11 | 704 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 10 02 | 703 | 1.1+ | 1.4+ |
| 2001 10 15 | 644 | 0.1+ | 0.2− | 2004 04 12 | 703 | 0.2+ | 0.9− | 2006 10 02 | 703 | 0.3+ | 0.6− |
| 2001 10 15 | 644 | 0.2+ | 0.4− | 2004 04 12 | 703 | 0.1− | 0.0 | 2006 10 02 | 703 | (1.6− | 0.9−) |
| 2001 10 15 | 644 | 0.2− | 0.4− | 2004 04 12 | 703 | 0.4+ | 0.8− | 2006 10 02 | 703 | 0.7− | 0.7− |
| 2001 10 23 | 644 | 0.0 | 0.5− | 2004 04 12 | 703 | 0.8− | 0.3− | 2006 10 02 | 703 | 0.2− | 0.4+ |
| 2001 10 23 | 644 | 0.2− | 0.6− | 2004 04 23 | 703 | (1.6+ | 0.4+) | 2006 10 02 | 703 | 0.2− | 0.4− |
| 2001 10 23 | 644 | 0.1+ | 0.8− | 2004 04 23 | 703 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.2+ | 0.1− |
| 2002 12 14 | 704 | 0.6+ | 0.3+ | 2004 04 23 | 703 | 0.8− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2002 12 14 | 704 | 0.3− | 0.1+ | 2004 04 23 | 703 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2002 12 14 | 704 | 0.0 | 0.1− | 2004 04 25 | 699 | 0.8+ | 0.9− | 2006 10 12 | 644 | 0.3+ | 0.6+ |
| 2003 01 01 | 704 | 0.2+ | 0.4+ | 2004 04 25 | 699 | 1.2+ | 0.4− | 2006 10 24 | 644 | 0.1− | 0.3+ |
| 2003 01 01 | 704 | 0.2− | 0.4+ | 2004 04 25 | 699 | (0.6− | 1.6+) | 2006 10 24 | 644 | 0.6+ | 0.6+ |
| 2003 01 01 | 704 | 0.1+ | 0.2− | 2004 04 25 | 699 | (2.6− | 0.9−) | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2003 01 01 | 704 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.4− | 1.2+ | | | | |
| 2003 01 01 | 704 | 0.2− | 0.0 | 2006 08 30 | 699 | (1.3+ | 1.9+) | | | | |

**(140550)∗ 2001 TY$_{198}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 233.98676 | | (2000.0) | | | |
| $n$ | 0.18592161 | $\omega$ | 56.83273 | | −0.38103653 | −0.91042069 |
| $a$ | 3.0402979 | $\Omega$ | 56.38341 | | +0.77075453 | −0.40901241 |
| $e$ | 0.0241606 | $i$ | 11.15264 | | +0.51063550 | −0.06199211 |
| $P$ | 5.30 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 1.0− | 0.7+ | 2002 12 11 | 704 | 0.4− | 0.5+ | 2004 04 09 | 644 | 0.2+ | 0.9+ |
| 2001 09 18 | 699 | (2.4− | 1.5+) | 2002 12 11 | 704 | 0.6+ | 0.1− | 2004 04 09 | 644 | 0.0 | 0.8+ |
| 2001 09 18 | 699 | 0.5− | 1.2+ | 2002 12 15 | 704 | 0.2+ | 0.1+ | 2004 04 09 | 644 | 0.0 | 0.7+ |
| 2001 09 18 | 699 | 1.2− | 0.7+ | 2002 12 15 | 704 | 0.0 | 0.4− | 2006 08 14 | 644 | 0.5+ | 0.7+ |
| 2001 09 25 | 704 | (2.3− | 0.7+) | 2002 12 15 | 704 | 0.3+ | 0.6− | 2006 08 14 | 644 | 0.2− | 0.7+ |
| 2001 09 25 | 704 | 0.3− | 0.1− | 2002 12 15 | 704 | 0.1+ | 0.7− | 2006 08 14 | 644 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.0 | 2003 01 04 | 704 | 0.3+ | 0.5− | 2006 08 16 | 644 | 0.6+ | 0.1+ |
| 2001 10 11 | 704 | 0.8− | 0.5+ | 2003 01 04 | 704 | 0.9− | 1.3+ | 2006 08 16 | 644 | 0.2+ | 0.4+ |
| 2001 10 11 | 704 | 1.0− | 0.7+ | 2003 01 04 | 704 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.3+ | 0.1+ |
| 2001 10 11 | 704 | (0.7− | 2.0+) | 2003 01 04 | 704 | 0.5+ | 0.8+ | 2006 08 28 | E12 | 0.9+ | 0.8+ |
| 2001 10 11 | 704 | 0.0 | 0.8+ | 2004 03 15 | 704 | 0.4+ | 1.0+ | 2006 08 28 | E12 | 0.0 | 0.3+ |
| 2001 10 15 | 644 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.1− | 0.9+ | 2006 08 28 | E12 | 0.6− | 0.7+ |
| 2001 10 15 | 644 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 0.2− | 1.3+ | 2006 08 28 | E12 | 0.2+ | 0.1+ |
| 2001 10 15 | 644 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 0.1− | 0.8− | 2006 09 20 | 703 | 1.5− | 0.2− |
| 2001 10 19 | 699 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.5+ | 0.2− | 2006 09 20 | 703 | 0.0 | 0.9− |
| 2001 10 19 | 699 | 0.8+ | 0.2+ | 2004 03 23 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.0 |
| 2001 10 19 | 699 | (2.6+ | 0.4+) | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.3− | 0.1+ |
| 2001 10 19 | 699 | 0.3− | 0.8+ | 2004 03 23 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 703 | 0.5+ | 0.3+ |
| 2002 12 10 | 644 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 1.5− | 0.6+ |
| 2002 12 10 | 644 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.2− |
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2004 03 25 | 704 | 0.2+ | 1.1+ | 2006 09 26 | 703 | 1.0− | 0.2− |
| 2002 12 11 | 704 | 0.3− | 0.8− | 2004 03 25 | 704 | 0.9+ | 1.3+ | | | | |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2004 03 25 | 704 | 0.4+ | 0.3+ | | | | |

**(140551)∗ 2001 TE$_{200}$ = 1996 OB$_2$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 29714)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.07347 | | (2000.0) | | | |
| $n$ | 0.21851651 | $\omega$ | 240.68277 | | +0.99432265 | +0.00852587 |
| $a$ | 2.7298988 | $\Omega$ | 118.64824 | | +0.02839438 | +0.93938066 |
| $e$ | 0.0559394 | $i$ | 6.94178 | | −0.10254863 | +0.34277001 |
| $P$ | 4.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 07 20 | 327 | 0.1+ | 0.2− | 2003 01 29 | 644 | 1.2− | 0.1+ | 2005 08 06 | 704 | 0.1− | 0.2+ |
| 1996 07 20 | 327 | 0.6+ | 0.4+ | 2003 01 29 | 644 | 0.0 | 0.5+ | 2005 08 06 | 704 | 0.9− | 0.8− |
| 1996 07 20 | 327 | 0.2+ | 0.5− | 2003 01 29 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.7+ |
| 1996 07 20 | 327 | 0.0 | 0.2− | 2004 04 13 | 691 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.5+ | 0.4− |
| 1996 07 20 | 327 | 0.2+ | 0.5− | 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.5+ |
| 1996 07 20 | 327 | 0.0 | 0.4+ | 2004 04 13 | 691 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.9+ |
| 1996 07 21 | 327 | 0.3− | 0.4− | 2005 06 29 | 644 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.6− | 0.6+ |
| 1996 07 21 | 327 | 0.2+ | 0.4− | 2005 06 29 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2005 06 29 | 644 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.4− | 0.5+ | 2005 06 30 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 1.1+ | 0.5− |
| 2001 09 25 | 704 | 1.1+ | 0.7+ | 2005 06 30 | 691 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.8− | 1.4+ |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2005 06 30 | 691 | 0.2− | 0.7+ | 2006 11 20 | 704 | (1.2− | 1.7+) |
| 2001 10 11 | 704 | 0.6+ | 0.8+ | 2005 07 04 | 644 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 10 11 | 704 | 0.0 | 0.1+ | 2005 07 04 | 644 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2001 10 11 | 704 | 1.5− | 0.0 | 2005 07 04 | 644 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.5+ | 0.3− |
| 2001 10 11 | 704 | (0.9− | 1.6−) | 2005 07 12 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2001 10 11 | 704 | 0.3− | 0.3+ | 2005 07 12 | G96 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2001 10 16 | 644 | 1.1− | 0.8+ | 2005 07 12 | G96 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2001 10 16 | 644 | 1.1− | 0.5+ | 2005 07 12 | G96 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2001 10 16 | 644 | 0.8− | 0.6+ | 2005 07 18 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2003 01 04 | 291 | 0.1− | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2003 01 04 | 291 | 0.5+ | 0.7+ | 2005 07 18 | 644 | 0.5+ | 0.3+ | 2006 11 24 | 691 | 0.3+ | 0.2− |
| 2003 01 04 | 291 | 0.1+ | 0.6+ | 2005 08 06 | 704 | 0.9− | 0.9+ | 2006 11 24 | 691 | 0.1+ | 0.0 |

**(140552)∗ 2001 TW$_{201}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.79716 | | (2000.0) | | | |
| $n$ | 0.19063874 | $\omega$ | 268.90170 | | +0.98546002 | +0.02802396 |
| $a$ | 2.9899363 | $\Omega$ | 89.47690 | | +0.04080846 | +0.91839476 |
| $e$ | 0.1377798 | $i$ | 9.64758 | | −0.16493397 | +0.39467167 |
| $P$ | 5.17 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2− | 0.3− | 2001 10 19 | 699 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.5+ |
| 2001 09 12 | 704 | 0.1+ | 0.4− | 2001 10 19 | 699 | 1.1− | 0.6− | 2004 03 23 | 704 | 0.3+ | 0.8+ |
| 2001 09 12 | 704 | 0.3− | 0.8− | 2001 10 19 | 699 | 0.2− | 0.4− | 2006 08 21 | 644 | 0.1− | 0.0 |
| 2001 09 21 | 644 | 0.0 | 0.3+ | 2001 10 23 | 644 | 0.4+ | 0.1+ | 2006 08 21 | 644 | 0.6− | 0.0 |
| 2001 09 21 | 644 | 0.0 | 0.4+ | 2001 10 23 | 644 | 0.3+ | 0.0 | 2006 08 21 | 644 | 0.3− | 0.3+ |
| 2001 09 21 | 644 | 0.1+ | 0.3+ | 2001 10 23 | 644 | 0.2+ | 0.1− | 2006 09 17 | 699 | 0.6− | 0.4+ |
| 2001 09 23 | 699 | 0.0 | 0.7+ | 2002 01 14 | 645 | 0.2+ | 0.1− | 2006 09 17 | 699 | 0.5− | 0.3+ |
| 2001 09 23 | 699 | 0.1− | 1.9+ | 2002 01 14 | 645 | 0.2+ | 0.2− | 2006 09 17 | 699 | 0.4− | 1.5− |
| 2001 09 23 | 699 | 0.2− | 0.7+ | 2003 01 05 | 704 | 0.6− | 0.2+ | 2006 09 17 | 699 | 1.0− | 0.2+ |
| 2001 09 23 | 699 | (1.0− | 2.0+) | 2003 01 05 | 704 | 0.2− | 0.2− | 2006 09 21 | 699 | 1.2+ | 1.1+ |
| 2001 10 11 | 704 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.1+ | 0.9+ | 2006 09 21 | 699 | 0.6− | 1.9+ |
| 2001 10 11 | 704 | 0.0 | 0.3+ | 2003 01 05 | 704 | 0.2− | 1.4+ | 2006 09 21 | 699 | 0.2+ | 0.7+ |
| 2001 10 11 | 704 | 0.2+ | 0.4+ | 2003 01 08 | 704 | 0.1+ | 0.4− | 2006 09 21 | 699 | 1.8+ | 1.1+ |
| 2001 10 11 | 704 | 0.3− | 0.2+ | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.5+ | 1.2+ |
| 2001 10 11 | 704 | 0.2+ | 0.2+ | 2003 01 08 | 704 | 0.6− | 1.0+ | 2006 09 26 | 703 | 0.7− | 0.2− |
| 2001 10 15 | 644 | 0.7− | 0.2− | 2003 02 03 | 644 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.5− |
| 2001 10 15 | 644 | 0.8− | 0.2− | 2003 02 03 | 644 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.6− | 1.0− |
| 2001 10 15 | 644 | 0.7− | 0.2− | 2003 02 03 | 644 | 1.1+ | 0.4+ | | | | |
| 2001 10 19 | 699 | 1.1− | 0.5− | 2004 03 23 | 704 | 0.6+ | 1.2+ | | | | |

**(140553)∗ 2001 TQ$_{202}$ = 2004 DX$_{21}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.01128 | | (2000.0) | | | |
| $n$ | 0.18712031 | $\omega$ | 138.46492 | | +0.09322476 | +0.98477419 |
| $a$ | 3.0272998 | $\Omega$ | 136.28332 | | −0.96030782 | +0.12784758 |
| $e$ | 0.0688559 | $i$ | 12.25788 | | −0.26290311 | −0.11779128 |
| $P$ | 5.27 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | 0.3+ | 0.8+ | 2004 02 21 | 608 | 0.4− | 0.2+ | 2005 05 16 | 704 | 0.3+ | 0.9+ |
| 2001 09 17 | 699 | 1.1− | 0.2+ | 2004 02 21 | 608 | 0.1− | 0.7− | 2005 07 05 | 704 | 0.0 | 0.4− |
| 2001 09 17 | 699 | 0.3− | 1.4+ | 2004 02 29 | 691 | 0.0 | 0.4+ | 2005 07 05 | 704 | 0.1+ | 1.0+ |
| 2001 09 17 | 699 | (0.7− | 2.3+) | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2005 07 05 | 704 | 0.5− | 1.0+ |
| 2001 10 11 | 704 | 0.8− | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2005 07 05 | 704 | 0.1+ | 0.0 |
| 2001 10 11 | 704 | 0.7− | 0.1+ | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2005 07 05 | 704 | 0.2− | 0.8+ |
| 2001 10 11 | 704 | 0.7− | 0.5+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 09 12 | 704 | 1.6+ | 0.7+ |
| 2001 10 15 | 644 | 0.1− | 0.5− | 2004 03 15 | 704 | 0.1+ | 0.5− | 2006 09 12 | 704 | 0.0 | 0.0 |
| 2001 10 15 | 644 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.2− | 0.3− | 2006 09 12 | 704 | 0.5− | 0.0 |
| 2001 10 15 | 644 | 0.0 | 0.5− | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 17 | 699 | (2.0+ | 0.1−) |
| 2001 10 19 | 699 | 1.1+ | 0.6+ | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 17 | 699 | 1.3− | 0.5+ |
| 2001 10 19 | 699 | 0.1+ | 0.9− | 2004 03 17 | 691 | 0.2− | 0.2+ | 2006 09 17 | 699 | 0.2+ | 0.7+ |
| 2001 10 19 | 699 | 0.8+ | 0.2+ | 2004 03 19 | 644 | 0.3− | 0.1− | 2006 09 17 | 699 | 0.1− | 1.4+ |
| 2001 10 19 | 699 | 0.9+ | 0.4+ | 2004 03 19 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.5− | 1.1+ |
| 2001 10 23 | 644 | 0.5− | 1.1+ | 2004 03 19 | 644 | 0.1+ | 0.1− | 2006 09 19 | 703 | 1.0− | 1.4+ |
| 2001 10 23 | 644 | 0.4− | 1.3+ | 2004 03 23 | 704 | 0.2+ | 1.0+ | 2006 09 19 | 703 | 0.5− | 0.9+ |
| 2001 10 23 | 644 | 0.4− | 1.1+ | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 703 | 0.0 | 0.6+ |
| 2003 11 20 | 691 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.3− | 0.4+ |
| 2003 11 20 | 691 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.0 | 0.9+ | 2006 09 25 | 703 | 0.7+ | 0.4+ |
| 2003 11 20 | 691 | 0.4+ | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 703 | (0.4− | 1.7+) |
| 2004 02 17 | 704 | 0.3+ | 0.5+ | 2004 04 09 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.9− | 0.9+ |
| 2004 02 17 | 704 | 0.6− | 0.5− | 2004 04 09 | 644 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2004 02 17 | 704 | 0.3− | 0.7+ | 2004 04 09 | 644 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2004 02 17 | 704 | 0.3− | 0.2+ | 2004 04 13 | 703 | 0.7+ | 1.3+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2004 02 17 | 703 | 0.1− | 0.7+ | 2004 04 13 | 703 | (1.9+ | 1.5+) | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2004 02 17 | 703 | 0.2+ | 0.9+ | 2004 04 13 | 703 | (1.7+ | 0.7−) | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2004 02 17 | 703 | 1.2+ | 0.5+ | 2004 04 13 | 703 | 0.7− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2004 02 17 | 703 | 0.5+ | 0.7+ | 2005 05 16 | 704 | 0.4+ | 1.2+ | | | | |
| 2004 02 21 | 608 | 0.6− | 0.3− | 2005 05 16 | 704 | 0.0 | 0.9+ | | | | |

**(140554)∗ 2001 TK$_{203}$ = 2003 AS$_{73}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40792)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.61190 | | (2000.0) | | | |
| $n$ | 0.18024836 | $\omega$ | 50.96396 | | −0.43290406 | −0.85581725 |
| $a$ | 3.1037626 | $\Omega$ | 66.91421 | | +0.70233700 | −0.51711712 |
| $e$ | 0.0904766 | $i$ | 17.92629 | | +0.56508125 | −0.01291190 |
| $P$ | 5.47 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 1.4− | 0.9− | 2003 03 24 | 704 | 0.6− | 0.1− | 2004 04 25 | 683 | 0.6− | 0.5− |
| 2001 09 17 | 704 | 0.7− | 0.2− | 2003 03 24 | 704 | 0.4− | 0.3+ | 2004 04 25 | 683 | 0.7+ | 0.5+ |
| 2001 09 17 | 704 | 0.8− | 0.3− | 2003 03 24 | 704 | 1.0− | 0.6+ | 2004 04 26 | 699 | 0.3+ | 0.9+ |
| 2001 09 17 | 704 | 0.3+ | 0.1+ | 2004 03 27 | 699 | 0.5− | 0.9+ | 2004 04 26 | 699 | 1.0− | 0.3+ |
| 2001 10 11 | 704 | 0.9− | 0.7+ | 2004 03 27 | 699 | 0.4− | 1.2+ | 2004 04 26 | 699 | 0.8− | 1.4+ |
| 2001 10 11 | 704 | 0.3− | 0.2+ | 2004 03 27 | 699 | 1.2− | 1.3+ | 2004 04 26 | 699 | 1.4− | 0.1− |
| 2001 10 11 | 704 | 0.6− | 1.1+ | 2004 03 27 | 699 | 0.2+ | 0.3+ | 2004 05 11 | 683 | 0.2− | 0.0 |
| 2001 10 11 | 704 | 1.2− | 0.5+ | 2004 04 10 | 644 | 0.0 | 0.9+ | 2004 05 11 | 683 | 0.0 | 0.5+ |
| 2001 10 11 | 704 | 0.6− | 0.2+ | 2004 04 10 | 644 | 0.2− | 0.0 | 2004 05 11 | 683 | (0.9− | 4.0+) |
| 2001 10 15 | 644 | 0.0 | 0.7+ | 2004 04 10 | 644 | 0.1+ | 0.8+ | 2004 05 14 | 683 | (0.6+ | 2.6+) |
| 2001 10 15 | 644 | 0.1− | 0.4+ | 2004 04 12 | 049 | 0.7− | 0.4+ | 2004 05 14 | 683 | 0.4+ | 0.8+ |
| 2001 10 15 | 644 | 0.5+ | 0.7+ | 2004 04 12 | 049 | 1.0− | 0.2+ | 2004 05 14 | 683 | (2.2− | 2.1+) |
| 2001 10 23 | 699 | 1.0− | 0.5+ | 2004 04 12 | 049 | 1.0− | 0.7+ | 2004 05 14 | 704 | 1.4+ | 0.7+ |
| 2001 10 23 | 699 | 0.4− | 0.5+ | 2004 04 12 | 683 | 0.6− | 1.7− | 2004 05 14 | 704 | 1.1+ | 0.1+ |
| 2001 10 23 | 699 | 0.1+ | 0.8+ | 2004 04 12 | 683 | 0.5+ | 1.4− | 2004 05 14 | 704 | 1.5+ | 1.2− |
| 2001 10 23 | 644 | 0.1+ | 0.5+ | 2004 04 12 | 683 | 0.4+ | 0.7− | 2004 05 14 | 704 | 1.1+ | 0.3+ |
| 2001 10 23 | 644 | 0.0 | 0.3+ | 2004 04 14 | 683 | 1.5− | 0.0 | 2004 05 23 | 704 | 0.6− | 0.6+ |
| 2001 10 23 | 699 | 0.3− | 0.1+ | 2004 04 14 | 683 | 0.7− | 1.4− | 2004 05 23 | 704 | 0.6+ | 1.3+ |
| 2001 10 23 | 644 | 0.1− | 0.3+ | 2004 04 14 | 683 | 0.9+ | 0.9− | 2004 05 23 | 704 | 0.2− | 0.1+ |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2004 04 15 | 683 | 0.5+ | 0.0 | 2004 05 23 | 704 | 0.0 | 0.7− |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2004 04 15 | 683 | 0.1− | 0.8+ | 2004 06 11 | 699 | 1.8− | 0.5+ |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2004 04 15 | 683 | (2.3− | 1.0+) | 2004 06 11 | 699 | 0.8− | 1.6+ |
| 2002 01 13 | 645 | 0.1+ | 0.0 | 2004 04 16 | 704 | (1.7+ | 2.1+) | 2004 06 11 | 699 | 0.9+ | 0.3+ |
| 2003 01 10 | 704 | 0.2+ | 0.2− | 2004 04 16 | 704 | 1.5+ | 1.8+ | 2004 06 11 | 699 | 1.0+ | 0.3+ |
| 2003 01 10 | 704 | 0.3− | 0.1+ | 2004 04 16 | 704 | 1.6+ | 1.3+ | 2006 08 23 | F84 | 0.5− | 0.5− |
| 2003 01 10 | 704 | 0.5+ | 0.3+ | 2004 04 16 | 704 | 1.1+ | 1.2+ | 2006 08 23 | F84 | 0.5+ | 0.4− |
| 2003 01 10 | 704 | 0.0 | 0.4− | 2004 04 16 | 704 | (2.2+ | 2.3+) | 2006 08 23 | F84 | 0.7+ | 0.1+ |
| 2003 01 13 | 704 | 0.3+ | 0.3+ | 2004 04 19 | 683 | 1.2+ | 0.3− | 2006 09 16 | E12 | 0.0 | 0.6+ |
| 2003 01 13 | 704 | 0.2+ | 0.1+ | 2004 04 19 | 683 | 0.2+ | 0.1− | 2006 09 16 | E12 | 0.4− | 0.0 |
| 2003 01 13 | 704 | 0.4+ | 0.0 | 2004 04 19 | 683 | 1.8+ | 0.5+ | 2006 09 16 | E12 | 0.1+ | 0.1+ |
| 2003 01 13 | 704 | 1.2+ | 0.3+ | 2004 04 20 | 683 | (2.1+ | 3.4−) | 2006 09 16 | E12 | 0.3− | 0.6+ |
| 2003 01 13 | 704 | 0.3− | 0.7+ | 2004 04 20 | 683 | 0.8+ | 1.1− | 2006 09 28 | E12 | 0.7− | 0.6+ |
| 2003 02 07 | 699 | 0.0 | 0.1+ | 2004 04 20 | 683 | (1.3− | 2.4+) | 2006 09 28 | E12 | 0.4+ | 0.8+ |
| 2003 02 07 | 699 | 0.3+ | 0.2+ | 2004 04 24 | 683 | (0.8+ | 2.9−) | 2006 09 28 | E12 | 0.4− | 0.7+ |
| 2003 02 07 | 699 | 0.4+ | 0.7+ | 2004 04 24 | 683 | 1.9+ | 2.0− | 2006 09 28 | E12 | 0.9− | 0.1+ |
| 2003 02 07 | 699 | 0.0 | 0.0 | 2004 04 24 | 683 | (1.1+ | 2.2−) | | | | |
| 2003 03 24 | 704 | 1.1− | 0.0 | 2004 04 25 | 683 | 0.8+ | 1.1+ | | | | |

**(140555)∗ 2001 TV$_{203}$ = 1999 CY$_{136}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 29716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.69071 | | (2000.0) | | | |
| $n$ | 0.22094862 | $\omega$ | 104.53035 | | −0.21029924 | +0.97568527 |
| $a$ | 2.7098288 | $\Omega$ | 153.08959 | | −0.94127411 | −0.18500802 |
| $e$ | 0.0316734 | $i$ | 7.84100 | | −0.26415390 | −0.11751715 |
| $P$ | 4.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.1+ | 0.5− | 2001 10 11 | 704 | (1.8+ | 1.5+) | 2005 09 01 | 691 | 0.0 | 0.2− |
| 1995 03 25 | 691 | 0.2+ | 0.2+ | 2001 10 16 | 644 | 0.4+ | 0.5+ | 2005 09 01 | 691 | 0.7− | 0.1− |
| 1995 03 25 | 691 | 0.4− | 0.3− | 2001 10 16 | 644 | 0.4+ | 1.0+ | 2005 10 25 | G96 | 0.2− | 0.6− |
| 1999 02 09 | 691 | 0.1+ | 0.4+ | 2001 10 16 | 644 | 0.7+ | 0.9+ | 2005 10 25 | G96 | 0.6+ | 0.1− |
| 1999 02 09 | 691 | 0.1+ | 0.2+ | 2004 04 23 | 704 | (1.4+ | 2.0+) | 2005 10 25 | G96 | 0.8+ | 0.3− |
| 1999 02 09 | 691 | 0.4+ | 0.2+ | 2004 04 23 | 704 | 0.5+ | 1.1+ | 2005 10 25 | G96 | 0.5+ | 0.8− |
| 1999 02 12 | 691 | 0.3− | 0.1+ | 2004 04 23 | 704 | 1.2+ | 0.6+ | 2006 10 18 | 118 | 0.5− | 0.4− |
| 1999 02 12 | 691 | 0.3− | 0.3+ | 2004 04 23 | 704 | (0.6− | 2.0+) | 2006 10 18 | 118 | 0.1+ | 0.5− |
| 1999 02 12 | 691 | 0.0 | 0.1+ | 2005 06 29 | 691 | 0.4− | 0.3+ | 2006 11 13 | 703 | (0.6− | 1.9−) |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2005 06 29 | 691 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.4+ | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.5− | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.3+ | 1.4− |
| 2001 09 12 | 704 | 0.4+ | 0.2− | 2005 07 04 | 691 | 0.4+ | 0.1− | 2006 11 13 | 703 | (5.2− | 0.4−) |
| 2001 09 12 | 704 | 0.5− | 0.1− | 2005 07 04 | 691 | 0.1− | 0.0 | 2006 11 19 | G92 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.1+ | 0.8+ | 2005 07 04 | 691 | 0.2− | 0.2+ | 2006 11 19 | G92 | 0.4+ | 0.1+ |
| 2001 09 18 | 699 | 0.1− | 0.6− | 2005 07 06 | 691 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.2− |
| 2001 09 18 | 699 | 0.5− | 0.2+ | 2005 07 06 | 691 | 0.0 | 0.2+ | 2006 11 19 | G92 | 0.4− | 0.3+ |
| 2001 09 18 | 699 | 0.5− | 0.4− | 2005 07 06 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 1.2− | 0.4− |
| 2001 09 18 | 699 | 0.7− | 1.4− | 2005 07 09 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.5− |
| 2001 09 25 | 704 | 1.4− | 0.8+ | 2005 07 09 | 691 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.7− | 0.5+ |
| 2001 09 25 | 704 | 0.5− | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 703 | 2.2− | 2.1+ |
| 2001 09 25 | 704 | 1.3+ | 0.4+ | 2005 07 31 | E12 | 0.5+ | 0.1+ | 2006 11 20 | 703 | 0.1− | 0.4+ |
| 2001 09 25 | 704 | 0.6+ | 0.2− | 2005 07 31 | E12 | 0.3− | 0.7− | 2006 11 20 | 703 | 2.1+ | 1.0− |
| 2001 09 25 | 704 | (1.6+ | 0.2−) | 2005 07 31 | E12 | 0.7− | 0.5− | 2006 11 20 | 703 | 1.5+ | 0.6+ |
| 2001 10 11 | 704 | 0.3+ | 0.5+ | 2005 07 31 | E12 | 0.3− | 0.2+ | | | | |
| 2001 10 11 | 704 | 0.4+ | 0.5+ | 2005 09 01 | 691 | 0.3+ | 0.1− | | | | |

**(140556)∗ 2001 TY$_{203}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 112.64890 | | | (2000.0) | | |
| $n$ | 0.21510222 | $\omega$ | 243.68003 | | +0.00764295 | +0.99423641 |
| $a$ | 2.7587104 | $\Omega$ | 27.40477 | | −0.81450347 | +0.06822841 |
| $e$ | 0.1043485 | $i$ | 13.43451 | | −0.58010834 | −0.08269728 |
| $P$ | 4.58 | $H$ | 15.3 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 1.2+ | 2004 03 17 | 704 | (0.9+ | 1.7+) | 2006 10 21 | G96 | 0.5+ | 0.0 |
| 2001 09 12 | 704 | 0.5− | 1.1+ | 2004 03 17 | 704 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.7+ | 0.7+ | 2004 03 17 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.7− | 0.7+ | 2004 03 17 | 704 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.8− | 1.4+ | 2004 03 17 | 704 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2001 10 08 | 644 | 0.1− | 0.0 | 2004 03 17 | 704 | 0.2+ | 0.9+ | 2006 10 21 | 691 | 0.5− | 0.2+ |
| 2001 10 08 | 644 | 0.4− | 0.3− | 2004 03 17 | 704 | 0.3− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2001 10 08 | 644 | 0.3− | 0.4− | 2004 03 17 | 704 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 10 11 | 704 | 0.4+ | 0.7− | 2004 03 17 | 704 | 0.5− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2001 10 11 | 704 | 0.1+ | 0.5− | 2004 03 23 | 704 | 0.7+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2001 10 11 | 704 | 1.0− | 0.7+ | 2004 03 23 | 704 | (1.6+ | 0.9−) | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2001 10 16 | 644 | 0.1− | 0.7+ | 2004 03 23 | 704 | 1.1+ | 0.3− | 2006 10 27 | 703 | 0.1− | 0.5− |
| 2001 10 16 | 644 | 0.3− | 0.9+ | 2004 03 23 | 704 | 1.1+ | 0.7+ | 2006 10 27 | 703 | 0.1+ | 0.3+ |
| 2001 10 16 | 644 | 0.6− | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.8− |
| 2001 10 24 | 644 | (0.6− | 1.7+) | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.2+ |
| 2001 10 24 | 644 | (0.3− | 1.6+) | 2004 03 26 | 691 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.2+ |
| 2001 10 24 | 644 | (0.6− | 1.6+) | 2004 03 26 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.7+ | 0.2+ |
| 2004 02 17 | 704 | 0.1− | 1.2+ | 2004 03 26 | 703 | (2.5+ | 1.0+) | 2006 11 01 | G96 | 0.2+ | 0.3+ |
| 2004 02 17 | 704 | (1.6+ | 0.9+) | 2004 03 26 | 703 | 0.8+ | 0.9+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 02 17 | 704 | 1.4+ | 0.4− | 2004 03 26 | 703 | (0.5− | 1.5+) | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2004 02 17 | 704 | 0.7− | 1.3+ | 2004 03 26 | 703 | 0.7+ | 1.4+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 704 | 1.2+ | 0.1+ | 2005 07 04 | E12 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2004 03 15 | 704 | (1.7+ | 1.0+) | 2005 07 04 | E12 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.3+ | 0.9+ |
| 2004 03 15 | 704 | 0.1− | 0.7+ | 2005 07 04 | E12 | 0.9− | 1.1+ | 2006 11 14 | 703 | 0.5+ | 1.1− |
| 2004 03 15 | 704 | 0.9− | 0.4+ | 2005 07 04 | E12 | 0.5− | 0.6+ | 2006 11 14 | 703 | 0.7+ | 0.3− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2005 08 06 | E12 | 0.1− | 0.9+ | 2006 11 14 | 703 | 0.3+ | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2005 08 06 | E12 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 0.5− | 0.9+ |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2005 08 06 | E12 | (1.7− | 1.1−) | 2006 11 19 | 704 | 0.3− | 0.9+ |
| 2004 03 16 | 704 | 0.6+ | 0.8+ | 2005 08 06 | E12 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2004 03 16 | 704 | (1.5+ | 0.6+) | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2004 03 16 | 704 | (2.0+ | 0.4−) | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 03 16 | 704 | 1.4+ | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 03 16 | 704 | (2.3+ | 0.5−) | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.2− |

**(140557)∗ 2001 TE$_{204}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 314.65846 | | | (2000.0) | | |
| $n$ | 0.21706741 | $\omega$ | 353.17786 | | +0.03473190 | −0.99323048 |
| $a$ | 2.7420348 | $\Omega$ | 94.78963 | | +0.92210432 | −0.01092142 |
| $e$ | 0.0151383 | $i$ | 6.38650 | | +0.38537944 | +0.11564569 |
| $P$ | 4.54 | $H$ | 15.4 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 04 | 691 | 0.8+ | 0.4+ | 2001 10 24 | 644 | 0.5− | 0.3− | 2005 07 31 | E12 | 0.3− | 0.0 |
| 1994 01 04 | 691 | 0.1− | 0.2+ | 2001 10 24 | 644 | 0.8− | 0.5− | 2005 07 31 | E12 | 0.5− | 0.2+ |
| 1994 01 04 | 691 | 0.5− | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.1− | 2005 07 31 | E12 | 0.0 | 0.4− |
| 2001 09 18 | 699 | 0.7+ | 1.4+ | 2002 12 31 | 704 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.6− | 1.1− |
| 2001 09 18 | 699 | 0.7− | 0.9+ | 2002 12 31 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.0 | 1.0− |
| 2001 09 18 | 699 | 0.7− | 0.2+ | 2002 12 31 | 704 | 0.9− | 0.4+ | 2006 10 16 | 703 | 0.6+ | 1.1− |
| 2001 09 18 | 699 | 1.5− | 1.4+ | 2003 01 04 | 704 | 0.1+ | 0.9+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2001 09 25 | 704 | 0.9− | 1.0+ | 2003 01 04 | 704 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 1.0− |
| 2001 09 25 | 704 | 0.1+ | 1.3+ | 2003 01 04 | 704 | (1.7+ | 2.8+) | 2006 10 17 | G96 | 0.2+ | 0.8− |
| 2001 09 25 | 704 | 0.2− | 0.8+ | 2003 01 04 | 704 | (1.4+ | 1.6+) | 2006 10 17 | G96 | 0.2− | 0.9− |
| 2001 09 25 | 704 | 0.7+ | 1.0+ | 2003 02 01 | 704 | 0.9− | 0.5− | 2006 10 17 | G96 | 0.2− | 1.0− |
| 2001 10 11 | 704 | 0.7+ | 0.4− | 2003 02 01 | 704 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.3− |
| 2001 10 11 | 704 | 0.3+ | 0.2+ | 2003 02 01 | 704 | 0.3− | 1.2+ | 2006 11 09 | 644 | 0.5− | 0.0 |
| 2001 10 11 | 704 | 0.8+ | 0.7+ | 2004 04 13 | 703 | 1.0+ | 0.6+ | 2006 11 09 | 644 | 0.5− | 0.5− |
| 2001 10 16 | 644 | 0.5− | 0.2− | 2004 04 13 | 703 | 0.6+ | 0.7+ | 2006 11 28 | 704 | 1.8+ | 1.1+ |
| 2001 10 16 | 644 | 0.2− | 0.1+ | 2004 04 13 | 703 | 0.3− | 1.0− | 2006 11 28 | 704 | 1.7+ | 1.1+ |
| 2001 10 16 | 644 | 0.3− | 0.1+ | 2004 04 13 | 703 | 0.2− | 0.4+ | 2006 11 28 | 704 | 1.3+ | 1.1− |
| 2001 10 24 | 644 | 0.6− | 0.6− | 2005 07 31 | E12 | 0.1+ | 0.1+ | | | | |

**(140558)∗ 2001 TO$_{204}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.50680 | | | (2000.0) | | |
| $n$ | 0.18628391 | $\omega$ | 306.44074 | | +0.98053552 | +0.14408229 |
| $a$ | 3.0363546 | $\Omega$ | 45.70607 | | −0.05670107 | +0.85818198 |
| $e$ | 0.0761358 | $i$ | 10.73965 | | −0.18797631 | +0.49271085 |
| $P$ | 5.29 | $H$ | 15.5 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 0.1− | 1.0− | 2006 08 28 | E12 | 0.8+ | 0.8+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2003 01 10 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2003 01 10 | 704 | 1.0+ | 1.3+ | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2003 01 10 | 704 | 1.4+ | 1.2+ | 2006 09 14 | 644 | 0.2+ | 0.3+ |
| 2001 08 27 | 699 | 0.8+ | 1.1− | 2003 01 10 | 704 | 0.6+ | 1.2+ | 2006 09 17 | 699 | 1.0+ | 0.1+ |
| 2001 08 27 | 699 | 0.7− | 1.0− | 2004 03 23 | 704 | 0.2− | 0.1− | 2006 09 17 | 699 | 1.0+ | 0.4− |
| 2001 08 27 | 699 | 0.2− | 0.6+ | 2004 03 23 | 704 | 0.2− | 0.4+ | 2006 09 17 | 699 | 0.3− | 1.1+ |
| 2001 08 27 | 699 | 0.8+ | 0.5+ | 2004 03 23 | 704 | 0.4+ | 0.0 | 2006 09 17 | 699 | (2.2− | 1.5+) |
| 2001 09 25 | 644 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.6− | 0.2+ | 2006 09 20 | 703 | 0.5− | 0.3− |
| 2001 09 25 | 644 | 0.2− | 0.9+ | 2004 03 26 | 691 | 0.4− | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.2− |
| 2001 09 25 | 644 | 0.3− | 0.2+ | 2004 03 26 | 691 | 0.3− | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.8− |
| 2001 10 08 | 644 | 0.7− | 0.4− | 2004 03 26 | 691 | 0.3− | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.0 |
| 2001 10 08 | 644 | 0.7− | 0.6− | 2006 07 30 | E12 | 0.0 | 0.6+ | 2006 09 20 | 703 | 0.8− | 0.3+ |
| 2001 10 08 | 644 | 0.7− | 0.7− | 2006 07 30 | E12 | 1.9+ | 0.1+ | 2006 09 20 | 703 | 1.2− | 0.5+ |
| 2001 10 11 | 704 | 0.6− | 0.8+ | 2006 07 30 | E12 | 0.1− | 1.0+ | 2006 09 20 | 703 | 0.0 | 0.1− |
| 2001 10 11 | 704 | 0.6− | 0.5+ | 2006 07 30 | E12 | 0.5− | 1.1+ | 2006 09 20 | 703 | 1.4− | 0.0 |
| 2001 10 11 | 704 | 1.6− | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| 2001 10 16 | 644 | 0.1− | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.5+ | 1.0− |
| 2001 10 16 | 644 | 0.2− | 0.7+ | 2006 08 18 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.5+ | 1.4+ |
| 2001 10 16 | 644 | 0.3+ | 0.3+ | 2006 08 28 | E12 | 0.0 | 0.4+ | 2006 09 26 | 703 | 1.1− | 0.3− |
| 2003 01 04 | 704 | 0.3+ | 0.3− | 2006 08 28 | E12 | 0.1− | 0.5+ | | | | |
| 2003 01 04 | 704 | 0.3− | 0.2+ | 2006 08 28 | E12 | 0.8− | 0.4+ | | | | |

**(140559)∗ 2001 TQ$_{204}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 280.86226 | | | (2000.0) | | |
| $n$ | 0.19551511 | $\omega$ | 63.80033 | | −0.27940071 | −0.94970041 |
| $a$ | 2.9400125 | $\Omega$ | 43.21633 | | +0.79065707 | −0.31114103 |
| $e$ | 0.1888532 | $i$ | 11.92031 | | +0.54479045 | −0.03550193 |
| $P$ | 5.04 | $H$ | 14.9 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2003 01 25 | 704 | (1.6− | 0.1+) | 2003 04 04 | 704 | 0.7+ | 0.2+ |
| 2001 09 25 | 704 | (2.0+ | 1.3−) | 2003 01 27 | 704 | 0.2− | 0.0 | 2003 04 04 | 704 | 0.8+ | 0.0 |
| 2001 09 25 | 704 | 0.3+ | 0.2+ | 2003 01 27 | 704 | 0.1− | 0.3− | 2003 04 04 | 704 | 0.0 | 1.2+ |
| 2001 09 25 | 704 | 0.4− | 0.7+ | 2003 01 27 | 704 | 0.2+ | 0.0 | 2003 04 04 | 704 | 0.5+ | 0.5+ |
| 2001 10 08 | 644 | 0.0 | 0.2+ | 2003 01 27 | 704 | 0.3+ | 0.4− | 2003 04 04 | 704 | 1.0+ | 0.9+ |
| 2001 10 08 | 644 | 0.0 | 0.4+ | 2003 01 27 | 704 | 0.0 | 0.3− | 2003 04 04 | 704 | 1.1+ | 0.3− |
| 2001 10 08 | 644 | 0.1− | 0.1+ | 2003 01 29 | 644 | 0.4− | 0.2+ | 2004 05 15 | E12 | (0.2− | 2.8+) |
| 2001 10 11 | 704 | 0.7− | 0.2+ | 2003 01 29 | 644 | 0.4− | 0.3+ | 2004 05 15 | E12 | (0.7+ | 2.1+) |
| 2001 10 11 | 704 | 0.2+ | 0.1+ | 2003 01 29 | 644 | 0.4− | 0.2+ | 2004 05 15 | E12 | 0.1+ | 1.3+ |
| 2001 10 11 | 704 | 0.5− | 0.1+ | 2003 02 01 | 644 | 0.2− | 1.0+ | 2004 05 15 | E12 | (1.8− | 3.2+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.4− | 0.1+ | 2003 02 01 | 644 | 0.2− | 1.1+ | 2006 09 18 | 703 | 0.0 | 0.6− |
| 2001 10 16 | 644 | 0.3− | 0.2− | 2003 02 01 | 644 | 0.2− | 1.0+ | 2006 09 18 | 703 | 1.3+ | 0.6− |
| 2001 10 16 | 644 | 0.5− | 0.0 | 2003 02 11 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.1− |
| 2001 10 24 | 644 | 0.2+ | 0.4+ | 2003 02 11 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.2+ |
| 2001 10 24 | 644 | 0.2+ | 0.2+ | 2003 02 11 | 704 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.3− | 1.3+ |
| 2001 10 24 | 644 | 0.2+ | 0.4+ | 2003 02 19 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.4+ | 1.1+ |
| 2002 11 06 | 704 | 0.0 | 1.1+ | 2003 02 19 | 644 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2002 11 06 | 704 | 1.1− | 0.0 | 2003 02 19 | 644 | 0.9+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.6+ |
| 2002 11 06 | 704 | (1.7− | 1.1−) | 2003 02 26 | 704 | 0.3− | 0.0 | 2006 10 02 | 703 | 0.9− | 0.1+ |
| 2002 11 11 | 704 | 0.5− | 1.1+ | 2003 02 26 | 704 | 0.7+ | 0.6+ | 2006 10 02 | 703 | 0.1+ | 0.1+ |
| 2002 11 11 | 704 | 0.0 | 0.6− | 2003 02 26 | 704 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.1+ | 0.1+ |
| 2002 11 11 | 704 | 0.4+ | 1.4− | 2003 02 26 | 704 | 0.4+ | 0.6− | 2006 10 02 | 703 | 0.6− | 0.1− |
| 2002 12 14 | 704 | 0.1− | 0.4− | 2003 02 26 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2002 12 14 | 704 | 0.1+ | 0.0 | 2003 02 26 | 704 | 0.5− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.6+ |
| 2002 12 14 | 704 | 0.7+ | 0.7− | 2003 02 26 | 704 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.1− | 1.2− |
| 2002 12 14 | 704 | 0.5+ | 0.8− | 2003 02 26 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2003 01 10 | 704 | 0.5− | 0.1+ | 2003 02 26 | 704 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2003 01 10 | 704 | 0.1− | 0.1− | 2003 03 03 | 644 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2003 01 10 | 704 | 0.6− | 0.1− | 2003 03 03 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 01 10 | 704 | 0.2− | 0.6− | 2003 03 03 | 644 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.5+ | 0.5+ |
| 2003 01 13 | 704 | 0.3− | 0.2− | 2003 03 08 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.8+ | 0.1+ |
| 2003 01 13 | 704 | 0.1− | 0.3− | 2003 03 08 | 644 | 0.2− | 0.1− | 2006 10 28 | 703 | (0.5+ | 2.0+) |
| 2003 01 13 | 704 | 0.0 | 0.3− | 2003 03 08 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.8− | 0.2− |
| 2003 01 25 | 704 | 0.3− | 0.3+ | 2003 04 04 | 704 | (0.2+ | 1.5+) | 2006 11 25 | G96 | 0.3+ | 0.0 |
| 2003 01 25 | 704 | 0.3− | 0.4− | 2003 04 04 | 704 | 0.3− | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2003 01 25 | 704 | 0.8− | 0.8− | 2003 04 04 | 704 | 1.3+ | 1.0+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2003 01 25 | 704 | 0.3− | 0.6− | 2003 04 04 | 704 | 0.1− | 0.6− | 2006 11 25 | G96 | 0.0 | 0.3− |

**(140560)∗ 2001 TW$_{204}$**

Discovered 2001 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.40171 | | (2000.0) | | | |
| $n$ | 0.18398149 | $\omega$ | 268.97881 | | +0.88169771 | −0.44458415 |
| $a$ | 3.0616342 | $\Omega$ | 117.40177 | | +0.47169564 | +0.82307896 |
| $e$ | 0.0860248 | $i$ | 10.24935 | | +0.01060035 | +0.35339206 |
| $P$ | 5.36 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 09 | 691 | 0.7+ | 0.4+ | 2003 01 04 | 704 | 0.5+ | 0.7+ | 2006 08 28 | E12 | 0.4+ | 0.1+ |
| 1994 05 09 | 691 | 1.0+ | 0.2− | 2003 01 08 | 704 | 0.9− | 0.1+ | 2006 08 28 | E12 | 0.6+ | 0.6+ |
| 1994 05 09 | 691 | 0.1+ | 0.3− | 2003 01 08 | 704 | 1.0+ | 0.3+ | 2006 08 28 | E12 | 1.1+ | 0.7+ |
| 1999 03 20 | 645 | 0.3− | 0.2+ | 2003 01 08 | 704 | 0.0 | 0.3− | 2006 08 28 | E12 | 0.1− | 0.2+ |
| 1999 03 20 | 645 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.6+ | 0.0 | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.5+ | 0.4+ | 2004 03 23 | 704 | 1.1+ | 0.5+ | 2006 09 14 | 644 | 0.3+ | 0.1+ |
| 2001 09 25 | 704 | 0.6− | 1.7+ | 2004 03 23 | 704 | 0.9+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2001 09 25 | 704 | 1.1− | 0.2+ | 2004 03 23 | 704 | 0.8+ | 1.4+ | 2006 09 17 | 699 | 0.3+ | 0.5− |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.6+ | 0.7+ | 2006 09 17 | 699 | 1.0− | 0.4− |
| 2001 10 11 | 704 | 0.0 | 1.2+ | 2005 06 10 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 699 | 0.4− | 1.3+ |
| 2001 10 11 | 704 | 0.2+ | 1.1+ | 2005 06 10 | 691 | 0.2+ | 0.3− | 2006 09 17 | 699 | (2.2+ | 0.7+) |
| 2001 10 11 | 704 | (0.6− | 2.3+) | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.5− |
| 2001 10 15 | 644 | 1.3− | 0.2− | 2005 06 14 | 691 | 0.3− | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.4+ |
| 2001 10 15 | 644 | 1.2− | 0.3− | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 09 20 | 703 | 1.2+ | 1.1+ |
| 2001 10 15 | 644 | 1.2− | 0.4− | 2005 06 14 | 691 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.7− | 0.4+ |
| 2001 10 23 | 644 | 0.2− | 0.6+ | 2006 07 23 | F84 | 0.1− | 1.2− | 2006 09 26 | 703 | 0.6+ | 0.6+ |
| 2001 10 23 | 644 | 0.2− | 0.5+ | 2006 07 23 | F84 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.3− | 0.2− |
| 2001 10 23 | 644 | 0.1− | 0.7+ | 2006 07 23 | F84 | 0.0 | 0.8+ | 2006 09 26 | 703 | 1.3− | 0.9+ |
| 2003 01 04 | 704 | 0.2+ | 1.3+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.6− | 0.8− |
| 2003 01 04 | 704 | 0.7+ | 0.9+ | 2006 08 24 | 644 | 0.2+ | 0.5− | | | | |
| 2003 01 04 | 704 | 1.0+ | 1.4+ | 2006 08 24 | 644 | 0.4+ | 0.1− | | | | |

**(140561)∗ 2001 TL$_{207}$ = 2004 HL$_{64}$ = 2005 ND$_{96}$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 85087)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.02457 | | (2000.0) | | | |
| $n$ | 0.20440341 | $\omega$ | 29.98341 | | +0.20694788 | −0.97833491 |
| $a$ | 2.8541533 | $\Omega$ | 48.07370 | | +0.89606972 | +0.18716929 |
| $e$ | 0.0145299 | $i$ | 0.44491 | | +0.39272336 | +0.08847858 |
| $P$ | 4.82 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 691 | 0.1+ | 0.0 | 2005 07 15 | G96 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2001 09 20 | 691 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.6− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2001 09 20 | 691 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2001 10 11 | 644 | 0.9− | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2001 10 11 | 644 | 0.2− | 0.6+ | 2006 07 21 | G96 | 0.2− | 0.5− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.7− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2001 10 16 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2001 10 16 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 03 | G96 | 0.2− | 0.0 |
| 2001 10 16 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 03 | G96 | 0.0 | 0.1+ |
| 2002 12 31 | 645 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 03 | G96 | 0.4+ | 0.2− |
| 2002 12 31 | 645 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.3− | 0.6− | 2006 11 03 | G96 | 0.1− | 0.2− |
| 2003 01 05 | 291 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2003 01 05 | 291 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.6− | 0.5− | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2003 01 05 | 291 | 0.6− | 1.1− | 2006 10 12 | 691 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2004 04 16 | 691 | 0.1+ | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.5+ | 0.1+ |
| 2004 04 16 | 691 | 0.4+ | 0.6+ | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2004 04 16 | 691 | 0.6+ | 0.2+ | 2006 10 16 | 691 | 0.5− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 04 25 | 291 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2004 04 25 | 291 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2004 04 25 | 291 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2005 07 07 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2005 07 07 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2005 07 07 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2005 07 15 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2005 07 15 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.6− | | | | |

**(140562)∗ 2001 TS$_{207}$ = 2003 BR$_{48}$**

Discovered 2001 Oct. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 40794)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.05612 | | (2000.0) | | | |
| $n$ | 0.20917514 | $\omega$ | 268.72559 | | −0.36453000 | −0.93107291 |
| $a$ | 2.8105804 | $\Omega$ | 202.67072 | | +0.86896089 | −0.33438565 |
| $e$ | 0.1467388 | $i$ | 2.21102 | | +0.33470114 | −0.14590914 |
| $P$ | 4.71 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.2− | 0.5+ | 2003 02 11 | 608 | 0.1− | 0.9− | 2006 10 28 | G96 | 0.6+ | 0.1− |
| 1994 04 06 | 691 | 0.4− | 0.4+ | 2003 02 11 | 608 | 0.1− | 1.1− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 1994 04 06 | 691 | 0.1− | 0.4+ | 2003 02 11 | 608 | 0.4− | 0.7− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 1999 05 18 | 691 | 0.2+ | 0.4+ | 2003 02 22 | 644 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1− |
| 1999 05 18 | 691 | 0.3+ | 0.0 | 2003 02 22 | 644 | 0.6+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 1999 05 18 | 691 | 0.0 | 0.3+ | 2003 02 22 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2003 02 22 | 644 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 0.4+ | 2003 02 22 | 644 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.8− | 0.7+ | 2003 02 22 | 644 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 1.2+ |
| 2001 09 20 | 704 | 0.6− | 0.8+ | 2003 03 06 | 644 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2001 10 11 | 644 | 0.3+ | 0.5+ | 2003 03 06 | 644 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.7+ |
| 2001 10 11 | 644 | 1.0+ | 0.9+ | 2003 03 06 | 644 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2001 10 11 | 644 | 0.7+ | 0.8+ | 2003 03 12 | 644 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2001 10 15 | 291 | 0.2+ | 0.3+ | 2003 03 12 | 644 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2001 10 15 | 291 | 0.5− | 0.3+ | 2003 03 12 | 644 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 10 15 | 291 | 0.1− | 0.4+ | 2004 06 12 | 926 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 10 19 | 644 | 0.2+ | 0.8+ | 2004 06 12 | 926 | 0.6− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2001 10 19 | 644 | 0.0 | 0.6+ | 2004 06 12 | 926 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.5− | 0.2− |
| 2001 10 19 | 644 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2001 10 21 | 704 | 0.9+ | 0.7+ | 2006 10 20 | 691 | 0.7− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 1.1+ | 2006 10 20 | 691 | 0.7− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.2− |
| 2003 01 26 | 699 | 0.7− | 0.3− | 2006 10 20 | 691 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2003 01 26 | 699 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2003 01 26 | 699 | 0.0 | 1.4+ | 2006 10 27 | G96 | 0.1+ | 0.7− | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2003 01 26 | 699 | 0.2+ | 0.8+ | 2006 10 27 | G96 | 0.5+ | 0.5− | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2003 01 30 | 699 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 18 | 704 | 0.8+ | 0.4+ |
| 2003 01 30 | 699 | 0.8+ | 0.2+ | 2006 10 28 | G96 | 0.7+ | 0.4+ | 2006 11 21 | 704 | (2.1+ | 0.7−) |
| 2003 01 30 | 699 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.6− |
| 2003 01 30 | 699 | 0.0 | 0.6− | 2006 10 28 | G96 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.7+ | 1.2+ |
| 2003 02 09 | 644 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2003 02 09 | 644 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.8+ | 0.1− | | | | |
| 2003 02 09 | 644 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | | | |

**(140563)∗ 2001 TE$_{209}$**

Discovered 2001 Oct. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.12287 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17342837 | $\omega$ | 231.17308 | | −0.60486469 | −0.76764139 | |
| $a$ | 3.1846078 | $\Omega$ | 257.36178 | | +0.78122040 | −0.52044691 | |
| $e$ | 0.0854814 | $i$ | 12.53724 | | +0.15438068 | −0.37398090 | |
| $P$ | 5.68 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 644 | 0.4+ | 0.1+ | 2002 12 12 | 704 | 0.1− | 0.1+ | 2004 03 17 | 704 | 0.4+ | 0.4− |
| 2001 08 28 | 644 | 0.5+ | 0.2+ | 2002 12 31 | 704 | 0.3+ | 1.6+ | 2004 03 17 | 704 | 0.4+ | 0.2− |
| 2001 08 28 | 644 | 0.3+ | 0.3+ | 2002 12 31 | 704 | 1.2− | 1.4+ | 2004 03 26 | 704 | 0.2− | 0.3+ |
| 2001 09 19 | 644 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 0.9− | 1.5+ | 2004 03 26 | 704 | 1.5+ | 0.6+ |
| 2001 09 19 | 644 | 0.4+ | 0.2+ | 2003 01 07 | 704 | 0.2− | 0.3+ | 2004 03 26 | 704 | 0.3− | 0.2+ |
| 2001 09 19 | 644 | 0.3+ | 0.3+ | 2003 01 07 | 704 | 0.3− | 0.0 | 2004 03 26 | 704 | 0.6− | 0.1− |
| 2001 09 29 | 644 | 0.6− | 0.4+ | 2003 01 07 | 704 | 0.4+ | 0.3+ | 2004 04 17 | 704 | 0.7+ | 0.7+ |
| 2001 09 29 | 644 | 0.4− | 0.6+ | 2003 01 07 | 704 | 0.3+ | 0.5+ | 2004 04 17 | 704 | 1.1+ | 0.3+ |
| 2001 09 29 | 644 | 0.6− | 0.5+ | 2003 01 07 | 704 | 0.8+ | 0.9+ | 2004 04 17 | 704 | 0.1− | 0.8+ |
| 2001 10 12 | 608 | 0.2+ | 0.4− | 2003 01 08 | 704 | 0.2+ | 0.1− | 2004 04 17 | 704 | 1.3+ | 0.1− |
| 2001 10 12 | 608 | 0.2− | 0.0 | 2003 01 08 | 704 | 0.2+ | 0.1− | 2004 04 25 | 703 | 0.7− | 1.1− |
| 2001 10 12 | 608 | 0.1+ | 0.1− | 2003 01 08 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 703 | 0.6− | 0.5+ |
| 2001 10 18 | 704 | 1.0− | 0.1− | 2003 01 08 | 704 | 0.7+ | 0.1− | 2004 04 25 | 703 | 1.1− | 0.1+ |
| 2001 10 18 | 704 | 1.6− | 1.8+ | 2003 01 08 | 704 | 0.4+ | 0.3+ | 2004 04 25 | 703 | 0.5+ | 0.2+ |
| 2001 10 18 | 704 | 0.7− | 0.5+ | 2003 01 08 | 557 | 0.7+ | 0.2− | 2004 05 12 | E12 | (2.2− | 2.1+) |
| 2001 10 18 | 704 | 0.1− | 0.3− | 2003 01 08 | 557 | 0.2+ | 0.2− | 2004 05 12 | E12 | (1.9− | 2.7+) |
| 2001 10 20 | 699 | 0.0 | 0.2− | 2003 01 08 | 557 | 0.7− | 0.3+ | 2004 05 12 | E12 | (1.0− | 2.5+) |
| 2001 10 20 | 699 | 0.7+ | 0.6+ | 2003 01 08 | 557 | 0.2+ | 0.4− | 2004 05 12 | E12 | (1.3− | 2.5+) |
| 2001 10 20 | 699 | 0.0 | 1.1+ | 2003 01 27 | 704 | 0.9+ | 0.9+ | 2004 05 14 | 644 | 0.3+ | 0.2+ |
| 2001 10 20 | 699 | 1.1− | 0.0 | 2003 01 27 | 704 | 0.2+ | 0.0 | 2004 05 14 | 644 | 0.3+ | 0.6+ |
| 2001 10 26 | 644 | 0.0 | 1.0+ | 2003 01 27 | 704 | 0.1− | 0.1+ | 2004 05 14 | 644 | 0.7+ | 0.4+ |
| 2001 10 26 | 644 | 0.9+ | 0.6+ | 2003 01 27 | 704 | 0.2+ | 0.2− | 2006 08 27 | 699 | 1.0+ | 0.6− |
| 2001 10 26 | 644 | 0.3− | 0.6+ | 2003 01 27 | 704 | 0.2− | 0.1− | 2006 08 27 | 699 | 0.6+ | 0.6− |
| 2001 11 17 | 704 | 0.5− | 0.7− | 2003 03 31 | 704 | 0.1+ | 1.2+ | 2006 08 27 | 699 | 1.1+ | 0.6+ |
| 2001 11 17 | 704 | 0.1− | 0.7+ | 2003 03 31 | 704 | 0.5− | 1.1+ | 2006 08 27 | 699 | 0.5+ | 0.3+ |
| 2001 11 17 | 704 | 0.9+ | 0.2− | 2003 03 31 | 704 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.7− |
| 2002 11 14 | 704 | 0.1+ | 0.6− | 2004 03 16 | E12 | 0.6− | 0.1+ | 2006 08 30 | 699 | 0.9− | 0.0 |
| 2002 11 14 | 704 | 0.3− | 0.8− | 2004 03 16 | E12 | 0.3− | 0.8+ | 2006 08 30 | 699 | 0.2− | 0.4+ |
| 2002 11 14 | 704 | 0.7− | 1.1− | 2004 03 16 | E12 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.5+ | 1.0− |
| 2002 11 14 | 704 | 0.2+ | 0.7− | 2004 03 16 | E12 | 0.1− | 0.4+ | 2006 09 11 | 703 | 1.0− | 0.6+ |
| 2002 12 11 | 704 | 0.2+ | 1.3− | 2004 03 16 | E12 | 0.3+ | 0.1+ | 2006 09 11 | 703 | 0.4− | 0.6+ |
| 2002 12 11 | 704 | 0.3− | 1.3− | 2004 03 16 | E12 | 0.3− | 0.7+ | 2006 09 11 | 703 | 0.1− | 0.2+ |
| 2002 12 11 | 704 | 0.7− | 1.3− | 2004 03 16 | E12 | 0.0 | 0.2+ | 2006 09 11 | 703 | (0.4− | 2.5+) |
| 2002 12 11 | 704 | 0.1− | 1.5− | 2004 03 16 | E12 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.2− |
| 2002 12 11 | 704 | 0.4+ | 1.4− | 2004 03 17 | 704 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.3− | 0.1+ |
| 2002 12 12 | 704 | 0.4− | 0.4+ | 2004 03 17 | 704 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.3+ | 1.0− |
| 2002 12 12 | 704 | 1.2− | 0.6− | 2004 03 17 | 704 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.1− | 0.5+ |

**(140564)∗ 2001 TY$_{209}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.76041 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22702394 | $\omega$ | 239.29264 | | +0.08875337 | −0.98181007 | |
| $a$ | 2.6612660 | $\Omega$ | 207.19335 | | +0.99233017 | +0.10171396 | |
| $e$ | 0.0572404 | $i$ | 21.54792 | | +0.08604465 | −0.16032236 | |
| $P$ | 4.34 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 691 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.5− | 0.2+ | 2004 05 22 | 704 | 0.4− | 1.1− |
| 1997 10 03 | 691 | 0.3+ | 0.4− | 2004 03 22 | 704 | 0.2− | 0.7+ | 2004 05 23 | 704 | 0.2+ | 0.4+ |
| 1997 10 03 | 691 | 0.1+ | 0.5+ | 2004 03 22 | 704 | 0.1+ | 0.3− | 2004 05 23 | 704 | 0.2− | 0.2− |
| 1997 10 30 | 704 | 0.5+ | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2004 05 23 | 704 | 1.3− | 0.4− |
| 1997 10 30 | 704 | 1.4− | 0.7+ | 2004 03 31 | 704 | 0.8+ | 0.8+ | 2004 05 23 | 704 | 0.9− | 0.1+ |
| 1997 10 30 | 704 | 1.0+ | 1.0+ | 2004 03 31 | 704 | 0.9+ | 0.5+ | 2004 05 23 | 704 | 1.0− | 0.6− |
| 1997 10 30 | 704 | 0.8− | 1.5+ | 2004 03 31 | 704 | 0.0 | 0.2− | 2005 07 17 | 644 | 0.1+ | 0.2+ |
| 1997 10 30 | 704 | 0.3− | 0.6+ | 2004 03 31 | 704 | 0.9− | 0.1− | 2005 07 17 | 644 | 0.1− | 0.0 |
| 2001 08 21 | 608 | 0.1− | 0.7− | 2004 04 15 | 699 | 0.4− | 0.8− | 2005 07 17 | 644 | 0.1− | 0.0 |
| 2001 08 21 | 608 | 0.3− | 0.4− | 2004 04 15 | 699 | (0.4+ | 2.1+) | 2006 10 20 | 703 | 0.8− | 0.4− |
| 2001 08 21 | 608 | 0.3− | 0.7− | 2004 04 15 | 699 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.6− | 1.0+ |
| 2001 09 10 | 704 | 0.5− | 0.6− | 2004 04 15 | 699 | 1.2+ | 0.3+ | 2006 10 20 | 703 | 0.3− | 0.9+ |
| 2001 09 10 | 704 | 0.2− | 0.2− | 2004 04 20 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 703 | 0.6+ | 0.1+ |
| 2001 09 10 | 704 | 0.2+ | 0.2− | 2004 04 20 | 704 | 0.6+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.6+ |
| 2001 09 10 | 704 | 0.0 | 0.5− | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 10 28 | 703 | 0.9− | 1.1− |
| 2001 09 10 | 704 | 0.2− | 0.2− | 2004 04 20 | 704 | 0.2+ | 0.4− | 2006 10 28 | 703 | 1.1− | 0.3− |
| 2001 09 21 | 644 | 0.0 | 0.4+ | 2004 04 30 | 608 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.5+ |
| 2001 09 21 | 644 | 0.0 | 0.7+ | 2004 04 30 | 608 | 0.8− | 0.7+ | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2001 09 21 | 644 | 0.4− | 0.4+ | 2004 04 30 | 608 | 1.0− | 0.0 | 2006 11 16 | 703 | 0.0 | 0.2+ |
| 2001 10 13 | 644 | 0.5+ | 0.7+ | 2004 05 18 | 704 | 0.9+ | 0.8+ | 2006 11 16 | 703 | 0.6+ | 0.3+ |
| 2001 10 13 | 644 | 0.3+ | 0.7+ | 2004 05 18 | 704 | (0.7+ | 1.6+) | 2006 11 16 | 703 | 0.5+ | 0.2+ |
| 2001 10 13 | 644 | 0.2+ | 1.1+ | 2004 05 18 | 704 | 0.7+ | 0.9+ | 2006 11 19 | 703 | 0.1+ | 0.9− |
| 2001 10 17 | 704 | 0.8+ | 0.2+ | 2004 05 18 | 704 | 0.5− | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.6− |
| 2001 10 17 | 704 | 0.2+ | 0.3+ | 2004 05 18 | 704 | 1.5+ | 1.0+ | 2006 11 19 | 703 | 1.0+ | 0.2+ |
| 2001 10 17 | 704 | 0.6− | 0.3− | 2004 05 22 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 0.2+ | 0.4+ |
| 2001 10 17 | 704 | 0.4+ | 0.7− | 2004 05 22 | 704 | 0.3+ | 0.0 | | | | |
| 2004 03 22 | 704 | (2.0+ | 1.5+) | 2004 05 22 | 704 | 0.7− | 0.1− | | | | |

**(140565)∗ 2001 TO$_{210}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.02234 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21309700 | $\omega$ | 297.21564 | | −0.38849860 | +0.90895595 | |
| $a$ | 2.7759895 | $\Omega$ | 309.09814 | | −0.76140121 | −0.40909829 | |
| $e$ | 0.1083471 | $i$ | 11.23632 | | −0.51897691 | −0.08023511 | |
| $P$ | 4.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 691 | 0.5− | 0.3− | 2001 10 17 | 704 | 0.3+ | 0.5− | 2006 09 17 | 703 | 0.5− | 1.4− |
| 1999 01 18 | 691 | 0.2− | 0.4− | 2004 01 28 | 704 | 0.9+ | 0.6+ | 2006 09 17 | 703 | 0.9− | 0.4+ |
| 1999 01 18 | 691 | 0.2− | 0.6− | 2004 01 28 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 1.0− | 0.3+ |
| 2001 07 24 | 644 | 0.4− | 0.4+ | 2004 01 28 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.6− | 0.4− |
| 2001 07 24 | 644 | 0.4− | 0.4+ | 2004 01 28 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.2+ |
| 2001 07 24 | 644 | 0.2− | 0.3+ | 2004 01 28 | 704 | 0.9+ | 0.5+ | 2006 09 28 | 703 | 0.6+ | 0.6+ |
| 2001 08 25 | 704 | 0.2− | 0.7+ | 2004 01 29 | 704 | 0.7+ | 1.3+ | 2006 09 28 | 703 | 0.4− | 0.2+ |
| 2001 08 25 | 704 | 0.9− | 0.0 | 2004 01 29 | 704 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.6+ | 0.0 |
| 2001 08 25 | 704 | 0.4− | 0.6− | 2004 01 29 | 704 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 08 25 | 704 | 0.3− | 0.2+ | 2004 02 19 | 704 | 0.4+ | 1.5+ | 2006 10 11 | 644 | 0.3+ | 0.5+ |
| 2001 09 10 | 704 | 0.2− | 0.3+ | 2004 02 19 | 704 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2001 09 10 | 704 | 1.2− | 0.2+ | 2004 02 19 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 09 10 | 704 | 0.6− | 0.0 | 2004 02 19 | 704 | 1.4+ | 0.1− | 2006 10 22 | 644 | 0.7+ | 0.2+ |
| 2001 09 21 | 699 | 0.5+ | 0.2+ | 2004 03 16 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2001 09 21 | 699 | 0.9− | 0.4+ | 2004 03 16 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2001 09 21 | 699 | 0.2− | 0.8+ | 2004 03 16 | 704 | 0.9+ | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2001 09 21 | 699 | 0.2+ | 0.5+ | 2004 03 27 | 691 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.4+ |
| 2001 09 25 | 704 | 0.6+ | 0.2+ | 2004 03 27 | 691 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.0 | 1.0− |
| 2001 09 25 | 704 | 0.0 | 0.5+ | 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.9+ | 2004 03 29 | 703 | 1.0+ | 0.0 | 2006 11 15 | 703 | 0.2− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.7+ | 0.3− | 2004 03 29 | 703 | 0.9+ | 0.3+ | 2006 11 15 | 703 | 0.7− | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.7+ | 2004 03 29 | 703 | 0.6+ | 0.3+ | 2006 11 22 | 703 | 0.7− | 0.9+ |
| 2001 10 13 | 644 | 0.4− | 0.6+ | 2004 03 29 | 703 | 0.3− | 1.4+ | 2006 11 22 | 703 | 0.0 | 1.0+ |
| 2001 10 13 | 644 | 0.4− | 0.7+ | 2004 04 16 | 699 | 0.1− | 0.7+ | 2006 11 22 | 703 | 0.0 | 0.6+ |
| 2001 10 13 | 644 | 0.4− | 0.9+ | 2004 04 16 | 699 | 0.8+ | 1.5+ | 2006 11 22 | 703 | 1.4− | 0.7− |
| 2001 10 17 | 704 | 0.1+ | 1.0+ | 2004 04 16 | 699 | (1.7+ | 2.9+) | | | | |
| 2001 10 17 | 704 | 0.8+ | 0.4+ | 2004 04 16 | 699 | 0.2+ | 0.2− | | | | |

**(140566)∗ 2001 TR$_{211}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.64779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18610417 | $\omega$ | 140.17034 | | +0.00642738 | −0.99063910 | |
| $a$ | 3.0383092 | $\Omega$ | 309.01883 | | +0.86693308 | +0.07348034 | |
| $e$ | 0.0395591 | $i$ | 10.10797 | | +0.49838311 | −0.11504267 | |
| $P$ | 5.30 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 699 | 0.5+ | 0.1− | 2002 12 11 | 704 | 0.8− | 0.8− | 2006 08 29 | 703 | 0.4− | 0.2+ |
| 2001 08 26 | 699 | 0.3+ | 1.2+ | 2002 12 11 | 704 | 0.5− | 0.3− | 2006 08 29 | 703 | 0.1+ | 0.1+ |
| 2001 08 26 | 699 | 0.2+ | 0.8+ | 2002 12 11 | 704 | 0.2− | 0.9+ | 2006 08 29 | 703 | 0.4− | 0.3− |
| 2001 08 26 | 699 | 0.2− | 0.8+ | 2002 12 11 | 704 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.3− |
| 2001 09 18 | 645 | 0.0 | 0.2− | 2002 12 15 | 704 | 0.2− | 0.1+ | 2006 08 30 | 699 | 1.5+ | 1.1− |
| 2001 09 18 | 645 | 0.0 | 0.2− | 2002 12 15 | 704 | 1.0+ | 0.4− | 2006 08 30 | 699 | 0.4− | 0.7+ |
| 2001 09 25 | 704 | 0.5− | 0.4+ | 2002 12 15 | 704 | 0.1+ | 0.8+ | 2006 08 30 | 699 | 0.1+ | 0.9− |
| 2001 09 25 | 704 | 0.3− | 0.3− | 2002 12 15 | 704 | 0.2− | 0.2+ | 2006 08 30 | 699 | (0.7+ | 2.4+) |
| 2001 09 25 | 704 | 0.4− | 0.4+ | 2002 12 15 | 704 | 0.7+ | 0.4− | 2006 09 13 | 644 | 0.4− | 0.4+ |
| 2001 09 25 | 704 | 0.9− | 0.2+ | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2006 09 13 | 644 | 0.8− | 0.1+ |
| 2001 09 25 | 704 | 0.6− | 0.8+ | 2004 03 17 | 704 | 0.5+ | 1.0+ | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 2001 09 29 | 644 | 0.2+ | 0.8+ | 2004 03 17 | 704 | 0.6+ | 1.7+ | 2006 09 13 | 644 | 0.3− | 0.3+ |
| 2001 09 29 | 644 | 0.3+ | 0.7+ | 2004 03 17 | 704 | 0.8− | 0.4+ | 2006 09 13 | 644 | 0.6− | 0.1− |
| 2001 09 29 | 644 | 0.0 | 0.5+ | 2004 03 26 | 699 | 0.3− | 0.8− | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2001 10 13 | 644 | 0.1+ | 0.1− | 2004 03 26 | 699 | 1.5+ | 0.2+ | 2006 09 18 | 703 | 1.2+ | 0.8− |
| 2001 10 13 | 644 | 0.1− | 0.1− | 2004 03 26 | 699 | 0.1− | 1.6− | 2006 09 18 | 703 | 1.1− | 0.9+ |
| 2001 10 13 | 644 | 0.1− | 0.4+ | 2004 03 26 | 699 | 0.6− | 1.0+ | 2006 09 18 | 703 | (4.1− | 3.0−) |
| 2001 10 17 | 704 | 0.8− | 0.9+ | 2006 08 18 | 644 | 0.4− | 0.3+ | 2006 09 18 | 703 | (2.7− | 0.2−) |
| 2001 10 17 | 704 | 0.3+ | 0.8+ | 2006 08 18 | 644 | 0.4− | 0.2− | 2006 09 30 | 699 | 0.1+ | 1.3− |
| 2001 10 17 | 704 | 0.5+ | 0.7− | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 09 30 | 699 | 1.2+ | 0.9− |
| 2001 10 17 | 704 | 0.0 | 0.2− | 2006 08 24 | 704 | 0.9+ | 0.2+ | 2006 09 30 | 699 | 1.3+ | 1.1+ |
| 2001 10 26 | 644 | 0.2− | 0.6+ | 2006 08 24 | 704 | 0.0 | 0.7− | 2006 09 30 | 699 | 0.0 | 0.5+ |
| 2001 10 26 | 644 | 0.2+ | 0.7+ | 2006 08 24 | 704 | 0.6− | 0.4+ | | | | |
| 2001 10 26 | 644 | 0.3+ | 0.6+ | 2006 08 24 | 704 | 0.3+ | 1.0+ | | | | |

**(140567)∗ 2001 TN$_{212}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.27399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19043306 | $\omega$ | 330.74613 | | −0.29518423 | +0.94341598 | |
| $a$ | 2.9920889 | $\Omega$ | 281.74120 | | −0.84386378 | −0.33159811 | |
| $e$ | 0.0577358 | $i$ | 8.87815 | | −0.44806271 | +0.00299537 | |
| $P$ | 5.18 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1− | 0.2+ | 2003 01 08 | 704 | 1.0+ | 0.4− | 2004 03 29 | 703 | 0.3− | 0.7− |
| 2001 09 25 | 704 | 0.6+ | 0.1− | 2003 01 08 | 704 | 0.7+ | 0.2+ | 2006 08 29 | 699 | (1.9− | 1.1+) |
| 2001 09 25 | 704 | 0.7+ | 0.0 | 2003 01 31 | 704 | 0.4+ | 0.9− | 2006 08 29 | 699 | 0.8− | 0.6+ |
| 2001 09 25 | 704 | 0.3+ | 0.3+ | 2003 01 31 | 704 | 0.1+ | 0.4− | 2006 08 29 | 699 | 0.3− | 1.1− |
| 2001 09 25 | 704 | 0.7− | 0.5+ | 2003 01 31 | 704 | 1.0− | 0.9− | 2006 08 29 | 699 | 0.7− | 0.6− |
| 2001 09 29 | 644 | 0.1− | 0.5+ | 2004 01 28 | 704 | 1.2+ | 0.3+ | 2006 09 06 | 644 | 0.0 | 0.2− |
| 2001 09 29 | 644 | 0.1− | 0.7+ | 2004 01 28 | 704 | 0.8+ | 0.5− | 2006 09 06 | 644 | 0.0 | 0.1+ |
| 2001 09 29 | 644 | 0.0 | 0.6+ | 2004 01 28 | 704 | 0.6+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.0 |
| 2001 10 13 | 644 | 0.0 | 0.1+ | 2004 02 14 | 644 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.6+ | 1.3− |
| 2001 10 13 | 644 | 0.3− | 0.2+ | 2004 02 14 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.9+ |
| 2001 10 13 | 644 | 0.2+ | 0.4+ | 2004 02 14 | 644 | 1.0+ | 0.3+ | 2006 09 17 | 703 | (0.6− | 2.7+) |
| 2001 10 17 | 704 | 0.4− | 1.0− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 703 | (1.2+ | 3.3+) |
| 2001 10 17 | 704 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.3− | 0.1+ | 2006 09 20 | G92 | 0.5− | 0.4+ |
| 2001 10 17 | 704 | 0.9+ | 0.3+ | 2004 02 19 | 704 | 0.9+ | 0.3+ | 2006 09 20 | G92 | 0.3+ | 0.5+ |
| 2001 10 26 | 644 | 1.2− | 0.9− | 2004 02 19 | 704 | (0.2− | 3.0+) | 2006 09 20 | G92 | 0.2+ | 0.6+ |
| 2001 10 26 | 644 | 0.8+ | 0.6+ | 2004 02 19 | 608 | 0.5+ | 0.8− | 2006 09 27 | 703 | (1.8− | 0.8−) |
| 2001 10 26 | 644 | 0.8− | 0.8− | 2004 02 19 | 608 | 0.6+ | 0.2− | 2006 09 27 | 703 | 0.4− | 0.0 |
| 2001 10 26 | 644 | 0.5+ | 0.0 | 2004 02 19 | 608 | 0.5+ | 0.3− | 2006 09 27 | 703 | 0.4− | 0.6+ |
| 2001 10 26 | 644 | 1.0− | 1.3− | 2004 03 16 | 704 | (0.3+ | 2.2+) | 2006 09 27 | 703 | 0.6− | 0.1− |
| 2001 10 26 | 644 | 0.9+ | 0.2+ | 2004 03 16 | 704 | 0.6− | 0.9− | 2006 10 03 | 703 | 0.1+ | 0.6− |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2004 03 16 | 704 | 1.3− | 0.7+ | 2006 10 03 | 703 | (2.7+ | 0.2−) |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 704 | 0.4− | 0.5+ | 2006 10 03 | 703 | 0.4− | 0.7+ |
| 2002 12 06 | 704 | 1.5− | 0.7+ | 2004 03 27 | 691 | 0.0 | 0.5+ | 2006 10 03 | 703 | 0.8+ | 0.3− |
| 2003 01 05 | 704 | 0.4− | 0.0 | 2004 03 27 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 691 | 0.3+ | 0.9+ |
| 2003 01 05 | 704 | 0.0 | 1.2+ | 2004 03 27 | 691 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2003 01 05 | 704 | 0.7− | 0.4− | 2004 03 29 | 703 | 0.7− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2003 01 05 | 704 | 0.4+ | 0.4− | 2004 03 29 | 703 | 0.6− | 0.8− | | | | |
| 2003 01 08 | 704 | 0.4+ | 0.5− | 2004 03 29 | 703 | 0.8− | 0.3− | | | | |

**(140568)∗ 2001 TZ$_{212}$**

Discovered 2001 Oct. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.55155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17486835 | $\omega$ | 156.28560 | | +0.55122563 | −0.81816191 | |
| $a$ | 3.1671010 | $\Omega$ | 259.88442 | | +0.73646350 | +0.56925700 | |
| $e$ | 0.0451722 | $i$ | 9.56534 | | +0.39213750 | +0.08097877 | |
| $P$ | 5.64 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4− | 0.5+ | 2001 12 11 | 704 | 0.3+ | 0.4+ | 2004 03 17 | 704 | 0.0 | 0.4+ |
| 2001 09 25 | 704 | 0.6− | 0.3+ | 2001 12 11 | 704 | 0.2− | 0.5− | 2004 03 17 | 704 | 0.4+ | 0.2+ |
| 2001 09 25 | 704 | 0.6− | 0.0 | 2002 12 10 | 644 | 0.1− | 0.0 | 2004 03 17 | 704 | (0.3− | 2.1+) |
| 2001 09 25 | 704 | 0.4− | 0.1+ | 2002 12 10 | 644 | 0.0 | 0.3+ | 2004 03 26 | 704 | 0.6+ | 1.1+ |
| 2001 09 25 | 704 | 0.8− | 0.3+ | 2002 12 10 | 644 | 0.2− | 0.4+ | 2004 03 26 | 704 | (2.9+ | 1.0+) |
| 2001 10 13 | 699 | 0.4+ | 1.5+ | 2003 01 01 | 704 | 0.2+ | 1.1− | 2004 03 26 | 704 | 1.0− | 0.3− |
| 2001 10 13 | 699 | 0.1− | 0.9+ | 2003 01 01 | 704 | 0.1− | 0.2− | 2004 03 26 | 704 | 0.6− | 0.1+ |
| 2001 10 13 | 699 | 0.1+ | 0.3− | 2003 01 01 | 704 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.5+ |
| 2001 10 13 | 699 | 0.2+ | 0.1+ | 2003 01 01 | 704 | 0.0 | 0.3− | 2006 08 18 | 644 | 0.4+ | 0.5+ |
| 2001 10 18 | 704 | 0.5+ | 0.3− | 2003 01 01 | 704 | 0.5+ | 1.3− | 2006 08 18 | 644 | 0.2+ | 0.6+ |
| 2001 10 18 | 704 | 0.1+ | 0.6− | 2003 01 07 | 704 | 0.6+ | 0.7− | 2006 08 30 | 699 | 0.5− | 0.4+ |
| 2001 10 18 | 704 | 0.4+ | 0.9− | 2003 01 07 | 704 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.4− | 1.0+ |
| 2001 10 18 | 704 | 0.4+ | 1.2− | 2003 01 07 | 704 | 0.3− | 0.3+ | 2006 08 30 | 699 | 0.2− | 0.1+ |
| 2001 10 18 | 704 | 0.2− | 0.7− | 2003 01 07 | 704 | 0.3+ | 0.7+ | 2006 08 30 | 699 | 0.1+ | 0.9+ |
| 2001 11 11 | 699 | 1.0+ | 0.1− | 2003 01 07 | 704 | 0.6+ | 0.4+ | 2006 09 11 | 703 | 0.6− | 0.3+ |
| 2001 11 11 | 699 | 1.8+ | 0.6− | 2003 01 27 | 704 | 0.8− | 0.3+ | 2006 09 11 | 703 | 0.3+ | 0.8+ |
| 2001 11 11 | 699 | 0.2+ | 0.6+ | 2003 01 27 | 704 | 0.7− | 0.6+ | 2006 09 11 | 703 | 0.5− | 0.4+ |
| 2001 11 11 | 699 | 0.2+ | 0.5− | 2003 01 27 | 704 | 0.0 | 0.9+ | 2006 09 11 | 703 | 1.2− | 1.5− |
| 2001 11 24 | 704 | 1.1− | 0.4+ | 2003 01 27 | 704 | 0.5+ | 1.6+ | 2006 09 18 | 703 | 0.2− | 0.3+ |
| 2001 11 24 | 704 | 0.7− | 1.1+ | 2004 03 15 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.6− |
| 2001 11 24 | 704 | 1.0− | 1.0+ | 2004 03 15 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.7− |
| 2001 12 11 | 704 | 0.5+ | 0.8− | 2004 03 15 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 1.2+ | 0.3− |
| 2001 12 11 | 704 | 0.0 | 0.6− | 2004 03 17 | 704 | 0.8+ | 0.1− | | | | |

**(140569)∗ 2001 TF$_{213}$**

Discovered 2001 Oct. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.40827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18636425 | $\omega$ | 96.66144 | | +0.82417277 | −0.55276657 | |
| $a$ | 3.0354819 | $\Omega$ | 296.96389 | | +0.44946521 | +0.77080963 | |
| $e$ | 0.0503447 | $i$ | 7.94789 | | +0.34455808 | +0.31670435 | |
| $P$ | 5.29 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 04 | 691 | 0.6− | 0.4+ | 2001 11 11 | 644 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.1+ |
| 1995 06 04 | 691 | 0.2− | 0.4+ | 2001 11 11 | 644 | 0.1+ | 0.0 | 2006 09 16 | 644 | 0.6− | 0.1− |
| 1995 06 04 | 691 | 0.1− | 0.3− | 2001 11 11 | 644 | 0.2− | 0.2− | 2006 09 16 | 644 | 0.2+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.3+ | 0.5− | 2001 11 20 | 699 | 0.4− | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.2+ | | |
| 1996 12 13 | 691 | 0.4+ | 0.6− | 2001 11 20 | 699 | 1.3− | 0.4+ | 2006 09 16 | 644 | 0.4+ | 0.3+ | | |
| 1996 12 13 | 691 | 0.4+ | 0.8− | 2001 11 20 | 699 | 0.5− | 0.5+ | 2006 09 16 | 644 | 0.3− | 0.3− | | |
| 2001 09 19 | 644 | 0.7+ | 0.6+ | 2001 11 20 | 699 | 1.1− | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.2+ | | |
| 2001 09 19 | 644 | 0.6+ | 0.1− | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.3− | 0.2+ | | |
| 2001 09 19 | 644 | 0.2+ | 0.0 | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.5− | 0.3+ | | |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2002 12 31 | 704 | 1.3+ | 0.8+ | 2006 09 17 | 703 | 1.3− | 0.2− | | |
| 2001 09 25 | 704 | 0.9− | 0.9+ | 2002 12 31 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.1+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.9+ | 2002 12 31 | 704 | 0.2− | 0.3+ | 2006 09 20 | 699 | (1.8+ | 0.0 ) | | |
| 2001 09 25 | 704 | 0.2+ | 0.5+ | 2002 12 31 | 704 | 0.8+ | 1.0+ | 2006 09 20 | 699 | 1.0− | 0.5+ | | |
| 2001 09 25 | 704 | 0.7+ | 0.2− | 2003 01 05 | 291 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.5+ | 0.4+ | | |
| 2001 09 26 | 734 | 0.6− | 0.1+ | 2003 01 05 | 291 | 0.2− | 0.4+ | 2006 09 20 | 699 | 0.1+ | 0.4− | | |
| 2001 09 26 | 734 | 0.2− | 0.2− | 2003 01 05 | 291 | 0.9− | 0.3+ | 2006 09 22 | 703 | 0.2− | 0.4+ | | |
| 2001 10 13 | 699 | 0.1− | 0.7+ | 2003 01 08 | 704 | 0.0 | 1.5+ | 2006 09 22 | 703 | 0.1+ | 0.5+ | | |
| 2001 10 13 | 699 | 1.3− | 0.1− | 2003 01 08 | 704 | 0.6+ | 0.1+ | 2006 09 22 | 703 | 0.4+ | 0.6+ | | |
| 2001 10 13 | 699 | 0.2− | 0.4− | 2003 01 08 | 704 | 0.4+ | 0.8+ | 2006 09 22 | 703 | 0.6+ | 0.5+ | | |
| 2001 10 13 | 644 | 0.4+ | 0.1− | 2003 01 08 | 704 | 1.2+ | 0.2+ | 2006 10 01 | 703 | 0.2− | 0.4+ | | |
| 2001 10 13 | 644 | 0.3+ | 0.2− | 2003 01 31 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 703 | 0.4− | 0.1+ | | |
| 2001 10 13 | 699 | 0.9− | 0.5+ | 2003 01 31 | 704 | 0.9+ | 0.6+ | 2006 10 01 | 703 | 0.0 | 0.0 | | |
| 2001 10 13 | 644 | 0.2+ | 0.1+ | 2003 01 31 | 704 | (0.9− | 1.7+) | 2006 10 01 | 703 | 0.1− | 0.5+ | | |
| 2001 10 18 | 704 | 0.9+ | 0.2− | 2004 03 26 | 704 | 1.3+ | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2001 10 18 | 704 | 0.9+ | 0.8− | 2004 03 26 | 704 | 1.1+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 18 | 704 | 0.5+ | 0.1− | 2004 03 26 | 704 | 0.9+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2− | | |
| 2001 10 18 | 704 | 0.6+ | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | | | | | | |
| 2001 10 18 | 704 | (2.3+ | 0.6−) | 2006 09 06 | 644 | 0.1+ | 0.1+ | | | | | | |

**(140570)∗ 2001 TY$_{213}$**

Discovered 2001 Oct. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.99295 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18462103 | $\omega$ | 276.00126 | | −0.99464414 | | +0.10086757 |
| $a$ | 3.0545596 | $\Omega$ | 269.78941 | | −0.08364625 | | −0.91373828 |
| $e$ | 0.0348938 | $i$ | 1.29249 | | −0.06071531 | | −0.39358366 |
| $P$ | 5.34 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.5− | 0.4+ | 2003 01 08 | 704 | 0.1− | 0.0 | 2005 06 03 | 691 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2004 03 25 | 699 | 0.1+ | 0.3− | 2005 06 16 | 691 | 0.1− | 0.2+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2004 03 25 | 699 | 0.8− | 0.9+ | 2005 06 16 | 691 | 0.0 | 0.2+ | | |
| 2001 09 20 | 704 | 0.7− | 0.4+ | 2004 03 25 | 699 | 1.2− | 0.2+ | 2005 06 16 | 691 | 0.0 | 0.3+ | | |
| 2001 10 13 | 691 | 0.4− | 0.7+ | 2004 03 25 | 699 | 0.8+ | 1.3+ | 2006 08 28 | 703 | 1.1− | 0.4+ | | |
| 2001 10 13 | 691 | 0.3− | 0.5+ | 2004 03 31 | 704 | 1.5+ | 0.9+ | 2006 08 28 | 703 | 0.8+ | 1.4+ | | |
| 2001 10 13 | 691 | 0.6− | 0.5+ | 2004 03 31 | 704 | 1.0+ | 0.8+ | 2006 08 28 | 703 | (2.1− | 0.1+) | | |
| 2001 10 14 | 704 | 0.6− | 1.1+ | 2004 03 31 | 704 | 1.3+ | 0.1+ | 2006 08 28 | 703 | (1.9− | 0.2+) | | |
| 2001 10 14 | 704 | 0.9− | 0.7+ | 2004 03 31 | 704 | 1.5+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ | | |
| 2001 10 14 | 704 | (0.5− | 2.3+) | 2004 04 12 | 699 | 0.2− | 0.2− | 2006 09 17 | 691 | 0.3− | 0.3+ | | |
| 2001 10 26 | 644 | 0.3− | 0.6+ | 2004 04 12 | 699 | 0.6− | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.1+ | | |
| 2001 10 26 | 644 | 0.3− | 0.4+ | 2004 04 12 | 699 | 0.5− | 0.4+ | 2006 09 21 | A50 | 0.4− | 0.2− | | |
| 2001 10 26 | 644 | 0.3− | 0.7+ | 2004 04 12 | 699 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.4+ | | |
| 2001 11 11 | 699 | (2.5− | 1.5+) | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.4+ | | |
| 2001 11 11 | 699 | 0.4− | 0.8+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.5− | 0.2+ | | |
| 2001 11 11 | 699 | 0.0 | 1.1+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.3− | | |
| 2001 11 11 | 699 | 0.2+ | 1.2+ | 2004 04 15 | 699 | 0.5+ | 0.3+ | 2006 10 02 | 691 | 0.4+ | 0.0 | | |
| 2001 11 16 | 691 | 0.2+ | 0.2+ | 2004 04 15 | 699 | 0.5− | 1.5+ | 2006 10 02 | 691 | 0.6+ | 0.4− | | |
| 2001 11 16 | 691 | 0.1+ | 0.0 | 2004 04 15 | 699 | (0.0 | 1.6+) | 2006 10 19 | G96 | 0.2− | 0.4+ | | |
| 2001 11 16 | 691 | 0.2+ | 0.1− | 2004 04 15 | 699 | 1.1+ | 0.7− | 2006 10 19 | G96 | 0.1− | 0.0 | | |
| 2001 11 17 | 704 | 0.7+ | 0.3+ | 2004 04 16 | 644 | 0.7+ | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.1+ | | |
| 2001 11 17 | 704 | 0.3− | 0.1+ | 2004 04 16 | 644 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.7− | | |
| 2001 11 17 | 704 | 0.6+ | 0.3+ | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2001 11 21 | 704 | 0.1− | 0.4+ | 2004 04 17 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 2001 11 21 | 704 | 0.5+ | 0.3− | 2004 04 17 | 704 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2004 04 17 | 704 | 0.2− | 0.8+ | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2001 11 21 | 704 | 1.4+ | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.6− | 0.2− | | |
| 2001 11 21 | 704 | 0.7+ | 0.2− | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2002 12 31 | 704 | 1.2− | 1.2+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.4+ | | |
| 2002 12 31 | 704 | 0.1− | 0.3− | 2004 05 24 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4+ | | |
| 2002 12 31 | 704 | 0.2+ | 0.5+ | 2004 05 24 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.1− | | |
| 2003 01 08 | 704 | 0.9+ | 0.2+ | 2004 05 24 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.5− | 0.2− | | |
| 2003 01 08 | 704 | 0.3− | 0.5+ | 2005 06 03 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.5− | 0.1− | | |
| 2003 01 08 | 704 | 0.4+ | 0.5+ | 2005 06 03 | 691 | 0.2− | 0.1− | | | | | | |

**(140571)∗ 2001 TL$_{214}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.82714 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20497235 | $\omega$ | 117.16089 | | −0.24072525 | | −0.96873474 |
| $a$ | 2.8488693 | $\Omega$ | 346.36069 | | +0.77580452 | | −0.15487547 |
| $e$ | 0.1031315 | $i$ | 14.74974 | | +0.58324841 | | −0.19382105 |
| $P$ | 4.81 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 14 | 691 | 0.3− | 0.4− | 2003 01 26 | 699 | 0.8+ | 0.2+ | 2003 03 07 | 699 | 0.1− | 0.0 | | |
| 1991 09 14 | 691 | 0.2− | 0.5− | 2003 01 26 | 699 | (2.1− | 1.3+) | 2003 03 07 | 699 | 0.2− | 0.1+ | | |
| 1991 09 14 | 691 | 0.9+ | 0.5+ | 2003 01 26 | 608 | 0.1− | 0.0 | 2003 03 07 | 699 | 0.3− | 0.7− | | |
| 2001 08 25 | 704 | 0.3+ | 1.2− | 2003 01 26 | 608 | 0.1− | 0.2− | 2003 03 07 | 699 | 0.6+ | 1.4+ | | |
| 2001 08 25 | 704 | 0.4− | 0.9− | 2003 01 26 | 608 | 0.4− | 0.4− | 2003 03 07 | 644 | 0.5+ | 0.2+ | | |
| 2001 08 25 | 704 | (0.9− | 1.6−) | 2003 01 27 | 704 | 0.5− | 0.6+ | 2003 03 07 | 644 | 0.4+ | 0.0 | | |
| 2001 09 10 | 704 | 0.6− | 0.4+ | 2003 01 27 | 704 | 0.1− | 0.2+ | 2003 03 07 | 644 | 0.4+ | 0.1− | | |
| 2001 09 10 | 704 | 0.3− | 1.4− | 2003 01 27 | 704 | 0.1− | 0.3+ | 2003 03 08 | 704 | 0.9+ | 0.2− | | |
| 2001 09 10 | 704 | 0.0 | 0.3− | 2003 01 27 | 704 | 0.4− | 0.3+ | 2003 03 08 | 704 | 0.1+ | 0.1− | | |
| 2001 09 25 | 704 | 0.0 | 0.7+ | 2003 01 27 | 704 | 0.5+ | 0.1− | 2003 03 08 | 704 | 0.5+ | 0.5− | | |
| 2001 09 25 | 704 | 0.6− | 0.6+ | 2003 01 31 | 704 | 0.3+ | 0.3+ | 2003 03 30 | 704 | 0.5− | 0.0 | | |
| 2001 09 25 | 704 | 0.2− | 0.7+ | 2003 01 31 | 704 | 0.0 | 0.2+ | 2003 03 30 | 704 | (1.5− | 0.0 ) | | |
| 2001 09 25 | 704 | 0.4+ | 0.7+ | 2003 01 31 | 704 | 0.3+ | 0.3+ | 2003 03 30 | 704 | 1.3− | 0.3− | | |
| 2001 09 25 | 704 | 0.4− | 0.6+ | 2003 01 31 | 704 | 0.2− | 0.1− | 2003 03 30 | 704 | 0.5− | 0.1− | | |
| 2001 10 13 | 644 | 0.0 | 0.1+ | 2003 02 02 | 704 | 0.1+ | 0.0 | 2003 03 30 | 704 | 0.2+ | 0.6− | | |
| 2001 10 13 | 644 | 0.4− | 0.0 | 2003 02 02 | 704 | 0.0 | 0.9+ | 2005 07 03 | 644 | 0.5− | 0.6+ | | |
| 2001 10 13 | 644 | 0.2− | 0.2+ | 2003 02 02 | 704 | 0.2+ | 0.1+ | 2005 07 03 | 644 | 0.8− | 0.6+ | | |
| 2001 10 18 | 704 | 0.4− | 0.3+ | 2003 02 02 | 704 | 0.5− | 0.7+ | 2005 07 03 | 644 | 0.7− | 0.3+ | | |
| 2001 10 18 | 704 | 0.6− | 0.2+ | 2003 02 02 | 704 | 0.2+ | 0.2− | 2005 09 01 | 644 | 0.6− | 0.9+ | | |
| 2001 10 18 | 704 | 0.1− | 0.9+ | 2003 02 04 | 699 | 0.1+ | 0.9+ | 2005 09 01 | 644 | (0.8− | 1.7+) | | |
| 2001 10 18 | 704 | 0.5− | 1.1+ | 2003 02 04 | 699 | 0.1− | 0.2− | 2005 09 01 | 644 | 0.5− | 0.8+ | | |
| 2001 10 18 | 704 | 0.7− | 1.1+ | 2003 02 04 | 699 | 1.0+ | 1.1− | 2005 09 01 | 644 | 0.3− | 0.9+ | | |
| 2001 11 12 | 704 | 0.2+ | 1.2+ | 2003 02 04 | 699 | 0.0 | 0.4+ | 2005 09 01 | 644 | 0.3− | 0.8+ | | |
| 2001 11 12 | 704 | (1.0− | 1.6+) | 2003 02 04 | 704 | 0.1+ | 0.8+ | 2005 09 01 | 644 | 0.5− | 1.2+ | | |
| 2001 11 12 | 704 | 0.7− | 0.2+ | 2003 02 04 | 704 | 0.7+ | 0.7+ | 2006 10 23 | 703 | 0.6+ | 0.4− | | |
| 2001 12 07 | 644 | 0.9+ | 0.2+ | 2003 02 04 | 704 | 1.0− | 0.1+ | 2006 10 23 | 703 | 0.1+ | 0.1− | | |
| 2001 12 07 | 644 | 0.7+ | 0.3+ | 2003 02 04 | 704 | 0.8+ | 0.1+ | 2006 10 23 | 703 | 0.5− | 0.5− | | |
| 2001 12 07 | 644 | 1.0+ | 0.1+ | 2003 02 04 | 704 | 0.6+ | 0.0 | 2006 10 23 | 703 | 0.3− | 0.6− | | |
| 2002 01 08 | 704 | 0.0 | 0.6− | 2003 03 06 | 699 | 0.4− | 0.5− | 2006 11 13 | 704 | 1.0+ | 0.3+ | | |
| 2002 01 08 | 704 | 0.2− | 1.3− | 2003 03 06 | 699 | 0.0 | 0.9+ | 2006 11 13 | 704 | 0.0 | 0.2− | | |
| 2002 01 08 | 704 | 0.1− | 0.5− | 2003 03 06 | 699 | 0.5− | 0.2+ | 2006 11 13 | 704 | 0.0 | 0.3+ | | |
| 2003 01 10 | 704 | 0.0 | 0.2− | 2003 03 06 | 699 | 0.3+ | 0.2+ | 2006 11 13 | 704 | 0.0 | 0.2+ | | |
| 2003 01 10 | 704 | 0.4+ | 0.1− | 2003 03 06 | 704 | 0.1− | 0.1+ | 2006 11 20 | 703 | 0.4+ | 0.6− | | |
| 2003 01 10 | 704 | 0.5− | 0.8− | 2003 03 06 | 704 | 0.2+ | 0.2− | 2006 11 20 | 703 | 0.2+ | 0.1+ | | |
| 2003 01 10 | 704 | 0.6− | 0.1− | 2003 03 06 | 704 | 0.0 | 0.3− | 2006 11 20 | 703 | 0.1+ | 0.2− | | |
| 2003 01 26 | 699 | 0.8+ | 0.8+ | 2003 03 06 | 704 | 0.1− | 0.0 | 2006 11 20 | 703 | 0.0 | 0.5− | | |
| 2003 01 26 | 699 | 0.4+ | 1.0+ | 2003 03 06 | 704 | 0.5+ | 0.6+ | | | | | | |

**(140572)∗ 2001 TE$_{215}$ = 2000 JZ$_{51}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 33483)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.85681 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22165660 | $\omega$ | 43.18290 | | +0.36666279 | | +0.90504321 |
| $a$ | 2.7040555 | $\Omega$ | 249.39109 | | −0.90393198 | | +0.29173800 |
| $e$ | 0.1877929 | $i$ | 13.31302 | | −0.22014852 | | +0.30949269 |
| $P$ | 4.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 11 12 | 448 | 0.6− | 0.1− | 2005 09 11 | 704 | 0.3+ | 0.3+ | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 11 12 | 704 | (1.6− | 1.0+) | 2005 09 25 | 644 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 09 | 704 | 0.8− | 0.8+ | 2001 11 12 | 448 | 0.3+ | 0.1+ | 2005 09 25 | 644 | 0.2− | 0.2− | | |
| 2000 05 09 | 704 | 1.1+ | 0.9− | 2004 05 14 | 644 | 0.7+ | 0.5+ | 2005 09 25 | 644 | 0.0 | 0.1− | | |
| 2000 05 09 | 704 | 0.3+ | 0.6+ | 2004 05 14 | 644 | 0.7+ | 0.4+ | 2005 09 25 | 644 | 0.0 | 0.1+ | | |
| 2000 05 09 | 704 | 0.4− | 0.3+ | 2004 05 14 | 644 | 0.2+ | 0.2− | 2005 09 25 | 644 | 0.1− | 0.2− | | |
| 2000 05 10 | 704 | 0.4+ | 0.3+ | 2005 07 03 | 703 | 1.2− | 0.1+ | 2005 09 25 | 644 | 0.1− | 0.1− | | |
| 2000 05 10 | 704 | 0.3+ | 0.1− | 2005 07 03 | 703 | 1.4− | 1.2+ | 2005 10 02 | 699 | (1.9− | 1.0−) | | |
| 2000 05 10 | 704 | 0.4+ | 0.0 | 2005 07 03 | 703 | 0.6− | 0.9− | 2005 10 02 | 699 | 0.3− | 0.4+ | | |
| 2000 05 10 | 704 | 1.0− | 0.4− | 2005 07 03 | 703 | 0.1− | 0.3− | 2005 10 02 | 699 | 0.5+ | 0.6− | | |
| 2001 10 13 | 644 | 0.4+ | 0.9+ | 2005 07 28 | 704 | 0.2+ | 0.2+ | 2005 10 02 | 699 | 0.0 | 0.1+ | | |
| 2001 10 13 | 644 | 0.1+ | 0.6+ | 2005 07 28 | 704 | 0.3+ | 0.5+ | 2005 10 26 | 703 | 0.1+ | 0.7− | | |
| 2001 10 13 | 644 | 0.5+ | 0.4+ | 2005 07 28 | 704 | 0.6+ | 0.9+ | 2005 10 26 | 703 | (1.6− | 0.2+) | | |
| 2001 10 18 | 704 | 0.0 | 0.5− | 2005 07 28 | 704 | 0.0 | 0.6+ | 2005 10 26 | 703 | 0.5+ | 0.8− | | |
| 2001 10 18 | 704 | 0.2+ | 0.4+ | 2005 07 28 | 704 | 0.3+ | 0.8+ | 2005 10 26 | 703 | 0.8− | 0.7+ | | |
| 2001 10 18 | 704 | 0.8+ | 0.3− | 2005 08 27 | 699 | 0.4+ | 0.4+ | 2005 12 02 | 703 | 0.8+ | 0.5+ | | |
| 2001 10 18 | 704 | 0.0 | 0.0 | 2005 08 27 | 699 | 0.6− | 0.4− | 2005 12 02 | 703 | 1.0+ | 0.6− | | |
| 2001 10 18 | 704 | 0.5− | 0.4+ | 2005 08 27 | 699 | 0.1− | 0.0 | 2005 12 02 | 703 | 0.6− | 0.4− | | |
| 2001 11 11 | 699 | 0.4+ | 0.7+ | 2005 08 27 | 699 | (1.7− | 2.0−) | 2005 12 02 | 703 | (2.0− | 2.2−) | | |
| 2001 11 11 | 699 | 0.9− | 0.5+ | 2005 08 30 | 644 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.2− | 0.8+ | | |
| 2001 11 11 | 699 | 0.7− | 0.1− | 2005 08 30 | 644 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.2− | | |
| 2001 11 11 | 699 | 0.1+ | 0.7− | 2005 08 30 | 644 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.2− | | |
| 2001 11 12 | 704 | 0.7+ | 0.2− | 2005 09 11 | 704 | 0.5+ | 0.4− | 2006 11 25 | 691 | 0.2− | 0.1− | | |
| 2001 11 12 | 704 | 0.2+ | 1.1+ | 2005 09 11 | 704 | 0.3+ | 0.3− | 2006 11 25 | 691 | 0.1− | 0.1− | | |
| 2001 11 12 | 448 | (0.6+ | 1.9+) | 2005 09 11 | 704 | 0.0 | 0.4+ | 2006 11 25 | 691 | 0.1− | 0.3− | | |
| 2001 11 12 | 704 | 0.8− | 0.1− | 2005 09 11 | 704 | 0.0 | 0.3+ | | | | | | |

**(140573)∗ 2001 TH$_{215}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.60549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18394999 | $\omega$ | 356.24787 | | +0.70265889 | +0.70531078 | |
| $a$ | 3.0619837 | $\Omega$ | 318.35776 | | −0.64908167 | +0.58135991 | |
| $e$ | 0.1570615 | $i$ | 8.11925 | | −0.29148496 | +0.40565671 | |
| $P$ | 5.36 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 22 | 691 | 0.3+ | 0.4− | 2004 03 27 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 704 | 0.2+ | 0.1− | | |
| 1990 10 22 | 691 | 0.1+ | 0.3− | 2004 03 27 | 691 | 0.0 | 0.6+ | 2006 09 15 | 704 | 0.5+ | 0.4− | | |
| 1990 10 22 | 691 | 0.0 | 0.3− | 2004 03 27 | 691 | 0.1− | 0.3+ | 2006 09 15 | 704 | 0.5− | 0.6− | | |
| 2001 09 25 | 704 | 0.4− | 0.4− | 2005 05 30 | E12 | 0.0 | 0.5+ | 2006 09 15 | 704 | 0.3− | 0.8− | | |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2005 05 30 | E12 | 0.6+ | 0.5+ | 2006 09 15 | 704 | 0.5+ | 0.1− | | |
| 2001 09 25 | 704 | 0.4− | 0.1− | 2005 05 30 | E12 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.0 | | |
| 2001 10 13 | 644 | 1.2− | 0.4+ | 2005 05 30 | E12 | (1.9− | 1.0+) | 2006 09 17 | 703 | 0.6+ | 0.3− | | |
| 2001 10 13 | 644 | 0.4− | 0.0 | 2005 06 26 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.7− | 0.1+ | | |
| 2001 10 13 | 644 | 0.3− | 0.3+ | 2005 06 26 | 644 | 0.3+ | 0.7+ | 2006 09 17 | 703 | 0.0 | 0.1− | | |
| 2001 10 18 | 704 | 0.0 | 0.3+ | 2005 06 26 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.6+ | 0.1+ | | |
| 2001 10 18 | 704 | 0.1+ | 0.5+ | 2006 08 18 | 699 | 0.4− | 0.3+ | 2006 09 18 | 704 | (1.6+ | 0.2−) | | |
| 2001 10 18 | 704 | 0.8+ | 0.1− | 2006 08 18 | 699 | 0.7− | 0.5+ | 2006 09 18 | 704 | 0.3− | 1.1+ | | |
| 2001 10 18 | 704 | 0.1+ | 0.1− | 2006 08 18 | 699 | 0.7− | 1.3+ | 2006 09 18 | 704 | 0.8− | 0.6+ | | |
| 2001 10 18 | 704 | 0.3− | 0.3− | 2006 08 18 | 699 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.8− | 0.4− | | |
| 2001 11 11 | 699 | 0.5+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.2+ | 0.3− | | |
| 2001 11 11 | 699 | 0.1+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.3− | 0.6− | | |
| 2001 11 11 | 699 | 1.1+ | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 09 18 | 704 | 1.2− | 1.1+ | | |
| 2001 11 11 | 699 | 0.5− | 0.8+ | 2006 08 29 | 703 | 1.1− | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.1− | | |
| 2001 11 12 | 704 | 0.5− | 0.5+ | 2006 08 29 | 703 | 0.2+ | 0.9+ | 2006 09 18 | 704 | 0.2+ | 0.4− | | |
| 2001 11 12 | 704 | 0.5− | 0.2+ | 2006 08 29 | 703 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.7+ | | |
| 2001 11 12 | 704 | 0.8− | 0.1+ | 2006 08 29 | 703 | (1.1− | 3.0+) | 2006 09 20 | 699 | (0.4+ | 2.1+) | | |
| 2001 11 12 | 704 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.8+ | | |
| 2001 11 12 | 704 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.6+ | | |
| 2001 11 20 | 699 | 1.2+ | 1.0+ | 2006 08 30 | 704 | 0.4− | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.4− | | |
| 2001 11 20 | 699 | (0.5− | 1.6+) | 2006 08 30 | 704 | 0.7+ | 0.8+ | 2006 09 29 | 699 | 0.6+ | 0.2− | | |
| 2001 11 20 | 699 | 0.8+ | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.5+ | 0.4− | | |
| 2001 11 20 | 699 | 0.6− | 0.3+ | 2006 09 01 | 704 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.4+ | | |
| 2001 12 10 | 704 | 0.1+ | 0.5+ | 2006 09 01 | 704 | 0.9− | 0.8− | 2006 10 01 | 703 | 0.1+ | 0.7− | | |
| 2001 12 10 | 704 | (1.8− | 0.9+) | 2006 09 01 | 704 | 0.1− | 0.3− | 2006 10 01 | 703 | 0.3+ | 0.6− | | |
| 2001 12 10 | 704 | 0.1+ | 0.5+ | 2006 09 01 | 704 | 0.1+ | 0.3− | 2006 10 01 | 703 | 0.1− | 0.6+ | | |
| 2001 12 10 | 704 | 0.1+ | 0.1+ | 2006 09 01 | 704 | 0.8− | 0.6+ | 2006 10 01 | 703 | 0.4− | 0.6− | | |
| 2004 03 16 | 704 | 0.4+ | 0.1− | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.3+ | | |
| 2004 03 16 | 704 | 1.3+ | 0.5+ | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2004 03 16 | 704 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | | |

**(140574)∗ 2001 TA$_{216}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.96193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17824245 | $\omega$ | 43.64323 | | +0.87893416 | −0.47358615 | |
| $a$ | 3.1270053 | $\Omega$ | 344.34306 | | +0.35956963 | +0.73578024 | |
| $e$ | 0.1152714 | $i$ | 12.08194 | | +0.31334394 | +0.48409048 | |
| $P$ | 5.53 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.3− | 0.2+ | 2006 08 25 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 0.5− | | |
| 1992 01 31 | 691 | 0.2+ | 0.1− | 2006 08 25 | 704 | 0.1+ | 1.1+ | 2006 09 17 | 704 | 0.8+ | 0.1− | | |
| 1992 01 31 | 691 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 17 | 704 | 1.3+ | 0.8− | | |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2006 08 27 | 699 | 0.0 | 1.0+ | 2006 09 17 | 704 | (1.6+ | 0.8−) | | |
| 2001 09 25 | 704 | (0.2+ | 1.6−) | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.0 | 1.1+ | | |
| 2001 09 25 | 704 | 0.7+ | 1.0− | 2006 08 27 | 699 | 0.1− | 0.6+ | 2006 09 20 | 704 | 0.7+ | 0.6+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.8− | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.0 | 0.3− | | |
| 2001 09 25 | 704 | 0.1+ | 0.3− | 2006 08 27 | 699 | 0.8− | 0.0 | 2006 09 20 | 704 | 0.4− | 0.1− | | |
| 2001 10 13 | 644 | 0.3− | 0.5− | 2006 08 27 | 699 | 0.0 | 0.8+ | 2006 09 20 | 704 | 0.2− | 0.3+ | | |
| 2001 10 13 | 644 | 0.3− | 0.4− | 2006 08 28 | 703 | 0.7− | 0.3− | 2006 09 27 | 704 | 1.0− | 0.4+ | | |
| 2001 10 13 | 644 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.3− | 0.7− | 2006 09 27 | 704 | 0.2− | 0.0 | | |
| 2001 10 15 | 704 | 1.2+ | 0.6− | 2006 08 28 | 703 | (1.6− | 0.9+) | 2006 09 27 | 704 | 0.8− | 0.1− | | |
| 2001 10 15 | 704 | (1.7+ | 0.3−) | 2006 08 28 | 703 | 0.7− | 0.6+ | 2006 09 27 | 704 | 1.0− | 0.4+ | | |
| 2001 10 15 | 704 | 1.1+ | 0.8− | 2006 08 29 | 704 | 0.6+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.4− | | |
| 2001 10 15 | 704 | (1.9+ | 1.8−) | 2006 08 29 | 704 | 1.1+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.4− | | |
| 2001 11 11 | 704 | 0.9− | 0.7+ | 2006 08 29 | 704 | 1.0− | 0.4− | 2006 09 27 | G96 | 0.2− | 0.5− | | |
| 2001 11 11 | 704 | 0.0 | 0.3− | 2006 08 30 | 704 | 1.3+ | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.3− | | |
| 2001 11 11 | 704 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.5+ | 1.2+ | 2006 09 29 | 704 | 0.3+ | 0.6− | | |
| 2001 11 11 | 704 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.2− | 0.4+ | | |
| 2001 11 11 | 704 | 0.1− | 0.1+ | 2006 09 01 | 704 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.7− | 0.3+ | | |
| 2001 11 19 | 644 | 0.2+ | 0.0 | 2006 09 01 | 704 | 0.5− | 0.4− | 2006 09 29 | 704 | 0.2− | 0.3+ | | |
| 2001 11 19 | 644 | 0.3+ | 0.1+ | 2006 09 01 | 704 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.0 | 0.0 | | |
| 2001 11 19 | 644 | 0.4+ | 0.0 | 2006 09 01 | 704 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.3+ | 0.3− | | |
| 2003 01 10 | 704 | 0.8− | 0.5+ | 2006 09 12 | 703 | 1.2− | 0.4− | 2006 09 30 | 704 | 0.5− | 0.1+ | | |
| 2003 01 10 | 704 | 0.8− | 0.3+ | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 09 30 | 699 | 0.2+ | 0.3− | | |
| 2003 01 10 | 704 | (0.0 | 1.5+) | 2006 09 12 | 703 | 0.5− | 0.1− | 2006 09 30 | 704 | 0.4− | 1.0+ | | |
| 2003 01 10 | 704 | 0.6+ | 0.9+ | 2006 09 12 | 703 | 0.3+ | 0.5− | 2006 09 30 | 699 | 0.3− | 0.6− | | |
| 2003 01 28 | 644 | 0.2+ | 1.0+ | 2006 09 13 | 644 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.1− | 0.5+ | | |
| 2003 01 28 | 644 | 0.5+ | 1.1+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 30 | 699 | 0.4+ | 0.2− | | |
| 2003 01 28 | 644 | 0.4+ | 1.3+ | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.5− | | |
| 2003 01 31 | 704 | 0.9+ | 0.2− | 2006 09 16 | 699 | 0.5− | 0.6− | 2006 10 10 | 644 | 0.2+ | 0.0 | | |
| 2003 01 31 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 699 | 0.6− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2003 01 31 | 704 | 0.4+ | 0.0 | 2006 09 16 | 699 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2003 01 31 | 704 | 0.8+ | 0.5+ | 2006 09 16 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2003 03 07 | 644 | 1.1+ | 1.4+ | 2006 09 16 | 644 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2003 03 07 | 644 | 0.4+ | 0.9+ | 2006 09 16 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2003 03 07 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.4+ | 0.0 | | |
| 2006 08 18 | 691 | 0.4− | 0.6+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.4− | | |
| 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.6− | | |
| 2006 08 18 | 691 | 0.3− | 0.9+ | 2006 09 16 | 644 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.4− | | |
| 2006 08 21 | 704 | (0.0 | 2.5+) | 2006 09 17 | 703 | 0.6+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.5− | | |
| 2006 08 21 | 704 | (0.5+ | 1.7+) | 2006 09 17 | 703 | 0.0 | 0.7− | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2006 08 21 | 704 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.9+ | 0.3− | 2006 11 17 | 291 | 0.6+ | 0.0 | | |
| 2006 08 21 | 704 | 0.9+ | 0.7+ | 2006 09 17 | 703 | 0.5− | 0.8− | 2006 11 17 | 291 | 0.3− | 1.0+ | | |
| 2006 08 25 | 704 | 0.5+ | 1.1+ | 2006 09 17 | 704 | 1.3+ | 0.7− | 2006 11 17 | 291 | 0.2+ | 0.0 | | |

**(140575)∗ 2001 TK$_{217}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.24247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20678878 | $\omega$ | 158.62102 | | +0.69656207 | −0.71275585 | |
| $a$ | 2.8321618 | $\Omega$ | 247.11973 | | +0.64465143 | +0.67209212 | |
| $e$ | 0.0675922 | $i$ | 5.12767 | | +0.31500129 | +0.20067706 | |
| $P$ | 4.77 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 29 | 552 | 0.0 | 1.4− | 2002 12 11 | 704 | 1.3+ | 0.9+ | 2006 09 25 | 704 | 0.6− | 0.7+ |
| 1997 12 29 | 552 | 0.8− | 0.9− | 2002 12 11 | 704 | (1.6+ | 0.4+) | 2006 09 25 | 704 | 0.3− | 0.2+ |
| 1997 12 29 | 552 | 0.1+ | 0.8− | 2002 12 11 | 704 | (1.7+ | 0.5+) | 2006 09 25 | 704 | 0.7− | 0.1+ |
| 2001 08 25 | 704 | 0.1− | 0.2+ | 2003 01 04 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 704 | 0.6− | 0.9+ |
| 2001 08 25 | 704 | 0.4+ | 0.9+ | 2003 01 04 | 704 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.1+ | 1.3+ | 2003 01 04 | 704 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.3+ | 0.5+ |
| 2001 08 25 | 704 | 0.1− | 0.5+ | 2003 01 04 | 704 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.2+ | 0.1+ | 2003 01 04 | 704 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.5+ | 0.1+ | 2003 01 07 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 09 16 | 704 | 0.3− | 0.1+ | 2003 01 07 | 704 | 0.1− | 0.3+ | 2006 10 11 | 683 | (0.8+ | 1.5−) |
| 2001 09 16 | 704 | 0.0 | 0.7− | 2003 01 07 | 704 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.6− | 0.1− | 2003 01 07 | 704 | 0.0 | 0.2− | 2006 10 11 | 683 | (0.1− | 1.9−) |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2003 01 07 | 704 | 1.1− | 0.2− | 2006 10 11 | 683 | 0.8+ | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2004 04 11 | 703 | (4.4− | 1.5−) | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | (0.3+ | 2.9+) | 2004 04 11 | 703 | 0.9− | 0.1+ | 2006 10 16 | 683 | 1.2+ | 0.2+ |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2004 04 11 | 703 | 0.6+ | 1.2− | 2006 10 16 | 683 | (0.3− | 1.8+) |
| 2001 09 20 | 704 | 0.1− | 1.4+ | 2004 04 11 | 703 | (1.1− | 1.9+) | 2006 10 16 | 683 | 0.6− | 1.4+ |
| 2001 09 22 | 683 | 0.0 | 0.2+ | 2004 04 17 | 699 | 0.7+ | 0.4− | 2006 10 17 | 683 | 0.9+ | 0.7+ |
| 2001 09 22 | 683 | 0.3− | 1.3− | 2004 04 17 | 699 | 0.6− | 0.5+ | 2006 10 17 | 683 | (2.3+ | 0.9+) |
| 2001 09 22 | 683 | 0.8+ | 1.5− | 2004 04 17 | 699 | 0.4− | 0.0 | 2006 10 17 | 683 | (1.4+ | 1.9+) |
| 2001 10 14 | 704 | 0.2+ | 0.1+ | 2004 04 17 | 699 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.8− | 0.0 |
| 2001 10 14 | 704 | 0.5+ | 0.3+ | 2006 08 23 | H55 | 0.5− | 1.5− | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2006 08 23 | H55 | 0.9− | 1.4− | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.2+ | 2006 08 23 | H55 | 0.7− | 1.2− | 2006 10 17 | 703 | 0.5+ | 0.0 |
| 2001 10 15 | 608 | 0.2+ | 0.9− | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 10 15 | 608 | 0.1+ | 0.9− | 2006 09 14 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2001 10 15 | 608 | 0.1+ | 0.4− | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.2− | 2006 11 20 | G96 | 0.1− | 0.7− |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.2− |
| 2001 12 10 | 645 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.7+ | 2006 11 20 | G96 | 0.3− | 0.3− |
| 2001 12 10 | 645 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.0 |

**(140576)∗ 2001 TL$_{217}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.65772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19039974 | $\omega$ | 164.60006 | | +0.81808651 | −0.55898528 | |
| $a$ | 2.9924379 | $\Omega$ | 230.18788 | | +0.50730751 | +0.81214429 | |
| $e$ | 0.0406178 | $i$ | 10.13475 | | +0.27087553 | +0.16720380 | |
| $P$ | 5.18 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.1− | 0.8+ | 2001 10 17 | 704 | 0.6− | 0.0 | 2006 08 18 | 644 | 0.0 | 0.0 |
| 1991 11 06 | 691 | 0.0 | 0.3+ | 2001 10 17 | 704 | 0.0 | 0.6− | 2006 09 11 | 703 | 0.4+ | 1.0− |
| 1991 11 06 | 691 | 0.1− | 0.8+ | 2003 01 05 | 704 | 0.7− | 0.4− | 2006 09 11 | 703 | (1.8− | 1.3+) |
| 2001 09 10 | 704 | 0.2− | 0.1− | 2003 01 05 | 704 | 0.1− | 0.5− | 2006 09 11 | 703 | 1.4− | 0.4− |
| 2001 09 10 | 704 | 0.2− | 0.5+ | 2003 01 05 | 704 | 0.8− | 0.6− | 2006 09 11 | 703 | 0.4− | 0.8− |
| 2001 09 10 | 704 | 1.3− | 0.7+ | 2003 01 05 | 704 | 0.8− | 0.4− | 2006 09 15 | 704 | 0.5+ | 1.4− |
| 2001 09 21 | 644 | 0.0 | 0.0 | 2003 01 05 | 704 | 0.3− | 0.9− | 2006 09 15 | 704 | 0.9− | 1.4+ |
| 2001 09 21 | 644 | 0.5+ | 0.2+ | 2004 03 16 | 691 | 0.4+ | 0.3+ | 2006 09 15 | 704 | 0.8+ | 0.3+ |
| 2001 09 21 | 644 | 0.2+ | 0.1+ | 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 09 15 | 704 | 0.3+ | 1.4+ |
| 2001 09 23 | 608 | 1.5+ | 0.7+ | 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.8− |
| 2001 09 23 | 608 | 1.4+ | 0.4+ | 2004 03 17 | 704 | 1.0+ | 1.0+ | 2006 09 18 | 703 | 0.1+ | 0.7+ |
| 2001 09 23 | 608 | (2.0+ | 0.2+) | 2004 03 17 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 703 | 1.3+ | 1.3+ |
| 2001 09 25 | 704 | 0.1+ | 0.7− | 2004 03 17 | 704 | (1.1+ | 1.7+) | 2006 09 18 | 703 | (1.2+ | 2.1+) |
| 2001 09 25 | 704 | 0.1+ | 0.6− | 2004 03 17 | 704 | 0.3+ | 0.0 | 2006 09 20 | 699 | 1.4− | 0.1− |
| 2001 09 25 | 704 | 0.3+ | 0.2− | 2004 03 17 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 699 | 0.4− | 0.7+ |
| 2001 09 25 | 704 | 0.1− | 1.0− | 2004 04 15 | 703 | (2.3+ | 1.0+) | 2006 09 20 | 699 | 0.7+ | 0.4− |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2004 04 15 | 703 | 0.1+ | 1.0+ | 2006 09 20 | 699 | 0.5+ | 0.1− |
| 2001 10 13 | 644 | 0.8− | 0.5+ | 2004 04 15 | 703 | 0.3− | 1.3+ | 2006 10 01 | 703 | 0.4+ | 0.1+ |
| 2001 10 13 | 644 | 0.3− | 0.8+ | 2004 04 15 | 703 | 0.1− | 0.2+ | 2006 10 01 | 703 | 0.4+ | 0.3+ |
| 2001 10 13 | 644 | 0.4− | 0.3+ | 2005 07 11 | G96 | 0.4− | 0.5+ | 2006 10 01 | 703 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.4− | 0.9+ | 2005 07 11 | G96 | 0.5− | 0.4+ | 2006 10 01 | 703 | 0.2+ | 0.8− |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2005 07 11 | G96 | 0.7− | 0.4+ | 2006 10 22 | 644 | 0.6+ | 0.3+ |
| 2001 10 14 | 704 | 0.5− | 0.5+ | 2005 07 11 | G96 | 0.8− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.1− | 0.6+ | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.5− | 0.9− | 2006 08 18 | 644 | 0.2+ | 0.4+ | | | | |

**(140577)∗ 2001 TF$_{219}$**

Discovered 2001 Oct. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.52637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17823275 | $\omega$ | 337.62605 | | +0.40860001 | −0.89522796 | |
| $a$ | 3.1271188 | $\Omega$ | 87.87546 | | +0.86202968 | +0.31450417 | |
| $e$ | 0.0940339 | $i$ | 10.24878 | | +0.29991810 | +0.31568027 | |
| $P$ | 5.53 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.4+ | 0.5− | 2002 11 21 | 644 | 0.2− | 0.0 | 2003 01 31 | 699 | 1.5+ | 0.1− |
| 1998 03 25 | 704 | 1.1+ | 0.5+ | 2002 11 21 | 644 | 0.3− | 0.4+ | 2003 01 31 | 699 | 0.8+ | 0.4+ |
| 1998 03 25 | 704 | 0.9− | 1.5+ | 2002 11 21 | 644 | 0.4+ | 0.5+ | 2003 01 31 | 699 | 0.7+ | 0.1− |
| 1998 03 25 | 704 | 0.2− | 1.0+ | 2002 12 27 | 699 | 0.4− | 0.1+ | 2003 02 04 | 699 | 0.3+ | 0.3− |
| 2001 09 17 | 699 | 0.8− | 1.3+ | 2002 12 27 | 699 | 1.0− | 0.0 | 2003 02 04 | 699 | 0.6− | 0.1− |
| 2001 09 17 | 699 | 0.6+ | 0.5+ | 2002 12 27 | 699 | 0.3− | 1.0+ | 2003 02 04 | 699 | 0.3+ | 0.4+ |
| 2001 09 17 | 699 | 0.2+ | 0.5+ | 2002 12 27 | 699 | 1.0− | 0.3+ | 2003 02 04 | 699 | 0.1+ | 0.3− |
| 2001 09 17 | 699 | 0.0 | 0.2+ | 2002 12 28 | 699 | 0.6− | 0.0 | 2003 02 04 | 704 | 1.0+ | 1.2+ |
| 2001 09 18 | 645 | 0.1+ | 0.1− | 2002 12 28 | 699 | 1.3− | 1.5+ | 2003 02 04 | 704 | 1.0+ | 0.1− |
| 2001 09 18 | 645 | 0.0 | 0.2− | 2002 12 28 | 699 | 0.6− | 0.1− | 2003 02 04 | 704 | 0.4+ | 0.7+ |
| 2001 09 25 | 704 | 0.7− | 0.9− | 2002 12 28 | 699 | 0.6− | 0.1− | 2003 02 04 | 704 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 1.2− | 0.2− | 2002 12 31 | 704 | 0.1− | 0.3− | 2003 02 04 | 704 | 1.1+ | 1.6− |
| 2001 09 25 | 704 | 0.1− | 1.0+ | 2002 12 31 | 704 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.1− | 0.5+ |
| 2001 09 25 | 704 | 1.8− | 0.1− | 2002 12 31 | 704 | 0.3− | 0.5+ | 2006 08 14 | 644 | 0.1− | 0.4+ |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2002 12 31 | 704 | 0.5− | 0.8+ | 2006 08 14 | 644 | 0.2− | 0.2+ |
| 2001 10 14 | 699 | 0.9− | 0.2− | 2002 12 31 | 704 | 0.2− | 0.4+ | 2006 08 16 | 644 | 0.2+ | 0.3+ |
| 2001 10 14 | 699 | 1.2− | 0.7+ | 2003 01 05 | 704 | 0.7+ | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.3+ |
| 2001 10 14 | 699 | 1.1− | 1.3− | 2003 01 05 | 704 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2001 10 14 | 699 | (2.1− | 0.3−) | 2003 01 05 | 704 | 0.6− | 0.5− | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2001 10 15 | 644 | 0.3+ | 1.4+ | 2003 01 05 | 704 | 0.6− | 0.3− | 2006 08 18 | 644 | 0.1+ | 0.4+ |
| 2001 10 15 | 644 | 0.1+ | 1.3+ | 2003 01 09 | 704 | 0.7+ | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2001 10 15 | 644 | 0.2+ | 1.3+ | 2003 01 09 | 704 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.5− | 1.1+ | 2003 01 09 | 704 | 0.1+ | 0.7− | 2006 08 24 | 644 | 0.1+ | 0.5+ |
| 2001 10 20 | 704 | (0.9+ | 2.3+) | 2003 01 09 | 704 | 0.6+ | 0.0 | 2006 08 24 | 644 | 0.4− | 0.3+ |
| 2001 10 20 | 704 | 0.1+ | 0.9+ | 2003 01 09 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 699 | 1.4+ | 0.9+ |
| 2001 10 20 | 704 | 0.3+ | 0.8+ | 2003 01 12 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 699 | 1.4− | 0.5− |
| 2001 10 20 | 704 | 0.2+ | 1.1+ | 2003 01 12 | 704 | 0.4+ | 0.5− | 2006 09 17 | 699 | 0.1− | 0.5+ |
| 2001 10 23 | 699 | 0.1− | 0.4+ | 2003 01 12 | 704 | 0.5+ | 0.8+ | 2006 09 17 | 699 | 0.6− | 0.4+ |
| 2001 10 23 | 699 | 0.2+ | 0.9+ | 2003 01 12 | 704 | 0.2− | 0.5+ | 2006 09 20 | 703 | 0.2− | 0.9+ |
| 2001 10 23 | 699 | 0.6+ | 0.6− | 2003 01 12 | 704 | 0.7− | 0.8− | 2006 09 20 | 703 | 0.5− | 1.1+ |
| 2001 10 23 | 699 | 0.3+ | 1.1+ | 2003 01 31 | 704 | 0.1− | 0.5+ | 2006 09 20 | 703 | 0.1+ | 0.5− |
| 2001 10 23 | 644 | 0.4− | 0.2− | 2003 01 31 | 704 | 0.2+ | 0.1− | 2006 09 20 | 703 | 0.8− | 0.2+ |
| 2001 10 23 | 644 | 0.5− | 0.1+ | 2003 01 31 | 704 | 0.6+ | 0.9+ | 2006 09 26 | 703 | 0.3+ | 0.4− |
| 2001 10 23 | 644 | 0.5− | 0.1− | 2003 01 31 | 699 | 0.6+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.7+ |
| 2001 12 18 | 645 | 0.2+ | 0.3− | 2003 01 31 | 704 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2001 12 18 | 645 | 0.2+ | 0.2− | 2003 01 31 | 704 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.9+ |

**(140578)∗ 2001 TN$_{221}$ = 1995 UE$_{57}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 29723)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.69185 | | (2000.0) | | | |
| $n$ | 0.17392014 | $\omega$ | 313.90062 | | +0.65351001 | +0.75686553 |
| $a$ | 3.1786018 | $\Omega$ | 356.86637 | | −0.63939308 | +0.54570905 |
| $e$ | 0.0230694 | $i$ | 9.37155 | | −0.40509402 | +0.35966123 |
| $P$ | 5.67 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.1− | 0.0 | 2004 03 17 | 691 | 0.0 | 0.3+ | 2004 04 15 | 699 | 1.0− | 0.7+ |
| 1995 10 16 | 691 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 08 14 | 644 | 0.2+ | 0.4+ |
| 1995 10 16 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 08 14 | 644 | 0.3− | 0.3+ |
| 1995 10 22 | 691 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.5+ | 2006 08 14 | 644 | 0.3+ | 0.6+ |
| 1995 10 22 | 691 | 0.1− | 0.6+ | 2004 03 18 | 704 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.7+ |
| 1995 10 22 | 691 | 0.0 | 0.7+ | 2004 03 18 | 704 | 0.3+ | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 1.7− | 0.6+ | 2004 03 20 | 699 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 2001 10 14 | 704 | 0.7− | 1.1+ | 2004 03 20 | 699 | 0.1+ | 1.0+ | 2006 08 16 | 644 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 0.5− | 0.6− | 2004 03 20 | 699 | 0.2− | 0.1− | 2006 08 16 | 644 | 0.1− | 0.6+ |
| 2001 10 14 | 704 | 0.9− | 0.7+ | 2004 03 20 | 699 | 1.2− | 1.4+ | 2006 08 16 | 644 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 1.2− | 0.0 | 2004 03 22 | 704 | 0.0 | 0.5+ | 2006 08 17 | 644 | 0.3− | 0.4+ |
| 2001 10 20 | 644 | 0.0 | 1.0+ | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2001 10 20 | 644 | 0.3− | 0.9+ | 2004 03 22 | 704 | 0.1+ | 0.7+ | 2006 08 17 | 644 | 0.3− | 0.2+ |
| 2001 10 20 | 644 | 0.3− | 1.2+ | 2004 03 22 | 704 | 0.9+ | 0.8+ | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.4− | 0.1− | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2001 11 10 | 704 | 0.1+ | 0.9+ | 2004 03 23 | 704 | 0.2− | 0.9+ | 2006 08 18 | 644 | 0.4− | 0.2+ |
| 2001 11 10 | 704 | 0.4− | 0.6− | 2004 03 23 | 704 | 0.8+ | 0.2− | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2001 11 10 | 704 | 0.4+ | 0.2− | 2004 03 23 | 704 | 0.7+ | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.2+ |
| 2001 11 11 | 704 | 1.3+ | 1.1+ | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.4+ |
| 2001 11 11 | 704 | 0.3+ | 0.6− | 2004 03 23 | 704 | 0.8+ | 0.1+ | 2006 08 23 | 704 | 0.9− | 1.7+ |
| 2001 11 11 | 704 | 1.2+ | 1.5− | 2004 03 23 | 704 | 0.1− | 0.1− | 2006 08 23 | 704 | 0.3− | 0.6+ |
| 2001 11 11 | 704 | 0.2+ | 1.2− | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.2− | 0.1+ |
| 2001 11 11 | 704 | 0.5− | 1.6− | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2003 01 10 | 704 | 1.6+ | 1.5+ | 2004 03 26 | 699 | 1.1+ | 0.5− | 2006 08 28 | 691 | 0.1− | 0.5+ |
| 2003 01 10 | 704 | 0.4+ | 0.8+ | 2004 03 26 | 699 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.3− | 0.5+ |
| 2003 01 10 | 704 | 0.1− | 0.1+ | 2004 03 26 | 699 | 0.1+ | 0.7− | 2006 08 28 | 699 | 0.3− | 0.9+ |
| 2003 01 10 | 704 | 0.2+ | 0.3+ | 2004 03 26 | 699 | 0.3+ | 0.3− | 2006 08 28 | 699 | 0.1− | 0.7+ |
| 2003 01 10 | 704 | 0.4+ | 1.6+ | 2004 03 27 | 704 | 1.4+ | 0.4+ | 2006 08 28 | 699 | 0.6− | 0.5+ |
| 2004 02 26 | 704 | 0.1− | 0.3+ | 2004 03 27 | 704 | 1.3+ | 0.3+ | 2006 08 28 | 699 | 1.3− | 0.1+ |
| 2004 02 26 | 704 | 0.3− | 0.4+ | 2004 03 27 | 704 | 1.0+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.2+ |
| 2004 02 26 | 704 | 0.1− | 1.1+ | 2004 03 27 | 704 | 0.8+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.3+ |
| 2004 02 26 | 704 | 0.5+ | 0.7+ | 2004 03 27 | 704 | 0.8− | 0.4+ | 2006 09 14 | 703 | 0.3+ | 0.9− |
| 2004 03 16 | 704 | 1.4+ | 0.3+ | 2004 03 31 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2004 03 16 | 704 | 0.6+ | 1.0+ | 2004 03 31 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | 1.3− | 0.6− |
| 2004 03 16 | 704 | 0.0 | 0.6− | 2004 03 31 | 691 | 0.2+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.1+ |
| 2004 03 16 | 704 | 0.3− | 0.5+ | 2004 04 15 | 699 | 0.4− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.8+ | 0.2+ | | | | |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.1− | 0.4+ | | | | |

**(140579)∗ 2001 TM$_{222}$**

Discovered 2001 Oct. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.00956 | | (2000.0) | | | |
| $n$ | 0.23819903 | $\omega$ | 258.61401 | | +0.98192793 | +0.08713980 |
| $a$ | 2.5773657 | $\Omega$ | 96.22453 | | −0.01804164 | +0.92675035 |
| $e$ | 0.1849773 | $i$ | 9.72950 | | −0.18839329 | +0.36543185 |
| $P$ | 4.14 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.1− | 0.5+ | 2003 02 01 | 645 | 0.1− | 0.1+ | 2005 08 24 | E12 | 0.0 | 0.4+ |
| 2001 08 11 | 608 | 0.2+ | 0.0 | 2003 02 01 | 645 | 0.1− | 0.1+ | 2005 08 24 | E12 | 0.3+ | 0.1+ |
| 2001 08 11 | 608 | 0.1+ | 0.5+ | 2003 02 01 | 704 | 1.3+ | 1.3+ | 2005 08 24 | E12 | 0.3− | 0.4+ |
| 2001 08 19 | 704 | (1.6+ | 0.2−) | 2003 02 01 | 704 | 0.6+ | 0.6+ | 2005 08 28 | 699 | 0.8+ | 0.4+ |
| 2001 08 19 | 704 | 0.8+ | 0.5− | 2003 02 01 | 704 | 0.5− | 0.5− | 2005 08 28 | 699 | 0.5− | 0.3+ |
| 2001 08 19 | 704 | 0.3− | 0.2− | 2003 02 01 | 704 | 0.7+ | 0.3− | 2005 08 28 | 699 | 0.1+ | 0.4+ |
| 2001 08 19 | 704 | 0.8− | 0.6+ | 2003 02 01 | 704 | 0.3+ | 0.2+ | 2005 08 28 | 699 | 0.6+ | 0.1+ |
| 2001 08 19 | 704 | 0.6+ | 0.2− | 2003 02 04 | 704 | 0.5+ | 0.9+ | 2005 09 01 | E12 | 0.2− | 0.2− |
| 2001 08 23 | 608 | 0.7+ | 0.9+ | 2003 02 04 | 704 | 0.4+ | 0.3+ | 2005 09 01 | E12 | 0.4+ | 0.6+ |
| 2001 08 23 | 608 | 0.7+ | 0.5+ | 2003 02 04 | 704 | 0.2+ | 1.1+ | 2005 09 01 | E12 | 0.0 | 0.0 |
| 2001 08 23 | 608 | 0.6+ | 0.9+ | 2003 02 04 | 704 | 0.4+ | 0.0 | 2005 09 08 | E12 | 0.1+ | 0.2− |
| 2001 08 23 | 608 | 0.3+ | 0.1− | 2005 06 09 | 703 | 1.1− | 0.2− | 2005 09 08 | E12 | 0.3+ | 0.1− |
| 2001 08 23 | 608 | 0.3+ | 0.2+ | 2005 06 09 | 703 | 0.6− | 0.4− | 2005 09 08 | E12 | 0.0 | 0.1+ |
| 2001 08 23 | 608 | 0.3+ | 0.1+ | 2005 06 09 | 703 | 0.1− | 1.0− | 2005 09 08 | E12 | 0.3+ | 0.7+ |
| 2001 09 11 | 704 | 0.0 | 0.8− | 2005 06 09 | 703 | 0.6− | 0.3− | 2005 10 02 | E12 | 0.3− | 1.0+ |
| 2001 09 11 | 704 | 0.2− | 0.6− | 2005 07 03 | 644 | 0.2− | 0.1+ | 2005 10 02 | E12 | 0.5+ | 0.4+ |
| 2001 09 11 | 704 | 0.1+ | 0.6− | 2005 07 03 | 644 | 0.2− | 0.0 | 2005 10 02 | E12 | 0.5− | 0.6+ |
| 2001 09 11 | 704 | 0.1− | 0.9− | 2005 07 03 | 644 | 0.3− | 0.0 | 2005 10 02 | E12 | 0.2− | 0.5+ |
| 2001 09 11 | 704 | 0.2− | 0.9− | 2005 07 10 | E12 | 0.8− | 0.1− | 2006 10 17 | G96 | 0.7− | 0.3− |
| 2001 09 17 | 699 | 0.6+ | 0.6+ | 2005 07 10 | E12 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.9− |
| 2001 09 17 | 699 | 0.2+ | 0.0 | 2005 07 10 | E12 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.6− |
| 2001 09 17 | 699 | 0.1− | 0.1− | 2005 08 04 | 644 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2001 09 17 | 699 | 0.2+ | 0.3+ | 2005 08 04 | 644 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 09 23 | 608 | 0.7− | 0.3− | 2005 08 04 | 644 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 09 23 | 608 | 0.3− | 0.4− | 2005 08 07 | 428 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2001 09 23 | 608 | 0.5− | 0.1− | 2005 08 07 | 428 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2001 10 14 | 644 | 0.1− | 0.2− | 2005 08 08 | 428 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2001 10 14 | 644 | 0.2− | 0.3− | 2005 08 08 | 428 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2001 10 14 | 644 | 0.3− | 0.1+ | 2005 08 08 | 428 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2001 10 18 | 699 | 0.2− | 0.4+ | 2005 08 09 | 428 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2001 10 18 | 699 | 0.3− | 0.5− | 2005 08 09 | 428 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.3− | 0.0 |
| 2001 10 18 | 699 | 0.5− | 0.1− | 2005 08 10 | 428 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2001 10 18 | 699 | 0.4− | 0.8+ | 2005 08 10 | 428 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2003 01 09 | 704 | 0.3+ | 0.5+ | 2005 08 15 | E12 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2003 01 09 | 704 | 0.2+ | 0.0 | 2005 08 15 | E12 | 0.1− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2003 01 09 | 704 | 0.9+ | 0.4− | 2005 08 15 | E12 | 0.9− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2003 01 09 | 704 | 0.1+ | 0.2+ | 2005 08 15 | E12 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2003 01 09 | 704 | 0.1− | 0.2+ | 2005 08 24 | E12 | 0.1+ | 0.5+ | | | | |

**(140580)∗ 2001 TW$_{223}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.28844 | | (2000.0) | | | |
| $n$ | 0.21871936 | $\omega$ | 317.75050 | | −0.98242938 | +0.00432154 |
| $a$ | 2.7282107 | $\Omega$ | 223.58834 | | +0.03426786 | −0.97855897 |
| $e$ | 0.1606939 | $i$ | 15.70114 | | −0.18346179 | −0.20592151 |
| $P$ | 4.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 699 | 0.1+ | 0.1+ | 2001 11 16 | 691 | 0.5+ | 0.6+ | 2006 11 15 | 703 | (1.4− | 3.5−) |
| 1999 04 11 | 699 | 0.8+ | 0.1+ | 2001 11 16 | 691 | 0.5+ | 0.4+ | 2006 11 15 | 703 | (1.4+ | 2.0−) |
| 1999 04 11 | 699 | 0.4+ | 0.9− | 2001 11 17 | 704 | 0.7− | 0.7+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 1999 05 10 | 704 | 0.6− | 0.5+ | 2001 11 17 | 704 | 0.5− | 0.9+ | 2006 11 25 | G96 | 0.3− | 0.3− |
| 1999 05 10 | 704 | 0.5− | 0.8+ | 2001 11 17 | 704 | 0.7− | 1.2+ | 2006 11 25 | G96 | 2.2+ | 1.1+ |
| 1999 05 10 | 704 | 0.7− | 1.2+ | 2001 11 17 | 704 | 1.1− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 1999 05 10 | 704 | 0.8− | 1.5+ | 2001 12 11 | 704 | 0.6− | 0.5− | 2006 11 25 | 703 | 1.0− | 0.3− |
| 1999 05 10 | 704 | (5.3− | 0.4−) | 2001 12 11 | 704 | 0.2− | 0.6− | 2006 11 25 | 703 | 0.6− | 0.3− |
| 1999 05 17 | 699 | 1.1+ | 1.6+ | 2001 12 11 | 704 | 0.4+ | 0.5+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 1999 05 17 | 699 | 0.4+ | 0.5+ | 2003 01 02 | 704 | 0.1+ | 0.6+ | 2006 11 25 | 703 | 0.3+ | 0.1− |
| 1999 05 17 | 699 | 0.4+ | 0.2− | 2003 01 02 | 704 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | 0.2+ | 0.0 | 2003 01 02 | 704 | 0.0 | 0.2− | 2006 11 25 | 703 | 0.9− | 0.9− |
| 2001 10 14 | 704 | 0.3+ | 1.4+ | 2003 01 02 | 704 | 0.3+ | 1.0+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2001 10 14 | 704 | (0.1− | 2.3−) | 2003 01 02 | 704 | 0.5+ | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2001 10 14 | 704 | 0.5− | 0.3− | 2003 01 29 | 704 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 0.4− | 0.2+ |
| 2001 10 20 | 644 | 0.1− | 0.0 | 2003 01 29 | 704 | (1.0+ | 1.9+) | 2006 11 25 | 703 | 0.3− | 0.3− |
| 2001 10 20 | 644 | 0.1− | 0.2− | 2003 01 29 | 704 | 0.5− | 0.5+ | 2006 11 25 | 703 | 0.5− | 0.2+ |
| 2001 10 20 | 644 | 0.5− | 0.6+ | 2003 01 29 | 704 | 0.2+ | 0.6+ | 2006 11 25 | 703 | 0.4− | 0.2− |
| 2001 10 23 | 333 | 0.4− | 0.2− | 2004 05 24 | 704 | 0.0 | 0.6+ | 2006 11 28 | 704 | 0.3+ | 0.8− |
| 2001 10 23 | 333 | 0.1− | 0.9− | 2004 05 24 | 704 | 0.9− | 1.1+ | 2006 11 28 | 704 | 0.3+ | 0.4− |
| 2001 10 23 | 333 | 0.3− | 0.0 | 2004 05 24 | 704 | 0.4+ | 0.8+ | 2006 11 28 | 704 | 0.4+ | 1.1+ |
| 2001 10 26 | 644 | 0.6− | 0.1+ | 2004 05 24 | 704 | 0.5− | 0.8+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2001 10 26 | 644 | 0.7− | 0.1+ | 2004 05 24 | 704 | 0.4+ | 0.6+ | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2001 10 26 | 644 | 0.9− | 0.4− | 2006 11 15 | 703 | 0.2− | 0.3+ | | | | |
| 2001 11 16 | 691 | 0.5+ | 0.5+ | 2006 11 15 | 703 | 0.4+ | 0.4+ | | | | |

**(140581)∗ 2001 TX$_{223}$ = 2004 HR$_{40}$**

Discovered 2001 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61145)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 76.85489 | | (2000.0) | | | |
| $n$ | 0.20433649 | $\omega$ | 88.26223 | | +0.69856384 | +0.71213335 |
| $a$ | 2.8547764 | $\Omega$ | 226.32065 | | −0.68888877 | +0.64294287 |
| $e$ | 0.0478124 | $i$ | 5.53992 | | −0.19349632 | +0.28194071 |
| $P$ | 4.82 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1− | 0.6− | 2005 06 27 | 644 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2001 09 20 | 704 | 0.4+ | 0.3− | 2005 06 27 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.3− | 2005 06 27 | 644 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.6+ |
| 2001 10 11 | 644 | (0.3+ | 1.5+) | 2005 07 06 | 691 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.4+ |
| 2001 10 11 | 644 | 0.2+ | 0.8+ | 2005 07 06 | 691 | 0.0 | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.7+ |
| 2001 10 11 | 644 | (0.1+ | 1.7+) | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.1− | 0.6− | 2005 07 30 | E12 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.1− | 0.6− | 2005 07 30 | E12 | 1.0− | 0.4− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2001 10 14 | 704 | 0.4+ | 0.6− | 2005 07 30 | E12 | 0.7− | 0.3+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2001 10 14 | 704 | 0.1+ | 1.2− | 2005 07 30 | E12 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2001 10 19 | 644 | 0.4− | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2001 10 19 | 644 | 0.4− | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2001 10 19 | 644 | 0.5− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | (1.9− | 0.5+) | 2006 09 27 | G96 | 0.2+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | (1.3− | 2.4+) | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.6+ |
| 2001 10 21 | 704 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.7+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2− | 1.3+ |
| 2004 04 25 | 691 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2004 04 25 | 691 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2004 05 24 | 691 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | (1.6+ | 1.5+) |
| 2004 05 24 | 691 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.5+ | | | | |
| 2004 05 24 | 691 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.4+ | | | | |

**(140582)∗ 2001 TW$_{225}$**

Discovered 2001 Oct. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.57403 | | (2000.0) | | | |
| $n$ | 0.17475806 | $\omega$ | 313.91256 | | +0.80613314 | −0.38090997 |
| $a$ | 3.1684334 | $\Omega$ | 73.45943 | | +0.57950896 | +0.66295344 |
| $e$ | 0.1904222 | $i$ | 28.18890 | | −0.11966090 | +0.64451558 |
| $P$ | 5.64 | $H$ | 14.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 1.3− | 0.9+ | 2001 11 19 | 704 | 0.1− | 0.0 | 2005 06 27 | G96 | 0.1+ | 0.2+ |
| 2001 10 11 | 704 | 1.0+ | 0.4+ | 2001 12 07 | 704 | 1.5− | 0.1− | 2005 06 27 | G96 | 0.1− | 0.1+ |
| 2001 10 11 | 704 | 1.0+ | 0.5+ | 2001 12 07 | 704 | 1.5− | 0.3− | 2005 06 27 | G96 | 0.4− | 0.3− |
| 2001 10 11 | 704 | 0.8+ | 0.6− | 2001 12 07 | 704 | 1.6− | 0.0 | 2005 06 27 | G96 | 0.4+ | 0.2+ |
| 2001 10 11 | 704 | 0.2− | 0.2+ | 2001 12 07 | 704 | 1.0− | 0.4+ | 2006 08 15 | E12 | 0.1+ | 0.2− |
| 2001 10 14 | 699 | 0.8+ | 0.7− | 2001 12 07 | 704 | 1.3− | 0.3− | 2006 08 15 | E12 | 0.3− | 0.0 |
| 2001 10 14 | 699 | 0.3− | 0.0 | 2001 12 18 | 704 | 1.4+ | 0.6+ | 2006 08 15 | E12 | 0.1+ | 0.0 |
| 2001 10 14 | 699 | 0.7+ | 0.5+ | 2001 12 18 | 704 | 0.3+ | 0.2− | 2006 08 21 | E12 | 0.2− | 0.2+ |
| 2001 10 14 | 699 | 0.0 | 0.2+ | 2001 12 18 | 704 | 1.6+ | 1.2− | 2006 08 21 | E12 | 0.2+ | 0.4− |
| 2001 10 16 | 608 | 0.1− | 0.3− | 2001 12 18 | 704 | 0.8+ | 0.4− | 2006 08 21 | E12 | 0.3+ | 0.1− |
| 2001 10 16 | 608 | 0.2− | 0.3− | 2001 12 18 | 704 | 0.8+ | 0.4− | 2006 08 21 | E12 | 0.0 | 0.8− |
| 2001 10 16 | 608 | 0.2− | 0.3− | 2001 12 18 | 645 | 0.1+ | 0.0 | 2006 09 01 | E12 | 0.5+ | 0.3− |
| 2001 11 13 | 608 | 0.3− | 0.8− | 2001 12 18 | 645 | 0.2+ | 0.0 | 2006 09 01 | E12 | 0.4+ | 0.1+ |
| 2001 11 13 | 608 | 0.2− | 0.5− | 2001 12 20 | 608 | 0.7− | 0.5− | 2006 09 01 | E12 | 0.0 | 0.1+ |
| 2001 11 13 | 608 | 0.3− | 0.4− | 2001 12 20 | 608 | 0.3− | 0.4+ | 2006 09 01 | E12 | 0.4− | 0.8+ |
| 2001 11 17 | 699 | 0.6− | 0.7+ | 2001 12 20 | 608 | 0.2− | 1.0− | 2006 09 21 | E12 | 0.6+ | 0.0 |
| 2001 11 17 | 699 | 0.9− | 0.5+ | 2003 01 14 | 704 | 0.4− | 0.5− | 2006 09 21 | E12 | 0.5+ | 0.7+ |
| 2001 11 17 | 699 | 0.1+ | 0.9+ | 2003 01 14 | 704 | 0.6+ | 0.5+ | 2006 09 21 | E12 | 1.3− | 0.0 |
| 2001 11 17 | 699 | 0.1+ | 1.1+ | 2003 01 14 | 704 | 0.5+ | 0.1+ | 2006 09 21 | E12 | 0.2+ | 0.2+ |
| 2001 11 19 | 704 | 0.5− | 0.5+ | 2003 01 14 | 704 | 0.2+ | 1.3+ | 2006 09 30 | E12 | 0.2− | 0.3+ |
| 2001 11 19 | 704 | 1.6− | 0.4+ | 2005 05 20 | G96 | 0.3− | 0.5+ | 2006 09 30 | E12 | 0.9− | 0.1+ |
| 2001 11 19 | 704 | 0.5− | 1.2+ | 2005 05 20 | G96 | 0.3+ | 0.6+ | 2006 09 30 | E12 | 0.2− | 0.6− |
| 2001 11 19 | 704 | 0.5+ | 0.2+ | 2005 05 20 | G96 | 0.4+ | 0.1+ | 2006 09 30 | E12 | 0.8+ | 0.2+ |

**(140583)∗ 2001 TZ$_{225}$**

Discovered 2001 Oct. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 311.72350 | | (2000.0) | | | |
| $n$ | 0.19242181 | $\omega$ | 314.58244 | | +0.65479875 | −0.72918039 |
| $a$ | 2.9714369 | $\Omega$ | 93.42411 | | +0.73754282 | +0.55899209 |
| $e$ | 0.1022136 | $i$ | 11.48951 | | +0.16513385 | +0.39474525 |
| $P$ | 5.12 | $H$ | 14.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.4+ | 0.5+ | 2003 01 05 | 704 | 0.0 | 0.5− | 2004 04 19 | 704 | 0.8− | 0.1− |
| 2001 07 19 | 644 | 0.3+ | 0.4+ | 2003 01 05 | 704 | 0.3− | 0.6− | 2004 04 19 | 704 | 0.8− | 1.1+ |
| 2001 07 19 | 644 | 0.3+ | 0.5+ | 2003 01 05 | 704 | 0.5− | 0.6− | 2004 04 19 | 704 | 0.6− | 0.5+ |
| 2001 08 02 | 644 | 0.6+ | 0.5+ | 2003 01 05 | 704 | 0.1+ | 0.8− | 2004 04 19 | 704 | 0.3− | 0.8+ |
| 2001 08 02 | 644 | 0.7+ | 0.3+ | 2003 01 09 | 704 | 0.3+ | 0.1+ | 2004 04 24 | 704 | 0.7+ | 0.3+ |
| 2001 08 02 | 644 | 0.4+ | 0.5+ | 2003 01 09 | 704 | 0.1+ | 0.0 | 2004 04 24 | 704 | 0.6+ | 0.5+ |
| 2001 08 14 | 608 | 0.6− | 0.3− | 2003 01 09 | 704 | 0.0 | 0.1+ | 2004 04 24 | 704 | 0.1+ | 0.6− |
| 2001 08 14 | 608 | 0.3− | 0.2− | 2003 01 09 | 704 | 0.2− | 0.1+ | 2004 04 24 | 704 | 0.8+ | 0.0 |
| 2001 08 14 | 608 | 0.5− | 0.1− | 2003 01 09 | 704 | 0.8+ | 0.4+ | 2006 08 28 | E12 | 0.1+ | 0.5+ |
| 2001 09 12 | 704 | 0.2− | 0.8+ | 2003 02 01 | 704 | 0.6− | 1.5+ | 2006 08 28 | E12 | 0.8− | 0.7+ |
| 2001 09 12 | 704 | 0.2− | 0.7+ | 2003 02 01 | 704 | 0.1+ | 1.0+ | 2006 08 28 | E12 | 0.3− | 0.4+ |
| 2001 09 12 | 704 | 0.5− | 0.5+ | 2003 02 01 | 704 | 0.6+ | 0.1+ | 2006 08 28 | E12 | 0.7− | 0.6+ |
| 2001 09 12 | 704 | 1.1− | 0.5+ | 2003 02 01 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 703 | 0.3+ | 0.1+ |
| 2001 09 12 | 704 | 1.1− | 0.2+ | 2003 02 01 | 704 | 0.5− | 0.6+ | 2006 09 20 | 703 | 0.1− | 0.3+ |
| 2001 10 14 | 644 | 0.1− | 0.4− | 2003 02 04 | 704 | 0.3+ | 0.9+ | 2006 09 20 | 703 | 1.0− | 0.3− |
| 2001 10 14 | 644 | 0.2− | 0.6− | 2003 02 04 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 703 | 0.1+ | 0.0 |
| 2001 10 14 | 644 | 0.4+ | 0.7− | 2003 02 04 | 704 | 0.4− | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.2+ |
| 2001 10 15 | 704 | 0.3− | 0.5+ | 2003 02 04 | 704 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2001 10 15 | 704 | 0.5− | 0.0 | 2003 02 04 | 704 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2001 10 15 | 704 | 0.9− | 0.3+ | 2004 03 15 | 704 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.2− |
| 2001 10 15 | 704 | 0.5− | 0.5− | 2004 03 15 | 704 | 0.9+ | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 10 23 | 644 | 0.6+ | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 644 | 0.6+ | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.7+ |
| 2001 10 23 | 644 | 1.0+ | 0.4+ | 2004 03 15 | 704 | 0.6+ | 0.7+ | 2006 10 12 | E12 | 0.5+ | 0.6+ |
| 2002 12 05 | 704 | 0.5− | 0.8+ | 2004 03 22 | 699 | 0.3+ | 0.7+ | 2006 10 12 | E12 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2004 03 22 | 699 | 0.1− | 0.6+ | 2006 10 12 | E12 | 0.4− | 0.5+ |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2004 03 22 | 699 | 0.5+ | 0.0 | 2006 10 12 | E12 | 0.1− | 0.7+ |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2004 03 22 | 699 | 0.5− | 0.7− | 2006 11 17 | 644 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.4+ | 2004 04 12 | 703 | 0.1− | 1.0+ | 2006 11 17 | 644 | 0.8+ | 0.2+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2004 04 12 | 703 | 0.4− | 1.2+ | 2006 11 17 | 644 | 0.1− | 0.3+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2004 04 12 | 703 | 0.3+ | 0.7+ | 2006 11 19 | 703 | 1.1− | 0.8+ |
| 2002 12 10 | 704 | 0.8− | 0.3+ | 2004 04 12 | 703 | 0.4− | 1.3+ | 2006 11 19 | 703 | 0.5+ | 0.1+ |
| 2002 12 10 | 704 | 0.8− | 0.5+ | 2004 04 16 | 644 | 0.7+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.7+ | 0.7+ | 2004 04 16 | 644 | 0.6+ | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.2− |
| 2003 01 05 | 704 | 0.2− | 0.5− | 2004 04 16 | 644 | 0.8+ | 0.1+ | | | | |

**(140584)∗ 2001 TU$_{226}$**

Discovered 2001 Oct. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.69159 | | (2000.0) | | | |
| $n$ | 0.24238341 | $\omega$ | 341.57021 | | −0.19654723 | −0.96567834 |
| $a$ | 2.5476169 | $\Omega$ | 119.45623 | | +0.92233000 | −0.24085563 |
| $e$ | 0.1445268 | $i$ | 11.24571 | | +0.33268087 | +0.09723123 |
| $P$ | 4.07 | $H$ | 15.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.9+ | 0.2+ | 2003 03 12 | 704 | (0.3+ | 2.4−) | 2003 04 09 | 644 | 0.1− | 0.7+ |
| 2001 09 12 | 704 | 0.9+ | 0.1− | 2003 03 12 | 704 | 0.9− | 0.4− | 2003 04 09 | 644 | 0.0 | 0.8+ |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2003 03 12 | 704 | 0.4+ | 0.4− | 2005 09 24 | 703 | 0.3+ | 0.6+ |
| 2001 10 11 | 704 | 0.3− | 0.6+ | 2003 03 12 | 704 | 1.3− | 1.2+ | 2005 09 24 | 703 | 0.1− | 0.8− |
| 2001 10 11 | 704 | 0.2+ | 0.1+ | 2003 03 12 | 704 | 0.1− | 0.9− | 2005 09 24 | 703 | 0.7− | 1.4− |
| 2001 10 11 | 704 | 0.7− | 0.7− | 2003 03 12 | 704 | (0.1− | 1.8+) | 2005 09 24 | 703 | 1.0+ | 0.4+ |
| 2001 10 11 | 704 | (2.0− | 0.2+) | 2003 03 12 | 704 | 0.8+ | 0.4− | 2005 10 08 | 699 | 0.2− | 0.8+ |
| 2001 10 14 | 644 | 0.3− | 0.1+ | 2003 03 12 | 704 | 0.4+ | 1.4+ | 2005 10 08 | 699 | 0.1− | 0.1− |
| 2001 10 14 | 644 | 0.5− | 0.1+ | 2003 03 12 | 644 | (0.6− | 1.9+) | 2005 10 08 | 699 | 0.2− | 1.5+ |
| 2001 10 14 | 644 | 0.1+ | 0.1+ | 2003 03 12 | 644 | 0.3− | 0.5+ | 2005 10 08 | 699 | 0.2− | 0.6+ |
| 2001 10 19 | 699 | 0.0 | 0.7− | 2003 03 12 | 644 | 0.0 | 0.6+ | 2005 10 25 | 704 | 1.5− | 0.3+ |
| 2001 10 19 | 699 | 0.7− | 0.8+ | 2003 03 13 | 644 | 0.1+ | 0.5+ | 2005 10 25 | 704 | 0.4− | 1.2+ |
| 2001 10 19 | 699 | 0.3+ | 1.1− | 2003 03 13 | 644 | 0.5− | 0.6+ | 2005 10 25 | 704 | 0.6− | 0.1+ |
| 2001 10 19 | 699 | 0.3− | 0.4+ | 2003 03 13 | 644 | 0.2− | 0.1− | 2005 10 30 | 703 | 0.6− | 0.5− |
| 2001 10 19 | 699 | 0.4+ | 0.1− | 2003 03 23 | 049 | 0.1− | 0.5+ | 2005 10 30 | 703 | (0.3− | 2.0−) |
| 2001 10 19 | 699 | 0.2+ | 1.2+ | 2003 03 23 | 049 | 0.6− | 0.6+ | 2005 10 30 | 703 | (0.2− | 1.7−) |
| 2001 10 19 | 699 | (0.7− | 2.1−) | 2003 03 24 | 049 | 0.0 | 0.3+ | 2005 10 30 | 703 | 0.1+ | 0.6− |
| 2001 10 19 | 699 | 0.4− | 1.3+ | 2003 03 24 | 049 | 0.7+ | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.6− |
| 2001 10 28 | 644 | 0.0 | 1.0+ | 2003 03 24 | 049 | 0.8+ | 0.8− | 2006 11 01 | G96 | 0.5+ | 0.6− |
| 2001 10 28 | 644 | 0.4+ | 1.2+ | 2003 03 24 | 049 | 1.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2001 10 28 | 644 | 0.2+ | 1.3+ | 2003 03 25 | 644 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.5− | 0.6− |
| 2003 01 28 | 704 | 0.6+ | 0.1− | 2003 03 25 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.3− |
| 2003 01 28 | 704 | 1.1+ | 0.3− | 2003 03 25 | 644 | 0.4+ | 0.6+ | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2003 01 28 | 704 | (1.7+ | 0.1+) | 2003 04 02 | 608 | 0.8+ | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2003 02 28 | 704 | 0.5− | 0.3+ | 2003 04 02 | 608 | 0.9+ | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.7− |
| 2003 02 28 | 704 | 1.0− | 0.7+ | 2003 04 02 | 608 | 0.8+ | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.7− |
| 2003 02 28 | 704 | 0.7− | 0.0 | 2003 04 05 | 699 | 0.7− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.7− |
| 2003 02 28 | 704 | 1.0− | 1.3+ | 2003 04 05 | 699 | 0.4− | 0.5− | 2006 11 21 | G96 | 0.8+ | 0.2+ |
| 2003 02 28 | 704 | 0.1− | 0.2+ | 2003 04 05 | 699 | 0.8+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2003 03 12 | 704 | (0.2− | 1.8−) | 2003 04 05 | 699 | 0.0 | 0.5+ | 2006 11 24 | 691 | 0.4+ | 0.2− |
| 2003 03 12 | 704 | 0.2+ | 1.0+ | 2003 04 09 | 644 | 0.0 | 0.6+ | 2006 11 24 | 691 | 0.0 | 0.4− |

**(140585)∗ 2001 TR$_{227}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.76484 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27600568 | $\omega$ | 357.25084 | | +0.36333117 | | −0.92500127 |
| $a$ | 2.3362754 | $\Omega$ | 71.42494 | | +0.85700375 | | +0.28501693 |
| $e$ | 0.2288319 | $i$ | 6.73631 | | +0.36542447 | | +0.25127277 |
| $P$ | 3.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 09 | 691 | 0.3+ | 0.9+ | 2001 11 17 | 699 | 0.6+ | 0.7− | 2005 12 30 | 699 | 0.1− | 0.4− |
| 1996 04 09 | 691 | 0.6+ | 0.4+ | 2001 11 17 | 699 | 0.4+ | 0.7+ | 2005 12 30 | 699 | 0.0 | 0.1+ |
| 2001 07 20 | 644 | 0.2− | 0.6+ | 2001 11 17 | 699 | 1.0+ | 0.3− | 2005 12 30 | 699 | 0.8− | 0.2+ |
| 2001 07 20 | 644 | 0.0 | 0.3+ | 2001 12 05 | 704 | 0.3+ | 1.6− | 2005 12 30 | 699 | 0.4+ | 0.1− |
| 2001 07 20 | 644 | 0.2+ | 0.8+ | 2001 12 05 | 704 | 0.7+ | 1.3− | 2006 01 05 | 703 | 0.1+ | 0.3− |
| 2001 09 11 | 699 | 0.6− | 0.2+ | 2001 12 05 | 704 | 0.0 | 0.8− | 2006 01 05 | 703 | 0.2− | 0.3− |
| 2001 09 11 | 699 | 0.6− | 0.1− | 2003 05 02 | 691 | 0.4+ | 0.7+ | 2006 01 05 | 703 | 0.6− | 0.1− |
| 2001 09 11 | 699 | 0.0 | 0.4+ | 2003 05 02 | 691 | 0.1+ | 0.6+ | 2006 01 06 | 704 | 0.3+ | 0.1+ |
| 2001 09 11 | 699 | 0.1− | 0.2+ | 2003 05 02 | 691 | 0.0 | 0.6+ | 2006 01 06 | 704 | 0.4+ | 0.0 |
| 2001 09 12 | 704 | 0.6− | 0.1− | 2005 11 01 | 704 | 0.7− | 0.1+ | 2006 01 06 | 704 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2005 11 01 | 704 | 0.0 | 0.6+ | 2006 01 06 | 704 | 0.3+ | 0.1+ |
| 2001 09 12 | 704 | 0.6− | 0.2+ | 2005 11 01 | 704 | 0.8+ | 0.3+ | 2006 01 06 | 704 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 1.1− | 0.3− | 2005 11 01 | 704 | 0.7+ | 0.2+ | 2006 01 08 | 699 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.8− | 0.1+ | 2005 11 10 | G96 | 0.1− | 0.3− | 2006 01 08 | 699 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.1− | 0.6+ | 2005 11 10 | G96 | 0.1− | 0.4− | 2006 01 08 | 699 | 0.4+ | 0.4+ |
| 2001 09 18 | 699 | 0.4− | 0.5+ | 2005 11 10 | G96 | 1.2+ | 1.7− | 2006 01 08 | 699 | 0.3+ | 0.2+ |
| 2001 09 18 | 699 | 0.2− | 1.1+ | 2005 11 13 | 699 | 1.1+ | 1.2+ | 2006 01 09 | 699 | 0.1+ | 0.2− |
| 2001 09 18 | 699 | 0.9− | 1.1+ | 2005 11 13 | 699 | (1.1+ | 2.8+) | 2006 01 09 | 699 | 0.3− | 0.1− |
| 2001 09 25 | 704 | 0.2− | 0.7+ | 2005 11 13 | 699 | 1.2+ | 1.1− | 2006 01 09 | 699 | 0.5+ | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 1.1+ | 2005 11 13 | 699 | 2.0+ | 0.8+ | 2006 01 18 | 703 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.3+ | 0.7+ | 2005 11 26 | 703 | 0.3− | 0.3− | 2006 01 18 | 703 | 0.7− | 0.3− |
| 2001 09 25 | 704 | 0.3− | 0.6+ | 2005 11 26 | 703 | 0.9− | 0.1+ | 2006 01 18 | 703 | 0.5− | 0.4+ |
| 2001 09 25 | 644 | 0.0 | 1.1+ | 2005 11 26 | 703 | 1.0− | 0.6− | 2006 01 18 | 703 | 0.3− | 0.0 |
| 2001 09 25 | 704 | 0.7− | 0.5+ | 2005 11 26 | 703 | 0.5+ | 0.3− | 2006 01 20 | 699 | 0.3+ | 0.4+ |
| 2001 09 25 | 644 | 0.2+ | 0.5+ | 2005 12 02 | 704 | 0.1+ | 0.6− | 2006 01 20 | 699 | 0.2− | 0.3+ |
| 2001 09 25 | 644 | 0.1+ | 0.7+ | 2005 12 02 | 704 | 0.2− | 0.2+ | 2006 01 20 | 699 | 0.1− | 0.2+ |
| 2001 10 11 | 704 | 1.5− | 0.3+ | 2005 12 02 | 704 | 0.8− | 0.6− | 2006 01 20 | 699 | 0.2− | 0.2+ |
| 2001 10 11 | 704 | 1.3− | 0.4− | 2005 12 02 | 704 | 0.2+ | 0.1+ | 2006 01 24 | 699 | 0.3+ | 0.1+ |
| 2001 10 11 | 704 | 0.1− | 0.6− | 2005 12 05 | 704 | 0.2+ | 0.3− | 2006 01 24 | 699 | 0.2+ | 0.2+ |
| 2001 10 11 | 704 | 0.2+ | 0.1+ | 2005 12 05 | 704 | 0.2+ | 0.8− | 2006 01 24 | 703 | 0.1+ | 0.2− |
| 2001 10 15 | 644 | 1.2+ | 1.1− | 2005 12 05 | 704 | 0.3+ | 0.2− | 2006 01 24 | 703 | 0.4− | 0.1− |
| 2001 10 15 | 644 | 1.0+ | 0.9− | 2005 12 05 | 704 | 0.4+ | 0.1− | 2006 01 24 | 703 | 0.5− | 0.1− |
| 2001 10 15 | 644 | 1.3+ | 0.9− | 2005 12 05 | 704 | 0.4+ | 0.3+ | 2006 01 24 | 703 | 0.6− | 0.2+ |
| 2001 10 19 | 699 | 0.3+ | 0.1+ | 2005 12 06 | 699 | 0.3+ | 0.1+ | 2006 01 24 | 699 | 0.5+ | 0.1− |
| 2001 10 19 | 699 | 0.6+ | 0.6+ | 2005 12 06 | 699 | 0.4+ | 0.4− | 2006 01 24 | 699 | 0.3+ | 0.2+ |
| 2001 10 19 | 699 | 0.7− | 0.3+ | 2005 12 06 | 699 | 0.2− | 0.2+ | 2006 01 30 | 703 | 0.5+ | 0.1+ |
| 2001 10 19 | 699 | 0.2+ | 1.0+ | 2005 12 06 | 699 | 0.1+ | 0.3+ | 2006 01 30 | 703 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.6− | 0.6+ | 2005 12 21 | 703 | 1.0− | 0.0 | 2006 01 30 | 703 | 0.3− | 0.1− |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2005 12 21 | 703 | 0.2− | 0.1+ | 2006 02 04 | 699 | 0.2+ | 0.4+ |
| 2001 10 20 | 704 | 1.0− | 0.5+ | 2005 12 21 | 703 | 0.4− | 0.6+ | 2006 02 04 | 699 | 0.3+ | 0.5+ |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2005 12 21 | 703 | 0.4− | 0.7+ | 2006 02 04 | 699 | 0.5− | 0.0 |
| 2001 10 24 | 644 | 0.0 | 0.6+ | 2005 12 27 | 703 | 1.0− | 0.1+ | 2006 02 04 | 699 | 1.2+ | 1.9+ |
| 2001 10 24 | 644 | 0.2+ | 0.4+ | 2005 12 27 | 703 | 0.5− | 0.7+ | 2006 02 06 | 704 | 0.2− | 0.0 |
| 2001 10 24 | 644 | 0.2− | 0.5+ | 2005 12 27 | 703 | 0.1+ | 0.2− | 2006 02 06 | 704 | 0.7− | 0.2− |
| 2001 11 08 | 644 | 0.4− | 1.1+ | 2005 12 29 | 703 | 0.5+ | 0.7+ | 2006 02 06 | 704 | 0.5− | 0.5+ |
| 2001 11 08 | 644 | 0.1+ | 0.9+ | 2005 12 29 | 703 | 0.9+ | 1.5+ | 2006 02 06 | 704 | 0.3− | 0.3− |
| 2001 11 08 | 644 | 0.1+ | 0.7+ | 2005 12 29 | 703 | (3.6+ | 1.7+) | 2006 02 06 | 704 | 0.2− | 0.4+ |
| 2001 11 17 | 699 | 1.1− | 0.0 | 2005 12 29 | 703 | 0.7+ | 1.1+ | | | | |

**(140586)∗ 2001 TP$_{228}$**

Discovered 2001 Oct. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.66516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21573932 | $\omega$ | 91.83891 | | +0.47799428 | | +0.87735995 |
| $a$ | 2.7532766 | $\Omega$ | 206.84306 | | −0.83831146 | | +0.44141574 |
| $e$ | 0.0746903 | $i$ | 5.33241 | | −0.26221243 | | +0.18812672 |
| $P$ | 4.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 291 | 0.5+ | 0.0 | 2001 10 21 | 704 | 1.2− | 0.8+ | 2006 09 28 | G96 | 0.4− | 0.5− |
| 2001 09 19 | 291 | 0.8+ | 0.0 | 2001 10 21 | 704 | 0.6− | 0.3− | 2006 09 28 | G96 | 0.5− | 1.3− |
| 2001 09 19 | 291 | 1.2+ | 0.3+ | 2004 04 20 | 691 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.5− | 0.4− |
| 2001 09 23 | 704 | 0.5− | 0.8+ | 2004 04 20 | 691 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 2001 09 23 | 704 | 0.3− | 0.2+ | 2004 04 20 | 691 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.6− |
| 2001 09 23 | 704 | 0.1+ | 0.4+ | 2005 07 05 | 644 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.6− |
| 2001 09 23 | 704 | 1.3− | 0.1+ | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 695 | 0.1+ | 0.0 |
| 2001 10 11 | 644 | 1.2− | 0.5− | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2001 10 11 | 644 | 1.0− | 0.7− | 2005 07 30 | 644 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2001 10 11 | 644 | 1.3− | 0.5− | 2005 07 30 | 644 | 0.3− | 0.6+ | 2006 11 16 | 691 | 0.3− | 0.2+ |
| 2001 10 15 | 691 | 0.3− | 0.2+ | 2005 07 30 | 644 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2001 10 15 | 691 | 0.4− | 0.1+ | 2005 07 30 | 644 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.7+ | 0.6+ |
| 2001 10 15 | 691 | 0.5− | 0.1+ | 2005 07 30 | 644 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.4− | 0.1− |
| 2001 10 21 | 704 | 0.7− | 0.6+ | 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.4+ |
| 2001 10 21 | 704 | 0.1− | 1.0+ | 2006 09 28 | G96 | 0.0 | 0.5− | | | | |
| 2001 10 21 | 704 | 1.3+ | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.7− | | | | |

**(140587)∗ 2001 TE$_{229}$**

Discovered 2001 Oct. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.80540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19534230 | $\omega$ | 86.85873 | | +0.67983670 | | −0.71731809 |
| $a$ | 2.9417461 | $\Omega$ | 318.89396 | | +0.54621241 | | +0.63408706 |
| $e$ | 0.1106327 | $i$ | 13.41825 | | +0.48936087 | | +0.28877041 |
| $P$ | 5.05 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 704 | 0.2− | 0.8+ | 2003 01 27 | 644 | 0.0 | 0.8+ | 2006 09 20 | 704 | 0.5− | 0.3+ |
| 2001 08 18 | 704 | 0.7+ | 1.1+ | 2003 01 27 | 644 | 0.1− | 0.8+ | 2006 09 20 | 704 | 0.4− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 704 | 0.4+ | 0.1+ | 2003 01 27 | 644 | 0.1+ | 1.3+ | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2001 09 19 | 644 | 0.4− | 0.0 | 2003 02 03 | 704 | 0.0 | 0.4+ | 2006 09 28 | 703 | 0.6+ | 0.2+ |
| 2001 09 19 | 644 | 0.4− | 0.4+ | 2003 02 03 | 704 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2001 09 19 | 644 | 0.6− | 0.4+ | 2003 02 03 | 704 | 0.3+ | 0.2− | 2006 09 28 | 703 | 0.1− | 0.1− |
| 2001 10 15 | 704 | 0.4− | 0.1− | 2003 02 03 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2001 10 15 | 704 | 0.2− | 0.1+ | 2003 02 08 | 704 | 0.2− | 1.0− | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2001 10 15 | 704 | 0.1− | 0.4+ | 2003 02 08 | 704 | 0.5+ | 0.3− | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2001 10 15 | 704 | 0.1− | 0.3+ | 2003 02 08 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 1.0+ | 0.7+ |
| 2001 10 15 | 704 | 0.2+ | 0.5+ | 2003 02 08 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2001 10 20 | 699 | 0.8+ | 0.0 | 2003 02 08 | 704 | 0.3+ | 0.9− | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2001 10 20 | 699 | 0.0 | 0.2− | 2003 02 11 | 704 | (0.6− | 3.1−) | 2006 10 19 | 703 | 0.2− | 0.4− |
| 2001 10 20 | 699 | 0.3+ | 0.1+ | 2003 02 11 | 704 | (0.7+ | 2.7−) | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2001 10 20 | 699 | 0.0 | 0.2+ | 2003 02 11 | 704 | (0.7− | 3.1−) | 2006 10 20 | 704 | 0.4+ | 1.1+ |
| 2001 11 11 | 704 | 0.0 | 0.5− | 2003 02 11 | 704 | (0.6− | 1.7−) | 2006 10 20 | 704 | 0.8+ | 0.6+ |
| 2001 11 11 | 704 | 0.2− | 0.3− | 2003 02 11 | 608 | 0.2+ | 0.1+ | 2006 10 20 | 704 | 0.1− | 1.1+ |
| 2001 11 11 | 704 | 0.1− | 0.5− | 2003 02 11 | 608 | 0.4+ | 0.4+ | 2006 10 20 | 704 | 0.2+ | 0.2− |
| 2001 11 11 | 704 | 0.2− | 0.2− | 2003 02 11 | 608 | 0.3+ | 0.2+ | 2006 10 20 | 704 | 0.6− | 1.0+ |
| 2001 11 11 | 704 | 0.2+ | 0.3− | 2003 02 21 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 11 12 | 699 | 0.1− | 0.2− | 2003 02 21 | 644 | 0.3− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2001 11 12 | 699 | 0.1− | 0.1− | 2003 02 21 | 644 | 0.1+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 11 12 | 699 | 0.1+ | 0.4− | 2003 03 12 | 644 | 0.1− | 0.5− | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2001 11 12 | 699 | 0.2− | 0.2+ | 2003 03 12 | 644 | 0.1+ | 0.2− | 2006 10 24 | 644 | 0.1− | 0.2− |
| 2001 12 10 | 704 | (1.7− | 3.2+) | 2003 03 12 | 644 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2001 12 10 | 704 | (1.9− | 3.1+) | 2004 04 25 | 704 | (0.3+ | 1.6+) | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2001 12 10 | 704 | (1.8− | 3.9+) | 2004 04 25 | 704 | 0.8+ | 0.7+ | 2006 10 27 | 703 | 0.3+ | 0.3− |
| 2001 12 10 | 704 | (2.0− | 3.6+) | 2004 04 25 | 704 | 0.5− | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2001 12 10 | 704 | (1.7− | 3.2+) | 2004 04 25 | 704 | 0.6+ | 0.5− | 2006 10 27 | 703 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 0.1+ | 0.2− | 2004 04 25 | 704 | 0.7− | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.3− |
| 2002 01 08 | 704 | 0.3+ | 0.1+ | 2004 05 11 | E12 | (0.4− | 2.3+) | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2002 01 08 | 704 | 0.2− | 0.1− | 2004 05 11 | E12 | (1.2− | 3.2+) | 2006 11 15 | 703 | 0.1+ | 0.2+ |
| 2002 01 08 | 704 | 0.2+ | 0.1+ | 2004 05 11 | E12 | (0.7− | 1.7+) | 2006 11 15 | 703 | 0.2− | 0.3− |
| 2002 01 08 | 704 | 0.1− | 0.0 | 2004 05 11 | E12 | 0.8+ | 1.1+ | 2006 11 16 | 704 | 0.3− | 0.1+ |
| 2003 01 26 | 699 | 0.3+ | 0.2− | 2006 08 12 | 644 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.8+ | 0.0 |
| 2003 01 26 | 699 | 0.1− | 0.8− | 2006 08 12 | 644 | 0.0 | 0.3+ | 2006 11 16 | 704 | 1.5+ | 0.9− |
| 2003 01 26 | 699 | 0.8− | 0.5− | 2006 08 12 | 644 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.4+ |
| 2003 01 26 | 699 | 1.1− | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 11 16 | 704 | 1.2− | 0.3+ |
| 2003 01 27 | 704 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 11 22 | 703 | 0.1− | 0.1− |
| 2003 01 27 | 704 | 0.9+ | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.4− | 2006 11 22 | 703 | 0.3− | 0.0 |
| 2003 01 27 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 11 22 | 703 | 0.3+ | 0.4− |
| 2003 01 27 | 704 | 0.3− | 0.7+ | 2006 09 20 | 704 | 0.5− | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.2− |
| 2003 01 27 | 704 | 0.2− | 0.6+ | 2006 09 20 | 704 | 0.4− | 0.7+ | | | | |

**(140588)∗ 2001 TU$_{230}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.08173 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21677945 | $\omega$ | 349.82771 | | +0.59655857 | −0.78642919 | |
| $a$ | 2.7444626 | $\Omega$ | 63.36591 | | +0.74835669 | +0.47298060 | |
| $e$ | 0.1655121 | $i$ | 10.32070 | | +0.28996576 | +0.39726374 | |
| $P$ | 4.55 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 699 | (1.1− | 1.6+) | 2002 12 31 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.7− |
| 2001 09 07 | 699 | 0.7− | 1.2+ | 2003 01 10 | 704 | 0.5+ | 0.9+ | 2006 09 20 | 704 | 0.2+ | 0.9+ |
| 2001 09 07 | 699 | 0.1− | 0.1− | 2003 01 10 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.6+ |
| 2001 09 07 | 699 | 0.5− | 0.0 | 2003 01 10 | 704 | 0.0 | 0.7− | 2006 09 20 | 704 | 0.5+ | 0.6− |
| 2001 09 18 | 699 | 0.7+ | 0.5+ | 2003 01 10 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.9+ |
| 2001 09 18 | 699 | 0.1+ | 0.6+ | 2003 01 10 | 704 | 0.3+ | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.9+ |
| 2001 09 18 | 699 | 0.4+ | 0.1+ | 2003 01 19 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.6− | 0.2− |
| 2001 09 18 | 699 | 0.0 | 0.5+ | 2003 01 19 | 644 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.0 |
| 2001 09 25 | 704 | 0.1+ | 0.3+ | 2003 01 19 | 644 | 0.6+ | 0.2+ | 2006 10 28 | 704 | (0.5+ | 1.5−) |
| 2001 09 25 | 704 | 0.2+ | 0.0 | 2003 01 28 | 644 | 0.2+ | 0.2− | 2006 10 28 | 704 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.0 | 0.1+ | 2003 01 28 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 704 | 0.4− | 0.2− |
| 2001 09 25 | 704 | 0.5+ | 0.2− | 2003 01 28 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 704 | 0.1+ | 0.7− |
| 2001 09 25 | 704 | 0.2+ | 0.1− | 2003 02 02 | 704 | 0.2− | 0.6+ | 2006 10 28 | 704 | 0.0 | 0.4+ |
| 2001 09 25 | 644 | 0.2+ | 0.2+ | 2003 02 02 | 704 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2001 09 25 | 644 | 0.1+ | 0.1+ | 2003 02 02 | 704 | 0.2− | 0.7− | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2001 09 25 | 644 | 0.1+ | 0.1+ | 2003 02 04 | 699 | 0.3+ | 0.8− | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2001 10 11 | 704 | (1.5− | 0.1+) | 2003 02 04 | 699 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.0 |
| 2001 10 11 | 704 | 1.3− | 0.3+ | 2003 02 04 | 699 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.1− |
| 2001 10 11 | 704 | 1.1− | 0.2− | 2003 02 04 | 699 | 0.2+ | 0.9+ | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2001 10 11 | 704 | 1.3− | 0.4+ | 2003 02 21 | 644 | 0.1+ | 0.6+ | 2006 11 16 | 704 | 0.3− | 0.1− |
| 2001 10 11 | 704 | 0.9− | 0.0 | 2003 02 21 | 644 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.3− |
| 2001 10 15 | 644 | 0.1− | 0.5+ | 2003 02 21 | 644 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.3− |
| 2001 10 15 | 644 | 0.1− | 0.6+ | 2003 02 26 | 704 | 0.0 | 1.1+ | 2006 11 16 | 691 | 0.8+ | 0.4− |
| 2001 10 15 | 644 | 0.2− | 0.5+ | 2003 02 26 | 704 | 0.0 | 0.9+ | 2006 11 16 | 691 | 0.1− | 0.3− |
| 2001 10 20 | 704 | 0.7− | 0.6+ | 2003 02 26 | 704 | 0.2− | 1.3+ | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.4− | 0.3+ | 2003 02 26 | 704 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2001 10 20 | 704 | 1.0− | 0.1+ | 2003 02 26 | 704 | 0.2− | 1.4+ | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.6+ | 2003 03 03 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2001 10 20 | 704 | 0.6+ | 1.1+ | 2003 03 03 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2001 10 23 | 644 | 0.0 | 0.2+ | 2003 03 03 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.3− |
| 2001 10 23 | 644 | 0.0 | 0.1+ | 2003 03 08 | 699 | 0.4− | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2001 10 23 | 644 | 0.1+ | 0.3+ | 2003 03 08 | 699 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2001 11 08 | 644 | 0.0 | 0.9+ | 2003 03 08 | 699 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2001 11 08 | 644 | 0.2+ | 0.6+ | 2003 03 08 | 699 | 1.0+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2001 11 08 | 644 | 0.3+ | 0.3+ | 2003 03 08 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2001 11 19 | 608 | (1.4+ | 1.6+) | 2003 03 08 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2001 11 19 | 608 | (2.6+ | 1.8+) | 2003 03 08 | 644 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2001 11 19 | 608 | (2.8+ | 3.5+) | 2004 05 21 | 704 | 0.8+ | 0.8+ | 2006 11 24 | 691 | 0.6+ | 0.0 |
| 2001 12 17 | 699 | 0.4+ | 0.8+ | 2004 05 21 | 704 | (0.3+ | 1.6+) | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 2001 12 17 | 699 | 0.7− | 1.0+ | 2004 05 21 | 704 | 0.4+ | 0.4+ | 2006 11 24 | 691 | 0.0 | 0.3− |
| 2001 12 17 | 699 | (0.0 | 1.6+) | 2004 05 21 | 704 | 0.4+ | 1.3+ | 2006 11 27 | 704 | 0.8− | 0.9+ |
| 2001 12 17 | 699 | 1.0− | 0.5+ | 2004 05 21 | 704 | 0.9+ | 0.2+ | 2006 11 27 | 704 | 0.3+ | 0.8− |
| 2002 12 05 | 704 | 0.7+ | 0.5− | 2005 08 12 | E12 | 0.1− | 0.2+ | 2006 11 27 | 704 | 0.3+ | 0.4− |
| 2002 12 05 | 704 | 0.6− | 0.0 | 2005 08 12 | E12 | 0.0 | 0.8+ | 2006 11 28 | 704 | 0.8+ | 0.6+ |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2005 08 12 | E12 | 0.2+ | 0.7+ | 2006 11 28 | 704 | 1.0− | 0.4+ |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2005 08 12 | E12 | 0.7− | 0.6+ | 2006 11 28 | 704 | 1.3− | 0.0 |
| 2002 12 31 | 704 | 0.0 | 0.0 | 2005 09 01 | E12 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2002 12 31 | 704 | 0.2− | 0.1+ | 2005 09 01 | E12 | 0.9− | 0.1− | 2006 11 28 | 704 | 1.2+ | 0.1− |
| 2002 12 31 | 704 | 0.0 | 0.6+ | 2005 09 01 | E12 | 0.6− | 0.9+ | | | | |
| 2002 12 31 | 704 | 0.8+ | 1.3+ | 2005 09 01 | E12 | 0.1+ | 0.0 | | | | |

**(140589)∗ 2001 TY$_{230}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.08150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19240606 | $\omega$ | 261.77252 | | +0.88807433 | +0.42678287 | |
| $a$ | 2.9715991 | $\Omega$ | 72.82425 | | −0.31887696 | +0.83957422 | |
| $e$ | 0.0832732 | $i$ | 10.29966 | | −0.33112152 | +0.33611235 | |
| $P$ | 5.12 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 699 | (1.6− | 2.7−) | 2003 01 05 | 704 | 0.8+ | 0.0 | 2004 06 08 | 926 | 0.3+ | 0.3− |
| 2001 09 07 | 699 | 0.3+ | 1.5− | 2003 01 05 | 704 | 0.6+ | 0.1+ | 2004 06 08 | 926 | 0.4+ | 0.8+ |
| 2001 09 07 | 699 | (3.0+ | 1.9+) | 2003 01 05 | 704 | 0.9− | 0.5+ | 2005 06 04 | 704 | 0.5+ | 1.6+ |
| 2001 09 07 | 699 | 0.3+ | 0.0 | 2003 01 07 | 704 | 0.1+ | 0.5− | 2005 06 04 | 704 | (2.9+ | 0.4+) |
| 2001 09 18 | 699 | 0.5+ | 1.4+ | 2003 01 07 | 704 | 0.4− | 0.4− | 2005 06 04 | 704 | 0.6+ | 0.0 |
| 2001 09 18 | 699 | 0.2− | 0.7+ | 2003 01 07 | 704 | 1.5− | 1.5+ | 2005 06 04 | 704 | 0.5− | 0.1− |
| 2001 09 18 | 699 | 0.3− | 0.5+ | 2003 01 09 | 704 | 0.3− | 0.2− | 2005 06 05 | 704 | 0.3+ | 0.4+ |
| 2001 09 18 | 699 | 0.0 | 0.1− | 2003 01 09 | 704 | 0.8− | 0.8+ | 2005 06 05 | 704 | (0.7− | 2.2+) |
| 2001 09 25 | 704 | 0.4− | 1.0+ | 2003 01 09 | 704 | 0.4− | 0.4+ | 2005 06 05 | 704 | (0.9− | 3.0+) |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2003 01 09 | 704 | 0.4− | 0.2− | 2005 06 05 | 704 | 0.3− | 1.3+ |
| 2001 09 25 | 704 | 0.4− | 0.1+ | 2004 02 18 | 201 | 0.2+ | 0.9+ | 2005 06 14 | G96 | 0.5− | 1.0+ |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2004 02 18 | 201 | 0.1− | 0.4+ | 2005 06 14 | G96 | 0.5− | 1.0+ |
| 2001 09 25 | 704 | 0.2− | 0.6+ | 2004 02 18 | 201 | 0.0 | 0.7+ | 2005 06 14 | G96 | 0.5− | 1.0+ |
| 2001 09 25 | 644 | 0.4− | 0.2− | 2004 03 23 | 704 | 0.8+ | 0.0 | 2006 08 21 | 644 | 0.0 | 0.1− |
| 2001 09 25 | 644 | 0.1− | 0.1− | 2004 03 23 | 704 | 1.1+ | 0.4− | 2006 08 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 25 | 644 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.8+ | 2006 08 21 | 644 | 0.2− | 0.2+ |
| 2001 10 11 | 704 | (0.1− | 2.2+) | 2004 03 23 | 704 | 0.8+ | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.1− |
| 2001 10 11 | 704 | 1.0− | 1.7+ | 2004 03 23 | 704 | 0.8+ | 0.5− | 2006 09 18 | 703 | 0.4− | 0.3− |
| 2001 10 11 | 704 | 0.4− | 1.5+ | 2004 03 25 | 704 | 0.3+ | 1.2+ | 2006 09 18 | 703 | 0.1− | 0.5− |
| 2001 10 11 | 704 | 1.2− | 0.9+ | 2004 03 25 | 704 | 1.1+ | 0.0 | 2006 09 18 | 703 | 1.2+ | 0.6− |
| 2001 10 11 | 704 | 0.8− | 1.0+ | 2004 03 25 | 704 | 1.1+ | 0.3+ | 2006 09 21 | 699 | 0.4− | 1.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.0 | 0.2+ | 2004 03 26 | 703 | 0.8− | 0.2− | 2006 09 21 | 699 | 0.2+ | 0.6+ |
| 2001 10 15 | 644 | 0.2+ | 0.1+ | 2004 03 26 | 703 | (1.0− | 3.1+) | 2006 09 21 | 699 | 2.0+ | 1.0+ |
| 2001 10 15 | 644 | 0.1+ | 0.0 | 2004 03 26 | 703 | (0.3− | 2.1+) | 2006 09 21 | 699 | 0.2− | 1.3+ |
| 2001 10 19 | 699 | 0.6+ | 1.1+ | 2004 03 26 | 703 | (3.3− | 0.8+) | 2006 09 26 | 703 | 0.7− | 0.0 |
| 2001 10 19 | 699 | 0.0 | 0.2+ | 2004 04 09 | 644 | 0.3+ | 0.9+ | 2006 09 26 | 703 | 0.5− | 0.4− |
| 2001 10 19 | 699 | 0.1+ | 0.1− | 2004 04 09 | 644 | 0.2+ | 1.1+ | 2006 09 26 | 703 | 0.3− | 1.3− |
| 2001 10 19 | 699 | 0.4− | 0.3− | 2004 04 09 | 644 | 0.2+ | 0.9+ | 2006 09 26 | 703 | 0.1− | 0.5− |
| 2003 01 05 | 704 | 0.2+ | 0.6+ | 2004 06 08 | 926 | 0.5+ | 0.5+ | | | | |

**(140590)∗ 2001 TR$_{231}$**

Discovered 2001 Oct. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.93312 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21347851 | $\omega$ | 231.56145 | | +0.98810219 | +0.15352770 | |
| $a$ | 2.7726812 | $\Omega$ | 119.60541 | | −0.13763507 | +0.90918087 | |
| $e$ | 0.0837083 | $i$ | 0.60148 | | −0.06863413 | +0.38706511 | |
| $P$ | 4.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.6− | 0.2− | 2003 01 11 | 291 | 0.2+ | 0.1− | 2005 07 15 | G96 | 0.3+ | 0.0 |
| 1999 03 10 | 691 | 0.5− | 0.0 | 2003 01 11 | 291 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 1999 03 10 | 691 | 0.2− | 0.2+ | 2003 01 11 | 291 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.4+ | 1.0− |
| 1999 03 18 | 691 | 0.2+ | 0.1− | 2004 04 12 | 691 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.1− |
| 1999 03 18 | 691 | 0.2+ | 0.2− | 2004 04 12 | 691 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.6− | 0.1− |
| 1999 03 18 | 691 | 0.4+ | 0.3+ | 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2004 04 26 | 568 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2001 09 21 | 704 | (2.1− | 0.6+) | 2004 04 26 | 568 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2001 09 21 | 704 | 1.0− | 0.7+ | 2004 04 26 | 568 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.6− | 0.2+ |
| 2001 10 15 | 291 | 0.2+ | 0.3+ | 2004 04 27 | 568 | 0.1+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 10 15 | 291 | 0.3+ | 0.2+ | 2005 07 04 | 691 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2001 10 15 | 291 | 0.4+ | 0.3+ | 2005 07 04 | 691 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 1.0− | 0.3+ | 2005 07 04 | 691 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.5− | 0.0 | 2005 07 15 | G96 | 0.2− | 0.7+ | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.7− | 0.7− | 2005 07 15 | G96 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2005 07 15 | G96 | 0.0 | 0.6+ | | | | |

**(140591)∗ 2001 TL$_{232}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.23047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19259769 | $\omega$ | 294.58703 | | +0.76740607 | −0.61111589 | |
| $a$ | 2.9696277 | $\Omega$ | 103.67462 | | +0.63639274 | +0.68917528 | |
| $e$ | 0.0572360 | $i$ | 11.51539 | | +0.07805257 | +0.38932609 | |
| $P$ | 5.12 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | (0.2− | 1.5+) | 2003 01 09 | 704 | (2.3− | 1.0+) | 2004 04 15 | 704 | 0.7+ | 1.5+ |
| 2001 08 20 | 644 | (0.5+ | 1.6+) | 2003 01 09 | 704 | 1.1− | 1.0+ | 2004 04 15 | 644 | 0.3+ | 0.5+ |
| 2001 08 20 | 644 | 0.1+ | 1.3+ | 2003 01 09 | 704 | 0.4− | 0.9+ | 2004 04 15 | 704 | 0.1− | 1.3+ |
| 2001 10 11 | 704 | 0.6− | 0.3− | 2003 01 09 | 704 | 0.4− | 0.6+ | 2004 04 15 | 644 | 0.3+ | 0.6+ |
| 2001 10 11 | 704 | 0.2− | 0.3− | 2003 01 09 | 704 | 1.1− | 0.1+ | 2004 04 15 | 644 | 0.0 | 0.7+ |
| 2001 10 11 | 704 | 0.2− | 1.2+ | 2003 01 10 | 608 | 0.4+ | 0.0 | 2004 04 23 | 703 | 0.9+ | 1.0− |
| 2001 10 11 | 704 | 0.9− | 0.9+ | 2003 01 10 | 608 | 0.1+ | 0.5− | 2004 04 23 | 703 | 0.3− | 0.1+ |
| 2001 10 15 | 644 | 0.6− | 0.2+ | 2003 01 10 | 608 | 0.5+ | 0.6− | 2004 04 23 | 703 | 0.9+ | 0.9+ |
| 2001 10 15 | 644 | 0.8− | 0.2+ | 2003 02 01 | 704 | 0.5+ | 0.3+ | 2004 04 23 | 703 | 0.7− | 0.1+ |
| 2001 10 15 | 644 | 0.7− | 0.2+ | 2003 02 01 | 704 | 1.0+ | 0.6+ | 2004 04 24 | 704 | (0.3+ | 1.8+) |
| 2001 10 19 | 699 | 0.1+ | 0.3+ | 2003 02 01 | 704 | 0.1+ | 0.4− | 2004 04 24 | 704 | 0.7+ | 0.6+ |
| 2001 10 19 | 699 | 0.3+ | 0.2+ | 2003 02 01 | 704 | 0.4− | 1.1+ | 2004 04 24 | 704 | (1.8+ | 1.5+) |
| 2001 10 19 | 699 | 0.4+ | 0.5+ | 2003 02 03 | 644 | 0.2− | 0.1+ | 2004 04 24 | 704 | 1.3+ | 0.2− |
| 2001 10 19 | 699 | (0.4− | 1.8+) | 2003 02 03 | 644 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 2001 10 28 | 644 | 0.1− | 1.1+ | 2003 02 03 | 644 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.8− | 0.2+ |
| 2001 10 28 | 644 | 0.3+ | 1.0+ | 2003 02 04 | 704 | 0.0 | 0.8− | 2006 09 19 | 703 | 0.0 | 0.5+ |
| 2001 10 28 | 644 | 0.6+ | 1.5+ | 2003 02 04 | 704 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.4− | 0.0 |
| 2001 11 17 | 699 | 1.0− | 1.4+ | 2003 02 04 | 704 | 0.3− | 0.4− | 2006 09 25 | 703 | 1.2− | 0.1+ |
| 2001 11 17 | 699 | 0.7− | 0.2− | 2003 02 04 | 704 | 0.3− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.0 |
| 2001 11 17 | 699 | 0.5− | 0.3+ | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 703 | 0.4− | 0.4+ |
| 2001 11 17 | 699 | 0.5− | 0.6− | 2004 03 15 | 704 | 0.4− | 0.7+ | 2006 09 25 | 703 | 0.2+ | 0.5+ |
| 2001 12 15 | 704 | 0.3− | 0.3+ | 2004 03 15 | 704 | 1.3− | 0.4+ | 2006 10 09 | 644 | 0.3+ | 0.5+ |
| 2001 12 15 | 704 | 0.6+ | 0.2+ | 2004 03 15 | 704 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2001 12 15 | 704 | 0.0 | 0.1+ | 2004 03 21 | 691 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 12 31 | 291 | 0.1+ | 0.4− | 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2002 12 31 | 291 | 0.0 | 0.4− | 2004 03 21 | 691 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 12 31 | 291 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.6+ | 0.5+ | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 0.1+ | 2004 03 23 | 704 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 12 31 | 704 | 0.6+ | 0.6+ | 2004 03 23 | 704 | 0.9+ | 1.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2003 01 05 | 704 | 0.0 | 0.2+ | 2004 04 12 | 703 | 0.6+ | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2004 04 12 | 703 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 0.0 | 2004 04 12 | 703 | 0.4− | 0.4+ | 2006 11 11 | 644 | 0.3− | 1.2+ |
| 2003 01 05 | 704 | 0.5+ | 0.1− | 2004 04 12 | 703 | 0.3− | 0.7+ | 2006 11 11 | 644 | 0.1− | 0.1+ |
| 2003 01 05 | 704 | 0.4+ | 0.1+ | 2004 04 15 | 704 | (0.3+ | 2.8+) | 2006 11 11 | 644 | 0.1− | 0.5+ |

**(140592)∗ 2001 TZ$_{233}$**

Discovered 2001 Oct. 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.16380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20958193 | $\omega$ | 125.51555 | | −0.33284773 | −0.94203387 | |
| $a$ | 2.8069423 | $\Omega$ | 343.76746 | | +0.80884592 | −0.26218590 | |
| $e$ | 0.1210145 | $i$ | 8.69197 | | +0.48474804 | −0.20935792 | |
| $P$ | 4.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.3− | 0.4+ | 2003 01 30 | 699 | 1.0+ | 0.5+ | 2003 03 08 | 704 | 0.3− | 0.4− |
| 1996 09 08 | 691 | 0.6− | 0.3+ | 2003 01 30 | 699 | 0.7+ | 1.4+ | 2003 03 10 | 699 | 0.1− | 0.3+ |
| 1996 09 08 | 691 | 0.3− | 0.5+ | 2003 01 30 | 699 | 0.8+ | 0.4+ | 2003 03 10 | 699 | 1.0+ | 0.6− |
| 2001 09 17 | 704 | 0.2− | 0.2− | 2003 01 30 | 699 | 0.3− | 0.9+ | 2003 03 10 | 699 | (1.6− | 1.8+) |
| 2001 09 17 | 704 | 0.1+ | 0.2− | 2003 02 01 | 704 | 0.7− | 0.6+ | 2003 03 10 | 699 | 0.4+ | 0.1+ |
| 2001 09 17 | 704 | 0.3− | 0.2− | 2003 02 01 | 704 | 1.1− | 1.4− | 2005 07 03 | 644 | 0.5− | 0.3+ |
| 2001 09 27 | 704 | 0.9+ | 0.1+ | 2003 02 01 | 704 | 0.4− | 0.0 | 2005 07 03 | 644 | 0.5− | 0.7+ |
| 2001 09 27 | 704 | 0.7+ | 0.2+ | 2003 02 01 | 704 | 0.5− | 0.5− | 2005 07 03 | 644 | 0.2+ | 0.3+ |
| 2001 09 27 | 704 | 1.1+ | 1.1+ | 2003 02 01 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.7− | 0.3+ |
| 2001 09 27 | 704 | 1.3+ | 0.5− | 2003 02 02 | 644 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.5− |
| 2001 09 28 | 644 | 0.2− | 0.5+ | 2003 02 02 | 644 | 0.0 | 1.0+ | 2006 10 19 | 703 | 0.1− | 0.3− |
| 2001 09 28 | 644 | 0.5− | 0.3+ | 2003 02 02 | 644 | 0.6+ | 0.0 | 2006 10 19 | 703 | 1.0− | 0.0 |
| 2001 09 28 | 644 | 0.4− | 0.4+ | 2003 02 04 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.3+ | 0.5− |
| 2001 10 15 | 608 | 0.5+ | 0.2+ | 2003 02 04 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.6+ | 0.8− |
| 2001 10 15 | 608 | 0.1− | 0.4+ | 2003 02 04 | 704 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.2− |
| 2001 10 15 | 608 | 0.6+ | 0.1+ | 2003 02 04 | 704 | 1.5+ | 0.2+ | 2006 10 27 | 703 | 0.7+ | 1.0− |
| 2001 10 17 | 704 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.8+ | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.2+ | 0.4+ | 2003 03 06 | 704 | 0.3− | 0.6− | 2006 11 15 | 703 | 0.8+ | 0.8+ |
| 2001 10 17 | 704 | 0.2− | 0.6− | 2003 03 06 | 704 | (0.2+ | 1.7−) | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 1.1− | 0.6− | 2003 03 06 | 704 | 0.6− | 0.6− | 2006 11 15 | 703 | 0.4− | 0.3+ |
| 2003 01 05 | 704 | 0.6− | 1.2+ | 2003 03 06 | 704 | 0.0 | 0.2− | 2006 11 17 | 644 | 0.2+ | 0.3− |
| 2003 01 05 | 704 | 0.6+ | 0.3− | 2003 03 08 | 704 | (2.0+ | 0.4−) | 2006 11 17 | 644 | 0.3− | 0.5− |
| 2003 01 05 | 704 | 0.1+ | 1.4+ | 2003 03 08 | 704 | 1.0− | 0.2− | 2006 11 17 | 644 | 0.0 | 0.9− |
| 2003 01 05 | 704 | 0.6+ | 0.7− | 2003 03 08 | 704 | 0.3− | 0.8+ | | | | |

**(140593)∗ 2001 TA$_{235}$**

Discovered 2001 Oct. 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.66557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20985584 | $\omega$ | 182.10437 | | −0.93809635 | −0.34054181 | |
| $a$ | 2.8044994 | $\Omega$ | 337.66218 | | +0.32017533 | −0.78281991 | |
| $e$ | 0.2187856 | $i$ | 9.58681 | | +0.13214759 | −0.52079197 | |
| $P$ | 4.70 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2003 01 13 | 704 | 0.4− | 0.0 | 2003 04 24 | 704 | 0.4+ | 0.3+ |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2003 01 13 | 704 | 0.5− | 0.1− | 2003 04 24 | 699 | 0.4− | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2003 01 31 | 704 | 0.4− | 0.2− | 2003 04 24 | 704 | 0.1+ | 0.1+ |
| 2001 09 28 | 644 | 0.0 | 0.5− | 2003 01 31 | 704 | 0.1− | 0.2+ | 2003 04 24 | 699 | 0.1+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.3+ | 0.6− | 2003 01 31 | 704 | 0.7− | 0.1− | 2005 08 05 | 644 | 0.6− | 0.5+ | |
| 2001 09 28 | 644 | 0.0 | 0.7− | 2003 01 31 | 704 | 0.2− | 0.1− | 2005 08 05 | 644 | 0.6− | 0.5+ | |
| 2001 10 14 | 704 | 0.4− | 0.9+ | 2003 01 31 | 704 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.3− | 0.5+ | |
| 2001 10 14 | 704 | 0.1− | 0.9+ | 2003 02 26 | 704 | 0.4+ | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.5+ | |
| 2001 10 14 | 704 | 0.5+ | 0.1+ | 2003 02 26 | 704 | 1.1+ | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.3+ | |
| 2001 10 14 | 704 | 0.3− | 0.2+ | 2003 02 26 | 704 | 0.3+ | 0.3− | 2005 08 06 | 644 | 0.1− | 0.5+ | |
| 2001 10 14 | 704 | 0.1+ | 0.6+ | 2003 02 26 | 704 | 0.1− | 0.6− | 2005 09 23 | 691 | 0.0 | 0.3+ | |
| 2001 10 15 | 608 | 0.6− | 0.0 | 2003 02 26 | 704 | 1.1+ | 0.7− | 2005 09 23 | 691 | 0.5− | 0.4+ | |
| 2001 10 15 | 608 | 0.5− | 0.2+ | 2003 03 06 | 704 | 0.1− | 0.5+ | 2005 09 23 | 691 | 0.2− | 0.6+ | |
| 2001 10 15 | 608 | 1.1− | 0.0 | 2003 03 06 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.6+ | 0.3− | |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2003 03 06 | 704 | 0.2− | 0.4+ | 2006 09 17 | 703 | 1.2+ | 0.8− | |
| 2001 10 21 | 704 | 0.6+ | 0.1+ | 2003 03 06 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 703 | (0.1− | 1.7+) | |
| 2001 10 21 | 704 | (2.0− | 1.7+) | 2003 03 06 | 704 | 0.6+ | 0.6− | 2006 09 17 | 703 | 0.6+ | 0.8+ | |
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2003 03 07 | 644 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.6+ | 0.5+ | |
| 2002 11 06 | 704 | 0.6+ | 0.1− | 2003 03 07 | 644 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.2− | 1.1− | |
| 2002 11 06 | 704 | 0.0 | 0.3− | 2003 03 07 | 644 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.1− | 1.0− | |
| 2002 11 06 | 704 | 0.3− | 0.4− | 2003 03 07 | 644 | 0.2− | 0.4+ | 2006 09 28 | 703 | 0.2+ | 0.3− | |
| 2002 12 15 | 704 | 0.3− | 0.3+ | 2003 03 07 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.4− | |
| 2002 12 15 | 704 | 0.1− | 0.1+ | 2003 03 07 | 644 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.7− | |
| 2002 12 15 | 704 | 0.3− | 0.5− | 2003 03 26 | 704 | (0.3− | 1.9−) | 2006 10 19 | 703 | (1.8− | 3.4−) | |
| 2002 12 15 | 704 | 0.0 | 0.1+ | 2003 03 26 | 704 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.1− | |
| 2002 12 15 | 704 | 0.3− | 0.4− | 2003 03 26 | 704 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.4+ | |
| 2002 12 31 | 699 | 0.7+ | 0.5+ | 2003 03 26 | 704 | (1.5− | 2.6−) | 2006 10 23 | 644 | 0.1+ | 0.5+ | |
| 2002 12 31 | 699 | 0.2+ | 0.5+ | 2003 03 26 | 704 | 0.9− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.2+ | |
| 2002 12 31 | 699 | 0.3− | 0.4+ | 2003 03 26 | 704 | (0.2− | 3.2−) | 2006 10 27 | 703 | (1.8− | 0.6−) | |
| 2002 12 31 | 699 | 0.4+ | 0.4+ | 2003 03 26 | 704 | 0.9− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.5− | |
| 2003 01 04 | 704 | 0.7+ | 0.5+ | 2003 03 26 | 704 | 0.6− | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.2− | |
| 2003 01 04 | 704 | 0.5+ | 0.4+ | 2003 03 30 | 704 | (0.8− | 2.9−) | 2006 10 27 | 703 | 0.5− | 1.4− | |
| 2003 01 04 | 704 | 0.5+ | 0.0 | 2003 03 30 | 704 | 0.4+ | 0.3− | 2006 11 15 | 703 | 0.7+ | 0.7− | |
| 2003 01 04 | 704 | 1.0+ | 0.6+ | 2003 03 30 | 704 | 0.0 | 1.0+ | 2006 11 15 | 703 | 0.2− | 0.3− | |
| 2003 01 10 | 704 | 0.3+ | 0.4+ | 2003 03 31 | 699 | 0.6− | 0.4− | 2006 11 15 | 703 | 0.0 | 0.1+ | |
| 2003 01 10 | 704 | 0.3+ | 0.2+ | 2003 03 31 | 699 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.6+ | 0.4− | |
| 2003 01 10 | 704 | 0.9+ | 0.6+ | 2003 03 31 | 699 | 0.4− | 0.6+ | 2006 11 22 | 703 | 1.1+ | 2.1− | |
| 2003 01 10 | 704 | 0.2+ | 0.5+ | 2003 03 31 | 699 | 0.1+ | 1.0+ | 2006 11 22 | 703 | 0.5− | 0.2− | |
| 2003 01 10 | 704 | 0.6+ | 0.5+ | 2003 04 24 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.2+ | |
| 2003 01 13 | 704 | 0.4− | 1.2− | 2003 04 24 | 699 | 0.5− | 0.2+ | 2006 11 22 | 703 | 1.1− | 1.6+ | |
| 2003 01 13 | 704 | 0.2− | 0.1− | 2003 04 24 | 704 | 0.3− | 0.7− | | | | | |
| 2003 01 13 | 704 | (1.8− | 0.8+) | 2003 04 24 | 699 | 0.3− | 0.1+ | | | | | |

**(140594)∗ 2001 TC$_{236}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.33706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18221476 | $\omega$ | 279.45092 | | +0.49989258 | −0.86012643 | |
| $a$ | 3.0813925 | $\Omega$ | 140.02884 | | +0.84362205 | +0.45707123 | |
| $e$ | 0.1062386 | $i$ | 9.08539 | | +0.19598276 | +0.22642528 | |
| $P$ | 5.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | (0.9+ | 2.1+) | 2003 02 02 | 644 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.5− | 0.9+ | |
| 2001 10 15 | 644 | (0.8+ | 2.3+) | 2003 02 02 | 644 | 0.6+ | 0.1− | 2006 08 29 | 691 | 0.1− | 0.8+ | |
| 2001 10 15 | 644 | (0.9+ | 2.1+) | 2003 02 02 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.8+ | |
| 2001 10 16 | 704 | 0.5+ | 0.2− | 2003 02 02 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 1.1− | 0.5+ | |
| 2001 10 16 | 704 | 0.2− | 0.6+ | 2003 02 02 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | (2.1− | 1.1−) | |
| 2001 10 16 | 704 | 0.1− | 0.3+ | 2003 02 02 | 644 | 0.9+ | 0.2+ | 2006 09 14 | 703 | 1.2− | 0.1− | |
| 2001 10 16 | 704 | (0.3+ | 1.7+) | 2003 02 03 | 291 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.6− | 1.4+ | |
| 2001 11 04 | 209 | 0.1+ | 0.1+ | 2003 02 03 | 291 | 1.3− | 0.2− | 2006 09 18 | 703 | 0.6− | 0.1+ | |
| 2001 11 04 | 209 | 0.4+ | 0.0 | 2003 02 03 | 291 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.5+ | 0.0 | |
| 2001 11 04 | 209 | 0.1+ | 0.1− | 2003 02 03 | 704 | 0.7+ | 0.6− | 2006 09 18 | 703 | 0.5+ | 1.0+ | |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 02 03 | 704 | 0.5+ | 0.0 | 2006 09 18 | 703 | 1.0+ | 1.0− | |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 02 03 | 704 | 0.3+ | 0.4+ | 2006 10 02 | 703 | 0.7+ | 0.2+ | |
| 2001 11 20 | 699 | 0.3− | 0.3− | 2003 02 03 | 704 | 0.4+ | 1.1− | 2006 10 02 | 703 | 1.2− | 0.0 | |
| 2001 11 20 | 699 | 0.2− | 1.5− | 2003 02 04 | 291 | 0.2+ | 0.5+ | 2006 10 02 | 703 | 0.7+ | 0.3− | |
| 2001 11 20 | 699 | 0.3− | 0.2+ | 2003 02 04 | 291 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.5+ | 0.2+ | |
| 2001 11 20 | 699 | 0.1− | 0.9+ | 2003 02 04 | 291 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.5+ | |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2003 02 06 | 291 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.3+ | 0.5− | |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2003 02 06 | 291 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.1− | |
| 2001 12 07 | 704 | 0.3+ | 0.7+ | 2003 02 06 | 291 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.4− | 0.1+ | |
| 2001 12 07 | 704 | (1.7+ | 2.5+) | 2003 02 09 | 608 | 0.9+ | 0.8− | 2006 10 23 | 644 | 0.0 | 0.5+ | |
| 2001 12 07 | 704 | 0.7+ | 0.3+ | 2003 02 09 | 608 | 0.4+ | 0.7− | 2006 10 23 | 644 | 0.3− | 0.3+ | |
| 2001 12 07 | 704 | 0.1− | 0.1− | 2003 02 09 | 608 | 0.0 | 0.7− | 2006 10 23 | 644 | 0.1− | 0.5+ | |
| 2003 01 27 | 704 | (1.1− | 3.2+) | 2003 02 21 | 644 | 0.7+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.2+ | |
| 2003 01 27 | 704 | 0.9− | 1.5+ | 2003 02 21 | 644 | 0.5+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.2+ | |
| 2003 01 27 | 704 | 0.4− | 0.9+ | 2003 02 21 | 644 | 0.4+ | 0.6− | 2006 10 24 | 644 | 0.2− | 0.3+ | |
| 2003 01 28 | 704 | 1.5+ | 0.4+ | 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.6+ | |
| 2003 01 28 | 704 | 0.3− | 0.7+ | 2004 04 20 | 691 | 0.3+ | 0.3+ | 2006 10 24 | 644 | 0.2− | 0.2+ | |
| 2003 01 28 | 704 | 0.2− | 0.5+ | 2004 04 20 | 691 | 0.2− | 0.4+ | 2006 10 24 | 644 | 0.3+ | 0.4+ | |

**(140595)∗ 2001 TE$_{236}$ = 2001 SJ$_{315}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Id. G. V. Williams (d, *MPO* 43103)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.12326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18098534 | $\omega$ | 219.95357 | | +0.88726473 | −0.45931527 | |
| $a$ | 3.0953311 | $\Omega$ | 167.18805 | | +0.45673554 | +0.86203635 | |
| $e$ | 0.1702671 | $i$ | 11.00137 | | +0.06445105 | +0.21429608 | |
| $P$ | 5.45 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.5− | 0.6− | 2001 11 04 | 209 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.4− | 0.5+ | |
| 1993 03 25 | 691 | 0.1− | 0.8− | 2001 11 04 | 209 | 0.5+ | 0.3+ | 2006 09 01 | 704 | 0.0 | 1.3− | |
| 1993 03 25 | 691 | 0.1+ | 0.6− | 2001 11 11 | 645 | 0.0 | 0.1− | 2006 09 01 | 704 | 0.0 | 0.4− | |
| 2001 09 16 | 704 | 0.8− | 0.1+ | 2001 11 11 | 645 | 0.0 | 0.1− | 2006 09 01 | 704 | 0.4− | 0.4− | |
| 2001 09 16 | 704 | 0.9− | 0.2− | 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 01 | 704 | 0.1− | 0.3+ | |
| 2001 09 16 | 704 | 0.2− | 0.0 | 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 01 | 704 | 0.1− | 0.6− | |
| 2001 09 17 | 699 | 0.0 | 0.2− | 2001 11 18 | 704 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.2+ | |
| 2001 09 17 | 699 | 0.6− | 0.3− | 2001 11 18 | 704 | 0.3+ | 0.7− | 2006 09 14 | 703 | 0.5− | 0.0 | |
| 2001 09 17 | 699 | 0.7− | 0.8− | 2001 11 18 | 704 | 0.9− | 0.0 | 2006 09 14 | 703 | 0.9− | 0.5+ | |
| 2001 09 17 | 699 | 0.2− | 0.5+ | 2001 11 18 | 608 | 1.0− | 0.6− | 2006 09 14 | 703 | 0.2− | 0.4+ | |
| 2001 09 25 | 704 | 0.6− | 0.6− | 2001 11 18 | 608 | 0.8− | 1.0− | 2006 09 17 | 704 | 0.4− | 0.4+ | |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2001 11 18 | 608 | 1.1− | 0.7− | 2006 09 17 | 704 | 0.1− | 0.6+ | |
| 2001 09 25 | 704 | 0.3− | 0.3− | 2001 12 07 | 704 | 0.7− | 0.2+ | 2006 09 17 | 704 | 0.7− | 0.4− | |
| 2001 09 25 | 704 | 0.6+ | 0.4− | 2001 12 07 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 704 | 0.6− | 0.2− | |
| 2001 09 26 | 704 | 1.5+ | 0.7+ | 2001 12 07 | 704 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.6− | 0.3+ | |
| 2001 09 26 | 704 | 0.3+ | 0.1+ | 2003 02 09 | 608 | 0.1− | 0.8+ | 2006 09 20 | 704 | 1.0− | 0.0 | |
| 2001 09 26 | 704 | 0.4− | 0.4+ | 2003 02 09 | 608 | 0.1− | 0.7+ | 2006 09 20 | 704 | 0.0 | 0.2+ | |
| 2001 09 26 | 704 | 1.0+ | 0.8+ | 2003 02 09 | 608 | 0.0 | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.2− | |
| 2001 09 26 | 704 | 0.1+ | 0.2− | 2003 02 19 | 644 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.2− | 0.2− | |
| 2001 09 26 | 704 | 0.1− | 0.1+ | 2003 02 19 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.1− | |
| 2001 09 26 | 704 | (1.9+ | 1.4+) | 2003 02 19 | 644 | 0.4+ | 0.6+ | 2006 09 20 | 644 | 0.1+ | 0.0 | |
| 2001 09 26 | 704 | 0.1+ | 0.2+ | 2003 02 22 | 644 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | |
| 2001 09 26 | 704 | 0.8− | 0.2+ | 2003 02 22 | 644 | 0.1− | 0.8+ | 2006 09 25 | 699 | 0.3− | 0.2+ | |
| 2001 09 26 | 704 | (1.9+ | 0.7+) | 2003 02 22 | 644 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.2− | 0.5− | |
| 2001 09 26 | 704 | 0.9+ | 0.6− | 2005 07 11 | 691 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.0 | |
| 2001 09 26 | 704 | 0.2− | 0.6− | 2005 07 11 | 691 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.5− | 0.4+ | |
| 2001 09 26 | 704 | 0.1− | 0.3+ | 2005 07 11 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | |
| 2001 09 26 | 704 | 0.8− | 0.4− | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.3− | |
| 2001 09 27 | 704 | 1.2+ | 0.3− | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | |
| 2001 09 27 | 704 | 1.4+ | 0.3− | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2− | |
| 2001 09 27 | 704 | 0.4+ | 0.4+ | 2006 08 19 | A50 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.3− | |
| 2001 09 27 | 704 | 1.4+ | 1.0− | 2006 08 19 | A50 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.2+ | 1.0− | |
| 2001 09 27 | 704 | 0.5+ | 0.5− | 2006 08 21 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.2+ | |
| 2001 10 14 | 699 | (2.5− | 0.9+) | 2006 08 21 | 704 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.2− | 0.1− | |
| 2001 10 14 | 699 | 0.9− | 0.0 | 2006 08 21 | 704 | 0.7+ | 0.5− | 2006 09 27 | 704 | 0.1+ | 0.6+ | |
| 2001 10 14 | 699 | 0.4+ | 0.4+ | 2006 08 21 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 1.1+ | |
| 2001 10 14 | 699 | 0.1− | 0.9+ | 2006 08 21 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.2+ | |
| 2001 10 15 | 644 | 0.4− | 1.1+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.6+ | |
| 2001 10 15 | 644 | 0.0 | 1.1+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.9+ | 0.5+ | |
| 2001 10 15 | 644 | 0.1− | 1.1+ | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.0 | |
| 2001 10 16 | 704 | 0.2− | 1.0+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.1− | |
| 2001 10 16 | 704 | 0.6− | 0.3+ | 2006 08 27 | 699 | 0.3+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1− | |
| 2001 10 16 | 704 | 0.4+ | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 695 | 0.0 | 0.1+ | |
| 2001 10 16 | 704 | 0.3+ | 0.3− | 2006 08 27 | 691 | 0.5+ | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.0 | |
| 2001 10 16 | 704 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 10 20 | 695 | 0.1− | 0.1− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.3+ | 1.2+ | 2006 08 27 | 699 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2001 10 23 | 644 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2001 10 23 | 644 | 0.2+ | 1.3+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2001 11 04 | 209 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.6− |

**(140596)∗ 2001 TO$_{236}$**

Discovered 2001 Oct. 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.65483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17854374 | $\omega$ | 351.57026 | | +0.13727292 | −0.93340466 | |
| $a$ | 3.1234865 | $\Omega$ | 90.05982 | | +0.92703432 | +0.00315543 | |
| $e$ | 0.1390268 | $i$ | 19.36165 | | +0.34894630 | +0.35881162 | |
| $P$ | 5.52 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.0 | 0.1+ | 2002 12 05 | 704 | 0.5+ | 0.8+ | 2004 03 29 | 704 | 0.7+ | 1.7+ |
| 2001 08 19 | 704 | 1.1− | 0.4+ | 2002 12 05 | 704 | 0.3− | 0.4+ | 2004 04 15 | 704 | 0.2− | 0.9+ |
| 2001 08 19 | 704 | 0.1+ | 1.3+ | 2002 12 05 | 704 | 0.1− | 1.0+ | 2004 04 15 | 704 | 0.4− | 1.4+ |
| 2001 09 11 | 704 | 1.7− | 0.9+ | 2002 12 14 | 704 | 0.3+ | 0.3− | 2004 04 15 | 704 | 1.0− | 0.2− |
| 2001 09 11 | 704 | 0.8− | 1.3+ | 2002 12 14 | 704 | 0.6+ | 0.7− | 2004 04 23 | 608 | 0.3+ | 0.4+ |
| 2001 09 11 | 704 | 0.0 | 0.2+ | 2002 12 14 | 704 | 0.8+ | 0.5− | 2004 04 23 | 608 | 0.1− | 0.0 |
| 2001 09 23 | 644 | 0.8− | 0.1+ | 2002 12 14 | 704 | 0.1− | 0.4− | 2004 04 23 | 608 | 0.6+ | 0.8+ |
| 2001 09 23 | 644 | 0.7− | 0.5− | 2002 12 14 | 704 | 1.8+ | 1.8− | 2004 04 26 | 704 | 0.1+ | 0.8+ |
| 2001 09 23 | 644 | 0.4− | 0.0 | 2002 12 31 | 699 | 0.8+ | 0.1+ | 2004 04 26 | 704 | 0.4+ | 0.8+ |
| 2001 09 25 | 699 | 0.1− | 0.0 | 2002 12 31 | 699 | 0.0 | 0.6+ | 2004 04 26 | 704 | 0.1+ | 0.9+ |
| 2001 09 25 | 699 | 0.2− | 0.3− | 2002 12 31 | 699 | 0.0 | 0.2+ | 2004 04 26 | 704 | 0.4+ | 0.6+ |
| 2001 09 25 | 699 | 0.4+ | 0.2+ | 2002 12 31 | 699 | 0.0 | 0.1+ | 2004 04 26 | 704 | 0.0 | 1.2+ |
| 2001 09 25 | 699 | 0.4+ | 0.5− | 2002 12 31 | 645 | 0.0 | 0.2− | 2004 05 13 | 704 | 0.7+ | 1.6+ |
| 2001 10 15 | 608 | 0.7+ | 1.4+ | 2002 12 31 | 645 | 0.0 | 0.2− | 2004 05 13 | 704 | 0.6− | 0.5+ |
| 2001 10 15 | 608 | 1.2+ | 1.4+ | 2003 01 07 | 704 | 0.0 | 0.6+ | 2004 05 13 | 704 | 0.5− | 0.3+ |
| 2001 10 15 | 608 | 1.0+ | 1.4+ | 2003 01 07 | 704 | 0.4− | 0.5+ | 2004 05 13 | 704 | 0.6+ | 0.1+ |
| 2001 10 18 | 699 | 0.1+ | 0.4+ | 2003 01 07 | 704 | 0.1− | 0.1+ | 2004 05 13 | 704 | 0.7+ | 0.6− |
| 2001 10 18 | 699 | 0.6+ | 0.2− | 2003 01 07 | 704 | 0.4− | 0.4+ | 2004 05 21 | 703 | 0.9+ | 0.0 |
| 2001 10 18 | 699 | 1.3− | 0.5− | 2003 01 07 | 704 | 0.6− | 0.4+ | 2004 05 21 | 703 | (0.7+ | 2.1+) |
| 2001 10 18 | 699 | 1.0− | 0.7+ | 2003 01 10 | 704 | 0.3− | 0.4+ | 2004 05 21 | 703 | 1.2+ | 0.8+ |
| 2001 11 06 | 644 | 0.6− | 1.1+ | 2003 01 10 | 704 | 0.4− | 0.8+ | 2004 05 21 | 703 | 1.6+ | 1.0+ |
| 2001 11 06 | 644 | 0.4− | 1.1+ | 2003 01 10 | 704 | 0.6− | 0.4+ | 2006 07 29 | E12 | 0.6+ | 0.6+ |
| 2001 11 06 | 644 | 0.5− | 1.2+ | 2003 01 10 | 704 | 0.2− | 0.8+ | 2006 07 29 | E12 | 0.3− | 0.3+ |
| 2001 12 04 | 704 | 0.3− | 0.5− | 2003 01 10 | 704 | 0.8− | 1.9+ | 2006 07 29 | E12 | 0.3+ | 0.4+ |
| 2001 12 04 | 704 | 0.2− | 0.0 | 2003 01 13 | 704 | 0.1− | 0.0 | 2006 07 29 | E12 | 0.1− | 0.6+ |
| 2001 12 04 | 704 | 0.0 | 0.4− | 2003 01 13 | 704 | 0.2+ | 0.1− | 2006 07 29 | E12 | 0.1− | 0.1− |
| 2002 01 14 | 699 | 0.6− | 1.2+ | 2003 01 13 | 704 | 0.1+ | 0.1− | 2006 07 29 | E12 | 0.3+ | 0.5− |
| 2002 01 14 | 699 | 1.2− | 0.2+ | 2003 01 13 | 704 | 0.1− | 0.2+ | 2006 07 29 | E12 | 0.5− | 0.7+ |
| 2002 01 14 | 699 | 1.2− | 0.8+ | 2003 01 13 | 704 | 0.1− | 0.1− | 2006 08 13 | E12 | 0.4− | 0.3− |
| 2002 01 14 | 699 | 0.5− | 0.3+ | 2003 01 31 | 699 | 0.0 | 1.1+ | 2006 08 13 | E12 | 0.3+ | 1.0+ |
| 2002 11 12 | 704 | 0.3− | 1.7+ | 2003 01 31 | 699 | 0.1+ | 0.4+ | 2006 08 13 | E12 | 0.8− | 0.1+ |
| 2002 11 12 | 704 | 0.9+ | 1.1+ | 2003 01 31 | 699 | 0.4+ | 0.5+ | 2006 08 13 | E12 | 0.6+ | 0.2+ |
| 2002 11 12 | 704 | (0.4+ | 2.2+) | 2003 01 31 | 699 | 0.4− | 0.7+ | 2006 09 12 | E12 | 0.1+ | 0.2+ |
| 2002 11 12 | 704 | 0.1+ | 0.9+ | 2003 02 02 | 704 | 0.5− | 0.3+ | 2006 09 12 | E12 | 0.2− | 0.5+ |
| 2002 11 12 | 704 | 0.6− | 1.3+ | 2003 02 02 | 704 | 0.6− | 0.1+ | 2006 09 12 | E12 | 0.1− | 0.4− |
| 2002 11 16 | 699 | 0.3+ | 0.4− | 2003 02 02 | 704 | 0.2− | 0.1− | 2006 09 12 | E12 | 0.9− | 0.5+ |
| 2002 11 16 | 699 | 0.1− | 0.4+ | 2003 02 02 | 704 | 0.8− | 0.5− | 2006 09 23 | E12 | 0.2− | 0.2− |
| 2002 11 16 | 699 | 1.2+ | 0.2− | 2003 02 06 | 699 | 0.1+ | 0.0 | 2006 09 23 | E12 | 0.1+ | 0.0 |
| 2002 11 16 | 699 | 1.4+ | 0.2− | 2003 02 06 | 699 | 0.0 | 0.3+ | 2006 09 23 | E12 | 0.8+ | 0.6+ |
| 2002 12 02 | 704 | 0.4+ | 0.1+ | 2003 02 06 | 699 | 0.0 | 0.2+ | 2006 09 23 | E12 | 0.2+ | 0.7+ |
| 2002 12 02 | 704 | 0.3+ | 0.6+ | 2003 02 06 | 699 | 0.1− | 0.5+ | 2006 09 28 | E12 | 0.2− | 0.1− |
| 2002 12 02 | 704 | 0.4+ | 0.3+ | 2004 03 29 | 704 | 0.6+ | 0.4+ | 2006 09 28 | E12 | 0.1− | 0.1+ |
| 2002 12 02 | 704 | 0.9+ | 0.1+ | 2004 03 29 | 704 | 0.7+ | 1.2+ | 2006 09 28 | E12 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2004 03 29 | 704 | 0.8+ | 1.1+ | 2006 09 28 | E12 | 0.6− | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.4+ | 2004 03 29 | 704 | (1.0+ | 2.7+) | | | | |

**(140597)∗ 2001 TZ$_{237}$ = 2003 AQ$_{68}$**

Discovered 2001 Oct. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 40809)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.25695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23508802 | $\omega$ | 123.58080 | | +0.11589024 | −0.98168537 | |
| $a$ | 2.6000541 | $\Omega$ | 318.91611 | | +0.81791907 | +0.18069034 | |
| $e$ | 0.1567882 | $i$ | 13.30232 | | +0.56354045 | −0.06037246 | |
| $P$ | 4.19 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 608 | 0.5− | 1.4+ | 2003 02 03 | 683 | (1.5− | 1.9+) | 2005 06 17 | G96 | 0.1− | 0.4+ |
| 2001 08 20 | 608 | 1.2− | 1.4+ | 2003 02 03 | 683 | 0.7− | 1.4+ | 2005 06 17 | G96 | 0.6− | 0.5+ |
| 2001 08 20 | 608 | 0.8− | 0.6+ | 2003 02 03 | 683 | 0.7− | 1.4+ | 2005 06 17 | G96 | 0.1− | 0.2+ |
| 2001 09 10 | 704 | 0.7− | 0.1+ | 2003 02 03 | 699 | 0.4+ | 0.3+ | 2005 06 17 | G96 | 0.1− | 0.3+ |
| 2001 09 10 | 704 | 0.4− | 0.0 | 2003 02 03 | 699 | 1.1+ | 0.6+ | 2005 06 18 | G96 | 0.1+ | 0.2+ |
| 2001 09 10 | 704 | 0.5− | 0.2+ | 2003 02 03 | 699 | 0.7+ | 1.0+ | 2005 06 18 | G96 | 0.6− | 0.5+ |
| 2001 09 10 | 704 | 0.2+ | 0.2− | 2003 02 03 | 699 | 0.8+ | 0.7+ | 2005 06 18 | G96 | 0.3− | 0.3+ |
| 2001 09 10 | 704 | 0.6− | 0.3+ | 2003 02 07 | 683 | (3.2+ | 0.3−) | 2005 06 18 | G96 | 0.5− | 0.3+ |
| 2001 09 25 | 704 | 0.8+ | 1.1+ | 2003 02 07 | 683 | 0.6− | 0.2− | 2005 07 30 | 644 | 0.3− | 0.4+ |
| 2001 09 25 | 704 | 1.0+ | 0.3− | 2003 02 07 | 683 | 0.3− | 0.3− | 2005 07 30 | 644 | 0.3− | 0.9+ |
| 2001 09 25 | 704 | 0.9+ | 0.5+ | 2003 02 22 | 333 | 0.6− | 0.2− | 2005 07 30 | 644 | 0.7− | 0.1+ |
| 2001 09 25 | 704 | 1.2+ | 0.9− | 2003 02 22 | 333 | 1.3− | 0.0 | 2005 08 01 | 599 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 1.4+ | 0.3− | 2003 02 22 | 333 | 0.3− | 0.0 | 2005 08 02 | 599 | 0.3− | 0.4+ |
| 2001 10 13 | 644 | 0.2+ | 1.0− | 2003 02 22 | 683 | (2.9− | 0.5+) | 2005 08 02 | 599 | 0.6− | 0.5+ |
| 2001 10 13 | 644 | 0.1+ | 1.1− | 2003 02 22 | 683 | 0.8− | 0.6+ | 2005 08 02 | 599 | 0.5− | 0.4+ |
| 2001 10 13 | 644 | 0.3+ | 0.9− | 2003 02 22 | 683 | (3.0− | 0.0 ) | 2005 08 06 | 644 | 0.4− | 0.7+ |
| 2001 10 17 | 704 | 0.3− | 0.5− | 2003 02 23 | 683 | (4.0− | 4.3+) | 2005 08 06 | 644 | 0.3− | 0.5+ |
| 2001 10 17 | 704 | 0.6− | 0.0 | 2003 02 23 | 683 | 0.4+ | 0.9+ | 2005 08 06 | 644 | 0.4− | 0.4+ |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2003 02 23 | 683 | 0.6− | 0.4+ | 2005 08 16 | E12 | 0.5− | 0.0 |
| 2001 10 17 | 704 | 0.7− | 0.1− | 2003 02 23 | 699 | 0.0 | 0.3+ | 2005 08 16 | E12 | (0.6− | 1.7+) |
| 2001 10 17 | 704 | 0.8− | 0.4+ | 2003 02 23 | 699 | 0.1+ | 0.8− | 2005 08 16 | E12 | 0.9− | 0.2+ |
| 2001 10 23 | 699 | 1.1− | 0.4+ | 2003 02 23 | 699 | 0.4+ | 0.2+ | 2005 08 16 | E12 | 0.0 | 0.0 |
| 2001 10 23 | 699 | 1.0+ | 0.1+ | 2003 02 23 | 699 | 0.5− | 0.3− | 2005 08 23 | 608 | 0.3− | 0.8− |
| 2001 10 23 | 699 | 0.3− | 0.1+ | 2003 03 06 | 699 | 0.0 | 0.6+ | 2005 08 23 | 608 | 0.2+ | 1.0− |
| 2001 10 23 | 699 | 0.3+ | 0.8+ | 2003 03 06 | 683 | (1.7+ | 1.1+) | 2005 08 23 | 608 | 0.2− | 0.4− |
| 2001 12 11 | 704 | 0.5− | 0.2− | 2003 03 06 | 699 | 0.2+ | 0.2+ | 2005 08 27 | 699 | 0.5− | 0.2+ |
| 2001 12 11 | 704 | 1.3− | 1.0+ | 2003 03 06 | 683 | 0.4+ | 0.5+ | 2005 08 27 | 699 | 0.3− | 0.9+ |
| 2001 12 11 | 704 | (1.9− | 0.3+) | 2003 03 06 | 683 | (1.8+ | 0.7+) | 2005 08 27 | 699 | 0.3− | 0.6+ |
| 2001 12 11 | 704 | 0.9− | 0.6+ | 2003 03 06 | 699 | 0.0 | 0.6+ | 2005 08 27 | 699 | 0.4− | 0.5+ |
| 2001 12 11 | 704 | 0.4− | 0.2+ | 2003 03 06 | 699 | 0.3− | 0.2+ | 2005 09 06 | 704 | 0.1− | 0.4+ |
| 2002 12 07 | 645 | 0.2− | 0.1− | 2003 03 07 | 683 | 0.4− | 0.7+ | 2005 09 06 | 704 | 0.1− | 0.5+ |
| 2002 12 07 | 645 | 0.2− | 0.1− | 2003 03 07 | 704 | 0.1+ | 0.0 | 2005 09 06 | 704 | 0.2+ | 0.5+ |
| 2003 01 04 | 704 | 1.1+ | 0.4+ | 2003 03 07 | 704 | 0.5+ | 1.2+ | 2005 09 11 | 699 | 0.6+ | 0.3+ |
| 2003 01 04 | 704 | 0.3+ | 0.2+ | 2003 03 07 | 704 | 0.3+ | 1.1+ | 2005 09 11 | 699 | 0.9− | 1.2+ |
| 2003 01 04 | 704 | 1.0+ | 0.0 | 2003 03 07 | 683 | 1.2− | 0.0 | 2005 09 11 | 699 | 0.1− | 0.9+ |
| 2003 01 04 | 704 | 0.4+ | 0.0 | 2003 03 07 | 704 | 0.1+ | 0.3− | 2005 09 11 | 699 | 0.1+ | 0.2+ |
| 2003 01 04 | 704 | 0.6+ | 0.4+ | 2003 03 07 | 704 | 0.0 | 1.3+ | 2005 09 23 | 691 | 0.5− | 0.6+ |
| 2003 01 08 | 704 | 1.0+ | 0.1+ | 2003 03 07 | 683 | 0.7− | 0.2+ | 2005 09 23 | 691 | 0.3− | 0.5+ |
| 2003 01 08 | 704 | 0.4+ | 0.1− | 2003 03 07 | 704 | 0.3+ | 0.2+ | 2005 09 23 | 691 | 0.1− | 1.1+ |
| 2003 01 08 | 704 | 0.4+ | 0.9− | 2003 03 07 | 704 | 0.1+ | 0.3+ | 2005 09 24 | 703 | 0.2+ | 0.4+ |
| 2003 01 08 | 704 | 1.1+ | 0.2− | 2003 03 07 | 704 | 0.2+ | 1.2+ | 2005 09 24 | 703 | 0.1+ | 1.1+ |
| 2003 01 08 | 704 | 0.7+ | 1.1− | 2003 03 07 | 704 | 0.1+ | 0.3+ | 2005 09 24 | 703 | 0.2+ | 0.1+ |
| 2003 01 10 | 704 | 0.1+ | 0.5+ | 2003 03 07 | 704 | 0.2− | 0.1+ | 2005 09 24 | 703 | 0.6+ | 0.4+ |
| 2003 01 10 | 704 | 0.1− | 0.2+ | 2003 03 07 | 704 | (0.2+ | 2.4+) | 2005 09 30 | 703 | 0.5− | 0.4+ |
| 2003 01 10 | 704 | 0.4+ | 0.3+ | 2003 03 07 | 704 | 0.0 | 0.1+ | 2005 09 30 | 703 | (1.4− | 1.5+) |
| 2003 01 14 | 608 | 1.2+ | 0.1+ | 2003 03 07 | 704 | 0.5+ | 0.5− | 2005 09 30 | 703 | 1.3− | 0.6− |
| 2003 01 14 | 608 | 1.0+ | 0.1+ | 2003 03 07 | 704 | 0.2+ | 0.6+ | 2005 09 30 | 703 | (1.7− | 0.5+) |
| 2003 01 14 | 608 | 1.4+ | 0.4+ | 2003 03 07 | 704 | 0.1+ | 0.1− | 2005 09 30 | 699 | 0.3− | 0.7+ |
| 2003 01 26 | 699 | 0.4+ | 0.3− | 2003 03 09 | 704 | 0.7+ | 0.8+ | 2005 09 30 | 699 | 1.0− | 0.4+ |
| 2003 01 26 | 699 | 1.0+ | 0.5− | 2003 03 09 | 704 | 0.4+ | 1.2+ | 2005 09 30 | 699 | 0.2− | 0.5+ |
| 2003 01 26 | 699 | 0.5+ | 0.1+ | 2003 03 09 | 704 | 0.5+ | 0.1− | 2005 09 30 | 699 | 0.0 | 0.6+ |
| 2003 01 26 | 699 | (1.0− | 2.5−) | 2003 03 09 | 704 | 0.4+ | 0.7+ | 2005 12 02 | 703 | (0.8− | 3.2+) |
| 2003 01 28 | 683 | 0.9+ | 0.8+ | 2003 03 09 | 704 | 0.1+ | 0.4+ | 2005 12 02 | 703 | 0.4− | 0.4− |
| 2003 01 28 | 683 | 1.3+ | 0.3+ | 2003 03 11 | 683 | 0.6+ | 1.2+ | 2005 12 02 | 703 | 0.7+ | 0.0 |
| 2003 01 28 | 683 | 0.3+ | 0.1− | 2003 03 11 | 683 | 0.6− | 0.1− | 2005 12 02 | 703 | (0.4− | 1.6+) |
| 2003 01 28 | 704 | 0.7+ | 1.1+ | 2003 03 11 | 683 | 0.0 | 1.2+ | 2006 10 21 | 703 | 1.2− | 0.3− |
| 2003 01 28 | 704 | 0.0 | 0.3+ | 2003 03 13 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2003 01 28 | 704 | 0.4+ | 0.7+ | 2003 03 13 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 1.2− |
| 2003 01 28 | 704 | 0.5+ | 0.6+ | 2003 03 13 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 704 | 0.1− | 0.6+ | 2003 03 23 | 683 | (0.1− | 1.8+) | 2006 10 28 | 703 | 0.3− | 1.1− |
| 2003 01 29 | 683 | 1.4+ | 0.3+ | 2003 03 23 | 683 | 0.1− | 0.0 | 2006 10 28 | 703 | (2.0+ | 1.4−) |
| 2003 01 29 | 683 | 0.2+ | 0.3− | 2003 03 23 | 683 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.1− | 1.0− |
| 2003 01 29 | 683 | 1.2+ | 0.0 | 2003 03 24 | 683 | 0.9+ | 1.0+ | 2006 11 15 | 703 | 0.7− | 0.4− |
| 2003 01 30 | 683 | 1.2− | 1.0− | 2003 03 24 | 683 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 1.1− | 0.3+ |
| 2003 01 30 | 683 | 0.1+ | 0.3− | 2003 03 24 | 683 | 0.4+ | 0.3− | 2006 11 15 | 703 | 1.0− | 0.6+ |
| 2003 01 30 | 683 | 1.0− | 0.5− | 2003 03 26 | 683 | (1.0+ | 2.3+) | 2006 11 15 | 703 | 0.6− | 0.7− |
| 2003 01 31 | 683 | 0.5− | 0.3+ | 2003 03 26 | 683 | 1.3+ | 0.3+ | 2006 11 23 | 703 | 0.3+ | 0.1+ |
| 2003 01 31 | 683 | 0.3− | 0.2− | 2003 03 26 | 683 | 1.1+ | 0.0 | 2006 11 23 | 703 | 0.2+ | 0.3− |
| 2003 01 31 | 683 | 0.4− | 0.4+ | 2003 03 26 | 699 | 0.4+ | 0.6− | 2006 11 23 | 703 | 0.1− | 0.3+ |
| 2003 02 01 | 683 | (0.0 | 1.7+) | 2003 03 26 | 699 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.1− |
| 2003 02 01 | 683 | 0.5+ | 0.6+ | 2003 03 26 | 699 | 0.1− | 0.4− | 2006 12 01 | 704 | 0.5+ | 0.0 |
| 2003 02 01 | 683 | 0.4+ | 0.3+ | 2003 03 26 | 699 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.8+ | 0.9+ |
| 2003 02 02 | 704 | 0.8+ | 0.1− | 2003 03 31 | 704 | 1.3+ | 0.3+ | 2006 12 01 | 704 | 0.8+ | 1.3+ |
| 2003 02 02 | 704 | 0.7+ | 0.8+ | 2003 03 31 | 704 | 1.0+ | 1.3+ | 2006 12 01 | 704 | 0.4+ | 0.2+ |
| 2003 02 02 | 704 | 0.5+ | 0.7+ | 2003 03 31 | 704 | 0.7+ | 0.5+ | 2006 12 01 | 704 | 1.2+ | 0.1− |

**(140598)∗ 2001 TD$_{238}$**

Discovered 2001 Oct. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.35561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23233241 | $\omega$ | 349.46500 | | +0.40022506 | −0.89632319 | |
| $a$ | 2.6205725 | $\Omega$ | 76.72658 | | +0.85441367 | +0.28966265 | |
| $e$ | 0.1897731 | $i$ | 11.30846 | | +0.33135659 | +0.33570864 | |
| $P$ | 4.24 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.5+ | 1.3+ | 2003 01 10 | 704 | 0.7+ | 0.1+ | 2005 08 30 | 699 | 1.2− | 1.3+ |
| 2001 08 19 | 704 | 0.3− | 1.2+ | 2003 01 10 | 704 | 0.3+ | 0.6− | 2005 08 30 | 699 | 0.6+ | 1.0+ |
| 2001 08 19 | 704 | 0.7+ | 0.9+ | 2003 01 10 | 704 | 0.1− | 0.7− | 2005 08 30 | 699 | 1.1− | 1.4− |
| 2001 08 19 | 704 | 0.1+ | 1.0+ | 2003 01 10 | 704 | 0.9+ | 0.3− | 2005 08 30 | 699 | 1.2+ | 0.9− |
| 2001 09 11 | 704 | 0.1+ | 0.0 | 2003 02 26 | 704 | 0.2− | 0.3+ | 2005 09 01 | 644 | 0.3− | 0.8+ |
| 2001 09 11 | 704 | 0.4− | 0.5− | 2003 02 26 | 704 | 0.5+ | 0.3+ | 2005 09 01 | 644 | 0.2− | 0.6+ |
| 2001 09 11 | 704 | 0.1+ | 0.3− | 2003 02 26 | 704 | 0.0 | 0.3+ | 2005 09 01 | 644 | 0.0 | 0.5+ |
| 2001 09 11 | 704 | 0.5− | 0.5− | 2003 03 08 | 699 | 0.0 | 0.4+ | 2005 09 01 | E12 | 0.1+ | 0.2+ |
| 2001 09 11 | 704 | 0.5− | 0.6− | 2003 03 08 | 699 | 0.1+ | 0.8+ | 2005 09 01 | E12 | 0.2− | 0.0 |
| 2001 10 14 | 644 | 0.0 | 0.1− | 2003 03 08 | 699 | 0.2+ | 0.4+ | 2005 09 01 | E12 | 0.1+ | 0.2+ |
| 2001 10 14 | 644 | 0.3− | 0.0 | 2003 03 08 | 699 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.4− | 0.4− |
| 2001 10 14 | 644 | 0.4+ | 0.8+ | 2003 03 08 | 644 | (0.1+ | 1.7+) | 2006 10 03 | G96 | 0.5− | 0.4− |
| 2001 10 15 | 704 | 0.7− | 0.4− | 2003 03 08 | 644 | 0.2+ | 1.4+ | 2006 10 03 | G96 | 1.1− | 1.1+ |
| 2001 10 15 | 704 | 0.1− | 0.6+ | 2003 03 08 | 644 | 0.3+ | 1.5+ | 2006 10 03 | G96 | 0.1− | 0.6− |
| 2001 10 15 | 704 | (0.3+ | 2.4+) | 2003 03 25 | 704 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.9− | 0.7+ |
| 2001 10 15 | 704 | 0.0 | 0.2− | 2003 03 25 | 704 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.4+ |
| 2001 10 18 | 699 | 0.1+ | 0.5− | 2003 03 25 | 704 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.8− | 0.2+ |
| 2001 10 18 | 699 | 0.6− | 0.3− | 2003 04 02 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.7+ | 0.7− |
| 2001 10 18 | 699 | 1.1+ | 0.1− | 2003 04 02 | 644 | 0.1+ | 0.6+ | 2006 11 16 | 704 | 0.9− | 0.1− |
| 2001 10 18 | 699 | 0.4− | 0.1+ | 2003 04 02 | 644 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2001 10 23 | 644 | 0.5− | 0.1+ | 2003 04 08 | 644 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.3− | 0.1+ |
| 2001 10 23 | 644 | 0.5− | 0.3+ | 2003 04 08 | 644 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.4− | 1.1− |
| 2001 10 23 | 644 | 0.6− | 0.2+ | 2003 04 08 | 644 | 0.2− | 0.7+ | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2001 11 07 | 644 | (0.8+ | 2.8+) | 2005 07 03 | 644 | 0.3− | 0.9+ | 2006 11 16 | 704 | 0.9− | 0.9+ |
| 2001 11 07 | 644 | 0.5+ | 0.9+ | 2005 07 03 | 644 | 0.4− | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2001 11 07 | 644 | (0.6+ | 1.6+) | 2005 07 03 | 644 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.8+ | 0.3− |
| 2001 11 17 | 608 | 0.9+ | 0.2− | 2005 08 15 | E12 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.3− | 1.2+ |
| 2001 11 17 | 608 | 0.1+ | 0.0 | 2005 08 15 | E12 | 0.0 | 0.4+ | 2006 11 22 | 704 | 1.2+ | 0.5+ |
| 2001 11 17 | 608 | 0.9+ | 0.3+ | 2005 08 15 | E12 | 0.5− | 0.3− | 2006 11 22 | 704 | 0.8+ | 0.1− |
| 2002 12 31 | 704 | 0.6− | 0.4+ | 2005 08 15 | E12 | 0.6− | 0.2+ | 2006 11 22 | 704 | 1.5+ | 0.3+ |
| 2002 12 31 | 704 | 0.2− | 1.1+ | 2005 08 22 | 644 | 0.3− | 0.8+ | 2006 11 22 | 704 | 1.5+ | 0.5+ |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2005 08 22 | 644 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.8+ | 1.0− |
| 2003 01 10 | 704 | 0.4+ | 0.4− | 2005 08 22 | 644 | 0.1− | 0.4+ | | | | |

**(140599)∗ 2001 TX$_{238}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.73317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18884125 | $\omega$ | 201.44373 | | +0.75930230 | +0.63085494 | |
| $a$ | 3.0088796 | $\Omega$ | 118.43155 | | −0.56752984 | +0.76200013 | |
| $e$ | 0.0355040 | $i$ | 10.45862 | | −0.31838639 | +0.14621162 | |
| $P$ | 5.22 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 21 | 691 | 0.3− | 1.1− | 2004 02 17 | 703 | 1.0+ | 0.7+ | 2005 06 14 | 691 | 0.2− | 0.1− |
| 1993 01 21 | 691 | 0.6− | 0.2− | 2004 02 17 | 703 | 0.9− | 0.5+ | 2005 06 14 | 691 | 0.1− | 0.1+ |
| 2001 09 18 | 699 | 0.5+ | 0.5− | 2004 02 17 | 703 | 0.2− | 0.5+ | 2005 06 14 | 691 | 0.2+ | 0.7− |
| 2001 09 18 | 699 | 0.8+ | 0.2+ | 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 08 23 | 644 | 0.2− | 0.2+ |
| 2001 09 18 | 699 | 1.4+ | 1.0+ | 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 08 23 | 644 | 0.5− | 0.0 |
| 2001 09 18 | 699 | 0.5+ | 0.1+ | 2004 02 29 | 691 | 0.3+ | 0.5+ | 2006 08 23 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 644 | 0.4− | 0.9+ | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.6− | 0.5+ |
| 2001 10 15 | 644 | 0.2+ | 0.7+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 20 | 703 | 1.0− | 0.2− |
| 2001 10 15 | 644 | 0.0 | 0.6+ | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 20 | 703 | 0.8− | 0.1+ |
| 2001 10 19 | 699 | 0.9+ | 0.0 | 2004 03 23 | 704 | 0.9+ | 0.6− | 2006 09 20 | 703 | 0.6− | 0.2+ |
| 2001 10 19 | 699 | 0.9+ | 0.4+ | 2004 03 23 | 704 | 0.6+ | 0.0 | 2006 09 26 | 703 | 0.6− | 0.6− |
| 2001 10 19 | 699 | (1.6− | 1.5+) | 2004 03 23 | 704 | 1.0+ | 0.4− | 2006 09 26 | 703 | 0.4− | 0.8− |
| 2001 10 19 | 699 | 0.3− | 1.5+ | 2004 03 23 | 704 | 0.6+ | 1.0+ | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2001 10 23 | 644 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.1− | 0.8+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2001 10 23 | 644 | 0.1+ | 0.5+ | 2005 06 10 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 644 | 0.1− | 0.4+ | 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2004 02 17 | 703 | 0.3− | 0.5− | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |

**(140600)∗ 2001 TC$_{239}$ = 1999 CZ$_{126}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 33486)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.84226 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23360115 | $\omega$ | 88.51366 | | −0.84952062 | −0.48231249 | |
| $a$ | 2.6110753 | $\Omega$ | 62.60549 | | +0.33499034 | −0.80617716 | |
| $e$ | 0.1291040 | $i$ | 13.93072 | | +0.40754901 | −0.34271423 | |
| $P$ | 4.22 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 21 | 704 | 0.8+ | 0.4− | 2002 12 13 | 645 | 0.3− | 0.1− | 2003 04 04 | 704 | 1.0− | 0.1+ |
| 1998 12 21 | 704 | 0.9+ | 1.2+ | 2002 12 15 | 704 | 0.3− | 0.3+ | 2003 04 04 | 704 | (1.5− | 2.2+) |
| 1998 12 21 | 704 | 0.9+ | 0.0 | 2002 12 15 | 704 | 0.3+ | 0.1+ | 2003 04 04 | 704 | 0.6+ | 0.0 |
| 1998 12 21 | 704 | (0.2− | 2.2+) | 2002 12 15 | 704 | 0.0 | 0.0 | 2003 04 04 | 704 | 1.0− | 0.1− |
| 1999 02 11 | 704 | 0.3+ | 0.7+ | 2002 12 15 | 704 | 0.9+ | 0.0 | 2005 08 08 | E12 | 0.4− | 0.1+ |
| 1999 02 11 | 704 | 0.1− | 0.6+ | 2002 12 15 | 704 | 0.1− | 0.3+ | 2005 08 08 | E12 | 0.4+ | 0.5− |
| 1999 02 11 | 704 | 0.1+ | 0.4+ | 2003 01 05 | 699 | 0.1− | 0.3− | 2005 08 08 | E12 | 0.6− | 0.6− |
| 1999 02 11 | 704 | 0.0 | 0.8+ | 2003 01 05 | 699 | 0.5− | 0.6− | 2005 08 08 | E12 | 0.6+ | 0.1− |
| 1999 02 11 | 704 | 1.1− | 0.3− | 2003 01 05 | 699 | 0.0 | 0.3+ | 2005 09 01 | 644 | 0.0 | 0.5− |
| 1999 02 18 | 704 | 0.8+ | 0.0 | 2003 01 05 | 699 | 0.1+ | 0.1+ | 2005 09 01 | 644 | 0.3− | 0.5− |
| 1999 02 18 | 704 | 0.9+ | 0.7+ | 2003 01 13 | 704 | 0.8+ | 0.7− | 2005 09 01 | 644 | 0.0 | 0.3− |
| 1999 02 18 | 704 | 0.5− | 1.3+ | 2003 01 13 | 704 | 0.1+ | 0.7− | 2006 11 15 | 704 | 0.2− | 0.9+ |
| 1999 02 18 | 704 | 1.4+ | 0.8− | 2003 01 13 | 704 | 0.7+ | 1.0− | 2006 11 15 | 704 | 0.2− | 1.4+ |
| 1999 02 18 | 704 | 0.3− | 0.3− | 2003 01 13 | 704 | 0.6+ | 0.9− | 2006 11 15 | 704 | 0.3+ | 0.8+ |
| 2001 09 18 | 699 | 0.5− | 0.8+ | 2003 01 13 | 704 | 0.3+ | 0.8− | 2006 11 15 | 704 | 0.0 | 0.0 |
| 2001 09 18 | 699 | 0.6− | 0.3+ | 2003 01 31 | 699 | 0.9+ | 0.2− | 2006 11 15 | 704 | 0.8− | 0.8+ |
| 2001 09 18 | 699 | 0.4− | 0.5+ | 2003 01 31 | 699 | 0.3+ | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.0 |
| 2001 09 18 | 699 | 1.3− | 0.5+ | 2003 01 31 | 699 | 0.2+ | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.4+ |
| 2001 10 15 | 644 | 0.1− | 0.0 | 2003 01 31 | 699 | 0.7+ | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.2+ |
| 2001 10 15 | 644 | 0.2− | 0.3+ | 2003 02 06 | 699 | 0.2+ | 1.1+ | 2006 11 15 | 704 | 0.0 | 0.9+ |
| 2001 10 15 | 644 | 0.2− | 0.2+ | 2003 02 06 | 699 | 0.6+ | 0.8+ | 2006 11 16 | 704 | (1.7+ | 1.6+) |
| 2001 10 19 | 699 | 0.8− | 0.5+ | 2003 02 06 | 699 | 0.7+ | 0.6+ | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2001 10 19 | 699 | 0.2− | 0.6+ | 2003 02 06 | 699 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.4+ | 0.9+ |
| 2001 10 19 | 699 | (1.7− | 0.3+) | 2003 02 25 | 704 | 0.0 | 0.5− | 2006 11 16 | 704 | 0.1− | 0.0 |
| 2001 10 19 | 699 | 0.2− | 0.6+ | 2003 02 25 | 704 | 0.1+ | 1.3− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2001 10 23 | 644 | 0.4+ | 0.1+ | 2003 02 25 | 704 | 0.8+ | 1.4− | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2001 10 23 | 644 | 0.6+ | 0.0 | 2003 03 09 | 699 | 0.5+ | 0.7+ | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2001 10 23 | 644 | 0.4+ | 0.1+ | 2003 03 09 | 699 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.6− | 0.4+ |
| 2001 12 05 | 704 | 0.0 | 0.7+ | 2003 03 09 | 699 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 1.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 05 | 704 | 0.2+ | 0.7+ | 2003 03 09 | 699 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 1.1+ | 0.2− |
| 2001 12 05 | 704 | 0.6+ | 0.0 | 2003 03 24 | 704 | 0.6+ | 0.8+ | 2006 11 22 | 704 | (1.8+ | 1.2−) |
| 2002 11 06 | 704 | 0.2− | 1.4− | 2003 03 24 | 704 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.5+ |
| 2002 11 06 | 704 | 0.6+ | 0.5+ | 2003 03 24 | 704 | 0.1− | 1.1+ | 2006 11 22 | 704 | 0.3+ | 0.5− |
| 2002 11 06 | 704 | 0.3− | 0.6+ | 2003 03 24 | 704 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2002 11 06 | 704 | 0.1− | 0.7+ | 2003 03 24 | 704 | 0.5− | 0.5+ | 2006 11 27 | 704 | 0.7+ | 0.5− |
| 2002 11 07 | 645 | 0.1− | 0.2− | 2003 03 24 | 704 | 0.1− | 0.7− | 2006 11 27 | 704 | 0.2+ | 0.4+ |
| 2002 11 07 | 645 | 0.1− | 0.2− | 2003 03 24 | 704 | 0.3− | 0.7+ | 2006 11 27 | 704 | 0.6− | 0.4+ |
| 2002 11 15 | 704 | 0.8+ | 0.4− | 2003 03 24 | 704 | 0.4− | 0.7− | 2006 11 27 | 704 | 0.7+ | 0.5− |
| 2002 11 15 | 704 | 0.9+ | 0.3− | 2003 03 24 | 704 | 0.1− | 1.1+ | 2006 11 29 | 704 | 0.6− | 0.5− |
| 2002 11 15 | 704 | 0.9+ | 0.2− | 2003 03 24 | 704 | 0.3− | 0.7− | 2006 11 29 | 704 | 0.6− | 0.4− |
| 2002 11 16 | 699 | 0.0 | 0.2+ | 2003 04 04 | 704 | 0.1− | 0.5+ | 2006 11 29 | 704 | 0.4− | 1.0− |
| 2002 11 16 | 699 | 0.1− | 0.7− | 2003 04 04 | 704 | 0.1+ | 0.9+ | 2006 11 29 | 704 | 1.0− | 0.8+ |
| 2002 11 16 | 699 | 0.9+ | 0.0 | 2003 04 04 | 704 | 0.5− | 0.9+ | 2006 11 29 | 704 | 0.2+ | 1.4− |
| 2002 11 16 | 699 | 0.2− | 0.7+ | 2003 04 04 | 704 | 0.7− | 1.0+ | | | | |
| 2002 12 13 | 645 | 0.3− | 0.0 | 2003 04 04 | 704 | (2.0− | 1.7+) | | | | |

**(140601)∗ 2001 TP$_{239}$**

Discovered 2001 Oct. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.04753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19317197 | $\omega$ | 281.30027 | | +0.48774548 | −0.86500373 | |
| $a$ | 2.9637392 | $\Omega$ | 138.82137 | | +0.85439059 | +0.44529241 | |
| $e$ | 0.0722499 | $i$ | 10.30515 | | +0.17922350 | +0.23126437 | |
| $P$ | 5.10 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 703 | (3.2+ | 0.6−) | 2003 01 14 | 608 | 0.1− | 0.5+ | 2006 08 28 | 699 | (1.6− | 1.7+) |
| 1999 05 18 | 703 | 1.2+ | 0.8+ | 2003 01 14 | 608 | 0.4− | 0.7+ | 2006 08 28 | 682 | 0.5− | 0.2+ |
| 1999 05 18 | 703 | 1.1− | 0.5− | 2003 01 27 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.1− |
| 1999 05 18 | 703 | (3.7− | 1.0−) | 2003 01 27 | 704 | 0.9+ | 0.1+ | 2006 08 28 | 682 | 0.3+ | 0.4− |
| 2001 08 26 | 644 | 1.1− | 0.0 | 2003 01 27 | 704 | (0.2+ | 2.6+) | 2006 08 28 | 682 | 0.2+ | 0.0 |
| 2001 08 26 | 644 | 1.0− | 0.1+ | 2003 01 27 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.6+ |
| 2001 08 26 | 644 | 1.1− | 0.1− | 2003 01 27 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | 0.2− | 0.3+ | 2003 01 27 | 699 | 1.1+ | 0.6− | 2006 09 18 | 703 | 0.5− | 1.0+ |
| 2001 09 16 | 704 | 1.3− | 0.1+ | 2003 01 27 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.3+ |
| 2001 09 16 | 704 | 0.1− | 0.5+ | 2003 01 27 | 644 | 0.0 | 0.2− | 2006 09 21 | 699 | 0.4− | 0.7+ |
| 2001 09 18 | 645 | 0.1+ | 0.0 | 2003 01 27 | 699 | 0.8+ | 0.1− | 2006 09 21 | 699 | 0.3− | 1.1+ |
| 2001 09 18 | 645 | 0.1+ | 0.1− | 2003 01 27 | 644 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.6− | 0.6+ |
| 2001 09 21 | 645 | 0.1+ | 0.1− | 2003 01 27 | 699 | 0.5− | 1.2+ | 2006 09 21 | 699 | 0.5+ | 0.5− |
| 2001 09 21 | 645 | 0.1+ | 0.1− | 2003 01 27 | 644 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.5+ | 0.6+ |
| 2001 09 25 | 704 | 0.2+ | 1.0+ | 2003 01 27 | 699 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.6− | 0.6+ |
| 2001 09 25 | 704 | 0.2+ | 0.6+ | 2003 01 27 | 644 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 0.6+ | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2003 01 27 | 644 | 0.5+ | 0.9+ | 2006 09 25 | 699 | 0.6− | 0.9+ |
| 2001 09 25 | 704 | 0.3+ | 1.3+ | 2003 01 31 | 704 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 0.7+ | 2003 01 31 | 704 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.5− | 0.2+ |
| 2001 10 15 | 644 | 0.1+ | 0.3+ | 2003 01 31 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 699 | 1.0− | 0.1+ |
| 2001 10 15 | 644 | 0.1− | 0.5+ | 2003 01 31 | 704 | 1.0− | 0.7− | 2006 09 29 | 699 | 1.1+ | 0.6+ |
| 2001 10 15 | 644 | 0.1− | 0.4+ | 2003 01 31 | 704 | 0.0 | 0.5− | 2006 09 30 | 704 | 0.8− | 0.3− |
| 2001 10 19 | 699 | 1.1+ | 0.3− | 2003 02 02 | 608 | 0.4− | 0.3− | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2001 10 19 | 699 | 0.3− | 0.4− | 2003 02 02 | 608 | 0.7− | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 2001 10 19 | 699 | 0.4− | 0.0 | 2003 02 02 | 608 | 0.3− | 0.3− | 2006 10 02 | 703 | 0.8− | 0.5+ |
| 2001 10 19 | 699 | 1.0− | 0.0 | 2003 02 03 | 704 | (0.4− | 1.5−) | 2006 10 02 | 703 | 0.6− | 1.4+ |
| 2001 10 23 | 644 | 0.5− | 0.3+ | 2003 02 03 | 704 | 0.1− | 1.0− | 2006 10 02 | 703 | 0.1+ | 0.9+ |
| 2001 10 23 | 644 | 0.7− | 0.4+ | 2003 02 03 | 704 | 0.6+ | 0.6− | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2001 10 23 | 644 | 0.6− | 0.5+ | 2003 02 03 | 704 | 0.2+ | 0.9− | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2002 01 14 | 645 | 0.0 | 0.2− | 2004 04 21 | 683 | (1.1+ | 1.5+) | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2002 01 14 | 645 | 0.0 | 0.3− | 2004 04 21 | 683 | (1.9+ | 1.7+) | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2003 01 01 | 704 | 0.2+ | 1.0+ | 2004 04 21 | 683 | 0.9+ | 1.4+ | 2006 10 17 | D35 | 0.2− | 0.6+ |
| 2003 01 01 | 704 | 0.7− | 0.5− | 2004 04 23 | 704 | 1.1+ | 0.1+ | 2006 10 17 | D35 | 0.7− | 0.6+ |
| 2003 01 01 | 704 | 0.7+ | 0.1+ | 2004 04 23 | 704 | 0.3+ | 0.6+ | 2006 10 17 | D35 | 1.0− | 0.2+ |
| 2003 01 01 | 704 | 0.5− | 0.6− | 2004 04 23 | 704 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 01 01 | 704 | 0.9− | 0.8− | 2004 04 26 | 699 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2003 01 07 | 704 | 0.9+ | 0.4+ | 2004 04 26 | 699 | 0.7− | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2003 01 07 | 704 | 0.4+ | 0.1+ | 2004 04 26 | 699 | 0.2− | 1.2+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2003 01 07 | 704 | 0.2− | 0.3+ | 2004 04 26 | 699 | 0.3− | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2003 01 07 | 704 | 0.0 | 0.4+ | 2006 08 22 | J95 | 0.1+ | 0.8+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2003 01 07 | 704 | 0.0 | 1.1+ | 2006 08 22 | J95 | 0.9+ | 0.0 | 2006 10 24 | 644 | 0.1− | 0.4− |
| 2003 01 08 | 704 | 0.0 | 0.0 | 2006 08 22 | J95 | 0.8+ | 0.7− | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2003 01 08 | 704 | 0.1+ | 0.2+ | 2006 08 25 | 682 | (0.8− | 1.7+) | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2003 01 08 | 704 | 0.8+ | 0.2+ | 2006 08 25 | 682 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.4− | 1.1− |
| 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 08 27 | 682 | 0.4− | 0.3− | 2006 10 28 | 703 | 0.3− | 0.6− |
| 2003 01 11 | 291 | 0.3− | 0.0 | 2006 08 27 | 682 | 0.0 | 0.4− | 2006 10 28 | 703 | 0.9− | 0.0 |
| 2003 01 11 | 291 | 0.1− | 0.0 | 2006 08 27 | 682 | 0.4− | 0.5− | 2006 10 28 | 703 | 0.2+ | 1.0− |
| 2003 01 11 | 291 | 0.0 | 0.0 | 2006 08 28 | 699 | (1.4− | 2.1+) | | | | |
| 2003 01 14 | 608 | 0.3− | 1.1+ | 2006 08 28 | 699 | 0.5− | 0.6+ | | | | |

**(140602)∗ 2001 TU$_{247}$ = 1999 FO$_{74}$**

Discovered 2001 Oct. 14 by the Sloan Digital Sky Survey at Apache Point.

Id. A. Doppler (*MPO* 75179)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.99601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20326669 | $\omega$ | 334.42799 | | −0.35299647 | −0.93500959 | |
| $a$ | 2.8647841 | $\Omega$ | 136.22072 | | +0.86661684 | −0.34041084 | |
| $e$ | 0.0189123 | $i$ | 2.81008 | | +0.35265954 | −0.09938571 | |
| $P$ | 4.85 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 03 23 | 691 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.3− | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2001 09 12 | 695 | 0.2+ | 0.7+ | 2004 04 20 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 09 12 | 695 | 0.4+ | 0.3+ | 2004 04 20 | 691 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 06 12 | 691 | 0.1+ | 0.5− | 2006 10 01 | 691 | 0.3− | 0.4+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 06 12 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 06 12 | 691 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2005 06 13 | G96 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2005 06 13 | G96 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2002 12 31 | 704 | (0.6+ | 1.6−) | 2005 06 13 | G96 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.5− |
| 2002 12 31 | 704 | 0.7− | 0.5− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 12 31 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.4− |

**(140603)∗ 2001 UQ = 2001 UG$_{55}$ = 2003 AE$_{54}$**

Discovered 2001 Oct. 18 by L. Ball at Emerald Lane Observatory, Decatur.

Id. A. Doppler (d, *MPO* 24067), G. V. Williams (*MPO* 40811)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.42566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21239129 | $\omega$ | 213.13043 | | +0.23085992 | +0.96883393 | |
| $a$ | 2.7821353 | $\Omega$ | 70.35543 | | −0.87068669 | +0.24690147 | |
| $e$ | 0.0305007 | $i$ | 5.47161 | | −0.43429067 | +0.02001218 | |
| $P$ | 4.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.8− | 1.1+ | 2003 02 01 | 704 | 0.3+ | 0.1− | 2004 05 12 | 699 | (1.8+ | 0.8−) |
| 2001 10 16 | 704 | 1.1− | 0.8+ | 2003 02 01 | 704 | 0.4− | 0.7+ | 2004 05 12 | 699 | 1.0+ | 0.7− |
| 2001 10 16 | 704 | (0.5+ | 2.0+) | 2003 02 01 | 704 | 0.5+ | 0.3− | 2004 05 12 | 699 | 0.8− | 1.3+ |
| 2001 10 18 | 843 | 1.3− | 0.4− | 2003 02 01 | 704 | 0.8− | 0.5+ | 2004 05 12 | 699 | 0.4− | 0.5+ |
| 2001 10 18 | 843 | (1.7− | 0.1+) | 2003 02 04 | 699 | 0.0 | 0.4+ | 2005 07 26 | 644 | 0.1− | 1.0+ |
| 2001 10 19 | 843 | 0.5+ | 0.4+ | 2003 02 04 | 699 | 0.0 | 1.2+ | 2005 07 26 | 644 | 0.0 | 0.4+ |
| 2001 10 19 | 843 | 0.4+ | 0.3− | 2003 02 04 | 699 | 1.4− | 0.4− | 2005 07 26 | 644 | 0.1− | 0.8+ |
| 2001 10 20 | 843 | 0.1+ | 0.6+ | 2003 02 04 | 699 | 0.2+ | 0.0 | 2005 08 27 | E12 | 0.5− | 0.7+ |
| 2001 10 20 | 843 | 0.2+ | 0.3+ | 2004 04 14 | 699 | 0.2+ | 0.9+ | 2005 08 27 | E12 | 1.0− | 0.6+ |
| 2001 10 21 | 843 | 0.2+ | 0.3+ | 2004 04 14 | 699 | 0.2+ | 0.1− | 2005 08 27 | E12 | 0.4+ | 0.5+ |
| 2001 10 21 | 843 | 1.4+ | 0.2− | 2004 04 14 | 699 | (1.6+ | 0.1−) | 2005 08 27 | E12 | 0.3+ | 0.6+ |
| 2001 11 16 | 843 | (1.8− | 0.5+) | 2004 04 14 | 699 | 1.1− | 0.3− | 2006 09 28 | G96 | 0.7− | 0.2− |
| 2001 11 16 | 843 | 0.3− | 0.4− | 2004 04 15 | 843 | 1.0− | 0.2+ | 2006 09 28 | G96 | 0.7− | 0.2+ |
| 2001 11 18 | 704 | 0.7− | 0.1+ | 2004 04 15 | 843 | (0.2− | 2.0+) | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2001 11 18 | 704 | 0.9− | 0.9+ | 2004 04 15 | 843 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2001 11 18 | 704 | 1.0− | 0.3+ | 2004 04 16 | 843 | (2.0− | 1.0+) | 2006 10 19 | G96 | 0.2− | 0.2+ |
| 2001 11 18 | 704 | 0.1− | 0.1− | 2004 04 16 | 843 | (1.8− | 0.4+) | 2006 10 19 | G96 | 0.9− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.2+ | 1.2+ | 2004 04 16 | 843 | 1.5− | 0.9+ | 2006 10 19 | G96 | 0.5− | 0.1− | | |
| 2001 11 20 | 704 | 0.3− | 0.2+ | 2004 04 17 | 843 | 1.4− | 1.3+ | 2006 10 19 | G96 | 0.7− | 0.1+ | | |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2004 04 17 | 843 | 1.4− | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.4− | | |
| 2001 11 20 | 704 | 0.2+ | 1.2+ | 2004 04 17 | 843 | 1.0− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2001 11 20 | 704 | (1.6− | 1.5+) | 2004 04 17 | 704 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.2− | | |
| 2001 11 20 | 704 | (0.2− | 1.5+) | 2004 04 17 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 2003 01 05 | 704 | 0.6+ | 1.1+ | 2004 04 17 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2− | | |
| 2003 01 05 | 704 | 0.2+ | 0.8+ | 2004 04 19 | 704 | 0.9+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2003 01 05 | 704 | (0.9+ | 2.0+) | 2004 04 19 | 704 | 0.6+ | 0.5− | 2006 11 27 | 703 | 0.7+ | 0.0 | | |
| 2003 01 09 | 704 | 0.5+ | 0.7+ | 2004 04 19 | 704 | 0.9+ | 0.1+ | 2006 11 27 | 703 | 0.2+ | 0.1+ | | |
| 2003 01 09 | 704 | 0.2+ | 0.6+ | 2004 04 19 | 704 | 0.4+ | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.9− | | |
| 2003 01 09 | 704 | 1.3+ | 1.1− | 2004 04 19 | 704 | 0.7+ | 0.0 | 2006 11 27 | 703 | 0.2− | 0.1+ | | |
| 2003 01 16 | 644 | 0.1+ | 0.1+ | 2004 04 20 | 691 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.5+ | | |
| 2003 01 16 | 644 | 0.2+ | 0.1+ | 2004 04 20 | 691 | 0.3+ | 0.2− | 2006 11 29 | 704 | 2.3+ | 0.8+ | | |
| 2003 01 16 | 644 | 0.0 | 0.3− | 2004 04 20 | 691 | 0.6+ | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.6+ | | |
| 2003 01 26 | 644 | 0.1+ | 0.2+ | 2004 05 11 | 699 | 0.7+ | 0.6+ | 2006 11 29 | 704 | 0.2+ | 0.4+ | | |
| 2003 01 26 | 644 | 0.1− | 0.1− | 2004 05 11 | 699 | 0.4+ | 0.6− | 2006 11 29 | 704 | 0.3+ | 0.4+ | | |
| 2003 01 26 | 644 | 0.1+ | 0.2+ | 2004 05 11 | 699 | 1.0− | 1.2+ | | | | | | |
| 2003 02 01 | 704 | 0.1− | 0.4+ | 2004 05 11 | 699 | 0.1− | 0.5− | | | | | | |

**(140604)∗ 2001 UA$_3$ = 2005 GP$_{210}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85102)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.98481 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17434392 | $\omega$ | 146.62348 | | +0.82494406 | +0.56516906 | |
| $a$ | 3.1734490 | $\Omega$ | 178.88344 | | −0.56468058 | +0.82464913 | |
| $e$ | 0.0690432 | $i$ | 21.55129 | | −0.02455901 | +0.02318930 | |
| $P$ | 5.65 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.5+ | 1.0− | 2001 10 17 | 704 | 0.0 | 0.6+ | 2005 05 09 | 703 | 0.3− | 0.2− | | |
| 1993 03 23 | 691 | 0.3+ | 0.9− | 2001 10 17 | 704 | 0.1+ | 0.3+ | 2005 05 09 | 703 | (2.5− | 0.9+) | | |
| 1993 03 23 | 691 | 0.2− | 0.7− | 2001 10 17 | 704 | 0.6+ | 0.1− | 2005 05 09 | 703 | 1.0− | 0.4− | | |
| 1999 03 20 | 645 | 0.1− | 0.1+ | 2001 10 20 | 704 | 2.0− | 1.2+ | 2005 05 09 | 703 | 0.6− | 0.6− | | |
| 1999 03 20 | 645 | 0.1− | 0.2+ | 2001 10 20 | 704 | 0.4− | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.2+ | | |
| 2001 09 16 | 704 | (1.5− | 2.6+) | 2001 10 20 | 704 | 0.3− | 0.5− | 2006 08 22 | 644 | 0.0 | 0.1+ | | |
| 2001 09 16 | 704 | 0.9− | 0.8+ | 2004 02 14 | 644 | 0.2− | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.1+ | | |
| 2001 09 16 | 704 | 1.4− | 0.4+ | 2004 02 14 | 644 | 0.8+ | 0.1+ | 2006 08 23 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2004 02 14 | 644 | 0.5− | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 704 | 0.4+ | 1.5+ | 2006 08 23 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.9− | 0.1− | 2004 03 20 | 704 | 0.4+ | 1.7+ | 2006 09 20 | 644 | 0.3− | 0.2+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.4− | 2004 03 20 | 704 | (0.4− | 2.2+) | 2006 09 20 | 644 | 0.2− | 0.2+ | | |
| 2001 10 16 | 704 | 0.4+ | 0.4− | 2004 03 20 | 704 | 0.1+ | 1.0+ | 2006 09 20 | 644 | 0.3− | 0.1− | | |
| 2001 10 16 | 704 | 0.6+ | 0.5− | 2004 03 20 | 704 | 0.8+ | 0.4+ | 2006 09 23 | 703 | 2.5+ | 0.8− | | |
| 2001 10 16 | 704 | 0.1+ | 0.8− | 2005 04 13 | 703 | 0.0 | 0.1+ | 2006 09 23 | 703 | (4.3+ | 0.4+) | | |
| 2001 10 16 | 704 | 0.4+ | 0.3− | 2005 04 13 | 703 | 0.2− | 0.7+ | 2006 09 23 | 703 | 0.9− | 0.5− | | |
| 2001 10 16 | 704 | 0.0 | 0.6− | 2005 04 13 | 703 | 0.3− | 1.6+ | 2006 09 23 | 703 | 0.7− | 1.5− | | |
| 2001 10 17 | 704 | 0.3+ | 0.8+ | 2005 04 13 | 703 | (0.1− | 2.1+) | | | | | | |

**(140605)∗ 2001 UG$_3$ = 2004 BY$_{83}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56317)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.06816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21563739 | $\omega$ | 188.53999 | | −0.55952522 | +0.80856812 | |
| $a$ | 2.7541442 | $\Omega$ | 47.67047 | | −0.74513313 | −0.39455616 | |
| $e$ | 0.1331393 | $i$ | 14.25734 | | −0.36291617 | −0.43651235 | |
| $P$ | 4.57 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 1.3− | 0.4+ | 2004 03 31 | 704 | 0.8+ | 0.3− | 2004 05 19 | 704 | 0.5− | 0.7+ | | |
| 2001 10 10 | 644 | 1.1− | 0.2+ | 2004 03 31 | 704 | 0.1+ | 0.2+ | 2004 05 19 | 704 | 0.4− | 1.1+ | | |
| 2001 10 10 | 644 | 1.5− | 0.8+ | 2004 03 31 | 704 | 0.1− | 0.3+ | 2004 06 09 | 703 | 0.1− | 0.7+ | | |
| 2001 10 16 | 704 | 0.2− | 0.9+ | 2004 03 31 | 704 | 0.2+ | 0.1+ | 2004 06 09 | 703 | 0.0 | 0.8− | | |
| 2001 10 16 | 704 | 0.5− | 0.4− | 2004 04 14 | 699 | 0.1+ | 0.4− | 2004 06 09 | 703 | (1.3− | 1.6−) | | |
| 2001 10 16 | 704 | 1.0− | 1.1+ | 2004 04 14 | 699 | 0.5− | 0.4− | 2004 06 09 | 703 | 1.0− | 0.7− | | |
| 2001 10 16 | 704 | 0.4− | 0.6+ | 2004 04 14 | 699 | 0.5− | 0.3+ | 2004 06 14 | 704 | 0.5+ | 1.1+ | | |
| 2001 10 16 | 704 | (1.6− | 1.1+) | 2004 04 14 | 699 | 0.6− | 0.1+ | 2004 06 14 | 704 | 0.6+ | 1.0+ | | |
| 2001 10 16 | 644 | (0.8− | 1.9+) | 2004 04 16 | 644 | 1.0+ | 0.3− | 2004 06 14 | 704 | 0.0 | 0.2+ | | |
| 2001 10 16 | 644 | 0.3− | 1.4+ | 2004 04 16 | 644 | 0.3+ | 0.3+ | 2004 06 18 | G92 | 1.3− | 0.0 | | |
| 2001 10 16 | 644 | (0.0 | 1.6+) | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2004 06 18 | G92 | 0.1+ | 0.5+ | | |
| 2001 10 17 | 704 | 1.3+ | 0.0 | 2004 04 17 | 704 | 0.1− | 0.2− | 2004 06 18 | G92 | 0.1− | 0.3+ | | |
| 2001 10 17 | 704 | (0.4+ | 2.2+) | 2004 04 17 | 704 | 0.3− | 0.7+ | 2004 07 06 | E12 | 0.1− | 0.9− | | |
| 2001 10 17 | 704 | 0.8+ | 0.8+ | 2004 04 17 | 704 | 0.2− | 0.4− | 2004 07 06 | E12 | 0.1+ | 0.4− | | |
| 2001 10 17 | 704 | 1.3+ | 0.8+ | 2004 04 19 | 704 | 1.1+ | 0.1+ | 2004 07 06 | E12 | 0.3+ | 0.8− | | |
| 2001 10 17 | 704 | 0.4− | 0.6+ | 2004 04 19 | 704 | 0.3+ | 0.1− | 2004 07 06 | E12 | 0.6+ | 0.1+ | | |
| 2001 10 18 | 644 | 0.3− | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.0 | 2004 07 19 | E12 | 0.0 | 0.1+ | | |
| 2001 10 18 | 644 | 0.3− | 0.0 | 2004 04 19 | 704 | 0.0 | 0.2+ | 2004 07 19 | E12 | 0.1+ | 0.3+ | | |
| 2001 10 18 | 644 | 0.4− | 0.5+ | 2004 04 19 | 704 | 0.7+ | 0.2+ | 2004 07 19 | E12 | 0.2+ | 0.7+ | | |
| 2001 10 24 | 644 | 0.4+ | 0.2− | 2004 04 20 | 704 | 0.3+ | 0.0 | 2004 07 19 | E12 | 0.0 | 0.3− | | |
| 2001 10 24 | 644 | 0.9+ | 0.5− | 2004 04 20 | 704 | 0.3− | 0.3+ | 2005 07 28 | 644 | 0.7− | 0.8+ | | |
| 2001 10 24 | 644 | 0.5+ | 0.4− | 2004 04 20 | 704 | 0.4− | 0.0 | 2005 07 28 | 644 | 0.4− | 0.8+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.5+ | 2004 04 20 | 704 | 0.1− | 0.0 | 2005 07 28 | 644 | 0.5− | 0.9+ | | |
| 2001 11 20 | 704 | (0.1− | 1.7+) | 2004 04 20 | 704 | 0.8+ | 0.8+ | 2005 09 01 | 644 | 0.7− | 1.4+ | | |
| 2001 11 20 | 704 | 0.8− | 0.6+ | 2004 04 22 | 704 | 0.1+ | 0.6+ | 2005 09 01 | 644 | 1.0− | 1.1+ | | |
| 2001 11 20 | 704 | 1.1− | 0.2− | 2004 04 22 | 704 | 0.4+ | 0.5+ | 2005 09 01 | 644 | 0.7− | 1.1+ | | |
| 2001 11 20 | 704 | 1.0− | 0.0 | 2004 04 22 | 704 | 0.9+ | 0.0 | 2006 09 27 | G96 | 0.5− | 0.3− | | |
| 2003 01 13 | 704 | 0.3+ | 0.0 | 2004 04 22 | 704 | 0.6+ | 1.0+ | 2006 09 27 | G96 | 0.3− | 0.3− | | |
| 2003 01 13 | 704 | 0.1− | 0.4− | 2004 04 22 | 704 | 0.8+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.3− | | |
| 2003 01 13 | 704 | 0.5− | 0.7+ | 2004 05 09 | 608 | 0.1+ | 1.2+ | 2006 09 27 | G96 | 0.0 | 0.1− | | |
| 2003 01 13 | 704 | 0.1+ | 0.6− | 2004 05 09 | 608 | 0.4+ | 1.4+ | 2006 10 20 | G96 | 0.0 | 0.0 | | |
| 2004 01 23 | 704 | 0.5+ | 0.6+ | 2004 05 09 | 608 | 0.6+ | 1.1+ | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2004 01 23 | 704 | 0.0 | 0.5+ | 2004 05 10 | 291 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ | | |
| 2004 01 23 | 704 | 0.7+ | 0.1+ | 2004 05 10 | 291 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.5− | | |
| 2004 01 28 | 704 | 0.6+ | 0.4− | 2004 05 10 | 291 | 0.7+ | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | | |
| 2004 01 28 | 704 | (1.8+ | 0.2−) | 2004 05 11 | 699 | 0.1− | 0.8− | 2006 11 13 | 691 | 0.1− | 0.3+ | | |
| 2004 01 28 | 704 | 0.5+ | 0.6− | 2004 05 11 | 699 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.2+ | | |
| 2004 02 25 | 704 | 0.5+ | 0.1+ | 2004 05 11 | 699 | 0.1+ | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 25 | 704 | 0.5+ | 0.8+ | 2004 05 11 | 699 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.0 | 0.4+ | | |
| 2004 02 25 | 704 | 0.3− | 0.4+ | 2004 05 12 | 699 | 0.3+ | 0.7− | 2006 11 17 | 691 | 0.1− | 0.3+ | | |
| 2004 02 25 | 704 | 0.5− | 0.7− | 2004 05 12 | 699 | 0.2− | 0.4− | 2006 11 21 | 691 | 0.1− | 0.2+ | | |
| 2004 03 20 | 704 | (3.1+ | 0.1+) | 2004 05 12 | 699 | 0.4− | 0.3− | 2006 11 21 | 691 | 0.2− | 0.3+ | | |
| 2004 03 20 | 704 | (2.3+ | 1.7−) | 2004 05 12 | 699 | 0.4− | 0.5− | 2006 11 21 | 691 | 0.3− | 0.2+ | | |
| 2004 03 20 | 704 | 0.1− | 0.6− | 2004 05 14 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.3− | | |
| 2004 03 20 | 704 | (0.1+ | 2.1−) | 2004 05 14 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.0 | | |
| 2004 03 22 | 704 | 0.9+ | 0.3+ | 2004 05 14 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.5− | 0.3− | | |
| 2004 03 22 | 704 | 1.0+ | 0.0 | 2004 05 15 | 704 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.5− | 0.5− | | |
| 2004 03 22 | 704 | 0.2+ | 0.5+ | 2004 05 15 | 704 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8− | 0.6+ | | |
| 2004 03 22 | 704 | 0.7+ | 0.9− | 2004 05 15 | 704 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.9+ | | |
| 2004 03 22 | 704 | 0.6− | 0.7+ | 2004 05 15 | 704 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 0.8− | 0.5+ | | |
| 2004 03 22 | 704 | 1.2+ | 0.5− | 2004 05 15 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.5− | 0.0 | | |
| 2004 03 22 | 704 | 0.7+ | 0.5− | 2004 05 16 | 704 | 0.4+ | 0.7+ | 2006 11 25 | 691 | 0.4− | 0.0 | | |
| 2004 03 22 | 704 | 0.0 | 1.2+ | 2004 05 16 | 704 | (0.7− | 1.9+) | 2006 11 25 | 691 | 0.2− | 0.2+ | | |
| 2004 03 22 | 704 | 0.4+ | 0.6− | 2004 05 16 | 704 | 0.3− | 1.4+ | 2006 11 25 | 691 | 0.1− | 1.6+ | | |
| 2004 03 27 | 699 | 0.4− | 0.1+ | 2004 05 16 | 704 | 1.1− | 0.7+ | 2006 11 27 | 704 | 0.3− | 0.1− | | |
| 2004 03 27 | 699 | 0.2− | 0.3+ | 2004 05 16 | 704 | 1.0− | 1.1+ | 2006 11 27 | 704 | 1.5+ | 1.0+ | | |
| 2004 03 27 | 699 | 0.3− | 0.1− | 2004 05 19 | 704 | 0.0 | 0.7+ | 2006 11 27 | 704 | 0.7+ | 0.7+ | | |
| 2004 03 27 | 699 | 1.1+ | 0.8− | 2004 05 19 | 704 | 0.2− | 1.2+ | 2006 11 27 | 704 | 0.5+ | 0.9− | | |
| 2004 03 31 | 704 | 0.7+ | 0.1+ | 2004 05 19 | 704 | 0.1− | 1.4+ | | | | | | |

**(140606)∗ 2001 UL$_3$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.03796 | | (2000.0) | | | |
| $n$ | 0.21064163 | $\omega$ | 227.63541 | | +0.46921485 | +0.85829139 |
| $a$ | 2.7975203 | $\Omega$ | 71.45865 | | −0.73206432 | +0.50964326 |
| $e$ | 0.1282039 | $i$ | 12.65955 | | −0.49388182 | +0.05999699 |
| $P$ | 4.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.4− | 0.0 | 2005 07 25 | E12 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.9+ | 1.4+ |
| 2001 08 18 | 644 | 0.6− | 0.4+ | 2005 07 25 | E12 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2001 08 18 | 644 | 0.2− | 0.1+ | 2005 07 25 | E12 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 09 25 | 704 | 0.0 | 0.2− | 2005 07 25 | E12 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2001 09 25 | 704 | 0.1− | 0.0 | 2005 08 06 | E12 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.7+ | 0.4− |
| 2001 09 25 | 704 | 0.6− | 0.8+ | 2005 08 06 | E12 | 0.4− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.6+ |
| 2001 10 15 | 644 | 1.0− | 0.2+ | 2005 08 06 | E12 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2001 10 15 | 644 | 1.0− | 0.1− | 2005 09 01 | E12 | 1.2− | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.5+ |
| 2001 10 15 | 644 | 1.2− | 0.1+ | 2005 09 01 | E12 | 0.4+ | 0.9+ | 2006 11 17 | 704 | 0.8+ | 0.7+ |
| 2001 10 16 | 704 | 0.5+ | 0.6− | 2005 09 01 | E12 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2001 10 16 | 704 | 1.0+ | 0.1+ | 2005 09 01 | E12 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.1− |
| 2001 10 16 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | (0.1− | 1.5−) | 2006 11 17 | 704 | 0.3+ | 1.0+ |
| 2001 10 16 | 704 | (0.4− | 2.0+) | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 11 17 | 704 | 0.7+ | 0.1− |
| 2001 10 16 | 704 | 0.4− | 0.4− | 2006 10 16 | 703 | (0.4− | 1.8−) | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2001 10 17 | 704 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 11 18 | 704 | 1.2− | 1.0+ |
| 2001 10 17 | 704 | 0.4− | 0.5+ | 2006 10 20 | 703 | 0.1− | 1.3− | 2006 11 18 | 704 | 0.8− | 1.2− |
| 2001 10 17 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 703 | 0.6+ | 0.4+ | 2006 11 18 | 704 | 0.3+ | 1.3− |
| 2001 10 20 | 704 | 0.1− | 1.5+ | 2006 10 20 | G96 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.6− | 0.3− |
| 2001 10 20 | 704 | 0.0 | 0.8+ | 2006 10 20 | 703 | 0.1+ | 0.6− | 2006 11 20 | 704 | 0.8− | 0.1− |
| 2001 10 20 | 704 | 0.9+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.6+ | 0.1+ |
| 2001 10 23 | 699 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2001 10 23 | 699 | 0.2− | 0.3− | 2006 10 20 | 703 | (2.4+ | 1.5+) | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2001 10 23 | 699 | 0.7+ | 0.5+ | 2006 11 02 | 703 | 0.2− | 1.3− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 10 23 | 699 | 0.1+ | 0.3− | 2006 11 02 | 703 | 0.7− | 0.7− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 11 02 | 703 | (0.4+ | 2.1−) | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2004 03 15 | 704 | 0.9+ | 0.2− | 2006 11 02 | 703 | 1.1+ | 0.8− | 2006 11 27 | 691 | 0.0 | 0.3− |
| 2004 03 15 | 704 | 0.3− | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 03 19 | 644 | 0.2+ | 0.7+ | 2006 11 10 | 644 | 0.5+ | 0.5+ | 2006 11 28 | 704 | 0.0 | 0.3− |
| 2004 03 19 | 644 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.5+ | 0.8+ |
| 2004 03 19 | 644 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.7− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.0 |
| 2005 06 08 | E12 | 0.3− | 0.2− | 2006 11 13 | 703 | (0.1+ | 2.1−) | 2006 11 28 | 704 | 0.8− | 0.5+ |
| 2005 06 08 | E12 | 0.5+ | 0.4− | 2006 11 13 | 703 | 0.4− | 1.4− | 2006 11 28 | 704 | 1.2− | 0.2− |
| 2005 06 08 | E12 | 0.6+ | 0.4− | 2006 11 13 | 703 | (1.8− | 1.2−) | 2006 11 29 | 704 | 0.3− | 0.6− |
| 2005 06 08 | E12 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.7+ | 2006 11 29 | 704 | 0.2− | 0.5− |
| 2005 07 05 | E12 | 0.1− | 0.1+ | 2006 11 14 | 704 | 0.2+ | 1.5+ | 2006 11 29 | 704 | 0.8− | 1.7− |
| 2005 07 05 | E12 | 0.6+ | 0.1− | 2006 11 14 | 704 | 0.8+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2005 07 05 | E12 | 0.9− | 0.6− | 2006 11 14 | 704 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.7− |

**(140607)∗ 2001 UC$_4$**

Discovered 2001 Oct. 17 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.00655 | | (2000.0) | | | |
| $n$ | 0.17883863 | $\omega$ | 209.21486 | | +0.54647175 | −0.83727092 |
| $a$ | 3.1200520 | $\Omega$ | 207.67229 | | +0.77593790 | +0.51454824 |
| $e$ | 0.1174590 | $i$ | 2.29560 | | +0.31510158 | +0.18497979 |
| $P$ | 5.51 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 22 | 691 | 0.0 | 0.1− | 2001 11 20 | 704 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.9+ |
| 1990 11 22 | 691 | 0.1− | 0.2− | 2001 11 20 | 704 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.0 | 0.2− |
| 1990 11 22 | 691 | 0.3− | 0.1− | 2001 11 20 | 704 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.4− | 0.4+ |
| 2001 09 18 | 333 | 0.4− | 0.4− | 2001 11 20 | 704 | 0.4− | 0.4− | 2006 09 18 | 699 | 1.4+ | 0.7− |
| 2001 09 18 | 333 | 0.6+ | 0.4+ | 2001 11 20 | 704 | 0.3+ | 0.3− | 2006 09 20 | 704 | 0.2− | 1.2+ |
| 2001 09 18 | 333 | 0.9+ | 0.4+ | 2001 11 21 | 704 | 0.1+ | 0.5− | 2006 09 20 | 704 | (0.6+ | 1.7+) |
| 2001 10 17 | 333 | 1.1− | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.4− | 2006 09 20 | 704 | 0.1− | 0.5− |
| 2001 10 17 | 333 | 0.0 | 0.4− | 2001 11 21 | 704 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.8− | 0.2− |
| 2001 10 17 | 333 | 0.9− | 0.2− | 2001 11 21 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.6− | 0.4− |
| 2001 10 21 | 333 | 0.4− | 0.8+ | 2001 11 21 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 699 | 1.1− | 0.1+ |
| 2001 10 21 | 333 | 0.0 | 0.7+ | 2001 12 14 | 291 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 0.7+ | 0.2+ |
| 2001 10 21 | 333 | 0.1+ | 0.2+ | 2001 12 14 | 291 | 0.6+ | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.4+ |
| 2001 10 23 | 704 | 1.2+ | 1.4+ | 2001 12 14 | 291 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | (0.9+ | 2.2+) | 2001 12 14 | 704 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.6+ |
| 2001 10 23 | 704 | (0.5+ | 4.9+) | 2001 12 14 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 1.0− | 0.0 |
| 2001 10 23 | 704 | (2.2+ | 1.9+) | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.3− | 0.4+ |
| 2001 10 24 | 704 | 1.5− | 1.5+ | 2001 12 14 | 704 | 0.2+ | 0.9+ | 2006 09 27 | 704 | 0.3+ | 0.0 |
| 2001 10 24 | 704 | (1.3+ | 2.7+) | 2001 12 14 | 704 | 0.4− | 0.5+ | 2006 09 27 | 704 | 0.0 | 0.6+ |
| 2001 10 24 | 704 | 0.5− | 0.2− | 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | (1.7− | 0.2−) | 2001 12 17 | 704 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.2+ | 0.3+ |
| 2001 10 24 | 704 | 0.4− | 0.1+ | 2001 12 17 | 704 | 1.1+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2001 10 25 | 644 | 0.1+ | 1.1+ | 2001 12 17 | 704 | 0.1+ | 0.9− | 2006 09 29 | 704 | (1.9− | 0.7+) |
| 2001 10 25 | 644 | 0.5+ | 1.1+ | 2001 12 17 | 704 | 0.2+ | 0.9− | 2006 09 29 | 704 | 0.5− | 0.3+ |
| 2001 10 25 | 644 | 0.1+ | 1.0+ | 2003 02 09 | 644 | 0.1− | 0.6+ | 2006 09 29 | 704 | 0.6− | 0.1+ |
| 2001 10 26 | 704 | 0.8+ | 1.2− | 2003 02 09 | 644 | 0.3+ | 0.7+ | 2006 09 29 | 704 | 0.5− | 0.1− |
| 2001 10 26 | 704 | 0.0 | 0.1+ | 2003 02 09 | 644 | 0.2+ | 0.5+ | 2006 09 29 | 704 | 1.0− | 0.2+ |
| 2001 10 26 | 704 | 1.0− | 0.4− | 2003 02 22 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.6− | 0.3+ |
| 2001 10 26 | 704 | 1.3− | 0.5− | 2003 02 22 | 644 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.7− | 0.1+ |
| 2001 11 09 | 704 | 1.3− | 0.5− | 2003 02 22 | 644 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 1.4+ |
| 2001 11 09 | 704 | 0.1− | 0.3+ | 2003 03 12 | 644 | 0.9+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 11 09 | 704 | 0.2+ | 0.5− | 2003 03 12 | 644 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 11 09 | 704 | 0.3+ | 0.6+ | 2003 03 12 | 644 | 0.5+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.5+ | 0.5− | 2003 03 30 | 645 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.4− | 2003 03 30 | 645 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 11 12 | 704 | 1.3− | 0.1− | 2004 05 14 | 926 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.1− | 0.6+ | 2004 05 14 | 926 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2001 11 16 | 644 | 0.3− | 0.3+ | 2004 05 14 | 926 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2001 11 16 | 644 | 0.0 | 0.2+ | 2004 05 23 | 691 | 0.7+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2001 11 16 | 644 | 0.1− | 0.1+ | 2004 05 23 | 691 | 0.6+ | 0.6+ | 2006 10 20 | G96 | 0.4− | 0.3− |
| 2001 11 17 | 704 | 0.4+ | 0.4− | 2004 05 23 | 691 | 0.6+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 17 | 704 | 0.4+ | 0.6− | 2006 08 28 | 703 | 1.0− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 17 | 704 | 0.8+ | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 11 17 | 704 | 0.2+ | 0.8+ | 2006 08 28 | 703 | 1.0− | 1.2− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2001 11 17 | 704 | 0.8+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 699 | 0.5+ | 0.2− | 2006 09 17 | 703 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 11 19 | 699 | 0.6+ | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 11 19 | 699 | 0.6+ | 0.6+ | 2006 09 17 | 703 | 0.3− | 0.3− | | | | |
| 2001 11 19 | 699 | 0.9+ | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.1− | | | | |

**(140608)∗ 2001 UD$_4$**

Discovered 2001 Oct. 17 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.44086 | | (2000.0) | | | |
| $n$ | 0.26771511 | $\omega$ | 216.04223 | | −0.04581247 | +0.99445539 |
| $a$ | 2.3842628 | $\Omega$ | 51.52579 | | −0.88589449 | +0.00334187 |
| $e$ | 0.1184235 | $i$ | 6.94437 | | −0.46161908 | −0.10510614 |
| $P$ | 3.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 22 | 691 | 0.2+ | 0.1+ | 2001 11 19 | 704 | 0.2+ | 0.2− | 2001 12 19 | 644 | 0.1+ | 0.3+ |
| 1996 04 22 | 691 | 0.2− | 0.0 | 2001 11 19 | 704 | 0.1+ | 0.4− | 2003 01 27 | 704 | 0.4− | 1.2+ |
| 1996 04 22 | 691 | 0.0 | 0.4+ | 2001 11 19 | 704 | 0.9− | 1.2− | 2003 01 27 | 704 | 0.8+ | 0.3+ |
| 2001 10 17 | 333 | 0.1+ | 0.8− | 2001 11 19 | 704 | 1.0+ | 0.9− | 2003 01 27 | 704 | 0.2+ | 0.1+ |
| 2001 10 17 | 333 | 0.2+ | 1.3− | 2001 11 19 | 704 | 0.2+ | 0.3− | 2003 03 05 | 704 | 1.1+ | 0.9+ |
| 2001 10 17 | 333 | 0.5+ | 0.1− | 2001 11 20 | 704 | 1.3− | 0.5+ | 2003 03 05 | 704 | 0.8− | 1.7+ |
| 2001 10 20 | 704 | 0.5+ | 0.1− | 2001 11 20 | 704 | 0.5− | 0.4+ | 2003 03 05 | 704 | 0.7+ | 0.6+ |
| 2001 10 20 | 704 | 0.2− | 0.7+ | 2001 11 20 | 704 | 0.6− | 0.4+ | 2003 03 05 | 704 | 0.8+ | 1.2+ |
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2001 11 21 | 704 | 0.2− | 0.6− | 2003 03 07 | 644 | 0.8+ | 1.0+ |
| 2001 10 21 | 291 | 0.5− | 0.7+ | 2001 11 21 | 704 | 0.5+ | 0.3− | 2003 03 07 | 644 | 0.5+ | 0.9+ |
| 2001 10 21 | 333 | 0.6− | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.4− | 2003 03 07 | 644 | 0.0 | 0.8+ |
| 2001 10 21 | 291 | 0.5+ | 0.9+ | 2001 11 21 | 704 | 0.4+ | 0.4− | 2003 03 24 | 608 | 0.0 | 0.6− |
| 2001 10 21 | 333 | 0.4− | 0.6+ | 2001 11 21 | 704 | 0.5+ | 1.0− | 2003 03 24 | 608 | 0.1− | 0.7− |
| 2001 10 21 | 291 | 0.9+ | 0.8+ | 2001 12 07 | 704 | 0.5− | 0.1− | 2003 03 24 | 608 | 0.4+ | 0.9− |
| 2001 10 21 | 333 | 0.4− | 0.9− | 2001 12 07 | 704 | 0.3+ | 0.5+ | 2004 07 25 | 699 | 0.3− | 0.7+ |
| 2001 10 23 | 704 | 0.4+ | 0.7− | 2001 12 07 | 704 | 0.4+ | 0.4− | 2004 07 25 | 699 | 0.6− | 0.2+ |
| 2001 10 23 | 704 | 0.3+ | 0.0 | 2001 12 07 | 704 | 0.4+ | 0.4+ | 2004 07 25 | 699 | 1.2+ | 0.8+ |
| 2001 10 23 | 704 | 0.2+ | 0.0 | 2001 12 07 | 704 | 0.2− | 0.3+ | 2004 07 25 | 699 | 0.3− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.5− | 0.2+ | 2001 12 07 | 704 | 0.7+ | 0.4+ | 2004 08 08 | 704 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 0.8− | 0.4− | 2001 12 07 | 704 | 0.9+ | 0.1+ | 2004 08 08 | 704 | 0.7+ | 0.1− |
| 2001 10 24 | 704 | 0.5+ | 0.4+ | 2001 12 07 | 704 | 1.5+ | 0.3+ | 2004 08 08 | 704 | 0.9− | 0.1+ |
| 2001 10 24 | 704 | 1.1− | 0.3− | 2001 12 15 | 704 | 0.1− | 0.4− | 2004 08 08 | 704 | 0.4+ | 0.6+ |
| 2001 10 25 | 644 | 0.6− | 0.9+ | 2001 12 15 | 704 | 0.6+ | 0.8− | 2004 08 22 | E12 | 0.5− | 0.4+ |
| 2001 10 25 | 644 | 0.0 | 1.3+ | 2001 12 15 | 704 | 0.4+ | 1.3− | 2004 08 22 | E12 | 0.1+ | 0.3+ |
| 2001 10 25 | 644 | 0.1− | 1.3+ | 2001 12 15 | 704 | 0.1+ | 0.7− | 2004 08 22 | E12 | 0.6− | 0.6+ |
| 2001 11 09 | 704 | 0.8+ | 0.2+ | 2001 12 15 | 704 | 0.5− | 1.0− | 2004 08 22 | E12 | 0.2− | 0.4+ |
| 2001 11 09 | 704 | 0.3+ | 0.2− | 2001 12 18 | 704 | 0.4− | 0.1+ | 2004 09 05 | E12 | 0.3− | 0.8+ |
| 2001 11 09 | 704 | 0.2− | 0.7+ | 2001 12 18 | 704 | 0.3− | 0.8− | 2004 09 05 | E12 | 0.2+ | 1.1− |
| 2001 11 09 | 704 | 0.1− | 1.0− | 2001 12 18 | 704 | 0.2− | 0.1+ | 2004 09 05 | E12 | 0.3− | 0.1+ |
| 2001 11 09 | 704 | 0.5+ | 0.4+ | 2001 12 19 | 704 | 0.3− | 0.2+ | 2004 09 05 | E12 | 0.5− | 0.5+ |
| 2001 11 14 | 291 | 0.3+ | 0.0 | 2001 12 19 | 704 | 0.1− | 0.4+ | 2005 12 05 | 704 | 0.0 | 0.2+ |
| 2001 11 14 | 291 | 0.3+ | 0.1− | 2001 12 19 | 704 | 0.3− | 0.2+ | 2005 12 05 | 704 | 0.6+ | 0.5− |
| 2001 11 14 | 291 | 0.1+ | 0.4+ | 2001 12 19 | 704 | 0.1− | 0.4+ | 2005 12 05 | 704 | 0.3+ | 0.5+ |
| 2001 11 15 | 291 | 0.5− | 0.2+ | 2001 12 19 | 704 | 0.7− | 0.7+ | 2005 12 06 | 691 | 0.3− | 0.4− |
| 2001 11 15 | 291 | 1.1− | 0.3− | 2001 12 19 | 644 | 0.3+ | 0.5+ | 2005 12 06 | 691 | 0.2− | 0.3− |
| 2001 11 15 | 291 | 0.5− | 0.2+ | 2001 12 19 | 644 | 0.1+ | 0.5+ | 2005 12 06 | 691 | 0.0 | 0.4− |

**(140609)∗ 2001 UE$_4$**

Discovered 2001 Oct. 17 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.93479 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18197103 | $\omega$ | 48.13634 | | −0.38268047 | −0.92303973 |
| $a$ | 3.0841432 | $\Omega$ | 64.40327 | | +0.83417199 | −0.36354479 |
| $e$ | 0.1227293 | $i$ | 2.50468 | | +0.39713065 | −0.12582860 |
| $P$ | 5.42 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 333 | 0.9− | 0.9− | 2001 12 17 | 704 | 0.1+ | 0.4− | 2003 03 24 | 291 | 0.1+ | 0.1+ |
| 2001 10 17 | 333 | 0.0 | 0.4− | 2001 12 17 | 704 | 0.2+ | 0.3− | 2003 03 24 | 291 | 0.0 | 0.0 |
| 2001 10 17 | 333 | 0.3− | 0.6− | 2001 12 17 | 704 | 0.3+ | 0.7− | 2003 03 24 | 291 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 0.5+ | 2001 12 19 | 644 | 0.2+ | 0.6+ | 2003 03 30 | 704 | 0.3+ | 0.3+ |
| 2001 10 20 | 704 | 0.3− | 0.2+ | 2001 12 19 | 644 | 0.3− | 0.2+ | 2003 03 30 | 704 | 0.6+ | 0.8+ |
| 2001 10 20 | 704 | 0.1+ | 0.3+ | 2001 12 19 | 644 | 0.2− | 0.2+ | 2003 03 30 | 704 | 0.4+ | 0.9+ |
| 2001 10 21 | 333 | 0.6− | 0.3+ | 2002 01 09 | 291 | 0.2+ | 0.4+ | 2003 03 30 | 704 | 0.7+ | 0.4+ |
| 2001 10 21 | 333 | 0.1+ | 0.8− | 2002 01 09 | 291 | 0.2+ | 0.4+ | 2003 03 30 | 704 | 0.4+ | 1.0+ |
| 2001 10 21 | 333 | 0.1− | 0.0 | 2002 01 09 | 291 | 0.2+ | 0.2+ | 2003 04 05 | 691 | 0.6− | 0.2+ |
| 2001 10 23 | 704 | 0.5− | 1.0− | 2002 12 11 | 645 | 0.4− | 0.1− | 2003 04 05 | 691 | 0.4− | 0.2+ |
| 2001 10 23 | 704 | 0.1− | 1.1+ | 2002 12 11 | 645 | 0.3− | 0.1− | 2003 04 05 | 691 | 0.4− | 0.2− |
| 2001 10 23 | 704 | 0.4+ | 0.0 | 2003 01 31 | 699 | 0.7− | 0.1+ | 2004 05 30 | 413 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.1+ | 0.8+ | 2003 01 31 | 699 | 0.6+ | 1.0− | 2004 05 30 | 413 | 0.2+ | 0.3+ |
| 2001 10 23 | 704 | 0.8+ | 0.4+ | 2003 01 31 | 699 | 0.1+ | 1.1+ | 2004 05 30 | 413 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.1+ | 1.2+ | 2003 01 31 | 699 | 0.3+ | 0.4+ | 2005 06 30 | 691 | 0.2+ | 0.6+ |
| 2001 10 24 | 704 | 0.6+ | 0.9+ | 2003 02 01 | 704 | 0.3+ | 0.2+ | 2005 06 30 | 691 | 0.2− | 0.8+ |
| 2001 10 24 | 704 | (0.7+ | 1.9+) | 2003 02 01 | 704 | 0.9+ | 0.1+ | 2005 06 30 | 691 | 0.4− | 0.7+ |
| 2001 10 24 | 704 | 0.0 | 1.3+ | 2003 02 01 | 704 | 0.6+ | 0.8+ | 2005 07 16 | 691 | 0.5− | 0.3+ |
| 2001 10 24 | 704 | 0.2+ | 1.5+ | 2003 02 01 | 704 | 0.2+ | 0.0 | 2005 07 16 | 691 | 0.2− | 0.5+ |
| 2001 10 25 | 644 | 0.5− | 0.6+ | 2003 02 03 | 699 | 0.2+ | 0.6+ | 2005 07 16 | 691 | 0.1− | 0.5+ |
| 2001 10 25 | 644 | 0.3− | 0.5+ | 2003 02 03 | 699 | 0.1+ | 0.6+ | 2006 09 14 | 691 | 0.5+ | 0.7+ |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2003 02 03 | 699 | 0.9+ | 0.9+ | 2006 09 14 | 691 | 0.4+ | 0.3+ |
| 2001 11 09 | 704 | 0.4− | 0.1+ | 2003 02 03 | 699 | 1.1+ | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.8+ |
| 2001 11 09 | 704 | 0.5− | 0.2− | 2003 02 04 | 704 | 1.3+ | 0.5− | 2006 09 14 | 703 | 0.4− | 0.0 |
| 2001 11 09 | 704 | 0.1+ | 0.4− | 2003 02 04 | 704 | 0.5+ | 0.7+ | 2006 09 14 | 703 | 0.2+ | 1.0− |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2003 02 04 | 704 | 0.8+ | 0.5+ | 2006 09 14 | 691 | 0.2+ | 0.3+ |
| 2001 11 09 | 704 | 0.9− | 1.2− | 2003 02 04 | 704 | 1.4+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.5+ |
| 2001 11 12 | 704 | 1.2+ | 1.1+ | 2003 02 04 | 704 | (1.5+ | 0.6+) | 2006 09 18 | 699 | (1.7+ | 1.0+) |
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2003 02 08 | 608 | 1.0+ | 1.2+ | 2006 09 18 | 699 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.5+ | 0.8− | 2003 02 08 | 608 | 0.8+ | 0.8+ | 2006 09 18 | 699 | 0.3+ | 0.1+ |
| 2001 11 12 | 704 | 0.4− | 0.3− | 2003 02 08 | 608 | (1.6+ | 1.1+) | 2006 09 18 | 699 | 0.1+ | 0.8− |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2003 02 22 | 644 | 0.1− | 1.3+ | 2006 10 15 | 703 | 1.0− | 0.3+ |
| 2001 11 20 | 704 | 0.8− | 0.1− | 2003 02 22 | 644 | 0.2+ | 1.1+ | 2006 10 15 | 703 | 0.2− | 0.4+ |
| 2001 11 20 | 704 | 0.9− | 0.6+ | 2003 02 22 | 644 | 0.3− | 1.1+ | 2006 10 15 | 703 | 0.1− | 0.5− |
| 2001 11 20 | 704 | 0.6− | 0.8+ | 2003 02 28 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.7+ | 0.3+ |
| 2001 11 20 | 704 | 0.5− | 0.6+ | 2003 02 28 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.1− | 0.4− | 2003 02 28 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.6− | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 0.6− | 2003 02 28 | 608 | 0.3+ | 1.0− | 2006 10 20 | 644 | 0.6− | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.3− | 2003 02 28 | 608 | 0.6+ | 0.9− | 2006 10 21 | 703 | 0.6− | 0.5− |
| 2001 11 21 | 704 | 0.1+ | 0.6− | 2003 02 28 | 608 | 0.4+ | 0.7− | 2006 10 21 | 703 | 1.1− | 0.2− |
| 2001 12 10 | 291 | 0.2+ | 0.1+ | 2003 03 06 | 699 | 0.3+ | 0.0 | 2006 10 21 | 703 | 1.0− | 0.6− |
| 2001 12 10 | 291 | 0.0 | 0.3+ | 2003 03 06 | 699 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.0 |
| 2001 12 10 | 291 | 0.1+ | 0.4+ | 2003 03 06 | 699 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 12 11 | 704 | 0.7− | 0.5− | 2003 03 06 | 699 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.4− | 1.2− | 2003 03 06 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.7+ |
| 2001 12 11 | 704 | 0.7− | 0.1− | 2003 03 06 | 704 | 0.3+ | 0.5− | 2006 10 22 | G96 | 0.5− | 0.3+ |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2003 03 06 | 704 | (1.1+ | 1.8−) | 2006 10 22 | G96 | 0.0 | 0.4+ |
| 2001 12 14 | 704 | 0.1− | 0.2+ | 2003 03 07 | 699 | 0.8+ | 1.2+ | 2006 10 22 | G96 | 0.3− | 0.3+ |
| 2001 12 14 | 704 | 0.1− | 0.0 | 2003 03 07 | 699 | 0.8+ | 0.8+ | 2006 10 22 | G96 | 0.4− | 0.2+ |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2003 03 07 | 699 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 12 14 | 704 | 0.5+ | 0.4− | 2003 03 07 | 699 | 1.0+ | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 0.4+ | 0.4− | 2003 03 24 | 691 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.5− | 2003 03 24 | 691 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2003 03 24 | 691 | 0.1+ | 0.3+ | | | | |

**(140610)∗ 2001 UG$_5$**

Discovered 2001 Oct. 19 by the BATTeRS program at the Bisei Spaceguard Center.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.50311 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27371889 | $\omega$ | 210.83918 | | +0.23412715 | −0.92164489 |
| $a$ | 2.3492696 | $\Omega$ | 227.66325 | | +0.95534217 | +0.27712729 |
| $e$ | 0.2247494 | $i$ | 24.74747 | | +0.18029369 | −0.27160848 |
| $P$ | 3.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 17 | 691 | 0.3− | 0.6+ | 2001 10 27 | 704 | 0.1− | 0.0 | 2001 12 09 | 699 | 0.2+ | 0.5+ |
| 1996 06 17 | 691 | 0.2+ | 0.1+ | 2001 10 27 | 704 | 0.1− | 0.6+ | 2001 12 18 | 704 | 0.7+ | 0.9+ |
| 1996 06 17 | 691 | 0.3− | 0.7+ | 2001 11 08 | 300 | 0.2− | 0.6+ | 2001 12 18 | 704 | 0.8+ | 0.3+ |
| 2001 08 23 | 704 | 0.2+ | 0.3− | 2001 11 08 | 300 | 0.0 | 0.5+ | 2001 12 18 | 704 | 0.5+ | 0.4+ |
| 2001 08 23 | 704 | 0.0 | 0.1+ | 2001 11 08 | 300 | 0.3− | 0.6+ | 2001 12 18 | 704 | 0.6+ | 0.6+ |
| 2001 08 23 | 704 | 0.1+ | 0.1+ | 2001 11 08 | 300 | 0.3− | 0.4+ | 2001 12 18 | 704 | 0.5+ | 0.8+ |
| 2001 08 23 | 704 | 0.2+ | 0.1+ | 2001 11 08 | 300 | 0.2− | 0.4+ | 2001 12 19 | 704 | 0.9+ | 0.6+ |
| 2001 08 23 | 704 | 0.4+ | 0.1+ | 2001 11 09 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.3− | 0.2− |
| 2001 09 22 | 699 | 0.1+ | 0.4+ | 2001 11 09 | 704 | 0.1− | 0.1+ | 2001 12 19 | 704 | 0.7+ | 0.4+ |
| 2001 09 22 | 699 | 0.9+ | 0.4− | 2001 11 09 | 704 | 0.0 | 0.1+ | 2001 12 19 | 704 | 0.4+ | 0.0 |
| 2001 09 22 | 699 | 0.9+ | 0.6+ | 2001 11 09 | 704 | 0.2+ | 0.1+ | 2001 12 19 | 704 | 0.9+ | 0.6+ |
| 2001 09 22 | 699 | 0.2+ | 0.5− | 2001 11 09 | 704 | 0.2+ | 0.3+ | 2001 12 19 | 608 | 0.6− | 0.4− |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2001 11 10 | 300 | 1.0+ | 0.9+ | 2001 12 19 | 608 | 0.6− | 0.1+ |
| 2001 09 25 | 704 | 0.3+ | 0.1− | 2001 11 10 | 300 | 0.1+ | 0.8+ | 2001 12 19 | 608 | 0.2+ | 0.2− |
| 2001 09 25 | 704 | 0.6− | 0.3+ | 2001 11 10 | 300 | 0.3+ | 1.1+ | 2002 01 12 | 699 | 0.2+ | 0.5+ |
| 2001 09 25 | 704 | 1.0+ | 0.3− | 2001 11 10 | 300 | 0.2− | 0.8+ | 2002 01 12 | 699 | 0.5+ | 0.0 |
| 2001 09 25 | 704 | 0.5+ | 0.3− | 2001 11 10 | 300 | 0.2+ | 0.8+ | 2002 01 12 | 699 | 1.3− | 0.4+ |
| 2001 10 09 | 704 | 0.0 | 0.3− | 2001 11 10 | 300 | 0.1+ | 1.0+ | 2002 01 12 | 699 | 1.1+ | 1.3− |
| 2001 10 09 | 704 | 0.7+ | 0.3− | 2001 11 10 | 300 | 0.1− | 0.0 | 2002 01 13 | 645 | 0.0 | 0.1− |
| 2001 10 09 | 704 | 0.4+ | 0.0 | 2001 11 10 | 300 | 0.2− | 0.5+ | 2002 01 13 | 645 | 0.0 | 0.2− |
| 2001 10 09 | 704 | 0.3+ | 0.0 | 2001 11 16 | 644 | 0.2− | 0.0 | 2003 04 29 | 704 | 0.1+ | 0.4− |
| 2001 10 09 | 704 | 0.2+ | 0.0 | 2001 11 16 | 644 | 0.1− | 0.1+ | 2003 04 29 | 704 | 0.1+ | 0.1− |
| 2001 10 18 | 704 | 0.9− | 0.1+ | 2001 11 16 | 644 | 0.2− | 0.1+ | 2003 04 29 | 704 | 0.1+ | 0.1+ |
| 2001 10 18 | 704 | 0.4− | 0.3+ | 2001 11 17 | 704 | (3.0+ | 0.3−) | 2003 04 29 | 704 | 0.6− | 0.6+ |
| 2001 10 18 | 704 | 1.2− | 0.5+ | 2001 11 17 | 704 | (3.0+ | 0.5−) | 2003 04 30 | 704 | 0.9− | 0.2+ |
| 2001 10 18 | 704 | 0.9− | 0.8+ | 2001 11 17 | 704 | (3.2+ | 0.5−) | 2003 04 30 | 704 | 0.6− | 0.9+ |
| 2001 10 19 | 300 | 0.6− | 0.3+ | 2001 11 17 | 704 | (3.1+ | 0.6−) | 2003 04 30 | 704 | 0.8− | 0.7+ |
| 2001 10 19 | 300 | 0.0 | 0.1+ | 2001 11 17 | 704 | (2.8+ | 1.0−) | 2003 04 30 | 704 | 1.0− | 0.4+ |
| 2001 10 19 | 300 | 0.6− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.6+ | 2003 05 08 | 608 | 0.0 | 0.3+ |
| 2001 10 19 | 300 | 0.5− | 0.5− | 2001 11 20 | 704 | 0.2+ | 0.7+ | 2003 05 08 | 608 | 0.3+ | 0.5+ |
| 2001 10 19 | 300 | 0.7+ | 0.4+ | 2001 11 20 | 704 | 0.4+ | 0.5+ | 2003 05 08 | 608 | 0.3+ | 0.6+ |
| 2001 10 19 | 300 | 0.2− | 0.5− | 2001 11 20 | 704 | 0.3+ | 0.4+ | 2003 06 01 | 691 | 0.3+ | 1.6+ |
| 2001 10 21 | 704 | 0.2− | 0.5+ | 2001 11 20 | 704 | 0.5+ | 0.1+ | 2003 06 01 | 691 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.0 | 0.3+ | 2003 06 01 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2001 11 21 | 704 | 0.2− | 0.1+ | 2005 12 08 | E12 | 0.3− | 0.6+ |
| 2001 10 21 | 704 | 0.2− | 0.4+ | 2001 11 21 | 704 | 0.0 | 0.1+ | 2005 12 08 | E12 | 0.1− | 0.5+ |
| 2001 10 21 | 704 | 1.1+ | 0.2+ | 2001 11 21 | 704 | 0.0 | 0.1− | 2005 12 08 | E12 | 0.4− | 0.3− |
| 2001 10 22 | 300 | 0.3− | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.2− | 2005 12 08 | E12 | 0.7− | 0.6+ |
| 2001 10 22 | 300 | 0.4− | 0.5+ | 2001 12 06 | 608 | 0.5− | 1.2− | 2006 01 21 | E12 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 300 | 0.5− | 0.4− | 2001 12 06 | 608 | 0.5− | 1.2− | 2006 01 21 | E12 | 0.1− | 0.3+ | | |
| 2001 10 22 | 300 | 0.2+ | 0.3− | 2001 12 06 | 608 | 0.7− | 0.1+ | 2006 01 21 | E12 | 0.2+ | 0.1+ | | |
| 2001 10 22 | 300 | 0.2− | 0.1+ | 2001 12 07 | 704 | 0.5− | 0.3− | 2006 01 21 | E12 | 0.2+ | 0.1+ | | |
| 2001 10 23 | 300 | 0.5− | 0.9− | 2001 12 07 | 704 | 0.1− | 0.1− | 2006 04 21 | E12 | 0.0 | 0.1+ | | |
| 2001 10 23 | 300 | 0.1− | 1.3+ | 2001 12 07 | 704 | 0.4− | 0.1+ | 2006 04 21 | E12 | 0.4− | 0.2+ | | |
| 2001 10 23 | 300 | 0.1− | 0.9− | 2001 12 07 | 704 | 0.3− | 0.1− | 2006 04 21 | E12 | 1.7+ | 1.8+ | | |
| 2001 10 23 | 300 | 0.1+ | 0.2+ | 2001 12 07 | 704 | 0.2− | 0.1+ | 2006 06 01 | E12 | 0.6+ | 0.5+ | | |
| 2001 10 27 | 704 | 0.1− | 0.1+ | 2001 12 09 | 699 | 0.5+ | 0.1+ | 2006 06 01 | E12 | 0.0 | 1.1+ | | |
| 2001 10 27 | 704 | 0.3− | 0.4+ | 2001 12 09 | 699 | 0.1− | 0.4+ | 2006 06 01 | E12 | 0.7− | 0.1− | | |
| 2001 10 27 | 704 | 0.1+ | 0.2+ | 2001 12 09 | 699 | 0.2+ | 0.4+ | 2006 06 01 | E12 | 0.2+ | 0.7+ | | |

**(140611)∗ 2001 UQ$_6$ = 2000 QV$_{163}$**

Discovered 2001 Oct. 17 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. A. Doppler (*MPO* 20563)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.37577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17156237 | $\omega$ | 130.97700 | | +0.97392351 | +0.20438917 | |
| $a$ | 3.2076577 | $\Omega$ | 217.53658 | | −0.22402151 | +0.93499491 | |
| $e$ | 0.1069758 | $i$ | 9.30179 | | +0.03587984 | +0.28984408 | |
| $P$ | 5.74 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 29 | 691 | 0.1− | 0.3+ | 2001 10 24 | 704 | 0.5− | 0.5+ | 2005 05 27 | 461 | 0.3+ | 0.7+ | | |
| 1993 04 29 | 691 | 0.2− | 0.4+ | 2001 10 24 | 704 | 0.6− | 0.3− | 2005 05 27 | 461 | 0.2− | 0.8+ | | |
| 1993 04 29 | 691 | 0.3+ | 0.1− | 2001 10 24 | 704 | 1.3− | 0.6+ | 2006 08 27 | 699 | 1.1+ | 0.7− | | |
| 2000 08 26 | 691 | 0.5+ | 0.0 | 2001 10 25 | 644 | 0.5− | 0.4− | 2006 08 27 | 699 | 0.2− | 0.7− | | |
| 2000 08 26 | 691 | 0.4+ | 0.2− | 2001 10 25 | 644 | 0.2− | 0.4− | 2006 08 27 | 699 | 1.2+ | 0.1− | | |
| 2000 08 26 | 691 | 0.5+ | 0.2− | 2001 10 25 | 644 | 0.1− | 0.1− | 2006 08 27 | 699 | 0.1− | 0.2+ | | |
| 2000 08 31 | 704 | 0.6+ | 0.2− | 2001 11 17 | 704 | 0.5− | 0.2+ | 2006 08 28 | 704 | 0.2− | 0.1+ | | |
| 2000 08 31 | 704 | 1.2+ | 0.3− | 2001 11 17 | 704 | 1.0+ | 0.1+ | 2006 08 28 | 704 | 0.5+ | 0.4+ | | |
| 2000 08 31 | 704 | 0.3+ | 0.5+ | 2001 11 17 | 704 | 1.1+ | 0.3− | 2006 08 28 | 704 | 0.5− | 0.6+ | | |
| 2000 08 31 | 704 | 0.1− | 1.0− | 2001 11 17 | 704 | 0.2+ | 0.1+ | 2006 08 28 | 704 | (0.2+ | 1.5+) | | |
| 2000 09 02 | 699 | 0.7− | 0.0 | 2001 11 17 | 704 | 0.4+ | 0.1− | 2006 08 30 | 699 | 0.5+ | 0.5+ | | |
| 2000 09 02 | 699 | 1.4− | 0.2− | 2001 11 19 | 699 | 0.8− | 0.2+ | 2006 08 30 | 699 | 0.5+ | 0.1− | | |
| 2000 09 02 | 699 | 0.7− | 0.1− | 2001 11 19 | 699 | 0.4+ | 0.3− | 2006 08 30 | 699 | 0.4+ | 0.0 | | |
| 2000 09 02 | 699 | 0.3− | 0.3− | 2001 11 19 | 699 | 0.6+ | 0.2+ | 2006 08 30 | 699 | 0.5− | 0.2+ | | |
| 2000 09 03 | 704 | 0.7− | 0.2− | 2001 11 19 | 699 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.1− | 0.6− | | |
| 2000 09 03 | 704 | 0.7+ | 0.6− | 2001 11 20 | 704 | 0.6− | 0.3− | 2006 09 11 | 703 | 0.6+ | 0.4− | | |
| 2000 09 03 | 704 | 1.2− | 0.6+ | 2001 11 20 | 704 | 0.1− | 0.5− | 2006 09 11 | 703 | 0.4− | 0.3+ | | |
| 2000 09 03 | 704 | 0.8+ | 0.6+ | 2001 11 20 | 704 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.9− | 0.6− | | |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.6− | 0.2− | 2006 09 18 | 703 | 0.4− | 0.3− | | |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.6− | 0.5− | 2006 09 18 | 703 | 0.3+ | 0.7+ | | |
| 2001 09 18 | 333 | 0.5+ | 0.7+ | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.4− | | |
| 2001 09 18 | 333 | (1.8+ | 0.1−) | 2001 11 21 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.3+ | | |
| 2001 09 18 | 333 | 1.0+ | 0.1+ | 2001 11 21 | 704 | 0.3− | 0.3− | 2006 09 20 | 699 | 1.2− | 0.5+ | | |
| 2001 10 17 | 333 | 0.4+ | 0.9− | 2001 11 21 | 704 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.2+ | 0.7+ | | |
| 2001 10 17 | 333 | 0.3+ | 0.9− | 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 09 20 | 699 | 0.1− | 0.5+ | | |
| 2001 10 17 | 333 | 1.0+ | 0.4+ | 2001 12 11 | 704 | (2.0+ | 0.0 ) | 2006 09 20 | 699 | 0.1− | 0.4+ | | |
| 2001 10 22 | 704 | (0.0 | 2.4+) | 2001 12 11 | 704 | 1.0+ | 0.5+ | 2006 09 30 | 699 | 0.3− | 0.2+ | | |
| 2001 10 22 | 704 | 0.2− | 0.9− | 2001 12 11 | 704 | 1.0+ | 1.3+ | 2006 09 30 | 699 | 0.8− | 0.1− | | |
| 2001 10 22 | 704 | 0.2+ | 0.5+ | 2001 12 14 | 704 | 0.5+ | 0.2− | 2006 09 30 | 699 | 0.3+ | 0.2+ | | |
| 2001 10 22 | 704 | 0.9− | 0.2+ | 2001 12 14 | 704 | 0.3+ | 0.1− | 2006 09 30 | 699 | 0.3− | 0.7+ | | |
| 2001 10 23 | 333 | 0.8+ | 1.4− | 2001 12 14 | 704 | 0.2− | 1.2+ | 2006 10 10 | 644 | 0.2− | 0.6+ | | |
| 2001 10 23 | 333 | 0.8− | 0.3− | 2001 12 14 | 704 | 1.2+ | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.3+ | | |
| 2001 10 23 | 333 | 0.2+ | 0.4+ | 2001 12 14 | 704 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.5+ | | |
| 2001 10 23 | 704 | (1.6+ | 0.6−) | 2001 12 17 | 704 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 10 23 | 704 | 0.4− | 0.4+ | 2001 12 17 | 704 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.5+ | | |
| 2001 10 23 | 704 | 0.7− | 0.2− | 2001 12 17 | 704 | 0.4− | 0.8+ | 2006 10 22 | 644 | 0.6+ | 0.2+ | | |
| 2001 10 23 | 704 | 0.6− | 0.3+ | 2001 12 17 | 704 | 0.2+ | 0.6+ | | | | | | |
| 2001 10 24 | 704 | 1.1− | 0.7− | 2001 12 17 | 704 | 0.2+ | 0.6+ | | | | | | |

**(140612)∗ 2001 UU$_6$**

Discovered 2001 Oct. 18 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.10859 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18197277 | $\omega$ | 227.23691 | | +0.17367344 | −0.98455378 | |
| $a$ | 3.0841236 | $\Omega$ | 212.78101 | | +0.91507498 | +0.16965495 | |
| $e$ | 0.0896919 | $i$ | 2.34648 | | +0.36397160 | +0.04325570 | |
| $P$ | 5.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.3+ | 0.6+ | 2001 11 20 | 704 | (0.2− | 2.2+) | 2003 02 22 | 644 | 0.1− | 0.3+ | | |
| 2000 07 30 | 807 | 0.1+ | 0.6+ | 2001 11 20 | 704 | 0.8+ | 0.8+ | 2003 02 22 | 644 | 0.2+ | 0.5+ | | |
| 2001 10 12 | 699 | 0.7+ | 0.7− | 2001 11 21 | 704 | 0.9− | 0.9− | 2003 02 24 | 608 | 0.4− | 0.2− | | |
| 2001 10 12 | 699 | 0.8− | 0.2− | 2001 11 21 | 704 | 0.6+ | 1.1+ | 2003 02 24 | 608 | 0.1+ | 0.4− | | |
| 2001 10 12 | 699 | 0.2− | 0.5+ | 2001 11 21 | 704 | 0.3− | 1.2− | 2003 02 24 | 608 | 0.2− | 0.3− | | |
| 2001 10 12 | 699 | (1.4− | 2.2+) | 2001 11 21 | 704 | 1.0+ | 1.4+ | 2003 03 12 | 644 | 0.3+ | 0.4+ | | |
| 2001 10 17 | 704 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.9− | 0.9− | 2003 03 12 | 644 | 0.0 | 0.4+ | | |
| 2001 10 17 | 704 | 0.4− | 0.3+ | 2001 11 21 | 704 | 1.1+ | 1.4+ | 2003 03 12 | 644 | 0.1+ | 0.9+ | | |
| 2001 10 17 | 704 | 0.2− | 0.3+ | 2001 11 21 | 704 | 1.0− | 0.7− | 2005 06 05 | 691 | 0.3− | 0.2+ | | |
| 2001 10 17 | 704 | 0.5− | 0.2− | 2001 11 21 | 704 | (1.4+ | 1.7+) | 2005 06 05 | 691 | 0.1+ | 0.1− | | |
| 2001 10 18 | 333 | 0.4+ | 0.2− | 2001 11 21 | 704 | 0.7− | 0.6− | 2005 06 05 | 691 | 0.1− | 0.3+ | | |
| 2001 10 18 | 333 | 0.1− | 0.2− | 2001 11 21 | 704 | (1.5+ | 1.8+) | 2006 09 16 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 18 | 333 | 0.9+ | 0.1− | 2001 12 09 | 691 | 0.4+ | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.1− | | |
| 2001 10 18 | 644 | 0.2− | 0.2+ | 2001 12 09 | 691 | 0.2+ | 0.1− | 2006 09 16 | 644 | 0.4+ | 0.1+ | | |
| 2001 10 18 | 644 | 0.2− | 0.3+ | 2001 12 09 | 691 | 0.4+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.8+ | | |
| 2001 10 18 | 644 | 0.3− | 0.0 | 2001 12 11 | 704 | 0.3+ | 0.5− | 2006 09 17 | 691 | 0.5− | 0.2+ | | |
| 2001 10 20 | 704 | 1.1− | 0.6+ | 2001 12 11 | 704 | 0.1− | 0.7− | 2006 09 17 | 691 | 0.4− | 0.0 | | |
| 2001 10 20 | 704 | 0.3+ | 0.1+ | 2001 12 11 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.3− | 0.0 | | |
| 2001 10 20 | 704 | 0.4+ | 0.1− | 2001 12 11 | 704 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.6+ | 0.4− | | |
| 2001 10 20 | 704 | 0.1+ | 0.6− | 2001 12 14 | 704 | (2.1− | 0.1−) | 2006 09 17 | 703 | 0.2+ | 0.3− | | |
| 2001 10 22 | 704 | 0.1+ | 0.1− | 2001 12 14 | 704 | (2.1− | 0.4+) | 2006 09 17 | 703 | 0.0 | 0.2− | | |
| 2001 10 22 | 704 | 0.2− | 0.3− | 2001 12 14 | 704 | (2.2− | 0.2+) | 2006 09 19 | 699 | 0.3− | 0.9+ | | |
| 2001 10 22 | 704 | 0.2− | 0.2− | 2001 12 14 | 704 | (1.7− | 0.4+) | 2006 09 19 | 699 | 0.3+ | 0.7+ | | |
| 2001 10 22 | 704 | 0.4− | 0.4− | 2001 12 14 | 704 | (1.8− | 0.7−) | 2006 09 19 | 699 | 0.3− | 0.9− | | |
| 2001 10 22 | 704 | 0.5+ | 0.4+ | 2001 12 17 | 704 | 0.2+ | 1.0− | 2006 09 19 | 699 | 0.1+ | 0.2+ | | |
| 2001 10 23 | 333 | 1.3− | 0.1− | 2001 12 17 | 704 | 1.0+ | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.2+ | | |
| 2001 10 23 | 333 | 0.3− | 0.1+ | 2001 12 17 | 704 | (2.4+ | 3.9−) | 2006 09 20 | 704 | 1.1− | 0.4+ | | |
| 2001 10 23 | 704 | 0.3− | 0.4− | 2001 12 17 | 704 | (0.3+ | 1.8−) | 2006 09 20 | 704 | (1.6− | 0.8−) | | |
| 2001 10 23 | 333 | 0.6− | 0.3− | 2001 12 19 | 644 | 0.3− | 0.4− | 2006 09 20 | 704 | 0.3− | 0.1+ | | |
| 2001 10 23 | 704 | 0.0 | 0.2− | 2001 12 19 | 644 | 0.5− | 0.2− | 2006 09 21 | A50 | 0.4+ | 0.5+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2001 12 19 | 644 | 0.5− | 0.4− | 2006 09 25 | 691 | 0.0 | 0.1− | | |
| 2001 10 23 | 704 | 0.0 | 0.1− | 2003 01 26 | 699 | 0.3+ | 0.6− | 2006 09 25 | 691 | 0.0 | 0.1− | | |
| 2001 10 23 | 704 | 0.2+ | 0.1− | 2003 01 26 | 699 | 0.3− | 0.5− | 2006 09 25 | 691 | (2.2− | 0.2−) | | |
| 2001 10 24 | 704 | 0.5− | 0.2− | 2003 01 26 | 699 | 0.4− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2001 10 24 | 704 | 0.0 | 0.4− | 2003 01 26 | 699 | 1.1− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 | | |
| 2001 10 24 | 704 | 0.3+ | 0.1− | 2003 01 28 | 704 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1− | | |
| 2001 10 24 | 704 | 0.2+ | 0.2− | 2003 01 28 | 704 | 1.2+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.1+ | | |
| 2001 10 24 | 704 | 0.0 | 0.2− | 2003 01 28 | 704 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.4− | 1.2+ | | |
| 2001 10 25 | 644 | 0.6− | 0.3+ | 2003 01 28 | 704 | 0.7+ | 0.7+ | 2006 09 29 | 704 | 0.8+ | 0.3+ | | |
| 2001 10 25 | 644 | 0.4− | 0.4+ | 2003 01 31 | 704 | 0.5+ | 0.7+ | 2006 09 29 | 704 | 0.1− | 1.1+ | | |
| 2001 10 25 | 644 | 0.5− | 0.4+ | 2003 01 31 | 704 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.7+ | 0.2− | | |
| 2001 10 26 | 704 | 0.2− | 0.1− | 2003 01 31 | 704 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.6+ | 0.3+ | | |
| 2001 10 26 | 704 | 0.4− | 0.5+ | 2003 01 31 | 704 | 0.3+ | 1.3+ | 2006 10 01 | 704 | 0.5+ | 0.5+ | | |
| 2001 10 26 | 704 | 0.4+ | 0.8− | 2003 01 31 | 704 | 0.7+ | 0.9+ | 2006 10 01 | 704 | 0.1+ | 0.1+ | | |
| 2001 11 09 | 704 | 0.1− | 0.0 | 2003 02 02 | 704 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.5+ | 0.3+ | | |
| 2001 11 09 | 704 | 0.6− | 0.2− | 2003 02 02 | 704 | 0.0 | 0.7+ | 2006 10 01 | 704 | (0.8+ | 2.4+) | | |
| 2001 11 09 | 704 | 0.6− | 0.0 | 2003 02 02 | 704 | 1.1+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.1− | | |
| 2001 11 09 | 704 | 0.4− | 0.1− | 2003 02 02 | 704 | 0.5− | 1.5− | 2006 10 02 | 691 | 0.3− | 0.0 | | |
| 2001 11 09 | 704 | 0.5− | 0.1− | 2003 02 02 | 704 | (2.0+ | 0.5+) | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2001 11 09 | 644 | 0.2+ | 0.2+ | 2003 02 02 | 704 | 1.3− | 1.1+ | 2006 10 02 | 691 | 0.1+ | 0.2− | | |
| 2001 11 09 | 644 | 0.5+ | 0.3− | 2003 02 02 | 704 | 0.8− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 09 | 644 | 0.2− | 0.5+ | 2003 02 02 | 704 | 1.1− | 0.8− | 2006 10 02 | 691 | 0.1+ | 0.0 | | |
| 2001 11 12 | 291 | 0.0 | 0.0 | 2003 02 03 | 704 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.4− | 0.1− | | |
| 2001 11 12 | 291 | 0.1+ | 0.1+ | 2003 02 03 | 704 | 0.3− | 0.8+ | 2006 10 17 | G96 | 0.7+ | 0.3− | | |
| 2001 11 12 | 291 | 0.2+ | 0.0 | 2003 02 03 | 704 | 1.2+ | 0.1− | 2006 10 17 | 703 | (1.6− | 0.2−) | | |
| 2001 11 16 | 644 | 0.0 | 0.3+ | 2003 02 03 | 704 | 0.6+ | 0.0 | 2006 10 17 | G96 | 0.4− | 1.0− | | |
| 2001 11 16 | 644 | 0.1+ | 0.4+ | 2003 02 04 | 608 | 0.1− | 0.7− | 2006 10 17 | 703 | 1.2− | 0.1− | | |
| 2001 11 16 | 644 | 0.3+ | 0.4+ | 2003 02 04 | 608 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.8+ | 0.4− | | |
| 2001 11 17 | 704 | 0.1− | 0.2− | 2003 02 04 | 608 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.0 | 0.1− | 2003 02 08 | 704 | (2.4+ | 1.0+) | 2006 10 17 | 703 | 1.2− | 0.5+ |
| 2001 11 17 | 704 | 0.5+ | 0.2+ | 2003 02 08 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 11 19 | 608 | (1.2− | 1.8−) | 2003 02 08 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2001 11 19 | 608 | 0.6− | 0.9− | 2003 02 08 | 704 | (1.6+ | 1.0−) | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 11 19 | 608 | 0.6− | 1.0− | 2003 02 19 | 608 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 0.7+ | 0.6+ | 2003 02 19 | 608 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 11 20 | 704 | 0.1+ | 1.4+ | 2003 02 19 | 608 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 1.1+ | 1.0+ | 2003 02 22 | 644 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.5− |

**(140613)∗ 2001 UX$_6$ = 1990 RY$_{12}$**

Discovered 2001 Oct. 18 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 43107)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.86362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18785983 | $\omega$ | 252.13986 | | +0.82873659 | −0.55942994 | |
| $a$ | 3.0193498 | $\Omega$ | 141.87251 | | +0.52237949 | +0.76346978 | |
| $e$ | 0.1919579 | $i$ | 1.41913 | | +0.20078678 | +0.32272596 | |
| $P$ | 5.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 14 | 809 | 0.1− | 0.4+ | 2001 11 20 | 704 | 0.1− | 0.6+ | 2006 09 20 | 704 | 0.7+ | 0.0 |
| 1990 09 14 | 809 | 0.1− | 0.5− | 2001 11 20 | 704 | 0.3− | 1.2+ | 2006 09 20 | 704 | 0.2+ | 0.2− |
| 1990 09 14 | 809 | 0.1+ | 1.8− | 2001 11 20 | 704 | (0.5− | 1.8+) | 2006 09 20 | 704 | 0.6+ | 1.4− |
| 2001 10 17 | 704 | 0.3− | 0.3− | 2001 11 20 | 704 | 0.0 | 1.0+ | 2006 09 20 | 704 | 1.2+ | 0.9− |
| 2001 10 17 | 704 | 0.1+ | 0.8+ | 2001 11 21 | 704 | 0.4− | 0.2− | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 2001 10 17 | 704 | 0.4− | 0.9+ | 2001 11 21 | 704 | 0.6+ | 0.9− | 2006 09 20 | 644 | 0.3− | 0.4+ |
| 2001 10 18 | 333 | 0.9− | 0.1− | 2001 11 21 | 704 | (0.1+ | 2.3+) | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2001 10 18 | 333 | 0.2− | 0.5− | 2001 11 21 | 704 | (0.8− | 2.2−) | 2006 09 25 | 691 | 0.2− | 0.1− |
| 2001 10 18 | 333 | 0.4− | 0.8− | 2001 11 21 | 704 | (1.7− | 0.1−) | 2006 09 25 | 691 | (0.0 | 1.6−) |
| 2001 10 20 | 704 | 0.2− | 0.0 | 2001 11 21 | 704 | 0.2+ | 1.2− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 1.5+ | 0.2+ | 2001 11 21 | 704 | 1.1− | 0.7− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2001 10 20 | 704 | 0.3+ | 0.2+ | 2001 11 21 | 704 | 0.0 | 1.5− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 10 22 | 704 | 0.2+ | 0.5+ | 2001 11 21 | 704 | 0.1+ | 0.6− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2001 10 22 | 704 | 0.0 | 0.8+ | 2001 12 09 | 691 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2001 10 22 | 704 | 0.2− | 0.2+ | 2001 12 09 | 691 | 0.6+ | 0.1− | 2006 09 28 | 704 | 0.8+ | 1.5+ |
| 2001 10 22 | 704 | 0.7+ | 1.5+ | 2001 12 09 | 691 | 0.6+ | 0.0 | 2006 09 28 | 704 | (1.8− | 0.8+) |
| 2001 10 23 | 333 | 1.4− | 0.9− | 2001 12 14 | 704 | 0.7− | 0.1− | 2006 09 28 | 704 | 1.2+ | 0.3+ |
| 2001 10 23 | 333 | 0.3+ | 0.3− | 2001 12 14 | 704 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.3+ | 0.4+ |
| 2001 10 23 | 704 | 0.1+ | 1.2+ | 2001 12 14 | 704 | 0.9− | 0.5+ | 2006 10 01 | 704 | 0.3+ | 0.3− |
| 2001 10 23 | 333 | 0.4− | 0.1+ | 2001 12 14 | 704 | 0.1− | 0.7+ | 2006 10 01 | 704 | 1.2− | 0.1+ |
| 2001 10 23 | 704 | 0.5− | 0.7+ | 2001 12 14 | 704 | 0.7− | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.0 | 1.0+ | 2002 12 07 | 645 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.2− | 0.5− |
| 2001 10 23 | 704 | 0.3− | 1.2+ | 2002 12 07 | 645 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2001 10 23 | 704 | 0.6− | 1.4+ | 2003 02 22 | 699 | 0.5− | 1.3+ | 2006 10 10 | 644 | 0.3− | 0.4− |
| 2001 10 24 | 704 | 0.1− | 0.3− | 2003 02 22 | 699 | 1.3+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.9+ | 0.7+ | 2003 02 22 | 699 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2003 02 22 | 699 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.6+ | 2003 02 23 | 291 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.3+ | 0.6+ | 2003 02 23 | 291 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 10 25 | 644 | 0.2+ | 0.4+ | 2003 02 23 | 291 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 10 25 | 644 | 0.2+ | 0.3+ | 2004 05 21 | 691 | 0.7+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 10 25 | 644 | 0.1+ | 0.3+ | 2004 05 21 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.8− |
| 2001 10 27 | 699 | (1.9+ | 0.0 ) | 2004 05 21 | 691 | 0.4+ | 1.1+ | 2006 10 17 | 703 | (0.9− | 2.6+) |
| 2001 10 27 | 699 | 0.4− | 0.6− | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.4− | 0.3− |
| 2001 10 27 | 699 | 0.7− | 0.9+ | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.7− |
| 2001 10 27 | 699 | 0.6− | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.8− | 0.2− | 2006 07 21 | G96 | 0.5− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 1.2− | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2001 11 09 | 704 | 0.3− | 0.6+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 11 16 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.7− | 0.2+ |
| 2001 11 16 | 644 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.8+ |
| 2001 11 16 | 644 | 0.2+ | 0.3− | 2006 09 14 | 703 | 0.4− | 0.5− | 2006 10 22 | 703 | 0.3+ | 0.7+ |
| 2001 11 17 | 704 | 0.7− | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.7− | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2001 11 17 | 704 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.9− | 0.3− | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2001 11 17 | 704 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.8− | 0.4− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 11 19 | 699 | 1.3+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 1.0− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2001 11 19 | 699 | 0.6+ | 0.1− | 2006 09 17 | 704 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2001 11 19 | 699 | 1.0+ | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 699 | 1.3+ | 0.1− | 2006 09 17 | 704 | 1.5+ | 0.8− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 11 19 | 608 | 0.3+ | 0.7− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 11 19 | 608 | 0.2− | 0.9− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2001 11 19 | 608 | 0.0 | 0.7− | 2006 09 18 | 691 | 0.1+ | 0.3+ | | | | |
| 2001 11 20 | 704 | 0.7− | 1.4+ | 2006 09 20 | 704 | 1.2+ | 0.3− | | | | |

**(140614)∗ 2001 UZ$_6$**

Discovered 2001 Oct. 18 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.30324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18220552 | $\omega$ | 16.26133 | | +0.47841496 | −0.86648036 | |
| $a$ | 3.0814967 | $\Omega$ | 45.41983 | | +0.78173110 | +0.34627494 | |
| $e$ | 0.2487498 | $i$ | 11.54785 | | +0.40001951 | +0.35959066 | |
| $P$ | 5.41 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 19 | 691 | 0.2+ | 0.0 | 2001 10 24 | 704 | (1.7− | 1.0+) | 2002 01 07 | 699 | 0.1− | 0.7− |
| 1990 10 19 | 691 | 0.1+ | 0.1− | 2001 10 24 | 704 | 0.0 | 0.1− | 2002 01 07 | 699 | 0.5− | 0.0 |
| 1990 10 19 | 691 | 0.1− | 0.1− | 2001 10 25 | 644 | 0.4− | 0.1− | 2002 01 07 | 699 | 0.5+ | 0.4− |
| 2001 09 17 | 704 | 0.1− | 0.9+ | 2001 10 25 | 644 | 0.4− | 0.2− | 2002 01 07 | 699 | 0.2+ | 0.3− |
| 2001 09 17 | 704 | 1.0+ | 1.0+ | 2001 10 25 | 644 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.4− | 1.3− |
| 2001 09 17 | 704 | 1.0+ | 1.2+ | 2001 10 26 | 704 | 0.2+ | 0.3+ | 2002 01 09 | 704 | 0.5− | 1.3− |
| 2001 09 17 | 704 | 0.9+ | 1.0+ | 2001 10 26 | 704 | 0.6+ | 0.6+ | 2002 01 09 | 704 | 0.5− | 1.2− |
| 2001 09 19 | 699 | 0.0 | 0.2+ | 2001 10 26 | 704 | 0.1+ | 0.4+ | 2002 01 09 | 704 | 0.0 | 1.2− |
| 2001 09 19 | 699 | 0.7+ | 0.5+ | 2001 10 26 | 704 | 0.3− | 0.8+ | 2002 01 09 | 704 | 0.2+ | 0.8− |
| 2001 09 19 | 699 | 0.4+ | 0.3+ | 2001 10 26 | 704 | 0.7+ | 0.1+ | 2002 01 11 | 699 | (1.7− | 1.4+) |
| 2001 09 19 | 699 | 0.2− | 0.0 | 2001 10 28 | 704 | 0.6+ | 0.0 | 2002 01 11 | 699 | 1.2− | 0.8+ |
| 2001 09 22 | 644 | 0.5+ | 0.6+ | 2001 10 28 | 704 | 0.2+ | 0.2− | 2002 01 11 | 699 | 0.8− | 0.4+ |
| 2001 09 22 | 644 | 0.3+ | 0.2+ | 2001 10 28 | 704 | 0.4+ | 0.1− | 2002 01 11 | 699 | 0.6− | 0.5+ |
| 2001 09 22 | 644 | 0.3+ | 0.5+ | 2001 11 09 | 704 | 0.2+ | 0.1+ | 2002 02 06 | 704 | 0.8− | 1.1− |
| 2001 09 25 | 333 | 0.2− | 0.4− | 2001 11 09 | 704 | 0.3+ | 0.1− | 2002 02 06 | 704 | 0.7− | 1.3+ |
| 2001 09 25 | 333 | 0.9+ | 0.5− | 2001 11 09 | 704 | 0.1+ | 0.3− | 2002 02 06 | 704 | 0.2+ | 0.1− |
| 2001 09 25 | 333 | 0.2− | 0.5+ | 2001 11 09 | 704 | 0.0 | 0.2− | 2002 02 06 | 704 | 0.2− | 0.6+ |
| 2001 09 26 | 704 | 0.8− | 1.1− | 2001 11 09 | 704 | 0.1− | 0.2− | 2002 02 08 | 704 | 0.3+ | 0.2+ |
| 2001 09 26 | 704 | 0.5− | 1.4− | 2001 11 11 | 691 | 0.2− | 0.2− | 2002 02 08 | 704 | 0.2+ | 0.5− |
| 2001 09 26 | 704 | 0.9− | 1.1− | 2001 11 11 | 691 | 0.2− | 0.3− | 2002 02 08 | 704 | 0.1+ | 0.1+ |
| 2001 09 26 | 704 | 1.0− | 1.1− | 2001 11 11 | 691 | 0.0 | 0.2− | 2002 02 08 | 704 | 0.4+ | 0.0 |
| 2001 09 26 | 704 | (1.1− | 1.6−) | 2001 11 12 | 704 | 0.5− | 1.0+ | 2004 04 25 | 691 | 0.2− | 0.1+ |
| 2001 10 09 | 691 | 0.4+ | 0.2− | 2001 11 12 | 704 | 0.8− | 1.1+ | 2004 04 25 | 691 | 0.2− | 0.0 |
| 2001 10 09 | 691 | 0.4+ | 0.2− | 2001 11 12 | 704 | 0.5− | 1.0+ | 2004 04 25 | 691 | 0.0 | 0.2+ |
| 2001 10 09 | 691 | 0.5+ | 0.3− | 2001 11 12 | 704 | 0.6− | 0.9+ | 2004 05 28 | 691 | 0.5+ | 0.8+ |
| 2001 10 13 | 704 | 1.1+ | 0.4− | 2001 11 12 | 704 | (2.1+ | 0.3+) | 2004 05 28 | 691 | 0.3+ | 0.4+ |
| 2001 10 13 | 704 | 0.2− | 0.9+ | 2001 11 19 | 704 | 0.7+ | 0.1+ | 2004 05 28 | 691 | 0.7+ | 0.6+ |
| 2001 10 13 | 704 | 0.7− | 0.8+ | 2001 11 19 | 704 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.3+ | 0.2+ |
| 2001 10 13 | 704 | (1.3− | 1.7+) | 2001 11 19 | 704 | 0.6+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 2001 10 17 | 704 | 0.4− | 0.4− | 2001 11 19 | 704 | 0.8+ | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2001 11 19 | 704 | 0.5+ | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 0.5− | 0.5+ | 2001 11 19 | 608 | 0.5+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.1+ | 0.2+ | 2001 11 19 | 608 | 0.3+ | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 0.2+ | 2001 11 19 | 608 | 0.6+ | 0.1− | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 2001 10 18 | 333 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.7− | 0.1− |
| 2001 10 18 | 333 | 0.3− | 0.5− | 2001 11 21 | 704 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 2001 10 18 | 333 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.7+ |
| 2001 10 18 | 644 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.2+ |
| 2001 10 18 | 644 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.2+ |
| 2001 10 18 | 644 | 0.3− | 0.1− | 2001 12 10 | 704 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.2+ |
| 2001 10 20 | 704 | 0.4− | 0.6− | 2001 12 10 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.7+ |
| 2001 10 20 | 704 | 0.0 | 0.4− | 2001 12 10 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.1− |
| 2001 10 20 | 704 | 0.2− | 0.2− | 2001 12 10 | 704 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2001 10 20 | 704 | 0.3− | 0.2− | 2001 12 10 | 704 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.4− |
| 2001 10 22 | 704 | 0.0 | 0.4− | 2001 12 15 | 704 | 0.9− | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.6− |
| 2001 10 22 | 704 | 0.2+ | 0.5− | 2001 12 15 | 704 | 0.8− | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.1− |
| 2001 10 22 | 704 | 0.1+ | 0.4− | 2001 12 15 | 704 | 1.3− | 0.5+ | 2006 09 20 | 703 | 0.4+ | 0.2+ |
| 2001 10 22 | 704 | 0.0 | 0.4− | 2001 12 15 | 704 | 1.0− | 0.8+ | 2006 09 20 | 703 | 0.3− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.1+ | 0.1− | 2001 12 15 | 704 | 1.4− | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 333 | 0.1− | 0.4− | 2001 12 18 | 704 | 0.1− | 0.5+ | 2006 09 21 | 699 | 0.7− | 1.5+ |
| 2001 10 23 | 333 | 0.2− | 0.2− | 2001 12 18 | 704 | 0.6− | 1.1+ | 2006 09 21 | 699 | 0.4+ | 0.2+ |
| 2001 10 23 | 333 | 1.1+ | 0.4− | 2001 12 18 | 704 | 0.5− | 1.2+ | 2006 09 21 | 699 | 0.3+ | 0.3+ |
| 2001 10 23 | 333 | 0.6− | 0.8− | 2001 12 18 | 704 | 0.7− | 1.0+ | 2006 09 21 | 699 | 0.3− | 0.2+ |
| 2001 10 23 | 704 | 0.0 | 0.2− | 2001 12 18 | 704 | (0.9− | 1.8+) | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2001 10 23 | 333 | 0.4+ | 0.7− | 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.0 |
| 2001 10 23 | 333 | 0.1− | 0.2+ | 2001 12 19 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.6+ | 0.0 |
| 2001 10 23 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.2− | 0.5+ | 2006 09 26 | 703 | 1.4+ | 0.2− |
| 2001 10 23 | 704 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.7+ | 0.8+ |
| 2001 10 23 | 704 | 0.6+ | 0.2+ | 2001 12 19 | 704 | 1.1− | 1.0+ | 2006 11 27 | 703 | 0.8+ | 0.6+ |
| 2001 10 23 | 704 | 0.3+ | 0.2+ | 2002 01 06 | 644 | 0.7− | 0.4− | 2006 11 27 | 703 | 0.9− | 0.6− |
| 2001 10 24 | 704 | 0.2+ | 0.5− | 2002 01 06 | 644 | 0.6− | 0.5− | 2006 11 27 | 703 | 1.5− | 0.3− |
| 2001 10 24 | 704 | 0.1+ | 0.3− | 2002 01 06 | 644 | 0.6− | 0.2− | | | | |

**(140615)∗ 2001 UA$_7$**

Discovered 2001 Oct. 18 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.15657 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21001777 | $\omega$ | 58.23875 | | −0.33317085 | | −0.93885204 |
| $a$ | 2.8030576 | $\Omega$ | 51.47302 | | +0.82313621 | | −0.33458054 |
| $e$ | 0.1594881 | $i$ | 6.37864 | | +0.45983037 | | −0.08131863 |
| $P$ | 4.69 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 02 | 691 | 0.3+ | 0.1+ | 2001 11 09 | 704 | 0.0 | 0.7− | 2001 12 19 | 704 | 0.2+ | 0.1− |
| 1994 05 02 | 691 | 0.1− | 0.2+ | 2001 11 09 | 704 | 0.2− | 1.4− | 2001 12 19 | 704 | 0.0 | 0.0 |
| 1994 05 02 | 691 | 0.1− | 0.1+ | 2001 11 09 | 704 | 0.2+ | 0.6− | 2001 12 19 | 704 | 1.0− | 0.2+ |
| 1994 05 05 | 691 | 0.1− | 0.3− | 2001 11 09 | 704 | 0.0 | 1.0− | 2002 01 06 | 644 | 0.3− | 0.0 |
| 1994 05 05 | 691 | 0.1− | 0.2+ | 2001 11 09 | 704 | 0.1+ | 0.4− | 2002 01 06 | 644 | 0.6− | 0.1− |
| 1994 05 05 | 691 | 0.0 | 0.8+ | 2001 11 09 | 644 | 0.3− | 0.5+ | 2002 01 06 | 644 | 0.3+ | 0.0 |
| 2001 09 25 | 333 | 0.6+ | 0.1− | 2001 11 09 | 644 | 0.2− | 0.4+ | 2003 03 06 | 704 | 1.3+ | 0.5− |
| 2001 09 25 | 333 | 0.3− | 1.0− | 2001 11 09 | 644 | 0.2− | 1.0+ | 2003 03 06 | 704 | (2.4+ | 0.4−) |
| 2001 09 25 | 333 | 0.7+ | 0.4+ | 2001 11 17 | 704 | 0.1− | 0.4+ | 2003 03 06 | 704 | (2.0+ | 0.7+) |
| 2001 10 12 | 699 | 0.1− | 1.1+ | 2001 11 17 | 704 | 0.5+ | 0.0 | 2003 03 09 | 704 | 0.5− | 1.0− |
| 2001 10 12 | 699 | 1.2+ | 0.6+ | 2001 11 17 | 704 | 0.6− | 0.6− | 2003 03 09 | 704 | 0.1+ | 0.2− |
| 2001 10 12 | 699 | 0.1− | 0.3− | 2001 11 19 | 608 | 0.3− | 0.4+ | 2003 03 09 | 704 | 0.1+ | 0.8− |
| 2001 10 12 | 699 | 1.2+ | 0.4− | 2001 11 19 | 608 | 0.6− | 0.7+ | 2003 03 09 | 704 | 0.7+ | 1.4+ |
| 2001 10 18 | 333 | 0.6− | 0.1− | 2001 11 19 | 608 | 0.6− | 0.5+ | 2003 03 09 | 704 | 1.0+ | 0.4− |
| 2001 10 18 | 333 | (1.5− | 0.2+) | 2001 11 20 | 704 | 0.1− | 0.6+ | 2003 03 15 | 608 | 0.3+ | 0.2+ |
| 2001 10 18 | 333 | 0.1+ | 0.8+ | 2001 11 20 | 704 | 0.0 | 0.7+ | 2003 03 15 | 608 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.2− | 0.2+ | 2001 11 20 | 704 | 0.3− | 0.7+ | 2003 03 15 | 608 | 0.3+ | 0.2+ |
| 2001 10 18 | 644 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.5+ | 2003 03 26 | 691 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.3− | 0.0 | 2001 11 20 | 704 | 0.0 | 0.4+ | 2003 03 26 | 691 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.0 | 0.3− | 2003 03 26 | 691 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.0 | 0.3+ | 2003 03 27 | 699 | 0.9− | 0.4+ |
| 2001 10 20 | 704 | 0.4− | 0.2− | 2001 11 21 | 704 | 0.5+ | 0.1− | 2003 03 27 | 699 | 0.5− | 0.2− |
| 2001 10 20 | 704 | 0.5− | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.4+ | 2003 03 27 | 699 | 1.0+ | 0.5+ |
| 2001 10 22 | 704 | 0.1− | 0.5− | 2001 11 21 | 704 | 1.4+ | 0.5+ | 2003 03 27 | 699 | 0.6− | 0.3− |
| 2001 10 22 | 704 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.0 | 0.4+ | 2003 04 09 | 704 | 0.3− | 0.1− |
| 2001 10 22 | 704 | 0.1− | 0.4+ | 2001 11 21 | 704 | 0.1+ | 0.8− | 2003 04 09 | 704 | (1.6+ | 0.1−) |
| 2001 10 22 | 704 | 1.2+ | 1.3+ | 2001 11 21 | 704 | 0.1− | 0.4+ | 2003 04 09 | 704 | 0.5+ | 0.5− |
| 2001 10 22 | 704 | 0.3− | 0.1+ | 2001 11 21 | 704 | 0.7+ | 1.2+ | 2003 04 09 | 704 | 1.2+ | 0.3+ |
| 2001 10 23 | 333 | 0.4− | 0.0 | 2001 11 21 | 704 | 0.1− | 0.2+ | 2003 04 09 | 704 | 0.4− | 1.1+ |
| 2001 10 23 | 333 | 0.3+ | 0.8− | 2001 12 11 | 704 | 0.1+ | 0.2+ | 2005 08 31 | 644 | 0.4− | 0.7+ |
| 2001 10 23 | 704 | 0.3− | 0.4+ | 2001 12 11 | 704 | 0.1− | 0.8+ | 2005 08 31 | 644 | 0.5− | 0.7+ |
| 2001 10 23 | 333 | 0.5+ | 0.5− | 2001 12 11 | 704 | 0.6− | 0.1+ | 2005 08 31 | 644 | 0.3− | 0.6+ |
| 2001 10 23 | 704 | 0.2− | 0.1− | 2001 12 11 | 704 | 0.5− | 0.9+ | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 2001 10 23 | 704 | 0.4− | 0.5+ | 2001 12 15 | 704 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.2+ | 0.6+ | 2001 12 15 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2001 10 23 | 704 | 0.1− | 0.3− | 2001 12 15 | 704 | 0.3+ | 0.6− | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2001 10 24 | 704 | 0.3+ | 0.4− | 2001 12 15 | 704 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.1+ | 0.3+ | 2001 12 15 | 704 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.3− | 0.3− | 2001 12 18 | 691 | 0.4+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.3− |
| 2001 10 24 | 704 | 0.6− | 0.5− | 2001 12 18 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.6− | 0.9+ |
| 2001 10 24 | 704 | 0.6− | 0.2+ | 2001 12 18 | 691 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2001 10 25 | 644 | 0.2− | 0.1+ | 2001 12 18 | 704 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2001 10 25 | 644 | 0.3− | 0.2+ | 2001 12 18 | 704 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.7− | 0.4− |
| 2001 10 25 | 644 | 0.3− | 0.3+ | 2001 12 18 | 704 | 1.4− | 0.5− | 2006 11 27 | 704 | 0.4− | 0.4− |
| 2001 10 26 | 704 | (0.7+ | 1.7−) | 2001 12 18 | 704 | 1.0− | 0.4+ | 2006 11 27 | 704 | 0.5+ | 0.9− |
| 2001 10 26 | 704 | 1.0+ | 1.2− | 2001 12 18 | 704 | 0.6− | 0.6− | 2006 11 27 | 704 | 0.3− | 0.3− |
| 2001 10 26 | 704 | 0.3− | 1.2− | 2001 12 19 | 704 | 0.5+ | 0.1− | | | | |
| 2001 10 26 | 704 | (0.3− | 2.3−) | 2001 12 19 | 704 | 0.5− | 0.2+ | | | | |

**(140616)∗ 2001 UC$_7$ = 1993 FG$_{68}$**

Discovered 2001 Oct. 22 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. A. Doppler (*MPO* 20564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.86464 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18653990 | $\omega$ | 189.44365 | | +0.62674498 | | −0.77495602 |
| $a$ | 3.0335760 | $\Omega$ | 221.80621 | | +0.72266222 | | +0.61716372 |
| $e$ | 0.0866127 | $i$ | 7.01810 | | +0.29146191 | | +0.13620611 |
| $P$ | 5.28 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.4− | 1.1+ | 2001 11 20 | 704 | (0.4− | 3.0+) | 2006 09 18 | 699 | (1.6+ | 0.3−) |
| 1993 03 22 | 809 | 1.1+ | 1.2+ | 2001 11 20 | 704 | (0.2− | 2.9+) | 2006 09 18 | 699 | (1.7+ | 0.1−) |
| 2001 09 19 | 699 | (1.9− | 0.7−) | 2001 11 20 | 704 | (0.1− | 2.7+) | 2006 09 18 | 699 | 1.0+ | 0.8− |
| 2001 09 19 | 699 | 0.0 | 0.9+ | 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.7− | 0.6− |
| 2001 09 19 | 699 | 0.7+ | 0.8+ | 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.6+ |
| 2001 09 19 | 699 | 1.0− | 0.9+ | 2001 11 21 | 704 | 0.5− | 0.8+ | 2006 09 29 | 704 | 1.1+ | 0.0 |
| 2001 09 20 | 333 | 1.1+ | 0.4+ | 2001 11 21 | 704 | 0.8− | 1.1+ | 2006 09 29 | 704 | 0.3+ | 0.2− |
| 2001 09 20 | 333 | 0.9− | 0.1− | 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.9+ |
| 2001 09 20 | 333 | 0.1+ | 0.3+ | 2001 11 24 | 704 | 0.8+ | 0.3+ | 2006 10 11 | 691 | 0.3+ | 0.0 |
| 2001 10 13 | 704 | 0.4− | 0.1− | 2001 11 24 | 704 | 1.3+ | 0.5+ | 2006 10 11 | 691 | 0.3+ | 0.1− |
| 2001 10 13 | 704 | 0.0 | 0.1− | 2001 11 24 | 704 | (2.2− | 1.3−) | 2006 10 11 | 691 | 0.3+ | 0.1+ |
| 2001 10 13 | 704 | 0.8− | 0.0 | 2001 11 24 | 704 | 0.1− | 0.1+ | 2006 10 11 | 683 | 0.5− | 0.7− |
| 2001 10 13 | 704 | 0.1+ | 0.3+ | 2001 11 24 | 704 | 0.2− | 0.2+ | 2006 10 11 | 683 | 0.1− | 0.4− |
| 2001 10 18 | 644 | 0.3− | 0.7− | 2001 11 24 | 704 | 0.0 | 0.7+ | 2006 10 11 | 683 | 0.5− | 0.9+ |
| 2001 10 18 | 644 | 0.2− | 0.9− | 2001 11 24 | 704 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2− |
| 2001 10 18 | 644 | 0.1− | 0.9− | 2001 11 24 | 704 | 0.1+ | 0.4− | 2006 10 15 | 691 | 0.2− | 0.5− |
| 2001 10 22 | 704 | 0.2− | 0.1+ | 2001 11 24 | 704 | 0.6− | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.3− |
| 2001 10 22 | 704 | 0.4− | 0.8− | 2001 11 24 | 644 | 0.8+ | 0.7+ | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2001 10 22 | 704 | 0.1− | 1.0− | 2001 11 24 | 644 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2001 10 22 | 704 | 0.2− | 0.0 | 2001 11 24 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2001 10 22 | 704 | 0.2− | 0.7− | 2001 12 09 | 699 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 22 | 333 | 0.0 | 0.7− | 2001 12 09 | 699 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 10 22 | 333 | 0.6+ | 0.0 | 2001 12 09 | 699 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2001 10 22 | 333 | 0.5− | 0.7+ | 2001 12 09 | 699 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 333 | 0.2− | 1.0− | 2001 12 14 | 704 | 1.0+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 10 23 | 333 | 0.3+ | 0.9− | 2001 12 14 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 0.0 | 0.9− | 2001 12 14 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 0.0 | 0.9− | 2001 12 14 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 10 23 | 333 | 0.6− | 1.2− | 2001 12 14 | 704 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.1− | 0.8− | 2001 12 17 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.2− | 0.9− | 2001 12 17 | 704 | 0.7+ | 0.3− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | (0.6− | 1.8−) | 2001 12 17 | 704 | 0.5+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | 0.4− | 0.5− | 2001 12 19 | 644 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.2+ | 0.2+ | 2001 12 19 | 644 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.4+ | 0.2+ | 2001 12 19 | 644 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.7+ | 0.1− | 2003 02 02 | 699 | 1.0− | 1.0− | 2006 11 06 | 644 | 0.0 | 0.4+ |
| 2001 10 25 | 644 | 0.2− | 1.2+ | 2003 02 02 | 699 | 0.1+ | 0.4− | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2001 10 25 | 644 | 0.5− | 0.9+ | 2003 02 02 | 699 | 0.9− | 1.1− | 2006 11 11 | 703 | 0.3+ | 0.9− |
| 2001 10 25 | 644 | 0.2− | 0.6+ | 2003 02 02 | 699 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2001 10 26 | 704 | 0.4− | 0.4+ | 2003 02 02 | 704 | 0.9+ | 1.4+ | 2006 11 11 | 703 | (0.3+ | 1.6−) |
| 2001 10 26 | 704 | 0.1− | 0.2− | 2003 02 02 | 704 | 0.6− | 1.2+ | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2001 10 26 | 704 | 0.4+ | 0.4+ | 2003 02 02 | 704 | 0.4− | 0.9+ | 2006 11 15 | 704 | 0.0 | 0.7+ |
| 2001 10 26 | 704 | 0.1+ | 0.1+ | 2003 02 02 | 704 | (0.7+ | 1.8+) | 2006 11 15 | 704 | 0.1+ | 0.7+ |
| 2001 11 09 | 704 | 0.2+ | 0.8− | 2003 02 22 | 683 | (1.7+ | 0.8−) | 2006 11 15 | 704 | 0.6+ | 0.3+ |
| 2001 11 09 | 704 | 0.1− | 0.5− | 2003 02 22 | 683 | (2.4+ | 1.8−) | 2006 11 15 | 704 | 0.3+ | 0.6+ |
| 2001 11 09 | 704 | 0.4− | 0.4− | 2003 02 22 | 683 | 1.0+ | 0.9− | 2006 11 15 | 704 | 0.5+ | 0.1− |
| 2001 11 09 | 704 | 0.3+ | 0.2+ | 2004 04 26 | 699 | 0.1− | 0.4+ | 2006 11 18 | 291 | 0.1− | 0.3+ |
| 2001 11 09 | 704 | 0.2+ | 0.1+ | 2004 04 26 | 699 | 0.3− | 0.8+ | 2006 11 18 | 291 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.6+ | 1.1+ | 2004 04 26 | 699 | 0.8− | 1.3+ | 2006 11 18 | 291 | 0.2− | 0.3+ | | |
| 2001 11 18 | 704 | 0.0 | 1.1+ | 2004 04 26 | 699 | 0.8+ | 0.7+ | 2006 11 18 | 704 | (0.2+ | 1.6+) | | |
| 2001 11 18 | 704 | 0.1− | 0.0 | 2004 05 23 | 691 | 0.3+ | 0.6+ | 2006 11 18 | 704 | (0.4− | 1.7+) | | |
| 2001 11 18 | 704 | 0.1− | 0.2− | 2004 05 23 | 691 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 1.0− | 0.3+ | | |
| 2001 11 18 | 704 | 0.2+ | 0.3− | 2004 05 23 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.8+ | | |
| 2001 11 19 | 608 | 0.0 | 0.4+ | 2005 05 15 | G96 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.7+ | | |
| 2001 11 19 | 608 | 0.1+ | 0.2+ | 2005 05 15 | G96 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.9+ | | |
| 2001 11 19 | 608 | 0.2− | 0.5+ | 2005 05 15 | G96 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.1+ | 1.1+ | | |
| 2001 11 20 | 704 | (0.5− | 3.2+) | 2005 05 15 | G96 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.0 | | |
| 2001 11 20 | 704 | (0.6− | 3.3+) | 2006 09 18 | 699 | 0.5− | 0.2+ | | | | | | |

**(140617)∗ 2001 UQ$_7$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.94159 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19004491 | $\omega$ | 301.96677 | | −0.86904312 | +0.48686668 | |
| $a$ | 2.9961615 | $\Omega$ | 267.30270 | | −0.41902299 | −0.81878827 | |
| $e$ | 0.0736021 | $i$ | 5.04792 | | −0.26302812 | −0.30421473 | |
| $P$ | 5.19 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.4+ | 0.6− | 2002 12 31 | 704 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.2− | 1.0− | | |
| 2001 09 10 | 704 | 0.5+ | 0.3+ | 2002 12 31 | 704 | 0.5+ | 0.1− | 2006 09 18 | 704 | 0.6− | 0.2+ | | |
| 2001 09 10 | 704 | 1.2+ | 0.5+ | 2002 12 31 | 704 | 0.9− | 0.2− | 2006 09 18 | 704 | 0.2+ | 0.3+ | | |
| 2001 09 10 | 704 | (2.5+ | 1.0+) | 2004 03 01 | 703 | 0.5− | 0.1+ | 2006 09 18 | 704 | 0.0 | 0.1+ | | |
| 2001 09 20 | 704 | 0.7− | 0.1− | 2004 03 01 | 703 | 1.1+ | 1.2+ | 2006 09 18 | 704 | 0.6− | 0.0 | | |
| 2001 09 20 | 704 | 0.5− | 0.3+ | 2004 03 01 | 703 | (0.4− | 1.6+) | 2006 09 20 | 703 | 0.1+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.1− | 0.1− | 2004 03 01 | 703 | (0.2+ | 1.7+) | 2006 09 20 | 703 | 0.6− | 1.0+ | | |
| 2001 09 28 | 644 | 0.5− | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.4+ | 1.3+ | | |
| 2001 09 28 | 644 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.3− | 0.9+ | | |
| 2001 09 28 | 644 | 0.4− | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.3− | | |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.3− | 0.2− | 2004 03 19 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | | |
| 2001 10 17 | 704 | 1.1+ | 0.8− | 2004 04 12 | 703 | 0.6+ | 1.4+ | 2006 10 23 | 703 | 0.4− | 0.5− | | |
| 2001 10 17 | 704 | 0.2− | 0.5− | 2004 04 12 | 703 | 0.1+ | 0.5− | 2006 10 23 | 703 | 0.1+ | 0.5− | | |
| 2001 10 18 | 704 | 0.3+ | 0.5− | 2004 04 12 | 703 | 0.9− | 0.4− | 2006 10 23 | 703 | (0.5− | 1.9−) | | |
| 2001 10 18 | 704 | 0.9+ | 0.6+ | 2004 04 12 | 703 | 0.2− | 0.5− | 2006 10 23 | 703 | 1.1− | 0.1− | | |
| 2001 10 18 | 704 | 0.6− | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.3+ | | |
| 2001 10 18 | 704 | 0.0 | 0.8+ | 2006 09 17 | 703 | 0.4− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 2002 12 31 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.0 | | |

**(140618)∗ 2001 UC$_9$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.04313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19043834 | $\omega$ | 234.14383 | | −0.20664049 | +0.97413014 | |
| $a$ | 2.9920336 | $\Omega$ | 24.41674 | | −0.81111083 | −0.11826196 | |
| $e$ | 0.0861291 | $i$ | 12.78679 | | −0.54717359 | −0.19257357 | |
| $P$ | 5.18 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 11 21 | 704 | 0.4+ | 0.9+ | 2004 03 26 | 691 | 0.1+ | 0.0 | | |
| 1999 03 21 | 645 | 0.1− | 0.1− | 2001 11 21 | 704 | 0.2+ | 1.0+ | 2004 03 26 | 691 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 0.7− | 0.1− | 2001 11 21 | 704 | 0.1− | 0.7− | 2004 03 26 | 691 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.2+ | 0.4− | 2004 03 12 | A50 | 0.1− | 0.0 | 2004 03 28 | 703 | (1.7+ | 2.0+) | | |
| 2001 09 21 | 704 | 0.8− | 0.4+ | 2004 03 12 | A50 | 0.0 | 0.7+ | 2004 03 28 | 703 | 1.0+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2004 03 12 | A50 | 0.1+ | 0.4− | 2004 03 28 | 703 | 0.7+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2004 03 12 | A50 | 0.3+ | 0.6− | 2004 03 28 | 703 | 0.2+ | 1.1+ | | |
| 2001 10 07 | 644 | 0.0 | 0.1− | 2004 03 12 | A50 | 0.4+ | 0.2− | 2004 04 12 | 703 | 0.8+ | 0.5+ | | |
| 2001 10 07 | 644 | 0.0 | 0.1− | 2004 03 12 | A50 | 0.2+ | 0.2− | 2004 04 12 | 703 | (0.7− | 1.8+) | | |
| 2001 10 07 | 644 | 0.1+ | 0.1− | 2004 03 12 | A50 | 0.4− | 0.3− | 2004 04 12 | 703 | 0.7+ | 1.4+ | | |
| 2001 10 17 | 704 | 0.8− | 0.1− | 2004 03 12 | A50 | 0.1+ | 0.8− | 2004 04 12 | 703 | (0.3− | 1.6+) | | |
| 2001 10 17 | 704 | 0.7− | 0.6− | 2004 03 13 | A50 | 0.5− | 0.2+ | 2004 04 20 | 704 | 1.2+ | 0.5+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.4+ | 2004 03 13 | A50 | (1.7− | 0.1+) | 2004 04 20 | 704 | (0.8+ | 1.6+) | | |
| 2001 10 18 | 704 | 1.1− | 0.8+ | 2004 03 13 | A50 | 0.4− | 0.7− | 2004 04 20 | 704 | 1.0+ | 0.6+ | | |
| 2001 10 18 | 704 | 0.8− | 0.7+ | 2004 03 13 | A50 | (0.5− | 1.8+) | 2006 09 30 | 703 | 1.1+ | 1.3− | | |
| 2001 10 18 | 704 | 0.9− | 0.3− | 2004 03 13 | A50 | (1.1+ | 1.7+) | 2006 09 30 | 703 | (2.2− | 2.8−) | | |
| 2001 10 18 | 704 | 0.0 | 0.2− | 2004 03 13 | A50 | 0.4+ | 0.0 | 2006 09 30 | 703 | (0.5+ | 2.1−) | | |
| 2001 10 20 | 704 | 0.0 | 0.1+ | 2004 03 13 | A50 | 1.4− | 0.1+ | 2006 09 30 | 703 | (1.7− | 0.6+) | | |
| 2001 10 20 | 704 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.2+ | | |
| 2001 10 20 | 704 | 1.2− | 0.3+ | 2004 03 15 | 704 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2001 10 21 | 704 | 0.8+ | 0.7+ | 2004 03 15 | 704 | 0.4− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.6+ | | |
| 2001 10 21 | 704 | 0.7+ | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2001 10 21 | 704 | 1.1+ | 0.5+ | 2004 03 16 | 608 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2001 10 21 | 704 | (0.2+ | 1.8+) | 2004 03 16 | 608 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.2− | 0.4+ | | |
| 2001 10 21 | 704 | 0.6+ | 0.4− | 2004 03 16 | 608 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.3+ | 0.3+ | | |
| 2001 10 24 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.6+ | | |
| 2001 10 24 | 704 | 0.7− | 0.7+ | 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.5+ | | |
| 2001 10 24 | 704 | 0.4− | 0.8− | 2004 03 18 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.4− | 0.5− | | |
| 2001 10 24 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.5+ | 0.1− | 2006 10 22 | G96 | 0.3− | 0.3− | | |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.4− | | |
| 2001 10 25 | 704 | 0.4+ | 0.2− | 2004 03 20 | 704 | 0.6− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1− | | |
| 2001 10 25 | 704 | 0.6+ | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.5− | 0.5− | | |
| 2001 10 25 | 704 | 0.0 | 0.7− | 2004 03 23 | 704 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2001 10 25 | 704 | 0.2+ | 1.2− | 2004 03 23 | 704 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.2− | | |
| 2001 11 15 | 691 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.6− | | |
| 2001 11 15 | 691 | 0.4+ | 0.3− | 2004 03 23 | 704 | 0.4− | 0.3− | | | | | | |
| 2001 11 15 | 691 | 0.3+ | 0.2− | 2004 03 23 | 704 | 0.2− | 0.2+ | | | | | | |

**(140619)∗ 2001 UG$_9$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.12578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18363968 | $\omega$ | 289.78124 | | +0.92860776 | +0.35013652 | |
| $a$ | 3.0654321 | $\Omega$ | 49.92842 | | −0.25086373 | +0.83634591 | |
| $e$ | 0.1964595 | $i$ | 9.23808 | | −0.27341364 | +0.42181742 | |
| $P$ | 5.37 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 699 | 1.1− | 0.4− | 2001 11 09 | 704 | 0.0 | 1.2+ | 2005 04 11 | G96 | 0.3− | 0.4+ | | |
| 2001 10 14 | 699 | 0.3+ | 0.0 | 2001 11 09 | 704 | 0.5+ | 0.6+ | 2005 04 11 | G96 | 0.2− | 0.2+ | | |
| 2001 10 14 | 699 | 0.6− | 0.8+ | 2001 11 09 | 704 | 0.2+ | 0.1+ | 2005 04 11 | G96 | 0.3− | 0.3+ | | |
| 2001 10 14 | 699 | 0.1+ | 0.7+ | 2001 11 20 | 704 | 0.0 | 0.3− | 2005 04 11 | G96 | 0.1+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2001 11 20 | 704 | 0.1− | 0.1− | 2005 05 09 | G96 | 0.3− | 0.0 | | |
| 2001 10 17 | 704 | 0.6− | 0.1− | 2001 11 20 | 704 | 0.2+ | 0.1+ | 2005 05 09 | G96 | 0.2− | 0.2+ | | |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2001 11 20 | 704 | 0.4+ | 0.1+ | 2005 05 09 | G96 | 0.3− | 0.1+ | | |
| 2001 10 17 | 704 | 0.6− | 0.1+ | 2001 11 20 | 704 | 0.4− | 1.0− | 2005 05 09 | G96 | 0.3− | 0.2+ | | |
| 2001 10 17 | 704 | 0.8− | 0.4+ | 2001 11 21 | 704 | 0.3+ | 0.0 | 2005 05 16 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 18 | 704 | 0.7− | 0.5− | 2001 11 21 | 704 | 0.2+ | 0.4− | 2005 05 16 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 18 | 704 | 0.4− | 0.0 | 2001 11 21 | 704 | 0.3− | 0.6− | 2005 05 16 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 18 | 704 | 0.5− | 0.7+ | 2001 11 21 | 704 | 0.0 | 0.4− | 2006 08 30 | 699 | 1.1+ | 0.8+ | | |
| 2001 10 23 | 704 | 0.6+ | 0.9+ | 2001 11 21 | 704 | 0.7− | 0.3− | 2006 08 30 | 699 | 1.0− | 0.8+ | | |
| 2001 10 23 | 704 | 0.9+ | 0.6+ | 2002 12 06 | 645 | 0.0 | 0.1− | 2006 08 30 | 699 | 1.3+ | 0.6− | | |
| 2001 10 23 | 704 | 1.0+ | 0.7+ | 2002 12 06 | 645 | 0.0 | 0.1− | 2006 08 30 | 699 | (2.5− | 1.8+) | | |
| 2001 10 23 | 704 | 0.5+ | 0.5+ | 2004 02 13 | 691 | 0.1+ | 0.5+ | 2006 08 30 | 699 | 0.4− | 0.1+ | | |
| 2001 10 23 | 704 | 0.5+ | 1.1+ | 2004 02 13 | 691 | 0.3+ | 0.1+ | 2006 08 30 | 699 | (3.5− | 2.6+) | | |
| 2001 10 24 | 704 | (2.9− | 0.1+) | 2004 02 13 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 1.2+ | 1.2+ | | |
| 2001 10 24 | 704 | 0.3+ | 0.3+ | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 1.7− | 0.9+ | | |
| 2001 10 24 | 704 | 1.1− | 0.4+ | 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.2− | | |
| 2001 10 24 | 704 | 0.1− | 0.8+ | 2004 03 17 | 691 | 0.6+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.2− | | |
| 2001 10 24 | 691 | 0.0 | 0.1− | 2005 04 07 | G96 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.1− | | |
| 2001 10 24 | 691 | 0.1− | 0.2− | 2005 04 07 | G96 | 0.1− | 0.0 | 2006 09 26 | 703 | 1.3− | 0.1− | | |
| 2001 10 24 | 691 | 0.2− | 0.1− | 2005 04 07 | G96 | 0.3− | 0.4− | | | | | | |
| 2001 11 09 | 704 | 0.1+ | 1.6+ | 2005 04 07 | G96 | 0.0 | 0.2− | | | | | | |

**(140620)∗ 2001 UN$_{10}$**

Discovered 2001 Oct. 21 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.72492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21246232 | $\omega$ | 284.58493 | | +0.91545059 | −0.38250876 | |
| $a$ | 2.7815152 | $\Omega$ | 98.02808 | | +0.40039891 | +0.83455734 | |
| $e$ | 0.0706422 | $i$ | 7.25507 | | +0.04038483 | +0.39648592 | |
| $P$ | 4.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 333 | 0.8+ | 0.4+ | 2001 12 17 | 704 | 0.5− | 0.4− | 2005 09 13 | 703 | 0.4+ | 0.1+ |
| 2001 10 21 | 333 | 0.3− | 0.8+ | 2001 12 17 | 704 | 0.7− | 0.4− | 2005 09 13 | 703 | (0.5+ | 1.7−) |
| 2001 10 21 | 333 | 1.0− | 0.2+ | 2001 12 20 | 704 | 0.1+ | 0.6− | 2005 09 13 | 703 | 0.6+ | 0.1− |
| 2001 10 23 | 333 | 1.0− | 0.8+ | 2001 12 20 | 704 | 0.3+ | 0.1− | 2005 09 27 | 704 | (0.1+ | 2.1+) |
| 2001 10 23 | 333 | 0.0 | 0.2− | 2001 12 20 | 704 | 0.5+ | 0.2− | 2005 09 27 | 704 | (0.8− | 1.6+) |
| 2001 10 23 | 333 | 0.4− | 0.2+ | 2001 12 20 | 704 | 0.3+ | 0.3+ | 2005 09 27 | 704 | 0.5+ | 0.2− |
| 2001 11 17 | 704 | 0.8− | 0.0 | 2001 12 20 | 704 | 0.7+ | 0.3− | 2005 09 27 | 704 | (0.5− | 1.9+) |
| 2001 11 17 | 704 | 0.1+ | 0.4+ | 2002 01 09 | 704 | 0.5− | 0.9+ | 2005 09 27 | 704 | 0.1− | 0.4− |
| 2001 11 17 | 704 | 0.1− | 0.2+ | 2002 01 09 | 704 | 0.5− | 1.2+ | 2005 09 27 | 704 | 0.6− | 1.1+ |
| 2001 11 17 | 704 | 0.8− | 0.5+ | 2002 01 09 | 704 | 0.5− | 1.1+ | 2005 09 27 | 704 | (0.7− | 1.6+) |
| 2001 11 17 | 704 | 0.2+ | 0.1+ | 2002 01 09 | 704 | 0.2− | 1.1+ | 2005 09 27 | 704 | 0.9− | 1.2+ |
| 2001 11 20 | 704 | 0.6+ | 0.4− | 2002 01 09 | 704 | 0.2− | 0.5+ | 2005 09 27 | 704 | 0.7− | 0.0 |
| 2001 11 20 | 704 | 0.7+ | 0.7− | 2003 03 25 | 644 | 0.1+ | 0.2+ | 2005 10 22 | 703 | 0.7− | 0.3+ |
| 2001 11 20 | 704 | 1.2+ | 0.7− | 2003 03 25 | 644 | 0.3+ | 0.3+ | 2005 10 22 | 703 | 0.9− | 0.2− |
| 2001 11 21 | 104 | 0.2− | 0.4− | 2003 03 25 | 644 | 0.1− | 0.2+ | 2005 10 22 | 703 | 0.4− | 0.7+ |
| 2001 11 21 | 104 | 0.5− | 0.1− | 2003 04 04 | 691 | 0.0 | 0.6+ | 2005 10 22 | 703 | (2.1− | 1.6−) |
| 2001 11 21 | 104 | 0.4− | 0.0 | 2003 04 04 | 691 | 0.2− | 1.1+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2001 11 21 | 104 | 0.2+ | 0.2+ | 2003 04 04 | 691 | 0.2+ | 1.1+ | 2006 10 01 | 691 | 0.3+ | 0.7+ |
| 2001 11 25 | 104 | 1.0+ | 1.1+ | 2003 04 08 | 691 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.4− | 0.7− |
| 2001 11 25 | 104 | 0.3− | 1.4+ | 2003 04 08 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 11 25 | 104 | 0.9+ | 0.1− | 2003 04 08 | 691 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.6− |
| 2001 12 11 | 704 | 0.3− | 0.4+ | 2005 08 26 | 644 | 0.5+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.7− |
| 2001 12 11 | 704 | 0.5− | 0.4+ | 2005 08 26 | 644 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.6− |
| 2001 12 11 | 704 | 0.3− | 1.2+ | 2005 08 26 | 644 | 0.1− | 0.6+ | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2005 08 27 | 699 | 0.0 | 0.5+ | 2006 10 29 | G96 | 0.4+ | 0.0 |
| 2001 12 14 | 704 | 1.0+ | 1.3− | 2005 08 27 | 699 | 0.1+ | 0.7+ | 2006 10 29 | G96 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 0.6+ | 1.4− | 2005 08 27 | 699 | 0.4+ | 0.2− | 2006 10 29 | G96 | 0.2− | 0.1− |
| 2001 12 14 | 704 | (1.3+ | 1.6−) | 2005 08 27 | 699 | 0.8− | 0.9+ | 2006 12 01 | G96 | 0.5− | 0.5− |
| 2001 12 14 | 704 | 1.3+ | 1.0− | 2005 09 03 | 703 | 0.3− | 0.5+ | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2001 12 14 | 704 | 0.3+ | 1.4− | 2005 09 03 | 703 | 0.5− | 1.4+ | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2001 12 17 | 704 | 0.4− | 0.4− | 2005 09 03 | 703 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.2− | 0.1+ | 2005 09 03 | 703 | 0.6− | 1.1+ | | | | |
| 2001 12 17 | 704 | 0.7− | 0.1− | 2005 09 13 | 703 | 0.0 | 0.5+ | | | | |

**(140621)∗ 2001 UQ$_{10}$**

Discovered 2001 Oct. 21 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.53178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17536191 | $\omega$ | 271.87024 | | +0.98873843 | −0.09166259 | |
| $a$ | 3.1611556 | $\Omega$ | 93.40223 | | +0.13103992 | +0.91207425 | |
| $e$ | 0.1765704 | $i$ | 6.80591 | | −0.07228315 | +0.39964801 | |
| $P$ | 5.62 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 26 | 691 | 0.6+ | 0.4+ | 2001 12 20 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 1992 02 26 | 691 | 0.1+ | 0.5+ | 2001 12 20 | 704 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.0 | 0.0 |
| 1992 02 26 | 691 | 0.2− | 0.6+ | 2002 01 09 | 704 | 0.7− | 0.6− | 2006 09 18 | 703 | 0.7+ | 0.2+ |
| 2001 10 21 | 333 | 0.1− | 0.4− | 2002 01 09 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.2+ |
| 2001 10 21 | 333 | 0.3+ | 0.5− | 2002 01 09 | 704 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.2− |
| 2001 10 21 | 333 | 0.4+ | 1.4− | 2002 01 09 | 704 | (1.6− | 0.5+) | 2006 09 21 | 699 | 0.3− | 0.7+ |
| 2001 10 23 | 333 | 0.7+ | 0.6− | 2003 01 26 | 608 | 0.9+ | 0.0 | 2006 09 21 | 699 | 0.5− | 0.6+ |
| 2001 10 23 | 333 | 0.1− | 0.8− | 2003 01 26 | 608 | 1.1+ | 0.6− | 2006 09 21 | 699 | 0.3+ | 0.2+ |
| 2001 10 23 | 333 | 1.5+ | 0.8− | 2003 01 26 | 608 | 0.7+ | 1.1− | 2006 09 21 | 699 | 0.7− | 0.3+ |
| 2001 10 23 | 704 | 0.2+ | 1.2+ | 2003 02 04 | 704 | 0.5+ | 0.6+ | 2006 09 25 | 703 | 0.3− | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2003 02 04 | 704 | 0.3− | 0.0 | 2006 09 25 | 703 | 1.2− | 0.6+ |
| 2001 10 23 | 704 | 0.7− | 0.5− | 2003 02 04 | 704 | 0.2+ | 1.0+ | 2006 09 25 | 703 | 1.0− | 0.4− |
| 2001 10 23 | 704 | 0.5− | 1.1+ | 2003 02 09 | 644 | 0.2− | 0.8+ | 2006 09 25 | 703 | 0.3− | 0.3+ |
| 2001 10 24 | 704 | 0.3+ | 0.8− | 2003 02 09 | 644 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.9+ |
| 2001 10 24 | 704 | 0.2+ | 0.2− | 2003 02 09 | 644 | 0.0 | 0.4+ | 2006 10 02 | 703 | 1.1− | 0.4− |
| 2001 10 24 | 704 | 0.1+ | 0.0 | 2003 02 19 | 644 | 0.1− | 0.6+ | 2006 10 02 | 703 | 0.7− | 0.7+ |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2003 02 19 | 644 | 0.3+ | 0.4+ | 2006 10 02 | 703 | 0.9+ | 0.8+ |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2003 02 19 | 644 | 0.0 | 0.7+ | 2006 10 02 | 703 | (3.0− | 4.5+) |
| 2001 11 12 | 704 | (1.6− | 0.4+) | 2003 03 06 | 704 | 0.6− | 0.1+ | 2006 10 02 | 703 | (0.3+ | 5.7+) |
| 2001 11 12 | 704 | 0.9− | 0.9+ | 2003 03 06 | 704 | 0.9− | 0.5− | 2006 10 02 | 703 | 0.8+ | 0.6+ |
| 2001 11 12 | 704 | 0.4− | 0.6+ | 2003 03 06 | 704 | (1.7− | 1.5−) | 2006 10 02 | 703 | 0.4+ | 0.7+ |
| 2001 11 12 | 704 | 1.4− | 0.2− | 2003 03 06 | 704 | 0.6− | 0.9+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2001 11 12 | 704 | (1.8− | 0.1−) | 2003 03 07 | 644 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.7− | 0.4− | 2003 03 07 | 644 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2003 03 07 | 644 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2006 07 31 | E12 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.5− | 0.4− | 2006 07 31 | E12 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.1+ | 0.4− | 2006 07 31 | E12 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.9− | 0.3− |
| 2001 11 24 | 704 | 0.1− | 0.4− | 2006 07 31 | E12 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 1.0+ | 0.6− | 2006 08 10 | 644 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | 0.8+ | 0.7− | 2006 08 10 | 644 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.1− |
| 2001 11 24 | 704 | 0.1+ | 0.3− | 2006 08 10 | 644 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 12 11 | 704 | (1.5+ | 0.7+) | 2006 09 12 | 704 | 0.8+ | 1.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | 1.0+ | 0.5+ | 2006 09 12 | 704 | 1.0+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 1.0+ | 0.4+ | 2006 09 12 | 704 | 0.7+ | 1.0+ | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 1.1+ | 0.7+ | 2006 09 12 | 704 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2006 09 13 | F84 | 0.1+ | 0.3− | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.2+ | 2006 09 13 | F84 | 0.3+ | 0.0 | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2006 09 13 | F84 | 0.5+ | 0.1− | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2001 12 14 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2001 12 14 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.8− | 2006 11 11 | 644 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.7− | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.2− | 0.4− | 2006 11 11 | 644 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.4− | 0.3+ | 2006 11 27 | 703 | 0.7− | 0.7− |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.8+ | 1.9− |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.6− | 0.1+ | 2006 11 27 | 703 | 0.6+ | 0.2+ |
| 2001 12 20 | 704 | 0.3− | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.5+ |
| 2001 12 20 | 704 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.4− | 0.3+ | | | | |

**(140622)∗ 2001 UO$_{12}$**

Discovered 2001 Oct. 24 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.87923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17314875 | $\omega$ | 196.53973 | | +0.55587548 | −0.80968516 | |
| $a$ | 3.1880355 | $\Omega$ | 220.23727 | | +0.79185532 | +0.58465221 | |
| $e$ | 0.1323153 | $i$ | 16.93722 | | +0.25291820 | −0.05090909 | |
| $P$ | 5.69 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.4− | 0.7+ | 2001 11 17 | 704 | 0.6+ | 0.4− | 2003 01 13 | 644 | 0.5+ | 0.1+ |
| 2001 09 14 | 644 | 0.2− | 0.3+ | 2001 11 17 | 704 | 0.3+ | 0.7− | 2003 01 13 | 644 | 0.2+ | 0.2+ |
| 2001 09 14 | 644 | 0.2− | 0.3+ | 2001 11 19 | 699 | 0.3+ | 0.1− | 2003 01 13 | 644 | 0.3+ | 0.1− |
| 2001 09 26 | 704 | 0.7+ | 0.4+ | 2001 11 19 | 699 | 0.4+ | 0.4+ | 2003 03 09 | 699 | 0.1− | 0.4+ |
| 2001 09 26 | 704 | 0.2+ | 0.3+ | 2001 11 19 | 699 | 0.4+ | 0.2− | 2003 03 09 | 699 | 0.2− | 0.1− |
| 2001 09 26 | 704 | 0.5+ | 0.7+ | 2001 11 19 | 699 | 0.1− | 0.2+ | 2003 03 09 | 699 | 0.3+ | 0.5+ |
| 2001 09 26 | 704 | 0.4+ | 0.1− | 2001 11 20 | 704 | 0.3− | 0.2− | 2003 03 09 | 699 | 0.0 | 1.1+ |
| 2001 09 26 | 704 | 0.4+ | 0.8− | 2001 11 20 | 704 | 0.1− | 0.0 | 2004 04 21 | 704 | 0.6+ | 1.0+ |
| 2001 10 17 | 704 | (1.8− | 1.3+) | 2001 11 20 | 704 | 0.5− | 0.3− | 2004 04 21 | 704 | 0.1− | 1.3+ |
| 2001 10 17 | 704 | 1.1− | 0.7+ | 2001 11 20 | 704 | 0.1− | 0.2− | 2004 04 21 | 704 | 0.5− | 1.1+ |
| 2001 10 17 | 704 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.4− | 0.2− | 2004 04 21 | 704 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2001 11 24 | 704 | 0.2− | 0.3+ | 2004 05 27 | 691 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | 0.8+ | 0.6− | 2001 11 24 | 704 | 0.2− | 0.1+ | 2004 05 27 | 691 | 0.1+ | 0.7+ |
| 2001 10 22 | 704 | 0.0 | 0.4− | 2001 11 24 | 704 | 0.4− | 0.8+ | 2004 05 27 | 691 | 0.2+ | 0.8+ |
| 2001 10 22 | 704 | 0.0 | 0.3− | 2001 11 24 | 704 | 0.7+ | 0.8− | 2006 08 10 | 644 | 0.1− | 0.3+ |
| 2001 10 22 | 704 | 0.9− | 0.0 | 2001 11 24 | 704 | 0.5+ | 0.1− | 2006 08 10 | 644 | 0.1− | 0.4+ |
| 2001 10 22 | 704 | (0.2+ | 2.5−) | 2001 12 08 | 699 | 0.1− | 0.0 | 2006 08 10 | 644 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2001 12 08 | 699 | 0.2+ | 0.7+ | 2006 08 10 | 644 | 0.4− | 0.4+ |
| 2001 10 23 | 704 | 0.0 | 0.1+ | 2001 12 08 | 699 | (1.7− | 1.5+) | 2006 08 10 | 644 | 0.0 | 0.5+ |
| 2001 10 23 | 704 | 0.1+ | 0.3− | 2001 12 08 | 699 | 0.6+ | 0.7+ | 2006 08 10 | 644 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2001 12 11 | 704 | 0.6+ | 0.1− | 2006 08 31 | 106 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 0.8− | 0.1− | 2001 12 11 | 704 | 0.7+ | 0.3− | 2006 08 31 | 106 | 0.1− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 333 | 0.2− | 1.4+ | 2001 12 11 | 704 | 0.6+ | 0.2− | 2006 08 31 | 106 | 0.2− | 0.1+ | |
| 2001 10 24 | 333 | 0.2− | 0.1+ | 2001 12 11 | 704 | 0.6+ | 0.1+ | 2006 08 31 | 106 | 0.0 | 0.1− | |
| 2001 10 24 | 333 | 0.1− | 0.3− | 2001 12 11 | 704 | 1.0+ | 0.0 | 2006 09 06 | 644 | 0.0 | 0.2+ | |
| 2001 10 24 | 704 | (1.8+ | 0.8+) | 2001 12 18 | 704 | (0.5− | 1.9+) | 2006 09 06 | 644 | 0.3+ | 0.1+ | |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2001 12 18 | 704 | 0.7− | 1.1+ | 2006 09 06 | 644 | 0.1+ | 0.2+ | |
| 2001 10 24 | 704 | 0.3− | 0.0 | 2001 12 18 | 704 | (0.1− | 2.2+) | 2006 09 27 | 703 | 0.1− | 0.1+ | |
| 2001 10 24 | 704 | 0.5+ | 0.1− | 2001 12 18 | 704 | 0.2− | 0.6+ | 2006 09 27 | 703 | 0.2− | 0.3− | |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2001 12 18 | 704 | 0.7− | 1.3+ | 2006 09 27 | 703 | 0.1− | 0.6+ | |
| 2001 10 25 | 333 | 0.5+ | 0.1− | 2001 12 18 | 704 | 0.0 | 1.3+ | 2006 09 27 | 703 | 0.8− | 0.1− | |
| 2001 10 25 | 333 | 0.4+ | 0.4+ | 2001 12 18 | 704 | 0.8− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2001 10 25 | 333 | 0.4− | 0.4+ | 2001 12 18 | 704 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.1+ | |
| 2001 11 09 | 704 | 0.4+ | 0.3+ | 2001 12 18 | 704 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | |
| 2001 11 09 | 704 | 0.2− | 0.0 | 2001 12 18 | 704 | 0.9− | 1.2+ | 2006 10 17 | 703 | 0.0 | 0.3+ | |
| 2001 11 09 | 704 | 0.4− | 0.8− | 2001 12 18 | 704 | 1.4− | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.6− | |
| 2001 11 09 | 704 | 0.1+ | 1.1− | 2001 12 18 | 704 | 0.6− | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.5+ | |
| 2001 11 09 | 704 | 0.3+ | 0.1+ | 2001 12 18 | 704 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.7− | |
| 2001 11 15 | 644 | 0.5+ | 0.1− | 2001 12 18 | 704 | 1.1− | 0.4+ | 2006 11 13 | 703 | 0.9− | 1.5+ | |
| 2001 11 15 | 644 | 0.9+ | 0.4+ | 2001 12 22 | 608 | 0.1− | 0.6− | 2006 11 13 | 703 | 0.6+ | 2.0+ | |
| 2001 11 15 | 644 | 0.3+ | 0.7+ | 2001 12 22 | 608 | 0.1+ | 1.0− | 2006 11 13 | 703 | 0.8+ | 1.6+ | |
| 2001 11 17 | 704 | 0.6+ | 0.4− | 2001 12 22 | 608 | 0.0 | 0.7− | 2006 11 13 | 703 | 0.4+ | 0.0 | |

**(140623)∗ 2001 UR$_{12}$**

Discovered 2001 Oct. 24 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.63458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21476562 | $\omega$ | 350.15660 | | +0.35816429 | −0.92593152 | |
| $a$ | 2.7615922 | $\Omega$ | 78.77875 | | +0.86471092 | +0.28054815 | |
| $e$ | 0.0593596 | $i$ | 7.01953 | | +0.35212691 | +0.25287063 | |
| $P$ | 4.59 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 12 | 699 | 1.2− | 0.7+ | 2001 12 11 | 704 | 0.7+ | 0.1+ | 2003 04 01 | 704 | 0.3− | 1.1+ | |
| 2001 10 12 | 699 | 0.6− | 0.1+ | 2001 12 11 | 704 | 0.2− | 0.2+ | 2003 04 01 | 704 | 0.0 | 0.7+ | |
| 2001 10 12 | 699 | 0.7− | 0.1− | 2001 12 11 | 704 | 0.3+ | 0.3− | 2003 04 01 | 704 | (0.3− | 1.6+) | |
| 2001 10 12 | 699 | 0.2− | 1.1+ | 2001 12 11 | 704 | 0.4− | 0.2− | 2003 04 06 | 699 | 0.5− | 0.4+ | |
| 2001 10 23 | 704 | 0.9− | 0.8+ | 2001 12 13 | 644 | 0.2− | 0.1− | 2003 04 06 | 699 | 0.1+ | 0.2− | |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2001 12 13 | 644 | 0.1+ | 0.0 | 2003 04 06 | 699 | 0.2+ | 0.9+ | |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2001 12 13 | 644 | 0.2+ | 0.2− | 2003 04 06 | 699 | 0.1+ | 0.4+ | |
| 2001 10 23 | 704 | 0.0 | 1.0+ | 2001 12 14 | 704 | 0.4+ | 0.1− | 2003 04 08 | 691 | 0.1− | 0.4+ | |
| 2001 10 23 | 704 | 0.4− | 1.0+ | 2001 12 14 | 704 | 0.3+ | 0.2− | 2003 04 08 | 691 | 0.2+ | 0.6+ | |
| 2001 10 24 | 333 | (0.3− | 1.5−) | 2001 12 14 | 704 | 0.3+ | 0.0 | 2003 04 08 | 691 | 0.1+ | 0.8+ | |
| 2001 10 24 | 333 | 0.1− | 0.1+ | 2001 12 14 | 704 | 0.5+ | 0.3+ | 2003 04 10 | 644 | 0.1+ | 0.4+ | |
| 2001 10 24 | 333 | 0.8− | 0.3− | 2001 12 14 | 704 | 0.6+ | 0.1+ | 2003 04 10 | 644 | 0.1+ | 0.2+ | |
| 2001 10 24 | 704 | 0.6− | 0.9+ | 2001 12 17 | 704 | (0.1− | 1.8−) | 2003 04 10 | 644 | 0.2+ | 0.5+ | |
| 2001 10 24 | 704 | 0.6− | 1.0+ | 2001 12 17 | 704 | 0.5− | 1.4− | 2005 08 27 | 644 | 0.1− | 0.3+ | |
| 2001 10 24 | 704 | 0.8− | 1.4+ | 2001 12 17 | 704 | (0.5− | 1.6−) | 2005 08 27 | 644 | 0.1− | 0.4+ | |
| 2001 10 24 | 704 | 1.0− | 1.0+ | 2001 12 17 | 704 | (0.5− | 1.8−) | 2005 08 27 | 644 | 0.4− | 0.5+ | |
| 2001 10 24 | 704 | 1.1− | 1.2+ | 2001 12 17 | 704 | (0.4− | 1.9−) | 2005 09 25 | 703 | 0.2+ | 0.8− | |
| 2001 10 25 | 333 | 0.5+ | 0.4+ | 2001 12 19 | 644 | 0.3− | 0.1+ | 2005 09 25 | 703 | 0.9− | 0.5+ | |
| 2001 10 25 | 333 | 0.4− | 0.5− | 2001 12 19 | 644 | 0.3− | 0.1+ | 2005 09 25 | 703 | 1.3− | 0.2+ | |
| 2001 10 25 | 333 | 0.0 | 0.6− | 2001 12 19 | 644 | 0.5− | 0.2+ | 2005 09 25 | 703 | 0.8− | 0.3− | |
| 2001 10 26 | 333 | 0.2− | 0.6− | 2001 12 20 | 704 | 0.2− | 0.6− | 2005 09 27 | 704 | 0.1+ | 0.9+ | |
| 2001 10 26 | 333 | 0.6− | 0.3− | 2001 12 20 | 704 | (1.0+ | 2.2−) | 2005 09 27 | 704 | 0.2− | 0.6+ | |
| 2001 10 26 | 333 | 0.4+ | 0.2− | 2001 12 20 | 704 | 0.6+ | 0.4− | 2005 09 27 | 704 | 0.4+ | 0.4+ | |
| 2001 11 09 | 704 | 0.5+ | 0.5− | 2001 12 20 | 704 | (0.3− | 1.7−) | 2005 09 27 | 704 | 0.9− | 1.1+ | |
| 2001 11 09 | 704 | 0.4+ | 0.4+ | 2002 01 21 | 704 | 0.4+ | 0.3+ | 2005 09 27 | 704 | 0.1− | 0.9+ | |
| 2001 11 09 | 704 | 0.3+ | 0.7+ | 2002 01 21 | 704 | 0.0 | 0.8− | 2005 10 03 | 703 | 0.2+ | 1.1+ | |
| 2001 11 09 | 704 | 0.0 | 0.3+ | 2002 01 21 | 704 | 0.2+ | 1.1− | 2005 10 03 | 703 | 0.2− | 0.7+ | |
| 2001 11 09 | 704 | (2.2+ | 5.3+) | 2002 01 21 | 704 | (0.5− | 1.6−) | 2005 10 03 | 703 | 0.5− | 0.8+ | |
| 2001 11 15 | 644 | 0.6− | 0.0 | 2003 02 02 | 699 | 0.5+ | 0.3+ | 2005 10 03 | 703 | 1.2+ | 1.4+ | |
| 2001 11 15 | 644 | 0.5− | 0.2+ | 2003 02 02 | 699 | 0.2− | 1.4+ | 2005 10 10 | 703 | 0.6− | 0.9+ | |
| 2001 11 15 | 644 | 0.6− | 0.0 | 2003 02 02 | 699 | 0.6− | 0.3+ | 2005 10 10 | 703 | 0.1− | 0.0 | |
| 2001 11 17 | 704 | 0.5+ | 1.2+ | 2003 02 02 | 699 | 0.3+ | 1.3+ | 2005 10 10 | 703 | 0.5− | 0.2+ | |
| 2001 11 17 | 704 | 0.3+ | 0.6+ | 2003 02 04 | 608 | 1.2+ | 1.5+ | 2005 10 10 | 703 | 0.5− | 0.4+ | |
| 2001 11 17 | 704 | 0.2+ | 0.8+ | 2003 02 04 | 608 | (1.0+ | 1.6+) | 2006 09 28 | 691 | 0.2+ | 0.2− | |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2003 02 04 | 608 | (1.0+ | 1.9+) | 2006 09 28 | 691 | 0.3+ | 0.3− | |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2003 02 28 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.2− | |
| 2001 11 20 | 704 | 0.1+ | 0.2+ | 2003 02 28 | 704 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.4− | |
| 2001 11 20 | 704 | 0.4+ | 1.0+ | 2003 02 28 | 704 | 0.7+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.6− | |
| 2001 11 20 | 704 | 0.3+ | 0.4+ | 2003 02 28 | 704 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.4− | |
| 2001 11 21 | 704 | (1.3+ | 1.6−) | 2003 02 28 | 704 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− | |
| 2001 11 21 | 704 | (0.8+ | 1.6−) | 2003 03 20 | 644 | 0.6+ | 1.0+ | 2006 10 29 | G96 | 0.2− | 0.7− | |
| 2001 11 21 | 704 | 0.3+ | 1.2− | 2003 03 20 | 644 | 0.2+ | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.5− | |
| 2001 11 21 | 704 | 0.7+ | 1.4− | 2003 03 20 | 644 | 0.2− | 0.9+ | 2006 10 29 | G96 | 0.2− | 0.7− | |
| 2001 11 21 | 704 | 0.3+ | 1.0− | 2003 03 25 | 644 | 0.3+ | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.5− | |
| 2001 11 24 | 704 | 0.7+ | 0.4− | 2003 03 25 | 644 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.3− | 0.7− | |
| 2001 11 24 | 704 | (2.3+ | 1.5−) | 2003 03 25 | 644 | 0.5+ | 0.3− | 2006 11 22 | G96 | 0.2− | 0.5− | |
| 2001 11 24 | 704 | 0.8+ | 0.6+ | 2003 03 26 | 049 | 0.5+ | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.5− | |
| 2001 11 24 | 704 | 0.8+ | 0.2+ | 2003 03 26 | 049 | 0.6+ | 0.7− | 2006 11 22 | G96 | 0.2− | 0.5− | |
| 2001 11 24 | 704 | 0.6+ | 0.0 | 2003 03 26 | 049 | (1.2+ | 1.5−) | | | | | |
| 2001 12 11 | 704 | 0.9− | 0.8− | 2003 04 01 | 704 | 0.2− | 1.0− | | | | | |

**(140624)∗ 2001 UY$_{12}$**

Discovered 2001 Oct. 24 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.97059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17278475 | $\omega$ | 232.24880 | | +0.32299636 | −0.94617719 | |
| $a$ | 3.1925114 | $\Omega$ | 198.93813 | | +0.88699950 | +0.31022178 | |
| $e$ | 0.1225729 | $i$ | 3.62939 | | +0.33000794 | +0.09225602 | |
| $P$ | 5.70 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 691 | 0.1+ | 0.2− | 2001 11 21 | 704 | 0.5− | 0.2− | 2006 08 23 | 644 | 0.1− | 0.2+ | |
| 1997 03 10 | 691 | 0.0 | 0.5+ | 2001 11 21 | 704 | 0.2− | 0.2− | 2006 08 29 | 691 | 0.1− | 0.2+ | |
| 1997 03 10 | 691 | 0.1+ | 0.3+ | 2001 11 21 | 691 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.1− | 0.2+ | |
| 2000 08 21 | 699 | 0.1+ | 1.1+ | 2001 11 21 | 704 | 0.4− | 0.2− | 2006 08 29 | 691 | 0.1− | 0.0 | |
| 2000 08 21 | 699 | 0.5+ | 0.3+ | 2001 11 21 | 704 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.0 | 0.5− | |
| 2000 08 21 | 699 | 0.4− | 0.2− | 2001 11 21 | 704 | 1.0− | 0.4− | 2006 09 12 | 703 | 0.0 | 0.7+ | |
| 2000 08 21 | 699 | 0.8+ | 0.5− | 2001 12 08 | 699 | 1.3+ | 0.0 | 2006 09 12 | 703 | 0.2− | 0.4+ | |
| 2001 09 17 | 704 | 0.6+ | 0.5+ | 2001 12 08 | 699 | 0.7+ | 0.4− | 2006 09 12 | 703 | 0.3+ | 0.0 | |
| 2001 09 17 | 704 | 0.3+ | 0.8+ | 2001 12 08 | 699 | 1.2+ | 1.0+ | 2006 09 16 | 699 | 0.5− | 0.3+ | |
| 2001 09 17 | 704 | 0.8+ | 1.0+ | 2001 12 08 | 699 | 1.2+ | 0.2− | 2006 09 16 | 699 | 1.0− | 0.4+ | |
| 2001 09 17 | 704 | 0.6+ | 0.1+ | 2001 12 11 | 704 | 0.2− | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.1− | |
| 2001 09 17 | 704 | 0.8+ | 0.3+ | 2001 12 11 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 704 | (1.8− | 1.1+) | |
| 2001 10 17 | 704 | (0.7− | 1.7+) | 2001 12 11 | 704 | 1.0+ | 0.7+ | 2006 09 17 | 704 | (2.0− | 0.1+) | |
| 2001 10 17 | 704 | 0.6− | 1.2+ | 2001 12 11 | 704 | (1.3− | 1.7+) | 2006 09 17 | 704 | (2.3− | 0.8+) | |
| 2001 10 17 | 704 | 0.2− | 0.9+ | 2001 12 11 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.0 | 0.5+ | |
| 2001 10 17 | 704 | (0.4− | 2.3+) | 2001 12 13 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.7− | 0.6+ | |
| 2001 10 17 | 704 | 0.8− | 1.4+ | 2001 12 13 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.2− | |
| 2001 10 22 | 704 | 0.6− | 0.7− | 2001 12 13 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 1.4− | 0.8− | |
| 2001 10 22 | 704 | 0.3− | 0.3− | 2001 12 14 | 704 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.9+ | 0.5+ | |
| 2001 10 22 | 704 | 0.5− | 0.8− | 2001 12 14 | 704 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.0 | |
| 2001 10 22 | 704 | 0.1+ | 0.2− | 2001 12 14 | 704 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.2− | 0.4+ | |
| 2001 10 23 | 704 | 0.2− | 0.8− | 2001 12 14 | 704 | 0.5− | 0.1− | 2006 09 19 | 699 | 0.0 | 0.5+ | |
| 2001 10 23 | 704 | 0.5− | 1.3− | 2001 12 14 | 704 | 0.5− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.2− | |
| 2001 10 23 | 704 | 0.3− | 0.9− | 2001 12 17 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 699 | (2.1− | 0.9+) | |
| 2001 10 23 | 704 | 0.6− | 0.7− | 2001 12 17 | 704 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.8+ | |
| 2001 10 23 | 704 | 0.6− | 0.3− | 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.1− | |
| 2001 10 24 | 333 | 0.2+ | 1.2− | 2001 12 17 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.4+ | |
| 2001 10 24 | 333 | 0.5+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.4+ | |
| 2001 10 24 | 333 | 0.3+ | 0.4− | 2001 12 18 | 644 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.7− | 0.1+ | |
| 2001 10 24 | 333 | 0.4+ | 0.1+ | 2001 12 18 | 644 | 0.1− | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.0 | |
| 2001 10 24 | 333 | 0.6+ | 1.4− | 2001 12 18 | 644 | 0.1− | 0.6+ | 2006 09 25 | 699 | 0.0 | 0.1− | |
| 2001 10 24 | 333 | 0.8+ | 0.9− | 2001 12 20 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.5+ | |
| 2001 10 24 | 704 | 0.4− | 0.8− | 2001 12 20 | 704 | 1.0− | 0.4− | 2006 09 25 | 699 | 0.1− | 0.4+ | |
| 2001 10 24 | 704 | 0.8+ | 0.4+ | 2001 12 20 | 704 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.4− | 0.1− | |
| 2001 10 24 | 704 | (2.4− | 0.9−) | 2003 02 02 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.6+ | |
| 2001 10 24 | 704 | 0.2− | 0.4− | 2003 02 02 | 704 | 0.7− | 0.8+ | 2006 09 26 | 704 | 0.6− | 0.3− | |
| 2001 10 25 | 333 | 0.2+ | 1.1− | 2003 02 02 | 704 | 1.0− | 1.4+ | 2006 09 26 | 704 | 0.9+ | 0.6+ | |
| 2001 10 25 | 333 | 0.2+ | 0.2− | 2003 02 02 | 704 | 1.3− | 0.8+ | 2006 09 26 | 704 | 0.1− | 0.0 | |
| 2001 10 25 | 333 | 0.1− | 0.9− | 2003 02 12 | 608 | (0.8+ | 1.8+) | 2006 09 27 | 704 | 0.5+ | 1.2+ | |
| 2001 10 25 | 644 | 0.1− | 0.4+ | 2003 02 12 | 608 | 1.1+ | 1.4+ | 2006 09 27 | 704 | 0.7+ | 1.2+ | |
| 2001 10 25 | 644 | 0.1− | 0.3+ | 2003 02 12 | 608 | 0.7+ | 1.3+ | 2006 09 27 | 704 | 0.2− | 0.6+ | |
| 2001 10 25 | 644 | 0.1− | 0.3+ | 2003 02 22 | 644 | 0.4+ | 0.6+ | 2006 09 27 | 704 | 1.4+ | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.8− | 0.2− | 2003 02 22 | 644 | 0.3+ | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.6+ |
| 2001 11 09 | 704 | 0.6− | 0.1+ | 2003 02 22 | 644 | 0.0 | 0.9+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2001 11 09 | 704 | 0.5− | 0.4− | 2003 03 05 | 704 | (0.0 | 2.0+) | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2001 11 09 | 704 | 0.4− | 0.0 | 2003 03 05 | 704 | (1.2− | 2.1+) | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2003 03 05 | 704 | (0.7− | 1.7+) | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2001 11 15 | 644 | 0.1+ | 1.0− | 2003 03 05 | 704 | 1.1+ | 0.9− | 2006 09 30 | 704 | 1.1− | 0.8+ |
| 2001 11 15 | 644 | 0.2+ | 0.8− | 2003 03 06 | 699 | 1.1+ | 0.3− | 2006 09 30 | 704 | 0.3+ | 0.7+ |
| 2001 11 15 | 644 | 0.2− | 0.5− | 2003 03 06 | 699 | 0.1− | 0.5+ | 2006 09 30 | 704 | 0.7− | 0.2− |
| 2001 11 17 | 704 | 0.0 | 0.3+ | 2003 03 06 | 699 | 0.7+ | 0.6+ | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2001 11 17 | 704 | 0.1− | 0.1− | 2003 03 06 | 699 | 0.1+ | 1.0+ | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2001 11 17 | 704 | 0.4+ | 0.1+ | 2003 03 09 | 704 | 0.6+ | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 0.4+ | 0.3+ | 2003 03 09 | 704 | 1.2+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2001 11 18 | 691 | 0.4− | 0.3− | 2003 03 09 | 704 | 0.4+ | 0.2− | 2006 10 20 | 291 | 0.2+ | 0.4+ |
| 2001 11 18 | 691 | 0.3− | 0.2+ | 2003 03 09 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 291 | 0.3+ | 0.4+ |
| 2001 11 18 | 691 | 0.8− | 0.7+ | 2003 03 09 | 704 | 1.0+ | 0.8+ | 2006 10 20 | 291 | 0.3+ | 0.4+ |
| 2001 11 20 | 704 | 0.5− | 0.1+ | 2004 04 26 | 699 | 1.2− | 0.7− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2004 04 26 | 699 | 0.3+ | 0.5− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2004 04 26 | 699 | 0.6− | 1.2+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.5+ | 0.3− | 2004 04 26 | 699 | 0.9− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.3− | 0.6− | 2006 08 20 | 691 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.2− | 2006 08 20 | 691 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.0 | 0.3− | 2006 08 20 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.4− | 0.5− | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.6− |
| 2001 11 21 | 704 | 0.2− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 691 | 0.4+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2001 11 21 | 704 | 0.3+ | 0.2− | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 691 | 0.3+ | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.0 | | | | |

**(140625)∗ 2001 UZ$_{12}$**

Discovered 2001 Oct. 24 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.71815 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19154910 | $\omega$ | 18.32718 | | −0.14847335 | −0.98676049 | |
| $a$ | 2.9804555 | $\Omega$ | 80.25070 | | +0.89882920 | −0.16217429 | |
| $e$ | 0.2251680 | $i$ | 3.79692 | | +0.41238542 | −0.00179602 | |
| $P$ | 5.15 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.2− | 0.6− | 2001 12 14 | 704 | 1.3− | 0.2− | 2006 10 16 | 683 | (2.1+ | 0.5−) |
| 2001 09 14 | 644 | 0.3− | 1.0− | 2001 12 14 | 704 | 1.1− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2001 09 14 | 644 | 0.4− | 0.5− | 2001 12 14 | 704 | (1.5− | 0.2−) | 2006 10 16 | 703 | 0.8− | 0.6− |
| 2001 10 12 | 699 | 0.1+ | 0.2− | 2001 12 14 | 704 | (1.6− | 0.4−) | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2001 10 12 | 699 | 0.3+ | 0.6+ | 2001 12 14 | 704 | 1.1− | 0.8− | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2001 10 12 | 699 | 0.0 | 0.6− | 2001 12 19 | 691 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.3− | 0.4− |
| 2001 10 12 | 699 | 0.9+ | 0.1− | 2001 12 19 | 691 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2001 10 22 | 704 | (0.8+ | 1.7−) | 2001 12 19 | 691 | 0.2+ | 0.4− | 2006 10 17 | 683 | (1.5− | 0.6+) |
| 2001 10 22 | 704 | 0.6+ | 1.2− | 2001 12 20 | 704 | 0.3+ | 1.0+ | 2006 10 17 | 683 | 0.8− | 1.1+ |
| 2001 10 22 | 704 | (0.8+ | 2.1−) | 2001 12 20 | 704 | 0.8+ | 0.8+ | 2006 10 17 | 683 | 1.4− | 1.2+ |
| 2001 10 24 | 049 | 0.1− | 0.6+ | 2001 12 20 | 704 | 0.0 | 1.3+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2001 10 24 | 049 | 0.3− | 0.3+ | 2001 12 20 | 704 | 0.2+ | 1.5+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 049 | 0.3− | 0.0 | 2001 12 20 | 704 | (0.2+ | 1.7+) | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2001 10 24 | 333 | 0.1+ | 0.4− | 2002 01 14 | 704 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 10 24 | 333 | 0.1+ | 0.3− | 2002 01 14 | 704 | 0.2+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 24 | 333 | 0.4− | 0.5− | 2002 01 14 | 704 | 0.1− | 0.9− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 10 24 | 333 | 0.2+ | 1.1− | 2002 01 14 | 704 | 0.4− | 1.2− | 2006 10 22 | 704 | 1.1− | 0.1− |
| 2001 10 24 | 333 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.4+ | 0.7− | 2006 10 22 | 704 | 0.2− | 0.4− |
| 2001 10 24 | 333 | 0.0 | 0.2− | 2002 01 18 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 704 | 0.6− | 1.1+ |
| 2001 10 24 | 704 | 0.6− | 0.7+ | 2002 01 18 | 691 | 0.7+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 10 24 | 704 | 0.3− | 0.2+ | 2002 01 18 | 691 | 0.9+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.1+ | 0.4− | 2002 01 21 | 704 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2001 10 24 | 704 | 0.3+ | 0.4− | 2002 01 21 | 704 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 0.5+ | 2002 01 21 | 704 | 0.7− | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2001 10 25 | 333 | 0.0 | 0.0 | 2002 01 21 | 704 | 0.3+ | 1.3+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 10 25 | 333 | 0.5+ | 0.7− | 2002 02 03 | 699 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 10 25 | 333 | 0.5+ | 0.5− | 2002 02 03 | 699 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.2− | 0.5+ |
| 2001 10 25 | 333 | 0.7+ | 0.2− | 2002 02 03 | 699 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.5+ | 0.3− |
| 2001 10 25 | 333 | 0.6+ | 0.4− | 2002 02 03 | 699 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.2+ | 0.1+ |
| 2001 10 25 | 333 | 0.3+ | 0.1+ | 2002 02 10 | 691 | 1.1− | 0.0 | 2006 11 13 | 703 | 0.0 | 0.7+ |
| 2001 11 09 | 704 | 0.5− | 0.0 | 2002 02 10 | 691 | 0.5+ | 0.2− | 2006 11 14 | 704 | 0.7− | 0.1− |
| 2001 11 09 | 704 | 0.2− | 0.9+ | 2002 02 10 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.6− | 0.2+ |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2003 03 27 | 699 | 0.2+ | 0.4− | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 2001 11 09 | 704 | 0.1+ | 0.1+ | 2003 03 27 | 699 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 2001 11 09 | 704 | 0.2+ | 0.4+ | 2003 03 27 | 699 | 0.6+ | 1.0+ | 2006 11 14 | 704 | 0.4− | 0.4+ |
| 2001 11 12 | 704 | 0.2− | 0.7+ | 2003 03 27 | 699 | 1.2+ | 0.7− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 11 12 | 704 | 0.3− | 0.7+ | 2003 03 30 | 460 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.3+ | 0.6+ | 2003 03 30 | 460 | 0.5− | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.5+ | 2003 03 30 | 704 | 0.4− | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2001 11 12 | 704 | 0.2+ | 0.9+ | 2003 03 30 | 704 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.5+ |
| 2001 11 12 | 704 | 0.1− | 0.3+ | 2003 03 30 | 704 | 0.2+ | 0.8− | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.4− | 0.1+ | 2003 03 31 | 460 | 0.1− | 0.4− | 2006 11 17 | 704 | (0.1+ | 1.6+) |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2003 03 31 | 460 | 0.8− | 0.9+ | 2006 11 17 | 704 | 0.6− | 0.5+ |
| 2001 11 12 | 704 | 0.8− | 0.2+ | 2003 04 08 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.5− | 0.4− |
| 2001 11 12 | 704 | 0.1− | 0.1− | 2003 04 08 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.7+ | 0.2+ |
| 2001 11 15 | 608 | 0.5+ | 1.0− | 2003 04 08 | 704 | 1.1+ | 1.3+ | 2006 11 17 | 703 | 0.6+ | 0.7+ |
| 2001 11 15 | 608 | 0.5+ | 0.1+ | 2003 04 08 | 704 | 0.2+ | 0.8− | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2001 11 15 | 608 | 0.6+ | 0.3− | 2003 04 08 | 704 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.1+ |
| 2001 11 16 | 644 | 0.0 | 0.2+ | 2003 04 08 | 704 | 1.4+ | 0.7− | 2006 11 19 | 704 | (1.0+ | 2.9+) |
| 2001 11 16 | 644 | 0.2+ | 0.2+ | 2003 04 08 | 644 | (0.0 | 2.3+) | 2006 11 19 | 704 | 0.6+ | 0.7+ |
| 2001 11 16 | 644 | 0.4+ | 0.2+ | 2003 04 09 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | (1.3− | 2.2+) |
| 2001 11 20 | 704 | 0.2+ | 0.2− | 2003 04 09 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | (0.2− | 2.5+) |
| 2001 11 20 | 704 | 0.7− | 0.3− | 2003 04 09 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | (1.2− | 1.6−) |
| 2001 11 20 | 704 | 0.4− | 0.2− | 2003 04 27 | 699 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.8+ | 0.4+ |
| 2001 11 20 | 704 | 0.1+ | 0.6− | 2003 04 27 | 699 | 0.4− | 0.9+ | 2006 11 20 | 704 | (2.0+ | 0.6+) |
| 2001 11 20 | 704 | 0.1+ | 0.5− | 2003 04 27 | 699 | 0.1− | 1.3+ | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2003 04 27 | 699 | 0.1− | 0.6+ | 2006 11 20 | 704 | 1.5+ | 0.6+ |
| 2001 11 21 | 704 | 0.2− | 0.4− | 2005 07 18 | 644 | 0.0 | 0.7+ | 2006 11 20 | 704 | 1.0+ | 0.9+ |
| 2001 11 21 | 704 | 0.6+ | 0.1− | 2005 07 18 | 644 | 0.2− | 0.7+ | 2006 11 21 | 704 | 0.7+ | 0.7+ |
| 2001 11 21 | 704 | 0.1+ | 0.4− | 2005 07 18 | 644 | 0.3− | 0.8+ | 2006 11 21 | 704 | 1.0− | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.8− | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.5− | 0.5− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2001 11 21 | 704 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2001 12 08 | 699 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 26 | 704 | 0.0 | 0.1+ |
| 2001 12 08 | 699 | 0.2− | 0.4− | 2006 10 16 | 683 | (3.2+ | 0.3−) | 2006 11 26 | 704 | 0.3− | 0.4+ |
| 2001 12 08 | 699 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 26 | 704 | 0.1+ | 0.2+ |
| 2001 12 08 | 699 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.1− | 1.0+ |
| 2001 12 11 | 704 | 0.2− | 0.8− | 2006 10 16 | 683 | (2.2+ | 0.3−) | 2006 11 28 | 704 | 0.5+ | 0.4+ |
| 2001 12 11 | 704 | 1.4− | 1.2− | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.2+ | 0.8+ |
| 2001 12 11 | 704 | 0.7− | 0.6− | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.6+ |
| 2001 12 11 | 704 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.8− | 2006 10 16 | 703 | 0.9− | 0.3− | | | | |

**(140626)∗ 2001 UC$_{13}$**

Discovered 2001 Oct. 24 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.31854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18590034 | $\omega$ | 217.76807 | | +0.30106991 | −0.94817813 | |
| $a$ | 3.0405298 | $\Omega$ | 215.04292 | | +0.91234139 | +0.31739475 | |
| $e$ | 0.0938932 | $i$ | 10.18816 | | +0.27747091 | −0.01479240 | |
| $P$ | 5.30 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.4− | 1.5+ | 2001 12 18 | 704 | (0.7− | 1.6−) | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2000 09 03 | 704 | 0.2− | 1.5+ | 2001 12 18 | 704 | 0.3+ | 0.7− | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2000 09 03 | 704 | 0.0 | 1.1+ | 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2001 10 20 | 704 | 0.1− | 0.5+ | 2001 12 18 | 704 | 0.6+ | 0.1− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.1+ | 0.3+ | 2001 12 18 | 704 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2001 10 22 | 704 | 0.1− | 0.2+ | 2001 12 18 | 704 | 0.7− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 10 22 | 704 | 0.0 | 0.2− | 2003 02 06 | 644 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 10 22 | 704 | 0.9+ | 0.1+ | 2003 02 06 | 644 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2003 02 06 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.1− |
| 2001 10 23 | 704 | 0.4− | 0.3− | 2003 03 10 | 699 | 1.3− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2001 10 23 | 704 | 0.0 | 0.6+ | 2003 03 10 | 699 | 0.9+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | (0.2+ | 1.7+) | 2003 03 10 | 699 | 0.2− | 0.9+ | 2006 10 21 | 703 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 333 | 0.7+ | 0.1− | 2003 03 10 | 699 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 10 24 | 333 | 0.1+ | 0.6− | 2003 03 10 | 699 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 10 24 | 333 | 0.4+ | 0.8+ | 2003 03 10 | 699 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 24 | 704 | 0.1+ | 0.3− | 2003 03 10 | 699 | 0.1− | 0.1+ | 2006 10 23 | 704 | 0.3+ | 0.2+ | | |
| 2001 10 24 | 704 | 0.2− | 0.1+ | 2003 03 10 | 699 | 0.1+ | 1.2+ | 2006 10 23 | 704 | 0.1+ | 0.4+ | | |
| 2001 10 24 | 704 | 0.2− | 0.3+ | 2003 04 01 | 691 | 0.6+ | 1.0+ | 2006 10 23 | 704 | 0.6+ | 0.4− | | |
| 2001 10 24 | 704 | 0.2− | 0.8+ | 2003 04 01 | 691 | 0.6+ | 1.0+ | 2006 10 23 | 704 | 0.5+ | 0.4− | | |
| 2001 10 24 | 704 | 0.5+ | 0.6+ | 2003 04 01 | 691 | 0.1+ | 1.4+ | 2006 10 23 | 704 | 0.3+ | 0.4+ | | |
| 2001 10 25 | 333 | 0.2+ | 0.8− | 2004 05 21 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 683 | 0.8+ | 0.1+ | | |
| 2001 10 25 | 333 | 0.8− | 0.0 | 2004 05 21 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 683 | 0.2+ | 0.4+ | | |
| 2001 10 25 | 333 | 0.5− | 0.7+ | 2004 05 21 | 704 | 1.0+ | 0.4+ | 2006 10 27 | 683 | 0.1+ | 0.1+ | | |
| 2001 10 26 | 333 | 0.5+ | 0.1− | 2004 05 21 | 704 | 0.2+ | 0.8+ | 2006 10 28 | 704 | 0.7− | 0.6+ | | |
| 2001 10 26 | 333 | 1.0− | 0.4− | 2004 05 21 | 704 | 0.1− | 1.2+ | 2006 10 28 | 704 | 0.6+ | 0.8+ | | |
| 2001 10 26 | 333 | 0.5− | 0.2− | 2005 05 14 | G96 | 0.2− | 0.4+ | 2006 10 28 | 704 | 1.1+ | 0.1− | | |
| 2001 10 26 | 333 | 0.6− | 0.1− | 2005 05 14 | G96 | 0.4− | 0.3+ | 2006 10 28 | 704 | 0.0 | 0.6+ | | |
| 2001 10 26 | 333 | 0.1− | 1.4− | 2005 05 14 | G96 | 0.4− | 0.6+ | 2006 10 28 | 683 | 0.2+ | 0.8− | | |
| 2001 10 26 | 333 | 0.0 | 0.4− | 2005 05 14 | G96 | 0.0 | 0.5+ | 2006 10 28 | 704 | 1.0− | 1.3+ | | |
| 2001 11 09 | 644 | 0.0 | 0.3+ | 2005 06 27 | 644 | 0.0 | 0.7+ | 2006 10 28 | 683 | 0.5+ | 0.9+ | | |
| 2001 11 09 | 644 | 0.5− | 0.4+ | 2005 06 27 | 644 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2001 11 09 | 644 | 0.6− | 0.1+ | 2005 06 27 | 644 | 0.1− | 0.6+ | 2006 10 28 | 683 | 0.3− | 0.6+ | | |
| 2001 11 16 | 644 | 0.0 | 0.1− | 2005 06 30 | 703 | 1.4− | 1.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2001 11 16 | 644 | 0.4− | 0.1+ | 2005 06 30 | 703 | 0.4− | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2001 11 16 | 644 | 0.3− | 0.0 | 2005 06 30 | 703 | (2.1− | 0.4+) | 2006 10 28 | G96 | 0.0 | 0.4− | | |
| 2001 11 17 | 704 | 0.3+ | 0.2− | 2005 06 30 | 703 | (2.2− | 0.9+) | 2006 10 29 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 17 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 1.0+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 17 | 704 | 0.4+ | 0.1− | 2006 09 18 | 704 | (2.0+ | 0.6+) | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2001 11 17 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.8− | 0.6+ | | |
| 2001 11 17 | 704 | 0.3+ | 0.0 | 2006 09 18 | 704 | (1.5+ | 1.1−) | 2006 11 11 | 703 | 0.3+ | 0.0 | | |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2+ | | |
| 2001 11 20 | 704 | 0.7+ | 0.8+ | 2006 09 25 | 704 | 0.7− | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.1− | | |
| 2001 11 20 | 704 | 0.5− | 0.5+ | 2006 09 25 | 704 | 0.7− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.3− | | |
| 2001 11 20 | 704 | 0.4+ | 0.7+ | 2006 09 25 | 704 | 0.1+ | 1.0+ | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 2001 11 20 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 704 | 1.1− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2001 11 24 | 704 | (0.5+ | 1.7−) | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.4− | | |
| 2001 11 24 | 704 | 0.1+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.4+ | | |
| 2001 11 24 | 704 | (0.3+ | 2.2−) | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 24 | 704 | 0.8− | 1.1− | 2006 09 29 | 704 | (2.2+ | 1.7−) | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2001 12 08 | 699 | 0.3− | 0.6− | 2006 09 29 | 704 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.5+ | | |
| 2001 12 08 | 699 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.6− | | |
| 2001 12 08 | 699 | (0.7+ | 1.5−) | 2006 09 29 | 704 | 0.9+ | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.4+ | | |
| 2001 12 08 | 699 | 0.6+ | 0.9− | 2006 09 29 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.1− | | |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2006 09 29 | 691 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.3− | 0.4+ | | |
| 2001 12 11 | 704 | 0.2− | 0.4− | 2006 09 29 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 1.5− | 0.2+ | | |
| 2001 12 11 | 704 | 0.4+ | 0.3− | 2006 10 03 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 1.3− | 0.2+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 1.2− | 0.5− | | |
| 2001 12 11 | 704 | 0.4+ | 0.6− | 2006 10 03 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 1.5− | 1.1− | | |
| 2001 12 18 | 704 | 0.6+ | 0.0 | 2006 10 16 | 104 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 1.4− | 1.5− | | |
| 2001 12 18 | 704 | 0.3− | 0.5− | 2006 10 16 | 104 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.0− | 1.0− | | |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2006 10 16 | 104 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.9− | | |

**(140627)∗ 2001 UR$_{13}$**

Discovered 2001 Oct. 24 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 4.22362 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18156005 | $\omega$ | 191.28106 | | +0.98842402 | | −0.15166190 | | |
| $a$ | 3.0887958 | $\Omega$ | 177.43162 | | +0.14531640 | | +0.93866078 | | |
| $e$ | 0.1933834 | $i$ | 5.22061 | | +0.04360165 | | +0.30970083 | | |
| $P$ | 5.43 | $H$ | 15.0 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.2− | 1.1+ | 2002 01 09 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.2+ | | |
| 2000 07 30 | 704 | 0.1− | 1.0+ | 2002 01 14 | 704 | 0.7− | 0.8+ | 2006 09 20 | 644 | 0.1− | 0.3+ | | |
| 2000 07 30 | 704 | 0.5− | 0.3+ | 2002 01 14 | 704 | 0.8+ | 0.8− | 2006 09 20 | 644 | 0.0 | 0.0 | | |
| 2000 07 30 | 704 | 0.2− | 0.7− | 2002 01 14 | 704 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1− | | |
| 2001 09 17 | 704 | 0.2+ | 0.4− | 2002 01 14 | 704 | 0.4− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 | | |
| 2001 09 17 | 704 | 0.8− | 1.2− | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | | |
| 2001 09 17 | 704 | (1.7− | 0.9−) | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 333 | 0.0 | 0.9− | 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.2+ | | |
| 2001 10 24 | 333 | 0.1− | 0.2− | 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 1.3+ | 0.4− | | |
| 2001 10 24 | 333 | 0.0 | 0.8− | 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.4+ | 0.9− | | |
| 2001 10 25 | 333 | 0.9+ | 0.0 | 2004 04 22 | 599 | 0.5− | 0.1+ | 2006 09 27 | 704 | 1.1+ | 0.3+ | | |
| 2001 10 25 | 333 | 0.1+ | 0.1+ | 2004 04 22 | 599 | 0.3+ | 1.5+ | 2006 09 29 | 691 | 0.0 | 0.3− | | |
| 2001 10 25 | 333 | 0.1+ | 0.3− | 2004 04 22 | 599 | 0.0 | 0.4+ | 2006 09 29 | 691 | 0.1+ | 0.2− | | |
| 2001 10 26 | 333 | 0.4− | 0.1− | 2004 04 25 | 691 | 0.0 | 0.5+ | 2006 09 29 | 691 | 0.0 | 0.0 | | |
| 2001 10 26 | 333 | 0.5+ | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.4− | 0.1− | | |
| 2001 10 26 | 333 | 0.7− | 0.6− | 2004 04 25 | 691 | 1.0+ | 0.9− | 2006 10 01 | 691 | 0.5− | 0.0 | | |
| 2001 11 09 | 704 | (1.7− | 4.5+) | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.4− | 0.1− | | |
| 2001 11 09 | 704 | (0.8− | 3.9+) | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 10 15 | 703 | 0.4− | 0.6+ | | |
| 2001 11 09 | 704 | (2.5− | 3.8+) | 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 10 15 | 703 | 0.5+ | 0.5+ | | |
| 2001 11 17 | 704 | 1.1+ | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.0 | 0.0 | | |
| 2001 11 17 | 704 | 0.2+ | 0.3− | 2006 08 06 | 699 | (0.6− | 2.5+) | 2006 10 15 | 703 | 0.1− | 0.1+ | | |
| 2001 11 17 | 704 | 0.9+ | 0.4− | 2006 08 06 | 699 | 0.2− | 0.2− | 2006 10 18 | 106 | 0.0 | 0.3+ | | |
| 2001 11 17 | 704 | 0.9+ | 0.7+ | 2006 08 06 | 699 | 0.3+ | 0.3+ | 2006 10 18 | 106 | 0.4− | 0.7− | | |
| 2001 11 17 | 704 | 1.0+ | 0.5− | 2006 08 06 | 699 | 0.2+ | 1.4+ | 2006 10 18 | 106 | 0.1+ | 0.7+ | | |
| 2001 11 20 | 704 | 1.2− | 0.1+ | 2006 08 24 | 644 | 0.5− | 0.1+ | 2006 10 18 | 106 | 0.2+ | 0.2− | | |
| 2001 11 20 | 704 | 0.6− | 0.6+ | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2001 11 20 | 704 | 0.4− | 0.6+ | 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2001 11 20 | 704 | 0.8− | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2001 11 20 | 704 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.8− | 0.2− | | |
| 2001 11 24 | 704 | 0.3− | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.3− | | |
| 2001 11 24 | 704 | 0.2+ | 0.2− | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.6− | 0.2+ | | |
| 2001 11 24 | 704 | 0.8+ | 0.0 | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.2− | | |
| 2001 11 24 | 704 | (1.1+ | 1.6+) | 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.6− | | |
| 2001 12 11 | 704 | 0.4− | 0.9+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2001 12 11 | 704 | 0.6− | 1.0+ | 2006 09 16 | 644 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.1+ | | |
| 2001 12 11 | 704 | 0.8− | 1.0+ | 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 10 22 | 704 | (1.6+ | 1.6+) | | |
| 2001 12 11 | 704 | 1.0− | 0.6+ | 2006 09 17 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 704 | 0.2− | 0.3− | | |
| 2001 12 11 | 704 | 1.1− | 0.9+ | 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 10 22 | 704 | (1.5− | 0.6+) | | |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.3+ | 0.2− | 2006 10 22 | 704 | 0.1− | 0.6+ | | |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2006 09 17 | 704 | 0.0 | 0.2+ | 2006 10 22 | 704 | (0.5+ | 1.6−) | | |
| 2001 12 18 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.1− | | |
| 2001 12 18 | 704 | 0.0 | 0.6+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2001 12 18 | 704 | 0.4− | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2001 12 20 | 644 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2001 12 20 | 644 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2001 12 20 | 644 | 0.4+ | 0.3− | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2002 01 07 | 699 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2002 01 07 | 699 | 0.2+ | 0.7+ | 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 11 18 | G96 | 0.3+ | 0.3− | | |
| 2002 01 07 | 699 | 0.3+ | 0.7− | 2006 09 20 | 704 | 0.9+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.5− | | |
| 2002 01 07 | 699 | 1.1+ | 0.4+ | 2006 09 20 | 704 | 0.8+ | 1.0+ | 2006 11 18 | G96 | 0.2+ | 0.5− | | |
| 2002 01 09 | 704 | 0.4+ | 1.0− | 2006 09 20 | 704 | 0.7+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.6− | | |
| 2002 01 09 | 704 | 0.8+ | 0.8+ | 2006 09 20 | 704 | 0.9+ | 0.0 | | | | | | |
| 2002 01 09 | 704 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.1+ | | | | | | |

**(140628)∗ 2001 UM$_{14}$**

Discovered 2001 Oct. 20 at Moletai Astronomical Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 181.34683 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26538990 | $\omega$ | 44.90637 | | +0.59129205 | | +0.80023230 | | |
| $a$ | 2.3981690 | $\Omega$ | 261.59700 | | −0.76539591 | | +0.51778748 | | |
| $e$ | 0.1441151 | $i$ | 5.80224 | | −0.25405276 | | +0.30252998 | | |
| $P$ | 3.71 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 644 | 0.2− | 0.2+ | 2001 10 21 | 704 | 0.3+ | 0.1− | 2004 06 14 | 704 | 0.0 | 0.6+ | | |
| 2001 09 19 | 644 | 0.1+ | 0.2− | 2001 10 21 | 704 | 1.5+ | 1.0− | 2004 07 16 | E12 | 0.1+ | 0.2− | | |
| 2001 09 19 | 644 | 0.6− | 0.0 | 2001 10 21 | 704 | 0.6− | 0.1+ | 2004 07 16 | E12 | 0.1− | 0.4− | | |
| 2001 10 12 | 644 | 0.4− | 0.6− | 2001 10 23 | 152 | (0.6− | 2.5+) | 2004 07 16 | E12 | 0.3− | 0.4− | | |
| 2001 10 12 | 608 | 0.3+ | 1.5+ | 2001 10 23 | 152 | 0.1− | 0.9− | 2004 07 16 | E12 | 0.0 | 0.8+ | | |
| 2001 10 12 | 608 | 0.3+ | 1.1+ | 2001 10 23 | 152 | (2.6− | 1.7−) | 2005 10 30 | G96 | 0.1+ | 0.5− | | |
| 2001 10 12 | 644 | 0.2+ | 0.1− | 2001 10 23 | 152 | 1.8− | 1.2− | 2005 10 30 | G96 | 0.0 | 0.3− | | |
| 2001 10 12 | 608 | 0.4+ | 1.0+ | 2001 10 24 | 152 | 0.1+ | 1.6+ | 2005 10 30 | G96 | 0.0 | 0.3− | | |
| 2001 10 12 | 644 | 0.2− | 0.1+ | 2001 10 24 | 152 | 1.4+ | 1.6+ | 2005 10 30 | G96 | 0.5− | 0.2− | | |
| 2001 10 12 | 599 | 0.1− | 0.8+ | 2001 12 06 | 152 | (0.8− | 3.4+) | 2005 11 12 | 691 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 12 | 599 | 0.0 | 0.4+ | 2001 12 06 | 152 | (0.7− | 2.8+) | 2005 11 12 | 691 | 0.1− | 0.0 | | |
| 2001 10 12 | 599 | 0.6− | 0.1− | 2001 12 06 | 152 | (0.7− | 2.7+) | 2005 11 12 | 691 | 0.2+ | 0.0 | | |
| 2001 10 14 | 704 | 0.2− | 0.5− | 2001 12 06 | 152 | (3.4− | 0.9+) | 2005 11 25 | 691 | 0.2− | 0.2+ | | |
| 2001 10 14 | 704 | 0.8− | 0.1− | 2003 01 25 | 809 | 0.3+ | 0.7+ | 2005 11 25 | 691 | 0.3+ | 0.1− | | |
| 2001 10 14 | 704 | 0.7− | 0.3+ | 2003 01 25 | 809 | 0.3+ | 0.7+ | 2005 11 25 | 691 | 0.0 | 0.0 | | |
| 2001 10 14 | 704 | 0.4− | 0.5+ | 2004 06 11 | 704 | 0.4+ | 0.4+ | 2006 01 22 | 701 | 0.3− | 0.0 | | |
| 2001 10 20 | 644 | 0.3+ | 0.1− | 2004 06 11 | 704 | 0.4+ | 0.0 | 2006 01 22 | 701 | 1.7− | 0.2+ | | |
| 2001 10 20 | 644 | 0.4+ | 0.3− | 2004 06 11 | 704 | 0.3− | 0.2− | 2006 01 23 | G96 | 0.0 | 0.2− | | |
| 2001 10 20 | 644 | 0.2+ | 0.3− | 2004 06 11 | 704 | 0.0 | 0.3+ | 2006 01 23 | G96 | 0.2− | 0.3+ | | |
| 2001 10 20 | 152 | (3.6+ | 2.1+) | 2004 06 14 | 704 | 0.1− | 0.2+ | 2006 01 23 | G96 | 0.2− | 0.1+ | | |
| 2001 10 20 | 152 | 0.1− | 0.9− | 2004 06 14 | 704 | 0.2+ | 0.8+ | 2006 01 23 | G96 | 0.2+ | 0.2+ | | |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2004 06 14 | 704 | 0.3− | 0.1+ | | | | | | |
| 2001 10 21 | 704 | 0.8+ | 1.1− | 2004 06 14 | 704 | 0.1+ | 0.1− | | | | | | |

**(140629)∗ 2001 UU$_{14}$**

Discovered 2001 Oct. 24 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.19326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18971080 | $\omega$ | 232.15794 | | +0.99166096 | −0.12348950 | |
| $a$ | 2.9996783 | $\Omega$ | 134.90160 | | +0.12841406 | +0.92268825 | |
| $e$ | 0.1756946 | $i$ | 2.98318 | | +0.01087947 | +0.36523517 | |
| $P$ | 5.20 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 14 | 691 | 0.1− | 0.4+ | 2001 11 24 | 704 | 0.9+ | 1.2+ | 2006 09 30 | 703 | 1.3− | 0.1+ | | |
| 1994 05 14 | 691 | 0.3− | 0.3+ | 2001 12 08 | 699 | 0.5− | 1.4− | 2006 09 30 | 703 | 0.0 | 0.4+ | | |
| 1998 03 05 | 691 | 0.1+ | 0.0 | 2001 12 08 | 699 | 0.8+ | 0.0 | 2006 09 30 | 703 | 0.5− | 0.6+ | | |
| 1998 03 05 | 691 | 0.8+ | 0.3− | 2001 12 08 | 699 | 1.0+ | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.2− | | |
| 1998 03 05 | 691 | 0.3+ | 0.1− | 2001 12 08 | 699 | 1.3+ | 0.4− | 2006 10 03 | G96 | 0.1− | 0.1− | | |
| 1998 03 21 | 691 | 0.4+ | 1.0− | 2001 12 11 | 704 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.2− | | |
| 1998 03 21 | 691 | (1.0+ | 5.7−) | 2001 12 11 | 704 | 0.3− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.1− | | |
| 1998 03 21 | 691 | 0.5+ | 0.1− | 2001 12 11 | 704 | 0.6− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.2− | | |
| 2001 10 23 | 704 | 0.7− | 0.8+ | 2001 12 11 | 704 | 0.7− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.3− | | |
| 2001 10 23 | 704 | 1.1− | 1.0+ | 2001 12 11 | 704 | 0.9− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.2− | | |
| 2001 10 23 | 704 | 0.7− | 0.0 | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− | | |
| 2001 10 23 | 704 | 0.6− | 1.0+ | 2001 12 14 | 704 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 23 | 704 | (0.3+ | 1.6+) | 2001 12 14 | 704 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.7+ | 0.1+ | | |
| 2001 10 24 | 333 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2001 10 24 | 333 | 0.0 | 0.3− | 2001 12 14 | 704 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2001 10 24 | 333 | 0.5− | 0.4− | 2001 12 17 | 704 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 10 24 | 704 | 0.3− | 0.6+ | 2001 12 17 | 704 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2001 10 24 | 704 | 0.5− | 0.7+ | 2001 12 17 | 704 | 1.0− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.0 | | |
| 2001 10 24 | 704 | 0.5− | 0.4+ | 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 2001 10 24 | 704 | 0.1− | 0.8+ | 2001 12 17 | 704 | 0.5− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1− | | |
| 2001 10 24 | 704 | 0.0 | 1.5+ | 2001 12 18 | 644 | 0.0 | 0.8+ | 2006 10 22 | 704 | 0.6+ | 0.3+ | | |
| 2001 10 26 | 333 | 0.1− | 0.3+ | 2001 12 18 | 644 | 0.3+ | 0.8+ | 2006 10 22 | 704 | 0.9− | 0.3− | | |
| 2001 10 26 | 333 | 0.0 | 0.3− | 2001 12 18 | 644 | 0.3+ | 0.9+ | 2006 10 22 | 704 | 0.7+ | 0.1+ | | |
| 2001 10 26 | 333 | 0.1+ | 0.2− | 2002 01 08 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 704 | 0.8+ | 0.1+ | | |
| 2001 11 16 | 644 | 0.1+ | 0.3+ | 2002 01 08 | 644 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.4+ | 0.4− | | |
| 2001 11 16 | 644 | 0.0 | 0.1+ | 2002 01 08 | 644 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 2001 11 16 | 644 | 0.0 | 0.0 | 2002 01 15 | 704 | 0.8− | 0.8− | 2006 11 01 | G96 | 0.3+ | 0.3− | | |
| 2001 11 17 | 704 | 0.5+ | 0.2− | 2002 01 15 | 704 | 0.5− | 0.7− | 2006 11 13 | 703 | 0.8+ | 0.2+ | | |
| 2001 11 17 | 704 | 0.2+ | 0.5− | 2002 01 15 | 704 | 0.4+ | 1.1− | 2006 11 13 | 703 | 0.2− | 0.1+ | | |
| 2001 11 17 | 704 | (1.6− | 0.0 ) | 2002 01 15 | 704 | 0.4+ | 1.1− | 2006 11 13 | 703 | 0.1− | 0.3− | | |
| 2001 11 17 | 704 | 0.6+ | 1.0− | 2003 02 03 | 291 | 0.4− | 0.6+ | 2006 11 13 | 703 | 0.4+ | 0.6+ | | |
| 2001 11 19 | 699 | 0.5+ | 0.4− | 2003 02 03 | 291 | 0.9− | 0.0 | 2006 11 14 | 704 | (1.5+ | 0.1−) | | |
| 2001 11 19 | 699 | (0.4+ | 1.6+) | 2003 02 03 | 291 | 0.3− | 0.3+ | 2006 11 14 | 704 | 0.9+ | 0.4− | | |
| 2001 11 19 | 699 | 0.5+ | 0.3+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 1.3+ | 0.9− | | |
| 2001 11 19 | 699 | 0.3+ | 1.3+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.5+ | 0.9− | | |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.9+ | 0.2− | | |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2006 08 25 | 704 | 0.3+ | 1.2+ | 2006 11 17 | 704 | 0.3− | 0.4− | | |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2006 08 25 | 704 | 0.8+ | 0.3− | 2006 11 17 | 704 | 0.5− | 0.7+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2006 08 25 | 704 | (1.6+ | 0.1−) | 2006 11 17 | 704 | 0.6− | 0.3+ | | |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.7+ | 0.4− | 2006 11 17 | 704 | 0.4− | 0.4− | | |
| 2001 11 24 | 704 | 1.2+ | 0.4− | 2006 09 15 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.4+ | | |
| 2001 11 24 | 704 | 0.3− | 0.2− | 2006 09 15 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.9− | 0.2+ | | |
| 2001 11 24 | 704 | 0.2− | 0.7− | 2006 09 15 | 644 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.5− | 0.7+ | | |
| 2001 11 24 | 704 | 1.2− | 0.1− | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.8− | 1.3+ | | |

**(140630)∗ 2001 UY$_{14}$**

Discovered 2001 Oct. 24 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.71203 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18725033 | $\omega$ | 303.90694 | | +0.98416369 | +0.10468939 | |
| $a$ | 3.0258982 | $\Omega$ | 50.51339 | | −0.01962780 | +0.86636781 | |
| $e$ | 0.1252039 | $i$ | 10.68132 | | −0.17617201 | +0.48831030 | |
| $P$ | 5.26 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.3+ | 0.4+ | 2001 11 25 | 557 | 0.2+ | 0.4− | 2006 09 22 | 151 | 0.3− | 0.2+ | | |
| 2001 09 14 | 644 | 0.1+ | 0.5+ | 2001 11 25 | 557 | 0.1− | 0.3− | 2006 09 22 | 151 | 0.2− | 0.3+ | | |
| 2001 09 14 | 644 | 0.3+ | 0.6+ | 2001 12 10 | 704 | 0.1− | 0.2+ | 2006 09 22 | 151 | 0.1− | 0.3+ | | |
| 2001 09 17 | 704 | 0.3− | 1.1+ | 2001 12 10 | 704 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.1+ | 1.0+ | | |
| 2001 09 17 | 704 | 0.0 | 0.7+ | 2001 12 10 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.7+ | | |
| 2001 09 17 | 704 | 0.8+ | 0.8+ | 2001 12 10 | 704 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.1− | | |
| 2001 10 12 | 699 | 0.8− | 0.3− | 2001 12 10 | 704 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.8+ | | |
| 2001 10 12 | 699 | 0.7+ | 0.1+ | 2001 12 15 | 704 | 0.3+ | 0.0 | 2006 09 22 | 704 | (1.5− | 0.6−) | | |
| 2001 10 12 | 699 | 0.9+ | 0.4+ | 2001 12 15 | 704 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.2− | 0.5+ | | |
| 2001 10 12 | 699 | 0.5+ | 1.0− | 2001 12 15 | 704 | 0.2+ | 0.3− | 2006 09 26 | 704 | 0.6+ | 0.3− | | |
| 2001 10 13 | 704 | 0.0 | 0.9+ | 2001 12 15 | 704 | 0.2+ | 0.5− | 2006 09 26 | 704 | 0.2+ | 0.5− | | |
| 2001 10 13 | 704 | 0.4− | 0.8+ | 2001 12 15 | 704 | 0.2+ | 0.9− | 2006 09 26 | 704 | 0.4+ | 0.6+ | | |
| 2001 10 13 | 704 | 0.8− | 0.3+ | 2001 12 18 | 704 | 0.8+ | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.9+ | | |
| 2001 10 13 | 704 | 0.2− | 0.2+ | 2001 12 18 | 704 | 1.1+ | 0.3+ | 2006 09 28 | 704 | (0.2− | 3.0+) | | |
| 2001 10 21 | 704 | 0.1− | 1.1− | 2001 12 18 | 704 | 0.3+ | 0.8+ | 2006 09 28 | 704 | 0.4− | 0.6+ | | |
| 2001 10 21 | 704 | 0.4− | 1.2− | 2001 12 18 | 704 | 1.0+ | 0.3− | 2006 09 28 | 704 | (0.2+ | 1.9+) | | |
| 2001 10 21 | 704 | (0.4− | 1.5−) | 2001 12 18 | 704 | 0.8+ | 0.2− | 2006 09 28 | 704 | 0.2+ | 1.3+ | | |
| 2001 10 21 | 704 | 0.2− | 1.1− | 2001 12 19 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.4− | | |
| 2001 10 21 | 704 | (0.8− | 1.7−) | 2001 12 19 | 704 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.1− | | |
| 2001 10 24 | 333 | 0.6+ | 0.9− | 2001 12 19 | 704 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.2− | | |
| 2001 10 24 | 333 | 0.6+ | 0.5− | 2001 12 19 | 704 | 0.8+ | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.1− | | |
| 2001 10 24 | 333 | 0.2+ | 0.4− | 2001 12 19 | 704 | 0.7+ | 0.5− | 2006 10 03 | G96 | 0.3+ | 0.1− | | |
| 2001 10 24 | 333 | 0.2− | 1.2− | 2001 12 21 | 704 | 0.3+ | 0.8− | 2006 10 03 | G96 | 0.3+ | 0.0 | | |
| 2001 10 24 | 333 | 0.2− | 0.5− | 2001 12 21 | 704 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1− | | |
| 2001 10 24 | 333 | 0.1− | 0.0 | 2001 12 21 | 704 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.1− | | |
| 2001 10 25 | 644 | 1.0+ | 0.6− | 2001 12 21 | 704 | 0.3+ | 1.5+ | 2006 10 16 | 703 | 0.4+ | 0.2− | | |
| 2001 10 25 | 644 | 0.9+ | 0.6− | 2002 01 06 | 644 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.0 | | |
| 2001 10 25 | 644 | 1.1+ | 0.7− | 2002 01 06 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.0 | | |
| 2001 10 26 | 704 | 0.2− | 0.5− | 2002 01 06 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.5− | | |
| 2001 10 26 | 704 | 0.1+ | 0.5− | 2003 01 10 | 704 | 0.9+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2001 10 26 | 704 | 0.0 | 0.6− | 2003 01 10 | 704 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 26 | 704 | 0.0 | 0.6+ | 2003 01 10 | 704 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2001 10 26 | 704 | 0.3+ | 0.2+ | 2003 01 10 | 704 | 0.8− | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.2− | | |
| 2001 10 26 | 333 | 0.7+ | 0.2− | 2003 01 24 | 644 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.7+ | 0.1− | | |
| 2001 10 26 | 333 | 0.3+ | 0.6− | 2003 01 24 | 644 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.2− | 0.5− | | |
| 2001 10 26 | 333 | (0.5− | 2.3−) | 2003 01 24 | 644 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.2− | | |
| 2001 11 09 | 704 | 0.5− | 0.0 | 2003 01 29 | 644 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 11 09 | 704 | 0.8− | 0.1+ | 2003 01 29 | 644 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 11 09 | 704 | 0.4− | 0.0 | 2003 01 29 | 644 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 11 09 | 704 | 0.5− | 0.0 | 2003 02 01 | 644 | 0.0 | 0.2− | 2006 10 22 | 704 | (1.8+ | 1.3+) | | |
| 2001 11 09 | 704 | 0.0 | 0.7− | 2003 02 01 | 644 | 0.4− | 0.3− | 2006 10 22 | 704 | (0.1+ | 2.9+) | | |
| 2001 11 09 | 644 | 0.3+ | 0.1+ | 2003 02 01 | 644 | 0.2− | 0.2− | 2006 10 22 | 704 | 0.6+ | 0.3+ | | |
| 2001 11 09 | 644 | 0.1− | 0.0 | 2003 02 08 | 699 | 0.3− | 1.0+ | 2006 10 22 | 704 | 0.6+ | 0.3− | | |
| 2001 11 09 | 644 | 0.0 | 0.2− | 2003 02 08 | 699 | 0.5− | 0.1− | 2006 10 22 | 704 | 1.1− | 0.4+ | | |
| 2001 11 12 | 704 | 0.4− | 0.9+ | 2003 02 08 | 699 | 0.2+ | 0.4− | 2006 10 27 | 704 | 0.8− | 0.2+ | | |
| 2001 11 12 | 704 | (0.3+ | 1.6+) | 2003 02 08 | 699 | (0.3− | 1.6−) | 2006 10 27 | 704 | 0.1− | 0.5+ | | |
| 2001 11 12 | 704 | (0.2+ | 2.1+) | 2003 02 26 | 704 | 1.0− | 1.4− | 2006 10 27 | 704 | 0.9− | 0.4+ | | |
| 2001 11 12 | 704 | (0.1+ | 1.5+) | 2003 02 26 | 704 | 0.2+ | 0.8+ | 2006 10 27 | 704 | 0.5− | 0.2+ | | |
| 2001 11 12 | 704 | 0.5+ | 1.2+ | 2003 02 26 | 704 | 0.2− | 0.5− | 2006 10 27 | 704 | 0.4− | 0.9+ | | |
| 2001 11 16 | 291 | 0.0 | 0.4+ | 2003 02 26 | 704 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2001 11 16 | 291 | 0.4− | 0.3+ | 2003 03 03 | 644 | 0.5+ | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2001 11 16 | 291 | 0.3− | 0.4+ | 2003 03 03 | 644 | 0.2+ | 1.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2001 11 16 | 644 | 0.1− | 1.1+ | 2003 03 03 | 644 | 0.6+ | 0.7+ | 2006 10 31 | G96 | 0.4+ | 0.2− | | |
| 2001 11 16 | 644 | 0.1− | 1.1+ | 2003 03 08 | 644 | 0.3+ | 0.3+ | 2006 10 31 | 704 | 0.5− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 644 | 0.0 | 0.8+ | 2003 03 08 | 644 | 0.4+ | 0.1+ | 2006 10 31 | 704 | 0.3− | 0.1− | | |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2003 03 08 | 644 | 0.5+ | 0.2+ | 2006 10 31 | 704 | 0.1− | 0.6+ | | |
| 2001 11 19 | 704 | 0.9− | 0.2− | 2003 03 08 | 644 | 0.3+ | 0.2+ | 2006 10 31 | 704 | 0.3− | 0.4− | | |
| 2001 11 19 | 704 | 0.2− | 0.1+ | 2003 03 08 | 644 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.5+ | | |
| 2001 11 19 | 704 | 0.1− | 0.4+ | 2003 03 08 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 2001 11 19 | 704 | 0.2− | 0.1− | 2003 03 08 | 695 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.6− | | |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2003 03 08 | 695 | 0.1− | 0.3− | 2006 11 11 | 703 | 1.3− | 0.1− | | |
| 2001 11 20 | 704 | 0.1+ | 0.3− | 2003 03 08 | 695 | 0.1− | 0.2− | 2006 11 14 | 704 | (0.2+ | 1.8+) | | |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2003 03 08 | 695 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.7− | 1.2+ | | |
| 2001 11 20 | 704 | 0.6− | 0.4− | 2003 03 09 | 695 | 0.1− | 0.2− | 2006 11 14 | 704 | (0.5− | 1.8+) | | |
| 2001 11 20 | 704 | 0.0 | 0.2+ | 2003 03 09 | 695 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.8− | 0.5− | | |
| 2001 11 20 | 704 | 0.1+ | 0.2+ | 2003 03 09 | 695 | 0.2− | 0.3− | 2006 11 14 | 704 | (1.8− | 1.8+) | | |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2003 03 09 | 695 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.4− | 0.2+ | | |
| 2001 11 20 | 704 | 0.6+ | 0.1− | 2003 03 09 | 695 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.3− | 0.3+ | | |
| 2001 11 20 | 704 | 0.3− | 0.5+ | 2004 03 20 | 704 | 1.0+ | 0.6+ | 2006 11 17 | 704 | 0.8− | 0.1− | | |
| 2001 11 20 | 608 | 0.3+ | 0.7− | 2004 03 20 | 704 | 1.1+ | 0.3+ | 2006 11 17 | 704 | 0.6− | 0.4+ | | |
| 2001 11 20 | 608 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 1.0+ | 1.3+ | 2006 11 17 | 704 | 0.3− | 0.3+ | | |
| 2001 11 20 | 608 | 0.2+ | 0.5− | 2004 03 22 | 704 | 0.5+ | 0.6+ | 2006 11 17 | 703 | 0.3+ | 0.1− | | |
| 2001 11 21 | 704 | 0.4− | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.8− | | |
| 2001 11 21 | 704 | 0.6− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.6− | 2006 11 17 | 703 | 0.5+ | 0.1− | | |
| 2001 11 21 | 704 | 0.4− | 0.4− | 2004 04 09 | E12 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.3− | 0.3− | | |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2004 04 09 | E12 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.1− | | |
| 2001 11 21 | 704 | 0.4− | 0.1+ | 2004 04 09 | E12 | (0.1− | 1.6+) | 2006 11 20 | 704 | 0.2− | 0.3+ | | |
| 2001 11 21 | 704 | 0.6− | 0.0 | 2004 04 09 | E12 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.2− | 1.1− | | |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.1+ | | |
| 2001 11 21 | 704 | 0.8− | 0.4+ | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 11 20 | 704 | 1.0− | 1.4+ | | |
| 2001 11 21 | 704 | 0.9− | 0.1+ | 2004 04 14 | 691 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.2+ | | |
| 2001 11 21 | 704 | 0.7− | 0.2− | 2004 04 20 | 704 | 0.6+ | 0.8+ | 2006 11 20 | 704 | 1.0+ | 0.8+ | | |
| 2001 11 21 | 704 | 0.4− | 0.3− | 2004 04 20 | 704 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.1+ | | |
| 2001 11 21 | 704 | 0.4− | 0.4− | 2004 04 20 | 704 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.3− | 0.2+ | | |
| 2001 11 21 | 704 | 0.1− | 0.0 | 2004 04 20 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 704 | (0.3+ | 1.9+) | | |
| 2001 11 21 | 704 | 0.7− | 0.4+ | 2004 04 20 | 704 | 0.5+ | 0.4+ | 2006 11 21 | 704 | (0.6+ | 2.7+) | | |
| 2001 11 21 | 704 | 0.3− | 0.3− | 2004 04 22 | 704 | 0.1− | 0.8− | 2006 11 21 | 704 | (0.4+ | 2.8+) | | |
| 2001 11 21 | 704 | 0.6− | 0.7− | 2004 04 22 | 704 | 0.2− | 0.0 | 2006 11 21 | 704 | (0.8− | 1.9+) | | |
| 2001 11 21 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 704 | 0.7+ | 0.1+ | 2006 11 21 | 704 | (0.6− | 2.3+) | | |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2004 04 22 | 704 | 0.6+ | 0.4− | 2006 11 26 | 704 | 0.6+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.2− | 0.2− | 2004 04 22 | 704 | 0.0 | 0.6+ | 2006 11 26 | 704 | 0.5+ | 0.4+ | | |
| 2001 11 21 | 704 | 0.4− | 0.6− | 2006 09 20 | 644 | 0.3− | 0.4+ | 2006 11 26 | 704 | 0.4+ | 0.1+ | | |
| 2001 11 25 | 557 | 0.4+ | 0.7− | 2006 09 20 | 644 | 0.2− | 0.3+ | | | | | | |
| 2001 11 25 | 557 | 0.5+ | 0.7− | 2006 09 20 | 644 | 0.1− | 0.1+ | | | | | | |

**(140631)∗ 2001 UV$_{15}$ = 1998 BZ$_{46}$**

Discovered 2001 Oct. 25 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 20568)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.34599 | | (2000.0) | | | |
| $n$ | 0.18733283 | $\omega$ | 51.46247 | | +0.53035907 | +0.83482814 |
| $a$ | 3.0250098 | $\Omega$ | 251.18130 | | −0.81823887 | +0.45851705 |
| $e$ | 0.2129757 | $i$ | 8.97013 | | −0.22182065 | +0.30467047 |
| $P$ | 5.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 18 | 691 | 0.3+ | 0.0 | 2001 11 11 | 699 | 0.7− | 1.1+ | 2006 09 06 | 644 | 0.0 | 0.0 | | |
| 1998 01 18 | 691 | 0.2− | 0.1− | 2001 11 11 | 699 | 0.5− | 0.8+ | 2006 09 16 | 703 | 0.4− | 0.0 | | |
| 1998 01 18 | 691 | 0.0 | 0.3− | 2001 11 11 | 699 | 0.6− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.3+ | | |
| 1998 01 26 | 691 | 0.3− | 0.4− | 2001 11 12 | 704 | 1.5− | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.3+ | | |
| 1998 01 26 | 691 | 0.3− | 0.1− | 2001 11 12 | 704 | 0.2− | 0.4+ | 2006 09 16 | 703 | 0.3+ | 0.0 | | |
| 2000 06 07 | 704 | 0.2− | 0.6− | 2001 11 12 | 704 | 0.0 | 0.0 | 2006 09 18 | H06 | 0.0 | 0.3− | | |
| 2000 06 07 | 704 | 0.5− | 0.1+ | 2001 11 12 | 704 | 0.6− | 0.6+ | 2006 09 18 | H06 | 0.3+ | 0.3− | | |
| 2000 06 07 | 704 | 0.2− | 0.6− | 2001 11 12 | 704 | (0.6− | 1.8+) | 2006 09 18 | H06 | 0.0 | 0.0 | | |
| 2000 06 07 | 704 | 0.5+ | 0.0 | 2001 11 24 | 704 | 0.2+ | 0.3− | 2006 09 21 | 621 | 0.2+ | 0.4− | | |
| 2001 10 14 | 704 | 1.1+ | 0.2− | 2001 11 24 | 704 | 0.7+ | 0.4+ | 2006 09 21 | 621 | 0.2+ | 0.4− | | |
| 2001 10 14 | 704 | 0.4+ | 1.0+ | 2001 11 24 | 704 | 1.1+ | 0.5− | 2006 09 21 | 621 | 0.2+ | 0.4− | | |
| 2001 10 14 | 704 | 0.5+ | 0.8+ | 2005 05 04 | 644 | 0.3+ | 0.4+ | 2006 09 23 | 621 | 0.1− | 0.9− | | |
| 2001 10 14 | 704 | 0.4+ | 0.8+ | 2005 05 04 | 644 | 0.5+ | 0.5+ | 2006 09 23 | 621 | 0.0 | 0.5− | | |
| 2001 10 14 | 704 | 0.4+ | 0.8+ | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 09 24 | 621 | 0.1+ | 0.5− | | |
| 2001 10 18 | 704 | 0.5− | 0.9+ | 2005 05 08 | E12 | 0.9− | 0.2+ | 2006 09 27 | 699 | 1.1+ | 0.5+ | | |
| 2001 10 18 | 704 | 0.9− | 1.4+ | 2005 05 08 | E12 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.2+ | 0.1− | | |
| 2001 10 18 | 704 | (0.6+ | 4.0+) | 2005 05 08 | E12 | 0.4− | 0.1+ | 2006 09 27 | 699 | 1.3+ | 0.8+ | | |
| 2001 10 21 | 704 | 0.1− | 0.0 | 2005 05 08 | E12 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.5− | | |
| 2001 10 21 | 704 | 0.3− | 0.5+ | 2005 05 11 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.4− | | |
| 2001 10 21 | 704 | 0.3+ | 0.1− | 2005 05 11 | 644 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.5− | | |
| 2001 10 21 | 704 | 0.8− | 1.1+ | 2005 05 11 | 644 | 0.5+ | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.8− | | |
| 2001 10 21 | 704 | 0.6+ | 1.2+ | 2005 06 03 | 703 | 0.4+ | 0.0 | 2006 10 03 | 704 | (1.9+ | 2.5−) | | |
| 2001 10 25 | 333 | 0.7− | 0.4− | 2005 06 03 | 703 | 0.6− | 0.0 | 2006 10 03 | 704 | 0.9+ | 0.0 | | |
| 2001 10 25 | 333 | 0.5+ | 0.8− | 2005 06 03 | 703 | 0.4+ | 0.6− | 2006 10 03 | 704 | 0.6+ | 0.1− | | |
| 2001 10 25 | 333 | 0.2+ | 1.2− | 2005 06 03 | 703 | 0.6− | 0.5+ | 2006 10 19 | 683 | 0.2+ | 0.0 | | |
| 2001 10 26 | 333 | 0.1− | 0.4− | 2005 06 11 | 703 | (0.6− | 1.8−) | 2006 10 19 | 683 | 0.2− | 0.7− | | |
| 2001 10 26 | 333 | 0.7+ | 0.6+ | 2005 06 11 | 703 | (1.6− | 0.8−) | 2006 10 19 | 683 | 0.7− | 0.3− | | |
| 2001 10 26 | 333 | 1.0+ | 0.8− | 2005 06 11 | 703 | (0.3+ | 1.6−) | 2006 10 20 | 683 | 0.7− | 0.8− | | |
| 2001 11 10 | 704 | (0.6− | 2.7+) | 2005 06 11 | 703 | (1.7− | 0.7+) | 2006 10 20 | 683 | 0.6+ | 0.6− | | |
| 2001 11 10 | 704 | (0.1+ | 2.7+) | 2005 07 04 | 644 | 0.2+ | 0.2− | 2006 10 20 | 683 | 0.1+ | 0.9+ | | |
| 2001 11 10 | 704 | (0.8− | 2.4+) | 2005 07 04 | 644 | 0.0 | 0.3− | 2006 10 23 | 703 | 0.5− | 0.1− | | |
| 2001 11 10 | 704 | (0.5+ | 1.9+) | 2005 07 04 | 644 | 0.2− | 0.3− | 2006 10 23 | 703 | 0.9− | 0.8− | | |
| 2001 11 10 | 704 | (0.7− | 2.7+) | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 23 | 703 | 0.2− | 0.1− | | |
| 2001 11 11 | 699 | 0.4− | 0.1− | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 23 | 703 | 1.0− | 0.1− | | |

**(140632)∗ 2001 UQ$_{17}$**

Discovered 2001 Oct. 26 by L. Ball at Emerald Lane Observatory, Decatur.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 196.90363 | | (2000.0) | | | |
| $n$ | 0.19491043 | $\omega$ | 81.28343 | | −0.95287650 | +0.30082192 |
| $a$ | 2.9460899 | $\Omega$ | 116.21577 | | −0.29265538 | −0.87759404 |
| $e$ | 0.0851877 | $i$ | 2.50097 | | −0.07986995 | −0.37327587 |
| $P$ | 5.06 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.1+ | 0.1+ | 2003 01 27 | 291 | 0.4− | 0.4+ | 2006 10 02 | G96 | 0.7+ | 0.0 | | |
| 1995 07 24 | 691 | 0.0 | 0.2− | 2003 01 27 | 291 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.0 | | |
| 1995 07 24 | 691 | 1.4− | 0.7+ | 2003 01 31 | 704 | 1.3+ | 0.4− | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 2000 07 29 | 807 | 0.2+ | 0.0 | 2003 01 31 | 704 | 1.3+ | 0.0 | 2006 10 17 | G96 | 1.1+ | 0.4+ | | |
| 2000 07 29 | 807 | 0.3+ | 0.3− | 2003 01 31 | 704 | (0.1+ | 1.9+) | 2006 10 17 | G96 | 0.4− | 0.1+ | | |
| 2001 10 20 | 704 | 0.9+ | 0.2− | 2004 04 22 | 704 | 0.4− | 1.1− | 2006 10 17 | G96 | 0.6− | 0.4− | | |
| 2001 10 20 | 704 | (1.9+ | 0.7+) | 2004 04 22 | 704 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.5− | 0.1+ | | |
| 2001 10 20 | 704 | 1.2+ | 0.9+ | 2004 04 22 | 704 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.9+ | | |
| 2001 10 26 | 843 | (3.1+ | 1.5+) | 2004 04 30 | 691 | 0.0 | 0.5+ | 2006 10 18 | 691 | 0.3− | 0.5+ | | |
| 2001 10 26 | 843 | 1.1+ | 0.3− | 2004 04 30 | 691 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.5+ | | |
| 2001 10 27 | 843 | 1.3+ | 0.6+ | 2004 04 30 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.5− | 0.0 | | |
| 2001 10 27 | 843 | (0.5− | 1.8+) | 2004 05 15 | 704 | 0.7+ | 1.2+ | 2006 10 22 | 691 | 0.4− | 0.2− | | |
| 2001 11 12 | 843 | (1.8+ | 0.1+) | 2004 05 15 | 704 | (0.1− | 2.2+) | 2006 10 22 | 691 | 0.4− | 0.1+ | | |
| 2001 11 12 | 843 | 0.6+ | 0.2− | 2004 05 15 | 704 | 0.1+ | 1.2+ | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2001 11 17 | 691 | 0.3+ | 0.2+ | 2004 05 15 | 704 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.5− | 0.2− | | |
| 2001 11 17 | 691 | 0.2+ | 0.1+ | 2004 05 21 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.3− | | |
| 2001 11 17 | 691 | 0.3+ | 0.0 | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 2001 11 20 | 704 | 0.0 | 0.2+ | 2004 05 21 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.0 | | |
| 2001 11 20 | 704 | 0.1+ | 0.7+ | 2004 06 13 | 691 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2001 11 20 | 704 | (1.3+ | 1.8+) | 2004 06 13 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.7− | 0.1+ | | |
| 2001 11 20 | 704 | 0.5+ | 0.6+ | 2004 06 13 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.4− | | |
| 2003 01 27 | 291 | 0.4− | 0.6+ | 2006 10 02 | G96 | 0.2− | 0.0 | | | | | | |

**(140633)∗ 2001 UR$_{17}$**

Discovered 2001 Oct. 26 by L. Ball at Emerald Lane Observatory, Decatur.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 135.11334 | | (2000.0) | | | |
| $n$ | 0.17577431 | $\omega$ | 171.16100 | | −0.61359421 | +0.68182045 |
| $a$ | 3.1562092 | $\Omega$ | 59.89809 | | −0.74968880 | −0.34466060 |
| $e$ | 0.0197924 | $i$ | 27.41046 | | −0.24792914 | −0.64523635 |
| $P$ | 5.61 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 843 | 0.7+ | 1.0+ | 2001 12 15 | 704 | 0.6− | 0.1+ | 2004 04 10 | 644 | 0.3+ | 0.4+ | | |
| 2001 10 24 | 843 | (2.1− | 1.6−) | 2001 12 15 | 704 | 0.3− | 0.3+ | 2004 04 10 | 644 | 0.5+ | 0.3+ | | |
| 2001 10 26 | 843 | 0.7− | 0.1− | 2001 12 18 | 704 | 0.2− | 0.4− | 2004 04 15 | 704 | 1.4− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 843 | 0.9+ | 0.9− | 2001 12 18 | 704 | 0.1− | 0.5+ | 2004 04 15 | 704 | 0.9− | 0.7+ |
| 2001 10 27 | 843 | 0.0 | 0.0 | 2001 12 18 | 704 | 0.5− | 0.5+ | 2004 04 15 | 704 | 0.1− | 0.5+ |
| 2001 10 27 | 843 | 0.8+ | 0.1− | 2001 12 18 | 704 | 0.5− | 0.5+ | 2004 04 15 | 704 | 0.9− | 0.4− |
| 2001 11 17 | 704 | 0.5+ | 1.1+ | 2001 12 19 | 704 | 0.4− | 0.2− | 2004 04 15 | 704 | 1.1− | 0.3− |
| 2001 11 17 | 704 | 0.2− | 1.0+ | 2001 12 19 | 644 | 0.5− | 0.1+ | 2004 04 24 | 704 | 1.2+ | 0.5− |
| 2001 11 17 | 704 | 0.2− | 1.5+ | 2001 12 19 | 644 | 0.7− | 0.2+ | 2004 04 24 | 704 | 0.5+ | 0.0 |
| 2001 11 17 | 704 | 0.0 | 0.9+ | 2001 12 19 | 704 | 0.2+ | 0.1+ | 2004 04 24 | 704 | 0.7+ | 0.5+ |
| 2001 11 18 | 704 | 0.0 | 0.7− | 2001 12 19 | 644 | 1.0− | 0.3− | 2004 04 26 | 699 | 0.4+ | 0.3+ |
| 2001 11 18 | 704 | 0.3+ | 0.5− | 2001 12 19 | 704 | 0.4+ | 0.3+ | 2004 04 26 | 699 | 0.2− | 0.2− |
| 2001 11 18 | 704 | (0.2+ | 2.0−) | 2001 12 19 | 704 | 0.7+ | 0.1− | 2004 04 26 | 699 | 0.8+ | 0.0 |
| 2001 11 19 | 699 | 0.3− | 0.4− | 2002 11 07 | 645 | 0.1− | 0.2− | 2004 04 26 | 699 | 0.0 | 0.4+ |
| 2001 11 19 | 699 | 0.9− | 0.6+ | 2002 11 07 | 645 | 0.1− | 0.2− | 2004 05 13 | 704 | 0.1+ | 0.4+ |
| 2001 11 19 | 699 | 0.0 | 0.7+ | 2003 02 07 | 699 | 0.6+ | 0.6+ | 2004 05 13 | 704 | 0.3+ | 0.5+ |
| 2001 11 19 | 699 | 0.7− | 0.6− | 2003 02 07 | 699 | 0.9+ | 1.2+ | 2004 05 13 | 704 | 0.7+ | 0.2+ |
| 2001 11 20 | 704 | (2.0+ | 0.7−) | 2003 02 07 | 699 | 0.5+ | 0.3+ | 2004 05 13 | 704 | 0.5+ | 0.4+ |
| 2001 11 20 | 704 | 0.5− | 0.0 | 2003 02 07 | 699 | (2.6+ | 0.3+) | 2004 05 13 | 704 | 1.1+ | 0.2− |
| 2001 11 20 | 704 | 0.6− | 0.6+ | 2003 03 31 | 843 | (0.2+ | 5.6+) | 2005 08 01 | E12 | 0.4+ | 0.2+ |
| 2001 11 20 | 704 | 0.8− | 0.9+ | 2003 03 31 | 843 | 0.3− | 0.6+ | 2005 08 01 | E12 | 0.5− | 1.0+ |
| 2001 11 20 | 704 | 0.7− | 0.9+ | 2003 03 31 | 843 | 1.0− | 0.6+ | 2005 08 01 | E12 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.0 | 1.0− | 2003 04 02 | 843 | 0.2− | 0.6+ | 2005 08 01 | E12 | 0.3− | 0.5− |
| 2001 11 21 | 704 | 1.0+ | 1.4− | 2003 04 02 | 843 | 0.9+ | 0.9+ | 2006 10 11 | E12 | 1.2− | 0.6− |
| 2001 11 21 | 704 | 1.2+ | 1.4− | 2003 04 02 | 843 | 0.1− | 0.9+ | 2006 10 11 | E12 | 0.2− | 0.7+ |
| 2001 12 11 | 704 | 0.9+ | 0.4+ | 2004 03 28 | 704 | 0.8+ | 0.5+ | 2006 10 11 | E12 | 0.2− | 1.2+ |
| 2001 12 11 | 704 | 0.7+ | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.8+ | 2006 10 11 | E12 | 0.7+ | 0.6+ |
| 2001 12 11 | 704 | 0.6+ | 0.3+ | 2004 03 28 | 704 | (0.0 | 1.6+) | 2006 11 19 | 703 | 0.7− | 0.2+ |
| 2001 12 15 | 704 | 0.6− | 0.1+ | 2004 03 28 | 704 | 0.6+ | 0.9+ | 2006 11 19 | 703 | 0.8− | 1.4+ |
| 2001 12 15 | 704 | 0.6− | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.3+ |
| 2001 12 15 | 704 | 0.7− | 0.0 | 2004 04 10 | 644 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.6− | 0.1+ |

**(140634)∗ 2001 UY$_{18}$**

Discovered 2001 Oct. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.91638 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18249654 | $\omega$ | 177.45944 | | +0.91519369 | | +0.39745516 |
| $a$ | 3.0782198 | $\Omega$ | 158.73485 | | −0.37292573 | | +0.89794000 |
| $e$ | 0.0858319 | $i$ | 10.59859 | | −0.15279694 | | +0.18903213 |
| $P$ | 5.40 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 05 | 691 | 0.4− | 0.8− | 2001 10 17 | 644 | 0.5− | 0.6+ | 2005 05 06 | 703 | 0.3+ | 0.5+ |
| 1998 03 05 | 691 | 0.5− | 0.1− | 2001 10 24 | 644 | (0.3+ | 1.9+) | 2005 05 07 | 703 | 0.5+ | 0.5+ |
| 1998 03 05 | 691 | 0.4− | 0.6− | 2001 10 24 | 644 | (0.8+ | 1.9+) | 2005 05 07 | 703 | 0.3+ | 1.2+ |
| 2001 08 16 | 704 | 0.8+ | 1.1− | 2001 10 24 | 644 | 0.7+ | 1.5+ | 2005 05 07 | 703 | 0.0 | 0.7− |
| 2001 08 16 | 704 | 0.3+ | 0.3+ | 2004 02 12 | 291 | 0.1− | 0.6+ | 2005 05 07 | 703 | 0.2− | 0.6− |
| 2001 08 16 | 704 | 0.9− | 1.4− | 2004 02 12 | 291 | 0.2− | 0.5+ | 2006 08 14 | 644 | 0.4− | 0.2+ |
| 2001 09 12 | 704 | 0.7+ | 0.2+ | 2004 02 12 | 291 | 0.3− | 0.4+ | 2006 08 14 | 644 | 0.1− | 0.6+ |
| 2001 09 12 | 704 | 0.6+ | 0.5+ | 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 08 14 | 644 | 0.6− | 0.7+ |
| 2001 09 12 | 704 | 0.8+ | 0.6+ | 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | (0.5+ | 3.0+) |
| 2001 09 12 | 704 | 1.0+ | 0.7+ | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.4+ | 1.0+ |
| 2001 09 12 | 704 | 1.1+ | 0.8+ | 2004 02 26 | 704 | 0.8− | 0.4+ | 2006 08 28 | 703 | (1.8− | 0.7+) |
| 2001 09 19 | 704 | 1.4− | 1.0+ | 2004 02 26 | 704 | 0.5− | 1.2+ | 2006 08 28 | 703 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.0 |
| 2001 09 19 | 704 | (4.3− | 0.8+) | 2004 02 26 | 704 | 0.3+ | 1.3+ | 2006 09 14 | 703 | (2.0− | 0.8−) |
| 2001 09 19 | 704 | 0.6− | 0.9+ | 2004 02 29 | 291 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 1.2− | 0.6− |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2004 02 29 | 291 | 0.7+ | 0.2+ | 2006 09 14 | 703 | (1.6− | 0.3−) |
| 2001 09 21 | 704 | 0.4− | 0.6+ | 2004 02 29 | 291 | 1.0+ | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.6+ | 2004 03 11 | 644 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2004 03 11 | 644 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2004 03 11 | 644 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2001 09 27 | 644 | 0.2− | 1.0+ | 2004 03 18 | 704 | 0.6+ | 0.8− | 2006 10 28 | G96 | 0.5− | 0.1− |
| 2001 09 27 | 644 | 0.2− | 1.3+ | 2004 03 18 | 704 | 0.2+ | 1.1+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2001 09 27 | 644 | 0.3− | 0.9+ | 2004 03 18 | 704 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2001 10 16 | 644 | 0.2+ | 0.9+ | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2001 10 16 | 644 | 0.2+ | 0.8+ | 2004 03 18 | 704 | 1.0− | 0.7+ | 2006 11 23 | G96 | 0.5− | 0.5− |
| 2001 10 16 | 644 | 0.4+ | 0.8+ | 2005 05 06 | 703 | (1.3− | 2.3+) | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2001 10 17 | 644 | 0.4− | 0.3+ | 2005 05 06 | 703 | (1.2+ | 1.6+) | 2006 11 23 | G96 | 0.4− | 0.3− |
| 2001 10 17 | 644 | 0.3− | 0.2+ | 2005 05 06 | 703 | 0.5− | 1.2+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |

**(140635)∗ 2001 UY$_{19}$**

Discovered 2001 Oct. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.36031 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18672799 | $\omega$ | 296.75213 | | +0.65405631 | | −0.74894474 |
| $a$ | 3.0315386 | $\Omega$ | 111.98525 | | +0.72835083 | | +0.58558944 |
| $e$ | 0.1669258 | $i$ | 6.58043 | | +0.20424349 | | +0.31010769 |
| $P$ | 5.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.5− | 0.4+ | 2001 10 24 | 644 | 0.3+ | 0.7+ | 2006 08 30 | 699 | 0.4+ | 1.0+ |
| 2001 09 16 | 704 | 1.0− | 1.0+ | 2001 12 07 | 704 | 0.8+ | 0.4+ | 2006 09 14 | 644 | 0.2+ | 0.4+ |
| 2001 09 16 | 704 | 0.7− | 0.2+ | 2001 12 07 | 704 | 0.5− | 0.1− | 2006 09 14 | 644 | 0.3+ | 0.6+ |
| 2001 09 16 | 704 | 1.1− | 0.3+ | 2001 12 07 | 704 | 0.1− | 0.6− | 2006 09 14 | 703 | 0.4− | 0.4− |
| 2001 09 16 | 704 | 1.0− | 0.7+ | 2003 01 27 | 704 | 0.7− | 0.6+ | 2006 09 14 | 644 | 0.1+ | 0.4+ |
| 2001 09 16 | 704 | 1.2− | 0.2+ | 2003 01 27 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | 0.3− | 0.1− | 2003 01 27 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 1.1+ | 2003 01 27 | 704 | (1.6− | 0.3+) | 2006 09 14 | 703 | 1.5− | 1.3+ |
| 2001 09 16 | 704 | 0.7− | 0.7− | 2003 01 27 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 704 | 0.3+ | 1.4+ |
| 2001 09 18 | 645 | 0.3+ | 0.1− | 2003 01 28 | 608 | 1.4+ | 1.3+ | 2006 09 16 | 704 | (0.0 | 1.8+) |
| 2001 09 18 | 645 | 0.3+ | 0.1− | 2003 01 28 | 608 | 1.3+ | 0.7+ | 2006 09 16 | 704 | 0.3− | 0.3+ |
| 2001 09 21 | 644 | 0.0 | 0.6+ | 2003 01 28 | 608 | 0.9+ | 1.0+ | 2006 09 16 | 704 | 0.5− | 0.8+ |
| 2001 09 21 | 644 | 0.1− | 0.7+ | 2003 01 30 | 699 | 0.8− | 0.9+ | 2006 09 16 | 704 | 0.2− | 0.4− |
| 2001 09 21 | 644 | 0.1− | 0.3+ | 2003 01 30 | 699 | 0.6− | 0.6+ | 2006 09 20 | 703 | (1.5− | 1.6+) |
| 2001 09 25 | 704 | 0.5− | 0.4− | 2003 01 30 | 699 | 1.2− | 1.0+ | 2006 09 20 | 703 | 0.7+ | 0.7+ |
| 2001 09 25 | 704 | 1.0− | 0.7− | 2003 01 30 | 699 | 1.1− | 0.9+ | 2006 09 20 | 703 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 0.4− | 0.3+ | 2003 02 01 | 704 | 0.2− | 0.7+ | 2006 09 20 | 703 | 0.1+ | 1.2+ |
| 2001 10 16 | 704 | 0.3− | 0.7− | 2003 02 01 | 704 | 0.5+ | 0.0 | 2006 09 21 | 699 | 0.7+ | 0.4+ |
| 2001 10 16 | 704 | 0.1+ | 0.3− | 2003 02 01 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 1.4− | 0.9+ |
| 2001 10 16 | 644 | 0.1− | 0.2+ | 2003 02 01 | 704 | (0.6− | 1.8+) | 2006 09 21 | 699 | 1.3− | 0.2− |
| 2001 10 16 | 704 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.4+ | 0.4+ | 2006 09 21 | 699 | (0.6− | 1.6−) |
| 2001 10 16 | 704 | 0.2+ | 0.8− | 2003 02 04 | 704 | 1.1+ | 0.3− | 2006 10 02 | 703 | (1.9− | 0.4+) |
| 2001 10 16 | 644 | 0.0 | 0.1+ | 2003 02 04 | 704 | 0.6+ | 0.8+ | 2006 10 02 | 703 | 0.0 | 0.9+ |
| 2001 10 16 | 644 | 0.6− | 0.0 | 2003 02 04 | 704 | 0.8+ | 0.3+ | 2006 10 02 | 703 | 0.1− | 0.4+ |
| 2001 10 16 | 704 | 0.6− | 0.0 | 2004 03 15 | 691 | 0.1+ | 0.6+ | 2006 10 02 | 703 | 0.2+ | 1.4+ |
| 2001 10 16 | 644 | 0.1− | 0.0 | 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 703 | 0.5− | 0.4− |
| 2001 10 16 | 644 | 0.5− | 0.4+ | 2004 03 15 | 691 | 0.4+ | 0.4+ | 2006 10 02 | 703 | 1.3− | 0.6− |
| 2001 10 16 | 644 | 0.5− | 0.1+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 1.5− | 1.4− |
| 2001 10 18 | 644 | 0.4− | 0.5+ | 2004 04 14 | 691 | 0.0 | 0.7+ | 2006 10 02 | 703 | 0.3+ | 0.0 |
| 2001 10 18 | 644 | 0.3− | 0.4+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.6+ |
| 2001 10 18 | 644 | 0.4− | 0.4+ | 2006 08 21 | 644 | 0.1− | 1.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.3− | 0.0 | 2006 08 21 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 08 21 | 644 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.2+ |
| 2001 10 20 | 704 | 0.3+ | 0.3+ | 2006 08 30 | 699 | 0.5+ | 0.9+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 10 24 | 644 | 0.1+ | 0.5+ | 2006 08 30 | 699 | 0.5+ | 0.9+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2001 10 24 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.2+ |

**(140636)∗ 2001 UB$_{21}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.85571 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17914590 | $\omega$ | 102.62002 | | +0.32700013 | | −0.93396788 |
| $a$ | 3.1164833 | $\Omega$ | 327.13583 | | +0.73069045 | | +0.34660045 |
| $e$ | 0.2313590 | $i$ | 15.40341 | | +0.59930158 | | +0.08701792 |
| $P$ | 5.50 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 09 | 691 | 0.2− | 0.2− | 2002 12 31 | 704 | 0.1+ | 0.4− | 2003 02 07 | 704 | 0.3− | 0.6− |
| 1992 02 09 | 691 | 0.1− | 0.7− | 2002 12 31 | 704 | 0.3+ | 0.5− | 2003 02 07 | 704 | 0.5− | 0.1− |
| 1992 02 09 | 691 | 0.0 | 0.3+ | 2002 12 31 | 704 | 0.1− | 0.2− | 2003 02 21 | 699 | 0.4− | 1.2+ |
| 2001 08 17 | 704 | (0.5+ | 2.3+) | 2003 01 05 | 704 | 0.6+ | 0.4+ | 2003 02 21 | 699 | 0.0 | 0.2− |
| 2001 08 17 | 704 | 0.3+ | 0.5+ | 2003 01 05 | 704 | 0.2+ | 0.4+ | 2003 02 21 | 699 | 0.5− | 0.6+ |
| 2001 08 17 | 704 | 0.9+ | 0.2+ | 2003 01 05 | 704 | 0.8+ | 0.9+ | 2003 02 21 | 699 | 0.1− | 0.6+ |
| 2001 08 17 | 704 | 0.5− | 0.1+ | 2003 01 05 | 704 | 0.1+ | 0.1− | 2003 02 25 | 049 | (2.3− | 0.3+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 704 | 0.8+ | 0.3− | 2003 01 05 | 704 | 0.1− | 0.5+ | 2003 02 25 | 049 | (1.7− | 0.6+) | | |
| 2001 08 17 | 704 | 0.1− | 1.1+ | 2003 01 08 | 608 | 0.1− | 0.3− | 2003 02 25 | 049 | (2.3− | 0.5+) | | |
| 2001 08 17 | 704 | 0.1− | 0.3− | 2003 01 08 | 608 | 0.1+ | 0.3− | 2003 03 06 | 644 | 0.4+ | 1.4+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.6+ | 2003 01 08 | 608 | 0.2− | 0.6− | 2003 03 06 | 644 | 1.2+ | 0.8+ | | |
| 2001 08 25 | 704 | 0.5+ | 0.2+ | 2003 01 09 | 704 | 0.1− | 0.3+ | 2003 03 06 | 644 | 0.5+ | 0.9+ | | |
| 2001 08 25 | 704 | 0.1− | 0.4+ | 2003 01 09 | 704 | 0.2+ | 0.3− | 2003 03 08 | 704 | 0.1− | 0.8+ | | |
| 2001 09 10 | 699 | 0.8− | 0.1− | 2003 01 09 | 704 | 1.0− | 0.0 | 2003 03 08 | 704 | 1.3− | 1.4+ | | |
| 2001 09 10 | 699 | 0.4− | 0.0 | 2003 01 09 | 704 | 0.5− | 1.0− | 2003 03 08 | 704 | 0.6− | 0.1− | | |
| 2001 09 10 | 699 | 0.3+ | 0.1− | 2003 01 09 | 704 | 0.7+ | 0.7− | 2003 03 08 | 704 | 0.5− | 0.6+ | | |
| 2001 09 10 | 699 | 1.0− | 0.5− | 2003 01 17 | 644 | 0.5+ | 1.0+ | 2003 03 12 | 644 | 0.1− | 0.4+ | | |
| 2001 09 15 | 644 | 0.5− | 0.1+ | 2003 01 17 | 644 | 0.4+ | 0.6+ | 2003 03 12 | 644 | 0.5+ | 0.8− | | |
| 2001 09 15 | 644 | 0.7− | 0.1+ | 2003 01 17 | 644 | 0.6+ | 1.0+ | 2003 03 12 | 644 | 0.0 | 0.3+ | | |
| 2001 09 15 | 644 | 0.6− | 0.0 | 2003 01 27 | 699 | 1.2+ | 0.4− | 2006 08 12 | 644 | 0.5− | 0.4+ | | |
| 2001 09 23 | 608 | 0.6+ | 0.1− | 2003 01 27 | 699 | 0.4+ | 0.2− | 2006 08 12 | 644 | 0.4− | 0.7+ | | |
| 2001 09 23 | 608 | 0.3+ | 0.1− | 2003 01 27 | 699 | 0.2− | 0.1+ | 2006 08 12 | 644 | 0.4− | 0.6+ | | |
| 2001 09 23 | 608 | 0.5+ | 0.4− | 2003 01 27 | 699 | 0.4+ | 0.1− | 2006 08 14 | 644 | 0.4− | 0.5+ | | |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2003 01 28 | 644 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.6− | 0.6+ | | |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2003 01 28 | 644 | 0.0 | 0.3+ | 2006 08 14 | 644 | 0.6− | 0.6+ | | |
| 2001 09 25 | 704 | 0.3+ | 0.0 | 2003 01 28 | 644 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.4− | 0.5+ | | |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2003 01 30 | 699 | 0.5+ | 0.7+ | 2006 08 20 | 644 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | 0.0 | 0.2− | 2003 01 30 | 699 | 0.5− | 0.0 | 2006 08 20 | 644 | 0.5− | 0.5+ | | |
| 2001 10 13 | 644 | 0.1− | 0.2+ | 2003 01 30 | 699 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2+ | | |
| 2001 10 13 | 644 | 0.3− | 0.2+ | 2003 01 30 | 699 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2+ | | |
| 2001 10 13 | 644 | 0.3− | 0.1− | 2003 02 01 | 704 | 0.7+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.5− | 0.0 | 2003 02 01 | 704 | 0.7+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.4+ | | |
| 2001 10 17 | 704 | 0.1− | 0.8− | 2003 02 01 | 704 | 0.6+ | 0.4− | 2006 10 21 | G96 | 0.9+ | 0.3− | | |
| 2001 10 17 | 704 | 0.3+ | 0.6− | 2003 02 01 | 704 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.4− | 0.0 | | |
| 2001 10 17 | 704 | 0.3− | 0.7− | 2003 02 01 | 704 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2001 10 19 | 704 | 0.7− | 0.8+ | 2003 02 02 | 644 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2001 10 19 | 704 | 0.3− | 0.6+ | 2003 02 02 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.3+ | | |
| 2001 10 19 | 704 | 0.2+ | 1.1+ | 2003 02 02 | 644 | 0.5+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.4+ | | |
| 2001 10 23 | 699 | 1.2− | 0.0 | 2003 02 04 | 704 | 0.0 | 0.5+ | 2006 11 01 | G96 | (1.7− | 0.8+) | | |
| 2001 10 23 | 699 | 0.4+ | 0.1− | 2003 02 04 | 704 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.1+ | | |
| 2001 10 23 | 699 | 0.7+ | 0.6− | 2003 02 04 | 704 | 0.2− | 0.8+ | 2006 11 23 | G96 | 0.4− | 0.3+ | | |
| 2001 10 23 | 699 | 0.1− | 0.3− | 2003 02 04 | 704 | 0.4+ | 0.4− | 2006 11 23 | G96 | 0.6+ | 0.4− | | |
| 2001 10 24 | 291 | 0.3+ | 0.1− | 2003 02 04 | 704 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2001 10 24 | 291 | 0.2+ | 0.2− | 2003 02 07 | 704 | 0.7+ | 0.3− | 2006 11 23 | G96 | 0.6+ | 0.6+ | | |
| 2001 10 24 | 291 | 0.3+ | 0.1− | 2003 02 07 | 704 | 0.7− | 0.2− | | | | | | |
| 2002 12 31 | 704 | 0.1+ | 0.4− | 2003 02 07 | 704 | 1.3− | 0.5− | | | | | | |

**(140637)∗ 2001 UX$_{21}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.36084 | | (2000.0) | | | |
| $n$ | 0.21155041 | $\omega$ | 108.91249 | | +0.14926280 | −0.98368075 |
| $a$ | 2.7895028 | $\Omega$ | 331.90852 | | +0.80781900 | +0.17990354 |
| $e$ | 0.1856283 | $i$ | 12.31881 | | +0.57021845 | +0.00262609 |
| $P$ | 4.66 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 691 | 0.0 | 0.1+ | 2001 10 17 | 704 | 0.2+ | 0.5+ | 2003 02 10 | 291 | 0.9− | 0.2+ | | |
| 1996 10 12 | 691 | 0.1+ | 0.0 | 2001 10 17 | 704 | 0.3+ | 0.5+ | 2003 02 22 | 644 | 0.5+ | 0.3+ | | |
| 1996 10 12 | 691 | 0.2+ | 0.5+ | 2001 10 17 | 704 | 0.3− | 0.7+ | 2003 02 22 | 644 | 1.1+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.8+ | 2001 10 19 | 704 | (1.7+ | 0.3+) | 2003 02 22 | 644 | 0.3+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.6+ | 0.8+ | 2001 10 19 | 704 | (0.0 | 1.6+) | 2003 02 23 | 699 | 0.3+ | 0.0 | | |
| 2001 08 25 | 704 | 0.2− | 0.7+ | 2001 10 19 | 704 | 0.4− | 0.7+ | 2003 02 23 | 699 | 0.7+ | 0.3+ | | |
| 2001 09 10 | 704 | 0.1+ | 0.8+ | 2001 10 19 | 704 | 0.8− | 0.1− | 2003 02 23 | 699 | 0.0 | 0.4+ | | |
| 2001 09 10 | 704 | 0.5− | 0.1− | 2001 10 19 | 608 | 0.1− | 0.7− | 2003 02 23 | 699 | 0.5− | 0.5+ | | |
| 2001 09 10 | 704 | 0.3− | 0.3− | 2001 10 19 | 608 | 0.1− | 0.1− | 2003 02 26 | 599 | 0.2+ | 0.0 | | |
| 2001 09 10 | 704 | 0.3− | 1.1+ | 2001 10 19 | 608 | 0.0 | 0.8− | 2003 02 26 | 599 | 0.2+ | 0.1+ | | |
| 2001 09 10 | 699 | 0.1+ | 0.3− | 2001 10 20 | 704 | 0.2+ | 0.5+ | 2003 02 26 | 599 | 0.2+ | 0.0 | | |
| 2001 09 10 | 704 | 0.5+ | 1.2+ | 2001 10 20 | 704 | 0.3− | 0.5+ | 2003 02 26 | 599 | 0.0 | 0.1+ | | |
| 2001 09 10 | 699 | 1.3− | 0.3+ | 2001 10 20 | 704 | 0.0 | 0.3+ | 2003 03 05 | 704 | 0.2+ | 0.3+ | | |
| 2001 09 10 | 699 | 1.4− | 0.1− | 2001 10 20 | 704 | 0.3+ | 0.2+ | 2003 03 05 | 704 | 0.3+ | 0.5+ | | |
| 2001 09 10 | 699 | 0.5− | 0.1+ | 2001 10 26 | 644 | 0.6− | 0.4+ | 2003 03 05 | 704 | 0.6+ | 0.5+ | | |
| 2001 09 21 | 699 | 0.1− | 0.5+ | 2001 10 26 | 644 | 0.6− | 0.4+ | 2003 03 05 | 704 | 0.9+ | 0.3− | | |
| 2001 09 21 | 699 | 0.0 | 0.5+ | 2001 10 26 | 644 | 0.5− | 0.5+ | 2003 03 06 | 699 | 0.3− | 0.3+ | | |
| 2001 09 21 | 699 | 0.4− | 0.9+ | 2001 11 11 | 644 | 0.2+ | 0.6+ | 2003 03 06 | 699 | 0.2+ | 0.0 | | |
| 2001 09 21 | 699 | 0.4− | 0.5+ | 2001 11 11 | 644 | 0.4− | 0.7+ | 2003 03 06 | 699 | 1.2+ | 0.2− | | |
| 2001 09 25 | 704 | 0.1+ | 0.7− | 2001 11 11 | 644 | 0.2− | 0.3+ | 2003 03 06 | 699 | 0.0 | 0.8+ | | |
| 2001 09 25 | 704 | 0.1− | 0.2− | 2003 01 26 | 699 | (2.9+ | 0.1+) | 2006 10 03 | 703 | 1.3+ | 0.7− | | |
| 2001 09 25 | 704 | 0.2− | 0.0 | 2003 01 26 | 699 | 1.2+ | 0.3+ | 2006 10 03 | 703 | (0.5+ | 1.7−) | | |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2003 01 26 | 699 | (1.7+ | 0.6+) | 2006 10 03 | 703 | 0.1+ | 0.5− | | |
| 2001 09 25 | 704 | 0.1− | 0.1− | 2003 01 26 | 699 | 1.0+ | 1.1+ | 2006 10 03 | 703 | 0.1+ | 0.8− | | |
| 2001 09 26 | 704 | 0.5+ | 0.8− | 2003 01 26 | 608 | 0.9+ | 0.4− | 2006 10 23 | 703 | 0.3+ | 0.0 | | |
| 2001 09 26 | 704 | 0.0 | 0.9− | 2003 01 26 | 608 | 0.8+ | 0.3− | 2006 10 23 | 703 | 0.5− | 0.1+ | | |
| 2001 09 26 | 704 | 1.1+ | 0.9− | 2003 01 26 | 608 | 0.5+ | 0.8− | 2006 10 23 | 703 | 0.6+ | 0.6+ | | |
| 2001 09 26 | 704 | 0.5+ | 0.8− | 2003 01 28 | 704 | 1.5+ | 0.8− | 2006 10 23 | 703 | 0.1− | 0.9+ | | |
| 2001 09 26 | 704 | 0.2+ | 1.0− | 2003 01 28 | 704 | 0.7+ | 0.1+ | 2006 11 13 | 704 | 0.8+ | 0.7− | | |
| 2001 09 29 | 644 | 0.4− | 0.1− | 2003 01 28 | 704 | 0.1+ | 0.7+ | 2006 11 13 | 704 | 0.4+ | 0.4− | | |
| 2001 09 29 | 644 | 0.5− | 0.2− | 2003 01 28 | 704 | 1.1− | 0.5− | 2006 11 13 | 704 | 0.7+ | 0.5− | | |
| 2001 09 29 | 644 | 0.6− | 0.0 | 2003 02 03 | 699 | 0.7+ | 0.2+ | 2006 11 20 | 703 | 0.5− | 0.2− | | |
| 2001 10 13 | 644 | 0.5− | 0.1+ | 2003 02 03 | 699 | 0.3− | 0.7+ | 2006 11 20 | 703 | 0.3+ | 1.1− | | |
| 2001 10 13 | 644 | 0.5− | 0.0 | 2003 02 03 | 699 | 0.0 | 0.6+ | 2006 11 20 | 703 | 0.5− | 0.9− | | |
| 2001 10 13 | 644 | 0.4− | 0.2− | 2003 02 03 | 699 | 0.1− | 0.1− | 2006 11 20 | 703 | 0.1+ | 1.1− | | |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2003 02 10 | 291 | 0.4− | 0.2+ | | | | | | |
| 2001 10 17 | 704 | 0.1− | 0.3+ | 2003 02 10 | 291 | 0.5− | 0.2+ | | | | | | |

**(140638)∗ 2001 UB$_{22}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.47028 | | (2000.0) | | | |
| $n$ | 0.22475518 | $\omega$ | 247.17374 | | −0.57504271 | −0.80291127 |
| $a$ | 2.6791452 | $\Omega$ | 238.87207 | | +0.80166480 | −0.51469001 |
| $e$ | 0.1505022 | $i$ | 10.57058 | | +0.16327718 | −0.30071198 |
| $P$ | 4.39 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 30 | 691 | 0.3+ | 0.1+ | 2001 11 10 | 704 | 0.2− | 0.0 | 2005 08 05 | 644 | 0.5+ | 0.2+ | | |
| 1998 01 30 | 691 | 0.2+ | 0.2− | 2001 11 10 | 704 | 0.4+ | 0.3+ | 2005 08 28 | 699 | 0.4− | 0.6+ | | |
| 1998 01 30 | 691 | 0.3+ | 0.8− | 2001 11 10 | 704 | 0.1+ | 1.1+ | 2005 08 28 | 699 | 0.6+ | 0.4− | | |
| 2001 08 25 | 704 | 0.4+ | 0.8− | 2001 11 10 | 704 | 0.3+ | 0.6+ | 2005 08 28 | 699 | 0.9+ | 0.0 | | |
| 2001 08 25 | 704 | 0.2+ | 0.7+ | 2002 12 30 | 608 | 0.9+ | 0.4− | 2005 08 28 | 699 | 0.7− | 0.6− | | |
| 2001 08 25 | 704 | 0.9− | 1.5+ | 2002 12 30 | 608 | 0.8+ | 0.4− | 2005 09 25 | A50 | 0.3+ | 0.1− | | |
| 2001 09 19 | 699 | 1.1+ | 0.0 | 2002 12 30 | 608 | 0.7+ | 0.7+ | 2005 09 25 | A50 | 0.2+ | 0.2− | | |
| 2001 09 19 | 699 | 0.3+ | 0.4− | 2003 01 02 | 704 | 0.9− | 0.8+ | 2005 09 26 | 703 | 0.3− | 0.3+ | | |
| 2001 09 19 | 699 | 0.5+ | 1.1+ | 2003 01 02 | 704 | 0.2− | 0.8+ | 2005 09 26 | 703 | (0.9− | 1.8+) | | |
| 2001 09 19 | 699 | 0.5+ | 1.0+ | 2003 01 02 | 704 | (1.8− | 2.2+) | 2005 09 26 | 703 | 0.9− | 0.2− | | |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2003 01 02 | 704 | 1.4− | 0.6+ | 2005 09 26 | 703 | 0.8+ | 1.3+ | | |
| 2001 09 25 | 704 | 0.2− | 0.5− | 2003 01 02 | 704 | 0.8− | 0.9+ | 2006 11 14 | 704 | (1.6+ | 0.1+) | | |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2003 01 08 | 699 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.2− | 0.6+ | | |
| 2001 09 25 | 704 | 0.8− | 1.1− | 2003 01 08 | 699 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.7+ | 0.5− | | |
| 2001 09 25 | 704 | 0.8− | 0.3− | 2003 01 08 | 699 | 0.3+ | 0.1+ | 2006 11 17 | 704 | (2.7+ | 2.2+) | | |
| 2001 09 29 | 644 | 1.3− | 0.6+ | 2003 01 08 | 699 | 1.2+ | 0.6+ | 2006 11 17 | 704 | (1.9+ | 0.9+) | | |
| 2001 09 29 | 644 | 1.1− | 0.6+ | 2003 01 14 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | (2.6+ | 2.0+) | | |
| 2001 09 29 | 644 | 1.1− | 0.8+ | 2003 01 14 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 704 | (4.1+ | 1.6+) | | |
| 2001 10 13 | 699 | 0.1+ | 0.8+ | 2003 01 14 | 644 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.2− | | |
| 2001 10 13 | 699 | 0.7− | 0.0 | 2003 01 29 | 704 | 0.3+ | 1.4+ | 2006 11 18 | 704 | 0.6− | 0.6+ | | |
| 2001 10 13 | 699 | 0.5− | 0.8+ | 2003 01 29 | 704 | 0.4+ | 1.2+ | 2006 11 18 | 704 | (0.4− | 1.8+) | | |
| 2001 10 13 | 699 | 1.3− | 0.2+ | 2003 01 29 | 704 | (0.2− | 1.8+) | 2006 11 19 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 15 | 608 | 0.5− | 0.2− | 2003 01 29 | 704 | (0.3+ | 2.0+) | 2006 11 19 | 691 | 0.4+ | 0.0 | | |
| 2001 10 15 | 608 | 0.5− | 0.5− | 2003 02 06 | 644 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.1+ | | |
| 2001 10 15 | 608 | 0.1+ | 0.2− | 2003 02 06 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.2− | 0.3+ | | |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2003 02 06 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.0 | 0.3+ | | |
| 2001 10 17 | 704 | 0.9− | 0.1− | 2003 02 08 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.1+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.5− | 0.7− | 2003 02 08 | 704 | 1.3− | 0.8− | 2006 11 20 | 704 | 0.7+ | 0.9+ | | |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2003 02 08 | 704 | 0.4− | 0.1− | 2006 11 23 | 691 | (3.1− | 3.9−) | | |
| 2001 10 17 | 704 | 1.2− | 0.2− | 2003 02 08 | 704 | 0.8+ | 1.1− | 2006 11 23 | 691 | 0.3+ | 0.1− | | |
| 2001 10 19 | 704 | 0.4− | 0.1− | 2003 03 29 | 699 | 0.8+ | 0.8+ | 2006 11 23 | 691 | 0.3+ | 0.9+ | | |
| 2001 10 19 | 704 | 0.5− | 0.1− | 2003 03 29 | 699 | 0.4+ | 0.5+ | 2006 11 28 | 691 | 0.4+ | 0.1+ | | |
| 2001 10 19 | 704 | 0.1− | 1.3+ | 2003 03 29 | 699 | 0.0 | 0.1+ | 2006 11 28 | 691 | 0.5− | 0.0 | | |
| 2001 10 19 | 704 | 0.3+ | 0.0 | 2003 03 29 | 699 | 0.0 | 0.8+ | 2006 11 28 | 691 | 0.8+ | 0.9+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2005 08 05 | 644 | 1.1+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.7− | | |
| 2001 10 21 | 704 | 0.3+ | 0.3+ | 2005 08 05 | 644 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.7− | | |
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.8− | | |
| 2001 10 21 | 704 | 0.3+ | 0.4+ | 2005 08 05 | 644 | 0.4+ | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.7− | | |
| 2001 10 21 | 704 | 0.5+ | 0.6+ | 2005 08 05 | 644 | 0.4+ | 0.1− | 2006 12 01 | 691 | 0.1− | 0.3+ | | |
| 2001 10 26 | 644 | 0.2+ | 0.1+ | 2005 08 05 | 644 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 26 | 644 | 0.1+ | 0.3+ | 2005 08 05 | 644 | 0.2+ | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 26 | 644 | 0.0 | 0.0 | 2005 08 05 | 644 | 0.4+ | 0.0 | | | | | | |

**(140639)∗ 2001 UQ$_{22}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.02444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18273035 | $\omega$ | 20.45280 | | +0.26873996 | +0.94772165 | |
| $a$ | 3.0755934 | $\Omega$ | 265.44770 | | −0.90598705 | +0.18805672 | |
| $e$ | 0.0734416 | $i$ | 9.93892 | | −0.32705703 | +0.25779517 | |
| $P$ | 5.39 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 27 | 691 | 0.6− | 0.0 | 2001 10 26 | 644 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.2+ | | |
| 1998 01 27 | 691 | 0.4− | 0.2− | 2001 10 26 | 644 | 0.0 | 0.6+ | 2006 08 18 | 644 | 0.2− | 0.0 | | |
| 1998 01 27 | 691 | 0.4− | 0.1+ | 2001 10 26 | 644 | 0.3− | 0.3+ | 2006 08 19 | 644 | 0.1− | 0.1+ | | |
| 2001 07 26 | 644 | 0.5+ | 0.3+ | 2001 11 11 | 644 | 0.0 | 0.4+ | 2006 08 19 | 644 | 0.0 | 0.1+ | | |
| 2001 07 26 | 644 | 0.5+ | 0.4+ | 2001 11 11 | 644 | 0.1+ | 0.4+ | 2006 08 19 | 644 | 0.1+ | 0.1+ | | |
| 2001 07 26 | 644 | 0.7+ | 0.4+ | 2001 11 11 | 644 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.0 | 0.1− | | |
| 2001 08 26 | 699 | 0.4+ | 1.2+ | 2004 02 14 | 644 | 0.8+ | 0.4+ | 2006 08 27 | 699 | 0.3+ | 0.7+ | | |
| 2001 08 26 | 699 | 0.1− | 0.8+ | 2004 02 14 | 644 | 0.4+ | 0.2+ | 2006 08 27 | 699 | 0.8− | 0.2− | | |
| 2001 08 26 | 699 | 0.5+ | 0.3+ | 2004 02 14 | 644 | 0.5+ | 0.3+ | 2006 08 27 | 699 | 0.8− | 0.5+ | | |
| 2001 08 26 | 699 | 0.2+ | 0.9− | 2004 02 19 | 704 | 1.0+ | 0.1− | 2006 08 28 | 704 | 0.8− | 0.9+ | | |
| 2001 09 24 | 644 | 1.2+ | 0.4− | 2004 02 19 | 704 | 0.7+ | 1.4+ | 2006 08 28 | 704 | 0.7+ | 0.3+ | | |
| 2001 09 24 | 644 | 0.9+ | 0.2− | 2004 02 19 | 704 | 0.9+ | 0.0 | 2006 08 28 | 704 | 0.6− | 0.0 | | |
| 2001 09 24 | 644 | 0.7+ | 0.9− | 2004 02 23 | 704 | 0.7+ | 0.7+ | 2006 09 11 | 703 | 0.2− | 1.1− | | |
| 2001 09 25 | 704 | (0.3− | 2.0+) | 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 09 11 | 703 | 0.1+ | 1.0− | | |
| 2001 09 25 | 704 | (2.1+ | 1.2+) | 2004 02 23 | 704 | 0.7+ | 0.5+ | 2006 09 11 | 703 | 0.3− | 0.5− | | |
| 2001 09 25 | 704 | 0.7+ | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.6+ | 2006 09 11 | 703 | 0.4+ | 0.1− | | |
| 2001 09 25 | 704 | 1.7+ | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.0 | | |
| 2001 09 29 | 644 | 1.6− | 0.7+ | 2004 02 25 | 097 | 0.0 | 0.6+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 29 | 644 | 0.5+ | 0.4+ | 2004 02 26 | 097 | 0.5+ | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.1+ | | |
| 2001 09 29 | 644 | 0.8− | 0.7+ | 2004 02 26 | 097 | 0.5+ | 0.6+ | 2006 09 16 | 691 | 0.0 | 0.1− | | |
| 2001 09 29 | 644 | 0.8+ | 0.3+ | 2004 03 19 | E12 | 0.0 | 0.3− | 2006 09 16 | 691 | 0.0 | 0.1− | | |
| 2001 09 29 | 644 | 1.6− | 0.9+ | 2004 03 19 | E12 | 0.4− | 0.7+ | 2006 09 16 | 691 | 0.1+ | 0.2− | | |
| 2001 09 29 | 644 | 0.6+ | 0.2+ | 2004 03 19 | E12 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.3− | 0.2− | | |
| 2001 10 13 | 699 | 0.0 | 0.2− | 2004 03 19 | E12 | 0.1− | 1.9+ | 2006 09 18 | 691 | 0.0 | 0.1− | | |
| 2001 10 13 | 699 | 0.6+ | 1.4+ | 2005 05 12 | 703 | (0.1+ | 2.5+) | 2006 09 18 | 691 | 0.1− | 0.0 | | |
| 2001 10 13 | 699 | 0.2+ | 0.7+ | 2005 05 12 | 703 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.7− | 0.6− | | |
| 2001 10 13 | 699 | 1.0− | 1.7+ | 2005 05 12 | 703 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.4− | | |
| 2001 10 17 | 704 | 1.1− | 0.5− | 2005 05 12 | 703 | 0.9− | 0.4+ | 2006 09 19 | 699 | 0.3+ | 1.6− | | |
| 2001 10 17 | 704 | 0.5− | 0.4+ | 2005 06 26 | 644 | 0.4+ | 0.8+ | 2006 09 19 | 699 | 0.6− | 0.4− | | |
| 2001 10 17 | 704 | 0.4− | 0.1− | 2005 06 26 | 644 | 0.5+ | 0.8+ | 2006 09 26 | 703 | 1.0+ | 0.5+ | | |
| 2001 10 17 | 704 | 0.6− | 0.0 | 2005 06 26 | 644 | 0.4+ | 0.9+ | 2006 09 26 | 703 | 0.8− | 0.4+ | | |
| 2001 10 19 | 704 | 0.7− | 0.2− | 2005 06 26 | 644 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.3+ | 1.2+ | | |
| 2001 10 19 | 704 | 0.1− | 0.5+ | 2005 06 26 | 644 | 0.5+ | 0.9+ | 2006 09 26 | 703 | 0.8− | 0.4+ | | |
| 2001 10 19 | 704 | 0.1− | 1.7+ | 2005 06 26 | 644 | 0.7+ | 0.5+ | | | | | | |
| 2001 10 19 | 704 | 0.0 | 0.8+ | 2006 08 18 | 644 | 0.1− | 0.3+ | | | | | | |

**(140640)∗ 2001 UO$_{23}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.12135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19144428 | $\omega$ | 214.94773 | | −0.24343475 | −0.95012560 | |
| $a$ | 2.9815433 | $\Omega$ | 249.83517 | | +0.93048205 | −0.17204436 | |
| $e$ | 0.0917617 | $i$ | 11.98567 | | +0.27375660 | −0.26011938 | |
| $P$ | 5.15 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 644 | 0.1+ | 0.3+ | 2001 12 17 | 704 | 0.5+ | 0.7+ | 2004 05 13 | 699 | 0.2+ | 0.9+ | | |
| 2001 09 18 | 644 | 0.0 | 0.3+ | 2001 12 17 | 704 | 0.1+ | 0.7+ | 2004 05 13 | 699 | 0.4+ | 1.0+ | | |
| 2001 09 18 | 644 | 0.3+ | 0.1+ | 2002 11 19 | 644 | 0.2− | 0.0 | 2004 05 13 | 703 | 0.2− | 0.3+ | | |
| 2001 09 19 | 699 | 0.6+ | 0.1+ | 2002 11 19 | 644 | 0.0 | 0.4+ | 2004 05 13 | 703 | 1.0− | 1.3+ | | |
| 2001 09 19 | 699 | 0.1+ | 0.2− | 2002 11 19 | 644 | 0.5+ | 0.2+ | 2004 05 13 | 703 | 0.6− | 0.2− | | |
| 2001 09 19 | 699 | 0.5− | 0.0 | 2002 12 02 | 608 | 0.8+ | 0.6+ | 2004 05 13 | 703 | 0.0 | 0.0 | | |
| 2001 09 19 | 699 | 0.3− | 0.6− | 2002 12 02 | 608 | 0.4+ | 0.5+ | 2004 05 15 | 704 | 1.1− | 0.6− | | |
| 2001 09 25 | 704 | 0.5+ | 0.2+ | 2002 12 02 | 608 | 0.2+ | 1.2+ | 2004 05 15 | 704 | (2.3− | 0.5+) | | |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2002 12 14 | 704 | 0.2− | 0.1− | 2004 05 15 | 704 | 0.3− | 0.8+ | | |
| 2001 09 25 | 704 | 0.6− | 0.2− | 2002 12 14 | 704 | 0.6+ | 0.2− | 2004 05 15 | 704 | 1.3− | 0.7− | | |
| 2001 09 25 | 704 | 0.4+ | 0.4+ | 2002 12 14 | 704 | 0.1− | 0.1− | 2004 05 15 | 704 | 0.2+ | 1.0− | | |
| 2001 09 25 | 704 | (1.6+ | 0.2−) | 2002 12 14 | 704 | 0.2− | 1.0− | 2004 05 19 | 704 | 0.6− | 0.2+ | | |
| 2001 10 13 | 699 | 0.9+ | 0.2+ | 2003 01 01 | 704 | 0.4− | 0.5− | 2004 05 19 | 704 | 1.4+ | 0.2− | | |
| 2001 10 13 | 699 | 0.5+ | 0.7− | 2003 01 01 | 704 | 0.2+ | 0.5+ | 2004 05 19 | 704 | 0.2+ | 0.1+ | | |
| 2001 10 13 | 699 | 0.0 | 0.4+ | 2003 01 01 | 704 | 0.0 | 0.1− | 2004 05 19 | 704 | (0.0 | 1.9+) | | |
| 2001 10 13 | 699 | 0.6− | 0.6+ | 2003 01 01 | 704 | 0.1+ | 0.2− | 2004 05 19 | 704 | 0.2+ | 0.3− | | |
| 2001 10 18 | 704 | 1.2− | 0.1+ | 2003 01 02 | 699 | 0.4+ | 0.8− | 2005 07 05 | 704 | (0.5− | 1.8+) | | |
| 2001 10 18 | 704 | 1.3− | 0.1+ | 2003 01 02 | 699 | 0.8+ | 0.2+ | 2005 07 05 | 704 | 0.1+ | 0.7+ | | |
| 2001 10 18 | 704 | 1.2− | 0.1− | 2003 01 02 | 699 | 0.3+ | 0.1− | 2005 07 05 | 704 | (0.8+ | 1.6+) | | |
| 2001 10 18 | 704 | 0.7− | 0.1+ | 2003 01 02 | 699 | 0.4+ | 0.1− | 2005 07 05 | 704 | 0.6− | 0.6+ | | |
| 2001 10 18 | 704 | 1.1− | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.9+ | 2005 07 05 | 704 | 0.2+ | 1.0+ | | |
| 2001 10 19 | 704 | 0.2− | 1.0+ | 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 08 29 | 699 | 0.2− | 0.4+ | | |
| 2001 10 19 | 704 | 0.6− | 0.9+ | 2003 01 05 | 704 | 0.9− | 0.3+ | 2006 08 29 | 699 | 0.4− | 0.1− | | |
| 2001 10 19 | 704 | 0.4− | 1.5+ | 2003 01 05 | 704 | 0.1− | 0.6+ | 2006 08 29 | 699 | 0.1− | 0.2+ | | |
| 2001 10 19 | 704 | 0.1+ | 0.5+ | 2003 01 09 | 704 | (2.6− | 0.8+) | 2006 08 29 | 699 | 0.2+ | 0.3+ | | |
| 2001 10 19 | 704 | 0.4+ | 0.9+ | 2003 01 09 | 704 | (3.3− | 0.4+) | 2006 09 06 | 644 | 0.2+ | 0.4+ | | |
| 2001 10 26 | 644 | 0.7− | 0.5− | 2003 01 09 | 704 | (3.3− | 0.7+) | 2006 09 06 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 26 | 644 | 0.6− | 0.5− | 2003 01 26 | 644 | 0.2− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.3+ | | |
| 2001 10 26 | 644 | 0.6− | 0.3− | 2003 01 26 | 644 | 0.6+ | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 10 | 704 | 1.2+ | 1.1− | 2003 01 26 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.4+ | | |
| 2001 11 10 | 704 | 0.7+ | 0.3− | 2003 01 28 | 704 | 0.2− | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.2+ | | |
| 2001 11 10 | 704 | 0.9+ | 0.1+ | 2003 01 28 | 704 | 0.1− | 1.4+ | 2006 09 16 | 703 | 0.2− | 0.6− | | |
| 2001 11 10 | 704 | 0.0 | 0.2+ | 2003 01 28 | 704 | 0.5− | 0.8+ | 2006 09 16 | 703 | 1.1+ | 0.5− | | |
| 2001 11 11 | 644 | 0.5− | 0.2+ | 2004 04 14 | E12 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.0 | 0.6+ | | |
| 2001 11 11 | 644 | 0.1− | 0.4+ | 2004 04 14 | E12 | 0.5+ | 1.1+ | 2006 09 16 | 703 | 0.5− | 0.5+ | | |
| 2001 11 11 | 644 | 0.1− | 0.5+ | 2004 04 14 | E12 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.5− | | |
| 2001 11 12 | 704 | 0.6+ | 0.6+ | 2004 04 14 | E12 | 0.3+ | 1.2+ | 2006 09 28 | 703 | 0.4+ | 0.1− | | |
| 2001 11 12 | 704 | 0.6+ | 0.7+ | 2004 04 25 | 704 | 0.3+ | 1.3+ | 2006 09 28 | 703 | 0.3+ | 0.2− | | |
| 2001 11 12 | 704 | 0.7+ | 0.9+ | 2004 04 25 | 704 | 0.0 | 0.6+ | 2006 09 28 | 703 | 0.5− | 0.3+ | | |
| 2001 11 17 | 704 | 0.1− | 0.7− | 2004 04 25 | 704 | 0.9+ | 0.3+ | 2006 09 28 | 703 | (2.1+ | 0.1+) | | |
| 2001 11 17 | 704 | 0.3+ | 0.2+ | 2004 04 25 | 704 | 0.2+ | 1.1+ | 2006 09 28 | 703 | 0.4− | 0.4+ | | |
| 2001 11 17 | 704 | 0.3− | 0.2+ | 2004 04 25 | 704 | 0.7+ | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.3− | | |
| 2001 11 17 | 704 | 0.0 | 0.1− | 2004 04 29 | 608 | 0.2+ | 0.8+ | 2006 10 04 | 703 | 0.0 | 0.4− | | |
| 2001 12 11 | 704 | 0.3+ | 1.0+ | 2004 04 29 | 608 | 0.1− | 1.0+ | 2006 10 04 | 703 | 0.8− | 0.1+ | | |
| 2001 12 11 | 704 | 0.1+ | 1.0+ | 2004 04 29 | 608 | 0.9+ | 0.8+ | 2006 10 04 | 703 | 0.4− | 0.6− | | |
| 2001 12 11 | 704 | 0.5− | 0.9+ | 2004 05 08 | 644 | 0.3+ | 0.1+ | 2006 10 04 | 703 | (2.1− | 0.9−) | | |
| 2001 12 11 | 704 | 0.5− | 0.2− | 2004 05 08 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 11 | 704 | 0.1− | 0.7+ | 2004 05 08 | 644 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2001 12 17 | 704 | 1.1+ | 0.1− | 2004 05 13 | 699 | (0.8+ | 1.6+) | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 0.4− | 0.3− | 2004 05 13 | 699 | 0.3+ | 0.5+ | | | | | | |

**(140641)∗ 2001 UP$_{25}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.62043 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18890814 | $\omega$ | 111.39765 | | +0.98184210 | −0.13485110 | |
| $a$ | 3.0081693 | $\Omega$ | 256.54640 | | +0.07787246 | +0.92785019 | |
| $e$ | 0.1475558 | $i$ | 7.88505 | | +0.17297970 | +0.34772001 | |
| $P$ | 5.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | 0.8− | 0.7+ | 2001 10 21 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 703 | 0.1− | 0.1+ | |
| 2001 08 28 | 699 | 0.5+ | 0.0 | 2001 11 10 | 704 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.1− | 0.4− | |
| 2001 08 28 | 699 | 0.6− | 0.6− | 2001 11 10 | 644 | 0.7+ | 0.9+ | 2006 09 21 | 699 | 0.3− | 0.6+ | |
| 2001 08 28 | 699 | 0.1+ | 0.4+ | 2001 11 10 | 704 | 0.0 | 0.1− | 2006 09 21 | 699 | 0.2+ | 0.1− | |
| 2001 09 18 | 691 | 0.1+ | 0.2− | 2001 11 10 | 644 | 1.0+ | 0.7+ | 2006 09 21 | 699 | 0.3+ | 0.3+ | |
| 2001 09 18 | 691 | 0.2+ | 0.3− | 2001 11 10 | 644 | 0.7+ | 0.7+ | 2006 09 27 | 703 | 0.9+ | 0.6+ | |
| 2001 09 18 | 691 | 0.2+ | 0.2− | 2001 11 10 | 704 | 0.4− | 0.7− | 2006 09 27 | 703 | 0.1+ | 0.8+ | |
| 2001 09 19 | 699 | 0.5− | 0.4− | 2001 11 10 | 704 | 0.9− | 0.4− | 2006 09 27 | 703 | 0.4+ | 0.6+ | |
| 2001 09 19 | 699 | 0.2− | 0.3+ | 2001 11 10 | 704 | 0.8− | 1.0− | 2006 09 27 | 703 | 0.1+ | 0.6+ | |
| 2001 09 19 | 699 | 0.2+ | 0.4− | 2002 12 06 | 291 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.3+ | 0.1+ | |
| 2001 09 19 | 699 | 0.6− | 0.9+ | 2002 12 06 | 291 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.1− | 0.5+ | |
| 2001 09 19 | 644 | 0.2− | 0.1+ | 2002 12 06 | 291 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.4+ | 0.9+ | |
| 2001 09 19 | 644 | 0.2− | 0.1+ | 2003 01 25 | 809 | 0.7+ | 0.1− | 2006 09 29 | 699 | 0.5− | 0.2+ | |
| 2001 09 19 | 644 | 0.1+ | 0.1+ | 2003 01 25 | 809 | 0.7+ | 0.0 | 2006 10 03 | 703 | 0.9− | 0.5+ | |
| 2001 10 12 | 599 | 0.3− | 0.8+ | 2003 01 25 | 809 | 0.7+ | 0.0 | 2006 10 03 | 703 | 0.8− | 0.6− | |
| 2001 10 12 | 599 | 0.5+ | 0.8+ | 2005 06 26 | G96 | 0.4− | 0.4+ | 2006 10 03 | 703 | 0.9− | 0.3− | |
| 2001 10 12 | 599 | 0.1− | 0.3− | 2005 06 26 | G96 | 0.1+ | 0.4+ | 2006 10 03 | 703 | 0.8− | 0.1− | |
| 2001 10 13 | 699 | 0.6− | 0.7+ | 2005 06 26 | G96 | 0.7+ | 0.4+ | 2006 10 17 | 691 | 0.3+ | 0.1− | |
| 2001 10 13 | 699 | 0.4− | 0.2+ | 2005 06 26 | G96 | 0.3− | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | |
| 2001 10 13 | 699 | 0.3− | 0.2+ | 2006 08 29 | 699 | 1.0− | 0.9+ | 2006 10 17 | 691 | 0.3+ | 0.0 | |
| 2001 10 13 | 699 | 0.1+ | 0.0 | 2006 08 29 | 699 | 0.8− | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.2− | |
| 2001 10 18 | 704 | 0.4+ | 0.3− | 2006 08 29 | 699 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.1− | |
| 2001 10 18 | 704 | 0.1+ | 0.6+ | 2006 08 29 | 699 | 0.4− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.0 | |
| 2001 10 18 | 704 | 0.3− | 0.2+ | 2006 08 31 | 704 | 0.6− | 0.6+ | 2006 10 21 | 691 | 0.1+ | 0.3− | |
| 2001 10 18 | 704 | 0.3− | 0.6− | 2006 08 31 | 704 | 0.8− | 0.9− | 2006 10 21 | 691 | 0.1+ | 0.2− | |
| 2001 10 18 | 704 | (0.7− | 1.7−) | 2006 08 31 | 704 | 0.4+ | 0.9− | 2006 10 21 | 691 | 0.1+ | 0.2− | |
| 2001 10 19 | 704 | 0.1− | 0.4+ | 2006 08 31 | 704 | (0.9− | 1.8+) | 2006 10 23 | 703 | 0.3+ | 0.8+ | |
| 2001 10 19 | 704 | 0.2+ | 1.0+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 10 23 | 703 | 0.6− | 0.1+ | |
| 2001 10 19 | 704 | 0.7+ | 0.3− | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 23 | 703 | 1.0− | 0.3+ | |
| 2001 10 19 | 704 | 0.7+ | 0.1− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.7− | 0.3+ | |
| 2001 10 20 | 644 | 0.3− | 1.0− | 2006 09 15 | 683 | 0.3+ | 0.4− | 2006 10 27 | A62 | 0.0 | 0.2− | |
| 2001 10 20 | 644 | 0.2− | 1.1− | 2006 09 15 | 683 | (1.6+ | 1.0+) | 2006 10 27 | A62 | 0.3+ | 0.2− | |
| 2001 10 20 | 644 | (1.0+ | 1.5−) | 2006 09 15 | 683 | 0.2− | 0.2− | 2006 10 27 | A62 | 0.1+ | 0.2− | |
| 2001 10 21 | 704 | 0.3+ | 0.5− | 2006 09 16 | 703 | 0.0 | 0.4− | 2006 10 27 | A62 | 0.3+ | 0.2− | |
| 2001 10 21 | 704 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.3− | 0.2− | | | | | |
| 2001 10 21 | 704 | 0.1− | 0.8+ | 2006 09 16 | 703 | 0.3+ | 0.3− | | | | | |

**(140642)∗ 2001 US$_{25}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.89035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20275907 | $\omega$ | 343.50582 | | +0.91616741 | +0.39995701 | |
| $a$ | 2.8695636 | $\Omega$ | 352.75720 | | −0.34058755 | +0.74282351 | |
| $e$ | 0.0826503 | $i$ | 11.86259 | | −0.21127564 | +0.53688697 | |
| $P$ | 4.86 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 1.5+ | 1.1+ | 2001 11 11 | 699 | 0.1+ | 0.3+ | 2005 08 05 | E12 | 0.0 | 0.8+ | |
| 2001 08 22 | 704 | 0.3+ | 0.4− | 2001 11 11 | 699 | 0.3+ | 0.7+ | 2005 08 05 | E12 | 0.4− | 1.2+ | |
| 2001 08 22 | 704 | 0.3− | 1.0− | 2001 11 11 | 699 | 0.5− | 0.6+ | 2005 08 05 | E12 | 0.1− | 0.2+ | |
| 2001 09 20 | 704 | 0.7− | 0.1− | 2001 11 11 | 699 | 0.7− | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.2− | |
| 2001 09 20 | 704 | 0.6− | 0.3− | 2001 11 12 | 704 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.2+ | |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2001 11 12 | 704 | 0.8− | 0.0 | 2006 10 19 | 703 | (3.0− | 2.7−) | |
| 2001 09 20 | 704 | 1.3− | 0.1+ | 2001 11 12 | 704 | 0.4− | 0.3+ | 2006 10 19 | 703 | (1.8+ | 3.0−) | |
| 2001 09 23 | 704 | 0.4− | 0.1− | 2003 03 08 | 644 | 0.6+ | 0.9+ | 2006 10 27 | 703 | (1.4+ | 2.2−) | |
| 2001 09 23 | 704 | 0.8+ | 1.1+ | 2003 03 08 | 644 | 0.7+ | 0.7+ | 2006 10 27 | 703 | (2.4+ | 1.7−) | |
| 2001 09 23 | 704 | 0.3− | 0.3+ | 2003 03 08 | 644 | 0.1− | 0.9+ | 2006 10 27 | 703 | 0.2− | 0.2+ | |
| 2001 10 18 | 704 | 0.1− | 0.5− | 2004 03 14 | 644 | 1.0+ | 0.4+ | 2006 10 27 | 703 | (2.0− | 0.5+) | |
| 2001 10 18 | 704 | 0.1− | 0.5+ | 2004 03 14 | 644 | (1.8+ | 0.3+) | 2006 11 15 | 703 | 1.0+ | 0.3− | |
| 2001 10 18 | 704 | 0.4− | 0.3− | 2004 03 14 | 644 | 0.8+ | 0.2+ | 2006 11 15 | 703 | 0.6+ | 0.4+ | |
| 2001 10 18 | 704 | 0.3+ | 0.5− | 2004 03 27 | 699 | 0.7− | 0.9+ | 2006 11 15 | 703 | 0.4+ | 0.1+ | |
| 2001 10 19 | 704 | 0.1− | 0.2− | 2004 03 27 | 699 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.1+ | 0.1− | |
| 2001 10 19 | 704 | 0.1− | 1.3− | 2004 03 27 | 699 | 0.5− | 1.0+ | 2006 11 21 | 703 | 0.8− | 0.0 | |
| 2001 10 19 | 704 | 0.4+ | 0.2+ | 2004 03 27 | 699 | 1.0+ | 0.1+ | 2006 11 21 | 703 | 0.3− | 0.6− | |
| 2001 10 19 | 704 | 0.1− | 0.3+ | 2004 04 21 | 704 | 0.9+ | 0.6+ | 2006 11 21 | 703 | 0.3+ | 0.1+ | |
| 2001 10 20 | 644 | 0.4+ | 0.6+ | 2004 04 21 | 704 | 0.5− | 0.4+ | 2006 11 21 | 703 | 0.3+ | 0.5− | |
| 2001 10 20 | 644 | 0.5+ | 0.7+ | 2004 04 21 | 704 | 0.2− | 0.2− | | | | | |
| 2001 10 20 | 644 | 0.5+ | 0.5+ | 2005 08 05 | E12 | 0.1+ | 0.7+ | | | | | |

**(140643)∗ 2001 UW$_{25}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.45317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19180188 | $\omega$ | 113.52391 | | +0.98004869 | −0.11988706 | |
| $a$ | 2.9778362 | $\Omega$ | 253.66549 | | +0.05782239 | +0.93508135 | |
| $e$ | 0.1230282 | $i$ | 9.50872 | | +0.19016079 | +0.33354153 | |
| $P$ | 5.14 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 699 | 0.1− | 0.6− | 2001 12 11 | 704 | 0.4− | 0.0 | 2006 08 29 | 699 | 0.1+ | 0.4+ | |
| 2001 07 29 | 699 | 0.0 | 0.2+ | 2001 12 11 | 704 | 0.0 | 0.1+ | 2006 08 29 | 699 | 0.1− | 0.4+ | |
| 2001 07 29 | 699 | 0.4+ | 0.5− | 2001 12 11 | 704 | 0.2− | 0.1− | 2006 08 29 | 699 | 0.2− | 0.1+ | |
| 2001 07 29 | 699 | 1.2+ | 0.8+ | 2001 12 11 | 704 | 0.4− | 0.3− | 2006 08 29 | 699 | 0.2+ | 0.6+ | |
| 2001 08 28 | 699 | 0.0 | 0.6+ | 2001 12 17 | 704 | 1.5+ | 1.4+ | 2006 09 14 | 644 | 0.2− | 0.0 | |
| 2001 08 28 | 644 | 0.2− | 0.2+ | 2001 12 17 | 704 | 0.3− | 1.0+ | 2006 09 14 | 644 | 0.1− | 0.1+ | |
| 2001 08 28 | 699 | 0.4+ | 0.8+ | 2001 12 17 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.1+ | |
| 2001 08 28 | 644 | 0.3− | 0.5+ | 2001 12 17 | 704 | 0.2+ | 1.1+ | 2006 09 16 | 703 | 0.1+ | 0.2+ | |
| 2001 08 28 | 699 | 0.2− | 0.0 | 2002 01 09 | 704 | 0.8+ | 0.9− | 2006 09 16 | 703 | 0.7− | 0.1− | |
| 2001 08 28 | 644 | 0.0 | 0.3+ | 2002 01 09 | 704 | 1.4+ | 0.5+ | 2006 09 16 | 703 | 0.6− | 0.5+ | |
| 2001 08 28 | 699 | 0.4+ | 0.9+ | 2002 01 09 | 704 | 0.7+ | 1.3− | 2006 09 16 | 703 | 0.0 | 0.1+ | |
| 2001 09 19 | 699 | 0.2− | 0.6+ | 2002 01 09 | 704 | 1.0+ | 0.1− | 2006 09 22 | 704 | 0.3− | 0.3+ | |
| 2001 09 19 | 699 | 0.5− | 0.5+ | 2002 01 09 | 704 | 1.1+ | 0.6− | 2006 09 22 | 704 | 0.1+ | 0.2+ | |
| 2001 09 19 | 699 | 0.7− | 0.3+ | 2002 02 07 | 704 | 0.1− | 0.9− | 2006 09 22 | 704 | 0.1+ | 0.4+ | |
| 2001 09 19 | 699 | 0.5− | 1.1+ | 2002 02 07 | 704 | 0.6− | 0.2− | 2006 09 22 | 699 | (1.7− | 1.0+) | |
| 2001 09 25 | 704 | 0.3− | 0.2+ | 2002 02 07 | 704 | 0.8− | 0.1− | 2006 09 22 | 704 | 0.2+ | 0.0 | |
| 2001 09 25 | 704 | 0.2+ | 0.7− | 2003 01 05 | 704 | 0.4+ | 0.2− | 2006 09 22 | 704 | 0.0 | 0.3+ | |
| 2001 09 25 | 704 | 0.1− | 0.8− | 2003 01 05 | 704 | 0.8+ | 0.6− | 2006 09 22 | 699 | (1.1+ | 2.2+) | |
| 2001 09 25 | 704 | 0.3+ | 0.8− | 2003 01 05 | 704 | 0.3− | 0.1+ | 2006 09 22 | 699 | 0.2+ | 0.3+ | |
| 2001 09 25 | 704 | 0.6− | 0.8− | 2003 01 05 | 704 | 0.6+ | 0.2− | 2006 09 22 | 699 | 0.6+ | 0.0 | |
| 2001 09 28 | 704 | 0.5− | 0.1− | 2003 01 05 | 704 | 0.7+ | 0.1− | 2006 09 25 | 703 | 0.6− | 0.0 | |
| 2001 09 28 | 704 | 1.1− | 0.3+ | 2003 01 11 | 704 | 1.3− | 0.8+ | 2006 09 25 | 703 | 0.1+ | 0.1− | |
| 2001 09 28 | 704 | 0.8− | 0.3+ | 2003 01 11 | 704 | (0.6− | 2.8−) | 2006 09 25 | 703 | 0.6− | 0.1− | |
| 2001 09 28 | 704 | 1.3− | 0.4+ | 2003 01 11 | 704 | (0.9− | 2.4−) | 2006 09 25 | 703 | 0.0 | 0.4+ | |
| 2001 09 28 | 704 | 0.7− | 0.2− | 2003 01 11 | 704 | (0.7+ | 1.6−) | 2006 09 28 | 703 | 0.1− | 0.1+ | |
| 2001 10 13 | 644 | 0.1− | 0.1− | 2003 01 11 | 704 | 0.5− | 0.7− | 2006 09 28 | 703 | 0.1+ | 0.0 | |
| 2001 10 13 | 644 | 0.0 | 0.0 | 2003 01 12 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.0 | |
| 2001 10 13 | 644 | 0.1+ | 0.2+ | 2003 01 12 | 704 | 0.0 | 0.6+ | 2006 09 28 | 703 | 0.1+ | 0.2− | |
| 2001 10 18 | 704 | 0.0 | 0.3− | 2003 01 12 | 704 | 0.2+ | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.2+ | |
| 2001 10 18 | 704 | 0.1− | 0.3− | 2003 01 12 | 704 | 0.1− | 0.9+ | 2006 09 29 | 704 | 0.5+ | 0.2− | |
| 2001 10 18 | 704 | 0.4− | 0.3− | 2003 01 13 | 704 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.5− | 0.1+ | |
| 2001 10 18 | 704 | 0.1− | 0.3− | 2003 01 13 | 704 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.6− | 0.4+ | |
| 2001 10 18 | 704 | 0.0 | 0.2+ | 2003 01 13 | 704 | 0.5+ | 0.7+ | 2006 09 29 | 704 | 0.2− | 0.3+ | |
| 2001 10 19 | 704 | 0.0 | 0.0 | 2003 01 14 | 704 | 0.1− | 0.3− | 2006 10 04 | 703 | 0.2− | 0.2− | |
| 2001 10 19 | 704 | 0.7+ | 0.2− | 2003 01 14 | 704 | 0.6− | 0.6+ | 2006 10 04 | 703 | 0.7− | 1.1− | |
| 2001 10 19 | 704 | 0.4+ | 0.0 | 2003 01 14 | 704 | 0.2+ | 0.4+ | 2006 10 04 | 703 | 0.3− | 0.0 | |
| 2001 10 19 | 704 | 0.1− | 0.2− | 2003 01 26 | 644 | 0.3− | 0.3+ | 2006 10 04 | 703 | 0.1+ | 0.3− | |
| 2001 10 19 | 704 | 0.0 | 0.3− | 2003 01 26 | 644 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.3+ | |
| 2001 10 20 | 644 | (1.0+ | 1.6+) | 2003 01 26 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.4+ | |
| 2001 10 20 | 644 | (1.1+ | 1.6+) | 2003 01 27 | 704 | 1.4− | 0.8− | 2006 10 09 | 644 | 0.2− | 0.3+ | |
| 2001 10 20 | 644 | (1.1+ | 1.7+) | 2003 01 27 | 704 | (2.2− | 0.4−) | 2006 10 09 | 644 | 0.1+ | 0.4+ | |
| 2001 10 28 | 704 | 0.0 | 0.5− | 2003 01 27 | 704 | (0.6− | 1.5−) | 2006 10 09 | 644 | 0.1+ | 0.4+ | |
| 2001 10 28 | 704 | 0.0 | 0.4− | 2003 01 27 | 704 | 1.3− | 0.8− | 2006 10 09 | 644 | 0.2+ | 0.5+ | |
| 2001 10 28 | 704 | 0.5− | 1.1− | 2003 02 01 | 608 | 0.3− | 0.9− | 2006 10 11 | 644 | 0.0 | 0.4+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 704 | 0.5− | 0.8− | 2003 02 01 | 608 | 0.5− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 10 28 | 704 | 0.3− | 1.0− | 2003 02 01 | 608 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 11 10 | 704 | 0.2− | 0.5+ | 2003 02 04 | 644 | 0.6+ | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2001 11 10 | 704 | 0.0 | 0.6+ | 2003 02 04 | 644 | 0.5+ | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2001 11 10 | 704 | 0.5− | 0.2+ | 2003 02 04 | 644 | 0.5+ | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.5− | 0.4+ | 2004 03 17 | 704 | 0.3+ | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.7+ |
| 2001 11 10 | 704 | 0.2− | 0.3+ | 2004 03 17 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.2+ |
| 2001 11 11 | 699 | 0.1+ | 0.0 | 2004 03 17 | 704 | 0.1− | 0.7− | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2001 11 11 | 699 | 0.3+ | 0.2+ | 2004 03 17 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.6− | 0.3− |
| 2001 11 11 | 699 | 0.6+ | 0.4+ | 2004 03 17 | 704 | 0.7+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 11 11 | 699 | 0.1− | 0.1+ | 2004 03 26 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2004 03 26 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2004 03 26 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 11 12 | 704 | 0.1− | 0.3+ | 2004 03 26 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2004 03 26 | 704 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.7+ | 0.1− | 2004 03 27 | 699 | 0.9− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 11 17 | 644 | 0.7+ | 1.0+ | 2004 03 27 | 699 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 11 17 | 644 | 0.7+ | 1.1+ | 2004 03 27 | 699 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 11 17 | 644 | 0.3+ | 0.9+ | 2004 03 27 | 699 | 0.1− | 0.0 | 2006 10 26 | 704 | (4.2− | 0.8+) |
| 2001 11 20 | 699 | 0.5− | 0.4+ | 2004 04 15 | 703 | 0.8− | 0.7+ | 2006 10 26 | 704 | 1.5− | 0.3+ |
| 2001 11 20 | 699 | 0.2+ | 0.1− | 2004 04 15 | 703 | 0.0 | 0.2+ | 2006 10 26 | 704 | 0.6− | 0.5+ |
| 2001 11 20 | 699 | 0.1+ | 0.4+ | 2004 04 15 | 703 | 0.1− | 0.9+ | 2006 10 26 | 704 | 0.3+ | 0.2− |
| 2001 11 20 | 699 | 0.1− | 0.3+ | 2004 04 15 | 703 | 0.3+ | 0.8+ | 2006 10 26 | 704 | 1.4− | 0.1+ |
| 2001 11 21 | 704 | 1.1+ | 0.0 | 2004 04 17 | 704 | 0.3+ | 1.0+ | 2006 11 15 | 683 | 1.2+ | 0.0 |
| 2001 11 21 | 704 | (1.6+ | 0.3−) | 2004 04 17 | 704 | 0.9+ | 0.1+ | 2006 11 15 | 683 | 0.9+ | 0.5− |
| 2001 11 21 | 704 | 1.2+ | 0.2+ | 2004 04 17 | 704 | 0.5+ | 0.3− | 2006 11 15 | 683 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.5+ | 0.1+ | 2004 04 17 | 704 | 0.6+ | 0.8+ | 2006 11 19 | 704 | 1.0− | 0.5− |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2004 04 17 | 699 | 0.7+ | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.4− |
| 2001 11 24 | 704 | 0.2− | 0.1+ | 2004 04 17 | 699 | (0.1+ | 1.6+) | 2006 11 19 | 704 | 0.6+ | 0.3− |
| 2001 11 24 | 704 | 0.4+ | 0.7− | 2004 04 17 | 699 | 0.9− | 0.6+ | 2006 11 28 | 704 | 0.5+ | 0.7+ |
| 2001 11 24 | 704 | 0.7− | 0.8− | 2004 04 17 | 699 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 1.0+ | 0.4− |
| 2001 11 24 | 704 | 0.0 | 0.5− | 2004 04 28 | 608 | (0.4− | 1.5+) | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2001 11 24 | 704 | 0.7− | 1.3− | 2004 04 28 | 608 | (0.3− | 1.5+) | 2006 11 28 | 704 | 0.6+ | 0.3− |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2004 04 28 | 608 | 0.0 | 0.5+ | 2006 11 28 | 704 | 0.7+ | 0.6− |

**(140644)∗ 2001 UL$_{26}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.11552 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18873751 | $\omega$ | 89.40720 | | +0.97531195 | | +0.14882291 |
| $a$ | 3.0099820 | $\Omega$ | 262.02597 | | −0.20045978 | | +0.90658552 |
| $e$ | 0.0460413 | $i$ | 9.48237 | | +0.09264162 | | +0.39491068 |
| $P$ | 5.22 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 699 | 0.2+ | 0.5− | 2003 01 07 | 704 | 0.4− | 0.2− | 2006 09 01 | 704 | 0.1+ | 0.1+ |
| 2001 09 19 | 699 | 0.4+ | 0.6+ | 2003 01 08 | 704 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.7− | 0.7+ |
| 2001 09 19 | 699 | 0.8− | 1.1+ | 2003 01 08 | 704 | 0.4− | 1.3+ | 2006 09 01 | 704 | 0.3− | 0.9+ |
| 2001 09 19 | 699 | 0.0 | 0.5− | 2003 01 08 | 704 | 0.9− | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.4+ |
| 2001 09 25 | 704 | 0.4− | 0.1+ | 2003 01 27 | 704 | 0.1− | 1.0− | 2006 09 16 | 703 | 0.2+ | 0.2+ |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2003 01 27 | 704 | (1.1+ | 1.6+) | 2006 09 16 | 703 | 0.2+ | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.6− | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.2+ |
| 2001 09 25 | 704 | 0.7− | 0.2− | 2003 01 27 | 704 | 0.6+ | 0.1+ | 2006 09 16 | 703 | 0.6− | 0.3− |
| 2001 09 25 | 704 | 0.8− | 0.7− | 2003 01 27 | 704 | 0.7− | 0.3− | 2006 09 16 | 703 | 0.9− | 0.3− |
| 2001 10 13 | 699 | 0.3+ | 0.4− | 2003 01 27 | 704 | 1.1+ | 0.6+ | 2006 09 16 | 703 | 0.3− | 0.1− |
| 2001 10 13 | 699 | 0.2− | 1.2− | 2003 01 27 | 704 | 1.3+ | 0.5− | 2006 09 16 | 703 | 0.6− | 0.9− |
| 2001 10 13 | 699 | 1.2+ | 0.9− | 2003 01 27 | 704 | 0.6+ | 0.8+ | 2006 09 24 | 106 | 0.0 | 0.2+ |
| 2001 10 13 | 699 | 0.3+ | 0.6− | 2003 01 27 | 704 | 0.7− | 0.9− | 2006 09 24 | 106 | 0.0 | 0.2− |
| 2001 10 18 | 704 | 0.1− | 0.2+ | 2003 01 27 | 704 | (1.7+ | 1.4+) | 2006 09 24 | 106 | 0.4+ | 0.7+ |
| 2001 10 18 | 704 | 0.6+ | 0.4− | 2004 03 17 | 704 | 0.9+ | 0.5+ | 2006 09 24 | 106 | 0.0 | 0.2− |
| 2001 10 18 | 704 | 0.4− | 0.1− | 2004 03 17 | 704 | 0.5+ | 0.4+ | 2006 09 29 | 699 | 0.9+ | 1.0+ |
| 2001 10 18 | 704 | 0.4− | 0.2− | 2004 03 17 | 704 | (1.0+ | 1.7+) | 2006 09 29 | 699 | 0.0 | 0.7− |
| 2001 10 19 | 704 | 0.4− | 0.1− | 2004 03 17 | 704 | 0.8+ | 0.5+ | 2006 09 29 | 699 | 0.6− | 0.6− |
| 2001 10 19 | 704 | 0.1− | 0.4+ | 2004 03 17 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 699 | 0.6+ | 0.3+ |
| 2001 10 19 | 704 | 0.0 | 0.8− | 2004 03 18 | 704 | 0.6+ | 1.0+ | 2006 10 03 | 704 | 0.1+ | 0.8+ |
| 2001 10 19 | 704 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.5+ | 1.1+ | 2006 10 03 | 704 | 0.3+ | 1.0+ |
| 2001 11 10 | 704 | 0.1+ | 1.4+ | 2004 03 18 | 704 | 0.9+ | 1.2+ | 2006 10 03 | 704 | 0.7+ | 0.9+ |
| 2001 11 10 | 704 | 0.7− | 0.6+ | 2004 03 18 | 704 | (0.8+ | 1.6+) | 2006 10 03 | 704 | 0.1+ | 0.3+ |
| 2001 11 10 | 704 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.4+ | 1.3+ | 2006 10 03 | 704 | 0.6+ | 0.6+ |
| 2001 11 10 | 704 | 0.2+ | 0.2+ | 2004 03 26 | 699 | 0.6− | 0.2+ | 2006 10 03 | 703 | 0.5− | 0.4− |
| 2001 11 17 | 704 | 1.0+ | 0.6+ | 2004 03 26 | 699 | (0.3− | 2.3+) | 2006 10 03 | 703 | 0.5− | 0.0 |
| 2001 11 17 | 704 | 0.2+ | 0.5+ | 2004 03 26 | 699 | 0.9− | 0.0 | 2006 10 03 | 703 | 0.4− | 0.0 |
| 2001 11 17 | 704 | 0.3+ | 0.7+ | 2004 03 26 | 699 | (0.3+ | 1.7+) | 2006 10 03 | 703 | (0.2− | 1.8−) |
| 2001 11 17 | 704 | 0.2+ | 0.1+ | 2004 03 31 | 704 | (1.2+ | 1.6+) | 2006 10 17 | 703 | 0.6+ | 1.2+ |
| 2001 11 17 | 704 | 1.4+ | 0.5+ | 2004 03 31 | 704 | 0.4+ | 1.2+ | 2006 10 17 | 703 | 0.4+ | 0.8+ |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 03 31 | 704 | 0.2+ | 1.2+ | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 1.0+ | 0.7− | 2004 03 31 | 704 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | 0.3+ | 0.6− | 2006 08 29 | 699 | (2.0+ | 0.1+) | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2003 01 07 | 704 | 0.9− | 0.5+ | 2006 08 29 | 699 | 0.4− | 0.6+ | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2003 01 07 | 704 | 0.3− | 0.1− | 2006 08 29 | 699 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2003 01 07 | 704 | 0.7− | 0.6+ | 2006 08 29 | 699 | 0.5+ | 0.5+ | | | | |

**(140645)∗ 2001 UO$_{26}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.64454 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17847905 | $\omega$ | 303.48273 | | +0.38660951 | | +0.92139454 |
| $a$ | 3.1242412 | $\Omega$ | 349.04537 | | −0.76193836 | | +0.29494551 |
| $e$ | 0.1402083 | $i$ | 12.01628 | | −0.51959890 | | +0.25305979 |
| $P$ | 5.52 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.1− | 0.1− | 2004 03 15 | 703 | 0.4− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 1995 08 22 | 691 | 0.1+ | 0.1− | 2004 03 15 | 703 | 0.5+ | 0.6+ | 2006 09 16 | 699 | 0.2− | 0.2+ |
| 1995 08 22 | 691 | 0.0 | 0.1− | 2004 03 15 | 703 | 0.5+ | 1.1+ | 2006 09 16 | 699 | 0.2− | 0.7+ |
| 2001 09 25 | 704 | 0.5+ | 0.2− | 2004 03 19 | 704 | (1.9− | 1.2+) | 2006 09 16 | 699 | 0.3+ | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.1− | 2004 03 19 | 704 | (2.9− | 1.3+) | 2006 09 16 | 699 | 0.6− | 0.4+ |
| 2001 09 25 | 704 | 0.4+ | 0.4− | 2004 03 19 | 704 | (2.2− | 1.1+) | 2006 09 17 | 704 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.4− | 2004 03 19 | 704 | (2.7− | 0.8+) | 2006 09 17 | 704 | 0.2+ | 0.2+ |
| 2001 09 25 | 704 | 0.9− | 0.5+ | 2004 03 19 | 704 | 1.1− | 0.8+ | 2006 09 17 | 704 | 0.6− | 0.5− |
| 2001 10 13 | 644 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.1+ |
| 2001 10 13 | 644 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.4− | 2006 09 17 | 704 | 0.2+ | 0.3+ |
| 2001 10 13 | 644 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.7+ | 0.0 | 2006 09 20 | 704 | 0.1− | 0.5+ |
| 2001 10 18 | 704 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.6+ |
| 2001 10 18 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.1+ |
| 2001 10 18 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 704 | (1.2+ | 1.6+) | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2001 10 18 | 704 | 0.0 | 0.2+ | 2004 03 28 | 704 | (1.7+ | 0.5+) | 2006 09 20 | 704 | 0.2− | 0.3+ |
| 2001 10 19 | 704 | (0.9+ | 1.8−) | 2004 03 28 | 704 | 1.1+ | 0.8+ | 2006 09 23 | 691 | 0.5− | 0.2+ |
| 2001 10 19 | 704 | 0.3+ | 0.3+ | 2005 08 06 | E12 | (2.4− | 1.5+) | 2006 09 23 | 691 | 0.5− | 0.3+ |
| 2001 10 19 | 704 | 0.4− | 1.4− | 2005 08 06 | E12 | (2.0+ | 0.0 ) | 2006 09 23 | 691 | 0.4− | 0.2+ |
| 2001 10 19 | 704 | 1.3+ | 0.6− | 2005 08 06 | E12 | 1.0+ | 0.4− | 2006 09 25 | 699 | 0.7− | 0.3+ |
| 2001 11 10 | 704 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 2001 11 10 | 704 | 0.9+ | 0.2− | 2006 08 16 | 644 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.7+ |
| 2001 11 10 | 704 | 0.7+ | 1.0− | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.9− | 0.7+ |
| 2001 11 12 | 704 | 0.3− | 0.2− | 2006 08 17 | 850 | (0.2+ | 2.0+) | 2006 09 26 | 704 | (0.4− | 1.6+) |
| 2001 11 12 | 704 | 0.0 | 0.0 | 2006 08 17 | 850 | (2.2− | 0.3−) | 2006 09 26 | 704 | (1.5− | 0.8+) |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2006 08 21 | 704 | 0.0 | 0.9+ | 2006 09 26 | 704 | (1.5− | 0.6+) |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2006 08 21 | 704 | (0.1− | 2.2+) | 2006 09 26 | 704 | 0.8− | 0.2+ |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2006 08 21 | 704 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.4+ |
| 2001 12 07 | 644 | 0.5+ | 0.3+ | 2006 08 21 | 704 | 0.3+ | 1.1+ | 2006 09 27 | 704 | 0.1+ | 0.8+ |
| 2001 12 07 | 644 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.4− |
| 2001 12 07 | 644 | 0.4+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.1− |
| 2003 01 10 | 704 | 1.1− | 1.3− | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.8+ |
| 2003 01 10 | 704 | 0.5+ | 0.4+ | 2006 08 25 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 0.6− | 0.7+ |
| 2003 01 10 | 704 | 0.9− | 0.1− | 2006 08 25 | 704 | 0.6− | 0.9+ | 2006 09 29 | 704 | 0.4− | 0.2+ |
| 2003 01 10 | 704 | 0.8− | 0.3+ | 2006 08 25 | 704 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.6+ |
| 2003 01 10 | 644 | 1.3+ | 0.6+ | 2006 08 25 | 704 | 0.5− | 0.9+ | 2006 09 29 | 704 | 0.5+ | 0.5+ |
| 2003 01 10 | 644 | 0.8+ | 0.2+ | 2006 08 27 | 699 | 0.4− | 1.3+ | 2006 09 29 | 704 | 0.3+ | 0.2+ |
| 2003 01 10 | 644 | (1.8+ | 1.2+) | 2006 08 27 | 699 | 1.2− | 0.6+ | 2006 10 01 | 703 | 0.0 | 0.4− |
| 2004 02 18 | 704 | 1.0+ | 0.7+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.4− | 0.0 |
| 2004 02 18 | 704 | 1.2+ | 1.1+ | 2006 08 27 | 699 | 0.5− | 0.6− | 2006 10 01 | 703 | 0.1− | 0.4− |
| 2004 02 18 | 704 | 0.5+ | 1.0+ | 2006 09 12 | 703 | 0.5+ | 0.6− | 2006 10 01 | 703 | 0.5− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 704 | (0.7+ | 1.7+) | 2006 09 12 | 703 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.6− |
| 2004 02 18 | 704 | 0.3+ | 0.7+ | 2006 09 12 | 703 | 0.1+ | 0.8− | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2004 02 19 | 608 | 0.9+ | 1.2+ | 2006 09 12 | 703 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2004 02 19 | 608 | 1.1+ | 1.0+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.5− |
| 2004 02 19 | 608 | 0.5+ | 1.2+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2004 02 23 | 704 | 0.3− | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2004 02 23 | 704 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2004 03 15 | 703 | 0.4+ | 1.0+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.1− |

**(140646)∗ 2001 UX$_{28}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 343.29785 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20694769 | $\omega$ | 330.34354 | | | +0.51461935 | | −0.85544321 | |
| $a$ | 2.8307118 | $\Omega$ | 88.62842 | | | +0.79767513 | | +0.45277691 | |
| $e$ | 0.0520153 | $i$ | 3.33578 | | | +0.31445399 | | +0.25141597 | |
| $P$ | 4.76 | $H$ | 15.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.2+ | 1.0+ | 2001 10 24 | 704 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.4− |
| 2001 09 26 | 704 | 1.1− | 0.9+ | 2001 10 24 | 704 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.4− | 0.6− |
| 2001 09 26 | 704 | 0.0 | 0.3+ | 2001 11 20 | 704 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.5− | 0.3− |
| 2001 09 26 | 704 | 0.4+ | 0.4+ | 2001 11 20 | 704 | 0.6− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.3− |
| 2001 10 16 | 704 | 0.7− | 0.6− | 2001 11 20 | 704 | 0.5− | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2001 10 16 | 704 | 0.7− | 1.2− | 2001 11 20 | 704 | 0.2+ | 1.0− | 2006 11 11 | 703 | 0.5− | 0.7+ |
| 2001 10 16 | 704 | 0.5− | 0.7− | 2003 01 30 | 699 | 0.2− | 0.8+ | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2001 10 16 | 704 | 0.2+ | 0.4− | 2003 01 30 | 699 | 0.4− | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.6+ |
| 2001 10 16 | 704 | 1.3− | 0.8− | 2003 01 30 | 699 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.0 |
| 2001 10 20 | 704 | 0.1− | 0.2− | 2003 01 30 | 699 | 0.4+ | 0.4+ | 2006 11 13 | G96 | 0.6+ | 0.6− |
| 2001 10 20 | 704 | 0.2+ | 0.3− | 2003 02 23 | 699 | (1.7+ | 0.1+) | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2001 10 20 | 704 | 1.0− | 0.5− | 2003 02 23 | 699 | 0.4+ | 0.6− | 2006 11 13 | G96 | 0.2+ | 0.8− |
| 2001 10 20 | 704 | 0.1+ | 0.5− | 2003 02 23 | 699 | 0.2− | 1.2+ | 2006 11 14 | 704 | 1.2− | 0.3+ |
| 2001 10 21 | 704 | (2.2− | 0.1+) | 2003 02 23 | 699 | 1.0+ | 0.3+ | 2006 11 14 | 704 | 0.0 | 1.3+ |
| 2001 10 21 | 704 | 0.1− | 0.3− | 2004 05 09 | 691 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.4− | 1.4+ |
| 2001 10 21 | 704 | 0.5+ | 0.4+ | 2004 05 09 | 691 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.5+ | 2004 05 09 | 691 | 0.1+ | 0.7+ | 2006 11 14 | 704 | (0.1− | 1.6+) |
| 2001 10 21 | 704 | 0.9− | 1.5+ | 2004 05 19 | 691 | 0.2+ | 0.9+ | 2006 11 17 | 703 | (1.4− | 1.6+) |
| 2001 10 21 | 704 | 0.4− | 0.4− | 2004 05 19 | 691 | 0.5+ | 0.7+ | 2006 11 17 | 703 | (1.4+ | 2.2+) |
| 2001 10 21 | 704 | 0.1+ | 0.5+ | 2004 05 19 | 691 | 0.4+ | 0.7+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | (1.3− | 2.4+) | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 2001 10 21 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2001 10 21 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | (0.5− | 2.5+) | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 1.0+ |
| 2001 10 21 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2001 10 21 | 704 | 0.7+ | 1.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.2− | 1.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2001 10 21 | 704 | 1.1− | 1.4+ | 2006 10 20 | 644 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2001 10 21 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2001 10 21 | 704 | (0.1+ | 1.6+) | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 1.0+ | 0.7+ |
| 2001 10 22 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2001 10 22 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2001 10 22 | 704 | 1.2− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 1.3+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.8+ | 0.1+ |
| 2001 10 23 | 704 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 1.0+ | 0.6+ |
| 2001 10 23 | 704 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | 0.2− | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.9+ | 1.1+ |
| 2001 10 24 | 704 | 0.0 | 1.2+ | 2006 11 09 | 644 | 0.1+ | 0.5− | | | | |

**(140647)∗ 2001 UM$_{29}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 54.90425 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18468080 | $\omega$ | 141.26134 | | | +0.40831402 | | +0.91005435 | |
| $a$ | 3.0539005 | $\Omega$ | 152.61954 | | | −0.87135459 | | +0.41183971 | |
| $e$ | 0.1102213 | $i$ | 8.91619 | | | −0.27206771 | | +0.04678810 | |
| $P$ | 5.34 | $H$ | 15.0 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.6− | 1.0+ | 2004 03 15 | 704 | 0.6+ | 0.7+ | 2006 09 13 | 644 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | 0.0 | 1.3+ | 2004 03 15 | 704 | 0.8− | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.3+ |
| 2001 09 16 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 691 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.2− |
| 2001 09 16 | 704 | 0.7− | 1.4+ | 2004 03 18 | 691 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.6− |
| 2001 10 10 | 644 | 0.3+ | 1.1+ | 2004 03 18 | 691 | 0.1− | 0.5+ | 2006 09 18 | 703 | 1.0− | 0.9+ |
| 2001 10 10 | 644 | 0.4+ | 1.1+ | 2004 03 19 | 291 | 0.6+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.2− |
| 2001 10 10 | 644 | 0.3+ | 1.0+ | 2004 03 19 | 704 | (0.4+ | 2.7+) | 2006 09 18 | 699 | 0.5+ | 0.8+ |
| 2001 10 14 | 699 | 0.1+ | 0.6+ | 2004 03 19 | 291 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.9+ | 0.1+ |
| 2001 10 14 | 699 | 0.5− | 0.8+ | 2004 03 19 | 704 | 0.8+ | 1.2+ | 2006 09 18 | 699 | 0.0 | 0.7+ |
| 2001 10 14 | 699 | 1.2− | 0.0 | 2004 03 19 | 704 | 0.5+ | 1.4+ | 2006 09 18 | 699 | 0.4+ | 0.3+ |
| 2001 10 14 | 699 | 0.1− | 0.5+ | 2004 03 19 | 291 | 0.6+ | 0.1+ | 2006 09 20 | 644 | 0.4− | 0.1− |
| 2001 10 16 | 704 | 0.1− | 0.9+ | 2004 03 19 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2001 10 16 | 704 | 1.2− | 1.3+ | 2004 03 19 | 704 | 0.4− | 0.7− | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 2001 10 16 | 704 | 0.0 | 0.1− | 2004 03 28 | 691 | 0.1+ | 0.4+ | 2006 09 22 | 704 | (0.2+ | 1.8+) |
| 2001 10 16 | 704 | 0.3− | 0.7+ | 2004 03 28 | 691 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 0.2+ | 0.1+ |
| 2001 10 16 | 704 | 0.5+ | 1.3+ | 2004 03 28 | 691 | 0.1− | 0.5+ | 2006 09 22 | 704 | 0.1+ | 1.0+ |
| 2001 10 20 | 704 | 1.0− | 0.5+ | 2005 06 09 | 703 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.8+ | 0.2− |
| 2001 10 20 | 704 | 0.1− | 0.6+ | 2005 06 09 | 703 | 0.8− | 0.8+ | 2006 09 26 | 704 | 0.3+ | 1.4+ |
| 2001 10 20 | 704 | 0.1+ | 1.0+ | 2005 06 09 | 703 | 0.2− | 0.0 | 2006 09 26 | 704 | (0.2+ | 1.7+) |
| 2001 10 20 | 704 | 0.4− | 0.2− | 2005 06 09 | 703 | 1.4− | 0.3+ | 2006 09 26 | 704 | 0.5+ | 0.8+ |
| 2001 10 24 | 644 | 0.4− | 0.4+ | 2005 06 11 | 691 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.1− | 1.2+ |
| 2001 10 24 | 644 | 0.6− | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.1− | 2006 09 26 | 704 | (1.1+ | 1.7+) |
| 2001 10 24 | 644 | 0.7− | 0.3+ | 2005 06 11 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2001 11 11 | 645 | 0.0 | 0.1− | 2005 07 04 | 691 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.6+ |
| 2001 11 11 | 645 | 0.1+ | 0.1− | 2005 07 04 | 691 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.3+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2005 07 04 | 691 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.8− | 0.0 |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.4+ |
| 2004 02 23 | 704 | 0.0 | 0.7+ | 2006 08 24 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 1.3+ | 0.1− |
| 2004 02 23 | 704 | 0.4+ | 1.3+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2004 02 23 | 704 | (0.8+ | 1.6+) | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2004 02 23 | 704 | (1.7+ | 1.6+) | 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2004 03 11 | 644 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2004 03 11 | 644 | 0.6+ | 0.0 | 2006 09 12 | 703 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2004 03 11 | 644 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.1− | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2004 03 15 | 704 | 0.7+ | 0.6+ | 2006 09 12 | 703 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2004 03 15 | 704 | 0.2− | 1.4+ | 2006 09 12 | 703 | 0.5− | 0.3− | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 09 13 | 644 | 0.2+ | 0.1+ | | | | |

**(140648)∗ 2001 UN$_{30}$ = 1998 BX$_{26}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20574)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 334.46578 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20933985 | $\omega$ | 316.13359 | | | +0.09947959 | | −0.98805847 | |
| $a$ | 2.8091059 | $\Omega$ | 127.80554 | | | +0.94905795 | | +0.05868601 | |
| $e$ | 0.1769043 | $i$ | 8.56439 | | | +0.29898630 | | +0.14246547 | |
| $P$ | 4.71 | $H$ | 15.5 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 18 | 691 | 0.1− | 0.1− | 2001 10 19 | 699 | 0.2− | 0.2+ | 2003 04 06 | 699 | 0.0 | 0.3− |
| 1998 01 18 | 691 | 0.1+ | 0.2− | 2001 10 20 | 704 | 0.0 | 0.6+ | 2003 04 06 | 699 | 0.6+ | 0.1− |
| 1998 01 18 | 691 | 0.1− | 0.4− | 2001 10 20 | 704 | 0.2− | 0.4+ | 2003 04 08 | 691 | 0.1+ | 0.4+ |
| 1998 01 22 | 691 | 0.3− | 0.2− | 2001 10 20 | 704 | 0.2− | 1.0+ | 2003 04 08 | 691 | 0.3+ | 0.5+ |
| 1998 01 22 | 691 | 0.5+ | 1.1+ | 2001 10 20 | 704 | 0.3− | 0.3− | 2003 04 08 | 691 | 0.6+ | 0.4+ |
| 1998 01 22 | 691 | 0.1− | 0.2− | 2001 10 23 | 644 | 0.1− | 0.8− | 2005 06 30 | 691 | 0.0 | 0.3+ |
| 1998 01 24 | 566 | 0.1+ | 0.0 | 2001 10 23 | 644 | 0.3− | 0.7− | 2005 06 30 | 691 | 0.1+ | 0.5+ |
| 1998 01 24 | 566 | 0.2− | 0.2+ | 2001 10 23 | 644 | 0.0 | 0.8− | 2005 06 30 | 691 | 0.5− | 0.2+ |
| 1998 01 24 | 566 | 0.1− | 0.1+ | 2001 11 19 | 704 | 1.0− | 0.5+ | 2005 07 04 | 644 | 0.4− | 0.3+ |
| 1998 01 25 | 691 | 0.0 | 0.6− | 2001 11 19 | 704 | 0.5− | 0.5+ | 2005 07 04 | 644 | 0.3− | 0.4+ |
| 1998 01 25 | 691 | 0.2+ | 0.4− | 2001 11 19 | 704 | 0.4− | 0.1+ | 2005 07 04 | 644 | 0.5− | 0.5+ |
| 1998 01 25 | 691 | 0.0 | 0.3− | 2001 11 19 | 704 | 0.5− | 0.2+ | 2005 07 12 | G96 | 0.3+ | 0.2+ |
| 1998 01 30 | 691 | 0.4− | 0.5− | 2001 11 19 | 704 | 0.7− | 0.4+ | 2005 07 12 | G96 | 0.2− | 0.4+ |
| 1998 01 30 | 691 | 0.3− | 0.2+ | 2001 12 15 | 704 | (0.3− | 2.2+) | 2005 07 12 | G96 | 0.6− | 0.4+ |
| 1998 01 30 | 691 | 0.3− | 0.2− | 2001 12 15 | 704 | (0.3+ | 2.0+) | 2005 07 12 | G96 | 0.4− | 0.3+ |
| 2001 08 26 | 644 | 0.0 | 0.3+ | 2001 12 15 | 704 | (0.7+ | 1.9+) | 2005 07 18 | 644 | 0.6− | 0.3+ |
| 2001 08 26 | 644 | 0.3− | 0.5+ | 2001 12 15 | 704 | (0.8+ | 1.6+) | 2005 07 18 | 644 | 0.3− | 0.4+ |
| 2001 08 26 | 644 | 0.1− | 0.3+ | 2002 01 13 | 645 | 0.1+ | 0.0 | 2005 07 18 | 644 | 0.3− | 0.2+ |
| 2001 09 16 | 704 | 0.1+ | 0.3+ | 2002 01 13 | 645 | 0.1+ | 0.0 | 2006 10 01 | 703 | (0.1+ | 1.6+) |
| 2001 09 16 | 704 | 1.4− | 0.6+ | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.1+ | 1.5+ |
| 2001 09 16 | 704 | 0.4− | 0.5− | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.3− | 0.4+ |
| 2001 09 16 | 704 | 0.8− | 0.2+ | 2003 02 01 | 704 | 0.1− | 0.0 | 2006 10 01 | 703 | (0.4+ | 1.5+) |
| 2001 09 16 | 704 | 0.2− | 1.4+ | 2003 02 01 | 704 | 0.5+ | 0.6− | 2006 11 05 | 644 | 0.2− | 0.1− |
| 2001 09 17 | 699 | (0.1+ | 1.9+) | 2003 02 01 | 704 | 0.0 | 0.4+ | 2006 11 05 | 644 | 0.0 | 0.0 |
| 2001 09 17 | 699 | 0.4− | 0.6+ | 2003 02 04 | 704 | 0.5− | 0.1+ | 2006 11 05 | 644 | 0.1+ | 0.4+ |
| 2001 09 17 | 699 | 0.2− | 0.7− | 2003 02 04 | 704 | 0.3− | 0.3+ | 2006 11 05 | 644 | 0.2− | 0.1+ |
| 2001 09 17 | 699 | 0.0 | 0.6+ | 2003 02 04 | 704 | 0.3− | 0.9+ | 2006 11 05 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 645 | 0.1+ | 0.0 | 2003 02 11 | 608 | 0.1− | 0.6+ | 2006 11 05 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 645 | 0.1+ | 0.0 | 2003 02 11 | 608 | 0.4− | 1.1+ | 2006 11 15 | 703 | 0.7− | 0.0 |
| 2001 09 25 | 704 | 0.7+ | 0.6+ | 2003 02 11 | 608 | 0.2− | 0.9+ | 2006 11 15 | 703 | 0.5+ | 0.3+ |
| 2001 09 25 | 704 | 0.4+ | 0.1− | 2003 02 28 | 704 | 1.3+ | 0.7+ | 2006 11 15 | 703 | 0.5− | 0.7− |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2003 02 28 | 704 | 0.5+ | 1.5+ | 2006 11 15 | 703 | 0.2+ | 0.1+ |
| 2001 09 25 | 704 | 0.9− | 1.1+ | 2003 02 28 | 704 | 0.9+ | 0.9+ | 2006 11 19 | 704 | (1.9+ | 2.3+) |
| 2001 09 25 | 704 | 0.2+ | 0.7+ | 2003 02 28 | 704 | 1.0+ | 1.0+ | 2006 11 19 | 704 | 1.3+ | 0.0 |
| 2001 09 27 | 644 | 0.4+ | 1.0+ | 2003 02 28 | 704 | (0.7+ | 1.6+) | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2001 09 27 | 644 | 0.8+ | 1.3+ | 2003 03 25 | 644 | 0.3+ | 0.9+ | 2006 11 19 | 704 | 0.5− | 0.7− |
| 2001 09 27 | 644 | 0.7+ | 1.1+ | 2003 03 25 | 644 | 0.4+ | 1.1+ | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2001 10 15 | 644 | 0.2− | 0.8− | 2003 03 25 | 644 | 0.6+ | 1.0+ | 2006 11 25 | 704 | 1.1− | 0.5− |
| 2001 10 15 | 644 | 0.2− | 0.8− | 2003 03 26 | 691 | 0.0 | 0.4+ | 2006 11 25 | 704 | 0.4− | 0.5+ |
| 2001 10 15 | 644 | 0.3− | 0.9− | 2003 03 26 | 691 | 0.1− | 0.4+ | 2006 11 25 | 704 | 1.0− | 0.2+ |
| 2001 10 16 | 704 | 0.4+ | 0.3+ | 2003 03 26 | 691 | 0.1− | 0.4+ | 2006 11 25 | 704 | 0.5+ | 1.1+ |
| 2001 10 16 | 704 | 0.9+ | 0.0 | 2003 04 01 | 704 | 1.1+ | 0.0 | 2006 11 25 | 704 | 0.1− | 0.7+ |
| 2001 10 16 | 704 | 0.2− | 0.6+ | 2003 04 01 | 704 | (1.8+ | 1.0+) | 2006 11 25 | 703 | 0.4+ | 0.1+ |
| 2001 10 16 | 704 | 1.2+ | 0.4+ | 2003 04 01 | 704 | 1.0+ | 0.0 | 2006 11 25 | 703 | 0.2− | 0.3− |
| 2001 10 19 | 699 | 0.3− | 0.5+ | 2003 04 01 | 704 | (1.7+ | 0.5+) | 2006 11 25 | 703 | 0.1+ | 0.0 |
| 2001 10 19 | 699 | 0.9− | 0.5+ | 2003 04 06 | 699 | 0.2− | 0.4− | 2006 11 25 | 703 | 0.1+ | 0.3+ |
| 2001 10 19 | 699 | 0.2− | 0.7+ | 2003 04 06 | 699 | 0.2+ | 0.1− | | | | |

**(140649)∗ 2001 US$_{30}$ = 2003 AA$_{69}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40826)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.64576 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18649819 | $\omega$ | 30.15345 | | +0.44436152 | −0.88901978 | |
| $a$ | 3.0340284 | $\Omega$ | 33.81877 | | +0.77719332 | +0.32128092 | |
| $e$ | 0.0453590 | $i$ | 11.44028 | | +0.44554842 | +0.32622447 | |
| $P$ | 5.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 691 | 0.2− | 0.3− | 2001 10 23 | 704 | 0.5+ | 1.4+ | 2003 01 13 | 704 | 0.5+ | 0.3+ |
| 1999 04 09 | 691 | 0.5− | 0.1+ | 2001 10 23 | 644 | 0.6− | 0.5− | 2003 01 13 | 704 | 0.4+ | 0.6− |
| 1999 04 09 | 691 | 0.1+ | 0.8− | 2001 10 23 | 644 | 0.7− | 0.4− | 2003 01 13 | 704 | 0.3− | 0.1+ |
| 1999 05 18 | 691 | 0.2+ | 0.2+ | 2001 10 23 | 704 | 1.4− | 1.2+ | 2004 03 18 | 691 | 0.1+ | 0.4+ |
| 1999 05 18 | 691 | 0.1− | 0.4+ | 2001 10 23 | 704 | 0.7− | 0.4+ | 2004 03 18 | 691 | 0.2+ | 0.2+ |
| 1999 05 18 | 691 | 0.0 | 0.1+ | 2001 10 24 | 644 | 0.6− | 0.8+ | 2004 03 18 | 691 | 0.0 | 0.4+ |
| 2001 08 05 | 644 | 0.1− | 0.9+ | 2001 10 24 | 644 | 0.5− | 1.5+ | 2004 03 28 | 704 | 1.9+ | 0.8+ |
| 2001 08 05 | 644 | 0.6− | 0.7+ | 2001 10 24 | 644 | 0.5− | 1.4+ | 2004 03 28 | 704 | 0.5+ | 1.0+ |
| 2001 08 05 | 644 | 1.0− | 0.6+ | 2001 11 20 | 704 | (0.3− | 2.6−) | 2004 03 28 | 704 | 0.6+ | 0.0 |
| 2001 09 16 | 704 | 0.4+ | 0.5+ | 2001 11 20 | 704 | 0.6− | 1.8− | 2004 03 28 | 704 | 0.9+ | 0.4− |
| 2001 09 16 | 704 | 0.6+ | 0.9+ | 2001 11 20 | 704 | 0.5− | 1.5− | 2004 03 28 | 691 | 0.1+ | 0.9+ |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2001 11 20 | 704 | (0.6− | 2.6−) | 2004 03 28 | 704 | 1.0+ | 0.2− |
| 2001 10 16 | 704 | 0.8− | 0.8+ | 2003 01 09 | 704 | 0.5− | 0.1+ | 2004 03 28 | 691 | 0.3+ | 0.2+ |
| 2001 10 16 | 704 | 1.1− | 1.1+ | 2003 01 09 | 704 | 0.3+ | 0.8+ | 2004 03 28 | 691 | 0.1+ | 0.3+ |
| 2001 10 16 | 704 | 0.1+ | 0.5+ | 2003 01 09 | 704 | 0.3− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.3+ |
| 2001 10 16 | 704 | 1.3− | 0.4− | 2003 01 10 | 704 | 1.0+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 1.3+ | 0.2+ | 2003 01 10 | 704 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.5+ |
| 2001 10 20 | 704 | 1.2+ | 0.3+ | 2003 01 10 | 704 | 0.5− | 1.6− | 2006 09 14 | 644 | 0.2− | 0.6+ |
| 2001 10 20 | 704 | 1.8+ | 0.2+ | 2003 01 10 | 704 | 0.6− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.2− |
| 2001 10 23 | 644 | 0.4− | 0.9− | 2003 01 10 | 704 | 0.8− | 0.2+ | 2006 09 14 | 644 | 0.7− | 0.0 |
| 2001 10 23 | 704 | 0.3+ | 0.3− | 2003 01 13 | 704 | 0.9+ | 0.3− | | | | |

**(140650)∗ 2001 UZ$_{31}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.82374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18887988 | $\omega$ | 118.60410 | | +0.12051592 | +0.99060229 | |
| $a$ | 3.0084693 | $\Omega$ | 158.03240 | | −0.96046380 | +0.13282425 | |
| $e$ | 0.1053245 | $i$ | 9.95608 | | −0.25096853 | −0.03263172 | |
| $P$ | 5.22 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 23 | 699 | 1.4+ | 0.6+ | 2004 02 23 | 704 | 0.2+ | 1.1+ | 2004 04 09 | 644 | 0.3+ | 0.3+ |
| 1999 03 23 | 699 | 1.3+ | 0.0 | 2004 02 23 | 704 | 0.0 | 0.6+ | 2004 04 09 | 644 | 0.3+ | 0.7+ |
| 1999 03 23 | 699 | 0.3+ | 0.7+ | 2004 02 23 | 704 | 0.1+ | 0.7+ | 2004 04 12 | 291 | 0.1− | 0.1+ |
| 1999 04 12 | 704 | (2.3− | 0.3−) | 2004 02 23 | 704 | 0.5+ | 0.4+ | 2004 04 12 | 291 | 0.4− | 0.1+ |
| 1999 04 12 | 704 | (0.9− | 2.1−) | 2004 02 23 | 704 | (1.8+ | 0.3+) | 2004 04 12 | 291 | 0.4− | 0.1+ |
| 1999 04 12 | 704 | 1.2+ | 0.6+ | 2004 03 15 | 704 | 0.0 | 0.1− | 2004 04 13 | 291 | 1.1− | 0.1− |
| 1999 04 12 | 704 | 1.5− | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.0 | 2004 04 13 | 291 | 0.4+ | 0.3+ |
| 1999 04 12 | 704 | 0.6− | 1.5+ | 2004 03 15 | 704 | 0.2− | 0.3+ | 2004 04 13 | 291 | 0.3+ | 0.6+ |
| 2001 09 16 | 704 | (1.5− | 2.2+) | 2004 03 15 | 704 | 0.1+ | 0.0 | 2005 07 05 | 704 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.7− | 0.7+ | 2004 03 15 | 704 | 0.1+ | 0.1+ | 2005 07 05 | 704 | 0.5+ | 0.9+ |
| 2001 09 16 | 704 | (0.9+ | 1.6+) | 2004 03 19 | 704 | 0.3− | 0.8+ | 2005 07 05 | 704 | 0.4− | 1.2+ |
| 2001 09 16 | 704 | 0.9− | 0.9+ | 2004 03 19 | 704 | 0.0 | 0.0 | 2005 07 05 | 704 | 0.4− | 1.3+ |
| 2001 10 16 | 704 | 0.7+ | 0.0 | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.3− |
| 2001 10 16 | 704 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.1− |
| 2001 10 16 | 704 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.3+ |
| 2001 10 16 | 704 | 0.7+ | 0.7− | 2004 03 20 | 699 | (1.5− | 0.4−) | 2006 09 18 | 703 | 0.5+ | 0.3+ |
| 2001 10 16 | 644 | 0.5− | 0.5+ | 2004 03 20 | 699 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.7+ | 1.3+ |
| 2001 10 16 | 644 | 0.4− | 0.5+ | 2004 03 20 | 699 | 0.3− | 0.9− | 2006 09 18 | 699 | 0.3− | 0.4+ |
| 2001 10 16 | 644 | 0.6− | 0.6+ | 2004 03 20 | 699 | 0.4− | 0.6− | 2006 09 18 | 699 | 0.6+ | 1.0+ |
| 2001 10 20 | 704 | 0.1− | 0.1+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.4+ |
| 2001 10 20 | 704 | 0.5− | 0.2+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.0 | 1.2+ |
| 2001 10 20 | 704 | (0.3− | 1.7+) | 2004 03 21 | 691 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.1+ |
| 2001 10 24 | 644 | 0.0 | 0.9+ | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.0 | 1.1+ |
| 2001 10 24 | 644 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.4− | 2006 09 26 | 704 | (0.3− | 1.7+) |
| 2001 10 24 | 644 | 0.0 | 0.9+ | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2004 03 28 | 704 | 1.2+ | 0.4− | 2006 10 16 | 703 | 0.4− | 1.3+ |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2004 03 28 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.5+ |
| 2004 02 14 | 703 | (1.6+ | 0.8+) | 2004 03 28 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 1.0− | 0.1− |
| 2004 02 14 | 703 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2004 02 14 | 703 | 0.4− | 1.1+ | 2004 03 30 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2004 02 14 | 703 | (4.6+ | 2.8+) | 2004 03 30 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 02 18 | 704 | 0.2+ | 0.9+ | 2004 03 30 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 02 18 | 704 | 0.1+ | 0.4+ | 2004 03 31 | 691 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2004 02 18 | 704 | 0.3+ | 0.6+ | 2004 03 31 | 691 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2004 02 18 | 704 | 0.1− | 0.7+ | 2004 03 31 | 691 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.8− |
| 2004 02 18 | 704 | 0.3+ | 0.7+ | 2004 04 09 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.8+ | 0.2− |

**(140651)∗ 2001 UU$_{32}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.41830 | | | (2000.0) | | |
| $n$ | 0.18618394 | $\omega$ | 260.99202 | | +0.86898789 | +0.45601967 |
| $a$ | 3.0374414 | $\Omega$ | 71.67925 | | −0.33581370 | +0.82861717 |
| $e$ | 0.0589423 | $i$ | 11.67542 | | −0.36344078 | +0.32471473 |
| $P$ | 5.29 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | (1.9− | 0.8+) | 2001 11 20 | 699 | 0.1+ | 1.1− | 2004 03 30 | 704 | (0.5+ | 1.7+) |
| 2001 09 25 | 704 | (1.7− | 0.6+) | 2002 01 02 | 644 | 0.2+ | 0.3+ | 2004 03 30 | 704 | 0.6+ | 1.1+ |
| 2001 09 25 | 704 | (2.6− | 0.2+) | 2002 01 02 | 644 | 0.3+ | 0.2+ | 2004 03 30 | 704 | 0.3+ | 0.8+ |
| 2001 09 25 | 704 | (2.3− | 0.7−) | 2002 01 02 | 644 | 0.0 | 0.1− | 2004 03 30 | 704 | (0.8+ | 2.3+) |
| 2001 09 25 | 704 | (2.4− | 0.4+) | 2003 01 10 | 704 | 0.5− | 0.1− | 2004 03 30 | 704 | 0.2− | 0.8+ |
| 2001 10 14 | 699 | 0.5− | 0.4+ | 2003 01 10 | 704 | 0.4+ | 0.5− | 2006 09 17 | 699 | 0.1+ | 0.1− |
| 2001 10 14 | 699 | 0.3− | 0.4+ | 2003 01 10 | 704 | 0.1− | 0.7− | 2006 09 17 | 699 | 0.6+ | 0.4+ |
| 2001 10 14 | 699 | 1.0− | 0.3− | 2003 01 10 | 704 | 0.0 | 0.8− | 2006 09 17 | 699 | 0.6+ | 0.1+ |
| 2001 10 14 | 699 | (2.1− | 0.2+) | 2003 01 10 | 704 | 0.2− | 0.1− | 2006 09 17 | 699 | 0.3− | 0.2− |
| 2001 10 16 | 704 | 0.9− | 0.8+ | 2003 01 31 | 699 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.1− |
| 2001 10 16 | 704 | 0.6− | 0.6+ | 2003 01 31 | 699 | 0.4+ | 0.7− | 2006 09 19 | 703 | 0.3+ | 0.4+ |
| 2001 10 16 | 704 | 0.4− | 1.2+ | 2003 01 31 | 704 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.3− | 0.4− |
| 2001 10 16 | 704 | (0.9− | 1.7+) | 2003 01 31 | 699 | 0.9− | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.4+ |
| 2001 10 16 | 704 | 0.1− | 1.4+ | 2003 01 31 | 704 | 1.2+ | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.1− |
| 2001 10 20 | 704 | 0.9+ | 0.5+ | 2003 01 31 | 699 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.3+ |
| 2001 10 20 | 704 | 0.1+ | 1.2+ | 2003 01 31 | 704 | (0.1+ | 2.2−) | 2006 09 25 | 703 | 0.4− | 0.1+ |
| 2001 10 20 | 704 | 0.4+ | 0.7+ | 2003 01 31 | 704 | 0.1+ | 0.5− | 2006 09 25 | 703 | 0.4− | 0.2− |
| 2001 10 20 | 704 | 0.1+ | 0.7+ | 2004 03 12 | 644 | 0.1− | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2001 10 24 | 644 | 0.0 | 0.3− | 2004 03 12 | 644 | 0.3− | 1.0+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2001 10 24 | 644 | 0.0 | 0.1− | 2004 03 12 | 644 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 10 24 | 644 | 0.1− | 0.2− | 2004 03 23 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2001 11 15 | 644 | 0.3− | 0.8− | 2004 03 23 | 704 | (1.9+ | 1.2+) | 2006 10 21 | 703 | 1.6− | 0.9− |
| 2001 11 15 | 644 | 0.5− | 0.5− | 2004 03 23 | 704 | 1.1+ | 0.0 | 2006 10 21 | 703 | 0.5− | 1.1− |
| 2001 11 15 | 644 | 0.5− | 0.6− | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 1.2+ | 0.8+ |
| 2001 11 18 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 11 18 | 704 | 0.1− | 0.7+ | 2004 03 25 | 704 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.6+ | 0.4+ |
| 2001 11 18 | 704 | 0.3− | 0.5+ | 2004 03 25 | 704 | 0.6+ | 0.9+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2001 11 18 | 704 | 0.3− | 0.5+ | 2004 03 25 | 704 | 0.6+ | 0.4+ | 2006 10 28 | 703 | 0.6− | 0.1+ |
| 2001 11 18 | 704 | 0.2− | 0.9+ | 2004 03 28 | 703 | 0.8+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.4− |
| 2001 11 20 | 699 | 0.1− | 0.4− | 2004 03 28 | 703 | 0.3− | 0.8+ | 2006 10 28 | 703 | 0.2− | 0.0 |
| 2001 11 20 | 699 | 0.2− | 0.2+ | 2004 03 28 | 703 | (0.1+ | 4.1+) | 2006 10 28 | 703 | 0.9− | 0.6+ |
| 2001 11 20 | 699 | 0.2+ | 0.4+ | 2004 03 28 | 703 | 0.1+ | 0.5+ | | | | |

**(140652)∗ 2001 UX$_{33}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.54142 | | | (2000.0) | | |
| $n$ | 0.18670710 | $\omega$ | 271.58912 | | +0.96868412 | −0.19008872 |
| $a$ | 3.0317647 | $\Omega$ | 99.38992 | | +0.23713960 | +0.89895807 |
| $e$ | 0.2046595 | $i$ | 9.31783 | | −0.07359273 | +0.39463993 |
| $P$ | 5.28 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | (1.8− | 0.4+) | 2001 11 18 | 704 | 0.2+ | 0.0 | 2005 06 03 | 703 | (0.6− | 2.1+) |
| 2001 09 17 | 699 | (2.3− | 0.2+) | 2001 11 20 | 699 | 1.0+ | 1.2+ | 2005 06 03 | 703 | 0.9− | 0.3− |
| 2001 09 17 | 699 | 1.0− | 0.8+ | 2001 11 20 | 699 | (1.9+ | 0.9+) | 2005 06 03 | 703 | 0.2+ | 0.6+ |
| 2001 09 17 | 699 | 0.4− | 0.4− | 2001 11 20 | 699 | 0.9+ | 1.4+ | 2005 07 05 | 644 | 0.1− | 0.5+ |
| 2001 09 23 | 699 | 0.5+ | 0.2+ | 2001 11 20 | 699 | 1.1− | 0.7+ | 2005 07 05 | 644 | 0.3+ | 0.8+ |
| 2001 09 23 | 699 | 0.7− | 0.0 | 2001 12 07 | 704 | (1.7+ | 0.4−) | 2005 07 05 | 644 | 0.0 | 0.7+ |
| 2001 09 23 | 699 | 0.0 | 0.2− | 2001 12 07 | 704 | 0.8+ | 0.8+ | 2006 07 31 | E12 | 0.3+ | 0.2+ |
| 2001 09 23 | 699 | 0.6+ | 0.5− | 2001 12 07 | 704 | 0.4+ | 0.4− | 2006 07 31 | E12 | 0.0 | 0.4+ |
| 2001 09 25 | 704 | 0.1− | 0.5− | 2001 12 07 | 704 | 0.5+ | 0.2− | 2006 07 31 | E12 | 0.1+ | 0.8+ |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2001 12 07 | 704 | 0.9+ | 0.4+ | 2006 07 31 | E12 | 0.4+ | 0.2− |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2001 12 15 | 704 | 0.4− | 0.4− | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2001 09 25 | 683 | (0.7− | 2.7+) | 2001 12 15 | 704 | 0.5− | 0.2− | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2001 12 15 | 704 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2001 09 25 | 683 | (1.7+ | 0.1+) | 2001 12 18 | 608 | 0.1+ | 1.4− | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 2001 09 25 | 683 | 0.1+ | 0.5+ | 2001 12 18 | 608 | (0.1− | 1.6−) | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.4− | 2001 12 18 | 608 | 0.5+ | 1.0− | 2006 08 16 | 644 | 0.2+ | 0.3+ |
| 2001 10 15 | 644 | 0.3− | 0.1− | 2001 12 19 | 704 | 0.1− | 0.3− | 2006 09 12 | 704 | 0.4− | 1.3+ |
| 2001 10 15 | 644 | 0.1− | 0.1+ | 2001 12 19 | 704 | 0.3+ | 0.0 | 2006 09 12 | 704 | 0.0 | 0.4+ |
| 2001 10 15 | 644 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.2− | 0.5+ | 2006 09 12 | 704 | 0.5+ | 0.9+ |
| 2001 10 16 | 704 | 0.2+ | 0.9− | 2001 12 19 | 704 | 0.4− | 0.3+ | 2006 09 12 | 704 | 0.8− | 0.3+ |
| 2001 10 16 | 704 | 0.4− | 0.7− | 2001 12 19 | 704 | 0.9− | 0.5+ | 2006 09 12 | 704 | 0.6+ | 0.6+ |
| 2001 10 16 | 704 | 0.4+ | 0.4− | 2002 01 04 | 621 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.1− |
| 2001 10 16 | 704 | 0.2− | 0.4− | 2002 01 04 | 621 | 0.9+ | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.2− |
| 2001 10 16 | 704 | 0.2+ | 0.4− | 2002 01 04 | 621 | 0.9+ | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.3− |
| 2001 10 20 | 704 | 0.6+ | 0.6+ | 2002 01 04 | 621 | 0.0 | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 1.3− | 0.6− | 2002 01 05 | 621 | 0.6− | 0.6− | 2006 09 21 | 699 | 0.6+ | 0.5+ |
| 2001 10 20 | 704 | 1.3− | 0.5− | 2002 01 05 | 621 | 0.3− | 0.3− | 2006 09 21 | 699 | 0.5− | 0.2+ |
| 2001 10 23 | 644 | 0.1+ | 0.7+ | 2002 01 05 | 621 | 0.2+ | 0.4− | 2006 09 21 | 699 | (0.9− | 1.5−) |
| 2001 10 23 | 644 | 0.1+ | 0.8+ | 2002 01 05 | 621 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.7− | 0.2− |
| 2001 10 23 | 644 | 0.1+ | 0.7+ | 2003 01 31 | 644 | 0.6+ | 1.2+ | 2006 09 26 | 703 | 0.3− | 0.3− |
| 2001 10 29 | 644 | 0.1+ | 0.8+ | 2003 01 31 | 644 | 0.5+ | 1.1+ | 2006 09 26 | 703 | 0.5+ | 0.1− |
| 2001 10 29 | 644 | 0.1− | 0.8+ | 2003 01 31 | 644 | 0.1− | 1.3+ | 2006 09 26 | 703 | 0.4− | 0.4− |
| 2001 10 29 | 644 | 0.2+ | 0.7+ | 2003 02 04 | 704 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.7− | 2.0− |
| 2001 11 18 | 704 | 0.0 | 0.6− | 2003 02 04 | 704 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.6+ | 0.1+ |
| 2001 11 18 | 704 | 0.1− | 0.2− | 2003 02 04 | 704 | 0.8− | 0.5+ | 2006 11 27 | 703 | 0.3+ | 1.3− |
| 2001 11 18 | 704 | 0.0 | 0.2− | 2003 02 04 | 704 | 0.8+ | 0.1+ | 2006 11 27 | 703 | 0.6− | 2.1− |
| 2001 11 18 | 704 | 1.0− | 0.1+ | 2005 06 03 | 703 | 0.7+ | 0.2+ | | | | |

**(140653)∗ 2001 UC$_{35}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.76165 | | | (2000.0) | | |
| $n$ | 0.18371921 | $\omega$ | 2.47238 | | +0.41082287 | −0.87667768 |
| $a$ | 3.0645474 | $\Omega$ | 63.36801 | | +0.83160378 | +0.24778140 |
| $e$ | 0.1814243 | $i$ | 16.26209 | | +0.37371075 | +0.41235982 |
| $P$ | 5.36 | $H$ | 14.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.5− | 0.2+ | 2001 12 14 | 704 | 0.5+ | 0.2+ | 2003 03 09 | 644 | 0.1+ | 0.2+ |
| 2001 08 26 | 644 | 0.7− | 0.4+ | 2001 12 14 | 704 | 0.4+ | 0.4+ | 2003 03 09 | 644 | 0.1+ | 0.2+ |
| 2001 08 26 | 644 | 0.6− | 0.4+ | 2001 12 17 | 704 | 0.4+ | 0.6− | 2003 03 09 | 644 | 0.1+ | 0.2+ |
| 2001 10 16 | 704 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.7+ | 0.4− | 2003 03 13 | 704 | 0.3− | 0.2+ |
| 2001 10 16 | 704 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.7+ | 0.1− | 2003 03 13 | 704 | 0.3− | 0.8− |
| 2001 10 16 | 704 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.0 | 0.2− | 2003 03 13 | 704 | 0.5− | 0.7+ |
| 2001 10 16 | 704 | 0.5− | 0.3− | 2001 12 17 | 704 | 0.3+ | 0.4− | 2003 03 13 | 704 | 0.1− | 0.7+ |
| 2001 10 16 | 704 | 0.2− | 0.2− | 2001 12 18 | 704 | 0.0 | 0.2+ | 2003 03 13 | 704 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.6+ | 0.7+ | 2001 12 18 | 704 | 0.9+ | 0.4+ | 2003 03 22 | 644 | 0.1+ | 0.8+ |
| 2001 10 20 | 704 | 0.6− | 0.3− | 2001 12 18 | 704 | 0.2− | 0.5+ | 2003 03 22 | 644 | 0.0 | 1.1+ |
| 2001 10 20 | 704 | 0.5− | 0.2− | 2001 12 18 | 704 | 1.2+ | 0.2+ | 2003 03 22 | 644 | 0.1+ | 1.1+ |
| 2001 10 24 | 704 | 1.4− | 0.0 | 2001 12 18 | 704 | 0.4+ | 0.2− | 2003 03 25 | 704 | 0.1− | 0.7+ |
| 2001 10 24 | 704 | 0.6− | 0.3+ | 2001 12 18 | 704 | 1.3+ | 0.0 | 2003 03 25 | 704 | 0.0 | 0.7+ |
| 2001 10 24 | 704 | 0.3− | 0.8+ | 2001 12 18 | 704 | 0.1+ | 0.2− | 2003 03 25 | 704 | 0.4+ | 0.7+ |
| 2001 10 24 | 704 | 0.7− | 0.2+ | 2001 12 18 | 704 | 1.1+ | 0.1+ | 2004 05 12 | 699 | (2.7− | 2.2+) |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2001 12 18 | 704 | 0.5+ | 0.1+ | 2004 05 12 | 699 | 0.1− | 0.8+ |
| 2001 10 24 | 644 | 0.2− | 0.5− | 2001 12 18 | 704 | 0.6+ | 0.1− | 2004 05 12 | 699 | (0.6+ | 1.6+) |
| 2001 10 24 | 644 | 0.2− | 0.4− | 2001 12 20 | 704 | 0.5− | 0.4+ | 2004 05 12 | 699 | 0.2− | 0.6+ |
| 2001 10 24 | 644 | 0.0 | 0.5− | 2001 12 20 | 704 | 0.0 | 0.2+ | 2006 07 31 | E12 | 0.2+ | 0.4+ |
| 2001 11 09 | 704 | 0.5+ | 0.3+ | 2001 12 20 | 704 | 0.2− | 0.1+ | 2006 07 31 | E12 | 0.4+ | 0.7+ |
| 2001 11 09 | 704 | 0.3− | 1.1− | 2001 12 20 | 704 | 0.4+ | 0.3+ | 2006 07 31 | E12 | 0.3− | 0.7+ |
| 2001 11 09 | 704 | 0.5+ | 0.1− | 2001 12 20 | 704 | 0.4− | 0.0 | 2006 07 31 | E12 | 0.1− | 0.4+ |
| 2001 11 09 | 704 | 0.4+ | 0.1− | 2002 01 09 | 704 | 0.8− | 0.9+ | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 2001 11 09 | 704 | 0.4− | 0.3− | 2002 01 09 | 704 | 0.5+ | 0.9+ | 2006 09 14 | 644 | 0.5− | 0.3+ |
| 2001 11 17 | 704 | 0.7− | 0.1+ | 2002 01 09 | 704 | 0.1+ | 0.4− | 2006 09 14 | 644 | 0.4− | 0.4+ |
| 2001 11 17 | 704 | 0.4− | 0.9+ | 2002 01 09 | 704 | 0.6+ | 0.8− | 2006 09 27 | 703 | 1.4− | 0.1+ |
| 2001 11 17 | 704 | 0.3+ | 0.3+ | 2002 01 09 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 703 | 0.0 | 0.5− |
| 2001 11 17 | 704 | 0.2− | 0.2− | 2002 01 21 | 704 | 0.6+ | 0.1− | 2006 09 27 | 703 | 0.6− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 608 | 0.0 | 0.3− | 2002 01 21 | 704 | 0.6− | 0.2+ | 2006 09 27 | 703 | 0.3+ | 0.4− |
| 2001 11 18 | 608 | 0.2+ | 0.5− | 2002 01 21 | 704 | 0.7− | 0.1+ | 2006 10 03 | E12 | 0.3− | 0.5+ |
| 2001 11 18 | 608 | 0.0 | 0.3− | 2002 01 21 | 704 | 1.0− | 1.0+ | 2006 10 03 | E12 | 0.2− | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.3− | 2003 01 11 | 704 | 0.9+ | 0.6− | 2006 10 03 | E12 | 0.4+ | 0.3+ |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2003 01 11 | 704 | 0.3− | 0.1− | 2006 10 03 | E12 | 0.8+ | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.0 | 2003 01 11 | 704 | 0.6− | 0.7+ | 2006 10 12 | E12 | 0.6− | 0.6+ |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2003 02 01 | 644 | 0.4+ | 0.8− | 2006 10 12 | E12 | 0.7+ | 0.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.0 | 2003 02 01 | 644 | 0.1+ | 1.0− | 2006 10 12 | E12 | 0.1+ | 0.7+ |
| 2001 11 24 | 704 | (0.4− | 3.1−) | 2003 02 01 | 644 | 0.2+ | 0.9− | 2006 11 09 | E12 | 0.1− | 0.2+ |
| 2001 11 24 | 704 | (0.4+ | 2.1−) | 2003 02 21 | 644 | 0.3+ | 0.3+ | 2006 11 09 | E12 | 0.3− | 0.7+ |
| 2001 11 24 | 704 | (0.9− | 1.5−) | 2003 02 21 | 644 | 0.1+ | 0.2+ | 2006 11 09 | E12 | 0.1+ | 1.1+ |
| 2001 11 24 | 704 | (0.9− | 2.7−) | 2003 02 21 | 644 | 0.5+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.2+ |
| 2001 12 11 | 704 | 0.1− | 0.4− | 2003 02 26 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 703 | 0.6− | 0.8− |
| 2001 12 11 | 704 | 0.0 | 0.8− | 2003 02 26 | 704 | 0.2− | 0.5+ | 2006 11 19 | 703 | 0.6− | 0.1− |
| 2001 12 11 | 704 | 0.4− | 0.7− | 2003 02 26 | 704 | 0.4− | 0.5+ | 2006 11 19 | 703 | 0.8− | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.7− | 2003 03 03 | 704 | 0.5− | 0.2− | 2006 11 27 | 703 | 0.1+ | 0.7+ |
| 2001 12 11 | 704 | 0.1− | 0.6− | 2003 03 03 | 704 | 0.9+ | 0.4+ | 2006 11 27 | 703 | 0.6+ | 0.4+ |
| 2001 12 14 | 704 | 0.3+ | 0.4+ | 2003 03 03 | 704 | 1.2+ | 0.1+ | 2006 11 27 | 703 | 0.5− | 1.1+ |
| 2001 12 14 | 704 | 0.4+ | 0.4+ | 2003 03 03 | 704 | 0.7+ | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.3− |
| 2001 12 14 | 704 | 0.8+ | 0.2+ | 2003 03 03 | 704 | 0.8+ | 0.5+ | | | | |

**(140654)∗ 2001 UQ$_{36}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.91494 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18699927 | $\omega$ | 172.47008 | | +0.99909973 | +0.03506894 | |
| $a$ | 3.0286059 | $\Omega$ | 185.68611 | | −0.03855497 | +0.98535789 | |
| $e$ | 0.1681005 | $i$ | 13.94237 | | +0.01769867 | +0.16685320 | |
| $P$ | 5.27 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.7− | 0.3+ | 2004 04 14 | 691 | 0.1− | 0.2+ | 2006 09 20 | 704 | 1.0− | 0.2− |
| 2001 09 14 | 644 | 0.7− | 0.0 | 2005 06 09 | 703 | (0.0 | 1.8−) | 2006 09 25 | 704 | (6.2+ | 1.2+) |
| 2001 09 14 | 644 | 0.6− | 0.1− | 2005 06 09 | 703 | (1.9− | 0.3+) | 2006 09 25 | 704 | (6.1+ | 0.7+) |
| 2001 09 17 | 704 | 0.8+ | 0.7− | 2005 06 09 | 703 | 0.9− | 0.1− | 2006 09 25 | 704 | (6.6+ | 0.5+) |
| 2001 09 17 | 704 | 0.5+ | 0.4+ | 2005 06 09 | 703 | 0.1+ | 0.6− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2001 09 17 | 704 | 0.4+ | 0.4+ | 2005 06 30 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2001 09 17 | 704 | 0.8+ | 0.1+ | 2005 06 30 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2001 09 17 | 704 | 0.1− | 0.2− | 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2001 10 10 | 644 | 0.4− | 0.2+ | 2006 08 18 | 699 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2001 10 10 | 644 | 0.4− | 0.1+ | 2006 08 18 | 699 | 1.0− | 0.5+ | 2006 09 27 | 704 | 0.3− | 0.5+ |
| 2001 10 10 | 644 | 0.6− | 0.3+ | 2006 08 18 | 699 | 0.6+ | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.1− |
| 2001 10 14 | 699 | 1.0− | 0.1− | 2006 08 18 | 699 | 0.2− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 699 | 1.0− | 0.0 | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 09 27 | 704 | 1.0− | 0.1+ |
| 2001 10 14 | 699 | 0.6− | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | (0.2− | 1.5+) | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.2− | 0.2+ |
| 2001 10 16 | 704 | 0.4+ | 0.4− | 2006 08 28 | 703 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.8− | 0.9+ |
| 2001 10 16 | 704 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.7+ | 0.2+ |
| 2001 10 16 | 704 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 09 29 | 704 | (0.5− | 1.7+) |
| 2001 10 16 | 704 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2001 10 20 | 704 | 0.7− | 0.7+ | 2006 08 30 | 704 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.5− | 1.0+ |
| 2001 10 20 | 704 | 0.9− | 0.5− | 2006 08 30 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 1.1+ |
| 2001 10 20 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.2+ |
| 2001 10 20 | 704 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.6− | 2006 10 01 | 704 | 0.0 | 0.2+ |
| 2001 11 18 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.2+ | 0.5− | 2006 10 01 | 704 | 0.5+ | 0.5+ |
| 2001 11 18 | 704 | 0.7+ | 0.1+ | 2006 09 01 | 704 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.6+ | 0.8+ |
| 2001 11 18 | 704 | 0.1− | 0.5+ | 2006 09 01 | 704 | 0.0 | 1.0− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2001 11 18 | 704 | 0.1+ | 0.9+ | 2006 09 01 | 704 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2001 11 18 | 704 | 0.3+ | 1.1+ | 2006 09 01 | 704 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2006 09 01 | 704 | (0.4− | 2.0−) | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.0 | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.1− |
| 2001 12 09 | 209 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.8+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2001 12 09 | 209 | 0.2− | 0.5+ | 2006 09 12 | 703 | 1.2+ | 0.4− | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2001 12 09 | 209 | 0.4− | 0.2+ | 2006 09 12 | 703 | 0.2+ | 0.4+ | 2006 11 10 | 704 | 1.5+ | 0.6+ |
| 2001 12 10 | 209 | 0.6− | 0.2+ | 2006 09 17 | 704 | 0.9− | 1.5+ | 2006 11 10 | 704 | 0.4+ | 0.1− |
| 2001 12 10 | 209 | 0.6− | 0.2+ | 2006 09 17 | 704 | 0.6− | 1.4+ | 2006 11 10 | 704 | 0.9− | 0.2− |
| 2001 12 10 | 209 | 0.3− | 0.4+ | 2006 09 17 | 704 | 1.1− | 1.0+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 12 11 | 209 | 0.5− | 0.6+ | 2006 09 17 | 704 | 0.5+ | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2001 12 11 | 209 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.6− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2001 12 11 | 209 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2002 01 09 | 645 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.8+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.6+ | 0.1+ |
| 2004 03 18 | 704 | 0.0 | 1.1+ | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 0.9+ | 1.1+ | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2004 03 29 | 291 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2004 03 29 | 291 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.2+ | 0.6− | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2004 03 29 | 291 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.4+ | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2004 04 14 | 691 | 0.0 | 0.7+ | 2006 09 20 | 704 | 0.0 | 0.3− | | | | |
| 2004 04 14 | 691 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.3+ | | | | |

**(140655)∗ 2001 UA$_{37}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.11457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18238288 | $\omega$ | 266.43401 | | +0.94847843 | −0.26914773 | |
| $a$ | 3.0794985 | $\Omega$ | 109.12439 | | +0.31160123 | +0.88794601 | |
| $e$ | 0.0952895 | $i$ | 10.19173 | | −0.05738769 | +0.37297638 | |
| $P$ | 5.40 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 01 | 691 | 0.5− | 1.0+ | 2001 11 19 | 699 | 1.1+ | 0.2− | 2003 03 07 | 644 | 0.3+ | 0.4+ |
| 1992 01 01 | 691 | 0.2− | 0.2− | 2001 11 19 | 699 | 0.6− | 0.4+ | 2004 03 23 | 704 | 0.8+ | 0.5+ |
| 1992 01 01 | 691 | 0.6− | 0.2− | 2001 11 19 | 608 | 0.9+ | 0.5− | 2004 03 23 | 704 | 1.3+ | 0.7− |
| 2001 08 28 | 644 | 0.4− | 0.9+ | 2001 11 19 | 608 | 1.0+ | 0.7− | 2004 03 23 | 704 | 0.2+ | 0.3+ |
| 2001 08 28 | 644 | 0.2− | 0.4+ | 2001 11 19 | 608 | 0.8+ | 0.8− | 2004 03 23 | 704 | 0.0 | 0.6+ |
| 2001 08 28 | 644 | 0.1+ | 0.1+ | 2001 11 20 | 699 | 0.0 | 0.1− | 2004 03 29 | 703 | 1.2+ | 1.1+ |
| 2001 10 16 | 704 | 0.9− | 0.2+ | 2001 11 20 | 699 | 0.2+ | 0.8+ | 2004 03 29 | 703 | 0.7+ | 0.1− |
| 2001 10 16 | 704 | 0.2− | 0.4+ | 2001 11 20 | 699 | 0.6+ | 0.1+ | 2004 03 29 | 703 | 0.5+ | 1.2+ |
| 2001 10 16 | 704 | 0.7− | 0.4− | 2001 11 20 | 699 | 0.7− | 0.3− | 2004 03 29 | 703 | 0.4− | 0.5+ |
| 2001 10 16 | 704 | 0.3− | 0.5+ | 2001 12 15 | 704 | 1.3+ | 1.4+ | 2004 03 29 | 691 | 0.4+ | 0.2+ |
| 2001 10 19 | 608 | 0.2+ | 0.5− | 2001 12 15 | 704 | (2.0+ | 1.5+) | 2004 03 29 | 691 | 0.2+ | 0.3+ |
| 2001 10 19 | 608 | 0.1+ | 0.6− | 2001 12 15 | 704 | (1.9+ | 1.3+) | 2004 03 29 | 691 | 0.3+ | 0.3+ |
| 2001 10 19 | 608 | 0.2+ | 0.6− | 2001 12 15 | 704 | (0.6+ | 1.7+) | 2006 09 17 | 699 | 0.2+ | 0.4+ |
| 2001 10 20 | 704 | 0.9+ | 0.3− | 2002 01 14 | 704 | 1.2+ | 0.1+ | 2006 09 17 | 699 | 0.1+ | 0.7+ |
| 2001 10 20 | 704 | 0.7+ | 0.2− | 2002 01 14 | 704 | 0.0 | 0.8− | 2006 09 17 | 699 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.0 | 0.5+ | 2002 01 14 | 704 | 0.4− | 0.3+ | 2006 09 17 | 699 | 1.3− | 0.6+ |
| 2001 10 20 | 704 | 0.8+ | 0.2− | 2003 01 27 | 699 | 1.2− | 0.1− | 2006 09 19 | 703 | (2.0− | 0.6+) |
| 2001 10 23 | 644 | 0.6− | 0.2− | 2003 01 27 | 699 | 0.5− | 1.1+ | 2006 09 19 | 703 | 0.7− | 0.7− |
| 2001 10 23 | 644 | 0.5− | 0.1− | 2003 01 27 | 699 | 0.9+ | 0.6+ | 2006 09 19 | 703 | 0.8− | 0.6+ |
| 2001 10 23 | 644 | 0.5− | 0.1− | 2003 01 27 | 699 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 1.1− | 0.6+ |
| 2001 10 29 | 644 | 0.0 | 1.2+ | 2003 01 30 | 699 | 0.7− | 0.1− | 2006 09 19 | 703 | 0.8− | 0.3+ |
| 2001 10 29 | 644 | 0.2+ | 1.1+ | 2003 01 30 | 699 | 0.3+ | 1.0− | 2006 09 19 | 703 | (1.5− | 0.8+) |
| 2001 10 29 | 644 | 0.1+ | 1.3+ | 2003 01 30 | 699 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.6− | 0.5− |
| 2001 11 18 | 704 | 0.3+ | 0.3+ | 2003 01 30 | 699 | 0.1+ | 0.5− | 2006 09 25 | 703 | 0.1− | 1.0− |
| 2001 11 18 | 704 | 0.4+ | 0.3+ | 2003 02 01 | 704 | 0.9− | 0.3− | 2006 09 25 | 703 | (2.2+ | 0.3−) |
| 2001 11 18 | 704 | 0.2− | 0.1− | 2003 02 01 | 704 | 0.5− | 0.6− | 2006 09 25 | 703 | (2.7+ | 1.1+) |
| 2001 11 18 | 704 | 0.3+ | 0.9+ | 2003 02 01 | 704 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.2+ | 0.7+ |
| 2001 11 18 | 704 | 0.1+ | 0.1− | 2003 02 01 | 704 | 0.6− | 0.5− | 2006 10 21 | 703 | 0.7− | 0.6− |
| 2001 11 19 | 704 | 0.7+ | 0.2− | 2003 02 04 | 704 | 0.5− | 0.8− | 2006 10 21 | 703 | 1.3− | 1.0− |
| 2001 11 19 | 704 | 0.5+ | 0.4− | 2003 02 04 | 704 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.4− | 0.1− |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2003 02 04 | 704 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.6− | 0.3− |
| 2001 11 19 | 704 | 0.8+ | 0.9+ | 2003 02 04 | 704 | 0.4+ | 0.6+ | 2006 10 28 | 703 | 0.4+ | 0.1− |
| 2001 11 19 | 704 | 0.0 | 0.1+ | 2003 02 04 | 704 | 0.7+ | 0.0 | 2006 10 28 | 703 | (0.9+ | 2.0−) |
| 2001 11 19 | 704 | 0.9+ | 0.1− | 2003 02 07 | 704 | 0.6+ | 0.9+ | 2006 10 28 | 703 | 0.8− | 1.4+ |
| 2001 11 19 | 704 | 0.3+ | 0.2+ | 2003 02 07 | 704 | 0.2+ | 1.0− | 2006 10 28 | 703 | 0.3− | 0.4+ |
| 2001 11 19 | 704 | 0.3+ | 0.5+ | 2003 02 07 | 704 | 0.6− | 0.3− | 2006 11 11 | 644 | 0.6− | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 0.9+ | 2003 02 07 | 704 | (1.4− | 1.9+) | 2006 11 11 | 644 | 0.3− | 0.4+ |
| 2001 11 19 | 699 | 0.8+ | 0.1− | 2003 03 07 | 644 | 0.3+ | 0.5+ | 2006 11 11 | 644 | 0.1− | 0.2+ |
| 2001 11 19 | 699 | 1.0+ | 0.3+ | 2003 03 07 | 644 | 0.2+ | 0.3− | | | | |

**(140656)∗ 2001 UT$_{37}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.47273 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19276633 | $\omega$ | 44.99636 | | +0.32255745 | +0.93665073 | |
| $a$ | 2.9678955 | $\Omega$ | 244.26732 | | −0.90548722 | +0.26331233 | |
| $e$ | 0.0881858 | $i$ | 8.71775 | | −0.27577091 | +0.23098056 | |
| $P$ | 5.11 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 04 | 644 | 0.6− | 0.7+ | 2001 11 10 | 704 | 0.3− | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.0 | |
| 2001 08 04 | 644 | 0.4− | 0.6+ | 2001 11 10 | 704 | 0.7− | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.0 | |
| 2001 08 04 | 644 | 0.7− | 0.8+ | 2001 11 10 | 704 | 1.1− | 0.2− | 2006 09 06 | 644 | 0.0 | 0.1− | |
| 2001 08 28 | 699 | 0.1− | 1.4+ | 2001 11 10 | 704 | 0.3− | 0.1− | 2006 09 15 | 683 | (0.4+ | 3.7−) | |
| 2001 08 28 | 699 | 0.3− | 0.3+ | 2001 11 10 | 704 | 0.0 | 0.3+ | 2006 09 15 | 683 | (2.2+ | 1.2−) | |
| 2001 08 28 | 699 | 0.6+ | 0.4+ | 2004 01 28 | 704 | (1.7+ | 1.3+) | 2006 09 15 | 683 | 1.2+ | 0.5− | |
| 2001 08 28 | 699 | 0.9+ | 0.8+ | 2004 01 28 | 704 | (1.8+ | 1.7+) | 2006 09 16 | 703 | 0.2+ | 0.2− | |
| 2001 09 10 | 704 | 0.5+ | 0.5+ | 2004 01 28 | 704 | 1.4+ | 0.2+ | 2006 09 16 | 683 | 0.3+ | 0.6− | |
| 2001 09 10 | 704 | 1.4+ | 0.8+ | 2004 01 28 | 704 | 1.0+ | 0.6+ | 2006 09 16 | 703 | 0.2− | 0.5− | |
| 2001 09 10 | 704 | 1.1+ | 0.1− | 2004 01 28 | 704 | (1.6+ | 0.5−) | 2006 09 16 | 703 | 0.4− | 0.1− | |
| 2001 09 10 | 704 | 0.2+ | 0.4− | 2004 02 17 | 703 | 0.6− | 0.7+ | 2006 09 16 | 683 | 0.5+ | 1.1− | |
| 2001 09 10 | 704 | (2.0+ | 0.1+) | 2004 02 17 | 703 | 0.6+ | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.4− | |
| 2001 09 19 | 699 | 0.0 | 0.3+ | 2004 02 17 | 703 | 0.6− | 0.5+ | 2006 09 16 | 683 | 0.7+ | 0.1− | |
| 2001 09 19 | 699 | 0.3− | 0.0 | 2004 02 17 | 703 | 0.6− | 0.7+ | 2006 09 17 | 683 | 0.4− | 0.5+ | |
| 2001 09 19 | 699 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.4+ | 1.1+ | 2006 09 17 | 683 | 0.4− | 0.5− | |
| 2001 09 19 | 699 | 0.4+ | 0.3+ | 2004 02 19 | 704 | 1.5+ | 1.2− | 2006 09 17 | 683 | 0.3− | 0.0 | |
| 2001 09 24 | 644 | 0.7− | 0.3+ | 2004 02 19 | 704 | 0.1− | 0.3+ | 2006 09 18 | 683 | 0.1− | 0.4− | |
| 2001 09 24 | 644 | 0.7− | 0.2+ | 2004 02 19 | 704 | 0.5+ | 0.9+ | 2006 09 18 | 683 | 0.8− | 0.8− | |
| 2001 09 24 | 644 | 0.5− | 0.2+ | 2004 03 16 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 683 | 0.6− | 0.0 | |
| 2001 09 25 | 704 | 0.1+ | 0.6− | 2004 03 16 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | |
| 2001 09 25 | 704 | 0.1− | 0.9− | 2004 03 16 | 704 | 0.6− | 0.8+ | 2006 09 19 | 699 | 0.5+ | 0.1+ | |
| 2001 09 25 | 704 | 0.1− | 0.2− | 2004 03 16 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2004 03 16 | 704 | 0.9− | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.1− | |
| 2001 09 25 | 704 | 1.0− | 0.4− | 2004 03 27 | 703 | 0.3− | 1.0+ | 2006 09 22 | 683 | 1.2+ | 0.3− | |
| 2001 09 26 | 704 | 0.1− | 1.2+ | 2004 03 27 | 703 | 0.6+ | 0.6+ | 2006 09 22 | 683 | 0.5+ | 0.6+ | |
| 2001 09 26 | 704 | 0.5− | 0.6+ | 2004 03 27 | 703 | (0.7− | 1.6+) | 2006 09 22 | 683 | 0.5+ | 0.6+ | |
| 2001 09 26 | 704 | 0.4+ | 0.2+ | 2004 03 27 | 703 | 1.4+ | 1.4+ | 2006 09 27 | 703 | 0.2− | 0.8− | |
| 2001 09 26 | 704 | 0.2+ | 0.7+ | 2005 02 14 | 809 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.4− | 0.9+ | |
| 2001 09 26 | 704 | 0.4+ | 1.1+ | 2005 02 14 | 809 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.1− | 0.4− | |
| 2001 09 29 | 644 | 0.1− | 0.2+ | 2005 02 14 | 809 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.1− | 0.3− | |
| 2001 09 29 | 644 | 0.1+ | 0.4+ | 2005 02 14 | 809 | 0.6− | 0.4− | 2006 09 29 | 699 | 0.5+ | 0.2− | |
| 2001 09 29 | 644 | 0.0 | 0.6+ | 2005 06 17 | G96 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.3− | |
| 2001 10 17 | 704 | 1.4− | 1.2+ | 2005 06 17 | G96 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.3+ | |
| 2001 10 17 | 704 | 1.0− | 0.1+ | 2005 06 17 | G96 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.1− | 0.5+ | |
| 2001 10 17 | 704 | 0.2+ | 0.4+ | 2005 06 17 | G96 | 0.2+ | 0.4+ | 2006 10 03 | 703 | 1.2− | 0.8+ | |
| 2001 10 17 | 704 | 0.1+ | 0.5+ | 2005 06 23 | 644 | 0.1− | 0.3+ | 2006 10 03 | 703 | 0.5− | 0.3+ | |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2005 06 23 | 644 | 0.2− | 0.5+ | 2006 10 03 | 703 | 0.7+ | 0.2− | |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2005 06 23 | 644 | 0.0 | 0.6+ | 2006 10 03 | 703 | 0.8− | 0.1+ | |
| 2001 10 20 | 704 | 0.3+ | 0.8− | 2005 07 26 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.0 | |
| 2001 10 20 | 704 | 0.0 | 0.5+ | 2005 07 26 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.4+ | |
| 2001 10 20 | 704 | 0.7− | 0.7− | 2005 07 26 | 644 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | |
| 2001 10 20 | 704 | 0.2+ | 0.4+ | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 1.1− | 1.1+ | |
| 2001 10 20 | 704 | 0.5− | 0.4− | 2005 08 04 | 644 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.1− | |
| 2001 10 20 | 704 | 1.0+ | 0.5− | 2005 08 04 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.4− | |
| 2001 10 20 | 704 | 0.6− | 0.2− | 2006 08 29 | 699 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.6− | |
| 2001 10 20 | 704 | 0.4+ | 0.1− | 2006 08 29 | 699 | 0.2+ | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.0 | |
| 2001 10 20 | 704 | 0.6+ | 0.4+ | 2006 08 29 | 699 | 0.2+ | 0.3+ | 2006 10 24 | 644 | 0.2− | 0.1+ | |
| 2001 10 21 | 704 | 0.5+ | 0.8+ | 2006 08 29 | 699 | 0.0 | 0.7+ | 2006 10 24 | 644 | 0.2− | 0.1+ | |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2006 08 31 | 704 | 0.1− | 1.1+ | 2006 10 27 | 691 | 0.3+ | 0.7− | |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2006 08 31 | 704 | 1.4− | 0.2− | 2006 10 27 | 691 | 0.7+ | 0.2+ | |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2006 08 31 | 704 | (2.1− | 0.2−) | 2006 10 27 | 691 | 0.1+ | 0.2+ | |
| 2001 10 21 | 704 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.1− | 0.1− | | | | | |

**(140657)∗ 2001 UC$_{39}$ = 1996 US$_2$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20581)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.33711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19226629 | $\omega$ | 336.90686 | | +0.92663091 | −0.37522286 | |
| $a$ | 2.9730391 | $\Omega$ | 45.15381 | | +0.34995871 | +0.83773186 | |
| $e$ | 0.1386065 | $i$ | 1.91776 | | +0.13741926 | +0.39675325 | |
| $P$ | 5.13 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 14 | 691 | 1.2− | 0.5− | 2001 10 23 | 704 | 1.1− | 1.3+ | 2004 04 13 | 691 | 0.3+ | 0.5+ | |
| 1991 12 14 | 691 | 0.8+ | 0.4− | 2001 10 23 | 704 | (1.6− | 1.9+) | 2004 04 13 | 691 | 0.3− | 0.3+ | |
| 1991 12 14 | 691 | 0.0 | 0.4− | 2001 10 24 | 704 | 0.5− | 0.5+ | 2004 04 13 | 691 | 0.3+ | 0.4− | |
| 1996 10 17 | 691 | 1.2− | 0.1+ | 2001 10 24 | 704 | 0.3+ | 0.4− | 2006 09 06 | 644 | 0.4− | 0.2+ | |
| 1996 10 17 | 691 | 0.3− | 0.2− | 2001 10 24 | 704 | 1.0− | 1.1+ | 2006 09 06 | 644 | 0.4− | 0.2+ | |
| 1996 10 17 | 691 | 0.8− | 0.6− | 2001 10 24 | 704 | 0.4− | 0.9+ | 2006 09 06 | 644 | 0.1− | 0.4+ | |
| 1996 10 18 | 691 | 0.6+ | 0.1+ | 2001 10 24 | 704 | 1.4+ | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.3− | |
| 1996 10 18 | 691 | 0.4+ | 0.2+ | 2001 11 20 | 691 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.3− | |
| 1996 10 18 | 691 | 0.4+ | 0.3+ | 2001 11 20 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.4− | 0.2− | |
| 1996 10 21 | 691 | 0.7+ | 0.1+ | 2001 11 20 | 704 | 0.1+ | 1.4+ | 2006 09 26 | 691 | 0.1− | 0.1− | |
| 1996 10 21 | 691 | 0.7+ | 0.2− | 2001 11 20 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1− | |
| 1996 10 21 | 691 | 0.1+ | 1.2− | 2001 11 20 | 704 | 0.2− | 1.0+ | 2006 09 26 | 691 | 0.2− | 0.2+ | |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2001 11 20 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | |
| 2001 09 21 | 704 | 1.1+ | 0.0 | 2001 11 20 | 704 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.2− | |
| 2001 09 21 | 704 | 1.2+ | 0.3+ | 2001 11 20 | 704 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.1− | |
| 2001 09 21 | 704 | 0.2+ | 1.1− | 2001 11 21 | 704 | (0.1+ | 1.6−) | 2006 09 26 | G96 | 0.2− | 0.1− | |
| 2001 09 21 | 704 | 1.1− | 0.5+ | 2001 11 21 | 704 | 0.6− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1− | |
| 2001 10 17 | 704 | 0.3+ | 0.6+ | 2001 11 21 | 704 | 0.5− | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.2− | |
| 2001 10 17 | 704 | (1.7+ | 0.3+) | 2001 11 21 | 704 | 0.4− | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.2− | |
| 2001 10 17 | 704 | 0.0 | 1.0+ | 2003 01 01 | 291 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.1− | |
| 2001 10 17 | 704 | 0.7+ | 0.2+ | 2003 01 01 | 291 | 0.0 | 0.1− | 2006 10 02 | 691 | 1.0+ | 0.7+ | |
| 2001 10 20 | 704 | 0.2+ | 0.2+ | 2003 01 01 | 291 | 0.3− | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.1− | |
| 2001 10 20 | 704 | 0.7+ | 1.0+ | 2003 01 31 | 644 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.0 | |
| 2001 10 20 | 704 | 0.2+ | 0.4+ | 2003 01 31 | 644 | 0.3+ | 0.5− | 2006 11 14 | G96 | 0.2+ | 0.4− | |
| 2001 10 20 | 704 | 0.2+ | 0.7+ | 2003 01 31 | 644 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.0 | |
| 2001 10 20 | 704 | 0.4+ | 1.0+ | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.0 | |
| 2001 10 23 | 704 | 1.5− | 0.5+ | 2004 03 23 | 691 | 0.2+ | 0.1+ | | | | | |
| 2001 10 23 | 704 | (1.6− | 2.1+) | 2004 03 23 | 691 | 0.2− | 0.1+ | | | | | |

**(140658)∗ 2001 UL$_{39}$ = 1999 JL$_{130}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20581)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.56328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21206919 | $\omega$ | 323.52745 | | −0.95736822 | −0.27982561 | |
| $a$ | 2.7849517 | $\Omega$ | 200.57734 | | +0.28878545 | −0.93313944 | |
| $e$ | 0.1529855 | $i$ | 11.77423 | | −0.00700410 | −0.22571757 | |
| $P$ | 4.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.1+ | 0.6− | 2001 10 20 | 704 | 0.1− | 0.5− | 2003 02 01 | 699 | 0.6− | 0.1+ | |
| 1999 05 13 | 704 | 1.1− | 1.9+ | 2001 10 20 | 704 | 0.1+ | 0.5− | 2003 02 01 | 699 | (2.2− | 1.2+) | |
| 1999 05 13 | 704 | 0.7+ | 0.0 | 2001 11 20 | 704 | 0.4+ | 1.0+ | 2003 02 22 | 644 | 0.0 | 0.4+ | |
| 1999 05 13 | 704 | (1.8− | 2.2+) | 2001 11 20 | 704 | 0.2+ | 0.9+ | 2003 02 22 | 644 | 0.0 | 0.2+ | |
| 1999 05 17 | 704 | 0.5+ | 0.2+ | 2001 11 20 | 704 | (0.1− | 2.7+) | 2003 02 22 | 644 | 0.2+ | 0.3+ | |
| 1999 05 17 | 704 | (0.0 | 2.0+) | 2001 11 20 | 704 | 0.7− | 1.3+ | 2006 10 30 | 703 | (0.3+ | 2.3−) | |
| 1999 05 17 | 704 | 0.9+ | 0.0 | 2003 01 02 | 704 | 0.0 | 0.1+ | 2006 10 30 | 703 | 1.2− | 0.3+ | |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2003 01 02 | 704 | 0.1+ | 0.3+ | 2006 10 30 | 703 | 0.6+ | 0.9+ | |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2003 01 02 | 704 | (1.4− | 1.7+) | 2006 10 30 | 703 | (3.2− | 3.5+) | |
| 2001 09 19 | 704 | 0.1− | 1.3+ | 2003 01 25 | 644 | 0.0 | 0.8+ | 2006 11 19 | 703 | (1.0+ | 1.5−) | |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2003 01 25 | 644 | 0.6− | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.3− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.7+ | 0.2− | 2003 01 25 | 644 | 0.0 | 0.7+ | 2006 11 19 | 703 | 0.5+ | 0.2+ |
| 2001 09 19 | 704 | 0.9− | 0.5+ | 2003 01 28 | 704 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.6+ | 0.9− |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2003 01 28 | 704 | 0.1+ | 0.4− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2001 10 17 | 704 | 0.4+ | 0.2+ | 2003 01 28 | 704 | 1.0− | 1.0− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2001 10 17 | 704 | 0.7− | 1.0− | 2003 01 28 | 704 | 0.7− | 1.0− | 2006 11 25 | G96 | 0.6+ | 0.3− |
| 2001 10 20 | 704 | 0.5+ | 0.5+ | 2003 02 01 | 699 | 0.3− | 0.4+ | 2006 11 25 | G96 | 0.5+ | 0.1− |
| 2001 10 20 | 704 | 0.4+ | 0.1− | 2003 02 01 | 699 | 1.0+ | 0.1− | | | | |

**(140659)∗ 2001 US$_{39}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.24220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19185447 | $\omega$ | 47.25490 | | −0.73186884 | −0.68049152 | |
| $a$ | 2.9772920 | $\Omega$ | 89.82853 | | +0.61421242 | −0.68164751 | |
| $e$ | 0.1683259 | $i$ | 2.06573 | | +0.29514592 | −0.26886420 | |
| $P$ | 5.14 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 08 | 910 | 0.9− | 0.2− | 2003 01 09 | 704 | 0.2− | 0.4+ | 2003 03 08 | 704 | 0.4+ | 0.4+ |
| 1997 12 08 | 910 | 1.1− | 0.2− | 2003 01 26 | 699 | 0.4+ | 0.3− | 2003 03 08 | 704 | 0.1− | 1.1+ |
| 1997 12 08 | 910 | 0.6− | 0.1+ | 2003 01 26 | 699 | 0.6+ | 0.7+ | 2003 05 01 | 704 | 0.3+ | 0.3− |
| 1998 03 03 | 704 | 0.2− | 0.8+ | 2003 01 26 | 699 | 1.3− | 0.4+ | 2003 05 01 | 704 | 0.5+ | 1.2+ |
| 1998 03 03 | 704 | 1.6− | 1.7+ | 2003 01 26 | 699 | 0.2− | 0.9− | 2003 05 01 | 704 | (1.1− | 1.6+) |
| 1998 03 03 | 704 | (2.3+ | 1.2+) | 2003 01 27 | 704 | 0.7− | 0.2+ | 2003 05 01 | 704 | 1.2− | 1.4+ |
| 1998 03 03 | 704 | (4.5− | 0.4−) | 2003 01 27 | 704 | 0.1− | 0.4− | 2003 05 01 | 704 | 0.5− | 0.1+ |
| 1998 03 21 | 691 | 0.1− | 0.2− | 2003 01 27 | 704 | 0.5− | 0.3− | 2004 05 16 | 704 | 0.4− | 1.1+ |
| 1998 03 21 | 691 | 0.4+ | 0.2− | 2003 01 27 | 704 | 0.7− | 0.0 | 2004 05 16 | 704 | 0.0 | 0.4− |
| 1998 03 21 | 691 | 0.2+ | 0.2− | 2003 01 27 | 704 | 0.3− | 0.4− | 2004 05 16 | 704 | 0.7+ | 0.7+ |
| 1998 04 20 | 691 | 0.3− | 0.3− | 2003 02 01 | 704 | 0.8+ | 0.3+ | 2004 05 16 | 704 | 0.4− | 0.0 |
| 1998 04 20 | 691 | 0.4− | 0.2− | 2003 02 01 | 704 | 1.2+ | 0.5+ | 2004 06 22 | 291 | 0.0 | 0.7+ |
| 1998 04 20 | 691 | 0.1− | 0.2− | 2003 02 01 | 704 | 0.7+ | 0.2+ | 2004 06 22 | 291 | 0.1+ | 0.7+ |
| 1998 04 27 | 691 | 0.6+ | 0.3− | 2003 02 01 | 704 | 0.5+ | 0.2+ | 2004 06 22 | 291 | 0.2+ | 0.5+ |
| 1998 04 27 | 691 | 0.1+ | 0.0 | 2003 02 01 | 704 | 0.9+ | 1.2+ | 2006 09 14 | 703 | 1.2− | 0.3+ |
| 1998 04 27 | 691 | 0.4+ | 0.3− | 2003 02 03 | 644 | 0.0 | 1.1+ | 2006 09 14 | 703 | 1.0− | 0.3− |
| 2001 09 24 | 704 | 0.1− | 1.1+ | 2003 02 03 | 704 | 0.4+ | 0.5− | 2006 09 14 | 703 | 0.0 | 0.6+ |
| 2001 09 24 | 704 | 0.8− | 0.7− | 2003 02 03 | 704 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.2− |
| 2001 09 24 | 704 | 1.0− | 0.1+ | 2003 02 03 | 644 | 0.1− | 1.1+ | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2001 09 24 | 704 | 0.8− | 0.2+ | 2003 02 03 | 704 | (1.7+ | 1.3+) | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2001 09 24 | 704 | 0.3− | 0.6+ | 2003 02 03 | 704 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.6+ | 0.3+ | 2003 02 03 | 704 | 0.6+ | 0.8− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.9+ | 0.2− | 2003 02 03 | 644 | 0.0 | 1.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.3+ | 0.4− | 2003 02 04 | 699 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.1− | 0.3− | 2003 02 04 | 699 | 0.3+ | 0.4+ | 2006 10 15 | 291 | 0.1+ | 0.3+ |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2003 02 04 | 699 | 0.2+ | 0.1− | 2006 10 15 | 291 | 0.2+ | 0.3+ |
| 2001 10 18 | 644 | 0.5− | 0.1+ | 2003 02 04 | 704 | 0.0 | 0.2− | 2006 10 15 | 291 | 0.0 | 0.2+ |
| 2001 10 18 | 644 | 0.3− | 0.0 | 2003 02 04 | 699 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.5− | 0.0 |
| 2001 10 18 | 644 | 0.2− | 0.2+ | 2003 02 04 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.2+ |
| 2001 10 20 | 704 | 0.1+ | 0.3+ | 2003 02 04 | 704 | 1.0− | 0.2+ | 2006 10 21 | 703 | (2.1+ | 1.7−) |
| 2001 10 20 | 704 | 0.4+ | 0.2− | 2003 02 04 | 704 | 0.3− | 0.3− | 2006 10 21 | 703 | 1.2+ | 0.4+ |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2003 02 04 | 704 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 10 20 | 704 | 0.1+ | 0.0 | 2003 02 08 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2003 02 08 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | 0.1− | 0.3− | 2003 02 08 | 704 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.3+ | 0.2+ | 2003 02 08 | 704 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2001 10 24 | 704 | 0.2− | 0.8− | 2003 02 08 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.6− |
| 2001 10 24 | 704 | 0.1+ | 0.7− | 2003 02 19 | 608 | 0.2− | 0.2+ | 2006 10 25 | A44 | 0.4+ | 0.5+ |
| 2001 11 20 | 704 | 0.8− | 0.6+ | 2003 02 19 | 608 | 0.4+ | 0.5+ | 2006 10 25 | A44 | 0.4+ | 0.6+ |
| 2001 11 20 | 704 | 0.1− | 0.8+ | 2003 02 19 | 608 | 0.2+ | 0.4− | 2006 10 30 | A44 | (0.2− | 2.0+) |
| 2001 11 20 | 704 | 1.0− | 1.1+ | 2003 02 21 | 644 | 0.2− | 0.0 | 2006 10 30 | A44 | 0.0 | 0.5+ |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2003 02 21 | 644 | 0.0 | 0.3− | 2006 10 30 | A44 | 0.7− | 0.5+ |
| 2001 11 21 | 704 | 0.2+ | 1.1+ | 2003 02 21 | 644 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 704 | 0.3− | 1.0+ | 2003 02 24 | 608 | 0.6+ | 0.8− | 2006 10 31 | G96 | 0.6+ | 0.4− |
| 2001 11 21 | 704 | 0.4+ | 0.2− | 2003 02 24 | 608 | 0.4+ | 0.8− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.3− | 0.4+ | 2003 02 24 | 608 | 0.1− | 0.9− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.5− | 0.7+ | 2003 03 06 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2003 03 06 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 1.1+ | 1.2− |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2003 03 06 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 1.7− | 1.3− |
| 2002 12 05 | 704 | 0.4+ | 0.2− | 2003 03 06 | 704 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.4− | 2.0− |
| 2002 12 05 | 704 | 0.9+ | 1.2+ | 2003 03 06 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2003 01 09 | 704 | 0.6− | 0.4+ | 2003 03 08 | 704 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2003 01 09 | 704 | 0.2+ | 1.0+ | 2003 03 08 | 704 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2003 01 09 | 704 | 0.8− | 0.6+ | 2003 03 08 | 704 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.3+ |

**(140660)∗ 2001 UH$_{42}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.84876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18762414 | $\omega$ | 66.46431 | | +0.13367965 | +0.97119183 | |
| $a$ | 3.0218778 | $\Omega$ | 213.17335 | | −0.98866319 | +0.11695878 | |
| $e$ | 0.1912690 | $i$ | 21.13266 | | −0.06837292 | +0.20762241 | |
| $P$ | 5.25 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 704 | 0.1+ | 0.5− | 2001 10 20 | 704 | 0.4− | 0.0 | 2005 05 12 | 699 | 0.5+ | 0.2+ |
| 2000 05 05 | 704 | 0.5+ | 0.3− | 2001 10 21 | 704 | 0.2− | 0.8+ | 2005 05 12 | G96 | 0.4− | 0.0 |
| 2000 05 05 | 704 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.2− | 0.2− | 2005 05 12 | G96 | 0.4− | 0.2− |
| 2000 05 05 | 704 | 0.2− | 0.3+ | 2001 10 21 | 704 | 0.0 | 1.2+ | 2005 05 12 | 699 | 0.0 | 0.1− |
| 2000 05 27 | 704 | 0.2− | 0.8− | 2001 10 21 | 704 | 1.0− | 1.1+ | 2005 05 12 | G96 | 0.3− | 0.0 |
| 2000 05 27 | 704 | 0.1+ | 1.3− | 2001 10 26 | 644 | 0.0 | 0.4+ | 2005 05 16 | 704 | 0.1+ | 0.3− |
| 2000 05 27 | 704 | 0.2+ | 0.5+ | 2001 10 26 | 644 | 0.1+ | 0.4+ | 2005 05 16 | 704 | 0.4+ | 0.1− |
| 2000 05 27 | 704 | 0.0 | 0.5− | 2001 10 26 | 644 | 0.1+ | 0.4+ | 2005 05 16 | 704 | 0.1− | 0.7+ |
| 2000 05 27 | 704 | 0.0 | 0.6− | 2001 11 10 | 704 | 1.0− | 0.3− | 2005 06 01 | 699 | 0.9+ | 0.6+ |
| 2001 08 26 | 699 | (0.1− | 1.5+) | 2001 11 10 | 704 | 1.2− | 0.5− | 2005 06 01 | 699 | 0.4− | 0.5− |
| 2001 08 26 | 699 | 0.3+ | 0.6− | 2001 11 10 | 704 | 1.2− | 0.1+ | 2005 06 01 | 699 | 0.3+ | 1.1+ |
| 2001 08 26 | 699 | 0.7+ | 0.3+ | 2001 11 10 | 704 | 1.1− | 0.8+ | 2005 06 01 | 699 | (1.8− | 0.5−) |
| 2001 08 26 | 699 | 0.6+ | 0.3− | 2005 04 05 | 644 | 0.0 | 0.4+ | 2005 06 25 | 644 | 0.1− | 0.2− |
| 2001 09 21 | 699 | 0.1− | 0.1− | 2005 04 05 | 644 | 0.1+ | 0.1+ | 2005 06 25 | 644 | 0.1+ | 0.1− |
| 2001 09 21 | 699 | 0.3− | 0.5− | 2005 04 05 | 644 | 0.2+ | 0.4+ | 2005 06 25 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 699 | 0.4− | 0.6+ | 2005 04 06 | 691 | 0.1+ | 0.1+ | 2005 06 26 | 644 | 0.4+ | 0.3+ |
| 2001 09 21 | 699 | 0.7− | 0.1+ | 2005 04 06 | 691 | 0.2− | 0.3+ | 2005 06 26 | 644 | 0.3+ | 0.0 |
| 2001 09 25 | 704 | 0.7+ | 0.1+ | 2005 04 06 | 691 | 0.0 | 0.1− | 2005 06 26 | 644 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.5+ | 0.1− | 2005 04 06 | 704 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.1+ | 0.4− |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2005 04 06 | 704 | 0.9− | 0.1+ | 2006 08 25 | 704 | 0.3+ | 0.2− |
| 2001 09 25 | 704 | 0.4+ | 0.4− | 2005 04 06 | 704 | 1.1− | 0.3+ | 2006 08 25 | 704 | 0.1+ | 0.9− |
| 2001 09 25 | 704 | 0.0 | 0.6− | 2005 04 06 | 704 | 0.6+ | 1.1+ | 2006 08 25 | 704 | (3.6− | 1.6−) |
| 2001 09 29 | 644 | 0.4+ | 1.0+ | 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.6− | 0.9− |
| 2001 09 29 | 644 | 0.4+ | 0.4+ | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 1.2+ | 0.3+ |
| 2001 09 29 | 644 | 0.9+ | 0.7+ | 2005 04 11 | 691 | 1.1+ | 0.5+ | 2006 09 01 | 704 | 0.5− | 0.1+ |
| 2001 10 13 | 644 | 0.0 | 0.6+ | 2005 04 14 | 608 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.8+ | 0.0 |
| 2001 10 13 | 644 | 0.6− | 0.7+ | 2005 04 14 | 608 | 0.5+ | 1.1+ | 2006 09 01 | 704 | (1.8+ | 0.9+) |
| 2001 10 13 | 644 | 0.3− | 0.5+ | 2005 04 14 | 608 | 0.1+ | 0.7+ | 2006 09 20 | 703 | (0.4+ | 2.0−) |
| 2001 10 17 | 704 | 0.7+ | 0.9+ | 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.9− | 0.4− |
| 2001 10 17 | 704 | 0.6+ | 0.4+ | 2005 04 15 | 691 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 1.1+ | 0.5− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 703 | (0.1+ | 1.8+) |
| 2001 10 19 | 704 | 1.1− | 0.4+ | 2005 05 08 | 703 | 1.1− | 0.5+ | 2006 09 27 | 703 | 0.0 | 0.2+ |
| 2001 10 19 | 704 | 0.2− | 0.1− | 2005 05 08 | 703 | 0.5− | 0.2− | 2006 09 27 | 703 | 0.0 | 0.4+ |
| 2001 10 19 | 704 | 0.0 | 0.1+ | 2005 05 08 | 703 | 1.0− | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.5− |
| 2001 10 19 | 704 | 0.1+ | 0.0 | 2005 05 08 | 703 | 1.0− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.6− |
| 2001 10 19 | 704 | 0.6+ | 0.5+ | 2005 05 08 | G96 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2001 10 19 | 704 | 1.1+ | 0.6− | 2005 05 08 | G96 | 0.6− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 2001 10 19 | 704 | 0.4− | 0.7− | 2005 05 08 | G96 | 1.5− | 1.1+ | 2006 10 17 | 703 | 0.8+ | 0.5− |
| 2001 10 20 | 704 | 0.2+ | 0.4+ | 2005 05 08 | G96 | 0.5− | 0.4− | 2006 10 23 | 703 | 0.1+ | 0.7+ |
| 2001 10 20 | 704 | 0.6− | 0.4+ | 2005 05 12 | 699 | 0.9− | 0.6+ | 2006 10 23 | 703 | 0.6− | 0.1+ |
| 2001 10 20 | 704 | 0.2− | 0.4+ | 2005 05 12 | 699 | 0.5+ | 0.1− | 2006 10 23 | 703 | 0.3− | 0.5+ |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2005 05 12 | G96 | 0.3− | 0.1− | 2006 10 23 | 703 | 0.4− | 0.2+ |

**(140661)∗ 2001 UY$_{42}$ = 2001 SO$_{251}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 22946)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.14931 | | (2000.0) | | | |
| $n$ | 0.19791182 | $\omega$ | 58.77597 | | −0.19894678 | −0.97957416 |
| $a$ | 2.9162285 | $\Omega$ | 42.73091 | | +0.88385126 | −0.19223259 |
| $e$ | 0.0256612 | $i$ | 2.46924 | | +0.42335225 | −0.05900077 |
| $P$ | 4.98 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.3+ | 0.1− | 2003 01 09 | 704 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 1991 10 13 | 691 | 0.1− | 0.6− | 2003 01 09 | 704 | 0.5+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 1991 10 13 | 691 | 0.0 | 0.6− | 2003 01 09 | 704 | 0.1+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.0 |
| 1996 11 07 | 691 | 0.2+ | 0.2− | 2003 01 30 | 699 | 0.7− | 1.2+ | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 1996 11 07 | 691 | 0.4+ | 0.3− | 2003 01 30 | 644 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.3+ |
| 1996 11 07 | 691 | 0.3+ | 0.2− | 2003 01 30 | 699 | 0.4− | 1.2+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2000 07 30 | 807 | 0.1− | 0.2+ | 2003 01 30 | 699 | 1.0− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2000 07 30 | 807 | 0.1− | 0.1+ | 2003 01 30 | 699 | 0.8− | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | (2.2− | 0.3+) | 2003 01 30 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 1.3− | 0.6+ | 2003 01 30 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2001 09 19 | 704 | (1.7− | 0.6+) | 2003 01 31 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 09 19 | 704 | 1.1− | 0.4+ | 2003 01 31 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 1.0− | 0.6+ | 2003 01 31 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 09 21 | 704 | (2.4− | 0.8+) | 2003 01 31 | 704 | 1.0+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | (2.1− | 0.9+) | 2003 02 01 | 704 | 0.5+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | (1.9− | 2.1+) | 2003 02 01 | 704 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 10 17 | 704 | (2.3− | 1.5+) | 2003 02 01 | 704 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 1.3− | 0.7+ | 2003 02 01 | 704 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 0.9+ | 0.8− | 2003 02 01 | 704 | 0.2− | 0.8+ | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2001 10 17 | 704 | 0.5− | 0.1+ | 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2001 10 20 | 704 | 0.2+ | 0.1− | 2004 04 24 | 691 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 10 20 | 704 | 0.0 | 0.2− | 2004 04 24 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 1.4+ | 0.8+ |
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2005 07 07 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.5+ |
| 2001 10 20 | 704 | 0.7− | 0.6− | 2005 07 07 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.7+ | 1.2+ | 2005 07 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2005 07 11 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2001 10 23 | 704 | 0.5+ | 0.4+ | 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2001 10 23 | 704 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2001 10 23 | 704 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2001 10 23 | 704 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.4+ | 0.0 |
| 2001 10 23 | 704 | (0.2− | 1.8+) | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2001 10 23 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.4+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.9− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2001 10 26 | 704 | 0.7+ | 1.4+ | 2006 09 30 | 703 | 0.5+ | 0.6+ | 2006 11 17 | 691 | 0.5+ | 0.3− |
| 2001 10 26 | 704 | 0.0 | 1.2+ | 2006 09 30 | 703 | 1.2− | 0.7+ | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2001 10 26 | 704 | 0.2+ | 1.2+ | 2006 10 04 | G96 | 0.6+ | 0.1− | 2006 11 17 | 703 | (1.6− | 0.7+) |
| 2001 10 26 | 704 | 0.9− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 1.2− | 0.7+ |
| 2001 11 20 | 704 | 0.8+ | 0.8− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 1.0− | 0.9+ |
| 2001 11 20 | 704 | 0.4+ | 0.5− | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | (2.0− | 0.1−) |
| 2001 11 20 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | 1.4− | 1.0+ |
| 2001 11 20 | 704 | 0.9+ | 0.8− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | (1.0− | 2.8+) |
| 2001 11 20 | 704 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.4− | 0.2+ | 2006 11 25 | 703 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 25 | 703 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 0.4+ | 1.1− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 25 | 703 | 0.8− | 0.7− |
| 2001 11 21 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.5+ | 2006 11 25 | 703 | 1.2− | 0.1− |
| 2003 01 09 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | | | |

**(140662)∗ 2001 UU$_{43}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.10022 | | (2000.0) | | | |
| $n$ | 0.23556087 | $\omega$ | 34.58034 | | −0.78847821 | −0.61263032 |
| $a$ | 2.5965735 | $\Omega$ | 107.54612 | | +0.55058017 | −0.74262644 |
| $e$ | 0.0556899 | $i$ | 3.28558 | | +0.27415979 | −0.27053662 |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 20 | 691 | 0.3+ | 0.7− | 2001 11 20 | 704 | 0.1− | 0.9+ | 2005 10 06 | 691 | 0.3− | 0.1+ |
| 1997 11 20 | 691 | 0.2− | 0.6− | 2001 11 20 | 704 | 0.2+ | 0.9+ | 2005 10 06 | 691 | 0.0 | 0.1+ |
| 1997 11 20 | 691 | 0.6+ | 0.7− | 2001 11 20 | 704 | 1.2− | 0.8+ | 2005 10 06 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.8− | 0.3− | 2001 11 20 | 704 | 0.8− | 0.7+ | 2005 10 07 | 703 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.6− | 0.4− | 2002 12 07 | 645 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.2+ | 0.6+ |
| 2001 09 21 | 704 | 0.9− | 0.1+ | 2002 12 07 | 645 | 0.1− | 0.0 | 2005 10 07 | 703 | 1.2− | 0.4− |
| 2001 10 17 | 704 | 0.1+ | 0.1+ | 2003 02 01 | 704 | 0.1− | 0.9+ | 2005 10 07 | 703 | 0.4− | 0.3− |
| 2001 10 17 | 704 | 0.1+ | 0.3+ | 2003 02 01 | 704 | 0.6+ | 1.0+ | 2005 10 12 | 691 | 0.1− | 0.0 |
| 2001 10 17 | 704 | (0.5+ | 2.1−) | 2003 02 01 | 704 | 0.2+ | 0.7− | 2005 10 12 | 691 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 1.4+ | 0.1− | 2003 02 28 | 608 | 0.2+ | 0.1+ | 2005 10 12 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.7+ | 0.0 | 2003 02 28 | 608 | 0.6+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.8− |
| 2001 10 20 | 704 | 1.1+ | 0.0 | 2003 02 28 | 608 | 0.8+ | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2001 10 20 | 704 | 1.5+ | 0.3+ | 2003 03 07 | 699 | 0.8+ | 1.2+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2001 10 23 | 704 | 0.9− | 0.1− | 2003 03 07 | 699 | 0.5+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2001 10 23 | 704 | 0.4− | 0.5− | 2003 03 07 | 699 | (0.0 | 1.6+) | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 10 23 | 704 | 0.4− | 0.0 | 2003 03 07 | 699 | 0.7+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 10 23 | 704 | 0.6− | 0.0 | 2005 09 22 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 10 23 | 704 | 0.1− | 0.4+ | 2005 09 22 | 644 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2001 10 24 | 704 | 0.4+ | 0.2+ | 2005 09 22 | 644 | 0.8+ | 0.2− | 2006 11 27 | 703 | 1.4+ | 1.2+ |
| 2001 10 24 | 704 | 0.4+ | 0.8− | 2005 09 24 | 644 | 0.6+ | 0.0 | 2006 11 27 | 703 | 0.7− | 0.1+ |
| 2001 10 24 | 704 | 0.4+ | 0.7− | 2005 09 24 | 644 | 0.4+ | 0.2+ | 2006 11 27 | 703 | 0.5+ | 1.0+ |
| 2001 10 24 | 704 | 0.6+ | 0.2− | 2005 09 24 | 644 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 1.1+ | 1.0+ |
| 2001 10 24 | 704 | 0.2+ | 0.2+ | 2005 09 25 | 691 | 0.4− | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2001 10 25 | 704 | 0.0 | 1.2− | 2005 09 25 | 691 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2001 10 25 | 704 | 0.1+ | 1.0+ | 2005 09 25 | 691 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2001 10 25 | 704 | 0.8− | 1.3+ | 2005 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2001 10 25 | 704 | 0.4− | 0.5+ | 2005 10 01 | 691 | 0.1− | 0.1+ | | | | |
| 2001 11 20 | 704 | (1.8+ | 0.8−) | 2005 10 01 | 691 | 0.1+ | 0.2+ | | | | |

**(140663)∗ 2001 UN$_{44}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 222.76796 | | (2000.0) | | | |
| $n$ | 0.23406645 | $\omega$ | 60.02834 | | −0.62699448 | +0.77900639 |
| $a$ | 2.6076138 | $\Omega$ | 171.13736 | | −0.72585155 | −0.58176582 |
| $e$ | 0.0378236 | $i$ | 1.93139 | | −0.28287357 | −0.23387512 |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.2− | 0.2− | 2001 11 21 | 704 | 0.0 | 0.4+ | 2003 03 12 | 644 | 0.1+ | 0.8+ |
| 1995 03 27 | 691 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.6− | 0.7+ | 2005 08 08 | 807 | 0.1− | 0.1+ |
| 1995 03 27 | 691 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.1− | 0.5− | 2005 09 24 | 691 | 0.1− | 0.0 |
| 2001 10 13 | 704 | 0.2+ | 0.7− | 2001 11 21 | 704 | 0.2+ | 0.8− | 2005 09 24 | 691 | 0.2− | 0.1− |
| 2001 10 13 | 704 | 0.1− | 0.6− | 2003 01 27 | 704 | 0.5− | 0.3− | 2005 09 24 | 691 | 0.3− | 0.1+ |
| 2001 10 13 | 704 | 0.1+ | 0.5+ | 2003 01 27 | 704 | 0.4− | 1.4− | 2005 09 29 | 644 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 1.0− | 0.7− | 2003 01 27 | 704 | 0.7− | 0.2− | 2005 09 29 | G96 | 0.3+ | 0.2+ |
| 2001 10 17 | 704 | 0.1− | 0.1+ | 2003 01 27 | 704 | 0.4+ | 0.8+ | 2005 09 29 | G96 | 0.3+ | 0.2+ |
| 2001 10 17 | 704 | 1.3+ | 0.5− | 2003 01 28 | 704 | 0.5+ | 1.1+ | 2005 09 29 | G96 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.4− | 0.9− | 2003 01 28 | 704 | (0.1− | 1.6+) | 2005 09 29 | 644 | 0.0 | 0.5+ |
| 2001 10 18 | 644 | 1.0− | 0.3+ | 2003 01 28 | 704 | (0.3− | 1.6+) | 2005 09 29 | G96 | 0.1− | 0.1+ |
| 2001 10 18 | 644 | 0.6− | 0.0 | 2003 01 28 | 704 | (1.0− | 3.2+) | 2005 09 29 | 644 | 0.1− | 0.2+ |
| 2001 10 18 | 644 | 0.8− | 0.0 | 2003 01 28 | 704 | (0.3− | 2.3+) | 2005 09 30 | 691 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.1+ | 2003 01 28 | 645 | 0.1− | 0.2− | 2005 09 30 | 691 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 0.1+ | 0.4+ | 2003 01 28 | 645 | 0.1− | 0.2− | 2005 09 30 | 691 | 0.3+ | 0.1+ |
| 2001 10 20 | 704 | 0.6+ | 0.4− | 2003 01 30 | 699 | 0.6− | 1.0+ | 2005 10 05 | 704 | 0.6+ | 0.5− |
| 2001 10 20 | 704 | 0.1− | 0.5− | 2003 01 30 | 699 | 0.1− | 0.4+ | 2005 10 05 | 704 | 0.4− | 0.2− |
| 2001 10 22 | 704 | 0.4− | 0.2+ | 2003 01 30 | 699 | 0.6+ | 0.7+ | 2005 10 05 | 704 | 0.4− | 0.5− |
| 2001 10 22 | 704 | 0.1− | 0.5+ | 2003 01 30 | 699 | 0.7+ | 1.0+ | 2005 10 05 | 704 | 0.1− | 0.6− |
| 2001 10 22 | 704 | 0.1− | 0.3− | 2003 01 31 | 704 | 0.2− | 0.3+ | 2005 10 06 | 699 | 0.2− | 1.1+ |
| 2001 10 22 | 704 | 0.2+ | 0.3− | 2003 01 31 | 704 | 0.7+ | 0.2+ | 2005 10 06 | 699 | 0.1+ | 0.0 |
| 2001 10 22 | 704 | 0.4− | 0.2+ | 2003 01 31 | 704 | 0.3+ | 0.3− | 2005 10 06 | 699 | 0.5− | 0.9+ |
| 2001 10 23 | 704 | 0.3+ | 0.1− | 2003 01 31 | 704 | 0.4+ | 0.1+ | 2005 10 06 | 699 | (0.1+ | 2.1−) |
| 2001 10 23 | 704 | 0.2− | 0.2+ | 2003 02 03 | 704 | 1.1+ | 0.2− | 2005 10 07 | 703 | 0.1− | 0.4− |
| 2001 10 23 | 704 | 0.1− | 1.0+ | 2003 02 03 | 704 | (0.1− | 1.6+) | 2005 10 07 | 703 | 0.6− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.2− | 0.2+ | 2003 02 03 | 704 | 0.8+ | 0.8+ | 2005 10 07 | 703 | 0.4− | 0.2+ |
| 2001 10 23 | 704 | 0.4+ | 0.1+ | 2003 02 03 | 704 | 0.5+ | 0.2− | 2005 10 07 | 703 | 0.3− | 0.1+ |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2003 02 03 | 704 | 0.9+ | 1.5+ | 2005 10 10 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 1.0+ | 0.5+ | 2003 02 03 | 704 | 0.4− | 0.7− | 2005 10 10 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.1+ | 0.3− | 2003 02 03 | 704 | 0.1+ | 0.8+ | 2005 10 10 | 691 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.3+ | 0.4+ | 2003 02 08 | 704 | 0.6+ | 0.3+ | 2005 10 28 | G96 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.4+ | 0.1+ | 2003 02 08 | 704 | 1.2− | 0.9+ | 2005 10 28 | G96 | 0.2− | 0.5− |
| 2001 10 25 | 644 | 0.1+ | 0.2− | 2003 02 08 | 704 | 0.2+ | 0.4+ | 2005 10 28 | G96 | 0.1− | 0.4− |
| 2001 10 25 | 644 | 0.4+ | 0.0 | 2003 02 08 | 704 | 0.1+ | 0.3+ | 2005 11 04 | 691 | 0.3+ | 0.2+ |
| 2001 10 25 | 644 | 0.1+ | 0.1+ | 2003 02 21 | 644 | 0.4+ | 0.3+ | 2005 11 04 | 691 | 0.0 | 0.2+ |
| 2001 10 26 | 704 | (1.6− | 0.2+) | 2003 02 21 | 644 | 0.0 | 0.2− | 2005 11 04 | 691 | 0.0 | 0.4+ |
| 2001 10 26 | 704 | 0.2+ | 1.0− | 2003 02 21 | 644 | 0.1− | 0.5+ | 2005 12 04 | G96 | 0.5+ | 0.2− |
| 2001 10 26 | 704 | (1.9+ | 1.3+) | 2003 02 22 | 699 | 0.1+ | 0.1− | 2005 12 04 | G96 | 0.0 | 0.3− |
| 2001 10 26 | 704 | 1.0+ | 0.3− | 2003 02 22 | 699 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.1− | 0.3− |
| 2001 11 09 | 704 | 0.6− | 0.1+ | 2003 02 22 | 699 | 0.3− | 0.4+ | 2005 12 04 | G96 | 1.0+ | 0.1+ |
| 2001 11 09 | 704 | 0.2+ | 0.3− | 2003 02 22 | 699 | 0.4− | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 11 09 | 704 | (0.6− | 1.9−) | 2003 03 06 | 644 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.7− |
| 2001 11 09 | 704 | 0.3+ | 1.3− | 2003 03 06 | 644 | 0.4+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 0.3+ | 2003 03 06 | 644 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2003 03 06 | 644 | 0.6+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2001 11 20 | 704 | 0.4+ | 0.5− | 2003 03 06 | 644 | 0.4+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.6− |
| 2001 11 20 | 704 | 0.0 | 0.9− | 2003 03 06 | 644 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.4+ | 0.4− | 2003 03 12 | 644 | 0.2+ | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2003 03 12 | 644 | 0.2+ | 0.8+ | | | | |

**(140664)∗ 2001 UG$_{45}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 242.07455 | | (2000.0) | | | |
| $n$ | 0.19007323 | $\omega$ | 103.81181 | | −0.81943940 | −0.54621280 |
| $a$ | 2.9958639 | $\Omega$ | 43.44400 | | +0.37770717 | −0.74254418 |
| $e$ | 0.1015981 | $i$ | 14.63123 | | +0.43111062 | −0.38765928 |
| $P$ | 5.19 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.5− | 1.0− | 2001 11 21 | 704 | 0.3− | 0.7− | 2004 05 13 | 644 | 0.0 | 0.3+ |
| 2001 09 26 | 704 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.3− | 0.7− | 2004 05 13 | 644 | 0.6+ | 0.9+ |
| 2001 09 26 | 704 | 0.3− | 0.1− | 2001 11 21 | 704 | 0.6− | 1.2− | 2004 05 13 | 644 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.2− | 0.4− | 2001 11 21 | 704 | 0.3− | 1.1− | 2004 05 22 | 704 | 0.3+ | 0.1− |
| 2001 10 17 | 704 | 0.6− | 0.6+ | 2001 12 09 | 699 | 0.6− | 0.1+ | 2004 05 22 | 704 | 0.4+ | 0.3− |
| 2001 10 17 | 704 | 0.2− | 0.9+ | 2001 12 09 | 699 | 1.2− | 0.2− | 2004 05 22 | 704 | 0.5− | 1.0+ |
| 2001 10 17 | 704 | 0.0 | 0.1− | 2001 12 09 | 699 | (0.5− | 1.9+) | 2005 08 05 | E12 | 0.3+ | 1.0+ |
| 2001 10 17 | 704 | 0.1− | 0.1+ | 2001 12 09 | 699 | 0.0 | 1.0+ | 2005 08 05 | E12 | 0.5− | 0.8+ |
| 2001 10 17 | 704 | 0.4− | 0.1+ | 2001 12 11 | 704 | 0.3+ | 0.2− | 2005 08 05 | E12 | 0.8− | 0.9+ |
| 2001 10 18 | 644 | 0.2+ | 0.2+ | 2001 12 11 | 704 | 0.9+ | 0.7− | 2005 08 05 | E12 | 0.0 | 0.5+ |
| 2001 10 18 | 644 | 0.1+ | 0.3+ | 2001 12 11 | 704 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.7+ |
| 2001 10 18 | 644 | 0.2+ | 0.2+ | 2001 12 11 | 704 | 1.2+ | 0.9+ | 2006 09 25 | 699 | 0.8+ | 0.2− |
| 2001 10 20 | 704 | 0.2+ | 0.3− | 2001 12 11 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 699 | 1.1− | 0.1+ |
| 2001 10 20 | 704 | 0.3+ | 0.2− | 2003 01 13 | 704 | 0.4+ | 0.7+ | 2006 09 25 | 699 | 0.6+ | 0.4− |
| 2001 10 20 | 704 | 0.6− | 0.8− | 2003 01 13 | 704 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.7− | 0.2+ |
| 2001 10 23 | 704 | 1.0+ | 0.7+ | 2003 01 13 | 704 | 0.1− | 0.7+ | 2006 10 01 | 704 | 1.0+ | 0.2+ |
| 2001 10 23 | 704 | 0.7+ | 0.6+ | 2003 01 13 | 704 | 0.2+ | 1.1+ | 2006 10 01 | 704 | 1.5+ | 0.6− |
| 2001 10 23 | 704 | 0.1+ | 0.1+ | 2003 01 13 | 704 | 0.0 | 1.1+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.7+ | 0.1+ | 2003 01 25 | 704 | 0.5+ | 0.2− | 2006 10 03 | G96 | 0.5+ | 0.2− |
| 2001 10 23 | 704 | 0.5+ | 0.1− | 2003 01 25 | 704 | 0.8+ | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.4− |
| 2001 10 24 | 704 | 0.4− | 0.1+ | 2003 01 25 | 704 | 0.5+ | 0.9+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.6− | 0.2+ | 2003 01 25 | 704 | 0.4+ | 1.1+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2003 01 25 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.5− | 0.2+ | 2003 01 27 | 645 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.5− | 0.1− | 2003 01 27 | 645 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.4− |
| 2001 10 26 | 704 | 0.4− | 0.2+ | 2003 02 08 | 699 | 1.3+ | 0.2− | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2001 10 26 | 704 | 0.1− | 0.3+ | 2003 02 08 | 699 | 0.4+ | 1.4+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 10 26 | 704 | 0.4− | 0.6+ | 2003 02 08 | 699 | 0.3+ | 1.1+ | 2006 10 21 | 703 | 0.0 | 0.3− |
| 2001 11 09 | 704 | 0.7− | 0.3+ | 2003 02 08 | 699 | 1.2+ | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 1.2− | 0.3+ | 2003 02 08 | 699 | 0.6+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2001 11 09 | 704 | 0.8− | 0.4+ | 2003 02 08 | 699 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.8− |
| 2001 11 09 | 704 | (1.6− | 1.2−) | 2003 02 08 | 699 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 09 | 704 | 0.6− | 0.4+ | 2003 02 08 | 699 | 0.1− | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 12 | 704 | 0.0 | 0.1− | 2003 03 03 | 644 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.5− | 0.4+ | 2003 03 03 | 644 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.6− |
| 2001 11 12 | 704 | 0.2+ | 0.8+ | 2003 03 03 | 644 | 0.6+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2001 11 12 | 704 | 0.1+ | 0.3+ | 2003 03 12 | 644 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.8− |
| 2001 11 12 | 704 | 0.4+ | 0.2+ | 2003 03 12 | 644 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2001 11 17 | 704 | 0.6− | 1.1+ | 2003 03 12 | 644 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.3− |
| 2001 11 17 | 704 | 0.1− | 0.9+ | 2004 04 25 | 704 | 1.1+ | 1.2+ | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2001 11 17 | 704 | 0.9− | 0.8+ | 2004 04 25 | 704 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 11 17 | 704 | 0.3+ | 0.8+ | 2004 04 25 | 704 | (1.3+ | 2.0+) | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2001 11 20 | 691 | 0.0 | 0.6+ | 2004 05 13 | 644 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.6− |
| 2001 11 20 | 691 | 0.1+ | 0.1+ | 2004 05 13 | 644 | 0.2+ | 0.8+ | 2006 11 17 | 703 | (2.1+ | 1.1−) |
| 2001 11 20 | 691 | 0.0 | 0.4+ | 2004 05 13 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 703 | (1.1+ | 2.9−) |

**(140665)∗ 2001 UH$_{45}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.32605 | | (2000.0) | | | |
| $n$ | 0.18144707 | $\omega$ | 214.85392 | | +0.50760618 | −0.85825595 |
| $a$ | 3.0900778 | $\Omega$ | 204.90205 | | +0.82572631 | +0.50968540 |
| $e$ | 0.0530155 | $i$ | 10.35900 | | +0.24599190 | +0.06014581 |
| $P$ | 5.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2001 11 09 | 704 | 0.4+ | 0.3− | 2006 09 18 | 704 | (2.2+ | 0.5−) |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2001 11 09 | 704 | (0.7+ | 1.7+) | 2006 09 18 | 704 | 0.6− | 1.0− |
| 2001 09 19 | 704 | 0.4+ | 0.6+ | 2001 11 20 | 704 | 0.2− | 0.3− | 2006 09 19 | 699 | 1.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.9+ | 0.1+ | 2001 11 20 | 704 | 0.9+ | 0.5+ | 2006 09 19 | 699 | (2.6+ | 1.0+) |
| 2001 09 19 | 704 | 0.8+ | 0.4+ | 2001 11 20 | 704 | 0.4− | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.9+ |
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2001 11 20 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 0.2+ | 1.5+ |
| 2001 09 30 | 049 | 0.9− | 0.4− | 2001 11 20 | 704 | 0.8− | 0.2+ | 2006 10 01 | 703 | 0.3+ | 0.3− |
| 2001 09 30 | 049 | 0.9− | 0.8− | 2003 01 28 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 703 | 0.0 | 0.8+ |
| 2001 09 30 | 049 | 1.0− | 0.3+ | 2003 01 28 | 704 | 0.5− | 0.4+ | 2006 10 01 | 703 | (0.7+ | 1.5+) |
| 2001 10 17 | 704 | 0.4+ | 0.0 | 2003 01 28 | 704 | 0.0 | 0.2+ | 2006 10 01 | 703 | 1.3+ | 1.4+ |
| 2001 10 17 | 704 | 0.9+ | 0.2+ | 2003 01 28 | 704 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.2− | 0.4+ | 2004 04 16 | 691 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 2001 10 17 | 704 | 1.0+ | 0.1+ | 2004 04 16 | 691 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.3+ | 0.2− | 2004 04 16 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.2+ | 0.4+ | 2004 04 19 | 691 | 0.1− | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2004 04 19 | 691 | 0.2− | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.7+ | 0.2− | 2004 04 19 | 691 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 22 | 704 | 0.4− | 0.2+ | 2004 05 15 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 2001 10 22 | 704 | 0.1− | 0.1− | 2004 05 15 | 691 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 10 22 | 704 | 0.9− | 0.2− | 2004 05 15 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.7+ |
| 2001 10 23 | 704 | 1.4− | 0.0 | 2006 08 29 | 703 | 0.3+ | 1.2− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.1− | 0.5+ | 2006 08 29 | 703 | 0.8− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.5− | 0.9+ | 2006 08 29 | 703 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 10 23 | 704 | 0.5− | 1.2+ | 2006 08 29 | 703 | 0.3− | 0.7− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.3− | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.7− | 0.0 |
| 2001 10 24 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.5− | 0.5+ |
| 2001 10 24 | 704 | 0.4+ | 1.1+ | 2006 09 17 | 703 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.4+ |
| 2001 11 09 | 704 | 0.8+ | 1.3+ | 2006 09 18 | 704 | (2.1+ | 1.1+) | | | | |
| 2001 11 09 | 704 | 0.0 | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.8− | | | | |

**(140666)∗ 2001 UO$_{46}$ = 7632 P-L**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20585)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.58583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19416299 | $\omega$ | 316.52689 | | +0.39027172 | −0.91942580 | |
| $a$ | 2.9536458 | $\Omega$ | 110.44810 | | +0.85823709 | +0.34425207 | |
| $e$ | 0.1295517 | $i$ | 2.96195 | | +0.33334230 | +0.19012288 | |
| $P$ | 5.08 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 10 22 | 675 | 0.0 | 0.0 | 2001 11 18 | 704 | 0.1− | 0.4− | 2004 05 13 | 691 | 0.1− | 0.6+ |
| 1960 10 25 | 675 | 0.1+ | 0.9+ | 2001 11 20 | 704 | (3.1− | 0.3+) | 2005 07 07 | 691 | 0.4+ | 0.3+ |
| 1960 10 26 | 675 | 0.2− | 0.1+ | 2001 11 20 | 704 | 0.4− | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.4+ |
| 1998 03 04 | 704 | (3.0− | 1.3−) | 2001 11 20 | 704 | 0.6− | 0.1− | 2005 07 07 | 691 | 0.1− | 0.2+ |
| 1998 03 04 | 704 | (3.1− | 0.9+) | 2001 11 20 | 704 | 0.6− | 0.4− | 2006 09 15 | 644 | 0.2− | 0.1− |
| 1998 03 04 | 704 | (2.1− | 0.7−) | 2001 12 11 | 704 | 0.2+ | 0.3− | 2006 09 15 | 644 | 0.1− | 0.3− |
| 1998 03 04 | 704 | 2.0− | 0.3− | 2001 12 11 | 704 | 0.0 | 0.0 | 2006 09 15 | 644 | 0.3+ | 0.2− |
| 2001 10 17 | 704 | 0.5− | 0.3− | 2001 12 11 | 704 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.3− | 2001 12 11 | 704 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 0.7+ | 0.1+ | 2001 12 11 | 704 | 0.5− | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.5− | 1.4+ | 2001 12 14 | 704 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2001 10 17 | 704 | 1.0+ | 0.4− | 2001 12 14 | 704 | 0.3− | 0.7+ | 2006 09 30 | 703 | (1.1− | 1.8−) |
| 2001 10 18 | 644 | 0.4+ | 0.1+ | 2001 12 14 | 704 | 0.5+ | 1.2+ | 2006 09 30 | 703 | (0.7+ | 1.8−) |
| 2001 10 18 | 644 | 0.5+ | 0.3+ | 2001 12 14 | 704 | 0.6− | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.4+ | 0.5+ | 2001 12 14 | 704 | 0.9− | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 10 20 | 704 | 0.3+ | 0.0 | 2003 02 01 | 704 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.3− |
| 2001 10 20 | 704 | 0.3− | 0.0 | 2003 02 01 | 704 | 0.7+ | 0.4− | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 10 20 | 704 | 0.1− | 0.2+ | 2003 02 01 | 704 | 1.3+ | 0.6− | 2006 10 17 | G96 | 0.2+ | 0.6− |
| 2001 10 20 | 704 | 0.1− | 0.5− | 2003 02 02 | 608 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.7− |
| 2001 10 22 | 704 | 0.0 | 0.9+ | 2003 02 02 | 608 | 0.1− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.5− |
| 2001 10 22 | 704 | 0.1− | 1.3+ | 2003 02 02 | 608 | 0.5+ | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.5− |
| 2001 10 22 | 704 | 0.5− | 1.3+ | 2003 02 04 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 10 22 | 704 | 0.4− | 0.9+ | 2003 02 04 | 704 | 0.7− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.4+ | 0.2+ | 2003 02 04 | 704 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | 0.5+ | 0.4+ | 2003 02 04 | 704 | 0.2− | 0.7+ | 2006 10 22 | 704 | (1.8+ | 1.6−) |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2003 02 22 | 644 | 0.1+ | 0.9+ | 2006 10 22 | 704 | (0.5+ | 2.1−) |
| 2001 10 23 | 704 | 0.3+ | 0.6+ | 2003 02 22 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 704 | 0.3+ | 1.4+ |
| 2001 10 23 | 704 | 0.1− | 0.6+ | 2003 02 22 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 704 | 1.2− | 1.0− |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2003 02 28 | 608 | 1.1+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.5− |
| 2001 10 24 | 704 | 0.2+ | 0.3− | 2003 02 28 | 608 | 0.9+ | 0.4− | 2006 11 01 | G96 | 0.5+ | 0.5− |
| 2001 10 24 | 704 | 0.3− | 0.9− | 2003 02 28 | 608 | 0.5+ | 0.9− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2003 03 06 | 699 | 1.0− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2003 03 06 | 699 | 0.7+ | 0.3+ | 2006 11 13 | 703 | 0.6− | 0.1+ |
| 2001 10 30 | 608 | 0.4− | 1.2− | 2003 03 06 | 699 | 0.5+ | 1.0+ | 2006 11 13 | 703 | 0.1+ | 0.2+ |
| 2001 10 30 | 608 | 0.3− | 0.8+ | 2003 03 06 | 699 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.4− |
| 2001 10 30 | 608 | 0.2− | 1.3+ | 2003 03 07 | 699 | 0.2− | 1.1+ | 2006 11 14 | 704 | 0.6+ | 0.7− |
| 2001 11 15 | 644 | 0.5− | 0.0 | 2003 03 07 | 699 | 0.2− | 1.2+ | 2006 11 14 | 704 | 0.3+ | 1.1+ |
| 2001 11 15 | 644 | 0.2− | 0.1− | 2003 03 07 | 699 | 1.3− | 0.6− | 2006 11 14 | 704 | 0.1− | 0.4− |
| 2001 11 15 | 644 | 0.4− | 0.1+ | 2003 03 07 | 704 | (1.1− | 2.5+) | 2006 11 14 | 704 | 0.6− | 0.8+ |
| 2001 11 17 | 704 | 0.3+ | 0.2+ | 2003 03 07 | 699 | 0.1− | 0.8+ | 2006 11 14 | 704 | 0.3+ | 0.1+ |
| 2001 11 17 | 704 | 0.3− | 0.2− | 2003 03 07 | 704 | 0.4+ | 0.4+ | 2006 11 20 | 704 | (1.0− | 5.0+) |
| 2001 11 17 | 704 | 0.1+ | 0.4+ | 2003 03 07 | 704 | 0.4+ | 1.0+ | 2006 11 20 | 704 | (2.1− | 4.1+) |
| 2001 11 18 | 704 | 0.3− | 0.4+ | 2003 03 07 | 704 | (0.2+ | 2.0+) | 2006 11 20 | 704 | (0.7− | 5.6+) |
| 2001 11 18 | 704 | 0.6− | 0.3+ | 2003 03 07 | 704 | 1.0+ | 0.5− | 2006 11 20 | 704 | (1.1− | 5.5+) |
| 2001 11 18 | 704 | 0.1+ | 0.2− | 2004 05 13 | 691 | 0.1− | 0.9+ | | | | |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2004 05 13 | 691 | 0.1+ | 0.6+ | | | | |

**(140667)∗ 2001 UT$_{47}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.35871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23587443 | $\omega$ | 231.50349 | | +0.88585007 | +0.45143340 | |
| $a$ | 2.5942718 | $\Omega$ | 101.42586 | | −0.38436107 | +0.84335335 | |
| $e$ | 0.2349363 | $i$ | 6.27493 | | −0.25987730 | +0.29148415 | |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 644 | 0.1+ | 0.1+ | 2001 11 20 | 699 | 0.3− | 0.4+ | 2005 10 03 | 703 | 0.1− | 0.4− |
| 2001 09 12 | 644 | 0.4+ | 0.7+ | 2001 11 20 | 704 | 0.3+ | 0.4+ | 2005 10 10 | 703 | 0.1+ | 0.1− |
| 2001 09 12 | 644 | 0.7+ | 0.6+ | 2001 11 24 | 704 | 0.1+ | 0.4− | 2005 10 10 | 703 | 0.3+ | 0.4− |
| 2001 10 13 | 699 | 0.2+ | 0.0 | 2001 11 24 | 704 | 0.1− | 0.5+ | 2005 10 10 | 703 | 0.1− | 0.1− |
| 2001 10 13 | 699 | 0.6+ | 0.2+ | 2001 11 24 | 704 | 1.2− | 0.1− | 2005 10 10 | 703 | 0.1+ | 0.2+ |
| 2001 10 13 | 699 | 0.5− | 0.6+ | 2001 11 24 | 704 | 0.8+ | 0.6− | 2005 10 26 | 704 | 0.7+ | 0.5− |
| 2001 10 13 | 699 | (1.6− | 0.4−) | 2001 11 24 | 704 | 0.0 | 1.0− | 2005 10 26 | 704 | 0.0 | 0.9+ |
| 2001 10 17 | 704 | 0.4− | 0.3+ | 2001 12 18 | 704 | 0.9− | 0.5+ | 2005 10 26 | 704 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.3− | 0.0 | 2001 12 18 | 704 | 1.0− | 1.0+ | 2005 11 03 | G96 | 0.3+ | 0.1− |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2001 12 18 | 704 | 0.6− | 1.1+ | 2005 11 03 | G96 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.3+ | 0.9+ | 2004 03 15 | 691 | 0.3+ | 0.3+ | 2005 11 03 | G96 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 1.3− | 0.9+ | 2004 03 15 | 691 | 0.3+ | 0.6+ | 2005 11 03 | G96 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.5+ | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.4+ | 2005 11 18 | 699 | 1.3− | 1.0+ |
| 2001 10 20 | 704 | 0.3+ | 0.2− | 2005 09 08 | 113 | 0.0 | 0.5+ | 2005 11 18 | 699 | 1.3+ | 0.4+ |
| 2001 10 20 | 704 | 0.3− | 0.4− | 2005 09 08 | 113 | 0.2− | 0.3+ | 2005 11 18 | 699 | 0.8+ | 0.4+ |
| 2001 10 20 | 704 | 0.5+ | 1.0− | 2005 09 08 | 113 | 0.1− | 0.3+ | 2005 11 18 | 699 | 1.1− | 0.0 |
| 2001 10 24 | 704 | 0.7− | 0.9− | 2005 09 08 | 113 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2001 10 24 | 704 | 0.2+ | 0.9+ | 2005 09 08 | 113 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.8− |
| 2001 10 24 | 704 | 1.2+ | 0.1+ | 2005 09 14 | 703 | 0.3− | 0.4− | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2001 11 18 | 608 | (7.5− | 10.7+) | 2005 09 14 | 703 | 0.2− | 0.7− | 2006 10 04 | G96 | 0.7− | 0.4− |
| 2001 11 18 | 608 | (8.1− | 11.8+) | 2005 09 14 | 703 | 0.8− | 0.4+ | 2006 11 16 | G96 | 0.4+ | 0.8− |
| 2001 11 18 | 608 | (8.3− | 13.6+) | 2005 09 14 | 703 | 0.8− | 0.6− | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2005 09 30 | 699 | 0.1+ | 1.0+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 699 | 0.6+ | 0.2+ | 2005 09 30 | 699 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.5− | 0.1+ | 2005 09 30 | 699 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.1− | 0.4+ |
| 2001 11 20 | 699 | 0.8− | 0.0 | 2005 09 30 | 699 | 0.3+ | 0.7− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.5− | 2005 10 03 | 703 | 0.3− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2001 11 20 | 699 | 0.2− | 0.3+ | 2005 10 03 | 703 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2005 10 03 | 703 | 0.7+ | 0.2− | | | | |

**(140668)∗ 2001 UG$_{48}$ = 1999 JU$_{137}$ = 2001 UL$_{145}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20587)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.66980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18091516 | $\omega$ | 246.72817 | | +0.64100282 | +0.74952985 | |
| $a$ | 3.0961315 | $\Omega$ | 64.19610 | | −0.61990289 | +0.63254250 | |
| $e$ | 0.0795508 | $i$ | 10.57924 | | −0.45258788 | +0.19517940 | |
| $P$ | 5.45 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.2+ | 1.3− | 2001 11 19 | 608 | 0.0 | 0.8− | 2004 03 23 | 704 | 1.1+ | 0.0 |
| 1999 05 13 | 704 | 0.5+ | 0.1− | 2001 11 19 | 608 | 0.1− | 0.9− | 2004 03 23 | 704 | 0.1+ | 1.2+ |
| 1999 05 13 | 704 | (1.3+ | 2.4+) | 2001 11 20 | 704 | 0.5+ | 0.7− | 2004 03 28 | 703 | 0.8− | 0.3+ |
| 1999 05 13 | 704 | (3.6+ | 1.0+) | 2001 11 20 | 704 | 1.1+ | 0.5− | 2004 03 28 | 703 | 0.6+ | 1.0− |
| 1999 05 14 | 703 | 1.6− | 1.6+ | 2001 11 20 | 704 | 0.5+ | 0.7− | 2004 03 28 | 703 | 0.4+ | 0.9+ |
| 1999 05 14 | 703 | 0.1+ | 0.1+ | 2001 11 20 | 704 | 0.8+ | 0.4− | 2004 03 28 | 703 | 0.8+ | 0.7+ |
| 1999 05 14 | 703 | 0.0 | 1.4+ | 2001 11 20 | 704 | 0.7+ | 0.8− | 2006 08 18 | 291 | 0.6− | 0.3+ |
| 1999 05 14 | 703 | (1.6+ | 4.3+) | 2001 11 21 | 704 | 0.4+ | 1.2− | 2006 08 18 | 291 | 0.5− | 0.3+ |
| 2001 10 17 | 704 | (0.8− | 1.5+) | 2001 11 21 | 704 | 0.9+ | 1.0− | 2006 08 18 | 291 | 0.4− | 0.2+ |
| 2001 10 17 | 704 | 0.4− | 0.9− | 2001 11 21 | 704 | 0.3+ | 0.3− | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.2+ | 0.7− | 2006 09 13 | 644 | 0.0 | 0.6+ |
| 2001 10 17 | 704 | 0.2+ | 0.3+ | 2001 11 21 | 704 | 0.2+ | 0.4− | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 0.7− | 2001 11 22 | 644 | 0.2− | 0.4+ | 2006 09 17 | 699 | 1.1+ | 1.0+ |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2001 11 22 | 644 | 0.7− | 0.5+ | 2006 09 17 | 699 | 0.6− | 0.3− |
| 2001 10 20 | 704 | 0.2+ | 0.3− | 2001 11 22 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 699 | 0.4− | 0.8− |
| 2001 10 23 | 704 | 0.3− | 0.8+ | 2001 12 09 | 691 | 0.3− | 0.6+ | 2006 09 17 | 699 | (1.6− | 0.5−) |
| 2001 10 23 | 704 | 1.3− | 0.8− | 2001 12 09 | 691 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.5+ | 0.4− |
| 2001 10 23 | 704 | 0.1+ | 0.5+ | 2001 12 09 | 691 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.9+ |
| 2001 10 23 | 704 | 1.2− | 0.2+ | 2001 12 11 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.2− | 0.9+ |
| 2001 10 23 | 704 | 0.1+ | 0.7+ | 2001 12 11 | 704 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.1− | 0.3+ | 2001 12 11 | 704 | 0.4− | 0.0 | 2006 09 25 | 703 | (0.6+ | 1.8+) |
| 2001 10 24 | 704 | 0.1+ | 0.0 | 2001 12 11 | 704 | 0.7− | 0.4+ | 2006 09 25 | 703 | (0.6+ | 1.9+) |
| 2001 10 24 | 704 | 0.1− | 0.7+ | 2001 12 14 | 704 | 0.5+ | 1.1+ | 2006 09 25 | 703 | (1.5+ | 2.3+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.1− | 1.2+ | 2001 12 14 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 703 | (0.9+ | 1.5+) |
| 2001 10 24 | 704 | 0.7+ | 1.4+ | 2001 12 14 | 704 | 0.5− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.9+ |
| 2001 10 25 | 644 | 0.4− | 0.3+ | 2001 12 14 | 704 | 0.1+ | 0.8− | 2006 10 21 | 703 | 0.5− | 0.6+ |
| 2001 10 25 | 644 | 0.2+ | 0.4+ | 2001 12 14 | 704 | 1.0− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2001 10 25 | 644 | 0.1− | 0.6+ | 2004 03 15 | 704 | (1.9+ | 0.1+) | 2006 10 21 | 703 | 0.4+ | 0.3+ |
| 2001 11 10 | 704 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.0 | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2001 11 10 | 704 | 0.3+ | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.7+ |
| 2001 11 10 | 704 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.4+ | 1.3+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2001 11 10 | 704 | 0.2− | 0.8− | 2004 03 15 | 704 | 0.7+ | 1.3+ | 2006 10 23 | 644 | 0.6− | 0.3+ |
| 2001 11 10 | 704 | 0.1+ | 0.1+ | 2004 03 21 | 699 | 1.2+ | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 11 17 | 704 | (0.0 | 1.5−) | 2004 03 21 | 699 | 1.3+ | 1.4+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2001 11 17 | 704 | 0.3− | 1.4− | 2004 03 21 | 699 | 1.4− | 0.0 | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2001 11 17 | 704 | (0.4+ | 1.8−) | 2004 03 21 | 699 | (1.0− | 1.7+) | 2006 10 28 | 703 | 1.0− | 0.0 |
| 2001 11 17 | 704 | (0.2+ | 1.6−) | 2004 03 23 | 704 | 0.5+ | 1.3+ | 2006 10 28 | 703 | 1.3+ | 0.3+ |
| 2001 11 19 | 608 | 0.1+ | 0.6− | 2004 03 23 | 704 | 1.0+ | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.3+ |

**(140669)∗ 2001 UV$_{48}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.00608 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18031686 | $\omega$ | 316.50925 | | +0.78375764 | −0.59175398 | |
| $a$ | 3.1029765 | $\Omega$ | 80.71545 | | +0.60920425 | +0.67345004 | |
| $e$ | 0.0934209 | $i$ | 11.01425 | | +0.12080627 | +0.44304884 | |
| $P$ | 5.47 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.2− | 0.1+ | 2001 11 20 | 704 | 0.3+ | 0.1− | 2003 02 26 | 704 | 0.3− | 0.5− |
| 2001 08 20 | 644 | 0.2− | 0.1+ | 2001 11 20 | 704 | (0.0 | 2.1+) | 2004 03 16 | 704 | 1.1+ | 0.4− |
| 2001 08 20 | 644 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.8− | 0.4+ | 2004 03 16 | 704 | 0.5+ | 1.0+ |
| 2001 08 28 | 644 | 0.3− | 0.9+ | 2001 11 20 | 704 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.4+ |
| 2001 08 28 | 644 | 0.2− | 0.8+ | 2001 11 24 | 704 | (3.2+ | 1.4−) | 2004 03 16 | 704 | 0.5+ | 0.7+ |
| 2001 08 28 | 644 | 0.2+ | 0.5+ | 2001 11 24 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 699 | (1.0− | 1.6+) |
| 2001 09 14 | 644 | 0.0 | 0.3− | 2001 11 24 | 704 | 0.2− | 0.5− | 2004 03 27 | 699 | 0.5+ | 1.1+ |
| 2001 09 14 | 644 | 0.1+ | 0.1+ | 2001 11 24 | 704 | 0.0 | 0.1− | 2004 03 27 | 699 | 0.9+ | 0.2+ |
| 2001 09 14 | 644 | 0.1− | 0.3− | 2001 11 24 | 704 | 0.3+ | 0.2− | 2004 03 27 | 699 | 0.4+ | 0.4+ |
| 2001 10 13 | 699 | (2.7− | 0.5−) | 2001 12 09 | 699 | 0.3− | 0.2+ | 2004 03 31 | 691 | 0.2− | 0.3+ |
| 2001 10 13 | 699 | 0.9− | 0.3+ | 2001 12 09 | 699 | 0.1− | 0.3+ | 2004 03 31 | 691 | 0.1+ | 0.2+ |
| 2001 10 13 | 699 | 0.4− | 0.9+ | 2001 12 09 | 699 | 0.7+ | 0.1+ | 2004 03 31 | 691 | 0.1− | 0.5+ |
| 2001 10 13 | 699 | 0.0 | 0.7+ | 2001 12 09 | 699 | 0.8− | 1.4+ | 2004 05 14 | 704 | 0.4+ | 1.4+ |
| 2001 10 17 | 704 | 0.3− | 0.9+ | 2001 12 11 | 704 | 0.4− | 1.0− | 2004 05 14 | 704 | 0.3+ | 0.2+ |
| 2001 10 17 | 704 | 0.2− | 0.3− | 2001 12 11 | 704 | 0.9− | 0.9− | 2004 05 14 | 704 | 1.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.9− | 1.2− | 2004 05 14 | 704 | 0.0 | 0.7+ |
| 2001 10 17 | 704 | 0.2+ | 0.2+ | 2001 12 11 | 704 | 0.7− | 0.7− | 2004 05 14 | 704 | 0.5− | 0.8+ |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2001 12 11 | 704 | 0.6− | 0.4− | 2004 05 17 | 704 | 0.7+ | 0.3+ |
| 2001 10 19 | 608 | 0.1− | 1.2+ | 2001 12 18 | 704 | 0.2+ | 0.3− | 2004 05 17 | 704 | 0.1+ | 0.9+ |
| 2001 10 19 | 608 | 0.2− | 1.2+ | 2001 12 18 | 704 | 0.1+ | 0.6− | 2004 05 17 | 704 | 0.2− | 0.4+ |
| 2001 10 19 | 608 | 0.4− | 0.9+ | 2001 12 18 | 704 | 1.0+ | 0.2− | 2004 05 17 | 704 | 0.4+ | 0.2+ |
| 2001 10 20 | 704 | 0.4− | 0.6− | 2001 12 18 | 704 | 0.7+ | 0.2− | 2004 05 17 | 704 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.7− | 0.5− | 2001 12 18 | 704 | 0.9+ | 0.1+ | 2004 05 17 | 704 | 0.3+ | 0.8+ |
| 2001 10 20 | 704 | 0.3+ | 0.5− | 2002 02 12 | 209 | (2.3− | 1.9−) | 2004 05 23 | 704 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.4− | 2002 02 12 | 209 | 1.3− | 0.4− | 2004 05 23 | 704 | 0.4+ | 0.3+ |
| 2001 10 22 | 704 | 0.5+ | 0.3+ | 2002 02 12 | 209 | 0.2− | 0.1− | 2004 05 23 | 704 | 0.3− | 1.0+ |
| 2001 10 22 | 704 | 0.0 | 0.9+ | 2002 12 31 | 704 | 0.2+ | 0.1+ | 2006 07 31 | E12 | 0.4− | 0.7− |
| 2001 10 22 | 704 | 0.2− | 0.2+ | 2002 12 31 | 704 | 0.5+ | 0.1− | 2006 07 31 | E12 | 0.1+ | 0.1− |
| 2001 10 22 | 704 | 0.8+ | 0.5− | 2002 12 31 | 704 | 0.4+ | 0.5+ | 2006 07 31 | E12 | 0.2+ | 0.5+ |
| 2001 10 24 | 704 | 0.2− | 0.9+ | 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 07 31 | E12 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | (0.9+ | 1.9+) | 2003 01 28 | 644 | 0.4+ | 0.5+ | 2006 09 17 | 699 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | (1.7− | 0.9+) | 2003 01 28 | 644 | 0.3+ | 0.6+ | 2006 09 17 | 699 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.7− | 0.7+ | 2003 01 28 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 699 | 0.4− | 0.0 |
| 2001 10 29 | 608 | 0.4+ | 0.3+ | 2003 02 02 | 644 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.6− | 0.7+ |
| 2001 10 29 | 608 | 1.2+ | 0.0 | 2003 02 02 | 644 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.4+ |
| 2001 10 29 | 608 | 0.2+ | 0.7+ | 2003 02 02 | 644 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.2+ |
| 2001 11 09 | 704 | 0.2− | 0.6− | 2003 02 08 | 699 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.4+ |
| 2001 11 09 | 704 | 0.5+ | 0.4+ | 2003 02 08 | 699 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2001 11 09 | 704 | 1.0− | 0.6+ | 2003 02 08 | 699 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.0 | 1.3+ |
| 2001 11 17 | 704 | 0.3+ | 0.8+ | 2003 02 08 | 699 | 0.8+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 1.2+ |
| 2001 11 17 | 704 | 0.7+ | 0.7+ | 2003 02 19 | 644 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.6+ | 1.2+ |
| 2001 11 17 | 704 | 0.7+ | 0.1+ | 2003 02 19 | 644 | 0.1− | 0.2− | 2006 09 26 | 703 | 1.0+ | 1.4+ |
| 2001 11 17 | 704 | 0.3+ | 0.5− | 2003 02 19 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.8− | 0.0 |
| 2001 11 19 | 608 | 0.2+ | 0.7− | 2003 02 26 | 704 | 0.1− | 0.5− | 2006 10 28 | 703 | 0.8− | 0.7+ |
| 2001 11 19 | 608 | 0.2+ | 0.6− | 2003 02 26 | 704 | 0.1+ | 0.6− | 2006 10 28 | 703 | 0.3− | 0.7+ |
| 2001 11 19 | 608 | 0.3− | 0.4− | 2003 02 26 | 704 | 0.5+ | 0.7+ | 2006 10 28 | 703 | 1.3− | 0.5+ |
| 2001 11 20 | 704 | 0.3+ | 0.2+ | 2003 02 26 | 704 | 0.7− | 0.8+ | | | | |

**(140670)∗ 2001 UY$_{48}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.82532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18380181 | $\omega$ | 287.21954 | | +0.93979802 | −0.28289859 | |
| $a$ | 3.0636291 | $\Omega$ | 89.54199 | | +0.33755918 | +0.85588683 | |
| $e$ | 0.1078507 | $i$ | 11.05224 | | −0.05323046 | +0.43292738 | |
| $P$ | 5.36 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 644 | 0.3− | 0.4+ | 2001 11 20 | 608 | 0.2+ | 0.0 | 2004 04 15 | 704 | 0.0 | 0.6+ |
| 2001 08 22 | 644 | 0.8− | 0.4+ | 2001 11 20 | 608 | 0.6+ | 0.0 | 2004 04 15 | 704 | 1.0− | 0.5− |
| 2001 08 22 | 644 | 0.6− | 0.5+ | 2001 12 09 | 699 | 0.1− | 0.3− | 2004 04 15 | 704 | 1.4+ | 0.1− |
| 2001 09 17 | 699 | 0.4+ | 0.0 | 2001 12 09 | 699 | 0.8+ | 0.4+ | 2004 04 15 | 704 | 0.6− | 1.2+ |
| 2001 09 17 | 699 | 1.0+ | 1.3+ | 2001 12 09 | 699 | 1.1+ | 0.0 | 2004 04 24 | 704 | (1.7+ | 3.0+) |
| 2001 09 17 | 699 | (0.8− | 1.6+) | 2001 12 09 | 699 | 0.5− | 0.3− | 2004 04 24 | 704 | 0.8+ | 1.5+ |
| 2001 09 17 | 699 | 0.4+ | 0.6+ | 2001 12 11 | 704 | 0.0 | 0.2+ | 2004 04 24 | 704 | 0.9+ | 0.5− |
| 2001 10 13 | 699 | 0.4− | 0.9+ | 2001 12 11 | 704 | 0.4+ | 0.0 | 2004 04 24 | 704 | 0.7+ | 0.2+ |
| 2001 10 13 | 699 | (1.9+ | 0.2+) | 2001 12 11 | 704 | 0.0 | 0.2− | 2004 04 25 | 704 | 0.5+ | 0.1+ |
| 2001 10 13 | 699 | 0.4+ | 0.0 | 2001 12 11 | 704 | 0.3+ | 0.8+ | 2004 04 25 | 704 | 0.3− | 0.1− |
| 2001 10 13 | 699 | (1.6+ | 0.2−) | 2001 12 11 | 704 | 0.1− | 0.3+ | 2004 04 25 | 704 | 0.9+ | 0.7+ |
| 2001 10 17 | 704 | 0.1+ | 0.8+ | 2001 12 18 | 704 | 0.4− | 0.3− | 2004 04 25 | 704 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.1+ | 1.0− | 2001 12 18 | 704 | 1.0− | 0.9− | 2004 04 25 | 699 | 0.5+ | 0.9− |
| 2001 10 17 | 704 | 0.6+ | 0.2+ | 2001 12 18 | 704 | 0.5− | 0.2+ | 2004 04 25 | 699 | 1.0− | 0.7+ |
| 2001 10 17 | 704 | 0.5+ | 0.0 | 2002 01 05 | 699 | 0.4+ | 0.4+ | 2004 04 25 | 699 | 0.7− | 0.5+ |
| 2001 10 17 | 704 | 0.2− | 0.2− | 2002 01 05 | 699 | 0.6+ | 0.2− | 2004 04 25 | 699 | 0.8− | 0.4+ |
| 2001 10 19 | 608 | 0.3− | 0.1− | 2002 01 05 | 608 | 0.4+ | 1.0− | 2006 09 20 | 703 | 0.7+ | 0.5+ |
| 2001 10 19 | 608 | 0.7− | 0.1− | 2002 01 05 | 608 | 0.5− | 0.9− | 2006 09 20 | 703 | 0.5+ | 0.4− |
| 2001 10 19 | 608 | 0.8− | 0.1− | 2002 01 05 | 699 | (2.4− | 0.0 ) | 2006 09 20 | 703 | 0.4+ | 0.3+ |
| 2001 10 20 | 704 | 0.9− | 0.4− | 2002 01 05 | 608 | 0.2− | 1.1− | 2006 09 20 | 703 | 0.4+ | 0.1− |
| 2001 10 20 | 704 | 0.0 | 0.1− | 2002 01 05 | 699 | 1.3− | 0.5+ | 2006 09 25 | 703 | 0.1− | 0.3− |
| 2001 10 20 | 704 | 0.1− | 0.5+ | 2003 01 31 | 704 | 0.5− | 0.1+ | 2006 09 25 | 703 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 1.0− | 1.5− | 2003 01 31 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 703 | 0.1+ | 0.0 |
| 2001 10 29 | 608 | 0.3− | 0.1+ | 2003 01 31 | 704 | 0.4− | 0.5− | 2006 09 25 | 703 | 0.0 | 0.3+ |
| 2001 10 29 | 608 | 0.2− | 0.6− | 2003 02 04 | 699 | (0.0 | 1.8+) | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 10 29 | 608 | 0.0 | 0.2+ | 2003 02 04 | 699 | (0.9− | 2.1+) | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 11 15 | 644 | 0.2− | 0.5+ | 2003 02 04 | 699 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 11 15 | 644 | 0.3− | 0.4+ | 2003 02 04 | 699 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.0 |
| 2001 11 15 | 644 | 0.5− | 0.4+ | 2003 02 08 | 699 | 0.8+ | 1.0+ | 2006 10 21 | 703 | 0.7− | 0.4+ |
| 2001 11 19 | 699 | 0.7− | 0.0 | 2003 02 08 | 699 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.1− | 0.7+ |
| 2001 11 19 | 699 | 0.0 | 0.4− | 2003 02 08 | 699 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.3+ |
| 2001 11 19 | 699 | 0.3− | 0.5− | 2003 02 08 | 699 | 0.9− | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.2+ | 0.1+ | 2003 02 19 | 644 | 0.0 | 0.4+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.9+ | 0.3− | 2003 02 19 | 644 | 0.2− | 0.1+ | 2006 10 24 | 644 | 0.4− | 0.2+ |
| 2001 11 20 | 704 | 0.6+ | 0.1− | 2003 02 19 | 644 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.2− | 0.6+ |
| 2001 11 20 | 704 | 0.6+ | 0.4− | 2003 02 26 | 704 | 1.2+ | 0.7+ | 2006 10 28 | 703 | 0.7− | 0.6+ |
| 2001 11 20 | 704 | 1.1+ | 0.8− | 2003 02 26 | 704 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.7− | 0.7+ |
| 2001 11 20 | 704 | 0.3+ | 0.5+ | 2003 02 26 | 704 | 0.6+ | 0.6− | 2006 10 28 | 703 | 0.5+ | 0.7+ |
| 2001 11 20 | 608 | 1.0+ | 0.5+ | 2003 02 26 | 704 | 1.0+ | 0.5− | | | | |

**(140671)∗ 2001 UR$_{49}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.99166 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18916399 | $\omega$ | 269.87067 | | +0.32132014 | −0.94551963 | |
| $a$ | 3.0054562 | $\Omega$ | 161.12782 | | +0.92046217 | +0.29884542 | |
| $e$ | 0.1348890 | $i$ | 9.32339 | | +0.22249217 | +0.12916677 | |
| $P$ | 5.21 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.7− | 0.8− | 2001 12 15 | 704 | 0.6+ | 0.3+ | 2006 09 20 | 699 | 0.7− | 1.1− |
| 1993 03 25 | 691 | 0.1− | 0.5− | 2001 12 15 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.9− | 0.4+ |
| 1993 03 25 | 691 | 0.5− | 1.2− | 2001 12 15 | 704 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.3+ | 1.1+ |
| 2001 09 17 | 704 | 0.1− | 0.2+ | 2001 12 19 | 704 | 0.7− | 0.7− | 2006 09 26 | 704 | 0.3− | 0.5− |
| 2001 09 17 | 704 | 0.7− | 0.7+ | 2001 12 19 | 704 | (1.7− | 1.0+) | 2006 09 26 | 704 | 0.5+ | 0.4− |
| 2001 09 17 | 704 | 0.4− | 0.8+ | 2001 12 19 | 704 | (1.8− | 1.0−) | 2006 09 26 | 704 | 0.9+ | 0.2+ |
| 2001 09 17 | 704 | 0.1− | 0.7+ | 2001 12 19 | 704 | 1.1− | 0.7− | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2001 09 17 | 704 | 0.7− | 0.6+ | 2003 02 22 | 644 | 0.5+ | 1.1+ | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2001 09 25 | 704 | 0.2− | 0.1− | 2003 02 22 | 644 | 0.9+ | 1.0+ | 2006 09 30 | 703 | 0.5− | 0.9− |
| 2001 09 25 | 704 | 0.2− | 0.7− | 2003 02 22 | 644 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.5+ | 1.0− | 2003 03 06 | 699 | 0.9+ | 0.0 | 2006 10 01 | 704 | 0.7+ | 0.8+ |
| 2001 09 25 | 704 | 0.9+ | 1.2− | 2003 03 06 | 699 | 0.3+ | 0.2− | 2006 10 01 | 704 | 0.3+ | 0.5− |
| 2001 09 26 | 704 | 0.4+ | 0.2− | 2003 03 06 | 699 | 0.9+ | 0.6+ | 2006 10 01 | 704 | 0.3+ | 0.3− |
| 2001 09 26 | 704 | 0.8+ | 0.0 | 2003 03 06 | 699 | 0.5+ | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.3− |
| 2001 09 26 | 704 | 0.2− | 0.5− | 2003 03 09 | 704 | 1.1+ | 1.2+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2001 09 26 | 704 | 0.0 | 0.1+ | 2003 03 09 | 704 | 0.1− | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.4− | 0.4− | 2003 03 09 | 704 | 1.0+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | 0.4− | 0.5+ | 2003 03 09 | 704 | 0.8+ | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.3+ | 0.1+ | 2003 03 09 | 704 | (1.2+ | 1.5+) | 2006 10 10 | 644 | 0.3− | 0.1− |
| 2001 10 17 | 704 | 0.3− | 0.8+ | 2003 03 11 | 291 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.2+ | 0.4+ | 2003 03 11 | 291 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 0.6− | 2003 03 11 | 291 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.1− | 0.3+ | 2003 04 01 | 291 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 10 20 | 704 | 0.4− | 0.9+ | 2003 04 01 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.5− |
| 2001 10 20 | 704 | 0.3− | 0.9+ | 2003 04 01 | 291 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2001 10 20 | 704 | 0.5− | 1.4+ | 2005 06 11 | 691 | 0.3+ | 1.0+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2001 11 15 | 704 | (0.3− | 1.9+) | 2005 06 11 | 691 | 0.1+ | 0.9+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2001 11 15 | 704 | (0.3− | 1.8+) | 2005 06 11 | 691 | 0.3− | 1.2+ | 2006 10 22 | 703 | 0.9+ | 0.5+ |
| 2001 11 15 | 704 | (0.5− | 1.7+) | 2005 07 01 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2001 11 15 | 704 | (0.2− | 2.8+) | 2005 07 01 | 644 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.6− |
| 2001 11 18 | 704 | 0.2− | 0.1− | 2005 07 01 | 644 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2001 11 18 | 704 | 0.0 | 0.2− | 2006 09 15 | 644 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.2+ |
| 2001 11 18 | 704 | 0.5− | 0.2− | 2006 09 15 | 644 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.1+ |
| 2001 11 18 | 704 | 0.7+ | 0.2− | 2006 09 15 | 644 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 0.2+ | 0.7− |
| 2001 11 18 | 704 | 0.4− | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.7− |
| 2001 12 07 | 704 | 1.1+ | 1.1+ | 2006 09 16 | 699 | 0.7− | 0.1+ | 2006 11 10 | 704 | 0.1− | 0.3+ |
| 2001 12 07 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.3+ | 0.7+ | 2006 11 10 | 704 | 0.6− | 0.7+ |
| 2001 12 07 | 704 | 1.2+ | 0.6+ | 2006 09 16 | 699 | 0.3− | 1.4− | 2006 11 10 | 704 | 0.5− | 0.3+ |
| 2001 12 07 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 703 | 1.0+ | 0.7+ | 2006 11 10 | 704 | 0.3+ | 0.7+ |
| 2001 12 07 | 704 | 0.9+ | 1.0+ | 2006 09 18 | 703 | (2.7+ | 1.3+) | 2006 11 10 | 704 | 0.1− | 0.3− |
| 2001 12 14 | 699 | 0.8+ | 0.4− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.1− | 0.0 |
| 2001 12 14 | 699 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.1+ |
| 2001 12 14 | 699 | 0.3+ | 0.3+ | 2006 09 20 | 699 | (2.1− | 1.7+) | 2006 11 16 | 703 | 0.4− | 0.4− |
| 2001 12 14 | 699 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.4− | 0.2+ | 2006 11 16 | 703 | 1.9− | 0.8− |

**(140672)∗ 2001 UH$_{50}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.87052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18954703 | $\omega$ | 277.90596 | | +0.91562593 | −0.36649909 | |
| $a$ | 3.0014058 | $\Omega$ | 103.71388 | | +0.40192181 | +0.84406557 | |
| $e$ | 0.1021440 | $i$ | 9.79359 | | −0.00938130 | +0.39144824 | |
| $P$ | 5.20 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.6+ | 0.5+ | 2001 12 11 | 704 | 0.1+ | 0.1− | 2004 04 11 | 644 | 0.3+ | 1.0+ |
| 2001 09 17 | 704 | 0.3− | 0.1− | 2001 12 15 | 704 | (0.2− | 2.1−) | 2004 04 11 | 644 | 0.4+ | 0.6+ |
| 2001 09 17 | 704 | 0.5+ | 1.0+ | 2001 12 15 | 704 | 1.4+ | 0.5+ | 2004 06 22 | 291 | 0.2+ | 0.6+ |
| 2001 09 17 | 704 | 0.7+ | 0.7+ | 2001 12 15 | 704 | 0.0 | 0.0 | 2004 06 22 | 291 | 0.2+ | 0.6+ |
| 2001 09 17 | 704 | 0.3+ | 0.4+ | 2001 12 15 | 704 | 0.4− | 0.2− | 2004 06 22 | 291 | 0.2+ | 0.6+ |
| 2001 09 21 | 644 | 0.1− | 0.5+ | 2001 12 15 | 704 | 0.1− | 0.4− | 2005 08 06 | 704 | 0.3− | 1.5+ |
| 2001 09 21 | 644 | 0.5− | 0.7+ | 2001 12 18 | 704 | 0.9+ | 0.2− | 2005 08 06 | 704 | 0.4+ | 0.7+ |
| 2001 09 21 | 644 | 0.6− | 0.2+ | 2001 12 18 | 704 | 1.3+ | 0.6− | 2005 08 06 | 704 | 0.7− | 0.7+ |
| 2001 10 17 | 704 | 0.1− | 0.7+ | 2001 12 18 | 704 | (1.8+ | 0.5−) | 2005 08 06 | 704 | 0.7+ | 1.2+ |
| 2001 10 17 | 704 | 0.0 | 0.7+ | 2001 12 18 | 704 | 0.9+ | 0.2+ | 2006 09 29 | 699 | 1.2− | 0.8+ |
| 2001 10 17 | 704 | 0.6− | 0.8+ | 2001 12 18 | 704 | 1.0+ | 0.1− | 2006 09 29 | 699 | 0.5− | 0.7+ |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2002 01 08 | 644 | 0.4− | 0.4− | 2006 09 29 | 699 | 0.5+ | 1.0+ |
| 2001 10 17 | 704 | 0.1− | 0.8+ | 2002 01 08 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.7− | 0.1− |
| 2001 10 20 | 704 | 0.5+ | 0.6+ | 2002 01 08 | 644 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.3+ |
| 2001 10 20 | 704 | 0.4− | 0.3+ | 2002 01 14 | 704 | 0.3− | 0.3+ | 2006 10 01 | 704 | 1.3− | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 1.0+ | 2002 01 14 | 704 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 2001 10 23 | 608 | 0.4− | 1.2− | 2002 01 14 | 704 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 0.8− | 0.3+ |
| 2001 10 23 | 608 | 0.5− | 1.2− | 2002 01 14 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 23 | 608 | 0.1− | 1.1− | 2003 01 05 | 704 | 0.6+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2001 11 15 | 644 | 0.1+ | 0.1+ | 2003 01 05 | 704 | 1.3+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 11 15 | 644 | 0.2+ | 0.3− | 2003 01 05 | 704 | 1.1+ | 0.4+ | 2006 10 17 | 703 | 0.8+ | 0.2− |
| 2001 11 15 | 644 | 0.1+ | 0.4+ | 2003 01 26 | 608 | 0.9− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2001 11 24 | 704 | 0.3− | 0.2− | 2003 01 26 | 608 | 0.9− | 0.4+ | 2006 10 17 | 703 | 0.6+ | 0.2+ |
| 2001 11 24 | 704 | 1.0− | 0.7+ | 2003 01 26 | 608 | 0.6− | 1.0+ | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2001 11 24 | 704 | 1.3− | 1.0− | 2003 02 02 | 644 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2001 11 24 | 704 | 0.3+ | 0.4− | 2003 02 02 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2001 11 24 | 704 | 0.5− | 0.4+ | 2003 02 02 | 644 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2001 11 24 | 704 | 0.1+ | 0.3+ | 2003 02 09 | 644 | 0.1− | 0.8− | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2001 11 24 | 704 | 0.3− | 0.1+ | 2003 02 09 | 644 | 0.5− | 0.8− | 2006 10 28 | 703 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 0.2− | 0.1+ | 2003 02 09 | 644 | 0.1− | 0.4− | 2006 10 28 | 703 | 1.0+ | 0.5− |
| 2001 11 24 | 704 | 0.1+ | 0.2+ | 2003 02 19 | 644 | 0.1+ | 0.3− | 2006 10 28 | 703 | 1.2+ | 0.5− |
| 2001 11 24 | 704 | 0.1− | 0.4+ | 2003 02 19 | 644 | 0.4+ | 0.0 | 2006 11 10 | 704 | (2.7− | 0.8−) |
| 2001 12 08 | 699 | 0.9− | 0.5+ | 2003 02 19 | 644 | 0.2− | 0.2− | 2006 11 10 | 704 | 0.8− | 0.6− |
| 2001 12 08 | 699 | 0.6− | 0.1+ | 2003 03 07 | 644 | 0.6+ | 1.0+ | 2006 11 10 | 704 | (2.0− | 0.2−) |
| 2001 12 08 | 699 | 0.6− | 0.4+ | 2003 03 07 | 644 | 0.4+ | 0.9+ | 2006 11 10 | 704 | 1.3− | 0.5− |
| 2001 12 08 | 699 | 0.1+ | 0.2+ | 2003 03 07 | 644 | 0.4+ | 0.4+ | 2006 11 10 | 704 | 0.1− | 0.2+ |
| 2001 12 11 | 704 | 0.3+ | 0.2+ | 2003 03 13 | 644 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.1+ | 0.3+ |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2003 03 13 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 703 | 0.3+ | 0.5+ |
| 2001 12 11 | 704 | 0.2− | 0.5− | 2003 03 13 | 644 | 0.2+ | 0.6+ | 2006 11 16 | 703 | 0.1− | 0.2+ |
| 2001 12 11 | 704 | 0.3− | 0.0 | 2004 04 11 | 644 | 0.2+ | 0.7+ | 2006 11 16 | 703 | 0.0 | 0.2+ |

**(140673)∗ 2001 UK$_{50}$ = 1999 JH$_7$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20588)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.63120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21541912 | $\omega$ | 1.46789 | | +0.39501098 | −0.83013036 | |
| $a$ | 2.7560042 | $\Omega$ | 65.40846 | | +0.83839802 | +0.15063156 | |
| $e$ | 0.0828207 | $i$ | 25.64299 | | +0.37557302 | +0.53683677 | |
| $P$ | 4.58 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 11 20 | 608 | 0.2+ | 0.2− | 2002 01 09 | 704 | 0.6+ | 0.3+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2001 11 24 | 704 | 0.2+ | 1.0+ | 2002 01 09 | 704 | 0.7+ | 0.6+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 11 24 | 704 | 0.8− | 0.7+ | 2002 01 09 | 704 | 0.4+ | 0.3+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 11 24 | 704 | 0.3− | 0.3+ | 2002 01 09 | 704 | 0.2+ | 0.3− |
| 1999 05 08 | 703 | 0.3+ | 0.3+ | 2001 11 24 | 704 | 0.5− | 0.1+ | 2002 01 09 | 704 | 0.8+ | 0.8+ |
| 1999 05 08 | 703 | 0.3+ | 0.2− | 2001 11 24 | 704 | 0.0 | 0.4+ | 2002 01 21 | 704 | 0.4+ | 0.2+ |
| 1999 05 08 | 703 | 1.0+ | 1.7+ | 2001 11 24 | 644 | 0.2− | 0.0 | 2002 01 21 | 704 | 0.7+ | 0.4− |
| 1999 05 08 | 703 | 0.0 | 1.4+ | 2001 11 24 | 644 | 0.3+ | 0.2− | 2002 01 21 | 704 | 0.1+ | 0.2+ |
| 1999 05 14 | 703 | 0.4+ | 1.0+ | 2001 11 24 | 644 | 0.4− | 0.1− | 2002 01 21 | 704 | 0.6− | 0.1+ |
| 1999 05 14 | 703 | 0.8+ | 0.4− | 2001 11 25 | 608 | 0.4− | 0.9− | 2002 01 21 | 704 | 0.2+ | 0.4+ |
| 1999 05 14 | 703 | 0.8+ | 0.1+ | 2001 11 25 | 608 | 0.5− | 0.9− | 2002 02 03 | 699 | 0.1+ | 0.6− |
| 1999 05 14 | 703 | 0.1− | 0.3+ | 2001 11 25 | 608 | 0.7− | 1.2− | 2002 02 03 | 699 | 0.3+ | 0.3+ |
| 2001 09 14 | 644 | 0.0 | 0.3+ | 2001 11 25 | 608 | 0.7− | 0.9− | 2002 02 03 | 699 | 0.7+ | 0.1− |
| 2001 09 14 | 644 | 0.1− | 0.1+ | 2001 11 25 | 608 | 0.5− | 0.8− | 2002 02 03 | 699 | 0.5+ | 1.4− |
| 2001 09 14 | 644 | 0.1+ | 0.5+ | 2001 11 25 | 608 | 1.0− | 0.8− | 2002 02 07 | 704 | 0.1− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 699 | 0.1+ | 0.1+ | 2001 12 08 | 699 | 0.3− | 0.3+ | 2002 02 07 | 704 | 0.1+ | 0.6− |
| 2001 09 23 | 699 | 0.2− | 0.5− | 2001 12 08 | 699 | 0.1− | 0.1+ | 2002 02 07 | 704 | 0.3+ | 0.1− |
| 2001 09 23 | 699 | 0.9+ | 0.1− | 2001 12 08 | 699 | 0.2+ | 0.3+ | 2002 02 07 | 704 | 0.6− | 0.6− |
| 2001 09 23 | 699 | 0.2+ | 0.8+ | 2001 12 08 | 699 | 0.0 | 0.3+ | 2003 03 13 | 699 | (0.2+ | 1.6+) |
| 2001 10 13 | 699 | 0.1+ | 0.5+ | 2001 12 09 | 691 | 0.3− | 0.3+ | 2003 03 13 | 699 | 0.3+ | 0.8− |
| 2001 10 13 | 699 | 0.3+ | 0.1+ | 2001 12 09 | 691 | 0.4− | 0.3+ | 2003 03 13 | 699 | 0.2− | 0.0 |
| 2001 10 13 | 699 | 0.4+ | 0.1− | 2001 12 09 | 691 | 1.0− | 0.4+ | 2003 03 13 | 699 | 0.5+ | 0.1+ |
| 2001 10 13 | 699 | 0.6+ | 0.4+ | 2001 12 11 | 704 | 0.3+ | 0.4+ | 2003 03 23 | 644 | 0.2+ | 0.5+ |
| 2001 10 16 | 608 | 0.3+ | 0.3− | 2001 12 11 | 704 | 0.4+ | 0.7+ | 2003 03 23 | 644 | 0.0 | 0.2+ |
| 2001 10 16 | 608 | 0.1+ | 0.1+ | 2001 12 11 | 704 | 0.1+ | 0.5+ | 2003 03 23 | 644 | 0.0 | 0.2+ |
| 2001 10 16 | 608 | 0.3+ | 0.7− | 2001 12 11 | 704 | 0.8+ | 0.5− | 2003 03 24 | 704 | 1.2+ | 0.4− |
| 2001 10 17 | 704 | 0.5+ | 0.8− | 2001 12 14 | 704 | 0.2− | 1.0− | 2003 03 24 | 704 | 1.4+ | 0.3+ |
| 2001 10 17 | 704 | 1.1+ | 0.6− | 2001 12 14 | 704 | 0.2− | 1.1− | 2003 03 24 | 704 | 0.7+ | 0.7− |
| 2001 10 17 | 704 | 0.6+ | 0.4− | 2001 12 14 | 704 | 0.1− | 1.1− | 2003 03 24 | 704 | 0.9+ | 0.5− |
| 2001 10 17 | 704 | 1.1+ | 0.6− | 2001 12 14 | 704 | 0.1+ | 1.1− | 2005 09 23 | E12 | 0.2+ | 0.4+ |
| 2001 10 17 | 704 | 0.9+ | 0.9− | 2001 12 14 | 704 | (0.3− | 1.6−) | 2005 09 23 | E12 | 0.1+ | 0.5+ |
| 2001 10 20 | 704 | 0.3− | 1.3+ | 2001 12 17 | 704 | 0.6− | 0.7+ | 2005 09 23 | E12 | 0.9− | 0.2+ |
| 2001 10 20 | 704 | 0.5− | 1.4+ | 2001 12 17 | 704 | 0.8− | 0.4+ | 2005 09 23 | E12 | 0.6− | 0.3+ |
| 2001 10 20 | 704 | 0.3− | 1.3+ | 2001 12 17 | 704 | 0.6− | 0.8+ | 2005 09 30 | E12 | 0.3− | 0.4+ |
| 2001 10 20 | 704 | 0.6− | 1.2+ | 2001 12 17 | 704 | 0.7− | 0.8+ | 2005 09 30 | E12 | 0.3+ | 0.7+ |
| 2001 10 23 | 608 | 0.8+ | 0.9− | 2001 12 17 | 704 | 0.9− | 0.7+ | 2005 09 30 | E12 | 0.2+ | 0.3− |
| 2001 10 23 | 608 | 0.1− | 0.2− | 2001 12 19 | 644 | 0.2+ | 0.1+ | 2005 09 30 | E12 | 0.1− | 1.1+ |
| 2001 10 23 | 608 | 0.1+ | 0.2− | 2001 12 19 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.2− | 1.0− |
| 2001 11 17 | 704 | (2.2− | 1.1+) | 2001 12 19 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.7+ |
| 2001 11 17 | 704 | (1.8− | 0.9+) | 2001 12 20 | 704 | 0.5+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 1.0− |
| 2001 11 17 | 704 | (2.5− | 0.7+) | 2001 12 20 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.2+ | 0.7+ |
| 2001 11 17 | 704 | (2.0− | 0.6+) | 2001 12 20 | 704 | 0.2+ | 0.1+ | 2006 11 20 | 703 | 0.9− | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2001 12 20 | 704 | 0.5+ | 0.2+ | 2006 11 20 | 703 | 0.3− | 0.3− |
| 2001 11 20 | 704 | 0.2− | 0.2− | 2001 12 20 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.9+ | 2002 01 07 | 699 | (2.3+ | 0.8+) | 2006 11 20 | 703 | 0.6− | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.5+ | 2002 01 07 | 699 | 0.0 | 0.7+ | 2006 11 20 | 703 | 0.2− | 0.3− |
| 2001 11 20 | 608 | 0.1− | 0.5− | 2002 01 07 | 699 | 0.8+ | 0.9+ | 2006 11 20 | 703 | 0.4− | 0.4− |
| 2001 11 20 | 608 | 0.0 | 0.0 | 2002 01 07 | 699 | 0.4+ | 0.8− | 2006 11 20 | 703 | 0.6− | 0.2+ |

**(140674)∗ 2001 UX$_{50}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.15134 | | (2000.0) | | | |
| $n$ | 0.21539305 | $\omega$ | 351.12587 | | −0.08418871 | −0.98024968 |
| $a$ | 2.7562266 | $\Omega$ | 103.55616 | | +0.92514905 | −0.14360483 |
| $e$ | 0.1359600 | $i$ | 10.60736 | | +0.37015065 | +0.13597142 |
| $P$ | 4.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.4+ | 0.5+ | 2001 12 11 | 704 | 0.1− | 0.1− | 2005 08 27 | 644 | 0.3− | 0.1− |
| 2001 09 14 | 644 | 0.4− | 0.8+ | 2001 12 15 | 704 | 0.3− | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.4+ |
| 2001 09 14 | 644 | 0.7− | 0.9+ | 2001 12 15 | 704 | 0.6+ | 1.0+ | 2005 08 27 | 644 | 0.5− | 0.1+ |
| 2001 09 17 | 704 | 1.2− | 1.1− | 2001 12 15 | 704 | 0.1− | 0.1− | 2005 09 25 | 703 | 0.0 | 0.6+ |
| 2001 09 17 | 704 | 1.2− | 0.1+ | 2001 12 15 | 704 | 0.3+ | 0.7+ | 2005 09 25 | 703 | 0.5− | 0.6− |
| 2001 09 17 | 704 | 0.7+ | 0.0 | 2002 01 05 | 699 | 0.5− | 0.2− | 2005 09 25 | 703 | 1.0+ | 1.5− |
| 2001 09 17 | 704 | 1.0− | 0.0 | 2002 01 05 | 699 | 0.7− | 0.8+ | 2005 09 25 | 703 | 0.1+ | 1.0+ |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2002 01 05 | 699 | 0.2+ | 0.3+ | 2005 09 26 | 704 | 0.0 | 0.7− |
| 2001 10 17 | 704 | (1.5+ | 1.9−) | 2002 01 05 | 699 | 0.5− | 1.0+ | 2005 09 26 | 704 | 0.5+ | 0.5+ |
| 2001 10 17 | 704 | 0.2− | 1.2− | 2002 01 06 | 608 | 0.4− | 0.6− | 2005 09 26 | 704 | 0.5− | 1.0+ |
| 2001 10 17 | 704 | (1.1+ | 1.5−) | 2002 01 06 | 608 | 0.1+ | 0.1− | 2005 09 26 | 703 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.6+ | 1.4− | 2002 01 06 | 608 | 0.2− | 0.5− | 2005 09 26 | 703 | 0.1− | 0.3− |
| 2001 10 20 | 704 | 0.2− | 0.6− | 2002 01 08 | 644 | 0.3− | 0.1+ | 2005 09 26 | 703 | 0.7+ | 0.6− |
| 2001 10 20 | 704 | 0.6+ | 0.7− | 2002 01 08 | 644 | 0.4− | 0.2+ | 2005 09 26 | 703 | 0.6+ | 0.1− |
| 2001 10 20 | 704 | 0.5+ | 0.7− | 2002 01 08 | 644 | 0.6− | 0.4+ | 2005 10 10 | 703 | 0.7− | 1.0− |
| 2001 10 20 | 704 | 0.5+ | 0.4− | 2002 01 09 | 704 | 0.3− | 0.5− | 2005 10 10 | 703 | 0.9+ | 0.5− |
| 2001 10 23 | 608 | 0.7− | 0.1+ | 2002 01 09 | 704 | 1.1− | 0.2+ | 2005 10 10 | 703 | 0.6− | 0.8+ |
| 2001 10 23 | 608 | 0.9− | 0.2− | 2002 01 09 | 704 | 0.6− | 0.4− | 2005 10 10 | 703 | 0.0 | 1.1+ |
| 2001 10 23 | 608 | 0.6− | 0.2− | 2002 01 09 | 704 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2001 11 16 | 644 | 0.3− | 0.2+ | 2002 01 14 | 704 | 0.2− | 1.1− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2001 11 16 | 644 | 0.4− | 0.2+ | 2002 01 14 | 704 | (0.2+ | 2.0−) | 2006 10 21 | G96 | 0.6+ | 0.8− |
| 2001 11 16 | 644 | 0.2− | 0.1+ | 2002 01 14 | 704 | (0.3+ | 1.6−) | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2001 11 21 | 608 | 0.5+ | 0.7+ | 2002 01 14 | 704 | (0.8+ | 1.8−) | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 608 | 0.2+ | 1.0+ | 2002 01 14 | 704 | (1.5+ | 1.7−) | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 608 | 0.1+ | 0.8+ | 2003 03 12 | 704 | 0.4− | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2001 11 24 | 704 | 0.6+ | 0.6− | 2003 03 12 | 704 | (1.9+ | 0.8+) | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 11 24 | 704 | 1.2+ | 1.0+ | 2003 03 12 | 704 | 0.8+ | 0.9+ | 2006 11 14 | 703 | 1.1− | 1.1− |
| 2001 11 24 | 704 | 0.1− | 0.7+ | 2003 03 12 | 704 | 0.4+ | 0.8− | 2006 11 14 | 703 | 1.2− | 0.2− |
| 2001 11 24 | 704 | 0.3+ | 1.3+ | 2003 03 12 | 704 | 1.4+ | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.4+ |
| 2001 11 24 | 704 | 0.3+ | 0.7+ | 2003 03 25 | 644 | 0.2+ | 0.8+ | 2006 11 14 | 703 | (1.8− | 0.4+) |
| 2001 11 24 | 704 | 0.8+ | 0.0 | 2003 03 25 | 644 | 0.0 | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 11 24 | 704 | 0.2+ | 0.3+ | 2003 03 25 | 644 | 0.0 | 1.0+ | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2001 11 24 | 704 | 1.1+ | 0.7+ | 2003 04 04 | 704 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 11 24 | 704 | 1.0+ | 0.5+ | 2003 04 04 | 704 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2001 11 24 | 704 | 0.2+ | 0.5+ | 2003 04 04 | 704 | 0.1+ | 0.7+ | 2006 11 21 | 704 | 0.9+ | 1.2− |
| 2001 12 08 | 699 | 0.8+ | 0.6+ | 2003 04 04 | 704 | (1.9− | 0.5+) | 2006 11 21 | 704 | 0.4+ | 0.3− |
| 2001 12 08 | 699 | 0.6− | 0.2+ | 2003 04 06 | 699 | 1.2− | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.5− |
| 2001 12 08 | 699 | 0.1− | 0.1− | 2003 04 06 | 699 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2001 12 08 | 699 | 0.6− | 0.3− | 2003 04 06 | 699 | 0.4− | 0.2− | 2006 11 28 | G96 | 0.0 | 0.4− |
| 2001 12 11 | 704 | 0.2− | 0.4+ | 2003 04 06 | 699 | 0.7+ | 0.1+ | 2006 11 28 | G96 | 0.1+ | 0.3− |
| 2001 12 11 | 704 | 0.6− | 0.1+ | 2005 08 27 | 644 | 0.4− | 0.3+ | 2006 11 28 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.3− | 0.2+ | 2005 08 27 | 644 | 0.3− | 0.2+ | 2006 11 28 | G96 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 0.1+ | 0.4+ | 2005 08 27 | 644 | 0.3− | 0.2+ | | | | |

**(140675)∗ 2001 UR$_{51}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 135.61898 | | (2000.0) | | | |
| $n$ | 0.22223893 | $\omega$ | 219.03198 | | +0.16803788 | +0.98480289 |
| $a$ | 2.6993298 | $\Omega$ | 60.68224 | | −0.89135791 | +0.17080750 |
| $e$ | 0.1646848 | $i$ | 2.88549 | | −0.42100397 | +0.03143335 |
| $P$ | 4.43 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 20 | 566 | 0.6+ | 1.2− | 2004 03 19 | 704 | 0.8+ | 0.3+ | 2004 04 22 | 704 | 0.3+ | 0.7+ |
| 1996 08 20 | 566 | 0.1− | 0.9− | 2004 03 19 | 704 | 0.5− | 0.4+ | 2005 08 26 | 644 | 0.1+ | 0.2− |
| 1996 08 20 | 566 | 0.6+ | 0.9− | 2004 03 19 | 704 | 0.8+ | 0.2− | 2005 08 26 | 644 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 0.3+ | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2005 08 26 | 644 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.7− | 0.4+ | 2004 03 19 | 704 | 0.5+ | 0.6− | 2005 08 28 | 699 | 0.1− | 1.8+ |
| 2001 10 17 | 704 | 0.5− | 1.1+ | 2004 03 22 | 704 | 0.3− | 0.5+ | 2005 08 28 | 691 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2005 08 28 | 691 | 0.2+ | 0.2+ |
| 2001 10 20 | 704 | 0.6− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2005 08 28 | 699 | 0.6− | 0.8+ |
| 2001 10 20 | 704 | 0.3+ | 0.8+ | 2004 03 22 | 704 | 0.7− | 0.4+ | 2005 08 28 | 691 | 0.3+ | 0.2+ |
| 2001 10 20 | 704 | 1.3− | 0.4+ | 2004 03 28 | 704 | 0.8+ | 0.3− | 2005 08 28 | 699 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 1.4− | 0.4+ | 2004 03 28 | 704 | 1.7+ | 0.9+ | 2005 08 28 | 699 | 0.7− | 1.5+ |
| 2001 10 23 | 704 | 0.4− | 0.4+ | 2004 03 28 | 704 | 1.4+ | 0.5+ | 2005 08 29 | 704 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.4+ | 0.4− | 2004 03 28 | 704 | 1.6+ | 0.0 | 2005 08 29 | 704 | 0.4− | 0.7+ |
| 2001 10 23 | 704 | 0.3+ | 0.4− | 2004 04 13 | 691 | 0.1− | 0.3+ | 2005 08 29 | 704 | 0.2− | 0.8+ |
| 2001 10 23 | 704 | 0.7+ | 0.4+ | 2004 04 13 | 691 | 0.1− | 0.4+ | 2005 08 29 | 704 | 0.9− | 0.1+ |
| 2001 10 24 | 704 | 0.8+ | 1.3+ | 2004 04 13 | 691 | 0.0 | 0.2+ | 2005 08 29 | 704 | 1.1− | 0.4+ |
| 2001 10 24 | 704 | 0.6+ | 1.0+ | 2004 04 16 | 704 | 0.3+ | 0.3+ | 2005 09 01 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.9+ | 1.2+ | 2004 04 16 | 704 | 0.4+ | 0.7+ | 2005 09 01 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 691 | 0.2− | 0.0 | 2004 04 16 | 704 | 0.5− | 0.6+ | 2005 09 01 | 691 | 0.0 | 0.0 |
| 2001 10 24 | 691 | 0.1− | 0.1+ | 2004 04 16 | 704 | 0.6+ | 0.6+ | 2005 09 11 | 691 | 0.3− | 0.1− |
| 2001 10 24 | 691 | 0.3− | 0.1+ | 2004 04 16 | 704 | 0.0 | 1.0+ | 2005 09 11 | 691 | 0.2− | 0.3− |
| 2001 11 20 | 704 | 0.1− | 0.7+ | 2004 04 19 | 704 | 0.5+ | 0.3− | 2005 09 11 | 691 | 0.3− | 0.3− |
| 2001 11 20 | 704 | 0.1+ | 0.5+ | 2004 04 19 | 704 | 0.2+ | 0.5+ | 2005 09 22 | 644 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 0.3− | 2004 04 19 | 704 | 0.1− | 0.2+ | 2005 09 22 | 644 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2004 04 19 | 704 | 0.3− | 0.6+ | 2005 09 22 | 644 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 0.5+ | 2004 04 19 | 704 | 1.4− | 0.9+ | 2005 10 01 | 704 | 0.5− | 1.5+ |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2004 04 22 | 704 | 0.5− | 2.0+ | 2005 10 01 | 704 | 0.7− | 0.4+ |
| 2001 11 21 | 704 | 0.1+ | 0.3− | 2004 04 22 | 704 | 0.2+ | 0.6+ | 2005 10 01 | 704 | 0.6− | 0.0 |
| 2001 11 21 | 704 | 0.2− | 1.1+ | 2004 04 22 | 704 | 0.0 | 0.3+ | 2005 10 01 | 704 | 0.2+ | 1.6+ |
| 2001 11 21 | 704 | 0.9− | 1.0+ | 2004 04 22 | 704 | 0.7− | 0.3− | 2005 10 01 | 704 | 0.4+ | 0.1− |
| 2004 03 14 | 703 | (0.3+ | 2.0−) | 2004 04 22 | 704 | 0.2− | 1.3+ | 2005 10 07 | 699 | 0.8+ | 1.2+ |
| 2004 03 14 | 703 | 1.8+ | 0.0 | 2004 04 22 | 704 | 0.3+ | 1.5+ | 2005 10 07 | 699 | 0.9− | 0.7+ |
| 2004 03 14 | 703 | 0.2− | 0.3+ | 2004 04 22 | 704 | 0.9+ | 0.5+ | 2005 10 07 | 699 | 0.5− | 0.9+ |
| 2004 03 14 | 703 | 0.7− | 0.5− | 2004 04 22 | 704 | 1.2+ | 0.5+ | 2005 10 07 | 699 | 0.4+ | 0.1− |

**(140676)∗ 2001 UY$_{51}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.26372 | | | (2000.0) | | |
| $n$ | 0.18462174 | $\omega$ | 7.73502 | | +0.45052054 | −0.89179119 |
| $a$ | 3.0545517 | $\Omega$ | 55.49701 | | +0.81636331 | +0.39260461 |
| $e$ | 0.0813852 | $i$ | 2.90114 | | +0.36136157 | +0.22487794 |
| $P$ | 5.34 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 27 | 691 | 0.4− | 0.0 | 2001 11 09 | 704 | (0.4− | 2.3+) | 2003 02 04 | 704 | 0.1+ | 1.0+ |
| 1991 12 27 | 691 | 0.4− | 0.3− | 2001 11 09 | 704 | (1.8+ | 2.0+) | 2003 02 04 | 704 | 0.2− | 0.8+ |
| 1991 12 27 | 691 | 0.2− | 0.7− | 2001 11 09 | 704 | (1.5+ | 1.8+) | 2003 02 04 | 704 | 0.7− | 0.3+ |
| 1993 04 14 | 691 | 0.2− | 0.3− | 2001 11 09 | 704 | (1.4+ | 1.8+) | 2003 02 19 | 644 | 0.3+ | 0.9+ |
| 1993 04 14 | 691 | 0.2− | 0.3− | 2001 11 15 | 691 | 0.2+ | 0.1− | 2003 02 19 | 644 | 0.5+ | 0.7+ |
| 1993 04 14 | 691 | 0.2− | 0.3− | 2001 11 15 | 691 | 0.0 | 0.3− | 2003 02 19 | 644 | 0.5+ | 0.9+ |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2001 11 15 | 691 | 0.0 | 0.0 | 2004 04 24 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.4+ | 0.6+ | 2001 11 17 | 704 | 0.0 | 0.2− | 2004 04 24 | 691 | 0.0 | 0.4+ |
| 2001 10 17 | 704 | 0.7− | 0.9+ | 2001 11 17 | 704 | 0.9+ | 0.4+ | 2004 04 24 | 691 | 0.1+ | 0.4+ |
| 2001 10 17 | 704 | 0.1+ | 1.0+ | 2001 11 17 | 704 | 0.8− | 0.0 | 2004 05 14 | 691 | 0.7+ | 0.3+ |
| 2001 10 20 | 704 | 0.7+ | 0.2+ | 2001 11 20 | 704 | 0.2− | 0.5+ | 2004 05 14 | 691 | 0.5+ | 0.7+ |
| 2001 10 20 | 704 | 0.3+ | 0.4+ | 2001 11 20 | 704 | 0.6+ | 0.4+ | 2004 05 14 | 691 | 0.6+ | 0.5+ |
| 2001 10 20 | 704 | 0.3+ | 0.5+ | 2001 11 20 | 704 | 0.2− | 0.8+ | 2006 09 18 | 703 | 0.6− | 0.7+ |
| 2001 10 20 | 704 | 0.0 | 1.0+ | 2001 11 20 | 704 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.4− | 1.0− |
| 2001 10 22 | 704 | 0.5+ | 0.3− | 2001 11 21 | 704 | 0.3− | 0.5+ | 2006 09 18 | 703 | (0.1− | 1.7−) |
| 2001 10 22 | 704 | 1.1+ | 0.4− | 2001 11 21 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.5+ | 0.0 |
| 2001 10 22 | 704 | (1.7+ | 0.5+) | 2001 11 21 | 704 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 10 22 | 704 | 1.0+ | 0.7+ | 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.5− | 0.7− | 2001 11 21 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 1.3+ | 1.1+ | 2001 12 11 | 704 | 0.6− | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.2− |
| 2001 10 23 | 704 | 0.4+ | 1.1− | 2001 12 11 | 704 | 0.0 | 1.4+ | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | 0.9+ | 0.8− | 2001 12 11 | 704 | (0.6− | 1.9+) | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.3− | 2001 12 11 | 704 | (0.0 | 2.3+) | 2006 09 27 | G96 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 0.3+ | 0.4− | 2003 01 26 | 699 | 0.0 | 0.7− | 2006 09 28 | G96 | 0.6− | 0.5− |
| 2001 10 24 | 704 | 0.2+ | 0.5− | 2003 01 26 | 699 | (0.3− | 1.8+) | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2003 01 26 | 699 | 1.1+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.1+ | 0.9− | 2003 01 26 | 699 | 0.1− | 0.6− | 2006 10 01 | 704 | 0.3− | 0.6+ |
| 2001 10 25 | 644 | 0.3+ | 0.5+ | 2003 01 27 | 704 | 0.0 | 0.8+ | 2006 10 01 | 704 | 0.0 | 1.4+ |
| 2001 10 25 | 644 | 0.3+ | 0.3+ | 2003 01 27 | 704 | 1.4− | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.5− |
| 2001 10 25 | 644 | 0.4+ | 0.2+ | 2003 01 27 | 704 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.3− | 0.4− |
| 2001 10 26 | 704 | 0.1+ | 0.3− | 2003 02 02 | 644 | 0.1− | 0.5+ | 2006 10 21 | 703 | 2.4− | 0.3− |
| 2001 10 26 | 704 | 0.0 | 0.2+ | 2003 02 02 | 644 | 1.0+ | 1.0+ | 2006 10 21 | 703 | 2.0− | 1.2+ |
| 2001 10 26 | 704 | 1.1+ | 1.0+ | 2003 02 02 | 644 | 0.3+ | 0.7+ | 2006 10 21 | 703 | 1.7− | 0.9+ |
| 2001 10 26 | 704 | 0.4− | 0.4+ | 2003 02 04 | 704 | 0.4+ | 1.3+ | 2006 10 21 | 703 | 0.3− | 1.8+ |
| 2001 11 09 | 704 | (0.3− | 2.5+) | 2003 02 04 | 704 | 0.3+ | 1.5+ | | | | |

**(140677)∗ 2001 UZ$_{51}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.46828 | | | (2000.0) | | |
| $n$ | 0.20631770 | $\omega$ | 244.98977 | | +0.94928929 | −0.31233854 |
| $a$ | 2.8364713 | $\Omega$ | 133.18780 | | +0.30331534 | +0.87966961 |
| $e$ | 0.1004850 | $i$ | 2.82845 | | +0.08276255 | +0.35864468 |
| $P$ | 4.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.0− | 1.2+ | 2003 01 28 | 291 | 0.4+ | 0.4+ | 2005 07 30 | E12 | 0.9− | 0.2+ |
| 2001 10 17 | 704 | 0.4− | 0.3+ | 2003 01 28 | 291 | 0.5+ | 0.6+ | 2005 07 30 | E12 | 0.6− | 0.1− |
| 2001 10 17 | 704 | 0.9− | 0.5+ | 2003 01 28 | 291 | 0.7+ | 0.4+ | 2005 07 30 | E12 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 1.3− | 0.6+ | 2003 02 06 | 291 | 0.4− | 0.6+ | 2005 07 30 | E12 | 0.3+ | 0.3− |
| 2001 10 20 | 704 | 0.6− | 0.9− | 2003 02 06 | 291 | 0.0 | 0.6+ | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.4− | 0.5− | 2003 02 06 | 291 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2001 10 20 | 704 | 0.1− | 0.6+ | 2004 03 16 | 291 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2001 10 20 | 704 | 0.1− | 0.4− | 2004 03 16 | 291 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | (2.0+ | 0.8−) | 2004 03 16 | 291 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2001 10 23 | 704 | (2.2+ | 0.8−) | 2005 06 27 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.6− | 0.0 |
| 2001 10 23 | 704 | (2.3+ | 1.3−) | 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.3+ |
| 2001 10 23 | 704 | (2.2+ | 2.5−) | 2005 06 27 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.5+ |
| 2001 10 23 | 704 | (2.5+ | 2.2−) | 2005 07 05 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.1− |
| 2001 10 24 | 704 | (2.6+ | 0.8+) | 2005 07 05 | 691 | 0.4− | 0.8+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2001 10 24 | 704 | (2.7+ | 0.0 ) | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | 1.1+ | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | (1.9+ | 1.1+) | 2005 07 09 | 691 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.3+ | 0.9+ |
| 2001 11 20 | 704 | 0.1− | 1.0+ | 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.4+ | 1.1+ | 2005 07 15 | G96 | 0.3− | 0.2− | 2006 11 20 | 704 | 1.3+ | 0.8+ |
| 2001 11 20 | 704 | 0.5+ | 1.2+ | 2005 07 15 | G96 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.7− | 0.5− |
| 2001 11 20 | 704 | 0.5+ | 1.3+ | 2005 07 15 | G96 | 0.7+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 1.0+ | 2005 07 15 | G96 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.4− | 0.2− |

**(140678)∗ 2001 UC$_{52}$ = 2003 EN$_5$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43119)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.61849 | | | (2000.0) | | |
| $n$ | 0.18200726 | $\omega$ | 338.56693 | | −0.34330625 | −0.93891512 |
| $a$ | 3.0837340 | $\Omega$ | 131.50289 | | +0.86632435 | −0.32645405 |
| $e$ | 0.1490264 | $i$ | 1.84153 | | +0.36279876 | −0.10893184 |
| $P$ | 5.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 05 | 691 | 0.0 | 0.0 | 2001 11 10 | 704 | 0.1+ | 0.6+ | 2003 03 08 | 704 | 0.2+ | 0.6+ |
| 1992 02 05 | 691 | 0.2+ | 0.2− | 2001 11 10 | 704 | 0.6− | 0.4+ | 2003 03 08 | 704 | 0.7+ | 0.0 |
| 1992 02 05 | 691 | 0.0 | 0.0 | 2001 11 10 | 704 | 0.2− | 0.9− | 2003 03 08 | 704 | 0.5+ | 0.3+ |
| 2000 07 30 | 807 | 0.3− | 0.4+ | 2001 11 17 | 704 | 1.2+ | 0.2+ | 2003 03 09 | 704 | 1.3+ | 0.5+ |
| 2000 07 30 | 807 | 0.1− | 0.4+ | 2001 11 17 | 704 | 0.0 | 0.2− | 2003 03 09 | 704 | 0.7+ | 0.2− |
| 2001 10 17 | 704 | 1.1+ | 1.2− | 2001 11 17 | 691 | 0.0 | 0.1− | 2003 03 09 | 704 | 0.6+ | 0.0 |
| 2001 10 17 | 704 | 0.1+ | 0.2− | 2001 11 17 | 704 | 0.1+ | 0.2+ | 2003 03 09 | 704 | 0.6+ | 0.0 |
| 2001 10 17 | 704 | 1.2+ | 0.7+ | 2001 11 17 | 691 | 0.2− | 0.1+ | 2003 03 14 | 608 | 0.6+ | 0.0 |
| 2001 10 17 | 704 | 0.9+ | 0.4+ | 2001 11 17 | 704 | 0.2+ | 1.2+ | 2003 03 14 | 608 | 0.1+ | 0.9+ |
| 2001 10 18 | 644 | 0.6+ | 0.0 | 2001 11 17 | 691 | 0.1− | 0.1− | 2003 03 14 | 608 | 0.2− | 0.2− |
| 2001 10 18 | 644 | 0.4+ | 0.0 | 2001 11 20 | 704 | 0.2− | 0.1− | 2003 03 30 | 645 | 0.2− | 0.2+ |
| 2001 10 18 | 644 | 0.4+ | 0.1− | 2001 11 20 | 704 | 0.3+ | 0.2− | 2003 03 30 | 645 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.5− | 2001 11 20 | 704 | 0.1− | 0.5− | 2004 05 20 | 599 | 0.0 | 0.9+ |
| 2001 10 20 | 704 | 0.6− | 0.2+ | 2001 11 20 | 704 | 0.5− | 0.2+ | 2004 05 20 | 599 | 0.4− | 0.6+ |
| 2001 10 20 | 704 | 0.8− | 0.0 | 2001 11 20 | 704 | 0.2− | 0.2− | 2004 05 20 | 599 | 0.1− | 0.9+ |
| 2001 10 22 | 704 | 1.8− | 0.7− | 2001 11 21 | 704 | 0.3+ | 0.2+ | 2005 06 13 | G96 | 0.4− | 0.5+ |
| 2001 10 22 | 704 | (2.0− | 0.8−) | 2001 11 21 | 704 | 0.4+ | 0.2− | 2005 06 13 | G96 | 0.5− | 0.5+ |
| 2001 10 22 | 704 | 1.4− | 0.6+ | 2001 11 21 | 704 | 0.3+ | 0.1− | 2005 06 13 | G96 | 0.4− | 0.3+ |
| 2001 10 22 | 704 | 1.3− | 0.0 | 2001 11 21 | 704 | 0.6+ | 0.5− | 2005 06 13 | G96 | 0.3− | 0.4+ |
| 2001 10 22 | 704 | 1.3− | 0.2+ | 2001 11 21 | 704 | 0.0 | 0.3− | 2005 07 15 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 1.0− | 0.1− | 2002 12 07 | 645 | 0.1− | 0.1− | 2005 07 15 | G96 | 0.4+ | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2002 12 07 | 645 | 0.2− | 0.0 | 2005 07 15 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.6− | 0.3+ | 2003 02 03 | 699 | 0.0 | 0.2− | 2005 07 15 | G96 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.7− | 0.3+ | 2003 02 03 | 699 | 1.4− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | 1.0+ | 0.0 | 2003 02 03 | 699 | 0.3− | 1.0− | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.7+ | 2003 02 03 | 699 | 0.7− | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.3+ | 0.8+ | 2003 02 22 | 699 | 0.1+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.0 |
| 2001 10 25 | 644 | 0.3− | 0.3− | 2003 02 22 | 699 | 0.1− | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.4+ |
| 2001 10 25 | 644 | 0.3− | 0.2− | 2003 02 22 | 699 | 0.9+ | 1.1+ | 2006 09 23 | 691 | 0.1+ | 0.7+ |
| 2001 10 25 | 644 | 0.2− | 0.2− | 2003 02 22 | 699 | 0.9+ | 0.8+ | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2001 10 26 | 704 | 0.5+ | 0.1− | 2003 03 05 | 704 | 1.1+ | 1.6+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 10 26 | 704 | 0.6+ | 0.2+ | 2003 03 05 | 704 | 1.1+ | 0.7− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2001 10 26 | 704 | (2.1− | 0.3+) | 2003 03 05 | 704 | 0.2− | 1.2− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 10 26 | 704 | 0.2− | 0.4− | 2003 03 06 | 699 | (0.2+ | 3.2+) | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 0.2− | 0.5− | 2003 03 06 | 699 | 1.0+ | 1.2+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.0 | 0.4− | 2003 03 06 | 699 | 1.0+ | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2003 03 06 | 699 | 1.1+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 2001 11 09 | 704 | 0.2+ | 0.6+ | 2003 03 06 | 644 | 0.9+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.7+ | 0.2− | 2003 03 06 | 644 | 0.9+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2+ | |
| 2001 11 10 | 704 | 1.2+ | 0.5− | 2003 03 06 | 644 | 1.0+ | 0.0 | | | | | |

**(140679)∗ 2001 US$_{52}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.93112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21798080 | $\omega$ | 328.43143 | | +0.87219830 | −0.48131496 | |
| $a$ | 2.7343696 | $\Omega$ | 60.58393 | | +0.46705411 | +0.76646742 | |
| $e$ | 0.1234929 | $i$ | 5.74611 | | +0.14536362 | +0.42528061 | |
| $P$ | 4.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 27 | 333 | 0.4− | 0.6+ | 2001 11 10 | 704 | 0.7− | 0.2+ | 2004 06 17 | 691 | 0.6+ | 0.6+ | |
| 2001 09 27 | 333 | 0.2+ | 0.4− | 2001 11 10 | 704 | 0.0 | 0.9+ | 2004 06 17 | 691 | 0.4+ | 0.5+ | |
| 2001 09 27 | 333 | 0.8− | 1.0− | 2001 11 10 | 704 | 0.1− | 0.6+ | 2005 07 27 | 644 | 0.0 | 0.1− | |
| 2001 10 11 | 333 | 1.0+ | 0.5− | 2001 11 10 | 704 | 0.8− | 1.0+ | 2005 07 27 | 644 | 0.2− | 0.5+ | |
| 2001 10 11 | 333 | 0.2− | 0.7− | 2001 11 10 | 704 | 0.4+ | 0.6− | 2005 07 27 | 644 | 0.3− | 0.1+ | |
| 2001 10 11 | 333 | 0.9+ | 1.4− | 2001 11 10 | 704 | 0.4− | 1.0+ | 2005 08 05 | 644 | 0.2− | 0.3+ | |
| 2001 10 13 | 333 | (1.9− | 1.6−) | 2001 11 10 | 704 | 0.2− | 0.8+ | 2005 08 05 | 644 | 0.2− | 0.0 | |
| 2001 10 13 | 333 | (2.6+ | 1.8−) | 2001 11 10 | 704 | 0.6− | 0.7+ | 2005 08 05 | 644 | 0.2− | 0.1+ | |
| 2001 10 17 | 704 | (1.9+ | 0.8−) | 2001 11 10 | 704 | 1.0+ | 0.7− | 2005 08 30 | 644 | 0.2− | 0.2+ | |
| 2001 10 17 | 704 | (3.9+ | 1.6−) | 2001 11 10 | 704 | 0.6− | 0.5+ | 2005 08 30 | 644 | 0.4− | 0.2+ | |
| 2001 10 17 | 704 | (3.5+ | 1.2−) | 2001 11 17 | 704 | 0.0 | 0.2+ | 2005 08 30 | 699 | 0.7+ | 0.8− | |
| 2001 10 18 | 644 | 0.1− | 0.5+ | 2001 11 17 | 704 | 0.4+ | 0.2+ | 2005 08 30 | 644 | 0.4− | 0.2+ | |
| 2001 10 18 | 644 | 0.3− | 0.6+ | 2001 11 17 | 704 | 0.7− | 0.1+ | 2005 08 30 | 699 | 0.0 | 0.4− | |
| 2001 10 18 | 644 | 0.3− | 0.7+ | 2001 11 17 | 704 | 0.2+ | 0.3− | 2005 08 30 | 699 | 0.1− | 0.1− | |
| 2001 10 20 | 704 | 0.2+ | 0.4+ | 2001 11 18 | 704 | 0.6+ | 1.0+ | 2005 08 30 | 699 | 0.1− | 0.2+ | |
| 2001 10 20 | 704 | 0.2+ | 0.0 | 2001 11 18 | 704 | 0.9+ | 1.1+ | 2005 09 01 | 644 | 0.2− | 0.1+ | |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2001 11 18 | 704 | 1.1+ | 1.1+ | 2005 09 01 | 644 | 0.0 | 0.1+ | |
| 2001 10 20 | 704 | 0.4− | 0.1− | 2001 11 18 | 704 | (1.7+ | 1.8+) | 2005 09 01 | 644 | 0.2− | 0.1+ | |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.1+ | 2005 09 05 | 703 | (1.6− | 0.9+) | |
| 2001 10 21 | 704 | 0.3+ | 0.2− | 2001 11 20 | 704 | 0.0 | 0.1+ | 2005 09 05 | 703 | 0.7+ | 0.8− | |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2001 11 20 | 704 | 0.1+ | 0.5+ | 2005 09 05 | 703 | 0.5− | 0.7− | |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.2− | 0.4+ | 2005 09 05 | 703 | (1.2− | 1.8−) | |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.6+ | 0.1+ | |
| 2001 10 22 | 704 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.3+ | |
| 2001 10 22 | 704 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.5− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.4+ | |
| 2001 10 22 | 704 | 0.0 | 0.3+ | 2001 11 21 | 704 | 0.6− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.0 | |
| 2001 10 22 | 704 | 1.0− | 0.1+ | 2001 11 21 | 704 | 0.5− | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.3− | |
| 2001 10 23 | 704 | (0.2+ | 2.2+) | 2001 11 21 | 704 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.4+ | 0.2− | |
| 2001 10 23 | 704 | 0.6+ | 0.4+ | 2001 12 09 | 699 | 0.5− | 0.3− | 2006 10 23 | G96 | 0.5− | 0.3− | |
| 2001 10 23 | 704 | 0.3− | 0.9+ | 2001 12 09 | 699 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.0 | |
| 2001 10 23 | 704 | (0.4+ | 1.7+) | 2001 12 09 | 699 | 0.8− | 0.4− | 2006 10 23 | G96 | 0.4− | 0.3− | |
| 2001 10 23 | 704 | (1.0− | 1.8+) | 2001 12 09 | 699 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.1+ | 0.5− | |
| 2001 10 24 | 704 | (2.0− | 3.1−) | 2001 12 14 | 704 | 0.3− | 1.0− | 2006 11 02 | G96 | 0.1+ | 0.1− | |
| 2001 10 24 | 704 | (2.3− | 3.7−) | 2001 12 14 | 704 | 0.4− | 0.4− | 2006 11 02 | G96 | 0.1− | 0.1+ | |
| 2001 10 24 | 704 | (2.6− | 3.8−) | 2001 12 14 | 704 | 0.3+ | 0.4+ | 2006 11 02 | G96 | 0.1− | 0.2− | |
| 2001 10 24 | 704 | (2.1− | 3.7−) | 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 11 02 | G96 | 0.3− | 0.8− | |
| 2001 10 24 | 704 | (2.6− | 4.0−) | 2001 12 14 | 704 | 0.5− | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.3− | |
| 2001 10 25 | 644 | 0.1− | 0.1+ | 2001 12 17 | 704 | 0.2+ | 0.5− | 2006 11 22 | G96 | 0.2− | 0.4− | |
| 2001 10 25 | 644 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.4− | 0.4− | |
| 2001 10 25 | 644 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.2− | 0.5+ | 2006 11 25 | G96 | 0.3− | 0.3− | |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2001 12 17 | 704 | 0.5− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.1− | |
| 2001 11 09 | 704 | 0.6+ | 0.8− | 2001 12 17 | 704 | 0.2− | 1.3+ | 2006 11 25 | G96 | 0.3− | 0.1− | |
| 2001 11 09 | 704 | 0.0 | 0.1− | 2003 01 28 | 645 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.2− | |
| 2001 11 09 | 704 | 0.0 | 0.0 | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 11 26 | J95 | 0.4− | 0.4− | |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2004 06 11 | 691 | 0.0 | 0.1+ | 2006 11 26 | J95 | 0.1+ | 0.1− | |
| 2001 11 09 | 644 | 0.0 | 0.0 | 2004 06 11 | 691 | 0.0 | 0.2+ | 2006 11 26 | J95 | 0.1+ | 0.1+ | |
| 2001 11 09 | 644 | 0.0 | 0.2+ | 2004 06 11 | 691 | 0.1+ | 0.3+ | | | | | |
| 2001 11 09 | 644 | 0.1− | 0.0 | 2004 06 17 | 691 | 0.6+ | 0.7+ | | | | | |

**(140680)∗ 2001 UC$_{53}$ = 2000 LR$_{8}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31429)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.77150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21103188 | $\omega$ | 244.57341 | | +0.76616053 | +0.59479997 | |
| $a$ | 2.7940704 | $\Omega$ | 77.98129 | | −0.46303158 | +0.77348908 | |
| $e$ | 0.2376340 | $i$ | 14.40573 | | −0.44564538 | +0.21892381 | |
| $P$ | 4.67 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 01 | 704 | 1.2− | 1.7+ | 2001 12 11 | 704 | (0.3+ | 2.6+) | 2005 08 25 | E12 | 0.2− | 0.5+ | |
| 2000 06 01 | 704 | 0.9+ | 0.1+ | 2001 12 11 | 704 | (1.7+ | 2.9+) | 2005 09 23 | E12 | 0.6+ | 0.1− | |
| 2000 06 01 | 704 | 0.2+ | 0.3+ | 2001 12 11 | 704 | (1.7+ | 2.0+) | 2005 09 23 | E12 | 0.6− | 0.1+ | |
| 2000 06 01 | 704 | 0.8+ | 0.8+ | 2001 12 11 | 704 | (2.5+ | 1.6+) | 2005 09 23 | E12 | 0.2− | 1.2− | |
| 2000 06 07 | 704 | 0.3+ | 0.1+ | 2005 05 20 | E12 | 0.2+ | 0.4+ | 2005 09 23 | E12 | 0.2− | 0.5− | |
| 2000 06 07 | 704 | 0.8+ | 0.0 | 2005 05 20 | E12 | (0.1− | 2.4+) | 2006 10 21 | G96 | 0.3− | 0.0 | |
| 2000 06 07 | 704 | 0.3+ | 0.0 | 2005 05 20 | E12 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | |
| 2000 06 07 | 704 | 0.1− | 0.3+ | 2005 05 20 | E12 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1+ | |
| 2000 06 24 | 704 | 0.1+ | 1.2+ | 2005 07 05 | E12 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.3+ | |
| 2000 06 24 | 704 | 0.1− | 0.3+ | 2005 07 05 | E12 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.3+ | |
| 2000 06 24 | 704 | 0.4+ | 0.4− | 2005 07 05 | E12 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ | |
| 2000 06 24 | 704 | 0.3− | 0.1+ | 2005 07 05 | E12 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.1− | |
| 2001 10 11 | 691 | 0.3+ | 0.1+ | 2005 07 25 | E12 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.0 | 0.0 | |
| 2001 10 11 | 691 | 0.0 | 0.2+ | 2005 07 25 | E12 | 0.3− | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.0 | |
| 2001 10 11 | 691 | 0.5− | 0.3+ | 2005 07 25 | E12 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.2+ | |
| 2001 10 17 | 704 | 0.7+ | 0.4− | 2005 07 25 | E12 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.1− | |
| 2001 10 17 | 704 | 0.7+ | 0.3+ | 2005 08 06 | E12 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 | |
| 2001 10 17 | 704 | (1.6+ | 0.3−) | 2005 08 06 | E12 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.2+ | |
| 2001 10 17 | 704 | (2.1+ | 1.4−) | 2005 08 06 | E12 | 0.5+ | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.1+ | |
| 2001 10 20 | 704 | 0.5− | 0.2− | 2005 08 25 | E12 | 0.4− | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.1+ | |
| 2001 10 20 | 704 | 0.6− | 0.4− | 2005 08 25 | E12 | 0.4− | 0.4+ | | | | | |
| 2001 10 20 | 704 | 0.6− | 0.1− | 2005 08 25 | E12 | 0.2− | 0.3− | | | | | |

**(140681)∗ 2001 UL$_{53}$ = 1996 XK$_{14}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20591)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.59482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17903090 | $\omega$ | 298.01629 | | +0.78081642 | −0.59435301 | |
| $a$ | 3.1178177 | $\Omega$ | 99.08713 | | +0.61949181 | +0.69661073 | |
| $e$ | 0.1728393 | $i$ | 11.24376 | | +0.08096676 | +0.40184323 | |
| $P$ | 5.51 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 09 | 691 | 0.1− | 0.0 | 2001 11 21 | 608 | 1.0+ | 0.3+ | 2002 01 09 | 704 | 0.2− | 0.0 | |
| 1996 12 09 | 691 | 0.1+ | 0.2− | 2001 11 21 | 608 | 1.1+ | 0.9+ | 2002 01 09 | 704 | 0.1− | 0.4+ | |
| 1996 12 09 | 691 | 0.2+ | 0.4− | 2001 12 08 | 699 | 0.5− | 0.1+ | 2002 01 09 | 704 | 0.2− | 0.0 | |
| 1996 12 11 | 691 | 0.7+ | 0.4+ | 2001 12 08 | 699 | 0.3− | 0.4− | 2002 01 09 | 704 | 0.5− | 0.7+ | |
| 1996 12 11 | 691 | 0.6+ | 0.4+ | 2001 12 08 | 699 | 0.2− | 0.1+ | 2003 01 10 | 704 | 0.3+ | 0.2+ | |
| 1996 12 11 | 691 | 0.4+ | 0.9− | 2001 12 08 | 699 | 0.5− | 0.1+ | 2003 01 10 | 704 | 0.1+ | 0.1+ | |
| 1996 12 14 | 691 | 1.6− | 0.1− | 2001 12 11 | 704 | 0.1− | 0.3+ | 2003 01 10 | 704 | 0.9− | 0.0 | |
| 1996 12 14 | 691 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.4+ | 0.1+ | 2003 02 28 | 608 | 0.3− | 0.2− | |
| 1996 12 14 | 691 | 0.4− | 0.3− | 2001 12 11 | 704 | 0.2− | 0.4+ | 2003 02 28 | 608 | 0.3+ | 0.2+ | |
| 2001 09 17 | 704 | 0.5− | 0.3− | 2001 12 11 | 704 | 0.4+ | 0.8+ | 2003 02 28 | 608 | 0.3+ | 0.6− | |
| 2001 09 17 | 704 | 0.7+ | 0.2+ | 2001 12 11 | 704 | 0.0 | 0.8+ | 2006 07 31 | E12 | 0.5+ | 0.5+ | |
| 2001 09 17 | 704 | 0.7− | 0.3+ | 2001 12 14 | 644 | 0.2− | 0.2+ | 2006 07 31 | E12 | 0.2− | 0.3− | |
| 2001 09 17 | 704 | 0.3− | 0.1+ | 2001 12 14 | 644 | 0.2− | 0.2+ | 2006 07 31 | E12 | 0.1+ | 0.7+ | |
| 2001 09 17 | 704 | 0.6− | 0.4+ | 2001 12 14 | 644 | 0.1− | 0.3+ | 2006 07 31 | E12 | 0.6+ | 0.4− | |
| 2001 09 27 | 644 | 0.1+ | 0.5− | 2001 12 17 | 704 | 0.1+ | 0.1− | 2006 08 21 | 644 | 0.3+ | 0.3− | |
| 2001 09 27 | 644 | 0.2+ | 0.0 | 2001 12 17 | 704 | 0.9+ | 0.7− | 2006 08 21 | 644 | 0.0 | 0.5− | |
| 2001 09 27 | 644 | 0.4+ | 0.3− | 2001 12 17 | 704 | 0.6+ | 0.7− | 2006 08 21 | 644 | 0.1− | 0.1+ | |
| 2001 10 17 | 704 | 1.4+ | 0.4+ | 2001 12 17 | 704 | (2.1+ | 0.4+) | 2006 09 14 | 644 | 0.3+ | 0.2− | |
| 2001 10 17 | 704 | 1.2+ | 1.0− | 2001 12 17 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 644 | 0.2− | 0.4− | |
| 2001 10 17 | 704 | 0.8+ | 0.2+ | 2001 12 18 | 644 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1− | |
| 2001 10 20 | 704 | 0.7− | 0.4+ | 2001 12 18 | 644 | 0.2− | 0.1+ | 2006 09 17 | 699 | 0.2− | 0.6− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4− | 0.8+ | 2001 12 18 | 644 | 0.3− | 0.1+ | 2006 09 17 | 699 | 1.0+ | 0.2− |
| 2001 10 20 | 704 | 0.3+ | 0.5+ | 2001 12 18 | 704 | 0.5+ | 0.5− | 2006 09 17 | 699 | 0.1+ | 0.4+ |
| 2001 10 23 | 608 | 0.2− | 1.0− | 2001 12 18 | 704 | 0.4+ | 0.1− | 2006 09 17 | 699 | 1.3− | 0.2− |
| 2001 10 23 | 608 | 0.4− | 0.9− | 2001 12 18 | 704 | 0.3+ | 0.0 | 2006 09 20 | 703 | 0.2− | 0.9− |
| 2001 10 23 | 608 | 0.1− | 1.2− | 2001 12 18 | 704 | 0.3− | 0.3− | 2006 09 20 | 703 | 1.3+ | 0.7− |
| 2001 10 25 | 644 | 0.3− | 0.1+ | 2001 12 18 | 704 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.3− |
| 2001 10 25 | 644 | 0.3− | 0.3+ | 2001 12 23 | 608 | 0.3− | 0.3− | 2006 09 20 | 703 | 0.4− | 0.2+ |
| 2001 10 25 | 644 | 0.1− | 0.3+ | 2001 12 23 | 608 | 0.0 | 0.7− | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2001 11 12 | 699 | 1.0− | 0.2+ | 2001 12 23 | 608 | 0.1+ | 0.8− | 2006 09 26 | 703 | 0.0 | 0.4− |
| 2001 11 12 | 699 | 0.6− | 0.1− | 2002 01 05 | 699 | 0.9− | 0.4− | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2001 11 12 | 699 | (2.6− | 0.7−) | 2002 01 05 | 699 | 0.7− | 0.4− | 2006 09 26 | 703 | 0.3+ | 0.4+ |
| 2001 11 12 | 699 | 0.9− | 0.6+ | 2002 01 05 | 699 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2001 11 16 | 644 | 0.5− | 0.2+ | 2002 01 05 | 699 | (0.8− | 1.6−) | 2006 10 22 | 644 | 0.4− | 0.2− |
| 2001 11 16 | 644 | 0.4− | 0.3+ | 2002 01 08 | 644 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2001 11 16 | 644 | 0.3− | 0.4+ | 2002 01 08 | 644 | 0.2− | 0.4+ | | | | |
| 2001 11 21 | 608 | 1.1+ | 1.0+ | 2002 01 08 | 644 | 0.2− | 0.4+ | | | | |

**(140682)∗ 2001 UA$_{54}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.06579 | | (2000.0) | | | |
| $n$ | 0.18598687 | $\omega$ | 244.94748 | | +0.71199839 | −0.70067197 |
| $a$ | 3.0395866 | $\Omega$ | 159.43065 | | +0.68216861 | +0.67468688 |
| $e$ | 0.1019833 | $i$ | 7.52511 | | +0.16644602 | +0.23206983 |
| $P$ | 5.30 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 09 | 691 | 0.3+ | 0.5− | 2003 02 03 | 699 | 0.2− | 1.0+ | 2006 09 29 | 699 | 0.7+ | 0.4+ |
| 1999 06 09 | 691 | 0.6− | 0.4+ | 2003 02 03 | 699 | 0.9+ | 0.9− | 2006 09 30 | 703 | 0.3− | 0.2+ |
| 1999 06 09 | 691 | 0.6+ | 0.6+ | 2003 02 03 | 699 | (0.7− | 2.7−) | 2006 09 30 | 703 | 0.2− | 1.2− |
| 2001 10 16 | 608 | 0.9− | 0.8− | 2003 02 22 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 1.0− | 1.5− |
| 2001 10 16 | 608 | 1.1− | 0.9− | 2003 02 22 | 644 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.7− |
| 2001 10 16 | 608 | 0.9− | 0.5− | 2003 02 22 | 644 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.2− | 0.4− |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2003 02 26 | 209 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.5− |
| 2001 10 17 | 704 | 0.6− | 1.1+ | 2003 02 26 | 209 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.4− |
| 2001 10 17 | 704 | 0.6− | 1.4+ | 2003 02 26 | 209 | 0.3+ | 0.5+ | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2001 10 20 | 704 | 0.1+ | 0.1+ | 2003 03 06 | 644 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.3− | 0.1+ |
| 2001 10 20 | 704 | 0.4+ | 0.0 | 2003 03 06 | 644 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 0.5+ | 2003 03 06 | 644 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1+ |
| 2001 11 19 | 699 | 0.1− | 0.7+ | 2003 03 12 | 644 | 0.1+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.2+ |
| 2001 11 19 | 699 | 0.6− | 0.4+ | 2003 03 12 | 644 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 11 19 | 699 | 0.0 | 0.5+ | 2003 03 12 | 644 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.5− | 0.3− | 2004 04 26 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 11 24 | 704 | 0.3+ | 0.4+ | 2004 04 26 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2001 11 24 | 704 | 0.5+ | 0.2+ | 2004 04 26 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2001 11 24 | 704 | 0.8+ | 0.1+ | 2006 09 16 | 699 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2001 11 24 | 704 | 0.2− | 0.4− | 2006 09 16 | 699 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2001 11 24 | 704 | 0.2+ | 0.2− | 2006 09 16 | 699 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 2001 11 24 | 704 | 0.5+ | 0.1− | 2006 09 16 | 699 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.8+ |
| 2001 11 24 | 704 | (2.9+ | 1.8+) | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 10 22 | 703 | (1.8+ | 0.8+) |
| 2001 12 08 | 699 | 0.6+ | 0.6+ | 2006 09 18 | 703 | 1.4+ | 1.5− | 2006 10 22 | 703 | 0.2− | 1.0− |
| 2001 12 08 | 699 | 0.5+ | 0.9− | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 12 08 | 699 | 0.9+ | 1.1+ | 2006 09 18 | 703 | 0.8+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2001 12 08 | 699 | 0.2+ | 0.8− | 2006 09 18 | 699 | 0.7+ | 0.6− | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2001 12 11 | 704 | 0.2− | 0.5− | 2006 09 18 | 699 | 0.4− | 0.5+ | 2006 11 10 | 704 | 1.4− | 0.2− |
| 2001 12 11 | 704 | 0.4+ | 0.0 | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 11 10 | 704 | 0.3− | 0.5+ |
| 2001 12 11 | 704 | 0.8+ | 0.9− | 2006 09 18 | 699 | 0.6− | 0.5+ | 2006 11 10 | 704 | 0.9+ | 0.9+ |
| 2001 12 11 | 704 | (0.6+ | 1.6−) | 2006 09 25 | 699 | 0.5− | 1.0+ | 2006 11 16 | 703 | 1.4+ | 0.1+ |
| 2001 12 11 | 704 | 0.5− | 0.5− | 2006 09 25 | 699 | 0.5+ | 1.0+ | 2006 11 16 | 703 | (3.6+ | 0.6+) |
| 2002 01 08 | 644 | 0.7− | 0.4+ | 2006 09 25 | 699 | 0.4− | 0.9+ | 2006 11 16 | 703 | 0.7− | 0.7+ |
| 2002 01 08 | 644 | 0.5− | 0.6+ | 2006 09 25 | 699 | 0.6+ | 0.6+ | 2006 11 16 | 703 | 0.7− | 0.7− |
| 2002 01 08 | 644 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.6− | | | | |
| 2003 02 03 | 699 | 0.8+ | 0.4− | 2006 09 29 | 699 | (1.8+ | 0.9+) | | | | |

**(140683)∗ 2001 UH$_{54}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.53880 | | (2000.0) | | | |
| $n$ | 0.24245497 | $\omega$ | 126.35827 | | +0.04572993 | −0.98645849 |
| $a$ | 2.5471156 | $\Omega$ | 320.11296 | | +0.81969534 | +0.12717490 |
| $e$ | 0.1625716 | $i$ | 14.21817 | | +0.57097138 | −0.10356734 |
| $P$ | 4.07 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 699 | 0.4+ | 0.1− | 2003 03 09 | 699 | 0.0 | 0.7+ | 2005 10 23 | 703 | 0.3+ | 0.1− |
| 2001 08 26 | 699 | 0.8− | 0.3+ | 2003 03 09 | 699 | 0.1− | 0.7+ | 2005 10 23 | 703 | 0.1− | 0.5− |
| 2001 08 26 | 699 | 0.4− | 0.6− | 2003 03 09 | 699 | 1.2+ | 0.5+ | 2005 10 24 | 644 | 0.2− | 0.1+ |
| 2001 08 26 | 699 | 0.5+ | 0.1+ | 2003 03 09 | 699 | 0.2+ | 0.1− | 2005 10 24 | 644 | 0.3− | 0.1+ |
| 2001 08 28 | 644 | 0.2+ | 0.9+ | 2003 03 28 | 699 | 0.6+ | 1.0+ | 2005 10 24 | 644 | 0.1− | 0.0 |
| 2001 08 28 | 644 | 0.4− | 1.2+ | 2003 03 28 | 699 | 0.3+ | 0.0 | 2005 10 29 | 703 | 0.4+ | 0.5− |
| 2001 08 28 | 644 | 0.1− | 1.2+ | 2003 03 28 | 699 | (1.8+ | 0.5−) | 2005 10 29 | 703 | 0.5− | 0.5− |
| 2001 09 09 | 704 | 0.4− | 0.8− | 2003 03 28 | 699 | (1.7+ | 0.7+) | 2005 10 29 | 703 | 0.1+ | 0.0 |
| 2001 09 09 | 704 | 0.6− | 0.9− | 2003 04 07 | 704 | 0.3− | 0.9− | 2005 10 29 | 703 | 0.1− | 0.0 |
| 2001 09 09 | 704 | 0.5+ | 0.1+ | 2003 04 07 | 704 | 0.0 | 0.6+ | 2005 11 04 | 699 | 0.0 | 0.6+ |
| 2001 09 29 | 644 | 0.7− | 1.1− | 2003 04 07 | 704 | 0.3+ | 0.1+ | 2005 11 04 | 699 | 1.0− | 0.1− |
| 2001 09 29 | 644 | (0.9+ | 3.4+) | 2003 04 07 | 704 | 0.9+ | 0.5+ | 2005 11 04 | 699 | 0.4− | 0.5+ |
| 2001 09 29 | 644 | 0.8− | 1.1− | 2005 09 01 | 644 | 0.2− | 0.4+ | 2005 11 04 | 699 | 0.4− | 0.6+ |
| 2001 09 29 | 644 | (0.9+ | 3.1+) | 2005 09 01 | 644 | 0.4− | 0.5+ | 2005 11 20 | 644 | 0.6− | 0.1+ |
| 2001 09 29 | 644 | 0.8− | 1.3− | 2005 09 01 | 644 | 0.3− | 0.3+ | 2005 11 20 | 644 | 0.5− | 0.0 |
| 2001 09 29 | 644 | (1.1+ | 3.4+) | 2005 09 12 | 704 | 0.8+ | 0.5+ | 2005 11 20 | 644 | 0.3− | 0.0 |
| 2001 10 18 | 704 | 0.4− | 0.8+ | 2005 09 12 | 704 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 10 18 | 704 | 0.1+ | 0.5+ | 2005 09 12 | 704 | 0.8+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 10 18 | 704 | 0.1+ | 0.5+ | 2005 09 12 | 704 | 0.3+ | 0.6− | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2001 10 18 | 704 | (0.8− | 1.9+) | 2005 09 12 | 704 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.4− | 0.0 |
| 2001 10 20 | 704 | (1.6+ | 0.7+) | 2005 10 01 | 703 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2001 10 20 | 704 | 1.3+ | 0.7+ | 2005 10 01 | 703 | 0.8− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 1.2+ | 0.7+ | 2005 10 01 | 703 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.4+ |
| 2001 10 20 | 704 | 0.7+ | 0.8+ | 2005 10 01 | 703 | 0.6− | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.4+ |
| 2001 10 20 | 704 | (2.3+ | 0.4+) | 2005 10 12 | 704 | 0.2− | 0.9+ | 2006 11 16 | 691 | 0.5+ | 0.2− |
| 2001 11 12 | 704 | 0.0 | 0.4− | 2005 10 12 | 704 | 0.4− | 0.9+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2001 11 12 | 704 | 0.4− | 0.7− | 2005 10 12 | 704 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.7− | 0.3− |
| 2001 11 12 | 704 | 0.3− | 0.7− | 2005 10 12 | 704 | 0.0 | 0.8+ | 2006 11 20 | G96 | 0.5− | 0.1− |
| 2001 11 12 | 704 | 0.0 | 0.9− | 2005 10 12 | 704 | 0.1− | 0.5+ | 2006 11 20 | G96 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.6− | 0.7− | 2005 10 23 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.1+ |
| 2001 12 10 | 704 | 0.1+ | 1.4+ | 2005 10 23 | 644 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2001 12 10 | 704 | 1.3+ | 0.3− | 2005 10 23 | 644 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.6− | 0.3− |
| 2001 12 10 | 704 | 1.1+ | 0.7− | 2005 10 23 | 703 | 0.2+ | 0.9− | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2001 12 10 | 704 | 0.1+ | 0.2− | 2005 10 23 | 703 | 0.8+ | 0.1− | 2006 12 01 | G96 | 0.5− | 0.1− |

**(140684)∗ 2001 UW$_{54}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.95912 | | (2000.0) | | | |
| $n$ | 0.21088783 | $\omega$ | 148.67980 | | +0.89250175 | −0.43419992 |
| $a$ | 2.7953426 | $\Omega$ | 237.53824 | | +0.37810295 | +0.86784076 |
| $e$ | 0.1645168 | $i$ | 8.32130 | | +0.24592435 | +0.24150124 |
| $P$ | 4.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 1992 11 27 | 691 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 1992 11 27 | 691 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 11 16 | 704 | 0.4− | 1.2− |
| 2001 08 17 | 644 | 0.2− | 0.9− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 1.1− | 0.8− |
| 2001 08 17 | 644 | 0.3+ | 1.0− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | 1.0− | 1.2+ |
| 2001 08 17 | 644 | 0.0 | 1.1− | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 1.5+ |
| 2001 08 25 | 704 | 0.7+ | 0.2+ | 2006 10 13 | 691 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.7+ | 0.6+ |
| 2001 08 25 | 704 | 0.6+ | 0.6− | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.5+ | 0.8− | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2001 09 09 | 699 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2001 09 09 | 699 | 1.0− | 0.3− | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.4− |
| 2001 09 09 | 699 | 0.5− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.6− |
| 2001 09 09 | 699 | (2.0− | 0.1+) | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.4− |
| 2001 09 25 | 704 | 0.1− | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.6− | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.4− | 0.6− | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2001 09 25 | 704 | 0.5− | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2001 10 16 | 704 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.5+ | 0.4− |
| 2001 10 16 | 704 | 0.2+ | 0.3+ | 2006 10 29 | 704 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.5− |
| 2001 10 16 | 704 | 0.3+ | 1.0+ | 2006 10 29 | 704 | 0.3− | 0.4+ | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2001 10 16 | 704 | 1.4+ | 0.3− | 2006 10 29 | 704 | 0.4+ | 0.6− | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.4− | 2006 11 22 | 704 | 1.3+ | 0.2+ |
| 2001 10 21 | 704 | 0.7+ | 1.4+ | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2001 10 21 | 704 | 0.6+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2001 11 18 | 704 | 1.2− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2001 11 18 | 704 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.6− | 2006 11 27 | 703 | 0.0 | 0.5+ |
| 2001 11 18 | 704 | 1.5− | 0.5− | 2006 11 08 | 644 | 0.3− | 0.3− | 2006 11 27 | 703 | 0.7+ | 0.3+ |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.2− | 2006 11 27 | 703 | 1.0− | 2.9− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.7+ | 1.0− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.8− | 2.6+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.3− | 2006 11 29 | 704 | 1.0− | 0.8− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.6− | 0.2− |
| 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.2− |

**(140685)∗ 2001 UA$_{55}$ = 2004 FA$_{108}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61160)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.10767 | | (2000.0) | | | |
| $n$ | 0.17767160 | $\omega$ | 145.78118 | | +0.90350957 | +0.42789372 |
| $a$ | 3.1336996 | $\Omega$ | 188.98233 | | −0.41952942 | +0.87160862 |
| $e$ | 0.0596457 | $i$ | 8.85347 | | −0.08755298 | +0.23917645 |
| $P$ | 5.55 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2001 10 21 | 704 | 0.8− | 0.6+ | 2005 06 28 | 644 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2001 10 21 | 704 | 0.4+ | 1.6+ | 2005 06 28 | 644 | 0.5+ | 0.1− |
| 2001 09 19 | 704 | 0.4+ | 0.1− | 2001 10 22 | 704 | 0.2− | 0.1+ | 2005 07 01 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2001 10 22 | 704 | 0.5− | 0.4+ | 2005 07 01 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2001 10 22 | 704 | 0.4− | 0.5+ | 2005 07 01 | 691 | 0.4− | 0.3+ |
| 2001 09 21 | 704 | 0.1− | 1.6− | 2001 10 23 | 704 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.5+ | 0.5− | 2001 10 23 | 704 | 0.4+ | 0.3− | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 0.8− | 2001 10 23 | 704 | 0.1− | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2001 10 23 | 704 | 0.2− | 0.0 | 2006 08 25 | 704 | 0.6− | 0.5+ |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2001 10 23 | 704 | 0.5− | 0.4− | 2006 08 25 | 704 | 0.1− | 0.7+ |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.5+ | 0.4− |
| 2001 09 21 | 704 | 0.8− | 0.7− | 2001 10 24 | 704 | 0.3− | 0.3− | 2006 08 25 | 704 | 0.7− | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 1.2+ | 2001 10 24 | 704 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.5− |
| 2001 09 26 | 704 | 0.7+ | 1.7+ | 2001 10 24 | 704 | 0.6− | 0.4+ | 2006 08 28 | 699 | 0.5+ | 1.4+ |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 699 | 0.9+ | 0.6− |
| 2001 09 26 | 704 | 0.5+ | 0.9+ | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.6+ |
| 2001 09 26 | 704 | 0.4− | 0.6− | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 703 | (2.4− | 1.6−) |
| 2001 10 16 | 704 | 0.5− | 1.2− | 2004 03 27 | 704 | 0.9+ | 0.1− | 2006 08 29 | 703 | 1.5− | 0.1+ |
| 2001 10 16 | 704 | 0.7− | 1.0− | 2004 03 27 | 704 | 1.4+ | 0.2− | 2006 08 29 | 703 | 0.6+ | 1.3+ |
| 2001 10 16 | 704 | 0.2− | 0.1+ | 2004 03 27 | 704 | 1.0+ | 0.1+ | 2006 08 29 | 703 | 1.1+ | 0.4− |
| 2001 10 16 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.2+ |
| 2001 10 16 | 704 | 0.5− | 1.6− | 2004 03 27 | 704 | 0.1+ | 1.7+ | 2006 08 30 | 704 | 0.6− | 1.0− |
| 2001 10 21 | 704 | 1.2+ | 1.9+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.1+ | 0.4+ |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2004 04 13 | 691 | 0.2− | 0.5+ | 2006 08 30 | 704 | 1.0+ | 0.5+ |
| 2001 10 21 | 704 | 0.2− | 1.0+ | 2004 04 13 | 691 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.5+ | 0.8+ |
| 2001 10 21 | 704 | 0.2− | 0.8+ | 2004 04 24 | 691 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.3+ |
| 2001 10 21 | 704 | 0.7− | 1.0+ | 2004 04 24 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.8+ | 0.1+ |
| 2001 10 21 | 704 | 0.0 | 1.1+ | 2004 04 24 | 691 | 0.0 | 0.5+ | 2006 09 19 | 703 | 1.3− | 0.4− |
| 2001 10 21 | 704 | 1.4+ | 1.1+ | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 1.2− | 0.2+ |
| 2001 10 21 | 704 | 0.8− | 0.0 | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.7− |
| 2001 10 21 | 704 | 0.8+ | 1.7+ | 2005 06 01 | 691 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.4− | 0.4− |
| 2001 10 21 | 704 | 0.8− | 0.9+ | 2005 06 24 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.5− | 0.3− |
| 2001 10 21 | 704 | 0.6− | 1.1+ | 2005 06 24 | 644 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.5− | 0.3− |
| 2001 10 21 | 704 | 0.3+ | 1.7+ | 2005 06 24 | 644 | 0.2− | 0.2+ | | | | |
| 2001 10 21 | 704 | 0.2+ | 1.4+ | 2005 06 28 | 644 | 0.0 | 0.0 | | | | |

**(140686)∗ 2001 UU$_{55}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 199.58618 | | (2000.0) | | | |
| $n$ | 0.17153033 | $\omega$ | 260.52230 | | −0.67776800 | −0.73166254 |
| $a$ | 3.2080571 | $\Omega$ | 232.40534 | | +0.70550873 | −0.61924481 |
| $e$ | 0.0623358 | $i$ | 5.27202 | | +0.20709410 | −0.28496629 |
| $P$ | 5.75 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 07 | 691 | 0.2+ | 0.0 | 2001 10 21 | 704 | 0.3+ | 0.0 | 2004 03 28 | 691 | 0.3+ | 0.4+ |
| 1999 06 07 | 691 | 0.2+ | 0.4− | 2001 10 21 | 704 | 0.2− | 0.9+ | 2004 03 28 | 691 | 0.1+ | 0.4+ |
| 1999 06 07 | 691 | 0.4− | 0.4− | 2001 10 21 | 704 | 0.3+ | 0.8+ | 2006 08 16 | 644 | 0.3+ | 0.1− |
| 2001 09 27 | 704 | 1.0− | 0.9+ | 2001 11 10 | 704 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.1+ |
| 2001 09 27 | 704 | 0.7+ | 0.4+ | 2001 11 10 | 704 | 0.3− | 1.3+ | 2006 08 16 | 644 | 0.2+ | 0.4+ |
| 2001 09 27 | 704 | 0.9− | 0.4− | 2001 11 10 | 704 | 1.1+ | 0.1− | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 2001 09 27 | 704 | 0.6− | 0.2− | 2001 11 10 | 704 | 0.4− | 0.9+ | 2006 08 17 | 644 | 0.1+ | 0.3+ |
| 2001 10 17 | 704 | 0.9+ | 0.4− | 2004 02 16 | 703 | 0.1− | 0.9− | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 0.1− | 2004 02 16 | 703 | 0.8− | 1.1− | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.1− | 0.5+ | 2004 02 16 | 703 | 0.4+ | 0.8+ | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | 0.8+ | 0.6+ | 2004 02 16 | 703 | 1.5+ | 0.0 | 2006 08 17 | 644 | 0.3− | 0.6− |
| 2001 10 17 | 704 | 0.5+ | 0.4+ | 2004 03 16 | 704 | 1.0+ | 1.2+ | 2006 08 18 | 644 | 0.5− | 0.2+ |
| 2001 10 18 | 644 | 0.6+ | 0.4− | 2004 03 16 | 704 | 0.1− | 1.2+ | 2006 08 18 | 644 | 0.7− | 0.1+ |
| 2001 10 18 | 644 | 0.5+ | 0.8− | 2004 03 16 | 704 | 0.5+ | 1.0+ | 2006 08 18 | 644 | 0.2− | 0.0 |
| 2001 10 18 | 644 | 0.4+ | 0.2− | 2004 03 16 | 704 | 0.9+ | 1.0+ | 2006 09 15 | 691 | 0.1+ | 0.3+ |
| 2001 10 20 | 291 | 0.5− | 0.7− | 2004 03 27 | 703 | (0.5− | 2.5+) | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2001 10 20 | 291 | 0.6− | 0.6− | 2004 03 27 | 703 | 1.4− | 0.1− | 2006 09 15 | 691 | 0.4− | 0.8+ |
| 2001 10 20 | 291 | (3.2− | 1.2−) | 2004 03 27 | 703 | 0.6− | 1.4− | 2006 09 18 | 691 | 0.4− | 0.0 |
| 2001 10 21 | 704 | 0.5+ | 0.7+ | 2004 03 27 | 703 | 1.1− | 0.5− | 2006 09 18 | 691 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.8+ | 0.5+ | 2004 03 28 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.4+ | 0.0 |

**(140687)∗ 2001 UX$_{55}$ = 2003 AH$_{18}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40838)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.83344 | | (2000.0) | | | |
| $n$ | 0.21134214 | $\omega$ | 131.20023 | | −0.71081373 | −0.70324105 |
| $a$ | 2.7913352 | $\Omega$ | 4.18403 | | +0.57419721 | −0.59164251 |
| $e$ | 0.1015427 | $i$ | 11.05898 | | +0.40625288 | −0.39422222 |
| $P$ | 4.66 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1+ | 0.2− | 2001 10 21 | 704 | (1.8− | 0.7+) | 2003 02 06 | 699 | 0.7− | 0.4− |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2001 10 23 | 691 | 0.1− | 0.1− | 2003 02 06 | 699 | 0.4+ | 1.1+ |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2001 10 23 | 691 | 0.1+ | 0.1− | 2003 02 06 | 699 | 0.3+ | 0.6+ |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2001 10 23 | 691 | 0.1− | 0.4− | 2003 02 06 | 699 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 1.2+ | 2003 01 05 | 699 | 0.6+ | 0.5+ | 2005 07 30 | 644 | 0.4− | 0.3+ |
| 2001 09 23 | 704 | (2.1− | 0.7+) | 2003 01 05 | 699 | 0.1− | 1.0− | 2005 07 30 | 644 | 0.5− | 0.3+ |
| 2001 09 23 | 704 | 1.1− | 0.8− | 2003 01 05 | 699 | 1.0+ | 0.5+ | 2005 07 30 | 644 | 0.5− | 0.6+ |
| 2001 09 23 | 704 | 1.1+ | 0.8− | 2003 01 05 | 699 | 0.4+ | 0.7− | 2005 08 01 | E12 | 0.4+ | 0.3+ |
| 2001 09 28 | 644 | 0.1− | 0.0 | 2003 01 07 | 704 | 1.3− | 0.4+ | 2005 08 01 | E12 | 0.2− | 0.1+ |
| 2001 09 28 | 644 | 0.2− | 0.1+ | 2003 01 07 | 704 | 0.7− | 1.0+ | 2005 08 01 | E12 | 0.2− | 0.5+ |
| 2001 09 28 | 644 | 0.1− | 0.0 | 2003 01 07 | 704 | 1.3− | 0.4+ | 2005 08 01 | E12 | 0.6− | 0.6+ |
| 2001 10 12 | 699 | 0.1− | 0.3− | 2003 01 07 | 704 | 0.2+ | 0.9+ | 2006 10 19 | 703 | 0.3− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 12 | 699 | 0.9− | 0.4+ | 2003 01 10 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.1+ | | |
| 2001 10 12 | 699 | 0.2− | 1.5+ | 2003 01 10 | 704 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.2+ | 0.2− | | |
| 2001 10 12 | 699 | 0.3+ | 0.1− | 2003 01 10 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.5+ | 0.9− | | |
| 2001 10 17 | 704 | (0.2− | 1.8+) | 2003 01 10 | 704 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.8− | 0.2− | | |
| 2001 10 17 | 704 | 0.3+ | 1.5+ | 2003 01 10 | 704 | 0.7+ | 0.5− | 2006 10 27 | 703 | 0.3− | 0.0 | | |
| 2001 10 17 | 704 | 0.6+ | 0.9+ | 2003 01 13 | 704 | 0.9+ | 0.1− | 2006 10 27 | 703 | 0.5− | 0.2+ | | |
| 2001 10 17 | 704 | (1.5+ | 0.8+) | 2003 01 13 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 1.2+ | 0.4− | | |
| 2001 10 17 | 704 | 0.6+ | 0.8+ | 2003 01 13 | 704 | 0.9− | 0.2− | 2006 11 15 | 703 | 0.5+ | 0.1+ | | |
| 2001 10 21 | 704 | (1.6− | 0.3−) | 2003 01 31 | 699 | 0.6+ | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.2− | | |
| 2001 10 21 | 704 | (2.0− | 0.1+) | 2003 01 31 | 699 | 1.0+ | 0.2+ | 2006 11 15 | 703 | 1.3+ | 1.0− | | |
| 2001 10 21 | 704 | (2.3− | 0.7−) | 2003 01 31 | 699 | 0.5+ | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.4− | | |
| 2001 10 21 | 704 | 1.4− | 0.4+ | 2003 01 31 | 699 | 0.2− | 1.0+ | | | | | | |

**(140688)∗ 2001 UE$_{57}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.01511 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19250979 | $\omega$ | 186.13130 | | −0.12261744 | −0.99217374 | |
| $a$ | 2.9705316 | $\Omega$ | 270.91360 | | +0.91155795 | −0.10319354 | |
| $e$ | 0.1213802 | $i$ | 1.35160 | | +0.39246281 | −0.07030197 | |
| $P$ | 5.12 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 691 | 0.2− | 0.0 | 2001 11 21 | 704 | 0.6− | 0.6− | 2006 09 17 | 691 | 0.1+ | 0.1+ | | |
| 2000 08 01 | 691 | 0.0 | 0.1− | 2001 12 18 | 291 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 1.1+ | 0.4+ | | |
| 2000 08 01 | 691 | 0.2− | 0.1− | 2001 12 18 | 291 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.1+ | | |
| 2001 09 20 | 704 | 1.1+ | 0.5− | 2001 12 18 | 291 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.5+ | 0.3+ | 2003 01 27 | 704 | 0.8− | 0.4− | 2006 09 18 | 699 | 0.3+ | 1.3+ | | |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2003 01 27 | 704 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.6+ | 0.4+ | | |
| 2001 10 17 | 704 | 0.7− | 1.3+ | 2003 01 27 | 704 | 0.6+ | 0.9+ | 2006 09 18 | 699 | 0.6+ | 0.6+ | | |
| 2001 10 17 | 704 | 0.1− | 0.5+ | 2003 01 27 | 704 | (0.0 | 1.7+) | 2006 09 25 | 691 | 0.3− | 0.2+ | | |
| 2001 10 17 | 704 | (1.6− | 0.6−) | 2003 01 27 | 704 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.4− | 0.2+ | | |
| 2001 10 17 | 704 | 0.6− | 0.8− | 2003 02 02 | 644 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.1+ | | |
| 2001 10 17 | 704 | 1.5− | 0.8+ | 2003 02 02 | 644 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | | |
| 2001 10 19 | 644 | 0.2+ | 0.6+ | 2003 02 02 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 | | |
| 2001 10 19 | 644 | 0.1+ | 0.4+ | 2003 02 07 | 333 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 2001 10 19 | 644 | 0.3+ | 0.5+ | 2003 02 07 | 333 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.7− | 0.2+ | 2003 02 07 | 333 | 0.4+ | 0.7+ | 2006 09 30 | 691 | 0.3+ | 0.0 | | |
| 2001 10 21 | 704 | 0.3− | 1.3− | 2003 02 21 | 644 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2001 10 21 | 704 | 1.2− | 0.4− | 2003 02 21 | 644 | 0.1− | 0.9+ | 2006 10 17 | 703 | 0.6− | 0.3− | | |
| 2001 10 21 | 704 | 0.1+ | 0.7− | 2003 02 21 | 644 | 0.5+ | 1.0+ | 2006 10 17 | 703 | 0.0 | 0.5− | | |
| 2001 10 21 | 704 | 0.5+ | 0.1− | 2004 05 28 | 691 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.6− | | |
| 2001 10 25 | 704 | 0.0 | 0.7+ | 2004 05 28 | 691 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.7− | 1.3− | | |
| 2001 10 25 | 704 | 0.8+ | 0.7+ | 2004 05 28 | 691 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2001 10 25 | 704 | 0.3− | 1.1+ | 2005 07 07 | 568 | 0.2− | 0.9+ | 2006 10 19 | G96 | 0.2+ | 0.5− | | |
| 2001 10 25 | 704 | 0.1+ | 0.6+ | 2005 07 07 | 568 | 0.3− | 0.9+ | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 2001 10 25 | 704 | 1.1+ | 0.5+ | 2005 07 07 | 568 | 0.2− | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.5− | | |
| 2001 10 25 | 704 | 0.2+ | 1.5+ | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.6− | | |
| 2001 11 21 | 704 | 0.1+ | 0.6− | 2006 09 17 | 703 | 1.3+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.5− | | |
| 2001 11 21 | 704 | (1.8− | 0.3−) | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.6− | | |
| 2001 11 21 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 703 | 0.7− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.5− | | |

**(140689)∗ 2001 UW$_{58}$ = 2004 BK$_{161}$ = 2004 CF$_{74}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61160), A. Doppler (d, *MPO* 85125)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.40228 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17535869 | $\omega$ | 231.06827 | | −0.42943358 | +0.90287586 | |
| $a$ | 3.1611943 | $\Omega$ | 13.54254 | | −0.79982650 | −0.36992363 | |
| $e$ | 0.1403633 | $i$ | 4.91174 | | −0.41936186 | −0.21902440 | |
| $P$ | 5.62 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 291 | 1.1+ | 0.0 | 2004 02 10 | 644 | 0.5+ | 0.4+ | 2004 03 23 | 704 | 0.1− | 0.1+ | | |
| 2001 09 23 | 291 | 1.4+ | 0.1+ | 2004 02 16 | 691 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.2− | 1.0+ | | |
| 2001 09 23 | 291 | (1.7+ | 0.2+) | 2004 02 16 | 691 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.0 | 0.0 | | |
| 2001 10 15 | 691 | 0.1− | 0.0 | 2004 02 16 | 691 | 0.3− | 0.0 | 2005 05 30 | E12 | 0.2+ | 0.5+ | | |
| 2001 10 15 | 691 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.2− | 0.9+ | 2005 05 30 | E12 | 0.4+ | 0.1− | | |
| 2001 10 15 | 691 | 0.3− | 0.1− | 2004 02 17 | 704 | 0.8+ | 1.0+ | 2005 05 30 | E12 | 0.0 | 0.8+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.1− | 2005 05 30 | E12 | 0.2− | 0.7+ | | |
| 2001 10 17 | 704 | 0.5− | 0.3− | 2004 02 17 | 704 | 0.5+ | 0.2− | 2006 08 30 | 699 | (0.5+ | 1.6+) | | |
| 2001 10 17 | 704 | 0.3− | 0.3− | 2004 02 19 | 704 | 0.6+ | 0.4+ | 2006 08 30 | 699 | (0.9− | 1.7+) | | |
| 2001 10 19 | 644 | 0.2+ | 0.2+ | 2004 02 19 | 704 | 0.2− | 0.2+ | 2006 08 30 | 699 | (0.9+ | 1.7+) | | |
| 2001 10 19 | 644 | 0.0 | 0.3+ | 2004 02 19 | 704 | 0.1− | 0.4+ | 2006 08 30 | 699 | (1.6− | 2.1+) | | |
| 2001 10 19 | 644 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.4− | 2006 09 14 | 703 | 0.4− | 0.2+ | | |
| 2001 10 21 | 704 | 1.1− | 0.2+ | 2004 02 19 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.4+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.0 | 0.7+ | 2004 02 23 | 704 | 0.8− | 0.9+ | 2006 09 14 | 703 | 0.2+ | 1.3+ | | |
| 2001 10 21 | 704 | 0.4− | 1.0+ | 2004 02 23 | 704 | 0.4− | 1.0+ | 2006 09 14 | 703 | (0.4+ | 2.0+) | | |
| 2001 10 24 | 704 | (4.0− | 0.6+) | 2004 02 23 | 704 | 0.3− | 0.5+ | 2006 09 19 | 699 | (0.1+ | 1.7+) | | |
| 2001 10 24 | 704 | 0.8− | 0.6− | 2004 02 23 | 704 | 0.4− | 1.0+ | 2006 09 19 | 699 | 0.3− | 0.8+ | | |
| 2001 10 24 | 704 | 0.9− | 0.2− | 2004 02 23 | 704 | 0.7− | 0.9+ | 2006 09 19 | 699 | 1.2− | 1.2+ | | |
| 2001 10 24 | 704 | 0.1− | 0.3+ | 2004 03 14 | 703 | 0.0 | 0.8− | 2006 09 19 | 699 | (0.4+ | 2.0+) | | |
| 2001 10 26 | 691 | 0.3− | 0.0 | 2004 03 14 | 703 | 1.1+ | 0.7− | 2006 09 30 | 703 | 0.4− | 0.9+ | | |
| 2001 10 26 | 691 | 0.3− | 0.1− | 2004 03 14 | 703 | (0.2+ | 1.7+) | 2006 09 30 | 703 | (1.8− | 1.1+) | | |
| 2001 10 26 | 691 | 0.4− | 0.1− | 2004 03 14 | 703 | 0.1− | 0.0 | 2006 09 30 | 703 | (0.7+ | 2.0+) | | |
| 2004 01 23 | 704 | 0.1− | 1.3− | 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.2+ | | |
| 2004 01 23 | 704 | 0.1+ | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.1+ | | |
| 2004 01 23 | 699 | 0.1+ | 0.6− | 2004 03 19 | 704 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.1+ | | |
| 2004 01 23 | 704 | 0.4+ | 0.8− | 2004 03 19 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.4− | 0.2+ | | |
| 2004 01 23 | 699 | 0.2− | 0.1− | 2004 03 19 | 704 | 1.0+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1+ | | |
| 2004 01 23 | 704 | 0.1+ | 0.7+ | 2004 03 21 | 671 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.1− | | |
| 2004 01 23 | 699 | 0.4− | 0.1+ | 2004 03 21 | 671 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.3+ | | |
| 2004 01 23 | 699 | 0.7+ | 1.2− | 2004 03 21 | 671 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2+ | | |
| 2004 01 30 | 704 | 0.2+ | 0.3− | 2004 03 21 | 671 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.4− | 0.3+ | | |
| 2004 01 30 | 704 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.5+ | 0.6− | 2006 11 17 | G96 | 0.4+ | 0.1− | | |
| 2004 01 30 | 704 | (0.7− | 1.8+) | 2004 03 22 | 704 | 1.4+ | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.5+ | | |
| 2004 01 30 | 704 | (0.1+ | 2.2+) | 2004 03 22 | 704 | 1.5+ | 0.9+ | 2006 11 17 | G96 | 0.2− | 0.2+ | | |
| 2004 02 10 | 644 | 0.5+ | 0.0 | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.5− | 0.1+ | | |
| 2004 02 10 | 644 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.3− | 0.4− | | | | | | |

**(140690)∗ 2001 UO$_{61}$ = 1998 AX$_3$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31430), M. E. Sansaturio (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.71340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20610740 | $\omega$ | 83.25537 | | +0.73048665 | −0.68280614 | |
| $a$ | 2.8384004 | $\Omega$ | 319.80677 | | +0.61844766 | +0.66937869 | |
| $e$ | 0.0717937 | $i$ | 1.14056 | | +0.28967525 | +0.29275919 | |
| $P$ | 4.78 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 02 | 691 | 0.2− | 0.1− | 2001 10 24 | 704 | 0.9− | 1.2+ | 2004 05 14 | 691 | 0.1− | 0.0 | | |
| 1998 01 02 | 691 | 0.1− | 0.2+ | 2001 10 24 | 704 | 0.2+ | 0.6+ | 2004 05 14 | 691 | 0.1+ | 0.3+ | | |
| 1998 01 02 | 691 | 0.2− | 0.3− | 2001 11 16 | 291 | 0.1+ | 0.2+ | 2004 05 14 | 691 | 0.4+ | 0.1− | | |
| 1998 01 08 | 691 | 0.1+ | 0.5− | 2001 11 16 | 291 | 0.0 | 0.2+ | 2005 07 09 | 691 | 0.0 | 0.1− | | |
| 1998 01 08 | 691 | 0.1+ | 0.0 | 2001 11 16 | 291 | 0.1− | 0.0 | 2005 07 09 | 691 | 0.0 | 0.0 | | |
| 1998 01 08 | 691 | 0.2− | 0.2− | 2001 11 21 | 704 | 1.0+ | 0.4+ | 2005 07 09 | 691 | 0.3− | 0.3− | | |
| 2001 10 17 | 704 | (1.8− | 2.0−) | 2001 11 21 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 691 | 0.0 | 0.3+ | | |
| 2001 10 17 | 704 | (0.3− | 1.6−) | 2001 11 21 | 704 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ | | |
| 2001 10 17 | 704 | 0.5+ | 0.3− | 2003 01 26 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.3+ | 0.4+ | | |
| 2001 10 21 | 704 | 0.5+ | 0.3− | 2003 01 26 | 291 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2003 01 26 | 291 | 0.5+ | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.0 | | |
| 2001 10 21 | 704 | 0.0 | 1.0+ | 2003 01 30 | 291 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.6− | 0.1− | | |
| 2001 10 21 | 704 | 0.1− | 1.2+ | 2003 01 30 | 291 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2001 10 21 | 704 | (0.3− | 1.6+) | 2003 01 30 | 291 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.7− | | |
| 2001 10 24 | 704 | 0.2− | 0.4+ | 2004 04 24 | 691 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.6− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.6− | 0.3+ | 2004 04 24 | 691 | 0.4+ | 0.4+ | 2006 11 01 | G96 | 0.3− | 0.5− | | |
| 2001 10 24 | 704 | 1.2− | 1.4+ | 2004 04 24 | 691 | 0.1+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.5− | | |

**(140691)∗ 2001 UZ$_{63}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.63587 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18202599 | $\omega$ | 204.67608 | | +0.39886620 | −0.91147347 | |
| $a$ | 3.0835225 | $\Omega$ | 222.01482 | | +0.86432903 | +0.41033321 | |
| $e$ | 0.0847682 | $i$ | 8.64503 | | +0.30633492 | +0.02903051 | |
| $P$ | 5.41 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.2+ | 0.4− | 2001 11 15 | 691 | 0.0 | 0.0 | 2002 11 13 | 645 | 0.2− | 0.5− | | |
| 2001 10 18 | 704 | 0.2+ | 0.2+ | 2001 11 15 | 691 | (1.3+ | 2.8+) | 2003 01 29 | 644 | 0.6+ | 0.5+ | | |
| 2001 10 18 | 704 | 0.7+ | 0.7+ | 2001 11 17 | 704 | 0.4− | 0.5+ | 2003 01 29 | 644 | 0.5+ | 0.9+ | | |
| 2001 10 18 | 704 | 0.7+ | 1.1+ | 2001 11 17 | 704 | 0.0 | 0.4+ | 2003 01 29 | 644 | 0.7+ | 0.8+ | | |
| 2001 10 19 | 644 | 0.1+ | 0.4+ | 2001 11 17 | 704 | 0.4+ | 0.1− | 2003 02 22 | 644 | 0.9− | 1.2+ | | |
| 2001 10 19 | 644 | 0.3+ | 0.7+ | 2001 11 17 | 704 | 0.1− | 0.1+ | 2003 02 22 | 644 | 0.3+ | 0.4+ | | |
| 2001 10 19 | 644 | 0.5+ | 0.6+ | 2001 11 19 | 704 | 0.3+ | 0.0 | 2003 02 22 | 644 | 0.5+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.2− | 0.7+ | 2001 11 19 | 704 | 0.3+ | 0.1+ | 2004 05 21 | 691 | 0.1+ | 0.8+ | | |
| 2001 10 21 | 704 | 0.2− | 0.8+ | 2001 11 19 | 704 | 0.5+ | 0.4+ | 2004 05 21 | 691 | 0.2+ | 0.6+ | | |
| 2001 10 21 | 704 | 0.0 | 1.2+ | 2001 11 19 | 704 | 0.3+ | 0.1− | 2004 05 21 | 691 | 0.1+ | 0.5+ | | |
| 2001 10 21 | 704 | 0.0 | 1.0+ | 2001 11 19 | 704 | 1.0+ | 0.6− | 2006 08 25 | D35 | 0.3− | 0.5− | | |
| 2001 10 21 | 704 | 0.9+ | 0.8+ | 2001 11 21 | 704 | 0.6+ | 0.3+ | 2006 08 25 | D35 | 0.5− | 0.3− | | |
| 2001 11 09 | 704 | 0.0 | 0.6+ | 2001 11 21 | 704 | 0.4+ | 0.9− | 2006 08 25 | D35 | 0.3− | 0.3− | | |
| 2001 11 09 | 704 | 0.4+ | 0.4− | 2001 11 21 | 704 | 1.0+ | 0.6− | 2006 10 01 | 703 | 1.0+ | 1.1+ | | |
| 2001 11 09 | 704 | 0.8− | 1.2− | 2001 11 21 | 704 | (1.8+ | 1.2−) | 2006 10 01 | 703 | 0.8− | 0.3+ | | |
| 2001 11 09 | 704 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.3− | 1.0+ | 2006 10 01 | 703 | 1.6+ | 0.6− | | |
| 2001 11 09 | 704 | 1.3− | 0.3+ | 2001 12 08 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 703 | (3.5+ | 0.2+) | | |
| 2001 11 12 | 691 | 0.3− | 0.1− | 2001 12 08 | 704 | 0.2− | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.4− | | |
| 2001 11 12 | 691 | 1.0− | 0.1− | 2001 12 08 | 704 | (0.3− | 1.7+) | 2006 10 11 | 644 | 0.3− | 0.5− | | |
| 2001 11 12 | 691 | 0.5− | 0.1+ | 2001 12 08 | 704 | 0.6− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 15 | 691 | 0.2+ | 0.1+ | 2002 11 13 | 645 | 0.1+ | 0.2+ | | | | | | |

**(140692)∗ 2001 UF$_{65}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.56342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18727975 | $\omega$ | 107.48972 | | +0.86609376 | −0.48033032 | |
| $a$ | 3.0255814 | $\Omega$ | 281.41032 | | +0.38808856 | +0.82065251 | |
| $e$ | 0.1222449 | $i$ | 8.11884 | | +0.31506962 | +0.30953553 | |
| $P$ | 5.26 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 02 | 691 | 0.7− | 0.0 | 2001 11 24 | 704 | 0.4+ | 0.7+ | 2003 03 09 | 704 | (0.4+ | 1.7+) | | |
| 1992 01 02 | 691 | (6.5− | 1.8+) | 2001 11 24 | 704 | 0.8− | 0.5− | 2003 03 09 | 704 | 1.4+ | 0.8+ | | |
| 1992 01 09 | 691 | 0.1+ | 0.6− | 2001 12 10 | 704 | 1.3+ | 1.1− | 2003 03 09 | 704 | 0.8+ | 1.0+ | | |
| 1992 01 09 | 691 | 0.3− | 0.7− | 2001 12 10 | 704 | 1.2+ | 1.0− | 2004 04 14 | E12 | 0.6− | 1.1+ | | |
| 2001 09 20 | 704 | 0.7− | 0.2− | 2001 12 10 | 704 | 0.7+ | 1.0− | 2004 04 14 | E12 | 0.0 | 0.2+ | | |
| 2001 09 20 | 704 | (1.6+ | 0.6−) | 2001 12 10 | 704 | 1.3+ | 1.1− | 2004 04 14 | E12 | (2.4+ | 0.2−) | | |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2001 12 10 | 704 | 1.3+ | 0.5− | 2004 04 14 | E12 | 0.8+ | 0.8+ | | |
| 2001 09 20 | 704 | 0.5− | 1.2+ | 2001 12 17 | 704 | 0.2− | 0.3+ | 2004 04 25 | 704 | 0.6+ | 0.2+ | | |
| 2001 09 20 | 704 | (0.7+ | 1.5−) | 2001 12 17 | 704 | 0.0 | 0.0 | 2004 04 25 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 22 | 704 | 0.7− | 0.3− | 2001 12 17 | 704 | 0.2− | 0.1− | 2004 04 25 | 704 | 1.0+ | 0.8+ | | |
| 2001 09 22 | 704 | 0.2+ | 0.4+ | 2001 12 17 | 704 | 0.1− | 0.4+ | 2004 04 25 | 704 | 0.7+ | 0.5+ | | |
| 2001 09 22 | 704 | 0.5+ | 1.1+ | 2001 12 17 | 704 | 0.5− | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.4+ | | |
| 2001 09 22 | 704 | 0.5+ | 0.1− | 2001 12 20 | 644 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.2+ | 1.1+ | | |
| 2001 09 22 | 704 | 0.5− | 0.4− | 2001 12 20 | 644 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.9+ | | |
| 2001 10 14 | 704 | (1.6+ | 0.1−) | 2001 12 20 | 644 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.5+ | | |
| 2001 10 14 | 704 | 0.6+ | 0.8+ | 2002 01 06 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.8+ | | |
| 2001 10 14 | 704 | (0.9+ | 2.8+) | 2002 01 06 | 644 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.3− | 0.6+ | | |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2002 01 06 | 644 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.5+ | | |
| 2001 10 14 | 704 | 1.4+ | 0.4− | 2002 01 08 | 704 | 0.7+ | 0.6+ | 2006 10 17 | A50 | 0.3− | 0.4+ | | |
| 2001 10 15 | 704 | (1.5+ | 0.8−) | 2002 01 08 | 704 | 0.5+ | 0.2− | 2006 10 17 | A50 | 0.0 | 0.2+ | | |
| 2001 10 15 | 704 | (0.6+ | 1.5−) | 2002 01 08 | 704 | 0.5+ | 0.8+ | 2006 10 18 | A50 | 0.3+ | 0.2− | | |
| 2001 10 15 | 704 | 0.0 | 1.1+ | 2002 01 08 | 704 | 0.0 | 0.1− | 2006 10 18 | A50 | 0.3− | 0.0 | | |
| 2001 10 15 | 704 | (2.5+ | 2.1−) | 2002 01 08 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.3+ | | |
| 2001 10 15 | 704 | 0.0 | 0.1− | 2002 01 11 | 699 | 0.1− | 1.1+ | 2006 10 19 | 703 | 0.4+ | 0.0 | | |
| 2001 10 18 | 704 | 0.3+ | 0.4+ | 2002 01 11 | 699 | 0.2+ | 1.3+ | 2006 10 19 | 703 | 0.0 | 0.2− | | |
| 2001 10 18 | 704 | 0.1+ | 0.9− | 2002 01 11 | 699 | (1.6+ | 0.5+) | 2006 10 19 | 703 | 0.1+ | 0.0 | | |
| 2001 10 18 | 704 | 0.8+ | 0.6+ | 2002 01 11 | 699 | 0.3+ | 1.0+ | 2006 10 21 | 704 | (3.0− | 1.3+) | | |
| 2001 10 18 | 704 | 0.9+ | 0.9− | 2002 01 14 | 704 | 0.1+ | 0.4− | 2006 10 21 | 704 | 0.3− | 0.5+ | | |
| 2001 10 21 | 704 | 0.1− | 0.6− | 2002 01 14 | 704 | 0.7+ | 0.4− | 2006 10 21 | 704 | 0.6− | 0.9+ | | |
| 2001 10 21 | 704 | 0.3+ | 0.2− | 2002 01 14 | 704 | 1.1+ | 0.6− | 2006 10 21 | 704 | 1.1− | 1.0+ | | |
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2002 01 14 | 704 | 0.7+ | 0.8− | 2006 10 21 | 704 | 0.7− | 0.4+ | | |
| 2001 10 21 | 704 | 0.6+ | 1.0− | 2002 01 14 | 704 | (1.0+ | 1.6−) | 2006 10 22 | 644 | 0.2− | 0.4+ | | |
| 2001 10 21 | 704 | 0.3+ | 1.2+ | 2002 02 06 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.3+ | | |
| 2001 10 27 | 704 | 0.7+ | 1.0+ | 2002 02 06 | 704 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.2+ | | |
| 2001 10 27 | 704 | 0.3− | 0.3− | 2002 02 06 | 704 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2001 10 27 | 704 | 0.3+ | 0.3+ | 2002 02 06 | 704 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.4+ | | |
| 2001 10 27 | 704 | 0.8+ | 1.4+ | 2002 02 06 | 704 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2001 11 10 | 704 | 0.7− | 0.4− | 2003 01 25 | 644 | 0.3+ | 0.1− | 2006 10 25 | 106 | 0.6− | 0.2− | | |
| 2001 11 10 | 704 | 0.9− | 0.2− | 2003 01 25 | 644 | 0.1− | 0.2+ | 2006 10 25 | 106 | 0.1− | 0.5− | | |
| 2001 11 10 | 704 | 0.7− | 0.6− | 2003 01 25 | 644 | 0.5− | 0.6+ | 2006 10 25 | 106 | 0.1− | 0.1− | | |
| 2001 11 10 | 704 | 0.9− | 0.7− | 2003 01 26 | 699 | 0.4− | 0.3+ | 2006 10 25 | 106 | 0.0 | 0.2+ | | |
| 2001 11 10 | 704 | 1.2− | 1.2− | 2003 01 26 | 699 | 0.7+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.1− | | |
| 2001 11 11 | 704 | 0.5− | 0.2− | 2003 01 26 | 699 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.1+ | | |
| 2001 11 11 | 704 | 0.6− | 0.2− | 2003 01 26 | 699 | 0.6+ | 1.2+ | 2006 10 27 | 703 | 0.0 | 0.6− | | |
| 2001 11 11 | 704 | 1.0− | 0.5− | 2003 02 23 | 683 | (1.4− | 2.1+) | 2006 10 27 | 703 | 0.6− | 0.2+ | | |
| 2001 11 11 | 704 | 1.1− | 0.4− | 2003 02 23 | 683 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.3− | 0.3− | | |
| 2001 11 11 | 704 | 0.9− | 0.3− | 2003 02 23 | 683 | 0.5− | 0.9+ | 2006 11 15 | 703 | 0.4+ | 0.0 | | |
| 2001 11 21 | 704 | (0.5− | 1.5−) | 2003 03 07 | 704 | 0.8− | 0.5− | 2006 11 15 | 703 | 0.4− | 0.2− | | |
| 2001 11 21 | 704 | (0.1− | 1.8−) | 2003 03 07 | 704 | 0.8− | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.3+ | | |
| 2001 11 21 | 704 | (0.3+ | 2.0−) | 2003 03 07 | 704 | 0.5+ | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.3+ | | |
| 2001 11 21 | 704 | 0.3− | 1.4− | 2003 03 07 | 704 | 0.5+ | 0.8+ | 2006 11 29 | 704 | 0.1− | 0.3+ | | |
| 2001 11 21 | 704 | 0.3− | 1.4− | 2003 03 07 | 704 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.4− | | |
| 2001 11 24 | 704 | 0.4+ | 0.8+ | 2003 03 09 | 704 | 0.2+ | 1.1+ | 2006 11 29 | 704 | 0.1+ | 0.8+ | | |
| 2001 11 24 | 704 | 0.3+ | 0.3+ | 2003 03 09 | 704 | 0.6+ | 1.1+ | 2006 11 29 | 704 | 0.1− | 0.1− | | |

**(140693)∗ 2001 UN$_{65}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.41838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18474222 | $\omega$ | 354.84145 | | +0.90358591 | −0.42475225 | |
| $a$ | 3.0532236 | $\Omega$ | 30.48797 | | +0.39688707 | +0.78089289 | |
| $e$ | 0.2595958 | $i$ | 6.31872 | | +0.16128594 | +0.45803038 | |
| $P$ | 5.34 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 12 | 691 | 0.0 | 0.1+ | 2001 12 07 | 644 | 0.2− | 0.9− | 2006 09 20 | 691 | 0.1+ | 0.1− | | |
| 1990 10 12 | 691 | 0.0 | 0.1+ | 2001 12 07 | 644 | 0.0 | 1.0− | 2006 09 20 | 691 | 0.0 | 0.0 | | |
| 1990 10 12 | 691 | 0.1− | 0.3+ | 2001 12 10 | 704 | 0.1− | 0.4− | 2006 09 20 | 691 | 0.1+ | 0.0 | | |
| 1990 10 26 | 691 | 0.1− | 0.2+ | 2001 12 10 | 704 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.4+ | | |
| 1990 10 26 | 691 | 0.3− | 0.5+ | 2001 12 10 | 704 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.6− | 0.3− | | |
| 1990 10 26 | 691 | 0.0 | 0.0 | 2001 12 10 | 704 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.0 | | |
| 2001 09 24 | 704 | 0.3− | 1.1+ | 2001 12 10 | 704 | 0.3− | 0.3+ | 2006 09 22 | 704 | 0.6− | 0.3− | | |
| 2001 09 24 | 704 | (1.8+ | 0.5−) | 2001 12 17 | 704 | 0.5− | 1.0+ | 2006 09 22 | 704 | 0.2− | 0.1+ | | |
| 2001 09 24 | 704 | (1.9+ | 0.4+) | 2001 12 17 | 704 | (1.5− | 1.6+) | 2006 09 24 | 608 | 0.8+ | 0.2− | | |
| 2001 09 24 | 704 | 0.8+ | 0.5+ | 2001 12 17 | 704 | 1.0− | 1.4+ | 2006 09 24 | 608 | 1.0+ | 0.1− | | |
| 2001 10 18 | 704 | 0.1− | 0.0 | 2001 12 17 | 704 | 0.7+ | 0.7+ | 2006 09 24 | 608 | 1.0+ | 0.5− | | |
| 2001 10 18 | 704 | 0.4+ | 0.9− | 2003 02 09 | 291 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.1+ | | |
| 2001 10 18 | 704 | 0.3+ | 0.5− | 2003 02 09 | 291 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.1+ | | |
| 2001 10 21 | 704 | 0.2+ | 0.4− | 2003 02 09 | 291 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.3+ | | |
| 2001 10 21 | 704 | 1.0+ | 1.4− | 2003 02 21 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.2+ | | |
| 2001 10 21 | 704 | 0.3− | 0.2− | 2003 02 21 | 644 | 1.0+ | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.2+ | 0.6+ | 2003 02 21 | 644 | 0.8+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2004 04 25 | 291 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.3− | 0.2+ | | |
| 2001 10 21 | 704 | 0.6− | 0.7− | 2004 04 25 | 291 | 0.4− | 1.1+ | 2006 09 26 | 704 | 0.2+ | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 291 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.2+ | | |
| 2001 10 21 | 704 | 0.6− | 0.3− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.3− | 0.2+ | | |
| 2001 11 10 | 704 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.3− | 0.0 | | |
| 2001 11 10 | 704 | 0.1+ | 0.7+ | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.1+ | 0.0 | | |
| 2001 11 10 | 704 | 0.3− | 0.2+ | 2006 09 12 | 703 | 1.0− | 0.4+ | 2006 09 28 | 704 | 0.1− | 0.0 | | |
| 2001 11 12 | 704 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.0 | 0.4+ | | |
| 2001 11 12 | 704 | 0.1− | 0.4− | 2006 09 12 | 703 | 0.3− | 0.1+ | 2006 09 30 | 703 | (0.5+ | 1.5+) | | |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.6+ | | |
| 2001 11 12 | 704 | 0.3− | 0.1− | 2006 09 16 | 704 | 1.3+ | 0.0 | 2006 09 30 | 704 | 0.9+ | 0.8− | | |
| 2001 11 12 | 704 | 0.4− | 0.3+ | 2006 09 16 | 704 | 0.6+ | 0.3− | 2006 09 30 | 704 | 1.4− | 1.1+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.5− | 2006 09 16 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 704 | 0.4− | 0.3+ | | |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2006 09 16 | 704 | 0.7+ | 0.1− | 2006 09 30 | 704 | 0.5− | 0.4+ | | |
| 2001 11 21 | 704 | 0.4+ | 1.1− | 2006 09 16 | 704 | 0.3+ | 0.7− | 2006 09 30 | 704 | 0.1− | 0.7+ | | |
| 2001 11 21 | 704 | 0.2+ | 1.1− | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 10 28 | 704 | 0.4− | 0.3+ | | |
| 2001 11 21 | 704 | 0.2− | 1.3− | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 28 | 704 | 0.5− | 0.6+ | | |
| 2001 11 24 | 704 | 0.4+ | 0.2− | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 28 | 704 | 0.4− | 0.3− | | |
| 2001 11 24 | 704 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.1− | 0.5+ | 2006 10 28 | 704 | 0.8− | 0.4+ | | |
| 2001 11 24 | 704 | 0.8+ | 0.3− | 2006 09 18 | 699 | 0.4+ | 0.3− | 2006 10 28 | 704 | (0.7− | 2.3+) | | |
| 2001 11 24 | 704 | 0.3+ | 0.4− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.3− | | |
| 2001 11 24 | 704 | 0.1+ | 0.9− | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2001 11 24 | 704 | 0.5+ | 0.6− | 2006 09 18 | 699 | 0.4+ | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.3− | | |
| 2001 11 24 | 704 | 0.8+ | 0.0 | 2006 09 19 | 704 | 0.4+ | 0.5− | 2006 11 21 | 704 | 1.0− | 0.1+ | | |
| 2001 11 24 | 704 | 0.4− | 0.3+ | 2006 09 19 | 704 | 0.5+ | 0.5+ | 2006 11 21 | 704 | 0.2− | 1.2+ | | |
| 2001 11 24 | 704 | 0.5− | 0.2+ | 2006 09 19 | 704 | 0.6− | 0.2− | 2006 11 21 | 704 | 1.5− | 1.6+ | | |
| 2001 11 24 | 704 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.2+ | 0.1− | 2006 11 21 | 704 | 1.5− | 0.4+ | | |
| 2001 12 07 | 644 | 0.2− | 0.9− | 2006 09 19 | 704 | 0.8+ | 0.3− | 2006 11 21 | 704 | 1.1− | 1.0+ | | |

**(140694)∗ 2001 UD$_{66}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.72062 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17879672 | $\omega$ | 35.84512 | | +0.03133904 | −0.98034083 | |
| $a$ | 3.1205395 | $\Omega$ | 53.16681 | | +0.85096492 | −0.07606523 | |
| $e$ | 0.0533311 | $i$ | 14.08681 | | +0.52428672 | +0.18206027 | |
| $P$ | 5.51 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.8− | 0.1+ | 2003 03 30 | 644 | 0.5+ | 0.1+ | 2005 07 05 | E12 | 0.3− | 0.7+ | | |
| 1998 04 24 | 704 | (2.3− | 3.1+) | 2003 03 30 | 644 | 0.0 | 0.3+ | 2005 07 05 | E12 | 0.3+ | 0.9+ | | |
| 1998 04 24 | 704 | 0.6− | 0.1+ | 2003 03 30 | 644 | 0.4+ | 0.8+ | 2005 07 05 | E12 | 0.4− | 0.1+ | | |
| 1998 04 24 | 704 | 0.7− | 0.0 | 2003 04 02 | 644 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.0 | 1.3+ | | |
| 1998 04 24 | 704 | 0.2− | 0.0 | 2003 04 02 | 644 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.2− | | |
| 2001 10 18 | 704 | 0.5− | 0.3− | 2003 04 02 | 644 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.1+ | | |
| 2001 10 18 | 704 | (1.7− | 0.7+) | 2003 04 08 | 644 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.7+ | 0.4+ | | |
| 2001 10 18 | 704 | 1.3− | 0.3+ | 2003 04 08 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.2− | | |
| 2001 10 21 | 704 | 0.3+ | 0.1− | 2003 04 08 | 644 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.6− | | |
| 2001 10 21 | 704 | 0.6− | 0.6− | 2004 05 09 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.8− | 0.2− | | |
| 2001 10 21 | 704 | 0.5− | 0.1+ | 2004 05 09 | 644 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 1.1− | 1.1− | | |
| 2001 11 10 | 704 | 0.7− | 0.4+ | 2004 05 09 | 644 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.5+ | | |
| 2001 11 10 | 704 | 0.0 | 0.6+ | 2004 05 12 | E12 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.4+ | | |
| 2001 11 10 | 704 | 0.5− | 0.1+ | 2004 05 12 | E12 | 1.0− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | | |
| 2001 11 12 | 704 | 0.5− | 0.7+ | 2004 05 12 | E12 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 2001 11 12 | 704 | 0.5− | 0.4+ | 2004 05 12 | E12 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.7− | 0.9+ | 2004 05 13 | 699 | 1.5+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.0 | | |
| 2001 11 12 | 704 | (0.9− | 1.8+) | 2004 05 13 | 699 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2001 11 12 | 704 | (0.5− | 3.0+) | 2004 05 13 | 699 | 1.4+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.3− | 2004 05 13 | 699 | 1.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.3+ | 0.8− | 2004 05 15 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2001 11 19 | 704 | 0.3+ | 0.7− | 2004 05 15 | 704 | 1.0− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.0 | | |
| 2001 11 19 | 704 | 0.4+ | 0.0 | 2004 05 15 | 704 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.2− | | |
| 2001 11 19 | 704 | 0.4+ | 0.2− | 2004 05 15 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.8− | 0.1+ | | |
| 2001 11 24 | 704 | 1.2+ | 0.7+ | 2004 05 16 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.6− | | |
| 2001 11 24 | 704 | 0.5+ | 0.9+ | 2004 05 16 | 704 | 0.7− | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.1+ | | |
| 2001 11 24 | 704 | 1.3+ | 0.6+ | 2004 05 16 | 704 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.2+ | | |
| 2001 12 10 | 704 | 0.7− | 0.6+ | 2004 05 16 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2001 12 10 | 704 | 0.1− | 0.3+ | 2004 05 16 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.5+ | | |
| 2001 12 10 | 704 | 0.7+ | 0.6+ | 2004 05 17 | 185 | 0.8− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2001 12 10 | 704 | 0.4− | 0.9+ | 2004 05 17 | 185 | 0.1− | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2001 12 10 | 704 | 0.3+ | 0.5+ | 2004 05 19 | 704 | 0.1+ | 0.0 | 2006 10 27 | 704 | 1.0− | 0.2− | | |
| 2001 12 17 | 704 | 0.7+ | 0.5− | 2004 05 19 | 704 | 0.0 | 0.1− | 2006 10 27 | 704 | (0.5− | 2.1+) | | |
| 2001 12 17 | 704 | 0.5+ | 0.6− | 2004 05 19 | 704 | 0.5− | 0.7+ | 2006 10 27 | 704 | 0.4+ | 0.6+ | | |
| 2001 12 17 | 704 | 1.0+ | 0.1− | 2004 05 19 | 704 | 0.3+ | 0.3− | 2006 10 27 | 704 | 1.0− | 0.5+ | | |
| 2001 12 17 | 704 | 1.0− | 0.1+ | 2004 05 19 | 704 | 0.7− | 0.3+ | 2006 11 16 | 703 | 0.0 | 1.2+ | | |
| 2003 02 26 | 704 | 0.4− | 0.6+ | 2004 06 13 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.3− | 1.0− | | |
| 2003 02 26 | 704 | 0.3+ | 0.3+ | 2004 06 13 | 691 | 0.5+ | 0.3+ | 2006 11 16 | 703 | 0.6− | 0.5+ | | |
| 2003 02 26 | 704 | 0.4− | 0.2+ | 2004 06 13 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.6+ | | |
| 2003 02 26 | 704 | 0.7− | 0.1+ | 2004 06 16 | 185 | 0.9+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2003 03 09 | 644 | 0.2+ | 0.3− | 2004 06 16 | 185 | 0.4+ | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2003 03 09 | 644 | 0.0 | 0.4− | 2004 06 16 | 185 | 0.2+ | 0.7− | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2003 03 09 | 644 | 0.2+ | 0.4− | 2005 07 05 | E12 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.0 | | |

**(140695)∗ 2001 UD$_{71}$ = 2005 NQ$_{65}$**

Discovered 2001 Oct. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 85130)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.41817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20286173 | $\omega$ | 92.40313 | | +0.55418827 | +0.83231675 | |
| $a$ | 2.8685954 | $\Omega$ | 211.25992 | | −0.77198559 | +0.50891812 | |
| $e$ | 0.0592596 | $i$ | 1.23059 | | −0.31130952 | +0.21966151 | |
| $P$ | 4.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.4− | 0.5+ | 2004 04 21 | 291 | 0.7+ | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.3+ | | |
| 1999 03 19 | 691 | (6.3− | 4.6−) | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 1999 03 19 | 691 | 0.7− | 0.4+ | 2004 05 13 | 691 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.3+ | | |
| 2001 10 17 | 691 | 0.5− | 0.1+ | 2004 05 13 | 691 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.4− | | |
| 2001 10 17 | 691 | 0.4− | 0.5+ | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.1− | | |
| 2001 10 17 | 691 | 0.1− | 0.2+ | 2005 07 01 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2001 10 21 | 691 | 0.4+ | 0.2+ | 2005 07 01 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2001 10 21 | 691 | 0.5+ | 0.0 | 2005 07 09 | 691 | 0.3− | 0.4+ | 2006 11 14 | 691 | 0.3− | 0.5+ | | |
| 2001 10 21 | 691 | 0.4+ | 0.4+ | 2005 07 09 | 691 | 0.3− | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.3+ | | |
| 2001 10 24 | 704 | 0.5+ | 0.6+ | 2005 07 09 | 691 | 0.1− | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.2+ | | |
| 2001 10 24 | 704 | 1.0+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.3+ | | |
| 2001 10 24 | 704 | (1.8+ | 1.4−) | 2006 10 17 | G96 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.3− | 0.8+ | | |
| 2001 10 24 | 704 | 0.4+ | 0.6+ | 2006 10 17 | G96 | 0.3− | 0.5− | 2006 11 14 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.4− | 0.5+ | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 11 18 | G96 | 0.3− | 0.2+ | | |
| 2001 11 21 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.2+ | | |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.1+ | | |
| 2004 03 23 | 291 | 0.2+ | 0.8+ | 2006 10 21 | 691 | 0.4− | 0.4+ | 2006 11 21 | 691 | 0.3− | 0.5+ | | |
| 2004 03 23 | 291 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.5− | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2004 03 23 | 291 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 21 | 691 | 0.2− | 0.1+ | | |
| 2004 04 21 | 291 | 0.5+ | 0.7+ | 2006 10 27 | G96 | 0.4+ | 0.2− | | | | | | |
| 2004 04 21 | 291 | 0.7+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.2− | | | | | | |

**(140696)∗ 2001 UV$_{72}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.59152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20053917 | $\omega$ | 84.95895 | | −0.91324696 | −0.40392020 | |
| $a$ | 2.8907014 | $\Omega$ | 71.20935 | | +0.34798549 | −0.84125861 | |
| $e$ | 0.0216865 | $i$ | 3.22043 | | +0.21186338 | −0.35934999 | |
| $P$ | 4.91 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1− | 0.3− | 2003 01 09 | 704 | 0.5− | 0.2+ | 2005 08 03 | 735 | 0.4− | 0.2− | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2003 01 09 | 704 | 0.6− | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.2+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2003 01 09 | 704 | (3.4− | 1.0+) | 2006 10 01 | 691 | 0.3− | 0.1+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.3+ | | |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2004 03 22 | 704 | 0.9+ | 1.2+ | 2006 10 15 | 703 | (1.6+ | 2.1+) | | |
| 2001 09 26 | 704 | 0.7+ | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.8− | 2006 10 15 | 703 | 0.0 | 0.9+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.0 | 0.5− | 2004 03 28 | 704 | 0.3+ | 1.3+ | 2006 10 15 | 703 | 0.5+ | 1.2+ |
| 2001 09 26 | 704 | 0.8− | 0.3− | 2004 03 28 | 704 | 1.3+ | 0.5− | 2006 10 15 | 703 | 0.9+ | 0.1− |
| 2001 09 26 | 704 | 1.0− | 0.0 | 2004 03 28 | 704 | 0.1+ | 1.4+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2001 10 12 | 699 | 0.5− | 0.9+ | 2004 03 28 | 704 | 0.7+ | 1.1+ | 2006 10 19 | 644 | 0.3+ | 0.7+ |
| 2001 10 12 | 699 | 0.3− | 1.2+ | 2004 04 12 | 699 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.6+ | 0.1+ |
| 2001 10 12 | 699 | (1.9− | 1.5+) | 2004 04 12 | 699 | 0.1+ | 1.1− | 2006 10 21 | 703 | 0.6− | 0.3− |
| 2001 10 12 | 699 | (1.6− | 0.7−) | 2004 04 12 | 699 | 0.7− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.2+ |
| 2001 10 16 | 704 | 0.2− | 0.1− | 2004 04 12 | 699 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2001 10 16 | 704 | 0.2+ | 0.9+ | 2004 04 14 | 691 | 0.4+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2001 10 16 | 704 | 0.3+ | 1.4+ | 2004 04 14 | 691 | 0.5+ | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 10 16 | 704 | 1.0− | 0.8+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.4+ |
| 2001 10 16 | 704 | 0.7− | 0.6+ | 2004 04 15 | 699 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 10 18 | 644 | 0.2− | 0.2− | 2004 04 15 | 699 | 1.1− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 10 18 | 644 | 0.2− | 0.1+ | 2004 04 15 | 699 | 0.5+ | 0.4− | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2001 10 18 | 644 | 0.0 | 0.1− | 2004 04 15 | 699 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2001 10 22 | 704 | 0.6− | 0.5− | 2004 04 16 | 704 | (1.6+ | 0.9+) | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | 0.2+ | 0.1− | 2004 04 16 | 704 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 10 22 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 704 | (0.3− | 1.7+) | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.5− | 0.4− | 2004 04 16 | 704 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2001 10 23 | 704 | (0.2− | 1.5+) | 2004 04 16 | 704 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.5− | 0.9+ | 2004 04 19 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | (4.7+ | 1.8+) |
| 2001 10 23 | 704 | 0.5− | 0.6+ | 2004 04 19 | 704 | 0.3+ | 1.2+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2001 10 23 | 704 | (2.4− | 0.1+) | 2004 04 19 | 704 | 0.5− | 1.2+ | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2001 10 25 | 691 | 0.2+ | 0.5+ | 2004 04 19 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 703 | 1.1+ | 1.2− |
| 2001 10 25 | 691 | 0.1− | 0.7+ | 2004 04 22 | 704 | 0.8+ | 0.8+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2001 10 25 | 691 | 0.0 | 0.6+ | 2004 04 22 | 704 | 1.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.3− | 0.2− | 2004 04 22 | 704 | 0.6− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2004 04 30 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | (1.7− | 0.4−) | 2004 04 30 | 691 | 0.7− | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.6− |
| 2003 01 05 | 704 | 0.5+ | 0.1+ | 2004 04 30 | 691 | 0.6+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.8− |
| 2003 01 05 | 704 | 0.4+ | 0.2+ | 2005 07 29 | 735 | 0.6− | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.6− |
| 2003 01 05 | 704 | 0.5+ | 0.0 | 2005 07 29 | 735 | 0.6− | 0.9+ | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2003 01 05 | 704 | 0.4+ | 1.1+ | 2005 07 29 | 735 | 0.3− | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2003 01 05 | 704 | 0.2− | 1.1+ | 2005 08 03 | 735 | 0.4− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2003 01 09 | 704 | 1.3− | 1.3+ | 2005 08 03 | 735 | 0.3− | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.5+ |

**(140697)∗ 2001 UG$_{73}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.28325 | | (2000.0) | | | |
| $n$ | 0.18474058 | $\omega$ | 108.98525 | | +0.76809166 | +0.63049766 |
| $a$ | 3.0532417 | $\Omega$ | 212.21225 | | −0.63750793 | +0.73653305 |
| $e$ | 0.1610882 | $i$ | 12.11100 | | −0.06015680 | +0.24493216 |
| $P$ | 5.34 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4+ | 0.2+ | 2001 11 09 | 704 | 0.2+ | 0.2+ | 2006 08 29 | 699 | 0.4− | 0.6+ |
| 2001 09 20 | 704 | 0.7+ | 0.8− | 2001 11 09 | 704 | 0.5− | 0.0 | 2006 08 29 | 699 | 0.5+ | 0.8+ |
| 2001 09 20 | 704 | 0.3− | 0.8− | 2001 11 20 | 704 | 0.4− | 0.3+ | 2006 08 29 | 699 | 0.9+ | 0.4− |
| 2001 09 20 | 704 | 0.2+ | 0.9− | 2001 11 20 | 704 | 0.2+ | 0.5+ | 2006 08 29 | 699 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.5+ | 0.4− | 2001 11 20 | 704 | 0.3− | 0.1− | 2006 08 31 | 704 | (1.7+ | 0.5−) |
| 2001 10 14 | 691 | 0.3+ | 0.3+ | 2001 11 20 | 704 | 0.0 | 0.3− | 2006 08 31 | 704 | 0.3− | 0.1+ |
| 2001 10 14 | 691 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.0 | 0.4− | 2006 08 31 | 704 | 1.1− | 0.6+ |
| 2001 10 14 | 691 | 0.2+ | 0.3+ | 2001 11 21 | 704 | 0.3− | 0.7− | 2006 08 31 | 704 | 1.1− | 1.0− |
| 2001 10 17 | 704 | 0.8+ | 1.2+ | 2001 11 21 | 704 | 0.1+ | 0.9− | 2006 08 31 | 704 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | (1.3+ | 1.6+) | 2001 11 21 | 704 | 0.6− | 0.9− | 2006 08 31 | 704 | 0.1+ | 0.3− |
| 2001 10 17 | 704 | 0.2+ | 0.8+ | 2001 11 21 | 704 | 0.2+ | 0.7− | 2006 08 31 | 704 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.4− | 0.7+ | 2001 11 21 | 704 | 0.5− | 1.3− | 2006 08 31 | 704 | 0.1− | 0.8− |
| 2001 10 18 | 644 | 0.1− | 0.8+ | 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.3+ | 0.1+ |
| 2001 10 18 | 644 | 0.1+ | 0.8+ | 2004 03 27 | 691 | 0.2+ | 0.4+ | 2006 09 06 | 644 | 0.2+ | 0.3+ |
| 2001 10 22 | 704 | 0.0 | 0.6+ | 2004 03 27 | 691 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.3+ |
| 2001 10 22 | 704 | 0.1− | 0.3+ | 2004 03 28 | 291 | 0.2− | 0.6+ | 2006 09 17 | 703 | 0.4+ | 0.1− |
| 2001 10 22 | 704 | 0.3+ | 0.4− | 2004 03 28 | 291 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.3+ |
| 2001 10 22 | 704 | 0.6− | 0.5+ | 2004 03 28 | 291 | 0.3+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 0.4+ |
| 2001 10 23 | 704 | 0.4− | 0.1− | 2005 01 22 | 809 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.8− | 0.8+ |
| 2001 10 23 | 704 | 0.8− | 0.2− | 2005 01 22 | 809 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.3+ | 2005 01 22 | 809 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.9− | 0.5+ |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2005 05 03 | 703 | 0.8− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | 0.3+ | 0.2+ | 2005 05 03 | 703 | 0.5− | 0.1− | 2006 09 19 | 699 | 0.5− | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.0 | 2005 05 03 | 703 | 0.8− | 0.3− | 2006 09 27 | 703 | 1.0− | 0.5− |
| 2001 10 24 | 704 | 0.6− | 0.1− | 2005 05 03 | 703 | 0.9− | 0.2− | 2006 09 27 | 703 | 0.5+ | 0.0 |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | 0.6− | 0.2− | 2005 05 08 | 691 | 0.0 | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.1+ |
| 2001 10 25 | 644 | 0.2− | 0.5+ | 2005 05 08 | 691 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 10 25 | 644 | 0.3− | 0.7+ | 2005 05 14 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 10 25 | 644 | 0.0 | 0.9+ | 2005 05 14 | 691 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 10 26 | 704 | (0.4− | 1.7+) | 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2001 10 26 | 704 | (0.3+ | 1.5+) | 2005 06 11 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2001 10 26 | 704 | (0.6+ | 2.2+) | 2005 06 11 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.3+ |
| 2001 10 26 | 704 | (0.3+ | 1.6+) | 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | (1.8− | 0.8+) | 2005 06 15 | 691 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | (0.2+ | 1.5+) | 2005 06 15 | 691 | 0.4+ | 0.2+ | 2006 10 24 | 644 | 0.4+ | 0.1− |
| 2001 11 09 | 704 | (1.7− | 0.7+) | 2005 06 15 | 691 | 0.3+ | 0.2+ | | | | |

**(140698)∗ 2001 UO$_{73}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.66825 | | (2000.0) | | | |
| $n$ | 0.19147054 | $\omega$ | 334.49063 | | +0.53364531 | −0.84375422 |
| $a$ | 2.9812707 | $\Omega$ | 83.20873 | | +0.78549794 | +0.46932990 |
| $e$ | 0.0845112 | $i$ | 3.31726 | | +0.31339378 | +0.26040020 |
| $P$ | 5.15 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 0.2− | 0.1− | 2001 11 09 | 704 | 0.4− | 0.3− | 2004 05 14 | 691 | 0.3+ | 0.3+ |
| 1999 04 17 | 691 | 0.4− | 0.3− | 2001 11 09 | 704 | 0.8− | 0.8− | 2004 05 14 | 691 | 0.2+ | 0.3+ |
| 1999 04 17 | 691 | 0.3− | 0.1+ | 2001 11 15 | 644 | 0.5− | 0.4+ | 2004 05 23 | 691 | 0.3+ | 0.7+ |
| 2001 09 26 | 704 | 0.4+ | 0.3+ | 2001 11 15 | 644 | 0.3− | 0.8+ | 2004 05 23 | 691 | 0.3+ | 0.5+ |
| 2001 09 26 | 704 | 0.8+ | 0.5− | 2001 11 15 | 644 | 0.2− | 1.2+ | 2004 05 23 | 691 | 0.6+ | 0.7+ |
| 2001 09 26 | 704 | 0.1− | 0.8+ | 2001 11 17 | 704 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.2+ |
| 2001 09 26 | 704 | 0.8− | 0.3− | 2001 11 17 | 704 | 0.9+ | 1.0− | 2006 09 06 | 644 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.7− | 0.2+ | 2001 11 17 | 704 | 0.3+ | 0.5+ | 2006 09 06 | 644 | 0.6+ | 0.7+ |
| 2001 10 14 | 699 | 0.3− | 0.3+ | 2001 11 17 | 704 | 0.7− | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2001 10 14 | 699 | 0.8− | 0.2+ | 2001 11 20 | 704 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.0 |
| 2001 10 14 | 699 | 0.9+ | 0.9− | 2001 11 20 | 704 | 0.6− | 0.5+ | 2006 09 17 | 691 | 0.3− | 0.0 |
| 2001 10 14 | 699 | 1.0− | 0.9+ | 2001 11 20 | 704 | 0.5− | 0.5+ | 2006 09 18 | 699 | 0.7− | 0.7+ |
| 2001 10 17 | 704 | 0.9+ | 0.3+ | 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 09 18 | 699 | (2.3− | 0.4+) |
| 2001 10 17 | 704 | (1.5+ | 0.1−) | 2001 11 20 | 704 | 0.5− | 0.2− | 2006 09 18 | 699 | (1.8+ | 0.4+) |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.3+ | 0.1+ |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2001 11 21 | 704 | 0.9+ | 0.7+ | 2006 10 01 | 704 | 0.3− | 0.1− |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.5− | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 2001 10 18 | 644 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.6− | 0.8+ | 2006 10 01 | 704 | 0.2− | 0.9+ |
| 2001 10 18 | 644 | 0.1+ | 0.2− | 2001 11 21 | 704 | 0.0 | 0.2+ | 2006 10 01 | 704 | 1.2+ | 1.1+ |
| 2001 10 18 | 644 | 0.1+ | 0.2− | 2003 01 27 | 704 | (1.0+ | 1.7−) | 2006 10 15 | 703 | 0.6− | 0.1+ |
| 2001 10 22 | 704 | 0.8− | 0.2− | 2003 01 27 | 704 | 0.8+ | 0.5− | 2006 10 15 | 703 | 0.6− | 0.4− |
| 2001 10 22 | 704 | 0.1− | 0.2− | 2003 01 27 | 704 | 0.2+ | 0.3− | 2006 10 15 | 703 | 0.3+ | 0.1+ |
| 2001 10 22 | 704 | 0.5− | 0.1+ | 2003 01 27 | 704 | 0.2− | 1.5− | 2006 10 15 | 703 | 0.4− | 0.4− |
| 2001 10 22 | 704 | 0.1+ | 0.0 | 2003 01 27 | 704 | 0.6+ | 0.7− | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 2001 10 22 | 704 | 0.2+ | 0.3− | 2003 02 02 | 644 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2001 10 23 | 704 | 0.7+ | 0.5+ | 2003 02 02 | 644 | 0.6− | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2001 10 23 | 704 | 0.5+ | 0.5+ | 2003 02 02 | 644 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.8+ | 0.7+ | 2003 02 04 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.9+ | 1.1+ | 2003 02 04 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.9+ | 1.0+ | 2003 02 04 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.2+ | 0.1− | 2003 02 04 | 608 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.4− |
| 2001 10 24 | 704 | 0.1− | 0.9+ | 2003 02 04 | 608 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.0 | 0.2+ | 2003 02 04 | 608 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2001 10 24 | 704 | 0.2+ | 0.2+ | 2003 02 09 | 608 | 0.6− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.3+ | 0.2− | 2003 02 09 | 608 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2001 10 25 | 644 | 0.4− | 0.1− | 2003 02 09 | 608 | 0.7− | 0.3− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 10 25 | 644 | 0.6− | 0.1− | 2003 02 21 | 699 | (2.1− | 3.5+) | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2001 10 25 | 644 | 0.3− | 0.2− | 2003 02 21 | 699 | 0.2− | 1.3+ | 2006 11 18 | G96 | 0.3+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.3+ | 0.5− | 2003 02 21 | 699 | (0.8+ | 1.5+) | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2003 02 21 | 699 | 0.7− | 0.8+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2001 11 09 | 704 | 0.5− | 0.4+ | 2004 05 14 | 691 | 0.4+ | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.3− |

**(140699)∗ 2001 UL$_{74}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.63052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18161038 | $\omega$ | 291.72666 | | −0.71418155 | −0.69654816 | |
| $a$ | 3.0882250 | $\Omega$ | 204.29478 | | +0.68807652 | −0.68053755 | |
| $e$ | 0.0529343 | $i$ | 9.65901 | | +0.12843446 | −0.22735280 | |
| $P$ | 5.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.5+ | 1.0+ | 2002 11 13 | 645 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.9− | 0.9+ |
| 2000 08 31 | 704 | 0.0 | 0.9+ | 2003 01 02 | 704 | 0.4+ | 1.0+ | 2006 09 17 | 703 | 0.0 | 0.6+ |
| 2000 08 31 | 704 | 0.7+ | 0.3− | 2003 01 02 | 704 | 0.4− | 1.2+ | 2006 09 17 | 703 | 0.1+ | 0.1− |
| 2000 08 31 | 704 | 0.6− | 0.2+ | 2003 01 02 | 704 | (0.5+ | 1.5+) | 2006 09 17 | 703 | 1.3− | 1.1− |
| 2001 10 17 | 704 | 0.7− | 0.9+ | 2003 01 02 | 704 | 0.2− | 1.4+ | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 2001 10 17 | 704 | 0.4+ | 0.1+ | 2003 01 26 | 644 | 0.5+ | 0.2+ | 2006 09 18 | 691 | 0.3+ | 0.2+ |
| 2001 10 17 | 704 | 1.3+ | 0.0 | 2003 01 26 | 644 | 0.9+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 0.3− | 0.4− | 2003 01 26 | 644 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2003 01 28 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.9− | 0.9+ |
| 2001 10 18 | 644 | 0.1− | 0.3+ | 2003 01 28 | 704 | 1.0− | 0.5− | 2006 09 19 | 699 | 0.5− | 0.2− |
| 2001 10 18 | 644 | 0.3− | 0.3+ | 2003 01 28 | 704 | 0.6− | 0.6− | 2006 09 19 | 699 | 0.0 | 0.0 |
| 2001 10 18 | 644 | 0.1+ | 0.5+ | 2003 01 28 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2001 10 22 | 704 | 0.4+ | 0.3+ | 2003 01 28 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 1.0+ | 0.8+ | 2003 02 03 | 699 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2001 10 22 | 704 | 0.0 | 0.7+ | 2003 02 03 | 699 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.7− | 1.3+ | 2003 02 03 | 699 | 0.3+ | 0.8+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | (1.7− | 0.3−) | 2003 02 03 | 699 | 0.9− | 1.2+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2001 10 23 | 704 | 0.8− | 0.1− | 2004 03 31 | 704 | 1.2+ | 0.7+ | 2006 10 11 | 291 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.7− | 0.2+ | 2004 03 31 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 291 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.5− | 0.0 | 2004 03 31 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 291 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.8− | 1.1− | 2004 04 19 | 704 | 0.5+ | 1.0+ | 2006 10 17 | 703 | (2.6− | 0.1+) |
| 2001 10 24 | 704 | (1.7+ | 1.8−) | 2004 04 19 | 704 | 0.5+ | 1.3+ | 2006 10 17 | 703 | 1.5− | 0.7− |
| 2001 10 24 | 704 | 0.2− | 0.8− | 2004 04 19 | 704 | 0.9+ | 0.6+ | 2006 10 17 | 703 | 0.9− | 0.7+ |
| 2001 11 20 | 704 | 0.5− | 0.6+ | 2004 04 19 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2001 11 20 | 704 | 0.5− | 0.8+ | 2004 04 19 | 704 | 0.9+ | 1.1+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2004 04 22 | 704 | (0.7− | 1.8+) | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 11 20 | 704 | 0.4− | 1.1+ | 2004 04 22 | 704 | 0.8− | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 0.7+ | 2004 04 22 | 704 | 0.3− | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 12 09 | 699 | 0.7+ | 0.4− | 2004 04 22 | 704 | 1.3+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2001 12 09 | 699 | (1.4− | 1.9−) | 2004 05 11 | 699 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2001 12 09 | 699 | 0.0 | 0.9− | 2004 05 11 | 699 | 0.4− | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 12 09 | 699 | 0.0 | 0.9− | 2004 05 11 | 699 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2001 12 11 | 704 | (1.1+ | 1.7−) | 2004 05 11 | 699 | 1.3− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 0.8+ | 0.8− | 2004 05 15 | 704 | 1.1− | 0.7+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2001 12 11 | 704 | 0.2− | 1.0− | 2004 05 15 | 704 | 0.6+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 11 13 | 645 | 0.1+ | 0.1− | 2004 05 15 | 704 | 0.8− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.2− |

**(140700)∗ 2001 UW$_{74}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.95148 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18151766 | $\omega$ | 304.17633 | | −0.75427889 | −0.65522241 | |
| $a$ | 3.0892766 | $\Omega$ | 195.03144 | | +0.64286038 | −0.72411482 | |
| $e$ | 0.0895169 | $i$ | 9.27417 | | +0.13339371 | −0.21527033 | |
| $P$ | 5.43 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 1.0+ | 2003 01 28 | 704 | 0.7+ | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.6+ |
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2003 01 28 | 608 | 0.5+ | 0.4− | 2006 09 19 | 691 | 0.5− | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2003 01 28 | 608 | 0.3+ | 0.5− | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2003 01 28 | 608 | 0.9+ | 0.0 | 2006 09 19 | 691 | 0.4− | 0.3+ |
| 2001 10 17 | 704 | 0.7− | 0.7+ | 2003 02 09 | 608 | 0.0 | 0.9+ | 2006 09 24 | 691 | 0.3− | 0.2+ |
| 2001 10 17 | 704 | 0.3− | 0.8+ | 2003 02 09 | 608 | 0.3− | 0.9+ | 2006 09 24 | 691 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.2+ | 1.4+ | 2003 02 09 | 608 | 0.6+ | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.4+ |
| 2001 10 17 | 704 | 0.6− | 0.9+ | 2003 02 22 | 644 | 0.5+ | 0.9+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 10 22 | 704 | 0.3− | 0.5+ | 2003 02 22 | 644 | 0.5+ | 1.0+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 10 22 | 704 | (0.6− | 1.5+) | 2003 02 22 | 644 | 0.3+ | 0.9+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2001 10 22 | 704 | (0.5+ | 1.6+) | 2003 03 30 | 645 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 1.0+ | 2003 03 30 | 645 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.7+ | 1.0+ | 2004 04 20 | 704 | 0.7+ | 0.6− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.5+ | 1.2+ | 2004 04 20 | 704 | 0.8− | 0.4− | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 0.3− | 0.7+ | 2004 04 20 | 704 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2001 10 23 | 704 | 0.4− | 1.0+ | 2004 05 09 | 291 | 0.8− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.4− | 0.9+ | 2004 05 09 | 291 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.5+ | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.8+ | 2004 05 09 | 291 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | 0.4+ | 0.6+ | 2004 05 13 | 291 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.5+ | 0.4+ |
| 2001 10 24 | 704 | 0.1− | 1.1+ | 2004 05 13 | 291 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 10 24 | 704 | 0.8− | 0.5+ | 2004 05 13 | 291 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2001 12 12 | 950 | 0.4+ | 0.4+ | 2004 05 14 | 291 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 12 12 | 950 | 0.4+ | 0.6+ | 2004 05 14 | 291 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2001 12 12 | 950 | 0.3+ | 0.5+ | 2004 05 14 | 291 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.9− | 1.0+ | 2004 05 18 | 704 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | 0.3− | 0.4+ | 2004 05 18 | 704 | 0.9+ | 1.2+ | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2001 12 19 | 704 | (0.8− | 1.6+) | 2004 05 18 | 704 | 0.9+ | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | (0.4− | 2.1+) | 2004 05 18 | 704 | 0.2+ | 1.1+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 12 19 | 704 | (0.1+ | 2.3+) | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 11 14 | G96 | 1.0+ | 0.4− |
| 2003 01 28 | 704 | 0.2− | 0.6+ | 2005 07 05 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2003 01 28 | 704 | 0.7+ | 1.0+ | 2005 07 05 | 644 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2003 01 28 | 704 | 0.6+ | 0.8− | 2005 07 09 | 691 | 0.2+ | 0.2+ | | | | |
| 2003 01 28 | 704 | 0.1+ | 0.9+ | 2005 07 09 | 691 | 0.2− | 0.3+ | | | | |

**(140701)∗ 2001 UJ$_{75}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.26621 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18871260 | $\omega$ | 282.30937 | | +0.98412160 | −0.14297833 | |
| $a$ | 3.0102469 | $\Omega$ | 85.97948 | | +0.17359335 | +0.89888036 | |
| $e$ | 0.1322527 | $i$ | 6.05223 | | −0.03701392 | +0.41421166 | |
| $P$ | 5.22 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 22 | 691 | 0.2+ | 0.6− | 2001 12 09 | 699 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.4+ |
| 1993 02 22 | 691 | 0.5− | 0.1+ | 2001 12 09 | 699 | 1.1+ | 0.4− | 2006 09 26 | 704 | 0.2− | 0.1− |
| 1993 02 22 | 691 | 0.3+ | 0.4+ | 2001 12 11 | 704 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.8+ | 0.5− |
| 2001 10 13 | 704 | (2.2+ | 1.2−) | 2001 12 11 | 704 | 0.5− | 0.7+ | 2006 09 26 | 704 | 1.3− | 0.0 |
| 2001 10 13 | 704 | 0.9+ | 1.0− | 2001 12 11 | 704 | 0.7− | 0.9+ | 2006 09 26 | 703 | 0.1+ | 0.6+ |
| 2001 10 13 | 704 | 0.2− | 0.8− | 2001 12 11 | 704 | 1.0− | 0.8+ | 2006 09 26 | 703 | 0.4+ | 0.2− |
| 2001 10 13 | 699 | 0.1+ | 1.4+ | 2001 12 11 | 704 | 0.9− | 0.9+ | 2006 09 26 | 703 | 0.5− | 0.5− |
| 2001 10 13 | 699 | 1.1+ | 0.7+ | 2001 12 14 | 704 | 0.3− | 0.6+ | 2006 09 26 | 703 | 0.5+ | 0.7− |
| 2001 10 13 | 699 | (0.4− | 1.6+) | 2001 12 14 | 704 | 1.0− | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.2− |
| 2001 10 13 | 699 | (1.5+ | 3.3+) | 2001 12 14 | 704 | 0.6− | 0.6+ | 2006 09 29 | 699 | 0.6+ | 0.2− |
| 2001 10 17 | 704 | 0.7+ | 0.1− | 2001 12 14 | 704 | 0.9− | 0.6+ | 2006 09 29 | 699 | 0.6+ | 0.2+ |
| 2001 10 17 | 704 | 0.8+ | 0.6− | 2001 12 14 | 704 | 1.2− | 0.8+ | 2006 09 29 | 699 | 0.0 | 0.4− |
| 2001 10 17 | 704 | 0.6+ | 0.4+ | 2001 12 17 | 704 | (2.2− | 0.7−) | 2006 10 01 | 704 | (1.6+ | 1.2−) |
| 2001 10 17 | 704 | 0.7+ | 0.4+ | 2001 12 17 | 704 | 0.4− | 0.5+ | 2006 10 01 | 704 | 0.5+ | 0.3− |
| 2001 10 17 | 704 | 0.5+ | 0.4+ | 2001 12 17 | 704 | (0.3− | 2.0+) | 2006 10 01 | 704 | 0.9+ | 0.1− |
| 2001 10 19 | 608 | 0.3− | 0.4+ | 2001 12 17 | 704 | 0.9− | 0.8+ | 2006 10 01 | 704 | 0.5− | 0.3+ |
| 2001 10 19 | 608 | 0.1− | 0.8+ | 2001 12 17 | 704 | 1.5− | 1.4+ | 2006 10 04 | G96 | 0.2− | 0.4− |
| 2001 10 19 | 608 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.7− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2001 10 22 | 704 | 0.3+ | 0.7+ | 2003 02 01 | 704 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2001 10 22 | 704 | 0.4− | 0.1+ | 2003 02 01 | 704 | 0.4− | 1.3− | 2006 10 04 | G96 | 0.3+ | 0.5− |
| 2001 10 22 | 704 | 0.3− | 0.1− | 2003 02 01 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2001 10 22 | 704 | 0.2− | 0.8− | 2003 02 04 | 704 | (1.1− | 2.2−) | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2001 10 24 | 704 | 1.1− | 0.6− | 2003 02 04 | 704 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.4+ | 0.7+ |
| 2001 10 24 | 704 | 0.2− | 0.5− | 2003 02 04 | 704 | 0.9+ | 0.9+ | 2006 10 16 | 703 | (0.6− | 2.0−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | (1.7− | 0.0 ) | 2003 02 04 | 704 | 1.1− | 1.2− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.6− | 0.5− | 2003 02 07 | 644 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.1+ | 0.7− | 2003 02 07 | 644 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | (0.2− | 1.6−) | 2003 02 07 | 644 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 0.2+ | 0.2+ | 2003 02 22 | 644 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 0.9+ | 0.1− | 2003 02 22 | 644 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 1.3− | 0.6+ | 2003 02 22 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 15 | 644 | 0.7+ | 0.2− | 2004 03 25 | 699 | 1.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 11 15 | 644 | 0.2+ | 0.1+ | 2004 03 25 | 699 | 1.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2001 11 15 | 644 | 0.9+ | 0.4+ | 2004 03 25 | 699 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.3+ | 0.3+ | 2004 03 25 | 699 | 1.1− | 1.5− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 17 | 704 | 0.4+ | 0.2− | 2006 09 16 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 17 | 704 | 0.2+ | 0.3− | 2006 09 16 | 704 | 1.0+ | 0.2− | 2006 10 22 | 703 | 0.8− | 0.6− |
| 2001 11 19 | 699 | 0.3+ | 0.4− | 2006 09 16 | 704 | (1.6+ | 0.3−) | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2001 11 19 | 699 | 0.1+ | 0.6− | 2006 09 16 | 704 | 0.3− | 0.9+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2001 11 19 | 699 | 0.4+ | 0.5− | 2006 09 18 | 703 | 0.1− | 0.7− | 2006 10 22 | 703 | 0.0 | 0.7+ |
| 2001 11 19 | 699 | 0.4− | 0.5− | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 27 | 704 | 0.2− | 0.4− |
| 2001 11 19 | 608 | 0.4− | 1.2− | 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 10 27 | 704 | 0.2− | 0.3− |
| 2001 11 19 | 608 | 0.4− | 1.4− | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 10 27 | 704 | 0.6− | 0.5+ |
| 2001 11 19 | 608 | 0.4− | 1.3− | 2006 09 22 | 704 | 0.6− | 0.4− | 2006 10 28 | 703 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.6+ | 0.2− | 2006 09 22 | 704 | 0.2+ | 1.1− | 2006 10 28 | 703 | 0.6+ | 0.4+ |
| 2001 11 20 | 704 | 0.2+ | 0.4− | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.8− | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 0.2− | 2006 09 22 | 704 | 0.5− | 0.1− | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.6+ | 0.1− | 2006 09 25 | 699 | 0.3− | 0.5− | 2006 11 14 | 704 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.5− | 0.1− |
| 2001 12 09 | 699 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.5− | 2006 11 14 | 704 | 0.3+ | 1.2+ |
| 2001 12 09 | 699 | 0.7+ | 0.2+ | 2006 09 25 | 699 | 0.8+ | 1.0− | 2006 11 14 | 704 | 0.6+ | 1.2+ |

**(140702)∗ 2001 UZ$_{75}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.70401 | | (2000.0) | | | |
| $n$ | 0.21875358 | $\omega$ | 274.01356 | | +0.72601773 | −0.68641789 |
| $a$ | 2.7279261 | $\Omega$ | 129.33982 | | +0.65034101 | +0.66569398 |
| $e$ | 0.2028285 | $i$ | 3.08171 | | +0.22350576 | +0.29271490 |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.7− | 0.4− | 2001 11 20 | 608 | 0.2+ | 0.5− | 2003 04 01 | 645 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.5+ | 0.5− | 2001 11 20 | 608 | 0.2− | 0.5− | 2003 04 01 | 645 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 0.4− | 2001 11 21 | 704 | 0.7− | 0.5− | 2003 04 06 | 691 | 0.3+ | 0.1+ |
| 2001 10 17 | 704 | 1.1+ | 0.1− | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2003 04 06 | 691 | 0.1− | 0.4+ |
| 2001 10 17 | 704 | 0.9+ | 0.6+ | 2001 11 21 | 704 | 0.2− | 0.1− | 2003 04 06 | 691 | 0.3− | 0.7+ |
| 2001 10 22 | 704 | 0.1− | 0.5− | 2001 11 21 | 704 | 0.8− | 0.1− | 2005 07 12 | G96 | 0.2− | 0.2+ |
| 2001 10 22 | 704 | 0.6+ | 0.1+ | 2001 11 21 | 704 | 0.5− | 0.5− | 2005 07 12 | G96 | 0.4− | 0.6+ |
| 2001 10 22 | 704 | 0.1− | 0.7− | 2001 11 24 | 704 | 0.1− | 1.0− | 2005 07 12 | G96 | 0.5− | 0.4+ |
| 2001 10 22 | 704 | 0.2− | 0.1− | 2001 11 24 | 704 | (1.5+ | 0.1−) | 2005 07 12 | G96 | 0.2− | 0.4+ |
| 2001 10 23 | 704 | 1.3− | 0.8+ | 2001 11 24 | 704 | 0.9+ | 0.8+ | 2005 07 28 | 644 | 0.0 | 0.6+ |
| 2001 10 23 | 704 | 0.5− | 0.0 | 2001 12 09 | 699 | 0.2− | 0.5+ | 2005 07 28 | 644 | 0.4− | 0.4+ |
| 2001 10 23 | 704 | 0.6− | 0.1+ | 2001 12 09 | 699 | 0.1+ | 0.2− | 2005 07 28 | 644 | 0.1− | 0.3+ |
| 2001 10 23 | 704 | 1.1− | 0.3+ | 2001 12 09 | 699 | 0.2+ | 0.6+ | 2005 08 04 | 644 | 0.0 | 0.7+ |
| 2001 10 23 | 704 | 0.8− | 0.1+ | 2001 12 09 | 699 | 0.3+ | 0.1+ | 2005 08 04 | 644 | 0.0 | 0.7+ |
| 2001 10 24 | 704 | 0.8− | 1.0+ | 2001 12 11 | 704 | 0.1+ | 0.8+ | 2005 08 04 | 644 | 0.2+ | 0.7+ |
| 2001 10 24 | 704 | 0.4+ | 0.5+ | 2001 12 11 | 704 | 0.3+ | 0.7− | 2005 08 05 | 644 | 0.0 | 0.8+ |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2001 12 11 | 704 | 0.0 | 0.1+ | 2005 08 05 | 644 | 0.1+ | 0.6+ |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2001 12 11 | 704 | 0.1− | 0.2+ | 2005 08 05 | 644 | 0.0 | 0.7+ |
| 2001 10 25 | 644 | 0.4− | 0.6− | 2001 12 11 | 704 | 0.3+ | 0.7+ | 2005 08 29 | 704 | 0.2− | 0.2+ |
| 2001 10 25 | 644 | (1.4− | 2.2+) | 2001 12 14 | 691 | 0.2+ | 0.0 | 2005 08 29 | 704 | 0.3− | 0.2+ |
| 2001 10 25 | 644 | 0.5− | 0.8− | 2001 12 14 | 704 | 0.3− | 0.1+ | 2005 08 29 | 704 | 0.4− | 0.5− |
| 2001 10 25 | 644 | (1.5− | 1.8+) | 2001 12 14 | 691 | 0.2+ | 0.1+ | 2005 08 29 | 704 | 0.4− | 0.6+ |
| 2001 10 25 | 644 | 0.6− | 0.9− | 2001 12 14 | 704 | 0.1+ | 0.6+ | 2005 09 22 | 644 | 0.2− | 0.9+ |
| 2001 10 25 | 644 | 1.3− | 1.5+ | 2001 12 14 | 704 | 0.5− | 0.4+ | 2005 09 22 | 644 | 0.4− | 0.7+ |
| 2001 11 09 | 704 | 0.0 | 0.4+ | 2001 12 14 | 691 | 0.3+ | 0.1+ | 2005 09 22 | 644 | 0.0 | 0.6+ |
| 2001 11 09 | 704 | 0.1− | 0.0 | 2001 12 14 | 704 | 0.6− | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.4− |
| 2001 11 09 | 704 | 1.4+ | 0.6+ | 2001 12 14 | 704 | 1.0− | 0.4+ | 2006 10 21 | G96 | 0.6− | 0.1+ |
| 2001 11 09 | 704 | 0.5+ | 0.4− | 2001 12 17 | 704 | 0.3+ | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 11 09 | 704 | 0.2+ | 0.1+ | 2001 12 17 | 704 | 0.7− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2001 11 17 | 704 | 0.4+ | 0.4+ | 2001 12 17 | 704 | 0.5− | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.8− |
| 2001 11 17 | 704 | 0.2+ | 0.4+ | 2001 12 17 | 704 | 0.8− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2001 11 17 | 704 | 0.4+ | 0.2+ | 2001 12 17 | 704 | (0.3− | 1.7+) | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2001 12 18 | 644 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.9− |
| 2001 11 20 | 704 | 0.0 | 0.2+ | 2001 12 18 | 644 | 0.1− | 1.2+ | 2006 11 28 | G96 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2001 12 18 | 644 | 0.3+ | 0.8+ | 2006 11 28 | G96 | 0.3+ | 0.4− |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2003 03 23 | 691 | 0.0 | 0.9+ | 2006 11 28 | G96 | 0.4− | 0.6− |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2003 03 23 | 691 | 0.0 | 1.2+ | 2006 11 28 | G96 | 0.0 | 0.3− |
| 2001 11 20 | 608 | 0.1+ | 0.4− | 2003 03 23 | 691 | 0.5− | 1.2+ | | | | |

**(140703)∗ 2001 UE$_{77}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.62882 | | (2000.0) | | | |
| $n$ | 0.18675147 | $\omega$ | 291.51288 | | +0.55239849 | −0.83286343 |
| $a$ | 3.0312845 | $\Omega$ | 124.90880 | | +0.77954427 | +0.50146122 |
| $e$ | 0.1921726 | $i$ | 2.41536 | | +0.29523996 | +0.23425446 |
| $P$ | 5.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 27 | 807 | 0.4− | 0.3+ | 2001 11 20 | 704 | 1.0+ | 0.4− | 2006 09 18 | 703 | 0.7− | 0.0 |
| 2000 08 27 | 807 | 0.4− | 0.4+ | 2001 11 20 | 704 | 1.0+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.5+ |
| 2001 10 17 | 704 | 0.6+ | 0.1+ | 2001 11 20 | 704 | 0.8+ | 0.5− | 2006 09 18 | 699 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 0.7− | 0.3+ | 2001 11 20 | 704 | 0.7+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 1.2+ |
| 2001 10 17 | 704 | 0.1− | 0.3− | 2001 11 20 | 704 | 0.7+ | 0.1− | 2006 09 18 | 699 | 0.6− | 0.3+ |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2001 11 21 | 704 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.6− | 0.9+ |
| 2001 10 18 | 644 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.6+ | 0.7− | 2006 09 26 | 704 | 0.3+ | 0.6+ |
| 2001 10 18 | 644 | 0.5+ | 0.1+ | 2001 11 21 | 704 | 0.8+ | 0.2− | 2006 09 26 | 704 | 0.4− | 0.5+ |
| 2001 10 18 | 644 | 0.1+ | 0.2− | 2001 11 21 | 704 | 0.7+ | 0.3− | 2006 09 26 | 704 | 0.6− | 0.2− |
| 2001 10 22 | 704 | 0.3− | 0.2+ | 2001 11 21 | 704 | 0.6+ | 0.2− | 2006 09 26 | 704 | 0.2− | 0.5+ |
| 2001 10 22 | 704 | 0.6− | 0.1− | 2001 12 10 | 691 | 0.8+ | 0.7+ | 2006 09 26 | 704 | 0.8+ | 0.2+ |
| 2001 10 22 | 704 | 0.1− | 0.3− | 2001 12 10 | 691 | 0.5+ | 0.9+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2001 10 22 | 704 | 0.8− | 0.8− | 2001 12 10 | 691 | 0.3+ | 1.0+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 10 22 | 704 | 0.2− | 0.5− | 2001 12 11 | 704 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 1.2− | 0.7− | 2001 12 11 | 704 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.5− | 0.6− | 2001 12 11 | 704 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 1.3− | 2001 12 11 | 704 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 1.2− | 2001 12 14 | 704 | 0.5+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 1.1− | 0.8− | 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 1.0− | 0.5− | 2001 12 14 | 704 | 0.4− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.9− | 1.1− | 2001 12 14 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.4− | 0.7− | 2001 12 14 | 704 | 0.7− | 0.4+ | 2006 10 01 | 704 | (0.5− | 1.8+) |
| 2001 10 24 | 704 | 0.2+ | 1.4− | 2003 02 23 | 291 | 0.5− | 0.2+ | 2006 10 01 | 704 | 0.4− | 1.4+ |
| 2001 10 24 | 704 | 0.2− | 1.1− | 2003 02 23 | 291 | 0.2− | 0.2+ | 2006 10 01 | 704 | (0.7− | 1.6+) |
| 2001 10 24 | 704 | 0.2− | 1.2− | 2003 02 23 | 291 | 0.7+ | 0.5+ | 2006 10 01 | 704 | (0.4− | 1.9+) |
| 2001 10 24 | 704 | (0.1− | 1.9−) | 2003 03 24 | 691 | 1.2+ | 1.1+ | 2006 10 15 | 106 | 0.1− | 0.4− |
| 2001 10 24 | 704 | 0.0 | 1.0− | 2003 03 24 | 691 | 0.7+ | 0.8+ | 2006 10 15 | 106 | 1.0+ | 1.1− |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2003 03 24 | 691 | 0.6+ | 0.5+ | 2006 10 15 | 106 | 0.6− | 0.2− |
| 2001 11 09 | 704 | 0.4− | 0.6+ | 2003 04 05 | 691 | 0.6− | 0.3+ | 2006 10 15 | 106 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.4− | 0.1− | 2003 04 05 | 691 | 0.6− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 0.2+ | 0.1+ | 2003 04 05 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 11 09 | 704 | 0.0 | 0.1+ | 2004 04 25 | 691 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 11 17 | 704 | 0.1− | 0.1− | 2004 04 25 | 691 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.7− | 0.4+ | 2004 04 25 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 11 17 | 704 | 0.7− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.4− | 2.0+ |
| 2001 11 17 | 704 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.5+ | 2006 10 21 | 703 | 1.3− | 2.7+ |
| 2001 11 19 | 608 | 0.5− | 0.7− | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2001 11 19 | 608 | 0.3− | 0.5− | 2006 09 18 | 691 | 0.3− | 0.6+ | 2006 10 21 | 703 | 1.6− | 1.4+ |
| 2001 11 19 | 608 | 0.3− | 1.2− | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 10 21 | 703 | 1.5− | 0.8+ |

**(140704)∗ 2001 UG$_{77}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.72969 | | (2000.0) | | | |
| $n$ | 0.20241109 | $\omega$ | 253.95206 | | +0.96337172 | +0.26170971 |
| $a$ | 2.8728515 | $\Omega$ | 90.84829 | | −0.21820292 | +0.89181451 |
| $e$ | 0.0446189 | $i$ | 3.35443 | | −0.15589232 | +0.36901884 |
| $P$ | 4.87 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.2− | 0.1− | 2001 12 09 | 691 | 0.1− | 0.1+ | 2005 08 29 | 699 | 0.5− | 0.5− |
| 2001 10 13 | 691 | 0.3− | 0.2− | 2001 12 09 | 691 | 0.3− | 0.6+ | 2005 08 29 | 699 | (1.8+ | 0.2+) |
| 2001 10 13 | 691 | 0.1− | 0.3− | 2001 12 09 | 691 | 0.1+ | 0.1+ | 2005 09 01 | 644 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.8− | 0.6− | 2001 12 14 | 704 | 0.4− | 0.4+ | 2005 09 01 | 644 | 0.3− | 0.2+ |
| 2001 10 17 | 704 | 0.1− | 0.8+ | 2001 12 14 | 704 | 0.1− | 0.8+ | 2005 09 01 | 644 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | (1.6− | 1.9+) | 2001 12 14 | 704 | 0.9+ | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 10 22 | 704 | 0.5− | 0.3− | 2001 12 14 | 704 | 0.3− | 1.4+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 10 22 | 704 | 0.0 | 0.6− | 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 10 22 | 704 | 0.3+ | 0.4+ | 2001 12 17 | 704 | 0.6+ | 1.4+ | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 2001 10 22 | 704 | 0.5− | 0.6− | 2001 12 17 | 704 | 0.9+ | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.7− | 0.2− | 2001 12 17 | 704 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.8+ | 0.3− | 2001 12 17 | 704 | 0.1+ | 0.9+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2004 04 25 | 691 | 0.3+ | 0.6+ | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2001 10 24 | 704 | 0.5+ | 0.8+ | 2004 04 25 | 691 | 0.2+ | 0.6+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.4+ | 1.0+ | 2004 04 25 | 691 | 0.4+ | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | (1.7+ | 0.6+) | 2004 05 12 | 699 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2001 10 24 | 704 | 0.9+ | 0.7+ | 2004 05 12 | 699 | 0.7+ | 0.6+ | 2006 11 21 | 704 | 0.7− | 0.4− |
| 2001 10 24 | 704 | 1.4+ | 0.5+ | 2004 05 12 | 699 | 1.0+ | 0.9+ | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2001 10 25 | 644 | 0.5− | 0.4+ | 2004 05 12 | 699 | (0.5− | 2.0+) | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2001 10 25 | 644 | 0.4− | 0.4+ | 2004 05 19 | 691 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 1.1+ | 0.8+ |
| 2001 10 25 | 644 | 0.2+ | 0.2+ | 2004 05 19 | 691 | 0.1+ | 0.5+ | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2001 11 09 | 704 | 0.9+ | 0.6+ | 2004 05 19 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2004 05 21 | 704 | (0.5+ | 1.7+) | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2004 05 21 | 704 | (0.3− | 2.2+) | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.3− | 0.3+ | 2004 05 21 | 704 | 0.5+ | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.5− | 0.6+ | 2004 05 21 | 704 | (0.4− | 1.9+) | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 11 17 | 704 | 0.6− | 0.2+ | 2004 05 28 | 691 | 0.1− | 0.7+ | 2006 11 27 | 703 | 0.2+ | 0.3+ |
| 2001 11 19 | 608 | 1.0− | 1.0+ | 2004 05 28 | 691 | 0.3+ | 0.8+ | 2006 11 27 | 703 | 0.2+ | 0.3− |
| 2001 11 19 | 608 | 0.7− | 1.0+ | 2004 05 28 | 691 | 0.3+ | 0.8+ | 2006 11 27 | 703 | 1.2− | 0.6− |
| 2001 11 19 | 608 | 0.7− | 0.6+ | 2005 07 18 | 644 | 0.3+ | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.0 | 0.6+ | 2005 07 18 | 644 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.8+ | 0.2− |
| 2001 11 20 | 704 | 0.9+ | 0.8− | 2005 07 18 | 644 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.8+ | 1.0− |
| 2001 11 20 | 704 | 0.9+ | 1.2+ | 2005 07 27 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.8+ | 0.5− |
| 2001 11 20 | 704 | 0.8− | 0.0 | 2005 07 27 | 644 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2005 07 27 | 644 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.9− |
| 2001 11 21 | 704 | 1.0− | 0.4+ | 2005 08 22 | 644 | 0.0 | 0.6+ | 2006 12 01 | 691 | 0.4− | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.0 | 2005 08 22 | 644 | 0.1+ | 0.3+ | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.1+ | 2005 08 22 | 644 | 0.1+ | 0.4+ | 2006 12 01 | 691 | 0.3+ | 0.4+ |
| 2001 11 21 | 704 | 0.5− | 0.1+ | 2005 08 29 | 699 | 0.9− | 0.6+ | | | | |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2005 08 29 | 699 | 0.7− | 0.5+ | | | | |

**(140705)∗ 2001 UG$_{78}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.47228 | | (2000.0) | | | |
| $n$ | 0.17739620 | $\omega$ | 185.21885 | | −0.83433890 | +0.53183019 |
| $a$ | 3.1369421 | $\Omega$ | 28.44731 | | −0.49410863 | −0.60485123 |
| $e$ | 0.1473820 | $i$ | 17.72640 | | −0.24440799 | −0.59271548 |
| $P$ | 5.56 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | (1.6− | 3.1+) | 2001 11 16 | 691 | 0.5+ | 0.5− | 2004 04 14 | 704 | 0.1− | 0.8+ |
| 1999 05 10 | 704 | 0.1+ | 0.6+ | 2001 11 16 | 691 | 0.3+ | 0.3− | 2004 04 14 | 644 | 0.4− | 0.1+ |
| 1999 05 10 | 704 | 1.7− | 1.9− | 2001 11 21 | 704 | 0.4− | 0.5− | 2004 04 14 | 704 | 0.5+ | 1.4+ |
| 1999 05 10 | 704 | 0.4+ | 0.4− | 2001 11 21 | 704 | 0.5− | 0.3+ | 2004 04 14 | 704 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.6+ | 1.4− | 2001 11 21 | 704 | 0.3+ | 0.2− | 2004 04 14 | 703 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | (0.4+ | 1.7+) | 2004 02 16 | 704 | 0.1− | 0.2+ | 2004 04 14 | 703 | (1.9+ | 0.6+) |
| 2001 09 19 | 704 | (0.8− | 2.0−) | 2004 02 16 | 704 | 0.4+ | 0.1+ | 2004 04 14 | 703 | 1.2+ | 0.4+ |
| 2001 09 19 | 704 | 0.6− | 1.0− | 2004 02 16 | 704 | 0.5+ | 0.3+ | 2004 04 14 | 703 | 0.2− | 0.6− |
| 2001 09 21 | 704 | 0.7− | 1.2+ | 2004 02 16 | 704 | 0.8+ | 0.3+ | 2004 05 23 | 704 | 0.3+ | 0.7+ |
| 2001 09 21 | 704 | 0.6+ | 0.4+ | 2004 03 10 | 644 | 0.4− | 0.5− | 2004 05 23 | 704 | 0.4+ | 1.2+ |
| 2001 09 21 | 704 | 0.9− | 0.7+ | 2004 03 10 | 644 | 0.3− | 0.4− | 2004 05 23 | 704 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.5+ | 0.0 | 2004 03 10 | 644 | 0.3− | 0.5− | 2004 05 23 | 704 | 0.7+ | 1.0+ |
| 2001 09 21 | 704 | 0.1+ | 0.2− | 2004 03 14 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 0.4+ | 1.5+ |
| 2001 09 21 | 704 | 0.5+ | 0.1+ | 2004 03 14 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 703 | (0.5+ | 1.9+) |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2004 03 14 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 1.2− | 0.7+ |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2004 03 14 | 704 | 1.0+ | 1.1+ | 2006 09 18 | 703 | (1.7− | 0.6+) |
| 2001 10 18 | 644 | 0.2− | 0.5− | 2004 03 18 | 703 | 0.2+ | 0.5− | 2006 09 21 | 699 | (2.8+ | 0.4+) |
| 2001 10 18 | 644 | 0.1− | 0.6− | 2004 03 18 | 703 | 0.6− | 0.0 | 2006 09 21 | 699 | 0.7− | 1.2− |
| 2001 10 18 | 644 | 0.1− | 0.3− | 2004 03 18 | 703 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.9− | 1.1+ |
| 2001 10 20 | 704 | 0.5− | 0.2+ | 2004 03 18 | 703 | 0.7+ | 1.3− | 2006 09 21 | 699 | 0.9+ | 0.7− |
| 2001 10 20 | 704 | 0.6− | 0.6+ | 2004 03 23 | 830 | 0.4+ | 0.1− | 2006 09 26 | 703 | (0.5+ | 2.8+) |
| 2001 10 20 | 704 | 1.3− | 0.5+ | 2004 03 23 | 830 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.2− | 1.5+ |
| 2001 10 20 | 704 | 0.0 | 0.2− | 2004 03 25 | 704 | 0.2− | 1.1+ | 2006 09 26 | 703 | (0.2+ | 2.4+) |
| 2001 10 20 | 704 | 0.4+ | 0.0 | 2004 03 25 | 704 | 0.1− | 0.2+ | 2006 09 26 | 703 | (1.5− | 2.0+) |
| 2001 10 22 | 704 | 0.3− | 0.3+ | 2004 03 25 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | 1.3− | 0.6+ |
| 2001 10 22 | 704 | 0.2− | 1.3+ | 2004 03 25 | 704 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.9− | 1.2+ |
| 2001 10 22 | 704 | 0.2+ | 0.9+ | 2004 03 30 | 703 | 0.3+ | 0.5− | 2006 09 26 | 703 | 0.5+ | 0.7− |
| 2001 10 23 | 704 | 0.2− | 0.2− | 2004 03 30 | 703 | 0.5+ | 0.1− | 2006 09 26 | 703 | (1.9− | 0.1+) |
| 2001 10 23 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 703 | 0.5− | 0.9− | 2006 10 02 | 703 | (2.4− | 2.4+) |
| 2001 10 23 | 704 | 0.1+ | 0.4+ | 2004 03 30 | 703 | 0.4− | 1.2− | 2006 10 02 | 703 | 0.1− | 0.6+ |
| 2001 10 23 | 704 | 0.1+ | 0.1+ | 2004 04 08 | 644 | 0.1− | 0.1− | 2006 10 02 | 703 | 0.6− | 0.1− |
| 2001 10 24 | 704 | 0.0 | 0.0 | 2004 04 08 | 644 | 0.1− | 0.0 | 2006 10 02 | 703 | (1.0+ | 2.1+) |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2004 04 08 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 10 24 | 704 | 0.6+ | 0.0 | 2004 04 14 | 644 | 0.4− | 1.0+ | 2006 10 11 | 644 | 0.4− | 0.7+ |
| 2001 11 16 | 691 | 0.4+ | 0.2− | 2004 04 14 | 644 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.3+ |

**(140706)∗ 2001 UV$_{79}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.27722 | | (2000.0) | | | |
| $n$ | 0.23428936 | $\omega$ | 328.52708 | | +0.66797596 | −0.74312212 |
| $a$ | 2.6059596 | $\Omega$ | 79.52961 | | +0.69088876 | +0.59942093 |
| $e$ | 0.0593607 | $i$ | 2.31493 | | +0.27655170 | +0.29742910 |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 30 | 049 | 0.7+ | 0.4+ | 2001 11 21 | 704 | 0.0 | 0.3+ | 2005 10 06 | 691 | 0.1− | 0.1+ |
| 2001 09 30 | 049 | 0.2− | 0.4+ | 2001 11 21 | 704 | 0.1+ | 0.0 | 2005 10 12 | 691 | 0.0 | 0.2+ |
| 2001 09 30 | 049 | 0.6− | 0.2− | 2003 02 08 | 608 | 0.9+ | 0.5− | 2005 10 12 | 691 | 0.4− | 0.1+ |
| 2001 10 11 | 691 | 0.4− | 0.1− | 2003 02 08 | 608 | 1.0+ | 0.5− | 2005 10 12 | 691 | 0.1− | 0.2+ |
| 2001 10 11 | 691 | 0.2− | 0.4− | 2003 02 08 | 608 | 0.7+ | 0.2− | 2005 10 22 | 699 | 1.4+ | 0.5− |
| 2001 10 11 | 691 | 0.4− | 0.0 | 2003 02 22 | 644 | 0.3+ | 0.4+ | 2005 10 22 | 699 | 0.4− | 1.4+ |
| 2001 10 13 | 704 | 0.5+ | 0.4− | 2003 02 22 | 644 | 0.4+ | 0.6+ | 2005 10 22 | 699 | 0.2− | 0.6+ |
| 2001 10 13 | 704 | 0.2+ | 1.0+ | 2003 02 22 | 644 | 0.2+ | 0.2+ | 2005 10 22 | 699 | 0.2+ | 0.4+ |
| 2001 10 13 | 704 | 0.7+ | 1.0+ | 2003 02 28 | 608 | 0.6+ | 0.5− | 2005 10 27 | 704 | 0.8+ | 0.9+ |
| 2001 10 13 | 704 | (0.5+ | 1.7+) | 2003 02 28 | 608 | 0.1+ | 1.1− | 2005 10 27 | 704 | 0.4+ | 0.2+ |
| 2001 10 20 | 704 | 0.8+ | 0.2+ | 2003 02 28 | 608 | 0.4+ | 0.6− | 2005 10 27 | 704 | 0.3+ | 0.5− |
| 2001 10 20 | 704 | 0.2+ | 0.1− | 2003 03 06 | 699 | (2.5− | 0.2+) | 2005 10 27 | 704 | 0.1+ | 1.0+ |
| 2001 10 20 | 704 | 0.1+ | 0.2− | 2003 03 06 | 699 | 0.5− | 0.4− | 2005 10 27 | 704 | (0.4− | 2.0+) |
| 2001 10 21 | 691 | 0.4− | 0.4+ | 2003 03 06 | 699 | 0.5− | 0.1− | 2005 10 28 | 704 | 0.3+ | 0.2+ |
| 2001 10 21 | 691 | 0.4− | 0.5+ | 2003 03 06 | 699 | 0.6+ | 0.1− | 2005 10 28 | 704 | 0.2+ | 0.3+ |
| 2001 10 21 | 691 | 0.6− | 0.4+ | 2003 03 07 | 699 | 1.0− | 0.1− | 2005 10 28 | 704 | 0.6+ | 0.4+ |
| 2001 10 22 | 704 | 0.2− | 0.2− | 2003 03 07 | 699 | (1.7+ | 1.5+) | 2005 11 01 | G96 | 0.3+ | 0.3− |
| 2001 10 22 | 704 | 0.6− | 0.4− | 2003 03 07 | 699 | (0.3− | 2.2+) | 2005 11 01 | G96 | 0.2+ | 0.3− |
| 2001 10 22 | 704 | 0.9− | 0.5− | 2003 03 07 | 699 | 0.0 | 0.7+ | 2005 11 01 | G96 | 0.2+ | 0.3− |
| 2001 10 22 | 704 | 0.0 | 0.7− | 2003 03 23 | 645 | 0.1− | 0.0 | 2005 11 01 | G96 | 0.3+ | 0.3− |
| 2001 10 22 | 704 | 0.6− | 0.5− | 2003 03 23 | 645 | 0.1− | 0.1+ | 2005 11 01 | G96 | 0.3+ | 0.3− |
| 2001 10 23 | 704 | 0.4− | 0.2+ | 2003 03 24 | 291 | 0.1+ | 0.3+ | 2005 11 01 | G96 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.4− | 0.2+ | 2003 03 24 | 291 | 0.3+ | 0.4+ | 2005 11 01 | G96 | 0.2+ | 0.3− |
| 2001 10 23 | 704 | 0.2− | 0.1+ | 2003 03 24 | 291 | 0.0 | 0.2+ | 2005 11 01 | G96 | 0.2+ | 0.3− |
| 2001 10 23 | 704 | 0.4− | 0.4+ | 2003 04 05 | 691 | 0.1− | 0.1+ | 2005 11 01 | G96 | 0.2+ | 0.3− |
| 2001 10 24 | 704 | (1.7− | 0.5−) | 2003 04 05 | 691 | 0.0 | 0.2+ | 2005 11 01 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 1.3− | 0.3− | 2003 04 05 | 691 | 0.0 | 0.0 | 2005 11 01 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.8− | 0.6− | 2005 09 23 | 703 | 0.0 | 0.3− | 2005 11 01 | G96 | 0.5+ | 0.1− |
| 2001 10 24 | 704 | 0.6− | 0.6+ | 2005 09 23 | 703 | 0.5+ | 0.2− | 2005 11 02 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 1.0− | 0.0 | 2005 09 23 | 703 | (0.8− | 1.7−) | 2005 11 02 | G96 | 0.4+ | 0.4− |
| 2001 11 09 | 704 | 0.4+ | 0.1+ | 2005 09 23 | 703 | 0.8+ | 0.8− | 2005 11 02 | G96 | 0.0 | 0.3− |
| 2001 11 09 | 704 | 0.1− | 0.5− | 2005 09 24 | 644 | 0.0 | 0.2+ | 2005 11 02 | G96 | 0.2+ | 0.5− |
| 2001 11 09 | 704 | 1.1+ | 0.9− | 2005 09 24 | 644 | 0.0 | 0.0 | 2005 11 02 | G96 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.3− | 0.1− | 2005 09 24 | 644 | 0.0 | 0.2+ | 2005 11 02 | G96 | 0.1+ | 0.2− |
| 2001 11 10 | 704 | 0.2− | 0.0 | 2005 09 25 | 691 | 0.2− | 0.3− | 2005 11 02 | G96 | 0.0 | 0.1+ |
| 2001 11 10 | 704 | 0.0 | 0.2+ | 2005 09 25 | 691 | 0.3− | 0.3− | 2005 11 02 | G96 | 0.4+ | 0.1− |
| 2001 11 10 | 704 | 0.7+ | 0.1− | 2005 09 25 | 691 | 0.3− | 0.3− | 2005 11 04 | 691 | 0.4+ | 0.3+ |
| 2001 11 10 | 704 | 0.4+ | 0.1− | 2005 09 30 | 699 | 0.5− | 0.0 | 2005 11 04 | 691 | 0.3+ | 0.1− |
| 2001 11 10 | 704 | 0.6− | 0.4+ | 2005 09 30 | 699 | 1.1− | 0.0 | 2005 11 04 | 691 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.6+ | 0.6+ | 2005 09 30 | 699 | 0.7− | 0.4− | 2005 11 30 | G96 | 0.1− | 0.2− |
| 2001 11 17 | 704 | 1.3+ | 0.0 | 2005 09 30 | 699 | 0.6− | 0.4+ | 2005 11 30 | G96 | 0.0 | 0.5− |
| 2001 11 17 | 691 | 0.5+ | 0.0 | 2005 10 01 | 691 | 0.0 | 0.1− | 2005 11 30 | G96 | 0.3+ | 0.4− |
| 2001 11 17 | 704 | 0.8+ | 0.7+ | 2005 10 01 | 691 | 0.0 | 0.1− | 2005 11 30 | G96 | 0.2− | 0.4− |
| 2001 11 17 | 691 | 0.5+ | 0.0 | 2005 10 01 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2001 11 17 | 704 | 0.7+ | 1.0− | 2005 10 01 | 704 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 11 17 | 691 | 0.6+ | 0.1− | 2005 10 01 | 704 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2001 11 20 | 704 | 0.4+ | 0.2+ | 2005 10 01 | 704 | 0.4− | 0.8+ | 2006 11 16 | G96 | 0.7− | 0.3− |
| 2001 11 20 | 704 | 0.5+ | 0.1+ | 2005 10 01 | 704 | 0.2− | 0.4− | 2006 11 16 | G96 | 0.3− | 0.8− |
| 2001 11 20 | 704 | 0.4+ | 0.2− | 2005 10 01 | 704 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.7− |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2005 10 03 | 704 | (2.7+ | 0.2+) | 2006 11 16 | G96 | 0.5− | 0.8− |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2005 10 03 | 704 | 0.2− | 0.9+ | 2006 11 24 | G96 | 0.6− | 0.6− |
| 2001 11 21 | 704 | 0.1− | 0.2− | 2005 10 03 | 704 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.5− | 0.4− |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2005 10 06 | 691 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2005 10 06 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.9− |

### (140707)∗ 2001 UB$_{80}$

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 336.90999 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20655465 | $\omega$ | 348.60347 | | +0.23489617 | | −0.97036857 | |
| $a$ | 2.8343017 | $\Omega$ | 87.79231 | | +0.89620771 | | +0.19364445 | |
| $e$ | 0.0705652 | $i$ | 3.24966 | | +0.37634495 | | +0.14452222 | |
| $P$ | 4.77 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.1+ | 0.1− | 2001 11 21 | 704 | 0.3+ | 0.0 | 2004 05 20 | 599 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.1+ | 0.1+ | 2001 11 21 | 704 | 0.5+ | 0.1− | 2004 06 09 | E12 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.9+ | 0.1− | 2004 06 09 | E12 | 0.5+ | 0.7+ |
| 2001 10 20 | 704 | 0.0 | 1.4+ | 2001 11 21 | 704 | 0.6+ | 0.0 | 2004 06 09 | E12 | 0.2+ | 0.9+ |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.4+ | 0.3− | 2004 06 09 | E12 | 0.6+ | 0.3− |
| 2001 10 20 | 704 | 0.7+ | 0.1+ | 2001 11 21 | 704 | 0.4− | 0.0 | 2005 07 27 | 644 | 0.4− | 0.2+ |
| 2001 10 20 | 704 | 0.3− | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.0 | 2005 07 27 | 644 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | 0.1− | 0.6+ | 2001 11 21 | 704 | 0.1+ | 0.5− | 2005 07 27 | 644 | 0.5− | 0.1+ |
| 2001 10 22 | 704 | 0.4+ | 0.5+ | 2001 11 21 | 704 | 0.5+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 10 22 | 704 | 0.2− | 1.1+ | 2001 11 21 | 704 | 0.5+ | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.3− |
| 2001 10 22 | 704 | 0.0 | 0.0 | 2002 12 14 | 645 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2001 10 22 | 704 | 0.2− | 0.2+ | 2002 12 14 | 645 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2001 10 23 | 704 | 0.9− | 0.3− | 2003 01 26 | 608 | (1.7+ | 0.1+) | 2006 10 21 | G96 | 1.0+ | 1.2− |
| 2001 10 23 | 704 | 1.3− | 0.5+ | 2003 01 26 | 608 | 1.4+ | 0.3− | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2001 10 23 | 704 | 0.6− | 0.3+ | 2003 01 26 | 608 | (1.6+ | 0.4−) | 2006 10 21 | G96 | 0.2− | 0.6− |
| 2001 10 23 | 704 | 0.5− | 0.4− | 2003 01 27 | 704 | 1.3+ | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2001 10 23 | 691 | 0.2+ | 0.1− | 2003 01 27 | 704 | (2.0+ | 0.2+) | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2001 10 23 | 691 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.4+ | 0.6+ | 2006 10 31 | G96 | (1.6− | 0.2−) |
| 2001 10 23 | 691 | 0.2+ | 0.0 | 2003 01 27 | 704 | 0.1+ | 1.1+ | 2006 10 31 | G96 | 0.7− | 0.1− |
| 2001 10 24 | 704 | 0.7− | 0.5+ | 2003 01 27 | 704 | 0.8+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 1.1+ |
| 2001 10 24 | 704 | 0.4− | 0.1+ | 2003 02 04 | 704 | (0.6+ | 1.7+) | 2006 11 18 | 704 | 0.5− | 0.2+ |
| 2001 10 24 | 704 | 0.0 | 0.7+ | 2003 02 04 | 704 | 1.2− | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.5+ |
| 2001 10 24 | 704 | 0.3− | 0.4+ | 2003 02 04 | 704 | 0.6− | 0.1+ | 2006 11 18 | 704 | (1.1+ | 1.6−) |
| 2001 10 25 | 644 | 0.6− | 0.0 | 2003 02 04 | 704 | 1.1+ | 1.2+ | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2001 10 25 | 644 | 0.5− | 0.1− | 2003 02 04 | 704 | 0.5+ | 0.4− | 2006 11 21 | 704 | 0.6+ | 0.0 |
| 2001 10 25 | 644 | 0.4− | 0.1+ | 2003 02 12 | 608 | 0.3− | 1.0− | 2006 11 21 | 704 | 0.7+ | 0.3+ |
| 2001 11 18 | 608 | 0.6− | 0.0 | 2003 02 12 | 608 | 0.5+ | 0.4− | 2006 11 21 | 704 | 1.1+ | 0.5+ |
| 2001 11 18 | 608 | 0.7− | 0.0 | 2003 02 12 | 608 | 0.2− | 0.7− | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2001 11 18 | 608 | 0.6− | 0.4+ | 2003 02 26 | 608 | 0.9+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 0.3+ | 2003 02 26 | 608 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.7− |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2003 02 26 | 608 | 1.0− | 0.7− | 2006 11 29 | 704 | 0.6+ | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.2+ | 2004 05 20 | 599 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.9− |
| 2001 11 20 | 704 | 0.4+ | 0.3− | 2004 05 20 | 599 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2004 05 20 | 599 | 0.0 | 0.4+ | | | | |

### (140708)∗ 2001 UH$_{81}$

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 287.31384 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18942030 | $\omega$ | 4.17186 | | −0.39279450 | | −0.91903167 | |
| $a$ | 3.0027445 | $\Omega$ | 108.95926 | | +0.84272568 | | −0.37410875 | |
| $e$ | 0.1916193 | $i$ | 2.00355 | | +0.36813843 | | −0.12419113 | |
| $P$ | 5.20 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 691 | 0.4− | 0.4− | 2001 11 21 | 704 | 0.2− | 0.4+ | 2003 04 09 | 704 | 0.4+ | 0.8+ |
| 2001 10 10 | 691 | 0.0 | 0.0 | 2001 11 21 | 704 | 0.9− | 0.2+ | 2003 04 09 | 704 | 0.0 | 0.4+ |
| 2001 10 10 | 691 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.3− | 0.4− | 2003 04 09 | 704 | 1.3+ | 0.2+ |
| 2001 10 18 | 644 | 0.5− | 0.0 | 2001 11 21 | 704 | 0.4− | 0.3+ | 2005 07 12 | G96 | 0.1+ | 1.3+ |
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.6+ | 0.4+ | 2005 07 12 | G96 | 1.0− | 1.0+ |
| 2001 10 18 | 644 | 0.5− | 0.1− | 2001 11 21 | 704 | 0.2+ | 0.7+ | 2005 07 12 | G96 | 0.0 | 1.3+ |
| 2001 10 20 | 704 | 0.4+ | 0.1+ | 2001 12 14 | 704 | 1.4+ | 0.5− | 2005 07 12 | G96 | 0.5− | 1.0+ |
| 2001 10 20 | 704 | 0.2− | 0.7+ | 2001 12 14 | 704 | 0.8+ | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.3+ |
| 2001 10 20 | 704 | 0.1+ | 0.8+ | 2001 12 14 | 704 | (1.6+ | 0.6−) | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.4+ | 1.0+ | 2001 12 14 | 704 | (1.8+ | 0.4+) | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2001 10 22 | 704 | 1.4− | 0.6+ | 2003 03 06 | 699 | 0.3+ | 1.1+ | 2006 09 18 | 691 | 0.2− | 0.3+ |
| 2001 10 22 | 704 | 0.6− | 0.8+ | 2003 03 06 | 699 | (0.5+ | 2.9+) | 2006 09 18 | 691 | 0.4− | 0.4+ |
| 2001 10 22 | 704 | 0.2+ | 1.3+ | 2003 03 06 | 704 | (0.5+ | 1.8+) | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2001 10 22 | 704 | 0.1+ | 0.8+ | 2003 03 06 | 699 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 2001 10 22 | 704 | (1.6− | 0.4+) | 2003 03 06 | 704 | (0.6+ | 1.7+) | 2006 09 30 | 703 | 0.4− | 1.5+ |
| 2001 10 23 | 704 | (1.8− | 0.7+) | 2003 03 06 | 699 | (1.6+ | 0.3+) | 2006 09 30 | 703 | 0.5− | 0.3+ |
| 2001 10 23 | 704 | (1.5− | 0.3−) | 2003 03 06 | 704 | 1.1+ | 1.2+ | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 2001 10 23 | 704 | 0.7− | 0.2− | 2003 03 06 | 704 | (0.8+ | 1.6+) | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 1.5− | 0.5− | 2003 03 09 | 704 | 0.5+ | 1.2+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | 1.2+ | 0.1+ | 2003 03 09 | 704 | 0.2− | 1.1+ | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2001 10 24 | 704 | 0.4− | 0.7+ | 2003 03 09 | 704 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.6− | 0.3+ |
| 2001 10 24 | 704 | 0.7− | 0.1− | 2003 03 09 | 704 | 0.7− | 0.4+ | 2006 10 16 | 691 | 0.6− | 0.3+ |
| 2001 10 24 | 704 | 0.4+ | 0.1− | 2003 03 23 | 691 | (0.2− | 2.1+) | 2006 10 16 | 691 | 0.6− | 0.3+ |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2003 03 23 | 691 | (0.4− | 2.1+) | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2001 10 25 | 644 | 0.1− | 0.2+ | 2003 03 23 | 691 | (0.1− | 1.7+) | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2001 10 25 | 644 | 0.2− | 0.2+ | 2003 03 24 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2001 10 25 | 644 | 0.0 | 0.1+ | 2003 03 24 | 691 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2001 10 26 | 704 | 0.2+ | 0.3− | 2003 03 24 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.4+ |
| 2001 10 26 | 704 | 0.7+ | 0.1− | 2003 03 26 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2001 10 26 | 704 | 0.1+ | 0.6+ | 2003 03 26 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 703 | (1.4+ | 1.7−) |
| 2001 11 09 | 704 | 0.5+ | 0.6− | 2003 03 26 | 644 | 0.7+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2003 03 26 | 699 | 0.4− | 0.7− | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2001 11 09 | 704 | 0.9+ | 1.5− | 2003 03 26 | 699 | 0.4− | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.2− |
| 2001 11 09 | 704 | 0.5+ | 0.2+ | 2003 03 26 | 699 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2001 11 09 | 704 | 0.6+ | 0.5− | 2003 03 26 | 699 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 1.1+ | 0.9− | 2003 04 01 | 645 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.5− |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2003 04 01 | 645 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.5+ | 0.2− | 2003 04 03 | 699 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.1+ | 0.6− | 2003 04 03 | 699 | 0.5+ | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.7− |
| 2001 11 12 | 704 | 0.8+ | 0.1− | 2003 04 03 | 699 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.5+ | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.2− | 2003 04 03 | 699 | 0.7− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.5− | 0.4+ | 2003 04 06 | 691 | 0.3− | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2003 04 06 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 1.1− | 0.9− | 2003 04 06 | 691 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |

**(140709)∗ 2001 US$_{82}$ = 2001 UN$_{174}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.73133 | | (2000.0) | | | |
| $n$ | 0.19623571 | $\omega$ | 310.49776 | | −0.09604427 | −0.99520009 |
| $a$ | 2.9328106 | $\Omega$ | 145.00023 | | +0.92285329 | −0.09609631 |
| $e$ | 0.1332173 | $i$ | 1.87522 | | +0.37298433 | −0.01850070 |
| $P$ | 5.02 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 20 | 691 | 0.2+ | 0.4+ | 2001 11 20 | 704 | 0.0 | 0.1+ | 2005 08 06 | 644 | 0.7− | 0.9+ |
| 2000 08 20 | 691 | 0.1− | 0.5+ | 2001 11 21 | 704 | 0.4− | 0.2+ | 2005 10 25 | G96 | 1.0− | 0.2+ |
| 2000 08 20 | 691 | 0.1− | 0.4+ | 2001 11 21 | 704 | 0.3− | 0.3− | 2005 10 25 | G96 | 0.0 | 0.0 |
| 2001 10 13 | 691 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.4− | 0.2+ | 2005 10 25 | G96 | 0.7− | 0.4+ |
| 2001 10 13 | 691 | 0.4− | 0.1− | 2001 11 21 | 704 | 0.3− | 0.0 | 2005 10 25 | G96 | 0.2− | 0.4− |
| 2001 10 13 | 691 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2001 10 18 | 644 | 0.7− | 0.1+ | 2001 11 24 | 704 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2001 11 24 | 704 | 0.7− | 1.1+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2001 11 24 | 704 | 0.5− | 0.7+ | 2006 09 30 | G96 | 0.5+ | 0.1− |
| 2001 10 20 | 704 | 0.2− | 0.4− | 2001 11 24 | 704 | 1.4− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.4− | 0.3− | 2001 11 24 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2001 12 10 | 691 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.7+ | 0.1+ |
| 2001 10 22 | 704 | 0.8− | 0.4+ | 2001 12 10 | 691 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2001 10 22 | 704 | 1.0+ | 0.2+ | 2001 12 10 | 691 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.8− |
| 2001 10 22 | 704 | 0.1− | 0.9+ | 2001 12 11 | 704 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2001 10 22 | 704 | 1.0− | 0.3+ | 2001 12 11 | 704 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2001 10 22 | 704 | 0.1+ | 0.1+ | 2001 12 11 | 704 | 0.9+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2001 10 23 | 704 | 0.0 | 0.1+ | 2001 12 11 | 704 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.8+ | 2001 12 14 | 704 | 1.0+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.1+ | 2001 12 14 | 704 | 0.7+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.4+ | 0.6+ | 2001 12 14 | 704 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.9+ | 1.1+ | 2001 12 14 | 704 | 1.4+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2001 10 24 | 704 | 0.4− | 0.1+ | 2001 12 17 | 704 | 0.6+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.5− | 0.5+ | 2006 11 02 | 703 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.0 | 0.3+ | 2001 12 17 | 704 | 0.7+ | 0.3+ | 2006 11 02 | 703 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 0.4+ | 2001 12 17 | 704 | 0.3+ | 0.4− | 2006 11 02 | 703 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 1.4+ | 0.3+ | 2001 12 17 | 704 | 0.3+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.5− |
| 2001 10 25 | 644 | 0.7− | 0.6− | 2001 12 19 | 644 | 0.5− | 0.6− | 2006 11 08 | 644 | 0.3− | 0.2− |
| 2001 10 25 | 644 | 0.7− | 0.2− | 2001 12 19 | 644 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2001 10 25 | 644 | 0.5− | 0.2− | 2001 12 19 | 644 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.4+ | 0.2+ | 2003 02 01 | 291 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.8+ | 0.5− | 2003 02 01 | 291 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 1.3+ | 0.1− | 2003 02 01 | 291 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 11 09 | 704 | 0.6+ | 0.2+ | 2003 02 22 | 291 | 0.5+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.4− | 0.5+ | 2003 02 22 | 291 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2001 11 15 | 644 | 0.2− | 0.5− | 2003 02 22 | 291 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2001 11 15 | 644 | 0.2+ | 0.4− | 2003 03 06 | 699 | 0.2+ | 1.0+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2001 11 15 | 644 | 0.0 | 0.4− | 2003 03 06 | 699 | 0.8+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2001 11 17 | 704 | 1.2− | 1.3+ | 2003 03 06 | 699 | 1.4+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.6+ |
| 2001 11 17 | 704 | 0.3+ | 0.8+ | 2003 03 06 | 699 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.6+ |
| 2001 11 17 | 704 | 0.2+ | 0.5+ | 2003 03 07 | 699 | 0.6− | 0.8− | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2003 03 07 | 699 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2001 11 18 | 704 | 0.1+ | 0.2− | 2003 03 07 | 699 | 0.5− | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2003 03 07 | 699 | 1.3+ | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2001 11 18 | 704 | 0.0 | 0.3+ | 2003 03 08 | 246 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.1+ |
| 2001 11 18 | 704 | 1.2− | 0.8+ | 2003 03 08 | 246 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2001 11 18 | 704 | 0.4− | 0.1+ | 2003 03 08 | 246 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2001 11 18 | 704 | 0.3− | 0.1− | 2003 03 08 | 246 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.6− |
| 2001 11 18 | 704 | (1.6− | 2.4+) | 2003 03 08 | 246 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2001 11 19 | 699 | 0.7+ | 0.1+ | 2003 03 08 | 246 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2001 11 19 | 699 | 0.3+ | 0.3+ | 2003 03 08 | 246 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2001 11 19 | 699 | 1.4+ | 1.5+ | 2003 03 08 | 246 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2001 11 19 | 699 | 0.0 | 0.9− | 2003 03 09 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.8+ |
| 2001 11 19 | 608 | 0.2+ | 0.3− | 2003 03 09 | 704 | 0.7+ | 1.2+ | 2006 11 21 | 704 | (0.6+ | 1.7+) |
| 2001 11 19 | 608 | 0.4+ | 0.6− | 2003 03 09 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | (0.7− | 2.4+) |
| 2001 11 19 | 608 | 0.3+ | 0.1− | 2003 04 11 | 691 | 0.4− | 0.5+ | 2006 11 21 | 704 | (3.0− | 2.3+) |
| 2001 11 20 | 704 | 0.5− | 0.7+ | 2003 04 11 | 691 | 0.1+ | 0.8+ | 2006 11 21 | 704 | (1.5− | 2.5+) |
| 2001 11 20 | 704 | 0.2− | 0.5+ | 2003 04 11 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2001 11 20 | 704 | 0.6− | 0.5+ | 2005 08 06 | 644 | 0.1+ | 1.0+ | | | | |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2005 08 06 | 644 | 0.4− | 0.7+ | | | | |

**(140710)∗ 2001 UZ$_{82}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.22794 | | (2000.0) | | | |
| $n$ | 0.18427999 | $\omega$ | 241.54325 | | +0.51655889 | +0.84200800 |
| $a$ | 3.0583271 | $\Omega$ | 60.38719 | | −0.70966567 | +0.52263914 |
| $e$ | 0.0996602 | $i$ | 10.30547 | | −0.47910495 | +0.13368190 |
| $P$ | 5.35 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 699 | 1.2+ | 1.9+ | 2001 11 18 | 704 | (1.6− | 0.1+) | 2004 04 21 | 703 | (2.9+ | 1.1+) |
| 1999 04 11 | 699 | 0.5+ | 1.8+ | 2001 11 19 | 608 | 0.6− | 1.2+ | 2004 04 21 | 703 | 0.1+ | 0.2+ |
| 1999 04 11 | 699 | 0.4+ | 0.3− | 2001 11 19 | 608 | 0.4− | 1.2+ | 2004 04 21 | 691 | 0.1+ | 0.5+ |
| 2001 09 25 | 333 | 0.1+ | 1.0− | 2001 11 19 | 608 | 0.1− | 1.0+ | 2004 04 23 | 704 | 0.5+ | 1.2+ |
| 2001 09 25 | 333 | 0.3+ | 0.1+ | 2001 11 20 | 704 | 1.1− | 0.3+ | 2004 04 23 | 704 | (1.6+ | 0.7+) |
| 2001 09 25 | 333 | 0.8+ | 0.2− | 2001 11 20 | 704 | 1.1− | 0.5+ | 2004 04 23 | 704 | 0.2+ | 0.4+ |
| 2001 10 11 | 333 | 0.8− | 0.0 | 2001 11 20 | 704 | 1.2− | 0.5+ | 2004 04 25 | 699 | 0.1− | 0.9+ |
| 2001 10 11 | 333 | 0.8− | 0.0 | 2001 11 20 | 704 | 0.7− | 0.7+ | 2004 04 25 | 699 | 1.3− | 0.1− |
| 2001 10 11 | 333 | (1.5− | 0.7−) | 2001 11 20 | 704 | 1.0− | 0.0 | 2004 04 25 | 699 | 0.0 | 0.6+ |
| 2001 10 13 | 699 | 1.0− | 1.0+ | 2001 11 21 | 704 | 0.4+ | 0.4+ | 2004 04 25 | 699 | (0.3− | 2.2+) |
| 2001 10 13 | 699 | 0.8+ | 0.9+ | 2001 11 21 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.6− |
| 2001 10 13 | 699 | 0.9− | 0.7+ | 2001 11 21 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.0 |
| 2001 10 13 | 699 | 0.3− | 0.5+ | 2001 11 21 | 704 | 0.5+ | 0.6− | 2006 09 18 | 703 | 0.7+ | 0.1− |
| 2001 10 14 | 704 | (0.9+ | 2.7+) | 2001 12 11 | 704 | (2.3+ | 0.2−) | 2006 09 18 | 703 | 0.5− | 0.3− |
| 2001 10 14 | 704 | (1.4− | 2.0+) | 2001 12 11 | 704 | 0.6+ | 0.2− | 2006 09 20 | 644 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.1− | 0.4+ | 2001 12 11 | 704 | 1.0+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2− |
| 2001 10 14 | 704 | 0.3− | 0.6+ | 2001 12 11 | 704 | 1.2+ | 0.9+ | 2006 09 20 | 644 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.4− | 0.0 | 2001 12 11 | 704 | 0.6+ | 0.9+ | 2006 09 21 | 699 | 1.2− | 0.5+ |
| 2001 10 18 | 644 | 0.4− | 0.2− | 2001 12 14 | 704 | 0.6+ | 0.2− | 2006 09 21 | 699 | 0.2− | 0.9+ |
| 2001 10 18 | 644 | 0.7− | 0.4− | 2001 12 14 | 704 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.1+ | 0.3+ |
| 2001 10 20 | 704 | (0.1− | 1.8−) | 2001 12 14 | 704 | 0.4+ | 0.4− | 2006 09 21 | 699 | 0.6− | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.9− | 2001 12 14 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.5+ | 0.8+ |
| 2001 10 20 | 704 | 0.6+ | 0.9− | 2001 12 14 | 704 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.0 | 0.5− |
| 2001 10 22 | 704 | 0.1+ | 0.3+ | 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.9+ | 0.3+ |
| 2001 10 22 | 704 | 0.6+ | 0.4+ | 2001 12 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.0 |
| 2001 10 22 | 704 | 0.1− | 0.4+ | 2001 12 17 | 704 | 0.2+ | 0.7− | 2006 09 26 | 703 | 0.0 | 0.3− |
| 2001 10 22 | 704 | 1.1− | 0.4+ | 2001 12 17 | 691 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 0.3− | 0.1+ | 2001 12 17 | 704 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.5− | 0.0 |
| 2001 10 23 | 704 | (1.8− | 0.4+) | 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.3+ | 1.5+ | 2001 12 17 | 691 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.5+ | 0.1+ |
| 2001 10 23 | 704 | 0.9− | 0.2− | 2002 11 07 | 645 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.8− | 1.2+ |
| 2001 10 23 | 704 | (0.9+ | 1.8+) | 2002 11 07 | 645 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.1− | 0.5− |
| 2001 10 23 | 704 | 0.4+ | 1.0+ | 2002 12 06 | 645 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.6− | 0.2+ |
| 2001 10 23 | 704 | 0.5− | 0.7+ | 2002 12 06 | 645 | 0.1− | 0.2− | 2006 09 30 | 704 | (1.6− | 0.1+) |
| 2001 10 23 | 704 | (0.1+ | 1.7+) | 2003 01 10 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.8+ | 0.8+ |
| 2001 10 23 | 704 | 0.4+ | 1.2+ | 2003 01 10 | 704 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.6+ | 0.7+ |
| 2001 10 24 | 704 | (0.1− | 1.8+) | 2003 01 10 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 704 | 0.9− | 0.3+ |
| 2001 10 24 | 704 | (0.0 | 1.8+) | 2003 01 10 | 704 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.2+ | 1.1+ |
| 2001 10 24 | 704 | (0.1− | 1.9+) | 2003 01 10 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 2001 10 24 | 704 | 0.3− | 1.2+ | 2004 03 15 | 704 | 0.5+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2001 10 24 | 704 | (0.7− | 2.1+) | 2004 03 15 | 704 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2001 10 25 | 644 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2001 10 25 | 644 | 0.5− | 0.3− | 2004 03 15 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.8+ |
| 2001 10 25 | 644 | 0.2− | 0.3− | 2004 03 15 | 704 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.6− | 0.0 |
| 2001 11 09 | 704 | 0.3− | 0.3+ | 2004 03 23 | 704 | (0.6+ | 2.2+) | 2006 10 22 | 703 | 0.4+ | 0.7+ |
| 2001 11 09 | 704 | 0.5− | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.8− | 0.8− |
| 2001 11 09 | 704 | 0.8− | 0.8+ | 2004 03 23 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 644 | 0.5− | 0.2+ |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2001 11 09 | 704 | 0.3+ | 0.7− | 2004 03 23 | 704 | 0.9+ | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.3+ | 0.2− | 2004 03 25 | 704 | 0.7+ | 1.5+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 17 | 704 | 0.3+ | 0.1+ | 2004 03 25 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2001 11 17 | 704 | 0.3− | 0.2− | 2004 03 25 | 704 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2001 11 17 | 704 | 0.4+ | 0.0 | 2004 04 15 | 704 | 1.2+ | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2001 11 18 | 704 | 0.2− | 0.7+ | 2004 04 15 | 704 | 0.9+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2001 11 18 | 704 | 0.3− | 0.2+ | 2004 04 15 | 704 | 1.1+ | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2001 11 18 | 704 | 0.3− | 0.3+ | 2004 04 15 | 704 | 1.1+ | 0.8+ | 2006 10 28 | 703 | 0.2− | 0.3− | | |
| 2001 11 18 | 704 | (0.8+ | 1.5+) | 2004 04 21 | 691 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.4+ | | |
| 2001 11 18 | 704 | 0.4− | 0.7+ | 2004 04 21 | 703 | 0.5+ | 0.6+ | 2006 10 28 | 703 | 0.7− | 0.4+ | | |
| 2001 11 18 | 704 | 0.1− | 0.2+ | 2004 04 21 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.1− | | |
| 2001 11 18 | 704 | 0.4+ | 1.2+ | 2004 04 21 | 703 | 0.7+ | 1.0+ | | | | | | |

**(140711)∗ 2001 UB$_{86}$**

Discovered 2001 Oct. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.42491 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19630398 | $\omega$ | 313.59936 | | +0.99208263 | +0.00006935 | |
| $a$ | 2.9321306 | $\Omega$ | 46.82714 | | +0.06322585 | +0.86375229 | |
| $e$ | 0.0469801 | $i$ | 9.91596 | | −0.10851055 | +0.50391663 | |
| $P$ | 5.02 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 05 | 691 | 0.5+ | 0.3+ | 2001 11 20 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 1991 11 05 | 691 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 1991 11 05 | 691 | 0.2− | 0.2+ | 2001 11 21 | 704 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.3− | | |
| 2001 09 19 | 704 | 0.4+ | 1.0+ | 2001 11 21 | 704 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.3+ | 1.2+ | 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.6− | 0.1+ | | |
| 2001 09 19 | 704 | 0.6+ | 1.4+ | 2001 11 21 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.3− | 0.2− | | |
| 2001 09 19 | 704 | 0.3− | 0.9+ | 2001 11 21 | 691 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.1− | | |
| 2001 09 26 | 704 | 0.2+ | 0.2+ | 2001 11 21 | 691 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.2− | | |
| 2001 09 26 | 704 | (0.6− | 1.8+) | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.7+ | 0.3− | | |
| 2001 09 26 | 704 | 0.2− | 0.4+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.1− | | |
| 2001 09 26 | 704 | 1.4+ | 0.8+ | 2003 01 25 | 645 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.3+ | 0.4− | | |
| 2001 10 16 | 691 | 0.6− | 0.0 | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1− | 0.0 | | |
| 2001 10 16 | 691 | 0.8− | 0.1+ | 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 691 | 0.4− | 0.1+ | | |
| 2001 10 16 | 691 | 0.2− | 0.0 | 2004 04 14 | 691 | 0.3+ | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.3+ | | |
| 2001 10 18 | 644 | 0.8− | 0.9+ | 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 11 15 | G92 | 0.4− | 0.0 | | |
| 2001 10 18 | 644 | 1.0− | 1.1+ | 2004 04 16 | 704 | 0.6+ | 0.6+ | 2006 11 15 | G92 | 1.1− | 0.1+ | | |
| 2001 10 18 | 644 | 0.8− | 1.2+ | 2004 04 16 | 704 | 1.4+ | 0.2+ | 2006 11 15 | G92 | 0.2+ | 0.4+ | | |
| 2001 10 23 | 704 | 0.5+ | 0.0 | 2004 04 16 | 704 | 0.4+ | 0.9+ | 2006 11 17 | G92 | 0.2+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.7+ | 0.4− | 2004 05 23 | 691 | 0.3+ | 0.4+ | 2006 11 17 | G92 | 0.3+ | 0.2− | | |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2004 05 23 | 691 | 0.3+ | 0.9+ | 2006 11 17 | G92 | 0.0 | 0.1+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.2+ | 2004 05 23 | 691 | 0.4+ | 0.6+ | 2006 11 18 | G92 | 0.2+ | 0.5+ | | |
| 2001 10 23 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.7+ | 2006 11 18 | G92 | (3.6+ | 0.0 ) | | |
| 2001 10 23 | 691 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 1.2+ | 2006 11 18 | G92 | 0.2− | 0.3+ | | |
| 2001 10 23 | 691 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 18 | G92 | 0.2+ | 0.4+ | | |
| 2001 10 23 | 691 | 0.3+ | 0.2− | 2006 09 30 | 703 | (0.7+ | 2.4+) | 2006 11 18 | G92 | 0.5− | 0.1+ | | |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 18 | G92 | 0.1+ | 0.5+ | | |
| 2001 10 24 | 704 | 0.2− | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 19 | G92 | 0.7+ | 0.4+ | | |
| 2001 10 24 | 704 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 19 | G92 | 0.3+ | 0.9+ | | |
| 2001 10 24 | 704 | 0.6− | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 19 | G92 | 1.0+ | 0.1+ | | |
| 2001 10 24 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.6+ | 2006 11 27 | 691 | 0.3− | 0.1+ | | |
| 2001 11 20 | 704 | 1.4− | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.7− | 0.8− | | |
| 2001 11 20 | 704 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.4− | 0.7+ | | |
| 2001 11 20 | 704 | 1.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3− | | | | | | |

**(140712)∗ 2001 UK$_{88}$ = 2004 DC$_{56}$**

Discovered 2001 Oct. 21 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 68946)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.18258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17371759 | $\omega$ | 76.91252 | | −0.31015720 | +0.95065158 | |
| $a$ | 3.1810721 | $\Omega$ | 174.99716 | | −0.90393774 | −0.29228747 | |
| $e$ | 0.1182011 | $i$ | 5.26719 | | −0.29444706 | −0.10406541 | |
| $P$ | 5.67 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.3+ | 0.1+ | 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 08 22 | 644 | 0.3+ | 0.2+ | | |
| 2000 08 01 | 704 | 0.1+ | 0.1+ | 2004 02 22 | 691 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.3+ | | |
| 2000 08 01 | 704 | 0.4+ | 0.9+ | 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.2+ | | |
| 2000 08 01 | 704 | 0.1+ | 0.3+ | 2004 02 22 | 691 | 0.1− | 0.5+ | 2006 08 25 | 704 | 0.4− | 0.1+ | | |
| 2001 09 21 | 704 | 0.2− | 1.2+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 08 25 | 704 | 1.1+ | 1.5+ | | |
| 2001 09 21 | 704 | 0.7− | 0.1+ | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 08 25 | 704 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.8+ | 1.1+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 08 25 | 704 | 0.7+ | 1.0+ | | |
| 2001 09 21 | 704 | (0.1+ | 1.8+) | 2004 03 18 | 691 | 0.4+ | 0.4+ | 2006 08 25 | 704 | 0.5+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.6+ | | |
| 2001 10 20 | 704 | 0.5− | 0.6+ | 2004 03 18 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.7+ | 0.6+ | | |
| 2001 10 20 | 704 | 1.0− | 0.7+ | 2005 05 12 | 704 | 0.9+ | 0.8+ | 2006 08 28 | 699 | 0.6+ | 0.5+ | | |
| 2001 10 20 | 704 | 0.5+ | 0.4+ | 2005 05 12 | 704 | 0.4+ | 0.8− | 2006 08 28 | 703 | 1.1− | 0.2+ | | |
| 2001 10 20 | 704 | 0.9− | 0.8+ | 2005 05 12 | 704 | 0.0 | 1.2+ | 2006 08 28 | 703 | 0.0 | 0.0 | | |
| 2001 10 20 | 704 | 0.3− | 0.9+ | 2005 05 12 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 699 | 0.7− | 0.7+ | | |
| 2001 10 21 | 691 | 0.4− | 0.2+ | 2005 05 16 | G96 | 1.1+ | 0.7+ | 2006 08 28 | 699 | (0.8− | 1.7+) | | |
| 2001 10 21 | 691 | 0.4− | 0.2+ | 2005 05 16 | G96 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.2+ | 1.2+ | | |
| 2001 10 21 | 691 | 0.3− | 0.2+ | 2005 05 16 | G96 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.9− | 1.1− | | |
| 2001 10 23 | 704 | 1.3+ | 0.4− | 2005 05 16 | G96 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.2− | | |
| 2001 10 23 | 691 | 0.0 | 0.5+ | 2005 06 02 | 703 | 1.0− | 0.9+ | 2006 09 14 | 703 | 0.1+ | 0.8− | | |
| 2001 10 23 | 704 | 0.0 | 0.9− | 2005 06 02 | 703 | 0.6+ | 1.5+ | 2006 09 14 | 703 | 0.1− | 0.6− | | |
| 2001 10 23 | 691 | 0.1− | 0.4+ | 2005 06 02 | 703 | 0.4− | 0.8+ | 2006 09 27 | G96 | 0.3− | 0.2− | | |
| 2001 10 23 | 704 | 1.2− | 0.8− | 2005 06 02 | 703 | 1.0− | 0.1− | 2006 09 27 | G96 | 0.3− | 0.2− | | |
| 2001 10 23 | 691 | 0.0 | 0.3+ | 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.2− | | |
| 2001 10 24 | 704 | 0.7− | 0.7+ | 2005 06 04 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 1.5− | | |
| 2001 10 24 | 704 | 0.8+ | 0.5+ | 2005 06 04 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 2001 10 24 | 704 | 0.1− | 0.1+ | 2005 06 05 | 704 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.5− | 0.3− | | |
| 2001 10 24 | 704 | 0.7+ | 0.8+ | 2005 06 05 | 704 | (0.3− | 1.6+) | 2006 10 27 | G96 | 0.2− | 0.4− | | |
| 2001 11 20 | 704 | (0.6+ | 2.3+) | 2005 06 05 | 704 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2001 11 20 | 704 | 0.8− | 0.5+ | 2005 06 05 | 704 | 0.7− | 1.1+ | | | | | | |
| 2001 11 20 | 704 | 0.3+ | 0.4+ | 2005 06 05 | 704 | 0.0 | 0.3+ | | | | | | |

**(140713)∗ 2001 UB$_{89}$**

Discovered 2001 Oct. 20 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.37653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19088818 | $\omega$ | 215.62027 | | +0.62317623 | +0.75305889 | |
| $a$ | 2.9873311 | $\Omega$ | 93.89839 | | −0.65957036 | +0.65108345 | |
| $e$ | 0.0992904 | $i$ | 12.21420 | | −0.42025984 | +0.09482957 | |
| $P$ | 5.16 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 608 | 0.6− | 0.3− | 2001 12 18 | 645 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.8+ | 0.6+ | | |
| 2001 10 20 | 608 | 0.2− | 0.1− | 2003 01 05 | 704 | 0.7+ | 0.2− | 2006 09 26 | 703 | (0.4+ | 1.7+) | | |
| 2001 10 20 | 608 | 0.7− | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.4− | 2006 09 26 | 703 | 1.4+ | 0.6+ | | |
| 2001 10 23 | 644 | 0.4+ | 0.2− | 2003 01 05 | 704 | 0.7+ | 0.0 | 2006 09 26 | 703 | 1.1− | 1.1+ | | |
| 2001 10 23 | 644 | 0.5+ | 0.2− | 2003 01 05 | 704 | (1.7+ | 0.9+) | 2006 10 02 | 703 | 0.9+ | 0.7+ | | |
| 2001 10 23 | 644 | 0.6+ | 0.1− | 2003 01 09 | 704 | 0.1− | 0.1− | 2006 10 02 | 703 | (1.7− | 0.2+) | | |
| 2001 10 29 | 644 | 1.2+ | 0.9− | 2003 01 09 | 704 | 0.8+ | 1.0+ | 2006 10 02 | 703 | 0.6+ | 0.3+ | | |
| 2001 10 29 | 644 | (1.8+ | 2.1+) | 2003 01 09 | 704 | 0.6+ | 0.3− | 2006 10 02 | 703 | 0.7− | 0.1+ | | |
| 2001 10 29 | 644 | 1.0+ | 1.1− | 2003 01 10 | 704 | 1.0− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2001 10 29 | 644 | (1.6+ | 2.1+) | 2003 01 10 | 704 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 2001 10 29 | 644 | 1.2+ | 1.0− | 2003 01 10 | 704 | 1.2− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2001 10 29 | 644 | (1.2+ | 2.1+) | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.5+ | | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.5+ | 1.1− | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2001 12 07 | 704 | 0.6+ | 0.1+ | 2004 03 15 | 704 | 1.2+ | 0.1− | 2006 10 17 | 703 | 1.3− | 0.6− | | |
| 2001 12 07 | 704 | 0.0 | 0.3+ | 2004 03 19 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.2+ | | |
| 2001 12 07 | 704 | 0.0 | 0.0 | 2004 03 19 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.5+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 704 | 1.3+ | 0.2− | 2004 03 19 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2001 12 07 | 704 | 0.5− | 0.5+ | 2004 03 24 | 703 | 1.2+ | 0.8+ | 2006 10 22 | 644 | 0.6− | 0.3+ |
| 2001 12 12 | 209 | 0.4− | 0.1+ | 2004 03 24 | 703 | 0.2− | 1.2+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2001 12 12 | 209 | 0.8− | 0.2+ | 2004 03 24 | 703 | 1.0− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.6+ |
| 2001 12 12 | 209 | 0.4− | 0.5+ | 2004 03 24 | 703 | 1.0− | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.4− |
| 2001 12 14 | 209 | 1.1− | 1.4+ | 2006 09 19 | 703 | 1.4− | 0.4+ | 2006 10 28 | 703 | 0.4+ | 0.4− |
| 2001 12 14 | 209 | 1.1− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.0 |
| 2001 12 14 | 209 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.8− | 0.9− | 2006 10 28 | 703 | 0.7+ | 0.3+ |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.5− | 0.4− | | | | |

**(140714)∗ 2001 UO$_{89}$**

Discovered 2001 Oct. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 225.89865 | | | | | | |
| $n$ | 0.17772059 | $\omega$ | 12.14640 | | −0.71578418 | | −0.67464817 |
| $a$ | 3.1331238 | $\Omega$ | 123.90427 | | +0.62114329 | | −0.73306908 |
| $e$ | 0.0423623 | $i$ | 12.54575 | | +0.31911444 | | −0.08636884 |
| $P$ | 5.55 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2003 01 26 | 608 | 0.3+ | 0.9− | 2004 04 15 | 704 | 0.2+ | 0.3+ |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2003 01 26 | 608 | 0.5+ | 0.8− | 2004 04 15 | 704 | 0.3− | 0.9+ |
| 2001 10 22 | 644 | 0.7− | 0.3+ | 2003 01 26 | 608 | 0.0 | 0.7− | 2004 04 15 | 704 | 0.6+ | 0.1+ |
| 2001 10 22 | 644 | 0.7− | 0.1+ | 2003 01 27 | 291 | 0.3+ | 0.2− | 2004 04 15 | 704 | 0.4− | 0.0 |
| 2001 10 22 | 644 | 0.2− | 0.2+ | 2003 01 27 | 291 | 0.3+ | 0.2− | 2004 04 24 | 704 | 0.1+ | 0.5+ |
| 2001 10 23 | 644 | 0.5− | 1.0+ | 2003 01 27 | 291 | 0.1+ | 0.2− | 2004 04 24 | 704 | 0.6+ | 0.8+ |
| 2001 10 23 | 644 | 0.3− | 0.6+ | 2003 01 29 | 644 | 0.4− | 0.1+ | 2004 04 24 | 704 | 0.0 | 1.3+ |
| 2001 10 23 | 644 | 0.4− | 0.8+ | 2003 01 29 | 644 | 0.5− | 0.0 | 2004 04 24 | 704 | 0.0 | 0.4+ |
| 2001 10 28 | 644 | 0.7− | 0.3+ | 2003 01 29 | 644 | 0.1− | 0.2+ | 2004 04 25 | 704 | 0.0 | 0.3+ |
| 2001 10 28 | 644 | 0.7− | 0.3+ | 2003 02 03 | 704 | 0.6+ | 0.7+ | 2004 04 25 | 704 | 1.0+ | 0.5+ |
| 2001 10 28 | 644 | 0.7− | 0.2+ | 2003 02 03 | 704 | 0.3− | 0.8+ | 2004 04 25 | 704 | 0.8+ | 1.0+ |
| 2001 11 20 | 699 | 0.5+ | 0.2+ | 2003 02 03 | 704 | 0.5+ | 0.1− | 2004 04 25 | 704 | 0.3− | 0.7+ |
| 2001 11 20 | 699 | 1.0− | 0.1+ | 2003 02 03 | 704 | 0.4− | 0.7+ | 2004 04 25 | 704 | 0.5+ | 0.8+ |
| 2001 11 20 | 699 | 1.4− | 0.5+ | 2003 02 03 | 704 | 0.2+ | 0.1− | 2004 05 11 | 703 | (1.9− | 0.3+) |
| 2001 11 20 | 699 | 0.5+ | 0.3+ | 2003 02 06 | 608 | 0.5− | 1.0+ | 2004 05 11 | 703 | (0.0 | 1.7+) |
| 2002 01 08 | 645 | 0.1+ | 0.0 | 2003 02 06 | 608 | 0.0 | 0.2+ | 2004 05 11 | 703 | (1.7+ | 0.9+) |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2003 02 06 | 608 | 0.3+ | 0.0 | 2004 05 11 | 703 | 0.4+ | 0.4− |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2003 02 07 | 704 | 0.4+ | 0.9+ | 2006 09 20 | 703 | 0.5− | 0.9+ |
| 2002 01 14 | 645 | 0.1+ | 0.1− | 2003 02 07 | 704 | 0.4− | 0.8+ | 2006 09 20 | 703 | (1.7− | 0.3−) |
| 2002 12 10 | 644 | 0.2− | 0.0 | 2003 02 07 | 704 | 0.2+ | 1.0+ | 2006 09 20 | 703 | 0.9− | 1.1+ |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2003 02 07 | 704 | 0.3− | 1.0+ | 2006 09 20 | 703 | 0.3− | 1.4+ |
| 2002 12 10 | 644 | 0.0 | 0.3+ | 2003 02 08 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.7+ | 1.1+ |
| 2003 01 08 | 704 | 0.3− | 0.2− | 2003 02 08 | 704 | 0.5+ | 1.2+ | 2006 09 26 | 703 | 0.8− | 0.5+ |
| 2003 01 08 | 704 | 0.0 | 0.0 | 2003 02 08 | 704 | 0.4− | 1.0+ | 2006 09 26 | 703 | 0.7+ | 0.3− |
| 2003 01 08 | 704 | 0.3− | 0.6− | 2003 02 08 | 704 | 0.3− | 1.1+ | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2003 01 08 | 704 | 0.1− | 0.6+ | 2004 03 16 | 704 | 0.9− | 0.7+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2003 01 08 | 704 | 0.5+ | 0.3− | 2004 03 16 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 01 23 | 291 | 0.0 | 0.3− | 2004 03 16 | 704 | 0.0 | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.7+ |
| 2003 01 23 | 291 | 0.1− | 0.4− | 2004 03 16 | 704 | 0.1− | 0.8+ | | | | |
| 2003 01 23 | 291 | 0.2− | 0.3− | 2004 04 15 | 704 | 0.6+ | 1.0+ | | | | |

**(140715)∗ 2001 UV$_{91}$**

Discovered 2001 Oct. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 14.19466 | | | | | | |
| $n$ | 0.18881475 | $\omega$ | 262.91148 | | +0.95145633 | | +0.27071345 |
| $a$ | 3.0091611 | $\Omega$ | 81.30167 | | −0.18961191 | | +0.89033596 |
| $e$ | 0.2151292 | $i$ | 8.51946 | | −0.24244212 | | +0.36608211 |
| $P$ | 5.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2001 11 20 | 699 | 0.6+ | 1.1+ | 2006 09 20 | 703 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.0 | 0.2+ | 2001 11 20 | 704 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.9− |
| 2001 10 17 | 704 | 0.2− | 0.5+ | 2001 11 20 | 699 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.2+ | 1.3− |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2001 11 20 | 704 | 0.5− | 1.2+ | 2006 09 26 | 703 | 0.2+ | 0.5− |
| 2001 10 18 | 644 | 0.3− | 0.1− | 2001 11 20 | 699 | 1.1+ | 0.7+ | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2001 10 18 | 644 | 0.3− | 0.2− | 2001 11 20 | 704 | 0.6− | 1.1+ | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2001 11 20 | 699 | 0.6− | 1.1+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2001 10 19 | 644 | 0.2− | 0.3+ | 2001 12 11 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 1.1+ | 0.2+ |
| 2001 10 19 | 644 | 0.5− | 0.4+ | 2001 12 11 | 704 | 0.4− | 0.8+ | 2006 10 21 | 703 | 0.8+ | 0.1+ |
| 2001 10 19 | 644 | 0.6− | 0.4+ | 2001 12 11 | 704 | 0.6− | 0.5+ | 2006 10 21 | 703 | 0.6+ | 0.8+ |
| 2001 10 24 | 644 | 0.6− | 0.5+ | 2003 01 30 | 644 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.7+ |
| 2001 10 24 | 644 | 0.7− | 0.7+ | 2003 01 30 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 644 | 0.6− | 0.3+ | 2003 01 30 | 644 | 0.1+ | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.4− |
| 2001 11 12 | 608 | 0.5− | 0.2− | 2005 05 19 | G96 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2001 11 12 | 608 | 0.7− | 1.3− | 2005 05 19 | G96 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2001 11 12 | 608 | 0.0 | 0.6− | 2005 05 19 | G96 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 11 17 | 704 | 0.0 | 0.6− | 2005 05 19 | G96 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 11 17 | 704 | 0.2− | 0.1+ | 2005 06 08 | 691 | 0.4+ | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2001 11 17 | 704 | 0.4− | 0.1+ | 2005 06 08 | 691 | 0.2+ | 0.8+ | 2006 10 28 | 703 | 0.3− | 0.9+ |
| 2001 11 18 | 608 | 0.8+ | 0.7+ | 2005 06 08 | 691 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2001 11 18 | 608 | 0.7+ | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.2− | 2006 10 28 | 703 | 0.8− | 0.2− |
| 2001 11 18 | 608 | 0.5+ | 0.5+ | 2006 09 20 | 703 | 0.2+ | 1.1− | | | | |
| 2001 11 20 | 704 | 0.8+ | 0.3− | 2006 09 20 | 703 | 0.3+ | 0.1+ | | | | |

**(140716)∗ 2001 UK$_{92}$**

Discovered 2001 Oct. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 8.81698 | | | | | | |
| $n$ | 0.17644961 | $\omega$ | 268.61509 | | +0.90239819 | | +0.38995431 |
| $a$ | 3.1481512 | $\Omega$ | 68.40580 | | −0.27314370 | | +0.84673319 |
| $e$ | 0.1002442 | $i$ | 11.37199 | | −0.33327171 | | +0.36190959 |
| $P$ | 5.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.2− | 0.8+ | 2001 11 18 | 608 | 0.1+ | 0.7− | 2005 06 14 | G96 | 0.1+ | 1.0+ |
| 2001 10 17 | 704 | 0.2+ | 0.3− | 2001 11 18 | 608 | 0.2− | 0.9− | 2005 06 14 | G96 | 0.4+ | 0.7+ |
| 2001 10 17 | 704 | 0.1+ | 0.1− | 2001 11 18 | 608 | 0.1− | 0.6− | 2005 06 14 | G96 | 0.1+ | 0.4+ |
| 2001 10 18 | 644 | 0.2+ | 1.3− | 2001 12 14 | 704 | 1.0− | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.0 |
| 2001 10 18 | 644 | 0.5+ | 1.2− | 2001 12 14 | 704 | 0.6− | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 2001 10 18 | 644 | 0.2+ | 1.2− | 2001 12 14 | 704 | 0.8− | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.1− |
| 2001 10 19 | 644 | 0.1+ | 0.4+ | 2001 12 17 | 704 | 0.6+ | 0.8+ | 2006 08 18 | 644 | 0.0 | 0.0 |
| 2001 10 19 | 644 | 0.1+ | 0.3+ | 2001 12 17 | 704 | 0.6+ | 1.0+ | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2001 10 19 | 644 | 0.2+ | 0.1− | 2001 12 17 | 704 | 1.0+ | 0.9+ | 2006 08 18 | 644 | 0.1− | 0.0 |
| 2001 11 12 | 608 | 0.2+ | 1.1− | 2001 12 17 | 704 | 1.1+ | 1.2+ | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2001 11 12 | 608 | 0.4− | 0.0 | 2001 12 17 | 704 | 0.7+ | 0.9+ | 2006 08 20 | 644 | 0.0 | 0.0 |
| 2001 11 12 | 608 | 0.6+ | 0.6− | 2002 12 06 | 645 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.1− |
| 2001 11 18 | 704 | 0.7− | 0.4+ | 2002 12 06 | 645 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.6+ |
| 2001 11 18 | 704 | 0.7− | 0.1+ | 2005 02 12 | 809 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.0 |
| 2001 11 18 | 704 | 0.6− | 1.1+ | 2005 02 12 | 809 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.8+ | 0.1− |
| 2001 11 18 | 704 | 0.2+ | 0.5+ | 2005 02 12 | 809 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 1.1− | 1.1+ |
| 2001 11 18 | 704 | 0.5− | 0.4+ | 2005 06 14 | G96 | 0.0 | 0.7+ | | | | |

**(140717)∗ 2001 UQ$_{92}$**

Discovered 2001 Oct. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 300.14720 | | | | | | |
| $n$ | 0.17990162 | $\omega$ | 4.80999 | | +0.32589607 | | −0.93147500 |
| $a$ | 3.1077494 | $\Omega$ | 66.24328 | | +0.86139357 | | +0.22207610 |
| $e$ | 0.0670299 | $i$ | 10.17571 | | +0.38960604 | | +0.28816060 |
| $P$ | 5.48 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.3− | 0.0 | 2001 12 11 | 704 | (0.9− | 2.1+) | 2004 04 20 | 704 | 0.4+ | 0.8+ |
| 2001 10 17 | 704 | 0.8− | 0.1+ | 2001 12 14 | 704 | 1.4− | 1.2+ | 2004 04 20 | 704 | 0.3+ | 0.9+ |
| 2001 10 17 | 704 | 0.1+ | 0.8+ | 2001 12 14 | 704 | 0.2+ | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.5+ |
| 2001 10 18 | 644 | 0.2− | 0.6+ | 2001 12 14 | 704 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.3− | 0.8+ |
| 2001 10 18 | 644 | 0.2− | 0.2− | 2001 12 14 | 704 | 0.0 | 1.0− | 2004 04 20 | 704 | 1.4+ | 0.4− |
| 2001 10 18 | 644 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.1− | 0.2− | 2004 04 22 | 704 | (1.0+ | 1.6+) |
| 2001 10 19 | 608 | 0.7− | 0.7− | 2001 12 17 | 704 | 0.4+ | 0.3+ | 2004 04 22 | 704 | (0.4− | 1.9+) |
| 2001 10 19 | 608 | 0.7− | 0.7− | 2001 12 17 | 704 | 0.3+ | 0.2− | 2004 04 22 | 704 | 0.5+ | 0.1− |
| 2001 10 19 | 608 | 0.4− | 0.5− | 2001 12 17 | 704 | 0.8+ | 0.3+ | 2004 04 22 | 704 | 0.4− | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 644 | 0.3− | 0.3+ | 2001 12 17 | 704 | 0.3+ | 0.2− | 2004 05 18 | 704 | 0.0 | 1.1+ | | |
| 2001 10 25 | 644 | 0.3− | 0.4+ | 2001 12 17 | 704 | 0.1+ | 0.1− | 2004 05 18 | 704 | 0.5+ | 1.3+ | | |
| 2001 10 25 | 644 | 0.3− | 0.5+ | 2002 12 31 | 704 | 0.4− | 0.6+ | 2004 05 18 | 704 | 0.7+ | 0.8+ | | |
| 2001 11 12 | 704 | 0.3+ | 0.8+ | 2002 12 31 | 704 | 1.0+ | 0.4+ | 2004 05 18 | 704 | 0.0 | 1.1+ | | |
| 2001 11 12 | 704 | 0.7+ | 0.4+ | 2002 12 31 | 704 | 0.8+ | 0.2+ | 2006 08 28 | D35 | 1.1− | 0.6+ | | |
| 2001 11 12 | 704 | 0.7+ | 0.9+ | 2002 12 31 | 704 | 1.1+ | 1.0+ | 2006 08 28 | D35 | 0.8− | 0.5+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.3− | 2003 01 08 | 704 | 0.7− | 0.6+ | 2006 08 28 | D35 | 0.9− | 0.6+ | | |
| 2001 11 12 | 704 | 1.0+ | 0.3+ | 2003 01 08 | 704 | 1.0− | 0.3+ | 2006 09 17 | 699 | 0.3− | 0.0 | | |
| 2001 11 19 | 608 | 0.1+ | 0.9− | 2003 01 08 | 704 | 0.5− | 0.8− | 2006 09 17 | 699 | 0.5+ | 0.7+ | | |
| 2001 11 19 | 608 | 0.1− | 0.8− | 2003 01 28 | 644 | 0.3+ | 1.0+ | 2006 09 17 | 699 | 1.0− | 0.2+ | | |
| 2001 11 19 | 608 | 0.0 | 1.1− | 2003 01 28 | 644 | 0.5+ | 1.0+ | 2006 09 17 | 699 | 0.7+ | 0.7+ | | |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2003 01 28 | 644 | 0.6+ | 0.8+ | 2006 09 19 | 703 | 0.1+ | 0.4+ | | |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2003 02 01 | 644 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.6+ | | |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2003 02 01 | 644 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.0 | 1.0+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2003 02 01 | 644 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.9− | 0.2+ | | |
| 2001 11 20 | 704 | 0.2+ | 0.0 | 2003 02 08 | 699 | 0.9+ | 0.2− | 2006 09 25 | 703 | 0.0 | 0.1+ | | |
| 2001 11 24 | 704 | 0.9+ | 0.0 | 2003 02 08 | 699 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.7− | 0.7+ | | |
| 2001 11 24 | 704 | 0.1− | 0.6+ | 2003 02 08 | 699 | 0.4− | 0.3+ | 2006 09 25 | 703 | 0.2+ | 0.5+ | | |
| 2001 11 24 | 704 | 0.6− | 0.3+ | 2003 02 08 | 699 | 0.2+ | 0.8− | 2006 09 25 | 703 | 0.5− | 0.5+ | | |
| 2001 12 09 | 699 | 0.1+ | 0.6− | 2003 02 26 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.0 | | |
| 2001 12 09 | 699 | 0.0 | 0.2+ | 2003 02 26 | 704 | 0.1+ | 0.1− | 2006 10 21 | 703 | 1.3− | 0.6+ | | |
| 2001 12 09 | 699 | 0.0 | 0.1+ | 2003 02 26 | 704 | 0.6− | 0.3+ | 2006 10 21 | 703 | 0.8+ | 0.5+ | | |
| 2001 12 09 | 699 | 0.1+ | 0.1+ | 2003 03 03 | 644 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.1− | | |
| 2001 12 10 | 691 | 0.1− | 0.2− | 2003 03 03 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.6+ | | |
| 2001 12 10 | 691 | 0.1− | 0.1+ | 2003 03 03 | 644 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.3+ | | |
| 2001 12 10 | 691 | 0.0 | 0.3− | 2003 03 08 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.6+ | | |
| 2001 12 11 | 704 | 0.7+ | 0.8+ | 2003 03 08 | 644 | 0.1− | 0.4+ | | | | | | |
| 2001 12 11 | 704 | 0.2− | 0.1+ | 2003 03 08 | 644 | 0.1+ | 0.3+ | | | | | | |

**(140718)∗ 2001 UG$_{93}$ = 1998 FN$_{134}$**

Discovered 2001 Oct. 19 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 46809)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 159.25903 | | (2000.0) | | | |
| $n$ | 0.17533060 | $\omega$ | 37.80026 | | −0.96221943 | +0.24715543 |
| $a$ | 3.1615319 | $\Omega$ | 155.75306 | | −0.26259217 | −0.95327143 |
| $e$ | 0.0538300 | $i$ | 16.14979 | | +0.07196614 | −0.17374632 |
| $P$ | 5.62 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 1.1− | 1.3+ | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2004 04 23 | 703 | 0.5+ | 0.3− | | |
| 1998 03 04 | 704 | 1.8− | 0.4− | 2004 03 15 | 704 | 0.3+ | 0.7+ | 2004 04 23 | 703 | 0.5− | 0.8+ | | |
| 1998 03 04 | 704 | (3.8− | 0.3+) | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2004 04 24 | 704 | 0.4+ | 0.8+ | | |
| 1998 03 04 | 704 | (4.7− | 2.2−) | 2004 03 15 | 704 | 0.6+ | 0.9+ | 2004 04 24 | 704 | 0.9+ | 0.5+ | | |
| 1998 03 20 | 704 | 0.2+ | 0.5− | 2004 03 15 | 704 | 0.5− | 0.9+ | 2004 04 24 | 704 | 1.2+ | 1.1+ | | |
| 1998 03 20 | 704 | 0.0 | 1.7− | 2004 03 16 | 704 | 0.6− | 0.4+ | 2004 04 24 | 704 | 0.1+ | 0.7+ | | |
| 1998 03 20 | 704 | 0.4− | 2.0− | 2004 03 16 | 704 | 0.4+ | 0.7+ | 2004 04 25 | 699 | 0.1+ | 0.4− | | |
| 1998 03 20 | 704 | (1.5+ | 2.9−) | 2004 03 16 | 704 | 0.5+ | 0.0 | 2004 04 25 | 699 | 0.2− | 0.3+ | | |
| 1998 03 21 | 691 | 0.1+ | 0.0 | 2004 03 16 | 704 | 0.3+ | 0.8+ | 2004 04 25 | 699 | 1.0− | 1.0+ | | |
| 1998 03 21 | 691 | 0.1− | 0.2− | 2004 03 16 | 704 | 0.5+ | 0.6+ | 2004 04 25 | 699 | 0.1− | 0.8− | | |
| 1998 03 21 | 691 | 0.4+ | 0.9− | 2004 03 22 | 699 | 0.1+ | 0.4+ | 2004 05 12 | 644 | 0.2+ | 0.4+ | | |
| 1999 06 12 | 704 | 0.4+ | 0.1− | 2004 03 22 | 699 | 0.1− | 0.9+ | 2004 05 12 | 644 | 0.2+ | 0.0 | | |
| 1999 06 12 | 704 | 0.0 | 0.8− | 2004 03 22 | 699 | 0.6− | 1.2+ | 2004 05 12 | 644 | 0.3+ | 0.3+ | | |
| 1999 06 12 | 704 | 0.5− | 0.0 | 2004 03 22 | 699 | 0.5+ | 0.4− | 2004 05 12 | 703 | 0.1+ | 0.8− | | |
| 1999 06 12 | 704 | 0.4− | 0.7− | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2004 05 12 | 703 | 0.7− | 1.2+ | | |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.1− | 2004 05 12 | 703 | 1.2− | 0.9+ | | |
| 2001 09 19 | 645 | 0.1+ | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2004 05 12 | 703 | 1.4− | 0.2− | | |
| 2001 09 21 | 645 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.7+ | | |
| 2001 09 21 | 645 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.5+ | 2006 08 22 | 644 | 0.6− | 0.3+ | | |
| 2001 10 19 | 608 | 1.1+ | 0.9+ | 2004 03 30 | 012 | 1.0− | 0.5+ | 2006 08 22 | 644 | 0.3+ | 0.3+ | | |
| 2001 10 19 | 608 | 0.0 | 0.5+ | 2004 03 30 | 012 | 0.0 | 0.1− | 2006 09 14 | 703 | (0.0 | 1.5+) | | |
| 2001 10 19 | 608 | 0.4+ | 0.5+ | 2004 03 30 | 012 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 0.2+ | 1.3+ | | |
| 2001 10 22 | 644 | 0.8− | 0.0 | 2004 03 30 | 012 | 1.0+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.5+ | | |
| 2001 10 22 | 644 | 0.5− | 0.6+ | 2004 03 30 | 012 | 0.0 | 1.1+ | 2006 09 14 | 703 | 0.9− | 0.1+ | | |
| 2001 10 22 | 644 | 0.9− | 0.1+ | 2004 03 30 | 012 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 1.0+ | | |
| 2001 10 28 | 644 | 0.0 | 0.1+ | 2004 04 12 | 703 | 0.4− | 0.4+ | 2006 09 27 | 703 | 0.5− | 0.6+ | | |
| 2001 10 28 | 644 | 0.6− | 0.5+ | 2004 04 12 | 703 | 0.0 | 1.0+ | 2006 09 27 | 703 | 1.4+ | 0.3+ | | |
| 2001 10 28 | 644 | 0.1− | 0.3+ | 2004 04 12 | 703 | 1.2− | 0.7+ | 2006 09 27 | 703 | 0.6− | 0.3+ | | |
| 2002 12 14 | 704 | 0.2− | 0.0 | 2004 04 12 | 703 | 0.1− | 0.8+ | 2006 09 30 | 703 | 1.2+ | 0.8− | | |
| 2002 12 14 | 704 | 0.6− | 0.5+ | 2004 04 15 | 704 | 0.4− | 1.2+ | 2006 09 30 | 703 | 0.7− | 0.9− | | |
| 2002 12 14 | 704 | 0.8+ | 0.3+ | 2004 04 15 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | (1.5− | 0.1+) | | |
| 2004 02 19 | 704 | 0.8+ | 0.5+ | 2004 04 15 | 704 | 0.9+ | 1.5− | 2006 09 30 | 703 | 0.3− | 1.0− | | |
| 2004 02 19 | 704 | 0.2+ | 1.0− | 2004 04 15 | 704 | 0.5− | 0.3− | 2006 10 24 | 644 | 0.4− | 0.1+ | | |
| 2004 02 19 | 704 | 1.5+ | 0.9+ | 2004 04 23 | 703 | 0.5+ | 1.5+ | 2006 10 24 | 644 | 0.0 | 0.6+ | | |
| 2004 02 19 | 704 | 0.2− | 0.4− | 2004 04 23 | 703 | (1.6+ | 1.2+) | 2006 10 24 | 644 | 0.0 | 0.4+ | | |

**(140719)∗ 2001 UL$_{93}$**

Discovered 2001 Oct. 19 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.65386 | | (2000.0) | | | |
| $n$ | 0.18741485 | $\omega$ | 294.50330 | | +0.30265317 | −0.94448877 |
| $a$ | 3.0241272 | $\Omega$ | 137.21448 | | +0.92834114 | +0.26175384 |
| $e$ | 0.2077407 | $i$ | 10.84776 | | +0.21583277 | +0.19855955 |
| $P$ | 5.26 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.1+ | 0.7+ | 2001 12 07 | 704 | 0.2− | 0.0 | 2003 04 06 | 699 | (2.4− | 0.9−) | | |
| 2000 08 01 | 807 | 0.1+ | 0.6+ | 2001 12 07 | 704 | 0.2− | 0.0 | 2003 04 06 | 699 | 1.0− | 1.2− | | |
| 2000 08 01 | 704 | 0.4+ | 0.9+ | 2001 12 07 | 704 | 0.3− | 0.0 | 2003 04 10 | 691 | 0.3− | 0.3+ | | |
| 2000 08 01 | 704 | 0.2+ | 0.6+ | 2002 01 08 | 645 | 0.1+ | 0.1− | 2003 04 10 | 691 | 0.1− | 0.2+ | | |
| 2000 08 01 | 704 | 0.1− | 0.8+ | 2002 01 08 | 645 | 0.1+ | 0.0 | 2003 04 10 | 691 | 0.5− | 0.1+ | | |
| 2001 09 14 | 644 | 0.5− | 0.5+ | 2002 01 09 | 645 | 0.1+ | 0.0 | 2004 05 14 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 14 | 644 | 0.2− | 0.4+ | 2002 01 09 | 645 | 0.1+ | 0.0 | 2004 05 14 | 691 | 0.2+ | 0.3+ | | |
| 2001 09 14 | 644 | 0.3− | 0.5+ | 2003 02 01 | 704 | 0.4+ | 0.5− | 2004 05 14 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.8− | 0.7+ | 2003 02 01 | 704 | 0.8+ | 0.1+ | 2004 05 19 | 691 | 0.1− | 0.6+ | | |
| 2001 09 16 | 704 | (1.5− | 1.6+) | 2003 02 01 | 704 | 0.0 | 0.2+ | 2004 05 19 | 691 | 0.1− | 0.9+ | | |
| 2001 09 16 | 704 | 1.0− | 0.5+ | 2003 02 01 | 704 | 0.3+ | 0.3− | 2004 05 19 | 691 | 0.1− | 0.7+ | | |
| 2001 09 16 | 704 | 0.7− | 0.6+ | 2003 02 01 | 704 | 0.8+ | 0.8− | 2004 05 24 | 704 | (0.1− | 1.5+) | | |
| 2001 09 17 | 699 | 0.2+ | 0.9+ | 2003 02 03 | 608 | 0.2+ | 1.0+ | 2004 05 24 | 704 | 0.4+ | 0.7+ | | |
| 2001 09 17 | 699 | 0.9+ | 0.5− | 2003 02 03 | 608 | 0.6− | 0.4+ | 2004 05 24 | 704 | (2.2+ | 0.3+) | | |
| 2001 09 17 | 699 | 0.3+ | 0.1− | 2003 02 03 | 608 | 0.0 | 1.1+ | 2004 05 24 | 704 | 0.3− | 0.5+ | | |
| 2001 09 17 | 699 | 0.2− | 0.3+ | 2003 02 04 | 704 | 0.2+ | 0.9+ | 2006 08 28 | 699 | 0.1− | 0.9+ | | |
| 2001 09 25 | 704 | 0.9− | 0.3− | 2003 02 04 | 704 | (1.0+ | 1.6+) | 2006 08 28 | 699 | 0.2+ | 1.3+ | | |
| 2001 09 25 | 704 | 0.7− | 0.3− | 2003 02 04 | 704 | 1.5+ | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.7+ | | |
| 2001 09 25 | 704 | 0.5− | 0.6− | 2003 02 04 | 704 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.4+ | | |
| 2001 09 25 | 704 | 0.5− | 0.6− | 2003 02 04 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 699 | 0.1+ | 0.2+ | | |
| 2001 09 25 | 704 | 0.2− | 0.7− | 2003 02 09 | 608 | 0.4+ | 0.0 | 2006 09 17 | 699 | 0.1+ | 0.5+ | | |
| 2001 10 14 | 699 | 0.5− | 0.6+ | 2003 02 09 | 608 | 0.2+ | 0.0 | 2006 09 17 | 699 | 0.0 | 0.6+ | | |
| 2001 10 14 | 699 | 0.6− | 0.3+ | 2003 02 09 | 608 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.4+ | 0.3+ | | |
| 2001 10 14 | 699 | 0.2− | 0.0 | 2003 02 22 | 644 | 1.0+ | 1.0+ | 2006 09 19 | 703 | 0.5− | 0.9+ | | |
| 2001 10 14 | 699 | 0.1− | 0.5+ | 2003 02 22 | 644 | 1.0+ | 1.0+ | 2006 09 19 | 703 | 0.3+ | 0.8+ | | |
| 2001 10 14 | 608 | 0.6− | 0.0 | 2003 02 22 | 644 | 0.7+ | 1.1+ | 2006 09 19 | 703 | 0.4− | 1.2+ | | |
| 2001 10 14 | 608 | 0.2− | 0.2− | 2003 02 28 | 704 | 0.7+ | 1.3+ | 2006 09 19 | 703 | 0.0 | 0.8+ | | |
| 2001 10 14 | 608 | 0.3− | 0.3− | 2003 02 28 | 704 | 0.7− | 1.1+ | 2006 09 24 | 608 | (2.1+ | 3.6+) | | |
| 2001 10 16 | 704 | 0.4+ | 0.9+ | 2003 02 28 | 704 | 0.7+ | 1.0+ | 2006 09 24 | 608 | (2.1+ | 4.2+) | | |
| 2001 10 16 | 704 | 0.9− | 1.0+ | 2003 02 28 | 704 | 0.1− | 0.1− | 2006 09 24 | 608 | (1.8+ | 3.6+) | | |
| 2001 10 16 | 704 | 0.4− | 0.9+ | 2003 03 06 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 703 | 0.4− | 0.4+ | | |
| 2001 10 16 | 704 | 0.4− | 0.4+ | 2003 03 06 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 703 | 0.1+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.1− | 0.3+ | 2003 03 06 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 703 | 0.5− | 0.3+ | | |
| 2001 10 19 | 608 | 1.2+ | 0.1− | 2003 03 06 | 704 | 0.1− | 1.3+ | 2006 09 25 | 703 | 0.5− | 0.8+ | | |
| 2001 10 19 | 608 | 0.8+ | 0.4+ | 2003 03 06 | 704 | 0.1+ | 1.1+ | 2006 10 12 | 644 | 0.6− | 0.2+ | | |
| 2001 10 19 | 608 | 0.9+ | 0.0 | 2003 03 10 | 644 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2001 10 23 | 644 | 0.1+ | 0.2+ | 2003 03 10 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.2+ | | |
| 2001 10 23 | 644 | 0.1+ | 0.2+ | 2003 03 10 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.4+ | | |
| 2001 10 23 | 644 | 0.3+ | 0.1+ | 2003 03 11 | 644 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.1− | | |
| 2001 10 28 | 644 | 0.2− | 0.0 | 2003 03 11 | 644 | 0.5+ | 0.3+ | 2006 10 21 | 703 | 1.5+ | 0.4+ | | |
| 2001 10 28 | 644 | 0.3− | 0.2− | 2003 03 11 | 644 | 0.6− | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.4+ | | |
| 2001 10 28 | 644 | 0.3− | 0.1− | 2003 03 25 | 644 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.5− | 0.5+ | | |
| 2001 11 12 | 608 | 0.0 | 0.3+ | 2003 03 25 | 644 | 0.5+ | 0.8+ | 2006 10 28 | 703 | 0.5+ | 0.9+ | | |
| 2001 11 12 | 608 | 0.1− | 0.0 | 2003 03 25 | 644 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.7− | 0.7+ | | |
| 2001 11 12 | 608 | 0.4− | 0.2− | 2003 04 01 | 704 | 0.6+ | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.4+ | | |
| 2001 11 18 | 704 | 0.3+ | 0.5+ | 2003 04 01 | 704 | 0.1+ | 0.6+ | 2006 11 27 | 703 | 0.5− | 1.3+ | | |
| 2001 11 18 | 704 | 0.3+ | 1.1+ | 2003 04 01 | 704 | 0.4− | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.6+ | | |
| 2001 11 18 | 704 | (1.7+ | 0.2+) | 2003 04 01 | 704 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.9− | 1.3+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 1.0− | 0.6− | 2003 04 01 | 704 | 0.7− | 0.6+ | 2006 11 27 | 703 | 0.3+ | 0.8+ |
| 2001 12 07 | 704 | 0.5− | 0.1+ | 2003 04 06 | 699 | 0.1+ | 0.6+ | | | | |
| 2001 12 07 | 704 | 0.0 | 0.2− | 2003 04 06 | 699 | 0.3− | 0.3− | | | | |

**(140720)∗ 2001 UO$_{93}$**

Discovered 2001 Oct. 19 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.39977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16962540 | $\omega$ | 263.37481 | | +0.29323947 | −0.95481460 | |
| $a$ | 3.2320305 | $\Omega$ | 169.19492 | | +0.94699049 | +0.28314758 | |
| $e$ | 0.0692260 | $i$ | 14.95255 | | +0.13122355 | +0.09031349 | |
| $P$ | 5.81 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 704 | (0.1− | 2.4−) | 2003 01 28 | 704 | 0.0 | 0.2+ | 2004 04 25 | 704 | 1.1+ | 0.6− |
| 1998 04 20 | 704 | 1.6+ | 0.3− | 2003 01 28 | 704 | 0.5− | 0.8+ | 2004 04 25 | 704 | 0.3+ | 0.3− |
| 1998 04 20 | 704 | 1.0− | 1.9+ | 2003 01 28 | 704 | 0.6+ | 0.4+ | 2006 08 15 | 644 | 0.3+ | 0.2+ |
| 1998 04 20 | 704 | 0.9+ | 0.5− | 2003 01 28 | 704 | 0.3+ | 0.3+ | 2006 08 15 | 644 | 0.3+ | 0.2+ |
| 2001 09 17 | 699 | 1.3− | 0.6+ | 2003 02 03 | 699 | 1.1+ | 0.1+ | 2006 08 15 | 644 | 0.3+ | 0.4+ |
| 2001 09 17 | 699 | 0.4− | 1.0+ | 2003 02 03 | 699 | 0.4− | 0.2+ | 2006 08 19 | 644 | 0.2+ | 0.1+ |
| 2001 09 17 | 699 | 0.1− | 0.3− | 2003 02 03 | 699 | (1.7− | 0.7−) | 2006 08 19 | 644 | 0.3+ | 0.2− |
| 2001 09 17 | 699 | 0.3− | 0.3+ | 2003 02 03 | 699 | 0.4+ | 0.1− | 2006 08 19 | 644 | 0.2− | 0.3− |
| 2001 10 19 | 608 | 0.8+ | 1.0+ | 2003 02 19 | 644 | 0.2+ | 0.2+ | 2006 08 24 | 704 | 0.0 | 0.4+ |
| 2001 10 19 | 608 | 0.8+ | 0.4+ | 2003 02 19 | 644 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 0.8− | 0.1+ |
| 2001 10 19 | 608 | 0.8+ | 0.1− | 2003 02 19 | 644 | 0.2− | 0.1+ | 2006 08 24 | 704 | 0.0 | 0.4− |
| 2001 10 23 | 644 | 0.8− | 0.7+ | 2003 03 07 | 608 | 0.1+ | 0.0 | 2006 08 24 | 704 | 0.0 | 0.5+ |
| 2001 10 23 | 644 | 0.6− | 0.7+ | 2003 03 07 | 608 | 0.2+ | 0.2− | 2006 08 24 | 704 | 0.3+ | 0.3+ |
| 2001 10 23 | 644 | 0.9− | 0.5+ | 2003 03 07 | 608 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.5− |
| 2001 11 13 | 608 | 0.2+ | 0.0 | 2004 03 14 | 703 | 0.3− | 1.1+ | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2001 11 13 | 608 | 0.2+ | 0.4− | 2004 03 14 | 703 | (0.4− | 2.3+) | 2006 08 28 | 703 | 0.4− | 1.1− |
| 2001 11 13 | 608 | 0.0 | 0.4+ | 2004 03 14 | 703 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.3− |
| 2001 11 17 | 699 | 0.6− | 0.3+ | 2004 03 14 | 703 | (0.1− | 1.8+) | 2006 08 29 | 691 | 0.0 | 0.5+ |
| 2001 11 17 | 699 | 1.0− | 0.3+ | 2004 03 16 | 704 | (2.4− | 0.7+) | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2001 11 17 | 699 | 0.6− | 0.7+ | 2004 03 16 | 704 | (1.8− | 1.6+) | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 2001 11 17 | 699 | (2.0− | 0.7+) | 2004 03 16 | 704 | 0.8− | 0.5− | 2006 09 14 | 703 | 0.4+ | 0.7+ |
| 2001 12 07 | 704 | (0.2− | 2.7−) | 2004 03 16 | 704 | 0.1− | 1.4+ | 2006 09 14 | 703 | 0.7+ | 0.8+ |
| 2001 12 07 | 704 | 0.9− | 0.5+ | 2004 03 16 | 704 | 0.6− | 1.0+ | 2006 09 14 | 703 | (0.6+ | 2.0+) |
| 2001 12 07 | 704 | (1.6− | 1.1−) | 2004 03 22 | 699 | 1.4− | 0.8+ | 2006 09 14 | 703 | 0.8− | 0.9+ |
| 2001 12 07 | 704 | 0.7− | 1.4− | 2004 03 22 | 699 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2002 01 13 | 645 | 0.1+ | 0.0 | 2004 03 22 | 699 | (2.3− | 0.3+) | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2002 01 13 | 645 | 0.1+ | 0.1+ | 2004 03 22 | 699 | 0.7− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2003 01 02 | 699 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2003 01 02 | 699 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.0 | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2003 01 02 | 699 | 0.5+ | 1.1− | 2004 03 23 | 704 | 0.0 | 0.9+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2003 01 02 | 699 | (2.0− | 0.2−) | 2004 04 09 | E12 | 0.5− | 1.3+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2003 01 02 | 704 | 0.0 | 0.2− | 2004 04 09 | E12 | (1.0− | 2.6+) | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 01 02 | 704 | 1.0− | 0.8+ | 2004 04 09 | E12 | 0.1− | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 2003 01 02 | 704 | 0.7− | 1.5+ | 2004 04 09 | E12 | (1.3− | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.8+ |
| 2003 01 26 | 644 | 0.7+ | 0.3+ | 2004 04 15 | 644 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2003 01 26 | 644 | 0.1+ | 0.6+ | 2004 04 15 | 644 | 0.2+ | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2003 01 26 | 644 | 0.5+ | 0.4+ | 2004 04 15 | 644 | 0.3+ | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2003 01 27 | 608 | 0.0 | 1.0− | 2004 04 25 | 704 | 1.0+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2003 01 27 | 608 | 0.1− | 0.7− | 2004 04 25 | 704 | 0.1+ | 0.2+ | | | | |
| 2003 01 27 | 608 | 0.1− | 0.4− | 2004 04 25 | 704 | 0.2+ | 0.4+ | | | | |

**(140721)∗ 2001 UT$_{93}$ = 1994 LM$_6$**

Discovered 2001 Oct. 19 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 20609)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.58951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18226058 | $\omega$ | 307.05378 | | +0.91723241 | −0.26861431 | |
| $a$ | 3.0808760 | $\Omega$ | 70.22554 | | +0.38416863 | +0.79177658 | |
| $e$ | 0.1307017 | $i$ | 18.21568 | | −0.10535261 | +0.54857652 | |
| $P$ | 5.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 03 | 809 | 0.1− | 1.1− | 2001 10 29 | 644 | 0.3+ | 0.3− | 2004 03 21 | 691 | 0.2+ | 0.5+ |
| 1994 06 03 | 809 | 0.5− | 1.0+ | 2001 10 29 | 644 | 0.7+ | 0.1− | 2004 03 21 | 691 | 0.2− | 0.9+ |
| 1994 06 03 | 809 | 0.9+ | 0.1+ | 2001 11 15 | 644 | 0.3− | 0.1+ | 2004 03 21 | 691 | 0.1+ | 0.4+ |
| 1994 06 04 | 809 | 0.3− | 0.0 | 2001 11 15 | 644 | 1.0− | 0.7− | 2004 03 29 | 691 | 0.2+ | 0.4+ |
| 1994 06 04 | 809 | 1.5+ | 1.2+ | 2001 11 15 | 644 | 1.0− | 0.4− | 2004 03 29 | 691 | 0.5+ | 0.4+ |
| 1994 06 04 | 809 | (3.4+ | 0.3+) | 2001 11 19 | 608 | 0.5+ | 1.2+ | 2004 03 29 | 691 | 0.2+ | 0.3+ |
| 2001 10 16 | 704 | 0.2+ | 1.2+ | 2001 11 19 | 608 | 0.0 | 1.0+ | 2006 09 16 | E12 | 0.9− | 0.1− |
| 2001 10 16 | 704 | 0.8− | 0.1+ | 2001 11 19 | 608 | 0.6+ | 0.8+ | 2006 09 16 | E12 | 1.0+ | 0.2− |
| 2001 10 16 | 704 | 0.0 | 0.4+ | 2001 11 20 | 699 | 0.6− | 0.1− | 2006 09 16 | E12 | 0.4+ | 0.4− |
| 2001 10 19 | 608 | 1.4− | 1.3+ | 2001 11 20 | 699 | 0.3− | 0.5+ | 2006 09 16 | E12 | 0.1− | 0.3− |
| 2001 10 19 | 608 | 1.5− | 0.5+ | 2001 11 20 | 699 | 1.1− | 1.0+ | 2006 10 12 | E12 | 0.7− | 0.1+ |
| 2001 10 19 | 608 | 0.9− | 0.6+ | 2001 11 20 | 699 | 0.5− | 0.9+ | 2006 10 12 | E12 | 0.5+ | 0.3+ |
| 2001 10 23 | 644 | 0.8− | 0.0 | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 10 12 | E12 | 0.6+ | 0.0 |
| 2001 10 23 | 644 | 0.7− | 0.1+ | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 10 12 | E12 | 0.6+ | 0.4+ |
| 2001 10 23 | 644 | 0.6− | 0.2+ | 2003 01 27 | 645 | 0.0 | 0.1− | | | | |
| 2001 10 29 | 644 | 0.7+ | 0.0 | 2003 01 27 | 645 | 0.1+ | 0.1+ | | | | |

**(140722)∗ 2001 UU$_{93}$**

Discovered 2001 Oct. 19 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.12081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19047044 | $\omega$ | 295.89684 | | +0.91421947 | −0.31688084 | |
| $a$ | 2.9916973 | $\Omega$ | 83.44095 | | +0.39788144 | +0.82004904 | |
| $e$ | 0.1461938 | $i$ | 14.72793 | | −0.07676668 | +0.47655650 | |
| $P$ | 5.17 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 1.3+ | 0.5− | 2001 12 07 | 704 | 0.3− | 0.9− | 2006 09 25 | 703 | 0.1− | 0.0 |
| 2001 08 26 | 644 | 1.1+ | 0.7− | 2001 12 07 | 704 | 0.7− | 0.0 | 2006 10 04 | 703 | 0.6+ | 0.5− |
| 2001 08 26 | 644 | 1.1+ | 0.5− | 2001 12 07 | 704 | 0.6− | 0.3− | 2006 10 04 | 703 | 1.1− | 0.9− |
| 2001 10 16 | 704 | 0.1− | 0.3+ | 2001 12 07 | 704 | 0.7+ | 0.2− | 2006 10 04 | 703 | 0.3+ | 0.3− |
| 2001 10 16 | 704 | 0.2− | 0.4+ | 2001 12 15 | 704 | 0.1+ | 0.8− | 2006 10 04 | 703 | 0.7− | 0.0 |
| 2001 10 16 | 704 | 0.3+ | 0.2+ | 2001 12 15 | 704 | 1.4+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2001 10 16 | 704 | 0.1− | 0.1+ | 2001 12 15 | 704 | 0.8+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2001 10 16 | 704 | 0.3+ | 0.9− | 2001 12 15 | 704 | 1.3+ | 0.7− | 2006 10 10 | 644 | 0.5− | 0.7+ |
| 2001 10 19 | 608 | 0.5+ | 0.2− | 2003 01 24 | 644 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 10 19 | 608 | 0.3− | 0.5− | 2003 01 24 | 644 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 10 19 | 608 | 0.3− | 0.0 | 2003 01 24 | 644 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 644 | 0.4− | 0.7+ | 2003 01 29 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 644 | 0.3− | 0.6+ | 2003 01 29 | 644 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 10 23 | 644 | 0.3− | 0.6+ | 2003 01 29 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 10 29 | 644 | 0.4− | 0.1+ | 2003 02 01 | 644 | 0.4+ | 0.1+ | 2006 10 31 | 703 | 0.1+ | 0.2+ |
| 2001 10 29 | 644 | 0.6− | 0.2+ | 2003 02 01 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 0.2+ | 0.1− |
| 2001 10 29 | 644 | 0.5− | 0.1+ | 2003 02 01 | 644 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 0.5− | 0.1− |
| 2001 11 13 | 608 | 0.5− | 0.4− | 2003 03 07 | 645 | 0.0 | 0.1− | 2006 10 31 | 703 | 1.4− | 1.3+ |
| 2001 11 13 | 608 | 0.5− | 0.4− | 2003 03 07 | 645 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2001 11 13 | 608 | 0.4− | 0.3− | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.6+ | 0.4− |
| 2001 11 18 | 704 | 0.4+ | 1.2+ | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.2− |
| 2001 11 18 | 704 | 1.0+ | 1.3+ | 2004 03 30 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 0.8+ |
| 2001 11 18 | 704 | 0.1+ | 1.1+ | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 1.0+ | 0.9− |
| 2001 11 18 | 704 | 0.3− | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 0.7− |
| 2001 11 19 | 608 | 0.5− | 0.4+ | 2006 09 24 | 699 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.4+ | 0.8+ |
| 2001 11 19 | 608 | 0.7− | 0.5+ | 2006 09 24 | 699 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.3+ |
| 2001 11 19 | 608 | 0.2− | 0.2+ | 2006 09 24 | 699 | 0.1+ | 0.4− | 2006 11 23 | 703 | 0.1+ | 0.1− |
| 2001 11 20 | 699 | 0.5− | 0.4− | 2006 09 24 | 699 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.5+ |
| 2001 11 20 | 699 | 0.5− | 0.4− | 2006 09 25 | 703 | 0.0 | 1.0+ | 2006 11 23 | 703 | 0.6− | 0.3+ |
| 2001 11 20 | 699 | 0.2− | 0.1+ | 2006 09 25 | 703 | 0.2+ | 0.1− | | | | |
| 2001 11 20 | 699 | 1.0− | 0.5+ | 2006 09 25 | 703 | 0.2− | 0.1− | | | | |

**(140723)∗ 2001 UY$_{93}$**

Discovered 2001 Oct. 19 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.94546 | | (2000.0) | | | |
| $n$ | 0.18968472 | $\omega$ | 240.09264 | | +0.87120616 | −0.48160530 |
| $a$ | 2.9999532 | $\Omega$ | 148.41388 | | +0.48924736 | +0.83579756 |
| $e$ | 0.0977682 | $i$ | 10.46803 | | +0.04045788 | +0.26362620 |
| $P$ | 5.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.7− | 0.2+ | 2001 12 07 | 704 | 0.6− | 0.2− | 2006 09 29 | 699 | 0.2− | 0.2− |
| 1995 07 03 | 691 | 0.4+ | 0.3+ | 2001 12 18 | 645 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.6− | 0.1− |
| 1995 07 03 | 691 | 0.1− | 0.5+ | 2001 12 18 | 645 | 0.1+ | 0.0 | 2006 09 29 | 699 | (3.1+ | 2.0−) |
| 1998 02 22 | 691 | 1.0+ | 0.1− | 2003 01 28 | 704 | 0.3+ | 0.8+ | 2006 09 30 | 704 | 0.4+ | 0.6− |
| 1998 02 22 | 691 | 0.4+ | 0.2− | 2003 01 28 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.2− |
| 1998 02 22 | 691 | 0.3+ | 0.2− | 2003 01 28 | 704 | 0.8+ | 0.6+ | 2006 09 30 | 704 | (2.0+ | 0.6+) |
| 1998 03 01 | 691 | 0.2+ | 0.2− | 2003 01 28 | 704 | (0.2+ | 1.6+) | 2006 09 30 | 704 | 0.5+ | 0.2− |
| 1998 03 01 | 691 | 0.6− | 0.1− | 2003 01 28 | 645 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 1998 03 01 | 691 | 0.6− | 0.2− | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2001 08 26 | 644 | 0.7+ | 0.1+ | 2003 02 02 | 644 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 08 26 | 644 | 1.0+ | 0.0 | 2003 02 02 | 644 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 2001 08 26 | 644 | 0.7+ | 0.1+ | 2003 02 02 | 644 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.6− | 1.2+ | 2003 02 03 | 699 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.3+ |
| 2001 10 14 | 699 | 0.4+ | 1.5+ | 2003 02 03 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 1.0+ | 0.9+ |
| 2001 10 14 | 699 | (1.1+ | 1.8+) | 2003 02 03 | 699 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2001 10 14 | 699 | 0.6− | 0.6+ | 2003 02 03 | 699 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.8+ | 1.4+ |
| 2001 10 16 | 683 | 1.4− | 1.4− | 2003 02 08 | 704 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.8+ | 1.2+ |
| 2001 10 16 | 683 | 0.4− | 0.1− | 2003 02 08 | 704 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2001 10 16 | 683 | (1.8+ | 1.6−) | 2003 02 08 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.0 |
| 2001 10 19 | 608 | 0.8− | 0.9− | 2003 02 08 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 703 | (0.5− | 1.8+) |
| 2001 10 19 | 608 | 0.7− | 1.0− | 2003 02 22 | 699 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2001 10 19 | 608 | 0.4− | 0.5− | 2003 02 22 | 699 | (1.1+ | 1.6+) | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 10 23 | 644 | 0.3− | 0.1+ | 2003 02 22 | 699 | 1.1− | 1.0+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 644 | 0.4− | 0.0 | 2003 02 22 | 699 | 0.2− | 0.8+ | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2001 10 23 | 644 | 0.4− | 0.1− | 2003 03 06 | 644 | 1.4+ | 0.6+ | 2006 10 28 | 703 | 1.1− | 0.9− |
| 2001 11 11 | 645 | 0.1+ | 0.1− | 2003 03 06 | 644 | 0.4+ | 0.9+ | 2006 10 28 | 703 | 1.1+ | 0.3+ |
| 2001 11 11 | 645 | 0.1+ | 0.1− | 2003 03 06 | 644 | 0.4+ | 1.3+ | 2006 10 28 | 703 | 0.5− | 0.2+ |
| 2001 11 18 | 704 | 0.2− | 0.6+ | 2006 09 16 | 699 | 1.5+ | 0.7+ | 2006 10 28 | 703 | 0.1+ | 1.0+ |
| 2001 11 18 | 704 | 1.1− | 0.2+ | 2006 09 16 | 699 | 0.6− | 0.1+ | 2006 11 07 | 644 | 0.7+ | 0.2+ |
| 2001 11 18 | 704 | 0.8− | 0.1+ | 2006 09 16 | 699 | (2.4− | 0.6+) | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2001 11 18 | 704 | 1.2− | 1.0+ | 2006 09 16 | 699 | 0.3− | 1.4+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2001 11 19 | 608 | 0.2− | 0.8+ | 2006 09 25 | 699 | 0.2+ | 0.3+ | 2006 11 16 | 703 | 1.7− | 0.4− |
| 2001 11 19 | 608 | 0.6− | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.8+ | 2006 11 16 | 703 | 2.5− | 0.9− |
| 2001 11 19 | 608 | 0.5− | 0.6+ | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 11 16 | 703 | 1.7− | 1.3− |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.9+ | 2006 11 16 | 703 | 0.4− | 1.5− |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.7+ | 2006 11 16 | 703 | 0.2+ | 1.2− |
| 2001 12 07 | 704 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.6+ | 0.1− | 2006 11 16 | 703 | 0.8+ | 0.9− |
| 2001 12 07 | 704 | 0.6− | 0.1+ | 2006 09 26 | 703 | 0.6+ | 0.1− | 2006 11 16 | 703 | 2.0− | 0.6− |
| 2001 12 07 | 704 | 0.9− | 0.3+ | 2006 09 26 | 703 | 0.9+ | 0.3+ | 2006 11 16 | 703 | 0.7+ | 1.6+ |
| 2001 12 07 | 704 | 0.6− | 0.2+ | 2006 09 29 | 699 | 0.2− | 0.3+ | | | | |

**(140724)∗ 2001 UL$_{94}$**

Discovered 2001 Oct. 19 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.16213 | | (2000.0) | | | |
| $n$ | 0.18390018 | $\omega$ | 188.56388 | | +0.97481616 | +0.21368273 |
| $a$ | 3.0625365 | $\Omega$ | 158.76891 | | −0.19274669 | +0.95123580 |
| $e$ | 0.0905425 | $i$ | 10.15073 | | −0.11217030 | +0.22246379 |
| $P$ | 5.36 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 608 | 0.1− | 0.7− | 2003 01 28 | 704 | (1.0+ | 2.0−) | 2006 09 30 | 703 | 0.3− | 0.5+ |
| 2001 10 19 | 608 | 0.1+ | 0.9− | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2001 10 19 | 608 | 0.5− | 0.5− | 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.3− | 1.2− |
| 2001 10 23 | 644 | 0.2− | 0.3+ | 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 2001 10 23 | 644 | 0.3− | 0.1+ | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | (4.6+ | 2.5−) |
| 2001 10 23 | 644 | 0.3− | 0.0 | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 2001 10 29 | 644 | 0.2− | 0.5+ | 2004 03 26 | 691 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2001 10 29 | 644 | 0.2− | 0.0 | 2004 04 12 | 703 | 1.1+ | 0.4− | 2006 10 16 | 703 | 0.8− | 0.4− |
| 2001 10 29 | 644 | 0.0 | 0.3+ | 2004 04 12 | 703 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 2001 11 18 | 704 | 0.5+ | 0.3− | 2004 04 12 | 703 | 0.6− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.5+ |
| 2001 11 18 | 704 | 0.8+ | 0.2+ | 2004 04 12 | 703 | 0.7+ | 0.9− | 2006 10 17 | 703 | 0.4+ | 0.6+ |
| 2001 11 18 | 704 | 0.2+ | 0.6− | 2006 08 17 | 644 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.2+ | 1.1+ |
| 2001 11 19 | 699 | 0.4+ | 0.1+ | 2006 08 17 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 11 19 | 699 | 0.3+ | 0.8− | 2006 08 17 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.5− | 0.2− |
| 2001 11 19 | 699 | 0.2+ | 0.4− | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2001 11 19 | 699 | 0.1+ | 0.4− | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 11 20 | 699 | 0.8− | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 11 20 | 699 | 0.3− | 0.9+ | 2006 09 18 | 703 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 11 20 | 699 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 699 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.4+ | 2006 10 21 | 644 | 0.4+ | 0.2− |
| 2001 12 07 | 704 | (1.1+ | 4.0+) | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 12 07 | 704 | (1.9+ | 3.3+) | 2006 09 26 | 704 | (0.5− | 1.5+) | 2006 10 22 | 703 | 1.2+ | 0.4+ |
| 2001 12 07 | 704 | (0.1+ | 2.2+) | 2006 09 26 | 704 | 0.2+ | 0.9+ | 2006 10 22 | 703 | 1.2− | 0.3− |
| 2001 12 07 | 704 | (1.9+ | 2.6+) | 2006 09 26 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.3− |
| 2001 12 14 | 699 | 0.8+ | 1.2+ | 2006 09 26 | 704 | (0.4+ | 2.9+) | 2006 10 22 | 703 | 1.4− | 0.1+ |
| 2001 12 14 | 699 | 0.0 | 1.1+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.0 | 0.5− |
| 2001 12 14 | 699 | 0.5− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.1+ |
| 2001 12 14 | 699 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.3+ |
| 2003 01 28 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.7− | 2006 10 28 | 703 | 0.1− | 1.5+ |
| 2003 01 28 | 704 | 0.2+ | 0.6− | 2006 09 30 | 703 | 0.4− | 0.1+ | | | | |
| 2003 01 28 | 704 | 0.4+ | 0.7+ | 2006 09 30 | 704 | 0.5− | 0.4− | | | | |

**(140725)∗ 2001 UX$_{94}$**

Discovered 2001 Oct. 19 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.65421 | | (2000.0) | | | |
| $n$ | 0.17724071 | $\omega$ | 288.28903 | | +0.90579503 | −0.37424472 |
| $a$ | 3.1387765 | $\Omega$ | 94.07670 | | +0.42310770 | +0.82400927 |
| $e$ | 0.1006579 | $i$ | 11.48961 | | −0.02269880 | +0.42538173 |
| $P$ | 5.56 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.5− | 0.3+ | 2001 12 07 | 704 | 0.3− | 1.2− | 2003 04 26 | 645 | 0.1− | 0.1− |
| 2001 08 20 | 644 | 0.5− | 0.5+ | 2001 12 07 | 704 | 0.9− | 1.2− | 2004 03 23 | 704 | 0.6+ | 0.8+ |
| 2001 08 20 | 644 | 0.1− | 0.5+ | 2001 12 07 | 704 | 1.0− | 0.6− | 2004 03 23 | 704 | 1.2+ | 0.5+ |
| 2001 08 28 | 644 | 0.3− | 0.9+ | 2001 12 07 | 704 | 1.1− | 1.4− | 2004 03 23 | 704 | 0.6+ | 0.6+ |
| 2001 08 28 | 644 | 0.6− | 0.5+ | 2001 12 18 | 704 | 0.8+ | 0.4+ | 2004 03 23 | 704 | (2.4+ | 1.3+) |
| 2001 08 28 | 644 | 0.2− | 0.4+ | 2001 12 18 | 704 | 1.4+ | 0.7+ | 2004 03 23 | 704 | 0.0 | 1.2+ |
| 2001 09 17 | 699 | 1.4+ | 0.1+ | 2001 12 18 | 704 | 0.8+ | 1.0+ | 2004 03 29 | 691 | 0.1+ | 0.4+ |
| 2001 09 17 | 699 | 1.0+ | 1.5+ | 2001 12 18 | 704 | (1.7+ | 0.9+) | 2004 03 29 | 691 | 0.1+ | 0.4+ |
| 2001 09 17 | 699 | 0.2+ | 1.2− | 2001 12 18 | 704 | 0.6+ | 0.7+ | 2004 03 29 | 691 | 0.0 | 0.5+ |
| 2001 09 17 | 699 | 0.8− | 0.0 | 2001 12 19 | 704 | 0.7+ | 0.6− | 2006 08 30 | 699 | 0.2+ | 0.6+ |
| 2001 10 16 | 704 | 0.8− | 0.4− | 2001 12 19 | 704 | 0.2− | 0.2− | 2006 08 30 | 699 | 0.4− | 0.5+ |
| 2001 10 16 | 704 | 0.3− | 0.1− | 2001 12 19 | 704 | 0.2− | 0.0 | 2006 08 30 | 699 | 0.2+ | 0.2− |
| 2001 10 16 | 704 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.1− | 0.8+ |
| 2001 10 16 | 704 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.1− | 1.5− | 2006 09 20 | 703 | 0.2+ | 1.1+ |
| 2001 10 16 | 704 | 0.2+ | 0.9+ | 2002 12 31 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 703 | 0.2− | 0.1+ |
| 2001 10 19 | 608 | 0.3− | 0.2− | 2002 12 31 | 704 | 1.1+ | 0.4+ | 2006 09 20 | 703 | 0.9− | 0.1+ |
| 2001 10 19 | 608 | 0.3− | 0.2− | 2002 12 31 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 703 | 1.0− | 0.8+ |
| 2001 10 19 | 608 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.3− | 2006 09 21 | 699 | 0.5+ | 1.1− |
| 2001 10 23 | 644 | 0.5− | 0.1− | 2003 01 10 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 699 | 0.3+ | 0.8+ |
| 2001 10 23 | 644 | 0.4− | 0.1+ | 2003 01 10 | 704 | 0.0 | 1.0+ | 2006 09 21 | 699 | 0.9− | 0.6− |
| 2001 10 23 | 644 | 0.6− | 0.0 | 2003 01 10 | 704 | 0.1− | 0.7+ | 2006 09 21 | 699 | 0.6− | 0.7− |
| 2001 10 29 | 644 | 0.2− | 0.0 | 2003 01 10 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 1.1+ |
| 2001 10 29 | 644 | 0.4− | 0.2− | 2003 01 31 | 704 | (3.7− | 0.8+) | 2006 09 26 | 703 | 0.2+ | 0.7+ |
| 2001 10 29 | 644 | 0.1− | 0.0 | 2003 01 31 | 704 | (2.9− | 1.1+) | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2001 11 18 | 704 | 0.1+ | 0.3+ | 2003 01 31 | 704 | (2.9− | 0.7+) | 2006 09 26 | 703 | 0.5+ | 0.5+ |
| 2001 11 18 | 704 | 0.1− | 0.1− | 2003 01 31 | 704 | (3.7− | 0.3−) | 2006 10 12 | E12 | 0.3+ | 0.7+ |
| 2001 11 18 | 704 | 0.5+ | 0.1+ | 2003 02 04 | 699 | 0.6− | 0.7− | 2006 10 12 | E12 | 0.0 | 1.0+ |
| 2001 11 19 | 608 | 0.2+ | 0.5− | 2003 02 04 | 699 | 0.1+ | 0.4+ | 2006 10 12 | E12 | 0.7− | 0.6+ |
| 2001 11 19 | 608 | 0.2+ | 0.3− | 2003 02 04 | 699 | 1.2+ | 0.9+ | 2006 10 12 | E12 | 0.3+ | 0.5+ |
| 2001 11 19 | 608 | 0.1+ | 0.4− | 2003 02 04 | 699 | 0.8+ | 0.4+ | 2006 10 28 | E12 | 0.3+ | 0.3− |
| 2001 11 20 | 699 | 0.7+ | 0.7+ | 2003 03 03 | 644 | 0.3+ | 0.6+ | 2006 10 28 | E12 | 0.2− | 0.2+ |
| 2001 11 20 | 699 | 0.2+ | 0.4+ | 2003 03 03 | 644 | 0.2+ | 0.5+ | 2006 10 28 | E12 | 0.2− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 699 | 0.9+ | 0.3+ | 2003 03 03 | 644 | 0.1+ | 0.5+ | 2006 10 28 | E12 | 0.1− | 1.0+ |
| 2001 11 20 | 699 | 0.2− | 0.5+ | 2003 04 26 | 645 | 0.0 | 0.0 | | | | |

**(140726)∗ 2001 UU$_{95}$**

Discovered 2001 Oct. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.43291 | | (2000.0) | | | |
| $n$ | 0.21257256 | $\omega$ | 4.44951 | | +0.36413706 | −0.92757471 |
| $a$ | 2.7805535 | $\Omega$ | 64.21462 | | +0.85159770 | +0.29521405 |
| $e$ | 0.0499998 | $i$ | 5.33506 | | +0.37707499 | +0.22902798 |
| $P$ | 4.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 12 | 699 | (2.0− | 0.2−) | 2003 02 01 | 704 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 10 12 | 699 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.4+ | 0.6+ | 2006 11 11 | G96 | 0.6+ | 0.5− |
| 2001 10 12 | 699 | (2.5− | 0.0 ) | 2003 02 01 | 704 | (1.1− | 1.7−) | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 10 12 | 699 | (2.4− | 0.2+) | 2003 02 01 | 704 | (1.2+ | 1.9+) | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2001 10 16 | 704 | 0.2− | 1.4+ | 2003 02 01 | 704 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.5− | 0.0 |
| 2001 10 16 | 704 | 1.3+ | 0.5+ | 2003 02 02 | 644 | 0.3− | 0.7+ | 2006 11 15 | 703 | 0.2− | 0.3− |
| 2001 10 16 | 704 | 0.4− | 0.5− | 2003 02 02 | 644 | 0.4+ | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2001 10 16 | 704 | 0.8+ | 0.4+ | 2003 02 02 | 644 | 0.3+ | 0.7+ | 2006 11 15 | 703 | 0.7− | 0.5− |
| 2001 10 18 | 644 | 1.2− | 0.9+ | 2004 04 28 | 691 | 0.3+ | 0.7+ | 2006 11 17 | 644 | 0.6+ | 0.1− |
| 2001 10 18 | 644 | 1.1− | 0.5+ | 2004 04 28 | 691 | 0.2+ | 0.8+ | 2006 11 17 | 644 | 0.2− | 0.2+ |
| 2001 10 18 | 644 | 0.7− | 0.6+ | 2004 04 28 | 691 | 0.3+ | 0.8+ | 2006 11 17 | 644 | 0.2+ | 0.4− |
| 2001 10 23 | 704 | 0.0 | 0.4− | 2005 07 03 | 644 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 1.1− | 2005 07 03 | 644 | 0.2− | 0.4+ | 2006 11 18 | 704 | (0.5− | 1.6+) |
| 2001 10 23 | 704 | 0.4− | 1.2− | 2005 07 03 | 644 | 0.4− | 0.6+ | 2006 11 18 | 704 | (0.5+ | 2.0+) |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2005 09 01 | 644 | 0.2− | 0.9+ | 2006 11 19 | 691 | 0.2− | 0.5+ |
| 2001 10 24 | 704 | 0.0 | 0.9+ | 2005 09 01 | 644 | 0.3− | 0.8+ | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2001 10 24 | 704 | 0.2+ | 0.1+ | 2005 09 01 | 644 | 0.3+ | 0.9+ | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2001 10 24 | 704 | 0.5− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.8− | 0.7+ |
| 2001 10 24 | 704 | 0.2− | 0.8− | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2001 10 25 | 644 | 0.8+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2001 10 25 | 644 | 0.5+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.1− |
| 2001 10 25 | 644 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2001 11 20 | 704 | 0.7− | 1.0− | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.6+ | 2006 10 19 | G96 | 0.6+ | 0.5− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.2− | 1.1+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.8− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2003 01 30 | 699 | 0.7+ | 0.8+ | 2006 10 28 | G96 | 0.3− | 0.7− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2003 01 30 | 699 | 0.2+ | 0.4− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.5+ |
| 2003 01 30 | 699 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.3− | 2006 12 01 | 691 | 0.1− | 0.6+ |
| 2003 01 30 | 699 | 0.4− | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.2− | 2006 12 01 | 691 | 0.1− | 0.4+ |

**(140727)∗ 2001 UA$_{96}$ = 1999 GO$_{15}$ = 2004 DS$_{41}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61166)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.45644 | | (2000.0) | | | |
| $n$ | 0.17709652 | $\omega$ | 14.76143 | | −0.65443005 | +0.75433088 |
| $a$ | 3.1404799 | $\Omega$ | 214.40844 | | −0.70272531 | −0.63216896 |
| $e$ | 0.0627182 | $i$ | 5.28207 | | −0.27910293 | −0.17705176 |
| $P$ | 5.57 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 26 | 691 | 0.4− | 0.4− | 2001 10 23 | 704 | 1.5+ | 1.0+ | 2004 03 19 | 704 | 0.4− | 0.8+ |
| 1998 01 26 | 691 | 0.5− | 0.6− | 2001 11 14 | 691 | 0.4− | 0.4+ | 2004 03 19 | 704 | 0.0 | 0.9− |
| 1998 01 26 | 691 | 0.0 | 0.5− | 2001 11 14 | 691 | 0.2− | 0.3− | 2004 03 19 | 704 | 0.2+ | 1.1+ |
| 1999 04 15 | 691 | 0.0 | 0.3+ | 2001 11 14 | 691 | 0.5− | 1.3+ | 2006 08 16 | D35 | 0.5− | 0.6+ |
| 1999 04 15 | 691 | 0.1− | 0.4+ | 2004 02 19 | 704 | 1.2+ | 1.1+ | 2006 08 16 | D35 | 0.5− | 0.3+ |
| 1999 04 21 | 691 | 0.5+ | 0.3− | 2004 02 19 | 704 | 1.7+ | 0.6+ | 2006 08 16 | D35 | 0.8− | 0.3+ |
| 1999 04 21 | 691 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 1.1+ | 0.7+ | 2006 08 27 | 699 | 1.1+ | 0.3− |
| 1999 04 21 | 691 | 0.2− | 0.3+ | 2004 02 19 | 704 | 1.1+ | 1.4+ | 2006 08 27 | 699 | (0.4− | 2.2+) |
| 2001 10 17 | 704 | 0.0 | 0.6+ | 2004 02 19 | 704 | (2.2+ | 0.8+) | 2006 08 27 | 699 | 0.7+ | 1.0+ |
| 2001 10 17 | 704 | 0.2− | 0.5− | 2004 02 25 | 704 | 0.3+ | 0.1− | 2006 08 27 | 699 | 0.4+ | 0.3+ |
| 2001 10 17 | 704 | 0.0 | 0.2− | 2004 02 25 | 704 | 0.3+ | 0.8+ | 2006 08 29 | 703 | 1.0− | 0.2− |
| 2001 10 17 | 704 | 0.2− | 0.8+ | 2004 02 25 | 704 | 0.3+ | 1.8+ | 2006 08 29 | 703 | 1.2+ | 0.7− |
| 2001 10 17 | 704 | 0.2+ | 1.0+ | 2004 02 25 | 704 | 0.8− | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.5+ |
| 2001 10 19 | 644 | 0.5− | 0.1+ | 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.6+ |
| 2001 10 19 | 644 | 0.4− | 0.0 | 2004 03 13 | 644 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.2+ | 0.7+ |
| 2001 10 19 | 644 | 0.4− | 0.4+ | 2004 03 13 | 644 | 0.2+ | 0.4+ | 2006 09 13 | 644 | 0.4− | 0.3+ |
| 2001 10 21 | 704 | (0.3+ | 3.2+) | 2004 03 16 | 704 | 0.1− | 0.8+ | 2006 09 13 | 644 | 0.0 | 0.6+ |
| 2001 10 21 | 704 | 1.8+ | 1.0+ | 2004 03 16 | 704 | 0.4+ | 1.7+ | 2006 09 17 | 703 | 0.6− | 0.3− |
| 2001 10 21 | 704 | 1.1+ | 0.1+ | 2004 03 16 | 704 | (0.5+ | 3.3+) | 2006 09 17 | 703 | 0.7− | 0.8− |
| 2001 10 23 | 704 | 0.7− | 1.1+ | 2004 03 16 | 704 | 0.9− | 1.4+ | 2006 09 17 | 703 | 0.6− | 0.7− |
| 2001 10 23 | 704 | 0.3+ | 0.8+ | 2004 03 19 | 704 | 1.0+ | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.4− |

**(140728)∗ 2001 UC$_{96}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.99237 | | (2000.0) | | | |
| $n$ | 0.20178780 | $\omega$ | 291.13529 | | +0.93443583 | +0.35444115 |
| $a$ | 2.8787643 | $\Omega$ | 48.12334 | | −0.30703761 | +0.85110336 |
| $e$ | 0.0719914 | $i$ | 2.66788 | | −0.18043723 | +0.38729128 |
| $P$ | 4.88 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3+ | 1.4− | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.4+ | 0.1− | 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | (0.4− | 1.5+) | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 1.2− | 0.6+ |
| 2001 09 21 | 704 | 1.0− | 0.5+ | 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 09 21 | 704 | (1.9− | 0.5+) | 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2001 09 21 | 704 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 27 | G96 | (2.7+ | 0.4−) |
| 2001 10 17 | 704 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 10 17 | 704 | 0.5− | 0.2+ | 2006 09 25 | G96 | 0.6+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 10 17 | 704 | 0.0 | 1.3+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2001 10 17 | 704 | 0.9− | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.3+ |
| 2001 10 23 | 704 | 0.3+ | 0.4+ | 2006 09 28 | G96 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.5+ |
| 2001 10 23 | 704 | 0.0 | 0.6− | 2006 09 28 | G96 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2001 10 23 | 704 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.6+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.1− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.5− | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2001 10 24 | 704 | 0.7+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.7+ | 0.6− | 2006 10 12 | 691 | 0.7+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.2+ |
| 2001 11 20 | 704 | 0.9+ | 0.8+ | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2001 11 20 | 704 | 0.2+ | 0.6+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.4− | 0.3− |
| 2001 11 20 | 704 | (1.2+ | 1.6+) | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2001 11 20 | 704 | (0.5+ | 1.5+) | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.4− | | | | |

**(140729)∗ 2001 UV$_{97}$ = 1997 YN$_{15}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20610)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.77298 | | (2000.0) | | | |
| $n$ | 0.20605227 | $\omega$ | 251.83555 | | +0.97328328 | +0.22260854 |
| $a$ | 2.8389066 | $\Omega$ | 95.27302 | | −0.18346849 | +0.90132061 |
| $e$ | 0.0924144 | $i$ | 3.23884 | | −0.13805421 | +0.37157313 |
| $P$ | 4.78 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 29 | 691 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 695 | 0.1+ | 0.1+ |
| 1997 12 29 | 691 | 0.3− | 0.2− | 2001 11 20 | 704 | 0.1+ | 0.5+ | 2006 11 02 | 703 | 1.5− | 1.0− |
| 1997 12 29 | 691 | 0.0 | 0.5− | 2001 11 20 | 704 | 0.3+ | 0.3+ | 2006 11 02 | 703 | (1.2+ | 1.7−) |
| 1998 01 02 | 691 | 0.4+ | 0.1− | 2004 04 14 | 691 | 0.4+ | 0.5+ | 2006 11 02 | 703 | 0.3− | 0.5− |
| 1998 01 02 | 691 | 0.1+ | 0.2− | 2004 04 14 | 691 | 0.2+ | 0.8+ | 2006 11 02 | 703 | (0.2+ | 2.2+) |
| 1998 01 02 | 691 | 0.3+ | 0.3− | 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 1999 03 22 | 645 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.9+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.5+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2004 04 19 | 704 | 1.0+ | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 0.9+ | 2004 04 19 | 704 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 10 17 | 704 | 1.2+ | 1.1+ | 2005 07 02 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 0.3− | 0.0 | 2005 07 02 | 691 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 10 17 | 704 | 0.6− | 0.3+ | 2005 07 02 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 10 17 | 704 | 1.0− | 0.5+ | 2005 07 07 | 691 | 0.5+ | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2001 10 18 | 644 | 0.3− | 0.7+ | 2005 07 07 | 691 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.6− | 1.1− |
| 2001 10 18 | 644 | 0.2− | 0.6+ | 2005 07 07 | 691 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 10 18 | 644 | 0.4− | 0.4+ | 2005 07 11 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.1− | 0.7+ | 2005 07 11 | 691 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.6+ | 0.6+ | 2005 07 11 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2001 10 23 | 704 | 0.1− | 0.4+ | 2005 07 30 | E12 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.5− |
| 2001 10 23 | 704 | 0.1+ | 0.1− | 2005 07 30 | E12 | 0.6+ | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.5− |
| 2001 10 23 | 704 | 0.7− | 0.2+ | 2005 07 30 | E12 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.6+ | 0.6+ | 2005 07 30 | E12 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2001 10 24 | 704 | (1.7+ | 0.8+) | 2005 08 06 | 704 | 0.9− | 0.9+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.3+ | 0.6+ | 2005 08 06 | 704 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.4− | 1.0+ |
| 2001 10 24 | 704 | 0.1+ | 0.7+ | 2005 08 06 | 704 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.1+ |
| 2001 10 24 | 691 | 0.6− | 0.0 | 2005 08 06 | 704 | 0.6+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.7− |
| 2001 10 24 | 691 | 0.6− | 0.0 | 2005 08 06 | 704 | 0.8+ | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2001 10 24 | 691 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.5− | 2006 12 01 | 691 | 0.2+ | 0.4+ |
| 2001 10 25 | 644 | 0.5+ | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.5+ |
| 2001 10 25 | 644 | 0.7+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2001 10 25 | 644 | 0.6+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.5− | | | | |
| 2001 11 20 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 695 | 0.2+ | 0.1− | | | | |

**(140730)∗ 2001 UU$_{98}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.94072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18819076 | $\omega$ | 52.09216 | | −0.38285195 | | −0.90942132 |
| $a$ | 3.0158092 | $\Omega$ | 61.16350 | | +0.77869837 | | −0.41227751 |
| $e$ | 0.0718880 | $i$ | 10.68448 | | +0.49704450 | | −0.05459048 |
| $P$ | 5.24 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.6− | 0.0 | 2001 11 17 | 704 | 0.1+ | 0.0 | 2004 05 10 | 703 | 1.2+ | 0.2− |
| 2001 10 17 | 704 | 0.3+ | 0.1+ | 2001 11 18 | 704 | (2.3− | 0.3+) | 2004 05 12 | 699 | 0.2− | 0.7+ |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2001 11 18 | 704 | (4.6− | 1.4−) | 2004 05 12 | 699 | 0.5+ | 0.8+ |
| 2001 10 17 | 704 | 0.0 | 0.4− | 2001 11 18 | 704 | (2.6− | 0.3+) | 2004 05 12 | 699 | 0.1− | 0.0 |
| 2001 10 17 | 704 | 1.0− | 1.5+ | 2001 11 18 | 704 | 0.6− | 0.1+ | 2004 05 12 | 699 | (0.2− | 1.7−) |
| 2001 10 18 | 644 | 0.5+ | 0.6+ | 2001 11 18 | 704 | (3.9− | 0.9+) | 2004 05 15 | 704 | 0.8+ | 1.3+ |
| 2001 10 18 | 644 | 0.4+ | 0.6+ | 2001 11 18 | 608 | 1.4− | 0.9− | 2004 05 15 | 704 | 1.0+ | 0.0 |
| 2001 10 18 | 644 | 0.2+ | 0.9+ | 2001 11 18 | 608 | 0.3+ | 0.4− | 2004 05 15 | 704 | 1.5+ | 1.2+ |
| 2001 10 23 | 704 | 0.6− | 0.1+ | 2001 11 18 | 608 | 0.0 | 0.7− | 2004 05 16 | 704 | 0.7+ | 0.5+ |
| 2001 10 23 | 704 | 1.2− | 1.3+ | 2001 11 20 | 704 | 0.8− | 0.4+ | 2004 05 16 | 704 | 0.9+ | 0.0 |
| 2001 10 23 | 704 | 0.8− | 0.3− | 2001 11 20 | 704 | 0.4− | 0.5+ | 2004 05 16 | 704 | 0.9+ | 0.8+ |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2001 11 20 | 704 | 0.4− | 0.5+ | 2004 05 16 | 704 | 1.1+ | 1.0+ |
| 2001 10 23 | 704 | (0.9− | 1.9−) | 2001 11 20 | 704 | 0.7− | 0.2− | 2004 05 16 | 704 | (1.3+ | 1.6+) |
| 2001 10 24 | 704 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.3− | 0.8+ | 2004 05 19 | 291 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | 1.0− | 0.1− | 2001 12 10 | 691 | 0.3+ | 0.5+ | 2004 05 19 | 291 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | 1.0− | 0.0 | 2001 12 10 | 691 | 0.1+ | 0.3+ | 2004 05 19 | 291 | 0.2− | 0.4+ |
| 2001 10 24 | 704 | 0.1− | 0.5− | 2001 12 10 | 691 | 0.2+ | 0.2+ | 2004 05 21 | 691 | 0.1+ | 0.6+ |
| 2001 10 24 | 704 | 0.3− | 0.1− | 2001 12 11 | 704 | (0.6− | 1.8+) | 2004 05 21 | 691 | 0.0 | 0.5+ |
| 2001 10 25 | 644 | 0.6+ | 0.3+ | 2001 12 11 | 704 | 0.9+ | 0.8+ | 2004 05 21 | 691 | 0.3+ | 0.4+ |
| 2001 10 25 | 644 | 0.1− | 0.8+ | 2001 12 11 | 704 | 0.9+ | 0.9+ | 2004 06 13 | 691 | 0.3+ | 0.5+ |
| 2001 10 25 | 644 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.3+ | 0.2− | 2004 06 13 | 691 | 0.3+ | 0.5+ |
| 2001 10 25 | 644 | 0.2− | 0.8+ | 2001 12 14 | 704 | 0.0 | 0.1− | 2004 06 13 | 691 | 0.0 | 0.6+ |
| 2001 10 25 | 644 | 0.5+ | 0.5+ | 2001 12 14 | 704 | 0.2− | 0.4+ | 2006 09 18 | 703 | (2.5+ | 0.1−) |
| 2001 10 25 | 644 | 0.3− | 1.0+ | 2001 12 14 | 704 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.7+ |
| 2001 11 09 | 704 | 0.2+ | 0.4− | 2001 12 17 | 704 | 0.5− | 0.6− | 2006 09 18 | 703 | 1.0− | 0.5+ |
| 2001 11 09 | 704 | 0.8+ | 0.1+ | 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.6− |
| 2001 11 09 | 704 | 0.7− | 0.1− | 2001 12 17 | 704 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.7+ | 0.5+ |
| 2001 11 10 | 704 | 0.2+ | 0.4+ | 2001 12 19 | 644 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.2− |
| 2001 11 10 | 704 | 0.2+ | 0.1+ | 2001 12 19 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 2001 11 10 | 704 | 0.2− | 0.1− | 2001 12 19 | 644 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.5+ |
| 2001 11 10 | 704 | 0.2+ | 0.1− | 2003 01 29 | 644 | 0.3+ | 0.1+ | 2006 09 29 | 699 | (1.6+ | 0.3+) |
| 2001 11 10 | 704 | 0.5+ | 0.3+ | 2003 01 29 | 644 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.8+ | 1.3+ |
| 2001 11 10 | 704 | 0.6− | 0.6+ | 2003 01 29 | 644 | 0.2+ | 0.1− | 2006 09 29 | 699 | 1.2− | 0.7+ |
| 2001 11 10 | 704 | 0.0 | 0.2+ | 2003 02 26 | 704 | 0.3+ | 0.5+ | 2006 09 29 | 699 | 1.1− | 1.2− |
| 2001 11 10 | 704 | 0.0 | 0.4+ | 2003 02 26 | 704 | 1.2+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2001 11 10 | 704 | 0.9− | 0.1− | 2003 02 26 | 704 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 2001 11 10 | 704 | 0.4− | 0.2+ | 2003 02 26 | 704 | 0.2− | 1.2+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2001 11 11 | 704 | 1.1− | 1.1+ | 2003 02 26 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2001 11 11 | 704 | 0.7− | 1.0+ | 2003 03 03 | 644 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.6+ | 0.5− |
| 2001 11 11 | 704 | 0.3− | 0.9+ | 2003 03 03 | 644 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2001 11 11 | 704 | 0.7− | 1.1+ | 2003 03 03 | 644 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.7− | 0.6− |
| 2001 11 11 | 704 | 0.3− | 1.3+ | 2003 03 08 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2001 11 12 | 704 | 0.5− | 1.1+ | 2003 03 08 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.7− | 0.5+ | 2003 03 08 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2001 11 12 | 704 | 0.3− | 1.2+ | 2004 04 30 | 691 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.3− | 1.0+ |
| 2001 11 12 | 704 | (0.4− | 1.6+) | 2004 04 30 | 691 | 0.4+ | 0.3+ | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2001 11 12 | 704 | 0.4+ | 0.9+ | 2004 04 30 | 691 | 0.2+ | 0.4+ | 2006 11 16 | 703 | 0.2+ | 0.6+ |
| 2001 11 17 | 704 | 0.9− | 0.0 | 2004 05 10 | 703 | (1.6+ | 3.0+) | 2006 11 16 | 703 | 1.1− | 1.7− |
| 2001 11 17 | 704 | 0.2− | 0.3− | 2004 05 10 | 703 | 0.1+ | 0.2+ | | | | |
| 2001 11 17 | 704 | 0.5− | 0.8+ | 2004 05 10 | 703 | 0.7− | 0.9− | | | | |

**(140731)∗ 2001 UW$_{98}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.80767 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21166340 | $\omega$ | 352.53047 | | +0.36018084 | | −0.92574772 |
| $a$ | 2.7885100 | $\Omega$ | 76.30353 | | +0.86191528 | | +0.28301090 |
| $e$ | 0.0505006 | $i$ | 6.80707 | | +0.35689188 | | +0.25079072 |
| $P$ | 4.66 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.2− | 0.1− | 2001 11 19 | 608 | 0.6− | 0.4+ | 2003 03 05 | 704 | 0.3− | 0.6+ |
| 2001 10 17 | 704 | 0.4− | 0.2− | 2001 11 20 | 704 | 0.5+ | 0.1− | 2003 03 05 | 704 | 0.4− | 0.1+ |
| 2001 10 17 | 704 | 1.2− | 0.5+ | 2001 11 20 | 704 | 0.1+ | 0.1+ | 2003 03 05 | 704 | 1.2− | 0.1+ |
| 2001 10 17 | 704 | 0.3− | 0.7− | 2001 11 20 | 704 | 0.4+ | 0.4+ | 2003 03 06 | 704 | (0.8+ | 1.7+) |
| 2001 10 17 | 704 | 0.4− | 0.3+ | 2001 11 20 | 704 | 0.8+ | 0.4+ | 2003 03 06 | 704 | 0.8+ | 0.1+ |
| 2001 10 18 | 644 | 0.5− | 0.2+ | 2001 11 20 | 704 | 0.2+ | 0.1+ | 2003 03 06 | 704 | 0.6+ | 1.1− |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2001 12 10 | 691 | 0.6+ | 0.8+ | 2003 03 06 | 704 | 1.2+ | 0.8+ |
| 2001 10 18 | 644 | 0.1− | 0.3+ | 2001 12 10 | 691 | 0.0 | 1.0+ | 2003 03 07 | 644 | 0.2+ | 0.3− |
| 2001 10 23 | 704 | 0.3+ | 0.8− | 2001 12 10 | 691 | 0.2+ | 1.2+ | 2003 03 07 | 644 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.5+ | 0.2− | 2001 12 11 | 704 | (2.3− | 1.6+) | 2003 03 07 | 644 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2001 12 11 | 704 | 0.2− | 0.5− | 2003 03 08 | 704 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.8− | 0.4+ | 2001 12 11 | 704 | 0.6− | 0.2+ | 2003 03 08 | 704 | 0.7+ | 0.8+ |
| 2001 10 24 | 704 | 0.1− | 0.6− | 2001 12 11 | 704 | 0.7− | 1.0− | 2003 03 08 | 704 | 0.9− | 0.3+ |
| 2001 10 24 | 704 | 0.4+ | 0.9− | 2001 12 14 | 704 | 0.3+ | 0.7+ | 2003 03 08 | 704 | 0.3+ | 0.8+ |
| 2001 10 24 | 704 | 0.2+ | 1.0− | 2001 12 14 | 704 | 0.0 | 0.5+ | 2004 05 16 | 704 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.1+ | 0.6− | 2001 12 14 | 704 | 0.2+ | 0.4− | 2004 05 16 | 704 | 0.0 | 0.5+ |
| 2001 10 24 | 704 | 0.3+ | 0.9− | 2001 12 14 | 704 | 0.1+ | 0.2− | 2004 05 16 | 704 | 0.4+ | 0.9+ |
| 2001 10 25 | 644 | 0.4− | 0.6+ | 2001 12 14 | 704 | 0.0 | 0.3− | 2004 05 16 | 704 | 1.0− | 1.0+ |
| 2001 10 25 | 644 | 0.3− | 0.1+ | 2001 12 17 | 704 | 0.4+ | 0.3− | 2004 05 16 | 704 | 0.4− | 0.6+ |
| 2001 10 25 | 644 | 0.2− | 0.3+ | 2001 12 17 | 704 | 0.3− | 0.3+ | 2005 07 29 | 644 | 0.0 | 0.6+ |
| 2001 11 10 | 704 | 0.3− | 0.4− | 2001 12 17 | 704 | 0.1− | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.6+ |
| 2001 11 10 | 704 | 0.4− | 0.2− | 2001 12 17 | 704 | 0.2+ | 0.0 | 2005 07 29 | 644 | 0.3+ | 0.4+ |
| 2001 11 10 | 704 | 0.3− | 0.7− | 2001 12 19 | 644 | 0.0 | 0.1− | 2005 08 31 | 644 | 0.3+ | 0.3+ |
| 2001 11 10 | 704 | 1.0− | 0.5− | 2001 12 19 | 644 | 0.0 | 0.2+ | 2005 08 31 | 644 | 0.0 | 0.3+ |
| 2001 11 10 | 704 | 0.1− | 0.4− | 2001 12 19 | 644 | 0.1− | 0.1− | 2005 08 31 | 644 | 0.2+ | 0.2+ |
| 2001 11 17 | 704 | 0.0 | 0.5+ | 2003 01 31 | 704 | 0.9− | 0.1+ | 2006 08 21 | 691 | 0.4− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.2− | 0.7+ | 2003 01 31 | 704 | 0.2− | 0.5+ | 2006 08 21 | 691 | 0.0 | 0.1− |
| 2001 11 17 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.0 | 0.1− | 2006 08 21 | 691 | 0.1− | 0.2− |
| 2001 11 19 | 699 | 0.4+ | 0.4− | 2003 02 27 | 608 | 0.7+ | 1.5+ | 2006 11 21 | 691 | 0.1+ | 0.4− |
| 2001 11 19 | 699 | 1.1− | 0.2+ | 2003 02 27 | 608 | 1.1+ | 0.8+ | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2001 11 19 | 699 | 0.1+ | 0.6+ | 2003 02 27 | 608 | 0.5+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2001 11 19 | 699 | 0.6− | 0.2+ | 2003 02 28 | 608 | 0.7+ | 0.1− | 2006 11 25 | 691 | 0.0 | 0.5− |
| 2001 11 19 | 608 | 0.6− | 0.3+ | 2003 02 28 | 608 | 0.4+ | 0.6− | 2006 11 25 | 691 | 0.0 | 0.4− |
| 2001 11 19 | 608 | 0.4− | 0.6+ | 2003 02 28 | 608 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.0 | 0.3− |

**(140732)∗ 2001 UM$_{99}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.74627 | | (2000.0) | | | |
| $n$ | 0.19986156 | $\omega$ | 178.04310 | | +0.83316981 | +0.55248848 |
| $a$ | 2.8972315 | $\Omega$ | 148.38067 | | −0.50800775 | +0.78190347 |
| $e$ | 0.0566759 | $i$ | 2.64321 | | −0.21853191 | +0.28876192 |
| $P$ | 4.93 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.1− | 0.4− | 2005 06 14 | G96 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.2+ | 0.1− | 2005 06 14 | G96 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.4+ | 0.7+ | 2005 07 04 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.7+ | 0.3+ | 2005 07 04 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.0 |
| 2001 10 18 | 644 | 0.4+ | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2+ |
| 2001 10 18 | 644 | 0.7+ | 0.5+ | 2005 07 04 | G96 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.1− | 2005 07 04 | G96 | 0.3− | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2005 07 04 | G96 | (1.6+ | 1.1+) | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2005 07 10 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.4+ | 0.5+ | 2005 07 10 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.3+ | 2005 07 10 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | 0.6+ | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.6+ |
| 2001 10 24 | 704 | 0.7+ | 0.8+ | 2005 07 15 | G96 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.0 | 0.3− | 2005 07 15 | G96 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.5+ |
| 2001 11 20 | 704 | 1.3− | 0.6− | 2005 07 15 | G96 | 0.4− | 0.1+ | 2006 11 08 | 644 | 0.5+ | 0.4− |
| 2001 11 20 | 704 | 0.8− | 0.4− | 2005 07 15 | G96 | 0.5− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 1.0− | 1.4− | 2005 07 15 | G96 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.4+ | 0.3+ |
| 2001 11 20 | 704 | 0.4− | 1.0− | 2005 07 15 | G96 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.4+ | 0.1+ |
| 2001 11 21 | 704 | 0.9+ | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.8− | 0.9+ | 2005 07 16 | E12 | 0.1+ | 0.5− | 2006 11 10 | 644 | 0.1+ | 0.4+ |
| 2001 11 21 | 704 | 0.6− | 0.4− | 2005 07 16 | E12 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 1.1− |
| 2003 01 26 | 608 | 0.3+ | 0.5− | 2005 07 16 | E12 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.8+ | 0.6− |
| 2003 01 26 | 608 | 0.4− | 0.5− | 2005 07 16 | E12 | 0.8+ | 0.0 | 2006 11 11 | 703 | (0.3− | 2.4−) |
| 2003 01 26 | 608 | 0.1− | 0.5+ | 2005 08 01 | E12 | 1.3− | 0.8− | 2006 11 11 | 703 | 1.5− | 0.1− |
| 2003 01 29 | 291 | 0.1+ | 0.4+ | 2005 08 01 | E12 | 0.5+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2003 01 29 | 291 | 0.4− | 0.3+ | 2005 08 01 | E12 | 0.3− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2003 01 29 | 291 | 0.2+ | 0.5+ | 2005 08 01 | E12 | 0.1− | 0.6+ | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2004 04 12 | 691 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.4− | 0.4− |
| 2005 05 19 | G96 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 1.1+ | 0.9+ |
| 2005 05 19 | G96 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.4− | 0.2− |
| 2005 05 19 | G96 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.8− | 0.4− |
| 2005 06 14 | G96 | 0.3+ | 0.7+ | 2006 10 11 | 691 | 0.4+ | 0.3− | | | | |

**(140733)∗ 2001 UR$_{99}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.75754 | | (2000.0) | | | |
| $n$ | 0.20038674 | $\omega$ | 290.51428 | | +0.11375129 | −0.99323934 |
| $a$ | 2.8921672 | $\Omega$ | 152.92227 | | +0.92943097 | +0.09815037 |
| $e$ | 0.0811051 | $i$ | 2.91608 | | +0.35102524 | +0.06198488 |
| $P$ | 4.92 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.9− | 0.2− | 2002 12 07 | 645 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 10 17 | 704 | 1.4− | 0.1+ | 2003 03 08 | 291 | 0.0 | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2003 03 08 | 291 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 1.2+ | 0.1− |
| 2001 10 18 | 644 | 0.3− | 0.3+ | 2003 03 08 | 291 | 0.4+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2001 10 18 | 644 | 0.1− | 0.3+ | 2005 06 30 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2001 10 18 | 644 | 0.5− | 0.2+ | 2005 06 30 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 0.6+ | 0.8− | 2005 06 30 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 10 23 | 704 | 0.3− | 1.2− | 2005 08 31 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 10 23 | 704 | 0.9+ | 1.2− | 2005 08 31 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2001 10 23 | 704 | 0.1+ | 1.2− | 2005 08 31 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.0 |
| 2001 10 23 | 704 | 0.2+ | 0.2+ | 2006 10 15 | D35 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2001 10 24 | 704 | 0.4+ | 0.0 | 2006 10 15 | D35 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.1− | 1.0− |
| 2001 10 24 | 704 | 0.0 | 0.2+ | 2006 10 15 | D35 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.6+ | 1.5+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 1.2− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.9− | 1.1− | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | (1.0+ | 3.9−) | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.7+ | 2006 10 18 | 691 | 0.5+ | 0.0 | 2006 11 17 | 703 | (2.3− | 1.6+) |
| 2001 11 20 | 704 | 0.5+ | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 1.0+ |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.6+ | 0.1− |

**(140734)∗ 2001 UF$_{100}$ = 1996 VJ$_{19}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20611)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.12703 | | (2000.0) | | | |
| $n$ | 0.19302027 | $\omega$ | 298.36222 | | +0.99650171 | −0.06635240 |
| $a$ | 2.9652918 | $\Omega$ | 65.48102 | | +0.08156675 | +0.90458368 |
| $e$ | 0.0639561 | $i$ | 3.20143 | | −0.01819914 | +0.42110061 |
| $P$ | 5.11 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.2− | 0.1+ | 2006 10 15 | 703 | (1.9− | 0.7−) |
| 1996 11 07 | 691 | 0.3+ | 0.2+ | 2001 11 20 | 704 | 0.5− | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.0 |
| 1996 11 07 | 691 | 0.2+ | 0.2+ | 2001 11 20 | 704 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.6− |
| 1996 11 13 | 691 | 0.5− | 0.3− | 2001 11 20 | 704 | 0.6− | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 1996 11 13 | 691 | 0.6− | 0.1− | 2001 11 21 | 704 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 1996 11 13 | 691 | 0.3− | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2000 07 29 | 807 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2000 07 29 | 807 | 0.1− | 0.2− | 2001 11 21 | 704 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.2− | 0.6+ |
| 2001 10 17 | 704 | 0.5− | 0.7+ | 2001 11 21 | 704 | 1.0− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 10 17 | 704 | (0.2− | 1.7+) | 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.8− | 1.4+ | 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 10 18 | 644 | 0.2− | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 18 | 644 | 0.1− | 0.6+ | 2004 05 24 | 691 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2001 10 18 | 644 | 0.1− | 0.7+ | 2004 05 24 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 10 23 | 704 | 1.2+ | 0.1− | 2004 05 24 | 691 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 1.1+ | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.0 | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.1+ |
| 2001 10 23 | 704 | 0.8+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2001 10 23 | 704 | 0.7+ | 1.0− | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.6− | 0.9− |
| 2001 10 24 | 704 | 0.8+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.6− |
| 2001 10 24 | 704 | 0.6+ | 0.8+ | 2006 09 23 | 691 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | 1.0+ | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 10 24 | 704 | 0.4+ | 1.1+ | 2006 09 27 | 691 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 11 09 | 704 | 0.3− | 0.9+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.0 | 0.6− | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.8+ |
| 2001 11 09 | 704 | 0.9+ | 0.3− | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.5+ | 1.7− |
| 2001 11 09 | 704 | 0.7+ | 0.2− | 2006 10 15 | 703 | 0.8− | 0.2+ | 2006 11 17 | 703 | 1.1− | 1.6− |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 10 15 | 703 | 1.4− | 0.9+ | | | | |

**(140735)∗ 2001 UH$_{101}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.94693 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18518264 | $\omega$ | 319.46311 | | −0.87932678 | −0.47428310 | |
| $a$ | 3.0483807 | $\Omega$ | 192.43741 | | +0.47196175 | −0.85590676 | |
| $e$ | 0.1265578 | $i$ | 11.48812 | | +0.06353362 | −0.20610474 | |
| $P$ | 5.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.2− | 2004 03 14 | 644 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.6− |
| 2000 09 03 | 645 | 0.0 | 0.2− | 2004 03 14 | 644 | 0.4+ | 0.2+ | 2004 04 22 | 704 | (0.9− | 1.9−) |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2004 03 15 | 703 | 0.4− | 0.1+ | 2004 04 22 | 704 | 1.0+ | 1.0− |
| 2001 09 16 | 704 | 0.4− | 1.1+ | 2004 03 15 | 703 | 0.9+ | 0.7− | 2004 04 23 | 691 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2004 03 15 | 703 | 0.8+ | 0.6− | 2004 04 23 | 691 | 0.2+ | 0.5+ |
| 2001 09 16 | 704 | 0.5− | 0.1+ | 2004 03 15 | 703 | 0.1+ | 0.9+ | 2004 04 23 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 1.0+ | 0.1+ | 2004 04 28 | 608 | 0.4− | 0.6+ |
| 2001 09 19 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 1.0+ | 0.6+ | 2004 04 28 | 608 | 0.1− | 0.4+ |
| 2001 09 19 | 704 | (1.1+ | 1.5+) | 2004 03 22 | 704 | 0.2− | 0.3+ | 2004 04 28 | 608 | 0.5+ | 0.4− |
| 2001 09 20 | 691 | 0.4+ | 0.6+ | 2004 03 22 | 704 | 0.6+ | 0.4+ | 2004 05 18 | 704 | 0.5− | 0.0 |
| 2001 09 20 | 691 | 0.4+ | 0.7+ | 2004 03 28 | 704 | 0.4− | 0.7+ | 2004 05 18 | 704 | 0.2− | 1.2+ |
| 2001 09 20 | 691 | 0.4+ | 0.5+ | 2004 03 28 | 704 | 0.9− | 0.9− | 2004 05 18 | 704 | 0.3+ | 1.2+ |
| 2001 10 16 | 691 | 0.4− | 0.1+ | 2004 03 28 | 704 | 0.7+ | 0.0 | 2004 05 18 | 704 | 0.1+ | 1.0+ |
| 2001 10 16 | 691 | 0.5− | 0.2− | 2004 03 28 | 704 | 0.3− | 0.0 | 2004 05 18 | 704 | 1.3− | 1.3+ |
| 2001 10 16 | 691 | 0.9− | 0.7+ | 2004 03 28 | 704 | 0.8+ | 0.1− | 2006 08 29 | 703 | 0.4− | 0.7− |
| 2001 10 17 | 644 | 0.5+ | 1.2+ | 2004 03 31 | 704 | 0.2− | 1.4+ | 2006 08 29 | 703 | 0.7+ | 0.1+ |
| 2001 10 17 | 644 | 0.3+ | 0.8+ | 2004 03 31 | 704 | 0.5− | 0.8+ | 2006 08 29 | 703 | 0.2+ | 0.8+ |
| 2001 10 17 | 644 | 0.1+ | 0.5+ | 2004 03 31 | 704 | 0.2− | 0.7+ | 2006 08 29 | 703 | 1.4− | 0.2+ |
| 2001 10 20 | 704 | 0.2+ | 0.1+ | 2004 03 31 | 704 | 0.9− | 0.8+ | 2006 09 12 | 703 | 0.5+ | 0.8− |
| 2001 10 20 | 704 | 0.2− | 0.5+ | 2004 03 31 | 704 | 1.0+ | 0.0 | 2006 09 12 | 703 | 0.3− | 0.9+ |
| 2001 10 20 | 704 | 0.1− | 0.6+ | 2004 03 31 | 691 | 0.3− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.1+ |
| 2001 10 20 | 704 | 0.3+ | 0.4+ | 2004 03 31 | 691 | 0.4− | 0.4+ | 2006 09 12 | 703 | 0.8+ | 0.6+ |
| 2001 10 23 | 704 | 0.4− | 0.2+ | 2004 03 31 | 691 | 0.4− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 1.2− | 0.3− | 2004 04 11 | 703 | 0.1− | 0.9+ | 2006 09 14 | 644 | 0.3− | 0.1+ |
| 2001 10 23 | 704 | 0.7− | 0.3− | 2004 04 11 | 703 | 1.0+ | 0.2− | 2006 09 14 | 644 | 0.4− | 0.1− |
| 2001 10 23 | 704 | (1.0− | 1.9−) | 2004 04 11 | 703 | 0.3+ | 0.2− | 2006 09 19 | 703 | (2.1− | 1.3+) |
| 2001 10 24 | 704 | 0.0 | 0.1− | 2004 04 11 | 703 | (1.0− | 1.7−) | 2006 09 19 | 703 | (0.9+ | 1.5+) |
| 2001 10 24 | 704 | 0.4+ | 0.6− | 2004 04 16 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 703 | (1.7− | 0.6+) |
| 2001 10 24 | 704 | 0.1− | 0.1+ | 2004 04 16 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.5− | 0.2+ |
| 2001 10 24 | 704 | 0.5+ | 0.6− | 2004 04 16 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 1.4− | 0.7+ |
| 2001 10 25 | 691 | 0.5+ | 0.5− | 2004 04 16 | 704 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.6+ |
| 2001 10 25 | 691 | 0.1+ | 0.1+ | 2004 04 17 | 699 | (1.8− | 0.2+) | 2006 09 25 | 699 | 0.7− | 0.5+ |
| 2001 10 25 | 691 | 0.2+ | 0.3− | 2004 04 17 | 699 | 0.8− | 0.8− | 2006 09 25 | 699 | 0.2+ | 1.1+ |
| 2001 11 20 | 704 | 0.9+ | 0.9+ | 2004 04 17 | 699 | 0.1− | 0.4− | 2006 10 03 | G96 | 0.4+ | 0.4+ |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2004 04 17 | 699 | 0.4− | 0.5+ | 2006 10 03 | G96 | 0.5+ | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.7− | 2004 04 19 | 704 | 0.5+ | 0.7+ | 2006 10 03 | G96 | 0.5+ | 0.3+ |
| 2001 11 20 | 704 | 0.3+ | 1.1+ | 2004 04 19 | 704 | 1.3+ | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.3+ |
| 2002 12 14 | 704 | 0.1− | 0.4− | 2004 04 19 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2002 12 14 | 704 | 0.3− | 0.1+ | 2004 04 19 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2002 12 14 | 704 | 0.3− | 0.7+ | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | 0.0 | 1.2+ | 2004 04 22 | 704 | 1.0− | 0.8− | | | | |
| 2004 03 14 | 644 | 0.1+ | 0.2+ | 2004 04 22 | 704 | 0.4− | 0.4− | | | | |

**(140736)∗ 2001 UJ$_{102}$ = 1995 QQ$_{11}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22964)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.53555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17076917 | $\omega$ | 311.65593 | | −0.81007201 | −0.58354657 | |
| $a$ | 3.2175829 | $\Omega$ | 192.98836 | | +0.58447352 | −0.79593263 | |
| $e$ | 0.0770187 | $i$ | 14.70919 | | +0.04662662 | −0.16113551 | |
| $P$ | 5.77 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 24 | 691 | 0.2+ | 0.6− | 2001 10 24 | 704 | 0.9+ | 0.0 | 2004 03 29 | 704 | 1.6− | 0.7+ |
| 1993 05 24 | 691 | 0.1− | 0.4− | 2001 10 24 | 704 | 0.6+ | 1.9− | 2004 03 29 | 691 | 0.1+ | 0.4+ |
| 1993 05 24 | 691 | 0.2+ | 0.6− | 2001 10 25 | 691 | 0.3+ | 0.3+ | 2004 03 29 | 691 | 0.1+ | 0.6+ |
| 1995 08 20 | 691 | 0.3− | 0.3− | 2001 10 25 | 691 | 0.0 | 0.1+ | 2004 03 31 | 704 | 0.7− | 0.9+ |
| 1995 08 20 | 691 | 0.3− | 0.4− | 2001 10 25 | 691 | 0.3+ | 0.3+ | 2004 03 31 | 704 | 0.2− | 1.0+ |
| 1995 08 20 | 691 | 0.0 | 0.4− | 2004 03 18 | 704 | 1.1+ | 0.4+ | 2004 03 31 | 704 | 0.0 | 0.3+ |
| 1995 08 27 | 691 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2004 03 31 | 704 | 0.7− | 0.9+ |
| 1995 08 27 | 691 | 0.1+ | 0.0 | 2004 03 18 | 704 | 1.1+ | 0.6+ | 2004 03 31 | 704 | 0.1− | 1.0+ |
| 1995 08 27 | 691 | 0.3− | 0.0 | 2004 03 18 | 704 | 1.1+ | 0.1+ | 2004 04 11 | 703 | 0.6− | 0.9+ |
| 2001 09 19 | 704 | 0.4+ | 0.1− | 2004 03 18 | 704 | 0.5+ | 1.0+ | 2004 04 11 | 703 | 0.5− | 0.4+ |
| 2001 09 19 | 704 | 0.7+ | 0.0 | 2004 03 24 | 699 | 0.1− | 0.1+ | 2004 04 11 | 703 | 0.4+ | 0.4+ |
| 2001 09 19 | 704 | 0.5− | 0.5− | 2004 03 24 | 699 | 0.4− | 0.2+ | 2004 04 11 | 703 | 0.1− | 0.8− |
| 2001 10 18 | 644 | 0.1+ | 0.5+ | 2004 03 24 | 699 | 0.5+ | 0.2− | 2004 04 15 | 699 | 0.6− | 0.2− |
| 2001 10 18 | 644 | 0.3− | 0.5+ | 2004 03 24 | 699 | 1.2− | 0.1− | 2004 04 15 | 699 | 0.2+ | 0.7+ |
| 2001 10 18 | 644 | 0.1− | 0.4+ | 2004 03 27 | 704 | 1.0+ | 0.4+ | 2004 04 15 | 699 | 0.0 | 0.9+ |
| 2001 10 20 | 704 | 0.6+ | 0.8+ | 2004 03 27 | 704 | 0.5+ | 0.4− | 2004 04 15 | 699 | 0.6+ | 0.4− |
| 2001 10 20 | 704 | 0.2+ | 0.3− | 2004 03 27 | 704 | 0.4+ | 0.0 | 2006 08 26 | J87 | 0.8+ | 0.4+ |
| 2001 10 20 | 704 | 0.2− | 0.9+ | 2004 03 27 | 704 | 0.7+ | 1.1− | 2006 08 26 | J87 | 0.4− | 0.1− |
| 2001 10 20 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 08 26 | J87 | 0.4− | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 1.0+ | 2004 03 28 | 704 | 0.2− | 0.3+ | 2006 08 27 | J87 | 0.2+ | 0.8+ |
| 2001 10 23 | 704 | 0.6− | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.5+ | 2006 08 27 | J87 | 1.2− | 1.2+ |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2004 03 28 | 704 | 0.1− | 0.7+ | 2006 08 27 | J87 | 0.3− | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2004 03 28 | 704 | 0.0 | 0.6+ | 2006 08 30 | 699 | 1.7+ | 0.9− |
| 2001 10 23 | 704 | 0.5+ | 0.1+ | 2004 03 28 | 704 | 0.5+ | 0.6+ | 2006 08 30 | 699 | 0.4+ | 0.3+ |
| 2001 10 24 | 691 | 0.3− | 0.0 | 2004 03 29 | 704 | 1.0− | 0.1− | 2006 08 30 | 699 | 0.9− | 0.8+ |
| 2001 10 24 | 691 | 0.2− | 0.1+ | 2004 03 29 | 704 | 0.3− | 0.3+ | 2006 08 30 | 699 | 0.7+ | 0.7+ |
| 2001 10 24 | 704 | 1.7+ | 0.1− | 2004 03 29 | 704 | 0.6− | 0.4+ | 2006 09 15 | 691 | 0.3− | 0.8+ |
| 2001 10 24 | 691 | 0.3− | 0.3+ | 2004 03 29 | 704 | 1.0− | 0.3− | 2006 09 15 | 691 | 0.2− | 0.6+ |
| 2001 10 24 | 704 | 0.6− | 0.2− | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.7+ |

**(140737)∗ 2001 UY$_{103}$ = 1996 XC$_{16}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 22965)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.97979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18640461 | $\omega$ | 284.43685 | | +0.91123438 | +0.40897384 | |
| $a$ | 3.0350438 | $\Omega$ | 51.44672 | | −0.34969892 | +0.83091992 | |
| $e$ | 0.1658225 | $i$ | 3.58584 | | −0.21762942 | +0.37724327 | |
| $P$ | 5.29 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.8− | 0.2− | 2001 10 23 | 704 | 0.1− | 0.8+ | 2005 06 14 | G96 | 0.6− | 0.2+ |
| 1996 12 04 | 691 | 0.7− | 0.7− | 2001 10 23 | 704 | 0.4− | 1.1+ | 2006 08 27 | 699 | 0.3− | 1.2+ |
| 1996 12 04 | 691 | 0.4− | 0.7− | 2001 10 23 | 704 | (0.1− | 1.6+) | 2006 08 27 | 699 | 0.4− | 0.4− |
| 1996 12 12 | 691 | 0.2+ | 0.5− | 2001 10 23 | 704 | 0.4− | 1.0+ | 2006 08 27 | 699 | (1.3− | 1.9+) |
| 1996 12 12 | 691 | 0.1− | 0.2− | 2001 10 24 | 704 | 0.3+ | 1.2+ | 2006 08 27 | 699 | 0.2+ | 0.7+ |
| 1996 12 12 | 691 | 0.0 | 0.3− | 2001 10 24 | 704 | (0.2+ | 1.7+) | 2006 09 14 | 703 | 1.4− | 0.7− |
| 1996 12 15 | 691 | 0.3+ | 0.1+ | 2001 10 24 | 704 | (0.5+ | 1.8+) | 2006 09 14 | 703 | 0.1+ | 0.1+ |
| 1996 12 15 | 691 | 1.5+ | 0.1− | 2001 10 24 | 704 | (0.1− | 1.6+) | 2006 09 14 | 703 | 0.1− | 0.6+ |
| 1996 12 15 | 691 | 0.2+ | 0.6− | 2001 10 26 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.9+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 10 26 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 941 | 0.0 | 0.3− |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 10 26 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 941 | 0.2+ | 0.3− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 11 20 | 691 | 0.1− | 0.2+ | 2006 09 25 | 941 | 0.1− | 0.7− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.0 | 0.4+ | 2006 09 25 | 941 | 0.1+ | 0.7− |
| 2001 09 26 | 704 | 0.1+ | 0.8− | 2001 11 20 | 691 | 0.2− | 0.5+ | 2006 09 30 | 703 | (0.1+ | 1.5−) |
| 2001 09 26 | 704 | 0.6+ | 0.0 | 2001 11 20 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.3− | 0.1+ | 2001 11 20 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.4− |
| 2001 09 27 | 644 | 0.4− | 0.5+ | 2001 11 20 | 704 | 0.7+ | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.1+ |
| 2001 09 27 | 644 | 0.2− | 0.5+ | 2001 11 20 | 704 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.6− |
| 2001 09 27 | 644 | 0.8− | 0.2+ | 2002 12 13 | 645 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 10 18 | 644 | 0.5− | 0.9+ | 2002 12 13 | 645 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2001 10 18 | 644 | 0.5− | 1.3+ | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.5− | 0.4− |
| 2001 10 18 | 644 | 0.5− | 0.9+ | 2004 03 17 | 691 | 0.6+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.4− | 0.4+ | 2004 03 17 | 691 | 0.1− | 0.7+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2001 10 20 | 704 | 0.1+ | 0.1− | 2005 06 14 | G96 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2001 10 20 | 704 | 0.1+ | 0.5+ | 2005 06 14 | G96 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.9+ | 1.0+ | 2005 06 14 | G96 | 0.1+ | 0.2− | | | | |

**(140738)∗ 2001 UH$_{104}$ = 1996 RP$_6$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.45302 | | (2000.0) | | | |
| $n$ | 0.21478962 | $\omega$ | 345.25673 | | −0.98381631 | −0.17917274 |
| $a$ | 2.7613864 | $\Omega$ | 184.42264 | | +0.16643544 | −0.91047570 |
| $e$ | 0.0478098 | $i$ | 1.19622 | | +0.06636796 | −0.37273465 |
| $P$ | 4.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 05 | 691 | 0.0 | 0.1− | 2003 01 27 | 704 | 0.8+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.7− |
| 1996 09 05 | 691 | 0.4− | 0.0 | 2003 01 27 | 704 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.4− | 0.5− |
| 1996 09 05 | 691 | 0.3− | 0.2+ | 2003 01 27 | 699 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.4− | 0.4− |
| 1996 09 08 | 691 | 0.2+ | 0.2− | 2003 01 27 | 704 | 0.4+ | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.6− |
| 1996 09 08 | 691 | 0.3+ | 0.2− | 2003 01 27 | 699 | (1.8+ | 0.3+) | 2006 10 31 | G96 | 0.1− | 0.3− |
| 1996 09 08 | 691 | 0.4+ | 0.3− | 2003 01 27 | 704 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 1996 09 19 | 691 | 0.1+ | 0.5− | 2003 01 27 | 699 | 0.9+ | 0.6− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 1996 09 19 | 691 | 0.0 | 0.4− | 2003 01 27 | 699 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 1996 09 19 | 691 | 0.0 | 0.5− | 2003 01 31 | 704 | (1.6+ | 0.3+) | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 1999 03 13 | 691 | 1.3− | 1.6+ | 2003 01 31 | 704 | 1.1+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 1999 03 13 | 691 | 0.2+ | 0.0 | 2003 01 31 | 704 | (2.4+ | 0.9+) | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 1999 03 13 | 691 | 0.1+ | 0.1+ | 2003 02 02 | 608 | 0.6+ | 0.9− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.0 | 0.7+ | 2003 02 02 | 608 | 0.8+ | 1.2− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 10 18 | 644 | 0.1− | 0.8+ | 2003 02 02 | 608 | 1.0+ | 0.9− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 10 18 | 644 | 0.1+ | 0.9+ | 2003 02 08 | 608 | 1.5+ | 0.5− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.7+ | 0.2+ | 2003 02 08 | 608 | 1.3+ | 0.8− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2003 02 08 | 608 | 1.1+ | 1.0− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 0.1+ | 0.7+ | 2005 08 28 | 691 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2001 10 23 | 704 | 0.9+ | 0.7− | 2005 08 28 | 691 | 0.1+ | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.8+ | 0.0 | 2005 08 28 | 691 | 0.3+ | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2001 10 23 | 704 | 0.8+ | 0.0 | 2005 09 11 | 691 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.4− | 1.0+ |
| 2001 10 23 | 704 | 0.7+ | 0.8− | 2005 09 11 | 691 | 0.1+ | 0.0 | 2006 12 01 | 704 | 1.1− | 0.6+ |
| 2001 10 24 | 704 | 1.3− | 0.5+ | 2005 09 11 | 691 | 0.1− | 0.1+ | 2006 12 01 | 691 | 0.4− | 0.3− |
| 2001 10 24 | 704 | 0.1− | 0.3+ | 2005 09 29 | G96 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 0.6+ | 0.4+ | 2005 09 29 | G96 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.4− | 0.1− |
| 2001 11 21 | 704 | 1.4+ | 1.0+ | 2005 09 29 | G96 | 0.0 | 0.1+ | 2006 12 01 | 704 | 1.2− | 0.6+ |
| 2001 11 21 | 704 | 0.3− | 0.2+ | 2005 09 29 | G96 | 0.1− | 0.7+ | 2006 12 01 | 691 | 0.4− | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.6− | 2006 09 27 | G96 | 0.4+ | 0.3− | | | | |

**(140739)∗ 2001 UZ$_{104}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.48432 | | (2000.0) | | | |
| $n$ | 0.19405584 | $\omega$ | 251.80939 | | +0.84771348 | +0.52770635 |
| $a$ | 2.9547329 | $\Omega$ | 76.30845 | | −0.46329806 | +0.78606385 |
| $e$ | 0.0332543 | $i$ | 3.18165 | | −0.25833461 | +0.32191555 |
| $P$ | 5.08 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.0 | 0.1− | 2001 11 20 | 704 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.2+ |
| 1993 01 22 | 691 | 0.6− | 0.1+ | 2001 11 20 | 704 | 0.5− | 0.8− | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 1993 01 22 | 691 | 0.0 | 0.1− | 2001 11 20 | 704 | 1.2+ | 0.1− | 2006 09 19 | 691 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2001 11 21 | 704 | (2.0− | 0.5+) | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 1.0+ | 0.5+ | 2001 11 21 | 704 | 0.9− | 0.5− | 2006 09 23 | 691 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2001 11 21 | 704 | 0.2− | 1.0− | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 10 18 | 644 | 0.6− | 0.8+ | 2003 01 05 | 704 | 0.1+ | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2001 10 18 | 644 | 0.4− | 1.0+ | 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 10 18 | 644 | 0.4− | 1.1+ | 2003 01 05 | 704 | 1.3+ | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.8− |
| 2001 10 20 | 704 | 0.6− | 0.9+ | 2003 01 25 | 645 | 0.1− | 0.1− | 2006 09 30 | 703 | (1.6− | 1.1+) |
| 2001 10 20 | 704 | 0.1− | 0.5+ | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.3− | 0.7− |
| 2001 10 20 | 704 | 0.3+ | 0.4+ | 2003 01 26 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 1.0− | 0.4+ |
| 2001 10 23 | 704 | 0.2− | 0.3− | 2003 01 26 | 644 | 0.4+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.1+ | 0.2+ | 2003 01 26 | 644 | 0.0 | 0.7+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2003 01 29 | 644 | 0.6+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.1− | 2003 01 29 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2001 10 24 | 704 | 0.0 | 1.2+ | 2003 01 29 | 644 | 0.8+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.4− | 1.0+ | 2003 02 04 | 644 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 10 24 | 704 | 0.7− | 1.2+ | 2003 02 04 | 644 | 0.6+ | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.6+ | 0.6+ | 2003 02 04 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | (0.1− | 1.7+) | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2001 10 25 | 704 | 0.4+ | 0.6+ | 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2001 10 25 | 704 | 0.6+ | 0.1− | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2001 10 25 | 704 | 0.5− | 0.5− | 2004 04 11 | 644 | 0.4+ | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 10 25 | 644 | 0.3− | 0.4+ | 2004 04 11 | 644 | 0.5+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 10 25 | 704 | 0.5− | 0.6− | 2004 04 11 | 644 | 0.1− | 1.0+ | 2006 11 09 | 644 | 0.6− | 0.6+ |
| 2001 10 25 | 644 | 0.5− | 0.5+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2001 10 25 | 644 | 0.4− | 0.9+ | 2004 04 13 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.8− |
| 2001 10 25 | 691 | 0.2+ | 0.1+ | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2001 10 25 | 691 | 0.3+ | 0.1+ | 2004 05 24 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2001 10 25 | 691 | 0.4+ | 0.0 | 2004 05 24 | 691 | 0.3+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.6− |
| 2001 11 20 | 704 | 0.2− | 0.2− | 2004 05 24 | 691 | 0.2+ | 0.4+ | | | | |

**(140740)∗ 2001 UY$_{105}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.34962 | | (2000.0) | | | |
| $n$ | 0.18463818 | $\omega$ | 193.09010 | | +0.89175197 | +0.45229098 |
| $a$ | 3.0543705 | $\Omega$ | 140.00885 | | −0.41311881 | +0.82678882 |
| $e$ | 0.1900215 | $i$ | 1.29606 | | −0.18469240 | +0.33444448 |
| $P$ | 5.34 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 04 | 327 | 1.0+ | 0.7+ | 2004 03 14 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.9− | 0.0 |
| 1995 08 04 | 327 | 0.1− | 0.1+ | 2004 03 14 | 691 | 0.1+ | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.2+ |
| 1995 08 04 | 327 | 0.3− | 0.2+ | 2005 05 08 | G96 | 0.5− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.5+ |
| 2001 09 30 | 049 | 0.7− | 0.4− | 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.8+ |
| 2001 09 30 | 049 | 0.2− | 0.5+ | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.7+ |
| 2001 09 30 | 049 | 0.7− | 0.0 | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.3+ |
| 2001 10 16 | 291 | 0.1− | 0.6+ | 2005 06 10 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.5+ |
| 2001 10 16 | 291 | 0.0 | 0.7+ | 2005 06 10 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.8− |
| 2001 10 16 | 291 | 0.4− | 0.6+ | 2005 06 10 | 691 | 0.5+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.2− |
| 2001 10 18 | 644 | 0.3+ | 0.8− | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2001 10 18 | 644 | 0.3+ | 0.7− | 2005 06 14 | 691 | 0.8− | 0.2− | 2006 09 20 | 704 | 0.5+ | 0.2− |
| 2001 10 18 | 644 | 0.3+ | 0.6− | 2005 06 14 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.7+ | 1.1+ | 2005 06 16 | G96 | 0.7− | 0.8+ | 2006 09 25 | 699 | 0.4− | 1.0− |
| 2001 10 20 | 704 | 0.6+ | 1.0+ | 2005 06 16 | G96 | 0.4− | 0.6+ | 2006 09 25 | 699 | 0.4− | 0.2− |
| 2001 10 20 | 704 | (0.6+ | 1.6+) | 2005 06 16 | G96 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.8− | 0.4+ |
| 2001 10 23 | 704 | 0.2+ | 0.6+ | 2005 06 16 | G96 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 1.2− | 0.5+ |
| 2001 10 23 | 704 | 1.2+ | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2001 10 23 | 704 | 1.2− | 0.8+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.7+ | 0.1− | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.8− | 0.3− | 2006 08 22 | 644 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.6+ | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.5− | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.4+ |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.5+ |
| 2001 10 24 | 704 | 0.6− | 0.5+ | 2006 08 24 | 644 | 0.3+ | 0.2− | 2006 09 28 | 704 | (0.3+ | 3.2−) |
| 2001 10 24 | 704 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.4− | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 2001 11 09 | 704 | 1.5+ | 1.4+ | 2006 08 27 | 699 | 1.1+ | 1.3+ | 2006 09 28 | 704 | 1.0+ | 0.0 |
| 2001 11 09 | 704 | 0.6+ | 0.9+ | 2006 08 27 | 699 | (1.6+ | 1.9+) | 2006 09 28 | 704 | 0.3+ | 0.2+ |
| 2001 11 09 | 704 | (2.9+ | 0.3−) | 2006 08 27 | 699 | (0.3+ | 2.0+) | 2006 09 30 | 704 | 1.0+ | 0.4− |
| 2001 11 09 | 704 | 0.5+ | 0.5− | 2006 08 27 | 699 | (1.5+ | 2.2+) | 2006 09 30 | 704 | 0.0 | 0.9+ |
| 2001 11 17 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.4+ | 0.6+ |
| 2001 11 17 | 704 | 0.7− | 0.3+ | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 09 30 | 704 | 1.0− | 0.2+ |
| 2001 11 17 | 704 | 0.6− | 0.5+ | 2006 09 12 | 703 | 0.6+ | 0.8− | 2006 09 30 | 704 | 0.1− | 1.2+ |
| 2001 11 17 | 691 | 0.2− | 0.7− | 2006 09 12 | 703 | 0.2+ | 0.9− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2001 11 17 | 704 | 1.4− | 1.0− | 2006 09 16 | 699 | 0.7− | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2001 11 17 | 691 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 699 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 0.6− | 0.3− | 2006 09 16 | 699 | (1.6− | 0.5+) | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.6− | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.7− | 0.1− | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.4− | 2006 09 17 | 704 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.3− | 0.3− |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.0 | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 1.2− | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.9+ | 0.2+ |
| 2003 01 25 | 645 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.6+ | 2006 11 15 | G96 | 0.6+ | 0.0 |
| 2003 01 25 | 645 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.4− | 0.5− | 2006 11 15 | G96 | 0.4− | 0.6+ |
| 2004 03 14 | 691 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.5+ |

**(140741)∗ 2001 UC$_{107}$ = 1995 OZ$_4$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.96902 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19154821 | $\omega$ | 299.67639 | | −0.16593240 | −0.98607374 | |
| $a$ | 2.9804647 | $\Omega$ | 159.86584 | | +0.91561838 | −0.15826713 | |
| $e$ | 0.0495579 | $i$ | 1.86140 | | +0.36620953 | −0.05108902 | |
| $P$ | 5.15 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.1− | 0.9− | 2001 11 21 | 704 | 1.2+ | 0.8− | 2006 09 26 | G96 | 0.3− | 0.6− |
| 1995 07 22 | 691 | 0.3− | 0.3− | 2001 12 10 | 691 | 0.2− | 0.6− | 2006 09 26 | G96 | 1.0− | 0.3− |
| 1995 07 22 | 691 | 0.5− | 0.1+ | 2001 12 10 | 691 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 1995 07 27 | 691 | 0.2+ | 0.0 | 2001 12 10 | 691 | 0.2− | 0.7− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 1995 07 27 | 691 | 0.2− | 0.3− | 2003 02 08 | 704 | 0.1− | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 1995 07 27 | 691 | 0.5+ | 0.1+ | 2003 02 08 | 704 | 0.2− | 1.0+ | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2001 10 18 | 644 | 0.3+ | 0.6+ | 2003 02 08 | 704 | 0.8+ | 1.2+ | 2006 10 02 | 691 | 0.0 | 0.5+ |
| 2001 10 18 | 644 | 0.4+ | 0.3+ | 2003 02 22 | 699 | 0.9− | 0.8+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2001 10 18 | 644 | 0.3− | 0.5+ | 2003 02 22 | 699 | 0.1− | 0.6+ | 2006 10 02 | 691 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 0.5− | 0.3+ | 2003 02 22 | 699 | 0.9+ | 1.3+ | 2006 10 15 | 691 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.3− | 0.6+ | 2003 02 22 | 699 | 0.1− | 0.5+ | 2006 10 15 | 691 | 0.2− | 0.2+ |
| 2001 10 20 | 704 | 0.9− | 0.5+ | 2004 04 28 | 691 | 0.1+ | 0.6+ | 2006 10 15 | 691 | 0.4− | 0.0 |
| 2001 10 23 | 704 | (1.3− | 1.8+) | 2004 04 28 | 691 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | (1.0− | 1.7+) | 2004 04 28 | 691 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | (1.0− | 2.0+) | 2005 07 04 | G96 | 0.0 | 0.6+ | 2006 10 19 | 691 | 0.1− | 1.1+ |
| 2001 10 24 | 704 | (1.1− | 1.8+) | 2005 07 04 | G96 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.5− | 1.3+ | 2005 07 04 | G96 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.4− | 1.2+ | 2005 07 04 | G96 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | (0.3+ | 1.7+) | 2005 07 07 | 691 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.9+ | 0.3+ |
| 2001 10 24 | 704 | (0.2− | 2.0+) | 2005 07 07 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2001 10 25 | 644 | 0.3+ | 0.5+ | 2005 07 07 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.4+ |
| 2001 10 25 | 644 | 0.3+ | 0.9+ | 2005 07 15 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.8+ |
| 2001 10 25 | 644 | 0.3+ | 0.6+ | 2005 07 15 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.8− | 0.8− | 2005 07 15 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2001 11 17 | 704 | 1.0+ | 0.0 | 2005 07 15 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 11 17 | 704 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.1− | 0.5− |
| 2001 11 20 | 704 | 1.0+ | 0.5+ | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2001 11 20 | 704 | 0.6− | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.6− | 0.1− |
| 2001 11 20 | 704 | (1.5+ | 0.4+) | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.9+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.8+ |
| 2001 11 20 | 691 | 0.5+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 691 | 0.5+ | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 11 20 | 691 | 0.7+ | 0.0 | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | (1.7+ | 0.8−) | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2001 11 21 | 704 | 0.6+ | 0.1+ | 2006 09 24 | 691 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.3− |

**(140742)∗ 2001 UL$_{107}$ = 2005 LG$_2$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75191)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.90641 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17818775 | $\omega$ | 60.20736 | | +0.02401455 | +0.98869291 | |
| $a$ | 3.1276453 | $\Omega$ | 212.21166 | | −0.98602804 | −0.00098865 | |
| $e$ | 0.1858973 | $i$ | 16.12203 | | −0.16483936 | +0.14995116 | |
| $P$ | 5.53 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.1+ | 0.7+ | 2005 05 16 | 704 | 0.6+ | 0.9+ | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2000 09 01 | 704 | 0.2+ | 0.5− | 2005 05 16 | 704 | 0.6+ | 0.2− | 2006 09 16 | 703 | 0.8− | 1.1− |
| 2000 09 01 | 704 | 0.8− | 0.1+ | 2005 05 16 | 704 | 0.1+ | 1.1+ | 2006 09 16 | 703 | 1.1− | 0.7− |
| 2000 09 01 | 704 | 0.3+ | 0.5+ | 2005 05 16 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 0.4− | 1.3− |
| 2000 09 01 | 704 | 0.2− | 0.4− | 2005 06 02 | 703 | 1.0− | 0.0 | 2006 09 16 | 703 | 0.2− | 0.9− |
| 2001 10 10 | 691 | 0.3− | 0.3+ | 2005 06 02 | 703 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3+ | 1.3+ |
| 2001 10 10 | 691 | 0.1− | 0.1+ | 2005 06 02 | 703 | 0.3− | 0.6− | 2006 09 19 | 699 | 0.3+ | 0.2− |
| 2001 10 10 | 691 | 0.3− | 0.0 | 2005 06 02 | 703 | 0.0 | 0.3− | 2006 09 19 | 699 | 1.0+ | 0.3+ |
| 2001 10 18 | 644 | 0.1+ | 0.2+ | 2005 06 03 | E12 | 0.7− | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.0 |
| 2001 10 18 | 644 | 0.4+ | 0.2− | 2005 06 03 | E12 | 0.1− | 0.4− | 2006 09 21 | 106 | 0.2− | 0.5+ |
| 2001 10 18 | 644 | 0.3+ | 0.3+ | 2005 06 03 | E12 | 0.2− | 0.1+ | 2006 09 21 | 106 | 0.5− | 0.4− |
| 2001 10 20 | 704 | 0.0 | 1.3− | 2005 06 03 | E12 | 0.5− | 0.4+ | 2006 09 21 | 106 | 0.5+ | 0.0 |
| 2001 10 20 | 704 | 0.6+ | 0.2− | 2005 06 09 | 704 | 0.5− | 0.2− | 2006 09 22 | 106 | 0.2− | 0.2− |
| 2001 10 20 | 704 | 0.7+ | 1.0− | 2005 06 09 | 704 | 0.1− | 0.1− | 2006 09 23 | 106 | 0.3− | 0.4+ |
| 2001 10 20 | 704 | 0.2− | 1.2− | 2005 06 09 | 704 | 0.2+ | 0.1− | 2006 09 23 | 106 | 0.0 | 0.7− |
| 2001 10 21 | 691 | 0.1− | 0.1+ | 2005 06 09 | 704 | 0.1− | 0.8− | 2006 09 23 | 106 | 0.4+ | 0.5− |
| 2001 10 21 | 691 | 0.0 | 0.2+ | 2005 06 09 | 704 | 0.5+ | 0.7− | 2006 09 23 | 106 | 0.8+ | 0.1+ |
| 2001 10 21 | 691 | 0.3− | 0.3+ | 2005 06 09 | 703 | 0.5− | 0.3+ | 2006 09 30 | 683 | (1.7+ | 1.1−) |
| 2001 10 23 | 704 | 1.0+ | 0.2+ | 2005 06 09 | 703 | 0.3− | 0.2− | 2006 09 30 | 683 | 1.3+ | 0.1− |
| 2001 10 23 | 704 | 0.9+ | 0.4+ | 2005 06 09 | 703 | 0.5− | 0.2− | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 10 23 | 704 | 1.2+ | 0.5+ | 2005 06 09 | 703 | 0.3− | 0.6− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.0 | 0.2+ | 2005 06 17 | 691 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.4+ | 0.3+ | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.2+ |
| 2001 10 24 | 704 | (1.8+ | 0.4+) | 2005 06 17 | 691 | 0.5+ | 1.4+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 0.4+ | 0.8+ | 2005 06 24 | 644 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.0 |
| 2001 11 10 | 704 | 1.5− | 1.2+ | 2005 06 24 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2001 11 10 | 704 | 0.1+ | 1.1+ | 2005 06 24 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 1.2− | 0.6− |
| 2001 11 10 | 704 | 0.5− | 0.7+ | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.0 |
| 2001 11 10 | 704 | 0.6+ | 0.7+ | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2001 11 10 | 704 | 0.2+ | 0.5+ | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.1+ | 1.0+ | 2006 08 29 | 699 | 1.0+ | 0.7− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2006 08 29 | 699 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.5− | 0.5+ | 2006 08 29 | 699 | 0.4− | 0.3− | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2001 11 20 | 704 | 0.4+ | 0.1− | 2006 08 29 | 699 | 0.3− | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | (1.7+ | 1.6+) | 2006 09 14 | 644 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2005 05 16 | 704 | 0.1− | 0.5− | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.4− |

**(140743)∗ 2001 UT$_{107}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.94840 | | (2000.0) | | | |
| $n$ | 0.20510248 | $\omega$ | 215.30488 | | +0.98742499 | −0.15687913 |
| $a$ | 2.8476642 | $\Omega$ | 153.70056 | | +0.15327589 | +0.91981926 |
| $e$ | 0.0834165 | $i$ | 2.52441 | | +0.03870900 | +0.35961294 |
| $P$ | 4.81 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.9+ | 1.1+ | 2001 11 20 | 704 | 0.6− | 0.7+ | 2005 07 06 | 691 | 0.2− | 0.2− |
| 2001 09 19 | 704 | 0.3+ | 0.3+ | 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2001 11 21 | 704 | 0.9− | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2001 10 18 | 644 | 0.0 | 0.6+ | 2001 11 21 | 704 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2001 10 18 | 644 | 0.2− | 0.8+ | 2001 11 21 | 704 | 0.3− | 0.8+ | 2006 10 17 | G96 | 0.0 | 0.7− |
| 2001 10 18 | 644 | 0.1+ | 0.6+ | 2001 11 21 | 704 | 0.6− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.3+ | 0.3− | 2003 01 29 | 291 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.1− | 2003 01 29 | 291 | 0.4− | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2003 01 29 | 291 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.6− |
| 2001 10 23 | 704 | 0.6− | 0.0 | 2004 03 26 | 291 | 0.5+ | 0.4+ | 2006 11 02 | 703 | 0.3− | 0.4− |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2004 03 26 | 291 | 0.3+ | 0.2+ | 2006 11 02 | 703 | 0.5+ | 0.6− |
| 2001 10 23 | 704 | 0.6− | 0.3+ | 2004 03 26 | 291 | 0.5+ | 0.4+ | 2006 11 02 | 703 | 0.2− | 0.9− |
| 2001 10 23 | 704 | 0.5+ | 0.7− | 2005 05 20 | G96 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2001 10 23 | 704 | 0.7− | 0.4+ | 2005 05 20 | G96 | 0.4− | 0.5+ | 2006 11 12 | G96 | 0.5+ | 0.0 |
| 2001 10 23 | 704 | 0.4+ | 0.1+ | 2005 05 20 | G96 | 0.3− | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2001 10 23 | 704 | (0.8− | 2.2+) | 2005 05 20 | G96 | 0.8− | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.2+ |
| 2001 10 24 | 704 | 0.9+ | 0.2+ | 2005 06 15 | G96 | 0.7− | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.7+ |
| 2001 10 24 | 704 | 0.5− | 1.0+ | 2005 06 15 | G96 | 0.7− | 0.5+ | 2006 11 17 | 703 | 1.5+ | 1.5+ |
| 2001 10 24 | 704 | 0.8+ | 0.0 | 2005 06 15 | G96 | 0.3− | 0.4+ | 2006 11 17 | 703 | 1.7− | 0.6− |
| 2001 10 24 | 704 | (0.2− | 1.7+) | 2005 06 15 | G96 | 0.4− | 0.7+ | 2006 11 17 | 703 | 0.3+ | 0.8− |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2005 07 06 | 691 | 0.1− | 0.1+ | | | | |
| 2001 11 20 | 704 | 0.3− | 0.7+ | 2005 07 06 | 691 | 0.3+ | 0.2+ | | | | |

**(140744)∗ 2001 UE$_{108}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.36063 | | (2000.0) | | | |
| $n$ | 0.19176320 | $\omega$ | 353.76710 | | −0.67721584 | −0.73552708 |
| $a$ | 2.9782367 | $\Omega$ | 138.85693 | | +0.67633980 | −0.63269881 |
| $e$ | 0.0894595 | $i$ | 1.69474 | | +0.28972949 | −0.24226461 |
| $P$ | 5.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 691 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.7− | 0.5+ | 2004 05 19 | 291 | 0.0 | 0.5+ |
| 2001 10 16 | 691 | 0.2− | 0.2− | 2003 01 27 | 699 | 0.6+ | 0.1+ | 2004 05 19 | 291 | 0.1+ | 1.0+ |
| 2001 10 16 | 691 | 0.5− | 0.2+ | 2003 01 27 | 704 | 0.1+ | 1.1+ | 2004 05 19 | 291 | 0.1− | 0.4+ |
| 2001 10 20 | 704 | 0.0 | 0.8+ | 2003 01 27 | 699 | 1.2− | 0.5+ | 2005 07 03 | G96 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.0 | 2003 01 27 | 704 | 0.0 | 1.1+ | 2005 07 03 | G96 | 0.1− | 0.5+ |
| 2001 10 20 | 704 | 0.5+ | 0.9+ | 2003 01 27 | 699 | 1.2− | 0.5+ | 2005 07 03 | G96 | 0.3+ | 0.3+ |
| 2001 10 23 | 704 | 1.2+ | 0.4+ | 2003 01 27 | 699 | (0.2+ | 1.6+) | 2005 07 03 | G96 | 0.1− | 0.4+ |
| 2001 10 23 | 704 | 1.4+ | 0.8+ | 2003 01 27 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.9+ | 0.5+ | 2003 01 27 | 644 | 0.3+ | 0.8− | 2006 09 14 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 704 | (0.4+ | 1.8+) | 2003 01 27 | 644 | 0.6+ | 0.3− | 2006 09 14 | 691 | 0.2+ | 0.2+ |
| 2001 10 23 | 704 | 1.1+ | 0.9+ | 2003 01 30 | 049 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 691 | 0.4+ | 0.2− | 2003 01 30 | 049 | 0.4+ | 0.6− | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 691 | 0.4+ | 0.4− | 2003 01 30 | 049 | 0.7+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 691 | (0.4− | 1.7+) | 2003 01 30 | 699 | 0.3+ | 0.8+ | 2006 10 15 | 703 | 1.0− | 0.4+ |
| 2001 10 24 | 704 | (1.8+ | 1.4−) | 2003 01 30 | 699 | 0.9+ | 0.2+ | 2006 10 15 | 703 | 0.1− | 0.8+ |
| 2001 10 24 | 704 | 0.4+ | 0.5+ | 2003 01 30 | 699 | 1.5− | 0.5− | 2006 10 15 | 703 | 0.1+ | 0.9+ |
| 2001 10 24 | 704 | 0.4− | 0.9+ | 2003 01 30 | 699 | 0.6+ | 1.2− | 2006 10 15 | 703 | 1.2− | 0.5− |
| 2001 10 25 | 644 | 1.0+ | 0.7+ | 2003 01 31 | 704 | (1.6− | 0.4+) | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2001 10 25 | 291 | 0.3− | 0.2− | 2003 01 31 | 704 | 1.0− | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.4+ |
| 2001 10 25 | 291 | 0.6− | 0.2− | 2003 01 31 | 704 | 0.7− | 0.8+ | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2001 10 25 | 291 | 1.2− | 0.4− | 2003 01 31 | 704 | 0.6+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 10 25 | 644 | 0.0 | 0.3+ | 2003 02 09 | 608 | 0.2+ | 0.9− | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2001 10 25 | 644 | 0.4+ | 0.5+ | 2003 02 09 | 608 | 0.2+ | 0.6− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.7+ | 2003 02 09 | 608 | 0.3+ | 0.9− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2003 02 21 | 644 | 1.1+ | 1.1+ | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.1+ | 2003 02 21 | 644 | 0.7+ | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2003 02 21 | 644 | 0.1+ | 1.2+ | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2003 03 12 | 644 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.5− | 0.0 | 2003 03 12 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.4− | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.5− | 2003 03 12 | 644 | 0.4+ | 0.4+ | 2006 11 19 | 691 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 0.5− | 0.9+ | 2004 05 12 | 699 | 0.3+ | 0.6+ | 2006 11 19 | 691 | 0.2+ | 0.3− |
| 2003 01 17 | 644 | 0.7+ | 0.3+ | 2004 05 12 | 699 | 1.1+ | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2003 01 17 | 644 | 0.3+ | 0.7+ | 2004 05 12 | 699 | 0.3+ | 1.3+ | 2006 11 20 | G96 | 0.5− | 0.6− |
| 2003 01 17 | 644 | 0.4+ | 0.7+ | 2004 05 12 | 699 | 0.4− | 0.8− | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2003 01 27 | 704 | 0.9− | 0.5+ | 2004 05 15 | 599 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 1.2+ | 0.3− |
| 2003 01 27 | 704 | 0.5− | 0.2+ | 2004 05 15 | 599 | 0.8+ | 0.6+ | 2006 11 20 | G96 | 0.7+ | 0.1+ |

**(140745)∗ 2001 UU$_{108}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.75890 | | (2000.0) | | | |
| $n$ | 0.17925288 | $\omega$ | 299.17879 | | +0.96584386 | −0.18342760 |
| $a$ | 3.1152431 | $\Omega$ | 71.89659 | | +0.24778401 | +0.86044917 |
| $e$ | 0.0991889 | $i$ | 11.10236 | | −0.07582039 | +0.47537516 |
| $P$ | 5.50 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.6+ | 0.0 | 2001 11 20 | 704 | 0.5+ | 0.2− | 2004 04 14 | 691 | 0.2+ | 0.3+ |
| 2001 10 20 | 704 | 0.0 | 0.0 | 2001 12 11 | 704 | (0.8+ | 2.5+) | 2004 04 14 | 691 | 0.2+ | 0.5+ |
| 2001 10 20 | 704 | 0.1+ | 0.0 | 2001 12 11 | 704 | 0.3+ | 1.0+ | 2004 04 25 | 704 | 0.8+ | 0.7+ |
| 2001 10 23 | 704 | 1.1− | 0.8− | 2001 12 11 | 704 | 0.7+ | 0.9+ | 2004 04 25 | 704 | 0.5− | 0.1+ |
| 2001 10 23 | 704 | 1.2− | 0.4− | 2001 12 11 | 704 | 1.4+ | 0.6+ | 2004 04 25 | 704 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 0.2− | 0.8+ | 2001 12 11 | 704 | 0.2+ | 0.3+ | 2004 04 25 | 704 | 0.1− | 1.5+ |
| 2001 10 23 | 704 | 1.2− | 0.5− | 2001 12 14 | 704 | 0.8− | 0.8− | 2006 09 20 | 703 | 0.5+ | 0.6+ |
| 2001 10 23 | 704 | 0.4− | 0.5− | 2001 12 14 | 704 | 0.4− | 0.1− | 2006 09 20 | 703 | 0.4− | 0.1− |
| 2001 10 24 | 704 | 1.1− | 0.1+ | 2001 12 14 | 704 | 1.1− | 1.2− | 2006 09 20 | 703 | 0.9− | 0.5+ |
| 2001 10 24 | 704 | 0.2+ | 0.1+ | 2001 12 14 | 704 | 1.0− | 0.3− | 2006 09 20 | 703 | 0.1− | 0.4+ |
| 2001 10 24 | 704 | 0.3+ | 0.3− | 2001 12 14 | 704 | 0.9− | 0.0 | 2006 09 25 | 703 | 0.7+ | 1.3− |
| 2001 10 24 | 704 | 0.9− | 0.1− | 2001 12 17 | 704 | 0.8− | 0.5+ | 2006 09 25 | 703 | (0.3+ | 1.7+) |
| 2001 10 24 | 704 | 1.0+ | 0.3− | 2001 12 17 | 704 | (1.4− | 1.6+) | 2006 09 25 | 703 | 0.5+ | 1.1+ |
| 2001 11 16 | 644 | 0.0 | 0.1+ | 2001 12 17 | 704 | 0.8− | 0.7+ | 2006 09 25 | 703 | 0.8+ | 0.8+ |
| 2001 11 16 | 644 | 0.8+ | 0.1+ | 2002 01 12 | 291 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2001 11 16 | 644 | 0.7+ | 0.3− | 2002 01 12 | 291 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2001 11 18 | 704 | 0.0 | 1.3+ | 2002 01 12 | 291 | 0.3+ | 0.0 | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 11 18 | 704 | 0.4+ | 0.4+ | 2003 01 29 | 644 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2001 11 18 | 704 | 0.5+ | 0.9+ | 2003 01 29 | 644 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.4− | 0.1− |
| 2001 11 18 | 704 | 0.3+ | 1.0+ | 2003 01 29 | 644 | 0.5− | 0.6− | 2006 10 11 | 644 | 0.5− | 0.3+ |
| 2001 11 20 | 704 | 0.4+ | 0.1− | 2003 02 01 | 644 | 0.4− | 0.4− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2003 02 01 | 644 | 0.6+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2001 11 20 | 704 | 0.5+ | 0.2− | 2003 02 01 | 644 | 0.3− | 0.4− | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.1− | 2004 04 14 | 691 | 0.3+ | 0.4+ | | | | |

**(140746)∗ 2001 US$_{109}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.20746 | | (2000.0) | | | |
| $n$ | 0.18889793 | $\omega$ | 208.05567 | | +0.66778226 | −0.74403206 |
| $a$ | 3.0082776 | $\Omega$ | 200.07370 | | +0.69435576 | +0.63329380 |
| $e$ | 0.1250196 | $i$ | 3.67180 | | +0.26821062 | +0.21296773 |
| $P$ | 5.22 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.2− | 0.3+ | 2001 12 14 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2001 10 20 | 704 | 0.4+ | 0.6+ | 2001 12 14 | 704 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 10 20 | 704 | 0.2− | 0.4+ | 2001 12 14 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.8− | 0.1− | 2001 12 14 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 683 | (2.1+ | 1.3+) |
| 2001 10 23 | 704 | 0.4− | 0.5+ | 2001 12 14 | 704 | 0.1− | 0.1− | 2006 10 22 | 683 | 0.6− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.2− | 0.1− | 2001 12 17 | 704 | 0.2− | 0.6+ | 2006 10 22 | 683 | (2.1+ | 0.4+) | | |
| 2001 10 23 | 704 | 0.2− | 0.8− | 2001 12 17 | 704 | 1.2− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.5− | | |
| 2001 10 24 | 704 | 0.6− | 0.1− | 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2001 10 24 | 704 | 0.0 | 0.2+ | 2004 06 08 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.4− | | |
| 2001 10 24 | 704 | 0.1+ | 0.1+ | 2004 06 08 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2001 10 24 | 704 | 0.6+ | 0.6+ | 2004 06 08 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2001 10 24 | 704 | 0.5+ | 0.5+ | 2005 05 15 | G96 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.3+ | 0.7+ | 2005 05 15 | G96 | 0.5− | 0.6− | 2006 11 10 | 691 | 0.3+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.5− | 1.4+ | 2005 05 15 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2+ | | |
| 2001 11 12 | 704 | 0.4+ | 0.9+ | 2005 05 15 | G96 | 0.2− | 0.8− | 2006 11 11 | 703 | 0.7− | 1.0+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.5+ | 2005 06 10 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 2001 11 14 | 691 | 0.6− | 0.3+ | 2005 06 10 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5+ | | |
| 2001 11 14 | 691 | 0.3− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.0 | | |
| 2001 11 14 | 691 | 0.5− | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | |
| 2001 11 17 | 704 | 0.5− | 0.2− | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1− | | |
| 2001 11 17 | 704 | 0.3+ | 0.5+ | 2005 06 14 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.6− | | |
| 2001 11 17 | 704 | 0.2+ | 0.1+ | 2005 07 08 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.4− | | |
| 2001 11 17 | 704 | 0.3+ | 0.6+ | 2005 07 08 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.5− | | |
| 2001 11 18 | 691 | 0.3+ | 0.0 | 2005 07 08 | 691 | (0.8+ | 1.7+) | 2006 11 14 | G96 | 0.2− | 0.6− | | |
| 2001 11 18 | 691 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.6− | 0.0 | | |
| 2001 11 18 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.1− | 0.4− | | |
| 2001 11 20 | 704 | 0.5− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.1− | 0.2− | | |
| 2001 11 20 | 704 | 0.5− | 0.9+ | 2006 09 30 | 703 | 0.7− | 0.7+ | 2006 11 17 | 703 | 0.0 | 0.8− | | |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.2− | | |
| 2001 11 20 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.8+ | | |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.7+ | 0.9+ | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2001 11 21 | 704 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1− | 0.5− | | |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2001 11 21 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 683 | 1.3− | 0.3− | 2006 11 25 | 703 | 2.1+ | 1.5− | | |
| 2001 11 21 | 704 | 0.2+ | 0.9+ | 2006 10 17 | 683 | 0.5− | 1.0− | 2006 11 25 | 703 | 2.3+ | 1.4− | | |
| 2001 12 11 | 704 | 0.1− | 0.3+ | 2006 10 17 | 683 | 0.9− | 1.0− | 2006 11 25 | 703 | 0.8− | 0.7− | | |
| 2001 12 11 | 704 | 0.4+ | 0.7− | 2006 10 19 | 644 | 0.2+ | 0.2− | 2006 11 25 | 703 | 0.1+ | 0.6− | | |
| 2001 12 11 | 704 | 1.0− | 0.9− | 2006 10 19 | 644 | 0.6+ | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.3+ | | |
| 2001 12 11 | 704 | 0.7+ | 1.0− | 2006 10 19 | 644 | 0.4− | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.1+ | | |
| 2001 12 13 | 644 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2001 12 13 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− | | | | | | |
| 2001 12 13 | 644 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ | | | | | | |

**(140747)∗ 2001 UV$_{109}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.40961 | | (2000.0) | | | |
| $n$ | 0.36463244 | $\omega$ | 60.16937 | | +0.28700453 | +0.92524619 |
| $a$ | 1.9404354 | $\Omega$ | 228.70899 | | −0.95260975 | +0.24841765 |
| $e$ | 0.0729229 | $i$ | 19.27985 | | −0.10081199 | +0.28671965 |
| $P$ | 2.70 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 704 | 0.9− | 0.5− | 2001 12 08 | 699 | 0.3+ | 1.3+ | 2003 07 05 | 704 | 0.1− | 0.2+ | | |
| 1998 10 18 | 704 | 0.5+ | 1.6− | 2001 12 08 | 699 | (3.1+ | 0.6−) | 2003 07 05 | 704 | 0.7− | 0.1+ | | |
| 1998 10 18 | 704 | 0.3− | 0.4− | 2001 12 08 | 699 | 1.0− | 0.3+ | 2003 07 05 | 704 | 0.4− | 0.2− | | |
| 1998 10 18 | 704 | 1.3+ | 1.1− | 2001 12 11 | 704 | 0.4+ | 0.1− | 2003 08 05 | 691 | 0.2+ | 0.3− | | |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2001 12 11 | 704 | 0.4+ | 0.3− | 2003 08 05 | 691 | 0.2+ | 0.2− | | |
| 2001 10 20 | 704 | 0.6+ | 0.8+ | 2001 12 11 | 704 | 0.2+ | 0.2+ | 2003 08 05 | 691 | 0.2+ | 0.3− | | |
| 2001 10 20 | 704 | 1.2+ | 1.0+ | 2001 12 11 | 704 | 0.1+ | 0.4− | 2006 05 25 | 703 | 0.8− | 0.4− | | |
| 2001 10 23 | 704 | 1.0− | 0.1− | 2001 12 11 | 704 | 0.5− | 0.2− | 2006 05 25 | 703 | 0.8− | 0.4− | | |
| 2001 10 23 | 704 | 1.2− | 0.3+ | 2001 12 15 | 704 | 0.7− | 0.2− | 2006 05 25 | 703 | (3.6− | 1.3−) | | |
| 2001 10 23 | 704 | 0.3− | 0.2+ | 2001 12 15 | 704 | 0.0 | 0.2+ | 2006 05 25 | 703 | (1.7− | 0.2+) | | |
| 2001 10 23 | 704 | 0.0 | 0.1− | 2001 12 15 | 704 | 0.1− | 0.1− | 2006 08 12 | 644 | 0.0 | 0.1+ | | |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2001 12 19 | 704 | 0.4+ | 0.4+ | 2006 08 12 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 24 | 704 | 0.2+ | 0.5− | 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 08 12 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 24 | 704 | 0.1+ | 0.6− | 2001 12 19 | 704 | 0.3− | 0.2− | 2006 09 12 | H68 | 0.4+ | 1.4+ | | |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2001 12 19 | 704 | 0.5+ | 0.4− | 2006 09 12 | H68 | 0.8− | 1.1+ | | |
| 2001 11 18 | 704 | 0.3− | 0.6+ | 2001 12 19 | 704 | 0.6+ | 0.4− | 2006 09 12 | H68 | 0.8+ | 0.9+ | | |
| 2001 11 18 | 704 | 0.6+ | 0.1+ | 2003 06 04 | 704 | 0.5− | 0.5+ | 2006 09 12 | 012 | 0.1+ | 0.3− | | |
| 2001 11 18 | 704 | 0.3− | 0.8+ | 2003 06 04 | 704 | 0.4− | 0.3+ | 2006 09 12 | 012 | 0.0 | 0.2− | | |
| 2001 11 18 | 704 | 0.3+ | 1.3+ | 2003 06 04 | 704 | 0.1+ | 0.4+ | 2006 09 12 | 012 | 0.0 | 0.0 | | |
| 2001 11 20 | 704 | (1.0+ | 1.7+) | 2003 06 09 | 704 | 0.0 | 0.3− | 2006 09 12 | 012 | 0.1+ | 0.3+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2003 06 09 | 704 | 0.1+ | 1.2+ | 2006 09 12 | 012 | 0.0 | 0.1− | | |
| 2001 11 20 | 704 | (2.9+ | 0.4+) | 2003 06 09 | 704 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 1.3− | 0.2+ | | |
| 2001 11 20 | 704 | 0.9− | 0.9+ | 2003 06 09 | 704 | 1.1+ | 0.2+ | 2006 10 17 | 703 | (0.4− | 1.6−) | | |
| 2001 11 20 | 704 | 1.0+ | 0.7− | 2003 06 29 | 704 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.0 | | |
| 2001 11 20 | 704 | 0.8− | 1.3+ | 2003 06 29 | 704 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.5+ | | |
| 2001 11 20 | 704 | 1.1− | 0.4− | 2003 06 29 | 704 | 0.0 | 0.3+ | 2006 10 23 | 703 | 0.6+ | 0.4− | | |
| 2001 11 20 | 704 | 0.8+ | 0.5− | 2003 06 29 | 704 | 0.0 | 0.7+ | 2006 10 23 | 703 | 0.7− | 0.4− | | |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2003 06 29 | 704 | 0.3− | 0.8+ | 2006 10 23 | 703 | 0.3+ | 0.4− | | |
| 2001 11 20 | 704 | (0.5+ | 1.6+) | 2003 07 05 | 704 | 0.1− | 0.1− | 2006 10 23 | 703 | 0.1+ | 0.1− | | |
| 2001 12 08 | 699 | 0.9+ | 0.6+ | 2003 07 05 | 704 | 0.1− | 0.4+ | | | | | | |

**(140748)∗ 2001 UD$_{110}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.82479 | | (2000.0) | | | |
| $n$ | 0.19765532 | $\omega$ | 285.03048 | | −0.64040411 | −0.76578649 |
| $a$ | 2.9187510 | $\Omega$ | 205.08697 | | +0.74712329 | −0.60340368 |
| $e$ | 0.0648710 | $i$ | 7.96712 | | +0.17801510 | −0.22242985 |
| $P$ | 4.99 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 15 | 644 | 0.1− | 0.3+ | 2001 10 25 | 704 | (2.2+ | 0.7+) | 2005 06 11 | 691 | 0.2− | 0.3− | | |
| 2001 09 15 | 644 | 0.3− | 0.4− | 2001 10 25 | 644 | 0.2+ | 0.6+ | 2005 06 11 | 691 | 0.1− | 0.4− | | |
| 2001 09 15 | 644 | 0.4− | 0.3+ | 2001 10 25 | 644 | 0.1+ | 0.3+ | 2005 06 11 | 691 | 0.0 | 0.1− | | |
| 2001 09 17 | 704 | 0.3+ | 0.2+ | 2001 11 21 | 704 | 0.9+ | 1.2+ | 2006 09 14 | 703 | 0.8− | 0.5− | | |
| 2001 09 17 | 704 | 0.7− | 1.2+ | 2001 11 21 | 704 | 0.6− | 1.0+ | 2006 09 14 | 703 | 0.7− | 0.3− | | |
| 2001 09 17 | 704 | 1.2− | 0.1+ | 2001 11 21 | 704 | (2.1− | 0.8+) | 2006 09 14 | 703 | 0.2+ | 0.4− | | |
| 2001 09 17 | 704 | 0.6− | 0.9+ | 2003 01 09 | 704 | 0.9+ | 0.6+ | 2006 09 14 | 703 | 0.3+ | 1.2− | | |
| 2001 09 20 | 704 | 0.6− | 0.3+ | 2003 01 09 | 704 | 0.4+ | 0.9+ | 2006 09 26 | 691 | 0.3+ | 0.0 | | |
| 2001 09 20 | 704 | 0.0 | 0.8+ | 2003 01 09 | 704 | 0.5+ | 1.0+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.1− | 1.2+ | 2003 01 09 | 704 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 2001 09 20 | 704 | 0.3+ | 0.9+ | 2003 01 27 | 704 | 1.0− | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.2− | | |
| 2001 09 20 | 704 | 0.1− | 1.1+ | 2003 01 27 | 704 | 0.8− | 1.3− | 2006 09 27 | 704 | 0.5− | 0.2− | | |
| 2001 09 23 | 704 | (0.4− | 1.8−) | 2003 01 27 | 704 | (2.0− | 1.7+) | 2006 09 27 | 704 | 1.2+ | 0.5− | | |
| 2001 09 23 | 704 | 0.6− | 1.2+ | 2003 01 27 | 704 | 0.1+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1− | | |
| 2001 09 23 | 704 | 1.0− | 0.4+ | 2003 01 27 | 704 | 0.5− | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.2− | 0.5− | 2004 03 22 | 699 | (2.4− | 1.5+) | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2001 09 25 | 691 | 0.2− | 0.1+ | 2004 03 22 | 699 | 0.9− | 1.1+ | 2006 10 15 | 703 | 0.6+ | 0.5+ | | |
| 2001 09 25 | 691 | 0.6− | 0.4+ | 2004 03 22 | 699 | 0.3− | 0.2− | 2006 10 15 | 703 | (0.2+ | 2.1+) | | |
| 2001 09 25 | 691 | 0.4− | 0.3+ | 2004 03 22 | 699 | (0.2− | 1.5+) | 2006 10 15 | 703 | 0.4− | 1.2+ | | |
| 2001 10 12 | 699 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.3+ | 2006 10 15 | 703 | 0.3− | 0.9+ | | |
| 2001 10 12 | 699 | 0.6+ | 0.5+ | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.4− | 0.1− | | |
| 2001 10 12 | 699 | 1.0+ | 0.5+ | 2004 03 27 | 704 | 0.4+ | 1.0+ | 2006 10 19 | G96 | 0.1− | 0.1− | | |
| 2001 10 12 | 699 | 1.3+ | 0.8+ | 2004 03 27 | 704 | 0.4− | 0.8+ | 2006 10 19 | G96 | 0.3+ | 0.1+ | | |
| 2001 10 13 | 704 | (2.0+ | 0.2−) | 2004 03 27 | 704 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2001 10 13 | 704 | 0.2+ | 0.2− | 2004 04 11 | 703 | 1.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.4+ | | |
| 2001 10 13 | 704 | 0.5+ | 1.1− | 2004 04 11 | 703 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.5+ | | |
| 2001 10 13 | 704 | 1.3− | 1.0− | 2004 04 11 | 703 | 0.8+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.2+ | 0.2− | 2004 04 11 | 703 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.3+ | 1.2+ | | |
| 2001 10 21 | 704 | 1.1+ | 1.2+ | 2004 04 21 | 704 | 0.5+ | 0.8− | 2006 11 11 | 703 | 0.5− | 0.6− | | |
| 2001 10 21 | 704 | 1.0+ | 0.6+ | 2004 04 21 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | (1.7− | 0.1+) | | |
| 2001 10 21 | 704 | (2.2+ | 0.4−) | 2004 04 21 | 704 | (1.3+ | 1.5+) | 2006 11 11 | 703 | 0.1− | 0.5− | | |
| 2001 10 21 | 704 | 0.3+ | 0.8+ | 2004 04 21 | 704 | 0.1+ | 0.4− | 2006 11 14 | 703 | 0.6− | 0.1+ | | |
| 2001 10 21 | 704 | (1.5+ | 1.1−) | 2004 04 24 | 691 | 0.0 | 0.5+ | 2006 11 14 | 703 | 0.1+ | 1.2+ | | |
| 2001 10 23 | 704 | 0.7+ | 1.4− | 2004 04 24 | 691 | 0.1− | 0.5+ | 2006 11 14 | 703 | 1.1− | 0.7+ | | |
| 2001 10 23 | 704 | 0.4− | 0.9− | 2004 04 24 | 691 | 0.0 | 0.5+ | 2006 11 14 | 703 | 1.0− | 0.3− | | |
| 2001 10 23 | 704 | 0.1− | 1.2− | 2004 04 29 | 608 | 0.4+ | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2001 10 23 | 704 | 0.3− | 1.3− | 2004 04 29 | 608 | 0.1− | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.1− | | |
| 2001 10 23 | 704 | 0.5+ | 0.9− | 2004 04 29 | 608 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2001 10 25 | 704 | 1.4+ | 1.2+ | 2004 05 27 | 691 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2001 10 25 | 704 | 0.9+ | 0.7+ | 2004 05 27 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2001 10 25 | 644 | 0.0 | 0.5+ | 2004 05 27 | 691 | 0.1− | 0.1+ | | | | | | |

**(140749)∗ 2001 UE$_{113}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 295.22724 | | (2000.0) | | | |
| $n$ | 0.18237853 | $\omega$ | 64.25382 | | −0.32465069 | −0.93417003 |
| $a$ | 3.0795475 | $\Omega$ | 45.54018 | | +0.77634398 | −0.35261838 |
| $e$ | 0.2816531 | $i$ | 11.97429 | | +0.54027026 | −0.05465005 |
| $P$ | 5.40 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 19 | 691 | 0.0 | 0.1+ | 2001 12 10 | 704 | 0.1+ | 1.3+ | 2003 05 05 | 704 | 1.4+ | 1.4+ | |
| 1991 01 19 | 691 | 0.1− | 0.5− | 2001 12 10 | 704 | 0.0 | 1.1+ | 2003 05 05 | 704 | 0.6+ | 0.6+ | |
| 1991 01 19 | 691 | 0.2+ | 0.1− | 2001 12 10 | 704 | 0.1+ | 0.9+ | 2003 05 05 | 704 | 0.8+ | 1.2+ | |
| 2001 09 26 | 704 | (1.6− | 0.5+) | 2001 12 10 | 704 | 0.3+ | 1.1+ | 2003 05 29 | 691 | (1.1+ | 1.9+) | |
| 2001 09 26 | 704 | 0.9− | 1.2+ | 2001 12 17 | 704 | 0.4+ | 0.5− | 2003 05 29 | 691 | (0.9+ | 1.7+) | |
| 2001 09 26 | 704 | 0.6− | 1.0+ | 2001 12 17 | 704 | 0.3+ | 0.0 | 2003 05 29 | 691 | (1.1+ | 1.7+) | |
| 2001 09 26 | 704 | 0.2− | 0.4+ | 2001 12 17 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | (2.0− | 0.0 ) | |
| 2001 09 26 | 704 | 0.8− | 0.2+ | 2001 12 17 | 704 | 0.4+ | 0.5− | 2006 09 18 | 703 | (1.0− | 2.0+) | |
| 2001 10 21 | 704 | 0.6− | 0.0 | 2001 12 17 | 704 | 0.6+ | 0.5− | 2006 09 18 | 703 | 0.6− | 1.1+ | |
| 2001 10 21 | 704 | 1.0− | 0.3− | 2002 02 08 | 704 | 0.2+ | 0.6− | 2006 09 18 | 703 | 0.7− | 0.7+ | |
| 2001 10 21 | 704 | 0.9− | 0.4− | 2002 02 08 | 704 | 0.7+ | 0.2− | 2006 09 20 | 644 | 0.5− | 0.3+ | |
| 2001 10 21 | 704 | (0.4− | 1.6+) | 2002 02 08 | 704 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.6− | 0.4+ | |
| 2001 10 23 | 704 | 0.4+ | 0.2+ | 2002 02 08 | 704 | 0.1− | 0.5+ | 2006 09 20 | 644 | 0.4− | 0.4+ | |
| 2001 10 23 | 704 | 0.6− | 0.3− | 2002 02 08 | 704 | (2.2+ | 2.5−) | 2006 09 21 | 699 | 0.6− | 0.1− | |
| 2001 10 23 | 704 | 0.3+ | 0.6− | 2003 03 27 | 644 | 0.5+ | 0.7+ | 2006 09 21 | 699 | (1.7− | 1.7+) | |
| 2001 10 23 | 704 | 0.3− | 0.2− | 2003 03 27 | 644 | 0.2+ | 0.8+ | 2006 09 21 | 699 | 0.1− | 1.4+ | |
| 2001 10 23 | 704 | 1.2+ | 0.4+ | 2003 03 27 | 644 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.3+ | 0.6+ | |
| 2001 10 23 | 704 | 0.7− | 0.2− | 2003 03 30 | 704 | 0.7+ | 0.4− | 2006 09 22 | 704 | (0.3− | 3.3+) | |
| 2001 10 23 | 704 | 0.8− | 0.0 | 2003 03 30 | 704 | 0.1+ | 1.1+ | 2006 09 22 | 704 | (0.4− | 1.7+) | |
| 2001 10 23 | 704 | 0.0 | 0.0 | 2003 03 30 | 704 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.8− | 1.4+ | |
| 2001 10 23 | 704 | 0.5− | 0.2− | 2003 03 30 | 704 | 0.0 | 1.5+ | 2006 09 25 | 699 | 0.9− | 0.6+ | |
| 2001 10 24 | 704 | 0.3− | 0.4+ | 2003 04 02 | 704 | 0.2+ | 0.2− | 2006 09 25 | 699 | 1.1− | 0.8+ | |
| 2001 10 24 | 704 | 0.5+ | 0.2− | 2003 04 02 | 704 | (0.7+ | 1.9+) | 2006 09 25 | 699 | (1.9− | 1.3+) | |
| 2001 10 24 | 704 | 0.6− | 0.1− | 2003 04 02 | 704 | (1.1− | 1.8+) | 2006 09 25 | 699 | 1.2+ | 1.4+ | |
| 2001 10 24 | 704 | 1.3+ | 0.3+ | 2003 04 02 | 704 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.6− | 0.3+ | |
| 2001 10 24 | 704 | 0.1− | 0.2+ | 2003 04 04 | 699 | 0.8+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.7+ | |
| 2001 10 24 | 704 | 0.4− | 0.3− | 2003 04 04 | 699 | (0.1+ | 1.8+) | 2006 09 26 | 704 | 0.4+ | 0.7+ | |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2003 04 04 | 699 | 0.8− | 1.1+ | 2006 09 26 | 704 | 0.8− | 0.4+ | |
| 2001 10 24 | 704 | (1.6+ | 0.7+) | 2003 04 04 | 699 | 1.0+ | 1.2+ | 2006 09 26 | 703 | 0.6− | 0.3− | |
| 2001 10 25 | 704 | 0.0 | 0.2− | 2003 04 08 | 608 | 0.4− | 0.1− | 2006 09 26 | 703 | 0.5− | 0.3+ | |
| 2001 10 25 | 704 | 0.8− | 0.1+ | 2003 04 08 | 608 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.1− | 0.3− | |
| 2001 10 25 | 704 | 0.1+ | 0.4− | 2003 04 08 | 608 | 0.3− | 0.4+ | 2006 09 26 | 703 | 1.0− | 0.5+ | |
| 2001 10 25 | 704 | 0.2− | 0.2− | 2003 04 11 | 644 | 0.8+ | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.3− | |
| 2001 10 27 | 704 | 0.5− | 1.3+ | 2003 04 11 | 644 | 0.5+ | 0.8+ | 2006 09 29 | 699 | 1.4− | 0.1+ | |
| 2001 10 27 | 704 | 1.0− | 0.8+ | 2003 04 11 | 644 | 0.9+ | 0.4+ | 2006 09 29 | 699 | 0.6+ | 0.9+ | |
| 2001 10 27 | 704 | 1.4− | 0.5− | 2003 04 26 | 608 | 0.5+ | 1.5+ | 2006 09 30 | 704 | (1.3+ | 2.1+) | |
| 2001 11 10 | 704 | 0.3− | 0.5+ | 2003 04 26 | 608 | (0.4− | 2.1+) | 2006 09 30 | 704 | (1.7+ | 0.7+) | |
| 2001 11 10 | 704 | 0.2+ | 1.2+ | 2003 04 26 | 608 | 0.5+ | 1.2+ | 2006 09 30 | 704 | 0.4+ | 0.5+ | |
| 2001 11 10 | 704 | 0.4+ | 0.6+ | 2003 04 27 | 699 | 0.8− | 1.2+ | 2006 09 30 | 704 | 1.2+ | 0.9+ | |
| 2001 11 12 | 704 | 0.7+ | 0.8+ | 2003 04 27 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.1+ | |
| 2001 11 12 | 704 | 1.0+ | 1.1+ | 2003 04 27 | 699 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.2− | |
| 2001 11 12 | 704 | 0.8+ | 1.1+ | 2003 04 27 | 699 | 0.2+ | 1.2+ | 2006 10 16 | 703 | 0.4− | 0.5− | |
| 2001 11 12 | 704 | 0.9+ | 1.1+ | 2003 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.1− | |
| 2001 11 12 | 704 | 0.8+ | 1.0+ | 2003 04 30 | 691 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.5− | 0.4+ | |
| 2001 11 19 | 704 | 0.7− | 0.2− | 2003 04 30 | 608 | 0.2+ | 1.0− | 2006 10 21 | 644 | 0.4− | 0.1+ | |
| 2001 11 19 | 704 | 0.7− | 0.3− | 2003 04 30 | 608 | 0.6+ | 1.3− | 2006 10 21 | 644 | 0.3− | 0.4+ | |
| 2001 11 19 | 704 | 0.7− | 0.2− | 2003 04 30 | 608 | 1.0+ | 0.4− | 2006 10 22 | 703 | 0.1− | 0.3+ | |
| 2001 11 19 | 704 | 0.6− | 0.3+ | 2003 04 30 | 691 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.0 | |
| 2001 11 19 | 704 | 0.4− | 0.0 | 2003 05 01 | 704 | (1.8+ | 0.3+) | 2006 10 22 | 703 | 0.8− | 0.5+ | |
| 2001 11 24 | 704 | 0.2− | 0.7− | 2003 05 01 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.7+ | 0.2+ | |
| 2001 11 24 | 704 | 0.0 | 0.3− | 2003 05 01 | 704 | (2.3+ | 0.9+) | 2006 11 24 | G96 | 0.0 | 0.1+ | |
| 2001 11 24 | 704 | 0.2− | 0.2− | 2003 05 01 | 704 | 0.0 | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.1+ | |
| 2001 11 24 | 704 | 0.2+ | 0.4− | 2003 05 01 | 704 | 1.3+ | 1.2+ | 2006 11 24 | G96 | 0.0 | 0.1+ | |
| 2001 11 24 | 704 | 0.0 | 0.3− | 2003 05 05 | 704 | 0.6+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2+ | |
| 2001 12 10 | 704 | 0.3+ | 1.0+ | 2003 05 05 | 704 | (2.1+ | 0.3+) | | | | | |

**(140750)∗ 2001 UZ$_{113}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 261.46469 | | (2000.0) | | | |
| $n$ | 0.19116875 | $\omega$ | 81.89639 | | −0.58076575 | −0.80329580 |
| $a$ | 2.9844075 | $\Omega$ | 44.48713 | | +0.65284229 | −0.55645398 |
| $e$ | 0.0592937 | $i$ | 10.85861 | | +0.48632097 | −0.21230833 |
| $P$ | 5.16 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.2+ | 0.7− | 2001 11 21 | 704 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.0 | |
| 2001 10 22 | 704 | 0.6− | 0.6+ | 2003 01 24 | 644 | 0.3+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.2+ | |
| 2001 10 22 | 704 | 0.3− | 0.8+ | 2003 01 24 | 644 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.0 | |
| 2001 10 22 | 704 | 0.6− | 0.4+ | 2003 01 24 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1− | |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2003 01 29 | 644 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2001 10 23 | 704 | 0.1− | 1.0+ | 2003 01 29 | 644 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | |
| 2001 10 23 | 704 | 0.1− | 0.3− | 2003 01 29 | 644 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | |
| 2001 10 23 | 704 | 0.2− | 0.2− | 2003 02 01 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 703 | (0.2+ | 2.1+) | |
| 2001 10 24 | 704 | 0.4+ | 0.2+ | 2003 02 01 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.8− | |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2003 02 01 | 644 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.8− | |
| 2001 10 24 | 704 | 0.2− | 0.3+ | 2003 03 07 | 645 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.3− | 1.4− | |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2003 03 07 | 645 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− | |
| 2001 10 24 | 704 | 0.5− | 0.7+ | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 | |
| 2001 11 16 | 691 | 0.1− | 0.2+ | 2003 04 26 | 645 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.0 | |
| 2001 11 16 | 691 | 0.3− | 0.8+ | 2004 04 28 | 691 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− | |
| 2001 11 16 | 691 | 0.2− | 0.6+ | 2004 04 28 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− | |
| 2001 11 17 | 704 | 0.0 | 0.8+ | 2004 04 28 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1− | |
| 2001 11 17 | 704 | 0.8− | 0.1− | 2004 05 15 | 704 | (1.6+ | 0.9+) | 2006 10 31 | G96 | 0.1− | 0.2− | |
| 2001 11 17 | 704 | 0.0 | 0.3+ | 2004 05 15 | 704 | 0.3+ | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.1− | |
| 2001 11 17 | 704 | (1.6+ | 1.4+) | 2004 05 15 | 704 | 0.9+ | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.2− | |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2004 05 28 | 691 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− | |
| 2001 11 20 | 704 | 0.1− | 0.8+ | 2004 05 28 | 691 | 0.3+ | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.4− | |
| 2001 11 20 | 704 | 0.0 | 0.7+ | 2004 05 28 | 691 | 0.7− | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.1+ | |
| 2001 11 20 | 704 | 0.4− | 0.7+ | 2004 06 08 | 691 | 0.0 | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.0 | |
| 2001 11 20 | 704 | 0.2+ | 0.0 | 2004 06 08 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.3− | |
| 2001 11 21 | 704 | 0.4− | 0.0 | 2004 06 08 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.4− | 1.1− | |
| 2001 11 21 | 704 | 0.6− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | |
| 2001 11 21 | 704 | 0.6− | 0.6+ | 2006 10 02 | G96 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.3+ | |
| 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.1− | | | | | |

**(140751)∗ 2001 UN$_{114}$ = 1995 UE$_{73}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20615)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 32.40373 | | (2000.0) | | | |
| $n$ | 0.17350882 | $\omega$ | 203.54332 | | +0.53826752 | +0.84149225 |
| $a$ | 3.1836233 | $\Omega$ | 99.05216 | | −0.76556211 | +0.51126242 |
| $e$ | 0.1340427 | $i$ | 2.69674 | | −0.35239570 | +0.17464688 |
| $P$ | 5.68 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | (2.7+ | 6.3−) | 2001 11 17 | 691 | 0.1+ | 0.1− | 2006 08 21 | 644 | 0.0 | 0.2+ | |
| 1993 03 23 | 809 | 0.5+ | 0.2− | 2001 11 17 | 704 | 1.1− | 0.2+ | 2006 08 22 | 644 | 0.2+ | 0.0 | |
| 1995 10 20 | 691 | 0.3− | 0.1− | 2001 11 17 | 691 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.3− | |
| 1995 10 20 | 691 | 0.1+ | 0.3− | 2001 11 17 | 691 | 0.1− | 0.1− | 2006 08 22 | 644 | 0.2+ | 0.2+ | |
| 1995 10 20 | 691 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.8− | 0.6+ | 2006 08 28 | 699 | 0.7+ | 0.2− | |
| 1995 10 26 | 691 | 0.4− | 0.7− | 2001 11 20 | 704 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.7− | |
| 1995 10 26 | 691 | 0.3+ | 0.2+ | 2001 11 20 | 704 | 0.3− | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.8− | |
| 1995 10 26 | 691 | 0.3+ | 0.1+ | 2001 11 20 | 704 | 0.6− | 0.2− | 2006 08 28 | 699 | 0.7+ | 0.6+ | |
| 2001 10 18 | 644 | 0.3− | 0.9+ | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.3− | |
| 2001 10 18 | 644 | 0.7− | 0.8+ | 2001 11 21 | 704 | 0.6− | 0.4− | 2006 08 28 | 703 | 0.9− | 0.9− | |
| 2001 10 18 | 644 | 0.6− | 0.7+ | 2001 11 21 | 704 | 0.5− | 0.3+ | 2006 08 28 | 699 | 0.5+ | 1.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.4+ | 1.0+ | 2001 11 21 | 704 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.5+ | 0.2+ | | |
| 2001 10 22 | 704 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.9+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.3+ | | |
| 2001 10 22 | 704 | 1.2+ | 0.3− | 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1− | | |
| 2001 10 22 | 704 | 0.6− | 1.1+ | 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 1.1+ | | |
| 2001 10 23 | 704 | 0.5+ | 0.3+ | 2005 04 11 | G96 | 0.2− | 0.2− | 2006 09 14 | 703 | 1.1− | 0.7+ | | |
| 2001 10 23 | 704 | 0.9+ | 0.2+ | 2005 04 11 | G96 | 0.1+ | 0.4− | 2006 09 14 | 703 | 1.3− | 0.4+ | | |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2005 05 08 | G96 | 0.6− | 0.0 | 2006 09 14 | 644 | 0.4+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.3+ | 0.6+ | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.0 | | |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.3− | 0.1− | | |
| 2001 10 24 | 704 | 1.0+ | 0.9+ | 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.6− | | |
| 2001 10 24 | 704 | 0.1− | 0.6+ | 2005 05 18 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.1+ | 0.0 | | |
| 2001 10 24 | 704 | 0.5+ | 0.3− | 2005 05 18 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | (1.8+ | 0.6−) | | |
| 2001 10 24 | 704 | 0.2+ | 0.9+ | 2005 05 18 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.4− | | |
| 2001 10 25 | 644 | 0.8− | 0.8+ | 2005 05 18 | 644 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.7− | | |
| 2001 10 25 | 644 | 0.6− | 0.7+ | 2005 05 18 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 1.2+ | | |
| 2001 10 25 | 644 | 0.6− | 0.6+ | 2005 05 18 | 644 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.8+ | 0.7− | | |
| 2001 11 09 | 704 | 0.2− | 0.6− | 2005 06 10 | 691 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.4− | 0.5+ | | |
| 2001 11 09 | 704 | 0.1− | 0.0 | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.8− | | |
| 2001 11 09 | 704 | 1.0− | 0.2− | 2005 06 10 | 691 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 1.0+ | 1.2− | | |
| 2001 11 12 | 704 | 0.4− | 1.1+ | 2005 06 14 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 1.0− | | |
| 2001 11 12 | 704 | 0.8+ | 0.9+ | 2005 06 14 | 691 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2001 11 12 | 704 | 0.3− | 1.0+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.2− | | |
| 2001 11 17 | 704 | 0.1− | 1.0+ | 2006 08 21 | 644 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.8− | | |
| 2001 11 17 | 704 | 1.0− | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3− | | |

**(140752)∗ 2001 UH$_{115}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.77912 | | (2000.0) | | | |
| $n$ | 0.18211646 | $\omega$ | 208.30374 | | +0.54705522 | −0.83264732 |
| $a$ | 3.0825012 | $\Omega$ | 208.78308 | | +0.79782479 | +0.54978694 |
| $e$ | 0.1042721 | $i$ | 10.31203 | | +0.25338940 | +0.06657898 |
| $P$ | 5.41 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.0 | 0.1− | 2001 11 11 | 704 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.1− | 0.4− | | |
| 1993 04 21 | 691 | 0.2+ | 0.8+ | 2001 11 11 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.7− | 0.2− | | |
| 1993 04 21 | 691 | 0.1− | 0.9+ | 2001 11 11 | 704 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.2− | 0.4− | | |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2001 11 12 | 704 | 0.1− | 0.4− | 2006 09 17 | 703 | 1.3− | 0.0 | | |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2001 11 12 | 704 | 0.4− | 0.5+ | 2006 09 19 | 699 | 1.0+ | 0.8+ | | |
| 2001 10 18 | 644 | 0.4+ | 0.5+ | 2001 11 12 | 704 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.1+ | | |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2001 11 12 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.7− | 0.0 | | |
| 2001 10 18 | 644 | 0.3+ | 0.5+ | 2001 11 17 | 704 | (1.8− | 2.8+) | 2006 09 19 | 699 | 0.3− | 0.2+ | | |
| 2001 10 22 | 704 | 1.0+ | 0.1− | 2001 11 17 | 704 | (2.8− | 2.1+) | 2006 09 20 | 703 | 0.2− | 0.0 | | |
| 2001 10 22 | 704 | 0.3+ | 1.3+ | 2001 11 17 | 704 | (2.4− | 3.2+) | 2006 09 20 | 703 | 0.1− | 0.3− | | |
| 2001 10 22 | 704 | 0.6− | 0.2+ | 2001 11 20 | 704 | 0.2+ | 0.7+ | 2006 09 20 | 703 | 0.1+ | 0.6− | | |
| 2001 10 22 | 704 | 0.0 | 0.3− | 2001 11 20 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 703 | 0.2− | 0.3+ | | |
| 2001 10 22 | 704 | 0.2− | 0.4− | 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 1.1− | 0.1+ | | |
| 2001 10 23 | 704 | 0.0 | 0.5+ | 2001 11 20 | 704 | 0.2+ | 0.5+ | 2006 09 29 | 704 | 0.6− | 0.5+ | | |
| 2001 10 23 | 704 | 0.5+ | 0.9+ | 2001 11 20 | 704 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.8+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.6− | 0.6− | 2001 12 11 | 704 | 0.0 | 1.3+ | 2006 10 09 | 644 | 0.4− | 0.3− | | |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2001 12 11 | 704 | 0.4− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.4+ | | |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2001 12 11 | 704 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.1− | | |
| 2001 10 24 | 704 | 0.3+ | 0.5− | 2001 12 11 | 704 | 0.2− | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2001 10 24 | 704 | 0.5+ | 0.0 | 2001 12 11 | 704 | 0.7− | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.3+ | | |
| 2001 10 24 | 704 | 0.6+ | 0.7− | 2003 02 02 | 699 | 0.8− | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2001 10 24 | 704 | 0.0 | 0.2− | 2003 02 02 | 699 | 0.0 | 1.1+ | 2006 10 17 | 703 | 1.0+ | 0.4+ | | |
| 2001 10 24 | 704 | 0.3+ | 0.2+ | 2003 02 02 | 699 | 0.7− | 0.8− | 2006 10 17 | 703 | (1.5+ | 0.3−) | | |
| 2001 10 25 | 704 | 0.4− | 0.1− | 2003 02 02 | 699 | 0.1− | 0.2− | 2006 10 17 | 703 | (1.7+ | 1.9−) | | |
| 2001 10 25 | 704 | (0.8− | 1.6−) | 2003 02 09 | 608 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.7− | | |
| 2001 10 25 | 704 | 0.2− | 0.4− | 2003 02 09 | 608 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2001 10 25 | 704 | 0.6− | 0.2− | 2003 02 09 | 608 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 10 25 | 704 | 0.2− | 0.3+ | 2003 03 08 | 699 | 0.5+ | 1.4− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 11 09 | 704 | 0.2− | 1.1+ | 2003 03 08 | 699 | 0.2− | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.5− | | |
| 2001 11 09 | 704 | (1.6+ | 0.4−) | 2003 03 08 | 699 | 0.7+ | 0.9− | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2001 11 09 | 704 | 0.7− | 1.2+ | 2003 03 08 | 699 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.4− | | |
| 2001 11 09 | 704 | 1.0− | 1.2+ | 2004 04 20 | 291 | 0.2+ | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.2− | | |
| 2001 11 10 | 704 | 0.1+ | 0.3+ | 2004 04 20 | 291 | 0.2+ | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.5− | | |
| 2001 11 10 | 704 | 0.6− | 1.0+ | 2004 04 20 | 291 | 0.3+ | 0.8+ | 2006 10 23 | G96 | 0.3− | 0.2− | | |
| 2001 11 10 | 704 | 0.7+ | 1.4+ | 2006 08 29 | 699 | 0.3+ | 0.9+ | 2006 10 23 | G96 | 0.3+ | 0.4− | | |
| 2001 11 10 | 704 | 0.0 | 1.0+ | 2006 08 29 | 699 | 0.9+ | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.4− | | |
| 2001 11 11 | 704 | 0.1+ | 0.2− | 2006 08 29 | 699 | 0.4+ | 0.3+ | | | | | | |
| 2001 11 11 | 704 | 0.4− | 0.0 | 2006 08 29 | 699 | 0.1− | 0.1− | | | | | | |

**(140753)∗ 2001 UC$_{116}$ = 2004 EA$_{97}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65113)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.90169 | | (2000.0) | | | |
| $n$ | 0.18601404 | $\omega$ | 252.59342 | | +0.46741961 | +0.87026647 |
| $a$ | 3.0392906 | $\Omega$ | 46.32359 | | −0.70740340 | +0.47364018 |
| $e$ | 0.0985326 | $i$ | 12.40906 | | −0.53018803 | +0.13528209 |
| $P$ | 5.30 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.0 | 0.9+ | 2001 11 21 | 704 | 0.4− | 0.0 | 2006 09 18 | 703 | (2.0+ | 1.1−) | | |
| 2001 10 22 | 704 | 0.2+ | 1.1+ | 2001 11 21 | 704 | 0.8− | 0.5+ | 2006 09 30 | 703 | 0.3+ | 1.0+ | | |
| 2001 10 22 | 704 | 0.1− | 0.7− | 2001 11 21 | 704 | 1.1− | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.1+ | | |
| 2001 10 22 | 704 | 0.1+ | 0.3+ | 2001 12 18 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.4− | | |
| 2001 10 23 | 704 | 0.3− | 0.8− | 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 1.0− | | |
| 2001 10 23 | 704 | (0.5+ | 1.7−) | 2001 12 18 | 704 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.0 | | |
| 2001 10 23 | 704 | 0.3+ | 0.1− | 2001 12 18 | 704 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.2− | 0.1− | | |
| 2001 10 23 | 704 | 0.8+ | 0.2+ | 2001 12 19 | 704 | 1.1+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.2+ | | |
| 2001 10 23 | 704 | 0.4− | 0.2+ | 2001 12 19 | 704 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.5+ | 0.1+ | | |
| 2001 10 24 | 704 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2001 10 24 | 704 | 0.3+ | 0.7− | 2001 12 19 | 704 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2001 10 24 | 704 | 0.5+ | 0.9+ | 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 24 | 704 | 0.4− | 0.1− | 2002 12 06 | 645 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2− | | |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2002 12 13 | 645 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 11 09 | 704 | 0.5− | 0.1− | 2002 12 13 | 645 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2001 11 09 | 704 | 0.0 | 0.4− | 2004 03 12 | 644 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | | |
| 2001 11 09 | 704 | 0.2− | 0.3+ | 2004 03 12 | 644 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 11 09 | 704 | 0.8+ | 0.5− | 2004 03 12 | 644 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 09 | 644 | 0.4− | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.7+ | | |
| 2001 11 09 | 644 | 0.7− | 0.8+ | 2004 03 23 | 704 | 0.7+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.1+ | | |
| 2001 11 09 | 644 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 703 | 0.2− | 1.0+ | | |
| 2001 11 19 | 704 | 0.4+ | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.9− | 0.9+ | | |
| 2001 11 19 | 704 | 0.3− | 0.0 | 2004 03 23 | 704 | 1.0+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2001 11 19 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.2− | 1.4− | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2001 11 19 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.6− | 2006 10 22 | G96 | 0.5+ | 0.3− | | |
| 2001 11 21 | 704 | 0.6− | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 10 22 | G96 | 0.5+ | 0.5− | | |

**(140754)∗ 2001 UX$_{117}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.06687 | | (2000.0) | | | |
| $n$ | 0.18325614 | $\omega$ | 354.51922 | | +0.71873172 | −0.68836035 |
| $a$ | 3.0697077 | $\Omega$ | 49.48107 | | +0.64270686 | +0.60404321 |
| $e$ | 0.1694393 | $i$ | 7.39942 | | +0.26524066 | +0.40161154 |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 19 | 691 | 0.2− | 0.2− | 2001 11 20 | 704 | 0.4+ | 0.5− | 2006 09 18 | 699 | 0.1− | 0.6+ | | |
| 1990 10 19 | 691 | 0.2+ | 0.3− | 2001 11 20 | 704 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.6+ | | |
| 1990 10 19 | 691 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 699 | 1.3+ | 0.7+ | | |
| 2001 10 13 | 704 | 0.6+ | 0.4+ | 2001 11 20 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.6+ | 1.2+ | | |
| 2001 10 13 | 704 | 1.0+ | 0.5− | 2001 11 21 | 704 | (0.4− | 2.8−) | 2006 09 26 | 704 | 0.1+ | 0.1+ | | |
| 2001 10 13 | 704 | 0.8+ | 0.2− | 2001 11 21 | 704 | (0.3− | 2.9−) | 2006 09 26 | 704 | 0.6− | 0.0 | | |
| 2001 10 13 | 704 | 0.1− | 0.5− | 2001 11 21 | 704 | (0.4− | 3.5−) | 2006 09 26 | 704 | 0.8− | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 333 | 1.0+ | 0.6− | 2001 11 21 | 704 | (0.4− | 2.8−) | 2006 09 26 | 704 | 0.1− | 0.2+ | | |
| 2001 10 18 | 333 | 0.0 | 0.3+ | 2001 11 21 | 704 | (0.5− | 3.2−) | 2006 09 26 | 704 | 0.0 | 0.3+ | | |
| 2001 10 18 | 333 | 0.4− | 0.0 | 2001 12 10 | 704 | (1.5− | 2.4−) | 2006 09 26 | 703 | 0.2− | 0.6+ | | |
| 2001 10 18 | 644 | 0.5+ | 1.0+ | 2001 12 10 | 704 | (1.4− | 2.3−) | 2006 09 26 | 703 | 0.2− | 0.6+ | | |
| 2001 10 18 | 644 | 0.3+ | 0.9+ | 2001 12 10 | 704 | (1.5− | 2.3−) | 2006 09 26 | 703 | 0.3− | 0.1+ | | |
| 2001 10 18 | 644 | 0.4+ | 0.6+ | 2001 12 10 | 704 | (1.0− | 1.6−) | 2006 09 26 | 703 | 0.4− | 0.0 | | |
| 2001 10 22 | 704 | 0.1+ | 0.7− | 2001 12 15 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.4− | | |
| 2001 10 22 | 704 | 0.2+ | 1.0− | 2001 12 15 | 704 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.4− | | |
| 2001 10 22 | 704 | 0.2− | 0.2− | 2001 12 15 | 704 | 0.9− | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.1+ | | |
| 2001 10 22 | 704 | 0.2+ | 1.3− | 2001 12 15 | 704 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.6+ | | |
| 2001 10 22 | 704 | 0.4− | 0.5− | 2001 12 15 | 704 | 0.7− | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.2+ | | |
| 2001 10 23 | 704 | (0.2− | 1.6−) | 2001 12 18 | 704 | 0.9− | 0.4+ | 2006 10 02 | 703 | 0.1+ | 1.2+ | | |
| 2001 10 23 | 704 | 0.0 | 1.3− | 2001 12 18 | 704 | 0.2− | 1.2+ | 2006 10 02 | 703 | 0.5− | 1.1+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.9− | 2001 12 18 | 704 | 0.3− | 0.5+ | 2006 10 02 | 703 | 0.5− | 1.1+ | | |
| 2001 10 23 | 704 | (0.8− | 1.7−) | 2001 12 18 | 704 | 0.7− | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2001 10 23 | 704 | (0.0 | 1.7−) | 2001 12 19 | 704 | 1.0− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 24 | 704 | 0.1− | 0.1+ | 2001 12 19 | 704 | 0.7− | 1.4+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2001 10 24 | 704 | 0.2+ | 0.6− | 2001 12 19 | 704 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.2− | | |
| 2001 10 24 | 704 | 0.5− | 0.0 | 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2001 12 19 | 704 | 1.2− | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.2+ | | |
| 2001 10 26 | 704 | 1.2− | 0.6+ | 2001 12 19 | 644 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.1+ | | |
| 2001 10 26 | 704 | 0.8− | 0.8+ | 2001 12 19 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.3− | 0.2− | | |
| 2001 10 26 | 704 | 0.5− | 0.8+ | 2001 12 19 | 644 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1− | | |
| 2001 10 26 | 704 | 0.2− | 0.4+ | 2002 01 06 | 644 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2001 10 26 | 704 | 0.7− | 0.0 | 2002 01 06 | 644 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2001 11 09 | 704 | 0.4+ | 1.2+ | 2002 01 06 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2001 11 09 | 704 | (0.6− | 1.6+) | 2003 01 27 | 704 | 1.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 09 | 704 | 0.2+ | 0.6+ | 2003 01 27 | 704 | 1.0− | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2001 11 09 | 704 | 0.0 | 1.4+ | 2003 01 27 | 704 | 1.0− | 0.0 | 2006 10 12 | 644 | 0.4− | 0.1+ | | |
| 2001 11 09 | 644 | 0.0 | 0.1+ | 2003 03 08 | 704 | 1.1− | 1.5+ | 2006 10 16 | 703 | 0.9− | 0.7+ | | |
| 2001 11 09 | 644 | 0.2+ | 0.0 | 2003 03 08 | 704 | 1.1+ | 0.9+ | 2006 10 16 | 703 | 0.0 | 0.1− | | |
| 2001 11 09 | 644 | 0.3+ | 0.1− | 2003 03 08 | 704 | 0.5+ | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.3− | | |
| 2001 11 12 | 704 | 0.3+ | 1.4+ | 2003 03 08 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.2+ | | |
| 2001 11 12 | 704 | (0.1+ | 2.6+) | 2003 03 08 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.1− | | |
| 2001 11 12 | 704 | 0.3− | 1.5+ | 2004 04 24 | 691 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 1.0− | 0.6+ | | |
| 2001 11 12 | 704 | (0.6− | 2.1+) | 2004 04 24 | 691 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.8+ | | |
| 2001 11 12 | 704 | 0.4− | 1.2+ | 2004 04 24 | 691 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 1.1+ | | |
| 2001 11 14 | 291 | 0.2+ | 0.0 | 2004 05 10 | 291 | 0.7+ | 1.0+ | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2001 11 14 | 291 | 0.0 | 0.1− | 2004 05 10 | 291 | 0.5+ | 0.8+ | 2006 10 22 | 703 | 0.3+ | 0.5− | | |
| 2001 11 14 | 291 | 0.0 | 0.2− | 2004 05 10 | 291 | 0.2+ | 1.2+ | 2006 10 22 | 703 | 0.5− | 0.3− | | |
| 2001 11 16 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 699 | (1.9+ | 1.0+) | 2006 10 22 | 703 | 0.5+ | 0.2+ | | |
| 2001 11 16 | 644 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.6− | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2001 11 16 | 644 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.6− | 0.4+ | 2006 10 22 | 703 | 0.8− | 0.2+ | | |
| 2001 11 19 | 704 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2001 11 19 | 704 | 0.2− | 0.7− | 2006 09 12 | 703 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2001 11 19 | 704 | 0.6+ | 0.1+ | 2006 09 12 | 703 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2001 11 19 | 704 | 0.1− | 0.4− | 2006 09 12 | 703 | (1.5− | 1.6−) | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.7− | 0.5− | | | | | | |

**(140755)∗ 2001 UY$_{117}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.67605 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19498335 | $\omega$ | 349.27136 | | +0.81660004 | −0.57633958 |
| $a$ | 2.9453554 | $\Omega$ | 45.96994 | | +0.53277327 | +0.73156535 |
| $e$ | 0.1098859 | $i$ | 2.51717 | | +0.22207435 | +0.36420437 |
| $P$ | 5.05 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.2+ | 0.4+ | 2001 11 16 | 644 | 0.0 | 0.4+ | 2003 02 22 | 699 | 0.2+ | 0.5+ | | |
| 1993 02 26 | 691 | 0.4+ | 0.3+ | 2001 11 16 | 644 | 0.2− | 0.5+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | | |
| 1993 02 26 | 691 | 0.4+ | 0.0 | 2001 11 19 | 704 | 0.1− | 0.4+ | 2004 04 22 | 691 | 0.1+ | 0.2+ | | |
| 1996 12 04 | 691 | 0.1+ | 0.2− | 2001 11 19 | 699 | 0.7+ | 0.0 | 2004 04 22 | 691 | 0.0 | 0.5+ | | |
| 1996 12 04 | 691 | 0.0 | 0.1− | 2001 11 19 | 704 | 0.3− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.2− | | |
| 1996 12 04 | 691 | 0.1− | 0.2− | 2001 11 19 | 704 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.6− | | |
| 1996 12 12 | 691 | 0.6+ | 0.4− | 2001 11 19 | 699 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 | | |
| 1996 12 12 | 691 | 0.4+ | 0.5− | 2001 11 19 | 704 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 1996 12 12 | 691 | 0.8+ | 0.7− | 2001 11 19 | 699 | 0.3+ | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 1996 12 15 | 691 | 0.1+ | 0.6− | 2001 11 19 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.1+ | | |
| 1996 12 15 | 691 | 0.3− | 0.7− | 2001 11 19 | 699 | 0.4+ | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 1996 12 15 | 691 | 0.8− | 0.6− | 2001 11 19 | 608 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 1997 01 16 | 691 | 0.0 | 0.1− | 2001 11 19 | 608 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 1997 01 16 | 691 | 0.2+ | 0.0 | 2001 11 19 | 608 | 0.9+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2+ | | |
| 1997 01 16 | 691 | 0.3+ | 0.2− | 2001 11 20 | 704 | 0.5− | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 1997 02 03 | 691 | 0.0 | 0.9− | 2001 11 20 | 704 | 0.4− | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.1− | | |
| 1997 02 03 | 691 | 0.2+ | 0.2− | 2001 11 20 | 704 | 0.6+ | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− | | |
| 1997 02 03 | 691 | 0.3+ | 0.6− | 2001 11 21 | 704 | (0.1+ | 1.6−) | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2001 09 18 | 333 | 0.4+ | 0.3− | 2001 11 21 | 704 | (0.1+ | 1.5−) | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2001 09 18 | 333 | 0.9− | 0.0 | 2001 11 21 | 704 | 0.5+ | 1.5− | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 18 | 333 | 0.3− | 0.4− | 2001 11 21 | 704 | 0.3+ | 1.3− | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 13 | 704 | 0.6+ | 0.1− | 2001 11 21 | 704 | 0.4+ | 1.5− | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2001 10 13 | 704 | 0.4+ | 0.2− | 2001 11 24 | 291 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.8+ | 0.0 | 2001 11 24 | 291 | 0.3− | 0.6+ | 2006 11 09 | J95 | 0.6+ | 0.5− | | |
| 2001 10 18 | 644 | 0.2+ | 0.9+ | 2001 11 24 | 291 | 0.5+ | 0.1+ | 2006 11 09 | J95 | 0.1+ | 0.1− | | |
| 2001 10 18 | 644 | 0.3+ | 1.2+ | 2001 11 25 | 608 | 0.1+ | 0.2+ | 2006 11 09 | J95 | 0.2+ | 0.1− | | |
| 2001 10 18 | 644 | 0.5+ | 1.2+ | 2001 11 25 | 608 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.7− | 0.2+ | | |
| 2001 10 21 | 291 | 0.1− | 0.1+ | 2001 11 25 | 608 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.4− | | |
| 2001 10 21 | 291 | 1.2− | 0.1+ | 2001 12 07 | 704 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.2+ | | |
| 2001 10 21 | 291 | 1.2− | 0.0 | 2001 12 07 | 704 | 0.2+ | 1.0− | 2006 11 11 | G96 | 0.3+ | 0.4− | | |
| 2001 10 22 | 704 | 0.0 | 0.4+ | 2001 12 07 | 704 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.4+ | 0.3− | | |
| 2001 10 22 | 704 | (1.6+ | 0.5−) | 2001 12 07 | 704 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2001 10 22 | 704 | 0.7− | 0.4+ | 2001 12 07 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.5− | | |
| 2001 10 22 | 704 | 0.6+ | 0.5− | 2001 12 07 | 704 | 0.2− | 1.2+ | 2006 11 11 | 703 | 0.0 | 0.2+ | | |
| 2001 10 22 | 704 | 0.1+ | 0.6+ | 2001 12 07 | 704 | 0.4− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.2+ | | |
| 2001 10 23 | 704 | 0.3− | 0.4+ | 2001 12 07 | 704 | 0.6− | 0.7+ | 2006 11 13 | 644 | 0.1− | 0.2+ | | |
| 2001 10 23 | 704 | 0.3− | 0.0 | 2001 12 07 | 704 | 0.0 | 0.6− | 2006 11 13 | 644 | 0.3− | 0.5+ | | |
| 2001 10 23 | 704 | 1.0− | 0.2− | 2001 12 08 | 691 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.1− | 0.2+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.1+ | 2001 12 08 | 691 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2001 10 23 | 704 | 0.2− | 0.0 | 2001 12 08 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.1− | | |
| 2001 10 24 | 704 | 0.3− | 0.2+ | 2001 12 11 | 704 | 1.3− | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.0 | | |
| 2001 10 24 | 704 | 0.3+ | 0.1− | 2001 12 11 | 704 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.5+ | 0.7+ | | |
| 2001 10 24 | 704 | 0.0 | 0.0 | 2001 12 11 | 704 | 0.3− | 0.7− | 2006 11 17 | 703 | 0.5+ | 0.2− | | |
| 2001 10 24 | 704 | 0.1− | 0.5+ | 2001 12 11 | 704 | 1.4− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.8+ | | |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.3− | 0.7− | 2006 11 18 | 704 | 0.3− | 0.6+ | | |
| 2001 10 25 | 644 | (0.1+ | 1.5+) | 2001 12 15 | 704 | 0.3− | 0.1+ | 2006 11 18 | 704 | (0.1− | 1.6+) | | |
| 2001 10 25 | 644 | 0.6+ | 1.3+ | 2001 12 15 | 704 | 0.5− | 0.9− | 2006 11 18 | 704 | 0.6− | 1.5+ | | |
| 2001 10 25 | 644 | 0.1+ | 1.4+ | 2001 12 15 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1− | 0.2+ | | |
| 2001 10 26 | 704 | 0.3− | 0.1− | 2001 12 15 | 704 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.6− | 1.4+ | | |
| 2001 10 26 | 704 | 0.1− | 0.3+ | 2001 12 15 | 704 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.9+ | | |
| 2001 10 26 | 704 | 0.2− | 0.2+ | 2001 12 18 | 704 | 1.1+ | 0.7+ | 2006 11 21 | 704 | 0.7− | 0.6+ | | |
| 2001 11 09 | 704 | 0.3− | 1.2+ | 2001 12 18 | 704 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.4+ | | |
| 2001 11 09 | 704 | 0.3+ | 1.4+ | 2001 12 18 | 704 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3− | 1.0+ | | |
| 2001 11 09 | 704 | 0.4+ | 1.2+ | 2001 12 18 | 704 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.3− | | |
| 2001 11 09 | 704 | 0.1− | 1.1+ | 2001 12 18 | 704 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2001 11 09 | 644 | 0.3− | 0.1+ | 2001 12 19 | 704 | 0.3− | 1.0+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2001 11 09 | 644 | 0.3− | 0.0 | 2001 12 19 | 704 | 0.2− | 0.9+ | 2006 11 27 | G96 | 0.4+ | 0.4− | | |
| 2001 11 09 | 644 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.1− | 0.6+ | 2006 11 27 | 703 | 0.2− | 0.3+ | | |
| 2001 11 12 | 704 | (0.5− | 2.2+) | 2001 12 19 | 704 | 0.6− | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.2+ | | |
| 2001 11 12 | 704 | 1.2+ | 0.7+ | 2001 12 19 | 704 | 0.5− | 1.1+ | 2006 11 27 | 703 | 0.4− | 0.2+ | | |
| 2001 11 12 | 704 | 0.7− | 0.3− | 2003 02 21 | 049 | 1.4− | 0.0 | 2006 11 27 | 703 | 0.5+ | 0.2+ | | |
| 2001 11 12 | 704 | 0.1+ | 1.0+ | 2003 02 21 | 049 | 0.9− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.7+ | | |
| 2001 11 14 | 291 | 0.0 | 0.2+ | 2003 02 21 | 049 | 0.6− | 0.0 | 2006 11 29 | 704 | 0.8− | 0.3+ | | |
| 2001 11 14 | 291 | 0.0 | 0.1+ | 2003 02 22 | 699 | 0.5+ | 0.5+ | 2006 11 29 | 704 | 0.4− | 0.2+ | | |
| 2001 11 14 | 291 | 0.0 | 0.1+ | 2003 02 22 | 699 | 0.4+ | 0.4+ | | | | | | |
| 2001 11 16 | 644 | 0.1+ | 0.4+ | 2003 02 22 | 699 | 0.2+ | 0.5+ | | | | | | |

**(140756)∗ 2001 UR$_{118}$ = 1999 FT$_{93}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 72414)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.25615 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18601904 | $\omega$ | 286.56671 | | +0.97831315 | +0.14920613 | |
| $a$ | 3.0392361 | $\Omega$ | 65.04159 | | −0.06878994 | +0.88829094 | |
| $e$ | 0.2560001 | $i$ | 9.11799 | | −0.19537482 | +0.43436935 | |
| $P$ | 5.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 11 20 | 704 | 1.1− | 0.1+ | 2006 09 17 | 699 | 0.2− | 0.7+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 11 20 | 704 | 0.3− | 0.6+ | 2006 09 17 | 699 | 0.1+ | 0.7+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.2− | 0.5+ | 2006 09 17 | 699 | (1.5+ | 0.2−) |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2001 11 20 | 704 | 0.6− | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.6+ |
| 2001 10 22 | 704 | 0.0 | 1.1+ | 2001 11 20 | 704 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2001 10 22 | 704 | 0.2− | 0.4− | 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2001 10 22 | 704 | 0.3− | 0.3+ | 2001 11 21 | 704 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2001 10 22 | 704 | 1.1− | 0.2+ | 2001 11 21 | 704 | 0.7− | 0.4+ | 2006 09 25 | 703 | 0.4− | 0.1− |
| 2001 10 23 | 704 | 1.0− | 0.2− | 2001 11 21 | 704 | 0.4− | 0.4+ | 2006 09 25 | 703 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.4+ | 0.0 | 2001 11 21 | 704 | 0.8− | 0.2+ | 2006 09 25 | 703 | 0.8− | 0.5+ |
| 2001 10 23 | 704 | 0.8+ | 0.1+ | 2001 12 09 | 691 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.2− | 0.1+ | 2001 12 09 | 691 | 0.4+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2001 12 09 | 691 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.3+ | 0.2+ |
| 2001 10 24 | 704 | 0.3− | 0.1− | 2001 12 14 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.2− | 0.5− | 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.2+ | 0.3− | 2001 12 14 | 704 | 0.1− | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 10 25 | 644 | 0.2− | 0.2+ | 2005 06 11 | 691 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 10 25 | 644 | 0.3− | 0.2+ | 2005 06 11 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 10 25 | 644 | 0.0 | 0.0 | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 11 19 | 699 | 0.4− | 1.4− | 2005 06 14 | 291 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.5− |
| 2001 11 19 | 699 | 0.7− | 0.7+ | 2005 06 14 | 291 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.6+ | 0.5+ |
| 2001 11 19 | 699 | 0.8− | 0.2− | 2005 06 14 | 291 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 1.0+ | 0.6+ |
| 2001 11 19 | 699 | 0.6+ | 0.1+ | 2006 09 17 | 699 | 0.3− | 0.9+ | 2006 10 21 | 703 | 0.5− | 0.3+ |

**(140757)∗ 2001 UX$_{118}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.92274 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19577602 | $\omega$ | 311.76675 | | +0.61281806 | −0.78802613 | |
| $a$ | 2.9373998 | $\Omega$ | 100.34421 | | +0.74162048 | +0.54779093 | |
| $e$ | 0.1729543 | $i$ | 3.43234 | | +0.27286091 | +0.28096246 | |
| $P$ | 5.03 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 691 | 0.1− | 0.4+ | 2001 11 20 | 608 | 0.0 | 0.4− | 2003 03 26 | 691 | 0.1− | 0.5+ |
| 1999 05 17 | 691 | 0.2+ | 0.5− | 2001 11 20 | 608 | 0.3+ | 0.5− | 2003 03 26 | 691 | 0.2+ | 0.3+ |
| 1999 05 17 | 691 | 0.6− | 0.1+ | 2001 11 24 | 704 | (1.6− | 0.8+) | 2004 04 21 | 691 | 0.3+ | 0.1+ |
| 1999 05 20 | 691 | 0.6− | 0.7+ | 2001 11 24 | 704 | (1.6− | 0.4−) | 2004 04 21 | 691 | 0.5+ | 0.1+ |
| 1999 05 20 | 691 | 1.0− | 0.6+ | 2001 11 24 | 704 | 1.4− | 0.1− | 2004 04 21 | 691 | 0.2+ | 0.7+ |
| 1999 05 20 | 691 | 0.5+ | 0.3+ | 2001 11 24 | 704 | 0.8+ | 1.2+ | 2004 05 13 | 691 | 0.6+ | 0.1− |
| 2001 10 17 | 704 | 1.3+ | 0.8+ | 2001 12 08 | 699 | 0.0 | 0.3− | 2004 05 13 | 691 | 0.8+ | 0.5+ |
| 2001 10 17 | 704 | 0.8+ | 1.4+ | 2001 12 08 | 699 | 0.4− | 0.1− | 2004 05 13 | 691 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | (0.1+ | 1.5+) | 2001 12 08 | 699 | 0.1− | 0.2+ | 2005 06 26 | G96 | 0.4− | 1.1+ |
| 2001 10 17 | 704 | 0.7+ | 1.2+ | 2001 12 08 | 699 | 0.1+ | 0.2− | 2005 06 26 | G96 | 0.5− | 0.5+ |
| 2001 10 22 | 704 | 0.1+ | 0.3+ | 2001 12 09 | 691 | 0.1− | 0.1+ | 2005 06 26 | G96 | 0.3+ | 0.7+ |
| 2001 10 22 | 704 | 0.0 | 0.3+ | 2001 12 09 | 691 | 0.0 | 0.0 | 2005 06 26 | G96 | 0.7+ | 0.6+ |
| 2001 10 22 | 704 | 0.4+ | 0.0 | 2001 12 09 | 691 | 0.2− | 0.1− | 2006 10 15 | D35 | 0.3− | 0.2+ |
| 2001 10 22 | 704 | 0.1+ | 0.9− | 2001 12 11 | 704 | 0.5− | 0.2+ | 2006 10 15 | D35 | 0.4− | 0.1+ |
| 2001 10 22 | 704 | 0.5+ | 0.3+ | 2001 12 11 | 704 | 0.5− | 0.3+ | 2006 10 15 | D35 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2001 12 11 | 704 | 0.1+ | 0.2− | 2006 10 18 | 691 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2001 12 11 | 704 | 0.1− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.5− | 0.5− | 2001 12 11 | 704 | 0.4− | 1.1+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 0.3− | 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 10 23 | 704 | 0.4+ | 0.1+ | 2001 12 14 | 704 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2001 12 14 | 704 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.2+ | 0.4+ | 2001 12 14 | 704 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.4− | 1.1+ |
| 2001 10 24 | 704 | 0.2− | 0.2+ | 2001 12 14 | 704 | 0.0 | 0.4− | 2006 11 02 | 703 | 0.4+ | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.2+ | 2001 12 17 | 704 | 0.4+ | 0.7− | 2006 11 02 | 703 | 0.8− | 0.6+ |
| 2001 10 24 | 704 | 0.2− | 0.1− | 2001 12 17 | 704 | 0.2+ | 0.4− | 2006 11 02 | 703 | 0.9− | 0.3− |
| 2001 10 25 | 644 | 0.1+ | 0.8+ | 2001 12 17 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 10 25 | 644 | 0.1+ | 0.0 | 2001 12 17 | 704 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2001 10 25 | 644 | 0.6− | 0.1− | 2001 12 17 | 704 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2001 12 18 | 644 | 0.3− | 1.1+ | 2006 11 11 | 703 | 0.5+ | 0.9− |
| 2001 11 09 | 704 | 0.5− | 0.3+ | 2001 12 18 | 644 | 0.1+ | 1.3+ | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2001 11 09 | 704 | 0.9− | 0.1− | 2001 12 18 | 644 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.2+ | 0.4− | 2001 12 19 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2001 11 09 | 704 | 0.4− | 0.2− | 2001 12 19 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 1.1− | 0.4+ |
| 2001 11 17 | 704 | 0.4− | 0.3+ | 2001 12 19 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 1.3− | 0.2+ |
| 2001 11 17 | 704 | 0.0 | 0.3− | 2001 12 20 | 704 | 0.4− | 0.3+ | 2006 11 14 | 704 | 1.1− | 0.2+ |
| 2001 11 17 | 704 | 0.4+ | 0.1− | 2001 12 20 | 704 | 0.8+ | 0.1+ | 2006 11 14 | 704 | 0.7− | 0.1+ |
| 2001 11 17 | 704 | 0.4+ | 0.4− | 2001 12 20 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.5+ | 0.6+ |
| 2001 11 18 | 704 | 0.2+ | 0.2+ | 2001 12 20 | 704 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.3+ | 0.6+ |
| 2001 11 18 | 704 | 0.3− | 0.0 | 2003 03 07 | 699 | 0.4+ | 1.5+ | 2006 11 17 | 704 | 0.3+ | 0.6+ |
| 2001 11 18 | 704 | 0.1+ | 0.1− | 2003 03 07 | 699 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.7+ | 0.3− |
| 2001 11 18 | 704 | 0.1+ | 0.4+ | 2003 03 07 | 699 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2001 11 18 | 704 | 0.6+ | 1.1− | 2003 03 07 | 699 | (2.3+ | 0.8+) | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2001 11 18 | 704 | 0.0 | 0.0 | 2003 03 09 | 291 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.8+ |
| 2001 11 18 | 704 | 0.3− | 1.0− | 2003 03 09 | 291 | 0.7+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2001 11 18 | 704 | 0.5− | 0.0 | 2003 03 09 | 291 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2001 11 18 | 704 | 0.2+ | 0.1− | 2003 03 09 | 291 | 1.4− | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.3+ |
| 2001 11 18 | 704 | 0.3+ | 0.3− | 2003 03 09 | 291 | (1.7− | 0.3+) | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2001 11 19 | 699 | 0.1+ | 0.1− | 2003 03 09 | 291 | (1.8− | 0.3+) | 2006 11 20 | 704 | 0.1+ | 0.3− |
| 2001 11 19 | 699 | 0.4+ | 0.3+ | 2003 03 13 | 291 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2001 11 19 | 699 | 0.4+ | 0.6− | 2003 03 13 | 291 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.6− | 0.4+ |
| 2001 11 19 | 699 | 0.2+ | 0.3+ | 2003 03 13 | 291 | 0.1− | 0.0 | 2006 11 25 | 683 | 0.7+ | 0.3+ |
| 2001 11 20 | 704 | 0.6+ | 0.3+ | 2003 03 23 | 645 | 0.0 | 0.2− | 2006 11 25 | 683 | 0.5+ | 0.5− |
| 2001 11 20 | 704 | 0.4+ | 0.5+ | 2003 03 23 | 645 | 0.1+ | 0.3− | 2006 11 25 | 683 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2003 03 25 | 644 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.2+ | 1.2+ |
| 2001 11 20 | 704 | 0.8+ | 0.4+ | 2003 03 25 | 644 | 0.4+ | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.7+ |
| 2001 11 20 | 704 | 0.8+ | 0.5+ | 2003 03 25 | 644 | 0.6+ | 0.0 | 2006 11 28 | 704 | 0.7− | 0.3− |
| 2001 11 20 | 608 | 0.5− | 1.2− | 2003 03 26 | 691 | 0.0 | 1.2+ | | | | |

**(140758)∗ 2001 UA$_{119}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.84736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19541061 | $\omega$ | 321.69644 | | +0.65314983 | −0.75514744 | |
| $a$ | 2.9410604 | $\Omega$ | 87.45007 | | +0.70785562 | +0.58256906 | |
| $e$ | 0.0818688 | $i$ | 3.21940 | | +0.26895301 | +0.30060878 | |
| $P$ | 5.04 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.0 | 0.8+ | 2001 12 14 | 291 | 0.2− | 0.6+ | 2005 07 09 | 691 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | 0.4+ | 0.3+ | 2001 12 14 | 291 | 1.0− | 0.7+ | 2005 07 09 | 691 | 0.2+ | 0.1+ |
| 2001 10 22 | 704 | 0.2− | 0.6+ | 2001 12 14 | 291 | 0.3− | 0.7+ | 2005 07 16 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.1− | 0.3− | 2001 12 14 | 704 | (0.1− | 1.6+) | 2005 07 16 | 691 | 0.1− | 0.3− |
| 2001 10 23 | 704 | 0.4− | 0.3+ | 2001 12 14 | 704 | 0.1+ | 0.3+ | 2005 07 16 | 691 | 0.4− | 0.0 |
| 2001 10 23 | 704 | 0.3− | 0.7+ | 2001 12 14 | 704 | (0.5− | 1.6+) | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.1+ | 2001 12 14 | 704 | (0.6− | 1.5+) | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.6+ | 0.3+ | 2001 12 14 | 704 | (0.3+ | 1.8+) | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 2001 10 25 | 644 | 0.2+ | 0.2+ | 2001 12 19 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2001 10 25 | 644 | 0.2+ | 0.4+ | 2001 12 19 | 644 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 10 25 | 644 | 0.1− | 0.1+ | 2001 12 19 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 11 17 | 704 | (1.0− | 3.6+) | 2004 04 28 | 691 | 0.1− | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2001 11 17 | 704 | (0.5+ | 3.4+) | 2004 04 28 | 691 | 0.2+ | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.3− |
| 2001 11 17 | 704 | (1.2+ | 4.0+) | 2004 04 28 | 691 | 0.5+ | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.5+ | 0.0 | 2004 05 13 | 691 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.4+ | 0.4− |
| 2001 11 20 | 704 | 1.3− | 0.5+ | 2004 05 13 | 691 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.5− |
| 2001 11 20 | 704 | 0.8+ | 0.0 | 2004 05 13 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 1.0+ | 0.5− | 2005 06 30 | 691 | 0.4− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.4+ | 0.5− | 2005 06 30 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.4− |
| 2001 11 21 | 704 | 0.1− | 0.4+ | 2005 06 30 | 691 | 0.4+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.0 | 0.5+ | 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.3+ | 0.2+ | 2005 07 05 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 1.3+ | | |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2005 07 05 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.7− | 0.4+ | | |
| 2001 11 21 | 704 | 0.4− | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.5− | 0.2− | | |

**(140759)∗ 2001 UB$_{119}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 310.47114 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18029878 | $\omega$ | 233.00462 | | +0.40487513 | | −0.91419265 | | |
| $a$ | 3.1031839 | $\Omega$ | 193.14820 | | +0.86218105 | | +0.38828587 | | |
| $e$ | 0.1508802 | $i$ | 4.56614 | | +0.30449954 | | +0.11612873 | | |
| $P$ | 5.47 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 1.3− | 0.3+ | 2001 12 11 | 704 | 0.3− | 0.5+ | 2006 09 17 | 704 | 0.8− | 0.5− | | |
| 2001 10 22 | 704 | 0.7− | 1.2+ | 2001 12 11 | 704 | 0.0 | 0.2+ | 2006 09 17 | 704 | (1.6− | 0.3+) | | |
| 2001 10 22 | 704 | 0.6− | 1.3+ | 2001 12 11 | 704 | 0.4− | 0.3+ | 2006 09 17 | 704 | 0.8− | 0.4− | | |
| 2001 10 22 | 704 | (1.7− | 1.1+) | 2001 12 11 | 704 | 0.1− | 0.6+ | 2006 09 17 | 704 | 1.0− | 0.2− | | |
| 2001 10 22 | 704 | 1.3− | 1.1+ | 2001 12 14 | 691 | 0.5+ | 0.1+ | 2006 09 17 | 704 | 1.2− | 0.7− | | |
| 2001 10 23 | 333 | 0.6− | 0.3− | 2001 12 14 | 704 | 0.0 | 0.6+ | 2006 09 18 | 699 | 0.1+ | 1.1+ | | |
| 2001 10 23 | 333 | 0.3− | 0.4+ | 2001 12 14 | 691 | 0.5+ | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.8− | | |
| 2001 10 23 | 333 | 0.1+ | 0.7+ | 2001 12 14 | 704 | 0.4− | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.3− | | |
| 2001 10 23 | 704 | (3.3− | 1.7+) | 2001 12 14 | 704 | 0.5− | 0.8+ | 2006 09 18 | 699 | 0.5+ | 0.9+ | | |
| 2001 10 23 | 704 | (2.3− | 1.3+) | 2001 12 14 | 691 | 0.6+ | 0.0 | 2006 09 23 | 291 | 0.2+ | 0.5+ | | |
| 2001 10 23 | 704 | (2.3− | 1.8+) | 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 09 23 | 291 | 0.2+ | 0.4+ | | |
| 2001 10 23 | 704 | (2.0− | 1.5+) | 2001 12 14 | 704 | 0.8− | 0.6+ | 2006 09 23 | 291 | 0.1+ | 0.5+ | | |
| 2001 10 23 | 704 | (2.7− | 1.6+) | 2001 12 17 | 704 | 0.2− | 0.7+ | 2006 09 24 | 106 | 0.6+ | 0.3− | | |
| 2001 10 24 | 704 | 1.2− | 0.9+ | 2001 12 17 | 704 | 0.2− | 0.3− | 2006 09 24 | 106 | (1.5+ | 0.3+) | | |
| 2001 10 24 | 704 | 1.2− | 0.9+ | 2001 12 17 | 704 | 0.2− | 0.8+ | 2006 09 24 | 106 | 0.2+ | 0.5− | | |
| 2001 10 24 | 704 | 0.2− | 0.1− | 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 09 24 | 106 | 0.0 | 0.2− | | |
| 2001 10 24 | 704 | 0.7− | 0.0 | 2001 12 17 | 704 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.9− | 0.7+ | | |
| 2001 10 24 | 704 | (1.4− | 1.7+) | 2001 12 18 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.5+ | 0.7− | | |
| 2001 11 09 | 704 | 0.5+ | 0.5− | 2001 12 18 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | (1.7+ | 1.8−) | | |
| 2001 11 09 | 704 | 0.2− | 0.3− | 2001 12 18 | 644 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.1− | 0.2+ | | |
| 2001 11 09 | 704 | 0.2+ | 0.2− | 2003 03 06 | 644 | 0.2+ | 0.8+ | 2006 09 27 | 704 | 0.4− | 0.4− | | |
| 2001 11 09 | 704 | 0.5− | 0.7− | 2003 03 06 | 644 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.9− | 0.6+ | | |
| 2001 11 09 | 704 | 0.5− | 1.1− | 2003 03 06 | 644 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.6+ | | |
| 2001 11 17 | 704 | 0.2+ | 0.0 | 2003 03 07 | 704 | 0.6− | 0.7+ | 2006 09 27 | 704 | 0.5− | 0.4+ | | |
| 2001 11 17 | 704 | 0.4+ | 0.3− | 2003 03 07 | 704 | 1.3+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 2001 11 17 | 704 | 0.3+ | 0.4+ | 2003 03 07 | 704 | 0.1− | 1.0+ | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2001 11 17 | 704 | 0.4+ | 0.6− | 2003 03 07 | 704 | 0.0 | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.0 | | |
| 2001 11 18 | 704 | 0.1− | 0.0 | 2003 03 09 | 704 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.3− | 1.0+ | | |
| 2001 11 18 | 704 | 0.2+ | 0.4− | 2003 03 09 | 704 | 0.2+ | 0.9− | 2006 09 29 | 704 | 1.0+ | 1.2+ | | |
| 2001 11 18 | 704 | 0.0 | 0.0 | 2003 03 09 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 1.0+ | 0.7+ | | |
| 2001 11 18 | 704 | 0.3− | 0.2− | 2004 05 28 | 691 | 0.2+ | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.1− | | |
| 2001 11 18 | 704 | 0.3− | 0.8− | 2004 05 28 | 691 | 0.3+ | 0.8+ | 2006 10 09 | 644 | 0.3+ | 0.1+ | | |
| 2001 11 19 | 699 | 0.0 | 0.3+ | 2004 05 28 | 691 | 0.1+ | 1.0+ | 2006 10 09 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 19 | 699 | 0.3− | 0.0 | 2006 08 21 | 691 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.2− | 1.1− | | |
| 2001 11 19 | 699 | 0.6− | 0.5− | 2006 08 21 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.3+ | 1.1− | | |
| 2001 11 19 | 699 | 0.5− | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.1+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.8− | 1.2− | | |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2001 11 20 | 704 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.3+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.6+ | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2001 11 20 | 704 | 0.1+ | 0.5+ | 2006 09 06 | 644 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.6− | | |
| 2001 11 24 | 704 | 0.3+ | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2001 11 24 | 704 | 0.2+ | 0.4− | 2006 09 12 | 703 | 0.7− | 0.6− | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2001 11 24 | 704 | 1.0+ | 0.3− | 2006 09 12 | 703 | 0.6− | 0.7+ | 2006 10 28 | G96 | 0.5+ | 0.4− | | |
| 2001 12 09 | 699 | 0.6− | 0.5− | 2006 09 12 | 703 | 1.2− | 0.8− | 2006 11 21 | G96 | 0.1+ | 0.0 | | |
| 2001 12 09 | 699 | 0.1+ | 0.6+ | 2006 09 12 | 703 | 0.1− | 1.4− | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2001 12 09 | 699 | 1.3+ | 0.5− | 2006 09 16 | 691 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2001 12 09 | 699 | 1.4+ | 0.6− | 2006 09 16 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2001 12 11 | 704 | 0.3− | 0.3+ | 2006 09 16 | 691 | 0.1− | 0.1+ | | | | | | |

**(140760)∗ 2001 UN$_{119}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 271.04626 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17446972 | $\omega$ | 39.01228 | | −0.29754461 | | −0.95397901 | | |
| $a$ | 3.1719233 | $\Omega$ | 68.32620 | | +0.86557043 | | −0.28604198 | | |
| $e$ | 0.1673121 | $i$ | 2.30031 | | +0.40280894 | | −0.09002240 | | |
| $P$ | 5.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 27 | 807 | 0.4− | 0.5+ | 2001 11 20 | 704 | 0.5− | 0.2− | 2001 12 19 | 704 | 0.4+ | 0.8− | | |
| 2000 08 27 | 807 | 0.1− | 0.6+ | 2001 11 20 | 704 | 0.9− | 0.7− | 2001 12 19 | 704 | 0.1− | 0.8− | | |
| 2001 10 22 | 704 | 1.2− | 0.9+ | 2001 11 20 | 704 | 0.3− | 0.1+ | 2002 01 13 | 291 | 0.4+ | 0.8+ | | |
| 2001 10 22 | 704 | 1.6− | 0.0 | 2001 11 20 | 704 | 0.9− | 0.3− | 2002 01 13 | 291 | 0.3− | 0.5+ | | |
| 2001 10 22 | 704 | 0.2− | 0.1− | 2001 11 20 | 608 | 0.5− | 0.7− | 2002 01 13 | 291 | 0.4+ | 0.0 | | |
| 2001 10 23 | 704 | 0.3− | 1.0− | 2001 11 20 | 608 | 0.4− | 0.5− | 2003 03 09 | 704 | 0.5− | 0.5+ | | |
| 2001 10 23 | 704 | 0.4+ | 0.7− | 2001 11 20 | 608 | 0.7− | 0.6− | 2003 03 09 | 704 | 0.5− | 0.5+ | | |
| 2001 10 23 | 704 | 0.3− | 0.1+ | 2001 11 21 | 704 | 0.4− | 0.2− | 2003 03 09 | 704 | 0.4− | 0.4+ | | |
| 2001 10 23 | 704 | 0.7+ | 0.3− | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2003 03 09 | 704 | 0.1− | 0.6+ | | |
| 2001 10 24 | 704 | 0.1+ | 1.4+ | 2001 11 21 | 704 | 0.2− | 0.2+ | 2003 03 26 | 644 | 0.8+ | 0.7+ | | |
| 2001 10 24 | 704 | 0.0 | 0.8+ | 2001 11 21 | 704 | 0.2− | 0.5+ | 2003 03 26 | 644 | 0.7+ | 0.7+ | | |
| 2001 10 24 | 704 | 0.6− | 1.7+ | 2001 11 21 | 704 | 0.0 | 0.3+ | 2003 03 26 | 644 | 0.6+ | 0.4+ | | |
| 2001 10 24 | 704 | 1.1+ | 1.1+ | 2001 12 15 | 704 | 0.8+ | 0.0 | 2003 03 27 | 691 | 0.0 | 0.4+ | | |
| 2001 11 09 | 704 | 0.4+ | 0.1− | 2001 12 15 | 704 | 1.2+ | 0.0 | 2003 03 27 | 691 | 0.6+ | 1.0+ | | |
| 2001 11 09 | 704 | 0.4− | 0.4+ | 2001 12 15 | 704 | 0.0 | 0.4+ | 2003 03 27 | 691 | 0.4+ | 0.4+ | | |
| 2001 11 09 | 704 | 0.6+ | 0.4− | 2001 12 15 | 704 | 1.4+ | 0.7− | 2006 08 18 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 09 | 704 | 0.8− | 0.3− | 2001 12 15 | 704 | 0.8+ | 0.1− | 2006 08 18 | 691 | 0.3+ | 0.0 | | |
| 2001 11 09 | 049 | 0.7+ | 1.2− | 2001 12 18 | 704 | 0.3− | 0.1− | 2006 08 18 | 691 | 0.1− | 0.6+ | | |
| 2001 11 09 | 049 | 0.6+ | 0.9− | 2001 12 18 | 704 | 0.4− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.2+ | | |
| 2001 11 09 | 049 | 0.7+ | 1.2− | 2001 12 18 | 704 | 0.5+ | 0.8− | 2006 09 15 | 691 | 0.1+ | 0.5+ | | |
| 2001 11 16 | 644 | 0.3− | 0.5+ | 2001 12 18 | 704 | 0.1+ | 0.6− | 2006 09 15 | 691 | 0.1− | 0.3+ | | |
| 2001 11 16 | 644 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 0.1− | 0.4− | 2006 09 19 | 703 | 1.6− | 0.8+ | | |
| 2001 11 16 | 644 | 0.1− | 0.2+ | 2001 12 19 | 704 | 0.6+ | 0.3− | 2006 09 19 | 703 | 0.9− | 0.4+ | | |
| 2001 11 19 | 699 | 1.1− | 0.3+ | 2001 12 19 | 704 | 0.3+ | 1.8− | 2006 09 19 | 703 | 1.3− | 0.8+ | | |
| 2001 11 19 | 699 | 0.4− | 0.7+ | 2001 12 19 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.7− | 0.2+ | | |
| 2001 11 19 | 699 | 0.9− | 0.3+ | 2001 12 19 | 644 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.2− | | |
| 2001 11 19 | 699 | 0.7− | 1.7+ | 2001 12 19 | 704 | 0.1+ | 0.9− | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2001 11 20 | 704 | 0.6+ | 0.3− | 2001 12 19 | 644 | 0.6+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | | |

**(140761)∗ 2001 UO$_{120}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 155.93766 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21055323 | $\omega$ | 208.92757 | | −0.19347444 | | +0.96425395 | | |
| $a$ | 2.7983032 | $\Omega$ | 50.52451 | | −0.84897597 | | −0.07204730 | | |
| $e$ | 0.0635101 | $i$ | 13.56583 | | −0.49173921 | | −0.25499708 | | |
| $P$ | 4.68 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 1.0+ | 0.3− | 2001 12 09 | 699 | (1.6− | 0.9+) | 2004 04 25 | 704 | 0.3− | 0.4+ | | |
| 2001 09 26 | 704 | 1.0+ | 0.9+ | 2001 12 09 | 699 | 0.7− | 0.2+ | 2004 05 15 | 704 | 0.5− | 0.4+ | | |
| 2001 09 26 | 704 | 0.3+ | 0.6+ | 2001 12 09 | 699 | 1.1− | 0.2+ | 2004 05 15 | 704 | 0.7− | 0.2+ | | |
| 2001 10 18 | 644 | 0.1− | 0.7+ | 2001 12 11 | 704 | 0.0 | 0.7+ | 2004 05 15 | 704 | 0.5− | 0.6+ | | |
| 2001 10 18 | 644 | 0.2− | 0.7+ | 2001 12 11 | 704 | 0.9− | 0.0 | 2004 05 16 | 704 | 0.5+ | 0.3+ | | |
| 2001 10 18 | 644 | 0.0 | 0.6+ | 2001 12 11 | 704 | 0.1+ | 0.6− | 2004 05 16 | 704 | 0.7+ | 0.1− | | |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2001 12 11 | 704 | 0.0 | 0.3+ | 2004 05 16 | 704 | 0.5+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2001 12 15 | 704 | (1.4+ | 1.6−) | 2004 05 16 | 704 | 0.6+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.9− | 0.2− | 2001 12 15 | 704 | (0.5− | 2.0−) | 2004 05 16 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2001 12 15 | 704 | (0.5+ | 2.3−) | 2004 05 19 | 704 | 0.6+ | 0.5+ | | |
| 2001 10 21 | 704 | 0.1− | 0.3− | 2001 12 15 | 704 | 0.5+ | 0.9− | 2004 05 19 | 704 | 0.5+ | 0.6+ | | |
| 2001 10 22 | 704 | 0.5− | 0.3+ | 2001 12 18 | 704 | 0.6+ | 0.7− | 2004 05 19 | 704 | 0.1− | 0.7+ | | |
| 2001 10 22 | 704 | 0.7− | 0.6+ | 2001 12 18 | 704 | 0.5− | 0.8− | 2004 05 19 | 704 | 0.1+ | 0.6+ | | |
| 2001 10 22 | 704 | 0.4+ | 0.7+ | 2001 12 18 | 704 | 0.0 | 1.1− | 2004 06 11 | 704 | (0.8+ | 1.6+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | (1.0+ | 1.8+) | 2001 12 18 | 704 | 0.2− | 0.9− | 2004 06 11 | 704 | (1.0+ | 2.2+) | | |
| 2001 10 23 | 704 | 0.3− | 1.0+ | 2001 12 18 | 704 | 0.5− | 0.7− | 2004 06 11 | 703 | 0.6− | 1.2+ | | |
| 2001 10 23 | 704 | 0.4+ | 0.5+ | 2001 12 19 | 644 | 0.5− | 0.1− | 2004 06 11 | 704 | (0.7− | 2.7+) | | |
| 2001 10 23 | 704 | 0.3− | 1.0+ | 2001 12 19 | 704 | 0.1− | 0.4+ | 2004 06 11 | 703 | 0.5− | 0.6+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.8+ | 2001 12 19 | 644 | 0.4− | 0.2+ | 2004 06 11 | 703 | 0.2+ | 1.2+ | | |
| 2001 10 24 | 704 | 0.4− | 0.5+ | 2001 12 19 | 704 | 0.3− | 0.2− | 2004 06 11 | 703 | (0.9− | 2.1+) | | |
| 2001 10 24 | 704 | 0.4− | 0.4+ | 2001 12 19 | 644 | 0.3− | 0.3+ | 2004 06 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 24 | 704 | 0.5+ | 0.3+ | 2001 12 19 | 704 | 0.7− | 0.0 | 2004 06 15 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 24 | 704 | 0.6+ | 0.9+ | 2001 12 19 | 704 | 0.4− | 0.2+ | 2004 06 15 | 691 | 0.0 | 0.2+ | | |
| 2001 10 24 | 704 | 0.1+ | 0.7+ | 2003 01 05 | 699 | 1.0− | 0.3− | 2004 06 16 | 704 | 0.6+ | 0.8− | | |
| 2001 10 25 | 704 | 0.3+ | 0.3+ | 2003 01 05 | 699 | 0.3− | 0.5+ | 2004 06 16 | 704 | 0.3− | 0.1+ | | |
| 2001 10 25 | 704 | 0.2+ | 0.4+ | 2003 01 05 | 699 | 1.0− | 0.6+ | 2004 06 16 | 704 | 0.0 | 0.2− | | |
| 2001 10 25 | 704 | 0.2− | 0.4+ | 2003 01 05 | 699 | 0.0 | 0.2+ | 2004 06 22 | E12 | 0.5+ | 0.3+ | | |
| 2001 10 25 | 644 | 0.6− | 0.3+ | 2003 01 25 | 704 | 1.3+ | 1.1+ | 2004 06 22 | E12 | 0.9− | 0.3+ | | |
| 2001 10 25 | 704 | 0.7+ | 0.3+ | 2003 01 25 | 704 | 0.5− | 0.3+ | 2004 06 22 | E12 | 0.1+ | 0.3− | | |
| 2001 10 25 | 644 | 0.6− | 0.5+ | 2003 01 25 | 704 | 0.1+ | 0.5− | 2004 06 22 | E12 | 0.3+ | 0.2+ | | |
| 2001 10 25 | 704 | 1.1− | 1.2+ | 2003 03 08 | 644 | 0.2+ | 0.2+ | 2004 07 05 | E12 | 1.2+ | 1.5+ | | |
| 2001 10 25 | 644 | 0.5− | 0.2+ | 2003 03 08 | 644 | 0.5+ | 0.3+ | 2004 07 05 | E12 | 0.6− | 0.9− | | |
| 2001 11 09 | 704 | 0.5− | 0.5− | 2003 03 08 | 644 | 0.4+ | 0.4+ | 2004 07 05 | E12 | 0.2− | 0.3+ | | |
| 2001 11 09 | 704 | 0.2+ | 0.5+ | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2004 07 05 | E12 | 0.3− | 0.5− | | |
| 2001 11 09 | 704 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 1.0+ | 0.4+ | 2005 07 28 | 644 | 0.1+ | 0.5− | | |
| 2001 11 09 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 1.4+ | 0.6− | 2005 07 28 | 644 | 0.5− | 0.2− | | |
| 2001 11 09 | 704 | 0.1− | 0.6− | 2004 02 23 | 704 | 0.8+ | 0.4+ | 2005 07 28 | 644 | 0.3− | 0.2+ | | |
| 2001 11 17 | 704 | 0.9− | 0.3+ | 2004 04 12 | 691 | 0.3+ | 0.1+ | 2005 09 02 | 644 | 0.3− | 0.7+ | | |
| 2001 11 17 | 704 | 0.2+ | 0.1− | 2004 04 12 | 644 | 0.4+ | 0.4+ | 2005 09 02 | 644 | 0.3− | 0.4+ | | |
| 2001 11 17 | 704 | 0.2+ | 0.2− | 2004 04 12 | 644 | 0.4+ | 0.2+ | 2005 09 02 | 644 | 0.3− | 0.4+ | | |
| 2001 11 20 | 704 | 0.7− | 0.3+ | 2004 04 12 | 644 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 1.1− | 0.7+ | | |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.0 | | |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2004 04 12 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 704 | (0.2− | 2.0+) | | |
| 2001 11 20 | 704 | 0.3− | 0.3+ | 2004 04 17 | 704 | 0.6+ | 0.5+ | 2006 11 21 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.9+ | 2004 04 17 | 704 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.3+ | 0.6− | | |
| 2001 11 21 | 704 | 0.7− | 0.2+ | 2004 04 17 | 704 | 0.8+ | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2004 04 17 | 704 | 0.6+ | 0.4+ | 2006 11 25 | 691 | 0.0 | 0.3+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.7+ | 2004 04 21 | 704 | 0.5+ | 0.4+ | 2006 11 25 | 691 | 0.1− | 0.2+ | | |
| 2001 11 21 | 704 | 0.3+ | 0.8+ | 2004 04 21 | 704 | 0.2− | 0.5+ | 2006 11 25 | 691 | 0.0 | 0.1+ | | |
| 2001 11 21 | 704 | 0.4− | 0.5+ | 2004 04 21 | 704 | 1.0+ | 0.2+ | 2006 11 25 | 691 | 0.3− | 0.3− | | |
| 2001 11 22 | 644 | 0.3− | 0.3+ | 2004 04 21 | 704 | 0.6+ | 1.1+ | 2006 11 25 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 22 | 644 | 0.3− | 0.3+ | 2004 04 25 | 704 | 1.0− | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.3+ | | |
| 2001 11 22 | 644 | 0.2− | 0.3+ | 2004 04 25 | 704 | 0.9− | 0.9+ | | | | | | |
| 2001 12 09 | 699 | 0.8+ | 0.4+ | 2004 04 25 | 704 | 0.2+ | 1.1+ | | | | | | |

**(140762)∗ 2001 UQ$_{120}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 109.81815 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20892847 | $\omega$ | 223.92085 | | +0.49576869 | | +0.86612951 | | |
| $a$ | 2.8127921 | $\Omega$ | 75.89490 | | −0.77763331 | | +0.47529063 | | |
| $e$ | 0.0737003 | $i$ | 3.75445 | | −0.38665208 | | +0.15465601 | | |
| $P$ | 4.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.1+ | 0.8− | 2005 08 30 | 644 | 0.2+ | 0.1+ | | |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.5+ | 0.2+ | 2005 08 30 | 644 | 0.1+ | 0.7+ | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 11 21 | 704 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.0 | | |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.8+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.3− | | |
| 2001 10 17 | 691 | 0.1+ | 0.3− | 2001 11 21 | 704 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.4− | | |
| 2001 10 17 | 691 | 1.1− | 0.3− | 2001 11 21 | 704 | 0.3+ | 1.3− | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2001 10 17 | 691 | 0.1− | 0.1+ | 2004 05 23 | 691 | 1.0+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 22 | 704 | 0.4− | 0.9+ | 2004 05 23 | 691 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.4+ | | |
| 2001 10 22 | 704 | 0.6− | 1.4+ | 2004 05 23 | 691 | 0.3− | 0.9+ | 2006 11 15 | 691 | 0.7+ | 0.0 | | |
| 2001 10 22 | 704 | 0.0 | 0.4+ | 2005 07 28 | 644 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.1+ | | |
| 2001 10 23 | 704 | 0.3+ | 0.8+ | 2005 07 28 | 644 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2001 10 23 | 704 | 0.5− | 0.9+ | 2005 07 28 | 644 | 0.1+ | 0.5+ | 2006 11 23 | 691 | 0.5− | 0.2+ | | |
| 2001 10 23 | 704 | 0.0 | 0.5− | 2005 08 04 | 644 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 23 | 704 | 0.6− | 1.1+ | 2005 08 04 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.5+ | | |
| 2001 10 24 | 704 | 0.9+ | 0.9+ | 2005 08 04 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2001 10 24 | 704 | 1.2+ | 0.3+ | 2005 08 28 | E12 | 0.4− | 0.4+ | 2006 12 01 | 691 | 0.0 | 0.2− | | |
| 2001 10 24 | 704 | 0.1− | 1.0+ | 2005 08 28 | E12 | 0.5− | 0.3+ | 2006 12 01 | 691 | 0.5− | 0.0 | | |
| 2001 11 20 | 704 | 0.9+ | 0.0 | 2005 08 28 | E12 | 1.1− | 0.1− | 2006 12 01 | 691 | 0.5− | 0.1+ | | |
| 2001 11 20 | 704 | 0.4+ | 0.2− | 2005 08 28 | E12 | 0.3− | 0.5+ | | | | | | |
| 2001 11 20 | 704 | 0.8+ | 0.4− | 2005 08 30 | 644 | 0.4− | 0.2+ | | | | | | |

**(140763)∗ 2001 UY$_{120}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 338.02690 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20209510 | $\omega$ | 289.19049 | | +0.12944313 | | −0.99136327 | | |
| $a$ | 2.8758453 | $\Omega$ | 153.34512 | | +0.92648576 | | +0.11335032 | | |
| $e$ | 0.2124277 | $i$ | 2.69014 | | +0.35336753 | | +0.06595883 | | |
| $P$ | 4.88 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 16 | 566 | 0.6− | 0.8+ | 2001 12 09 | 699 | 0.8+ | 0.0 | 2006 10 25 | D35 | 0.2+ | 0.1− | | |
| 1996 10 16 | 566 | 0.7− | 0.4+ | 2001 12 09 | 699 | 0.5− | 0.8+ | 2006 10 25 | D35 | 0.2+ | 0.2− | | |
| 1996 10 16 | 566 | 0.7− | 0.3+ | 2001 12 11 | 704 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.4− | 0.6− | | |
| 2001 09 26 | 333 | 1.2− | 0.2+ | 2001 12 11 | 704 | 0.5− | 0.1+ | 2006 11 14 | 704 | 0.3+ | 0.4+ | | |
| 2001 09 26 | 333 | 1.0− | 0.2− | 2001 12 11 | 704 | 0.7− | 1.3− | 2006 11 14 | 704 | 0.1− | 0.5− | | |
| 2001 09 26 | 333 | 0.9+ | 0.7+ | 2001 12 11 | 704 | 0.0 | 1.0− | 2006 11 14 | 704 | 0.3− | 1.3+ | | |
| 2001 10 17 | 691 | 0.4− | 0.1+ | 2001 12 11 | 704 | 0.5− | 0.7− | 2006 11 16 | G96 | 0.2− | 0.4− | | |
| 2001 10 17 | 691 | 0.1− | 0.2+ | 2001 12 14 | 704 | 0.9+ | 0.9− | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2001 10 17 | 691 | 0.0 | 0.4+ | 2001 12 14 | 704 | 1.3+ | 1.0− | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2001 10 22 | 704 | 0.6− | 0.4+ | 2001 12 14 | 704 | 1.0+ | 0.9− | 2006 11 16 | G96 | 0.3+ | 0.4− | | |
| 2001 10 22 | 704 | 1.3− | 1.1+ | 2001 12 14 | 704 | 0.9+ | 0.4− | 2006 11 17 | 704 | 0.1− | 0.3− | | |
| 2001 10 22 | 704 | 0.2− | 0.6+ | 2001 12 14 | 704 | 0.4+ | 1.1− | 2006 11 17 | 704 | 0.3− | 0.6− | | |
| 2001 10 22 | 704 | 0.6− | 0.9+ | 2001 12 17 | 704 | (1.6+ | 0.4−) | 2006 11 17 | 704 | 0.7− | 0.1− | | |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2001 12 17 | 704 | 1.0+ | 0.1− | 2006 11 17 | 704 | 0.6− | 0.5− | | |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2001 12 17 | 704 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.8− | | |
| 2001 10 23 | 704 | (1.1− | 1.9+) | 2001 12 17 | 704 | 0.1+ | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.1− | | |
| 2001 10 23 | 704 | 1.1− | 0.3− | 2001 12 20 | 691 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2001 10 24 | 704 | 0.1− | 0.6+ | 2001 12 20 | 691 | 0.4+ | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.1− | | |
| 2001 10 24 | 704 | 0.2− | 0.1− | 2001 12 20 | 691 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.9− | 1.0− | | |
| 2001 10 24 | 704 | 0.3− | 0.1− | 2002 01 09 | 704 | (0.7− | 1.8+) | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2001 10 24 | 704 | 0.4− | 0.3+ | 2002 01 09 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2002 01 09 | 704 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.3+ | | |
| 2001 10 25 | 644 | 0.2− | 0.7+ | 2003 03 23 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.6+ | | |
| 2001 10 25 | 644 | 0.1+ | 0.6+ | 2003 03 23 | 691 | 0.5− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.9− | | |
| 2001 10 25 | 644 | 0.2− | 0.7+ | 2003 03 23 | 691 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.0 | 1.4− | | |
| 2001 11 09 | 704 | 0.1+ | 0.6+ | 2003 03 31 | 699 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.2− | 0.8− | | |
| 2001 11 09 | 704 | 1.1+ | 0.1− | 2003 03 31 | 699 | 1.5− | 1.2+ | 2006 11 20 | 704 | 0.5+ | 0.9− | | |
| 2001 11 09 | 704 | (1.7− | 1.4+) | 2003 03 31 | 699 | 0.4− | 0.7+ | 2006 11 20 | 704 | 0.1− | 1.0− | | |
| 2001 11 09 | 704 | 0.3− | 0.8+ | 2003 03 31 | 699 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2001 11 19 | 699 | 0.1+ | 0.6+ | 2003 04 07 | 691 | 0.9+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 2001 11 19 | 699 | 0.3− | 1.0+ | 2003 04 07 | 691 | 0.8+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2001 11 19 | 699 | 0.3+ | 0.2+ | 2003 04 07 | 691 | 0.5+ | 0.1− | 2006 11 25 | 704 | 0.1− | 0.6+ | | |
| 2001 11 19 | 699 | 0.6− | 0.7+ | 2003 04 26 | 691 | 0.1+ | 0.5+ | 2006 11 25 | 704 | 0.6− | 0.0 | | |
| 2001 11 19 | 608 | (1.8+ | 2.0+) | 2003 04 26 | 691 | 0.1+ | 0.3+ | 2006 11 25 | 704 | 0.5+ | 0.3+ | | |
| 2001 11 19 | 608 | (1.6+ | 1.2+) | 2003 04 26 | 691 | 0.5+ | 0.7+ | 2006 11 25 | 704 | 1.0+ | 0.9+ | | |
| 2001 11 19 | 608 | (1.9+ | 2.0+) | 2005 07 15 | G96 | 0.1− | 0.9+ | 2006 11 25 | 704 | 0.7+ | 0.5+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.8+ | 2005 07 15 | G96 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.0 | | |
| 2001 11 20 | 704 | 0.3− | 0.7+ | 2005 07 15 | G96 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.3+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.2− | 1.0+ | 2005 07 15 | G96 | 0.1− | 0.5+ | 2006 11 29 | 704 | 0.1+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.2− | 1.2+ | 2005 07 18 | 644 | 0.6− | 0.6+ | 2006 11 29 | 704 | 0.4− | 0.5+ | | |
| 2001 11 20 | 704 | 0.8+ | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.6+ | 2006 11 29 | 704 | 0.1− | 0.1+ | | |
| 2001 12 09 | 699 | 0.1− | 1.0+ | 2005 07 18 | 644 | 0.1− | 0.0 | | | | | | |
| 2001 12 09 | 699 | 0.5− | 0.2+ | 2006 10 25 | D35 | 0.0 | 0.3+ | | | | | | |

**(140764)∗ 2001 UB$_{122}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.03378 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17680747 | $\omega$ | 325.88066 | | +0.93350135 | −0.28017394 | |
| $a$ | 3.1439018 | $\Omega$ | 51.99982 | | +0.35810348 | +0.76039644 | |
| $e$ | 0.1099393 | $i$ | 16.49803 | | −0.01836070 | +0.58591792 | |
| $P$ | 5.57 | $H$ | 13.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | (1.8+ | 0.2−) | 2001 11 19 | 704 | 0.3+ | 0.1+ | 2003 01 25 | 704 | 0.7+ | 0.8+ |
| 2001 09 17 | 704 | 0.3+ | 0.1+ | 2001 11 21 | 704 | 0.3− | 0.7− | 2003 01 25 | 704 | 1.0− | 0.8+ |
| 2001 09 17 | 704 | 0.6+ | 0.1+ | 2001 11 21 | 704 | 0.3− | 0.5− | 2003 01 25 | 704 | 0.4+ | 0.1+ |
| 2001 09 17 | 704 | 0.1+ | 0.4+ | 2001 11 21 | 704 | 0.2− | 0.5− | 2003 01 25 | 704 | 0.7+ | 0.4+ |
| 2001 09 26 | 704 | 0.5+ | 1.4− | 2001 11 21 | 704 | 0.3− | 0.5− | 2003 02 08 | 699 | 0.1+ | 0.2− |
| 2001 09 26 | 704 | (2.2+ | 1.1−) | 2001 11 21 | 704 | 0.2− | 0.4− | 2003 02 08 | 699 | 1.1+ | 0.3+ |
| 2001 09 26 | 704 | 0.3+ | 1.0− | 2001 12 08 | 699 | 0.5− | 0.8+ | 2003 02 08 | 699 | 0.2+ | 0.2− |
| 2001 09 26 | 704 | 0.6+ | 0.4− | 2001 12 08 | 699 | 0.8− | 0.4+ | 2003 02 08 | 699 | 0.6− | 0.1+ |
| 2001 09 26 | 704 | 0.6+ | 1.4− | 2001 12 08 | 699 | 0.8− | 0.2+ | 2003 02 11 | 704 | 0.6+ | 0.3− |
| 2001 10 12 | 699 | 0.2− | 0.9+ | 2001 12 08 | 699 | 0.4− | 0.2+ | 2003 02 11 | 704 | (1.6− | 1.1−) |
| 2001 10 12 | 699 | 1.0+ | 0.9− | 2001 12 10 | 704 | 0.3+ | 0.2+ | 2003 02 11 | 704 | 1.4− | 1.4− |
| 2001 10 12 | 699 | 0.4− | 1.1+ | 2001 12 10 | 704 | 0.1− | 0.2+ | 2003 02 19 | 644 | 0.3− | 0.8+ |
| 2001 10 12 | 699 | 0.3− | 0.1+ | 2001 12 10 | 704 | 0.1− | 0.4+ | 2003 02 19 | 644 | 0.3− | 0.7+ |
| 2001 10 13 | 704 | 0.5+ | 0.3− | 2001 12 10 | 704 | 0.3− | 0.3+ | 2003 02 19 | 644 | 0.3− | 0.6+ |
| 2001 10 13 | 704 | 0.8+ | 0.8− | 2001 12 10 | 704 | 0.5− | 0.4− | 2003 03 09 | 644 | 0.0 | 0.2+ |
| 2001 10 13 | 704 | 0.3− | 1.2− | 2001 12 15 | 704 | 0.3− | 0.1+ | 2003 03 09 | 644 | 0.2− | 0.2+ |
| 2001 10 13 | 704 | 1.2+ | 0.0 | 2001 12 15 | 704 | 0.3− | 0.3+ | 2003 03 09 | 644 | 0.1− | 0.0 |
| 2001 10 22 | 704 | 0.4+ | 0.1+ | 2001 12 15 | 704 | 0.5− | 0.4− | 2004 03 23 | 704 | 1.2+ | 0.4− |
| 2001 10 22 | 704 | 0.2+ | 0.1+ | 2001 12 15 | 704 | 0.0 | 0.2− | 2004 03 23 | 704 | 1.1+ | 1.1− |
| 2001 10 22 | 704 | 0.2− | 0.0 | 2001 12 15 | 704 | 0.6− | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.6+ |
| 2001 10 22 | 704 | 0.2+ | 0.3− | 2001 12 18 | 704 | 0.5+ | 0.4+ | 2004 04 10 | 644 | 0.0 | 0.7+ |
| 2001 10 23 | 333 | 0.2− | 0.5− | 2001 12 18 | 704 | 0.1+ | 0.4+ | 2004 04 10 | 644 | 0.1+ | 0.6+ |
| 2001 10 23 | 333 | 1.1+ | 0.5− | 2001 12 18 | 704 | 0.6+ | 0.6+ | 2004 04 10 | 644 | 0.1− | 0.6+ |
| 2001 10 23 | 333 | 0.0 | 0.5− | 2001 12 18 | 704 | 0.0 | 0.6+ | 2004 04 17 | 699 | 0.4− | 0.2− |
| 2001 10 23 | 704 | 0.5− | 0.5− | 2001 12 18 | 704 | 0.3− | 0.5+ | 2004 04 17 | 699 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.8− | 0.6− | 2001 12 19 | 704 | 1.0+ | 0.4− | 2004 04 17 | 699 | 0.5− | 0.3− |
| 2001 10 23 | 704 | 0.3− | 0.9− | 2001 12 19 | 704 | 0.7+ | 0.5− | 2004 04 17 | 699 | 0.4+ | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.5− | 2001 12 19 | 704 | 0.6+ | 0.3− | 2004 04 21 | 703 | 0.6+ | 0.1− |
| 2001 10 23 | 704 | 0.3− | 0.1− | 2001 12 19 | 704 | 0.6+ | 0.1+ | 2004 04 21 | 703 | 1.0+ | 0.7+ |
| 2001 10 24 | 704 | 0.4− | 0.1+ | 2001 12 19 | 704 | 0.4+ | 0.2− | 2004 04 21 | 703 | 0.3− | 0.2− |
| 2001 10 24 | 704 | 0.3+ | 0.1+ | 2001 12 20 | 644 | 0.2− | 0.0 | 2004 04 21 | 703 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 1.2+ | 2001 12 20 | 704 | 1.1+ | 0.2− | 2004 04 23 | 704 | (0.4− | 1.7+) |
| 2001 10 24 | 704 | 0.1+ | 0.3+ | 2001 12 20 | 644 | 0.1− | 0.2− | 2004 04 23 | 704 | 0.4− | 0.8+ |
| 2001 10 24 | 704 | 0.3+ | 0.6+ | 2001 12 20 | 704 | 0.7+ | 0.4− | 2004 04 23 | 704 | 0.3− | 0.4+ |
| 2001 10 25 | 644 | 0.4− | 0.0 | 2001 12 20 | 704 | 0.1+ | 0.1+ | 2004 04 23 | 704 | 0.2− | 0.3+ |
| 2001 10 25 | 644 | 0.3− | 0.2− | 2001 12 20 | 644 | 0.1+ | 0.0 | 2004 04 23 | 704 | 0.1+ | 0.8+ |
| 2001 10 25 | 644 | 0.3− | 0.1+ | 2001 12 20 | 704 | 0.5− | 0.1− | 2006 07 31 | E12 | 0.6+ | 0.3− |
| 2001 10 26 | 704 | 0.5− | 0.1+ | 2001 12 20 | 704 | (2.6− | 0.3+) | 2006 07 31 | E12 | 0.4+ | 0.6− |
| 2001 10 26 | 704 | 0.4− | 0.2+ | 2001 12 21 | 704 | 0.4+ | 0.6+ | 2006 07 31 | E12 | 0.2− | 0.4− |
| 2001 10 26 | 704 | 0.4− | 0.5+ | 2001 12 21 | 704 | 0.1− | 0.4+ | 2006 07 31 | E12 | 1.3− | 0.3+ |
| 2001 10 26 | 704 | 0.1+ | 0.9+ | 2001 12 21 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.5− | 0.3+ |
| 2001 10 26 | 704 | 0.9− | 1.1+ | 2002 01 06 | 644 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.3− | 1.0+ |
| 2001 11 09 | 704 | (1.7− | 0.2−) | 2002 01 06 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.9− |
| 2001 11 09 | 704 | (1.9− | 0.9−) | 2002 01 06 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 2001 11 09 | 704 | (1.1− | 1.6−) | 2002 01 11 | 699 | (1.6− | 1.7−) | 2006 10 11 | 644 | 0.4− | 0.5+ |
| 2001 11 09 | 704 | (2.9− | 0.5−) | 2002 01 11 | 699 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2001 11 09 | 704 | (2.3− | 1.2−) | 2002 01 11 | 699 | 0.9− | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.3− | 2002 01 11 | 699 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2001 11 12 | 704 | 0.1+ | 0.2− | 2002 02 03 | 699 | 1.2− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.6+ |
| 2001 11 12 | 704 | 0.0 | 0.1− | 2002 02 03 | 699 | 0.5− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2001 11 12 | 704 | 0.2− | 0.0 | 2002 02 03 | 699 | 0.3− | 0.4− | 2006 10 24 | 644 | 0.0 | 0.5+ |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2002 02 03 | 699 | 0.5− | 0.6− | 2006 10 24 | 644 | 0.1− | 0.7+ |
| 2001 11 19 | 704 | 0.3+ | 0.2+ | 2002 12 04 | 704 | 0.2− | 0.6− | 2006 10 24 | 644 | 0.1− | 0.5+ |
| 2001 11 19 | 704 | 0.4+ | 0.2+ | 2002 12 04 | 704 | 0.5+ | 0.8− | 2006 11 19 | 703 | 0.9− | 1.2+ |
| 2001 11 19 | 704 | 0.2+ | 0.1+ | 2002 12 04 | 704 | 0.6+ | 0.6− | 2006 11 19 | 703 | 0.2− | 0.5+ |
| 2001 11 19 | 704 | 0.4+ | 0.1+ | 2003 01 25 | 704 | (0.9+ | 1.6+) | 2006 11 19 | 703 | 0.1− | 0.6+ |

**(140765)∗ 2001 UF$_{122}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.36854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17554462 | $\omega$ | 270.43031 | | +0.81288762 | +0.53578034 | |
| $a$ | 3.1589617 | $\Omega$ | 57.18895 | | −0.36456552 | +0.77386877 | |
| $e$ | 0.0479584 | $i$ | 15.76666 | | −0.45420887 | +0.33773741 | |
| $P$ | 5.61 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.4+ | 0.2− | 2001 11 19 | 704 | 0.4+ | 0.5− | 2004 03 23 | 704 | 0.6+ | 0.9+ |
| 2001 10 22 | 704 | 0.5+ | 0.2− | 2001 11 19 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.5+ |
| 2001 10 22 | 704 | 1.1+ | 1.1− | 2001 11 19 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.8+ | 0.2+ |
| 2001 10 23 | 704 | 0.0 | 0.6− | 2001 11 21 | 704 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.6+ | 0.5+ |
| 2001 10 23 | 704 | 1.0− | 0.4+ | 2001 11 21 | 704 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.9+ | 0.3+ |
| 2001 10 23 | 704 | 0.9− | 0.1− | 2001 11 21 | 704 | 0.2− | 0.2− | 2004 03 29 | 703 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.3− | 0.7+ | 2001 11 21 | 704 | 0.0 | 0.2− | 2004 03 29 | 703 | 0.3+ | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.8+ | 2001 11 21 | 704 | 0.1− | 0.2− | 2004 03 29 | 703 | 0.2+ | 0.2+ |
| 2001 10 24 | 704 | 0.1− | 0.2− | 2001 12 07 | 691 | 0.0 | 0.5− | 2004 03 29 | 703 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.2− | 0.8+ | 2001 12 07 | 691 | 0.7− | 0.3+ | 2004 03 29 | 691 | 0.4+ | 0.1+ |
| 2001 10 24 | 704 | 0.5+ | 0.3+ | 2001 12 07 | 691 | 0.0 | 0.4− | 2004 03 29 | 691 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.0 | 1.1+ | 2001 12 10 | 704 | 1.1− | 0.3− | 2004 03 29 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.2− | 1.1+ | 2001 12 10 | 704 | 0.4− | 0.0 | 2004 04 22 | 703 | (3.3+ | 2.8+) |
| 2001 10 25 | 704 | (0.8+ | 2.3+) | 2001 12 10 | 704 | 0.3− | 1.4− | 2004 04 22 | 703 | 1.0− | 0.3− |
| 2001 10 25 | 704 | (0.3+ | 1.8+) | 2001 12 15 | 704 | 0.7− | 0.1− | 2004 04 22 | 703 | (1.9− | 0.8+) |
| 2001 10 25 | 704 | 0.3− | 1.4+ | 2001 12 15 | 704 | 0.1− | 0.2− | 2004 04 22 | 703 | (0.3+ | 2.1+) |
| 2001 10 25 | 704 | 0.3− | 1.0+ | 2001 12 15 | 704 | 0.9− | 0.2+ | 2004 04 25 | 699 | 1.3− | 0.4+ |
| 2001 10 25 | 704 | (1.6− | 1.1+) | 2001 12 15 | 704 | 0.4− | 0.4+ | 2004 04 25 | 699 | 0.2− | 0.3+ |
| 2001 10 25 | 644 | (0.3+ | 1.8+) | 2001 12 15 | 704 | 0.2− | 0.5+ | 2004 04 25 | 699 | (1.4− | 1.6+) |
| 2001 10 25 | 644 | (0.5+ | 1.8+) | 2001 12 18 | 704 | 0.9− | 1.3+ | 2004 04 25 | 699 | (1.1+ | 2.2+) |
| 2001 10 25 | 644 | (0.6+ | 1.7+) | 2001 12 18 | 704 | 0.5− | 0.6+ | 2004 05 09 | 703 | (3.2+ | 0.3+) |
| 2001 10 26 | 704 | 0.3− | 0.2+ | 2001 12 18 | 704 | 0.0 | 1.0+ | 2004 05 09 | 703 | (2.1+ | 1.0+) |
| 2001 10 26 | 704 | 0.6+ | 0.6+ | 2001 12 18 | 704 | 0.5− | 0.7+ | 2004 05 09 | 703 | 0.2+ | 0.9+ |
| 2001 10 26 | 704 | 0.4− | 0.2+ | 2001 12 18 | 704 | 0.4− | 1.2+ | 2004 05 09 | 703 | 0.0 | 0.9+ |
| 2001 10 26 | 704 | 1.2− | 0.4− | 2001 12 19 | 704 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.3+ | 0.3− | 2001 12 19 | 644 | 0.5+ | 0.7+ | 2006 09 19 | 703 | 0.1− | 0.5+ |
| 2001 11 09 | 704 | 0.3+ | 0.2+ | 2001 12 19 | 704 | 0.8+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.1− |
| 2001 11 09 | 704 | 1.0+ | 0.6+ | 2001 12 19 | 644 | 0.9+ | 1.0+ | 2006 09 19 | 703 | 0.8+ | 1.2+ |
| 2001 11 09 | 704 | 0.9+ | 0.1+ | 2001 12 19 | 644 | 0.1+ | 1.3+ | 2006 09 25 | 703 | 0.5− | 0.7+ |
| 2001 11 09 | 704 | 0.6+ | 0.6+ | 2001 12 19 | 704 | 0.1+ | 0.3− | 2006 09 25 | 703 | 1.1− | 0.9+ |
| 2001 11 12 | 704 | 0.1+ | 0.0 | 2001 12 19 | 704 | 0.1− | 0.1− | 2006 09 25 | 703 | 1.1− | 0.0 |
| 2001 11 12 | 704 | 0.1− | 0.5− | 2001 12 19 | 704 | 0.1− | 0.6− | 2006 09 25 | 703 | 0.5− | 0.0 |
| 2001 11 12 | 704 | 0.5+ | 0.2+ | 2001 12 19 | 704 | 0.5+ | 0.5− | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 2001 11 15 | 608 | 0.3− | 0.5− | 2001 12 19 | 704 | 0.1+ | 0.4− | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2001 11 15 | 608 | 0.6− | 0.2+ | 2001 12 19 | 704 | 0.4− | 0.7− | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 11 15 | 608 | 0.1− | 0.4+ | 2001 12 19 | 704 | 0.4− | 0.8− | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2001 11 16 | 644 | 0.3− | 0.0 | 2002 01 06 | 644 | 0.6+ | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.4+ |
| 2001 11 16 | 644 | 0.6− | 0.0 | 2002 01 06 | 644 | 0.6+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2001 11 16 | 644 | 0.1− | 0.1+ | 2002 01 06 | 644 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2001 11 18 | 291 | 0.8+ | 0.5− | 2003 01 31 | 699 | 0.3+ | 0.6− | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2001 11 18 | 291 | 0.2+ | 0.7− | 2003 01 31 | 699 | 1.2+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2001 11 18 | 291 | 0.1+ | 0.5− | 2003 01 31 | 699 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.1− | 0.4− |
| 2001 11 19 | 699 | 0.1+ | 0.2+ | 2003 01 31 | 699 | 0.5+ | 0.2+ | 2006 10 28 | 703 | 0.6− | 0.6+ |
| 2001 11 19 | 699 | 0.4− | 0.5+ | 2003 02 06 | 699 | (1.0+ | 2.0−) | 2006 10 28 | 703 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.0 | 0.6− | 2003 02 06 | 699 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2001 11 19 | 699 | 0.3+ | 0.1+ | 2003 02 06 | 699 | 0.2− | 1.2+ | | | | |
| 2001 11 19 | 704 | 0.3+ | 0.2+ | 2003 02 06 | 699 | 0.3− | 0.1− | | | | |

**(140766)∗ 2001 UZ$_{122}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.58016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17823889 | $\omega$ | 246.31296 | | +0.51861649 | +0.78879006 | |
| $a$ | 3.1270470 | $\Omega$ | 59.07017 | | −0.57470177 | +0.60729519 | |
| $e$ | 0.2414014 | $i$ | 22.61971 | | −0.63305198 | +0.09488305 | |
| $P$ | 5.53 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.2− | 0.2− | 2001 12 15 | 704 | 0.0 | 0.3+ | 2005 06 04 | 704 | 0.5+ | 0.8− |
| 2001 10 22 | 704 | 0.5+ | 0.5+ | 2001 12 15 | 704 | 0.2− | 0.1− | 2005 06 11 | 703 | 0.9− | 0.5+ |
| 2001 10 22 | 704 | 0.4− | 1.0+ | 2001 12 18 | 704 | 0.2+ | 0.5+ | 2005 06 11 | 703 | 0.2− | 0.6+ |
| 2001 10 23 | 704 | 0.8− | 0.0 | 2001 12 18 | 704 | 0.8+ | 0.4+ | 2005 06 11 | 703 | 0.6− | 0.4+ |
| 2001 10 23 | 704 | 0.6− | 0.8+ | 2001 12 18 | 704 | 0.4+ | 0.8+ | 2005 06 11 | 703 | 0.4− | 0.2− |
| 2001 10 23 | 704 | 0.5− | 0.5+ | 2001 12 18 | 704 | 0.7+ | 0.7+ | 2005 07 03 | 644 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.7− | 0.4+ | 2001 12 19 | 704 | 0.2− | 0.2+ | 2005 07 03 | 644 | 0.4+ | 0.3+ |
| 2001 10 23 | 704 | (0.3− | 1.6+) | 2001 12 19 | 704 | 0.2+ | 0.5+ | 2005 07 03 | 644 | 0.7+ | 0.3+ |
| 2001 10 24 | 704 | 0.8− | 1.3+ | 2001 12 19 | 704 | 0.0 | 0.7+ | 2006 09 24 | 699 | 0.5− | 0.8− |
| 2001 10 24 | 704 | 0.1+ | 0.3+ | 2001 12 19 | 704 | 0.2+ | 0.8+ | 2006 09 24 | 699 | 1.0+ | 0.7+ |
| 2001 10 24 | 704 | 0.5+ | 0.1+ | 2001 12 19 | 704 | 0.1− | 1.0+ | 2006 09 24 | 699 | (1.2− | 2.5+) |
| 2001 10 24 | 704 | 0.2+ | 0.9+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 09 24 | 699 | 1.0− | 0.1+ |
| 2001 11 16 | 291 | 0.2− | 0.9− | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.0 | 0.1− |
| 2001 11 16 | 291 | 0.4− | 0.8− | 2005 04 17 | 703 | 1.1− | 0.3+ | 2006 09 25 | 703 | 0.6+ | 0.3− |
| 2001 11 16 | 291 | 0.2− | 0.9− | 2005 04 17 | 703 | 0.5− | 0.3+ | 2006 09 25 | 703 | 0.3− | 0.4− |
| 2001 11 19 | 704 | 0.3+ | 0.1+ | 2005 04 17 | 703 | 0.7− | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.4+ |
| 2001 11 19 | 704 | 0.9+ | 0.2+ | 2005 04 17 | 703 | 0.7− | 0.2− | 2006 10 04 | 703 | 0.6− | 0.4− |
| 2001 11 19 | 704 | 0.0 | 0.2+ | 2005 05 04 | 704 | 0.8+ | 0.7+ | 2006 10 04 | 703 | 0.6− | 0.3− |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2005 05 04 | 704 | 1.3+ | 0.9+ | 2006 10 04 | 703 | 0.4+ | 0.4+ |
| 2001 11 19 | 704 | 0.5+ | 0.1+ | 2005 05 04 | 704 | 1.0+ | 0.9+ | 2006 10 04 | 703 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 0.2+ | 1.2+ | 2005 05 04 | 704 | 0.9+ | 0.7+ | 2006 10 21 | 703 | (3.0− | 0.4+) |
| 2001 11 21 | 704 | 0.1+ | 0.7+ | 2005 05 04 | 704 | 1.4+ | 0.3− | 2006 10 21 | 703 | 1.2+ | 0.1+ |
| 2001 11 21 | 704 | 1.0− | 0.9+ | 2005 05 18 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.4− |
| 2001 11 21 | 704 | (0.9+ | 2.5+) | 2005 05 18 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.4+ |
| 2001 12 08 | 699 | 0.1− | 0.2+ | 2005 05 18 | 644 | 1.1− | 0.2− | 2006 10 31 | 703 | 1.1+ | 0.4+ |
| 2001 12 08 | 699 | 0.4− | 0.6− | 2005 05 18 | E12 | 0.0 | 0.3+ | 2006 10 31 | 703 | 0.2+ | 0.3+ |
| 2001 12 08 | 699 | 0.8− | 0.1+ | 2005 05 18 | E12 | 0.2+ | 0.1− | 2006 10 31 | 703 | 0.0 | 0.8+ |
| 2001 12 08 | 699 | 0.4+ | 0.9+ | 2005 05 18 | E12 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.7+ | 0.9+ |
| 2001 12 10 | 704 | 1.1+ | 0.1− | 2005 05 18 | E12 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2001 12 10 | 704 | 0.4+ | 0.5+ | 2005 05 29 | E12 | 0.6− | 0.7− | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2001 12 10 | 704 | 0.9− | 0.0 | 2005 05 29 | E12 | 0.3− | 0.4+ | 2006 11 17 | 703 | 1.0− | 0.6− |
| 2001 12 10 | 704 | 0.2− | 0.7+ | 2005 05 29 | E12 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2001 12 10 | 704 | 0.2+ | 0.2+ | 2005 05 29 | E12 | 0.5+ | 0.1+ | 2006 11 23 | 703 | 1.8+ | 1.2− |
| 2001 12 15 | 704 | 0.9− | 1.0+ | 2005 06 04 | 704 | 0.5+ | 0.7− | 2006 11 23 | 703 | 0.4− | 0.6+ |
| 2001 12 15 | 704 | 0.0 | 0.5− | 2005 06 04 | 704 | 0.3− | 0.1− | 2006 11 23 | 703 | 1.1− | 0.8− |
| 2001 12 15 | 704 | 0.2− | 0.0 | 2005 06 04 | 704 | 0.6+ | 0.1+ | 2006 11 23 | 703 | 1.2− | 2.0− |

**(140767)∗ 2001 UA$_{123}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.16364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18741002 | $\omega$ | 137.45474 | | +0.99110697 | −0.08612116 | |
| $a$ | 3.0241791 | $\Omega$ | 227.78157 | | +0.05082096 | +0.94951330 | |
| $e$ | 0.1015330 | $i$ | 7.87269 | | +0.12298049 | +0.30167473 | |
| $P$ | 5.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1− | 0.1+ | 2001 12 11 | 704 | (1.8− | 0.1+) | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2000 09 03 | 645 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2001 08 23 | 704 | 0.3+ | 0.4+ | 2001 12 14 | 704 | 0.5− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.5+ |
| 2001 08 23 | 704 | 0.2− | 0.5− | 2001 12 14 | 704 | 0.4− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2001 08 23 | 704 | 0.2− | 0.2+ | 2001 12 14 | 704 | 0.6− | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.4+ |
| 2001 09 26 | 704 | 0.0 | 0.3− | 2001 12 14 | 704 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2001 09 26 | 704 | 0.3− | 0.9+ | 2001 12 17 | 704 | 0.4− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2001 09 26 | 704 | 0.5+ | 0.1+ | 2001 12 17 | 704 | 1.0− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.4+ |
| 2001 09 26 | 704 | 0.3+ | 0.2− | 2001 12 17 | 704 | 0.9− | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2001 10 22 | 704 | 0.1+ | 0.0 | 2001 12 17 | 704 | 0.8− | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 0.1+ | 0.4− | 2001 12 17 | 704 | 0.7− | 1.1+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2001 10 22 | 704 | 0.0 | 0.7− | 2001 12 18 | 644 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2001 10 22 | 704 | 0.8+ | 0.1+ | 2001 12 18 | 644 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2001 10 23 | 704 | 1.3− | 0.6− | 2001 12 18 | 644 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 0.6− | 2001 12 19 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 224 | 0.2+ | 0.3+ |
| 2001 10 23 | 704 | 1.1− | 0.0 | 2001 12 19 | 704 | 0.5+ | 0.0 | 2006 10 27 | 224 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | 0.9− | 0.4− | 2001 12 19 | 704 | 0.7+ | 0.1+ | 2006 10 27 | 224 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 1.0− | 0.4− | 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 10 26 | 704 | 0.2+ | 0.9+ | 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 10 26 | 704 | 0.4+ | 0.7+ | 2001 12 19 | 704 | 0.6+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 10 26 | 704 | 0.2+ | 0.8+ | 2001 12 19 | 704 | 0.5+ | 0.3− | 2006 10 29 | 704 | 0.1− | 0.5− |
| 2001 10 26 | 704 | 0.8+ | 0.9+ | 2001 12 19 | 704 | 0.6+ | 0.3+ | 2006 10 29 | 704 | 0.4+ | 0.9− |
| 2001 11 09 | 704 | 0.3+ | 0.1− | 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.5+ | 0.3+ |
| 2001 11 09 | 704 | 0.3+ | 0.0 | 2001 12 19 | 704 | 0.5+ | 0.5+ | 2006 10 29 | 704 | 0.0 | 0.5− |
| 2001 11 09 | 704 | 0.0 | 0.5+ | 2001 12 20 | 704 | 0.9+ | 0.4+ | 2006 10 29 | 704 | 1.1+ | 0.2− |
| 2001 11 09 | 704 | 0.3+ | 0.0 | 2001 12 20 | 704 | 0.2+ | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 0.3+ | 1.0+ | 2001 12 20 | 704 | 0.4− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.0 | 0.5− | 2001 12 20 | 704 | 0.7+ | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2001 11 11 | 704 | 0.5+ | 0.8− | 2001 12 20 | 704 | 0.8− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 11 11 | 704 | 0.1+ | 0.6− | 2001 12 20 | 704 | 0.6− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 11 11 | 704 | 0.0 | 0.2+ | 2001 12 20 | 704 | 0.4− | 1.0+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.1+ | 0.1+ | 2001 12 20 | 704 | 0.8− | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 11 12 | 704 | 0.1− | 0.9+ | 2001 12 20 | 704 | 0.5− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.6− | 0.1+ | 2001 12 20 | 704 | 0.4+ | 1.2+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 11 12 | 704 | 0.8+ | 0.8+ | 2001 12 20 | 704 | 0.7− | 0.8− | 2006 11 11 | 703 | 0.7− | 0.7− |
| 2001 11 12 | 704 | 0.3+ | 1.1+ | 2001 12 20 | 704 | 0.9− | 0.7− | 2006 11 11 | 703 | 0.4+ | 0.9− |
| 2001 11 12 | 704 | 0.4+ | 1.4+ | 2001 12 20 | 704 | 0.7− | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2001 11 19 | 699 | (1.5+ | 0.2+) | 2004 04 20 | 704 | (0.2− | 1.8+) | 2006 11 11 | 703 | 1.1− | 0.5− |
| 2001 11 19 | 699 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 0.6+ | 1.4+ | 2006 11 17 | 703 | 0.8− | 0.5− |
| 2001 11 19 | 699 | 0.2+ | 0.7+ | 2004 04 20 | 704 | (0.0 | 1.7+) | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2001 11 19 | 699 | 0.1+ | 0.9+ | 2004 04 22 | 691 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.7− | 0.4+ |
| 2001 11 20 | 704 | 0.4− | 0.2+ | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2004 04 22 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2001 11 20 | 704 | 0.0 | 0.6+ | 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.6+ |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2004 05 13 | 704 | 0.7+ | 1.5+ | 2006 11 18 | 704 | 0.3− | 1.3+ |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2004 05 13 | 704 | 1.3+ | 0.4+ | 2006 11 18 | 704 | 1.4+ | 0.3+ |
| 2001 11 21 | 704 | 1.4+ | 0.0 | 2004 05 13 | 691 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.8− | 0.6+ |
| 2001 11 21 | 704 | 0.9+ | 0.4− | 2004 05 13 | 704 | 0.7+ | 1.3+ | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.8+ | 0.3− | 2004 05 13 | 704 | (1.6− | 1.0+) | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2001 11 21 | 704 | (3.4+ | 0.0 ) | 2004 05 13 | 691 | 0.2+ | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2001 11 21 | 608 | 0.7+ | 0.6+ | 2004 05 21 | 691 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2001 11 21 | 608 | 0.6+ | 0.0 | 2004 05 21 | 691 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2001 11 21 | 608 | 1.1+ | 0.6+ | 2004 05 21 | 691 | 0.0 | 0.9+ | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2001 12 08 | 699 | 1.3+ | 0.3− | 2004 05 29 | 691 | 0.1+ | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2001 12 08 | 699 | 0.2− | 0.1+ | 2004 05 29 | 691 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2001 12 08 | 699 | 0.8− | 0.8− | 2004 05 29 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 12 08 | 699 | 0.4− | 0.7+ | 2005 06 28 | 644 | 0.4− | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2001 12 11 | 704 | (1.5− | 0.2+) | 2005 06 28 | 644 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2001 12 11 | 704 | 1.4− | 0.6+ | 2005 06 28 | 644 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.3− | 0.8+ |
| 2001 12 11 | 704 | (1.9− | 0.3+) | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 2001 12 11 | 704 | 1.3− | 0.8+ | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.1− |

**(140768)∗ 2001 UL$_{123}$ = 2000 QK$_{164}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20620)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.54189 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17552058 | $\omega$ | 228.95378 | | −0.00590940 | −0.99364983 | |
| $a$ | 3.1592501 | $\Omega$ | 221.79704 | | +0.96059489 | +0.02558448 | |
| $e$ | 0.1665708 | $i$ | 9.70561 | | +0.27788944 | −0.10956943 | |
| $P$ | 5.62 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.5+ | 0.2+ | 2001 12 11 | 704 | 1.4+ | 1.0+ | 2006 09 16 | 683 | 0.2+ | 0.3− |
| 2000 08 31 | 704 | 0.5− | 0.4− | 2001 12 11 | 704 | 1.4+ | 0.8+ | 2006 09 16 | 683 | (0.5+ | 1.6+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 1.6− | 0.2+ | 2001 12 11 | 704 | 1.0+ | 1.1+ | 2006 09 16 | 703 | 0.2− | 0.1− | | |
| 2000 09 03 | 704 | 0.3− | 0.9+ | 2001 12 18 | 704 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.1− | 0.3− | | |
| 2000 09 03 | 704 | 0.2− | 0.3+ | 2001 12 18 | 704 | 0.3− | 0.1− | 2006 09 16 | 683 | (0.4− | 1.8+) | | |
| 2000 09 03 | 704 | 0.8− | 1.0+ | 2001 12 18 | 704 | 0.2+ | 0.4− | 2006 09 16 | 703 | 0.1+ | 0.2− | | |
| 2000 09 03 | 704 | 0.0 | 0.5+ | 2001 12 18 | 704 | 0.5+ | 1.3− | 2006 09 16 | 703 | 0.4− | 0.2− | | |
| 2000 09 23 | 704 | (0.9− | 2.1+) | 2001 12 20 | 644 | 0.2− | 0.2+ | 2006 09 17 | 683 | 0.5− | 1.2+ | | |
| 2000 09 23 | 704 | 1.1+ | 0.3+ | 2001 12 20 | 644 | 0.3− | 0.2+ | 2006 09 17 | 683 | 1.3− | 0.9+ | | |
| 2000 09 23 | 704 | 0.6− | 0.6+ | 2001 12 20 | 644 | 0.1− | 0.2+ | 2006 09 17 | 683 | (0.3− | 1.5+) | | |
| 2000 09 23 | 704 | 1.4+ | 0.7− | 2002 01 09 | 704 | 0.2− | 0.3+ | 2006 09 18 | 683 | (2.2+ | 0.1+) | | |
| 2001 09 27 | 704 | 0.9+ | 0.5+ | 2002 01 09 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 683 | 0.5− | 0.3+ | | |
| 2001 09 27 | 704 | 0.3− | 0.3+ | 2002 01 09 | 704 | 0.0 | 0.1+ | 2006 09 18 | 683 | (0.6+ | 1.5+) | | |
| 2001 09 27 | 704 | 0.3+ | 0.1− | 2002 01 09 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.7− | 0.2+ | | |
| 2001 10 15 | 333 | 0.4+ | 1.0− | 2002 01 09 | 704 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.8+ | 1.0+ | | |
| 2001 10 15 | 333 | 0.5+ | 0.1− | 2002 02 08 | 704 | 0.4− | 1.4+ | 2006 09 19 | 699 | 0.4+ | 0.1+ | | |
| 2001 10 15 | 333 | 0.4+ | 0.5+ | 2002 02 08 | 704 | 0.8− | 0.8+ | 2006 09 19 | 699 | 0.2− | 0.5+ | | |
| 2001 10 22 | 704 | 0.4− | 0.5− | 2002 02 08 | 704 | 0.7− | 0.4+ | 2006 09 19 | 699 | (1.7− | 0.7−) | | |
| 2001 10 22 | 704 | 0.6− | 1.3− | 2002 02 08 | 704 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.1+ | | |
| 2001 10 22 | 704 | 0.7− | 1.3− | 2002 02 08 | 704 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.3− | | |
| 2001 10 22 | 704 | 0.4− | 0.6− | 2003 02 11 | 608 | 0.2+ | 0.0 | 2006 09 21 | 106 | 0.1− | 0.3− | | |
| 2001 10 23 | 704 | 0.1+ | 0.2+ | 2003 02 11 | 608 | 0.1+ | 0.1− | 2006 09 21 | 106 | 0.2− | 0.0 | | |
| 2001 10 23 | 704 | 0.1− | 0.3− | 2003 02 11 | 608 | 0.1+ | 0.1+ | 2006 09 21 | 106 | 0.2− | 0.7+ | | |
| 2001 10 23 | 704 | 0.7+ | 0.1− | 2003 02 27 | 608 | 1.2+ | 0.8+ | 2006 09 22 | 106 | 0.2− | 0.3− | | |
| 2001 10 23 | 704 | 0.1− | 0.3− | 2003 02 27 | 608 | 1.4+ | 1.1+ | 2006 09 27 | 699 | 0.0 | 0.0 | | |
| 2001 10 24 | 704 | 0.2− | 1.4− | 2003 02 27 | 608 | 0.5+ | 0.4+ | 2006 09 27 | 699 | 1.0− | 0.8+ | | |
| 2001 10 24 | 704 | 0.4− | 1.0− | 2003 03 10 | 699 | 0.2− | 0.6+ | 2006 09 27 | 699 | 0.4+ | 0.4+ | | |
| 2001 10 24 | 704 | (0.4− | 1.8−) | 2003 03 10 | 699 | 0.9+ | 1.1+ | 2006 09 27 | 699 | (0.6− | 1.7+) | | |
| 2001 11 09 | 704 | (0.9− | 2.3+) | 2003 03 10 | 704 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 1.1− | | |
| 2001 11 09 | 704 | 0.0 | 0.2− | 2003 03 10 | 699 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.0 | | |
| 2001 11 09 | 704 | 0.0 | 0.4+ | 2003 03 10 | 704 | 0.8+ | 0.3+ | 2006 10 17 | 703 | 1.1+ | 1.3− | | |
| 2001 11 09 | 704 | 0.1− | 0.0 | 2003 03 10 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 1.1+ | 0.4+ | | |
| 2001 11 09 | 704 | 0.5− | 0.6+ | 2003 03 10 | 699 | 0.3+ | 1.2+ | 2006 10 22 | 644 | 0.2− | 0.4+ | | |
| 2001 11 17 | 704 | 0.1+ | 0.1+ | 2003 03 10 | 704 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2001 11 17 | 704 | 0.1− | 0.4+ | 2003 03 10 | 704 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.3+ | | |
| 2001 11 17 | 704 | 0.5+ | 0.7+ | 2003 03 28 | 699 | (0.7+ | 1.7+) | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2001 11 17 | 704 | 0.3+ | 0.7+ | 2003 03 28 | 699 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 11 18 | 704 | 0.4− | 0.0 | 2003 03 28 | 699 | 1.0− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 18 | 704 | 0.5− | 0.1− | 2003 03 28 | 699 | 1.2− | 0.9+ | 2006 10 23 | G96 | 0.4− | 0.5+ | | |
| 2001 11 18 | 704 | 0.5− | 0.2− | 2004 06 22 | 691 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.1− | | |
| 2001 11 18 | 704 | 1.1− | 0.6− | 2004 06 22 | 691 | 0.5+ | 0.7+ | 2006 10 23 | G96 | 0.3+ | 0.2+ | | |
| 2001 11 18 | 704 | 1.1− | 0.3− | 2004 06 22 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | 0.4− | 0.5− | 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.2− | 0.6+ | | |
| 2001 11 20 | 704 | 0.4+ | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.0 | | |
| 2001 11 20 | 704 | 0.5− | 1.1+ | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.0 | 0.2+ | | |
| 2001 11 24 | 704 | 0.3− | 0.8− | 2006 09 14 | 557 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.6+ | | |
| 2001 11 24 | 704 | 1.0+ | 0.4− | 2006 09 14 | 557 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 1.0+ | 0.8+ | | |
| 2001 11 24 | 704 | (3.8+ | 0.1−) | 2006 09 15 | 683 | 0.5− | 0.5− | 2006 11 18 | 704 | (1.8+ | 1.1−) | | |
| 2001 12 11 | 704 | 1.0+ | 0.7+ | 2006 09 15 | 683 | 0.1+ | 1.5+ | | | | | | |
| 2001 12 11 | 704 | 0.9+ | 0.6+ | 2006 09 15 | 683 | 0.9− | 1.4+ | | | | | | |

**(140769)∗ 2001 UA$_{124}$**

Discovered 2001 Oct. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.29244 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20380808 | $\omega$ | 286.58296 | | +0.74336318 | −0.63589411 | |
| $a$ | 2.8597086 | $\Omega$ | 113.40871 | | +0.66679202 | +0.67994393 | |
| $e$ | 0.1046206 | $i$ | 13.06718 | | +0.05291115 | +0.36512318 | |
| $P$ | 4.84 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | (1.7− | 2.7−) | 2001 11 17 | 699 | 0.4− | 0.7+ | 2005 07 07 | 691 | 0.2− | 0.1+ | | |
| 2001 09 12 | 704 | (1.3− | 1.5−) | 2001 11 17 | 699 | 0.2− | 0.1− | 2005 07 15 | G96 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | (1.3− | 3.1−) | 2001 11 17 | 699 | 0.2+ | 0.2+ | 2005 07 15 | G96 | 0.3− | 0.2− | | |
| 2001 09 25 | 704 | 1.2− | 0.8+ | 2001 11 17 | 699 | 1.1+ | 0.6− | 2005 07 15 | G96 | 0.0 | 0.8− | | |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2002 11 11 | 291 | 0.0 | 0.4+ | 2005 07 15 | G96 | 1.4+ | 0.1− | | |
| 2001 09 25 | 704 | (1.6− | 1.3+) | 2002 11 11 | 291 | 0.3− | 0.1+ | 2006 10 17 | 703 | (1.4+ | 1.8+) | | |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2002 11 11 | 291 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.9− | 1.2+ | | |
| 2001 09 25 | 704 | 1.4− | 0.9+ | 2003 01 26 | 699 | (2.5+ | 0.4+) | 2006 10 17 | 703 | (1.7+ | 0.5+) | | |
| 2001 09 25 | 704 | 1.2− | 0.1+ | 2003 01 26 | 699 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.5+ | 1.0− | | |
| 2001 09 25 | 704 | 0.6− | 0.8+ | 2003 01 26 | 699 | 1.4+ | 0.7− | 2006 11 16 | 703 | 0.1− | 0.2− | | |
| 2001 10 11 | 704 | (3.6+ | 0.3+) | 2003 01 26 | 699 | 0.9+ | 0.5+ | 2006 11 16 | 703 | 0.6+ | 0.3+ | | |
| 2001 10 11 | 704 | 1.1+ | 1.2− | 2003 01 27 | 699 | 0.1+ | 0.9− | 2006 11 16 | 703 | 0.2− | 0.2+ | | |
| 2001 10 11 | 704 | (1.5+ | 0.6+) | 2003 01 27 | 699 | 0.7− | 0.4− | 2006 11 16 | 703 | 1.1+ | 1.1+ | | |
| 2001 10 11 | 704 | 1.2+ | 1.2− | 2003 01 27 | 699 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.0 | | |
| 2001 10 11 | 704 | 0.5+ | 0.9− | 2003 01 27 | 699 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.3+ | | |
| 2001 10 22 | 644 | 0.3+ | 0.2+ | 2003 02 04 | 699 | (2.0+ | 0.6−) | 2006 11 21 | 704 | 0.0 | 0.3− | | |
| 2001 10 22 | 644 | 0.2+ | 0.1− | 2003 02 04 | 699 | (2.7+ | 1.2−) | 2006 11 21 | 704 | (1.9− | 2.0+) | | |
| 2001 10 22 | 644 | 0.0 | 0.0 | 2003 02 04 | 699 | (0.9+ | 1.5+) | 2006 12 01 | G96 | 0.2− | 0.5− | | |
| 2001 10 28 | 644 | 0.4+ | 0.2+ | 2003 02 04 | 699 | (3.0+ | 0.9+) | 2006 12 01 | G96 | 0.2− | 0.5− | | |
| 2001 10 28 | 644 | 0.2+ | 0.2+ | 2005 07 07 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.6− | | |
| 2001 10 28 | 644 | 0.4+ | 0.2+ | 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.5− | | |

**(140770)∗ 2001 UU$_{125}$**

Discovered 2001 Oct. 23 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.77276 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19251385 | $\omega$ | 229.96084 | | +0.96841215 | +0.17868481 | |
| $a$ | 2.9704898 | $\Omega$ | 119.09035 | | −0.12047867 | +0.94597118 | |
| $e$ | 0.0790747 | $i$ | 11.48031 | | −0.21831809 | +0.27057396 | |
| $P$ | 5.12 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 644 | 0.9− | 0.9+ | 2003 01 04 | 704 | 0.3− | 0.7− | 2006 09 25 | 703 | 0.1− | 0.0 | | |
| 2001 09 22 | 644 | 1.3− | 1.2+ | 2003 01 04 | 704 | 1.2+ | 0.3− | 2006 09 25 | 703 | 0.8− | 0.6− | | |
| 2001 09 22 | 644 | 1.3− | 1.1+ | 2003 01 09 | 704 | 0.7+ | 0.9+ | 2006 09 25 | 703 | 0.4− | 0.1− | | |
| 2001 10 11 | 704 | 0.7+ | 0.6+ | 2003 01 09 | 704 | 0.8+ | 0.1+ | 2006 09 25 | 703 | 0.7+ | 0.1+ | | |
| 2001 10 11 | 704 | 0.0 | 0.3+ | 2003 01 09 | 704 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2001 10 11 | 704 | 0.0 | 0.1+ | 2003 01 31 | 704 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.5+ | 0.4− | | |
| 2001 10 11 | 704 | 1.0+ | 0.2− | 2003 01 31 | 704 | 0.2− | 0.6− | 2006 10 09 | 644 | 0.3+ | 0.0 | | |
| 2001 10 14 | 644 | 0.0 | 0.7+ | 2003 01 31 | 704 | 0.8− | 0.2+ | 2006 10 21 | 703 | 1.1− | 0.1− | | |
| 2001 10 14 | 644 | 0.0 | 0.8+ | 2004 03 23 | 704 | 0.9+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.9− | | |
| 2001 10 14 | 644 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.3− | 1.2+ | 2006 10 21 | 703 | 0.0 | 0.8+ | | |
| 2001 10 19 | 699 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.7+ | 0.4+ | | |
| 2001 10 19 | 699 | 0.3+ | 0.1+ | 2004 03 23 | 704 | (0.4+ | 1.5+) | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2001 10 19 | 699 | 0.2− | 0.1+ | 2004 03 23 | 704 | (2.1+ | 2.3+) | 2006 10 22 | 644 | 0.3− | 0.2− | | |
| 2001 10 19 | 699 | 0.4+ | 0.6+ | 2004 04 25 | 699 | 0.7+ | 1.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 23 | 644 | (0.6− | 1.6−) | 2004 04 25 | 699 | 0.2+ | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.2− | | |
| 2001 10 23 | 644 | 1.4− | 1.2− | 2004 04 25 | 699 | 0.8− | 1.4+ | 2006 10 23 | 644 | 0.3+ | 0.4− | | |
| 2001 10 23 | 644 | 1.1− | 1.1− | 2004 04 25 | 699 | 0.3+ | 0.5+ | 2006 10 23 | 644 | 0.6+ | 0.2− | | |
| 2001 10 28 | 644 | 0.1− | 0.8+ | 2006 09 20 | 703 | 0.4+ | 0.2− | 2006 10 28 | 703 | 0.1+ | 0.6− | | |
| 2001 10 28 | 644 | 0.2+ | 0.8+ | 2006 09 20 | 703 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.6+ | 1.0− | | |
| 2001 10 28 | 644 | 0.3+ | 1.1+ | 2006 09 20 | 703 | 0.1− | 0.5+ | 2006 10 28 | 703 | 0.3− | 0.6− | | |
| 2003 01 04 | 704 | 0.7− | 0.5− | 2006 09 20 | 703 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.0 | | |

**(140771)∗ 2001 UJ$_{126}$**

Discovered 2001 Oct. 23 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.52917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19311662 | $\omega$ | 263.64804 | | +0.95932431 | −0.18938244 | |
| $a$ | 2.9643055 | $\Omega$ | 107.11888 | | +0.25148302 | +0.91024494 | |
| $e$ | 0.1184637 | $i$ | 12.65408 | | −0.12826987 | +0.36822336 | |
| $P$ | 5.10 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.1+ | 1.0+ | 2001 12 07 | 704 | 0.1+ | 0.4+ | 2004 04 15 | 704 | 0.5− | 0.7+ | | |
| 2001 08 18 | 644 | (0.5+ | 1.7+) | 2001 12 15 | 704 | 0.1+ | 0.0 | 2004 04 15 | 704 | 0.3− | 0.3+ | | |
| 2001 08 18 | 644 | 0.3− | 0.7+ | 2001 12 15 | 704 | 0.3− | 0.4− | 2004 04 15 | 704 | 1.2+ | 0.2+ | | |
| 2001 08 18 | 644 | 0.1+ | 1.4+ | 2001 12 15 | 704 | 0.3+ | 0.4− | 2004 04 22 | 703 | 0.0 | 0.4+ | | |
| 2001 08 18 | 644 | 0.5− | 0.9+ | 2001 12 15 | 704 | 0.6− | 0.0 | 2004 04 22 | 703 | 1.1+ | 0.5+ | | |
| 2001 08 18 | 644 | 1.0+ | 1.5+ | 2001 12 15 | 704 | 0.4− | 0.0 | 2004 04 22 | 703 | 0.9+ | 1.3+ | | |
| 2001 08 26 | 644 | 0.1+ | 1.4+ | 2001 12 18 | 645 | 0.1+ | 0.2− | 2004 04 22 | 703 | 0.7− | 0.0 | | |
| 2001 08 26 | 644 | 0.2+ | 1.2+ | 2001 12 18 | 645 | 0.1+ | 0.3− | 2004 05 13 | 704 | 0.3+ | 1.1+ | | |
| 2001 08 26 | 644 | 0.1+ | 1.4+ | 2002 02 11 | 704 | 0.8− | 0.3− | 2004 05 13 | 704 | 0.6− | 1.2+ | | |
| 2001 09 23 | 699 | 0.4− | 0.0 | 2002 02 11 | 704 | 0.0 | 0.8− | 2004 05 13 | 704 | 0.1− | 1.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 699 | 0.4− | 0.3+ | 2002 02 11 | 704 | 0.4− | 0.5− | 2006 09 19 | 703 | 0.9− | 0.4+ | 2001 11 17 | 704 | 0.1− | 0.7− | 2002 01 15 | 704 | 0.1+ | 1.0− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 09 23 | 699 | 0.4− | 0.3+ | 2002 12 31 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.6− | 1.3+ | 2001 11 19 | 699 | 0.5− | 0.3− | 2002 01 15 | 704 | 0.7+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 09 23 | 699 | 0.1− | 0.4+ | 2002 12 31 | 704 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.2− | 1.3+ | 2001 11 19 | 699 | 0.1+ | 0.0 | 2002 01 15 | 704 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 10 14 | 699 | 1.3− | 0.3+ | 2002 12 31 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 1.3− | 0.6+ | 2001 11 19 | 699 | 0.2+ | 0.5− | 2002 01 15 | 704 | 0.8+ | 1.1− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 14 | 699 | 0.0 | 1.2+ | 2002 12 31 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.4− | 1.4+ | 2001 11 19 | 699 | 0.2− | 0.9− | 2002 01 15 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.5− |
| 2001 10 14 | 699 | 0.3− | 0.1− | 2002 12 31 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 704 | 0.1− | 0.7+ | 2001 11 20 | 704 | 0.7+ | 1.1− | 2003 01 26 | 608 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2001 10 14 | 699 | 0.1− | 1.0+ | 2003 01 08 | 608 | 0.7− | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.5+ | 2001 11 20 | 704 | 0.8+ | 0.8− | 2003 01 26 | 608 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2001 10 23 | 644 | 0.0 | 0.3+ | 2003 01 08 | 608 | 0.6− | 0.3+ | 2006 09 30 | 704 | 0.9+ | 0.1+ | 2001 11 20 | 704 | (1.1+ | 2.0−) | 2003 01 26 | 608 | 0.8+ | 0.9+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2001 10 23 | 644 | 0.1+ | 0.3+ | 2003 01 08 | 608 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.1− | 0.2+ | 2001 11 20 | 704 | (0.5+ | 2.2−) | 2003 01 31 | 704 | 0.0 | 1.3+ | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2001 10 23 | 644 | 0.0 | 0.3+ | 2003 02 01 | 704 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.7+ | 1.2− | 2003 01 31 | 704 | 0.7− | 0.8+ | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2001 10 28 | 644 | 0.5− | 0.9+ | 2003 02 01 | 704 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2001 11 21 | 608 | 0.5− | 0.6− | 2003 01 31 | 704 | 0.1+ | 1.5− | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2001 10 28 | 644 | 0.1− | 0.9+ | 2003 02 01 | 704 | 0.7+ | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.0 | 2001 11 21 | 608 | 0.6− | 0.3− | 2003 02 04 | 699 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2001 10 28 | 644 | 0.2− | 0.9+ | 2003 02 01 | 704 | 1.1+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.0 | 2001 11 21 | 608 | 0.8− | 0.8+ | 2003 02 04 | 699 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 10 29 | 644 | 0.2+ | 0.6+ | 2003 02 01 | 704 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2001 11 24 | 704 | (1.6− | 0.5−) | 2003 02 04 | 699 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 10 29 | 644 | 0.4+ | 0.5+ | 2003 02 19 | 644 | 0.7+ | 0.9+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2001 11 24 | 704 | 0.8− | 0.8+ | 2003 02 04 | 699 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 10 29 | 644 | 0.3+ | 0.3+ | 2003 02 19 | 644 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2001 11 24 | 704 | 0.9− | 0.2+ | 2003 03 08 | 704 | 0.9+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.7− |
| 2001 11 07 | 644 | 0.4− | 0.2+ | 2003 02 19 | 644 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2001 11 24 | 704 | 0.7− | 0.2+ | 2003 03 08 | 704 | 0.3− | 0.4− | 2006 10 28 | 703 | 0.7− | 0.8− |
| 2001 11 07 | 644 | 0.5− | 0.3+ | 2003 02 26 | 704 | (0.5− | 1.7−) | 2006 10 11 | 644 | 0.1+ | 0.0 | 2001 11 24 | 704 | 1.0− | 0.2− | 2003 03 08 | 704 | 0.6− | 0.8− | 2006 10 28 | 703 | 0.6− | 0.4− |
| 2001 11 07 | 644 | 0.5− | 0.1+ | 2003 02 26 | 704 | 0.6+ | 0.7− | 2006 10 20 | 703 | 0.2+ | 0.1+ | 2001 12 08 | 699 | 0.0 | 0.0 | 2003 03 08 | 704 | 0.9+ | 1.0− | 2006 10 28 | 703 | 0.0 | 0.4− |
| 2001 11 12 | 645 | 0.1+ | 0.2− | 2003 02 26 | 704 | 0.5− | 0.2− | 2006 10 20 | 703 | 0.2+ | 0.4+ | 2001 12 08 | 699 | 0.5− | 0.2+ | 2004 04 23 | 704 | 0.6+ | 0.9+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 11 12 | 645 | 0.1+ | 0.2− | 2003 02 26 | 704 | 1.2+ | 1.2− | 2006 10 20 | 703 | 0.4− | 0.1+ | 2001 12 08 | 699 | 0.0 | 0.0 | 2004 04 23 | 704 | 0.1+ | 1.3+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 11 13 | 608 | 0.4− | 0.3− | 2003 03 03 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 703 | 0.3− | 0.1+ | 2001 12 08 | 699 | 0.4− | 0.3+ | 2004 04 23 | 704 | (1.0+ | 1.9−) | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2001 11 13 | 608 | 0.6− | 0.4− | 2003 03 03 | 644 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.8− | 2001 12 11 | 704 | 0.5+ | 0.0 | 2004 04 23 | 704 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 11 13 | 608 | 0.6− | 0.4− | 2003 03 03 | 644 | 0.3+ | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.2− | 2001 12 11 | 704 | 0.0 | 0.0 | 2004 06 09 | 699 | (1.8+ | 1.3+) | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2001 11 20 | 699 | 0.2+ | 0.4+ | 2003 03 07 | 644 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.8− | 0.2+ | 2001 12 11 | 704 | 0.9+ | 0.1+ | 2004 06 09 | 699 | 0.7− | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 699 | 0.3+ | 0.8+ | 2003 03 07 | 644 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.5− | 0.2− | 2001 12 11 | 704 | 0.1− | 0.2− | 2004 06 09 | 699 | 0.2+ | 1.4+ | 2006 11 10 | 704 | 0.3− | 0.7+ |
| 2001 11 20 | 699 | 0.9− | 0.6− | 2003 03 07 | 644 | 0.2− | 0.3− | 2006 11 23 | 703 | 0.3− | 0.1+ | 2001 12 11 | 704 | 0.6+ | 0.2+ | 2004 06 09 | 699 | 1.1+ | 0.6− | 2006 11 10 | 704 | 0.1− | 1.0+ |
| 2001 11 20 | 699 | 0.4− | 0.4− | 2003 03 10 | 699 | 0.1− | 0.7− | 2006 11 23 | 703 | 0.3− | 0.1+ | 2001 12 14 | 704 | 0.7− | 0.4− | 2006 09 16 | 699 | 1.0− | 1.2+ | 2006 11 10 | 704 | 0.3+ | 0.6+ |
| 2001 12 07 | 704 | 0.3+ | 0.3+ | 2003 03 10 | 699 | 0.5− | 0.0 | 2006 11 23 | 703 | 0.3+ | 0.2+ | 2001 12 14 | 704 | 0.8− | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.4+ | 2006 11 10 | 704 | 0.2− | 0.4+ |
| 2001 12 07 | 704 | 0.2− | 0.2+ | 2003 03 10 | 699 | 0.2− | 0.4+ | 2006 11 23 | 703 | 0.4+ | 0.5+ | 2001 12 14 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.8+ | 0.3− |
| 2001 12 07 | 704 | 0.7− | 0.7+ | 2003 03 10 | 699 | 0.0 | 1.5+ | | | | | 2001 12 14 | 704 | 1.1− | 0.6+ | 2006 09 16 | 699 | 0.5− | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.5− |
| 2001 12 07 | 704 | 0.7− | 0.9+ | 2004 04 15 | 704 | 0.2+ | 0.6+ | | | | | 2001 12 17 | 704 | 0.2− | 0.1+ | 2006 09 21 | 699 | (0.1+ | 1.9+) | 2006 11 16 | 703 | 0.3+ | 0.0 |
| | | | | | | | | | | | | 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.5+ | 0.3− | 2006 11 16 | 703 | 0.3+ | 1.0− |

**(140772)∗ 2001 UU$_{127}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.24418 | | (2000.0) | | | |
| $n$ | 0.18428163 | $\omega$ | 297.28274 | | +0.89564555 | −0.41003906 |
| $a$ | 3.0583089 | $\Omega$ | 87.35639 | | +0.44404077 | +0.80220659 |
| $e$ | 0.0994578 | $i$ | 9.93220 | | +0.02543298 | +0.43397298 |
| $P$ | 5.35 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.9− | 0.8+ | 2001 12 17 | 704 | 0.3− | 0.6+ | 2006 09 21 | 699 | 0.7+ | 0.1+ | 1977 10 16 | 675 | 1.8+ | 0.1− | 2001 10 24 | 704 | 0.4+ | 0.9− | 2006 09 29 | 691 | 0.2− | 0.2− |
| 2001 09 17 | 704 | 0.2− | 0.2− | 2001 12 17 | 704 | 0.2− | 1.0+ | 2006 09 21 | 699 | 0.0 | 0.1+ | 1977 10 16 | 675 | 1.5+ | 1.5− | 2001 10 24 | 704 | 0.6+ | 0.6− | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 2001 09 17 | 704 | 0.0 | 0.6− | 2001 12 17 | 704 | 0.2− | 0.8+ | 2006 09 25 | 699 | 0.5+ | 0.6+ | 1977 10 17 | 675 | 0.1+ | 0.9− | 2001 10 24 | 704 | 0.2− | 0.8− | 2006 10 03 | 691 | 0.3− | 0.2+ |
| 2001 09 17 | 704 | 0.3+ | 0.6− | 2001 12 18 | 644 | 0.4− | 0.3− | 2006 09 25 | 699 | 0.3+ | 0.4+ | 1977 10 17 | 675 | 0.7+ | 1.3− | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 10 03 | 691 | 0.0 | 0.3+ |
| 2001 09 17 | 704 | 0.1− | 0.2+ | 2001 12 18 | 644 | 0.6− | 0.4− | 2006 09 25 | 699 | 0.8+ | 0.5+ | 1977 10 21 | 675 | 1.5+ | 1.5− | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 10 13 | 699 | 0.3− | 0.6+ | 2001 12 18 | 644 | 0.5− | 0.4− | 2006 09 25 | 699 | 0.2− | 1.1+ | 1977 10 21 | 675 | 0.1− | 1.6− | 2004 03 23 | 704 | (1.8+ | 0.5+) | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 10 13 | 699 | 0.1− | 0.9+ | 2001 12 20 | 704 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.4− | 2001 09 11 | 699 | 0.0 | 0.4− | 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 13 | 699 | 0.6+ | 0.2+ | 2001 12 20 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.3− | 2001 09 11 | 699 | 0.7+ | 0.5− | 2004 03 23 | 704 | 0.5+ | 0.5+ | 2006 10 13 | A50 | 0.5− | 0.5+ |
| 2001 10 13 | 699 | 0.5− | 0.4+ | 2001 12 20 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.3− | 2001 09 11 | 699 | 0.4+ | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 10 13 | A50 | 0.5+ | 0.0 |
| 2001 10 17 | 704 | 1.3+ | 0.1+ | 2001 12 20 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.3+ | 2001 09 11 | 699 | 0.4− | 0.5− | 2006 09 14 | 703 | 0.1− | 1.1+ | 2006 10 15 | 703 | 0.4− | 0.2− |
| 2001 10 17 | 704 | 0.9+ | 0.4+ | 2001 12 20 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 0.1+ | 0.1− | 2001 09 12 | 704 | (1.4− | 1.7+) | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 10 15 | 703 | 0.5− | 0.7+ |
| 2001 10 17 | 704 | 0.7+ | 0.6+ | 2002 01 08 | 644 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.1− | 1.4+ | 2001 09 12 | 704 | (0.0 | 2.1+) | 2006 09 14 | 703 | (1.7− | 2.3+) | 2006 10 15 | 703 | 0.8− | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2002 01 08 | 644 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.2− | 0.3+ | 2001 09 12 | 704 | 0.1+ | 1.3+ | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.6+ | 0.1− |
| 2001 10 24 | 704 | 0.6+ | 0.0 | 2002 01 08 | 644 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.2+ | 2001 09 12 | 704 | 0.2+ | 0.0 | 2006 09 16 | 644 | 0.4+ | 0.3− | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2001 10 24 | 704 | 0.2− | 0.6− | 2002 01 09 | 704 | 0.9+ | 1.2+ | 2006 09 30 | 704 | (0.0 | 2.4+) | 2001 09 18 | 699 | 0.3− | 1.0+ | 2006 09 16 | 644 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 11 09 | 704 | 0.5+ | 1.3− | 2002 01 09 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.3+ | 0.3− | 2001 09 18 | 699 | 0.6− | 0.6+ | 2006 09 16 | 644 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 11 09 | 704 | (0.3+ | 1.7−) | 2002 01 09 | 704 | 0.5− | 0.4+ | 2006 09 30 | 704 | 0.3− | 0.6+ | 2001 09 18 | 699 | 0.9− | 0.5− | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2001 11 09 | 704 | (0.4+ | 1.6−) | 2002 01 09 | 704 | 0.2− | 1.5+ | 2006 09 30 | 704 | (0.9− | 2.5+) | 2001 09 18 | 699 | 0.7− | 0.6+ | 2006 09 17 | 691 | 0.4− | 0.6− | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2001 11 09 | 704 | (0.5+ | 2.2−) | 2002 01 13 | 704 | 0.5+ | 0.5− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2001 09 21 | 704 | 0.1− | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.6+ |
| 2001 11 09 | 704 | 1.0+ | 0.7− | 2002 01 13 | 704 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2001 09 21 | 704 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.1− |
| 2001 11 17 | 704 | 0.1− | 1.1− | 2002 01 13 | 704 | 0.6+ | 0.5− | 2006 10 10 | 644 | 0.1− | 0.1+ | | | | | | | | | | | | |
| 2001 11 17 | 704 | 0.0 | 0.9− | 2002 01 13 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1− | | | | | | | | | | | | |
| 2001 11 17 | 704 | 0.2− | 0.8− | 2002 01 13 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | | | | | | | | | | | | |

**(140773)∗ 2001 UY$_{128}$ = 3790 T-3**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 27277)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.24863 | | (2000.0) | | | |
| $n$ | 0.20380631 | $\omega$ | 259.31993 | | +0.16412728 | +0.98222993 |
| $a$ | 2.8597251 | $\Omega$ | 20.80443 | | −0.77486222 | +0.18548245 |
| $e$ | 0.1334452 | $i$ | 14.85035 | | −0.61045129 | +0.02864665 |
| $P$ | 4.84 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | (0.3+ | 1.6−) | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.5+ | 0.2− |
| 2001 10 19 | 699 | 0.3+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 19 | 699 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 10 19 | 699 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 10 19 | 699 | 1.1− | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2001 10 20 | 704 | 0.5+ | 0.8+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2001 10 20 | 704 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.9+ | 0.9− | 2006 11 01 | 691 | 0.5− | 0.2+ |
| 2001 10 20 | 704 | 0.6− | 1.4+ | 2006 09 27 | 704 | 1.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 10 20 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.0 | 1.1+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 10 20 | 704 | 0.6− | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.5− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2001 10 24 | 704 | 0.0 | 1.2− | 2006 09 29 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 704 | (0.4− | 1.7−) | 2006 09 29 | 691 | 0.3+ | 0.0 | | | | |

**(140774)∗ 2001 UC$_{131}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.39485 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18203132 | $\omega$ | 81.78973 | | −0.88513071 | | −0.46427144 |
| $a$ | 3.0834622 | $\Omega$ | 70.54231 | | +0.41268519 | | −0.81449658 |
| $e$ | 0.0627425 | $i$ | 1.91778 | | +0.21502223 | | −0.34791860 |
| $P$ | 5.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 10 | 327 | 0.7− | 0.2− | 2003 01 05 | 699 | 0.2− | 0.9+ | 2005 07 02 | 691 | 0.3− | 0.0 |
| 1996 12 10 | 327 | 0.2− | 0.7− | 2003 01 05 | 699 | 0.2+ | 1.2− | 2005 07 02 | 691 | 0.4− | 0.2+ |
| 1996 12 10 | 327 | 0.0 | 0.2− | 2003 01 05 | 699 | 1.1− | 0.4− | 2005 07 07 | 691 | 0.1− | 0.3− |
| 2000 08 27 | 807 | 0.1− | 0.5+ | 2003 01 05 | 699 | 0.3− | 0.8− | 2005 07 07 | 691 | 0.0 | 0.0 |
| 2000 08 27 | 807 | 0.0 | 0.5+ | 2003 01 27 | 699 | 0.1− | 0.5+ | 2005 07 07 | 691 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.4− | 1.0+ | 2003 01 27 | 699 | 0.8− | 0.8− | 2005 07 11 | 691 | 0.2+ | 0.2+ |
| 2001 10 20 | 704 | 0.0 | 0.0 | 2003 01 27 | 699 | 0.0 | 0.8+ | 2005 07 11 | 691 | 0.1+ | 0.3+ |
| 2001 10 20 | 704 | 0.6− | 0.3− | 2003 01 27 | 699 | 0.5− | 0.2− | 2005 07 11 | 691 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2003 01 27 | 608 | (0.5− | 1.6+) | 2006 09 18 | 691 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.6− | 0.2− | 2003 01 27 | 608 | 0.3− | 0.9+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.7− | 0.5+ | 2003 01 27 | 608 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.2− |
| 2001 10 24 | 704 | 0.1+ | 1.1+ | 2003 01 31 | 644 | 0.6+ | 1.1+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.1− | 0.1+ | 2003 01 31 | 644 | 0.4+ | 1.2+ | 2006 09 25 | 691 | 0.1+ | 0.4+ |
| 2001 11 15 | 691 | 0.2+ | 0.3+ | 2003 01 31 | 704 | 0.2− | 0.6− | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2001 11 15 | 691 | 0.5+ | 0.2+ | 2003 01 31 | 644 | 0.5+ | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2001 11 15 | 691 | 0.5+ | 0.1− | 2003 01 31 | 704 | 0.7− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2003 01 31 | 644 | 0.2+ | 1.0+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.5− | 0.0 | 2003 01 31 | 704 | 0.7+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2001 11 20 | 704 | 0.8+ | 0.2+ | 2003 01 31 | 704 | 0.2+ | 0.6− | 2006 10 22 | G96 | 1.2+ | 0.6+ |
| 2001 11 20 | 704 | 0.1− | 0.6+ | 2003 01 31 | 644 | 0.4+ | 0.9+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.6− | 0.4+ | 2003 01 31 | 644 | 0.4+ | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2004 05 09 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.3− | 0.1+ | 2004 05 09 | 691 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 0.3+ | 2005 07 02 | 691 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.0 |

**(140775)∗ 2001 US$_{131}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.96527 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18496041 | $\omega$ | 201.51645 | | −0.35556718 | | +0.93038802 |
| $a$ | 3.0508220 | $\Omega$ | 47.77642 | | −0.83900140 | | −0.27568376 |
| $e$ | 0.0237254 | $i$ | 6.91549 | | −0.41188425 | | −0.24161249 |
| $P$ | 5.33 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.5− | 0.7+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.0 | 0.3+ | 2003 01 25 | 645 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2001 10 20 | 704 | 0.2− | 0.6+ | 2004 03 16 | 691 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.3− | 0.8+ | 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 691 | 0.1+ | 0.2+ | 2004 03 16 | 691 | 0.4+ | 0.7+ | 2006 09 30 | 291 | 0.2− | 0.3+ |
| 2001 10 21 | 691 | 0.0 | 0.1+ | 2004 04 15 | 699 | (0.8− | 2.0+) | 2006 09 30 | 291 | 0.2− | 0.5+ |
| 2001 10 21 | 691 | 0.0 | 0.3+ | 2004 04 15 | 699 | 0.4+ | 1.0+ | 2006 09 30 | 291 | 0.3− | 0.5+ |
| 2001 10 24 | 704 | 1.1+ | 0.0 | 2004 04 15 | 699 | 1.0− | 0.1− | 2006 10 01 | 691 | 0.4− | 0.3+ |
| 2001 10 24 | 704 | 0.8− | 1.0+ | 2004 04 15 | 699 | (0.7− | 2.2+) | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.1+ | 0.3− | 2004 04 19 | 704 | 1.4+ | 0.8+ | 2006 10 01 | 291 | 0.2+ | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.1− | 2004 04 19 | 704 | 0.8+ | 1.2+ | 2006 10 01 | 291 | 0.2+ | 0.3+ |
| 2001 11 09 | 704 | 0.3+ | 0.2− | 2004 04 19 | 704 | 1.5+ | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2001 11 09 | 704 | 0.8− | 0.2+ | 2004 04 19 | 704 | 1.4+ | 1.5+ | 2006 10 01 | 291 | 0.3+ | 0.4+ |
| 2001 11 09 | 704 | 1.3− | 0.7− | 2004 04 22 | 704 | 0.9− | 1.1+ | 2006 10 15 | 703 | 1.1− | 0.7+ |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.7+ | 0.3+ | 2006 10 15 | 703 | 1.0+ | 0.5− |
| 2001 11 20 | 704 | 1.1− | 0.2+ | 2004 04 22 | 704 | 0.6+ | 0.9+ | 2006 10 15 | 703 | (2.0+ | 0.8+) |
| 2001 11 20 | 704 | 0.3+ | 1.0+ | 2004 04 22 | 704 | 0.0 | 1.0− | 2006 10 15 | 703 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.8+ | 2004 04 30 | 691 | 0.3+ | 0.9+ | 2006 10 22 | 703 | 0.4+ | 1.2+ |
| 2001 11 20 | 704 | 0.0 | 0.9+ | 2004 04 30 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 1.4− | 0.0 |
| 2001 11 21 | 704 | 0.6− | 0.3+ | 2004 04 30 | 691 | 0.0 | 0.6+ | 2006 10 22 | 703 | 1.0− | 0.3+ |
| 2001 11 21 | 704 | 0.1− | 0.1− | 2004 05 28 | 691 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 1.1− | 0.6+ |
| 2001 11 21 | 704 | 0.4+ | 0.9+ | 2004 05 28 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2001 11 21 | 704 | 0.8− | 0.7+ | 2004 05 28 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2003 01 25 | 645 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2003 01 25 | 645 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.3− |

**(140776)∗ 2001 UU$_{131}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.78098 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16996228 | $\omega$ | 279.14952 | | +0.61220770 | | −0.79020416 |
| $a$ | 3.2277584 | $\Omega$ | 133.06300 | | +0.73962821 | | +0.55982895 |
| $e$ | 0.0495133 | $i$ | 2.18953 | | +0.27955652 | | +0.24933701 |
| $P$ | 5.80 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 691 | 0.5− | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.4+ | 2004 04 13 | 691 | 0.2− | 0.5+ |
| 2001 10 17 | 691 | 0.4− | 0.1− | 2001 11 21 | 704 | 0.0 | 0.7+ | 2004 04 13 | 691 | 0.2+ | 0.5+ |
| 2001 10 17 | 691 | 0.3− | 0.3− | 2001 11 21 | 704 | 0.5− | 0.2+ | 2004 04 13 | 691 | 0.1− | 0.5+ |
| 2001 10 18 | 644 | 0.2+ | 0.1+ | 2001 11 22 | 644 | 0.2− | 0.2+ | 2004 05 09 | 691 | 0.5+ | 0.5+ |
| 2001 10 18 | 644 | 0.3+ | 0.2+ | 2001 11 22 | 644 | 0.7− | 0.6+ | 2004 05 09 | 691 | 0.2+ | 0.4+ |
| 2001 10 18 | 644 | 0.4+ | 0.4+ | 2001 11 22 | 644 | 0.8+ | 0.2+ | 2004 05 09 | 691 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.4+ | 0.2+ | 2001 12 09 | 691 | 0.1+ | 0.4+ | 2004 05 24 | 691 | 0.3+ | 0.1+ |
| 2001 10 20 | 704 | 0.1− | 0.0 | 2001 12 09 | 691 | 0.0 | 0.4+ | 2004 05 24 | 691 | 0.4+ | 0.5+ |
| 2001 10 20 | 704 | 0.1− | 0.0 | 2001 12 09 | 691 | 0.1+ | 0.5+ | 2004 05 24 | 691 | 0.3− | 0.5+ |
| 2001 10 20 | 704 | 0.5+ | 0.5+ | 2001 12 11 | 704 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.6− | 0.1− | 2001 12 11 | 704 | 0.1+ | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.8− | 2001 12 11 | 704 | 0.1+ | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.7+ |
| 2001 10 24 | 704 | 0.1+ | 0.0 | 2001 12 11 | 704 | 0.7− | 1.0+ | 2006 08 21 | 691 | 0.1+ | 0.5+ |
| 2001 10 24 | 704 | 0.5+ | 0.6− | 2001 12 14 | 704 | 0.1− | 0.1+ | 2006 08 21 | 691 | 0.1+ | 0.5+ |
| 2001 10 24 | 704 | 0.2− | 0.3+ | 2001 12 14 | 704 | 0.4− | 0.7+ | 2006 08 21 | 691 | 0.6− | 0.6+ |
| 2001 10 25 | 644 | 0.2+ | 0.5+ | 2001 12 14 | 704 | 0.3− | 0.8+ | 2006 08 27 | 291 | 0.1− | 0.4+ |
| 2001 10 25 | 644 | 0.0 | 0.0 | 2001 12 14 | 704 | 0.3− | 0.5+ | 2006 08 27 | 291 | 0.0 | 0.2+ |
| 2001 10 25 | 644 | 0.2+ | 0.3+ | 2003 01 27 | 704 | 0.7− | 1.1− | 2006 08 27 | 291 | 0.0 | 0.4+ |
| 2001 11 09 | 704 | 0.4− | 0.2− | 2003 01 27 | 704 | 0.2− | 0.4− | 2006 08 28 | 703 | 1.3− | 0.8+ |
| 2001 11 09 | 704 | 0.6+ | 0.1− | 2003 01 27 | 704 | 1.4− | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.4+ |
| 2001 11 09 | 704 | 0.7+ | 0.2+ | 2003 01 28 | 704 | 0.6+ | 0.2− | 2006 08 28 | 703 | 1.4− | 0.2− |
| 2001 11 09 | 704 | 1.0+ | 0.4+ | 2003 01 28 | 704 | 0.8+ | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.8+ |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2003 01 28 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.5− | 0.8− |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2003 01 28 | 704 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.3− |
| 2001 11 18 | 704 | 0.1+ | 0.4− | 2003 01 29 | 291 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.5− |
| 2001 11 18 | 704 | 0.1+ | 0.4+ | 2003 01 29 | 291 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.8− | 1.3+ |
| 2001 11 19 | 608 | 0.6− | 0.2+ | 2003 01 29 | 291 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2001 11 19 | 608 | 1.1− | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2001 11 19 | 608 | 0.6− | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.1+ | 0.9+ | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.7+ | 0.1+ |
| 2001 11 20 | 704 | 0.8+ | 0.6+ | 2004 03 28 | 704 | 0.3− | 1.2+ | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.6+ | 0.7+ | 2004 03 28 | 704 | 1.2+ | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.1− | 0.4+ | 2004 03 28 | 704 | 1.0+ | 0.8+ | 2006 09 30 | G96 | 0.2+ | 0.0 | |
| 2001 11 21 | 704 | 0.7− | 0.2+ | 2004 03 28 | 704 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.0 | |

**(140777)∗ 2001 UZ$_{131}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.27555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20397739 | $\omega$ | 177.68671 | | +0.96919721 | −0.24615038 | |
| $a$ | 2.8581259 | $\Omega$ | 196.57003 | | +0.22550047 | +0.90025124 | |
| $e$ | 0.0815975 | $i$ | 1.64167 | | +0.09902678 | +0.35910679 | |
| $P$ | 4.83 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.8+ | 1.4+ | 2005 05 19 | G96 | 0.8− | 0.4− | 2006 10 19 | G96 | 0.4+ | 0.6− | |
| 2001 10 20 | 704 | 0.5+ | 0.2− | 2005 05 19 | G96 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.1− | |
| 2001 10 20 | 704 | 0.1+ | 0.5− | 2005 05 19 | G96 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.2− | |
| 2001 10 24 | 704 | (1.0− | 1.8+) | 2005 05 19 | G96 | 0.6− | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.3− | |
| 2001 10 24 | 704 | (0.9− | 1.6+) | 2005 07 04 | G96 | 0.7− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.2− | |
| 2001 10 24 | 704 | 0.3− | 1.2+ | 2005 07 04 | G96 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.0 | |
| 2001 10 24 | 704 | (1.5− | 1.7+) | 2005 07 04 | G96 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2− | |
| 2001 11 15 | 691 | 0.0 | 0.1+ | 2005 07 04 | G96 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.0 | |
| 2001 11 15 | 691 | 0.0 | 0.4+ | 2005 07 07 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | |
| 2001 11 15 | 691 | 0.2+ | 0.0 | 2005 07 07 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2− | |
| 2001 11 20 | 704 | 0.2− | 0.0 | 2005 07 07 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.8+ | |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2005 07 31 | E12 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.9− | 0.6+ | |
| 2001 11 20 | 704 | 0.3− | 0.6+ | 2005 07 31 | E12 | 1.0+ | 0.4+ | 2006 11 21 | 704 | 0.7− | 0.7+ | |
| 2001 11 20 | 704 | 0.4− | 0.3− | 2005 07 31 | E12 | 0.4+ | 1.0− | 2006 11 21 | 704 | 0.4+ | 0.5+ | |
| 2001 11 20 | 704 | 0.5− | 0.1− | 2005 07 31 | E12 | 1.4− | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2+ | |
| 2001 11 21 | 704 | 0.7− | 0.0 | 2005 10 26 | G96 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.3− | 0.0 | |
| 2001 11 21 | 704 | 0.4− | 0.0 | 2005 10 26 | G96 | 0.3− | 0.7+ | 2006 11 23 | 691 | 0.2− | 0.3+ | |
| 2001 11 21 | 704 | 0.6− | 0.1− | 2005 10 26 | G96 | 0.5− | 0.3− | 2006 11 27 | 691 | 0.2− | 0.2+ | |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2005 10 26 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.2+ | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.1+ | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.3− | 0.3− | |
| 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.3− | 0.5− | |
| 2004 05 23 | 691 | 0.0 | 0.8+ | 2006 09 27 | G96 | 0.1+ | 0.9− | 2006 11 27 | 703 | 0.9− | 0.0 | |
| 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.1+ | 0.4+ | |

**(140778)∗ 2001 UA$_{133}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.66319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20301730 | $\omega$ | 151.06087 | | +0.72387034 | −0.68973786 | |
| $a$ | 2.8671297 | $\Omega$ | 252.55842 | | +0.62962113 | +0.67019900 | |
| $e$ | 0.0712596 | $i$ | 0.99311 | | +0.28211515 | +0.27403466 | |
| $P$ | 4.85 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 13 | 691 | 0.5− | 0.1− | 2003 01 26 | 291 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.4− | |
| 1991 09 13 | 691 | 0.0 | 0.6− | 2003 01 26 | 291 | 0.0 | 0.3− | 2006 10 11 | 691 | 0.3− | 0.5+ | |
| 1991 09 13 | 691 | 0.3+ | 0.3− | 2003 01 26 | 291 | 0.0 | 0.3− | 2006 10 11 | 691 | 0.1− | 0.2+ | |
| 1996 09 20 | 691 | 0.2− | 0.2− | 2003 01 31 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.4− | 0.3+ | |
| 1996 09 20 | 691 | 0.3− | 0.3+ | 2003 01 31 | 644 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.4− | 0.1+ | |
| 1996 09 20 | 691 | 0.5− | 0.2− | 2003 01 31 | 644 | 0.8+ | 0.6+ | 2006 10 19 | 691 | 0.5− | 0.1+ | |
| 2001 09 20 | 704 | 1.4+ | 1.3+ | 2005 06 13 | G96 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.0 | |
| 2001 09 20 | 704 | 0.7+ | 0.9+ | 2005 06 13 | G96 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.5− | |
| 2001 09 20 | 704 | 1.3+ | 0.3+ | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | |
| 2001 10 19 | 644 | 0.0 | 0.6+ | 2005 06 13 | G96 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.5− | |
| 2001 10 19 | 644 | 0.3− | 0.6+ | 2005 07 03 | G96 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− | |
| 2001 10 19 | 644 | 0.1+ | 0.8+ | 2005 07 03 | G96 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.2− | |
| 2001 10 21 | 704 | 0.4+ | 0.9+ | 2005 07 03 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.4+ | 0.3− | |
| 2001 10 21 | 704 | 0.6+ | 0.2− | 2005 07 03 | G96 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.0 | 0.5− | |
| 2001 10 21 | 704 | 0.1− | 0.5+ | 2005 07 06 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.4− | |
| 2001 10 21 | 704 | 0.6+ | 0.5+ | 2005 07 06 | 691 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.2− | |
| 2001 10 21 | 704 | 1.1+ | 0.1− | 2005 07 06 | 691 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.5− | |
| 2001 10 24 | 704 | 0.5+ | 1.3+ | 2005 07 07 | 568 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.7− | |
| 2001 10 24 | 704 | 0.8+ | 0.5+ | 2005 07 07 | 568 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.6− | |
| 2001 10 24 | 704 | (2.2+ | 1.9+) | 2005 07 07 | 568 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.3− | |
| 2001 12 20 | 291 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.2− | 0.4+ | |
| 2001 12 20 | 291 | 0.5+ | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.5− | | | | | |
| 2001 12 20 | 291 | 0.5+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.4− | | | | | |

**(140779)∗ 2001 UF$_{133}$ = 2004 HO$_{45}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65116)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.39751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21229374 | $\omega$ | 347.59348 | | −0.89927684 | +0.43504807 | |
| $a$ | 2.7829875 | $\Omega$ | 218.29706 | | −0.39481196 | −0.85180301 | |
| $e$ | 0.0868728 | $i$ | 4.17359 | | −0.18821444 | −0.29183011 | |
| $P$ | 4.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 699 | 0.1+ | 0.4+ | 2004 04 26 | 699 | 0.0 | 0.7+ | 2005 10 30 | G96 | 0.2+ | 0.3+ | |
| 1999 03 22 | 699 | 1.0+ | 0.5+ | 2004 04 26 | 699 | 0.3− | 0.3− | 2005 10 31 | G96 | 0.2− | 0.3+ | |
| 1999 03 22 | 699 | 1.2+ | 0.4+ | 2004 04 26 | 699 | 0.2− | 0.8+ | 2005 10 31 | G96 | 0.5+ | 0.5+ | |
| 2001 10 19 | 644 | 0.2− | 0.5+ | 2004 05 09 | 691 | 0.1− | 0.2+ | 2005 10 31 | G96 | 0.2− | 0.4+ | |
| 2001 10 19 | 644 | 0.2− | 0.5+ | 2004 05 09 | 691 | 0.1− | 0.2+ | 2005 10 31 | G96 | 0.5− | 0.0 | |
| 2001 10 19 | 644 | 0.2− | 0.2+ | 2004 05 09 | 691 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.3+ | |
| 2001 10 21 | 704 | 0.4− | 0.1+ | 2004 05 10 | 608 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.0 | |
| 2001 10 21 | 704 | 0.7− | 0.3+ | 2004 05 10 | 608 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.3+ | |
| 2001 10 21 | 704 | 0.6− | 0.2+ | 2004 05 10 | 608 | 0.3+ | 0.6− | 2006 10 20 | 691 | 0.2− | 0.2+ | |
| 2001 10 21 | 704 | 0.4− | 0.0 | 2004 05 11 | 699 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 2001 10 24 | 704 | 0.4+ | 0.4+ | 2004 05 11 | 699 | 0.7− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ | |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2004 05 11 | 699 | 0.7− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.4− | |
| 2001 10 24 | 704 | 0.4+ | 0.1− | 2004 05 11 | 699 | 0.1− | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.2− | |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2004 05 12 | 699 | 0.6+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.1− | |
| 2003 01 07 | 704 | 0.1+ | 0.8+ | 2004 05 12 | 699 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.3− | |
| 2003 01 07 | 704 | (0.9− | 1.7+) | 2004 05 12 | 699 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.1− | |
| 2003 01 07 | 704 | 0.2− | 0.4+ | 2004 05 12 | 699 | 0.7+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.0 | |
| 2003 01 07 | 704 | 0.5− | 0.6+ | 2004 05 15 | 704 | 1.1− | 1.1− | 2006 10 28 | G96 | 0.4− | 0.1− | |
| 2003 01 23 | 291 | 0.1− | 0.0 | 2004 05 15 | 704 | 0.5− | 0.7+ | 2006 10 28 | G96 | 0.0 | 0.1+ | |
| 2003 01 23 | 291 | 0.1+ | 0.0 | 2004 05 15 | 704 | 1.3− | 1.2− | 2006 11 01 | 691 | 1.1+ | 0.2+ | |
| 2003 01 23 | 291 | 0.3− | 0.1+ | 2004 05 15 | 704 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.2+ | |
| 2004 04 13 | 644 | 0.2− | 0.1+ | 2004 05 19 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.3− | 0.2+ | |
| 2004 04 13 | 644 | 0.1− | 0.6+ | 2004 05 19 | 691 | 0.1+ | 0.4+ | 2006 11 12 | 703 | 0.3+ | 0.1− | |
| 2004 04 13 | 644 | 0.1− | 0.5+ | 2004 05 19 | 704 | 0.9+ | 0.3+ | 2006 11 12 | 703 | 0.5− | 0.1− | |
| 2004 04 21 | 704 | 0.2− | 0.2− | 2004 05 19 | 704 | 0.0 | 0.4− | 2006 11 12 | 703 | 1.2− | 0.7− | |
| 2004 04 21 | 704 | 0.7+ | 0.6− | 2004 05 19 | 691 | 0.1+ | 0.5+ | 2006 11 12 | 703 | 0.7+ | 0.1+ | |
| 2004 04 21 | 704 | 0.9+ | 0.2+ | 2004 05 19 | 704 | 0.2+ | 0.8+ | 2006 11 14 | 691 | 0.2+ | 0.0 | |
| 2004 04 21 | 704 | 1.0+ | 0.9+ | 2004 05 19 | 704 | 0.0 | 0.4+ | 2006 11 14 | 691 | 0.3+ | 0.2+ | |
| 2004 04 21 | 704 | 0.1− | 0.4+ | 2005 07 30 | 644 | 0.2− | 0.7+ | 2006 11 14 | 691 | 0.2+ | 0.1+ | |
| 2004 04 25 | 704 | 1.5+ | 0.3+ | 2005 07 30 | 644 | 0.3− | 0.6+ | 2006 11 17 | 703 | 1.0− | 0.8+ | |
| 2004 04 25 | 704 | 0.2− | 0.0 | 2005 07 30 | 644 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.3+ | 1.9+ | |
| 2004 04 25 | 704 | 1.3+ | 0.7− | 2005 10 30 | G96 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.1+ | |
| 2004 04 25 | 704 | 0.6+ | 0.3+ | 2005 10 30 | G96 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.5− | 1.5+ | |
| 2004 04 26 | 699 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.4+ | 0.2+ | | | | | |

**(140780)∗ 2001 UW$_{133}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.84820 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20200142 | $\omega$ | 38.15472 | | −0.35707355 | +0.91483783 | |
| $a$ | 2.8767344 | $\Omega$ | 212.22525 | | −0.92013570 | −0.37925333 | |
| $e$ | 0.0428761 | $i$ | 20.71270 | | −0.16077554 | +0.13870351 | |
| $P$ | 4.88 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | (1.2+ | 1.6−) | 2001 11 21 | 704 | 0.2− | 0.7− | 2005 07 01 | 644 | 0.0 | 0.2+ |
| 2001 08 28 | 699 | 0.5+ | 0.2+ | 2001 11 21 | 704 | 0.8− | 0.2− | 2005 07 01 | 644 | 0.0 | 0.3+ |
| 2001 08 28 | 699 | (0.6− | 3.1+) | 2004 04 12 | 644 | 0.2+ | 0.5+ | 2005 07 01 | 644 | 0.1+ | 0.4+ |
| 2001 08 28 | 699 | (2.4+ | 0.5+) | 2004 04 12 | 644 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2001 10 07 | 644 | 0.5+ | 0.4+ | 2004 04 12 | 644 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2001 10 07 | 644 | 0.8+ | 0.4+ | 2004 04 14 | 699 | 0.6+ | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2001 10 07 | 644 | 0.4+ | 0.2+ | 2004 04 14 | 699 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2001 10 19 | 644 | 0.2+ | 0.4+ | 2004 04 14 | 699 | 0.4+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.1+ |
| 2001 10 19 | 644 | 0.1+ | 0.4+ | 2004 04 14 | 699 | 0.5− | 0.8+ | 2006 10 12 | 691 | 0.0 | 0.1− |
| 2001 10 19 | 644 | 0.3+ | 0.4+ | 2004 04 16 | 333 | (1.7− | 0.6−) | 2006 10 12 | 691 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2004 04 16 | 333 | (0.2− | 1.7+) | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2004 04 16 | 333 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.6− |
| 2001 10 21 | 704 | 0.6+ | 0.1+ | 2004 04 17 | 704 | 0.6+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 0.6+ | 0.3+ | 2004 04 17 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.6+ |
| 2001 10 21 | 704 | 0.8+ | 0.2+ | 2004 04 17 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.6+ | 0.6− |
| 2001 10 24 | 704 | 0.1+ | 0.9+ | 2004 04 17 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.9− | 0.4+ | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2001 10 24 | 704 | 0.7− | 1.1+ | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.3+ | 0.6+ | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.7+ | 2004 04 20 | 703 | 0.4− | 1.2+ | 2006 10 20 | 691 | 0.1+ | 0.4+ |
| 2001 10 24 | 704 | 0.6− | 0.2− | 2004 04 20 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.2− | 1.2+ | 2004 04 20 | 703 | (1.8− | 2.3+) | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.1+ | 0.3− | 2004 04 20 | 703 | 0.7+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.1− | 1.4+ | 2004 04 20 | 704 | 0.0 | 0.6− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 10 25 | 704 | 0.2− | 0.8+ | 2004 04 20 | 704 | 0.8− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 10 25 | 704 | 0.4− | 0.0 | 2004 04 20 | 704 | 0.4+ | 1.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 10 25 | 704 | 1.3+ | 1.1+ | 2004 04 20 | 704 | 0.7+ | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2001 10 25 | 704 | (1.1+ | 1.6+) | 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | 0.4− | 0.3+ | 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.2+ | 0.5+ | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.5− | 0.0 | 2004 05 10 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2001 11 20 | 704 | 0.8− | 0.2+ | 2004 05 10 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.2+ | 2004 05 10 | 691 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2001 11 21 | 704 | 0.9− | 0.3+ | 2005 05 18 | 644 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.6− | 2005 05 18 | 644 | 0.0 | 0.1+ | | | | |
| 2001 11 21 | 704 | 0.5− | 0.1+ | 2005 05 18 | 644 | 0.3− | 0.2+ | | | | |

**(140781)∗ 2001 UD$_{134}$ = 2004 HN$_{24}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65117)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.24333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20997950 | $\omega$ | 348.44879 | | −0.92464783 | +0.37435885 | |
| $a$ | 2.8033982 | $\Omega$ | 213.80281 | | −0.33863235 | −0.89218789 | |
| $e$ | 0.1478159 | $i$ | 7.21482 | | −0.17422551 | −0.25269787 | |
| $P$ | 4.69 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1− | 0.2− | 2004 04 30 | 691 | 0.1+ | 0.0 | 2005 08 30 | 644 | 0.2+ | 0.3− |
| 2001 10 21 | 704 | 0.8− | 0.4+ | 2004 04 30 | 691 | 0.0 | 0.2+ | 2005 08 30 | 644 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 1.2− | 0.4+ | 2004 05 12 | 699 | 0.6− | 0.0 | 2005 08 30 | 644 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 0.5+ | 0.7+ | 2004 05 12 | 699 | 0.7+ | 0.5− | 2005 10 05 | 691 | 0.3− | 0.3+ |
| 2001 10 24 | 704 | (0.1+ | 1.6+) | 2004 05 12 | 699 | 0.4+ | 0.1+ | 2005 10 05 | 691 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 1.0+ | 0.7+ | 2004 05 12 | 699 | 0.2− | 0.1− | 2005 10 05 | 691 | 0.1− | 0.0 |
| 2001 11 16 | 691 | 0.1− | 0.2+ | 2004 05 15 | 704 | 0.7+ | 0.5− | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 2001 11 16 | 691 | 0.3− | 0.2− | 2004 05 15 | 704 | 0.3+ | 0.7− | 2006 10 12 | 691 | 0.3+ | 0.5+ |
| 2001 11 16 | 691 | 0.0 | 0.3− | 2004 05 15 | 704 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1− | 0.4+ |
| 2001 11 20 | 691 | 0.6+ | 0.5− | 2004 05 15 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 691 | 0.0 | 0.5− | 2004 05 15 | 704 | 0.6+ | 1.0− | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 691 | 0.1+ | 0.2+ | 2004 05 15 | 599 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2004 04 17 | 704 | 0.1+ | 0.0 | 2004 05 15 | 599 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2004 04 17 | 704 | 0.7− | 0.7+ | 2004 05 15 | 599 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2004 04 17 | 704 | 0.3− | 1.0+ | 2004 05 17 | 704 | 0.9+ | 1.4+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2004 04 17 | 704 | 0.3+ | 1.0+ | 2004 05 17 | 704 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2004 04 22 | 704 | 0.3+ | 1.0+ | 2004 05 17 | 704 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2004 04 22 | 704 | 0.1− | 0.6+ | 2004 05 17 | 704 | 0.7− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2004 04 22 | 704 | 0.4+ | 0.7+ | 2004 05 17 | 704 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.6+ |
| 2004 04 22 | 704 | 0.8− | 0.4+ | 2004 05 21 | 704 | 0.7+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2004 04 22 | 704 | 0.8− | 0.7+ | 2004 05 21 | 704 | 0.8+ | 1.4+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2004 04 25 | 704 | 0.0 | 0.7+ | 2004 05 21 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.6+ | 0.4+ |
| 2004 04 25 | 704 | 0.1− | 0.3+ | 2004 05 21 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2004 04 25 | 704 | 0.9− | 1.1− | 2004 05 21 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2004 04 25 | 704 | 0.5+ | 0.4− | 2004 05 29 | E12 | 0.9− | 0.3+ | 2006 11 11 | 703 | (1.0+ | 1.6−) |
| 2004 04 26 | 699 | 0.1− | 0.3− | 2004 05 29 | E12 | 0.1+ | 0.6+ | 2006 11 11 | 644 | 0.2− | 0.6+ |
| 2004 04 26 | 699 | 1.3− | 0.2− | 2004 05 29 | E12 | 1.1− | 0.4− | 2006 11 11 | 644 | 0.1− | 0.3+ |
| 2004 04 26 | 699 | 0.1− | 0.3− | 2004 05 29 | E12 | (2.8− | 2.0−) | 2006 11 11 | 644 | 0.3− | 0.4+ |
| 2004 04 26 | 699 | 0.4− | 0.0 | 2004 06 09 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2004 04 29 | 704 | 0.6− | 0.6+ | 2004 06 09 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.5+ | 0.3+ |
| 2004 04 29 | 704 | 0.3+ | 0.5+ | 2004 06 09 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 2004 04 29 | 704 | (1.6− | 0.1+) | 2004 06 15 | 704 | 1.2+ | 0.6+ | 2006 11 12 | G96 | 0.4+ | 0.2+ |
| 2004 04 29 | 704 | 0.4− | 0.7+ | 2004 06 15 | 704 | 0.1− | 0.2− | 2006 11 17 | 703 | (1.6+ | 1.5+) |
| 2004 04 29 | 608 | 0.1+ | 1.1− | 2004 06 15 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2004 04 29 | 608 | 0.1+ | 1.4− | 2005 08 26 | 644 | 0.2+ | 0.2− | 2006 11 17 | 703 | (2.3+ | 1.4−) |
| 2004 04 29 | 608 | 0.2− | 0.9− | 2005 08 26 | 644 | 0.2− | 0.5− | 2006 11 17 | 703 | 0.3− | 1.1− |
| 2004 04 30 | 691 | 0.0 | 0.2+ | 2005 08 26 | 644 | 0.0 | 0.1− | | | | |

**(140782)∗ 2001 UH$_{136}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.06686 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18105826 | $\omega$ | 2.30210 | | +0.25748696 | −0.96555393 | |
| $a$ | 3.0945000 | $\Omega$ | 72.77865 | | +0.88591775 | +0.22040007 | |
| $e$ | 0.2392766 | $i$ | 2.24988 | | +0.38581110 | +0.13830917 | |
| $P$ | 5.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 19 | 691 | 0.0 | 0.5− | 2001 11 21 | 704 | 0.5+ | 0.4+ | 2001 12 19 | 704 | 0.2+ | 0.0 |
| 1990 11 19 | 691 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.5− | 0.4+ | 2001 12 20 | 704 | 1.3− | 0.6+ |
| 1990 11 19 | 691 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.5+ | 0.4+ | 2001 12 20 | 704 | 1.2− | 1.4+ |
| 1995 08 28 | 809 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.3− | 0.4+ | 2001 12 20 | 704 | 0.9− | 1.1+ |
| 2001 10 22 | 704 | 0.8+ | 0.3+ | 2001 11 21 | 704 | 0.3− | 0.4+ | 2001 12 20 | 704 | 0.5− | 0.5+ |
| 2001 10 22 | 704 | 0.5− | 0.4− | 2001 11 21 | 704 | 0.1+ | 0.3− | 2002 01 14 | 704 | 0.0 | 0.2− |
| 2001 10 22 | 704 | 0.5+ | 0.6+ | 2001 11 21 | 704 | 0.1+ | 0.5+ | 2002 01 14 | 704 | 0.2+ | 0.5+ |
| 2001 10 22 | 704 | 1.8+ | 0.1+ | 2001 11 24 | 704 | 0.6+ | 0.2− | 2002 01 14 | 704 | 0.4+ | 0.7− |
| 2001 10 23 | 704 | 0.1− | 0.7+ | 2001 11 24 | 704 | 0.1+ | 0.8− | 2002 01 14 | 704 | 1.5+ | 0.3− |
| 2001 10 23 | 704 | 0.1+ | 0.2+ | 2001 11 24 | 704 | 0.5+ | 0.3− | 2002 01 14 | 291 | 0.4+ | 0.0 |
| 2001 10 23 | 704 | 0.0 | 1.4+ | 2001 11 24 | 704 | 0.2− | 0.5− | 2002 01 14 | 291 | 0.5+ | 0.1+ |
| 2001 10 24 | 704 | 0.7+ | 0.3+ | 2001 11 24 | 704 | 0.1+ | 0.2− | 2002 01 14 | 291 | 0.3+ | 0.1+ |
| 2001 10 24 | 704 | 0.3+ | 0.0 | 2001 11 24 | 704 | 0.4− | 0.8− | 2003 03 24 | 691 | 0.2+ | 0.2+ |
| 2001 10 24 | 704 | 0.7+ | 0.4+ | 2001 11 24 | 704 | 0.5+ | 0.6+ | 2003 03 24 | 691 | 0.1+ | 0.4+ |
| 2001 10 24 | 704 | 0.7+ | 0.7+ | 2001 11 24 | 704 | 0.0 | 0.5− | 2003 03 24 | 691 | 0.4+ | 0.3+ |
| 2001 10 24 | 704 | 0.9+ | 0.9+ | 2001 11 24 | 704 | 0.2− | 0.0 | 2003 04 07 | 691 | 0.1+ | 0.3+ |
| 2001 10 26 | 704 | 0.3− | 0.3+ | 2001 11 24 | 704 | 0.1− | 0.9− | 2003 04 07 | 691 | 0.1− | 0.1+ |
| 2001 10 26 | 704 | 0.2+ | 0.4+ | 2001 12 08 | 699 | 0.3− | 0.1− | 2003 04 07 | 691 | 0.1− | 0.1+ |
| 2001 10 26 | 704 | 0.6− | 0.0 | 2001 12 08 | 699 | 0.4− | 1.0− | 2003 04 29 | 691 | 0.1+ | 0.8+ |
| 2001 10 26 | 704 | 0.7+ | 0.3+ | 2001 12 08 | 699 | 0.0 | 0.1− | 2003 04 29 | 691 | 0.8+ | 0.7+ |
| 2001 10 26 | 704 | 0.1− | 0.7− | 2001 12 08 | 699 | (2.2− | 2.8−) | 2003 04 29 | 691 | 0.2+ | 1.0+ |
| 2001 11 09 | 704 | 0.1− | 0.3− | 2001 12 10 | 704 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.2− | 0.7+ |
| 2001 11 09 | 704 | 0.6+ | 0.1+ | 2001 12 10 | 704 | 0.7− | 0.4− | 2006 08 28 | 703 | 0.1− | 0.4+ |
| 2001 11 09 | 704 | 0.8+ | 0.7− | 2001 12 10 | 704 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.7+ | 0.2− |
| 2001 11 09 | 704 | 0.9+ | 0.2− | 2001 12 10 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.3+ | 1.2− |
| 2001 11 09 | 704 | 0.9+ | 1.2− | 2001 12 15 | 704 | 1.2+ | 0.2− | 2006 09 20 | 704 | (4.6+ | 0.8−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.1− | 0.3− | 2001 12 15 | 704 | 1.3+ | 0.2− | 2006 09 20 | 704 | 0.6− | 0.3+ |
| 2001 11 12 | 704 | 0.2− | 0.3− | 2001 12 15 | 704 | 0.9+ | 0.5− | 2006 09 20 | 704 | 1.1+ | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2001 12 15 | 704 | 0.9+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.5− |
| 2001 11 12 | 704 | 0.4− | 0.7− | 2001 12 15 | 704 | 1.0+ | 0.5− | 2006 09 26 | 704 | 0.2− | 0.4+ |
| 2001 11 16 | 691 | 0.7− | 0.4− | 2001 12 18 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.6+ |
| 2001 11 16 | 691 | 0.8− | 0.3− | 2001 12 18 | 704 | 0.6− | 0.6+ | 2006 09 26 | 704 | 0.1+ | 1.0+ |
| 2001 11 16 | 691 | 0.7− | 0.7− | 2001 12 18 | 704 | 0.8− | 0.8+ | 2006 09 26 | 704 | 1.1+ | 0.8+ |
| 2001 11 20 | 704 | 0.3− | 0.3+ | 2001 12 18 | 704 | 0.5− | 0.9+ | 2006 09 28 | 691 | 0.6− | 0.7+ |
| 2001 11 20 | 704 | 0.2− | 0.6+ | 2001 12 18 | 704 | 0.7− | 0.8+ | 2006 09 28 | 691 | 0.4− | 0.8+ |
| 2001 11 20 | 704 | 0.4− | 0.8+ | 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.6− | 0.7+ |
| 2001 11 20 | 704 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 704 | 0.8− | 0.0 |
| 2001 11 20 | 704 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.6+ |
| 2001 11 21 | 704 | 0.3− | 0.5+ | 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.5− | 1.5+ |

**(140783)∗ 2001 UP$_{137}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.14940 | | (2000.0) | | | |
| $n$ | 0.23108751 | $\omega$ | 81.74689 | | −0.91280860 | −0.40434127 |
| $a$ | 2.6299757 | $\Omega$ | 74.38789 | | +0.34732776 | −0.84249984 |
| $e$ | 0.0308241 | $i$ | 3.41359 | | +0.21481127 | −0.35595247 |
| $P$ | 4.27 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 910 | 0.6+ | 0.5+ | 2001 10 24 | 704 | 0.1− | 0.0 | 2005 10 01 | 703 | 1.4− | 0.4+ |
| 1999 03 21 | 910 | 0.6+ | 0.6+ | 2001 11 20 | 704 | 0.5+ | 0.3− | 2005 10 01 | 703 | 0.4− | 0.2− |
| 1999 03 21 | 910 | 0.4+ | 0.5+ | 2001 11 20 | 704 | 1.0+ | 0.8− | 2005 10 01 | 703 | 0.7+ | 0.3− |
| 2001 09 21 | 704 | 0.3− | 0.6− | 2001 11 20 | 704 | 0.4+ | 0.6− | 2005 10 01 | 703 | 1.3− | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.1− | 2001 11 20 | 704 | 0.2− | 0.5− | 2005 10 01 | 703 | 1.0− | 0.6+ |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2003 01 30 | 699 | 0.4− | 0.7+ | 2005 10 01 | 703 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.6− | 0.3− | 2003 01 30 | 699 | 0.5− | 0.7+ | 2005 10 01 | 703 | 0.7− | 1.1+ |
| 2001 10 18 | 644 | 1.3− | 1.0+ | 2003 01 30 | 699 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 10 18 | 644 | 1.1− | 1.2+ | 2003 01 30 | 699 | 1.1− | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.5− |
| 2001 10 18 | 644 | (1.2− | 1.6+) | 2003 02 22 | 644 | 0.2+ | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 10 22 | 704 | (2.7+ | 0.6−) | 2003 02 22 | 644 | 0.4+ | 0.8+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 10 22 | 704 | 0.8+ | 0.2− | 2003 02 22 | 644 | 0.3+ | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.2− |
| 2001 10 22 | 704 | 0.2− | 0.4− | 2005 08 30 | 691 | 0.1+ | 0.5− | 2006 10 29 | G96 | 0.3+ | 0.0 |
| 2001 10 23 | 704 | 0.6+ | 0.1+ | 2005 08 30 | 691 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.5+ | 0.9− |
| 2001 10 23 | 704 | 0.0 | 0.0 | 2005 08 30 | 691 | 0.0 | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.5− |
| 2001 10 23 | 704 | 0.4+ | 0.5+ | 2005 09 13 | 691 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2001 10 23 | 704 | 1.2+ | 0.9− | 2005 09 13 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.7+ | 0.0 |
| 2001 10 24 | 691 | 0.0 | 0.0 | 2005 09 13 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.0 |
| 2001 10 24 | 691 | 0.0 | 0.2− | 2005 09 23 | 703 | 0.8− | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2001 10 24 | 691 | 0.3− | 0.1− | 2005 09 23 | 703 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | 0.4+ | 1.1+ | 2005 09 23 | 703 | 0.7− | 0.7− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.4− | 1.4+ | 2005 09 23 | 703 | 0.8+ | 1.0− | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2001 10 24 | 704 | 0.2+ | 1.3+ | 2005 10 01 | 703 | 0.5− | 0.7+ | 2006 12 01 | G96 | 1.1− | 0.3+ |

**(140784)∗ 2001 UN$_{139}$ = 2000 QK$_{69}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46831)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 125.37737 | | (2000.0) | | | |
| $n$ | 0.18511286 | $\omega$ | 30.94898 | | −0.62198058 | +0.77987423 |
| $a$ | 3.0491467 | $\Omega$ | 200.85313 | | −0.75273256 | −0.62021959 |
| $e$ | 0.1197933 | $i$ | 11.38331 | | −0.21571707 | −0.08440291 |
| $P$ | 5.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 691 | 0.9+ | 0.3+ | 2004 03 19 | 704 | 1.0+ | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2000 08 26 | 691 | 0.4+ | 0.0 | 2004 03 19 | 704 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2000 08 26 | 691 | 0.3+ | 0.1− | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2000 08 31 | 691 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.9+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2000 08 31 | 691 | 0.3+ | 0.4− | 2004 03 26 | 699 | 0.5+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2000 08 31 | 691 | 0.2+ | 0.1+ | 2004 03 26 | 699 | 0.4− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2000 09 27 | 645 | 0.3− | 0.2+ | 2004 03 26 | 699 | 0.3+ | 0.8+ | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2000 09 27 | 645 | 0.3− | 0.2+ | 2004 03 26 | 699 | 0.1− | 1.3+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | 0.9+ | 0.7+ | 2004 03 27 | 703 | 0.7− | 1.2+ | 2006 10 17 | 703 | (3.9+ | 2.4+) |
| 2001 10 23 | 704 | 0.3+ | 0.2+ | 2004 03 27 | 703 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.7+ |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2004 03 27 | 703 | 0.1− | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 2001 10 23 | 704 | 0.0 | 0.3− | 2004 03 27 | 703 | 0.9− | 0.9+ | 2006 10 17 | 703 | 1.0+ | 1.2+ |
| 2001 10 24 | 704 | 1.0+ | 0.3+ | 2004 04 16 | 704 | 0.2− | 1.0+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 10 24 | 704 | 1.3+ | 0.2+ | 2004 04 16 | 704 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.5+ | 0.3+ | 2004 04 16 | 704 | 0.8+ | 0.7+ | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 0.8+ | 2004 04 16 | 704 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2001 10 26 | 691 | 0.6− | 0.1− | 2004 04 21 | 691 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2001 10 26 | 691 | 0.5− | 0.1+ | 2004 04 21 | 691 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2001 10 26 | 691 | 0.5− | 0.1+ | 2004 04 21 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 703 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2006 08 29 | 703 | 0.3+ | 1.0+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2001 11 21 | 704 | 0.2+ | 0.8+ | 2006 08 29 | 703 | 1.3− | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.8− |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 08 29 | 703 | 1.3− | 0.8+ | 2006 10 31 | G96 | 0.4− | 0.2− |
| 2004 03 16 | 703 | (1.3− | 2.2+) | 2006 09 17 | 703 | 0.4+ | 0.8− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2004 03 16 | 703 | 0.9+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2004 03 16 | 703 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.9− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 03 16 | 703 | 1.1+ | 0.2− | 2006 09 17 | 703 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 03 19 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− |

**(140785)∗ 2001 UG$_{140}$ = 2003 AV$_{74}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46831)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 195.16925 | | (2000.0) | | | |
| $n$ | 0.18014835 | $\omega$ | 114.67051 | | −0.95720725 | −0.25302125 |
| $a$ | 3.1049113 | $\Omega$ | 50.98941 | | +0.15324080 | −0.85490657 |
| $e$ | 0.0682565 | $i$ | 10.41581 | | +0.24550262 | −0.45289623 |
| $P$ | 5.47 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.9− | 0.8− | 2003 01 31 | 699 | 0.3+ | 0.1− | 2004 04 20 | 703 | 0.6+ | 0.3− |
| 2001 10 23 | 704 | 0.4− | 0.6− | 2003 01 31 | 699 | 0.1+ | 0.0 | 2004 04 20 | 704 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.6− | 2004 04 20 | 703 | 1.4+ | 0.1− |
| 2001 10 23 | 704 | 0.1− | 0.6− | 2004 03 22 | 704 | 0.5− | 0.6+ | 2004 04 20 | 704 | 0.5+ | 0.4+ |
| 2001 10 24 | 704 | 1.0+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.9− | 2004 04 20 | 703 | (2.1+ | 0.5+) |
| 2001 10 24 | 704 | 0.9+ | 0.7− | 2004 03 22 | 704 | 0.0 | 0.3+ | 2004 04 20 | 703 | 0.2− | 0.3+ |
| 2001 10 24 | 704 | 0.6+ | 1.1+ | 2004 04 09 | E12 | 0.8− | 0.0 | 2004 04 20 | 704 | 0.4− | 0.1− |
| 2001 10 24 | 704 | 0.1− | 1.0+ | 2004 04 09 | E12 | 0.6+ | 0.5+ | 2004 04 22 | 704 | 0.2+ | 1.5+ |
| 2001 10 24 | 704 | 1.3+ | 0.6− | 2004 04 09 | E12 | 1.5+ | 0.7+ | 2004 04 22 | 704 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | (2.1− | 0.1+) | 2004 04 09 | E12 | 0.2+ | 1.3− | 2004 04 22 | 704 | (0.4+ | 3.0+) |
| 2001 11 20 | 704 | 0.8− | 0.6+ | 2004 04 14 | 691 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.4− | 0.6+ |
| 2001 11 20 | 704 | (1.7− | 0.7+) | 2004 04 14 | 691 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.5− | 1.0+ |
| 2001 11 20 | 704 | 1.1− | 0.5− | 2004 04 14 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | (0.4+ | 1.7+) |
| 2003 01 10 | 704 | 0.0 | 0.5+ | 2004 04 16 | 704 | 0.5− | 0.3+ | 2006 09 19 | 703 | 0.7+ | 1.1+ |
| 2003 01 10 | 704 | 0.2+ | 0.0 | 2004 04 16 | 704 | 0.2+ | 0.0 | 2006 09 19 | 703 | (0.1− | 2.2+) |
| 2003 01 10 | 704 | 1.2+ | 0.6+ | 2004 04 16 | 704 | 1.4+ | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.4+ |
| 2003 01 10 | 704 | 0.4+ | 0.4− | 2004 04 16 | 704 | 0.4− | 0.4− | 2006 09 25 | 703 | (1.0− | 1.6+) |
| 2003 01 10 | 704 | 0.4− | 1.0+ | 2004 04 17 | 699 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 1.0− | 0.2+ |
| 2003 01 13 | 704 | 0.0 | 0.0 | 2004 04 17 | 699 | (1.6− | 0.4−) | 2006 09 25 | 703 | 0.2− | 0.3− |
| 2003 01 13 | 704 | 1.3− | 0.8+ | 2004 04 17 | 699 | 0.3− | 1.3+ | 2006 09 25 | 703 | 0.8− | 0.4+ |
| 2003 01 13 | 704 | 1.2− | 0.7+ | 2004 04 17 | 699 | 0.1+ | 0.9− | 2006 10 23 | 644 | 0.4− | 1.0+ |
| 2003 01 31 | 699 | 1.2+ | 0.6− | 2004 04 20 | 704 | 1.0+ | 0.6+ | 2006 10 23 | 644 | 0.8− | 1.2+ |
| 2003 01 31 | 699 | 0.1− | 0.1− | 2004 04 20 | 704 | 0.1+ | 1.4+ | 2006 10 23 | 644 | 0.5− | 1.2+ |

**(140786)∗ 2001 UR$_{140}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.87669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24006293 | $\omega$ | 13.67156 | | −0.65462300 | −0.75561451 | |
| $a$ | 2.5640076 | $\Omega$ | 117.22471 | | +0.69115309 | −0.61040302 | |
| $e$ | 0.1477565 | $i$ | 1.46303 | | +0.30622890 | −0.23760234 | |
| $P$ | 4.11 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 17 | 691 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.1− | 0.9+ | 2005 10 10 | 691 | 0.0 | 0.4+ | |
| 1993 12 17 | 691 | 0.5+ | 0.0 | 2001 11 21 | 704 | (0.6− | 2.7+) | 2005 10 10 | 691 | 0.0 | 0.5+ | |
| 1993 12 17 | 691 | 1.1− | 0.1− | 2001 11 21 | 704 | (1.9− | 0.1+) | 2005 10 10 | 691 | 0.1+ | 0.2+ | |
| 1997 11 02 | 691 | 0.7+ | 0.7− | 2003 03 24 | 691 | 0.4− | 0.6− | 2005 10 26 | 691 | 0.3− | 0.1+ | |
| 1997 11 02 | 691 | 0.5+ | 0.5− | 2003 03 24 | 691 | 0.4− | 0.7− | 2005 10 26 | 691 | 0.1− | 0.2+ | |
| 1997 11 02 | 691 | 0.7+ | 0.7− | 2003 03 24 | 691 | 0.1− | 0.3− | 2005 10 26 | 691 | 0.0 | 0.2+ | |
| 2001 10 16 | 691 | 0.7− | 0.2+ | 2003 03 27 | 644 | 0.3+ | 0.0 | 2005 10 28 | 599 | 0.4+ | 0.7+ | |
| 2001 10 16 | 691 | 0.4− | 0.3+ | 2003 03 27 | 644 | 0.4+ | 0.1+ | 2005 10 28 | 599 | 0.2− | 0.5+ | |
| 2001 10 16 | 691 | 0.1+ | 0.2+ | 2003 03 27 | 644 | 0.4+ | 0.3− | 2005 10 28 | 599 | 0.2− | 0.9− | |
| 2001 10 23 | 704 | 0.2+ | 0.2+ | 2003 04 01 | 704 | 1.0− | 1.0+ | 2005 10 28 | 599 | 0.9− | 0.1− | |
| 2001 10 23 | 704 | 0.7− | 0.9+ | 2003 04 01 | 704 | 0.4+ | 0.1− | 2005 10 29 | G96 | 0.0 | 0.2− | |
| 2001 10 23 | 704 | (1.3− | 1.8+) | 2003 04 01 | 704 | 1.0− | 0.5+ | 2005 10 29 | G96 | 0.4− | 0.2− | |
| 2001 10 23 | 704 | 0.3− | 1.0+ | 2003 04 01 | 704 | 0.4+ | 0.4− | 2005 10 29 | G96 | 0.4− | 0.1+ | |
| 2001 10 23 | 691 | (1.0− | 1.6+) | 2003 04 04 | 691 | 0.5+ | 0.4+ | 2005 10 29 | G96 | 0.3− | 0.2+ | |
| 2001 10 23 | 691 | 0.6− | 0.3− | 2003 04 04 | 691 | 0.7+ | 0.3+ | 2005 11 29 | G96 | 0.2+ | 0.1+ | |
| 2001 10 23 | 691 | 0.8− | 0.2+ | 2003 04 04 | 691 | 0.5+ | 0.5+ | 2005 11 29 | G96 | 0.2− | 0.1− | |
| 2001 10 24 | 704 | 1.0− | 0.5+ | 2003 04 08 | 691 | 0.3+ | 0.1+ | 2005 11 29 | G96 | 0.7− | 0.2− | |
| 2001 10 24 | 704 | 0.2− | 0.1+ | 2003 04 08 | 691 | 0.0 | 0.1− | 2005 11 29 | G96 | 0.7− | 0.1+ | |
| 2001 10 24 | 704 | 1.1− | 0.1+ | 2003 04 08 | 691 | 0.0 | 0.1− | 2006 10 30 | G96 | 0.8− | 0.4− | |
| 2001 10 24 | 704 | 0.4− | 0.7+ | 2003 04 08 | 608 | 0.0 | 0.3− | 2006 10 30 | G96 | 0.2− | 0.2− | |
| 2001 10 24 | 704 | (1.6− | 0.8+) | 2003 04 08 | 608 | 0.2+ | 0.3− | 2006 10 30 | G96 | 0.6− | 0.4− | |
| 2001 11 14 | 691 | 0.5+ | 0.2+ | 2003 04 08 | 608 | 0.2− | 0.0 | 2006 10 30 | G96 | (1.6− | 0.1+) | |
| 2001 11 14 | 691 | 0.3+ | 0.3+ | 2003 04 25 | 691 | 0.4+ | 1.2+ | 2006 11 25 | 691 | 0.4+ | 0.5− | |
| 2001 11 14 | 691 | 0.6+ | 0.3+ | 2003 04 25 | 691 | 0.3+ | 1.2+ | 2006 11 25 | 691 | 0.1− | 0.4− | |
| 2001 11 20 | 704 | 0.5+ | 1.5+ | 2003 04 25 | 691 | 0.3+ | 1.2+ | 2006 11 25 | 691 | 0.1− | 0.6+ | |
| 2001 11 20 | 704 | (0.2+ | 2.1+) | 2003 05 05 | 691 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.1+ | |
| 2001 11 20 | 704 | 0.6+ | 1.0+ | 2003 05 05 | 691 | 0.2− | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.2+ | |
| 2001 11 21 | 704 | (2.2− | 0.1−) | 2003 05 05 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.2+ | |
| 2001 11 21 | 704 | 0.6+ | 0.4+ | 2005 10 01 | 691 | 0.1− | 0.4+ | 2006 12 01 | G96 | 0.5+ | 0.5+ | |
| 2001 11 21 | 704 | 0.0 | 0.3− | 2005 10 01 | 691 | 0.0 | 0.4+ | | | | | |
| 2001 11 21 | 704 | 0.6− | 1.1+ | 2005 10 01 | 691 | 0.1+ | 0.0 | | | | | |

**(140787)∗ 2001 UF$_{141}$ = 2005 ON$_{17}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85160)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.92660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20959918 | $\omega$ | 287.44200 | | −0.39532972 | −0.91847216 | |
| $a$ | 2.8067884 | $\Omega$ | 185.88046 | | +0.87851741 | −0.37454744 | |
| $e$ | 0.0075067 | $i$ | 6.22225 | | +0.26818198 | −0.12697680 | |
| $P$ | 4.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 07 | 691 | 0.1− | 0.4+ | 2004 05 18 | 704 | 0.2− | 1.4+ | 2006 10 23 | G96 | 0.5+ | 0.4− | |
| 2000 06 07 | 691 | 0.4+ | 0.2+ | 2004 05 18 | 704 | (0.0 | 1.9+) | 2006 10 23 | G96 | 0.2+ | 0.1− | |
| 2000 06 07 | 691 | 0.4+ | 0.5+ | 2004 05 18 | 704 | 1.3+ | 1.0+ | 2006 11 16 | 691 | 0.5− | 0.5+ | |
| 2001 10 23 | 704 | 1.1− | 0.3+ | 2004 05 18 | 704 | 0.2− | 1.1+ | 2006 11 16 | 691 | 0.0 | 0.0 | |
| 2001 10 23 | 704 | 0.6− | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.0 | |
| 2001 10 23 | 704 | 0.2− | 0.3− | 2005 07 30 | 644 | 0.3− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.0 | |
| 2001 10 23 | 704 | (1.7− | 0.3+) | 2005 07 30 | 644 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.0 | |
| 2001 10 24 | 704 | 0.7+ | 0.9+ | 2005 07 31 | 644 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.3+ | |
| 2001 10 24 | 704 | 0.6+ | 0.1− | 2005 07 31 | 644 | 0.3− | 0.3+ | 2006 11 20 | 704 | (2.6− | 0.1−) | |
| 2001 10 24 | 704 | 0.1− | 0.2+ | 2005 07 31 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.1− | 1.3+ | |
| 2001 11 20 | 704 | (1.7− | 0.5+) | 2005 08 22 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 1.4− | 0.7+ | |
| 2001 11 20 | 704 | 0.9− | 1.3− | 2005 08 22 | 644 | 0.5− | 0.0 | 2006 11 20 | 704 | 1.0− | 0.3+ | |
| 2001 11 20 | 704 | 1.1− | 1.3− | 2005 08 22 | 644 | 0.1− | 0.5+ | 2006 11 24 | 691 | 0.1+ | 0.2+ | |
| 2003 01 27 | 644 | 0.3+ | 0.3+ | 2005 10 27 | G96 | 0.5− | 0.0 | 2006 11 24 | 691 | 0.3+ | 0.4+ | |
| 2003 01 27 | 644 | 0.2+ | 0.3+ | 2005 10 27 | G96 | (0.6+ | 1.6−) | 2006 11 24 | 691 | 0.4+ | 0.5+ | |
| 2003 01 27 | 644 | 0.2+ | 0.5+ | 2005 10 27 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.5+ | 0.1− | |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.3− | 1.4− | 2006 11 24 | G96 | 0.2+ | 0.2− | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.3− | |
| 2004 04 20 | 704 | 0.9− | 0.8+ | 2006 10 23 | G96 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.7+ | 0.3− | |
| 2004 04 20 | 704 | (0.7− | 2.3+) | 2006 10 23 | G96 | 0.0 | 0.3− | | | | | |
| 2004 04 20 | 704 | 0.1− | 1.2+ | 2006 10 23 | G96 | 0.3+ | 0.2− | | | | | |

**(140788)∗ 2001 UD$_{142}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.19550 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20616069 | $\omega$ | 169.40448 | | +0.78235667 | +0.62252403 | |
| $a$ | 2.8379113 | $\Omega$ | 152.06549 | | −0.57444365 | +0.73334597 | |
| $e$ | 0.0732454 | $i$ | 2.39074 | | −0.24069176 | +0.27325359 | |
| $P$ | 4.78 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 1.0+ | 0.2+ | 2003 01 08 | 704 | 0.4+ | 1.3+ | 2005 07 27 | 644 | 0.1+ | 0.0 | |
| 1994 03 05 | 691 | 0.1− | 0.1+ | 2003 01 27 | 704 | 0.6− | 0.8+ | 2005 07 27 | 644 | 0.0 | 0.1+ | |
| 1994 03 05 | 691 | 0.1+ | 0.1+ | 2003 01 27 | 704 | (0.5+ | 1.8+) | 2005 07 27 | 644 | 0.1− | 0.2+ | |
| 2001 10 17 | 704 | 1.3− | 1.2− | 2003 01 27 | 704 | (1.1− | 2.1+) | 2005 08 06 | 704 | (1.9− | 0.5+) | |
| 2001 10 17 | 704 | (2.4+ | 1.5−) | 2003 01 27 | 704 | (0.8+ | 1.9+) | 2005 08 06 | 704 | 1.5− | 0.1+ | |
| 2001 10 17 | 704 | 0.0 | 0.7− | 2003 01 27 | 608 | 0.4− | 0.4+ | 2005 08 06 | 704 | (1.5− | 0.5+) | |
| 2001 10 17 | 704 | 0.2− | 0.9− | 2003 01 27 | 608 | 0.0 | 0.4− | 2005 08 06 | 704 | 1.4− | 0.5+ | |
| 2001 10 17 | 291 | 0.1− | 0.2+ | 2003 01 27 | 608 | 0.5+ | 0.1− | 2005 08 31 | 691 | 0.0 | 0.1− | |
| 2001 10 17 | 291 | 0.4− | 0.2+ | 2004 04 16 | 691 | 0.0 | 0.6+ | 2005 08 31 | 691 | 0.0 | 0.1− | |
| 2001 10 17 | 291 | 0.5− | 0.2+ | 2004 04 16 | 691 | 0.1+ | 0.6+ | 2005 08 31 | 691 | 0.3− | 0.0 | |
| 2001 10 18 | 644 | 0.1− | 0.3+ | 2004 04 16 | 691 | 0.2+ | 0.6+ | 2005 09 13 | 691 | 0.1− | 0.1− | |
| 2001 10 18 | 644 | 0.3− | 0.6+ | 2004 04 16 | 704 | 0.5− | 0.6+ | 2005 09 13 | 691 | 0.3− | 0.0 | |
| 2001 10 18 | 644 | 0.0 | 0.2+ | 2004 04 16 | 704 | 0.6+ | 0.7+ | 2005 09 13 | 691 | 0.1− | 0.1+ | |
| 2001 10 23 | 704 | 0.1− | 0.6+ | 2004 04 16 | 704 | 0.2+ | 0.9+ | 2006 10 19 | G96 | 0.3− | 0.3− | |
| 2001 10 23 | 704 | 0.4+ | 1.1+ | 2004 04 16 | 704 | 0.8− | 1.1+ | 2006 10 19 | G96 | 0.1+ | 0.6− | |
| 2001 10 23 | 704 | 0.3− | 0.9+ | 2004 04 19 | 704 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.5− | |
| 2001 10 23 | 704 | 0.2− | 1.1+ | 2004 04 19 | 704 | 0.6+ | 0.9+ | 2006 10 19 | G96 | 0.1+ | 0.5− | |
| 2001 10 23 | 704 | 0.4− | 0.1+ | 2004 04 19 | 704 | 0.2− | 0.9+ | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2001 10 24 | 704 | 0.6+ | 0.3+ | 2004 04 19 | 704 | 0.4+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.1− | |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 704 | 0.6− | 0.9+ | 2006 10 22 | G96 | 0.3+ | 0.1− | |
| 2001 10 24 | 704 | 0.1+ | 0.6+ | 2004 04 22 | 704 | 0.8+ | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.0 | |
| 2001 10 24 | 704 | 1.2+ | 0.7+ | 2004 04 22 | 704 | 0.6− | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.9+ | |
| 2001 11 20 | 704 | 0.4− | 0.3+ | 2004 04 22 | 704 | 0.5+ | 1.1+ | 2006 11 11 | 703 | 0.7+ | 0.5+ | |
| 2001 11 20 | 704 | 0.6− | 0.3+ | 2005 06 30 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 1.3− | 0.2− | |
| 2001 11 20 | 704 | 0.5− | 0.0 | 2005 06 30 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.1+ | |
| 2001 11 20 | 704 | 0.2− | 0.9+ | 2005 06 30 | 691 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.5+ | |
| 2001 11 20 | 704 | 0.3− | 0.7− | 2005 07 10 | 703 | 0.9+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.3+ | |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2005 07 10 | 703 | 0.4+ | 0.7+ | 2006 11 19 | 691 | 0.1− | 1.2+ | |
| 2001 11 21 | 704 | 0.5− | 0.1+ | 2005 07 10 | 703 | 1.0+ | 1.2+ | 2006 11 20 | 704 | 1.4+ | 0.0 | |
| 2001 11 21 | 704 | 0.5− | 0.5+ | 2005 07 10 | 703 | 0.1− | 0.9+ | 2006 11 20 | 704 | 0.3+ | 0.2− | |
| 2001 11 21 | 704 | 0.8− | 0.6+ | 2005 07 11 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.8+ | |
| 2003 01 08 | 704 | (0.4− | 1.9+) | 2005 07 11 | 691 | 0.1+ | 0.3+ | | | | | |
| 2003 01 08 | 704 | 0.2+ | 0.9+ | 2005 07 11 | 691 | 0.2+ | 0.2+ | | | | | |

**(140789)∗ 2001 UM$_{142}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.72040 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17929894 | $\omega$ | 268.57999 | | −0.49707100 | −0.86287811 | |
| $a$ | 3.1147096 | $\Omega$ | 211.75623 | | +0.84908601 | −0.46197701 | |
| $e$ | 0.0657634 | $i$ | 10.00560 | | +0.17881101 | −0.20498442 | |
| $P$ | 5.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 25 | 691 | 0.5− | 0.2+ | 2001 10 25 | 644 | 0.5− | 0.5+ | 2004 05 10 | 291 | 0.4− | 0.9+ |
| 1990 10 25 | 691 | 0.0 | 0.5+ | 2001 10 25 | 644 | 0.6− | 0.5+ | 2004 05 10 | 291 | 0.8− | 0.6+ |
| 1990 10 25 | 691 | 0.2+ | 0.4+ | 2001 11 20 | 704 | 0.8− | 0.5+ | 2004 05 14 | 691 | 0.4+ | 0.5+ |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2001 11 20 | 704 | 0.7− | 1.0+ | 2004 05 14 | 691 | 0.3+ | 0.5+ |
| 2001 09 19 | 704 | 0.3+ | 0.3− | 2001 11 20 | 704 | 0.6− | 0.7+ | 2004 05 14 | 691 | 0.2+ | 0.4+ |
| 2001 09 19 | 704 | 0.2+ | 1.1− | 2001 11 20 | 704 | 0.2− | 0.7+ | 2004 05 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 691 | 0.2+ | 0.4+ | 2001 11 20 | 704 | 0.0 | 1.0+ | 2004 05 27 | 691 | 0.3+ | 0.1+ |
| 2001 10 14 | 691 | 0.6+ | 0.4+ | 2001 11 21 | 704 | 0.0 | 0.5+ | 2004 05 27 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 691 | 0.6+ | 0.3+ | 2001 11 21 | 704 | 0.3− | 1.1+ | 2006 08 25 | D35 | 0.3− | 0.1− |
| 2001 10 18 | 644 | 0.6− | 0.2+ | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 08 25 | D35 | 0.6− | 0.5− |
| 2001 10 18 | 644 | 0.7− | 0.4+ | 2001 11 21 | 704 | 0.2− | 0.9+ | 2006 08 25 | D35 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.6− | 0.2− | 2001 11 21 | 704 | 0.7− | 1.3+ | 2006 09 17 | 703 | 0.1− | 0.9+ |
| 2001 10 23 | 704 | 0.1+ | 0.1− | 2003 01 28 | 704 | 0.9− | 1.0+ | 2006 09 17 | 703 | 0.1− | 1.2+ |
| 2001 10 23 | 704 | 0.3− | 1.0+ | 2003 01 28 | 704 | (0.0 | 1.8+) | 2006 09 17 | 703 | 0.1+ | 0.7+ |
| 2001 10 23 | 704 | 0.0 | 0.4+ | 2003 01 28 | 704 | (0.5− | 1.9+) | 2006 09 17 | 703 | (0.3− | 1.6+) |
| 2001 10 23 | 704 | 0.8− | 1.2+ | 2003 01 28 | 704 | (0.5+ | 2.1+) | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 1.1+ | 0.2− | 2003 01 28 | 704 | 0.4+ | 1.0+ | 2006 10 11 | 691 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 1.1+ | 2004 04 24 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.6+ | 1.0− | 2004 04 24 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2001 10 24 | 704 | 0.7+ | 0.3+ | 2004 04 24 | 691 | 0.5+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 10 25 | 644 | 0.4− | 0.3+ | 2004 05 10 | 291 | 0.1− | 0.9+ | 2006 10 19 | 691 | 0.2− | 0.1+ |

**(140790)∗ 2001 UV$_{142}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.06399 | | (2000.0) | | | |
| $n$ | 0.18907965 | $\omega$ | 73.52301 | | +0.20193256 | +0.97883768 |
| $a$ | 3.0063499 | $\Omega$ | 208.19238 | | −0.92323501 | +0.17894038 |
| $e$ | 0.0679443 | $i$ | 4.02573 | | −0.32689502 | +0.09928316 |
| $P$ | 5.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 691 | 0.3+ | 0.5− | 2004 04 20 | 704 | 0.4− | 0.7+ | 2006 10 19 | 701 | 0.2− | 0.1+ |
| 1998 01 07 | 691 | 0.3+ | 1.0+ | 2004 04 20 | 704 | 0.6− | 0.4+ | 2006 10 19 | 644 | 0.6+ | 0.1− |
| 1998 01 07 | 691 | 0.5+ | 0.3− | 2004 04 20 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 701 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 1.0− | 0.7− | 2005 06 05 | 691 | 0.1+ | 0.7+ | 2006 10 19 | 701 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 0.0 | 0.6− | 2005 06 05 | 691 | 0.1+ | 0.6+ | 2006 10 19 | 701 | 0.4+ | 0.3− |
| 2001 10 23 | 704 | 0.6− | 0.6− | 2005 06 05 | 691 | 0.1− | 0.6+ | 2006 10 19 | 701 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | 0.4+ | 0.4− | 2006 09 14 | 703 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.6+ | 0.5+ |
| 2001 10 24 | 704 | 0.2− | 0.8− | 2006 09 14 | 703 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2001 10 24 | 704 | 0.7− | 0.3− | 2006 09 14 | 703 | 1.4− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 10 24 | 704 | 0.8− | 0.6− | 2006 09 14 | 703 | 0.7− | 0.4− | 2006 10 21 | 703 | (1.8− | 0.8−) |
| 2001 10 24 | 704 | 0.3− | 0.9− | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.9+ |
| 2001 10 24 | 704 | 1.1− | 0.9− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.3+ |
| 2001 11 17 | 704 | 0.5− | 0.8− | 2006 09 15 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2001 11 17 | 704 | 0.1− | 0.0 | 2006 09 19 | 683 | (1.7+ | 0.2−) | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2001 11 17 | 704 | 0.3− | 1.0+ | 2006 09 19 | 683 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2001 11 18 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 11 18 | 691 | 0.1− | 0.2+ | 2006 09 19 | 683 | 0.9− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 11 18 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.4− | 0.1+ |
| 2001 11 20 | 704 | 0.7− | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.2− | 1.1+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.3− |
| 2001 11 20 | 704 | 0.1− | 1.1+ | 2006 09 26 | 691 | (0.4− | 1.6−) | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.9+ | 2006 09 27 | 704 | 0.8− | 1.0+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2004 03 18 | 704 | 1.0+ | 0.9+ | 2006 09 27 | 704 | 0.8− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 1.3− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.7− | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.1− | 1.2+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.5+ |
| 2004 03 20 | 704 | 0.5− | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2004 03 20 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.4− |
| 2004 03 20 | 704 | 0.3− | 0.5+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2004 03 20 | 704 | 0.2− | 0.0 | 2006 10 16 | 701 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.9− | 0.5− |
| 2004 03 20 | 704 | 0.3+ | 0.2− | 2006 10 16 | 701 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2004 03 20 | 704 | 0.6+ | 0.1− | 2006 10 16 | 701 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2004 03 20 | 704 | 0.8+ | 0.8+ | 2006 10 16 | 701 | 0.6− | 0.1− | 2006 11 17 | 703 | 0.8− | 0.7+ |
| 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 10 16 | 701 | 0.7+ | 0.2+ | 2006 11 17 | 703 | 1.4− | 0.5+ |
| 2004 03 29 | 691 | 0.0 | 0.6+ | 2006 10 16 | 701 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.8− | 1.1+ |
| 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 10 16 | 701 | 0.1+ | 0.1+ | 2006 11 22 | 291 | 0.3+ | 0.4+ |
| 2004 03 29 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 701 | 0.5+ | 0.1− | 2006 11 22 | 291 | 0.3+ | 0.2+ |
| 2004 03 31 | 704 | (0.0 | 1.8+) | 2006 10 19 | 701 | 0.2− | 0.1+ | 2006 11 22 | 291 | 0.1+ | 0.2+ |
| 2004 03 31 | 704 | 0.3+ | 0.7+ | 2006 10 19 | 701 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.6− | 0.5− |
| 2004 03 31 | 704 | 0.3− | 0.7+ | 2006 10 19 | 701 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2004 04 20 | 691 | 0.1+ | 0.8+ | 2006 10 19 | 701 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2004 04 20 | 691 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 10 19 | 701 | 0.4+ | 0.1+ | | | | |
| 2004 04 20 | 704 | 0.8+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.1+ | | | | |

**(140791)∗ 2001 UG$_{143}$ = 2003 BT$_{48}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40860)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 268.92498 | | (2000.0) | | | |
| $n$ | 0.17942906 | $\omega$ | 289.99528 | | −0.27660145 | −0.96096617 |
| $a$ | 3.1132036 | $\Omega$ | 176.04767 | | +0.91090261 | −0.26416116 |
| $e$ | 0.1247294 | $i$ | 4.97042 | | +0.30618308 | −0.08223688 |
| $P$ | 5.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 15 | 691 | 0.0 | 0.3− | 2003 02 03 | 699 | 0.6+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1990 10 15 | 691 | 0.2− | 0.1+ | 2003 02 03 | 699 | 0.8+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 1990 10 15 | 691 | 0.0 | 0.0 | 2003 02 03 | 699 | (0.6+ | 2.1+) | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 10 22 | 704 | 0.0 | 0.5− | 2003 02 22 | 644 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 10 22 | 704 | 0.8− | 0.3+ | 2003 02 22 | 644 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 0.2+ | 0.9+ | 2003 02 22 | 644 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 10 22 | 704 | (1.8+ | 0.4+) | 2003 03 06 | 644 | 0.0 | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2001 10 23 | 704 | 0.4+ | 0.0 | 2003 03 06 | 644 | 0.5− | 0.7+ | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2001 10 23 | 704 | 0.3− | 0.2+ | 2003 03 06 | 644 | 0.1− | 1.0+ | 2006 10 16 | G96 | 0.7+ | 0.8− |
| 2001 10 23 | 704 | 0.7+ | 0.6+ | 2003 03 12 | 644 | 0.5+ | 0.4+ | 2006 10 16 | G96 | 0.4+ | 0.3− |
| 2001 10 23 | 704 | 0.2+ | 0.1− | 2003 03 12 | 644 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.7+ | 0.2− |
| 2001 10 24 | 704 | 1.0+ | 0.6+ | 2003 03 12 | 644 | 0.6+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2005 06 04 | 691 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 1.3− | 0.0 |
| 2001 10 24 | 704 | 0.4+ | 0.5+ | 2005 06 04 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.6+ |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2005 06 04 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.6− | 0.6+ | 2005 07 11 | G96 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2003 01 26 | 699 | 0.3− | 0.1− | 2005 07 11 | G96 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2003 01 26 | 699 | 0.3+ | 0.7+ | 2005 07 11 | G96 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2003 01 26 | 699 | 0.6− | 0.7+ | 2005 07 11 | G96 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2003 01 26 | 699 | 0.5+ | 0.4− | 2006 08 19 | 691 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2003 01 30 | 699 | 0.1− | 1.0+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2003 01 30 | 699 | (1.9+ | 0.1−) | 2006 08 19 | 691 | 0.5− | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2003 01 30 | 699 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.4− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2003 01 30 | 699 | 0.1− | 0.3− | 2006 09 20 | 704 | 0.3+ | 0.0 | | | | |
| 2003 02 03 | 699 | (1.1− | 2.4−) | 2006 09 20 | 704 | 0.2− | 0.2− | | | | |

**(140792)∗ 2001 UW$_{143}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 289.57846 | | (2000.0) | | | |
| $n$ | 0.18943755 | $\omega$ | 44.29621 | | −0.16224466 | −0.97721435 |
| $a$ | 3.0025621 | $\Omega$ | 55.50527 | | +0.85292527 | −0.20862500 |
| $e$ | 0.0884004 | $i$ | 9.55812 | | +0.49618057 | +0.03908602 |
| $P$ | 5.20 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.2+ | 0.1+ | 2001 11 21 | 704 | (2.1+ | 0.2+) | 2003 03 03 | 644 | 0.3+ | 0.1− |
| 2001 10 13 | 704 | 0.4+ | 0.2+ | 2001 11 21 | 704 | (1.6+ | 0.2+) | 2003 03 03 | 644 | 0.1+ | 0.2− |
| 2001 10 13 | 704 | 0.6+ | 0.8− | 2001 11 21 | 704 | (1.8+ | 0.1−) | 2003 03 03 | 644 | 0.0 | 0.3− |
| 2001 10 18 | 644 | 0.4− | 0.0 | 2001 11 21 | 704 | 1.4+ | 0.2+ | 2003 03 08 | 644 | 0.5+ | 0.1+ |
| 2001 10 18 | 644 | 0.6− | 0.0 | 2001 11 22 | 644 | 0.1+ | 0.3+ | 2003 03 08 | 644 | 0.3+ | 0.0 |
| 2001 10 18 | 644 | 0.6− | 0.2− | 2001 11 22 | 644 | 0.2+ | 0.4+ | 2003 03 08 | 644 | 0.5+ | 0.1− |
| 2001 10 21 | 691 | 0.6− | 0.2+ | 2001 11 22 | 644 | 0.2+ | 0.4+ | 2004 05 13 | 644 | 0.4+ | 1.0+ |
| 2001 10 21 | 691 | 0.6− | 0.5+ | 2001 12 09 | 699 | 0.9− | 0.1− | 2004 05 13 | 644 | 0.2+ | 0.6+ |
| 2001 10 21 | 691 | 0.5− | 0.2+ | 2001 12 09 | 699 | 0.3− | 0.8+ | 2004 05 13 | 644 | 0.4+ | 0.6+ |
| 2001 10 22 | 704 | 1.3− | 0.4− | 2001 12 09 | 699 | 0.5+ | 0.4+ | 2004 05 18 | 704 | 0.5+ | 0.2+ |
| 2001 10 22 | 704 | 0.6− | 0.4− | 2001 12 09 | 699 | 0.3+ | 0.7+ | 2004 05 18 | 704 | 0.1− | 0.6+ |
| 2001 10 22 | 704 | 1.3+ | 1.1− | 2001 12 11 | 704 | 0.5− | 1.1+ | 2004 05 18 | 704 | 0.6+ | 0.7+ |
| 2001 10 22 | 704 | (0.1+ | 1.5−) | 2001 12 11 | 704 | 0.8− | 0.5− | 2004 05 18 | 704 | 1.5+ | 0.6+ |
| 2001 10 22 | 704 | (1.5− | 0.8−) | 2001 12 11 | 704 | 0.4− | 1.1+ | 2004 06 13 | 691 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.8+ | 0.5− | 2001 12 11 | 704 | 0.2− | 1.0+ | 2004 06 13 | 691 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.0 | 0.7− | 2001 12 17 | 704 | 0.6− | 1.0+ | 2004 06 13 | 691 | 0.1− | 0.7+ |
| 2001 10 23 | 704 | 0.8+ | 0.5− | 2001 12 17 | 691 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.5− |
| 2001 10 23 | 704 | 0.6+ | 1.0− | 2001 12 17 | 704 | 1.1− | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.3+ |
| 2001 10 23 | 704 | 0.1+ | 1.2− | 2001 12 17 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 2001 10 24 | 704 | (0.7+ | 2.4+) | 2001 12 17 | 704 | 0.9+ | 0.3− | 2006 09 30 | 703 | 0.5− | 1.2− |
| 2001 10 24 | 704 | 0.1− | 0.7+ | 2001 12 17 | 691 | 0.5+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.6+ | 0.6+ | 2001 12 17 | 704 | 0.9+ | 1.3+ | 2006 10 03 | G96 | 0.1+ | 0.7− |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2001 12 18 | 704 | 0.4+ | 0.1− | 2006 10 03 | G96 | 0.3− | 0.0 |
| 2001 10 24 | 704 | 0.7+ | 0.7+ | 2001 12 18 | 704 | 0.2+ | 0.6− | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 2001 10 25 | 644 | 0.6− | 0.3+ | 2001 12 18 | 704 | 0.5+ | 0.4− | 2006 10 22 | 703 | (2.0+ | 0.7+) |
| 2001 10 25 | 644 | 0.5− | 0.5+ | 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2001 10 25 | 644 | 0.6− | 0.6+ | 2001 12 19 | 704 | 0.3+ | 1.3− | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2001 11 09 | 704 | 0.1− | 0.5+ | 2001 12 19 | 644 | 0.0 | 0.7+ | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2001 11 09 | 704 | 1.0− | 0.0 | 2001 12 19 | 704 | 0.4+ | 1.1− | 2006 10 22 | 703 | (0.5+ | 2.2+) |
| 2001 11 09 | 704 | 0.6+ | 0.3+ | 2001 12 19 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2001 11 09 | 704 | 0.1+ | 0.1+ | 2001 12 19 | 704 | 0.1− | 1.5− | 2006 10 22 | 703 | 1.3+ | 1.5+ |
| 2001 11 09 | 704 | 0.4+ | 0.6− | 2001 12 19 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2001 11 17 | 704 | 0.6+ | 0.4+ | 2001 12 19 | 704 | 0.3− | 0.8− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.4− | 0.3+ | 2001 12 19 | 704 | 0.0 | 0.8− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 11 17 | 704 | 0.8− | 0.1− | 2002 02 13 | 291 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.0 | 0.7+ | 2002 02 13 | 291 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.6+ | 2002 02 13 | 291 | 0.5− | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.6+ |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2003 02 26 | 704 | 0.4− | 0.7+ | 2006 11 16 | 703 | 0.5− | 0.7− |
| 2001 11 20 | 704 | 0.1− | 0.8+ | 2003 02 26 | 704 | 0.3− | 0.3+ | 2006 11 16 | 703 | 0.0 | 1.0+ |
| 2001 11 20 | 704 | (0.1+ | 1.6+) | 2003 02 26 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 703 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.1− | 1.3+ | 2003 02 26 | 704 | 0.2+ | 0.3+ | | | | |
| 2001 11 21 | 704 | (2.0+ | 0.6+) | 2003 02 26 | 704 | 0.5− | 0.4+ | | | | |

**(140793)∗ 2001 UM$_{144}$ = 2000 OL$_{40}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 27278)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.77359 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17048409 | $\omega$ | 128.04060 | | +0.84869660 | +0.52471495 |
| $a$ | 3.2211687 | $\Omega$ | 200.57132 | | −0.52478503 | +0.81993692 |
| $e$ | 0.1079597 | $i$ | 10.86699 | | −0.06568672 | +0.22886169 |
| $P$ | 5.78 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.0 | 0.2− | 2005 04 30 | 691 | 0.2+ | 0.1+ | 2005 06 28 | 644 | 0.1− | 0.1+ |
| 2000 07 30 | 704 | 0.4+ | 0.2− | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2005 06 28 | 644 | 0.0 | 0.2+ |
| 2000 07 30 | 704 | 0.0 | 0.3− | 2005 05 10 | 691 | 0.0 | 0.2+ | 2005 07 05 | 644 | 0.3− | 0.2+ |
| 2000 08 03 | 704 | 1.1− | 0.7+ | 2005 05 10 | 691 | 0.2+ | 0.4+ | 2005 07 05 | 644 | 0.5− | 0.0 |
| 2000 08 03 | 704 | 0.7+ | 0.3− | 2005 05 14 | 691 | 0.1+ | 0.4+ | 2005 07 05 | 644 | 0.0 | 0.3+ |
| 2000 08 03 | 704 | 0.9+ | 0.3+ | 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.2− | 0.5− |
| 2001 09 19 | 704 | 0.4+ | 1.3+ | 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2005 05 17 | G96 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.8− | 0.5+ |
| 2001 09 19 | 704 | 1.2+ | 0.5+ | 2005 05 17 | G96 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.8− |
| 2001 09 19 | 704 | 0.8+ | 0.4+ | 2005 05 17 | G96 | 0.4− | 0.2− | 2006 08 30 | 699 | 1.6+ | 1.0− |
| 2001 09 19 | 704 | 0.8+ | 0.5+ | 2005 05 17 | G96 | 0.5− | 1.0+ | 2006 08 30 | 699 | 0.6+ | 0.1− |
| 2001 10 18 | 644 | 1.1− | 1.9+ | 2005 05 20 | G96 | 0.4− | 0.3+ | 2006 08 30 | 699 | 1.0+ | 0.0 |
| 2001 10 18 | 644 | 1.4− | 1.5+ | 2005 05 20 | G96 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.5+ | 0.0 |
| 2001 10 18 | 644 | (1.3− | 2.1+) | 2005 05 20 | G96 | 0.4− | 0.3+ | 2006 09 11 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 704 | 0.0 | 0.4+ | 2005 05 20 | G96 | 0.2− | 0.3+ | 2006 09 11 | 703 | 1.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.0 | 0.5+ | 2005 06 05 | 691 | 0.1+ | 0.0 | 2006 09 11 | 703 | 1.8− | 0.3+ |
| 2001 10 23 | 704 | 0.3− | 0.5− | 2005 06 05 | 691 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.8− | 0.3− |
| 2001 10 23 | 704 | 0.2+ | 0.4− | 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 09 16 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.2− | 0.2+ | 2005 06 13 | G96 | 0.7− | 0.3+ | 2006 09 16 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.2− | 1.1+ | 2005 06 13 | 291 | 0.1− | 0.0 | 2006 09 16 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.3+ | 0.9+ | 2005 06 13 | G96 | 0.8− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2005 06 13 | 291 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.4+ |
| 2001 10 24 | 704 | 1.2− | 0.3+ | 2005 06 13 | G96 | 0.5− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.2+ | 0.8+ | 2005 06 13 | 291 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.2+ | 1.5+ |
| 2001 11 18 | 704 | 0.3− | 0.1− | 2005 06 13 | G96 | 0.7− | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.7+ |
| 2001 11 18 | 704 | 0.4− | 0.2+ | 2005 06 15 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.7− | 0.2− |
| 2001 11 18 | 704 | 1.0− | 1.0+ | 2005 06 15 | 691 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.3− | 0.5+ |
| 2004 04 12 | 691 | 0.5+ | 0.8+ | 2005 06 15 | 691 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.5+ | 0.5+ |
| 2004 04 12 | 691 | 0.5+ | 0.4+ | 2005 06 23 | 644 | 0.4− | 0.1− | 2006 09 26 | 703 | 0.3+ | 1.2− |
| 2004 04 12 | 691 | 0.0 | 0.6+ | 2005 06 23 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.8− |
| 2005 04 30 | 691 | 0.4+ | 0.0 | 2005 06 23 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.3− | 0.4− |
| 2005 04 30 | 691 | 0.4− | 0.1− | 2005 06 28 | 644 | 0.3− | 0.1+ | | | | |

**(140794)∗ 2001 UQ$_{145}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.19466 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18837248 | $\omega$ | 94.69509 | | −0.91748733 | −0.36670551 |
| $a$ | 3.0138692 | $\Omega$ | 63.85947 | | +0.26141750 | −0.84788149 |
| $e$ | 0.0832557 | $i$ | 9.88365 | | +0.29979642 | −0.38291519 |
| $P$ | 5.23 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 691 | 0.8− | 0.5+ | 2001 12 09 | 699 | 0.2− | 0.9+ | 2003 03 03 | 644 | 0.4− | 0.2+ |
| 2001 10 19 | 691 | 0.7− | 0.3+ | 2001 12 09 | 699 | 1.4− | 0.5− | 2003 03 08 | 644 | 0.1− | 0.2+ |
| 2001 10 19 | 691 | 0.8− | 0.3+ | 2001 12 09 | 699 | (0.2− | 2.7−) | 2003 03 08 | 644 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | 0.4− | 0.5+ | 2001 12 14 | 704 | 0.3+ | 0.5− | 2003 03 08 | 644 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.6+ | 0.4+ | 2001 12 14 | 704 | 0.1− | 0.3+ | 2004 04 23 | 599 | 0.4− | 0.2+ |
| 2001 10 23 | 704 | 0.1+ | 0.5− | 2001 12 14 | 704 | 0.2+ | 0.3+ | 2004 04 23 | 599 | 0.1+ | 0.6+ |
| 2001 10 24 | 704 | (0.4+ | 1.6−) | 2001 12 14 | 704 | 0.4− | 0.4− | 2004 04 23 | 599 | 0.3− | 0.7+ |
| 2001 10 24 | 704 | 0.3+ | 0.9− | 2001 12 17 | 704 | 0.6+ | 0.5− | 2004 05 16 | 704 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 1.0+ | 0.4− | 2001 12 17 | 704 | 0.1− | 0.7+ | 2004 05 16 | 704 | 0.5+ | 0.0 |
| 2001 10 24 | 704 | 0.6+ | 0.5− | 2001 12 17 | 704 | 0.7− | 0.0 | 2004 05 16 | 704 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 0.9+ | 0.5− | 2003 01 10 | 704 | 0.0 | 0.3− | 2004 05 16 | 704 | 0.4− | 0.3+ |
| 2001 11 12 | 704 | (0.7+ | 1.5+) | 2003 01 10 | 704 | 0.5+ | 0.3+ | 2004 05 16 | 704 | 0.5+ | 0.7+ |
| 2001 11 12 | 704 | 0.6− | 0.0 | 2003 01 10 | 704 | 0.4− | 0.2+ | 2004 05 19 | 704 | (0.5− | 1.7+) |
| 2001 11 12 | 704 | 0.7+ | 1.3+ | 2003 01 28 | 644 | 0.7+ | 1.2+ | 2004 05 19 | 704 | 0.3+ | 1.0+ |
| 2001 11 12 | 704 | 0.5+ | 0.6+ | 2003 01 28 | 644 | 0.2+ | 0.7+ | 2004 05 19 | 704 | 0.7+ | 0.1− |
| 2001 11 19 | 608 | (0.3− | 1.6+) | 2003 01 28 | 644 | 0.8+ | 0.8+ | 2004 05 19 | 704 | 1.2+ | 0.1+ |
| 2001 11 19 | 608 | 0.3− | 1.0+ | 2003 01 30 | 704 | 0.8− | 0.8− | 2004 06 12 | E12 | 0.2− | 1.5+ |
| 2001 11 19 | 608 | 0.7− | 1.2+ | 2003 01 30 | 704 | 0.1+ | 0.4− | 2004 06 12 | E12 | 0.2+ | 0.6+ |
| 2001 11 20 | 704 | 1.3+ | 0.6+ | 2003 01 30 | 704 | 0.3− | 0.2− | 2004 06 12 | E12 | 0.1+ | 0.6+ |
| 2001 11 20 | 704 | 0.3− | 0.3− | 2003 01 30 | 704 | 0.3+ | 0.3+ | 2004 06 12 | E12 | 0.5+ | 0.7+ |
| 2001 11 20 | 704 | (0.4+ | 1.8+) | 2003 02 02 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 1.0− |
| 2001 11 20 | 704 | 1.4+ | 0.2− | 2003 02 02 | 704 | 0.3− | 0.4+ | 2006 09 30 | 703 | (1.7+ | 0.7−) |
| 2001 11 20 | 704 | 0.8+ | 0.7− | 2003 02 02 | 704 | 0.5− | 1.2+ | 2006 09 30 | 703 | 1.1+ | 0.5+ |
| 2001 11 21 | 704 | 0.4+ | 0.2+ | 2003 02 19 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.1− |
| 2001 11 21 | 704 | 0.3+ | 0.0 | 2003 02 19 | 644 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.4+ | 0.2− | 2003 02 19 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 1.3− | 0.3− |
| 2001 11 21 | 704 | 0.8+ | 0.5− | 2003 02 26 | 704 | 0.3+ | 0.5− | 2006 11 13 | 703 | 1.3+ | 0.6+ |
| 2001 11 21 | 704 | 1.0+ | 0.4− | 2003 02 26 | 704 | 0.3+ | 0.5− | 2006 11 13 | 703 | 1.0− | 1.3+ |
| 2001 11 24 | 704 | 1.1− | 0.4− | 2003 02 26 | 704 | 0.2+ | 0.7− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2001 11 24 | 704 | 0.3− | 1.0+ | 2003 02 26 | 704 | 0.1− | 1.1− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2001 11 24 | 704 | 0.3− | 1.2+ | 2003 02 26 | 704 | 0.3+ | 0.6− | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2001 11 24 | 704 | (0.8− | 2.5+) | 2003 03 03 | 644 | 0.5+ | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2001 12 09 | 699 | 0.5+ | 1.0− | 2003 03 03 | 644 | 0.1+ | 0.1− | | | | |

**(140795)∗ 2001 UF$_{146}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.57844 | | (2000.0) | | | |
| $n$ | 0.18265231 | $\omega$ | 121.91936 | | +0.96751335 | +0.21552872 |
| $a$ | 3.0764694 | $\Omega$ | 226.01357 | | −0.24461912 | +0.93010726 |
| $e$ | 0.0508313 | $i$ | 10.58400 | | +0.06387016 | +0.29740185 |
| $P$ | 5.40 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 25 | 691 | 0.1+ | 0.2− | 2001 11 18 | 704 | 0.1− | 0.2+ | 2004 05 24 | 691 | 0.7+ | 0.6+ |
| 1990 10 25 | 691 | 0.2− | 0.3− | 2001 11 18 | 704 | 0.5+ | 0.4+ | 2006 09 01 | 224 | 0.4− | 0.4− |
| 1990 10 25 | 691 | 0.1+ | 0.0 | 2001 11 19 | 699 | 1.1− | 0.7+ | 2006 09 01 | 224 | 0.6+ | 0.0 |
| 2000 08 31 | 704 | 0.3− | 0.2− | 2001 11 19 | 699 | 1.1+ | 0.7+ | 2006 09 01 | 224 | 1.4+ | 0.3+ |
| 2000 08 31 | 704 | 0.4+ | 0.7+ | 2001 11 19 | 699 | 0.3− | 0.9+ | 2006 09 03 | 224 | 1.4+ | 0.7+ |
| 2000 08 31 | 704 | 0.8− | 1.7+ | 2001 11 19 | 699 | 0.6− | 0.6+ | 2006 09 03 | 224 | 0.8− | 1.1+ |
| 2001 10 18 | 644 | 0.6+ | 0.3− | 2001 11 20 | 704 | 0.5− | 0.0 | 2006 09 03 | 224 | 0.2+ | 0.6+ |
| 2001 10 18 | 644 | 0.0 | 0.1− | 2001 11 20 | 704 | 0.0 | 0.6− | 2006 09 16 | 703 | 1.0− | 0.7− |
| 2001 10 18 | 644 | 0.5+ | 0.5− | 2001 11 20 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.7+ | 0.0 |
| 2001 10 21 | 291 | 0.3− | 0.3+ | 2001 11 20 | 704 | 0.4− | 0.2+ | 2006 09 16 | 703 | 1.4+ | 0.4+ |
| 2001 10 21 | 291 | 0.4− | 0.2− | 2001 11 20 | 704 | 0.8− | 0.0 | 2006 09 16 | 703 | 1.0− | 1.2− |
| 2001 10 21 | 291 | 0.3− | 0.2− | 2001 11 21 | 704 | 0.6− | 0.8+ | 2006 09 27 | 703 | 0.9− | 0.3− |
| 2001 10 23 | 704 | 1.1− | 0.3− | 2001 11 21 | 704 | 1.2− | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.4+ |
| 2001 10 23 | 704 | 0.5+ | 0.7− | 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 09 27 | 703 | 0.5+ | 0.6+ |
| 2001 10 23 | 704 | 0.5+ | 0.8+ | 2001 11 21 | 704 | 0.9− | 0.4− | 2006 09 27 | 703 | 0.4− | 0.9− |
| 2001 10 24 | 704 | 0.4− | 0.2+ | 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.7− | 0.1+ |
| 2001 10 24 | 704 | 0.8+ | 0.3− | 2001 12 09 | 691 | 0.7+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | (0.8− | 1.5+) | 2001 12 09 | 691 | 0.7+ | 0.7− | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2001 10 24 | 704 | 0.1− | 0.9+ | 2001 12 09 | 691 | 0.6+ | 0.8− | 2006 10 17 | 703 | 0.9− | 0.1+ |
| 2001 10 25 | 644 | 0.2− | 0.1+ | 2001 12 14 | 704 | 1.3+ | 1.2+ | 2006 10 19 | 683 | 0.2+ | 0.2+ |
| 2001 10 25 | 644 | 0.0 | 0.1+ | 2001 12 14 | 704 | 0.1+ | 1.2+ | 2006 10 19 | 683 | (1.2+ | 2.2+) |
| 2001 10 25 | 644 | 0.2− | 0.2− | 2001 12 14 | 704 | (2.0+ | 3.1+) | 2006 10 19 | 683 | 0.8+ | 0.4+ |
| 2001 11 09 | 704 | 0.9+ | 1.2+ | 2001 12 14 | 704 | 0.9− | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2001 11 09 | 704 | 1.4+ | 0.6+ | 2001 12 17 | 704 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2001 11 09 | 704 | 0.6− | 0.9− | 2001 12 17 | 704 | 0.5+ | 1.1+ | 2006 10 22 | 644 | 0.4− | 0.1+ |
| 2001 11 09 | 704 | 0.5− | 0.6− | 2001 12 17 | 704 | (1.7− | 0.2+) | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2001 11 18 | 704 | 0.0 | 0.1+ | 2001 12 17 | 704 | 0.8− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 11 18 | 704 | 0.3− | 1.3+ | 2004 04 17 | 704 | 0.9− | 0.3− | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2001 11 18 | 704 | 0.4+ | 0.3+ | 2004 04 17 | 704 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 2001 11 18 | 704 | 0.5− | 1.1+ | 2004 04 17 | 704 | 0.5− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.8+ |
| 2001 11 18 | 704 | 0.3− | 0.0 | 2004 05 24 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 1.3− |
| 2001 11 18 | 704 | 0.1+ | 0.4+ | 2004 05 24 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.3+ | 0.4+ |

**(140796)∗ 2001 UN$_{146}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.81216 | | (2000.0) | | | |
| $n$ | 0.18350762 | $\omega$ | 56.91602 | | −0.20785042 | −0.97242946 |
| $a$ | 3.0669026 | $\Omega$ | 45.46764 | | +0.84073895 | −0.23285071 |
| $e$ | 0.1574141 | $i$ | 8.52965 | | +0.49995621 | −0.01270753 |
| $P$ | 5.37 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 21 | 691 | 0.5− | 0.7+ | 2001 11 19 | 704 | 0.2+ | 0.2− | 2003 02 28 | 704 | 0.4+ | 0.2+ |
| 1990 10 21 | 691 | 0.9− | 1.3+ | 2001 11 19 | 704 | 0.2+ | 0.1− | 2003 03 25 | 644 | 1.0+ | 0.5+ |
| 1990 10 21 | 691 | 0.0 | 0.4+ | 2001 11 21 | 704 | 0.0 | 0.4+ | 2003 03 25 | 644 | 1.0+ | 0.5+ |
| 2001 10 12 | 699 | 0.4+ | 0.4+ | 2001 11 21 | 704 | 0.2− | 0.3+ | 2003 03 25 | 644 | 1.1+ | 0.5+ |
| 2001 10 12 | 699 | 0.5− | 0.2+ | 2001 11 21 | 704 | 0.1+ | 0.0 | 2003 04 04 | 691 | 0.0 | 0.0 |
| 2001 10 12 | 699 | 0.5+ | 1.4+ | 2001 11 21 | 704 | 0.0 | 0.2+ | 2003 04 04 | 691 | 0.2− | 0.4+ |
| 2001 10 12 | 699 | 0.7− | 0.6− | 2001 11 21 | 704 | 0.4+ | 0.1− | 2003 04 04 | 691 | 0.2+ | 0.1+ |
| 2001 10 18 | 644 | 0.5+ | 0.7+ | 2001 12 08 | 699 | 0.2+ | 0.2+ | 2003 04 05 | 699 | 0.5− | 0.4+ |
| 2001 10 18 | 644 | 0.9+ | 0.0 | 2001 12 08 | 699 | 0.4+ | 0.1+ | 2003 04 05 | 699 | (1.7+ | 0.7−) |
| 2001 10 18 | 644 | 0.5+ | 0.5+ | 2001 12 08 | 699 | 0.1− | 0.7− | 2003 04 05 | 699 | 0.2+ | 0.0 |
| 2001 10 22 | 333 | 0.4+ | 0.1+ | 2001 12 08 | 699 | 1.0− | 0.1+ | 2003 04 05 | 699 | 0.3− | 0.7+ |
| 2001 10 22 | 333 | 0.3− | 1.3− | 2001 12 10 | 704 | 0.5+ | 0.3− | 2006 09 18 | 703 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.1+ | 0.1+ | 2001 12 10 | 704 | 0.9+ | 0.4− | 2006 09 18 | 703 | 1.2− | 0.0 |
| 2001 10 23 | 704 | 0.4− | 0.3− | 2001 12 10 | 704 | 0.7+ | 0.6− | 2006 09 18 | 703 | 0.4+ | 1.1− |
| 2001 10 23 | 704 | 0.1+ | 0.7− | 2001 12 10 | 704 | 0.4+ | 0.7− | 2006 09 18 | 703 | 1.4+ | 0.5− |
| 2001 10 23 | 704 | 0.2− | 0.5+ | 2001 12 10 | 704 | 0.2− | 0.7+ | 2006 09 21 | 699 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.3− | 0.0 | 2001 12 15 | 704 | 0.6+ | 0.1− | 2006 09 21 | 699 | 0.1+ | 1.0+ |
| 2001 10 24 | 704 | 0.3+ | 0.0 | 2001 12 15 | 704 | 0.2− | 0.9− | 2006 09 21 | 699 | 0.2− | 0.8+ |
| 2001 10 24 | 704 | 0.1− | 0.5− | 2001 12 15 | 704 | 0.1− | 0.7− | 2006 09 21 | 699 | 1.0− | 0.6+ |
| 2001 10 24 | 704 | 0.1− | 0.5− | 2001 12 15 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.3− | 0.7− |
| 2001 10 24 | 704 | 0.6+ | 0.6− | 2001 12 15 | 704 | 0.0 | 0.1− | 2006 09 29 | 699 | 1.0− | 1.2+ |
| 2001 11 09 | 704 | (0.9+ | 1.8−) | 2001 12 18 | 704 | 0.8+ | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.1− |
| 2001 11 09 | 704 | 0.6+ | 0.1− | 2001 12 18 | 704 | 1.2+ | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.7+ |
| 2001 11 09 | 704 | 0.1− | 0.4+ | 2001 12 18 | 704 | (1.2+ | 1.6+) | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 11 09 | 704 | 0.3+ | 0.4− | 2001 12 18 | 704 | 0.7+ | 1.1+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2001 11 09 | 644 | 0.3+ | 0.1− | 2001 12 18 | 704 | 1.0+ | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2001 11 09 | 644 | 0.0 | 0.5+ | 2001 12 19 | 704 | (2.2+ | 1.6+) | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 11 09 | 644 | 0.4+ | 0.1− | 2001 12 19 | 704 | (2.3+ | 1.6+) | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2001 11 11 | 691 | 0.0 | 0.3− | 2001 12 19 | 704 | (2.4+ | 1.7+) | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2001 11 11 | 691 | 0.2− | 0.6− | 2001 12 19 | 704 | (2.5+ | 1.8+) | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2001 11 11 | 691 | 0.0 | 0.3− | 2001 12 20 | 644 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 11 12 | 704 | 0.5− | 0.3− | 2001 12 20 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4− |
| 2001 11 12 | 704 | (0.8− | 1.5+) | 2001 12 20 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 1.0− | 1.2+ | 2003 01 12 | 291 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2001 11 12 | 704 | 0.3− | 1.2+ | 2003 01 12 | 291 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.5+ | 0.8+ |
| 2001 11 12 | 704 | 0.7− | 0.4+ | 2003 01 12 | 291 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.7+ |
| 2001 11 16 | 644 | 0.0 | 0.3− | 2003 01 13 | 291 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.7− | 0.4+ |
| 2001 11 16 | 644 | 0.0 | 0.5− | 2003 01 13 | 291 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 11 16 | 644 | 0.1− | 0.0 | 2003 01 13 | 291 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 0.4− | 0.9− | 2003 02 28 | 704 | 1.2+ | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 0.8− | 1.2− | 2003 02 28 | 704 | 1.2+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2001 11 19 | 704 | 0.4+ | 0.9− | 2003 02 28 | 704 | 0.9+ | 0.2− | | | | |

**(140797)∗ 2001 UE$_{148}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.92522 | | (2000.0) | | | |
| $n$ | 0.19161200 | $\omega$ | 287.10253 | | +0.37929848 | −0.92524455 |
| $a$ | 2.9798032 | $\Omega$ | 140.60466 | | +0.85331026 | +0.34668284 |
| $e$ | 0.0426485 | $i$ | 0.67060 | | +0.35776287 | +0.15405687 |
| $P$ | 5.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.5+ | 0.4− | 2001 11 21 | 704 | 0.2+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.0 |
| 1993 03 25 | 691 | 1.0+ | 0.6− | 2001 11 21 | 704 | 0.6+ | 0.7− | 2006 09 25 | G96 | 0.6− | 0.2− |
| 1993 03 25 | 691 | 0.3+ | 0.4− | 2003 02 10 | 291 | 0.7− | 0.6+ | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 1996 11 17 | 691 | 0.7− | 0.2− | 2003 02 10 | 291 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 1996 11 17 | 691 | 0.2− | 0.0 | 2003 02 10 | 291 | 0.5− | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1996 11 17 | 691 | 0.2− | 0.1− | 2003 03 09 | 291 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.5+ | 1.4+ |
| 1999 05 16 | 691 | 0.2+ | 0.7+ | 2003 03 09 | 291 | 0.3+ | 0.1+ | 2006 10 21 | 703 | (0.3− | 1.9+) |
| 1999 05 16 | 691 | 0.2+ | 0.5+ | 2003 03 09 | 291 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 1.2+ | 0.9+ |
| 1999 05 16 | 691 | 0.1− | 0.3+ | 2004 05 14 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | (0.1− | 1.8+) |
| 2000 07 29 | 807 | 0.3− | 0.1− | 2004 05 14 | 691 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2000 07 29 | 807 | 0.1− | 0.1− | 2004 05 14 | 691 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2001 10 14 | 691 | 0.5− | 0.1+ | 2005 07 07 | 568 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2001 10 14 | 691 | 0.4− | 0.3+ | 2005 07 07 | 568 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 10 14 | 691 | 0.4− | 0.3+ | 2005 07 07 | 568 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.4− | 0.2+ | 2005 07 08 | 568 | 0.7− | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.4+ |
| 2001 10 18 | 644 | 0.0 | 0.1+ | 2005 07 15 | G96 | (2.2− | 0.6−) | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 10 18 | 644 | 0.1+ | 0.2− | 2005 07 15 | G96 | 0.3− | 1.3+ | 2006 11 01 | 691 | 0.4+ | 0.3+ |
| 2001 10 23 | 704 | 0.9+ | 0.2− | 2005 07 15 | G96 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2001 10 23 | 704 | 0.1− | 0.5− | 2005 07 15 | G96 | 1.0− | 1.2− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 0.4+ | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.2+ | 0.3− | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.5+ | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 1.4− | 0.1− | 2006 07 21 | G96 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.8− | 0.2− | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.5+ | 0.1− |
| 2001 11 20 | 704 | 0.7+ | 0.2− | 2006 09 14 | 691 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.4+ | 2006 11 20 | G96 | 0.4+ | 0.7− |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.3− |
| 2001 11 20 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 11 20 | G96 | 1.0− | 0.5+ |
| 2001 11 21 | 704 | 0.2+ | 0.9− | 2006 09 25 | G96 | 0.2+ | 0.1− | | | | |
| 2001 11 21 | 704 | 0.5− | 0.9− | 2006 09 25 | G96 | 0.2+ | 0.1− | | | | |

**(140798)∗ 2001 UR$_{149}$ = 2004 FY$_{163}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75196)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.67613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19974695 | $\omega$ | 262.16540 | | +0.99542201 | +0.07687616 | |
| $a$ | 2.8983397 | $\Omega$ | 93.41290 | | −0.04840374 | +0.91782400 | |
| $e$ | 0.0737483 | $i$ | 3.26136 | | −0.08241421 | +0.38947294 | |
| $P$ | 4.93 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.6+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.4− |
| 1991 11 08 | 691 | 0.3− | 0.5+ | 2001 11 21 | 704 | 0.8+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 1991 11 08 | 691 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.5− | 0.0 |
| 2001 10 23 | 704 | (0.1− | 2.0+) | 2001 12 14 | 704 | 0.7+ | 0.9+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.2+ | 1.3+ | 2001 12 14 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2001 10 23 | 704 | 0.6+ | 0.4+ | 2001 12 14 | 704 | 0.5+ | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2001 10 23 | 704 | (0.7+ | 2.3+) | 2001 12 14 | 704 | 0.5+ | 0.0 | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2001 10 24 | 704 | 0.5+ | 0.3− | 2003 02 21 | 644 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.6− | 0.9+ | 2003 02 21 | 644 | 0.4− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2003 02 21 | 644 | 0.7+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.9+ | 2004 03 16 | 291 | 0.4+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.6+ |
| 2001 11 09 | 704 | 0.3− | 0.5+ | 2004 03 16 | 291 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2001 11 09 | 704 | 0.7+ | 0.1− | 2004 03 16 | 291 | 0.5+ | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2001 11 09 | 704 | 1.0+ | 0.5− | 2004 03 26 | 291 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.3+ | 0.6− | 2004 03 26 | 291 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.3− |
| 2001 11 18 | 704 | 0.9− | 0.2+ | 2004 03 26 | 291 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2001 11 18 | 704 | 0.3− | 0.2+ | 2004 04 22 | 599 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.6− | 0.2+ |
| 2001 11 18 | 704 | 0.8− | 0.2− | 2004 04 22 | 599 | 1.3+ | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 11 18 | 704 | 0.1− | 0.8+ | 2004 04 22 | 599 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.5+ |
| 2001 11 18 | 704 | 0.3− | 0.8− | 2004 04 22 | 599 | (1.7+ | 0.4+) | 2006 11 23 | 691 | 0.3− | 0.5+ |
| 2001 11 18 | 704 | 0.2+ | 0.4− | 2004 05 23 | 691 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2001 11 18 | 704 | 0.2+ | 0.5− | 2004 05 23 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2001 11 18 | 704 | 0.1− | 0.5+ | 2004 05 23 | 691 | 0.0 | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 11 18 | 704 | 0.5− | 1.3− | 2005 06 30 | G96 | 0.1− | 0.8+ | 2006 11 27 | 703 | 0.3− | 0.0 |
| 2001 11 18 | 704 | 0.4+ | 0.0 | 2005 06 30 | G96 | 0.8− | 1.1+ | 2006 11 27 | 703 | 1.0− | 0.2− |
| 2001 11 18 | 704 | 0.4− | 0.6− | 2005 06 30 | G96 | 0.3− | 0.6+ | 2006 11 27 | 703 | 0.5− | 1.1− |
| 2001 11 20 | 704 | 0.4− | 0.3− | 2005 06 30 | G96 | 0.0 | 0.9+ | 2006 11 27 | 703 | 0.0 | 0.6− |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2005 11 06 | G96 | 0.2+ | 0.2− | 2006 12 01 | 691 | 0.3+ | 0.2+ |
| 2001 11 20 | 704 | 0.6− | 0.0 | 2005 11 06 | G96 | 0.6− | 0.4+ | 2006 12 01 | 691 | 1.9+ | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.7− | 2005 11 06 | G96 | 0.3+ | 0.9+ | 2006 12 01 | 691 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.3− | 0.7− | 2005 11 06 | G96 | 0.5− | 0.6+ | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.5+ | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.4− | 2006 12 01 | 691 | 0.3− | 0.4− |
| 2001 11 21 | 704 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 12 01 | 691 | 0.1− | 0.1− |

**(140799)∗ 2001 UG$_{150}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.02032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19392832 | $\omega$ | 330.76500 | | +0.82889593 | −0.55716324 | |
| $a$ | 2.9560281 | $\Omega$ | 63.17931 | | +0.52351348 | +0.74110767 | |
| $e$ | 0.1281792 | $i$ | 3.21224 | | +0.19714255 | +0.37460453 | |
| $P$ | 5.08 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 21 | 691 | 0.5− | 0.0 | 2001 12 10 | 704 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.5− |
| 1998 03 21 | 691 | 0.3− | 0.3− | 2001 12 10 | 704 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.4− | 0.6− |
| 1998 03 21 | 691 | 0.2− | 0.6− | 2001 12 13 | 644 | 0.1+ | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 09 17 | 704 | (1.2+ | 1.9+) | 2001 12 13 | 644 | 0.2− | 1.2+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | (0.8+ | 1.5+) | 2001 12 13 | 644 | 0.4+ | 1.3+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 09 17 | 704 | 1.0+ | 0.5+ | 2001 12 15 | 704 | (2.4+ | 0.1−) | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2001 09 17 | 704 | (0.2+ | 1.9+) | 2001 12 15 | 704 | (2.0+ | 0.3+) | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 09 17 | 704 | 0.2+ | 0.5+ | 2001 12 15 | 704 | (2.9+ | 1.7−) | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 1.0− | 0.0 | 2001 12 15 | 704 | (2.2+ | 0.6−) | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.0 | 0.7− | 2001 12 15 | 704 | (1.8+ | 0.8−) | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.5− | 0.6− | 2001 12 17 | 691 | 0.2+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2001 12 17 | 691 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.5− | 0.5− | 2001 12 17 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.9− | 2001 12 18 | 704 | 0.5− | 0.7− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.3− | 0.9− | 2001 12 18 | 704 | 1.0− | 0.6− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 1.1− | 0.6− | 2001 12 18 | 704 | 0.4− | 1.0− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2001 10 25 | 704 | 0.0 | 0.3− | 2001 12 18 | 704 | 0.9− | 0.7− | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 10 25 | 704 | 0.5+ | 0.1+ | 2001 12 18 | 704 | 0.4− | 0.6− | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2001 10 25 | 704 | 0.3+ | 0.1+ | 2001 12 19 | 704 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2001 10 25 | 704 | 0.3− | 0.6+ | 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2001 10 25 | 704 | 0.2+ | 1.0+ | 2001 12 19 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.0+ | 1.0+ |
| 2001 10 25 | 644 | 0.2− | 0.3+ | 2001 12 19 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2001 10 25 | 644 | 0.2− | 0.3+ | 2001 12 19 | 644 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.1+ |
| 2001 10 25 | 644 | 0.3− | 0.4+ | 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.3− |
| 2001 10 26 | 704 | 1.2+ | 1.1− | 2001 12 19 | 644 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2001 10 26 | 704 | (0.4+ | 1.8−) | 2001 12 19 | 704 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2001 10 26 | 704 | 0.1− | 1.0− | 2002 01 09 | 691 | 0.4+ | 0.1− | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2001 10 26 | 704 | 0.5− | 1.5− | 2002 01 09 | 691 | 0.6+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2001 11 09 | 704 | 0.3− | 0.2− | 2002 01 09 | 691 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2002 01 14 | 704 | 0.5+ | 0.3− | 2006 11 17 | 703 | 0.8− | 0.1− |
| 2001 11 09 | 704 | 0.5− | 0.6+ | 2002 01 14 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 703 | 0.4+ | 0.1− |
| 2001 11 09 | 704 | 0.5+ | 0.5+ | 2002 01 14 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 1.4− | 0.1− |
| 2001 11 09 | 704 | 0.3+ | 0.2+ | 2002 01 14 | 704 | 1.0+ | 1.1+ | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | (0.8− | 2.0+) | 2002 01 14 | 704 | (2.1+ | 0.9+) | 2006 11 18 | 704 | 0.2+ | 1.5+ |
| 2001 11 12 | 704 | 0.1− | 0.1+ | 2002 12 14 | 645 | 0.1+ | 0.0 | 2006 11 18 | 704 | (0.3+ | 1.7+) |
| 2001 11 12 | 704 | 0.2− | 0.8+ | 2002 12 14 | 645 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.0 |
| 2001 11 12 | 704 | 0.1+ | 0.7+ | 2003 02 21 | 644 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2001 11 12 | 704 | 0.3− | 0.7+ | 2003 02 21 | 644 | 0.7+ | 0.6+ | 2006 11 18 | 704 | 1.3+ | 0.6+ |
| 2001 11 15 | 608 | 0.1− | 0.4− | 2003 02 21 | 644 | 0.5+ | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2001 11 15 | 608 | 0.2− | 0.8− | 2003 03 06 | 699 | 1.1− | 1.4+ | 2006 11 18 | 704 | (0.9− | 1.7+) |
| 2001 11 15 | 608 | 0.1− | 0.6− | 2003 03 06 | 699 | (0.5+ | 2.7+) | 2006 11 18 | 704 | 0.6+ | 1.1+ |
| 2001 11 18 | 691 | 0.1+ | 0.3+ | 2003 03 06 | 699 | (1.0+ | 1.7+) | 2006 11 18 | 704 | 0.7+ | 1.0+ |
| 2001 11 18 | 691 | 0.2+ | 0.1+ | 2003 03 06 | 699 | 0.7+ | 1.1+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2001 11 18 | 691 | 0.2+ | 0.2+ | 2004 04 22 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 11 19 | 699 | 0.2− | 0.6− | 2004 04 22 | 691 | 0.2+ | 0.8+ | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2001 11 19 | 699 | 0.1− | 0.4+ | 2004 04 22 | 691 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 11 19 | 699 | 0.3− | 0.1− | 2004 05 16 | 691 | 0.3+ | 0.6+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 699 | 0.7− | 0.1+ | 2004 05 16 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2001 11 20 | 704 | (1.7− | 0.5−) | 2004 05 16 | 691 | 0.3+ | 0.5+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2001 11 20 | 704 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.9+ | 0.8+ |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.7+ |
| 2001 11 21 | 704 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.5− | 0.1− |
| 2001 11 21 | 704 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4− | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.7− |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.6− | 0.2+ |
| 2001 12 10 | 704 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.7− |
| 2001 12 10 | 704 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.5− | 2006 11 29 | 704 | 1.0+ | 0.3+ |

**(140800)∗ 2001 UV$_{150}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.87525 | | (2000.0) | | | |
| $n$ | 0.17118365 | $\omega$ | 170.81176 | | +0.94761092 | −0.31667774 |
| $a$ | 3.2123870 | $\Omega$ | 207.76257 | | +0.28707097 | +0.90170767 |
| $e$ | 0.1611395 | $i$ | 5.15067 | | +0.14008496 | +0.29434417 |
| $P$ | 5.76 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 12 25 | 691 | 0.2− | 0.1+ | 2001 11 21 | 691 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.2+ | 0.3− |
| 1990 12 25 | 691 | 0.2+ | 0.3+ | 2001 11 21 | 704 | 1.0− | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 1990 12 25 | 691 | 0.0 | 0.1− | 2001 11 21 | 691 | 0.3− | 0.1− | 2006 08 29 | 691 | 0.3− | 0.2+ |
| 1995 10 02 | 691 | 0.1− | 0.8− | 2001 11 21 | 704 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.2− |
| 1995 10 02 | 691 | 0.1− | 0.8− | 2001 11 21 | 691 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.4− | 0.6− |
| 1995 10 02 | 691 | 0.0 | 0.9− | 2001 11 21 | 704 | 1.2− | 0.2+ | 2006 08 29 | 703 | 0.7+ | 0.2− |
| 1995 11 15 | 327 | 1.1+ | 0.0 | 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 08 29 | 691 | 0.3− | 0.0 |
| 1995 11 15 | 327 | 0.5+ | 0.7− | 2001 11 21 | 704 | (2.1− | 1.0+) | 2006 08 29 | 703 | 0.2+ | 0.3− |
| 1995 11 15 | 327 | 1.3+ | 0.7− | 2001 11 24 | 644 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | 0.1+ | 0.2+ | 2001 11 24 | 644 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.2+ | 1.5+ | 2001 11 24 | 644 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.4+ | 0.8+ |
| 2001 10 23 | 704 | 0.8− | 0.9+ | 2001 11 25 | 704 | 0.9+ | 0.3− | 2006 08 30 | 704 | 1.8− | 1.0+ |
| 2001 10 23 | 704 | 0.3− | 0.8+ | 2001 11 25 | 704 | 0.2+ | 0.3− | 2006 08 30 | 704 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.9+ | 1.5− | 2001 11 25 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 1.0− | 0.0 |
| 2001 10 24 | 704 | 1.9+ | 1.1− | 2001 12 11 | 704 | 1.0− | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 1.8+ | 0.4− | 2001 12 11 | 704 | 0.7− | 0.0 | 2006 08 30 | 704 | 1.0+ | 0.3+ |
| 2001 10 24 | 704 | 1.0+ | 1.6− | 2001 12 11 | 704 | 0.8+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.0 |
| 2001 10 25 | 644 | 0.4+ | 0.1− | 2001 12 11 | 704 | 0.1− | 0.7− | 2006 08 30 | 704 | 1.1− | 0.2+ |
| 2001 10 25 | 644 | 0.5+ | 0.2− | 2001 12 11 | 704 | 0.0 | 0.2− | 2006 09 01 | 704 | 0.4− | 0.7− |
| 2001 10 25 | 644 | 0.3+ | 0.2− | 2001 12 14 | 704 | 0.5+ | 0.1+ | 2006 09 01 | 704 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 0.6− | 0.5+ | 2001 12 14 | 704 | 0.8+ | 0.3+ | 2006 09 01 | 704 | 0.4− | 0.6− |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2001 12 14 | 704 | 0.5+ | 0.1+ | 2006 09 01 | 704 | 0.1− | 0.7+ |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2001 12 18 | 644 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.5− | 0.0 | 2001 12 18 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.0 | 0.1− | 2001 12 18 | 644 | 0.2+ | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.5+ | 0.4+ | 2003 03 07 | 704 | 0.3− | 0.8+ | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.8+ | 0.6+ | 2003 03 07 | 704 | 0.2+ | 1.7+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.1+ | 1.0+ | 2003 03 07 | 704 | 0.8+ | 1.7+ | 2006 09 17 | 691 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.4+ | 0.7+ | 2005 07 11 | G96 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 1.7+ | 1.5− |
| 2001 11 12 | 704 | 0.7+ | 0.8+ | 2005 07 11 | G96 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.9+ | 0.1− |
| 2001 11 17 | 704 | 0.2+ | 0.3+ | 2005 07 11 | G96 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.0 |
| 2001 11 17 | 704 | 0.1− | 0.2− | 2005 07 11 | G96 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 1.3− | 0.6− |
| 2001 11 17 | 704 | 0.1+ | 0.1+ | 2006 08 24 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 291 | 0.0 | 0.3+ |
| 2001 11 17 | 704 | 0.1− | 0.4+ | 2006 08 24 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 291 | 0.6+ | 0.3+ |
| 2001 11 19 | 699 | 0.4− | 0.0 | 2006 08 24 | 704 | 0.4+ | 0.0 | 2006 09 18 | 291 | 0.2+ | 0.1+ |
| 2001 11 19 | 699 | 0.3− | 0.0 | 2006 08 24 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 699 | 0.9+ | 0.4+ |
| 2001 11 19 | 699 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.3− | 0.1+ | 2006 09 19 | 699 | 1.0− | 0.5− |
| 2001 11 19 | 699 | 0.6− | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.4+ | 2006 09 19 | 699 | 0.4+ | 0.3− |
| 2001 11 20 | 704 | 0.5− | 1.1+ | 2006 08 28 | 699 | 0.2− | 0.2− | 2006 09 19 | 699 | 1.5− | 1.4+ |
| 2001 11 20 | 704 | 1.0− | 0.3− | 2006 08 28 | 699 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.5+ | 0.9+ |
| 2001 11 20 | 704 | 1.0− | 1.0+ | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 25 | 704 | 0.5+ | 0.7+ |
| 2001 11 20 | 704 | 0.9− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 25 | 704 | 0.0 | 1.0+ |
| 2001 11 20 | 704 | 1.3− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.1− | 1.5+ |

**(140801)∗ 2001 UK$_{151}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.20168 | | (2000.0) | | | |
| $n$ | 0.20158298 | $\omega$ | 34.73735 | | −0.71300964 | −0.69902433 |
| $a$ | 2.8807140 | $\Omega$ | 100.81375 | | +0.63003785 | −0.67292272 |
| $e$ | 0.0124152 | $i$ | 3.18712 | | +0.30768419 | −0.24195039 |
| $P$ | 4.89 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 15 | 691 | 0.1− | 0.4+ | 2001 11 21 | 704 | 0.2− | 0.4+ | 2005 08 27 | 644 | 0.4− | 0.1+ |
| 1994 04 15 | 691 | 0.2+ | 0.6+ | 2001 11 21 | 704 | 0.7− | 0.8+ | 2005 08 27 | 644 | 0.3− | 0.1+ |
| 1994 04 15 | 691 | 0.3− | 0.2+ | 2001 11 21 | 704 | 0.2− | 0.0 | 2005 08 27 | 644 | 0.2− | 0.1− |
| 1998 01 25 | 691 | 1.2− | 0.6− | 2001 11 21 | 704 | 1.0− | 0.1+ | 2005 08 31 | 691 | 0.2+ | 0.0 |
| 1998 01 25 | 691 | 0.4+ | 0.1− | 2001 11 21 | 704 | 0.3− | 0.0 | 2005 08 31 | 691 | 0.1+ | 0.1− |
| 1998 01 25 | 691 | 0.8+ | 0.0 | 2001 12 10 | 691 | 0.4− | 0.0 | 2005 08 31 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.7− | 0.4+ | 2001 12 10 | 691 | 0.3− | 0.1− | 2005 09 14 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.4− | 0.4− | 2001 12 10 | 691 | 0.5− | 0.1+ | 2005 09 14 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.9+ | 0.2+ | 2001 12 14 | 704 | 0.7− | 0.2− | 2005 09 14 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.8− | 0.6+ | 2001 12 14 | 704 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2001 10 23 | 704 | 0.3+ | 1.4+ | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.3− | 0.0 | 2001 12 14 | 691 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2001 10 24 | 704 | 1.0− | 0.6+ | 2001 12 14 | 704 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 2001 10 24 | 704 | 1.2− | 0.6− | 2001 12 14 | 691 | 0.5+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2001 11 09 | 704 | 0.4+ | 0.9+ | 2001 12 14 | 691 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 0.0 | 1.0+ | 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2001 11 09 | 704 | 0.7+ | 0.8− | 2001 12 17 | 704 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 11 11 | 704 | 0.3− | 0.3+ | 2001 12 17 | 704 | 0.3+ | 1.1− | 2006 11 19 | H07 | 0.5+ | 0.1+ |
| 2001 11 11 | 704 | 0.2+ | 0.1+ | 2001 12 17 | 704 | 0.4− | 0.2− | 2006 11 19 | H07 | (1.6+ | 0.6−) |
| 2001 11 11 | 704 | 1.1+ | 0.7+ | 2003 03 06 | 699 | 1.1− | 0.5+ | 2006 11 19 | H07 | 0.4+ | 0.5− |
| 2001 11 11 | 704 | (1.0− | 1.9+) | 2003 03 06 | 699 | (1.7+ | 0.2+) | 2006 11 19 | H07 | 0.0 | 0.6+ |
| 2001 11 14 | 691 | 0.4+ | 0.1+ | 2003 03 06 | 699 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 1.4− |
| 2001 11 14 | 691 | 0.1+ | 0.3+ | 2003 03 06 | 699 | 0.5+ | 0.5+ | 2006 11 21 | 704 | 0.8− | 0.1− |
| 2001 11 14 | 691 | 0.1+ | 0.3+ | 2003 03 07 | 699 | 1.2+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2001 11 19 | 699 | 0.4− | 0.6− | 2003 03 07 | 699 | (1.9+ | 1.6+) | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2001 11 19 | 699 | 1.4+ | 1.1+ | 2003 03 07 | 699 | 0.9+ | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.3− |
| 2001 11 19 | 699 | 0.2− | 0.3+ | 2003 03 07 | 699 | 0.2+ | 1.1+ | 2006 11 23 | 691 | 0.3− | 0.2− |
| 2001 11 19 | 699 | 0.7− | 0.7+ | 2004 06 06 | 644 | 0.3+ | 0.5+ | 2006 11 23 | 691 | 0.2+ | 0.3− |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2004 06 06 | 644 | 0.5+ | 0.7+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.6+ | 2004 06 06 | 644 | 0.2+ | 0.6+ | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.0 | 1.1+ | 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.1+ | 0.8+ | 2005 08 06 | 644 | 0.3+ | 0.1+ | | | | |
| 2001 11 20 | 704 | 0.1− | 0.4+ | 2005 08 06 | 644 | 0.0 | 0.0 | | | | |

**(140802)∗ 2001 UM$_{151}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.16554 | | (2000.0) | | | |
| $n$ | 0.17934700 | $\omega$ | 200.17726 | | +0.68278478 | −0.72964507 |
| $a$ | 3.1141532 | $\Omega$ | 206.80383 | | +0.68128506 | +0.65448202 |
| $e$ | 0.1646898 | $i$ | 4.79865 | | +0.26392349 | +0.19817003 |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 1.2− | 0.4+ | 2001 12 08 | 699 | 0.8− | 0.4+ | 2006 09 12 | 703 | 0.3+ | 0.7− |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2001 12 08 | 699 | 0.0 | 1.3+ | 2006 09 12 | 703 | 0.0 | 0.6+ |
| 2001 10 23 | 704 | 0.3− | 0.4+ | 2001 12 08 | 699 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.4+ |
| 2001 10 23 | 704 | 0.2+ | 0.4+ | 2001 12 11 | 704 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.7+ | 0.5+ | 2001 12 11 | 704 | 0.0 | 0.7+ | 2006 09 17 | 703 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 0.9− | 0.2+ | 2001 12 11 | 704 | 0.6− | 0.3+ | 2006 09 17 | 703 | 0.6− | 0.2+ |
| 2001 10 24 | 704 | 0.1+ | 1.1+ | 2001 12 11 | 704 | 0.0 | 0.9+ | 2006 09 18 | 704 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.4− | 0.3+ | 2001 12 11 | 704 | 0.9− | 0.2− | 2006 09 18 | 704 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.2− | 0.6+ | 2001 12 13 | 644 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.5− | 0.7+ | 2001 12 13 | 644 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.2+ | 0.4− |
| 2001 11 11 | 704 | 1.0− | 0.3− | 2001 12 13 | 644 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.8+ |
| 2001 11 11 | 704 | 0.3+ | 0.3− | 2001 12 14 | 704 | 0.2+ | 0.6− | 2006 09 25 | 704 | 0.1+ | 0.3+ |
| 2001 11 11 | 704 | 0.1− | 0.9− | 2001 12 14 | 704 | 0.4+ | 0.4− | 2006 09 25 | 704 | 0.9+ | 0.5+ |
| 2001 11 11 | 704 | 0.2+ | 0.5− | 2001 12 14 | 704 | 1.2+ | 0.4− | 2006 09 25 | 704 | 0.5+ | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.6− | 2001 12 14 | 704 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.9+ | 0.1− |
| 2001 11 16 | 644 | 0.1+ | 1.0+ | 2001 12 14 | 704 | 0.3− | 0.8− | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 2001 11 16 | 644 | 0.1+ | 1.1+ | 2001 12 17 | 704 | 0.8+ | 0.3+ | 2006 09 29 | 704 | 0.6− | 0.3+ |
| 2001 11 16 | 644 | 0.1+ | 0.7+ | 2001 12 17 | 704 | 0.1+ | 0.7− | 2006 09 29 | 704 | 0.2+ | 0.1− |
| 2001 11 17 | 704 | 0.1+ | 0.4− | 2001 12 17 | 704 | (1.9− | 0.1+) | 2006 09 29 | 704 | (0.5+ | 2.4+) |
| 2001 11 17 | 704 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.5− | 0.4− | 2006 10 01 | 704 | (2.2− | 2.0+) |
| 2001 11 17 | 704 | 0.4+ | 0.2− | 2001 12 17 | 704 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.0 |
| 2001 11 17 | 704 | 0.3− | 0.0 | 2001 12 18 | 644 | 0.6− | 0.6+ | 2006 10 01 | 704 | 0.6+ | 0.6− |
| 2001 11 17 | 704 | 0.4− | 0.0 | 2001 12 18 | 644 | 0.5− | 0.4+ | 2006 10 01 | 704 | 1.1− | 0.6+ |
| 2001 11 18 | 704 | 0.4− | 0.1− | 2001 12 18 | 644 | 0.5− | 0.7+ | 2006 10 16 | 703 | 0.6+ | 0.1− |
| 2001 11 18 | 704 | 0.3− | 0.6+ | 2003 03 07 | 704 | 1.0+ | 1.1+ | 2006 10 16 | 703 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.3− | 0.4+ | 2003 03 07 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 11 18 | 704 | 0.2− | 0.8+ | 2003 03 07 | 704 | 0.4− | 1.0− | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2001 11 18 | 704 | 0.8+ | 0.6− | 2004 05 14 | 691 | 0.1− | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2001 11 18 | 704 | 0.4− | 0.2− | 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 11 18 | 704 | 1.2+ | 0.9− | 2004 05 14 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2001 11 18 | 704 | 1.0+ | 0.7− | 2004 05 23 | 691 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 11 20 | 704 | 1.0+ | 0.6− | 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.8+ | 0.7− | 2004 05 23 | 691 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.6+ | 1.1+ | 2006 08 18 | 644 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.9+ | 2006 08 18 | 644 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.5− | 1.4+ | 2006 08 29 | 703 | 0.3+ | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2006 08 29 | 703 | 0.4− | 0.1− | 2006 10 22 | 703 | 1.1+ | 0.3− |
| 2001 11 20 | 704 | (1.6− | 1.3+) | 2006 08 29 | 703 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.8+ |
| 2001 11 20 | 704 | 0.5− | 0.7+ | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2001 11 20 | 704 | (0.2− | 2.0+) | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.0− | 1.0+ |
| 2001 11 21 | 691 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 691 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2001 11 21 | 691 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.4− | 0.5− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2001 12 08 | 699 | 0.4− | 1.3− | 2006 09 12 | 703 | 0.7+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.2− |

**(140803)∗ 2001 UX$_{151}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.22812 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19738003 | $\omega$ | 358.47347 | | +0.57003448 | −0.80690936 | |
| $a$ | 2.9214643 | $\Omega$ | 56.74705 | | +0.75577009 | +0.44106126 | |
| $e$ | 0.1057956 | $i$ | 10.66642 | | +0.32229218 | +0.39288961 | |
| $P$ | 4.99 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 08 | 327 | 0.3− | 1.2− | 2001 12 11 | 704 | 0.2+ | 0.6− | 2006 09 19 | 699 | 0.1+ | 0.0 |
| 1996 12 08 | 327 | 0.0 | 0.2− | 2001 12 11 | 704 | 0.4− | 0.3+ | 2006 09 19 | 699 | 1.2− | 1.1− |
| 1996 12 08 | 327 | 1.1− | 0.8− | 2001 12 11 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 1996 12 16 | 691 | 0.2+ | 0.6− | 2001 12 11 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.3− |
| 1996 12 16 | 691 | 0.5+ | 1.4− | 2001 12 15 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.3+ |
| 1996 12 16 | 691 | 0.2+ | 0.8− | 2001 12 15 | 704 | 0.3+ | 0.4− | 2006 09 20 | 704 | 0.9+ | 0.2+ |
| 1996 12 16 | 691 | 0.3+ | 0.8− | 2001 12 15 | 704 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.4− | 0.3− |
| 1996 12 16 | 691 | 0.1− | 0.6− | 2001 12 15 | 704 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.5− | 0.2− |
| 1996 12 16 | 691 | 0.5− | 0.5+ | 2001 12 15 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.4− | 0.2− |
| 1997 12 27 | 327 | 0.5+ | 0.9− | 2001 12 18 | 704 | 0.1+ | 0.6+ | 2006 09 28 | G96 | 0.4− | 0.3− |
| 1997 12 27 | 327 | 0.3− | 0.6+ | 2001 12 18 | 704 | 0.1+ | 0.7+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 1997 12 27 | 327 | 0.3− | 0.8+ | 2001 12 18 | 704 | (0.2+ | 1.8+) | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2001 08 22 | 704 | (0.9+ | 1.8+) | 2001 12 18 | 704 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 08 22 | 704 | 0.0 | 1.3+ | 2001 12 18 | 704 | 0.6− | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 08 22 | 704 | 0.9− | 0.7+ | 2001 12 19 | 704 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 09 26 | 704 | 0.2− | 0.4+ | 2001 12 19 | 704 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 09 26 | 704 | 0.7− | 1.0+ | 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 09 26 | 704 | 0.2− | 0.8+ | 2001 12 19 | 704 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.6− | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 0.5+ | 2002 01 06 | 644 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.4+ |
| 2001 10 23 | 704 | 0.4+ | 0.8+ | 2002 01 06 | 644 | 0.0 | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.1+ | 0.8+ | 2002 01 06 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2001 10 23 | 704 | 0.1+ | 0.6+ | 2003 02 02 | 699 | 1.1+ | 0.2− | 2006 11 11 | 703 | 0.8− | 0.5− |
| 2001 10 24 | 704 | 0.3+ | 0.4− | 2003 02 02 | 699 | 0.5− | 1.2+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 1.4− | 0.9+ | 2003 02 02 | 699 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.5+ |
| 2001 10 24 | 704 | 0.5− | 0.2+ | 2003 02 02 | 699 | 0.8− | 0.2− | 2006 11 17 | 704 | 0.3− | 0.5+ |
| 2001 11 09 | 704 | 0.1+ | 0.5+ | 2003 02 12 | 608 | 1.2+ | 0.5− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.7+ | 0.5+ | 2003 02 12 | 608 | 0.5+ | 0.8− | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 2001 11 09 | 704 | 0.2+ | 0.6+ | 2003 02 12 | 608 | 0.7+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 0.5+ | 0.9+ | 2003 03 23 | 644 | 0.0 | 0.8+ | 2006 11 17 | 704 | (2.1+ | 0.5−) |
| 2001 11 12 | 704 | 0.0 | 0.6+ | 2003 03 23 | 644 | 0.4− | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.3− |
| 2001 11 12 | 704 | 0.7− | 0.4+ | 2003 03 23 | 644 | 0.3− | 0.7+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2001 11 12 | 704 | (1.5− | 1.0+) | 2004 05 19 | 704 | 0.7+ | 0.9− | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.6+ | 0.2+ | 2004 05 19 | 704 | 0.4+ | 1.2− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2001 11 12 | 704 | 0.4+ | 0.6− | 2004 05 19 | 704 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2001 11 16 | 291 | 0.0 | 0.7− | 2004 05 19 | 704 | 0.8+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2001 11 16 | 291 | 0.0 | 0.7− | 2004 05 19 | 704 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2001 11 16 | 291 | 0.1+ | 0.7− | 2004 05 19 | 704 | 0.7− | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.2− |
| 2001 11 19 | 704 | 0.7+ | 0.6+ | 2004 05 19 | 704 | 0.8− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2001 11 19 | 704 | 0.8+ | 0.5+ | 2004 05 19 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.8− |
| 2001 11 19 | 704 | 0.7+ | 0.8+ | 2004 05 19 | 599 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.8+ | 0.6+ |
| 2001 11 19 | 704 | 0.4+ | 1.0+ | 2004 05 19 | 599 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2001 11 19 | 704 | 1.0+ | 0.9+ | 2004 05 19 | 599 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.8− | 1.5+ |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2004 05 20 | 599 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.4− |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2004 05 22 | 704 | 0.7− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.5+ | 0.2− | 2004 05 22 | 704 | 0.4+ | 0.2− | 2006 11 22 | 691 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.9+ | 0.1− | 2004 05 22 | 704 | 0.8− | 0.9− | 2006 11 27 | 704 | 0.6− | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.4− | 2004 05 22 | 704 | 0.2− | 0.4+ | 2006 11 27 | 704 | 0.6− | 0.2+ |
| 2001 12 10 | 704 | 0.7+ | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.8+ | 2006 11 27 | 704 | 0.8− | 1.8+ |
| 2001 12 10 | 704 | 1.0+ | 0.2+ | 2006 09 16 | 703 | 0.9− | 0.0 | 2006 12 01 | 704 | 0.4+ | 1.3+ |
| 2001 12 10 | 704 | 0.8+ | 0.1− | 2006 09 16 | 703 | 0.2− | 0.7+ | 2006 12 01 | 704 | 0.4+ | 0.8+ |
| 2001 12 10 | 704 | 0.8+ | 0.1− | 2006 09 16 | 703 | 0.2− | 0.6− | 2006 12 01 | 704 | 0.3+ | 0.8+ |
| 2001 12 10 | 704 | 1.5+ | 1.0+ | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 12 01 | 704 | 0.1− | 0.8+ |
| 2001 12 11 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.9− | 0.0 | | | | |

**(140804)∗ 2001 UJ$_{152}$ = 2003 FQ$_{111}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46837)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.07190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22696564 | $\omega$ | 233.08587 | | +0.21768876 | −0.97524976 | |
| $a$ | 2.6617217 | $\Omega$ | 204.42608 | | +0.92262276 | +0.21856045 | |
| $e$ | 0.0878808 | $i$ | 5.37326 | | +0.31840044 | +0.03345494 | |
| $P$ | 4.34 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 691 | 0.0 | 0.3+ | 2001 12 18 | 704 | 1.1− | 0.9− | 2005 10 01 | 291 | 0.3+ | 0.3+ |
| 1999 04 09 | 691 | 0.1− | 0.1+ | 2001 12 18 | 704 | 0.1− | 0.1− | 2005 10 01 | 291 | 0.1+ | 0.2+ |
| 1999 04 09 | 691 | 0.2+ | 0.1− | 2001 12 18 | 704 | 0.8− | 0.6+ | 2005 10 03 | 703 | 1.9− | 0.1− |
| 2001 10 23 | 704 | 0.6+ | 1.4− | 2001 12 18 | 704 | 0.6− | 0.4− | 2005 10 03 | 703 | 0.2+ | 1.9+ |
| 2001 10 23 | 704 | 0.9+ | 0.7− | 2001 12 18 | 704 | 1.6− | 0.1− | 2005 10 03 | 703 | 0.9− | 0.2+ |
| 2001 10 23 | 704 | 1.0+ | 0.0 | 2003 03 24 | 691 | 0.1+ | 0.1− | 2005 10 03 | 703 | 0.1+ | 0.5+ |
| 2001 10 23 | 704 | 0.3+ | 0.6− | 2003 03 24 | 691 | 0.0 | 0.0 | 2005 10 06 | 699 | 0.1− | 1.5+ |
| 2001 10 24 | 704 | 0.3+ | 0.2+ | 2003 03 24 | 691 | 0.3− | 0.3− | 2005 10 06 | 699 | 0.4+ | 0.1− |
| 2001 10 24 | 704 | 0.3− | 0.0 | 2003 03 31 | 704 | 0.3+ | 0.3+ | 2005 10 06 | 699 | 0.5+ | 0.1− |
| 2001 10 24 | 704 | 0.2− | 0.1+ | 2003 03 31 | 704 | (2.1+ | 0.8−) | 2005 10 06 | 699 | 0.7+ | 0.2+ |
| 2001 10 24 | 704 | 0.3+ | 0.4+ | 2003 03 31 | 704 | 0.5+ | 0.1− | 2005 10 07 | 704 | 0.1− | 1.4− |
| 2001 10 24 | 704 | 0.1− | 0.4+ | 2003 03 31 | 704 | 1.4+ | 0.3− | 2005 10 07 | 691 | 0.0 | 0.4+ |
| 2001 11 17 | 704 | 0.0 | 0.7+ | 2003 04 01 | 644 | 0.5+ | 0.2+ | 2005 10 07 | 704 | 0.4− | 0.5+ |
| 2001 11 17 | 704 | 0.1− | 0.6+ | 2003 04 01 | 644 | 0.7+ | 0.2+ | 2005 10 07 | 691 | 0.2− | 0.4+ |
| 2001 11 17 | 704 | 0.3− | 0.5+ | 2003 04 01 | 644 | 0.4+ | 0.0 | 2005 10 07 | 704 | 0.5− | 0.9− |
| 2001 11 17 | 704 | 0.0 | 0.2+ | 2003 04 22 | 557 | 0.6− | 0.2+ | 2005 10 07 | 704 | 0.4− | 0.4+ |
| 2001 11 17 | 704 | 0.3+ | 0.0 | 2003 04 22 | 557 | 0.7− | 0.9+ | 2005 10 07 | 691 | 0.0 | 0.4+ |
| 2001 11 18 | 704 | 0.1− | 0.1+ | 2003 04 24 | 691 | 0.9+ | 1.7+ | 2005 10 22 | 703 | 0.7− | 0.0 |
| 2001 11 18 | 704 | 0.9+ | 0.3− | 2003 04 24 | 691 | 0.5+ | 1.7+ | 2005 10 22 | 703 | 0.2− | 0.1− |
| 2001 11 18 | 704 | 0.2− | 0.5− | 2003 04 24 | 691 | 0.2+ | 1.7+ | 2005 10 22 | 703 | 0.3+ | 0.4− |
| 2001 11 18 | 704 | 0.2+ | 0.1+ | 2003 04 29 | 691 | 0.1+ | 0.2+ | 2005 10 22 | 703 | 0.8+ | 0.4+ |
| 2001 11 18 | 704 | 0.6+ | 0.8+ | 2003 04 29 | 691 | 0.1+ | 0.2+ | 2005 10 24 | 699 | 1.2− | 1.2+ |
| 2001 11 18 | 704 | 0.5+ | 0.2+ | 2003 04 29 | 691 | 0.4− | 0.4+ | 2005 10 24 | 699 | 0.4− | 0.0 |
| 2001 11 18 | 704 | 0.1+ | 1.0− | 2005 09 07 | A50 | 0.0 | 0.1− | 2005 10 24 | 699 | 0.3− | 0.6+ |
| 2001 11 18 | 704 | 0.3+ | 0.0 | 2005 09 08 | A50 | 0.1− | 0.2+ | 2005 10 24 | 699 | 1.1− | 0.4+ |
| 2001 11 24 | 704 | 1.7− | 1.0− | 2005 09 17 | 644 | 0.1− | 0.5+ | 2005 11 04 | 691 | 0.5− | 0.5+ |
| 2001 11 24 | 704 | 0.0 | 0.2− | 2005 09 17 | 644 | 0.0 | 0.7+ | 2005 11 04 | 691 | 0.5− | 0.4+ |
| 2001 11 24 | 704 | 0.3− | 0.6− | 2005 09 17 | 644 | 0.1− | 1.0+ | 2005 11 04 | 691 | 0.1− | 0.4+ |
| 2001 12 11 | 704 | 0.3+ | 0.1− | 2005 09 25 | 644 | 0.1− | 0.5+ | 2005 11 04 | 704 | 0.6+ | 0.8+ |
| 2001 12 11 | 704 | 1.0+ | 0.4− | 2005 09 25 | 644 | 0.1− | 0.7+ | 2005 11 04 | 704 | 0.2+ | 0.4+ |
| 2001 12 11 | 704 | 0.3+ | 0.1+ | 2005 09 25 | 644 | 0.3− | 0.8+ | 2005 11 04 | 704 | 0.0 | 0.4+ |
| 2001 12 11 | 704 | 0.9+ | 0.4− | 2005 09 29 | 699 | 0.4− | 0.6+ | 2005 12 02 | G96 | 0.1− | 0.0 |
| 2001 12 11 | 704 | 0.9+ | 0.5− | 2005 09 29 | 699 | 0.0 | 0.1− | 2005 12 02 | G96 | 0.3+ | 0.1+ |
| 2001 12 18 | 644 | 0.4− | 0.0 | 2005 09 29 | 699 | 0.7+ | 0.6+ | 2005 12 02 | G96 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 644 | 0.3− | 0.1+ | 2005 09 29 | 699 | 0.4− | 0.2− | 2005 12 02 | G96 | 0.2− | 0.3+ |
| 2001 12 18 | 644 | 0.7− | 0.1+ | 2005 10 01 | 291 | 0.2+ | 0.3+ | | | | |

**(140805)∗ 2001 UQ$_{152}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.63697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19521071 | $\omega$ | 222.75276 | | +0.60030848 | | +0.79770027 |
| $a$ | 2.9430680 | $\Omega$ | 84.22010 | | −0.71728998 | | +0.56879552 |
| $e$ | 0.0772264 | $i$ | 3.31206 | | −0.35372986 | | +0.20036451 |
| $P$ | 5.05 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 695 | 0.0 | 0.4+ | 2001 12 17 | 704 | 0.7− | 0.7+ | 2005 09 01 | 644 | 0.0 | 0.5+ |
| 2000 09 21 | 695 | 0.1+ | 0.4+ | 2001 12 17 | 704 | 1.1− | 0.3+ | 2005 09 01 | 644 | 0.4− | 0.6+ |
| 2001 10 23 | 704 | 0.7+ | 1.0+ | 2001 12 17 | 704 | 1.2− | 1.1+ | 2005 09 01 | 644 | 0.3− | 0.6+ |
| 2001 10 23 | 704 | 0.5+ | 0.1− | 2001 12 17 | 704 | 0.9− | 0.5+ | 2005 11 06 | G96 | 0.7− | 0.1+ |
| 2001 10 23 | 704 | 0.4− | 0.4− | 2001 12 17 | 704 | 0.7− | 0.4+ | 2005 11 06 | G96 | 0.3− | 0.0 |
| 2001 10 23 | 704 | 0.5+ | 0.6+ | 2001 12 18 | 691 | 0.1+ | 0.1+ | 2005 11 06 | G96 | 0.4− | 0.5+ |
| 2001 10 24 | 704 | 0.2− | 1.1− | 2001 12 18 | 691 | 0.2+ | 0.3+ | 2005 11 06 | G96 | 0.1− | 0.7+ |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2001 12 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 10 24 | 704 | 0.1− | 0.8− | 2002 01 18 | 691 | 0.7− | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 2001 11 11 | 704 | 0.3− | 0.6+ | 2002 01 18 | 691 | 0.6− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2001 11 11 | 704 | 0.4+ | 1.4+ | 2002 01 18 | 691 | 0.3+ | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2001 11 11 | 704 | 0.3+ | 0.9+ | 2004 04 16 | 644 | 0.7+ | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 11 18 | 691 | 0.0 | 0.1− | 2004 04 16 | 644 | 0.7+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2001 11 18 | 691 | 0.2− | 0.2− | 2004 04 16 | 644 | 0.7+ | 0.7+ | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2001 11 18 | 691 | 0.2− | 0.0 | 2004 04 19 | 704 | (1.2− | 2.4+) | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.6+ | 1.1+ | 2004 04 19 | 704 | (0.5− | 2.6+) | 2006 11 14 | 691 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.2+ | 1.2+ | 2004 04 19 | 704 | (0.6− | 3.1+) | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.4− | 1.0+ | 2004 04 19 | 704 | (1.9− | 2.2+) | 2006 11 18 | 704 | 1.0+ | 0.7+ |
| 2001 11 20 | 704 | 0.9+ | 0.5+ | 2004 04 20 | 704 | 0.6+ | 1.3+ | 2006 11 18 | 704 | 0.1− | 1.3+ |
| 2001 11 21 | 704 | 0.3− | 0.3+ | 2004 04 20 | 704 | 0.2− | 1.1+ | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2004 04 20 | 704 | 0.0 | 0.9+ | 2006 11 18 | 704 | 0.5− | 0.1− |
| 2001 11 21 | 704 | 0.1+ | 0.7+ | 2004 04 20 | 704 | (0.7+ | 1.6+) | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 1.3+ | 2004 05 14 | 691 | 0.3+ | 0.6+ | 2006 11 21 | 704 | 0.1− | 1.3+ |
| 2001 11 21 | 704 | (0.6+ | 1.7+) | 2004 05 14 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2001 12 14 | 704 | 0.2+ | 0.5− | 2004 05 14 | 691 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 1.2+ | 0.6− | 2005 07 27 | 644 | 0.1− | 0.6+ | 2006 11 22 | 704 | 0.5+ | 0.7+ |
| 2001 12 14 | 704 | 0.7+ | 0.2− | 2005 07 27 | 644 | 0.1− | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2001 12 14 | 704 | 0.4+ | 0.0 | 2005 07 27 | 644 | 0.1− | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.2+ |

**(140806)∗ 2001 UT$_{152}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.43269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17638358 | $\omega$ | 308.35167 | | +0.98884834 | | −0.08073792 |
| $a$ | 3.1489368 | $\Omega$ | 56.61577 | | +0.13066686 | | +0.87350791 |
| $e$ | 0.0589775 | $i$ | 8.61939 | | −0.07145025 | | +0.48006803 |
| $P$ | 5.59 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.8− | 0.4+ | 2002 01 07 | 691 | 0.1+ | 0.8+ | 2004 04 25 | 704 | (0.9− | 2.1+) |
| 2000 08 26 | 704 | 0.6− | 0.0 | 2003 02 02 | 644 | 0.3− | 0.5+ | 2004 04 25 | 704 | 1.1+ | 0.4+ |
| 2000 08 26 | 704 | 0.3+ | 1.7− | 2003 02 02 | 644 | 0.3− | 0.6+ | 2004 04 25 | 704 | 1.3− | 1.3+ |
| 2001 10 23 | 704 | 1.2+ | 0.3+ | 2003 02 02 | 644 | 0.0 | 1.2+ | 2004 04 25 | 704 | 0.2+ | 1.0+ |
| 2001 10 23 | 704 | 0.7+ | 0.3− | 2003 02 04 | 699 | 0.8− | 1.1− | 2004 04 25 | 704 | 0.2+ | 0.7+ |
| 2001 10 23 | 704 | 0.5− | 0.3− | 2003 02 04 | 699 | 0.3− | 0.6+ | 2004 04 25 | 704 | 1.0+ | 0.6+ |
| 2001 10 23 | 704 | 0.4+ | 0.3+ | 2003 02 04 | 699 | 0.6+ | 0.2+ | 2004 04 25 | 704 | (0.7+ | 1.8+) |
| 2001 10 23 | 704 | 0.5− | 0.6− | 2003 02 04 | 699 | 1.4− | 0.4− | 2004 04 25 | 704 | 0.8− | 0.4+ |
| 2001 10 24 | 704 | 0.8− | 0.3+ | 2003 02 19 | 644 | 0.0 | 0.1+ | 2004 04 25 | 704 | 1.0− | 1.2+ |
| 2001 10 24 | 704 | 0.5− | 0.8− | 2003 02 19 | 644 | 0.1+ | 0.1+ | 2004 05 23 | 691 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.1− | 2003 02 19 | 644 | 0.1+ | 0.3− | 2004 05 23 | 691 | 0.1+ | 0.3− |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2003 03 03 | 644 | 0.4− | 0.0 | 2004 05 23 | 691 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 0.2− | 1.4− | 2003 03 03 | 644 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.8− | 0.5+ |
| 2001 11 09 | 704 | 0.1+ | 0.2+ | 2003 03 03 | 644 | 0.2− | 0.1− | 2006 09 16 | 704 | (0.2− | 1.5+) |
| 2001 11 09 | 704 | 0.4− | 0.8− | 2004 03 16 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 704 | 0.5− | 1.0+ |
| 2001 11 09 | 704 | 0.3− | 0.7− | 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.1+ |
| 2001 11 16 | 291 | 0.5− | 0.8− | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.7− | 0.4+ |
| 2001 11 16 | 291 | 0.1− | 0.9− | 2004 03 22 | 704 | (0.1− | 1.7+) | 2006 09 18 | 703 | 0.6+ | 0.7+ |
| 2001 11 16 | 291 | 0.5− | 0.8− | 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.9+ |
| 2001 11 19 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 1.4+ | 0.6+ | 2006 09 18 | 699 | 0.4+ | 0.1− |
| 2001 11 19 | 704 | 0.3+ | 0.1+ | 2004 03 28 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.5+ |
| 2001 11 19 | 704 | 0.5+ | 0.1+ | 2004 03 28 | 704 | (1.7+ | 1.1+) | 2006 09 18 | 699 | 0.6− | 0.3+ |
| 2001 11 19 | 704 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 0.2+ | 0.9− | 2006 09 18 | 699 | 0.3+ | 1.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.5+ | 2004 03 28 | 704 | 1.4+ | 0.2− | 2006 09 20 | 644 | 0.3− | 1.0+ |
| 2001 11 21 | 704 | 0.9+ | 0.2+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.6+ |
| 2001 11 21 | 704 | 0.3− | 0.5+ | 2004 04 14 | 691 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.5− | 0.3+ |
| 2001 12 15 | 704 | 0.2+ | 0.2+ | 2004 04 14 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.6+ |
| 2001 12 15 | 704 | 0.2+ | 0.6+ | 2004 04 16 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.6+ |
| 2001 12 15 | 704 | 0.6+ | 0.6+ | 2004 04 16 | 644 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.3+ |
| 2001 12 15 | 704 | 0.4− | 0.8+ | 2004 04 16 | 644 | 0.4+ | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.6+ |
| 2001 12 15 | 704 | 0.7− | 0.7− | 2004 04 17 | 699 | 0.7− | 0.4− | 2006 10 16 | 703 | 0.9+ | 0.7+ |
| 2001 12 15 | 704 | 0.3− | 0.8+ | 2004 04 17 | 699 | 0.8+ | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.4− |
| 2001 12 15 | 704 | 1.3+ | 0.6+ | 2004 04 17 | 699 | 1.3+ | 0.5− | 2006 10 16 | 703 | 1.3− | 0.1− |
| 2001 12 15 | 704 | 0.0 | 0.5+ | 2004 04 17 | 699 | 0.1− | 1.4+ | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.6+ | 0.6+ | 2004 04 19 | 704 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.3+ | 0.1+ | 2004 04 19 | 704 | 0.7+ | 0.1− | 2006 10 17 | 703 | (1.6+ | 0.2−) |
| 2001 12 18 | 704 | 0.0 | 0.6+ | 2004 04 19 | 704 | 1.4+ | 0.8+ | 2006 10 17 | 703 | (0.6− | 1.6+) |
| 2001 12 18 | 704 | 0.4+ | 0.5+ | 2004 04 19 | 704 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.8+ |
| 2001 12 18 | 704 | 0.5+ | 0.9+ | 2004 04 19 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.1+ |
| 2001 12 18 | 704 | 0.6+ | 1.1+ | 2004 04 20 | 704 | 0.7+ | 0.3− | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2001 12 18 | 704 | 0.6+ | 1.0+ | 2004 04 20 | 704 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.0 | 0.7+ |
| 2002 01 06 | 644 | 0.5− | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2002 01 06 | 644 | 0.2− | 0.2+ | 2004 04 20 | 704 | 1.1− | 0.5− | 2006 11 06 | 644 | 0.4− | 0.6+ |
| 2002 01 06 | 644 | 0.2− | 0.3+ | 2004 04 23 | 691 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.6− | 0.9+ |
| 2002 01 07 | 691 | 0.2+ | 0.6+ | 2004 04 23 | 691 | 0.1− | 0.1+ | 2006 11 06 | 644 | 0.4− | 0.6+ |
| 2002 01 07 | 691 | 0.2+ | 0.8+ | 2004 04 23 | 691 | 0.0 | 0.1+ | | | | |

**(140807)∗ 2001 UR$_{153}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.62532 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17122273 | $\omega$ | 5.94504 | | +0.28896258 | | −0.92511087 |
| $a$ | 3.2118982 | $\Omega$ | 67.46633 | | +0.86699018 | | +0.14376937 |
| $e$ | 0.0883736 | $i$ | 15.46640 | | +0.40599097 | | +0.35142602 |
| $P$ | 5.76 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 691 | 0.4− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.0 | 2002 01 09 | 704 | 0.0 | 0.3− |
| 2001 08 16 | 691 | 0.1− | 0.1− | 2001 11 20 | 704 | 0.1+ | 1.0− | 2002 01 09 | 704 | 0.2+ | 0.2− |
| 2001 08 16 | 691 | 0.4− | 0.0 | 2001 11 20 | 704 | 0.1− | 1.1− | 2002 01 09 | 704 | 0.4− | 1.4+ |
| 2001 08 26 | 691 | 0.4− | 0.4− | 2001 11 21 | 704 | (0.6+ | 1.9−) | 2003 02 01 | 644 | 0.6+ | 0.7+ |
| 2001 08 26 | 691 | 0.3− | 0.5− | 2001 11 21 | 704 | (0.6+ | 2.0−) | 2003 02 01 | 644 | 0.4+ | 0.5+ |
| 2001 08 26 | 691 | 0.4− | 0.2− | 2001 11 21 | 704 | (0.5+ | 1.8−) | 2003 02 01 | 644 | 0.2+ | 0.3+ |
| 2001 10 23 | 704 | 0.7− | 1.1− | 2001 11 21 | 704 | (0.7+ | 2.0−) | 2003 03 08 | 699 | 0.6− | 0.2+ |
| 2001 10 23 | 704 | 0.8+ | 0.1− | 2001 11 21 | 704 | (0.2+ | 1.8−) | 2003 03 08 | 699 | 0.9− | 0.2+ |
| 2001 10 23 | 704 | 0.7+ | 0.6+ | 2001 12 08 | 699 | 0.5+ | 0.7− | 2003 03 08 | 699 | 0.3+ | 0.8− |
| 2001 10 23 | 704 | 0.1− | 0.8+ | 2001 12 08 | 699 | 0.5+ | 1.0− | 2003 03 08 | 699 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | 0.7+ | 0.5+ | 2001 12 08 | 699 | 1.0− | 0.1− | 2003 03 09 | 644 | 0.1− | 0.5+ |
| 2001 10 24 | 704 | 0.7+ | 0.9− | 2001 12 08 | 699 | (2.5− | 1.2+) | 2003 03 09 | 644 | 0.1− | 0.6+ |
| 2001 10 24 | 704 | 0.9+ | 0.7− | 2001 12 10 | 704 | 0.5+ | 0.4− | 2003 03 09 | 644 | 0.1− | 0.6+ |
| 2001 10 24 | 704 | 0.6+ | 0.2− | 2001 12 10 | 704 | 0.6+ | 0.6− | 2004 05 18 | 704 | 0.4+ | 1.4+ |
| 2001 10 24 | 704 | 1.1+ | 0.4− | 2001 12 10 | 704 | 0.8+ | 0.2− | 2004 05 18 | 704 | 0.4+ | 0.1− |
| 2001 10 27 | 333 | 0.3− | 0.5− | 2001 12 10 | 704 | 1.0+ | 0.0 | 2004 05 18 | 704 | 0.9+ | 1.0+ |
| 2001 10 27 | 333 | 0.7+ | 0.7− | 2001 12 10 | 704 | 1.4+ | 1.0+ | 2004 05 18 | 704 | 1.0+ | 1.2+ |
| 2001 10 27 | 333 | 1.0− | 0.5− | 2001 12 11 | 291 | 0.5− | 0.8+ | 2006 09 14 | 644 | 0.3− | 0.6+ |
| 2001 11 09 | 704 | 0.1+ | 0.5+ | 2001 12 11 | 291 | 0.4− | 0.9+ | 2006 09 14 | 644 | 0.3− | 0.5+ |
| 2001 11 09 | 704 | 0.2+ | 0.2+ | 2001 12 11 | 291 | 0.2− | 1.1+ | 2006 09 14 | 644 | 0.1− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.2− | 0.2+ | 2001 12 14 | 704 | 0.2− | 0.4− | 2006 09 26 | 703 | 0.5− | 0.3+ |
| 2001 11 09 | 704 | 0.2− | 0.9+ | 2001 12 14 | 704 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2001 11 09 | 704 | 0.0 | 0.1+ | 2001 12 14 | 704 | 0.7+ | 1.1− | 2006 09 26 | 703 | 0.4+ | 0.1− |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2001 12 18 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.8+ |
| 2001 11 12 | 704 | 0.1+ | 1.0− | 2001 12 18 | 704 | 0.6+ | 0.5+ | 2006 10 12 | E12 | 1.0− | 0.8+ |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 1.2− | 1.1+ | 2006 10 12 | E12 | 0.1+ | 0.4+ |
| 2001 11 20 | 704 | 0.3+ | 0.4− | 2001 12 18 | 704 | 0.0 | 0.5+ | 2006 10 12 | E12 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.7+ | 1.0− | 2001 12 18 | 704 | 0.9− | 0.4− | 2006 10 12 | E12 | 0.2− | 0.4+ |

**(140808)∗ 2001 UV$_{156}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 218.83070 | | (2000.0) | | | |
| $n$ | 0.18333423 | $\omega$ | 99.36837 | | −0.95574226 | −0.21306217 |
| $a$ | 3.0688360 | $\Omega$ | 68.54333 | | +0.09861944 | −0.88170900 |
| $e$ | 0.0663568 | $i$ | 12.59102 | | +0.27718393 | −0.42094387 |
| $P$ | 5.38 | $H$ | 14.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.0 | 0.4− | 2001 12 11 | 704 | 0.0 | 0.7+ | 2004 05 17 | 704 | 1.1+ | 0.9+ |
| 2001 10 23 | 704 | 0.2+ | 0.1− | 2001 12 11 | 704 | 0.2− | 0.1+ | 2004 05 17 | 704 | 0.1+ | 0.6+ |
| 2001 10 23 | 704 | 1.4− | 0.2− | 2001 12 14 | 704 | 0.1+ | 0.3− | 2004 05 17 | 704 | 0.1− | 0.7+ |
| 2001 10 23 | 704 | 0.6− | 0.5− | 2001 12 14 | 704 | 0.1− | 0.5+ | 2004 05 17 | 704 | 0.6+ | 0.3+ |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2001 12 14 | 704 | 0.3− | 0.9+ | 2004 05 17 | 704 | 0.6+ | 0.6+ |
| 2001 10 24 | 704 | 0.7− | 0.7+ | 2001 12 17 | 704 | 0.2+ | 0.4+ | 2004 05 21 | 704 | 0.5+ | 0.2+ |
| 2001 10 24 | 704 | 0.0 | 0.3− | 2001 12 17 | 704 | 0.2+ | 0.5+ | 2004 05 21 | 704 | 0.2+ | 0.6+ |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2001 12 17 | 704 | 0.5+ | 0.7+ | 2004 05 21 | 704 | 0.5+ | 0.6+ |
| 2001 10 25 | 644 | 0.1+ | 0.4+ | 2001 12 17 | 704 | 0.4+ | 0.8+ | 2004 05 21 | 704 | 0.2+ | 0.6+ |
| 2001 10 25 | 644 | 0.2+ | 0.3+ | 2001 12 17 | 704 | 0.0 | 0.9+ | 2004 05 21 | 704 | 0.5+ | 0.8+ |
| 2001 10 25 | 644 | 0.2− | 0.7+ | 2001 12 19 | 644 | 0.4− | 1.0+ | 2004 06 11 | 644 | 0.6+ | 0.2+ |
| 2001 11 17 | 704 | 0.2− | 0.9+ | 2001 12 19 | 644 | 0.2+ | 0.8+ | 2004 06 11 | 644 | 0.4+ | 0.5+ |
| 2001 11 17 | 704 | 0.5− | 1.1+ | 2001 12 19 | 644 | 0.1− | 0.7+ | 2004 06 11 | 644 | 0.6+ | 0.6+ |
| 2001 11 17 | 704 | 0.5− | 0.9+ | 2003 01 24 | 644 | 0.1+ | 0.6+ | 2004 06 14 | 704 | 0.1− | 0.1+ |
| 2001 11 17 | 704 | 0.9− | 0.5+ | 2003 01 24 | 644 | 0.1+ | 0.2+ | 2004 06 14 | 704 | 0.1+ | 0.3− |
| 2001 11 18 | 704 | 0.1− | 0.3+ | 2003 01 24 | 644 | 0.2− | 0.4+ | 2004 06 14 | 704 | 0.4+ | 0.4− |
| 2001 11 18 | 704 | 0.5+ | 0.7+ | 2003 02 01 | 644 | 0.2− | 0.1− | 2004 06 14 | 704 | 1.0+ | 0.2− |
| 2001 11 18 | 704 | 0.7− | 0.3+ | 2003 02 01 | 644 | 0.3+ | 0.2+ | 2004 06 17 | 691 | 0.1+ | 0.4+ |
| 2001 11 18 | 704 | 0.2+ | 0.0 | 2003 02 01 | 644 | 0.0 | 0.2+ | 2004 06 17 | 691 | 0.2− | 0.5+ |
| 2001 11 18 | 704 | 1.1+ | 0.0 | 2003 02 01 | 644 | 0.0 | 0.2+ | 2004 06 17 | 691 | 0.3+ | 0.4+ |
| 2001 11 18 | 704 | 0.6− | 0.1+ | 2003 02 01 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 1.0+ |
| 2001 11 18 | 704 | 0.9+ | 0.4+ | 2003 02 01 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.5+ |
| 2001 11 18 | 704 | 0.9− | 0.4− | 2003 02 19 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.6− |
| 2001 11 18 | 704 | 0.1+ | 0.5+ | 2003 02 19 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.4+ |
| 2001 11 19 | 699 | 0.2− | 0.4+ | 2003 02 19 | 644 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2001 11 19 | 699 | 0.2− | 0.3+ | 2004 04 17 | 704 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 11 19 | 699 | 0.7− | 0.4+ | 2004 04 17 | 704 | 0.3− | 0.9− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2001 11 19 | 699 | 0.0 | 0.2+ | 2004 04 17 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 1.4− | 0.3− |
| 2001 11 20 | 704 | 0.7− | 0.5+ | 2004 04 17 | 704 | 0.3− | 0.0 | 2006 10 22 | 703 | (0.4+ | 1.7+) |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2004 04 22 | 704 | 0.3− | 1.0+ | 2006 10 22 | 703 | (0.0 | 1.6+) |
| 2001 11 20 | 704 | 0.3− | 0.7+ | 2004 04 22 | 704 | 0.7− | 0.2− | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2001 11 20 | 704 | 0.9− | 0.3+ | 2004 04 22 | 704 | 0.7− | 1.1+ | 2006 10 28 | 703 | 0.6+ | 0.5+ |
| 2001 11 20 | 704 | 0.5− | 0.7+ | 2004 04 22 | 704 | 0.1− | 0.8+ | 2006 10 28 | 703 | 0.3− | 0.6+ |
| 2001 11 20 | 608 | 0.1− | 1.4− | 2004 04 22 | 704 | 0.2− | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 2001 11 20 | 608 | (0.4− | 1.7−) | 2004 05 15 | 704 | 0.6+ | 1.2+ | 2006 10 28 | 703 | 0.7− | 0.5− |
| 2001 11 20 | 608 | 0.6− | 0.9− | 2004 05 15 | 704 | 1.3+ | 0.9+ | 2006 11 16 | 703 | 0.7− | 1.3+ |
| 2001 12 11 | 704 | 1.0+ | 0.2− | 2004 05 15 | 704 | 0.8+ | 0.5+ | 2006 11 16 | 703 | 0.7− | 0.4+ |
| 2001 12 11 | 704 | 0.1− | 1.3− | 2004 05 15 | 704 | 0.2− | 0.7+ | 2006 11 16 | 703 | 0.4+ | 0.9+ |
| 2001 12 11 | 704 | 0.1+ | 0.1− | 2004 05 15 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 1.0+ | 0.7− |

**(140809)∗ 2001 UL$_{157}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.14453 | | (2000.0) | | | |
| $n$ | 0.20023458 | $\omega$ | 330.40590 | | +0.55421390 | −0.83030910 |
| $a$ | 2.8936322 | $\Omega$ | 85.87893 | | +0.77476545 | +0.48884210 |
| $e$ | 0.0836503 | $i$ | 3.36807 | | +0.30427858 | +0.26761950 |
| $P$ | 4.92 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 02 | 691 | 0.1+ | 0.1+ | 2001 11 17 | 704 | 0.3+ | 0.3+ | 2005 09 01 | 644 | 0.1+ | 0.2+ |
| 1991 11 02 | 691 | 0.6+ | 0.3− | 2001 11 20 | 704 | (0.4+ | 1.6+) | 2005 09 01 | 644 | 0.3+ | 0.4+ |
| 1991 11 02 | 691 | 0.3− | 0.3− | 2001 11 20 | 704 | 0.6+ | 0.7+ | 2005 09 01 | 644 | 0.3+ | 0.3+ |
| 1998 01 25 | 691 | 0.1− | 0.3− | 2001 11 20 | 704 | 0.7+ | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 1998 01 25 | 691 | 0.0 | 0.2− | 2001 11 20 | 704 | 0.6+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 1998 01 25 | 691 | 0.3− | 0.3− | 2001 11 20 | 704 | 0.9+ | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 1999 05 16 | 691 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.7+ | 0.6− | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 1999 05 16 | 691 | 0.3− | 0.2+ | 2001 11 21 | 704 | (1.8+ | 0.3−) | 2006 10 31 | G96 | 0.2− | 0.4− |
| 1999 05 16 | 691 | 0.8− | 0.2− | 2001 11 21 | 704 | 0.8+ | 0.3− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 1999 05 19 | 691 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.5+ | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 1999 05 19 | 691 | 0.4− | 0.1+ | 2001 12 11 | 704 | 0.5+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 1999 05 19 | 691 | 0.6− | 0.1+ | 2001 12 11 | 704 | 0.2+ | 0.5− | 2006 11 17 | 704 | (1.8+ | 1.0+) |
| 1999 06 18 | 691 | 0.0 | 1.4− | 2001 12 11 | 704 | 0.7− | 0.8− | 2006 11 17 | 704 | (1.8+ | 0.2+) |
| 1999 06 18 | 691 | 0.1+ | 1.2− | 2001 12 11 | 704 | 1.2+ | 1.2− | 2006 11 17 | 704 | (2.4+ | 0.5+) |
| 1999 06 18 | 691 | 0.3+ | 1.5− | 2001 12 14 | 704 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.9+ | 0.4− |
| 2001 10 23 | 704 | 1.3+ | 0.6+ | 2001 12 14 | 704 | 0.2+ | 0.1− | 2006 11 18 | 704 | (1.7+ | 0.3−) |
| 2001 10 23 | 704 | 0.9+ | 0.1− | 2001 12 14 | 704 | 0.6+ | 0.2− | 2006 11 18 | 704 | 1.2+ | 0.4− |
| 2001 10 23 | 704 | (1.7+ | 0.2−) | 2001 12 14 | 691 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2001 10 23 | 704 | 0.9+ | 0.3+ | 2001 12 14 | 704 | 0.3+ | 0.8− | 2006 11 18 | 704 | 1.0+ | 0.2+ |
| 2001 10 24 | 704 | (0.5+ | 1.9+) | 2001 12 14 | 704 | 0.0 | 0.5− | 2006 11 21 | 704 | (0.1+ | 1.9+) |
| 2001 10 24 | 704 | 0.7+ | 1.0+ | 2001 12 14 | 691 | 0.2+ | 0.6− | 2006 11 21 | 704 | (0.7+ | 1.6+) |
| 2001 10 24 | 704 | 0.4+ | 0.9+ | 2001 12 14 | 691 | (0.5+ | 1.7−) | 2006 11 21 | 704 | 1.0+ | 1.1+ |
| 2001 10 25 | 644 | 0.3+ | 0.6+ | 2001 12 17 | 704 | 0.1− | 0.6+ | 2006 11 21 | 704 | 0.8+ | 1.2+ |
| 2001 10 25 | 644 | 0.2+ | 0.6+ | 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2001 10 25 | 644 | 0.1+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.0 | 0.8+ |
| 2001 11 09 | 704 | 0.5+ | 0.0 | 2001 12 17 | 704 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2001 11 09 | 704 | 0.6+ | 0.6+ | 2001 12 17 | 704 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.3− | 0.1− |
| 2001 11 09 | 704 | 1.3+ | 0.1− | 2002 12 11 | 645 | 0.0 | 0.0 | 2006 11 27 | 703 | 1.1− | 0.5+ |
| 2001 11 09 | 704 | 0.9+ | 0.1− | 2002 12 11 | 645 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.1− | 0.8+ | 2003 02 22 | 644 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 0.2+ | 0.7+ |
| 2001 11 14 | 691 | 1.4− | 0.9− | 2003 02 22 | 644 | 0.4+ | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 11 14 | 691 | 0.8− | 1.1− | 2003 02 22 | 644 | 0.7+ | 0.6+ | 2006 11 29 | 704 | 0.3− | 0.3+ |
| 2001 11 14 | 691 | 1.1− | 0.9− | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.6− | 0.0 |
| 2001 11 15 | 644 | 0.5− | 0.4+ | 2003 03 30 | 645 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.9− | 0.6− |
| 2001 11 15 | 644 | 0.2+ | 0.0 | 2004 05 19 | 599 | 0.5+ | 0.1+ | 2006 11 29 | 704 | 1.5− | 0.6− |
| 2001 11 15 | 644 | 0.2− | 0.1− | 2004 05 19 | 599 | 0.6+ | 0.6+ | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2001 11 17 | 704 | 0.1+ | 1.4+ | 2004 05 20 | 599 | 0.5+ | 0.4+ | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2001 11 17 | 704 | 0.3+ | 0.3+ | 2004 05 20 | 599 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.3− | 0.0 |

**(140810)∗ 2001 UM$_{158}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 274.79882 | | (2000.0) | | | |
| $n$ | 0.17952263 | $\omega$ | 252.63902 | | −0.30338264 | −0.94868000 |
| $a$ | 3.1121218 | $\Omega$ | 215.41905 | | +0.92224219 | −0.26878497 |
| $e$ | 0.0783316 | $i$ | 8.85852 | | +0.23964204 | −0.16661603 |
| $P$ | 5.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.5− | 0.2+ | 2001 12 11 | 704 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.5− |
| 2001 10 23 | 704 | 0.5+ | 0.3− | 2001 12 11 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.2− |
| 2001 10 23 | 704 | 0.4+ | 0.4− | 2001 12 11 | 704 | (2.5+ | 2.8−) | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 704 | 0.4+ | 1.5+ | 2004 05 21 | 704 | 1.2+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2001 10 24 | 704 | 0.2− | 0.7+ | 2004 05 21 | 704 | 0.4+ | 0.5+ | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2001 10 24 | 704 | 0.4+ | 0.2− | 2004 05 21 | 704 | 0.2+ | 1.4+ | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.3+ | 0.1− | 2004 06 16 | 691 | 0.2− | 0.6+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | 0.1+ | 0.2− | 2004 06 16 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.6+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.2+ | 0.6+ | 2004 06 16 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2001 11 17 | 704 | 0.1− | 0.1+ | 2005 07 09 | 691 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.2− | 0.4+ |
| 2001 11 17 | 704 | 0.2− | 0.7+ | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.6+ |
| 2001 11 20 | 704 | 1.3+ | 0.1+ | 2005 07 09 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.3+ |
| 2001 11 20 | 704 | (2.0− | 0.1−) | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 11 20 | 704 | 1.2− | 0.8+ | 2006 09 29 | 704 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2001 12 11 | 704 | 0.5− | 0.6+ | 2006 09 29 | 704 | 0.5− | 0.5+ | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2001 12 11 | 704 | 0.5− | 0.4+ | 2006 09 29 | 704 | 0.7− | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.2− |

**(140811)∗ 2001 UC$_{159}$ = 2003 FR$_{26}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46842)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.22081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18121759 | $\omega$ | 0.06947 | | −0.28329472 | | −0.95774379 |
| $a$ | 3.0926860 | $\Omega$ | 106.38756 | | +0.87987049 | | −0.28018172 |
| $e$ | 0.1943061 | $i$ | 2.97002 | | +0.38153902 | | −0.06500027 |
| $P$ | 5.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.0 | 0.4+ | 2001 11 18 | 704 | 0.5− | 0.3+ | 2003 03 24 | 691 | 0.0 | 0.1+ |
| 2000 08 30 | 691 | 0.2− | 0.3+ | 2001 11 18 | 704 | 0.1+ | 0.8+ | 2003 03 26 | 644 | 0.2− | 0.6+ |
| 2000 08 30 | 691 | 0.3− | 0.4+ | 2001 11 20 | 704 | 0.6− | 0.2− | 2003 03 26 | 644 | 0.3− | 0.8+ |
| 2001 10 23 | 704 | 0.1+ | 0.9+ | 2001 11 20 | 704 | 0.8− | 0.4+ | 2003 03 26 | 644 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.4+ | 1.0+ | 2001 11 20 | 704 | 0.0 | 0.7+ | 2003 04 10 | 691 | 0.5+ | 0.9+ |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2001 11 20 | 704 | 0.2+ | 0.4+ | 2003 04 10 | 691 | 0.4+ | 0.8+ |
| 2001 10 24 | 704 | 0.3− | 0.1+ | 2001 11 20 | 704 | 0.3− | 0.2+ | 2003 04 10 | 691 | 0.3+ | 1.0+ |
| 2001 10 24 | 704 | 0.2+ | 0.3− | 2001 12 14 | 704 | 0.6+ | 0.2− | 2006 09 28 | 691 | 0.3− | 0.6+ |
| 2001 10 24 | 704 | 1.4− | 0.5− | 2001 12 14 | 704 | 0.9+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.3− | 0.4+ | 2001 12 14 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.4+ |
| 2001 11 11 | 704 | 0.5− | 0.3− | 2001 12 14 | 704 | 0.2+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.5+ |
| 2001 11 11 | 704 | 0.4− | 0.3− | 2001 12 14 | 691 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 2001 11 11 | 704 | 0.0 | 0.7− | 2001 12 14 | 691 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2001 11 11 | 704 | 0.5+ | 0.6− | 2001 12 17 | 704 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.5+ | 0.3+ |
| 2001 11 11 | 704 | 0.9− | 0.2+ | 2001 12 17 | 704 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2001 11 17 | 704 | (2.4+ | 0.2+) | 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | (2.9+ | 0.4−) | 2001 12 17 | 704 | 0.8+ | 0.0 | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2001 11 17 | 704 | (3.2+ | 0.8−) | 2003 03 24 | 691 | 0.1+ | 0.3+ | | | | |
| 2001 11 18 | 704 | 0.4− | 0.5+ | 2003 03 24 | 691 | 0.3+ | 0.1+ | | | | |

**(140812)∗ 2001 UE$_{159}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.14948 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17810055 | $\omega$ | 215.53593 | | +0.28243795 | | −0.95271939 |
| $a$ | 3.1286661 | $\Omega$ | 218.41162 | | +0.91655132 | | +0.30248269 |
| $e$ | 0.0853117 | $i$ | 10.38963 | | +0.28312978 | | −0.02880942 |
| $P$ | 5.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2001 11 20 | 704 | (1.9+ | 0.6+) | 2006 08 29 | 699 | 0.2+ | 0.0 |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.8− | 0.1+ | 2006 08 29 | 699 | 0.4− | 0.4+ |
| 2001 10 23 | 704 | 0.1− | 0.6− | 2001 11 20 | 704 | (0.9+ | 2.1+) | 2006 08 29 | 699 | 0.5+ | 0.1− |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.3− |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.4+ | 0.8+ | 2006 09 16 | 703 | 0.3− | 0.5+ |
| 2001 10 23 | 704 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.2− | 0.7+ | 2006 09 16 | 703 | 0.6− | 1.4+ |
| 2001 10 24 | 704 | 0.4+ | 0.1+ | 2001 11 20 | 704 | 0.1+ | 1.3+ | 2006 09 16 | 703 | 0.3+ | 0.7− |
| 2001 10 24 | 704 | 0.3+ | 0.4− | 2001 11 20 | 704 | 0.6− | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.4− |
| 2001 10 24 | 704 | 0.3+ | 0.1+ | 2001 11 20 | 704 | (0.4+ | 3.1+) | 2006 09 27 | 703 | (1.6− | 1.3+) |
| 2001 10 24 | 704 | 0.9+ | 0.4+ | 2001 12 08 | 699 | 0.4+ | 1.1− | 2006 09 27 | 703 | 0.3− | 0.6− |
| 2001 11 17 | 704 | 0.1− | 0.2− | 2001 12 08 | 699 | (1.9− | 0.1+) | 2006 09 27 | 703 | 0.4+ | 1.1+ |
| 2001 11 17 | 704 | 0.8+ | 0.1+ | 2001 12 08 | 699 | 0.3− | 1.4+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2001 11 17 | 704 | 0.3− | 0.2− | 2001 12 08 | 699 | (1.7− | 0.3−) | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.4− | 0.0 | 2001 12 11 | 704 | 0.3− | 0.8− | 2006 10 02 | G96 | 0.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.6− | 0.3+ | 2001 12 11 | 704 | 0.5+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2001 11 19 | 704 | 0.5− | 0.5+ | 2001 12 11 | 704 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.4+ |
| 2001 11 19 | 704 | 0.2+ | 1.4+ | 2001 12 11 | 704 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.5+ |
| 2001 11 19 | 699 | 0.3− | 0.4− | 2001 12 11 | 704 | 0.6+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.6+ |
| 2001 11 19 | 704 | 0.5− | 0.2− | 2003 02 06 | 644 | 0.2+ | 0.9+ | 2006 10 17 | 703 | 0.4− | 0.6− |
| 2001 11 19 | 704 | (1.6− | 0.4+) | 2003 02 06 | 644 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2001 11 19 | 704 | 0.3− | 0.2− | 2003 02 06 | 644 | 0.1− | 1.0+ | 2006 10 17 | 703 | 0.5− | 0.9− |
| 2001 11 19 | 704 | 0.2− | 0.6+ | 2004 05 28 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2001 11 19 | 699 | 0.2+ | 0.2− | 2004 05 28 | 691 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2001 11 19 | 704 | 0.4− | 0.4− | 2004 05 28 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2001 11 19 | 704 | 0.8+ | 0.2− | 2004 06 08 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2001 11 19 | 699 | 0.4+ | 0.3+ | 2004 06 08 | 691 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2001 11 19 | 699 | 0.9+ | 0.3+ | 2004 06 08 | 691 | 0.4+ | 0.4+ | | | | |
| 2001 11 20 | 704 | 0.4− | 0.1+ | 2006 08 29 | 699 | 0.3− | 0.3+ | | | | |

**(140813)∗ 2001 UN$_{159}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.48537 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18774790 | $\omega$ | 251.79870 | | −0.11579788 | | −0.99317646 |
| $a$ | 3.0205497 | $\Omega$ | 204.86342 | | +0.92329106 | | −0.10249378 |
| $e$ | 0.0599921 | $i$ | 1.88541 | | +0.36623008 | | −0.05563754 |
| $P$ | 5.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 09 | 691 | 0.5− | 0.2− | 2003 02 23 | 699 | 1.4+ | 1.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 1992 01 09 | 691 | 0.2+ | 0.0 | 2003 02 23 | 699 | 0.3+ | 0.7− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 1995 09 29 | 691 | 0.0 | 0.0 | 2003 02 23 | 699 | 0.9+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 1995 09 29 | 691 | 0.3+ | 0.0 | 2003 02 23 | 699 | (0.8− | 2.3+) | 2006 10 20 | 691 | 0.2− | 0.1− |
| 1995 09 29 | 691 | 0.2+ | 0.2− | 2003 03 06 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 1.1+ | 2003 03 06 | 644 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | (0.8+ | 1.8+) | 2003 03 06 | 644 | 0.4− | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.2+ | 1.4+ | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.6+ | 0.3− |
| 2001 10 24 | 704 | 0.2+ | 0.5+ | 2005 07 01 | 691 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 1.0+ | 2005 07 01 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 1.1+ | 2005 07 01 | 691 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 11 18 | 691 | 0.1+ | 0.0 | 2005 07 01 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2001 11 18 | 691 | 0.1+ | 0.2+ | 2005 07 01 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 11 18 | 691 | 0.3+ | 0.2− | 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 1.1− | 1.1− | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2005 07 09 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2001 11 21 | 704 | 0.5− | 0.2− | 2005 08 06 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.7− | 0.4+ | 2005 08 06 | 644 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.7− | 0.2+ | 2005 09 01 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.4− | 0.4− |
| 2001 11 21 | 704 | 1.0− | 0.5+ | 2005 09 01 | 691 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 12 14 | 704 | 0.2− | 0.2+ | 2005 09 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.2− |
| 2001 12 14 | 704 | 0.6− | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.4+ | 0.8− |
| 2001 12 14 | 704 | 0.1− | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.5− | 1.2− |
| 2001 12 14 | 704 | 0.5− | 0.3− | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.2+ | 1.3− |
| 2001 12 17 | 704 | 1.3− | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.7− | 0.5+ |
| 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2001 12 17 | 704 | 0.1+ | 1.0+ | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2001 12 17 | 704 | 0.6− | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2001 12 17 | 704 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2001 12 19 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.5− |
| 2001 12 19 | 691 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− |

**(140814)∗ 2001 US$_{159}$ = 2004 FO$_{121}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61178)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 84.85265 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19191256 | $\omega$ | 240.21490 | | +0.51476726 | | +0.83968176 | |
| $a$ | 2.9766912 | $\Omega$ | 61.76782 | | −0.70306560 | | +0.52896960 | |
| $e$ | 0.1229133 | $i$ | 11.32801 | | −0.49062555 | | +0.12298657 | |
| $P$ | 5.14 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 1.0− | 1.7+ | 2003 01 06 | 695 | 0.1+ | 0.5− | 2005 08 07 | E12 | (0.3− | 1.6+) | 2001 10 23 | 704 | (3.5− | 2.0−) | 2001 12 19 | 704 | (1.5+ | 1.7+) | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1999 05 12 | 704 | (0.1− | 2.2−) | 2004 03 22 | 699 | 0.1− | 0.2+ | 2005 08 07 | E12 | 0.5− | 1.4+ | 2001 10 23 | 704 | (3.7− | 0.9−) | 2001 12 19 | 704 | (0.8+ | 2.0+) | 2006 11 11 | 703 | 0.5+ | 0.8+ |
| 1999 05 12 | 704 | (2.6+ | 0.3+) | 2004 03 22 | 699 | 0.5− | 0.6+ | 2005 08 13 | E12 | 0.2− | 1.0+ | 2001 10 23 | 704 | (2.0− | 0.2−) | 2001 12 19 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.3− | 0.0 |
| 1999 05 12 | 704 | 0.7+ | 1.6− | 2004 03 22 | 699 | (0.7− | 1.9−) | 2005 08 13 | E12 | 1.4+ | 1.1− | 2001 10 24 | 704 | (0.2+ | 1.6−) | 2001 12 19 | 704 | (0.8+ | 1.7+) | 2006 11 11 | 703 | 0.7+ | 0.0 |
| 2000 07 10 | 699 | 0.4+ | 0.5+ | 2004 03 22 | 699 | 1.1− | 0.3+ | 2005 08 13 | E12 | 0.2+ | 1.3+ | 2001 10 24 | 704 | 0.9− | 0.9− | 2001 12 19 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2000 07 10 | 699 | 0.5− | 0.8+ | 2004 03 23 | 704 | 0.1− | 0.4− | 2005 08 13 | E12 | 0.0 | 1.0+ | 2001 10 24 | 704 | 0.6+ | 0.5− | 2001 12 19 | 704 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2000 07 10 | 699 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.0 | 2001 10 24 | 704 | 0.0 | 0.8− | 2001 12 19 | 704 | 0.5− | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2000 07 10 | 699 | 1.7− | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2001 11 09 | 704 | 0.6− | 1.3+ | 2001 12 19 | 704 | 0.5− | 0.8+ | 2006 11 12 | G96 | 0.9− | 0.5− |
| 2001 10 23 | 704 | 0.3+ | 0.2− | 2004 03 29 | 703 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2001 11 09 | 704 | 1.3− | 0.3+ | 2001 12 19 | 704 | 0.6− | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.8− |
| 2001 10 23 | 704 | 1.0+ | 0.4+ | 2004 03 29 | 703 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.0 | 2001 11 09 | 704 | 0.3− | 1.3+ | 2004 04 28 | 691 | 0.3+ | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 0.3− | 2004 03 29 | 703 | 0.3+ | 0.7− | 2006 10 16 | 703 | 1.0− | 0.0 | 2001 11 09 | 704 | 0.7− | 0.8+ | 2004 04 28 | 691 | 0.3+ | 0.6+ | 2006 11 13 | 644 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | 0.2− | 0.5− | 2004 03 29 | 703 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.5− | 2001 11 12 | 704 | 0.3+ | 1.1+ | 2004 04 28 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 0.6+ | 1.3+ | 2004 04 11 | 049 | (0.5− | 2.0−) | 2006 10 16 | 703 | 0.7− | 1.0− | 2001 11 12 | 704 | 0.3+ | 1.4+ | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2001 10 24 | 704 | 0.5+ | 0.3+ | 2004 04 11 | 049 | (0.3− | 1.5−) | 2006 10 16 | 703 | 0.6+ | 0.6+ | 2001 11 12 | 704 | 0.1+ | 1.0+ | 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.3+ | 0.2− |
| 2001 11 17 | 291 | 0.8− | 0.5+ | 2004 04 12 | 049 | (1.3− | 2.4−) | 2006 10 18 | 691 | 0.2− | 0.1+ | 2001 11 12 | 704 | 0.5+ | 0.9+ | 2004 05 13 | 691 | 0.3+ | 0.5+ | 2006 11 13 | 644 | 0.7− | 0.1+ |
| 2001 11 17 | 291 | 0.9− | 0.3+ | 2004 04 12 | 683 | (1.5+ | 1.6−) | 2006 10 18 | 691 | 0.2− | 0.1+ | 2001 11 12 | 691 | 0.8− | 0.0 | 2004 06 08 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 2001 11 17 | 291 | 1.1− | 0.3+ | 2004 04 12 | 683 | 0.6+ | 0.9− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2001 11 12 | 704 | 0.2+ | 1.3+ | 2004 06 08 | 691 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.0 | 2004 04 12 | 683 | 0.9+ | 1.5− | 2006 11 11 | 703 | 0.3− | 0.2− | 2001 11 12 | 691 | 0.9− | 0.0 | 2004 06 08 | 691 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.4+ | 0.1− |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2004 04 13 | 683 | 0.5− | 1.3+ | 2006 11 11 | 703 | 0.2− | 0.1− | 2001 11 12 | 691 | 0.7− | 0.0 | 2004 06 15 | 691 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 0.6+ | 0.4+ |
| 2001 11 20 | 704 | 0.6+ | 0.5− | 2004 04 13 | 683 | (0.3+ | 1.7+) | 2006 11 11 | 703 | 0.2− | 1.1− | 2001 11 19 | 699 | 0.5− | 0.2− | 2004 06 15 | 691 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 1.1− |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2004 04 13 | 683 | 0.2− | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.4− | 2001 11 19 | 699 | 0.7+ | 0.7+ | 2004 06 15 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.8+ | 0.0 |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2004 04 14 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1− | 0.4− | 2001 11 19 | 699 | 0.1− | 0.7+ | 2005 07 03 | 644 | 0.0 | 0.7+ | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2001 11 21 | 704 | 0.1+ | 0.5− | 2004 04 14 | 683 | (1.6+ | 0.4−) | 2006 11 12 | G96 | 0.0 | 0.4− | 2001 11 19 | 699 | 1.1+ | 0.9+ | 2005 07 03 | 644 | 0.1− | 0.9+ | 2006 11 18 | 704 | 0.5+ | 0.1− |
| 2001 11 21 | 704 | 0.4+ | 0.7− | 2004 04 14 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.5− | 2001 11 19 | 704 | 0.2+ | 1.1+ | 2005 07 03 | 644 | 0.1+ | 1.1+ | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2001 11 21 | 704 | 0.4+ | 0.7− | 2004 04 14 | 683 | 0.9+ | 1.0+ | 2006 11 12 | G96 | 0.0 | 0.5− | 2001 11 19 | 704 | 0.4+ | 1.3+ | 2005 08 06 | E12 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.5− | 2004 04 14 | 683 | 1.1− | 1.4+ | 2006 11 17 | 703 | 0.2+ | 0.4+ | 2001 11 19 | 704 | 0.1− | 1.0+ | 2005 08 06 | E12 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.5− |
| 2001 11 21 | 704 | 0.3+ | 0.5− | 2004 04 14 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.2− | 2001 11 19 | 704 | 0.1+ | 1.0+ | 2005 08 06 | E12 | 0.1− | 0.8+ | 2006 11 18 | 704 | 0.7+ | 0.5+ |
| 2001 12 07 | 691 | 0.4+ | 0.9+ | 2004 04 15 | 644 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.7− | 0.1− | 2001 11 19 | 704 | 0.1− | 0.7+ | 2005 08 06 | E12 | 1.2− | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2001 12 07 | 691 | 0.6+ | 0.8+ | 2004 04 15 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.3− | 2001 11 21 | 704 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.6+ | 0.2− |
| 2001 12 07 | 691 | 0.5+ | 1.1+ | 2004 04 15 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | (0.3+ | 1.6+) | 2001 11 21 | 704 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.5+ | 0.1− |
| 2001 12 15 | 704 | 1.0− | 0.4− | 2004 04 16 | 291 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.8+ | 2001 11 21 | 704 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 12 15 | 704 | 1.2− | 0.2− | 2004 04 16 | 291 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.9+ | 0.1− | 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 1.2− | 0.3+ |
| 2001 12 15 | 704 | 0.6− | 0.1+ | 2004 04 16 | 291 | 0.4+ | 0.2+ | 2006 11 18 | 704 | (1.9+ | 0.0 ) | 2001 11 21 | 704 | 0.2+ | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2001 12 15 | 704 | 0.5− | 0.2+ | 2004 04 20 | 683 | 0.6− | 0.3− | 2006 11 21 | 704 | 0.9− | 0.9+ | 2001 12 10 | 704 | 0.7+ | 0.1− | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.9− | 0.5+ |
| 2001 12 15 | 704 | 0.5− | 0.0 | 2004 04 20 | 683 | 0.4+ | 1.1+ | 2006 11 21 | 704 | 0.2− | 0.1+ | 2001 12 10 | 704 | 1.3− | 0.5− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.0 |
| 2001 12 18 | 704 | (4.1+ | 0.5+) | 2004 04 20 | 683 | (1.4− | 4.9+) | 2006 11 21 | 704 | 0.8+ | 1.2+ | 2001 12 10 | 704 | 0.7− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2001 12 18 | 704 | 1.0+ | 0.3− | 2004 04 23 | 704 | 1.4+ | 1.3+ | 2006 11 21 | 704 | 0.4+ | 1.4+ | 2001 12 10 | 704 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 1.4+ |
| 2001 12 18 | 704 | (2.8+ | 0.9+) | 2004 04 23 | 704 | (1.5+ | 0.6−) | 2006 11 21 | 704 | 0.5− | 0.9+ | 2001 12 10 | 704 | 0.3+ | 1.0− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 1.0+ | 1.0+ |
| 2001 12 18 | 704 | (3.9+ | 1.2−) | 2004 04 23 | 704 | 0.9+ | 0.3+ | 2006 11 27 | 703 | 0.8+ | 0.9− | 2001 12 15 | 704 | 1.5+ | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.3− |
| 2001 12 19 | 704 | (3.1+ | 0.2+) | 2004 04 23 | 704 | 0.5+ | 1.1+ | 2006 11 27 | 703 | 0.1− | 0.5− | 2001 12 15 | 704 | (3.0+ | 0.3−) | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.7− |
| 2001 12 19 | 704 | (2.3+ | 0.9+) | 2004 04 23 | 704 | 1.1+ | 0.5+ | 2006 11 27 | 703 | 0.3− | 1.6− | 2001 12 15 | 704 | (2.3+ | 0.9−) | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 1.1− | 0.9− |
| 2001 12 19 | 704 | (2.0+ | 1.4−) | 2004 04 25 | 699 | 0.4− | 1.4+ | 2006 11 27 | 703 | 0.0 | 0.9− | 2001 12 15 | 704 | 1.1+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.8− |
| 2001 12 19 | 704 | (2.5+ | 0.6−) | 2004 04 25 | 699 | 0.9− | 0.2+ | 2006 11 29 | 704 | 0.9+ | 0.5+ | 2001 12 18 | 704 | (0.9+ | 1.7+) | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.2− | 1.0− |
| 2001 12 19 | 704 | (2.8+ | 0.7−) | 2004 04 25 | 699 | 0.2− | 0.2+ | 2006 11 29 | 704 | 1.6+ | 0.7+ | 2001 12 18 | 704 | (1.0+ | 1.5+) | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.9− | 0.1− |
| 2003 01 06 | 695 | 0.7+ | 0.7− | 2004 04 25 | 699 | 0.3+ | 0.7+ | 2006 11 29 | 704 | 1.5− | 0.4+ | 2001 12 18 | 704 | (1.6+ | 1.5+) | 2006 11 02 | 703 | 0.5− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2003 01 06 | 695 | 0.2+ | 0.7− | 2005 08 07 | E12 | 0.4− | 1.2+ | 2006 11 29 | 704 | 0.3− | 0.4+ | 2001 12 18 | 704 | 1.0+ | 1.4+ | 2006 11 02 | 703 | 0.7+ | 0.6− | 2006 12 01 | G96 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2001 12 19 | 704 | (1.2+ | 1.9+) | 2006 11 02 | 703 | (2.7− | 0.3−) | 2006 12 01 | G96 | 0.1− | 0.4− |
| | | | | | | | | | | | | 2001 12 19 | 704 | (1.8− | 0.1+) | 2006 11 02 | 703 | 0.3− | 0.9− | 2006 12 01 | G96 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2001 12 19 | 704 | 1.4+ | 1.4+ | 2006 11 09 | 644 | 0.0 | 0.3+ | | | | |
| | | | | | | | | | | | | 2001 12 19 | 704 | 1.2− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 | | | | |

**(140815)∗ 2001 UL$_{160}$ = 2004 LQ$_{10}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65122)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 14.48329 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19284362 | $\omega$ | 328.34503 | | +0.89993055 | | −0.39656063 | |
| $a$ | 2.9671023 | $\Omega$ | 56.08750 | | +0.43157967 | | +0.75083214 | |
| $e$ | 0.0525458 | $i$ | 12.61776 | | +0.06216094 | | +0.52819577 | |
| $P$ | 5.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | (3.5− | 2.0−) | 2001 12 19 | 704 | (1.5+ | 1.7+) | 2006 11 09 | 644 | 0.2− | 0.1+ | | | | | |
| 2001 10 23 | 704 | (3.7− | 0.9−) | 2001 12 19 | 704 | (0.8+ | 2.0+) | 2006 11 11 | 703 | 0.5+ | 0.8+ | | | | | |
| 2001 10 23 | 704 | (2.0− | 0.2−) | 2001 12 19 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.3− | 0.0 | | | | | |
| 2001 10 24 | 704 | (0.2+ | 1.6−) | 2001 12 19 | 704 | (0.8+ | 1.7+) | 2006 11 11 | 703 | 0.7+ | 0.0 | | | | | |
| 2001 10 24 | 704 | 0.9− | 0.9− | 2001 12 19 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1− | 0.3+ | | | | | |
| 2001 10 24 | 704 | 0.6+ | 0.5− | 2001 12 19 | 704 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.3− | | | | | |
| 2001 10 24 | 704 | 0.0 | 0.8− | 2001 12 19 | 704 | 0.5− | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.3− | | | | | |
| 2001 11 09 | 704 | 0.6− | 1.3+ | 2001 12 19 | 704 | 0.5− | 0.8+ | 2006 11 12 | G96 | 0.9− | 0.5− | | | | | |
| 2001 11 09 | 704 | 1.3− | 0.3+ | 2001 12 19 | 704 | 0.6− | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.8− | | | | | |
| 2001 11 09 | 704 | 0.3− | 1.3+ | 2004 04 28 | 691 | 0.3+ | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.5+ | | | | | |
| 2001 11 09 | 704 | 0.7− | 0.8+ | 2004 04 28 | 691 | 0.3+ | 0.6+ | 2006 11 13 | 644 | 0.5− | 0.4+ | | | | | |
| 2001 11 12 | 704 | 0.3+ | 1.1+ | 2004 04 28 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.2− | | | | | |
| 2001 11 12 | 704 | 0.3+ | 1.4+ | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.1− | | | | | |
| 2001 11 12 | 704 | 0.1+ | 1.0+ | 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.3+ | 0.2− | | | | | |
| 2001 11 12 | 704 | 0.5+ | 0.9+ | 2004 05 13 | 691 | 0.3+ | 0.5+ | 2006 11 13 | 644 | 0.7− | 0.1+ | | | | | |
| 2001 11 12 | 691 | 0.8− | 0.0 | 2004 06 08 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.3+ | 0.1+ | | | | | |
| 2001 11 12 | 704 | 0.2+ | 1.3+ | 2004 06 08 | 691 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.3+ | 0.0 | | | | | |
| 2001 11 12 | 691 | 0.9− | 0.0 | 2004 06 08 | 691 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.4+ | 0.1− | | | | | |
| 2001 11 12 | 691 | 0.7− | 0.0 | 2004 06 15 | 691 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 0.6+ | 0.4+ | | | | | |
| 2001 11 19 | 699 | 0.5− | 0.2− | 2004 06 15 | 691 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 1.1− | | | | | |
| 2001 11 19 | 699 | 0.7+ | 0.7+ | 2004 06 15 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.8+ | 0.0 | | | | | |
| 2001 11 19 | 699 | 0.1− | 0.7+ | 2005 07 03 | 644 | 0.0 | 0.7+ | 2006 11 17 | 703 | 0.3− | 0.3− | | | | | |
| 2001 11 19 | 699 | 1.1+ | 0.9+ | 2005 07 03 | 644 | 0.1− | 0.9+ | 2006 11 18 | 704 | 0.5+ | 0.1− | | | | | |
| 2001 11 19 | 704 | 0.2+ | 1.1+ | 2005 07 03 | 644 | 0.1+ | 1.1+ | 2006 11 18 | 704 | 0.0 | 0.8+ | | | | | |
| 2001 11 19 | 704 | 0.4+ | 1.3+ | 2005 08 06 | E12 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.2+ | | | | | |
| 2001 11 19 | 704 | 0.1− | 1.0+ | 2005 08 06 | E12 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.5− | | | | | |
| 2001 11 19 | 704 | 0.1+ | 1.0+ | 2005 08 06 | E12 | 0.1− | 0.8+ | 2006 11 18 | 704 | 0.7+ | 0.5+ | | | | | |
| 2001 11 19 | 704 | 0.1− | 0.7+ | 2005 08 06 | E12 | 1.2− | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.1− | | | | | |
| 2001 11 21 | 704 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.6+ | 0.2− | | | | | |
| 2001 11 21 | 704 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.5+ | 0.1− | | | | | |
| 2001 11 21 | 704 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.0 | 0.2− | | | | | |
| 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 1.2− | 0.3+ | | | | | |
| 2001 11 21 | 704 | 0.2+ | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.1+ | | | | | |
| 2001 12 10 | 704 | 0.7+ | 0.1− | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.9− | 0.5+ | | | | | |
| 2001 12 10 | 704 | 1.3− | 0.5− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.0 | | | | | |
| 2001 12 10 | 704 | 0.7− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.4− | | | | | |
| 2001 12 10 | 704 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 1.4+ | | | | | |
| 2001 12 10 | 704 | 0.3+ | 1.0− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 1.0+ | 1.0+ | | | | | |
| 2001 12 15 | 704 | 1.5+ | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.3− | | | | | |
| 2001 12 15 | 704 | (3.0+ | 0.3−) | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.7− | | | | | |
| 2001 12 15 | 704 | (2.3+ | 0.9−) | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 1.1− | 0.9− | | | | | |
| 2001 12 15 | 704 | 1.1+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.8− | | | | | |
| 2001 12 18 | 704 | (0.9+ | 1.7+) | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.2− | 1.0− | | | | | |
| 2001 12 18 | 704 | (1.0+ | 1.5+) | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.9− | 0.1− | | | | | |
| 2001 12 18 | 704 | (1.6+ | 1.5+) | 2006 11 02 | 703 | 0.5− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.3− | | | | | |
| 2001 12 18 | 704 | 1.0+ | 1.4+ | 2006 11 02 | 703 | 0.7+ | 0.6− | 2006 12 01 | G96 | 0.1− | 0.3− | | | | | |
| 2001 12 19 | 704 | (1.2+ | 1.9+) | 2006 11 02 | 703 | (2.7− | 0.3−) | 2006 12 01 | G96 | 0.1− | 0.4− | | | | | |
| 2001 12 19 | 704 | (1.8− | 0.1+) | 2006 11 02 | 703 | 0.3− | 0.9− | 2006 12 01 | G96 | 0.2− | 0.2− | | | | | |
| 2001 12 19 | 704 | 1.4+ | 1.4+ | 2006 11 09 | 644 | 0.0 | 0.3+ | | | | | | | | | |
| 2001 12 19 | 704 | 1.2− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 | | | | | | | | | |

**(140816)∗ 2001 UD$_{161}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.68539 | | (2000.0) | | +0.67734769 | −0.73542443 |
| $n$ | 0.18561419 | $\omega$ | 245.69917 | | +0.69467147 | +0.63101563 |
| $a$ | 3.0436539 | $\Omega$ | 161.62454 | | +0.24213974 | +0.24692141 |
| $e$ | 0.1774784 | $i$ | 3.40717 | | | |
| $P$ | 5.31 | $H$ | 15.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.6− | 0.3− | 2001 12 11 | 704 | 0.0 | 0.7− | 2006 09 20 | 704 | (0.4− | 1.6+) |
| 1995 09 19 | 691 | 0.4− | 0.1− | 2001 12 14 | 644 | 0.3− | 0.7− | 2006 09 20 | 704 | 0.3+ | 0.2− |
| 1995 09 19 | 691 | 0.5− | 0.0 | 2001 12 14 | 644 | 0.2+ | 1.2+ | 2006 09 20 | 644 | 0.2+ | 0.7+ |
| 1995 09 25 | 691 | 0.9+ | 1.8+ | 2001 12 14 | 704 | 0.6− | 0.2− | 2006 09 20 | 644 | 0.2+ | 0.7+ |
| 1995 09 25 | 691 | (2.8+ | 5.2+) | 2001 12 14 | 704 | 0.9− | 0.4− | 2006 09 20 | 644 | 0.1− | 0.8+ |
| 1995 09 25 | 691 | 0.3+ | 0.3− | 2001 12 14 | 704 | 0.4− | 0.4− | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.1+ | 0.2+ | 2001 12 14 | 704 | 0.3− | 0.6− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.7− | 0.3+ | 2001 12 14 | 644 | 0.3− | 0.8− | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 0.3+ | 0.5+ | 2001 12 14 | 704 | 0.9− | 0.9− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.4+ | 2001 12 14 | 644 | 0.3+ | 1.1+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2001 12 14 | 644 | 0.0 | 0.5− | 2006 10 10 | 644 | 0.3− | 0.4+ |
| 2001 10 24 | 704 | 0.0 | 0.2+ | 2001 12 14 | 644 | 0.2+ | 1.2+ | 2006 10 15 | 703 | 0.2− | 0.6+ |
| 2001 11 15 | 608 | 0.3+ | 0.5− | 2001 12 18 | 704 | 0.7+ | 0.2− | 2006 10 15 | 703 | 0.5− | 0.4− |
| 2001 11 15 | 608 | 0.2+ | 0.9− | 2001 12 18 | 704 | 1.2+ | 0.4+ | 2006 10 15 | 703 | 0.8− | 0.2+ |
| 2001 11 15 | 608 | 0.2− | 0.7− | 2001 12 18 | 704 | 0.2+ | 0.6+ | 2006 10 15 | 703 | 0.7− | 1.3+ |
| 2001 11 17 | 704 | 0.6− | 0.3+ | 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2001 11 17 | 704 | 0.0 | 0.7+ | 2001 12 18 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.1− | 0.5+ | 2001 12 23 | 608 | 0.5+ | 0.8− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2001 11 17 | 704 | 0.1− | 0.1+ | 2001 12 23 | 608 | 0.0 | 0.6− | 2006 10 21 | 703 | 0.7− | 0.4− |
| 2001 11 17 | 704 | 0.0 | 0.4+ | 2001 12 23 | 608 | 0.2− | 1.1− | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2001 11 18 | 704 | 0.9+ | 0.3− | 2003 03 27 | 691 | 0.5+ | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.2+ |
| 2001 11 18 | 704 | 0.5+ | 0.6− | 2003 03 27 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 11 18 | 704 | (1.9− | 1.1−) | 2003 03 27 | 691 | 0.4+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2001 11 18 | 704 | 0.2− | 0.0 | 2003 04 05 | 291 | 0.2− | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.0 |
| 2001 11 19 | 699 | 0.8− | 0.3+ | 2003 04 05 | 291 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 11 19 | 699 | 0.2+ | 1.2+ | 2003 04 05 | 291 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.6− |
| 2001 11 19 | 699 | 0.2− | 1.3+ | 2006 09 14 | 703 | (1.0+ | 2.3+) | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 1.0+ | 0.6+ | 2006 09 14 | 703 | 0.3+ | 1.1+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2001 11 20 | 704 | 0.8+ | 0.2+ | 2006 09 14 | 703 | (0.1+ | 1.5+) | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.4+ | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.8− | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 1.0+ | 2006 09 17 | 704 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2001 11 21 | 608 | 0.4− | 0.9− | 2006 09 17 | 704 | 0.5+ | 0.8− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 608 | 0.1− | 0.5− | 2006 09 17 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 2.4+ | 0.8− |
| 2001 11 21 | 608 | 0.2− | 0.8− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 1.3− |
| 2001 11 24 | 704 | 1.5+ | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 2.9− |
| 2001 11 24 | 704 | 0.4− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.7− |
| 2001 11 24 | 704 | (1.5+ | 0.6+) | 2006 09 18 | 699 | 0.8+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2001 11 24 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2001 12 11 | 704 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2001 12 11 | 704 | 0.8− | 0.9− | 2006 09 20 | 704 | 0.9− | 1.0+ | | | | |
| 2001 12 11 | 704 | 0.5− | 0.4− | 2006 09 20 | 704 | 0.9− | 0.0 | | | | |

**(140817)∗ 2001 UR$_{161}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.06518 | | (2000.0) | | +0.08429258 | −0.98650919 |
| $n$ | 0.19089293 | $\omega$ | 28.13004 | | +0.88011261 | +0.00767224 |
| $a$ | 2.9872815 | $\Omega$ | 57.35381 | | +0.46722216 | +0.16352600 |
| $e$ | 0.0743617 | $i$ | 9.59409 | | | |
| $P$ | 5.16 | $H$ | 15.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.9− | 0.6+ | 2001 12 19 | 704 | 0.3+ | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2001 10 23 | 704 | 0.4− | 0.5+ | 2002 01 08 | 704 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2001 10 23 | 704 | 1.0− | 0.7+ | 2002 01 08 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.1− |
| 2001 10 24 | 291 | 0.7+ | 0.4− | 2002 01 08 | 704 | 1.4− | 0.8− | 2006 11 11 | 703 | 0.8− | 0.3+ |
| 2001 10 24 | 291 | 0.2− | 0.5− | 2002 01 08 | 704 | 1.2− | 0.0 | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2001 10 24 | 291 | 0.5+ | 0.5− | 2002 01 08 | 704 | 0.9− | 0.4− | 2006 11 13 | 644 | 0.3− | 0.2+ |
| 2001 10 24 | 704 | 1.4− | 0.0 | 2003 03 08 | 644 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.5− | 0.2+ |
| 2001 10 24 | 704 | 0.4− | 0.2+ | 2003 03 08 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2001 10 24 | 704 | 0.4− | 0.2+ | 2003 03 08 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.9+ |
| 2001 11 09 | 704 | (0.6+ | 2.1−) | 2003 03 31 | 644 | 0.3+ | 0.9+ | 2006 11 17 | 703 | 0.8− | 0.6+ |
| 2001 11 09 | 704 | (1.2+ | 1.8−) | 2003 03 31 | 644 | 0.6+ | 1.1+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.5+ | 1.3− | 2003 03 31 | 644 | 0.0 | 1.0+ | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 2001 11 09 | 704 | 0.2+ | 1.5− | 2003 04 08 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 2001 11 12 | 704 | 0.4+ | 0.1+ | 2003 04 08 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.4− |
| 2001 11 12 | 704 | 0.4− | 0.8− | 2003 04 08 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 11 12 | 704 | 0.0 | 0.4− | 2005 07 03 | 644 | 0.4− | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.3+ |
| 2001 11 12 | 704 | 0.5− | 0.0 | 2005 07 03 | 644 | 0.2− | 0.9+ | 2006 11 18 | 704 | 0.6− | 1.2+ |
| 2001 11 12 | 704 | 0.2− | 0.0 | 2005 07 03 | 644 | 0.5− | 0.8+ | 2006 11 18 | 704 | 0.5+ | 0.7+ |
| 2001 11 19 | 704 | 0.1− | 0.1+ | 2005 08 04 | 644 | 0.1− | 1.0+ | 2006 11 18 | 704 | 0.6− | 0.2− |
| 2001 11 19 | 704 | (1.6− | 1.9−) | 2005 08 04 | 644 | 0.4− | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2001 11 19 | 704 | 1.2− | 0.3− | 2005 08 04 | 644 | 0.5− | 1.1+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2001 11 19 | 704 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.5− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.6+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2001 11 21 | 704 | 0.6+ | 0.3− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.6− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2001 12 08 | 699 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2001 12 08 | 699 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2001 12 08 | 699 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 1.1+ | 0.5+ |
| 2001 12 08 | 699 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.1+ | 0.2+ |
| 2001 12 10 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 1.0+ |
| 2001 12 10 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.8− | 0.3+ |
| 2001 12 10 | 704 | 1.0+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.2+ | 0.3− |
| 2001 12 10 | 704 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.7+ | 0.1+ |
| 2001 12 10 | 704 | 0.8+ | 0.7− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.5− | 0.2− |
| 2001 12 18 | 704 | (0.6− | 1.5+) | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 29 | 704 | 1.7+ | 1.1− |
| 2001 12 18 | 704 | 0.7+ | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.3+ | 1.0+ |
| 2001 12 18 | 704 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 0.4+ | 1.3+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2001 12 19 | 704 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2001 12 19 | 704 | 0.7+ | 1.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.4− |

**(140818)∗ 2001 UC$_{162}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.34521 | | (2000.0) | | +0.93765657 | +0.32688539 |
| $n$ | 0.19057112 | $\omega$ | 279.41576 | | −0.24212487 | +0.85810721 |
| $a$ | 2.9906436 | $\Omega$ | 61.58337 | | −0.24935056 | +0.39597721 |
| $e$ | 0.2166249 | $i$ | 7.71652 | | | |
| $P$ | 5.17 | $H$ | 14.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 07 | 704 | 0.5+ | 0.5+ | 2001 12 19 | 704 | 0.6− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.1− |
| 2000 06 07 | 704 | 1.4− | 1.2+ | 2001 12 19 | 704 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2000 06 07 | 704 | 0.8+ | 1.5+ | 2001 12 19 | 704 | 0.6− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2000 06 07 | 704 | 0.6− | 1.7+ | 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.4+ | 0.8− | 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.2+ | 0.2− | 2001 12 21 | 704 | (2.7+ | 3.1−) | 2006 11 02 | 703 | 0.5− | 0.1− |
| 2001 10 23 | 704 | 0.8− | 1.3− | 2001 12 21 | 704 | (2.3+ | 3.8−) | 2006 11 02 | 703 | 0.2− | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 0.5− | 2001 12 21 | 704 | (2.5+ | 3.3−) | 2006 11 02 | 703 | 0.4− | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 0.2− | 2002 01 08 | 704 | 0.8+ | 0.2− | 2006 11 02 | 703 | 0.1− | 0.5− |
| 2001 10 24 | 704 | 0.1− | 0.3− | 2002 01 08 | 704 | (0.4− | 2.2−) | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.5− | 0.2+ | 2002 01 08 | 704 | 0.5− | 0.7− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.2+ | 0.3− | 2002 01 08 | 704 | (0.4− | 3.1−) | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 11 09 | 704 | 0.3− | 0.6+ | 2002 01 11 | 699 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2001 11 09 | 704 | 0.3− | 0.5+ | 2002 01 11 | 699 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2001 11 09 | 704 | 0.7− | 0.2+ | 2002 01 11 | 699 | (0.9+ | 2.6+) | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 0.5− | 0.5+ | 2002 01 11 | 699 | 0.8− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2001 11 09 | 704 | 0.4− | 0.5+ | 2004 03 20 | 704 | (1.5+ | 1.9+) | 2006 11 13 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 918 | 1.0− | 0.1− | 2004 03 20 | 704 | (1.6+ | 1.3+) | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 11 10 | 918 | 0.4− | 0.0 | 2004 03 20 | 704 | 0.9+ | 1.3+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2001 11 10 | 918 | 0.7− | 0.2− | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2001 11 12 | 704 | 0.2− | 0.1− | 2004 03 21 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2004 03 21 | 691 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.4+ | 0.1− |
| 2001 11 12 | 704 | 0.1+ | 0.6+ | 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.5− | 0.2+ | 2004 03 22 | 704 | 1.3+ | 0.4+ | 2006 11 18 | 704 | 1.1− | 0.5+ |
| 2001 11 19 | 704 | 0.6− | 0.3+ | 2004 03 22 | 704 | 0.7+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2001 11 19 | 704 | 0.1− | 0.4+ | 2004 03 28 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2001 11 21 | 704 | 0.3+ | 0.7+ | 2004 03 28 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2001 11 21 | 704 | 0.8+ | 0.5+ | 2004 03 28 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2001 11 21 | 704 | 0.3+ | 0.5+ | 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 1.1+ |
| 2001 11 21 | 704 | 0.8+ | 0.5+ | 2004 04 20 | 704 | 1.0− | 0.5+ | 2006 11 18 | 704 | 0.6− | 0.4− |
| 2001 11 21 | 704 | 0.6+ | 0.4+ | 2004 04 20 | 704 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.9+ |
| 2001 12 09 | 644 | 0.5− | 0.3+ | 2006 08 28 | 703 | 1.1− | 0.3+ | 2006 11 18 | 704 | 0.1− | 1.2+ |
| 2001 12 09 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.7− | 1.2− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2001 12 09 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2001 12 10 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.7+ |
| 2001 12 10 | 704 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 1.3+ |
| 2001 12 10 | 704 | 1.2+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 1.3+ |
| 2001 12 10 | 704 | 1.1+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.5+ | 0.0 |
| 2001 12 15 | 704 | 1.2+ | 1.0− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.0 | 0.3− |
| 2001 12 15 | 704 | 0.3+ | 0.1− | 2006 10 03 | 704 | 0.1+ | 0.6− | 2006 11 27 | 703 | 0.1+ | 0.3− |
| 2001 12 15 | 704 | 0.7+ | 0.4+ | 2006 10 03 | 704 | 0.8+ | 0.0 | 2006 11 27 | 703 | 0.3− | 0.3− |
| 2001 12 15 | 704 | 0.6+ | 0.4− | 2006 10 03 | 704 | 0.7+ | 0.8+ | 2006 11 27 | 621 | 0.7+ | 0.1− |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.2+ | 1.0+ | 2006 11 27 | 621 | 0.4+ | 0.0 |
| 2001 12 18 | 704 | 0.1+ | 0.3− | 2006 10 03 | 704 | 0.8+ | 0.5+ | 2006 11 28 | 621 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.3+ | 2006 11 29 | 704 | 0.5− | 0.2− |
| 2001 12 18 | 291 | 0.1− | 0.7− | 2006 10 16 | 703 | (1.5+ | 0.8−) | 2006 11 29 | 704 | 0.1− | 2.3+ |
| 2001 12 18 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.3− | 1.5+ |
| 2001 12 18 | 704 | 0.7+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 1.1+ |
| 2001 12 18 | 291 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.0 | 0.9+ |
| 2001 12 18 | 291 | 0.3− | 0.6− | 2006 10 17 | G96 | 0.6+ | 0.1− | | | | |

**(140819)∗ 2001 UR$_{162}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.74402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20330948 | $\omega$ | 2.71210 | | −0.70924634 | +0.70257082 | |
| $a$ | 2.8643821 | $\Omega$ | 222.12393 | | −0.64840546 | −0.68242320 | |
| $e$ | 0.0122108 | $i$ | 4.96059 | | −0.27665861 | −0.20172464 | |
| $P$ | 4.85 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.6+ | 0.3+ | 2001 11 20 | 704 | 0.9+ | 0.7+ | 2005 08 26 | 599 | 0.0 | 0.5+ |
| 1996 10 07 | 691 | 0.0 | 0.0 | 2001 11 21 | 704 | 0.3− | 0.2− | 2005 08 26 | 599 | 0.4+ | 0.6+ |
| 1996 10 07 | 691 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.4− | 1.1+ | 2005 08 26 | 599 | 1.2− | 1.0− |
| 1996 10 18 | 691 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.1− | 0.5+ | 2005 11 01 | G96 | 0.6− | 0.5− |
| 1996 10 18 | 691 | 0.1− | 0.4− | 2001 11 21 | 704 | 0.2− | 0.8+ | 2005 11 01 | G96 | 0.1− | 0.1− |
| 1996 10 18 | 691 | 0.5− | 0.4− | 2001 11 21 | 704 | (1.8− | 1.2+) | 2005 11 01 | G96 | 0.3− | 0.6− |
| 1999 05 17 | 691 | 0.1− | 0.3+ | 2001 12 17 | 704 | 0.1+ | 0.6+ | 2005 11 01 | G96 | 0.2+ | 0.7− |
| 1999 05 17 | 691 | 0.1+ | 0.3− | 2001 12 17 | 704 | 1.4+ | 0.3− | 2006 09 28 | G96 | 0.5+ | 0.2− |
| 1999 05 17 | 691 | 0.1− | 0.5+ | 2001 12 17 | 704 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2001 10 21 | 291 | 0.6− | 0.6+ | 2001 12 17 | 704 | 0.4− | 0.8− | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2001 10 21 | 291 | 0.2+ | 0.5+ | 2004 05 15 | 704 | 0.8+ | 0.5− | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2001 10 21 | 291 | 0.3− | 0.5− | 2004 05 15 | 704 | 0.4− | 1.1+ | 2006 10 20 | 695 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 1.0− | 1.2+ | 2004 05 15 | 704 | 0.6+ | 1.1+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | (0.8− | 1.8+) | 2004 05 15 | 704 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.8+ | 1.0+ | 2005 08 24 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2001 10 24 | 704 | 0.3− | 0.7+ | 2005 08 24 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.4− | 0.2− | 2005 08 24 | 644 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 1.0+ | 0.8+ | 2005 08 25 | 599 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2001 11 20 | 704 | 0.2+ | 1.0− | 2005 08 25 | 599 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 1.2+ | 2005 08 25 | 599 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 11 20 | 704 | (0.8+ | 1.6+) | 2005 08 25 | 599 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.4− |

**(140820)∗ 2001 UO$_{163}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.43290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17510830 | $\omega$ | 60.67098 | | +0.35685409 | +0.86349335 | |
| $a$ | 3.1642070 | $\Omega$ | 234.68887 | | −0.93410604 | +0.33394570 | |
| $e$ | 0.2503710 | $i$ | 25.89825 | | +0.01005261 | +0.37796761 | |
| $P$ | 5.63 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.1− | 0.0 | 2001 12 17 | 704 | 0.2− | 0.4+ | 2005 06 10 | 691 | 0.1+ | 0.5+ |
| 2000 09 30 | 704 | 0.0 | 0.4+ | 2005 03 15 | E12 | 0.5+ | 0.0 | 2005 06 16 | 691 | 0.5+ | 0.3+ |
| 2000 09 30 | 704 | 0.5− | 0.2+ | 2005 03 15 | E12 | 0.4− | 0.0 | 2005 06 16 | 691 | 0.4+ | 0.4+ |
| 2000 09 30 | 704 | 0.1+ | 0.0 | 2005 03 15 | E12 | 0.9− | 1.2+ | 2005 06 16 | 691 | 0.5+ | 0.3+ |
| 2000 09 30 | 704 | (2.7+ | 0.4+) | 2005 03 15 | E12 | 0.4+ | 0.3+ | 2005 06 23 | 644 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.3+ | 2005 04 11 | E12 | 0.4− | 0.4+ | 2005 06 23 | 644 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 0.6+ | 2005 04 11 | E12 | 0.0 | 0.6+ | 2005 06 23 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2005 04 11 | E12 | 0.3− | 0.1+ | 2005 07 30 | E12 | 0.3− | 0.4+ |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2005 04 11 | E12 | 0.1− | 0.2+ | 2005 07 30 | E12 | 0.6+ | 0.1− |
| 2001 10 24 | 704 | 0.6+ | 0.2+ | 2005 04 30 | E12 | (2.2− | 2.0+) | 2005 07 30 | E12 | 0.0 | 0.8− |
| 2001 10 24 | 704 | 0.4+ | 0.6+ | 2005 04 30 | E12 | 0.9− | 0.9− | 2005 07 30 | E12 | 0.7− | 0.3− |
| 2001 10 24 | 704 | 0.6+ | 0.4+ | 2005 04 30 | E12 | 0.2− | 0.1+ | 2006 08 13 | 644 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.8+ | 0.8+ | 2005 04 30 | E12 | 0.9− | 0.4+ | 2006 08 13 | 644 | 0.0 | 0.2+ |
| 2001 11 09 | 704 | 0.8+ | 1.4+ | 2005 05 04 | 704 | 0.3− | 0.5− | 2006 08 13 | 644 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 0.3− | 2005 05 04 | 704 | 1.4− | 0.2− | 2006 09 19 | 703 | 1.4+ | 0.6+ |
| 2001 11 09 | 704 | 1.0+ | 0.2+ | 2005 05 04 | 704 | 0.6− | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.6+ |
| 2001 11 09 | 704 | 0.4− | 0.4− | 2005 05 04 | 704 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.1− |
| 2001 11 09 | 704 | 0.4+ | 0.3− | 2005 05 08 | E12 | 0.2− | 0.1+ | 2006 09 24 | 699 | 0.2− | 0.2− |
| 2001 11 14 | 691 | 0.4+ | 0.0 | 2005 05 08 | E12 | 0.1− | 0.3+ | 2006 09 24 | 699 | 0.1+ | 0.3− |
| 2001 11 14 | 691 | 0.3+ | 0.1+ | 2005 05 08 | E12 | 0.0 | 0.3+ | 2006 09 24 | 699 | 0.7+ | 0.4+ |
| 2001 11 14 | 691 | 0.3+ | 0.1+ | 2005 05 08 | E12 | 0.1+ | 0.6+ | 2006 09 24 | 699 | 0.5− | 0.0 |
| 2001 11 19 | 699 | 0.0 | 0.3− | 2005 05 09 | 704 | 0.7− | 0.2− | 2006 09 25 | 703 | 0.3− | 0.8− |
| 2001 11 19 | 699 | 0.3+ | 0.7− | 2005 05 09 | 704 | 0.6− | 0.4− | 2006 09 25 | 703 | 0.3+ | 0.4− |
| 2001 11 19 | 699 | 0.9+ | 0.5+ | 2005 05 09 | 704 | 0.3+ | 0.6− | 2006 09 25 | 703 | 0.2+ | 0.3− |
| 2001 11 19 | 699 | 0.1− | 0.5+ | 2005 05 09 | 704 | 0.9− | 1.0− | 2006 09 25 | 703 | 0.0 | 0.6− |
| 2001 11 20 | 704 | 0.1+ | 0.7+ | 2005 05 09 | 704 | 0.3− | 0.7− | 2006 10 02 | 704 | 0.4− | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.8+ | 2005 05 18 | E12 | 0.3− | 0.3+ | 2006 10 02 | 704 | 0.7− | 1.1− |
| 2001 11 20 | 704 | 0.4− | 1.1+ | 2005 05 18 | E12 | 0.4− | 0.4+ | 2006 10 02 | 704 | (1.9+ | 0.3+) |
| 2001 11 20 | 704 | 0.0 | 0.8+ | 2005 05 18 | E12 | 0.4− | 0.4+ | 2006 10 02 | 704 | 0.9− | 0.3− |
| 2001 11 20 | 704 | 0.5+ | 0.6+ | 2005 05 30 | 699 | 0.7+ | 0.5+ | 2006 10 02 | 704 | 0.7+ | 0.3− |
| 2001 11 21 | 704 | 0.9+ | 1.5+ | 2005 05 30 | 699 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | (0.2+ | 2.2+) | 2005 05 30 | 699 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | (0.2− | 2.3+) | 2005 05 30 | 699 | 0.2− | 0.8+ | 2006 10 02 | 703 | 0.4− | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.0 | 2005 06 04 | 704 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 0.1+ | 1.0+ | 2005 06 04 | 703 | 0.9− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.4− |
| 2001 12 11 | 704 | 0.6− | 1.1+ | 2005 06 04 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.9− | 0.7+ | 2005 06 04 | 703 | 0.5− | 0.4+ | 2006 10 19 | 703 | 0.5+ | 0.0 |
| 2001 12 14 | 704 | 1.1− | 0.2+ | 2005 06 04 | 703 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.1− |
| 2001 12 14 | 704 | 1.2− | 1.0+ | 2005 06 04 | 704 | 1.0+ | 0.3− | 2006 10 20 | 704 | 0.2− | 0.5+ |
| 2001 12 14 | 704 | 1.1− | 0.7+ | 2005 06 04 | 703 | 1.1− | 0.6+ | 2006 10 20 | 704 | 0.0 | 1.0+ |
| 2001 12 14 | 704 | 1.2− | 0.7+ | 2005 06 04 | 704 | 0.3+ | 0.0 | 2006 10 20 | 704 | 0.1− | 0.9+ |
| 2001 12 17 | 704 | 0.5− | 1.3− | 2005 06 04 | 704 | 1.2+ | 0.1− | 2006 10 20 | 704 | 0.0 | 0.9+ |
| 2001 12 17 | 704 | 0.0 | 0.3+ | 2005 06 10 | 691 | 0.1− | 0.3+ | 2006 10 20 | 704 | 1.0− | 0.4+ |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2005 06 10 | 691 | 0.1+ | 0.5+ | | | | |

**(140821)∗ 2001 UA$_{164}$ = 1999 JW$_{137}$**

Discovered 2001 Oct. 18 by NEAT at Palomar.

Id. A. Doppler (*MPO* 27281)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.34688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17849131 | $\omega$ | 111.22238 | | −0.98800887 | +0.02644271 | |
| $a$ | 3.1240981 | $\Omega$ | 70.54912 | | −0.09191179 | −0.89236591 | |
| $e$ | 0.0557566 | $i$ | 9.28370 | | +0.12405922 | −0.45053731 | |
| $P$ | 5.52 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 699 | 0.8+ | 0.9+ | 2001 10 19 | 699 | 0.1+ | 1.1+ | 2004 03 25 | 704 | 0.9− | 0.5− | |
| 1999 05 12 | 699 | 0.5+ | 0.5+ | 2001 10 19 | 699 | 0.4− | 0.8+ | 2004 03 26 | 703 | 0.9+ | 1.1+ | |
| 1999 05 12 | 699 | 0.3+ | 0.3+ | 2001 10 19 | 699 | 0.0 | 0.7+ | 2004 03 26 | 703 | 0.9+ | 1.1+ | |
| 1999 05 13 | 704 | (2.2− | 1.2+) | 2001 10 19 | 699 | 0.2+ | 1.0+ | 2004 03 26 | 703 | 0.3+ | 0.2+ | |
| 1999 05 13 | 704 | 0.2+ | 0.7+ | 2001 10 24 | 644 | 0.4− | 0.6+ | 2004 03 26 | 703 | 1.5+ | 0.5+ | |
| 1999 05 13 | 704 | 0.1− | 0.3+ | 2001 10 24 | 644 | 0.3− | 0.4+ | 2004 04 09 | 644 | 0.0 | 0.5+ | |
| 1999 05 13 | 704 | (6.0− | 1.5+) | 2001 10 24 | 644 | 0.1− | 0.7+ | 2004 04 09 | 644 | 0.0 | 0.6+ | |
| 1999 05 14 | 703 | 1.4+ | 0.2+ | 2004 02 17 | 704 | 0.8+ | 0.3+ | 2004 04 09 | 644 | 0.1− | 0.4+ | |
| 1999 05 14 | 703 | 1.3− | 0.6+ | 2004 02 17 | 704 | 0.3− | 0.5+ | 2004 04 13 | 703 | 0.3+ | 0.9+ | |
| 1999 05 14 | 703 | 0.1− | 1.3+ | 2004 02 17 | 704 | 1.1+ | 1.4+ | 2004 04 13 | 703 | 0.9+ | 0.2− | |
| 1999 05 14 | 703 | 0.4− | 0.9+ | 2004 02 17 | 704 | 0.1+ | 0.4+ | 2004 04 13 | 703 | 0.5+ | 0.6+ | |
| 1999 06 07 | 703 | 0.4− | 1.0+ | 2004 02 17 | 704 | 0.5+ | 0.3+ | 2004 04 13 | 703 | 0.8+ | 0.1+ | |
| 1999 06 07 | 703 | 1.6+ | 0.2− | 2004 03 15 | 704 | 1.1− | 0.4+ | 2005 06 01 | 809 | 0.1+ | 0.3+ | |
| 1999 06 07 | 703 | 0.9− | 0.4− | 2004 03 15 | 704 | 0.0 | 0.9+ | 2005 06 01 | 809 | 0.8− | 0.2+ | |
| 1999 06 07 | 703 | 0.5+ | 1.3− | 2004 03 15 | 704 | 0.6+ | 0.9+ | 2006 08 16 | 644 | 0.4− | 0.1+ | |
| 2001 09 18 | 645 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.7+ | 1.5+ | 2006 08 16 | 644 | 0.3− | 0.1+ | |
| 2001 09 18 | 645 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.4+ | 1.5+ | 2006 08 16 | 644 | 0.3+ | 0.6+ | |
| 2001 09 25 | 704 | 1.4− | 1.2+ | 2004 03 23 | 704 | (2.6− | 2.0−) | 2006 09 26 | 703 | 0.6− | 0.8+ | |
| 2001 09 25 | 704 | 0.1− | 1.4+ | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 703 | 0.9− | 0.5+ | |
| 2001 09 25 | 704 | 0.4− | 1.6+ | 2004 03 23 | 704 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.7+ | 0.0 | |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.4+ | |
| 2001 10 18 | 644 | 0.6− | 0.2+ | 2004 03 25 | 704 | 1.1− | 1.2− | | | | | |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2004 03 25 | 704 | 1.0− | 0.4− | | | | | |

**(140822)∗ 2001 UO$_{164}$**

Discovered 2001 Oct. 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.19412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19876305 | $\omega$ | 146.84681 | | +0.87005841 | +0.49282170 | |
| $a$ | 2.9078965 | $\Omega$ | 183.68110 | | −0.48164431 | +0.84505526 | |
| $e$ | 0.1152500 | $i$ | 10.03418 | | −0.10496253 | +0.20738461 | |
| $P$ | 4.96 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.1− | 0.3+ | 2001 12 07 | 704 | 0.2− | 0.2+ | 2004 04 19 | 704 | 0.2+ | 1.2+ | |
| 2001 08 27 | 644 | 0.2− | 0.3+ | 2001 12 07 | 704 | 0.2+ | 1.0− | 2004 04 19 | 704 | 0.6+ | 0.7+ | |
| 2001 08 27 | 644 | 0.4+ | 0.1+ | 2001 12 07 | 704 | 0.4+ | 0.0 | 2004 04 19 | 704 | 0.4− | 1.2+ | |
| 2001 09 17 | 699 | (1.5− | 1.7+) | 2002 11 13 | 645 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.9− | 0.1+ | |
| 2001 09 17 | 699 | 0.5− | 1.2+ | 2002 11 13 | 645 | 0.0 | 0.0 | 2004 04 19 | 704 | (1.1+ | 1.6+) | |
| 2001 09 17 | 699 | (0.2− | 1.7+) | 2003 01 28 | 645 | 0.0 | 0.1− | 2006 09 30 | 699 | (1.7+ | 0.4+) | |
| 2001 09 17 | 699 | 0.3− | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.1− | 2006 09 30 | 699 | (1.0− | 1.7−) | |
| 2001 10 17 | 704 | 0.5− | 0.1+ | 2003 02 04 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 699 | 0.3+ | 0.7− | |
| 2001 10 17 | 704 | 0.4+ | 0.1+ | 2003 02 04 | 644 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.7+ | 0.3+ | |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2003 02 04 | 644 | 0.2+ | 0.6+ | 2006 09 30 | 699 | 0.1+ | 0.7+ | |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.4− | 0.8+ | |
| 2001 10 17 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.6+ | |
| 2001 10 19 | 644 | 0.4− | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 1.4+ | |
| 2001 10 19 | 644 | 0.7− | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 11 01 | 703 | 0.6− | 0.1− | |
| 2001 10 19 | 644 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.3− | 0.2− | 2006 11 01 | 703 | 0.8+ | 0.0 | |
| 2001 10 24 | 644 | 0.0 | 0.8+ | 2004 03 20 | 699 | 0.3+ | 0.3+ | 2006 11 01 | 703 | 0.7+ | 0.4+ | |
| 2001 10 24 | 644 | 0.3+ | 1.3+ | 2004 03 20 | 699 | 0.2− | 0.5+ | 2006 11 01 | 703 | 0.2+ | 0.6− | |
| 2001 10 24 | 644 | 0.4+ | 1.1+ | 2004 03 20 | 699 | 0.4+ | 0.9+ | 2006 11 08 | 644 | 0.5+ | 0.2+ | |
| 2001 11 18 | 704 | 0.2+ | 0.5+ | 2004 03 20 | 699 | 0.9− | 0.9+ | 2006 11 08 | 644 | 0.3+ | 0.1+ | |
| 2001 11 18 | 704 | 0.1− | 0.8+ | 2004 03 23 | 704 | 0.6+ | 0.3− | 2006 11 08 | 644 | 0.4+ | 0.1+ | |
| 2001 11 18 | 704 | 1.0+ | 0.6+ | 2004 03 23 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.9− | 0.7− | |
| 2001 11 18 | 704 | 0.4− | 0.4+ | 2004 03 23 | 704 | 1.0+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 1.0− | |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2004 03 23 | 704 | 1.0+ | 0.8+ | 2006 11 11 | 703 | 0.9− | 0.5− | |
| 2001 11 18 | 608 | 0.0 | 0.2+ | 2004 04 11 | 644 | 0.5+ | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.0 | |
| 2001 11 18 | 608 | 0.5− | 0.1− | 2004 04 11 | 644 | 0.0 | 0.8+ | | | | | |
| 2001 11 18 | 608 | 0.3− | 0.1+ | 2004 04 11 | 644 | 0.1+ | 0.7+ | | | | | |

**(140823)∗ 2001 UT$_{165}$ = 2004 DM$_{42}$**

Discovered 2001 Oct. 23 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61179)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.88282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18545497 | $\omega$ | 78.14241 | | −0.63829603 | +0.76502845 | |
| $a$ | 3.0453957 | $\Omega$ | 151.62557 | | −0.75758299 | −0.60458555 | |
| $e$ | 0.0378767 | $i$ | 10.36422 | | −0.13655110 | −0.22182828 | |
| $P$ | 5.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 16 | 703 | 1.1− | 0.7+ | 2004 02 25 | 704 | (0.6+ | 1.8+) | 2006 08 28 | 699 | 0.6+ | 1.0+ | |
| 1999 04 16 | 703 | 0.0 | 0.5+ | 2004 02 26 | 683 | 0.1− | 1.4− | 2006 09 18 | 703 | (0.2− | 1.6−) | |
| 1999 04 16 | 703 | 0.2− | 1.2+ | 2004 02 26 | 683 | 0.6− | 1.0+ | 2006 09 18 | 703 | (2.7+ | 0.6−) | |
| 1999 04 16 | 703 | (2.4− | 0.1−) | 2004 02 26 | 683 | 0.8− | 0.2− | 2006 09 18 | 703 | 1.2+ | 0.7− | |
| 2000 08 01 | 704 | 0.2− | 0.2− | 2004 03 12 | 644 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.4− | |
| 2000 08 01 | 704 | 0.2+ | 0.1+ | 2004 03 12 | 644 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.3+ | |
| 2000 08 01 | 704 | 0.4+ | 0.3+ | 2004 03 12 | 644 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.3+ | |
| 2000 08 01 | 704 | 0.0 | 0.5+ | 2004 03 15 | 704 | 1.2+ | 0.6− | 2006 09 18 | 699 | 1.3+ | 1.2+ | |
| 2001 10 10 | 644 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.2+ | |
| 2001 10 10 | 644 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.2+ | |
| 2001 10 10 | 644 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | |
| 2001 10 14 | 699 | 0.0 | 0.3− | 2004 03 15 | 704 | 1.0− | 0.9+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | |
| 2001 10 14 | 699 | 1.0− | 0.5− | 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 09 22 | 704 | 0.8+ | 1.3− | |
| 2001 10 14 | 699 | 1.1+ | 0.6+ | 2004 03 20 | 704 | 0.2− | 1.1+ | 2006 09 22 | 704 | 0.3− | 0.6+ | |
| 2001 10 14 | 699 | (2.2+ | 0.7+) | 2004 03 20 | 704 | (0.1− | 1.8+) | 2006 09 22 | 704 | 0.2− | 1.1+ | |
| 2001 10 23 | 644 | 0.0 | 1.4+ | 2004 03 20 | 704 | (0.2− | 1.6+) | 2006 09 26 | 704 | 0.6− | 0.7+ | |
| 2001 10 23 | 644 | 0.1+ | 1.3+ | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.6− | 0.2+ | |
| 2001 10 23 | 644 | 0.1− | 1.4+ | 2004 03 28 | 703 | 0.8+ | 0.4+ | 2006 09 26 | 704 | 1.0− | 0.5+ | |
| 2001 10 24 | 644 | (2.1− | 1.5+) | 2004 03 28 | 703 | 0.9+ | 0.1+ | 2006 09 26 | 704 | 0.8− | 1.1+ | |
| 2001 10 24 | 644 | (1.9− | 2.1+) | 2004 03 28 | 703 | 0.0 | 0.6− | 2006 09 30 | 703 | 0.1− | 0.5+ | |
| 2001 10 24 | 644 | (2.1− | 2.2+) | 2004 03 28 | 703 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.4+ | |
| 2002 01 08 | 645 | 0.0 | 0.0 | 2004 04 23 | 704 | (0.5+ | 1.8+) | 2006 09 30 | 703 | 0.2+ | 0.6+ | |
| 2002 01 08 | 645 | 0.2+ | 0.1− | 2004 04 23 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.4+ | |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2004 04 23 | 704 | 0.7+ | 1.5+ | 2006 10 16 | 703 | 0.5+ | 0.3+ | |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2004 04 23 | 704 | (0.4+ | 2.8+) | 2006 10 16 | 703 | 0.3− | 0.3+ | |
| 2003 01 01 | 704 | 0.3+ | 0.3+ | 2004 04 23 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.7− | 1.1− | |
| 2003 01 01 | 704 | 0.6− | 0.2− | 2004 04 25 | 699 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.6+ | 1.1− | |
| 2003 01 01 | 704 | 0.2− | 0.9+ | 2004 04 25 | 699 | 0.2+ | 0.6+ | 2006 10 16 | 703 | (0.4− | 1.6−) | |
| 2003 01 01 | 704 | 0.5− | 0.8+ | 2004 04 25 | 699 | 0.6− | 0.3+ | 2006 10 16 | 703 | 1.1+ | 0.8− | |
| 2004 02 19 | 704 | 1.0+ | 1.1+ | 2004 04 25 | 699 | 0.4− | 0.9+ | 2006 10 16 | 703 | 1.1− | 0.7+ | |
| 2004 02 19 | 704 | 1.0+ | 1.4+ | 2006 08 18 | 691 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.9+ | 0.8+ | |
| 2004 02 19 | 704 | (1.5+ | 1.2+) | 2006 08 18 | 691 | 0.7− | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.2+ | |
| 2004 02 25 | 704 | 1.0+ | 1.5+ | 2006 08 18 | 691 | 0.6− | 0.6+ | 2006 10 23 | 644 | 0.3+ | 0.2+ | |
| 2004 02 25 | 704 | (0.5+ | 1.8+) | 2006 08 28 | 699 | 0.5− | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.6+ | |
| 2004 02 25 | 704 | (0.2+ | 1.8+) | 2006 08 28 | 699 | 0.1+ | 0.0 | | | | | |
| 2004 02 25 | 704 | (0.3− | 1.7+) | 2006 08 28 | 699 | (0.5+ | 2.0+) | | | | | |

**(140824)∗ 2001 UC$_{167}$ = 1998 DZ$_{16}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 22997)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.40605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18607572 | $\omega$ | 106.64548 | | +0.70055974 | −0.69559535 | |
| $a$ | 3.0386189 | $\Omega$ | 297.76020 | | +0.56671942 | +0.67795745 | |
| $e$ | 0.0544803 | $i$ | 10.36814 | | +0.43364174 | +0.23774105 | |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 22 | 691 | 0.0 | 0.1+ | 2001 10 25 | 704 | 0.7− | 0.6− | 2006 08 27 | 699 | 0.8− | 0.1− | |
| 1998 02 22 | 691 | 0.2+ | 0.5− | 2001 10 25 | 704 | 0.6− | 0.9+ | 2006 09 14 | 703 | 0.3− | 0.2− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 691 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.9− | 0.3+ |
| 1998 02 28 | 691 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.9− | 2006 09 14 | 703 | 1.2− | 0.4− |
| 1998 02 28 | 691 | 0.3− | 0.4+ | 2002 12 11 | 704 | 0.5+ | 1.2− | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 2001 08 26 | 699 | 0.1− | 0.3− | 2002 12 31 | 704 | 0.6+ | 0.1+ | 2006 09 22 | 703 | 0.2− | 0.1− |
| 2001 08 26 | 699 | 0.2+ | 0.7+ | 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 703 | 0.2− | 0.3+ |
| 2001 08 26 | 699 | 0.2+ | 0.4+ | 2002 12 31 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 703 | 0.5− | 1.3+ |
| 2001 08 26 | 699 | (0.5+ | 2.3+) | 2002 12 31 | 704 | 0.2+ | 1.0+ | 2006 09 22 | 703 | 0.4− | 1.4− |
| 2001 09 29 | 644 | 0.5+ | 0.2+ | 2003 01 08 | 704 | 0.5− | 0.7+ | 2006 09 29 | 699 | 0.1− | 1.2+ |
| 2001 09 29 | 644 | 0.7+ | 0.1− | 2003 01 08 | 704 | 0.1+ | 0.6+ | 2006 09 29 | 699 | 0.7+ | 0.2+ |
| 2001 09 29 | 644 | 0.4+ | 0.2+ | 2003 01 08 | 704 | 0.3− | 0.3+ | 2006 09 29 | 699 | (1.5+ | 0.0 ) |
| 2001 10 18 | 704 | 1.0+ | 0.5− | 2003 01 09 | 704 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.5− | 0.8+ |
| 2001 10 18 | 704 | 0.5+ | 0.4− | 2003 01 09 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.3− |
| 2001 10 18 | 704 | 0.6+ | 0.3− | 2003 01 09 | 704 | 0.1− | 0.9+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2001 10 20 | 699 | 0.9− | 0.4− | 2003 02 02 | 587 | 0.4+ | 0.5− | 2006 10 20 | 691 | 0.3+ | 0.2− |
| 2001 10 20 | 699 | 0.7− | 0.4+ | 2003 02 02 | 587 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.7− |
| 2001 10 20 | 699 | 0.4− | 1.1− | 2006 08 27 | 699 | 0.9+ | 1.0+ | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2001 10 20 | 699 | 0.4+ | 1.2− | 2006 08 27 | 699 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2001 10 25 | 704 | (1.7− | 0.1+) | 2006 08 27 | 699 | 0.4+ | 1.1+ | | | | |

**(140825)∗ 2001 UZ$_{167}$**

Discovered 2001 Oct. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.32106 | | (2000.0) | | | |
| $n$ | 0.19259905 | $\omega$ | 81.16173 | | +0.97352847 | −0.13107137 |
| $a$ | 2.9696137 | $\Omega$ | 286.20612 | | +0.03615494 | +0.89723372 |
| $e$ | 0.1771866 | $i$ | 11.24464 | | +0.22568815 | +0.42165383 |
| $P$ | 5.12 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.7+ | 0.5+ | 2001 12 09 | 704 | 0.3+ | 0.5+ | 2004 04 14 | 701 | 0.5− | 0.8+ |
| 2000 07 07 | 704 | 0.6− | 0.5− | 2001 12 09 | 704 | 0.5+ | 0.8+ | 2004 04 14 | 926 | 0.1− | 0.3+ |
| 2000 07 07 | 704 | 0.0 | 0.0 | 2001 12 09 | 704 | 0.8+ | 0.9+ | 2004 04 14 | 701 | 1.2+ | 1.3− |
| 2000 07 07 | 704 | 1.4− | 1.0− | 2001 12 14 | 704 | 0.1+ | 0.0 | 2004 04 14 | 926 | 0.0 | 0.4+ |
| 2000 07 07 | 704 | 0.5+ | 0.6− | 2001 12 14 | 704 | 0.6+ | 0.2+ | 2006 10 23 | 703 | (2.1+ | 0.2−) |
| 2000 08 01 | 704 | 0.4− | 0.8+ | 2001 12 14 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 703 | 0.1+ | 0.2+ |
| 2000 08 01 | 704 | 0.5+ | 0.7+ | 2001 12 14 | 704 | 0.2− | 0.7− | 2006 10 23 | 703 | 0.7+ | 0.3− |
| 2000 08 01 | 704 | 0.3+ | 0.8+ | 2001 12 14 | 704 | 0.2+ | 0.2− | 2006 10 29 | 703 | 0.6+ | 0.9+ |
| 2000 08 01 | 704 | 0.2− | 0.5+ | 2001 12 22 | 704 | 0.4+ | 0.1− | 2006 10 29 | 703 | 0.2+ | 0.8+ |
| 2000 08 01 | 704 | 0.4+ | 0.4+ | 2001 12 22 | 704 | 0.9+ | 0.1− | 2006 10 29 | 703 | 0.8− | 0.4− |
| 2001 10 19 | 704 | 0.1− | 0.3+ | 2001 12 22 | 704 | 0.6+ | 0.3+ | 2006 10 29 | 703 | 0.1+ | 0.4− |
| 2001 10 19 | 704 | 0.1− | 0.1+ | 2001 12 22 | 704 | 0.7+ | 0.0 | 2006 11 15 | 703 | 1.0− | 0.6+ |
| 2001 10 19 | 704 | 0.7− | 0.3+ | 2001 12 22 | 704 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.7+ | 0.2− |
| 2001 10 19 | 704 | 0.7− | 0.6+ | 2002 01 08 | 704 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.9+ | 0.6+ |
| 2001 10 25 | 704 | 0.1+ | 0.6+ | 2002 01 08 | 704 | 0.6− | 1.2− | 2006 11 15 | 704 | 0.1− | 0.4+ |
| 2001 10 25 | 704 | 0.4+ | 0.1+ | 2002 01 08 | 704 | 1.0− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 2001 10 25 | 704 | 0.1− | 0.4− | 2002 01 08 | 704 | 0.0 | 0.9− | 2006 11 15 | 704 | 0.1− | 0.6+ |
| 2001 10 25 | 704 | 0.0 | 0.5+ | 2002 01 08 | 704 | 0.3+ | 0.3− | 2006 11 15 | 704 | 0.8− | 0.3+ |
| 2001 11 11 | 704 | 0.5− | 0.2+ | 2004 04 13 | 644 | 0.4+ | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 2001 11 11 | 704 | 0.8− | 0.1+ | 2004 04 13 | 644 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.2− |
| 2001 11 11 | 704 | 0.8− | 0.1+ | 2004 04 13 | 644 | 0.0 | 0.5+ | 2006 11 21 | 703 | 0.7− | 0.6− |
| 2001 11 11 | 704 | 0.7− | 0.5+ | 2004 04 14 | 448 | 0.7− | 1.0+ | 2006 11 21 | 703 | 0.1+ | 0.5− |
| 2001 11 11 | 704 | 0.9− | 0.8+ | 2004 04 14 | 448 | 0.4+ | 1.1+ | 2006 11 21 | 703 | 0.4− | 0.8− |
| 2001 12 09 | 704 | 0.1+ | 0.0 | 2004 04 14 | 701 | (2.5+ | 0.0 ) | 2006 11 21 | 703 | 0.1− | 1.0− |
| 2001 12 09 | 704 | 0.1+ | 0.2+ | 2004 04 14 | 448 | 0.9+ | 1.0+ | | | | |

**(140826)∗ 2001 UX$_{168}$**

Discovered 2001 Oct. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.95266 | | (2000.0) | | | |
| $n$ | 0.17724445 | $\omega$ | 126.13228 | | +0.11117440 | −0.98092789 |
| $a$ | 3.1387324 | $\Omega$ | 316.61044 | | +0.82086284 | +0.18107414 |
| $e$ | 0.2163563 | $i$ | 13.42044 | | +0.56020037 | −0.07065858 |
| $P$ | 5.56 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.2+ | 0.1− | 2001 12 09 | 704 | 0.0 | 0.6+ | 2006 09 22 | 151 | 0.2− | 0.3− |
| 2000 08 31 | 704 | 0.9− | 1.9+ | 2001 12 09 | 704 | 0.1+ | 0.6+ | 2006 09 22 | 151 | 0.1− | 0.2− |
| 2000 08 31 | 704 | 0.6− | 0.1+ | 2001 12 22 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2000 08 31 | 704 | 1.1+ | 1.2+ | 2001 12 22 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.4+ | 1.0− |
| 2000 09 23 | 704 | 0.9− | 0.4+ | 2001 12 22 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.2+ | 0.1− |
| 2000 09 23 | 704 | 0.7− | 0.2+ | 2001 12 22 | 704 | 0.6+ | 0.5+ | 2006 09 28 | 703 | 0.1− | 0.6− |
| 2000 09 23 | 704 | 1.1− | 0.3+ | 2001 12 22 | 704 | 1.0+ | 0.5− | 2006 10 19 | 703 | 0.6− | 0.3− |
| 2001 09 28 | 704 | 0.2+ | 0.5+ | 2002 01 07 | 704 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.8+ | 0.1+ |
| 2001 09 28 | 704 | 0.4+ | 0.3+ | 2002 01 07 | 704 | 0.8− | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 2001 09 28 | 704 | 0.4− | 0.6− | 2002 01 07 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.0 |
| 2001 09 28 | 704 | 0.6+ | 0.3+ | 2002 01 07 | 704 | (1.6− | 0.2+) | 2006 10 21 | 704 | 0.6+ | 0.1− |
| 2001 09 28 | 704 | 0.2− | 0.7+ | 2002 01 07 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 704 | 0.3+ | 0.2− |
| 2001 10 19 | 704 | 1.4+ | 0.4− | 2002 01 18 | 704 | 0.5− | 0.1− | 2006 10 21 | 704 | 1.0+ | 0.5− |
| 2001 10 19 | 704 | 1.2+ | 0.5− | 2002 01 18 | 704 | 0.4− | 0.9− | 2006 10 21 | 704 | 0.3+ | 0.1− |
| 2001 10 19 | 704 | 0.7− | 0.6+ | 2002 01 18 | 704 | 0.3− | 0.3+ | 2006 10 21 | 704 | 0.2+ | 0.4+ |
| 2001 10 19 | 704 | 0.1+ | 0.6+ | 2002 01 21 | 704 | 0.9− | 0.7− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 10 25 | 704 | 0.6− | 0.4+ | 2002 01 21 | 704 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2001 10 25 | 704 | 0.2− | 0.5− | 2002 01 21 | 704 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2001 10 25 | 704 | 0.0 | 0.4− | 2003 03 23 | 644 | 0.4+ | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2001 10 25 | 704 | 0.1+ | 0.1− | 2003 03 23 | 644 | 0.1+ | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2001 11 19 | 644 | 0.7− | 0.1+ | 2003 03 23 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 11 19 | 644 | 0.1− | 0.2− | 2003 04 11 | 699 | 0.8− | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.7+ |
| 2001 11 19 | 644 | 0.3+ | 0.3+ | 2003 04 11 | 699 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.2+ | 1.2+ |
| 2001 12 09 | 704 | 0.5+ | 0.6+ | 2003 04 11 | 699 | 0.8+ | 1.1− | 2006 10 27 | 703 | 0.0 | 0.6− |
| 2001 12 09 | 704 | 0.5+ | 0.4+ | 2003 04 11 | 699 | (1.3+ | 1.9+) | 2006 10 27 | 703 | 0.3− | 0.5− |
| 2001 12 09 | 704 | 0.2+ | 0.6+ | 2006 09 22 | 151 | 0.1− | 0.5− | | | | |

**(140827)∗ 2001 UZ$_{169}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.93778 | | (2000.0) | | | |
| $n$ | 0.17678469 | $\omega$ | 282.91241 | | +0.54087412 | +0.83911667 |
| $a$ | 3.1441719 | $\Omega$ | 20.15529 | | −0.69197206 | +0.48297494 |
| $e$ | 0.0746186 | $i$ | 9.65331 | | −0.47815253 | +0.25023674 |
| $P$ | 5.58 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 18 | 809 | 0.3− | 0.1+ | 2001 10 21 | 704 | 0.2− | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.0 |
| 1993 03 23 | 809 | 0.3+ | 0.1+ | 2001 10 25 | 704 | 0.1+ | 0.6+ | 2004 03 26 | 691 | 0.2+ | 0.4+ |
| 2001 09 20 | 704 | 0.8− | 0.9+ | 2001 10 25 | 704 | 0.2+ | 0.5+ | 2004 03 26 | 691 | 0.2+ | 0.5+ |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2001 10 25 | 704 | 0.2− | 1.5+ | 2004 03 26 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2001 11 19 | 704 | 1.1+ | 0.1− | 2006 08 30 | 699 | 0.7− | 1.3+ |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2001 11 19 | 704 | 1.0+ | 1.0− | 2006 08 30 | 699 | 0.2+ | 0.6+ |
| 2001 09 20 | 704 | 0.0 | 0.9+ | 2001 11 19 | 704 | 0.6+ | 0.0 | 2006 08 30 | 699 | 0.6− | 0.2+ |
| 2001 10 11 | 644 | 0.2+ | 0.9− | 2004 03 15 | 703 | 0.1− | 0.9+ | 2006 08 30 | 699 | 1.2− | 1.3+ |
| 2001 10 11 | 644 | 0.5+ | 1.2− | 2004 03 15 | 703 | 0.7+ | 0.6+ | 2006 09 14 | 703 | 0.7+ | 0.5− |
| 2001 10 11 | 644 | 0.6+ | 1.0− | 2004 03 15 | 704 | 0.7+ | 0.7− | 2006 09 14 | 703 | 1.2− | 0.1+ |
| 2001 10 19 | 644 | 0.0 | 0.5+ | 2004 03 15 | 703 | (1.5− | 1.6+) | 2006 09 14 | 703 | (1.1− | 1.7+) |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2004 03 15 | 704 | (1.7+ | 1.2−) | 2006 09 14 | 703 | 0.4− | 1.0+ |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2004 03 15 | 703 | 0.1− | 0.7+ | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2001 10 21 | 704 | 0.5− | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.9− | 0.5+ | 2004 03 15 | 704 | 0.9+ | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.5+ | 2004 03 15 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 1.0− | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.1+ | | | | |

**(140828)∗ 2001 UA$_{172}$**

Discovered 2001 Oct. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.69738 | | (2000.0) | | | |
| $n$ | 0.18387543 | $\omega$ | 321.97195 | | +0.99855638 | +0.05308288 |
| $a$ | 3.0628114 | $\Omega$ | 34.98785 | | −0.04510491 | +0.91164488 |
| $e$ | 0.0451944 | $i$ | 0.82019 | | −0.02916695 | +0.40753628 |
| $P$ | 5.36 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 691 | 0.4+ | 0.3− | 2001 10 17 | 704 | 0.6+ | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 1996 11 09 | 691 | 0.3+ | 0.0 | 2001 10 17 | 704 | 0.1− | 0.7+ | 2006 08 27 | 691 | 0.0 | 0.3+ |
| 1996 11 09 | 691 | 0.1+ | 0.3− | 2001 10 17 | 704 | 0.5− | 1.0+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 1996 12 05 | 691 | 0.0 | 0.3+ | 2001 10 18 | 644 | 0.0 | 1.0+ | 2006 09 19 | 703 | 0.0 | 1.4− |
| 1996 12 05 | 691 | 0.0 | 0.0 | 2001 10 18 | 644 | 0.1− | 0.2+ | 2006 09 19 | 703 | 1.1+ | 1.0− |
| 1996 12 05 | 691 | 0.3− | 0.2− | 2001 10 18 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.3− |
| 1998 01 29 | 691 | 0.4+ | 0.4− | 2001 10 25 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.6− |
| 1998 01 29 | 691 | 0.1+ | 0.0 | 2001 10 25 | 644 | 0.4− | 0.7+ | 2006 09 19 | D35 | 0.7+ | 0.3+ |
| 1998 01 29 | 691 | 0.1+ | 0.0 | 2001 10 25 | 644 | 0.5− | 0.6+ | 2006 09 19 | D35 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 0.3− | 2004 03 17 | 691 | 0.6+ | 0.4+ | 2006 09 19 | D35 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.3− | 1.0+ | 2004 04 22 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.6− | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.9+ | 2004 04 22 | 691 | 0.3− | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 10 14 | 291 | 0.5− | 0.0 | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.4+ | 0.5+ |
| 2001 10 14 | 291 | 0.6− | 0.0 | 2006 08 18 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2001 10 14 | 291 | 0.5− | 0.1− | 2006 08 18 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.6+ |
| 2001 10 17 | 704 | 0.3+ | 0.1+ | 2006 08 18 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.0 |

**(140829)∗ 2001 UQ$_{172}$**

Discovered 2001 Oct. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 162.98813 | | (2000.0) | | | |
| $n$ | 0.21004781 | $\omega$ | 200.49032 | | −0.37239757 | +0.92579868 |
| $a$ | 2.8027903 | $\Omega$ | 47.70782 | | −0.83880026 | −0.30580825 |
| $e$ | 0.0138265 | $i$ | 5.03625 | | −0.39715762 | −0.22221187 |
| $P$ | 4.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 15 | 691 | 0.6+ | 0.1+ | 2001 11 21 | 691 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.6− |
| 1994 02 15 | 691 | 0.0 | 0.1− | 2004 05 28 | 691 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.5− |
| 1994 02 15 | 691 | 0.4− | 0.1− | 2004 05 28 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.0 |
| 2001 10 18 | 644 | 0.4+ | 0.4− | 2004 05 28 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2001 10 18 | 644 | 0.5+ | 0.9− | 2004 06 08 | 691 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.4+ |
| 2001 10 18 | 644 | 0.5+ | 0.6− | 2004 06 08 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.3− |
| 2001 10 24 | 691 | 0.2+ | 0.1+ | 2004 06 08 | 691 | 0.7+ | 0.5+ | 2006 10 29 | G96 | 0.1+ | 0.1+ |
| 2001 10 24 | 691 | 0.2− | 0.1+ | 2004 06 15 | 691 | 0.3− | 0.3+ | 2006 10 29 | G96 | 0.1+ | 0.2+ |
| 2001 10 24 | 691 | 1.3− | 0.4− | 2004 06 15 | 691 | 0.1− | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.4− |
| 2001 10 25 | 644 | 0.6− | 0.4+ | 2004 06 15 | 691 | 0.2+ | 0.5+ | 2006 10 29 | G96 | 0.1− | 0.0 |
| 2001 10 25 | 644 | 0.1+ | 0.6+ | 2005 08 28 | E12 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2005 08 28 | E12 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.6+ | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.4− | 2005 08 28 | E12 | 0.2− | 0.5+ | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2005 08 28 | E12 | 0.4+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | (1.7− | 1.0−) | 2005 09 01 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.5− | 0.4+ | 2005 09 01 | 644 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2005 09 01 | 644 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | 0.3+ | 0.5+ | 2005 09 01 | 644 | 0.2+ | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 0.2+ | 0.9+ | 2005 09 01 | 644 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.6+ | 2005 09 01 | 644 | 0.3+ | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2001 11 21 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.5− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 2001 11 21 | 691 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.8− | 2006 11 22 | 691 | 0.1− | 0.2+ |

**(140830)∗ 2001 UL$_{173}$**

Discovered 2001 Oct. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.15072 | | (2000.0) | | | |
| $n$ | 0.18647954 | $\omega$ | 0.92464 | | +0.75584896 | −0.64231561 |
| $a$ | 3.0342306 | $\Omega$ | 39.99364 | | +0.59944242 | +0.60086050 |
| $e$ | 0.0569493 | $i$ | 11.39468 | | +0.26336503 | +0.47581227 |
| $P$ | 5.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.6− | 0.1− | 2001 11 19 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.3+ |
| 2001 10 18 | 644 | 0.8− | 0.0 | 2001 11 19 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 1.0− | 0.9− |
| 2001 10 18 | 644 | 0.7− | 0.4+ | 2001 11 21 | 704 | 0.8− | 0.8+ | 2006 09 18 | 703 | (0.3− | 2.7+) |
| 2001 10 21 | 704 | 1.2− | 1.0+ | 2001 11 21 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 1.1− | 1.4+ |
| 2001 10 21 | 704 | 0.7− | 0.4+ | 2001 11 21 | 704 | 0.5+ | 0.8+ | 2006 09 25 | 699 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.6− | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.8+ | 0.5+ |
| 2001 10 21 | 704 | (1.6− | 0.4−) | 2003 01 24 | 644 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 1.3− | 0.7+ |
| 2001 10 21 | 704 | 0.7− | 0.7+ | 2003 01 24 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.5− | 0.5+ |
| 2001 10 23 | 291 | 0.1− | 0.1+ | 2003 01 24 | 644 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 1.1+ |
| 2001 10 23 | 291 | 0.1+ | 1.2− | 2003 01 29 | 644 | 0.6+ | 1.1+ | 2006 09 30 | 703 | 0.8− | 0.2− |
| 2001 10 23 | 291 | 0.3+ | 0.1+ | 2003 01 29 | 644 | 0.1+ | 1.5+ | 2006 09 30 | 703 | 0.0 | 0.9+ |
| 2001 10 25 | 644 | 0.1+ | 0.6+ | 2003 01 29 | 644 | (0.5+ | 2.0+) | 2006 09 30 | 703 | 0.9+ | 0.5+ |
| 2001 10 25 | 644 | 0.1− | 0.4+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2001 10 25 | 644 | 0.7− | 0.1+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2001 11 09 | 704 | 0.5+ | 1.1+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 11 09 | 704 | 1.3+ | 0.2− | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2003 04 26 | 645 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | (1.7+ | 0.0 ) | 2003 04 26 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 11 | 691 | 0.5− | 0.1− | 2004 04 22 | 691 | 0.3+ | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2001 11 11 | 691 | 0.1− | 0.1+ | 2004 04 22 | 691 | 0.3+ | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 11 11 | 691 | 0.1+ | 0.2+ | 2004 04 22 | 691 | 0.3+ | 0.7+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2001 11 19 | 704 | 0.7+ | 0.0 | 2004 05 13 | 691 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2001 11 19 | 704 | 0.2+ | 0.4+ | 2004 05 13 | 691 | 0.5+ | 0.4+ | | | | |
| 2001 11 19 | 704 | 0.2+ | 0.7+ | 2004 05 13 | 691 | 0.1+ | 0.3+ | | | | |

**(140831)∗ 2001 UV$_{174}$**

Discovered 2001 Oct. 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 83.49993 | | (2000.0) | | | |
| $n$ | 0.20328590 | $\omega$ | 17.32187 | | +0.34617064 | +0.93807945 |
| $a$ | 2.8646037 | $\Omega$ | 272.93297 | | −0.86230716 | +0.31262618 |
| $e$ | 0.0949367 | $i$ | 0.75427 | | −0.36958389 | +0.14923748 |
| $P$ | 4.85 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.2+ | 0.1− | 2002 12 05 | 704 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.4− | 0.1+ |
| 2001 09 17 | 704 | 0.1+ | 0.3− | 2002 12 31 | 704 | 0.5− | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.4+ |
| 2001 09 17 | 704 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2002 12 31 | 704 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.6− |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2002 12 31 | 704 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.4+ | 0.4− |
| 2001 09 20 | 704 | 0.4− | 0.6+ | 2004 03 15 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2004 03 15 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.5+ | 0.9+ | 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 2001 09 21 | 333 | 0.2+ | 0.6− | 2004 03 16 | 704 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.3− | 0.3− |
| 2001 09 21 | 333 | 0.1+ | 0.1+ | 2004 03 16 | 704 | 0.4+ | 0.9− | 2006 10 21 | 703 | 0.4+ | 1.4− |
| 2001 09 21 | 333 | 0.5+ | 0.2+ | 2004 03 16 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 09 23 | 704 | (1.6+ | 1.1−) | 2004 03 16 | 704 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 1.2+ | 1.2− | 2004 03 16 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 09 23 | 704 | (2.5+ | 1.5+) | 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2001 09 23 | 704 | (1.9− | 0.2+) | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2001 10 11 | 644 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2001 10 11 | 644 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2001 10 11 | 644 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2001 10 13 | 704 | 0.2− | 0.4+ | 2004 03 26 | 699 | 0.1+ | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 10 13 | 704 | 0.9− | 1.2− | 2004 03 26 | 699 | 0.2+ | 0.8+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2001 10 13 | 704 | 0.0 | 0.5+ | 2004 03 26 | 699 | 1.1− | 0.6+ | 2006 11 11 | 703 | 0.9+ | 0.0 |
| 2001 10 13 | 704 | 0.6+ | 0.2− | 2004 03 26 | 699 | (0.0 | 1.6+) | 2006 11 11 | 703 | 0.7− | 1.2− |
| 2001 10 14 | 699 | 1.3− | 0.8+ | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 699 | 0.2− | 0.2− | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.5+ | 0.8+ | | |
| 2001 10 14 | 699 | 0.0 | 0.5+ | 2004 03 27 | 704 | 1.1+ | 0.9+ | 2006 11 15 | 691 | 0.1+ | 0.0 | | |
| 2001 10 14 | 699 | 1.1− | 0.6+ | 2004 03 27 | 704 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.3− | | |
| 2001 10 15 | 691 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.2− | | |
| 2001 10 15 | 691 | 0.2− | 0.1+ | 2004 04 13 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 1.3− | 0.7+ | | |
| 2001 10 15 | 691 | 0.0 | 0.1+ | 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.3− | 0.6+ | | |
| 2001 10 17 | 704 | (2.1+ | 2.2+) | 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.3− | 0.5+ | | |
| 2001 10 17 | 704 | 0.7− | 1.0+ | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.3+ | | |
| 2001 10 17 | 704 | (0.3− | 1.5+) | 2004 04 15 | 644 | 0.4− | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.2− | | |
| 2001 10 17 | 704 | 0.3− | 1.3+ | 2004 04 15 | 644 | 0.3− | 0.6+ | 2006 11 18 | 704 | (0.1+ | 1.6−) | | |
| 2001 10 17 | 704 | (1.3− | 2.8+) | 2004 04 16 | 704 | 1.1+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.5− | | |
| 2001 10 19 | 644 | 0.5− | 0.7+ | 2004 04 16 | 704 | 0.0 | 1.2+ | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2001 10 19 | 644 | 0.4− | 0.6+ | 2004 04 16 | 704 | 1.0+ | 0.8+ | 2006 11 20 | 691 | 0.4+ | 0.4− | | |
| 2001 10 19 | 644 | 0.7− | 0.6+ | 2004 04 21 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.4− | | |
| 2001 10 21 | 704 | 0.2+ | 0.8+ | 2004 04 21 | 691 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.4− | | |
| 2001 10 21 | 704 | 0.8+ | 1.1+ | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 1.0+ | | |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2006 09 20 | 699 | 0.5− | 0.6− | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2001 10 21 | 704 | 0.1− | 1.3+ | 2006 09 20 | 699 | 0.0 | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.7+ | | |
| 2001 10 21 | 704 | 0.1− | 0.8+ | 2006 09 20 | 699 | 0.2+ | 1.0− | 2006 11 21 | 704 | 0.2+ | 0.9+ | | |
| 2001 10 25 | 644 | 0.5− | 0.6+ | 2006 09 20 | 699 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.6+ | | |
| 2001 10 25 | 644 | 0.6− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 25 | 644 | 0.8− | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.4+ | 0.1− | | |
| 2001 11 09 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 09 | 704 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.4+ | 0.4− | | |
| 2001 11 09 | 704 | (0.3− | 2.2−) | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.5− | 0.0 | | |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.4− | 0.2− | | |
| 2002 12 05 | 704 | 0.5+ | 0.5− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.1− | 0.3+ | | |

**(140832)∗ 2001 UK$_{175}$ = 1999 FW$_{14}$**

Discovered 2001 Oct. 24 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 20629)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.43774 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18745200 | $\omega$ | 153.64545 | | +0.96812881 | | +0.24766634 |
| $a$ | 3.0237276 | $\Omega$ | 192.19055 | | −0.24941574 | | +0.93987021 |
| $e$ | 0.1189380 | $i$ | 10.16196 | | −0.02276853 | | +0.23517096 |
| $P$ | 5.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 05 | 691 | 0.5+ | 0.1+ | 2001 11 18 | 704 | 0.2− | 0.8+ | 2006 09 29 | 704 | 0.2− | 0.9+ | | |
| 1996 12 05 | 691 | 0.4+ | 0.3+ | 2001 11 20 | 699 | 1.1− | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.7+ | | |
| 1996 12 05 | 691 | 0.7+ | 0.2+ | 2001 11 20 | 699 | 0.0 | 0.9+ | 2006 10 01 | 704 | 0.5+ | 1.0+ | | |
| 1999 03 10 | 691 | 0.1− | 0.6+ | 2001 11 20 | 699 | 0.6− | 0.5+ | 2006 10 01 | 704 | 0.3− | 0.4+ | | |
| 1999 03 10 | 691 | 0.2+ | 1.2+ | 2001 11 20 | 699 | 0.7− | 0.8+ | 2006 10 01 | 704 | 0.3+ | 0.7+ | | |
| 1999 03 10 | 691 | 0.2− | 0.7+ | 2002 12 14 | 645 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3− | 0.4+ | | |
| 1999 03 19 | 691 | 0.1− | 0.7+ | 2002 12 14 | 645 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ | | |
| 1999 03 19 | 691 | 0.0 | 0.6+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2+ | | |
| 1999 03 19 | 691 | 0.3+ | 1.0+ | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.5+ | 0.1+ | | |
| 1999 03 23 | 691 | 0.1+ | 0.5+ | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.1− | | |
| 1999 03 23 | 691 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 1.2+ | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.1− | | |
| 1999 03 23 | 691 | 0.5− | 0.7+ | 2004 03 27 | 704 | 0.6+ | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.1+ | | |
| 1999 03 24 | 691 | 0.4+ | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.2− | | |
| 1999 03 24 | 691 | 0.2− | 0.9+ | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 10 09 | 644 | 0.3− | 0.2+ | | |
| 1999 03 24 | 691 | 0.0 | 0.4+ | 2004 04 19 | 691 | 0.3+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.5+ | | |
| 2001 09 19 | 704 | 0.8+ | 0.3+ | 2004 04 19 | 691 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.3− | 0.2+ | | |
| 2001 09 19 | 704 | 0.8+ | 0.7+ | 2004 04 19 | 691 | 0.1+ | 0.3− | 2006 10 16 | 703 | (0.7− | 1.5+) | | |
| 2001 09 19 | 704 | 0.6+ | 0.5+ | 2005 06 29 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | (0.1+ | 3.1+) | | |
| 2001 09 19 | 704 | 0.3+ | 0.7+ | 2005 06 29 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.6+ | | |
| 2001 09 26 | 704 | 1.4+ | 1.3+ | 2005 06 29 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | (0.1− | 2.0+) | | |
| 2001 09 26 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.1− | | |
| 2001 09 26 | 704 | 1.1− | 0.1− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.4− | 0.1− | | |
| 2001 09 26 | 704 | 1.0− | 0.4− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− | | |
| 2001 10 20 | 704 | 1.1− | 1.0+ | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.1− | | |
| 2001 10 20 | 704 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.9− | 0.2+ | | |
| 2001 10 20 | 704 | 0.6− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.0 | | |
| 2001 10 20 | 704 | 0.8− | 0.6+ | 2006 09 20 | 704 | 1.3+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2+ | | |
| 2001 10 24 | 644 | 0.5− | 0.8+ | 2006 09 20 | 704 | 0.8+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.5− | | |
| 2001 10 24 | 644 | 0.6− | 0.5+ | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.5− | 0.3+ | | |
| 2001 10 24 | 644 | 0.6− | 0.1+ | 2006 09 20 | 704 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.5+ | | |
| 2001 10 25 | 644 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2001 10 25 | 644 | 0.4− | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.6+ | | |
| 2001 10 25 | 644 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 2001 10 26 | 644 | (1.5− | 0.4+) | 2006 09 27 | 704 | 1.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2001 10 26 | 644 | 1.2− | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.3− | 0.1+ | | |
| 2001 10 26 | 644 | 1.3− | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 2001 11 18 | 704 | 0.4− | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2001 11 18 | 704 | 1.0− | 0.7+ | 2006 09 29 | 704 | 0.5+ | 0.8+ | | | | | | |
| 2001 11 18 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 704 | (0.1− | 1.6+) | | | | | | |

**(140833)∗ 2001 UE$_{179}$**

Discovered 2001 Oct. 25 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.37200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20311445 | $\omega$ | 269.94029 | | +0.57030916 | | +0.82113283 |
| $a$ | 2.8662154 | $\Omega$ | 34.86131 | | −0.73743357 | | +0.52365711 |
| $e$ | 0.0414265 | $i$ | 2.21569 | | −0.36185520 | | +0.22698923 |
| $P$ | 4.85 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.5− | 0.2+ | 2001 11 16 | 691 | 0.0 | 0.4+ | 2004 05 23 | 691 | 0.2+ | 0.7+ | | |
| 2001 10 14 | 691 | 0.4− | 0.2− | 2001 11 19 | 704 | 0.9− | 0.4+ | 2004 05 23 | 691 | 0.5− | 0.2+ | | |
| 2001 10 14 | 691 | 0.4− | 0.1− | 2001 11 19 | 704 | 0.6− | 0.2+ | 2004 05 23 | 291 | 0.6+ | 0.8+ | | |
| 2001 10 15 | 735 | 0.5+ | 0.0 | 2001 11 19 | 704 | (0.5+ | 1.5+) | 2004 05 23 | 291 | 0.6+ | 0.7+ | | |
| 2001 10 15 | 735 | 0.2+ | 0.6+ | 2001 11 21 | 704 | 0.4+ | 0.2− | 2004 05 23 | 291 | 0.3+ | 0.6+ | | |
| 2001 10 15 | 735 | 1.0− | 1.2+ | 2001 11 21 | 704 | 0.8+ | 0.4+ | 2005 07 31 | E12 | 0.6− | 0.7+ | | |
| 2001 10 20 | 704 | 0.6+ | 0.1+ | 2001 11 21 | 704 | 0.1+ | 0.5+ | 2005 07 31 | E12 | 0.2− | 0.9+ | | |
| 2001 10 20 | 704 | 1.4+ | 0.1− | 2001 11 21 | 704 | 0.5+ | 0.4+ | 2005 07 31 | E12 | 0.6+ | 0.9+ | | |
| 2001 10 20 | 704 | (1.6− | 0.0 ) | 2001 11 21 | 704 | 0.5+ | 0.5+ | 2005 07 31 | E12 | 0.2+ | 0.9+ | | |
| 2001 10 20 | 704 | (1.8+ | 0.4+) | 2003 01 27 | 608 | 0.2− | 0.9− | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2001 10 23 | 704 | 0.4− | 0.4+ | 2003 01 27 | 608 | 0.4+ | 0.9− | 2006 10 17 | 691 | 0.1− | 0.0 | | |
| 2001 10 23 | 704 | 0.2− | 0.5− | 2003 01 27 | 608 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ | | |
| 2001 10 23 | 704 | 0.2− | 0.5− | 2003 01 30 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.4+ | | |
| 2001 10 23 | 704 | 0.4+ | 0.6+ | 2003 01 30 | 644 | 0.2+ | 1.2+ | 2006 11 11 | 703 | 1.2− | 0.0 | | |
| 2001 10 23 | 704 | 0.6+ | 0.9+ | 2003 01 30 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 2001 10 23 | 049 | 1.0− | 0.4+ | 2003 01 30 | 644 | 0.9+ | 1.1+ | 2006 11 11 | 703 | 0.6+ | 1.1+ | | |
| 2001 10 23 | 049 | 0.2+ | 0.3+ | 2003 01 30 | 644 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.3− | | |
| 2001 10 23 | 049 | 0.4+ | 0.3+ | 2003 01 30 | 644 | 1.1+ | 0.8+ | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 2001 10 25 | 644 | 0.3− | 0.0 | 2004 04 21 | 704 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.4+ | 0.0 | | |
| 2001 10 25 | 644 | 0.3− | 0.7+ | 2004 04 21 | 704 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.1− | | |
| 2001 10 25 | 644 | 1.3− | 1.5+ | 2004 04 21 | 704 | 0.1− | 0.8− | 2006 11 17 | 703 | 0.0 | 0.3+ | | |
| 2001 10 26 | 644 | 0.6− | 0.5+ | 2004 04 21 | 704 | 0.3+ | 0.5− | 2006 11 17 | 703 | 1.2− | 0.4+ | | |
| 2001 10 26 | 644 | 0.2− | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.9− | | |
| 2001 10 26 | 644 | 0.1− | 0.5+ | 2004 04 22 | 691 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.4− | 1.1+ | | |
| 2001 11 16 | 691 | 0.0 | 0.4+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | | | | | | |
| 2001 11 16 | 691 | 0.0 | 0.4+ | 2004 05 23 | 691 | 0.1− | 0.4+ | | | | | | |

**(140834)∗ 2001 UF$_{179}$ = 1998 HH$_{150}$**

Discovered 2001 Oct. 25 by NEAT at Palomar.

Id. A. Doppler (*MPO* 23002)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.34866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17844400 | $\omega$ | 269.84581 | | −0.69716742 | | −0.70767333 |
| $a$ | 3.1246502 | $\Omega$ | 225.10622 | | +0.70516045 | | −0.64806413 |
| $e$ | 0.1537525 | $i$ | 9.31778 | | +0.12925291 | | −0.28144509 |
| $P$ | 5.52 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 19 | 691 | 0.2− | 0.9+ | 2001 11 12 | 291 | 0.7+ | 0.3+ | 2003 04 01 | 704 | 0.3− | 0.5− | | |
| 1998 04 19 | 691 | 0.0 | 0.3+ | 2001 11 12 | 291 | 0.7+ | 0.3+ | 2005 07 03 | 705 | 0.5+ | 0.9+ | | |
| 1998 04 19 | 691 | 0.5+ | 0.4+ | 2001 11 12 | 291 | 1.0+ | 0.4+ | 2005 07 03 | 705 | 0.3+ | 0.5+ | | |
| 1998 04 21 | 704 | 0.3− | 0.4− | 2001 11 20 | 704 | 0.9+ | 0.6+ | 2005 07 03 | 705 | 0.0 | 0.9+ | | |
| 1998 04 21 | 704 | 0.2+ | 1.6+ | 2001 11 20 | 704 | 0.5+ | 0.2− | 2006 09 27 | 703 | 1.1− | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.6+ | 0.2− | 2001 11 20 | 704 | 0.8+ | 0.4− | 2006 09 27 | 703 | 0.2+ | 1.0− |
| 1998 04 21 | 704 | 1.1− | 1.2− | 2001 11 20 | 704 | (1.9+ | 0.7+) | 2006 09 27 | 703 | 0.6− | 0.5− |
| 2001 10 23 | 291 | 1.0− | 0.1− | 2001 11 20 | 704 | 0.9+ | 0.0 | 2006 09 27 | 703 | (1.8+ | 1.3−) |
| 2001 10 23 | 291 | 0.9− | 0.1− | 2001 11 21 | 291 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2001 10 23 | 291 | 1.3− | 0.3− | 2001 11 21 | 291 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.4− | 0.7− |
| 2001 10 25 | 644 | 0.1+ | 0.8+ | 2001 11 21 | 291 | 0.5+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 10 25 | 644 | 0.6− | 0.2+ | 2003 01 26 | 608 | 0.1+ | 0.8− | 2006 10 02 | G96 | 0.3− | 0.1− |
| 2001 10 25 | 644 | 0.1+ | 0.7+ | 2003 01 26 | 608 | 0.2+ | 0.5− | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 2001 10 26 | 644 | 0.1− | 0.7+ | 2003 01 26 | 608 | 0.2+ | 0.9− | 2006 10 23 | G96 | 0.5− | 0.8+ |
| 2001 10 26 | 644 | 0.2+ | 0.7+ | 2003 02 12 | 608 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2001 10 26 | 644 | 0.1+ | 0.5+ | 2003 02 12 | 608 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.4+ |
| 2001 11 09 | 704 | 0.3− | 1.0− | 2003 02 12 | 608 | 0.4− | 0.7+ | 2006 10 23 | G96 | 0.5+ | 0.4+ |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2003 04 01 | 704 | 0.5+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.6+ |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2003 04 01 | 704 | 0.6− | 0.3− | 2006 10 23 | G96 | 0.4+ | 0.2+ |
| 2001 11 09 | 704 | 0.4+ | 0.4− | 2003 04 01 | 704 | 0.9+ | 1.6+ | | | | |

**(140835)∗ 2001 UL$_{184}$ = 2003 FT$_{40}$**

Discovered 2001 Oct. 16 by NEAT at Palomar.

Id. A. Doppler (*MPO* 46851)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.74367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22952054 | $\omega$ | 2.41910 | | −0.23168648 | −0.97021088 | |
| $a$ | 2.6419322 | $\Omega$ | 100.98364 | | +0.89130263 | −0.24087379 | |
| $e$ | 0.1224966 | $i$ | 4.13565 | | +0.38974477 | −0.02589721 | |
| $P$ | 4.29 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.2− | 1.2+ | 2003 03 23 | 645 | 0.0 | 0.0 | 2005 09 01 | 691 | 0.3− | 0.4+ |
| 2001 10 16 | 644 | 0.3− | 0.8+ | 2003 03 25 | 644 | 0.6+ | 0.2+ | 2005 09 01 | 691 | 0.4− | 0.5+ |
| 2001 10 16 | 644 | 0.7− | 0.8+ | 2003 03 25 | 644 | 0.2+ | 0.5+ | 2005 09 11 | 691 | 0.2− | 0.8+ |
| 2001 10 18 | 291 | 0.5− | 0.1+ | 2003 03 25 | 644 | 0.5+ | 0.5+ | 2005 09 11 | 691 | 0.2− | 0.6+ |
| 2001 10 18 | 291 | 0.1− | 0.1+ | 2003 03 26 | 691 | 0.1− | 0.6+ | 2005 09 11 | 691 | 0.3+ | 0.4+ |
| 2001 10 18 | 291 | 0.3+ | 0.0 | 2003 03 26 | 691 | 0.2− | 0.7+ | 2006 10 17 | G96 | 0.1+ | 1.1− |
| 2001 10 24 | 644 | 0.1+ | 1.0+ | 2003 03 26 | 691 | 0.5− | 0.7+ | 2006 10 17 | G96 | 1.0+ | 0.9− |
| 2001 10 24 | 644 | 0.2+ | 0.8+ | 2003 04 10 | 691 | 0.9+ | 0.8+ | 2006 10 17 | G96 | 0.6− | 0.8− |
| 2001 10 24 | 644 | 0.3+ | 1.1+ | 2003 04 10 | 691 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.3− |
| 2003 02 24 | 106 | (0.8+ | 1.7+) | 2003 04 10 | 691 | 1.0+ | 1.1+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2003 02 24 | 106 | 0.9+ | 1.0+ | 2005 08 26 | 644 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2003 02 24 | 106 | 0.8− | 0.7+ | 2005 08 26 | 644 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2003 03 06 | 699 | 0.4+ | 0.8− | 2005 08 26 | 644 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2003 03 06 | 699 | 0.1+ | 1.0+ | 2005 08 26 | 644 | 0.4− | 0.4+ | 2006 11 27 | G96 | 0.6+ | 0.5− |
| 2003 03 06 | 699 | 0.7+ | 0.4+ | 2005 08 26 | 644 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2003 03 06 | 699 | 0.6+ | 0.5+ | 2005 08 26 | 644 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2003 03 23 | 645 | 0.1− | 0.1+ | 2005 09 01 | 691 | 0.5− | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.2− |

**(140836)∗ 2001 UD$_{192}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.74435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19144488 | $\omega$ | 79.71835 | | +0.93167314 | +0.28640914 | |
| $a$ | 2.9815371 | $\Omega$ | 263.36647 | | −0.35233987 | +0.86229828 | |
| $e$ | 0.1081235 | $i$ | 13.00361 | | +0.08855377 | +0.41762600 | |
| $P$ | 5.15 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 644 | 0.5− | 0.2− | 2003 01 01 | 704 | (0.0 | 2.4+) | 2006 09 16 | 703 | 0.2+ | 0.9+ |
| 2001 09 29 | 644 | 0.5− | 0.1− | 2003 01 01 | 704 | (0.3+ | 1.9+) | 2006 09 16 | 703 | 0.8+ | 0.3+ |
| 2001 09 29 | 644 | 0.6− | 0.0 | 2003 01 07 | 704 | 0.1− | 0.3− | 2006 09 16 | 703 | 0.8+ | 0.2+ |
| 2001 10 15 | 608 | 0.3− | 0.4− | 2003 01 07 | 704 | 0.5− | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.5+ |
| 2001 10 15 | 608 | 0.1+ | 0.8− | 2003 01 07 | 704 | 0.6− | 0.5+ | 2006 09 21 | 699 | 0.1− | 0.2− |
| 2001 10 15 | 608 | 0.2− | 0.6− | 2003 01 07 | 704 | 0.4− | 0.2+ | 2006 09 21 | 699 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.3− | 0.1+ | 2003 01 27 | 704 | 0.3+ | 1.3+ | 2006 09 21 | 699 | 0.1− | 0.4− |
| 2001 10 18 | 704 | 0.2− | 0.1+ | 2003 01 27 | 704 | 1.2+ | 0.1− | 2006 09 28 | 703 | 0.0 | 0.5− |
| 2001 10 18 | 704 | 0.2− | 0.1+ | 2003 01 27 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.9− | 0.6− |
| 2001 10 18 | 704 | 0.3+ | 0.8+ | 2003 01 27 | 704 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.5− | 0.2+ |
| 2001 10 18 | 704 | 0.1+ | 0.8+ | 2005 06 23 | 644 | 0.0 | 0.9+ | 2006 09 28 | 703 | 0.9− | 0.3+ |
| 2001 10 20 | 699 | 0.3+ | 0.1+ | 2005 06 23 | 644 | 0.0 | 0.7+ | 2006 10 26 | 703 | 0.9− | 0.9− |
| 2001 10 20 | 699 | 0.8+ | 0.1− | 2005 06 23 | 644 | 0.3− | 0.6+ | 2006 10 26 | 703 | 0.6− | 0.6− |
| 2001 10 20 | 699 | 0.6+ | 0.1+ | 2005 06 26 | 644 | 0.1+ | 0.8+ | 2006 10 26 | 703 | 0.3+ | 0.2− |
| 2001 10 20 | 699 | 0.3+ | 0.2+ | 2005 06 26 | 644 | 0.1+ | 0.7+ | 2006 10 26 | 703 | (1.6− | 1.8−) |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2005 06 26 | 644 | 0.0 | 0.7+ | 2006 11 25 | 703 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.1− | 0.4+ | 2006 08 29 | 699 | 0.3+ | 0.4+ | 2006 11 25 | 703 | 0.6+ | 0.2− |
| 2001 11 12 | 704 | 0.5+ | 0.2− | 2006 08 29 | 699 | 0.4− | 0.4+ | 2006 11 25 | 703 | 0.3− | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.3− | 2006 08 29 | 699 | 0.1− | 0.2+ | 2006 11 25 | 703 | 0.9+ | 0.2− |
| 2002 12 11 | 704 | 0.6+ | 1.1+ | 2006 08 29 | 699 | 0.1− | 0.6+ | 2006 11 28 | 704 | 0.9+ | 1.0+ |
| 2002 12 11 | 704 | 1.1+ | 1.1+ | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | 1.0+ | 1.0+ |
| 2002 12 11 | 704 | 0.2− | 0.5+ | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.7+ |
| 2003 01 01 | 704 | (0.7− | 1.8+) | 2006 09 06 | 644 | 0.0 | 0.1− | | | | |

**(140837)∗ 2001 UP$_{192}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.20286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20611809 | $\omega$ | 90.53517 | | +0.90543106 | −0.38304988 | |
| $a$ | 2.8383023 | $\Omega$ | 291.99811 | | +0.26636189 | +0.84823494 | |
| $e$ | 0.1168750 | $i$ | 11.37944 | | +0.33052374 | +0.36574619 | |
| $P$ | 4.78 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 699 | 0.6+ | 0.9+ | 2001 12 14 | 704 | 1.1+ | 0.6+ | 2003 02 26 | 599 | 0.1− | 0.2− |
| 2001 07 29 | 699 | 0.8− | 0.5+ | 2001 12 14 | 704 | 1.4+ | 0.4+ | 2003 02 28 | 608 | 0.0 | 0.4− |
| 2001 07 29 | 699 | 0.3+ | 0.2+ | 2003 01 27 | 699 | 1.3+ | 0.0 | 2003 02 28 | 608 | 0.1− | 0.2+ |
| 2001 07 29 | 699 | 0.0 | 1.1+ | 2003 01 27 | 699 | 0.3− | 0.1+ | 2003 02 28 | 608 | 0.1+ | 0.2− |
| 2001 08 22 | 644 | 0.3− | 0.4+ | 2003 01 27 | 699 | (1.3− | 1.9+) | 2004 04 12 | E12 | (0.2− | 1.8+) |
| 2001 08 22 | 644 | 0.1− | 0.4+ | 2003 01 27 | 699 | 0.6+ | 1.3+ | 2004 04 12 | E12 | 1.0+ | 1.1− |
| 2001 08 22 | 644 | 0.2− | 0.5+ | 2003 01 30 | 699 | 0.1+ | 0.3+ | 2004 04 12 | E12 | 0.3− | 0.7+ |
| 2001 09 19 | 644 | 0.2+ | 0.4+ | 2003 01 30 | 704 | 0.1+ | 1.3+ | 2004 04 12 | E12 | 0.0 | 0.2+ |
| 2001 09 19 | 644 | 0.2+ | 0.3+ | 2003 01 30 | 704 | 0.0 | 0.4+ | 2005 06 11 | 703 | 0.2− | 0.2− |
| 2001 09 19 | 644 | 0.3+ | 0.3+ | 2003 01 30 | 699 | 0.0 | 0.1+ | 2005 06 11 | 703 | 1.5+ | 0.7− |
| 2001 10 18 | 704 | 0.5− | 0.6− | 2003 01 30 | 704 | 0.3+ | 0.6+ | 2005 06 11 | 703 | 0.9− | 0.4− |
| 2001 10 18 | 704 | 0.1+ | 0.4− | 2003 01 30 | 699 | 0.2+ | 0.5+ | 2005 06 11 | 703 | 0.1− | 0.2+ |
| 2001 10 18 | 704 | 0.5− | 0.2− | 2003 01 30 | 704 | 0.4+ | 0.1− | 2005 06 26 | 644 | 0.3− | 0.6+ |
| 2001 10 18 | 704 | 0.3+ | 0.2− | 2003 01 30 | 699 | 0.0 | 0.8+ | 2005 06 26 | G96 | 0.3− | 0.3+ |
| 2001 10 20 | 699 | (1.7− | 0.2+) | 2003 01 30 | 704 | 0.6+ | 0.3+ | 2005 06 26 | G96 | 0.1− | 0.4+ |
| 2001 10 20 | 699 | 0.2− | 0.3+ | 2003 02 02 | 704 | 1.0+ | 0.2− | 2005 06 26 | 644 | 0.2− | 0.5+ |
| 2001 10 20 | 699 | 1.1− | 0.2− | 2003 02 02 | 704 | 0.2− | 0.9+ | 2005 06 26 | G96 | 0.2− | 0.4+ |
| 2001 10 20 | 699 | 1.5− | 0.4+ | 2003 02 02 | 704 | 0.4+ | 0.0 | 2005 06 26 | G96 | 0.3− | 0.7+ |
| 2001 11 12 | 704 | 0.2− | 0.0 | 2003 02 02 | 704 | 0.3− | 0.3− | 2005 06 26 | 644 | 0.2− | 0.4+ |
| 2001 11 12 | 704 | 0.0 | 0.5+ | 2003 02 02 | 704 | 0.6− | 0.4+ | 2006 10 23 | 703 | 0.3− | 1.0− |
| 2001 11 12 | 704 | 0.3− | 0.2+ | 2003 02 19 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.3− | 0.4− |
| 2001 11 12 | 704 | 0.2− | 0.0 | 2003 02 19 | 644 | 0.1− | 0.4+ | 2006 10 23 | 703 | 0.2− | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2003 02 19 | 644 | 0.0 | 0.3+ | 2006 10 23 | 703 | 0.8− | 1.1− |
| 2001 11 19 | 644 | 0.1− | 0.3+ | 2003 02 24 | 599 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.2− |
| 2001 11 19 | 644 | 0.1− | 0.2+ | 2003 02 24 | 599 | 0.7− | 0.6+ | 2006 11 29 | 704 | 1.4+ | 0.9+ |
| 2001 11 19 | 644 | 0.2− | 0.2+ | 2003 02 24 | 599 | 0.3− | 0.1+ | 2006 11 29 | 704 | 1.4+ | 1.6− |
| 2001 12 14 | 704 | 0.4+ | 0.1+ | 2003 02 24 | 599 | 0.2+ | 1.1− | 2006 11 29 | 704 | 0.6− | 1.3− |
| 2001 12 14 | 704 | 0.0 | 0.8+ | 2003 02 26 | 599 | 0.1− | 0.2− | | | | |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2003 02 26 | 599 | 0.1− | 0.1− | | | | |

**(140838)∗ 2001 UU$_{192}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.92022 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19071134 | $\omega$ | 125.65490 | | +0.58961228 | −0.79406609 | |
| $a$ | 2.9891775 | $\Omega$ | 287.54931 | | +0.68191361 | +0.58740521 | |
| $e$ | 0.0371092 | $i$ | 8.91180 | | +0.43284083 | +0.15625031 | |
| $P$ | 5.17 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 699 | 0.2− | 0.8+ | 2002 12 31 | 704 | 0.7− | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.0 | |
| 2001 08 26 | 699 | 0.2− | 0.7+ | 2002 12 31 | 704 | 0.5− | 0.0 | 2006 09 13 | 644 | 0.4− | 0.0 | |
| 2001 08 26 | 699 | 0.2+ | 1.4+ | 2003 01 04 | 704 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.2− | 0.4− | |
| 2001 08 26 | 699 | 0.1− | 0.7+ | 2003 01 04 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.2− | |
| 2001 09 25 | 704 | 0.3+ | 0.4+ | 2003 01 04 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.4+ | |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2003 01 04 | 704 | (0.6+ | 1.6+) | 2006 09 16 | 703 | 0.2− | 0.0 | |
| 2001 09 25 | 704 | 0.1+ | 0.4− | 2003 01 08 | 704 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.3− | 0.1− | |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2003 01 08 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.8− | 0.2− | |
| 2001 09 25 | 704 | 0.5+ | 0.4− | 2003 01 08 | 704 | 0.8− | 0.4− | 2006 09 19 | 699 | 0.0 | 0.5+ | |
| 2001 09 29 | 644 | 0.5+ | 0.3− | 2003 01 08 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.0 | |
| 2001 09 29 | 644 | 0.5+ | 0.5− | 2003 01 08 | 704 | 0.3− | 0.3− | 2006 09 24 | 106 | 0.1− | 0.3− | |
| 2001 09 29 | 644 | 0.8+ | 0.3− | 2003 01 11 | 704 | 0.2− | 0.8+ | 2006 09 24 | 106 | 0.3− | 0.1+ | |
| 2001 10 13 | 644 | 0.3− | 0.2+ | 2003 01 11 | 704 | 0.1+ | 0.0 | 2006 09 24 | 106 | 0.1+ | 0.7+ | |
| 2001 10 13 | 644 | 0.4− | 0.1+ | 2003 01 11 | 704 | 0.6+ | 0.2− | 2006 09 24 | 106 | 0.3− | 0.1− | |
| 2001 10 13 | 644 | 0.6− | 0.1+ | 2003 01 11 | 704 | 0.2+ | 0.5+ | 2006 09 29 | 699 | 0.5+ | 0.1+ | |
| 2001 10 18 | 704 | 0.3− | 0.5+ | 2003 01 11 | 704 | 0.1− | 0.7− | 2006 09 29 | 699 | 0.4+ | 1.1+ | |
| 2001 10 18 | 704 | 0.6− | 0.5− | 2004 03 15 | 644 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.8− | 0.0 | |
| 2001 10 18 | 704 | 0.3+ | 0.2− | 2004 03 15 | 644 | 0.1− | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.3− | |
| 2001 10 18 | 704 | 0.7− | 0.2+ | 2004 03 15 | 644 | 0.4+ | 0.4+ | 2006 10 03 | 703 | 1.1− | 0.2+ | |
| 2001 10 18 | 704 | 0.7− | 0.8− | 2004 03 26 | 704 | 0.4− | 0.0 | 2006 10 03 | 703 | 0.1− | 0.0 | |
| 2001 10 20 | 699 | 0.1− | 0.1+ | 2004 03 26 | 704 | 0.2− | 1.0− | 2006 10 03 | 703 | 0.8− | 0.8− | |
| 2001 10 20 | 699 | 0.6− | 1.0− | 2004 03 26 | 704 | 0.0 | 1.1+ | 2006 10 03 | 703 | 0.9− | 0.2− | |
| 2001 10 20 | 699 | 1.0+ | 0.8− | 2004 03 26 | 704 | 0.6+ | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | |
| 2001 10 20 | 699 | 0.2+ | 0.7− | 2004 03 27 | 699 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | |
| 2001 10 26 | 644 | 0.3− | 0.2− | 2004 03 27 | 699 | 0.1− | 1.1− | 2006 10 17 | 691 | 0.1+ | 0.1+ | |
| 2001 10 26 | 644 | 0.0 | 0.2− | 2004 03 27 | 699 | 1.1+ | 1.1+ | 2006 10 19 | 691 | 0.4+ | 0.9+ | |
| 2001 10 26 | 644 | 0.1+ | 0.1− | 2004 03 27 | 699 | 0.2+ | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | |
| 2001 11 11 | 644 | 0.4+ | 1.1+ | 2004 04 13 | 644 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | |
| 2001 11 11 | 644 | 0.3+ | 0.9+ | 2004 04 13 | 644 | 0.3+ | 0.7+ | 2006 10 21 | 691 | 0.1+ | 0.1− | |
| 2001 11 11 | 644 | 0.0 | 0.8+ | 2004 04 13 | 644 | 0.5+ | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.1− | |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2004 04 17 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.0 | |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2004 04 17 | 704 | 0.8+ | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.1− | |
| 2002 12 05 | 704 | 0.1− | 0.7+ | 2004 04 17 | 704 | 0.3− | 1.4+ | 2006 10 23 | 691 | 0.1− | 0.3− | |
| 2002 12 05 | 704 | 0.7+ | 0.3− | 2004 04 17 | 704 | 0.1+ | 1.0+ | 2006 10 23 | 691 | 0.2− | 0.2− | |
| 2002 12 05 | 704 | 0.0 | 1.0+ | 2006 08 29 | 699 | 1.4+ | 0.4+ | 2006 10 23 | 703 | 1.5− | 0.5− | |
| 2002 12 31 | 704 | 0.2− | 0.1+ | 2006 08 29 | 699 | 0.1+ | 0.9+ | 2006 10 23 | 703 | 0.1− | 1.2+ | |
| 2002 12 31 | 704 | 0.5− | 0.2− | 2006 08 29 | 699 | 0.6+ | 0.3− | 2006 10 23 | 703 | 0.6+ | 0.4+ | |
| 2002 12 31 | 704 | 1.4+ | 0.1+ | 2006 08 29 | 699 | (0.5− | 1.8+) | 2006 10 23 | 703 | 1.8− | 0.5+ | |

**(140839)∗ 2001 UH$_{193}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.85211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24475159 | $\omega$ | 171.08343 | | −0.39381584 | −0.90404843 | |
| $a$ | 2.5311567 | $\Omega$ | 301.95010 | | +0.83080729 | −0.27274913 | |
| $e$ | 0.0308878 | $i$ | 11.29222 | | +0.39327895 | −0.32909625 | |
| $P$ | 4.03 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 21 | 699 | 0.9− | 1.6− | 2003 02 04 | 608 | 0.7+ | 0.5+ | 2005 09 30 | 699 | (2.0+ | 0.2+) | |
| 1999 02 21 | 699 | 0.6+ | 0.7+ | 2003 02 04 | 608 | 0.2− | 1.1+ | 2005 10 03 | 703 | 0.7− | 0.6− | |
| 1999 02 21 | 699 | 0.2− | 0.2+ | 2003 02 11 | 608 | 0.2− | 0.4+ | 2005 10 03 | 703 | 0.3+ | 0.6− | |
| 2001 09 19 | 699 | 0.6+ | 1.0+ | 2003 02 11 | 608 | 0.3− | 0.7+ | 2005 10 03 | 703 | 0.3− | 0.3− | |
| 2001 09 19 | 699 | 0.5+ | 0.4+ | 2003 02 11 | 608 | 0.0 | 0.4+ | 2005 10 03 | 703 | 0.4− | 0.0 | |
| 2001 09 19 | 699 | 0.4+ | 0.3+ | 2003 02 22 | 644 | 0.1+ | 0.8− | 2005 10 04 | 703 | 0.0 | 0.2− | |
| 2001 09 19 | 699 | 0.3+ | 0.2+ | 2003 02 22 | 644 | 0.3+ | 0.4− | 2005 10 04 | 703 | 1.2− | 0.9− | |
| 2001 09 29 | 644 | 0.2+ | 0.0 | 2003 02 22 | 644 | 0.0 | 0.4− | 2005 10 04 | 703 | 0.1+ | 0.0 | |
| 2001 09 29 | 644 | 0.2+ | 0.1− | 2003 02 25 | 608 | (0.3+ | 2.8−) | 2005 10 04 | 703 | 0.7+ | 0.2+ | |
| 2001 09 29 | 644 | 0.1+ | 0.1− | 2003 02 25 | 608 | (0.5+ | 2.4−) | 2005 10 08 | 703 | 0.6+ | 0.3+ | |
| 2001 10 15 | 608 | 1.1− | 1.4− | 2003 02 25 | 608 | (2.0+ | 0.3−) | 2005 10 08 | 703 | 0.3− | 0.0 | |
| 2001 10 15 | 608 | 1.2− | 1.2− | 2003 02 26 | 608 | (0.8+ | 1.6−) | 2005 10 08 | 703 | 0.2− | 0.1+ | |
| 2001 10 15 | 608 | 1.0− | 1.1− | 2003 02 26 | 608 | (0.3+ | 2.6−) | 2005 10 08 | 703 | 0.5− | 0.9− | |
| 2001 10 18 | 704 | (3.0− | 0.1+) | 2003 02 26 | 608 | (0.1− | 2.6−) | 2005 10 10 | 703 | 0.3− | 0.0 | |
| 2001 10 18 | 704 | (2.0− | 0.3−) | 2003 03 07 | 704 | 0.5+ | 0.0 | 2005 10 10 | 703 | 0.9− | 1.0+ | |
| 2001 10 18 | 704 | (3.4− | 0.1+) | 2003 03 07 | 704 | 0.4− | 0.2− | 2005 10 10 | 703 | (1.8+ | 1.8+) | |
| 2001 10 20 | 699 | 0.4− | 0.9+ | 2003 03 07 | 704 | 0.3− | 0.1− | 2005 10 10 | 703 | 0.6+ | 0.4− | |
| 2001 10 20 | 699 | 0.5− | 0.1+ | 2003 03 07 | 704 | 0.5+ | 0.5− | 2005 10 13 | 704 | 0.0 | 0.1− | |
| 2001 10 20 | 699 | 0.5+ | 0.3+ | 2003 03 07 | 704 | 0.0 | 0.0 | 2005 10 13 | 704 | 1.5+ | 0.5− | |
| 2001 10 20 | 699 | 0.8− | 0.4+ | 2003 03 07 | 704 | 0.1− | 0.1− | 2005 10 13 | 704 | 0.4− | 0.8+ | |
| 2001 12 10 | 704 | 0.2− | 0.1+ | 2003 03 07 | 704 | 0.8+ | 0.2− | 2005 10 13 | 704 | 0.5+ | 0.3+ | |
| 2001 12 10 | 704 | 0.4+ | 0.6+ | 2003 03 07 | 704 | 0.3− | 0.1− | 2005 10 13 | 704 | 0.3+ | 0.1− | |
| 2001 12 10 | 704 | 0.7+ | 1.3+ | 2003 03 07 | 704 | 1.0+ | 1.4− | 2005 10 29 | 703 | 0.8− | 0.7− | |
| 2001 12 10 | 704 | 0.8+ | 0.6+ | 2003 03 07 | 704 | (1.6− | 0.1+) | 2005 10 29 | 703 | 0.3+ | 0.4+ | |
| 2003 01 07 | 704 | 0.4− | 0.6+ | 2003 03 07 | 704 | 0.1− | 0.4− | 2005 10 29 | 703 | 0.1− | 0.1− | |
| 2003 01 07 | 704 | 0.3+ | 0.8− | 2003 03 07 | 704 | (1.3+ | 2.3−) | 2005 10 29 | 703 | 0.1− | 0.1+ | |
| 2003 01 07 | 704 | 0.0 | 0.3+ | 2003 03 07 | 704 | 0.2− | 0.3− | 2005 10 29 | 703 | 0.1+ | 0.2− | |
| 2003 01 07 | 704 | 0.1+ | 1.0+ | 2003 03 07 | 608 | 0.5− | 0.8+ | 2005 10 29 | 703 | 0.5+ | 0.2− | |
| 2003 01 07 | 704 | 0.3− | 0.7+ | 2003 03 07 | 608 | 0.1− | 0.1+ | 2005 10 29 | 703 | 0.0 | 0.1+ | |
| 2003 01 08 | 704 | 0.2+ | 0.8− | 2003 03 07 | 608 | 0.3− | 0.1+ | 2005 10 29 | 703 | 0.2− | 0.7− | |
| 2003 01 08 | 704 | 0.9+ | 0.2− | 2003 03 09 | 704 | 0.2− | 0.4+ | 2005 10 30 | 644 | 0.2+ | 0.0 | |
| 2003 01 08 | 704 | 1.0+ | 1.1− | 2003 03 09 | 704 | 0.4+ | 0.1+ | 2005 10 30 | 644 | 0.1+ | 0.3+ | |
| 2003 01 26 | 699 | 0.1− | 0.1+ | 2003 03 09 | 704 | 0.5+ | 0.2− | 2005 10 30 | 644 | 0.0 | 0.1+ | |
| 2003 01 26 | 699 | 0.5− | 0.7+ | 2003 03 09 | 704 | 0.2− | 0.3− | 2005 11 01 | 699 | 0.1+ | 0.8− | |
| 2003 01 26 | 699 | 0.8− | 0.1+ | 2003 03 09 | 704 | 0.8+ | 0.3+ | 2005 11 01 | 699 | 0.1− | 0.1+ | |
| 2003 01 26 | 699 | 0.4+ | 0.4+ | 2005 09 10 | 699 | (2.9+ | 1.0−) | 2005 11 01 | 699 | 0.1− | 0.1+ | |
| 2003 01 28 | 704 | 1.3− | 0.2+ | 2005 09 10 | 699 | 0.3+ | 0.6+ | 2005 11 01 | 699 | 0.4+ | 0.8− | |
| 2003 01 28 | 704 | 0.5− | 0.2+ | 2005 09 10 | 699 | 1.2+ | 0.7+ | 2005 11 04 | 703 | 0.8− | 0.3− | |
| 2003 01 28 | 704 | 0.3− | 0.3− | 2005 09 10 | 699 | 0.2+ | 1.2+ | 2005 11 04 | 703 | 0.5− | 0.1− | |
| 2003 01 28 | 704 | 0.5− | 0.6− | 2005 09 13 | 704 | 0.2− | 0.3+ | 2005 11 04 | 703 | 0.2− | 0.8− | |
| 2003 02 02 | 699 | 0.7+ | 0.7− | 2005 09 13 | 704 | 0.3+ | 0.4− | 2005 11 04 | 703 | 0.1+ | 0.4− | |
| 2003 02 02 | 699 | (1.7+ | 0.1−) | 2005 09 13 | 704 | 0.8+ | 1.1+ | 2005 11 07 | 704 | 0.4− | 0.5+ | |
| 2003 02 02 | 699 | (1.8+ | 0.1−) | 2005 09 13 | 704 | 0.9+ | 0.2− | 2005 11 07 | 704 | 0.3− | 0.7− | |
| 2003 02 02 | 699 | 0.5+ | 0.5− | 2005 09 13 | 704 | 0.4+ | 0.9+ | 2005 11 07 | 704 | 0.2− | 0.5− | |
| 2003 02 02 | 704 | (0.2+ | 1.7+) | 2005 09 18 | 644 | 0.4+ | 0.4+ | 2006 10 22 | 691 | 0.2+ | 0.2− | |
| 2003 02 02 | 704 | 0.1+ | 1.0+ | 2005 09 18 | 644 | 0.4+ | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.0 | |
| 2003 02 02 | 704 | 0.3+ | 1.5+ | 2005 09 18 | 644 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.2− | |
| 2003 02 02 | 704 | 0.1+ | 0.5+ | 2005 09 23 | 703 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.0 | |
| 2003 02 02 | 704 | 0.1− | 0.1+ | 2005 09 23 | 703 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.4+ | |
| 2003 02 03 | 699 | 0.3− | 0.3+ | 2005 09 23 | 703 | 1.0− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1+ | |
| 2003 02 03 | 699 | 0.0 | 0.3− | 2005 09 23 | 703 | 1.0− | 0.9− | 2006 11 16 | G96 | 0.3− | 0.7− | |
| 2003 02 03 | 699 | 0.4− | 0.5+ | 2005 09 30 | 699 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.3− | 0.4− | |
| 2003 02 03 | 699 | 0.3+ | 0.6− | 2005 09 30 | 699 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.6− | 0.6− | |
| 2003 02 04 | 608 | 0.9+ | 0.6+ | 2005 09 30 | 699 | 0.9+ | 0.8+ | 2006 11 16 | G96 | 0.6− | 0.8− | |

**(140840)∗ 2001 UO$_{193}$**

Discovered 2001 Oct. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.39473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18211103 | $\omega$ | 225.87610 | | −0.80059351 | −0.56682903 | |
| $a$ | 3.0825624 | $\Omega$ | 278.65549 | | +0.59042705 | −0.69092443 | |
| $e$ | 0.0648346 | $i$ | 11.33497 | | +0.10220540 | −0.44869621 | |
| $P$ | 5.41 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 644 | 0.6− | 0.3+ | 2003 01 01 | 704 | 0.6+ | 0.7+ | 2004 04 13 | 644 | 0.3+ | 0.1− | |
| 2001 09 18 | 644 | 0.5− | 0.1− | 2003 01 01 | 704 | (2.2+ | 1.3+) | 2004 04 16 | 699 | 0.8− | 0.0 | |
| 2001 09 18 | 644 | 0.5− | 0.6+ | 2003 01 04 | 704 | 0.5− | 0.8− | 2004 04 16 | 699 | 0.9− | 0.0 | |
| 2001 09 25 | 704 | 0.2+ | 0.1− | 2003 01 04 | 704 | 0.5− | 0.6− | 2004 04 16 | 699 | 0.1− | 0.8+ | |
| 2001 09 25 | 704 | 0.4+ | 0.6− | 2003 01 04 | 704 | 0.2− | 0.6− | 2004 04 16 | 699 | 0.4− | 0.5+ | |
| 2001 09 25 | 704 | 0.8+ | 0.2+ | 2003 01 08 | 704 | 0.5− | 0.0 | 2004 04 17 | 704 | 1.0+ | 0.5+ | |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2003 01 08 | 704 | 0.1− | 0.1+ | 2004 04 17 | 704 | 0.0 | 0.3+ | |
| 2001 09 29 | 644 | 0.0 | 0.3+ | 2003 01 08 | 704 | 0.6− | 0.3+ | 2004 04 17 | 704 | 0.2+ | 0.3− | |
| 2001 09 29 | 644 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.4− | 0.4+ | 2004 04 17 | E12 | 0.8+ | 1.3+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 644 | 0.0 | 0.1+ | 2003 01 08 | 704 | 0.1+ | 0.6+ | 2004 04 17 | E12 | 0.6+ | 0.4+ |
| 2001 10 18 | 704 | 1.2− | 0.8+ | 2004 03 16 | E12 | 0.4− | 0.3+ | 2004 04 17 | E12 | 0.5− | 1.1+ |
| 2001 10 18 | 704 | 0.5+ | 0.3+ | 2004 03 16 | E12 | 0.5− | 0.2+ | 2004 04 17 | E12 | 0.5+ | 0.6+ |
| 2001 10 18 | 704 | 0.2+ | 0.6+ | 2004 03 16 | E12 | (2.2− | 0.4+) | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2001 10 18 | 704 | (0.3− | 2.1+) | 2004 03 16 | E12 | 0.7+ | 0.1− | 2006 09 14 | 703 | 0.2− | 1.0+ |
| 2001 10 20 | 699 | 0.2− | 0.7+ | 2004 03 26 | 704 | 1.1− | 0.9+ | 2006 09 14 | 703 | 0.0 | 0.5− |
| 2001 10 20 | 699 | 0.3+ | 0.8+ | 2004 03 26 | 704 | 0.4+ | 1.3+ | 2006 09 14 | 703 | 1.0− | 0.3− |
| 2001 10 20 | 699 | 0.0 | 0.8+ | 2004 03 26 | 704 | 0.4+ | 0.0 | 2006 09 15 | 704 | 0.7+ | 1.1− |
| 2001 10 20 | 699 | 0.4− | 0.8+ | 2004 03 26 | 704 | 0.3− | 0.4+ | 2006 09 15 | 704 | 0.1+ | 0.2+ |
| 2001 10 26 | 644 | 0.6− | 0.5+ | 2004 03 26 | 704 | 0.8+ | 0.3+ | 2006 09 15 | 704 | 0.1+ | 0.0 |
| 2001 10 26 | 644 | 0.6− | 0.3+ | 2004 03 28 | 699 | 1.0+ | 1.1+ | 2006 09 15 | 704 | 0.4− | 0.2+ |
| 2001 10 26 | 644 | 0.6− | 0.6+ | 2004 03 28 | 699 | 1.0+ | 0.5− | 2006 09 16 | 644 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 0.6− | 0.7+ | 2004 03 28 | 699 | 0.2− | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.7− | 0.2+ | 2004 03 28 | 699 | 0.7+ | 0.3+ | 2006 09 16 | 644 | 0.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 0.2− | 2004 03 31 | 704 | 0.7+ | 0.9− | 2006 09 16 | 644 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2004 03 31 | 704 | 0.3− | 0.4− | 2006 09 16 | 644 | 0.1− | 0.1+ |
| 2002 12 10 | 704 | 0.4+ | 0.3− | 2004 03 31 | 704 | 0.9+ | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.6+ | 0.5− | 2004 03 31 | 704 | 0.1− | 0.5+ | 2006 09 20 | 699 | 0.3− | 0.5+ |
| 2002 12 10 | 704 | 1.1+ | 0.4− | 2004 03 31 | 704 | 0.6− | 0.8− | 2006 09 20 | 699 | 0.4− | 0.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2004 03 31 | 704 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.4+ |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2004 03 31 | 704 | 0.7+ | 0.4− | 2006 09 20 | 699 | 0.7− | 0.6+ |
| 2002 12 31 | 704 | 0.5+ | 0.1+ | 2004 03 31 | 704 | 0.4− | 0.4+ | 2006 10 17 | 703 | 1.4+ | 1.1+ |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2004 03 31 | 704 | 0.2+ | 1.3+ | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2003 01 01 | 704 | 0.3+ | 0.1+ | 2004 04 13 | 644 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 1.4− | 0.1− |
| 2003 01 01 | 704 | 0.4− | 0.1+ | 2004 04 13 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.7− | 0.5+ |

**(140841)∗ 2001 UO$_{198}$ = 2004 CM$_{97}$**

Discovered 2001 Oct. 19 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61182)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.35898 | | | | | |
| $n$ | 0.19000913 | $\omega$ | 256.42670 | | −0.03304812 | +0.99877245 |
| $a$ | 2.9965377 | $\Omega$ | 11.86543 | | −0.83351934 | −0.00717141 |
| $e$ | 0.0774360 | $i$ | 10.33768 | | −0.55150098 | −0.04901178 |
| $P$ | 5.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 02 15 | 703 | 0.1− | 0.1+ | 2004 04 12 | 291 | 0.2+ | 0.1+ |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2004 02 15 | 703 | 0.8+ | 0.1+ | 2004 04 12 | 291 | 0.1+ | 0.2+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2004 03 11 | 644 | 0.0 | 0.5+ | 2004 04 12 | 291 | 0.8+ | 0.2+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 691 | 0.0 | 0.2+ |
| 1999 04 07 | 691 | 0.5− | 0.2+ | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 691 | 0.0 | 0.2+ |
| 1999 04 07 | 691 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.1− | 0.7+ |
| 1999 04 07 | 691 | 0.3− | 0.1− | 2004 03 15 | 704 | 0.6+ | 0.6+ | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 1999 04 19 | 691 | 0.4+ | 0.2+ | 2004 03 15 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 691 | 0.2+ | 0.3− |
| 1999 04 19 | 691 | 0.8+ | 0.5− | 2004 03 16 | 704 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.6− | 0.9− |
| 1999 04 19 | 691 | 0.6+ | 0.2+ | 2004 03 16 | 704 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.9− | 0.1+ |
| 1999 04 20 | 691 | 0.8− | 0.4− | 2004 03 16 | 704 | 0.2− | 1.0− | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 1999 04 20 | 691 | 0.3− | 0.3− | 2004 03 16 | 704 | 0.5− | 1.0+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 1999 04 20 | 691 | (1.5− | 4.1−) | 2004 03 17 | 704 | 0.2+ | 0.6− | 2006 09 23 | 691 | 0.1− | 1.3+ |
| 2001 09 20 | 704 | 0.9− | 1.1+ | 2004 03 17 | 704 | 0.3+ | 0.5− | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 09 20 | 704 | (0.9− | 3.2+) | 2004 03 17 | 704 | 0.4+ | 0.8− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | (0.1+ | 2.0+) | 2004 03 17 | 704 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 09 20 | 704 | (0.0 | 2.4+) | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 09 28 | 704 | 0.1+ | 0.9− | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 09 27 | 691 | 0.7− | 0.5+ |
| 2001 09 28 | 704 | 0.7− | 1.3− | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2001 09 28 | 704 | 0.3+ | 1.0− | 2004 03 18 | 704 | 0.9+ | 0.2− | 2006 09 27 | 691 | 0.5− | 0.2+ |
| 2001 10 17 | 704 | (2.8+ | 0.8+) | 2004 03 18 | 704 | 0.4+ | 0.7+ | 2006 09 28 | 704 | 1.0+ | 0.8+ |
| 2001 10 17 | 704 | 0.8+ | 0.5− | 2004 03 19 | 291 | 0.2− | 0.1+ | 2006 09 28 | 704 | 1.1− | 0.4− |
| 2001 10 17 | 704 | 0.7+ | 0.3− | 2004 03 19 | 291 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.5− |
| 2001 10 17 | 704 | 0.6+ | 0.1+ | 2004 03 19 | 291 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.1− | 1.3+ |
| 2001 10 17 | 704 | 0.8− | 0.4− | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.5+ |
| 2001 10 19 | 644 | 0.7+ | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.0 | 1.2+ |
| 2001 10 19 | 644 | 0.5+ | 0.0 | 2004 03 19 | 704 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.4− | 0.4+ |
| 2001 10 19 | 644 | 0.6+ | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.0 | 2006 10 10 | 104 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | (1.8+ | 0.5−) | 2004 03 19 | 704 | 0.0 | 0.5− | 2006 10 10 | 104 | 0.8− | 0.1− |
| 2001 10 21 | 704 | 0.0 | 0.6− | 2004 03 20 | 699 | 0.4− | 0.9+ | 2006 10 10 | 104 | 0.1− | 0.5+ |
| 2001 10 21 | 704 | 0.2+ | 0.7+ | 2004 03 20 | 699 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2004 03 20 | 699 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 699 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 10 26 | 644 | 0.0 | 0.8− | 2004 03 22 | 704 | 0.7+ | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.7− |
| 2001 10 26 | 644 | 0.1+ | 0.3− | 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 10 26 | 644 | 0.1+ | 0.3− | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2004 02 13 | 691 | 0.4− | 0.2− | 2004 03 22 | 704 | 0.9+ | 1.1+ | 2006 11 11 | G96 | 0.9− | 0.5+ |
| 2004 02 13 | 691 | 0.4− | 0.0 | 2004 03 23 | 704 | 0.5− | 0.7+ | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2004 02 13 | 691 | 0.4− | 0.0 | 2004 03 23 | 704 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2004 02 15 | 703 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2004 02 15 | 703 | (1.6+ | 0.1+) | 2004 03 23 | 704 | 0.1+ | 0.8− | 2006 11 21 | G96 | 0.3+ | 0.2− |

**(140842)∗ 2001 UH$_{199}$ = 2005 GU$_{136}$**

Discovered 2001 Oct. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 75200)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.68179 | | | | | |
| $n$ | 0.18140572 | $\omega$ | 226.01709 | | +0.78878873 | +0.60141558 |
| $a$ | 3.0905473 | $\Omega$ | 96.60493 | | −0.52102569 | +0.76377164 |
| $e$ | 0.1517659 | $i$ | 7.34131 | | −0.32610515 | +0.23441884 |
| $P$ | 5.43 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.2− | 0.3+ | 2001 10 20 | 704 | 0.2+ | 0.4+ | 2006 08 16 | E12 | 0.6+ | 0.5− |
| 2001 08 27 | 699 | 0.7− | 0.0 | 2001 10 20 | 704 | 0.8+ | 0.1− | 2006 08 16 | E12 | 0.1+ | 0.3+ |
| 2001 08 27 | 699 | 0.3− | 1.0+ | 2001 10 20 | 704 | 0.7− | 0.0 | 2006 08 16 | E12 | 0.4− | 0.3+ |
| 2001 08 27 | 699 | 0.4− | 0.7+ | 2001 10 20 | 704 | 0.5+ | 0.5+ | 2006 08 16 | E12 | 0.6+ | 0.3− |
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2001 10 24 | 644 | 0.4− | 0.8+ | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 1.3+ | 2001 10 24 | 644 | 0.2− | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.4+ | 0.6+ | 2001 10 24 | 644 | 0.3− | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.6− | 2004 02 17 | 691 | 0.2+ | 0.5+ | 2006 08 23 | 704 | 1.0− | 1.1− |
| 2001 09 25 | 704 | 0.1− | 0.1+ | 2004 02 17 | 691 | 0.3+ | 0.4+ | 2006 08 23 | 704 | 1.0− | 0.5+ |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2004 02 17 | 691 | 0.2+ | 0.4+ | 2006 08 23 | 704 | 0.5− | 0.8− |
| 2001 10 10 | 644 | 0.6− | 0.4+ | 2005 04 10 | 691 | 0.3+ | 0.3+ | 2006 08 23 | 704 | 0.3− | 0.7− |
| 2001 10 10 | 644 | 0.5− | 0.6+ | 2005 04 10 | 691 | 0.4+ | 0.4+ | 2006 08 23 | 704 | 0.0 | 0.4+ |
| 2001 10 10 | 644 | 0.5− | 0.6+ | 2005 04 10 | 691 | 0.4+ | 0.4+ | 2006 09 15 | 644 | 0.2+ | 0.4+ |
| 2001 10 11 | 704 | (1.7+ | 3.4+) | 2005 04 14 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 644 | 0.3+ | 0.3+ |
| 2001 10 11 | 704 | 1.3− | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 644 | 0.2+ | 0.4+ |
| 2001 10 11 | 704 | 0.8+ | 1.1+ | 2005 04 14 | 691 | 0.3− | 0.2− | 2006 09 15 | 644 | 0.1− | 0.4+ |
| 2001 10 11 | 704 | 1.0+ | 0.3+ | 2005 05 07 | 703 | 0.4− | 0.7+ | 2006 09 15 | 644 | 0.3+ | 0.6+ |
| 2001 10 11 | 704 | (1.7+ | 0.8−) | 2005 05 07 | 703 | 0.2+ | 0.2+ | 2006 09 15 | 644 | 0.2+ | 0.3+ |
| 2001 10 19 | 699 | 0.1+ | 0.4+ | 2005 05 07 | 703 | 0.3− | 0.1+ | 2006 10 11 | E12 | 1.5+ | 0.8− |
| 2001 10 19 | 699 | 0.6− | 0.3− | 2005 05 07 | 703 | 0.8− | 1.5+ | 2006 10 11 | E12 | 0.1− | 0.8− |
| 2001 10 19 | 699 | 0.7− | 1.1+ | 2005 05 15 | 644 | 0.2− | 0.2+ | 2006 10 11 | E12 | 0.3− | 0.3+ |
| 2001 10 19 | 699 | 1.1− | 0.7+ | 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 10 11 | E12 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.5+ | 0.0 | 2005 05 15 | 644 | 0.3+ | 0.1+ | | | | |

**(140843)∗ 2001 UP$_{203}$ = 2004 HS$_{16}$**

Discovered 2001 Oct. 19 by NEAT at Palomar.

Id. A. Doppler (*MPO* 68953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 103.03644 | | | | | |
| $n$ | 0.21182040 | $\omega$ | 286.62348 | | +0.53655689 | +0.84367228 |
| $a$ | 2.7871319 | $\Omega$ | 15.86466 | | −0.74697605 | +0.48476455 |
| $e$ | 0.0706493 | $i$ | 3.77411 | | −0.39259837 | +0.23069549 |
| $P$ | 4.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.9− | 0.9+ | 2004 04 20 | 704 | 0.3+ | 0.2+ | 2005 07 27 | 644 | 0.1− | 0.6+ |
| 2001 10 19 | 644 | 0.4− | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.6− | 2005 07 27 | 644 | 0.5− | 0.9+ |
| 2001 10 19 | 644 | 0.4− | 0.1− | 2004 04 20 | 704 | 0.7+ | 0.9+ | 2005 07 27 | 644 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 0.5+ | 0.5+ | 2004 04 20 | 704 | (0.2+ | 1.7+) | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.8− | 0.3+ | 2004 04 21 | 291 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2001 10 21 | 704 | 1.4− | 1.3+ | 2004 04 21 | 291 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 1.2− | 0.1+ | 2004 04 21 | 291 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.2− | | |
| 2001 10 26 | 644 | 1.0− | 0.0 | 2004 04 22 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.2+ | | |
| 2001 10 26 | 644 | 1.0− | 0.3+ | 2004 04 22 | 691 | 0.4+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.0 | | |
| 2001 11 15 | 691 | 0.1+ | 0.3+ | 2004 04 22 | 691 | 0.5+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 15 | 691 | 0.2+ | 0.4+ | 2004 04 30 | 291 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 15 | 691 | 0.6+ | 0.3+ | 2004 04 30 | 291 | 0.4− | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.1+ | | |
| 2004 03 23 | 291 | 0.2+ | 0.2+ | 2004 04 30 | 291 | 0.9− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2004 03 23 | 291 | 0.3+ | 0.3+ | 2005 07 04 | 644 | 0.4− | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.1+ | | |
| 2004 03 23 | 291 | 0.3+ | 0.4+ | 2005 07 04 | 644 | 0.1− | 0.6+ | 2006 11 22 | 691 | 0.2+ | 0.2+ | | |
| 2004 04 20 | 704 | 0.3− | 0.9+ | 2005 07 04 | 644 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.1+ | | |

**(140844)∗ 2001 UE$_{206}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.40124 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18926397 | $\omega$ | 308.28314 | | +0.73057532 | −0.66627756 | |
| $a$ | 3.0043977 | $\Omega$ | 94.03546 | | +0.66390375 | +0.64192809 | |
| $e$ | 0.1935787 | $i$ | 8.61631 | | +0.15966059 | +0.37947667 | |
| $P$ | 5.21 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 29 | 644 | 0.5− | 0.1+ | 2003 01 05 | 699 | 1.2− | 0.3+ | 2004 04 14 | 691 | 0.1+ | 0.7+ | | |
| 2001 08 29 | 644 | 0.4− | 0.2+ | 2003 01 05 | 699 | 0.0 | 0.1+ | 2004 04 14 | 691 | 0.3+ | 0.5+ | | |
| 2001 08 29 | 644 | 0.3− | 0.1+ | 2003 01 05 | 699 | 0.2− | 0.5+ | 2004 04 14 | 691 | 0.2+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.8− | 0.9+ | 2003 01 05 | 699 | (2.2− | 1.5−) | 2006 08 15 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 12 | 704 | 0.2− | 1.1+ | 2003 01 05 | 704 | 1.2+ | 1.0+ | 2006 08 15 | 644 | 0.0 | 0.4+ | | |
| 2001 09 12 | 704 | 0.6− | 1.1+ | 2003 01 05 | 704 | 0.4+ | 0.1− | 2006 08 15 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 18 | 699 | 0.8− | 0.2− | 2003 01 05 | 704 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.2+ | | |
| 2001 09 18 | 699 | 0.9− | 0.9+ | 2003 01 05 | 704 | 0.8− | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.6+ | | |
| 2001 09 18 | 699 | 0.3− | 0.9+ | 2003 02 01 | 704 | 0.9− | 0.4− | 2006 08 16 | 644 | 0.3− | 0.2+ | | |
| 2001 09 18 | 699 | 0.6− | 0.2+ | 2003 02 01 | 704 | 0.7+ | 0.4+ | 2006 08 16 | 644 | 0.4− | 0.3+ | | |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2003 02 01 | 704 | 1.1− | 0.8− | 2006 08 16 | 644 | 0.2− | 0.2+ | | |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.4+ | 0.8− | 2006 08 16 | 644 | 0.4− | 0.0 | | |
| 2001 09 25 | 704 | 0.3+ | 0.1+ | 2003 02 01 | 704 | 1.2− | 0.7− | 2006 08 28 | E12 | 0.8+ | 1.2+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2003 02 02 | 644 | 0.1+ | 0.1+ | 2006 08 28 | E12 | 0.3− | 0.2+ | | |
| 2001 09 25 | 644 | 0.4− | 0.2+ | 2003 02 02 | 644 | 0.0 | 0.0 | 2006 08 28 | E12 | 0.2− | 0.3+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2003 02 02 | 644 | 0.0 | 0.5+ | 2006 08 28 | E12 | 0.1+ | 0.4+ | | |
| 2001 09 25 | 644 | 0.1− | 0.3+ | 2003 02 04 | 699 | 1.1+ | 1.3− | 2006 09 14 | 644 | 0.3+ | 0.0 | | |
| 2001 09 25 | 644 | 0.4− | 0.0 | 2003 02 04 | 699 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.1− | | |
| 2001 10 11 | 704 | 0.1+ | 0.3+ | 2003 02 04 | 699 | (1.0+ | 2.0−) | 2006 09 14 | 644 | 0.1− | 0.3+ | | |
| 2001 10 11 | 704 | 1.3+ | 1.2+ | 2003 02 04 | 699 | 0.1− | 0.2− | 2006 09 17 | 699 | 0.5− | 0.2+ | | |
| 2001 10 11 | 704 | 0.5− | 0.5− | 2003 02 04 | 704 | 0.4+ | 0.0 | 2006 09 17 | 699 | 0.5+ | 0.9− | | |
| 2001 10 11 | 704 | 0.3+ | 0.2+ | 2003 02 04 | 704 | 1.1+ | 0.1+ | 2006 09 17 | 699 | 0.2− | 0.5− | | |
| 2001 10 19 | 699 | 0.2+ | 0.3+ | 2003 02 04 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 699 | 1.1− | 1.2− | | |
| 2001 10 19 | 699 | 0.7+ | 0.3+ | 2003 02 04 | 704 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.5− | 0.4− | | |
| 2001 10 19 | 699 | 0.2+ | 0.1− | 2003 02 26 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.2− | | |
| 2001 10 19 | 699 | 0.9+ | 0.2+ | 2003 02 26 | 704 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.4− | | |
| 2001 10 20 | 704 | 0.6− | 0.1+ | 2003 02 26 | 704 | (1.8+ | 0.6+) | 2006 09 26 | 703 | 0.5+ | 0.7− | | |
| 2001 10 20 | 704 | 1.0− | 0.4+ | 2003 02 26 | 704 | (0.8+ | 1.8+) | 2006 10 11 | E12 | 0.0 | 0.3− | | |
| 2001 10 20 | 704 | 0.5+ | 0.4+ | 2003 03 03 | 644 | 0.2− | 0.6+ | 2006 10 11 | E12 | 0.7+ | 0.2− | | |
| 2001 10 20 | 704 | 0.2+ | 0.5− | 2003 03 03 | 644 | 0.4+ | 0.5+ | 2006 10 11 | E12 | 0.2+ | 0.1− | | |
| 2001 10 20 | 704 | 0.3− | 0.2− | 2003 03 03 | 644 | 0.3+ | 0.3+ | 2006 10 11 | E12 | 0.3+ | 0.0 | | |
| 2001 10 23 | 644 | 0.0 | 0.7− | 2003 03 07 | 644 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2001 10 23 | 644 | 0.2− | 0.6− | 2003 03 07 | 644 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.1− | | |
| 2001 10 23 | 644 | 0.3+ | 0.5− | 2003 03 07 | 644 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.6+ | 0.1− | | |

**(140845)∗ 2001 UK$_{206}$ = 2004 GJ$_{25}$**

Discovered 2001 Oct. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61183)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.73190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19816717 | $\omega$ | 209.33609 | | +0.53315859 | −0.84130934 | |
| $a$ | 2.9137229 | $\Omega$ | 208.72090 | | +0.80785362 | +0.53755469 | |
| $e$ | 0.0896604 | $i$ | 10.68649 | | +0.25122588 | +0.05686435 | |
| $P$ | 4.97 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.4+ | 0.4+ | 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 28 | 644 | 0.1+ | 0.7+ | 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.7+ | | |
| 2001 09 28 | 644 | 0.4+ | 0.4+ | 2004 03 23 | 291 | 0.2− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2001 10 11 | 691 | 0.1− | 0.8+ | 2004 03 23 | 291 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2001 10 11 | 691 | 0.1− | 0.5+ | 2004 03 23 | 291 | 0.6+ | 0.2+ | 2006 10 17 | 703 | (2.1− | 0.3−) | | |
| 2001 10 11 | 691 | 0.1+ | 0.6+ | 2004 04 14 | 291 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.8− | 0.4− | | |
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2004 04 14 | 291 | 0.2− | 0.5+ | 2006 10 17 | 703 | (0.1− | 1.9−) | | |
| 2001 10 18 | 644 | 0.5− | 0.2− | 2004 04 14 | 291 | 0.1+ | 0.6+ | 2006 10 17 | 703 | (1.0− | 2.0−) | | |
| 2001 10 18 | 644 | 0.3− | 0.1+ | 2004 04 16 | 691 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.1− | | |
| 2001 10 20 | 691 | 0.2− | 0.1+ | 2004 04 16 | 691 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.4− | | |
| 2001 10 20 | 691 | 0.4− | 0.1+ | 2004 04 16 | 691 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.2− | | |
| 2001 10 20 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1− | | |
| 2001 10 21 | 704 | 0.2− | 1.1− | 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.2+ | | |
| 2001 10 21 | 704 | (0.2− | 1.9−) | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.5− | 0.2− | | |
| 2001 10 21 | 704 | 0.4+ | 0.6− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.2+ | | |
| 2001 10 21 | 704 | 0.9− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.2+ | | | | | | |

**(140846)∗ 2001 UX$_{206}$**

Discovered 2001 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.71960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20301185 | $\omega$ | 225.69763 | | +0.19638370 | +0.95291450 | |
| $a$ | 2.8671811 | $\Omega$ | 56.98878 | | −0.80279677 | +0.29155871 | |
| $e$ | 0.1214589 | $i$ | 15.99414 | | −0.56298382 | −0.08335145 | |
| $P$ | 4.85 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 645 | 0.0 | 0.1− | 2004 03 28 | 704 | (1.4− | 1.8+) | 2006 11 09 | 644 | 0.2+ | 0.5+ | | |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2004 03 28 | 704 | (1.2− | 1.6+) | 2006 11 09 | 644 | 0.2+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.8− | 0.5− | 2005 06 07 | E12 | (0.9− | 3.1+) | 2006 11 13 | 703 | 0.9+ | 0.9+ | | |
| 2001 09 25 | 704 | 0.9− | 0.2+ | 2005 06 07 | E12 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.7+ | | |
| 2001 09 25 | 704 | 0.9− | 0.4+ | 2005 06 07 | E12 | 0.6− | 0.3+ | 2006 11 13 | 703 | 0.6+ | 0.1+ | | |
| 2001 10 15 | 644 | 0.2+ | 1.3+ | 2005 06 07 | E12 | 0.5− | 0.4+ | 2006 11 13 | 703 | 0.1+ | 1.3+ | | |
| 2001 10 15 | 644 | 0.1+ | 1.3+ | 2005 06 17 | E12 | 0.5− | 0.2− | 2006 11 13 | 958 | 0.9− | 0.8+ | | |
| 2001 10 15 | 644 | 0.2+ | 1.3+ | 2005 06 17 | E12 | 0.3− | 0.5+ | 2006 11 13 | 958 | 0.8+ | 0.3− | | |
| 2001 10 20 | 704 | 0.8+ | 0.8+ | 2005 06 17 | E12 | 0.5+ | 0.2− | 2006 11 13 | 958 | 0.2− | 0.2+ | | |
| 2001 10 20 | 704 | 0.7+ | 0.5− | 2005 06 17 | E12 | 0.6− | 0.6+ | 2006 11 14 | 704 | 0.8+ | 0.4+ | | |
| 2001 10 20 | 704 | 1.2− | 0.1− | 2005 07 25 | E12 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.9− | 0.7+ | | |
| 2001 10 20 | 704 | 1.1− | 0.8− | 2005 07 25 | E12 | 0.1− | 0.3+ | 2006 11 14 | 704 | (0.9+ | 1.5+) | | |
| 2001 10 23 | 644 | 0.5+ | 0.3− | 2005 07 25 | E12 | 0.4+ | 0.6+ | 2006 11 14 | 704 | (0.3+ | 1.9+) | | |
| 2001 10 23 | 644 | 0.5+ | 0.2− | 2005 07 25 | E12 | 0.8+ | 0.5+ | 2006 11 14 | 704 | 0.4+ | 1.1+ | | |
| 2001 10 23 | 644 | 0.4+ | 0.2− | 2005 08 05 | E12 | 0.5+ | 0.2− | 2006 11 20 | 704 | 0.3− | 0.3− | | |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2005 08 05 | E12 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.6+ | | |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2005 08 05 | E12 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.3+ | | |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 11 20 | 704 | 0.6+ | 0.7+ | | |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.8− | 0.5+ | 2006 11 22 | G96 | 0.0 | 0.2− | | |
| 2004 01 28 | 645 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.0− | 1.1+ | 2006 11 22 | G96 | 0.3+ | 0.1− | | |
| 2004 01 28 | 645 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 1.0+ | 2006 11 22 | G96 | 0.3+ | 0.0 | | |
| 2004 03 11 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 22 | G96 | 0.2− | 0.0 | | |
| 2004 03 11 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 1.4− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2004 03 11 | 644 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 1.3− | 0.8− | 2006 11 23 | G96 | 0.3+ | 0.1+ | | |
| 2004 03 28 | 704 | 0.7− | 0.5− | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.3− | 0.1+ | | |
| 2004 03 28 | 704 | (0.3− | 1.8+) | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 1.0− | 1.1− | | |

**(140847)∗ 2001 UR$_{209}$ = 2003 BA$_{90}$**

Discovered 2001 Oct. 20 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 43149)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.32951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23536810 | $\omega$ | 200.63716 | | −0.69092966 | −0.72002318 | |
| $a$ | 2.5979911 | $\Omega$ | 293.13023 | | +0.67273769 | −0.60763694 | |
| $e$ | 0.1291793 | $i$ | 4.03284 | | +0.26465109 | −0.33517752 | |
| $P$ | 4.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 30 | 691 | 0.1− | 0.4− | 2003 03 06 | 704 | 0.2− | 0.0 | 2003 03 26 | 699 | 0.6− | 0.2− |
| 1997 11 30 | 691 | 0.0 | 0.3− | 2003 03 06 | 704 | 0.8+ | 0.8+ | 2003 03 31 | 704 | 0.8− | 0.3− |
| 1997 11 30 | 691 | 0.2+ | 0.4− | 2003 03 06 | 704 | 0.6+ | 1.5+ | 2003 03 31 | 704 | 0.7− | 0.2+ |
| 2001 10 14 | 704 | 0.3− | 1.1+ | 2003 03 06 | 704 | 1.3+ | 0.5+ | 2003 03 31 | 704 | 1.2− | 0.6+ |
| 2001 10 14 | 704 | 0.9− | 0.7+ | 2003 03 06 | 704 | (0.7+ | 1.7+) | 2005 09 01 | 691 | 0.1− | 0.4+ |
| 2001 10 14 | 704 | 0.4− | 0.9+ | 2003 03 06 | 704 | 1.4+ | 0.1− | 2005 09 01 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 1.1− | 0.3+ | 2003 03 07 | 704 | 0.0 | 0.2+ | 2005 09 01 | 691 | 0.2− | 0.4+ |
| 2001 10 14 | 704 | 0.7− | 0.6+ | 2003 03 07 | 704 | 0.3+ | 0.0 | 2005 09 09 | A50 | 0.1− | 0.0 |
| 2001 10 20 | 644 | 0.0 | 0.4+ | 2003 03 07 | 704 | 0.1+ | 0.5+ | 2005 09 09 | A50 | 0.1− | 0.3+ |
| 2001 10 20 | 644 | 0.2− | 0.2+ | 2003 03 07 | 704 | 0.2+ | 0.3+ | 2005 09 26 | 644 | 0.2− | 0.6+ |
| 2001 10 20 | 644 | 0.0 | 0.7+ | 2003 03 07 | 704 | 0.7+ | 0.6+ | 2005 09 26 | 644 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | 0.3+ | 0.6+ | 2003 03 08 | 704 | 1.0+ | 0.0 | 2005 09 26 | 644 | 0.3− | 0.3+ |
| 2001 10 24 | 704 | 1.4+ | 0.4+ | 2003 03 08 | 704 | 0.3+ | 0.2+ | 2005 10 01 | 703 | (1.5− | 1.6−) |
| 2001 10 24 | 704 | 1.2+ | 0.8− | 2003 03 08 | 704 | 0.3− | 0.1+ | 2005 10 01 | 703 | 0.4+ | 0.2− |
| 2003 01 27 | 608 | 0.2+ | 0.0 | 2003 03 08 | 704 | 0.4− | 0.4+ | 2005 10 01 | 703 | 1.2− | 0.4+ |
| 2003 01 27 | 608 | 0.4+ | 0.3− | 2003 03 08 | 704 | 0.1− | 0.2− | 2005 10 01 | 703 | 0.3− | 0.1+ |
| 2003 01 27 | 608 | 0.0 | 0.3− | 2003 03 09 | 704 | 0.1+ | 0.8− | 2006 10 03 | G96 | 0.4+ | 0.6− |
| 2003 01 28 | 704 | 0.2+ | 0.7+ | 2003 03 09 | 704 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.4− | 0.0 |
| 2003 01 28 | 704 | 0.2+ | 0.1+ | 2003 03 09 | 704 | 0.3+ | 0.3− | 2006 10 03 | G96 | 0.0 | 0.5− |
| 2003 01 28 | 704 | 0.1+ | 0.0 | 2003 03 09 | 704 | (0.4+ | 3.3+) | 2006 10 03 | G96 | 0.2− | 0.5− |
| 2003 02 02 | 704 | 0.6− | 0.5+ | 2003 03 09 | 704 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.7− |
| 2003 02 02 | 704 | 0.3− | 0.2+ | 2003 03 09 | 704 | 1.4+ | 0.2− | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2003 02 02 | 704 | (0.5− | 1.7+) | 2003 03 09 | 704 | 0.6+ | 0.4− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2003 02 08 | 608 | 0.1+ | 0.1− | 2003 03 09 | 704 | 0.5+ | 0.6− | 2006 10 23 | G96 | 0.6− | 0.5− |
| 2003 02 08 | 608 | 0.4− | 0.0 | 2003 03 10 | 704 | 0.4− | 0.6− | 2006 11 15 | G96 | 0.8− | 0.6− |
| 2003 02 08 | 608 | 0.2+ | 0.4− | 2003 03 10 | 704 | (2.3− | 0.8+) | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2003 02 23 | 699 | 0.3− | 0.0 | 2003 03 10 | 704 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.6− | 0.7− |
| 2003 02 23 | 699 | 0.6− | 0.5− | 2003 03 10 | 704 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.4− | 0.4+ |
| 2003 02 23 | 699 | 0.1− | 0.4− | 2003 03 10 | 704 | 0.1− | 0.2− | 2006 11 27 | 703 | 2.1+ | 0.1+ |
| 2003 02 23 | 699 | 0.5+ | 0.7+ | 2003 03 12 | 704 | 1.3− | 0.1− | 2006 11 27 | 703 | 0.2− | 1.1+ |
| 2003 02 28 | 608 | (1.8+ | 0.8−) | 2003 03 12 | 704 | (0.8+ | 1.7−) | 2006 11 27 | 703 | 1.3− | 1.0+ |
| 2003 02 28 | 608 | (1.6+ | 1.8−) | 2003 03 12 | 704 | 0.4+ | 0.8+ | 2006 11 27 | 703 | 1.7+ | 1.2+ |
| 2003 02 28 | 608 | 1.2+ | 0.9− | 2003 03 12 | 704 | (0.0 | 1.8−) | 2006 11 28 | G96 | 0.1− | 0.4− |
| 2003 03 06 | 699 | 1.3− | 0.2+ | 2003 03 12 | 704 | 0.1− | 0.2+ | 2006 11 28 | G96 | 0.3+ | 0.5− |
| 2003 03 06 | 699 | 1.1+ | 1.4+ | 2003 03 26 | 699 | 0.3− | 0.6+ | 2006 11 28 | G96 | 0.5− | 0.3− |
| 2003 03 06 | 699 | 0.1+ | 0.1− | 2003 03 26 | 699 | (0.2+ | 1.8+) | 2006 11 28 | G96 | 0.1− | 0.2− |
| 2003 03 06 | 699 | 0.3− | 0.8+ | 2003 03 26 | 699 | 0.2− | 0.3− | | | | |

**(140848)∗ 2001 UJ$_{210}$**

Discovered 2001 Oct. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.68264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19023202 | $\omega$ | 65.90549 | | +0.92526899 | −0.26005575 | |
| $a$ | 2.9941966 | $\Omega$ | 307.96155 | | +0.06008514 | +0.81927465 | |
| $e$ | 0.2543320 | $i$ | 20.50149 | | +0.37452246 | +0.51103821 | |
| $P$ | 5.18 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 27 | 691 | 0.6− | 0.5− | 2001 10 25 | 704 | 0.4+ | 0.4+ | 2006 08 25 | 704 | 0.2− | 0.1− |
| 1998 01 27 | 691 | 1.0− | 0.7− | 2001 10 25 | 704 | (0.0 | 1.6−) | 2006 08 25 | 704 | 0.2− | 0.0 |
| 1998 01 27 | 691 | 0.6− | 0.9− | 2001 10 25 | 704 | 0.5+ | 1.3− | 2006 08 25 | 704 | 0.0 | 0.1+ |
| 2001 08 23 | 704 | 0.5− | 0.3+ | 2001 11 02 | 644 | 0.4+ | 1.3+ | 2006 09 06 | 644 | 0.0 | 0.1− |
| 2001 08 23 | 704 | 0.7− | 0.4+ | 2001 11 02 | 644 | 1.0+ | 1.3+ | 2006 09 06 | 644 | 0.2− | 0.2− |
| 2001 08 23 | 704 | 0.1− | 0.1− | 2001 11 02 | 644 | 0.7+ | 1.3+ | 2006 09 06 | 644 | 0.2− | 0.5− |
| 2001 08 23 | 704 | 0.8− | 0.0 | 2001 11 11 | 704 | 0.5+ | 0.3− | 2006 09 22 | 704 | 0.0 | 0.0 |
| 2001 08 23 | 704 | 0.2− | 0.3+ | 2001 11 11 | 704 | 0.5− | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.3+ |
| 2001 09 08 | 704 | 0.8− | 0.2+ | 2001 11 11 | 704 | 0.5− | 1.3− | 2006 09 22 | 704 | 0.8+ | 0.1+ |
| 2001 09 08 | 704 | 0.6− | 0.2− | 2001 11 11 | 704 | 0.1− | 0.7− | 2006 09 22 | 704 | 0.0 | 0.1+ |
| 2001 09 08 | 704 | 0.2+ | 0.5+ | 2001 11 11 | 704 | 0.6+ | 1.1− | 2006 09 28 | 703 | 0.5− | 0.5− |
| 2001 09 22 | 699 | 0.2+ | 0.3+ | 2001 12 22 | 704 | 0.1− | 1.2− | 2006 09 28 | 703 | 0.6− | 0.5+ |
| 2001 09 22 | 699 | 0.5− | 0.6+ | 2001 12 22 | 704 | 0.0 | 0.6− | 2006 09 28 | 703 | 0.6− | 0.2− |
| 2001 09 22 | 699 | (3.1+ | 0.2−) | 2001 12 22 | 704 | 0.6− | 0.4− | 2006 09 28 | 703 | (2.2− | 1.4−) |
| 2001 09 22 | 699 | 0.8+ | 0.3+ | 2002 11 11 | 291 | 0.4+ | 0.8+ | 2006 10 15 | 240 | 0.9+ | 0.0 |
| 2001 09 26 | 704 | 0.3− | 0.2+ | 2002 11 11 | 291 | 0.2+ | 0.5+ | 2006 10 15 | 240 | 0.6+ | 0.3− |
| 2001 09 26 | 704 | 0.7− | 0.6− | 2002 11 11 | 291 | 0.3− | 0.8+ | 2006 10 15 | 240 | 0.5− | 0.6− |
| 2001 09 26 | 704 | 0.5− | 0.4− | 2003 01 28 | 645 | 0.2+ | 0.0 | 2006 11 15 | 703 | 1.4+ | 0.4+ |
| 2001 09 26 | 704 | 0.8− | 0.1+ | 2003 01 28 | 645 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.9− |
| 2001 10 21 | 699 | 0.6+ | 0.2+ | 2003 02 22 | 644 | 0.4+ | 0.5+ | 2006 11 15 | 703 | 1.5+ | 1.4+ |
| 2001 10 21 | 699 | 0.5+ | 0.2− | 2003 02 22 | 644 | 0.6+ | 0.7+ | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2001 10 21 | 699 | 0.5+ | 0.1+ | 2003 02 22 | 644 | 0.6+ | 0.2+ | 2006 11 25 | 703 | 1.1+ | 0.8+ |
| 2001 10 21 | 699 | 0.9+ | 0.1+ | 2006 08 10 | 644 | 0.3− | 0.0 | 2006 11 25 | 703 | 0.9− | 0.1+ |
| 2001 10 25 | 704 | 1.4+ | 0.3− | 2006 08 10 | 644 | 0.2− | 0.1− | 2006 11 25 | 703 | 0.9− | 0.0 |
| 2001 10 25 | 704 | 0.3+ | 0.4− | 2006 08 10 | 644 | 0.5− | 0.0 | 2006 11 25 | 703 | 0.4− | 0.1+ |

**(140849)∗ 2001 UB$_{212}$ = 2004 JB$_{14}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 65127)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.19284 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18900060 | $\omega$ | 297.29890 | | −0.98983659 | −0.07003999 | |
| $a$ | 3.0071881 | $\Omega$ | 238.92159 | | +0.10714011 | −0.93956979 | |
| $e$ | 0.0711035 | $i$ | 8.30879 | | −0.09351217 | −0.33511642 | |
| $P$ | 5.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 07 | 691 | 0.3+ | 0.5+ | 2003 02 04 | 644 | 0.1+ | 0.7+ | 2005 07 26 | 644 | 0.1+ | 0.0 |
| 1991 12 07 | 691 | 0.3− | 0.1+ | 2003 02 04 | 644 | 0.3+ | 0.6+ | 2005 07 26 | 644 | 0.1− | 0.0 |
| 1991 12 07 | 691 | 0.2+ | 0.5− | 2004 04 25 | 704 | 0.2− | 1.0+ | 2005 08 01 | 599 | (1.0− | 2.2+) |
| 2001 10 21 | 704 | 0.3+ | 0.1− | 2004 04 25 | 704 | 0.5− | 0.1− | 2005 08 01 | 599 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2004 04 25 | 704 | 0.1+ | 0.3+ | 2005 08 01 | 599 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.9− | 0.2+ | 2004 05 09 | 691 | 0.1− | 0.2+ | 2005 08 01 | 599 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | (1.2− | 1.7+) | 2004 05 09 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.0 |
| 2001 10 25 | 691 | 0.1− | 0.1− | 2004 05 09 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.3+ |
| 2001 10 25 | 691 | 0.2− | 0.0 | 2004 05 12 | 699 | (2.7+ | 0.7+) | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2001 10 25 | 691 | 0.1− | 0.1− | 2004 05 12 | 699 | 0.6− | 0.8− | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2001 11 11 | 291 | 0.2+ | 0.1+ | 2004 05 12 | 699 | 0.6+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 11 11 | 291 | 0.2+ | 0.0 | 2004 05 12 | 699 | 0.2− | 1.0− | 2006 10 12 | 644 | 0.5− | 0.1+ |
| 2001 11 11 | 291 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 691 | 0.9+ | 0.0 |
| 2001 11 19 | 704 | 0.3+ | 0.2+ | 2004 05 15 | 704 | 0.9+ | 1.3+ | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2001 11 19 | 704 | 0.7− | 0.5+ | 2004 05 15 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.0 | 0.3− | 2004 05 15 | 704 | 0.6+ | 1.2− | 2006 10 17 | 703 | (0.4− | 2.6+) |
| 2001 11 19 | 704 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | 1.0+ | 1.0+ |
| 2001 11 19 | 704 | 0.4− | 0.6+ | 2004 05 16 | 704 | 0.1+ | 0.5− | 2006 10 17 | 703 | 1.4+ | 0.2− |
| 2003 01 27 | 704 | 0.4+ | 0.0 | 2004 05 16 | 704 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.6− |
| 2003 01 27 | 704 | 0.4+ | 0.6− | 2004 05 16 | 704 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2003 01 27 | 704 | 1.0− | 0.7− | 2004 05 16 | 704 | 1.5− | 0.6− | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2003 02 04 | 644 | 0.7+ | 0.5+ | 2005 07 26 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− |

**(140850)∗ 2001 UH$_{212}$**

Discovered 2001 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.96398 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18931397 | $\omega$ | 103.65627 | | +0.87165930 | −0.48933515 | |
| $a$ | 3.0038687 | $\Omega$ | 285.64676 | | +0.43786859 | +0.80279893 | |
| $e$ | 0.1137309 | $i$ | 1.64181 | | +0.22018438 | +0.34068312 | |
| $P$ | 5.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.8− | 0.4+ | 2002 02 13 | 291 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1− |
| 2001 10 19 | 644 | 0.1− | 0.6+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.5+ | 0.5− | 2004 04 16 | 691 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.4+ | 0.4− | 2004 04 16 | 691 | 0.8+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.0 | 0.1+ | 2004 04 16 | 691 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 691 | 0.3+ | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 1.0+ | 0.5− | 2004 04 22 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 10 24 | 291 | 0.0 | 0.0 | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 10 24 | 291 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 10 24 | 291 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.3− | 0.6− |
| 2001 11 19 | 704 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 0.5− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.1− | 0.6− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.8+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2001 11 19 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2001 11 21 | 704 | 0.1− | 1.4− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 1.2− | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.1− |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | (0.8− | 1.6+) | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 18 | 291 | 0.2+ | 0.2+ |
| 2002 02 13 | 291 | 0.5− | 0.2+ | 2006 10 10 | 644 | 0.4+ | 0.0 | 2006 11 18 | 291 | 0.1+ | 0.2+ |
| 2002 02 13 | 291 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 18 | 291 | 0.1+ | 0.1+ |

**(140851)∗ 2001 UA$_{213}$**

Discovered 2001 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 51.81678 | | | (2000.0) | | | **P** | | | **Q** | | |
| $n$ | 0.18751867 | | $\omega$ | 216.32630 | | | +0.73413345 | | | +0.67697859 | | |
| $a$ | 3.0230108 | | $\Omega$ | 100.97781 | | | −0.60971592 | | | +0.69122760 | | |
| $e$ | 0.0315577 | | $i$ | 3.06100 | | | −0.29882196 | | | +0.25279318 | | |
| $P$ | 5.26 | | $H$ | 14.8 | | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.1+ | 0.5+ | 2003 01 30 | 699 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.5− | 0.6− |
| 2000 08 01 | 704 | 0.5+ | 0.2− | 2003 01 30 | 699 | (2.9+ | 1.2+) | 2006 09 25 | 699 | 0.2− | 1.2+ |
| 2000 08 01 | 704 | 0.6+ | 0.2+ | 2003 01 30 | 699 | 1.5+ | 0.9+ | 2006 09 26 | 704 | 0.8− | 0.1+ |
| 2001 10 18 | 644 | 0.3+ | 0.2+ | 2003 01 30 | 699 | 0.8+ | 0.3+ | 2006 09 26 | 704 | (0.3− | 1.6+) |
| 2001 10 18 | 644 | 0.4+ | 0.1+ | 2003 01 31 | 704 | 0.7+ | 0.6− | 2006 09 26 | 704 | (0.5+ | 1.8+) |
| 2001 10 18 | 644 | 0.5+ | 0.5+ | 2003 01 31 | 704 | 0.3+ | 0.4− | 2006 09 26 | 704 | 0.3− | 0.4+ |
| 2001 10 22 | 704 | (0.5− | 3.1+) | 2003 01 31 | 704 | 0.2− | 0.4− | 2006 09 26 | 704 | 0.5+ | 0.3+ |
| 2001 10 22 | 704 | (0.6− | 4.2+) | 2003 02 03 | 704 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.6+ |
| 2001 10 22 | 704 | (2.3− | 2.7+) | 2003 02 03 | 704 | 0.6− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2001 10 22 | 704 | 1.2− | 1.0+ | 2003 02 03 | 704 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2001 10 23 | 704 | 1.3− | 0.0 | 2003 02 03 | 704 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.8+ |
| 2001 10 23 | 704 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2001 10 23 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.7+ |
| 2001 10 23 | 704 | 0.2− | 0.1− | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 11 09 | 704 | 0.4− | 1.4+ | 2004 03 26 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2001 11 09 | 704 | 0.3− | 0.6+ | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | 0.0 | 0.5+ | 2004 04 09 | E12 | 0.7− | 1.3+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2001 11 09 | 704 | 0.2− | 0.7+ | 2004 04 09 | E12 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2001 11 20 | 704 | (0.7− | 1.7−) | 2004 04 09 | E12 | 0.6− | 0.8+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2001 11 20 | 704 | 0.7− | 1.3− | 2004 04 09 | E12 | (1.2− | 1.7+) | 2006 10 22 | 703 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.7− | 1.2− | 2004 04 19 | 704 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2001 11 20 | 704 | 0.8− | 1.2− | 2004 04 19 | 704 | 0.0 | 0.8− | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2001 11 20 | 704 | 0.8− | 1.3− | 2004 04 19 | 704 | 0.7+ | 0.8+ | 2006 11 17 | G96 | 0.4+ | 0.2+ |
| 2001 12 11 | 704 | 0.2+ | 0.6+ | 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2001 12 11 | 704 | 1.0+ | 1.1− | 2004 04 19 | 704 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 0.6+ | 0.2− | 2006 09 25 | 699 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.0 | | | | |

**(140852)∗ 2001 UT$_{215}$**

Discovered 2001 Oct. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 86.79897 | | | (2000.0) | | | **P** | | | **Q** | | |
| $n$ | 0.17888321 | | $\omega$ | 213.00910 | | | −0.07166783 | | | +0.97957296 | | |
| $a$ | 3.1195336 | | $\Omega$ | 53.57688 | | | −0.85705215 | | | +0.03587845 | | |
| $e$ | 0.1723723 | | $i$ | 13.50305 | | | −0.51022087 | | | −0.19786248 | | |
| $P$ | 5.51 | | $H$ | 15.3 | | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 699 | 0.6− | 1.5+ | 2001 11 20 | 704 | 1.2+ | 0.8− | 2006 09 26 | 703 | 1.0+ | 0.5− |
| 1999 04 11 | 699 | 0.7+ | 1.5+ | 2001 11 20 | 704 | 0.4+ | 1.0− | 2006 09 29 | 699 | 0.3− | 0.8+ |
| 1999 04 11 | 699 | (1.1+ | 2.2+) | 2001 11 20 | 704 | 0.6+ | 0.1+ | 2006 09 29 | 699 | 1.1− | 0.9− |
| 1999 05 18 | 704 | (0.4+ | 2.7+) | 2001 12 11 | 291 | 0.1− | 0.4+ | 2006 09 29 | 699 | 0.8− | 1.0+ |
| 1999 05 18 | 704 | (0.4+ | 4.7+) | 2001 12 11 | 291 | 0.1+ | 0.7+ | 2006 09 29 | 699 | (0.2− | 1.9+) |
| 1999 05 18 | 704 | 1.4+ | 0.3− | 2001 12 11 | 291 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 1.1+ | 0.1+ |
| 1999 05 18 | 704 | (4.9− | 1.8+) | 2003 12 25 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2− | 1.2+ |
| 2001 10 09 | 691 | 0.7− | 0.3− | 2003 12 25 | 645 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.1− | 0.4+ |
| 2001 10 09 | 691 | 0.6− | 0.2− | 2004 02 16 | 704 | 0.4− | 1.1− | 2006 10 16 | 703 | (3.1+ | 0.1+) |
| 2001 10 09 | 691 | 0.5− | 0.1− | 2004 02 16 | 704 | (0.3+ | 1.7−) | 2006 10 21 | 644 | 0.4+ | 0.4+ |
| 2001 10 23 | 704 | 0.3− | 0.6+ | 2004 02 16 | 704 | (0.3+ | 2.4−) | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 0.7+ | 0.8+ | 2004 02 16 | 704 | (0.4+ | 1.8+) | 2006 10 21 | 644 | 0.7+ | 0.9+ |
| 2001 10 23 | 704 | (1.6+ | 1.5−) | 2004 04 14 | 644 | 0.9+ | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.5− |
| 2001 10 25 | 644 | 0.3+ | 0.2+ | 2004 04 14 | 644 | 0.4+ | 0.9+ | 2006 10 22 | 703 | 0.7+ | 0.8+ |
| 2001 10 25 | 644 | 0.5+ | 0.4+ | 2004 04 14 | 644 | 0.7+ | 0.9+ | 2006 10 22 | 703 | 1.4− | 1.4− |
| 2001 10 25 | 644 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.5− | 0.7− |
| 2001 11 20 | 704 | 0.5+ | 0.2− | 2006 09 26 | 703 | (1.8+ | 0.3−) | | | | |
| 2001 11 20 | 704 | 0.7+ | 1.1− | 2006 09 26 | 703 | 0.5− | 0.1− | | | | |

**(140853)∗ 2001 UU$_{215}$ = 1999 KB$_4$**

Discovered 2001 Oct. 23 by W. K. Y. Yeung at Desert Eagle Observatory. Id. A. Doppler (*MPO* 35119)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 48.25163 | | | (2000.0) | | | **P** | | | **Q** | | |
| $n$ | 0.18477676 | | $\omega$ | 107.70136 | | | +0.85031920 | | | +0.51489789 | | |
| $a$ | 3.0528431 | | $\Omega$ | 221.49063 | | | −0.52324376 | | | +0.80504010 | | |
| $e$ | 0.1459668 | | $i$ | 9.45232 | | | −0.05633137 | | | +0.29460245 | | |
| $P$ | 5.33 | | $H$ | 15.0 | | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 17 | 691 | 0.4− | 0.0 | 2004 04 16 | 644 | 0.3− | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1990 11 17 | 691 | 0.1+ | 0.2− | 2004 04 16 | 644 | 0.1+ | 1.3+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1990 11 17 | 691 | 0.2− | 0.1− | 2004 04 16 | 644 | 0.3− | 1.0+ | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 1999 05 13 | 704 | 0.7− | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.3− |
| 1999 05 13 | 704 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | (6.4+ | 1.1−) |
| 1999 05 13 | 704 | (0.3+ | 2.5+) | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 17 | 703 | 0.2− | 1.1+ |
| 1999 05 13 | 704 | (5.3− | 0.4+) | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.2− | 0.0 |
| 1999 05 18 | 691 | 0.1− | 0.1+ | 2006 10 04 | 703 | (2.7+ | 1.1−) | 2006 11 17 | 703 | 0.6− | 0.6+ |
| 1999 05 18 | 691 | 0.2+ | 0.1+ | 2006 10 04 | 703 | (3.5+ | 0.3−) | 2006 11 17 | 703 | 0.0 | 0.8+ |
| 1999 05 18 | 691 | 0.2− | 0.2− | 2006 10 04 | 703 | 0.9− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.8+ |
| 1999 05 21 | 691 | 0.1+ | 0.1+ | 2006 10 04 | 703 | 0.8+ | 0.4− | 2006 11 18 | 704 | 1.1+ | 0.2− |
| 1999 05 21 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 1999 05 21 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.9+ |
| 2000 06 04 | 691 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.5+ | 0.4− |
| 2000 06 04 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.7+ | 1.0+ |
| 2000 06 04 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.3− |
| 2000 08 31 | 704 | 0.8+ | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 1.3− | 0.7− |
| 2000 08 31 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 2000 08 31 | 704 | 0.6+ | 0.5− | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | (2.2+ | 1.3+) |
| 2000 08 31 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2000 08 31 | 704 | 0.2+ | 0.1− | 2006 10 23 | H07 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2001 10 23 | 333 | 1.4+ | 0.3− | 2006 10 23 | H07 | 0.6− | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2001 10 23 | 333 | 1.0− | 0.1− | 2006 10 23 | H07 | 0.2− | 1.0− | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2001 10 23 | 333 | 0.7+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.8− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 1.1+ | 0.9− | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.3− | 0.4+ | | |
| 2001 10 24 | 704 | 0.7+ | 1.0− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.6− | 0.4+ | | |
| 2001 10 24 | 704 | 1.0+ | 0.8− | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.8− | 0.4+ | | |
| 2001 11 17 | 704 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.0 | 1.0+ | 2006 11 28 | 704 | 0.6− | 1.0+ | | |
| 2001 11 17 | 704 | 0.5− | 0.3+ | 2006 10 28 | 704 | 0.5+ | 1.3− | 2006 11 28 | 704 | 0.8− | 0.7+ | | |
| 2001 11 17 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.3− | 1.1+ | | |
| 2001 12 11 | 704 | 0.6+ | 0.2− | 2006 10 28 | 704 | 0.4+ | 0.2− | 2006 11 28 | 704 | 1.6− | 1.1+ | | |
| 2001 12 11 | 704 | 0.3+ | 0.3+ | 2006 10 28 | 704 | 0.8− | 0.2+ | 2006 11 28 | 704 | 0.4− | 0.4+ | | |
| 2001 12 11 | 704 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | | | | | | |

**(140854)∗ 2001 UR$_{219}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.06852 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17538991 | $\omega$ | 287.95807 | | +0.94656677 | −0.27818051 | |
| $a$ | 3.1608191 | $\Omega$ | 88.44033 | | +0.32110626 | +0.86003733 | |
| $e$ | 0.0619704 | $i$ | 9.39490 | | −0.03003531 | +0.42772818 | |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.4+ | 0.3+ | 2003 02 04 | 699 | (1.1+ | 1.6+) | 2006 09 18 | 703 | 0.1− | 0.5− | | |
| 2001 10 17 | 704 | 0.2− | 0.1− | 2003 02 04 | 699 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.7− | | |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.0 | | |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.8+ | | |
| 2001 12 09 | 699 | 0.4− | 0.4+ | 2004 03 29 | 703 | 0.8− | 0.3− | 2006 09 21 | 699 | 1.1+ | 1.3+ | | |
| 2001 12 09 | 699 | 0.8+ | 0.3+ | 2004 03 29 | 703 | (0.9+ | 2.5+) | 2006 09 21 | 699 | 0.2− | 0.4− | | |
| 2001 12 09 | 699 | 0.7+ | 1.4+ | 2004 03 29 | 703 | 0.8+ | 0.1+ | 2006 09 21 | 699 | 0.5+ | 0.0 | | |
| 2001 12 09 | 699 | 0.6+ | 0.7+ | 2004 03 29 | 703 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.1+ | | |
| 2001 12 11 | 704 | 1.4− | 0.9− | 2004 04 15 | 644 | 0.1− | 1.0+ | 2006 09 26 | 703 | 0.2− | 0.5− | | |
| 2001 12 11 | 704 | 0.2− | 0.8− | 2004 04 15 | 644 | 0.0 | 1.0+ | 2006 09 26 | 703 | 0.2− | 0.0 | | |
| 2001 12 11 | 704 | 1.2− | 0.9− | 2004 04 15 | 644 | 0.0 | 0.9+ | 2006 09 26 | 703 | 1.1− | 0.5+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.9+ | 2004 04 25 | 699 | 0.0 | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.3+ | | |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2004 04 25 | 699 | 1.1+ | 0.2+ | 2006 10 23 | 644 | 0.4+ | 0.1− | | |
| 2001 12 17 | 704 | 0.4− | 0.3+ | 2004 04 25 | 699 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.4− | 0.1− | | |
| 2001 12 17 | 704 | 0.4+ | 0.7+ | 2004 04 25 | 699 | 0.7+ | 1.0+ | 2006 10 24 | 644 | 0.2− | 0.0 | | |
| 2001 12 17 | 704 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.1− | 0.1+ | | |
| 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 08 16 | 644 | 0.5− | 0.2+ | 2006 10 24 | 644 | 0.1+ | 0.0 | | |
| 2003 02 04 | 699 | (2.5− | 0.8+) | 2006 08 16 | 644 | 0.2− | 0.0 | | | | | | |
| 2003 02 04 | 699 | 0.7+ | 1.3− | 2006 09 18 | 703 | 0.7+ | 1.0+ | | | | | | |

**(140855)∗ 2001 US$_{219}$**

Discovered 2001 Oct. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.60586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17255692 | $\omega$ | 230.83494 | | +0.71425220 | +0.62291492 | |
| $a$ | 3.1953207 | $\Omega$ | 88.17346 | | −0.50217315 | +0.77369031 | |
| $e$ | 0.0810047 | $i$ | 18.61793 | | −0.48750992 | +0.11567324 | |
| $P$ | 5.71 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 14 | 691 | 0.4− | 0.3− | 2003 01 31 | 699 | 0.2+ | 0.3− | 2004 04 25 | 699 | 0.2− | 0.0 | | |
| 1993 06 14 | 691 | 0.4− | 0.1+ | 2003 01 31 | 699 | 1.2+ | 0.3+ | 2004 04 25 | 699 | (2.0+ | 2.5+) | | |
| 1993 06 14 | 691 | 0.0 | 1.2− | 2003 01 31 | 699 | 0.1+ | 0.9− | 2004 04 25 | 608 | 0.2− | 0.2− | | |
| 2001 10 17 | 704 | 0.2− | 0.6− | 2003 02 06 | 699 | 1.1− | 0.5− | 2004 04 25 | 608 | 0.5+ | 0.5− | | |
| 2001 10 17 | 704 | 0.7+ | 0.2+ | 2003 02 06 | 699 | 0.0 | 1.3− | 2004 04 25 | 608 | 0.2− | 0.2+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.5− | 2003 02 06 | 699 | 0.4− | 0.7− | 2004 04 26 | 704 | 0.2+ | 0.9− | | |
| 2001 10 17 | 704 | 0.1− | 0.8− | 2003 02 06 | 699 | (1.7+ | 0.4+) | 2004 04 26 | 704 | 0.8+ | 0.5+ | | |
| 2001 12 05 | 608 | 0.5− | 1.1− | 2003 03 08 | 644 | 0.3+ | 0.1− | 2004 04 26 | 704 | 0.1+ | 0.2− | | |
| 2001 12 05 | 608 | 0.5− | 0.9− | 2003 03 08 | 644 | 0.1+ | 0.1− | 2004 04 26 | 704 | 1.0+ | 0.4+ | | |
| 2001 12 05 | 608 | 0.2− | 0.5− | 2003 03 08 | 644 | 0.0 | 0.1+ | 2004 04 26 | 704 | 0.2− | 0.5+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.2+ | 2004 03 29 | 704 | 0.5+ | 1.3+ | 2004 05 12 | 704 | (1.6+ | 0.5+) | | |
| 2001 12 11 | 704 | 0.2+ | 0.3+ | 2004 03 29 | 704 | 0.2+ | 0.5+ | 2004 05 12 | 704 | 0.6+ | 0.3+ | | |
| 2001 12 11 | 704 | 0.3+ | 0.2+ | 2004 03 29 | 704 | 0.4+ | 1.3+ | 2004 05 12 | 704 | (0.5− | 1.6+) | | |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2004 03 29 | 704 | 0.7+ | 0.9+ | 2004 06 18 | 703 | 0.4− | 1.1− | | |
| 2001 12 11 | 704 | 0.4+ | 0.4− | 2004 04 14 | 704 | 0.5− | 0.5− | 2004 06 18 | 703 | 0.5+ | 1.0− | | |
| 2001 12 18 | 644 | 0.1− | 0.0 | 2004 04 14 | 704 | 0.0 | 0.1+ | 2004 06 18 | 703 | 0.8+ | 0.8− | | |
| 2001 12 18 | 644 | 0.3+ | 0.3+ | 2004 04 14 | 704 | 0.4+ | 0.5+ | 2004 06 18 | 703 | 0.2+ | 0.9− | | |
| 2001 12 18 | 644 | 0.3− | 0.4− | 2004 04 15 | 704 | 0.4− | 0.2+ | 2006 10 03 | E12 | 1.1− | 0.7+ | | |
| 2001 12 18 | 704 | (3.0+ | 0.3−) | 2004 04 15 | 704 | 0.2− | 0.7+ | 2006 10 03 | E12 | 0.3+ | 0.6+ | | |
| 2001 12 18 | 704 | 0.2− | 0.7+ | 2004 04 15 | 704 | 0.2− | 1.0+ | 2006 10 03 | E12 | 0.9− | 0.0 | | |
| 2001 12 18 | 704 | 0.8+ | 0.8− | 2004 04 15 | 704 | 0.3− | 1.0+ | 2006 10 03 | E12 | 0.7+ | 1.0− | | |
| 2001 12 18 | 704 | 0.1+ | 0.5+ | 2004 04 25 | 703 | 0.3− | 0.0 | 2006 10 12 | E12 | 0.3+ | 0.1− | | |
| 2003 01 31 | 699 | 0.3− | 1.0+ | 2004 04 25 | 703 | 0.2− | 0.7+ | 2006 10 12 | E12 | 0.9+ | 0.2− | | |
| 2003 01 31 | 699 | 0.9− | 0.3+ | 2004 04 25 | 703 | 0.4− | 0.8+ | 2006 10 12 | E12 | 0.6− | 1.2+ | | |
| 2003 01 31 | 699 | 1.4+ | 0.1+ | 2004 04 25 | 703 | 0.8− | 0.4− | 2006 10 12 | E12 | 0.2− | 0.7+ | | |
| 2003 01 31 | 699 | 0.1− | 0.6+ | 2004 04 25 | 699 | 0.0 | 0.6− | | | | | | |
| 2003 01 31 | 699 | 0.7+ | 0.5− | 2004 04 25 | 699 | 0.5− | 0.7+ | | | | | | |

**(140856)∗ 2001 UY$_{219}$ = 2003 BV$_{76}$**

Discovered 2001 Oct. 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 43151)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.38738 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21218653 | $\omega$ | 111.41537 | | −0.88077651 | −0.46107369 | |
| $a$ | 2.7839249 | $\Omega$ | 41.33723 | | +0.35093815 | −0.78856876 | |
| $e$ | 0.0886393 | $i$ | 9.40275 | | +0.31792318 | −0.40690339 | |
| $P$ | 4.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 0.0 | 0.1+ | 2001 10 24 | 704 | (0.1− | 1.5−) | 2003 03 08 | 644 | 0.4+ | 0.7+ | | |
| 1999 04 17 | 691 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.1+ | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.1− | | |
| 1999 04 17 | 691 | 0.1− | 0.8+ | 2001 11 20 | 704 | 1.4− | 0.3+ | 2006 10 04 | G96 | 0.5− | 0.3− | | |
| 1999 04 18 | 691 | 0.3− | 0.2− | 2001 11 20 | 704 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.3− | 0.2− | | |
| 1999 04 18 | 691 | 0.1+ | 0.5− | 2001 11 20 | 704 | 1.2+ | 1.4− | 2006 10 04 | G96 | 0.1+ | 0.3− | | |
| 1999 04 18 | 691 | 0.3− | 0.1− | 2003 01 29 | 644 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.7− | | |
| 1999 05 18 | 691 | 0.2+ | 0.2+ | 2003 01 29 | 644 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.1+ | 1.0− | | |
| 1999 05 18 | 691 | 0.3+ | 0.0 | 2003 01 29 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− | | |
| 1999 05 18 | 691 | 0.2+ | 0.0 | 2003 02 01 | 644 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.3− | | |
| 2001 10 18 | 644 | 0.5− | 0.9+ | 2003 02 01 | 644 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.3− | | |
| 2001 10 18 | 644 | 0.2− | 1.3+ | 2003 02 01 | 644 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.2− | 0.0 | | |
| 2001 10 18 | 644 | 0.4− | 1.2+ | 2003 02 19 | 644 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.2+ | | |
| 2001 10 23 | 704 | 0.3− | 1.1+ | 2003 02 19 | 644 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.6− | 0.1− | | |
| 2001 10 23 | 704 | 0.4− | 0.4+ | 2003 02 19 | 644 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.3− | | |
| 2001 10 23 | 704 | 0.0 | 1.0+ | 2003 02 26 | 704 | (2.4+ | 0.8−) | 2006 11 13 | G96 | 1.3+ | 0.5+ | | |
| 2001 10 23 | 704 | 0.9− | 0.8− | 2003 02 26 | 704 | 0.9− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.4− | | |
| 2001 10 24 | 704 | 0.8− | 1.4+ | 2003 02 26 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1− | | |
| 2001 10 24 | 704 | 0.4+ | 0.4+ | 2003 02 26 | 704 | 1.0+ | 0.7+ | 2006 11 17 | 691 | 0.2+ | 0.1− | | |
| 2001 10 24 | 704 | 0.1− | 0.1+ | 2003 03 08 | 644 | 0.2+ | 0.7+ | 2006 11 17 | 691 | 0.1+ | 0.0 | | |
| 2001 10 24 | 704 | 0.0 | 1.0+ | 2003 03 08 | 644 | 0.2+ | 0.6+ | | | | | | |

**(140857)∗ 2001 UZ$_{221}$ = 2001 XQ$_{263}$**

Discovered 2001 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 38538)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.89793 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20058603 | $\omega$ | 300.71809 | | +0.96526511 | −0.25619911 | |
| $a$ | 2.8902512 | $\Omega$ | 74.16790 | | +0.25421572 | +0.87568742 | |
| $e$ | 0.0862623 | $i$ | 3.05289 | | +0.06031281 | +0.40930863 | |
| $P$ | 4.91 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 691 | 0.1− | 0.1− | 2001 12 14 | 704 | 0.5− | 0.2+ | 2005 09 01 | 644 | 0.4− | 0.1− | | |
| 1996 11 18 | 691 | 0.3− | 0.0 | 2001 12 14 | 704 | 0.2+ | 0.5+ | 2005 09 01 | 644 | 0.3− | 0.5+ | | |
| 1996 11 18 | 691 | 0.2− | 0.2− | 2001 12 14 | 704 | 0.4− | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2001 10 24 | 704 | 1.0+ | 0.9+ | 2001 12 14 | 704 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2001 10 24 | 704 | 0.6+ | 0.7+ | 2001 12 14 | 704 | 0.0 | 0.9+ | 2006 10 28 | G96 | 0.1− | 0.3− | | |
| 2001 10 24 | 704 | (0.4+ | 2.1+) | 2001 12 17 | 691 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 291 | 0.3− | 0.2+ | 2001 12 17 | 691 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2001 11 18 | 291 | 0.4− | 0.3+ | 2001 12 17 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 11 18 | 291 | 0.2− | 0.2+ | 2002 12 14 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.4+ | 1.1+ | 2002 12 14 | 645 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.4− |
| 2001 11 20 | 704 | 0.2+ | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.1+ | 0.6+ | 2004 04 28 | 691 | 0.4+ | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.4+ | 0.9+ | 2004 04 28 | 691 | 0.3+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.4− | 0.8+ | 2004 04 28 | 691 | 0.2+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.7− |
| 2001 11 21 | 704 | 0.3− | 0.8+ | 2005 07 27 | 644 | 0.6− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.0 | 0.6+ | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 0.8+ | 2005 07 27 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2005 09 01 | 644 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.4− | 0.1+ |

**(140858)∗ 2001 UU$_{222}$**

Discovered 2001 Oct. 24 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.93670 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19412483 | $\omega$ | 251.92277 | | +0.59550251 | | −0.80329396 |
| $a$ | 2.9540328 | $\Omega$ | 161.51854 | | +0.74823294 | | +0.55017239 |
| $e$ | 0.0533118 | $i$ | 1.76722 | | +0.29244526 | | +0.22809899 |
| $P$ | 5.08 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.0 | 0.2− | 2001 11 20 | 704 | 1.4+ | 0.5+ | 2005 07 05 | G96 | 0.5+ | 1.2+ |
| 1995 07 27 | 691 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.2+ | 1.1− | 2005 07 05 | G96 | 0.5− | 1.0+ |
| 1995 07 27 | 691 | 0.6+ | 0.1− | 2001 11 21 | 704 | 0.8− | 0.2− | 2005 07 15 | G96 | 0.4− | 0.2− |
| 2000 09 03 | 691 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.6− | 0.2+ | 2005 07 15 | G96 | 0.3− | 0.4− |
| 2000 09 03 | 691 | 0.6− | 0.1− | 2001 11 21 | 704 | 0.1− | 0.2− | 2005 07 15 | G96 | 0.7− | 0.0 |
| 2000 09 03 | 691 | 0.4− | 0.2+ | 2001 11 21 | 704 | 0.5− | 0.4+ | 2005 07 15 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 049 | 0.8− | 0.9− | 2001 12 10 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 049 | 1.0− | 0.6− | 2001 12 10 | 691 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2001 10 24 | 049 | 0.8− | 0.7− | 2001 12 10 | 691 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2001 11 14 | 691 | 0.1+ | 0.4+ | 2003 01 25 | 291 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2001 11 14 | 691 | 0.0 | 0.0 | 2003 01 25 | 291 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 1.1+ | 0.4− |
| 2001 11 14 | 691 | 0.2+ | 0.2+ | 2003 01 25 | 291 | 0.6− | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2001 11 19 | 699 | 0.5+ | 1.1+ | 2003 03 30 | 645 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 11 19 | 699 | 0.9+ | 0.3+ | 2003 03 30 | 645 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 11 19 | 699 | 0.1+ | 0.5+ | 2005 07 01 | 691 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2001 11 19 | 699 | 0.3− | 0.6− | 2005 07 01 | 691 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2001 11 20 | 704 | 0.2− | 0.2− | 2005 07 01 | 691 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.0 | 0.8− |
| 2001 11 20 | 704 | 1.5+ | 0.3+ | 2005 07 05 | G96 | 0.4− | 1.0+ | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2001 11 20 | 704 | (0.1+ | 1.8+) | 2005 07 05 | G96 | 0.3+ | 1.1+ | 2006 11 13 | G96 | 0.2+ | 0.5− |

**(140859)∗ 2001 VP**

Discovered 2001 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.33612 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17610016 | $\omega$ | 268.62537 | | +0.56399948 | | −0.78154971 |
| $a$ | 3.1523145 | $\Omega$ | 142.64155 | | +0.81628073 | | +0.57647581 |
| $e$ | 0.2568590 | $i$ | 26.06448 | | −0.12486131 | | +0.23844430 |
| $P$ | 5.60 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 413 | 0.1+ | 0.5+ | 2001 12 09 | 644 | 0.5+ | 0.3+ | 2006 08 13 | 644 | 0.2− | 0.2+ |
| 2000 08 31 | 413 | 0.3+ | 0.4+ | 2001 12 17 | 699 | 0.3+ | 0.2− | 2006 08 15 | 644 | 0.2+ | 0.0 |
| 2000 08 31 | 413 | 0.1− | 0.7+ | 2001 12 17 | 699 | 0.4− | 0.2+ | 2006 08 15 | 644 | 0.1− | 0.1− |
| 2000 08 31 | 413 | 0.1− | 0.6+ | 2001 12 17 | 699 | 0.1− | 0.8− | 2006 08 15 | 644 | 0.1− | 0.0 |
| 2000 08 31 | 413 | 0.1− | 0.4+ | 2001 12 17 | 699 | 0.4− | 0.3− | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2001 10 19 | 608 | 0.6− | 0.6+ | 2002 01 13 | 699 | 0.5+ | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.4+ |
| 2001 10 19 | 608 | 0.6− | 0.3+ | 2002 01 13 | 699 | 0.8− | 0.5+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2001 10 19 | 608 | 0.6− | 0.6+ | 2002 01 13 | 704 | 0.8− | 0.2+ | 2006 08 23 | 704 | (0.5− | 2.5+) |
| 2001 11 07 | 704 | 2.0+ | 1.1− | 2002 01 13 | 699 | 0.5− | 0.4+ | 2006 08 23 | 704 | 0.4+ | 0.4+ |
| 2001 11 07 | 704 | 1.2+ | 0.3+ | 2002 01 13 | 699 | 0.5− | 0.7+ | 2006 08 23 | 704 | 0.8+ | 0.7+ |
| 2001 11 07 | 704 | 0.3− | 0.8+ | 2002 01 13 | 704 | 0.5+ | 0.2− | 2006 08 23 | 704 | 1.3+ | 0.3+ |
| 2001 11 07 | 704 | 0.3+ | 0.3+ | 2002 01 13 | 704 | 0.6+ | 0.9+ | 2006 08 23 | 644 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 0.1+ | 0.7+ | 2002 01 13 | 704 | 1.1+ | 0.3− | 2006 08 23 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.2+ | 0.0 | 2002 01 13 | 704 | 0.2+ | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.5− | 0.7+ | 2003 03 08 | 644 | 0.0 | 0.7+ | 2006 08 28 | 704 | 0.5− | 0.9+ |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2003 03 08 | 644 | 0.2+ | 0.6+ | 2006 08 28 | 704 | 0.9+ | 0.4+ |
| 2001 11 09 | 704 | 0.4− | 0.1+ | 2003 03 08 | 644 | 0.3− | 0.8+ | 2006 08 28 | 699 | 0.0 | 0.4+ |
| 2001 11 17 | 608 | 0.3− | 0.0 | 2003 03 23 | 644 | 0.2− | 1.5+ | 2006 08 28 | 704 | 0.4− | 1.6− |
| 2001 11 17 | 608 | 0.6− | 0.0 | 2003 03 23 | 644 | 0.1+ | 1.3+ | 2006 08 28 | 699 | 0.3− | 0.5− |
| 2001 11 17 | 608 | 0.5− | 0.3+ | 2003 03 23 | 644 | 0.1+ | 1.5+ | 2006 08 28 | 704 | 0.9− | 0.5− |
| 2001 12 04 | 704 | 0.1− | 1.7− | 2006 07 18 | G96 | 0.1− | 0.3− | 2006 08 28 | 699 | 0.1+ | 0.1+ |
| 2001 12 04 | 704 | 0.2− | 0.6− | 2006 07 18 | G96 | 0.1+ | 0.3− | 2006 08 28 | 699 | 0.4− | 0.4+ |
| 2001 12 04 | 704 | 0.5− | 0.7− | 2006 07 18 | G96 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.2− | 1.1+ |
| 2001 12 04 | 704 | 0.1+ | 0.1− | 2006 07 18 | G96 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.4− | 0.1− |
| 2001 12 09 | 644 | 0.5+ | 0.6+ | 2006 08 13 | 644 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2001 12 09 | 644 | 0.3+ | 0.5+ | 2006 08 13 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.9+ | 0.0 |

**(140860)∗ 2001 VW**

Discovered 2001 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.13346 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22182148 | $\omega$ | 292.17809 | | +0.57636203 | | −0.78949828 |
| $a$ | 2.7027154 | $\Omega$ | 120.89846 | | +0.81063552 | | +0.51971906 |
| $e$ | 0.3254255 | $i$ | 14.23137 | | +0.10332893 | | +0.32647290 |
| $P$ | 4.44 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 27 | 566 | 0.4− | 0.0 | 2001 11 06 | 704 | 0.3+ | 0.1− | 2005 07 04 | 599 | 1.0− | 0.5+ |
| 1997 12 27 | 566 | 0.1− | 0.1− | 2001 11 06 | 704 | 0.9+ | 0.3+ | 2005 07 04 | 599 | 0.3+ | 0.1− |
| 1997 12 27 | 566 | 0.3− | 0.0 | 2001 11 07 | 704 | 0.8− | 0.2+ | 2005 07 10 | 691 | 0.2+ | 0.1+ |
| 1998 03 01 | 327 | 0.0 | 0.5+ | 2001 11 07 | 644 | 0.5+ | 1.0+ | 2005 07 10 | 691 | 1.3− | 1.0− |
| 1998 03 01 | 327 | 0.2+ | 0.0 | 2001 11 07 | 704 | 0.1+ | 0.3+ | 2005 07 10 | 691 | 0.1+ | 0.1− |
| 1998 03 01 | 327 | 0.2+ | 0.3+ | 2001 11 07 | 644 | 0.6+ | 1.1+ | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 2001 07 30 | 704 | (0.1+ | 2.1+) | 2001 11 07 | 704 | 0.1+ | 0.8− | 2006 10 19 | 703 | 0.3− | 0.4− |
| 2001 07 30 | 704 | 0.1− | 0.8+ | 2001 11 07 | 704 | 0.5+ | 0.2− | 2006 10 19 | 703 | 0.9− | 0.5− |
| 2001 07 30 | 704 | 0.3− | 1.2+ | 2001 11 07 | 644 | 0.5+ | 1.0+ | 2006 10 19 | 703 | 0.8− | 0.0 |
| 2001 08 19 | 704 | 0.5− | 0.4+ | 2001 11 07 | 704 | 0.8+ | 0.1+ | 2006 11 17 | 704 | 0.5− | 1.3+ |
| 2001 08 19 | 704 | 0.5− | 0.4+ | 2001 12 04 | 704 | 0.5− | 0.3− | 2006 11 17 | 704 | (0.9+ | 2.2+) |
| 2001 08 19 | 704 | 0.4− | 0.7+ | 2001 12 04 | 704 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.3− |
| 2001 08 19 | 704 | 0.3− | 0.7+ | 2001 12 04 | 704 | 0.0 | 0.5− | 2006 11 17 | 704 | 1.5+ | 0.3+ |
| 2001 08 19 | 704 | 0.4− | 0.6+ | 2001 12 26 | 608 | (0.4+ | 1.7+) | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2001 09 12 | 644 | 0.4+ | 0.4− | 2001 12 26 | 608 | 0.6+ | 1.3+ | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2001 09 12 | 644 | 0.5+ | 0.3− | 2001 12 26 | 608 | 0.4+ | 1.3+ | 2006 11 20 | 704 | 0.6+ | 0.2+ |
| 2001 09 12 | 644 | 0.3+ | 0.3− | 2003 03 12 | 644 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2001 10 14 | 644 | 0.0 | 0.1− | 2003 03 12 | 644 | 0.3+ | 0.7+ | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2001 10 14 | 644 | 0.2+ | 0.1− | 2003 03 12 | 644 | 0.6+ | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2001 10 14 | 644 | 0.4+ | 0.0 | 2004 04 28 | 691 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2001 10 18 | 699 | 0.1+ | 0.7− | 2004 04 28 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 10 18 | 699 | 0.5− | 0.1− | 2004 04 28 | 691 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.3− |
| 2001 10 18 | 699 | 0.3− | 0.3− | 2005 06 14 | 691 | (0.3− | 2.2+) | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2001 10 18 | 699 | 0.2− | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.5− | 0.3− |
| 2001 10 18 | 699 | 0.2+ | 0.2+ | 2005 06 14 | 691 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.5− | 0.3+ |
| 2001 10 18 | 699 | 1.3− | 0.2− | 2005 07 04 | G96 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2001 10 18 | 699 | 0.4+ | 0.6+ | 2005 07 04 | G96 | 0.4+ | 0.0 | 2006 11 30 | 683 | 0.2− | 0.5+ |
| 2001 10 18 | 699 | 0.6− | 0.5− | 2005 07 04 | G96 | 0.2+ | 0.3+ | 2006 11 30 | 683 | 1.7− | 1.5+ |
| 2001 11 06 | 704 | 0.3− | 0.0 | 2005 07 04 | G96 | 0.4+ | 0.3+ | 2006 11 30 | 683 | 1.6+ | 1.7+ |
| 2001 11 06 | 704 | 1.2− | 0.1− | 2005 07 04 | 599 | 0.3− | 0.1+ | | | | |

**(140861)∗ 2001 VD$_1$**

Discovered 2001 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.50205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22415873 | $\omega$ | 273.55379 | | +0.78564842 | −0.57572082 | |
| $a$ | 2.6838955 | $\Omega$ | 121.72985 | | +0.61829495 | +0.74345691 | |
| $e$ | 0.2603807 | $i$ | 15.44433 | | −0.02163115 | +0.34031950 | |
| $P$ | 4.40 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 644 | 0.1− | 0.8+ | 2001 11 07 | 704 | 0.2+ | 0.5+ | 2005 07 04 | G96 | 0.1+ | 0.7− |
| 2001 08 12 | 644 | 0.1− | 0.7+ | 2001 11 07 | 704 | 0.1− | 0.9+ | 2005 07 04 | G96 | 0.0 | 0.4− |
| 2001 08 12 | 644 | 0.1− | 0.9+ | 2001 11 07 | 704 | 0.1+ | 0.1+ | 2005 07 04 | G96 | 0.1− | 0.6− |
| 2001 08 19 | 704 | 0.1− | 1.0+ | 2001 11 07 | 644 | 0.9− | 0.9− | 2005 07 04 | G96 | 0.2− | 0.5− |
| 2001 08 19 | 704 | 0.1+ | 0.9+ | 2001 11 07 | 644 | 0.1− | 0.0 | 2005 07 06 | 691 | 0.1+ | 0.8+ |
| 2001 08 19 | 704 | 0.2+ | 0.9+ | 2001 11 07 | 644 | 0.8− | 0.8− | 2005 07 06 | 691 | 0.1+ | 0.3+ |
| 2001 08 19 | 704 | 0.0 | 1.5+ | 2001 11 07 | 644 | 0.2+ | 0.1− | 2005 07 06 | 691 | 0.0 | 0.2+ |
| 2001 08 19 | 704 | 0.3+ | 1.2+ | 2001 11 07 | 644 | 0.7− | 0.7− | 2005 07 10 | 691 | 0.1− | 0.1+ |
| 2001 09 11 | 704 | 0.5− | 0.4+ | 2001 11 07 | 644 | 0.1+ | 0.3+ | 2005 07 10 | 691 | 0.0 | 0.2− |
| 2001 09 11 | 704 | 0.1+ | 0.3− | 2003 01 27 | 704 | 0.2− | 1.2+ | 2005 07 10 | 691 | 0.1− | 0.1− |
| 2001 09 11 | 704 | 0.3− | 0.3− | 2003 01 27 | 704 | 0.6+ | 0.5+ | 2006 11 02 | 703 | 0.4− | 0.5+ |
| 2001 09 11 | 704 | 0.2− | 0.0 | 2003 01 27 | 704 | (0.6− | 3.0+) | 2006 11 02 | 703 | 1.2+ | 0.7− |
| 2001 09 11 | 704 | 0.0 | 0.3− | 2003 01 27 | 704 | (1.4− | 3.5+) | 2006 11 02 | 703 | 0.3+ | 1.1− |
| 2001 09 26 | 699 | 0.2+ | 0.4+ | 2003 02 28 | 608 | 0.1+ | 1.4+ | 2006 11 02 | 703 | 1.2− | 1.3− |
| 2001 09 26 | 699 | 0.1+ | 0.4− | 2003 02 28 | 608 | (0.2− | 1.9+) | 2006 11 05 | 644 | 0.0 | 0.4+ |
| 2001 09 26 | 699 | 0.2+ | 1.1+ | 2003 02 28 | 608 | 0.2+ | 1.0+ | 2006 11 05 | 644 | 0.1+ | 0.3+ |
| 2001 09 26 | 699 | 0.3− | 0.7+ | 2003 03 08 | 644 | 0.5+ | 0.7+ | 2006 11 05 | 644 | 0.3+ | 0.2+ |
| 2001 10 23 | 704 | 0.5+ | 0.3− | 2003 03 08 | 644 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.9+ |
| 2001 10 23 | 704 | 0.5+ | 1.4− | 2003 03 08 | 644 | 0.4+ | 0.7+ | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2001 10 23 | 704 | 0.2− | 1.3− | 2003 03 22 | 644 | 0.2− | 1.0+ | 2006 11 20 | 704 | 0.3− | 0.4− |
| 2001 11 06 | 704 | 1.2− | 0.3+ | 2003 03 22 | 644 | 0.0 | 1.0+ | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2001 11 06 | 704 | 0.4+ | 0.8+ | 2003 03 22 | 644 | 0.5+ | 1.0+ | 2006 11 24 | 644 | 0.2+ | 0.6+ |
| 2001 11 06 | 704 | 0.8+ | 0.1− | 2004 04 15 | 644 | 0.2− | 0.7+ | 2006 11 24 | 644 | 0.2+ | 0.4+ |
| 2001 11 07 | 704 | 0.1− | 0.5+ | 2004 04 15 | 644 | 0.0 | 0.5+ | 2006 11 24 | 644 | 0.0 | 0.3+ |
| 2001 11 07 | 704 | 0.5− | 0.9+ | 2004 04 15 | 644 | 0.3− | 0.3+ | | | | |

**(140862)∗ 2001 VB$_3$**

Discovered 2001 Nov. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.24599 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18137010 | $\omega$ | 282.54974 | | +0.73986533 | +0.66228389 | |
| $a$ | 3.0909519 | $\Omega$ | 36.17445 | | −0.51281997 | +0.66895180 | |
| $e$ | 0.0800261 | $i$ | 11.55530 | | −0.43544801 | +0.33746634 | |
| $P$ | 5.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2003 01 13 | 704 | (0.4+ | 1.6+) | 2006 09 18 | 703 | 0.6+ | 0.6− |
| 2001 10 21 | 704 | 1.3− | 1.2+ | 2003 01 13 | 704 | 0.8+ | 1.1+ | 2006 09 18 | 703 | 0.7− | 0.1+ |
| 2001 10 21 | 704 | 0.3− | 0.7+ | 2003 01 13 | 704 | 0.5+ | 0.5− | 2006 09 18 | 703 | 0.9− | 0.0 |
| 2001 10 21 | 704 | 0.4− | 0.7+ | 2003 01 13 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 699 | 0.3− | 0.2+ |
| 2001 10 21 | 704 | 0.6− | 0.1− | 2004 03 15 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.1+ |
| 2001 10 25 | 704 | (1.6+ | 0.1−) | 2004 03 15 | 704 | (0.4+ | 2.2+) | 2006 09 18 | 699 | 0.1+ | 1.1+ |
| 2001 10 25 | 704 | 0.8+ | 0.9+ | 2004 03 15 | 704 | 1.3+ | 0.7+ | 2006 09 26 | 704 | 0.8− | 0.4+ |
| 2001 10 25 | 704 | 1.2+ | 0.1+ | 2004 03 15 | 704 | 1.1+ | 0.2+ | 2006 09 26 | 704 | (5.9− | 1.5+) |
| 2001 10 26 | 644 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.3− | 1.4+ | 2006 09 26 | 704 | 0.0 | 0.7+ |
| 2001 10 26 | 644 | 0.3− | 0.2− | 2004 03 20 | 704 | (0.5+ | 1.6+) | 2006 09 26 | 704 | 0.1+ | 0.3+ |
| 2001 10 26 | 644 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.6+ | 1.1+ | 2006 09 26 | 704 | 0.5− | 0.2+ |
| 2001 11 09 | 691 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.0 | 1.3+ | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2001 11 09 | 691 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.3− |
| 2001 11 09 | 691 | 0.0 | 0.2− | 2004 04 15 | 644 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2001 11 11 | 691 | 0.4− | 0.1+ | 2004 04 15 | 644 | 0.1+ | 1.0+ | 2006 09 30 | 703 | 0.9− | 0.9− |
| 2001 11 11 | 691 | 0.2+ | 0.1+ | 2004 04 15 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.8+ | 0.1+ |
| 2001 11 11 | 691 | 0.3− | 0.3+ | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 704 | 0.7− | 0.9+ |
| 2001 11 16 | 644 | 0.4+ | 0.8+ | 2004 04 20 | 704 | 1.3+ | 0.3− | 2006 09 30 | 704 | 0.2− | 0.0 |
| 2001 11 16 | 644 | 0.4+ | 0.8+ | 2004 04 20 | 704 | 1.1+ | 0.3− | 2006 09 30 | 704 | 0.5− | 1.0+ |
| 2001 11 16 | 644 | 0.4+ | 0.8+ | 2004 04 20 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 704 | 0.1+ | 1.2+ |
| 2001 11 19 | 704 | 0.1+ | 0.4− | 2004 04 25 | 699 | 0.9− | 0.4+ | 2006 10 02 | 703 | 0.4− | 0.0 |
| 2001 11 19 | 704 | 0.3+ | 0.5− | 2004 04 25 | 699 | 0.0 | 0.4+ | 2006 10 02 | 703 | 1.2− | 0.1+ |
| 2001 11 19 | 704 | 0.0 | 0.8− | 2004 04 25 | 699 | 1.4+ | 1.2+ | 2006 10 02 | 703 | 0.1+ | 0.8+ |
| 2001 11 19 | 704 | 0.0 | 0.9− | 2004 04 25 | 699 | 0.2− | 1.0+ | 2006 10 02 | 703 | 0.3− | 0.3− |
| 2001 11 19 | 704 | 0.3− | 0.7− | 2004 07 16 | 807 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2001 12 20 | 644 | 0.1− | 0.3+ | 2004 07 16 | 807 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2001 12 20 | 644 | 0.5+ | 0.3+ | 2006 08 19 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.6− |
| 2001 12 20 | 644 | 0.1+ | 0.0 | 2006 08 19 | 644 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 19 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.5+ |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2006 09 12 | 703 | 1.0− | 0.4− | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.7+ | 0.9+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.7− | 1.1+ |
| 2002 12 13 | 645 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.3+ | 0.5− | | | | |
| 2002 12 13 | 645 | 0.1− | 0.1− | 2006 09 18 | 703 | (4.5+ | 4.4+) | | | | |

**(140863)∗ 2001 VZ$_3$ = 2005 QU$_{14}$**

Discovered 2001 Nov. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 85186), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.33679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20362330 | $\omega$ | 309.85508 | | +0.75623005 | +0.65428536 | |
| $a$ | 2.8614384 | $\Omega$ | 9.28347 | | −0.59009260 | +0.68540972 | |
| $e$ | 0.0547812 | $i$ | 1.83835 | | −0.28267797 | +0.31956875 | |
| $P$ | 4.84 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 291 | 0.3+ | 0.3− | 2002 01 07 | 691 | 0.4− | 0.5+ | 2005 08 29 | 699 | (2.0+ | 0.8−) |
| 2001 11 11 | 291 | 0.2+ | 0.2− | 2002 12 14 | 645 | 0.0 | 0.0 | 2005 08 29 | 699 | 1.3− | 0.4− |
| 2001 11 11 | 291 | 0.3+ | 0.3− | 2002 12 14 | 645 | 0.0 | 0.1− | 2005 08 29 | 699 | 0.2+ | 0.6− |
| 2001 11 12 | 691 | 0.3+ | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 08 29 | 699 | 0.8− | 0.2+ |
| 2001 11 12 | 704 | 1.2+ | 0.6+ | 2003 01 28 | 645 | 0.1+ | 0.2+ | 2005 09 01 | 691 | 0.0 | 0.0 |
| 2001 11 12 | 691 | 0.3+ | 0.6+ | 2003 02 04 | 291 | 0.2− | 0.9+ | 2005 09 01 | 691 | 0.1− | 0.3+ |
| 2001 11 12 | 691 | 0.3+ | 0.1+ | 2003 02 04 | 291 | 0.1+ | 0.6+ | 2005 09 01 | 691 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.5− | 0.4+ | 2003 02 04 | 291 | 0.4+ | 0.6+ | 2005 09 11 | 691 | 0.1+ | 0.4+ |
| 2001 11 12 | 704 | 0.0 | 0.8+ | 2004 04 21 | 691 | 0.1+ | 0.1+ | 2005 09 11 | 691 | 0.3− | 0.4+ |
| 2001 11 21 | 704 | 0.6− | 0.4+ | 2004 04 21 | 691 | 0.1+ | 0.3+ | 2005 09 11 | 691 | 0.1− | 0.5+ |
| 2001 11 21 | 704 | 1.0− | 0.6− | 2004 04 21 | 691 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.7− | 2004 06 13 | 691 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.2− | 2004 06 13 | 691 | 0.2+ | 0.4+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2001 12 15 | 704 | 0.0 | 0.2− | 2004 06 13 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 12 15 | 704 | 0.3+ | 0.2− | 2005 08 25 | 644 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.4− | 0.1− |
| 2001 12 15 | 704 | 0.8+ | 0.5− | 2005 08 25 | 644 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2001 12 15 | 704 | 0.7− | 0.2+ | 2005 08 25 | 644 | 0.4− | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.4− |
| 2001 12 15 | 704 | 1.0− | 0.2+ | 2005 08 28 | 691 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.2+ | 0.3− |
| 2002 01 07 | 691 | 0.5− | 0.7+ | 2005 08 28 | 691 | 0.2− | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.7− |
| 2002 01 07 | 691 | 0.7− | 0.5+ | 2005 08 28 | 691 | 0.3− | 0.2+ | | | | |

**(140864)∗ 2001 VL$_4$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.01324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37859274 | $\omega$ | 349.64326 | | −0.64733687 | +0.70614255 | |
| $a$ | 1.8924360 | $\Omega$ | 239.34668 | | −0.67329166 | −0.70620082 | |
| $e$ | 0.0470839 | $i$ | 19.48214 | | −0.35725805 | +0.05141105 | |
| $P$ | 2.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 1.4− | 0.4− | 2001 11 20 | 704 | 0.6+ | 0.2+ | 2005 04 15 | 703 | 0.2+ | 0.5− |
| 2000 05 07 | 704 | 1.0− | 0.8+ | 2001 11 20 | 704 | 0.6+ | 0.3− | 2005 04 15 | 703 | (0.2− | 1.9−) |
| 2000 05 07 | 704 | 0.4− | 0.2+ | 2001 11 20 | 704 | 0.7+ | 0.2− | 2005 04 15 | 703 | 1.2− | 0.0 |
| 2000 05 07 | 704 | 0.4+ | 0.1− | 2001 11 24 | 704 | (0.6− | 1.7−) | 2006 09 25 | 703 | 0.7+ | 0.4− |
| 2000 05 23 | 699 | 1.4+ | 0.8+ | 2001 11 24 | 704 | 1.4− | 1.1+ | 2006 09 25 | 703 | 0.3+ | 0.0 |
| 2000 05 23 | 699 | 1.0− | 0.6+ | 2001 11 24 | 704 | 0.2− | 0.4− | 2006 09 25 | 703 | (1.6+ | 1.1+) |
| 2000 05 23 | 699 | 0.5+ | 0.9+ | 2001 11 24 | 704 | 1.1− | 1.1+ | 2006 09 25 | 703 | 0.4+ | 0.3+ |
| 2000 05 23 | 699 | 1.9+ | 1.5+ | 2001 11 24 | 704 | (1.6− | 1.0+) | 2006 10 03 | 703 | (8.5+ | 5.0+) |
| 2001 10 21 | 704 | 0.1+ | 0.5+ | 2001 12 08 | 699 | 0.7+ | 0.4− | 2006 10 03 | 703 | 0.3− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2− | 0.1− | 2001 12 08 | 699 | 0.3− | 0.5− | 2006 10 03 | 703 | 0.4− | 0.3− | | |
| 2001 10 21 | 704 | 0.3− | 0.2− | 2001 12 08 | 699 | 0.2+ | 0.3− | 2006 10 27 | 703 | 0.4+ | 0.2− | | |
| 2001 10 21 | 704 | 0.4− | 0.4− | 2001 12 08 | 699 | 0.1− | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.5− | | |
| 2001 11 09 | 704 | 0.4+ | 1.0+ | 2001 12 11 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.1− | | |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2001 12 11 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.1− | | |
| 2001 11 09 | 704 | 0.5− | 0.4+ | 2001 12 11 | 704 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.1− | | |
| 2001 11 09 | 704 | 0.2− | 0.8+ | 2001 12 11 | 704 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.4+ | | |
| 2001 11 09 | 704 | 0.4− | 0.8+ | 2001 12 11 | 704 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.2+ | | |
| 2001 11 10 | 049 | 0.5+ | 1.0− | 2001 12 24 | 608 | 0.6− | 0.4− | 2006 11 15 | 703 | 0.3− | 0.5+ | | |
| 2001 11 10 | 049 | (0.3+ | 2.0−) | 2001 12 24 | 608 | 0.7− | 0.0 | 2006 11 23 | 703 | 0.2− | 0.0 | | |
| 2001 11 10 | 049 | (0.5+ | 1.7−) | 2001 12 24 | 608 | 0.3− | 0.5− | 2006 11 23 | 703 | 0.3− | 0.3− | | |
| 2001 11 12 | 704 | 1.2+ | 0.8− | 2002 01 09 | 644 | 0.0 | 0.6+ | 2006 11 23 | 703 | 0.4− | 0.9− | | |
| 2001 11 12 | 704 | 0.7+ | 0.8+ | 2002 01 09 | 644 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.4− | 0.1− | | |
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2002 01 09 | 644 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.2− | 0.1+ | | |
| 2001 11 12 | 704 | 0.6+ | 0.2+ | 2005 03 02 | 704 | 0.4− | 0.3− | 2006 11 29 | 704 | 1.0+ | 0.4+ | | |
| 2001 11 13 | 049 | 0.4+ | 0.1+ | 2005 03 02 | 704 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.0 | 0.1+ | | |
| 2001 11 13 | 049 | 0.1+ | 0.1− | 2005 03 02 | 704 | 0.8− | 0.4− | 2006 11 29 | 704 | 0.0 | 0.4+ | | |
| 2001 11 13 | 049 | 0.5+ | 0.1+ | 2005 03 02 | 704 | 0.1− | 1.2− | 2006 11 29 | 704 | 0.2+ | 0.1− | | |
| 2001 11 20 | 704 | 0.3+ | 0.1− | 2005 04 15 | 703 | 1.2+ | 0.3+ | | | | | | |

**(140865)∗ 2001 VX$_7$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.12618 | | (2000.0) | | | |
| $n$ | 0.19681419 | $\omega$ | 88.96808 | | +0.82377867 | +0.54344569 |
| $a$ | 2.9270610 | $\Omega$ | 238.09437 | | −0.56563514 | +0.76880656 |
| $e$ | 0.0521770 | $i$ | 10.96119 | | −0.03802086 | +0.33705083 |
| $P$ | 5.01 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | (0.5+ | 1.9+) | 2001 12 15 | 704 | 0.7− | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.2− | | |
| 2001 10 14 | 704 | 0.3− | 0.8+ | 2001 12 15 | 704 | 0.7− | 0.4+ | 2006 10 27 | 703 | 0.8+ | 0.3− | | |
| 2001 10 14 | 704 | 0.7+ | 0.5+ | 2001 12 15 | 704 | 0.4− | 1.0+ | 2006 10 27 | 703 | 0.3+ | 0.1+ | | |
| 2001 10 14 | 704 | (0.3+ | 1.8+) | 2001 12 18 | 691 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.7+ | 1.1− | | |
| 2001 10 19 | 644 | 0.5− | 0.6+ | 2001 12 18 | 691 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.6− | | |
| 2001 10 19 | 644 | 0.2− | 0.3+ | 2001 12 18 | 691 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.6− | | |
| 2001 10 19 | 644 | 0.1− | 0.8+ | 2001 12 18 | 704 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.5− | | |
| 2001 10 21 | 704 | 0.5+ | 0.6− | 2001 12 18 | 704 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.6− | | |
| 2001 10 21 | 704 | 0.1+ | 0.3− | 2001 12 18 | 704 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.0 | | |
| 2001 10 21 | 704 | 0.8+ | 0.1− | 2001 12 18 | 704 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.3+ | 0.2− | | |
| 2001 10 21 | 704 | 0.8+ | 0.5− | 2001 12 18 | 704 | 0.6− | 1.0+ | 2006 11 08 | 644 | 0.2+ | 0.2− | | |
| 2001 10 21 | 704 | 0.5+ | 0.6− | 2001 12 19 | 704 | 0.1+ | 1.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | |
| 2001 10 26 | 644 | 0.3− | 0.1+ | 2001 12 19 | 704 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.2− | | |
| 2001 10 26 | 644 | 0.3− | 0.4+ | 2001 12 19 | 704 | 0.4− | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | | |
| 2001 10 26 | 644 | 0.4− | 0.5+ | 2001 12 19 | 704 | 0.2− | 0.7+ | 2006 11 10 | 644 | 0.3+ | 0.1− | | |
| 2001 11 09 | 704 | 0.2− | 0.3− | 2002 11 13 | 645 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.2− | | |
| 2001 11 09 | 704 | 0.3− | 0.1+ | 2002 11 13 | 645 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1+ | | |
| 2001 11 09 | 704 | 0.5− | 1.0− | 2003 01 28 | 704 | 1.1− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.9+ | | |
| 2001 11 09 | 704 | 0.8+ | 0.1− | 2003 01 28 | 704 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.4− | | |
| 2001 11 09 | 704 | 0.3+ | 0.6+ | 2003 01 28 | 704 | 1.2− | 0.1− | 2006 11 11 | 703 | 0.2− | 1.2− | | |
| 2001 11 10 | 704 | 0.4− | 0.9− | 2003 01 28 | 704 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.4− | | |
| 2001 11 10 | 704 | 0.2− | 1.2− | 2004 04 21 | 704 | 0.5− | 0.5+ | 2006 11 13 | 644 | 0.3− | 0.4− | | |
| 2001 11 10 | 704 | 0.3+ | 0.7− | 2004 04 21 | 704 | 0.3+ | 1.0+ | 2006 11 13 | 644 | 0.1− | 0.3+ | | |
| 2001 11 10 | 704 | 0.4− | 0.3− | 2004 04 21 | 704 | 0.2− | 0.6+ | 2006 11 13 | 644 | 0.3− | 0.1+ | | |
| 2001 11 12 | 704 | 0.7− | 0.7+ | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.2− | | |
| 2001 11 12 | 704 | 0.1− | 0.8+ | 2004 04 21 | 704 | 0.4+ | 0.4+ | 2006 11 14 | G96 | 0.4+ | 0.3− | | |
| 2001 11 12 | 704 | 0.7+ | 0.0 | 2004 04 24 | 704 | 1.2+ | 1.3+ | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2001 11 12 | 704 | 0.7− | 0.2− | 2004 04 24 | 704 | 0.8− | 1.4+ | 2006 11 14 | G96 | 0.1+ | 0.3− | | |
| 2001 11 13 | 049 | 0.4+ | 0.1+ | 2004 04 24 | 704 | 1.0+ | 0.4+ | 2006 11 16 | 704 | 1.0− | 1.2+ | | |
| 2001 11 13 | 049 | 0.3+ | 0.1+ | 2004 04 24 | 704 | 0.2− | 0.5+ | 2006 11 16 | 704 | 0.5− | 0.3+ | | |
| 2001 11 13 | 049 | 0.1+ | 0.0 | 2004 04 25 | 704 | (0.7− | 2.5+) | 2006 11 16 | 704 | 0.7− | 1.2+ | | |
| 2001 11 16 | 644 | 0.1+ | 0.1− | 2004 04 25 | 704 | (1.2+ | 1.6+) | 2006 11 16 | 704 | 0.6− | 0.4+ | | |
| 2001 11 16 | 644 | 0.1− | 0.1− | 2004 04 25 | 704 | 0.5− | 0.8+ | 2006 11 16 | 704 | (1.9− | 0.1−) | | |
| 2001 11 16 | 644 | 0.1+ | 0.2+ | 2004 04 25 | 704 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.1− | | |
| 2001 11 19 | 704 | 0.3+ | 0.5+ | 2005 06 21 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.9+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.4+ | 0.6+ | 2005 06 21 | 644 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.1− | | |
| 2001 11 19 | 704 | 0.7+ | 1.0+ | 2005 06 21 | 644 | 0.1− | 0.6+ | 2006 11 17 | 703 | 0.0 | 1.0+ | | |
| 2001 11 19 | 704 | 0.4+ | 1.0+ | 2005 06 21 | 644 | 0.2− | 0.7+ | 2006 11 19 | 704 | 0.7− | 0.3− | | |
| 2001 11 19 | 704 | 0.2+ | 1.3+ | 2005 06 21 | 644 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.3− | 0.5− | | |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2005 06 21 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.8− | 0.7+ | | |
| 2001 11 21 | 704 | 0.3− | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.6− | 0.2− | | |
| 2001 11 21 | 704 | 0.1− | 0.1− | 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.1− | | |
| 2001 11 21 | 704 | 0.1+ | 0.4− | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.7− | | |
| 2001 11 21 | 704 | 0.3− | 0.6− | 2006 10 21 | 691 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.4− | 0.1− | | |
| 2001 12 11 | 704 | (1.0− | 1.8+) | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.5− | 0.8+ | | |
| 2001 12 11 | 704 | (0.2+ | 1.8+) | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 22 | 704 | 1.1+ | 0.1− | | |
| 2001 12 11 | 704 | 0.2+ | 0.9+ | 2006 10 27 | 703 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.1+ | | |
| 2001 12 11 | 704 | 1.3− | 1.4+ | 2006 10 27 | 703 | 0.3+ | 0.9− | 2006 11 29 | 704 | 0.4+ | 0.5+ | | |
| 2001 12 15 | 704 | 1.2− | 0.8− | 2006 10 27 | 703 | 0.7+ | 0.0 | 2006 11 29 | 704 | 0.1− | 1.1+ | | |
| 2001 12 15 | 704 | (0.3+ | 2.1−) | 2006 10 27 | 703 | 0.0 | 0.3− | | | | | | |

**(140866)∗ 2001 VZ$_9$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.70202 | | (2000.0) | | | |
| $n$ | 0.18679924 | $\omega$ | 169.62441 | | +0.68667329 | −0.70711047 |
| $a$ | 3.0307676 | $\Omega$ | 236.76362 | | +0.65169174 | +0.70161924 |
| $e$ | 0.1886667 | $i$ | 11.63911 | | +0.32214542 | +0.08789327 |
| $P$ | 5.28 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 644 | 0.3− | 0.5+ | 2001 11 10 | 704 | 0.3− | 0.9+ | 2005 07 12 | G96 | (1.6+ | 2.3+) | | |
| 2001 09 18 | 644 | 0.6− | 0.3+ | 2001 11 11 | 704 | 0.6− | 0.8− | 2005 07 12 | G96 | 0.4+ | 0.5+ | | |
| 2001 09 18 | 644 | 0.8− | 0.2+ | 2001 11 11 | 704 | 0.0 | 0.6− | 2005 07 12 | G96 | 0.2− | 0.2+ | | |
| 2001 09 19 | 699 | 0.5− | 0.1+ | 2001 11 11 | 704 | 0.1− | 1.4− | 2005 07 12 | G96 | 0.1+ | 0.7− | | |
| 2001 09 19 | 699 | 1.1− | 0.2− | 2001 11 11 | 704 | 0.6− | 0.9− | 2006 08 26 | 704 | 1.1+ | 1.3+ | | |
| 2001 09 19 | 699 | 0.4− | 0.3+ | 2001 11 11 | 704 | 0.3− | 1.4− | 2006 08 26 | 704 | 1.1+ | 1.1+ | | |
| 2001 09 19 | 699 | 0.1− | 0.0 | 2001 11 11 | 644 | 0.4+ | 0.1− | 2006 08 26 | 704 | 0.6+ | 1.0+ | | |
| 2001 09 25 | 704 | 0.4− | 0.3− | 2001 11 11 | 644 | 0.4+ | 0.3+ | 2006 08 29 | 699 | 0.5− | 0.4+ | | |
| 2001 09 25 | 704 | 0.1− | 0.4− | 2001 11 11 | 644 | 0.2+ | 0.0 | 2006 08 29 | 699 | 0.0 | 0.2− | | |
| 2001 09 25 | 704 | 0.0 | 0.4− | 2001 11 17 | 704 | 0.1− | 0.9− | 2006 08 29 | 699 | 0.1+ | 0.6+ | | |
| 2001 09 25 | 704 | 0.3− | 0.5− | 2001 11 17 | 704 | 0.2− | 0.2− | 2006 08 29 | 699 | 0.7+ | 0.1− | | |
| 2001 09 25 | 704 | 0.2+ | 0.8− | 2001 11 17 | 704 | 0.7+ | 0.2+ | 2006 08 31 | H06 | 0.5− | 0.2+ | | |
| 2001 09 29 | 644 | 0.3− | 0.2− | 2001 11 17 | 704 | 0.6− | 0.1+ | 2006 08 31 | H06 | 0.5− | 0.5+ | | |
| 2001 09 29 | 644 | 0.0 | 0.3+ | 2001 11 17 | 704 | 0.4+ | 1.0+ | 2006 08 31 | H06 | 0.2− | 0.2− | | |
| 2001 09 29 | 644 | 0.3− | 0.0 | 2001 11 17 | 644 | 0.2+ | 0.5− | 2006 09 11 | 703 | (2.6− | 1.3−) | | |
| 2001 09 29 | 644 | 0.0 | 0.4+ | 2001 11 17 | 644 | 1.1+ | 0.3− | 2006 09 11 | 703 | 1.1− | 0.9− | | |
| 2001 09 29 | 644 | 0.3− | 0.1− | 2001 11 17 | 644 | 0.5+ | 0.5− | 2006 09 11 | 703 | 0.6− | 0.3− | | |
| 2001 09 29 | 644 | 0.1+ | 0.3+ | 2001 11 24 | 704 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.5+ | 1.3+ | | |
| 2001 10 13 | 699 | 0.7+ | 0.2+ | 2001 11 24 | 704 | 0.8+ | 0.4− | 2006 09 15 | H06 | 0.4+ | 0.5− | | |
| 2001 10 13 | 699 | 0.2− | 0.2+ | 2001 11 24 | 704 | (1.7+ | 1.6+) | 2006 09 15 | H06 | 0.3− | 0.5− | | |
| 2001 10 13 | 699 | 0.9+ | 0.2− | 2001 11 24 | 704 | 1.2+ | 0.3+ | 2006 09 15 | H06 | 0.0 | 0.1+ | | |
| 2001 10 13 | 699 | 0.0 | 0.5+ | 2001 12 11 | 704 | 0.6− | 0.2− | 2006 09 15 | 704 | 0.3+ | 0.1− | | |
| 2001 10 13 | 699 | 0.0 | 1.0+ | 2001 12 11 | 704 | 0.7− | 0.3+ | 2006 09 15 | 704 | 0.6+ | 0.1− | | |
| 2001 10 13 | 699 | 0.1− | 0.1+ | 2001 12 11 | 704 | 0.2− | 0.9+ | 2006 09 15 | 704 | 0.3+ | 0.7+ | | |
| 2001 10 13 | 699 | 0.7+ | 0.2+ | 2001 12 11 | 704 | 0.4− | 0.5+ | 2006 09 15 | 704 | 0.2− | 0.7+ | | |
| 2001 10 13 | 699 | 0.4− | 0.2+ | 2001 12 11 | 704 | 0.2− | 1.0+ | 2006 09 15 | 704 | 0.1− | 0.4+ | | |
| 2001 10 17 | 704 | 0.6− | 0.0 | 2003 01 02 | 699 | 0.2− | 0.1− | 2006 09 21 | 185 | 1.1− | 1.5− | | |
| 2001 10 17 | 704 | 0.6− | 0.1+ | 2003 01 02 | 699 | 0.1+ | 1.1+ | 2006 09 21 | 185 | 1.3+ | 0.5+ | | |
| 2001 10 17 | 704 | 0.5− | 0.0 | 2003 01 02 | 699 | 0.5− | 0.7− | 2006 09 21 | 185 | 0.8− | 0.4− | | |
| 2001 10 17 | 704 | 0.6− | 0.0 | 2003 01 02 | 704 | 0.4− | 1.4+ | 2006 09 21 | 185 | 0.6− | 0.4− | | |
| 2001 10 17 | 704 | 0.7− | 0.1− | 2003 01 02 | 699 | 0.8− | 0.3+ | 2006 10 01 | 703 | 0.5− | 0.7− | | |
| 2001 10 19 | 704 | (2.3+ | 0.5+) | 2003 01 02 | 704 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.5− | 0.9− | | |
| 2001 10 19 | 704 | 1.0+ | 0.6+ | 2003 01 02 | 704 | 0.4− | 0.0 | 2006 10 01 | 703 | 0.1+ | 0.4− | | |
| 2001 10 19 | 704 | 0.8+ | 0.7+ | 2003 01 02 | 704 | 0.6− | 0.7+ | 2006 10 01 | 703 | 0.4− | 0.8− | | |
| 2001 10 19 | 704 | 1.4+ | 1.2+ | 2003 01 25 | 644 | 0.4+ | 0.6+ | 2006 11 13 | 703 | (1.6− | 0.5−) | | |
| 2001 10 19 | 704 | 0.3− | 1.3+ | 2003 01 25 | 644 | 0.8+ | 0.6+ | 2006 11 13 | 703 | 1.5− | 0.2− | | |
| 2001 10 20 | 644 | 1.2+ | 0.9− | 2003 01 25 | 644 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 1.4+ | 0.6− | | |
| 2001 10 20 | 644 | 1.1+ | 0.9− | 2003 01 28 | 704 | 0.2+ | 0.4− | 2006 11 13 | 703 | 0.0 | 0.2− | | |
| 2001 10 20 | 644 | 1.1+ | 1.0− | 2003 01 28 | 704 | 0.2− | 0.3− | 2006 11 19 | 703 | 0.7+ | 1.2+ | | |
| 2001 10 26 | 644 | 0.7− | 0.1+ | 2003 01 28 | 704 | 1.4+ | 1.0− | 2006 11 19 | 703 | 0.4− | 0.1+ | | |
| 2001 10 26 | 644 | 0.6− | 0.1+ | 2003 01 28 | 704 | 0.4− | 0.3− | 2006 11 19 | 703 | 0.6+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.5− | 0.0 | 2003 02 22 | 644 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.5+ | | |
| 2001 11 10 | 704 | (1.6+ | 0.6−) | 2003 02 22 | 644 | 0.0 | 0.0 | | | | | | |
| 2001 11 10 | 704 | 0.9+ | 0.6− | 2003 02 22 | 644 | 0.1+ | 0.1+ | | | | | | |

**(140867)∗ 2001 VJ$_{10}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.21989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17598353 | $\omega$ | 111.47334 | | +0.61979041 | −0.77219270 | |
| $a$ | 3.1537072 | $\Omega$ | 299.45288 | | +0.64733581 | +0.60385251 | |
| $e$ | 0.1280404 | $i$ | 9.24694 | | +0.44363972 | +0.19768807 | |
| $P$ | 5.60 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 644 | 0.4+ | 1.3+ | 2001 12 10 | 704 | 1.1+ | 0.5− | 2006 08 27 | 699 | 0.5+ | 0.6+ | | |
| 2001 09 21 | 644 | 0.5+ | 1.6+ | 2001 12 10 | 704 | 0.2− | 0.8− | 2006 08 27 | 699 | 0.6− | 0.8+ | | |
| 2001 09 21 | 644 | 0.4+ | 0.8+ | 2001 12 10 | 704 | 0.8− | 0.9− | 2006 08 27 | 699 | 0.4+ | 0.2+ | | |
| 2001 10 09 | 704 | 0.5+ | 0.3+ | 2001 12 10 | 704 | 0.5− | 1.4− | 2006 08 27 | 699 | 0.1+ | 0.5+ | | |
| 2001 10 09 | 704 | 0.1+ | 0.7+ | 2002 12 14 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.9− | 0.3− | | |
| 2001 10 09 | 704 | 0.2− | 0.1− | 2002 12 14 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.9− | 0.6− | | |
| 2001 10 09 | 704 | 0.8+ | 0.6+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.0 | 0.2+ | | |
| 2001 10 19 | 704 | 0.8+ | 0.4− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 1.1− | 0.2− | | |
| 2001 10 19 | 704 | 0.4+ | 0.6+ | 2003 02 03 | 699 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.5− | | |
| 2001 10 19 | 704 | 0.6− | 0.1+ | 2003 02 03 | 699 | 0.4− | 0.3+ | 2006 08 30 | 699 | 0.1− | 0.0 | | |
| 2001 10 19 | 704 | 0.9− | 0.0 | 2003 02 03 | 699 | 0.5− | 0.0 | 2006 08 30 | 699 | 0.2− | 0.1− | | |
| 2001 10 27 | 699 | 0.3− | 1.2+ | 2003 02 03 | 699 | 0.5− | 0.5− | 2006 08 30 | 699 | 1.4− | 0.3+ | | |
| 2001 10 27 | 699 | 0.1− | 0.6− | 2003 02 07 | 644 | 0.3+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.0 | | |
| 2001 10 27 | 699 | 0.2− | 0.6+ | 2003 02 07 | 644 | 0.5+ | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.0 | | |
| 2001 10 27 | 699 | 0.6− | 0.3+ | 2003 02 07 | 644 | 0.3+ | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.1− | | |
| 2001 11 10 | 704 | 0.0 | 0.5− | 2003 02 22 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.7+ | 0.5+ | | |
| 2001 11 10 | 704 | 0.2− | 0.5− | 2003 02 22 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 1.5+ | | |
| 2001 11 10 | 704 | 0.0 | 0.6− | 2003 02 22 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 703 | (0.4− | 3.1+) | | |
| 2001 11 10 | 704 | 0.6+ | 0.3+ | 2003 03 07 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 1.5+ | 0.2+ | | |
| 2001 11 11 | 704 | 1.0− | 0.7− | 2003 03 07 | 704 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.8− | 0.7+ | | |
| 2001 11 11 | 704 | 0.3− | 0.8− | 2003 03 07 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 699 | 0.4+ | 0.3+ | | |
| 2001 11 11 | 704 | 0.6− | 0.3− | 2003 03 07 | 704 | 0.3+ | 1.3+ | 2006 09 20 | 699 | 0.1+ | 0.9+ | | |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2003 03 07 | 704 | 0.1− | 0.5+ | 2006 09 30 | 699 | 0.2− | 0.1− | | |
| 2001 11 11 | 704 | 0.3− | 0.0 | 2004 04 16 | E12 | 0.4− | 0.7+ | 2006 09 30 | 699 | 0.1− | 0.0 | | |
| 2001 11 19 | 644 | 0.6+ | 0.4+ | 2004 04 16 | E12 | 0.6+ | 1.1+ | 2006 09 30 | 699 | 0.2− | 0.6− | | |
| 2001 11 19 | 644 | 0.9+ | 0.3+ | 2004 04 16 | E12 | 0.6+ | 0.2+ | 2006 09 30 | 699 | 0.9+ | 0.3− | | |
| 2001 11 19 | 644 | 0.7+ | 0.4+ | 2004 04 16 | E12 | 0.8+ | 0.6+ | | | | | | |

**(140868)∗ 2001 VQ$_{10}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.80321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18145339 | $\omega$ | 108.04489 | | +0.78502115 | −0.59714113 | |
| $a$ | 3.0900060 | $\Omega$ | 288.94137 | | +0.48174269 | +0.75574807 | |
| $e$ | 0.1107723 | $i$ | 10.03509 | | +0.38944291 | +0.26882581 | |
| $P$ | 5.43 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.1− | 1.0+ | 2001 11 11 | 644 | 0.7+ | 0.2− | 2006 09 19 | 699 | 1.0− | 0.4+ | | |
| 2000 08 01 | 704 | 0.3− | 0.3+ | 2002 01 08 | 704 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.3− | 0.7+ | | |
| 2000 08 01 | 704 | 0.0 | 0.3− | 2002 01 08 | 704 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.4− | 0.5+ | | |
| 2000 08 01 | 704 | 0.1− | 0.2+ | 2002 01 08 | 704 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.1− | 0.1− | | |
| 2001 10 09 | 704 | 0.2− | 0.1− | 2002 01 08 | 704 | 1.3+ | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.2− | | |
| 2001 10 09 | 704 | 0.2− | 0.7+ | 2002 01 08 | 704 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.2− | 0.9− | | |
| 2001 10 09 | 704 | 0.1+ | 0.9+ | 2002 12 07 | 645 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.8− | 0.4− | | |
| 2001 10 09 | 704 | 0.7+ | 1.5+ | 2002 12 07 | 645 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.1− | | |
| 2001 10 19 | 704 | 1.0− | 0.8+ | 2003 02 09 | 608 | 1.2+ | 0.3− | 2006 09 29 | 699 | 0.7+ | 0.5+ | | |
| 2001 10 19 | 704 | 0.3+ | 0.1− | 2003 02 09 | 608 | 0.8+ | 0.2− | 2006 09 29 | 699 | 0.2− | 0.7+ | | |
| 2001 10 19 | 704 | 0.7− | 0.8+ | 2003 02 09 | 608 | 0.6+ | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.2+ | | |
| 2001 11 10 | 704 | (0.9− | 2.3−) | 2004 05 13 | 644 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 10 | 704 | 0.1− | 0.2− | 2004 05 13 | 644 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.3+ | 0.2+ | | |
| 2001 11 10 | 704 | 1.2+ | 0.6− | 2004 05 13 | 644 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1− | | |
| 2001 11 10 | 704 | 0.6+ | 0.4− | 2006 08 29 | 699 | 0.2+ | 1.2+ | 2006 10 17 | 703 | 0.1− | 0.4− | | |
| 2001 11 10 | 704 | 0.4− | 0.4− | 2006 08 29 | 699 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.0 | | |
| 2001 11 11 | 704 | 0.4+ | 0.8− | 2006 08 29 | 699 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.1− | | |
| 2001 11 11 | 699 | 0.9− | 0.3+ | 2006 08 29 | 699 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.5− | | |
| 2001 11 11 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 10 22 | 683 | 0.0 | 0.4− | | |
| 2001 11 11 | 704 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.0 | 0.3− | 2006 10 22 | 683 | 0.3− | 1.4+ | | |
| 2001 11 11 | 699 | 0.4− | 0.4+ | 2006 09 16 | 703 | 0.6− | 0.8− | 2006 10 22 | 683 | 2.9+ | 0.4− | | |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.4+ | 2006 10 23 | 703 | 1.0− | 0.6− | | |
| 2001 11 11 | 699 | 0.5− | 0.6− | 2006 09 16 | 703 | 0.6+ | 0.4− | 2006 10 23 | 703 | 0.1+ | 0.5− | | |
| 2001 11 11 | 704 | 0.3− | 0.2− | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 10 23 | 703 | 0.1+ | 0.5− | | |
| 2001 11 11 | 699 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.2+ | 0.5− | | |
| 2001 11 11 | 644 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.3− | | | | | | |
| 2001 11 11 | 644 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.4− | 0.3− | | | | | | |

**(140869)∗ 2001 VZ$_{10}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.98904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27775313 | $\omega$ | 183.24900 | | −0.81017812 | +0.57761397 | |
| $a$ | 2.3264662 | $\Omega$ | 32.68922 | | −0.53355845 | −0.65610968 | |
| $e$ | 0.0259799 | $i$ | 10.65599 | | −0.24274842 | −0.48567704 | |
| $P$ | 3.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.1+ | 0.1− | 2001 11 10 | 704 | 0.1− | 1.3+ | 2003 03 14 | 608 | 0.1+ | 0.9− | | |
| 1996 04 13 | 691 | 0.3− | 0.4− | 2001 11 10 | 704 | 0.1+ | 0.6+ | 2003 03 14 | 608 | 0.8+ | 0.3+ | | |
| 1996 04 13 | 691 | 0.0 | 0.1+ | 2001 11 10 | 704 | 1.1+ | 0.8+ | 2003 04 09 | 704 | 0.6+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.2+ | 1.0− | 2001 11 11 | 704 | 1.0− | 0.3− | 2003 04 09 | 704 | 0.3+ | 0.5− | | |
| 2001 09 20 | 704 | 0.8− | 0.8− | 2001 11 11 | 704 | 0.3− | 0.3+ | 2003 04 09 | 704 | 0.0 | 0.7− | | |
| 2001 09 20 | 704 | 0.1− | 0.1− | 2001 11 11 | 704 | 1.1− | 0.0 | 2005 12 08 | 703 | 0.9− | 0.1+ | | |
| 2001 10 15 | 291 | 0.7+ | 0.1+ | 2001 11 11 | 704 | 0.6− | 0.3+ | 2005 12 08 | 703 | 0.2+ | 0.5− | | |
| 2001 10 15 | 291 | 0.4+ | 0.1− | 2001 11 11 | 704 | 0.3− | 0.1+ | 2005 12 08 | 703 | 0.9+ | 0.0 | | |
| 2001 10 15 | 291 | 0.3+ | 0.2+ | 2001 11 19 | 704 | 0.1− | 0.4− | 2005 12 08 | 703 | 0.9+ | 0.2− | | |
| 2001 10 19 | 644 | 0.7+ | 1.5+ | 2001 11 19 | 704 | 0.5− | 0.8− | 2005 12 10 | 703 | 0.4− | 0.1− | | |
| 2001 10 19 | 644 | 0.8+ | 1.5+ | 2001 11 19 | 704 | 0.2− | 0.8− | 2005 12 10 | 703 | 0.2− | 0.1+ | | |
| 2001 10 19 | 644 | 0.3+ | 1.3+ | 2001 11 19 | 704 | 0.5− | 0.9− | 2005 12 10 | 703 | 0.9− | 0.8+ | | |
| 2001 10 21 | 704 | 0.5− | 0.2− | 2001 11 19 | 704 | 0.6− | 0.7− | 2005 12 10 | 703 | (2.8− | 0.5+) | | |
| 2001 10 21 | 704 | 0.6− | 0.5− | 2003 03 09 | 704 | 0.1− | 1.7+ | 2006 01 04 | A24 | 0.8+ | 0.2+ | | |
| 2001 10 21 | 704 | 0.9− | 0.2− | 2003 03 09 | 704 | 0.2− | 0.8+ | 2006 01 04 | A24 | 1.2+ | 0.4− | | |
| 2001 10 21 | 704 | 0.9− | 0.9− | 2003 03 09 | 704 | 0.4+ | 0.9+ | 2006 01 06 | A24 | 0.0 | 0.8− | | |
| 2001 10 21 | 704 | 1.3− | 1.1− | 2003 03 09 | 704 | 0.1− | 0.8+ | 2006 01 06 | A24 | 0.7− | 0.4− | | |
| 2001 11 10 | 704 | 0.1− | 0.3+ | 2003 03 09 | 704 | 0.6− | 0.9+ | 2006 01 07 | A24 | (1.6− | 3.0−) | | |
| 2001 11 10 | 704 | 0.5+ | 0.8+ | 2003 03 14 | 608 | 0.7+ | 0.3− | 2006 01 07 | A24 | 0.8− | 1.2− | | |

**(140870)∗ 2001 VS$_{12}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.72526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18172675 | $\omega$ | 55.45178 | | +0.19612710 | −0.97364865 | |
| $a$ | 3.0869066 | $\Omega$ | 24.05304 | | +0.77986357 | +0.08293704 | |
| $e$ | 0.1039964 | $i$ | 16.58983 | | +0.59442996 | +0.21243766 | |
| $P$ | 5.42 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.0 | 0.5− | 2003 04 08 | 691 | 0.4− | 0.3+ | 2006 10 28 | 704 | 0.8+ | 0.0 | | |
| 1998 03 29 | 704 | 1.2− | 1.9− | 2003 04 08 | 691 | 0.4− | 0.1+ | 2006 10 28 | 704 | 0.8+ | 0.4− | | |
| 1998 03 29 | 704 | 0.0 | 1.6+ | 2003 04 08 | 691 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 1998 03 29 | 704 | (2.3+ | 0.7+) | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.0 | | |
| 1998 03 29 | 704 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.8+ | 0.7− | 2006 10 28 | G96 | 0.2− | 0.1− | | |
| 2001 10 09 | 704 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 09 | 704 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 10 09 | 704 | 0.4− | 0.2+ | 2006 09 15 | 644 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.3− |
| 2001 10 09 | 704 | 0.5− | 0.6+ | 2006 09 15 | 644 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2001 10 19 | 704 | 0.0 | 0.5+ | 2006 09 15 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 10 19 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2001 10 19 | 704 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.0 | 0.8+ | 2006 11 11 | 691 | 0.1− | 0.4− |
| 2001 10 19 | 704 | 0.1− | 0.8+ | 2006 09 17 | 704 | 0.7− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.8− |
| 2001 10 25 | 704 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2001 10 25 | 704 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.8− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2001 10 25 | 704 | 0.0 | 0.5− | 2006 09 18 | 699 | 1.3− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2001 10 25 | 704 | 0.0 | 0.9− | 2006 09 18 | 699 | 0.4− | 1.1+ | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2001 10 25 | 704 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 11 10 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 704 | 0.5− | 0.5+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2001 11 11 | 704 | 0.3+ | 0.9+ | 2006 09 20 | 704 | 0.5− | 1.0+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.5− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 11 11 | 704 | 0.6+ | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.6+ | 0.1− | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 1.0+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | (1.5+ | 2.0+) |
| 2001 12 09 | 704 | 0.4− | 0.0 | 2006 09 27 | 704 | (2.1+ | 0.6−) | 2006 11 19 | 704 | (0.6+ | 2.5+) |
| 2001 12 09 | 704 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.0 | 0.9+ | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2001 12 09 | 704 | 0.0 | 0.4− | 2006 09 27 | 704 | (2.5− | 0.1−) | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2001 12 09 | 704 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | (0.4+ | 2.3+) |
| 2001 12 09 | 704 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.7+ |
| 2001 12 22 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2001 12 22 | 704 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.1+ |
| 2001 12 22 | 704 | 0.6+ | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2001 12 22 | 704 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.8+ |
| 2001 12 22 | 704 | 0.5+ | 0.0 | 2006 10 18 | H07 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.7− | 0.6− |
| 2002 02 10 | 704 | 0.4− | 0.5− | 2006 10 18 | H07 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.7− |
| 2002 02 10 | 704 | 0.4+ | 0.8− | 2006 10 18 | H07 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.2− | 0.5− |
| 2002 02 10 | 704 | 0.7− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2002 02 10 | 704 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.3− | 0.5− |
| 2003 03 08 | 704 | (2.2+ | 0.8−) | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2003 03 08 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.4− | 0.7− |
| 2003 03 08 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2003 03 08 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 1.5− |
| 2003 03 08 | 704 | 1.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 1.1− | 0.5− |
| 2003 03 12 | 704 | 0.4− | 0.7− | 2006 10 23 | 704 | 1.1− | 0.8− | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2003 03 12 | 704 | 1.2+ | 0.7− | 2006 10 23 | 704 | (1.7− | 0.4+) | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2003 03 12 | 704 | (1.7+ | 0.2+) | 2006 10 23 | 704 | 1.3− | 0.5+ | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2003 03 13 | 636 | 1.4+ | 0.7− | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2003 03 13 | 636 | 1.0− | 0.7− | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2+ | 1.5+ |
| 2003 03 13 | 636 | 1.2+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.7+ | 0.5+ |
| 2003 03 31 | 644 | 0.8+ | 0.1+ | 2006 10 28 | 704 | 1.1+ | 0.6− | 2006 11 28 | 704 | 0.2− | 0.3− |
| 2003 03 31 | 644 | 0.6+ | 0.3+ | 2006 10 28 | 704 | 0.3+ | 0.9− | | | | |
| 2003 03 31 | 644 | 0.8+ | 0.2+ | 2006 10 28 | 704 | 0.0 | 0.0 | | | | |

**(140871)∗ 2001 VH$_{15}$ = 2003 FU$_{40}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46865)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.68403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17852323 | $\omega$ | 42.83353 | | +0.29718256 | −0.95185213 | |
| $a$ | 3.1237257 | $\Omega$ | 30.10933 | | +0.83046398 | +0.21879106 | |
| $e$ | 0.1184029 | $i$ | 8.62526 | | +0.47118160 | +0.21472774 | |
| $P$ | 5.52 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 1.0+ | 0.5− | 2003 02 28 | 704 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2001 11 10 | 704 | 1.1+ | 0.8− | 2003 03 25 | 644 | 0.6+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.2− |
| 2001 11 10 | 704 | 0.6+ | 0.6− | 2003 03 25 | 644 | 0.9+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.1+ | 0.1− | 2003 03 25 | 644 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2001 11 11 | 704 | 0.2+ | 0.2− | 2003 03 26 | 691 | 0.2− | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2003 03 26 | 691 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 11 11 | 704 | 0.4+ | 0.5+ | 2003 03 26 | 691 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 0.6+ | 0.6+ | 2003 04 07 | 049 | 1.0+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 0.2+ | 0.2− | 2003 04 07 | 049 | 1.2+ | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.6+ |
| 2001 11 24 | 704 | 0.3+ | 0.2− | 2003 04 07 | 049 | 0.7+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2001 11 24 | 704 | 0.3+ | 0.5+ | 2004 06 09 | 568 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2001 11 24 | 704 | 0.4− | 0.1− | 2004 06 09 | 568 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2001 11 24 | 704 | 0.6− | 0.0 | 2006 09 06 | 644 | 0.6+ | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.5+ |
| 2001 11 24 | 704 | 0.2− | 0.6− | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.6+ | 0.1+ |
| 2001 11 24 | 704 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.4+ | 0.2+ |
| 2001 11 24 | 704 | 0.4− | 0.7− | 2006 09 21 | 699 | 1.4− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 0.2− | 0.9− | 2006 09 21 | 699 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 12 09 | 704 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.8− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 12 09 | 704 | 0.2− | 0.8− | 2006 09 21 | 699 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 12 09 | 704 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 12 09 | 704 | 1.0− | 0.7− | 2006 09 22 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 12 09 | 704 | 1.0− | 0.6− | 2006 09 22 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2001 12 17 | 704 | 0.2+ | 0.7+ | 2006 09 22 | 704 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.7− | 1.0+ |
| 2001 12 17 | 704 | 0.3− | 0.9+ | 2006 09 25 | 699 | 0.5− | 0.1− | 2006 10 22 | 703 | (0.4− | 2.1+) |
| 2001 12 17 | 704 | (0.3+ | 1.7+) | 2006 09 25 | 699 | 0.4− | 0.5+ | 2006 10 22 | 703 | 0.5+ | 1.4+ |
| 2001 12 17 | 704 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.0− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 12 17 | 704 | (0.0 | 1.6+) | 2006 09 25 | 699 | 0.1− | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 02 08 | 704 | 0.4+ | 0.6− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 02 08 | 704 | 0.1− | 1.1+ | 2006 09 28 | 691 | 0.3− | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 02 08 | 704 | 0.4+ | 0.3− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 02 08 | 704 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.6− | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2003 02 28 | 704 | (0.3+ | 2.1−) | 2006 10 01 | 704 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2003 02 28 | 704 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2003 02 28 | 704 | 1.1+ | 0.1+ | 2006 10 01 | 704 | 0.9− | 0.3− | | | | |
| 2003 02 28 | 704 | 0.3+ | 0.5+ | 2006 10 02 | 691 | 0.2− | 0.1− | | | | |

**(140872)∗ 2001 VO$_{16}$**

Discovered 2001 Nov. 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.67460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23203797 | $\omega$ | 283.18176 | | +0.01706704 | −0.99790895 | |
| $a$ | 2.6227890 | $\Omega$ | 165.40328 | | +0.98614133 | +0.00650918 | |
| $e$ | 0.1425899 | $i$ | 14.32211 | | +0.16502724 | +0.06430682 | |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 06 | 691 | 0.1− | 0.1− | 2002 01 12 | 704 | 0.2+ | 0.7− | 2005 09 14 | 703 | 0.3− | 0.1+ |
| 1995 05 06 | 691 | 0.1− | 0.1− | 2002 01 12 | 704 | (0.6− | 2.2−) | 2005 09 24 | 703 | 0.4− | 1.0+ |
| 1995 05 06 | 691 | 0.2− | 0.1+ | 2002 01 12 | 704 | (0.3+ | 2.4−) | 2005 09 24 | 644 | 0.3− | 0.2+ |
| 2001 09 17 | 699 | 1.4+ | 1.3+ | 2003 03 06 | 209 | 0.4− | 0.0 | 2005 09 24 | 644 | 0.0 | 0.4+ |
| 2001 09 17 | 699 | 1.0+ | 0.3− | 2003 03 06 | 209 | 0.3− | 0.2− | 2005 09 24 | 703 | 1.0− | 1.6+ |
| 2001 09 17 | 699 | 0.6+ | 1.1+ | 2003 03 06 | 209 | 0.6− | 0.5+ | 2005 09 24 | 703 | 0.6− | 0.2+ |
| 2001 09 17 | 699 | 0.2− | 0.3− | 2003 03 26 | 644 | 0.2− | 0.2+ | 2005 09 24 | 703 | 0.2− | 0.4− |
| 2001 09 25 | 704 | 0.2+ | 0.7− | 2003 03 26 | 644 | 0.3− | 0.4+ | 2005 09 24 | 644 | 0.0 | 0.5+ |
| 2001 09 25 | 704 | 0.5− | 1.1+ | 2003 03 26 | 644 | 0.2− | 0.1+ | 2005 09 24 | 644 | 0.0 | 0.5+ |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2003 04 07 | 644 | 0.2+ | 1.4+ | 2005 09 24 | 644 | 0.1+ | 0.4+ |
| 2001 09 25 | 704 | 0.3− | 1.8+ | 2003 04 07 | 644 | 0.2+ | 1.3+ | 2005 09 24 | 644 | 0.1+ | 0.6+ |
| 2001 10 16 | 704 | 0.4− | 0.0 | 2003 04 07 | 644 | 0.0 | 1.2+ | 2005 09 28 | 644 | 0.2− | 0.5+ |
| 2001 10 16 | 704 | 0.6− | 1.0− | 2003 04 08 | 608 | 1.0− | 0.3+ | 2005 09 28 | 644 | 0.1− | 0.4+ |
| 2001 10 16 | 704 | 0.4+ | 0.1− | 2003 04 08 | 608 | 0.6− | 0.2+ | 2005 09 28 | 644 | 0.1− | 0.3+ |
| 2001 10 16 | 704 | 0.6+ | 0.7+ | 2003 04 08 | 608 | 0.5− | 0.4+ | 2005 09 30 | 699 | 0.3− | 1.6+ |
| 2001 10 16 | 704 | 0.2+ | 0.3+ | 2003 04 09 | 691 | 0.9+ | 1.2+ | 2005 09 30 | 699 | 1.1+ | 0.7+ |
| 2001 11 07 | 644 | 0.1− | 0.1+ | 2003 04 09 | 691 | 0.5+ | 1.3+ | 2005 09 30 | 699 | 0.2+ | 0.9+ |
| 2001 11 07 | 644 | 0.5− | 0.3+ | 2003 04 09 | 704 | 0.1+ | 0.8+ | 2005 09 30 | 699 | 0.7− | 1.1+ |
| 2001 11 07 | 644 | 0.0 | 0.2+ | 2003 04 09 | 704 | 0.2− | 0.9+ | 2005 10 03 | 703 | 0.1+ | 0.5− |
| 2001 11 13 | 608 | 0.4− | 0.3− | 2003 04 09 | 691 | 0.8+ | 1.5+ | 2005 10 03 | 703 | 0.3− | 0.2+ |
| 2001 11 13 | 608 | 0.3− | 0.5− | 2003 04 09 | 704 | 0.0 | 0.7+ | 2005 10 03 | 703 | 0.6+ | 1.0+ |
| 2001 11 13 | 608 | 0.8− | 0.0 | 2003 04 09 | 704 | 0.0 | 0.5+ | 2005 10 10 | 703 | (0.1+ | 2.9+) |
| 2001 11 17 | 699 | 0.4− | 0.1+ | 2003 04 09 | 704 | 0.1+ | 0.8+ | 2005 10 10 | 703 | 0.4− | 0.2− |
| 2001 11 17 | 699 | 0.1− | 0.2+ | 2005 08 31 | 699 | 0.6+ | 0.7+ | 2005 10 10 | 703 | 0.8+ | 0.8+ |
| 2001 11 17 | 699 | 0.2+ | 0.2− | 2005 08 31 | 699 | 0.7− | 1.8+ | 2005 10 10 | 703 | 0.3+ | 0.3+ |
| 2001 11 17 | 699 | 0.3+ | 0.0 | 2005 08 31 | 699 | 0.3+ | 0.4+ | 2005 10 26 | 704 | 0.9− | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.1− | 1.1+ | 2005 08 31 | 644 | 0.1− | 0.5+ | 2005 10 26 | 704 | 1.4− | 0.2+ |
| 2001 11 19 | 704 | 0.4+ | 0.1− | 2005 08 31 | 699 | 0.6+ | 1.4+ | 2005 10 26 | 704 | 0.0 | 0.6+ |
| 2001 11 19 | 704 | 0.2+ | 0.7+ | 2005 08 31 | 644 | 0.1+ | 0.4+ | 2005 10 31 | 699 | 0.6− | 1.0+ |
| 2001 11 19 | 704 | 0.7− | 0.1− | 2005 08 31 | 644 | 0.0 | 0.4+ | 2005 10 31 | 699 | 1.1− | 0.8+ |
| 2001 11 19 | 704 | 0.1+ | 1.1+ | 2005 09 14 | 703 | 0.5+ | 1.1+ | 2005 10 31 | 699 | 1.7− | 0.1+ |
| 2002 01 12 | 704 | 1.4+ | 1.8− | 2005 09 14 | 703 | 0.6+ | 1.4− | 2005 10 31 | 699 | (0.2+ | 2.4+) |
| 2002 01 12 | 704 | 0.7+ | 0.9− | 2005 09 14 | 703 | 0.2+ | 0.0 | | | | |

**(140873)∗ 2001 VH$_{17}$**

Discovered 2001 Nov. 11 by P. Kušnirák and P. Pravec at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.67783 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19013134 | $\omega$ | 9.43644 | | +0.41460074 | −0.89251106 | |
| $a$ | 2.9952535 | $\Omega$ | 56.26720 | | +0.82036898 | +0.28213128 | |
| $e$ | 0.0899590 | $i$ | 12.32847 | | +0.39382860 | +0.35188911 | |
| $P$ | 5.18 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 691 | 0.3− | 0.3− | 2001 12 15 | 704 | 0.3+ | 0.8+ | 2005 08 10 | E12 | 0.2+ | 0.7+ |
| 1993 03 20 | 691 | 0.1− | 0.4− | 2001 12 18 | 704 | (1.6− | 0.3−) | 2005 08 10 | E12 | 1.2− | 1.3+ |
| 1993 03 20 | 691 | 0.2+ | 0.0 | 2001 12 18 | 704 | (1.7− | 0.2−) | 2005 08 10 | E12 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.3+ | 0.5− | 2001 12 18 | 704 | 1.5− | 0.0 | 2005 08 10 | E12 | 0.6− | 0.3+ |
| 2001 10 23 | 704 | 0.0 | 0.3− | 2001 12 18 | 704 | 1.2− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.3+ | 0.3− | 2001 12 18 | 704 | 1.3− | 0.1− | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.2+ | 0.2+ | 2001 12 19 | 704 | 1.0− | 0.7+ | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2001 10 24 | 291 | 0.6− | 0.2− | 2001 12 19 | 704 | (3.0+ | 0.3+) | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 291 | 0.2+ | 0.2− | 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 10 15 | D35 | 0.0 | 0.3+ |
| 2001 10 24 | 291 | 0.4− | 0.3− | 2001 12 19 | 704 | (0.4+ | 1.6+) | 2006 10 15 | D35 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | 0.0 | 0.8+ | 2002 01 08 | 704 | 0.9− | 0.8+ | 2006 10 15 | D35 | 0.3+ | 0.0 |
| 2001 11 09 | 704 | 0.8+ | 1.0+ | 2002 01 08 | 704 | (0.8− | 1.9+) | 2006 10 18 | 691 | 0.4− | 0.1+ |
| 2001 11 09 | 704 | 0.2+ | 0.9+ | 2002 01 08 | 704 | 1.3− | 0.7+ | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 0.5+ | 0.9+ | 2002 01 08 | 704 | (1.5− | 2.2+) | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2001 11 11 | 557 | 0.4+ | 0.2+ | 2003 02 02 | 557 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2001 11 11 | 557 | 0.1+ | 0.1+ | 2003 02 02 | 557 | 0.3− | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2001 11 11 | 557 | 0.4+ | 0.1+ | 2003 02 02 | 557 | 0.7+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2001 11 12 | 704 | (1.8− | 0.1+) | 2003 03 02 | 557 | 0.2+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.0 | 2003 03 02 | 557 | 0.4+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.5− | 0.1+ | 2003 03 08 | 704 | 1.1+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2003 03 08 | 704 | 1.2+ | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2001 11 13 | 557 | 0.3− | 0.9+ | 2003 03 08 | 704 | 1.2− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2001 11 13 | 557 | 0.3− | 0.1+ | 2003 03 08 | 704 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2001 11 13 | 557 | 0.2+ | 0.1+ | 2003 03 08 | 644 | 0.2− | 1.1+ | 2006 11 11 | 703 | 0.3− | 1.1− |
| 2001 11 14 | 557 | 0.4+ | 0.1− | 2003 03 08 | 644 | 0.3− | 1.0+ | 2006 11 11 | 703 | 0.5+ | 0.7− |
| 2001 11 19 | 704 | 0.6− | 0.2+ | 2003 03 08 | 644 | 0.3− | 1.2+ | 2006 11 11 | 703 | 0.7+ | 0.6− |
| 2001 11 19 | 704 | 0.0 | 0.3+ | 2003 03 26 | 704 | 0.4+ | 1.0+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2001 11 19 | 704 | 0.1− | 0.3+ | 2003 03 26 | 704 | (0.6− | 1.7+) | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2001 11 19 | 704 | 0.3− | 0.5+ | 2003 03 26 | 704 | 0.8+ | 0.5+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2001 11 19 | 704 | 0.4− | 0.2+ | 2003 03 26 | 704 | (1.6+ | 1.4−) | 2006 11 12 | G96 | 0.2− | 0.5− |
| 2001 11 20 | 704 | (3.1+ | 0.4−) | 2004 05 20 | 599 | 0.2− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | (3.0+ | 0.6−) | 2004 05 20 | 599 | 0.0 | 0.3+ | 2006 11 18 | 704 | (0.4− | 3.0+) |
| 2001 11 20 | 704 | (1.5+ | 0.4−) | 2004 05 20 | 599 | 0.0 | 0.6+ | 2006 11 18 | 704 | (0.8+ | 3.3+) |
| 2001 11 20 | 704 | 1.3+ | 1.0− | 2004 05 20 | 599 | 0.1− | 0.4+ | 2006 11 18 | 704 | 1.1− | 0.3+ |
| 2001 11 20 | 704 | 1.4+ | 1.2− | 2004 05 21 | 704 | (1.8+ | 1.0−) | 2006 11 18 | 704 | (2.2+ | 0.3−) |
| 2001 11 24 | 704 | 0.3− | 0.2+ | 2004 05 21 | 704 | 0.6+ | 0.4− | 2006 11 18 | 704 | (0.9− | 3.1+) |
| 2001 11 24 | 704 | 0.0 | 0.4− | 2004 05 21 | 704 | 0.8+ | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2001 11 24 | 704 | 0.3− | 0.7− | 2004 05 21 | 704 | 0.6+ | 0.3− | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2001 11 24 | 704 | 0.7− | 0.3− | 2004 06 09 | E12 | 0.9− | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.8+ |
| 2001 11 24 | 704 | 0.3− | 0.3− | 2004 06 09 | E12 | 0.6+ | 0.8− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2001 11 24 | 557 | 0.2− | 0.5− | 2004 06 09 | E12 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2001 11 24 | 557 | 0.2− | 0.5− | 2004 06 09 | E12 | 0.5− | 0.9+ | 2006 11 27 | 703 | 0.9+ | 0.2− |
| 2001 12 10 | 704 | 1.1+ | 0.1+ | 2005 08 10 | E12 | 0.0 | 0.8+ | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2001 12 10 | 704 | 1.1+ | 0.3− | 2005 08 10 | E12 | 0.6− | 0.3+ | 2006 11 27 | 703 | 0.4+ | 0.7− |
| 2001 12 10 | 704 | 0.8+ | 0.4+ | 2005 08 10 | E12 | 0.1+ | 0.8+ | 2006 11 27 | 703 | 1.0− | 1.7− |
| 2001 12 10 | 704 | 0.0 | 1.4+ | 2005 08 10 | E12 | 0.4− | 0.8+ | 2006 11 29 | 704 | 0.9+ | 0.7+ |
| 2001 12 10 | 704 | 0.6+ | 0.2+ | 2005 08 10 | E12 | 0.1− | 0.7+ | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2001 12 15 | 704 | 0.0 | 0.4+ | 2005 08 10 | E12 | 0.6− | 0.4+ | 2006 11 29 | 704 | 1.2+ | 1.1+ |
| 2001 12 15 | 704 | 0.1+ | 0.8+ | 2005 08 10 | E12 | 0.2+ | 0.7+ | 2006 11 29 | 704 | 0.4+ | 0.8+ |
| 2001 12 15 | 704 | 0.5+ | 1.0+ | 2005 08 10 | E12 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.3+ |

**(140874)∗ 2001 VL$_{17}$**

Discovered 2001 Nov. 9 by W. Bickel at Bergisch Gladbach.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.23253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17435287 | $\omega$ | 269.20686 | | +0.93817634 | +0.30511151 | |
| $a$ | 3.1733403 | $\Omega$ | 73.01654 | | −0.20817283 | +0.87467204 | |
| $e$ | 0.0814009 | $i$ | 9.84336 | | −0.27656687 | +0.37663747 | |
| $P$ | 5.65 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 21 | 691 | 0.1+ | 0.3− | 2001 12 19 | 704 | 0.3+ | 0.5− | 2006 09 18 | 703 | 0.1+ | 0.4+ |
| 1993 05 21 | 691 | 0.1− | 0.3− | 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2− | 1.4− |
| 1993 05 21 | 691 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.9− | 0.8− | 2006 09 18 | 703 | (0.5− | 1.8+) |
| 1993 05 21 | 691 | 0.1− | 0.1− | 2001 12 19 | 704 | 0.8+ | 0.8− | 2006 09 18 | 703 | 0.2+ | 0.3− |
| 1993 05 21 | 691 | 0.0 | 0.1− | 2001 12 23 | 291 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.9+ | 0.7+ |
| 1993 05 21 | 691 | 0.4− | 0.0 | 2001 12 23 | 291 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.7− | 0.5+ |
| 2000 09 24 | 699 | 0.2− | 0.2− | 2001 12 23 | 291 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.8− | 0.8− |
| 2000 09 24 | 699 | 0.2− | 1.0+ | 2002 01 08 | 704 | 0.2+ | 0.7+ | 2006 09 21 | 699 | 1.0− | 0.2− |
| 2000 09 24 | 699 | 0.1− | 0.6+ | 2002 01 08 | 704 | 0.6− | 0.8+ | 2006 09 25 | 699 | 0.6+ | 1.2+ |
| 2000 09 24 | 699 | 0.7− | 1.0+ | 2002 01 08 | 704 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.4+ | 0.4+ |
| 2001 10 24 | 704 | 0.1− | 1.4− | 2002 01 08 | 704 | 1.0− | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.7+ |
| 2001 10 24 | 704 | 0.3− | 0.9− | 2002 01 14 | 704 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.2− | 0.2− |
| 2001 10 24 | 704 | 0.1− | 0.4− | 2002 01 14 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2001 10 24 | 704 | 0.4− | 1.1− | 2002 01 14 | 704 | 0.6+ | 0.2− | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 2001 11 09 | 704 | 0.5+ | 0.0 | 2002 01 14 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.7+ | 1.2+ | 2002 01 14 | 704 | 0.5− | 1.2+ | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2001 11 09 | 704 | 0.3− | 0.3− | 2004 03 15 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 699 | (0.6+ | 1.7+) |
| 2001 11 09 | 704 | 0.4+ | 0.6+ | 2004 03 15 | 691 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.7− | 0.4− |
| 2001 11 09 | 621 | 0.3− | 0.6+ | 2004 03 15 | 691 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.3− | 0.9+ |
| 2001 11 09 | 621 | 1.3− | 0.9+ | 2004 03 23 | 704 | 1.4− | 1.3− | 2006 09 30 | 704 | 0.1+ | 1.4+ |
| 2001 11 09 | 621 | 0.6− | 0.3+ | 2004 03 23 | 704 | 0.5+ | 1.1+ | 2006 09 30 | 704 | 1.3− | 0.4+ |
| 2001 11 10 | 621 | 1.3+ | 0.1+ | 2004 03 23 | 704 | 1.0+ | 1.1+ | 2006 09 30 | 704 | 0.8− | 1.4+ |
| 2001 11 10 | 621 | (2.5− | 0.8+) | 2004 04 11 | 621 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.6− | 0.1− |
| 2001 11 20 | 704 | 0.1− | 0.2− | 2004 04 11 | 621 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2001 11 20 | 704 | 0.2+ | 0.3− | 2004 04 11 | 621 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.4− |
| 2001 11 20 | 704 | 0.3− | 0.2− | 2004 04 13 | 621 | 0.0 | 0.1+ | 2006 10 17 | 703 | (1.5− | 0.4−) |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2004 04 13 | 621 | 0.1− | 0.4− | 2006 10 17 | 703 | (1.9− | 0.3+) |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2004 04 14 | 621 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.2+ | 0.2− | 2004 04 23 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2001 12 14 | 704 | 0.4+ | 0.0 | 2004 04 23 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2001 12 14 | 704 | 0.1− | 0.2− | 2004 04 23 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2001 12 14 | 704 | 0.7+ | 0.8+ | 2004 04 25 | 704 | 1.0+ | 0.8+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2001 12 14 | 704 | 0.9+ | 0.6+ | 2004 04 25 | 704 | 0.5+ | 1.3+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2001 12 17 | 704 | (2.1− | 1.2−) | 2004 04 25 | 704 | 0.1+ | 1.3+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2001 12 17 | 704 | (1.7− | 1.4−) | 2004 04 25 | 704 | 0.6− | 0.3− | 2006 10 28 | 703 | 0.2+ | 1.1+ |
| 2001 12 17 | 704 | (2.8− | 1.7−) | 2004 04 25 | 704 | 0.1− | 0.4− | 2006 10 28 | 703 | 0.4− | 1.3+ |
| 2001 12 17 | 704 | (1.8− | 1.6−) | 2004 04 26 | 704 | 0.7+ | 1.0+ | 2006 10 28 | 703 | 0.0 | 0.9+ |
| 2001 12 17 | 704 | (2.0− | 2.3−) | 2004 04 26 | 704 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.8+ | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 0.3− | 2004 04 26 | 704 | 0.2− | 0.7+ | | | | |

**(140875)∗ 2001 VP$_{17}$**

Discovered 2001 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.98709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20210252 | $\omega$ | 324.96511 | | +0.73975126 | +0.67235586 | |
| $a$ | 2.8757749 | $\Omega$ | 352.60975 | | −0.56053631 | +0.59392171 | |
| $e$ | 0.0609586 | $i$ | 11.91875 | | −0.37224605 | +0.44180833 | |
| $P$ | 4.88 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | 0.8− | 1.4− | 2003 01 31 | 699 | (0.9− | 1.6+) | 2005 08 24 | E12 | 0.1− | 0.1− |
| 2001 08 28 | 699 | (2.1− | 1.1+) | 2003 01 31 | 699 | 0.1− | 0.7+ | 2005 08 24 | E12 | 0.1+ | 0.2− |
| 2001 08 28 | 699 | 0.9− | 0.7+ | 2004 03 15 | 644 | 0.7+ | 0.6+ | 2005 08 24 | E12 | 0.5− | 0.4+ |
| 2001 08 28 | 699 | 0.7− | 0.6− | 2004 03 15 | 644 | 0.6+ | 0.6+ | 2006 10 29 | 703 | 0.1− | 0.3− |
| 2001 09 25 | 704 | 0.8+ | 0.6+ | 2004 03 15 | 644 | 0.8+ | 0.4+ | 2006 10 29 | 703 | 0.4+ | 0.7− |
| 2001 09 25 | 704 | 0.6+ | 0.7− | 2004 03 19 | 704 | 0.0 | 0.5+ | 2006 10 29 | 703 | 0.1− | 0.7− |
| 2001 09 25 | 704 | 0.0 | 0.3− | 2004 03 19 | 704 | 0.1+ | 0.9+ | 2006 10 29 | 703 | 0.1+ | 0.4− |
| 2001 09 25 | 704 | 0.0 | 0.0 | 2004 03 19 | 704 | (0.8+ | 2.5−) | 2006 11 15 | 703 | 0.7+ | 0.6+ |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2004 03 19 | 704 | 0.9+ | 0.4− | 2006 11 15 | 703 | 0.3+ | 0.3+ |
| 2001 10 13 | 699 | 1.0+ | 0.8+ | 2004 04 09 | E12 | (1.0+ | 3.0−) | 2006 11 15 | 703 | 0.2− | 0.5+ |
| 2001 10 13 | 699 | 0.0 | 0.6− | 2004 04 09 | E12 | (1.6+ | 2.5−) | 2006 11 15 | 703 | 1.2+ | 0.5+ |
| 2001 10 13 | 699 | 0.9− | 0.9+ | 2004 04 09 | E12 | (1.1+ | 2.7−) | 2006 11 15 | 704 | 1.2+ | 1.0+ |
| 2001 10 13 | 699 | 0.9− | 1.3+ | 2004 04 09 | E12 | (1.9+ | 2.3−) | 2006 11 15 | 704 | 0.4+ | 0.3− |
| 2001 10 26 | 704 | 0.5− | 1.0− | 2004 04 14 | 699 | (2.2+ | 1.0+) | 2006 11 15 | 704 | 0.8− | 0.1− |
| 2001 10 26 | 704 | 0.2+ | 0.4+ | 2004 04 14 | 699 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.8− | 0.1− |
| 2001 10 26 | 704 | 1.4+ | 0.4+ | 2004 04 14 | 699 | 0.4+ | 1.0+ | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2001 11 08 | 704 | 0.3− | 0.9+ | 2004 04 14 | 699 | 0.7+ | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2001 11 08 | 704 | 0.3− | 0.6+ | 2005 08 12 | E12 | 1.5− | 0.7+ | 2006 11 15 | 703 | 0.7− | 0.5+ |
| 2001 11 08 | 704 | 0.5+ | 0.3+ | 2005 08 12 | E12 | 0.5+ | 0.2+ | 2006 11 21 | 703 | 0.5− | 0.2− |
| 2001 11 12 | 704 | 0.6− | 1.2+ | 2005 08 12 | E12 | 0.1+ | 0.1+ | 2006 11 21 | 703 | 0.6− | 0.8− |
| 2001 11 12 | 704 | 0.3− | 0.7+ | 2005 08 12 | E12 | 0.1+ | 0.1+ | 2006 11 21 | 703 | 0.6− | 0.7− |
| 2001 11 12 | 704 | 0.4− | 0.5+ | 2005 08 24 | E12 | 0.0 | 0.2− | 2006 11 21 | 703 | 0.1− | 0.3− |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2005 08 24 | E12 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.1+ | 0.4+ |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2005 08 24 | E12 | 0.2+ | 0.3− | 2006 11 21 | 703 | 0.3+ | 1.0+ |
| 2003 01 31 | 699 | 0.5+ | 0.7+ | 2005 08 24 | E12 | 0.3− | 0.1+ | 2006 11 21 | 703 | 0.0 | 0.2+ |
| 2003 01 31 | 699 | (0.5− | 1.9+) | 2005 08 24 | E12 | 0.1− | 0.1+ | 2006 11 21 | 703 | 0.1+ | 0.5+ |

**(140876)∗ 2001 VM$_{19}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.73942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17190054 | $\omega$ | 27.98391 | | +0.37533544 | −0.91915322 | |
| $a$ | 3.2034496 | $\Omega$ | 40.29371 | | +0.81218562 | +0.26401750 | |
| $e$ | 0.0411462 | $i$ | 10.64861 | | +0.44662939 | +0.29232192 | |
| $P$ | 5.73 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 333 | 0.7− | 0.1+ | 2001 11 24 | 704 | 0.5− | 0.9− | 2004 04 14 | 691 | 0.2+ | 0.4+ |
| 2001 09 21 | 333 | 0.3− | 0.7− | 2001 12 15 | 704 | 0.1+ | 0.7+ | 2004 04 14 | 691 | 0.1+ | 0.4+ |
| 2001 09 21 | 333 | 0.2+ | 0.3+ | 2001 12 15 | 704 | 0.2− | 0.8+ | 2004 04 19 | 704 | (2.1+ | 0.2+) |
| 2001 10 21 | 704 | 0.7− | 0.3+ | 2001 12 15 | 704 | 0.7− | 0.3+ | 2004 04 19 | 691 | 0.2+ | 0.6+ |
| 2001 10 21 | 704 | 1.2− | 0.6+ | 2001 12 15 | 704 | 0.4− | 0.7+ | 2004 04 19 | 704 | 1.7+ | 0.5+ |
| 2001 10 21 | 704 | 0.9− | 0.8− | 2001 12 15 | 704 | 0.8− | 0.5+ | 2004 04 19 | 691 | 0.2+ | 0.5+ |
| 2001 10 26 | 644 | 1.2+ | 0.4− | 2001 12 18 | 704 | 0.5− | 0.7+ | 2004 04 19 | 704 | 0.9+ | 0.5+ |
| 2001 10 26 | 644 | 1.2+ | 0.1+ | 2001 12 18 | 704 | 0.4− | 0.4+ | 2004 04 19 | 691 | 0.3+ | 0.4+ |
| 2001 10 26 | 644 | 1.4+ | 0.1+ | 2001 12 18 | 704 | 1.0− | 1.2+ | 2004 04 22 | 704 | 0.5− | 1.2+ |
| 2001 11 09 | 704 | 0.7− | 0.3− | 2001 12 18 | 704 | 0.7− | 0.9+ | 2004 04 22 | 704 | 1.9− | 0.4+ |
| 2001 11 09 | 704 | 0.5− | 0.0 | 2001 12 18 | 704 | 0.3− | 1.0+ | 2004 04 22 | 704 | 0.1+ | 0.9+ |
| 2001 11 09 | 704 | 0.9− | 0.3− | 2001 12 19 | 704 | 0.4+ | 0.8+ | 2004 04 22 | 704 | 0.1+ | 0.1− |
| 2001 11 09 | 704 | 0.4− | 0.3− | 2001 12 19 | 704 | 0.0 | 0.3+ | 2004 05 12 | 699 | 0.6+ | 0.6+ |
| 2001 11 09 | 704 | 0.4− | 0.6+ | 2001 12 19 | 704 | 0.4− | 0.3− | 2004 05 12 | 699 | 1.3+ | 0.1+ |
| 2001 11 12 | 704 | 0.2− | 1.3+ | 2001 12 19 | 704 | 0.4− | 0.5+ | 2004 05 12 | 699 | 1.1+ | 1.2+ |
| 2001 11 12 | 704 | 0.7+ | 0.4+ | 2001 12 19 | 704 | 0.2− | 0.1+ | 2004 05 12 | 699 | 0.2− | 0.7− |
| 2001 11 12 | 704 | 0.1− | 0.3− | 2001 12 20 | 644 | 0.0 | 0.4+ | 2004 05 15 | 691 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.2+ | 0.2+ | 2001 12 20 | 644 | 0.0 | 0.3+ | 2004 05 15 | 691 | 0.3+ | 0.1+ |
| 2001 11 13 | 049 | 0.3+ | 0.5+ | 2001 12 20 | 644 | 0.2− | 0.6+ | 2004 05 15 | 691 | 0.2− | 0.4− |
| 2001 11 13 | 049 | 0.0 | 0.6+ | 2003 01 10 | 644 | 0.4+ | 0.6+ | 2004 05 28 | 691 | 0.0 | 0.3+ |
| 2001 11 13 | 049 | 0.2− | 0.4+ | 2003 01 10 | 644 | 0.1+ | 0.4+ | 2004 05 28 | 691 | 0.3− | 0.2+ |
| 2001 11 18 | 704 | 0.5+ | 0.4− | 2003 01 10 | 644 | 0.8+ | 0.1+ | 2004 05 28 | 691 | 0.1− | 0.5+ |
| 2001 11 18 | 704 | 0.9+ | 1.1+ | 2003 01 29 | 645 | 0.1− | 0.1− | 2006 08 30 | 699 | 1.0+ | 0.5+ |
| 2001 11 18 | 704 | 0.1+ | 0.4+ | 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.1− | 0.4+ |
| 2001 11 18 | 704 | 0.3+ | 0.2+ | 2003 02 02 | 704 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.5− | 1.2+ |
| 2001 11 18 | 704 | 0.6+ | 0.3+ | 2003 02 02 | 704 | 0.9− | 0.5+ | 2006 08 30 | 699 | 0.9+ | 1.4+ |
| 2001 11 19 | 704 | 0.1− | 0.2− | 2003 02 02 | 704 | 0.9− | 0.8+ | 2006 09 20 | 703 | 0.3− | 1.1+ |
| 2001 11 19 | 704 | 0.2− | 0.4+ | 2003 03 08 | 644 | 0.1− | 0.1− | 2006 09 20 | 703 | (3.1+ | 2.2+) |
| 2001 11 19 | 704 | 0.7− | 0.0 | 2003 03 08 | 644 | 0.2+ | 0.8+ | 2006 09 20 | 703 | 0.1+ | 1.9+ |
| 2001 11 19 | 704 | 0.5− | 0.5+ | 2003 03 08 | 644 | 0.2+ | 0.6+ | 2006 09 20 | 703 | 0.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.5− | 0.6+ | 2004 03 19 | 704 | 1.6+ | 0.0 | 2006 10 02 | 703 | 1.0− | 0.7+ |
| 2001 11 24 | 704 | 0.1− | 0.6+ | 2004 03 19 | 704 | 0.8+ | 0.2+ | 2006 10 02 | 703 | 2.2− | 0.4+ |
| 2001 11 24 | 704 | 1.1− | 0.8+ | 2004 03 19 | 704 | 0.7+ | 1.3+ | 2006 10 02 | 703 | 1.1− | 0.4+ |
| 2001 11 24 | 704 | 0.5+ | 0.5+ | 2004 03 19 | 704 | 1.2+ | 0.7+ | 2006 10 02 | 703 | (3.3− | 2.2+) |
| 2001 11 24 | 704 | 0.0 | 0.7− | 2004 04 14 | 691 | 0.6+ | 0.7+ | | | | |

**(140877)∗ 2001 VN$_{19}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.91949 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17661743 | $\omega$ | 88.95345 | | +0.39499200 | −0.91867481 | |
| $a$ | 3.1461566 | $\Omega$ | 337.77960 | | +0.83836355 | +0.36233752 | |
| $e$ | 0.1780969 | $i$ | 0.64118 | | +0.37566991 | +0.15731531 | |
| $P$ | 5.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.2− | 0.9− | 2001 12 08 | 691 | 0.1− | 0.5− | 2003 04 01 | 291 | 0.0 | 0.4+ |
| 2001 08 22 | 704 | 0.7− | 0.9+ | 2001 12 08 | 699 | 0.7− | 0.8+ | 2004 04 22 | 691 | 0.2+ | 0.9+ |
| 2001 08 22 | 704 | 0.1+ | 0.3+ | 2001 12 08 | 691 | 0.1− | 0.2+ | 2004 04 22 | 691 | 0.4+ | 0.8+ |
| 2001 10 18 | 333 | 0.0 | 0.4− | 2001 12 08 | 699 | 0.2− | 0.4+ | 2004 04 22 | 691 | 0.1+ | 0.3+ |
| 2001 10 18 | 333 | 0.9− | 0.7+ | 2001 12 08 | 699 | 0.3− | 0.2− | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2001 10 18 | 333 | 0.5− | 0.5− | 2001 12 08 | 699 | 0.3− | 0.4− | 2006 08 27 | 691 | 0.5− | 0.5+ |
| 2001 10 19 | 644 | 0.5+ | 0.2+ | 2001 12 11 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.5− | 0.7+ |
| 2001 10 19 | 644 | 0.0 | 0.1+ | 2001 12 11 | 704 | 0.0 | 0.5− | 2006 08 28 | 703 | 0.2+ | 0.8+ |
| 2001 10 19 | 644 | 0.6+ | 0.5− | 2001 12 11 | 704 | 0.8− | 0.8+ | 2006 08 28 | 703 | 0.1− | 1.0+ |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2001 12 15 | 704 | (1.5+ | 0.1+) | 2006 08 28 | 703 | 0.8+ | 1.0− |
| 2001 10 21 | 704 | 0.4+ | 0.3− | 2001 12 15 | 704 | 1.1+ | 0.5+ | 2006 08 28 | 703 | 0.5− | 1.3+ |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2001 12 15 | 704 | 1.1+ | 0.3− | 2006 09 12 | 703 | 1.3+ | 0.3− |
| 2001 10 21 | 704 | 0.2− | 0.4+ | 2001 12 15 | 704 | 0.8+ | 0.9− | 2006 09 12 | 703 | 0.3+ | 0.4+ |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2001 12 18 | 704 | 1.2− | 1.3+ | 2006 09 12 | 703 | 0.7− | 0.0 |
| 2001 10 26 | 644 | 0.5+ | 0.3+ | 2001 12 18 | 704 | 0.1+ | 0.5+ | 2006 09 12 | 703 | 0.0 | 0.3+ |
| 2001 10 26 | 644 | 0.2+ | 0.2+ | 2001 12 18 | 704 | 1.3− | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 2001 10 26 | 644 | 0.7+ | 0.0 | 2001 12 18 | 704 | 0.7+ | 0.0 | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.5− | 0.9+ | 2001 12 18 | 704 | 0.7− | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.3+ |
| 2001 11 09 | 704 | 0.7− | 0.8+ | 2001 12 18 | 704 | 0.4+ | 1.3+ | 2006 09 16 | 699 | 0.3− | 0.9+ |
| 2001 11 09 | 704 | 0.2− | 0.7+ | 2001 12 18 | 704 | (2.7− | 0.8−) | 2006 09 16 | 699 | 1.4− | 1.0+ |
| 2001 11 09 | 704 | 0.7− | 1.3+ | 2001 12 18 | 704 | 0.3− | 1.3+ | 2006 09 16 | 699 | (0.7+ | 2.4+) |
| 2001 11 09 | 644 | 0.1− | 0.1+ | 2002 01 09 | 291 | 0.3− | 0.2+ | 2006 09 16 | 699 | 0.5− | 1.4+ |
| 2001 11 09 | 644 | 0.3− | 0.0 | 2002 01 09 | 291 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.1− |
| 2001 11 09 | 644 | 0.3− | 0.1− | 2002 01 09 | 291 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2001 11 11 | 691 | 0.2+ | 0.5− | 2003 02 22 | 644 | 0.9+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.2+ |
| 2001 11 11 | 691 | 0.7+ | 0.3− | 2003 02 22 | 644 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.3+ |
| 2001 11 11 | 691 | 0.1+ | 0.0 | 2003 02 22 | 644 | 0.9+ | 0.4+ | 2006 10 16 | 703 | (1.6+ | 0.3+) |
| 2001 11 12 | 704 | (1.6− | 1.1+) | 2003 02 23 | 699 | 0.7− | 0.7+ | 2006 10 16 | 703 | 0.6+ | 0.1+ |
| 2001 11 12 | 704 | 0.1− | 1.3+ | 2003 02 23 | 699 | 0.7+ | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2003 02 23 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 0.5− | 0.7+ | 2003 02 23 | 699 | (2.2+ | 1.5+) | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.7− | 2003 02 25 | 599 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 2001 11 19 | 704 | 0.1− | 0.2+ | 2003 02 25 | 599 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 704 | 0.1− | 0.2− | 2003 02 25 | 599 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.3+ | 2003 02 26 | 599 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2001 11 19 | 704 | 0.2− | 0.3+ | 2003 02 26 | 599 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2001 11 19 | 704 | (0.7− | 1.7+) | 2003 02 26 | 599 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2003 02 27 | 599 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.8− | 0.5− |
| 2001 11 21 | 704 | 0.3+ | 0.8− | 2003 03 06 | 644 | 0.4+ | 0.7+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.5− | 2003 03 06 | 644 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | 0.4+ | 0.3− | 2003 03 06 | 644 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2003 04 01 | 291 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.5+ | 0.2− |
| 2001 12 08 | 691 | 0.0 | 0.0 | 2003 04 01 | 291 | 0.1+ | 0.2+ | | | | |

**(140878)∗ 2001 VP$_{19}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.32590 | | | (2000.0) | | |
| $n$ | 0.18984909 | $\omega$ | 59.31922 | | −0.27051991 | −0.94675184 |
| $a$ | 2.9982214 | $\Omega$ | 47.45299 | | +0.78218532 | −0.32187080 |
| $e$ | 0.0825973 | $i$ | 13.70808 | | +0.56125315 | −0.00775516 |
| $P$ | 5.19 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 1.4− | 1.2− | 2001 11 21 | 704 | 0.7+ | 1.3+ | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 1998 03 25 | 704 | 0.3+ | 1.0− | 2001 11 21 | 704 | 1.3+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.6− |
| 1998 03 25 | 704 | (1.6− | 3.3+) | 2001 12 15 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 1998 03 25 | 704 | (5.3− | 0.3+) | 2001 12 15 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.0− |
| 2001 10 23 | 704 | 0.2− | 1.3+ | 2001 12 15 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.1− |
| 2001 10 23 | 704 | (0.3+ | 2.2+) | 2001 12 18 | 704 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | 0.6− | 1.3+ | 2001 12 18 | 704 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | (3.3+ | 0.9−) | 2001 12 18 | 704 | 0.6+ | 0.5− | 2006 10 19 | 644 | 0.3+ | 0.3− |
| 2001 10 25 | 644 | 0.1+ | 0.8+ | 2001 12 18 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.3− |
| 2001 10 25 | 644 | 0.0 | 0.5+ | 2001 12 19 | 704 | 0.6− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 10 25 | 644 | 0.4+ | 0.5+ | 2001 12 19 | 704 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 0.4− | 0.2− | 2001 12 19 | 704 | 0.4− | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2001 11 09 | 704 | 1.2− | 0.1− | 2001 12 19 | 704 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 11 09 | 704 | 1.4− | 0.5− | 2001 12 19 | 704 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 11 09 | 704 | 0.6− | 0.5− | 2003 01 26 | 699 | (0.3− | 2.2−) | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 11 12 | 704 | 0.8+ | 0.9− | 2003 01 26 | 699 | 0.5+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2003 01 26 | 699 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 11 12 | 704 | (0.1+ | 1.7−) | 2003 01 26 | 699 | 0.6+ | 0.3− | 2006 10 22 | 691 | 0.7+ | 0.9+ |
| 2001 11 19 | 699 | 0.9− | 1.4− | 2003 02 21 | 644 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2001 11 19 | 699 | 1.0− | 0.2− | 2003 02 21 | 644 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.6− |
| 2001 11 19 | 699 | 0.7+ | 0.3− | 2003 02 21 | 644 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.7− |
| 2001 11 19 | 704 | 0.5− | 0.1− | 2003 03 22 | 644 | 0.5− | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2001 11 19 | 699 | 0.3+ | 0.2+ | 2003 03 22 | 644 | 0.4− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2001 11 19 | 704 | 0.4− | 0.1− | 2003 03 22 | 644 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.4− |
| 2001 11 19 | 704 | 1.3− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2001 11 19 | 704 | 0.7− | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.8+ | 2006 11 13 | 703 | 0.4+ | 0.4+ |
| 2001 11 19 | 704 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.9− | 0.6+ |
| 2001 11 19 | 608 | 1.2+ | 0.6− | 2006 09 30 | 703 | 0.1− | 0.6− | 2006 11 13 | 703 | 1.2+ | 0.7+ |
| 2001 11 19 | 608 | 1.0+ | 0.4− | 2006 10 16 | 703 | 0.7− | 0.4− | 2006 11 13 | 703 | 1.6+ | 0.2+ |
| 2001 11 19 | 608 | 1.4+ | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.1− | | | | |
| 2001 11 21 | 704 | 0.9+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.4+ | | | | |

**(140879)∗ 2001 VE$_{20}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.08638 | | | (2000.0) | | |
| $n$ | 0.18832062 | $\omega$ | 22.73058 | | +0.91871583 | −0.39491918 |
| $a$ | 3.0144226 | $\Omega$ | 0.53055 | | +0.35807116 | +0.83272846 |
| $e$ | 0.1483492 | $i$ | 1.54148 | | +0.16657212 | +0.38807492 |
| $P$ | 5.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 333 | 0.3+ | 0.8− | 2001 12 08 | 699 | 0.9− | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.2+ |
| 2001 09 20 | 333 | 0.6− | 0.6− | 2001 12 10 | 704 | 0.4+ | 0.2− | 2006 10 11 | 691 | 0.3− | 0.2+ |
| 2001 09 20 | 333 | 0.7+ | 0.7− | 2001 12 10 | 704 | 0.5+ | 0.9− | 2006 10 11 | 691 | 0.1− | 0.5+ |
| 2001 10 21 | 704 | 0.1+ | 0.4− | 2001 12 10 | 704 | 0.8+ | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 1.1− | 2001 12 10 | 704 | 0.7+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ |
| 2001 10 21 | 704 | 0.3+ | 0.5− | 2001 12 10 | 704 | 0.6+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.4− | 0.7− | 2001 12 15 | 704 | 1.3+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.1+ | 1.1− | 2001 12 15 | 704 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2001 10 26 | 644 | 1.1+ | 1.2− | 2001 12 15 | 704 | 1.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 10 26 | 644 | (1.5+ | 1.6−) | 2001 12 15 | 704 | 0.7+ | 1.4+ | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2001 10 26 | 644 | 1.4+ | 1.4− | 2001 12 15 | 704 | 1.1+ | 1.0+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2001 11 09 | 704 | 0.4− | 0.6− | 2002 12 28 | 291 | 0.4+ | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2001 11 09 | 704 | 0.3− | 0.6− | 2002 12 28 | 291 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.6− | 0.9− | 2002 12 28 | 291 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2003 02 21 | 644 | 0.8+ | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.3− |
| 2001 11 09 | 704 | 0.1+ | 0.4− | 2003 02 21 | 644 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 1.0− |
| 2001 11 11 | 691 | 0.0 | 0.3+ | 2003 02 21 | 644 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.4− |
| 2001 11 11 | 691 | 0.2+ | 0.1− | 2004 05 23 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 11 | 691 | 0.3+ | 0.2− | 2004 05 23 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 11 12 | 704 | 0.6− | 0.5+ | 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.6− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | (1.0− | 1.9−) | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 11 16 | 644 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2001 11 16 | 644 | 0.4− | 0.2+ | 2006 09 19 | 691 | (0.1+ | 1.6+) | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2001 11 16 | 644 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 11 16 | 049 | 0.6− | 0.5− | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2001 11 16 | 049 | 0.6− | 0.7− | 2006 09 20 | 704 | 0.6+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2001 11 16 | 049 | 0.6− | 0.8− | 2006 09 20 | 704 | 0.7+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 11 19 | 699 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.2− | 2006 11 06 | 644 | 0.1− | 0.5+ |
| 2001 11 19 | 699 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 11 06 | 644 | 0.4− | 0.4+ |
| 2001 11 19 | 699 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.9+ |
| 2001 11 19 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 1.1+ | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2001 11 19 | 704 | 0.6− | 0.1+ | 2006 09 27 | 704 | 0.8+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 1.2− | 0.0 | 2006 09 27 | 704 | 1.0+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.7− | 0.3+ | 2006 09 27 | 704 | 0.9+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.8− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 1.1− | 1.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2001 12 08 | 699 | 0.7+ | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2001 12 08 | 699 | 0.6− | 0.6− | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.5+ | 0.2− |
| 2001 12 08 | 699 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.7+ | 0.1− |

**(140880)∗ 2001 VL$_{20}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.39048 | | | (2000.0) | | |
| $n$ | 0.22462611 | $\omega$ | 236.14455 | | −0.67677850 | −0.73330737 |
| $a$ | 2.6801714 | $\Omega$ | 256.58875 | | +0.69560332 | −0.60803775 |
| $e$ | 0.0403478 | $i$ | 3.83428 | | +0.24105370 | −0.30422097 |
| $P$ | 4.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2− | 0.1+ | 2001 12 10 | 704 | 0.6+ | 0.6+ | 2005 10 06 | 699 | 0.4− | 0.4− |
| 2001 10 21 | 704 | 0.9− | 0.2+ | 2001 12 10 | 704 | 0.9+ | 0.7+ | 2005 10 06 | 699 | 0.2+ | 1.1− |
| 2001 10 21 | 704 | 0.6− | 0.6− | 2001 12 18 | 704 | (1.9− | 2.2−) | 2005 10 06 | 699 | (1.4+ | 1.6+) |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2001 12 18 | 704 | (0.6− | 2.6−) | 2005 10 06 | 699 | 1.1− | 1.2+ |
| 2001 10 21 | 704 | 0.7− | 0.2+ | 2001 12 18 | 704 | (1.8− | 3.0−) | 2005 10 07 | 691 | 0.2+ | 0.0 |
| 2001 10 25 | 704 | 0.2+ | 0.5− | 2001 12 18 | 704 | (1.4− | 2.2−) | 2005 10 07 | 691 | 0.1+ | 0.1+ |
| 2001 10 25 | 704 | 0.9+ | 0.3+ | 2001 12 19 | 644 | 0.2− | 1.4+ | 2005 10 07 | 691 | 0.2+ | 0.0 |
| 2001 10 25 | 704 | 0.4− | 0.9− | 2001 12 19 | 644 | 0.1− | 0.9+ | 2005 10 07 | 704 | 0.7− | 0.9+ |
| 2001 10 25 | 704 | 1.1+ | 1.1+ | 2001 12 19 | 644 | 0.4+ | 0.8+ | 2005 10 07 | 704 | 0.9+ | 0.8+ |
| 2001 10 26 | 644 | 0.3− | 0.4+ | 2003 03 06 | 704 | 0.3+ | 0.7− | 2005 10 07 | 704 | (0.8+ | 1.8+) |
| 2001 10 26 | 644 | 0.5− | 0.2+ | 2003 03 06 | 704 | 0.6+ | 1.0+ | 2005 10 07 | 703 | 1.2− | 0.3+ |
| 2001 10 26 | 644 | 0.4− | 0.2+ | 2003 03 06 | 704 | 1.0+ | 0.2− | 2005 10 07 | 703 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 0.8+ | 0.3− | 2003 03 07 | 704 | 0.2− | 0.1+ | 2005 10 07 | 703 | 0.9+ | 0.8− |
| 2001 11 09 | 704 | 0.0 | 0.1− | 2003 03 07 | 704 | 0.2+ | 0.1+ | 2005 10 07 | 703 | 0.5− | 0.7+ |
| 2001 11 09 | 704 | 0.4− | 0.6− | 2003 03 07 | 704 | 0.1− | 1.1+ | 2005 11 07 | 201 | 0.2+ | 0.7− |
| 2001 11 09 | 704 | 1.2− | 0.6− | 2003 03 26 | 644 | 0.1− | 0.6+ | 2005 11 07 | 201 | 0.2+ | 0.4− |
| 2001 11 12 | 704 | 0.4+ | 1.1+ | 2003 03 26 | 644 | 0.1− | 0.3+ | 2005 11 07 | 201 | 0.1− | 0.3− |
| 2001 11 12 | 704 | 0.3+ | 0.5− | 2003 03 26 | 644 | 0.1− | 0.5+ | 2005 12 23 | 185 | 1.0+ | 0.4+ |
| 2001 11 12 | 704 | (0.7+ | 1.7+) | 2003 03 31 | 704 | (1.7+ | 0.8+) | 2005 12 23 | 185 | 0.9− | 0.5+ |
| 2001 11 12 | 704 | 0.2+ | 0.2+ | 2003 03 31 | 704 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.9− |
| 2001 11 19 | 699 | 0.3+ | 0.4+ | 2003 03 31 | 704 | 0.6+ | 1.0+ | 2006 10 21 | G96 | 0.4− | 0.9− |
| 2001 11 19 | 699 | 1.4− | 1.4− | 2003 03 31 | 704 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.8− | 0.5+ | 2005 08 30 | 644 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.9− |
| 2001 11 19 | 699 | 0.5− | 0.5− | 2005 08 30 | 644 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2001 11 19 | 704 | 0.1+ | 0.6+ | 2005 08 30 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.5+ | 0.0 |
| 2001 11 19 | 704 | 0.1− | 0.1+ | 2005 09 22 | 644 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.6− |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2005 09 22 | 644 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.4− | 0.1− |
| 2001 11 19 | 704 | 0.2− | 0.9+ | 2005 09 22 | 644 | 0.6− | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2005 09 29 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2005 09 29 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.8− |
| 2001 11 21 | 704 | 0.1+ | 0.1− | 2005 09 29 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.8− |
| 2001 11 21 | 704 | 0.1+ | 0.6+ | 2005 10 01 | 703 | 0.3− | 0.8− | 2006 11 18 | G96 | 0.6− | 0.5− |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2005 10 01 | 703 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.5− | 0.2− |
| 2001 12 10 | 704 | 0.1+ | 0.3− | 2005 10 01 | 703 | 0.0 | 0.2− | 2006 11 18 | G96 | 1.0− | 0.6− |
| 2001 12 10 | 704 | 0.7+ | 0.2− | 2005 10 01 | 703 | 0.9− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.3− |

**(140881)∗ 2001 VB$_{21}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.92831 | | (2000.0) | | | |
| $n$ | 0.17480579 | $\omega$ | 202.43527 | | +0.21269312 | −0.97538078 |
| $a$ | 3.1678565 | $\Omega$ | 235.33073 | | +0.90689925 | +0.21925072 |
| $e$ | 0.1424870 | $i$ | 4.06192 | | +0.36372434 | +0.02369505 |
| $P$ | 5.64 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2+ | 0.2− | 2001 11 21 | 704 | 0.7+ | 0.9+ | 2004 04 25 | 691 | 0.1+ | 0.4+ |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2001 12 08 | 691 | 0.1− | 0.1− | 2004 04 25 | 691 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | 0.5+ | 0.1− | 2001 12 08 | 691 | 0.2− | 0.0 | 2004 05 19 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.6+ | 0.2− | 2001 12 08 | 691 | 0.2− | 0.0 | 2004 05 19 | 691 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.9+ | 0.3+ | 2001 12 10 | 291 | 0.2− | 0.2+ | 2004 05 19 | 691 | 0.2+ | 0.2+ |
| 2001 10 26 | 704 | (0.4+ | 2.4+) | 2001 12 10 | 291 | 0.1− | 0.2+ | 2006 08 20 | 691 | 0.6− | 0.2− |
| 2001 10 26 | 704 | 0.7− | 0.2− | 2001 12 10 | 291 | 0.2+ | 0.0 | 2006 08 20 | 691 | 0.1+ | 0.4− |
| 2001 10 26 | 704 | 0.4+ | 1.0− | 2001 12 11 | 704 | 0.1− | 0.5− | 2006 08 20 | 691 | 0.0 | 0.1+ |
| 2001 10 26 | 704 | 0.8+ | 0.4− | 2001 12 11 | 704 | 0.6− | 0.6+ | 2006 08 29 | 703 | 0.8+ | 0.2− |
| 2001 10 26 | 704 | 0.9+ | 1.2− | 2001 12 11 | 704 | 0.0 | 0.6− | 2006 08 29 | 703 | 0.3+ | 1.3+ |
| 2001 11 09 | 704 | 0.2− | 0.7+ | 2001 12 11 | 704 | 1.0− | 0.7+ | 2006 08 29 | 703 | 0.4− | 0.5− |
| 2001 11 09 | 704 | 0.9− | 0.6+ | 2001 12 11 | 704 | 0.3− | 0.4− | 2006 08 29 | 703 | 0.1+ | 0.4− |
| 2001 11 09 | 704 | 0.5− | 1.2+ | 2001 12 14 | 704 | 0.9+ | 0.5− | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2001 11 09 | 704 | 0.7− | 1.3+ | 2001 12 14 | 704 | 0.6+ | 1.2− | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2001 11 09 | 644 | 0.1− | 0.4+ | 2001 12 14 | 704 | 0.4+ | 0.4− | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2001 11 09 | 704 | (1.1− | 2.2+) | 2001 12 14 | 704 | 1.0+ | 0.4− | 2006 09 16 | 699 | 0.9− | 0.5− |
| 2001 11 09 | 644 | 0.1− | 0.2− | 2001 12 14 | 704 | 0.9+ | 0.5− | 2006 09 16 | 699 | 1.0+ | 1.2+ |
| 2001 11 09 | 644 | 0.4− | 0.1+ | 2001 12 17 | 704 | 0.6− | 1.1− | 2006 09 16 | 699 | 0.2− | 0.8− |
| 2001 11 12 | 704 | 0.4− | 0.3+ | 2001 12 17 | 704 | 0.6− | 0.6− | 2006 09 16 | 699 | 0.4+ | 0.3− |
| 2001 11 12 | 704 | 0.3− | 0.3+ | 2001 12 17 | 704 | 0.4− | 1.1− | 2006 09 19 | 703 | 1.3− | 0.7− |
| 2001 11 12 | 704 | 0.1+ | 0.6+ | 2001 12 17 | 704 | 0.1− | 0.9− | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 1.1− | 0.6+ | 2001 12 17 | 704 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.3+ | 0.4− |
| 2001 11 16 | 644 | 0.2− | 0.4+ | 2001 12 19 | 644 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2001 11 16 | 644 | 0.2+ | 0.1− | 2001 12 19 | 644 | 0.4− | 0.4+ | 2006 09 29 | 291 | 0.5+ | 0.1+ |
| 2001 11 16 | 644 | 0.2+ | 0.0 | 2001 12 19 | 644 | 0.4− | 0.4+ | 2006 09 29 | 291 | 0.3+ | 0.1+ |
| 2001 11 19 | 704 | 0.7+ | 0.9+ | 2003 02 23 | 699 | 0.7+ | 0.5+ | 2006 09 29 | 291 | 0.4+ | 0.2+ |
| 2001 11 19 | 704 | 0.4+ | 0.1− | 2003 02 23 | 699 | 0.8+ | 0.1− | 2006 09 29 | 291 | 0.4− | 0.2+ |
| 2001 11 19 | 704 | 0.4+ | 0.7+ | 2003 02 23 | 699 | (1.1+ | 2.4+) | 2006 09 29 | 291 | 0.0 | 0.1+ |
| 2001 11 19 | 704 | 0.0 | 1.1+ | 2003 02 23 | 699 | (2.5+ | 1.4+) | 2006 09 29 | 291 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.8+ | 0.9+ | 2003 03 07 | 704 | 0.1− | 0.5+ | 2006 09 30 | 291 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.5+ | 2003 03 07 | 704 | 0.1+ | 1.0+ | 2006 09 30 | 291 | 0.3− | 0.4+ |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2003 03 07 | 704 | 0.6− | 0.8+ | 2006 09 30 | 291 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.1− | 0.2− | 2003 03 07 | 704 | 0.1− | 0.1− | | | | |
| 2001 11 21 | 704 | 0.3− | 0.6+ | 2004 04 25 | 691 | 0.1− | 0.2+ | | | | |

**(140882)∗ 2001 VG$_{22}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.05906 | | (2000.0) | | | |
| $n$ | 0.18267557 | $\omega$ | 294.42747 | | +0.93186830 | +0.34023462 |
| $a$ | 3.0762082 | $\Omega$ | 45.96127 | | −0.23550813 | +0.83136160 |
| $e$ | 0.0486930 | $i$ | 10.09012 | | −0.27596628 | +0.43940676 |
| $P$ | 5.40 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.4− | 0.3− | 2001 12 19 | 704 | 0.2+ | 1.4− | 2006 09 18 | 703 | 0.7− | 0.4+ |
| 2001 10 21 | 704 | 0.4− | 0.4− | 2001 12 19 | 704 | (3.0+ | 3.5+) | 2006 09 18 | 703 | 0.5− | 0.8+ |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2001 12 19 | 704 | 0.0 | 0.9− | 2006 09 18 | 703 | 0.7+ | 0.2− |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2001 12 19 | 704 | (3.0+ | 3.2+) | 2006 09 30 | 703 | 0.2− | 0.7+ |
| 2001 10 21 | 704 | 0.7− | 0.2− | 2001 12 19 | 704 | (0.8− | 2.1−) | 2006 09 30 | 703 | 0.1+ | 1.0+ |
| 2001 11 09 | 704 | 0.1− | 0.7− | 2001 12 19 | 704 | (3.0+ | 4.4+) | 2006 09 30 | 703 | 0.1+ | 0.6+ |
| 2001 11 09 | 704 | 0.1− | 0.8− | 2001 12 19 | 704 | 0.1− | 1.5− | 2006 09 30 | 703 | 1.0− | 0.4+ |
| 2001 11 09 | 704 | 0.4+ | 0.2− | 2001 12 19 | 704 | (4.0+ | 3.9+) | 2006 10 01 | 704 | 0.9+ | 0.2+ |
| 2001 11 09 | 704 | 0.5− | 0.8− | 2003 02 01 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.7+ | 1.4+ |
| 2001 11 09 | 644 | 0.1− | 1.4+ | 2003 02 01 | 644 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3− | 1.3+ |
| 2001 11 09 | 644 | 0.3− | 1.1+ | 2003 02 01 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | (1.6+ | 0.3−) |
| 2001 11 09 | 644 | 0.4− | 1.1+ | 2003 02 19 | 644 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.4+ | 1.2+ | 2003 02 19 | 644 | 0.4− | 0.7− | 2006 10 03 | G96 | 0.7− | 0.1− |
| 2001 11 12 | 704 | 0.3+ | 0.3+ | 2003 02 19 | 644 | 0.4+ | 1.0− | 2006 10 03 | G96 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2001 11 12 | 704 | 0.0 | 1.0+ | 2004 03 22 | 704 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.7+ |
| 2001 11 19 | 704 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.1− | 0.7− | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2001 11 19 | 704 | 0.2− | 0.5+ | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.6− | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.1+ | 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 15 | 703 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 0.0 | 0.2+ | 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 1.0− |
| 2001 11 24 | 704 | 0.3+ | 0.3+ | 2004 04 16 | 704 | 0.5+ | 0.9+ | 2006 10 15 | 703 | 0.1− | 0.3− |
| 2001 11 24 | 704 | 0.4+ | 0.7+ | 2004 04 16 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 11 24 | 704 | 0.3− | 1.2+ | 2004 04 16 | 704 | 0.5+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2001 11 24 | 704 | 0.6− | 0.9+ | 2004 04 16 | 704 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 11 24 | 704 | 0.5− | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2001 12 10 | 704 | 0.1+ | 0.4− | 2004 04 19 | 704 | 1.1+ | 1.0+ | 2006 10 21 | 703 | 0.5− | 0.4− |
| 2001 12 10 | 704 | 0.2+ | 0.3+ | 2004 04 19 | 704 | 0.7− | 0.1− | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2001 12 10 | 704 | 0.8+ | 1.0+ | 2004 04 19 | 704 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 2001 12 10 | 704 | 0.0 | 0.4+ | 2004 04 19 | 704 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 12 10 | 704 | (1.7− | 0.6−) | 2004 04 23 | 691 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 12 15 | 704 | (1.6− | 0.5−) | 2004 04 23 | 691 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.6+ |
| 2001 12 15 | 704 | 0.3− | 1.2+ | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2001 12 15 | 704 | 0.3+ | 0.0 | 2004 04 25 | 704 | 0.5+ | 0.3− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | (0.6+ | 2.4+) | 2004 04 25 | 704 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2001 12 18 | 704 | 0.4− | 0.5− | 2004 04 25 | 704 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | (2.4+ | 2.1+) | 2004 04 25 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.6+ |
| 2001 12 18 | 704 | (0.2+ | 2.8−) | 2004 04 25 | 704 | 1.0+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | (1.6+ | 2.6+) | 2004 04 30 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | (0.4− | 1.8−) | 2004 04 30 | 691 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 1.0+ | 0.1− |
| 2001 12 18 | 704 | (2.4+ | 2.7+) | 2004 04 30 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 2001 12 18 | 704 | (1.2− | 2.3−) | 2004 05 23 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.5− | 1.3− |
| 2001 12 18 | 704 | (2.5+ | 2.5+) | 2004 05 23 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2004 05 23 | 691 | 0.1+ | 0.3− | | | | |
| 2001 12 19 | 704 | (2.2+ | 2.4+) | 2006 09 18 | 703 | 0.8− | 0.1− | | | | |

**(140883)∗ 2001 VD$_{24}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.75214 | | (2000.0) | | | |
| $n$ | 0.22034429 | $\omega$ | 126.02511 | | +0.88556915 | −0.46298773 |
| $a$ | 2.7147813 | $\Omega$ | 261.58206 | | +0.41303575 | +0.82184508 |
| $e$ | 0.1207849 | $i$ | 2.17513 | | +0.21252942 | +0.33198346 |
| $P$ | 4.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.4+ | 0.0 | 2001 12 18 | 704 | 0.1− | 0.1+ | 2005 09 08 | 704 | 0.5− | 0.2+ |
| 2001 10 21 | 704 | 0.5+ | 0.0 | 2001 12 18 | 704 | 0.2+ | 0.2+ | 2005 09 08 | 704 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 0.3+ | 0.5+ | 2001 12 18 | 704 | 0.1+ | 0.3+ | 2005 09 08 | 704 | (0.4+ | 4.3+) |
| 2001 11 09 | 704 | 0.0 | 1.3− | 2001 12 18 | 704 | 0.0 | 0.7+ | 2005 09 08 | 704 | 1.3− | 0.3+ |
| 2001 11 09 | 704 | (0.3− | 1.5−) | 2001 12 18 | 704 | 0.2+ | 0.5+ | 2005 09 14 | 691 | 0.3− | 0.1+ |
| 2001 11 09 | 704 | (0.2− | 1.6−) | 2001 12 19 | 704 | 0.1− | 0.3− | 2005 09 14 | 691 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 0.4− | 1.4− | 2001 12 19 | 704 | 0.6+ | 0.5+ | 2005 09 14 | 691 | 0.3− | 0.1+ |
| 2001 11 09 | 704 | 0.3− | 0.9− | 2001 12 19 | 704 | 0.3− | 0.1− | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 1.0+ | 0.5− | 2001 12 19 | 704 | 0.6− | 0.1− | 2005 09 22 | 644 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.7+ | 0.7− | 2001 12 19 | 704 | 0.1− | 0.4+ | 2005 09 22 | 644 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 1.3+ | 0.5− | 2001 12 20 | 704 | 0.1− | 0.2− | 2005 09 29 | 699 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 1.0+ | 0.8− | 2001 12 20 | 704 | 1.4− | 0.2+ | 2005 09 29 | 699 | 0.0 | 0.7− |
| 2001 11 12 | 704 | 0.9+ | 0.1+ | 2001 12 20 | 704 | 0.8− | 0.5+ | 2005 09 29 | 699 | 0.2+ | 1.2+ |
| 2001 11 16 | 644 | 0.5+ | 0.1+ | 2001 12 20 | 704 | (0.3− | 1.6+) | 2005 09 29 | 699 | 0.5+ | 0.7+ |
| 2001 11 16 | 644 | 0.4+ | 0.1− | 2003 02 23 | 599 | 0.6+ | 0.5+ | 2005 10 01 | 703 | 0.3− | 0.3+ |
| 2001 11 16 | 644 | 0.4+ | 0.1+ | 2003 02 23 | 599 | 0.6+ | 0.7+ | 2005 10 01 | 703 | 0.1− | 0.1− |
| 2001 11 19 | 704 | 0.5+ | 0.2− | 2003 02 24 | 599 | 0.4+ | 0.5+ | 2005 10 01 | 703 | 1.0− | 0.3− |
| 2001 11 19 | 704 | 0.6+ | 0.4− | 2003 02 24 | 599 | 0.4+ | 0.2+ | 2005 10 01 | 703 | 0.3− | 0.6+ |
| 2001 11 19 | 704 | 0.6+ | 0.1+ | 2003 03 27 | 691 | 0.3+ | 0.6+ | 2005 10 26 | 644 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.8+ | 0.2− | 2003 03 27 | 691 | 0.5+ | 0.4+ | 2005 10 26 | 644 | 0.1+ | 0.2+ |
| 2001 11 19 | 704 | 0.8+ | 0.0 | 2003 03 27 | 691 | 0.1+ | 0.1+ | 2005 10 26 | 644 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.2− | 2003 04 09 | 691 | 0.2+ | 0.8+ | 2005 11 30 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2003 04 09 | 691 | 0.1− | 1.0+ | 2005 11 30 | G96 | 0.3− | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.3− | 2003 04 09 | 691 | 0.4+ | 0.9+ | 2005 11 30 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2005 08 09 | A50 | 0.0 | 0.1− | 2005 11 30 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 0.4+ | 0.0 | 2005 08 26 | 699 | 0.3+ | 0.1+ | 2006 01 10 | 291 | 0.0 | 0.6+ |
| 2001 12 08 | 699 | 0.1− | 1.3+ | 2005 08 26 | 699 | 0.6+ | 1.0+ | 2006 01 10 | 291 | 0.3+ | 0.6+ |
| 2001 12 08 | 699 | 0.1+ | 0.1− | 2005 08 26 | 699 | 0.2+ | 0.5+ | 2006 01 10 | 291 | 0.1− | 0.5+ |
| 2001 12 08 | 699 | 0.2− | 1.0+ | 2005 08 26 | 699 | 0.6+ | 0.5+ | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2001 12 08 | 699 | 0.6− | 0.1− | 2005 08 27 | 644 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2001 12 10 | 704 | 0.7− | 0.1− | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2001 12 10 | 704 | 0.3− | 0.1− | 2005 08 27 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2001 12 10 | 704 | 0.7− | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2001 12 10 | 704 | 0.7− | 0.6+ | 2005 08 31 | 691 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 12 10 | 704 | 0.0 | 0.4+ | 2005 08 31 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 12 15 | 704 | 1.5− | 0.3+ | 2005 09 06 | 699 | (1.6− | 0.4+) | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2001 12 15 | 704 | 1.4− | 0.0 | 2005 09 06 | 699 | 0.0 | 0.8− | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2001 12 15 | 704 | 1.2− | 0.4+ | 2005 09 06 | 699 | 0.8− | 0.9+ | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2001 12 15 | 704 | 1.1− | 0.3+ | 2005 09 06 | 699 | 0.8− | 0.8+ | 2006 11 27 | G96 | 0.3− | 0.5− |
| 2001 12 15 | 704 | 1.2− | 0.2− | 2005 09 08 | 704 | 1.0− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.1− |

**(140884)∗ 2001 VH$_{25}$ = 2004 FV$_{45}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61189)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.56712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17877245 | $\omega$ | 317.54064 | | +0.96772969 | −0.19330543 | |
| $a$ | 3.1208220 | $\Omega$ | 54.30611 | | +0.24903440 | +0.83162470 | |
| $e$ | 0.0964498 | $i$ | 11.48120 | | −0.03848524 | +0.52060866 | |
| $P$ | 5.51 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2001 12 19 | 704 | 1.3− | 0.0 | 2006 09 21 | 699 | 0.6− | 0.5+ |
| 2001 10 21 | 704 | 0.0 | 0.7+ | 2001 12 19 | 704 | 0.8− | 0.2− | 2006 09 21 | 699 | (2.1− | 0.2+) |
| 2001 10 21 | 704 | 0.6+ | 0.2− | 2001 12 19 | 704 | 0.8− | 0.9+ | 2006 09 21 | 699 | 1.1− | 0.9+ |
| 2001 11 09 | 704 | 1.3− | 0.2+ | 2001 12 19 | 704 | 0.0 | 0.6+ | 2006 09 25 | 699 | 0.0 | 0.4+ |
| 2001 11 09 | 704 | 0.3− | 0.8+ | 2001 12 19 | 704 | 0.4− | 1.3+ | 2006 09 25 | 699 | 0.1− | 0.6+ |
| 2001 11 09 | 704 | 1.1− | 0.1− | 2001 12 19 | 704 | 0.9− | 0.8+ | 2006 09 25 | 699 | 0.7− | 0.6+ |
| 2001 11 09 | 704 | 0.0 | 0.3+ | 2001 12 19 | 704 | 0.9− | 1.3+ | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2001 11 09 | 704 | 0.7− | 0.3− | 2001 12 19 | 704 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.1+ | 0.7− | 2001 12 19 | 704 | 0.4− | 1.3+ | 2006 09 26 | 703 | 0.0 | 0.6+ |
| 2001 11 12 | 704 | 0.1+ | 0.3− | 2001 12 19 | 704 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2003 02 01 | 644 | 0.8+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.7+ | 0.8− | 2003 02 01 | 644 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.3− | 1.0+ |
| 2001 11 12 | 691 | 0.6+ | 0.0 | 2003 02 01 | 644 | 0.9+ | 0.3+ | 2006 09 29 | 699 | 0.8− | 0.3+ |
| 2001 11 12 | 704 | 0.3+ | 0.2− | 2003 02 01 | 644 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 0.0 | 1.3+ |
| 2001 11 12 | 691 | 0.6+ | 0.0 | 2003 02 01 | 644 | 0.5+ | 0.5+ | 2006 09 29 | 699 | (1.6− | 0.5+) |
| 2001 11 12 | 691 | 0.6+ | 1.0− | 2003 02 01 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 1.2− | 0.6+ |
| 2001 11 19 | 704 | 0.4− | 1.0+ | 2003 03 08 | 644 | 0.3+ | 0.7+ | 2006 09 30 | 704 | 1.2− | 0.9+ |
| 2001 11 19 | 704 | (1.0− | 2.0+) | 2003 03 08 | 644 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.9− | 0.6+ |
| 2001 11 19 | 704 | 0.3− | 0.8+ | 2003 03 08 | 644 | 0.4+ | 0.6+ | 2006 10 02 | 703 | 0.0 | 1.4+ |
| 2001 11 19 | 704 | 0.2− | 0.7+ | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 10 02 | 703 | (0.9+ | 2.3+) |
| 2001 11 21 | 704 | 0.2− | 0.3− | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 02 | 703 | (0.2+ | 1.7+) |
| 2001 11 21 | 704 | 0.2− | 0.1− | 2004 03 16 | 691 | 0.2+ | 0.2+ | 2006 10 02 | 703 | (0.2+ | 1.9+) |
| 2001 11 21 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.3+ | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.2+ | 1.4+ |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | (0.1+ | 1.8+) |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.2− | 0.9+ | 2006 10 17 | 703 | 0.6+ | 0.9+ |
| 2001 12 10 | 704 | 0.1+ | 0.3− | 2004 03 31 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2001 12 10 | 704 | 0.8− | 0.0 | 2004 03 31 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2004 03 31 | 691 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2001 12 15 | 704 | 1.4+ | 0.5− | 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 12 15 | 704 | 0.3+ | 1.1− | 2004 04 14 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 12 15 | 704 | 0.2+ | 0.8− | 2004 04 14 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 12 15 | 704 | 0.3− | 1.0− | 2004 04 20 | 704 | 1.0− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 12 18 | 704 | 0.2+ | 0.5− | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2001 12 18 | 704 | 0.3+ | 0.2− | 2004 04 20 | 704 | 0.5+ | 0.9+ | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.1− | 2004 04 23 | 691 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.3− | 1.6+ |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2004 04 23 | 691 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.4+ |
| 2001 12 18 | 704 | 0.0 | 0.4− | 2004 04 23 | 691 | 0.1− | 0.7+ | 2006 10 28 | 703 | 0.5− | 1.0+ |
| 2001 12 19 | 704 | 0.3− | 0.1− | 2006 09 21 | 699 | (0.1− | 1.6+) | 2006 10 28 | 703 | 0.3− | 0.1+ |

**(140885)∗ 2001 VH$_{26}$ = 2000 QN$_{164}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23021)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.16403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18236997 | $\omega$ | 109.05267 | | +0.97744193 | +0.17222108 | |
| $a$ | 3.0796439 | $\Omega$ | 241.19305 | | −0.20381482 | +0.92092398 | |
| $e$ | 0.1300696 | $i$ | 8.02037 | | +0.05537862 | +0.34962682 | |
| $P$ | 5.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1− | 0.8+ | 2001 11 21 | 704 | 0.8− | 1.1+ | 2006 08 12 | 644 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.4+ | 0.4+ | 2001 11 21 | 704 | (1.6− | 1.8+) | 2006 08 12 | 644 | 0.1− | 0.1+ |
| 2000 08 31 | 704 | 0.0 | 0.7+ | 2001 12 07 | 644 | (5.7− | 0.0 ) | 2006 08 12 | 644 | 0.5− | 0.3+ |
| 2000 09 03 | 704 | 0.6+ | 0.1− | 2001 12 07 | 644 | (5.8− | 0.0 ) | 2006 09 20 | 699 | 0.3− | 0.1− |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2001 12 07 | 644 | (6.0− | 0.1−) | 2006 09 20 | 699 | 0.3− | 0.5+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2001 12 08 | 699 | 0.2+ | 0.2+ | 2006 09 20 | 699 | 0.5− | 0.3+ |
| 2000 09 03 | 704 | 0.1− | 0.9+ | 2001 12 08 | 699 | 0.9− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.3− |
| 2000 09 03 | 704 | 0.5− | 0.9+ | 2001 12 08 | 699 | 0.1+ | 1.1+ | 2006 09 30 | 703 | 0.6+ | 0.0 |
| 2000 09 03 | 704 | 0.3− | 0.5+ | 2001 12 08 | 699 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.1− |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2001 12 10 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.1− |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2001 12 10 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.9+ | 0.8− |
| 2001 10 21 | 704 | 1.1− | 1.2− | 2001 12 10 | 704 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.5− | 0.0 |
| 2001 10 21 | 704 | 1.2− | 1.3− | 2001 12 10 | 704 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | (1.8− | 1.4−) | 2001 12 10 | 704 | 0.4+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 1.3− | 0.9− | 2001 12 14 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2001 10 24 | 291 | 0.6+ | 0.1+ | 2001 12 14 | 704 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2001 10 24 | 291 | 0.8+ | 0.1+ | 2001 12 14 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2001 10 24 | 291 | 0.7+ | 0.0 | 2001 12 14 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.8− | 0.2− |
| 2001 10 26 | 704 | 1.1− | 0.8− | 2001 12 14 | 704 | 0.8+ | 0.8+ | 2006 10 19 | 704 | 0.0 | 0.7+ |
| 2001 10 26 | 704 | 0.9− | 0.2− | 2001 12 17 | 704 | 0.3+ | 0.8− | 2006 10 19 | 704 | 0.1− | 0.4+ |
| 2001 10 26 | 704 | 0.9− | 0.7− | 2001 12 17 | 704 | 0.0 | 0.5+ | 2006 10 19 | 704 | 0.8− | 0.5+ |
| 2001 11 09 | 704 | 1.2+ | 0.1− | 2001 12 17 | 704 | 0.7+ | 0.6− | 2006 10 19 | 704 | 0.3+ | 0.2− |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.2+ | 0.1+ | 2001 12 17 | 704 | 0.3+ | 1.1− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.7+ | 0.1+ | 2001 12 20 | 704 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2001 12 20 | 704 | 0.1− | 0.3+ | 2006 10 29 | 704 | (1.7− | 1.9+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.3+ | 0.1− | 2001 12 20 | 704 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.4+ | 0.5− | | |
| 2001 11 12 | 704 | 0.2+ | 1.0− | 2001 12 23 | 704 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.6− | 1.3+ | | |
| 2001 11 12 | 704 | 0.1− | 0.7− | 2001 12 23 | 704 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.5− | 1.1+ | | |
| 2001 11 12 | 704 | 0.6+ | 0.1+ | 2001 12 23 | 704 | 0.7− | 0.4+ | 2006 10 29 | 704 | 1.0− | 0.1+ | | |
| 2001 11 15 | 691 | 0.2− | 0.2− | 2001 12 23 | 704 | 0.1+ | 0.8+ | 2006 11 19 | 704 | 1.3+ | 0.5− | | |
| 2001 11 15 | 691 | 0.3− | 0.2− | 2001 12 23 | 704 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.8+ | 0.1− | | |
| 2001 11 15 | 691 | 0.8− | 0.1+ | 2002 11 13 | 645 | 0.0 | 0.1− | 2006 11 19 | 704 | (0.9+ | 1.7−) | | |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.6+ | | |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2004 04 21 | 704 | 0.4− | 1.0+ | 2006 11 19 | 704 | 0.1− | 0.4− | | |
| 2001 11 20 | 704 | 0.0 | 0.3− | 2004 04 21 | 704 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.2− | | |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2004 04 21 | 704 | 0.4+ | 0.5+ | 2006 11 25 | G96 | 0.5+ | 0.9− | | |
| 2001 11 20 | 704 | 0.7− | 0.3− | 2006 08 06 | 699 | 1.2− | 0.1+ | 2006 11 25 | G96 | 1.1+ | 0.8− | | |
| 2001 11 21 | 704 | 0.8− | 0.8+ | 2006 08 06 | 699 | 0.4− | 0.6+ | 2006 11 25 | G96 | 1.1+ | 0.5− | | |
| 2001 11 21 | 704 | 0.7− | 1.4+ | 2006 08 06 | 699 | 0.1+ | 1.0+ | | | | | | |
| 2001 11 21 | 704 | 0.6− | 1.1+ | 2006 08 06 | 699 | 0.3+ | 1.4− | | | | | | |

**(140886)∗ 2001 VY$_{27}$ = 1998 FF$_{149}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23023)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.32669 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19071546 | $\omega$ | 73.78453 | | −0.47724271 | | −0.87702778 |
| $a$ | 2.9891345 | $\Omega$ | 44.85712 | | +0.77332631 | | −0.44905023 |
| $e$ | 0.1086435 | $i$ | 4.49934 | | +0.41737971 | | −0.17081031 |
| $P$ | 5.17 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | 1.9− | 1.0− | 2001 12 19 | 704 | 0.3+ | 0.1+ | 2005 08 04 | 644 | 0.0 | 0.8+ | | |
| 1998 03 22 | 704 | 0.2− | 0.7+ | 2001 12 19 | 704 | 0.1− | 0.1+ | 2005 08 28 | E12 | 0.1+ | 0.9+ | | |
| 1998 03 22 | 704 | (2.0− | 2.5+) | 2001 12 19 | 704 | 0.6− | 0.1+ | 2005 08 28 | E12 | 0.8− | 0.6+ | | |
| 1998 03 22 | 704 | (2.1− | 0.3−) | 2001 12 19 | 704 | 0.1− | 0.2+ | 2005 08 28 | E12 | (2.0+ | 0.3+) | | |
| 1998 03 25 | 704 | 1.4− | 0.2+ | 2002 01 08 | 704 | (0.1− | 2.4−) | 2005 08 28 | E12 | 1.0− | 0.2+ | | |
| 1998 03 25 | 704 | 0.3− | 1.6− | 2002 01 08 | 704 | 0.1+ | 0.4− | 2006 10 12 | 691 | 0.0 | 0.1+ | | |
| 1998 03 25 | 704 | 1.2+ | 0.5+ | 2002 01 08 | 704 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.2+ | | |
| 1998 03 25 | 704 | (2.9− | 1.7−) | 2002 01 08 | 704 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1+ | | |
| 1998 03 29 | 704 | 0.6− | 0.5− | 2002 02 06 | 704 | 0.6− | 1.0− | 2006 10 16 | 691 | 0.1− | 0.0 | | |
| 1998 03 29 | 704 | 0.5+ | 1.0− | 2002 02 06 | 704 | 0.2− | 1.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | | |
| 1998 03 29 | 704 | 1.0− | 1.6− | 2002 02 06 | 704 | 1.3− | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.2− | | |
| 1998 03 29 | 704 | (0.3+ | 2.6+) | 2002 02 06 | 704 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.1+ | | |
| 1998 03 29 | 704 | (2.2− | 0.0 ) | 2003 03 06 | 704 | (1.9+ | 1.0+) | 2006 10 20 | 691 | 0.3− | 0.2+ | | |
| 1998 04 20 | 704 | 0.4+ | 1.5+ | 2003 03 06 | 704 | 0.6+ | 1.5+ | 2006 10 20 | 691 | 0.4− | 0.0 | | |
| 1998 04 20 | 704 | 0.1− | 1.3− | 2003 03 06 | 704 | 1.3+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 1998 04 20 | 704 | 0.3− | 0.2+ | 2003 03 06 | 704 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 1998 04 20 | 704 | 0.6− | 0.6− | 2003 03 09 | 704 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2001 11 09 | 704 | 0.2+ | 1.2+ | 2003 03 09 | 704 | 0.5+ | 0.7+ | 2006 10 27 | G96 | (2.8− | 2.8−) | | |
| 2001 11 09 | 704 | 0.4− | 1.4+ | 2003 03 09 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2001 11 09 | 704 | 0.1− | 0.1+ | 2003 03 09 | 704 | 0.1+ | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 2001 11 09 | 704 | 0.0 | 0.9+ | 2003 03 09 | 704 | (0.6+ | 1.6+) | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2001 11 09 | 704 | 0.0 | 1.4+ | 2003 03 11 | 644 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.8+ | | |
| 2001 11 12 | 704 | 0.8− | 0.2− | 2003 03 11 | 644 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.6+ | 0.4+ | | |
| 2001 11 12 | 704 | 0.4− | 0.7+ | 2003 03 11 | 644 | (2.8+ | 1.7+) | 2006 11 11 | 703 | 0.4− | 0.6− | | |
| 2001 11 12 | 704 | 0.5+ | 0.9− | 2003 03 26 | 699 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.8− | 0.2+ | | |
| 2001 11 12 | 704 | 0.4− | 0.1− | 2003 03 26 | 699 | 0.2− | 0.6− | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2001 11 12 | 704 | 0.2+ | 0.5− | 2003 03 26 | 699 | 0.5+ | 0.6+ | 2006 11 12 | G96 | 0.1− | 0.2− | | |
| 2001 11 19 | 704 | 0.1− | 0.4− | 2003 03 26 | 699 | 1.1+ | 0.5+ | 2006 11 12 | G96 | 0.5+ | 0.2− | | |
| 2001 11 19 | 704 | 0.2+ | 0.0 | 2003 03 30 | 704 | 1.2+ | 0.3+ | 2006 11 12 | G96 | 0.5+ | 0.2− | | |
| 2001 11 19 | 704 | 0.6+ | 0.2+ | 2003 03 30 | 704 | 0.3+ | 0.8+ | 2006 11 17 | 703 | 0.5− | 0.1− | | |
| 2001 11 19 | 704 | 0.5+ | 0.2− | 2003 03 30 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.5− | | |
| 2001 11 19 | 704 | 0.6+ | 0.1+ | 2003 03 30 | 704 | 1.1+ | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.5− | 0.2− | 2003 03 30 | 704 | 0.1− | 0.7+ | 2006 11 17 | 703 | 0.6− | 0.3+ | | |
| 2001 11 21 | 704 | 0.2− | 0.2− | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.1− | | |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.9− | 0.2− | | |
| 2001 11 21 | 704 | 0.2+ | 0.3− | 2003 04 05 | 699 | (1.5+ | 2.1+) | 2006 11 18 | 704 | 0.7+ | 0.7+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.0 | 2003 04 05 | 699 | 0.4− | 1.2+ | 2006 11 18 | 704 | 0.2− | 0.2+ | | |
| 2001 12 08 | 699 | 1.0+ | 0.9− | 2003 04 05 | 699 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.6− | 0.4− | | |
| 2001 12 08 | 699 | 0.3+ | 0.8+ | 2003 04 05 | 699 | 0.4− | 0.4+ | 2006 11 21 | 704 | (0.1+ | 1.5+) | | |
| 2001 12 08 | 699 | 0.2+ | 0.7+ | 2003 04 09 | 704 | 0.4+ | 0.8+ | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 2001 12 08 | 699 | 0.3+ | 1.0+ | 2003 04 09 | 704 | 0.8+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.8+ | | |
| 2001 12 10 | 704 | 1.0+ | 0.3− | 2003 04 09 | 704 | 0.0 | 0.5+ | 2006 11 21 | 704 | (0.5+ | 1.5+) | | |
| 2001 12 10 | 704 | 1.1+ | 0.7− | 2003 04 09 | 704 | 0.8+ | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.9+ | | |
| 2001 12 10 | 704 | 0.0 | 1.2− | 2003 04 09 | 704 | 1.0+ | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.5+ | | |
| 2001 12 10 | 704 | 1.2+ | 1.0− | 2003 04 26 | 699 | 0.6− | 1.1+ | 2006 11 29 | 704 | 0.3+ | 0.5+ | | |
| 2001 12 15 | 704 | 0.2+ | 0.4− | 2003 04 26 | 699 | 1.3− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.1− | | |
| 2001 12 15 | 704 | 0.3+ | 0.4− | 2003 04 26 | 699 | (1.8− | 2.0−) | 2006 11 29 | 704 | 0.3+ | 0.1− | | |
| 2001 12 15 | 704 | 0.2+ | 0.0 | 2003 04 26 | 699 | (0.6− | 7.2−) | 2006 11 29 | 704 | 0.9+ | 0.8+ | | |
| 2001 12 18 | 704 | 0.4− | 0.7+ | 2005 08 04 | 644 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.7− | | |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2005 08 04 | 644 | 0.2+ | 0.7+ | 2006 12 01 | G96 | 0.0 | 0.5− | | |
| 2001 12 18 | 704 | 0.2− | 0.3− | 2005 08 04 | 644 | 0.0 | 0.6+ | 2006 12 01 | G96 | 0.2+ | 0.5− | | |
| 2001 12 18 | 704 | 0.2− | 0.2− | 2005 08 04 | 644 | 0.2− | 0.5+ | 2006 12 01 | G96 | 0.4+ | 0.6− | | |
| 2001 12 18 | 704 | 0.3+ | 0.2− | 2005 08 04 | 644 | 0.3+ | 0.5+ | | | | | | |

**(140887)∗ 2001 VD$_{28}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.92813 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18388011 | $\omega$ | 58.21455 | | −0.26102204 | | −0.96522067 |
| $a$ | 3.0627593 | $\Omega$ | 46.92365 | | +0.87872435 | | −0.24388677 |
| $e$ | 0.1761602 | $i$ | 1.15437 | | +0.39963860 | | −0.09417164 |
| $P$ | 5.36 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 29 | 691 | 0.8− | 1.4− | 2001 12 15 | 704 | 0.2− | 0.1+ | 2003 04 26 | 691 | 0.8+ | 1.3+ | | |
| 1992 02 29 | 691 | 0.6− | 0.8− | 2001 12 15 | 704 | 0.3+ | 0.7+ | 2003 04 26 | 691 | 0.5+ | 1.3+ | | |
| 1992 02 29 | 691 | 0.5− | 0.8− | 2001 12 15 | 704 | 0.4+ | 0.4+ | 2003 04 26 | 691 | 0.5+ | 1.3+ | | |
| 2000 08 29 | I03 | 0.3+ | 0.4+ | 2001 12 18 | 704 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.3− | 0.4+ | | |
| 2000 08 29 | I03 | 1.4+ | 0.9+ | 2001 12 18 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.4+ | | |
| 2001 11 09 | 704 | 0.3+ | 0.9+ | 2001 12 18 | 704 | 1.2+ | 0.2+ | 2006 09 18 | 691 | 0.7− | 1.0+ | | |
| 2001 11 09 | 704 | 0.3− | 0.8− | 2001 12 18 | 704 | 0.6+ | 0.9− | 2006 09 24 | 691 | 0.2+ | 0.1− | | |
| 2001 11 09 | 704 | 1.0− | 0.4+ | 2001 12 18 | 704 | 0.4+ | 1.3− | 2006 09 24 | 691 | 0.1− | 0.3+ | | |
| 2001 11 09 | 704 | 0.2− | 0.5+ | 2001 12 19 | 704 | 0.7+ | 0.4− | 2006 09 24 | 691 | 0.0 | 0.1+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.5− | 2001 12 19 | 704 | 0.9+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.1− | | |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2001 12 19 | 704 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | | |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2001 12 19 | 704 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.0 | | |
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2001 12 19 | 704 | (0.4+ | 1.7−) | 2006 09 25 | G96 | 0.2− | 0.3− | | |
| 2001 11 12 | 704 | 0.5+ | 0.0 | 2002 01 08 | 691 | 0.5+ | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.1+ | | |
| 2001 11 12 | 691 | 0.4− | 0.0 | 2002 01 08 | 691 | 0.7+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.4+ | | |
| 2001 11 12 | 691 | 0.3− | 0.0 | 2002 01 08 | 691 | 0.3+ | 0.5+ | 2006 10 02 | 691 | 0.3− | 0.3+ | | |
| 2001 11 12 | 691 | 0.2− | 0.1− | 2003 03 11 | 291 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.2− | 1.0+ | | |
| 2001 11 19 | 704 | 0.0 | 0.4+ | 2003 03 11 | 291 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.5+ | 0.2− | | |
| 2001 11 19 | 704 | 0.0 | 0.5+ | 2003 03 11 | 291 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.3+ | | |
| 2001 11 19 | 704 | 0.5+ | 0.0 | 2003 03 23 | 291 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.5− | 1.5+ | | |
| 2001 11 19 | 704 | 0.1+ | 0.8+ | 2003 03 23 | 291 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.2+ | | |
| 2001 11 19 | 704 | (1.7− | 0.2+) | 2003 03 23 | 291 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2001 11 21 | 704 | 0.6− | 0.4+ | 2003 03 23 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2001 11 21 | 704 | 0.3− | 0.0 | 2003 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.2− | | |
| 2001 11 21 | 704 | 0.3− | 0.4+ | 2003 03 23 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 1.0− | 0.1− | | |
| 2001 11 21 | 704 | 0.3− | 1.2− | 2003 03 26 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | (1.7− | 0.3+) | | |
| 2001 11 21 | 704 | 0.2− | 0.4+ | 2003 03 26 | 691 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2+ | | |
| 2001 12 09 | 644 | 0.5− | 0.4+ | 2003 03 26 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.1− | | |
| 2001 12 09 | 644 | 0.0 | 0.4+ | 2003 03 31 | 699 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2001 12 09 | 644 | 0.0 | 0.5+ | 2003 03 31 | 699 | 1.0+ | 0.7+ | 2006 11 11 | 703 | 1.2+ | 0.5+ | | |
| 2001 12 10 | 704 | 0.4+ | 0.1− | 2003 03 31 | 699 | 0.9− | 1.5+ | 2006 11 11 | G96 | 0.2− | 0.1+ | | |
| 2001 12 10 | 704 | 0.0 | 0.3− | 2003 03 31 | 699 | 0.0 | 1.0+ | 2006 11 11 | 703 | 1.1− | 0.4− | | |
| 2001 12 10 | 704 | 0.3− | 1.1− | 2003 04 07 | 691 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.0 | | |
| 2001 12 10 | 704 | 0.5− | 0.5+ | 2003 04 07 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 12 15 | 704 | 0.1− | 0.1− | 2003 04 07 | 691 | 0.5− | 0.3− | 2006 11 19 | 691 | 0.3− | 0.2+ | | |

**(140888)∗ 2001 VX$_{28}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.93364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17472349 | $\omega$ | 287.31689 | | +0.94269744 | +0.17519652 | |
| $a$ | 3.1688512 | $\Omega$ | 63.39384 | | −0.00719152 | +0.86151679 | |
| $e$ | 0.1500022 | $i$ | 18.51664 | | −0.33357131 | +0.47654486 | |
| $P$ | 5.64 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 704 | 1.5− | 0.4+ | 2001 12 15 | 704 | 0.1− | 0.0 | 2004 04 13 | 703 | (2.0+ | 0.3−) |
| 1999 05 18 | 704 | (0.7+ | 2.7−) | 2001 12 15 | 704 | 0.0 | 0.2+ | 2004 04 13 | 703 | 0.7+ | 0.4+ |
| 1999 05 18 | 704 | 1.1− | 1.5− | 2001 12 15 | 704 | 0.5− | 0.0 | 2004 04 13 | 703 | (1.3− | 1.8+) |
| 1999 05 18 | 704 | 1.4+ | 0.3+ | 2001 12 15 | 704 | 0.8− | 0.3− | 2004 04 24 | 704 | 0.3− | 1.0+ |
| 1999 05 18 | 704 | (2.4− | 0.5+) | 2001 12 18 | 704 | 0.4+ | 0.2− | 2004 04 24 | 704 | 0.2− | 0.1− |
| 2001 09 26 | 704 | 0.1+ | 0.3− | 2001 12 18 | 704 | (2.1+ | 1.5−) | 2004 04 24 | 703 | 0.5− | 0.3− |
| 2001 09 26 | 704 | 0.4− | 0.5− | 2001 12 18 | 704 | 0.7− | 0.7− | 2004 04 24 | 703 | 0.1+ | 0.9+ |
| 2001 09 26 | 704 | 0.1− | 0.0 | 2001 12 18 | 704 | 0.4− | 0.5+ | 2004 04 24 | 703 | 0.3− | 0.7+ |
| 2001 09 26 | 704 | 0.0 | 1.0− | 2001 12 18 | 704 | 0.2− | 0.3+ | 2004 04 24 | 704 | 0.6− | 0.5− |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2001 12 19 | 704 | 1.1+ | 0.2+ | 2004 04 24 | 703 | 1.3+ | 0.9− |
| 2001 11 09 | 704 | 0.3+ | 0.1+ | 2001 12 19 | 704 | 1.2+ | 0.4− | 2004 05 13 | 704 | (2.1+ | 0.2−) |
| 2001 11 09 | 704 | 0.4− | 0.0 | 2001 12 19 | 704 | 0.9+ | 0.5− | 2004 05 13 | 704 | 0.5+ | 0.0 |
| 2001 11 09 | 704 | 0.0 | 0.2+ | 2001 12 19 | 704 | 1.0+ | 0.2− | 2004 05 13 | 704 | 1.1+ | 0.1− |
| 2001 11 09 | 704 | 0.4− | 0.9+ | 2001 12 19 | 704 | 0.9+ | 0.3− | 2006 08 16 | 644 | 0.5− | 0.3+ |
| 2001 11 12 | 704 | 0.5− | 0.6+ | 2001 12 21 | 704 | 0.1− | 0.3− | 2006 08 16 | 644 | 0.3− | 0.3+ |
| 2001 11 12 | 704 | 0.9− | 0.1+ | 2001 12 21 | 704 | 0.1+ | 0.9− | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 0.7− | 0.3+ | 2001 12 21 | 704 | 1.0− | 0.2− | 2006 09 27 | 703 | 0.5− | 0.4+ |
| 2001 11 12 | 704 | 0.6− | 0.2+ | 2002 01 08 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.2− | 0.3− | 2002 01 08 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 0.5− | 0.1+ | 2002 01 08 | 704 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.8− | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.5+ | 2002 01 08 | 704 | 0.5+ | 0.6+ | 2006 10 03 | E12 | 0.8+ | 0.1+ |
| 2001 11 19 | 704 | 0.5− | 0.0 | 2002 01 08 | 704 | 0.1− | 0.5+ | 2006 10 03 | E12 | 0.0 | 0.3+ |
| 2001 11 19 | 704 | 0.5− | 0.0 | 2002 02 06 | 704 | 0.4− | 0.6− | 2006 10 03 | E12 | 0.4− | 0.0 |
| 2001 11 19 | 704 | 0.4− | 0.4+ | 2002 02 06 | 704 | 1.1+ | 0.9− | 2006 10 03 | E12 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2002 02 06 | 704 | 0.9+ | 0.4− | 2006 10 12 | E12 | 0.4+ | 0.3− |
| 2001 11 21 | 704 | 0.3− | 0.2+ | 2002 02 06 | 704 | 0.0 | 0.3+ | 2006 10 12 | E12 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2002 02 06 | 704 | (2.1+ | 0.2+) | 2006 10 12 | E12 | 0.3+ | 0.3+ |
| 2001 11 21 | 704 | 0.2− | 0.4+ | 2002 02 07 | 704 | 0.5+ | 0.1+ | 2006 10 12 | E12 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.2− | 0.8+ | 2002 02 07 | 704 | 0.2− | 0.6+ | 2006 10 31 | 703 | 0.9− | 0.0 |
| 2001 12 10 | 704 | 0.2+ | 0.5− | 2002 02 07 | 704 | 0.5− | 0.5− | 2006 10 31 | 703 | 1.1− | 0.5− |
| 2001 12 10 | 704 | 0.0 | 0.4− | 2003 03 09 | 644 | 0.3+ | 0.4+ | 2006 10 31 | 703 | 0.4− | 0.2+ |
| 2001 12 10 | 704 | 0.8+ | 0.2− | 2003 03 09 | 644 | 0.2+ | 1.0+ | 2006 10 31 | 703 | 0.7− | 0.7+ |
| 2001 12 10 | 704 | 0.5+ | 0.2− | 2003 03 09 | 644 | 0.2− | 0.9+ | 2006 11 09 | E12 | 0.4+ | 0.3+ |
| 2001 12 10 | 704 | (0.8+ | 2.5−) | 2004 04 09 | 644 | 0.3+ | 0.5+ | 2006 11 09 | E12 | 0.2− | 0.6+ |
| 2001 12 11 | 704 | 0.6+ | 0.3+ | 2004 04 09 | 644 | 0.2+ | 0.8+ | 2006 11 09 | E12 | 0.0 | 0.2+ |
| 2001 12 11 | 704 | 0.6+ | 0.2+ | 2004 04 09 | 644 | 0.3+ | 0.7+ | 2006 11 09 | E12 | 0.0 | 0.8+ |
| 2001 12 11 | 704 | 0.4+ | 0.3− | 2004 04 09 | 644 | 0.4+ | 0.5+ | 2006 11 09 | E12 | 0.4− | 0.0 |
| 2001 12 11 | 704 | 0.5+ | 0.0 | 2004 04 09 | 644 | 0.0 | 0.6+ | 2006 11 09 | E12 | 0.4− | 0.6+ |
| 2001 12 11 | 704 | 1.1+ | 0.4− | 2004 04 09 | 644 | 0.5+ | 0.4+ | 2006 11 09 | E12 | 0.4+ | 0.5− |
| 2001 12 14 | 644 | 0.3− | 0.1− | 2004 04 11 | A35 | 0.3+ | 0.4+ | 2006 11 09 | E12 | 0.4+ | 0.3+ |
| 2001 12 14 | 644 | 0.1− | 0.3− | 2004 04 11 | A35 | 0.6+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2001 12 14 | 644 | 0.0 | 0.1− | 2004 04 11 | A35 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2001 12 15 | 704 | 0.2+ | 0.2− | 2004 04 13 | 703 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.7+ |

**(140889)∗ 2001 VL$_{29}$ = 1998 HC$_{156}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25419)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.40697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18817521 | $\omega$ | 335.39728 | | +0.42310902 | −0.90396468 | |
| $a$ | 3.0159752 | $\Omega$ | 89.52126 | | +0.84121971 | +0.36653985 | |
| $e$ | 0.1561189 | $i$ | 3.54669 | | +0.33664247 | +0.22021898 | |
| $P$ | 5.24 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 08 | 327 | 1.0− | 0.0 | 2001 12 11 | 291 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 1996 12 08 | 327 | 0.6− | 0.0 | 2001 12 11 | 291 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 1996 12 08 | 327 | 1.1− | 0.3− | 2001 12 11 | 291 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.4+ | 1.3+ |
| 1998 03 25 | 691 | 0.6+ | 0.7− | 2001 12 14 | 704 | 1.4+ | 1.2− | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 1998 03 25 | 691 | 0.8+ | 0.5− | 2001 12 14 | 704 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.8+ |
| 1998 03 25 | 691 | 1.1+ | 1.2+ | 2001 12 14 | 704 | 0.1+ | 1.2− | 2006 10 16 | 703 | 0.7− | 0.1+ |
| 1998 04 04 | 691 | 0.7− | 0.5− | 2001 12 17 | 704 | 0.2+ | 0.8+ | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 1998 04 04 | 691 | 0.3− | 0.6− | 2001 12 17 | 704 | 0.1− | 0.9+ | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 1998 04 04 | 691 | (5.8+ | 0.4−) | 2001 12 17 | 704 | 0.1− | 0.8+ | 2006 10 18 | 691 | 0.3+ | 0.0 |
| 1998 04 21 | 691 | 0.9− | 0.6− | 2001 12 17 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.4− |
| 1998 04 21 | 691 | 0.5− | 0.1− | 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 1998 04 21 | 691 | 0.9− | 0.1− | 2001 12 20 | 704 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 11 09 | 704 | 0.4+ | 0.2+ | 2001 12 20 | 704 | 0.1+ | 1.1− | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2001 11 09 | 704 | 1.5+ | 0.1− | 2001 12 20 | 704 | 0.6− | 0.5− | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2001 12 20 | 704 | (0.0 | 1.9−) | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 11 09 | 704 | 0.7+ | 0.2+ | 2001 12 20 | 704 | 0.8− | 0.7− | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2001 11 09 | 704 | 1.3+ | 0.6+ | 2002 01 15 | 691 | 0.1+ | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.1− | 0.3+ | 2002 01 15 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2002 01 15 | 691 | 0.2+ | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2003 03 11 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | (0.8− | 1.9−) |
| 2001 11 12 | 704 | 0.6− | 0.0 | 2003 03 11 | 644 | 0.4+ | 1.2+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2001 11 12 | 704 | 0.4− | 0.1+ | 2003 03 11 | 644 | 0.3+ | 1.0+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 11 16 | 049 | 0.4+ | 0.2− | 2003 03 26 | 644 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2001 11 16 | 049 | 0.8+ | 0.4− | 2003 03 26 | 644 | 0.1− | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2001 11 16 | 049 | 0.2− | 0.0 | 2003 03 26 | 644 | 0.4+ | 0.6+ | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 2001 11 20 | 704 | (2.1+ | 0.4−) | 2005 07 11 | 691 | 0.0 | 0.5+ | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2001 11 20 | 704 | (1.5+ | 0.2−) | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2001 11 20 | 704 | (1.6+ | 0.2−) | 2005 07 11 | 691 | 0.2+ | 0.6− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 11 20 | 704 | (1.9+ | 0.4−) | 2006 09 30 | 703 | (0.1+ | 1.6+) | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 11 20 | 704 | (2.0+ | 0.9−) | 2006 09 30 | 703 | 1.0− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | (2.2+ | 0.0 ) | 2006 09 30 | 703 | (0.4− | 1.5+) | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2001 11 21 | 704 | (2.5+ | 0.6−) | 2006 09 30 | 703 | 0.9− | 0.8+ | 2006 11 21 | 704 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | (1.6+ | 0.8−) | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.1− |
| 2001 11 21 | 704 | (2.2+ | 0.8−) | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.9+ | 0.1+ |

**(140890)∗ 2001 VK$_{30}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.50146 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18081311 | $\omega$ | 338.44060 | | +0.96810323 | −0.24984755 | |
| $a$ | 3.0972964 | $\Omega$ | 36.04438 | | +0.23428778 | +0.87616571 | |
| $e$ | 0.2035295 | $i$ | 1.82807 | | +0.08879960 | +0.41220121 | |
| $P$ | 5.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.2+ | 0.0 | 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.2+ |
| 2001 11 09 | 704 | 0.3− | 0.2− | 2002 12 14 | 645 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.3+ | 0.1− | 2004 04 12 | 691 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2004 04 12 | 691 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2001 11 09 | 704 | 0.3+ | 0.5− | 2004 04 12 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2004 04 19 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2001 11 12 | 704 | 0.6+ | 0.2+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.8+ |
| 2001 11 12 | 704 | 0.5+ | 0.3− | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.8+ | 0.4+ | 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.3− |
| 2001 11 12 | 704 | 1.1+ | 0.2+ | 2004 04 25 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.3+ |
| 2001 11 17 | 291 | 0.7− | 0.2− | 2004 04 25 | 691 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.1− | 0.0 |
| 2001 11 17 | 291 | 0.4− | 0.2− | 2004 04 26 | 568 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.1− | 0.1+ |
| 2001 11 17 | 291 | 0.4− | 0.3− | 2004 04 26 | 568 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.8− | 0.1+ |
| 2001 11 19 | 704 | 0.1− | 0.1− | 2004 04 26 | 568 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.3− | 0.2− |
| 2001 11 19 | 704 | 0.7+ | 0.3+ | 2004 04 27 | 568 | 0.0 | 0.6+ | 2006 09 28 | 704 | 0.5− | 0.1− |
| 2001 11 19 | 704 | 0.5+ | 0.2+ | 2004 05 19 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.3+ |
| 2001 11 19 | 704 | 0.8+ | 0.3+ | 2004 05 19 | 691 | 0.8− | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.2+ | 0.6− | 2004 05 19 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.7− | 2004 05 24 | 691 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.0 | 0.6− | 2004 05 24 | 691 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.6− | 0.1− |
| 2001 11 21 | 704 | 0.1+ | 0.3+ | 2004 05 24 | 691 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.8− | 0.3− |
| 2001 11 21 | 704 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.9− | 0.5− |
| 2001 12 09 | 644 | 0.3− | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.6− | 0.1− |
| 2001 12 09 | 644 | 0.1+ | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 01 | 704 | 0.8− | 0.1+ |
| 2001 12 09 | 644 | 0.0 | 0.5+ | 2006 09 12 | 703 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2001 12 10 | 704 | 1.2− | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.8+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2001 12 10 | 704 | 1.0− | 0.0 | 2006 09 12 | 703 | 0.8− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | (1.9− | 0.9+) | 2006 09 12 | 703 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 12 10 | 704 | (1.5− | 0.3+) | 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2001 12 10 | 704 | 1.3− | 0.8+ | 2006 09 16 | 644 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 12 15 | 704 | 0.1− | 0.9+ | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 12 15 | 704 | 1.5− | 0.8+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 12 15 | 704 | 0.7− | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 12 17 | 691 | 0.6− | 0.1− | 2006 09 17 | H07 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 12 17 | 691 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 12 17 | 691 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 12 18 | 704 | 0.4+ | 0.3− | 2006 09 17 | H07 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.1+ | 0.1− | 2006 09 17 | H07 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2001 12 18 | 704 | 0.4+ | 0.1− | 2006 09 17 | H07 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2001 12 18 | 704 | 0.2− | 0.3− | 2006 09 18 | H07 | (0.3− | 1.9+) | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.4+ | 0.2− | 2006 09 18 | H07 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 12 19 | 704 | 0.3+ | 0.3− | 2006 09 18 | H07 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.6− |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.6− |
| 2001 12 19 | 704 | 0.4+ | 0.2− | 2006 09 18 | 699 | 1.0+ | 0.3− | 2006 10 21 | G96 | 0.3− | 0.6− |
| 2001 12 23 | 291 | 0.8+ | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.6− |
| 2001 12 23 | 291 | 0.8+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2001 12 23 | 291 | 0.6+ | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2002 01 08 | 704 | 0.8+ | 0.5− | 2006 09 20 | 704 | 0.7+ | 0.4+ | 2006 11 06 | 644 | 0.1+ | 0.4+ |
| 2002 01 08 | 704 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.2− | 0.6+ | 2006 11 06 | 644 | 0.0 | 0.4+ |
| 2002 01 08 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2002 01 08 | 704 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.1− | 0.2+ | | | | |
| 2002 01 08 | 704 | 0.0 | 0.7− | 2006 09 24 | 691 | 0.1+ | 0.1+ | | | | |

**(140891)∗ 2001 VB$_{31}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.94305 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21589176 | $\omega$ | 348.39526 | | +0.58981795 | −0.69758326 | |
| $a$ | 2.7519804 | $\Omega$ | 64.05959 | | +0.77237890 | +0.34030236 | |
| $e$ | 0.1331878 | $i$ | 26.89685 | | +0.23568118 | +0.63053302 | |
| $P$ | 4.57 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.5− | 0.0 | 2001 11 19 | 704 | 0.6− | 0.3+ | 2001 12 22 | 704 | (0.1− | 1.8−) |
| 2001 09 17 | 704 | 0.9+ | 0.1+ | 2001 11 19 | 704 | 0.8− | 0.5+ | 2001 12 22 | 704 | (0.4+ | 1.8−) |
| 2001 09 17 | 704 | 0.1+ | 0.2+ | 2001 11 19 | 704 | 0.6− | 0.7+ | 2003 03 22 | 644 | 0.6+ | 0.1+ |
| 2001 09 17 | 704 | 0.3+ | 0.6− | 2001 11 24 | 704 | 0.5+ | 0.5− | 2003 03 22 | 644 | 0.5+ | 0.4+ |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2001 11 24 | 704 | 0.5+ | 0.3+ | 2003 03 22 | 644 | 0.6+ | 0.0 |
| 2001 10 14 | 704 | 0.8− | 0.2− | 2001 11 24 | 704 | 0.7+ | 0.6− | 2003 04 01 | 699 | (1.4− | 1.7−) |
| 2001 10 14 | 704 | 0.4− | 0.3− | 2001 11 24 | 704 | 0.2+ | 1.0+ | 2003 04 01 | 699 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2001 11 24 | 704 | 0.6+ | 0.5− | 2003 04 01 | 699 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.1+ | 0.7− | 2001 11 24 | 704 | 0.2− | 0.2+ | 2003 04 01 | 699 | 0.7− | 0.9+ |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2001 11 24 | 704 | 0.3+ | 0.1− | 2005 09 06 | E12 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.3− | 0.0 | 2001 11 24 | 704 | 0.4+ | 1.1+ | 2005 09 06 | E12 | 0.6+ | 0.1+ |
| 2001 10 24 | 704 | 0.6− | 0.4+ | 2001 11 24 | 704 | 0.5+ | 0.5− | 2005 09 06 | E12 | 0.8− | 0.0 |
| 2001 10 24 | 704 | 0.6− | 0.4+ | 2001 11 24 | 704 | 0.1− | 0.7+ | 2005 09 06 | E12 | 0.3− | 0.2+ |
| 2001 10 24 | 704 | 0.7− | 0.6+ | 2001 12 09 | 704 | 0.1+ | 0.1− | 2005 10 24 | E12 | 0.4− | 0.3+ |
| 2001 10 26 | 704 | 1.2− | 0.3+ | 2001 12 09 | 704 | 0.2+ | 0.3− | 2005 10 24 | E12 | 0.1+ | 0.1+ |
| 2001 10 26 | 704 | 0.4+ | 0.0 | 2001 12 09 | 704 | 0.3+ | 0.2+ | 2005 10 24 | E12 | 0.2+ | 0.0 |
| 2001 10 26 | 704 | 0.6+ | 1.0+ | 2001 12 09 | 704 | 0.1− | 0.1− | 2005 10 24 | E12 | 0.7− | 0.0 |
| 2001 10 26 | 704 | 0.1+ | 0.4+ | 2001 12 09 | 704 | 0.3− | 0.3− | 2006 10 27 | 703 | 1.1+ | 1.0+ |
| 2001 11 09 | 704 | 0.4+ | 1.0− | 2001 12 17 | 704 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.2− | 1.0+ |
| 2001 11 09 | 704 | 0.2+ | 0.1+ | 2001 12 17 | 704 | 0.2− | 0.5− | 2006 10 27 | 703 | (0.6+ | 1.7+) |
| 2001 11 09 | 704 | 0.4+ | 0.4− | 2001 12 17 | 704 | 0.9+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2001 11 09 | 704 | 0.4+ | 0.4− | 2001 12 17 | 704 | 0.7− | 0.0 | 2006 11 13 | 704 | 0.4− | 1.1+ |
| 2001 11 09 | 704 | 0.7+ | 0.3− | 2001 12 17 | 704 | 0.1+ | 0.5− | 2006 11 13 | 704 | 0.7+ | 0.9+ |
| 2001 11 12 | 704 | 0.2− | 0.1+ | 2001 12 18 | 704 | 0.5+ | 0.1− | 2006 11 13 | 704 | 0.9+ | 0.1− |
| 2001 11 12 | 704 | 0.4− | 0.4+ | 2001 12 18 | 704 | 0.6+ | 0.4− | 2006 11 13 | 704 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.1− | 2001 12 18 | 704 | 0.6+ | 0.3− | 2006 11 20 | 703 | 0.2+ | 0.9− |
| 2001 11 12 | 704 | 0.5− | 0.9+ | 2001 12 18 | 704 | 0.8+ | 0.1− | 2006 11 20 | 703 | 0.4− | 0.3− |
| 2001 11 12 | 704 | 0.2− | 0.8+ | 2001 12 22 | 704 | 0.1+ | 0.9− | 2006 11 20 | 703 | 0.4− | 0.2+ |
| 2001 11 19 | 704 | 0.7− | 0.2+ | 2001 12 22 | 704 | 0.1+ | 1.4− | 2006 11 20 | 703 | 0.6− | 0.6− |
| 2001 11 19 | 704 | 0.7− | 0.4+ | 2001 12 22 | 704 | (0.1− | 1.5−) | | | | |

**(140892)∗ 2001 VG$_{31}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.99408 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18396925 | $\omega$ | 358.87918 | | +0.39253156 | −0.87880556 | |
| $a$ | 3.0617700 | $\Omega$ | 67.95923 | | +0.84610488 | +0.22937485 | |
| $e$ | 0.0726566 | $i$ | 17.02103 | | +0.36059049 | +0.41843514 | |
| $P$ | 5.36 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.1− | 0.5+ | 2001 12 19 | 704 | 0.4− | 0.2+ | 2004 04 17 | 704 | (6.8+ | 5.3+) |
| 2001 10 24 | 704 | 0.4− | 0.9− | 2001 12 19 | 704 | 0.2− | 0.2+ | 2004 04 17 | 704 | (7.0+ | 7.2+) |
| 2001 10 24 | 704 | 0.5+ | 0.5+ | 2001 12 20 | 704 | 0.4− | 1.0+ | 2004 04 17 | 704 | (7.0+ | 8.6+) |
| 2001 10 24 | 704 | 0.2− | 0.8+ | 2001 12 20 | 704 | 0.3− | 1.3+ | 2004 05 09 | 691 | 0.4+ | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 0.7− | 2001 12 20 | 704 | 0.0 | 0.2+ | 2004 05 09 | 691 | 0.2+ | 0.5+ |
| 2001 11 09 | 704 | 0.5+ | 0.2− | 2001 12 20 | 704 | 0.1+ | 0.9− | 2004 05 09 | 691 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.5+ | 0.2− | 2001 12 20 | 704 | 0.2− | 0.0 | 2004 05 21 | 704 | 0.1+ | 0.4+ |
| 2001 11 09 | 704 | 0.3+ | 0.2− | 2002 01 08 | 704 | 0.4− | 1.3+ | 2004 05 21 | 704 | 0.3+ | 1.0+ |
| 2001 11 09 | 704 | 0.7− | 0.6− | 2002 01 08 | 704 | (1.5+ | 1.1+) | 2004 05 21 | 704 | 0.3+ | 0.6+ |
| 2001 11 12 | 704 | 0.7+ | 0.6− | 2002 01 08 | 704 | (1.2+ | 1.6+) | 2004 05 21 | 704 | 0.7+ | 0.1+ |
| 2001 11 12 | 704 | 0.6+ | 0.5− | 2002 01 08 | 704 | 0.7+ | 0.8+ | 2004 05 21 | 704 | 0.2+ | 1.1+ |
| 2001 11 12 | 704 | 0.6+ | 0.7− | 2002 01 08 | 704 | (0.3− | 2.1+) | 2005 07 05 | E12 | 0.3+ | 0.5+ |
| 2001 11 12 | 704 | 0.3+ | 0.1− | 2003 02 21 | 644 | 0.3+ | 0.0 | 2005 07 05 | E12 | (0.3− | 1.8+) |
| 2001 11 12 | 704 | 0.5+ | 0.3− | 2003 02 21 | 644 | 0.3+ | 0.0 | 2005 07 05 | E12 | 0.5− | 0.8+ |
| 2001 11 20 | 704 | 0.4− | 0.2− | 2003 02 21 | 644 | 0.5+ | 0.2− | 2005 07 05 | E12 | 0.2− | 1.2+ |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2003 02 26 | 704 | 0.4− | 1.0+ | 2005 08 06 | E12 | 0.3− | 0.6+ |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2003 02 26 | 704 | 0.8− | 0.2− | 2005 08 06 | E12 | 0.6+ | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2003 02 26 | 704 | 0.1− | 0.1− | 2005 08 06 | E12 | 0.6− | 1.0+ |
| 2001 11 20 | 704 | 0.3+ | 0.2− | 2003 02 26 | 704 | 0.7− | 0.0 | 2005 08 06 | E12 | 0.9− | 1.2+ |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2003 03 08 | 699 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2003 03 08 | 699 | 1.1− | 1.4+ | 2006 10 12 | 644 | 0.3− | 0.5+ |
| 2001 11 21 | 704 | 0.4+ | 0.2+ | 2003 03 08 | 699 | 1.1+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.7+ |
| 2001 11 21 | 704 | 0.4+ | 0.5+ | 2003 03 08 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.1+ |
| 2001 11 21 | 704 | 0.5+ | 0.3+ | 2003 03 09 | 644 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2001 12 10 | 704 | 0.4− | 1.1+ | 2003 03 09 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2001 12 10 | 704 | 1.0− | 0.6+ | 2003 03 09 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 2001 12 10 | 704 | 0.6− | 0.7+ | 2003 03 13 | 704 | 0.3− | 0.2− | 2006 10 22 | 703 | 1.2+ | 0.0 |
| 2001 12 10 | 704 | 0.4+ | 1.3+ | 2003 03 13 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.2+ |
| 2001 12 10 | 704 | 0.3+ | 0.1+ | 2003 03 13 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2001 12 15 | 704 | 0.9− | 0.4+ | 2003 03 13 | 704 | 0.7+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2001 12 15 | 704 | 0.8− | 0.3+ | 2003 03 22 | 644 | 0.4+ | 1.2+ | 2006 11 13 | 703 | 0.5− | 0.8+ |
| 2001 12 15 | 704 | 0.2− | 1.0+ | 2003 03 22 | 644 | 0.5+ | 1.0+ | 2006 11 13 | 703 | 0.9− | 0.1− |
| 2001 12 15 | 704 | (1.1− | 1.5+) | 2003 03 22 | 644 | 0.4+ | 1.2+ | 2006 11 13 | 703 | 0.4− | 0.2+ |
| 2001 12 18 | 704 | 0.0 | 0.8− | 2003 04 07 | 644 | 0.6+ | 0.3+ | 2006 11 13 | 703 | 1.0− | 1.0+ |
| 2001 12 18 | 704 | 0.2− | 0.8− | 2003 04 07 | 644 | 0.5+ | 0.2+ | 2006 11 19 | 703 | 0.7− | 1.0+ |
| 2001 12 18 | 704 | 0.7− | 1.4− | 2003 04 07 | 644 | 0.7+ | 0.6+ | 2006 11 19 | 703 | 0.0 | 0.6+ |
| 2001 12 18 | 704 | 0.4− | 0.9− | 2004 04 12 | 644 | 1.0+ | 0.8+ | 2006 11 19 | 703 | 0.3+ | 0.8+ |
| 2001 12 18 | 704 | 0.4− | 1.0− | 2004 04 12 | 644 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.0 | 0.8+ |
| 2001 12 19 | 704 | 0.0 | 0.3+ | 2004 04 12 | 644 | 0.4− | 0.1+ | | | | |
| 2001 12 19 | 704 | 0.3− | 0.1+ | 2004 04 17 | 704 | (6.4+ | 5.3+) | | | | |

**(140893)∗ 2001 VF$_{32}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.21774 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17692042 | $\omega$ | 107.09044 | | −0.72393426 | −0.68962667 | |
| $a$ | 3.1425636 | $\Omega$ | 29.31694 | | +0.61789849 | −0.65996741 | |
| $e$ | 0.1233914 | $i$ | 2.13981 | | +0.30679088 | −0.29809071 | |
| $P$ | 5.57 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.1− | 0.5+ | 2002 01 14 | 704 | 0.2+ | 0.2+ | 2003 04 09 | 704 | 1.3+ | 0.7+ |
| 2000 10 01 | 704 | 0.2− | 0.6+ | 2002 01 14 | 704 | 0.6− | 0.0 | 2003 04 09 | 704 | 0.2− | 0.5+ |
| 2000 10 01 | 704 | 0.8− | 0.2− | 2003 02 12 | 608 | 0.5+ | 0.2+ | 2003 04 09 | 704 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.4+ | 0.7+ | 2003 02 12 | 608 | 0.5+ | 0.0 | 2003 04 25 | 699 | 0.4+ | 1.0+ |
| 2001 11 09 | 704 | 1.3− | 0.2+ | 2003 02 12 | 608 | 0.4+ | 0.7− | 2003 04 25 | 699 | 0.2− | 0.4− |
| 2001 11 09 | 704 | 0.0 | 0.3− | 2003 03 05 | 704 | 1.2− | 0.7+ | 2003 04 25 | 699 | 0.8− | 0.3+ |
| 2001 11 09 | 704 | 0.6+ | 1.1− | 2003 03 05 | 704 | 0.3+ | 0.6+ | 2003 04 25 | 699 | 1.4− | 1.3+ |
| 2001 11 09 | 704 | (1.2− | 1.6−) | 2003 03 05 | 704 | 0.2+ | 0.7+ | 2003 04 26 | 735 | 0.5+ | 0.3+ |
| 2001 11 09 | 704 | 0.6− | 0.0 | 2003 03 06 | 699 | 1.1− | 0.1+ | 2003 04 26 | 735 | 0.9+ | 0.2+ |
| 2001 11 12 | 704 | 0.1− | 1.1− | 2003 03 06 | 699 | 0.5+ | 0.3− | 2003 04 26 | 735 | 0.3+ | 0.8− |
| 2001 11 12 | 704 | 0.2+ | 0.6− | 2003 03 06 | 699 | 0.5+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.3− | 2003 03 06 | 699 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.4− | 0.4+ |
| 2001 11 12 | 704 | 0.9− | 0.7− | 2003 03 23 | 333 | 0.7− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.1− | 0.7− | 2003 03 23 | 683 | (1.2− | 2.1+) | 2006 10 11 | 691 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.1− | 0.1− | 2003 03 23 | 683 | (2.0− | 0.1−) | 2006 10 11 | 691 | 0.2− | 0.1− |
| 2001 11 19 | 704 | 0.2− | 0.1− | 2003 03 23 | 333 | 0.6− | 0.2− | 2006 10 11 | 691 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 0.4− | 0.4− | 2003 03 23 | 683 | (2.2− | 0.3+) | 2006 10 12 | A13 | 0.9− | 0.4− |
| 2001 11 19 | 704 | 0.7− | 0.5− | 2003 03 24 | 683 | 0.1+ | 0.7+ | 2006 10 12 | A13 | 0.6− | 0.8+ |
| 2001 11 21 | 704 | 0.4− | 0.5− | 2003 03 24 | 683 | 0.0 | 0.4− | 2006 10 15 | 691 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.4+ | 0.8− | 2003 03 24 | 683 | 0.5+ | 0.5− | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.3+ | 0.3− | 2003 03 25 | 683 | (2.0+ | 0.6+) | 2006 10 15 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2003 03 25 | 683 | 1.5+ | 0.4− | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.5+ | 1.3− | 2003 03 25 | 683 | 1.1+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 12 15 | 704 | 0.2− | 0.1+ | 2003 03 25 | 699 | 0.2+ | 0.9− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 12 15 | 704 | 0.2− | 0.1+ | 2003 03 25 | 699 | 0.1− | 0.3− | 2006 10 20 | 703 | 0.5− | 0.7+ |
| 2001 12 15 | 704 | 0.3− | 0.1− | 2003 03 25 | 699 | 0.1− | 0.5+ | 2006 10 20 | 703 | 0.8+ | 0.7+ |
| 2001 12 18 | 704 | 0.1+ | 0.9+ | 2003 03 25 | 699 | 0.2+ | 0.4− | 2006 10 20 | 703 | 0.1+ | 0.6+ |
| 2001 12 18 | 704 | 0.0 | 0.6+ | 2003 03 26 | 683 | (2.0− | 1.2+) | 2006 10 20 | 703 | 0.7− | 0.2− |
| 2001 12 18 | 704 | 0.6− | 1.1+ | 2003 03 26 | 683 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.1+ | 1.2− |
| 2001 12 18 | 704 | 0.2− | 1.3+ | 2003 03 26 | 683 | 1.0− | 0.2− | 2006 10 21 | 703 | 0.9+ | 0.1− |
| 2001 12 18 | 704 | 0.6− | 0.9+ | 2003 03 27 | 703 | 0.9+ | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2003 03 27 | 683 | (1.9− | 0.8−) | 2006 10 21 | 703 | 0.1− | 0.7+ |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2003 03 27 | 703 | 0.1− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2001 12 19 | 704 | 0.1− | 0.1+ | 2003 03 27 | 683 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 12 19 | 704 | 0.1+ | 0.3− | 2003 03 27 | 703 | 0.7+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.7+ |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2003 03 27 | 703 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.7+ | 0.2− | 2003 03 27 | 683 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 0.5+ | 0.0 | 2003 03 30 | 683 | 0.6− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2001 12 19 | 704 | (1.9+ | 0.3−) | 2003 03 30 | 683 | 0.4− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.8+ | 0.1− | 2003 03 30 | 683 | 1.1+ | 0.7− | 2006 10 28 | G96 | 0.2− | 0.2+ |
| 2001 12 19 | 704 | 0.9+ | 0.1− | 2003 04 01 | 704 | 0.2− | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.5+ | 0.4+ | 2003 04 01 | 704 | 0.9− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 1.1+ | 0.1+ | 2003 04 01 | 704 | 0.4+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2001 12 19 | 704 | 0.2− | 0.4− | 2003 04 01 | 704 | 0.1− | 1.2+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.9− | 0.0 | 2003 04 01 | 704 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2001 12 19 | 704 | 0.1+ | 0.3+ | 2003 04 03 | 699 | 0.0 | 0.8− | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2002 01 08 | 704 | 1.0+ | 0.5+ | 2003 04 03 | 699 | (1.9− | 0.4+) | 2006 11 20 | G96 | 0.2− | 0.4− |
| 2002 01 08 | 704 | 0.6+ | 0.0 | 2003 04 03 | 699 | 0.4− | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2002 01 08 | 704 | 1.1+ | 0.5+ | 2003 04 03 | 699 | 0.7− | 0.2− | 2006 11 20 | G96 | 0.3+ | 0.3− |
| 2002 01 14 | 704 | 0.2+ | 0.2− | 2003 04 06 | 691 | 0.2+ | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.6− |
| 2002 01 14 | 704 | 0.2− | 0.3− | 2003 04 06 | 691 | 0.3− | 0.2+ | | | | |
| 2002 01 14 | 704 | 0.1− | 0.2+ | 2003 04 06 | 691 | 0.3+ | 0.4+ | | | | |

**(140894)∗ 2001 VT$_{32}$ = 2003 GH$_2$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46877)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.83289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18948022 | $\omega$ | 187.91215 | | +0.00619518 | −0.99950392 | |
| $a$ | 3.0021114 | $\Omega$ | 261.73669 | | +0.91916455 | +0.01785327 | |
| $e$ | 0.1716149 | $i$ | 1.78810 | | +0.39382502 | −0.02594549 | |
| $P$ | 5.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | (1.1+ | 1.5+) | 2001 12 17 | 291 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.1+ | 0.3+ | 2001 12 17 | 291 | 0.4− | 0.2− | 2006 11 08 | 644 | 0.2− | 0.2− |
| 2001 11 09 | 704 | 0.0 | 0.1+ | 2001 12 18 | 704 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | (0.2− | 1.5+) | 2001 12 18 | 704 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.3− | 0.7+ | 2001 12 18 | 704 | 0.1− | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2001 12 18 | 704 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 0.4+ | 1.0+ | 2001 12 19 | 704 | 0.9+ | 0.7− | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2001 11 12 | 704 | 0.5+ | 1.5+ | 2001 12 19 | 704 | (1.8+ | 0.7−) | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2001 11 12 | 704 | 0.1+ | 1.4+ | 2001 12 19 | 704 | (1.9+ | 1.2−) | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2001 11 17 | 291 | 0.1− | 0.4− | 2001 12 19 | 704 | (2.1+ | 0.7−) | 2006 11 12 | 703 | 0.6− | 0.0 |
| 2001 11 17 | 291 | 0.2− | 0.3− | 2002 01 09 | 704 | 0.2+ | 1.3− | 2006 11 12 | 703 | 0.1+ | 0.3− |
| 2001 11 17 | 291 | 0.2− | 0.2− | 2002 01 09 | 704 | 0.4− | 0.5− | 2006 11 12 | 703 | 0.1− | 0.9− |
| 2001 11 19 | 704 | 0.1+ | 1.0− | 2002 01 09 | 704 | 0.6+ | 0.1− | 2006 11 12 | 703 | 0.2+ | 0.2+ |
| 2001 11 19 | 704 | 0.2+ | 0.9− | 2002 01 09 | 704 | 0.4− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2001 11 19 | 704 | 0.1− | 0.3+ | 2003 03 26 | 691 | (0.0 | 2.2+) | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 0.2− | 0.0 | 2003 03 26 | 691 | (0.1+ | 2.0+) | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | (0.4+ | 1.7+) | 2003 03 26 | 691 | (0.0 | 1.9+) | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.4+ | 0.7+ | 2003 04 01 | 644 | 0.6+ | 0.7+ | 2006 11 13 | 644 | 0.4− | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 1.2+ | 2003 04 01 | 644 | 0.2+ | 1.2+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.2+ | 1.1+ | 2003 04 01 | 644 | 0.6+ | 1.0+ | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2001 11 21 | 704 | 0.8+ | 0.3+ | 2003 04 03 | 699 | 0.5+ | 0.6− | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 0.3− | 0.2− | 2003 04 03 | 699 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.3− |
| 2001 11 24 | 704 | 0.9− | 0.2+ | 2003 04 03 | 699 | (0.8+ | 1.6+) | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2001 11 24 | 704 | 0.7− | 0.1+ | 2003 04 03 | 699 | 0.6− | 0.8+ | 2006 11 17 | 703 | 0.2+ | 0.8− |
| 2001 11 24 | 704 | 0.6− | 0.3+ | 2005 07 01 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.3− | 1.4− |
| 2001 11 24 | 704 | 0.7− | 0.4− | 2005 07 01 | 691 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.2− |
| 2001 12 07 | 691 | 0.2+ | 0.3+ | 2005 07 01 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | (2.1− | 3.0−) |
| 2001 12 07 | 691 | 0.2+ | 0.2+ | 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (0.4− | 2.2+) |
| 2001 12 07 | 691 | 0.1+ | 0.1+ | 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (0.0 | 2.0+) |
| 2001 12 10 | 704 | 0.4− | 0.3− | 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1− | 1.4+ |
| 2001 12 10 | 704 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | (1.3+ | 3.0−) |
| 2001 12 10 | 704 | 0.9+ | 1.2+ | 2005 07 18 | 644 | 0.2− | 0.7+ | 2006 11 18 | 704 | (0.3− | 1.5+) |
| 2001 12 12 | 644 | 0.0 | 0.3− | 2005 07 18 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2001 12 12 | 644 | 0.2− | 0.2− | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2001 12 12 | 644 | 0.2− | 0.1− | 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.6− | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2001 12 15 | 704 | 0.3− | 0.9− | 2006 10 21 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.3− |
| 2001 12 15 | 704 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2001 12 17 | 704 | (1.7+ | 0.0 ) | 2006 10 21 | 691 | 0.3+ | 0.6+ | 2006 11 29 | 704 | 1.3− | 0.0 |
| 2001 12 17 | 704 | 1.2+ | 0.2+ | 2006 11 02 | 691 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.3− |
| 2001 12 17 | 704 | 0.7+ | 1.0+ | 2006 11 02 | 691 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.8− | 0.2− |
| 2001 12 17 | 704 | 0.7+ | 1.4+ | 2006 11 02 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2001 12 17 | 291 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.0 | | | | |

**(140895)∗ 2001 VR$_{33}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.63788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18607760 | $\omega$ | 348.65544 | | +0.78227470 | −0.62269986 | |
| $a$ | 3.0385985 | $\Omega$ | 49.87179 | | +0.57326246 | +0.70890918 | |
| $e$ | 0.2093787 | $i$ | 1.27878 | | +0.24375489 | +0.33119882 | |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | (2.2− | 0.8+) | 2002 01 08 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 0.9− | 0.6+ | 2002 01 14 | 704 | 0.5+ | 0.5− | 2006 10 20 | 644 | 0.4− | 1.2+ |
| 2001 09 26 | 704 | 0.4− | 1.1+ | 2002 01 14 | 704 | 0.9− | 0.9− | 2006 10 21 | 703 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | (0.1− | 2.0+) | 2002 01 14 | 704 | (0.1+ | 2.2+) | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 2001 11 09 | 704 | 0.3− | 0.3− | 2002 01 14 | 704 | 1.2− | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.3− |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2003 04 01 | 695 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 2001 11 09 | 704 | 0.2− | 0.3+ | 2003 04 01 | 695 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2001 11 09 | 704 | 0.2+ | 0.1− | 2003 05 29 | 807 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2001 11 09 | 704 | 0.3− | 0.0 | 2003 05 30 | 807 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2001 11 12 | 704 | 0.7+ | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.4+ | 0.1− |
| 2001 11 12 | 704 | 0.3+ | 0.4+ | 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.2+ | 1.3+ |
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2004 04 22 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 704 | 0.9+ | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.5+ | 2004 04 28 | 291 | 0.6− | 0.4+ | 2006 10 23 | 704 | 0.2− | 0.9+ |
| 2001 11 12 | 704 | 0.8+ | 0.6+ | 2004 04 28 | 291 | 0.2− | 0.3+ | 2006 10 23 | 704 | 0.2− | 0.7+ |
| 2001 11 19 | 704 | 0.2− | 0.1− | 2004 04 28 | 291 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2001 11 19 | 704 | 0.6− | 0.4− | 2004 05 16 | 691 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 11 19 | 704 | 0.7− | 0.2− | 2004 05 16 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 704 | 0.6− | 0.0 | 2004 05 16 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 704 | 0.5− | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.9+ | 0.7+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.5− | 0.6+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 28 | 704 | 0.0 | 0.8+ |
| 2001 11 21 | 704 | 0.1+ | 0.5+ | 2006 08 30 | 699 | 0.2− | 0.4+ | 2006 10 28 | 704 | 0.2+ | 0.8+ |
| 2001 12 10 | 704 | 0.3+ | 0.3− | 2006 08 30 | 699 | 0.4− | 0.1− | 2006 10 28 | 704 | 0.1− | 0.3− |
| 2001 12 10 | 704 | 0.5+ | 1.0− | 2006 08 30 | 699 | (1.9+ | 0.4−) | 2006 10 28 | 704 | 0.3− | 0.6+ |
| 2001 12 10 | 704 | 0.3+ | 0.4− | 2006 08 30 | 699 | 0.7+ | 0.3+ | 2006 10 28 | 704 | 0.4− | 0.5− |
| 2001 12 10 | 704 | 0.8+ | 1.2− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2001 12 10 | 704 | 0.8− | 0.6− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2001 12 15 | 704 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 12 15 | 704 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2001 12 15 | 704 | 0.3− | 0.5+ | 2006 09 27 | 704 | 1.1− | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 0.3− | 0.7+ | 2006 09 27 | 704 | 1.1− | 1.1+ | 2006 11 07 | 644 | 0.7+ | 0.2+ |
| 2001 12 18 | 704 | 0.1+ | 0.4− | 2006 09 27 | 704 | 0.1+ | 0.9+ | 2006 11 09 | 958 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.2− | 0.5+ | 2006 11 09 | 958 | 0.2+ | 0.2− |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.5+ | 2006 11 09 | 958 | 1.2+ | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.8− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.7− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2001 12 19 | 703 | 0.3− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 2001 12 19 | 704 | 0.2+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 703 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2001 12 19 | 703 | 0.9− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2001 12 19 | 704 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2001 12 19 | 703 | 0.4+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 2001 12 19 | 704 | 0.1+ | 0.5− | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.1+ | 0.7+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.1− | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 683 | 1.2+ | 1.3− | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 683 | 1.4+ | 0.7− | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2001 12 19 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 683 | 0.4+ | 0.7− | 2006 11 18 | 704 | (1.8+ | 0.6+) |
| 2001 12 19 | 704 | 0.4− | 0.4+ | 2006 10 17 | 683 | 0.6− | 0.4− | 2006 11 18 | 704 | 0.2+ | 1.4+ |
| 2001 12 19 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 683 | (0.7− | 2.2+) | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2001 12 19 | 704 | 0.3− | 0.8+ | 2006 10 17 | 683 | 0.1− | 0.7+ | 2006 11 21 | 704 | 1.0+ | 0.3+ |
| 2001 12 19 | 704 | 0.8+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2001 12 20 | 704 | 0.7− | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2001 12 20 | 704 | 0.1− | 0.4− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2001 12 20 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 683 | 1.5+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2001 12 20 | 704 | 0.9+ | 0.6− | 2006 10 19 | 683 | 0.6+ | 0.9+ | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2001 12 20 | 704 | 0.2− | 0.5+ | 2006 10 19 | 683 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.5+ |
| 2002 01 08 | 704 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2002 01 08 | 704 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.1− |
| 2002 01 08 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.1− | | | | |
| 2002 01 08 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | | | | |

**(140896)∗ 2001 VW$_{35}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 290.53666 | (2000.0) | | | | |
| $n$ | 0.18551570 | $\omega$ | 51.48742 | | −0.46444716 | −0.83127954 |
| $a$ | 3.0447311 | $\Omega$ | 68.82317 | | +0.67582521 | −0.55554391 |
| $e$ | 0.1269662 | $i$ | 19.11751 | | +0.57231907 | −0.01858203 |
| $P$ | 5.31 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 1.0− | 0.7− | 2002 01 15 | 704 | (1.9+ | 0.8+) | 2003 04 11 | 246 | 0.7+ | 0.0 |
| 1998 04 24 | 704 | 0.2− | 0.5− | 2002 01 15 | 704 | 0.1− | 0.1+ | 2003 04 11 | 246 | 0.4+ | 0.6+ |
| 1998 04 24 | 704 | 0.2+ | 1.2+ | 2002 01 15 | 704 | 0.7+ | 0.1+ | 2003 04 11 | 246 | 0.1+ | 0.1− |
| 1998 04 24 | 704 | 0.8+ | 0.2− | 2002 01 15 | 704 | 0.8+ | 0.8− | 2003 04 12 | 734 | 1.0− | 0.1+ |
| 2001 09 26 | 704 | 0.3− | 1.0+ | 2002 01 15 | 704 | 1.0+ | 0.1− | 2003 04 12 | 734 | 0.4+ | 0.1+ |
| 2001 09 26 | 704 | 1.0− | 0.2+ | 2002 01 19 | 704 | 0.3− | 0.2− | 2003 04 12 | 448 | 0.1− | 0.4+ |
| 2001 09 26 | 704 | (1.8− | 0.5+) | 2002 01 19 | 704 | (1.6+ | 0.4+) | 2003 04 12 | 734 | 0.2− | 0.0 |
| 2001 11 09 | 704 | 0.3+ | 0.3+ | 2002 01 19 | 704 | 1.0− | 0.6+ | 2003 04 12 | 448 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2002 01 19 | 704 | 1.3+ | 0.4+ | 2003 04 12 | 448 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.3− | 0.4+ | 2002 01 19 | 704 | 0.8− | 0.1− | 2003 04 24 | 704 | 0.2− | 0.5+ |
| 2001 11 09 | 704 | 0.4− | 0.0 | 2002 01 19 | 704 | 1.2+ | 1.1+ | 2003 04 24 | 704 | 0.2+ | 0.5+ |
| 2001 11 09 | 704 | 0.1− | 0.4− | 2002 01 19 | 704 | 0.6+ | 0.2+ | 2003 04 24 | 704 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.2− | 0.5− | 2002 02 08 | 704 | 1.3+ | 0.5+ | 2003 04 24 | 704 | 1.3+ | 0.7− |
| 2001 11 12 | 704 | 0.2+ | 0.4− | 2002 02 08 | 704 | (2.0+ | 0.1−) | 2003 04 24 | 704 | 0.4+ | 0.4+ |
| 2001 11 12 | 704 | 0.1− | 0.4− | 2002 02 08 | 704 | 0.1− | 0.7+ | 2003 05 30 | 645 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.2+ | 2002 02 08 | 704 | 0.8+ | 0.2+ | 2003 05 30 | 645 | 0.2− | 0.1− |
| 2001 11 19 | 704 | 0.2+ | 0.1+ | 2002 02 08 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 699 | 0.3+ | 0.5− |
| 2001 11 19 | 704 | 0.6+ | 0.0 | 2002 02 12 | 704 | (1.0− | 1.8+) | 2006 09 30 | 699 | 0.3− | 1.3+ |
| 2001 11 19 | 704 | 0.7+ | 0.0 | 2002 02 12 | 704 | 0.0 | 0.7+ | 2006 09 30 | 699 | (0.3− | 1.9+) |
| 2001 11 19 | 704 | 0.9+ | 0.3+ | 2002 02 12 | 704 | (1.5− | 0.1+) | 2006 09 30 | 703 | 0.6− | 0.4− |
| 2001 11 21 | 704 | 1.2+ | 1.1− | 2002 02 12 | 704 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.4− | 0.7− |
| 2001 11 21 | 704 | 1.0+ | 0.1− | 2003 03 08 | 704 | 0.7+ | 0.0 | 2006 09 30 | 699 | 0.3− | 0.9+ |
| 2001 11 21 | 704 | (0.4− | 1.9−) | 2003 03 08 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.3− |
| 2001 11 21 | 704 | 1.1+ | 0.7− | 2003 03 08 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.3+ |
| 2001 11 21 | 704 | 1.0− | 1.5− | 2003 03 08 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2001 11 21 | 704 | (0.9− | 1.7−) | 2003 03 08 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2001 12 10 | 704 | 0.2+ | 0.2− | 2003 03 09 | 699 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2001 12 10 | 704 | 0.0 | 0.3+ | 2003 03 09 | 699 | 0.8− | 0.5− | 2006 10 22 | 703 | 1.0− | 0.2+ |
| 2001 12 10 | 704 | 0.7+ | 0.0 | 2003 03 09 | 699 | 0.6− | 0.1+ | 2006 11 01 | 703 | 0.5+ | 0.2− |
| 2001 12 10 | 704 | 0.6− | 0.6− | 2003 03 09 | 699 | 0.4+ | 0.7+ | 2006 11 01 | 703 | 0.3− | 0.2+ |
| 2001 12 10 | 704 | 0.3− | 0.1+ | 2003 03 13 | 704 | 0.0 | 0.4− | 2006 11 01 | 703 | 0.7− | 0.4− |
| 2001 12 15 | 704 | 0.1− | 0.4− | 2003 03 13 | 704 | (0.2− | 1.7+) | 2006 11 01 | 703 | 0.0 | 0.3+ |
| 2001 12 15 | 704 | 0.1+ | 0.4− | 2003 03 13 | 704 | 0.6− | 1.0+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 12 15 | 704 | 0.0 | 0.3− | 2003 03 13 | 704 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.6+ |
| 2001 12 18 | 704 | 0.7− | 0.9− | 2003 03 13 | 704 | 0.2+ | 1.2+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2001 12 18 | 704 | 0.8− | 0.7− | 2003 04 05 | 608 | 0.4+ | 0.9− | 2006 11 11 | 703 | 1.1− | 0.4− |
| 2001 12 18 | 704 | 0.5− | 0.8− | 2003 04 05 | 608 | 0.2+ | 1.4− | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2001 12 18 | 704 | 0.5− | 0.4− | 2003 04 05 | 608 | 0.3− | 1.2− | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 2001 12 18 | 704 | 0.5− | 0.4− | 2003 04 06 | 699 | 0.6− | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2001 12 19 | 703 | 0.2− | 0.5+ | 2003 04 06 | 699 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.6+ |
| 2001 12 19 | 704 | 0.6− | 0.9− | 2003 04 06 | 699 | 0.6+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2001 12 19 | 703 | 0.2+ | 0.7+ | 2003 04 06 | 699 | 0.1− | 0.4− | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.7− | 1.0− | 2003 04 10 | 704 | 0.9+ | 0.1− | 2006 11 19 | 703 | 0.4− | 0.6+ |
| 2001 12 19 | 703 | 0.1+ | 0.8+ | 2003 04 10 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2001 12 19 | 703 | 0.5+ | 0.2+ | 2003 04 10 | 704 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.2+ | 1.3+ |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2003 04 10 | 704 | 0.4+ | 0.2− | 2006 11 19 | 703 | 0.3− | 0.5+ |
| 2001 12 19 | 704 | 0.6− | 0.1− | 2003 04 10 | 704 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.8+ | 0.4+ |
| 2001 12 19 | 704 | 0.4− | 0.0 | 2003 04 11 | 246 | 0.8+ | 0.7+ | 2006 11 20 | 704 | 0.2+ | 0.7− |
| 2001 12 20 | 704 | (1.9+ | 1.6+) | 2003 04 11 | 246 | 0.6+ | 0.2+ | 2006 11 20 | 704 | 1.1− | 1.2+ |
| 2001 12 20 | 704 | (0.1− | 2.7+) | 2003 04 11 | 246 | 0.1+ | 0.6+ | 2006 11 20 | 704 | (1.7− | 0.9+) |
| 2001 12 20 | 704 | (0.5+ | 2.7+) | 2003 04 11 | 246 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2001 12 20 | 704 | (4.1+ | 0.6−) | 2003 04 11 | 246 | 0.1+ | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2002 01 08 | 704 | 0.4+ | 0.1− | 2003 04 11 | 246 | 0.3+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.1+ | 0.1+ | 2003 04 11 | 246 | 0.5+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.1+ |
| 2002 01 08 | 704 | 0.4− | 0.3+ | 2003 04 11 | 246 | 0.3+ | 0.4+ | | | | |
| 2002 01 08 | 704 | 0.4− | 0.5+ | 2003 04 11 | 246 | 0.8+ | 0.4+ | | | | |

**(140897)**∗ **2001 VC**$_{36}$

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.63192 | | | (2000.0) | | |
| $n$ | 0.18337141 | $\omega$ | 288.42726 | | +0.97765699 | +0.13773542 |
| $a$ | 3.0684211 | $\Omega$ | 63.91456 | | −0.04951402 | +0.88505889 |
| $e$ | 0.2929541 | $i$ | 10.18366 | | −0.20429186 | +0.44463435 |
| $P$ | 5.37 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | (3.0+ | 3.8−) | 2002 02 06 | 704 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2001 09 26 | 704 | (3.5+ | 3.5−) | 2002 02 06 | 704 | 0.7− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 2001 09 26 | 704 | (3.1+ | 2.4−) | 2002 02 06 | 704 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.0 | 0.1+ |
| 2001 10 18 | 704 | 0.5+ | 0.5+ | 2002 02 06 | 704 | 0.9− | 0.8+ | 2006 09 29 | 699 | 0.1+ | 0.3+ |
| 2001 10 18 | 704 | 0.2+ | 0.3+ | 2002 02 06 | 704 | 0.7− | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.5+ |
| 2001 10 18 | 704 | 0.0 | 0.6+ | 2002 02 07 | 704 | 0.6− | 0.1− | 2006 09 30 | 704 | 0.4+ | 0.2− |
| 2001 10 26 | 704 | 0.2− | 0.5+ | 2002 02 07 | 704 | 0.1+ | 0.5− | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 2001 10 26 | 704 | 0.3− | 0.4+ | 2002 02 07 | 704 | 0.2− | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.2− |
| 2001 10 26 | 704 | 1.0+ | 0.9+ | 2004 03 23 | 704 | 0.8− | 0.9+ | 2006 09 30 | 704 | 0.9+ | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 1.1+ | 2004 03 23 | 704 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.1+ | 0.5− |
| 2001 11 09 | 704 | 1.3+ | 0.6+ | 2004 03 23 | 704 | 0.8+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.8− | 0.5+ | 2004 03 23 | 704 | 0.7+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.2+ | 0.9+ | 2004 03 23 | 704 | (2.1+ | 1.9−) | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.1+ | 1.0+ | 2005 03 17 | G96 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2005 03 17 | G96 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.3+ | 0.3− | 2005 03 17 | G96 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 1.1+ | 1.0− | 2005 03 17 | G96 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.5− | 2005 05 03 | 703 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2001 11 19 | 704 | 1.3− | 1.0− | 2005 05 03 | 703 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 11 19 | 704 | 1.4− | 1.2− | 2005 05 03 | 703 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 1.1− | 1.3− | 2005 05 03 | 703 | 0.9+ | 1.3− | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2001 11 19 | 704 | (1.1− | 1.7−) | 2005 05 07 | G96 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 0.2+ | 0.8− | 2005 05 07 | G96 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.4+ | 0.8− | 2005 05 07 | G96 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.3+ | 0.9− | 2005 05 07 | G96 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 1.0− | 2005 05 09 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.5+ | 1.0− | 2005 05 09 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2001 12 10 | 704 | 0.2− | 0.7+ | 2005 05 09 | 704 | 1.2+ | 0.3− | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2001 12 10 | 704 | 0.5− | 0.9+ | 2005 06 04 | 704 | 0.9+ | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2001 12 10 | 704 | 0.1− | 1.2+ | 2005 06 04 | 704 | 0.7+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2001 12 10 | 704 | (1.5− | 1.1+) | 2005 06 04 | 704 | 0.9+ | 0.5− | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 12 15 | 704 | 0.3− | 0.5+ | 2005 06 04 | 704 | 0.3+ | 0.6− | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 12 15 | 704 | 0.5− | 0.2+ | 2005 06 04 | 704 | 0.7+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 12 15 | 704 | 0.3− | 0.3− | 2005 06 06 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 12 15 | 704 | 0.6− | 0.2+ | 2005 06 06 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 12 18 | 704 | (1.9− | 0.8−) | 2005 06 06 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.5− | 0.5− | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.2− |
| 2001 12 18 | 704 | 0.5− | 0.7− | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.7− | 0.6− | 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2001 12 18 | 704 | 0.6− | 0.8− | 2005 06 11 | 703 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2001 12 19 | 703 | 0.3− | 0.4+ | 2005 06 11 | 703 | 1.4− | 0.0 | 2006 11 10 | 704 | 0.7+ | 0.0 |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2005 06 11 | 703 | 0.8− | 0.5− | 2006 11 10 | 704 | 0.3+ | 0.7+ |
| 2001 12 19 | 703 | 0.0 | 0.0 | 2005 06 11 | 703 | 0.6− | 0.2− | 2006 11 10 | 704 | 0.6+ | 1.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2005 06 14 | G96 | 0.8− | 0.6+ | 2006 11 10 | 704 | 0.2+ | 0.3+ |
| 2001 12 19 | 703 | 1.0+ | 0.3+ | 2005 06 14 | G96 | 0.0 | 0.7+ | 2006 11 10 | 704 | 0.3+ | 0.6+ |
| 2001 12 19 | 703 | 0.6+ | 0.5+ | 2005 06 14 | G96 | 0.3− | 0.6+ | 2006 11 14 | 704 | 0.2− | 0.4+ |
| 2001 12 19 | 704 | 0.1+ | 0.5+ | 2005 06 14 | G96 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.8+ |
| 2001 12 19 | 704 | 0.5+ | 0.6+ | 2005 07 01 | 703 | (1.6− | 1.5+) | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2001 12 19 | 704 | 0.3− | 0.4+ | 2005 07 01 | 703 | 1.2− | 0.7− | 2006 11 14 | 704 | 1.1− | 1.1+ |
| 2001 12 20 | 704 | 0.7+ | 0.0 | 2005 07 01 | 703 | 1.3− | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.2− |
| 2001 12 20 | 704 | 0.4+ | 0.2− | 2005 07 01 | 703 | 0.1+ | 0.4− | 2006 11 16 | 703 | 0.1+ | 0.1− |
| 2001 12 20 | 704 | 0.1+ | 0.1+ | 2005 07 04 | 644 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 0.5− | 0.3+ |
| 2001 12 20 | 704 | 0.4+ | 0.5+ | 2005 07 04 | 644 | 0.3+ | 0.1− | 2006 11 16 | 703 | 0.6− | 0.0 |
| 2001 12 20 | 704 | 0.4+ | 0.8+ | 2005 07 04 | 644 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.2− |
| 2002 01 08 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 2002 01 08 | 704 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.4− | 0.5+ |
| 2002 01 08 | 704 | 1.4− | 0.7− | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2002 01 08 | 704 | 0.4− | 0.4− | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.5− | 0.4+ |
| 2002 01 08 | 704 | 0.1+ | 0.3− | 2006 09 21 | 699 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.1− |
| 2002 01 09 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.7+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2002 01 09 | 704 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.5+ | 0.6+ |
| 2002 01 09 | 704 | 0.3+ | 0.5+ | 2006 09 21 | 699 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2002 01 09 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2002 01 09 | 704 | 0.6+ | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2002 01 09 | 704 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 01 09 | 704 | 0.1− | 0.7+ | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2002 01 09 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2002 01 09 | 704 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.0 | 0.2− | 2006 11 21 | 704 | (2.3+ | 2.0+) |
| 2002 01 09 | 704 | 0.4− | 0.2− | 2006 09 26 | 704 | 0.4− | 0.9− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2002 01 14 | 704 | 0.5+ | 0.4− | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2002 01 14 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2002 01 14 | 704 | 1.1+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 01 14 | 704 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.4− | | | | |

**(140898)**∗ **2001 VV**$_{37}$

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.58869 | | | (2000.0) | | |
| $n$ | 0.19677245 | $\omega$ | 335.83489 | | +0.35338604 | −0.92225684 |
| $a$ | 2.9274750 | $\Omega$ | 93.15994 | | +0.88181540 | +0.27248264 |
| $e$ | 0.2310172 | $i$ | 9.03031 | | +0.31228178 | +0.27421805 |
| $P$ | 5.01 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.5+ | 1.1− | 2001 12 21 | 704 | 0.5+ | 0.2+ | 2005 07 03 | 644 | 0.3− | 0.4+ |
| 2001 09 17 | 704 | 0.7+ | 1.2− | 2001 12 21 | 704 | 0.3+ | 0.2+ | 2005 07 03 | 644 | 0.1+ | 0.2+ |
| 2001 09 17 | 704 | 0.2+ | 1.5− | 2002 01 03 | 106 | 0.1− | 0.1+ | 2005 07 26 | 644 | 0.1− | 1.0+ |
| 2001 09 17 | 704 | 0.1+ | 0.7− | 2002 01 03 | 106 | 0.1− | 0.3+ | 2005 07 26 | 644 | 0.1+ | 0.7+ |
| 2001 09 17 | 704 | 0.2+ | 1.3− | 2002 01 03 | 106 | 0.2− | 0.1+ | 2005 07 26 | 644 | 0.2− | 0.9+ |
| 2001 10 13 | 704 | 0.5+ | 0.0 | 2002 01 09 | 704 | 0.0 | 0.0 | 2005 08 10 | E12 | 0.2− | 0.1− |
| 2001 10 13 | 704 | 0.1+ | 0.8− | 2002 01 09 | 704 | 0.1− | 0.3+ | 2005 08 10 | E12 | 0.3+ | 0.6+ |
| 2001 10 13 | 704 | 0.8+ | 0.7− | 2002 01 09 | 704 | 0.4+ | 0.5+ | 2005 08 10 | E12 | 0.0 | 0.6+ |
| 2001 10 24 | 704 | (2.8+ | 0.3−) | 2002 01 09 | 704 | 0.2− | 0.0 | 2005 08 10 | E12 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | (1.9+ | 0.2−) | 2002 01 09 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.6+ | 0.5− |
| 2001 10 24 | 704 | 1.5+ | 1.1+ | 2002 01 13 | 704 | 0.3+ | 0.3− | 2006 09 22 | 704 | (0.7− | 1.6+) |
| 2001 11 09 | 704 | 0.6+ | 0.1− | 2002 01 13 | 704 | 0.1− | 0.3+ | 2006 09 22 | 704 | 1.4+ | 0.6+ |
| 2001 11 09 | 704 | 0.0 | 0.1+ | 2002 01 13 | 704 | 0.0 | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.7+ |
| 2001 11 09 | 704 | 0.5+ | 0.1+ | 2002 01 15 | 704 | 0.1+ | 0.6− | 2006 11 14 | 704 | 0.3− | 0.4− |
| 2001 11 09 | 704 | 0.2+ | 0.3− | 2002 01 15 | 704 | 0.1+ | 0.9− | 2006 11 14 | 704 | 0.5+ | 0.6+ |
| 2001 11 09 | 704 | 0.4− | 0.0 | 2002 01 15 | 704 | 0.5+ | 0.9− | 2006 11 14 | 704 | (1.6− | 0.1+) |
| 2001 11 12 | 704 | 0.6− | 0.5+ | 2002 01 15 | 704 | 0.4− | 0.2− | 2006 11 14 | 704 | 0.2− | 0.3− |
| 2001 11 12 | 704 | 0.8− | 0.4+ | 2002 01 15 | 704 | 0.6− | 0.6− | 2006 11 17 | 704 | 0.5− | 0.3+ |
| 2001 11 12 | 704 | (1.5− | 0.4−) | 2002 01 19 | 704 | 0.4+ | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2001 11 12 | 704 | (1.7− | 0.8+) | 2002 01 19 | 704 | 0.1+ | 1.0+ | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.9+ | 0.1− | 2002 01 19 | 704 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.5+ | 0.5+ |
| 2001 11 20 | 704 | 0.8+ | 0.1− | 2002 01 19 | 704 | 0.8+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2001 11 20 | 704 | 0.4+ | 0.1− | 2002 01 19 | 704 | 0.2+ | 0.9+ | 2006 11 18 | 691 | 0.4− | 0.1+ |
| 2001 11 20 | 704 | 0.6+ | 0.0 | 2002 01 21 | 704 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2001 11 20 | 704 | 0.5+ | 1.4− | 2002 01 21 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2001 11 24 | 704 | 1.4− | 0.1+ | 2002 01 21 | 704 | 0.1+ | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 0.2− | 0.3+ | 2002 01 21 | 704 | 0.7+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2001 11 24 | 704 | 1.1− | 0.5− | 2002 01 21 | 704 | 0.6− | 0.8+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2001 11 24 | 704 | 0.3− | 1.0− | 2002 02 06 | 704 | 1.3− | 0.5− | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2001 12 10 | 704 | 0.3− | 1.2+ | 2002 02 06 | 704 | (1.9+ | 1.0−) | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2001 12 10 | 704 | (0.3− | 1.7−) | 2002 02 06 | 704 | 0.6+ | 0.8− | 2006 11 20 | 704 | 0.1− | 0.1− |
| 2001 12 10 | 704 | 0.6− | 0.8− | 2002 02 06 | 704 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2002 02 06 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2001 12 14 | 704 | 0.1− | 0.3+ | 2002 02 07 | 704 | 0.8− | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2001 12 14 | 704 | 0.3− | 0.3+ | 2002 02 07 | 704 | 0.7− | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.6+ | 0.8+ | 2002 02 07 | 704 | 0.7+ | 0.5− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.2− | 2002 02 07 | 704 | 0.3+ | 0.9− | 2006 11 22 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.1− | 0.1− | 2003 04 09 | 704 | 0.8+ | 0.9+ | 2006 11 27 | 704 | 2.1− | 0.2+ | | |
| 2001 12 17 | 704 | 0.2− | 0.3− | 2003 04 09 | 704 | 0.9+ | 0.8+ | 2006 11 27 | 704 | 0.3+ | 0.6− | | |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2003 04 09 | 704 | 0.4− | 0.5+ | 2006 11 27 | 704 | 1.1− | 0.5− | | |
| 2001 12 17 | 704 | 0.0 | 0.0 | 2003 04 09 | 704 | 0.4+ | 1.0+ | 2006 11 27 | 704 | 0.5− | 0.1− | | |
| 2001 12 20 | 704 | 0.9− | 0.3− | 2003 05 02 | 691 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.8− | 1.7+ | | |
| 2001 12 20 | 704 | 0.6− | 0.4− | 2003 05 02 | 691 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.6+ | 0.3− | | |
| 2001 12 20 | 704 | 0.6− | 0.3− | 2003 05 02 | 691 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 0.7+ | 0.0 | | |
| 2001 12 20 | 704 | 0.6− | 0.5− | 2005 06 28 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.3+ | | |
| 2001 12 21 | 704 | 0.2+ | 0.1− | 2005 06 28 | 644 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.3− | | |
| 2001 12 21 | 704 | 0.1+ | 0.3+ | 2005 06 28 | 644 | 0.2− | 0.6+ | 2006 11 29 | 704 | 1.0+ | 0.5+ | | |
| 2001 12 21 | 704 | 0.7+ | 1.3+ | 2005 07 03 | 644 | 0.7− | 0.6+ | | | | | | |

**(140899)∗ 2001 VK$_{38}$ = 1996 XO$_{16}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23036)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.43415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19606714 | $\omega$ | 278.17949 | | +0.90247137 | +0.35823858 | |
| $a$ | 2.9344914 | $\Omega$ | 61.11893 | | −0.20009625 | +0.84038716 | |
| $e$ | 0.1385679 | $i$ | 15.85251 | | −0.38145368 | +0.40671186 | |
| $P$ | 5.03 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.1+ | 0.1− | 2001 12 10 | 704 | 0.1− | 0.7+ | 2006 10 16 | 703 | 1.5− | 0.5+ | | |
| 1996 12 04 | 691 | 0.0 | 0.4− | 2001 12 10 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | (0.5− | 1.9−) | | |
| 1996 12 04 | 691 | 0.0 | 0.7− | 2001 12 10 | 704 | 1.4+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.5− | | |
| 1996 12 12 | 691 | 0.4+ | 0.6− | 2001 12 13 | 644 | 0.4+ | 0.9+ | 2006 10 17 | G96 | 0.0 | 0.5− | | |
| 1996 12 12 | 691 | 0.2+ | 0.8− | 2001 12 13 | 644 | 0.7+ | 1.4+ | 2006 10 17 | G96 | 0.1+ | 0.2− | | |
| 1996 12 12 | 691 | 0.3+ | 0.6− | 2001 12 13 | 644 | 1.5+ | 1.4+ | 2006 10 17 | G96 | 0.2+ | 0.5− | | |
| 2001 10 23 | 704 | 0.3+ | 0.6+ | 2001 12 14 | 291 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.1+ | | |
| 2001 10 23 | 704 | (2.0+ | 1.1+) | 2001 12 14 | 291 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 23 | 704 | 0.0 | 1.4+ | 2001 12 14 | 291 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.6+ | 0.5+ | | |
| 2001 10 23 | 704 | (0.1− | 1.7+) | 2001 12 18 | 704 | 1.1− | 0.5− | 2006 10 22 | 691 | 0.4− | 0.2+ | | |
| 2001 10 24 | 704 | 0.3− | 0.3− | 2001 12 18 | 704 | (0.5− | 1.5−) | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2001 10 24 | 704 | 1.1− | 0.6+ | 2001 12 18 | 704 | 0.6− | 1.1− | 2006 10 22 | 691 | 1.3− | 0.6+ | | |
| 2001 10 24 | 704 | 0.4− | 0.1+ | 2001 12 18 | 704 | 0.3− | 0.7− | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2001 10 24 | 704 | (0.1− | 1.9+) | 2001 12 19 | 704 | 0.1− | 1.3− | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2001 10 24 | 704 | (2.2+ | 0.2+) | 2001 12 19 | 704 | 0.2− | 0.6− | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2001 10 25 | 644 | 0.7− | 0.1− | 2001 12 19 | 704 | 0.2+ | 0.6− | 2006 11 02 | 703 | 1.2+ | 0.5+ | | |
| 2001 10 25 | 644 | 0.5− | 0.4+ | 2001 12 19 | 704 | 1.3− | 1.5− | 2006 11 02 | 703 | 0.0 | 0.5+ | | |
| 2001 10 25 | 644 | 0.2− | 0.4− | 2002 01 06 | 691 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.3+ | 0.1+ | | |
| 2001 11 09 | 704 | 0.4− | 0.1− | 2002 01 06 | 691 | 0.1− | 0.1+ | 2006 11 02 | 703 | 0.6+ | 1.2+ | | |
| 2001 11 09 | 704 | 0.8− | 0.9− | 2002 01 06 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1− | | |
| 2001 11 09 | 704 | 0.3− | 0.5+ | 2004 04 15 | 704 | (1.7+ | 0.9+) | 2006 11 09 | 644 | 0.3− | 0.1+ | | |
| 2001 11 09 | 704 | (0.2+ | 1.8−) | 2004 04 15 | 704 | (2.0+ | 0.4−) | 2006 11 09 | 644 | 0.4− | 0.2− | | |
| 2001 11 12 | 704 | 0.5− | 0.3− | 2004 04 15 | 704 | 0.3+ | 1.4+ | 2006 11 10 | 644 | 0.2+ | 0.0 | | |
| 2001 11 12 | 704 | 0.4+ | 0.8+ | 2004 04 15 | 704 | 0.7+ | 1.4+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.0 | 0.6+ | 2004 04 15 | 644 | 1.0+ | 0.8+ | 2006 11 10 | 644 | 0.3+ | 0.0 | | |
| 2001 11 12 | 704 | 0.3+ | 0.7− | 2004 04 15 | 644 | 0.9+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.3− | | |
| 2001 11 19 | 699 | 0.2+ | 0.5+ | 2004 04 15 | 644 | 1.3+ | 1.1+ | 2006 11 17 | 703 | 0.3− | 0.3− | | |
| 2001 11 19 | 699 | 0.8+ | 0.9+ | 2004 04 25 | 699 | (0.9− | 2.0+) | 2006 11 17 | 703 | 0.7− | 0.5− | | |
| 2001 11 19 | 699 | 0.5− | 0.2+ | 2004 04 25 | 699 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.5− | 1.1− | | |
| 2001 11 19 | 699 | 0.2− | 1.1+ | 2004 04 25 | 699 | (0.3− | 2.0+) | 2006 11 21 | 704 | 0.5+ | 1.0+ | | |
| 2001 11 20 | 704 | 1.1+ | 0.2+ | 2004 04 25 | 699 | (0.7+ | 2.1+) | 2006 11 21 | 704 | 0.9+ | 0.8+ | | |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2005 07 04 | E12 | 0.6− | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.5+ | | |
| 2001 11 20 | 704 | 0.7+ | 0.2− | 2005 07 04 | E12 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.8+ | | |
| 2001 11 20 | 704 | 0.5+ | 0.1− | 2005 07 04 | E12 | 0.7+ | 0.5− | 2006 11 21 | 704 | 0.3− | 0.6+ | | |
| 2001 11 20 | 704 | 0.2+ | 0.0 | 2005 07 04 | E12 | 0.5− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.4− | | |
| 2001 11 21 | 704 | 0.4− | 0.2− | 2006 10 03 | G96 | 0.2− | 0.5− | 2006 11 27 | G96 | 0.4+ | 0.4− | | |
| 2001 11 21 | 704 | 0.0 | 0.3− | 2006 10 03 | G96 | 0.2− | 0.6− | 2006 11 27 | G96 | 0.2− | 0.3− | | |
| 2001 11 21 | 704 | 0.4− | 0.5+ | 2006 10 03 | G96 | 0.3+ | 0.6− | 2006 11 27 | G96 | 0.4+ | 0.2− | | |
| 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.5− | 2006 11 29 | 704 | 1.0− | 0.4− | | |
| 2001 12 10 | 704 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 0.2+ | 0.2+ | | |
| 2001 12 10 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.9+ | 0.3− | | |

**(140900)∗ 2001 VW$_{38}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.53101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17130949 | $\omega$ | 96.26259 | | +0.90469664 | +0.34633792 | |
| $a$ | 3.2108136 | $\Omega$ | 243.70709 | | −0.40790988 | +0.87226283 | |
| $e$ | 0.0804911 | $i$ | 16.06788 | | +0.12301833 | +0.34526454 | |
| $P$ | 5.75 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 1.1− | 1.1+ | 2001 11 19 | 699 | 1.0− | 0.0 | 2004 04 16 | 699 | 0.5+ | 0.5− | | |
| 1999 06 15 | 704 | 0.8− | 1.3+ | 2001 11 19 | 699 | 0.6− | 0.1− | 2004 04 16 | 699 | 0.6+ | 0.0 | | |
| 1999 06 15 | 704 | 1.1− | 1.5+ | 2001 11 19 | 699 | 0.4+ | 0.9− | 2004 04 16 | 699 | 0.3+ | 1.2+ | | |
| 1999 06 15 | 704 | 1.1+ | 2.0+ | 2001 11 19 | 704 | 0.0 | 0.6+ | 2004 04 17 | 644 | 0.2+ | 0.3+ | | |
| 1999 06 15 | 704 | 0.4− | 1.3+ | 2001 11 19 | 704 | 0.3+ | 0.6+ | 2004 04 17 | 644 | 0.2+ | 0.1+ | | |
| 2000 09 01 | 704 | 0.2+ | 1.2+ | 2001 11 19 | 704 | 0.1+ | 0.7+ | 2004 04 17 | 644 | 0.2+ | 0.0 | | |
| 2000 09 01 | 704 | 0.2+ | 0.0 | 2001 11 19 | 704 | 0.4+ | 0.9+ | 2006 08 10 | 644 | 0.0 | 0.1+ | | |
| 2000 09 01 | 704 | 0.1+ | 0.9+ | 2001 11 19 | 704 | 0.4+ | 0.3+ | 2006 08 10 | 644 | 0.0 | 0.0 | | |
| 2000 09 01 | 704 | 0.1− | 0.4− | 2001 11 21 | 704 | 0.7+ | 0.2+ | 2006 08 10 | 644 | 0.1+ | 0.1− | | |
| 2000 09 01 | 704 | 0.1+ | 1.1+ | 2001 11 21 | 704 | 1.2+ | 1.1+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | | |
| 2000 10 04 | 704 | 0.3+ | 0.4− | 2001 11 21 | 704 | 0.7− | 0.6+ | 2006 09 06 | 644 | 0.3+ | 0.0 | | |
| 2000 10 04 | 704 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.8+ | 0.5+ | 2006 09 06 | 644 | 0.4+ | 0.0 | | |
| 2000 10 04 | 704 | 0.2+ | 0.3− | 2001 11 21 | 704 | 1.0+ | 0.5+ | 2006 09 16 | 703 | 0.1− | 0.6− | | |
| 2001 10 21 | 704 | 0.7− | 0.1+ | 2001 12 10 | 704 | 0.8− | 0.6+ | 2006 09 16 | 703 | 0.2− | 0.5+ | | |
| 2001 10 21 | 704 | 0.6− | 0.5+ | 2001 12 10 | 704 | 0.4− | 0.4− | 2006 09 16 | 703 | 0.3− | 0.2+ | | |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2001 12 10 | 704 | 0.8− | 1.1+ | 2006 09 16 | 703 | 0.2− | 0.7− | | |
| 2001 10 21 | 704 | 0.1− | 1.3+ | 2001 12 14 | 704 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.5+ | 0.2− | | |
| 2001 11 09 | 704 | 0.7+ | 0.2− | 2001 12 14 | 704 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.2− | | |
| 2001 11 09 | 704 | 0.2− | 1.0+ | 2001 12 14 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.0 | | |
| 2001 11 09 | 704 | 0.6+ | 1.0+ | 2001 12 14 | 704 | 0.4+ | 1.0+ | 2006 09 17 | 703 | 0.1+ | 0.0 | | |
| 2001 11 09 | 704 | 0.3− | 0.7+ | 2001 12 14 | 704 | 0.5+ | 0.5+ | 2006 09 21 | 699 | 0.4+ | 0.3+ | | |
| 2001 11 12 | 704 | 1.2− | 0.7+ | 2001 12 17 | 704 | 0.9− | 1.2− | 2006 09 21 | 699 | 0.1+ | 0.7+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.8+ | 2001 12 17 | 704 | 0.3− | 1.1− | 2006 09 21 | 699 | 0.2+ | 0.2− | | |
| 2001 11 12 | 704 | 1.1− | 0.2+ | 2001 12 17 | 704 | 0.4− | 1.2− | 2006 09 21 | 699 | 0.7+ | 0.8+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2001 12 17 | 704 | 0.6− | 1.3− | 2006 09 28 | 703 | 0.1+ | 0.8− | | |
| 2001 11 12 | 691 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.1+ | 1.0− | 2006 09 28 | 703 | 0.4− | 0.3− | | |
| 2001 11 12 | 704 | 0.1− | 0.5+ | 2003 01 27 | 608 | 0.5+ | 0.8− | 2006 09 28 | 703 | 0.9− | 0.7− | | |
| 2001 11 12 | 691 | 0.3− | 0.3− | 2003 01 27 | 608 | 0.1− | 0.7− | 2006 10 20 | 703 | 0.1− | 0.8− | | |
| 2001 11 12 | 691 | 0.2− | 0.1− | 2003 01 27 | 608 | 0.5− | 0.0 | 2006 10 20 | 703 | 0.9− | 1.2+ | | |
| 2001 11 15 | 691 | 0.5+ | 0.4+ | 2004 03 15 | 644 | 0.3+ | 0.6+ | 2006 10 20 | 703 | 0.0 | 1.0− | | |
| 2001 11 15 | 691 | 0.4+ | 0.2+ | 2004 03 15 | 644 | 0.0 | 0.6+ | 2006 10 20 | 703 | 0.6− | 0.7− | | |
| 2001 11 15 | 691 | 0.5+ | 0.5+ | 2004 03 15 | 644 | 0.3− | 0.5+ | | | | | | |
| 2001 11 19 | 699 | 0.1− | 0.3+ | 2004 04 16 | 699 | 0.3− | 1.1+ | | | | | | |

**(140901)∗ 2001 VT$_{40}$**

Discovered 2001 Nov. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.03671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17589311 | $\omega$ | 269.94891 | | +0.80460247 | +0.57471185 | |
| $a$ | 3.1547879 | $\Omega$ | 54.97077 | | −0.44588416 | +0.75089150 | |
| $e$ | 0.2161248 | $i$ | 10.51263 | | −0.39217622 | +0.32537400 | |
| $P$ | 5.60 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 809 | 0.0 | 0.7+ | 2004 03 20 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 1995 12 19 | 691 | 0.3− | 0.4− | 2004 03 23 | 704 | 1.4+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 1995 12 19 | 691 | 0.3− | 0.2− | 2004 03 23 | 704 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 1995 12 19 | 691 | 0.2− | 0.4− | 2004 03 23 | 704 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 1995 12 26 | 691 | 0.7+ | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 1995 12 26 | 691 | 0.7+ | 0.2− | 2005 07 03 | E12 | 0.0 | 0.2+ | 2006 10 22 | 703 | 1.5− | 0.4+ | | |
| 1995 12 26 | 691 | 0.9+ | 0.0 | 2005 07 03 | E12 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.5− | | |
| 2000 07 10 | 699 | 0.1− | 0.5− | 2005 07 03 | E12 | (1.0− | 1.8+) | 2006 10 22 | 703 | 0.1+ | 1.1+ | | |
| 2000 07 10 | 699 | 0.7− | 1.2− | 2005 07 03 | E12 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 699 | 0.8+ | 0.7− | 2006 09 18 | 703 | 0.6− | 0.2− | 2006 10 27 | 704 | 1.4− | 0.3+ | | |
| 2000 07 10 | 699 | 0.2+ | 0.9− | 2006 09 18 | 703 | 0.5− | 0.4− | 2006 10 27 | 704 | 0.4− | 0.6+ | | |
| 2000 08 26 | 704 | 0.7− | 0.6− | 2006 09 18 | 703 | 0.5− | 0.9− | 2006 10 27 | 704 | 0.8− | 0.9+ | | |
| 2000 08 26 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.9− | 0.9− | 2006 10 27 | 704 | 0.5− | 0.4+ | | |
| 2000 08 26 | 704 | 0.3− | 0.6− | 2006 09 26 | 704 | 0.6+ | 0.8+ | 2006 10 27 | 704 | 0.2+ | 0.1− | | |
| 2000 08 26 | 704 | 0.9+ | 0.3− | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.4+ | | |
| 2001 11 09 | 704 | 0.3+ | 0.0 | 2006 09 26 | 704 | 1.0+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.5+ | | |
| 2001 11 09 | 704 | 0.8− | 0.4− | 2006 09 26 | 704 | (1.6+ | 0.2+) | 2006 10 28 | 703 | 1.1− | 0.2+ | | |
| 2001 11 09 | 704 | 0.3− | 0.6− | 2006 09 26 | 704 | 1.0+ | 0.7+ | 2006 10 28 | 703 | 0.6− | 0.9+ | | |
| 2001 11 12 | 704 | 0.7+ | 0.0 | 2006 09 26 | 704 | 0.9+ | 1.0+ | 2006 11 10 | 704 | 0.6− | 0.3− | | |
| 2001 11 12 | 704 | 0.8+ | 0.2− | 2006 09 26 | 704 | 1.1+ | 0.6+ | 2006 11 10 | 704 | 0.3+ | 0.3+ | | |
| 2001 11 12 | 704 | 0.3+ | 0.4− | 2006 09 26 | 704 | 0.4− | 0.6+ | 2006 11 10 | 704 | 0.6− | 0.3+ | | |
| 2001 11 12 | 704 | 0.3+ | 0.9− | 2006 09 26 | 703 | 0.3− | 0.4− | 2006 11 10 | 704 | 0.1− | 0.3+ | | |
| 2001 12 15 | 704 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.7− | 2006 11 14 | 704 | 0.6+ | 0.1− | | |
| 2001 12 15 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.7+ | 0.2+ | | |
| 2001 12 15 | 704 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.7− | 1.0− | 2006 11 14 | 704 | 0.5+ | 0.7+ | | |
| 2001 12 18 | 704 | 0.5− | 0.5+ | 2006 09 29 | 699 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.1− | 0.7+ | | |
| 2001 12 18 | 704 | 0.7− | 0.9+ | 2006 09 29 | 699 | 0.2− | 0.1+ | 2006 11 17 | 704 | 1.2− | 0.8− | | |
| 2001 12 18 | 704 | 0.2− | 0.9+ | 2006 09 29 | 699 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.1− | | |
| 2001 12 18 | 704 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.4+ | 0.0 | | |
| 2001 12 18 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.8+ | 1.5+ | | |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2006 09 30 | 704 | 0.6− | 0.4− | 2006 11 20 | 704 | 0.2+ | 1.1+ | | |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2006 09 30 | 704 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.9+ | | |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.5− | 0.6+ | 2006 11 20 | 704 | 0.9+ | 0.9+ | | |
| 2001 12 19 | 704 | 0.7− | 0.1− | 2006 09 30 | 704 | 0.5− | 0.4+ | 2006 11 24 | G96 | 0.4+ | 0.4− | | |
| 2001 12 19 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.4− | | |
| 2003 02 01 | 645 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.3− | | |
| 2003 02 01 | 645 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2004 03 20 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.3+ | | | | | | |
| 2004 03 20 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− | | | | | | |

**(140902)∗ 2001 VK$_{49}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 256.80896 | | (2000.0) | | −0.52670353 | | −0.83457736 |
| $n$ | 0.18570044 | $\omega$ | 57.14527 | | +0.70851179 | | −0.53595189 |
| $a$ | 3.0427114 | $\Omega$ | 65.45906 | | +0.46967481 | | −0.12742137 |
| $e$ | 0.0474773 | $i$ | 10.22277 | | | | |
| $P$ | 5.31 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.3− | 0.4+ | 2003 01 29 | 644 | 0.1+ | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.1+ | | |
| 2001 10 17 | 704 | 0.5+ | 0.6+ | 2003 01 29 | 644 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.4+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.4− | 0.8+ | 2003 02 01 | 644 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.1− | | |
| 2001 11 10 | 704 | 0.6− | 1.2+ | 2003 02 01 | 644 | 0.5+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.1− | | |
| 2001 11 10 | 704 | 0.6− | 0.1− | 2003 02 01 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.2− | | |
| 2001 11 10 | 704 | (1.6− | 0.2+) | 2003 02 06 | 699 | (2.2+ | 1.0+) | 2006 09 20 | 644 | 0.0 | 0.2− | | |
| 2001 11 12 | 704 | 1.5+ | 0.4+ | 2003 02 06 | 699 | 0.0 | 0.7+ | 2006 10 16 | 703 | 1.5− | 1.0+ | | |
| 2001 11 12 | 704 | 0.4+ | 0.5+ | 2003 02 06 | 699 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.0 | | |
| 2001 11 12 | 704 | 0.1− | 0.5+ | 2003 02 06 | 699 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.4+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | (1.5− | 0.1+) | | |
| 2001 11 12 | 704 | 0.4− | 0.4− | 2003 04 26 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2001 11 20 | 704 | 0.0 | 0.6− | 2004 05 21 | 704 | 1.0+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 11 20 | 704 | 0.0 | 0.9− | 2004 05 21 | 704 | 0.5+ | 1.1+ | 2006 10 21 | 644 | 0.3+ | 0.4− | | |
| 2001 11 20 | 704 | 0.2+ | 0.7− | 2004 05 21 | 704 | 0.7+ | 1.1+ | 2006 10 21 | 644 | 0.3+ | 0.3+ | | |
| 2001 11 20 | 704 | 0.3− | 1.0− | 2004 05 21 | 704 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2004 05 21 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2001 11 22 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.5+ | 2006 11 16 | 703 | 0.4+ | 0.4− | | |
| 2001 11 22 | 644 | 0.2+ | 0.0 | 2006 09 18 | 703 | 1.1+ | 1.5− | 2006 11 16 | 703 | 2.1− | 2.6+ | | |
| 2001 11 22 | 644 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.3− | 2006 11 16 | 703 | 1.5− | 1.1+ | | |
| 2003 01 29 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.7− | 2006 11 16 | 703 | 0.8+ | 0.7+ | | |

**(140903)∗ 2001 VO$_{49}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 2.18263 | | (2000.0) | | | | |
| $n$ | 0.19465555 | $\omega$ | 36.84309 | | +0.94555621 | | −0.31922847 |
| $a$ | 2.9486611 | $\Omega$ | 341.46469 | | +0.23017638 | | +0.79360059 |
| $e$ | 0.0749132 | $i$ | 11.50002 | | +0.23009193 | | +0.51796842 |
| $P$ | 5.06 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.2+ | 0.2+ | 2001 11 12 | 704 | (1.6+ | 0.6+) | 2004 04 25 | 704 | 0.2+ | 0.5+ | | |
| 2001 08 25 | 704 | 0.9− | 0.2− | 2002 12 31 | 704 | 0.5− | 0.5+ | 2004 04 25 | 704 | 0.4+ | 0.7− | | |
| 2001 08 25 | 704 | 0.1− | 0.6− | 2002 12 31 | 704 | 0.4+ | 0.8+ | 2004 04 25 | 704 | 0.7+ | 1.4+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 0.6+ | 0.1+ | 2005 07 05 | E12 | 0.7− | 0.8+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.7+ | 0.7+ | 2005 07 05 | E12 | 0.2− | 0.4+ | | |
| 2001 09 25 | 704 | 0.5+ | 0.1− | 2002 12 31 | 704 | 0.9− | 0.2− | 2005 07 05 | E12 | (1.6− | 2.0+) | | |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2003 01 10 | 704 | 0.2+ | 0.1− | 2005 07 05 | E12 | 0.3− | 0.9+ | | |
| 2001 09 25 | 704 | 0.3− | 0.2+ | 2003 01 10 | 704 | 0.6− | 0.4− | 2006 08 12 | 644 | 0.2− | 0.3+ | | |
| 2001 10 13 | 699 | 0.1− | 0.2+ | 2003 01 10 | 704 | 1.3+ | 0.6+ | 2006 08 12 | 644 | 0.1− | 0.0 | | |
| 2001 10 13 | 699 | 0.2+ | 0.2− | 2003 01 10 | 704 | 0.2− | 1.3− | 2006 08 12 | 644 | 0.2− | 0.3+ | | |
| 2001 10 13 | 699 | 0.1+ | 0.1− | 2003 01 10 | 704 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.2+ | 0.3+ | | |
| 2001 10 13 | 699 | 0.2+ | 0.2+ | 2003 01 31 | 699 | 0.8+ | 0.0 | 2006 09 28 | 703 | 0.5− | 0.6+ | | |
| 2001 10 13 | 644 | 0.2− | 0.1− | 2003 01 31 | 704 | 0.4− | 0.0 | 2006 09 28 | 703 | 1.0− | 0.5+ | | |
| 2001 10 13 | 644 | 0.5− | 0.1+ | 2003 01 31 | 699 | 0.6− | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.1− | | |
| 2001 10 13 | 644 | 0.4− | 0.2− | 2003 01 31 | 704 | 0.4− | 0.3+ | 2006 10 17 | A50 | 0.2+ | 0.2− | | |
| 2001 10 18 | 704 | 0.4− | 0.5+ | 2003 01 31 | 699 | 0.4+ | 0.1− | 2006 10 17 | A50 | 0.7+ | 0.4+ | | |
| 2001 10 18 | 704 | 0.1− | 0.1+ | 2003 01 31 | 704 | 0.3+ | 0.2+ | 2006 10 17 | A50 | 0.2+ | 0.3+ | | |
| 2001 10 18 | 704 | 0.9+ | 0.4+ | 2003 01 31 | 699 | (1.7+ | 0.6−) | 2006 10 17 | A50 | 0.9+ | 0.4+ | | |
| 2001 10 18 | 704 | 0.2− | 1.0+ | 2003 02 01 | 704 | 0.7− | 0.5− | 2006 10 18 | A50 | 0.1− | 0.3+ | | |
| 2001 10 18 | 704 | 0.8+ | 0.9+ | 2003 02 01 | 704 | 0.1+ | 0.4+ | 2006 10 18 | A50 | 0.5− | 0.2+ | | |
| 2001 10 19 | 704 | 0.8− | 0.5− | 2003 02 01 | 704 | 0.9+ | 0.9− | 2006 10 21 | 704 | 0.9+ | 0.4+ | | |
| 2001 10 19 | 704 | 0.1− | 0.6− | 2003 02 02 | 644 | 0.6+ | 0.7+ | 2006 10 21 | 704 | 0.5− | 0.3+ | | |
| 2001 10 19 | 704 | 0.2+ | 0.0 | 2003 02 02 | 644 | 0.1− | 0.9+ | 2006 10 21 | 704 | 0.2− | 1.0+ | | |
| 2001 10 19 | 704 | 1.4+ | 0.4− | 2003 02 02 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 704 | 0.0 | 0.2− | | |
| 2001 11 10 | 704 | 0.4− | 0.6− | 2003 02 04 | 699 | 0.0 | 0.7− | 2006 10 27 | 703 | 0.1− | 0.0 | | |
| 2001 11 10 | 704 | 0.5− | 0.3− | 2003 02 04 | 699 | 0.6− | 0.8− | 2006 10 27 | 703 | 0.0 | 0.2+ | | |
| 2001 11 10 | 704 | 0.2− | 0.2− | 2003 02 04 | 699 | 0.5− | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.1− | | |
| 2001 11 10 | 704 | 0.4− | 0.1− | 2003 02 04 | 699 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.3+ | | |
| 2001 11 10 | 704 | 0.7− | 0.5+ | 2003 02 04 | 704 | 0.5− | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.4− | | |
| 2001 11 11 | 699 | 0.1− | 0.4− | 2003 02 04 | 704 | 0.4− | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.4− | | |
| 2001 11 11 | 699 | 0.2+ | 0.2+ | 2003 02 04 | 704 | 0.9+ | 0.5+ | 2006 11 15 | 703 | 0.8− | 1.0− | | |
| 2001 11 11 | 699 | 0.3− | 0.1− | 2003 02 04 | 704 | 0.1− | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.5− | | |
| 2001 11 11 | 699 | 0.2− | 0.2− | 2003 02 23 | 699 | 0.2+ | 0.2− | 2006 11 18 | 113 | 0.6+ | 0.4− | | |
| 2001 11 12 | 704 | 0.5+ | 0.2− | 2003 02 23 | 699 | 0.5+ | 0.3+ | 2006 11 18 | 113 | 0.2+ | 0.3− | | |
| 2001 11 12 | 704 | 0.4+ | 0.2+ | 2003 02 23 | 699 | 0.7− | 0.9+ | 2006 11 18 | 113 | 0.1− | 0.6− | | |
| 2001 11 12 | 704 | 0.9+ | 0.7+ | 2003 02 23 | 699 | 0.2+ | 0.2+ | | | | | | |
| 2001 11 12 | 704 | 0.6− | 0.5+ | 2004 04 25 | 704 | 0.6+ | 0.5+ | | | | | | |

**(140904)∗ 2001 VV$_{49}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 324.76375 | | (2000.0) | | | | |
| $n$ | 0.19301552 | $\omega$ | 66.91320 | | +0.34585833 | | −0.93823011 |
| $a$ | 2.9653404 | $\Omega$ | 2.91196 | | +0.76939823 | | +0.27729942 |
| $e$ | 0.1989644 | $i$ | 11.70802 | | +0.53703667 | | +0.20695239 |
| $P$ | 5.11 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.2− | 0.3− | 2001 11 10 | 704 | (1.5− | 2.1+) | 2006 09 14 | 644 | 0.2− | 0.2+ | | |
| 1998 01 28 | 691 | 0.2+ | 0.2+ | 2001 11 10 | 704 | 1.2− | 1.5+ | 2006 09 14 | 644 | 0.0 | 0.5+ | | |
| 1998 01 28 | 691 | 0.1+ | 0.2− | 2001 11 12 | 704 | 0.1+ | 0.2− | 2006 09 20 | 699 | 0.7+ | 0.3− | | |
| 1998 01 28 | 691 | 0.1− | 0.4− | 2001 11 12 | 704 | 0.1− | 0.3+ | 2006 09 20 | 699 | 1.2− | 0.8+ | | |
| 1998 02 21 | 691 | 0.6+ | 0.0 | 2001 11 12 | 704 | 0.1+ | 0.9− | 2006 09 20 | 699 | 0.8− | 0.3+ | | |
| 1998 02 21 | 691 | 0.4− | 1.0− | 2001 11 12 | 704 | 0.3− | 0.3− | 2006 09 20 | 699 | 0.5+ | 0.6+ | | |
| 1998 02 21 | 691 | 0.4+ | 0.2− | 2001 11 12 | 704 | 0.5+ | 0.5− | 2006 09 22 | 104 | 0.0 | 0.2+ | | |
| 1998 03 02 | 691 | 0.1− | 0.1+ | 2001 11 17 | 704 | 0.2+ | 0.4− | 2006 09 22 | 104 | 0.2− | 0.2+ | | |
| 1998 03 02 | 691 | 0.7− | 0.0 | 2001 11 17 | 704 | 0.1+ | 0.3− | 2006 09 22 | 104 | 0.4− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.6− | 0.1− | 2001 11 17 | 704 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 1998 03 24 | 704 | 0.0 | 0.1− | 2001 11 17 | 704 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.0 | 0.0 |
| 1998 03 24 | 704 | 0.3− | 1.6+ | 2001 12 07 | 644 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 1998 03 24 | 704 | 1.9− | 1.8− | 2001 12 07 | 644 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.4+ |
| 1998 03 24 | 704 | (2.1+ | 0.0 ) | 2001 12 07 | 644 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 1998 03 24 | 704 | 1.0+ | 0.6− | 2002 12 11 | 645 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.7+ |
| 1998 03 24 | 704 | 1.4+ | 1.6+ | 2002 12 11 | 645 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1998 03 24 | 704 | 0.2+ | 0.4− | 2003 02 22 | 644 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 1998 03 24 | 704 | 0.4− | 0.6+ | 2003 02 22 | 644 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1998 03 24 | 704 | (5.1− | 0.0 ) | 2003 02 22 | 644 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2001 09 21 | 699 | 0.4− | 0.2+ | 2003 02 28 | 704 | 1.1+ | 0.2− | 2006 10 17 | 703 | 0.6− | 0.3− |
| 2001 09 21 | 699 | 0.1+ | 1.5− | 2003 02 28 | 704 | 0.5+ | 0.9− | 2006 10 17 | 703 | (4.4+ | 5.6−) |
| 2001 09 21 | 699 | 1.3− | 0.5− | 2003 02 28 | 704 | 1.2+ | 1.0+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 09 21 | 699 | 0.0 | 0.8− | 2003 03 07 | 699 | 0.7+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2001 10 13 | 644 | 0.1− | 0.2− | 2003 03 07 | 699 | 0.8+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2001 10 13 | 644 | 0.0 | 0.1− | 2003 03 07 | 699 | 0.8+ | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 10 13 | 644 | 0.2+ | 0.1− | 2003 03 07 | 699 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 10 19 | 704 | 0.6+ | 0.3− | 2003 03 31 | 691 | 0.4+ | 1.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 19 | 704 | 1.0+ | 0.2+ | 2003 03 31 | 691 | 0.4+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 10 19 | 704 | 0.6+ | 0.7+ | 2003 03 31 | 691 | 0.2+ | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 10 19 | 704 | 0.3+ | 0.2− | 2003 04 11 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 10 | 704 | (1.8− | 2.4+) | 2003 04 11 | 691 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2001 11 10 | 704 | (1.0− | 2.6+) | 2003 04 11 | 691 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.7− | 0.5− |
| 2001 11 10 | 704 | (0.5− | 2.2+) | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.7− | 0.2+ |

**(140905)∗ 2001 VC$_{50}$ = 2003 BJ$_{48}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46888)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.70069 | | (2000.0) | | | |
| $n$ | 0.18963307 | $\omega$ | 66.72943 | | +0.89608219 | +0.40731558 |
| $a$ | 3.0004979 | $\Omega$ | 268.84474 | | −0.44361290 | +0.80774640 |
| $e$ | 0.0505809 | $i$ | 10.16450 | | −0.01563029 | +0.42619217 |
| $P$ | 5.20 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.1− | 0.3+ | 2001 12 10 | 704 | 0.7− | 0.5− | 2006 09 28 | 703 | 0.1+ | 0.7− |
| 2000 08 02 | 704 | 0.6− | 1.5+ | 2001 12 10 | 704 | 0.2+ | 0.5− | 2006 09 28 | 703 | 0.0 | 0.6− |
| 2000 08 02 | 704 | 0.1− | 0.1− | 2001 12 10 | 704 | 0.3− | 0.7+ | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2000 08 02 | 704 | 0.3− | 1.4+ | 2001 12 10 | 704 | 0.7− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.6− | 0.0 | 2001 12 10 | 704 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.5+ |
| 2001 08 25 | 704 | 0.4+ | 0.2− | 2003 01 07 | 704 | 0.3− | 0.7+ | 2006 10 10 | 644 | 0.5+ | 0.1+ |
| 2001 08 25 | 704 | 0.5− | 0.6− | 2003 01 07 | 704 | 0.9− | 0.6+ | 2006 10 19 | 703 | 0.2+ | 0.4+ |
| 2001 09 21 | 699 | 0.5− | 1.1+ | 2003 01 07 | 704 | 0.7− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.5− |
| 2001 09 21 | 699 | 0.9− | 1.3+ | 2003 01 07 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.6− |
| 2001 09 21 | 699 | 0.8+ | 0.6− | 2003 01 26 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.4+ |
| 2001 09 21 | 699 | (2.8+ | 0.6+) | 2003 01 26 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.1+ |
| 2001 10 13 | 644 | 0.4− | 0.9+ | 2003 01 26 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 10 13 | 644 | 0.2− | 0.8+ | 2003 01 30 | 699 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2001 10 13 | 644 | 0.5− | 1.0+ | 2003 01 30 | 699 | 0.1− | 1.0+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | (2.0+ | 1.6+) | 2003 01 30 | 699 | 1.5+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 11 10 | 704 | 0.7+ | 0.2+ | 2003 01 30 | 699 | 0.5+ | 0.8− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 11 10 | 704 | 0.4− | 0.6+ | 2004 03 26 | 704 | 0.4+ | 0.4+ | 2006 10 24 | 644 | 0.5+ | 0.0 |
| 2001 11 11 | 699 | 0.1− | 0.6− | 2004 03 26 | 704 | 0.5+ | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2001 11 11 | 699 | 0.5− | 0.0 | 2004 03 26 | 704 | 0.1+ | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.5+ |
| 2001 11 11 | 699 | 0.1+ | 0.3+ | 2004 03 26 | 704 | 0.3+ | 0.8+ | 2006 10 27 | 703 | 0.3+ | 0.7− |
| 2001 11 11 | 644 | 0.2+ | 0.1− | 2004 03 26 | 704 | 0.5− | 0.2− | 2006 10 27 | 703 | 1.5− | 0.8− |
| 2001 11 11 | 699 | 0.1+ | 0.1+ | 2004 04 24 | 608 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.8− | 1.3− |
| 2001 11 11 | 644 | 0.6+ | 0.1− | 2004 04 24 | 608 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.1− | 0.8− |
| 2001 11 11 | 644 | 0.1− | 0.0 | 2004 04 24 | 608 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.3− |
| 2001 11 12 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 1.1+ | 0.6− | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 0.9+ | 0.1− | 2006 09 28 | 703 | 0.4− | 0.9− | 2006 11 14 | 703 | 0.1+ | 0.3+ |
| 2001 11 12 | 704 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 0.9+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.7− | 0.3− | | | | |
| 2001 11 12 | 704 | 0.1− | 0.6+ | 2006 09 28 | 703 | 0.8− | 1.2− | | | | |

**(140906)∗ 2001 VG$_{52}$ = 1999 LW$_6$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20640)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.53382 | | (2000.0) | | | |
| $n$ | 0.21058070 | $\omega$ | 225.98456 | | −0.21728776 | −0.96672809 |
| $a$ | 2.7980599 | $\Omega$ | 237.02711 | | +0.93527596 | −0.16661696 |
| $e$ | 0.1423585 | $i$ | 9.25972 | | +0.27936519 | −0.19410201 |
| $P$ | 4.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 08 | 691 | 0.5+ | 0.1+ | 2001 11 19 | 704 | 0.2− | 0.1+ | 2005 08 26 | 644 | 0.5+ | 0.4+ |
| 1999 06 08 | 691 | 0.2− | 0.1+ | 2001 11 19 | 704 | 0.2+ | 0.0 | 2005 08 26 | 644 | 0.3+ | 0.3+ |
| 1999 06 08 | 691 | 0.3− | 0.2+ | 2001 11 19 | 704 | 0.3+ | 0.2− | 2005 08 26 | 644 | 0.3+ | 0.3+ |
| 1999 06 13 | 691 | 0.2− | 0.4− | 2001 11 19 | 704 | 0.4+ | 0.1− | 2005 08 27 | 699 | 1.0− | 0.1+ |
| 1999 06 13 | 691 | 0.4− | 0.4− | 2001 11 24 | 704 | (0.2− | 1.8+) | 2005 08 27 | 699 | 1.0+ | 1.2+ |
| 1999 06 13 | 691 | 0.3− | 0.2+ | 2001 11 24 | 704 | 0.1− | 0.1− | 2005 08 27 | 699 | 0.4+ | 0.1− |
| 2001 10 14 | 704 | 0.3+ | 0.6− | 2001 11 24 | 704 | 0.4− | 1.1+ | 2005 08 27 | 699 | 1.0− | 0.1+ |
| 2001 10 14 | 704 | 0.4− | 0.1+ | 2001 11 24 | 704 | 0.5− | 1.3+ | 2005 08 29 | 644 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.4− | 0.2− | 2001 12 05 | 608 | 0.6− | 1.0− | 2005 08 29 | 644 | 0.0 | 0.5+ |
| 2001 10 14 | 704 | 0.1− | 0.6+ | 2001 12 05 | 608 | 0.5− | 1.1− | 2005 08 29 | 644 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 0.2− | 0.5+ | 2001 12 05 | 608 | 0.6+ | 0.7− | 2006 10 23 | 704 | 0.1− | 0.4− |
| 2001 10 19 | 644 | 0.1+ | 0.7+ | 2001 12 11 | 704 | 0.5+ | 0.2− | 2006 10 23 | 704 | 0.2+ | 0.3+ |
| 2001 10 19 | 644 | 0.2+ | 0.7+ | 2001 12 11 | 704 | 1.0+ | 0.1+ | 2006 10 23 | 704 | 0.5− | 0.9− |
| 2001 10 19 | 644 | 0.1+ | 0.9+ | 2001 12 11 | 704 | 0.8+ | 0.2− | 2006 10 23 | 704 | 0.2− | 0.4+ |
| 2001 10 21 | 704 | 0.4+ | 1.1+ | 2001 12 11 | 704 | 0.3+ | 0.2− | 2006 11 14 | 704 | 0.8+ | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.8+ | 2001 12 15 | 704 | 0.6− | 0.3− | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 2001 10 21 | 704 | 0.0 | 1.1+ | 2001 12 15 | 704 | 1.1− | 0.3− | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2001 10 21 | 704 | 0.3+ | 1.0+ | 2001 12 15 | 704 | 0.5− | 0.4− | 2006 11 14 | 704 | 0.6− | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 0.9+ | 2001 12 15 | 704 | 0.9− | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2001 10 23 | 691 | 0.7+ | 0.1− | 2001 12 15 | 704 | 1.1− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2001 10 23 | 691 | 0.7+ | 0.2− | 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.1+ |
| 2001 10 23 | 691 | 0.7+ | 0.3− | 2001 12 19 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 1.3+ | 0.4− |
| 2001 11 10 | 704 | 0.3+ | 0.0 | 2001 12 19 | 704 | 0.2− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2001 11 10 | 704 | 0.2+ | 0.2+ | 2001 12 19 | 704 | 0.6− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2001 11 10 | 704 | 0.2+ | 0.0 | 2001 12 19 | 704 | 0.3− | 0.2− | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2001 11 10 | 704 | 0.1+ | 0.2+ | 2002 02 12 | 209 | 0.9− | 0.3+ | 2006 11 25 | 704 | 1.3− | 0.3− |
| 2001 11 10 | 704 | 0.3+ | 0.1+ | 2002 02 12 | 209 | 0.5− | 0.7− | 2006 11 25 | 704 | 1.0+ | 0.6+ |
| 2001 11 11 | 291 | 0.5− | 0.1− | 2002 02 12 | 209 | (1.7− | 0.9+) | 2006 11 25 | 704 | 1.2+ | 0.1− |
| 2001 11 11 | 291 | 1.0− | 0.0 | 2003 02 09 | 644 | 0.7+ | 0.6+ | 2006 11 25 | 704 | 1.7− | 0.3+ |
| 2001 11 11 | 291 | 0.6− | 0.2− | 2003 02 09 | 644 | 0.6+ | 0.3+ | 2006 11 25 | 704 | 0.2+ | 0.7+ |
| 2001 11 12 | 704 | 0.4− | 0.8− | 2003 02 09 | 644 | 0.6+ | 0.6+ | 2006 11 29 | 704 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.9− | 1.0− | 2003 03 10 | 704 | (0.9+ | 1.6+) | 2006 11 29 | 704 | 0.3− | 0.0 |
| 2001 11 12 | 704 | 1.4+ | 0.4+ | 2003 03 10 | 704 | 1.0+ | 0.9+ | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2001 11 12 | 704 | 1.0+ | 0.1− | 2003 03 10 | 704 | 0.6+ | 0.1− | 2006 11 29 | 704 | 1.3− | 0.2+ |
| 2001 11 12 | 704 | (0.4− | 2.6−) | 2003 03 10 | 704 | 1.3+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.4− |
| 2001 11 17 | 704 | 0.1+ | 0.4+ | 2003 03 10 | 704 | 0.6+ | 0.3+ | 2006 12 01 | 691 | 0.1− | 0.2− |
| 2001 11 17 | 704 | 0.4+ | 0.7+ | 2003 03 28 | 699 | 0.2− | 0.4− | 2006 12 01 | 691 | 0.1− | 0.2− |
| 2001 11 17 | 704 | 0.4+ | 0.2− | 2003 03 28 | 699 | 0.6+ | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.7+ | 0.1+ | 2003 03 28 | 699 | 0.7− | 0.3+ | | | | |
| 2001 11 19 | 704 | 0.1+ | 0.0 | 2003 03 28 | 699 | 0.3− | 0.6+ | | | | |

**(140907)∗ 2001 VJ$_{52}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.77895 | | (2000.0) | | | |
| $n$ | 0.22339330 | $\omega$ | 70.26719 | | +0.98652266 | −0.15936735 |
| $a$ | 2.6900228 | $\Omega$ | 298.88760 | | +0.12974152 | +0.89997298 |
| $e$ | 0.0685389 | $i$ | 2.42733 | | +0.09970048 | +0.40577170 |
| $P$ | 4.41 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.5− | 0.3− | 2001 11 19 | 704 | 0.0 | 0.8− | 2005 08 29 | 699 | (0.9− | 1.7+) |
| 1993 11 20 | 691 | 0.3+ | 0.3+ | 2001 11 19 | 704 | 0.1+ | 1.0− | 2005 08 29 | 699 | 0.5+ | 1.4+ |
| 1993 11 20 | 691 | 0.1+ | 0.5− | 2001 11 24 | 704 | 0.0 | 0.7− | 2005 08 31 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.0 | 0.1− | 2001 11 24 | 704 | 0.4− | 0.6− | 2005 08 31 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.2− | 0.5− | 2001 11 24 | 704 | 0.9+ | 0.4+ | 2005 08 31 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.1− | 0.9+ | 2001 11 24 | 704 | 0.2− | 0.2+ | 2005 09 06 | 699 | 0.4− | 0.8+ |
| 2001 10 14 | 704 | 0.2− | 0.6+ | 2002 12 14 | 645 | 0.0 | 0.1− | 2005 09 06 | 699 | 1.4− | 0.1+ |
| 2001 10 19 | 644 | 0.2+ | 0.7− | 2002 12 14 | 645 | 0.0 | 0.0 | 2005 09 06 | 699 | 0.1− | 0.9+ |
| 2001 10 19 | 644 | 0.2+ | 0.7− | 2003 01 05 | 291 | 0.2− | 0.2+ | 2005 09 06 | 699 | 0.8+ | 0.1− |
| 2001 10 19 | 644 | 0.5+ | 0.5− | 2003 01 05 | 291 | 0.1+ | 0.4+ | 2005 09 08 | 704 | 0.1− | 1.4+ |
| 2001 10 21 | 704 | 0.3+ | 0.6+ | 2003 01 05 | 291 | 0.1− | 0.4+ | 2005 09 08 | 704 | 0.1+ | 0.7+ |
| 2001 10 21 | 704 | 0.2+ | 0.4+ | 2003 01 27 | 291 | 0.0 | 0.2+ | 2005 09 08 | 704 | 0.8+ | 1.2+ |
| 2001 10 21 | 704 | 0.4+ | 0.4+ | 2003 01 27 | 291 | 0.3− | 0.2+ | 2005 09 08 | 704 | 0.6+ | 0.8+ |
| 2001 10 21 | 704 | (2.5+ | 1.8−) | 2003 01 27 | 291 | 0.5− | 0.3+ | 2005 09 13 | 691 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.4− | 1.0+ | 2003 02 22 | 644 | 1.0+ | 0.2+ | 2005 09 13 | 691 | 0.1+ | 0.1+ |
| 2001 10 28 | 644 | 0.5− | 0.0 | 2003 02 22 | 644 | 0.4+ | 0.6+ | 2005 09 13 | 691 | 0.2− | 0.1− |
| 2001 10 28 | 644 | 0.4− | 0.0 | 2003 02 22 | 644 | 0.7+ | 0.3+ | 2005 09 14 | 703 | 0.4− | 0.6− |
| 2001 10 28 | 644 | 0.2− | 0.2− | 2003 03 06 | 644 | 0.2+ | 0.1+ | 2005 09 14 | 703 | 0.5− | 0.9+ |
| 2001 11 10 | 704 | (0.2+ | 1.6+) | 2003 03 06 | 644 | 0.3+ | 0.6+ | 2005 09 14 | 703 | 0.2− | 1.0− |
| 2001 11 10 | 704 | 0.0 | 0.1+ | 2003 03 06 | 644 | 0.3+ | 0.7+ | 2005 09 14 | 703 | 0.3− | 0.2− |
| 2001 11 10 | 704 | 0.6− | 0.9− | 2003 03 12 | 291 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2001 11 10 | 704 | 0.2− | 0.0 | 2003 03 12 | 291 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 2001 11 12 | 704 | 0.3+ | 0.5+ | 2003 03 12 | 291 | 0.6+ | 0.1+ | 2006 09 25 | 691 | 0.4+ | 0.2− |
| 2001 11 12 | 704 | 0.4+ | 1.1+ | 2003 03 12 | 644 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.5− | 0.3− |
| 2001 11 12 | 704 | 0.7− | 0.3+ | 2003 03 12 | 644 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.5− | 2003 03 12 | 644 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2001 11 19 | 704 | 0.7+ | 0.6− | 2005 08 29 | 699 | 0.7− | 0.1− | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2001 11 19 | 704 | 0.0 | 0.2− | 2005 08 29 | 699 | 0.1− | 0.3+ | | | | |

**(140908)∗ 2001 VP$_{53}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 285.48489 | | (2000.0) | | | |
| $n$ | 0.17620254 | $\omega$ | 197.12893 | | +0.26231339 | −0.95763528 |
| $a$ | 3.1510934 | $\Omega$ | 237.81032 | | +0.90099401 | +0.28715863 |
| $e$ | 0.0954854 | $i$ | 8.07341 | | +0.34554520 | −0.02178485 |
| $P$ | 5.59 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1− | 0.0 | 2001 11 15 | 291 | 0.1− | 0.3− | 2004 04 17 | 704 | 0.3+ | 0.2+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2001 11 15 | 291 | 0.1− | 0.3− | 2004 04 17 | 704 | 0.4+ | 0.5+ |
| 2001 08 22 | 704 | 0.3− | 1.2+ | 2001 11 15 | 291 | 0.0 | 0.4− | 2004 04 21 | 704 | 0.1+ | 0.8+ |
| 2001 08 22 | 704 | 0.7− | 0.8+ | 2001 11 16 | 644 | 0.4+ | 0.7+ | 2004 04 21 | 704 | (1.0+ | 3.1+) |
| 2001 08 22 | 704 | 0.1+ | 0.5+ | 2001 11 16 | 644 | 0.3+ | 0.5+ | 2004 04 21 | 704 | (1.1+ | 2.1+) |
| 2001 08 22 | 704 | 0.2− | 1.1+ | 2001 11 16 | 644 | 0.0 | 0.7+ | 2004 04 21 | 704 | (1.0+ | 1.6+) |
| 2001 09 22 | 699 | 0.4− | 0.5+ | 2001 11 17 | 704 | 0.3+ | 0.1− | 2004 04 27 | 735 | 1.3+ | 0.3+ |
| 2001 09 22 | 699 | 0.4+ | 1.5+ | 2001 11 17 | 704 | 0.3+ | 0.6− | 2004 04 27 | 735 | 1.2+ | 0.1− |
| 2001 09 22 | 699 | 0.1− | 1.0− | 2001 11 17 | 704 | 0.5+ | 0.2− | 2004 04 27 | 735 | 0.9− | 0.9+ |
| 2001 09 22 | 699 | 0.0 | 0.7− | 2001 11 17 | 704 | 0.9+ | 0.5− | 2006 08 18 | 644 | 0.4− | 0.0 |
| 2001 09 26 | 704 | 0.7+ | 0.4+ | 2001 11 17 | 704 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.4− | 0.6+ |
| 2001 09 26 | 704 | 0.5− | 0.1+ | 2001 11 17 | 644 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.5− | 0.0 |
| 2001 09 26 | 704 | 0.5− | 0.8− | 2001 11 17 | 644 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.3− | 0.1− |
| 2001 09 26 | 704 | 0.3− | 1.1+ | 2001 11 17 | 644 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.2− | 0.6− |
| 2001 09 26 | 704 | 1.4− | 0.2− | 2001 11 19 | 704 | 0.4+ | 0.4− | 2006 08 27 | 699 | 0.9− | 0.5+ |
| 2001 10 14 | 704 | 0.1+ | 0.3+ | 2001 11 19 | 704 | 0.2+ | 0.2− | 2006 08 27 | 699 | (1.8− | 0.5+) |
| 2001 10 14 | 704 | 0.3− | 0.6+ | 2001 11 19 | 704 | 0.1+ | 0.4− | 2006 09 15 | 704 | (1.7+ | 1.1−) |
| 2001 10 14 | 704 | 0.1+ | 0.2− | 2001 11 19 | 704 | 0.1− | 0.5− | 2006 09 15 | 704 | 0.1+ | 1.2+ |
| 2001 10 14 | 333 | 0.6− | 0.5− | 2001 11 19 | 704 | 0.2− | 0.1− | 2006 09 15 | 704 | 0.9+ | 0.3+ |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2001 12 11 | 704 | 0.5+ | 0.3− | 2006 09 15 | 704 | 0.1− | 0.7− |
| 2001 10 14 | 333 | 0.0 | 0.7− | 2001 12 11 | 704 | 0.4− | 1.0+ | 2006 09 15 | 704 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 0.0 | 0.3− | 2001 12 11 | 704 | 0.4− | 0.3− | 2006 09 16 | 644 | 0.2+ | 0.2− |
| 2001 10 14 | 333 | 0.8− | 0.5− | 2001 12 11 | 704 | 0.6− | 0.6+ | 2006 09 16 | 644 | 0.1+ | 0.1+ |
| 2001 10 14 | 333 | 0.0 | 0.5− | 2001 12 11 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 644 | 0.2+ | 0.0 |
| 2001 10 14 | 333 | (1.5− | 0.2+) | 2001 12 15 | 704 | 1.1+ | 0.2+ | 2006 09 18 | 703 | 0.7− | 1.0− |
| 2001 10 14 | 333 | 0.4− | 1.4− | 2001 12 15 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.8− | 1.0+ |
| 2001 10 19 | 644 | 0.2+ | 0.7+ | 2001 12 15 | 704 | 0.4+ | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.5− |
| 2001 10 19 | 644 | 0.4+ | 1.0+ | 2001 12 15 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 1.1+ | 0.2+ |
| 2001 10 19 | 644 | 0.4+ | 0.9+ | 2001 12 15 | 704 | 0.4+ | 0.9− | 2006 09 20 | 699 | 0.7− | 0.7− |
| 2001 10 21 | 704 | 0.4+ | 0.0 | 2001 12 18 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 699 | 0.4− | 0.7+ |
| 2001 10 21 | 704 | 0.3+ | 0.5+ | 2001 12 18 | 704 | 1.1+ | 0.8− | 2006 09 20 | 699 | 0.9− | 0.1− |
| 2001 10 21 | 704 | 0.2+ | 1.1+ | 2001 12 18 | 704 | 0.5+ | 0.4− | 2006 09 20 | 699 | (1.1− | 1.6−) |
| 2001 10 21 | 704 | 0.5+ | 0.7+ | 2001 12 18 | 704 | 0.8+ | 0.0 | 2006 09 30 | 699 | 0.6+ | 0.3− |
| 2001 10 21 | 704 | (0.1+ | 1.8+) | 2001 12 19 | 704 | 0.1+ | 1.2+ | 2006 09 30 | 699 | 0.6− | 0.8+ |
| 2001 10 28 | 644 | 0.4− | 0.5− | 2001 12 19 | 704 | 0.3+ | 0.6− | 2006 09 30 | 699 | 0.3− | 0.6− |
| 2001 10 28 | 644 | 0.4− | 0.4− | 2001 12 19 | 704 | 0.3− | 0.3− | 2006 09 30 | 699 | 0.4+ | 0.5− |
| 2001 10 28 | 644 | 0.4− | 0.4− | 2001 12 19 | 704 | 0.3− | 0.3− | 2006 10 01 | 703 | 1.1+ | 0.6− |
| 2001 11 10 | 704 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.1− | 2006 10 01 | 703 | 0.2+ | 0.8+ |
| 2001 11 10 | 704 | 0.3− | 0.4+ | 2003 02 08 | 608 | 0.5+ | 0.3+ | 2006 10 01 | 703 | 0.7+ | 1.2+ |
| 2001 11 10 | 704 | 0.2− | 0.2− | 2003 02 08 | 608 | 0.1+ | 0.6+ | 2006 10 01 | 703 | 0.4+ | 0.5− |
| 2001 11 10 | 704 | 0.3− | 0.9+ | 2003 02 08 | 608 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 11 10 | 704 | 0.6− | 1.2+ | 2003 02 22 | 644 | 0.6+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.7− | 0.4+ | 2003 02 22 | 644 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 1.4+ | 0.7+ | 2003 02 22 | 644 | 0.3+ | 0.6+ | 2006 10 16 | A44 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.3+ | 1.0+ | 2003 03 30 | 645 | 0.1− | 0.0 | 2006 10 16 | A44 | 0.3+ | 0.0 |
| 2001 11 12 | 704 | 0.4− | 0.9+ | 2003 03 30 | 645 | 0.1− | 0.0 | 2006 10 16 | A44 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.9+ | 0.3− | 2004 04 17 | 704 | 1.4+ | 0.4+ | | | | |

**(140909)∗ 2001 VW$_{54}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.47842 | | (2000.0) | | | |
| $n$ | 0.18529644 | $\omega$ | 330.95856 | | +0.59720447 | +0.80096121 |
| $a$ | 3.0471325 | $\Omega$ | 335.63523 | | −0.71456690 | +0.50721095 |
| $e$ | 0.1396272 | $i$ | 5.91588 | | −0.36433635 | +0.31811664 |
| $P$ | 5.32 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.4+ | 0.7− | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 09 27 | 699 | (3.9+ | 2.0−) |
| 1995 09 20 | 691 | 0.3+ | 0.7− | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1995 09 20 | 691 | 0.3+ | 0.6− | 2006 09 15 | 683 | (0.3− | 1.6−) | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | (1.6− | 1.4−) | 2006 09 15 | 683 | 0.7− | 1.2− | 2006 09 27 | 691 | 0.5− | 0.1+ |
| 2001 10 14 | 704 | 0.9− | 0.5+ | 2006 09 15 | 683 | 1.1− | 0.3− | 2006 09 29 | 704 | 0.6+ | 1.1+ |
| 2001 10 14 | 704 | 1.1− | 0.9+ | 2006 09 17 | 683 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.7+ | 0.5+ |
| 2001 10 14 | 704 | 0.5− | 0.4− | 2006 09 17 | 683 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.5+ |
| 2001 10 14 | 704 | 0.5− | 0.5+ | 2006 09 17 | 683 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 0.8− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 09 29 | 704 | (2.0+ | 0.8−) |
| 2001 11 10 | 704 | 0.5− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 30 | 683 | (0.1− | 1.7+) |
| 2001 11 10 | 704 | 0.7− | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2001 11 10 | 704 | 0.9− | 1.0+ | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 09 30 | 683 | (1.2− | 2.8+) |
| 2001 11 10 | 704 | 0.3− | 0.6+ | 2006 09 18 | 704 | (0.2+ | 1.7+) | 2006 09 30 | 703 | 0.3− | 1.2− |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 683 | 1.1+ | 0.5+ | 2006 09 30 | 683 | (2.1− | 0.6+) |
| 2001 11 12 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 1.2− | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.8− |
| 2001 11 12 | 704 | 0.8+ | 0.3+ | 2006 09 18 | 683 | 0.7+ | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.2− |
| 2001 11 12 | 704 | 0.3+ | 1.0+ | 2006 09 18 | 704 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2001 11 12 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 683 | 0.1− | 1.2+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | (2.0+ | 1.7+) | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2001 11 24 | 704 | (0.2− | 1.9+) | 2006 09 18 | 699 | 0.9− | 0.2+ | 2006 10 03 | 704 | 1.0− | 0.1− |
| 2001 11 24 | 704 | 0.1− | 1.2+ | 2006 09 18 | 699 | 0.2− | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.2+ |
| 2001 11 24 | 704 | 0.1+ | 1.5+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 03 | 704 | 0.1+ | 0.5+ |
| 2002 11 07 | 645 | 0.1− | 0.3− | 2006 09 19 | 683 | 0.1+ | 0.2− | 2006 10 03 | 704 | 0.3− | 0.6+ |
| 2002 11 07 | 645 | 0.1− | 0.3− | 2006 09 19 | 683 | 0.8+ | 1.4− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 12 13 | 645 | 0.0 | 0.2− | 2006 09 19 | 683 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 12 13 | 645 | 0.1− | 0.1− | 2006 09 21 | 683 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2004 03 15 | 691 | 0.4+ | 0.6+ | 2006 09 21 | 683 | 0.0 | 0.6+ | 2006 10 17 | 703 | (0.3− | 4.5+) |
| 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 09 21 | 683 | 0.3+ | 1.3+ | 2006 10 17 | 703 | 0.3+ | 0.9+ |
| 2004 03 15 | 691 | 0.3+ | 0.5+ | 2006 09 22 | 683 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 09 22 | 683 | (2.2+ | 1.0+) | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 09 22 | 683 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 09 23 | 104 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 09 23 | 104 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.8+ | 1.2+ | 2006 09 23 | 104 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2004 03 27 | 704 | 1.1+ | 0.8+ | 2006 09 24 | 104 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.6− | 0.0 |
| 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 09 24 | 104 | 0.3+ | 1.2+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 09 24 | 104 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 04 12 | 691 | 0.0 | 0.1− | 2006 09 27 | 699 | 1.1+ | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 09 27 | 699 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 699 | (0.9+ | 1.5+) | | | | |

**(140910)∗ 2001 VH$_{55}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.82443 | | (2000.0) | | | |
| $n$ | 0.17871199 | $\omega$ | 93.30083 | | +0.62004132 | −0.78252157 |
| $a$ | 3.1215258 | $\Omega$ | 318.20399 | | +0.68185399 | +0.57317484 |
| $e$ | 0.0723538 | $i$ | 4.87560 | | +0.38810295 | +0.24316783 |
| $P$ | 5.52 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.8− | 0.7+ | 2003 01 08 | 704 | 1.1− | 0.8− | 2006 08 27 | 699 | 0.1− | 1.3+ |
| 2000 08 24 | 704 | (2.5− | 1.1+) | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.0 | 0.1− |
| 2000 08 24 | 704 | 0.9− | 0.4+ | 2003 01 08 | 704 | 0.2+ | 0.5− | 2006 08 29 | 703 | 0.1+ | 0.0 |
| 2000 08 24 | 704 | 0.1− | 0.1+ | 2003 01 26 | 291 | 0.4− | 0.3+ | 2006 08 29 | 703 | 0.7− | 0.4− |
| 2001 09 21 | 699 | (0.7− | 2.3−) | 2003 01 26 | 291 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.2− | 0.2− |
| 2001 09 21 | 699 | 0.2+ | 0.0 | 2003 01 26 | 291 | 0.4+ | 0.6+ | 2006 09 06 | 644 | 0.2− | 0.0 |
| 2001 09 21 | 699 | 0.0 | 0.6+ | 2003 01 27 | 704 | 0.2+ | 0.4− | 2006 09 06 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 699 | 0.4+ | 0.8+ | 2003 01 27 | 704 | 0.3− | 0.1− | 2006 09 06 | 644 | 0.2− | 0.0 |
| 2001 09 21 | 644 | 0.4+ | 0.3+ | 2003 01 27 | 704 | 0.2+ | 0.3− | 2006 09 06 | 644 | 0.8− | 0.2+ |
| 2001 09 21 | 644 | 0.8+ | 0.5+ | 2003 01 27 | 699 | 0.6− | 0.5− | 2006 09 06 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 644 | 0.2+ | 0.2+ | 2003 01 27 | 704 | 0.1+ | 1.2− | 2006 09 06 | 644 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.3+ | 0.2− | 2003 01 27 | 699 | 0.2+ | 0.8+ | 2006 09 12 | 703 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.0 | 0.5− | 2003 01 27 | 704 | 0.1− | 0.5− | 2006 09 12 | 703 | 0.6− | 0.1− |
| 2001 10 14 | 704 | 0.3+ | 0.4− | 2003 01 27 | 699 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.4− | 0.6+ |
| 2001 10 14 | 704 | 0.1− | 0.4− | 2003 01 27 | 699 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 0.6+ | 0.7+ |
| 2001 10 14 | 704 | 0.2+ | 0.3− | 2003 01 30 | 291 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.6+ |
| 2001 10 21 | 704 | 0.7+ | 0.7− | 2003 01 30 | 291 | 0.3− | 0.4+ | 2006 09 16 | 699 | 0.2− | 0.3+ |
| 2001 10 21 | 704 | 0.6− | 0.8− | 2003 01 30 | 291 | 0.7− | 0.2+ | 2006 09 16 | 699 | 0.3− | 0.6+ |
| 2001 10 21 | 704 | 0.1+ | 1.3− | 2003 01 30 | 699 | 0.7+ | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.8+ | 0.5+ | 2003 01 30 | 699 | 1.1+ | 0.3+ | 2006 09 18 | 704 | 0.9− | 0.4− |
| 2001 10 21 | 704 | 0.7+ | 0.2− | 2003 01 30 | 699 | 0.0 | 0.5− | 2006 09 18 | 704 | 0.6− | 0.4+ |
| 2001 11 10 | 704 | 0.1− | 0.7− | 2003 01 30 | 699 | 0.6+ | 0.0 | 2006 09 18 | 704 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.5− | 1.0− | 2003 01 31 | 644 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.2− | 0.7− |
| 2001 11 10 | 704 | 0.4+ | 1.1− | 2003 01 31 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.2+ |
| 2001 11 10 | 704 | (0.6− | 1.7−) | 2003 01 31 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.9− | 0.8+ |
| 2001 11 10 | 704 | 0.1+ | 1.0− | 2003 02 03 | 704 | 0.8+ | 1.2+ | 2006 09 19 | 699 | 0.1+ | 0.6+ |
| 2001 11 10 | 644 | 0.3− | 0.3+ | 2003 02 03 | 704 | 0.3− | 0.8+ | 2006 09 19 | 703 | 0.6− | 0.0 |
| 2001 11 10 | 644 | 0.2− | 0.3+ | 2003 02 03 | 704 | 1.2+ | 0.5+ | 2006 09 19 | 703 | 1.0− | 0.4+ |
| 2001 11 10 | 644 | 0.1− | 0.5+ | 2003 02 03 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 1.0+ |
| 2001 11 12 | 704 | 0.3− | 0.3− | 2003 02 21 | 644 | (1.7+ | 0.7−) | 2006 09 19 | 703 | 0.5− | 0.2+ |
| 2001 11 12 | 704 | 0.5− | 0.5− | 2003 02 21 | 644 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.1− |
| 2001 11 12 | 704 | 0.6− | 0.4− | 2003 02 21 | 644 | 0.6+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.4− | 2003 03 06 | 644 | 0.2− | 0.4+ | 2006 09 24 | 106 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.6− | 0.1+ | 2003 03 06 | 644 | 0.1+ | 0.3+ | 2006 09 24 | 106 | 0.8+ | 0.4+ |
| 2001 11 17 | 644 | 1.1+ | 1.3+ | 2003 03 06 | 644 | 0.0 | 0.2− | 2006 09 24 | 106 | 0.1+ | 0.8+ |
| 2001 11 17 | 644 | 0.4+ | 0.8+ | 2003 03 08 | 291 | 0.0 | 0.2+ | 2006 09 24 | 106 | 0.6+ | 0.2− |
| 2001 11 17 | 644 | 0.4+ | 0.7+ | 2003 03 08 | 291 | 0.7+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.6+ | 2003 03 08 | 291 | 0.4− | 0.3− | 2006 09 29 | 704 | 0.8+ | 0.2+ |
| 2001 11 21 | 704 | (1.3− | 1.8+) | 2003 03 12 | 644 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.6− |
| 2001 11 21 | 704 | 0.8− | 1.5+ | 2003 03 12 | 644 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.6+ | 0.1+ |
| 2001 11 24 | 704 | (0.8− | 3.0+) | 2003 03 12 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.9+ |
| 2001 11 24 | 704 | (0.6− | 2.8+) | 2004 04 13 | 644 | 0.7+ | 1.1+ | 2006 10 01 | 703 | 0.5− | 0.5+ |
| 2001 11 24 | 704 | (1.4− | 2.0+) | 2004 04 13 | 644 | 0.9+ | 0.7+ | 2006 10 01 | 703 | 0.6− | 0.2− |
| 2001 11 24 | 704 | 0.7− | 1.3+ | 2004 04 13 | 644 | 0.6+ | 0.9+ | 2006 10 01 | 703 | 0.2− | 0.1+ |
| 2001 11 24 | 704 | (1.0− | 2.5+) | 2004 04 13 | 644 | 0.4+ | 0.9+ | 2006 10 01 | 703 | 0.9− | 0.1− |
| 2001 12 10 | 704 | 1.2+ | 0.5− | 2004 04 13 | 644 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.2− | 0.6− |
| 2001 12 10 | 704 | 0.5+ | 1.0− | 2004 04 13 | 644 | (0.9+ | 1.7+) | 2006 10 01 | 704 | 0.4+ | 0.9+ |
| 2001 12 10 | 704 | (0.6+ | 1.5−) | 2004 04 21 | 704 | (2.0+ | 1.2+) | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 2001 12 10 | 704 | (1.0+ | 1.7−) | 2004 04 21 | 704 | 0.8+ | 0.3+ | 2006 10 01 | 704 | 0.7+ | 0.1+ |
| 2001 12 10 | 704 | (0.0 | 2.6−) | 2004 04 21 | 704 | (0.1− | 1.6+) | 2006 10 17 | 106 | 0.5+ | 0.8+ |
| 2001 12 18 | 699 | 0.1+ | 0.9− | 2004 04 21 | 704 | 1.0+ | 0.9+ | 2006 10 17 | 106 | 0.1+ | 0.4− |
| 2001 12 18 | 699 | 0.6− | 0.1− | 2006 08 24 | 644 | 0.3− | 0.1− | 2006 10 17 | 106 | 0.4− | 0.3+ |
| 2001 12 18 | 699 | 0.5+ | 0.2− | 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 10 17 | 106 | 0.4+ | 0.6+ |
| 2001 12 18 | 699 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.5− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2001 12 20 | 644 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2001 12 20 | 644 | 0.4+ | 0.4− | 2006 08 27 | 699 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2001 12 20 | 644 | 0.0 | 0.2− | 2006 08 27 | 699 | 0.1− | 0.1+ | | | | |

**(140911)∗ 2001 VO$_{57}$ = 2004 GG$_{8}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61192)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.34788 | | (2000.0) | | | |
| $n$ | 0.17932348 | $\omega$ | 315.89831 | | +0.98312582 | −0.07684126 |
| $a$ | 3.1144255 | $\Omega$ | 49.26875 | | +0.15339444 | +0.84073312 |
| $e$ | 0.0688236 | $i$ | 12.65462 | | −0.09966830 | +0.53596944 |
| $P$ | 5.50 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2− | 0.0 | 2001 12 17 | 704 | 0.0 | 1.1− | 2006 09 18 | 703 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 0.2+ | 0.4+ | 2001 12 17 | 704 | 0.4− | 0.7− | 2006 09 18 | 703 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 0.3− | 0.4+ | 2001 12 18 | 704 | 0.5+ | 0.4− | 2006 09 18 | 703 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.3+ | 0.6+ | 2001 12 18 | 704 | 0.3+ | 0.8− | 2006 09 26 | 703 | 1.0− | 0.3+ |
| 2001 11 10 | 704 | 1.4− | 0.6− | 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.8− | 0.1− |
| 2001 11 10 | 704 | 0.8− | 0.6+ | 2001 12 18 | 704 | 0.3+ | 1.0− | 2006 09 26 | 703 | 0.7− | 0.0 |
| 2001 11 10 | 704 | 0.7− | 0.1− | 2001 12 18 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.4+ |
| 2001 11 10 | 704 | 0.6− | 0.5+ | 2003 02 01 | 644 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.4+ | 0.2+ | 2003 02 01 | 644 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.1+ |
| 2001 11 10 | 704 | (1.6− | 0.9+) | 2003 02 01 | 644 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 0.2− | 0.3− | 2003 03 08 | 644 | 0.3+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.4+ | 0.3+ | 2003 03 08 | 644 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.2− | 0.4+ | 2003 03 08 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.7+ | 0.1+ | 2004 03 28 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 1.1+ | 0.4− |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2004 03 28 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 0.4− | 0.0 | 2004 03 28 | 704 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 11 19 | 704 | 0.3− | 0.3− | 2004 04 12 | 644 | 0.8+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2001 11 19 | 704 | 0.1− | 0.3+ | 2004 04 12 | 644 | 0.7+ | 0.2− | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.3− | 0.5+ | 2004 04 12 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.3+ | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2001 11 24 | 704 | (0.1+ | 1.8+) | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 703 | (1.9− | 0.1−) |
| 2001 11 24 | 704 | 1.3− | 0.1− | 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2001 11 24 | 704 | (1.6− | 1.0+) | 2004 04 19 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.6+ |
| 2001 11 24 | 704 | 0.0 | 0.5+ | 2004 04 19 | 704 | 1.4− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2001 11 24 | 704 | 0.2− | 0.2+ | 2004 04 19 | 704 | 0.4− | 0.5+ | 2006 11 13 | 703 | 0.7+ | 0.4− |
| 2001 11 24 | 704 | 0.7+ | 0.5− | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.6− |
| 2001 11 24 | 704 | 0.5+ | 0.2+ | 2004 04 20 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.4− |
| 2001 12 10 | 704 | 0.5+ | 0.8+ | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.2+ |
| 2001 12 10 | 704 | 0.6− | 0.1− | 2004 04 22 | 704 | 0.1+ | 1.2+ | 2006 11 23 | G96 | 0.0 | 0.3+ |
| 2001 12 10 | 704 | 1.0+ | 1.2+ | 2004 04 22 | 704 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2001 12 10 | 704 | 0.0 | 1.2+ | 2004 04 22 | 704 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.8+ | 0.6− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2+ |

**(140912)∗ 2001 VA$_{58}$ = 2001 VQ$_{71}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. ?. Asami (d, *MPO* 21170)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.15584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23285017 | $\omega$ | 113.54516 | | +0.70227055 | −0.71122919 | |
| $a$ | 2.6166864 | $\Omega$ | 291.80685 | | +0.64032864 | +0.65016421 | |
| $e$ | 0.2338724 | $i$ | 1.92148 | | +0.31111944 | +0.26728175 | |
| $P$ | 4.23 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 13 | 691 | 0.2+ | 0.3+ | 2001 11 16 | 644 | 0.1+ | 0.2− | 2005 09 09 | 704 | 0.1+ | 0.1+ |
| 1994 02 13 | 691 | 0.2− | 0.1− | 2001 11 16 | 644 | 0.1− | 0.1− | 2005 09 22 | 644 | 0.1+ | 0.0 |
| 1994 02 13 | 691 | 0.0 | 0.3− | 2001 11 19 | 704 | 0.6+ | 0.3− | 2005 09 22 | 644 | 0.1+ | 0.0 |
| 2001 08 22 | 704 | 0.7− | 0.5+ | 2001 11 19 | 704 | 0.7+ | 0.1− | 2005 09 22 | 644 | 0.2+ | 0.0 |
| 2001 08 22 | 704 | 0.3+ | 0.6+ | 2001 11 19 | 704 | 0.9+ | 0.1− | 2005 09 23 | 699 | 0.3− | 0.3+ |
| 2001 08 22 | 704 | (1.4− | 2.0+) | 2001 11 19 | 704 | 0.9+ | 0.2+ | 2005 09 23 | 699 | 0.1+ | 0.7+ |
| 2001 08 22 | 704 | 1.0− | 0.9+ | 2001 11 19 | 704 | 0.8+ | 0.1+ | 2005 09 23 | 703 | 0.4− | 0.5− |
| 2001 09 20 | 704 | 0.2+ | 0.9− | 2001 11 20 | 704 | 0.1− | 0.5− | 2005 09 23 | 703 | 1.3− | 1.3− |
| 2001 09 20 | 704 | 1.0+ | 0.3− | 2001 11 20 | 704 | 0.3− | 0.8− | 2005 09 23 | 703 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.0 | 2001 11 20 | 704 | 0.0 | 0.3+ | 2005 09 23 | 703 | 0.1+ | 0.7− |
| 2001 09 20 | 704 | 1.1+ | 0.3+ | 2001 11 20 | 704 | 0.1+ | 0.0 | 2005 09 23 | 699 | 0.5− | 0.4+ |
| 2001 09 21 | 699 | 0.2− | 0.3− | 2001 11 20 | 704 | 0.2+ | 0.0 | 2005 09 23 | 699 | 0.0 | 0.5+ |
| 2001 09 21 | 699 | 0.9− | 0.4+ | 2001 11 20 | 300 | 0.6− | 0.2− | 2005 09 29 | 699 | 0.4− | 0.2+ |
| 2001 09 21 | 699 | 0.6− | 0.2− | 2001 11 20 | 300 | 0.4+ | 0.0 | 2005 09 29 | 644 | 0.4+ | 0.5+ |
| 2001 09 21 | 699 | 0.8− | 0.7+ | 2001 11 20 | 300 | 0.8+ | 0.2+ | 2005 09 29 | 699 | 0.2− | 0.2+ |
| 2001 10 12 | 699 | 0.4− | 0.1− | 2001 11 24 | 704 | 0.3+ | 0.8− | 2005 09 29 | 644 | 0.1+ | 0.3+ |
| 2001 10 12 | 699 | 0.6− | 0.3+ | 2001 11 24 | 704 | 0.8− | 0.6− | 2005 09 29 | 644 | 0.1− | 0.1+ |
| 2001 10 12 | 699 | 0.2− | 0.6+ | 2001 11 24 | 704 | 0.3− | 0.5− | 2005 09 29 | 699 | 0.4+ | 0.2− |
| 2001 10 12 | 699 | 0.5− | 0.1+ | 2001 11 24 | 704 | 0.4− | 0.5− | 2005 09 29 | 699 | 0.4− | 0.3− |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2001 11 24 | 704 | 1.2− | 0.4− | 2005 10 01 | 703 | 0.8− | 0.9− |
| 2001 10 14 | 704 | 0.4+ | 0.4− | 2002 01 06 | 644 | 0.1− | 0.0 | 2005 10 01 | 703 | 0.6− | 0.9− |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2002 01 06 | 644 | 0.1+ | 0.2− | 2005 10 01 | 703 | (0.4− | 1.6−) |
| 2001 10 14 | 704 | 0.2+ | 0.3− | 2002 01 06 | 644 | 0.3+ | 0.2+ | 2005 10 01 | 703 | 1.4− | 0.6− |
| 2001 10 14 | 704 | 0.3− | 0.2− | 2002 01 09 | 704 | 0.3− | 0.8+ | 2005 10 02 | 704 | (2.0+ | 0.7−) |
| 2001 10 19 | 644 | 0.1+ | 0.1− | 2002 01 09 | 704 | (0.0 | 2.0+) | 2005 10 02 | 704 | 0.4+ | 0.4− |
| 2001 10 19 | 644 | 0.2+ | 0.1+ | 2002 01 09 | 704 | 0.9− | 0.0 | 2005 10 02 | 704 | 0.5+ | 0.5+ |
| 2001 10 19 | 644 | 0.1+ | 0.0 | 2002 01 09 | 704 | 1.1− | 0.8+ | 2005 10 07 | 704 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | (0.5− | 1.9+) | 2002 01 21 | 704 | 0.7− | 0.2− | 2005 10 07 | 704 | 0.4+ | 0.8+ |
| 2001 10 21 | 704 | (0.5− | 2.0+) | 2002 01 21 | 704 | 0.4− | 0.1− | 2005 10 07 | 704 | 0.1− | 0.4− |
| 2001 10 21 | 704 | (0.5− | 2.2+) | 2002 01 21 | 704 | 0.0 | 0.3+ | 2005 10 27 | 644 | 0.1− | 0.1− |
| 2001 10 21 | 704 | (0.4− | 1.9+) | 2003 04 01 | 644 | (0.6+ | 1.6+) | 2005 10 27 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | (0.2− | 2.2+) | 2003 04 01 | 644 | 0.3+ | 1.4+ | 2005 10 27 | 644 | 0.0 | 0.4− |
| 2001 10 26 | 644 | 0.4+ | 0.1+ | 2003 04 01 | 644 | 0.5+ | 1.3+ | 2005 11 18 | 699 | 1.0+ | 1.3+ |
| 2001 10 26 | 644 | 0.4+ | 0.2+ | 2005 08 27 | 644 | 0.1− | 0.0 | 2005 11 18 | 699 | 0.1+ | 1.3+ |
| 2001 10 26 | 644 | 0.3+ | 0.1+ | 2005 08 27 | 644 | 0.1− | 0.1− | 2005 11 18 | 699 | 0.3+ | 0.0 |
| 2001 11 10 | 704 | 0.6− | 0.4− | 2005 08 27 | 644 | 0.1+ | 0.0 | 2005 11 18 | 699 | 0.3+ | 0.3− |
| 2001 11 10 | 704 | 0.4− | 0.4− | 2005 09 02 | 608 | 0.0 | 0.5− | 2005 11 28 | 703 | 0.8− | 0.3− |
| 2001 11 10 | 644 | 0.1+ | 0.2+ | 2005 09 02 | 608 | 0.2+ | 0.8− | 2005 11 28 | 703 | 0.0 | 0.8− |
| 2001 11 10 | 704 | 0.3− | 0.1+ | 2005 09 02 | 608 | 0.2+ | 0.3− | 2005 11 28 | 703 | 0.3− | 1.1− |
| 2001 11 10 | 644 | 0.0 | 0.0 | 2005 09 05 | 565 | (1.0− | 1.9+) | 2005 11 28 | 703 | (1.5− | 1.9−) |
| 2001 11 10 | 704 | 0.2− | 0.5+ | 2005 09 05 | 565 | (0.9− | 1.9+) | 2005 11 30 | G96 | 0.3+ | 0.1− |
| 2001 11 10 | 644 | 0.2+ | 0.6+ | 2005 09 05 | 565 | (1.4− | 1.6+) | 2005 11 30 | G96 | 0.3+ | 0.1− |
| 2001 11 10 | 300 | 0.9+ | 0.0 | 2005 09 06 | 699 | 0.4+ | 0.0 | 2005 11 30 | G96 | 0.1− | 0.4− |
| 2001 11 10 | 300 | 0.0 | 0.0 | 2005 09 06 | 699 | 0.1− | 0.6+ | 2005 11 30 | G96 | 0.1+ | 0.1− |
| 2001 11 10 | 300 | 0.1+ | 0.8− | 2005 09 06 | 699 | 0.2− | 0.7+ | 2005 12 04 | 704 | 0.5+ | 0.1− |
| 2001 11 10 | 300 | 0.9+ | 0.2− | 2005 09 06 | 699 | 0.4+ | 0.2+ | 2005 12 04 | 704 | 0.4+ | 1.3− |
| 2001 11 10 | 300 | (1.7+ | 1.0−) | 2005 09 08 | 704 | 0.1+ | 0.9+ | 2005 12 04 | 704 | 0.5+ | 1.2− |
| 2001 11 12 | 704 | 0.1+ | 0.4+ | 2005 09 08 | 704 | 0.1− | 0.8+ | 2005 12 04 | 704 | 0.0 | 0.4− |
| 2001 11 12 | 704 | 0.1− | 0.2+ | 2005 09 08 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2001 11 12 | 704 | 0.2− | 1.0+ | 2005 09 08 | 704 | 0.4− | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2001 11 12 | 704 | 0.4− | 0.8+ | 2005 09 08 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 691 | (0.6+ | 1.6+) |
| 2001 11 12 | 704 | 0.3− | 1.1+ | 2005 09 09 | 704 | 0.0 | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.5+ |
| 2001 11 14 | 300 | 0.1− | 0.1+ | 2005 09 09 | 704 | 0.1− | 0.7+ | 2006 12 01 | G96 | 0.3+ | 0.3+ |
| 2001 11 14 | 300 | 0.1+ | 0.4+ | 2005 09 09 | 704 | 0.2+ | 0.7+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2001 11 16 | 644 | 0.1+ | 0.1+ | 2005 09 09 | 704 | 0.2+ | 0.5+ | 2006 12 01 | G96 | 0.1+ | 0.0 |

**(140913)∗ 2001 VT$_{58}$ = 1991 XE$_7$ = 2000 OO$_{28}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20643, *MPO* 94268)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.30418 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19107029 | $\omega$ | 64.14973 | | +0.81898784 | +0.55117964 | |
| $a$ | 2.9854326 | $\Omega$ | 262.01401 | | −0.56705314 | +0.73487112 | |
| $e$ | 0.0999372 | $i$ | 9.27216 | | −0.08780466 | +0.39517773 | |
| $P$ | 5.16 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 13 | 691 | 0.7− | 1.1+ | 2001 11 17 | 704 | 0.2− | 0.2+ | 2003 01 08 | 704 | 1.1+ | 0.1− |
| 1991 12 13 | 691 | 0.6+ | 0.5− | 2001 11 17 | 704 | 0.1+ | 0.4+ | 2003 01 08 | 704 | 1.0− | 1.4+ |
| 2000 07 30 | 704 | 0.3+ | 1.0+ | 2001 11 17 | 704 | 0.2+ | 0.3+ | 2003 01 27 | 644 | 0.1+ | 0.1− |
| 2000 07 30 | 704 | 0.7− | 1.3+ | 2001 11 18 | 704 | 0.4+ | 0.0 | 2003 01 27 | 644 | 0.4+ | 0.2− |
| 2000 07 30 | 704 | 0.1− | 0.4+ | 2001 11 18 | 704 | 0.1+ | 0.4− | 2003 01 27 | 644 | 0.5+ | 0.1− |
| 2000 07 30 | 704 | 0.3+ | 0.9+ | 2001 11 18 | 704 | (1.3− | 1.8+) | 2003 01 30 | 699 | 0.6− | 0.2− |
| 2000 07 30 | 704 | 0.6+ | 1.0+ | 2001 11 18 | 704 | 0.1+ | 0.4− | 2003 01 30 | 699 | 0.2− | 0.6+ |
| 2000 08 02 | 704 | 1.4− | 0.6+ | 2001 11 18 | 704 | 0.4+ | 0.2+ | 2003 01 30 | 699 | 0.2+ | 0.3+ |
| 2000 08 02 | 704 | 0.5− | 0.9− | 2001 11 18 | 704 | 0.2+ | 0.2− | 2003 01 30 | 699 | 0.5− | 0.8+ |
| 2000 08 02 | 704 | 0.0 | 0.2− | 2001 11 18 | 704 | 0.4+ | 0.4+ | 2003 02 01 | 608 | 0.6− | 0.3− |
| 2000 08 02 | 704 | 0.4+ | 0.7− | 2001 11 18 | 704 | 0.2+ | 0.5− | 2003 02 01 | 608 | 0.2− | 0.7− |
| 2000 08 02 | 704 | 0.6− | 0.2+ | 2001 11 18 | 704 | 0.2+ | 0.5+ | 2003 02 01 | 608 | 0.2− | 0.6− |
| 2001 10 12 | 699 | 0.4+ | 0.9− | 2001 11 18 | 704 | 0.9+ | 0.6− | 2004 03 26 | 704 | (0.2− | 1.6+) |
| 2001 10 12 | 699 | 0.8− | 1.0− | 2001 11 21 | 704 | 0.4+ | 0.7− | 2004 03 26 | 704 | 0.5+ | 0.5+ |
| 2001 10 12 | 699 | 1.1− | 1.0+ | 2001 11 21 | 704 | 1.0+ | 0.0 | 2004 03 26 | 704 | 1.3+ | 0.3+ |
| 2001 10 12 | 699 | 0.7+ | 0.5+ | 2001 11 21 | 704 | 1.1− | 0.0 | 2004 03 26 | 704 | 0.1− | 0.7+ |
| 2001 10 14 | 704 | 0.4+ | 0.3+ | 2001 11 21 | 704 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.6− |
| 2001 10 14 | 704 | 0.0 | 0.4− | 2001 11 21 | 704 | 1.0− | 0.1− | 2006 10 19 | 703 | 0.5− | 0.0 |
| 2001 10 14 | 704 | 0.3− | 0.2− | 2001 11 24 | 704 | (0.8− | 2.8+) | 2006 10 19 | 703 | 0.3− | 0.3− |
| 2001 10 14 | 704 | 0.6+ | 0.3− | 2001 11 24 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | 1.1− | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.5− | 2001 11 24 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 704 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.4− | 0.2− | 2001 11 24 | 704 | 0.4− | 0.2+ | 2006 10 21 | 704 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.3− | 0.2+ | 2001 11 24 | 704 | (0.6− | 1.7+) | 2006 10 21 | 704 | 0.6− | 0.6+ |
| 2001 10 21 | 704 | 0.3+ | 0.1− | 2001 12 10 | 704 | 0.8− | 0.2+ | 2006 10 21 | 704 | 0.4− | 0.4− |
| 2001 10 21 | 704 | 0.6− | 0.3− | 2001 12 10 | 704 | 1.0− | 0.3− | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.1+ | 0.5− | 2001 12 10 | 704 | 1.1− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2001 12 10 | 704 | 0.6− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2001 10 21 | 704 | 0.1− | 0.3+ | 2001 12 10 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 1.2+ | 0.5− |
| 2001 10 21 | 704 | 0.2− | 0.4− | 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.2+ | 0.4+ | 2001 12 17 | 704 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.3− | 1.1+ |
| 2001 10 21 | 704 | 1.3− | 0.5− | 2001 12 17 | 704 | 0.9+ | 0.6− | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2001 12 17 | 704 | 0.2− | 0.6− | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.5+ | 0.1− | 2001 12 20 | 644 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.6− | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 0.9+ | 2001 12 20 | 644 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2001 12 20 | 644 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2001 12 23 | 691 | 0.4+ | 0.1− | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 11 10 | 704 | 0.3− | 0.2− | 2001 12 23 | 691 | 0.4+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2001 11 10 | 704 | 0.2+ | 0.3− | 2001 12 23 | 691 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2001 11 10 | 704 | 0.4− | 0.2− | 2002 12 05 | 291 | 0.0 | 0.5− | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2001 11 12 | 704 | 0.1+ | 0.1+ | 2002 12 05 | 291 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.3+ | 0.4− |
| 2001 11 12 | 704 | 0.4+ | 0.4− | 2002 12 05 | 291 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2003 01 07 | 704 | 0.1− | 0.7+ | 2006 11 29 | 704 | 1.1+ | 0.7+ |
| 2001 11 12 | 704 | 0.0 | 0.6+ | 2003 01 07 | 704 | 0.4+ | 0.8+ | 2006 11 29 | 704 | 0.7+ | 0.4+ |
| 2001 11 12 | 704 | 0.5− | 0.3+ | 2003 01 07 | 704 | 0.6+ | 0.4+ | 2006 11 29 | 704 | 0.7+ | 0.5+ |
| 2001 11 17 | 704 | 0.3+ | 0.4+ | 2003 01 08 | 704 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.5+ |
| 2001 11 17 | 704 | 0.3+ | 0.2+ | 2003 01 08 | 704 | 0.3− | 0.7− | 2006 11 29 | 704 | 1.3+ | 0.0 |

**(140914)∗ 2001 VH$_{60}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.08513 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18940377 | $\omega$ | 27.83697 | | +0.42512666 | −0.89670827 | |
| $a$ | 3.0029192 | $\Omega$ | 37.37728 | | +0.78817870 | +0.29982012 | |
| $e$ | 0.0321842 | $i$ | 11.71055 | | +0.44501872 | +0.32561046 | |
| $P$ | 5.20 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 691 | 0.2− | 0.1+ | 2004 04 13 | 644 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 22 | 691 | 0.1− | 0.0 | 2004 04 13 | 644 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.6+ | | |
| 2001 09 22 | 691 | 0.0 | 0.1+ | 2004 04 13 | 644 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2001 10 13 | 704 | 0.0 | 0.4+ | 2004 04 21 | 704 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2001 10 13 | 704 | 0.2− | 1.3+ | 2004 04 21 | 704 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.1+ | | |
| 2001 10 13 | 704 | 0.0 | 0.2− | 2004 04 21 | 704 | 0.9+ | 1.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2001 11 10 | 704 | 0.3− | 0.2− | 2004 04 21 | 704 | 1.4+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.3+ | | |
| 2001 11 10 | 704 | 0.4− | 0.2− | 2004 04 22 | 691 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.5− | 0.6+ | | |
| 2001 11 10 | 704 | 0.5− | 0.2+ | 2004 04 22 | 691 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 10 | 704 | 0.2+ | 0.0 | 2004 04 22 | 691 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.4− | 0.2+ | | |
| 2001 11 10 | 644 | 0.4+ | 0.4+ | 2004 05 08 | 644 | 0.5+ | 1.1+ | 2006 11 01 | 691 | 0.4− | 0.1+ | | |
| 2001 11 10 | 644 | 0.8+ | 0.2+ | 2004 05 08 | 644 | 0.8+ | 0.9+ | 2006 11 11 | 703 | 0.1+ | 0.2+ | | |
| 2001 11 10 | 644 | 0.4+ | 0.3+ | 2004 05 08 | 644 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.9− | 0.5+ | | |
| 2001 11 12 | 704 | 0.7− | 0.5− | 2004 05 10 | 644 | (1.0+ | 2.9+) | 2006 11 11 | 703 | 0.9− | 0.6+ | | |
| 2001 11 12 | 704 | 0.6− | 0.1+ | 2004 05 10 | 608 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2001 11 12 | 704 | 0.5− | 0.1− | 2004 05 10 | 644 | (2.0+ | 2.8+) | 2006 11 11 | 703 | 0.9− | 0.6− | | |
| 2001 11 12 | 704 | 0.7+ | 0.8− | 2004 05 10 | 608 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2001 11 19 | 704 | 0.3− | 0.6− | 2004 05 10 | 644 | (1.0+ | 2.7+) | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2001 11 19 | 704 | 0.1− | 0.8− | 2004 05 10 | 608 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2001 11 19 | 704 | 0.3+ | 0.4− | 2004 05 15 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2001 11 19 | 704 | 0.3− | 0.0 | 2004 05 15 | 704 | (0.8+ | 1.5+) | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2001 11 24 | 704 | 0.5+ | 0.1+ | 2004 05 15 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1− | | |
| 2001 11 24 | 704 | 0.2+ | 0.4+ | 2004 05 15 | 704 | (1.5+ | 0.0 ) | 2006 11 17 | 691 | 0.1+ | 0.2− | | |
| 2001 11 24 | 704 | 0.6− | 0.0 | 2004 05 15 | 704 | 0.9+ | 0.3− | 2006 11 17 | 691 | 0.1− | 0.1− | | |
| 2001 11 24 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 1.1+ | 1.2+ | 2006 11 17 | 691 | 0.1− | 0.2− | | |
| 2001 11 24 | 704 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.6− | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.3− | | |
| 2001 12 10 | 704 | 0.9+ | 0.6− | 2006 09 26 | 704 | 0.8+ | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.0 | | |
| 2001 12 10 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | (1.9+ | 1.0+) | 2006 11 17 | 703 | 0.9+ | 0.2− | | |
| 2001 12 10 | 704 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.7− | 0.6+ | 2006 11 17 | 703 | 0.5− | 0.6− | | |
| 2001 12 10 | 704 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.9− | | |
| 2001 12 10 | 704 | 0.4− | 0.3− | 2006 09 30 | 703 | 1.0− | 1.2+ | 2006 11 18 | 704 | 0.1+ | 0.6+ | | |
| 2001 12 17 | 704 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.0 | | |
| 2001 12 17 | 704 | 0.1+ | 1.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 1.4+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.1− | | |
| 2002 01 06 | 644 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.9− | | |
| 2002 01 06 | 644 | 0.5− | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3− | 0.4− | | |
| 2002 01 06 | 644 | 0.1+ | 0.9+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.4− | | |
| 2003 01 28 | 704 | 0.4− | 1.3+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.1− | | |
| 2003 01 28 | 704 | 0.4− | 0.9+ | 2006 10 19 | 644 | 0.3− | 0.2− | 2006 11 20 | 691 | 0.5+ | 0.0 | | |
| 2003 01 28 | 704 | 1.2+ | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.2− | | |
| 2003 01 29 | 644 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 2003 01 29 | 644 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2003 01 29 | 644 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2003 02 01 | 644 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 26 | 704 | 1.3− | 0.5+ | | |
| 2003 02 01 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 26 | 704 | 0.0 | 0.1+ | | |
| 2003 02 01 | 644 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 26 | 704 | 0.3− | 1.0+ | | |
| 2003 02 02 | 704 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 26 | 958 | 0.7+ | 0.5− | | |
| 2003 02 02 | 704 | 0.7+ | 1.3− | 2006 10 21 | 703 | 1.3+ | 0.4+ | 2006 11 26 | 958 | 0.5+ | 1.2− | | |
| 2003 02 02 | 704 | 0.7+ | 1.2− | 2006 10 21 | 703 | 0.6− | 0.1+ | 2006 11 26 | 958 | 0.9+ | 0.6+ | | |
| 2003 02 19 | 644 | 0.4− | 0.7+ | 2006 10 21 | 703 | 0.6+ | 0.9+ | 2006 11 27 | 703 | 1.4− | 0.7+ | | |
| 2003 02 19 | 644 | 0.2− | 0.7+ | 2006 10 21 | 703 | 0.3+ | 0.9+ | 2006 11 27 | 703 | 0.2− | 0.7− | | |
| 2003 02 19 | 644 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.5− | 0.0 | 2006 11 27 | 703 | 1.0− | 0.2+ | | |
| 2003 03 08 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 27 | 703 | 1.3− | 0.6− | | |
| 2003 03 08 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | | | | | |
| 2003 03 08 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | | | | | | |

**(140915)∗ 2001 VY$_{61}$ = 2000 QY$_{226}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 27287)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.03106 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17614519 | $\omega$ | 51.37105 | | +0.70532499 | +0.69804006 | |
| $a$ | 3.1517773 | $\Omega$ | 263.97306 | | −0.68286314 | +0.62226526 | |
| $e$ | 0.1065152 | $i$ | 7.13483 | | −0.19030130 | +0.35429653 | |
| $P$ | 5.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 1.0− | 0.3+ | 2001 12 10 | 704 | 0.2+ | 1.2− | 2006 09 17 | 703 | 0.1+ | 0.3+ | | |
| 2000 08 31 | 704 | 0.7+ | 0.2+ | 2001 12 10 | 704 | 0.3+ | 0.8− | 2006 09 24 | 106 | 0.6− | 0.6− | | |
| 2000 08 31 | 704 | 0.3+ | 0.0 | 2001 12 10 | 704 | 0.5+ | 0.1− | 2006 09 24 | 106 | 0.3+ | 0.5− | | |
| 2000 09 02 | 691 | 0.1− | 0.0 | 2001 12 10 | 704 | 1.0+ | 0.8+ | 2006 09 24 | 106 | 0.2+ | 0.1− | | |
| 2000 09 02 | 691 | 0.2− | 0.0 | 2001 12 15 | 704 | 0.3+ | 0.1+ | 2006 09 24 | 106 | 0.0 | 0.2+ | | |
| 2000 09 02 | 691 | 0.2+ | 0.0 | 2001 12 15 | 704 | 0.6− | 0.6− | 2006 09 27 | 703 | 0.2− | 0.6+ | | |
| 2001 10 14 | 704 | 0.5+ | 0.4+ | 2001 12 15 | 704 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.4− | | |
| 2001 10 14 | 704 | 1.0− | 0.1+ | 2001 12 15 | 704 | 0.4− | 0.5+ | 2006 09 27 | 703 | 0.8+ | 0.3− | | |
| 2001 10 14 | 704 | 0.3+ | 0.3+ | 2001 12 15 | 704 | 0.9− | 0.1− | 2006 09 27 | 703 | 0.7− | 0.5− | | |
| 2001 10 14 | 704 | 0.7− | 0.8+ | 2001 12 18 | 704 | 0.8− | 1.0− | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2001 10 21 | 704 | 1.3− | 0.0 | 2001 12 18 | 704 | 1.4− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.6− | 1.1− | 2001 12 18 | 704 | 0.3+ | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2001 10 21 | 704 | (1.6− | 0.6+) | 2001 12 18 | 704 | 0.3− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.3+ | | |
| 2001 10 21 | 704 | 0.3+ | 0.4− | 2001 12 19 | 704 | 0.6− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.0 | | |
| 2001 10 26 | 644 | 0.4− | 0.2+ | 2001 12 19 | 704 | 1.0− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | |
| 2001 10 26 | 644 | 0.2+ | 0.0 | 2001 12 19 | 704 | (1.6− | 0.5+) | 2006 10 21 | 691 | 0.5− | 0.3− | | |
| 2001 10 26 | 644 | 0.2− | 0.1− | 2001 12 19 | 704 | 0.9− | 0.6+ | 2006 10 21 | 691 | 0.3+ | 0.4+ | | |
| 2001 11 10 | 704 | 0.5+ | 0.8+ | 2001 12 19 | 704 | (1.6− | 0.5+) | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2001 11 10 | 704 | 0.7+ | 0.2+ | 2001 12 20 | 644 | 0.1− | 0.2− | 2006 10 21 | 246 | 0.4− | 0.7+ | | |
| 2001 11 10 | 704 | 0.5+ | 0.5− | 2001 12 20 | 644 | 0.2− | 0.0 | 2006 10 21 | 246 | 0.3+ | 0.5− | | |
| 2001 11 10 | 644 | 0.1+ | 0.5− | 2001 12 20 | 644 | 0.1− | 0.0 | 2006 10 21 | 246 | 1.1+ | 1.2+ | | |
| 2001 11 10 | 644 | 0.2+ | 0.4− | 2004 03 28 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 246 | 0.9− | 0.2+ | | |
| 2001 11 10 | 644 | 0.2− | 0.5+ | 2004 03 28 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 246 | 0.2+ | 0.3+ | | |
| 2001 11 12 | 704 | 0.3+ | 0.1− | 2004 03 28 | 691 | 0.2+ | 0.7+ | 2006 10 22 | 715 | 0.0 | 0.3− | | |
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2006 08 18 | 291 | 0.4− | 0.3− | 2006 10 22 | 291 | 0.3+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.5+ | 0.1− | 2006 08 18 | 291 | 0.6− | 0.2− | 2006 10 22 | 291 | 0.3+ | 0.1+ | | |
| 2001 11 12 | 704 | 1.0+ | 0.3+ | 2006 08 18 | 291 | 0.9− | 0.2− | 2006 10 22 | 715 | 0.2+ | 0.1− | | |
| 2001 11 12 | 704 | 0.9+ | 0.1+ | 2006 08 29 | 699 | 0.3− | 1.1+ | 2006 10 22 | 291 | 0.1+ | 0.0 | | |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2006 08 29 | 699 | 1.3+ | 0.2− | 2006 10 22 | 715 | 0.2+ | 0.2− | | |
| 2001 11 21 | 704 | 0.5+ | 0.5− | 2006 08 29 | 699 | 0.1+ | 0.6+ | 2006 10 23 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 21 | 704 | (3.3− | 1.8+) | 2006 08 29 | 699 | 0.6+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.0 | | |
| 2001 11 21 | 704 | 0.8+ | 0.2+ | 2006 09 15 | 704 | 0.3+ | 1.1+ | 2006 10 23 | 691 | 0.0 | 0.0 | | |
| 2001 11 21 | 704 | (1.2− | 1.6−) | 2006 09 15 | 704 | 0.1+ | 1.3+ | 2006 10 23 | 703 | (1.5+ | 0.2+) | | |
| 2001 11 24 | 704 | 0.3− | 0.6+ | 2006 09 15 | 704 | 0.6+ | 0.4+ | 2006 10 23 | 703 | (0.0 | 1.9−) | | |
| 2001 11 24 | 704 | (0.1+ | 2.0+) | 2006 09 15 | 704 | 1.0− | 0.1+ | 2006 10 23 | 703 | 0.0 | 0.8− | | |
| 2001 11 24 | 704 | 0.5+ | 0.1− | 2006 09 15 | 704 | 0.4+ | 0.7− | 2006 10 23 | 703 | 0.5− | 0.2+ | | |
| 2001 11 24 | 704 | (1.4− | 1.7+) | 2006 09 17 | 703 | 0.9+ | 0.8+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2001 11 24 | 704 | (1.8− | 1.1+) | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2001 12 10 | 704 | 0.4+ | 0.4− | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |

**(140916)∗ 2001 VN$_{62}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.93816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17505176 | $\omega$ | 332.10237 | | +0.98732960 | −0.12825672 | |
| $a$ | 3.1648884 | $\Omega$ | 35.65156 | | +0.15813338 | +0.84421506 | |
| $e$ | 0.1179298 | $i$ | 9.22486 | | −0.01319463 | +0.52043361 | |
| $P$ | 5.63 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.3− | 0.5− | 2001 11 24 | 704 | 0.8− | 1.1− | 2004 03 19 | 704 | 0.2− | 0.2+ | | |
| 2001 10 13 | 704 | 0.3+ | 0.8+ | 2001 11 24 | 704 | 0.1− | 0.1− | 2004 03 19 | 704 | 1.0+ | 0.2− | | |
| 2001 10 13 | 704 | 0.7+ | 0.8+ | 2001 12 10 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.6+ | | |
| 2001 10 13 | 704 | 0.4− | 0.1+ | 2001 12 10 | 704 | 0.1− | 0.8+ | 2004 03 28 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2001 12 10 | 704 | 0.1+ | 0.7+ | 2004 03 28 | 704 | 0.4− | 0.9+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.2− | 2001 12 10 | 704 | 0.7+ | 0.6+ | 2004 03 28 | 704 | 0.7+ | 0.5+ | | |
| 2001 10 21 | 704 | 0.7− | 0.2− | 2001 12 11 | 704 | 0.6− | 1.4− | 2004 03 28 | 704 | 0.5+ | 0.6+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1− | 0.9− | 2001 12 11 | 704 | 0.3+ | 0.3− | 2004 03 28 | 704 | 0.1− | 1.0+ | | |
| 2001 10 21 | 704 | 0.2− | 0.3− | 2001 12 11 | 704 | 0.5− | 0.6− | 2004 04 19 | 704 | 0.2+ | 0.9+ | | |
| 2001 10 25 | 704 | 0.2− | 1.0− | 2001 12 20 | 644 | 0.1+ | 0.6+ | 2004 04 19 | 704 | (1.8+ | 1.2+) | | |
| 2001 10 25 | 704 | 0.3− | 0.6+ | 2001 12 20 | 644 | 0.2− | 0.1+ | 2004 04 19 | 704 | (0.2+ | 1.6+) | | |
| 2001 10 25 | 704 | 0.6− | 0.3+ | 2001 12 20 | 644 | 0.1− | 0.4+ | 2004 04 19 | 704 | (0.6+ | 1.6+) | | |
| 2001 10 25 | 704 | 0.5+ | 0.0 | 2003 01 10 | 704 | 1.1+ | 0.3+ | 2006 08 30 | 699 | 0.3− | 0.3+ | | |
| 2001 10 25 | 704 | 1.3− | 1.0+ | 2003 01 10 | 704 | 0.6+ | 0.2+ | 2006 08 30 | 699 | 0.3+ | 0.7+ | | |
| 2001 11 10 | 704 | 0.4+ | 0.6+ | 2003 01 10 | 704 | 0.6+ | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.6+ | | |
| 2001 11 10 | 704 | 0.2+ | 0.1− | 2003 01 10 | 704 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.7− | 0.3+ | | |
| 2001 11 10 | 704 | 0.1− | 0.7+ | 2003 01 24 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 1.3− | 0.6− | | |
| 2001 11 10 | 704 | 0.2− | 0.8− | 2003 01 24 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | (1.8− | 0.8−) | | |
| 2001 11 10 | 644 | 0.1+ | 0.1+ | 2003 01 24 | 644 | 0.0 | 0.6+ | 2006 09 14 | 703 | (2.3− | 1.0−) | | |
| 2001 11 10 | 644 | 0.3+ | 0.3+ | 2003 01 29 | 644 | 0.7+ | 0.3+ | 2006 09 20 | 703 | 0.8+ | 0.8+ | | |
| 2001 11 10 | 644 | 0.4+ | 0.3+ | 2003 01 29 | 644 | 0.7+ | 0.5+ | 2006 09 20 | 703 | 0.2− | 0.8+ | | |
| 2001 11 12 | 704 | 0.4− | 0.4− | 2003 01 29 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.4+ | 0.7+ | | |
| 2001 11 12 | 704 | 0.1− | 0.5− | 2003 02 01 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.1+ | 0.6+ | | |
| 2001 11 12 | 704 | 0.5− | 0.6− | 2003 02 01 | 644 | 0.4+ | 0.2+ | 2006 09 21 | 699 | 0.3− | 0.1+ | | |
| 2001 11 12 | 704 | 0.1− | 0.1− | 2003 02 01 | 644 | 0.2− | 0.5+ | 2006 09 21 | 699 | 0.1+ | 0.9+ | | |
| 2001 11 12 | 704 | 0.4− | 0.1+ | 2003 02 01 | 644 | 0.3+ | 0.3+ | 2006 09 21 | 699 | 0.7+ | 0.1+ | | |
| 2001 11 17 | 704 | 0.6+ | 0.4+ | 2003 02 01 | 644 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 1.0− | 0.5+ | | |
| 2001 11 17 | 704 | 0.8+ | 0.5− | 2003 02 01 | 644 | 0.4+ | 0.3+ | 2006 10 02 | 703 | 0.0 | 0.3+ | | |
| 2001 11 17 | 704 | 0.3+ | 0.2− | 2003 02 08 | 699 | (1.7+ | 0.4−) | 2006 10 02 | 703 | 0.7− | 0.4+ | | |
| 2001 11 17 | 704 | 0.6+ | 0.2− | 2003 02 08 | 699 | 0.6+ | 0.2+ | 2006 10 02 | 703 | 0.3− | 0.0 | | |
| 2001 11 17 | 704 | 0.8+ | 1.0+ | 2003 02 08 | 699 | 0.3− | 0.5+ | 2006 10 02 | 703 | 1.1− | 0.5+ | | |
| 2001 11 19 | 704 | 0.3+ | 0.3− | 2003 02 08 | 699 | 1.4+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.3+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.6− | 2003 02 26 | 704 | 0.6− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2001 11 19 | 704 | 0.3+ | 0.3+ | 2003 02 26 | 704 | 1.0− | 1.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.0 | 2003 02 26 | 704 | 0.7+ | 0.5+ | 2006 11 27 | G96 | 0.4+ | 0.2− | | |
| 2001 11 19 | 704 | 0.3+ | 0.4+ | 2003 02 26 | 704 | 0.5+ | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.2+ | | |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2003 04 26 | 645 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.4− | | |
| 2001 11 24 | 704 | 0.4− | 0.7− | 2003 04 26 | 645 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.3− | | |
| 2001 11 24 | 704 | 0.3− | 0.8− | 2004 03 19 | 704 | 0.1− | 0.7− | | | | | | |

**(140917)∗ 2001 VQ$_{62}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.04559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18215637 | $\omega$ | 217.87900 | | −0.22212584 | −0.96096122 | |
| $a$ | 3.0820509 | $\Omega$ | 245.49956 | | +0.93298984 | −0.16034752 | |
| $e$ | 0.1371381 | $i$ | 10.44486 | | +0.28317850 | −0.22548217 | |
| $P$ | 5.41 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 691 | 0.2− | 0.5+ | 2001 12 10 | 704 | 0.8+ | 0.8+ | 2004 06 09 | E12 | (1.4+ | 1.8+) | | |
| 2000 10 07 | 691 | 0.3− | 0.6+ | 2001 12 15 | 704 | 0.2− | 0.2+ | 2006 08 29 | 699 | 0.5− | 0.6+ | | |
| 2000 10 07 | 691 | 0.1− | 0.5+ | 2001 12 15 | 704 | 0.3− | 0.2− | 2006 08 29 | 699 | 0.0 | 0.4− | | |
| 2001 09 19 | 699 | 0.8− | 0.3+ | 2001 12 15 | 704 | 0.1+ | 0.0 | 2006 08 29 | 699 | 0.1− | 0.6− | | |
| 2001 09 19 | 699 | 0.2− | 0.4− | 2001 12 15 | 704 | 0.4− | 0.2− | 2006 08 29 | 699 | 0.4− | 1.0+ | | |
| 2001 09 19 | 699 | 0.1+ | 0.9+ | 2001 12 15 | 704 | 0.3− | 0.3− | 2006 09 16 | 703 | 1.0+ | 0.1+ | | |
| 2001 09 19 | 699 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 0.2+ | 1.1+ | 2006 09 16 | 703 | 0.0 | 0.5+ | | |
| 2001 10 14 | 704 | 0.4− | 0.2− | 2001 12 18 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.0 | | |
| 2001 10 14 | 704 | 0.1− | 0.2+ | 2001 12 18 | 704 | 0.2+ | 1.3+ | 2006 09 16 | 703 | 0.8− | 0.7+ | | |
| 2001 10 14 | 704 | 0.5− | 0.4+ | 2001 12 18 | 704 | 0.2− | 0.7+ | 2006 09 28 | 703 | 0.1+ | 0.5− | | |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2001 12 18 | 704 | 0.1− | 1.1+ | 2006 09 28 | 703 | 0.8+ | 0.9− | | |
| 2001 10 14 | 704 | 0.7− | 0.1− | 2001 12 19 | 704 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.2+ | 0.6+ | | |
| 2001 10 21 | 704 | 0.4− | 0.6− | 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.8− | | |
| 2001 10 21 | 704 | 0.6− | 1.1− | 2001 12 19 | 704 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.6− | 0.2− | | |
| 2001 10 21 | 704 | 0.1− | 0.2− | 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.5+ | | |
| 2001 10 21 | 704 | (1.6− | 0.2+) | 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.7+ | 0.1− | | |
| 2001 10 26 | 644 | 0.6+ | 0.7+ | 2001 12 19 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.1− | | |
| 2001 10 26 | 644 | 0.6+ | 0.6+ | 2001 12 19 | 644 | 0.2+ | 0.2+ | 2006 10 04 | 703 | 0.2+ | 0.4− | | |
| 2001 10 26 | 644 | 0.5+ | 0.7+ | 2001 12 19 | 644 | 0.3+ | 0.2+ | 2006 10 04 | 703 | 0.0 | 0.9− | | |
| 2001 11 10 | 704 | 0.2− | 0.8+ | 2002 01 09 | 291 | 0.3+ | 0.2− | 2006 10 04 | 703 | 0.6− | 0.0 | | |
| 2001 11 10 | 704 | 0.2− | 0.6+ | 2002 01 09 | 291 | 0.2+ | 0.1+ | 2006 10 04 | 703 | 0.7− | 0.2− | | |
| 2001 11 10 | 704 | 0.1− | 0.5+ | 2002 01 09 | 291 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 2001 11 10 | 704 | 0.1+ | 1.2+ | 2002 01 09 | 704 | 1.3− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2001 11 10 | 704 | 1.1− | 0.6− | 2002 01 09 | 704 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2001 11 12 | 704 | 0.0 | 0.6− | 2002 01 09 | 704 | 0.1− | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2001 11 12 | 704 | 0.1+ | 1.1− | 2002 01 11 | 699 | 0.3− | 0.9− | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2001 11 12 | 704 | 0.1− | 0.6− | 2002 01 11 | 699 | 0.0 | 1.0− | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2001 11 12 | 704 | 0.1− | 0.8− | 2002 01 11 | 699 | 0.9+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.4+ | | |
| 2001 11 12 | 704 | 0.2− | 0.6− | 2002 01 11 | 699 | 1.2+ | 1.2+ | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 2001 11 16 | 644 | 0.2− | 0.1− | 2002 01 21 | 704 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.1− | 0.5− | | |
| 2001 11 16 | 644 | 0.0 | 0.1− | 2002 01 21 | 704 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.2− | | |
| 2001 11 16 | 644 | 0.2+ | 0.1− | 2002 01 21 | 704 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2001 11 17 | 644 | 0.1− | 0.1+ | 2003 02 07 | 644 | 0.7+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2001 11 17 | 644 | 0.1+ | 0.1− | 2003 02 07 | 644 | 0.4+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2001 11 17 | 644 | 0.1+ | 0.3+ | 2003 02 07 | 644 | 0.5+ | 0.9+ | 2006 10 21 | 644 | 0.4+ | 0.3− | | |
| 2001 11 19 | 704 | 1.0+ | 0.2− | 2003 02 28 | 608 | (1.1+ | 1.8+) | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2001 11 19 | 704 | 0.8+ | 0.7− | 2003 02 28 | 608 | (1.4+ | 2.0+) | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2001 11 19 | 704 | 1.0+ | 0.2− | 2003 02 28 | 608 | (1.0+ | 1.8+) | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2001 11 19 | 704 | 1.0+ | 0.3− | 2003 03 08 | 699 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2001 11 19 | 704 | 1.1+ | 0.5− | 2003 03 08 | 699 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2003 03 08 | 699 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.1− | 2003 03 08 | 699 | 0.1+ | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2001 11 20 | 704 | 0.8+ | 0.1+ | 2003 03 10 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2001 11 20 | 704 | 0.1− | 0.7+ | 2003 03 10 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2001 11 24 | 704 | 0.6− | 0.8− | 2003 03 10 | 704 | 0.0 | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2001 11 24 | 704 | 1.1− | 1.0− | 2003 03 10 | 704 | 0.6+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.4+ | | |
| 2001 11 24 | 704 | 1.0− | 1.1− | 2003 03 28 | 699 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.1− | | |
| 2001 11 24 | 704 | 1.5− | 0.6− | 2003 03 28 | 699 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 24 | 704 | 1.4− | 0.5− | 2003 03 28 | 699 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2001 12 10 | 704 | 0.0 | 0.5+ | 2003 03 28 | 699 | 0.8− | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.6+ | | |
| 2001 12 10 | 704 | 0.2− | 0.2+ | 2004 06 09 | E12 | (1.0+ | 1.7+) | 2006 11 28 | 704 | 0.0 | 0.5+ | | |
| 2001 12 10 | 704 | 0.4− | 0.5+ | 2004 06 09 | E12 | (0.1+ | 3.6+) | 2006 11 28 | 704 | 0.2− | 0.3− | | |
| 2001 12 10 | 704 | 0.2+ | 0.7+ | 2004 06 09 | E12 | (1.9+ | 2.6+) | 2006 11 28 | 704 | 0.0 | 0.2− | | |

**(140918)∗ 2001 VZ$_{62}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.19709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18555795 | $\omega$ | 306.72674 | | −0.90700027 | +0.36620399 | |
| $a$ | 3.0442688 | $\Omega$ | 255.58909 | | −0.28419373 | −0.89665577 | |
| $e$ | 0.2247915 | $i$ | 12.39854 | | −0.31078036 | −0.24880327 | |
| $P$ | 5.31 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.6− | 1.3+ | 2001 12 18 | 704 | 0.6+ | 1.0+ | 2003 01 28 | 704 | 0.2+ | 0.2+ | | |
| 1999 07 13 | 704 | 0.2− | 0.1+ | 2001 12 18 | 704 | 0.6+ | 0.3+ | 2003 01 28 | 704 | 0.2+ | 0.1+ | | |
| 1999 07 13 | 704 | 0.2+ | 0.1+ | 2001 12 19 | 704 | 0.8+ | 0.1+ | 2003 01 28 | 704 | 0.2+ | 0.1− | | |
| 1999 07 13 | 704 | 0.8− | 0.8+ | 2001 12 19 | 704 | 0.1+ | 0.9+ | 2003 01 28 | 704 | 0.6+ | 0.5+ | | |
| 1999 07 13 | 704 | 0.1− | 0.2+ | 2001 12 19 | 704 | 0.4− | 1.2+ | 2003 01 28 | 704 | 0.6+ | 0.1+ | | |
| 2000 09 23 | 704 | 0.5+ | 0.5+ | 2001 12 19 | 704 | 0.4+ | 0.7+ | 2003 02 01 | 699 | 0.4+ | 0.5− | | |
| 2000 09 23 | 704 | 0.1− | 0.6+ | 2002 11 14 | 644 | 0.1− | 0.0 | 2003 02 01 | 699 | 0.4− | 0.2+ | | |
| 2000 09 23 | 704 | 0.7+ | 0.5+ | 2002 11 14 | 644 | 0.0 | 0.2− | 2003 02 01 | 699 | 0.5− | 0.2+ | | |
| 2001 10 14 | 704 | 0.2− | 0.5+ | 2002 11 14 | 644 | 0.1− | 0.5+ | 2003 02 01 | 704 | 0.8+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.5− | 0.2+ | 2002 12 14 | 704 | 0.4+ | 0.2+ | 2003 02 01 | 699 | 1.1− | 0.8− | | |
| 2001 10 14 | 704 | (0.0 | 2.1+) | 2002 12 14 | 704 | (1.7+ | 0.7+) | 2003 02 01 | 704 | 0.6− | 0.0 | | |
| 2001 11 10 | 704 | 0.9− | 0.2− | 2002 12 14 | 704 | 0.0 | 1.4+ | 2003 02 01 | 704 | 0.3+ | 0.4− | | |
| 2001 11 10 | 704 | 0.4− | 0.5+ | 2002 12 14 | 704 | 0.1+ | 0.7+ | 2006 09 17 | 703 | 0.5− | 0.8+ | | |
| 2001 11 10 | 704 | 0.4− | 0.7+ | 2002 12 15 | 608 | 0.2− | 1.1− | 2006 09 17 | 703 | 0.1− | 1.1− | | |
| 2001 11 10 | 704 | 0.9+ | 0.6− | 2002 12 15 | 608 | 0.1− | 0.8− | 2006 09 17 | 703 | 0.5+ | 0.2− | | |
| 2001 11 11 | 699 | 1.1− | 0.9− | 2002 12 15 | 608 | 0.5+ | 0.9− | 2006 09 17 | 703 | 1.4− | 0.7− | | |
| 2001 11 11 | 699 | 1.0− | 0.1− | 2003 01 01 | 704 | 0.8+ | 1.0+ | 2006 09 28 | 703 | 0.4− | 0.6+ | | |
| 2001 11 11 | 699 | 0.9− | 0.7− | 2003 01 01 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 703 | 0.8+ | 0.5− | | |
| 2001 11 11 | 699 | 0.5− | 0.7− | 2003 01 01 | 704 | 0.6+ | 0.6+ | 2006 09 28 | 703 | 0.7+ | 1.2− | | |
| 2001 11 12 | 704 | 0.3− | 0.1+ | 2003 01 01 | 704 | 0.9+ | 1.4+ | 2006 09 28 | 703 | 1.0− | 0.1+ | | |
| 2001 11 12 | 704 | 0.4− | 0.6+ | 2003 01 05 | 704 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.1− | | |
| 2001 11 12 | 704 | 0.3− | 0.7− | 2003 01 05 | 704 | 0.3+ | 0.8− | 2006 10 12 | 644 | 0.4+ | 0.1− | | |
| 2001 11 12 | 704 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.3+ | 0.9− | 2006 10 12 | 644 | 0.0 | 0.3− | | |
| 2001 11 12 | 704 | 0.2+ | 0.5+ | 2003 01 05 | 704 | 0.4+ | 0.7− | 2006 10 19 | 703 | 0.0 | 0.2− | | |
| 2001 11 24 | 704 | 0.3− | 0.2+ | 2003 01 09 | 704 | (1.5− | 0.4−) | 2006 10 19 | 703 | 0.5− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 704 | 0.7+ | 1.4+ | 2003 01 09 | 704 | 0.9− | 0.3+ | 2006 10 19 | 703 | 0.7+ | 0.1− |
| 2001 11 24 | 704 | 0.6+ | 0.5+ | 2003 01 09 | 704 | 0.8− | 0.4+ | 2006 10 19 | 703 | 0.3+ | 0.5+ |
| 2001 11 24 | 704 | (1.1− | 2.0+) | 2003 01 10 | 704 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.2− |
| 2001 11 24 | 704 | 0.1− | 0.5− | 2003 01 10 | 704 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 11 24 | 704 | (1.1− | 2.2+) | 2003 01 10 | 704 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 1.1+ | 1.1+ | 2003 01 10 | 704 | 0.4− | 1.0+ | 2006 10 27 | 703 | 0.8+ | 1.0+ |
| 2001 11 24 | 704 | (1.4+ | 2.0+) | 2003 01 10 | 704 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.8− |
| 2001 12 10 | 704 | 0.4+ | 0.3− | 2003 01 14 | 608 | 0.1− | 0.7− | 2006 10 27 | 703 | 0.1− | 0.2+ |
| 2001 12 10 | 704 | 1.1− | 1.0− | 2003 01 14 | 608 | 0.4+ | 0.8− | 2006 10 27 | 703 | 1.0− | 0.3− |
| 2001 12 10 | 704 | 0.7− | 0.3+ | 2003 01 14 | 608 | 0.3+ | 0.7− | 2006 11 15 | 703 | 1.4+ | 0.0 |
| 2001 12 18 | 704 | 0.4− | 0.8− | 2003 01 26 | 644 | 0.0 | 0.2+ | 2006 11 15 | 703 | 1.2− | 1.1− |
| 2001 12 18 | 704 | 1.1+ | 0.5+ | 2003 01 26 | 644 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.6+ | 1.8− |
| 2001 12 18 | 704 | 0.9+ | 0.2+ | 2003 01 26 | 644 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.0 |

**(140919)∗ 2001 VM$_{63}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.51360 | | (2000.0) | | | |
| $n$ | 0.18256872 | $\omega$ | 138.42757 | | +0.37513595 | −0.92590229 |
| $a$ | 3.0774084 | $\Omega$ | 289.49666 | | +0.83753987 | +0.35911457 |
| $e$ | 0.2015115 | $i$ | 2.70419 | | +0.39724045 | +0.11722488 |
| $P$ | 5.40 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3− | 0.1− | 2001 12 18 | 704 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.6+ | 0.3+ |
| 2001 10 14 | 704 | 0.6− | 0.3+ | 2001 12 18 | 704 | (1.9+ | 0.9−) | 2006 08 30 | 704 | 0.5+ | 0.3− |
| 2001 10 14 | 704 | 0.1− | 0.2+ | 2001 12 18 | 704 | 0.3+ | 1.3− | 2006 08 30 | 704 | 0.4− | 0.5− |
| 2001 10 14 | 704 | 0.6− | 0.5+ | 2001 12 19 | 704 | 0.4+ | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.3+ | 0.3+ | 2001 12 19 | 704 | (1.6+ | 1.3−) | 2006 09 06 | 644 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.5+ | 0.2+ | 2001 12 19 | 704 | (1.9+ | 1.8−) | 2006 09 06 | 644 | 0.7− | 0.1+ |
| 2001 10 21 | 704 | 0.3+ | 0.7+ | 2001 12 19 | 704 | 1.3+ | 1.0− | 2006 09 17 | 703 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.9+ | 2001 12 20 | 644 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.2− | 0.1+ |
| 2001 10 26 | 644 | 0.0 | 0.3+ | 2001 12 20 | 644 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.7+ | 0.9− |
| 2001 10 26 | 644 | 0.1+ | 0.1+ | 2001 12 20 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.3− |
| 2001 10 26 | 644 | 0.1+ | 0.2+ | 2002 01 05 | 699 | 0.6− | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.1+ |
| 2001 11 09 | 644 | 0.1− | 0.1− | 2002 01 05 | 699 | 0.3− | 0.9+ | 2006 09 18 | 704 | 0.8+ | 0.4+ |
| 2001 11 09 | 644 | 0.2+ | 0.2− | 2002 01 05 | 699 | 0.3− | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.5+ |
| 2001 11 09 | 644 | 0.4+ | 0.0 | 2002 01 05 | 699 | 0.2+ | 0.7+ | 2006 09 18 | 704 | 0.4− | 0.7+ |
| 2001 11 10 | 704 | 0.5− | 1.0− | 2002 01 07 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.2+ | 1.2+ |
| 2001 11 10 | 704 | 0.5− | 0.6− | 2002 01 07 | 691 | 0.6+ | 0.0 | 2006 09 19 | 699 | 0.0 | 0.4− |
| 2001 11 10 | 704 | 0.4− | 0.4− | 2002 01 07 | 691 | 0.4+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.3− |
| 2001 11 10 | 704 | 0.1− | 0.2− | 2002 01 09 | 704 | 1.4− | 0.4− | 2006 09 19 | 699 | 0.1− | 0.2+ |
| 2001 11 10 | 704 | 0.2+ | 0.3− | 2002 01 09 | 704 | 0.4+ | 1.4+ | 2006 09 19 | 699 | 1.3− | 0.2+ |
| 2001 11 12 | 704 | 0.8− | 0.0 | 2002 01 09 | 704 | 1.1+ | 0.9+ | 2006 09 24 | 106 | 0.0 | 0.5− |
| 2001 11 12 | 704 | 0.9− | 0.1+ | 2002 01 09 | 704 | 0.4+ | 0.9+ | 2006 09 24 | 106 | 0.3+ | 0.2+ |
| 2001 11 12 | 704 | 0.7− | 0.6+ | 2002 01 21 | 704 | 0.5− | 0.9+ | 2006 09 24 | 106 | 0.2+ | 1.1− |
| 2001 11 12 | 704 | 0.6− | 0.5+ | 2002 01 21 | 704 | 0.5− | 0.6+ | 2006 09 24 | 106 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.5− | 0.6+ | 2002 01 21 | 704 | 0.1+ | 1.2− | 2006 09 25 | 704 | 0.1+ | 0.0 |
| 2001 11 16 | 644 | 0.0 | 0.1− | 2002 01 21 | 704 | (2.1− | 1.9−) | 2006 09 25 | 704 | 0.2+ | 0.4+ |
| 2001 11 16 | 644 | 0.2− | 0.0 | 2002 01 21 | 704 | 0.1+ | 0.7− | 2006 09 25 | 704 | 0.3− | 0.5+ |
| 2001 11 16 | 644 | 0.0 | 0.4− | 2002 02 07 | 704 | 0.5− | 0.3+ | 2006 09 25 | 704 | (0.4− | 1.9+) |
| 2001 11 17 | 644 | 0.2− | 0.1+ | 2002 02 07 | 704 | 0.6+ | 0.5+ | 2006 09 25 | 704 | 0.9+ | 0.2+ |
| 2001 11 17 | 644 | 0.4− | 0.1+ | 2002 02 07 | 704 | 0.0 | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 11 17 | 644 | 0.2− | 0.2+ | 2003 03 06 | 699 | 0.6− | 0.8+ | 2006 09 27 | 691 | 0.5− | 0.1− |
| 2001 11 19 | 699 | 0.6− | 0.4+ | 2003 03 06 | 699 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.2− | 0.1− |
| 2001 11 19 | 699 | 0.7− | 0.3+ | 2003 03 06 | 699 | (0.4+ | 2.8+) | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2001 11 19 | 699 | 0.2− | 0.5+ | 2003 03 06 | 699 | (4.7+ | 0.7+) | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 11 19 | 699 | 0.5− | 0.7+ | 2003 03 26 | 644 | 0.1+ | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2001 11 19 | 704 | 0.8− | 0.4− | 2003 03 26 | 644 | 0.4+ | 0.9+ | 2006 10 01 | 704 | 1.1+ | 0.9+ |
| 2001 11 19 | 704 | 0.1− | 0.1− | 2003 03 26 | 644 | 0.3+ | 0.7+ | 2006 10 01 | 704 | 0.3− | 0.2+ |
| 2001 11 19 | 704 | 0.6− | 0.1− | 2003 03 26 | 644 | 0.8+ | 1.0+ | 2006 10 01 | 704 | 0.0 | 0.5+ |
| 2001 11 19 | 704 | 0.4− | 0.3+ | 2003 03 26 | 644 | 0.3+ | 0.8+ | 2006 10 01 | 704 | 0.7− | 0.2+ |
| 2001 11 19 | 704 | 0.6− | 0.1+ | 2003 03 26 | 644 | 0.2+ | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2001 11 20 | 608 | (0.9− | 1.8−) | 2004 04 28 | 691 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 11 20 | 608 | (0.3− | 2.0−) | 2004 04 28 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 608 | 1.0− | 0.9− | 2004 04 28 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.7+ | 0.2+ | 2004 05 13 | 691 | 0.6+ | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 0.0 | 0.1− | 2004 05 13 | 691 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.4− | 0.2+ |
| 2001 11 24 | 704 | 0.1− | 0.2+ | 2004 05 13 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 0.0 | 0.3+ | 2004 05 21 | 691 | 0.4+ | 0.2+ | 2006 10 17 | 703 | (0.9− | 1.8+) |
| 2001 11 24 | 704 | 0.0 | 0.4+ | 2004 05 21 | 691 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.6− |
| 2001 12 10 | 704 | 0.5+ | 0.5+ | 2004 05 21 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.1− | 0.6+ |
| 2001 12 10 | 704 | 0.6+ | 0.1+ | 2004 06 13 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 12 10 | 704 | 0.1+ | 0.6+ | 2004 06 13 | 691 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 12 10 | 704 | 0.1− | 0.4+ | 2004 06 13 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | (0.5− | 1.8+) | 2006 08 17 | 644 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2001 12 15 | 704 | 0.3+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2001 12 15 | 704 | 0.1+ | 0.6− | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.3+ |
| 2001 12 15 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2001 12 15 | 704 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 1.1− | 0.3+ | 2006 11 06 | 644 | 0.3− | 0.1− |
| 2001 12 15 | 704 | 0.5+ | 0.2− | 2006 08 28 | 703 | 0.4+ | 0.5+ | 2006 11 06 | 644 | 0.4− | 0.5+ |
| 2001 12 18 | 704 | 0.8+ | 0.2− | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2001 12 18 | 704 | 1.1+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.5+ | | | | |

**(140920)∗ 2001 VQ$_{65}$ = 1997 XA$_{8}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 20645)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.05384 | | (2000.0) | | | |
| $n$ | 0.22089682 | $\omega$ | 105.92688 | | +0.68800395 | −0.72311641 |
| $a$ | 2.7102524 | $\Omega$ | 300.43513 | | +0.63568645 | +0.64123225 |
| $e$ | 0.1672946 | $i$ | 4.07456 | | +0.35007615 | +0.25675641 |
| $P$ | 4.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 07 | 910 | 0.7− | 0.1− | 2001 11 24 | 704 | 0.2− | 0.4− | 2005 09 12 | 691 | 0.2− | 0.0 |
| 1997 12 07 | 910 | 0.5− | 0.2− | 2001 11 24 | 704 | 0.4− | 0.1+ | 2005 09 12 | 691 | 0.3− | 0.2+ |
| 1997 12 07 | 910 | 0.2− | 0.2− | 2001 11 24 | 704 | 0.5− | 0.2+ | 2005 09 12 | 691 | 0.5− | 0.2+ |
| 1997 12 07 | 910 | 0.1+ | 0.0 | 2001 11 27 | 644 | 0.1− | 0.8+ | 2005 09 14 | 703 | 0.8+ | 0.3− |
| 1997 12 08 | 910 | 0.2+ | 0.3− | 2001 11 27 | 644 | 0.1− | 0.7+ | 2005 09 14 | 703 | 0.3+ | 0.0 |
| 1997 12 08 | 910 | 0.3+ | 0.0 | 2001 11 27 | 644 | 0.2− | 0.9+ | 2005 09 14 | 703 | 0.3+ | 0.7+ |
| 2001 09 24 | 704 | 0.6+ | 0.5− | 2001 12 08 | 699 | 0.1+ | 0.4+ | 2005 09 14 | 703 | 0.8− | 0.3+ |
| 2001 09 24 | 704 | 0.9− | 0.6− | 2001 12 08 | 699 | 0.7+ | 0.3+ | 2005 09 29 | 691 | 0.3+ | 0.1− |
| 2001 09 24 | 704 | 1.1− | 0.2− | 2001 12 08 | 699 | 0.0 | 0.3− | 2005 09 29 | 691 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 1.0+ | 0.3+ | 2001 12 08 | 699 | 0.3− | 0.3+ | 2005 09 29 | 691 | 0.2+ | 0.1+ |
| 2001 10 20 | 621 | 0.4− | 0.1− | 2001 12 10 | 704 | 0.2+ | 1.1+ | 2005 09 30 | 703 | 0.1+ | 0.6− |
| 2001 10 20 | 621 | 0.0 | 0.2− | 2001 12 10 | 704 | 0.1− | 1.3+ | 2005 09 30 | 703 | 0.2− | 0.1− |
| 2001 11 10 | 704 | 0.6− | 0.1+ | 2001 12 10 | 704 | 0.1− | 0.7+ | 2005 09 30 | 703 | 0.0 | 0.1+ |
| 2001 11 10 | 704 | 0.6− | 0.3− | 2001 12 10 | 704 | 0.1+ | 1.2+ | 2005 09 30 | 703 | 0.3− | 0.5− |
| 2001 11 10 | 704 | 0.3− | 0.9− | 2001 12 17 | 704 | 0.9+ | 0.2− | 2005 10 07 | 704 | 0.5+ | 0.6− |
| 2001 11 10 | 704 | 0.2− | 0.6− | 2001 12 17 | 704 | 0.8− | 0.0 | 2005 10 07 | 704 | 0.1− | 0.3− |
| 2001 11 10 | 704 | 1.1− | 1.5− | 2001 12 17 | 704 | 0.9− | 0.5− | 2005 10 07 | 704 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.1+ | 0.5+ | 2001 12 17 | 704 | 0.1+ | 0.5+ | 2005 10 07 | 704 | 0.4+ | 0.5− |
| 2001 11 12 | 704 | 0.3+ | 0.2+ | 2001 12 17 | 704 | 0.0 | 0.0 | 2005 11 22 | 703 | (1.7− | 0.1−) |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2002 01 06 | 644 | 0.3− | 0.2+ | 2005 11 22 | 703 | 1.5− | 0.9− |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2002 01 06 | 644 | 0.2− | 0.1+ | 2005 11 22 | 703 | 0.8− | 0.2− |
| 2001 11 19 | 699 | 0.9+ | 0.3− | 2002 01 06 | 644 | 0.3− | 0.1− | 2005 11 22 | 703 | (2.7− | 0.5+) |
| 2001 11 19 | 699 | 0.5+ | 0.0 | 2002 01 14 | 704 | 1.4− | 0.3− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2001 11 19 | 699 | 0.0 | 0.5+ | 2002 01 14 | 704 | 0.1− | 0.7− | 2006 10 23 | G96 | 0.5− | 0.2− |
| 2001 11 19 | 699 | 0.5+ | 0.3+ | 2002 01 14 | 704 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2001 11 20 | 704 | 0.1− | 0.8− | 2002 01 14 | 704 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2001 11 20 | 704 | 1.0+ | 0.3+ | 2002 01 14 | 704 | 0.2− | 0.5− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.2+ | 0.6− | 2005 07 31 | 644 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2001 11 20 | 704 | 0.3− | 0.8− | 2005 07 31 | 644 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.9+ | 0.0 | 2005 07 31 | 644 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.6+ | 0.0 | 2005 08 27 | 644 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2001 11 21 | 704 | 0.4+ | 0.1+ | 2005 08 27 | 644 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2001 11 21 | 704 | 1.2+ | 0.4− | 2005 08 27 | 644 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2001 11 21 | 704 | 0.6+ | 0.3− | 2005 09 06 | 699 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2001 11 21 | 704 | 0.8+ | 0.1+ | 2005 09 06 | 699 | 0.7+ | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 704 | 0.6− | 0.0 | | 2005 09 06 | 699 | 1.3+ | 0.3+ | | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2001 11 24 | 704 | 0.1− | 0.2− | | 2005 09 06 | 699 | 0.9+ | 0.4+ | | 2006 11 27 | G96 | 0.2+ | 0.3− |

**(140921)∗ 2001 VS$_{65}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.66743 | | (2000.0) | | | |
| $n$ | 0.18703086 | $\omega$ | 310.37319 | | +0.96306517 | +0.25068950 |
| $a$ | 3.0282650 | $\Omega$ | 35.43003 | | −0.16539021 | +0.83876459 |
| $e$ | 0.0720018 | $i$ | 9.76136 | | −0.21248896 | +0.48335157 |
| $P$ | 5.27 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 19 | 691 | 0.3− | 0.6+ | | 2003 02 04 | 699 | 0.2+ | 0.5+ | | 2006 10 19 | 644 | 0.1− | 0.5+ |
| 1990 10 19 | 691 | 0.5− | 0.4+ | | 2003 02 04 | 699 | 1.2− | 1.2+ | | 2006 10 19 | 644 | 0.4− | 0.5+ |
| 1990 10 19 | 691 | 0.2+ | 0.5+ | | 2003 02 04 | 699 | 0.5− | 1.0− | | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2000 08 04 | 608 | 1.0− | 0.6− | | 2003 02 04 | 699 | 1.0− | 0.9+ | | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2000 08 04 | 608 | 0.4− | 0.6− | | 2004 04 12 | 644 | 0.9+ | 0.4+ | | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2000 08 04 | 608 | 0.8− | 0.6− | | 2004 04 12 | 644 | 0.7+ | 0.3+ | | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 0.3− | | 2004 04 12 | 644 | 0.6+ | 0.3+ | | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 10 21 | 704 | 0.2− | 0.1+ | | 2004 04 21 | 704 | 0.1+ | 0.7+ | | 2006 10 21 | 644 | 0.3+ | 0.6+ |
| 2001 10 21 | 704 | 0.3− | 0.1− | | 2004 04 21 | 704 | (1.1+ | 1.6+) | | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.3+ | 0.5+ | | 2004 04 21 | 704 | 0.9− | 0.1+ | | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 0.6− | 1.0− | | 2004 04 25 | 703 | (1.8+ | 1.0+) | | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 11 10 | 704 | 0.3− | 1.1− | | 2004 04 25 | 703 | 0.4+ | 0.3+ | | 2006 10 27 | G96 | (3.5− | 7.0+) |
| 2001 11 10 | 704 | 0.5− | 1.2− | | 2004 04 25 | 703 | 0.3+ | 0.8+ | | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.8+ | 0.2+ | | 2004 04 25 | 703 | 0.5+ | 0.7+ | | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.4− | 0.3+ | | 2004 04 30 | 291 | 0.6+ | 0.8+ | | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.9+ | 1.3+ | | 2004 04 30 | 291 | 0.7+ | 0.7+ | | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2001 11 12 | 704 | 0.1+ | 1.2+ | | 2004 04 30 | 291 | (1.7+ | 0.3+) | | 2006 11 11 | 703 | 0.5+ | 0.7− |
| 2001 11 12 | 704 | 0.1− | 0.8+ | | 2005 08 24 | E12 | 0.1− | 0.6+ | | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | | 2005 08 24 | E12 | 0.1+ | 1.1+ | | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 0.2+ | 0.2+ | | 2005 08 24 | E12 | 0.2+ | 0.9+ | | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 0.3+ | 0.3+ | | 2005 09 01 | E12 | 0.1− | 0.9+ | | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 1.0+ | 0.6+ | | 2005 09 01 | E12 | (0.3− | 1.6+) | | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2001 11 24 | 704 | 0.3+ | 0.2− | | 2005 09 01 | E12 | (1.9+ | 1.8+) | | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2001 11 24 | 704 | 0.1+ | 0.5− | | 2006 09 26 | G96 | 0.2− | 0.1+ | | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2001 11 24 | 704 | 0.0 | 0.4− | | 2006 09 26 | G96 | 0.3− | 0.2+ | | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2001 11 24 | 704 | 0.4+ | 0.1− | | 2006 09 26 | G96 | 0.0 | 0.1+ | | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 11 24 | 704 | 0.0 | 1.0− | | 2006 09 26 | G96 | 0.2+ | 0.1− | | 2006 11 17 | 703 | (1.5+ | 1.6+) |
| 2001 12 17 | 704 | 1.4− | 0.1− | | 2006 10 04 | G96 | 0.0 | 0.1+ | | 2006 11 17 | 703 | 0.6+ | 0.3+ |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | | 2006 10 04 | G96 | 0.0 | 0.1+ | | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2001 12 17 | 704 | 0.6− | 0.1+ | | 2006 10 04 | G96 | 0.0 | 0.0 | | 2006 11 17 | 703 | 0.5− | 1.0− |
| 2001 12 17 | 704 | 0.3− | 0.3+ | | 2006 10 04 | G96 | 0.1+ | 0.1+ | | 2006 11 21 | 704 | 0.6− | 0.1− |
| 2001 12 17 | 704 | 0.3+ | 0.0 | | 2006 10 12 | 691 | 0.2− | 0.0 | | 2006 11 21 | 704 | 0.6− | 0.1− |
| 2002 01 06 | 644 | 0.1+ | 0.2+ | | 2006 10 12 | 691 | 0.3− | 0.1+ | | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2002 01 06 | 644 | 0.3+ | 0.0 | | 2006 10 12 | 691 | 0.4− | 0.2+ | | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2002 01 06 | 644 | 0.3+ | 0.2+ | | 2006 10 16 | 691 | 0.2− | 0.2+ | | 2006 11 28 | 704 | 0.8− | 0.0 |
| 2003 01 28 | 644 | 0.5+ | 1.3+ | | 2006 10 16 | 691 | 0.8+ | 0.5− | | 2006 11 28 | 704 | 0.6+ | 0.8+ |
| 2003 01 28 | 644 | 0.4+ | 1.1+ | | 2006 10 16 | 691 | 0.1− | 0.2+ | | 2006 11 28 | 704 | 0.3+ | 0.6+ |
| 2003 01 28 | 644 | 0.4+ | 0.5+ | | 2006 10 19 | 644 | 0.0 | 0.4+ | | 2006 11 28 | 704 | 0.3+ | 0.4+ |

**(140922)∗ 2001 VW$_{65}$ = 1984 WS$_2$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85216)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.36143 | | (2000.0) | | | |
| $n$ | 0.23168591 | $\omega$ | 89.70892 | | +0.77809554 | −0.62665743 |
| $a$ | 2.6254452 | $\Omega$ | 309.09457 | | +0.55189333 | +0.71487647 |
| $e$ | 0.2048839 | $i$ | 3.19222 | | +0.29996847 | +0.31024523 |
| $P$ | 4.25 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 11 27 | 010 | (0.5− | 2.5+) | | 2002 01 14 | 704 | 1.0+ | 0.5− | | 2005 10 11 | 704 | 0.1+ | 0.1+ |
| 1984 11 28 | 010 | 0.4+ | 1.5− | | 2002 01 14 | 704 | 0.2+ | 0.7− | | 2005 10 11 | 704 | 0.2+ | 0.6+ |
| 2001 11 10 | 704 | 0.3− | 0.3− | | 2002 01 14 | 704 | 1.0+ | 0.8− | | 2005 10 11 | 704 | 0.6− | 0.6+ |
| 2001 11 10 | 704 | 0.4− | 0.3− | | 2002 01 14 | 704 | (0.6+ | 1.7−) | | 2005 10 11 | 704 | 0.5− | 0.0 |
| 2001 11 10 | 704 | 0.6− | 0.6− | | 2002 01 21 | 704 | 0.4− | 0.1− | | 2005 10 11 | 704 | 0.5− | 0.1− |
| 2001 11 10 | 704 | 0.2+ | 0.2− | | 2002 01 21 | 704 | 0.2− | 0.5+ | | 2005 10 21 | 699 | 1.1− | 0.5− |
| 2001 11 11 | 291 | 0.1− | 0.1− | | 2002 01 21 | 704 | 0.9− | 0.2+ | | 2005 10 21 | 699 | 0.0 | 0.2+ |
| 2001 11 11 | 291 | 0.4+ | 0.3− | | 2002 01 21 | 704 | 0.5− | 0.2+ | | 2005 10 21 | 699 | 0.2− | 0.1+ |
| 2001 11 11 | 291 | 0.1+ | 1.4+ | | 2002 02 03 | 699 | 0.9− | 0.1+ | | 2005 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.1− | 0.5− | | 2002 02 03 | 699 | 0.4+ | 0.6− | | 2005 10 21 | 699 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.0 | 0.4− | | 2002 02 03 | 699 | 0.6− | 0.3− | | 2005 10 21 | 644 | 0.3+ | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.6− | | 2002 02 03 | 699 | 0.7− | 0.4+ | | 2005 10 21 | 644 | 0.2+ | 0.1− |
| 2001 11 12 | 704 | 0.3− | 0.5− | | 2002 02 06 | 704 | 0.6+ | 0.1+ | | 2005 10 22 | 699 | 0.2+ | 0.2− |
| 2001 11 12 | 704 | 0.4− | 0.6− | | 2002 02 06 | 704 | 0.1+ | 0.2− | | 2005 10 22 | 699 | 0.3− | 0.3+ |
| 2001 11 19 | 704 | 0.3+ | 0.7− | | 2002 02 06 | 704 | 0.3+ | 0.4+ | | 2005 10 22 | 699 | 0.3− | 0.1− |
| 2001 11 19 | 704 | 0.5+ | 0.7− | | 2002 02 06 | 704 | 0.8+ | 0.4+ | | 2005 10 22 | 699 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.5+ | 0.7− | | 2003 03 26 | 644 | 0.4+ | 1.0+ | | 2005 10 27 | 699 | 0.2− | 0.0 |
| 2001 11 19 | 704 | 0.7+ | 0.1− | | 2003 03 26 | 644 | 0.5+ | 0.9+ | | 2005 10 27 | 699 | 0.1+ | 0.2+ |
| 2001 11 19 | 704 | 0.8+ | 0.2− | | 2003 03 26 | 644 | 0.4+ | 0.8+ | | 2005 10 27 | 699 | 0.2− | 0.4− |
| 2001 11 20 | 704 | 0.2− | 0.2+ | | 2005 08 03 | 704 | 0.4+ | 0.2+ | | 2005 10 27 | 699 | 0.5+ | 0.1+ |
| 2001 11 20 | 704 | 0.4− | 0.1− | | 2005 08 03 | 704 | 0.6− | 0.2− | | 2005 11 01 | 704 | 0.6− | 0.6+ |
| 2001 11 20 | 704 | 0.1− | 0.2− | | 2005 08 03 | 704 | 0.3− | 0.5+ | | 2005 11 01 | 704 | 0.2+ | 0.9+ |
| 2001 11 20 | 704 | 0.7− | 0.3− | | 2005 08 03 | 704 | 0.3+ | 0.5+ | | 2005 11 01 | 704 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | 1.1− | 0.2− | | 2005 09 10 | 699 | 0.4+ | 0.3+ | | 2005 11 01 | 704 | 0.3+ | 0.4+ |
| 2001 11 24 | 704 | 0.6− | 1.0+ | | 2005 09 10 | 699 | 0.1+ | 0.1− | | 2005 11 01 | 704 | 0.1+ | 0.1− |
| 2001 11 24 | 704 | 0.6− | 0.8+ | | 2005 09 10 | 699 | 0.0 | 0.3+ | | 2005 11 04 | 704 | 0.8+ | 0.5+ |
| 2001 11 24 | 704 | 0.5− | 1.4+ | | 2005 09 10 | 699 | 0.2− | 0.2+ | | 2005 11 04 | 704 | 0.3+ | 0.1+ |
| 2001 11 24 | 704 | 0.1+ | 1.1+ | | 2005 09 11 | 704 | 0.6+ | 0.1− | | 2005 11 04 | 704 | 0.6+ | 0.3− |
| 2001 11 24 | 704 | 0.5− | 0.9+ | | 2005 09 11 | 704 | 0.3+ | 0.3+ | | 2005 11 04 | 704 | 0.1+ | 0.1+ |
| 2001 12 08 | 699 | 0.5+ | 0.9− | | 2005 09 11 | 704 | 0.5+ | 0.0 | | 2005 11 04 | 704 | 0.2+ | 0.2− |
| 2001 12 08 | 699 | 0.1− | 0.4− | | 2005 09 11 | 704 | 0.5+ | 0.6− | | 2005 11 05 | 704 | 0.7+ | 0.4+ |
| 2001 12 08 | 699 | 0.1− | 0.5− | | 2005 09 11 | 704 | 1.4− | 0.2− | | 2005 11 05 | 704 | 0.4+ | 0.4− |
| 2001 12 08 | 699 | 0.2− | 0.3− | | 2005 09 23 | 703 | 0.7− | 0.1+ | | 2005 11 05 | 704 | 0.2+ | 1.4− |
| 2001 12 10 | 704 | 0.2− | 0.1+ | | 2005 09 23 | 703 | 0.6− | 0.2− | | 2005 11 05 | 704 | 0.9+ | 0.2− |
| 2001 12 10 | 704 | 0.3− | 0.0 | | 2005 09 23 | 703 | 0.6− | 0.3− | | 2005 11 05 | 704 | 0.3+ | 0.0 |
| 2001 12 10 | 704 | 0.6− | 0.1+ | | 2005 09 23 | 703 | 0.5− | 0.3− | | 2005 11 28 | 703 | 0.5− | 0.3− |
| 2001 12 10 | 704 | 0.2− | 0.1+ | | 2005 09 29 | 691 | 0.2+ | 0.0 | | 2005 11 28 | 703 | 0.5+ | 1.3+ |
| 2001 12 17 | 704 | 0.3− | 0.2+ | | 2005 09 29 | 691 | 0.1+ | 0.0 | | 2005 11 28 | 703 | 0.0 | 0.4+ |
| 2001 12 17 | 704 | 0.5− | 0.4+ | | 2005 09 29 | 691 | 0.0 | 0.1+ | | 2005 11 28 | 703 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 0.3− | 0.9+ | | 2005 09 29 | 699 | 0.0 | 0.1− | | 2005 12 01 | 699 | (0.8− | 1.5−) |
| 2001 12 17 | 704 | 0.0 | 0.6+ | | 2005 09 29 | 699 | 0.4+ | 0.3+ | | 2005 12 01 | 699 | 0.1− | 0.4+ |
| 2001 12 18 | 704 | 0.2− | 0.1+ | | 2005 09 29 | 699 | (0.3− | 1.7−) | | 2005 12 01 | 699 | 0.3− | 0.2− |
| 2001 12 18 | 704 | 0.4− | 0.0 | | 2005 09 29 | 699 | 0.3− | 0.0 | | 2005 12 01 | 699 | 1.0+ | 0.3− |
| 2001 12 18 | 704 | 0.0 | 0.1+ | | 2005 10 01 | 703 | 0.2− | 0.2− | | 2005 12 02 | 704 | 0.3− | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.0 | | 2005 10 01 | 703 | 0.1+ | 0.1− | | 2005 12 02 | 704 | 0.8− | 0.3+ |
| 2001 12 18 | 704 | 0.4+ | 0.4+ | | 2005 10 01 | 703 | 0.0 | 0.2− | | 2005 12 02 | 704 | 0.8− | 0.8+ |
| 2001 12 18 | 704 | 1.0− | 0.7− | | 2005 10 01 | 703 | 0.2− | 0.3− | | 2005 12 02 | 704 | 0.2− | 0.7+ |
| 2001 12 18 | 704 | 0.1+ | 0.7− | | 2005 10 03 | 691 | 0.5− | 0.3+ | | 2005 12 02 | 704 | 0.5− | 0.8− |
| 2001 12 18 | 704 | 0.1− | 0.7− | | 2005 10 03 | 691 | 0.2− | 0.3+ | | 2005 12 07 | 704 | 0.6+ | 1.4+ |
| 2001 12 18 | 704 | 0.0 | 0.7− | | 2005 10 03 | 691 | 0.4− | 0.1+ | | 2005 12 07 | 704 | 0.6+ | 0.2+ |
| 2001 12 18 | 704 | 0.5− | 0.9− | | 2005 10 03 | 704 | 0.2+ | 0.2+ | | 2005 12 07 | 704 | 0.5+ | 0.2+ |
| 2001 12 19 | 704 | 1.5+ | 0.3− | | 2005 10 03 | 704 | 0.1− | 0.5+ | | 2005 12 24 | 703 | 1.0− | 0.3− |
| 2001 12 19 | 704 | (1.7+ | 0.8−) | | 2005 10 03 | 704 | 0.3+ | 0.1− | | 2005 12 24 | 703 | 0.6− | 0.9− |
| 2001 12 19 | 704 | 1.3+ | 0.6− | | 2005 10 03 | 704 | 0.2+ | 0.4− | | 2005 12 24 | 703 | 0.9+ | 0.3− |
| 2001 12 19 | 704 | 1.2+ | 0.7− | | 2005 10 06 | 699 | 0.2− | 0.1− | | 2005 12 24 | 703 | (0.4− | 1.7−) |
| 2001 12 19 | 704 | 1.2+ | 0.9− | | 2005 10 06 | 699 | 0.1− | 0.0 | | 2005 12 29 | 704 | 0.1− | 0.4− |
| 2001 12 20 | 704 | (0.3− | 2.0+) | | 2005 10 06 | 699 | 0.3− | 0.4+ | | 2005 12 29 | 704 | 0.7− | 0.3− |
| 2001 12 20 | 704 | 0.9+ | 0.1+ | | 2005 10 06 | 699 | 0.1− | 0.2− | | 2005 12 29 | 704 | 1.2+ | 0.6+ |
| 2001 12 20 | 704 | (0.6− | 3.0+) | | 2005 10 07 | 691 | 0.0 | 0.2+ | | 2005 12 29 | 704 | 0.4+ | 0.2+ |
| 2001 12 20 | 704 | 1.3− | 1.4− | | 2005 10 07 | 691 | 0.1− | 0.2+ | | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2001 12 20 | 704 | 1.4+ | 0.8− | | 2005 10 07 | 691 | 0.2− | 0.2+ | | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 01 06 | 644 | 0.3− | 0.1− | | 2005 10 07 | 703 | 0.4− | 0.1− | | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2002 01 06 | 644 | 0.2− | 0.1− | | 2005 10 07 | 703 | 0.2− | 0.0 | | 2006 10 27 | G96 | (1.7+ | 0.9+) |
| 2002 01 06 | 644 | 0.0 | 0.2+ | | 2005 10 07 | 703 | 0.1+ | 0.1+ | | 2006 11 16 | 691 | 0.4+ | 0.6+ |
| 2002 01 11 | 699 | 0.5− | 0.8+ | | 2005 10 07 | 703 | 0.1− | 0.0 | | 2006 11 16 | 691 | 0.8+ | 0.4+ |
| 2002 01 11 | 699 | 0.5+ | 0.5− | | 2005 10 08 | 704 | 0.0 | 0.0 | | 2006 11 16 | 691 | 0.5+ | 0.6+ |
| 2002 01 11 | 699 | 0.8− | 0.7+ | | 2005 10 08 | 704 | 0.3+ | 0.0 | | 2006 11 21 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 699 | 0.1+ | 0.1+ | 2005 10 08 | 704 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.5+ |
| 2002 01 11 | 699 | 0.0 | 0.3− | 2005 10 08 | 704 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.4+ |
| 2002 01 11 | 699 | 1.2+ | 0.1+ | 2005 10 08 | 704 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2002 01 11 | 699 | 0.3− | 0.4− | 2005 10 08 | 224 | 0.5+ | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2002 01 11 | 699 | 0.3+ | 0.0 | 2005 10 08 | 224 | 0.5+ | 0.2+ | 2006 12 01 | G96 | 0.5− | 0.1− |
| 2002 01 14 | 704 | 0.1+ | 0.2+ | 2005 10 08 | 224 | 0.7+ | 0.4+ | 2006 12 01 | G96 | 0.5− | 0.1− |

**(140923)∗ 2001 VX$_{66}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.51710 | | (2000.0) | | | |
| $n$ | 0.24169119 | $\omega$ | 38.65394 | | +0.98591407 | −0.16614259 |
| $a$ | 2.5524789 | $\Omega$ | 330.89241 | | +0.14194287 | +0.89200220 |
| $e$ | 0.1317158 | $i$ | 2.26644 | | +0.08846279 | +0.42039114 |
| $P$ | 4.08 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.8− | 0.8− | 2001 12 19 | 704 | 0.4− | 0.4+ | 2005 11 28 | 703 | (1.3− | 1.7−) |
| 1999 03 19 | 691 | 0.6− | 0.5− | 2001 12 19 | 704 | 0.3+ | 0.1− | 2005 11 28 | 703 | (0.2+ | 3.2−) |
| 1999 03 19 | 691 | 0.6− | 0.7− | 2001 12 19 | 704 | 0.0 | 0.2+ | 2005 11 29 | 691 | 0.1− | 0.2− |
| 1999 03 21 | 645 | 0.2+ | 0.1+ | 2001 12 20 | 704 | (0.6+ | 1.6+) | 2005 11 29 | 691 | 0.3− | 0.2− |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2001 12 20 | 704 | 0.4+ | 0.2+ | 2005 11 29 | 691 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.0 | 0.1− | 2001 12 20 | 704 | 0.2− | 0.0 | 2005 11 29 | 699 | 0.9+ | 0.8− |
| 2001 10 21 | 704 | 0.3− | 0.2− | 2001 12 20 | 704 | 0.7+ | 0.2− | 2005 11 29 | 699 | 0.5+ | 0.3+ |
| 2001 10 21 | 704 | 0.1+ | 0.4− | 2001 12 20 | 704 | (0.1− | 1.6+) | 2005 11 29 | 699 | 0.5+ | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.5− | 2003 03 27 | 691 | 0.2− | 0.4+ | 2005 11 29 | 699 | 1.1− | 0.6− |
| 2001 11 10 | 704 | 0.4− | 0.0 | 2003 03 27 | 691 | 0.0 | 0.4+ | 2005 11 29 | 704 | 0.9− | 0.2+ |
| 2001 11 10 | 704 | 0.3− | 0.2− | 2003 03 27 | 691 | 0.8+ | 0.1+ | 2005 11 29 | 704 | 0.4+ | 0.1+ |
| 2001 11 10 | 704 | 0.4+ | 0.0 | 2005 10 29 | 703 | 0.3− | 0.1− | 2005 11 29 | 704 | 0.1− | 0.5+ |
| 2001 11 12 | 704 | 0.9− | 0.1+ | 2005 10 29 | 703 | 0.8− | 0.7− | 2005 11 29 | 704 | 0.2− | 0.3− |
| 2001 11 12 | 704 | 1.0− | 0.3+ | 2005 10 29 | 703 | 0.4− | 1.0− | 2005 11 29 | 704 | 0.2+ | 0.4+ |
| 2001 11 12 | 704 | 0.3− | 0.3+ | 2005 10 29 | 703 | 0.2− | 0.2− | 2005 12 01 | 695 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 1.0− | 1.2+ | 2005 10 30 | 644 | 0.3− | 0.1− | 2005 12 01 | 695 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.7− | 0.5+ | 2005 10 30 | 691 | 0.0 | 0.1− | 2005 12 01 | 695 | 0.0 | 0.2− |
| 2001 11 19 | 704 | 0.0 | 0.6− | 2005 10 30 | 644 | 0.2+ | 0.1− | 2005 12 02 | 704 | 0.1+ | 1.0− |
| 2001 11 19 | 704 | 0.7+ | 0.5+ | 2005 10 30 | 691 | 0.0 | 0.2− | 2005 12 02 | 704 | 0.3− | 0.2+ |
| 2001 11 19 | 704 | 0.5+ | 0.1+ | 2005 10 30 | 644 | 0.1+ | 0.1+ | 2005 12 02 | 695 | 0.3− | 0.1− |
| 2001 11 24 | 704 | 0.3+ | 0.4− | 2005 10 30 | 691 | 0.0 | 0.1− | 2005 12 02 | 704 | 0.5− | 0.4+ |
| 2001 11 24 | 704 | 0.3+ | 0.4− | 2005 11 01 | 704 | 0.7− | 0.1− | 2005 12 02 | 704 | 0.1− | 0.3+ |
| 2001 11 24 | 704 | 1.0+ | 0.3+ | 2005 11 01 | 704 | 1.1− | 0.5+ | 2005 12 02 | 704 | 0.4− | 0.1− |
| 2001 11 24 | 704 | 0.7+ | 0.2− | 2005 11 01 | 704 | 0.5+ | 0.6− | 2005 12 02 | 695 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 1.1+ | 0.3+ | 2005 11 04 | 704 | 0.2− | 0.1+ | 2005 12 02 | 695 | 0.1− | 0.2− |
| 2001 12 08 | 699 | 0.1− | 0.5− | 2005 11 04 | 704 | 0.0 | 0.3+ | 2005 12 05 | 691 | 0.1+ | 0.1+ |
| 2001 12 08 | 699 | 0.6+ | 0.5+ | 2005 11 04 | 704 | 0.3+ | 0.6+ | 2005 12 05 | 691 | 0.2+ | 0.1+ |
| 2001 12 08 | 699 | 1.2− | 0.0 | 2005 11 04 | 704 | 0.5+ | 0.1− | 2005 12 05 | 691 | 0.1+ | 0.0 |
| 2001 12 08 | 699 | 0.1− | 0.6+ | 2005 11 04 | 704 | 0.2+ | 0.8+ | 2005 12 07 | 691 | 0.2+ | 0.2+ |
| 2001 12 10 | 704 | 0.5+ | 0.4− | 2005 11 07 | 704 | (1.1+ | 1.8+) | 2005 12 07 | 691 | 0.1+ | 0.1+ |
| 2001 12 10 | 704 | 0.2+ | 0.7− | 2005 11 07 | 704 | 0.1+ | 0.2+ | 2005 12 07 | 691 | 0.2+ | 0.1− |
| 2001 12 10 | 704 | 0.1+ | 0.2− | 2005 11 07 | 704 | 0.7+ | 0.8+ | 2005 12 09 | 704 | 0.8− | 0.2+ |
| 2001 12 10 | 704 | 0.4+ | 0.1+ | 2005 11 07 | 704 | 0.0 | 0.0 | 2005 12 09 | 704 | 0.8− | 0.5+ |
| 2001 12 15 | 704 | 0.1+ | 0.8+ | 2005 11 07 | 704 | 0.0 | 0.1+ | 2005 12 09 | 704 | 0.8+ | 0.1+ |
| 2001 12 15 | 704 | 0.6− | 0.4+ | 2005 11 11 | 704 | (1.6+ | 0.0 ) | 2005 12 09 | 704 | 0.7− | 0.6− |
| 2001 12 15 | 704 | 1.5− | 0.9+ | 2005 11 11 | 704 | 0.2+ | 0.1+ | 2005 12 09 | 704 | 0.1+ | 0.2+ |
| 2001 12 15 | 704 | 0.2+ | 0.4− | 2005 11 11 | 704 | 1.1+ | 0.3+ | 2006 10 30 | G96 | 0.5− | 0.3− |
| 2001 12 18 | 704 | 0.1+ | 0.1+ | 2005 11 11 | 704 | 0.7+ | 0.2− | 2006 10 30 | G96 | 0.7− | 0.3− |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2005 11 11 | 704 | 0.8+ | 0.5− | 2006 10 30 | G96 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2005 11 12 | 704 | 0.5+ | 0.5+ | 2006 10 30 | G96 | 0.7− | 0.0 |
| 2001 12 18 | 704 | 0.5− | 0.2− | 2005 11 12 | 704 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.2− | 0.2− | 2005 11 12 | 704 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.1− |
| 2001 12 18 | 704 | 0.4− | 0.7+ | 2005 11 12 | 704 | 1.1+ | 0.0 | 2006 11 20 | G96 | 1.3− | 0.2+ |
| 2001 12 18 | 704 | 0.7+ | 0.2− | 2005 11 20 | 699 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.5− | 0.4+ |
| 2001 12 18 | 704 | 0.3− | 0.3− | 2005 11 20 | 699 | 1.2− | 1.2− | 2006 11 21 | 691 | 0.4+ | 0.3+ |
| 2001 12 18 | 704 | 0.7− | 0.5− | 2005 11 20 | 699 | 0.2− | 1.3+ | 2006 11 21 | 691 | 0.4+ | 0.1+ |
| 2001 12 18 | 704 | 0.6+ | 0.2− | 2005 11 20 | 699 | (1.9+ | 0.4−) | 2006 11 21 | 691 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | 0.8+ | 0.6+ | 2005 11 28 | 703 | 0.4− | 0.6− | | | | |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2005 11 28 | 703 | (1.6− | 1.2−) | | | | |

**(140924)∗ 2001 VU$_{67}$ = 2003 AV$_{51}$**

Discovered 2001 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40891)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.59131 | | (2000.0) | | | |
| $n$ | 0.18063170 | $\omega$ | 174.18972 | | −0.48900012 | −0.85916230 |
| $a$ | 3.0993699 | $\Omega$ | 304.99221 | | +0.79271320 | −0.36560380 |
| $e$ | 0.0264996 | $i$ | 10.60212 | | +0.36398442 | −0.35801398 |
| $P$ | 5.46 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 0.0 | 0.8− | 2003 01 05 | 704 | 0.5− | 0.4+ | 2006 09 15 | 704 | 0.0 | 1.3+ |
| 1998 03 04 | 704 | 0.9− | 1.1+ | 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 09 15 | 704 | 0.6− | 0.4+ |
| 1998 03 04 | 704 | (0.2+ | 2.4+) | 2003 01 09 | 704 | (1.8+ | 1.0+) | 2006 09 15 | 704 | (2.1− | 1.5+) |
| 1998 03 04 | 704 | 0.9− | 1.9+ | 2003 01 09 | 704 | 0.2+ | 0.4− | 2006 09 20 | 699 | 0.4+ | 0.6+ |
| 1998 03 04 | 704 | (1.2− | 2.3+) | 2003 01 09 | 704 | 0.3− | 1.0+ | 2006 09 20 | 699 | 0.4− | 0.4+ |
| 2001 10 13 | 644 | 0.3+ | 0.7+ | 2003 01 09 | 704 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.3− | 1.4+ |
| 2001 10 13 | 644 | 0.2+ | 0.5+ | 2003 01 30 | 699 | 0.3− | 0.6+ | 2006 09 20 | 699 | 0.3− | 0.5+ |
| 2001 10 13 | 644 | 0.1+ | 0.8+ | 2003 01 30 | 699 | 0.2+ | 0.3+ | 2006 09 22 | 703 | 0.2− | 0.5− |
| 2001 10 18 | 704 | 0.1− | 0.1+ | 2003 01 30 | 699 | 0.2+ | 1.0+ | 2006 09 22 | 703 | 0.6− | 0.6− |
| 2001 10 18 | 704 | 0.0 | 0.3− | 2003 01 30 | 699 | 0.3− | 0.7+ | 2006 09 22 | 703 | 0.9− | 0.2− |
| 2001 10 18 | 704 | 0.4− | 0.1+ | 2003 01 30 | 608 | 0.6+ | 1.4− | 2006 09 22 | 703 | 0.6− | 0.3− |
| 2001 10 18 | 704 | 0.5− | 0.2− | 2003 01 30 | 608 | 0.4+ | 1.1− | 2006 09 27 | 703 | 1.1− | 1.3− |
| 2001 10 18 | 704 | 0.5− | 0.5− | 2003 01 30 | 608 | 0.3+ | 0.8− | 2006 09 27 | 703 | 0.8− | 1.2− |
| 2001 11 11 | 704 | 0.9+ | 0.4− | 2004 04 16 | 699 | 0.3+ | 0.0 | 2006 09 27 | 703 | 0.8− | 0.2+ |
| 2001 11 11 | 704 | 0.8+ | 0.4+ | 2004 04 16 | 699 | 0.6+ | 0.4− | 2006 09 27 | 703 | 0.0 | 0.6− |
| 2001 11 11 | 704 | 0.8+ | 0.2+ | 2004 04 16 | 699 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 11 11 | 704 | 1.0+ | 0.1− | 2004 04 16 | 699 | 0.7− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 11 11 | 704 | 0.7+ | 0.6+ | 2004 04 17 | 704 | 1.3+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2004 04 17 | 704 | 0.6+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.4+ | 0.2− | 2004 04 17 | 704 | 0.6+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2004 04 17 | 704 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | (0.3+ | 1.5+) | 2004 04 24 | 608 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2004 04 24 | 608 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2004 04 24 | 608 | 0.7+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.6− | 0.3+ | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.2− | | | | |

**(140925)∗ 2001 VR$_{68}$**

Discovered 2001 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.20315 | | (2000.0) | | | |
| $n$ | 0.18073264 | $\omega$ | 88.66807 | | +0.02716352 | −0.99963030 |
| $a$ | 3.0982157 | $\Omega$ | 359.76538 | | +0.76318444 | +0.02150255 |
| $e$ | 0.2230089 | $i$ | 16.78827 | | +0.64560952 | +0.01664018 |
| $P$ | 5.45 | $H$ | 13.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 809 | 0.9+ | 0.5+ | 2003 03 05 | 704 | 1.3+ | 0.1+ | 2006 09 20 | 704 | 0.5− | 1.0+ |
| 1995 08 29 | 809 | 0.8+ | 0.0 | 2003 03 05 | 704 | 1.3+ | 0.5− | 2006 09 20 | 704 | 0.4− | 0.8+ |
| 1995 08 30 | 809 | (3.7− | 3.9−) | 2003 03 05 | 209 | 0.7+ | 0.7+ | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 1995 08 31 | 809 | (2.4− | 3.5−) | 2003 03 05 | 209 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.5− | 0.6+ |
| 1995 08 31 | 809 | 0.5− | 0.5− | 2003 03 05 | 209 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.9+ | 0.0 |
| 1995 09 01 | 809 | 1.3− | 1.1− | 2003 03 09 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.3+ |
| 1995 09 01 | 809 | (1.7− | 3.7+) | 2003 03 09 | 704 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.7− |
| 1995 09 18 | 809 | 1.0− | 0.7+ | 2003 03 09 | 704 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.5+ | 1.0+ |
| 1995 09 19 | 809 | 0.3− | 0.3+ | 2003 03 26 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.5+ |
| 1995 09 19 | 809 | 0.4+ | 0.0 | 2003 03 26 | 644 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.2− | 0.8+ |
| 1995 09 20 | 809 | 0.7− | 0.7− | 2003 03 26 | 644 | 0.2+ | 0.3− | 2006 09 27 | 704 | 0.4+ | 0.1+ |
| 1995 09 22 | 809 | 1.4+ | 0.1− | 2003 03 31 | 703 | 0.4− | 1.2+ | 2006 09 27 | 704 | 0.2+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 23 | 809 | 0.8+ | 0.3− | 2003 03 31 | 703 | 0.7− | 1.0+ | 2006 09 27 | 704 | 0.3− | 0.6+ | | |
| 1995 09 23 | 809 | (5.1+ | 1.6−) | 2003 03 31 | 703 | 0.1− | 1.2+ | 2006 09 27 | 704 | 0.0 | 0.9+ | | |
| 1995 09 24 | 809 | 0.3+ | 0.2+ | 2003 03 31 | 703 | 0.3− | 0.9+ | 2006 09 27 | J75 | 0.4+ | 0.3− | | |
| 2001 08 22 | 704 | 0.3+ | 0.7+ | 2003 04 01 | 704 | 0.8+ | 0.9+ | 2006 09 27 | J75 | 0.6+ | 0.7− | | |
| 2001 08 22 | 704 | 0.2+ | 0.1− | 2003 04 01 | 704 | 0.8+ | 0.9+ | 2006 09 27 | J75 | 0.5+ | 0.4− | | |
| 2001 08 22 | 704 | 0.7+ | 0.3− | 2003 04 01 | 704 | 0.8+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.1+ | | |
| 2001 08 22 | 704 | 0.7+ | 0.5+ | 2003 04 01 | 704 | 0.6+ | 0.2+ | 2006 09 28 | 691 | 0.3+ | 0.5− | | |
| 2001 08 22 | 704 | 0.6+ | 0.0 | 2003 04 01 | 704 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.2+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2003 04 03 | 699 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.5+ | | |
| 2001 09 25 | 704 | 0.2− | 0.5− | 2003 04 03 | 699 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.5+ | | |
| 2001 09 25 | 704 | 0.3− | 0.6− | 2003 04 03 | 699 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.2+ | 2003 04 03 | 699 | 0.1− | 0.7+ | 2006 09 29 | 704 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | 0.0 | 1.0+ | 2003 04 05 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.5+ | | |
| 2001 09 28 | 704 | 0.0 | 0.1+ | 2003 04 05 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.6− | 0.6+ | | |
| 2001 09 28 | 704 | 0.2+ | 0.1− | 2003 04 05 | 691 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.3+ | | |
| 2001 09 28 | 704 | 0.3+ | 0.1− | 2003 04 08 | 704 | (0.1− | 1.8+) | 2006 10 01 | 704 | 0.3− | 0.2+ | | |
| 2001 09 28 | 704 | 0.1− | 0.2− | 2003 04 08 | 704 | 0.1− | 0.8+ | 2006 10 01 | 704 | 0.2− | 0.1+ | | |
| 2001 09 28 | 704 | 0.1− | 0.3− | 2003 04 08 | 704 | 0.4+ | 0.7+ | 2006 10 01 | 704 | 0.5− | 0.3+ | | |
| 2001 10 08 | 704 | 0.5− | 0.9− | 2003 04 29 | 704 | 0.6+ | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 2001 10 08 | 704 | 0.3+ | 0.3+ | 2003 04 29 | 704 | 0.9+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2001 10 08 | 704 | 0.5+ | 1.0− | 2003 04 29 | 704 | 0.2+ | 0.7+ | 2006 10 09 | 644 | 0.3− | 0.1− | | |
| 2001 10 08 | 704 | 1.1+ | 0.5− | 2003 04 29 | 704 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2001 11 11 | 704 | 0.0 | 0.0 | 2003 04 29 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.6− | | |
| 2001 11 11 | 704 | 0.4− | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.5− | | |
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | (1.6− | 0.3+) | | |
| 2001 11 11 | 704 | 0.7− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 11 11 | 704 | 0.3− | 0.2− | 2006 08 21 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2006 08 21 | 704 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2006 08 21 | 704 | 0.8− | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.1+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2006 08 21 | 704 | 0.9− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2006 08 21 | 704 | 1.1− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.5+ | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2001 12 09 | 704 | 1.1− | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 12 09 | 704 | 0.9− | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.2+ | | |
| 2001 12 09 | 704 | 1.1− | 0.4+ | 2006 08 25 | 704 | 0.1+ | 0.0 | 2006 10 22 | 703 | 1.2− | 1.3− | | |
| 2001 12 09 | 704 | 1.0− | 0.3+ | 2006 08 25 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | 1.3− | 0.2− | | |
| 2001 12 09 | 704 | 0.5− | 0.7+ | 2006 08 25 | 704 | 1.2− | 0.6+ | 2006 10 22 | 703 | 0.8− | 0.4− | | |
| 2001 12 22 | 704 | 0.0 | 0.5+ | 2006 08 25 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.1− | | |
| 2001 12 22 | 704 | 0.6+ | 0.2− | 2006 08 25 | 704 | 0.5− | 0.2− | 2006 10 23 | 704 | 0.1− | 0.3+ | | |
| 2001 12 22 | 704 | 0.7− | 0.3− | 2006 09 12 | 703 | (1.7− | 0.9+) | 2006 10 23 | 704 | 0.1+ | 0.5+ | | |
| 2001 12 22 | 704 | 0.2+ | 0.6− | 2006 09 12 | 703 | 1.3− | 0.3− | 2006 10 23 | 704 | 1.3− | 0.4+ | | |
| 2002 01 07 | 704 | 0.3+ | 0.4− | 2006 09 12 | 703 | (2.1− | 0.2−) | 2006 10 23 | 704 | 1.5− | 0.0 | | |
| 2002 01 07 | 704 | 0.3+ | 0.6− | 2006 09 12 | 703 | 0.7− | 0.2− | 2006 10 24 | 644 | 0.1− | 0.1+ | | |
| 2002 01 07 | 704 | 0.3+ | 0.7− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.1− | 0.1+ | | |
| 2002 01 07 | 704 | 0.7+ | 0.7− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.2− | 0.4+ | | |
| 2002 01 07 | 704 | 0.9+ | 0.5− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 29 | 704 | 1.0− | 0.4+ | | |
| 2003 01 02 | 704 | (1.9+ | 1.0+) | 2006 09 16 | 691 | 0.3− | 0.2+ | 2006 10 29 | 704 | 0.2+ | 0.8+ | | |
| 2003 01 02 | 704 | 1.2+ | 0.0 | 2006 09 16 | 691 | 0.4− | 0.4+ | 2006 10 29 | 704 | 0.2− | 0.3+ | | |
| 2003 01 02 | 704 | 1.2+ | 0.6+ | 2006 09 16 | 691 | 0.2− | 0.4+ | 2006 10 29 | 704 | 0.5+ | 0.8+ | | |
| 2003 01 02 | 704 | 1.2+ | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.6+ | 2006 10 29 | 703 | 0.5+ | 1.1− | | |
| 2003 01 02 | 704 | 1.2+ | 0.3+ | 2006 09 17 | 704 | 0.4+ | 1.0+ | 2006 10 29 | 703 | (2.2− | 1.4−) | | |
| 2003 02 12 | 608 | 0.9+ | 0.1− | 2006 09 17 | 704 | 0.0 | 1.0+ | 2006 10 29 | 703 | (2.1− | 1.8−) | | |
| 2003 02 12 | 608 | 0.7+ | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 703 | (2.1− | 2.7−) | | |
| 2003 02 12 | 608 | 0.6+ | 0.5+ | 2006 09 17 | 704 | 0.4− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.3+ | | |
| 2003 02 23 | 608 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 11 06 | 644 | 0.1− | 0.1− | | |
| 2003 02 23 | 608 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.1− | | |
| 2003 02 23 | 608 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.0 | 0.0 | | | | | | |
| 2003 03 05 | 704 | 1.3+ | 0.5− | 2006 09 20 | 704 | 0.4− | 0.4+ | | | | | | |

**(140926)∗ 2001 VY$_{69}$**

Discovered 2001 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 242.74593 | | (2000.0) | | | |
| $n$ | 0.17454233 | $\omega$ | 118.51552 | | −0.82144344 | −0.56313866 |
| $a$ | 3.1710435 | $\Omega$ | 27.50413 | | +0.43092905 | −0.71632820 |
| $e$ | 0.1726867 | $i$ | 11.24185 | | +0.37353826 | −0.41200578 |
| $P$ | 5.65 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1− | 0.5− | 2003 02 06 | 704 | 0.0 | 0.8+ | 2003 04 10 | 644 | 0.2− | 0.4+ | |
| 1995 10 02 | 691 | 0.2+ | 0.5− | 2003 02 06 | 704 | 0.4− | 0.5+ | 2003 04 10 | 644 | 0.2+ | 0.2+ | |
| 1995 10 02 | 691 | 0.2+ | 0.3− | 2003 02 12 | 608 | 0.6+ | 0.6+ | 2003 04 10 | 644 | 0.1+ | 0.5+ | |
| 1997 02 06 | 566 | 0.3+ | 0.9− | 2003 02 12 | 608 | 0.4+ | 0.4+ | 2003 04 25 | 699 | 1.1− | 0.3+ | |
| 1997 02 06 | 566 | 0.3+ | 0.8− | 2003 02 12 | 608 | 0.5+ | 0.5+ | 2003 04 25 | 699 | 0.6− | 0.1+ | |
| 1997 02 06 | 566 | 0.3+ | 1.0− | 2003 02 24 | 608 | 0.4+ | 0.7+ | 2003 04 25 | 699 | 0.3+ | 0.4+ | |
| 2001 10 21 | 704 | 1.0− | 0.5+ | 2003 02 24 | 608 | 0.5+ | 0.8+ | 2003 04 25 | 699 | 0.4+ | 0.6+ | |
| 2001 10 21 | 704 | 0.5− | 0.9− | 2003 02 24 | 608 | 0.2− | 0.2+ | 2003 05 01 | 704 | 1.5+ | 0.9+ | |
| 2001 10 21 | 704 | 1.4− | 0.3+ | 2003 02 28 | 704 | 1.3+ | 0.4− | 2003 05 01 | 704 | 0.3+ | 0.8− | |
| 2001 10 21 | 704 | 1.0− | 1.1− | 2003 02 28 | 704 | 1.2+ | 0.3+ | 2003 05 01 | 704 | 0.8+ | 0.6+ | |
| 2001 11 11 | 704 | 0.6+ | 0.2− | 2003 02 28 | 704 | (1.7+ | 0.3+) | 2003 05 01 | 704 | 0.1+ | 0.6+ | |
| 2001 11 11 | 704 | 0.6+ | 0.2− | 2003 02 28 | 704 | (1.5+ | 0.3+) | 2006 09 18 | 691 | 0.3− | 0.1+ | |
| 2001 11 11 | 704 | 0.1− | 0.7+ | 2003 02 28 | 704 | 1.1+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ | |
| 2001 11 11 | 704 | 0.0 | 0.5+ | 2003 03 03 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.1+ | |
| 2001 11 11 | 704 | 0.6+ | 0.1+ | 2003 03 03 | 704 | 0.4− | 0.4− | 2006 09 25 | 691 | 0.2+ | 0.2+ | |
| 2001 11 12 | 704 | 0.0 | 0.4− | 2003 03 03 | 704 | 1.1+ | 1.1− | 2006 09 25 | 691 | 0.1− | 0.2+ | |
| 2001 11 12 | 704 | 0.2− | 0.8− | 2003 03 03 | 704 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ | |
| 2001 11 12 | 704 | 0.2− | 0.3− | 2003 03 05 | 704 | 1.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.3+ | |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2003 03 05 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.2+ | |
| 2001 11 12 | 704 | 0.3− | 0.5+ | 2003 03 05 | 704 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.3+ | |
| 2001 11 21 | 704 | 0.6+ | 1.3+ | 2003 03 06 | 699 | 0.4+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.5+ | |
| 2001 11 21 | 704 | 0.8+ | 0.2+ | 2003 03 06 | 699 | 0.6− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.4+ | |
| 2001 11 21 | 704 | 1.0+ | 0.9+ | 2003 03 06 | 699 | 0.0 | 1.2+ | 2006 10 02 | 691 | 0.3− | 0.5+ | |
| 2001 11 21 | 704 | 1.2+ | 0.7− | 2003 03 06 | 699 | 0.1+ | 0.6+ | 2006 10 15 | 703 | (1.8− | 1.4−) | |
| 2001 11 21 | 704 | 0.2− | 0.1− | 2003 03 15 | 608 | (0.4+ | 1.9+) | 2006 10 15 | 703 | (1.3− | 2.2−) | |
| 2001 11 24 | 704 | 0.1+ | 0.2− | 2003 03 15 | 608 | 0.7+ | 1.4+ | 2006 10 15 | 703 | (0.5− | 2.3−) | |
| 2001 11 24 | 704 | 0.1− | 0.2+ | 2003 03 15 | 608 | 0.7+ | 1.3+ | 2006 10 15 | 703 | 0.4+ | 0.0 | |
| 2001 11 24 | 704 | 0.3− | 0.2− | 2003 03 23 | 645 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 2001 11 24 | 704 | 0.2− | 0.4+ | 2003 03 23 | 645 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2001 11 24 | 704 | 0.9− | 0.4− | 2003 03 25 | 644 | 0.2+ | 1.1− | 2006 10 20 | 644 | 0.3− | 0.0 | |
| 2001 12 10 | 704 | 0.4+ | 0.2− | 2003 03 25 | 644 | 0.5+ | 0.8− | 2006 10 22 | 703 | (0.9− | 1.7+) | |
| 2001 12 10 | 704 | (1.7+ | 0.1−) | 2003 03 25 | 644 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.1− | 0.2+ | |
| 2001 12 10 | 704 | 0.5+ | 0.5− | 2003 03 27 | 704 | 0.7+ | 0.6+ | 2006 10 22 | 703 | (0.4− | 2.2+) | |
| 2003 01 10 | 704 | 0.7− | 0.6− | 2003 03 27 | 704 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.8− | 0.1− | |
| 2003 01 10 | 704 | 0.2+ | 0.4− | 2003 03 27 | 704 | 0.6+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.1− | |
| 2003 01 10 | 704 | 0.3+ | 0.7− | 2003 03 27 | 704 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1− | |
| 2003 01 13 | 291 | 0.3− | 0.2+ | 2003 03 27 | 704 | 0.5+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.3− | |
| 2003 01 13 | 291 | 0.4− | 0.4+ | 2003 04 01 | 704 | (0.3− | 1.5+) | 2006 10 22 | G96 | 0.3− | 0.3− | |
| 2003 01 13 | 291 | 0.4− | 0.3+ | 2003 04 01 | 704 | 0.5+ | 1.1+ | 2006 11 14 | G96 | 1.2+ | 0.2+ | |
| 2003 02 06 | 704 | 0.4+ | 0.1+ | 2003 04 01 | 704 | 0.5+ | 0.8+ | 2006 11 14 | G96 | 0.4− | 0.3− | |
| 2003 02 06 | 704 | 1.2+ | 0.3+ | 2003 04 01 | 704 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.3− | |
| 2003 02 06 | 704 | 0.1+ | 0.4+ | 2003 04 01 | 704 | 0.3+ | 0.7+ | 2006 11 14 | G96 | 0.3− | 0.2− | |

**(140927)∗ 2001 VM$_{74}$**

Discovered 2001 Nov. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.02032 | | (2000.0) | | | |
| $n$ | 0.18799354 | $\omega$ | 181.53142 | | +0.57490771 | −0.80909493 |
| $a$ | 3.0179180 | $\Omega$ | 233.39282 | | +0.75230495 | +0.58125837 |
| $e$ | 0.1219013 | $i$ | 8.73053 | | +0.32174273 | +0.08662622 |
| $P$ | 5.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 23 | 691 | 0.3− | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.2− | |
| 1995 09 23 | 691 | 0.3− | 0.4+ | 2001 12 08 | 699 | 0.0 | 0.6− | 2006 09 30 | 703 | 0.1− | 1.0− | |
| 1995 09 23 | 691 | 0.1− | 0.5+ | 2001 12 08 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.8− | |
| 2001 10 13 | 704 | 0.8+ | 0.4− | 2001 12 08 | 699 | 1.1+ | 0.2+ | 2006 09 30 | 703 | 0.5+ | 1.2− | |
| 2001 10 13 | 704 | (1.6+ | 0.3+) | 2001 12 08 | 699 | 1.0− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.5− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 1.3+ | 0.3+ | 2001 12 11 | 291 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 13 | 704 | 1.0+ | 0.5+ | 2001 12 11 | 291 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.5− | 0.4+ | | |
| 2001 10 21 | 704 | 0.4+ | 0.4− | 2001 12 11 | 291 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.1− | | |
| 2001 10 21 | 704 | 0.2+ | 0.4− | 2001 12 11 | 704 | (0.8+ | 1.8+) | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2001 12 11 | 704 | 0.2+ | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.0 | | |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2001 12 11 | 704 | 0.8− | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 26 | 704 | 0.4− | 0.2− | 2001 12 11 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2− | | |
| 2001 10 26 | 704 | 1.2− | 0.2+ | 2001 12 14 | 291 | 0.8+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.4− | | |
| 2001 10 26 | 704 | 0.5− | 0.6− | 2001 12 14 | 291 | 0.7+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.1− | | |
| 2001 10 26 | 644 | 0.3− | 0.1− | 2001 12 14 | 291 | 0.8+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.2− | | |
| 2001 10 26 | 644 | 0.4− | 0.0 | 2001 12 14 | 704 | 0.6− | 1.4+ | 2006 10 17 | 703 | 0.4+ | 0.2+ | | |
| 2001 10 26 | 644 | 0.2+ | 0.3− | 2001 12 14 | 704 | 0.3+ | 1.0+ | 2006 10 17 | 703 | 0.1+ | 0.1− | | |
| 2001 11 12 | 704 | (0.6+ | 2.2−) | 2001 12 14 | 704 | 0.5+ | 0.9− | 2006 10 17 | 703 | 0.1− | 0.7− | | |
| 2001 11 12 | 704 | 1.4− | 0.2+ | 2001 12 14 | 704 | 1.0+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.7− | | |
| 2001 11 12 | 704 | 1.1− | 0.3+ | 2001 12 14 | 704 | 0.5+ | 1.3+ | 2006 10 19 | 644 | 0.2− | 0.3− | | |
| 2001 11 12 | 704 | 0.3− | 0.3− | 2001 12 17 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2001 11 12 | 704 | 0.3− | 0.2+ | 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 14 | 291 | 0.2+ | 0.1− | 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2001 11 14 | 291 | 0.6+ | 0.2− | 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 11 14 | 291 | 0.5+ | 0.0 | 2001 12 17 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 11 15 | 291 | (1.7− | 0.4+) | 2003 03 10 | 699 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 11 15 | 291 | 0.8− | 0.8+ | 2003 03 10 | 699 | (1.0+ | 1.6−) | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 11 15 | 291 | 0.7− | 0.2+ | 2003 03 10 | 699 | 1.1− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 2001 11 19 | 704 | 0.1+ | 0.1− | 2003 03 10 | 699 | 0.6+ | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.1− | | |
| 2001 11 19 | 699 | 1.4− | 0.9+ | 2004 05 09 | 691 | 0.4− | 0.3+ | 2006 11 13 | 691 | 0.3+ | 0.0 | | |
| 2001 11 19 | 704 | 0.1+ | 0.1− | 2004 05 09 | 691 | 0.1− | 0.5+ | 2006 11 13 | 683 | 1.4+ | 0.9− | | |
| 2001 11 19 | 704 | 0.6+ | 0.3+ | 2004 05 09 | 691 | 0.0 | 0.4+ | 2006 11 13 | 683 | (2.4+ | 1.6−) | | |
| 2001 11 19 | 699 | 0.8− | 0.2+ | 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 683 | (2.0+ | 0.8−) | | |
| 2001 11 19 | 704 | 0.5+ | 0.8− | 2004 05 19 | 691 | 0.5+ | 0.5+ | 2006 11 14 | 703 | 0.7− | 0.4+ | | |
| 2001 11 19 | 699 | 0.9− | 0.0 | 2004 05 19 | 691 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 1.0− | 0.0 | | |
| 2001 11 19 | 704 | 0.6+ | 0.4− | 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | (3.4− | 1.4−) | | |
| 2001 11 19 | 699 | 0.5+ | 0.2+ | 2005 06 04 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | (1.7− | 0.5−) | | |
| 2001 11 19 | 608 | 1.0− | 0.1− | 2005 06 04 | 691 | 0.0 | 0.1+ | 2006 11 15 | 224 | 0.5+ | 1.1− | | |
| 2001 11 19 | 608 | 1.0− | 0.2− | 2006 09 20 | 699 | 0.0 | 0.9− | 2006 11 15 | 224 | 0.1+ | 0.4− | | |
| 2001 11 19 | 608 | 0.8− | 0.2− | 2006 09 20 | 699 | 0.5− | 0.1+ | 2006 11 15 | 224 | 0.4+ | 0.6+ | | |
| 2001 11 20 | 704 | 1.4− | 0.8+ | 2006 09 20 | 699 | 0.8+ | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2001 11 20 | 704 | 0.7− | 1.0+ | 2006 09 20 | 699 | 0.8+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.0 | | |
| 2001 11 20 | 704 | 1.0− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2− | 0.4+ | | |
| 2001 11 20 | 704 | 0.1+ | 1.0+ | 2006 09 28 | 691 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.4− | 0.1+ | | |
| 2001 11 21 | 704 | 0.3− | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 1.2− | 0.3− | | |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.7− | 2006 11 22 | 704 | 0.6− | 1.0+ | | |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | (0.2− | 1.6−) | 2006 11 22 | 704 | 0.2+ | 0.5+ | | |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.4− | 0.4+ | | |

**(140928)∗ 2001 VG$_{75}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.33900 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.52665425 | $\omega$ | 257.19250 | | −0.73893444 | −0.59222384 | |
| $a$ | 1.5186312 | $\Omega$ | 245.56344 | | +0.66835051 | −0.70466848 | |
| $e$ | 0.2968144 | $i$ | 20.66703 | | −0.08534339 | −0.39078543 | |
| $P$ | 1.87 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 03 07 | 260 | 1.2+ | 0.7+ | 2003 11 20 | 704 | 0.2+ | 1.1+ | 2003 12 16 | 113 | 0.0 | 0.4+ | | |
| 1976 03 07 | 260 | 1.3− | 0.3+ | 2003 11 20 | 704 | 0.7+ | 0.1+ | 2003 12 16 | 113 | 0.2− | 0.1− | | |
| 1976 03 10 | 260 | 0.3− | 0.0 | 2003 11 23 | 704 | 0.0 | 0.1− | 2003 12 16 | 113 | 0.1+ | 0.0 | | |
| 1976 03 10 | 260 | 0.7− | 0.4+ | 2003 11 23 | 704 | 0.1− | 0.7+ | 2003 12 16 | 151 | 0.2+ | 0.4− | | |
| 1976 05 01 | 260 | 0.6− | 0.2+ | 2003 11 23 | 704 | 0.1+ | 0.0 | 2003 12 16 | 151 | 0.3+ | 0.1− | | |
| 1976 05 01 | 260 | 1.3+ | 0.1+ | 2003 11 23 | 704 | 0.2+ | 0.4+ | 2003 12 16 | 151 | 0.1+ | 0.5− | | |
| 1976 05 27 | 260 | 1.2− | 0.8− | 2003 11 23 | 704 | 0.1− | 0.4+ | 2003 12 16 | 151 | 0.4+ | 0.2− | | |
| 1976 05 27 | 260 | 0.3+ | 0.4+ | 2003 11 24 | 699 | 0.4− | 0.6+ | 2003 12 16 | 151 | 0.2+ | 0.5− | | |
| 2001 11 12 | 704 | 0.4− | 0.1− | 2003 11 24 | 699 | 0.3+ | 0.2− | 2003 12 16 | 151 | 0.1− | 0.3− | | |
| 2001 11 12 | 704 | 0.4− | 0.6− | 2003 11 24 | 699 | 0.3+ | 0.0 | 2003 12 16 | 151 | 0.1+ | 0.2− | | |
| 2001 11 12 | 704 | 0.3− | 0.6− | 2003 11 24 | 704 | 0.1− | 0.4+ | 2003 12 16 | 151 | 0.2+ | 0.5− | | |
| 2001 11 12 | 704 | 0.3− | 0.4− | 2003 11 24 | 699 | 0.1+ | 0.2− | 2003 12 17 | H41 | (0.7− | 1.8+) | | |
| 2001 11 14 | 557 | 0.1+ | 0.2− | 2003 11 24 | 704 | 0.3+ | 0.4+ | 2003 12 17 | H41 | 0.2+ | 1.3+ | | |
| 2001 11 14 | 557 | 0.1− | 0.2+ | 2003 11 24 | 704 | 0.0 | 0.3+ | 2003 12 17 | H41 | (0.4+ | 1.6+) | | |
| 2001 11 14 | 557 | 0.7− | 0.6− | 2003 11 24 | 704 | 0.1+ | 0.3+ | 2003 12 17 | H41 | 0.6− | 1.0+ | | |
| 2001 11 14 | 046 | 0.7+ | 0.4+ | 2003 11 24 | 704 | 0.0 | 0.1+ | 2003 12 17 | H41 | 0.1+ | 0.1− | | |
| 2001 11 15 | 046 | 0.3− | 0.2− | 2003 11 24 | 113 | 0.1− | 0.1+ | 2003 12 17 | H41 | 0.2+ | 1.0+ | | |
| 2001 11 15 | 046 | (2.2− | 1.6+) | 2003 11 24 | 113 | 0.4− | 0.0 | 2003 12 18 | 608 | 0.2− | 1.2− | | |
| 2001 11 15 | 046 | 0.8− | 0.0 | 2003 11 24 | 113 | 1.5− | 0.3− | 2003 12 18 | 608 | 0.4− | 1.1− | | |
| 2001 11 15 | 046 | (1.9− | 0.5+) | 2003 11 24 | 113 | 0.3+ | 0.2+ | 2003 12 18 | 608 | 0.3− | 1.1− | | |
| 2001 11 16 | 651 | 0.9+ | 0.7+ | 2003 11 24 | 113 | 1.0+ | 0.2+ | 2003 12 19 | H72 | 0.8+ | 0.7+ | | |
| 2001 11 16 | 651 | 0.6+ | 1.2− | 2003 11 26 | 704 | 0.7− | 0.3− | 2003 12 19 | H72 | 0.2− | 0.4+ | | |
| 2001 11 16 | 651 | 0.8+ | 0.4− | 2003 11 26 | 704 | 0.7− | 0.4− | 2003 12 19 | H72 | 1.5− | 0.0 | | |
| 2001 11 19 | 696 | 0.0 | 0.3− | 2003 11 26 | 704 | 0.7− | 0.5− | 2003 12 19 | H72 | 0.2+ | 0.3− | | |
| 2001 11 19 | 696 | 0.3+ | 0.0 | 2003 11 26 | 704 | 1.1− | 0.3− | 2003 12 20 | H41 | 0.3+ | 0.2− | | |
| 2001 11 21 | 691 | 0.4+ | 0.4− | 2003 11 27 | H72 | 0.4+ | 0.4+ | 2003 12 20 | H41 | 1.2+ | 0.2+ | | |
| 2001 11 21 | 691 | 0.2+ | 0.3− | 2003 11 27 | H72 | 0.5+ | 0.5+ | 2003 12 20 | H41 | 0.2+ | 0.2− | | |
| 2001 11 21 | 691 | 1.0+ | 0.1− | 2003 11 27 | H72 | 1.0− | 0.1+ | 2003 12 20 | H41 | 0.4+ | 0.2+ | | |
| 2001 12 06 | 649 | 0.3− | 0.2+ | 2003 11 27 | H72 | 0.7+ | 0.3+ | 2003 12 20 | H41 | 0.3+ | 0.1+ | | |
| 2001 12 06 | 649 | 0.9+ | 0.5+ | 2003 11 27 | H72 | 0.7− | 0.4− | 2003 12 20 | H41 | 0.1+ | 0.0 | | |
| 2002 01 08 | 291 | 0.0 | 0.0 | 2003 11 27 | H72 | 0.3− | 0.3− | 2003 12 20 | H72 | 0.7− | 0.6− | | |
| 2002 01 08 | 291 | 0.2+ | 0.2+ | 2003 11 27 | H72 | 0.6+ | 0.2− | 2003 12 20 | H72 | (1.6− | 1.2−) | | |
| 2002 01 08 | 291 | 0.4− | 0.4+ | 2003 11 27 | H72 | 0.0 | 0.8+ | 2003 12 20 | H72 | 1.1− | 0.3− | | |
| 2003 11 02 | 170 | 0.1+ | 0.3+ | 2003 11 30 | 130 | 0.2+ | 0.2+ | 2003 12 23 | 113 | 0.0 | 0.4+ | | |
| 2003 11 02 | 170 | 0.1+ | 0.2+ | 2003 11 30 | 130 | 0.3+ | 0.1+ | 2003 12 23 | 113 | 0.1+ | 0.2+ | | |
| 2003 11 02 | 170 | 0.1+ | 0.3+ | 2003 11 30 | 130 | 0.1+ | 0.1+ | 2003 12 23 | 113 | 0.0 | 0.4+ | | |
| 2003 11 02 | 170 | 0.2+ | 0.2+ | 2003 12 01 | 704 | 0.2+ | 0.3+ | 2003 12 23 | 113 | 0.1− | 0.3+ | | |
| 2003 11 02 | 670 | 0.6+ | 0.5+ | 2003 12 01 | 704 | 0.1+ | 0.4+ | 2003 12 23 | 113 | 0.1+ | 0.1+ | | |
| 2003 11 02 | 670 | 0.3+ | 0.5+ | 2003 12 01 | 704 | 0.1+ | 0.4+ | 2003 12 26 | J87 | 0.7− | 0.7− | | |
| 2003 11 02 | 670 | 0.5+ | 0.2+ | 2003 12 01 | 704 | 0.5+ | 0.3+ | 2003 12 26 | J87 | 1.2+ | 0.1+ | | |
| 2003 11 03 | 151 | 0.1+ | 0.5− | 2003 12 01 | 704 | 0.3+ | 0.4+ | 2004 01 15 | H41 | (0.8+ | 2.2−) | | |
| 2003 11 03 | 151 | 1.3− | 0.5− | 2003 12 02 | D85 | 0.2+ | 0.2− | 2004 01 15 | H41 | 0.5+ | 0.6− | | |
| 2003 11 03 | 151 | 0.4− | 0.0 | 2003 12 02 | D85 | 0.2+ | 0.3− | 2004 01 15 | H41 | (2.0+ | 0.2−) | | |
| 2003 11 03 | 151 | 0.2− | 0.7− | 2003 12 02 | D85 | 0.3− | 0.6− | 2004 01 15 | H41 | 1.3+ | 0.7− | | |
| 2003 11 03 | 151 | 0.4− | 0.5− | 2003 12 04 | 703 | 0.1− | 0.3+ | 2004 02 15 | 644 | 0.3+ | 0.0 | | |
| 2003 11 03 | 151 | 0.2− | 0.2+ | 2003 12 04 | 703 | 0.4+ | 0.6+ | 2004 02 15 | 644 | 0.1+ | 0.3+ | | |
| 2003 11 04 | 704 | 0.2+ | 0.3+ | 2003 12 04 | 703 | 0.3− | 0.1− | 2004 02 15 | 644 | 0.1+ | 0.4+ | | |
| 2003 11 04 | 704 | 0.1− | 0.7+ | 2003 12 04 | 703 | 0.2+ | 0.6+ | 2004 05 10 | 428 | 0.1− | 0.4− | | |
| 2003 11 04 | 704 | 0.1− | 0.0 | 2003 12 07 | 240 | 0.0 | 0.3+ | 2004 05 21 | 608 | 0.2− | 0.6+ | | |
| 2003 11 04 | 704 | 0.1+ | 0.4+ | 2003 12 07 | 240 | 0.2+ | 0.2− | 2004 05 21 | 608 | 0.6+ | 0.6+ | | |
| 2003 11 04 | 704 | 0.6+ | 0.2+ | 2003 12 07 | 240 | 0.6+ | 0.4+ | 2004 05 21 | 608 | 0.7+ | 0.1− | | |
| 2003 11 04 | 185 | 0.0 | 0.2− | 2003 12 08 | D85 | 0.8− | 0.3+ | 2004 05 30 | E17 | (2.7− | 2.6+) | | |
| 2003 11 04 | 185 | 0.3+ | 0.2− | 2003 12 08 | D85 | 0.2− | 0.3− | 2004 05 30 | E17 | 0.6+ | 0.1+ | | |
| 2003 11 04 | 185 | 1.0− | 0.1+ | 2003 12 08 | D85 | 0.0 | 1.0− | 2004 05 30 | E17 | 0.4+ | 0.0 | | |
| 2003 11 06 | 926 | 0.2+ | 0.3+ | 2003 12 08 | 113 | 0.4− | 0.8+ | 2006 05 28 | 704 | (0.8+ | 1.7+) | | |
| 2003 11 06 | 926 | 0.2+ | 0.1+ | 2003 12 08 | 113 | 0.5+ | 1.3+ | 2006 05 28 | 704 | 0.7+ | 0.8+ | | |
| 2003 11 06 | 926 | 0.1− | 0.3− | 2003 12 08 | 113 | 0.1− | 0.0 | 2006 05 28 | 704 | 0.3− | 1.4+ | | |
| 2003 11 13 | 104 | 0.0 | 0.1− | 2003 12 11 | 703 | 0.8− | 0.4− | 2006 05 28 | 704 | 0.2+ | 1.0+ | | |
| 2003 11 13 | 104 | 0.2− | 0.1− | 2003 12 11 | 703 | 0.1− | 0.2+ | 2006 06 04 | G96 | 0.2− | 0.0 | | |
| 2003 11 13 | 104 | 0.1− | 0.0 | 2003 12 11 | 703 | 0.1− | 0.4+ | 2006 06 04 | G96 | 0.2− | 0.0 | | |
| 2003 11 14 | 644 | 0.2− | 0.1+ | 2003 12 11 | 703 | 0.3− | 0.2− | 2006 06 04 | G96 | 0.1− | 0.1+ | | |
| 2003 11 14 | 644 | 0.1− | 0.1+ | 2003 12 11 | 170 | 0.3+ | 0.1− | 2006 06 05 | 704 | 0.5− | 0.0 | | |
| 2003 11 14 | 644 | 0.2+ | 0.1+ | 2003 12 11 | 170 | 0.2+ | 0.1− | 2006 06 05 | 704 | 0.5− | 0.6+ | | |
| 2003 11 17 | 670 | 0.2+ | 0.1− | 2003 12 12 | 644 | 0.2− | 0.1− | 2006 06 05 | 704 | 0.2− | 0.6+ | | |
| 2003 11 17 | 670 | 0.4− | 0.2+ | 2003 12 12 | 644 | 0.1− | 0.1− | 2006 06 05 | 704 | 0.2− | 0.4+ | | |
| 2003 11 19 | 704 | 1.1− | 0.8+ | 2003 12 12 | 644 | 0.0 | 0.2− | 2006 06 05 | 704 | 0.3− | 0.3+ | | |
| 2003 11 19 | 704 | 1.1− | 0.7+ | 2003 12 14 | 704 | 0.9+ | 1.1+ | 2006 06 15 | 691 | 0.0 | 0.6+ | | |
| 2003 11 19 | 704 | 1.2− | 0.6+ | 2003 12 14 | 704 | 0.5+ | 0.9+ | 2006 06 15 | 691 | 0.0 | 0.6+ | | |
| 2003 11 19 | 704 | 1.1− | 0.6+ | 2003 12 14 | 704 | 0.6+ | 0.3+ | 2006 06 15 | 691 | 0.1− | 0.4+ | | |
| 2003 11 19 | 704 | 1.2− | 0.6+ | 2003 12 14 | 704 | 0.2+ | 0.7+ | 2006 06 19 | 691 | 0.2− | 0.1+ | | |
| 2003 11 20 | 691 | 0.0 | 0.1+ | 2003 12 15 | H41 | (1.5− | 1.1+) | 2006 06 19 | 691 | 0.0 | 0.4+ | | |
| 2003 11 20 | 704 | 0.5+ | 0.1+ | 2003 12 15 | H41 | 1.0+ | 0.6− | 2006 06 19 | 691 | 0.4− | 0.1+ | | |
| 2003 11 20 | 691 | 0.1− | 0.0 | 2003 12 15 | H41 | 1.4+ | 0.3+ | 2006 06 24 | 941 | 0.4+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.2− | 0.5+ | 2003 12 15 | H41 | 0.7+ | 0.3+ | 2006 06 24 | 941 | 0.5+ | 0.0 | | |
| 2003 11 20 | 704 | 0.5+ | 0.2+ | 2003 12 16 | 113 | 0.3− | 0.2+ | 2006 06 24 | 941 | 0.4+ | 0.0 | | |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2003 12 16 | 113 | 0.2− | 0.2+ | | | | | | |

**(140929)∗ 2001 VY$_{77}$**

Discovered 2001 Nov. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.47512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17259518 | $\omega$ | 285.38256 | | +0.86059076 | +0.50469552 | |
| $a$ | 3.1948485 | $\Omega$ | 44.36516 | | −0.42174324 | +0.78139513 | |
| $e$ | 0.0380119 | $i$ | 5.60619 | | −0.28551040 | +0.36702055 | |
| $P$ | 5.71 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.4+ | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.9+ | 2006 09 14 | 703 | 0.5+ | 0.4− |
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2001 11 21 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.5− | 2001 11 21 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.5+ | 1.3− |
| 2001 11 11 | 691 | 0.4− | 0.0 | 2001 11 21 | 704 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 1.4+ |
| 2001 11 11 | 691 | 0.5− | 0.1+ | 2001 11 21 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 699 | 0.4+ | 1.4+ |
| 2001 11 11 | 691 | 0.5− | 0.2+ | 2003 01 29 | 645 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.7+ |
| 2001 11 17 | 291 | 0.0 | 0.2+ | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.0 |
| 2001 11 17 | 291 | 0.1− | 0.3+ | 2003 01 30 | 644 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.3− | 1.4+ |
| 2001 11 17 | 291 | 0.0 | 0.1+ | 2003 01 30 | 644 | 0.2+ | 0.3− | 2006 09 25 | 699 | 0.8− | 0.2− |
| 2001 11 19 | 704 | 0.4− | 0.1+ | 2003 01 30 | 644 | 0.3+ | 0.1− | 2006 09 25 | 699 | (2.0− | 0.1+) |
| 2001 11 19 | 704 | 0.0 | 0.3− | 2004 03 28 | 691 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.2+ | 0.1− |
| 2001 11 19 | 704 | 0.6− | 0.0 | 2004 03 28 | 691 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2004 03 28 | 691 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 11 19 | 608 | 0.6+ | 1.1+ | 2004 04 19 | 704 | 0.9+ | 1.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 11 19 | 608 | 0.1+ | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.9+ | 2006 11 25 | G96 | 0.6− | 0.1+ |
| 2001 11 19 | 608 | 0.8+ | 0.5+ | 2004 04 19 | 704 | 0.3+ | 0.3− | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2001 11 20 | 691 | 0.0 | 0.0 | 2004 04 19 | 704 | 1.0+ | 1.3+ | 2006 11 25 | G96 | 0.3− | 0.5− |
| 2001 11 20 | 691 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.0 | 0.7+ | 2006 11 25 | G96 | 0.3− | 0.5− |
| 2001 11 20 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.8− | 0.0 | | | | |

**(140930)∗ 2001 VU$_{79}$ = 1992 EE$_{21}$**

Discovered 2001 Nov. 9 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 20646)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.63124 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18117128 | $\omega$ | 316.23889 | | +0.05442329 | −0.99499135 | |
| $a$ | 3.0932129 | $\Omega$ | 130.45742 | | +0.94376718 | +0.02383368 | |
| $e$ | 0.1591826 | $i$ | 6.32663 | | +0.32610063 | +0.09707818 | |
| $P$ | 5.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 02 | 809 | (0.4− | 2.2+) | 2001 11 21 | 608 | 0.1+ | 0.9+ | 2005 07 10 | 691 | 0.6− | 0.4+ |
| 1992 03 05 | 809 | 1.6− | 1.9+ | 2001 11 21 | 608 | 0.1+ | 0.6+ | 2005 07 15 | 691 | 0.2− | 0.0 |
| 1993 05 19 | 691 | 0.2+ | 0.3+ | 2001 12 11 | 704 | 0.6− | 0.5− | 2005 07 15 | 691 | 0.1+ | 0.3+ |
| 1993 05 19 | 691 | 0.4+ | 0.4+ | 2001 12 11 | 704 | 0.6− | 0.3− | 2005 07 15 | 691 | 0.1+ | 0.3+ |
| 1993 05 19 | 691 | 0.5+ | 0.3+ | 2001 12 11 | 704 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.5+ |
| 2000 09 05 | 691 | 0.5− | 0.1− | 2001 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.2+ |
| 2000 09 05 | 691 | 0.3+ | 0.3+ | 2001 12 11 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.7+ |
| 2000 09 05 | 691 | 0.2+ | 0.1− | 2001 12 18 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | (2.3− | 2.0+) |
| 2001 11 09 | 644 | 0.1+ | 0.8+ | 2001 12 18 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.6− |
| 2001 11 09 | 644 | 0.2+ | 0.5− | 2001 12 18 | 644 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.4− | 1.0− |
| 2001 11 09 | 644 | 0.4+ | 0.6− | 2001 12 18 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2001 11 16 | 644 | 0.1+ | 0.0 | 2001 12 18 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2001 11 16 | 644 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 1.4+ | 1.4+ | 2006 10 16 | 703 | 0.3+ | 0.8+ |
| 2001 11 16 | 644 | 0.1− | 0.0 | 2001 12 18 | 704 | 0.8+ | 0.7+ | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2001 11 17 | 704 | 0.8− | 0.5+ | 2002 01 08 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.8− | 1.4+ | 2002 01 08 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 1.1+ | 0.5+ |
| 2001 11 17 | 704 | 1.2− | 0.9+ | 2002 01 08 | 644 | 0.6+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2001 11 17 | 704 | 0.8− | 1.0+ | 2003 03 25 | 644 | 0.7+ | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.4− |
| 2001 11 19 | 699 | 0.1+ | 0.9+ | 2003 03 25 | 644 | 0.4+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.1+ | 0.1− | 2003 03 25 | 644 | 0.7+ | 0.7+ | 2006 10 20 | 644 | 0.5− | 0.5− |
| 2001 11 19 | 699 | 0.3− | 0.3− | 2003 03 26 | 699 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2001 11 19 | 699 | 1.1− | 0.2+ | 2003 03 26 | 699 | 0.2+ | 1.3+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2001 11 20 | 704 | (1.9− | 1.8−) | 2003 03 26 | 699 | 1.1+ | 0.2− | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2001 11 20 | 704 | (1.2− | 1.9−) | 2003 03 26 | 699 | 0.6− | 0.6+ | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2001 11 20 | 704 | (1.1− | 3.0−) | 2005 07 10 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.9+ |
| 2001 11 21 | 608 | 0.0 | 1.0+ | 2005 07 10 | 691 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.5+ | 0.4− |

**(140931)∗ 2001 VO$_{81}$ = 2001 UR$_{6}$**

Discovered 2001 Nov. 15 by NEAT at Palomar.

Id. A. Doppler (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.17450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18604403 | $\omega$ | 322.36738 | | +0.39097542 | −0.91967805 | |
| $a$ | 3.0389640 | $\Omega$ | 104.59127 | | +0.85334209 | +0.34735473 | |
| $e$ | 0.2018968 | $i$ | 2.16009 | | +0.34488476 | +0.18313102 | |
| $P$ | 5.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 01 | 691 | 0.0 | 0.5+ | 2001 11 20 | 608 | 0.5+ | 1.4− | 2006 09 27 | 704 | 0.1− | 0.0 |
| 1995 08 01 | 691 | 0.3− | 0.2+ | 2001 11 20 | 608 | 0.4+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 1995 08 01 | 691 | 0.1− | 0.3+ | 2001 11 21 | 704 | 0.5+ | 0.3− | 2006 09 28 | 691 | 0.6− | 0.7− |
| 2001 10 17 | 704 | (0.8+ | 1.5+) | 2001 11 21 | 704 | (1.6+ | 0.3−) | 2006 09 28 | 691 | 0.3+ | 0.5+ |
| 2001 10 17 | 704 | 0.5− | 1.0+ | 2001 11 21 | 704 | 0.4+ | 0.4− | 2006 09 29 | 699 | 0.1+ | 0.2+ |
| 2001 10 17 | 333 | 1.2− | 0.7− | 2001 11 21 | 704 | 0.6+ | 0.2− | 2006 09 29 | 699 | 0.3+ | 1.3+ |
| 2001 10 17 | 333 | (0.5− | 1.9+) | 2001 11 21 | 704 | 0.5+ | 0.2− | 2006 09 29 | 699 | 0.4− | 0.1+ |
| 2001 10 17 | 704 | 0.4− | 1.1+ | 2001 12 08 | 699 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.3+ | 0.0 |
| 2001 10 17 | 333 | 0.8+ | 0.8+ | 2001 12 08 | 699 | 0.4+ | 0.4+ | 2006 09 29 | 608 | (0.1+ | 2.8−) |
| 2001 10 17 | 704 | 0.2+ | 0.1− | 2001 12 08 | 699 | 0.1− | 0.6+ | 2006 09 29 | 608 | (0.5+ | 2.4−) |
| 2001 10 23 | 333 | 0.2− | 0.6− | 2001 12 08 | 699 | 0.1− | 0.7+ | 2006 09 29 | 608 | (0.8+ | 2.0−) |
| 2001 10 23 | 333 | 0.2+ | 0.3+ | 2001 12 11 | 704 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.4− | 1.1+ |
| 2001 10 23 | 333 | 0.0 | 0.3+ | 2001 12 11 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.3− | 1.3+ |
| 2001 10 23 | 333 | 0.7− | 0.2− | 2001 12 11 | 704 | 0.6− | 1.4− | 2006 10 01 | 704 | 0.8− | 0.4+ |
| 2001 10 23 | 333 | 0.1+ | 0.4+ | 2001 12 11 | 704 | 0.2− | 0.7− | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 2001 10 23 | 333 | 0.1− | 0.2− | 2001 12 11 | 704 | 0.5+ | 0.6− | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.8− | 0.0 | 2001 12 14 | 704 | 1.0+ | 1.4− | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | 0.8− | 0.4− | 2001 12 14 | 704 | 1.1+ | 0.9− | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.7− | 0.4− | 2001 12 14 | 704 | 0.5− | 1.4− | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2001 10 23 | 704 | 0.7− | 0.4− | 2001 12 17 | 704 | 0.4+ | 0.6− | 2006 10 16 | 703 | 0.6+ | 0.1− |
| 2001 10 23 | 704 | 0.9− | 0.0 | 2001 12 17 | 704 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2001 10 24 | 704 | 0.8− | 0.4+ | 2001 12 17 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2001 10 24 | 704 | 0.7− | 0.0 | 2001 12 17 | 704 | 0.0 | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.7− | 0.4+ | 2001 12 17 | 704 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.7− | 0.2+ | 2002 01 09 | 704 | 0.6+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.8− | 1.1+ | 2002 01 09 | 704 | 1.1+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | (1.7− | 1.6+) | 2002 01 09 | 704 | 0.1− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2002 01 09 | 704 | (0.3+ | 2.1+) | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2001 11 09 | 704 | 0.4+ | 0.1+ | 2003 03 08 | 291 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.5− | 0.2− |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2003 03 08 | 291 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2001 11 15 | 644 | 0.4+ | 0.0 | 2003 03 08 | 291 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2001 11 15 | 644 | 0.1+ | 0.6+ | 2003 03 26 | 644 | 0.7+ | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2001 11 15 | 644 | 0.1− | 0.1+ | 2003 03 26 | 644 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 11 16 | 644 | 0.3− | 0.4+ | 2003 03 26 | 644 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 16 | 644 | 0.3− | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.0 |
| 2001 11 16 | 644 | 0.2− | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.8+ |
| 2001 11 17 | 704 | (1.7+ | 2.2−) | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.6+ | 0.7+ |
| 2001 11 17 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.6+ |
| 2001 11 17 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2001 11 17 | 704 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2001 11 19 | 699 | 0.1− | 0.8+ | 2006 09 18 | 699 | 0.5+ | 0.8− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2001 11 19 | 699 | 0.4− | 0.0 | 2006 09 18 | 699 | (2.3+ | 1.7−) | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 11 19 | 699 | 1.2− | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2001 11 19 | 699 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 1.1− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 699 | (2.0+ | 0.9−) | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2001 11 20 | 704 | 0.6+ | 0.2+ | 2006 09 25 | 699 | (2.0+ | 0.1−) | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2001 11 20 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 699 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2001 11 20 | 704 | 0.6+ | 0.5+ | 2006 09 25 | 699 | 0.8+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 11 20 | 608 | 0.3+ | 1.2− | 2006 09 27 | 704 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.3− |

**(140932)∗ 2001 VA$_{82}$ = 1977 ON**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 20646)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.00362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37838919 | $\omega$ | 245.45214 | | +0.65174021 | +0.64895099 | |
| $a$ | 1.8931146 | $\Omega$ | 71.36563 | | −0.45400093 | +0.74841446 | |
| $e$ | 0.0740720 | $i$ | 24.47333 | | −0.60755070 | +0.13688832 | |
| $P$ | 2.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 07 17 | 413 | 1.2− | 2.1− | 2001 11 25 | 704 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.5+ | 0.2− | |
| 1977 07 17 | 413 | 1.4+ | 1.8+ | 2001 11 26 | 704 | (1.6+ | 0.2+) | 2001 12 19 | 704 | 0.3+ | 0.1− | |
| 1977 07 18 | 413 | 0.6− | 0.3− | 2001 11 26 | 704 | (2.2+ | 0.4−) | 2001 12 19 | 704 | 0.4+ | 0.0 | |
| 1977 07 18 | 413 | (5.4+ | 5.6+) | 2001 11 26 | 704 | 1.3+ | 1.4− | 2001 12 19 | 704 | 0.0 | 0.0 | |
| 2000 03 27 | 704 | 0.4+ | 1.5+ | 2001 11 27 | 704 | (1.8− | 0.3−) | 2002 01 08 | 704 | 0.7+ | 0.3− | |
| 2000 03 27 | 704 | 0.8+ | 0.7+ | 2001 11 27 | 704 | 0.1− | 1.3− | 2002 01 08 | 704 | 0.2− | 0.1+ | |
| 2000 03 27 | 704 | 1.0+ | 0.8+ | 2001 11 27 | 704 | 1.0− | 1.5− | 2002 01 08 | 704 | 0.4+ | 0.0 | |
| 2001 11 12 | 704 | 0.1− | 0.2+ | 2001 11 27 | 704 | 0.4− | 0.9− | 2002 01 08 | 704 | 0.5+ | 0.2+ | |
| 2001 11 12 | 704 | 0.5+ | 0.4− | 2001 11 27 | 704 | (1.9− | 1.4−) | 2006 09 27 | 703 | 0.9− | 0.0 | |
| 2001 11 12 | 704 | 1.2− | 1.1− | 2001 11 27 | 704 | 0.4− | 0.4− | 2006 09 27 | 703 | 0.3+ | 0.5+ | |
| 2001 11 12 | 704 | 0.8− | 0.6+ | 2001 11 27 | 704 | 0.2− | 0.4− | 2006 09 27 | 703 | 0.8− | 0.5+ | |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2001 11 27 | 704 | 0.2− | 0.3− | 2006 09 27 | 703 | 0.0 | 0.2+ | |
| 2001 11 20 | 704 | 0.5+ | 1.1+ | 2001 11 27 | 704 | 0.6− | 0.2− | 2006 10 25 | E12 | 0.5− | 0.0 | |
| 2001 11 20 | 704 | 0.5− | 0.3− | 2001 12 06 | 704 | 0.3− | 0.2+ | 2006 10 25 | E12 | 0.5+ | 0.2− | |
| 2001 11 20 | 704 | 0.5− | 0.1+ | 2001 12 06 | 704 | 0.2− | 0.4+ | 2006 11 01 | 703 | 0.4− | 0.7− | |
| 2001 11 20 | 704 | 0.5− | 0.4+ | 2001 12 06 | 704 | 0.0 | 0.4+ | 2006 11 01 | 703 | 0.2− | 0.0 | |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2001 12 06 | 704 | 0.3− | 0.2+ | 2006 11 01 | 703 | 1.5+ | 0.3+ | |
| 2001 11 21 | 704 | 0.6− | 0.8− | 2001 12 10 | 704 | 0.5− | 0.2− | 2006 11 01 | 703 | 0.3− | 0.4+ | |
| 2001 11 21 | 704 | 0.5+ | 0.6− | 2001 12 10 | 704 | 0.4+ | 0.6− | 2006 11 06 | 644 | 0.4− | 0.2+ | |
| 2001 11 21 | 704 | 0.2− | 0.8+ | 2001 12 10 | 704 | 0.8+ | 0.6− | 2006 11 06 | 644 | 0.1− | 0.1+ | |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2001 12 10 | 704 | 0.1+ | 0.5+ | 2006 11 06 | 644 | 0.1− | 0.1+ | |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2001 12 10 | 704 | (0.4− | 1.6−) | 2006 11 18 | 703 | 0.0 | 0.9+ | |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2001 12 15 | 704 | 0.4+ | 0.3+ | 2006 11 18 | 703 | 0.5− | 0.1+ | |
| 2001 11 21 | 704 | (0.5− | 1.6+) | 2001 12 15 | 704 | 0.1+ | 0.0 | 2006 11 18 | 703 | 0.1− | 0.8+ | |
| 2001 11 24 | 704 | 1.0+ | 1.2+ | 2001 12 15 | 704 | 0.0 | 0.4+ | 2006 11 18 | 703 | 0.6− | 0.1− | |
| 2001 11 24 | 704 | 0.8+ | 0.1+ | 2001 12 18 | 704 | 0.2+ | 0.1+ | 2006 11 24 | 703 | 0.3− | 0.2+ | |
| 2001 11 24 | 704 | (0.4+ | 1.9+) | 2001 12 18 | 704 | 0.5+ | 0.2− | 2006 11 24 | 703 | 0.8− | 0.2+ | |
| 2001 11 24 | 704 | 0.3+ | 1.1+ | 2001 12 18 | 704 | 0.4+ | 0.1+ | 2006 11 24 | 703 | 0.4− | 0.1− | |
| 2001 11 25 | 704 | 0.1+ | 0.3+ | 2001 12 18 | 704 | 0.9+ | 0.7+ | 2006 11 24 | 703 | 0.1+ | 0.3− | |
| 2001 11 25 | 704 | 0.2− | 0.4+ | 2001 12 18 | 704 | 0.3+ | 0.1− | | | | | |

**(140933)∗ 2001 VS$_{82}$**

Discovered 2001 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.74510 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17870231 | $\omega$ | 89.85780 | | +0.46783054 | +0.87877863 | |
| $a$ | 3.1216384 | $\Omega$ | 208.64403 | | −0.86877567 | +0.43765530 | |
| $e$ | 0.0330240 | $i$ | 11.33878 | | −0.16236820 | +0.19027864 | |
| $P$ | 5.52 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 16 | 413 | 0.5+ | 1.6+ | 2001 12 11 | 704 | 0.5− | 0.3− | 2004 04 20 | 704 | (1.3+ | 1.8+) | |
| 2001 09 25 | 333 | 0.4+ | 0.3+ | 2001 12 11 | 704 | 0.9− | 0.4+ | 2004 04 20 | 704 | 0.5+ | 0.3+ | |
| 2001 09 25 | 333 | 0.6− | 1.2+ | 2001 12 11 | 704 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.2− | 0.6+ | |
| 2001 09 25 | 333 | 0.4+ | 1.0+ | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.4− | |
| 2001 10 18 | 644 | 0.2− | 0.7+ | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.7− | 0.1− | |
| 2001 10 18 | 644 | 0.1+ | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.1+ | |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ | |
| 2001 10 23 | 704 | 0.8+ | 0.1+ | 2004 03 27 | 704 | 0.3− | 0.4− | 2006 09 18 | 691 | 0.4− | 0.3+ | |
| 2001 10 23 | 704 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.0 | |
| 2001 10 23 | 704 | (1.4+ | 3.3+) | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.3+ | |
| 2001 10 23 | 704 | (1.7+ | 0.5+) | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | |
| 2001 10 24 | 704 | (2.3+ | 3.0+) | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.3+ | 0.1+ | |
| 2001 10 24 | 704 | 0.7+ | 0.9− | 2004 03 29 | 704 | 0.4+ | 0.6− | 2006 10 02 | G96 | 0.0 | 0.1− | |
| 2001 10 24 | 704 | 0.8+ | 0.6− | 2004 03 29 | 704 | 0.8+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.2− | |
| 2001 10 24 | 704 | 0.6+ | 0.7− | 2004 03 29 | 704 | 0.4+ | 1.2+ | 2006 10 02 | G96 | 0.3+ | 0.1− | |
| 2001 11 10 | 704 | 0.0 | 1.2− | 2004 03 30 | 704 | 1.4+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1+ | |
| 2001 11 10 | 704 | 0.7+ | 0.5− | 2004 03 30 | 704 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.8− | 1.0− | |
| 2001 11 10 | 704 | 0.5− | 0.3− | 2004 03 30 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | (0.0 | 1.8−) | |
| 2001 11 10 | 704 | 1.2+ | 1.1− | 2004 04 12 | 699 | 1.1− | 0.2+ | 2006 10 17 | 703 | (2.4+ | 1.7−) | |
| 2001 11 10 | 704 | 0.5− | 0.1− | 2004 04 12 | 699 | 0.1− | 0.1+ | 2006 10 17 | 703 | (2.6+ | 0.2+) | |
| 2001 11 17 | 704 | 0.3+ | 0.8+ | 2004 04 12 | 699 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.3+ | |
| 2001 11 17 | 704 | 0.6− | 0.0 | 2004 04 12 | 699 | 0.8− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.4+ | |
| 2001 11 17 | 704 | 0.0 | 0.7+ | 2004 04 15 | 699 | 0.3− | 1.3− | 2006 10 22 | 644 | 0.0 | 0.2+ | |
| 2001 11 19 | 699 | 1.0− | 0.3+ | 2004 04 15 | 699 | 0.2+ | 0.7+ | 2006 10 22 | G96 | 0.5− | 0.6− | |
| 2001 11 19 | 699 | 0.6+ | 0.1+ | 2004 04 15 | 699 | 0.9− | 0.4+ | 2006 10 22 | G96 | 0.6+ | 0.3+ | |
| 2001 11 19 | 699 | 0.3− | 0.2+ | 2004 04 15 | 699 | 1.0− | 0.8− | 2006 10 22 | G96 | 0.4+ | 0.6− | |
| 2001 11 19 | 699 | 0.6− | 1.3+ | 2004 04 20 | 704 | (1.9+ | 0.9+) | 2006 10 22 | G96 | 0.4+ | 0.1− | |
| 2001 12 11 | 704 | 0.6− | 0.5− | 2004 04 20 | 704 | 0.0 | 0.3+ | | | | | |
| 2001 12 11 | 704 | 0.2− | 0.7− | 2004 04 20 | 704 | 0.7+ | 0.7+ | | | | | |

**(140934)∗ 2001 VB$_{84}$**

Discovered 2001 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.41454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18320904 | $\omega$ | 322.39065 | | −0.53457930 | −0.84500000 | |
| $a$ | 3.0702339 | $\Omega$ | 159.91269 | | +0.78503325 | −0.50269958 | |
| $e$ | 0.2631027 | $i$ | 2.35977 | | +0.31296608 | −0.18239556 | |
| $P$ | 5.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 28 | 691 | 0.6− | 0.7− | 2001 11 21 | 608 | (0.5+ | 1.9−) | 2006 09 18 | 691 | 0.1− | 0.1+ | |
| 1992 02 28 | 691 | 0.0 | 0.3− | 2001 12 11 | 704 | 0.6− | 0.8+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | |
| 1992 02 28 | 691 | 0.2− | 0.9− | 2001 12 11 | 704 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.7+ | |
| 1997 01 14 | 566 | 0.1+ | 0.1− | 2001 12 11 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.3+ | |
| 1997 01 14 | 566 | 0.3+ | 0.2+ | 2001 12 11 | 704 | 0.9− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ | |
| 1997 01 14 | 566 | 0.0 | 1.7− | 2001 12 11 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | |
| 2001 10 24 | 704 | 0.6+ | 0.2− | 2001 12 14 | 704 | 0.2− | 1.3+ | 2006 09 25 | 691 | 0.1− | 0.2− | |
| 2001 10 24 | 704 | 0.6+ | 0.8− | 2001 12 14 | 704 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.6− | 0.4− | |
| 2001 10 24 | 704 | 0.6− | 0.6+ | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 10 03 | 691 | 0.2− | 0.0 | |
| 2001 10 24 | 704 | 0.0 | 0.4− | 2001 12 14 | 704 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.3− | 0.1+ | |
| 2001 11 11 | 704 | 0.4− | 0.5+ | 2001 12 14 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | |
| 2001 11 11 | 704 | 0.5− | 0.9+ | 2001 12 17 | 704 | 0.6− | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.0 | |
| 2001 11 11 | 704 | 0.4− | 0.6+ | 2001 12 17 | 704 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | |
| 2001 11 11 | 704 | 0.9− | 0.8+ | 2001 12 17 | 704 | 0.7− | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.0 | |
| 2001 11 11 | 704 | 1.0− | 1.4+ | 2001 12 17 | 704 | 0.3− | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.4+ | |
| 2001 11 17 | 704 | 0.3− | 0.2+ | 2001 12 17 | 704 | 0.6− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | |
| 2001 11 17 | 704 | 0.3+ | 0.4+ | 2003 04 01 | 695 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.4− | |
| 2001 11 17 | 704 | 0.2− | 0.3+ | 2003 04 01 | 695 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.3− | |
| 2001 11 17 | 704 | 0.1+ | 0.1− | 2003 04 24 | 699 | (1.3− | 2.9+) | 2006 10 31 | G96 | 0.1+ | 0.3− | |
| 2001 11 18 | 704 | 0.5+ | 1.4+ | 2003 04 24 | 699 | 0.9− | 0.7+ | 2006 10 31 | G96 | 0.4+ | 0.5− | |
| 2001 11 18 | 704 | 0.2− | 1.1+ | 2003 04 24 | 699 | 0.1− | 0.6+ | 2006 11 01 | 691 | 0.4+ | 0.4+ | |
| 2001 11 18 | 704 | (0.6− | 2.0+) | 2003 04 24 | 699 | (0.4− | 1.6−) | 2006 11 01 | 691 | 0.1− | 0.1− | |
| 2001 11 18 | 704 | (0.9+ | 2.0+) | 2003 04 25 | 691 | 0.4+ | 1.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− | |
| 2001 11 18 | 691 | 0.2+ | 0.2+ | 2003 04 25 | 691 | 0.2+ | 1.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− | |
| 2001 11 18 | 691 | 0.1+ | 0.2+ | 2003 04 25 | 691 | 0.6+ | 1.3+ | 2006 11 16 | G96 | 0.2+ | 0.6− | |
| 2001 11 18 | 691 | 0.4+ | 0.2+ | 2003 05 10 | 691 | 0.4+ | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.2− | |
| 2001 11 20 | 704 | 0.4− | 0.3+ | 2003 05 10 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.3− | |
| 2001 11 20 | 704 | 0.2+ | 0.6+ | 2003 05 10 | 691 | 0.4+ | 0.6+ | 2006 11 17 | 703 | 1.0+ | 0.5− | |
| 2001 11 20 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.3− | |
| 2001 11 20 | 704 | 0.6− | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.7− | 1.5− | |
| 2001 11 20 | 704 | 0.1− | 1.2+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.6+ | 2.3− | |
| 2001 11 21 | 608 | 0.1− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.1+ | | | | | |
| 2001 11 21 | 608 | 0.1− | 0.7− | 2006 09 18 | 691 | 0.1+ | 0.0 | | | | | |

**(140935)∗ 2001 VM$_{84}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.54394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20310117 | $\omega$ | 45.66857 | | +0.50221751 | +0.83159062 | |
| $a$ | 2.8663404 | $\Omega$ | 255.88369 | | −0.84656049 | +0.41687330 | |
| $e$ | 0.1317843 | $i$ | 14.15361 | | −0.17638851 | +0.36697915 | |
| $P$ | 4.85 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.6+ | 0.1− | 2001 11 18 | 704 | 0.1− | 0.4+ | 2004 05 14 | 644 | 0.3+ | 0.6+ | |
| 2001 10 15 | 704 | 0.3+ | 0.0 | 2001 11 18 | 704 | 0.6− | 0.7+ | 2004 05 14 | 699 | 1.1− | 0.6− | |
| 2001 10 15 | 704 | 0.0 | 0.0 | 2001 11 18 | 704 | 0.8− | 0.1+ | 2004 05 14 | 644 | 0.4+ | 0.2+ | |
| 2001 10 15 | 704 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.1+ | 1.4+ | 2004 05 14 | 699 | 0.0 | 0.6− | |
| 2001 10 15 | 704 | 0.4+ | 0.4+ | 2001 12 17 | 704 | (0.2+ | 1.6+) | 2004 05 14 | 644 | 0.0 | 0.7+ | |
| 2001 10 18 | 704 | 1.0− | 0.7+ | 2001 12 17 | 704 | 0.8− | 0.4+ | 2005 06 05 | 704 | 1.1+ | 0.5+ | |
| 2001 10 18 | 704 | 1.0− | 0.8− | 2003 01 05 | 704 | (1.7+ | 0.9+) | 2005 06 05 | 704 | 0.2− | 0.8+ | |
| 2001 10 18 | 704 | 0.7+ | 0.7− | 2003 01 05 | 704 | 0.9+ | 0.2+ | 2005 06 05 | 704 | 0.2+ | 0.1+ | |
| 2001 10 18 | 704 | 0.6− | 0.7− | 2003 01 05 | 704 | (2.0+ | 0.6−) | 2005 06 05 | 704 | 0.1− | 0.3+ | |
| 2001 10 18 | 704 | 0.5+ | 0.7− | 2003 01 05 | 704 | 1.0+ | 0.0 | 2005 06 05 | 704 | 0.6− | 1.0+ | |
| 2001 10 19 | 704 | 0.2− | 0.6+ | 2003 01 05 | 704 | 0.9+ | 0.3+ | 2005 06 06 | 691 | 0.1− | 0.3+ | |
| 2001 10 19 | 704 | 0.1− | 1.1+ | 2004 03 16 | E12 | 0.1− | 0.4+ | 2005 06 06 | 691 | 0.0 | 0.1+ | |
| 2001 10 19 | 704 | 0.6− | 1.0+ | 2004 03 16 | E12 | 0.9− | 0.4+ | 2005 06 06 | 691 | 0.1− | 0.1+ | |
| 2001 10 19 | 704 | (2.4+ | 1.1+) | 2004 03 16 | E12 | 0.1− | 0.6+ | 2006 10 20 | 704 | (2.7+ | 1.1+) | |
| 2001 11 10 | 704 | 0.2+ | 0.5− | 2004 03 16 | E12 | 1.3− | 0.8+ | 2006 10 20 | 704 | (2.2+ | 1.4+) | |
| 2001 11 10 | 704 | 0.6− | 0.1− | 2004 03 17 | 704 | 0.0 | 0.1− | 2006 10 20 | 704 | (2.6+ | 1.2+) | |
| 2001 11 10 | 704 | 0.1+ | 0.1+ | 2004 03 17 | 704 | 0.1+ | 0.2− | 2006 10 20 | 704 | (2.7+ | 0.9+) | |
| 2001 11 10 | 704 | (1.9+ | 1.6+) | 2004 03 17 | 704 | 1.0+ | 0.3+ | 2006 10 27 | 703 | 0.8− | 0.2− | |
| 2001 11 11 | 699 | 0.1+ | 0.1− | 2004 03 17 | 704 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.3− | |
| 2001 11 11 | 699 | 0.5− | 0.1+ | 2004 03 17 | 704 | 0.6+ | 0.7+ | 2006 10 27 | 703 | 0.4+ | 0.9+ | |
| 2001 11 11 | 699 | 0.1− | 0.2+ | 2004 03 26 | 704 | 0.8− | 0.8− | 2006 10 27 | 703 | 0.5+ | 0.5− | |
| 2001 11 11 | 699 | 0.8− | 0.4+ | 2004 03 26 | 704 | 0.4− | 0.3+ | 2006 11 02 | 703 | 1.0+ | 1.4+ | |
| 2001 11 12 | 704 | 0.6+ | 0.1+ | 2004 03 26 | 704 | 0.2− | 0.5+ | 2006 11 02 | 703 | 0.3+ | 0.1+ | |
| 2001 11 12 | 704 | 0.6+ | 0.1+ | 2004 03 26 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.6+ | |
| 2001 11 12 | 704 | 0.4+ | 0.1+ | 2004 04 13 | 644 | 0.7+ | 0.5+ | 2006 11 02 | 703 | 1.2− | 0.1− | |
| 2001 11 12 | 704 | 0.2+ | 0.1− | 2004 04 13 | 644 | 0.7+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | |
| 2001 11 12 | 704 | 1.0+ | 0.4− | 2004 04 13 | 644 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1− | |
| 2001 11 17 | 704 | 0.6+ | 0.2+ | 2004 04 17 | 704 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− | |
| 2001 11 17 | 704 | 0.4− | 0.3+ | 2004 04 17 | 704 | 0.3+ | 0.7+ | 2006 11 14 | 703 | 0.8+ | 1.0− | |
| 2001 11 17 | 704 | 0.0 | 0.2+ | 2004 04 17 | 704 | 0.5+ | 0.0 | 2006 11 14 | 703 | (1.0− | 2.0−) | |
| 2001 11 17 | 704 | 0.2+ | 0.7+ | 2004 04 17 | 704 | 0.3+ | 0.5− | 2006 11 14 | 703 | 0.0 | 0.0 | |
| 2001 11 18 | 704 | 0.2− | 0.4+ | 2004 05 12 | E12 | 0.9+ | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.0 | |
| 2001 11 18 | 704 | 0.2− | 0.5+ | 2004 05 12 | E12 | (1.5− | 0.3−) | 2006 11 22 | 703 | 0.7− | 0.3− | |
| 2001 11 18 | 704 | 0.1+ | 0.3+ | 2004 05 12 | E12 | 1.2− | 1.2+ | 2006 11 22 | 703 | 0.1+ | 0.4− | |
| 2001 11 18 | 704 | 0.7+ | 0.1− | 2004 05 12 | E12 | (2.2− | 1.4+) | 2006 11 22 | 703 | 0.7− | 0.2− | |
| 2001 11 18 | 704 | 0.4− | 0.5+ | 2004 05 14 | 699 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.3− | 0.5− | |
| 2001 11 18 | 704 | 0.2− | 0.5+ | 2004 05 14 | 699 | 0.7− | 0.2− | | | | | |

**(140936)∗ 2001 VV$_{84}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.01939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18257394 | $\omega$ | 169.92586 | | −0.21583375 | −0.96580493 | |
| $a$ | 3.0773497 | $\Omega$ | 292.42334 | | +0.88469682 | −0.13117165 | |
| $e$ | 0.0860907 | $i$ | 8.94026 | | +0.41319164 | −0.22363996 | |
| $P$ | 5.40 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.0 | 0.0 | 2003 02 22 | 644 | (1.7− | 0.1−) | |
| 2001 10 13 | 644 | 0.3− | 0.7+ | 2003 01 08 | 704 | 0.6− | 0.0 | 2003 02 22 | 644 | 0.5− | 0.3+ | |
| 2001 10 13 | 644 | 0.6− | 0.4+ | 2003 01 08 | 704 | 0.1− | 0.1− | 2003 03 06 | 704 | 0.8− | 1.0− | |
| 2001 10 15 | 704 | 0.2− | 0.6+ | 2003 01 08 | 704 | (2.0− | 1.7+) | 2003 03 06 | 704 | 0.1− | 0.1+ | |
| 2001 10 15 | 704 | 0.6− | 0.2+ | 2003 01 17 | 644 | 0.2+ | 0.5+ | 2003 03 06 | 704 | 0.2+ | 0.1+ | |
| 2001 10 15 | 704 | 0.1− | 0.1+ | 2003 01 17 | 644 | 0.8+ | 0.6+ | 2003 03 07 | 704 | 0.8− | 0.2− | |
| 2001 10 15 | 704 | 0.1− | 1.2+ | 2003 01 17 | 644 | 0.7+ | 1.2+ | 2003 03 07 | 704 | 0.1+ | 0.0 | |
| 2001 10 15 | 704 | 0.7− | 0.9− | 2003 01 27 | 644 | 0.2− | 0.7+ | 2003 03 07 | 704 | (0.5− | 1.6+) | |
| 2001 11 11 | 699 | 0.4+ | 0.6− | 2003 01 27 | 644 | 0.4− | 0.6+ | 2003 03 07 | 704 | 0.3− | 0.1+ | |
| 2001 11 11 | 699 | (1.6− | 0.9−) | 2003 01 27 | 644 | 0.3− | 0.7+ | 2003 03 07 | 704 | 0.1+ | 0.1− | |
| 2001 11 11 | 699 | (0.4− | 3.3+) | 2003 01 28 | 608 | 1.4+ | 0.0 | 2005 06 03 | 691 | 0.0 | 0.1+ | |
| 2001 11 11 | 699 | 0.2+ | 1.1+ | 2003 01 28 | 608 | 0.7+ | 0.3− | 2005 06 03 | 691 | 0.1+ | 0.0 | |
| 2001 11 12 | 704 | 0.5+ | 0.2+ | 2003 01 28 | 608 | 0.9+ | 1.1+ | 2005 06 03 | 691 | 0.3− | 0.1+ | |
| 2001 11 12 | 704 | 0.6+ | 0.3− | 2003 02 01 | 699 | 1.5− | 0.7− | 2005 06 08 | 691 | 0.1+ | 0.1− | |
| 2001 11 12 | 704 | 0.5− | 0.3+ | 2003 02 01 | 699 | (0.9− | 1.9−) | 2005 06 08 | 691 | 0.1+ | 0.0 | |
| 2001 11 12 | 704 | 0.4+ | 0.2− | 2003 02 01 | 699 | 0.7− | 0.3− | 2005 06 08 | 691 | 0.2− | 0.4+ | |
| 2001 11 12 | 704 | 1.1+ | 0.5− | 2003 02 01 | 699 | (0.6− | 2.2+) | 2006 09 24 | 113 | 0.2− | 0.7− | |
| 2001 11 17 | 704 | 0.3− | 0.5+ | 2003 02 02 | 704 | 0.7+ | 0.4+ | 2006 09 24 | 113 | 0.6+ | 0.0 | |
| 2001 11 17 | 704 | 0.8+ | 0.0 | 2003 02 02 | 704 | 0.8+ | 0.1− | 2006 09 27 | 699 | 0.1− | 0.4+ | |
| 2001 11 17 | 704 | 0.4− | 0.2− | 2003 02 02 | 704 | 0.1+ | 0.3− | 2006 09 27 | 699 | 0.3+ | 0.9+ | |
| 2001 11 17 | 704 | 0.7− | 1.0+ | 2003 02 02 | 704 | 0.5+ | 0.6− | 2006 09 27 | 699 | 0.9+ | 0.4− | |
| 2001 11 18 | 704 | 0.1− | 0.2+ | 2003 02 02 | 704 | 1.3+ | 0.7+ | 2006 09 27 | 699 | 0.2+ | 0.3+ | |
| 2001 11 18 | 704 | 0.6+ | 0.5+ | 2003 02 09 | 608 | 0.0 | 0.9− | 2006 09 27 | 703 | 0.1+ | 0.3+ | |
| 2001 11 18 | 704 | 0.1+ | 0.3− | 2003 02 09 | 608 | 0.1− | 0.7− | 2006 09 27 | 703 | 0.8− | 0.8− | |
| 2001 11 18 | 704 | 0.2− | 0.9− | 2003 02 09 | 608 | 0.0 | 0.7− | 2006 09 27 | 703 | (1.2− | 1.6−) | |
| 2001 11 18 | 704 | 0.8+ | 0.8− | 2003 02 19 | 644 | 0.6− | 0.4+ | 2006 09 27 | 703 | 0.6− | 0.1− | |
| 2001 12 10 | 704 | 0.4− | 0.1+ | 2003 02 19 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.5+ | 0.2+ | |
| 2001 12 10 | 704 | 0.0 | 1.3− | 2003 02 19 | 644 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.6− | 0.0 | |
| 2001 12 10 | 704 | 0.1− | 0.6− | 2003 02 22 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.3− | |

**(140937)∗ 2001 VS$_{86}$**

Discovered 2001 Nov. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.47476 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20357972 | $\omega$ | 126.83328 | | +0.57015886 | −0.79807330 | |
| $a$ | 2.8618467 | $\Omega$ | 287.27516 | | +0.67369304 | +0.58999587 | |
| $e$ | 0.1919371 | $i$ | 11.77912 | | +0.47016653 | +0.12240864 | |
| $P$ | 4.84 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 691 | 0.0 | 0.5− | 2001 12 11 | 704 | 0.4− | 0.3+ | 2003 03 11 | 683 | (0.4+ | 2.2+) | |
| 1998 01 07 | 691 | 0.2− | 0.1− | 2001 12 11 | 704 | 0.6− | 0.0 | 2003 03 11 | 683 | 0.4+ | 1.1+ | |
| 1998 01 07 | 691 | 0.1+ | 0.2− | 2001 12 11 | 704 | 0.6− | 0.2+ | 2003 03 11 | 683 | 0.5+ | 0.2+ | |
| 1998 01 28 | 566 | 1.7− | 0.8− | 2001 12 11 | 704 | 1.2+ | 0.3+ | 2003 04 27 | 699 | 0.3+ | 0.1− | |
| 1998 01 28 | 566 | 1.6− | 1.1− | 2001 12 11 | 704 | 0.4− | 0.2+ | 2003 04 27 | 699 | 0.2+ | 0.4+ | |
| 1998 01 28 | 566 | (2.6− | 0.7−) | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2003 04 27 | 699 | 0.9− | 1.2+ | |
| 2001 08 14 | 644 | 0.1− | 0.5+ | 2001 12 14 | 704 | 0.8− | 0.4+ | 2003 04 27 | 699 | (0.9+ | 2.2+) | |
| 2001 08 14 | 644 | 0.3− | 0.5+ | 2001 12 14 | 704 | 0.4− | 0.3− | 2005 06 04 | 704 | 0.4− | 0.4+ | |
| 2001 08 14 | 644 | 0.1+ | 0.6+ | 2002 12 11 | 704 | 1.0+ | 0.0 | 2005 06 04 | 704 | 0.2+ | 1.3+ | |
| 2001 08 22 | 704 | 1.0+ | 0.8− | 2002 12 11 | 704 | 0.6+ | 0.6− | 2005 06 04 | 704 | 1.2− | 0.9+ | |
| 2001 08 22 | 704 | (1.8+ | 0.4+) | 2002 12 11 | 704 | 0.5− | 1.2− | 2006 08 23 | 704 | 0.6− | 0.7+ | |
| 2001 08 22 | 704 | 1.1+ | 0.2+ | 2002 12 11 | 704 | 0.3+ | 0.6+ | 2006 08 23 | 704 | 0.6+ | 0.2+ | |
| 2001 08 22 | 704 | 1.2+ | 0.2− | 2002 12 13 | 699 | 0.4+ | 0.4+ | 2006 08 23 | 704 | 0.0 | 0.9+ | |
| 2001 08 22 | 704 | (1.6+ | 0.1+) | 2002 12 13 | 699 | 1.2+ | 0.7+ | 2006 08 23 | 704 | 0.5− | 0.4+ | |
| 2001 08 26 | 699 | 1.2− | 0.3+ | 2002 12 13 | 699 | 0.8− | 0.6+ | 2006 08 23 | 704 | 0.3+ | 0.1− | |
| 2001 08 26 | 699 | 1.1− | 0.7+ | 2002 12 13 | 699 | (1.6+ | 0.7+) | 2006 09 19 | 703 | 0.1− | 0.7− | |
| 2001 08 26 | 699 | 0.7− | 0.9− | 2003 01 02 | 704 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.7− | |
| 2001 08 26 | 699 | 1.0+ | 0.2+ | 2003 01 02 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.2− | |
| 2001 09 09 | 704 | 0.0 | 0.5− | 2003 01 02 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.9− | 0.6− | |
| 2001 09 09 | 704 | 0.2− | 1.3− | 2003 01 02 | 704 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.4− | |
| 2001 09 09 | 704 | 0.2− | 0.8− | 2003 01 02 | 704 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.8− | 1.2− | |
| 2001 09 09 | 704 | 0.3− | 0.5− | 2003 01 08 | 704 | 0.3− | 0.9+ | 2006 09 19 | 703 | 0.9+ | 0.1+ | |
| 2001 09 09 | 704 | 0.0 | 1.5− | 2003 01 08 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.3− | 0.1− | |
| 2001 09 18 | 644 | 0.3+ | 0.1+ | 2003 01 08 | 704 | 0.3+ | 0.2+ | 2006 09 23 | 699 | 1.3+ | 0.6− | |
| 2001 09 18 | 644 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.1+ | 0.1+ | 2006 09 23 | 699 | 0.0 | 0.1− | |
| 2001 09 18 | 644 | 0.3+ | 0.2+ | 2003 01 16 | 644 | 0.1− | 0.3+ | 2006 09 23 | 699 | 0.7+ | 0.1+ | |
| 2001 09 21 | 699 | 0.3+ | 0.0 | 2003 01 16 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.3+ | 0.2− | |
| 2001 09 21 | 699 | 0.3+ | 0.6+ | 2003 01 16 | 644 | 0.2− | 0.6+ | 2006 09 25 | 703 | 0.2+ | 0.4− | |
| 2001 09 21 | 699 | 0.2+ | 0.0 | 2003 01 25 | 644 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.4− | |
| 2001 09 21 | 699 | 0.7+ | 0.3− | 2003 01 25 | 644 | 0.3+ | 0.1− | 2006 09 25 | 703 | 0.7+ | 0.4− | |
| 2001 09 29 | 644 | 0.2− | 0.3+ | 2003 01 25 | 644 | 0.2+ | 0.3− | 2006 10 02 | 704 | 0.3− | 0.3+ | |
| 2001 09 29 | 644 | 0.1− | 0.4+ | 2003 01 28 | 704 | 0.8+ | 0.7+ | 2006 10 02 | 704 | 0.5− | 0.1+ | |
| 2001 09 29 | 644 | 0.3− | 0.1+ | 2003 01 28 | 704 | 0.4+ | 0.3+ | 2006 10 02 | 704 | 0.5− | 0.1+ | |
| 2001 10 18 | 704 | 0.3− | 0.1+ | 2003 01 28 | 704 | 0.4+ | 0.8+ | 2006 10 02 | 704 | 0.5− | 0.3+ | |
| 2001 10 18 | 704 | 0.1− | 0.2+ | 2003 01 28 | 704 | 0.6+ | 0.3+ | 2006 10 02 | 704 | 0.7− | 0.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.5− | 0.1− | 2003 01 28 | 704 | 0.5+ | 0.5+ | 2006 10 02 | 703 | 0.1+ | 0.3− | | |
| 2001 10 18 | 704 | 0.3− | 1.1+ | 2003 02 02 | 699 | 0.8− | 0.2− | 2006 10 02 | 703 | 0.0 | 0.4− | | |
| 2001 10 18 | 704 | 0.2− | 0.8+ | 2003 02 02 | 699 | 0.2+ | 0.9− | 2006 10 02 | 703 | 0.3+ | 0.5− | | |
| 2001 10 19 | 608 | 0.4− | 0.6+ | 2003 02 02 | 699 | 0.5− | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.2− | | |
| 2001 10 19 | 608 | 0.2− | 0.9+ | 2003 02 02 | 699 | 0.3− | 0.3− | 2006 10 20 | 704 | 0.7+ | 0.3− | | |
| 2001 10 19 | 608 | 0.4− | 0.8+ | 2003 02 03 | 699 | 0.6− | 0.2− | 2006 10 20 | 704 | (2.0+ | 0.2+) | | |
| 2001 10 23 | 699 | 0.1− | 0.1− | 2003 02 03 | 699 | 0.6+ | 0.5+ | 2006 10 20 | 704 | (0.8+ | 2.2−) | | |
| 2001 10 23 | 699 | 0.1− | 0.4+ | 2003 02 03 | 699 | 0.6− | 0.4+ | 2006 10 20 | 704 | 0.3− | 0.2− | | |
| 2001 10 23 | 699 | 0.3+ | 0.0 | 2003 02 03 | 699 | 0.5− | 0.5+ | 2006 10 20 | 704 | 0.8− | 1.2+ | | |
| 2001 10 23 | 699 | 0.2+ | 0.1+ | 2003 02 04 | 608 | 0.1− | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.8− | | |
| 2001 10 26 | 608 | 1.1+ | 0.4+ | 2003 02 04 | 608 | 0.3− | 0.6− | 2006 10 27 | 703 | 0.8+ | 0.1+ | | |
| 2001 10 26 | 608 | 1.2+ | 0.8+ | 2003 02 04 | 608 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.1+ | 0.5− | | |
| 2001 10 26 | 608 | 0.9+ | 0.9+ | 2003 02 05 | 644 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.2+ | 0.3− | | |
| 2001 11 11 | 699 | 0.4− | 0.4+ | 2003 02 05 | 644 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.6− | | |
| 2001 11 11 | 699 | 0.4− | 0.1− | 2003 02 05 | 644 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.3+ | 0.2− | | |
| 2001 11 11 | 699 | 0.8− | 0.0 | 2003 02 05 | 608 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.3− | | |
| 2001 11 11 | 699 | 0.7− | 0.4+ | 2003 02 05 | 608 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.0 | | |
| 2001 11 13 | 704 | 0.1− | 0.4+ | 2003 02 05 | 608 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.4+ | | |
| 2001 11 13 | 704 | 0.6− | 0.9+ | 2003 03 09 | 704 | 0.5+ | 0.6− | 2006 11 16 | 704 | 0.0 | 1.0+ | | |
| 2001 11 13 | 704 | 0.2− | 0.3− | 2003 03 09 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.7+ | | |
| 2001 11 17 | 704 | 1.0− | 0.1+ | 2003 03 09 | 704 | 0.6+ | 0.1− | 2006 11 16 | 704 | 0.3− | 0.2+ | | |
| 2001 11 17 | 704 | 0.5+ | 0.1− | 2003 03 09 | 704 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.0 | | |
| 2001 11 17 | 704 | 0.3+ | 0.5+ | 2003 03 09 | 704 | 0.2+ | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.3− | | |
| 2001 11 17 | 704 | 0.6− | 0.7− | 2003 03 10 | 699 | (1.6+ | 0.1+) | 2006 11 22 | 703 | 0.3− | 0.0 | | |
| 2001 11 19 | 644 | 0.2− | 0.1− | 2003 03 10 | 699 | 1.3+ | 0.8+ | 2006 11 22 | 703 | 0.1− | 0.2− | | |
| 2001 11 19 | 644 | 0.4− | 0.2− | 2003 03 10 | 699 | 0.2+ | 0.1+ | | | | | | |
| 2001 11 19 | 644 | 0.6− | 0.1+ | 2003 03 10 | 699 | 0.5+ | 0.8− | | | | | | |

**(140938)∗ 2001 VU$_{88}$**

Discovered 2001 Nov. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.98164 | | (2000.0) | | | |
| $n$ | 0.18189999 | $\omega$ | 239.79371 | | +0.63546174 | −0.77087591 |
| $a$ | 3.0849462 | $\Omega$ | 170.37264 | | +0.76746795 | +0.62433659 |
| $e$ | 0.2337801 | $i$ | 15.26475 | | +0.08474262 | +0.12630977 |
| $P$ | 5.42 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 0.8− | 1.2− | 2003 03 09 | 704 | 0.5− | 1.2+ | 2006 09 19 | 703 | 0.4− | 0.2+ | | |
| 2001 09 16 | 704 | 0.0 | 0.4− | 2003 03 09 | 704 | 0.1− | 0.9+ | 2006 09 19 | 704 | 0.3− | 1.2+ | | |
| 2001 09 16 | 704 | 0.5− | 0.0 | 2003 03 09 | 704 | 0.8− | 0.8+ | 2006 09 19 | 704 | 0.1+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.5− | 0.0 | 2003 03 26 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.9− | 0.8+ | | |
| 2001 09 21 | 644 | 0.1+ | 0.1− | 2003 03 26 | 644 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.7− | 0.1− | | |
| 2001 09 21 | 644 | 0.1+ | 0.1+ | 2003 03 26 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.3+ | | |
| 2001 09 21 | 644 | 0.3+ | 0.1+ | 2005 06 26 | 644 | 0.0 | 0.8+ | 2006 09 22 | 704 | 0.3− | 0.5+ | | |
| 2001 09 23 | 699 | 0.4− | 0.8+ | 2005 06 26 | 644 | 0.6+ | 0.5+ | 2006 09 22 | 704 | 0.5− | 0.0 | | |
| 2001 09 23 | 699 | 0.6+ | 0.3− | 2005 06 26 | 644 | 0.4+ | 0.7+ | 2006 09 22 | 704 | 0.0 | 0.1+ | | |
| 2001 09 23 | 699 | 1.3+ | 0.5+ | 2006 08 17 | 644 | 0.6− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.3− | | |
| 2001 09 23 | 699 | 0.0 | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.3− | | |
| 2001 10 14 | 699 | 0.7− | 0.6− | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.3+ | | |
| 2001 10 14 | 699 | 1.3− | 0.0 | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.2+ | | |
| 2001 10 14 | 699 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.0 | | |
| 2001 10 14 | 699 | 0.9− | 0.3− | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 2001 10 16 | 704 | (1.2+ | 1.7−) | 2006 08 18 | 699 | 0.5− | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 16 | 704 | (0.6+ | 2.0−) | 2006 08 18 | 699 | 0.2− | 0.8+ | 2006 09 26 | 704 | 0.4+ | 0.7+ | | |
| 2001 10 16 | 704 | 0.6+ | 1.2− | 2006 08 18 | 699 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.0 | 0.8+ | | |
| 2001 10 16 | 704 | (0.1− | 1.6−) | 2006 08 18 | 699 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.3+ | | |
| 2001 10 19 | 608 | 1.0+ | 0.5+ | 2006 08 21 | 704 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.5+ | | |
| 2001 10 19 | 608 | 0.8+ | 0.4+ | 2006 08 21 | 704 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.4+ | 0.0 | | |
| 2001 10 19 | 608 | 0.8+ | 0.6+ | 2006 08 21 | 704 | 0.4− | 0.4− | 2006 09 28 | 704 | 0.1− | 0.3+ | | |
| 2001 10 28 | 644 | 0.0 | 0.2− | 2006 08 21 | 704 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.4+ | | |
| 2001 10 28 | 644 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.3− | | |
| 2001 10 28 | 644 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2+ | | |
| 2001 11 12 | 699 | 0.5− | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.5+ | | |
| 2001 11 12 | 699 | 0.3+ | 0.4+ | 2006 08 25 | 704 | 1.1+ | 0.2− | 2006 09 30 | 704 | 0.5− | 0.7+ | | |
| 2001 11 12 | 699 | 0.2− | 0.0 | 2006 08 25 | 704 | 0.3− | 1.0− | 2006 09 30 | 703 | 1.0− | 0.8+ | | |
| 2001 11 12 | 699 | 0.0 | 0.9+ | 2006 08 25 | 704 | 0.1− | 0.4− | 2006 09 30 | 704 | 0.1− | 0.8+ | | |
| 2001 11 12 | 608 | 0.1+ | 0.3− | 2006 08 25 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.3− | | |
| 2001 11 12 | 608 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.1+ | 0.4− | 2006 09 30 | 704 | 0.5− | 0.2− | | |
| 2001 11 12 | 608 | 0.1− | 0.5+ | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2001 11 15 | 704 | 1.2− | 0.1− | 2006 09 12 | 703 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.1− | 0.2− | | |
| 2001 11 15 | 704 | 0.3− | 1.1+ | 2006 09 14 | 644 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 2001 11 15 | 704 | 0.5− | 1.3+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2001 11 15 | 704 | 0.0 | 0.8+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2− | | |
| 2001 11 15 | 704 | 0.5− | 0.8+ | 2006 09 16 | 699 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.3− | | |
| 2001 11 17 | 699 | 0.2+ | 0.1− | 2006 09 16 | 699 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2− | | |
| 2001 11 17 | 699 | 0.5+ | 0.9− | 2006 09 16 | 699 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.1− | | |
| 2001 11 17 | 699 | 0.2+ | 0.9− | 2006 09 17 | 704 | 1.2− | 0.7− | 2006 10 12 | 644 | 0.2+ | 0.3− | | |
| 2001 11 17 | 699 | 0.5+ | 0.3− | 2006 09 17 | 704 | (0.3− | 2.5+) | 2006 10 19 | 703 | 0.7− | 0.3− | | |
| 2001 12 14 | 644 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.9− | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.2− | | |
| 2001 12 14 | 644 | 0.1− | 0.4− | 2006 09 17 | 704 | 1.1− | 0.5− | 2006 10 19 | 703 | 0.5+ | 0.8+ | | |
| 2001 12 14 | 699 | 0.5+ | 0.5+ | 2006 09 17 | 704 | 1.3− | 0.1− | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 2001 12 14 | 644 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.4+ | 0.2− | | |
| 2001 12 14 | 699 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2001 12 14 | 699 | 0.6+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2001 12 14 | 699 | 0.7− | 0.2+ | 2006 09 19 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2003 02 09 | 608 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.5− | | |
| 2003 02 09 | 608 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2− | | |
| 2003 02 09 | 608 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.4− | | |
| 2003 03 07 | 699 | (1.8+ | 0.7+) | 2006 09 19 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.0 | | |
| 2003 03 07 | 699 | (2.1+ | 0.9+) | 2006 09 19 | 703 | 0.3+ | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2003 03 07 | 699 | 1.3+ | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.0 | 0.6− | | |
| 2003 03 07 | 699 | 0.9+ | 1.0− | 2006 09 19 | 704 | 1.5+ | 0.3− | 2006 11 27 | 703 | 0.1+ | 0.7− | | |
| 2003 03 09 | 704 | (1.9− | 0.7−) | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.2+ | 0.2− | | |
| 2003 03 09 | 704 | 1.0− | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.2+ | 1.2− | | |

**(140939)∗ 2001 VZ$_{89}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.71946 | | (2000.0) | | | |
| $n$ | 0.20001240 | $\omega$ | 42.53172 | | −0.52799744 | −0.79861109 |
| $a$ | 2.8957747 | $\Omega$ | 81.32806 | | +0.67922800 | −0.60128552 |
| $e$ | 0.2126917 | $i$ | 16.98963 | | +0.50977253 | −0.02600109 |
| $P$ | 4.93 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 704 | 0.1− | 1.0− | 2001 11 20 | 699 | 0.5+ | 0.8− | 2003 04 10 | 704 | 0.1− | 0.0 | | |
| 1998 04 28 | 704 | 0.7− | 0.8+ | 2001 11 20 | 608 | 0.0 | 0.0 | 2003 04 10 | 704 | 0.1+ | 0.1− | | |
| 1998 04 28 | 704 | (0.1+ | 2.4+) | 2001 11 20 | 608 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.9− | | |
| 1998 04 28 | 704 | (4.7− | 0.3−) | 2001 11 20 | 608 | 0.0 | 0.6− | 2006 09 18 | 703 | 0.7+ | 0.4− | | |
| 1998 04 30 | 704 | 0.3− | 0.9− | 2001 12 15 | 704 | 0.0 | 0.9− | 2006 09 18 | 703 | 0.0 | 0.3− | | |
| 1998 04 30 | 704 | 0.6+ | 1.3+ | 2001 12 15 | 704 | (2.0− | 1.2+) | 2006 09 18 | 703 | 0.6− | 0.2− | | |
| 1998 04 30 | 704 | 1.4+ | 0.7+ | 2001 12 15 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 1998 04 30 | 704 | (4.4− | 0.9−) | 2001 12 15 | 704 | 0.3+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2001 09 15 | 644 | 0.4− | 0.5+ | 2001 12 15 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2001 09 15 | 644 | 0.5− | 0.1+ | 2001 12 15 | 704 | 0.8− | 1.2+ | 2006 10 30 | 703 | 0.3− | 0.5− | | |
| 2001 09 15 | 644 | 0.5− | 0.5+ | 2001 12 15 | 704 | 0.1+ | 0.7− | 2006 10 30 | 703 | 0.1− | 0.5− | | |
| 2001 09 15 | 644 | 0.3− | 0.5+ | 2001 12 15 | 704 | 1.4− | 1.0+ | 2006 10 30 | 703 | 0.0 | 0.9− | | |
| 2001 09 15 | 644 | 0.3− | 0.3+ | 2001 12 15 | 704 | 0.4− | 0.5+ | 2006 10 30 | 703 | 0.1+ | 0.0 | | |
| 2001 09 15 | 644 | 0.4− | 0.3+ | 2001 12 15 | 704 | 0.8− | 1.2+ | 2006 11 05 | 644 | 0.2+ | 0.0 | | |
| 2001 10 13 | 699 | 0.6− | 0.7+ | 2001 12 17 | 704 | 1.3− | 0.1− | 2006 11 05 | 644 | 0.6+ | 0.1− | | |
| 2001 10 13 | 699 | 0.6− | 0.6+ | 2001 12 17 | 704 | (2.0− | 1.2+) | 2006 11 05 | 644 | 0.5− | 0.2− | | |
| 2001 10 13 | 699 | 0.3+ | 0.6+ | 2001 12 17 | 704 | 0.9+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.0 | | |
| 2001 10 13 | 699 | 0.6− | 0.9+ | 2001 12 17 | 704 | 0.5+ | 0.7− | 2006 11 15 | 703 | 0.2− | 0.2+ | | |
| 2001 10 16 | 704 | 1.3− | 0.0 | 2001 12 18 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.7+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.2+ | 0.2− | 2001 12 18 | 644 | 0.0 | 0.7+ | 2006 11 15 | 703 | 0.3+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.1+ | 0.2+ | 2001 12 18 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.9− | | |
| 2001 10 16 | 704 | 0.1− | 0.6+ | 2002 01 14 | 704 | 0.4− | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.2− | | |
| 2001 10 16 | 704 | 0.6− | 0.9+ | 2002 01 14 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.4− | | |
| 2001 10 20 | 608 | 0.4− | 0.7− | 2002 01 14 | 704 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.4− | | |
| 2001 10 20 | 608 | 0.5+ | 0.6− | 2003 02 08 | 608 | (1.1− | 1.6+) | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2001 10 20 | 608 | 0.4− | 0.6− | 2003 02 08 | 608 | 1.1− | 0.8+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | (0.0 | 2.7+) | 2003 02 08 | 608 | 0.2− | 0.4+ | 2006 11 23 | G96 | 0.4+ | 0.4− | | |
| 2001 11 15 | 704 | (0.9− | 2.6+) | 2003 03 13 | 704 | 0.8− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2001 11 15 | 704 | (0.8− | 2.3+) | 2003 03 13 | 704 | 1.0− | 0.8+ | 2006 11 23 | G96 | 0.5+ | 0.6− | | |
| 2001 11 15 | 704 | (0.2− | 1.7+) | 2003 03 13 | 704 | 0.1+ | 0.4− | 2006 11 23 | G96 | 0.5+ | 0.5− | | |
| 2001 11 15 | 704 | (0.9− | 1.8+) | 2003 03 13 | 704 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.8+ | 0.5− | | |
| 2001 11 15 | 644 | 0.9+ | 0.5+ | 2003 03 13 | 704 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.6− | | |
| 2001 11 15 | 644 | 0.6− | 0.0 | 2003 03 14 | 608 | 1.2+ | 1.1− | 2006 11 25 | 704 | 0.2− | 0.4− | | |
| 2001 11 15 | 644 | 0.2− | 0.4− | 2003 03 14 | 608 | (1.2+ | 1.5−) | 2006 11 25 | 704 | 0.2+ | 0.0 | | |
| 2001 11 18 | 704 | (0.8− | 1.6+) | 2003 03 14 | 608 | 1.4+ | 1.0− | 2006 11 25 | 704 | 0.3+ | 0.2+ | | |
| 2001 11 18 | 704 | (0.5− | 1.8+) | 2003 03 27 | 704 | 0.5− | 0.8+ | 2006 11 25 | 704 | 0.1− | 0.0 | | |
| 2001 11 18 | 704 | 0.2− | 1.4+ | 2003 03 27 | 704 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.1− | | |
| 2001 11 18 | 704 | 0.0 | 1.4+ | 2003 03 27 | 704 | 0.9+ | 0.4− | 2006 11 28 | 704 | 0.0 | 0.1− | | |
| 2001 11 20 | 699 | 1.0+ | 0.6+ | 2003 03 27 | 704 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.1− | | |
| 2001 11 20 | 699 | 0.3+ | 0.0 | 2003 04 10 | 704 | 0.5+ | 0.4+ | 2006 11 28 | 704 | 0.2− | 0.2− | | |
| 2001 11 20 | 699 | 0.0 | 0.0 | 2003 04 10 | 704 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.2+ | | |

**(140940)∗ 2001 VR$_{90}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.39480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19523736 | $\omega$ | 260.54022 | | +0.96346257 | +0.07403393 | |
| $a$ | 2.9428001 | $\Omega$ | 94.89460 | | +0.02572147 | +0.93102459 | |
| $e$ | 0.2279834 | $i$ | 14.97218 | | −0.26660509 | +0.35736842 | |
| $P$ | 5.05 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.8− | 0.1+ | 2001 11 18 | 704 | 0.4− | 0.9− | 2003 02 26 | 704 | 0.8+ | 0.4− | | |
| 1996 12 07 | 691 | 0.9+ | 0.0 | 2001 11 18 | 704 | (2.6− | 0.8−) | 2003 02 26 | 704 | 0.7+ | 0.6− | | |
| 1996 12 07 | 691 | 0.7+ | 0.3− | 2001 11 18 | 704 | 0.3− | 0.6− | 2003 02 26 | 704 | 0.4+ | 0.6+ | | |
| 1996 12 17 | 566 | 0.4− | 0.5− | 2001 11 18 | 704 | 0.8+ | 0.1− | 2003 03 03 | 644 | 0.4+ | 0.2− | | |
| 1996 12 17 | 566 | 0.4− | 0.4− | 2001 11 20 | 699 | 1.2+ | 0.1− | 2003 03 03 | 644 | 0.3+ | 0.1+ | | |
| 1996 12 17 | 566 | 0.4− | 0.0 | 2001 11 20 | 699 | 0.5+ | 0.4− | 2003 03 03 | 644 | 0.2+ | 0.0 | | |
| 2001 08 22 | 644 | 0.2+ | 0.5+ | 2001 11 20 | 699 | 0.5+ | 0.4− | 2003 03 07 | 645 | 0.1− | 0.1− | | |
| 2001 08 22 | 644 | 0.0 | 0.2− | 2001 11 20 | 699 | 0.9+ | 0.4− | 2003 03 07 | 645 | 0.1− | 0.1− | | |
| 2001 08 22 | 644 | 0.1+ | 0.5+ | 2001 12 15 | 704 | 0.2− | 0.2− | 2003 04 26 | 645 | 0.0 | 0.0 | | |
| 2001 09 13 | 644 | 0.2+ | 0.1+ | 2001 12 15 | 704 | 0.0 | 0.1+ | 2003 04 26 | 645 | 0.1− | 0.0 | | |
| 2001 09 13 | 644 | 0.3− | 0.1+ | 2001 12 15 | 704 | 0.3− | 0.6− | 2006 09 30 | 699 | 0.5+ | 0.7+ | | |
| 2001 09 13 | 644 | 0.2− | 0.4+ | 2001 12 15 | 704 | 0.2+ | 0.1− | 2006 09 30 | 699 | 0.3− | 1.1+ | | |
| 2001 09 21 | 644 | 0.1− | 0.5+ | 2001 12 19 | 704 | 0.9− | 0.7− | 2006 09 30 | 699 | 0.7− | 0.4+ | | |
| 2001 09 21 | 644 | 0.4− | 0.1− | 2001 12 19 | 704 | 0.2− | 0.4− | 2006 09 30 | 699 | 0.2− | 0.2+ | | |
| 2001 09 21 | 644 | 0.2+ | 0.2+ | 2001 12 19 | 704 | 0.2− | 0.4− | 2006 10 28 | 703 | 0.0 | 0.3− | | |
| 2001 09 23 | 699 | 0.7− | 0.4− | 2001 12 19 | 704 | 0.3− | 0.3− | 2006 10 28 | 703 | 0.2− | 0.4− | | |
| 2001 09 23 | 699 | 0.0 | 1.1+ | 2001 12 19 | 704 | 1.1− | 0.7− | 2006 10 28 | 703 | 0.1+ | 0.2− | | |
| 2001 09 23 | 699 | 0.0 | 0.1− | 2002 02 12 | 291 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.5+ | 0.3+ | | |
| 2001 09 23 | 699 | 0.6− | 1.1+ | 2002 02 12 | 291 | 0.3+ | 0.5+ | 2006 11 10 | 704 | 0.3+ | 0.2− | | |
| 2001 10 14 | 699 | (1.6− | 0.5+) | 2002 02 12 | 291 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.4+ | 0.0 | | |
| 2001 10 14 | 699 | 0.4+ | 0.3+ | 2002 12 31 | 704 | (1.6+ | 0.7−) | 2006 11 10 | 704 | 1.2+ | 0.3− | | |
| 2001 10 14 | 699 | 1.0− | 0.4+ | 2002 12 31 | 704 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.5+ | 0.4− | | |
| 2001 10 14 | 699 | 0.6− | 0.1+ | 2002 12 31 | 704 | 0.1− | 0.7+ | 2006 11 10 | 704 | 1.4− | 0.7− | | |
| 2001 10 16 | 704 | 0.3− | 0.6+ | 2003 01 10 | 704 | 0.8− | 1.5+ | 2006 11 16 | 703 | 0.1+ | 0.7− | | |
| 2001 10 16 | 704 | 0.3− | 1.1+ | 2003 01 10 | 704 | 0.5− | 0.6+ | 2006 11 16 | 703 | 0.1+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.2− | 1.0+ | 2003 01 10 | 704 | 0.4+ | 0.4− | 2006 11 16 | 703 | 0.4− | 0.0 | | |
| 2001 10 16 | 704 | 0.0 | 0.5+ | 2003 01 24 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.2− | 0.1− | | |
| 2001 10 16 | 704 | 0.2− | 0.9+ | 2003 01 24 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2001 11 15 | 704 | 0.2− | 0.5− | 2003 01 24 | 644 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.7+ | | |
| 2001 11 15 | 704 | 0.2− | 1.1− | 2003 02 01 | 644 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.5+ | | |
| 2001 11 15 | 704 | 0.0 | 1.0− | 2003 02 01 | 644 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.0 | | |
| 2001 11 15 | 704 | 0.5− | 0.7− | 2003 02 01 | 644 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.0 | | |
| 2001 11 15 | 704 | 0.5− | 1.0− | 2003 02 26 | 704 | (1.8+ | 1.1−) | | | | | | |
| 2001 11 18 | 704 | 0.0 | 0.2− | 2003 02 26 | 704 | 1.0+ | 0.8+ | | | | | | |

**(140941)∗ 2001 VU$_{90}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.44725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18102184 | $\omega$ | 347.41344 | | +0.31363252 | −0.89854880 | |
| $a$ | 3.0949151 | $\Omega$ | 83.66805 | | +0.89577239 | +0.17272828 | |
| $e$ | 0.1358669 | $i$ | 17.99158 | | +0.31500234 | +0.40345384 | |
| $P$ | 5.44 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 699 | 0.5+ | 0.4− | 2001 12 19 | 704 | (4.7− | 2.2+) | 2004 04 24 | 704 | 0.9+ | 0.4+ | | |
| 2001 09 23 | 699 | 0.0 | 1.2+ | 2001 12 19 | 704 | (4.7− | 2.3+) | 2004 04 24 | 704 | 0.1− | 0.6+ | | |
| 2001 09 23 | 699 | 0.7+ | 1.1+ | 2001 12 19 | 704 | (4.3− | 2.3+) | 2004 04 24 | 704 | 0.3+ | 0.2+ | | |
| 2001 09 23 | 699 | 0.3− | 1.4+ | 2001 12 19 | 704 | (4.9− | 2.9+) | 2004 05 14 | 704 | 0.0 | 1.2+ | | |
| 2001 10 16 | 704 | 0.4+ | 0.2+ | 2002 01 05 | 608 | 0.4+ | 1.3+ | 2004 05 14 | 704 | 0.4− | 0.1+ | | |
| 2001 10 16 | 704 | 0.9+ | 0.9+ | 2002 01 05 | 608 | (0.4+ | 1.6+) | 2004 05 14 | 704 | 0.3− | 0.5− | | |
| 2001 10 16 | 704 | 0.4+ | 1.1− | 2002 01 05 | 608 | 0.9+ | 1.0+ | 2004 05 14 | 704 | 0.6− | 0.2− | | |
| 2001 10 16 | 704 | 0.6+ | 0.0 | 2002 01 10 | 704 | 0.8− | 0.0 | 2004 05 14 | 699 | 0.7+ | 0.6+ | | |
| 2001 10 20 | 608 | 0.6− | 0.2− | 2002 01 10 | 704 | 0.3− | 1.5− | 2004 05 14 | 699 | 0.2+ | 0.8+ | | |
| 2001 10 20 | 608 | 0.4− | 0.7− | 2002 01 10 | 704 | 0.7− | 0.1+ | 2004 05 14 | 699 | 0.3− | 0.4+ | | |
| 2001 10 20 | 608 | 0.3− | 0.5− | 2002 01 11 | 608 | 0.7− | 0.2− | 2004 05 14 | 699 | 0.4+ | 0.4+ | | |
| 2001 11 15 | 704 | 0.2+ | 0.2+ | 2002 01 11 | 608 | 0.5− | 0.2− | 2004 05 23 | 704 | 0.4+ | 0.2+ | | |
| 2001 11 15 | 704 | 0.3− | 0.0 | 2002 01 11 | 608 | 0.3− | 0.6− | 2004 05 23 | 704 | 0.3+ | 0.1+ | | |
| 2001 11 15 | 704 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.6− | 0.1− | 2004 05 23 | 704 | 0.6− | 0.2+ | | |
| 2001 11 15 | 704 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.9− | 0.4− | 2004 05 23 | 704 | 0.5+ | 0.6+ | | |
| 2001 11 15 | 644 | 0.9− | 0.3− | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2004 05 23 | 704 | 0.5− | 0.4+ | | |
| 2001 11 15 | 644 | 0.4− | 0.6+ | 2003 02 11 | 704 | 1.2− | 0.1+ | 2004 06 09 | 699 | 0.5+ | 0.5+ | | |
| 2001 11 15 | 644 | 0.7− | 0.3+ | 2003 02 11 | 704 | 0.7− | 0.5+ | 2004 06 09 | 699 | (0.3+ | 1.8+) | | |
| 2001 11 15 | 608 | 0.4+ | 0.8+ | 2003 02 11 | 704 | 0.9− | 0.1+ | 2004 06 09 | 699 | (1.1− | 1.6+) | | |
| 2001 11 15 | 608 | 0.8+ | 0.3− | 2003 02 11 | 704 | 0.1+ | 0.2− | 2004 06 09 | 699 | 0.2− | 0.6+ | | |
| 2001 11 15 | 608 | 1.1+ | 0.3− | 2003 02 22 | 644 | 0.3− | 0.3+ | 2005 07 03 | 644 | 0.6+ | 0.5+ | | |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2003 02 22 | 644 | 0.1+ | 0.6+ | 2005 07 03 | 644 | 0.5+ | 0.7+ | | |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2003 02 22 | 644 | 0.0 | 0.5+ | 2005 07 03 | 644 | 0.3+ | 0.8+ | | |
| 2001 11 18 | 704 | 0.6+ | 0.5+ | 2003 02 26 | 704 | (0.9+ | 1.9+) | 2006 09 27 | 703 | 0.3− | 0.0 | | |
| 2001 11 18 | 704 | 0.2− | 0.6− | 2003 02 26 | 704 | 0.7+ | 1.0− | 2006 09 27 | 703 | 0.1+ | 0.3+ | | |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2003 02 26 | 704 | 1.4+ | 0.8+ | 2006 09 27 | 703 | 0.1− | 0.3+ | | |
| 2001 12 07 | 704 | 0.2+ | 0.0 | 2003 02 26 | 704 | 0.5+ | 1.4+ | 2006 09 27 | 703 | 0.1− | 0.2+ | | |
| 2001 12 07 | 704 | 0.2+ | 0.2− | 2003 02 26 | 704 | 0.2+ | 0.8+ | 2006 10 03 | E12 | 1.0− | 0.7+ | | |
| 2001 12 07 | 704 | 0.9+ | 0.3− | 2003 02 26 | 704 | (0.1+ | 1.9+) | 2006 10 03 | E12 | 0.1+ | 1.0+ | | |
| 2001 12 07 | 704 | (1.6− | 0.7+) | 2003 02 26 | 704 | 0.3+ | 0.2− | 2006 10 03 | E12 | 0.7− | 0.9+ | | |
| 2001 12 09 | 699 | 0.4− | 0.1+ | 2003 02 26 | 704 | 0.8+ | 0.1+ | 2006 10 03 | E12 | 0.7− | 0.7+ | | |
| 2001 12 09 | 699 | 0.1− | 0.2− | 2003 03 13 | 704 | 0.9+ | 0.4+ | 2006 10 12 | E12 | 0.2− | 0.7+ | | |
| 2001 12 09 | 699 | 0.4− | 0.0 | 2003 03 13 | 704 | 1.1+ | 0.0 | 2006 10 12 | E12 | 0.5− | 0.6+ | | |
| 2001 12 09 | 699 | 0.2− | 0.1+ | 2003 03 13 | 704 | 0.7+ | 0.3+ | 2006 10 12 | E12 | 0.2− | 0.9+ | | |
| 2001 12 15 | 704 | 0.4+ | 0.1+ | 2003 03 13 | 704 | 1.0+ | 0.4+ | 2006 10 12 | E12 | 0.1+ | 0.4− | | |
| 2001 12 15 | 704 | 0.2+ | 0.2− | 2003 03 13 | 704 | 0.8+ | 0.7+ | 2006 10 31 | 703 | 0.1− | 0.6− | | |
| 2001 12 15 | 704 | 0.4− | 0.2− | 2003 03 21 | 644 | 0.7+ | 0.7+ | 2006 10 31 | 703 | 0.1− | 0.3− | | |
| 2001 12 17 | 704 | 0.4− | 0.4+ | 2003 03 21 | 644 | 0.1− | 0.2+ | 2006 10 31 | 703 | 0.7− | 0.3+ | | |
| 2001 12 17 | 704 | 0.5− | 0.7− | 2003 03 21 | 644 | 0.1+ | 0.8+ | 2006 10 31 | 703 | 0.3+ | 0.5− | | |
| 2001 12 17 | 704 | 0.6− | 0.4− | 2004 04 23 | 703 | 0.7+ | 0.4− | 2006 11 18 | 703 | 1.0− | 1.1+ | | |
| 2001 12 17 | 704 | 0.2− | 0.1+ | 2004 04 23 | 703 | 0.9− | 0.3+ | 2006 11 18 | 703 | 0.4+ | 1.7+ | | |
| 2001 12 17 | 704 | 0.9− | 0.1− | 2004 04 23 | 703 | (1.8− | 1.2+) | 2006 11 18 | 703 | 0.3+ | 1.0+ | | |
| 2001 12 19 | 704 | (4.8− | 2.0+) | 2004 04 23 | 703 | 0.5− | 1.2+ | 2006 11 18 | 703 | 0.2− | 0.8+ | | |

**(140942)∗ 2001 VS$_{91}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.81257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18371885 | $\omega$ | 204.54673 | | +0.97184535 | −0.23229425 | |
| $a$ | 3.0645513 | $\Omega$ | 168.67114 | | +0.23535733 | +0.94916476 | |
| $e$ | 0.0484864 | $i$ | 11.58406 | | +0.01111531 | +0.21242798 | |
| $P$ | 5.36 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.1− | 0.5+ | 2003 03 07 | 704 | 0.3+ | 1.5+ | 2006 09 18 | 703 | 0.1− | 0.1− | | |
| 2000 09 03 | 704 | 0.2+ | 0.8+ | 2003 03 07 | 704 | 0.0 | 1.2+ | 2006 09 21 | 699 | 0.2+ | 0.2+ | | |
| 2000 09 03 | 704 | 0.1− | 1.1+ | 2003 03 07 | 704 | (0.2+ | 1.7+) | 2006 09 21 | 699 | 0.2− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.8− | 0.1− | 2003 03 07 | 704 | 0.8+ | 1.1+ | 2006 09 21 | 699 | 0.1− | 0.1− |
| 2001 11 15 | 704 | 0.6− | 0.3+ | 2003 03 07 | 608 | 0.3− | 0.2− | 2006 09 21 | 699 | 0.6+ | 0.2+ |
| 2001 11 15 | 704 | 0.9− | 0.2− | 2003 03 07 | 608 | 0.4− | 0.8+ | 2006 09 25 | 699 | 0.5+ | 1.0+ |
| 2001 11 15 | 704 | 0.2+ | 0.4− | 2003 03 07 | 608 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.7+ | 0.1+ |
| 2001 11 15 | 704 | 1.0− | 0.0 | 2004 03 20 | 704 | 0.7+ | 0.0 | 2006 09 25 | 699 | 0.0 | 0.4− |
| 2001 11 18 | 704 | 0.7+ | 0.5+ | 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 2001 11 18 | 704 | 0.2+ | 0.1− | 2004 03 20 | 704 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.7+ |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.9+ | 2006 09 26 | 704 | 0.6− | 0.3− |
| 2001 11 18 | 704 | 0.5+ | 0.8+ | 2004 04 11 | 644 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.8− | 0.3+ |
| 2001 11 20 | 699 | 0.1− | 0.4+ | 2004 04 11 | 644 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.6− | 0.8+ |
| 2001 11 20 | 699 | 0.1+ | 1.0+ | 2004 04 11 | 644 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.8− | 0.0 |
| 2001 11 20 | 699 | 0.4+ | 0.1− | 2004 04 13 | 703 | (1.6− | 0.9−) | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2001 11 20 | 699 | 0.4+ | 0.2− | 2004 04 13 | 703 | 0.9− | 0.6+ | 2006 09 26 | 703 | 0.9+ | 0.6+ |
| 2001 12 07 | 704 | 0.7+ | 0.1− | 2004 04 13 | 703 | 1.0+ | 0.8+ | 2006 10 01 | 704 | 1.5+ | 0.1+ |
| 2001 12 07 | 704 | 0.5− | 0.6− | 2004 04 13 | 703 | 1.4+ | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.4+ |
| 2001 12 07 | 704 | 0.6− | 0.5+ | 2004 04 14 | 699 | 0.0 | 0.3− | 2006 10 01 | 704 | (1.0+ | 1.6−) |
| 2001 12 07 | 704 | 0.5− | 0.4− | 2004 04 14 | 699 | 0.8+ | 1.5+ | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 2001 12 09 | 699 | 0.5+ | 0.8+ | 2004 04 14 | 699 | (0.5− | 1.9+) | 2006 10 01 | 704 | 0.2+ | 0.8+ |
| 2001 12 09 | 699 | (1.7+ | 0.5−) | 2004 04 14 | 699 | (1.8+ | 2.1+) | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 12 09 | 699 | 0.6+ | 0.1+ | 2004 04 16 | 704 | (0.3− | 2.3+) | 2006 10 16 | 703 | 0.5+ | 0.9+ |
| 2001 12 09 | 699 | 0.8− | 0.1− | 2004 04 16 | 704 | 0.1− | 1.4+ | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2001 12 19 | 704 | 0.4+ | 0.9− | 2004 04 16 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.6− | 0.6+ |
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2004 04 16 | 704 | 0.5− | 0.4− | 2006 10 22 | 703 | 1.0+ | 0.4+ |
| 2001 12 19 | 704 | 0.1+ | 0.7+ | 2004 04 23 | 704 | 1.4− | 1.3+ | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2004 04 23 | 704 | 0.8− | 0.3+ | 2006 10 22 | 703 | 1.2− | 0.4+ |
| 2001 12 19 | 704 | 0.4− | 0.3− | 2004 04 23 | 704 | 0.3− | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 02 02 | 704 | 0.2+ | 0.9− | 2004 04 23 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2003 02 02 | 704 | 0.8+ | 0.3+ | 2004 05 09 | 608 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2003 02 02 | 704 | 0.0 | 0.5− | 2004 05 09 | 608 | 0.4− | 0.5+ | 2006 11 16 | 703 | 0.1+ | 0.3− |
| 2003 02 02 | 704 | 0.4− | 0.2− | 2004 05 09 | 608 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.1+ | 0.7− |
| 2003 02 03 | 608 | 0.5+ | 0.1+ | 2006 09 16 | 699 | 0.7− | 1.0+ | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2003 02 03 | 608 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.7− |
| 2003 02 03 | 608 | 0.0 | 0.5+ | 2006 09 16 | 699 | 1.0− | 0.6− | 2006 11 16 | 703 | 0.5− | 0.4+ |
| 2003 02 09 | 608 | 0.2+ | 0.8− | 2006 09 16 | 699 | (0.3− | 1.5+) | 2006 11 16 | 703 | 1.2− | 0.2+ |
| 2003 02 09 | 608 | 0.2+ | 0.7− | 2006 09 18 | 703 | 0.7+ | 0.0 | 2006 11 16 | 703 | 1.4− | 0.1+ |
| 2003 02 09 | 608 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.6− | 0.2− | 2006 11 16 | 703 | 0.6− | 0.1− |
| 2003 03 07 | 704 | 0.4− | 0.8+ | 2006 09 18 | 703 | 0.6+ | 0.4+ | | | | |

**(140943)∗ 2001 VJ$_{93}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.95011 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17250770 | $\omega$ | 231.50189 | | +0.07542848 | −0.96257940 | |
| $a$ | 3.1959285 | $\Omega$ | 216.84166 | | +0.99527109 | +0.08869819 | |
| $e$ | 0.1877507 | $i$ | 25.72828 | | +0.06120453 | −0.25607329 | |
| $P$ | 5.71 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2− | 0.2+ | 2001 12 07 | 704 | 0.6− | 0.2− | 2004 05 23 | 704 | 0.6+ | 0.2+ |
| 1995 10 15 | 691 | 0.1+ | 0.0 | 2001 12 07 | 704 | 0.7− | 0.2+ | 2004 05 23 | 704 | 0.1− | 0.5+ |
| 1995 10 15 | 691 | 0.0 | 0.2+ | 2001 12 14 | 644 | 0.0 | 0.3+ | 2004 05 23 | 704 | (1.6− | 0.1+) |
| 2000 09 28 | 704 | 0.4− | 0.1+ | 2001 12 14 | 644 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.8+ | 0.6+ |
| 2000 09 28 | 704 | 0.6+ | 0.3+ | 2001 12 14 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.2− |
| 2000 09 28 | 704 | 0.4+ | 0.3+ | 2001 12 18 | 608 | 0.2− | 0.4− | 2006 09 16 | 703 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | (1.6+ | 0.1+) | 2001 12 18 | 608 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.3+ | 1.2+ |
| 2001 10 17 | 704 | (1.7+ | 1.7+) | 2001 12 18 | 608 | 0.3+ | 0.4− | 2006 09 16 | 703 | 0.5+ | 0.4− |
| 2001 10 17 | 704 | 0.4+ | 0.6− | 2002 02 04 | 699 | 0.5+ | 0.4+ | 2006 09 16 | 703 | 0.3+ | 0.6− |
| 2001 10 17 | 704 | 0.8+ | 0.1+ | 2002 02 04 | 699 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.1+ | 1.1− |
| 2001 11 14 | 683 | 0.5− | 1.3+ | 2002 02 04 | 699 | 1.4− | 0.6+ | 2006 09 16 | 703 | 0.4+ | 1.0+ |
| 2001 11 14 | 683 | 0.7− | 0.1− | 2002 02 04 | 699 | 0.7− | 0.8+ | 2006 09 28 | 703 | 0.6− | 0.1− |
| 2001 11 14 | 683 | 1.1− | 0.5− | 2003 03 09 | 699 | 0.4+ | 0.3+ | 2006 09 28 | 703 | 0.6− | 0.1− |
| 2001 11 15 | 704 | 0.1+ | 0.0 | 2003 03 09 | 699 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.2+ |
| 2001 11 15 | 704 | 0.1+ | 0.1− | 2003 03 09 | 699 | 0.3+ | 0.4+ | 2006 09 28 | 703 | 0.9− | 0.4− |
| 2001 11 15 | 704 | 0.1+ | 0.1− | 2003 03 09 | 699 | 0.2+ | 0.5+ | 2006 10 20 | 703 | 0.3− | 0.9+ |
| 2001 11 15 | 704 | 0.1+ | 0.4− | 2003 03 23 | 644 | 0.1+ | 0.5− | 2006 10 20 | 703 | 0.4− | 0.0 |
| 2001 11 15 | 704 | 0.2+ | 0.3− | 2003 03 23 | 644 | 0.1− | 0.1− | 2006 10 20 | 703 | 0.5+ | 0.6+ |
| 2001 11 18 | 704 | 1.1+ | 0.6+ | 2003 03 23 | 644 | 0.0 | 0.2− | 2006 10 20 | 703 | 0.2− | 1.2+ |
| 2001 11 18 | 704 | 1.0+ | 0.5+ | 2003 04 06 | 704 | 0.7− | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.3+ |
| 2001 11 18 | 704 | (1.6+ | 0.9+) | 2003 04 06 | 704 | 0.5− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.1− |
| 2001 11 18 | 704 | 1.2+ | 1.0+ | 2003 04 06 | 704 | 0.5+ | 0.5+ | 2006 11 14 | 703 | 0.5− | 1.0− |
| 2001 11 18 | 704 | 0.9+ | 0.9+ | 2004 04 14 | 691 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.5+ | 0.5− |
| 2001 12 07 | 704 | 0.1+ | 0.1− | 2004 04 14 | 691 | 0.1+ | 0.6+ | | | | |
| 2001 12 07 | 704 | 0.7− | 0.2+ | 2004 04 14 | 691 | 0.2− | 0.4+ | | | | |

**(140944)∗ 2001 VU$_{93}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.54466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18150394 | $\omega$ | 283.13627 | | +0.00982315 | −0.99825150 | |
| $a$ | 3.0894323 | $\Omega$ | 165.90589 | | +0.98488357 | −0.00042250 | |
| $e$ | 0.2058070 | $i$ | 13.84873 | | +0.17293887 | +0.05910811 | |
| $P$ | 5.43 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.0 | 0.8− | 2003 03 23 | 683 | 1.0− | 0.9+ | 2006 09 25 | 699 | 0.6+ | 0.3− |
| 1995 07 25 | 691 | 0.0 | 0.4− | 2003 03 26 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | (0.7− | 1.7+) |
| 1995 07 25 | 691 | 0.1+ | 0.1− | 2003 03 26 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2003 03 26 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.4− |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2003 03 26 | 644 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.4+ |
| 2001 10 16 | 704 | 0.6− | 0.7− | 2003 03 26 | 644 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 2001 10 16 | 704 | 0.5− | 0.1− | 2003 03 26 | 644 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.9− | 0.2− |
| 2001 10 16 | 704 | 0.7− | 0.0 | 2003 03 31 | 699 | 0.6+ | 0.7+ | 2006 09 29 | 699 | 0.4+ | 0.5− |
| 2001 11 15 | 704 | 0.4− | 0.3+ | 2003 03 31 | 699 | (1.8− | 0.0 ) | 2006 09 29 | 699 | (2.3+ | 0.1−) |
| 2001 11 15 | 704 | 0.5− | 0.6+ | 2003 03 31 | 699 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.1− | 0.1+ |
| 2001 11 15 | 704 | 0.7− | 0.9+ | 2003 03 31 | 699 | 0.4− | 0.0 | 2006 09 29 | 699 | 0.3+ | 1.2+ |
| 2001 11 15 | 704 | 0.1− | 0.2− | 2003 04 20 | 246 | 0.1+ | 0.4− | 2006 10 16 | 703 | 1.1+ | 0.2− |
| 2001 11 15 | 704 | 0.2+ | 1.1+ | 2003 04 20 | 246 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 1.0+ | 0.7− |
| 2001 11 18 | 704 | 0.2+ | 1.0+ | 2003 04 20 | 246 | 0.2− | 0.7− | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2001 11 18 | 704 | 0.6+ | 0.3− | 2003 04 20 | 246 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.7+ | 0.4+ |
| 2001 11 18 | 704 | 0.9+ | 0.2+ | 2003 04 20 | 246 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 11 18 | 704 | 0.6+ | 0.1+ | 2003 04 20 | 246 | 0.8− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2001 11 18 | 704 | 0.8+ | 0.6− | 2004 06 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2001 12 07 | 704 | 0.5− | 0.0 | 2004 06 17 | 691 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2001 12 07 | 704 | 0.0 | 0.1+ | 2004 06 17 | 691 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2001 12 07 | 704 | 0.0 | 0.1+ | 2004 06 26 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2001 12 07 | 704 | 0.0 | 0.4+ | 2004 06 26 | 691 | 0.7+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 2001 12 07 | 704 | 0.1− | 0.2+ | 2004 06 26 | 691 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2001 12 18 | 608 | 0.4+ | 0.3− | 2006 09 18 | 703 | (0.3− | 1.6+) | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2001 12 18 | 608 | 1.0+ | 0.3− | 2006 09 18 | 703 | 1.3− | 1.1+ | 2006 10 28 | 703 | 0.3− | 0.3− |
| 2001 12 18 | 608 | 0.2− | 1.1− | 2006 09 18 | 703 | 0.2− | 1.3+ | 2006 10 28 | 703 | 0.7+ | 1.6+ |
| 2003 03 23 | 683 | 1.1− | 1.3+ | 2006 09 18 | 703 | 0.2− | 1.1− | 2006 10 28 | 703 | 0.5+ | 0.3+ |
| 2003 03 23 | 683 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.0 | 0.3− |

**(140945)∗ 2001 VW$_{93}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.31811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17285388 | $\omega$ | 180.71984 | | +0.93723030 | −0.33160245 | |
| $a$ | 3.1916600 | $\Omega$ | 199.72518 | | +0.32151230 | +0.94152038 | |
| $e$ | 0.1909017 | $i$ | 18.64182 | | +0.13501561 | +0.05982625 | |
| $P$ | 5.70 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.4− | 0.3− | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 08 31 | 704 | 0.2+ | 0.6+ |
| 2001 08 24 | 644 | 0.7− | 0.1+ | 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.1+ | 0.4+ |
| 2001 08 24 | 644 | 0.4− | 0.4− | 2004 04 19 | 691 | 0.3+ | 0.1+ | 2006 09 11 | 703 | 0.6− | 0.3− |
| 2001 10 16 | 704 | 0.2+ | 0.8− | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.3− | 1.2− |
| 2001 10 16 | 704 | 0.6− | 0.3+ | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 09 11 | 703 | 0.2− | 0.1− |
| 2001 10 16 | 704 | 0.4+ | 0.3− | 2004 05 24 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 704 | 0.6+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.6+ | 0.5− | 2004 05 24 | 691 | 0.2− | 0.0 | 2006 09 15 | 704 | 0.1− | 0.2+ |
| 2001 10 16 | 704 | 0.1− | 0.5− | 2004 05 24 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 704 | 0.2− | 0.4+ |
| 2001 11 12 | 699 | 0.5+ | 0.4+ | 2005 05 21 | 644 | 0.1+ | 0.5+ | 2006 09 15 | 704 | 0.2− | 0.2+ |
| 2001 11 12 | 699 | 0.2− | 0.2− | 2005 05 21 | 644 | 0.1+ | 0.3+ | 2006 09 15 | 704 | 0.1− | 0.3− |
| 2001 11 12 | 699 | 0.3− | 0.1+ | 2005 05 21 | 644 | 0.2− | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.1− |
| 2001 11 12 | 699 | 0.6+ | 0.1+ | 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.3− |
| 2001 11 15 | 704 | 0.2− | 1.0+ | 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 644 | 0.1− | 0.6+ |
| 2001 11 15 | 704 | 0.4− | 0.5+ | 2005 06 30 | 644 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.0 | 0.4+ |
| 2001 11 15 | 704 | 0.4− | 0.8+ | 2005 07 11 | 691 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.4+ | 0.2+ |
| 2001 11 15 | 704 | 0.4− | 0.9+ | 2005 07 11 | 691 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.1+ | 0.3+ |
| 2001 11 15 | 704 | 0.4− | 0.5+ | 2005 07 11 | 691 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.0 |
| 2001 11 18 | 704 | 1.1+ | 0.0 | 2006 08 10 | 644 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.1− |
| 2001 11 18 | 704 | 0.5+ | 0.2+ | 2006 08 10 | 644 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.1− | 0.7+ |
| 2001 11 18 | 704 | 0.3− | 0.5+ | 2006 08 10 | 644 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.0 | 0.1− |
| 2001 11 18 | 704 | 0.9+ | 0.4+ | 2006 08 10 | 644 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 11 18 | 704 | 0.1+ | 0.6+ | 2006 08 10 | 644 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2001 12 07 | 704 | 0.1− | 0.4+ | 2006 08 10 | 644 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2001 12 07 | 704 | 0.4+ | 0.6+ | 2006 08 27 | 683 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.5− | 1.2− |
| 2001 12 07 | 704 | 0.0 | 0.4+ | 2006 08 27 | 683 | 0.9+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.7+ |
| 2001 12 07 | 704 | 0.9+ | 0.8+ | 2006 08 28 | 683 | (1.7− | 0.4+) | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2001 12 07 | 704 | 0.1− | 0.3+ | 2006 08 28 | 683 | (0.7− | 1.5+) | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 12 14 | 644 | 0.3− | 0.1− | 2006 08 28 | 683 | (1.6− | 0.4+) | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 12 14 | 644 | 0.0 | 0.2− | 2006 08 29 | 699 | 0.2+ | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 12 14 | 644 | 0.5− | 0.1+ | 2006 08 29 | 699 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2002 01 12 | 704 | 0.2− | 0.3− | 2006 08 29 | 683 | 0.8− | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.1− |
| 2002 01 12 | 704 | 0.6+ | 0.1− | 2006 08 29 | 683 | (1.2+ | 2.8+) | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2002 01 12 | 704 | 0.0 | 1.2+ | 2006 08 29 | 699 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.6+ |
| 2002 01 12 | 704 | 0.4− | 0.4+ | 2006 08 29 | 683 | (1.4− | 2.0+) | 2006 11 10 | 704 | 0.5+ | 0.9+ |
| 2002 01 12 | 704 | 0.6− | 0.2+ | 2006 08 29 | 699 | 0.7− | 1.4− | 2006 11 10 | 704 | 0.1− | 1.2+ |
| 2004 04 11 | 644 | 0.5+ | 0.4+ | 2006 08 31 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 704 | 0.3+ | 0.5+ |
| 2004 04 11 | 644 | 0.1+ | 0.5+ | 2006 08 31 | 704 | 0.1+ | 0.6+ | 2006 11 10 | 704 | 0.0 | 1.2+ |
| 2004 04 11 | 644 | 0.7+ | 0.8+ | 2006 08 31 | 704 | 1.0+ | 0.0 | 2006 11 10 | 704 | 0.1− | 0.0 |
| 2004 04 13 | 691 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.3− | 0.5+ | | | | |

**(140946)∗ 2001 VO$_{94}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.13585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19201254 | $\omega$ | 161.58039 | | +0.99152881 | −0.05262984 | |
| $a$ | 2.9756578 | $\Omega$ | 202.46680 | | +0.03896068 | +0.99264382 | |
| $e$ | 0.2901874 | $i$ | 18.10348 | | +0.12390596 | +0.10903366 | |
| $P$ | 5.13 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 16 | 691 | 0.2− | 1.0+ | 2004 03 16 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 1999 04 16 | 691 | 0.3+ | 0.6+ | 2004 03 16 | 691 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.2− |
| 1999 04 16 | 691 | 0.0 | 0.0 | 2004 03 16 | 691 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2001 11 15 | 704 | 0.2− | 0.0 | 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.3− | 0.0 |
| 2001 11 15 | 704 | 0.0 | 0.3− | 2004 04 13 | 691 | 0.2+ | 0.3− | 2006 10 03 | 704 | 0.7− | 0.7+ |
| 2001 11 15 | 704 | 0.1− | 0.3+ | 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 10 03 | 704 | 1.2− | 0.6+ |
| 2001 11 15 | 704 | 0.4− | 0.3+ | 2005 06 30 | 644 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.7− | 0.4+ |
| 2001 11 15 | 704 | 0.2− | 0.2− | 2005 06 30 | 644 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.7− | 0.4+ |
| 2001 11 18 | 704 | 0.0 | 0.3− | 2005 06 30 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2001 11 18 | 704 | 0.5+ | 0.2− | 2006 08 25 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2001 11 18 | 704 | 0.7+ | 0.5− | 2006 08 25 | 704 | 0.3+ | 1.0+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 11 18 | 704 | 0.7+ | 0.1+ | 2006 08 25 | 704 | 0.3− | 1.4+ | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2001 11 18 | 704 | 0.1− | 0.0 | 2006 08 25 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.6+ | 0.3+ |
| 2001 12 07 | 704 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2001 12 07 | 704 | 0.4+ | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2001 12 07 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.3+ | 0.5− | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2001 12 07 | 704 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.5+ | 0.7+ | 2006 11 01 | 703 | 0.8+ | 0.4− |
| 2001 12 07 | 704 | 0.2− | 0.4− | 2006 09 17 | 699 | 1.0− | 0.5+ | 2006 11 01 | 703 | 0.3− | 1.2+ |
| 2001 12 09 | 699 | 0.7− | 1.1+ | 2006 09 17 | 699 | 0.3− | 1.0+ | 2006 11 01 | 703 | 0.5+ | 0.3− |
| 2001 12 09 | 699 | 0.3+ | 0.2− | 2006 09 17 | 699 | 0.1− | 0.9+ | 2006 11 01 | 703 | 0.4+ | 0.1− |
| 2001 12 09 | 699 | 0.1+ | 0.6− | 2006 09 17 | 699 | 1.3+ | 0.4− | 2006 11 13 | 703 | 0.2+ | 0.7− |
| 2001 12 09 | 699 | 0.4+ | 0.6+ | 2006 09 19 | 704 | 0.1− | 1.0− | 2006 11 13 | 703 | 0.1− | 0.2− |
| 2001 12 14 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 704 | 0.3+ | 0.5− | 2006 11 13 | 703 | 0.3− | 0.8− |
| 2001 12 14 | 644 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.3+ | 1.1+ | 2006 11 13 | 703 | 0.0 | 0.8− |
| 2001 12 14 | 644 | 0.1− | 0.0 | 2006 09 19 | 704 | 0.0 | 0.7− | 2006 11 19 | 703 | 0.1+ | 0.6+ |
| 2001 12 25 | 608 | 0.4− | 0.3+ | 2006 09 19 | 704 | 0.5+ | 0.0 | 2006 11 19 | 703 | 0.0 | 0.6+ |
| 2001 12 25 | 608 | 0.1+ | 1.1+ | 2006 09 30 | 699 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.0 | 0.4+ |
| 2001 12 25 | 608 | 0.0 | 0.2+ | 2006 09 30 | 699 | 0.2+ | 0.9+ | 2006 11 19 | 703 | 0.1+ | 0.7+ |
| 2002 01 06 | 608 | (0.0 | 1.6−) | 2006 09 30 | 699 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.3− |
| 2002 01 06 | 608 | 0.0 | 1.0− | 2006 09 30 | 699 | 0.5+ | 0.8− | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2002 01 06 | 608 | 0.0 | 1.3− | 2006 09 30 | 683 | 1.2− | 0.7− | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2002 01 12 | 704 | 0.7− | 0.0 | 2006 09 30 | 683 | 0.8+ | 1.2− | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2002 01 12 | 704 | 0.3− | 0.3+ | 2006 09 30 | 683 | (0.3− | 1.6−) | | | | |
| 2002 01 12 | 704 | 0.8− | 0.8+ | 2006 09 30 | 703 | 0.5+ | 1.3− | | | | |

**(140947)∗ 2001 VM$_{95}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.71449 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17602016 | $\omega$ | 37.56856 | | −0.61893942 | −0.73032959 | |
| $a$ | 3.1532697 | $\Omega$ | 92.59622 | | +0.63204904 | −0.68157431 | |
| $e$ | 0.0795243 | $i$ | 16.81708 | | +0.46629175 | −0.04555385 | |
| $P$ | 5.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 644 | 0.0 | 1.3+ | 2003 01 29 | 644 | 0.2+ | 0.1+ | 2004 05 21 | 703 | 0.6− | 0.3+ |
| 2001 08 23 | 644 | 0.4− | 0.5+ | 2003 01 29 | 644 | 0.4+ | 0.3+ | 2004 05 24 | 704 | 0.3− | 0.9+ |
| 2001 08 23 | 644 | 0.0 | 1.2+ | 2003 02 01 | 644 | 0.1+ | 0.1+ | 2004 05 24 | 704 | 0.2+ | 0.4+ |
| 2001 11 11 | 683 | 0.0 | 0.4+ | 2003 02 01 | 644 | 0.1+ | 0.1+ | 2004 05 24 | 704 | 0.1− | 0.0 |
| 2001 11 11 | 683 | 0.7+ | 0.6+ | 2003 02 01 | 644 | 0.1− | 0.1− | 2004 05 24 | 704 | 0.3+ | 0.8+ |
| 2001 11 15 | 704 | 1.1− | 0.1− | 2003 02 08 | 699 | 1.1+ | 0.6+ | 2004 05 24 | 704 | 0.7+ | 0.5+ |
| 2001 11 15 | 704 | 0.3− | 0.1− | 2003 02 08 | 699 | 1.3+ | 1.3+ | 2005 07 15 | G96 | 0.0 | 0.9+ |
| 2001 11 15 | 704 | 0.2− | 0.7− | 2003 02 08 | 699 | (0.8+ | 2.1+) | 2005 07 15 | G96 | 0.2+ | 0.7+ |
| 2001 11 15 | 704 | 0.1− | 0.8+ | 2003 02 08 | 699 | 0.1+ | 0.4− | 2005 07 15 | G96 | 0.2− | 0.8+ |
| 2001 11 18 | 704 | 0.1− | 0.5+ | 2003 02 19 | 644 | 0.3+ | 0.2+ | 2005 07 16 | E12 | 0.1− | 0.3+ |
| 2001 11 18 | 704 | 0.1− | 0.2+ | 2003 02 19 | 644 | 0.2+ | 0.3+ | 2005 07 16 | E12 | 0.9+ | 0.0 |
| 2001 11 18 | 704 | 0.1+ | 0.9+ | 2003 02 19 | 644 | 0.2+ | 0.1− | 2005 07 16 | E12 | 0.7+ | 0.4+ |
| 2001 11 18 | 704 | 0.2− | 1.2+ | 2003 02 26 | 704 | 1.5− | 0.9− | 2005 07 16 | E12 | 0.1− | 0.5+ |
| 2001 11 20 | 608 | 1.3− | 0.8+ | 2003 02 26 | 704 | 0.4− | 0.3+ | 2006 09 27 | 703 | 0.2− | 1.1+ |
| 2001 11 20 | 608 | 0.9− | 0.1− | 2003 02 26 | 704 | 0.4+ | 1.5+ | 2006 09 27 | 703 | 0.8+ | 1.3− |
| 2001 11 20 | 608 | 1.1− | 0.2+ | 2003 03 03 | 644 | 1.0+ | 0.1+ | 2006 09 27 | 703 | 1.1− | 0.1− |
| 2001 12 19 | 704 | 0.7+ | 0.2+ | 2003 03 03 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 1.1− | 1.5+ |
| 2001 12 19 | 704 | 0.3+ | 0.6+ | 2003 03 03 | 644 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.4− | 2004 05 14 | 691 | 0.5+ | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 1.0− | 0.2+ | 2004 05 14 | 691 | 0.5+ | 0.4+ | 2006 09 27 | 703 | 0.7− | 0.1− |
| 2002 12 05 | 704 | 0.5− | 0.4− | 2004 05 14 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.6− |
| 2002 12 05 | 704 | 0.6− | 0.1+ | 2004 05 17 | 185 | 1.0− | 0.0 | 2006 09 28 | 703 | 0.6+ | 0.5− |
| 2003 01 24 | 644 | 0.2+ | 0.2+ | 2004 05 17 | 185 | 0.4+ | 0.9+ | 2006 09 28 | 703 | 0.6− | 0.8+ |
| 2003 01 24 | 644 | 0.3+ | 0.0 | 2004 05 21 | 703 | 1.3− | 0.3+ | 2006 09 28 | 703 | 1.3+ | 0.5+ |
| 2003 01 24 | 644 | 0.3− | 0.5+ | 2004 05 21 | 703 | 1.3− | 0.2+ | 2006 09 28 | 703 | 0.5− | 0.4+ |
| 2003 01 29 | 644 | 0.2+ | 0.4+ | 2004 05 21 | 703 | 0.6− | 0.3− | | | | |

**(140948)∗ 2001 VC$_{98}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.71847 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19020975 | $\omega$ | 268.24210 | | +0.69078697 | −0.70186929 | |
| $a$ | 2.9944302 | $\Omega$ | 136.28032 | | +0.72199896 | +0.65655730 | |
| $e$ | 0.2816941 | $i$ | 14.56128 | | +0.03912623 | +0.27624627 | |
| $P$ | 5.18 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.4+ | 0.7− | 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 703 | 0.1+ | 0.6+ |
| 2001 11 15 | 704 | 0.9+ | 0.8− | 2004 04 25 | 691 | 0.1− | 0.5+ | 2006 10 20 | 703 | 0.4− | 0.1− |
| 2001 11 15 | 704 | 0.3− | 1.0− | 2004 05 14 | 691 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.3− | 1.1− | 2004 05 14 | 691 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.4− |
| 2001 11 18 | 704 | 0.0 | 0.5− | 2004 05 14 | 691 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.9− | 0.8− |
| 2001 11 18 | 704 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.3− | 2006 10 28 | 703 | 1.0− | 0.3− |
| 2001 11 18 | 704 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.1− | 2006 11 10 | 704 | 0.6+ | 0.7+ |
| 2001 11 18 | 704 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 11 10 | 704 | 0.0 | 0.1− |
| 2001 11 18 | 704 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.6− | 0.4− | 2006 11 10 | 704 | 0.1− | 0.5+ |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2006 09 20 | 608 | (0.5+ | 1.6+) | 2006 11 10 | 704 | 0.5− | 0.5+ |
| 2001 12 19 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 608 | 0.7+ | 0.8+ | 2006 11 10 | 704 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 608 | 1.4+ | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.6+ |
| 2001 12 19 | 704 | 0.3− | 0.7+ | 2006 09 30 | 704 | 1.3− | 1.0+ | 2006 11 22 | 704 | 0.1+ | 0.9+ |
| 2002 01 11 | 704 | 1.1+ | 1.0+ | 2006 09 30 | 704 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.3+ | 0.9+ |
| 2002 01 11 | 704 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.6− | 0.7+ | 2006 11 22 | 704 | 0.3+ | 0.7+ |
| 2002 01 11 | 704 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.7− | 0.5+ | 2006 11 22 | 704 | 0.3− | 0.6+ |
| 2003 03 25 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.7+ | 2006 11 22 | 703 | 0.3+ | 0.6+ |
| 2003 03 25 | 644 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.5+ | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2003 03 25 | 644 | 0.9+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.1− | 2006 11 22 | 703 | 0.7+ | 0.1+ |
| 2003 03 31 | 645 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.4+ | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.2− | 0.1+ | | | | |
| 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 703 | 0.1+ | 0.4+ | | | | |

**(140949)∗ 2001 VK$_{98}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.17407 | | (2000.0) | | | |
| $n$ | 0.18487287 | $\omega$ | 279.68175 | | +0.25332692 | −0.96159638 |
| $a$ | 3.0517849 | $\Omega$ | 154.86333 | | +0.95609434 | +0.23224336 |
| $e$ | 0.2929315 | $i$ | 14.39897 | | +0.14734003 | +0.14627173 |
| $P$ | 5.33 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 30 | 809 | 0.9+ | 0.6+ | 2003 04 03 | 049 | 0.5+ | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 1995 09 01 | 809 | 1.1− | 1.2− | 2003 04 03 | 049 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2001 10 16 | 704 | 0.9− | 0.1− | 2003 04 09 | 704 | 1.1− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2001 10 16 | 704 | 0.6+ | 0.3+ | 2003 04 09 | 704 | 0.7+ | 1.1+ | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2001 10 16 | 704 | (1.8+ | 1.9+) | 2003 04 09 | 704 | (1.5+ | 1.2+) | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2001 11 15 | 704 | 0.5− | 0.6+ | 2003 04 27 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 2001 11 15 | 704 | 0.3+ | 0.6+ | 2003 04 27 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2001 11 15 | 704 | 0.3− | 1.1+ | 2003 04 28 | 699 | 0.7+ | 0.1− | 2006 10 28 | 703 | 0.6− | 0.5+ |
| 2001 11 15 | 704 | 0.6− | 1.0+ | 2003 04 28 | 699 | (1.7+ | 1.8+) | 2006 10 28 | 703 | 0.2+ | 0.3+ |
| 2001 11 15 | 704 | 0.2− | 0.1+ | 2003 04 28 | 699 | 0.6− | 0.5− | 2006 10 29 | 106 | 0.3+ | 0.1− |
| 2001 11 18 | 704 | 0.5− | 0.0 | 2003 04 28 | 699 | 1.5+ | 0.1− | 2006 10 29 | 106 | 0.6− | 0.1− |
| 2001 11 18 | 704 | 0.2+ | 0.2− | 2005 07 05 | 691 | 0.1+ | 0.4+ | 2006 10 30 | 106 | 0.2+ | 0.3+ |
| 2001 11 18 | 704 | 0.1− | 0.2+ | 2005 07 05 | 691 | 0.1− | 0.8+ | 2006 10 30 | 106 | 0.7+ | 0.9− |
| 2001 11 18 | 704 | 0.3− | 0.3− | 2005 07 05 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.8+ |
| 2001 11 18 | 704 | 0.0 | 0.4− | 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2001 12 07 | 704 | 0.1+ | 1.0+ | 2005 07 05 | 644 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.4+ |
| 2001 12 07 | 704 | 0.6+ | 0.5+ | 2005 07 05 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.5+ |
| 2001 12 07 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2001 12 07 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.8− | 2006 11 17 | 703 | 0.3+ | 0.8+ |
| 2001 12 07 | 704 | 0.1+ | 0.8− | 2006 09 18 | 703 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2002 04 05 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2002 04 05 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2002 04 05 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2002 04 05 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.0 |
| 2003 03 29 | 699 | 0.7+ | 0.8− | 2006 09 26 | 703 | 0.3− | 0.2+ | 2006 11 23 | 703 | 0.1− | 0.4+ |
| 2003 03 29 | 699 | 0.6+ | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.5+ |
| 2003 03 29 | 699 | 0.5− | 1.0+ | 2006 09 30 | 704 | 0.4+ | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.5+ |
| 2003 03 29 | 699 | 0.1− | 0.9− | 2006 09 30 | 704 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.6− | 0.0 |
| 2003 04 03 | 049 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.0 | | | | |

**(140950)∗ 2001 VP$_{99}$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.43039 | | (2000.0) | | | |
| $n$ | 0.18082563 | $\omega$ | 320.35338 | | +0.42799031 | −0.85562063 |
| $a$ | 3.0971535 | $\Omega$ | 102.49645 | | +0.88630044 | +0.33429948 |
| $e$ | 0.2193738 | $i$ | 17.34718 | | +0.17690625 | +0.39516730 |
| $P$ | 5.45 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 11 | 691 | 0.2+ | 0.5− | 2001 11 20 | 699 | 0.4+ | 0.6+ | 2003 03 22 | 644 | 0.1+ | 0.1+ |
| 1996 12 11 | 691 | 0.5− | 0.2+ | 2001 11 20 | 699 | 0.1− | 0.8+ | 2003 03 22 | 644 | 0.5+ | 0.2+ |
| 1996 12 11 | 691 | 0.3− | 0.2− | 2001 12 07 | 704 | 0.1− | 0.2+ | 2003 04 07 | 644 | 0.5+ | 0.4+ |
| 2001 08 23 | 644 | 0.3− | 0.5− | 2001 12 07 | 704 | 0.3− | 0.1− | 2003 04 07 | 644 | 0.7+ | 0.3+ |
| 2001 08 23 | 644 | 0.1+ | 0.6− | 2001 12 07 | 704 | 0.1− | 0.2− | 2003 04 07 | 644 | 0.4+ | 0.3+ |
| 2001 08 23 | 644 | 0.3− | 0.6− | 2001 12 07 | 704 | 0.0 | 0.0 | 2004 05 19 | 691 | 0.1+ | 0.3+ |
| 2001 09 23 | 699 | 0.3+ | 0.5+ | 2001 12 07 | 704 | 0.1+ | 0.0 | 2004 05 19 | 691 | 0.3+ | 0.6+ |
| 2001 09 23 | 699 | 0.1+ | 0.5− | 2002 01 06 | 608 | 1.3+ | 0.3− | 2004 05 19 | 691 | 0.1+ | 0.4+ |
| 2001 09 23 | 699 | 0.1− | 1.0+ | 2002 01 06 | 608 | 1.0+ | 0.4− | 2004 05 24 | 704 | 0.1− | 0.6− |
| 2001 09 23 | 699 | 0.0 | 1.1+ | 2002 01 06 | 608 | 0.7+ | 0.7− | 2004 05 24 | 704 | 0.1+ | 0.3+ |
| 2001 10 14 | 699 | 0.3− | 0.2+ | 2002 01 09 | 644 | 0.1+ | 0.4+ | 2004 05 24 | 704 | 0.8+ | 0.0 |
| 2001 10 14 | 699 | 0.2+ | 0.0 | 2002 01 09 | 644 | 0.0 | 0.4+ | 2004 05 24 | 704 | 0.1− | 0.7+ |
| 2001 10 14 | 699 | 0.5+ | 0.1− | 2002 01 09 | 644 | 0.2+ | 0.4+ | 2006 07 30 | E12 | 0.1+ | 0.3− |
| 2001 10 14 | 699 | 0.3− | 0.1− | 2002 01 10 | 704 | 0.2− | 1.0+ | 2006 07 30 | E12 | 1.0− | 0.5− |
| 2001 10 16 | 704 | 0.6+ | 0.1+ | 2002 01 10 | 704 | 0.7− | 0.3+ | 2006 07 30 | E12 | 0.3+ | 0.1+ |
| 2001 10 16 | 704 | 0.7+ | 0.2− | 2002 01 10 | 704 | 0.7− | 0.3− | 2006 09 16 | E12 | 0.7− | 0.5+ |
| 2001 10 16 | 704 | 0.4+ | 0.5− | 2002 02 08 | 704 | 0.2− | 0.1− | 2006 09 16 | E12 | 0.4− | 0.1+ |
| 2001 10 16 | 704 | 0.5+ | 0.6− | 2002 02 08 | 704 | 0.7− | 0.2+ | 2006 09 16 | E12 | 0.3+ | 0.3+ |
| 2001 10 19 | 608 | 0.2+ | 0.7+ | 2002 02 08 | 704 | 0.1− | 0.2− | 2006 09 16 | E12 | 0.4− | 0.7+ |
| 2001 10 19 | 608 | 0.3+ | 0.0 | 2002 02 08 | 704 | 0.4− | 0.3+ | 2006 09 22 | E12 | 0.4+ | 0.0 |
| 2001 10 19 | 608 | 0.3+ | 0.7+ | 2002 02 11 | 704 | 0.1− | 0.3− | 2006 09 22 | E12 | 0.8− | 0.3+ |
| 2001 11 12 | 608 | 0.1+ | 0.7− | 2002 02 11 | 704 | 0.6+ | 0.3− | 2006 09 22 | E12 | 0.9− | 0.3− |
| 2001 11 12 | 608 | 0.1− | 0.5− | 2002 02 11 | 704 | 0.3− | 0.5+ | 2006 09 22 | E12 | 0.6− | 0.2− |
| 2001 11 12 | 608 | 0.1− | 0.7− | 2003 03 08 | 699 | 0.4− | 0.2+ | 2006 10 02 | E12 | 0.8+ | 0.3+ |
| 2001 11 15 | 704 | 0.5− | 0.9+ | 2003 03 08 | 699 | 0.3+ | 1.2− | 2006 10 02 | E12 | 0.6− | 0.6+ |
| 2001 11 15 | 704 | 0.4− | 0.7+ | 2003 03 08 | 699 | 0.4+ | 1.5+ | 2006 10 02 | E12 | 0.9− | 0.1+ |
| 2001 11 15 | 704 | 0.2− | 0.5+ | 2003 03 08 | 699 | 0.0 | 0.2+ | 2006 10 02 | E12 | 0.6+ | 0.4+ |
| 2001 11 15 | 704 | 0.3− | 0.9+ | 2003 03 09 | 644 | 0.0 | 0.6+ | 2006 10 12 | E12 | 0.2+ | 0.1+ |
| 2001 11 15 | 704 | 0.3− | 1.1+ | 2003 03 09 | 644 | 0.3+ | 0.5+ | 2006 10 12 | E12 | 0.5− | 0.0 |
| 2001 11 18 | 704 | 0.9− | 0.3+ | 2003 03 09 | 644 | 0.5+ | 0.4+ | 2006 10 12 | E12 | 0.3+ | 0.4+ |
| 2001 11 18 | 704 | 0.6− | 0.3− | 2003 03 13 | 704 | 0.1− | 0.5+ | 2006 10 12 | E12 | 0.0 | 0.0 |
| 2001 11 18 | 704 | 0.7+ | 0.3− | 2003 03 13 | 704 | 0.2+ | 0.5+ | 2006 10 28 | E12 | 0.9− | 1.1+ |
| 2001 11 18 | 704 | 0.1+ | 0.2+ | 2003 03 13 | 704 | 0.3+ | 1.2+ | 2006 10 28 | E12 | 0.0 | 0.6− |
| 2001 11 20 | 699 | 0.0 | 0.3+ | 2003 03 13 | 704 | 0.3− | 0.5+ | 2006 10 28 | E12 | 0.2+ | 0.5+ |
| 2001 11 20 | 699 | 0.4+ | 0.6+ | 2003 03 22 | 644 | 0.3+ | 0.1+ | 2006 10 28 | E12 | 0.3− | 1.9+ |

**(140951)∗ 2001 VZ$_{99}$ = 1984 AM$_1$**

Discovered 2001 Nov. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43180)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.70701 | | (2000.0) | | | |
| $n$ | 0.21756059 | $\omega$ | 29.76282 | | −0.51760213 | −0.62764249 |
| $a$ | 2.7378894 | $\Omega$ | 97.91799 | | +0.62214213 | −0.74265321 |
| $e$ | 0.1995067 | $i$ | 35.95194 | | +0.58739016 | +0.23351898 |
| $P$ | 4.53 | $H$ | 13.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 01 05 | 675 | (3.2− | 2.4+) | 2002 01 14 | 608 | 0.7− | 0.4− | 2003 06 01 | 608 | (2.1− | 3.2+) |
| 1984 01 05 | 675 | (2.6+ | 2.3−) | 2002 02 07 | 704 | 0.4− | 0.2+ | 2003 06 01 | 608 | (1.8− | 2.6+) |
| 2001 10 11 | 704 | 1.3− | 0.3− | 2002 02 07 | 704 | 0.4− | 0.2− | 2003 06 01 | 608 | (1.9− | 3.7+) |
| 2001 10 11 | 704 | 0.1− | 0.6− | 2002 02 07 | 704 | 0.6− | 0.1+ | 2003 06 30 | 704 | 0.3+ | 0.1+ |
| 2001 10 11 | 704 | 0.8− | 1.3− | 2002 02 07 | 704 | 0.6− | 0.0 | 2003 06 30 | 704 | 0.6+ | 0.2+ |
| 2001 10 11 | 704 | 0.4− | 0.4− | 2002 02 07 | 704 | 0.6− | 0.1− | 2003 06 30 | 704 | 0.6+ | 0.5+ |
| 2001 10 11 | 704 | 1.0+ | 0.7− | 2002 02 20 | 704 | 0.2+ | 1.2+ | 2003 06 30 | 704 | 0.2+ | 0.2− |
| 2001 11 15 | 704 | 0.2− | 0.8+ | 2002 02 20 | 704 | (0.4+ | 1.8+) | 2003 06 30 | 704 | 0.3+ | 0.2+ |
| 2001 11 15 | 704 | 0.0 | 0.6+ | 2002 02 20 | 704 | (0.0 | 1.7+) | 2003 07 22 | 644 | 0.0 | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.1+ | 0.6+ | 2002 02 20 | 704 | 0.4+ | 0.8+ | 2003 07 22 | 644 | 0.1− | 0.8+ |
| 2001 11 15 | 704 | 0.3− | 0.6+ | 2002 02 20 | 704 | 1.1+ | 0.7+ | 2003 07 22 | 644 | 0.2− | 1.3+ |
| 2001 11 15 | 704 | 0.0 | 0.8+ | 2002 03 09 | 704 | 0.0 | 0.7+ | 2004 06 11 | E12 | 0.5+ | 1.5+ |
| 2001 11 18 | 704 | 0.9+ | 0.4+ | 2002 03 09 | 704 | 0.2− | 0.8+ | 2004 06 11 | E12 | 0.7+ | 0.6+ |
| 2001 11 18 | 704 | 0.9+ | 0.7− | 2002 03 09 | 704 | 0.4+ | 0.4+ | 2004 06 11 | E12 | 0.2+ | 0.5+ |
| 2001 11 18 | 704 | 0.1+ | 0.4− | 2002 03 09 | 704 | 0.1− | 0.5+ | 2004 06 11 | E12 | 1.4+ | 0.8+ |
| 2001 11 18 | 704 | 0.3+ | 1.1− | 2002 03 09 | 704 | 0.2− | 0.5+ | 2004 06 29 | E12 | (0.7+ | 1.9+) |
| 2001 11 18 | 704 | 0.9+ | 0.2− | 2003 02 28 | 704 | (0.8+ | 1.5−) | 2004 06 29 | E12 | 0.2− | 1.4+ |
| 2001 12 07 | 704 | 0.0 | 0.2+ | 2003 02 28 | 704 | (0.8+ | 2.6−) | 2004 06 29 | E12 | 0.8+ | 1.0+ |
| 2001 12 07 | 704 | 0.1− | 0.2+ | 2003 02 28 | 704 | 0.1+ | 0.3+ | 2004 06 29 | E12 | (1.4+ | 2.3+) |
| 2001 12 07 | 704 | 0.1− | 0.1− | 2003 02 28 | 704 | (0.5− | 2.3−) | 2005 10 10 | E12 | 0.1− | 0.1+ |
| 2001 12 07 | 704 | 0.0 | 0.0 | 2003 03 08 | 704 | (2.0+ | 0.9−) | 2005 10 10 | E12 | 0.0 | 0.2+ |
| 2001 12 07 | 704 | 0.1− | 0.0 | 2003 03 08 | 704 | (2.1+ | 0.8−) | 2005 10 10 | E12 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | (1.2+ | 1.9−) | 2003 03 08 | 704 | 1.3+ | 0.2− | 2006 10 21 | 704 | (1.8+ | 1.0−) |
| 2001 12 19 | 704 | (1.2+ | 1.8−) | 2003 03 08 | 704 | 1.3+ | 0.5+ | 2006 10 21 | 703 | 0.8− | 0.2− |
| 2001 12 19 | 704 | (1.1+ | 1.6−) | 2003 03 30 | 699 | 0.1− | 0.2− | 2006 10 21 | 704 | 0.3+ | 0.4− |
| 2001 12 19 | 704 | (1.3+ | 1.7−) | 2003 03 30 | 699 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.8− |
| 2001 12 19 | 704 | (0.8+ | 1.6−) | 2003 03 30 | 699 | 0.4+ | 0.8+ | 2006 10 21 | 704 | 1.3+ | 0.2+ |
| 2001 12 22 | 683 | (2.5+ | 2.9−) | 2003 03 30 | 699 | 1.1− | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2001 12 22 | 683 | 1.5+ | 0.3− | 2003 04 11 | 699 | 0.6− | 0.7+ | 2006 10 21 | 704 | 0.3+ | 0.2+ |
| 2001 12 22 | 683 | (0.3− | 2.1−) | 2003 04 11 | 699 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2002 01 07 | 699 | 0.5− | 0.2− | 2003 04 11 | 699 | 0.5− | 0.9− | 2006 10 28 | 703 | 0.4− | 0.0 |
| 2002 01 07 | 699 | 0.4− | 0.3+ | 2003 04 11 | 699 | 0.2+ | 0.5− | 2006 10 28 | 703 | 0.3− | 0.2+ |
| 2002 01 07 | 699 | 0.7− | 0.2+ | 2003 04 24 | 704 | 1.2− | 0.6− | 2006 10 28 | 703 | 0.8− | 0.1− |
| 2002 01 07 | 699 | 0.7− | 0.1− | 2003 04 24 | 704 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.4+ | 0.8+ |
| 2002 01 08 | 608 | 0.2+ | 0.5+ | 2003 04 24 | 704 | 0.1− | 0.1− | 2006 11 16 | 704 | 1.4+ | 1.1+ |
| 2002 01 08 | 608 | 0.1+ | 0.9+ | 2003 04 24 | 704 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.4− |
| 2002 01 08 | 608 | 0.1+ | 0.8+ | 2003 05 08 | 608 | (1.6− | 0.7−) | 2006 11 16 | 704 | (0.2− | 2.0−) |
| 2002 01 09 | 644 | 0.1− | 0.3+ | 2003 05 08 | 608 | 0.3+ | 0.9− | 2006 11 24 | 703 | 0.5+ | 0.7− |
| 2002 01 09 | 644 | 0.1− | 0.3+ | 2003 05 08 | 608 | 0.0 | 1.1− | 2006 11 24 | 703 | 0.3+ | 0.1+ |
| 2002 01 09 | 644 | 0.1− | 0.2+ | 2003 05 12 | 704 | (1.8− | 0.8+) | 2006 11 24 | 703 | 0.4− | 0.3− |
| 2002 01 10 | 704 | 0.0 | 0.2− | 2003 05 12 | 704 | 0.3− | 0.1+ | 2006 11 29 | 704 | 1.2+ | 0.7− |
| 2002 01 10 | 704 | 0.9− | 0.5+ | 2003 05 12 | 704 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 1.2− | 0.7− |
| 2002 01 10 | 704 | 0.5− | 0.0 | 2003 05 12 | 704 | 0.1− | 0.6+ | 2006 11 29 | 704 | 0.1− | 1.0+ |
| 2002 01 10 | 704 | 0.3− | 0.5− | 2003 05 12 | 704 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.4− | 1.2+ |
| 2002 01 10 | 704 | 0.5− | 0.3+ | 2003 05 29 | 608 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 1.3− | 0.2− |
| 2002 01 14 | 608 | 0.7− | 0.3− | 2003 05 29 | 608 | 0.0 | 0.2− | | | | |
| 2002 01 14 | 608 | 0.7− | 0.4− | 2003 05 29 | 608 | 0.5+ | 0.0 | | | | |

**(140952)∗ 2001 VK$_{100}$ = 2003 FH$_{31}$**

Discovered 2001 Nov. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 46910)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.79286 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21982851 | $\omega$ | 251.61910 | | +0.29994547 | −0.95395319 |
| $a$ | 2.7190260 | $\Omega$ | 180.93714 | | +0.92209694 | +0.29058690 |
| $e$ | 0.1206803 | $i$ | 8.63528 | | +0.24447895 | +0.07438124 |
| $P$ | 4.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 20 | 691 | 0.4− | 0.4+ | 2003 03 23 | 291 | 0.3− | 0.2− | 2005 09 29 | 699 | 0.4− | 1.0+ |
| 1996 09 20 | 691 | 0.0 | 0.3+ | 2003 03 23 | 291 | 0.1− | 0.0 | 2005 09 29 | G96 | 0.2+ | 1.2+ |
| 1996 09 20 | 691 | 0.1+ | 0.4+ | 2003 03 23 | 291 | 0.0 | 0.2− | 2005 09 29 | G96 | 0.2+ | 1.1+ |
| 2001 10 17 | 704 | 0.6+ | 0.6+ | 2003 03 23 | 691 | 0.1− | 0.1+ | 2005 09 29 | G96 | 0.0 | 0.9+ |
| 2001 10 17 | 704 | 0.0 | 0.3− | 2003 03 23 | 691 | 0.2− | 0.0 | 2005 09 29 | G96 | 0.3+ | 0.9+ |
| 2001 10 17 | 704 | 0.3+ | 0.1− | 2003 03 23 | 691 | 0.1− | 0.0 | 2005 10 01 | 704 | 0.1− | 1.4+ |
| 2001 11 12 | 699 | 0.0 | 0.5+ | 2003 03 26 | 691 | 0.2+ | 0.6+ | 2005 10 01 | 704 | (0.2− | 2.1+) |
| 2001 11 12 | 699 | 0.0 | 0.0 | 2003 03 26 | 691 | 0.0 | 0.5+ | 2005 10 01 | 704 | 1.1+ | 1.2+ |
| 2001 11 12 | 699 | 0.9+ | 0.0 | 2003 03 26 | 691 | 0.1+ | 0.8+ | 2005 10 01 | 704 | 0.5+ | 0.2+ |
| 2001 11 12 | 699 | 0.7− | 0.6+ | 2003 03 30 | 291 | 0.0 | 0.1+ | 2005 10 02 | 644 | 0.6− | 0.8+ |
| 2001 11 19 | 699 | 1.2+ | 0.1− | 2003 03 30 | 291 | 0.2+ | 0.4+ | 2005 10 02 | 644 | 0.0 | 0.8+ |
| 2001 11 19 | 699 | 0.7+ | 0.1+ | 2003 03 30 | 291 | 0.0 | 0.1+ | 2005 10 02 | 644 | 0.2− | 0.8+ |
| 2001 11 19 | 699 | 0.5+ | 0.3− | 2003 04 07 | 691 | 1.1+ | 1.6+ | 2005 10 07 | 703 | 0.4+ | 0.2+ |
| 2001 11 19 | 699 | 0.7+ | 0.7− | 2003 04 07 | 691 | 0.7+ | 1.4+ | 2005 10 07 | 703 | 0.2− | 0.6− |
| 2001 12 11 | 704 | 0.4− | 0.6+ | 2003 04 07 | 691 | 0.8+ | 1.5+ | 2005 10 07 | 703 | 0.2− | 0.4− |
| 2001 12 11 | 704 | 0.0 | 1.2+ | 2003 04 26 | 691 | 0.3+ | 0.5+ | 2005 10 07 | 703 | 1.5− | 0.3− |
| 2001 12 11 | 704 | 0.7− | 1.3+ | 2003 04 26 | 691 | 0.4+ | 0.4+ | 2005 10 22 | 703 | (0.4− | 2.2+) |
| 2001 12 11 | 704 | 1.0− | 1.3+ | 2003 04 26 | 691 | 0.0 | 0.4+ | 2005 10 22 | 703 | 1.0+ | 1.0+ |
| 2001 12 11 | 704 | 0.3− | 1.4+ | 2005 08 25 | 644 | 0.2− | 0.7+ | 2005 10 22 | 703 | 0.8− | 0.5+ |
| 2001 12 19 | 704 | 0.4− | 0.1− | 2005 08 25 | 644 | 0.2− | 0.8+ | 2005 10 22 | 703 | 1.6− | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2005 08 25 | 644 | 0.7− | 0.6+ | 2005 10 28 | G96 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 1.3− | 0.3− | 2005 08 31 | 691 | 0.3− | 0.8+ | 2005 10 28 | G96 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 0.4− | 0.6− | 2005 08 31 | 691 | 0.3− | 0.7+ | 2005 10 28 | G96 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.1+ | 0.0 | 2005 08 31 | 691 | 0.3− | 0.7+ | 2005 10 28 | G96 | 0.0 | 0.6+ |
| 2003 03 10 | 291 | 0.3− | 0.2+ | 2005 09 29 | 699 | 0.5− | 1.2+ | 2005 10 28 | G96 | 0.3+ | 0.3+ |
| 2003 03 10 | 291 | 0.1− | 0.1+ | 2005 09 29 | 699 | (1.4+ | 2.5+) | 2005 10 28 | G96 | 0.4− | 0.5+ |
| 2003 03 10 | 291 | 0.1− | 0.4+ | 2005 09 29 | 699 | 0.5+ | 1.6+ | 2005 10 28 | G96 | 0.0 | 0.3+ |

**(140953)∗ 2001 VR$_{100}$**

Discovered 2001 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.46208 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.36757312 | $\omega$ | 7.93761 | | +0.79428795 | −0.58001569 |
| $a$ | 1.9300722 | $\Omega$ | 29.91399 | | +0.53559781 | +0.52803251 |
| $e$ | 0.0884713 | $i$ | 21.25639 | | +0.28677803 | +0.62029305 |
| $P$ | 2.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 699 | 1.2+ | 0.2+ | 2001 11 27 | 704 | 0.2− | 0.1+ | 2006 07 30 | E12 | 0.0 | 0.3+ |
| 1998 09 27 | 699 | 0.9+ | 0.4+ | 2004 12 21 | 703 | (0.4− | 1.8−) | 2006 09 16 | E12 | 0.0 | 0.1+ |
| 1998 09 27 | 699 | 0.5+ | 0.4− | 2004 12 21 | 703 | 1.3− | 0.2+ | 2006 09 16 | E12 | 0.2− | 0.1− |
| 1998 10 16 | 704 | 0.1− | 0.6− | 2004 12 21 | 703 | 0.3− | 0.3+ | 2006 09 16 | E12 | 0.0 | 0.1− |
| 1998 10 16 | 704 | 0.4− | 0.1+ | 2004 12 21 | 703 | 0.5− | 0.6+ | 2006 09 16 | E12 | 0.2+ | 0.3− |
| 1998 10 16 | 704 | 0.7− | 0.7− | 2005 01 17 | 703 | 1.4− | 0.6− | 2006 09 22 | E12 | 0.3− | 0.0 |
| 1998 10 16 | 704 | 1.0− | 0.7− | 2005 01 17 | 703 | 0.2+ | 0.3− | 2006 09 22 | E12 | 0.6+ | 0.1+ |
| 1998 10 16 | 704 | 0.0 | 0.8− | 2005 01 17 | 703 | 0.2− | 1.3− | 2006 09 22 | E12 | 0.1− | 0.3+ |
| 1998 10 29 | 704 | 0.6+ | 1.4− | 2005 01 17 | 703 | 0.8− | 1.4− | 2006 09 22 | E12 | 0.1− | 0.0 |
| 1998 10 29 | 704 | 0.1+ | 0.8+ | 2005 02 28 | 703 | 0.4− | 1.1− | 2006 10 12 | E12 | 0.1− | 0.2− |
| 1998 10 29 | 704 | 0.6+ | 1.2− | 2005 02 28 | 703 | 0.3+ | 0.8+ | 2006 10 12 | E12 | 0.4− | 0.3+ |
| 1998 10 29 | 704 | 0.1+ | 0.9+ | 2005 02 28 | 703 | 0.4+ | 0.0 | 2006 10 12 | E12 | 0.2− | 0.7− |
| 1998 11 15 | 699 | 1.1+ | 1.0− | 2005 02 28 | 703 | 0.3− | 0.3+ | 2006 10 12 | E12 | 0.4− | 0.0 |
| 1998 11 15 | 699 | 0.7+ | 0.6− | 2005 03 08 | 703 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.7− |
| 1998 11 15 | 699 | 0.3− | 1.4+ | 2005 03 08 | 703 | 0.8− | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.3− |
| 2000 05 09 | 704 | 0.8+ | 0.7+ | 2005 03 08 | 703 | (0.2− | 1.7+) | 2006 10 28 | 703 | 0.0 | 0.3− |
| 2000 05 09 | 704 | 0.1+ | 0.1− | 2005 03 08 | 703 | 0.4− | 0.5+ | 2006 10 28 | 703 | 0.2+ | 0.2− |
| 2000 05 09 | 704 | 0.0 | 0.2− | 2005 03 14 | 703 | 0.2− | 0.4− | 2006 11 11 | 644 | 0.3− | 0.2+ |
| 2000 05 09 | 704 | 0.9+ | 0.5+ | 2005 03 14 | 703 | 0.7− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.1− |
| 2001 09 28 | 704 | 1.1− | 0.2− | 2005 03 14 | 703 | 0.1+ | 0.1+ | 2006 11 11 | 644 | 0.1− | 0.3+ |
| 2001 09 28 | 704 | 1.0+ | 0.0 | 2005 03 14 | 703 | 0.7− | 0.6+ | 2006 11 14 | 704 | 0.6+ | 1.1+ |
| 2001 09 28 | 704 | 0.5− | 0.9− | 2005 04 01 | 703 | 0.8+ | 0.1− | 2006 11 14 | 704 | 0.7+ | 0.3+ |
| 2001 09 28 | 704 | 0.1+ | 0.5− | 2005 04 01 | 703 | 0.9+ | 0.5− | 2006 11 14 | 704 | 0.3+ | 0.1− |
| 2001 11 08 | 704 | 0.2− | 0.9+ | 2005 04 01 | 703 | 1.1+ | 0.5+ | 2006 11 14 | 704 | (1.7− | 1.3+) |
| 2001 11 08 | 704 | 0.1+ | 0.9+ | 2005 04 01 | 703 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2001 11 08 | 704 | 0.5− | 0.7+ | 2005 04 30 | 703 | (1.9+ | 0.6+) | 2006 11 20 | 704 | 0.1− | 1.1+ |
| 2001 11 08 | 704 | 0.3+ | 1.1+ | 2005 04 30 | 703 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 1.3− | 1.1+ |
| 2001 11 08 | 704 | 0.5+ | 1.2+ | 2005 04 30 | 703 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.6− | 1.2+ |
| 2001 11 27 | 704 | 0.5+ | 0.1+ | 2005 04 30 | 703 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2001 11 27 | 704 | 0.3+ | 0.1− | 2006 07 30 | E12 | (1.9− | 0.8+) | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2001 11 27 | 704 | 0.8− | 0.6+ | 2006 07 30 | E12 | 0.3− | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2001 11 27 | 704 | 0.8+ | 0.0 | 2006 07 30 | E12 | 0.4− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |

**(140954)∗ 2001 VZ$_{100}$ = 2003 FL$_{35}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46910)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.65362 | | (2000.0) | | | |
| $n$ | 0.18889747 | $\omega$ | 104.36132 | | −0.27391775 | −0.96175095 |
| $a$ | 3.0082825 | $\Omega$ | 1.54069 | | +0.85052929 | −0.24323088 |
| $e$ | 0.2196991 | $i$ | 4.35694 | | +0.44896436 | −0.12599144 |
| $P$ | 5.22 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 807 | 0.3− | 1.2+ | 2001 11 19 | 704 | 0.0 | 0.6− | 2006 09 26 | 691 | 0.3− | 0.4+ | |
| 2000 08 26 | 807 | 0.4− | 1.1+ | 2001 12 15 | 704 | 1.4+ | 0.5− | 2006 09 26 | 691 | 0.1− | 0.6+ | |
| 2001 10 18 | 691 | 0.2− | 0.4− | 2001 12 15 | 704 | 0.7+ | 0.8+ | 2006 10 11 | 691 | 0.1− | 0.2+ | |
| 2001 10 18 | 691 | 0.2− | 0.5− | 2001 12 15 | 704 | 0.7+ | 1.0+ | 2006 10 11 | 691 | 0.2− | 0.3+ | |
| 2001 10 18 | 691 | 0.1− | 0.4− | 2001 12 15 | 704 | 1.0+ | 0.9+ | 2006 10 11 | 691 | 0.3− | 0.3+ | |
| 2001 10 21 | 704 | 0.7− | 0.8− | 2001 12 23 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | (1.8− | 0.0 ) | |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2001 12 23 | 691 | 0.2+ | 0.4− | 2006 10 17 | 703 | (2.2+ | 0.7−) | |
| 2001 10 21 | 704 | 0.7+ | 0.2+ | 2001 12 23 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.0 | |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2003 03 23 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.9+ | |
| 2001 10 21 | 704 | 0.5− | 0.7+ | 2003 03 23 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.3+ | |
| 2001 10 26 | 644 | 0.4− | 0.0 | 2003 03 23 | 691 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.2+ | |
| 2001 10 26 | 644 | 0.2− | 0.1+ | 2003 03 26 | 691 | 0.4+ | 0.5+ | 2006 10 27 | 691 | 0.6− | 0.0 | |
| 2001 10 26 | 644 | 0.3− | 0.1− | 2003 03 26 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.1+ | |
| 2001 11 12 | 704 | 0.7− | 0.1+ | 2003 03 26 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.0 | |
| 2001 11 12 | 704 | 0.1+ | 0.7+ | 2003 04 07 | 691 | 0.5+ | 0.8+ | 2006 10 31 | 691 | 0.1+ | 0.4+ | |
| 2001 11 12 | 704 | 0.8− | 0.5+ | 2003 04 07 | 691 | 0.2+ | 0.9+ | 2006 11 17 | G96 | 0.1− | 0.1− | |
| 2001 11 12 | 704 | 0.5− | 1.4+ | 2003 04 07 | 691 | 0.4+ | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.2− | |
| 2001 11 19 | 704 | 0.6− | 0.2− | 2003 04 26 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3+ | |
| 2001 11 19 | 704 | 0.0 | 0.2− | 2003 04 26 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2+ | |
| 2001 11 19 | 704 | 0.2− | 0.5− | 2003 04 26 | 691 | 0.2+ | 0.2+ | | | | | |
| 2001 11 19 | 704 | 0.3+ | 0.4− | 2006 09 26 | 691 | 0.3− | 0.7+ | | | | | |

**(140955)∗ 2001 VF$_{101}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.71779 | | (2000.0) | | | |
| $n$ | 0.17528511 | $\omega$ | 93.76832 | | +0.98532704 | +0.10487276 |
| $a$ | 3.1620789 | $\Omega$ | 260.24684 | | −0.14843836 | +0.91595746 |
| $e$ | 0.0758988 | $i$ | 7.85295 | | +0.08424175 | +0.38732884 |
| $P$ | 5.62 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.3+ | 1.0− | 2001 12 18 | 704 | 1.5+ | 0.1+ | 2006 08 31 | 704 | 0.4− | 0.3+ | |
| 2000 08 02 | 704 | 1.3+ | 0.8+ | 2001 12 18 | 704 | 1.5+ | 0.4− | 2006 09 14 | 703 | 0.0 | 0.3+ | |
| 2000 08 02 | 704 | 0.9− | 0.4− | 2001 12 18 | 704 | (1.6+ | 0.2+) | 2006 09 14 | 703 | 0.0 | 0.6+ | |
| 2000 08 02 | 704 | 0.1+ | 2.0+ | 2001 12 19 | 704 | 1.0+ | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.1+ | |
| 2000 08 31 | 704 | 0.6− | 0.2+ | 2001 12 19 | 704 | 0.9+ | 0.5− | 2006 09 14 | 703 | 0.1+ | 0.2+ | |
| 2000 08 31 | 704 | 0.6+ | 0.4+ | 2001 12 19 | 704 | (1.9+ | 0.9−) | 2006 09 15 | 704 | 0.5+ | 0.2+ | |
| 2000 08 31 | 704 | 1.6+ | 0.1+ | 2001 12 19 | 704 | (2.0+ | 0.1+) | 2006 09 15 | 704 | 0.1+ | 0.8+ | |
| 2000 08 31 | 704 | 0.0 | 0.2+ | 2001 12 19 | 704 | 0.8+ | 0.3+ | 2006 09 15 | 704 | 0.1− | 0.3+ | |
| 2000 09 03 | 645 | 0.1− | 0.0 | 2002 12 06 | 291 | 0.1+ | 0.2+ | 2006 09 15 | 704 | 1.2+ | 0.1− | |
| 2000 09 03 | 645 | 0.1− | 0.0 | 2002 12 06 | 291 | 0.2− | 0.4+ | 2006 09 15 | 704 | 1.0+ | 0.2+ | |
| 2001 11 10 | 644 | 0.1− | 0.2+ | 2002 12 06 | 291 | 0.2+ | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.1− | |
| 2001 11 10 | 644 | 0.1− | 0.3− | 2003 01 07 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 699 | 0.2− | 0.1− | |
| 2001 11 10 | 644 | 0.3− | 0.3− | 2003 01 07 | 704 | 0.2− | 0.4+ | 2006 09 20 | 699 | 0.6− | 0.1+ | |
| 2001 11 12 | 704 | 1.2+ | 0.0 | 2003 01 07 | 704 | 0.5− | 0.1− | 2006 09 20 | 699 | 0.1− | 0.1− | |
| 2001 11 12 | 704 | 0.9+ | 0.5+ | 2003 01 07 | 704 | 1.0+ | 0.1+ | 2006 09 22 | 703 | 0.5− | 0.9− | |
| 2001 11 12 | 704 | 0.4+ | 0.4+ | 2003 01 08 | 704 | 1.5− | 0.5− | 2006 09 22 | 703 | 0.6− | 0.6− | |
| 2001 11 12 | 704 | 0.7+ | 1.1− | 2003 01 08 | 704 | 1.2− | 0.2+ | 2006 09 22 | 703 | 0.2+ | 0.6+ | |
| 2001 11 14 | 291 | 0.8− | 0.5− | 2003 01 08 | 704 | 0.1+ | 0.0 | 2006 09 22 | 703 | 0.7+ | 0.4− | |
| 2001 11 14 | 291 | 0.8− | 0.3− | 2003 01 25 | 809 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.5− | 0.7+ | |
| 2001 11 14 | 291 | 0.5− | 0.6− | 2003 01 25 | 809 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.2− | 0.2− | |
| 2001 11 19 | 704 | 0.2− | 0.4+ | 2003 01 25 | 809 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.1+ | |
| 2001 11 19 | 704 | 0.1+ | 0.1+ | 2003 01 26 | 608 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.4+ | 0.9+ | |
| 2001 11 19 | 704 | 0.4+ | 0.5+ | 2003 01 26 | 608 | 0.3+ | 0.2− | 2006 10 01 | 703 | 1.4+ | 1.3− | |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2003 01 26 | 608 | 0.1+ | 0.5− | 2006 10 01 | 703 | 0.2− | 0.2+ | |
| 2001 11 19 | 704 | 0.4+ | 0.8+ | 2003 02 04 | 644 | 0.8+ | 0.2+ | 2006 10 01 | 703 | 0.8+ | 0.6+ | |
| 2001 11 24 | 704 | 0.3− | 0.5− | 2003 02 04 | 644 | 0.5+ | 0.6+ | 2006 10 01 | 703 | 0.6+ | 0.0 | |
| 2001 11 24 | 704 | 0.6− | 0.3+ | 2003 02 04 | 644 | 0.8+ | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.0 | |
| 2001 11 24 | 704 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | |
| 2001 11 24 | 704 | 0.8− | 0.2+ | 2006 08 27 | 699 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.1+ | |
| 2001 12 15 | 704 | (0.3+ | 1.6+) | 2006 08 27 | 699 | 0.6− | 0.4− | 2006 10 22 | 691 | 0.1+ | 0.2− | |
| 2001 12 15 | 704 | 0.3+ | 0.9+ | 2006 08 27 | 699 | 0.8− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1+ | |
| 2001 12 15 | 704 | 1.1+ | 0.8+ | 2006 08 31 | 704 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.0 | |
| 2001 12 18 | 704 | 1.4+ | 0.1+ | 2006 08 31 | 704 | 0.9− | 0.4+ | | | | | |

**(140956)∗ 2001 VL$_{102}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 252.73185 | | (2000.0) | | | |
| $n$ | 0.16924711 | $\omega$ | 216.63890 | | −0.26328772 | −0.95042357 |
| $a$ | 3.2368448 | $\Omega$ | 249.15024 | | +0.92181405 | −0.19727438 |
| $e$ | 0.0520606 | $i$ | 10.19776 | | +0.28449681 | −0.24037024 |
| $P$ | 5.82 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.3− | 0.7− | 2001 12 10 | 704 | 0.1− | 0.2+ | 2003 02 04 | 704 | 1.0+ | 0.8+ | |
| 2000 09 01 | 704 | 0.9− | 0.6− | 2001 12 10 | 704 | 1.3+ | 0.9+ | 2003 02 08 | 608 | 0.5− | 0.8− | |
| 2000 09 01 | 704 | 1.0+ | 1.5+ | 2001 12 15 | 704 | 0.6− | 0.5− | 2003 02 08 | 608 | 0.3− | 1.2− | |
| 2000 09 01 | 704 | 0.7+ | 0.6+ | 2001 12 15 | 704 | 0.3− | 0.4− | 2003 02 08 | 608 | 0.3− | 0.9− | |
| 2001 10 14 | 704 | 0.1− | 0.8− | 2001 12 15 | 704 | 0.3− | 0.5− | 2003 02 22 | 644 | 0.3+ | 0.2+ | |
| 2001 10 14 | 704 | 0.4+ | 0.6− | 2001 12 15 | 704 | 0.2+ | 0.2− | 2003 02 22 | 644 | 0.3+ | 0.1+ | |
| 2001 10 14 | 704 | 0.7+ | 0.1+ | 2001 12 18 | 704 | 0.2+ | 0.8+ | 2003 02 22 | 644 | 0.3+ | 0.1+ | |
| 2001 10 14 | 704 | 0.1+ | 0.3− | 2001 12 18 | 704 | 0.1+ | 0.3+ | 2004 04 13 | 644 | 0.3− | 0.8+ | |
| 2001 10 21 | 704 | 0.0 | 0.6+ | 2001 12 18 | 704 | (0.1− | 1.5+) | 2004 04 13 | 644 | 0.1− | 0.9+ | |
| 2001 10 21 | 704 | 0.3− | 0.5− | 2001 12 18 | 704 | 0.5− | 0.7+ | 2004 04 13 | 644 | 0.0 | 0.9+ | |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2001 12 18 | 704 | 0.5− | 1.1+ | 2004 04 16 | 699 | (0.8− | 2.2+) | |
| 2001 10 26 | 644 | 0.5+ | 0.6+ | 2001 12 19 | 704 | 0.5− | 0.5+ | 2004 04 16 | 699 | 0.7− | 0.8+ | |
| 2001 10 26 | 644 | 0.5+ | 0.9+ | 2001 12 19 | 644 | 0.1− | 0.4+ | 2004 04 16 | 699 | (1.6+ | 0.7+) | |
| 2001 10 26 | 644 | 0.5+ | 0.6+ | 2001 12 19 | 644 | 0.3− | 0.5+ | 2004 04 16 | 699 | 1.2+ | 0.7+ | |
| 2001 11 12 | 704 | 0.6− | 0.3+ | 2001 12 19 | 644 | 0.1+ | 0.4+ | 2004 04 28 | 608 | 0.7− | 0.2− | |
| 2001 11 12 | 704 | 1.2− | 1.0+ | 2001 12 19 | 704 | 0.6− | 0.2+ | 2004 04 28 | 608 | 0.5− | 0.8− | |
| 2001 11 12 | 704 | 0.8− | 0.2+ | 2001 12 19 | 704 | 0.6− | 1.2+ | 2004 04 28 | 608 | 0.3+ | 0.3− | |
| 2001 11 12 | 704 | 0.9− | 0.7+ | 2001 12 19 | 704 | 0.5− | 0.9+ | 2004 05 13 | 644 | 0.5+ | 1.1+ | |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2002 01 09 | 691 | 0.3− | 0.1− | 2004 05 13 | 644 | 0.2+ | 1.1+ | |
| 2001 11 19 | 699 | 0.4+ | 0.6− | 2002 01 09 | 691 | 0.3− | 0.1+ | 2004 05 13 | 644 | 0.3+ | 0.6+ | |
| 2001 11 19 | 699 | 0.7+ | 0.4− | 2002 01 09 | 691 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.2− | |
| 2001 11 19 | 699 | 0.6+ | 1.4− | 2003 01 25 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.6+ | |
| 2001 11 19 | 699 | 0.6+ | 0.5− | 2003 01 25 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.1+ | |
| 2001 11 19 | 704 | 0.0 | 0.1− | 2003 01 25 | 644 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.7+ | 0.0 | |
| 2001 11 19 | 704 | 0.0 | 0.3− | 2003 01 28 | 704 | (3.5+ | 1.4+) | 2006 09 15 | 704 | 0.2− | 1.1+ | |
| 2001 11 19 | 704 | 0.0 | 0.3− | 2003 01 28 | 704 | (2.6+ | 1.2+) | 2006 09 15 | 704 | 0.8− | 0.1− | |
| 2001 11 19 | 704 | 0.1− | 0.3− | 2003 01 28 | 704 | (2.9+ | 0.2−) | 2006 09 15 | 704 | 0.0 | 0.9+ | |
| 2001 11 19 | 704 | 0.6− | 0.5− | 2003 01 28 | 704 | (3.0+ | 0.7+) | 2006 09 15 | 704 | 0.7+ | 0.5− | |
| 2001 11 20 | 608 | (0.3+ | 2.0−) | 2003 02 01 | 699 | 0.1− | 0.4+ | 2006 09 22 | 703 | 0.2+ | 0.8+ | |
| 2001 11 20 | 608 | (0.4+ | 1.9−) | 2003 02 01 | 699 | 0.8− | 0.3− | 2006 09 22 | 703 | 0.3+ | 1.2− | |
| 2001 11 20 | 608 | 0.5+ | 1.2− | 2003 02 01 | 699 | 1.1− | 0.2+ | 2006 09 22 | 703 | 0.0 | 0.9+ | |
| 2001 11 24 | 704 | 0.8+ | 0.7+ | 2003 02 01 | 699 | 0.6+ | 0.4− | 2006 09 27 | 703 | 0.6+ | 1.2+ | |
| 2001 11 24 | 704 | 0.2+ | 0.3+ | 2003 02 03 | 608 | 0.6− | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.0 | |
| 2001 11 24 | 704 | 0.9− | 0.4+ | 2003 02 03 | 608 | 0.7− | 0.4+ | 2006 09 27 | 703 | 0.1− | 1.0− | |
| 2001 11 24 | 704 | 1.3+ | 0.1− | 2003 02 03 | 608 | 0.5− | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.5+ | |
| 2001 11 24 | 704 | 0.3+ | 0.2+ | 2003 02 04 | 704 | 0.8+ | 0.3− | 2006 10 01 | 703 | 0.9− | 0.6− | |
| 2001 12 10 | 704 | 0.3+ | 0.2− | 2003 02 04 | 704 | 1.1+ | 0.6− | 2006 10 01 | 703 | 0.1− | 1.1+ | |
| 2001 12 10 | 704 | 0.1+ | 0.1+ | 2003 02 04 | 704 | 0.8+ | 0.1+ | 2006 10 01 | 703 | 0.8+ | 1.5− | |
| 2001 12 10 | 704 | 0.4+ | 0.4− | 2003 02 04 | 704 | 0.7+ | 0.0 | 2006 10 01 | 703 | 0.1− | 0.5− | |

**(140957)∗ 2001 VJ$_{103}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.78578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18303409 | $\omega$ | 271.43696 | | +0.69860410 | +0.68618216 | |
| $a$ | 3.0721899 | $\Omega$ | 45.29269 | | −0.48862856 | +0.66452584 | |
| $e$ | 0.2214236 | $i$ | 16.57523 | | −0.52268005 | +0.29590447 | |
| $P$ | 5.38 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 561 | 0.7+ | 0.1− | 2001 12 10 | 704 | 0.4− | 0.7+ | 2006 09 30 | 704 | 1.3+ | 0.2+ |
| 1998 01 07 | 561 | 0.0 | 0.9+ | 2001 12 10 | 704 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.4+ | 0.3+ |
| 1998 01 07 | 561 | 0.5+ | 0.7+ | 2005 05 16 | 644 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.2− |
| 1998 01 07 | 561 | 0.0 | 0.3+ | 2005 05 16 | 644 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.6− | 0.4+ | 2005 05 16 | 644 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2005 05 19 | E12 | 1.3+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.7+ | 0.4+ | 2005 05 19 | E12 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.9+ | 0.8+ | 2005 05 19 | E12 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2001 10 26 | 644 | 0.1+ | 0.3+ | 2005 05 19 | E12 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 10 26 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2001 10 26 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.6− |
| 2001 11 12 | 704 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.7+ | 0.5− | 2006 10 22 | 703 | 0.5+ | 0.3+ |
| 2001 11 12 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.2− | 0.3− | 2006 09 21 | 699 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 11 12 | 704 | 0.2+ | 0.8+ | 2006 09 21 | 699 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.3− | 0.4+ | 2006 09 21 | 699 | 1.2− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2001 11 19 | 699 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.5− | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2001 11 19 | 699 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2001 11 19 | 699 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.4− |
| 2001 11 19 | 699 | 0.7+ | 0.5+ | 2006 09 25 | 699 | 0.2− | 0.6+ | 2006 10 28 | 703 | 0.3+ | 0.2− |
| 2001 11 19 | 704 | 0.5− | 0.5− | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 0.6− | 0.7− | 2006 09 26 | 703 | 0.4+ | 0.4− | 2006 10 28 | 703 | 0.7− | 0.2+ |
| 2001 11 19 | 704 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.7− | 0.5− | 2006 10 28 | 703 | 0.9− | 0.8− |
| 2001 11 19 | 704 | 0.7− | 0.6− | 2006 09 26 | 703 | 0.7− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.3− |
| 2001 11 19 | 704 | 0.8− | 0.7− | 2006 09 26 | 703 | 0.8+ | 0.0 | 2006 11 10 | 704 | 0.2+ | 0.3+ |
| 2001 12 08 | 699 | 1.3+ | 1.0− | 2006 09 29 | 699 | 0.9+ | 0.9+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2001 12 08 | 699 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 1.0− | 0.1− | 2006 11 10 | 704 | 0.0 | 0.0 |
| 2001 12 08 | 699 | 0.8− | 0.6+ | 2006 09 29 | 699 | 0.9+ | 0.1− | 2006 11 10 | 704 | 0.4− | 0.7+ |
| 2001 12 08 | 699 | 0.4+ | 1.2− | 2006 09 30 | 704 | (1.7+ | 0.4+) | 2006 11 10 | 644 | 0.2+ | 0.4− |
| 2001 12 10 | 704 | 1.1− | 0.4− | 2006 09 30 | 704 | 0.0 | 0.5+ | | | | |
| 2001 12 10 | 704 | (1.6− | 1.5+) | 2006 09 30 | 704 | 0.5− | 0.6+ | | | | |

**(140958)∗ 2001 VT$_{103}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.75286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19332380 | $\omega$ | 7.76745 | | +0.67518635 | −0.72888567 | |
| $a$ | 2.9621872 | $\Omega$ | 39.86988 | | +0.66691650 | +0.53753229 | |
| $e$ | 0.0396081 | $i$ | 10.18495 | | +0.31519165 | +0.42401027 | |
| $P$ | 5.10 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 1.1− | 2003 02 21 | 644 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.9− | 2003 03 03 | 644 | 0.4− | 0.3+ | 2006 10 12 | 691 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 1.4+ | 0.3− | 2003 03 03 | 644 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.4+ | 0.3+ |
| 2001 10 21 | 704 | 0.1+ | 0.8− | 2003 03 03 | 644 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 1.2− | 2003 03 08 | 644 | 1.2+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.2− | 0.0 | 2003 03 08 | 644 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.3+ | 0.1− | 2003 03 08 | 644 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 1.3− | 1.0+ | 2004 04 12 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2001 11 12 | 704 | 0.2+ | 0.5+ | 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 0.7+ | 0.4+ | 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 11 14 | 608 | 0.7− | 0.1+ | 2004 04 20 | 704 | 0.6− | 0.2+ | 2006 11 07 | A13 | 0.4− | 0.1+ |
| 2001 11 14 | 608 | 0.3+ | 0.4− | 2004 04 20 | 704 | 0.1− | 0.0 | 2006 11 07 | A13 | 0.2− | 0.1− |
| 2001 11 14 | 608 | 0.2− | 0.2+ | 2004 04 20 | 704 | 1.0− | 0.8+ | 2006 11 07 | A13 | 0.2+ | 0.2− |
| 2001 11 19 | 699 | 0.4− | 0.5+ | 2004 04 20 | 704 | 0.0 | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.0 | 0.3+ | 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 11 19 | 699 | 0.4− | 0.5+ | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.2− | 1.3− | 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.2− | 0.2+ | 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2001 11 19 | 704 | 0.1+ | 0.3+ | 2004 05 13 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 11 19 | 704 | 0.6− | 0.0 | 2004 05 13 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2001 11 19 | 704 | 0.1− | 0.1+ | 2004 05 13 | 644 | 0.3+ | 0.7+ | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2001 11 19 | 704 | 0.1+ | 1.2− | 2004 05 13 | 644 | 0.2+ | 0.7+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2001 11 20 | 608 | 0.5− | 1.1+ | 2004 05 13 | 644 | 0.5+ | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2001 11 20 | 608 | 0.1+ | 0.9+ | 2004 05 15 | 704 | 0.6+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2001 11 20 | 608 | 0.2− | 0.6+ | 2004 05 15 | 704 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2001 11 24 | 704 | 1.1+ | 0.1− | 2004 05 15 | 704 | 0.4− | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 0.2+ | 0.5− | 2004 05 15 | 704 | 0.4− | 0.9+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 1.0+ | 0.0 | 2004 05 16 | 704 | 0.2− | 0.8− | 2006 11 16 | 704 | 0.2− | 0.9+ |
| 2001 11 24 | 704 | 0.0 | 0.2+ | 2004 05 16 | 704 | 0.5+ | 0.7− | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 2001 11 24 | 704 | 0.3− | 0.3+ | 2004 05 16 | 704 | 0.6+ | 0.4− | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 2001 12 10 | 704 | 0.4+ | 0.3− | 2004 06 12 | E12 | 0.6− | 0.9+ | 2006 11 16 | 704 | 0.5− | 0.7+ |
| 2001 12 10 | 704 | 0.1− | 0.3− | 2004 06 12 | E12 | (1.3− | 2.4+) | 2006 11 16 | 704 | 0.9− | 0.3+ |
| 2001 12 10 | 704 | 0.6+ | 0.2− | 2004 06 12 | E12 | (0.9− | 1.6+) | 2006 11 17 | 703 | 0.9− | 0.2+ |
| 2001 12 10 | 704 | 0.7+ | 0.4− | 2004 06 12 | E12 | 0.6− | 1.0+ | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2001 12 10 | 704 | 0.1+ | 0.4+ | 2004 06 13 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.2− | 0.4− | 2004 06 13 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2004 06 13 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.9− | 0.3+ |
| 2001 12 17 | 704 | 0.8− | 0.6+ | 2005 07 06 | E12 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.8− | 0.0 | 2005 07 06 | E12 | 0.1− | 0.6+ | 2006 11 22 | 704 | 0.6− | 0.7+ |
| 2001 12 20 | 644 | 0.1+ | 0.2− | 2005 07 06 | E12 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2001 12 20 | 644 | 0.2− | 0.0 | 2005 07 06 | E12 | 0.1+ | 0.7+ | 2006 11 29 | 704 | 0.7− | 0.4+ |
| 2001 12 20 | 644 | 0.0 | 0.2+ | 2005 08 04 | 644 | 0.0 | 0.9+ | 2006 11 29 | 704 | 0.1− | 1.0+ |
| 2003 01 10 | 704 | 0.9+ | 0.1+ | 2005 08 04 | 644 | 0.3+ | 0.8+ | 2006 11 29 | 704 | 0.9− | 0.7+ |
| 2003 01 10 | 704 | 0.5+ | 0.1− | 2005 08 04 | 644 | 0.1− | 1.1+ | 2006 11 29 | 704 | 0.5− | 0.2+ |
| 2003 01 10 | 704 | 0.6+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 1.6− | 1.9+ |
| 2003 02 21 | 644 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.4+ | 0.1− | | | | |
| 2003 02 21 | 644 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.3+ | 0.3− | | | | |

**(140959)∗ 2001 VD$_{104}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.81887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18656079 | $\omega$ | 196.35335 | | +0.14587084 | −0.97631576 | |
| $a$ | 3.0333496 | $\Omega$ | 245.48943 | | +0.92620132 | +0.19153123 | |
| $e$ | 0.0566314 | $i$ | 10.11376 | | +0.34766767 | −0.10061470 | |
| $P$ | 5.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 691 | 0.3− | 0.5+ | 2001 12 15 | 704 | 0.2− | 0.9− | 2006 09 25 | 152 | 0.1+ | 0.3− |
| 2000 09 23 | 691 | 0.1+ | 0.4− | 2001 12 15 | 704 | (0.2− | 1.8−) | 2006 09 25 | 152 | 1.2+ | 1.2+ |
| 2000 09 23 | 691 | 0.1− | 0.4+ | 2001 12 15 | 704 | (1.1− | 1.6−) | 2006 09 25 | 152 | 0.8+ | 0.8+ |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2001 12 15 | 704 | 0.2− | 1.1− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2001 12 18 | 704 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 11 12 | 704 | 0.2+ | 1.4− | 2001 12 18 | 704 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.3− | 2001 12 18 | 704 | 0.8+ | 0.5+ | 2006 10 19 | 703 | (0.9− | 1.7−) |
| 2001 11 12 | 704 | 0.4− | 0.4− | 2001 12 18 | 704 | 1.1− | 0.5− | 2006 10 19 | 703 | 0.2− | 0.7+ |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2001 12 18 | 704 | 0.8− | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2001 11 19 | 704 | 0.3− | 0.5+ | 2001 12 19 | 704 | 0.0 | 0.6− | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.7− | 0.2− | 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.7− |
| 2001 11 19 | 704 | (1.8− | 1.2+) | 2001 12 19 | 704 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.7− |
| 2001 11 19 | 704 | (1.4− | 1.5+) | 2001 12 19 | 704 | 0.5+ | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2001 11 19 | 704 | 0.3− | 0.1+ | 2001 12 19 | 704 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2001 11 21 | 704 | (1.9− | 0.3−) | 2002 01 13 | 291 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.9− |
| 2001 11 21 | 704 | 0.6− | 0.8− | 2002 01 13 | 291 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2001 11 21 | 704 | (2.1− | 0.8−) | 2002 01 13 | 291 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.5− | 0.8+ |
| 2001 11 21 | 704 | 0.3− | 0.5− | 2004 05 13 | 691 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.3+ | 0.5− |
| 2001 11 21 | 704 | (2.1− | 0.5−) | 2004 05 13 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.1+ | 1.2+ |
| 2001 11 21 | 704 | 0.6+ | 0.5− | 2004 05 13 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.8+ |
| 2001 11 21 | 704 | (2.0− | 0.9−) | 2006 09 23 | 152 | 0.1+ | 0.9− | 2006 11 14 | 703 | 1.5− | 0.3+ |
| 2001 11 21 | 704 | 1.0− | 0.7− | 2006 09 23 | 152 | 0.4+ | 0.4+ | 2006 11 14 | 703 | (0.0 | 1.8−) |
| 2001 11 21 | 704 | 0.2− | 0.6− | 2006 09 24 | 152 | 0.9− | 0.4+ | 2006 11 25 | G96 | 0.3+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.4+ | 0.1+ | 2006 09 24 | 152 | 0.0 | 1.1− | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2001 12 14 | 291 | 0.3+ | 0.1+ | 2006 09 25 | 152 | 0.6+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 291 | 0.8+ | 0.0 | 2006 09 25 | 152 | (1.8− | 0.0 ) | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 1.2− | 1.0− | 2006 09 25 | 152 | 1.1− | 0.3+ | | | | |

**(140960)∗ 2001 VL$_{105}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.48946 | | (2000.0) | | | |
| $n$ | 0.17804789 | $\omega$ | 106.53253 | | +0.41100480 | −0.91080014 |
| $a$ | 3.1292829 | $\Omega$ | 319.12953 | | +0.81205923 | +0.38520108 |
| $e$ | 0.0608749 | $i$ | 3.41371 | | +0.41428838 | +0.14853698 |
| $P$ | 5.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 691 | 0.0 | 0.1+ | 2001 12 18 | 704 | 1.2− | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 1998 04 23 | 691 | 0.3+ | 0.1+ | 2001 12 19 | 704 | (1.2+ | 1.5+) | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 1998 04 23 | 691 | 0.2+ | 0.2+ | 2001 12 19 | 704 | (1.9+ | 1.1−) | 2006 09 17 | 703 | 0.1− | 0.4+ |
| 1998 04 29 | 691 | 0.1+ | 0.4+ | 2001 12 19 | 704 | 0.1− | 0.7+ | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 1998 04 29 | 691 | 0.3+ | 0.4+ | 2001 12 19 | 704 | 1.2+ | 0.7+ | 2006 09 17 | 703 | 0.3+ | 0.3− |
| 1998 04 29 | 691 | 0.1− | 0.5+ | 2001 12 19 | 704 | 0.9+ | 0.2− | 2006 09 21 | A50 | 0.1− | 0.5+ |
| 2001 10 21 | 704 | 0.3+ | 0.7+ | 2003 01 05 | 291 | 0.5− | 0.4+ | 2006 09 22 | A50 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.6+ | 0.3+ | 2003 01 05 | 291 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.4− | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.7− | 2003 01 05 | 291 | 0.5− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 0.9+ | 2003 01 31 | 704 | (1.7− | 0.3−) | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2001 11 12 | 704 | 0.1− | 0.1− | 2003 01 31 | 704 | 0.4− | 0.2+ | 2006 09 27 | 699 | (0.1+ | 1.6+) |
| 2001 11 12 | 704 | 0.2− | 0.3− | 2003 01 31 | 704 | 0.3+ | 0.1− | 2006 09 27 | 699 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.2− | 0.4− | 2003 01 31 | 704 | 0.3+ | 0.6− | 2006 09 27 | 699 | 0.3− | 0.1+ |
| 2001 11 12 | 704 | 0.3− | 0.3− | 2003 02 22 | 699 | 0.4+ | 0.5+ | 2006 09 27 | 699 | 0.4− | 1.0+ |
| 2001 11 12 | 704 | 0.5− | 0.1− | 2003 02 22 | 699 | 0.2− | 0.4+ | 2006 09 29 | 704 | 1.1− | 0.2− |
| 2001 11 19 | 704 | 0.5− | 1.0− | 2003 02 22 | 699 | 0.5+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.6+ |
| 2001 11 19 | 704 | 0.2− | 0.1− | 2003 02 22 | 699 | 0.3+ | 0.3− | 2006 09 29 | 704 | 0.9+ | 0.3− |
| 2001 11 19 | 704 | 0.3− | 0.4− | 2003 03 06 | 644 | 0.7+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 11 19 | 704 | 0.6− | 0.3− | 2003 03 06 | 644 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.7+ | 1.4+ |
| 2001 11 24 | 704 | 0.6− | 0.4− | 2003 03 06 | 644 | 0.6+ | 0.3− | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 11 24 | 704 | 0.2+ | 0.1− | 2003 03 12 | 291 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.2+ |
| 2001 11 24 | 704 | 0.1+ | 0.4+ | 2003 03 12 | 291 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 0.9+ | 1.1+ | 2003 03 12 | 291 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 11 24 | 704 | 0.2+ | 0.3+ | 2003 03 12 | 644 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 12 15 | 704 | 0.9+ | 0.5− | 2003 03 12 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 12 15 | 704 | 0.4+ | 0.2− | 2003 03 12 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 12 15 | 704 | 0.4+ | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 12 15 | 704 | 1.0+ | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2001 12 18 | 704 | 0.5− | 0.6− | 2006 09 06 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 12 18 | 704 | 0.1− | 0.7− | 2006 09 17 | 703 | 1.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | 1.3− | 0.6− | 2006 09 17 | 703 | 0.3+ | 0.9+ | | | | |

**(140961)∗ 2001 VZ$_{106}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 215.51099 | | (2000.0) | | | |
| $n$ | 0.19217042 | $\omega$ | 292.42472 | | −0.98349084 | +0.08674349 |
| $a$ | 2.9740278 | $\Omega$ | 252.84322 | | −0.02660250 | −0.93739120 |
| $e$ | 0.0549856 | $i$ | 9.56744 | | −0.17899186 | −0.33730298 |
| $P$ | 5.13 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.2+ | 0.4+ | 2001 12 15 | 704 | 0.4− | 0.5− | 2004 06 16 | 704 | 0.7− | 0.3+ |
| 2001 11 12 | 704 | 1.0+ | 0.5+ | 2001 12 18 | 704 | (0.1− | 2.2+) | 2004 06 16 | 704 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 1.2+ | 0.3+ | 2001 12 18 | 704 | 0.6+ | 1.4+ | 2004 06 16 | 704 | 0.4− | 0.4+ |
| 2001 11 12 | 704 | (1.6+ | 1.1−) | 2001 12 18 | 704 | 0.5+ | 0.5− | 2004 06 16 | 704 | 0.3− | 0.2− |
| 2001 11 19 | 699 | 1.4− | 0.5− | 2001 12 18 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 1.0+ | 0.4+ |
| 2001 11 19 | 699 | 0.3− | 0.2− | 2002 01 08 | 691 | 0.2+ | 0.4− | 2006 10 19 | 703 | 0.8− | 0.2− |
| 2001 11 19 | 699 | 0.4− | 0.0 | 2002 01 08 | 691 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.9+ | 0.3+ |
| 2001 11 19 | 699 | 0.5− | 0.6+ | 2002 01 08 | 691 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.8− | 1.3+ |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2003 01 08 | 608 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.4− | 1.0− |
| 2001 11 19 | 704 | 0.5+ | 0.0 | 2003 01 08 | 608 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.0 | 1.1− |
| 2001 11 19 | 704 | 0.4− | 1.5+ | 2003 01 08 | 608 | 0.0 | 0.5− | 2006 10 27 | 703 | 0.6− | 0.4+ |
| 2001 11 19 | 704 | 0.8+ | 0.4+ | 2003 01 25 | 644 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.9+ | 0.6+ |
| 2001 11 19 | 704 | 1.0− | 1.2+ | 2003 01 25 | 644 | 0.3− | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.2+ | 2003 01 25 | 644 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.7− | 0.4− | 2003 01 28 | 704 | 0.2+ | 0.9+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.4− | 0.1+ | 2003 01 28 | 704 | 0.0 | 0.9+ | 2006 11 11 | 703 | (0.2− | 1.6−) |
| 2001 11 20 | 704 | 0.2+ | 0.7+ | 2003 01 28 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.9+ | 1.4+ |
| 2001 11 24 | 704 | 0.2+ | 0.3− | 2003 01 28 | 704 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2001 11 24 | 704 | 1.3− | 0.2− | 2003 01 28 | 704 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.8+ |
| 2001 11 24 | 704 | 0.6− | 0.1+ | 2003 01 28 | 608 | 0.9+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.8− |
| 2001 11 24 | 704 | (1.6− | 0.7+) | 2003 01 28 | 608 | 0.9+ | 0.7− | 2006 11 18 | G96 | 0.0 | 0.6− |
| 2001 11 24 | 704 | 0.2+ | 1.2+ | 2003 01 28 | 608 | 0.7+ | 0.5− | 2006 11 18 | G96 | 0.0 | 0.6− |
| 2001 12 08 | 699 | (3.0− | 0.0 ) | 2003 02 03 | 608 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.1− | 0.6− |
| 2001 12 08 | 699 | 0.0 | 0.1+ | 2003 02 03 | 608 | 0.9− | 0.3− | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2001 12 08 | 699 | 0.0 | 1.1− | 2003 02 03 | 608 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2001 12 08 | 699 | 0.1− | 1.3+ | 2004 06 09 | E12 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.9− |
| 2001 12 10 | 704 | 1.3− | 1.2+ | 2004 06 09 | E12 | 0.8+ | 0.8+ | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2001 12 10 | 704 | 1.1− | 1.0+ | 2004 06 09 | E12 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.7+ | 0.3− |
| 2001 12 10 | 704 | (1.3− | 1.7+) | 2004 06 09 | E12 | 0.8+ | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2001 12 10 | 704 | 1.1− | 1.3+ | 2004 06 14 | 704 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.4− |
| 2001 12 15 | 704 | 0.8+ | 0.6− | 2004 06 14 | 704 | 0.5− | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2001 12 15 | 704 | 0.7+ | 0.1+ | 2004 06 14 | 704 | 0.4− | 0.7+ | 2006 11 22 | 704 | 0.6− | 0.3− |
| 2001 12 15 | 704 | 0.5+ | 0.2− | 2004 06 14 | 704 | 0.5+ | 0.1− | 2006 11 22 | 704 | 0.2− | 1.2− |

**(140962)∗ 2001 VB$_{107}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.75722 | | (2000.0) | | | |
| $n$ | 0.17770831 | $\omega$ | 88.03628 | | −0.55969609 | −0.82071196 |
| $a$ | 3.1332681 | $\Omega$ | 36.76942 | | +0.66348851 | −0.52677495 |
| $e$ | 0.0305671 | $i$ | 11.05388 | | +0.49651111 | −0.22122395 |
| $P$ | 5.55 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.6+ | 0.8+ | 2003 02 11 | 636 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 2001 10 21 | 704 | 0.4+ | 0.2+ | 2003 02 11 | 636 | 0.7− | 0.6− | 2006 10 02 | 691 | 0.0 | 0.5+ |
| 2001 10 21 | 704 | 0.3− | 0.6+ | 2003 02 11 | 636 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2003 02 19 | 644 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.4+ | 2003 02 19 | 644 | 0.2+ | 0.3+ | 2006 10 02 | 691 | (1.7+ | 1.2+) |
| 2001 11 12 | 704 | (1.8− | 0.9−) | 2003 02 19 | 644 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.9− | 0.2− | 2003 03 03 | 644 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2001 11 12 | 704 | 1.0− | 0.6− | 2003 03 03 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 1.4− |
| 2001 11 12 | 704 | (2.4− | 0.1−) | 2003 03 03 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 1.4− | 0.4− |
| 2001 11 19 | 699 | 0.2− | 0.2− | 2003 03 08 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.5− |
| 2001 11 19 | 699 | 0.0 | 0.5+ | 2003 03 08 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 1.0+ | 1.1− |
| 2001 11 19 | 699 | 0.6+ | 0.8− | 2003 03 08 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2001 11 19 | 699 | 0.1− | 0.3− | 2004 04 13 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.8− | 0.2+ | 2004 04 13 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2001 11 19 | 704 | 0.2− | 0.3− | 2004 04 13 | 644 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 11 19 | 704 | 0.3− | 0.9+ | 2004 04 23 | 704 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2001 11 19 | 704 | 0.7− | 0.7− | 2004 04 23 | 704 | 1.5+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2001 11 19 | 704 | 0.2− | 0.9+ | 2004 04 23 | 704 | (1.7+ | 0.3+) | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 11 24 | 704 | 0.9+ | 0.8+ | 2004 04 23 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | 0.5+ | 0.1− | 2004 05 16 | 704 | (0.1− | 1.6+) | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2001 11 24 | 704 | 0.3− | 1.0+ | 2004 05 16 | 704 | 0.6+ | 0.7+ | 2006 10 22 | 703 | 0.4+ | 0.1− |
| 2001 11 24 | 704 | 1.1+ | 0.7+ | 2004 05 16 | 704 | (1.6+ | 0.9+) | 2006 10 22 | 703 | 0.9− | 0.3− |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2004 05 16 | 704 | 0.6+ | 1.3+ | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2001 12 17 | 704 | 0.9− | 0.2+ | 2004 05 16 | 704 | 1.1+ | 0.9+ | 2006 10 22 | 703 | 1.4− | 0.9− |
| 2001 12 17 | 704 | 0.0 | 0.3− | 2004 05 16 | 704 | 0.9+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 12 20 | 644 | 0.3+ | 0.1+ | 2004 05 16 | 704 | 0.9− | 0.8+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2001 12 20 | 644 | 0.7− | 0.8+ | 2004 05 16 | 704 | 0.6+ | 0.7+ | 2006 11 16 | G96 | 0.4+ | 0.3+ |
| 2001 12 20 | 644 | 0.0 | 0.1+ | 2004 05 16 | 704 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 10 | 636 | 0.4+ | 0.1+ | 2004 05 16 | 704 | 0.6− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.1− | | |
| 2003 02 10 | 636 | 0.3+ | 0.1+ | 2004 05 16 | 704 | 0.2+ | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2003 02 10 | 636 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.2− | | |
| 2003 02 10 | 636 | 0.4+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |

**(140963)∗ 2001 VX$_{107}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.79060 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21996222 | $\omega$ | 142.27362 | | +0.66907432 | −0.73921269 | |
| $a$ | 2.7179241 | $\Omega$ | 265.59069 | | +0.66173683 | +0.63960903 | |
| $e$ | 0.0420975 | $i$ | 4.41997 | | +0.33829562 | +0.21086698 | |
| $P$ | 4.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 25 | 691 | 0.0 | 0.1− | 2001 12 10 | 704 | 0.2+ | 0.4+ | 2005 09 29 | 699 | 0.9− | 0.8+ | | |
| 1992 11 25 | 691 | 0.1− | 0.1− | 2001 12 10 | 704 | 0.3+ | 0.3− | 2005 09 29 | 699 | 0.5− | 1.0+ | | |
| 1992 11 25 | 691 | 0.4+ | 0.2− | 2001 12 15 | 704 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.2− | 0.1+ | | |
| 1996 10 12 | 691 | 0.0 | 0.0 | 2001 12 15 | 704 | 0.1+ | 0.0 | 2005 10 01 | 703 | 1.3− | 0.5+ | | |
| 1996 10 12 | 691 | 0.2− | 0.2− | 2001 12 15 | 704 | 0.9+ | 1.4+ | 2005 10 01 | 703 | 0.1− | 0.7− | | |
| 2001 10 21 | 704 | 0.3+ | 0.6− | 2001 12 18 | 704 | 0.6+ | 1.4+ | 2005 10 01 | 703 | 0.1− | 0.6+ | | |
| 2001 10 21 | 704 | (1.6+ | 0.5−) | 2001 12 18 | 704 | 0.0 | 0.2+ | 2005 10 06 | 703 | 1.0− | 1.0− | | |
| 2001 10 21 | 704 | 1.0− | 0.7− | 2001 12 18 | 704 | 0.3− | 0.9+ | 2005 10 06 | 703 | 0.2+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2003 03 09 | 644 | 0.4+ | 0.6+ | 2005 10 06 | 703 | 1.5+ | 1.1+ | | |
| 2001 11 12 | 704 | 0.4+ | 0.3+ | 2003 03 09 | 644 | 0.1+ | 0.4+ | 2005 10 06 | 703 | 0.0 | 0.0 | | |
| 2001 11 12 | 704 | 0.0 | 1.0− | 2003 03 09 | 644 | 0.5+ | 0.4+ | 2005 11 03 | G96 | 0.4− | 0.4+ | | |
| 2001 11 12 | 704 | (1.6+ | 0.2+) | 2003 03 10 | 699 | 0.5− | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.2− | | |
| 2001 11 12 | 704 | 1.3+ | 1.0− | 2003 03 10 | 699 | (0.4+ | 2.1+) | 2005 11 03 | G96 | 0.4+ | 0.2− | | |
| 2001 11 19 | 704 | 0.6− | 0.2+ | 2003 03 10 | 699 | 0.5+ | 0.6+ | 2005 11 03 | G96 | 0.2+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.4− | 0.1+ | 2003 03 10 | 699 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.4− | 1.3− | | |
| 2001 11 19 | 704 | 0.2− | 0.3+ | 2005 08 29 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.2+ | | |
| 2001 11 21 | 704 | 0.4− | 0.3− | 2005 08 29 | 644 | 0.4− | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.6− | | |
| 2001 11 21 | 704 | 0.6− | 0.1− | 2005 08 29 | 644 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.6− | | |
| 2001 11 21 | 704 | 0.8− | 0.4− | 2005 09 26 | 644 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.7+ | 0.2+ | | |
| 2001 11 21 | 704 | 1.0− | 0.4+ | 2005 09 26 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 2001 11 21 | 704 | 0.4− | 0.2+ | 2005 09 26 | 644 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 1.0+ | | |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2005 09 29 | 699 | 1.0+ | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2001 12 10 | 704 | 0.3+ | 0.0 | 2005 09 29 | 699 | 0.9+ | 0.4− | | | | | | |

**(140964)∗ 2001 VM$_{108}$ = 1998 ED$_1$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23095)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.36301 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17661716 | $\omega$ | 17.16475 | | +0.86397455 | +0.50165830 | |
| $a$ | 3.1461598 | $\Omega$ | 312.64421 | | −0.46864048 | +0.76954815 | |
| $e$ | 0.0794501 | $i$ | 3.38553 | | −0.18418493 | +0.39513871 | |
| $P$ | 5.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 910 | 0.5− | 0.0 | 2003 01 27 | 608 | 0.6+ | 0.6− | 2006 09 19 | 699 | 0.6+ | 1.0+ | | |
| 1998 03 02 | 910 | 0.1+ | 0.6− | 2003 01 27 | 608 | 0.1+ | 0.8− | 2006 09 25 | 704 | (1.6+ | 0.1−) | | |
| 1998 03 02 | 910 | 0.2− | 0.3− | 2003 01 27 | 608 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.8+ | 0.0 | | |
| 1998 03 02 | 910 | 0.0 | 0.1− | 2003 01 31 | 704 | 0.9− | 0.5+ | 2006 09 25 | 704 | 0.3− | 0.2− | | |
| 1998 03 02 | 910 | 0.3− | 0.6− | 2003 01 31 | 704 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.6+ | | |
| 1998 03 02 | 910 | 0.0 | 0.3− | 2003 01 31 | 704 | 0.3+ | 1.5+ | 2006 09 26 | 691 | 0.2− | 0.1− | | |
| 2001 10 21 | 704 | 0.2− | 0.6− | 2003 02 10 | 291 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 1.0− | 0.3− | 2003 02 10 | 291 | 0.7+ | 0.2− | 2006 09 26 | 691 | 0.4− | 0.0 | | |
| 2001 10 21 | 704 | 1.1− | 0.7− | 2003 02 10 | 291 | 0.8+ | 0.0 | 2006 09 27 | 699 | 0.5+ | 0.5− | | |
| 2001 10 21 | 704 | 0.6+ | 0.1− | 2003 02 21 | 644 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.7− | 0.1− | | |
| 2001 10 21 | 704 | 0.2− | 0.2+ | 2003 02 21 | 644 | 0.3− | 1.2+ | 2006 09 27 | 699 | 0.8+ | 0.4+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.5− | 2003 02 21 | 644 | 0.0 | 1.1+ | 2006 09 27 | 699 | 0.3− | 0.1− | | |
| 2001 11 12 | 704 | 0.3+ | 1.4+ | 2003 03 09 | 291 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ | | |
| 2001 11 12 | 704 | 0.6+ | 0.9+ | 2003 03 09 | 291 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.3+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2003 03 09 | 291 | 0.4− | 0.3− | 2006 09 30 | 691 | 0.2− | 0.2+ | | |
| 2001 11 19 | 704 | 0.1− | 0.5− | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 2001 11 19 | 704 | (1.0+ | 2.2−) | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.8+ | | |
| 2001 11 19 | 704 | 0.2− | 1.1− | 2006 09 16 | 644 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.9− | | |
| 2001 11 19 | 704 | 0.0 | 1.1− | 2006 09 17 | 703 | 0.3− | 0.7− | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 2001 11 19 | 704 | 0.7+ | 0.8− | 2006 09 17 | 703 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− | | |
| 2001 12 15 | 704 | 0.8+ | 1.2+ | 2006 09 17 | 703 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1− | | |
| 2001 12 15 | 704 | 0.6+ | 0.3− | 2006 09 17 | 703 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 12 15 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.0 | 0.1− | | |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.4− | | |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2001 12 19 | 704 | 0.3+ | 1.3− | 2006 09 19 | 699 | 0.1+ | 1.0− | 2006 10 23 | G96 | 0.3+ | 0.3− | | |
| 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | (1.7+ | 0.2+) | | | | | | |
| 2001 12 19 | 704 | 1.1− | 0.2− | 2006 09 19 | 699 | 0.9− | 0.2+ | | | | | | |

**(140965)∗ 2001 VF$_{111}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.12706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18471710 | $\omega$ | 194.48673 | | −0.01715291 | −0.99073955 | |
| $a$ | 3.0535004 | $\Omega$ | 256.63040 | | +0.93057230 | +0.03345194 | |
| $e$ | 0.1128381 | $i$ | 7.95759 | | +0.36570612 | −0.13159066 | |
| $P$ | 5.34 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | (0.6− | 1.6−) | 2001 12 18 | 704 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.3+ | | |
| 2001 10 21 | 704 | (0.4− | 2.6−) | 2001 12 18 | 704 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.5− | | |
| 2001 10 21 | 704 | (0.5− | 2.9−) | 2001 12 18 | 704 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.2− | | |
| 2001 10 21 | 704 | (0.8− | 2.4−) | 2001 12 18 | 704 | 1.0− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 12 | 704 | 0.5− | 0.5+ | 2001 12 19 | 704 | 0.6+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2001 11 12 | 704 | 0.6+ | 0.8+ | 2001 12 19 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 11 12 | 704 | (0.7− | 1.7+) | 2001 12 19 | 704 | 0.7− | 1.1− | 2006 10 31 | 703 | 0.2− | 0.5− | | |
| 2001 11 12 | 704 | (0.7− | 1.6+) | 2001 12 19 | 704 | 1.1+ | 0.6+ | 2006 10 31 | 703 | 0.3− | 0.3− | | |
| 2001 11 19 | 704 | 0.1− | 0.7+ | 2002 01 14 | 291 | 0.1+ | 0.4+ | 2006 10 31 | 703 | 1.1− | 0.9− | | |
| 2001 11 19 | 704 | 0.2− | 1.1+ | 2002 01 14 | 291 | 0.1+ | 0.4+ | 2006 10 31 | 703 | 0.1+ | 0.6+ | | |
| 2001 11 19 | 704 | 0.4− | 0.5+ | 2002 01 14 | 291 | 0.0 | 0.4+ | 2006 11 14 | 703 | 1.1− | 0.2− | | |
| 2001 11 21 | 704 | 0.4+ | 0.6− | 2003 03 27 | 644 | 0.5+ | 1.0+ | 2006 11 14 | 703 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.3− | 0.7− | 2003 03 27 | 644 | 0.5+ | 0.8+ | 2006 11 14 | 703 | 0.2+ | 0.5− | | |
| 2001 11 21 | 704 | 0.1+ | 0.6− | 2003 03 27 | 644 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.2+ | 0.6− | | |
| 2001 11 21 | 704 | 0.7+ | 0.7− | 2005 06 29 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | (0.9− | 1.6−) | | |
| 2001 12 15 | 704 | 0.4+ | 0.3+ | 2005 06 29 | 691 | 0.3− | 0.3+ | 2006 11 14 | 703 | 1.1− | 0.6− | | |
| 2001 12 15 | 704 | 0.2+ | 0.4+ | 2005 06 29 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.0 | | |
| 2001 12 15 | 704 | 0.9− | 0.3+ | 2005 07 08 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.3+ | | |
| 2001 12 15 | 704 | 0.5− | 0.4+ | 2005 07 08 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 1.1+ | 0.3− | | |
| 2001 12 18 | 704 | 0.3+ | 0.2− | 2005 07 08 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.5− | | |
| 2001 12 18 | 704 | (1.5+ | 1.6−) | 2006 09 28 | 703 | 0.0 | 0.9+ | 2006 11 14 | 703 | 0.6+ | 0.6− | | |
| 2001 12 18 | 704 | 0.5− | 0.3− | 2006 09 28 | 703 | 0.3− | 0.8+ | 2006 11 14 | 703 | 1.1− | 0.4− | | |
| 2001 12 18 | 704 | 0.4− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.8− | 2006 11 18 | 185 | 0.9+ | 1.0− | | |
| 2001 12 18 | 704 | 0.8+ | 0.4− | 2006 09 28 | 703 | 0.1− | 0.2+ | 2006 11 18 | 185 | 2.1+ | 0.3− | | |
| 2001 12 18 | 704 | 0.1− | 0.9+ | 2006 10 19 | 703 | (3.6+ | 4.5−) | | | | | | |

**(140966)∗ 2001 VV$_{112}$ = 1995 WV$_{15}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 23099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.03103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17366477 | $\omega$ | 32.96534 | | +0.36073498 | −0.93093248 | |
| $a$ | 3.1817171 | $\Omega$ | 35.98154 | | +0.83338720 | +0.29435632 | |
| $e$ | 0.1685805 | $i$ | 5.55538 | | +0.41873148 | +0.21614596 | |
| $P$ | 5.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 11 | 691 | 0.1− | 0.1+ | 2001 12 14 | 644 | 0.6− | 0.5+ | 2003 03 26 | 699 | 0.2+ | 0.6+ |
| 1991 01 11 | 691 | 0.5− | 0.4+ | 2001 12 14 | 644 | 0.1− | 0.1+ | 2004 04 28 | 691 | 0.1+ | 0.1+ |
| 1991 01 11 | 691 | 0.1+ | 0.4− | 2001 12 14 | 644 | 1.0− | 0.0 | 2004 04 28 | 691 | 0.3+ | 0.3+ |
| 1995 11 17 | 691 | 0.0 | 0.1− | 2001 12 15 | 704 | (1.6+ | 4.2−) | 2004 04 28 | 691 | 0.2+ | 0.4+ |
| 1995 11 17 | 691 | 0.1+ | 0.0 | 2001 12 15 | 704 | (1.4+ | 4.5−) | 2004 05 13 | 691 | 0.3+ | 0.4+ |
| 1995 11 17 | 691 | 0.0 | 0.0 | 2001 12 15 | 704 | (1.6+ | 4.1−) | 2004 05 13 | 691 | 0.3+ | 0.3+ |
| 1995 11 23 | 691 | 0.3+ | 0.1− | 2001 12 18 | 704 | 0.4− | 0.8+ | 2004 05 13 | 691 | 0.4+ | 0.5+ |
| 1995 11 23 | 691 | 0.1+ | 0.1− | 2001 12 18 | 704 | 0.8− | 0.6+ | 2006 09 14 | 703 | 0.5− | 0.0 |
| 1995 11 23 | 691 | 0.2+ | 0.2− | 2001 12 18 | 704 | 0.9− | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.3− |
| 2001 11 12 | 704 | 0.8+ | 0.1+ | 2001 12 18 | 704 | 0.7− | 0.6+ | 2006 09 14 | 703 | 0.9− | 0.6− |
| 2001 11 12 | 704 | 0.5+ | 0.4+ | 2001 12 18 | 704 | 1.0− | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.5+ | 2001 12 19 | 704 | 0.2− | 1.0− | 2006 09 19 | 699 | (0.9+ | 2.1+) |
| 2001 11 12 | 704 | 1.0+ | 1.1+ | 2001 12 19 | 704 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.1− | 1.4+ |
| 2001 11 12 | 704 | 0.7+ | 0.9+ | 2001 12 19 | 704 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.8+ | 0.3− |
| 2001 11 19 | 704 | (2.1− | 0.5−) | 2001 12 19 | 704 | 0.6− | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.7+ |
| 2001 11 19 | 704 | 0.2− | 0.4− | 2001 12 19 | 704 | 0.9− | 0.1− | 2006 09 25 | 699 | 0.5− | 0.2+ |
| 2001 11 19 | 704 | (0.1+ | 1.9−) | 2001 12 20 | 704 | 1.2+ | 0.2− | 2006 09 25 | 699 | 0.0 | 0.7+ |
| 2001 11 24 | 704 | 0.9+ | 0.3+ | 2001 12 20 | 704 | 1.1− | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.9+ |
| 2001 11 24 | 704 | 0.3+ | 0.1− | 2001 12 20 | 704 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2001 11 24 | 704 | 0.9+ | 0.1+ | 2001 12 20 | 704 | 0.5− | 0.5+ | 2006 09 30 | 703 | 0.6− | 1.2− |
| 2001 11 24 | 704 | 0.9+ | 0.4+ | 2003 03 10 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.8− |
| 2001 11 24 | 704 | 0.4+ | 0.6+ | 2003 03 10 | 644 | 1.3+ | 0.2− | 2006 09 30 | 703 | 1.1− | 1.0+ |
| 2001 11 24 | 704 | 1.2+ | 0.1− | 2003 03 10 | 644 | 0.9+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 11 24 | 704 | 0.1+ | 0.2− | 2003 03 25 | 644 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2001 11 24 | 704 | (1.6+ | 2.4+) | 2003 03 25 | 644 | 0.4+ | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 2001 11 24 | 704 | 0.6− | 0.3+ | 2003 03 25 | 644 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.7− | 1.1+ |
| 2001 11 24 | 704 | 0.5+ | 0.3− | 2003 03 26 | 691 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2001 12 10 | 704 | 0.3− | 0.0 | 2003 03 26 | 691 | 0.4− | 0.3− | 2006 10 19 | 703 | 1.2− | 0.3− |
| 2001 12 10 | 704 | 0.2+ | 0.3+ | 2003 03 26 | 691 | 0.4− | 0.4+ | 2006 10 19 | 703 | 1.1+ | 1.1+ |
| 2001 12 10 | 704 | 0.0 | 0.6+ | 2003 03 26 | 699 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.5+ |
| 2001 12 10 | 704 | 0.3+ | 0.7+ | 2003 03 26 | 699 | 0.6+ | 0.1− | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2001 12 10 | 704 | 0.2+ | 0.5+ | 2003 03 26 | 699 | 0.2+ | 1.3+ | 2006 10 22 | 644 | 0.4− | 0.3+ |

**(140967)∗ 2001 VL$_{113}$ = 2000 QL$_{156}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.94877 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18801863 | $\omega$ | 119.15089 | | +0.94971671 | −0.27213503 | |
| $a$ | 3.0176495 | $\Omega$ | 256.99998 | | +0.20229322 | +0.91078820 | |
| $e$ | 0.1281903 | $i$ | 9.14482 | | +0.23898876 | +0.31049537 | |
| $P$ | 5.24 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.1− | 0.8− | 2001 12 10 | 704 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 1995 08 25 | 691 | 0.1− | 0.1− | 2001 12 10 | 704 | 0.8+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 1995 08 25 | 691 | 0.1− | 0.2− | 2001 12 15 | 704 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2000 08 31 | 704 | 0.2− | 0.3+ | 2001 12 15 | 704 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2000 08 31 | 704 | 0.3+ | 0.2− | 2001 12 15 | 704 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.9− | 0.3+ |
| 2000 08 31 | 704 | 0.1+ | 0.7+ | 2001 12 15 | 704 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.4− | 0.5− |
| 2000 08 31 | 704 | 0.7+ | 0.3+ | 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2000 09 03 | 645 | 0.0 | 0.2− | 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2000 09 03 | 645 | 0.0 | 0.2− | 2001 12 19 | 704 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2000 09 03 | 704 | 0.4+ | 0.4+ | 2001 12 19 | 704 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2000 09 03 | 704 | 0.2+ | 0.9+ | 2001 12 19 | 704 | 0.4− | 0.4− | 2006 11 14 | 703 | 0.3− | 0.1− |
| 2000 09 03 | 704 | 0.3+ | 0.0 | 2002 01 13 | 704 | 0.0 | 1.4+ | 2006 11 14 | 703 | (2.3− | 0.4−) |
| 2000 09 03 | 704 | 0.7+ | 0.3+ | 2002 01 13 | 704 | 1.2+ | 0.6+ | 2006 11 14 | 703 | (1.8− | 1.0+) |
| 2001 10 21 | 704 | 0.5+ | 0.7+ | 2002 01 13 | 704 | 0.8+ | 0.4− | 2006 11 14 | 703 | (0.8− | 1.6+) |
| 2001 10 21 | 704 | 0.1+ | 0.0 | 2002 01 13 | 704 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.3+ | 1.1+ |
| 2001 10 21 | 704 | 0.3− | 1.2− | 2002 01 14 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2001 11 12 | 704 | 0.5+ | 0.0 | 2002 01 14 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2001 11 12 | 704 | 0.9+ | 0.2+ | 2002 01 14 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.7+ | 0.2+ | 2002 01 15 | 704 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.6+ | 0.4+ | 2002 01 15 | 704 | 0.5− | 0.4+ | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.7+ | 0.2+ | 2002 01 15 | 704 | 1.2+ | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2001 11 19 | 704 | 0.3− | 0.6+ | 2002 01 15 | 704 | 0.7+ | 1.2− | 2006 11 17 | 704 | 0.5+ | 0.3− |
| 2001 11 19 | 704 | 0.3− | 0.6+ | 2004 04 15 | E12 | 0.4− | 1.0+ | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.4+ | 2004 04 15 | E12 | (2.8− | 0.7+) | 2006 11 17 | 704 | 1.4− | 1.0+ |
| 2001 11 19 | 704 | 0.1− | 0.7+ | 2004 04 15 | E12 | 0.6− | 0.8+ | 2006 11 17 | 704 | 0.9− | 0.2− |
| 2001 11 19 | 704 | 0.2− | 0.5+ | 2004 04 15 | E12 | 0.5− | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.1+ |
| 2001 11 20 | 704 | (1.5− | 2.7+) | 2004 04 16 | E12 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 2001 11 20 | 704 | 0.2+ | 0.8− | 2004 04 16 | E12 | 0.4− | 1.4+ | 2006 11 19 | 704 | 0.2− | 0.6+ |
| 2001 11 20 | 704 | 0.1+ | 0.2+ | 2004 04 16 | E12 | 1.3− | 0.6+ | 2006 11 19 | 704 | 0.4− | 0.7+ |
| 2001 11 20 | 704 | 0.4− | 1.1+ | 2004 04 16 | E12 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 2001 11 20 | 704 | 0.6− | 0.2− | 2005 06 05 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2001 11 21 | 704 | 0.3− | 0.3− | 2005 06 05 | 691 | 0.3+ | 0.9+ | 2006 11 21 | 704 | (0.9− | 1.8+) |
| 2001 11 21 | 704 | 0.6− | 0.5− | 2005 06 05 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 704 | (1.1− | 1.6+) |
| 2001 11 21 | 704 | 0.1− | 0.3− | 2005 06 10 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | (1.9− | 1.2+) |
| 2001 11 21 | 704 | 0.4− | 0.6− | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 1.2− | 1.1+ |
| 2001 11 21 | 704 | 0.8− | 0.3− | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 1.3− | 1.0+ |
| 2001 11 24 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.9− | 0.4+ |
| 2001 11 24 | 704 | 1.1+ | 0.6− | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.6+ |
| 2001 11 24 | 704 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.8+ |
| 2001 11 24 | 704 | 0.8+ | 0.3− | 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2001 11 24 | 704 | 0.2− | 0.8− | 2006 10 19 | 703 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2001 12 09 | 644 | 0.2− | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2001 12 09 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2001 12 09 | 644 | 0.6+ | 0.2+ | 2006 10 21 | 704 | 0.3− | 0.2+ | 2006 11 23 | 703 | 0.3− | 0.3− |
| 2001 12 09 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 704 | 0.3+ | 0.4+ | 2006 11 23 | 703 | 0.2− | 0.2− |
| 2001 12 09 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 704 | 0.4− | 0.3+ | 2006 11 23 | 703 | 0.1− | 0.2− |
| 2001 12 09 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 704 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.5− | 0.1− |
| 2001 12 10 | 704 | 1.0+ | 0.8+ | 2006 10 21 | 704 | 0.4− | 0.2+ | | | | |
| 2001 12 10 | 704 | 0.6− | 1.4+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | | | |

**(140968)∗ 2001 VU$_{116}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.22106 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17726991 | $\omega$ | 346.14108 | | +0.89338618 | −0.44894325 | |
| $a$ | 3.1384318 | $\Omega$ | 40.54973 | | +0.41475706 | +0.80899137 | |
| $e$ | 0.1913438 | $i$ | 1.55467 | | +0.17273599 | +0.37945081 | |
| $P$ | 5.56 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.4+ | 0.3− | 2001 12 18 | 704 | 0.0 | 0.9+ | 2006 09 26 | 704 | 0.8+ | 1.0+ |
| 1995 09 18 | 691 | 0.2+ | 0.1+ | 2001 12 19 | 703 | 1.2− | 0.2+ | 2006 09 26 | 704 | (1.6+ | 0.7+) |
| 1995 09 18 | 691 | 0.4+ | 0.2− | 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 09 26 | 704 | 1.4+ | 1.5+ |
| 1995 09 27 | 691 | 0.0 | 0.7− | 2001 12 19 | 703 | 0.4− | 1.2+ | 2006 09 26 | 704 | (1.5+ | 0.3+) |
| 1995 09 27 | 691 | (0.6+ | 2.2−) | 2001 12 19 | 703 | 0.2− | 0.7− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1995 09 27 | 691 | 0.1+ | 0.3− | 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 1997 01 15 | 566 | 0.4+ | 0.4− | 2001 12 19 | 703 | 1.1− | 1.0− | 2006 09 26 | G96 | 0.4− | 0.3− |
| 1997 01 15 | 566 | 0.7+ | 0.4− | 2001 12 19 | 704 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 1997 01 15 | 566 | 0.3+ | 0.2− | 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.5+ |
| 2000 08 26 | 704 | 0.9− | 1.0− | 2001 12 20 | 704 | 0.4− | 0.2− | 2006 09 27 | 704 | 1.5+ | 0.8+ |
| 2000 08 26 | 704 | 0.2+ | 0.7+ | 2001 12 20 | 704 | 0.3− | 0.1− | 2006 09 27 | 704 | (0.6− | 2.7+) |
| 2000 08 26 | 704 | 0.1+ | 0.5+ | 2001 12 20 | 704 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.4+ |
| 2000 09 02 | 699 | 1.0− | 0.4− | 2001 12 20 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.5+ |
| 2000 09 02 | 699 | 0.5− | 0.7− | 2001 12 20 | 704 | 0.4− | 0.0 | 2006 09 28 | 704 | 0.6+ | 0.5+ |
| 2000 09 02 | 699 | (2.6− | 0.0 ) | 2002 01 14 | 704 | 1.0+ | 0.8+ | 2006 09 28 | 704 | 0.0 | 0.6+ |
| 2000 09 02 | 699 | 1.1− | 0.6+ | 2002 01 14 | 704 | 0.5+ | 1.1+ | 2006 09 28 | 704 | 0.1+ | 0.5+ |
| 2001 11 12 | 704 | 0.3− | 0.6+ | 2002 01 14 | 704 | 0.6− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.4− | 0.0 | 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.3− | 0.4+ | 2004 04 22 | 691 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.3− | 0.1+ | 2004 04 22 | 691 | 0.6+ | 0.6+ | 2006 09 30 | 704 | 0.4− | 1.3+ |
| 2001 11 12 | 704 | 0.6− | 0.2+ | 2004 05 13 | 691 | 0.4+ | 0.7+ | 2006 09 30 | 704 | 0.5+ | 0.9+ |
| 2001 11 17 | 291 | 0.1+ | 0.2+ | 2004 05 13 | 691 | 0.5+ | 0.6+ | 2006 09 30 | 704 | 0.3+ | 0.3+ |
| 2001 11 17 | 291 | 0.2− | 0.1+ | 2004 05 13 | 691 | 0.5+ | 0.6+ | 2006 09 30 | 704 | 0.8+ | 0.2− |
| 2001 11 17 | 291 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.4+ |
| 2001 11 19 | 704 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.4− | 0.6+ | 2006 09 30 | 608 | (0.7+ | 1.6−) |
| 2001 11 19 | 704 | 0.3+ | 0.7− | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 09 30 | 608 | (0.5+ | 1.8−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.3+ | 0.1− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 30 | 608 | (0.3+ | 1.7−) |
| 2001 11 21 | 704 | 0.3− | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2001 11 21 | 704 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2006 09 15 | 691 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 12 10 | 704 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2001 12 10 | 704 | 0.4− | 0.7− | 2006 09 17 | 704 | 0.5− | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2001 12 10 | 704 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.9− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2001 12 10 | 704 | 0.4− | 0.5− | 2006 09 17 | 704 | 1.0− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2001 12 10 | 704 | 0.4− | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2001 12 15 | 704 | 0.3− | 0.5+ | 2006 09 18 | 699 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 12 15 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 0.4− | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 12 17 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 12 17 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 12 17 | 691 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.9+ | 2006 11 27 | 703 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 1.1− | 0.6− |
| 2001 12 18 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 11 27 | 703 | 0.6− | 0.2− |
| 2001 12 18 | 704 | 0.1− | 0.5+ | 2006 09 26 | 704 | (1.6+ | 0.9+) | 2006 11 27 | 703 | 0.2− | 0.3+ |

**(140969)∗ 2001 VE$_{118}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.26438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18322709 | $\omega$ | 10.22272 | | +0.17062472 | −0.96962457 | |
| $a$ | 3.0700322 | $\Omega$ | 70.12311 | | +0.89036254 | +0.07553132 | |
| $e$ | 0.0762245 | $i$ | 10.74046 | | +0.42206843 | +0.23264395 | |
| $P$ | 5.38 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 28 | 691 | 0.4− | 0.2− | 2002 01 14 | 704 | 0.8− | 0.1+ | 2006 11 01 | 703 | 0.7− | 0.5+ |
| 1993 04 28 | 691 | 0.4+ | 0.8+ | 2002 01 14 | 704 | 0.6− | 0.1− | 2006 11 01 | 703 | 0.3− | 0.1+ |
| 1993 04 28 | 691 | 0.3+ | 0.3+ | 2002 01 14 | 704 | 0.9− | 0.2+ | 2006 11 01 | 703 | 0.5− | 0.7+ |
| 2001 11 12 | 704 | (0.2+ | 2.0−) | 2002 01 14 | 704 | (1.9− | 1.0+) | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.7+ | 0.4− | 2002 12 11 | 645 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.9+ | 0.2+ | 2002 12 11 | 645 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2001 11 19 | 704 | 1.1− | 1.0− | 2003 02 28 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2001 11 19 | 704 | 1.2− | 1.0− | 2003 02 28 | 704 | 0.3− | 1.1+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 0.0 | 0.4− | 2003 02 28 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.3+ | 2003 02 28 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2001 11 21 | 704 | (1.9− | 1.3+) | 2003 03 12 | 704 | 0.4+ | 1.1+ | 2006 11 13 | 104 | 0.2+ | 0.4+ |
| 2001 11 21 | 704 | 0.3− | 0.4+ | 2003 03 12 | 704 | 0.6+ | 0.9+ | 2006 11 13 | 104 | 0.3+ | 0.4+ |
| 2001 11 21 | 704 | 1.0− | 0.6+ | 2003 03 12 | 704 | 0.7+ | 0.3+ | 2006 11 13 | 104 | 0.3+ | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.4+ | 2003 03 25 | 644 | 0.5+ | 0.5+ | 2006 11 14 | 704 | 0.1− | 0.9+ |
| 2001 12 18 | 704 | 0.9+ | 0.2− | 2003 03 25 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.5− | 0.1+ |
| 2001 12 18 | 704 | 0.5+ | 0.7− | 2003 03 25 | 644 | 0.6+ | 0.1+ | 2006 11 14 | 704 | (0.4− | 1.8+) |
| 2001 12 18 | 704 | 0.1+ | 0.6− | 2003 04 04 | 704 | (0.7− | 1.6+) | 2006 11 14 | 704 | 0.8+ | 0.9+ |
| 2001 12 18 | 704 | (1.7+ | 1.1−) | 2003 04 04 | 704 | 1.1+ | 0.4+ | 2006 11 14 | 704 | 0.1− | 1.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.9− | 2003 04 04 | 704 | 0.3+ | 0.9+ | 2006 11 19 | 704 | 0.8− | 0.1− |
| 2001 12 19 | 704 | 0.4+ | 0.7− | 2003 04 04 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.4+ | 1.2− | 2005 08 04 | 644 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2001 12 19 | 704 | 0.5+ | 0.2− | 2005 08 04 | 644 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2001 12 20 | 704 | 1.2+ | 0.5− | 2005 08 04 | 644 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.0 | 1.2+ |
| 2001 12 20 | 704 | 0.9+ | 1.2+ | 2006 10 16 | 703 | 0.9− | 0.6+ | 2006 11 20 | 704 | 0.4− | 0.4− |
| 2001 12 20 | 704 | 1.5+ | 1.4− | 2006 10 16 | 703 | 0.9− | 0.2− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2001 12 20 | 704 | 0.6+ | 0.6− | 2006 10 16 | 703 | (0.5− | 1.6+) | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2002 01 08 | 704 | (1.5+ | 2.4+) | 2006 10 16 | 703 | 1.1− | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2002 01 08 | 704 | (1.3+ | 2.2+) | 2006 10 22 | 703 | 0.7+ | 0.3+ | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2002 01 08 | 704 | (1.5+ | 2.2+) | 2006 10 22 | 703 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.2− | 1.5+ |
| 2002 01 08 | 704 | (1.9+ | 2.3+) | 2006 10 22 | 703 | 0.9+ | 0.5+ | 2006 11 28 | 704 | 1.0− | 0.0 |
| 2002 01 08 | 704 | (1.7+ | 3.1+) | 2006 10 22 | 703 | 0.8+ | 0.2+ | 2006 11 28 | 704 | 0.8− | 0.1− |
| 2002 01 14 | 704 | 1.1− | 0.1+ | 2006 11 01 | 703 | (1.6− | 0.1−) | | | | |

**(140970)∗ 2001 VL$_{118}$ = 2000 SX$_{337}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23104)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.06743 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17018965 | $\omega$ | 17.90173 | | +0.20357792 | −0.97337043 | |
| $a$ | 3.2248830 | $\Omega$ | 60.46722 | | +0.88280941 | +0.13595709 | |
| $e$ | 0.1083623 | $i$ | 6.95687 | | +0.42332444 | +0.18456890 | |
| $P$ | 5.79 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 28 | 691 | 0.5+ | 0.6+ | 2001 12 19 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.0 |
| 1992 04 28 | 691 | 0.0 | 0.4+ | 2001 12 19 | 704 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.1+ |
| 1992 04 28 | 691 | 0.0 | 0.7+ | 2001 12 19 | 704 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| 2000 09 05 | 645 | 0.0 | 0.1+ | 2002 01 08 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.5+ |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.2− |
| 2000 09 25 | 608 | 1.6− | 0.3+ | 2002 01 08 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.0 | 1.1+ |
| 2000 09 25 | 608 | 0.8− | 0.8+ | 2002 01 08 | 704 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.5− | 0.2+ |
| 2000 09 25 | 608 | 0.6− | 1.4+ | 2002 01 14 | 704 | (1.4− | 4.7+) | 2006 09 22 | 704 | 0.5+ | 0.3+ |
| 2000 10 02 | 704 | 0.6− | 0.6+ | 2002 01 14 | 704 | (1.0− | 4.3+) | 2006 09 22 | 704 | 0.5− | 0.6+ |
| 2000 10 02 | 704 | 0.3+ | 0.0 | 2002 01 14 | 704 | (0.8− | 4.1+) | 2006 09 22 | 704 | 0.5− | 0.1+ |
| 2000 10 02 | 704 | 0.2+ | 0.0 | 2002 01 14 | 704 | (1.0− | 4.4+) | 2006 09 29 | 704 | 0.5− | 0.4+ |
| 2001 11 12 | 704 | 0.6− | 0.0 | 2002 01 14 | 704 | (0.7− | 3.4+) | 2006 09 29 | 704 | 0.4+ | 0.8+ |
| 2001 11 12 | 704 | 0.1− | 0.7+ | 2003 02 12 | 608 | 0.3+ | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.7+ |
| 2001 11 12 | 704 | 0.0 | 1.1+ | 2003 02 12 | 608 | 1.2+ | 0.3− | 2006 09 29 | 704 | (0.5+ | 2.0+) |
| 2001 11 12 | 704 | 0.2− | 0.5+ | 2003 02 12 | 608 | 0.2+ | 0.4− | 2006 09 30 | 704 | 0.4+ | 0.3− |
| 2001 11 19 | 704 | 0.7+ | 0.3+ | 2003 03 06 | 699 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.1− | 1.1− |
| 2001 11 19 | 704 | 0.7+ | 0.1+ | 2003 03 06 | 699 | 0.9+ | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.4+ | 0.1+ | 2003 03 06 | 699 | (2.2+ | 0.9−) | 2006 09 30 | 704 | 0.1+ | 1.1− |
| 2001 11 19 | 704 | 0.9+ | 0.3− | 2003 03 06 | 699 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.7+ |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2003 03 23 | 645 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2003 03 23 | 645 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 0.5+ | 0.1+ | 2004 06 09 | E12 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2001 11 21 | 704 | 0.5− | 0.0 | 2004 06 09 | E12 | 0.8+ | 0.5− | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2001 11 21 | 704 | 0.6+ | 0.1− | 2004 06 09 | E12 | 0.2+ | 1.0− | 2006 10 22 | 703 | 0.7− | 0.3+ |
| 2001 12 15 | 704 | 0.5− | 0.9− | 2004 06 09 | E12 | 0.8+ | 0.1− | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2001 12 15 | 704 | 0.0 | 0.4− | 2006 09 12 | 703 | 0.2− | 0.8− | 2006 10 22 | 703 | 0.7− | 1.0+ |
| 2001 12 15 | 704 | 0.4− | 0.5− | 2006 09 12 | 703 | 0.6− | 1.1− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.2− | 0.4+ | 2006 09 12 | 703 | 0.4+ | 0.4− | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2006 09 12 | 703 | 0.6+ | 1.5− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.3+ | 0.3− | | | | |

**(140971)∗ 2001 VY$_{118}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.62212 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17465939 | $\omega$ | 342.92544 | | +0.99372780 | −0.10916289 | |
| $a$ | 3.1696265 | $\Omega$ | 23.38252 | | +0.10840756 | +0.88717865 | |
| $e$ | 0.1037965 | $i$ | 3.50452 | | +0.02743825 | +0.44832745 | |
| $P$ | 5.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.0 | 0.5− | 2001 12 19 | 704 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1995 10 02 | 691 | 0.3+ | 0.4− | 2001 12 19 | 704 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1995 10 02 | 691 | 0.2+ | 0.5− | 2001 12 19 | 704 | (2.5+ | 1.2+) | 2006 09 27 | 704 | 0.1+ | 0.6+ |
| 2001 10 21 | 704 | 0.3− | 0.5+ | 2001 12 19 | 704 | 0.5+ | 0.3− | 2006 09 27 | 704 | (0.3+ | 2.3+) |
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.4+ | 0.9− | 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.6+ | 0.5+ |
| 2001 10 21 | 704 | 0.2− | 0.6+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | (1.2+ | 1.6+) |
| 2001 11 12 | 704 | (1.8− | 1.4+) | 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.6+ | 1.3+ |
| 2001 11 12 | 704 | 0.1+ | 0.6− | 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.1+ | 1.0− | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 09 28 | 704 | (0.5+ | 1.5+) |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2004 04 22 | 333 | 0.9+ | 0.1+ | 2006 09 28 | 704 | 0.9− | 0.4+ |
| 2001 11 19 | 704 | (0.9− | 1.6+) | 2004 04 22 | 333 | 0.2+ | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.7− | 1.4+ | 2004 04 22 | 333 | 0.1+ | 1.1+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 1.1− | 1.0+ | 2004 04 23 | 333 | 0.7+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.4− | 1.5+ | 2004 04 23 | 333 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.9+ | 0.3− |
| 2001 11 24 | 704 | 0.4− | 0.1− | 2004 04 25 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.5+ |
| 2001 11 24 | 704 | 0.1− | 0.8+ | 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.4+ |
| 2001 11 24 | 704 | 0.1− | 0.3+ | 2004 04 25 | 691 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2004 05 24 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.4− | 0.4+ | 2004 05 24 | 691 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | (0.9− | 2.2+) | 2004 05 24 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 11 24 | 704 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2001 11 24 | 704 | 0.7− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | 1.0− | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2001 12 15 | 704 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.5− | 1.1+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2001 12 15 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 704 | 0.8− | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2001 12 15 | 704 | 0.1− | 1.0+ | 2006 09 17 | 704 | (1.5− | 0.3−) | 2006 10 21 | 644 | 0.7− | 0.2+ |
| 2001 12 15 | 704 | 0.8+ | 0.7+ | 2006 09 17 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2001 12 18 | 704 | 0.0 | 0.1+ | 2006 09 17 | 704 | (1.6− | 1.1+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.2− |
| 2001 12 18 | 704 | 0.1− | 1.0+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.5− | 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2001 12 19 | 704 | 0.7+ | 0.7+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.7− | 0.3+ |

**(140972)∗ 2001 VF$_{120}$ = 2003 FK$_{20}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46919)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.19923 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18274790 | $\omega$ | 16.98829 | | +0.39506131 | −0.90815990 |
| $a$ | 3.0753966 | $\Omega$ | 49.97174 | | +0.82043841 | +0.28098479 |
| $e$ | 0.0798665 | $i$ | 10.41789 | | +0.41328850 | +0.31031137 |
| $P$ | 5.39 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 24 | 691 | 0.3+ | 0.5+ | 2003 03 26 | 704 | 0.3+ | 0.4− | 2006 10 21 | G96 | 0.2− | 0.0 |
| 1993 04 24 | 691 | 0.4+ | 0.3+ | 2004 04 30 | 691 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 1993 04 24 | 691 | 0.1+ | 0.6+ | 2004 04 30 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | (1.7+ | 0.4−) | 2004 04 30 | 691 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 11 12 | 704 | (1.7+ | 0.2−) | 2004 05 13 | 644 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.4− | 0.2− |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2004 05 13 | 644 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 11 12 | 704 | (2.3+ | 0.4+) | 2004 05 13 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.5− | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.7− | 2004 05 16 | 704 | 1.4+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.3+ | 1.2− | 2004 05 16 | 704 | 1.1+ | 1.3+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.1− | 0.3+ | 2004 05 16 | 704 | 0.5+ | 1.0+ | 2006 11 10 | 644 | 0.2− | 0.4+ |
| 2001 11 19 | 704 | 0.4+ | 0.1− | 2004 05 16 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.7− |
| 2001 11 19 | 704 | 0.1− | 0.7+ | 2004 06 11 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2001 11 19 | 704 | 0.3+ | 1.0+ | 2004 06 11 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2001 11 24 | 704 | (1.4+ | 1.5+) | 2004 06 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.8+ |
| 2001 11 24 | 704 | 0.0 | 0.8+ | 2004 06 17 | 691 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2001 11 24 | 704 | 0.2+ | 0.0 | 2004 06 17 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2001 11 24 | 704 | (0.4+ | 1.9+) | 2004 06 17 | 691 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.8+ |
| 2001 11 24 | 704 | 1.1− | 1.2+ | 2005 08 25 | E12 | 0.3+ | 0.7+ | 2006 11 14 | 704 | 0.3+ | 0.5+ |
| 2001 12 17 | 704 | 0.3− | 1.2− | 2005 08 25 | E12 | 0.4− | 1.0+ | 2006 11 14 | 704 | 0.0 | 0.9+ |
| 2001 12 17 | 704 | 0.4+ | 1.1− | 2006 09 30 | 703 | (1.3+ | 2.4+) | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.4+ | 1.2− | 2006 09 30 | 703 | 0.3− | 0.7+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.4+ | 0.5− | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 01 08 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 01 08 | 704 | 0.0 | 1.2− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 17 | 704 | 1.1− | 1.3+ |
| 2002 01 08 | 704 | 0.3+ | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2003 03 08 | 704 | 0.5+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2003 03 08 | 704 | 0.7− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.1− |
| 2003 03 08 | 704 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2003 03 08 | 704 | 0.9− | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.7+ |
| 2003 03 08 | 704 | 0.3− | 1.4+ | 2006 10 11 | 644 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.5− |
| 2003 03 08 | 644 | 0.3+ | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.6+ | 1.3+ |
| 2003 03 08 | 644 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.0 | 1.1+ |
| 2003 03 08 | 644 | 0.8+ | 0.7+ | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 20 | 704 | (0.8− | 1.6+) |
| 2003 03 23 | 644 | 0.6+ | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2003 03 23 | 644 | 0.7+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.6− |
| 2003 03 23 | 644 | 0.6+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 26 | 704 | 0.0 | 1.0+ |
| 2003 03 26 | 704 | 1.0+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 26 | 704 | 0.2− | 0.3+ |
| 2003 03 26 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 26 | 704 | 0.2+ | 0.7+ |
| 2003 03 26 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | | | |
| 2003 03 26 | 704 | 0.9+ | 0.9+ | 2006 10 21 | G96 | 0.1− | 0.0 | | | | |

**(140973)∗ 2001 VN$_{120}$ = 2003 FV$_{19}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46919)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.11635 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22820602 | $\omega$ | 246.49242 | | +0.71386448 | +0.65372964 |
| $a$ | 2.6520680 | $\Omega$ | 71.65516 | | −0.50624174 | +0.72947102 |
| $e$ | 0.1493469 | $i$ | 15.33786 | | −0.48385617 | +0.20126991 |
| $P$ | 4.32 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.5+ | 1.5+ | 2005 11 21 | 699 | 0.5− | 0.2+ | 2005 12 05 | G96 | 0.1+ | 0.1− |
| 1995 05 29 | 691 | 0.1+ | 0.7+ | 2005 11 21 | 703 | 0.4− | 0.1+ | 2005 12 05 | 699 | 0.7− | 0.4− |
| 1995 05 29 | 691 | 0.7+ | 0.2+ | 2005 11 21 | 703 | 0.3− | 0.1− | 2005 12 06 | 704 | 0.3− | 0.5+ |
| 2001 11 12 | 704 | 0.1+ | 0.4+ | 2005 11 21 | 703 | 0.2− | 0.3+ | 2005 12 06 | 704 | 0.0 | 0.5− |
| 2001 11 12 | 704 | 0.5− | 1.8+ | 2005 11 21 | 703 | 0.7− | 1.5+ | 2005 12 06 | 704 | 0.3− | 0.1− |
| 2001 11 12 | 704 | 1.0+ | 1.2+ | 2005 11 21 | 644 | 0.0 | 0.2+ | 2005 12 06 | 704 | 0.5+ | 0.1− |
| 2001 11 12 | 704 | (0.2− | 2.2+) | 2005 11 21 | 644 | 0.0 | 0.1− | 2005 12 06 | 704 | 0.4− | 0.4− |
| 2001 11 19 | 704 | 0.5+ | 0.8− | 2005 11 21 | 644 | 0.2+ | 0.0 | 2005 12 09 | 704 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 1.2+ | 1.2+ | 2005 11 28 | 699 | 0.5− | 0.5+ | 2005 12 09 | 704 | 0.1+ | 0.7+ |
| 2001 11 19 | 704 | 0.0 | 0.9− | 2005 11 28 | 699 | 1.2+ | 1.3+ | 2005 12 09 | 704 | 0.4− | 1.2+ |
| 2001 11 19 | 704 | 1.1+ | 0.9+ | 2005 11 28 | 699 | 0.4+ | 1.4+ | 2005 12 09 | 704 | 1.4− | 1.0+ |
| 2001 12 09 | 704 | 0.2− | 1.1− | 2005 11 28 | 703 | 0.3− | 0.6+ | 2005 12 10 | 699 | 0.6− | 0.3+ |
| 2001 12 09 | 704 | 0.1− | 1.2− | 2005 11 28 | 703 | 0.1− | 0.1+ | 2005 12 10 | 699 | 0.5+ | 0.3+ |
| 2001 12 09 | 704 | 0.1+ | 0.9− | 2005 11 28 | 703 | (1.4− | 4.3+) | 2005 12 10 | 699 | 0.5− | 0.6+ |
| 2001 12 09 | 704 | 1.2+ | 1.1− | 2005 11 30 | G96 | 0.3+ | 0.0 | 2005 12 10 | 699 | 0.3− | 0.7+ |
| 2001 12 17 | 704 | 0.8− | 0.4+ | 2005 11 30 | G96 | 0.2+ | 0.1− | 2005 12 21 | 699 | 0.3+ | 0.2+ |
| 2001 12 17 | 704 | 1.2− | 0.4+ | 2005 11 30 | G96 | 0.0 | 0.3− | 2005 12 21 | 699 | 0.3− | 0.6− |
| 2001 12 17 | 704 | 0.6− | 1.1+ | 2005 12 01 | 695 | 0.3− | 0.0 | 2005 12 21 | 699 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 0.3− | 0.3+ | 2005 12 01 | 704 | 0.2+ | 0.6+ | 2005 12 24 | 703 | 0.3− | 0.3+ |
| 2001 12 17 | 704 | 0.2+ | 0.6+ | 2005 12 01 | 704 | 0.5− | 0.3+ | 2005 12 24 | 703 | 0.4+ | 0.3− |
| 2001 12 19 | 644 | 0.5− | 0.7− | 2005 12 01 | 704 | 0.3+ | 0.2− | 2005 12 24 | 703 | 0.2+ | 0.7+ |
| 2001 12 19 | 644 | 0.2− | 0.9− | 2005 12 01 | 695 | 0.1+ | 0.0 | 2005 12 24 | 703 | 1.0− | 0.5+ |
| 2001 12 19 | 644 | 0.3− | 0.6− | 2005 12 01 | 704 | 0.2+ | 0.5+ | 2005 12 25 | G96 | 0.2+ | 0.4− |
| 2003 03 22 | 644 | 0.0 | 0.5− | 2005 12 01 | 704 | 0.4− | 0.4+ | 2005 12 25 | G96 | 0.4+ | 0.4− |
| 2003 03 22 | 644 | 0.2− | 0.5− | 2005 12 01 | 695 | 0.3+ | 0.0 | 2005 12 25 | G96 | 0.1+ | 0.4− |
| 2003 03 22 | 644 | 0.2+ | 0.4− | 2005 12 04 | 704 | 0.3+ | 0.2− | 2005 12 25 | G96 | 0.1+ | 0.4− |
| 2003 03 26 | 704 | 0.0 | 0.8+ | 2005 12 04 | 704 | 0.6+ | 0.1− | 2006 01 04 | 699 | 0.2− | 0.0 |
| 2003 03 26 | 704 | 0.9+ | 1.2+ | 2005 12 04 | 704 | 0.1+ | 0.2− | 2006 01 04 | 699 | 0.3− | 0.4+ |
| 2003 03 26 | 704 | 0.1+ | 0.1− | 2005 12 04 | G96 | 0.1+ | 0.1− | 2006 01 04 | 699 | 0.1− | 0.9+ |
| 2003 04 07 | 644 | 0.6− | 0.5− | 2005 12 04 | G96 | 0.2+ | 0.1+ | 2006 01 04 | 699 | 0.8− | 0.4− |
| 2003 04 07 | 644 | 0.4− | 0.7− | 2005 12 04 | G96 | 0.3+ | 0.2− | 2006 01 05 | G96 | 0.1+ | 0.3− |
| 2003 04 07 | 644 | 0.3− | 0.5− | 2005 12 04 | G96 | 0.4+ | 0.2− | 2006 01 05 | G96 | 0.1+ | 0.4− |
| 2005 10 28 | 704 | 0.6− | 0.8− | 2005 12 05 | 703 | 1.9− | 1.1+ | 2006 01 05 | G96 | 0.2+ | 0.6− |
| 2005 10 28 | 704 | 0.6− | 0.9− | 2005 12 05 | 703 | 0.0 | 1.3+ | 2006 01 05 | G96 | 0.2+ | 0.4− |
| 2005 10 28 | 704 | 0.4+ | 0.3+ | 2005 12 05 | G96 | 0.7+ | 1.1+ | 2006 01 25 | G96 | 0.1− | 0.5− |
| 2005 10 28 | 704 | 0.7− | 0.7− | 2005 12 05 | G96 | 0.0 | 0.2− | 2006 01 25 | G96 | 0.1− | 0.5− |
| 2005 10 28 | 704 | 0.1− | 0.4− | 2005 12 05 | 703 | 1.8+ | 0.6+ | 2006 01 25 | G96 | 0.0 | 0.4− |
| 2005 11 06 | 704 | 0.1− | 0.3+ | 2005 12 05 | G96 | 0.2− | 0.2− | 2006 01 25 | G96 | 0.1− | 0.1− |
| 2005 11 06 | 704 | 0.1+ | 0.5+ | 2005 12 05 | 699 | 0.3+ | 0.5+ | 2006 03 04 | G96 | 0.3+ | 0.2− |
| 2005 11 06 | 704 | 0.6− | 0.2+ | 2005 12 05 | 703 | (0.1− | 2.2−) | 2006 03 04 | G96 | 0.5+ | 0.2− |
| 2005 11 06 | 704 | 0.3− | 0.5+ | 2005 12 05 | 699 | 0.0 | 0.3+ | 2006 03 04 | G96 | 0.3+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 21 | 699 | 0.3− | 0.1− | 2005 12 05 | G96 | 0.2+ | 0.1− | 2006 03 04 | G96 | 0.1+ | 0.2− |
| 2005 11 21 | 699 | 0.2− | 0.3− | 2005 12 05 | G96 | 0.1− | 0.2− | | | | |
| 2005 11 21 | 699 | 0.5− | 0.9+ | 2005 12 05 | G96 | 0.3+ | 0.1− | | | | |

**(140974)∗ 2001 VW$_{120}$**

Discovered 2001 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.93125 | | (2000.0) | | | |
| $n$ | 0.18828709 | $\omega$ | 359.38498 | | +0.23226688 | −0.95302587 |
| $a$ | 3.0147805 | $\Omega$ | 77.17207 | | +0.89323999 | +0.12989846 |
| $e$ | 0.1034253 | $i$ | 11.50086 | | +0.38493430 | +0.27362032 |
| $P$ | 5.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 28 | 327 | 0.6+ | 0.3− | 2001 12 22 | 704 | 0.9− | 1.3+ | 2005 09 02 | 644 | 0.4− | 0.7+ |
| 1997 01 28 | 327 | 0.3− | 0.4+ | 2001 12 22 | 704 | 0.5+ | 1.1+ | 2005 09 02 | 644 | 0.1+ | 0.6+ |
| 1997 01 28 | 327 | 0.5+ | 0.0 | 2002 01 08 | 644 | 0.3+ | 0.8− | 2005 09 02 | 644 | 0.2+ | 0.6+ |
| 1998 04 21 | 704 | 0.9− | 0.5− | 2002 01 08 | 644 | 0.3+ | 1.0− | 2006 11 11 | 691 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 1.3− | 1.0− | 2002 01 08 | 704 | 0.2+ | 1.1+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 1998 04 21 | 704 | 0.8+ | 1.5− | 2002 01 08 | 704 | (1.6+ | 0.3+) | 2006 11 11 | 691 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 1.9− | 0.2+ | 2002 01 08 | 644 | 0.5+ | 1.0− | 2006 11 15 | 691 | 0.3− | 0.0 |
| 1998 05 26 | 691 | 0.5− | 0.0 | 2002 01 08 | 704 | 0.9+ | 0.8+ | 2006 11 15 | 691 | 0.2− | 0.0 |
| 1998 05 26 | 691 | 0.3− | 0.2− | 2002 01 08 | 704 | 1.1+ | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 1998 05 26 | 691 | 0.1− | 0.1− | 2002 03 08 | 557 | 0.7+ | 0.7− | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2001 11 12 | 704 | 0.7+ | 0.2+ | 2003 03 26 | 644 | 0.8+ | 0.3+ | 2006 11 18 | 704 | 0.9+ | 0.0 |
| 2001 11 12 | 704 | 0.7− | 1.0+ | 2003 03 26 | 644 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.2+ | 1.1+ |
| 2001 11 12 | 704 | 0.5− | 0.2+ | 2003 03 26 | 644 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2003 03 26 | 644 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.8+ |
| 2001 11 12 | 704 | 1.2− | 0.0 | 2003 03 26 | 644 | 0.6+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 0.1+ | 0.5+ | 2003 03 26 | 644 | 0.2+ | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 0.9+ | 0.5− | 2003 04 01 | 645 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.8− | 2003 04 01 | 645 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.7− |
| 2001 11 19 | 704 | 0.2− | 1.3− | 2003 04 09 | 704 | 1.3+ | 0.5+ | 2006 11 21 | 704 | 0.6− | 0.6− |
| 2001 11 24 | 704 | 0.5− | 0.7− | 2003 04 09 | 704 | 0.9+ | 1.1+ | 2006 11 21 | 704 | 0.9− | 0.4+ |
| 2001 11 24 | 704 | 0.4− | 0.9− | 2003 04 09 | 704 | 0.4+ | 0.8+ | 2006 11 21 | 704 | 0.8+ | 0.6− |
| 2001 11 24 | 704 | 0.2+ | 0.3+ | 2003 04 09 | 704 | 0.4+ | 1.4+ | 2006 11 21 | 704 | 1.0+ | 0.2− |
| 2001 11 24 | 704 | 1.2− | 0.1− | 2003 04 09 | 704 | 0.4+ | 0.6+ | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2001 12 17 | 704 | 0.5+ | 0.5− | 2005 08 28 | E12 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.4− | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 0.8− | 2005 08 28 | E12 | 0.4+ | 1.4− | 2006 11 27 | 691 | 0.4− | 0.1+ |
| 2001 12 17 | 704 | 0.7+ | 0.7− | 2005 08 28 | E12 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2005 08 28 | E12 | 0.3− | 0.3− | 2006 12 01 | 704 | 0.4+ | 0.8+ |
| 2001 12 17 | 704 | 0.3+ | 0.6− | 2005 09 02 | 644 | 0.1+ | 0.7+ | 2006 12 01 | 704 | 0.1+ | 0.0 |
| 2001 12 22 | 704 | 0.1+ | 0.5+ | 2005 09 02 | 644 | 0.1+ | 0.7+ | 2006 12 01 | 704 | 1.2+ | 0.2+ |
| 2001 12 22 | 704 | 0.4− | 1.0+ | 2005 09 02 | 644 | 0.0 | 0.8+ | | | | |

**(140975)∗ 2001 VM$_{121}$**

Discovered 2001 Nov. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.77728 | | (2000.0) | | | |
| $n$ | 0.19196773 | $\omega$ | 259.92740 | | −0.07432871 | −0.99647936 |
| $a$ | 2.9761209 | $\Omega$ | 194.50615 | | +0.96483001 | −0.06202569 |
| $e$ | 0.2328849 | $i$ | 8.90712 | | +0.25214735 | −0.05640664 |
| $P$ | 5.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1− | 0.1+ | 2001 12 15 | 704 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2000 09 03 | 645 | 0.1− | 0.1+ | 2001 12 15 | 704 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 1.3− | 0.4− | 2003 04 07 | 291 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.4− | 0.3+ |
| 2001 10 17 | 704 | 0.0 | 1.1+ | 2003 04 07 | 291 | 0.5+ | 0.7+ | 2006 10 19 | 691 | 0.5− | 0.3+ |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2003 04 07 | 291 | 0.3+ | 0.9+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.2− | 0.6+ | 2003 04 25 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 10 19 | 608 | 0.0 | 0.7− | 2003 04 25 | 691 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 10 19 | 608 | 0.5− | 0.6− | 2003 04 25 | 691 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2001 10 19 | 608 | 0.3+ | 0.6− | 2003 04 29 | 291 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 11 15 | 644 | 0.7+ | 0.2− | 2003 04 29 | 291 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 11 15 | 644 | 0.8+ | 0.2− | 2003 04 29 | 291 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2001 11 15 | 644 | 1.3+ | 0.1+ | 2005 07 15 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2001 11 20 | 608 | (0.8+ | 2.0+) | 2005 07 15 | 691 | 0.4− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2001 11 20 | 608 | 0.2+ | 1.1+ | 2005 07 15 | 691 | 0.6+ | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2001 11 20 | 608 | 0.5+ | 1.0+ | 2006 09 30 | 703 | 0.6− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 12 07 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.4+ | 1.1− | 2006 11 11 | 691 | 0.4+ | 0.3− |
| 2001 12 07 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 1.1+ | 0.4− | 2006 11 11 | 691 | 0.3+ | 0.3− |
| 2001 12 07 | 704 | 0.4− | 1.1+ | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.2+ | 0.3+ |
| 2001 12 07 | 704 | 0.8+ | 0.9+ | 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.5− | 0.0 |
| 2001 12 07 | 704 | 0.9− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.5− | 0.6+ |
| 2001 12 09 | 699 | (0.1− | 2.0+) | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.6+ | 1.2− |
| 2001 12 09 | 699 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.4− |
| 2001 12 09 | 699 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.7− |
| 2001 12 09 | 699 | 0.4− | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.6+ |
| 2001 12 14 | 704 | 0.1+ | 1.2+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.6+ |
| 2001 12 14 | 704 | 0.0 | 1.1+ | 2006 10 15 | 691 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.6− | 0.5− |
| 2001 12 14 | 704 | 0.0 | 1.0+ | 2006 10 15 | 691 | 0.5+ | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2001 12 14 | 704 | 0.5− | 1.2+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2001 12 15 | 704 | 0.1+ | 1.4+ | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2001 12 15 | 704 | 1.3− | 1.3+ | 2006 10 17 | G96 | 0.6+ | 0.5− | 2006 11 22 | G96 | 0.3+ | 0.3− |

**(140976)∗ 2001 VS$_{121}$**

Discovered 2001 Nov. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.17159 | | (2000.0) | | | |
| $n$ | 0.17993270 | $\omega$ | 1.23747 | | −0.06495006 | −0.97339562 |
| $a$ | 3.1073916 | $\Omega$ | 92.51685 | | +0.91364501 | −0.14655751 |
| $e$ | 0.1327885 | $i$ | 12.70579 | | +0.40129078 | +0.17613024 |
| $P$ | 5.48 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.2− | 0.5+ | 2001 12 15 | 704 | 0.7− | 0.5+ | 2003 03 08 | 644 | 0.4+ | 0.9+ |
| 2001 10 17 | 704 | 0.5− | 0.6+ | 2001 12 15 | 704 | 0.7+ | 0.7+ | 2003 03 08 | 644 | 0.4+ | 0.7+ |
| 2001 10 17 | 704 | 0.2− | 0.9− | 2001 12 15 | 704 | 1.1− | 0.4+ | 2003 03 13 | 704 | 0.1− | 0.4− |
| 2001 10 17 | 704 | (0.3− | 2.2−) | 2001 12 15 | 704 | 0.9− | 0.4+ | 2003 03 13 | 704 | 0.2− | 0.4− |
| 2001 10 20 | 704 | 1.1− | 0.6+ | 2001 12 15 | 704 | 0.3− | 0.6+ | 2003 03 13 | 704 | 1.0− | 1.0+ |
| 2001 10 20 | 704 | (1.0− | 1.6+) | 2001 12 15 | 704 | 0.6− | 1.1+ | 2003 03 13 | 704 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.2− | 0.2+ | 2001 12 15 | 704 | 0.8− | 0.6+ | 2003 03 22 | 644 | 0.0 | 0.2− |
| 2001 11 15 | 644 | 0.8− | 0.4+ | 2001 12 15 | 704 | 1.0− | 0.6+ | 2003 03 22 | 644 | 0.3− | 0.0 |
| 2001 11 15 | 644 | 0.3− | 0.3+ | 2001 12 15 | 704 | 0.5− | 0.2+ | 2003 03 22 | 644 | 0.3− | 0.0 |
| 2001 11 15 | 644 | 0.2− | 0.3+ | 2001 12 15 | 704 | 0.7− | 0.1− | 2004 04 14 | 691 | 0.1+ | 0.3+ |
| 2001 11 20 | 608 | 0.2+ | 0.4− | 2001 12 15 | 704 | 0.1− | 0.8+ | 2004 04 14 | 691 | 0.0 | 0.4+ |
| 2001 11 20 | 608 | 0.2+ | 0.1− | 2001 12 15 | 704 | 1.0− | 0.0 | 2004 04 14 | 691 | 0.3− | 0.3+ |
| 2001 11 20 | 608 | 0.3+ | 0.1+ | 2001 12 18 | 644 | 0.2− | 0.7+ | 2004 04 16 | 644 | 0.2− | 0.2+ |
| 2001 12 09 | 699 | 0.1+ | 0.2+ | 2001 12 18 | 644 | 0.2− | 0.7+ | 2004 04 16 | 644 | 0.2+ | 0.6+ |
| 2001 12 09 | 699 | 0.0 | 0.1− | 2001 12 18 | 644 | 0.3− | 0.7+ | 2004 04 16 | 644 | 0.2+ | 0.3+ |
| 2001 12 09 | 699 | 1.0− | 0.4+ | 2002 01 08 | 644 | 0.2+ | 0.4+ | 2004 05 09 | 691 | 0.3+ | 0.5+ |
| 2001 12 09 | 699 | 1.3+ | 0.0 | 2002 01 08 | 644 | 0.2+ | 0.2+ | 2004 05 09 | 691 | 0.1+ | 0.4+ |
| 2001 12 11 | 704 | 0.1+ | 0.5+ | 2002 01 08 | 644 | 0.1− | 0.1+ | 2004 05 09 | 691 | 0.3+ | 0.6+ |
| 2001 12 11 | 704 | 0.2− | 0.3+ | 2003 01 10 | 704 | 0.2+ | 0.8− | 2004 05 14 | 599 | 0.1+ | 1.1− |
| 2001 12 11 | 704 | 0.3+ | 0.1+ | 2003 01 10 | 704 | 0.4+ | 1.3− | 2004 05 14 | 599 | 0.9− | 0.3+ |
| 2001 12 11 | 704 | 0.2− | 0.5+ | 2003 01 10 | 704 | 0.2− | 0.4− | 2004 05 14 | 599 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 0.3− | 0.7+ | 2003 01 10 | 704 | 0.8+ | 0.1− | 2004 05 20 | 691 | 0.4+ | 0.8+ |
| 2001 12 14 | 704 | (1.5+ | 1.6+) | 2003 02 02 | 699 | 0.3+ | 0.1+ | 2004 05 20 | 691 | 0.6+ | 0.9+ |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2003 02 02 | 699 | 0.2+ | 0.8− | 2004 05 20 | 691 | 0.6+ | 0.9+ |
| 2001 12 14 | 704 | (0.7+ | 1.7+) | 2003 02 02 | 699 | 0.5− | 0.7− | 2006 09 25 | 703 | 1.0− | 0.9− |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2003 02 02 | 699 | 0.5+ | 0.8− | 2006 09 25 | 703 | (1.6+ | 0.6−) |
| 2001 12 14 | 704 | 1.3+ | 1.3+ | 2003 03 08 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 703 | 0.5− | 0.6+ |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2003 03 08 | 704 | 0.9− | 0.3+ | 2006 09 25 | 703 | 0.5− | 0.6+ |
| 2001 12 14 | 704 | 1.2+ | 1.3+ | 2003 03 08 | 704 | 0.9+ | 0.6+ | 2006 10 09 | 644 | 0.1− | 0.6+ |
| 2001 12 14 | 704 | 0.1− | 0.4+ | 2003 03 08 | 704 | 0.4− | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.5+ |
| 2001 12 14 | 704 | (0.9+ | 1.7+) | 2003 03 08 | 704 | 1.5+ | 1.2+ | 2006 10 09 | 644 | 0.4− | 0.5+ |
| 2001 12 14 | 704 | 0.2+ | 0.5+ | 2003 03 08 | 704 | (0.5+ | 1.9−) | 2006 10 24 | 644 | 0.5+ | 0.7+ |
| 2001 12 15 | 704 | 0.1+ | 0.0 | 2003 03 08 | 704 | 0.9− | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.4+ |
| 2001 12 15 | 704 | 0.7− | 0.8+ | 2003 03 08 | 644 | 0.4+ | 0.9+ | 2006 10 24 | 644 | 0.0 | 0.6+ |

**(140977)∗ 2001 VG$_{122}$**

Discovered 2001 Nov. 13 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.55880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17860000 | $\omega$ | 204.45473 | | +0.84501932 | | −0.53025840 |
| $a$ | 3.1228304 | $\Omega$ | 188.61211 | | +0.53421735 | | +0.84281652 |
| $e$ | 0.1361416 | $i$ | 27.46086 | | +0.02354092 | | −0.09212137 |
| $P$ | 5.52 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.4− | 0.8− | 2006 08 29 | 703 | 0.6− | 0.1+ | 2006 09 27 | 704 | (1.0+ | 2.9+) |
| 1995 08 28 | 691 | 0.1− | 0.6− | 2006 08 29 | 703 | 0.5+ | 0.6+ | 2006 09 27 | 704 | (1.1+ | 3.0+) |
| 1995 08 28 | 691 | 0.1+ | 0.7− | 2006 08 29 | 703 | 0.7− | 0.7+ | 2006 09 27 | 704 | (1.2+ | 3.0+) |
| 1998 03 29 | 704 | 0.1− | 1.1− | 2006 08 29 | 699 | 0.4+ | 0.2+ | 2006 09 27 | 704 | (1.4+ | 2.9+) |
| 1998 03 29 | 704 | 1.6− | 0.7− | 2006 08 29 | 699 | 0.6− | 0.1+ | 2006 09 27 | 704 | (1.2+ | 3.0+) |
| 1998 03 29 | 704 | 0.9− | 2.0+ | 2006 08 29 | 699 | 0.4− | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 1998 03 29 | 704 | (4.2− | 0.8−) | 2006 08 29 | 699 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.8+ | 0.0 |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.3− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.1− |
| 2000 09 01 | 704 | 0.4+ | 0.3− | 2006 08 30 | 704 | 0.7− | 0.6+ | 2006 09 29 | 704 | 0.5+ | 0.2− |
| 2000 09 01 | 704 | 1.2− | 0.0 | 2006 08 30 | 704 | 0.7− | 0.2+ | 2006 10 01 | 704 | 0.6+ | 0.0 |
| 2000 09 01 | 704 | 1.0+ | 0.3− | 2006 08 30 | 704 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.0 |
| 2000 09 01 | 704 | 0.3+ | 0.3+ | 2006 08 31 | 704 | 0.3− | 0.0 | 2006 10 01 | 704 | 1.2+ | 0.2− |
| 2001 10 11 | 704 | 1.5+ | 1.3− | 2006 08 31 | 704 | 0.8− | 0.9− | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2001 10 11 | 704 | 1.0+ | 0.5− | 2006 08 31 | 704 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.4− | 0.0 |
| 2001 10 11 | 704 | 0.6+ | 1.0− | 2006 08 31 | 704 | 0.9− | 0.7+ | 2006 10 02 | 691 | 0.2+ | 0.2+ |
| 2001 10 11 | 704 | (1.4+ | 1.5−) | 2006 08 31 | 704 | 0.2− | 1.5+ | 2006 10 02 | 691 | 0.3+ | 0.4+ |
| 2001 10 11 | 704 | 0.5+ | 1.3− | 2006 08 31 | 704 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.5+ | 0.3+ |
| 2001 11 13 | 608 | 0.9+ | 0.6− | 2006 08 31 | 704 | 0.5+ | 0.7− | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2001 11 13 | 608 | 0.4+ | 0.5− | 2006 08 31 | 704 | 0.9− | 0.7− | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2001 11 13 | 608 | 0.2− | 0.3− | 2006 08 31 | 704 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2001 11 17 | 699 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.5− | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2001 11 17 | 699 | 0.3− | 0.3− | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 11 17 | 699 | 0.5− | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 11 17 | 699 | 0.2− | 0.2+ | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 11 19 | 608 | 0.7− | 0.9+ | 2006 09 15 | 704 | 0.7− | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.9+ |
| 2001 11 19 | 608 | 0.7− | 0.8+ | 2006 09 15 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.8− | 0.4− |
| 2001 11 19 | 608 | 0.5− | 0.7+ | 2006 09 15 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2002 01 12 | 644 | 0.4+ | 0.9+ | 2006 09 15 | 704 | 0.6+ | 0.3− | 2006 10 16 | 703 | (2.0− | 0.5+) |
| 2002 01 12 | 644 | 0.3+ | 0.8+ | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2002 01 12 | 644 | 0.8+ | 0.3+ | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.7− | 1.2+ |
| 2003 02 07 | 644 | 0.8+ | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.6− | 0.9+ |
| 2003 02 07 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2003 02 07 | 644 | 0.6− | 0.0 | 2006 09 17 | 703 | 0.1− | 0.9− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2003 03 29 | 699 | (4.1+ | 1.9+) | 2006 09 17 | 703 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2003 03 29 | 699 | (0.2+ | 1.5+) | 2006 09 17 | 703 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2003 03 29 | 699 | 0.1− | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2003 03 29 | 699 | 0.6− | 0.3+ | 2006 09 18 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2004 04 23 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 704 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.7+ |
| 2004 04 23 | 704 | 0.3+ | 1.1+ | 2006 09 18 | 704 | (1.8+ | 0.2+) | 2006 10 23 | 704 | 0.1+ | 0.6− |
| 2004 04 23 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.2+ | 2006 10 23 | 704 | 0.2+ | 0.1− |
| 2004 04 23 | 704 | 0.9+ | 0.4− | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.5+ | 0.5+ |
| 2006 08 24 | 704 | 0.4+ | 0.4− | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 11 10 | 704 | (0.6+ | 1.8+) |
| 2006 08 24 | 704 | 1.4− | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.6− | 2006 11 10 | 704 | (0.1+ | 1.8+) |
| 2006 08 24 | 704 | 0.8− | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.1− | 2006 11 10 | 704 | 0.4+ | 0.6− |
| 2006 08 24 | 704 | 0.4− | 1.3+ | 2006 09 21 | 704 | 0.5+ | 0.7+ | 2006 11 10 | 704 | 1.0+ | 0.2+ |
| 2006 08 26 | 704 | 0.4− | 0.1+ | 2006 09 21 | 704 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.9− | 1.6+ |
| 2006 08 26 | 704 | 0.1− | 0.2+ | 2006 09 21 | 704 | 0.5− | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2006 08 26 | 704 | 0.3− | 0.0 | 2006 09 21 | A50 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.5+ | 0.9+ |
| 2006 08 29 | 703 | 0.5− | 0.1+ | 2006 09 21 | A50 | 0.4− | 0.3− | 2006 11 17 | 704 | 1.0+ | 0.1+ |

**(140978)∗ 2001 VP$_{122}$**

Discovered 2001 Nov. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.52468 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19096861 | $\omega$ | 171.48400 | | +0.96494555 | | +0.26198848 |
| $a$ | 2.9864922 | $\Omega$ | 173.26701 | | −0.24793489 | | +0.92941771 |
| $e$ | 0.1909679 | $i$ | 7.62660 | | −0.08607190 | | +0.25989372 |
| $P$ | 5.16 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 08 | 691 | 0.1− | 0.0 | 2001 11 24 | 704 | 0.2+ | 0.6− | 2006 09 22 | 704 | 0.4+ | 0.2+ |
| 1991 12 08 | 691 | 0.2+ | 0.5− | 2001 11 24 | 704 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.3+ |
| 1991 12 08 | 691 | 0.2− | 0.4− | 2001 11 24 | 704 | (0.4− | 1.8−) | 2006 09 26 | 704 | 0.2+ | 0.4− |
| 1996 12 12 | 691 | 0.0 | 0.5− | 2001 12 07 | 704 | 1.3+ | 0.2+ | 2006 09 26 | 704 | (0.1+ | 1.6+) |
| 1996 12 12 | 691 | 0.2− | 0.0 | 2001 12 07 | 704 | 0.5+ | 0.9− | 2006 09 26 | 704 | 0.9+ | 0.0 |
| 1996 12 12 | 691 | 0.0 | 0.3+ | 2001 12 07 | 704 | 1.3+ | 0.7− | 2006 09 26 | 704 | 0.1− | 0.4+ |
| 2001 09 17 | 704 | 0.5− | 0.7+ | 2003 01 27 | 644 | 0.7− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.5+ |
| 2001 09 17 | 704 | 0.1− | 0.2+ | 2003 01 27 | 644 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 2001 09 17 | 704 | 0.7+ | 0.2− | 2003 01 27 | 644 | 0.3+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.6+ |
| 2001 09 17 | 699 | 0.5− | 0.6− | 2004 03 26 | 691 | 0.4+ | 1.1+ | 2006 09 30 | 703 | 0.1+ | 0.8− |
| 2001 09 17 | 704 | 0.9+ | 0.8+ | 2004 03 26 | 691 | 0.2+ | 0.8+ | 2006 10 01 | 704 | 0.1− | 0.9+ |
| 2001 09 17 | 699 | 0.4− | 0.9+ | 2004 03 26 | 691 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.7− | 1.1+ |
| 2001 09 17 | 704 | 0.4+ | 0.4+ | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.5+ |
| 2001 09 17 | 699 | 1.4− | 0.9− | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 2001 09 17 | 699 | 1.0− | 0.2+ | 2005 06 14 | 691 | 0.1− | 0.2+ | 2006 10 01 | 704 | (1.6+ | 0.9+) |
| 2001 09 27 | 644 | 0.3− | 0.5− | 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2001 09 27 | 644 | 0.5− | 0.5− | 2005 07 04 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2001 09 27 | 644 | 1.1− | 0.5− | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 10 13 | 699 | 0.5+ | 0.5+ | 2006 08 19 | 699 | 1.2− | 1.0+ | 2006 10 15 | 703 | 0.7+ | 0.6− |
| 2001 10 13 | 699 | 0.1− | 0.8+ | 2006 08 19 | 699 | 0.1− | 0.8− | 2006 10 15 | 703 | 0.4− | 0.7− |
| 2001 10 13 | 699 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.0 | 1.0+ | 2006 10 15 | 703 | 0.2+ | 0.6+ |
| 2001 10 13 | 699 | 0.8+ | 0.9+ | 2006 08 19 | 699 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.3+ | 0.2− |
| 2001 10 17 | 704 | 0.1+ | 1.1+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 0.8− | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.2+ | 1.0+ | 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.2+ | 0.6+ |
| 2001 10 17 | 704 | 0.0 | 0.8+ | 2006 09 16 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2001 10 24 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.8+ | 0.2− |
| 2001 10 24 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.6− | 0.6+ | 2006 10 22 | 703 | 0.5− | 0.8− |
| 2001 10 24 | 644 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.8+ | 0.9+ |
| 2001 11 15 | 644 | 0.1− | 0.8+ | 2006 09 16 | 704 | 1.4− | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.4− |
| 2001 11 15 | 644 | 0.0 | 0.6+ | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.9+ | 1.1+ |
| 2001 11 15 | 644 | 0.5+ | 1.4+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 11 17 | 704 | 1.4+ | 0.4− | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 11 17 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 11 17 | 704 | (2.1+ | 0.2+) | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2001 11 19 | 608 | 0.8− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2001 11 19 | 608 | 0.6− | 0.3+ | 2006 09 19 | 704 | 0.3+ | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2001 11 19 | 608 | 0.5− | 0.3+ | 2006 09 19 | 704 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 11 24 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 704 | 0.5− | 0.4− | 2006 10 27 | 704 | 0.6− | 1.3+ |
| 2001 11 24 | 704 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.5+ | 0.2− | 2006 10 27 | 704 | 1.4− | 0.1− |
| 2001 11 24 | 704 | 0.5− | 0.1+ | 2006 09 22 | 704 | 0.5+ | 0.3− | 2006 10 27 | 704 | 0.7− | 0.3− |
| 2001 11 24 | 704 | 0.2− | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.5− | 2006 10 27 | 704 | 0.5+ | 0.4+ |
| 2001 11 24 | 704 | 0.6− | 0.3+ | 2006 09 22 | 704 | 0.5− | 1.2+ | | | | |

**(140979)∗ 2001 VQ$_{125}$ = 2005 LJ$_1$**

Discovered 2001 Nov. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 85244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.48575 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17896984 | $\omega$ | 57.05913 | | +0.39387386 | | +0.89952528 |
| $a$ | 3.1185268 | $\Omega$ | 237.26648 | | −0.90038418 | | +0.33623131 |
| $e$ | 0.1845816 | $i$ | 12.98347 | | −0.18485592 | | +0.27893149 |
| $P$ | 5.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 699 | 0.5− | 1.0+ | 2001 11 19 | 704 | (2.2− | 0.9−) | 2006 08 29 | 699 | 0.8− | 0.8− |
| 2000 07 10 | 699 | 1.3− | 0.2+ | 2001 12 08 | 691 | 0.5− | 0.2− | 2006 08 29 | 699 | 0.0 | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 699 | 0.8− | 0.7+ | 2001 12 08 | 691 | 0.3− | 0.0 | 2006 08 29 | 699 | 0.4+ | 0.1+ | | |
| 2000 07 10 | 699 | 0.8− | 0.7+ | 2001 12 08 | 691 | 0.3− | 0.3+ | 2006 08 29 | 699 | 0.3+ | 0.0 | | |
| 2000 08 03 | 704 | 0.6+ | 2.0+ | 2005 01 19 | 809 | 0.3− | 0.4+ | 2006 09 16 | 703 | (4.1+ | 5.9+) | | |
| 2000 08 03 | 704 | 0.1− | 0.0 | 2005 01 19 | 809 | 0.0 | 0.5+ | 2006 09 16 | 703 | 0.2+ | 0.7+ | | |
| 2000 08 03 | 704 | 0.2+ | 0.2− | 2005 01 19 | 809 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.3− | | |
| 2000 09 02 | 704 | 0.7− | 0.1+ | 2005 05 19 | G96 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.5+ | | |
| 2000 09 02 | 704 | 0.9+ | 1.8− | 2005 05 19 | G96 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.1− | 0.5− | | |
| 2000 09 02 | 704 | 0.6+ | 1.1− | 2005 05 19 | G96 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.3− | 0.2− | | |
| 2000 09 02 | 704 | 1.2+ | 0.4+ | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 09 28 | 703 | 0.7+ | 0.0 | | |
| 2001 11 11 | 691 | 0.3+ | 0.1− | 2005 06 03 | 428 | 0.3+ | 0.6− | 2006 09 28 | 703 | 0.2+ | 0.8− | | |
| 2001 11 11 | 691 | 0.2+ | 0.1− | 2005 06 03 | 428 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.3− | | |
| 2001 11 11 | 691 | 0.1+ | 0.0 | 2005 06 04 | 704 | 1.2+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.4− | | |
| 2001 11 13 | 049 | 0.6+ | 0.4+ | 2005 06 04 | 704 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 2001 11 13 | 049 | 0.2+ | 0.4+ | 2005 06 04 | 704 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2001 11 13 | 049 | 0.7+ | 0.4+ | 2005 06 04 | 704 | 0.7− | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2001 11 19 | 704 | (1.7− | 0.3+) | 2005 06 04 | 704 | 1.0− | 0.5− | 2006 10 23 | 644 | 0.3− | 0.4− | | |
| 2001 11 19 | 704 | (1.7− | 0.6−) | 2005 06 04 | 428 | 0.4− | 0.4− | | | | | | |
| 2001 11 19 | 704 | (2.8− | 1.4−) | 2005 06 04 | 428 | 1.2+ | 1.2− | | | | | | |

**(140980)∗ 2001 VQ$_{132}$ = 2000 LQ$_3$**

Discovered 2001 Nov. 12 by the Sloan Digital Sky Survey at Apache Point.

Id. A. Doppler (*MPO* 75214)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.28372 | | (2000.0) | | | |
| $n$ | 0.19587025 | $\omega$ | 179.79770 | | +0.41918445 | +0.88024374 |
| $a$ | 2.9364576 | $\Omega$ | 114.97924 | | −0.83332716 | +0.47025137 |
| $e$ | 0.2964972 | $i$ | 14.20157 | | −0.36034740 | −0.06351859 |
| $P$ | 5.03 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 04 | 704 | 0.1− | 0.1− | 2005 06 02 | 703 | 0.9− | 1.3+ | 2005 07 05 | 704 | 0.1+ | 0.4+ | | |
| 2000 06 04 | 704 | 0.1− | 0.1+ | 2005 06 03 | E12 | 0.3− | 0.3− | 2005 07 05 | 704 | 0.2+ | 0.6+ | | |
| 2000 06 04 | 704 | 0.7− | 0.4+ | 2005 06 03 | E12 | 0.4+ | 0.0 | 2005 07 05 | 704 | 0.0 | 0.6+ | | |
| 2000 06 04 | 704 | 0.1− | 0.4+ | 2005 06 03 | E12 | 0.1− | 0.1− | 2005 07 05 | 704 | 0.0 | 0.3+ | | |
| 2000 06 04 | 704 | 0.2+ | 0.4+ | 2005 06 03 | E12 | 0.1− | 0.2− | 2005 07 05 | 704 | 0.1− | 0.4+ | | |
| 2000 06 06 | 704 | 0.0 | 0.1+ | 2005 06 09 | 704 | 0.3+ | 0.1+ | 2005 08 01 | E12 | 0.1− | 0.5+ | | |
| 2000 06 06 | 704 | 0.3− | 0.1− | 2005 06 09 | 704 | 0.0 | 0.0 | 2005 08 01 | E12 | 0.1+ | 0.3+ | | |
| 2000 06 06 | 704 | 0.0 | 0.6− | 2005 06 09 | 704 | 0.6+ | 0.5+ | 2005 08 01 | E12 | 0.2+ | 0.4+ | | |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2005 06 09 | 704 | 0.8+ | 0.9+ | 2005 08 01 | E12 | 0.4+ | 0.5− | | |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2005 06 09 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.3− | | |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2005 06 09 | 703 | 0.7− | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.3+ | | |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2005 06 09 | 703 | (1.8− | 1.2+) | 2006 10 17 | 703 | 1.2− | 0.3− | | |
| 2001 12 07 | 704 | 0.6− | 0.6− | 2005 06 09 | 703 | 0.7− | 1.4+ | 2006 10 17 | 703 | 0.2+ | 0.5+ | | |
| 2001 12 07 | 704 | 0.5− | 0.3− | 2005 06 09 | 703 | 0.5+ | 1.4+ | 2006 10 29 | 703 | 0.1− | 1.0+ | | |
| 2001 12 07 | 704 | 0.3− | 0.5+ | 2005 06 13 | 608 | 0.3+ | 1.1− | 2006 10 29 | 703 | 1.2− | 0.2+ | | |
| 2001 12 07 | 704 | 0.7+ | 0.5− | 2005 06 13 | 608 | 0.1+ | 1.2− | 2006 10 29 | 703 | 0.8− | 0.7+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.4+ | 2005 06 13 | 608 | 0.4+ | 0.9− | 2006 10 29 | 703 | (2.4− | 1.9+) | | |
| 2004 02 17 | 691 | 0.2+ | 0.4+ | 2005 07 04 | 703 | 1.4+ | 0.4− | 2006 12 01 | G96 | 0.2− | 0.4− | | |
| 2004 02 17 | 691 | 0.2+ | 0.3+ | 2005 07 04 | 703 | 0.1− | 0.7− | 2006 12 01 | G96 | 0.1− | 0.0 | | |
| 2005 06 02 | 703 | 0.1− | 1.1+ | 2005 07 04 | 703 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.1− | 0.3− | | |
| 2005 06 02 | 703 | 0.2+ | 0.8+ | 2005 07 04 | 703 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.7− | 1.0+ | | |

**(140981)∗ 2001 WS$_2$ = 2005 QZ$_{167}$**

Discovered 2001 Nov. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 100089)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 137.69509 | | (2000.0) | | | |
| $n$ | 0.21448371 | $\omega$ | 30.90133 | | −0.19307316 | +0.97756640 |
| $a$ | 2.7640115 | $\Omega$ | 228.10965 | | −0.92174192 | −0.21011652 |
| $e$ | 0.2207251 | $i$ | 6.49313 | | −0.33632512 | +0.01466252 |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.3+ | 0.2− | 2004 03 16 | 704 | 1.0+ | 1.3+ | 2006 11 11 | G96 | 0.5− | 0.6− | | |
| 1996 10 05 | 691 | 0.1− | 0.1− | 2004 04 12 | 703 | 0.0 | 1.2− | 2006 11 11 | G96 | 0.5+ | 0.7− | | |
| 1996 10 05 | 691 | 0.1− | 0.1− | 2004 04 12 | 703 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.6− | | |
| 2000 06 24 | 704 | 1.1− | 1.2+ | 2004 04 12 | 703 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.5− | | |
| 2000 06 24 | 704 | 0.4− | 0.2+ | 2004 04 12 | 703 | 0.6− | 0.2− | 2006 11 15 | 691 | 0.4− | 0.2+ | | |
| 2000 06 24 | 704 | 0.4− | 0.4+ | 2005 08 29 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.2+ | | |
| 2000 06 24 | 704 | 0.2+ | 0.0 | 2005 08 29 | 644 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.4+ | | |
| 2001 10 14 | 704 | 0.1− | 0.4− | 2005 08 29 | 644 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.1− | | |
| 2001 10 14 | 704 | 0.3+ | 0.4+ | 2005 08 30 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2001 10 14 | 704 | 0.2− | 1.1+ | 2005 08 30 | 644 | 0.1+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2001 10 14 | 704 | 0.5+ | 0.3− | 2005 08 30 | 644 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.4− | | |
| 2001 11 16 | 691 | 0.0 | 0.1+ | 2005 09 07 | A50 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2001 11 16 | 691 | 0.3− | 0.4+ | 2005 09 07 | A50 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2001 11 16 | 691 | 0.4− | 0.1+ | 2005 10 05 | 691 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2001 11 18 | 691 | 0.3+ | 0.2+ | 2005 10 05 | 691 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.3+ | | |
| 2001 11 18 | 691 | 0.5+ | 0.4− | 2005 10 05 | 691 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.3− | 0.3− | | |
| 2001 11 18 | 691 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.2− | 0.0 | | |
| 2001 11 21 | 704 | 1.5+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.5+ | | |
| 2001 11 21 | 704 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2001 11 21 | 704 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.4+ | | |
| 2004 03 16 | 704 | 1.7+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.7+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2004 03 16 | 704 | 0.1+ | 1.6+ | 2006 11 11 | 691 | 0.1+ | 0.3− | | | | | | |
| 2004 03 16 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | | | | | | |

**(140982)∗ 2001 WJ$_6$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.92001 | | (2000.0) | | | |
| $n$ | 0.19168288 | $\omega$ | 346.18831 | | +0.13193411 | −0.99060014 |
| $a$ | 2.9790686 | $\Omega$ | 96.22126 | | +0.91287754 | +0.10721925 |
| $e$ | 0.0603202 | $i$ | 2.08232 | | +0.38632628 | +0.08494350 |
| $P$ | 5.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.1+ | 0.1+ | 2001 11 21 | 704 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.7+ | | |
| 2001 10 14 | 691 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.4+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.4+ | | |
| 2001 10 14 | 691 | 0.2+ | 0.3− | 2001 11 21 | 704 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.3− | 0.4+ | | |
| 2001 10 18 | 644 | 0.3+ | 0.6+ | 2001 11 21 | 704 | 0.1− | 0.2− | 2006 10 15 | 691 | 0.4− | 0.5− | | |
| 2001 10 18 | 644 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.4+ | 0.5− | 2006 10 15 | 691 | 0.5− | 0.2− | | |
| 2001 10 18 | 644 | 0.2− | 0.5+ | 2003 02 21 | 644 | 0.2+ | 0.7+ | 2006 10 15 | 691 | 0.2− | 0.4+ | | |
| 2001 10 23 | 704 | 0.2− | 0.5+ | 2003 02 21 | 644 | 0.0 | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.2+ | | |
| 2001 10 23 | 704 | 0.9− | 1.5+ | 2003 02 21 | 644 | 0.7+ | 1.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2001 10 23 | 704 | 0.4− | 0.3+ | 2004 04 28 | 691 | 0.2− | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | |
| 2001 10 24 | 704 | 0.8− | 0.4− | 2004 04 28 | 691 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2004 04 28 | 691 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 24 | 704 | 0.5− | 0.1− | 2004 06 08 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.4− | 0.9+ | | |
| 2001 10 24 | 704 | 1.4+ | 0.3+ | 2004 06 08 | 691 | 0.3+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.3− | | |
| 2001 10 24 | 704 | (0.6− | 1.8+) | 2004 06 08 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.5− | | |
| 2001 11 09 | 704 | 0.5− | 0.3− | 2005 06 30 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2001 11 09 | 704 | 1.1− | 0.8− | 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2001 11 09 | 704 | (2.0− | 1.0+) | 2005 06 30 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1+ | | |
| 2001 11 09 | 704 | 1.1− | 0.4− | 2005 07 09 | 691 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.4+ | | |
| 2001 11 17 | 704 | 0.1− | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2001 11 17 | 704 | 0.8− | 0.2+ | 2005 07 09 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3+ | | |
| 2001 11 17 | 704 | 0.7+ | 1.4+ | 2005 07 12 | G96 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 17 | 704 | 1.1− | 0.1− | 2005 07 12 | G96 | 0.3− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.5− | | |
| 2001 11 18 | 704 | 0.2− | 0.6+ | 2005 07 12 | G96 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.4− | 0.1− | | |
| 2001 11 18 | 704 | 0.2+ | 0.3+ | 2005 07 12 | G96 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.7+ | 0.2+ | | |
| 2001 11 18 | 704 | 0.3+ | 0.7+ | 2005 07 16 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.2+ | | |
| 2001 11 19 | 608 | 0.1+ | 0.6− | 2005 07 16 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.2− | | |
| 2001 11 19 | 608 | 0.0 | 0.4− | 2005 07 16 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.4+ | | |
| 2001 11 19 | 608 | 0.0 | 0.3− | 2006 09 30 | 703 | (2.0+ | 4.1+) | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 1.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.7+ | 2006 11 27 | 691 | 0.3+ | 0.0 | | |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 1.2− | | | | | | |

**(140983)∗ 2001 WO$_8$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 52.90499 | | (2000.0) | | | |
| $n$ | 0.21259930 | $\omega$ | 292.07661 | | +0.97598162 | −0.13618832 |
| $a$ | 2.7803203 | $\Omega$ | 76.07713 | | +0.19786492 | +0.88073368 |
| $e$ | 0.1785711 | $i$ | 10.08936 | | −0.09115566 | +0.45360878 |
| $P$ | 4.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.1− | 0.3+ | 2001 11 24 | 704 | 0.8− | 0.1+ | 2002 01 17 | 691 | 0.0 | 0.0 | |
| 2001 09 17 | 704 | 0.1+ | 0.2− | 2001 11 24 | 704 | (1.1− | 1.5+) | 2004 04 26 | 691 | 0.2+ | 0.7+ | |
| 2001 09 17 | 704 | 0.1+ | 0.4− | 2001 12 08 | 699 | 0.3+ | 0.6− | 2004 04 26 | 691 | 0.3+ | 0.6+ | |
| 2001 09 17 | 704 | (1.5+ | 0.0 ) | 2001 12 08 | 699 | 0.9− | 0.8+ | 2004 04 26 | 691 | 0.5+ | 0.6+ | |
| 2001 10 25 | 644 | 0.4+ | 0.3+ | 2001 12 08 | 699 | 0.1− | 0.6+ | 2005 07 03 | 644 | 0.1+ | 0.4+ | |
| 2001 10 25 | 644 | 0.3+ | 0.4+ | 2001 12 08 | 699 | 0.6− | 0.2+ | 2005 07 03 | 644 | 0.1+ | 0.4+ | |
| 2001 10 25 | 644 | 0.2− | 0.8+ | 2001 12 10 | 691 | 0.4+ | 0.0 | 2005 07 03 | 644 | 0.0 | 0.2+ | |
| 2001 11 09 | 704 | 0.3− | 0.1+ | 2001 12 10 | 691 | 0.3+ | 0.1− | 2005 07 26 | 644 | 0.0 | 0.4+ | |
| 2001 11 09 | 704 | 0.4+ | 1.1+ | 2001 12 10 | 691 | 0.4+ | 0.0 | 2005 07 26 | 644 | 0.2+ | 0.2+ | |
| 2001 11 09 | 704 | 1.0− | 0.8+ | 2001 12 11 | 704 | 0.7− | 0.8− | 2005 07 26 | 644 | 0.2+ | 0.3+ | |
| 2001 11 09 | 704 | 0.2+ | 0.7+ | 2001 12 11 | 704 | 0.6− | 0.3− | 2005 08 04 | 644 | 0.4− | 0.3+ | |
| 2001 11 17 | 704 | 0.3− | 0.5+ | 2001 12 11 | 704 | 0.6− | 1.0− | 2005 08 04 | 644 | 0.4− | 0.3+ | |
| 2001 11 17 | 704 | 0.6− | 0.4+ | 2001 12 11 | 704 | 0.9− | 0.5− | 2005 08 04 | 644 | 0.2− | 0.1+ | |
| 2001 11 17 | 704 | 0.7− | 0.5+ | 2001 12 13 | 644 | 0.3− | 0.2− | 2005 08 30 | 699 | 0.4+ | 0.4+ | |
| 2001 11 17 | 704 | 0.8− | 0.5+ | 2001 12 13 | 644 | 0.4− | 0.3+ | 2005 08 30 | 699 | 0.1− | 0.0 | |
| 2001 11 17 | 704 | 0.9− | 0.4+ | 2001 12 13 | 644 | 0.0 | 0.1+ | 2005 08 30 | 699 | 0.4− | 0.0 | |
| 2001 11 18 | 704 | 0.7+ | 0.8+ | 2001 12 14 | 704 | 0.4− | 0.5+ | 2005 08 30 | 699 | 0.4− | 0.7− | |
| 2001 11 18 | 704 | 0.3− | 0.5+ | 2001 12 14 | 704 | 0.5− | 0.4+ | 2005 09 01 | 644 | 0.1+ | 0.0 | |
| 2001 11 18 | 704 | 0.4+ | 0.5+ | 2001 12 14 | 704 | 0.2− | 0.2+ | 2005 09 01 | 644 | 0.1+ | 0.2+ | |
| 2001 11 18 | 704 | 0.4− | 0.6+ | 2001 12 14 | 704 | 0.3− | 0.4+ | 2005 09 01 | 644 | 0.0 | 0.2+ | |
| 2001 11 18 | 704 | 1.0+ | 1.1+ | 2001 12 14 | 704 | 0.0 | 0.5+ | 2005 09 08 | E12 | 0.1− | 0.3− | |
| 2001 11 18 | 704 | 0.1− | 0.5+ | 2001 12 17 | 704 | (2.0+ | 0.2−) | 2005 09 08 | E12 | 0.2+ | 0.1+ | |
| 2001 11 18 | 704 | (0.0 | 2.3+) | 2001 12 17 | 704 | (2.2+ | 0.2+) | 2005 09 08 | E12 | 0.2− | 0.0 | |
| 2001 11 18 | 704 | 0.7+ | 0.1+ | 2001 12 17 | 704 | 1.5+ | 0.4− | 2005 09 08 | E12 | 0.2− | 0.4− | |
| 2001 11 18 | 704 | 0.7− | 0.8+ | 2001 12 17 | 704 | 1.4+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.0 | |
| 2001 11 18 | 704 | 0.7+ | 0.6+ | 2001 12 17 | 704 | 1.5+ | 0.5− | 2006 09 19 | 691 | 0.5+ | 0.1− | |
| 2001 11 18 | 704 | 0.2+ | 0.3+ | 2001 12 20 | 704 | 0.3+ | 0.6− | 2006 09 19 | 691 | 0.2+ | 0.2− | |
| 2001 11 18 | 704 | 0.5− | 0.4+ | 2001 12 20 | 704 | 0.7− | 0.7− | 2006 10 22 | G96 | 0.1+ | 0.0 | |
| 2001 11 18 | 704 | 0.0 | 0.2+ | 2001 12 20 | 704 | 0.2+ | 0.4− | 2006 10 22 | G96 | 0.0 | 0.1+ | |
| 2001 11 19 | 699 | (1.6+ | 0.2+) | 2001 12 20 | 704 | 0.9+ | 0.5− | 2006 10 22 | G96 | 0.3+ | 0.1+ | |
| 2001 11 19 | 699 | 0.7+ | 0.1− | 2001 12 20 | 704 | 0.3− | 0.3− | 2006 10 23 | G96 | 0.1− | 0.2− | |
| 2001 11 19 | 699 | 0.6+ | 0.2+ | 2002 01 09 | 704 | 0.8− | 1.0− | 2006 10 23 | G96 | 0.0 | 0.3− | |
| 2001 11 19 | 699 | 0.3+ | 0.2+ | 2002 01 09 | 704 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.2+ | |
| 2001 11 20 | 704 | 0.6+ | 0.6− | 2002 01 09 | 704 | 0.9− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.0 | |
| 2001 11 20 | 704 | 0.3+ | 0.7− | 2002 01 09 | 704 | 0.9+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.1− | |
| 2001 11 20 | 704 | 0.4+ | 0.7− | 2002 01 13 | 704 | 0.5− | 0.2− | 2006 10 23 | G96 | 0.3− | 0.5− | |
| 2001 11 20 | 704 | 0.3+ | 0.8− | 2002 01 13 | 704 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.3− | 0.1− | |
| 2001 11 20 | 704 | 0.4+ | 0.9− | 2002 01 13 | 704 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.0 | |
| 2001 11 21 | 691 | 0.0 | 0.0 | 2002 01 13 | 704 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.2− | |
| 2001 11 21 | 691 | 0.0 | 0.1+ | 2002 01 13 | 704 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.1− | |
| 2001 11 21 | 691 | 0.1+ | 0.1+ | 2002 01 15 | 704 | 1.1− | 0.6+ | 2006 10 23 | G96 | 0.2− | 0.1− | |
| 2001 11 21 | 608 | 0.7+ | 0.6− | 2002 01 15 | 704 | 1.4− | 0.8+ | 2006 10 23 | G96 | 0.1− | 0.1− | |
| 2001 11 21 | 608 | 0.6− | 0.2− | 2002 01 15 | 704 | 0.7− | 0.5+ | 2006 11 25 | G96 | 0.4− | 0.1− | |
| 2001 11 21 | 608 | 0.6− | 0.5− | 2002 01 15 | 704 | 1.0− | 0.6+ | 2006 11 25 | G96 | 0.2− | 0.0 | |
| 2001 11 24 | 704 | 0.1+ | 1.0− | 2002 01 15 | 704 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.0 | |
| 2001 11 24 | 704 | 1.0− | 1.0+ | 2002 01 17 | 691 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.4− | 0.3− | |
| 2001 11 24 | 704 | 0.5− | 0.1+ | 2002 01 17 | 691 | 0.1− | 0.2+ | | | | | |

**(140984)∗ 2001 WN$_{11}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.53265 | | (2000.0) | | | |
| $n$ | 0.18291393 | $\omega$ | 293.34815 | | −0.57965371 | −0.81470660 |
| $a$ | 3.0735352 | $\Omega$ | 192.11728 | | +0.77264152 | −0.54329101 |
| $e$ | 0.1151257 | $i$ | 4.36062 | | +0.25889508 | −0.20270184 |
| $P$ | 5.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.4+ | 1.1− | 2003 02 02 | 608 | (0.9+ | 2.3+) | 2006 07 21 | G96 | 0.1+ | 0.1+ | |
| 1998 03 29 | 704 | 0.1+ | 0.7+ | 2003 02 02 | 608 | (1.4+ | 1.9+) | 2006 07 21 | G96 | 0.3− | 0.1− | |
| 1998 03 29 | 704 | (0.1− | 2.8+) | 2003 03 06 | 699 | (0.9− | 1.8−) | 2006 07 21 | G96 | 0.3− | 0.2− | |
| 1998 03 29 | 704 | 0.9+ | 0.8− | 2003 03 06 | 699 | 1.0+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.2− | |
| 1998 03 29 | 704 | 1.1− | 0.3+ | 2003 03 06 | 699 | 0.3− | 0.9+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | |
| 2000 08 26 | 807 | 0.1+ | 0.7+ | 2003 03 06 | 699 | 0.4+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.0 | |
| 2000 08 26 | 807 | 0.1+ | 0.9+ | 2003 03 06 | 644 | 0.4+ | 0.7+ | 2006 09 18 | 691 | 0.2+ | 0.2− | |
| 2001 11 17 | 704 | 0.3− | 0.2+ | 2003 03 06 | 644 | 0.7+ | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.2− | |
| 2001 11 17 | 704 | 0.2− | 0.3+ | 2003 03 06 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.2+ | 0.0 | |
| 2001 11 17 | 704 | 0.5− | 0.1− | 2003 03 07 | 704 | 0.6+ | 1.5+ | 2006 09 25 | 691 | 0.0 | 0.0 | |
| 2001 11 18 | 704 | (0.2+ | 1.6+) | 2003 03 07 | 704 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | |
| 2001 11 18 | 704 | 0.3+ | 0.4+ | 2003 03 07 | 704 | 0.1+ | 0.9+ | 2006 09 25 | G96 | 0.3+ | 0.2− | |
| 2001 11 18 | 704 | 0.3+ | 0.5+ | 2003 03 07 | 704 | 0.9+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | |
| 2001 11 20 | 704 | (1.5+ | 1.9−) | 2003 03 07 | 704 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.6+ | |
| 2001 11 20 | 704 | 0.6+ | 0.9+ | 2003 03 09 | 704 | 0.7+ | 1.4+ | 2006 09 25 | G96 | 0.2− | 0.0 | |
| 2001 11 20 | 704 | 1.1− | 0.4+ | 2003 03 09 | 704 | 1.0− | 0.1− | 2006 09 25 | G96 | 0.3− | 0.5+ | |
| 2001 11 20 | 704 | 0.6+ | 0.2− | 2003 03 09 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.3+ | |
| 2001 11 20 | 704 | 1.2− | 0.5− | 2003 03 09 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | |
| 2001 12 13 | 644 | 0.2− | 0.0 | 2003 03 09 | 704 | 1.3+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2001 12 13 | 644 | 0.1− | 0.1− | 2003 03 14 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.1+ | |
| 2001 12 13 | 644 | 0.1+ | 0.4+ | 2003 03 14 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2001 12 14 | 704 | 0.9+ | 0.2− | 2003 03 14 | 644 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.6− | 0.3+ | |
| 2001 12 14 | 704 | 0.2+ | 0.1− | 2003 03 24 | 691 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.3− | 0.0 | |
| 2001 12 14 | 704 | 0.4− | 0.1+ | 2003 03 24 | 691 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 | |
| 2001 12 14 | 704 | 0.5+ | 0.3+ | 2003 03 24 | 691 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ | |
| 2001 12 14 | 704 | 0.3+ | 0.2− | 2003 04 05 | 691 | 0.3+ | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.3+ | |
| 2001 12 17 | 704 | 0.7− | 0.5+ | 2003 04 05 | 691 | 0.5+ | 0.8+ | 2006 11 01 | 691 | 0.3− | 0.4+ | |
| 2001 12 17 | 704 | 0.3+ | 0.6+ | 2003 04 05 | 691 | 0.5+ | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.0 | |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2005 07 01 | 691 | 0.4− | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.0 | |
| 2001 12 17 | 704 | 1.2− | 1.5+ | 2005 07 01 | 691 | 0.3− | 0.6+ | 2006 11 11 | 691 | 0.2+ | 0.4+ | |
| 2001 12 17 | 704 | 0.4− | 0.5+ | 2005 07 01 | 691 | 0.3− | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.1+ | |
| 2003 01 27 | 608 | 0.0 | 0.7+ | 2005 07 09 | 691 | 0.1− | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.2− | |
| 2003 01 27 | 608 | 0.3+ | 0.5+ | 2005 07 09 | 691 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.4+ | 0.4− | |
| 2003 01 27 | 608 | 0.2+ | 0.8+ | 2005 07 09 | 691 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.4+ | 0.3− | |
| 2003 02 02 | 608 | (1.9+ | 2.4+) | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.0 | |

**(140985)∗ 2001 WZ$_{11}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 234.72389 | | (2000.0) | | | |
| $n$ | 0.17085054 | $\omega$ | 321.29846 | | −0.78328375 | −0.62166426 |
| $a$ | 3.2165612 | $\Omega$ | 180.26446 | | +0.58682173 | −0.73920569 |
| $e$ | 0.1249279 | $i$ | 4.14159 | | +0.20519948 | −0.25905307 |
| $P$ | 5.77 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.5− | 1.5+ | 2001 12 08 | 699 | 0.4− | 0.6+ | 2004 06 15 | 691 | 0.1− | 0.2+ | |
| 1997 03 04 | 691 | 0.3+ | 0.3+ | 2001 12 08 | 699 | 0.4− | 0.7+ | 2004 06 15 | 691 | 0.1+ | 0.8+ | |
| 1997 03 04 | 691 | 0.2+ | 0.4+ | 2001 12 17 | 704 | 0.2+ | 0.3+ | 2004 06 15 | 691 | 0.4+ | 0.5+ | |
| 1997 03 10 | 691 | 0.0 | 0.3+ | 2001 12 17 | 704 | 0.0 | 0.9+ | 2004 06 22 | 691 | 0.1+ | 0.4+ | |
| 1997 03 10 | 691 | 0.1− | 0.3+ | 2001 12 17 | 704 | 1.2− | 0.2+ | 2004 06 22 | 691 | 0.0 | 0.4+ | |
| 1997 03 10 | 691 | 0.1− | 0.3+ | 2001 12 17 | 704 | 1.1− | 0.4+ | 2004 06 22 | 691 | 0.3+ | 0.4+ | |
| 2001 11 17 | 704 | 0.7+ | 0.8− | 2003 02 22 | 644 | 0.3+ | 0.5+ | 2005 07 01 | 291 | 0.3− | 0.5+ | |
| 2001 11 17 | 704 | 0.9+ | 0.0 | 2003 02 22 | 644 | 0.0 | 0.5+ | 2005 07 01 | 291 | 0.5− | 0.7+ | |
| 2001 11 17 | 704 | 0.0 | 0.6− | 2003 02 22 | 644 | 0.0 | 0.6+ | 2005 07 01 | 291 | 0.5− | 0.6+ | |
| 2001 11 18 | 704 | 0.5− | 0.7+ | 2003 02 23 | 699 | 0.5+ | 0.5+ | 2005 07 10 | 691 | 0.1+ | 0.4+ | |
| 2001 11 18 | 704 | 1.0+ | 0.0 | 2003 02 23 | 699 | 0.8+ | 0.5+ | 2005 07 10 | 691 | 0.7+ | 0.1− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.5− | 0.0 | 2003 02 23 | 699 | 0.2− | 0.7+ | 2005 07 10 | 691 | 0.1− | 0.8+ |
| 2001 11 18 | 704 | 0.4+ | 0.6+ | 2003 02 23 | 699 | 0.8+ | 0.6+ | 2005 07 15 | 691 | 0.0 | 0.4+ |
| 2001 11 19 | 704 | 0.9+ | 0.8− | 2003 02 28 | 608 | 0.2− | 0.8+ | 2005 07 15 | 691 | 0.0 | 0.3+ |
| 2001 11 19 | 704 | 0.3− | 0.5− | 2003 02 28 | 608 | 0.4− | 1.4+ | 2005 07 15 | 691 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | (0.7+ | 2.3+) | 2003 02 28 | 608 | 0.0 | 1.2+ | 2006 07 21 | G96 | 0.8− | 0.3− |
| 2001 11 19 | 704 | 0.2+ | 0.8+ | 2003 03 05 | 704 | 0.2− | 1.0+ | 2006 07 21 | G96 | 0.2− | 0.3− |
| 2001 11 19 | 704 | 1.0+ | 0.4+ | 2003 03 05 | 704 | 0.1− | 0.9+ | 2006 07 21 | G96 | 0.3+ | 0.4− |
| 2001 11 19 | 699 | 0.9+ | 0.0 | 2003 03 05 | 704 | 0.1− | 0.8+ | 2006 07 21 | G96 | 0.9+ | 0.2+ |
| 2001 11 19 | 704 | 0.4+ | 0.1+ | 2003 03 06 | 699 | 0.6+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2001 11 19 | 699 | 0.0 | 1.3+ | 2003 03 06 | 699 | 0.7− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2001 11 19 | 699 | 0.3+ | 0.7− | 2003 03 06 | 699 | 0.2− | 0.6+ | 2006 09 19 | 691 | 0.5− | 0.4+ |
| 2001 11 20 | 704 | 0.1− | 1.3+ | 2003 03 06 | 699 | 0.6− | 0.7+ | 2006 09 19 | 703 | 0.6− | 0.4+ |
| 2001 11 20 | 704 | 1.0+ | 0.0 | 2003 03 06 | 644 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.7− | 0.7− |
| 2001 11 20 | 704 | (1.2+ | 2.3+) | 2003 03 06 | 644 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 1.2− | 0.7+ |
| 2001 11 20 | 704 | 0.1+ | 0.4+ | 2003 03 06 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.1+ | 1.2− |
| 2001 11 20 | 704 | 0.1+ | 0.6+ | 2003 03 09 | 704 | (2.6+ | 1.0−) | 2006 09 23 | 691 | 0.4− | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 0.4− | 2003 03 09 | 704 | (2.5+ | 1.2−) | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 1.1+ | 2003 03 09 | 704 | 1.1+ | 0.6− | 2006 09 23 | 691 | 0.2− | 0.6+ |
| 2001 11 20 | 704 | 0.3− | 0.2+ | 2003 03 09 | 704 | 0.8+ | 1.8− | 2006 09 27 | 691 | 0.7− | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 1.0+ | 2003 03 26 | 699 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.5+ |
| 2001 11 20 | 704 | 0.3− | 0.8+ | 2003 03 26 | 699 | 1.2− | 0.8+ | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 2001 12 08 | 699 | 1.5+ | 0.8+ | 2003 03 26 | 699 | 0.1− | 0.5− | | | | |
| 2001 12 08 | 699 | 0.1+ | 0.4+ | 2003 03 26 | 699 | 1.0+ | 0.1− | | | | |

**(140986)∗ 2001 WS$_{12}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.73091 | | (2000.0) | | | |
| $n$ | 0.22343665 | $\omega$ | 264.57105 | | +0.84163792 | −0.53272803 |
| $a$ | 2.6896748 | $\Omega$ | 127.58711 | | +0.52911106 | +0.78059895 |
| $e$ | 0.1704536 | $i$ | 6.41814 | | +0.10810692 | +0.32690386 |
| $P$ | 4.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.5+ | 0.3+ | 2002 01 08 | 644 | 0.0 | 0.3+ | 2005 10 01 | 703 | 0.2− | 0.2− |
| 2001 09 17 | 704 | 0.1+ | 0.2− | 2002 01 08 | 644 | 0.1− | 0.1+ | 2005 10 01 | 703 | 0.1+ | 0.1+ |
| 2001 09 17 | 704 | 0.0 | 0.4+ | 2002 01 08 | 644 | 0.3− | 0.1− | 2005 10 01 | 703 | 0.3− | 0.4+ |
| 2001 09 17 | 704 | 0.6+ | 0.3+ | 2002 01 09 | 704 | (2.5+ | 0.0 ) | 2005 10 01 | 703 | 0.0 | 0.4− |
| 2001 11 17 | 704 | (1.8+ | 1.0−) | 2002 01 09 | 704 | 1.0+ | 0.9+ | 2005 10 07 | 699 | 0.4+ | 0.7+ |
| 2001 11 17 | 704 | 0.2+ | 0.6− | 2002 01 09 | 704 | 0.2+ | 0.4− | 2005 10 07 | 699 | 0.7+ | 0.6+ |
| 2001 11 17 | 704 | 0.2+ | 0.4− | 2002 01 09 | 704 | (0.3− | 2.0+) | 2005 10 07 | 699 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.1+ | 0.1− | 2003 03 12 | 644 | (0.8+ | 1.8+) | 2005 10 07 | 699 | 0.3+ | 0.1+ |
| 2001 11 18 | 704 | 0.2+ | 0.7+ | 2003 03 12 | 644 | (1.0+ | 2.1+) | 2005 10 22 | 703 | 0.4+ | 1.0+ |
| 2001 11 18 | 704 | 0.1+ | 0.3− | 2003 03 12 | 644 | (0.8+ | 1.7+) | 2005 10 22 | 703 | (1.9+ | 0.2+) |
| 2001 11 18 | 704 | 1.0+ | 0.1− | 2003 03 25 | 644 | 0.3+ | 0.7+ | 2005 10 22 | 703 | 0.6+ | 0.2+ |
| 2001 11 18 | 704 | 0.5+ | 0.4− | 2003 03 25 | 644 | 0.4+ | 0.7+ | 2005 10 22 | 703 | 0.4+ | 0.9+ |
| 2001 11 21 | 608 | 0.3− | 1.3− | 2003 03 25 | 644 | 0.2+ | 0.5+ | 2005 11 17 | 644 | 0.5+ | 0.1− |
| 2001 11 21 | 608 | 0.1+ | 1.1− | 2005 08 27 | 699 | 0.3− | 0.1+ | 2005 11 17 | 644 | 0.2+ | 0.3− |
| 2001 11 21 | 608 | 0.1+ | 1.3− | 2005 08 27 | 699 | 0.0 | 0.1− | 2005 11 17 | 644 | 0.1+ | 0.0 |
| 2001 12 05 | 608 | 0.6+ | 0.4+ | 2005 08 27 | 699 | 0.4− | 0.1+ | 2005 12 06 | 703 | 0.7− | 0.3− |
| 2001 12 05 | 608 | 0.5+ | 0.1+ | 2005 08 30 | 691 | 0.1− | 0.3+ | 2005 12 06 | 703 | 1.4− | 1.2+ |
| 2001 12 05 | 608 | 0.1+ | 0.6+ | 2005 08 30 | 691 | 0.0 | 0.3+ | 2005 12 06 | 703 | 0.5+ | 0.2− |
| 2001 12 11 | 704 | 0.0 | 0.6− | 2005 08 30 | 691 | 0.1− | 0.2+ | 2005 12 06 | 703 | (2.9− | 0.9−) |
| 2001 12 11 | 704 | 0.4− | 0.4− | 2005 09 03 | 703 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.5+ | 0.5+ |
| 2001 12 11 | 704 | 0.0 | 0.6− | 2005 09 03 | 703 | 0.2− | 0.7+ | 2006 10 23 | 691 | 0.6+ | 0.3+ |
| 2001 12 11 | 704 | 0.3− | 0.4− | 2005 09 03 | 703 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.3+ | 0.7+ |
| 2001 12 11 | 704 | 0.1− | 0.5− | 2005 09 03 | 703 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.4+ |
| 2001 12 18 | 644 | 0.5− | 0.0 | 2005 09 13 | 703 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.3+ |
| 2001 12 18 | 644 | 0.6− | 0.0 | 2005 09 13 | 703 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.8− | 1.2+ |
| 2001 12 18 | 644 | 0.6− | 0.2+ | 2005 09 13 | 703 | 0.2− | 1.4− | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2001 12 18 | 704 | (1.6− | 0.4+) | 2005 09 13 | 703 | 0.0 | 0.1− | 2006 11 15 | G96 | 1.0− | 0.5− |
| 2001 12 18 | 704 | (2.7− | 0.4+) | 2005 09 23 | 703 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.9− | 0.4− |
| 2001 12 18 | 704 | 1.5− | 0.6+ | 2005 09 23 | 703 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.7− | 0.3+ |
| 2001 12 18 | 704 | (2.1− | 0.2−) | 2005 09 23 | 703 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.1+ |
| 2001 12 18 | 704 | (2.4− | 1.0+) | 2005 09 23 | 703 | 0.2+ | 0.1+ | | | | |

**(140987)∗ 2001 WS$_{13}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 267.32716 | | (2000.0) | | | |
| $n$ | 0.17329765 | $\omega$ | 279.14433 | | −0.52560118 | −0.84844577 |
| $a$ | 3.1862090 | $\Omega$ | 202.89895 | | +0.82982534 | −0.49516919 |
| $e$ | 0.0659390 | $i$ | 9.21555 | | +0.18743879 | −0.18694184 |
| $P$ | 5.69 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.4− | 0.3− | 2003 03 27 | 644 | 0.5+ | 1.3+ | 2006 10 20 | 703 | 0.5+ | 0.2+ |
| 2001 11 17 | 704 | 0.7− | 0.4+ | 2003 03 27 | 644 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.6+ |
| 2001 11 17 | 704 | 0.5− | 0.3− | 2003 03 27 | 644 | 0.3+ | 1.0+ | 2006 10 20 | 703 | 0.3− | 0.5− |
| 2001 11 17 | 704 | 0.3− | 0.2+ | 2003 04 02 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.4+ | 0.7− |
| 2001 11 17 | 704 | 0.2+ | 0.6+ | 2003 04 02 | 644 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 11 18 | 704 | 0.4+ | 0.6− | 2003 04 02 | 644 | 0.2− | 1.0+ | 2006 10 21 | 703 | 1.1− | 0.2+ |
| 2001 11 18 | 704 | 0.3+ | 0.9+ | 2004 06 21 | 599 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2001 11 18 | 704 | 1.1+ | 0.1+ | 2004 06 21 | 599 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.6− | 0.7− |
| 2001 12 11 | 704 | 0.5+ | 0.0 | 2005 07 30 | 644 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.7+ |
| 2001 12 11 | 704 | 0.1− | 0.5+ | 2005 07 30 | 644 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 12 11 | 704 | 0.1+ | 0.7+ | 2005 07 30 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 12 11 | 704 | 0.6− | 0.2− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 12 11 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2001 12 13 | 704 | 1.3+ | 1.2− | 2006 09 18 | 691 | (0.7− | 1.6+) | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2001 12 13 | 704 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.4− |
| 2001 12 13 | 704 | 0.0 | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 12 13 | 704 | 0.3− | 0.6− | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 12 13 | 704 | 1.0− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.4+ | 0.6− | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.4− | 0.8− | 2006 09 28 | 691 | 0.1− | 0.5+ | 2006 10 27 | 691 | 0.4+ | 0.2+ |
| 2001 12 14 | 704 | 0.4+ | 0.4− | 2006 10 02 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.9− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 12 14 | 704 | 0.6+ | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.2− | 0.9− | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | (1.6+ | 1.6−) | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 01 09 | 704 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 2002 01 09 | 704 | 0.1− | 1.0+ | 2006 10 15 | 691 | 0.2− | 0.9+ | 2006 10 31 | 691 | 0.2+ | 0.5− |
| 2002 01 09 | 704 | 0.4− | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2002 01 09 | 704 | 1.0− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.9+ | 0.3+ |
| 2003 02 06 | 644 | 0.6+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2003 02 06 | 644 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 1.0− |
| 2003 03 24 | 644 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2003 03 24 | 644 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 | | | | |
| 2003 03 24 | 644 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.3+ | 0.7− | | | | |

**(140988)∗ 2001 WU$_{16}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.43384 | | (2000.0) | | | |
| $n$ | 0.17759335 | $\omega$ | 177.21045 | | −0.87235163 | +0.46623037 |
| $a$ | 3.1346202 | $\Omega$ | 31.93729 | | −0.45374826 | −0.66017046 |
| $e$ | 0.1865402 | $i$ | 16.14294 | | −0.18197567 | −0.58890085 |
| $P$ | 5.55 | $H$ | 14.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.1− | 0.3+ | 2004 02 27 | 704 | 0.5− | 0.0 | 2004 05 17 | 704 | 1.3+ | 0.3− |
| 2001 09 17 | 704 | 0.1+ | 0.8+ | 2004 03 12 | 644 | 0.2+ | 0.1+ | 2004 05 17 | 704 | 0.3+ | 0.3+ |
| 2001 09 17 | 704 | 0.3+ | 1.2+ | 2004 03 12 | 644 | 0.3+ | 0.2+ | 2004 06 02 | 703 | 1.0+ | 0.2− |
| 2001 09 21 | 704 | (0.1− | 3.2+) | 2004 03 12 | 644 | 0.3+ | 0.1+ | 2004 06 02 | 703 | 0.1+ | 0.6+ |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.5+ | 0.8+ | 2004 06 02 | 703 | 0.1+ | 0.6+ |
| 2001 09 21 | 704 | (0.8+ | 4.3+) | 2004 03 15 | 704 | 0.5+ | 0.7+ | 2004 06 02 | 703 | (1.6− | 0.8−) |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.7+ | 0.7+ | 2004 06 13 | 704 | 0.4+ | 0.1+ |
| 2001 09 21 | 704 | (0.4+ | 3.1+) | 2004 03 15 | 704 | 0.3+ | 0.6+ | 2004 06 13 | 704 | 0.6+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 1.0− | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2004 06 13 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 21 | 704 | (0.1+ | 2.7+) | 2004 03 21 | 699 | 0.2− | 0.2+ | 2004 06 13 | 704 | 0.7+ | 0.8+ | | |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2004 03 21 | 699 | 0.4− | 0.3+ | 2004 06 13 | 704 | 1.0+ | 1.0+ | | |
| 2001 09 21 | 704 | 0.3− | 0.3− | 2004 03 21 | 699 | 0.4− | 0.4+ | 2004 06 15 | 704 | 0.4+ | 1.4+ | | |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2004 03 21 | 699 | 0.3− | 0.2+ | 2004 06 15 | 704 | 0.7+ | 1.1+ | | |
| 2001 09 26 | 704 | 0.4− | 1.2+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2004 06 15 | 704 | 0.8+ | 0.6+ | | |
| 2001 09 26 | 704 | 0.6− | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.1− | 2004 06 15 | 704 | 0.4+ | 1.4+ | | |
| 2001 10 13 | 704 | 0.5− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2004 06 16 | 699 | 0.7+ | 0.7+ | | |
| 2001 10 13 | 704 | 1.1− | 0.4− | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2004 06 16 | 699 | (0.4− | 1.6+) | | |
| 2001 10 13 | 704 | 0.2+ | 0.7+ | 2004 03 23 | 704 | 0.3+ | 0.1+ | 2004 06 16 | 699 | 0.3− | 0.1+ | | |
| 2001 10 14 | 699 | 0.3− | 0.4− | 2004 04 02 | 608 | 0.4+ | 0.5+ | 2004 06 16 | 699 | (0.1− | 1.8+) | | |
| 2001 10 14 | 699 | 0.5− | 0.5+ | 2004 04 02 | 608 | 0.2− | 1.0+ | 2005 06 09 | E12 | 0.3− | 0.2+ | | |
| 2001 10 14 | 699 | 0.2− | 0.3+ | 2004 04 02 | 608 | 0.1+ | 0.4+ | 2005 06 09 | E12 | 0.1− | 0.4+ | | |
| 2001 10 14 | 699 | 0.0 | 0.8+ | 2004 04 09 | 644 | 0.1+ | 0.1+ | 2005 06 09 | E12 | 0.0 | 0.1− | | |
| 2001 10 15 | 691 | 0.5− | 0.1+ | 2004 04 09 | 644 | 0.2+ | 0.2+ | 2005 06 09 | E12 | 0.3+ | 0.3+ | | |
| 2001 10 15 | 691 | 0.6− | 0.2+ | 2004 04 09 | 644 | 0.2+ | 0.1+ | 2005 07 04 | E12 | 0.1− | 0.4+ | | |
| 2001 10 15 | 691 | 0.5− | 0.2+ | 2004 04 10 | 644 | 0.4+ | 0.2+ | 2005 07 04 | E12 | 0.5− | 0.9+ | | |
| 2001 10 21 | 704 | 0.0 | 0.4− | 2004 04 10 | 644 | 0.2+ | 0.2+ | 2005 07 04 | E12 | 0.5− | 0.6+ | | |
| 2001 10 21 | 704 | 0.0 | 0.8− | 2004 04 10 | 644 | 0.3+ | 0.0 | 2005 07 04 | E12 | 0.6− | 0.8+ | | |
| 2001 10 21 | 704 | 0.7− | 0.4− | 2004 04 15 | 704 | 0.3+ | 0.6+ | 2005 07 25 | E12 | 0.1− | 0.4+ | | |
| 2001 10 21 | 704 | 1.0− | 0.4− | 2004 04 15 | 704 | 0.3+ | 0.9+ | 2005 07 25 | E12 | 0.7+ | 0.4+ | | |
| 2001 10 21 | 704 | (2.5− | 1.1−) | 2004 04 15 | 704 | 0.8+ | 0.3+ | 2005 07 25 | E12 | 0.1− | 0.7+ | | |
| 2001 10 26 | 704 | 0.6+ | 1.1+ | 2004 04 15 | 704 | 0.9+ | 0.4+ | 2005 08 06 | E12 | 0.1+ | 0.5+ | | |
| 2001 10 26 | 704 | 0.3− | 0.8+ | 2004 04 15 | 704 | 0.8+ | 0.3+ | 2005 08 06 | E12 | 0.4− | 0.3+ | | |
| 2001 10 26 | 644 | 0.3− | 0.4+ | 2004 04 16 | 691 | 0.4− | 0.2+ | 2005 08 06 | E12 | 0.6− | 0.6+ | | |
| 2001 10 26 | 704 | 0.3+ | 1.4+ | 2004 04 16 | 691 | 0.4− | 0.1+ | 2005 08 06 | E12 | 0.6+ | 0.2− | | |
| 2001 10 26 | 644 | 0.1− | 0.3+ | 2004 04 16 | 691 | 0.4− | 0.1+ | 2005 08 25 | E12 | 0.7− | 1.1+ | | |
| 2001 10 26 | 704 | 0.2− | 1.2+ | 2004 04 21 | 691 | 0.0 | 0.1− | 2005 08 25 | E12 | 0.3− | 1.3+ | | |
| 2001 10 26 | 644 | 0.2− | 0.2+ | 2004 04 21 | 703 | 0.0 | 0.5+ | 2005 08 25 | E12 | 0.1− | 1.0+ | | |
| 2001 11 17 | 704 | 0.7+ | 1.3+ | 2004 04 21 | 703 | 0.5+ | 0.2− | 2005 08 25 | E12 | 0.1− | 0.0 | | |
| 2001 11 17 | 704 | 0.3− | 0.2+ | 2004 04 21 | 691 | 0.1− | 0.1− | 2006 08 28 | 699 | 1.0− | 0.1− | | |
| 2001 11 17 | 704 | 0.0 | 0.6+ | 2004 04 21 | 703 | 0.6+ | 0.4+ | 2006 08 28 | 699 | 0.5+ | 0.5− | | |
| 2001 11 17 | 704 | 0.2− | 0.4+ | 2004 04 21 | 703 | 0.4+ | 0.9− | 2006 08 28 | 699 | 0.3+ | 0.3− | | |
| 2001 11 17 | 704 | 0.7− | 1.0+ | 2004 04 21 | 691 | 0.1− | 0.2− | 2006 08 28 | 699 | (2.0− | 0.0 ) | | |
| 2001 11 18 | 691 | 0.0 | 0.1+ | 2004 04 22 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.5+ | | |
| 2001 11 18 | 691 | 0.2+ | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.7+ | 1.1+ | | |
| 2001 11 18 | 691 | 0.2+ | 0.4+ | 2004 04 22 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.6− | 1.0+ | | |
| 2001 11 19 | 704 | 0.1− | 0.6+ | 2004 04 22 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.1+ | | |
| 2001 11 19 | 704 | 0.1− | 0.7+ | 2004 04 22 | 704 | 0.6+ | 0.2− | 2006 09 19 | 703 | (0.4+ | 2.7+) | | |
| 2001 11 19 | 704 | 0.6− | 0.6+ | 2004 04 25 | 699 | 0.2+ | 0.1+ | 2006 09 19 | 703 | (0.6+ | 1.7+) | | |
| 2001 11 21 | 704 | 0.7− | 1.2+ | 2004 04 25 | 699 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.3− | 0.8+ | | |
| 2001 11 21 | 704 | (1.0− | 1.7+) | 2004 04 25 | 699 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.7+ | | |
| 2001 11 21 | 704 | 1.4− | 0.4+ | 2004 04 25 | 699 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.8− | 1.1+ | | |
| 2001 11 21 | 704 | 1.3− | 1.5+ | 2004 05 09 | 608 | 0.7+ | 1.1+ | 2006 09 26 | 703 | 0.0 | 0.2+ | | |
| 2001 11 21 | 704 | (1.6− | 1.3+) | 2004 05 09 | 608 | 0.6+ | 0.9+ | 2006 09 26 | 703 | 0.9− | 0.4+ | | |
| 2003 12 20 | 704 | 0.2− | 0.7− | 2004 05 09 | 608 | 0.8+ | 0.8+ | 2006 09 26 | 703 | 0.3+ | 1.4+ | | |
| 2003 12 20 | 704 | 0.7+ | 1.0+ | 2004 05 13 | 704 | 1.0+ | 1.2+ | 2006 10 02 | 703 | 1.3− | 0.5+ | | |
| 2003 12 20 | 704 | 0.3+ | 0.6+ | 2004 05 13 | 704 | 0.7+ | 0.3+ | 2006 10 02 | 703 | 0.2+ | 0.4+ | | |
| 2004 01 27 | 703 | 0.8+ | 0.5− | 2004 05 13 | 704 | 0.7+ | 0.8+ | 2006 10 02 | 703 | 1.0− | 0.3+ | | |
| 2004 01 27 | 703 | 0.4+ | 0.3− | 2004 05 13 | 704 | 0.7+ | 0.7+ | 2006 10 02 | 703 | 1.3− | 0.7− | | |
| 2004 01 27 | 703 | 0.9+ | 0.4+ | 2004 05 13 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.3− | 1.5+ | | |
| 2004 01 27 | 703 | 0.9+ | 0.5+ | 2004 05 14 | 608 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.5+ | | |
| 2004 02 27 | 704 | 0.3+ | 0.4+ | 2004 05 14 | 608 | 0.1+ | 0.7− | 2006 10 22 | 703 | 0.1+ | 0.2− | | |
| 2004 02 27 | 704 | 0.5+ | 1.0+ | 2004 05 14 | 608 | 0.3+ | 0.7− | 2006 10 22 | 703 | 0.2− | 0.8+ | | |
| 2004 02 27 | 704 | 0.1− | 0.9+ | 2004 05 17 | 704 | 0.8+ | 0.8+ | | | | | | |

**(140989)∗ 2001 WW$_{17}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.73801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19207103 | $\omega$ | 56.62203 | | +0.82707822 | −0.56187769 | |
| $a$ | 2.9750537 | $\Omega$ | 337.55199 | | +0.50144831 | +0.74990178 | |
| $e$ | 0.1136640 | $i$ | 2.30127 | | +0.25395121 | +0.34920020 | |
| $P$ | 5.13 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3− | 0.1+ | 2003 02 02 | 644 | 0.8+ | 0.5− | 2006 10 17 | 703 | 0.0 | 0.7− | | |
| 2001 10 14 | 704 | 0.5− | 0.4+ | 2003 02 02 | 644 | 0.6+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.1− | | |
| 2001 10 14 | 704 | 0.1− | 0.0 | 2003 02 02 | 644 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.1− | 0.3+ | | |
| 2001 10 14 | 704 | 0.3− | 0.7+ | 2004 05 13 | 691 | 0.8+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 2001 10 14 | 704 | 0.9− | 0.4− | 2004 05 13 | 691 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.7+ | | |
| 2001 10 19 | 644 | 0.1+ | 0.2+ | 2004 05 13 | 691 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2001 10 19 | 644 | 0.2+ | 0.4+ | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2001 10 19 | 644 | 0.2+ | 0.3+ | 2006 07 22 | G96 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2001 10 21 | 704 | 0.2− | 0.3+ | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 10 21 | 704 | 0.7− | 0.0 | 2006 07 22 | G96 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2001 10 21 | 704 | 1.1− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2001 10 21 | 704 | 1.0− | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− | | |
| 2001 10 21 | 704 | 0.7− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1+ | | |
| 2001 10 26 | 644 | 0.5− | 0.2+ | 2006 09 18 | 699 | 1.2− | 0.6− | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2001 10 26 | 644 | 0.7− | 0.2+ | 2006 09 18 | 699 | 0.9+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2001 10 26 | 644 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.2+ | 1.1− | 2006 10 31 | 691 | 0.1− | 0.1− | | |
| 2001 11 10 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 699 | (2.2+ | 0.1+) | 2006 10 31 | 691 | 0.1− | 0.2− | | |
| 2001 11 10 | 704 | (1.7+ | 1.1+) | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 2001 11 10 | 704 | 1.2+ | 1.2+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.2− | | |
| 2001 11 10 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 16 | 644 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 2001 11 16 | 644 | 0.8+ | 0.7+ | 2006 09 27 | 704 | (1.6+ | 0.3+) | 2006 11 11 | 703 | 0.4− | 0.4+ | | |
| 2001 11 16 | 644 | 0.3+ | 0.8+ | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.0 | 0.5− | | |
| 2001 11 17 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 1.4+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.6− | | |
| 2001 11 17 | 704 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.2+ | | |
| 2001 11 17 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.3+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.2+ | | |
| 2001 11 19 | 704 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.4− | | |
| 2001 11 19 | 704 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2001 11 19 | 704 | 0.3− | 0.5− | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.4− | | |
| 2001 11 19 | 704 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.5− | | |
| 2003 01 28 | 291 | 0.1− | 0.3− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.3+ | | |
| 2003 01 28 | 291 | 0.5− | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.1− | | |
| 2003 01 28 | 291 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.4− | 1.2− | 2006 11 19 | 704 | 0.1+ | 0.7− | | |

**(140990)∗ 2001 WP$_{19}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.44612 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20649777 | $\omega$ | 99.83528 | | +0.80458086 | +0.59063287 | |
| $a$ | 2.8348221 | $\Omega$ | 223.99605 | | −0.57369130 | +0.74625459 | |
| $e$ | 0.1829584 | $i$ | 5.09315 | | −0.15338815 | +0.30701286 | |
| $P$ | 4.77 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.5+ | 1.0+ | 2001 11 19 | 704 | 0.2+ | 0.5+ | 2005 07 07 | 704 | (1.3− | 1.9+) | | |
| 2001 10 13 | 704 | 0.3+ | 0.4+ | 2001 11 19 | 704 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.4− | | |
| 2001 10 13 | 704 | 0.4− | 1.0+ | 2001 11 19 | 704 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.2− | | |
| 2001 10 13 | 704 | (1.3− | 1.8+) | 2001 11 19 | 704 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.0 | | |
| 2001 10 18 | 691 | 0.4− | 0.0 | 2001 11 19 | 704 | 0.1+ | 0.8− | 2006 09 28 | G96 | 0.1− | 0.3− | | |
| 2001 10 18 | 691 | 0.2− | 0.0 | 2001 11 21 | 704 | 0.3− | 1.1+ | 2006 10 19 | G96 | 0.3+ | 0.2− | | |
| 2001 10 18 | 691 | 0.3− | 0.2+ | 2001 11 21 | 704 | 0.6− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 2001 10 19 | 644 | 0.3+ | 0.0 | 2001 11 21 | 704 | 0.2− | 1.3+ | 2006 10 19 | G96 | 0.3+ | 0.1+ | | |
| 2001 10 19 | 644 | 0.3+ | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 2001 10 19 | 644 | 0.3+ | 0.3+ | 2001 11 21 | 704 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2001 10 21 | 704 | 0.2+ | 0.3+ | 2001 12 17 | 691 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.1− | | |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2001 12 17 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2001 10 21 | 704 | 0.0 | 0.7+ | 2001 12 17 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.3− | | |
| 2001 10 21 | 704 | 0.1+ | 0.5+ | 2004 04 12 | 691 | 0.3+ | 0.8+ | 2006 11 12 | G96 | 0.4− | 0.3− | | |
| 2001 10 21 | 704 | 0.4+ | 0.3+ | 2004 04 12 | 691 | 0.2+ | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.1+ | | |
| 2001 10 26 | 644 | 0.1+ | 0.4+ | 2004 04 12 | 691 | 0.3+ | 0.6+ | 2006 11 12 | G96 | 0.4− | 0.1+ | | |
| 2001 10 26 | 644 | 0.0 | 0.6+ | 2004 04 19 | 691 | 0.2+ | 0.6+ | 2006 11 12 | G96 | 0.1− | 0.0 | | |
| 2001 10 26 | 644 | 0.1− | 0.8+ | 2004 04 19 | 691 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 1.2− | 0.5+ | | |
| 2001 11 09 | 704 | 0.3− | 0.2+ | 2004 04 19 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.8+ | 1.2+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.4− | 0.9+ | 2005 06 04 | 691 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2001 11 09 | 704 | 0.5+ | 0.2− | 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | (0.8+ | 1.6+) |
| 2001 11 09 | 704 | 0.4− | 0.7− | 2005 06 04 | 691 | 0.3− | 0.5+ | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2001 11 09 | 704 | 0.8− | 0.1+ | 2005 06 17 | 691 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 11 17 | 704 | 0.2+ | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.5− | 0.7+ | 2005 06 17 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2001 11 17 | 704 | 0.2+ | 1.2+ | 2005 07 07 | 704 | 0.7+ | 0.4− | | | | |
| 2001 11 17 | 704 | 0.0 | 0.0 | 2005 07 07 | 704 | 0.7− | 0.6+ | | | | |

**(140991)∗ 2001 WG$_{20}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.54451 | | (2000.0) | | | |
| $n$ | 0.20275569 | $\omega$ | 341.27950 | | +0.99909923 | +0.04121070 |
| $a$ | 2.8695955 | $\Omega$ | 16.36850 | | −0.03288560 | +0.90264355 |
| $e$ | 0.0814830 | $i$ | 2.05785 | | −0.02681909 | +0.42841138 |
| $P$ | 4.86 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 691 | 0.3+ | 0.6+ | 2004 03 23 | 291 | 0.2− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 10 17 | 691 | 0.3+ | 0.6+ | 2004 03 23 | 291 | 1.1− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2001 10 17 | 691 | 0.4+ | 0.5+ | 2004 05 13 | 691 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.2− | 1.2+ | 2004 05 13 | 691 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2001 10 21 | 704 | 0.1− | 1.4+ | 2004 05 13 | 691 | 0.9+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.9+ |
| 2001 10 21 | 704 | 0.3− | 1.3+ | 2004 05 21 | 691 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2001 11 17 | 704 | 0.8− | 0.6+ | 2004 05 21 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 11 17 | 704 | 0.9− | 0.6+ | 2004 05 21 | 691 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 1.1+ | 0.2− |
| 2001 11 17 | 704 | 1.0− | 0.8+ | 2005 07 30 | E12 | 0.7− | 0.7+ | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2001 11 19 | 704 | 0.5− | 0.2+ | 2005 07 30 | E12 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2001 11 19 | 704 | 0.5− | 0.4+ | 2005 07 30 | E12 | 1.3+ | 0.8+ | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2001 11 19 | 704 | 0.7− | 0.7+ | 2005 07 30 | E12 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2001 11 19 | 704 | 1.0− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2001 11 21 | 704 | 1.2− | 1.3− | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2001 11 21 | 704 | 0.7− | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 03 23 | 291 | 0.2+ | 0.7+ | 2006 10 21 | 691 | 0.6− | 0.3+ | | | | |

**(140992)∗ 2001 WU$_{26}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.87572 | | (2000.0) | | | |
| $n$ | 0.19077960 | $\omega$ | 296.28189 | | +0.39073917 | −0.92006107 |
| $a$ | 2.9884645 | $\Omega$ | 130.68777 | | +0.85736942 | +0.35250984 |
| $e$ | 0.0381897 | $i$ | 2.15170 | | +0.33502325 | +0.17095155 |
| $P$ | 5.17 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.7− | 0.4+ | 2001 12 09 | 691 | 0.4+ | 0.5+ | 2005 07 03 | G96 | 0.1+ | 0.8+ |
| 2000 08 30 | 691 | 0.5− | 0.0 | 2001 12 09 | 691 | 0.1− | 0.3+ | 2005 07 03 | G96 | 0.3+ | 0.6+ |
| 2000 08 30 | 691 | 0.9− | 0.1+ | 2001 12 09 | 691 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.9+ | 0.1+ | 2002 12 14 | 645 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.5− |
| 2001 11 17 | 704 | 0.2− | 1.1+ | 2002 12 14 | 645 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.5− |
| 2001 11 17 | 704 | 1.3+ | 0.9+ | 2003 01 30 | 291 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2001 11 17 | 704 | 0.6+ | 0.1− | 2003 01 30 | 291 | 0.0 | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.2− |
| 2001 11 17 | 704 | 0.8+ | 1.4+ | 2003 01 30 | 291 | 0.5− | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2001 11 20 | 704 | 0.6+ | 0.2− | 2004 04 28 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.1− | 0.7+ | 2004 04 28 | 691 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2001 11 20 | 704 | (0.9+ | 2.1+) | 2004 04 28 | 691 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 0.4− | 0.4+ | 2004 05 13 | 691 | 0.5+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.8+ | 0.3+ | 2004 05 13 | 691 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.5+ | 0.4+ | 2004 05 13 | 691 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.5+ | 2005 07 03 | G96 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2001 11 21 | 704 | 0.4+ | 0.5+ | 2005 07 03 | G96 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− |

**(140993)∗ 2001 WB$_{27}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 279.12340 | | (2000.0) | | | |
| $n$ | 0.17477748 | $\omega$ | 10.06330 | | −0.05282038 | −0.98293198 |
| $a$ | 3.1681986 | $\Omega$ | 83.12256 | | +0.90342189 | −0.12222638 |
| $e$ | 0.0744586 | $i$ | 10.22422 | | +0.42548665 | +0.13749702 |
| $P$ | 5.64 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.8+ | 1.8+ | 2001 12 13 | 644 | 0.3− | 0.4+ | 2003 03 03 | 644 | 0.2− | 0.3+ |
| 1998 04 24 | 704 | 0.1+ | 0.1− | 2001 12 14 | 704 | 0.3+ | 0.2+ | 2003 03 03 | 644 | 0.1− | 0.7+ |
| 1998 04 24 | 704 | 0.6− | 0.3+ | 2001 12 14 | 704 | 0.3+ | 0.4+ | 2003 03 03 | 644 | 0.2+ | 0.5+ |
| 1998 04 24 | 704 | (3.9− | 2.3+) | 2001 12 14 | 704 | 0.6− | 0.9+ | 2004 05 10 | 703 | 0.6− | 0.7− |
| 2000 08 26 | 704 | 0.4+ | 0.4− | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2004 05 10 | 703 | 0.3+ | 0.6− |
| 2000 08 26 | 704 | 0.7+ | 0.1− | 2001 12 14 | 704 | 0.4− | 0.3− | 2004 05 10 | 703 | (1.1− | 1.9+) |
| 2000 08 26 | 704 | 0.0 | 0.4− | 2001 12 17 | 704 | 0.1− | 0.2+ | 2004 05 10 | 703 | (0.5− | 1.6+) |
| 2000 08 26 | 704 | 0.7− | 0.3− | 2001 12 17 | 704 | 0.4+ | 0.5+ | 2004 05 13 | 699 | (1.7+ | 0.9+) |
| 2001 09 17 | 704 | 0.1+ | 0.8− | 2001 12 17 | 704 | 0.8+ | 0.3+ | 2004 05 13 | 699 | 0.6− | 1.2+ |
| 2001 09 17 | 704 | 1.1+ | 0.4− | 2001 12 17 | 704 | 0.2− | 0.1− | 2004 05 13 | 699 | 1.3+ | 0.7+ |
| 2001 09 17 | 704 | 0.1+ | 0.4− | 2001 12 17 | 704 | 0.2− | 0.2+ | 2004 05 13 | 699 | 0.2+ | 0.4+ |
| 2001 09 17 | 704 | 1.0+ | 0.8− | 2001 12 20 | 704 | 0.8− | 0.4− | 2004 05 15 | 704 | 0.8+ | 1.3+ |
| 2001 10 25 | 644 | 1.0+ | 1.0− | 2001 12 20 | 704 | 0.4− | 0.0 | 2004 05 15 | 704 | 0.3− | 0.6+ |
| 2001 10 25 | 644 | 0.4− | 0.1− | 2001 12 20 | 704 | 0.1+ | 0.4− | 2004 05 15 | 704 | 0.1− | 1.1− |
| 2001 10 25 | 644 | 0.2− | 0.3− | 2002 01 05 | 699 | 0.8− | 0.0 | 2004 05 18 | 704 | (1.7+ | 0.5−) |
| 2001 11 09 | 704 | 0.4− | 0.6+ | 2002 01 05 | 699 | 0.2− | 0.4+ | 2004 05 18 | 704 | 0.5+ | 0.5+ |
| 2001 11 09 | 704 | 0.1− | 0.2+ | 2002 01 05 | 699 | 0.5+ | 0.7− | 2004 05 18 | 704 | 0.4+ | 0.4+ |
| 2001 11 09 | 704 | 0.1+ | 0.7+ | 2002 01 05 | 699 | 0.2− | 0.3− | 2004 05 18 | 704 | 0.9− | 0.1+ |
| 2001 11 09 | 704 | 0.1− | 0.4+ | 2002 01 11 | 699 | 0.4− | 0.6− | 2004 05 22 | 704 | 0.8− | 0.8+ |
| 2001 11 09 | 704 | 1.1− | 0.5− | 2002 01 11 | 699 | 1.1− | 1.1− | 2004 05 22 | 704 | 0.3+ | 0.5+ |
| 2001 11 09 | 644 | 0.5− | 0.3+ | 2002 01 11 | 699 | 0.4+ | 0.0 | 2004 05 22 | 704 | 0.6+ | 0.5+ |
| 2001 11 09 | 644 | 0.1+ | 0.7+ | 2002 01 11 | 699 | 0.2− | 0.7+ | 2004 05 22 | 704 | 1.2+ | 0.1+ |
| 2001 11 09 | 644 | 0.4− | 0.3+ | 2002 01 13 | 704 | 0.1− | 0.0 | 2005 08 04 | 644 | 0.3+ | 0.7+ |
| 2001 11 17 | 704 | 0.0 | 0.5− | 2002 01 13 | 704 | 0.3+ | 0.2− | 2005 08 04 | 644 | 0.2+ | 0.8+ |
| 2001 11 17 | 704 | 0.2− | 0.1+ | 2002 01 13 | 704 | 0.3+ | 0.1+ | 2005 08 04 | 644 | 0.1+ | 0.8+ |
| 2001 11 17 | 704 | 0.5− | 0.0 | 2002 01 13 | 704 | 0.4+ | 1.1+ | 2006 09 19 | 703 | 0.5− | 0.1− |
| 2001 11 17 | 704 | 0.0 | 0.3+ | 2002 01 13 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2001 11 17 | 704 | 0.3− | 0.4+ | 2002 01 15 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.2+ | 0.5+ |
| 2001 11 20 | 704 | 1.3+ | 0.3+ | 2002 01 15 | 704 | 0.3+ | 0.7+ | 2006 09 19 | 703 | 1.1− | 0.4+ |
| 2001 11 20 | 704 | 0.1+ | 0.2− | 2002 01 15 | 704 | 1.1+ | 0.4+ | 2006 09 25 | 703 | 0.3− | 0.8− |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2002 01 15 | 704 | 0.7+ | 1.1+ | 2006 09 25 | 703 | 0.4+ | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2003 01 26 | 699 | 1.0− | 0.6+ | 2006 09 25 | 703 | 0.6− | 0.1+ |
| 2001 11 20 | 704 | 0.8+ | 0.1− | 2003 01 26 | 699 | 0.2− | 1.1− | 2006 09 25 | 703 | 0.6+ | 0.3− |
| 2001 12 08 | 699 | 0.0 | 0.1+ | 2003 01 26 | 699 | 0.9− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2001 12 08 | 699 | 0.5− | 0.3+ | 2003 01 26 | 699 | (0.7− | 2.8+) | 2006 10 10 | 644 | 0.2− | 0.6+ |
| 2001 12 08 | 699 | 0.9+ | 0.6− | 2003 01 28 | 644 | 0.1+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.6+ |
| 2001 12 08 | 699 | 0.4− | 0.4+ | 2003 01 28 | 644 | 0.3− | 0.5+ | 2006 10 21 | 703 | 1.5− | 0.9+ |
| 2001 12 11 | 704 | 0.0 | 0.8− | 2003 01 28 | 644 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2001 12 11 | 704 | 0.2− | 0.5+ | 2003 02 06 | 704 | (2.0+ | 0.8+) | 2006 10 21 | 703 | 1.0− | 0.7+ |
| 2001 12 11 | 704 | 0.8− | 0.1+ | 2003 02 06 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.4− |
| 2001 12 11 | 704 | 0.7− | 0.6− | 2003 02 06 | 704 | 0.2+ | 0.8+ | 2006 10 28 | 703 | 0.1− | 0.9+ |
| 2001 12 11 | 704 | (2.1− | 0.7+) | 2003 02 28 | 608 | 0.9+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.7+ |
| 2001 12 13 | 644 | 0.3− | 0.3+ | 2003 02 28 | 608 | 1.3+ | 1.1− | 2006 10 28 | 703 | 0.6+ | 1.2+ |
| 2001 12 13 | 644 | 0.5− | 0.3+ | 2003 02 28 | 608 | 0.7+ | 0.9− | 2006 10 28 | 703 | 0.2+ | 0.3+ |

**(140994)∗ 2001 WR$_{27}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.86584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17203827 | $\omega$ | 296.94696 | | −0.58206377 | −0.81299681 | |
| $a$ | 3.2017396 | $\Omega$ | 188.69843 | | +0.77753348 | −0.55092101 | |
| $e$ | 0.1340643 | $i$ | 5.85434 | | +0.23799887 | −0.18847342 | |
| $P$ | 5.73 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 1.1− | 1.0− | 2003 02 23 | 699 | 1.1+ | 0.3+ | 2005 07 30 | E12 | 0.2+ | 0.5+ | |
| 1998 05 01 | 704 | 0.4+ | 0.6+ | 2003 02 23 | 699 | 0.8− | 0.6− | 2005 07 30 | E12 | 0.2− | 0.5+ | |
| 1998 05 01 | 704 | (0.3− | 2.2−) | 2003 03 06 | 704 | 0.3+ | 0.2+ | 2005 07 30 | E12 | 0.2− | 0.2− | |
| 1998 05 01 | 704 | 0.1+ | 1.3+ | 2003 03 06 | 704 | 0.5− | 0.8+ | 2005 07 30 | E12 | 0.7− | 0.7+ | |
| 2001 10 25 | 644 | 0.2+ | 0.6− | 2003 03 06 | 704 | 1.0+ | 1.4+ | 2006 08 28 | 703 | 0.2− | 0.1− | |
| 2001 10 25 | 644 | 1.2+ | 1.0− | 2003 03 06 | 704 | 0.5+ | 1.2+ | 2006 08 28 | 703 | 0.5− | 1.5+ | |
| 2001 10 25 | 644 | 0.6+ | 0.9− | 2003 03 06 | 704 | (1.9+ | 1.4+) | 2006 08 28 | 703 | 0.8− | 0.9+ | |
| 2001 11 16 | 644 | 0.5− | 0.4+ | 2003 03 07 | 683 | 0.1− | 0.6− | 2006 08 28 | 703 | 1.1− | 1.0+ | |
| 2001 11 16 | 644 | 0.8− | 0.2+ | 2003 03 07 | 683 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.0 | 0.4+ | |
| 2001 11 16 | 644 | 0.5− | 0.4+ | 2003 03 07 | 683 | 0.1− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.5+ | |
| 2001 11 17 | 704 | 0.7+ | 0.4− | 2003 03 07 | 704 | 0.0 | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | |
| 2001 11 17 | 704 | 0.7− | 0.5− | 2003 03 07 | 704 | 0.2− | 1.1+ | 2006 09 23 | 691 | 0.2− | 0.4+ | |
| 2001 11 17 | 704 | 0.0 | 0.2− | 2003 03 07 | 704 | 0.0 | 1.1+ | 2006 09 23 | 691 | 0.1− | 0.2+ | |
| 2001 11 17 | 704 | 0.5+ | 0.5− | 2003 03 07 | 704 | 0.6− | 1.2+ | 2006 09 23 | 691 | 0.0 | 0.5+ | |
| 2001 11 19 | 699 | 0.3− | 0.3− | 2003 03 07 | 704 | 0.1− | 1.0+ | 2006 09 25 | G96 | 0.1− | 0.2− | |
| 2001 11 19 | 699 | 0.6+ | 0.2+ | 2003 03 08 | 683 | (1.1− | 2.9+) | 2006 09 25 | G96 | 0.2+ | 0.0 | |
| 2001 11 19 | 699 | 0.0 | 0.7+ | 2003 03 08 | 683 | 0.2+ | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.1− | |
| 2001 11 19 | 699 | 0.6+ | 0.1− | 2003 03 08 | 683 | (1.8− | 2.5+) | 2006 09 25 | G96 | 0.0 | 0.0 | |
| 2001 11 20 | 704 | 0.8+ | 1.1− | 2003 03 09 | 683 | 0.9+ | 0.9+ | 2006 09 27 | 691 | 0.3− | 0.2+ | |
| 2001 11 20 | 704 | 0.4+ | 0.2+ | 2003 03 09 | 683 | 0.6+ | 0.6+ | 2006 09 27 | 704 | 0.8+ | 0.1− | |
| 2001 11 20 | 704 | 0.4− | 0.1− | 2003 03 09 | 683 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.2+ | |
| 2001 12 11 | 704 | 0.7− | 0.5− | 2003 03 09 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.4+ | |
| 2001 12 11 | 704 | 0.2− | 0.3− | 2003 03 09 | 704 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.1+ | |
| 2001 12 11 | 704 | 0.1− | 0.5+ | 2003 03 09 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.4+ | 0.1+ | |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2003 03 09 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.5+ | |
| 2001 12 11 | 704 | 0.1− | 0.6+ | 2003 03 09 | 704 | 0.2+ | 0.5+ | 2006 09 29 | 704 | 1.2− | 0.8+ | |
| 2001 12 14 | 644 | 0.4− | 0.2+ | 2003 03 12 | 683 | (1.5+ | 0.8+) | 2006 09 29 | 704 | 0.7+ | 0.9+ | |
| 2001 12 14 | 644 | 0.6− | 0.2+ | 2003 03 12 | 683 | 1.0− | 0.0 | 2006 09 29 | 704 | 0.2+ | 1.0− | |
| 2001 12 14 | 644 | 0.5− | 0.3+ | 2003 03 12 | 683 | 0.8+ | 0.9− | 2006 09 29 | 704 | 0.1− | 0.4+ | |
| 2001 12 18 | 644 | 0.5− | 0.1+ | 2003 03 25 | 608 | 0.2− | 1.1− | 2006 09 29 | 704 | 0.4+ | 0.4+ | |
| 2001 12 18 | 644 | 0.3− | 0.2+ | 2003 03 25 | 608 | 0.1− | 1.1− | 2006 10 02 | G96 | 0.2+ | 0.1− | |
| 2001 12 18 | 644 | 0.4− | 0.2+ | 2003 03 25 | 608 | 0.3− | 0.5− | 2006 10 02 | G96 | 0.3− | 0.2− | |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2003 03 26 | 699 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.1− | |
| 2001 12 18 | 704 | 0.6+ | 0.3+ | 2003 03 26 | 699 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.1− | |
| 2001 12 18 | 704 | 0.5+ | 0.2+ | 2003 03 26 | 699 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.5+ | |
| 2001 12 18 | 704 | 0.9+ | 0.1− | 2003 03 26 | 699 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.3+ | |
| 2001 12 18 | 704 | 1.2+ | 0.6− | 2003 03 27 | 691 | 0.2+ | 0.5+ | 2006 10 09 | 644 | 0.4− | 0.5+ | |
| 2002 01 08 | 644 | 0.3− | 0.2+ | 2003 03 27 | 691 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | |
| 2002 01 08 | 644 | 0.6− | 0.3+ | 2003 03 27 | 691 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 2002 01 08 | 644 | 0.5− | 0.4+ | 2003 03 27 | 703 | (0.1+ | 2.1−) | 2006 10 12 | 644 | 0.1+ | 0.3+ | |
| 2003 01 31 | 699 | 0.1− | 0.3+ | 2003 03 27 | 703 | (0.4+ | 2.2−) | 2006 10 16 | G96 | 0.1+ | 0.3+ | |
| 2003 01 31 | 699 | 1.0+ | 0.8+ | 2003 03 27 | 703 | (0.4+ | 1.6−) | 2006 10 16 | G96 | 0.5− | 0.0 | |
| 2003 01 31 | 699 | 0.3− | 0.3− | 2003 03 27 | 703 | 0.1− | 1.3− | 2006 10 16 | G96 | 0.5− | 0.4+ | |
| 2003 01 31 | 699 | 0.5+ | 0.1+ | 2003 04 05 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.6− | 0.2+ | |
| 2003 02 21 | 644 | 0.2− | 0.2+ | 2003 04 05 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ | |
| 2003 02 21 | 644 | 0.2+ | 0.3+ | 2003 04 05 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.4+ | |
| 2003 02 21 | 644 | 0.0 | 0.2+ | 2005 07 15 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.4+ | |
| 2003 02 23 | 699 | 0.1− | 0.2+ | 2005 07 15 | 691 | 0.2+ | 0.7+ | | | | | |
| 2003 02 23 | 699 | 0.1− | 0.3+ | 2005 07 15 | 691 | 0.1+ | 0.3+ | | | | | |

**(140995)∗ 2001 WS$_{27}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.86466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19084481 | $\omega$ | 232.32766 | | +0.99582571 | −0.08325642 | |
| $a$ | 2.9877837 | $\Omega$ | 132.41479 | | +0.09117918 | +0.92617344 | |
| $e$ | 0.1066296 | $i$ | 2.90453 | | −0.00418400 | +0.36779222 | |
| $P$ | 5.16 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 05 | 691 | 0.4− | 0.2+ | 2001 12 17 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 683 | 0.3+ | 0.9− | |
| 1998 03 05 | 691 | 0.0 | 0.1+ | 2001 12 17 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 683 | 0.5− | 1.3− | |
| 1998 03 05 | 691 | 0.3− | 0.1− | 2001 12 18 | 644 | 1.0+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− | |
| 2001 10 23 | 704 | (1.9+ | 1.5−) | 2001 12 18 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 683 | (1.0− | 1.8−) | |
| 2001 10 23 | 704 | 0.4− | 0.1+ | 2001 12 18 | 644 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.3− | |
| 2001 10 23 | 704 | 0.1− | 0.5− | 2004 05 21 | 691 | 0.5+ | 0.4+ | 2006 10 22 | 683 | 0.7− | 0.8− | |
| 2001 10 23 | 704 | 1.1− | 1.0− | 2004 05 21 | 691 | 0.4+ | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.1− | |
| 2001 10 24 | 704 | 0.0 | 0.5− | 2004 05 21 | 691 | 0.5+ | 0.4+ | 2006 10 23 | 683 | 0.3− | 0.3− | |
| 2001 10 24 | 704 | 0.1− | 0.1− | 2005 06 08 | 691 | 0.0 | 0.0 | 2006 10 23 | 683 | 0.2− | 0.0 | |
| 2001 10 24 | 704 | 0.1+ | 0.4− | 2005 06 08 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2− | |
| 2001 10 24 | 704 | (0.4+ | 1.6−) | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 10 23 | 683 | 0.1+ | 1.2+ | |
| 2001 10 24 | 704 | 0.6+ | 0.5− | 2005 06 12 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 | |
| 2001 10 25 | 333 | 0.2− | 0.1+ | 2005 06 12 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.5− | 0.1− | |
| 2001 10 25 | 333 | 0.1− | 0.3− | 2005 06 12 | 691 | 0.2− | 0.0 | 2006 10 27 | 683 | 0.9− | 0.1− | |
| 2001 10 25 | 333 | 0.3+ | 0.9− | 2005 06 14 | G96 | 0.4− | 0.5+ | 2006 10 27 | 683 | (1.3+ | 1.8+) | |
| 2001 11 16 | 644 | 0.3+ | 0.7+ | 2005 06 14 | G96 | 0.0 | 0.5+ | 2006 10 27 | 683 | 0.9− | 1.0+ | |
| 2001 11 16 | 644 | 0.2+ | 0.4+ | 2005 06 14 | G96 | 0.0 | 0.7+ | 2006 10 28 | 683 | 0.0 | 0.9− | |
| 2001 11 16 | 644 | 0.1+ | 0.5+ | 2005 06 14 | G96 | 0.2− | 0.6+ | 2006 10 28 | 683 | (1.5+ | 2.1+) | |
| 2001 11 17 | 704 | 0.0 | 0.3− | 2005 07 03 | G96 | 0.2− | 0.2+ | 2006 10 28 | 683 | 0.6+ | 0.2+ | |
| 2001 11 17 | 704 | 0.1+ | 0.6− | 2005 07 03 | G96 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2− | |
| 2001 11 17 | 704 | 0.0 | 1.1− | 2005 07 03 | G96 | (0.7+ | 1.5+) | 2006 11 08 | 644 | 0.2+ | 0.1− | |
| 2001 11 17 | 704 | 0.1− | 0.4− | 2005 07 03 | G96 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.6+ | 0.1+ | |
| 2001 11 17 | 704 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1− | |
| 2001 11 18 | 704 | 0.8− | 0.5− | 2006 09 30 | 703 | 1.1+ | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.0 | |
| 2001 11 18 | 704 | 0.0 | 0.6− | 2006 09 30 | 703 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.2− | |
| 2001 11 18 | 704 | (2.3+ | 0.6−) | 2006 09 30 | 703 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2− | |
| 2001 11 18 | 691 | 0.7− | 0.7+ | 2006 10 03 | 704 | 0.2− | 1.1+ | 2006 11 09 | 644 | 0.2+ | 0.3− | |
| 2001 11 18 | 691 | 0.7− | 0.0 | 2006 10 03 | 704 | 0.5+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.1− | |
| 2001 11 18 | 691 | 0.2− | 0.0 | 2006 10 03 | 704 | 0.2+ | 1.3+ | 2006 11 14 | 704 | 0.4+ | 1.0− | |
| 2001 11 20 | 704 | 0.7− | 0.8+ | 2006 10 03 | 704 | 0.1− | 0.6+ | 2006 11 14 | 704 | 0.5+ | 1.4− | |
| 2001 11 20 | 704 | 0.8− | 1.0+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 704 | 0.4+ | 0.9− | |
| 2001 11 20 | 704 | 0.3− | 1.0+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.0 | |
| 2001 11 20 | 704 | (0.5− | 1.6+) | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 14 | 704 | (2.1+ | 0.1−) | |
| 2001 11 21 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 703 | (0.4+ | 4.5−) | 2006 11 15 | G96 | 0.4+ | 0.4− | |
| 2001 11 21 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | (2.3+ | 3.3−) | 2006 11 15 | G96 | 0.2+ | 0.6− | |
| 2001 11 21 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.3− | |
| 2001 12 08 | 699 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− | |
| 2001 12 08 | 699 | 0.9− | 0.8− | 2006 10 17 | G96 | 0.3+ | 0.9− | 2006 11 17 | 704 | 0.4+ | 0.5+ | |
| 2001 12 08 | 699 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 17 | 704 | 0.1+ | 0.3+ | |
| 2001 12 08 | 699 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 11 17 | 704 | 0.3+ | 0.4+ | |
| 2001 12 11 | 704 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.2+ | 1.0+ | |
| 2001 12 11 | 704 | 0.4+ | 0.7+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | (0.5− | 2.1+) | |
| 2001 12 11 | 704 | 0.4+ | 0.9+ | 2006 10 18 | 691 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.1− | 0.3+ | |
| 2001 12 14 | 704 | 0.3+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.7− | 0.2− | |
| 2001 12 14 | 704 | 0.8+ | 0.4+ | 2006 10 19 | 683 | (1.4+ | 2.2−) | 2006 11 20 | 704 | 0.1− | 1.3+ | |
| 2001 12 14 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 683 | (1.8+ | 1.6−) | 2006 11 20 | 704 | 0.0 | 1.0+ | |
| 2001 12 14 | 704 | 0.8+ | 0.5+ | 2006 10 19 | 691 | 1.1− | 1.3+ | 2006 11 28 | 704 | 0.1− | 0.2+ | |
| 2001 12 14 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 683 | 0.8+ | 1.5+ | 2006 11 28 | 704 | 0.1+ | 1.4− | |
| 2001 12 17 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.0 | |
| 2001 12 17 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.7+ | 1.4+ | |
| 2001 12 17 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 683 | 0.3+ | 0.1− | | | | | |

**(140996)∗ 2001 WE$_{28}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.35093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22007048 | $\omega$ | 289.99690 | | +0.90263825 | −0.40095589 | |
| $a$ | 2.7170327 | $\Omega$ | 93.90533 | | +0.42963506 | +0.81772961 | |
| $e$ | 0.1434433 | $i$ | 9.02239 | | +0.02564968 | +0.41298021 | |
| $P$ | 4.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.4+ | 0.8− | 2005 09 26 | 704 | 0.8+ | 0.4− |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2001 12 18 | 704 | 0.3+ | 0.7− | 2005 09 26 | 704 | 0.3− | 0.1− |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 12 18 | 704 | 0.5− | 0.9− | 2005 10 03 | 703 | 1.3− | 0.6+ |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2001 12 18 | 704 | 0.1− | 0.9− | 2005 10 03 | 703 | 0.5− | 1.1− |
| 2001 11 16 | 644 | 0.1− | 0.3+ | 2002 01 05 | 699 | 0.1− | 0.9+ | 2005 10 03 | 703 | 0.1− | 1.3− |
| 2001 11 16 | 644 | 0.0 | 0.3+ | 2002 01 05 | 699 | 0.2+ | 0.4− | 2005 10 03 | 703 | 1.3− | 0.3+ |
| 2001 11 16 | 644 | 0.2− | 0.5+ | 2002 01 05 | 699 | 0.6+ | 1.4+ | 2005 10 07 | 699 | 0.4+ | 0.6+ |
| 2001 11 17 | 704 | 0.2+ | 0.5+ | 2002 01 05 | 699 | (0.5+ | 2.4+) | 2005 10 07 | 699 | 0.9− | 0.7− |
| 2001 11 17 | 704 | 0.1+ | 0.4+ | 2002 01 08 | 644 | 0.1− | 1.1+ | 2005 10 07 | 699 | 0.8− | 1.3+ |
| 2001 11 17 | 704 | 0.7− | 0.3+ | 2002 01 08 | 644 | 0.2− | 0.8+ | 2005 10 07 | 699 | 0.2− | 0.7+ |
| 2001 11 17 | 704 | 0.9− | 0.3+ | 2002 01 08 | 644 | 0.2− | 1.0+ | 2005 10 07 | 699 | 0.8+ | 0.4+ |
| 2001 11 20 | 704 | 1.0+ | 0.5+ | 2003 03 23 | 644 | 0.3+ | 0.9+ | 2005 10 07 | 699 | 0.6− | 0.4+ |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2003 03 23 | 644 | 0.7+ | 1.0+ | 2005 10 07 | 699 | 0.2+ | 0.8+ |
| 2001 11 20 | 704 | 0.1+ | 0.9+ | 2003 03 23 | 644 | 0.7+ | 1.4+ | 2005 10 07 | 699 | 0.1− | 0.4+ |
| 2001 11 21 | 608 | 0.4− | 0.6− | 2004 04 30 | 691 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.5− |
| 2001 11 21 | 608 | 0.1− | 0.2+ | 2004 04 30 | 691 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2001 11 21 | 608 | 0.1− | 0.5− | 2004 04 30 | 691 | 0.4+ | 0.3+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2001 12 11 | 704 | 0.1+ | 0.1+ | 2005 08 31 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.6− |
| 2001 12 11 | 704 | 0.5− | 0.3+ | 2005 08 31 | 644 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2001 12 11 | 704 | 0.2− | 0.8+ | 2005 08 31 | 644 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2001 12 11 | 704 | 0.3− | 1.0+ | 2005 09 25 | 703 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2001 12 11 | 704 | 0.2− | 0.5+ | 2005 09 25 | 703 | 1.2+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 644 | 0.0 | 0.5+ | 2005 09 25 | 703 | (1.7+ | 1.1+) | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2001 12 18 | 644 | 0.2− | 0.3+ | 2005 09 25 | 703 | 0.5+ | 0.7− | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2001 12 18 | 644 | 0.2− | 0.5+ | 2005 09 26 | 704 | 0.1+ | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2001 12 18 | 704 | 0.2+ | 1.3− | 2005 09 26 | 704 | 0.6+ | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.7− |

**(140997)∗ 2001 WR$_{28}$ = 1998 HF$_{147}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 23125)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.05587 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18009060 | $\omega$ | 70.83523 | | −0.78733821 | −0.54793319 | |
| $a$ | 3.1055750 | $\Omega$ | 74.98370 | | +0.39568435 | −0.80062643 | |
| $e$ | 0.1543214 | $i$ | 17.01371 | | +0.47279217 | −0.24241811 | |
| $P$ | 5.47 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.2− | 0.1− | 2001 12 20 | 704 | (2.2− | 1.3−) | 2003 03 08 | 704 | 0.2+ | 0.5+ |
| 1998 04 17 | 691 | 0.1− | 0.1− | 2001 12 23 | 608 | 0.3+ | 0.6− | 2003 03 08 | 704 | 0.2− | 0.3+ |
| 1998 04 17 | 691 | 0.3− | 0.3− | 2001 12 23 | 608 | 0.4+ | 0.5− | 2003 03 08 | 704 | 0.5+ | 0.0 |
| 1998 04 23 | 704 | 0.4+ | 0.7+ | 2001 12 23 | 608 | 0.4+ | 0.8− | 2003 03 08 | 704 | 0.0 | 0.1+ |
| 1998 04 23 | 704 | 1.0+ | 0.6+ | 2002 01 05 | 699 | 0.0 | 0.4+ | 2003 03 09 | 644 | 0.3− | 0.9+ |
| 1998 04 23 | 704 | 2.0+ | 0.5+ | 2002 01 05 | 699 | 0.8− | 0.2+ | 2003 03 09 | 644 | 0.1− | 0.9+ |
| 1998 04 23 | 704 | 0.1+ | 0.4+ | 2002 01 05 | 699 | 0.8− | 0.5+ | 2003 03 09 | 644 | 0.2− | 0.7+ |
| 1998 04 24 | 704 | 1.0− | 0.1− | 2002 01 05 | 699 | (1.2− | 8.4−) | 2003 03 13 | 704 | 0.5+ | 0.1− |
| 1998 04 24 | 704 | 0.3− | 0.9+ | 2002 01 09 | 704 | 0.2+ | 0.3− | 2003 03 13 | 704 | 0.9− | 1.1+ |
| 1998 04 24 | 704 | 0.7+ | 0.0 | 2002 01 09 | 704 | 0.5+ | 0.2− | 2003 03 13 | 704 | (0.8− | 3.1−) |
| 2001 11 17 | 704 | 1.2+ | 0.8− | 2002 01 09 | 704 | 0.5+ | 0.2+ | 2003 03 13 | 704 | 1.0+ | 0.7− |
| 2001 11 17 | 704 | 1.1+ | 0.8− | 2002 01 09 | 704 | 0.4+ | 0.1− | 2003 03 13 | 704 | 0.4+ | 0.3− |
| 2001 11 17 | 704 | 0.2+ | 0.5− | 2002 01 09 | 704 | 0.1+ | 0.1+ | 2003 03 22 | 644 | 0.3− | 0.0 |
| 2001 11 17 | 704 | 1.0+ | 0.4− | 2002 01 13 | 704 | 0.2− | 0.0 | 2003 03 22 | 644 | 0.0 | 0.4+ |
| 2001 11 17 | 704 | 0.4+ | 0.9− | 2002 01 13 | 704 | 0.6+ | 0.5+ | 2003 03 22 | 644 | 0.1+ | 0.3− |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2002 01 13 | 704 | 0.3+ | 0.1+ | 2003 04 01 | 699 | 0.6− | 0.5− |
| 2001 11 20 | 704 | 0.4− | 0.1− | 2002 01 13 | 704 | 0.1+ | 0.6+ | 2003 04 01 | 699 | 0.6− | 0.1− |
| 2001 11 20 | 704 | 0.4− | 0.0 | 2002 01 13 | 704 | 0.1− | 1.1+ | 2003 04 01 | 699 | 0.5− | 0.6− |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2002 01 15 | 704 | 0.4− | 0.2+ | 2003 04 01 | 699 | 0.5− | 0.6− |
| 2001 11 20 | 704 | 0.5− | 0.1+ | 2002 01 15 | 704 | 0.4+ | 1.4+ | 2003 04 10 | 704 | 0.9− | 0.3+ |
| 2001 11 24 | 704 | 0.1+ | 0.7− | 2002 01 15 | 691 | 0.2+ | 0.3− | 2003 04 10 | 704 | 0.5− | 0.1− |
| 2001 11 24 | 704 | 0.1+ | 0.7− | 2002 01 15 | 704 | 0.0 | 0.2+ | 2003 04 10 | 704 | 0.1− | 0.4− |
| 2001 11 24 | 704 | 0.5− | 1.3− | 2002 01 15 | 704 | 0.4+ | 1.2+ | 2003 04 10 | 704 | 0.2− | 0.2− |
| 2001 11 24 | 704 | 0.2+ | 0.8+ | 2002 01 15 | 704 | 0.4− | 0.0 | 2003 04 10 | 704 | 0.7− | 0.5− |
| 2001 12 05 | 608 | 0.3+ | 1.3− | 2002 01 15 | 691 | 0.0 | 0.2− | 2003 04 24 | 704 | 1.3+ | 0.5− |
| 2001 12 05 | 608 | 0.4+ | 0.4− | 2002 01 15 | 704 | (0.9+ | 1.9+) | 2003 04 24 | 704 | 0.2+ | 0.4+ |
| 2001 12 05 | 608 | 0.3+ | 0.6− | 2002 01 15 | 704 | (0.7+ | 1.6+) | 2003 04 24 | 704 | 0.2+ | 0.4+ |
| 2001 12 07 | 644 | 0.4+ | 0.0 | 2002 01 15 | 691 | 0.2+ | 0.0 | 2003 04 24 | 704 | 0.8+ | 1.0+ |
| 2001 12 07 | 644 | 0.1+ | 0.2+ | 2002 01 15 | 704 | 0.5− | 0.5+ | 2003 04 24 | 704 | 0.2− | 0.7+ |
| 2001 12 07 | 644 | 0.4+ | 0.1+ | 2002 01 15 | 704 | (0.9+ | 1.7+) | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2001 12 08 | 699 | 0.8+ | 0.0 | 2002 02 07 | 704 | 0.6− | 0.2+ | 2006 09 26 | 703 | 1.1− | 0.9+ |
| 2001 12 08 | 699 | 0.5+ | 0.7− | 2002 02 07 | 704 | 1.4− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2001 12 08 | 699 | 0.9+ | 0.1+ | 2002 02 07 | 704 | 0.9− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 2001 12 08 | 699 | 0.6+ | 0.0 | 2002 02 07 | 704 | 1.5− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.6+ |
| 2001 12 11 | 704 | 0.8− | 0.1− | 2003 01 11 | 704 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 12 11 | 704 | 0.1+ | 0.1− | 2003 01 11 | 704 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2001 12 11 | 704 | 0.3− | 0.1− | 2003 01 11 | 704 | 0.4+ | 0.2− | 2006 10 28 | 703 | 0.0 | 0.4+ |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2003 01 26 | 704 | 0.5+ | 0.7− | 2006 10 28 | 703 | 0.3+ | 0.6+ |
| 2001 12 14 | 704 | 0.1− | 0.8+ | 2003 01 26 | 704 | 1.2+ | 0.3+ | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2001 12 14 | 704 | 0.3+ | 0.5+ | 2003 01 26 | 704 | 0.9+ | 0.6− | 2006 10 28 | 703 | (1.5− | 0.5−) |
| 2001 12 14 | 704 | 0.9+ | 0.1+ | 2003 02 07 | 704 | 1.5+ | 0.6− | 2006 11 16 | 703 | 1.1− | 0.8+ |
| 2001 12 14 | 704 | 1.0− | 0.1− | 2003 02 07 | 704 | 0.9+ | 0.3− | 2006 11 16 | 703 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.7− | 0.4+ | 2003 02 07 | 704 | 0.6− | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.8+ |
| 2001 12 17 | 704 | 0.5− | 0.3+ | 2003 02 07 | 704 | 0.5+ | 0.0 | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.1− | 2003 03 08 | 704 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.6− | 0.4+ | 2003 03 08 | 704 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.4− | 0.7+ |
| 2001 12 17 | 704 | 0.4− | 0.3+ | 2003 03 08 | 704 | 0.3+ | 0.5+ | 2006 11 16 | 703 | 0.6− | 0.3+ |
| 2001 12 20 | 704 | (1.9− | 1.2−) | 2003 03 08 | 704 | 0.4− | 0.2+ | 2006 11 16 | 703 | 1.0− | 0.0 |
| 2001 12 20 | 704 | 1.4− | 1.1− | 2003 03 08 | 704 | 0.4− | 0.3+ | | | | |
| 2001 12 20 | 704 | (2.1− | 1.2−) | 2003 03 08 | 704 | 0.7− | 0.1− | | | | |

**(140998)∗ 2001 WE$_{29}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.17027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17546280 | $\omega$ | 291.43798 | | +0.76316864 | −0.63467465 | |
| $a$ | 3.1599437 | $\Omega$ | 108.16957 | | +0.63007818 | +0.68912245 | |
| $e$ | 0.1344275 | $i$ | 7.34675 | | +0.14344032 | +0.34971179 | |
| $P$ | 5.62 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.6+ | 0.2− | 2002 01 08 | 644 | 0.4− | 0.6− | 2006 08 19 | 644 | 0.2− | 0.6+ |
| 2001 11 17 | 704 | 0.1+ | 1.4− | 2002 01 08 | 644 | 0.2− | 0.6− | 2006 08 19 | 644 | 0.6− | 0.6+ |
| 2001 11 17 | 704 | 0.2+ | 0.1+ | 2002 01 09 | 704 | 0.4− | 1.1− | 2006 08 21 | 644 | 0.4− | 0.6+ |
| 2001 11 17 | 704 | 0.2+ | 0.2+ | 2002 01 09 | 704 | 0.1+ | 0.1− | 2006 08 21 | 644 | 0.1− | 0.8+ |
| 2001 11 17 | 704 | 0.9+ | 0.3+ | 2002 01 09 | 704 | 0.0 | 1.2+ | 2006 08 21 | 644 | 0.3− | 0.6+ |
| 2001 11 20 | 704 | 0.1+ | 0.7− | 2003 02 21 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 1.3− | 1.1+ |
| 2001 11 20 | 704 | 0.1− | 0.2− | 2003 02 21 | 644 | 0.7+ | 0.2+ | 2006 08 28 | 699 | (0.1− | 2.3+) |
| 2001 11 20 | 704 | 0.1− | 0.6− | 2003 02 21 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.1− | 0.7+ |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2003 02 21 | 644 | 0.5+ | 0.1+ | 2006 08 28 | 699 | 0.8− | 1.4+ |
| 2001 11 24 | 704 | 0.0 | 0.1− | 2003 02 21 | 644 | 0.0 | 0.2+ | 2006 09 17 | 699 | 0.3+ | 1.1+ |
| 2001 11 24 | 704 | 0.4+ | 0.6+ | 2003 02 21 | 644 | 0.5+ | 0.0 | 2006 09 17 | 699 | 0.1+ | 0.7+ |
| 2001 11 24 | 704 | 0.3+ | 1.0+ | 2003 02 28 | 608 | 0.6− | 1.1+ | 2006 09 17 | 699 | 0.2+ | 0.3+ |
| 2001 11 24 | 704 | 0.5+ | 0.7+ | 2003 02 28 | 608 | 0.4− | 1.0+ | 2006 09 17 | 699 | 0.2+ | 0.8+ |
| 2001 11 24 | 704 | 0.1+ | 0.1+ | 2003 02 28 | 608 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2001 12 11 | 704 | 0.1+ | 0.3+ | 2003 03 07 | 699 | 1.2− | 0.0 | 2006 09 19 | 703 | 0.3− | 1.0+ |
| 2001 12 11 | 704 | 0.4− | 0.2+ | 2003 03 07 | 699 | (1.6+ | 0.7+) | 2006 09 19 | 703 | 0.2− | 0.3+ |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2003 03 07 | 699 | 1.2+ | 1.2+ | 2006 09 19 | 703 | 0.3− | 0.5+ |
| 2001 12 11 | 704 | 0.4− | 0.1− | 2003 03 07 | 699 | 0.9+ | 1.4+ | 2006 09 25 | 703 | 0.6+ | 0.1− |
| 2001 12 18 | 644 | 0.5− | 0.2+ | 2003 03 07 | 644 | 0.0 | 0.5+ | 2006 09 25 | 703 | 0.8+ | 0.2+ |
| 2001 12 18 | 644 | 0.6− | 0.2− | 2003 03 07 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 703 | 0.3+ | 0.5+ |
| 2001 12 18 | 644 | 0.5− | 0.2− | 2003 03 07 | 644 | 0.6+ | 0.7+ | 2006 09 25 | 703 | 0.9+ | 0.6+ |
| 2001 12 18 | 704 | 0.4+ | 0.6+ | 2004 04 20 | 704 | 0.4+ | 1.1+ | 2006 10 04 | 703 | (1.6− | 0.1+) |
| 2001 12 18 | 704 | (1.9+ | 0.1+) | 2004 04 20 | 704 | 0.4+ | 0.2+ | 2006 10 04 | 703 | 0.2− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.2+ | 0.8+ | 2004 04 20 | 704 | 0.7− | 0.6+ | 2006 10 04 | 703 | 0.4− | 0.1+ |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2004 05 23 | 704 | 0.4− | 0.2+ | 2006 10 04 | 703 | 0.5+ | 0.1+ |
| 2001 12 24 | 608 | 0.2− | 0.1+ | 2004 05 23 | 704 | (0.3− | 1.7+) | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2001 12 24 | 608 | 0.8− | 0.0 | 2004 05 23 | 704 | 0.5+ | 1.2+ | 2006 10 28 | 703 | 0.5− | 0.7− |
| 2001 12 24 | 608 | 0.5− | 0.1+ | 2004 05 23 | 704 | 0.6+ | 0.7+ | 2006 10 28 | 703 | 0.2− | 1.7− |
| 2002 01 08 | 644 | 0.4− | 0.8− | 2006 08 19 | 644 | 0.4− | 0.3+ | 2006 10 28 | 703 | 1.3− | 0.6− |

**(140999)∗ 2001 WK$_{29}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 277.71411 | | (2000.0) | | | |
| $n$ | 0.17743919 | $\omega$ | 28.17709 | | −0.48791503 | −0.84677548 |
| $a$ | 3.1364354 | $\Omega$ | 91.73331 | | +0.75575393 | −0.53128304 |
| $e$ | 0.1939082 | $i$ | 12.24060 | | +0.43677789 | −0.02663880 |
| $P$ | 5.55 | $H$ | 14.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 30 | 691 | 0.1− | 0.6+ | 2002 01 09 | 704 | 0.6+ | 0.6+ | 2003 03 27 | 704 | 0.3+ | 0.2+ |
| 1998 06 30 | 691 | 0.0 | 0.5+ | 2002 01 13 | 704 | 0.1− | 0.1− | 2003 03 31 | 645 | 0.0 | 0.0 |
| 1998 06 30 | 691 | 0.0 | 0.2+ | 2002 01 13 | 704 | 0.3− | 0.4+ | 2003 03 31 | 645 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.8+ | 0.4+ | 2002 01 13 | 704 | 0.0 | 0.4+ | 2003 04 20 | 608 | (0.8+ | 1.5+) |
| 2001 11 09 | 704 | 1.0− | 0.0 | 2002 01 13 | 704 | 0.1+ | 0.8+ | 2003 04 20 | 608 | 0.2+ | 0.8+ |
| 2001 11 09 | 704 | 0.6− | 0.3− | 2002 01 13 | 704 | 0.2− | 0.8+ | 2003 04 20 | 608 | 1.2+ | 0.4− |
| 2001 11 09 | 704 | 0.3− | 0.5+ | 2002 01 14 | 608 | 1.0+ | 1.2+ | 2003 04 25 | 704 | 0.7+ | 0.4+ |
| 2001 11 09 | 704 | 0.2− | 0.5+ | 2002 01 14 | 608 | 0.9+ | 0.8+ | 2003 04 25 | 704 | 0.1− | 0.3+ |
| 2001 11 17 | 704 | 0.4− | 0.3− | 2002 01 14 | 608 | 1.2+ | 0.6+ | 2003 04 25 | 704 | 0.7+ | 0.7+ |
| 2001 11 17 | 704 | (1.5− | 0.3−) | 2002 01 15 | 704 | 1.4− | 0.6+ | 2003 04 25 | 704 | 0.6+ | 0.6+ |
| 2001 11 17 | 704 | 0.7− | 0.7− | 2002 01 15 | 704 | 1.0− | 0.9+ | 2003 04 25 | 704 | (5.2− | 1.0−) |
| 2001 11 17 | 704 | 0.3− | 0.7− | 2002 01 15 | 704 | 0.1− | 0.5− | 2005 07 03 | 644 | 0.2− | 0.3− |
| 2001 11 17 | 704 | 0.7− | 0.7− | 2002 01 15 | 704 | 0.4− | 0.1− | 2005 07 03 | 644 | 0.2+ | 1.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.7+ | 2002 01 19 | 704 | 0.2+ | 0.7− | 2005 07 03 | 644 | 0.3+ | 0.7+ |
| 2001 11 20 | 704 | 0.2− | 0.3+ | 2002 01 19 | 704 | 0.6− | 0.9− | 2005 07 03 | 644 | 0.3+ | 0.8+ |
| 2001 11 20 | 704 | 0.4− | 0.2+ | 2002 01 19 | 704 | 0.8+ | 0.5+ | 2005 07 03 | 644 | 0.3+ | 0.8+ |
| 2001 11 20 | 704 | 0.4− | 0.8+ | 2002 01 19 | 704 | 0.2+ | 0.3− | 2005 07 03 | 644 | 0.5+ | 0.8+ |
| 2001 11 20 | 704 | 0.3− | 0.5+ | 2002 01 19 | 704 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.5+ | 0.9+ |
| 2001 11 24 | 704 | 0.8+ | 0.2+ | 2002 01 22 | 704 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.5− | 1.0+ |
| 2001 11 24 | 704 | 0.8+ | 1.0+ | 2002 01 22 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.1− | 1.0+ |
| 2001 11 24 | 704 | 0.7+ | 1.0+ | 2002 01 22 | 704 | 0.5− | 0.3+ | 2006 09 21 | 699 | 0.0 | 1.1+ |
| 2001 11 24 | 704 | 0.6+ | 0.1− | 2002 02 03 | 699 | 0.5+ | 0.4− | 2006 09 26 | 703 | 0.7− | 1.1+ |
| 2001 11 24 | 704 | 1.2+ | 0.0 | 2002 02 03 | 699 | 0.6− | 0.9− | 2006 09 26 | 703 | 0.5− | 0.1+ |
| 2001 12 08 | 699 | 0.5+ | 0.5− | 2002 02 03 | 699 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2001 12 08 | 699 | 0.4+ | 0.2− | 2002 02 03 | 699 | 0.2− | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2001 12 08 | 699 | 0.6+ | 0.4+ | 2003 02 06 | 704 | 1.2+ | 1.2− | 2006 10 02 | 703 | 1.1− | 0.0 |
| 2001 12 08 | 699 | 1.3− | 0.4+ | 2003 02 06 | 704 | 1.0+ | 0.7− | 2006 10 02 | 703 | 0.4− | 0.7− |
| 2001 12 11 | 704 | 0.2− | 0.0 | 2003 02 06 | 704 | 0.2+ | 0.3+ | 2006 10 02 | 703 | (1.5− | 0.2+) |
| 2001 12 11 | 704 | 0.6− | 0.1+ | 2003 02 06 | 704 | (1.8+ | 0.4+) | 2006 10 02 | 703 | 0.8− | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.0 | 2003 02 28 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2003 02 28 | 704 | 0.8+ | 0.2− | 2006 10 10 | 644 | 0.2− | 0.7+ |
| 2001 12 11 | 704 | 1.0− | 0.2− | 2003 02 28 | 704 | 0.5+ | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2001 12 17 | 704 | 1.0+ | 1.5− | 2003 02 28 | 704 | 0.8+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2001 12 17 | 704 | 0.8+ | 1.5− | 2003 02 28 | 704 | (1.6+ | 0.5+) | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | (0.6+ | 1.7−) | 2003 03 13 | 704 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.7+ | 1.5− | 2003 03 13 | 704 | (1.3+ | 1.8+) | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 12 17 | 704 | (0.5+ | 1.6−) | 2003 03 13 | 704 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 2001 12 20 | 704 | 0.5− | 0.3− | 2003 03 13 | 704 | 0.8+ | 1.0+ | 2006 10 12 | 644 | 0.3+ | 0.8+ |
| 2001 12 20 | 704 | 0.5− | 0.2− | 2003 03 13 | 704 | 1.1+ | 1.2+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 12 20 | 704 | 0.5− | 0.1+ | 2003 03 13 | 704 | 1.3+ | 1.3+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 12 20 | 704 | 0.5− | 0.1− | 2003 03 13 | 704 | 1.0+ | 0.9+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2002 01 06 | 699 | 0.8+ | 0.8+ | 2003 03 13 | 704 | 0.7− | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2002 01 06 | 699 | 0.5+ | 0.5+ | 2003 03 13 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 703 | (0.4− | 2.0+) |
| 2002 01 06 | 699 | 0.5− | 0.8+ | 2003 03 13 | 704 | 0.8+ | 1.2+ | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2002 01 06 | 699 | 0.9− | 0.4+ | 2003 03 23 | 645 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.5+ |
| 2002 01 09 | 704 | 0.5+ | 0.1− | 2003 03 23 | 645 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2002 01 09 | 704 | 0.5+ | 0.2− | 2003 03 27 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 1.4− | 0.5+ |
| 2002 01 09 | 704 | 0.3+ | 0.2+ | 2003 03 27 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 1.2+ |
| 2002 01 09 | 704 | 0.2+ | 0.3− | 2003 03 27 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 3.0− | 0.3− |

**(141000)∗ 2001 WO$_{29}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.71334 | | (2000.0) | | | |
| $n$ | 0.17172744 | $\omega$ | 181.67825 | | +0.98933880 | −0.14509496 |
| $a$ | 3.2056019 | $\Omega$ | 186.70337 | | +0.13483124 | +0.94501708 |
| $e$ | 0.1720984 | $i$ | 6.14618 | | +0.05503887 | +0.29307025 |
| $P$ | 5.74 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.9+ | 1.1+ | 2004 04 16 | 644 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.6+ | 0.1+ |
| 2000 08 01 | 704 | 0.5+ | 0.2− | 2005 06 03 | 703 | 0.3− | 0.7+ | 2006 09 20 | 699 | 0.1− | 0.3+ |
| 2000 08 01 | 704 | 0.5+ | 0.1+ | 2005 06 03 | 703 | 0.9+ | 0.7− | 2006 09 20 | 699 | 0.0 | 0.3− |
| 2000 08 01 | 704 | 0.8+ | 0.2− | 2005 06 03 | 703 | 0.4− | 0.6+ | 2006 09 20 | 699 | 0.0 | 0.3+ |
| 2000 08 21 | 699 | 0.4− | 0.5+ | 2005 06 03 | 703 | 0.9− | 0.8+ | 2006 09 20 | 699 | 0.2− | 0.3+ |
| 2000 08 21 | 699 | 1.3− | 0.0 | 2006 08 24 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 704 | (1.8+ | 0.8−) |
| 2000 08 21 | 699 | 0.8+ | 0.5+ | 2006 08 24 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 704 | 1.1+ | 0.2+ |
| 2000 08 21 | 699 | 0.7+ | 0.7+ | 2006 08 24 | 704 | 0.1+ | 0.5− | 2006 09 27 | 704 | 0.3− | 1.1+ |
| 2000 09 02 | 699 | 0.7− | 0.3+ | 2006 08 24 | 704 | 0.1+ | 0.8+ | 2006 09 27 | 704 | 0.9+ | 0.3− |
| 2000 09 02 | 699 | 0.6− | 0.5− | 2006 08 24 | 704 | 0.0 | 0.3− | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2000 09 02 | 699 | 0.7− | 0.3− | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2000 09 02 | 699 | 1.4− | 0.0 | 2006 08 27 | 699 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2001 11 17 | 704 | 0.4+ | 0.8+ | 2006 08 27 | 699 | 0.7− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.1+ |
| 2001 11 17 | 704 | 0.8− | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 2001 11 17 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.5− | 0.7+ | 2006 09 29 | 704 | 0.7+ | 0.0 |
| 2001 11 17 | 704 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 09 29 | 704 | 1.2+ | 0.4+ |
| 2001 11 17 | 704 | 0.9+ | 0.7+ | 2006 08 28 | 703 | 0.3+ | 0.1+ | 2006 09 30 | 699 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.8− | 1.0+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.9+ |
| 2001 11 20 | 704 | 0.6− | 1.4+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 30 | 699 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | (1.1− | 2.4+) | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.1− | 0.6− |
| 2001 11 20 | 704 | (0.5− | 1.8+) | 2006 08 30 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 699 | 0.1− | 0.1− |
| 2001 12 08 | 699 | 0.3− | 0.5+ | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.3− | 0.2+ |
| 2001 12 08 | 699 | 0.5+ | 0.7− | 2006 08 30 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 699 | 0.2− | 0.0 |
| 2001 12 08 | 699 | 0.8+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 12 08 | 699 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 12 11 | 704 | 0.0 | 0.5+ | 2006 09 01 | 704 | 0.4+ | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2001 12 11 | 704 | 0.3+ | 0.0 | 2006 09 01 | 704 | 0.7− | 0.4− | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.7+ | 0.7+ | 2006 09 01 | 704 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2001 12 18 | 704 | 0.4− | 0.9+ | 2006 09 01 | 704 | 0.6+ | 0.3− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.8− | 0.0 | 2006 09 01 | 704 | 1.2+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 12 18 | 704 | 0.1+ | 0.3− | 2006 09 11 | 703 | 0.7− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 01 09 | 704 | 0.4+ | 1.4− | 2006 09 11 | 703 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 01 09 | 704 | (0.2− | 1.6−) | 2006 09 11 | 703 | 0.7− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 01 09 | 704 | 0.1+ | 0.8− | 2006 09 11 | 703 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.1+ |
| 2002 01 09 | 704 | 0.2− | 1.1+ | 2006 09 17 | 703 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2003 03 30 | 645 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 04 13 | 691 | 0.3+ | 0.8+ | 2006 09 17 | 703 | 0.7− | 0.7+ | 2006 11 18 | 703 | 1.2− | 0.9+ |
| 2004 04 13 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 704 | 0.5+ | 0.1− | 2006 11 18 | 703 | 0.3+ | 0.4− |
| 2004 04 13 | 691 | 0.5+ | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.6+ | 2006 11 18 | 703 | 0.4− | 0.3+ |
| 2004 04 16 | 644 | 0.7+ | 0.6+ | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 11 18 | 703 | 1.1− | 0.7+ |
| 2004 04 16 | 644 | 0.4+ | 0.8+ | 2006 09 17 | 704 | 0.0 | 0.0 | | | | |

**(141001)∗ 2001 WX$_{30}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.07041 | | (2000.0) | | | |
| $n$ | 0.22146877 | $\omega$ | 285.84162 | | +0.85973214 | −0.50079648 |
| $a$ | 2.7055842 | $\Omega$ | 104.30521 | | +0.49922068 | +0.78247553 |
| $e$ | 0.0740388 | $i$ | 5.94232 | | +0.10788586 | +0.37004720 |
| $P$ | 4.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 02 | 704 | 1.0− | 0.7+ | 2001 11 24 | 704 | 0.9− | 0.0 | 2005 09 03 | 703 | 0.4+ | 0.0 |
| 1998 01 02 | 704 | 0.2+ | 0.6− | 2001 11 24 | 704 | 0.7+ | 0.1− | 2005 09 03 | 703 | 0.3− | 1.1− |
| 1998 01 02 | 704 | 0.1+ | 0.7− | 2001 11 24 | 704 | 0.9− | 0.3− | 2005 09 03 | 703 | 0.3− | 0.2− |
| 1998 01 02 | 704 | 0.7− | 0.4− | 2001 12 11 | 704 | 0.1+ | 0.3− | 2005 09 13 | 703 | 1.3+ | 0.5− |
| 2001 09 17 | 704 | 0.3+ | 0.0 | 2001 12 11 | 704 | 0.4− | 0.4− | 2005 09 13 | 703 | 0.4+ | 0.3+ |
| 2001 09 17 | 704 | 0.1+ | 0.1− | 2001 12 11 | 704 | 0.6− | 0.5− | 2005 09 13 | 703 | 1.0+ | 0.5+ |
| 2001 09 17 | 704 | 0.4+ | 0.4+ | 2001 12 11 | 704 | 0.2− | 0.6+ | 2005 09 13 | 703 | 0.5+ | 0.9+ |
| 2001 10 17 | 704 | 0.3+ | 0.1+ | 2001 12 11 | 704 | 0.2− | 0.4+ | 2005 09 23 | 703 | 0.1+ | 0.5− |
| 2001 10 17 | 704 | 0.9+ | 0.5− | 2001 12 18 | 644 | 0.3+ | 0.1+ | 2005 09 23 | 703 | 0.0 | 0.5+ |
| 2001 10 17 | 704 | (0.7+ | 1.8−) | 2001 12 18 | 644 | 0.0 | 0.5+ | 2005 09 23 | 703 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.5− | 0.3+ | 2001 12 18 | 644 | 0.3− | 0.1+ | 2005 09 23 | 703 | 0.7− | 0.2− |
| 2001 11 09 | 704 | 0.2− | 0.8− | 2001 12 18 | 704 | 0.5+ | 0.2+ | 2005 10 01 | 703 | 0.6− | 0.1− |
| 2001 11 09 | 704 | 0.5+ | 0.8− | 2001 12 18 | 704 | 0.2− | 0.3+ | 2005 10 01 | 703 | 0.9+ | 0.8− |
| 2001 11 09 | 704 | 0.2+ | 1.4− | 2001 12 18 | 704 | 0.7− | 0.2− | 2005 10 01 | 703 | 0.4− | 0.9− |
| 2001 11 17 | 704 | 0.1+ | 0.7+ | 2001 12 20 | 691 | 0.3+ | 0.7+ | 2005 10 01 | 703 | (0.5− | 1.6−) |
| 2001 11 17 | 704 | 0.1+ | 0.4+ | 2001 12 20 | 691 | 0.2+ | 0.6+ | 2005 10 22 | 703 | 1.0− | 0.7+ |
| 2001 11 17 | 704 | 0.1+ | 0.7+ | 2001 12 20 | 691 | 0.2+ | 0.8+ | 2005 10 22 | 703 | (1.1+ | 2.5+) |
| 2001 11 17 | 704 | 0.6+ | 0.6+ | 2002 12 11 | 645 | 0.0 | 0.0 | 2005 10 22 | 703 | (0.3+ | 2.3+) |
| 2001 11 19 | 699 | 0.3+ | 0.0 | 2002 12 11 | 645 | 0.1+ | 0.0 | 2005 10 22 | 703 | 0.3+ | 0.1+ |
| 2001 11 19 | 699 | 0.3− | 0.4− | 2003 02 28 | 704 | (0.9− | 2.6+) | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 11 19 | 699 | 0.9− | 0.0 | 2003 02 28 | 704 | 0.1− | 1.3+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 11 19 | 699 | 0.1− | 0.0 | 2003 02 28 | 704 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.6− | 0.1− |
| 2001 11 20 | 704 | 0.7− | 1.1+ | 2004 06 22 | 599 | (0.1+ | 1.8−) | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 11 20 | 704 | (1.8− | 0.9+) | 2004 06 22 | 599 | 0.3+ | 1.0+ | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2001 11 20 | 704 | 0.4− | 0.0 | 2004 06 22 | 599 | 0.6+ | 0.8+ | 2006 10 31 | G96 | 0.3+ | 0.9− |
| 2001 11 20 | 704 | 0.3− | 0.6− | 2004 06 22 | 599 | 0.1+ | 0.7+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 11 20 | 704 | (2.5− | 0.4+) | 2005 08 27 | 699 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2001 11 20 | 608 | 0.0 | 1.4− | 2005 08 27 | 699 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 608 | 0.1− | 0.6− | 2005 08 27 | 699 | 0.8− | 0.6+ | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2001 11 20 | 608 | 0.2− | 0.7− | 2005 08 27 | 699 | 0.5− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 11 24 | 704 | 0.3+ | 1.1+ | 2005 09 03 | 703 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.5− | 0.1− |

**(141002)∗ 2001 WY$_{30}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.67674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17752174 | $\omega$ | 279.45945 | | +0.90604700 | −0.40836513 | |
| $a$ | 3.1354631 | $\Omega$ | 104.70864 | | +0.41913403 | +0.82981489 | |
| $e$ | 0.1284541 | $i$ | 6.58869 | | +0.05835663 | +0.38032247 | |
| $P$ | 5.55 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.3+ | 0.4+ | 2002 01 08 | 644 | 0.6+ | 1.0+ | 2006 08 31 | 704 | 0.5− | 0.4+ |
| 2000 08 01 | 704 | 0.2− | 0.5+ | 2002 01 08 | 644 | 0.5+ | 1.0+ | 2006 08 31 | 704 | 0.2+ | 0.4+ |
| 2000 08 01 | 704 | 0.3+ | 0.3+ | 2002 01 08 | 644 | 0.5+ | 1.3+ | 2006 09 14 | 703 | 0.1+ | 0.0 |
| 2000 08 01 | 704 | 0.5+ | 0.2− | 2003 01 27 | 704 | 0.9+ | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.0 |
| 2000 08 01 | 704 | 0.6+ | 1.9+ | 2003 01 27 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.4+ |
| 2001 09 10 | 704 | 0.3− | 0.2− | 2003 01 27 | 704 | 1.3+ | 1.0− | 2006 09 14 | 703 | 0.1+ | 0.1+ |
| 2001 09 10 | 704 | 0.1− | 0.3+ | 2003 01 27 | 704 | 0.5+ | 0.7− | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2001 09 10 | 704 | 1.2− | 0.8+ | 2003 01 27 | 704 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2001 09 10 | 704 | 0.0 | 0.8+ | 2003 02 01 | 704 | 0.7+ | 0.1+ | 2006 09 20 | 644 | 0.4− | 0.2+ |
| 2001 10 19 | 291 | 1.0− | 0.2− | 2003 02 01 | 704 | 0.3− | 0.3− | 2006 09 21 | 699 | 0.8+ | 1.0− |
| 2001 10 19 | 291 | 0.3− | 0.3− | 2003 02 01 | 704 | 0.5− | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.6+ |
| 2001 10 19 | 291 | (2.2− | 0.4−) | 2003 02 01 | 704 | 0.3+ | 0.7+ | 2006 09 21 | 699 | 0.9− | 0.1+ |
| 2001 11 09 | 704 | 1.2+ | 1.0− | 2003 02 01 | 704 | 0.3− | 0.3− | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 2001 11 09 | 704 | 1.4+ | 0.4− | 2003 02 04 | 699 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.1+ |
| 2001 11 09 | 704 | 0.6+ | 0.5− | 2003 02 04 | 699 | 0.9− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.1+ |
| 2001 11 09 | 704 | 0.6+ | 0.1+ | 2003 02 04 | 699 | 0.5+ | 0.2− | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2001 11 09 | 704 | 1.0+ | 0.4+ | 2003 02 04 | 699 | 1.1− | 0.8+ | 2006 09 27 | 703 | 0.7+ | 0.2− |
| 2001 11 17 | 704 | 1.3− | 0.8+ | 2003 02 04 | 608 | 0.2+ | 0.5− | 2006 09 27 | 703 | 0.1− | 0.1+ |
| 2001 11 17 | 704 | 1.4− | 0.6+ | 2003 02 04 | 608 | 0.6+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.2+ |
| 2001 11 17 | 704 | 1.4− | 0.5+ | 2003 02 04 | 608 | 0.3+ | 0.2− | 2006 09 27 | 703 | 0.4+ | 0.2+ |
| 2001 11 17 | 704 | 1.5− | 0.3+ | 2003 02 19 | 644 | (1.9+ | 1.0+) | 2006 10 02 | 703 | 0.3+ | 1.1− |
| 2001 11 20 | 704 | 0.6+ | 0.2− | 2003 02 19 | 644 | 1.1+ | 0.2+ | 2006 10 02 | 703 | 0.4− | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.9− | 2003 02 19 | 644 | 1.5+ | 1.1+ | 2006 10 02 | 703 | 0.6− | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2003 02 23 | 699 | 0.2− | 0.9+ | 2006 10 02 | 703 | 0.1+ | 1.0+ |
| 2001 11 20 | 704 | 0.1− | 0.7− | 2003 02 23 | 699 | 0.1− | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 11 20 | 704 | 0.3+ | 0.5− | 2003 02 23 | 699 | 0.3+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 11 20 | 608 | 0.3− | 0.1− | 2003 02 23 | 699 | 0.9+ | 0.9− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2001 11 20 | 608 | 0.1+ | 0.2− | 2003 03 06 | 704 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2001 11 20 | 608 | 0.1+ | 0.2+ | 2003 03 06 | 704 | 0.6+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 11 24 | 704 | 0.2+ | 0.2− | 2003 03 06 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 0.7+ | 0.2− | 2003 03 06 | 704 | 0.5+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.6+ |
| 2001 11 24 | 704 | 1.1+ | 0.0 | 2003 03 06 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 0.1− | 0.0 | 2003 03 07 | 644 | 1.0+ | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2001 11 24 | 704 | 0.4− | 0.2+ | 2003 03 07 | 644 | 0.6+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.3− |
| 2001 12 08 | 699 | 0.1+ | 0.4+ | 2003 03 07 | 644 | 0.7+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2001 12 08 | 699 | 0.4+ | 0.0 | 2003 03 08 | 704 | 0.8− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 12 08 | 699 | 0.7+ | 0.1+ | 2003 03 08 | 704 | 0.8− | 0.4− | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2001 12 08 | 699 | 0.2− | 1.0+ | 2003 03 08 | 704 | 0.1− | 0.7+ | 2006 10 24 | 644 | 0.1− | 0.5+ |
| 2001 12 11 | 704 | 0.1+ | 0.1+ | 2003 03 08 | 704 | 1.4− | 0.8+ | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.1+ | 0.6− | 2004 04 14 | 691 | 0.1− | 0.7+ | 2006 10 24 | 644 | 0.2+ | 0.5+ |
| 2001 12 11 | 704 | 0.6− | 0.4+ | 2004 04 14 | 691 | 0.1− | 0.6+ | 2006 11 27 | 703 | 0.0 | 0.8− |
| 2001 12 11 | 704 | 0.0 | 0.3− | 2004 04 14 | 691 | 0.3− | 0.6+ | 2006 11 27 | 703 | 1.0+ | 0.3− |
| 2001 12 11 | 704 | 0.5− | 0.3− | 2006 08 30 | 699 | 0.0 | 0.7+ | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2001 12 18 | 704 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 1.7+ | 0.4− |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.3+ | | | | |
| 2001 12 18 | 704 | 1.2− | 0.9+ | 2006 08 31 | 704 | (0.1+ | 1.7+) | | | | |

**(141003)∗ 2001 WL$_{31}$ = 2004 JH$_3$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65170)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.01050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19763928 | $\omega$ | 284.29290 | | +0.95422030 | −0.29673379 | |
| $a$ | 2.9189089 | $\Omega$ | 92.97911 | | +0.28688295 | +0.87242141 | |
| $e$ | 0.1141426 | $i$ | 2.15692 | | +0.08462733 | +0.38836830 | |
| $P$ | 4.99 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.3− | 0.1− | 2001 11 21 | 704 | 0.5− | 0.9+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2000 07 29 | 807 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.4+ | 0.9+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.6+ | 0.6+ | 2001 12 19 | 644 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.4+ |
| 2001 10 23 | 704 | 0.6− | 0.8+ | 2001 12 19 | 644 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.7+ | 0.0 | 2001 12 19 | 644 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.6− | 0.6− | 2004 04 20 | 291 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2001 10 25 | 644 | 0.8− | 0.4− | 2004 04 20 | 291 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.7− | 0.3+ |
| 2001 10 25 | 644 | 1.0− | 0.7− | 2004 04 20 | 291 | 0.1− | 0.2− | 2006 11 17 | 703 | (1.6− | 3.5−) |
| 2001 10 25 | 644 | 0.8− | 0.2− | 2004 05 09 | 291 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 0.9− | 0.2+ |
| 2001 11 09 | 704 | 0.1+ | 0.5+ | 2004 05 09 | 291 | 0.7+ | 0.8+ | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2001 11 09 | 704 | 1.1+ | 0.4− | 2004 05 09 | 291 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.5+ |
| 2001 11 09 | 704 | 0.3− | 0.4− | 2004 05 13 | 291 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.7− | 0.3+ |
| 2001 11 09 | 704 | 0.7− | 1.4− | 2004 05 13 | 291 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2001 11 17 | 704 | 0.8+ | 0.6+ | 2004 05 13 | 291 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2001 11 17 | 704 | 0.8− | 0.6+ | 2004 05 23 | 691 | 0.6+ | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2001 11 17 | 704 | 1.3+ | 0.5+ | 2004 05 23 | 691 | 0.4− | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.6− |
| 2001 11 17 | 704 | 0.2+ | 0.6+ | 2004 05 23 | 691 | 0.1+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2001 11 19 | 699 | (0.2+ | 1.7+) | 2005 07 02 | 691 | 0.1− | 0.4+ | 2006 11 21 | 691 | 0.4+ | 1.1+ |
| 2001 11 19 | 699 | 0.8− | 0.7+ | 2005 07 02 | 691 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2001 11 19 | 699 | 0.3+ | 0.2+ | 2005 07 02 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.4− | 0.5− |
| 2001 11 19 | 699 | 0.5+ | 0.6+ | 2005 07 07 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.6− | 0.5+ | 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.5− |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2005 07 07 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 1.2− | 0.5− |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.3+ | 0.7− |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.3− | 1.7− |
| 2001 11 21 | 704 | 0.0 | 0.9+ | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.2− | 1.5+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.4+ | 1.0− |
| 2001 11 21 | 704 | 0.3− | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.2+ | | | | |

**(141004)∗ 2001 WR$_{31}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.08542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17972184 | $\omega$ | 224.16010 | | +0.05249900 | −0.99359613 | |
| $a$ | 3.1098216 | $\Omega$ | 223.12476 | | +0.95198818 | +0.08005494 | |
| $e$ | 0.0788037 | $i$ | 8.41628 | | +0.30159968 | −0.07973668 | |
| $P$ | 5.48 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 01 | 704 | 0.9− | 1.7+ | 2001 11 20 | 704 | 0.6− | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.1+ |
| 1998 04 01 | 704 | 1.6+ | 0.0 | 2001 11 21 | 704 | 0.1− | 0.5− | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 1998 04 01 | 704 | (0.3− | 2.6−) | 2001 11 21 | 704 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.7− | 0.5− |
| 1998 04 01 | 704 | (2.1− | 0.9+) | 2001 11 21 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.6− |
| 2001 10 17 | 333 | 0.5− | 0.4− | 2001 11 21 | 704 | 0.5− | 1.1+ | 2006 09 19 | 699 | 0.5− | 1.0+ |
| 2001 10 17 | 333 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 683 | 1.4− | 0.2− |
| 2001 10 17 | 333 | 0.4+ | 0.1+ | 2001 12 11 | 704 | 0.7+ | 0.6+ | 2006 09 22 | 683 | (2.9− | 0.4−) |
| 2001 10 23 | 049 | 1.1− | 0.2+ | 2001 12 11 | 704 | 0.3− | 0.8+ | 2006 09 22 | 683 | (0.4− | 1.7+) |
| 2001 10 24 | 049 | 0.9− | 0.3+ | 2001 12 11 | 704 | 0.5+ | 0.3− | 2006 09 25 | 704 | 0.2− | 0.1− |
| 2001 10 24 | 049 | 0.9− | 0.2+ | 2001 12 14 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 704 | (1.1− | 1.6+) |
| 2001 10 24 | 704 | 0.0 | 1.3− | 2001 12 14 | 704 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.3+ | 1.2− |
| 2001 10 24 | 704 | (0.6+ | 1.7−) | 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.0 | 1.5+ |
| 2001 10 24 | 704 | (1.2− | 1.9−) | 2001 12 14 | 704 | 0.2+ | 0.0 | 2006 09 25 | 683 | 1.4+ | 0.6+ |
| 2001 10 24 | 704 | 0.1+ | 0.3− | 2001 12 17 | 704 | 0.5− | 0.5− | 2006 09 25 | 683 | (1.1− | 2.0+) |
| 2001 10 25 | 644 | 0.2− | 1.0+ | 2001 12 17 | 704 | 0.4− | 1.1− | 2006 09 25 | 683 | 0.3+ | 0.7+ |
| 2001 10 25 | 644 | 0.2− | 1.3+ | 2001 12 17 | 704 | (1.8+ | 2.4−) | 2006 09 26 | 683 | (2.5+ | 0.5+) |
| 2001 10 25 | 644 | 0.4− | 0.7+ | 2001 12 17 | 704 | 1.3+ | 0.4+ | 2006 09 26 | 683 | 1.4+ | 0.8+ |
| 2001 11 09 | 704 | 0.1− | 0.5− | 2003 02 11 | 608 | 0.1− | 0.8− | 2006 09 26 | 683 | (1.5+ | 1.1−) |
| 2001 11 09 | 704 | 0.3+ | 0.6+ | 2003 02 11 | 608 | 0.4− | 0.6− | 2006 09 29 | 704 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.2− | 0.5+ | 2003 02 11 | 608 | 0.1− | 0.6+ | 2006 09 29 | 704 | 0.6− | 0.8+ |
| 2001 11 09 | 704 | 0.3− | 0.9+ | 2003 02 27 | 608 | 0.1− | 0.5+ | 2006 09 29 | 704 | 1.1− | 0.3− |
| 2001 11 09 | 704 | 0.8+ | 0.6+ | 2003 02 27 | 608 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.0 |
| 2001 11 16 | 644 | 0.3+ | 0.6+ | 2003 02 27 | 608 | 0.1+ | 0.4− | 2006 09 29 | 704 | 1.1− | 0.2+ |
| 2001 11 16 | 644 | 0.2+ | 0.6+ | 2004 04 24 | 291 | 0.1− | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 11 16 | 644 | 0.5+ | 0.6+ | 2004 04 24 | 291 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2001 11 17 | 704 | 1.0+ | 0.2− | 2004 04 24 | 291 | 0.2− | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 11 17 | 704 | 1.1+ | 0.4− | 2004 04 28 | 691 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 11 17 | 704 | 0.5+ | 0.2− | 2004 04 28 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.9+ | 0.3− |
| 2001 11 19 | 699 | 0.5− | 1.1+ | 2004 04 28 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2001 11 19 | 699 | 0.5− | 0.1− | 2006 08 29 | 699 | 0.4+ | 0.5− | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2001 11 19 | 699 | 0.1− | 0.0 | 2006 08 29 | 699 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2001 11 19 | 699 | 0.7− | 0.8+ | 2006 08 29 | 699 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2006 08 29 | 699 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2006 09 18 | 703 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.6− | 0.4+ | 2006 09 18 | 703 | 0.8− | 0.2+ | | | | |
| 2001 11 20 | 704 | 0.2− | 1.2+ | 2006 09 18 | 703 | 0.9+ | 0.3+ | | | | |

**(141005)∗ 2001 WP$_{32}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.80239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19514662 | $\omega$ | 207.53742 | | +0.92778341 | +0.37087702 | |
| $a$ | 2.9437123 | $\Omega$ | 130.63268 | | −0.33167061 | +0.86990606 | |
| $e$ | 0.1178706 | $i$ | 3.08510 | | −0.17091680 | +0.32513639 | |
| $P$ | 5.05 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.6− | 1.3+ | 2004 04 14 | 691 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2001 10 23 | 704 | 0.1− | 0.0 | 2004 04 14 | 691 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2001 10 23 | 704 | 0.7+ | 1.2+ | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 2001 10 23 | 704 | 0.3− | 1.4+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 0.3− | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 2001 11 17 | 704 | 0.3− | 0.0 | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 11 17 | 704 | 0.5− | 0.0 | 2005 05 20 | G96 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 11 17 | 704 | 0.6− | 0.1+ | 2005 05 20 | G96 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.8− | 0.6+ | 2005 05 20 | G96 | 0.6− | 0.4+ | 2006 11 02 | 703 | 0.9+ | 0.6− |
| 2001 11 19 | 699 | 0.9− | 1.1− | 2005 05 20 | G96 | 0.5− | 0.4+ | 2006 11 02 | 703 | 0.4− | 0.4+ |
| 2001 11 19 | 699 | 0.7− | 0.7+ | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 11 02 | 703 | 0.4+ | 0.4− |
| 2001 11 19 | 699 | 1.0− | 0.2+ | 2005 06 14 | G96 | 0.1+ | 0.4+ | 2006 11 02 | 703 | 0.3− | 0.3− |
| 2001 11 20 | 704 | 0.3− | 0.8+ | 2005 06 14 | G96 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2005 06 14 | G96 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.8+ | 2005 07 03 | G96 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2005 07 03 | G96 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.7+ | 0.1+ |
| 2001 11 20 | 704 | 1.0− | 0.1− | 2005 07 03 | G96 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 12 14 | 704 | 0.8+ | 0.4− | 2005 07 03 | G96 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 1.0+ | 0.3+ | 2005 07 06 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 12 14 | 704 | 0.2+ | 1.0+ | 2005 07 06 | 291 | 0.0 | 0.1+ | 2006 11 20 | 704 | 1.2− | 0.1− |
| 2001 12 14 | 704 | 0.8+ | 0.0 | 2005 07 06 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.5+ | 1.2+ |
| 2001 12 14 | 704 | 1.1+ | 0.2+ | 2005 07 06 | 291 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3− | 1.0+ |
| 2001 12 17 | 704 | 0.0 | 0.8+ | 2005 07 06 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | (2.0+ | 0.3+) |
| 2001 12 17 | 704 | 0.2− | 1.4+ | 2005 07 06 | 291 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.6+ | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.6− | 2006 11 28 | 704 | 0.5+ | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 28 | 704 | 0.3− | 0.8+ |
| 2001 12 17 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 28 | 704 | 0.2+ | 0.3− |

**(141006)∗ 2001 WS$_{32}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.24114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23593369 | $\omega$ | 315.83604 | | −0.04850993 | −0.99786498 | |
| $a$ | 2.5938373 | $\Omega$ | 136.88850 | | +0.93322165 | −0.06088535 | |
| $e$ | 0.0781426 | $i$ | 3.66865 | | +0.35601144 | +0.02363174 | |
| $P$ | 4.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.4− | 0.3+ | 2003 03 30 | 704 | 0.7+ | 0.7+ | 2005 10 24 | 699 | 0.4+ | 0.1+ |
| 2001 09 26 | 704 | 0.1− | 0.6+ | 2003 03 30 | 704 | 0.5+ | 0.4+ | 2005 10 24 | 699 | 0.4− | 0.0 |
| 2001 09 26 | 704 | (0.6+ | 2.2+) | 2003 03 31 | 703 | (1.1− | 1.9−) | 2005 10 24 | 699 | 0.7− | 0.1+ |
| 2001 11 15 | 644 | 0.3+ | 0.5− | 2003 03 31 | 703 | 0.4− | 0.0 | 2005 10 28 | 704 | 0.6− | 0.1+ |
| 2001 11 15 | 644 | 0.1+ | 0.1+ | 2003 03 31 | 703 | 0.0 | 0.9+ | 2005 10 28 | 704 | 0.1+ | 1.2+ |
| 2001 11 15 | 644 | 0.1+ | 0.4− | 2003 04 08 | 704 | 0.9+ | 0.9+ | 2005 10 28 | 704 | 0.4− | 0.5+ |
| 2001 11 17 | 704 | 0.4+ | 0.2− | 2003 04 08 | 704 | 1.0+ | 1.4+ | 2005 10 28 | 704 | 0.4+ | 0.3+ |
| 2001 11 17 | 704 | 1.3− | 0.3+ | 2003 04 08 | 704 | 0.2+ | 1.1+ | 2005 10 28 | 704 | 0.6− | 1.2+ |
| 2001 11 17 | 704 | 0.2− | 0.1+ | 2003 04 08 | 704 | (1.1+ | 1.6+) | 2005 10 30 | 699 | 0.5− | 0.5− |
| 2001 11 17 | 704 | 0.3− | 0.1− | 2003 04 08 | 704 | 1.4+ | 1.3+ | 2005 10 30 | 699 | (1.6+ | 0.7−) |
| 2001 11 19 | 699 | 0.1+ | 0.0 | 2003 04 10 | 704 | 0.1− | 0.8+ | 2005 10 30 | 699 | 0.2+ | 0.6+ |
| 2001 11 19 | 699 | 0.3− | 0.5− | 2003 04 10 | 704 | 0.7+ | 0.3+ | 2005 10 30 | 699 | 0.4+ | 0.4+ |
| 2001 11 19 | 699 | 0.4+ | 0.1− | 2003 04 10 | 704 | 0.7+ | 0.9+ | 2005 10 31 | 704 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.0 | 0.0 | 2003 04 10 | 704 | 0.4+ | 0.1+ | 2005 10 31 | 704 | 0.2+ | 0.3+ |
| 2001 11 20 | 704 | 0.0 | 1.3− | 2003 04 10 | 704 | 0.3+ | 0.8+ | 2005 10 31 | 704 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 1.0+ | 0.5+ | 2003 04 22 | 683 | (1.8+ | 0.6+) | 2005 10 31 | 704 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.2+ | 1.0+ | 2003 04 22 | 683 | 1.5+ | 0.0 | 2005 10 31 | 704 | 0.0 | 0.0 |
| 2001 11 20 | 704 | (0.4+ | 2.0−) | 2003 04 22 | 683 | 1.5+ | 0.3− | 2005 11 03 | 704 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.9− | 1.1− | 2003 04 25 | 683 | (2.7+ | 0.9−) | 2005 11 03 | 704 | 1.3+ | 0.3− |
| 2001 11 20 | 704 | (0.2− | 1.6−) | 2003 04 25 | 683 | 0.3− | 0.5− | 2005 11 03 | 704 | 0.5+ | 1.1+ |
| 2001 11 20 | 704 | (0.3− | 1.6−) | 2003 04 25 | 683 | 0.4+ | 0.6− | 2005 11 03 | 704 | 0.5− | 0.4+ |
| 2001 11 20 | 704 | 0.9+ | 0.9+ | 2003 04 28 | 683 | 0.4+ | 0.2− | 2005 11 03 | 704 | 0.7− | 0.5− |
| 2001 11 20 | 704 | (0.1− | 1.8−) | 2003 04 28 | 683 | (1.5− | 1.1−) | 2005 11 04 | 704 | 1.1+ | 0.4− |
| 2001 11 20 | 704 | 1.0− | 0.0 | 2003 04 28 | 683 | 1.0− | 1.3+ | 2005 11 04 | 704 | 0.9+ | 0.5+ |
| 2001 11 20 | 608 | 0.4− | 1.0− | 2003 04 29 | 683 | 1.1− | 1.1− | 2005 11 04 | 704 | 0.8− | 0.4+ |
| 2001 11 20 | 608 | 0.1− | 0.8− | 2003 04 29 | 683 | (1.3− | 2.4−) | 2005 11 04 | 704 | 0.5+ | 0.6− |
| 2001 11 20 | 608 | 0.3− | 0.2+ | 2003 04 29 | 683 | 1.4+ | 0.6− | 2005 11 05 | 699 | 0.5+ | 0.4+ |
| 2001 11 24 | 704 | 0.3+ | 1.0− | 2003 05 06 | 703 | (2.9+ | 0.1+) | 2005 11 05 | 699 | 0.5+ | 0.3+ |
| 2001 11 24 | 704 | 0.1+ | 0.6+ | 2003 05 06 | 703 | (2.1+ | 0.4−) | 2005 11 05 | 699 | 1.2+ | 0.3+ |
| 2001 11 24 | 704 | 0.8− | 0.1+ | 2003 05 06 | 703 | (2.4+ | 0.8+) | 2005 11 05 | 699 | 0.0 | 0.4+ |
| 2001 11 24 | 704 | 1.0+ | 0.2+ | 2003 05 06 | 703 | 0.1+ | 0.9+ | 2005 11 06 | 699 | 0.2+ | 0.4+ |
| 2001 11 24 | 704 | 0.1+ | 0.8− | 2005 09 23 | 691 | 0.4− | 0.0 | 2005 11 06 | 699 | 0.6− | 0.2+ |
| 2001 12 11 | 704 | 0.2− | 0.5− | 2005 09 23 | 691 | 0.4− | 0.1+ | 2005 11 06 | 699 | 0.2+ | 0.0 |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2005 09 23 | 691 | 0.1− | 0.1+ | 2005 11 06 | 699 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.3+ | 0.1+ | 2005 10 01 | 704 | 0.0 | 0.7+ | 2005 11 09 | 703 | 0.3+ | 1.4− |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2005 10 01 | 704 | 1.0+ | 0.5+ | 2005 11 09 | 703 | 0.4− | 1.2− |
| 2001 12 11 | 704 | 0.3− | 0.1− | 2005 10 01 | 704 | 0.1+ | 0.3+ | 2005 11 09 | 703 | 0.0 | 1.2− |
| 2001 12 17 | 704 | 0.4+ | 0.1+ | 2005 10 01 | 704 | 0.7+ | 0.1+ | 2005 11 09 | 703 | 0.2− | 0.5− |
| 2001 12 17 | 704 | 0.1+ | 0.4− | 2005 10 01 | 703 | 0.2− | 0.1− | 2005 11 22 | 703 | 1.2− | 0.8− |
| 2001 12 17 | 704 | 0.5− | 0.4− | 2005 10 01 | 703 | 0.5+ | 0.2− | 2005 11 22 | 703 | 0.2+ | 0.4+ |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2005 10 01 | 703 | 1.4− | 0.4+ | 2005 11 22 | 703 | 0.2− | 0.5− |
| 2001 12 20 | 704 | 0.6+ | 0.1+ | 2005 10 01 | 703 | 0.5− | 0.6+ | 2005 11 22 | 703 | (2.1− | 2.1+) |
| 2001 12 20 | 704 | 0.3+ | 0.5− | 2005 10 01 | 691 | 0.0 | 0.4+ | 2005 11 30 | 704 | 0.7+ | 0.5− |
| 2001 12 20 | 704 | 0.2+ | 0.4− | 2005 10 01 | 691 | 0.1+ | 0.3+ | 2005 11 30 | 704 | 0.8+ | 0.5− |
| 2001 12 20 | 704 | 0.0 | 0.1− | 2005 10 01 | 691 | 0.4+ | 0.8+ | 2005 11 30 | 704 | 0.5− | 0.5+ |
| 2002 01 08 | 644 | 0.5+ | 0.9+ | 2005 10 05 | 704 | 0.1− | 1.1+ | 2006 10 22 | G96 | 1.0− | 1.0− |
| 2002 01 08 | 644 | 0.2+ | 1.0+ | 2005 10 05 | 704 | 0.5− | 0.8+ | 2006 10 22 | G96 | 0.4− | 0.7− |
| 2002 01 08 | 644 | 0.6+ | 0.9+ | 2005 10 05 | 704 | 0.3− | 0.7+ | 2006 10 22 | G96 | 0.3− | 0.6− |
| 2002 01 13 | 704 | (1.3− | 1.6−) | 2005 10 05 | 704 | 0.2− | 1.0+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2002 01 13 | 704 | (2.7+ | 1.6−) | 2005 10 05 | 704 | 0.0 | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2002 01 13 | 704 | 0.5+ | 0.0 | 2005 10 06 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 1.1− | 0.5− |
| 2002 01 13 | 704 | 0.6− | 1.2+ | 2005 10 06 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.8− | 0.2− |
| 2003 03 06 | 704 | 0.4+ | 1.4+ | 2005 10 06 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2003 03 06 | 704 | (0.3+ | 2.5+) | 2005 10 07 | 703 | (0.3− | 2.0−) | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2003 03 06 | 704 | 0.9− | 1.5+ | 2005 10 07 | 703 | 0.7− | 1.5− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2003 03 06 | 704 | 0.1+ | 1.2+ | 2005 10 07 | 703 | 0.0 | 0.6− | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2003 03 06 | 704 | (0.4− | 1.9+) | 2005 10 07 | 703 | 0.7− | 0.7− | 2006 11 20 | G96 | 0.1− | 0.9− |
| 2003 03 26 | 691 | 0.3− | 0.2+ | 2005 10 12 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.5− | 0.9− |
| 2003 03 26 | 691 | 0.2− | 0.4+ | 2005 10 12 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2003 03 26 | 691 | 0.4− | 0.3+ | 2005 10 12 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.8− |
| 2003 03 26 | 644 | 0.1+ | 0.8+ | 2005 10 22 | 644 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2003 03 26 | 644 | 0.1+ | 0.6+ | 2005 10 22 | 644 | 0.4− | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2003 03 26 | 644 | 0.1+ | 0.7+ | 2005 10 22 | 644 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2003 03 27 | 699 | 0.3− | 1.2+ | 2005 10 23 | 703 | 0.2+ | 1.0− | 2006 11 25 | 691 | 0.2− | 0.3− |
| 2003 03 27 | 699 | 1.2+ | 0.0 | 2005 10 23 | 703 | 0.1− | 0.5− | 2006 11 25 | 691 | 0.1+ | 0.3− |
| 2003 03 27 | 699 | 1.0+ | 0.2− | 2005 10 23 | 703 | 0.3− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.3− |
| 2003 03 27 | 699 | 0.4− | 0.3− | 2005 10 23 | 703 | 0.5− | 0.1− | | | | |
| 2003 03 30 | 704 | 0.4− | 0.0 | 2005 10 24 | 699 | 1.0− | 0.6+ | | | | |

**(141007)∗ 2001 WD$_{33}$ = 1999 MK$_2$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 94298)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.64443 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18994850 | $\omega$ | 289.35557 | | +0.84813393 | −0.52733827 | |
| $a$ | 2.9971752 | $\Omega$ | 102.49981 | | +0.50350939 | +0.77251966 | |
| $e$ | 0.1059396 | $i$ | 2.98411 | | +0.16476385 | +0.35373397 | |
| $P$ | 5.19 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 18 | 691 | 0.2− | 1.0− | 2001 12 17 | 704 | (0.8+ | 2.9−) | 2006 10 16 | 703 | (2.0− | 0.9+) |
| 1999 06 18 | 691 | 0.2+ | 0.0 | 2001 12 17 | 704 | (0.1+ | 2.4−) | 2006 10 16 | 703 | (0.1− | 1.5+) |
| 1999 06 18 | 691 | 0.3− | 0.3− | 2001 12 17 | 704 | (1.3− | 3.1−) | 2006 10 18 | 691 | 0.3+ | 0.4+ |
| 2001 11 09 | 704 | 0.8− | 1.0− | 2002 12 14 | 645 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.2− |
| 2001 11 09 | 704 | 0.2− | 0.0 | 2002 12 14 | 645 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 0.3− | 0.3+ | 2004 03 16 | 291 | 0.1+ | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2001 11 09 | 704 | (1.1+ | 1.6+) | 2004 03 16 | 291 | 0.0 | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.2− | 0.1+ | 2004 03 16 | 291 | 0.0 | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.4+ | 0.1− | 2004 03 26 | 291 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 11 17 | 704 | 0.1+ | 0.9+ | 2004 03 26 | 291 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.4+ | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.5+ | 2004 03 26 | 291 | 0.1− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 0.1+ | 2005 06 12 | 691 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 11 20 | 704 | 0.2− | 0.2− | 2005 06 12 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2005 06 12 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2001 11 21 | 704 | 0.6+ | 0.1− | 2005 06 13 | G96 | 0.1− | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2005 06 13 | G96 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 12 13 | 644 | 0.1− | 0.5+ | 2005 06 13 | G96 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.6+ |
| 2001 12 13 | 644 | 0.4+ | 0.4+ | 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 12 13 | 644 | 0.3+ | 0.7+ | 2005 06 16 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2001 12 14 | 704 | (1.1+ | 1.9+) | 2005 06 16 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 17 | 703 | (2.1− | 0.0 ) |
| 2001 12 14 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.9− | 0.8− |
| 2001 12 14 | 704 | 0.5+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 1.0− |
| 2001 12 14 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.7+ | 2006 11 17 | 703 | 1.1− | 1.5− |
| 2001 12 14 | 691 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.3− | 1.4+ | | | | |

**(141008)∗ 2001 WA$_{34}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.46879 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23166015 | $\omega$ | 35.34309 | | −0.89700820 | −0.43775621 | |
| $a$ | 2.6256399 | $\Omega$ | 118.58505 | | +0.38781137 | −0.84586645 | |
| $e$ | 0.1557337 | $i$ | 3.99668 | | +0.21208167 | −0.30476129 | |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.7+ | 0.5− | 2001 12 14 | 704 | 0.3− | 0.2+ | 2003 05 01 | 704 | 1.0+ | 0.4− |
| 2001 11 17 | 704 | 0.5+ | 0.8− | 2001 12 17 | 704 | 0.6− | 0.6+ | 2003 05 01 | 704 | 0.7+ | 0.6+ |
| 2001 11 17 | 704 | 0.2+ | 0.6+ | 2001 12 17 | 704 | 0.3− | 1.0+ | 2003 05 01 | 704 | 0.5+ | 1.5+ |
| 2001 11 19 | 699 | 0.8− | 0.1+ | 2001 12 17 | 704 | 1.0+ | 0.2+ | 2003 05 01 | 704 | (0.2+ | 1.9+) |
| 2001 11 19 | 699 | (0.5− | 1.6−) | 2001 12 17 | 704 | 0.3+ | 0.1+ | 2005 09 25 | 691 | 0.3− | 0.5+ |
| 2001 11 19 | 699 | 0.3+ | 0.2+ | 2001 12 17 | 704 | 0.2− | 0.3+ | 2005 09 25 | 691 | 0.1− | 0.6+ |
| 2001 11 19 | 699 | 0.7− | 1.1− | 2003 03 24 | 691 | 0.1+ | 0.6+ | 2005 09 25 | 691 | 0.3− | 0.7+ |
| 2001 11 20 | 704 | 0.8+ | 1.1− | 2003 03 24 | 691 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.5+ | 2003 03 24 | 691 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.6− |
| 2001 11 20 | 704 | 1.1− | 0.7− | 2003 04 02 | 704 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.7− |
| 2001 11 20 | 704 | 0.5− | 0.6+ | 2003 04 02 | 704 | 0.2+ | 0.7− | 2006 10 27 | G96 | 0.0 | 0.5+ |
| 2001 11 20 | 704 | 0.6− | 0.5+ | 2003 04 02 | 704 | 0.8+ | 0.7− | 2006 10 30 | G96 | 0.6− | 0.4− |
| 2001 11 20 | 704 | 0.4+ | 1.2+ | 2003 04 02 | 704 | 0.1+ | 0.0 | 2006 10 30 | G96 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2003 04 26 | 608 | 0.3− | 1.5+ | 2006 10 30 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 1.2+ | 0.9+ | 2003 04 26 | 608 | (0.0 | 1.8+) | 2006 10 30 | G96 | 0.4+ | 0.2− |
| 2001 11 20 | 704 | 0.2+ | 0.4− | 2003 04 26 | 608 | 0.2+ | 1.2+ | 2006 11 24 | G96 | 0.1− | 0.6− |
| 2001 12 14 | 704 | 0.9− | 0.1− | 2003 04 27 | 699 | 0.6− | 0.8+ | 2006 11 24 | G96 | 0.4− | 0.5− |
| 2001 12 14 | 704 | 0.1− | 0.5+ | 2003 04 27 | 699 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.5+ | 0.6− |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2003 04 27 | 699 | 1.0− | 0.7− | 2006 11 24 | G96 | 0.2− | 0.8− |
| 2001 12 14 | 704 | 0.0 | 0.5+ | 2003 04 27 | 699 | 0.9− | 0.5− | | | | |

**(141009)∗ 2001 WQ$_{34}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.73751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19073588 | $\omega$ | 266.24850 | | +0.98505099 | +0.00929832 | |
| $a$ | 2.9889211 | $\Omega$ | 93.16277 | | +0.05819756 | +0.92186776 | |
| $e$ | 0.1037525 | $i$ | 9.92008 | | −0.16213449 | +0.38739304 | |
| $P$ | 5.17 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.4− | 0.6− | 2002 01 15 | 704 | 0.0 | 1.1+ | 2006 10 22 | 703 | 0.6− | 0.4− |
| 2001 11 17 | 704 | 0.2+ | 0.8− | 2002 01 15 | 704 | 0.8+ | 1.0+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2001 11 17 | 704 | 0.0 | 1.3− | 2002 01 15 | 704 | 0.1+ | 1.1+ | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2001 11 20 | 704 | 0.3+ | 0.8− | 2004 04 11 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.7+ | 0.6+ | 2004 04 11 | 644 | 0.4+ | 0.3+ | 2006 11 01 | 703 | 0.7− | 0.2+ |
| 2001 11 20 | 704 | 0.2+ | 0.1+ | 2004 04 11 | 644 | 0.1+ | 0.5+ | 2006 11 01 | 703 | 0.4− | 0.3+ |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2004 04 11 | 644 | 0.2+ | 0.3+ | 2006 11 01 | 703 | 0.5− | 0.8+ |
| 2001 11 24 | 704 | 0.6− | 0.2+ | 2004 04 11 | 644 | 0.4+ | 0.3+ | 2006 11 01 | 703 | 0.8− | 0.7− |
| 2001 11 24 | 704 | 1.1− | 0.4+ | 2004 04 11 | 644 | 0.8+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2001 11 24 | 704 | 0.2− | 0.2− | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2001 11 24 | 704 | 0.6− | 0.2− | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.5+ | 0.2+ |
| 2001 12 11 | 704 | 0.5+ | 0.7+ | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2001 12 11 | 704 | 0.1+ | 0.6+ | 2004 05 23 | 704 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.5+ | 0.5+ | 2004 05 23 | 704 | 0.0 | 1.4+ | 2006 11 11 | 703 | 0.1− | 0.4+ | | |
| 2001 12 11 | 704 | 0.2+ | 0.1+ | 2004 05 23 | 704 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.1+ | | |
| 2001 12 11 | 704 | (0.2+ | 1.7+) | 2004 05 23 | 704 | 0.5+ | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2001 12 18 | 644 | 0.4− | 0.4+ | 2004 05 23 | 704 | 0.2+ | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.0 | | |
| 2001 12 18 | 644 | 0.2− | 0.2+ | 2005 07 07 | 428 | 0.4+ | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.2+ | | |
| 2001 12 18 | 644 | 0.2− | 0.1+ | 2005 07 07 | 428 | 0.4− | 0.6+ | 2006 11 19 | 703 | 0.4+ | 0.4− | | |
| 2001 12 18 | 704 | 0.3− | 0.4+ | 2005 07 17 | E12 | 0.3− | 0.9+ | 2006 11 19 | 703 | (1.8+ | 0.8−) | | |
| 2001 12 18 | 704 | 0.3− | 0.3+ | 2005 07 17 | E12 | 0.4+ | 0.5+ | 2006 11 19 | 703 | 0.5+ | 1.4− | | |
| 2001 12 18 | 704 | 0.9− | 0.4+ | 2005 07 17 | E12 | 0.0 | 0.9+ | 2006 11 19 | 703 | 0.7− | 0.6− | | |
| 2002 01 08 | 644 | 0.1− | 0.7+ | 2005 07 17 | E12 | 0.3+ | 1.0+ | 2006 11 20 | 704 | 0.7− | 0.9+ | | |
| 2002 01 08 | 644 | 0.1− | 0.7+ | 2005 07 29 | E12 | 0.4− | 0.1+ | 2006 11 20 | 704 | 1.5+ | 0.3+ | | |
| 2002 01 08 | 644 | 0.0 | 0.3+ | 2005 07 29 | E12 | 0.4− | 1.2+ | 2006 11 20 | 704 | (0.1+ | 1.7+) | | |
| 2002 01 11 | 699 | 0.2+ | 1.3+ | 2005 07 29 | E12 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.3+ | 1.0+ | | |
| 2002 01 11 | 699 | 0.0 | 0.5+ | 2005 07 29 | E12 | 0.1− | 0.3− | 2006 11 20 | 704 | 1.2+ | 1.3+ | | |
| 2002 01 11 | 699 | 1.4− | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2002 01 11 | 699 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2002 01 15 | 704 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.2− | | |
| 2002 01 15 | 704 | 0.1+ | 0.9+ | 2006 10 16 | 703 | 0.4+ | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.1− | | |

**(141010)∗ 2001 WT$_{35}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.15690 | | (2000.0) | | | |
| $n$ | 0.18367880 | $\omega$ | 242.13693 | | −0.13832830 | −0.98790122 |
| $a$ | 3.0649968 | $\Omega$ | 216.02876 | | +0.94542370 | −0.11062704 |
| $e$ | 0.1594013 | $i$ | 6.84644 | | +0.29502426 | −0.10868691 |
| $P$ | 5.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.5+ | 0.1− | 2005 07 30 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 17 | 704 | 0.0 | 0.2+ | 2005 08 31 | 291 | 0.2− | 1.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2001 11 17 | 704 | 0.4+ | 0.1− | 2005 08 31 | 291 | (0.2− | 1.6+) | 2006 10 21 | 644 | 0.1+ | 0.4+ | | |
| 2001 11 17 | 704 | 1.2+ | 0.2− | 2005 08 31 | 291 | 0.1− | 1.2+ | 2006 10 27 | 691 | 0.7+ | 0.8+ | | |
| 2001 11 20 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.5− | | |
| 2001 11 20 | 704 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1− | | |
| 2001 11 20 | 704 | 0.7− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2001 11 20 | 704 | 0.1+ | 1.0+ | 2006 10 15 | 691 | 0.7− | 0.4− | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2001 11 20 | 704 | 0.2+ | 0.7+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.5− | | |
| 2001 12 08 | 699 | 0.6+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2+ | | |
| 2001 12 08 | 699 | 0.7− | 0.2+ | 2006 10 16 | 683 | 1.0+ | 0.9− | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2001 12 08 | 699 | 0.2+ | 1.0+ | 2006 10 16 | 683 | 1.3+ | 1.1− | 2006 10 31 | 691 | 0.2− | 0.2+ | | |
| 2001 12 08 | 699 | 0.4+ | 0.6+ | 2006 10 16 | 683 | 0.9+ | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.2− | | |
| 2001 12 11 | 704 | 0.2− | 0.9+ | 2006 10 17 | 683 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.4+ | | |
| 2001 12 11 | 704 | 0.5− | 1.1+ | 2006 10 17 | 683 | (0.1+ | 1.6+) | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2001 12 11 | 704 | 0.5− | 1.0+ | 2006 10 17 | 683 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.0 | | |
| 2001 12 11 | 704 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.5− | 2006 11 10 | 691 | 0.3− | 0.4− | | |
| 2001 12 11 | 704 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.4− | 2006 11 10 | 691 | 0.3− | 0.2− | | |
| 2002 01 08 | 644 | 0.7− | 0.9+ | 2006 10 17 | 703 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.3− | | |
| 2002 01 08 | 644 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.6− | 2006 11 11 | 703 | (2.3− | 1.0−) | | |
| 2002 01 08 | 644 | 0.4− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.5+ | | |
| 2003 03 11 | 644 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.2+ | | |
| 2003 03 11 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 691 | (1.5+ | 1.8+) | 2006 11 13 | G96 | 0.0 | 0.3− | | |
| 2003 03 11 | 644 | 0.0 | 0.8+ | 2006 10 19 | 683 | 0.6− | 0.1+ | 2006 11 13 | G96 | 0.5− | 0.4+ | | |
| 2003 05 01 | 691 | 0.2+ | 1.0+ | 2006 10 19 | 683 | (1.9− | 0.0 ) | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 2003 05 01 | 691 | 0.4+ | 0.9+ | 2006 10 19 | 683 | 0.7+ | 1.0− | 2006 11 13 | G96 | 0.4− | 0.5− | | |
| 2003 05 01 | 691 | 0.4+ | 0.7+ | 2006 10 20 | 683 | (1.6− | 0.2−) | 2006 11 16 | 691 | 0.1+ | 0.2+ | | |
| 2005 07 04 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 683 | (1.4− | 2.7+) | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2005 07 04 | 691 | 0.5− | 0.0 | 2006 10 20 | 683 | 1.2− | 1.0+ | 2006 11 16 | 691 | 0.2− | 0.1+ | | |
| 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2005 07 30 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.1− | | |
| 2005 07 30 | 644 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1+ | | |

**(141011)∗ 2001 WN$_{38}$**

Discovered 2001 Nov. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.32237 | | (2000.0) | | | |
| $n$ | 0.17656364 | $\omega$ | 242.36764 | | +0.53941652 | −0.84201273 |
| $a$ | 3.1467955 | $\Omega$ | 174.97314 | | +0.79687491 | +0.50791156 |
| $e$ | 0.1639354 | $i$ | 4.36069 | | +0.27206653 | +0.18177022 |
| $P$ | 5.58 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.3− | 0.1− | 2003 03 07 | 699 | 0.7+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.4− | | |
| 1997 02 03 | 691 | 0.1− | 0.1− | 2003 03 30 | 695 | 0.4+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.4− | | |
| 1997 02 03 | 691 | 0.2− | 0.2− | 2003 03 30 | 695 | 1.0+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.3− | | |
| 2000 08 29 | 704 | 0.2+ | 0.7+ | 2003 03 31 | 691 | (0.1− | 2.9+) | 2006 09 26 | G96 | 0.0 | 0.5− | | |
| 2000 08 29 | 704 | 0.0 | 0.6+ | 2003 03 31 | 691 | (0.3− | 2.8+) | 2006 09 27 | 691 | 0.4− | 0.1+ | | |
| 2000 08 29 | 704 | 0.0 | 1.1+ | 2003 03 31 | 691 | (0.2− | 2.4+) | 2006 09 27 | 704 | 0.2− | 0.0 | | |
| 2001 10 23 | 333 | 0.5+ | 0.7− | 2003 04 01 | 695 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.9+ | | |
| 2001 10 23 | 333 | 1.0+ | 0.2+ | 2003 04 01 | 695 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2001 10 23 | 333 | 0.3− | 0.4− | 2006 07 22 | G96 | 0.5− | 0.1− | 2006 09 27 | 704 | 0.1− | 0.3+ | | |
| 2001 11 17 | 704 | 0.2+ | 0.5+ | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 2001 11 17 | 704 | 0.2− | 0.1+ | 2006 07 22 | G96 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.5+ | | |
| 2001 11 17 | 704 | 0.2+ | 0.0 | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.2− | 0.2+ | | |
| 2001 11 17 | 704 | 0.5+ | 0.3+ | 2006 09 12 | 703 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.7+ | | |
| 2001 11 17 | 704 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.6− | 2006 09 28 | 704 | 0.3+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.4+ | 0.8− | 2006 09 12 | 703 | 0.6− | 0.4− | 2006 09 28 | 704 | 0.1+ | 0.9− | | |
| 2001 11 20 | 704 | 0.3− | 0.6− | 2006 09 12 | 703 | 0.9− | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.5+ | | |
| 2001 11 20 | 704 | 1.3+ | 1.4− | 2006 09 15 | 691 | 0.6+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1+ | | |
| 2001 11 20 | 704 | 1.1+ | 1.0− | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 2001 12 11 | 704 | 0.8− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.3+ | | |
| 2001 12 11 | 704 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.0 | 0.3+ | | |
| 2001 12 11 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.9+ | 0.7− | 2006 10 09 | 644 | 0.1+ | 0.2− | | |
| 2001 12 11 | 704 | 0.8− | 0.7+ | 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.2− | | |
| 2001 12 11 | 704 | 0.6− | 0.6+ | 2006 09 17 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2001 12 17 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.3− | | |
| 2001 12 17 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1− | | |
| 2001 12 17 | 644 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 1.2+ | | |
| 2001 12 18 | 704 | 0.2− | 0.7+ | 2006 09 18 | 699 | 0.5− | 0.7− | 2006 10 17 | 703 | 0.4− | 1.2+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 1.0+ | 1.5− | 2006 10 17 | 703 | 0.8− | 1.1+ | | |
| 2001 12 18 | 704 | 0.7− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.6− | 2006 10 17 | 703 | 0.0 | 1.1+ | | |
| 2001 12 18 | 704 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.5+ | 1.3− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 01 09 | 704 | 0.0 | 0.4+ | 2006 09 19 | 703 | (2.7− | 0.1−) | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2002 01 09 | 704 | 0.5+ | 0.5− | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.4− | 0.1− | | |
| 2002 01 09 | 704 | 1.0+ | 0.1− | 2006 09 20 | 704 | 0.3− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.5− | | |
| 2003 01 31 | 291 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.4− | | |
| 2003 01 31 | 291 | 0.2+ | 0.6+ | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.3− | | |
| 2003 01 31 | 291 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.5− | | |
| 2003 03 06 | 683 | 0.6− | 1.4+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 22 | 291 | 0.3+ | 0.2+ | | |
| 2003 03 06 | 683 | 0.5+ | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.3− | 2006 10 22 | 291 | 0.1+ | 0.1+ | | |
| 2003 03 06 | 683 | 0.4+ | 0.3− | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 22 | 291 | 0.1+ | 0.0 | | |
| 2003 03 07 | 699 | (4.8+ | 3.3+) | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 27 | 291 | 0.0 | 0.0 | | |
| 2003 03 07 | 699 | (2.0+ | 1.1+) | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 291 | 0.0 | 0.0 | | |
| 2003 03 07 | 699 | 0.1+ | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 27 | 291 | 0.1+ | 0.1+ | | |

**(141012)∗ 2001 WD$_{42}$**

Discovered 2001 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 153.74507 | | (2000.0) | | | |
| $n$ | 0.20134634 | $\omega$ | 132.82043 | | −0.32505943 | +0.94451465 |
| $a$ | 2.8829707 | $\Omega$ | 118.15419 | | −0.88252988 | −0.28503337 |
| $e$ | 0.0227608 | $i$ | 3.06915 | | −0.33981963 | −0.16324229 |
| $P$ | 4.90 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.2− | 0.5− | 2001 12 14 | 704 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.3− | | |
| 2001 11 18 | 704 | 0.1− | 0.4− | 2004 04 20 | 704 | 0.5− | 0.9+ | 2006 10 12 | 691 | 0.2− | 0.0 | | |
| 2001 11 18 | 704 | 0.6− | 0.2+ | 2004 04 20 | 704 | 0.8− | 0.7− | 2006 10 12 | 691 | 0.1− | 0.0 | | |
| 2001 11 18 | 704 | 0.7− | 0.0 | 2004 04 20 | 704 | (0.1− | 1.9+) | 2006 11 12 | G96 | 0.2+ | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.5+ | 0.8+ | 2004 04 20 | 704 | (1.6− | 1.5+) | 2006 11 12 | G96 | 0.1+ | 0.2− | | |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2004 05 13 | 691 | 0.3+ | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.7− | | |
| 2001 11 20 | 704 | 1.0− | 0.2− | 2004 05 13 | 691 | 0.3+ | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.5− | | |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2004 05 13 | 691 | 0.4+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.3+ | | |
| 2001 11 22 | 644 | 0.1+ | 0.8+ | 2004 05 21 | 704 | 0.6− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.3+ | | |
| 2001 11 22 | 644 | 0.1− | 0.9+ | 2004 05 21 | 704 | 0.8− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 2001 11 22 | 644 | 0.1+ | 1.2+ | 2004 05 21 | 704 | 0.3+ | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.7+ | | |
| 2001 12 11 | 704 | 0.3− | 1.5+ | 2004 06 15 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.3+ | | |
| 2001 12 11 | 704 | 0.0 | 1.0+ | 2004 06 15 | 691 | 0.2+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2001 12 11 | 704 | 0.6+ | 1.1+ | 2004 06 15 | 691 | 0.2+ | 0.5+ | 2006 12 01 | 691 | 0.0 | 0.6− | | |
| 2001 12 11 | 704 | 0.2+ | 0.9+ | 2005 07 12 | G96 | 0.3− | 0.2+ | 2006 12 01 | 691 | 0.2− | 0.9+ | | |
| 2001 12 14 | 704 | 0.8− | 0.5+ | 2005 07 12 | G96 | 0.2+ | 0.0 | 2006 12 01 | 691 | 0.3+ | 0.2− | | |
| 2001 12 14 | 704 | 0.0 | 1.0+ | 2005 07 12 | G96 | 0.2+ | 0.2− | | | | | | |
| 2001 12 14 | 704 | 0.6− | 0.1+ | 2005 07 12 | G96 | 0.5− | 0.4+ | | | | | | |

**(141013)∗ 2001 WO$_{43}$ = 2001 UB$_{180}$**

Discovered 2001 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.86427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17220589 | $\omega$ | 347.54362 | | −0.90271455 | +0.40093227 | |
| $a$ | 3.1996616 | $\Omega$ | 217.34611 | | −0.36936518 | −0.90822241 | |
| $e$ | 0.0488939 | $i$ | 14.90900 | | −0.22062593 | −0.11993905 | |
| $P$ | 5.72 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.0 | 0.3+ | 2001 12 17 | 704 | (1.7+ | 0.3−) | 2006 09 16 | 703 | (1.5+ | 1.3−) | | |
| 1995 11 24 | 691 | 0.0 | 0.1− | 2001 12 17 | 704 | 0.7− | 0.2− | 2006 09 16 | 703 | 0.4+ | 0.2− | | |
| 1995 11 24 | 691 | 0.0 | 0.0 | 2001 12 17 | 704 | 1.2− | 0.4+ | 2006 09 16 | 703 | 0.4− | 1.4+ | | |
| 2001 10 09 | 691 | 0.1+ | 0.0 | 2004 03 20 | 699 | 1.3− | 0.5− | 2006 09 22 | 683 | 0.9− | 0.2+ | | |
| 2001 10 09 | 691 | 0.2+ | 0.0 | 2004 03 20 | 699 | 0.5− | 1.1− | 2006 09 22 | 683 | 0.8− | 0.8+ | | |
| 2001 10 09 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 699 | 0.9− | 0.4+ | 2006 09 24 | 106 | 0.5− | 0.3− | | |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2004 03 20 | 699 | (2.6+ | 1.3+) | 2006 09 24 | 106 | 0.2− | 0.8+ | | |
| 2001 10 23 | 704 | 0.5+ | 0.4+ | 2004 03 29 | 704 | (2.7+ | 1.0+) | 2006 09 24 | 106 | 0.2− | 0.2+ | | |
| 2001 10 23 | 704 | 0.4+ | 0.0 | 2004 03 29 | 704 | (2.2+ | 1.6+) | 2006 09 24 | 106 | 0.3+ | 0.3− | | |
| 2001 10 23 | 704 | 0.2− | 0.8+ | 2004 03 29 | 704 | (2.7+ | 1.3+) | 2006 09 27 | 703 | 0.2− | 0.1− | | |
| 2001 10 23 | 704 | 0.1− | 0.8+ | 2004 03 29 | 704 | 0.7− | 0.8− | 2006 09 27 | 703 | 0.5− | 0.9+ | | |
| 2001 10 25 | 644 | 0.1+ | 1.3+ | 2004 04 17 | 704 | 0.9+ | 0.9+ | 2006 09 27 | 703 | 0.8− | 0.4− | | |
| 2001 10 25 | 644 | (0.6+ | 1.6+) | 2004 04 17 | 704 | 0.2+ | 0.9+ | 2006 09 27 | 703 | 0.5+ | 1.1− | | |
| 2001 10 25 | 644 | 0.6+ | 1.4+ | 2004 04 17 | 704 | 1.4+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.3+ | | |
| 2001 11 18 | 704 | 0.9− | 0.3− | 2004 04 19 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2001 11 18 | 704 | 0.6− | 0.7− | 2004 04 19 | 704 | 0.9+ | 0.7− | 2006 10 19 | 691 | 0.1+ | 0.3+ | | |
| 2001 11 18 | 704 | (1.7− | 0.9−) | 2004 04 19 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.1− | | |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 691 | 0.0 | 0.1+ | | |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2004 04 21 | 704 | 0.2− | 1.4+ | 2006 10 21 | 691 | 0.3+ | 0.1− | | |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2004 04 21 | 704 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.2+ | 2004 04 21 | 704 | 0.6− | 0.8+ | 2006 10 23 | 691 | 0.0 | 0.2− | | |
| 2001 11 20 | 704 | 0.7− | 0.2− | 2004 04 21 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.0 | | |
| 2001 12 14 | 704 | 0.2+ | 1.2− | 2004 04 21 | 704 | 0.1− | 0.9+ | 2006 10 31 | 691 | 0.3+ | 0.3− | | |
| 2001 12 14 | 704 | 0.2+ | 0.4− | 2004 05 24 | 691 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2001 12 14 | 704 | 1.2+ | 0.8+ | 2004 05 24 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2001 12 17 | 704 | 0.3− | 0.6+ | 2004 05 24 | 691 | 0.1− | 0.3+ | | | | | | |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.3+ | 0.1+ | | | | | | |

**(141014)∗ 2001 WJ$_{44}$ = 2005 ON$_{6}$**

Discovered 2001 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85260)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.43007 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20701220 | $\omega$ | 245.80493 | | +0.68886826 | +0.72276655 | |
| $a$ | 2.8301237 | $\Omega$ | 67.85533 | | −0.64148271 | +0.64341651 | |
| $e$ | 0.0172859 | $i$ | 3.42895 | | −0.33758029 | +0.25223739 | |
| $P$ | 4.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 691 | 0.2− | 1.8+ | 2004 06 11 | 691 | 0.5+ | 0.2+ | 2005 09 30 | G96 | 0.2− | 0.2− | | |
| 1998 01 07 | 691 | 0.3+ | 0.7+ | 2004 06 11 | 691 | 0.1+ | 0.2+ | 2005 11 06 | G96 | 0.0 | 0.1− | | |
| 1998 01 07 | 691 | 0.1− | 0.7− | 2004 06 17 | 691 | 0.4+ | 0.1+ | 2005 11 06 | G96 | 0.3− | 0.3− | | |
| 2001 11 18 | 704 | 0.4− | 1.5+ | 2004 06 17 | 691 | 0.2− | 0.0 | 2005 11 06 | G96 | 0.1− | 0.0 | | |
| 2001 11 18 | 704 | 0.5+ | 0.7+ | 2004 06 17 | 691 | 0.2+ | 0.1+ | 2005 11 06 | G96 | 0.1+ | 0.0 | | |
| 2001 11 18 | 704 | 0.0 | 0.8+ | 2005 07 28 | 644 | 0.4− | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 2001 11 20 | 704 | (0.7+ | 1.7+) | 2005 07 28 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.6− | 1.0+ | 2005 07 28 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.5+ | 2005 07 29 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.5− | 0.5+ | | |
| 2001 11 20 | 704 | 0.9− | 0.1+ | 2005 07 29 | 644 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.5+ | | |
| 2001 11 20 | 704 | 0.0 | 0.7+ | 2005 07 29 | 644 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2001 11 21 | 704 | 0.1+ | 0.7+ | 2005 08 27 | 644 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2001 11 21 | 704 | 0.2− | 1.5+ | 2005 08 27 | 644 | 0.5− | 0.1+ | 2006 11 15 | 691 | 0.5− | 0.2+ | | |
| 2001 11 21 | 704 | 0.7− | 0.0 | 2005 08 27 | 644 | 0.4− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 | | |
| 2001 11 21 | 704 | (0.0 | 1.6+) | 2005 08 27 | 644 | 0.4− | 0.1+ | 2006 11 15 | 691 | 0.6− | 1.4− | | |
| 2001 12 14 | 291 | 0.2+ | 0.1+ | 2005 08 27 | 644 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2001 12 14 | 291 | 0.6+ | 0.3+ | 2005 08 27 | 644 | 0.7− | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.0 | | |
| 2001 12 14 | 291 | 0.4− | 0.3− | 2005 08 30 | 699 | 0.9+ | 1.0+ | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2004 05 16 | E12 | 0.6− | 0.6+ | 2005 08 30 | 699 | (0.8− | 2.0+) | 2006 11 23 | 691 | 0.1+ | 0.4− | | |
| 2004 05 16 | E12 | 0.6+ | 0.1+ | 2005 08 30 | 699 | 1.3+ | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2004 05 16 | E12 | 0.5− | 0.6+ | 2005 08 30 | 699 | 0.3− | 1.1+ | 2006 11 23 | 691 | 0.3+ | 0.2− | | |
| 2004 05 16 | E12 | 0.7− | 0.1+ | 2005 09 30 | G96 | 0.7− | 0.3− | | | | | | |
| 2004 06 11 | 691 | 0.0 | 0.5+ | 2005 09 30 | G96 | 0.1+ | 0.3− | | | | | | |

**(141015)∗ 2001 WT$_{44}$**

Discovered 2001 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.98990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18925144 | $\omega$ | 246.48557 | | −0.24505431 | −0.96571588 | |
| $a$ | 3.0045303 | $\Omega$ | 218.02419 | | +0.93251050 | −0.21059876 | |
| $e$ | 0.0700810 | $i$ | 7.99541 | | +0.26527825 | −0.15179260 | |
| $P$ | 5.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 608 | 0.4− | 1.0+ | 2003 04 01 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.0 | | |
| 2001 11 15 | 608 | 0.5− | 1.2+ | 2003 04 01 | 691 | 0.1− | 0.7− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2001 11 15 | 608 | 0.1+ | 0.6+ | 2003 04 01 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 18 | 704 | (0.7+ | 1.6+) | 2004 06 22 | 691 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.3− | | |
| 2001 11 18 | 704 | 0.1− | 0.3+ | 2004 06 22 | 691 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.2− | 0.4− | | |
| 2001 11 18 | 704 | 0.5− | 0.4− | 2004 06 22 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.5+ | | |
| 2001 11 20 | 704 | 0.3− | 1.4+ | 2006 09 27 | G96 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2001 11 20 | 704 | 0.1+ | 1.2+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2001 11 20 | 704 | 0.3+ | 1.4+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2001 11 20 | 704 | 0.4− | 1.0+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.9− | 0.1− | | |
| 2001 11 21 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.2− | | |
| 2001 11 21 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.5− | | |
| 2001 11 21 | 691 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.6− | | |
| 2001 12 11 | 704 | 0.6− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1− | 0.5− | | |
| 2001 12 11 | 704 | 0.7+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.3− | | |
| 2001 12 11 | 704 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.6− | 0.9+ | | |
| 2001 12 11 | 704 | 0.5− | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 1.2− | 0.1− | | |
| 2001 12 14 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.3+ | 0.1+ | | |
| 2001 12 14 | 644 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.3− | 0.2+ | | |
| 2001 12 14 | 644 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.7− | | |
| 2003 03 07 | 704 | 0.1+ | 1.1+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3− | 0.0 | | |
| 2003 03 07 | 704 | 0.6+ | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | (0.0 | 1.8+) | | |
| 2003 03 07 | 704 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.2− | | |

**(141016)∗ 2001 WS$_{45}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 245.86962 | | | (2000.0) | | |
| $n$ | 0.18664382 | $\omega$ | 96.51803 | | −0.87007569 | −0.49223299 |
| $a$ | 3.0324499 | $\Omega$ | 53.99763 | | +0.43860318 | −0.79717753 |
| $e$ | 0.1100276 | $i$ | 1.84035 | | +0.22493455 | −0.34959216 |
| $P$ | 5.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 809 | (2.5− | 2.3+) | 2001 12 08 | 691 | 0.1− | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.1− | | | | | |
| 1998 02 28 | 809 | 0.5+ | 0.4− | 2001 12 18 | 704 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | | | | | |
| 1998 03 22 | 704 | 0.3− | 1.7− | 2001 12 18 | 704 | 1.4+ | 0.4− | 2006 10 19 | 691 | 0.4− | 0.0 | | | | | |
| 1998 03 22 | 704 | (0.3− | 2.8−) | 2001 12 18 | 704 | 0.9+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.1− | | | | | |
| 1998 03 22 | 704 | (3.2− | 0.7+) | 2001 12 18 | 704 | 0.4− | 0.8− | 2006 10 23 | 691 | 0.2− | 0.1− | | | | | |
| 1998 03 22 | 704 | 1.5− | 0.8− | 2002 12 14 | 645 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1+ | | | | | |
| 1998 03 29 | 704 | 0.7+ | 1.9− | 2002 12 14 | 645 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | | | | | |
| 1998 03 29 | 704 | 0.7− | 0.2− | 2003 01 30 | 699 | 1.2+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | | |
| 1998 03 29 | 704 | 0.2− | 1.7− | 2003 01 30 | 699 | 0.8+ | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | | | | | |
| 1998 03 29 | 704 | 0.8− | 0.1+ | 2003 01 30 | 699 | 0.8+ | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.9+ | | | | | |
| 2000 09 03 | 645 | 0.1− | 0.1+ | 2003 01 30 | 699 | 0.3+ | 1.4+ | 2006 11 01 | 691 | 0.3− | 0.4+ | | | | | |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2003 03 06 | 699 | 0.9+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 | | | | | |
| 2001 10 25 | 644 | 0.5− | 0.0 | 2003 03 06 | 699 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.1− | | | | | |
| 2001 10 25 | 644 | 0.6− | 0.3+ | 2003 03 06 | 699 | 1.1+ | 1.1+ | 2006 11 11 | G96 | 0.2+ | 0.5− | | | | | |
| 2001 10 25 | 644 | 0.6− | 0.5+ | 2003 03 06 | 699 | 0.9+ | 0.8+ | 2006 11 11 | G96 | 0.8− | 0.8− | | | | | |
| 2001 11 14 | 291 | 0.4+ | 0.0 | 2003 03 06 | 704 | 0.0 | 0.9+ | 2006 11 11 | G96 | 0.4+ | 1.0− | | | | | |
| 2001 11 14 | 291 | 0.3+ | 0.1− | 2003 03 06 | 704 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | | | | |
| 2001 11 14 | 291 | 0.3+ | 0.0 | 2003 03 06 | 704 | 0.3− | 0.8+ | 2006 11 14 | G96 | 0.1− | 0.3− | | | | | |
| 2001 11 19 | 704 | 0.3− | 0.3+ | 2003 03 06 | 704 | 0.4− | 1.0+ | 2006 11 14 | G96 | 0.1+ | 0.4− | | | | | |
| 2001 11 19 | 704 | 0.9− | 0.7+ | 2003 03 06 | 704 | (0.0 | 1.7+) | 2006 11 14 | G96 | 0.4+ | 0.2− | | | | | |
| 2001 11 19 | 704 | 0.8− | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.4− | 2006 11 17 | 703 | 0.3− | 0.5− | | | | | |
| 2001 11 20 | 704 | 0.9− | 1.0− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.1− | 1.3− | | | | | |
| 2001 11 20 | 704 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.5− | 0.2− | | | | | |
| 2001 11 20 | 704 | 0.5+ | 0.4− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.3− | 1.1− | | | | | |
| 2001 11 21 | 704 | 0.8− | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.5+ | 0.1+ | | | | | |
| 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 10 11 | 691 | 0.4− | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.1− | | | | | |
| 2001 11 21 | 704 | 0.6− | 1.1+ | 2006 10 11 | 691 | 0.5− | 0.1− | 2006 11 21 | 691 | 0.5+ | 0.2− | | | | | |
| 2001 11 21 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.6+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 | | | | | |
| 2001 12 08 | 691 | 0.0 | 0.4− | 2006 10 15 | 691 | 0.6+ | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.6− | | | | | |
| 2001 12 08 | 691 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.5+ | 0.0 | | | | | |

**(141017)∗ 2001 WY$_{45}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.65377 | | | (2000.0) | | |
| $n$ | 0.19338534 | $\omega$ | 153.56576 | | +0.85576084 | −0.51522093 |
| $a$ | 2.9615587 | $\Omega$ | 237.52535 | | +0.46423895 | +0.80489112 |
| $e$ | 0.0866186 | $i$ | 3.20221 | | +0.22837597 | +0.29444468 |
| $P$ | 5.10 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.1+ | 0.0 | 2001 12 19 | 704 | 0.5− | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.3− | | | | | |
| 2000 07 29 | 807 | 0.2− | 0.0 | 2001 12 19 | 704 | 0.4− | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.4+ | | | | | |
| 2001 10 21 | 704 | 0.5+ | 0.7+ | 2001 12 19 | 704 | 0.8− | 1.0+ | 2006 11 10 | 644 | 0.5− | 0.4+ | | | | | |
| 2001 10 21 | 704 | 1.0+ | 0.9+ | 2001 12 19 | 691 | 1.2+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.3+ | | | | | |
| 2001 10 21 | 704 | 1.0+ | 0.8+ | 2001 12 19 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.2+ | | | | | |
| 2001 10 21 | 704 | 1.2+ | 1.0+ | 2001 12 19 | 704 | 0.1+ | 1.1− | 2006 11 10 | 644 | 0.5− | 0.3+ | | | | | |
| 2001 11 09 | 704 | 0.1+ | 0.2− | 2004 05 09 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.1+ | | | | | |
| 2001 11 09 | 704 | 0.4− | 0.0 | 2004 05 09 | 691 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.0 | | | | | |
| 2001 11 09 | 704 | 0.4+ | 0.9+ | 2004 05 09 | 691 | 0.0 | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.2+ | | | | | |
| 2001 11 09 | 704 | 0.7+ | 0.6+ | 2004 05 16 | 691 | 0.2+ | 0.9+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | | | | | |
| 2001 11 19 | 704 | 0.2− | 0.4+ | 2004 05 16 | 691 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 1.1+ | 1.1− | | | | | |
| 2001 11 19 | 704 | 0.6+ | 0.2+ | 2004 05 16 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.9− | 1.1− | | | | | |
| 2001 11 19 | 704 | 1.0− | 1.0+ | 2005 06 18 | G96 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.7+ | 0.5− | | | | | |
| 2001 11 19 | 704 | (0.6− | 1.8+) | 2005 06 18 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7+ | 1.0− | | | | | |
| 2001 11 19 | 704 | 0.9− | 0.4+ | 2005 06 18 | G96 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.5− | | | | | |
| 2001 11 20 | 704 | 0.5− | 0.5+ | 2005 06 18 | G96 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.7− | | | | | |
| 2001 11 20 | 704 | 0.7− | 0.1− | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.5− | | | | | |
| 2001 11 20 | 704 | 0.2− | 0.3+ | 2005 06 29 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3− | 0.5− | | | | | |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2005 06 29 | 691 | 1.0− | 0.8+ | 2006 11 17 | 703 | 0.2+ | 1.1− | | | | | |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2005 07 05 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.0 | | | | | |
| 2001 11 21 | 704 | 0.6− | 0.0 | 2005 07 05 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.6− | 0.9− | | | | | |
| 2001 11 21 | 704 | 0.6− | 0.0 | 2005 07 05 | 691 | 0.5+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.4− | | | | | |
| 2001 11 21 | 704 | 0.7− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.7− | 0.0 | | | | | |
| 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.1− | | | | | |
| 2001 11 21 | 704 | 0.5− | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.3+ | | | | | |
| 2001 12 17 | 704 | 0.9+ | 0.5− | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.5+ | | | | | |
| 2001 12 17 | 704 | 1.0− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.5+ | | | | | |
| 2001 12 17 | 704 | 0.8− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.4− | | | | | |
| 2001 12 17 | 704 | 0.4− | 0.4− | 2006 10 20 | 691 | 1.1− | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.9+ | | | | | |
| 2001 12 18 | 691 | 0.8− | 0.2− | 2006 10 20 | 691 | 0.7+ | 1.2+ | 2006 11 21 | 704 | 0.2+ | 0.9+ | | | | | |
| 2001 12 18 | 691 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.4− | 1.2+ | | | | | |
| 2001 12 18 | 691 | 0.7− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.1− | | | | | |
| 2001 12 19 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.2+ | 1.4+ | | | | | |
| 2001 12 19 | 691 | 0.8+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.1+ | 1.7+ | | | | | |

**(141018)∗ 2001 WC$_{47}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 234.27149 | | | (2000.0) | | |
| $n$ | 0.59606989 | $\omega$ | 100.97614 | | −0.97378149 | +0.22192453 |
| $a$ | 1.3983136 | $\Omega$ | 91.85996 | | −0.22332560 | −0.89077275 |
| $e$ | 0.2409593 | $i$ | 2.86699 | | −0.04330468 | −0.39657712 |
| $P$ | 1.65 | $H$ | 18.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 07 | 261 | 0.5+ | 0.3− | 2001 12 10 | 704 | 0.1− | 0.1− | 2002 01 21 | 704 | 0.9− | 0.5+ | | | | | |
| 1991 12 07 | 261 | 1.3+ | 1.2− | 2001 12 10 | 704 | 0.1− | 0.4+ | 2002 01 21 | 704 | 0.2− | 0.4+ | | | | | |
| 1997 02 03 | 691 | 0.3+ | 0.2− | 2001 12 10 | 704 | 0.5− | 0.3− | 2002 01 21 | 704 | 1.1+ | 0.6+ | | | | | |
| 1997 02 03 | 691 | 0.3+ | 0.1− | 2001 12 14 | 704 | 0.2− | 0.2− | 2002 01 21 | 704 | 0.1− | 0.1− | | | | | |
| 1997 02 03 | 691 | 0.7− | 0.0 | 2001 12 14 | 704 | 0.4− | 0.2+ | 2002 01 22 | 388 | (1.6− | 1.6−) | | | | | |
| 2001 11 20 | 704 | 0.4+ | 0.1− | 2001 12 14 | 704 | 0.3− | 0.2+ | 2002 01 22 | 388 | 0.4+ | 0.2− | | | | | |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2001 12 14 | 704 | (1.7− | 1.0+) | 2002 01 22 | 388 | 0.3+ | 0.1+ | | | | | |
| 2001 11 20 | 704 | 0.6+ | 0.5− | 2001 12 14 | 704 | 0.6− | 0.4+ | 2002 01 22 | 388 | 0.2− | 1.3+ | | | | | |
| 2001 11 21 | 704 | 0.7+ | 0.3+ | 2001 12 17 | 704 | (1.5− | 0.8−) | 2002 01 22 | 388 | 0.6− | 0.4− | | | | | |
| 2001 11 21 | 704 | 0.3+ | 0.7+ | 2001 12 17 | 704 | 0.6− | 0.4− | 2002 01 22 | 388 | 0.6− | 0.1+ | | | | | |
| 2001 11 21 | 704 | 0.8+ | 0.6+ | 2001 12 17 | 704 | 0.6− | 0.1− | 2002 01 22 | 388 | 0.2− | 0.3+ | | | | | |
| 2001 11 21 | 704 | 0.4+ | 0.7+ | 2001 12 17 | 704 | 0.6− | 0.5+ | 2002 01 31 | 341 | 0.5− | 0.6+ | | | | | |
| 2001 12 06 | 704 | 0.4− | 0.2+ | 2001 12 17 | 704 | 0.5− | 0.1+ | 2002 01 31 | 341 | 0.6− | 0.0 | | | | | |
| 2001 12 06 | 704 | 1.1− | 0.3+ | 2001 12 20 | 704 | 0.1+ | 0.1− | 2002 01 31 | 341 | 0.7+ | 0.2− | | | | | |
| 2001 12 06 | 704 | 0.8− | 0.2+ | 2001 12 20 | 704 | 0.6+ | 0.2+ | 2002 02 01 | 341 | 1.1+ | 0.3+ | | | | | |
| 2001 12 06 | 946 | 0.8+ | 0.7− | 2001 12 20 | 704 | 0.1+ | 0.1− | 2002 02 01 | 341 | 0.0 | 0.9− | | | | | |
| 2001 12 06 | 946 | 0.0 | 0.4− | 2001 12 20 | 704 | 0.3+ | 0.2+ | 2002 02 01 | 341 | 0.1+ | 0.1+ | | | | | |
| 2001 12 06 | 946 | 0.1− | 0.3− | 2001 12 20 | 704 | 0.2+ | 0.3+ | 2002 02 06 | 704 | 0.3+ | 1.0+ | | | | | |
| 2001 12 07 | 704 | 0.3+ | 0.4− | 2001 12 20 | 118 | 0.3− | 0.9− | 2002 02 06 | 704 | 0.7+ | 0.4+ | | | | | |
| 2001 12 07 | 704 | 0.0 | 0.1+ | 2001 12 20 | 118 | 0.2+ | 0.6− | 2002 02 06 | 704 | (1.7+ | 0.8+) | | | | | |
| 2001 12 07 | 704 | 0.2− | 1.1− | 2001 12 20 | 118 | 0.2− | 0.2− | 2004 09 12 | 671 | 0.2− | 0.5− | | | | | |
| 2001 12 07 | 704 | 0.3+ | 0.2+ | 2002 01 01 | 413 | 0.1− | 0.2− | 2004 09 12 | 671 | 0.1+ | 0.3+ | | | | | |
| 2001 12 07 | 704 | 0.1− | 0.1+ | 2002 01 01 | 413 | 0.1− | 0.2− | 2004 09 12 | 671 | 0.2− | 0.4− | | | | | |
| 2001 12 07 | 704 | 0.3− | 0.2+ | 2002 01 01 | 413 | 0.0 | 0.2− | 2004 09 12 | 671 | 0.2− | 0.2+ | | | | | |
| 2001 12 07 | 704 | 0.5− | 0.6− | 2002 01 08 | 704 | 0.9+ | 0.7− | 2004 09 17 | 704 | 0.2− | 1.0+ | | | | | |
| 2001 12 07 | 704 | 0.1+ | 0.2− | 2002 01 08 | 704 | 1.3− | 0.3+ | 2004 09 17 | 704 | 0.3+ | 0.7− | | | | | |
| 2001 12 08 | 704 | 0.3+ | 0.0 | 2002 01 08 | 704 | (0.4+ | 2.5+) | 2004 09 17 | 704 | 0.0 | 0.9+ | | | | | |
| 2001 12 08 | 704 | 0.5+ | 0.6+ | 2002 01 08 | 704 | 0.4− | 0.5− | 2004 09 17 | 704 | 0.4− | 0.9+ | | | | | |
| 2001 12 08 | 704 | 0.3+ | 0.2+ | 2002 01 08 | 704 | 0.3+ | 0.2+ | 2004 10 04 | G90 | 0.0 | 0.4+ | | | | | |
| 2001 12 08 | 704 | 0.2− | 0.6+ | 2002 01 14 | 704 | 0.5+ | 0.3− | 2004 10 05 | G90 | 0.3+ | 0.2− | | | | | |
| 2001 12 08 | 118 | 0.7− | 0.2− | 2002 01 14 | 704 | 0.0 | 0.1+ | 2004 10 05 | G90 | 0.4− | 0.0 | | | | | |
| 2001 12 08 | 118 | 0.7− | 0.3− | 2002 01 14 | 704 | 0.3− | 0.4+ | 2004 10 05 | G90 | 0.0 | 0.3+ | | | | | |
| 2001 12 08 | 118 | 0.1+ | 0.0 | 2002 01 14 | 704 | 0.6+ | 0.5+ | 2006 11 18 | 704 | (0.6+ | 1.6−) | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 118 | 0.0 | 0.1− | 2002 01 14 | 704 | 0.1− | 0.5+ | 2006 11 18 | 704 | (0.3+ | 1.8−) | | |
| 2001 12 09 | 118 | 0.3+ | 0.3− | 2002 01 19 | 341 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.9+ | 1.0− | | |
| 2001 12 09 | 118 | 0.1+ | 0.3− | 2002 01 19 | 341 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.6+ | 1.3− | | |
| 2001 12 10 | 704 | 0.2+ | 0.4+ | 2002 01 19 | 341 | 0.2− | 0.1+ | | | | | | |
| 2001 12 10 | 704 | 0.1− | 0.6+ | 2002 01 19 | 341 | 0.3+ | 0.2+ | | | | | | |

**(141019)∗ 2001 WX$_{47}$**

Discovered 2001 Nov. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.50520 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21734708 | $\omega$ | 266.73106 | | +0.95687686 | +0.17838229 | |
| $a$ | 2.7396821 | $\Omega$ | 82.90423 | | −0.07025160 | +0.90792649 | |
| $e$ | 0.3274280 | $i$ | 13.35850 | | −0.28187123 | +0.37927462 | |
| $P$ | 4.53 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 02 | 691 | 0.1− | 0.8− | 2001 11 19 | 699 | 0.3− | 0.3+ | 2002 01 09 | 704 | 1.3+ | 0.8+ | | |
| 1992 12 02 | 691 | 0.4+ | 0.1− | 2001 11 19 | 699 | 0.5− | 0.2+ | 2002 01 09 | 704 | 0.9+ | 0.0 | | |
| 1992 12 02 | 691 | 0.2+ | 0.9− | 2001 11 19 | 699 | 0.1+ | 0.1− | 2002 01 09 | 704 | 0.7+ | 0.9+ | | |
| 2001 08 22 | 644 | 0.5− | 0.1+ | 2001 11 20 | 699 | 0.0 | 0.2+ | 2002 01 09 | 704 | 1.0+ | 1.3+ | | |
| 2001 08 22 | 644 | 0.5− | 0.1+ | 2001 11 20 | 699 | 0.4− | 0.4+ | 2003 02 01 | 644 | 0.3+ | 0.7+ | | |
| 2001 08 22 | 644 | 0.6− | 0.3+ | 2001 11 20 | 699 | 0.4+ | 0.6+ | 2003 02 01 | 644 | 0.0 | 0.5+ | | |
| 2001 08 31 | 644 | 0.2+ | 0.5− | 2001 11 20 | 699 | 0.4− | 0.5+ | 2003 02 01 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 31 | 644 | 0.2− | 0.9− | 2001 11 20 | 608 | 0.6− | 0.5− | 2005 06 11 | 704 | 0.5+ | 0.1− | | |
| 2001 08 31 | 644 | 0.2+ | 0.5− | 2001 11 20 | 608 | 0.6− | 0.4− | 2005 06 11 | 704 | (3.4+ | 1.7−) | | |
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2001 11 20 | 608 | 0.7− | 0.8− | 2005 06 11 | 704 | 0.7+ | 0.6− | | |
| 2001 09 16 | 704 | 0.7− | 0.5+ | 2001 12 09 | 699 | 0.3+ | 0.0 | 2005 06 11 | 704 | 0.4− | 0.7+ | | |
| 2001 09 16 | 704 | 1.1− | 0.2− | 2001 12 09 | 699 | 0.5+ | 0.2− | 2005 11 27 | E12 | 0.7− | 0.3+ | | |
| 2001 09 21 | 644 | 0.4+ | 0.3− | 2001 12 09 | 699 | 0.9+ | 0.4− | 2005 11 27 | E12 | 0.8− | 0.2+ | | |
| 2001 09 21 | 644 | 0.4+ | 1.1− | 2001 12 09 | 699 | 1.3+ | 0.0 | 2005 11 27 | E12 | 0.6− | 0.6+ | | |
| 2001 09 21 | 644 | 0.0 | 0.5− | 2001 12 11 | 704 | 0.3+ | 0.1− | 2005 11 27 | E12 | 0.3− | 0.2− | | |
| 2001 09 23 | 699 | 0.4− | 0.1− | 2001 12 11 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1− | | |
| 2001 09 23 | 699 | 0.2− | 0.1− | 2001 12 11 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1− | | |
| 2001 09 23 | 699 | 0.2+ | 0.2+ | 2001 12 11 | 704 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.1+ | | |
| 2001 09 23 | 699 | 0.7− | 0.1− | 2001 12 11 | 704 | 0.1− | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.2+ | | |
| 2001 10 04 | 644 | 0.3+ | 0.7+ | 2001 12 17 | 704 | 0.9− | 0.7− | 2006 09 24 | 691 | 0.0 | 0.3+ | | |
| 2001 10 04 | 644 | 0.2+ | 0.7+ | 2001 12 17 | 704 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 04 | 644 | 0.2+ | 0.7+ | 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.5− | 0.4− | | |
| 2001 10 13 | 699 | 0.9− | 0.6− | 2001 12 17 | 704 | 1.4+ | 0.1− | 2006 10 23 | G96 | 0.6− | 0.6− | | |
| 2001 10 13 | 699 | 0.8− | 0.2+ | 2001 12 17 | 704 | 0.5+ | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 2001 10 13 | 699 | 0.2− | 0.5+ | 2001 12 17 | 704 | (0.2+ | 2.0+) | 2006 10 23 | G96 | 0.3− | 0.5− | | |
| 2001 10 13 | 699 | 0.4− | 0.4+ | 2001 12 17 | 704 | 0.4− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.9− | | |
| 2001 10 16 | 704 | 0.3+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.5+ | 1.1+ | | |
| 2001 10 16 | 704 | 0.3+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.3− | 0.6− | | |
| 2001 10 16 | 704 | 0.3+ | 0.0 | 2001 12 17 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.1+ | | |
| 2001 10 16 | 704 | 0.3− | 0.2− | 2001 12 18 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2+ | | |
| 2001 10 16 | 704 | 0.0 | 0.2− | 2001 12 18 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 1.0+ | 0.6+ | | |
| 2001 10 20 | 608 | 0.1− | 0.2− | 2001 12 18 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.6+ | | |
| 2001 10 20 | 608 | 0.2− | 0.2− | 2001 12 18 | 704 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.7+ | | |
| 2001 10 20 | 608 | 0.2− | 0.1− | 2001 12 18 | 704 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 1.3+ | | |
| 2001 11 15 | 704 | 0.1+ | 0.3+ | 2001 12 18 | 704 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.8− | 0.0 | | |
| 2001 11 15 | 704 | 0.5+ | 0.7+ | 2001 12 18 | 704 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.4− | 0.2− | | |
| 2001 11 15 | 704 | 0.4+ | 0.4+ | 2001 12 18 | 704 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.7− | 0.2− | | |
| 2001 11 15 | 704 | 0.2+ | 0.5+ | 2002 01 05 | 608 | 0.7− | 0.1− | 2006 11 25 | G96 | 0.9− | 0.1− | | |
| 2001 11 15 | 704 | 0.4+ | 0.7+ | 2002 01 05 | 608 | 0.2− | 0.1− | | | | | | |
| 2001 11 19 | 699 | 0.0 | 0.3+ | 2002 01 05 | 608 | 0.1− | 0.1+ | | | | | | |

**(141020)∗ 2001 WY$_{50}$ = 2004 JV$_{15}$**

Discovered 2001 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65175)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.93429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20923046 | $\omega$ | 166.93028 | | −0.43108539 | +0.89962322 | |
| $a$ | 2.8100849 | $\Omega$ | 77.49759 | | −0.83413441 | −0.36791508 | |
| $e$ | 0.0985839 | $i$ | 4.08782 | | −0.34407146 | −0.23519473 | |
| $P$ | 4.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 02 | 691 | 1.2− | 1.2+ | 2004 05 16 | 704 | 0.3+ | 0.5+ | 2005 09 22 | 644 | 0.0 | 0.2− | | |
| 1991 10 02 | 691 | 0.3− | 1.0+ | 2004 05 16 | 704 | 0.1+ | 1.1+ | 2005 10 01 | 703 | (0.1− | 2.9−) | | |
| 1991 10 02 | 691 | 0.8− | 0.7+ | 2004 05 16 | 704 | 0.3− | 1.4+ | 2005 10 01 | 703 | 0.6+ | 0.7− | | |
| 2001 11 09 | 704 | 0.3− | 1.1+ | 2004 05 16 | 704 | 0.7+ | 1.0+ | 2005 10 01 | 703 | 0.3− | 0.1+ | | |
| 2001 11 09 | 704 | 0.3+ | 0.6+ | 2004 05 16 | 704 | 0.3− | 1.5+ | 2005 10 01 | 703 | 1.1− | 1.0− | | |
| 2001 11 09 | 704 | 1.0+ | 0.5+ | 2004 05 19 | 704 | 0.3− | 0.1− | 2005 10 13 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 18 | 704 | (0.1− | 2.2+) | 2004 05 19 | 704 | 0.1+ | 0.5+ | 2005 10 13 | 691 | 0.3+ | 0.3− | | |
| 2001 11 18 | 704 | (0.3− | 1.5+) | 2004 05 19 | 704 | 0.1+ | 0.6− | 2005 10 13 | 691 | 0.4+ | 0.5− | | |
| 2001 11 18 | 704 | (0.5+ | 1.8+) | 2004 05 19 | 704 | 0.6+ | 1.0+ | 2006 11 11 | G96 | 0.0 | 0.6− | | |
| 2001 11 18 | 704 | 0.6− | 0.2+ | 2004 06 14 | 704 | 0.8+ | 0.8+ | 2006 11 11 | G96 | 0.4− | 0.3− | | |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2004 06 14 | 704 | 0.2+ | 0.7+ | 2006 11 11 | G96 | 0.9− | 0.4− | | |
| 2001 11 21 | 704 | 0.2+ | 0.6+ | 2004 06 14 | 704 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2001 11 21 | 704 | 0.3− | 0.8− | 2004 06 14 | 704 | (0.7+ | 2.0+) | 2006 11 15 | 691 | 0.0 | 0.5+ | | |
| 2001 12 14 | 291 | 0.9+ | 0.3+ | 2004 06 14 | 704 | 0.8+ | 0.2− | 2006 11 15 | 691 | 0.3− | 0.1− | | |
| 2001 12 14 | 291 | 1.1+ | 0.0 | 2005 08 30 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.6− | 0.5+ | | |
| 2001 12 14 | 291 | 0.8+ | 0.2+ | 2005 08 30 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.2+ | | |
| 2004 05 10 | 644 | 0.5+ | 0.4+ | 2005 08 30 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2004 05 10 | 644 | 0.7+ | 0.7+ | 2005 09 13 | 691 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.4− | 0.1− | | |
| 2004 05 10 | 644 | 0.2+ | 0.6+ | 2005 09 13 | 691 | 0.2+ | 0.4− | 2006 12 01 | 691 | 0.0 | 0.3+ | | |
| 2004 05 15 | 704 | 0.3+ | 1.2+ | 2005 09 13 | 691 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.3− | 0.2+ | | |
| 2004 05 15 | 704 | 0.1− | 1.0+ | 2005 09 22 | 644 | 0.3− | 0.2− | 2006 12 01 | 691 | 0.3− | 0.6+ | | |
| 2004 05 15 | 704 | (0.4+ | 2.2+) | 2005 09 22 | 644 | 0.1+ | 0.3− | | | | | | |

**(141021)∗ 2001 WQ$_{51}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.70277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19943048 | $\omega$ | 32.99018 | | +0.57949006 | −0.81488124 | |
| $a$ | 2.9014050 | $\Omega$ | 21.60345 | | +0.74009503 | +0.51968496 | |
| $e$ | 0.0682065 | $i$ | 1.96778 | | +0.34124861 | +0.25670237 | |
| $P$ | 4.94 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 1.0− | 1.4+ | 2003 02 21 | 644 | 0.0 | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.2− | 0.6− | 2003 02 21 | 644 | 0.4− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 13 | 704 | 0.1+ | 0.4+ | 2003 02 21 | 644 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2001 10 13 | 704 | 0.5+ | 0.1− | 2003 03 06 | 704 | 0.5+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.3− | | |
| 2001 10 21 | 704 | 0.2+ | 0.9+ | 2003 03 06 | 704 | (0.3− | 1.7+) | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.5+ | 2003 03 06 | 704 | (0.3+ | 1.6+) | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2001 10 21 | 704 | 0.2− | 0.9+ | 2003 03 06 | 704 | (0.3− | 1.9+) | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 2001 10 21 | 704 | 0.5− | 1.1+ | 2004 04 29 | 926 | 0.3− | 0.6− | 2006 11 10 | 644 | 0.1− | 0.3+ | | |
| 2001 10 21 | 704 | 0.4− | 0.8+ | 2004 04 29 | 926 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.2+ | | |
| 2001 11 09 | 704 | 1.0+ | 1.2− | 2004 04 29 | 926 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.7+ | | |
| 2001 11 09 | 704 | 0.8+ | 0.8− | 2004 04 30 | 291 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.7− | | |
| 2001 11 09 | 704 | 0.0 | 1.2+ | 2004 04 30 | 291 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.1+ | | |
| 2001 11 12 | 691 | 0.1− | 0.1+ | 2004 04 30 | 291 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.3− | | |
| 2001 11 12 | 691 | 0.3− | 0.3+ | 2004 05 01 | 291 | 0.9+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.7− | | |
| 2001 11 12 | 691 | 0.4− | 0.1+ | 2004 05 01 | 291 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.3− | | |
| 2001 11 19 | 704 | 0.5− | 1.2− | 2004 05 01 | 291 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.4− | | |
| 2001 11 19 | 704 | 0.2− | 0.0 | 2004 05 09 | 691 | 0.3− | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.4− | | |
| 2001 11 19 | 704 | 0.5− | 0.4− | 2004 05 09 | 691 | 0.3− | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.3+ | | |
| 2001 11 19 | 704 | 0.1− | 0.0 | 2004 05 09 | 691 | 0.1− | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.3+ | | |
| 2001 11 21 | 704 | 0.3+ | 0.8+ | 2004 05 19 | 691 | 0.2+ | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.0 | | |
| 2001 11 21 | 704 | 0.0 | 0.6+ | 2004 05 19 | 691 | 0.4+ | 0.7+ | 2006 11 18 | 704 | (4.3+ | 1.9−) | | |
| 2001 11 21 | 704 | 0.6+ | 0.8+ | 2004 05 19 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.2− | | |
| 2001 11 21 | 704 | 0.0 | 1.3+ | 2005 07 11 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.9+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.4+ | 0.4+ | 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (1.6+ | 1.1+) | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 03 | 644 | 0.0 | 1.1+ | 2005 07 11 | 691 | 0.2− | 0.3+ | 2006 11 18 | 185 | 0.6+ | 0.2− |
| 2003 02 03 | 644 | 0.0 | 1.0+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 18 | 185 | 0.8+ | 0.4− |
| 2003 02 03 | 644 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 18 | 185 | 0.1− | 0.3− |
| 2003 02 04 | 699 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 18 | 185 | 0.8+ | 0.5− |
| 2003 02 04 | 699 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2003 02 04 | 699 | 0.5+ | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | (0.5− | 1.6+) |
| 2003 02 04 | 704 | 0.3− | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.4− | 1.3+ |
| 2003 02 04 | 699 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2003 02 04 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.7− | 0.6+ |
| 2003 02 04 | 704 | 0.1+ | 1.0+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.8+ |
| 2003 02 04 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 1.1− | 0.0 |
| 2003 02 04 | 608 | 0.1+ | 1.0− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.2− |
| 2003 02 04 | 608 | 0.1+ | 0.7− | 2006 10 20 | 691 | 0.2− | 0.0 | | | | |
| 2003 02 04 | 608 | 0.4+ | 0.9− | 2006 10 20 | 691 | 0.0 | 0.1+ | | | | |

**(141022)∗ 2001 WS$_{51}$ = 2004 EL$_{44}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68977)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.23428 | | (2000.0) | | | |
| $n$ | 0.17929731 | $\omega$ | 35.92859 | | +0.95050565 | +0.31065320 |
| $a$ | 3.1147286 | $\Omega$ | 305.97180 | | −0.28671395 | +0.86976496 |
| $e$ | 0.2013864 | $i$ | 0.41036 | | −0.11972519 | +0.38341036 |
| $P$ | 5.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.8+ | 2005 05 07 | 691 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.1− | 0.7− |
| 2001 10 21 | 704 | (1.1− | 1.8+) | 2005 05 09 | G96 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.8− | 0.3+ |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2005 05 09 | G96 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.8− | 0.6+ |
| 2001 10 21 | 704 | 0.8− | 0.0 | 2005 05 09 | G96 | 0.3− | 0.3+ | 2006 08 29 | 704 | (1.2+ | 1.5+) |
| 2001 11 12 | 691 | 0.3+ | 0.1+ | 2005 05 09 | G96 | 0.2− | 0.0 | 2006 08 29 | 704 | (1.4+ | 2.1+) |
| 2001 11 12 | 691 | 0.2+ | 0.1+ | 2005 05 11 | 691 | 0.3+ | 0.1− | 2006 08 29 | 704 | 0.3+ | 0.6+ |
| 2001 11 12 | 691 | 0.1+ | 0.2+ | 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 704 | 0.0 | 1.0+ |
| 2001 11 19 | 704 | 0.1− | 0.3− | 2005 05 11 | 691 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.5− |
| 2001 11 19 | 704 | 0.5− | 0.4+ | 2006 06 20 | G96 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.8+ |
| 2001 11 19 | 704 | 0.6− | 0.5− | 2006 06 20 | G96 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.7+ | 0.3− |
| 2001 11 19 | 704 | 0.6− | 0.2+ | 2006 06 20 | G96 | 0.2− | 0.5− | 2006 08 30 | 704 | 0.0 | 1.2+ |
| 2001 11 19 | 704 | 0.2− | 0.3+ | 2006 06 20 | G96 | 0.1+ | 0.2+ | 2006 08 30 | 704 | (2.2+ | 2.0+) |
| 2001 11 21 | 704 | 0.1− | 0.7+ | 2006 08 13 | 644 | 0.1+ | 0.2+ | 2006 09 12 | 699 | (0.5− | 2.8+) |
| 2001 11 21 | 704 | 0.6− | 0.4+ | 2006 08 13 | 644 | 0.2− | 0.3+ | 2006 09 12 | 699 | 0.2− | 0.6− |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 09 12 | 699 | 0.1+ | 0.8+ |
| 2001 11 21 | 704 | 0.7− | 0.9+ | 2006 08 15 | 644 | 0.0 | 0.4+ | 2006 09 12 | 699 | 0.4− | 0.8+ |
| 2001 11 21 | 704 | 0.5− | 0.8+ | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.4− | 1.1− |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.5− |
| 2003 01 25 | 645 | 0.1+ | 0.0 | 2006 08 15 | 644 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.6+ | 0.1− |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 08 15 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.9+ |
| 2004 03 14 | 691 | 0.2− | 0.5+ | 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2004 03 14 | 691 | 0.6− | 0.4+ | 2006 08 28 | 699 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2004 03 17 | 291 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2004 03 17 | 291 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.2+ | 0.9+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2004 03 17 | 291 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.9+ | 0.0 |
| 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 1.2− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 699 | (1.3− | 1.8+) | 2006 11 13 | G96 | 0.6+ | 0.6− |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.6+ | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2005 05 07 | 691 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.5− | | | | |
| 2005 05 07 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.7+ | | | | |

**(141023)∗ 2001 WV$_{51}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.36213 | | (2000.0) | | | |
| $n$ | 0.20371148 | $\omega$ | 39.37133 | | +0.96924063 | −0.24595973 |
| $a$ | 2.8606126 | $\Omega$ | 334.86311 | | +0.22029575 | +0.88284935 |
| $e$ | 0.0851005 | $i$ | 1.17914 | | +0.10973778 | +0.40010103 |
| $P$ | 4.84 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.0 | 0.2− | 2001 11 19 | 704 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 1996 10 06 | 691 | 0.1− | 0.1− | 2001 11 19 | 704 | 0.3− | 0.3− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1996 10 06 | 691 | 0.3− | 0.3− | 2001 11 21 | 704 | 0.7+ | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 1996 10 10 | 691 | 1.0+ | 0.3− | 2001 11 21 | 704 | 0.3+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1996 10 10 | 691 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.6+ | 0.3+ | 2006 11 20 | 703 | 0.8− | 1.3+ |
| 1996 10 10 | 691 | 0.2− | 0.2+ | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 703 | 0.2− | 0.0 |
| 1999 04 17 | 691 | 0.1+ | 0.2+ | 2001 11 21 | 704 | 1.0+ | 0.3+ | 2006 11 20 | 703 | 1.0− | 0.3− |
| 1999 04 17 | 691 | 0.4+ | 0.4+ | 2005 07 04 | 691 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.1− |
| 1999 04 17 | 691 | 0.2− | 0.1− | 2005 07 04 | 691 | 0.2− | 0.3+ | 2006 11 20 | 703 | 0.7− | 0.1+ |
| 2001 10 21 | 704 | 0.3+ | 0.5− | 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.0 |
| 2001 10 21 | 704 | 0.3+ | 0.8+ | 2005 07 30 | E12 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2001 10 21 | 704 | 0.0 | 0.6− | 2005 07 30 | E12 | 0.4+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 1.2− | 0.6− | 2005 07 30 | E12 | 0.3− | 0.5+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.3+ | 1.1− | 2005 07 30 | E12 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2001 10 28 | 644 | 0.9− | 1.0+ | 2006 10 21 | 691 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.4+ | 0.1+ |
| 2001 10 28 | 644 | 0.6− | 0.6+ | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.1− |
| 2001 10 28 | 644 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.0 |
| 2001 11 19 | 704 | 0.4− | 0.9− | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.2− | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.8− | 2006 10 31 | G96 | 0.2− | 0.3− | | | | |
| 2001 11 19 | 704 | 0.1− | 0.8− | 2006 10 31 | G96 | 0.5+ | 0.3− | | | | |

**(141024)∗ 2001 WA$_{52}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 67.83027 | | (2000.0) | | | |
| $n$ | 0.17287832 | $\omega$ | 245.54888 | | +0.12767225 | +0.99073384 |
| $a$ | 3.1913592 | $\Omega$ | 31.89325 | | −0.87527086 | +0.13451574 |
| $e$ | 0.0450792 | $i$ | 5.03047 | | −0.46647692 | +0.01876088 |
| $P$ | 5.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.2− | 0.5− | 2004 03 17 | 683 | 0.1− | 0.6+ | 2004 04 15 | 691 | 0.4+ | 0.3− |
| 1992 01 31 | 691 | 0.4− | 0.8− | 2004 03 17 | 683 | 0.8+ | 1.4+ | 2004 04 15 | 691 | 0.2+ | 0.1+ |
| 1992 01 31 | 691 | 0.2− | 0.0 | 2004 03 17 | 683 | 0.3− | 0.0 | 2004 04 22 | 691 | 0.0 | 0.3+ |
| 2001 10 17 | 691 | 0.1− | 0.3+ | 2004 03 17 | 691 | 0.3+ | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.3+ |
| 2001 10 17 | 691 | 0.5+ | 0.7+ | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2004 04 22 | 691 | 0.1− | 0.4+ |
| 2001 10 17 | 691 | 0.2+ | 0.2+ | 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 08 24 | 644 | 0.4− | 0.4+ |
| 2001 10 21 | 704 | 0.5+ | 1.4+ | 2004 03 19 | 704 | 1.3+ | 0.8+ | 2006 08 24 | 644 | 0.3− | 0.2+ |
| 2001 10 21 | 704 | (0.8− | 2.2+) | 2004 03 19 | 704 | 0.1− | 0.3− | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | (0.6− | 2.0+) | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 0.6+ | 0.8− |
| 2001 11 19 | 704 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.1+ | 0.4+ |
| 2001 11 19 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 1.0+ | 1.0+ | 2006 08 30 | 699 | 0.5+ | 0.6+ |
| 2001 11 19 | 704 | 1.2− | 0.1+ | 2004 03 24 | 699 | 0.7− | 0.6+ | 2006 08 30 | 699 | 0.3+ | 0.3+ |
| 2001 11 19 | 704 | 0.4− | 0.2− | 2004 03 24 | 699 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2001 11 19 | 704 | 0.4− | 0.2+ | 2004 03 24 | 699 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.4+ | 1.1+ | 2004 03 24 | 699 | 0.5− | 0.4+ | 2006 09 14 | 703 | 0.5+ | 0.3− |
| 2001 11 21 | 704 | 0.3− | 0.0 | 2004 03 28 | 704 | 0.7− | 0.6+ | 2006 09 14 | 703 | 0.5− | 0.9+ |
| 2001 11 21 | 704 | 0.4− | 0.1− | 2004 03 28 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.1− |
| 2001 11 21 | 704 | 0.5− | 1.2+ | 2004 03 28 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.9+ |
| 2001 11 21 | 704 | 0.6− | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.5− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 03 28 | 704 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2002 11 07 | 645 | 0.1− | 0.0 | 2004 04 12 | 699 | 1.4− | 1.1− | 2006 11 27 | G96 | 1.6− | 0.0 |
| 2004 02 23 | 704 | 0.8− | 0.3− | 2004 04 12 | 699 | 0.3+ | 1.5− | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2004 02 23 | 704 | (2.7− | 0.5+) | 2004 04 12 | 699 | 0.3+ | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2004 02 23 | 704 | 0.2+ | 0.0 | 2004 04 12 | 699 | 0.5− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.4+ |
| 2004 02 23 | 704 | 0.5+ | 0.4+ | 2004 04 15 | 691 | 0.3+ | 0.0 | | | | |

**(141025)∗ 2001 WR$_{52}$ = 2004 KC$_{10}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65175)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 197.65721 | | (2000.0) | | | |
| $n$ | 0.17757730 | $\omega$ | 136.53504 | | −0.97808098 | −0.07093252 |
| $a$ | 3.1348090 | $\Omega$ | 40.65188 | | −0.05933473 | −0.80626630 |
| $e$ | 0.1633256 | $i$ | 17.48824 | | +0.19959206 | −0.58728462 |
| $P$ | 5.55 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.3− | 0.8+ | 2001 12 15 | 704 | 0.4+ | 1.0− | 2004 05 19 | 704 | 1.2− | 0.8+ |
| 1998 04 24 | 704 | 0.7− | 1.5+ | 2001 12 15 | 704 | 0.8− | 0.9− | 2004 05 19 | 704 | 0.2+ | 0.2+ |
| 1998 04 24 | 704 | 1.8+ | 0.6− | 2001 12 15 | 704 | 0.3+ | 0.9− | 2004 05 19 | 704 | 0.3− | 0.0 |
| 1998 04 24 | 704 | 0.5+ | 0.3+ | 2002 12 15 | 704 | 0.1+ | 0.2− | 2004 05 22 | 704 | 0.6+ | 0.8+ |
| 1998 04 24 | 704 | 0.4− | 1.8− | 2002 12 15 | 704 | 0.1− | 0.6+ | 2004 05 22 | 704 | 0.5+ | 0.4+ |
| 2001 10 17 | 691 | 0.1− | 0.1+ | 2002 12 15 | 704 | 0.6+ | 0.5+ | 2004 05 22 | 704 | 0.5+ | 0.3+ |
| 2001 10 17 | 691 | 0.1− | 0.1+ | 2002 12 15 | 704 | 1.0+ | 0.2+ | 2004 05 22 | 704 | 0.4+ | 0.0 |
| 2001 10 17 | 691 | 0.1− | 0.2+ | 2002 12 28 | 704 | (1.6+ | 0.1+) | 2004 06 05 | 644 | 0.7+ | 0.4+ |
| 2001 10 21 | 704 | 0.5− | 1.2− | 2002 12 28 | 704 | 0.4+ | 0.7− | 2004 06 05 | 644 | 0.3+ | 0.4+ |
| 2001 10 21 | 704 | 0.7− | 0.1− | 2002 12 28 | 704 | 0.1− | 0.3+ | 2004 06 05 | 644 | 0.8+ | 0.5+ |
| 2001 10 21 | 704 | 0.8− | 0.3− | 2002 12 28 | 704 | 0.9+ | 0.2+ | 2004 06 11 | 704 | 0.6+ | 1.2+ |
| 2001 10 21 | 704 | (2.4− | 0.4+) | 2003 01 14 | 704 | 0.9− | 0.9+ | 2004 06 11 | 704 | 0.1− | 0.7+ |
| 2001 11 19 | 704 | (0.2− | 2.2+) | 2003 01 14 | 704 | 0.6+ | 1.1+ | 2004 06 11 | 704 | 0.2+ | 0.7+ |
| 2001 11 19 | 704 | 0.3− | 1.4+ | 2003 01 14 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2001 11 19 | 704 | (0.0 | 1.9+) | 2003 01 14 | 704 | 1.4− | 0.9− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 11 19 | 704 | (0.1+ | 2.7+) | 2003 02 07 | 699 | 0.4− | 1.0+ | 2006 10 21 | 644 | 0.5− | 0.4+ |
| 2001 11 19 | 704 | (0.5+ | 1.8+) | 2003 02 07 | 699 | 0.3+ | 0.5+ | 2006 10 28 | 703 | (1.8− | 0.7+) |
| 2001 11 21 | 704 | 0.2− | 1.0+ | 2003 02 07 | 699 | 0.5− | 0.1− | 2006 10 28 | 703 | 0.2− | 0.9+ |
| 2001 11 21 | 704 | 0.1+ | 1.3+ | 2003 02 07 | 699 | 0.4+ | 0.1− | 2006 10 28 | 703 | (0.8− | 2.7+) |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2003 03 09 | 644 | 0.1− | 0.0 | 2006 10 28 | 703 | 1.2+ | 1.5+ |
| 2001 11 21 | 704 | 0.0 | 1.2+ | 2003 03 09 | 644 | 0.1− | 0.1+ | | | | |
| 2001 11 21 | 704 | 0.2− | 1.0+ | 2003 03 09 | 644 | 0.1+ | 0.1− | | | | |

**(141026)∗ 2001 WH$_{55}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 116.22855 | | (2000.0) | | | |
| $n$ | 0.21467319 | $\omega$ | 70.16684 | | +0.53709927 | +0.84118383 |
| $a$ | 2.7623848 | $\Omega$ | 232.47841 | | −0.80048951 | +0.48484367 |
| $e$ | 0.0896267 | $i$ | 4.53586 | | −0.26597166 | +0.23945016 |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.0 | 0.3− | 2001 11 22 | 644 | 0.1+ | 0.6+ | 2005 09 24 | 703 | 1.3− | 0.8− |
| 1992 11 27 | 691 | 0.3+ | 0.1− | 2001 11 22 | 644 | (1.9+ | 0.4+) | 2005 09 24 | 703 | 0.4− | 0.4− |
| 1992 11 27 | 691 | 0.2− | 0.4− | 2001 12 15 | 704 | 0.2+ | 0.5+ | 2005 09 24 | 703 | 0.5+ | 0.6+ |
| 2001 10 21 | 704 | 0.3− | 0.8− | 2001 12 15 | 704 | 0.7+ | 0.8+ | 2005 09 24 | 703 | 0.8+ | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.7− | 2001 12 15 | 704 | 0.6+ | 0.2− | 2005 09 24 | 461 | 0.2− | 0.2− |
| 2001 10 21 | 704 | 0.6− | 0.4− | 2004 05 15 | 704 | 0.3− | 1.2+ | 2005 09 24 | 461 | 0.4+ | 0.3− |
| 2001 10 21 | 704 | 1.0− | 0.3− | 2004 05 15 | 704 | 0.1− | 0.9+ | 2005 09 24 | 461 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.5− | 0.3− | 2004 05 15 | 704 | 0.1+ | 0.2− | 2005 09 24 | 461 | 0.2− | 0.4+ |
| 2001 10 26 | 644 | 0.3+ | 0.2+ | 2004 05 15 | 704 | (0.3− | 2.0+) | 2005 09 24 | 461 | 0.3− | 0.1+ |
| 2001 10 26 | 644 | 0.2+ | 0.3+ | 2004 05 23 | 691 | 0.2+ | 0.4+ | 2005 09 26 | 691 | 0.0 | 0.1− |
| 2001 10 26 | 644 | 0.6+ | 0.3+ | 2004 05 23 | 691 | 0.2+ | 0.5+ | 2005 09 26 | 691 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.3+ | 0.7− | 2004 05 23 | 691 | 0.1+ | 0.3+ | 2005 09 26 | 691 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.1− | 1.5+ | 2005 08 27 | 644 | 0.1+ | 0.1− | 2005 10 09 | 691 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | (2.4+ | 2.7+) | 2005 08 27 | 644 | 0.1− | 0.1+ | 2005 10 09 | 691 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.2− | 0.7+ | 2005 08 27 | 644 | 0.0 | 0.2+ | 2005 10 09 | 691 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 1.4− | 0.3+ | 2005 08 30 | 704 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2001 11 19 | 704 | 0.5− | 0.1+ | 2005 08 30 | 704 | (1.4− | 1.8+) | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 0.2− | 0.3− | 2005 08 30 | 704 | (2.0+ | 0.8−) | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2001 11 19 | 704 | 0.9+ | 0.7+ | 2005 08 30 | 704 | 0.3+ | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.6− | 2005 08 30 | 704 | (1.3+ | 2.7−) | 2006 11 21 | 691 | 0.3+ | 0.2+ |
| 2001 11 21 | 704 | 0.3+ | 0.8+ | 2005 09 06 | 704 | 0.3− | 0.2+ | 2006 11 21 | 691 | (1.1+ | 2.1+) |
| 2001 11 21 | 704 | 0.1− | 0.4+ | 2005 09 06 | 704 | 0.5+ | 0.3+ | 2006 11 25 | 691 | 0.4− | 0.3+ |
| 2001 11 21 | 704 | 0.4+ | 0.1+ | 2005 09 06 | 704 | 0.5+ | 0.1− | 2006 11 25 | 691 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.3− | 0.6+ | 2005 09 12 | 691 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.9+ |
| 2001 11 21 | 704 | 0.4− | 1.1+ | 2005 09 12 | 691 | 0.0 | 0.1+ | | | | |
| 2001 11 22 | 644 | 0.1+ | 0.8+ | 2005 09 12 | 691 | 0.1− | 0.0 | | | | |

**(141027)∗ 2001 WR$_{55}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 125.41107 | | (2000.0) | | | |
| $n$ | 0.19003435 | $\omega$ | 212.31390 | | −0.20317904 | +0.97855602 |
| $a$ | 2.9962725 | $\Omega$ | 45.98812 | | −0.88803765 | −0.16959822 |
| $e$ | 0.0481543 | $i$ | 2.69837 | | −0.41244080 | −0.11689548 |
| $P$ | 5.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.1+ | 0.6+ | 2004 05 15 | 704 | 0.3− | 0.8+ | 2006 11 03 | G96 | 0.5+ | 0.1− |
| 2001 11 09 | 704 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 03 | G96 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 03 | G96 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.6+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 03 | G96 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.5− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 0.4− | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2001 11 19 | 704 | 0.3− | 0.8− | 2006 10 12 | 691 | 0.1− | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2001 11 19 | 704 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2001 11 19 | 704 | 0.9− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | (0.0 | 1.6−) | 2006 10 16 | 691 | 0.8− | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.8+ | 0.3− | 2006 10 16 | 691 | 0.9− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.5− | 0.9− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2001 12 15 | 704 | 0.9− | 0.7− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2001 12 15 | 704 | 0.6− | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.7+ |
| 2001 12 15 | 704 | 1.4− | 0.7+ | 2006 10 21 | 644 | 0.5− | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 12 15 | 704 | 1.2− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2001 12 18 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2001 12 18 | 691 | 0.3+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2001 12 18 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2003 02 01 | 704 | 0.7− | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2003 02 01 | 704 | 0.2+ | 0.8− | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2003 02 01 | 704 | 0.4+ | 0.8+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2004 04 21 | 704 | 0.7+ | 0.9+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2004 04 21 | 704 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2004 04 21 | 704 | 0.6+ | 0.8+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2004 04 21 | 704 | 0.6+ | 0.9+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | 2006 11 25 | 703 | 0.5− | 0.6− |
| 2004 05 13 | 691 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.4+ | 0.1− | 2006 11 25 | 703 | 0.2− | 0.0 |
| 2004 05 13 | 691 | 0.3+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 0.7+ | 0.2− |
| 2004 05 13 | 691 | 0.4+ | 0.8+ | 2006 10 29 | 691 | 0.1− | 0.4+ | 2006 11 25 | 703 | 0.1+ | 0.2− |
| 2004 05 15 | 704 | (0.3+ | 3.7+) | 2006 10 29 | 691 | 0.0 | 0.4+ | | | | |
| 2004 05 15 | 704 | (0.6+ | 2.7+) | 2006 10 29 | 691 | 0.2+ | 0.3+ | | | | |

**(141028)∗ 2001 WG$_{58}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 141.84150 | | (2000.0) | | | |
| $n$ | 0.20985968 | $\omega$ | 30.69500 | | +0.08846808 | +0.99413873 |
| $a$ | 2.8044651 | $\Omega$ | 244.44340 | | −0.92730152 | +0.05941922 |
| $e$ | 0.0208371 | $i$ | 3.94972 | | −0.36371045 | +0.09031912 |
| $P$ | 4.70 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 691 | 0.5− | 0.3+ | 2001 11 21 | 704 | 0.4− | 0.1+ | 2005 08 01 | 599 | 1.2+ | 0.0 |
| 2000 07 10 | 691 | 0.1− | 0.5+ | 2001 11 21 | 704 | 0.6+ | 0.4− | 2005 08 01 | 599 | 0.5+ | 0.2+ |
| 2000 07 10 | 691 | 0.2− | 0.6+ | 2001 11 21 | 704 | 0.7+ | 0.0 | 2005 08 01 | 599 | 0.4− | 0.5− |
| 2001 10 19 | 644 | 0.4− | 0.4+ | 2003 01 28 | 645 | 0.1+ | 0.2+ | 2005 08 01 | 599 | 0.6− | 0.1+ |
| 2001 10 19 | 644 | 0.3− | 0.8+ | 2003 01 28 | 645 | 0.0 | 0.2+ | 2005 08 24 | 644 | 0.1+ | 0.0 |
| 2001 10 19 | 644 | 0.4− | 0.5+ | 2004 05 15 | 704 | 0.6+ | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.6+ | 0.7+ | 2004 05 15 | 704 | 0.4+ | 0.5− | 2005 08 24 | 644 | 1.0− | 0.2+ |
| 2001 10 21 | 704 | 0.9− | 0.6− | 2004 05 15 | 704 | 0.7+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.0 | 1.1+ | 2004 05 15 | 704 | 0.5− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 10 21 | 704 | (1.0+ | 2.4+) | 2004 05 15 | 704 | 0.9+ | 0.8+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.7− | 1.1+ | 2004 05 16 | 704 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2001 10 24 | 291 | 0.1+ | 0.0 | 2004 05 16 | 704 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2001 10 24 | 291 | 0.4+ | 0.1+ | 2004 05 16 | 704 | 0.7+ | 1.4+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2001 10 24 | 291 | 0.3− | 0.2+ | 2004 05 16 | E12 | 0.3− | 0.6− | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2001 10 26 | 644 | 0.1− | 0.1+ | 2004 05 16 | E12 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.3− | 0.1− |
| 2001 10 26 | 644 | 0.3− | 0.5+ | 2004 05 16 | E12 | 0.6+ | 0.9− | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2001 10 26 | 644 | 0.0 | 0.5+ | 2004 05 16 | E12 | 1.2+ | 0.4− | 2006 11 15 | 691 | 0.2− | 0.3− |
| 2001 11 19 | 704 | 0.5+ | 0.8− | 2004 06 11 | 691 | 0.5− | 0.2+ | 2006 11 19 | 691 | 0.5+ | 1.2+ |
| 2001 11 19 | 704 | 0.5+ | 0.0 | 2004 06 11 | 691 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2001 11 19 | 704 | 0.1− | 0.0 | 2004 06 11 | 691 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2001 11 19 | 704 | 0.4+ | 0.5− | 2005 07 31 | 644 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.6+ | 0.4− | 2005 07 31 | 644 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.4+ | 0.5− | 2005 07 31 | 644 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.0 |

**(141029)∗ 2001 WD$_{59}$ = 1996 TV$_{46}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46949)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.36896 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20109670 | $\omega$ | 100.33365 | | +0.99973788 | +0.01171492 | |
| $a$ | 2.8853561 | $\Omega$ | 258.99715 | | −0.01852293 | +0.91884302 | |
| $e$ | 0.0746488 | $i$ | 1.14822 | | +0.01345626 | +0.39444933 | |
| $P$ | 4.90 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 691 | 0.1− | 0.4− | 2001 12 08 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 1996 10 10 | 691 | 0.1+ | 0.5− | 2002 01 09 | 291 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1996 10 11 | 691 | 0.1+ | 0.3− | 2002 01 09 | 291 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 1.5− | 0.7− |
| 1996 10 11 | 691 | 0.2+ | 0.4− | 2002 01 09 | 291 | 0.2− | 1.1+ | 2006 11 11 | 703 | 0.5− | 0.9+ |
| 1996 10 11 | 691 | 0.0 | 0.1− | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.1− | 1.2+ |
| 2001 11 19 | 704 | 0.2+ | 1.1+ | 2003 01 28 | 645 | 0.1+ | 0.2+ | 2006 11 11 | 703 | (3.4+ | 0.4−) |
| 2001 11 19 | 704 | 0.8− | 0.3+ | 2005 06 30 | 691 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 0.3− | 0.4+ | 2005 06 30 | 691 | 0.3− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2001 11 19 | 704 | 0.8+ | 0.2+ | 2005 06 30 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.9− | 1.3+ | 2005 07 11 | 691 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.3+ | 0.5− |
| 2001 11 19 | 608 | 0.2− | 0.2− | 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.5− |
| 2001 11 19 | 608 | 0.3− | 0.6− | 2005 07 11 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.3+ | 0.2− |
| 2001 11 19 | 608 | 0.2+ | 0.2+ | 2005 08 31 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.2− | 1.3+ | 2005 08 31 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 1.1− | 0.3+ | 2005 08 31 | 691 | 0.1− | 0.6+ | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 12 01 | G96 | 1.3+ | 0.3− |
| 2001 11 21 | 704 | 0.9− | 1.4+ | 2006 09 27 | G96 | 0.6+ | 0.3− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.3− | 1.2+ | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2001 12 08 | 691 | 0.4+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2001 12 08 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.7− | 0.3+ | | | | |

**(141030)∗ 2001 WN$_{59}$ = 2004 FA$_{151}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.47317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16849334 | $\omega$ | 60.40970 | | +0.54876490 | +0.82925172 | |
| $a$ | 3.2464912 | $\Omega$ | 243.24847 | | −0.80213554 | +0.48666205 | |
| $e$ | 0.0800619 | $i$ | 6.80601 | | −0.23544778 | +0.27477563 | |
| $P$ | 5.85 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.3+ | 0.8+ | 2001 12 15 | 704 | 0.3+ | 1.3+ | 2005 06 16 | G96 | 0.3+ | 1.0+ |
| 2000 08 31 | 704 | 0.1+ | 0.1+ | 2001 12 15 | 704 | 1.4+ | 0.6+ | 2005 06 29 | 688 | 0.8+ | 0.1− |
| 2000 08 31 | 704 | 0.5− | 0.7+ | 2001 12 15 | 704 | 0.1+ | 0.3+ | 2005 06 29 | 688 | 0.1− | 0.4+ |
| 2000 10 04 | 691 | 0.1− | 0.3+ | 2001 12 15 | 704 | 0.6+ | 1.1+ | 2006 08 18 | 644 | 0.3+ | 0.4+ |
| 2000 10 04 | 691 | 0.0 | 0.3+ | 2001 12 15 | 704 | 0.5+ | 0.8+ | 2006 08 18 | 644 | 0.1+ | 0.6+ |
| 2000 10 04 | 691 | 0.2− | 0.2+ | 2004 02 17 | I03 | 0.1+ | 0.7+ | 2006 08 18 | 644 | 0.1+ | 0.4+ |
| 2001 10 26 | 644 | 0.1− | 0.1− | 2004 02 17 | I03 | 0.3− | 0.6+ | 2006 08 27 | 699 | 1.6− | 0.3− |
| 2001 10 26 | 644 | 0.2+ | 0.4+ | 2004 02 17 | I03 | 0.5+ | 0.3+ | 2006 08 27 | 699 | 0.4− | 0.7+ |
| 2001 10 26 | 644 | 0.4+ | 0.2+ | 2004 03 16 | 691 | 0.4+ | 0.8+ | 2006 08 27 | 699 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 0.6− | 0.6+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 1.1− | 0.6+ |
| 2001 11 19 | 704 | 0.3− | 0.5+ | 2004 03 16 | 691 | 0.1+ | 0.7+ | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2001 11 19 | 704 | 0.3− | 0.4+ | 2004 03 28 | 691 | 0.2+ | 0.1+ | 2006 09 13 | 644 | 0.5+ | 0.3+ |
| 2001 11 21 | 704 | 0.9− | 0.3− | 2004 03 28 | 691 | 0.3+ | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 1.0+ | 2004 03 28 | 691 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.9− | 1.1+ |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2005 06 16 | G96 | 0.3− | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.5+ |
| 2001 11 21 | 704 | 1.3− | 1.2+ | 2005 06 16 | G96 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.8+ |
| 2001 11 21 | 704 | 1.7− | 0.9− | 2005 06 16 | G96 | 0.4− | 0.8+ | 2006 09 18 | 703 | 0.3+ | 0.8+ |

**(141031)∗ 2001 WT$_{60}$ = 2004 FB$_{62}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61204)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.02515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17520971 | $\omega$ | 276.00144 | | +0.74113296 | +0.66882975 | |
| $a$ | 3.1629860 | $\Omega$ | 42.04218 | | −0.57644338 | +0.67840434 | |
| $e$ | 0.0929621 | $i$ | 4.98680 | | −0.34414381 | +0.30403012 | |
| $P$ | 5.63 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.3− | 0.3− | 2004 03 19 | 704 | (0.5+ | 1.9+) | 2006 09 22 | 704 | 0.1+ | 0.9+ |
| 2000 08 26 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | (0.1− | 1.6+) | 2006 09 22 | 704 | 1.1− | 1.4− |
| 2000 08 26 | 704 | 0.1− | 1.2+ | 2004 03 19 | 704 | (0.6+ | 1.7+) | 2006 09 22 | 704 | 0.1+ | 1.3− |
| 2001 10 21 | 704 | 0.2− | 0.9− | 2004 03 22 | 704 | 0.3+ | 0.9+ | 2006 09 26 | 704 | 0.4+ | 0.6+ |
| 2001 10 21 | 704 | 0.0 | 0.4− | 2004 03 22 | 704 | 0.3− | 1.4+ | 2006 09 26 | 704 | 0.9+ | 1.2+ |
| 2001 10 21 | 704 | 0.5− | 0.0 | 2004 03 22 | 704 | 0.8− | 0.4− | 2006 09 26 | 704 | 0.3− | 0.6+ |
| 2001 10 21 | 704 | 1.2− | 0.9− | 2004 03 22 | 704 | 0.9+ | 0.7+ | 2006 09 26 | 704 | 0.7− | 0.8+ |
| 2001 10 26 | 704 | 0.5+ | 0.0 | 2004 03 22 | 704 | 1.0+ | 0.8+ | 2006 09 26 | 704 | 0.7+ | 1.0+ |
| 2001 10 26 | 704 | 0.5+ | 0.3− | 2004 03 28 | 704 | (1.7+ | 2.3+) | 2006 09 28 | 704 | 0.0 | 0.9+ |
| 2001 10 26 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 0.9+ | 0.8+ | 2006 09 28 | 704 | (1.2− | 1.5+) |
| 2001 11 09 | 704 | (1.6+ | 2.0+) | 2004 03 28 | 704 | (0.7+ | 1.7+) | 2006 09 28 | 704 | 1.4− | 0.2− |
| 2001 11 09 | 704 | 0.3+ | 0.4− | 2004 03 28 | 704 | 1.2+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2004 03 28 | 704 | 1.2+ | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2001 11 09 | 704 | 0.4+ | 0.8+ | 2004 04 19 | 691 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.4+ | 0.6+ |
| 2001 11 19 | 704 | 0.2− | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.4+ |
| 2001 11 19 | 704 | 0.5− | 0.8+ | 2006 08 18 | 691 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2001 11 19 | 704 | 0.3+ | 0.9+ | 2006 08 18 | 691 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2001 11 19 | 704 | 0.1− | 0.5+ | 2006 08 18 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 1.0− | 0.7+ | 2006 08 28 | 699 | 0.7− | 1.4+ | 2006 09 30 | 703 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 0.1− | 0.7+ | 2006 08 28 | 699 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2006 08 28 | 699 | (1.7+ | 0.4+) | 2006 09 30 | 703 | 0.5+ | 0.4− |
| 2001 11 21 | 704 | 0.1− | 1.2+ | 2006 08 28 | 699 | 1.1− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.6+ |
| 2001 11 21 | 704 | 0.7− | 0.2+ | 2006 09 12 | 703 | 1.5− | 0.7+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2001 12 10 | 704 | 0.5+ | 1.0+ | 2006 09 12 | 703 | 0.6− | 1.2+ | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 2001 12 10 | 704 | 0.4+ | 0.2+ | 2006 09 12 | 703 | (1.8− | 0.1+) | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2001 12 10 | 704 | 0.2− | 1.2+ | 2006 09 12 | 703 | 0.8+ | 0.1− | 2006 10 16 | 703 | 0.4− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.3+ | 0.1− | 2006 09 16 | 704 | (1.9+ | 2.2+) | 2006 10 16 | 703 | 0.6+ | 0.2− |
| 2001 12 15 | 704 | (0.5+ | 2.9−) | 2006 09 16 | 704 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.5− | 1.3− |
| 2001 12 15 | 704 | (0.7+ | 1.8−) | 2006 09 16 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.7+ | 0.8− |
| 2001 12 15 | 704 | 1.1+ | 1.5− | 2006 09 18 | 703 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 12 19 | 644 | 0.1− | 0.9− | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 12 19 | 644 | 0.1− | 0.6− | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2001 12 19 | 644 | 0.4− | 0.4− | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2003 01 05 | 704 | 0.0 | 0.8+ | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2003 01 05 | 704 | 0.7+ | 0.3− | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2003 01 05 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 0.7+ | 1.3+ | 2006 09 18 | 699 | 0.3+ | 1.0+ | 2006 10 23 | 644 | 0.4+ | 0.3+ |
| 2004 03 19 | 704 | 1.1+ | 1.1+ | 2006 09 22 | 704 | 0.3− | 0.6− | 2006 10 23 | 644 | 0.3− | 0.3+ |

**(141032)∗ 2001 WG$_{62}$ = 1995 WJ$_{39}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.70912 | | (2000.0) | | | |
| $n$ | 0.16927482 | $\omega$ | 115.44564 | | +0.99254368 | +0.07833251 |
| $a$ | 3.2364916 | $\Omega$ | 240.18609 | | −0.10614935 | +0.93207339 |
| $e$ | 0.1101445 | $i$ | 6.17884 | | +0.05991119 | +0.35369934 |
| $P$ | 5.82 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 23 | 691 | 0.9+ | 0.6+ | 2001 12 14 | 704 | 0.4+ | 0.7− | 2006 08 30 | 704 | 0.8+ | 0.7+ |
| 1995 11 23 | 691 | 0.1− | 0.2− | 2001 12 14 | 704 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.3+ |
| 1995 11 23 | 691 | 0.4− | 0.1− | 2001 12 14 | 704 | 0.5− | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.0 |
| 1995 11 30 | 691 | 0.6− | 0.4+ | 2001 12 14 | 704 | 0.2− | 0.1− | 2006 08 30 | 699 | 0.5+ | 0.3+ |
| 1995 11 30 | 691 | 0.4− | 0.3+ | 2003 01 27 | 644 | 0.5+ | 0.6+ | 2006 08 30 | 704 | 0.3− | 0.7+ |
| 1995 11 30 | 691 | 0.0 | 0.3+ | 2003 01 27 | 644 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.2+ | 0.2− |
| 2000 08 21 | 699 | 0.2− | 1.1+ | 2003 01 27 | 644 | 0.5+ | 0.8+ | 2006 08 30 | 699 | 0.3+ | 0.4+ |
| 2000 08 21 | 699 | 0.9− | 0.2− | 2005 06 16 | G96 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.1− | 0.2+ |
| 2000 08 21 | 699 | 0.1+ | 0.4+ | 2005 06 16 | G96 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.3− | 0.3− |
| 2000 08 21 | 699 | 0.9− | 0.7+ | 2005 06 16 | G96 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.1+ | 0.2+ |
| 2000 09 02 | 691 | 0.7+ | 0.2− | 2005 06 16 | G96 | 0.4+ | 0.0 | 2006 09 01 | 704 | 0.2− | 0.0 |
| 2000 09 02 | 691 | 0.5+ | 0.2− | 2005 06 28 | G96 | 0.1+ | 0.6+ | 2006 09 11 | 703 | 0.3− | 1.2+ |
| 2000 09 02 | 691 | 0.3+ | 0.4− | 2005 06 28 | G96 | 0.3− | 0.7+ | 2006 09 11 | 703 | 0.3− | 0.1+ |
| 2000 09 03 | 645 | 0.0 | 0.2− | 2005 06 28 | G96 | 0.2− | 0.6+ | 2006 09 11 | 703 | 1.5+ | 0.6− |
| 2000 09 03 | 645 | 0.0 | 0.2− | 2005 06 28 | G96 | 0.2− | 0.8+ | 2006 09 11 | 703 | 0.7− | 0.2− |
| 2001 11 09 | 704 | 0.9+ | 0.5− | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 11 | 703 | 0.2+ | 0.3+ |
| 2001 11 09 | 704 | 0.1+ | 0.4− | 2006 08 17 | 644 | 0.1− | 0.3− | 2006 09 11 | 703 | 0.1+ | 0.7+ |
| 2001 11 09 | 704 | 0.6+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 11 | 703 | 0.1− | 0.7+ |
| 2001 11 09 | 704 | 0.7+ | 0.7− | 2006 08 27 | 699 | 0.3+ | 0.4− | 2006 09 11 | 703 | 0.4+ | 1.4+ |
| 2001 11 19 | 704 | 1.3− | 1.3− | 2006 08 27 | 699 | 0.5− | 0.8+ | 2006 09 19 | 703 | 0.6+ | 0.8− |
| 2001 11 19 | 704 | 1.2− | 1.2− | 2006 08 27 | 699 | 0.3− | 1.0+ | 2006 09 19 | 703 | 0.5− | 0.8− |
| 2001 11 19 | 704 | 1.2− | 1.7− | 2006 08 27 | 699 | 0.0 | 1.3+ | 2006 09 19 | 703 | 0.4− | 0.5− |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.9− | 0.8+ |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 09 26 | 703 | 2.2− | 1.3+ |
| 2001 11 21 | 704 | 1.1+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.8+ | 2006 09 26 | 703 | 0.8− | 1.2− |
| 2001 12 14 | 704 | 0.9+ | 1.2+ | 2006 08 30 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 703 | 0.2+ | 1.0− |

**(141033)∗ 2001 WS$_{63}$ = 2005 NM$_{73}$**

Discovered 2001 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85266)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.85650 | | (2000.0) | | | |
| $n$ | 0.18804045 | $\omega$ | 133.79814 | | +0.94357424 | −0.33083864 |
| $a$ | 3.0174160 | $\Omega$ | 245.52647 | | +0.29903965 | +0.87017549 |
| $e$ | 0.0713938 | $i$ | 0.91976 | | +0.14227771 | +0.36515807 |
| $P$ | 5.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.5+ | 0.7− | 2005 07 07 | 568 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.7+ | 0.4+ |
| 2001 11 19 | 704 | 0.6+ | 1.4− | 2005 07 07 | 568 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2001 11 19 | 704 | (0.8+ | 1.9−) | 2005 07 08 | 568 | 0.3+ | 0.8+ | 2006 11 01 | 691 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 0.8− | 0.7+ | 2005 07 09 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.4− | 1.3+ | 2005 07 09 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.8− | 0.9− |
| 2001 11 21 | 704 | 0.0 | 1.0+ | 2005 07 09 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | (1.3− | 1.8−) |
| 2001 11 21 | 704 | 0.5− | 0.6+ | 2005 07 15 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.8+ |
| 2001 12 07 | 644 | 0.8− | 0.6+ | 2005 07 15 | G96 | 0.3− | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.5− |
| 2001 12 07 | 644 | 0.4− | 0.6+ | 2005 07 15 | G96 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.5− |
| 2001 12 07 | 644 | 0.3− | 0.6+ | 2005 07 15 | G96 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2001 12 15 | 704 | 0.0 | 0.6− | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 12 15 | 704 | 0.8+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2001 12 15 | 704 | 0.8− | 0.4− | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | (0.4+ | 3.0−) |
| 2001 12 15 | 704 | (1.8+ | 0.4−) | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 1.3+ | 0.2− |
| 2001 12 18 | 704 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.5+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2002 12 07 | 645 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2005 06 13 | G96 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.5+ | 0.3− |
| 2005 06 13 | G96 | 0.5− | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.5− |
| 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.0 | | | | |
| 2005 07 07 | 568 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.2− | | | | |

**(141034)∗ 2001 WJ$_{66}$ = 2004 FL$_{128}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61204)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 159.06859 | | (2000.0) | | | |
| $n$ | 0.19298030 | $\omega$ | 40.45589 | | −0.74493972 | +0.66712982 |
| $a$ | 2.9657013 | $\Omega$ | 181.39318 | | −0.62795137 | −0.70200526 |
| $e$ | 0.0536012 | $i$ | 3.80977 | | −0.22525960 | −0.24925172 |
| $P$ | 5.11 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.3− | 0.0 | 2004 04 16 | 691 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.7+ |
| 2001 10 23 | 704 | 0.7− | 0.0 | 2004 04 16 | 691 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2001 10 23 | 704 | 1.1− | 0.2+ | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.6− | 1.0+ | 2004 04 16 | 644 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 1.2− | 0.1+ | 2004 04 16 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 1.3+ | 1.2+ |
| 2001 10 24 | 291 | 0.2+ | 0.2+ | 2004 04 19 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.2− |
| 2001 10 24 | 291 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 703 | (2.9+ | 0.3−) |
| 2001 10 24 | 291 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.5− | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | (0.5+ | 1.6+) | 2004 04 19 | 704 | 0.7+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2001 11 20 | 704 | 1.2+ | 0.8+ | 2004 04 19 | 704 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.5+ | 0.0 | 2004 04 30 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 1.0− | 1.3+ | 2004 04 30 | 691 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | (0.0 | 2.1+) | 2004 04 30 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.1− | 0.8+ | 2005 07 05 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.7− | 0.8+ | 2005 07 05 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2004 03 27 | 704 | (0.2+ | 1.7+) | 2005 07 05 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2004 03 27 | 704 | 0.4− | 0.3− | 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.8− | 0.3+ |
| 2004 03 27 | 704 | 1.2+ | 1.0+ | 2005 07 11 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.2+ | 0.1− | 2005 07 11 | G96 | 0.3− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 03 29 | 291 | 0.4+ | 0.5+ | 2005 07 11 | G96 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.5− | 0.5+ |
| 2004 03 29 | 291 | 0.3− | 0.5+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.7+ | 0.2− |
| 2004 03 29 | 291 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2004 04 15 | 699 | 0.9− | 0.3− | 2006 07 21 | G96 | 0.7+ | 0.9+ | 2006 11 20 | 691 | 0.3− | 0.5+ |
| 2004 04 15 | 699 | 0.5− | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2004 04 15 | 699 | 0.1+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.2+ |
| 2004 04 15 | 699 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 | | | | |
| 2004 04 16 | 691 | 0.1− | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.8+ | | | | |

**(141035)∗ 2001 WS$_{66}$ = 2003 DG$_{16}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43193)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 239.14077 | | (2000.0) | | | |
| $n$ | 0.17831390 | $\omega$ | 290.31380 | | −0.67121012 | −0.74060397 |
| $a$ | 3.1261700 | $\Omega$ | 201.94229 | | +0.70755304 | −0.62750018 |
| $e$ | 0.1192054 | $i$ | 4.81237 | | +0.22101056 | −0.24031080 |
| $P$ | 5.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1− | 2003 02 03 | 699 | 1.0+ | 0.1+ | 2006 09 17 | 291 | 0.3− | 0.2+ |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2003 02 03 | 699 | 0.5+ | 1.2+ | 2006 09 17 | 291 | 0.5− | 0.3+ |
| 2001 10 23 | 704 | 0.4+ | 0.4+ | 2003 02 03 | 699 | 0.9− | 0.1+ | 2006 09 17 | 291 | 0.2− | 0.4+ |
| 2001 10 23 | 704 | 1.0+ | 0.4+ | 2003 02 03 | 699 | 0.7+ | 1.3+ | 2006 09 17 | 703 | 0.6+ | 0.5− |
| 2001 10 23 | 704 | 0.8+ | 0.7+ | 2003 02 19 | 644 | (0.4+ | 1.6+) | 2006 09 17 | 703 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.4− | 1.1+ | 2003 02 19 | 644 | (0.0 | 1.5+) | 2006 09 17 | 703 | 0.1− | 0.9− |
| 2001 10 25 | 644 | (1.9+ | 2.2+) | 2003 02 19 | 644 | 0.0 | 1.4+ | 2006 09 17 | 703 | 0.2+ | 0.0 |
| 2001 10 25 | 644 | (1.2+ | 2.0+) | 2003 02 22 | 699 | 0.2− | 0.4+ | 2006 09 19 | 291 | 0.2+ | 0.3+ |
| 2001 10 25 | 644 | (1.8+ | 2.2+) | 2003 02 22 | 699 | 0.6− | 0.8+ | 2006 09 19 | 291 | 0.4+ | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.5+ | 2003 02 22 | 699 | 1.1+ | 0.5− | 2006 09 19 | 291 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.7+ | 2003 02 22 | 699 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 1.3− | 0.3+ | 2004 05 13 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.4+ | 0.1− |
| 2001 11 20 | 704 | 0.8− | 0.1− | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.6− | 0.2+ | 2004 05 21 | 691 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.7− | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.4− | 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2004 05 21 | 691 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.5− | 0.0 |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2006 08 21 | 691 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2003 01 29 | 644 | 0.2+ | 0.4+ | 2006 09 16 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2003 01 29 | 644 | 0.1− | 0.1+ | 2006 09 16 | 691 | 0.0 | 0.6+ | | | | |
| 2003 01 29 | 644 | 0.1− | 0.1+ | 2006 09 16 | 691 | 0.4− | 0.3+ | | | | |

**(141036)∗ 2001 WU$_{67}$ = 1996 VJ$_{15}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 46950)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 159.28909 | | (2000.0) | | | |
| $n$ | 0.19492790 | $\omega$ | 172.13166 | | −0.62634117 | +0.77844203 |
| $a$ | 2.9459139 | $\Omega$ | 59.07752 | | −0.71783263 | −0.55516005 |
| $e$ | 0.0657522 | $i$ | 2.77483 | | −0.30399515 | −0.29295958 |
| $P$ | 5.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.1+ | 0.3+ | 2001 11 21 | 704 | 0.3+ | 1.4+ | 2005 07 18 | 644 | 0.0 | 0.2+ |
| 1993 01 26 | 691 | 0.3+ | 0.2+ | 2001 11 22 | 644 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 1993 01 26 | 691 | 0.0 | 0.1− | 2001 11 22 | 644 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.7− |
| 1996 11 05 | 691 | 0.1− | 0.1− | 2001 11 22 | 644 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 1996 11 05 | 691 | 0.1+ | 0.0 | 2003 01 29 | 645 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 1996 11 05 | 691 | 0.3+ | 0.0 | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.3+ |
| 1996 11 10 | 691 | 0.5− | 0.0 | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.5− | 0.2+ |
| 1996 11 10 | 691 | 0.5− | 0.0 | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 1996 11 10 | 691 | 0.6− | 0.5+ | 2004 04 21 | 704 | 1.0+ | 0.1− | 2006 09 30 | G96 | 0.1− | 0.2− |
| 1999 05 18 | 691 | 0.1− | 0.0 | 2004 04 21 | 704 | 1.3+ | 0.9+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 1999 05 18 | 691 | 0.2− | 0.3− | 2004 04 21 | 704 | 0.3− | 0.9+ | 2006 10 19 | 691 | 0.5− | 0.1− |
| 1999 05 18 | 691 | 0.1− | 0.2− | 2004 04 24 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2001 10 23 | 291 | 0.1+ | 0.4+ | 2004 04 24 | 691 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 10 23 | 291 | 0.2+ | 0.6+ | 2004 04 24 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2001 10 23 | 291 | 0.3+ | 0.6+ | 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2001 11 20 | 704 | 0.4+ | 0.2+ | 2004 05 23 | 691 | 0.4+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2001 11 20 | 704 | 0.0 | 0.9+ | 2004 05 23 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.2+ | 0.6+ | 2004 05 27 | 691 | 0.4+ | 0.7+ | 2006 10 31 | 691 | 0.3+ | 0.5+ |
| 2001 11 20 | 704 | 0.1+ | 0.8+ | 2004 05 27 | 691 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.8+ | 0.1+ | 2004 05 27 | 691 | 0.1− | 0.7+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2001 11 21 | 704 | (1.7+ | 0.0 ) | 2005 07 18 | 644 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.5+ | 0.4+ | 2005 07 18 | 644 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.2− |

**(141037)∗ 2001 WZ$_{70}$ = 2004 GZ$_{19}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 149.53100 | | (2000.0) | | | |
| $n$ | 0.18416645 | $\omega$ | 359.70225 | | −0.68333898 | +0.72405151 |
| $a$ | 3.0595839 | $\Omega$ | 227.19018 | | −0.66959024 | −0.67271902 |
| $e$ | 0.0811934 | $i$ | 7.34547 | | −0.29102706 | −0.15231068 |
| $P$ | 5.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.9+ | 0.1− | 2004 04 16 | 333 | 0.2− | 0.8+ | 2005 07 29 | 644 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.6− | 1.1+ | 2004 04 16 | 691 | 0.2+ | 0.5+ | 2005 07 29 | 644 | 0.1− | 0.0 |
| 2001 10 21 | 704 | (1.7+ | 0.4+) | 2004 04 16 | 691 | 0.3+ | 0.4+ | 2005 10 01 | G96 | 0.2− | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2004 04 16 | 691 | 0.3+ | 0.0 | 2005 10 01 | G96 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.3+ | 1.3+ | 2004 04 17 | 704 | 0.3+ | 0.2+ | 2005 10 01 | G96 | 0.3− | 0.3− |
| 2001 11 20 | 704 | 0.3− | 1.1+ | 2004 04 17 | 704 | 0.8+ | 0.2+ | 2005 10 01 | G96 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.0 | 0.4+ | 2004 04 17 | 704 | 0.7+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.7− | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 1.1+ | 2004 04 20 | 704 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.2− | 1.5+ | 2004 04 20 | 704 | 0.2+ | 1.1− | 2006 10 02 | 691 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.7− | 0.7+ | 2004 04 20 | 704 | 1.1− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.5− | 0.1+ | 2004 05 13 | 333 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2004 05 13 | 333 | 0.1+ | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.2+ |
| 2004 04 15 | 333 | 0.2− | 0.2+ | 2004 05 13 | 333 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.2+ |
| 2004 04 15 | 333 | 0.7− | 0.8+ | 2004 05 23 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.3− | 0.1+ |
| 2004 04 15 | 333 | 0.1+ | 0.3+ | 2004 05 23 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2004 04 15 | 699 | 0.3+ | 0.7+ | 2004 05 23 | 691 | 0.2+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2004 04 15 | 699 | (0.9+ | 1.5+) | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 04 15 | 699 | 1.1− | 0.2− | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2004 04 15 | 699 | 0.9− | 0.1+ | 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2004 04 16 | 333 | 0.5− | 0.1− | 2005 07 29 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1− |

**(141038)∗ 2001 WW$_{72}$ = 2003 EW$_{3}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43194)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 257.35150 | | (2000.0) | | | |
| $n$ | 0.18598453 | $\omega$ | 332.73079 | | −0.77649058 | −0.63006859 |
| $a$ | 3.0396122 | $\Omega$ | 168.20184 | | +0.58562249 | −0.72668320 |
| $e$ | 0.1483805 | $i$ | 2.44293 | | +0.23261273 | −0.27376103 |
| $P$ | 5.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 704 | 0.9+ | 0.6+ | 2003 02 03 | 699 | 0.3− | 1.5− | 2003 03 26 | 699 | 0.6+ | 0.1+ |
| 1998 04 20 | 704 | 0.1− | 0.1− | 2003 02 08 | 608 | 1.2+ | 0.4+ | 2003 03 26 | 699 | 0.7− | 0.6− |
| 1998 04 20 | 704 | 1.1− | 1.4− | 2003 02 08 | 608 | (1.9+ | 0.5−) | 2003 03 26 | 699 | (2.6+ | 0.3−) |
| 1998 04 20 | 704 | 0.6+ | 1.9+ | 2003 02 08 | 608 | (1.6+ | 0.2+) | 2003 04 05 | 291 | 0.4+ | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.8+ | 2003 02 23 | 699 | 0.3+ | 0.1+ | 2003 04 05 | 291 | 0.5+ | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.1− | 2003 02 23 | 699 | 0.2+ | 0.4+ | 2003 04 05 | 291 | 0.6+ | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.0 | 2003 02 23 | 699 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2003 02 23 | 699 | 0.9− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 0.2− | 2003 03 06 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2003 03 06 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 0.2− | 2003 03 06 | 644 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 0.5− | 0.1+ | 2003 03 07 | 291 | 0.6− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2003 03 07 | 291 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.5+ | | |
| 2001 11 21 | 704 | 0.5+ | 0.7+ | 2003 03 07 | 291 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1− | | |
| 2001 12 10 | 691 | 0.3+ | 0.1− | 2003 03 09 | 704 | 0.5+ | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2001 12 10 | 691 | 0.2+ | 0.0 | 2003 03 09 | 704 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.6− | | |
| 2001 12 10 | 691 | 0.4+ | 0.2− | 2003 03 09 | 704 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− | | |
| 2001 12 14 | 704 | 0.4− | 0.4− | 2003 03 09 | 704 | 1.3+ | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.0 | | |
| 2001 12 14 | 704 | 0.9− | 0.1− | 2003 03 09 | 704 | 0.1+ | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.3− | | |
| 2001 12 14 | 704 | 0.7− | 1.1− | 2003 03 24 | 691 | 0.3− | 0.3− | 2006 11 20 | 691 | 0.3+ | 0.1− | | |
| 2003 02 03 | 699 | 0.5+ | 0.4− | 2003 03 24 | 691 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2003 02 03 | 699 | 1.4− | 0.2− | 2003 03 24 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2− | | |
| 2003 02 03 | 699 | 0.6− | 0.6− | 2003 03 26 | 699 | 0.2+ | 0.4+ | | | | | | |

**(141039)∗ 2001 WO$_{73}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 19.89798 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.20370529 | $\omega$ | 192.11198 | | +0.83353071 | | −0.55238561 | | |
| $a$ | 2.8606705 | $\Omega$ | 201.42774 | | +0.50910412 | | +0.77488943 | | |
| $e$ | 0.0131270 | $i$ | 1.54232 | | +0.21456827 | | +0.30727268 | | |
| $P$ | 4.84 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2+ | 0.2− | 2005 07 29 | 644 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | 0.6+ | 0.5− | 2005 08 06 | 644 | 0.3− | 0.1+ | 2006 11 19 | 691 | 1.0− | 0.5+ | | |
| 2001 11 20 | 704 | 0.8+ | 1.0− | 2005 08 06 | 644 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | 1.2+ | 0.6− | 2005 08 06 | 644 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.4+ | | |
| 2001 11 20 | 704 | 0.7+ | 0.4− | 2005 08 24 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2005 08 24 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.8+ | | |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2005 08 24 | 644 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.0 | | |
| 2001 11 21 | 704 | 0.6+ | 0.7+ | 2005 10 01 | G96 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.2− | 0.2+ | | |
| 2001 12 11 | 291 | 0.1− | 0.1+ | 2005 10 01 | G96 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2001 12 11 | 291 | 0.2− | 0.4− | 2005 10 01 | G96 | 0.0 | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2001 12 11 | 291 | 0.3− | 0.1+ | 2005 10 01 | G96 | 0.5+ | 0.5− | 2006 11 24 | G96 | 0.1− | 0.4− | | |
| 2001 12 14 | 704 | 1.1− | 0.8+ | 2006 09 28 | G96 | 0.3+ | 0.7− | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2001 12 14 | 704 | (0.6− | 1.6+) | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2001 12 14 | 704 | 0.8− | 1.2+ | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2001 12 14 | 704 | (2.2− | 1.9+) | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2004 05 19 | 599 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2004 05 19 | 599 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2004 05 19 | 599 | 0.2− | 0.7+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1− | | |
| 2004 05 20 | 599 | 0.2+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1− | | |
| 2005 07 29 | 644 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.1+ | | |
| 2005 07 29 | 644 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ | | | | | | |

**(141040)∗ 2001 WM$_{75}$ = 2004 JY$_{19}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65176)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 160.24434 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18323525 | $\omega$ | 348.85154 | | −0.76988432 | | +0.62434115 | | |
| $a$ | 3.0699410 | $\Omega$ | 230.60681 | | −0.57157850 | | −0.76671557 | | |
| $e$ | 0.0647809 | $i$ | 9.84954 | | −0.28385940 | | −0.14948362 | | |
| $P$ | 5.38 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3+ | 0.2+ | 2003 02 04 | 644 | 0.0 | 0.7+ | 2004 05 18 | 704 | 1.1+ | 0.1− | | |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2003 02 04 | 644 | 0.4− | 0.6+ | 2004 05 18 | 704 | 1.4+ | 0.4+ | | |
| 2001 11 20 | 704 | 0.1− | 0.6− | 2003 02 04 | 644 | 0.1− | 0.6+ | 2005 06 27 | 691 | 0.0 | 0.0 | | |
| 2001 11 20 | 704 | 0.5− | 0.0 | 2004 04 13 | 644 | 0.6− | 0.1+ | 2005 06 27 | 691 | 0.3− | 0.2+ | | |
| 2001 11 21 | 704 | 0.4− | 0.5− | 2004 04 13 | 644 | 0.3− | 0.2+ | 2005 06 27 | 691 | 0.1− | 0.2+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.6− | 2004 04 13 | 644 | 0.1+ | 0.1+ | 2005 09 02 | 644 | 0.1+ | 1.1− | | |
| 2001 11 21 | 704 | 0.6− | 0.4− | 2004 04 25 | 704 | 0.1+ | 0.3+ | 2005 09 02 | 644 | 0.1− | 0.2+ | | |
| 2001 11 21 | 704 | 0.2+ | 0.6− | 2004 04 25 | 704 | 0.3+ | 0.7− | 2005 09 02 | 644 | 0.4− | 0.3+ | | |
| 2001 11 21 | 704 | 0.7− | 0.7− | 2004 04 25 | 704 | 0.9− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.3+ | | |
| 2001 12 11 | 291 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.5− | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.2+ | | |
| 2001 12 11 | 291 | 0.2− | 0.4+ | 2004 05 14 | 691 | 0.0 | 0.5+ | 2006 09 28 | 691 | 0.4− | 0.1+ | | |
| 2001 12 11 | 291 | 0.5− | 0.3+ | 2004 05 14 | 691 | 0.0 | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | | |
| 2001 12 14 | 291 | 0.7+ | 0.4+ | 2004 05 14 | 691 | 0.0 | 0.7+ | 2006 10 02 | 691 | 0.4+ | 0.0 | | |
| 2001 12 14 | 291 | 0.5+ | 0.4+ | 2004 05 15 | 704 | 1.0+ | 0.2− | 2006 10 02 | 691 | 0.4+ | 0.2+ | | |
| 2001 12 14 | 291 | 0.0 | 0.8+ | 2004 05 15 | 704 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.5+ | 1.1+ | | |
| 2001 12 17 | 704 | 0.4− | 0.1+ | 2004 05 15 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.3+ | | |
| 2001 12 17 | 704 | 0.7− | 0.1− | 2004 05 15 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.6− | | |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2004 05 16 | 704 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 1.3− | 0.2+ | | |
| 2001 12 17 | 704 | 0.3+ | 0.5− | 2004 05 16 | 704 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2003 01 14 | 608 | 0.5− | 0.5− | 2004 05 16 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2003 01 14 | 608 | 0.0 | 0.0 | 2004 05 16 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.5+ | | |
| 2003 01 14 | 608 | 0.3− | 0.0 | 2004 05 18 | 704 | 0.2− | 0.5− | | | | | | |

**(141041)∗ 2001 WW$_{75}$ = 2004 JC$_{48}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 68979)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 265.10970 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18863919 | $\omega$ | 318.12458 | | −0.57960588 | | −0.81484994 | | |
| $a$ | 3.0110279 | $\Omega$ | 167.29007 | | +0.75781868 | | −0.54292600 | | |
| $e$ | 0.0300015 | $i$ | 2.27982 | | +0.29961287 | | −0.20310327 | | |
| $P$ | 5.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.3− | 0.2− | 2001 12 09 | 691 | 0.2− | 0.2+ | 2005 07 11 | 691 | 0.0 | 0.6+ | | |
| 1993 03 25 | 691 | 0.2− | 0.3− | 2001 12 09 | 691 | 0.2− | 0.3+ | 2005 07 11 | 691 | 0.3− | 0.3+ | | |
| 1993 03 25 | 691 | 0.0 | 0.1− | 2001 12 14 | 704 | (1.4+ | 2.1+) | 2005 08 31 | 691 | 0.3+ | 0.3− | | |
| 2000 09 21 | 695 | 0.0 | 0.1+ | 2001 12 14 | 704 | (0.4+ | 2.2+) | 2005 08 31 | 691 | 0.1+ | 0.3− | | |
| 2000 09 21 | 695 | 0.1− | 0.1+ | 2001 12 14 | 704 | 1.0+ | 1.5+ | 2005 08 31 | 691 | 0.2− | 0.2+ | | |
| 2001 11 20 | 704 | 0.6+ | 0.2− | 2003 01 26 | 291 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.3− | | |
| 2001 11 20 | 704 | 0.1− | 0.6+ | 2003 01 26 | 291 | 0.2+ | 0.8+ | 2006 09 30 | G96 | 0.1+ | 0.4− | | |
| 2001 11 20 | 704 | 0.1+ | 1.0+ | 2003 01 26 | 291 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.3− | | |
| 2001 11 20 | 704 | 0.0 | 0.2+ | 2004 05 13 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.5− | | |
| 2001 11 21 | 704 | 0.2+ | 0.3+ | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 2001 11 21 | 704 | 0.6− | 1.5+ | 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 | | |
| 2001 11 21 | 704 | 0.9− | 0.6+ | 2004 05 21 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.4− | 0.4− | | |
| 2001 11 21 | 704 | 0.3− | 0.6+ | 2004 05 21 | 691 | 0.0 | 0.5+ | 2006 11 27 | 691 | 0.7+ | 0.0 | | |
| 2001 11 21 | 704 | 0.7+ | 0.3+ | 2004 05 21 | 691 | 0.2+ | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2001 12 09 | 691 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.5+ | 2006 11 27 | 691 | 0.5− | 0.1− | | |

**(141042)∗ 2001 WS$_{76}$ = 2003 BV$_{79}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46952)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 180.41570 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18326764 | $\omega$ | 140.46143 | | −0.91141095 | | +0.39288575 | | |
| $a$ | 3.0695794 | $\Omega$ | 63.07868 | | −0.40368488 | | −0.79600285 | | |
| $e$ | 0.0725500 | $i$ | 7.88741 | | −0.07980352 | | −0.46045657 | | |
| $P$ | 5.38 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2003 03 07 | 644 | 0.0 | 0.6+ | 2004 05 21 | 704 | 0.6+ | 0.3− | | |
| 2001 11 20 | 704 | 0.0 | 0.4+ | 2003 03 07 | 644 | 0.1− | 0.2+ | 2004 05 21 | 704 | 0.5+ | 0.8+ | | |
| 2001 11 20 | 704 | 1.1− | 0.8+ | 2003 03 07 | 644 | 0.0 | 0.6+ | 2004 05 21 | 704 | 0.9+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.8− | 0.6+ | 2004 04 17 | 704 | 0.1− | 0.4+ | 2004 06 08 | 691 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | 0.9− | 1.3+ | 2004 04 17 | 704 | 0.1− | 0.7− | 2004 06 08 | 691 | 0.1− | 0.2+ | | |
| 2001 11 21 | 704 | 1.0+ | 0.3+ | 2004 04 17 | 704 | 0.2+ | 0.2− | 2004 06 08 | 691 | 0.1− | 0.1+ | | |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2004 04 17 | 704 | 0.5+ | 0.4− | 2004 06 14 | 704 | 0.8+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.8− | 0.4+ | 2004 04 22 | 704 | 1.1+ | 0.5+ | 2004 06 14 | 704 | 0.5+ | 0.6+ | | |
| 2001 11 21 | 704 | 0.7− | 0.6+ | 2004 04 22 | 704 | 0.9− | 1.0+ | 2004 06 14 | 704 | 0.8− | 0.9+ | | |
| 2001 11 21 | 704 | 0.3− | 1.4+ | 2004 04 22 | 704 | 0.4− | 0.2+ | 2004 06 15 | 691 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.4+ | 0.5+ | 2004 04 22 | 704 | 0.4+ | 0.0 | 2004 06 15 | 691 | 0.1− | 0.4+ | | |
| 2001 12 15 | 704 | 0.3+ | 0.3+ | 2004 04 22 | 704 | 1.3− | 0.1− | 2004 06 15 | 691 | 0.1− | 0.1− | | |
| 2001 12 15 | 704 | 0.4+ | 0.4+ | 2004 05 12 | 699 | 0.2− | 0.6− | 2005 07 03 | 644 | 0.4− | 1.0+ | | |
| 2001 12 15 | 704 | 0.1+ | 0.2− | 2004 05 12 | 699 | 0.5+ | 0.4− | 2005 07 03 | 644 | 0.1+ | 0.8+ | | |
| 2003 01 10 | 704 | 0.1− | 0.8− | 2004 05 12 | 699 | 0.2− | 0.1+ | 2005 07 03 | 644 | 0.1+ | 0.7+ | | |
| 2003 01 10 | 704 | 0.4+ | 1.0− | 2004 05 12 | 699 | 0.3+ | 0.3− | 2006 09 30 | 703 | 1.0+ | 1.3− | | |
| 2003 01 10 | 704 | 0.3− | 0.1− | 2004 05 15 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.3+ | 1.1− | | |
| 2003 01 10 | 704 | 0.1+ | 0.3− | 2004 05 15 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.3− | | |
| 2003 01 10 | 704 | 0.0 | 0.1− | 2004 05 15 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | | |
| 2003 01 31 | 704 | 0.7+ | 0.5+ | 2004 05 15 | 704 | 0.0 | 0.5− | 2006 10 03 | G96 | 0.1− | 0.4+ | | |
| 2003 01 31 | 704 | 0.7− | 0.7+ | 2004 05 17 | 704 | 0.2+ | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.2+ | | |
| 2003 01 31 | 704 | 0.1+ | 0.2+ | 2004 05 17 | 704 | 0.4− | 0.2− | 2006 10 03 | G96 | 0.3− | 0.5+ | | |
| 2003 02 01 | 644 | 0.1+ | 0.0 | 2004 05 17 | 704 | 0.1− | 0.8− | 2006 10 03 | G96 | 0.4− | 0.2+ | | |
| 2003 02 01 | 644 | 0.2+ | 0.4+ | 2004 05 17 | 704 | 0.2+ | 0.7+ | | | | | | |
| 2003 02 01 | 644 | 0.2+ | 0.3+ | 2004 05 21 | 704 | 0.3+ | 0.1− | | | | | | |

**(141043)∗ 2001 WT$_{79}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.11972 | | (2000.0) | | | |
| $n$ | 0.17661991 | $\omega$ | 68.79193 | | −0.72023694 | −0.68815866 |
| $a$ | 3.1461272 | $\Omega$ | 67.60426 | | +0.59610016 | −0.67859708 |
| $e$ | 0.1202406 | $i$ | 5.44476 | | +0.35485681 | −0.25679500 |
| $P$ | 5.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.0 | 0.1+ | 2001 12 10 | 704 | 0.0 | 1.4+ | 2003 03 25 | 699 | 0.3− | 0.4+ | | |
| 1995 10 21 | 691 | 0.1− | 0.1− | 2001 12 13 | 644 | 0.2− | 0.2− | 2003 03 25 | 699 | 0.8+ | 0.0 | | |
| 2001 11 09 | 704 | 0.6+ | 0.1− | 2001 12 13 | 644 | 0.0 | 0.3+ | 2003 03 25 | 699 | 0.4+ | 0.2+ | | |
| 2001 11 09 | 704 | (0.8+ | 1.5+) | 2001 12 13 | 644 | 0.1+ | 0.3+ | 2003 03 25 | 644 | 0.1− | 0.6+ | | |
| 2001 11 09 | 704 | (0.0 | 2.2+) | 2001 12 15 | 704 | (0.4− | 1.6−) | 2003 03 25 | 699 | 0.2− | 0.5+ | | |
| 2001 11 20 | 704 | 0.4+ | 0.5+ | 2001 12 15 | 704 | 0.1− | 1.3− | 2003 04 10 | 691 | 0.0 | 0.1+ | | |
| 2001 11 20 | 704 | 0.6− | 0.0 | 2001 12 15 | 704 | 0.1− | 0.4− | 2003 04 10 | 691 | 0.2+ | 0.8+ | | |
| 2001 11 20 | 704 | 0.3− | 0.1+ | 2001 12 15 | 704 | 0.4+ | 1.2− | 2003 04 10 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2001 12 15 | 704 | (1.7+ | 1.1−) | 2006 09 28 | 691 | 0.2− | 0.4+ | | |
| 2001 11 20 | 704 | 0.7− | 0.6− | 2002 01 15 | 691 | 0.7+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.6+ | | |
| 2001 11 21 | 704 | 0.1− | 0.9− | 2002 01 15 | 691 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.4+ | | |
| 2001 11 21 | 704 | 0.1+ | 1.1− | 2002 01 15 | 691 | 0.6+ | 0.0 | 2006 10 02 | 691 | 0.4− | 0.6+ | | |
| 2001 11 21 | 704 | 0.1− | 1.0− | 2003 02 28 | 704 | 0.0 | 1.4+ | 2006 10 02 | 691 | 0.1+ | 0.4+ | | |
| 2001 11 21 | 704 | (0.8+ | 2.0−) | 2003 02 28 | 704 | 0.7+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.5+ | | |
| 2001 11 21 | 704 | 1.0− | 1.5− | 2003 02 28 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.5+ | | |
| 2001 12 10 | 704 | 0.5+ | 1.4− | 2003 02 28 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.5− | 0.3+ | | |
| 2001 12 10 | 704 | 0.8− | 0.1+ | 2003 03 25 | 644 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 12 10 | 704 | 0.6− | 0.9+ | 2003 03 25 | 644 | 0.1+ | 0.9+ | | | | | | |

**(141044)∗ 2001 WL$_{80}$ = 1995 UT$_{28}$ = 2004 FS$_{79}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61205)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.24623 | | (2000.0) | | | |
| $n$ | 0.18015897 | $\omega$ | 232.81355 | | +0.94350022 | +0.32823082 |
| $a$ | 3.1047893 | $\Omega$ | 107.98506 | | −0.28684327 | +0.87775051 |
| $e$ | 0.0940921 | $i$ | 2.74300 | | −0.16591648 | +0.34902517 |
| $P$ | 5.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1+ | 0.3+ | 2001 12 19 | 691 | 0.7− | 0.7+ | 2006 10 01 | 691 | 0.3− | 0.2+ | | |
| 1995 10 20 | 691 | 0.0 | 0.1− | 2001 12 19 | 691 | 0.5− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.4+ | | |
| 1995 10 20 | 691 | 0.2− | 0.0 | 2004 03 20 | 291 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.3+ | | |
| 1995 10 25 | 691 | 0.1− | 0.2+ | 2004 03 20 | 291 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.3+ | | |
| 1995 10 25 | 691 | 0.4− | 0.2+ | 2004 03 20 | 291 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 1995 10 25 | 691 | 0.3+ | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.3+ | | |
| 2001 11 20 | 704 | (2.6+ | 0.5−) | 2004 03 23 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.7− | 0.2+ | | |
| 2001 11 20 | 704 | 1.4+ | 0.2− | 2004 03 23 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 20 | 704 | 1.1+ | 1.1− | 2004 04 20 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.1− | | |
| 2001 11 21 | 704 | 0.5+ | 0.7− | 2004 04 20 | 691 | 0.2+ | 0.8+ | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2001 11 21 | 704 | 0.8+ | 0.2− | 2004 04 20 | 691 | 0.2− | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.2− | | |
| 2001 11 21 | 704 | 0.8+ | 0.4− | 2006 09 27 | 691 | 0.4− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2001 11 21 | 704 | 0.9+ | 0.5− | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 2001 12 19 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.7+ | | | | | | |

**(141045)∗ 2001 WE$_{83}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.71263 | | (2000.0) | | | |
| $n$ | 0.19444240 | $\omega$ | 290.57936 | | +0.18206348 | −0.98325058 |
| $a$ | 2.9508156 | $\Omega$ | 148.92690 | | +0.90812645 | +0.16485040 |
| $e$ | 0.0514208 | $i$ | 0.93669 | | +0.37704010 | +0.07773448 |
| $P$ | 5.07 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.9− | 0.2+ | 2003 02 26 | 599 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.4+ | 0.0 | | |
| 2001 11 20 | 704 | (1.7− | 0.5−) | 2003 02 26 | 599 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2003 02 26 | 599 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.8+ | 0.2− | | |
| 2001 11 20 | 704 | 0.6− | 0.6− | 2003 02 27 | 599 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.4− | | |
| 2001 11 21 | 704 | 0.5− | 1.4+ | 2003 03 10 | 291 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.1− | | |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2003 03 10 | 291 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.3+ | | |
| 2001 11 21 | 704 | 0.0 | 0.9+ | 2003 03 10 | 291 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 1.3− | | |
| 2001 11 21 | 704 | 0.0 | 0.3− | 2003 03 31 | 645 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.4− | | |
| 2001 12 13 | 644 | 0.1+ | 0.3+ | 2003 03 31 | 645 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.3− | | |
| 2001 12 13 | 644 | 0.1− | 0.1+ | 2004 05 20 | 599 | 0.2+ | 1.5+ | 2006 11 12 | G96 | 0.4+ | 0.3− | | |
| 2001 12 13 | 644 | 0.1− | 0.2+ | 2004 05 20 | 599 | 0.3+ | 0.8+ | 2006 11 12 | G96 | 0.4+ | 0.3− | | |
| 2001 12 14 | 704 | 1.2− | 1.1+ | 2004 05 20 | 599 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.3− | 0.5+ | | |
| 2001 12 14 | 704 | 0.6− | 1.3+ | 2004 05 20 | 599 | 0.2+ | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.1− | | |
| 2001 12 14 | 704 | (1.4− | 1.8+) | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.0 | | |
| 2001 12 14 | 704 | (1.4− | 2.4+) | 2006 10 12 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.3+ | | |
| 2001 12 18 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.3+ | | |
| 2001 12 18 | 691 | 0.3+ | 1.3− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.2− | | |
| 2001 12 18 | 691 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.6+ | | |
| 2003 02 25 | 599 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.4− | | |
| 2003 02 25 | 599 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.5− | | |
| 2003 02 25 | 599 | 0.6+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.3− | | |
| 2003 02 25 | 599 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− | | |

**(141046)∗ 2001 WR$_{89}$**

Discovered 2001 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.56510 | | (2000.0) | | | |
| $n$ | 0.17760359 | $\omega$ | 239.03267 | | −0.30555464 | −0.94449587 |
| $a$ | 3.1344996 | $\Omega$ | 229.25866 | | +0.91889669 | −0.25928315 |
| $e$ | 0.1982842 | $i$ | 9.16514 | | +0.24953003 | −0.20174190 |
| $P$ | 5.55 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.5− | 1.0+ | 2002 01 11 | 699 | 0.2+ | 0.6+ | 2005 07 10 | 691 | 0.2− | 0.1+ | | |
| 2001 11 20 | 704 | 0.4− | 1.2+ | 2002 01 11 | 699 | 0.3+ | 0.6+ | 2005 07 10 | 691 | 0.2− | 0.4+ | | |
| 2001 11 20 | 704 | 0.7− | 1.3+ | 2003 03 31 | 704 | 0.3+ | 0.4+ | 2005 08 29 | 691 | 0.0 | 0.5+ | | |
| 2001 11 20 | 704 | 0.2− | 1.0+ | 2003 03 31 | 704 | 0.1+ | 1.1+ | 2005 08 29 | 691 | 0.0 | 0.5+ | | |
| 2001 11 20 | 704 | 0.2+ | 1.1+ | 2003 03 31 | 704 | 0.2+ | 0.3− | 2005 08 29 | 691 | 0.2− | 0.1+ | | |
| 2001 11 24 | 704 | (0.1− | 1.6−) | 2003 03 31 | 704 | 0.4− | 0.8+ | 2006 10 03 | G96 | 0.4− | 0.2+ | | |
| 2001 11 24 | 704 | (1.8+ | 0.6−) | 2003 03 31 | 704 | 0.7+ | 0.6+ | 2006 10 03 | G96 | 0.3+ | 0.2+ | | |
| 2001 11 24 | 704 | (2.4+ | 0.7−) | 2003 03 31 | 704 | 0.1+ | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.1+ | | |
| 2001 11 24 | 704 | (1.2+ | 2.0−) | 2003 03 31 | 704 | 0.1− | 0.6+ | 2006 10 03 | G96 | 0.3+ | 0.0 | | |
| 2001 11 24 | 704 | 1.4+ | 0.4− | 2003 03 31 | 699 | 0.6− | 1.3+ | 2006 10 17 | 703 | 0.1− | 0.6− | | |
| 2001 12 18 | 704 | 1.1− | 0.1+ | 2003 03 31 | 704 | 1.2+ | 0.5− | 2006 10 17 | 703 | 0.7+ | 0.5+ | | |
| 2001 12 18 | 704 | 0.6− | 0.5− | 2003 03 31 | 704 | 0.7+ | 0.4− | 2006 10 17 | 703 | 0.8+ | 0.6− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2− | 0.1− | 2003 03 31 | 699 | 1.4− | 1.1+ | 2006 10 17 | 703 | 0.6− | 0.8− |
| 2001 12 18 | 704 | 1.3− | 0.3+ | 2003 03 31 | 699 | 1.0+ | 0.1+ | 2006 10 20 | 683 | (0.3+ | 2.1−) |
| 2002 01 09 | 704 | 0.9+ | 1.0+ | 2003 03 31 | 699 | 0.2+ | 1.3+ | 2006 10 20 | 683 | (1.7− | 1.9−) |
| 2002 01 09 | 704 | 1.1+ | 0.8+ | 2003 04 07 | 704 | 0.2− | 0.2− | 2006 10 20 | 683 | 0.1− | 0.5− |
| 2002 01 09 | 704 | 1.0+ | 0.5+ | 2003 04 07 | 704 | 0.1− | 1.3− | 2006 11 20 | G96 | 0.0 | 0.2+ |
| 2002 01 09 | 704 | 0.6+ | 0.8+ | 2003 04 07 | 704 | 0.2− | 0.8+ | 2006 11 20 | G96 | 0.4− | 0.2− |
| 2002 01 11 | 699 | 0.4− | 0.6− | 2003 04 07 | 704 | (2.2− | 1.2−) | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2002 01 11 | 699 | 0.2+ | 0.4− | 2005 07 10 | 691 | 0.0 | 0.5+ | 2006 11 20 | G96 | 0.1− | 0.6− |

**(141047)∗ 2001 WY$_{90}$**

Discovered 2001 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.95993 | | (2000.0) | | | |
| $n$ | 0.22041525 | $\omega$ | 55.73944 | | +0.95120388 | +0.27957761 |
| $a$ | 2.7141986 | $\Omega$ | 287.72328 | | −0.30839353 | +0.84735134 |
| $e$ | 0.2609268 | $i$ | 7.87845 | | −0.01022783 | +0.45147765 |
| $P$ | 4.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 1.1+ | 0.2+ | 2005 07 11 | 703 | 0.5− | 0.1− | 2005 10 08 | 704 | 1.0+ | 0.3+ |
| 2001 10 15 | 704 | 1.5+ | 0.5+ | 2005 07 11 | 703 | 0.3+ | 0.2+ | 2005 10 08 | 704 | 0.6+ | 0.3+ |
| 2001 10 15 | 704 | 0.6+ | 0.7+ | 2005 07 11 | 703 | 0.5− | 0.9+ | 2005 10 21 | 703 | 0.0 | 0.7− |
| 2001 11 11 | 704 | 0.0 | 0.1− | 2005 07 12 | 703 | 0.4+ | 0.7− | 2005 10 21 | 703 | 1.1− | 1.1− |
| 2001 11 11 | 704 | 0.3− | 0.1+ | 2005 07 12 | 703 | 0.1− | 1.4− | 2005 10 21 | 703 | 1.2+ | 1.2− |
| 2001 11 11 | 704 | 0.7− | 0.0 | 2005 07 12 | 703 | (1.2+ | 1.8−) | 2005 10 21 | 703 | 0.6+ | 1.2− |
| 2001 11 11 | 704 | 0.0 | 0.4− | 2005 07 12 | 703 | 0.2+ | 0.1− | 2005 10 27 | 703 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.4+ | 0.5+ | 2005 07 29 | 699 | 0.3+ | 0.4+ | 2005 10 27 | 703 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2005 07 29 | 699 | 0.2− | 0.5+ | 2005 10 27 | 704 | 0.0 | 0.8+ |
| 2001 11 21 | 704 | 0.3− | 0.8− | 2005 07 29 | 699 | 0.0 | 0.1− | 2005 10 27 | 703 | 0.6− | 0.5− |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2005 07 29 | 699 | 0.2+ | 0.4+ | 2005 10 27 | 703 | 0.7+ | 0.0 |
| 2001 11 24 | 704 | 0.8+ | 0.3− | 2005 07 29 | 644 | 0.0 | 0.1+ | 2005 10 27 | 704 | 0.4+ | 0.2− |
| 2001 11 24 | 704 | 0.0 | 0.4− | 2005 07 29 | 644 | 0.1− | 0.2+ | 2005 10 27 | 704 | 0.3+ | 0.3+ |
| 2001 11 24 | 704 | 0.4+ | 0.7+ | 2005 07 29 | 644 | 0.1− | 0.1+ | 2005 10 27 | 704 | 0.5− | 0.6+ |
| 2001 11 24 | 704 | 0.3+ | 0.6+ | 2005 07 31 | 608 | (0.4− | 1.6+) | 2005 10 27 | 704 | 1.0− | 1.0+ |
| 2001 11 24 | 704 | 0.2+ | 0.1+ | 2005 07 31 | 608 | (0.3− | 1.5+) | 2005 10 30 | 699 | 1.0− | 1.3+ |
| 2001 12 17 | 704 | 0.8− | 0.4− | 2005 07 31 | 608 | 0.3− | 1.3+ | 2005 10 30 | 699 | 1.3+ | 0.6− |
| 2001 12 17 | 704 | 0.2− | 1.0− | 2005 08 23 | 608 | 0.3+ | 1.0− | 2005 10 30 | 699 | 0.7− | 0.1+ |
| 2001 12 17 | 704 | 0.7− | 0.9− | 2005 08 23 | 608 | 0.2− | 0.2− | 2005 10 30 | 699 | 0.9− | 1.3+ |
| 2001 12 17 | 704 | 0.8− | 0.6− | 2005 08 23 | 608 | 0.0 | 0.1− | 2005 12 02 | 703 | 0.3+ | 0.5− |
| 2001 12 17 | 704 | 0.4− | 0.5− | 2005 08 24 | 644 | 0.1+ | 0.1+ | 2005 12 02 | 703 | 0.8− | 1.0+ |
| 2001 12 20 | 644 | 0.3− | 0.6+ | 2005 08 24 | 644 | 0.3+ | 0.0 | 2005 12 02 | 703 | (2.3− | 0.9+) |
| 2001 12 20 | 644 | 0.3+ | 1.2+ | 2005 08 24 | 644 | 0.1+ | 0.0 | 2005 12 02 | 703 | 0.3− | 0.2+ |
| 2001 12 20 | 644 | 0.2+ | 1.1+ | 2005 08 28 | 608 | 0.2− | 1.0− | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2002 01 08 | 704 | 0.1− | 0.9+ | 2005 08 28 | 608 | 0.4− | 1.0− | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 2002 01 08 | 704 | 0.6− | 1.5+ | 2005 08 28 | 608 | 0.7− | 1.0− | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2002 01 08 | 704 | 0.9− | 0.2− | 2005 08 29 | 699 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.5− |
| 2002 01 08 | 704 | 0.2− | 0.1− | 2005 08 29 | 699 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2003 03 30 | 645 | 0.0 | 0.1+ | 2005 08 29 | 699 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2003 03 30 | 645 | 0.1+ | 0.1+ | 2005 08 29 | 699 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2005 05 16 | 644 | 0.4+ | 0.2+ | 2005 08 31 | 704 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2005 05 16 | 644 | 0.2− | 0.1+ | 2005 08 31 | 704 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2005 05 16 | 644 | 0.1+ | 0.3+ | 2005 08 31 | 704 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.2+ |
| 2005 06 07 | 703 | 0.8− | 0.1+ | 2005 08 31 | 704 | 0.7+ | 0.7+ | 2006 10 31 | G96 | 0.4− | 0.2− |
| 2005 06 07 | 703 | 0.8− | 1.2+ | 2005 08 31 | 704 | 0.8− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2005 06 07 | 703 | 0.3− | 0.4− | 2005 09 12 | 608 | 0.1+ | 0.7− | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2005 06 07 | 703 | 0.2+ | 0.0 | 2005 09 12 | 608 | 0.1+ | 0.6− | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2005 06 23 | 644 | 0.2− | 0.1+ | 2005 09 12 | 608 | 0.1− | 0.5− | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2005 06 23 | 644 | 0.5− | 0.3+ | 2005 10 08 | 704 | 0.6+ | 0.9+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2005 06 23 | 644 | 0.2− | 0.2+ | 2005 10 08 | 704 | 0.7+ | 0.0 | | | | |
| 2005 07 11 | 703 | 0.3− | 0.1+ | 2005 10 08 | 704 | 0.9+ | 0.1+ | | | | |

**(141048)∗ 2001 WR$_{91}$**

Discovered 2001 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.34323 | | (2000.0) | | | |
| $n$ | 0.17247599 | $\omega$ | 60.88090 | | +0.23087564 | −0.97261820 |
| $a$ | 3.1963202 | $\Omega$ | 15.83757 | | +0.85532116 | +0.18982273 |
| $e$ | 0.1684002 | $i$ | 5.60416 | | +0.46381263 | +0.13409391 |
| $P$ | 5.71 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.1+ | 0.4− | 2003 03 06 | 699 | 1.0+ | 0.8+ | 2006 09 20 | 704 | 0.4+ | 0.6+ |
| 1995 10 19 | 691 | 0.1+ | 0.3− | 2003 03 07 | 699 | 0.4+ | 0.8+ | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 1995 10 19 | 691 | 0.0 | 0.3− | 2003 03 07 | 699 | 0.4− | 0.3+ | 2006 09 20 | 704 | (1.7− | 1.4+) |
| 2000 09 04 | 704 | 0.3− | 0.5+ | 2003 03 07 | 699 | 0.1− | 1.4+ | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 2000 09 04 | 704 | 0.2+ | 0.3+ | 2003 03 07 | 699 | 1.3+ | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.4+ |
| 2000 09 04 | 704 | 0.1− | 1.1+ | 2003 03 09 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.9+ |
| 2001 11 11 | 704 | 0.0 | 1.0+ | 2003 03 09 | 704 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.1+ | 0.9+ | 2003 03 09 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 691 | 0.3+ | 1.4− |
| 2001 11 11 | 704 | 0.1+ | 1.0+ | 2003 03 26 | 644 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 11 11 | 704 | 0.4− | 1.2+ | 2003 03 26 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 691 | 0.4− | 0.3+ |
| 2001 11 11 | 704 | 0.6− | 1.5+ | 2003 03 26 | 644 | 0.2+ | 0.8+ | 2006 09 26 | 704 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.6− | 0.8− | 2003 03 30 | 704 | 0.7+ | 0.8+ | 2006 09 26 | 704 | (1.6+ | 2.1−) |
| 2001 11 21 | 704 | 0.3− | 1.4− | 2003 03 30 | 704 | 0.8+ | 1.0+ | 2006 09 26 | 704 | 1.3− | 0.1− |
| 2001 11 21 | 704 | 0.1− | 1.1− | 2003 03 30 | 704 | 0.6+ | 1.1+ | 2006 09 26 | 704 | 0.7+ | 0.8+ |
| 2001 11 21 | 704 | 0.3− | 1.1− | 2003 03 30 | 704 | 0.0 | 0.9+ | 2006 09 28 | 704 | 0.4+ | 0.3− |
| 2001 11 24 | 704 | 0.6− | 0.1+ | 2003 03 30 | 704 | 0.6− | 1.4+ | 2006 09 28 | 704 | 0.2+ | 0.9+ |
| 2001 11 24 | 704 | 0.2− | 0.1− | 2003 04 01 | 645 | 0.1+ | 0.1+ | 2006 09 28 | 704 | (0.1− | 1.8+) |
| 2001 11 24 | 704 | 0.6− | 0.0 | 2003 04 01 | 645 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 1.2+ | 0.0 |
| 2001 11 24 | 704 | 0.5− | 0.3− | 2006 08 18 | 691 | 0.5− | 0.8+ | 2006 09 30 | 704 | 0.6− | 1.0+ |
| 2001 11 24 | 704 | 0.9− | 0.7− | 2006 08 18 | 691 | 0.4− | 0.5+ | 2006 09 30 | 704 | 0.2− | 1.0+ |
| 2001 12 09 | 704 | 0.0 | 0.3− | 2006 08 18 | 691 | 0.5− | 0.6+ | 2006 09 30 | 704 | 0.1− | 1.3+ |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 30 | 704 | 1.3− | 1.3+ |
| 2001 12 09 | 704 | 0.1− | 0.6+ | 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 12 09 | 704 | 0.1− | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 12 09 | 704 | 0.0 | 1.0+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2001 12 17 | 704 | 1.0+ | 0.6− | 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 1.1+ | 0.7− | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.5+ | 0.1− | 2006 09 12 | 703 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2001 12 17 | 704 | 1.0+ | 0.7− | 2006 09 12 | 703 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.5− |
| 2001 12 20 | 644 | 0.1− | 1.0+ | 2006 09 12 | 703 | 0.9+ | 1.3− | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2001 12 20 | 644 | 0.0 | 0.8+ | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.4+ |
| 2001 12 20 | 644 | 0.2− | 0.8+ | 2006 09 16 | 699 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 01 08 | 704 | 0.3+ | 0.9+ | 2006 09 16 | 699 | 0.4+ | 0.7− | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2002 01 08 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 699 | 0.9+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2002 01 08 | 704 | 0.1− | 0.6− | 2006 09 17 | 704 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2002 01 08 | 704 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.7− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 02 06 | 704 | 0.6+ | 0.9− | 2006 09 17 | 704 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 02 06 | 704 | 1.0+ | 0.0 | 2006 09 17 | 704 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 02 06 | 704 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.5− | 0.3+ |
| 2002 02 06 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2002 02 06 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2003 02 27 | 608 | 0.3+ | 0.0 | 2006 09 19 | 699 | (1.6+ | 0.2−) | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2003 02 27 | 608 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 1.0− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2003 02 27 | 608 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 03 06 | 704 | 0.6+ | 1.3+ | 2006 09 19 | 699 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2003 03 06 | 704 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.5+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2003 03 06 | 699 | 0.8+ | 1.3+ | 2006 09 19 | 699 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2003 03 06 | 704 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.6− | 1.0+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2003 03 06 | 699 | 0.8− | 0.9+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2003 03 06 | 699 | 0.1− | 0.9+ | 2006 09 20 | 704 | 0.4− | 1.1+ | | | | |

**(141049)∗ 2001 WM$_{97}$**

Discovered 2001 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.54400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18184287 | $\omega$ | 229.07129 | | +0.99345024 | −0.05253956 | |
| $a$ | 3.0855922 | $\Omega$ | 133.67157 | | +0.08133165 | +0.94888393 | |
| $e$ | 0.1536948 | $i$ | 8.06440 | | −0.08026071 | +0.31122161 | |
| $P$ | 5.42 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.1+ | 0.1− | 2003 01 30 | 291 | 0.1− | 0.5+ | 2006 09 15 | 704 | 0.4− | 0.0 |
| 2001 08 26 | 644 | 0.3− | 0.6+ | 2004 03 14 | 691 | 0.4+ | 0.2+ | 2006 09 15 | 704 | 0.3− | 0.8+ |
| 2001 08 26 | 644 | 0.7− | 0.6+ | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 09 15 | 704 | 0.9− | 0.4+ |
| 2001 10 13 | 699 | 0.2+ | 0.4+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 09 15 | 703 | 0.6− | 0.2+ |
| 2001 10 13 | 699 | 0.4− | 0.1− | 2004 03 20 | 704 | 1.5+ | 1.8+ | 2006 09 15 | 703 | 1.7− | 0.0 |
| 2001 10 13 | 699 | 0.7+ | 1.4+ | 2004 03 20 | 704 | 0.7+ | 1.6+ | 2006 09 15 | 703 | 1.3− | 0.7+ |
| 2001 10 13 | 699 | 1.2− | 1.1− | 2004 03 20 | 704 | 0.0 | 0.7− | 2006 09 15 | 703 | 0.3− | 0.6+ |
| 2001 10 16 | 704 | 0.9+ | 0.4+ | 2005 06 08 | 691 | 0.1− | 0.2+ | 2006 09 16 | 704 | 0.2− | 1.4+ |
| 2001 10 16 | 704 | 0.0 | 0.6− | 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.6+ | 0.4+ |
| 2001 10 16 | 704 | 0.8+ | 0.9+ | 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 704 | 0.9+ | 0.3− |
| 2001 10 16 | 704 | 0.6+ | 0.2− | 2005 06 10 | 691 | 0.2− | 0.5+ | 2006 09 19 | 704 | 0.5− | 0.3− |
| 2001 10 23 | 644 | 0.5+ | 1.5+ | 2005 06 10 | 691 | 0.2− | 0.0 | 2006 09 19 | 704 | 0.1− | 1.6+ |
| 2001 10 23 | 644 | 0.0 | 1.3+ | 2005 06 10 | 691 | 0.5− | 0.4+ | 2006 09 19 | 704 | 0.4+ | 1.9+ |
| 2001 10 23 | 644 | 0.4+ | 1.2+ | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 09 21 | 699 | (1.3− | 2.3+) |
| 2001 11 18 | 704 | 0.2− | 0.2+ | 2005 06 14 | 691 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 0.1+ | 1.0+ |
| 2001 11 18 | 704 | 0.3+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.4+ | 0.7− |
| 2001 11 18 | 704 | 0.9− | 1.0− | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 09 21 | 699 | 0.4− | 1.1+ |
| 2001 11 18 | 704 | 0.4− | 1.6− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.6− |
| 2001 11 20 | 699 | 0.6+ | 1.1+ | 2006 08 17 | 644 | 0.0 | 0.3− | 2006 09 26 | 704 | 0.2+ | 0.9+ |
| 2001 11 20 | 699 | 0.1− | 0.8+ | 2006 08 30 | 699 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.5− | 0.0 |
| 2001 11 20 | 699 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 0.4+ | 0.5− |
| 2001 11 20 | 699 | 0.7− | 0.7+ | 2006 08 30 | 704 | 1.8+ | 1.3− | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 2001 12 07 | 704 | 0.1− | 0.5+ | 2006 08 30 | 699 | 1.0− | 0.6− | 2006 09 26 | 703 | 0.2+ | 0.6+ |
| 2001 12 07 | 704 | 1.7− | 0.6− | 2006 08 30 | 704 | 1.4+ | 0.7− | 2006 09 26 | 703 | 0.7+ | 0.8+ |
| 2001 12 07 | 704 | 1.5− | 0.3− | 2006 08 30 | 704 | 1.1+ | 1.1− | 2006 09 26 | 703 | (0.4− | 2.4−) |
| 2001 12 07 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.4− | 0.1− | 2006 09 26 | 703 | 1.1+ | 1.5− |
| 2003 01 26 | 291 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.4− | 0.2+ | 2006 10 02 | 703 | 0.8− | 0.5+ |
| 2003 01 26 | 291 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.5− | 2006 10 02 | 703 | 0.0 | 0.0 |
| 2003 01 26 | 291 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.4− | 2006 10 02 | 703 | 0.7− | 0.4+ |
| 2003 01 30 | 291 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.4− | 0.9+ |
| 2003 01 30 | 291 | 0.2− | 0.3+ | 2006 09 14 | 703 | (0.9− | 3.1−) | | | | |

**(141050)∗ 2001 WN$_{99}$ = 2003 ER$_{12}$**

Discovered 2001 Nov. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43196)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.93918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18126981 | $\omega$ | 297.95042 | | −0.41323321 | −0.91046991 | |
| $a$ | 3.0920919 | $\Omega$ | 176.33265 | | +0.90023868 | −0.41123174 | |
| $e$ | 0.1155290 | $i$ | 15.24443 | | +0.13714461 | −0.04396589 | |
| $P$ | 5.44 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 12 | 691 | 0.6− | 0.3− | 2003 03 06 | 704 | 0.9+ | 1.5+ | 2003 04 03 | 699 | 1.1− | 0.3− |
| 1993 06 12 | 691 | 0.4− | 0.7− | 2003 03 06 | 704 | (0.2+ | 1.7+) | 2003 04 03 | 699 | 0.3− | 0.3+ |
| 1993 06 12 | 691 | 0.7+ | 0.8− | 2003 03 07 | 699 | 0.1+ | 1.1− | 2003 04 03 | 699 | 0.4+ | 0.9+ |
| 2001 11 18 | 704 | 0.4− | 0.4+ | 2003 03 07 | 699 | 0.4− | 0.9− | 2003 04 03 | 699 | 0.5− | 1.4− |
| 2001 11 18 | 704 | 0.5− | 0.2+ | 2003 03 07 | 704 | 0.3+ | 0.5+ | 2003 04 07 | 049 | 0.1− | 0.1− |
| 2001 11 18 | 704 | 0.7− | 0.7+ | 2003 03 07 | 699 | 0.2− | 0.3− | 2003 04 07 | 049 | 0.6− | 0.3− |
| 2001 12 07 | 704 | 0.3+ | 1.0+ | 2003 03 07 | 704 | 0.1− | 0.6+ | 2003 04 07 | 049 | 0.3− | 0.2− |
| 2001 12 07 | 704 | 0.4− | 0.7+ | 2003 03 07 | 699 | 0.2+ | 1.0− | 2003 04 09 | 691 | 0.3+ | 0.9+ |
| 2001 12 07 | 704 | 1.3− | 0.5+ | 2003 03 07 | 704 | 0.7+ | 0.4+ | 2003 04 09 | 691 | 0.3+ | 0.8+ |
| 2001 12 07 | 704 | 1.1− | 0.8+ | 2003 03 07 | 704 | 0.4− | 0.0 | 2003 04 09 | 691 | 0.6+ | 1.0+ |
| 2001 12 09 | 699 | 0.7− | 0.3− | 2003 03 07 | 704 | 0.4+ | 1.1+ | 2004 06 12 | 691 | 0.2+ | 0.4+ |
| 2001 12 09 | 699 | (2.1− | 0.1−) | 2003 03 26 | 644 | 0.2+ | 0.3+ | 2004 06 12 | 691 | 0.0 | 0.6+ |
| 2001 12 09 | 699 | 0.3− | 0.1+ | 2003 03 26 | 644 | 0.1− | 0.4− | 2004 06 12 | 691 | 0.1+ | 0.3+ |
| 2001 12 09 | 699 | 0.1+ | 0.5− | 2003 03 26 | 644 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.5− | 0.0 |
| 2001 12 14 | 644 | 0.0 | 0.7+ | 2003 03 26 | 644 | 0.1+ | 0.2− | 2006 09 26 | 703 | 1.0− | 0.3+ |
| 2001 12 14 | 644 | 0.3− | 0.2+ | 2003 03 26 | 644 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.7+ | 0.4+ |
| 2001 12 14 | 644 | 0.0 | 0.4+ | 2003 03 26 | 644 | 0.3+ | 0.3− | 2006 09 26 | 703 | 1.0− | 0.7+ |
| 2001 12 18 | 645 | 0.1+ | 0.0 | 2003 03 26 | 699 | 0.4+ | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.0 |
| 2001 12 18 | 645 | 0.1+ | 0.1− | 2003 03 26 | 699 | 1.2+ | 0.7− | 2006 10 04 | G96 | 0.1− | 0.1+ |
| 2002 01 13 | 645 | 0.1+ | 0.2− | 2003 03 26 | 699 | 0.1+ | 0.8− | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2002 01 13 | 645 | 0.1+ | 0.1− | 2003 03 26 | 699 | 0.6− | 0.9− | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 2003 02 09 | 608 | 0.6− | 1.1− | 2003 03 27 | 691 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2003 02 09 | 608 | 0.3− | 0.6− | 2003 03 27 | 691 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 2003 02 09 | 608 | 0.7− | 1.2− | 2003 03 27 | 691 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.8+ |
| 2003 03 06 | 704 | 0.3+ | 0.7+ | 2003 04 01 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.7+ |
| 2003 03 06 | 704 | 0.7+ | 1.3+ | 2003 04 01 | 704 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 03 06 | 704 | 0.2+ | 0.7+ | 2003 04 01 | 704 | 0.8− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2003 03 06 | 704 | (0.1+ | 1.7+) | 2003 04 01 | 704 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.5+ |

**(141051)∗ 2001 WW$_{101}$ = 2004 FH$_4$**

Discovered 2001 Nov. 18 by Spacewatch at Kitt Peak.

Id. K. E. Smalley (*MPO* 61206)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.00462 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17265874 | $\omega$ | 148.66309 | | +0.77880944 | +0.62725915 | |
| $a$ | 3.1940645 | $\Omega$ | 172.48828 | | −0.57761407 | +0.71800502 | |
| $e$ | 0.1293683 | $i$ | 0.59127 | | −0.24457687 | +0.30168653 | |
| $P$ | 5.71 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1+ | 0.6− | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.5+ |
| 1995 10 02 | 691 | 0.2+ | 0.3− | 2004 03 17 | 691 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.6− |
| 1995 10 02 | 691 | 0.2+ | 0.1− | 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.8− | 0.5− |
| 2000 08 21 | 699 | 1.5+ | 0.4+ | 2004 03 20 | 735 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.0 | 0.7+ |
| 2000 08 21 | 699 | 0.3− | 0.8+ | 2004 03 20 | 735 | 0.4− | 0.6− | 2006 09 19 | 699 | 0.6+ | 0.6+ |
| 2000 08 21 | 699 | 0.1− | 0.0 | 2004 03 20 | 735 | 0.4+ | 0.0 | 2006 09 20 | 704 | (0.0 | 2.1+) |
| 2000 08 21 | 699 | 0.5− | 0.1+ | 2004 03 31 | 691 | 0.4− | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.3+ |
| 2000 09 02 | 691 | 0.3− | 0.1− | 2004 03 31 | 691 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.5+ | 1.3+ |
| 2000 09 02 | 691 | 0.3− | 0.4− | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2000 09 02 | 691 | 0.2+ | 0.2+ | 2005 06 16 | G96 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.0 |
| 2001 11 18 | 291 | 0.1− | 0.4+ | 2005 06 16 | G96 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.2+ |
| 2001 11 18 | 291 | 0.2− | 0.3+ | 2005 06 16 | G96 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.1− | 0.4+ |
| 2001 11 18 | 291 | 0.7− | 0.3+ | 2005 06 16 | G96 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.4− | 0.6+ |
| 2001 11 20 | 704 | 0.7+ | 0.9− | 2005 06 26 | G96 | 0.6+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.4+ |
| 2001 11 20 | 704 | 0.4− | 0.7− | 2005 06 26 | G96 | 0.3+ | 0.0 | 2006 09 25 | 699 | 1.1+ | 0.3− |
| 2001 11 20 | 704 | 0.2+ | 0.8− | 2005 06 26 | G96 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.1+ | 0.8− | 2005 06 26 | G96 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 1.1+ | 1.1+ | 2005 06 28 | G96 | 0.4+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.2− | 0.6+ | 2005 06 28 | G96 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.5+ | 0.6+ | 2005 06 28 | G96 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.5+ | 0.3− | 2005 06 28 | G96 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 12 13 | 644 | 0.1− | 0.6+ | 2006 08 27 | 699 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 12 13 | 644 | 0.4− | 0.4+ | 2006 08 27 | 699 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 12 13 | 644 | 0.1− | 1.1+ | 2006 08 27 | 699 | 0.7+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2001 12 14 | 704 | 0.5− | 0.4+ | 2006 08 27 | 699 | 0.6− | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.8+ |
| 2001 12 14 | 704 | 0.2− | 0.6+ | 2006 09 12 | 703 | (8.0+ | 6.3+) | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 12 14 | 704 | 0.7+ | 0.2+ | 2006 09 12 | 703 | (10.2+ | 4.2+) | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 12 14 | 704 | 0.9− | 0.6− | 2006 09 12 | 703 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2006 09 12 | 703 | (2.3+ | 0.4+) | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.0 | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2001 12 18 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 12 18 | 691 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.4− | 0.1− | | | | |
| 2001 12 18 | 691 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.0 | | | | |

**(141052)∗ 2001 XR$_1$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.09834 | | (2000.0) | | | |
| $n$ | 0.70905459 | $\omega$ | 304.03360 | | −0.52777882 | +0.80124276 |
| $a$ | 1.2455168 | $\Omega$ | 291.62996 | | −0.64444501 | −0.59392847 |
| $e$ | 0.5502680 | $i$ | 17.65223 | | −0.55329933 | −0.07251902 |
| $P$ | 1.39 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 11 27 | 261 | 0.8− | 0.1− | 2002 01 13 | 469 | 0.2+ | 0.3− | 2006 09 06 | 240 | 0.2− | 0.2+ |
| 1987 11 27 | 261 | 1.7− | 0.6− | 2002 01 13 | 469 | 0.2− | 0.0 | 2006 09 06 | 240 | 0.1+ | 0.2+ |
| 1994 12 01 | 261 | 1.3− | 0.1− | 2002 01 13 | 469 | 0.8+ | 0.1+ | 2006 09 06 | 240 | 0.4+ | 0.0 |
| 1994 12 01 | 261 | 0.1+ | 0.2+ | 2002 01 15 | 704 | (1.7+ | 3.8+) | 2006 09 06 | 240 | 0.3+ | 0.2+ |
| 1999 10 13 | 704 | 0.7+ | 0.6− | 2002 01 15 | 704 | (1.5+ | 3.4+) | 2006 09 06 | 240 | 0.0 | 0.7+ |
| 1999 10 13 | 704 | 0.3− | 0.8− | 2002 01 15 | 704 | (1.6+ | 2.3+) | 2006 09 06 | 240 | 0.1− | 0.5+ |
| 1999 10 13 | 704 | 0.6+ | 0.1− | 2002 01 15 | 704 | (1.0+ | 3.3+) | 2006 09 06 | 240 | 0.1+ | 0.6+ |
| 1999 10 13 | 704 | 0.3+ | 0.6− | 2002 01 15 | 704 | (0.3+ | 3.1+) | 2006 09 06 | 240 | 0.3+ | 0.4+ |
| 1999 10 13 | 704 | 0.8+ | 0.7− | 2002 01 18 | 704 | 0.2+ | 1.2− | 2006 09 09 | 240 | 0.2− | 0.5+ |
| 2001 12 09 | 704 | 0.1+ | 0.6− | 2002 01 18 | 704 | 0.1+ | 1.4− | 2006 09 09 | 240 | 0.2− | 0.5+ |
| 2001 12 09 | 704 | 0.2− | 0.6− | 2002 01 18 | 704 | (0.1− | 1.6−) | 2006 09 09 | 240 | 0.1− | 0.3+ |
| 2001 12 09 | 704 | 1.5− | 0.3+ | 2002 01 18 | 704 | (0.1+ | 2.0−) | 2006 09 09 | 240 | 0.0 | 0.4+ |
| 2001 12 09 | 704 | 0.4+ | 0.8− | 2002 01 18 | 704 | 0.1+ | 1.4− | 2006 09 10 | 204 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | 0.8− | 1.0− | 2002 01 19 | 704 | 0.9+ | 0.5+ | 2006 09 10 | 204 | 0.0 | 0.2+ |
| 2001 12 10 | 046 | 0.4+ | 0.0 | 2002 01 19 | 704 | 0.1− | 0.1+ | 2006 09 10 | 204 | 0.3+ | 0.0 |
| 2001 12 10 | 046 | 0.6+ | 0.1− | 2002 01 19 | 704 | 0.4− | 0.2+ | 2006 09 13 | H45 | 0.1+ | 0.2+ |
| 2001 12 10 | 046 | 0.2+ | 0.0 | 2002 01 19 | 704 | 0.2+ | 0.3− | 2006 09 13 | H45 | 0.1− | 0.1− |
| 2001 12 10 | 046 | 0.1+ | 0.0 | 2002 01 19 | 704 | 0.3− | 0.6+ | 2006 09 13 | H45 | 0.8+ | 0.1+ |
| 2001 12 10 | 704 | 0.1− | 0.1+ | 2002 01 19 | 704 | 0.1+ | 1.0+ | 2006 09 13 | H45 | 0.0 | 0.3+ |
| 2001 12 10 | 704 | 0.0 | 0.4− | 2002 01 19 | 704 | 0.2− | 0.5+ | 2006 09 13 | H45 | 0.1+ | 0.0 |
| 2001 12 10 | 704 | 0.7− | 0.3− | 2002 01 19 | 704 | 0.5− | 0.4+ | 2006 09 15 | H45 | 0.2+ | 0.1+ |
| 2001 12 10 | 704 | 0.1− | 0.0 | 2002 01 21 | 704 | 0.1− | 0.8+ | 2006 09 15 | H45 | 0.3+ | 0.1− |
| 2001 12 10 | 704 | 0.1− | 0.6− | 2002 01 21 | 704 | 0.0 | 0.5+ | 2006 09 15 | H45 | 0.3+ | 0.1+ |
| 2001 12 10 | 649 | 0.2− | 0.0 | 2002 01 21 | 704 | 0.1− | 0.6+ | 2006 09 15 | H45 | 0.3+ | 0.0 |
| 2001 12 10 | 649 | 0.4− | 0.1+ | 2002 01 21 | 704 | 0.2− | 0.7+ | 2006 09 15 | H45 | 0.2+ | 0.0 |
| 2001 12 10 | 649 | 0.3+ | 0.0 | 2002 01 21 | 704 | 0.1− | 0.8+ | 2006 09 20 | 240 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.2+ | 2002 01 29 | 151 | 0.4− | 0.0 | 2006 09 20 | 240 | 0.5+ | 0.1+ |
| 2001 12 11 | 704 | 0.5− | 0.0 | 2002 01 29 | 151 | 0.4+ | 0.1+ | 2006 09 20 | 240 | 0.2+ | 0.1+ |
| 2001 12 11 | 704 | 0.7+ | 0.1+ | 2002 01 29 | 151 | 0.3− | 1.1− | 2006 09 20 | 240 | 0.0 | 0.2+ |
| 2001 12 11 | 704 | 0.2− | 0.1+ | 2002 01 29 | 151 | 0.3− | 0.6+ | 2006 09 20 | 240 | 0.2+ | 0.9+ |
| 2001 12 11 | 704 | 0.5+ | 0.3+ | 2002 01 30 | 198 | 0.3+ | 0.9+ | 2006 09 20 | 240 | 0.2− | 0.3+ |
| 2001 12 12 | 670 | (3.5+ | 2.3−) | 2002 01 30 | 198 | 0.1− | 0.2+ | 2006 09 21 | B15 | 0.0 | 0.0 |
| 2001 12 12 | 670 | 1.1+ | 0.1+ | 2002 01 30 | 198 | 0.3+ | 0.4+ | 2006 09 21 | B15 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.7+ | 1.0− | 2002 02 04 | 151 | 0.1− | 0.0 | 2006 09 22 | B15 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.9+ | 0.7− | 2002 02 04 | 151 | 0.6− | 0.4− | 2006 09 22 | B15 | 0.3− | 0.2+ |
| 2001 12 14 | 704 | 1.0+ | 1.1− | 2002 02 04 | 151 | 0.1− | 1.2+ | 2006 10 04 | 704 | 0.4+ | 0.6+ |
| 2001 12 14 | 704 | (0.6− | 2.3−) | 2002 02 04 | 151 | 0.6− | 0.2+ | 2006 10 04 | 704 | 0.2+ | 0.2+ |
| 2001 12 14 | 704 | 1.1+ | 1.3− | 2002 02 04 | 151 | 1.1− | 0.1− | 2006 10 04 | 704 | 0.3+ | 0.4+ |
| 2001 12 22 | 704 | 0.7+ | 1.4+ | 2002 02 04 | 151 | 0.2+ | 0.9− | 2006 10 04 | 704 | 0.0 | 0.7+ |
| 2001 12 22 | 704 | 0.3+ | 1.4+ | 2002 02 04 | 113 | 0.1− | 0.5+ | 2006 10 04 | 704 | 1.0− | 1.2+ |
| 2001 12 22 | 704 | 0.7+ | 1.1+ | 2002 02 04 | 113 | 0.1+ | 0.0 | 2006 10 08 | 113 | 0.4+ | 0.1− |
| 2001 12 22 | 704 | 0.6+ | 1.0+ | 2002 02 04 | 113 | 0.3− | 0.3− | 2006 10 08 | 113 | 0.1+ | 0.1− |
| 2001 12 22 | 704 | 0.4+ | 1.1+ | 2002 02 04 | 113 | 0.1+ | 0.7+ | 2006 10 08 | 113 | 0.0 | 0.4− |
| 2001 12 23 | 704 | 0.2− | 0.2− | 2002 02 05 | 699 | 0.1+ | 0.8+ | 2006 10 08 | 113 | 0.1− | 0.4− |
| 2001 12 23 | 704 | 0.2− | 0.1− | 2002 02 05 | 699 | 0.0 | 0.7+ | 2006 10 08 | 113 | 0.1+ | 0.5− |
| 2001 12 23 | 704 | 0.1− | 0.0 | 2002 02 05 | 699 | 0.1+ | 0.5+ | 2006 10 09 | A53 | 0.0 | 0.6+ |
| 2001 12 23 | 704 | 0.0 | 0.0 | 2002 02 05 | 699 | 0.1− | 0.3− | 2006 10 09 | A53 | 0.8− | 0.2− |
| 2001 12 23 | 704 | 0.2− | 0.0 | 2002 02 06 | 644 | 0.0 | 0.9+ | 2006 10 09 | A53 | 1.0+ | 0.5+ |
| 2001 12 23 | 113 | 0.3+ | 0.0 | 2002 02 06 | 644 | 0.1+ | 1.1+ | 2006 10 12 | 240 | 0.1+ | 0.7− |
| 2001 12 23 | 113 | 0.2+ | 0.6+ | 2002 02 06 | 644 | 0.0 | 1.0+ | 2006 10 12 | 240 | 0.0 | 0.9− |
| 2001 12 23 | 113 | 0.0 | 0.2+ | 2002 02 07 | 704 | 0.2+ | 0.2− | 2006 10 12 | 240 | 0.1− | 0.2− |
| 2001 12 23 | 113 | 0.3− | 0.2+ | 2002 02 07 | 704 | 0.2+ | 0.2− | 2006 10 12 | 240 | 0.1− | 0.1− |
| 2001 12 23 | 113 | 0.7+ | 0.2+ | 2002 02 07 | 704 | 0.1+ | 0.1− | 2006 10 12 | 240 | 0.1+ | 0.1− |
| 2001 12 27 | 118 | 0.2+ | 1.0− | 2002 02 07 | 704 | (3.3+ | 1.3−) | 2006 10 12 | 240 | 0.1+ | 0.2− |
| 2001 12 27 | 118 | 0.2+ | 0.1− | 2002 02 07 | 704 | 0.3− | 0.7− | 2006 10 12 | 240 | 0.1− | 0.1− |
| 2001 12 27 | 118 | 0.0 | 0.1− | 2002 02 16 | 704 | 0.8+ | 1.0− | 2006 10 13 | 170 | 0.2− | 0.4− |
| 2002 01 02 | 151 | 0.0 | 0.1− | 2002 02 16 | 704 | 0.0 | 0.6− | 2006 10 13 | 170 | 0.1+ | 0.1+ |
| 2002 01 02 | 151 | 0.1+ | 0.1+ | 2002 02 16 | 704 | 0.0 | 0.6− | 2006 10 13 | 170 | 0.0 | 0.2+ |
| 2002 01 02 | 151 | 0.2− | 0.0 | 2002 02 16 | 704 | 0.1+ | 0.9− | 2006 10 13 | 170 | 0.0 | 0.3+ |
| 2002 01 02 | 151 | 0.8− | 0.7− | 2002 02 17 | 240 | 0.3+ | 0.1− | 2006 10 15 | H55 | (2.0− | 1.6+) |
| 2002 01 02 | 151 | 0.1+ | 0.1+ | 2002 02 17 | 240 | 0.2− | 0.4+ | 2006 10 15 | H55 | 0.2+ | 0.2+ |
| 2002 01 03 | 127 | 0.0 | 0.4− | 2002 02 17 | 240 | 0.3− | 0.0 | 2006 10 15 | H55 | 0.0 | 0.3− |
| 2002 01 03 | 127 | 0.2− | 0.4− | 2002 03 04 | 699 | 1.0− | 1.2− | 2006 10 15 | H55 | 0.6+ | 0.2− |
| 2002 01 04 | 644 | 0.0 | 0.3+ | 2002 03 04 | 699 | 1.4− | 0.4− | 2006 10 16 | 704 | 0.7+ | 0.2+ |
| 2002 01 04 | 644 | 0.1+ | 0.3+ | 2002 03 04 | 699 | 1.1− | 0.2+ | 2006 10 16 | 704 | 0.9+ | 0.2+ |
| 2002 01 04 | 644 | 0.0 | 0.4+ | 2002 03 04 | 699 | (2.1− | 0.2−) | 2006 10 16 | 704 | 0.4− | 0.5+ |
| 2002 01 04 | 215 | 0.2+ | 0.0 | 2002 10 28 | 704 | 0.7− | 0.2− | 2006 10 16 | 113 | 0.0 | 0.2− |
| 2002 01 04 | 215 | 0.2+ | 0.4+ | 2002 10 28 | 704 | 0.3− | 0.2− | 2006 10 16 | 113 | 0.1+ | 0.2− |
| 2002 01 04 | 215 | 0.3+ | 0.1− | 2002 10 28 | 704 | 0.0 | 1.1− | 2006 10 16 | 113 | 0.0 | 0.3− |
| 2002 01 06 | 157 | 0.4− | 0.3− | 2004 12 16 | E12 | 0.7+ | 0.8+ | 2006 10 16 | 113 | 0.0 | 0.2− |
| 2002 01 06 | 157 | 0.9+ | 0.6+ | 2004 12 16 | E12 | 0.1− | 0.0 | 2006 10 16 | 198 | 0.0 | 0.1− |
| 2002 01 06 | 157 | 0.1− | 0.5+ | 2004 12 16 | E12 | 0.9− | 0.5− | 2006 10 16 | 198 | 0.1− | 0.1+ |
| 2002 01 07 | 704 | (0.3− | 1.7−) | 2004 12 16 | E12 | 0.6− | 0.3+ | 2006 10 16 | 198 | 0.2− | 0.3+ |
| 2002 01 07 | 704 | (0.3− | 1.5−) | 2005 11 04 | 461 | 0.3− | 0.1− | 2006 10 17 | 113 | 0.2+ | 0.3+ |
| 2002 01 07 | 704 | (0.3− | 1.7−) | 2005 11 04 | 461 | 0.0 | 0.3− | 2006 10 17 | 113 | 0.2+ | 0.0 |
| 2002 01 07 | 704 | (0.6− | 1.8−) | 2005 11 04 | 461 | 0.4− | 0.2+ | 2006 10 17 | 113 | 0.0 | 0.3− |
| 2002 01 07 | 704 | (0.4− | 2.1−) | 2005 11 04 | 461 | 0.3− | 0.5+ | 2006 10 17 | 113 | 0.4− | 0.2− |
| 2002 01 08 | 696 | 0.1+ | 0.2− | 2005 11 04 | 461 | 0.2+ | 0.1+ | 2006 10 21 | H45 | 0.2+ | 0.1− |
| 2002 01 08 | 696 | 0.1+ | 0.4− | 2005 11 06 | A74 | 0.8− | 0.2− | 2006 10 21 | H45 | 0.0 | 0.1− |
| 2002 01 10 | 113 | 0.0 | 0.2+ | 2005 11 06 | A74 | 0.5− | 0.1− | 2006 10 21 | H45 | 0.1− | 0.3− |
| 2002 01 10 | 113 | 0.2− | 0.3+ | 2005 11 06 | A74 | 0.6− | 0.2− | 2006 10 21 | H45 | 0.1− | 0.4− |
| 2002 01 10 | 113 | 0.2+ | 0.1+ | 2005 11 23 | 704 | 0.2+ | 0.6− | 2006 10 21 | H45 | 0.2+ | 0.2− |
| 2002 01 10 | 113 | 0.5− | 0.3− | 2005 11 23 | 704 | 1.0− | 0.3− | 2006 10 21 | H45 | (0.2− | 2.0−) |
| 2002 01 10 | 113 | 0.0 | 0.2+ | 2005 11 23 | 704 | 0.1− | 0.6+ | 2006 10 24 | H45 | 0.2− | 0.3− |
| 2002 01 12 | 151 | 0.6− | 0.0 | 2005 11 23 | 704 | 0.7+ | 0.1+ | 2006 10 24 | H45 | 0.1− | 0.1− |
| 2002 01 12 | 151 | 0.4− | 0.3+ | 2006 01 27 | 703 | 0.4+ | 0.5− | 2006 10 24 | H45 | 0.1− | 0.3− |
| 2002 01 12 | 151 | 0.0 | 0.1− | 2006 01 27 | 703 | 0.8+ | 0.6− | 2006 10 24 | H45 | 0.2− | 0.1+ |
| 2002 01 12 | 151 | 0.0 | 0.2+ | 2006 01 27 | 703 | 0.9− | 0.3− | 2006 10 24 | H45 | 0.2+ | 0.1+ |
| 2002 01 12 | 157 | 0.2− | 0.7− | 2006 01 27 | 703 | 1.4− | 0.2− | 2006 10 24 | H45 | 0.2+ | 0.0 |
| 2002 01 12 | 157 | 0.3− | 0.3+ | 2006 09 01 | 151 | 0.3− | 0.3+ | 2006 11 16 | 703 | 0.4+ | 0.2− |
| 2002 01 12 | 157 | 0.1+ | 0.4− | 2006 09 01 | 151 | 0.4− | 0.2+ | 2006 11 16 | 703 | 1.1+ | 0.4+ |
| 2002 01 12 | 157 | 0.9− | 0.2− | 2006 09 01 | 151 | 0.4− | 0.1+ | 2006 11 16 | 703 | 0.7− | 0.2+ |
| 2002 01 13 | 185 | 0.1− | 0.4+ | 2006 09 01 | 151 | 0.5− | 0.4+ | 2006 11 16 | 703 | 0.8− | 0.8+ |
| 2002 01 13 | 185 | 0.2+ | 0.0 | 2006 09 01 | 151 | 0.5− | 0.5+ | 2006 11 22 | 703 | 0.6− | 0.1+ |
| 2002 01 13 | 185 | 0.2− | 0.1− | 2006 09 01 | 151 | 0.6− | 0.7+ | 2006 11 22 | 703 | 0.7+ | 0.8− |
| 2002 01 13 | 185 | 0.0 | 0.4− | 2006 09 02 | 157 | 0.3− | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.5+ |
| 2002 01 13 | 185 | 0.1− | 0.3− | 2006 09 02 | 157 | 0.3− | 0.1+ | 2006 11 22 | 703 | 0.7− | 0.0 |
| 2002 01 13 | 469 | 1.2+ | 1.2− | 2006 09 02 | 157 | 0.1+ | 0.1+ | | | | |

**(141053)∗ 2001 XT$_1$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.05952 | | (2000.0) | | | |
| $n$ | 0.52205477 | $\omega$ | 31.08367 | | +0.97622227 | +0.21425470 |
| $a$ | 1.5275379 | $\Omega$ | 316.50490 | | −0.20741650 | +0.87908388 |
| $e$ | 0.5792568 | $i$ | 2.74304 | | −0.06299587 | +0.42580096 |
| $P$ | 1.89 | $H$ | 18.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.1+ | 0.1− | 2001 12 14 | 333 | 0.5+ | 0.8− | 2002 01 05 | 113 | 0.6+ | 0.0 |
| 2001 12 09 | 704 | 0.0 | 0.0 | 2001 12 14 | 704 | 0.0 | 0.3+ | 2002 01 13 | 413 | 0.2+ | 0.4− |
| 2001 12 09 | 704 | 0.3+ | 0.2− | 2001 12 14 | 704 | 0.1− | 0.3+ | 2002 01 13 | 413 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.3+ | 0.0 | 2001 12 14 | 704 | 0.3− | 0.2+ | 2002 01 13 | 413 | 0.2+ | 0.0 |
| 2001 12 09 | 704 | 0.3+ | 0.3− | 2001 12 14 | 704 | 0.1− | 0.5+ | 2002 01 14 | 704 | 0.3+ | 0.0 |
| 2001 12 10 | 611 | 0.4− | 0.8− | 2001 12 14 | 704 | 0.2− | 0.4+ | 2002 01 14 | 704 | 0.2− | 0.2− |
| 2001 12 10 | 611 | 0.1− | 0.1− | 2001 12 22 | 704 | 0.1− | 0.1+ | 2002 01 14 | 704 | 0.4+ | 0.5− |
| 2001 12 10 | 611 | 0.2+ | 0.2− | 2001 12 22 | 704 | 0.5− | 0.1+ | 2002 01 14 | 704 | (1.6− | 0.5+) |
| 2001 12 10 | 611 | 0.0 | 0.4− | 2001 12 22 | 704 | 0.3− | 0.3+ | 2002 01 14 | 704 | 0.0 | 0.1− |
| 2001 12 10 | 611 | 0.6+ | 0.3− | 2001 12 22 | 704 | 0.7− | 0.3+ | 2002 01 21 | 704 | 0.3− | 0.4+ |
| 2001 12 10 | 046 | 0.5− | 1.1+ | 2001 12 22 | 704 | 0.8− | 0.5+ | 2002 01 21 | 704 | 0.1− | 0.1+ |
| 2001 12 10 | 046 | 0.3− | 1.1+ | 2001 12 23 | 113 | 0.1− | 0.0 | 2002 01 21 | 704 | 0.0 | 0.0 |
| 2001 12 10 | 046 | 0.4− | 0.9+ | 2001 12 23 | 113 | 0.3− | 0.4+ | 2002 01 21 | 704 | 0.6− | 0.8+ |
| 2001 12 10 | 046 | 0.4− | 0.8+ | 2001 12 23 | 113 | 0.2− | 0.4+ | 2002 01 21 | 704 | 0.2+ | 0.3+ |
| 2001 12 10 | 046 | 0.5− | 0.9+ | 2001 12 23 | 113 | 0.2− | 0.4+ | 2002 02 13 | 696 | 0.1− | 0.0 |
| 2001 12 10 | 118 | 0.1+ | 0.1− | 2001 12 23 | 113 | 0.2+ | 0.6+ | 2002 02 13 | 696 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 118 | 0.0 | 0.0 | 2001 12 23 | 587 | 0.2+ | 0.4+ | 2003 03 27 | 696 | 0.1− | 0.5− |
| 2001 12 10 | 118 | 0.1− | 0.1+ | 2001 12 23 | 587 | 0.1+ | 0.4+ | 2003 03 27 | 696 | 0.7− | 0.7− |
| 2001 12 10 | 649 | 0.0 | 0.1− | 2002 01 01 | 413 | 0.1+ | 0.2− | 2003 04 14 | 413 | 0.2+ | 0.4− |
| 2001 12 10 | 649 | 0.0 | 0.0 | 2002 01 01 | 413 | 0.1+ | 0.1− | 2003 04 14 | 413 | 0.4+ | 0.1− |
| 2001 12 10 | 649 | 0.4− | 0.3− | 2002 01 01 | 413 | 0.3+ | 0.2− | 2003 04 15 | 413 | 0.2− | 0.0 |
| 2001 12 10 | 704 | 0.2+ | 0.2− | 2002 01 02 | 644 | 0.7+ | 0.0 | 2003 04 15 | 413 | 0.1− | 0.4+ |
| 2001 12 10 | 670 | 0.1− | 0.2+ | 2002 01 02 | 644 | 0.1− | 0.0 | 2003 05 23 | 291 | 0.2+ | 0.1− |
| 2001 12 10 | 704 | 0.4+ | 0.2+ | 2002 01 02 | 644 | 0.2− | 0.1+ | 2003 05 23 | 291 | 0.4− | 0.5+ |
| 2001 12 10 | 704 | 0.2+ | 0.1+ | 2002 01 02 | 644 | 0.1− | 0.1+ | 2003 05 23 | 291 | (0.4+ | 2.4+) |
| 2001 12 10 | 704 | 0.2− | 0.1+ | 2002 01 02 | 644 | 0.3+ | 0.2− | 2003 05 24 | 291 | 0.7+ | 0.4+ |
| 2001 12 10 | 704 | 0.0 | 0.1+ | 2002 01 02 | 644 | 0.4+ | 0.2− | 2003 05 24 | 291 | 0.4+ | 0.5+ |
| 2001 12 10 | 670 | 0.5+ | 0.2+ | 2002 01 02 | 322 | (2.2− | 1.1+) | 2003 05 24 | 291 | 0.1− | 0.6+ |
| 2001 12 10 | 704 | 0.5+ | 0.0 | 2002 01 02 | 322 | 0.3+ | 1.1− | 2003 12 17 | 291 | 0.6− | 0.5+ |
| 2001 12 10 | 704 | 0.2+ | 0.1− | 2002 01 02 | 151 | 0.1+ | 0.9− | 2003 12 17 | 291 | 0.9− | 0.8+ |
| 2001 12 10 | 704 | 0.5+ | 0.2+ | 2002 01 02 | 151 | 0.2+ | 0.1+ | 2003 12 17 | 291 | 0.8− | 0.6+ |
| 2001 12 10 | 704 | 0.5+ | 0.3+ | 2002 01 02 | 151 | 0.5+ | 0.7+ | 2004 01 22 | 704 | 0.4− | 0.3+ |
| 2001 12 10 | 704 | 0.8+ | 0.1+ | 2002 01 02 | 151 | 0.6− | 0.3+ | 2004 01 22 | 704 | 1.3+ | 0.2− |
| 2001 12 10 | 670 | 0.5+ | 0.2+ | 2002 01 03 | 198 | 0.8+ | 0.4− | 2004 01 22 | 704 | (1.6+ | 0.2+) |
| 2001 12 10 | 670 | 0.1+ | 0.6+ | 2002 01 03 | 198 | 0.3− | 0.3− | 2004 01 22 | 704 | 0.0 | 0.0 |
| 2001 12 11 | 670 | 0.6− | 0.3+ | 2002 01 03 | 198 | 0.0 | 0.3− | 2004 01 22 | 704 | 0.5+ | 0.3− |
| 2001 12 11 | 670 | 0.3+ | 0.4+ | 2002 01 03 | 198 | 0.2− | 0.3− | 2004 01 30 | 691 | 0.0 | 0.0 |
| 2001 12 13 | 636 | 0.2+ | 0.2− | 2002 01 04 | 215 | 0.1− | 0.3− | 2004 01 30 | 691 | 0.4+ | 0.0 |
| 2001 12 13 | 636 | 0.0 | 0.2− | 2002 01 04 | 215 | 0.2+ | 0.0 | 2004 01 30 | 691 | 0.1− | 0.0 |
| 2001 12 13 | 636 | 1.5+ | 0.2+ | 2002 01 04 | 215 | 0.1+ | 0.0 | 2004 02 17 | 645 | 0.1− | 0.2− |
| 2001 12 14 | 557 | 0.8− | 0.2+ | 2002 01 04 | 198 | 0.0 | 0.3− | 2004 02 17 | 645 | 0.0 | 0.3− |
| 2001 12 14 | 557 | 0.3− | 0.1+ | 2002 01 04 | 198 | 0.4+ | 0.2− | 2004 03 18 | 291 | 0.3+ | 0.3+ |
| 2001 12 14 | 557 | 0.3− | 0.2− | 2002 01 04 | 046 | 0.3+ | 0.4+ | 2004 03 18 | 291 | 0.6− | 0.4− |
| 2001 12 14 | 557 | 0.3− | 0.1− | 2002 01 04 | 046 | 0.3+ | 0.1− | 2004 03 18 | 291 | 0.5+ | 0.5− |
| 2001 12 14 | 557 | 0.5− | 0.1− | 2002 01 04 | 046 | 0.2− | 0.0 | 2005 05 11 | F65 | 0.1+ | 0.2+ |
| 2001 12 14 | 557 | 0.4+ | 0.2− | 2002 01 04 | 046 | 0.0 | 0.9− | 2005 05 11 | F65 | 0.1+ | 0.4+ |
| 2001 12 14 | 333 | 0.3− | 0.3− | 2002 01 04 | 198 | 0.9+ | 0.3+ | 2005 05 11 | F65 | 0.1− | 0.4+ |
| 2001 12 14 | 333 | (1.5+ | 0.4−) | 2002 01 05 | 113 | 0.2+ | 0.3+ | 2006 02 20 | G96 | 0.1− | 0.0 |
| 2001 12 14 | 333 | (3.6+ | 0.9−) | 2002 01 05 | 113 | 0.1+ | 0.3− | 2006 02 20 | G96 | 0.4− | 0.0 |
| 2001 12 14 | 333 | 0.2+ | 0.2− | 2002 01 05 | 113 | 0.4+ | 0.3− | 2006 02 20 | G96 | 0.2− | 0.0 |
| 2001 12 14 | 333 | 0.3− | 1.2− | 2002 01 05 | 113 | 0.7+ | 0.1+ | 2006 02 20 | G96 | (0.3− | 2.3−) |

**(141054)∗ 2001 XW$_2$**

Discovered 2001 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.21546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35878787 | $\omega$ | 92.85698 | | −0.51098519 | −0.83946922 | |
| $a$ | 1.9614514 | $\Omega$ | 30.24325 | | +0.56748404 | −0.49100560 | |
| $e$ | 0.0844098 | $i$ | 21.53631 | | +0.64564387 | −0.23281952 | |
| $P$ | 2.75 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 704 | (1.8+ | 1.1−) | 2005 04 01 | 699 | 1.4+ | 0.5− | 2006 09 21 | 699 | 0.2− | 0.3− |
| 2001 12 08 | 704 | 0.4+ | 0.7+ | 2005 04 04 | 703 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.8− | 0.3+ |
| 2001 12 08 | 704 | 0.8− | 0.0 | 2005 04 04 | 703 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.8+ |
| 2001 12 08 | 704 | 0.6+ | 0.7− | 2005 04 04 | 703 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.6− | 0.6− |
| 2001 12 10 | 704 | 0.5+ | 0.7+ | 2005 04 04 | 703 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.3− | 1.0+ |
| 2001 12 10 | 704 | 0.1+ | 0.5+ | 2005 04 05 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 699 | 0.1− | 0.7+ |
| 2001 12 10 | 704 | 0.9+ | 0.1− | 2005 04 05 | 704 | 0.6+ | 0.3− | 2006 09 26 | 704 | (1.6− | 0.8+) |
| 2001 12 10 | 704 | 0.3+ | 0.2+ | 2005 04 05 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 1.3− | 1.5+ |
| 2001 12 11 | 704 | 0.3− | 0.3− | 2005 04 05 | 704 | 0.2+ | 0.0 | 2006 09 26 | 704 | (2.1− | 0.2+) |
| 2001 12 11 | 704 | (1.8− | 0.2−) | 2005 04 05 | 704 | 0.0 | 0.1+ | 2006 09 26 | 704 | 1.0− | 0.0 |
| 2001 12 11 | 704 | 0.7+ | 0.1+ | 2005 04 09 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 2001 12 11 | 704 | 0.8+ | 0.7− | 2005 04 09 | 704 | 1.0+ | 0.6+ | 2006 09 26 | 703 | 0.9− | 0.1+ |
| 2001 12 11 | 704 | 0.0 | 0.4− | 2005 04 09 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 703 | 1.0− | 0.1− |
| 2001 12 11 | 704 | 0.4+ | 0.2− | 2005 04 09 | 704 | 0.6+ | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 2001 12 11 | 704 | 0.2− | 0.7+ | 2005 04 09 | 704 | 0.6+ | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.8+ |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2005 04 13 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.8+ |
| 2001 12 23 | 704 | 0.1− | 0.0 | 2005 04 13 | 704 | 0.5+ | 0.4− | 2006 09 29 | 699 | 0.0 | 0.8+ |
| 2001 12 23 | 704 | 0.1− | 0.7+ | 2005 04 13 | 704 | 0.4− | 0.1− | 2006 09 29 | 699 | 1.3+ | 0.6+ |
| 2001 12 23 | 704 | 0.9− | 0.4+ | 2005 04 13 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 704 | (0.8− | 3.0+) |
| 2001 12 23 | 704 | 0.2+ | 0.4+ | 2005 04 13 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 704 | 0.9− | 0.9+ |
| 2001 12 23 | 704 | 0.7− | 0.3+ | 2005 04 15 | 699 | 0.5+ | 0.4+ | 2006 09 30 | 704 | 0.8− | 1.1+ |
| 2002 01 25 | 704 | 0.4− | 0.0 | 2005 04 15 | 699 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.6− | 1.5+ |
| 2002 01 25 | 704 | 0.4− | 0.3− | 2005 04 15 | 699 | 0.6+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 01 25 | 704 | 0.5− | 0.1− | 2005 04 18 | 703 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2002 01 25 | 704 | 0.6− | 0.2− | 2005 04 18 | 703 | 0.9+ | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 01 25 | 704 | 0.4− | 0.1− | 2005 04 18 | 703 | 0.6+ | 1.4+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2002 02 01 | 699 | 0.3+ | 0.0 | 2005 04 18 | 703 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2002 02 01 | 699 | 0.7+ | 0.2− | 2005 04 19 | 691 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2002 02 01 | 699 | 0.9+ | 0.0 | 2005 04 19 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2002 02 01 | 699 | 0.6+ | 0.3+ | 2005 04 19 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2002 03 04 | 704 | 0.6+ | 0.7+ | 2005 04 19 | 704 | 0.6+ | 1.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 03 04 | 704 | 0.5+ | 0.5+ | 2005 04 19 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2002 03 04 | 704 | (1.6+ | 1.8+) | 2005 04 19 | 704 | 1.0+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 03 04 | 704 | 0.3+ | 0.8+ | 2005 04 19 | 704 | 0.8+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 03 16 | 699 | 0.4+ | 0.1− | 2005 04 21 | 705 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 03 16 | 699 | 0.1+ | 0.2− | 2005 04 21 | 705 | 0.3+ | 0.2+ | 2006 10 22 | 704 | 0.4− | 1.4+ |
| 2002 03 16 | 699 | 0.3+ | 0.0 | 2005 04 21 | 705 | 0.4+ | 0.0 | 2006 10 22 | 704 | 0.9− | 0.9+ |
| 2002 03 16 | 699 | 0.8+ | 0.1− | 2005 05 04 | G96 | 0.4+ | 0.1− | 2006 10 22 | 704 | (1.0− | 1.6+) |
| 2002 03 27 | 644 | 0.0 | 0.1− | 2005 05 04 | G96 | 0.3+ | 0.1− | 2006 10 22 | 704 | 0.4− | 1.0+ |
| 2002 03 27 | 644 | 0.1− | 0.3− | 2005 05 04 | G96 | 0.3+ | 0.0 | 2006 10 22 | 704 | 0.9− | 0.8+ |
| 2002 03 27 | 644 | 0.0 | 0.1− | 2005 05 04 | G96 | 0.3+ | 0.1− | 2006 10 22 | 703 | (0.8− | 4.2+) |
| 2002 05 13 | 704 | 0.0 | 0.9+ | 2005 05 08 | 703 | 0.3− | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.6+ |
| 2002 05 13 | 704 | (0.7− | 1.5+) | 2005 05 08 | 703 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.2− | 0.3+ |
| 2002 05 13 | 704 | 0.6− | 1.1+ | 2005 05 08 | 703 | 1.4− | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.2− |
| 2002 05 13 | 704 | 0.4− | 0.5+ | 2005 05 08 | 703 | 0.1− | 0.5+ | 2006 10 27 | 704 | (0.7− | 2.1+) |
| 2003 10 22 | 644 | 0.9− | 0.6+ | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.2− | 0.1− |
| 2003 10 22 | 644 | 0.9− | 0.3+ | 2005 05 08 | G96 | 0.1+ | 0.1+ | 2006 10 27 | 704 | 0.9− | 0.3− |
| 2003 10 22 | 644 | 1.0− | 0.5+ | 2005 05 08 | G96 | 0.3+ | 0.2+ | 2006 10 27 | 704 | (0.6− | 1.6+) |
| 2005 01 09 | 703 | (1.6− | 1.2−) | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 11 06 | 644 | 0.2+ | 0.4+ |
| 2005 01 09 | 703 | 1.4− | 0.3− | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.6+ |
| 2005 01 09 | 703 | 0.6+ | 1.4+ | 2005 05 12 | G96 | 0.1+ | 0.0 | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 2005 01 09 | 703 | 0.9− | 0.4+ | 2005 05 12 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.3+ |
| 2005 01 16 | 703 | 0.6− | 0.5− | 2005 05 12 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2005 01 16 | 703 | 0.1− | 0.6− | 2005 05 14 | 703 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2005 01 16 | 703 | 0.9− | 0.5− | 2005 05 14 | 703 | 0.9− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2005 01 16 | 703 | 0.3+ | 0.3+ | 2005 05 14 | 703 | 1.0− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2005 03 03 | 683 | 0.4− | 0.2+ | 2005 05 14 | 703 | 0.4− | 0.9+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2005 03 03 | 683 | (0.7− | 2.1−) | 2005 05 23 | 644 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 2005 03 03 | 683 | 0.1+ | 0.5− | 2005 05 23 | 644 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.2− |
| 2005 03 07 | 683 | (0.3− | 1.8+) | 2005 05 23 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.7− | 0.2− |
| 2005 03 07 | 683 | 0.6− | 1.4+ | 2005 05 30 | E12 | 0.7+ | 1.2+ | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2005 03 07 | 683 | 0.4− | 1.2+ | 2005 05 30 | E12 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.5− | 0.5+ |
| 2005 03 09 | 683 | 1.3− | 0.9+ | 2005 05 30 | E12 | 0.2+ | 1.1+ | 2006 11 17 | 703 | 0.6− | 0.4− |
| 2005 03 09 | 683 | (1.6− | 1.2+) | 2005 05 30 | E12 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.7+ |
| 2005 03 10 | 683 | 0.2+ | 0.7− | 2006 09 16 | 699 | 0.9− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2005 03 10 | 683 | (1.6+ | 0.4+) | 2006 09 16 | 699 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2005 03 10 | 703 | 0.4− | 0.0 | 2006 09 16 | 699 | 0.4− | 0.6+ | 2006 11 18 | 704 | 1.3− | 0.2+ |
| 2005 03 10 | 683 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2005 03 10 | 703 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2005 03 10 | 703 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2005 03 10 | 703 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.7+ | 0.1+ |
| 2005 04 01 | 699 | 1.4+ | 1.1− | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2005 04 01 | 699 | 0.6+ | 0.3− | 2006 09 21 | 699 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2005 04 01 | 699 | 0.7+ | 0.7+ | 2006 09 21 | 699 | (0.8+ | 2.1−) | | | | |

**(141055)∗ 2001 XT$_3$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.64453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35660438 | $\omega$ | 224.50271 | | −0.78105204 | −0.54735420 | |
| $a$ | 1.9694499 | $\Omega$ | 279.98531 | | +0.62336442 | −0.65481784 | |
| $e$ | 0.0668590 | $i$ | 17.77168 | | +0.03707432 | −0.52116886 | |
| $P$ | 2.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.4− | 0.1− | 2002 01 14 | 704 | 0.2− | 0.0 | 2005 02 04 | 703 | 0.4+ | 0.2− |
| 2001 10 25 | 704 | 0.3+ | 0.5− | 2002 01 14 | 704 | 0.1+ | 0.1+ | 2005 02 04 | 703 | 0.4+ | 0.1+ |
| 2001 10 25 | 704 | 0.1+ | 0.7− | 2002 01 14 | 704 | 0.2− | 0.1− | 2005 02 04 | 703 | 0.3+ | 0.1+ |
| 2001 11 19 | 644 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.3− | 0.1+ | 2005 02 04 | 703 | 0.3− | 0.3− |
| 2001 11 19 | 644 | 0.1+ | 0.1+ | 2002 01 21 | 704 | (4.3− | 1.5−) | 2005 02 15 | 703 | 0.2− | 0.2− |
| 2001 11 19 | 644 | 0.3+ | 0.1− | 2002 01 21 | 704 | (3.9− | 1.9−) | 2005 02 15 | 703 | 0.3− | 0.5+ |
| 2001 12 09 | 704 | 0.4− | 0.1− | 2002 01 21 | 704 | (3.3− | 2.1−) | 2005 02 15 | 703 | 0.0 | 0.6+ |
| 2001 12 09 | 704 | 0.4− | 0.3− | 2002 01 21 | 704 | (3.2− | 1.4−) | 2005 02 15 | 703 | 0.3+ | 1.4+ |
| 2001 12 09 | 704 | 0.6− | 0.4− | 2002 01 21 | 704 | (3.2− | 1.3−) | 2005 03 07 | 704 | 1.0+ | 0.1− |
| 2001 12 09 | 704 | 0.6− | 0.2− | 2002 02 07 | 704 | 1.0− | 0.0 | 2005 03 07 | 704 | 0.2+ | 0.0 |
| 2001 12 09 | 704 | 0.5− | 0.3− | 2002 02 07 | 704 | 0.2− | 0.7+ | 2005 03 07 | 704 | 0.1+ | 0.5+ |
| 2001 12 11 | 704 | 0.5+ | 0.3+ | 2002 02 07 | 704 | 0.3− | 0.4+ | 2005 03 07 | 704 | 0.1− | 0.2+ |
| 2001 12 11 | 704 | 0.7+ | 0.3+ | 2002 02 07 | 704 | 0.1+ | 0.9− | 2006 08 25 | 704 | 0.1+ | 0.3− |
| 2001 12 11 | 704 | 0.3+ | 0.5+ | 2002 02 07 | 704 | 0.3− | 0.2− | 2006 08 25 | 704 | 1.2+ | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.2+ | 2003 06 26 | 704 | 0.3− | 0.9− | 2006 08 25 | 704 | 0.2+ | 0.4+ |
| 2001 12 11 | 704 | 0.9+ | 0.4+ | 2003 06 26 | 704 | 0.9− | 0.6− | 2006 08 25 | 704 | 0.1− | 1.5+ |
| 2001 12 22 | 704 | 0.0 | 0.4+ | 2003 06 26 | 704 | 0.2− | 0.5+ | 2006 08 29 | 699 | 0.2+ | 0.1− |
| 2001 12 22 | 704 | 0.0 | 0.1+ | 2003 06 26 | 608 | 0.6+ | 0.7− | 2006 08 29 | 699 | 0.5− | 0.4+ |
| 2001 12 22 | 704 | 0.4+ | 0.4+ | 2003 06 26 | 608 | 0.7− | 0.1+ | 2006 08 29 | 699 | 1.0+ | 0.0 |
| 2001 12 22 | 704 | 0.2+ | 0.5+ | 2003 06 26 | 608 | 0.8− | 0.6− | 2006 08 29 | 699 | 0.9− | 0.2+ |
| 2001 12 22 | 704 | 0.1+ | 0.8+ | 2003 07 01 | 704 | 0.3− | 0.2+ | 2006 09 01 | 704 | (2.9+ | 1.0−) |
| 2002 01 08 | 704 | 0.7+ | 0.1− | 2003 07 01 | 704 | 0.6− | 0.2− | 2006 09 01 | 704 | 1.1− | 0.7+ |
| 2002 01 08 | 704 | 0.2− | 0.7− | 2003 07 01 | 704 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.4+ | 0.4− |
| 2002 01 08 | 704 | 0.8+ | 0.0 | 2003 07 26 | 704 | 0.2− | 0.3+ | 2006 09 01 | 704 | 0.5− | 0.0 |
| 2002 01 08 | 704 | 0.8+ | 0.4− | 2003 07 26 | 704 | 0.8+ | 1.2+ | 2006 09 01 | 704 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 0.8− | 1.2− | 2003 07 26 | 704 | 1.3+ | 0.3+ | 2006 09 27 | 703 | 0.7− | 0.1− |
| 2002 01 10 | 704 | 0.2− | 0.4− | 2003 07 26 | 704 | 1.6+ | 1.1+ | 2006 09 27 | 703 | 0.9− | 0.8− |
| 2002 01 10 | 704 | 1.0− | 0.3+ | 2005 01 15 | 699 | 0.2+ | 0.1− | 2006 09 27 | 703 | 0.5− | 0.0 |
| 2002 01 10 | 704 | 0.0 | 0.8− | 2005 01 15 | 699 | 0.0 | 0.6+ | 2006 09 27 | 703 | 0.5− | 0.8+ |
| 2002 01 10 | 704 | 0.5− | 0.1− | 2005 01 15 | 699 | 0.3+ | 0.1+ | | | | |
| 2002 01 14 | 704 | 0.1− | 0.0 | 2005 01 15 | 699 | 0.4+ | 0.4+ | | | | |

**(141056)∗ 2001 XV$_4$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.68053 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.40236903 | $\omega$ | 300.39410 | | −0.83624136 | +0.27569040 | |
| $a$ | 1.8171315 | $\Omega$ | 259.32191 | | −0.16220154 | −0.95010680 | |
| $e$ | 0.4443496 | $i$ | 28.84051 | | −0.52382350 | −0.14591734 | |
| $P$ | 2.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.3− | 0.1− | 2002 01 03 | 540 | (1.3− | 2.2−) | 2003 09 26 | 696 | (1.8− | 4.3−) |
| 2001 12 09 | 704 | 0.1+ | 0.7− | 2002 01 06 | 644 | 0.7+ | 0.2− | 2003 09 26 | 696 | 0.4− | 0.0 |
| 2001 12 09 | 704 | (0.4+ | 1.7−) | 2002 01 06 | 644 | 0.3+ | 0.1+ | 2003 09 26 | 696 | 0.6+ | 0.3− |
| 2001 12 09 | 704 | 0.6+ | 0.5− | 2002 01 06 | 644 | 0.4− | 0.2+ | 2005 06 01 | 291 | 0.4− | 0.1+ |
| 2001 12 10 | 118 | 0.5− | 0.6− | 2002 01 11 | 413 | 0.6+ | 0.1+ | 2005 06 01 | 291 | 0.4− | 0.2− |
| 2001 12 10 | 118 | 0.5− | 0.3− | 2002 01 11 | 413 | 0.3+ | 0.0 | 2005 06 01 | 291 | 0.4− | 0.1+ |
| 2001 12 10 | 118 | (2.2+ | 0.3+) | 2002 02 12 | 291 | 0.3+ | 0.9+ | 2005 08 31 | 461 | 0.8+ | 0.3+ |
| 2001 12 10 | 649 | 0.0 | 0.0 | 2002 02 12 | 291 | 0.4+ | 0.8+ | 2005 08 31 | 461 | 0.4+ | 0.6− |
| 2001 12 10 | 649 | 0.4+ | 0.0 | 2002 02 12 | 291 | 0.3+ | 0.6+ | 2005 09 07 | 198 | 0.3+ | 1.1+ |
| 2001 12 10 | 649 | 0.0 | 0.2+ | 2002 02 12 | 413 | 1.0+ | 0.7− | 2005 09 07 | 198 | 0.5+ | 0.9+ |
| 2001 12 10 | 704 | 0.0 | 0.3+ | 2002 02 12 | 413 | 0.2+ | 0.1+ | 2005 09 07 | 198 | 0.1+ | 0.5+ |
| 2001 12 10 | 704 | 0.5+ | 0.4+ | 2002 02 13 | 711 | (7.1+ | 0.2+) | 2005 09 07 | 198 | 0.1+ | 0.3+ |
| 2001 12 10 | 704 | 0.7− | 0.4+ | 2002 02 13 | 711 | 0.1− | 0.2+ | 2006 10 15 | 291 | 0.2− | 0.0 |
| 2001 12 10 | 704 | 0.0 | 0.1+ | 2002 02 13 | 711 | 0.9− | 0.1− | 2006 10 15 | 291 | 0.1+ | 0.6+ |
| 2001 12 11 | 704 | 0.4− | 0.1− | 2002 04 02 | 413 | 0.5+ | 0.3− | 2006 10 15 | 291 | 0.1− | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.3+ | 2002 04 02 | 413 | 0.4+ | 0.4+ | 2006 10 16 | 291 | 1.2− | 0.1+ |
| 2001 12 11 | 704 | 0.5+ | 0.9+ | 2002 04 02 | 413 | 0.4+ | 0.1+ | 2006 10 16 | 291 | 0.9− | 1.2+ |
| 2001 12 11 | 704 | 0.2− | 0.5− | 2002 04 02 | 413 | 0.4+ | 0.1+ | 2006 10 16 | 291 | 0.5− | 0.5+ |
| 2001 12 11 | 966 | 0.5+ | 0.6+ | 2002 05 01 | 413 | 0.7− | 0.3− | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2001 12 11 | 966 | 0.6+ | 0.4+ | 2002 05 01 | 413 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.7− |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2002 05 01 | 413 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.6+ | 1.0− |
| 2001 12 17 | 704 | 0.6− | 0.0 | 2002 07 30 | 413 | 0.2+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.4− |
| 2001 12 17 | 704 | 0.9− | 0.2+ | 2002 07 30 | 413 | 0.8+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 01 03 | 540 | (0.9− | 2.2−) | 2002 07 31 | 413 | 0.0 | 0.4+ | 2006 11 26 | 691 | 0.3+ | 0.1− |
| 2002 01 03 | 540 | 1.1− | 1.2− | 2002 07 31 | 413 | 0.2+ | 0.3+ | 2006 11 26 | 691 | 0.2+ | 0.0 |

**(141057)∗ 2001 XS$_5$**

Discovered 2001 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.22277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17935449 | $\omega$ | 262.77514 | | +0.60028281 | −0.78899640 | |
| $a$ | 3.1140664 | $\Omega$ | 149.11795 | | +0.79675445 | +0.57569190 | |
| $e$ | 0.1500643 | $i$ | 14.77997 | | +0.06959092 | +0.21462413 | |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.5− | 0.1+ | 2001 12 09 | 699 | 1.3+ | 0.2+ | 2006 09 19 | 703 | 0.4+ | 0.2+ |
| 2000 07 30 | 807 | 0.6− | 0.3+ | 2001 12 09 | 699 | 0.3+ | 0.7+ | 2006 09 19 | 703 | 0.6+ | 0.1+ |
| 2000 09 03 | 691 | 0.4+ | 0.1− | 2001 12 09 | 699 | (0.3− | 2.3+) | 2006 09 19 | 703 | (1.2+ | 1.7−) |
| 2000 09 03 | 691 | 0.2− | 0.1+ | 2001 12 09 | 699 | 0.7+ | 1.3+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2000 09 03 | 691 | 0.2+ | 0.2− | 2002 01 09 | 645 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2001 10 16 | 704 | (0.9− | 1.9−) | 2002 01 09 | 645 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2001 10 16 | 704 | 0.9− | 1.2− | 2002 01 13 | 704 | 0.6+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 10 16 | 704 | 0.9− | 0.6− | 2002 01 13 | 704 | 0.2+ | 0.8− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 16 | 704 | 0.3− | 0.8− | 2002 01 13 | 704 | 1.1+ | 1.3− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 10 16 | 704 | 0.8− | 0.7− | 2003 02 22 | 644 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 11 12 | 699 | 0.1− | 0.3+ | 2003 02 22 | 644 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 11 12 | 699 | 0.4− | 1.0+ | 2003 02 22 | 644 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 11 12 | 699 | 0.2+ | 0.2+ | 2004 04 23 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2001 11 12 | 699 | (0.6− | 1.8−) | 2004 04 23 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2001 12 07 | 704 | 0.9− | 0.1− | 2004 04 23 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2001 12 07 | 704 | 0.9− | 0.6− | 2006 08 22 | 644 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.6− |
| 2001 12 07 | 704 | 1.0− | 0.4− | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 2001 12 07 | 704 | 0.6− | 0.5− | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2001 12 07 | 704 | 1.0− | 0.6− | 2006 09 17 | 699 | 0.8+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 12 08 | 704 | 0.8− | 0.1− | 2006 09 17 | 699 | 0.3− | 0.8− | 2006 10 28 | 703 | 0.8+ | 0.8− |
| 2001 12 08 | 704 | 1.4− | 0.7+ | 2006 09 17 | 699 | 0.9− | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.9− |
| 2001 12 08 | 704 | 0.8− | 0.2+ | 2006 09 17 | 699 | 0.4− | 0.5+ | 2006 10 28 | 703 | 0.1+ | 0.7− |
| 2001 12 08 | 704 | 0.8− | 0.9+ | 2006 09 19 | 703 | 0.3+ | 0.9+ | 2006 10 28 | 703 | 0.2− | 0.6+ |

**(141058)∗ 2001 XE$_6$ = 2003 FF$_{46}$**

Discovered 2001 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46957)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.79057 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17233855 | $\omega$ | 11.29306 | | −0.47730515 | −0.87786918 | |
| $a$ | 3.1980193 | $\Omega$ | 107.22669 | | +0.80300721 | −0.45379055 | |
| $e$ | 0.1660154 | $i$ | 2.34359 | | +0.35687422 | −0.15303541 | |
| $P$ | 5.72 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 05 | 691 | 0.7− | 0.2+ | 2001 12 20 | 704 | 0.2− | 0.1− | 2003 04 25 | 691 | 0.1+ | 0.1+ |
| 2000 10 05 | 691 | 0.2− | 0.0 | 2002 01 09 | 704 | 0.9− | 0.9+ | 2003 04 25 | 691 | 0.0 | 0.3+ |
| 2000 10 05 | 691 | 0.4− | 0.1+ | 2002 01 09 | 704 | 0.2+ | 0.4+ | 2005 07 11 | 691 | 0.3+ | 0.5+ |
| 2001 11 20 | 704 | 0.4− | 0.1+ | 2002 01 09 | 704 | 0.6− | 0.1− | 2005 07 11 | 691 | 0.4+ | 0.8+ |
| 2001 11 20 | 704 | 0.6+ | 0.3+ | 2002 01 09 | 704 | 0.7− | 0.2− | 2005 07 11 | 691 | 0.1+ | 0.7+ |
| 2001 11 20 | 704 | 0.3+ | 1.2+ | 2002 01 09 | 704 | 0.4+ | 0.2− | 2005 07 12 | G96 | 0.2+ | 0.3+ |
| 2001 11 20 | 704 | 1.4+ | 0.2+ | 2002 01 13 | 704 | 0.5+ | 1.3− | 2005 07 12 | G96 | 0.3+ | 0.0 |
| 2001 11 21 | 704 | 0.4− | 1.0+ | 2002 01 13 | 704 | 0.4+ | 1.2− | 2005 07 12 | G96 | 0.5+ | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2002 01 13 | 704 | 0.5+ | 0.4− | 2005 07 12 | G96 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2002 01 13 | 704 | 0.3− | 0.8− | 2006 09 14 | 691 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.4− | 1.0+ | 2002 01 15 | 704 | 0.0 | 0.7− | 2006 09 14 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.8+ | 0.1+ | 2002 01 15 | 704 | 0.7+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2001 12 07 | 704 | 0.6− | 1.0+ | 2002 01 15 | 704 | 0.1− | 0.8− | 2006 09 18 | 691 | 0.1− | 0.3− |
| 2001 12 07 | 704 | 0.6+ | 0.2− | 2002 01 15 | 704 | 0.7+ | 0.8− | 2006 09 18 | 691 | 0.1− | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 704 | 0.2− | 0.4+ | 2003 03 24 | 691 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2001 12 07 | 704 | 0.4+ | 0.8+ | 2003 03 24 | 691 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.3+ |
| 2001 12 07 | 704 | 0.2− | 1.2+ | 2003 03 24 | 691 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.6− |
| 2001 12 08 | 704 | 0.8+ | 0.1+ | 2003 03 25 | 703 | 0.3+ | 0.2− | 2006 09 22 | 704 | 1.0+ | 1.0− |
| 2001 12 08 | 704 | 1.2+ | 0.6− | 2003 03 25 | 703 | 0.5− | 0.5− | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2001 12 08 | 704 | 0.8+ | 0.4− | 2003 03 25 | 703 | 0.8− | 0.8+ | 2006 09 28 | 691 | 1.1− | 0.2+ |
| 2001 12 11 | 704 | 0.0 | 0.1+ | 2003 03 25 | 703 | (1.6+ | 0.8+) | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2001 12 11 | 704 | 0.3− | 0.2− | 2003 03 27 | 644 | 0.4+ | 1.3+ | 2006 10 02 | 691 | 0.4− | 0.3+ |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2003 03 27 | 644 | 0.4+ | 1.2+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | 0.3− | 0.8+ | 2003 03 27 | 644 | 0.1+ | 1.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2001 12 11 | 704 | 0.2+ | 0.2+ | 2003 04 01 | 704 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 12 14 | 704 | 0.3− | 1.1+ | 2003 04 01 | 704 | 0.9+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.2− | 0.5+ | 2003 04 01 | 704 | 0.4+ | 0.4− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 12 14 | 704 | 0.9− | 0.5+ | 2003 04 01 | 704 | 0.6− | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2001 12 14 | 704 | 0.1− | 0.9+ | 2003 04 01 | 704 | 1.2+ | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 12 14 | 704 | 0.6− | 0.4+ | 2003 04 08 | 704 | 0.8− | 1.4+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2003 04 08 | 704 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2003 04 08 | 704 | (0.9+ | 2.1+) | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 12 17 | 704 | 0.0 | 0.6+ | 2003 04 08 | 704 | (2.7+ | 1.5+) | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.6+ | 2003 04 10 | 291 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2003 04 10 | 291 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 12 20 | 704 | 1.3+ | 1.0− | 2003 04 10 | 291 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2001 12 20 | 704 | 0.8− | 0.0 | 2003 04 25 | 691 | 0.4+ | 0.0 | | | | |

**(141059)∗ 2001 XQ$_6$ = 2003 FK$_{76}$**

Discovered 2001 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46957)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 285.51418 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17491397 | $\omega$ | 262.55296 | | −0.14075458 | −0.98763990 | |
| *a* | 3.1665503 | $\Omega$ | 196.04062 | | +0.97795101 | −0.12784379 | |
| *e* | 0.1396674 | *i* | 14.45204 | | +0.15427237 | −0.09068296 | |
| *P* | 5.63 | *H* | 15.2 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.2− | 0.2− | 2001 12 12 | 209 | 0.6− | 0.3− | 2004 06 13 | 691 | 0.2+ | 0.2+ |
| 1995 10 26 | 691 | 0.4+ | 0.1− | 2001 12 12 | 209 | 0.3− | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 1995 10 26 | 691 | 0.0 | 0.6− | 2001 12 12 | 209 | 0.6− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.4+ |
| 2001 11 15 | 704 | 0.5+ | 0.0 | 2001 12 14 | 209 | 0.0 | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.3+ |
| 2001 11 15 | 704 | 0.5− | 0.8+ | 2001 12 14 | 209 | 0.0 | 1.2+ | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2001 11 15 | 704 | 0.2− | 1.0+ | 2001 12 14 | 209 | 0.4− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2001 11 15 | 704 | 0.1− | 0.3+ | 2001 12 15 | 209 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 11 17 | 608 | 0.5− | 0.5− | 2001 12 15 | 209 | 0.6+ | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.3+ |
| 2001 11 17 | 608 | 0.0 | 0.5− | 2001 12 15 | 209 | 0.1− | 1.1+ | 2006 09 26 | 691 | 0.3− | 0.3+ |
| 2001 11 17 | 608 | 0.4+ | 0.7− | 2001 12 19 | 704 | 0.7+ | 0.1− | 2006 09 26 | 691 | 0.5+ | 0.2+ |
| 2001 12 05 | 608 | 0.2+ | 0.6− | 2001 12 19 | 704 | 1.4+ | 0.6+ | 2006 10 02 | H55 | 0.3− | 0.5+ |
| 2001 12 05 | 608 | 0.1+ | 0.9− | 2001 12 19 | 704 | 1.0+ | 0.4+ | 2006 10 02 | H55 | 0.4+ | 0.3+ |
| 2001 12 05 | 608 | 0.3+ | 0.5+ | 2001 12 19 | 704 | 0.7+ | 0.7+ | 2006 10 02 | H55 | 0.5− | 0.2− |
| 2001 12 08 | 704 | 1.1− | 0.4+ | 2001 12 19 | 704 | 0.9+ | 0.7+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 12 08 | 704 | 0.3− | 0.4+ | 2003 03 27 | 644 | 0.7+ | 1.4+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2001 12 08 | 704 | 0.8− | 0.2+ | 2003 03 27 | 644 | 0.3+ | 1.2+ | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2001 12 09 | 704 | 0.5− | 0.0 | 2003 03 27 | 644 | 0.2+ | 0.9+ | 2006 10 28 | G96 | 0.5+ | 0.1− |
| 2001 12 09 | 699 | 0.9+ | 0.7+ | 2003 03 30 | 644 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.6+ | 0.7− |
| 2001 12 09 | 704 | 0.6− | 0.0 | 2003 03 30 | 644 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2001 12 09 | 704 | 0.1+ | 0.4− | 2003 03 30 | 644 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2001 12 09 | 699 | (0.5− | 2.0+) | 2004 04 24 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 12 09 | 704 | 0.6− | 0.4− | 2004 04 24 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2001 12 09 | 699 | 1.2− | 0.3− | 2004 04 24 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.7+ | 0.4− |
| 2001 12 09 | 704 | 0.2− | 0.0 | 2004 06 13 | 691 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 12 09 | 699 | 0.3+ | 0.4− | 2004 06 13 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.0 |

**(141060)∗ 2001 XB$_7$ = 2003 FS$_{75}$**

Discovered 2001 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 273.59806 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.20670883 | $\omega$ | 272.60811 | | −0.93496108 | −0.33972737 | |
| *a* | 2.8328921 | $\Omega$ | 247.54732 | | +0.35322997 | −0.86490202 | |
| *e* | 0.1410274 | *i* | 6.34532 | | +0.03280805 | −0.36949942 | |
| *P* | 4.77 | *H* | 15.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2− | 0.0 | 2001 12 19 | 644 | 0.2+ | 1.2+ | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.1+ | 1.1− | 2001 12 19 | 644 | 0.0 | 1.3+ | 2006 10 28 | G96 | 0.5− | 0.4− |
| 2001 10 21 | 704 | 0.2+ | 0.9− | 2001 12 19 | 704 | 0.4− | 0.5+ | 2006 11 11 | 691 | 0.3− | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2002 01 09 | 291 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2002 01 09 | 291 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2001 11 19 | 704 | 0.3− | 1.0+ | 2002 01 09 | 291 | 0.6+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 0.3+ | 0.7+ | 2003 03 02 | 704 | 0.3− | 0.8− | 2006 11 15 | 691 | 1.0− | 0.1− |
| 2001 11 19 | 704 | 0.5− | 0.2+ | 2003 03 02 | 704 | 1.2− | 0.6+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.6+ | 2003 03 02 | 704 | 0.1+ | 0.5− | 2006 11 19 | 691 | 0.2− | 0.6+ |
| 2001 11 19 | 704 | 0.2− | 0.1+ | 2003 03 02 | 704 | 0.3+ | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.0 | 2003 03 02 | 704 | (1.7+ | 0.0 ) | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2003 03 02 | 704 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.9− | 0.3− |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2003 03 02 | 704 | 1.0+ | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.6− |
| 2001 11 21 | 704 | 0.8+ | 0.2+ | 2003 03 10 | 699 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.3− | 0.7− |
| 2001 12 07 | 704 | 0.3− | 0.8+ | 2003 03 10 | 699 | 0.7+ | 1.1+ | 2006 11 21 | 704 | 0.7+ | 1.0− |
| 2001 12 07 | 704 | 0.0 | 0.8+ | 2003 03 10 | 704 | 0.2− | 0.2+ | 2006 11 21 | 704 | (0.2− | 1.6−) |
| 2001 12 07 | 704 | 0.8+ | 0.1+ | 2003 03 10 | 699 | 0.6+ | 0.8+ | 2006 11 23 | 691 | 0.2+ | 0.3− |
| 2001 12 07 | 704 | 0.3− | 0.2+ | 2003 03 10 | 704 | 0.6+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.3− |
| 2001 12 07 | 704 | (1.8+ | 0.5+) | 2003 03 10 | 699 | 0.5+ | 0.8+ | 2006 11 23 | 691 | 0.1+ | 0.3− |
| 2001 12 10 | 704 | 0.9− | 0.4+ | 2003 03 10 | 704 | 0.3+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 12 10 | 704 | 0.8− | 0.6+ | 2003 03 10 | 704 | (0.8− | 2.5−) | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2001 12 10 | 704 | 0.4− | 0.1+ | 2003 03 10 | 704 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.2− | 2003 03 27 | 644 | 0.6+ | 0.6+ | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2001 12 11 | 704 | 0.5− | 0.3+ | 2003 03 27 | 644 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 0.4− | 0.0 | 2003 03 27 | 644 | 0.5+ | 0.5+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2001 12 15 | 704 | 0.7− | 0.8− | 2003 03 28 | 699 | 0.7− | 1.0+ | 2006 12 01 | 704 | 0.1− | 0.3− |
| 2001 12 15 | 704 | 1.3− | 0.6− | 2003 03 28 | 699 | 1.0− | 0.2− | 2006 12 01 | 704 | 0.2+ | 0.8− |
| 2001 12 15 | 704 | 0.1− | 0.6− | 2003 03 28 | 699 | 0.0 | 0.3− | 2006 12 01 | 691 | 1.0+ | 0.6+ |
| 2001 12 15 | 704 | 0.5− | 1.1− | 2003 03 28 | 699 | 0.2− | 0.0 | 2006 12 01 | 691 | 1.4+ | 0.7+ |
| 2001 12 18 | 704 | 0.6+ | 0.4+ | 2003 04 01 | 644 | 0.2+ | 0.6+ | 2006 12 01 | 704 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2003 04 01 | 644 | 0.2+ | 0.6+ | 2006 12 01 | 704 | 0.1+ | 0.4− |
| 2001 12 18 | 704 | 0.5− | 0.6+ | 2003 04 01 | 644 | 0.3+ | 0.4+ | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2001 12 18 | 704 | 0.2+ | 0.1+ | 2005 10 01 | 691 | 0.2− | 0.6+ | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.1− | 0.1+ | 2005 10 01 | 691 | 0.3− | 0.3+ | 2006 12 01 | 704 | 0.4+ | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2005 10 01 | 691 | 0.0 | 0.5+ | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.5− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2001 12 19 | 644 | 0.1− | 1.0+ | 2006 10 28 | G96 | 0.3− | 0.7− | | | | |

**(141061)∗ 2001 XN$_9$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 305.35702 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17685709 | $\omega$ | 77.54190 | | +0.11451435 | −0.99338621 | |
| *a* | 3.1433138 | $\Omega$ | 5.90177 | | +0.87684368 | +0.09710560 | |
| *e* | 0.1639913 | *i* | 4.67705 | | +0.46693857 | +0.06127260 | |
| *P* | 5.57 | *H* | 15.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.1− | 0.1− | 2001 12 22 | 704 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.3− | 0.5− |
| 2000 08 29 | 704 | 0.3− | 1.2+ | 2002 01 08 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.6− |
| 2000 08 29 | 704 | (0.4− | 3.3+) | 2002 01 08 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 699 | (1.8+ | 0.0 ) |
| 2001 11 11 | 704 | 0.5+ | 0.2− | 2002 01 08 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 1.4+ | 1.5− | 2002 01 08 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.6− | 1.0− | 2002 02 06 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 2001 11 11 | 704 | 0.5− | 0.4− | 2002 02 06 | 704 | 0.5+ | 1.3+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.4− | 0.5− | 2002 02 06 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.7+ | 0.1+ | 2002 02 08 | 704 | 0.3+ | 1.0+ | 2006 09 26 | 691 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 704 | 0.2− | 0.2− | 2002 02 08 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | (1.2− | 2.2−) |
| 2001 11 24 | 704 | 0.4+ | 0.3− | 2002 02 08 | 704 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.8+ | 1.1− |
| 2001 11 24 | 704 | 0.2+ | 0.1+ | 2003 03 29 | 291 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2001 12 09 | 704 | 0.3− | 0.2− | 2003 03 29 | 291 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.8− | 0.7− |
| 2001 12 09 | 704 | 0.2− | 0.0 | 2003 03 29 | 291 | (0.2− | 2.4+) | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 12 09 | 704 | 0.1− | 0.2− | 2003 05 01 | 691 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 12 09 | 704 | 0.4− | 0.0 | 2003 05 01 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 12 09 | 704 | 0.4− | 0.2+ | 2003 05 01 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2001 12 10 | 704 | 0.4− | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2001 12 10 | 704 | 0.2− | 0.6− | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 12 10 | 704 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 12 10 | 704 | 0.4− | 0.5− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 12 10 | 704 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 12 14 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.4− | 0.2− |
| 2001 12 14 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.2+ | 0.4+ |
| 2001 12 14 | 644 | (0.8− | 2.0−) | 2006 09 14 | 703 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.1− | 1.0+ |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | (1.7− | 1.2+) | 2006 11 11 | 703 | 0.7− | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 09 14 | 703 | 1.1− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 703 | (0.1+ | 1.6+) | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2001 12 17 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2001 12 22 | 704 | 0.5− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2001 12 22 | 704 | 0.3− | 0.4− | 2006 09 15 | 691 | 0.0 | 0.1− | | | | |
| 2001 12 22 | 704 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.3− | 0.6+ | | | | |

**(141062)∗ 2001 XS$_{10}$**

Discovered 2001 Dec. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.98975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18574768 | $\omega$ | 251.48597 | | −0.21636205 | −0.97628889 | |
| $a$ | 3.0421955 | $\Omega$ | 211.01204 | | +0.90071824 | −0.19688165 | |
| $e$ | 0.1153657 | $i$ | 0.76621 | | +0.37668836 | −0.08998678 | |
| $P$ | 5.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 09 | 691 | 0.1+ | 0.6− | 2001 12 11 | 291 | 0.7+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 1992 01 09 | 691 | 0.1+ | 0.2+ | 2003 02 01 | 291 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.2− |
| 1992 01 09 | 691 | 0.6− | 0.3− | 2003 02 01 | 291 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 1.0− | 0.1+ |
| 1995 09 17 | 691 | 0.5− | 0.0 | 2003 02 01 | 291 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 1995 09 17 | 691 | 0.1− | 0.6+ | 2003 02 25 | 599 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 1995 09 17 | 691 | 0.2+ | 0.5+ | 2003 02 25 | 599 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 10 21 | 291 | 0.6− | 0.1+ | 2003 02 25 | 599 | 0.5+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2001 10 21 | 291 | 0.4+ | 0.0 | 2003 02 25 | 599 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2001 10 21 | 291 | 0.3+ | 0.1+ | 2003 02 26 | 599 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.4− | 0.3+ | 2003 02 26 | 599 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.1− | 0.4+ | 2003 02 26 | 599 | 0.9+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.8− | 0.6+ | 2003 02 27 | 599 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.4− |
| 2001 10 24 | 704 | 1.2+ | 0.2− | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2001 11 19 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.3− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.7− |
| 2001 11 19 | 704 | 0.6− | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.2+ | 1.1− |
| 2001 12 10 | 291 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.6− | 0.5− |
| 2001 12 10 | 291 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.8+ | 0.7− |
| 2001 12 10 | 291 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2001 12 11 | 291 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.6− |
| 2001 12 11 | 291 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.6− | 0.5− |

**(141063)∗ 2001 XZ$_{11}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.70447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19011126 | $\omega$ | 149.61239 | | −0.47930143 | −0.87410508 | |
| $a$ | 2.9954644 | $\Omega$ | 328.82831 | | +0.77148675 | −0.37681258 | |
| $e$ | 0.2119509 | $i$ | 8.75747 | | +0.41842364 | −0.30651686 | |
| $P$ | 5.18 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.1+ | 0.2+ | 2001 12 22 | 704 | (0.9− | 2.2+) | 2005 09 22 | 644 | 0.7− | 0.2− |
| 2000 08 24 | 704 | 0.2− | 0.9+ | 2001 12 22 | 704 | (0.4− | 2.2+) | 2005 09 22 | 644 | 0.5− | 0.6+ |
| 2000 08 24 | 704 | 0.4− | 0.7+ | 2001 12 22 | 704 | (0.2− | 2.2+) | 2005 10 01 | G96 | 0.2− | 0.2+ |
| 2000 08 24 | 704 | 0.8+ | 0.9+ | 2002 01 07 | 704 | 0.1+ | 0.3− | 2005 10 01 | G96 | 0.1+ | 0.1− |
| 2000 09 19 | 695 | 0.2− | 0.1+ | 2002 01 07 | 704 | 0.1+ | 0.3− | 2005 10 01 | G96 | 0.3+ | 0.2+ |
| 2000 09 19 | 695 | 0.2− | 0.1+ | 2002 01 07 | 704 | 0.5+ | 0.4− | 2005 10 01 | G96 | 0.1− | 0.2+ |
| 2001 11 11 | 704 | 0.2− | 0.2+ | 2002 01 07 | 704 | 0.3− | 0.4− | 2006 08 29 | 703 | 0.7+ | 1.1− |
| 2001 11 11 | 704 | 0.3− | 0.9− | 2002 01 07 | 704 | (1.6+ | 0.8+) | 2006 08 29 | 703 | 0.4− | 1.2− |
| 2001 11 11 | 704 | 0.4+ | 0.2− | 2002 02 08 | 704 | 1.1+ | 0.2+ | 2006 08 29 | 703 | 0.9+ | 0.3− |
| 2001 11 11 | 704 | 0.2+ | 0.2+ | 2002 02 08 | 704 | 1.0+ | 0.6− | 2006 08 29 | 703 | (1.2+ | 3.2+) |
| 2001 11 11 | 704 | 1.2− | 0.8+ | 2002 02 08 | 704 | 0.6+ | 0.9+ | 2006 10 23 | 703 | 0.4+ | 0.4− |
| 2001 12 09 | 704 | 0.1− | 0.5+ | 2002 02 08 | 704 | (2.0+ | 1.1+) | 2006 10 23 | 703 | 0.2+ | 0.5− |
| 2001 12 09 | 704 | 0.5+ | 0.5+ | 2002 02 08 | 704 | 0.9+ | 0.1+ | 2006 10 23 | 703 | 0.0 | 0.4− |
| 2001 12 09 | 704 | 0.2+ | 0.4+ | 2003 03 23 | 644 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.5+ | 0.0 |
| 2001 12 09 | 704 | 1.0+ | 0.6+ | 2003 03 23 | 644 | 0.3− | 0.5+ | 2006 10 29 | 703 | (5.4+ | 0.8+) |
| 2001 12 09 | 704 | 0.3+ | 0.9+ | 2003 03 23 | 644 | 0.0 | 0.5+ | 2006 10 29 | 703 | 0.2− | 0.6− |
| 2001 12 11 | 704 | 0.6− | 0.6+ | 2003 04 02 | 704 | 0.7+ | 0.0 | 2006 10 29 | 703 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.5− | 0.5+ | 2003 04 02 | 704 | 0.2− | 0.5+ | 2006 10 29 | 703 | 0.2+ | 1.3− |
| 2001 12 11 | 704 | 0.5− | 0.6+ | 2003 04 02 | 704 | (1.6− | 1.7+) | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.2+ | 0.1+ | 2003 04 02 | 704 | 0.5− | 0.4− | 2006 11 02 | G96 | 0.5− | 1.1+ |
| 2001 12 11 | 704 | 0.6− | 0.2+ | 2003 04 30 | 704 | 0.4+ | 0.2+ | 2006 11 02 | G96 | (1.9+ | 1.4+) |
| 2001 12 14 | 704 | 0.9− | 1.0+ | 2003 04 30 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.3− | 0.9+ | 2003 04 30 | 704 | 0.2+ | 0.6+ | 2006 11 15 | 703 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 1.0− | 0.2+ | 2003 04 30 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 703 | 0.5− | 0.5− |
| 2001 12 14 | 704 | 0.6+ | 0.6+ | 2003 04 30 | 704 | 0.3+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 1.1− | 0.3+ | 2005 08 06 | 644 | 0.0 | 0.3+ | 2006 11 17 | 644 | 0.4+ | 0.0 |
| 2001 12 14 | 704 | 0.4+ | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 11 17 | 644 | 0.5+ | 0.0 |
| 2001 12 14 | 704 | 0.9− | 0.1− | 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 11 17 | 644 | 0.4+ | 0.2+ |
| 2001 12 14 | 704 | 0.7+ | 0.4+ | 2005 08 24 | 644 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.0 | 0.3+ |
| 2001 12 14 | 704 | 0.8− | 0.1− | 2005 08 24 | 644 | 0.2− | 0.2+ | 2006 11 21 | 703 | 0.3+ | 0.2− |
| 2001 12 22 | 704 | (1.1− | 2.0+) | 2005 08 24 | 644 | 0.5− | 0.1+ | 2006 11 21 | 703 | 0.2+ | 0.1− |
| 2001 12 22 | 704 | (1.1− | 2.0+) | 2005 09 22 | 644 | 0.6− | 0.3+ | 2006 11 21 | 703 | 0.4− | 0.3− |

**(141064)∗ 2001 XD$_{12}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.60474 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36612280 | $\omega$ | 210.79683 | | −0.41408238 | −0.85102564 | |
| $a$ | 1.9351659 | $\Omega$ | 265.40975 | | +0.88712617 | −0.29787053 | |
| $e$ | 0.0963491 | $i$ | 18.90382 | | +0.20382085 | −0.43246792 | |
| $P$ | 2.69 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.6+ | 0.1− | 2002 01 11 | 699 | 0.1+ | 1.0+ | 2003 06 29 | 704 | 0.1+ | 0.7+ |
| 2001 09 26 | 704 | 0.6+ | 0.4− | 2002 01 11 | 699 | 0.6+ | 0.3+ | 2003 06 29 | 704 | 0.4− | 0.9+ |
| 2001 09 26 | 704 | 0.2+ | 0.9− | 2002 01 11 | 699 | 0.0 | 0.5− | 2003 06 29 | 704 | 0.6− | 0.7+ |
| 2001 09 26 | 704 | 0.1+ | 0.5− | 2002 01 11 | 699 | 0.6+ | 0.0 | 2003 06 29 | 704 | 0.1+ | 0.3+ |
| 2001 09 26 | 704 | 0.6+ | 0.3− | 2002 01 13 | 608 | 0.4− | 0.8− | 2003 06 29 | 704 | 0.2− | 0.9+ |
| 2001 11 11 | 704 | 0.2− | 0.7− | 2002 01 13 | 608 | 0.7− | 0.8− | 2003 07 01 | 704 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 0.5− | 0.7− | 2002 01 13 | 608 | (0.8− | 1.5−) | 2003 07 01 | 704 | 0.3− | 0.8+ |
| 2001 11 11 | 704 | 1.2− | 0.7− | 2002 01 14 | 704 | 0.9− | 0.2− | 2003 07 01 | 704 | 0.2+ | 0.8+ |
| 2001 11 11 | 704 | 0.3− | 1.0− | 2002 01 14 | 704 | 0.8− | 0.2+ | 2003 07 01 | 704 | 0.1+ | 0.7+ |
| 2001 11 11 | 704 | 0.2− | 0.9− | 2002 01 14 | 704 | 0.9− | 0.2+ | 2003 07 01 | 704 | 0.0 | 0.2+ |
| 2001 12 09 | 704 | 0.1− | 0.2− | 2002 01 14 | 704 | 1.1− | 0.2+ | 2004 12 07 | 704 | 0.6+ | 1.0− |
| 2001 12 09 | 704 | 0.1− | 0.3− | 2002 01 14 | 704 | 1.2− | 0.3+ | 2004 12 07 | 704 | (0.1− | 1.7+) |
| 2001 12 09 | 704 | 0.2+ | 0.4− | 2002 01 14 | 291 | 0.3+ | 0.1− | 2004 12 07 | 704 | 1.0− | 0.3− |
| 2001 12 09 | 704 | 0.3+ | 0.4− | 2002 01 14 | 291 | 0.2+ | 0.0 | 2004 12 07 | 704 | (1.8+ | 1.8+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.5+ | 0.3− | 2002 01 14 | 291 | 0.4+ | 0.0 | 2005 01 08 | 704 | 0.3+ | 0.1+ |
| 2001 12 11 | 704 | 0.1+ | 0.2+ | 2002 01 15 | 704 | 0.6+ | 0.1− | 2005 01 08 | 704 | 0.1+ | 0.0 |
| 2001 12 11 | 704 | 0.0 | 0.4+ | 2002 01 15 | 704 | 0.0 | 0.1− | 2005 01 08 | 704 | 0.2+ | 0.3+ |
| 2001 12 11 | 704 | 0.2+ | 0.5+ | 2002 01 15 | 691 | 0.3+ | 0.1+ | 2005 01 08 | 704 | 0.4+ | 0.3+ |
| 2001 12 11 | 704 | 0.5+ | 0.5+ | 2002 01 15 | 704 | 0.1+ | 0.0 | 2005 01 08 | 704 | 0.9+ | 0.5− |
| 2001 12 11 | 704 | 0.2+ | 0.7+ | 2002 01 15 | 704 | 0.4− | 0.3+ | 2005 02 04 | 704 | 0.6+ | 0.5− |
| 2001 12 11 | 704 | 0.5+ | 0.5+ | 2002 01 15 | 704 | 0.1− | 0.1+ | 2005 02 04 | 704 | 0.5+ | 0.4− |
| 2001 12 11 | 704 | 0.6+ | 0.2+ | 2002 01 15 | 704 | 0.1− | 0.4+ | 2005 02 04 | 704 | 0.7+ | 0.7+ |
| 2001 12 11 | 704 | 0.5+ | 0.3+ | 2002 01 15 | 691 | 0.3+ | 0.0 | 2005 02 04 | 704 | (0.2− | 1.6+) |
| 2001 12 11 | 704 | 0.4+ | 0.7+ | 2002 01 15 | 704 | 0.9+ | 0.8+ | 2005 02 04 | 704 | 0.6− | 0.5− |
| 2001 12 11 | 704 | 0.5+ | 0.5+ | 2002 01 15 | 704 | 0.0 | 0.4+ | 2005 03 02 | 704 | 0.7− | 1.0+ |
| 2001 12 17 | 704 | 0.1+ | 0.8+ | 2002 01 15 | 691 | 0.4+ | 0.1+ | 2005 03 02 | 704 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.6+ | 2002 01 15 | 704 | 0.1+ | 0.9+ | 2005 03 02 | 704 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.6+ | 2002 01 15 | 704 | 0.0 | 0.4+ | 2005 03 02 | 704 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.0 | 1.0+ | 2002 02 05 | 699 | 0.4+ | 1.4+ | 2005 03 02 | 704 | 0.8+ | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.9+ | 2002 02 05 | 699 | 0.1− | 0.9+ | 2005 03 09 | E12 | 0.2+ | 1.5+ |
| 2001 12 18 | 699 | 0.4− | 0.0 | 2002 02 05 | 699 | 0.9− | 1.1+ | 2005 03 09 | E12 | 0.9+ | 1.4+ |
| 2001 12 18 | 699 | 0.4− | 0.1+ | 2002 02 05 | 699 | 0.7+ | 0.9+ | 2005 03 09 | E12 | 0.1− | 0.2− |
| 2001 12 18 | 699 | 0.4− | 0.0 | 2002 02 07 | 704 | 0.5+ | 1.3+ | 2005 03 09 | E12 | 0.3+ | 0.5+ |
| 2001 12 18 | 699 | 0.5− | 0.1− | 2002 02 07 | 704 | 0.5− | 0.7+ | 2005 04 04 | 644 | 0.1+ | 0.4+ |
| 2001 12 21 | 704 | 0.8− | 0.1− | 2002 02 07 | 704 | (0.3+ | 1.5+) | 2005 04 04 | 644 | 0.5+ | 0.2+ |
| 2001 12 21 | 704 | 0.4− | 0.9+ | 2002 02 11 | 704 | 0.4+ | 0.2− | 2005 04 04 | 644 | 0.1− | 0.2+ |
| 2001 12 21 | 704 | 0.5− | 0.6+ | 2002 02 11 | 704 | 0.5+ | 0.8− | 2005 04 04 | 644 | 0.3+ | 0.2+ |
| 2001 12 21 | 704 | 0.5− | 0.3+ | 2002 02 11 | 704 | 0.7+ | 0.1+ | 2005 04 04 | 644 | 0.0 | 0.1+ |
| 2002 01 05 | 699 | 0.1− | 0.1+ | 2002 02 11 | 704 | 1.1+ | 0.2+ | 2005 04 04 | 644 | 0.0 | 0.5− |
| 2002 01 05 | 699 | 0.2− | 0.2+ | 2002 02 11 | 704 | 0.1− | 0.2+ | 2005 05 02 | E12 | 0.3− | 0.4+ |
| 2002 01 05 | 699 | 0.1− | 0.0 | 2002 03 07 | 704 | 0.6+ | 1.0− | 2005 05 02 | E12 | 0.5− | 0.4+ |
| 2002 01 05 | 699 | 0.1− | 0.0 | 2002 03 07 | 704 | 0.8− | 1.0+ | 2005 05 02 | E12 | 0.3− | 0.3+ |
| 2002 01 06 | 691 | 0.4− | 0.1− | 2002 03 07 | 704 | 0.9+ | 0.0 | 2005 05 02 | E12 | 0.5− | 0.6+ |
| 2002 01 06 | 691 | 0.5− | 0.2− | 2002 03 07 | 704 | 0.9− | 1.2+ | 2006 08 13 | 644 | 0.6− | 0.1+ |
| 2002 01 06 | 644 | 0.4− | 0.0 | 2003 05 30 | 704 | 0.4− | 0.6+ | 2006 08 13 | 644 | 0.5− | 0.2+ |
| 2002 01 06 | 691 | 0.6− | 0.3− | 2003 05 30 | 704 | 0.0 | 0.7+ | 2006 08 13 | 644 | 0.6− | 0.2+ |
| 2002 01 06 | 644 | 0.5− | 0.1+ | 2003 05 30 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.9− |
| 2002 01 06 | 644 | 0.4− | 0.1+ | 2003 05 30 | 704 | 0.4− | 0.7+ | 2006 10 22 | 703 | 0.6+ | 0.2+ |
| 2002 01 07 | 691 | 0.0 | 0.1+ | 2003 06 26 | 704 | 0.5+ | 0.8− | 2006 10 22 | 703 | 1.3− | 1.2+ |
| 2002 01 07 | 691 | 0.0 | 0.1+ | 2003 06 26 | 704 | 0.4− | 0.2− | 2006 10 22 | 703 | (0.6− | 1.7+) |
| 2002 01 07 | 691 | 0.4+ | 0.0 | 2003 06 26 | 704 | 1.0− | 1.0+ | 2006 11 14 | 703 | 0.2+ | 1.1+ |
| 2002 01 09 | 704 | 0.4+ | 0.3− | 2003 06 26 | 704 | 0.6− | 0.8+ | 2006 11 14 | 703 | 0.2+ | 0.3+ |
| 2002 01 09 | 704 | 0.3+ | 0.3− | 2003 06 28 | 704 | 0.4− | 0.9+ | 2006 11 14 | 703 | 0.2− | 0.5+ |
| 2002 01 09 | 704 | 0.0 | 0.2+ | 2003 06 28 | 704 | (0.0 | 1.7+) | 2006 11 14 | 703 | 0.3− | 0.3+ |
| 2002 01 09 | 704 | 0.2+ | 0.2− | 2003 06 28 | 704 | 0.1− | 0.9+ | | | | |
| 2002 01 09 | 704 | 0.2+ | 0.4− | 2003 06 28 | 704 | (0.4− | 1.6+) | | | | |

**(141065)∗ 2001 XS$_{12}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.33258 | | (2000.0) | | +0.90277455 | +0.40088580 |
| $n$ | 0.19274455 | $\omega$ | 47.11635 | | −0.42675875 | +0.78969194 |
| $a$ | 2.9681191 | $\Omega$ | 288.69951 | | −0.05361968 | +0.46441061 |
| $e$ | 0.0927804 | $i$ | 9.47013 | | | |
| $P$ | 5.11 | $H$ | 15.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2− | 0.3+ | 2005 06 15 | G96 | 0.1− | 0.3− | 2005 07 15 | G96 | 0.1+ | 0.2− |
| 2001 11 11 | 704 | 0.8− | 0.9+ | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2005 07 15 | G96 | 0.4+ | 0.2− |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2005 06 27 | 644 | 0.3− | 0.3− | 2005 07 15 | G96 | 0.4− | 0.2− |
| 2001 11 11 | 704 | 0.3+ | 0.3− | 2005 06 27 | 644 | 0.1+ | 0.1− | 2005 07 15 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.6+ | 0.0 | 2005 06 28 | 291 | 0.4− | 0.3+ | 2005 07 30 | E12 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 1.0+ | 0.0 | 2005 06 28 | 291 | 0.1− | 0.2+ | 2005 07 30 | E12 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 1.4+ | 1.0+ | 2005 06 28 | 291 | 0.1− | 0.1+ | 2005 07 30 | E12 | 0.7+ | 0.2− |
| 2001 11 24 | 704 | 0.1+ | 0.6+ | 2005 07 04 | 644 | 0.0 | 0.2− | 2005 07 30 | E12 | 0.1+ | 0.1− |
| 2001 11 24 | 704 | 0.7+ | 0.9+ | 2005 07 04 | G96 | 0.0 | 0.4− | 2006 10 29 | 703 | 0.6− | 0.8− |
| 2001 11 24 | 704 | 0.2− | 0.7+ | 2005 07 04 | G96 | 0.1− | 0.3− | 2006 10 29 | 703 | 0.5+ | 0.9+ |
| 2001 11 24 | 704 | (0.5+ | 2.3+) | 2005 07 04 | G96 | 0.2+ | 0.4− | 2006 10 29 | 703 | 0.8− | 0.4− |
| 2001 12 09 | 704 | 0.4− | 0.2− | 2005 07 04 | G96 | 0.1+ | 0.3− | 2006 10 29 | 703 | 0.3+ | 0.8+ |
| 2001 12 09 | 704 | 0.5− | 0.2− | 2005 07 04 | 644 | 0.2+ | 0.4− | 2006 11 02 | G96 | 0.3− | 0.1− |
| 2001 12 09 | 704 | 0.7− | 0.1− | 2005 07 04 | 644 | 0.2+ | 0.2− | 2006 11 02 | G96 | 0.2+ | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.3− | 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 1.2− | 0.4+ | 2005 07 05 | 691 | 0.2− | 0.7+ | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2001 12 11 | 704 | 0.3− | 0.5+ | 2005 07 05 | 691 | 0.1+ | 0.3− | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2004 04 22 | E12 | 0.1− | 0.3+ | 2005 07 10 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 2004 04 22 | E12 | 0.4− | 0.7+ | 2005 07 10 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2004 04 22 | E12 | 0.1+ | 0.8+ | 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.2− |
| 2004 04 22 | E12 | 1.0+ | 0.4+ | 2005 07 12 | 703 | 0.1+ | 0.5+ | 2006 11 21 | 703 | 0.1− | 0.6+ |
| 2005 06 15 | G96 | 0.3+ | 0.3− | 2005 07 12 | 703 | 0.5+ | 0.4− | 2006 11 21 | 703 | 0.4+ | 0.6− |
| 2005 06 15 | G96 | 0.1− | 0.4− | 2005 07 12 | 703 | (1.8− | 0.0 ) | 2006 11 21 | 703 | 0.6− | 0.7− |
| 2005 06 15 | G96 | 0.1− | 0.2− | 2005 07 12 | 703 | 1.5− | 0.5+ | 2006 11 21 | 703 | 0.8+ | 0.1+ |

**(141066)∗ 2001 XF$_{13}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 262.54713 | | (2000.0) | | −0.77692831 | −0.60518705 |
| $n$ | 0.17276900 | $\omega$ | 98.70554 | | +0.43408733 | −0.71460991 |
| $a$ | 3.1927053 | $\Omega$ | 44.29055 | | +0.45601600 | −0.35082946 |
| $e$ | 0.1316907 | $i$ | 14.39352 | | | |
| $P$ | 5.70 | $H$ | 14.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.7− | 0.2− | 2003 03 31 | 699 | 0.4+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.6+ |
| 2001 12 09 | 704 | 0.5− | 0.2− | 2003 03 31 | 699 | 0.8+ | 0.3+ | 2006 10 22 | 691 | 0.7− | 1.0+ |
| 2001 12 09 | 704 | 0.5− | 0.6− | 2003 03 31 | 699 | 0.2− | 0.8− | 2006 10 22 | 691 | 0.5− | 0.6+ |
| 2001 12 11 | 704 | 0.6+ | 0.8− | 2003 03 31 | 699 | 0.3− | 0.5− | 2006 10 31 | G96 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.1+ | 0.6− | 2003 04 07 | 691 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.4+ |
| 2001 12 11 | 704 | 0.5+ | 0.7− | 2003 04 07 | 691 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2001 12 11 | 704 | 0.3− | 0.8− | 2003 04 07 | 691 | 0.4+ | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.4+ |
| 2001 12 22 | 704 | 0.3+ | 0.5+ | 2003 04 08 | 704 | 0.7+ | 0.0 | 2006 11 09 | 644 | 0.1− | 1.1+ |
| 2001 12 22 | 704 | 0.7+ | 1.2+ | 2003 04 08 | 704 | 0.9+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.8+ |
| 2001 12 22 | 704 | 0.1+ | 0.6− | 2003 04 08 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.9+ |
| 2001 12 22 | 704 | 0.3+ | 0.4+ | 2003 04 08 | 704 | 1.1+ | 0.2+ | 2006 11 11 | 703 | (0.5+ | 1.6+) |
| 2002 01 05 | 644 | 0.2− | 0.1− | 2003 04 27 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.6− |
| 2002 01 05 | 644 | 0.2− | 0.1+ | 2003 04 27 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.8− |
| 2002 01 05 | 644 | 0.2− | 0.0 | 2003 04 27 | 704 | 0.8+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2002 01 06 | 704 | 0.4− | 0.2− | 2003 04 27 | 704 | 0.1+ | 1.0+ | 2006 11 17 | 703 | 0.6+ | 0.3+ |
| 2002 01 06 | 704 | 0.6− | 0.2+ | 2003 05 01 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 1.0− |
| 2002 01 06 | 704 | 0.2+ | 0.7− | 2003 05 01 | 704 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.5− | 0.9− |
| 2002 01 06 | 704 | 0.1− | 0.7− | 2003 05 01 | 704 | 0.6+ | 0.4− | 2006 11 17 | 703 | 0.2+ | 1.1+ |
| 2002 02 02 | 644 | 0.3+ | 0.3+ | 2005 09 02 | 644 | 0.6− | 0.9+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2002 02 02 | 644 | 0.4+ | 0.3+ | 2005 09 02 | 644 | 0.9− | 0.8+ | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2002 02 02 | 644 | 0.6+ | 0.1+ | 2005 09 02 | 644 | 0.7− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 1.1+ |
| 2003 03 24 | 608 | 0.5− | 1.0+ | 2006 10 14 | D35 | 0.2− | 0.6+ | 2006 11 21 | 704 | 1.4− | 1.0+ |
| 2003 03 24 | 608 | 0.4− | 1.5+ | 2006 10 14 | D35 | 0.2+ | 0.8+ | | | | |
| 2003 03 24 | 608 | 0.3− | 1.0+ | 2006 10 14 | D35 | 0.9− | 0.6+ | | | | |

**(141067)∗ 2001 XV$_{13}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 185.59377 | | (2000.0) | | −0.57312655 | +0.80750608 |
| $n$ | 0.19179446 | $\omega$ | 178.39803 | | −0.75369185 | −0.45260766 |
| $a$ | 2.9779130 | $\Omega$ | 56.61049 | | −0.32167459 | −0.37825950 |
| $e$ | 0.0310901 | $i$ | 9.61777 | | | |
| $P$ | 5.14 | $H$ | 14.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 25 | 691 | 0.2− | 0.1− | 2003 02 27 | 608 | 0.7− | 0.5− | 2005 09 25 | 703 | 0.8− | 0.1− |
| 1993 05 25 | 691 | 0.0 | 0.3+ | 2003 02 27 | 608 | 1.1− | 0.6− | 2005 09 26 | 703 | (1.9− | 0.8+) |
| 1993 05 25 | 691 | 0.2− | 0.1− | 2003 02 27 | 608 | 1.1− | 0.1− | 2005 09 26 | 703 | 0.5− | 0.5− |
| 1998 04 20 | 704 | 1.8+ | 1.8+ | 2003 02 28 | 704 | 0.1+ | 0.3+ | 2005 09 26 | 703 | 0.7− | 0.5− |
| 1998 04 20 | 704 | (0.6− | 2.6+) | 2003 02 28 | 704 | 0.6+ | 0.8+ | 2005 09 26 | 703 | 0.3+ | 0.3+ |
| 1998 04 20 | 704 | 0.3− | 0.3− | 2003 02 28 | 704 | 0.9+ | 0.2− | 2005 09 27 | 704 | 0.1+ | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 704 | (2.7− | 0.4+) | 2003 02 28 | 704 | 0.4+ | 1.1+ | 2005 09 27 | 704 | 0.0 | 1.2+ | | |
| 2000 09 23 | 699 | 0.7− | 1.1+ | 2003 02 28 | 704 | 1.0+ | 1.4+ | 2005 09 27 | 704 | 0.2− | 1.1− | | |
| 2000 09 23 | 699 | (0.6− | 2.2+) | 2003 03 08 | 699 | 0.0 | 0.8− | 2005 10 03 | 703 | (1.2− | 1.5+) | | |
| 2000 09 23 | 699 | 0.6− | 1.6+ | 2003 03 08 | 699 | 1.3+ | 0.3+ | 2005 10 03 | 703 | 0.5− | 0.8+ | | |
| 2000 09 23 | 699 | 0.6− | 0.7+ | 2003 03 08 | 699 | 0.4+ | 0.0 | 2005 10 03 | 703 | 1.4− | 0.5+ | | |
| 2001 12 09 | 704 | 0.7− | 0.5+ | 2003 03 08 | 699 | 0.1+ | 0.2+ | 2005 10 03 | 703 | (2.3− | 0.0 ) | | |
| 2001 12 09 | 704 | 0.6− | 0.4+ | 2003 03 08 | 644 | 0.2+ | 0.2+ | 2005 10 10 | 703 | 0.3+ | 1.1+ | | |
| 2001 12 09 | 704 | 0.1− | 0.5− | 2003 03 08 | 644 | 0.1− | 0.3+ | 2005 10 10 | 703 | 0.9+ | 0.3− | | |
| 2001 12 09 | 704 | 0.3− | 0.5+ | 2003 03 08 | 644 | 0.1− | 0.2+ | 2005 10 10 | 703 | 0.0 | 0.8− | | |
| 2001 12 11 | 704 | 0.1+ | 0.9+ | 2003 03 25 | 644 | 0.1+ | 0.3+ | 2005 10 10 | 703 | 0.7+ | 0.4+ | | |
| 2001 12 11 | 704 | 0.4+ | 0.5+ | 2003 03 25 | 644 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.1− | | |
| 2001 12 11 | 704 | 0.6− | 0.3− | 2003 03 25 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.2− | | |
| 2001 12 11 | 704 | 0.5+ | 0.4− | 2005 09 03 | 703 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1− | | |
| 2001 12 11 | 704 | 0.0 | 0.5− | 2005 09 03 | 703 | 0.8+ | 0.1− | 2006 11 16 | 704 | (1.9+ | 1.4+) | | |
| 2001 12 17 | 704 | 1.4+ | 0.4− | 2005 09 03 | 703 | 1.3+ | 0.8− | 2006 11 16 | 704 | 0.7+ | 0.2+ | | |
| 2001 12 17 | 704 | 1.4+ | 0.2− | 2005 09 03 | 703 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.4+ | 0.6+ | | |
| 2001 12 17 | 704 | (1.9+ | 1.2−) | 2005 09 24 | 644 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.1+ | | |
| 2001 12 17 | 704 | 1.4+ | 0.7− | 2005 09 24 | 644 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.9− | 0.4− | | |
| 2001 12 17 | 704 | 0.9+ | 0.4− | 2005 09 24 | 644 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.9− | 0.4− | | |
| 2002 01 08 | 704 | 0.8− | 0.3+ | 2005 09 25 | 703 | (0.2− | 1.9+) | 2006 11 19 | 704 | 0.3− | 0.8− | | |
| 2002 01 08 | 704 | 0.8− | 0.5+ | 2005 09 25 | 703 | (2.8− | 0.6−) | | | | | | |
| 2002 01 08 | 704 | 0.0 | 0.5+ | 2005 09 25 | 703 | (2.3− | 0.7+) | | | | | | |

**(141068)∗ 2001 XR$_{14}$ = 2003 GD$_{47}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46961)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.25583 | | (2000.0) | | | |
| $n$ | 0.17478156 | $\omega$ | 43.62877 | | −0.25929667 | −0.90012656 |
| $a$ | 3.1681493 | $\Omega$ | 64.31733 | | +0.74469379 | −0.41713189 |
| $e$ | 0.1153804 | $i$ | 22.85665 | | +0.61497674 | +0.12559126 |
| $P$ | 5.64 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 30 | 691 | 0.4+ | 0.6+ | 2003 03 08 | 704 | 0.0 | 0.5− | 2006 10 02 | 703 | 0.2+ | 1.0+ | | |
| 1998 04 30 | 691 | 0.6+ | 0.6+ | 2003 03 08 | 704 | 0.0 | 0.3− | 2006 10 02 | 703 | 0.3− | 0.3+ | | |
| 1998 04 30 | 691 | 0.3+ | 0.8+ | 2003 03 26 | 704 | 0.7+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.4+ | | |
| 2001 12 09 | 704 | 1.0− | 1.1+ | 2003 03 26 | 704 | 1.2+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 2001 12 09 | 704 | 0.8− | 0.6+ | 2003 03 26 | 704 | 0.8+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2001 12 09 | 704 | 0.5− | 0.3+ | 2003 03 26 | 704 | 0.9+ | 0.0 | 2006 10 20 | 703 | 0.8− | 0.2− | | |
| 2001 12 09 | 704 | (0.5− | 2.7+) | 2003 03 26 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 703 | 0.4− | 0.4− | | |
| 2001 12 11 | 704 | 1.5− | 1.5− | 2003 04 01 | 699 | 1.4− | 0.5− | 2006 10 20 | 703 | 0.6+ | 0.3+ | | |
| 2001 12 11 | 704 | (1.7− | 0.8−) | 2003 04 01 | 699 | 0.6− | 0.0 | 2006 10 20 | 703 | 0.6− | 0.2− | | |
| 2001 12 11 | 704 | (2.1− | 1.1−) | 2003 04 01 | 699 | 0.9+ | 0.6+ | 2006 10 28 | 703 | 0.9− | 0.4− | | |
| 2001 12 11 | 704 | (2.9− | 1.5−) | 2003 04 01 | 699 | 0.9− | 0.3+ | 2006 10 28 | 703 | 0.5+ | 1.3+ | | |
| 2001 12 22 | 704 | 0.3+ | 0.6+ | 2003 04 08 | 644 | 0.0 | 0.6+ | 2006 10 28 | 703 | 0.8− | 0.0 | | |
| 2001 12 22 | 704 | 0.5+ | 1.4+ | 2003 04 08 | 644 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.1+ | 0.3− | | |
| 2001 12 22 | 704 | 0.3+ | 0.7+ | 2003 04 08 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.7+ | 0.5+ | | |
| 2001 12 22 | 704 | 0.0 | 0.3+ | 2003 04 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.9+ | | |
| 2001 12 22 | 704 | 0.1− | 0.3+ | 2003 04 09 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4− | 1.4+ | | |
| 2002 01 23 | 704 | 1.0+ | 0.5+ | 2003 04 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.6+ | | |
| 2002 01 23 | 704 | 0.1+ | 0.9− | 2006 09 19 | 703 | 0.5+ | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.4+ | | |
| 2002 01 23 | 704 | 0.4+ | 0.1− | 2006 09 19 | 703 | 1.4− | 0.3+ | 2006 11 23 | 703 | 0.6− | 0.8+ | | |
| 2002 01 23 | 704 | 0.7+ | 0.1− | 2006 09 19 | 703 | 1.3− | 0.7+ | 2006 11 23 | 703 | 0.1+ | 0.2+ | | |
| 2003 03 08 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.0 | 0.4− | 2006 11 23 | 703 | 0.9− | 0.2+ | | |
| 2003 03 08 | 704 | 0.2− | 0.3− | 2006 10 02 | 703 | 0.1− | 0.3− | | | | | | |
| 2003 03 08 | 704 | 0.6− | 0.0 | 2006 10 02 | 703 | 0.7− | 0.0 | | | | | | |

**(141069)∗ 2001 XX$_{14}$ = 2003 GK$_{11}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46961)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 233.83367 | | (2000.0) | | | |
| $n$ | 0.18009057 | $\omega$ | 115.35924 | | −0.98218124 | −0.03440237 |
| $a$ | 3.1055753 | $\Omega$ | 63.14410 | | −0.05859680 | −0.87803856 |
| $e$ | 0.1251530 | $i$ | 11.95228 | | +0.17856769 | −0.47735183 |
| $P$ | 5.47 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | (3.3+ | 2.0−) | 2003 03 12 | 704 | 0.4+ | 0.2− | 2003 04 08 | 608 | 0.3+ | 1.0+ | | |
| 2001 12 09 | 704 | (2.7+ | 2.3−) | 2003 03 12 | 704 | 0.9+ | 0.4+ | 2005 08 31 | 644 | 0.9− | 0.8+ | | |
| 2001 12 09 | 704 | (1.2+ | 1.6−) | 2003 03 15 | 608 | 0.8+ | 0.4− | 2005 08 31 | 644 | 0.4− | 0.5+ | | |
| 2001 12 11 | 704 | 0.1− | 0.4− | 2003 03 15 | 608 | 0.5+ | 0.3− | 2005 08 31 | 644 | 0.5− | 0.8+ | | |
| 2001 12 11 | 704 | 0.5+ | 0.4− | 2003 03 15 | 608 | 0.9+ | 0.6− | 2006 09 30 | G96 | 0.1− | 0.0 | | |
| 2001 12 11 | 704 | 1.3− | 0.6− | 2003 03 24 | 608 | 0.2+ | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 2001 12 11 | 704 | 0.2+ | 0.0 | 2003 03 24 | 608 | 0.3− | 1.3+ | 2006 09 30 | G96 | 0.2+ | 0.3+ | | |
| 2001 12 11 | 704 | 0.0 | 0.2+ | 2003 03 24 | 608 | (0.1+ | 2.4+) | 2006 09 30 | G96 | 0.1− | 0.3− | | |
| 2001 12 17 | 704 | 0.2− | 0.3− | 2003 03 27 | 704 | 0.6+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.2+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.7+ | 2003 03 27 | 704 | 0.0 | 0.4− | 2006 10 18 | 691 | 0.3− | 0.1+ | | |
| 2001 12 17 | 704 | 0.2− | 0.0 | 2003 03 27 | 704 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.2+ | | |
| 2001 12 17 | 704 | 0.2− | 0.1+ | 2003 03 27 | 704 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.5+ | | |
| 2001 12 17 | 704 | 0.1− | 0.3+ | 2003 03 27 | 704 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2001 12 22 | 704 | 0.4+ | 1.0− | 2003 04 03 | 608 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2001 12 22 | 704 | 0.8+ | 0.5− | 2003 04 03 | 608 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2001 12 22 | 704 | 0.5+ | 1.1+ | 2003 04 03 | 608 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.5+ | 0.1+ | | |
| 2002 01 08 | 704 | 0.4− | 0.9− | 2003 04 04 | 704 | 0.7− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 01 08 | 704 | 0.7+ | 1.3− | 2003 04 04 | 704 | 1.1− | 0.2+ | 2006 11 21 | 704 | 1.0− | 1.2− | | |
| 2002 01 08 | 704 | 0.3+ | 0.3− | 2003 04 04 | 704 | 0.7+ | 0.5− | 2006 11 21 | 704 | 0.6+ | 0.5+ | | |
| 2003 03 12 | 704 | 0.2+ | 1.0+ | 2003 04 06 | 699 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 1.2− | | |
| 2003 03 12 | 704 | 0.1− | 0.0 | 2003 04 06 | 699 | 1.0− | 0.5− | 2006 11 21 | 704 | 0.0 | 0.4− | | |
| 2003 03 12 | 704 | (1.7+ | 1.5+) | 2003 04 06 | 699 | 0.1− | 0.8+ | 2006 11 28 | 704 | 3.0+ | 0.3+ | | |
| 2003 03 12 | 704 | 1.3+ | 1.0+ | 2003 04 06 | 699 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.2− | 0.9+ | | |
| 2003 03 12 | 704 | 0.6+ | 0.3+ | 2003 04 08 | 608 | 0.3+ | 0.6+ | 2006 11 28 | 704 | 1.1− | 1.0+ | | |
| 2003 03 12 | 704 | 0.1+ | 0.4+ | 2003 04 08 | 608 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.7− | 1.0+ | | |

**(141070)∗ 2001 XN$_{15}$ = 2000 QU$_{187}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23151)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.84556 | | (2000.0) | | | |
| $n$ | 0.17545614 | $\omega$ | 37.83163 | | +0.20980165 | −0.97596726 |
| $a$ | 3.1600237 | $\Omega$ | 40.15456 | | +0.87329738 | +0.15995090 |
| $e$ | 0.2012669 | $i$ | 5.24212 | | +0.43969870 | +0.14799872 |
| $P$ | 5.62 | $H$ | 14.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.9+ | 0.1+ | 2002 02 06 | 704 | 0.3− | 0.3+ | 2006 09 18 | 699 | (1.0+ | 1.7+) | | |
| 2000 08 26 | 704 | 0.1− | 1.2+ | 2002 02 06 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.0 | | |
| 2000 08 26 | 704 | 0.2− | 0.3+ | 2002 02 06 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.3− | 0.7+ | | |
| 2000 08 26 | 704 | 0.1+ | 0.3+ | 2002 02 07 | 704 | 0.1+ | 0.1− | 2006 09 19 | 704 | 0.4+ | 0.2− | | |
| 2000 09 04 | 704 | 0.5− | 0.1+ | 2002 02 07 | 704 | 0.6+ | 0.0 | 2006 09 19 | 704 | 0.3+ | 0.0 | | |
| 2000 09 04 | 704 | 0.8− | 1.3+ | 2002 02 07 | 704 | 0.3− | 0.9− | 2006 09 19 | 704 | 0.9− | 0.5+ | | |
| 2000 09 04 | 704 | 0.1− | 0.4+ | 2002 02 07 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 704 | 0.5− | 1.1+ | | |
| 2000 09 04 | 704 | 0.0 | 1.6+ | 2002 02 07 | 704 | 0.8+ | 0.2− | 2006 09 22 | 704 | (0.5− | 2.1+) | | |
| 2000 09 24 | 704 | 0.7− | 0.1+ | 2002 02 20 | 704 | 0.3+ | 0.2− | 2006 09 22 | 704 | (0.9− | 1.9+) | | |
| 2000 09 24 | 704 | 0.7− | 0.7+ | 2002 02 20 | 704 | 0.6+ | 0.8+ | 2006 09 22 | 704 | 0.1+ | 1.4+ | | |
| 2000 09 24 | 704 | 0.0 | 1.5− | 2002 02 20 | 704 | 0.7+ | 0.4− | 2006 09 22 | 704 | 0.8− | 0.9+ | | |
| 2000 09 24 | 704 | 0.2− | 0.9− | 2002 02 20 | 704 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.4+ | 1.0+ | | |
| 2001 11 12 | 704 | 0.5+ | 1.1− | 2002 02 23 | 704 | 0.5− | 0.1− | 2006 09 26 | 704 | 0.2− | 0.3− | | |
| 2001 11 12 | 704 | 0.7+ | 0.2+ | 2002 02 23 | 704 | 0.2+ | 1.1− | 2006 09 26 | 704 | 0.3− | 0.0 | | |
| 2001 11 12 | 704 | 0.6+ | 0.4− | 2002 02 23 | 704 | 0.3+ | 0.4− | 2006 09 26 | 704 | 0.6− | 0.5+ | | |
| 2001 11 12 | 704 | 0.6+ | 0.6− | 2003 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.4+ | | |
| 2001 11 19 | 704 | 0.4− | 0.6− | 2003 03 23 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.5+ | | |
| 2001 11 19 | 704 | 0.4− | 0.7− | 2003 03 23 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ | | |
| 2001 11 19 | 704 | 0.4− | 0.6− | 2003 03 26 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.7− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.4− | 0.9− | 2003 03 26 | 691 | 0.3+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 2001 11 19 | 704 | 0.1− | 0.7− | 2003 03 26 | 691 | 0.5+ | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 24 | 704 | 0.1+ | 0.6− | 2003 03 27 | 699 | 0.5+ | 1.0+ | 2006 09 26 | 704 | 0.5+ | 0.3− | | |
| 2001 11 24 | 704 | 0.3+ | 0.5− | 2003 03 27 | 699 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.8− | | |
| 2001 11 24 | 704 | 0.1+ | 0.1+ | 2003 03 27 | 699 | 0.4− | 0.7+ | 2006 09 28 | 704 | 0.4− | 0.3+ | | |
| 2001 11 24 | 704 | 0.5− | 0.1+ | 2003 03 27 | 699 | 0.3+ | 0.3+ | 2006 09 28 | 704 | 0.1− | 1.1+ | | |
| 2001 12 10 | 704 | 0.4− | 0.3+ | 2003 04 08 | 636 | 1.4+ | 1.0+ | 2006 09 28 | 704 | 0.1+ | 0.6+ | | |
| 2001 12 10 | 704 | 0.1− | 0.4+ | 2003 04 08 | 636 | (1.2+ | 1.9+) | 2006 09 28 | 704 | 0.2+ | 0.7+ | | |
| 2001 12 10 | 704 | 1.0+ | 0.3+ | 2003 04 08 | 636 | 1.0+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2001 12 10 | 704 | 0.4− | 0.6+ | 2003 04 26 | 691 | 0.0 | 0.7+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2001 12 10 | 704 | 0.2+ | 0.1+ | 2003 04 26 | 691 | 0.1+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2001 12 10 | 704 | 0.0 | 0.5+ | 2003 04 26 | 691 | 0.3+ | 0.9+ | 2006 10 01 | 704 | 0.5+ | 0.4+ | | |
| 2001 12 10 | 704 | 0.8+ | 0.1− | 2003 04 26 | 699 | (1.6− | 0.8−) | 2006 10 01 | 704 | 0.3− | 0.6+ | | |
| 2001 12 10 | 704 | 0.1− | 0.4+ | 2003 04 26 | 699 | (1.3− | 1.8+) | 2006 10 01 | 704 | 0.5− | 0.9+ | | |
| 2001 12 10 | 704 | 0.1+ | 0.2+ | 2003 04 26 | 699 | 0.1+ | 0.8− | 2006 10 01 | 704 | 0.2− | 0.7+ | | |
| 2001 12 10 | 704 | 0.1− | 0.1+ | 2003 04 26 | 699 | 1.3+ | 0.0 | 2006 10 01 | 704 | 1.4− | 0.6+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.2+ | 2005 07 06 | E12 | 0.1− | 0.4+ | 2006 10 18 | 106 | 0.3− | 0.8− | | |
| 2001 12 11 | 704 | 0.1− | 0.2+ | 2005 07 06 | E12 | 0.5+ | 0.1− | 2006 10 18 | 106 | 0.4− | 0.6+ | | |
| 2001 12 11 | 704 | 0.2− | 0.3+ | 2005 07 06 | E12 | 0.2+ | 0.5− | 2006 10 18 | 106 | 0.6− | 0.7− | | |
| 2001 12 11 | 704 | 0.0 | 0.2+ | 2005 07 06 | E12 | 0.2− | 0.4+ | 2006 10 18 | 106 | 0.1+ | 0.8+ | | |
| 2001 12 11 | 704 | 0.1− | 0.3+ | 2006 08 23 | 644 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2001 12 17 | 704 | 0.6+ | 0.7+ | 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.3+ | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.3− | 0.2+ | | |
| 2001 12 17 | 704 | 0.7+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2001 12 17 | 704 | 0.9+ | 0.2+ | 2006 09 12 | 703 | 0.6− | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2001 12 17 | 704 | 0.9+ | 0.3+ | 2006 09 12 | 703 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 12 22 | 704 | 0.6− | 0.1− | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 12 22 | 704 | 0.8− | 0.2− | 2006 09 16 | 704 | 0.8+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 12 22 | 704 | 0.0 | 0.3+ | 2006 09 16 | 704 | 0.3− | 0.6+ | 2006 10 21 | 703 | 0.3− | 1.4+ | | |
| 2001 12 22 | 704 | 1.3− | 0.2− | 2006 09 16 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 703 | (0.6− | 1.6+) | | |
| 2001 12 22 | 704 | 1.1− | 0.2− | 2006 09 16 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 01 08 | 704 | 0.4− | 0.7+ | 2006 09 16 | 704 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.5+ | | |
| 2002 01 08 | 704 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.3− | 2006 10 21 | 703 | 0.6− | 1.0+ | | |
| 2002 01 08 | 704 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 28 | 704 | 0.3− | 0.0 | | |
| 2002 01 08 | 704 | 0.5− | 1.0+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.5− | | |
| 2002 01 15 | 704 | 0.3− | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.6− | 0.4+ | | |
| 2002 01 15 | 704 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.6− | 2006 11 14 | G96 | 0.5+ | 0.3− | | |
| 2002 01 15 | 704 | 0.4− | 1.4+ | 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.4− | | |
| 2002 01 15 | 704 | (1.7+ | 0.8+) | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.5− | | |
| 2002 02 06 | 704 | 1.2− | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2002 02 06 | 704 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | | | | | | |

**(141071)∗ 2001 XM$_{17}$ = 2003 FH$_{118}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46963)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.13120 | | (2000.0) | | | |
| $n$ | 0.19026199 | $\omega$ | 9.42906 | | +0.51627666 | −0.84674592 |
| $a$ | 2.9938821 | $\Omega$ | 49.60747 | | +0.77435920 | +0.39750471 |
| $e$ | 0.0671261 | $i$ | 9.70368 | | +0.36582268 | +0.35356944 |
| $P$ | 5.18 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 608 | 0.5− | 0.2− | 2001 12 23 | 704 | (0.2+ | 1.6−) | 2006 10 28 | 291 | 0.4− | 0.0 | | |
| 2000 09 19 | 608 | 0.8− | 0.2− | 2002 01 15 | 704 | 0.4+ | 0.5+ | 2006 11 15 | 704 | 0.1+ | 0.2+ | | |
| 2000 09 19 | 608 | 0.8− | 1.0+ | 2002 01 15 | 704 | (1.6+ | 0.9+) | 2006 11 15 | 704 | 0.3+ | 0.0 | | |
| 2001 11 11 | 704 | 0.5− | 1.2− | 2002 01 15 | 704 | 1.2+ | 0.4+ | 2006 11 15 | 704 | 0.4+ | 0.0 | | |
| 2001 11 11 | 704 | 0.5+ | 0.7− | 2002 01 15 | 704 | 0.6+ | 0.1+ | 2006 11 15 | 704 | 0.6− | 0.4+ | | |
| 2001 11 11 | 704 | 0.1+ | 0.8+ | 2003 03 25 | 644 | 0.7+ | 0.6+ | 2006 11 16 | 704 | 0.1+ | 0.3+ | | |
| 2001 11 11 | 704 | 0.1+ | 0.3+ | 2003 03 25 | 644 | 0.8+ | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.5+ | | |
| 2001 12 09 | 704 | 0.1− | 0.0 | 2003 03 25 | 644 | 0.5+ | 0.6+ | 2006 11 16 | 704 | 1.3+ | 0.9+ | | |
| 2001 12 09 | 704 | 1.1+ | 0.6− | 2003 03 26 | 699 | 0.6− | 0.6+ | 2006 11 16 | 704 | 1.4+ | 0.6+ | | |
| 2001 12 09 | 704 | 0.0 | 0.5+ | 2003 03 26 | 699 | 0.4− | 0.1+ | 2006 11 16 | 704 | 1.0+ | 0.4+ | | |
| 2001 12 09 | 704 | 0.6− | 0.0 | 2003 03 26 | 699 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.6+ | 0.3+ | | |
| 2001 12 09 | 704 | 0.1− | 0.3− | 2003 03 26 | 699 | 1.0+ | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2001 12 13 | 704 | 0.1+ | 0.0 | 2003 04 01 | 704 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.0 | | |
| 2001 12 13 | 704 | 0.1− | 0.3− | 2003 04 01 | 704 | 1.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.7+ | | |
| 2001 12 13 | 704 | 0.4− | 0.5+ | 2003 04 01 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.9− | 1.3− | | |
| 2001 12 13 | 704 | 0.7− | 0.6+ | 2003 04 05 | 699 | (1.6+ | 0.6+) | 2006 11 19 | 704 | 0.6− | 0.0 | | |
| 2001 12 17 | 704 | (1.3+ | 2.8−) | 2003 04 05 | 699 | 1.3− | 0.5+ | 2006 11 19 | 704 | 1.0− | 0.5+ | | |
| 2001 12 17 | 704 | 0.7+ | 1.1− | 2003 04 05 | 699 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.1− | 1.4+ | | |
| 2001 12 17 | 704 | (0.8+ | 1.8−) | 2003 04 05 | 699 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.0 | | |
| 2001 12 17 | 704 | (0.8+ | 2.0−) | 2005 07 27 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.3− | | |
| 2001 12 17 | 704 | (0.7+ | 2.0−) | 2005 07 27 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.7+ | 0.7− | | |
| 2001 12 22 | 704 | 0.1− | 0.5+ | 2005 07 27 | 644 | 0.1− | 0.4+ | 2006 11 23 | 703 | 1.4− | 0.3+ | | |
| 2001 12 22 | 704 | 0.3+ | 0.6+ | 2005 08 30 | 699 | 0.5+ | 0.2+ | 2006 11 23 | 703 | 0.0 | 0.7+ | | |
| 2001 12 22 | 704 | 0.4+ | 0.1+ | 2005 08 30 | 699 | 0.0 | 0.4+ | 2006 11 25 | 691 | 1.3− | 0.4− | | |
| 2001 12 22 | 704 | 0.6− | 0.7− | 2005 08 30 | 699 | 0.6+ | 0.6+ | 2006 11 25 | 691 | 0.6+ | 0.2− | | |
| 2001 12 23 | 704 | 0.1− | 0.7− | 2005 08 30 | 699 | 0.4− | 0.1+ | 2006 11 25 | 691 | 0.3+ | 0.2− | | |
| 2001 12 23 | 704 | 0.1− | 1.3− | 2006 10 28 | 291 | 0.6− | 0.2+ | | | | | | |
| 2001 12 23 | 704 | 0.4+ | 0.9− | 2006 10 28 | 291 | 0.4− | 0.0 | | | | | | |

**(141072)∗ 2001 XF$_{19}$ = 1998 HU$_{156}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 52881)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.40401 | | (2000.0) | | | |
| $n$ | 0.18530216 | $\omega$ | 16.58049 | | +0.34192052 | −0.92871561 |
| $a$ | 3.0470697 | $\Omega$ | 53.64948 | | +0.84070532 | +0.23409945 |
| $e$ | 0.0938901 | $i$ | 10.25957 | | +0.41988680 | +0.28754957 |
| $P$ | 5.32 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 24 | 691 | 0.0 | 1.1+ | 2001 12 22 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1− | | |
| 1990 11 24 | 691 | 0.0 | 0.2− | 2001 12 22 | 704 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.4− | | |
| 1990 11 24 | 691 | 0.0 | 0.2− | 2001 12 22 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.2− | | |
| 1997 01 28 | 327 | 0.5+ | 0.2− | 2001 12 22 | 704 | 0.3− | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.2− | | |
| 1997 01 28 | 327 | 1.4+ | 0.6+ | 2003 03 27 | 704 | 0.7+ | 0.7− | 2006 11 16 | 704 | 0.4+ | 1.1− | | |
| 1997 01 28 | 327 | 0.8+ | 0.2+ | 2003 03 27 | 704 | 0.2+ | 0.5− | 2006 11 16 | 704 | 1.2+ | 0.1+ | | |
| 1998 04 21 | 704 | 0.5− | 1.0+ | 2003 03 27 | 704 | 0.5+ | 1.2− | 2006 11 16 | 704 | 0.4+ | 0.6− | | |
| 1998 04 21 | 704 | (2.8− | 0.1−) | 2003 03 31 | 699 | 0.2+ | 0.7+ | 2006 11 16 | 704 | 0.1− | 0.0 | | |
| 1998 04 21 | 704 | 0.7− | 0.4− | 2003 03 31 | 699 | 1.4+ | 0.8+ | 2006 11 17 | 691 | 0.1+ | 0.0 | | |
| 1998 04 21 | 704 | 0.6− | 0.1+ | 2003 03 31 | 699 | 1.5+ | 0.9+ | 2006 11 17 | 691 | 0.1+ | 0.1− | | |
| 2000 09 24 | 699 | 0.3− | 0.2− | 2003 03 31 | 699 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.1− | | |
| 2000 09 24 | 699 | 0.2− | 0.1− | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.0 | | |
| 2000 09 24 | 699 | 0.7− | 0.7+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2000 09 24 | 699 | 1.0− | 1.2+ | 2003 04 09 | 704 | 0.7+ | 0.0 | 2006 11 18 | 691 | 0.4+ | 0.1− | | |
| 2000 10 02 | 699 | 0.1− | 0.5− | 2003 04 09 | 704 | 1.2+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2000 10 02 | 699 | 0.8− | 1.4+ | 2003 04 09 | 704 | (0.2− | 1.8+) | 2006 11 19 | 704 | 0.2+ | 0.1+ | | |
| 2000 10 02 | 699 | (2.2+ | 1.0+) | 2003 04 09 | 704 | 0.9+ | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.2+ | | |
| 2000 10 02 | 699 | 0.3+ | 1.9+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.1− | | |
| 2001 11 11 | 704 | 0.7+ | 0.9− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1− | | |
| 2001 11 11 | 704 | 0.1+ | 0.8− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.3− | 0.0 | | |
| 2001 11 11 | 704 | 0.2− | 0.8− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.0 | 0.2− | | |
| 2001 11 21 | 704 | (0.4− | 2.1+) | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.3− | | |
| 2001 11 21 | 704 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.3− | 0.2+ | | |
| 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 10 28 | 704 | 0.6− | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.7− | | |
| 2001 11 24 | 704 | 0.0 | 0.2− | 2006 10 28 | 704 | 0.8− | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.7− | | |
| 2001 11 24 | 704 | 0.7+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3− | 0.6− | | |
| 2001 11 24 | 704 | 0.9+ | 0.1− | 2006 10 28 | G96 | 0.4− | 0.2− | 2006 11 25 | 691 | 0.1+ | 0.3− | | |
| 2001 11 24 | 704 | (0.3+ | 1.8+) | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 25 | 691 | 0.8+ | 0.5+ | | |
| 2001 12 09 | 704 | 0.8− | 0.2+ | 2006 10 28 | 704 | 0.5− | 0.3+ | 2006 11 25 | 691 | 0.2+ | 0.4− | | |
| 2001 12 09 | 704 | 1.3− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.0 | 0.0 | | |
| 2001 12 09 | 704 | 1.4− | 0.3+ | 2006 11 01 | G96 | (2.1+ | 2.0−) | 2006 11 27 | 704 | 0.3− | 0.5− | | |
| 2001 12 09 | 704 | 0.9− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 27 | 704 | 0.2+ | 0.1− | | |
| 2001 12 09 | 704 | 0.9− | 0.2− | 2006 11 01 | G96 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.8+ | | |
| 2001 12 13 | 704 | 0.2− | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.1− | 0.1+ | | |
| 2001 12 13 | 704 | 0.3− | 1.0+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.6− | 0.3+ | | |
| 2001 12 13 | 704 | 0.7− | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 1.0− | 1.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 704 | 0.2− | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.7+ |
| 2001 12 19 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.1+ | 2006 12 01 | 704 | 1.2+ | 0.8+ |
| 2001 12 19 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 12 01 | 704 | 0.5+ | 1.1+ |
| 2001 12 19 | 644 | (1.3+ | 1.7+) | 2006 11 11 | 703 | 0.7− | 0.6− | 2006 12 01 | 704 | 1.4+ | 0.1+ |

**(141073)∗ 2001 XW$_{21}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.13242 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21449468 | $\omega$ | 116.67382 | | +0.11458304 | −0.99130348 | |
| $a$ | 2.7639172 | $\Omega$ | 326.55009 | | +0.86461055 | +0.13159505 | |
| $e$ | 0.2005957 | $i$ | 6.74249 | | +0.48920274 | −0.00039227 | |
| $P$ | 4.60 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.1− | 0.3− | 2002 01 19 | 704 | 0.4− | 0.1− | 2005 10 01 | 703 | (1.5+ | 1.1−) |
| 1993 01 29 | 691 | 0.1− | 0.1− | 2002 02 04 | 644 | 0.4− | 0.2+ | 2005 10 01 | 703 | 0.1+ | 0.3+ |
| 1993 01 29 | 691 | 0.2− | 0.3− | 2002 02 04 | 644 | 0.1+ | 0.2+ | 2005 10 01 | 703 | 0.0 | 0.3− |
| 2001 11 11 | 704 | 0.8− | 0.3+ | 2002 02 04 | 644 | 0.5− | 0.1+ | 2005 10 06 | 703 | 0.2− | 0.1− |
| 2001 11 11 | 704 | 0.1− | 0.9− | 2002 02 04 | 644 | 0.2− | 0.1− | 2005 10 06 | 703 | 0.5− | 1.0+ |
| 2001 11 11 | 704 | 0.4− | 0.1+ | 2002 02 04 | 644 | 0.2− | 0.1+ | 2005 10 06 | 703 | 0.5− | 0.1− |
| 2001 11 11 | 704 | 0.4+ | 0.4+ | 2002 02 04 | 644 | 0.1− | 0.5+ | 2005 10 06 | 703 | (1.9+ | 1.0+) |
| 2001 11 17 | 699 | 0.5− | 0.4− | 2002 02 06 | 704 | 0.5+ | 0.6− | 2005 10 08 | 704 | 0.1+ | 0.1− |
| 2001 11 17 | 699 | 1.0− | 0.1− | 2002 02 06 | 704 | 0.2+ | 0.0 | 2005 10 08 | 704 | 0.7+ | 0.5+ |
| 2001 11 17 | 699 | 0.2− | 0.8− | 2002 02 06 | 704 | 0.5+ | 0.1− | 2005 10 08 | 704 | 0.4+ | 0.2− |
| 2001 11 17 | 699 | 0.3− | 0.3+ | 2002 02 06 | 704 | 0.8+ | 0.0 | 2005 10 08 | 704 | 0.1+ | 0.1+ |
| 2001 12 09 | 704 | 0.4+ | 0.6+ | 2002 02 06 | 704 | 0.6+ | 0.4− | 2005 10 08 | 704 | 0.2+ | 0.6− |
| 2001 12 09 | 704 | 1.2− | 0.4− | 2002 02 07 | 704 | 0.6+ | 1.0− | 2005 10 21 | 699 | 1.2+ | 0.9− |
| 2001 12 09 | 704 | 0.3− | 0.4− | 2002 02 07 | 704 | 0.6+ | 0.3− | 2005 10 21 | 699 | 0.0 | 0.6− |
| 2001 12 09 | 704 | 0.9− | 0.5− | 2002 02 07 | 704 | 0.5+ | 0.1− | 2005 10 21 | 699 | 0.4+ | 0.1− |
| 2001 12 09 | 704 | 0.6− | 0.7− | 2002 02 07 | 704 | 0.2+ | 0.4− | 2005 10 21 | 699 | 1.1− | 0.7+ |
| 2001 12 13 | 704 | 0.2− | 0.3− | 2002 02 07 | 704 | 0.5+ | 0.3− | 2005 10 22 | 699 | 0.4− | 0.2+ |
| 2001 12 13 | 704 | 0.0 | 0.1+ | 2002 02 12 | 704 | 0.3+ | 1.2+ | 2005 10 22 | 699 | 0.4+ | 0.3+ |
| 2001 12 13 | 704 | 0.1− | 0.3+ | 2002 02 12 | 704 | 0.3+ | 1.1+ | 2005 10 22 | 699 | 0.3+ | 0.2+ |
| 2001 12 13 | 704 | 0.4− | 0.6+ | 2002 02 12 | 704 | 0.4+ | 1.1+ | 2005 10 22 | 699 | 0.1+ | 0.2+ |
| 2001 12 13 | 704 | 0.7− | 0.1+ | 2002 02 12 | 704 | 0.0 | 1.2+ | 2005 10 30 | 699 | (1.6+ | 0.3+) |
| 2001 12 17 | 704 | 0.8+ | 0.4− | 2002 02 12 | 704 | 0.2+ | 1.4+ | 2005 10 30 | 704 | (0.3+ | 1.6+) |
| 2001 12 17 | 704 | 0.6+ | 0.4− | 2005 08 29 | 644 | 0.0 | 0.0 | 2005 10 30 | 704 | 0.7+ | 0.5+ |
| 2001 12 17 | 704 | 0.9+ | 0.2− | 2005 08 29 | 644 | 0.1− | 0.1− | 2005 10 30 | 699 | 0.7+ | 0.6− |
| 2001 12 17 | 704 | 0.2+ | 0.1− | 2005 08 29 | 644 | 0.1− | 0.2− | 2005 10 30 | 704 | 0.4− | 0.5+ |
| 2001 12 17 | 704 | 1.0+ | 0.2− | 2005 09 01 | 691 | 0.3− | 0.1− | 2005 10 30 | 704 | (0.8− | 1.6+) |
| 2001 12 19 | 644 | 0.2− | 0.2+ | 2005 09 01 | 691 | 0.4− | 0.1− | 2005 10 30 | 699 | 0.7+ | 0.6+ |
| 2001 12 19 | 644 | 0.2− | 0.0 | 2005 09 01 | 691 | 0.3− | 0.2+ | 2005 10 30 | 699 | 0.9− | 0.9+ |
| 2001 12 19 | 644 | 0.0 | 0.2+ | 2005 09 10 | 699 | 0.0 | 1.1+ | 2005 11 05 | 704 | 0.8+ | 0.0 |
| 2001 12 22 | 704 | 0.1+ | 0.5+ | 2005 09 10 | 699 | 0.4− | 0.1− | 2005 11 05 | 704 | 0.6− | 1.2+ |
| 2001 12 22 | 704 | 0.5+ | 1.1− | 2005 09 10 | 699 | 0.6− | 1.0+ | 2005 11 05 | 704 | 0.3− | 1.3− |
| 2001 12 22 | 704 | 0.3− | 0.2+ | 2005 09 10 | 699 | 0.1− | 0.1+ | 2005 11 05 | 704 | (0.8+ | 1.8−) |
| 2001 12 22 | 704 | 0.9− | 0.2+ | 2005 09 26 | 644 | 0.0 | 0.3− | 2005 12 02 | 704 | 0.2− | 0.9− |
| 2001 12 22 | 704 | 0.8− | 0.2+ | 2005 09 26 | 644 | 0.2+ | 0.3+ | 2005 12 02 | 704 | 0.5− | 1.5− |
| 2002 01 06 | 644 | 0.1− | 0.3+ | 2005 09 26 | 644 | 0.3+ | 0.1− | 2005 12 02 | 704 | 0.8+ | 0.1− |
| 2002 01 06 | 644 | 0.1− | 0.3+ | 2005 09 26 | 644 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.4− | 0.1− |
| 2002 01 06 | 644 | 0.5+ | 0.1+ | 2005 09 26 | 644 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2002 01 08 | 704 | 0.8− | 0.3+ | 2005 09 26 | 644 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.8− |
| 2002 01 08 | 704 | 0.5− | 0.6+ | 2005 09 29 | 699 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2002 01 08 | 704 | 0.5− | 0.4+ | 2005 09 29 | 699 | 0.3+ | 0.8− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 01 08 | 704 | 0.5− | 0.1+ | 2005 09 29 | 699 | 0.3− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 01 17 | 644 | 0.7+ | 0.0 | 2005 10 01 | 703 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 1.1− | 0.0 |
| 2002 01 17 | 644 | 0.9+ | 0.1− | 2005 10 01 | 703 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2002 01 17 | 644 | 0.5+ | 0.1− | 2005 10 01 | 703 | 0.6− | 0.2+ | 2006 11 26 | 691 | 0.1+ | 0.6+ |
| 2002 01 19 | 704 | 0.4+ | 0.3− | 2005 10 01 | 703 | 0.6+ | 0.1+ | 2006 11 26 | 691 | 0.1+ | 0.4+ |
| 2002 01 19 | 704 | 0.4+ | 0.3− | 2005 10 01 | 703 | 0.5+ | 0.3+ | 2006 11 26 | 691 | 0.6+ | 0.5+ |

**(141074)∗ 2001 XA$_{22}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.59915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18209654 | $\omega$ | 340.77545 | | +0.67571811 | −0.71333966 | |
| $a$ | 3.0827259 | $\Omega$ | 66.22446 | | +0.70014560 | +0.54215120 | |
| $e$ | 0.2019445 | $i$ | 11.71940 | | +0.23065381 | +0.44409302 | |
| $P$ | 5.41 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 22 | 691 | 0.5+ | 0.2+ | 2001 12 22 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 704 | 0.6+ | 0.4+ |
| 1993 06 22 | 691 | 0.3+ | 0.1− | 2001 12 22 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 704 | 0.6− | 1.0+ |
| 1993 06 22 | 691 | 0.9− | 0.2+ | 2001 12 22 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 704 | 0.4− | 1.0− |
| 2000 09 20 | 704 | 0.9+ | 0.4− | 2001 12 22 | 704 | 0.7+ | 0.1− | 2006 10 27 | 704 | 0.4+ | 0.4+ |
| 2000 09 20 | 704 | 0.6− | 1.0+ | 2001 12 22 | 704 | 1.1+ | 0.0 | 2006 10 27 | 704 | 1.3− | 0.2+ |
| 2000 09 20 | 704 | 0.7− | 0.0 | 2002 01 21 | 704 | 0.1− | 1.0+ | 2006 10 27 | 704 | 0.3− | 0.5+ |
| 2000 09 20 | 704 | 0.3+ | 0.5+ | 2002 01 21 | 704 | 0.1+ | 0.7+ | 2006 11 02 | 704 | (0.4+ | 1.9+) |
| 2000 09 20 | 704 | 0.2+ | 0.3+ | 2002 01 21 | 704 | 0.2− | 0.3+ | 2006 11 02 | 704 | (0.5− | 1.8+) |
| 2000 09 28 | 699 | 0.4− | 0.1+ | 2002 01 21 | 704 | 0.2− | 0.5+ | 2006 11 02 | 704 | 0.7− | 0.2+ |
| 2000 09 28 | 699 | 0.6− | 0.3+ | 2002 02 03 | 644 | 0.0 | 0.0 | 2006 11 02 | 704 | 0.5− | 0.5+ |
| 2000 09 28 | 699 | 0.3+ | 0.6− | 2002 02 03 | 644 | 0.4− | 1.2− | 2006 11 02 | 703 | 0.2+ | 0.2− |
| 2000 09 28 | 699 | 0.0 | 0.0 | 2002 02 03 | 644 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.5− | 0.4− |
| 2001 10 14 | 704 | 0.0 | 0.1+ | 2002 02 10 | 704 | 0.9+ | 0.0 | 2006 11 02 | 703 | 0.7− | 0.8− |
| 2001 10 14 | 704 | 0.4+ | 0.7+ | 2002 02 10 | 704 | 0.5+ | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.6− |
| 2001 10 14 | 704 | 0.2− | 0.6+ | 2002 02 10 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.8+ | 2002 02 10 | 704 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2001 10 14 | 704 | 0.2− | 0.6− | 2002 02 10 | 704 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2001 11 11 | 699 | 0.4+ | 0.3− | 2002 03 05 | 704 | 0.8+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2001 11 11 | 704 | 0.2+ | 0.6+ | 2002 03 05 | 704 | 0.5+ | 1.3− | 2006 11 14 | 704 | 0.0 | 0.4+ |
| 2001 11 11 | 699 | 0.5+ | 0.7+ | 2002 03 05 | 704 | 1.0+ | 0.8− | 2006 11 14 | 704 | 0.1+ | 0.2+ |
| 2001 11 11 | 704 | 0.3− | 1.3+ | 2002 03 05 | 704 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.3+ | 0.1+ |
| 2001 11 11 | 704 | 0.1+ | 1.3+ | 2002 03 05 | 704 | 0.8+ | 0.4− | 2006 11 14 | 704 | 0.4+ | 0.6+ |
| 2001 11 11 | 704 | 0.6− | 1.0+ | 2002 03 19 | 704 | 0.1+ | 0.6+ | 2006 11 14 | 704 | 0.3+ | 0.4+ |
| 2001 11 11 | 699 | (1.6+ | 0.0 ) | 2002 03 19 | 704 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2001 11 11 | 704 | 0.5− | 0.8+ | 2002 03 19 | 704 | 0.4− | 0.4− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 11 11 | 699 | 0.2− | 0.2− | 2004 06 14 | 704 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 699 | 0.3− | 0.3− | 2004 06 14 | 704 | 0.7− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 11 20 | 699 | 1.5− | 0.5− | 2004 06 14 | 704 | (1.8+ | 0.6+) | 2006 11 16 | H07 | 0.1+ | 0.6− |
| 2001 11 20 | 699 | 1.3− | 0.0 | 2005 07 29 | E12 | 0.1+ | 0.8+ | 2006 11 16 | H07 | 0.2+ | 0.1− |
| 2001 11 20 | 699 | 0.4− | 0.5− | 2005 07 29 | E12 | 0.6− | 0.2+ | 2006 11 16 | H07 | 0.3+ | 0.1− |
| 2001 11 24 | 704 | 0.2+ | 0.6− | 2005 07 29 | E12 | (3.5+ | 4.6+) | 2006 11 16 | H07 | 0.8+ | 0.2− |
| 2001 11 24 | 704 | 1.1− | 0.6+ | 2005 07 29 | E12 | (1.7+ | 1.0+) | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2001 11 24 | 704 | 0.1+ | 0.1− | 2005 08 06 | E12 | 0.1− | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.2+ | 0.3+ | 2005 08 06 | E12 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.3+ | 0.5− | 2005 08 06 | E12 | 0.8+ | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2001 12 09 | 704 | 0.0 | 0.7+ | 2005 08 06 | E12 | 0.7+ | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2001 12 09 | 704 | 0.2+ | 0.8+ | 2005 08 24 | E12 | 0.7− | 0.9+ | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2001 12 09 | 704 | 0.3− | 0.8+ | 2005 08 24 | E12 | 0.4− | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2001 12 09 | 704 | 0.0 | 0.1+ | 2005 08 24 | E12 | 0.7+ | 1.0+ | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.5+ | 0.7− | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2001 12 13 | 704 | 0.2− | 0.4− | 2006 09 16 | 704 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.4− |
| 2001 12 13 | 704 | 0.3+ | 0.8− | 2006 09 16 | 704 | 1.3+ | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2001 12 13 | 704 | 0.7− | 1.0− | 2006 09 16 | 704 | 0.3− | 0.5+ | 2006 11 18 | 704 | 0.8− | 0.9+ |
| 2001 12 13 | 704 | 0.5− | 0.8− | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2001 12 14 | 704 | 0.1+ | 0.4− | 2006 09 18 | 703 | (1.8+ | 0.9−) | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2001 12 14 | 704 | 0.3− | 0.2+ | 2006 09 18 | 703 | 1.3+ | 1.4− | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2001 12 14 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | (0.2+ | 2.1−) | 2006 11 20 | 704 | 0.5− | 0.1+ |
| 2001 12 14 | 704 | 0.1− | 0.1+ | 2006 10 15 | A44 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2001 12 14 | 704 | 0.2− | 0.3− | 2006 10 15 | A44 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.9+ |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.6− | 0.7+ |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 25 | 704 | 0.9+ | 0.1+ |
| 2001 12 14 | 704 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.4+ | 0.1− |
| 2001 12 14 | 704 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 25 | 704 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 25 | 704 | 0.1− | 0.1+ |
| 2001 12 18 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2001 12 18 | 699 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.0 |
| 2001 12 18 | 699 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 1.1− | 2006 11 29 | 704 | 0.3+ | 0.5− |
| 2001 12 18 | 699 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.7− | 2006 11 29 | 704 | 0.1− | 0.8− |
| 2001 12 19 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 704 | 0.2+ | 0.7+ | 2006 11 29 | 704 | 0.0 | 0.6− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.6− | 0.9+ | 2006 10 22 | 704 | 0.1+ | 0.3+ | |
| 2001 12 19 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 704 | 0.1− | 0.8+ | |

**(141075)∗ 2001 XT$_{22}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.40841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18088277 | $\omega$ | 8.31459 | | +0.44942702 | −0.88015180 | |
| $a$ | 3.0965012 | $\Omega$ | 55.11157 | | +0.80851437 | +0.32802737 | |
| $e$ | 0.0875160 | $i$ | 10.73589 | | +0.37989455 | +0.34311931 | |
| $P$ | 5.45 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 20 | 691 | 0.1+ | 0.5− | 2003 04 20 | 049 | 0.3+ | 0.5− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 1995 11 20 | 691 | 0.5+ | 0.5− | 2003 04 20 | 049 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.3− |
| 1995 11 20 | 691 | 0.1+ | 0.4− | 2003 04 20 | 049 | 0.5+ | 0.8− | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2000 10 02 | 699 | 0.1− | 0.0 | 2005 07 03 | 644 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2000 10 02 | 699 | 0.1− | 1.1+ | 2005 07 03 | 644 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2000 10 02 | 699 | 0.2− | 0.6+ | 2005 07 03 | 644 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2000 10 02 | 699 | 0.2+ | 0.9+ | 2005 08 04 | 644 | 0.6− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 10 14 | 704 | 0.1− | 0.0 | 2005 08 04 | 644 | 0.5− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.9+ | 0.5+ | 2005 08 04 | 644 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2001 10 14 | 704 | 0.5+ | 0.8+ | 2005 08 10 | E12 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2001 10 14 | 704 | (0.9+ | 1.9+) | 2005 08 10 | E12 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2001 11 11 | 704 | 0.6+ | 0.1+ | 2005 08 10 | E12 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2001 11 11 | 704 | 0.7+ | 0.3− | 2005 08 10 | E12 | 0.7+ | 0.6− | 2006 11 13 | 644 | 0.0 | 0.5− |
| 2001 11 11 | 704 | 0.3+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2001 11 11 | 704 | 0.2+ | 0.0 | 2006 09 30 | 703 | (2.0− | 1.1+) | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2001 12 09 | 704 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.8+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 12 09 | 704 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 12 09 | 704 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 12 09 | 704 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2001 12 13 | 704 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.5− | 2006 11 17 | 703 | 0.4+ | 1.2+ |
| 2001 12 13 | 704 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.2+ | 1.0+ |
| 2001 12 13 | 704 | 0.8− | 0.7+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.8− |
| 2001 12 17 | 704 | 1.2− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.7− | 0.6− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2001 12 17 | 704 | 0.4− | 1.1− | 2006 10 16 | 703 | (2.9+ | 0.9−) | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2001 12 22 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2001 12 22 | 704 | 0.2− | 1.0+ | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.8− |
| 2001 12 22 | 704 | 0.8− | 1.1+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2001 12 22 | 704 | (0.3− | 1.7+) | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | (0.1+ | 1.5+) |
| 2002 01 08 | 704 | (1.0+ | 1.8+) | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2002 01 08 | 704 | (0.4+ | 1.5+) | 2006 10 27 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2002 01 08 | 704 | (0.6+ | 1.6+) | 2006 10 27 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2002 01 08 | 704 | 1.0+ | 1.1+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 1.2− |
| 2002 01 08 | 704 | (0.1+ | 1.7+) | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 0.5+ | 1.3+ |
| 2003 03 25 | 644 | 0.0 | 0.8+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.4− | 0.1− |
| 2003 03 25 | 644 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.2− | 0.6− |
| 2003 03 25 | 644 | 0.4+ | 0.8+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 28 | 704 | 1.5+ | 0.1+ |

**(141076)∗ 2001 XE$_{25}$ = 1991 VE$_6$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23159)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.09507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20332638 | $\omega$ | 340.26605 | | +0.49024071 | −0.85502681 | |
| $a$ | 2.8642235 | $\Omega$ | 80.05244 | | +0.82095294 | +0.38782409 | |
| $e$ | 0.3054951 | $i$ | 9.88529 | | +0.29274616 | +0.34426970 | |
| $P$ | 4.85 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 18 | 261 | 0.0 | 0.4+ | 2001 12 10 | 704 | 0.3+ | 0.0 | 2002 02 13 | 644 | 0.1− | 0.1− |
| 1991 10 18 | 261 | 0.7− | 0.5+ | 2001 12 13 | 704 | 0.0 | 0.1− | 2002 02 13 | 644 | 0.2− | 0.3− |
| 1991 11 02 | 809 | 1.5+ | 0.4− | 2001 12 13 | 704 | 0.0 | 0.3− | 2002 02 13 | 644 | 0.0 | 0.1− |
| 1991 11 02 | 809 | 0.5+ | 0.3− | 2001 12 13 | 704 | 0.1− | 0.2+ | 2002 02 13 | 644 | 0.0 | 0.3+ |
| 1991 11 02 | 809 | 0.7− | 0.7− | 2001 12 13 | 704 | 0.2− | 0.3+ | 2002 02 13 | 644 | 0.3− | 0.1+ |
| 1991 11 06 | 809 | (3.0− | 4.9−) | 2001 12 13 | 704 | 0.0 | 0.4+ | 2002 03 03 | 644 | 0.2+ | 1.2+ |
| 1991 11 06 | 809 | (4.3− | 3.2−) | 2001 12 17 | 704 | 0.5− | 0.8+ | 2002 03 03 | 644 | 0.1+ | 0.8+ |
| 1991 11 06 | 809 | (3.3− | 3.4−) | 2001 12 17 | 704 | 0.6− | 0.4+ | 2002 03 03 | 644 | 0.4+ | 1.1+ |
| 1996 10 12 | 261 | 0.1+ | 0.2− | 2001 12 17 | 704 | 0.4− | 0.4+ | 2002 04 09 | 699 | 1.1− | 0.2− |
| 1996 10 12 | 261 | 0.0 | 0.4− | 2001 12 17 | 704 | 0.4− | 0.7+ | 2002 04 09 | 699 | 0.6+ | 0.6+ |
| 2001 10 13 | 704 | 0.9− | 1.1+ | 2001 12 17 | 704 | 1.3− | 0.6+ | 2002 04 09 | 699 | 0.0 | 0.6− |
| 2001 10 13 | 704 | (1.6− | 0.0 ) | 2001 12 18 | 644 | 0.2+ | 0.1− | 2002 04 09 | 699 | 0.3− | 0.4− |
| 2001 10 13 | 704 | 0.3− | 0.1+ | 2001 12 18 | 644 | 0.2+ | 0.1− | 2003 04 11 | 644 | 0.4+ | 0.8+ |
| 2001 10 13 | 704 | 0.0 | 0.7+ | 2001 12 18 | 644 | 0.0 | 0.1− | 2003 04 11 | 644 | 0.3+ | 1.0+ |
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2001 12 19 | 644 | 0.1+ | 0.0 | 2003 04 11 | 644 | 0.2+ | 1.0+ |
| 2001 11 12 | 704 | 0.1+ | 0.3+ | 2001 12 19 | 644 | 0.1+ | 0.2− | 2005 09 01 | 644 | 0.2− | 0.9+ |
| 2001 11 12 | 704 | 0.5+ | 0.0 | 2001 12 19 | 644 | 0.1+ | 0.0 | 2005 09 01 | 644 | 0.2− | 0.7+ |
| 2001 11 12 | 704 | 0.8+ | 0.3− | 2001 12 21 | 704 | 1.3− | 0.1− | 2005 09 01 | 644 | 0.2− | 0.9+ |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2001 12 21 | 704 | 0.3− | 0.1− | 2005 09 08 | E12 | 0.3− | 0.7+ |
| 2001 11 12 | 704 | (1.6+ | 0.6+) | 2001 12 21 | 704 | 0.3− | 0.5+ | 2005 09 08 | E12 | 0.3+ | 0.5+ |
| 2001 11 12 | 704 | 0.1− | 0.2− | 2001 12 21 | 704 | 0.1− | 0.4+ | 2005 09 08 | E12 | 0.2− | 0.7+ |
| 2001 11 12 | 704 | 0.5+ | 0.5+ | 2001 12 21 | 704 | 0.5− | 0.8+ | 2005 09 08 | E12 | 0.4− | 1.3+ |
| 2001 11 12 | 704 | 0.5− | 0.2− | 2002 01 08 | 704 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.8− | 0.7+ |
| 2001 11 12 | 704 | 0.9+ | 0.1+ | 2002 01 08 | 704 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.2+ | 0.2+ |
| 2001 11 13 | 608 | 0.7+ | 0.2− | 2002 01 08 | 704 | 0.1+ | 0.1− | 2006 10 01 | 703 | 0.4+ | 0.7+ |
| 2001 11 13 | 608 | 0.9+ | 0.6− | 2002 01 08 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.6− | 0.6+ |
| 2001 11 13 | 608 | 1.1+ | 1.1+ | 2002 01 08 | 704 | 0.1+ | 0.4− | 2006 10 21 | 703 | 1.0− | 0.7− |
| 2001 11 24 | 704 | 0.1+ | 0.2− | 2002 01 21 | 704 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.8− | 0.1− |
| 2001 11 24 | 704 | 0.8+ | 0.6− | 2002 01 21 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.1− |
| 2001 11 24 | 704 | 0.6+ | 0.3− | 2002 01 21 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.6− | 0.2− |
| 2001 11 24 | 704 | 0.7+ | 0.4− | 2002 01 21 | 704 | 0.1+ | 0.8− | 2006 11 23 | 703 | 0.7− | 0.6− |
| 2001 12 09 | 699 | 0.1+ | 0.2+ | 2002 01 21 | 704 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.4+ |
| 2001 12 09 | 699 | 0.1+ | 0.3− | 2002 01 21 | 704 | 0.1− | 0.8− | 2006 11 23 | 703 | (1.7− | 0.4+) |
| 2001 12 09 | 699 | 0.3− | 0.3+ | 2002 01 21 | 704 | 0.0 | 0.8− | 2006 11 23 | 703 | 0.8+ | 0.3− |
| 2001 12 09 | 699 | 1.0+ | 0.2+ | 2002 02 08 | 704 | 0.3− | 0.5− | 2006 12 01 | 704 | 1.2+ | 0.8+ |
| 2001 12 10 | 704 | 0.2+ | 0.7− | 2002 02 08 | 704 | (2.8− | 1.1−) | 2006 12 01 | 704 | 1.9+ | 0.2− |
| 2001 12 10 | 704 | 0.2+ | 0.8− | 2002 02 08 | 704 | 1.0− | 0.4+ | 2006 12 01 | 704 | 0.9+ | 0.3+ |
| 2001 12 10 | 704 | 0.2− | 0.4− | 2002 02 08 | 704 | 1.5− | 0.1+ | 2006 12 01 | 704 | 1.9+ | 0.6− |
| 2001 12 10 | 704 | 0.1+ | 0.1+ | 2002 02 13 | 644 | 0.1− | 0.1+ | | | | |

**(141077)∗ 2001 XB$_{27}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.05607 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17948029 | $\omega$ | 66.77831 | | −0.45023555 | −0.88750170 | |
| $a$ | 3.1126112 | $\Omega$ | 50.35132 | | +0.76556507 | −0.44024645 | |
| $e$ | 0.2155475 | $i$ | 7.32174 | | +0.45956291 | −0.13610218 | |
| $P$ | 5.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.6− | 0.7− | 2002 02 08 | 704 | 0.2+ | 0.2− | 2006 10 28 | 704 | 0.1+ | 1.2− |
| 2000 09 24 | 704 | 0.1− | 0.2− | 2002 02 08 | 704 | 0.3+ | 0.0 | 2006 10 28 | 704 | 0.3+ | 0.2− |
| 2000 09 24 | 704 | 0.4− | 0.5+ | 2002 02 08 | 704 | 0.2+ | 0.7− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 10 | 704 | 0.1+ | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 10 | 704 | 0.2+ | 1.0+ | 2006 11 10 | 691 | (0.2− | 1.6−) |
| 2001 11 16 | 699 | 0.5− | 0.0 | 2002 02 10 | 704 | 0.3− | 1.1+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 11 16 | 699 | 1.1+ | 0.9+ | 2002 02 10 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2001 11 16 | 699 | 0.6− | 0.1+ | 2002 02 10 | 704 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2001 11 16 | 699 | 0.2− | 0.1− | 2002 02 12 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2001 12 10 | 704 | 0.1+ | 0.1+ | 2002 02 12 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 1.2− | 0.7− |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2002 02 12 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 1.5− | 0.3+ |
| 2001 12 10 | 704 | 1.0+ | 0.5+ | 2002 02 12 | 704 | 0.5+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2001 12 10 | 704 | 0.2+ | 0.4+ | 2002 02 12 | 704 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2001 12 13 | 704 | 0.3− | 1.3− | 2002 02 12 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 704 | 0.0 | 0.8− | 2002 02 12 | 704 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 1.4− |
| 2001 12 13 | 704 | (1.2+ | 1.8−) | 2002 02 12 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.3− | 0.2− |
| 2001 12 13 | 704 | 0.9+ | 1.1− | 2002 02 12 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.0 |
| 2001 12 13 | 704 | 0.9+ | 1.0− | 2002 02 12 | 704 | (2.5+ | 2.7+) | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2002 01 08 | 704 | 0.1+ | 0.1− | 2002 02 13 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2002 01 08 | 704 | 0.1+ | 0.1+ | 2002 02 13 | 704 | 0.2+ | 0.1− | 2006 11 16 | 704 | (2.0− | 0.4+) |
| 2002 01 08 | 704 | 0.3+ | 0.5− | 2002 02 13 | 704 | 0.7+ | 0.8− | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2002 01 08 | 704 | 0.4+ | 0.6+ | 2002 02 13 | 704 | 0.1+ | 0.3− | 2006 11 16 | 704 | 1.2− | 0.3− |
| 2002 01 08 | 704 | 0.6+ | 0.1− | 2002 02 13 | 704 | 0.3+ | 0.3− | 2006 11 16 | 704 | 1.2− | 0.9− |
| 2002 01 21 | 704 | 0.1− | 1.3− | 2002 02 13 | 644 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 01 21 | 704 | 0.1− | 1.5− | 2002 02 13 | 644 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2002 01 21 | 704 | (0.1− | 1.7−) | 2002 02 13 | 644 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 01 21 | 704 | 0.3− | 1.3− | 2002 03 11 | 644 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.8− | 0.1+ |
| 2002 02 03 | 644 | 0.0 | 0.3+ | 2002 03 11 | 644 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2002 02 03 | 644 | 0.1− | 0.3+ | 2002 03 11 | 644 | 0.6− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.1− |
| 2002 02 03 | 644 | 0.1− | 0.3+ | 2005 07 30 | 644 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.6− |
| 2002 02 06 | 704 | 0.3− | 0.1+ | 2005 07 30 | 644 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.7+ |
| 2002 02 06 | 704 | 0.4− | 0.2+ | 2005 07 30 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.4− |
| 2002 02 06 | 704 | 0.5− | 0.0 | 2005 07 30 | 644 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2002 02 06 | 704 | 0.2− | 0.2+ | 2005 07 30 | 644 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.5− |
| 2002 02 06 | 704 | 0.1− | 0.4+ | 2005 07 30 | 644 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2002 02 07 | 704 | 0.7− | 1.3+ | 2005 08 27 | 644 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2002 02 07 | 704 | 0.6− | 1.3+ | 2005 08 27 | 644 | 0.1− | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 02 07 | 704 | (0.1− | 1.7+) | 2005 08 27 | 644 | 0.6− | 0.6+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2002 02 07 | 704 | 0.5− | 1.4+ | 2006 09 19 | 926 | 0.2+ | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2002 02 07 | 704 | (0.0 | 1.5+) | 2006 09 19 | 926 | 0.3+ | 0.3− | 2006 11 27 | 704 | 0.0 | 0.4+ |
| 2002 02 08 | 704 | 0.3− | 0.4+ | 2006 09 19 | 926 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.7+ | 2.0+ |
| 2002 02 08 | 704 | 0.7− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 27 | 704 | 0.3− | 1.1+ |
| 2002 02 08 | 704 | 0.8− | 0.3− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.9+ | 0.3+ |
| 2002 02 08 | 704 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.8+ | 0.3+ |
| 2002 02 08 | 704 | 0.4− | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 28 | 704 | 1.3+ | 0.3+ |
| 2002 02 08 | 704 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.3+ |
| 2002 02 08 | 704 | 0.4+ | 0.1− | 2006 10 28 | 704 | 0.4+ | 0.3− | 2006 11 28 | 704 | 0.9+ | 0.1+ |

**(141078)∗ 2001 XQ$_{30}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.27178 | | (2000.0) | | | |
| $n$ | 0.38747461 | $\omega$ | 270.44061 | | −0.80665790 | −0.56815199 |
| $a$ | 1.8634048 | $\Omega$ | 234.94668 | | +0.58973578 | −0.75562474 |
| $e$ | 0.4502303 | $i$ | 11.47154 | | +0.03891969 | −0.32593645 |
| $P$ | 2.54 | $H$ | 18.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 03 | 566 | 0.3− | 0.4+ | 2001 12 14 | 966 | 0.2− | 0.4− | 2002 03 09 | 696 | 0.7+ | 0.4− |
| 2001 10 20 | 644 | 0.1− | 1.4− | 2001 12 27 | 715 | (1.7− | 1.6+) | 2002 03 09 | 696 | 0.3− | 0.2− |
| 2001 10 20 | 644 | 0.7+ | 1.4− | 2001 12 27 | 715 | 1.2− | 0.5− | 2002 04 02 | 413 | 0.1+ | 0.4+ |
| 2001 10 21 | 644 | 0.7+ | 0.8+ | 2001 12 27 | 715 | (1.6− | 1.6−) | 2002 04 02 | 413 | 0.1− | 0.4+ |
| 2001 11 15 | 608 | 0.3+ | 1.0+ | 2002 01 04 | 649 | 0.8− | 0.2− | 2002 05 01 | 413 | 0.3− | 1.3+ |
| 2001 11 15 | 608 | 0.8+ | 1.2+ | 2002 01 04 | 649 | 0.8− | 1.0− | 2002 05 01 | 413 | 1.3− | 1.3+ |
| 2001 11 15 | 608 | 1.2+ | 0.2+ | 2002 01 04 | 649 | (1.9− | 0.8+) | 2002 06 06 | 696 | 0.0 | 0.5+ |
| 2001 12 11 | 704 | 0.3+ | 0.0 | 2002 01 08 | 291 | 0.2− | 0.4+ | 2002 06 06 | 696 | 1.2+ | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.8+ | 2002 01 08 | 291 | 0.1− | 0.4+ | 2003 07 29 | 568 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.9+ | 2002 01 08 | 291 | 0.2+ | 0.1+ | 2003 07 29 | 568 | 0.2− | 0.0 |
| 2001 12 11 | 704 | 0.1− | 0.2+ | 2002 01 11 | 413 | 0.1− | 0.1+ | 2003 07 30 | 568 | 0.2− | 0.1− |
| 2001 12 11 | 704 | 0.2+ | 0.8+ | 2002 01 11 | 413 | 0.2+ | 0.4− | 2003 07 30 | 568 | 0.1+ | 0.0 |
| 2001 12 12 | 950 | 0.2+ | 0.0 | 2002 01 11 | 413 | 0.4+ | 0.3− | 2005 06 29 | 291 | 0.5− | 0.7+ |
| 2001 12 12 | 950 | 0.2+ | 0.1− | 2002 01 31 | 413 | (2.1− | 0.4+) | 2005 06 29 | 291 | 0.7+ | 0.9+ |
| 2001 12 12 | 950 | 0.2+ | 0.1− | 2002 01 31 | 413 | (1.8− | 0.3−) | 2005 06 29 | 291 | 0.8+ | 0.4+ |
| 2001 12 14 | 557 | (0.3+ | 1.7−) | 2002 02 09 | 413 | 0.6+ | 0.6+ | 2006 10 25 | 113 | 0.6− | 0.1+ |
| 2001 12 14 | 557 | 0.5+ | 0.2+ | 2002 02 09 | 413 | 0.1+ | 0.4+ | 2006 10 25 | 113 | 1.1− | 0.1− |
| 2001 12 14 | 557 | 0.2+ | 1.3+ | 2002 02 09 | 413 | 0.9+ | 0.1+ | 2006 10 25 | 113 | (2.2+ | 1.8−) |
| 2001 12 14 | 966 | 0.6+ | 0.6+ | 2002 03 09 | 696 | 0.5− | 0.9− | | | | |

**(141079)∗ 2001 XS$_{30}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.77031 | | (2000.0) | | | |
| $n$ | 0.78426019 | $\omega$ | 0.83013 | | −0.30543530 | +0.83757423 |
| $a$ | 1.1645620 | $\Omega$ | 251.48590 | | −0.87636803 | −0.43330909 |
| $e$ | 0.8282274 | $i$ | 28.53458 | | −0.37240885 | +0.33273510 |
| $P$ | 1.26 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 566 | 0.7+ | 0.3− | 2001 12 31 | 649 | 1.2− | 1.1− | 2003 11 16 | H06 | (1.8− | 3.5−) |
| 1998 11 16 | 566 | 1.6+ | 0.0 | 2001 12 31 | 649 | 0.4− | 0.5+ | 2003 11 16 | H06 | (0.2+ | 2.2−) |
| 2001 12 11 | 704 | 0.7− | 0.3+ | 2001 12 31 | 649 | 0.7+ | 0.7+ | 2003 11 16 | H06 | 1.2− | 1.4− |
| 2001 12 11 | 704 | 0.2+ | 1.1+ | 2002 01 03 | 413 | 0.2− | 0.0 | 2003 11 17 | 670 | (2.1+ | 0.1+) |
| 2001 12 11 | 704 | 0.3− | 0.2+ | 2002 01 03 | 413 | 0.3− | 0.2− | 2003 11 17 | 670 | 0.8− | 1.5− |
| 2001 12 11 | 704 | 0.3− | 0.2+ | 2002 01 03 | 413 | 0.5− | 0.4+ | 2003 11 17 | 170 | 0.2+ | 0.0 |
| 2001 12 11 | 704 | 0.8− | 0.8+ | 2002 01 06 | 448 | 0.5+ | 0.9− | 2003 11 17 | 170 | 0.5+ | 0.4+ |
| 2001 12 13 | 704 | 0.9− | 1.1− | 2002 01 06 | 448 | 0.1+ | 0.2− | 2003 11 17 | 170 | 0.2+ | 0.5+ |
| 2001 12 13 | 704 | 0.2− | 0.1− | 2002 01 06 | 448 | 0.3− | 0.3− | 2003 11 21 | 644 | 0.1− | 0.5+ |
| 2001 12 13 | 704 | 1.3+ | 0.2+ | 2002 01 06 | 448 | 0.8− | 1.5− | 2003 11 21 | 644 | 0.1− | 0.2+ |
| 2001 12 13 | 704 | 0.5+ | 0.1− | 2002 02 12 | 711 | 0.2+ | 0.3− | 2003 11 21 | 704 | 0.1− | 0.3− |
| 2001 12 13 | 474 | 0.8− | 0.5− | 2002 02 12 | 711 | 0.6− | 0.2− | 2003 11 21 | 704 | 0.2− | 0.8+ |
| 2001 12 13 | 474 | 0.4− | 0.1− | 2002 02 12 | 711 | 0.6− | 0.9− | 2003 11 21 | 704 | 0.6+ | 0.4+ |
| 2001 12 13 | 474 | 0.8− | 0.4− | 2002 02 15 | 711 | 0.0 | 0.5− | 2003 11 21 | 644 | 0.1+ | 0.5+ |
| 2001 12 13 | 474 | 0.8− | 0.4− | 2002 02 15 | 711 | 0.7− | 0.7− | 2004 12 31 | 734 | (1.5+ | 2.6−) |
| 2001 12 14 | 704 | 0.1− | 0.2+ | 2002 02 15 | 711 | 0.4− | 0.0 | 2004 12 31 | 734 | 1.2+ | 0.4+ |
| 2001 12 14 | 704 | 0.0 | 0.1− | 2002 10 29 | 696 | 0.4− | 0.0 | 2004 12 31 | 734 | (3.1− | 0.7+) |
| 2001 12 14 | 704 | 0.9+ | 0.1+ | 2002 10 29 | 696 | 0.1− | 0.5− | 2005 12 04 | 448 | 0.2− | 1.5+ |
| 2001 12 14 | 611 | (1.8− | 0.7+) | 2002 12 01 | 113 | 0.4− | 0.1+ | 2005 12 04 | 448 | 0.2− | 0.4− |
| 2001 12 14 | 611 | 1.0− | 0.3+ | 2002 12 01 | 113 | 0.5− | 0.4+ | 2005 12 04 | 448 | 0.5− | 0.2− |
| 2001 12 14 | 046 | (2.1− | 1.1−) | 2002 12 01 | 113 | 0.7− | 0.8+ | 2005 12 05 | 448 | 0.2− | 0.2− |
| 2001 12 14 | 046 | 1.0− | 0.1− | 2003 01 03 | 291 | 0.2+ | 0.7+ | 2005 12 05 | 448 | 0.2− | 0.3− |
| 2001 12 14 | 046 | 0.1+ | 1.0+ | 2003 01 03 | 291 | 0.8+ | 0.2− | 2005 12 05 | 448 | 0.1+ | 0.2− |
| 2001 12 14 | 046 | (1.9+ | 0.7+) | 2003 01 03 | 291 | 1.0+ | 1.2+ | 2005 12 17 | E17 | (1.9− | 2.3+) |
| 2001 12 14 | 046 | 1.3+ | 0.4− | 2003 11 02 | 670 | 0.0 | 0.2+ | 2005 12 17 | E17 | 0.5+ | 0.3+ |
| 2001 12 14 | 966 | 0.1+ | 0.3− | 2003 11 02 | 670 | 0.8− | 0.0 | 2005 12 17 | E17 | 0.1− | 0.0 |
| 2001 12 14 | 966 | 0.2− | 0.2+ | 2003 11 02 | 670 | 0.8− | 0.1+ | 2005 12 23 | E17 | 0.1− | 0.9+ |
| 2001 12 18 | 704 | 1.2+ | 1.5+ | 2003 11 04 | 461 | 0.6− | 0.1+ | 2005 12 23 | E17 | 0.2− | 0.0 |
| 2001 12 18 | 704 | (1.7− | 0.7+) | 2003 11 04 | 461 | 1.1− | 0.6− | 2005 12 23 | E17 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.9− | 1.2+ | 2003 11 04 | 461 | 1.3− | 0.5+ | 2006 11 20 | 691 | 0.6+ | 0.2− |
| 2001 12 18 | 704 | 1.1− | 0.8+ | 2003 11 04 | 461 | 0.6− | 0.7+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.3− | 2003 11 05 | 704 | (2.0+ | 0.9−) | 2006 11 20 | 691 | 0.4+ | 0.5− |
| 2001 12 19 | 704 | 0.8− | 0.5− | 2003 11 05 | 704 | 0.1+ | 1.2− | 2006 11 24 | 691 | 0.9+ | 1.0− |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2003 11 05 | 704 | 0.6+ | 0.2− | | | | |
| 2001 12 19 | 704 | 0.5+ | 0.3− | 2003 11 05 | 704 | (1.4+ | 2.6−) | | | | |

**(141080)∗ 2001 XV$_{33}$ = 2000 SR$_{171}$**

Discovered 2001 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23168)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.90944 | | (2000.0) | | | |
| $n$ | 0.18256094 | $\omega$ | 138.46254 | | +0.88585572 | −0.44482102 |
| $a$ | 3.0774959 | $\Omega$ | 248.40042 | | +0.37942141 | +0.85815430 |
| $e$ | 0.0882195 | $i$ | 8.15471 | | +0.26701880 | +0.25633077 |
| $P$ | 5.40 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 1.5+ | 0.4+ | 2001 12 20 | 704 | (1.9− | 0.3−) | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2000 09 03 | 704 | 0.2+ | 0.5+ | 2001 12 20 | 704 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.1− | 0.3+ |
| 2000 09 03 | 704 | 1.0− | 0.9+ | 2001 12 20 | 704 | (1.7− | 0.0 ) | 2006 10 27 | 703 | 0.8+ | 0.1− |
| 2000 09 26 | 704 | 0.9− | 0.6+ | 2002 01 13 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 1.0− |
| 2000 09 26 | 704 | 0.1+ | 0.7+ | 2002 01 13 | 704 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 0.7− | 0.4+ | 2002 01 13 | 704 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.2− | 0.2− | | |
| 2000 09 30 | 704 | 0.3− | 1.6+ | 2002 01 13 | 704 | 0.6+ | 0.3− | 2006 11 01 | G96 | 0.2− | 0.1− | | |
| 2000 09 30 | 704 | 0.7− | 1.5+ | 2002 01 13 | 704 | 0.2+ | 0.9− | 2006 11 01 | G96 | 0.1+ | 0.1− | | |
| 2000 09 30 | 704 | 0.6− | 0.3− | 2002 01 15 | 704 | 0.4− | 0.8− | 2006 11 01 | J95 | 0.2+ | 0.1+ | | |
| 2000 09 30 | 704 | 0.1+ | 0.4− | 2002 01 15 | 704 | 0.1− | 0.5+ | 2006 11 01 | J95 | 0.5− | 0.4− | | |
| 2000 10 30 | I03 | 0.3− | 0.5+ | 2002 01 15 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.6− | 0.2+ | | |
| 2000 10 30 | I03 | 0.1− | 0.4+ | 2003 04 01 | 691 | 0.3+ | 1.3+ | 2006 11 08 | 644 | 0.3− | 0.3+ | | |
| 2000 10 30 | I03 | 0.5− | 0.8+ | 2003 04 01 | 691 | 0.7+ | 1.0+ | 2006 11 08 | 644 | 0.4− | 0.1+ | | |
| 2000 10 30 | I03 | 0.3− | 0.3+ | 2003 04 01 | 691 | 0.2+ | 0.6+ | 2006 11 14 | 703 | 0.2+ | 0.2− | | |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2005 06 27 | 644 | 0.1− | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.5− | | |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2005 06 27 | 644 | 0.3− | 0.7+ | 2006 11 14 | 703 | 0.3+ | 0.5+ | | |
| 2001 11 20 | 704 | 0.0 | 0.3− | 2005 06 27 | 644 | 0.2+ | 0.3− | 2006 11 14 | 703 | 0.5+ | 0.4+ | | |
| 2001 12 07 | 704 | 0.5+ | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 11 16 | 704 | (1.0− | 2.4+) | | |
| 2001 12 07 | 704 | 0.1+ | 1.5− | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.8+ | | |
| 2001 12 07 | 704 | 0.7− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 16 | 704 | (0.4+ | 1.8+) | | |
| 2001 12 07 | 704 | 0.7− | 1.4− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.3− | 1.4+ | | |
| 2001 12 07 | 704 | 0.8− | 0.8− | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.2+ | | |
| 2001 12 14 | 704 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.8− | | |
| 2001 12 14 | 704 | 0.7+ | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2001 12 14 | 704 | 0.4+ | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.5− | | |
| 2001 12 14 | 704 | 0.6− | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 1.5+ | 0.0 | | |
| 2001 12 14 | 704 | 0.1+ | 0.5+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.2+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 1.0+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.6− | | |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.3+ | | |
| 2001 12 17 | 704 | 0.5− | 1.0− | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.0 | | |
| 2001 12 20 | 704 | 1.0− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.0 | | | | | | |
| 2001 12 20 | 704 | 0.2− | 1.0+ | 2006 10 21 | 691 | 0.2− | 0.0 | | | | | | |

**(141081)∗ 2001 XF$_{34}$ = 1993 FD$_{69}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23169)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.98583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19141583 | $\omega$ | 79.16277 | | +0.26707152 | −0.96357381 | |
| $a$ | 2.9818387 | $\Omega$ | 355.27630 | | +0.80381499 | +0.23080455 | |
| $e$ | 0.0838237 | $i$ | 9.84631 | | +0.53155834 | +0.13511022 | |
| $P$ | 5.15 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.4+ | 0.0 | 2003 03 06 | 644 | (1.6+ | 0.4−) | 2005 11 06 | G96 | 0.0 | 0.6+ | | |
| 1993 03 22 | 809 | 0.9+ | 0.5− | 2003 03 06 | 644 | 0.5+ | 0.3− | 2005 11 06 | G96 | 0.6− | 0.5+ | | |
| 1995 10 03 | 691 | 0.3− | 0.4+ | 2003 03 09 | 704 | 0.8+ | 0.6+ | 2005 11 06 | G96 | 0.3− | 0.3+ | | |
| 1995 10 03 | 691 | 0.3− | 0.1+ | 2003 03 09 | 704 | 0.2+ | 0.3− | 2005 11 06 | G96 | 0.4− | 0.3+ | | |
| 1995 10 03 | 691 | 0.0 | 0.2+ | 2003 03 09 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.9+ | | |
| 2001 10 25 | 704 | 0.3+ | 0.3− | 2003 03 09 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.5+ | 0.3+ | | |
| 2001 10 25 | 704 | 0.1+ | 0.1+ | 2003 03 09 | 704 | 0.6+ | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.1+ | | |
| 2001 10 25 | 704 | 0.6+ | 0.1− | 2003 03 10 | 704 | (1.7+ | 0.6+) | 2006 10 27 | 703 | 0.6+ | 0.6+ | | |
| 2001 10 25 | 704 | 0.1+ | 0.6+ | 2003 03 10 | 704 | 0.6+ | 0.2− | 2006 11 02 | G96 | 0.0 | 0.5− | | |
| 2001 11 11 | 704 | 0.1− | 0.6− | 2003 03 10 | 704 | (0.1− | 1.7−) | 2006 11 02 | G96 | 0.0 | 0.3− | | |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2003 03 10 | 291 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.1+ | 0.4− | | |
| 2001 11 11 | 704 | (1.7− | 0.4+) | 2003 03 10 | 291 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.4− | | |
| 2001 12 09 | 704 | 0.3− | 0.3− | 2003 03 10 | 291 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 0.1− | 0.6+ | | |
| 2001 12 09 | 704 | 0.5+ | 0.2+ | 2003 03 12 | 291 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.3+ | | |
| 2001 12 09 | 704 | 0.9− | 0.2+ | 2003 03 12 | 291 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.3− | 0.5+ | | |
| 2001 12 09 | 704 | 0.9− | 0.2− | 2003 03 12 | 291 | 0.0 | 0.1+ | 2006 11 02 | 703 | 0.3− | 0.2+ | | |
| 2001 12 09 | 704 | 0.2− | 0.4+ | 2003 03 26 | 699 | 0.2+ | 0.7− | 2006 11 15 | 703 | 0.2+ | 0.8− | | |
| 2001 12 14 | 704 | 0.4− | 0.7− | 2003 03 26 | 699 | 1.3− | 0.0 | 2006 11 15 | 703 | 0.7− | 0.4− | | |
| 2001 12 14 | 704 | 0.7− | 0.3− | 2003 03 26 | 699 | 0.3+ | 1.5− | 2006 11 15 | 703 | 0.2− | 0.2− | | |
| 2001 12 14 | 704 | 0.9− | 1.4− | 2003 03 26 | 699 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.3− | 0.8− | | |
| 2001 12 22 | 704 | 0.5+ | 0.7+ | 2003 04 01 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.5− | 0.4+ | | |
| 2001 12 22 | 704 | 0.7+ | 0.2+ | 2003 04 01 | 704 | 0.8+ | 0.7+ | 2006 11 15 | 704 | 1.3+ | 0.6+ | | |
| 2001 12 22 | 704 | 0.5+ | 0.7+ | 2003 04 01 | 704 | (2.0+ | 0.0 ) | 2006 11 21 | 703 | 0.4+ | 0.1− | | |
| 2003 02 22 | 644 | 0.0 | 0.1+ | 2003 04 01 | 704 | 0.7+ | 1.1+ | 2006 11 21 | 703 | 0.1− | 0.1+ | | |
| 2003 02 22 | 644 | 0.0 | 0.2+ | 2003 04 09 | 691 | 0.2− | 0.1+ | 2006 11 21 | 703 | 0.3+ | 0.8+ | | |
| 2003 02 22 | 644 | 0.3− | 0.2− | 2003 04 09 | 691 | 0.3− | 0.1+ | 2006 11 21 | 703 | 0.7+ | 0.5− | | |
| 2003 03 06 | 644 | 0.3+ | 0.4− | 2003 04 09 | 691 | 0.4− | 0.1− | | | | | | |

**(141082)∗ 2001 XT$_{34}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.49793 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18712642 | $\omega$ | 142.43222 | | −0.37773218 | −0.92264680 | |
| $a$ | 3.0272339 | $\Omega$ | 329.53513 | | +0.80799132 | −0.28746570 | |
| $e$ | 0.0915093 | $i$ | 8.81834 | | +0.45218185 | −0.25707267 | |
| $P$ | 5.27 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.6+ | 0.6− | 2001 12 19 | 704 | 0.4− | 0.7+ | 2003 03 25 | 699 | 0.4− | 0.5− | | |
| 2000 09 23 | 704 | 1.3+ | 0.7+ | 2001 12 19 | 704 | 0.3+ | 0.3− | 2003 03 25 | 699 | 0.9+ | 0.6− | | |
| 2000 09 23 | 704 | 0.5− | 0.7− | 2001 12 19 | 704 | 0.6− | 0.5+ | 2005 07 12 | G96 | 0.7− | 0.3+ | | |
| 2000 09 23 | 704 | 0.8− | 0.4+ | 2001 12 20 | 704 | 0.0 | 0.1+ | 2005 07 12 | G96 | 0.8− | 0.2+ | | |
| 2001 10 25 | 704 | 0.7− | 1.2+ | 2001 12 20 | 704 | 0.0 | 1.2+ | 2005 07 12 | G96 | 0.7− | 0.3+ | | |
| 2001 10 25 | 704 | 0.8− | 1.4+ | 2001 12 20 | 704 | 0.4+ | 0.9+ | 2005 07 12 | G96 | 0.6− | 0.3+ | | |
| 2001 10 25 | 704 | (0.8− | 2.4+) | 2001 12 20 | 704 | 0.4+ | 0.7+ | 2005 08 05 | 644 | 0.6− | 0.8+ | | |
| 2001 10 25 | 704 | (0.4− | 2.4+) | 2001 12 20 | 704 | 1.5+ | 0.8+ | 2005 08 05 | 644 | 0.4− | 1.2+ | | |
| 2001 12 09 | 704 | 0.3+ | 0.6+ | 2001 12 22 | 704 | 0.3− | 0.2+ | 2005 08 05 | 644 | 0.5− | 0.8+ | | |
| 2001 12 09 | 704 | 0.8+ | 0.1+ | 2001 12 22 | 704 | 0.1+ | 0.4+ | 2005 09 30 | G96 | 0.2− | 0.7+ | | |
| 2001 12 09 | 704 | 1.2− | 0.9− | 2001 12 22 | 704 | 0.1+ | 0.8+ | 2005 09 30 | G96 | 0.1+ | 0.7+ | | |
| 2001 12 09 | 704 | 0.3− | 0.2+ | 2001 12 22 | 704 | 0.7− | 1.2+ | 2005 09 30 | G96 | 0.2− | 0.3+ | | |
| 2001 12 09 | 704 | 0.2+ | 0.3+ | 2001 12 22 | 704 | (0.1− | 1.9+) | 2005 09 30 | G96 | 0.0 | 0.6+ | | |
| 2001 12 14 | 704 | 0.0 | 0.7− | 2002 02 08 | 704 | 0.3+ | 0.1+ | 2005 10 26 | G96 | 0.5+ | 0.8+ | | |
| 2001 12 14 | 704 | 1.0− | 0.9− | 2002 02 08 | 704 | 0.7+ | 0.3− | 2005 10 26 | G96 | 0.1− | 0.9+ | | |
| 2001 12 14 | 704 | 0.4+ | 0.2− | 2002 02 08 | 704 | 0.7+ | 0.1− | 2005 10 26 | G96 | 0.3− | 0.3+ | | |
| 2001 12 14 | 704 | 0.1+ | 1.1− | 2003 03 07 | 704 | 0.3− | 0.7+ | 2005 10 26 | G96 | 0.5− | 0.7+ | | |
| 2001 12 14 | 704 | 0.1− | 0.9− | 2003 03 07 | 704 | 1.1− | 1.5+ | 2006 10 19 | 703 | 0.1− | 0.7+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.5+ | 2003 03 07 | 704 | 0.4+ | 1.1+ | 2006 10 19 | 703 | 0.4+ | 0.2+ | | |
| 2001 12 17 | 704 | 0.7+ | 0.7+ | 2003 03 07 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.5− | 0.6+ | | |
| 2001 12 17 | 704 | 0.5+ | 0.7+ | 2003 03 07 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2001 12 17 | 704 | (2.4+ | 0.5+) | 2003 03 07 | 704 | (0.8− | 2.2+) | 2006 10 27 | 703 | 1.0+ | 0.2+ | | |
| 2001 12 18 | 704 | 0.3+ | 1.0− | 2003 03 07 | 704 | 0.1+ | 1.3+ | 2006 10 27 | 703 | 0.6− | 0.3− | | |
| 2001 12 18 | 704 | 0.5+ | 0.8− | 2003 03 10 | 699 | 0.5+ | 1.1+ | 2006 10 27 | 703 | 0.2− | 0.4− | | |
| 2001 12 18 | 704 | 0.0 | 1.0− | 2003 03 10 | 699 | (1.6+ | 0.9+) | 2006 10 27 | 703 | 0.9− | 0.2− | | |
| 2001 12 18 | 704 | 0.8+ | 0.3− | 2003 03 10 | 704 | 0.7+ | 0.6+ | 2006 11 14 | 644 | 0.1+ | 0.3+ | | |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2003 03 10 | 699 | 0.2− | 0.5+ | 2006 11 14 | 644 | 0.2+ | 0.4+ | | |
| 2001 12 18 | 704 | 0.3− | 0.1− | 2003 03 10 | 704 | 1.2+ | 0.1− | 2006 11 14 | 644 | 0.2− | 0.1− | | |
| 2001 12 18 | 704 | 0.3+ | 0.8− | 2003 03 10 | 699 | 0.4− | 0.5+ | 2006 11 15 | 703 | 0.5+ | 0.6+ | | |
| 2001 12 18 | 704 | 0.4− | 0.3− | 2003 03 10 | 704 | (0.2+ | 1.7+) | 2006 11 15 | 703 | 0.4− | 0.6+ | | |
| 2001 12 18 | 704 | 0.0 | 1.1− | 2003 03 10 | 704 | 1.3+ | 1.4+ | 2006 11 15 | 703 | 0.1+ | 0.7+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.7− | 2003 03 11 | 704 | 1.0+ | 1.0+ | 2006 11 15 | 703 | 0.6+ | 0.3+ | | |
| 2001 12 19 | 704 | 0.6− | 0.2− | 2003 03 11 | 704 | 0.8+ | 0.5+ | 2006 11 17 | 644 | 0.3− | 0.4+ | | |
| 2001 12 19 | 704 | 0.8− | 0.3− | 2003 03 11 | 704 | 0.7+ | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.3+ | | |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2003 03 25 | 644 | 0.2+ | 0.3− | 2006 11 17 | 644 | 0.3− | 0.0 | | |
| 2001 12 19 | 704 | 1.0− | 0.4+ | 2003 03 25 | 644 | 0.1+ | 0.1− | 2006 11 21 | 703 | 0.4+ | 1.4+ | | |
| 2001 12 19 | 704 | 0.1− | 0.5− | 2003 03 25 | 699 | 0.1+ | 0.4+ | 2006 11 21 | 703 | 0.7− | 0.7− | | |
| 2001 12 19 | 704 | 0.6− | 0.4+ | 2003 03 25 | 644 | 0.2+ | 0.2− | 2006 11 21 | 703 | 0.0 | 0.4− | | |
| 2001 12 19 | 704 | 1.0− | 0.7− | 2003 03 25 | 699 | 0.9− | 0.2− | 2006 11 21 | 703 | 0.5− | 0.3+ | | |

**(141083)∗ 2001 XE$_{35}$ = 2000 QR$_{175}$**

Discovered 2001 Dec. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 23169)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.87599 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18118064 | $\omega$ | 97.77778 | | +0.72613133 | −0.67723391 | |
| $a$ | 3.0931064 | $\Omega$ | 304.94119 | | +0.55987153 | +0.68260864 | |
| $e$ | 0.0953243 | $i$ | 8.32517 | | +0.39909544 | +0.27459000 | |
| $P$ | 5.44 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.3− | 1.1+ | 2001 12 22 | 704 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.5− | | |
| 2000 08 31 | 704 | 0.2+ | 0.4+ | 2001 12 22 | 704 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.0 | 0.8− | | |
| 2000 08 31 | 704 | 0.7− | 1.1+ | 2001 12 22 | 704 | 0.6+ | 0.0 | 2006 09 28 | 703 | 0.7− | 1.0− | | |
| 2000 08 31 | 704 | 0.7− | 0.7+ | 2001 12 22 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.3+ | | |
| 2000 08 31 | 704 | 0.1+ | 0.4+ | 2001 12 22 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2000 09 03 | 704 | 0.0 | 0.2+ | 2001 12 23 | 704 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1− | | |
| 2000 09 03 | 704 | 0.2+ | 0.2+ | 2001 12 23 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.1− | | |
| 2000 09 03 | 704 | 0.7− | 0.8− | 2001 12 23 | 704 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.4− | 0.7+ | | |
| 2001 12 09 | 704 | 0.3− | 0.4− | 2001 12 23 | 704 | 0.8+ | 0.1− | 2006 10 19 | 703 | 0.0 | 0.6− | | |
| 2001 12 09 | 704 | 0.3− | 0.3− | 2002 01 08 | 704 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.5+ | 0.6+ | | |
| 2001 12 09 | 704 | 0.4− | 0.0 | 2002 01 08 | 704 | 0.8+ | 0.0 | 2006 10 21 | 704 | 0.8− | 0.6+ | | |
| 2001 12 09 | 704 | 0.2+ | 0.1+ | 2002 01 08 | 704 | 0.5− | 0.5+ | 2006 10 21 | 704 | 0.1− | 0.1+ | | |
| 2001 12 09 | 704 | 0.9− | 0.4− | 2002 01 15 | 704 | 0.6− | 0.6− | 2006 10 21 | 704 | 0.9− | 0.4− | | |
| 2001 12 13 | 644 | 0.1− | 0.2+ | 2002 01 15 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2001 12 13 | 644 | 0.1− | 0.4+ | 2002 01 15 | 704 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | | |
| 2001 12 13 | 644 | 0.2− | 0.2+ | 2005 07 02 | 691 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.3+ | | |
| 2001 12 13 | 644 | 0.3− | 0.1− | 2005 07 02 | 691 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.3− | 0.4− | | |
| 2001 12 13 | 644 | 0.0 | 0.1− | 2005 07 02 | 691 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.2+ | 1.1− | | |
| 2001 12 13 | 644 | 0.0 | 0.0 | 2005 07 07 | 691 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.1+ | | |
| 2001 12 14 | 644 | 0.4− | 0.2+ | 2005 07 07 | 691 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.3− | 0.6− | | |
| 2001 12 14 | 644 | 0.5− | 0.3+ | 2005 07 07 | 691 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.2− | 0.2+ | | |
| 2001 12 14 | 644 | 0.5− | 0.4+ | 2005 08 01 | E12 | (1.4− | 1.6+) | 2006 11 15 | 703 | 1.2+ | 0.1+ | | |
| 2001 12 17 | 704 | (2.1− | 1.5+) | 2005 08 01 | E12 | (0.4− | 2.8+) | 2006 11 15 | 703 | 0.0 | 0.7− | | |
| 2001 12 17 | 704 | (1.3− | 2.2+) | 2005 08 01 | E12 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.8− | | |
| 2001 12 17 | 704 | (2.4− | 1.8+) | 2005 08 01 | E12 | 1.0+ | 0.8+ | | | | | | |
| 2001 12 17 | 704 | (1.2− | 1.7+) | 2006 09 28 | 703 | 0.6+ | 0.4+ | | | | | | |

**(141084)∗ 2001 XJ$_{35}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.98789 | | (2000.0) | | +0.08114068 | −0.99382714 |
| $n$ | 0.18047960 | $\omega$ | 113.98344 | | +0.84821798 | +0.10871376 |
| $a$ | 3.1011109 | $\Omega$ | 331.04990 | | +0.52339511 | −0.02211171 |
| $e$ | 0.1121414 | $i$ | 8.99210 | | | |
| $P$ | 5.46 | $H$ | 14.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 695 | 0.1− | 0.7+ | 2002 01 08 | 704 | 0.4+ | 1.0− | 2005 07 06 | E12 | 0.3− | 0.7+ | | |
| 2000 09 21 | 695 | 0.2− | 0.7+ | 2002 01 08 | 704 | 0.9− | 0.2− | 2005 07 06 | E12 | (1.0− | 1.8+) | | |
| 2001 09 20 | 704 | (0.5+ | 1.6−) | 2002 01 08 | 704 | (0.5+ | 1.7−) | 2006 09 14 | 644 | 0.0 | 0.4+ | | |
| 2001 09 20 | 704 | 1.4+ | 0.6− | 2002 01 08 | 704 | 0.4+ | 0.7− | 2006 09 14 | 644 | 0.5− | 0.7+ | | |
| 2001 09 20 | 704 | 0.5+ | 0.7− | 2003 01 27 | 608 | 0.6+ | 0.2− | 2006 09 14 | 644 | 0.4− | 0.2+ | | |
| 2001 09 20 | 704 | 1.2+ | 1.4− | 2003 01 27 | 608 | 0.4+ | 0.5− | 2006 09 16 | 703 | 0.3− | 0.4− | | |
| 2001 10 15 | 704 | 0.1+ | 0.0 | 2003 01 27 | 608 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.9− | | |
| 2001 10 15 | 704 | 0.0 | 0.1+ | 2003 02 01 | 291 | 0.2− | 0.2+ | 2006 09 16 | 703 | 1.1− | 0.4+ | | |
| 2001 10 15 | 704 | 0.5− | 1.0+ | 2003 02 01 | 291 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.3− | | |
| 2001 10 15 | 704 | 0.3− | 0.6+ | 2003 02 01 | 291 | 1.5− | 0.7+ | 2006 09 19 | 699 | 0.0 | 0.7+ | | |
| 2001 10 15 | 704 | 0.5− | 1.1+ | 2003 02 08 | 608 | 0.5+ | 0.8− | 2006 09 19 | 699 | 0.6+ | 0.3+ | | |
| 2001 11 11 | 704 | (0.6+ | 2.1+) | 2003 02 08 | 608 | 0.3+ | 0.7− | 2006 09 19 | 699 | 0.0 | 1.0+ | | |
| 2001 11 11 | 704 | 1.0+ | 0.9+ | 2003 02 08 | 608 | 0.5+ | 0.3− | 2006 09 27 | 699 | 0.9− | 0.3+ | | |
| 2001 11 11 | 704 | 1.3+ | 0.7+ | 2003 02 23 | 699 | 0.3− | 0.1+ | 2006 09 27 | 699 | (1.5− | 1.6+) | | |
| 2001 11 11 | 704 | 0.8+ | 1.3+ | 2003 02 23 | 699 | 0.3+ | 0.4+ | 2006 09 27 | 699 | 0.6− | 0.7+ | | |
| 2001 11 11 | 704 | 0.5+ | 0.9+ | 2003 02 23 | 699 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.9− | 0.1+ | | |
| 2001 12 09 | 704 | 0.3+ | 0.3− | 2003 02 23 | 699 | 1.1+ | 1.1+ | 2006 09 27 | 703 | 0.2− | 0.6+ | | |
| 2001 12 09 | 704 | 0.2− | 0.3− | 2003 03 06 | 644 | 0.2− | 0.8+ | 2006 09 27 | 703 | 0.1+ | 0.2+ | | |
| 2001 12 09 | 704 | 0.0 | 0.1+ | 2003 03 06 | 644 | 0.3+ | 0.2− | 2006 09 27 | 703 | 0.4+ | 0.3+ | | |
| 2001 12 09 | 704 | 0.3+ | 0.3+ | 2003 03 06 | 644 | 0.3+ | 0.3− | 2006 09 27 | 703 | 0.1+ | 0.0 | | |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2003 03 09 | 704 | 1.0+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.0 | | |
| 2001 12 14 | 704 | 0.8− | 0.4− | 2003 03 09 | 704 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.8+ | | |
| 2001 12 14 | 704 | 0.6− | 0.7− | 2003 03 09 | 704 | 0.3+ | 0.4− | 2006 10 17 | 703 | 1.3− | 0.3+ | | |
| 2001 12 14 | 704 | 0.1− | 0.6− | 2003 03 09 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.7+ | | |
| 2001 12 18 | 699 | 0.0 | 0.5+ | 2003 03 09 | 704 | 0.9+ | 1.0− | 2006 10 21 | 644 | 0.4− | 0.5+ | | |
| 2001 12 18 | 699 | 0.5− | 0.1+ | 2003 03 24 | 691 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.5+ | | |
| 2001 12 18 | 699 | 0.7− | 0.8− | 2003 03 24 | 691 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.5+ | | |
| 2001 12 18 | 699 | (1.8+ | 0.0 ) | 2003 03 24 | 691 | 0.5+ | 0.6+ | 2006 10 27 | 683 | 1.5− | 1.3− | | |
| 2001 12 22 | 704 | 0.5− | 0.5− | 2003 03 26 | 699 | 0.3+ | 1.1− | 2006 10 27 | 683 | 1.1− | 1.0− | | |
| 2001 12 22 | 704 | 0.3− | 0.5− | 2003 03 26 | 699 | 0.2− | 0.5− | 2006 10 27 | 683 | 0.7+ | 0.2+ | | |
| 2001 12 22 | 704 | 0.4− | 0.2− | 2003 03 26 | 699 | 0.5+ | 0.9− | 2006 10 28 | 683 | 1.5+ | 0.5+ | | |
| 2001 12 22 | 704 | 0.6− | 0.1− | 2003 03 26 | 699 | (2.0− | 0.5−) | 2006 10 28 | 683 | (3.2+ | 1.4−) | | |
| 2001 12 22 | 704 | 0.3− | 0.2− | 2005 07 06 | E12 | (2.1− | 0.8+) | 2006 10 28 | 683 | 1.7+ | 0.6+ | | |
| 2002 01 08 | 704 | 0.3+ | 0.5− | 2005 07 06 | E12 | 0.6− | 0.8+ | | | | | | |

**(141085)∗ 2001 XQ$_{35}$ = 2003 BB$_{80}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40911)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.44032 | | (2000.0) | | +0.91927859 | +0.39144741 |
| $n$ | 0.18446041 | $\omega$ | 324.25227 | | −0.30444588 | +0.77344974 |
| $a$ | 3.0563325 | $\Omega$ | 12.89664 | | −0.24947860 | +0.49854231 |
| $e$ | 0.1285117 | $i$ | 10.63222 | | | |
| $P$ | 5.34 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 1.1− | 0.5+ | 2004 04 20 | 704 | 0.1− | 1.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2001 12 09 | 704 | 0.2+ | 0.5− | 2004 04 20 | 704 | 0.1+ | 1.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2001 12 09 | 704 | 0.0 | 0.0 | 2004 04 24 | E12 | 0.5+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.1+ | | |
| 2001 12 09 | 704 | 0.2− | 0.6− | 2004 04 24 | E12 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1+ | | |
| 2001 12 09 | 704 | 0.3− | 0.5+ | 2004 04 24 | E12 | 0.9+ | 0.9+ | 2006 10 19 | 644 | 0.4− | 0.2− | | |
| 2001 12 14 | 704 | 0.6+ | 0.2+ | 2004 04 24 | E12 | (0.8+ | 2.1+) | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2001 12 14 | 704 | 0.4+ | 1.1+ | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2001 12 14 | 704 | 1.0+ | 0.9+ | 2006 07 21 | G96 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2001 12 22 | 704 | 0.4+ | 0.2− | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 12 22 | 704 | 0.7+ | 0.7− | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2001 12 22 | 704 | 0.7− | 0.6− | 2006 09 18 | 699 | 0.5+ | 0.9+ | 2006 10 21 | 703 | 0.2+ | 1.2− | | |
| 2001 12 22 | 704 | 0.5− | 0.6+ | 2006 09 18 | 699 | 0.7− | 0.0 | 2006 10 21 | 703 | 0.5− | 0.0 | | |
| 2001 12 22 | 704 | 0.9− | 0.0 | 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.6− | | |
| 2003 01 24 | 644 | 0.5+ | 0.7+ | 2006 09 18 | 699 | 0.7+ | 0.1+ | 2006 10 21 | 703 | 1.0− | 0.5− | | |
| 2003 01 24 | 644 | 0.8+ | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 25 | 106 | 0.3− | 0.0 | | |
| 2003 01 24 | 644 | 0.9+ | 0.9+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 25 | 106 | 0.1− | 0.5− | | |
| 2003 01 31 | 704 | 0.7+ | 0.2− | 2006 09 18 | 699 | 0.8− | 0.5+ | 2006 10 25 | 106 | 1.0− | 0.5+ | | |
| 2003 01 31 | 704 | 0.7+ | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.9+ | 2006 10 25 | 106 | 0.3− | 0.3+ | | |
| 2003 01 31 | 704 | 0.4+ | 0.6− | 2006 09 20 | 704 | 0.6+ | 0.6+ | 2006 11 07 | 644 | 0.8+ | 0.4+ | | |
| 2003 02 01 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.9+ | 2006 11 07 | 644 | 0.7− | 0.2− | | |
| 2003 02 01 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.9+ | 2006 11 07 | 644 | 0.2− | 0.1− | | |
| 2003 02 01 | 644 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.0 | | |
| 2003 03 07 | 645 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.8+ | 2006 11 07 | 644 | 0.0 | 0.2− | | |
| 2003 03 07 | 645 | 0.1− | 0.1− | 2006 09 25 | 704 | 1.3+ | 0.1+ | 2006 11 07 | 644 | 0.4− | 0.0 | | |
| 2003 04 26 | 645 | 0.1− | 0.1− | 2006 09 25 | 704 | 1.2+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.4+ | | |
| 2003 04 26 | 645 | 0.2− | 0.2− | 2006 09 25 | 704 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.6− | 0.9+ | | |
| 2004 03 27 | 291 | 0.3+ | 0.5+ | 2006 09 29 | 691 | 0.4− | 0.4+ | 2006 11 14 | 703 | 0.7− | 0.5+ | | |
| 2004 03 27 | 291 | 0.6+ | 0.4+ | 2006 09 29 | 691 | 0.4− | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.5− | | |
| 2004 03 27 | 291 | 0.9+ | 0.7+ | 2006 09 29 | 691 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.7+ | | |
| 2004 03 27 | 704 | 0.4+ | 0.9+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 1.1+ | | |
| 2004 03 27 | 704 | 0.9+ | 1.1+ | 2006 10 02 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.5+ | | |
| 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.9+ | | |
| 2004 03 27 | 704 | (1.6+ | 0.4+) | 2006 10 03 | 704 | 1.0+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.9+ | | |
| 2004 04 20 | 691 | 0.4+ | 0.7+ | 2006 10 03 | 704 | 0.1+ | 0.6+ | 2006 11 25 | G96 | 0.1− | 0.3− | | |
| 2004 04 20 | 691 | 0.3+ | 0.8+ | 2006 10 03 | 704 | 0.7+ | 0.7+ | 2006 11 25 | G96 | 0.2− | 0.3− | | |
| 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 10 03 | 704 | 0.9+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.2− | | |
| 2004 04 20 | 704 | 0.8+ | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.7− | 0.4− | | |
| 2004 04 20 | 704 | 1.1+ | 1.2+ | 2006 10 10 | 644 | 0.1− | 0.3− | | | | | | |

**(141086)∗ 2001 XQ$_{36}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.54094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19191600 | $\omega$ | 1.31794 | | +0.86399288 | −0.49527781 | |
| $a$ | 2.9766556 | $\Omega$ | 28.93657 | | +0.46022501 | +0.70380472 | |
| $e$ | 0.1078246 | $i$ | 10.79764 | | +0.20422840 | +0.50927282 | |
| $P$ | 5.14 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 30 | 327 | 1.0+ | 0.0 | 2005 07 10 | E12 | 0.2− | 0.5− | 2006 11 15 | 704 | 0.3+ | 0.2+ |
| 1998 01 30 | 327 | 0.4+ | 0.4− | 2005 07 27 | E12 | 0.5− | 0.1− | 2006 11 16 | 704 | 0.4+ | 1.2+ |
| 1998 01 30 | 327 | 0.2− | 0.1+ | 2005 07 27 | E12 | 0.4+ | 0.5+ | 2006 11 16 | 704 | 1.2− | 0.3+ |
| 2001 10 14 | 704 | 0.2+ | 0.5− | 2005 07 27 | E12 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.5− | 0.2− |
| 2001 10 14 | 704 | 0.3− | 0.3− | 2005 07 27 | E12 | 0.9− | 0.3+ | 2006 11 16 | 704 | 0.4− | 0.2+ |
| 2001 10 14 | 704 | 0.6− | 0.2− | 2005 08 10 | E12 | 0.0 | 0.5− | 2006 11 16 | 704 | 0.1− | 0.1− |
| 2001 10 14 | 704 | 0.3− | 0.6− | 2005 08 10 | E12 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.5− | 0.1− |
| 2001 10 14 | 704 | 0.1+ | 0.2+ | 2005 08 10 | E12 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.4− | 0.5+ |
| 2001 12 09 | 704 | 0.3− | 0.3+ | 2005 08 10 | E12 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.8+ | 0.0 |
| 2001 12 09 | 704 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.7− | 0.8+ |
| 2001 12 09 | 704 | 0.6+ | 1.1− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 12 09 | 704 | 0.4− | 0.1− | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 12 09 | 704 | 0.3− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2001 12 14 | 704 | 0.4+ | 1.2+ | 2006 10 19 | 703 | 0.7− | 0.9− | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 12 14 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.8− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | (2.0+ | 0.5+) | 2006 10 19 | 703 | 0.5+ | 1.1− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 12 22 | 704 | 0.2− | 0.1− | 2006 10 19 | 703 | 1.1− | 0.7− | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 2001 12 22 | 704 | 0.2+ | 0.8+ | 2006 10 23 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.6+ |
| 2001 12 22 | 704 | 0.6+ | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.8+ |
| 2001 12 22 | 704 | 0.7− | 0.4+ | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2002 01 08 | 704 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2002 01 08 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2002 01 08 | 704 | 0.6− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2002 01 08 | 704 | 0.1− | 0.8− | 2006 11 11 | 644 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2002 01 08 | 704 | 0.0 | 1.1+ | 2006 11 11 | 644 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.3− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.8− | 0.8+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2003 02 03 | 608 | 0.4+ | 0.1− | 2006 11 14 | 703 | 1.5− | 1.2+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 02 03 | 608 | 0.3+ | 0.7+ | 2006 11 14 | 703 | 0.8+ | 0.8+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2003 02 03 | 608 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.3− | 2006 11 28 | 704 | 0.5− | 0.5− |
| 2003 02 09 | 608 | 1.1− | 1.4− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.3− |
| 2003 02 09 | 608 | 0.1+ | 0.7− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 1.1− | 0.9− |
| 2003 02 09 | 608 | 0.1+ | 0.8− | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.3− |
| 2005 07 10 | E12 | 0.6+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.9− |
| 2005 07 10 | E12 | 0.9− | 0.0 | 2006 11 15 | 704 | 0.1− | 0.1+ | | | | |
| 2005 07 10 | E12 | 0.9+ | 0.0 | 2006 11 15 | 704 | 0.2+ | 0.2− | | | | |

**(141087)∗ 2001 XK$_{37}$ = 2003 FD$_{76}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46971)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.07151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18954151 | $\omega$ | 137.53323 | | −0.23883237 | −0.96752175 | |
| $a$ | 3.0014641 | $\Omega$ | 326.03856 | | +0.84636349 | −0.16558769 | |
| $e$ | 0.1122209 | $i$ | 8.52678 | | +0.47605456 | −0.19100361 | |
| $P$ | 5.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.3− | 0.6+ | 2003 02 11 | 608 | 0.3+ | 1.0− | 2003 03 31 | 704 | 0.1+ | 0.4+ |
| 1995 10 24 | 691 | 0.3− | 0.3+ | 2003 02 11 | 608 | 0.3+ | 0.5− | 2005 08 25 | 644 | 0.4+ | 1.1+ |
| 1995 10 24 | 691 | 0.2− | 0.3+ | 2003 03 07 | 699 | 0.7+ | 0.1+ | 2005 08 25 | 644 | 0.1− | 1.1+ |
| 2001 11 11 | 704 | 0.3− | 0.5+ | 2003 03 07 | 704 | 0.1+ | 0.5+ | 2005 08 25 | 644 | 0.1− | 0.8+ |
| 2001 11 11 | 704 | 0.6− | 0.3+ | 2003 03 07 | 699 | 0.8+ | 0.0 | 2005 09 29 | G96 | 0.4− | 0.1+ |
| 2001 11 11 | 704 | 0.6− | 0.4− | 2003 03 07 | 704 | 0.1− | 1.0+ | 2005 09 29 | G96 | 0.5− | 0.2+ |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2003 03 07 | 699 | 0.1− | 0.1+ | 2005 09 29 | G96 | 0.6− | 0.3− |
| 2001 11 11 | 704 | 0.4+ | 1.3+ | 2003 03 07 | 699 | 0.4− | 0.2− | 2005 09 29 | G96 | 0.1− | 0.4+ |
| 2001 12 09 | 704 | 0.2− | 0.2+ | 2003 03 07 | 704 | (1.3+ | 1.8+) | 2006 10 19 | 703 | 0.2− | 0.6+ |
| 2001 12 09 | 704 | 0.3− | 1.5+ | 2003 03 07 | 704 | 0.5+ | 1.1+ | 2006 10 19 | 703 | 0.4+ | 0.0 |
| 2001 12 09 | 704 | 0.0 | 0.3+ | 2003 03 07 | 704 | 0.2+ | 1.2+ | 2006 10 19 | 703 | 1.4− | 1.0− |
| 2001 12 14 | 704 | 0.6+ | 0.2− | 2003 03 27 | 644 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.7+ | 0.6− |
| 2001 12 14 | 704 | 0.0 | 0.5+ | 2003 03 27 | 644 | 0.1− | 1.1+ | 2006 11 08 | 644 | 1.2+ | 0.9− |
| 2001 12 14 | 704 | 0.1+ | 0.3+ | 2003 03 27 | 644 | 0.3+ | 1.1+ | 2006 11 08 | 644 | 0.4+ | 0.1+ |
| 2001 12 14 | 704 | 1.0+ | 0.3− | 2003 03 30 | 644 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 12 22 | 704 | 0.2+ | 0.7+ | 2003 03 30 | 644 | 0.5− | 0.7+ | 2006 11 22 | 703 | 0.1+ | 0.6− |
| 2001 12 22 | 704 | 0.7− | 0.3− | 2003 03 30 | 644 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.1+ |
| 2001 12 22 | 704 | 0.2− | 0.3− | 2003 03 31 | 704 | 0.9+ | 0.3− | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2001 12 22 | 704 | 0.1+ | 0.4+ | 2003 03 31 | 704 | 0.9+ | 0.1− | 2006 11 22 | 703 | 1.0− | 0.1− |
| 2001 12 22 | 704 | 0.2− | 0.8− | 2003 03 31 | 704 | 0.7+ | 1.1+ | | | | |
| 2003 02 11 | 608 | 0.4+ | 1.1− | 2003 03 31 | 704 | 0.6− | 0.8+ | | | | |

**(141088)∗ 2001 XR$_{39}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.45285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17453975 | $\omega$ | 306.45846 | | +0.92890304 | −0.12296896 | |
| $a$ | 3.1710747 | $\Omega$ | 63.05797 | | +0.30378366 | +0.79248137 | |
| $e$ | 0.1301091 | $i$ | 23.06894 | | −0.21178913 | +0.59737083 | |
| $P$ | 5.65 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 26 | 691 | (3.8+ | 1.3+) | 2001 12 09 | 704 | 0.1− | 0.2− | 2006 08 05 | E12 | 0.1+ | 0.0 |
| 1993 04 26 | 691 | 0.1− | 0.1− | 2001 12 09 | 704 | 0.4− | 0.2+ | 2006 08 05 | E12 | 0.3+ | 0.1− |
| 1993 04 26 | 691 | 0.0 | 0.2− | 2001 12 09 | 704 | 0.2+ | 0.1+ | 2006 08 05 | E12 | 0.3+ | 0.6+ |
| 1995 11 17 | 691 | 0.1− | 0.1− | 2001 12 14 | 704 | 0.4+ | 0.4+ | 2006 08 05 | E12 | 0.1− | 0.9+ |
| 1995 11 17 | 691 | 0.3− | 0.1− | 2001 12 14 | 704 | 1.2+ | 0.3+ | 2006 09 25 | 703 | 1.0− | 0.4− |
| 1995 11 17 | 691 | 0.2− | 0.1− | 2001 12 14 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 703 | 0.1− | 0.4− |
| 1995 12 16 | 691 | 0.1+ | 0.1− | 2001 12 14 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 703 | 0.1− | 0.6+ |
| 1995 12 16 | 691 | 0.1− | 0.1+ | 2001 12 14 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 703 | 0.2− | 0.2− |
| 1995 12 16 | 691 | 0.2+ | 0.0 | 2001 12 22 | 704 | 0.0 | 0.3+ | 2006 10 04 | 703 | 0.4+ | 0.0 |
| 1995 12 23 | 691 | 0.1+ | 0.3− | 2001 12 22 | 704 | 0.3+ | 0.3− | 2006 10 04 | 703 | 0.1+ | 0.1− |
| 1995 12 23 | 691 | 0.3+ | 0.2− | 2001 12 22 | 704 | 0.7− | 0.2− | 2006 10 04 | 703 | 0.3− | 0.3+ |
| 1995 12 23 | 691 | 0.2+ | 0.0 | 2001 12 22 | 704 | 0.3+ | 0.0 | 2006 10 04 | 703 | 0.3+ | 0.3− |
| 2001 11 11 | 704 | 0.4− | 0.2+ | 2003 03 10 | 644 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.7− | 0.2+ |
| 2001 11 11 | 704 | 1.0+ | 0.1+ | 2003 03 10 | 644 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 11 11 | 704 | 0.4− | 0.2− | 2003 03 10 | 644 | 0.2− | 0.8+ | 2006 10 09 | 644 | 0.3− | 0.4+ |
| 2001 11 11 | 704 | 0.6− | 0.1+ | 2003 04 01 | 644 | 0.0 | 0.3+ | 2006 10 31 | 703 | 0.2+ | 0.3+ |
| 2001 11 11 | 704 | 0.7− | 0.8+ | 2003 04 01 | 644 | 0.1+ | 0.4+ | 2006 10 31 | 703 | 0.8− | 0.2+ |
| 2001 12 07 | 644 | 0.1− | 0.1− | 2003 04 01 | 644 | 0.1− | 0.4+ | 2006 10 31 | 703 | 0.9− | 1.4+ |
| 2001 12 07 | 644 | 0.1− | 0.2+ | 2004 04 16 | 704 | 0.1+ | 0.2− | 2006 10 31 | 703 | 1.2+ | 1.1+ |
| 2001 12 07 | 644 | (1.6− | 0.0 ) | 2004 04 16 | 704 | 0.3+ | 0.5+ | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2001 12 07 | 644 | 0.1− | 0.2− | 2004 04 16 | 704 | 0.3+ | 0.2− | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 2001 12 07 | 644 | 0.2− | 0.1− | 2004 04 16 | 704 | 0.5− | 0.7+ | 2006 11 06 | 644 | 0.7− | 0.0 |
| 2001 12 07 | 644 | 0.1+ | 0.0 | 2004 05 23 | 704 | 0.2+ | 1.2+ | 2006 11 23 | 703 | 0.4− | 0.1− |
| 2001 12 09 | 704 | 0.1+ | 0.7− | 2004 05 23 | 704 | 0.9+ | 0.1− | 2006 11 23 | 703 | 0.1− | 0.4− |
| 2001 12 09 | 704 | 0.2− | 0.0 | 2004 05 23 | 704 | 1.0+ | 0.8+ | 2006 11 23 | 703 | 0.2− | 0.6− |

**(141089)∗ 2001 XA$_{40}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.98281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18329921 | $\omega$ | 9.69517 | | +0.58837025 | −0.79151630 | |
| $a$ | 3.0692269 | $\Omega$ | 44.49895 | | +0.72517485 | +0.42610020 | |
| $e$ | 0.2667728 | $i$ | 13.64077 | | +0.35768966 | +0.43811021 | |
| $P$ | 5.38 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 691 | 0.8+ | 0.9+ | 2006 09 21 | 699 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 1998 04 24 | 691 | 0.8+ | 1.2+ | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 1998 04 24 | 691 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2+ | 0.4− | 2006 09 25 | 699 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.3− | 0.1− | 2001 10 21 | 704 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 0.4− | 0.8− | 2006 09 25 | 699 | 0.4− | 0.4− | 2006 10 23 | 644 | 0.4− | 0.1− | 2001 10 21 | 704 | 0.7+ | 0.3− |
| 2001 10 14 | 704 | (1.8− | 0.0 ) | 2006 09 26 | 704 | 0.9+ | 0.2− | 2006 10 27 | 704 | 0.8− | 0.1+ | 2001 11 11 | 704 | 0.0 | 1.3− |
| 2001 10 14 | 704 | 0.5+ | 0.5− | 2006 09 26 | 704 | 0.2− | 0.9+ | 2006 10 27 | 704 | 0.1− | 0.6+ | 2001 11 11 | 704 | 0.3+ | 0.5− |
| 2001 10 14 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.3− | 0.7+ | 2001 11 11 | 704 | 0.0 | 0.6− |
| 2001 11 11 | 704 | (0.4− | 1.6+) | 2006 09 26 | 704 | 0.3− | 0.9+ | 2006 10 27 | 704 | 0.0 | 0.3+ | 2001 11 11 | 704 | 0.3+ | 0.0 |
| 2001 11 11 | 704 | (0.8− | 1.7+) | 2006 09 26 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 704 | 0.5− | 0.7+ | 2001 11 11 | 704 | 0.2+ | 0.1+ |
| 2001 11 11 | 704 | 1.0− | 1.3+ | 2006 09 26 | 704 | 0.5− | 0.7+ | 2006 10 31 | 704 | 0.2+ | 0.3− | 2001 12 09 | 704 | 0.3+ | 1.5− |
| 2001 11 11 | 704 | (0.9− | 2.2+) | 2006 09 26 | 704 | 0.3+ | 0.4+ | 2006 10 31 | 704 | 0.2− | 0.5+ | 2001 12 09 | 704 | 0.2− | 1.1− |
| 2001 11 11 | 704 | (0.6− | 1.7+) | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 31 | 704 | (1.6+ | 0.8+) | 2001 12 09 | 704 | 0.4− | 1.1− |
| 2001 12 07 | 644 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2001 12 09 | 704 | 0.9− | 0.8− |
| 2001 12 07 | 644 | 0.4+ | 0.5− | 2006 09 26 | 703 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2001 12 14 | 704 | 0.0 | 0.1+ |
| 2001 12 07 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1− | 0.0 | 2001 12 14 | 704 | 0.2+ | 0.3+ |
| 2001 12 07 | 644 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.5− | 2006 11 13 | 703 | 0.3− | 0.8− | 2001 12 14 | 704 | 0.5+ | 0.2+ |
| 2001 12 07 | 644 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.0 | 0.5− | 2006 11 13 | 703 | 0.8− | 1.2− | 2001 12 14 | 704 | 0.2+ | 0.2− |
| 2001 12 07 | 644 | 0.4+ | 0.3− | 2006 09 29 | 699 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.8− | 0.2− | 2001 12 14 | 704 | 0.4+ | 0.0 |
| 2001 12 09 | 704 | 1.5− | 1.2− | 2006 09 29 | 699 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.3− | 0.5+ | 2001 12 20 | 644 | 0.4+ | 0.1+ |
| 2001 12 09 | 704 | 0.3+ | 0.5− | 2006 09 29 | 699 | 0.2+ | 0.7+ | 2006 11 14 | 704 | 0.0 | 0.5+ | 2001 12 20 | 644 | 0.5+ | 0.0 |
| 2001 12 09 | 704 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.0 | 1.0+ | 2001 12 20 | 644 | 0.3+ | 0.1+ |
| 2001 12 14 | 704 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.4+ | 0.1+ | 2001 12 22 | 704 | 0.0 | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.1+ | 2001 12 22 | 704 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | 1.2− | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.2− | 1.3+ | 2001 12 22 | 704 | 0.2+ | 0.2+ |
| 2001 12 14 | 704 | 0.3− | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.3− | 1.3+ | 2001 12 22 | 704 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.1− | 0.6+ | 2001 12 22 | 704 | 0.1+ | 0.2+ |
| 2001 12 22 | 704 | 0.3− | 0.8− | 2006 10 04 | G96 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.7+ | 0.4+ | 2002 01 05 | 644 | 0.2− | 0.4+ |
| 2001 12 22 | 704 | 0.0 | 0.9− | 2006 10 04 | G96 | 0.2− | 0.7− | 2006 11 18 | G96 | 0.0 | 0.1− | 2002 01 05 | 644 | 0.1− | 0.3+ |
| 2001 12 22 | 704 | 0.3+ | 0.7− | 2006 10 04 | G96 | 0.7+ | 0.8− | 2006 11 18 | G96 | 0.2− | 0.1− | 2002 01 05 | 644 | 0.4− | 0.3+ |
| 2001 12 22 | 704 | 0.2+ | 0.6− | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.5− | 2002 01 06 | 704 | 0.0 | 0.9+ |
| 2002 01 07 | 704 | 0.6+ | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.4− | 0.2− | 2002 01 06 | 704 | 0.0 | 1.2+ |
| 2002 01 07 | 704 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1− | 2002 01 06 | 704 | 0.1− | 1.2+ |
| 2002 01 07 | 704 | 0.7+ | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.5− | 2002 01 06 | 704 | 0.1− | 1.1+ |
| 2002 01 07 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.0 | 2002 01 06 | 704 | 0.9− | 0.9+ |
| 2003 03 26 | 644 | 0.5+ | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.7+ | 2002 01 14 | 644 | 0.1− | 0.1− |
| 2003 03 26 | 644 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.2+ | 2002 01 14 | 644 | 0.2− | 0.2− |
| 2003 03 26 | 644 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.4+ | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.1+ | 2002 01 14 | 644 | 0.2− | 0.1− |
| 2003 04 11 | 291 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− | 2002 01 23 | 704 | 0.3+ | 0.3− |
| 2003 04 11 | 291 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.5− | 0.5+ | 2002 01 23 | 704 | 0.4+ | 0.4− |
| 2003 04 11 | 291 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.7+ | 2002 01 23 | 704 | 0.6+ | 0.2− |
| 2006 08 29 | D35 | 0.2− | 0.1+ | 2006 10 22 | 704 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.0 | 1.4+ | 2002 01 23 | 704 | 0.0 | 0.0 |
| 2006 08 29 | D35 | 0.1− | 0.0 | 2006 10 22 | 704 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.4− | 1.2+ | 2002 01 25 | 704 | 0.5− | 0.2+ |
| 2006 08 29 | D35 | 0.2− | 0.0 | 2006 10 22 | 704 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.6− | 0.5+ | 2002 01 25 | 704 | 0.2− | 0.2+ |
| 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 22 | 704 | 0.8− | 0.5+ | 2006 11 21 | 704 | 0.5− | 0.4+ | 2002 01 25 | 704 | 0.6− | 0.2+ |
| 2006 09 18 | 703 | 0.0 | 0.5+ | 2006 10 22 | 704 | 0.4− | 0.8+ | 2006 11 21 | 704 | 0.1− | 0.7+ | 2002 01 25 | 704 | 0.6− | 0.2+ |
| 2006 09 18 | 703 | 0.8− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2+ | 1.0+ | 2002 03 19 | 704 | 1.2− | 0.3− |
| 2006 09 18 | 703 | 0.8− | 1.2+ | 2006 10 22 | 703 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.7+ | 2002 03 19 | 704 | 0.7− | 0.3− |
| 2006 09 21 | 699 | 0.4+ | 1.0+ | 2006 10 22 | 703 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.7+ | 2002 03 19 | 704 | 0.6− | 0.4+ |
| 2006 09 21 | 699 | 1.0+ | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.1− | | | | | 2002 03 20 | 704 | 0.0 | 0.2+ |
| 2006 09 21 | 699 | 0.5− | 0.4− | 2006 10 22 | 644 | 0.4− | 0.1− | | | | | 2002 03 20 | 704 | 0.2+ | 0.1+ |
| | | | | | | | | | | | | 2002 03 20 | 704 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2002 05 04 | 704 | 1.0− | 0.2+ |
| | | | | | | | | | | | | 2002 05 04 | 704 | 0.1+ | 0.0 |
| | | | | | | | | | | | | 2002 05 04 | 704 | 1.4+ | 0.6+ |
| | | | | | | | | | | | | 2002 05 04 | 704 | 1.0+ | 1.0+ |
| | | | | | | | | | | | | 2003 04 30 | 704 | 0.5− | 0.4− |
| | | | | | | | | | | | | 2003 04 30 | 704 | 0.4− | 0.8+ |
| | | | | | | | | | | | | 2003 04 30 | 704 | 0.1+ | 0.5− |
| | | | | | | | | | | | | 2003 04 30 | 704 | 0.8− | 0.6− |
| | | | | | | | | | | | | 2003 04 30 | 704 | 0.3+ | 0.3+ |
| | | | | | | | | | | | | 2003 04 30 | 704 | (1.6− | 0.2−) |
| | | | | | | | | | | | | 2003 05 05 | 704 | 0.0 | 0.5+ |
| | | | | | | | | | | | | 2003 05 05 | 704 | 0.1− | 0.1+ |
| | | | | | | | | | | | | 2003 05 05 | 704 | 0.0 | 0.4+ |
| | | | | | | | | | | | | 2003 05 05 | 704 | 0.1+ | 0.4+ |
| | | | | | | | | | | | | 2004 07 15 | E12 | 0.1+ | 0.7+ |
| | | | | | | | | | | | | 2004 07 15 | E12 | 0.2+ | 0.1+ |
| | | | | | | | | | | | | 2004 07 15 | E12 | 0.0 | 0.1+ |
| | | | | | | | | | | | | 2004 07 15 | E12 | 0.5− | 0.4+ |
| | | | | | | | | | | | | 2005 09 02 | 644 | 0.4− | 0.6+ |
| | | | | | | | | | | | | 2005 09 02 | 644 | 0.6− | 0.5+ |
| | | | | | | | | | | | | 2005 09 02 | 644 | 0.3− | 0.4+ |
| | | | | | | | | | | | | 2006 09 30 | 703 | 0.9+ | 0.6− |
| | | | | | | | | | | | | 2006 09 30 | 703 | 0.4− | 1.2− |
| | | | | | | | | | | | | 2006 09 30 | 703 | 0.6− | 0.6− |
| | | | | | | | | | | | | 2006 09 30 | 703 | 0.6− | 1.3− |
| | | | | | | | | | | | | 2006 10 03 | 683 | 1.0+ | 0.3− |
| | | | | | | | | | | | | 2006 10 03 | 683 | 0.5− | 0.5+ |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.1+ | 0.0 |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.2− | 0.1− |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.8− | 0.1+ |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.8+ | 0.3+ |
| | | | | | | | | | | | | 2006 10 17 | 683 | 0.4+ | 0.8− |
| | | | | | | | | | | | | 2006 10 17 | 683 | 1.5− | 0.6− |
| | | | | | | | | | | | | 2006 10 19 | 683 | 0.3− | 0.5+ |
| | | | | | | | | | | | | 2006 10 19 | 683 | 0.0 | 0.6+ |
| | | | | | | | | | | | | 2006 10 19 | 683 | (1.9− | 0.3−) |
| | | | | | | | | | | | | 2006 10 20 | 683 | 0.2− | 0.8− |
| | | | | | | | | | | | | 2006 10 20 | 683 | 0.1− | 0.7− |
| | | | | | | | | | | | | 2006 10 20 | 683 | 1.4− | 0.3− |
| | | | | | | | | | | | | 2006 10 21 | 683 | 0.2− | 0.0 |
| | | | | | | | | | | | | 2006 10 21 | 683 | (0.2− | 1.6−) |
| | | | | | | | | | | | | 2006 10 21 | G96 | 0.3+ | 0.5+ |
| | | | | | | | | | | | | 2006 10 21 | G96 | 0.4+ | 0.0 |
| | | | | | | | | | | | | 2006 10 21 | G96 | 0.0 | 0.0 |
| | | | | | | | | | | | | 2006 10 21 | 683 | 0.9− | 0.3− |
| | | | | | | | | | | | | 2006 10 21 | G96 | 0.1+ | 0.0 |
| | | | | | | | | | | | | 2006 10 22 | 683 | 0.5+ | 1.0− |
| | | | | | | | | | | | | 2006 10 22 | 683 | 1.1+ | 0.4+ |
| | | | | | | | | | | | | 2006 10 22 | 683 | 0.0 | 0.9+ |
| | | | | | | | | | | | | 2006 10 23 | 683 | 0.3− | 0.7+ |
| | | | | | | | | | | | | 2006 10 23 | 683 | 0.0 | 0.1− |
| | | | | | | | | | | | | 2006 10 23 | 683 | 1.0− | 0.1− |
| | | | | | | | | | | | | 2006 10 27 | 683 | 0.3+ | 0.2+ |
| | | | | | | | | | | | | 2006 10 27 | 683 | 0.1+ | 0.1+ |
| | | | | | | | | | | | | 2006 10 28 | 683 | 0.8− | 0.4− |
| | | | | | | | | | | | | 2006 10 28 | 683 | 0.6+ | 0.6− |
| | | | | | | | | | | | | 2006 10 28 | 683 | 0.7− | 1.4− |
| | | | | | | | | | | | | 2006 11 09 | 644 | 0.0 | 0.3+ |
| | | | | | | | | | | | | 2006 11 09 | 644 | 0.1− | 0.2+ |
| | | | | | | | | | | | | 2006 11 09 | 644 | 0.1− | 0.2+ |
| | | | | | | | | | | | | 2006 11 10 | 683 | 0.9+ | 0.5− |
| | | | | | | | | | | | | 2006 11 10 | 683 | 0.1+ | 0.0 |
| | | | | | | | | | | | | 2006 11 10 | 683 | 0.2+ | 0.3− |
| | | | | | | | | | | | | 2006 11 10 | 644 | 0.1− | 0.4+ |
| | | | | | | | | | | | | 2006 11 10 | 644 | 0.1− | 0.2+ |
| | | | | | | | | | | | | 2006 11 10 | 644 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2006 11 11 | 683 | 0.8+ | 0.9− |
| | | | | | | | | | | | | 2006 11 11 | 683 | 0.1+ | 1.0− |
| | | | | | | | | | | | | 2006 11 11 | 683 | 1.3− | 1.0− |
| | | | | | | | | | | | | 2006 11 11 | 703 | 0.4− | 0.1− |
| | | | | | | | | | | | | 2006 11 11 | 703 | 0.3− | 0.4− |
| | | | | | | | | | | | | 2006 11 11 | 703 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2006 11 11 | 703 | 0.9+ | 0.4− |
| | | | | | | | | | | | | 2006 11 13 | 683 | (1.8+ | 0.0 ) |
| | | | | | | | | | | | | 2006 11 13 | 683 | 0.9+ | 0.3+ |
| | | | | | | | | | | | | 2006 11 14 | 704 | 0.0 | 1.2+ |
| | | | | | | | | | | | | 2006 11 14 | 704 | 0.3+ | 1.3+ |
| | | | | | | | | | | | | 2006 11 14 | 704 | 0.6+ | 0.9+ |
| | | | | | | | | | | | | 2006 11 14 | 704 | 0.3+ | 0.4+ |
| | | | | | | | | | | | | 2006 11 14 | 704 | 0.3− | 1.2+ |
| | | | | | | | | | | | | 2006 11 15 | 683 | (1.8− | 1.6−) |
| | | | | | | | | | | | | 2006 11 15 | 683 | (1.0− | 2.9−) |
| | | | | | | | | | | | | 2006 11 15 | 683 | 1.4− | 0.4− |
| | | | | | | | | | | | | 2006 11 15 | G96 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2006 11 15 | G96 | 0.3+ | 0.1− |
| | | | | | | | | | | | | 2006 11 15 | G96 | 0.0 | 0.1− |
| | | | | | | | | | | | | 2006 11 15 | G96 | 0.1+ | 0.2− |
| | | | | | | | | | | | | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| | | | | | | | | | | | | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| | | | | | | | | | | | | 2006 11 17 | 704 | 0.4− | 0.6+ |
| | | | | | | | | | | | | 2006 11 17 | 704 | 0.2− | 0.7+ |
| | | | | | | | | | | | | 2006 11 17 | 703 | 0.4− | 0.2− |
| | | | | | | | | | | | | 2006 11 17 | 703 | 0.0 | 0.3− |
| | | | | | | | | | | | | 2006 11 17 | 703 | 0.3+ | 0.0 |
| | | | | | | | | | | | | 2006 11 17 | 703 | 0.4− | 0.0 |
| | | | | | | | | | | | | 2006 11 19 | 704 | 0.2− | 0.6+ |
| | | | | | | | | | | | | 2006 11 19 | 704 | 1.3− | 0.3+ |
| | | | | | | | | | | | | 2006 11 19 | 704 | 0.7+ | 0.2− |
| | | | | | | | | | | | | 2006 11 19 | 704 | (2.4− | 0.8−) |
| | | | | | | | | | | | | 2006 11 20 | 704 | 0.6− | 0.4+ |
| | | | | | | | | | | | | 2006 11 20 | 704 | 0.5− | 0.4+ |
| | | | | | | | | | | | | 2006 11 20 | 704 | 0.6− | 0.2+ |
| | | | | | | | | | | | | 2006 11 20 | 704 | 0.4− | 0.1+ |
| | | | | | | | | | | | | 2006 11 20 | 704 | 0.1− | 0.6+ |
| | | | | | | | | | | | | 2006 11 28 | 704 | 0.7+ | 0.3+ |
| | | | | | | | | | | | | 2006 11 28 | 704 | 0.5+ | 0.4+ |
| | | | | | | | | | | | | 2006 11 28 | 704 | 0.7+ | 0.3+ |
| | | | | | | | | | | | | 2006 11 28 | 704 | 0.4+ | 0.3+ |
| | | | | | | | | | | | | 2006 11 28 | 704 | 0.8+ | 0.1+ |

**(141090)∗ 2001 XJ$_{42}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.39101 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17929957 | $\omega$ | 83.18235 | | −0.74848400 | −0.61751227 |
| $a$ | 3.1147024 | $\Omega$ | 58.37931 | | +0.43858152 | −0.73439954 |
| $e$ | 0.2409457 | $i$ | 16.49405 | | +0.49741125 | −0.28166630 |
| $P$ | 5.50 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.1+ | 2003 04 07 | 704 | (1.7+ | 0.1+) | 2006 11 02 | 703 | 0.8+ | 0.5+ |
| 2000 09 26 | 645 | 0.0 | 0.1+ | 2003 04 07 | 704 | 1.1+ | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.7+ |
| 2000 11 29 | 699 | 1.3− | 0.3+ | 2003 04 07 | 704 | 1.5+ | 0.5+ | 2006 11 02 | 703 | 0.4+ | 0.9− |
| 2000 11 29 | 699 | 0.7− | 1.1− | 2003 04 26 | 608 | 0.3− | 1.0+ | 2006 11 02 | 703 | 0.1+ | 0.5+ |
| 2000 11 29 | 699 | 1.0+ | 0.7− | 2003 04 26 | 608 | 1.1+ | 0.9+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2000 11 29 | 699 | 1.4− | 0.8− | 2003 04 26 | 608 | 0.8+ | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | (1.0− | 1.5+) | 2003 04 30 | 704 | 0.9− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ |

**(141091)∗ 2001 XZ$_{42}$ = 2000 OR$_{36}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.10454 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17649924 | $\omega$ | 102.04619 | | +0.69057405 | −0.62407688 |
| $a$ | 3.1475610 | $\Omega$ | 297.78866 | | +0.38958469 | +0.74681045 |
| $e$ | 0.2634232 | $i$ | 24.40708 | | +0.60936956 | +0.22978729 |
| $P$ | 5.58 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 14 | 691 | 0.1− | 0.2+ | 2002 01 08 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.3+ |
| 1991 01 14 | 691 | 0.2+ | 0.5− | 2002 01 08 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.7+ | 0.3+ |
| 1991 01 14 | 691 | 0.0 | 0.3+ | 2002 01 08 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.1− | 0.1+ |
| 2000 07 30 | 704 | 0.6− | 1.9+ | 2002 01 08 | 704 | 0.7+ | 0.2− | 2006 09 18 | 704 | (2.7+ | 0.1+) |
| 2000 07 30 | 704 | 0.1− | 0.3− | 2002 01 17 | 644 | 0.0 | 0.4− | 2006 09 18 | 704 | (2.4+ | 0.3−) |
| 2000 07 30 | 704 | 1.2+ | 0.8− | 2002 01 17 | 644 | 0.1− | 0.1− | 2006 09 18 | 704 | (2.3+ | 0.7+) |
| 2000 07 30 | 704 | 0.0 | 0.0 | 2002 01 17 | 644 | 0.0 | 0.3− | 2006 09 18 | 704 | (3.0+ | 0.5−) |
| 2000 08 03 | 704 | 0.3− | 0.2+ | 2002 01 19 | 704 | 0.3+ | 1.3+ | 2006 09 25 | 703 | 0.2− | 0.2+ |
| 2000 08 03 | 704 | 1.0− | 0.0 | 2002 01 19 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 703 | 0.6− | 0.1− |
| 2000 08 03 | 704 | 0.8− | 0.3+ | 2002 01 19 | 704 | 0.9+ | 0.5+ | 2006 09 25 | 703 | 0.0 | 0.5+ |
| 2000 08 03 | 704 | 0.3− | 0.5+ | 2002 01 19 | 704 | 0.1− | 1.3+ | 2006 10 02 | 703 | 0.6+ | 0.4− |
| 2000 08 03 | 704 | 0.6− | 0.7+ | 2002 01 19 | 704 | 0.4+ | 1.4+ | 2006 10 02 | 703 | 0.1+ | 0.1+ |
| 2001 10 23 | 699 | 1.0− | 1.3+ | 2002 02 04 | 644 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.1− | 0.0 |
| 2001 10 23 | 699 | 0.0 | 0.0 | 2002 02 04 | 644 | 0.2− | 0.3− | 2006 10 02 | 703 | 0.6− | 0.6+ |
| 2001 10 23 | 699 | 0.9− | 0.0 | 2002 02 04 | 644 | 0.1− | 0.2− | 2006 10 03 | 704 | 0.6− | 1.0− |
| 2001 10 23 | 699 | 0.7− | 0.1+ | 2002 02 06 | 704 | 0.3+ | 0.5− | 2006 10 03 | 704 | 0.3+ | 0.4+ |
| 2001 10 25 | 704 | 0.3+ | 0.1− | 2002 02 06 | 704 | 1.0− | 0.3− | 2006 10 03 | 704 | 0.0 | 0.4− |
| 2001 10 25 | 704 | 0.5− | 0.4− | 2002 02 06 | 704 | 0.4− | 0.8− | 2006 10 03 | 704 | 1.0+ | 0.3+ |
| 2001 10 25 | 704 | (1.6− | 0.8+) | 2002 02 07 | 704 | 0.4− | 0.4+ | 2006 10 16 | 704 | 0.8+ | 0.8+ |
| 2001 11 19 | 644 | 0.0 | 0.2+ | 2002 02 07 | 704 | 0.2+ | 0.3− | 2006 10 16 | 704 | 0.1− | 0.3+ |
| 2001 11 19 | 644 | 0.0 | 0.5+ | 2002 02 07 | 704 | 0.1− | 0.4+ | 2006 10 16 | 704 | 0.6+ | 0.7+ |
| 2001 11 19 | 644 | 0.3− | 0.2+ | 2002 02 07 | 704 | 0.9+ | 0.9+ | 2006 10 16 | 704 | 0.3− | 0.9+ |
| 2001 12 09 | 704 | 0.3− | 0.4+ | 2002 02 10 | 704 | 0.5+ | 0.1− | 2006 10 16 | 704 | 0.1− | 0.3+ |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2002 02 10 | 704 | 0.2− | 0.2− | 2006 10 27 | 106 | 0.3+ | 0.5− |
| 2001 12 09 | 704 | 0.6+ | 0.1− | 2002 02 10 | 704 | 0.3+ | 0.3− | 2006 10 27 | 106 | 0.2− | 1.1− |
| 2001 12 09 | 704 | 0.5+ | 0.7− | 2002 02 12 | 704 | 0.1− | 0.2− | 2006 10 27 | 106 | 0.5− | 0.6− |
| 2001 12 09 | 704 | 0.4+ | 0.3− | 2002 02 12 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 106 | 0.0 | 0.7− |
| 2001 12 14 | 704 | 0.9+ | 0.6+ | 2002 02 12 | 704 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2001 12 14 | 704 | 0.6+ | 0.5+ | 2002 02 12 | 704 | 0.1− | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 0.6+ | 0.7+ | 2002 02 20 | 704 | 0.0 | 0.7− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2001 12 14 | 704 | 0.2+ | 0.6+ | 2002 02 20 | 704 | 0.2+ | 1.0+ | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2001 12 14 | 704 | 0.0 | 0.8+ | 2002 02 20 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 704 | 0.8+ | 1.0− |
| 2001 12 19 | 644 | 0.1− | 0.9− | 2002 02 20 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 704 | 0.5+ | 0.3+ |
| 2001 12 19 | 644 | 0.0 | 0.8− | 2006 06 03 | 703 | (2.9− | 0.4−) | 2006 11 14 | 704 | 0.1− | 0.1− |
| 2001 12 19 | 644 | 0.1+ | 0.9− | 2006 06 03 | 703 | (0.4− | 1.7+) | 2006 11 14 | 704 | 0.3+ | 0.1+ |
| 2001 12 22 | 704 | 0.9− | 1.3− | 2006 06 03 | 703 | 0.9− | 0.0 | 2006 11 14 | 704 | 0.1+ | 1.3− |
| 2001 12 22 | 704 | 0.4− | 0.2− | 2006 06 03 | 703 | 0.4− | 1.2+ | 2006 11 21 | 703 | 0.2− | 0.5+ |
| 2001 12 22 | 704 | 0.3− | 0.1− | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.3− | 0.3+ |
| 2001 12 22 | 704 | 0.3− | 0.3− | 2006 08 13 | 644 | 0.1+ | 0.1− | 2006 11 21 | 703 | 0.1+ | 0.5+ |
| 2001 12 22 | 704 | 0.7− | 0.5− | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 11 21 | 703 | 0.5− | 0.6− |
| 2002 01 08 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.5− | 0.2+ | | | | |

**(141092)∗ 2001 XJ$_{43}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.14522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18798544 | $\omega$ | 116.48844 | | −0.08759072 | −0.99442361 | |
| $a$ | 3.0180047 | $\Omega$ | 338.29501 | | +0.84806376 | −0.04350802 | |
| $e$ | 0.1220551 | $i$ | 9.13791 | | +0.52260475 | −0.09606631 | |
| $P$ | 5.24 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.2+ | 0.1+ | 2003 03 26 | 608 | 0.5− | 0.2+ | 2005 10 25 | G96 | 0.3− | 0.3− |
| 1992 01 31 | 691 | 0.0 | 0.3− | 2003 03 26 | 644 | 0.1+ | 0.7+ | 2005 11 25 | G96 | 0.4− | 0.1+ |
| 1992 01 31 | 691 | 0.3− | 0.7− | 2003 03 26 | 608 | (0.2+ | 2.6+) | 2005 11 25 | G96 | 0.4+ | 0.2+ |
| 2000 10 01 | 704 | 0.6− | 0.7+ | 2003 03 28 | 691 | 0.0 | 1.1+ | 2005 11 25 | G96 | 1.0− | 0.3− |
| 2000 10 01 | 704 | 0.5+ | 0.4+ | 2003 03 28 | 691 | (0.2− | 1.7+) | 2005 11 25 | G96 | 0.3+ | 0.6− |
| 2000 10 01 | 704 | 0.9− | 1.5+ | 2003 03 28 | 691 | 0.6− | 1.3+ | 2006 10 23 | 703 | 1.0+ | 0.6+ |
| 2001 12 09 | 704 | 0.6+ | 0.4+ | 2003 03 30 | 699 | 0.2− | 0.7− | 2006 10 23 | 703 | 0.9+ | 0.7+ |
| 2001 12 09 | 704 | 0.6+ | 0.5+ | 2003 03 30 | 699 | 0.3+ | 0.3− | 2006 10 23 | 703 | 0.5+ | 0.7− |
| 2001 12 09 | 704 | 1.3+ | 0.5− | 2003 03 30 | 699 | 0.4+ | 0.5− | 2006 10 23 | 703 | 0.3+ | 0.2− |
| 2001 12 14 | 704 | 0.9− | 0.2+ | 2003 03 30 | 699 | 0.3+ | 0.6− | 2006 10 29 | 703 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.0 | 2003 03 31 | 704 | 0.6+ | 0.1− | 2006 10 29 | 703 | 0.6+ | 0.1− |
| 2001 12 14 | 704 | 0.7− | 0.4− | 2003 03 31 | 704 | (1.6+ | 0.1−) | 2006 10 29 | 703 | 0.6− | 0.0 |
| 2001 12 14 | 704 | 0.9− | 0.2+ | 2003 03 31 | 691 | 0.0 | 0.4− | 2006 10 29 | 703 | 0.8− | 0.5+ |
| 2001 12 22 | 704 | 0.1− | 0.7+ | 2003 03 31 | 704 | 1.1+ | 0.3+ | 2006 11 02 | G96 | 0.4+ | 0.1− |
| 2001 12 22 | 704 | 0.9− | 0.6+ | 2003 03 31 | 704 | (2.2+ | 0.8+) | 2006 11 02 | G96 | 0.5+ | 0.1+ |
| 2001 12 22 | 704 | 0.3+ | 0.6+ | 2003 03 31 | 691 | 0.0 | 0.3− | 2006 11 02 | G96 | 0.4+ | 0.1+ |
| 2001 12 22 | 704 | 0.1− | 0.3+ | 2003 03 31 | 691 | 0.1− | 0.3− | 2006 11 02 | G96 | 0.4+ | 0.1+ |
| 2002 01 07 | 704 | 0.4− | 0.6+ | 2005 07 04 | 644 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2002 01 07 | 704 | 0.9− | 0.0 | 2005 07 04 | 644 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2002 01 07 | 704 | 0.8− | 1.2+ | 2005 07 04 | 644 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2002 02 08 | 704 | 0.2+ | 0.2+ | 2005 07 27 | 644 | 0.5− | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2002 02 08 | 704 | 0.9− | 0.2+ | 2005 07 27 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.3+ |
| 2002 02 08 | 704 | 0.7− | 0.3− | 2005 07 27 | 644 | 0.3− | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2003 03 10 | 699 | 0.5+ | 0.2− | 2005 10 03 | G96 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.2+ |
| 2003 03 10 | 699 | (1.5+ | 0.4−) | 2005 10 03 | G96 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.0 |
| 2003 03 10 | 699 | 1.2+ | 0.9+ | 2005 10 03 | G96 | 0.0 | 0.0 | 2006 11 21 | 703 | 0.4− | 0.3− |
| 2003 03 10 | 699 | 1.5+ | 0.4− | 2005 10 03 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 703 | 0.0 | 0.3+ |
| 2003 03 26 | 644 | 0.2+ | 0.4+ | 2005 10 25 | G96 | 0.0 | 0.2− | 2006 11 21 | 703 | 0.9+ | 0.1+ |
| 2003 03 26 | 644 | 0.5+ | 0.4+ | 2005 10 25 | G96 | 0.3− | 0.5− | 2006 11 21 | 703 | 0.6− | 0.2− |
| 2003 03 26 | 608 | (0.2+ | 2.8−) | 2005 10 25 | G96 | 0.0 | 0.1− | | | | |

**(141093)∗ 2001 XS$_{44}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.61403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18111291 | $\omega$ | 351.95992 | | +0.73714621 | −0.65781487 | |
| $a$ | 3.0938775 | $\Omega$ | 50.36500 | | +0.63060509 | +0.58747826 | |
| $e$ | 0.0651614 | $i$ | 11.57915 | | +0.24280174 | +0.47132674 | |
| $P$ | 5.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | (3.0+ | 3.3+) | 2002 02 10 | 704 | 1.1+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 1998 04 22 | 704 | (3.6+ | 0.4−) | 2002 02 10 | 704 | 0.8+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 1998 04 22 | 704 | (2.1+ | 0.5+) | 2002 02 10 | 704 | 1.1+ | 0.5− | 2006 11 15 | 704 | 1.4− | 0.7+ |
| 1998 04 22 | 704 | 0.1+ | 0.8− | 2002 02 10 | 704 | 0.2+ | 0.3− | 2006 11 15 | 704 | 0.3+ | 0.3− |
| 2000 10 01 | 704 | 0.5− | 0.3+ | 2003 03 26 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 704 | 0.3+ | 1.3+ |
| 2000 10 01 | 704 | 0.8− | 0.1+ | 2003 03 26 | 644 | 0.4+ | 0.9+ | 2006 11 15 | 704 | (0.5+ | 1.7+) |
| 2000 10 01 | 704 | 0.1+ | 0.6+ | 2003 03 26 | 644 | 0.6+ | 0.6+ | 2006 11 16 | 704 | 0.9+ | 0.5+ |
| 2000 10 01 | 704 | 0.6− | 1.0+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6+ | 1.3+ |
| 2000 10 01 | 704 | 0.1+ | 0.7+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 11 16 | 704 | 1.2+ | 1.3− |
| 2001 12 09 | 704 | 0.6+ | 1.5+ | 2003 04 01 | 704 | 1.1+ | 0.8+ | 2006 11 18 | 704 | 1.5+ | 0.6+ |
| 2001 12 09 | 704 | 0.4+ | 1.1+ | 2003 04 01 | 704 | 1.0+ | 0.3+ | 2006 11 18 | 704 | 0.8− | 1.3+ |
| 2001 12 09 | 704 | 0.2+ | 1.1+ | 2003 04 01 | 704 | 0.1− | 0.8+ | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.7− | 2003 04 01 | 704 | 0.6+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2001 12 14 | 704 | 0.7− | 0.2+ | 2003 04 03 | 608 | 0.3− | 1.3− | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2001 12 14 | 704 | 0.8− | 0.6− | 2003 04 03 | 608 | (0.2+ | 1.7−) | 2006 11 19 | 704 | 0.4+ | 0.8+ |
| 2001 12 14 | 704 | 0.7− | 0.3− | 2003 04 03 | 608 | 1.1+ | 1.4− | 2006 11 19 | 704 | 0.1+ | 1.0+ |
| 2001 12 19 | 644 | 0.1− | 0.5− | 2005 08 28 | E12 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2001 12 19 | 644 | 0.2− | 0.6− | 2005 08 28 | E12 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 2001 12 19 | 644 | 0.4− | 0.3− | 2005 08 28 | E12 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2001 12 22 | 704 | 0.7− | 0.4+ | 2005 08 28 | E12 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.3− |
| 2001 12 22 | 704 | 0.3+ | 0.7+ | 2005 09 02 | 644 | 0.4− | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2001 12 22 | 704 | 0.1+ | 0.1− | 2005 09 02 | 644 | 0.4− | 0.8+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2002 01 05 | 644 | 0.1+ | 0.4− | 2005 09 02 | 644 | 0.5− | 0.7+ | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2002 01 05 | 699 | 0.5− | 0.2+ | 2005 09 10 | 699 | (2.0− | 0.3−) | 2006 11 22 | 704 | 0.8− | 0.4+ |
| 2002 01 05 | 644 | 0.4+ | 0.2− | 2005 09 10 | 699 | 0.7+ | 0.8− | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2002 01 05 | 699 | 0.4− | 0.0 | 2005 09 10 | 699 | 0.5+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2002 01 05 | 699 | 0.1+ | 0.0 | 2005 09 10 | 699 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2002 01 05 | 644 | 0.4+ | 0.3− | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 27 | 704 | 0.3+ | 0.1− |
| 2002 01 05 | 699 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | 704 | 0.2− | 0.3+ |
| 2002 02 03 | 644 | 0.1− | 1.3+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 27 | 704 | 0.3+ | 0.1+ |
| 2002 02 03 | 644 | 0.1− | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 27 | 704 | 0.3+ | 0.3− |
| 2002 02 03 | 644 | (0.6+ | 1.8+) | 2006 10 20 | G96 | 0.1− | 0.5− | 2006 11 28 | 704 | 0.5+ | 1.5− |
| 2002 02 08 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.5− | 1.0− | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2002 02 08 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 1.3− | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2002 02 08 | 644 | 0.5− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 1.6− | 1.6− |

**(141094)∗ 2001 XL$_{45}$ = 2000 SC$_{192}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23174)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.71604 | | (2000.0) | | | |
| $n$ | 0.17401777 | $\omega$ | 80.36084 | | +0.24525915 | −0.96938527 |
| $a$ | 3.1774128 | $\Omega$ | 355.39091 | | +0.82164637 | +0.21433065 |
| $e$ | 0.0889064 | $i$ | 8.47185 | | +0.51453395 | +0.11981057 |
| $P$ | 5.66 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 1.3− | 1.1+ | 2001 12 14 | 704 | 0.4− | 0.1− | 2006 09 28 | 703 | 0.5+ | 0.6+ |
| 2000 09 24 | 699 | 1.4− | 1.9+ | 2001 12 14 | 704 | 0.1+ | 0.3− | 2006 10 19 | 703 | 0.4+ | 1.1+ |
| 2000 09 24 | 704 | 0.4− | 0.3+ | 2001 12 22 | 704 | 1.0+ | 0.2− | 2006 10 19 | 703 | 0.6− | 0.2+ |
| 2000 09 24 | 699 | (1.1+ | 2.1+) | 2001 12 22 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.9− |
| 2000 09 24 | 704 | 0.2− | 1.1+ | 2001 12 22 | 704 | 0.4− | 1.1− | 2006 10 19 | 703 | 0.7− | 0.1− |
| 2000 09 24 | 699 | (0.5+ | 2.1+) | 2002 01 08 | 704 | 0.3− | 0.7+ | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2000 09 24 | 704 | 0.4− | 1.6+ | 2002 01 08 | 704 | 1.5− | 1.3− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2000 09 24 | 704 | 0.5− | 0.2+ | 2002 01 08 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.2− |
| 2000 09 24 | 704 | 0.0 | 1.0+ | 2002 01 08 | 704 | 0.9− | 1.4− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2000 09 25 | 691 | 0.2− | 0.0 | 2002 01 08 | 704 | 0.1+ | 1.3+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2000 09 25 | 691 | 0.4− | 0.1− | 2002 01 08 | 704 | 1.0− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 09 25 | 691 | 0.4− | 0.1− | 2002 01 08 | 704 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.1+ | 0.6+ | 2002 01 08 | 704 | (1.6− | 1.6−) | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2000 10 01 | 704 | 0.2+ | 1.3+ | 2002 01 08 | 704 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.6+ | 2002 01 08 | 704 | (1.4− | 2.2−) | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2000 10 01 | 704 | 0.1+ | 0.9+ | 2003 03 26 | 644 | 0.5+ | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2000 10 02 | 704 | 0.2− | 0.0 | 2003 03 26 | 644 | 0.3+ | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2000 10 02 | 704 | 0.3+ | 1.0+ | 2003 03 26 | 644 | 0.4+ | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2000 10 02 | 704 | 0.2+ | 0.3+ | 2003 04 05 | 691 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.8− | 0.1+ |
| 2000 10 02 | 704 | 0.5− | 0.1+ | 2003 04 05 | 691 | 0.8+ | 0.6+ | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 2000 10 02 | 704 | 0.7+ | 1.7+ | 2003 04 05 | 691 | 0.6+ | 0.0 | 2006 10 27 | 703 | 0.5− | 0.1− |
| 2001 12 09 | 704 | 0.1+ | 0.2+ | 2003 05 01 | 691 | 0.5− | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2001 12 09 | 704 | 0.5+ | 0.7− | 2003 05 01 | 691 | 0.5+ | 1.2+ | 2006 11 14 | 703 | 0.6− | 0.9+ |
| 2001 12 09 | 704 | 1.2+ | 0.1− | 2003 05 01 | 691 | 0.6+ | 0.9+ | 2006 11 14 | 703 | 0.2− | 0.8+ |
| 2001 12 09 | 704 | 1.2+ | 0.8− | 2006 09 28 | 703 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.2+ | 1.1+ |
| 2001 12 14 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.7− | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2001 12 14 | 704 | 0.8− | 0.2− | 2006 09 28 | 703 | 0.8− | 0.1− | | | | |

**(141095)∗ 2001 XW$_{46}$ = 1978 WA$_{11}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23175)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.24417 | | (2000.0) | | | |
| $n$ | 0.17393043 | $\omega$ | 73.08614 | | −0.72071654 | −0.65037620 |
| $a$ | 3.1784765 | $\Omega$ | 65.63410 | | +0.49225672 | −0.72385912 |
| $e$ | 0.1854472 | $i$ | 15.27297 | | +0.48810961 | −0.23030147 |
| $P$ | 5.67 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 29 | 675 | 0.3+ | 0.4+ | 2002 01 19 | 699 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.3+ |
| 1978 11 30 | 675 | 0.6− | 0.1+ | 2002 01 19 | 699 | 0.5+ | 0.4− | 2006 10 22 | 703 | 0.2− | 1.2+ |
| 2001 11 11 | 704 | 0.6+ | 0.7+ | 2002 01 21 | 699 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.6+ | 0.3+ |
| 2001 11 11 | 704 | (0.7+ | 1.7+) | 2002 01 21 | 699 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2001 11 11 | 704 | 0.8+ | 0.1+ | 2002 01 21 | 699 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2001 11 11 | 704 | 0.7+ | 1.0+ | 2002 01 21 | 699 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2002 01 23 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 11 17 | 699 | 0.6− | 0.0 | 2002 01 23 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 11 17 | 699 | 0.4+ | 0.5− | 2002 01 23 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2001 11 17 | 699 | 0.5+ | 0.2+ | 2002 01 23 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2001 11 17 | 699 | 0.7+ | 0.4− | 2002 01 23 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2001 12 09 | 704 | 0.2− | 0.1+ | 2002 01 25 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.4− |
| 2001 12 09 | 704 | 0.1+ | 0.1+ | 2002 01 25 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | (1.6− | 0.5−) |
| 2001 12 09 | 704 | 0.3+ | 0.1+ | 2002 01 25 | 704 | 0.6− | 0.2− | 2006 11 14 | 704 | (0.6+ | 2.4+) |
| 2001 12 09 | 704 | 0.3+ | 0.3− | 2002 01 25 | 704 | 0.7− | 0.2+ | 2006 11 14 | 704 | (0.8− | 2.0+) |
| 2001 12 09 | 704 | 0.3+ | 0.3+ | 2002 01 25 | 704 | 0.9− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 1.4+ |
| 2001 12 14 | 704 | 0.0 | 0.4− | 2002 02 02 | 644 | 0.4− | 0.0 | 2006 11 14 | 704 | (0.3− | 1.6+) |
| 2001 12 14 | 704 | 0.2− | 0.5− | 2002 02 02 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.3− | 2002 02 02 | 644 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2001 12 18 | 699 | 0.2− | 0.2+ | 2002 02 07 | 699 | 0.6+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2001 12 18 | 699 | 0.2− | 0.0 | 2002 02 07 | 699 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 12 18 | 699 | 0.1− | 0.1− | 2002 02 07 | 699 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.5− | 0.0 |
| 2001 12 18 | 699 | 0.4− | 0.0 | 2002 02 07 | 699 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2001 12 22 | 704 | 0.1+ | 0.1+ | 2002 02 12 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 12 22 | 704 | 0.4− | 0.6− | 2002 02 12 | 644 | 0.1− | 0.5− | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2001 12 22 | 704 | 0.6− | 0.3− | 2002 02 12 | 644 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.5− | 1.3+ |
| 2001 12 22 | 704 | 0.2− | 0.8− | 2003 04 05 | 291 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2001 12 22 | 704 | 0.3+ | 0.2− | 2003 04 05 | 291 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2002 01 05 | 644 | 0.2− | 0.6− | 2003 04 05 | 291 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2002 01 05 | 644 | 0.2− | 0.6− | 2003 04 28 | 704 | 0.5+ | 0.1+ | 2006 11 20 | 704 | 0.9− | 0.8+ |
| 2002 01 05 | 644 | 0.3− | 0.7− | 2003 04 28 | 704 | 1.0+ | 0.9+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2002 01 14 | 644 | 0.5+ | 0.5+ | 2003 04 28 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2002 01 14 | 644 | 0.2+ | 0.5+ | 2003 05 08 | 704 | (2.8+ | 1.0−) | 2006 11 20 | 704 | 0.4− | 0.8+ |
| 2002 01 14 | 644 | 0.3+ | 0.3+ | 2003 05 08 | 704 | (2.8+ | 0.9−) | 2006 11 20 | 704 | 0.4− | 0.5+ |
| 2002 01 14 | 644 | 0.2+ | 0.5+ | 2003 05 08 | 704 | (2.8+ | 0.2+) | 2006 11 28 | 704 | 0.8− | 0.0 |
| 2002 01 14 | 644 | 0.4+ | 0.4+ | 2003 05 27 | 691 | 0.3+ | 0.6+ | 2006 11 28 | 704 | 1.0− | 1.2+ |
| 2002 01 14 | 644 | 0.2+ | 0.5+ | 2003 05 27 | 691 | 0.0 | 0.8+ | 2006 11 28 | 704 | 0.4+ | 0.2+ |
| 2002 01 19 | 699 | 0.3+ | 0.3− | 2003 05 27 | 691 | 0.0 | 0.7+ | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 2002 01 19 | 699 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.9+ | 1.1+ | | | | |

**(141096)∗ 2001 XB$_{48}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 176.29726 | | (2000.0) | | | |
| $n$ | 0.34907239 | $\omega$ | 220.17914 | | −0.98698557 | +0.10538769 |
| $a$ | 1.9976790 | $\Omega$ | 325.29371 | | −0.02155479 | −0.83520174 |
| $e$ | 0.1049719 | $i$ | 12.31736 | | −0.15935770 | −0.53975132 |
| $P$ | 2.82 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 1.1+ | 0.4− | 2002 02 12 | 704 | 0.1+ | 0.2− | 2005 02 09 | 704 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.3− | 0.7− | 2002 02 12 | 704 | 0.1+ | 0.1− | 2005 02 09 | 704 | 0.2+ | 0.1− |
| 2001 11 11 | 704 | 0.6− | 0.0 | 2002 02 12 | 704 | 0.4+ | 0.3− | 2005 02 09 | 704 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.6− | 1.0− | 2003 07 24 | 644 | 0.6− | 0.5+ | 2005 03 08 | 699 | 0.5− | 0.4− |
| 2001 12 09 | 704 | (2.3+ | 1.1+) | 2003 07 24 | 644 | 0.9− | 0.5+ | 2005 03 08 | 699 | 0.6+ | 0.5+ |
| 2001 12 09 | 704 | 1.0+ | 0.2+ | 2003 07 24 | 644 | 0.5− | 0.4+ | 2005 03 08 | 699 | 0.3+ | 0.3− |
| 2001 12 09 | 704 | 0.4+ | 1.0− | 2003 08 21 | 599 | 0.3+ | 0.4+ | 2005 03 09 | 699 | 0.5+ | 0.1− |
| 2001 12 09 | 704 | 0.1+ | 1.1− | 2003 08 21 | 599 | 0.4− | 0.6+ | 2005 03 09 | 699 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | 0.1− | 0.9− | 2003 08 21 | 599 | 0.2− | 1.4+ | 2005 03 09 | 699 | 1.3+ | 0.2+ |
| 2001 12 14 | 704 | 0.5− | 0.2+ | 2003 08 21 | 599 | 0.6− | 0.5+ | 2005 03 09 | 699 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | (1.7+ | 0.3+) | 2003 08 21 | 599 | 0.4− | 0.1− | 2005 03 10 | 703 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.1− | 0.3− | 2003 08 28 | 704 | 1.0− | 1.3+ | 2005 03 10 | 703 | 0.0 | 0.3− |
| 2001 12 22 | 704 | 0.1− | 0.6− | 2003 08 28 | 704 | 0.7− | 1.0+ | 2005 03 10 | 703 | 0.2− | 0.2+ |
| 2001 12 22 | 704 | 0.1− | 0.0 | 2003 08 28 | 704 | 1.0− | 0.1− | 2005 03 10 | 703 | 0.2+ | 0.0 |
| 2001 12 22 | 704 | 0.4− | 0.2+ | 2003 08 28 | 704 | 0.7− | 0.0 | 2005 03 17 | 703 | 0.1− | 0.1+ |
| 2001 12 22 | 704 | 0.4− | 0.8− | 2003 09 02 | 704 | 0.4− | 0.6+ | 2005 03 17 | 703 | 0.4+ | 0.1+ |
| 2001 12 22 | 704 | 0.5− | 0.4+ | 2003 09 02 | 704 | 0.4− | 0.1+ | 2005 03 17 | 703 | 0.4− | 0.5+ |
| 2002 01 05 | 699 | 0.8− | 0.1− | 2003 09 02 | 704 | 0.1+ | 0.9+ | 2005 03 17 | 703 | 0.1− | 0.5+ |
| 2002 01 05 | 699 | 0.0 | 0.5+ | 2003 09 02 | 704 | 0.4+ | 0.2+ | 2005 04 09 | 699 | 1.1+ | 0.8+ |
| 2002 01 05 | 699 | 0.5+ | 0.3+ | 2003 09 16 | 699 | 1.2+ | 0.2+ | 2005 04 09 | 699 | 0.4+ | 0.7+ |
| 2002 01 05 | 699 | 0.5− | 0.9+ | 2003 09 16 | 699 | 0.6− | 0.6+ | 2005 04 09 | 699 | 0.2+ | 0.5+ |
| 2002 01 08 | 644 | 0.1+ | 0.4+ | 2003 09 16 | 699 | 0.9+ | 0.5− | 2005 04 09 | 699 | 0.2− | 0.3+ |
| 2002 01 08 | 644 | 0.1− | 0.4+ | 2003 09 16 | 699 | 0.6− | 1.5+ | 2005 05 04 | 703 | 1.1− | 0.8+ |
| 2002 01 08 | 644 | 0.0 | 0.3+ | 2003 09 18 | 644 | 0.0 | 0.8+ | 2005 05 04 | 703 | 0.2− | 0.4+ |
| 2002 01 08 | 106 | 0.8− | 0.2+ | 2003 09 18 | 644 | 0.1− | 0.7+ | 2005 05 04 | 703 | 0.5− | 0.5+ |
| 2002 01 08 | 046 | 0.0 | 0.1− | 2003 09 18 | 644 | 0.2− | 0.8+ | 2005 05 04 | 703 | 0.9− | 0.9+ |
| 2002 01 08 | 046 | 0.4− | 0.2+ | 2003 09 19 | 691 | 0.2− | 0.4+ | 2005 05 06 | 704 | 0.6+ | 1.3+ |
| 2002 01 08 | 046 | 0.1− | 0.1+ | 2003 09 19 | 691 | 0.2− | 0.3+ | 2005 05 06 | 704 | 0.6+ | 1.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 046 | 0.2+ | 0.1− | 2003 09 19 | 691 | 0.2− | 0.3+ | 2005 05 06 | 704 | 1.0+ | 0.9+ |
| 2002 01 08 | 106 | 0.2+ | 0.3+ | 2003 09 29 | 691 | 0.1− | 0.2+ | 2005 05 06 | 704 | 0.7+ | 0.3+ |
| 2002 01 08 | 046 | 0.1− | 0.3− | 2003 09 29 | 691 | 0.2− | 0.3+ | 2006 08 23 | 807 | 0.2− | 0.1+ |
| 2002 01 08 | 595 | 0.0 | 0.4− | 2003 09 29 | 691 | 0.1− | 0.2+ | 2006 08 23 | 807 | 0.3− | 0.0 |
| 2002 01 09 | 595 | 0.2+ | 0.9− | 2004 12 15 | 704 | (2.3+ | 1.2+) | 2006 08 29 | 703 | 0.2+ | 1.2+ |
| 2002 01 09 | 595 | 0.6+ | 0.3− | 2004 12 15 | 704 | (1.1+ | 2.1+) | 2006 08 29 | 703 | 0.9− | 0.9+ |
| 2002 01 09 | 644 | 0.2− | 0.0 | 2004 12 15 | 704 | 1.0+ | 0.6+ | 2006 08 29 | 703 | 0.6+ | 0.0 |
| 2002 01 09 | 644 | 0.5− | 0.0 | 2005 01 07 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.6+ | 0.5+ |
| 2002 01 09 | 644 | 0.2− | 0.1− | 2005 01 07 | 704 | 0.8+ | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2002 01 14 | 644 | 0.1+ | 0.2+ | 2005 01 07 | 704 | 0.7+ | 0.7+ | 2006 09 14 | 644 | 0.3− | 0.1− |
| 2002 01 14 | 644 | 0.2+ | 0.3+ | 2005 01 07 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1− |
| 2002 01 14 | 644 | 0.0 | 0.2+ | 2005 01 07 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 699 | 0.2+ | 0.1+ |
| 2002 01 18 | 704 | 0.7− | 0.1+ | 2005 01 12 | 704 | (0.9+ | 1.8+) | 2006 09 19 | 699 | 0.4+ | 0.0 |
| 2002 01 18 | 704 | 0.5− | 0.4+ | 2005 01 12 | 704 | (1.8+ | 1.3+) | 2006 09 19 | 699 | 0.2+ | 0.5− |
| 2002 01 18 | 704 | 1.2− | 0.3+ | 2005 01 12 | 704 | 1.0+ | 1.3+ | 2006 09 19 | 699 | 0.4+ | 0.0 |
| 2002 01 21 | 704 | 0.1+ | 0.2+ | 2005 01 12 | 704 | 0.5+ | 1.0+ | 2006 09 27 | 703 | 0.3+ | 0.2+ |
| 2002 01 21 | 704 | 0.6+ | 0.2− | 2005 01 12 | 704 | 0.2− | 0.0 | 2006 09 27 | 703 | 1.1− | 0.2+ |
| 2002 01 21 | 704 | 0.3+ | 0.4+ | 2005 01 17 | 703 | 0.3+ | 0.0 | 2006 09 27 | 703 | 1.2+ | 1.1+ |
| 2002 01 21 | 704 | 0.7+ | 0.3− | 2005 01 17 | 703 | 0.1− | 0.5− | 2006 09 27 | 703 | (1.9+ | 1.0+) |
| 2002 01 21 | 704 | 0.3+ | 0.6− | 2005 01 17 | 703 | 0.2− | 0.6− | 2006 10 03 | 703 | 1.0− | 1.4− |
| 2002 02 03 | 644 | 0.1− | 0.2+ | 2005 01 17 | 703 | 0.6− | 0.1+ | 2006 10 03 | 703 | 0.1− | 0.8− |
| 2002 02 03 | 644 | 0.0 | 0.2+ | 2005 02 01 | 691 | 0.4+ | 0.3+ | 2006 10 03 | 703 | 0.7− | 0.9− |
| 2002 02 03 | 644 | 0.1+ | 0.1+ | 2005 02 01 | 691 | 0.4+ | 0.1+ | 2006 10 03 | 703 | 0.2+ | 0.4− |
| 2002 02 04 | 644 | 0.3+ | 0.8+ | 2005 02 01 | 691 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2002 02 04 | 644 | 0.0 | 0.8+ | 2005 02 02 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | (3.1− | 0.7+) |
| 2002 02 04 | 644 | 0.1− | 1.3+ | 2005 02 02 | 704 | (1.4+ | 2.0+) | 2006 10 17 | 703 | (1.3− | 2.2+) |
| 2002 02 08 | 704 | 0.3− | 0.6− | 2005 02 02 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 1.0− | 0.3− |
| 2002 02 08 | 704 | 0.0 | 0.7− | 2005 02 02 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 703 | 0.8− | 0.8+ |
| 2002 02 08 | 704 | 0.0 | 0.9− | 2005 02 02 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 0.1− | 1.3+ |
| 2002 02 08 | 704 | (1.4− | 1.8−) | 2005 02 09 | 704 | 0.1− | 0.2+ | 2006 10 23 | 703 | 1.7− | 0.6− |
| 2002 02 12 | 704 | 0.2+ | 0.4− | 2005 02 09 | 704 | 0.1− | 0.1+ | 2006 10 23 | 703 | 1.6+ | 0.6− |

**(141097)∗ 2001 XN$_{50}$ = 1999 JQ$_{131}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23177)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.65844 | | (2000.0) | | | |
| $n$ | 0.17681674 | $\omega$ | 250.98236 | | +0.76019474 | +0.58411374 |
| $a$ | 3.1437920 | $\Omega$ | 72.27100 | | −0.42454758 | +0.77803206 |
| $e$ | 0.0891860 | $i$ | 17.37587 | | −0.49179601 | +0.23125150 |
| $P$ | 5.57 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 0.9+ | 0.7− | 2001 12 19 | 704 | 0.7+ | 0.4− | 2004 03 29 | 691 | 0.1+ | 0.3+ |
| 1999 05 13 | 704 | 1.8+ | 1.3+ | 2001 12 19 | 704 | 0.3− | 0.1− | 2004 04 12 | 703 | 0.2+ | 0.8+ |
| 1999 05 13 | 704 | 1.7+ | 1.3+ | 2001 12 19 | 704 | 0.1+ | 0.5− | 2004 04 12 | 703 | 1.1− | 0.8− |
| 1999 05 13 | 704 | 1.1− | 0.9+ | 2001 12 19 | 704 | 0.1− | 0.3+ | 2004 04 12 | 703 | 0.4+ | 0.2− |
| 1999 05 18 | 704 | 1.3− | 1.1+ | 2001 12 19 | 704 | 0.3+ | 0.1− | 2004 04 12 | 703 | 1.3+ | 1.0+ |
| 1999 05 18 | 704 | 1.1− | 1.3+ | 2001 12 19 | 704 | 0.6− | 0.1+ | 2004 04 23 | 703 | (0.1+ | 2.1+) |
| 1999 06 15 | 704 | 1.4+ | 0.3+ | 2001 12 19 | 704 | 0.7+ | 0.5− | 2004 04 23 | 703 | 0.6− | 0.6+ |
| 1999 06 15 | 704 | 0.9+ | 0.1− | 2001 12 20 | 704 | 0.8− | 1.1+ | 2004 04 23 | 703 | 0.4− | 0.9+ |
| 1999 06 15 | 704 | (1.8+ | 2.2+) | 2001 12 20 | 704 | 0.7− | 0.5+ | 2004 04 23 | 703 | 0.4+ | 1.2+ |
| 1999 06 15 | 704 | 1.0− | 0.0 | 2001 12 20 | 704 | 0.3+ | 0.1− | 2004 04 24 | 704 | 0.0 | 0.9− |
| 1999 06 15 | 704 | (2.2+ | 0.7+) | 2001 12 20 | 704 | 1.4− | 0.5+ | 2004 04 24 | 704 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 1.1+ | 0.6+ | 2001 12 20 | 704 | 0.4+ | 0.4+ | 2004 04 24 | 704 | 0.4+ | 0.1− |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2001 12 20 | 704 | 0.2+ | 0.3+ | 2004 04 25 | 699 | 0.3− | 1.4− |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2001 12 20 | 704 | 0.0 | 0.2+ | 2004 04 25 | 699 | 0.9− | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.9+ | 2001 12 20 | 704 | 0.0 | 0.6+ | 2004 04 25 | 699 | 0.6− | 0.9− |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2001 12 23 | 704 | 0.5− | 0.5− | 2004 04 25 | 699 | 0.2− | 0.7+ |
| 2001 11 24 | 704 | 1.0− | 0.4+ | 2001 12 23 | 704 | 0.2− | 0.3+ | 2004 05 13 | 704 | 0.9+ | 0.1+ |
| 2001 11 24 | 704 | 0.3− | 0.6− | 2001 12 23 | 704 | 0.8− | 0.2+ | 2004 05 13 | 704 | 1.1+ | 0.6+ |
| 2001 11 24 | 704 | 0.4+ | 0.7+ | 2001 12 23 | 704 | 0.7− | 0.5− | 2004 05 13 | 704 | (1.9+ | 1.1+) |
| 2001 11 24 | 704 | 0.6− | 0.5+ | 2002 01 09 | 704 | 0.5+ | 0.6− | 2004 05 13 | 704 | 1.3+ | 0.4+ |
| 2001 12 05 | 608 | 0.1+ | 0.1− | 2002 01 09 | 704 | 1.0− | 0.2− | 2006 09 24 | 699 | 0.5+ | 0.0 |
| 2001 12 05 | 608 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.0 | 0.7+ | 2006 09 24 | 699 | 1.2+ | 0.1− |
| 2001 12 05 | 608 | 0.4− | 0.0 | 2002 01 09 | 704 | 0.9− | 1.4+ | 2006 09 24 | 699 | 0.1+ | 0.2+ |
| 2001 12 10 | 704 | 0.3+ | 0.6+ | 2002 01 09 | 704 | 1.3− | 0.4+ | 2006 09 24 | 699 | 0.5− | 0.1− |
| 2001 12 10 | 704 | 0.7− | 1.4− | 2002 01 14 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 703 | 1.4− | 1.3+ |
| 2001 12 10 | 704 | 0.5+ | 0.4− | 2002 01 14 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 703 | 0.5− | 1.4+ |
| 2001 12 10 | 704 | 0.3+ | 0.4+ | 2002 01 14 | 704 | 0.0 | 0.0 | 2006 09 25 | 703 | 1.3− | 0.4+ |
| 2001 12 10 | 704 | 0.1+ | 0.0 | 2002 01 14 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 703 | (1.6− | 2.1+) |
| 2001 12 14 | 704 | (1.7+ | 0.1+) | 2002 01 14 | 704 | 0.0 | 0.5+ | 2006 10 31 | 703 | 0.4− | 0.4+ |
| 2001 12 14 | 704 | 0.8+ | 0.1+ | 2002 01 14 | 291 | 0.4+ | 0.2+ | 2006 10 31 | 703 | 0.3+ | 0.7+ |
| 2001 12 14 | 704 | 0.7+ | 0.4− | 2002 01 14 | 291 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.6+ | 0.5+ |
| 2001 12 14 | 704 | 0.3+ | 0.7− | 2002 01 14 | 291 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 1.1− | 0.8+ |
| 2001 12 14 | 704 | 0.4− | 1.2− | 2004 03 22 | 699 | 0.1+ | 1.0+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.3− | 2004 03 22 | 699 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2001 12 17 | 704 | 0.2+ | 0.1− | 2004 03 22 | 699 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.3− | 1.0+ |
| 2001 12 17 | 704 | 0.5− | 0.1− | 2004 03 22 | 699 | 0.8− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.4− | 0.2− | 2004 03 28 | 704 | (0.0 | 2.5+) | 2006 11 23 | 703 | 1.4− | 0.6+ |
| 2001 12 17 | 704 | 0.6− | 0.1− | 2004 03 28 | 704 | (1.1+ | 1.9+) | 2006 11 23 | 703 | 0.3− | 0.4+ |
| 2001 12 19 | 704 | 0.7+ | 0.4− | 2004 03 28 | 704 | 0.9+ | 1.0+ | 2006 11 23 | 703 | 0.3− | 0.6+ |
| 2001 12 19 | 704 | 0.3+ | 0.4− | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.3+ | 0.8+ | 2004 03 29 | 691 | 0.4+ | 0.2+ | | | | |

**(141098)∗ 2001 XO$_{52}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.89010 | | (2000.0) | | | |
| $n$ | 0.18457296 | $\omega$ | 323.43325 | | +0.75512569 | −0.62692247 |
| $a$ | 3.0550899 | $\Omega$ | 76.52656 | | +0.63846961 | +0.63689483 |
| $e$ | 0.0755411 | $i$ | 11.36961 | | +0.14880102 | +0.44870167 |
| $P$ | 5.34 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 10 | 691 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.5+ | 0.3− | 2004 05 15 | 704 | 0.0 | 0.1− |
| 1990 11 10 | 691 | 0.1+ | 0.3− | 2001 12 17 | 704 | 0.2+ | 0.1+ | 2004 05 15 | 704 | 0.5+ | 0.2− |
| 1990 11 10 | 691 | 0.0 | 0.3− | 2001 12 20 | 704 | 0.0 | 0.5− | 2004 05 15 | 704 | 0.2+ | 0.4− |
| 2001 10 23 | 704 | 0.7+ | 0.3+ | 2001 12 20 | 704 | 0.7+ | 0.0 | 2005 07 10 | E12 | 1.2− | 1.0+ |
| 2001 10 23 | 704 | 0.5+ | 0.4− | 2001 12 20 | 704 | 0.0 | 0.3− | 2005 07 10 | E12 | 0.7− | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2001 12 23 | 691 | (1.8− | 0.9+) | 2005 07 10 | E12 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | 0.0 | 0.8+ | 2001 12 23 | 691 | (2.0− | 0.8+) | 2005 07 10 | E12 | 0.6+ | 0.6+ |
| 2001 11 09 | 704 | 0.4− | 0.2+ | 2001 12 23 | 691 | (1.8− | 0.8+) | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 2001 11 09 | 704 | 0.0 | 0.8− | 2002 01 09 | 704 | 1.1+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 2001 11 09 | 704 | 0.1+ | 0.9− | 2002 01 09 | 704 | (1.8+ | 0.5−) | 2006 09 30 | 703 | (1.7− | 0.1+) |
| 2001 11 12 | 704 | (1.7− | 0.5+) | 2002 01 09 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2001 11 12 | 704 | 0.3− | 0.4− | 2002 01 09 | 704 | 1.2+ | 1.5+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2001 11 12 | 704 | 0.6− | 0.1+ | 2003 03 08 | 704 | 1.5− | 0.9+ | 2006 10 16 | 703 | 0.9− | 0.6+ |
| 2001 11 12 | 704 | 0.9− | 0.1+ | 2003 03 08 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.4− |
| 2001 11 12 | 704 | 0.4+ | 0.3+ | 2003 03 08 | 704 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2001 11 15 | 049 | 0.2− | 0.4− | 2003 03 08 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2001 11 15 | 049 | 0.2− | 0.7− | 2003 03 08 | 644 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2001 11 16 | 049 | 0.0 | 0.6− | 2003 03 08 | 644 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2001 11 20 | 691 | 0.1+ | 0.0 | 2003 03 08 | 644 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2001 11 20 | 691 | 0.0 | 0.2+ | 2003 03 22 | 644 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.9+ | 0.3+ |
| 2001 11 20 | 691 | 0.0 | 0.1+ | 2003 03 22 | 644 | 0.5− | 0.3+ | 2006 11 13 | 703 | 0.9+ | 0.6+ |
| 2001 12 09 | 644 | 0.3+ | 0.3+ | 2003 03 22 | 644 | 0.5− | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.3+ |
| 2001 12 09 | 644 | 0.0 | 0.3+ | 2003 04 02 | 644 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.6− | 0.2+ |
| 2001 12 09 | 644 | 0.2+ | 0.3+ | 2003 04 02 | 644 | 0.0 | 0.1− | 2006 11 17 | 644 | 0.1− | 0.5+ |
| 2001 12 10 | 704 | 0.5− | 0.2+ | 2003 04 02 | 644 | 0.0 | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.5+ |
| 2001 12 10 | 704 | 0.1+ | 0.5+ | 2003 04 08 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 644 | 0.4− | 0.7+ |
| 2001 12 10 | 704 | 0.3+ | 0.1− | 2003 04 08 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.6+ |
| 2001 12 14 | 704 | 0.4− | 0.5− | 2003 04 08 | 644 | 0.0 | 0.7+ | 2006 11 19 | 703 | 1.2+ | 1.4− |
| 2001 12 14 | 704 | 0.2− | 0.3+ | 2004 05 13 | 291 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.7− | 0.7+ |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2004 05 13 | 291 | 0.4− | 0.0 | 2006 11 19 | 703 | 0.6− | 0.2+ |
| 2001 12 14 | 704 | 0.3+ | 0.1− | 2004 05 13 | 291 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.3− | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2004 05 14 | 291 | 0.3+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.4− | 0.0 | 2004 05 14 | 291 | 0.5+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.5+ | 2004 05 14 | 291 | 0.4+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.0 |

**(141099)∗ 2001 XJ$_{53}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.11265 | | (2000.0) | | | |
| $n$ | 0.18738748 | $\omega$ | 180.97177 | | +0.86382966 | −0.50355003 |
| $a$ | 3.0244216 | $\Omega$ | 209.27936 | | +0.46242429 | +0.80463472 |
| $e$ | 0.0945259 | $i$ | 1.79883 | | +0.19990521 | +0.31464319 |
| $P$ | 5.26 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 809 | (0.5+ | 2.4+) | 2005 07 02 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 2000 07 29 | 807 | 0.3− | 0.1− | 2005 07 02 | 691 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2000 07 29 | 807 | 0.1+ | 0.1− | 2005 07 02 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.4− |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2005 07 04 | G96 | 0.5− | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2001 11 20 | 704 | 0.2+ | 0.2− | 2005 07 04 | G96 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2001 11 20 | 704 | 0.7+ | 0.3− | 2005 07 04 | G96 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.0 | 0.9+ |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2005 07 04 | G96 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.2− | 0.2− | 2005 07 15 | G96 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2001 11 21 | 704 | 0.1− | 0.3− | 2005 07 15 | G96 | 0.9− | 1.0− | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2001 11 21 | 704 | 0.0 | 0.6− | 2005 07 15 | G96 | 1.4+ | 0.7− | 2006 11 17 | 703 | (2.1− | 0.3+) |
| 2001 11 21 | 704 | 0.5− | 0.9− | 2005 07 15 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.6− | 0.8+ |
| 2001 11 21 | 704 | 0.5− | 1.1− | 2005 07 30 | E12 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2001 12 10 | 704 | 0.2− | 0.6+ | 2005 07 30 | E12 | 1.0− | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2001 12 10 | 704 | 0.3+ | 0.2+ | 2005 07 30 | E12 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 2001 12 10 | 704 | 0.4+ | 0.1+ | 2005 07 30 | E12 | 0.7− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.7− |
| 2001 12 12 | 644 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.5− |
| 2001 12 12 | 644 | 0.0 | 0.4+ | 2006 07 22 | G96 | 0.4− | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.0 |
| 2001 12 12 | 644 | 0.2+ | 0.1+ | 2006 07 22 | G96 | 0.8− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 0.2− | 0.4+ | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 12 14 | 704 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 12 14 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.8+ | 1.2+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2001 12 20 | 704 | 0.7− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.3+ | 0.7− |
| 2001 12 20 | 704 | 1.0+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2001 12 20 | 704 | 0.6+ | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 1.1+ | 0.2− |
| 2001 12 20 | 704 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 1.2+ | 0.2− |
| 2001 12 24 | 691 | 0.1− | 1.0− | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2001 12 24 | 691 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.6+ |
| 2001 12 24 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 1.0− | 0.8− |
| 2004 04 24 | 291 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.0 | 0.5+ |
| 2004 04 24 | 291 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.7− | 1.1+ |
| 2004 04 24 | 291 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.7− | 0.8− |
| 2004 05 19 | 291 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.7+ | 2006 11 29 | 704 | 0.9− | 1.5+ |
| 2004 05 19 | 291 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.9+ | | | | |
| 2004 05 19 | 291 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ | | | | |

**(141100)∗ 2001 XV$_{53}$ = 2000 QW$_{253}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46981)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.34691 | | (2000.0) | | | |
| $n$ | 0.18139978 | $\omega$ | 252.02565 | | +0.77238695 | −0.63468727 |
| $a$ | 3.0906147 | $\Omega$ | 147.35861 | | +0.59845867 | +0.71441708 |
| $e$ | 0.1971543 | $i$ | 2.58211 | | +0.21275717 | +0.29458499 |
| $P$ | 5.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 413 | 0.3− | 0.2+ | 2002 01 09 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.8− | 0.1+ |
| 2000 08 26 | 413 | 0.3− | 0.3+ | 2002 01 09 | 704 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.5+ |
| 2000 08 26 | 413 | 0.2− | 0.2+ | 2002 01 09 | 704 | 0.7− | 0.1− | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.7− | 0.1+ | 2002 01 09 | 704 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.6+ | 0.0 | 2002 01 13 | 704 | 0.5+ | 0.4− | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.4+ | 2002 01 13 | 704 | 0.6− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.4+ | 0.0 | 2002 01 13 | 704 | 1.2− | 0.9− | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.9+ | 0.4− | 2002 01 13 | 704 | 0.7− | 0.9+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.8+ | 0.8− | 2002 01 13 | 704 | 0.0 | 0.7+ | 2006 09 29 | 699 | 0.1− | 0.6+ |
| 2001 11 20 | 704 | 1.2+ | 0.7− | 2003 03 07 | 291 | 0.3+ | 0.5+ | 2006 09 29 | 699 | 0.3+ | 0.8+ |
| 2001 11 20 | 704 | 0.8+ | 1.0− | 2003 03 07 | 291 | 0.3+ | 0.5+ | 2006 09 29 | 699 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.7+ | 1.1− | 2003 03 07 | 291 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 0.7− | 1.3+ |
| 2001 11 24 | 704 | 0.9+ | 0.3− | 2003 03 27 | 691 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2001 11 24 | 704 | (1.5+ | 0.2−) | 2003 03 27 | 691 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2001 11 24 | 704 | 0.5+ | 0.2− | 2003 03 27 | 691 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2001 11 24 | 704 | 0.6+ | 0.4− | 2003 03 30 | 695 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.5− |
| 2001 11 24 | 704 | 0.6+ | 1.1− | 2003 03 30 | 695 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.6− | 0.3+ |
| 2001 12 10 | 704 | 0.3− | 0.2− | 2004 03 26 | 291 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 12 10 | 704 | 0.3− | 0.2+ | 2004 03 26 | 291 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2001 12 10 | 704 | 0.4− | 0.1+ | 2004 03 26 | 291 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.2+ | 1.0+ |
| 2001 12 10 | 704 | 0.3− | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 703 | (1.7− | 0.5+) |
| 2001 12 14 | 704 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2001 12 14 | 704 | 0.4+ | 0.4+ | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.6+ | 0.6+ |
| 2001 12 14 | 704 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 12 14 | 704 | 0.2− | 0.8+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.6− | 0.3− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.7+ | 0.6+ | 2006 09 14 | 703 | 0.7+ | 0.6− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 11 06 | 644 | 0.2+ | 0.5+ |
| 2001 12 17 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2001 12 17 | 704 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.6+ | 0.5− | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2001 12 20 | 704 | 0.9− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2001 12 20 | 704 | 0.9− | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 12 20 | 704 | 1.2− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 12 20 | 704 | 0.8− | 0.2− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 01 09 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.6− | 0.1+ | | | | |

**(141101)∗ 2001 XY$_{53}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.01032 | | (2000.0) | | | |
| $n$ | 0.17354691 | $\omega$ | 207.11223 | | +0.43946841 | −0.89755038 |
| $a$ | 3.1831575 | $\Omega$ | 216.84863 | | +0.83453678 | +0.42265245 |
| $e$ | 0.1512834 | $i$ | 3.40789 | | +0.33228885 | +0.12557156 |
| $P$ | 5.68 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 20 | 691 | 0.3+ | 0.1+ | 2001 12 20 | 704 | 0.4+ | 0.6− | 2006 09 18 | 699 | 1.2+ | 0.8+ |
| 1998 05 20 | 691 | 0.2− | 0.7+ | 2001 12 20 | 704 | 0.8+ | 1.0− | 2006 09 18 | 699 | 0.7− | 0.8− |
| 1998 05 20 | 691 | 0.1− | 0.9+ | 2001 12 20 | 704 | 0.9+ | 0.3− | 2006 09 18 | 699 | 1.0+ | 0.8+ |
| 2000 08 31 | 704 | 0.1+ | 1.0+ | 2001 12 20 | 704 | 0.5+ | 0.4− | 2006 09 18 | 699 | 0.7+ | 0.6+ |
| 2000 08 31 | 704 | 0.2+ | 1.3+ | 2002 01 09 | 704 | 0.7+ | 1.1+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 2000 08 31 | 704 | 0.4− | 0.1− | 2002 01 09 | 704 | 0.0 | 0.8+ | 2006 09 27 | 704 | 0.1+ | 0.3− |
| 2001 11 09 | 704 | 0.5− | 0.9+ | 2002 01 09 | 704 | 0.3+ | 1.3+ | 2006 09 27 | 704 | 0.0 | 0.4+ |
| 2001 11 09 | 704 | 0.4− | 0.1− | 2002 01 13 | 704 | 0.5+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2001 11 09 | 704 | 0.5− | 0.2− | 2002 01 13 | 704 | 0.8+ | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.3− | 0.8+ | 2002 01 13 | 704 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.7+ | 0.5+ |
| 2001 11 12 | 704 | (0.0 | 1.9−) | 2002 01 13 | 704 | 0.3− | 0.6+ | 2006 09 29 | 704 | 1.4− | 0.6− |
| 2001 11 12 | 704 | 0.4+ | 0.9+ | 2002 01 15 | 704 | 0.5+ | 0.8+ | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2002 01 15 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.6− | 0.1+ |
| 2001 11 12 | 704 | 1.4− | 1.2+ | 2002 01 15 | 704 | 1.1− | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2002 01 15 | 704 | (1.5− | 0.5+) | 2006 09 29 | 704 | 0.1− | 0.4− |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2004 04 28 | 691 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2004 04 28 | 691 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.6− | 0.5− |
| 2001 11 20 | 704 | 0.3+ | 0.4− | 2004 04 28 | 691 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.4+ | 0.0 | 2004 05 13 | 691 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 1.0− | 0.3+ |
| 2001 11 21 | 704 | 0.1− | 0.4− | 2004 05 13 | 691 | 0.3+ | 0.2+ | 2006 10 01 | 703 | 1.0− | 0.1− |
| 2001 11 21 | 704 | 0.1− | 0.1+ | 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 703 | 0.5− | 0.9− |
| 2001 11 21 | 704 | 0.4− | 0.3− | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.2− | 0.9− |
| 2001 11 21 | 704 | 0.1− | 0.2− | 2004 05 21 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 703 | 0.2+ | 0.6− |
| 2001 12 10 | 704 | 0.4− | 0.4+ | 2004 05 21 | 691 | 0.6+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.9+ |
| 2001 12 10 | 704 | 0.4+ | 1.0+ | 2006 08 21 | 691 | 0.5− | 0.7+ | 2006 10 01 | 704 | (0.6+ | 1.5+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 704 | 0.2− | 0.6+ | 2006 08 21 | 691 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.5+ | 0.0 | |
| 2001 12 10 | 704 | 0.7+ | 1.1+ | 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 10 01 | 704 | 1.2+ | 0.7+ | |
| 2001 12 10 | 704 | 0.6+ | 1.4+ | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.5+ | |
| 2001 12 14 | 704 | 0.1+ | 0.4+ | 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.3+ | |
| 2001 12 14 | 704 | 0.6− | 0.0 | 2006 08 24 | 644 | 0.4− | 0.1− | 2006 10 09 | 644 | 0.4+ | 0.1+ | |
| 2001 12 14 | 704 | 0.3− | 0.3+ | 2006 09 12 | 703 | 0.8− | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.5+ | |
| 2001 12 14 | 704 | 0.4− | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ | |
| 2001 12 14 | 704 | 0.1− | 0.5+ | 2006 09 12 | 703 | 0.3+ | 1.0+ | 2006 10 09 | 644 | 0.0 | 0.3+ | |
| 2001 12 17 | 704 | 0.4− | 0.7+ | 2006 09 12 | 703 | 1.2− | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.0 | |
| 2001 12 17 | 704 | 0.4− | 0.5+ | 2006 09 18 | 704 | 0.5− | 0.1− | 2006 10 23 | G96 | 0.2− | 0.3− | |
| 2001 12 17 | 704 | 0.4− | 0.8+ | 2006 09 18 | 704 | 0.7+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.3− | |
| 2001 12 17 | 704 | 0.4− | 0.4+ | 2006 09 18 | 704 | 0.8+ | 1.1− | 2006 10 23 | G96 | 0.1− | 0.4− | |
| 2001 12 20 | 704 | 0.0 | 1.0− | 2006 09 18 | 704 | 0.1+ | 1.4− | | | | | |

**(141102)∗ 2001 XE$_{54}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.97130 | | (2000.0) | | +0.82209872 | −0.56933002 |
| $n$ | 0.19683332 | $\omega$ | 206.20648 | | +0.52714347 | +0.76387989 |
| $a$ | 2.9268714 | $\Omega$ | 188.50064 | | +0.21511265 | +0.30389280 |
| $e$ | 0.0986111 | $i$ | 1.59912 | | | |
| $P$ | 5.01 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 08 | 691 | 0.4+ | 0.2− | 2001 12 20 | 704 | (2.3− | 2.5+) | 2005 07 04 | G96 | 0.0 | 0.6+ | |
| 1999 06 08 | 691 | 0.3+ | 0.2+ | 2001 12 20 | 704 | 0.3− | 0.5+ | 2005 07 04 | G96 | 0.1+ | 1.0+ | |
| 1999 06 08 | 691 | 0.1+ | 0.3+ | 2001 12 20 | 704 | 0.8− | 0.4− | 2005 07 04 | G96 | 0.4− | 0.8+ | |
| 1999 06 13 | 691 | 0.8− | 0.6+ | 2001 12 20 | 704 | 0.0 | 1.5− | 2005 07 04 | G96 | 0.2− | 0.5+ | |
| 1999 06 13 | 691 | 0.2− | 0.4− | 2001 12 20 | 704 | 0.7− | 0.0 | 2006 11 15 | 703 | 1.0− | 0.1− | |
| 1999 06 13 | 691 | 0.1+ | 0.6− | 2001 12 20 | 704 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.6− | |
| 2001 11 20 | 704 | 1.0− | 0.0 | 2001 12 20 | 704 | (0.3− | 2.0−) | 2006 11 15 | 703 | 0.0 | 1.3− | |
| 2001 11 20 | 704 | 0.6+ | 0.0 | 2001 12 20 | 704 | 0.5− | 0.9+ | 2006 11 15 | 703 | 0.6− | 0.8− | |
| 2001 11 20 | 704 | 0.0 | 0.4− | 2001 12 20 | 704 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.5− | 0.5− | |
| 2001 11 20 | 704 | 0.1− | 0.6+ | 2001 12 20 | 704 | (2.4− | 1.6+) | 2006 11 15 | 691 | 0.0 | 0.0 | |
| 2001 11 21 | 704 | 0.7+ | 0.9+ | 2001 12 20 | 704 | 0.1− | 0.9+ | 2006 11 15 | 691 | 0.4+ | 0.1− | |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2003 01 30 | 291 | 0.7− | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.2− | |
| 2001 11 21 | 704 | 0.8+ | 0.6− | 2003 01 30 | 291 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.2− | |
| 2001 11 21 | 704 | (2.3+ | 0.4−) | 2003 01 30 | 291 | 0.3− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.1− | |
| 2001 12 10 | 704 | 0.3− | 0.9+ | 2003 03 06 | 699 | 0.9+ | 0.3− | 2006 11 21 | 704 | (1.9+ | 0.9+) | |
| 2001 12 10 | 704 | (0.0 | 2.0+) | 2003 03 06 | 699 | (1.6− | 1.0−) | 2006 11 21 | 704 | (3.7+ | 1.7+) | |
| 2001 12 10 | 704 | 0.0 | 0.6+ | 2003 03 06 | 699 | (0.6+ | 1.9−) | 2006 11 21 | 704 | (3.6+ | 1.9+) | |
| 2001 12 10 | 704 | 0.2− | 0.2+ | 2003 03 06 | 699 | (0.6− | 1.8−) | 2006 11 21 | 704 | (3.2+ | 1.3+) | |
| 2001 12 14 | 704 | 0.5+ | 0.3+ | 2003 03 07 | 699 | (0.3+ | 1.6−) | 2006 11 21 | 704 | (3.2+ | 1.8+) | |
| 2001 12 14 | 704 | 1.0+ | 0.3+ | 2003 03 07 | 699 | (1.6− | 0.5−) | 2006 11 21 | 704 | 0.6− | 0.8+ | |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2003 03 07 | 699 | (0.9− | 2.7+) | 2006 11 21 | 704 | 0.3− | 0.9+ | |
| 2001 12 14 | 691 | 0.1+ | 0.1− | 2003 03 07 | 699 | (0.8+ | 2.9+) | 2006 11 21 | 704 | 0.3− | 1.2+ | |
| 2001 12 14 | 704 | 0.7+ | 0.6+ | 2003 03 09 | 704 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2− | 1.0+ | |
| 2001 12 14 | 691 | 0.1− | 0.3− | 2003 03 09 | 704 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.1+ | |
| 2001 12 14 | 691 | 0.2+ | 0.3− | 2003 03 09 | 704 | 1.0+ | 1.0− | 2006 11 23 | 691 | 0.0 | 0.0 | |
| 2001 12 17 | 704 | 0.4− | 0.1+ | 2003 04 01 | 695 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.0 | |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2003 04 01 | 695 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 | |
| 2001 12 17 | 704 | 0.8− | 0.5+ | 2003 04 09 | 691 | 0.2+ | 0.7+ | 2006 12 01 | 704 | 0.1− | 0.0 | |
| 2001 12 17 | 704 | 0.2− | 0.8+ | 2003 04 09 | 691 | 0.3+ | 0.5+ | 2006 12 01 | 704 | (0.7+ | 2.1+) | |
| 2001 12 17 | 704 | 0.1− | 0.9+ | 2003 04 09 | 691 | 0.7+ | 0.3+ | 2006 12 01 | 704 | 0.1− | 0.4+ | |
| 2001 12 20 | 704 | (1.9− | 0.5+) | 2004 05 20 | 599 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.9+ | 0.2− | |
| 2001 12 20 | 704 | (3.6− | 2.1+) | 2004 05 20 | 599 | 0.1+ | 0.4+ | 2006 12 01 | 704 | 1.1+ | 0.7− | |
| 2001 12 20 | 704 | 0.6+ | 0.6+ | 2004 05 20 | 599 | 0.1+ | 0.3+ | | | | | |
| 2001 12 20 | 704 | 0.3− | 0.1+ | 2004 05 20 | 599 | 0.1− | 0.1+ | | | | | |

**(141103)∗ 2001 XM$_{56}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.01666 | | (2000.0) | | +0.33733799 | −0.94066483 |
| $n$ | 0.19298934 | $\omega$ | 209.92116 | | +0.87457268 | +0.32761370 |
| $a$ | 2.9656087 | $\Omega$ | 220.39578 | | +0.34831839 | +0.08842479 |
| $e$ | 0.1611063 | $i$ | 3.25349 | | | |
| $P$ | 5.11 | $H$ | 15.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.2− | 0.8− | 2002 01 09 | 704 | 0.7− | 1.0+ | 2006 11 11 | 691 | 0.2− | 0.1− | |
| 2001 11 09 | 704 | 1.1− | 0.2+ | 2002 01 09 | 704 | 0.3− | 0.5+ | 2006 11 12 | 703 | 0.4− | 0.5+ | |
| 2001 11 09 | 704 | 1.3− | 0.7+ | 2002 01 13 | 704 | 0.1− | 0.7− | 2006 11 12 | 703 | 0.3+ | 0.9+ | |
| 2001 11 20 | 704 | 0.1+ | 0.4− | 2002 01 13 | 704 | 0.3− | 0.9− | 2006 11 12 | 703 | 1.0+ | 1.0+ | |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2002 01 13 | 704 | 0.1− | 0.8− | 2006 11 12 | 703 | 0.3+ | 0.8+ | |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2002 01 13 | 704 | 0.2+ | 0.8− | 2006 11 15 | 691 | 0.2− | 0.2+ | |
| 2001 11 20 | 704 | 0.1+ | 0.5+ | 2003 03 24 | 691 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.1− | 0.3+ | |
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2003 03 24 | 691 | 0.6− | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.2+ | |
| 2001 11 21 | 704 | 0.7+ | 0.5+ | 2003 03 24 | 691 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.4+ | |
| 2001 11 21 | 704 | 0.7+ | 1.0+ | 2003 04 07 | 691 | 0.0 | 1.0+ | 2006 11 18 | 704 | 0.3+ | 0.1− | |
| 2001 11 21 | 704 | 0.0 | 0.7− | 2003 04 07 | 691 | 0.5+ | 1.2+ | 2006 11 18 | 704 | 0.3+ | 0.3+ | |
| 2001 11 21 | 704 | 0.4+ | 0.3− | 2003 04 07 | 691 | 0.3+ | 1.1+ | 2006 11 18 | 704 | 0.1− | 0.4− | |
| 2001 11 21 | 704 | 0.9+ | 0.2+ | 2003 04 24 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.4− | |
| 2001 12 10 | 704 | 0.1− | 0.2− | 2003 04 24 | 691 | 1.0+ | 0.3− | 2006 11 19 | 691 | 0.1− | 0.4+ | |
| 2001 12 10 | 704 | 0.3+ | 0.5+ | 2003 04 24 | 691 | 0.9+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.3+ | |
| 2001 12 10 | 704 | 0.2− | 0.7+ | 2003 04 29 | 691 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.5+ | |
| 2001 12 10 | 704 | 0.2+ | 0.1+ | 2003 04 29 | 691 | 0.2− | 0.4+ | 2006 11 21 | 704 | (2.5+ | 0.8+) | |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2003 04 29 | 691 | 0.7− | 0.1+ | 2006 11 21 | 704 | 1.3+ | 0.4+ | |
| 2001 12 14 | 704 | 0.9− | 0.8+ | 2005 07 01 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 1.2+ | 0.8+ | |
| 2001 12 14 | 704 | (0.9− | 1.7+) | 2005 07 01 | 691 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.3+ | |
| 2001 12 14 | 704 | 1.0− | 1.1+ | 2005 07 01 | 691 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.6+ | 0.3+ | |
| 2001 12 17 | 704 | 0.9− | 1.0− | 2005 07 09 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2+ | |
| 2001 12 17 | 704 | (0.7+ | 1.7+) | 2005 07 09 | 691 | 0.2+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2+ | |
| 2001 12 17 | 704 | 1.2− | 0.5+ | 2005 07 09 | 691 | 0.4− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2+ | |
| 2001 12 17 | 704 | 1.3+ | 0.1− | 2005 08 06 | 644 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.3− | 0.2+ | |
| 2001 12 17 | 704 | 0.7+ | 0.8− | 2005 08 06 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.2+ | |
| 2001 12 18 | 704 | 0.1− | 1.3− | 2005 08 06 | 644 | 0.4+ | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.2+ | |
| 2001 12 18 | 704 | 0.3+ | 0.9− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.9− | 0.2+ | |
| 2001 12 18 | 704 | 0.2+ | 0.6− | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.7− | 0.3+ | |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.8− | 0.4− | |
| 2001 12 18 | 704 | 0.2− | 1.3− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.6− | 0.6+ | |
| 2001 12 20 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.2− | |
| 2001 12 20 | 691 | 0.2+ | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.3− | |
| 2001 12 20 | 704 | (2.2− | 0.1−) | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.6− | |
| 2001 12 20 | 704 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 1.2+ | 0.4− | |
| 2001 12 20 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.3− | 2006 11 29 | 704 | 1.0+ | 0.5+ | |
| 2001 12 20 | 704 | 0.5− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.1− | 0.4− | |
| 2001 12 20 | 704 | 0.4− | 0.9− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.2− | 0.1+ | |
| 2001 12 20 | 704 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.1− | |
| 2002 01 09 | 704 | 0.7+ | 0.1− | 2006 11 11 | 691 | 0.4− | 0.1+ | | | | | |
| 2002 01 09 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | | | | | |

**(141104)∗ 2001 XB$_{57}$ = 2000 QA$_{12}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23185)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.26361 | | (2000.0) | | +0.99970600 | −0.02388408 |
| $n$ | 0.18578483 | $\omega$ | 99.07811 | | +0.02025903 | +0.91748482 |
| $a$ | 3.0417900 | $\Omega$ | 262.29055 | | +0.01332241 | +0.39705309 |
| $e$ | 0.1707527 | $i$ | 0.24164 | | | |
| $P$ | 5.31 | $H$ | 15.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 15 | 691 | 0.6− | 0.7− | 2002 12 07 | 645 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.6− | |
| 1993 04 15 | 691 | 0.4− | 0.3− | 2002 12 07 | 645 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.6− | |
| 1993 04 15 | 691 | 0.1+ | 1.4− | 2003 02 23 | 291 | 0.0 | 0.5+ | 2006 11 12 | G96 | 0.3+ | 0.6− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.2+ | 0.5+ | 2003 02 23 | 291 | 0.5+ | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.6− | | |
| 2000 08 01 | 704 | 0.2− | 1.2+ | 2003 02 23 | 291 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.6− | | |
| 2000 08 01 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.4− | | |
| 2000 08 01 | 704 | 1.4− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2000 08 01 | 704 | 0.2+ | 1.6− | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.6− | | |
| 2000 08 24 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2000 08 24 | 704 | 0.5− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1− | | |
| 2000 08 24 | 704 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.3− | 0.1− | | |
| 2000 08 24 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.1− | | |
| 2000 08 24 | 704 | 0.2− | 1.2+ | 2006 10 22 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.3− | | |
| 2000 09 02 | 704 | 0.5− | 1.0+ | 2006 10 22 | 644 | 0.5+ | 0.0 | 2006 11 17 | 703 | 0.8− | 0.5+ | | |
| 2000 09 02 | 704 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.0 | 0.8− | | |
| 2000 09 02 | 704 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.1+ | | |
| 2001 11 20 | 704 | 1.0+ | 1.4+ | 2006 10 28 | 691 | 0.2− | 0.2− | 2006 11 18 | 704 | 1.1+ | 1.0+ | | |
| 2001 11 20 | 704 | 1.3+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.9+ | | |
| 2001 11 20 | 704 | (1.2− | 2.2+) | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 1.1+ | 0.0 | | |
| 2001 11 20 | 704 | 0.3− | 1.4+ | 2006 11 01 | 691 | 0.3− | 0.3− | 2006 11 18 | 704 | 1.2+ | 0.8− | | |
| 2001 12 10 | 704 | 0.0 | 0.9− | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.9+ | 1.4+ | | |
| 2001 12 10 | 704 | 0.5− | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.6− | | |
| 2001 12 10 | 704 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.5− | | |
| 2001 12 10 | 704 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.1+ | | |
| 2001 12 14 | 704 | 0.6+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 21 | G96 | (2.1+ | 1.4+) | | |
| 2001 12 14 | 704 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.6− | | |
| 2001 12 14 | 704 | 1.3− | 1.3+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.6+ | | |
| 2001 12 14 | 704 | 0.5− | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.4+ | | |
| 2001 12 14 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.5− | | |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.3− | | |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2− | | |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.7− | | |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.1− | | |
| 2002 01 13 | 704 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.2− | | |
| 2002 01 13 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.4+ | | |
| 2002 01 13 | 704 | 0.5+ | 0.8− | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3− | 2.0+ | | |
| 2002 01 13 | 704 | 0.2− | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.4+ | | |
| 2002 01 15 | 704 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.6+ | 0.2+ | 2006 11 29 | 704 | 0.8+ | 0.5+ | | |
| 2002 01 15 | 704 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.6− | 2006 11 29 | 704 | 0.6− | 1.3+ | | |
| 2002 01 15 | 704 | 0.2− | 0.9− | 2006 11 12 | G96 | 0.3+ | 0.5− | 2006 11 29 | 704 | 0.6− | 0.7+ | | |
| 2002 01 15 | 704 | 0.9− | 0.7− | 2006 11 12 | G96 | 0.1+ | 0.5− | | | | | | |

**(141105)∗ 2001 XK$_{57}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.42582 | | (2000.0) | | | |
| $n$ | 0.18099993 | $\omega$ | 325.44161 | | +0.59466481 | −0.76978192 |
| $a$ | 3.0951648 | $\Omega$ | 86.95733 | | +0.78007154 | +0.48261598 |
| $e$ | 0.1398821 | $i$ | 13.43230 | | +0.19458201 | +0.41775304 |
| $P$ | 5.45 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | (0.6− | 2.5+) | 2002 01 15 | 704 | 0.3− | 0.4− | 2003 04 06 | 699 | 0.7− | 0.1− | | |
| 1998 04 23 | 704 | 1.3− | 0.9+ | 2002 01 15 | 704 | 0.1− | 0.5− | 2004 05 23 | 704 | (1.8+ | 0.8+) | | |
| 1998 04 23 | 704 | 1.6− | 0.5− | 2002 01 15 | 704 | 0.3− | 1.2− | 2004 05 23 | 704 | 0.1+ | 1.3+ | | |
| 1998 04 23 | 704 | 1.0+ | 0.1+ | 2002 01 19 | 704 | 0.2+ | 0.2+ | 2004 05 23 | 704 | 1.1+ | 0.1+ | | |
| 2000 08 21 | 699 | 0.7+ | 0.7+ | 2002 01 19 | 704 | 0.6− | 0.2+ | 2004 05 23 | 704 | 0.6+ | 0.9+ | | |
| 2000 08 21 | 699 | 0.2− | 1.9− | 2002 01 19 | 704 | 0.7− | 0.4+ | 2004 05 23 | 704 | 0.6+ | 1.4+ | | |
| 2000 08 21 | 699 | 0.5− | 1.4− | 2002 01 19 | 704 | 0.1− | 0.3+ | 2004 06 16 | 691 | 0.7+ | 0.2+ | | |
| 2000 08 21 | 699 | 1.3− | 0.0 | 2002 01 19 | 704 | 1.2− | 1.0+ | 2004 06 16 | 691 | 0.4+ | 0.3+ | | |
| 2001 11 20 | 704 | 0.4+ | 0.2+ | 2002 01 21 | 704 | 0.6− | 0.5+ | 2004 06 16 | 691 | 0.6+ | 0.4+ | | |
| 2001 11 20 | 704 | 0.9+ | 0.1+ | 2002 01 21 | 704 | 0.5− | 0.4− | 2006 09 19 | 703 | 0.2− | 0.9+ | | |
| 2001 11 20 | 704 | 0.7+ | 0.4− | 2002 01 21 | 704 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.1− | 0.2+ | | |
| 2001 11 20 | 704 | 0.8+ | 0.2− | 2002 01 21 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.4+ | | |
| 2001 11 20 | 704 | 0.1+ | 1.5− | 2002 01 21 | 704 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.4+ | 0.3+ | | |
| 2001 12 10 | 704 | 0.3− | 0.9+ | 2002 02 06 | 704 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.1− | 0.3+ | | |
| 2001 12 10 | 704 | 0.7− | 0.0 | 2002 02 06 | 704 | 0.3− | 0.7− | 2006 09 26 | 703 | 0.5− | 0.7+ | | |
| 2001 12 10 | 704 | 0.1+ | 0.2+ | 2002 02 06 | 704 | 0.6+ | 0.8− | 2006 09 26 | 703 | 0.2− | 0.1+ | | |
| 2001 12 10 | 704 | 0.8− | 0.3− | 2002 02 06 | 704 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.2− | 0.5+ | | |
| 2001 12 14 | 704 | 0.2− | 0.5− | 2002 02 06 | 704 | 0.1+ | 0.3− | 2006 09 30 | 704 | 0.8+ | 0.3+ | | |
| 2001 12 14 | 704 | (1.6− | 0.5−) | 2003 01 27 | 704 | 1.2+ | 0.6+ | 2006 09 30 | 704 | 0.2+ | 0.5+ | | |
| 2001 12 14 | 704 | 0.2− | 0.1+ | 2003 01 27 | 704 | (0.9+ | 1.6+) | 2006 09 30 | 704 | 0.0 | 0.7+ | | |
| 2001 12 14 | 704 | 0.7+ | 0.8− | 2003 01 27 | 704 | 0.5+ | 0.7− | 2006 09 30 | 704 | 0.1+ | 0.1+ | | |
| 2001 12 14 | 704 | 0.3+ | 0.6+ | 2003 01 27 | 704 | 0.7+ | 0.5+ | 2006 09 30 | 704 | 0.9− | 0.2+ | | |
| 2001 12 14 | 704 | 0.6+ | 1.2− | 2003 01 27 | 704 | 1.0+ | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 2001 12 14 | 691 | 0.2+ | 0.0 | 2003 02 25 | 246 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 2001 12 14 | 691 | 0.3+ | 0.0 | 2003 02 25 | 246 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.4+ | | |
| 2001 12 14 | 691 | 0.2+ | 0.0 | 2003 02 25 | 246 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2001 12 17 | 704 | 0.0 | 0.1+ | 2003 02 25 | 246 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 2001 12 17 | 704 | 0.5+ | 0.1+ | 2003 02 25 | 246 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2001 12 17 | 704 | 0.8+ | 0.2+ | 2003 02 25 | 246 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.4− | 0.6+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.2− | 2003 03 08 | 699 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.6+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.6+ | 2003 03 08 | 699 | 1.0− | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.1− | | |
| 2001 12 20 | 704 | 0.1+ | 1.1+ | 2003 03 08 | 699 | 1.1− | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.8+ | | |
| 2001 12 20 | 704 | 0.6− | 1.0+ | 2003 03 08 | 699 | 0.5+ | 0.5+ | 2006 10 28 | 703 | (2.4+ | 0.6−) | | |
| 2001 12 20 | 704 | 1.1− | 1.2+ | 2003 03 08 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.3− | 0.4+ | | |
| 2001 12 20 | 704 | (0.4− | 1.5+) | 2003 03 08 | 704 | 0.8+ | 0.9+ | 2006 10 28 | 703 | 0.8− | 0.1+ | | |
| 2001 12 21 | 704 | (0.6+ | 1.6+) | 2003 03 08 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 1.1− | 0.5+ | | |
| 2001 12 21 | 704 | 0.8− | 0.7+ | 2003 03 08 | 704 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.5− | 0.5+ | | |
| 2001 12 21 | 704 | 0.4+ | 0.2+ | 2003 03 08 | 644 | 0.0 | 0.5− | 2006 11 10 | 704 | 0.1− | 1.3+ | | |
| 2001 12 21 | 704 | 0.9+ | 0.5+ | 2003 03 08 | 644 | 0.5+ | 0.1− | 2006 11 10 | 704 | 0.7− | 0.5+ | | |
| 2001 12 21 | 704 | 0.2− | 1.2+ | 2003 03 08 | 644 | 0.0 | 0.1+ | 2006 11 10 | 704 | 0.5+ | 0.4+ | | |
| 2002 01 08 | 704 | 0.5+ | 0.7+ | 2003 03 12 | 704 | (1.8+ | 1.6+) | 2006 11 10 | 704 | 0.4− | 0.2+ | | |
| 2002 01 08 | 704 | 0.1+ | 0.6− | 2003 03 12 | 704 | 0.7− | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.4− | | |
| 2002 01 08 | 704 | 0.2− | 0.5− | 2003 03 12 | 704 | 0.0 | 1.2+ | 2006 11 16 | 703 | 0.7− | 0.2+ | | |
| 2002 01 08 | 704 | (1.0− | 1.7+) | 2003 03 12 | 704 | 0.3− | 0.2− | 2006 11 16 | 703 | 0.3− | 0.0 | | |
| 2002 01 13 | 704 | 0.6+ | 0.6− | 2003 03 26 | 704 | 1.0− | 0.5+ | 2006 11 16 | 703 | 0.3− | 0.4− | | |
| 2002 01 13 | 704 | 1.0+ | 0.1− | 2003 03 26 | 704 | 0.2+ | 0.9+ | 2006 11 16 | 703 | 0.2− | 0.1− | | |
| 2002 01 13 | 704 | 0.7+ | 0.4− | 2003 03 26 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 703 | 0.2+ | 0.6+ | | |
| 2002 01 13 | 704 | 0.2+ | 1.2− | 2003 04 06 | 699 | 0.7− | 0.4+ | 2006 11 16 | 703 | 0.1− | 0.4− | | |
| 2002 01 15 | 704 | 0.1− | 0.2+ | 2003 04 06 | 699 | 0.7− | 1.0− | 2006 11 16 | 703 | 0.4− | 0.3− | | |
| 2002 01 15 | 704 | 0.6− | 0.2− | 2003 04 06 | 699 | 0.2+ | 1.1+ | | | | | | |

**(141106)∗ 2001 XP$_{57}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.55363 | | (2000.0) | | | |
| $n$ | 0.17445367 | $\omega$ | 333.22016 | | +0.49760053 | −0.80553721 |
| $a$ | 3.1721179 | $\Omega$ | 85.33760 | | +0.84241483 | +0.36040412 |
| $e$ | 0.1495561 | $i$ | 18.83160 | | +0.20671470 | +0.47033889 |
| $P$ | 5.65 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 04 | 644 | 0.2+ | 0.7+ | 2001 12 21 | 704 | 0.0 | 0.5+ | 2003 03 22 | 644 | 0.3+ | 0.9+ | | |
| 2001 09 04 | 644 | 0.4+ | 0.3+ | 2002 01 08 | 704 | 0.5− | 0.6+ | 2003 04 01 | 699 | 0.5− | 0.1− | | |
| 2001 09 04 | 644 | 0.1− | 0.6+ | 2002 01 08 | 704 | 0.4− | 0.2+ | 2003 04 01 | 699 | 0.3+ | 0.0 | | |
| 2001 11 20 | 704 | 0.7− | 0.6+ | 2002 01 08 | 704 | 0.7− | 0.2+ | 2003 04 01 | 699 | 1.0+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2002 01 08 | 704 | 0.9− | 0.4− | 2003 04 01 | 699 | 1.0− | 0.5− | | |
| 2001 11 20 | 704 | 1.0− | 0.5+ | 2002 01 08 | 704 | 0.8− | 0.2− | 2003 04 07 | 644 | 0.3+ | 0.3− | | |
| 2001 11 20 | 704 | 0.5− | 0.3+ | 2002 01 13 | 704 | 0.1− | 0.4+ | 2003 04 07 | 644 | 0.3+ | 0.1− | | |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2002 01 13 | 704 | 0.2− | 0.4+ | 2003 04 07 | 644 | 0.4+ | 0.3− | | |
| 2001 11 24 | 704 | 0.7− | 0.0 | 2002 01 13 | 704 | 0.1− | 0.4+ | 2004 05 14 | 691 | 0.1+ | 0.5+ | | |
| 2001 11 24 | 704 | 0.5− | 0.0 | 2002 01 13 | 704 | 0.0 | 0.2+ | 2004 05 14 | 699 | 0.5+ | 0.8+ | | |
| 2001 11 24 | 704 | 0.1+ | 0.2− | 2002 01 13 | 704 | 0.2− | 0.5+ | 2004 05 14 | 699 | 0.8+ | 1.2− | | |
| 2001 11 24 | 704 | 0.7− | 0.3+ | 2002 01 15 | 704 | 0.2− | 0.3+ | 2004 05 14 | 691 | 0.1+ | 0.7+ | | |
| 2001 11 24 | 704 | 0.1+ | 1.0− | 2002 01 15 | 704 | 0.1− | 0.1− | 2004 05 14 | 699 | 0.1− | 0.2+ | | |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2002 01 15 | 704 | 0.1− | 0.3+ | 2004 05 14 | 699 | 1.0+ | 0.9− | | |
| 2001 12 10 | 704 | 0.7+ | 0.2− | 2002 01 15 | 704 | 0.2− | 0.2+ | 2004 05 14 | 691 | 0.1+ | 0.6+ | | |
| 2001 12 10 | 704 | 0.0 | 0.4+ | 2002 01 15 | 704 | 0.1+ | 0.5+ | 2004 05 19 | 691 | 0.3− | 0.4+ | | |
| 2001 12 10 | 704 | 0.5+ | 0.5+ | 2002 01 21 | 704 | 0.1− | 0.7+ | 2004 05 19 | 691 | 0.2− | 0.3+ | | |
| 2001 12 10 | 704 | 0.2+ | 0.3+ | 2002 01 21 | 704 | 0.0 | 0.2+ | 2004 05 19 | 691 | 0.0 | 0.4+ | | |
| 2001 12 14 | 704 | 0.3− | 0.7− | 2002 01 21 | 704 | 0.0 | 1.1+ | 2004 05 23 | 704 | 1.4+ | 0.9+ | | |
| 2001 12 14 | 704 | 0.2+ | 0.5− | 2002 01 21 | 704 | 0.4+ | 0.7+ | 2004 05 23 | 704 | 0.4+ | 0.4− | | |
| 2001 12 14 | 704 | 0.1− | 0.5− | 2002 02 06 | 704 | 0.1− | 0.2− | 2004 05 23 | 704 | 0.7+ | 0.6+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.0 | 0.7− | 2002 02 06 | 704 | 0.7− | 0.0 | 2004 05 23 | 704 | 1.1+ | 0.3− |
| 2001 12 14 | 691 | (2.0− | 0.0 ) | 2002 02 06 | 704 | 0.2+ | 0.3+ | 2005 07 03 | 644 | 0.4+ | 1.1+ |
| 2001 12 14 | 691 | 0.2− | 0.2− | 2002 02 06 | 704 | 0.2− | 0.9+ | 2005 07 03 | 644 | 0.1− | 0.7+ |
| 2001 12 14 | 691 | 0.1+ | 0.1− | 2002 02 06 | 704 | 0.1+ | 0.1− | 2005 07 03 | 644 | 0.1+ | 0.6+ |
| 2001 12 17 | 704 | 0.1+ | 0.1+ | 2002 02 07 | 704 | 0.2− | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.2+ |
| 2001 12 17 | 704 | 0.7+ | 0.9+ | 2002 02 07 | 704 | 0.1+ | 0.4− | 2006 09 27 | 703 | 0.0 | 0.6+ |
| 2001 12 17 | 704 | 0.1+ | 0.2+ | 2002 02 07 | 704 | 0.7+ | 0.2+ | 2006 09 27 | 703 | 0.8− | 0.6+ |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2002 02 07 | 704 | 0.4+ | 0.1− | 2006 09 27 | 703 | (1.6− | 0.1+) |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2003 02 26 | 704 | 0.2− | 0.4− | 2006 10 03 | E12 | 0.0 | 0.8+ |
| 2001 12 20 | 704 | 0.2+ | 0.0 | 2003 02 26 | 704 | 0.0 | 0.2+ | 2006 10 03 | E12 | 0.0 | 0.1+ |
| 2001 12 20 | 704 | 0.2+ | 0.1− | 2003 02 26 | 704 | 0.6+ | 0.3− | 2006 10 03 | E12 | 0.5− | 0.3+ |
| 2001 12 20 | 704 | 0.2+ | 0.1− | 2003 02 26 | 704 | 0.2− | 0.4+ | 2006 10 03 | E12 | 0.2− | 0.7+ |
| 2001 12 20 | 704 | 0.6+ | 0.3− | 2003 03 09 | 644 | 0.1− | 0.7− | 2006 10 12 | E12 | 0.3− | 0.1− |
| 2001 12 20 | 704 | 0.4+ | 0.1+ | 2003 03 09 | 644 | 0.1− | 0.6− | 2006 10 12 | E12 | 0.0 | 0.6+ |
| 2001 12 21 | 704 | 0.6− | 1.2+ | 2003 03 09 | 644 | 0.3− | 0.9− | 2006 10 12 | E12 | 0.3− | 0.5+ |
| 2001 12 21 | 704 | 0.2− | 0.3+ | 2003 03 22 | 644 | 0.0 | 1.2+ | 2006 10 12 | E12 | 0.5− | 0.2+ |
| 2001 12 21 | 704 | 0.2+ | 0.1− | 2003 03 22 | 644 | 0.2+ | 1.0+ | | | | |

**(141107)∗ 2001 XF$_{58}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.03278 | | (2000.0) | | −0.04971185 | −0.97800641 |
| $n$ | 0.18028908 | $\omega$ | 11.79556 | | −0.89887839 | −0.13221903 |
| $a$ | 3.1032953 | $\Omega$ | 81.29992 | | +0.43536923 | +0.16131207 |
| $e$ | 0.1034985 | $i$ | 11.82493 | | +0.89966117 | −0.43577564 |
| $P$ | 5.47 | $H$ | 14.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.3+ | 1.4+ | 2002 01 05 | 691 | 0.1+ | 0.4− | 2003 04 05 | 699 | 0.0 | 0.2− |
| 2001 11 09 | 704 | 0.1− | 0.5+ | 2002 01 08 | 704 | 0.1+ | 0.4− | 2004 06 14 | 704 | 0.3− | 0.2+ |
| 2001 11 09 | 704 | (1.0− | 1.7+) | 2002 01 08 | 704 | 0.6+ | 0.6− | 2004 06 14 | 704 | 0.1− | 1.3− |
| 2001 11 09 | 704 | 0.3− | 0.3+ | 2002 01 08 | 704 | 1.2− | 0.6− | 2004 06 14 | 704 | 0.1+ | 0.5+ |
| 2001 11 20 | 704 | 0.2− | 0.4− | 2002 01 08 | 704 | 0.1− | 0.5− | 2004 06 14 | 704 | 1.3− | 1.1− |
| 2001 11 20 | 704 | 0.6− | 0.4− | 2002 01 08 | 704 | 0.7− | 0.7− | 2006 09 29 | 699 | 1.0+ | 0.1+ |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2003 02 28 | 704 | 0.5+ | 1.1+ | 2006 09 29 | 699 | 0.5− | 0.8+ |
| 2001 12 10 | 704 | 0.1− | 0.3+ | 2003 02 28 | 704 | 0.6+ | 0.7− | 2006 09 29 | 699 | 0.5+ | 0.7+ |
| 2001 12 10 | 704 | 0.5+ | 0.3− | 2003 02 28 | 704 | (2.0+ | 0.4−) | 2006 09 29 | 699 | 1.1− | 0.9+ |
| 2001 12 10 | 704 | 0.9− | 0.3+ | 2003 03 12 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.9+ |
| 2001 12 14 | 704 | 0.4+ | 0.3+ | 2003 03 12 | 704 | 1.3+ | 1.5+ | 2006 09 30 | 703 | 0.5+ | 0.6− |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2003 03 12 | 704 | 0.5+ | 1.2+ | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2003 03 12 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 1.1+ | 0.5− |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2003 03 12 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2001 12 14 | 704 | 0.3+ | 0.6+ | 2003 03 12 | 644 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.5− | 0.3− | 2003 03 12 | 644 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.5− | 0.4− | 2003 03 25 | 644 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.6− | 0.2− | 2003 03 25 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.5− | 0.6− | 2003 03 25 | 644 | 0.2− | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2001 12 18 | 704 | 0.1− | 0.4− | 2003 04 01 | 703 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.7+ |
| 2001 12 19 | 704 | 0.4− | 0.1+ | 2003 04 01 | 703 | 1.2+ | 0.7+ | 2006 10 22 | 703 | 0.9− | 0.3+ |
| 2001 12 19 | 704 | 0.4+ | 0.0 | 2003 04 01 | 703 | 0.7+ | 0.7+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2001 12 19 | 704 | 0.5+ | 0.1− | 2003 04 01 | 703 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.8− | 1.0+ |
| 2001 12 19 | 704 | 0.2+ | 0.0 | 2003 04 02 | 608 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.8+ |
| 2001 12 21 | 704 | 0.0 | 0.3− | 2003 04 02 | 608 | 0.8− | 0.4+ | 2006 11 19 | 703 | 0.7− | 0.2+ |
| 2001 12 21 | 704 | 0.5+ | 0.1+ | 2003 04 02 | 608 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.5− | 0.1+ |
| 2001 12 21 | 704 | 0.2− | 0.2− | 2003 04 05 | 699 | 0.6− | 1.0− | 2006 11 19 | 703 | 1.3− | 1.1+ |
| 2002 01 05 | 691 | 0.2+ | 0.2− | 2003 04 05 | 699 | 1.0− | 0.0 | | | | |
| 2002 01 05 | 691 | 0.8+ | 0.7− | 2003 04 05 | 699 | 0.1+ | 0.1+ | | | | |

**(141108)∗ 2001 XG$_{58}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.32999 | | (2000.0) | | +0.89966117 | −0.43577564 |
| $n$ | 0.17976758 | $\omega$ | 325.70088 | | +0.40713062 | +0.81536623 |
| $a$ | 3.1092941 | $\Omega$ | 60.15530 | | +0.15765294 | +0.38115285 |
| $e$ | 0.1801841 | $i$ | 1.75963 | | +0.89966117 | −0.43577564 |
| $P$ | 5.48 | $H$ | 15.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 06 | 691 | 0.4− | 0.0 | 2002 01 08 | 704 | (1.7+ | 0.0 ) | 2006 10 19 | 644 | 0.1− | 0.5+ |
| 1992 03 06 | 691 | 0.2+ | 0.2− | 2002 01 12 | 691 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2000 08 26 | 704 | 0.9− | 0.3+ | 2002 01 12 | 691 | 0.1+ | 0.4− | 2006 10 20 | H07 | 0.3− | 0.1+ |
| 2000 08 26 | 704 | 0.7− | 1.7+ | 2002 01 12 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2000 08 26 | 704 | 0.6+ | 1.2+ | 2002 01 14 | 704 | (0.6+ | 1.7−) | 2006 10 20 | H07 | 0.3− | 0.2− |
| 2000 08 26 | 704 | 0.9− | 1.4+ | 2002 01 14 | 704 | (0.6+ | 1.9−) | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 11 09 | 704 | 0.2+ | 0.5− | 2002 01 14 | 704 | (1.0+ | 2.8−) | 2006 10 21 | 703 | 0.1− | 0.7+ |
| 2001 11 09 | 704 | 0.5+ | 0.1+ | 2002 01 14 | 704 | (0.5+ | 1.9−) | 2006 10 21 | 703 | 0.7+ | 0.6− |
| 2001 11 09 | 704 | 0.0 | 0.1− | 2003 02 23 | 291 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.5− |
| 2001 11 09 | 704 | 0.8+ | 0.7+ | 2003 02 23 | 291 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.6− | 0.6− | 2003 02 23 | 291 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.4− | 0.2+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.4+ | 0.0 | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2003 04 05 | 691 | 0.4+ | 1.1+ | 2006 10 23 | 704 | 0.1+ | 1.0+ |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2003 04 05 | 691 | 0.6+ | 1.0+ | 2006 10 23 | 704 | 0.4− | 0.6+ |
| 2001 11 21 | 704 | 0.4− | 0.4+ | 2003 04 05 | 691 | 0.5+ | 0.9+ | 2006 10 23 | 704 | 0.0 | 0.9+ |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2004 04 24 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.3− | 0.4+ |
| 2001 11 21 | 704 | 1.3− | 0.6+ | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 704 | 0.1+ | 0.9+ |
| 2001 12 10 | 704 | 0.3+ | 0.3− | 2004 04 24 | 691 | 0.0 | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 12 10 | 704 | 0.4− | 0.6+ | 2004 05 14 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 12 10 | 704 | 0.8+ | 1.0− | 2004 05 14 | 691 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 12 10 | 704 | 0.1+ | 0.6− | 2004 05 14 | 691 | 0.2+ | 0.5+ | 2006 10 29 | G96 | 0.2− | 0.4− |
| 2001 12 14 | 704 | 0.4− | 1.1+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.3+ | 0.2− |
| 2001 12 14 | 704 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 29 | G96 | 0.3− | 0.4− |
| 2001 12 14 | 704 | 0.4− | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.3+ | 0.4− |
| 2001 12 14 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.2− |
| 2001 12 14 | 557 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2001 12 14 | 557 | 0.6− | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2001 12 14 | 557 | 0.6− | 0.1− | 2006 09 20 | 704 | 0.4+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 12 14 | 557 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.5− | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.5− | 1.0+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.6+ | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2001 12 18 | 704 | 0.2+ | 0.5− | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 12 19 | 704 | 0.6− | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.6− |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 1.1− | 0.2− |
| 2001 12 19 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 0.7+ | 0.5− | 2006 11 17 | 703 | 0.2+ | 0.9+ |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2006 10 13 | D35 | (1.6+ | 0.4−) | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | 0.1+ | 0.4− | 2006 10 13 | D35 | 1.0+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2001 12 19 | 704 | 0.1− | 0.6− | 2006 10 13 | D35 | 1.1+ | 0.1− | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2001 12 19 | 704 | (0.2+ | 1.7−) | 2006 10 15 | 703 | 0.8− | 0.9+ | 2006 11 18 | 704 | 0.7+ | 0.9+ |
| 2001 12 19 | 704 | 0.6− | 1.1− | 2006 10 15 | 703 | 0.5− | 0.3+ | 2006 11 18 | 704 | 0.3− | 1.2+ |
| 2001 12 21 | 704 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.8− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2001 12 21 | 704 | 0.0 | 0.3− | 2006 10 15 | 703 | 0.1+ | 0.9+ | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2001 12 21 | 704 | 0.4+ | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.4+ | 0.4− |
| 2002 01 08 | 704 | 0.7+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.5− |
| 2002 01 08 | 704 | 0.3+ | 0.6− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 20 | G96 | 0.2− | 0.2− |
| 2002 01 08 | 704 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.5+ | | | | |
| 2002 01 08 | 704 | 0.3+ | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1+ | | | | |

**(141109)∗ 2001 XZ$_{59}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.75817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16949764 | $\omega$ | 327.76328 | | −0.20617876 | −0.97832406 | |
| $a$ | 3.2336545 | $\Omega$ | 134.12712 | | +0.90337695 | −0.19788801 | |
| $e$ | 0.2398132 | $i$ | 1.54044 | | +0.37603246 | −0.06101116 | |
| $P$ | 5.81 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 1.0+ | 0.4+ | 2002 01 13 | 704 | 0.6− | 0.6+ | 2006 09 12 | 703 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 1.1− | 0.4+ | 2002 01 13 | 704 | 0.8− | 0.5+ | 2006 09 12 | 703 | (1.0− | 2.7+) |
| 2000 09 24 | 704 | 0.1+ | 0.4+ | 2002 01 13 | 704 | 1.1− | 0.0 | 2006 09 12 | 703 | (1.2+ | 2.2+) |
| 2000 09 24 | 704 | 0.5− | 1.2+ | 2002 01 15 | 704 | 0.3− | 0.3− | 2006 09 12 | 703 | 0.2+ | 1.3+ |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2002 01 15 | 704 | 0.2+ | 1.2+ | 2006 09 13 | 644 | 0.3− | 0.5+ |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2002 01 15 | 704 | (0.1+ | 2.6+) | 2006 09 13 | 644 | 0.0 | 0.6+ |
| 2001 11 21 | 704 | 0.2+ | 0.8+ | 2002 01 15 | 704 | 0.2− | 1.3+ | 2006 09 13 | 644 | 0.3− | 0.6+ |
| 2001 11 21 | 704 | 0.3− | 0.8+ | 2002 01 15 | 704 | 0.9− | 1.1+ | 2006 09 15 | 691 | 0.3− | 0.3+ |
| 2001 12 10 | 704 | 0.8+ | 0.8+ | 2002 01 19 | 704 | 0.5− | 0.4+ | 2006 09 15 | 691 | 0.5− | 0.6+ |
| 2001 12 10 | 704 | 0.9+ | 0.2− | 2002 01 19 | 704 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.6− | 0.3+ |
| 2001 12 10 | 704 | (1.8+ | 0.1−) | 2002 01 19 | 704 | 0.7− | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.9+ |
| 2001 12 10 | 704 | 1.3+ | 0.1− | 2002 01 19 | 704 | 0.6− | 0.2− | 2006 09 18 | 699 | 0.1− | 0.4+ |
| 2001 12 14 | 704 | 0.2+ | 0.3+ | 2002 02 20 | 704 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.6− | 1.0+ |
| 2001 12 14 | 704 | 0.0 | 0.3+ | 2002 02 20 | 704 | 0.6+ | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.9+ |
| 2001 12 14 | 704 | 0.3+ | 0.5+ | 2002 02 20 | 704 | 0.6+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.7+ | 2003 03 26 | 699 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.5− | 0.0 |
| 2001 12 14 | 704 | 0.5+ | 0.8+ | 2003 03 26 | 699 | 0.8− | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2001 12 17 | 704 | 0.8− | 0.4− | 2003 03 26 | 699 | 0.3− | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 1.0− | 0.4− | 2003 03 26 | 699 | 0.1− | 0.4− | 2006 09 27 | 704 | 0.5− | 0.0 |
| 2001 12 17 | 704 | 0.3− | 1.0− | 2003 04 29 | 691 | 0.9+ | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.5+ |
| 2001 12 17 | 704 | 0.5− | 1.0− | 2003 04 29 | 704 | 0.3+ | 1.2+ | 2006 09 27 | 704 | 0.1+ | 1.3+ |
| 2001 12 17 | 704 | 0.3− | 1.1− | 2003 04 29 | 704 | 0.4+ | 0.8+ | 2006 09 27 | 704 | 0.2+ | 0.9+ |
| 2001 12 20 | 704 | 0.5+ | 0.3+ | 2003 04 29 | 691 | 1.1+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.6+ |
| 2001 12 20 | 704 | (2.0− | 1.5+) | 2003 04 29 | 704 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2001 12 20 | 704 | 0.4− | 0.0 | 2003 04 29 | 691 | 1.2+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2001 12 20 | 704 | 0.1+ | 1.0+ | 2003 04 29 | 704 | (2.2+ | 1.8+) | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2001 12 21 | 704 | 0.3− | 0.2+ | 2003 05 05 | 691 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2001 12 21 | 704 | 0.1+ | 0.4+ | 2003 05 05 | 691 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.6− | 0.2− |
| 2001 12 21 | 704 | 0.1+ | 0.2+ | 2003 05 05 | 691 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2001 12 21 | 704 | 1.0+ | 1.0+ | 2003 05 10 | 691 | 0.5− | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 01 09 | 704 | 0.9+ | 0.3− | 2003 05 10 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2002 01 09 | 704 | 0.1− | 0.3+ | 2003 05 10 | 691 | 0.2− | 1.1+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 01 09 | 704 | 0.7+ | 0.6+ | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 01 09 | 704 | 1.1+ | 0.5+ | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 01 13 | 704 | 0.3− | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.0 | | | | |
| 2002 01 13 | 704 | 0.5− | 0.3+ | 2005 06 13 | G96 | 1.0− | 0.2+ | | | | |

**(141110)∗ 2001 XY$_{62}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.40458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20365805 | $\omega$ | 235.56240 | | +0.43998552 | −0.89799298 | |
| $a$ | 2.8611129 | $\Omega$ | 188.33851 | | +0.83400081 | +0.41052804 | |
| $e$ | 0.2225938 | $i$ | 1.82540 | | +0.33294952 | +0.15835191 | |
| $P$ | 4.84 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.1− | 0.6− | 2002 01 15 | 704 | 0.5+ | 0.2+ | 2005 09 05 | 703 | 0.5− | 0.9+ |
| 1998 03 29 | 704 | 0.5+ | 0.4− | 2002 01 15 | 704 | 0.9+ | 0.4+ | 2005 09 05 | 703 | 0.0 | 0.5+ |
| 1998 03 29 | 704 | 1.4− | 1.3− | 2002 01 15 | 704 | 0.8+ | 0.6+ | 2005 09 05 | 703 | 0.4+ | 0.2+ |
| 1998 03 29 | 704 | 0.9− | 0.0 | 2002 01 15 | 704 | 0.7+ | 0.6+ | 2005 09 30 | G96 | 0.5+ | 0.3+ |
| 1998 03 29 | 704 | (6.1− | 2.0−) | 2002 01 15 | 704 | 0.7+ | 0.7+ | 2005 09 30 | G96 | 0.2− | 0.4+ |
| 2001 12 10 | 704 | 0.3+ | 0.1− | 2002 01 19 | 704 | 0.3− | 0.5+ | 2005 09 30 | G96 | 0.3− | 0.6+ |
| 2001 12 10 | 704 | 0.0 | 0.5− | 2002 01 19 | 704 | 0.1− | 0.2− | 2005 09 30 | G96 | 0.3− | 0.5+ |
| 2001 12 10 | 704 | 0.1+ | 0.9− | 2002 01 19 | 704 | 0.1− | 0.5− | 2005 11 25 | G96 | 0.1− | 0.0 |
| 2001 12 10 | 704 | 0.5− | 0.2+ | 2002 01 19 | 704 | 0.1+ | 0.4+ | 2005 11 25 | G96 | 0.6− | 0.3+ |
| 2001 12 14 | 704 | 0.4+ | 0.2− | 2002 01 19 | 704 | 0.4− | 0.0 | 2005 11 25 | G96 | 0.5− | 0.2+ |
| 2001 12 14 | 704 | 0.2+ | 0.0 | 2002 01 19 | 704 | 0.1+ | 0.6+ | 2005 11 25 | G96 | 0.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2002 01 19 | 704 | (0.4− | 3.4+) | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.2+ | 0.3+ | 2003 04 05 | 691 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.0 | 0.5+ | 2003 04 05 | 691 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 1.1− | 0.1− | 2003 04 05 | 691 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | 1.1− | 0.0 | 2003 04 24 | 691 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 1.2− | 0.9+ |
| 2001 12 17 | 704 | (3.6+ | 0.3+) | 2003 04 24 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.0 |
| 2001 12 17 | 704 | (2.7− | 0.6+) | 2003 04 24 | 691 | 0.1− | 0.4+ | 2006 11 14 | 703 | 1.1− | 0.1+ |
| 2001 12 20 | 704 | 0.3− | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.9+ | 2006 11 14 | 703 | (2.2+ | 1.2+) |
| 2001 12 20 | 704 | 0.6− | 0.4− | 2005 08 06 | 644 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2001 12 20 | 704 | 0.5− | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.9+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2001 12 20 | 704 | 0.4− | 0.2+ | 2005 08 24 | 644 | 0.4− | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2001 12 21 | 704 | 0.3+ | 0.4+ | 2005 08 24 | 644 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2001 12 21 | 704 | 0.2− | 0.1− | 2005 08 24 | 644 | 0.1− | 0.8+ | 2006 11 21 | 704 | 0.2+ | 1.6+ |
| 2001 12 21 | 704 | 0.4+ | 0.4+ | 2005 08 29 | 704 | 0.7− | 0.7+ | 2006 11 21 | 704 | 0.9+ | 1.7+ |
| 2001 12 21 | 704 | 0.0 | 0.2+ | 2005 08 29 | 704 | 0.8− | 0.2+ | 2006 11 21 | 704 | 0.0 | 1.3+ |
| 2001 12 21 | 704 | 0.3− | 0.1− | 2005 08 29 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3+ | 1.7+ |
| 2002 01 09 | 704 | 0.5+ | 0.1+ | 2005 08 29 | 704 | 1.2− | 0.7+ | 2006 11 21 | 704 | 0.4+ | 1.4+ |
| 2002 01 09 | 704 | 0.7+ | 0.2− | 2005 08 29 | 704 | 0.5− | 1.0+ | | | | |
| 2002 01 09 | 704 | 0.2+ | 0.3− | 2005 09 05 | 703 | 0.6+ | 0.2+ | | | | |

**(141111)∗ 2001 XR$_{64}$ = 1985 VJ$_4$ = 1990 SB$_{21}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25459)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.45179 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19041705 | $\omega$ | 260.04386 | | +0.84751356 | −0.53019140 | |
| $a$ | 2.9922566 | $\Omega$ | 131.96967 | | +0.49913559 | +0.78019400 | |
| $e$ | 0.3552594 | $i$ | 1.91587 | | +0.18051159 | +0.33195542 | |
| $P$ | 5.18 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 11 11 | 095 | 1.1− | 0.8+ | 2001 12 21 | 704 | 1.2+ | 1.0− | 2003 03 29 | 291 | 0.5− | 0.2− |
| 1990 09 18 | 809 | 0.9+ | 0.1− | 2001 12 21 | 704 | 0.1+ | 0.3+ | 2003 03 29 | 291 | 0.4+ | 0.3− |
| 1990 09 18 | 809 | 0.4+ | 0.2− | 2001 12 21 | 704 | 0.1+ | 0.1− | 2003 04 07 | 691 | 0.6+ | 0.3+ |
| 1990 09 18 | 809 | 0.2− | 0.3+ | 2001 12 21 | 704 | 0.6+ | 0.2− | 2003 04 07 | 691 | 0.3+ | 0.1+ |
| 1995 08 04 | 327 | 0.4+ | 1.3+ | 2001 12 21 | 704 | 0.4− | 0.0 | 2003 04 07 | 691 | 0.1− | 0.4− |
| 1995 08 04 | 327 | 0.1+ | 0.4+ | 2001 12 27 | 644 | 0.0 | 0.3− | 2004 04 25 | 691 | 0.6+ | 0.1+ |
| 1995 08 04 | 327 | 0.4+ | 0.8+ | 2001 12 27 | 644 | 0.0 | 0.5− | 2004 04 25 | 691 | 0.3+ | 0.3+ |
| 1997 02 06 | 910 | 1.0+ | 1.1− | 2001 12 27 | 644 | 0.1+ | 0.2+ | 2004 04 25 | 691 | 0.9+ | 0.3− |
| 1997 02 06 | 910 | 1.0+ | 1.1− | 2002 01 05 | 106 | 1.4− | 0.1− | 2006 09 27 | 704 | 0.0 | 0.5+ |
| 1997 02 07 | 910 | 1.4+ | 1.4− | 2002 01 05 | 106 | 0.5+ | 0.7− | 2006 09 27 | 704 | 0.6+ | 0.0 |
| 1999 05 16 | 691 | 1.8− | 0.8+ | 2002 01 05 | 106 | 0.1− | 0.4− | 2006 09 27 | 704 | 0.8+ | 0.0 |
| 1999 05 16 | 691 | 0.4− | 0.4− | 2002 01 05 | 608 | 0.5− | 0.7+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 1999 05 16 | 691 | 0.9− | 0.5+ | 2002 01 05 | 608 | 1.0− | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.7+ |
| 2001 10 26 | 704 | (0.2− | 2.6−) | 2002 01 05 | 608 | 0.9− | 1.2+ | 2006 09 28 | 704 | 0.2− | 0.1+ |
| 2001 10 26 | 704 | 0.8− | 1.3+ | 2002 01 06 | 699 | (1.8+ | 1.0−) | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2001 10 26 | 704 | 0.4− | 0.9+ | 2002 01 06 | 699 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.1− |
| 2001 11 16 | 644 | 0.3+ | 0.0 | 2002 01 06 | 699 | 0.5− | 0.3− | 2006 09 28 | 704 | 0.1− | 0.2− |
| 2001 11 16 | 644 | 0.1+ | 0.4+ | 2002 01 06 | 699 | 0.2− | 0.6+ | 2006 10 21 | 704 | 0.9− | 1.3− |
| 2001 11 16 | 644 | 0.3+ | 0.1+ | 2002 01 09 | 704 | 0.1+ | 0.1− | 2006 10 21 | 704 | 0.2− | 1.1− |
| 2001 12 09 | 699 | 0.0 | 0.0 | 2002 01 09 | 704 | 0.1− | 0.2− | 2006 10 21 | 704 | 0.3+ | 0.2+ |
| 2001 12 09 | 699 | 0.2− | 1.2− | 2002 01 09 | 704 | 0.0 | 0.2− | 2006 10 21 | 704 | 0.3− | 0.5− |
| 2001 12 09 | 699 | (2.1+ | 0.6−) | 2002 01 09 | 704 | 0.0 | 0.6− | 2006 10 21 | 704 | 0.4− | 0.2+ |
| 2001 12 09 | 699 | 1.4− | 0.0 | 2002 01 09 | 704 | 0.0 | 0.3− | 2006 10 23 | 704 | 1.1+ | 0.1− |
| 2001 12 10 | 704 | 1.2+ | 1.3+ | 2002 01 12 | 704 | 0.5+ | 0.1− | 2006 10 23 | 704 | 1.3− | 0.8− |
| 2001 12 10 | 704 | 0.1+ | 0.0 | 2002 01 12 | 704 | 0.8+ | 0.5− | 2006 10 23 | 704 | (0.8+ | 1.7+) |
| 2001 12 10 | 704 | 0.0 | 0.4+ | 2002 01 12 | 704 | 0.7+ | 0.9− | 2006 10 23 | 704 | 0.9+ | 1.0+ |
| 2001 12 10 | 704 | 0.0 | 0.2− | 2002 01 12 | 704 | 0.5+ | 0.1− | 2006 10 28 | 704 | 0.4− | 1.0+ |
| 2001 12 10 | 704 | 0.3− | 0.1+ | 2002 01 12 | 704 | 0.6+ | 0.1− | 2006 10 28 | 704 | 0.1− | 0.3+ |
| 2001 12 14 | 291 | 0.1− | 0.0 | 2002 01 13 | 291 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.9− | 0.8+ |
| 2001 12 14 | 291 | 0.0 | 0.0 | 2002 01 13 | 704 | 0.2+ | 0.8− | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 2001 12 14 | 291 | 0.2+ | 0.0 | 2002 01 13 | 704 | 0.1+ | 1.0− | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 2001 12 14 | 704 | 0.5+ | 0.3− | 2002 01 13 | 291 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2001 12 14 | 704 | 0.6+ | 0.5− | 2002 01 13 | 704 | 0.2+ | 1.1− | 2006 11 18 | 704 | 0.3− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.3+ | 0.7− | 2002 01 13 | 291 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.2+ | | |
| 2001 12 14 | 704 | 0.5+ | 0.0 | 2002 01 13 | 704 | (2.0− | 0.9−) | 2006 11 21 | 704 | 0.2+ | 0.8+ | | |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2002 01 15 | 704 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.2+ | | |
| 2001 12 17 | 291 | 0.4− | 0.1− | 2002 01 15 | 704 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.1− | 0.5− | | |
| 2001 12 17 | 291 | 0.6− | 0.2+ | 2002 01 15 | 704 | 0.1− | 0.2− | 2006 11 21 | 704 | (2.5− | 0.8+) | | |
| 2001 12 17 | 704 | 0.1+ | 0.1+ | 2002 01 16 | 608 | 0.8+ | 0.8+ | 2006 11 26 | 691 | 0.1− | 0.1− | | |
| 2001 12 17 | 644 | 0.1+ | 0.3+ | 2002 01 16 | 608 | 0.6+ | 0.0 | 2006 11 26 | 691 | 0.0 | 0.1− | | |
| 2001 12 17 | 291 | 0.3− | 0.2+ | 2002 01 16 | 608 | 0.6+ | 0.1+ | 2006 11 26 | 691 | 0.2− | 0.0 | | |
| 2001 12 17 | 644 | 0.0 | 0.1+ | 2002 01 19 | 704 | 0.4+ | 0.3+ | 2006 11 27 | 704 | 0.0 | 0.2− | | |
| 2001 12 17 | 704 | 0.2− | 0.3− | 2002 01 19 | 704 | 0.8+ | 0.5+ | 2006 11 27 | 704 | 0.3− | 0.3− | | |
| 2001 12 17 | 644 | 0.5+ | 0.0 | 2002 01 19 | 704 | 0.2+ | 0.2− | 2006 11 27 | 704 | 0.2− | 0.2+ | | |
| 2001 12 17 | 704 | 0.0 | 0.1− | 2002 01 19 | 704 | 0.2+ | 0.4− | 2006 11 28 | 185 | 0.1− | 0.4− | | |
| 2001 12 17 | 704 | 0.3− | 0.6− | 2002 02 07 | 704 | 0.0 | 0.1+ | 2006 11 28 | 185 | 0.6+ | 0.2− | | |
| 2001 12 17 | 704 | 0.1− | 0.6− | 2002 02 07 | 704 | 0.4− | 0.1+ | 2006 11 28 | 185 | 0.1− | 0.4− | | |
| 2001 12 19 | 691 | 0.6− | 0.0 | 2002 02 07 | 704 | 0.3− | 0.5+ | 2006 11 28 | 185 | 0.1− | 0.2− | | |
| 2001 12 19 | 691 | 0.8− | 0.6+ | 2002 02 07 | 704 | 0.4+ | 0.8+ | 2006 12 01 | 704 | 0.1+ | 0.4− | | |
| 2001 12 19 | 691 | 0.8− | 0.4+ | 2002 02 11 | 704 | 0.1− | 1.2+ | 2006 12 01 | 704 | 0.0 | 0.0 | | |
| 2001 12 20 | 704 | 0.2+ | 0.2+ | 2002 02 11 | 704 | 1.0+ | 1.1+ | 2006 12 01 | 704 | 0.7+ | 0.3− | | |
| 2001 12 20 | 704 | 0.4− | 0.2− | 2002 02 11 | 704 | 0.6+ | 1.0+ | 2006 12 01 | 704 | 0.2− | 0.3− | | |
| 2001 12 20 | 704 | 0.1− | 0.6− | 2002 02 11 | 704 | 0.6+ | 1.1+ | 2006 12 01 | 704 | 0.0 | 0.0 | | |
| 2001 12 20 | 704 | 0.3− | 0.5− | 2002 02 11 | 704 | 0.3+ | 0.7+ | | | | | | |
| 2001 12 20 | 704 | 0.0 | 0.7− | 2003 03 29 | 291 | 0.5+ | 0.3+ | | | | | | |

**(141112)∗ 2001 XV$_{65}$ = 2000 SX$_{248}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23200)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.24770 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17746379 | $\omega$ | 170.68500 | | +0.54694458 | −0.83555139 | |
| $a$ | 3.1361456 | $\Omega$ | 246.14095 | | +0.76437904 | +0.52376404 | |
| $e$ | 0.1224405 | $i$ | 3.26044 | | +0.34143271 | +0.16590692 | |
| $P$ | 5.55 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 09 | 691 | 0.1− | 0.1+ | 2002 01 14 | 608 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.0 | 0.2+ | | |
| 1994 09 09 | 691 | 0.2− | 0.3− | 2002 01 14 | 608 | 0.5+ | 0.6− | 2006 10 21 | 691 | 0.1+ | 0.1+ | | |
| 1994 09 09 | 691 | 0.5− | 0.2+ | 2002 01 15 | 704 | (1.9− | 1.6+) | 2006 10 27 | 703 | 0.6+ | 0.2− | | |
| 2000 09 24 | 704 | 0.5+ | 0.3+ | 2002 01 15 | 704 | (2.1− | 1.0+) | 2006 10 27 | 703 | 0.5+ | 0.1− | | |
| 2000 09 24 | 704 | 0.1+ | 0.2− | 2002 01 15 | 704 | (2.2− | 1.7+) | 2006 10 27 | 703 | 0.5− | 1.0− | | |
| 2000 09 24 | 704 | 1.5+ | 0.5+ | 2002 01 15 | 704 | (1.8− | 0.9+) | 2006 10 27 | 703 | 0.5− | 0.7− | | |
| 2000 09 24 | 704 | 0.4− | 0.2+ | 2002 01 19 | 704 | 0.5+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− | | |
| 2000 10 02 | 704 | 0.7+ | 0.3− | 2002 01 19 | 704 | 0.5+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− | | |
| 2000 10 02 | 704 | 0.1− | 0.5+ | 2002 01 19 | 704 | 0.9+ | 0.3− | 2006 11 01 | G96 | 0.3− | 0.4− | | |
| 2000 10 02 | 704 | 0.3+ | 0.5+ | 2002 01 22 | 691 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.3− | | |
| 2000 10 02 | 704 | 0.6+ | 0.9+ | 2002 01 22 | 691 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.3+ | 1.3+ | | |
| 2000 10 02 | 704 | 0.4+ | 0.3− | 2002 01 22 | 691 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2000 10 02 | 704 | 0.1− | 1.2+ | 2002 02 11 | 704 | 1.1− | 1.2+ | 2006 11 09 | 644 | 0.3− | 0.1− | | |
| 2000 10 02 | 704 | 0.3+ | 1.6+ | 2002 02 11 | 704 | (1.8− | 0.4+) | 2006 11 11 | 703 | 0.5+ | 0.5+ | | |
| 2001 12 10 | 704 | 0.4− | 0.2+ | 2002 02 11 | 704 | (2.1− | 0.2+) | 2006 11 11 | 703 | 0.7+ | 0.4− | | |
| 2001 12 10 | 704 | 0.2+ | 0.8+ | 2002 02 11 | 704 | (2.0− | 1.3+) | 2006 11 11 | 703 | 0.9+ | 0.2− | | |
| 2001 12 10 | 704 | 0.8+ | 0.7+ | 2003 03 23 | 691 | (0.9+ | 1.8+) | 2006 11 11 | 703 | 0.1+ | 0.6− | | |
| 2001 12 10 | 704 | 1.0− | 0.5+ | 2003 03 23 | 691 | (1.2+ | 1.8+) | 2006 11 11 | 703 | 0.3− | 0.3+ | | |
| 2001 12 14 | 704 | 0.5− | 0.3+ | 2003 03 23 | 691 | 1.0+ | 1.5+ | 2006 11 11 | 703 | 1.0− | 0.5− | | |
| 2001 12 14 | 704 | 0.5− | 0.9− | 2005 05 19 | G96 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.2− | | |
| 2001 12 14 | 704 | 0.2+ | 0.2+ | 2005 05 19 | G96 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.1− | 0.1+ | | |
| 2001 12 14 | 704 | 0.7− | 0.5− | 2005 05 19 | G96 | 0.1+ | 0.8− | 2006 11 12 | 703 | 0.2+ | 0.1+ | | |
| 2001 12 17 | 704 | 1.1+ | 0.5+ | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 11 12 | 703 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 1.2+ | 0.4− | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 11 12 | 703 | 0.1+ | 0.6+ | | |
| 2001 12 17 | 704 | (1.6+ | 0.4+) | 2005 07 01 | 691 | 0.1− | 0.0 | 2006 11 12 | 703 | 0.2+ | 0.9+ | | |
| 2001 12 17 | 704 | 1.0+ | 0.0 | 2005 07 01 | 691 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2001 12 19 | 644 | 0.0 | 0.6+ | 2005 07 05 | 644 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.3− | 0.1− | | |
| 2001 12 19 | 644 | 0.2+ | 0.3+ | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2001 12 19 | 644 | 0.2+ | 0.6+ | 2005 07 05 | 644 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− | | |
| 2001 12 20 | 704 | 1.1+ | 0.4− | 2005 08 06 | 644 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.8− | | |
| 2001 12 20 | 704 | 0.6− | 0.8+ | 2005 08 06 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.1− | | |
| 2001 12 20 | 704 | 0.1+ | 0.6− | 2005 08 06 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.5− | 0.1− | | |
| 2001 12 20 | 704 | 0.1− | 0.3− | 2005 09 01 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.5− | | |
| 2001 12 20 | 704 | 0.3+ | 0.0 | 2005 09 01 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.4− | 1.1+ | | |
| 2002 01 09 | 704 | 1.0− | 0.2− | 2005 09 01 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.7− | 1.2+ | | |
| 2002 01 09 | 704 | 0.1+ | 0.1+ | 2005 10 30 | G96 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.4− | 1.0+ | | |
| 2002 01 09 | 704 | 0.4+ | 0.0 | 2005 10 30 | G96 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.8+ | | |
| 2002 01 09 | 704 | 0.4+ | 0.1− | 2005 10 30 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.1− | 0.5− | | |
| 2002 01 13 | 704 | 0.4− | 0.6+ | 2005 10 30 | G96 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.6+ | | |
| 2002 01 13 | 704 | 0.0 | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.4+ | | |
| 2002 01 13 | 704 | 0.1− | 0.8+ | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.9− | | |
| 2002 01 13 | 704 | (0.9+ | 2.5+) | 2006 10 13 | 691 | 0.1− | 0.1+ | | | | | | |
| 2002 01 14 | 608 | 0.4+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2+ | | | | | | |

**(141113)∗ 2001 XN$_{69}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.58777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18931339 | $\omega$ | 154.24559 | | +0.70992584 | −0.70321131 | |
| $a$ | 3.0038748 | $\Omega$ | 250.49740 | | +0.63885396 | +0.66614446 | |
| $e$ | 0.1126994 | $i$ | 2.35412 | | +0.29643029 | +0.24848624 | |
| $P$ | 5.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.1− | 0.1+ | 2003 04 05 | 691 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.0 | | |
| 1995 07 26 | 691 | 0.2− | 0.3− | 2003 04 05 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.3+ | | |
| 1995 07 26 | 691 | 0.2− | 0.1− | 2003 04 05 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2000 07 30 | 807 | 0.2+ | 0.6+ | 2004 05 13 | 691 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.4+ | | |
| 2000 07 30 | 807 | 1.0− | 0.3+ | 2004 05 13 | 691 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.4+ | | |
| 2001 11 21 | 704 | 1.0+ | 0.2+ | 2004 05 13 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.6+ | | |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2004 05 21 | 691 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2001 11 21 | 704 | 1.0+ | 0.7− | 2004 05 21 | 691 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.4− | 0.5+ | | |
| 2001 12 09 | 644 | 0.5+ | 0.1− | 2004 05 21 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.8+ | | |
| 2001 12 09 | 644 | 0.3− | 0.1+ | 2005 05 19 | G96 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.2+ | | |
| 2001 12 09 | 644 | 0.4+ | 0.1+ | 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.7+ | | |
| 2001 12 11 | 704 | 0.0 | 0.5− | 2005 05 19 | G96 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.6+ | | |
| 2001 12 11 | 704 | 0.4+ | 0.0 | 2005 05 19 | G96 | 0.0 | 0.5+ | 2006 11 11 | 703 | 1.2− | 0.3− | | |
| 2001 12 11 | 704 | (2.1+ | 1.2+) | 2005 06 29 | 691 | 0.2+ | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2001 12 14 | 704 | 0.6+ | 1.1+ | 2005 06 29 | 691 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.2− | | |
| 2001 12 14 | 704 | (1.6− | 1.6+) | 2005 06 29 | 691 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.0 | | |
| 2001 12 14 | 704 | 0.3− | 1.0+ | 2005 07 04 | G96 | 0.7+ | 0.8+ | 2006 11 11 | G96 | 0.3− | 0.3− | | |
| 2001 12 14 | 704 | 0.0 | 1.0+ | 2005 07 04 | G96 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2001 12 14 | 704 | 0.1− | 0.8+ | 2005 07 04 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 1.4+ | | |
| 2001 12 18 | 704 | 0.8+ | 0.2+ | 2005 07 04 | G96 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.4+ | | |
| 2001 12 18 | 704 | 0.2+ | 0.3− | 2005 07 11 | G96 | 0.5− | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.1+ | | |
| 2001 12 18 | 704 | 0.2− | 0.9− | 2005 07 11 | G96 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.2− | | |
| 2001 12 18 | 704 | 1.1− | 0.8− | 2005 07 11 | G96 | 0.7− | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2001 12 18 | 704 | 0.0 | 0.7− | 2005 07 11 | G96 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.0 | | |
| 2001 12 19 | 704 | 0.3+ | 0.9− | 2006 09 30 | G96 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.0 | | |
| 2001 12 19 | 704 | 0.6+ | 0.3− | 2006 09 30 | G96 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.1+ | | |
| 2001 12 19 | 704 | 0.3+ | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.1+ | | |
| 2001 12 19 | 704 | 0.5+ | 1.0− | 2006 09 30 | G96 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.1− | | |
| 2001 12 19 | 704 | 0.4+ | 1.1− | 2006 10 03 | G96 | 0.1+ | 0.2+ | 2006 11 18 | 185 | 0.3+ | 0.4− | | |
| 2003 03 24 | 691 | 0.4+ | 0.8+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 18 | 185 | 0.1+ | 0.1+ | | |
| 2003 03 24 | 691 | 0.1+ | 0.5+ | 2006 10 03 | G96 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.2− | 0.7− | | |
| 2003 03 24 | 691 | 0.1+ | 0.7+ | 2006 10 03 | G96 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.6− | | |
| 2003 03 30 | 291 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.9+ | 0.2+ | | |
| 2003 03 30 | 291 | 0.3+ | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.9+ | | | | | | |
| 2003 03 30 | 291 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.5− | 0.5+ | | | | | | |

**(141114)∗ 2001 XX$_{72}$ = 2003 FY$_{100}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46990)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.28445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21713667 | $\omega$ | 227.07737 | | +0.50638755 | −0.86154916 | |
| $a$ | 2.7414517 | $\Omega$ | 192.64501 | | +0.83140722 | +0.49892652 | |
| $e$ | 0.1587734 | $i$ | 9.49734 | | +0.22876556 | +0.09383691 | |
| $P$ | 4.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 19 | 566 | 0.2+ | 0.1− | 2003 03 31 | 699 | 0.3− | 0.4− | 2005 09 28 | A50 | (1.1+ | 1.9−) |
| 1996 10 19 | 566 | 0.7− | 0.5− | 2003 03 31 | 699 | 0.5− | 0.4− | 2005 09 28 | A50 | 0.8+ | 0.0 |
| 1996 10 19 | 566 | 0.3− | 0.7− | 2003 03 31 | 699 | 0.3− | 1.1+ | 2005 09 29 | 699 | 0.3− | 0.4+ |
| 2001 08 29 | 644 | 0.3− | 0.2− | 2003 03 31 | 699 | 0.9− | 0.7+ | 2005 09 29 | 699 | 0.7− | 0.3+ |
| 2001 08 29 | 644 | 0.6− | 0.4− | 2003 04 01 | 704 | 1.0+ | 0.9+ | 2005 09 29 | 699 | 1.4+ | 0.5− |
| 2001 08 29 | 644 | 0.5− | 0.2− | 2003 04 01 | 704 | 0.9+ | 0.8+ | 2005 09 29 | 699 | 0.5− | 0.2+ |
| 2001 09 27 | 644 | 0.0 | 0.0 | 2003 04 01 | 704 | (0.3+ | 2.3+) | 2005 09 30 | 691 | 0.3− | 0.1+ |
| 2001 09 27 | 644 | 0.2− | 0.0 | 2003 04 03 | 699 | 1.2− | 0.7+ | 2005 09 30 | 691 | 0.1− | 0.1+ |
| 2001 09 27 | 644 | 0.1+ | 0.2− | 2003 04 03 | 699 | 1.1+ | 0.9+ | 2005 09 30 | 691 | 0.1− | 0.0 |
| 2001 10 17 | 704 | (1.9+ | 0.7+) | 2003 04 03 | 699 | 0.7− | 0.5+ | 2005 09 30 | 291 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.5+ | 0.4− | 2003 04 03 | 699 | 1.4− | 0.4− | 2005 09 30 | 291 | 0.3+ | 0.0 |
| 2001 10 17 | 704 | 0.9+ | 1.2− | 2003 04 26 | 691 | 0.4+ | 0.9+ | 2005 09 30 | 291 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.4− | 2003 04 26 | 691 | 0.7+ | 0.7+ | 2005 10 01 | 703 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | 0.9− | 0.2− | 2003 04 26 | 691 | 0.6+ | 0.9+ | 2005 10 01 | 703 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | (1.5− | 0.3+) | 2005 07 03 | 703 | 0.6− | 0.9+ | 2005 10 01 | 703 | 0.1− | 0.7+ |
| 2001 10 24 | 704 | 0.8− | 1.2+ | 2005 07 03 | 703 | 0.4− | 1.0+ | 2005 10 01 | 703 | 0.7− | 0.2− |
| 2001 10 24 | 704 | 0.1+ | 0.1− | 2005 07 03 | 703 | 0.7− | 0.6+ | 2005 10 07 | 704 | 0.6+ | 0.7+ |
| 2001 10 24 | 704 | 0.2− | 1.3+ | 2005 07 03 | 703 | 0.7− | 0.2+ | 2005 10 07 | 704 | 0.2− | 1.2+ |
| 2001 12 05 | 608 | 0.7− | 0.9+ | 2005 08 26 | 699 | 0.3+ | 0.9+ | 2005 10 07 | 704 | 1.1+ | 0.1+ |
| 2001 12 05 | 608 | 1.2− | 1.1+ | 2005 08 26 | 699 | 0.7− | 0.1− | 2005 10 07 | 704 | 0.3− | 1.4+ |
| 2001 12 05 | 608 | 0.6− | 1.0+ | 2005 08 26 | 699 | 0.1− | 0.4+ | 2005 10 07 | 704 | 0.5− | 0.2− |
| 2001 12 08 | 699 | 0.5+ | 0.0 | 2005 08 26 | 699 | 0.4+ | 0.5− | 2005 10 20 | 644 | 0.0 | 0.2+ |
| 2001 12 08 | 699 | 0.7+ | 0.2− | 2005 08 26 | 608 | 0.4− | 0.3− | 2005 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 12 08 | 699 | 0.5+ | 0.1− | 2005 08 26 | 608 | 0.1− | 0.6− | 2005 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 12 08 | 699 | 0.3+ | 0.5− | 2005 08 26 | 608 | 0.3− | 0.5− | 2005 10 22 | 703 | 0.3+ | 0.7+ |
| 2001 12 11 | 704 | 0.8+ | 0.4+ | 2005 08 29 | 691 | 0.1− | 0.1+ | 2005 10 22 | 703 | 0.4+ | 0.1+ |
| 2001 12 11 | 704 | 0.8+ | 0.3+ | 2005 08 29 | 691 | 0.1− | 0.1+ | 2005 10 22 | 703 | 0.2− | 0.3+ |
| 2001 12 11 | 704 | 0.8+ | 0.5+ | 2005 08 29 | 691 | 0.1− | 0.0 | 2005 10 22 | 703 | 0.6− | 0.5+ |
| 2001 12 11 | 704 | 0.4+ | 0.4+ | 2005 08 29 | 699 | 0.8− | 0.4+ | 2005 10 25 | 699 | 0.3− | 0.7+ |
| 2001 12 11 | 704 | 0.8+ | 0.2− | 2005 08 29 | 699 | 0.6+ | 0.4+ | 2005 10 25 | 699 | 0.8− | 0.6+ |
| 2001 12 15 | 704 | 1.2+ | 0.6+ | 2005 08 29 | 699 | 0.6+ | 0.1+ | 2005 10 25 | 699 | 0.9− | 0.8+ |
| 2001 12 15 | 704 | 1.5+ | 0.7+ | 2005 08 30 | 704 | 0.0 | 0.8+ | 2005 10 25 | 699 | 0.1− | 0.1+ |
| 2001 12 15 | 704 | 1.0+ | 1.4+ | 2005 08 30 | 704 | 0.1+ | 0.5+ | 2005 11 01 | G96 | 0.2− | 0.1− |
| 2001 12 15 | 704 | (1.7+ | 0.6+) | 2005 08 30 | 704 | 0.7− | 0.7+ | 2005 11 01 | G96 | 0.1+ | 0.0 |
| 2001 12 20 | 209 | 0.1+ | 0.1− | 2005 08 30 | 704 | 0.3− | 0.3+ | 2005 11 01 | G96 | 0.1− | 0.1− |
| 2001 12 20 | 209 | 0.2− | 0.1− | 2005 08 30 | 704 | 0.0 | 0.3+ | 2005 11 01 | G96 | 0.4− | 0.1− |
| 2001 12 20 | 209 | 0.0 | 0.1− | 2005 09 06 | 699 | 0.1+ | 0.5+ | 2005 11 25 | G96 | 0.2+ | 0.1− |
| 2001 12 23 | 209 | 0.7− | 0.4− | 2005 09 06 | 699 | 0.1+ | 0.6+ | 2005 11 25 | G96 | 0.2+ | 0.1− |
| 2001 12 23 | 209 | 1.1− | 0.3+ | 2005 09 06 | 699 | 0.2+ | 0.7+ | 2005 11 25 | G96 | 0.3+ | 0.0 |
| 2001 12 23 | 209 | 0.8− | 0.2+ | 2005 09 06 | 699 | 0.0 | 0.2+ | 2005 11 25 | G96 | 0.2− | 0.0 |
| 2001 12 24 | 608 | 0.6− | 0.1+ | 2005 09 09 | 704 | 0.1+ | 0.6+ | 2005 12 04 | 704 | 0.0 | 0.4+ |
| 2001 12 24 | 608 | 0.2− | 0.2+ | 2005 09 09 | 704 | 0.3− | 0.5+ | 2005 12 04 | 704 | 0.3+ | 0.7+ |
| 2001 12 24 | 608 | 0.3− | 0.3− | 2005 09 09 | 704 | 0.3+ | 0.6+ | 2005 12 04 | 704 | 0.1+ | 0.4+ |
| 2002 01 19 | 699 | 1.0− | 0.0 | 2005 09 09 | 704 | 0.0 | 0.3+ | 2005 12 04 | 704 | 1.3+ | 1.1+ |
| 2002 01 19 | 699 | 0.3+ | 0.0 | 2005 09 09 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 703 | (3.4+ | 1.8+) |
| 2002 01 19 | 699 | 1.0− | 0.5− | 2005 09 22 | 644 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.0 | 1.4+ |
| 2002 01 19 | 699 | 0.3+ | 0.4+ | 2005 09 22 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | (1.5− | 1.4−) |
| 2003 03 23 | 703 | 0.8+ | 0.4+ | 2005 09 22 | 644 | 0.0 | 0.3+ | 2006 10 19 | 703 | 1.0+ | 0.1− |
| 2003 03 23 | 703 | 0.1− | 0.5+ | 2005 09 24 | 703 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.9− | 0.5+ |
| 2003 03 23 | 703 | 0.1+ | 0.1+ | 2005 09 24 | 703 | 0.4+ | 0.2− | 2006 11 16 | 703 | 0.1− | 1.1+ |
| 2003 03 23 | 703 | (0.1+ | 1.9+) | 2005 09 24 | 703 | 0.2− | 0.9− | 2006 11 16 | 703 | 1.4− | 0.4+ |
| 2003 03 23 | 691 | 0.2+ | 0.7+ | 2005 09 24 | 703 | 0.8− | 0.3+ | 2006 11 16 | 703 | 0.7− | 1.2− |
| 2003 03 23 | 691 | 0.2+ | 0.7+ | 2005 09 28 | A50 | (0.6+ | 2.7−) | | | | |
| 2003 03 23 | 691 | 0.2+ | 0.6+ | 2005 09 28 | A50 | 0.3+ | 0.6+ | | | | |

**(141115)∗ 2001 XO$_{73}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.81139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18151949 | $\omega$ | 256.92557 | | −0.68545288 | −0.71371550 | |
| $a$ | 3.0892558 | $\Omega$ | 237.30594 | | +0.71661613 | −0.62624615 | |
| $e$ | 0.0912965 | $i$ | 9.85918 | | +0.12890182 | −0.31372910 | |
| $P$ | 5.43 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.4− | 0.2− | 2001 12 14 | 704 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.6− | 2001 12 17 | 704 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.9+ | 0.5− | 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2001 11 20 | 704 | 0.1+ | 0.5− | 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.1+ | 0.5− | 2001 12 17 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2001 11 21 | 704 | 0.5+ | 0.0 | 2001 12 17 | 704 | 0.3+ | 0.7+ | 2006 10 17 | 691 | 0.4+ | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 0.8− | 2003 03 27 | 644 | 0.2+ | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.4− | 0.7− | 2003 03 27 | 644 | 0.4+ | 0.9+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2001 11 21 | 704 | (0.5+ | 1.5−) | 2003 03 27 | 644 | 0.4+ | 1.0+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.5− | 2005 06 30 | 644 | 0.1− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 12 11 | 704 | 0.6+ | 0.8+ | 2005 06 30 | 644 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.2+ | 0.6+ | 2005 06 30 | 644 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.3− | 0.1+ |
| 2001 12 11 | 704 | 0.6− | 1.5+ | 2005 07 31 | 644 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 0.8− | 1.3+ | 2005 07 31 | 644 | 0.0 | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | 0.3− | 1.0+ | 2005 07 31 | 644 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.7+ | 1.8− |
| 2001 12 14 | 704 | 0.4− | 0.6− | 2005 07 31 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.0 |
| 2001 12 14 | 704 | 0.5− | 0.0 | 2005 07 31 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 1.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.1− | 0.9− | 2005 07 31 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.8+ | 2.3− |
| 2001 12 14 | 704 | 0.4+ | 1.1− | 2006 09 26 | 691 | 0.0 | 0.1+ | | | | |

**(141116)∗ 2001 XU$_{73}$ = 2003 FW$_{103}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46991)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.01554 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21242465 | $\omega$ | 287.24259 | | −0.68242373 | −0.73015827 | |
| $a$ | 2.7818440 | $\Omega$ | 205.89100 | | +0.69684537 | −0.63575766 | |
| $e$ | 0.1063042 | $i$ | 4.48654 | | +0.22069069 | −0.25036193 | |
| $P$ | 4.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.1+ | 0.3− | 2003 03 24 | 691 | 0.7+ | 0.9+ | 2005 08 31 | 691 | 0.3− | 0.8+ |
| 1996 11 07 | 691 | 0.3+ | 0.3− | 2003 03 24 | 691 | 0.6+ | 1.2+ | 2005 08 31 | 691 | 0.0 | 0.7+ |
| 1996 11 07 | 691 | 0.2− | 0.0 | 2003 03 24 | 691 | 1.1+ | 0.9+ | 2005 08 31 | 691 | 0.4− | 0.7+ |
| 2001 11 20 | 704 | 0.8+ | 0.1− | 2003 03 27 | 699 | 0.4− | 0.7+ | 2005 09 14 | 691 | 0.2+ | 0.8+ |
| 2001 11 20 | 704 | 0.8+ | 0.5− | 2003 03 27 | 699 | 0.3− | 0.1+ | 2005 09 14 | 691 | 0.3+ | 0.7+ |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2003 03 27 | 699 | 0.7− | 0.0 | 2005 09 14 | 691 | 0.0 | 0.8+ |
| 2001 11 20 | 704 | 0.7+ | 0.3− | 2003 03 27 | 699 | 0.4− | 0.4+ | 2005 09 24 | A50 | 0.1− | 0.3+ |
| 2001 12 11 | 704 | 0.5− | 1.0+ | 2003 04 01 | 704 | 0.2+ | 0.8− | 2005 09 24 | A50 | 0.3− | 0.3+ |
| 2001 12 11 | 704 | 0.6− | 0.3+ | 2003 04 01 | 704 | 0.4+ | 0.4+ | 2005 09 25 | 644 | 0.2− | 1.1+ |
| 2001 12 11 | 704 | 0.0 | 0.1+ | 2003 04 01 | 704 | 0.7+ | 0.3+ | 2005 09 25 | 644 | 0.0 | 0.8+ |
| 2001 12 11 | 704 | 0.4− | 0.4− | 2003 04 01 | 704 | 0.6− | 0.5− | 2005 09 25 | 644 | 0.3− | 0.9+ |
| 2001 12 11 | 704 | 1.0− | 0.5− | 2003 04 01 | 704 | (2.2+ | 0.7+) | 2005 09 25 | 703 | 1.0− | 0.6− |
| 2001 12 14 | 704 | 0.4− | 0.8+ | 2003 04 03 | 699 | 0.3− | 0.1− | 2005 09 25 | 703 | 1.5− | 0.4− |
| 2001 12 14 | 704 | 0.3− | 0.5+ | 2003 04 03 | 699 | 0.6− | 0.6− | 2005 09 25 | 703 | 0.1+ | 0.7+ |
| 2001 12 14 | 704 | 0.3− | 0.6+ | 2003 04 03 | 699 | 0.5− | 0.9− | 2005 09 25 | 703 | (2.1− | 0.3−) |
| 2001 12 14 | 704 | 0.7− | 1.2+ | 2003 04 03 | 699 | 0.3+ | 0.3− | 2005 09 26 | 644 | 0.5+ | 0.6+ |
| 2001 12 14 | 704 | 0.7− | 0.9+ | 2003 04 25 | 691 | 0.3+ | 1.1+ | 2005 09 26 | 644 | 0.2+ | 0.3+ |
| 2001 12 17 | 704 | 0.6+ | 0.6+ | 2003 04 25 | 691 | 0.4+ | 1.0+ | 2005 09 26 | 644 | 0.1− | 0.7+ |
| 2001 12 17 | 704 | 0.2− | 0.6+ | 2003 04 25 | 691 | 0.2+ | 1.0+ | 2005 10 01 | 703 | 0.8− | 0.1− |
| 2001 12 17 | 704 | 0.3+ | 0.4+ | 2003 04 29 | 704 | 0.2− | 0.6+ | 2005 10 01 | 703 | 1.1− | 0.2− |
| 2001 12 17 | 704 | 0.5− | 1.1+ | 2003 04 29 | 704 | 0.2− | 0.6+ | 2005 10 01 | 703 | 0.5+ | 1.0− |
| 2001 12 17 | 704 | 0.4+ | 1.0+ | 2003 04 29 | 704 | 0.8− | 0.3+ | 2005 10 01 | 703 | 0.9− | 0.7− |
| 2001 12 18 | 644 | 0.4+ | 0.4− | 2003 04 29 | 704 | 0.8− | 1.5+ | 2005 10 01 | 703 | 0.5− | 0.5+ |
| 2001 12 18 | 644 | 0.5+ | 0.3− | 2003 05 30 | 699 | 0.7− | 0.3+ | 2005 10 01 | 703 | 0.3− | 0.0 |
| 2001 12 18 | 644 | 0.6+ | 0.0 | 2003 05 30 | 699 | 0.6− | 1.4− | 2005 10 01 | 703 | 0.7− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 704 | 0.0 | 0.2− | 2003 05 30 | 699 | 0.4− | 0.3− | 2005 10 01 | 703 | 0.1− | 0.2− | | |
| 2001 12 20 | 704 | 0.5− | 0.4− | 2003 05 30 | 699 | 0.8+ | 0.3− | 2005 10 30 | G96 | 0.0 | 0.3+ | | |
| 2001 12 20 | 704 | 0.1− | 0.2+ | 2005 08 25 | 644 | 0.4− | 1.1+ | 2005 10 30 | G96 | 0.1+ | 0.3+ | | |
| 2001 12 20 | 704 | 0.1− | 0.4− | 2005 08 25 | 644 | 0.2− | 1.0+ | 2005 10 30 | G96 | 0.3+ | 0.4+ | | |
| 2001 12 20 | 704 | 0.2+ | 0.4+ | 2005 08 25 | 644 | 0.2− | 0.8+ | 2005 10 30 | G96 | 0.6− | 0.3+ | | |

**(141117)∗ 2001 XJ$_{80}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.71547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18850708 | $\omega$ | 264.94922 | | +0.84495217 | −0.51844690 | |
| $a$ | 3.0124345 | $\Omega$ | 126.21537 | | +0.53212249 | +0.79014155 | |
| $e$ | 0.1272906 | $i$ | 9.37398 | | +0.05386554 | +0.32693905 | |
| $P$ | 5.23 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.3+ | 0.1− | 2002 01 09 | 704 | 0.1+ | 0.7+ | 2005 07 15 | G96 | 0.2+ | 0.3+ | | |
| 2001 11 17 | 704 | (0.3− | 1.9+) | 2002 01 14 | 704 | 0.9+ | 0.2− | 2005 07 15 | G96 | 0.2+ | 0.2+ | | |
| 2001 11 17 | 704 | 0.0 | 1.3+ | 2002 01 14 | 704 | 0.0 | 0.6+ | 2005 07 15 | G96 | 0.3− | 0.3+ | | |
| 2001 11 17 | 704 | 0.1− | 0.9+ | 2002 01 14 | 704 | 0.1− | 1.0+ | 2005 08 01 | E12 | (1.7− | 0.8+) | | |
| 2001 11 17 | 704 | 0.6− | 1.1+ | 2003 02 28 | 704 | 0.5− | 0.7+ | 2005 08 01 | E12 | 0.6+ | 0.2+ | | |
| 2001 12 11 | 704 | 0.3− | 0.3+ | 2003 02 28 | 704 | 0.2− | 0.3− | 2005 08 01 | E12 | 0.7+ | 1.0+ | | |
| 2001 12 11 | 704 | 0.4− | 0.2+ | 2003 02 28 | 704 | 0.6− | 1.1+ | 2005 08 01 | E12 | 0.6− | 0.2+ | | |
| 2001 12 11 | 704 | 0.5− | 0.6+ | 2003 02 28 | 704 | 0.7+ | 1.3+ | 2006 09 30 | 703 | 0.1+ | 0.0 | | |
| 2001 12 11 | 704 | 0.3− | 1.1+ | 2003 03 25 | 699 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.5− | | |
| 2001 12 11 | 704 | 0.0 | 1.0+ | 2003 03 25 | 699 | (2.0− | 0.8+) | 2006 09 30 | 703 | 0.0 | 0.5− | | |
| 2001 12 14 | 704 | 0.2− | 0.0 | 2003 03 25 | 699 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.2− | | |
| 2001 12 14 | 704 | 0.0 | 0.4− | 2003 03 25 | 699 | (1.2− | 2.3−) | 2006 10 17 | 703 | 0.6+ | 0.2− | | |
| 2001 12 14 | 704 | 0.2− | 0.3− | 2003 03 28 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.0 | | |
| 2001 12 14 | 704 | (0.3− | 1.7+) | 2003 03 28 | 691 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.3+ | | |
| 2001 12 14 | 704 | 0.8+ | 0.1+ | 2003 03 28 | 691 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.0 | 0.6+ | | |
| 2001 12 18 | 704 | (0.5+ | 1.7+) | 2005 06 18 | G96 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.6− | | |
| 2001 12 18 | 704 | 0.0 | 1.4+ | 2005 06 18 | G96 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.2− | | |
| 2001 12 18 | 704 | 0.1− | 0.8+ | 2005 06 18 | G96 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2001 12 18 | 704 | 0.1− | 0.6+ | 2005 06 18 | G96 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.2− | | |
| 2001 12 19 | 704 | 0.4− | 0.2+ | 2005 06 27 | 691 | 0.2− | 0.7+ | 2006 11 13 | 703 | 0.2+ | 0.2− | | |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2005 06 27 | 691 | 0.4+ | 0.5+ | 2006 11 13 | 703 | 0.8+ | 0.1− | | |
| 2001 12 19 | 704 | 0.6− | 0.3+ | 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.1+ | 0.1+ | | |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2005 07 04 | G96 | 0.3− | 0.0 | 2006 11 19 | 703 | 0.2− | 1.1− | | |
| 2001 12 19 | 704 | 0.2− | 0.2− | 2005 07 04 | G96 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.7− | | |
| 2001 12 20 | 644 | 0.5− | 0.4+ | 2005 07 04 | G96 | 0.5− | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.7− | | |
| 2001 12 20 | 644 | 0.3− | 0.5+ | 2005 07 06 | 691 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.4+ | 0.7− | | |
| 2001 12 20 | 644 | 0.6+ | 0.6+ | 2005 07 06 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.2− | | |
| 2002 01 09 | 704 | (1.6− | 1.1−) | 2005 07 06 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1+ | | |
| 2002 01 09 | 644 | 0.1− | 0.2+ | 2005 07 15 | G96 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2002 01 09 | 704 | 0.5+ | 0.6+ | 2005 07 15 | G96 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.0 | | |
| 2002 01 09 | 704 | 0.3− | 0.7− | 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.1− | | |
| 2002 01 09 | 644 | 0.1− | 0.2− | 2005 07 15 | G96 | 0.2+ | 0.2+ | | | | | | |
| 2002 01 09 | 644 | 0.1− | 0.1+ | 2005 07 15 | G96 | 0.3− | 0.4+ | | | | | | |

**(141118)∗ 2001 XW$_{80}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.64173 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18261863 | $\omega$ | 321.46211 | | +0.66108782 | −0.72475737 | |
| $a$ | 3.0768477 | $\Omega$ | 86.24137 | | +0.72756840 | +0.55600237 | |
| $e$ | 0.0218689 | $i$ | 11.21883 | | +0.18332243 | +0.40692519 | |
| $P$ | 5.40 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.6− | 2001 12 20 | 704 | (0.4− | 2.2+) | 2005 08 04 | 644 | 0.1− | 0.5+ | | |
| 2001 11 20 | 704 | 0.4+ | 0.7− | 2001 12 20 | 704 | 0.1+ | 1.5+ | 2005 08 04 | 644 | 0.1− | 0.7+ | | |
| 2001 11 20 | 704 | 0.0 | 0.8− | 2001 12 20 | 704 | (0.8− | 2.4+) | 2006 10 16 | 703 | 0.3+ | 0.3+ | | |
| 2001 11 20 | 704 | 1.1− | 1.2− | 2001 12 20 | 704 | (0.4− | 2.2+) | 2006 10 16 | 703 | 0.6+ | 0.4+ | | |
| 2001 11 20 | 704 | 0.2− | 0.9− | 2002 01 08 | 704 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.2+ | | |
| 2001 11 21 | 704 | 1.0+ | 0.2− | 2002 01 08 | 704 | 0.9− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.6+ | | |
| 2001 11 21 | 704 | 0.8+ | 0.4− | 2002 01 08 | 704 | 0.0 | 1.0+ | 2006 10 22 | 703 | 0.3− | 0.7+ | | |
| 2001 11 21 | 704 | 0.5+ | 0.4− | 2002 01 13 | 704 | 0.4− | 0.5− | 2006 10 22 | 703 | 0.3+ | 0.3− | | |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2002 01 13 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.2− | 1.3− | | |
| 2001 12 11 | 704 | 0.2− | 0.1− | 2002 01 13 | 704 | 0.3− | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.0 | | |
| 2001 12 11 | 704 | 0.1+ | 1.0+ | 2002 01 13 | 704 | 0.9+ | 0.1− | 2006 11 01 | 703 | 0.2− | 0.1− | | |
| 2001 12 11 | 704 | 0.1− | 0.2− | 2002 01 13 | 704 | 0.2− | 0.3+ | 2006 11 01 | 703 | 0.7− | 0.4+ | | |
| 2001 12 11 | 704 | 0.3+ | 0.1+ | 2003 03 08 | 644 | 0.4+ | 0.3+ | 2006 11 01 | 703 | 0.0 | 1.1+ | | |
| 2001 12 14 | 704 | 0.1− | 0.1+ | 2003 03 08 | 644 | 0.6+ | 0.8+ | 2006 11 01 | 703 | 0.1+ | 0.6− | | |
| 2001 12 14 | 704 | 0.1− | 1.0+ | 2003 03 08 | 644 | 0.8+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2001 12 14 | 704 | 0.3+ | 0.7+ | 2003 03 23 | 644 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.4+ | | |
| 2001 12 14 | 704 | 0.4− | 0.6+ | 2003 03 23 | 644 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.7+ | | |
| 2001 12 17 | 704 | 0.4− | 0.2− | 2003 03 23 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.9− | 0.1+ | | |
| 2001 12 17 | 704 | 0.2− | 0.1− | 2004 05 18 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 703 | 0.1− | 0.4+ | | |
| 2001 12 17 | 704 | (1.5− | 0.2+) | 2004 05 18 | 704 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.9− | 0.0 | | |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2004 05 18 | 704 | 0.4− | 1.3+ | 2006 11 19 | 703 | 0.5+ | 0.7− | | |
| 2001 12 19 | 691 | (0.3+ | 3.9+) | 2005 07 05 | 644 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.1+ | | |
| 2001 12 19 | 691 | (0.4+ | 4.2+) | 2005 07 05 | 644 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2001 12 19 | 691 | (0.3+ | 4.1+) | 2005 07 05 | 644 | 0.2+ | 0.7+ | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2001 12 20 | 704 | (0.9− | 2.3+) | 2005 08 04 | 644 | 0.1− | 0.7+ | 2006 11 24 | G96 | 0.2+ | 0.1+ | | |

**(141119)∗ 2001 XQ$_{81}$ = 2003 GA$_{42}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 46996)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.31937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18079923 | $\omega$ | 46.51849 | | −0.99138036 | +0.02862488 | |
| $a$ | 3.0974549 | $\Omega$ | 134.66490 | | −0.06320852 | −0.95926044 | |
| $e$ | 0.0581791 | $i$ | 10.35571 | | +0.11475917 | −0.28106944 | |
| $P$ | 5.45 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 07 | 809 | 0.1− | 1.3− | 2003 02 22 | 644 | 0.3+ | 0.2− | 2003 04 10 | 644 | 0.5+ | 1.2+ | | |
| 1998 04 23 | 704 | 1.2− | 0.9+ | 2003 02 22 | 644 | 0.5+ | 0.2− | 2003 04 10 | 644 | 0.6+ | 0.6+ | | |
| 1998 04 23 | 704 | 1.4− | 0.2+ | 2003 02 22 | 644 | 0.4+ | 0.3− | 2005 08 04 | 644 | 0.2+ | 0.7+ | | |
| 1998 04 23 | 704 | 1.0+ | 0.2− | 2003 02 28 | 704 | 0.2+ | 0.5+ | 2005 08 04 | 644 | 0.1− | 0.7+ | | |
| 1998 04 23 | 704 | 0.8+ | 0.9− | 2003 02 28 | 704 | 0.8+ | 0.3+ | 2005 08 04 | 644 | 0.5− | 0.5+ | | |
| 1998 04 23 | 704 | (3.1− | 1.4−) | 2003 02 28 | 704 | 0.4+ | 0.1+ | 2005 08 05 | 644 | 0.0 | 0.8+ | | |
| 2001 11 17 | 704 | 1.3− | 0.5− | 2003 02 28 | 704 | 0.4+ | 0.6+ | 2005 08 05 | 644 | 0.0 | 0.5+ | | |
| 2001 11 17 | 704 | 0.4− | 0.3− | 2003 02 28 | 704 | 0.3− | 0.4+ | 2005 08 05 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 17 | 704 | 0.5− | 0.1− | 2003 02 28 | 704 | 0.2− | 0.3− | 2005 08 27 | 644 | 0.2− | 0.4+ | | |
| 2001 11 17 | 704 | 0.8− | 0.2− | 2003 03 25 | 644 | 0.4+ | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.4+ | | |
| 2001 12 11 | 704 | 0.9− | 0.3+ | 2003 03 25 | 644 | 0.4+ | 0.3+ | 2005 08 27 | 644 | 0.1− | 0.5+ | | |
| 2001 12 11 | 704 | 0.5− | 0.0 | 2003 03 25 | 644 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 2001 12 11 | 704 | 0.3+ | 0.6− | 2003 04 05 | 699 | (1.6+ | 1.7−) | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 12 14 | 704 | 0.8+ | 0.4− | 2003 04 05 | 699 | (1.2+ | 1.6+) | 2006 11 08 | 644 | 0.7− | 0.0 | | |
| 2001 12 14 | 704 | 0.8+ | 0.0 | 2003 04 05 | 699 | (1.7− | 0.9+) | 2006 11 13 | 703 | 0.1− | 0.6− | | |
| 2001 12 14 | 704 | 0.7+ | 0.5+ | 2003 04 05 | 699 | (0.0 | 1.6+) | 2006 11 13 | 703 | 0.7+ | 1.4+ | | |
| 2001 12 14 | 704 | 0.1− | 0.8+ | 2003 04 08 | 691 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.7− | 0.2− | | |
| 2002 02 04 | 209 | 1.4+ | 0.5+ | 2003 04 08 | 691 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.6− | 0.3+ | | |
| 2002 02 04 | 209 | 0.6+ | 0.3+ | 2003 04 08 | 691 | 0.3− | 0.2+ | | | | | | |
| 2002 02 04 | 209 | 0.7+ | 1.1+ | 2003 04 10 | 644 | 0.9+ | 1.0+ | | | | | | |

**(141120)∗ 2001 XT$_{81}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.06425 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23009031 | $\omega$ | 276.80227 | | +0.38579187 | −0.92235481 | |
| $a$ | 2.6375690 | $\Omega$ | 150.47813 | | +0.86214374 | +0.35246036 | |
| $e$ | 0.0798820 | $i$ | 2.40129 | | +0.32843997 | +0.15821916 | |
| $P$ | 4.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.2− | 0.6− | 2003 04 01 | 704 | 0.5+ | 0.2− | 2005 11 01 | G96 | 0.1+ | 0.1+ |
| 1992 09 30 | 691 | 0.3− | 0.1− | 2003 04 03 | 699 | 0.4+ | 1.1− | 2005 11 01 | 704 | 1.1− | 1.0+ |
| 1992 09 30 | 691 | 0.5+ | 0.1+ | 2003 04 03 | 699 | (0.0 | 1.7+) | 2005 11 01 | G96 | 0.3+ | 0.1− |
| 1996 09 08 | 691 | 0.1+ | 0.5− | 2003 04 03 | 699 | 0.8+ | 0.2+ | 2005 11 01 | G96 | 0.1− | 0.0 |
| 1996 09 08 | 691 | 0.1+ | 0.2+ | 2003 04 03 | 699 | 0.4+ | 0.4− | 2005 11 01 | 704 | 1.4− | 0.3− |
| 1996 09 08 | 691 | 0.1− | 0.3+ | 2003 04 08 | 691 | 0.7+ | 0.9+ | 2005 11 02 | 704 | 0.0 | 0.5− |
| 2001 10 24 | 333 | 0.4+ | 0.5− | 2003 04 08 | 691 | 0.4+ | 1.0+ | 2005 11 02 | 704 | 0.1+ | 0.5+ |
| 2001 10 24 | 333 | 0.6− | 0.5+ | 2003 04 08 | 691 | 0.3+ | 0.9+ | 2005 11 02 | 704 | 0.1− | 0.9+ |
| 2001 10 24 | 333 | 0.8+ | 1.0− | 2003 04 25 | 691 | 0.3− | 0.0 | 2005 11 02 | 704 | 0.6+ | 0.7+ |
| 2001 11 20 | 704 | 0.3+ | 0.7− | 2003 04 25 | 691 | 0.5− | 0.0 | 2005 11 02 | 704 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.8− | 0.1+ | 2003 04 25 | 691 | 0.2− | 0.1+ | 2005 11 02 | 704 | 0.6− | 0.4+ |
| 2001 11 20 | 704 | 0.1+ | 0.5− | 2005 10 01 | 699 | 0.1− | 0.1+ | 2005 11 02 | 704 | 0.1+ | 0.3+ |
| 2001 11 20 | 704 | 0.4− | 0.7− | 2005 10 01 | 699 | (1.7− | 0.8−) | 2005 11 02 | 704 | (1.1+ | 1.8+) |
| 2001 11 20 | 704 | 0.0 | 1.0− | 2005 10 01 | 699 | (2.7− | 1.5−) | 2005 11 02 | 704 | 0.9− | 0.3+ |
| 2001 12 11 | 704 | 0.0 | 0.4− | 2005 10 01 | 699 | (1.1+ | 2.0−) | 2005 11 02 | 704 | 0.3− | 0.3− |
| 2001 12 11 | 704 | 0.3+ | 0.3− | 2005 10 04 | G96 | 0.3+ | 0.1+ | 2005 11 02 | 704 | 0.4− | 0.1− |
| 2001 12 11 | 704 | 0.0 | 1.2− | 2005 10 04 | G96 | 0.1− | 0.0 | 2005 11 02 | 704 | 0.7+ | 0.1− |
| 2001 12 11 | 704 | 0.0 | 0.2+ | 2005 10 04 | G96 | 0.0 | 0.1+ | 2005 11 02 | 704 | 0.3+ | 0.4+ |
| 2001 12 11 | 704 | 0.1+ | 0.2− | 2005 10 04 | G96 | 0.2+ | 0.0 | 2005 11 02 | 704 | 1.0+ | 1.4+ |
| 2001 12 14 | 704 | 0.4+ | 0.4− | 2005 10 05 | 704 | 0.3+ | 0.3+ | 2005 11 02 | 704 | (0.9− | 1.8+) |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2005 10 05 | 704 | 0.4+ | 0.3+ | 2005 11 03 | 704 | 0.6− | 1.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.0 | 2005 10 05 | 704 | 1.3+ | 0.2− | 2005 11 03 | 704 | 0.4− | 0.4− |
| 2001 12 14 | 704 | 0.2− | 0.6− | 2005 10 05 | 704 | 0.3− | 0.2− | 2005 11 03 | 704 | 0.5− | 0.2− |
| 2001 12 14 | 704 | 0.0 | 0.4− | 2005 10 05 | 704 | (1.8+ | 0.1+) | 2005 11 03 | 704 | 0.1+ | 0.8+ |
| 2001 12 15 | 704 | 0.6− | 0.8+ | 2005 10 07 | 703 | 0.6+ | 0.9+ | 2005 11 03 | 704 | 0.3+ | 0.7+ |
| 2001 12 15 | 704 | 0.3− | 0.2+ | 2005 10 07 | 703 | (0.1− | 1.6+) | 2005 11 03 | 704 | 0.5− | 0.3− |
| 2001 12 15 | 704 | 0.4− | 0.4+ | 2005 10 07 | 703 | 0.0 | 1.3+ | 2005 11 03 | 704 | 0.1− | 0.3+ |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2005 10 07 | 703 | (0.8+ | 1.7+) | 2005 11 03 | 704 | 0.8− | 0.4+ |
| 2001 12 17 | 704 | 0.2− | 1.3− | 2005 10 07 | 691 | 0.0 | 0.1− | 2005 11 03 | 704 | 0.5− | 1.4+ |
| 2001 12 17 | 704 | 0.5+ | 0.2− | 2005 10 07 | 691 | 0.2− | 0.4+ | 2005 11 04 | 704 | 0.3+ | 0.4− |
| 2001 12 17 | 704 | 0.2+ | 0.7− | 2005 10 07 | 691 | 0.0 | 0.1+ | 2005 11 04 | 704 | 0.1− | 0.8− |
| 2001 12 17 | 704 | 0.4+ | 0.1+ | 2005 10 22 | 703 | 0.8+ | 0.6− | 2005 11 04 | 704 | (1.9− | 0.5+) |
| 2001 12 17 | 704 | 0.2− | 1.1− | 2005 10 22 | 703 | 1.2− | 0.3+ | 2005 11 04 | 704 | 0.1− | 0.8− |
| 2001 12 17 | 704 | 0.6+ | 0.4+ | 2005 10 22 | 703 | 0.0 | 0.4− | 2005 11 04 | 704 | 0.1− | 0.3− |
| 2001 12 17 | 704 | 0.4− | 0.7− | 2005 10 22 | 703 | 0.6+ | 0.2+ | 2005 11 09 | 703 | 0.8− | 0.3− |
| 2001 12 17 | 704 | 0.4+ | 0.3+ | 2005 10 22 | 644 | 0.1+ | 0.1+ | 2005 11 09 | 703 | 0.2− | 1.0+ |
| 2001 12 20 | 704 | 0.9+ | 0.5+ | 2005 10 22 | 644 | 0.2+ | 0.3+ | 2005 11 09 | 703 | 1.2− | 0.7+ |
| 2001 12 20 | 704 | (2.7+ | 0.8+) | 2005 10 22 | 644 | 0.1+ | 0.3+ | 2005 11 09 | 703 | 1.1− | 0.5− |
| 2001 12 20 | 704 | 0.6+ | 1.1+ | 2005 10 25 | 699 | 0.5+ | 1.1+ | 2005 12 01 | 704 | 0.3− | 0.0 |
| 2001 12 20 | 704 | 0.4+ | 1.0+ | 2005 10 25 | 699 | 0.0 | 0.5− | 2005 12 01 | 704 | 0.3− | 0.4− |
| 2002 01 09 | 704 | 0.0 | 0.3+ | 2005 10 25 | 699 | 0.8− | 0.5− | 2005 12 01 | 704 | 0.7− | 0.4− |
| 2002 01 09 | 704 | 0.3− | 0.1− | 2005 10 25 | 699 | 0.1+ | 0.1− | 2005 12 01 | 704 | 0.5− | 0.1− |
| 2002 01 09 | 704 | 0.5− | 0.3+ | 2005 10 28 | 703 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.6− | 0.4− |
| 2002 01 09 | 704 | 0.3+ | 0.1+ | 2005 10 28 | 703 | 0.6+ | 0.5− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2002 01 09 | 704 | 0.4+ | 0.1− | 2005 10 28 | 703 | 1.1+ | 0.4− | 2006 10 21 | G96 | 0.3− | 0.4− |
| 2002 02 06 | 644 | 0.1+ | 1.5+ | 2005 10 28 | 703 | 0.5+ | 0.5− | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2002 02 06 | 644 | (0.7+ | 1.6+) | 2005 10 31 | 704 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2002 02 06 | 644 | 0.5+ | 1.5+ | 2005 10 31 | 704 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2003 03 27 | 699 | 0.4− | 1.5− | 2005 10 31 | 704 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2003 03 27 | 699 | 0.9+ | 0.2− | 2005 10 31 | 704 | 0.2+ | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2003 03 27 | 699 | 0.8− | 0.2− | 2005 10 31 | 704 | 0.2+ | 0.6+ | 2006 11 16 | G96 | 1.0− | 0.0 |
| 2003 03 27 | 699 | 1.1− | 0.2− | 2005 11 01 | 704 | 0.1+ | 1.1+ | 2006 11 16 | G96 | 0.5− | 1.2− |
| 2003 04 01 | 704 | 0.6+ | 0.5− | 2005 11 01 | 704 | (1.7− | 1.8+) | 2006 11 16 | G96 | 1.1− | 0.1− |
| 2003 04 01 | 704 | 0.4+ | 0.5+ | 2005 11 01 | G96 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2003 04 01 | 704 | 0.7+ | 0.6+ | 2005 11 01 | 704 | (1.0− | 1.8+) | | | | |

**(141121)∗ 2001 XB$_{82}$ = 2005 NO$_{121}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 89125)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.86972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19227667 | $\omega$ | 265.70078 | | +0.81669250 | −0.57517473 | |
| $a$ | 2.9729321 | $\Omega$ | 129.40365 | | +0.55055913 | +0.75232175 | |
| $e$ | 0.1368071 | $i$ | 3.47012 | | +0.17291040 | +0.32122580 | |
| $P$ | 5.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2005 06 15 | G96 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 11 20 | 704 | (0.8+ | 2.5−) | 2005 06 15 | G96 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.9+ | 0.4− | 2005 06 30 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 11 20 | 704 | 0.3+ | 0.8− | 2005 06 30 | 691 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 1.0− | 1.1− |
| 2001 12 11 | 704 | 0.7− | 0.7+ | 2005 06 30 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.6− | 0.1+ |
| 2001 12 11 | 704 | 0.8− | 0.1− | 2005 07 12 | G96 | 0.2− | 0.0 | 2006 11 17 | 704 | 1.3− | 1.1+ |
| 2001 12 11 | 704 | 0.3+ | 0.2+ | 2005 07 12 | G96 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.7− | 0.6+ |
| 2001 12 11 | 704 | 0.2+ | 0.6+ | 2005 07 12 | G96 | 0.6− | 0.2+ | 2006 11 17 | 704 | 1.2+ | 0.2− |
| 2001 12 12 | 644 | 0.2− | 0.3+ | 2005 07 12 | G96 | 0.2− | 0.1+ | 2006 11 17 | 704 | 1.1− | 1.0− |
| 2001 12 12 | 644 | 0.5− | 0.6+ | 2005 07 16 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2001 12 12 | 644 | 0.1− | 0.3+ | 2005 07 16 | 691 | (1.7+ | 1.4+) | 2006 11 20 | 704 | 1.4+ | 0.5+ |
| 2001 12 14 | 704 | 0.1+ | 0.1− | 2005 07 16 | 691 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 20 | 704 | 1.3− | 0.3+ |
| 2001 12 14 | 704 | 0.5− | 0.0 | 2006 10 18 | 691 | 0.3− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | 0.4+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2003 02 26 | 599 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2003 02 26 | 599 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.3− | 0.4+ |
| 2003 02 26 | 599 | 0.1+ | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2003 02 26 | 599 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2003 03 12 | 291 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.4+ | 0.1− | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2003 03 12 | 291 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.5+ | 0.9+ |
| 2003 03 12 | 291 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2005 06 15 | G96 | 0.4− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.2− | | | | |
| 2005 06 15 | G96 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1− | | | | |

**(141122)∗ 2001 XC$_{82}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.84339 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17869169 | $\omega$ | 98.49389 | | −0.96548246 | +0.16715200 | |
| $a$ | 3.1217622 | $\Omega$ | 91.30148 | | −0.23428385 | −0.89242923 | |
| $e$ | 0.0617978 | $i$ | 11.52590 | | +0.11381867 | −0.41908266 | |
| $P$ | 5.52 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.2− | 1.5− | 2003 03 08 | 704 | 0.8+ | 0.5+ | 2004 06 16 | 704 | 0.0 | 1.1+ |
| 1998 04 23 | 704 | 0.0 | 1.1+ | 2003 03 08 | 704 | (0.2+ | 1.8+) | 2004 06 16 | 704 | 0.1− | 0.7+ |
| 1998 04 23 | 704 | 0.1+ | 0.6− | 2003 03 08 | 704 | 0.3− | 0.5+ | 2004 06 16 | 704 | 0.6− | 1.1− |
| 1998 04 23 | 704 | 1.5− | 1.4− | 2003 03 08 | 704 | 0.7− | 0.4+ | 2004 06 18 | 704 | 0.8+ | 0.0 |
| 2001 12 11 | 704 | 0.2− | 0.2− | 2003 03 08 | 644 | 0.2+ | 0.2− | 2004 06 18 | 704 | 0.3+ | 0.6+ |
| 2001 12 11 | 704 | 0.8− | 0.3− | 2003 03 08 | 644 | 0.1+ | 0.0 | 2004 06 18 | 704 | 0.6+ | 0.8+ |
| 2001 12 11 | 704 | 0.7− | 0.3+ | 2003 03 08 | 644 | 0.0 | 0.1− | 2004 06 18 | 704 | 0.2+ | 0.8+ |
| 2001 12 11 | 704 | 0.6− | 0.4+ | 2003 03 22 | 644 | 0.1+ | 0.1+ | 2004 06 18 | 704 | 0.2+ | 0.2− |
| 2001 12 11 | 704 | 0.3− | 1.0+ | 2003 03 22 | 644 | 0.3+ | 0.0 | 2005 07 27 | 644 | 0.0 | 1.2+ |
| 2001 12 14 | 704 | 0.1− | 0.4− | 2003 03 22 | 644 | 0.2− | 0.0 | 2005 07 27 | 644 | 0.1+ | 1.1+ |
| 2001 12 14 | 704 | 0.2+ | 0.7+ | 2003 04 02 | 644 | 0.5+ | 0.1− | 2005 07 27 | 644 | 0.6− | 0.8+ |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2003 04 02 | 644 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2001 12 14 | 704 | 0.1+ | 0.9+ | 2003 04 02 | 644 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.4+ | 0.6+ |
| 2001 12 17 | 704 | 0.6+ | 0.9+ | 2004 04 20 | 704 | 0.3− | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.3+ | 0.7+ | 2004 04 20 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.5+ |
| 2001 12 17 | 704 | 0.7+ | 0.6+ | 2004 04 20 | 704 | 0.2− | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2001 12 17 | 704 | 1.1+ | 0.9+ | 2004 05 15 | 704 | (0.1+ | 1.7+) | 2006 10 22 | 703 | 0.1− | 0.8+ |
| 2002 01 09 | 704 | 0.2+ | 0.2− | 2004 05 15 | 704 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.8− | 0.5+ |
| 2002 01 09 | 704 | 0.9− | 0.3− | 2004 05 15 | 704 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 01 09 | 704 | 1.4− | 0.6+ | 2004 05 15 | 704 | 0.0 | 1.1+ | 2006 11 13 | 703 | 0.8− | 1.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 699 | 0.7− | 1.1+ | 2004 05 15 | 704 | 0.7− | 1.1+ | 2006 11 13 | 703 | 0.4− | 1.4− |
| 2003 01 26 | 699 | 0.4+ | 0.1+ | 2004 05 18 | 704 | 0.6+ | 0.1+ | 2006 11 13 | 703 | 0.9+ | 0.5− |
| 2003 01 26 | 699 | 0.1− | 0.8+ | 2004 05 18 | 704 | 1.1+ | 0.6+ | 2006 11 13 | 703 | 0.6− | 0.4+ |
| 2003 01 26 | 699 | (0.4+ | 2.0+) | 2004 05 18 | 704 | (0.6+ | 1.9+) | 2006 11 19 | 703 | 0.1− | 0.4+ |
| 2003 02 08 | 699 | 0.2+ | 0.6− | 2004 05 18 | 704 | 0.4+ | 0.6+ | 2006 11 19 | 703 | 0.7− | 0.1+ |
| 2003 02 08 | 699 | 0.6+ | 0.5+ | 2004 05 22 | 704 | 0.5− | 0.4+ | 2006 11 19 | 703 | 0.3+ | 1.0− |
| 2003 02 08 | 699 | 0.2+ | 0.0 | 2004 05 22 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.1− |
| 2003 02 08 | 699 | 0.3− | 0.4+ | 2004 05 22 | 704 | 0.3+ | 0.1− | | | | |

**(141123)∗ 2001 XM$_{82}$ = 2003 FT$_{39}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 46996)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.53590 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22421780 | $\omega$ | 286.01355 | | +0.15195206 | −0.98815215 | |
| $a$ | 2.6834242 | $\Omega$ | 155.21540 | | +0.92537689 | +0.13455847 | |
| $e$ | 0.0523310 | $i$ | 2.95139 | | +0.34725809 | +0.07381963 | |
| $P$ | 4.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.7− | 0.3− | 2003 03 24 | 691 | 0.8+ | 0.2+ | 2005 10 01 | 691 | 0.0 | 0.5+ |
| 2001 12 11 | 704 | 0.6− | 0.3− | 2003 03 24 | 691 | 0.4+ | 0.1+ | 2005 10 01 | 691 | 0.2− | 0.7+ |
| 2001 12 11 | 704 | 0.7− | 0.9− | 2003 03 26 | 691 | 0.3− | 0.5+ | 2005 10 07 | 703 | 0.0 | 0.4+ |
| 2001 12 11 | 704 | 1.2− | 1.1− | 2003 03 26 | 691 | 0.1− | 0.3+ | 2005 10 07 | 703 | 1.3+ | 0.4+ |
| 2001 12 14 | 704 | 0.1− | 0.8+ | 2003 03 26 | 691 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.9− | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.3+ | 2003 04 08 | 691 | 0.7+ | 0.2+ | 2005 10 07 | 703 | 0.1+ | 0.8− |
| 2001 12 14 | 704 | 0.1+ | 0.9+ | 2003 04 08 | 691 | 0.2+ | 0.7+ | 2005 10 10 | 691 | 0.1− | 0.5+ |
| 2001 12 14 | 704 | 1.3− | 0.0 | 2003 04 08 | 691 | 0.6+ | 0.5+ | 2005 10 10 | 691 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 1.1+ | 0.8+ | 2003 04 24 | 230 | (1.8+ | 0.7−) | 2005 10 10 | 691 | 0.3− | 0.4+ |
| 2001 12 17 | 704 | 1.3+ | 0.4− | 2003 04 24 | 230 | 0.8+ | 0.8− | 2006 10 23 | 691 | 0.7+ | 0.3− |
| 2001 12 17 | 704 | 1.2+ | 0.4+ | 2003 04 25 | 230 | (1.7+ | 1.1−) | 2006 10 23 | 691 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 1.3+ | 0.3− | 2003 04 26 | 691 | 0.3− | 0.5+ | 2006 10 23 | 691 | 0.5+ | 0.3+ |
| 2001 12 20 | 704 | 0.1− | 0.4− | 2003 04 26 | 691 | 0.4− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 12 20 | 704 | 0.8− | 0.2+ | 2003 04 26 | 691 | 0.6− | 0.2+ | 2006 11 23 | G96 | 1.0− | 0.1+ |
| 2001 12 20 | 704 | 0.2− | 0.1− | 2004 06 14 | 926 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2001 12 20 | 704 | 0.2− | 0.2+ | 2004 06 14 | 926 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.5− | 0.8− |
| 2002 01 13 | 704 | 0.8+ | 0.2+ | 2004 06 14 | 926 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.8− | 0.6− |
| 2002 01 13 | 704 | 0.6+ | 0.2− | 2005 09 25 | 691 | 0.3− | 0.6+ | 2006 12 01 | G96 | 0.5− | 0.7− |
| 2002 01 13 | 704 | 0.5+ | 0.7+ | 2005 09 25 | 691 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2002 01 13 | 704 | 0.8− | 0.5− | 2005 09 25 | 691 | 0.4− | 0.2+ | 2006 12 01 | G96 | 1.0− | 0.2− |
| 2003 03 24 | 691 | 0.4+ | 0.7+ | 2005 10 01 | 691 | 0.2− | 0.5+ | | | | |

**(141124)∗ 2001 XU$_{82}$ = 1997 RM$_{7}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23213)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.27063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28126931 | $\omega$ | 187.69389 | | +0.94584137 | −0.32393737 | |
| $a$ | 2.3070366 | $\Omega$ | 191.27639 | | +0.30331284 | +0.90510525 | |
| $e$ | 0.1985521 | $i$ | 6.21873 | | +0.11569536 | +0.27540710 | |
| $P$ | 3.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.4− | 0.1− | 2004 08 09 | 704 | 0.7+ | 0.3− | 2004 09 21 | 704 | 0.1− | 0.8+ |
| 1996 04 12 | 691 | 0.5− | 0.0 | 2004 08 17 | 704 | 0.2+ | 0.1− | 2004 09 21 | 704 | 0.2− | 0.9− |
| 1996 04 12 | 691 | 0.4− | 0.1− | 2004 08 17 | 704 | 0.3+ | 0.2+ | 2004 09 21 | 704 | 0.3− | 0.2+ |
| 1997 09 10 | 046 | 0.6+ | 0.2− | 2004 08 17 | 704 | 0.0 | 1.0− | 2004 09 21 | 704 | 0.2+ | 0.6− |
| 1997 09 10 | 046 | 0.2+ | 0.1− | 2004 08 17 | 704 | 0.6+ | 0.1+ | 2004 10 05 | 699 | 1.4+ | 0.0 |
| 1997 09 10 | 046 | 0.5+ | 0.5− | 2004 08 25 | 691 | 0.2− | 0.2+ | 2004 10 05 | 699 | 0.4+ | 0.1− |
| 1997 09 10 | 046 | 0.1+ | 0.4− | 2004 08 25 | 691 | 0.3− | 0.0 | 2004 10 05 | 699 | 0.7− | 0.1− |
| 1997 09 11 | 046 | 0.0 | 0.5− | 2004 08 25 | 691 | 0.2− | 0.1+ | 2004 10 05 | 704 | 0.3− | 1.4+ |
| 1997 09 11 | 046 | 0.0 | 0.6− | 2004 09 08 | 704 | 0.3− | 0.2+ | 2004 10 05 | 699 | 0.2+ | 0.4− |
| 1997 09 11 | 046 | 0.4+ | 0.5− | 2004 09 08 | 704 | 0.5− | 0.6+ | 2004 10 05 | 704 | 0.1+ | 0.1+ |
| 2001 11 17 | 704 | 0.7− | 0.0 | 2004 09 08 | 704 | 0.0 | 0.8+ | 2004 10 05 | 704 | 1.8− | 1.8+ |
| 2001 11 17 | 704 | 0.1− | 0.1− | 2004 09 08 | 704 | 0.9+ | 0.8− | 2004 10 05 | 704 | 1.0− | 0.1− |
| 2001 11 17 | 704 | 1.0− | 0.5+ | 2004 09 08 | 704 | 0.5− | 1.1+ | 2004 10 05 | 704 | (1.2− | 2.2+) |
| 2001 11 17 | 704 | 0.5+ | 1.0+ | 2004 09 10 | 704 | 0.5− | 0.9+ | 2004 10 05 | 704 | 1.0− | 0.3+ |
| 2001 12 11 | 704 | 0.4+ | 1.3+ | 2004 09 10 | 704 | 0.0 | 0.2+ | 2004 10 05 | 704 | 1.0− | 1.2+ |
| 2001 12 11 | 704 | 0.4+ | 1.0+ | 2004 09 10 | 704 | 0.3− | 0.5+ | 2004 10 05 | 704 | 0.4− | 0.6+ |
| 2001 12 11 | 704 | 0.9+ | 0.1+ | 2004 09 10 | 704 | 0.1− | 0.5+ | 2004 10 05 | 704 | (1.0− | 4.1+) |
| 2001 12 11 | 704 | 0.1− | 0.8+ | 2004 09 10 | 704 | 0.3− | 0.3+ | 2004 10 09 | 704 | 0.4− | 0.4− |
| 2001 12 11 | 704 | 1.0+ | 0.5+ | 2004 09 13 | 704 | (2.0− | 2.2+) | 2004 10 09 | 704 | 0.5+ | 0.4− |
| 2001 12 14 | 704 | 0.3+ | 0.0 | 2004 09 13 | 704 | 0.6− | 0.2− | 2004 10 09 | 704 | 1.5+ | 1.6− |
| 2001 12 14 | 704 | 0.5+ | 0.4− | 2004 09 13 | 704 | 0.9− | 0.1− | 2004 10 10 | 644 | 0.6− | 0.1+ |
| 2001 12 14 | 704 | 0.4+ | 0.5− | 2004 09 13 | 704 | 0.2+ | 1.0+ | 2004 10 10 | 644 | 0.5− | 0.3+ |
| 2002 01 09 | 704 | 0.4− | 0.8− | 2004 09 13 | 704 | 0.1− | 0.2+ | 2004 10 10 | 644 | 0.4− | 0.3+ |
| 2002 01 09 | 704 | 0.9− | 1.1− | 2004 09 15 | 699 | 0.9+ | 0.9− | 2006 01 31 | 703 | 0.8+ | 0.2+ |
| 2002 01 09 | 704 | 1.0− | 0.1− | 2004 09 15 | 699 | 0.2+ | 0.2+ | 2006 01 31 | 703 | 0.4+ | 0.3+ |
| 2002 01 09 | 704 | 1.1+ | 0.1+ | 2004 09 15 | 699 | 0.3+ | 0.0 | 2006 01 31 | 703 | 0.9− | 0.8+ |
| 2003 04 04 | 291 | 0.6+ | 0.8+ | 2004 09 15 | 699 | 0.1− | 0.3+ | 2006 01 31 | 703 | 1.3− | 0.9− |
| 2003 04 04 | 291 | 1.3+ | 0.1+ | 2004 09 18 | 704 | 0.5+ | 0.3− | 2006 02 02 | 691 | 0.3− | 0.1+ |
| 2003 04 04 | 291 | 0.5+ | 0.2+ | 2004 09 18 | 704 | 0.3+ | 0.5− | 2006 02 02 | 691 | 0.2− | 0.1+ |
| 2004 08 09 | 704 | 0.0 | 0.1+ | 2004 09 18 | 704 | 0.4− | 0.1− | 2006 02 02 | 691 | 0.1− | 0.2+ |
| 2004 08 09 | 704 | 0.2− | 0.2+ | 2004 09 18 | 704 | 1.5+ | 0.7− | | | | |
| 2004 08 09 | 704 | 0.4+ | 0.5+ | 2004 09 21 | 704 | 0.6+ | 0.8+ | | | | |

**(141125)∗ 2001 XJ$_{83}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.90300 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18041041 | $\omega$ | 94.19082 | | +0.89352821 | +0.38953334 | |
| $a$ | 3.1019038 | $\Omega$ | 243.01293 | | −0.44165208 | +0.85213012 | |
| $e$ | 0.2436040 | $i$ | 14.51345 | | +0.08093684 | +0.34948251 | |
| $P$ | 5.46 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 08 | 704 | 0.0 | 0.0 | 2005 05 30 | E12 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.4− |
| 2000 06 08 | 704 | 1.0+ | 0.4+ | 2005 05 30 | E12 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.5+ | 0.3+ |
| 2000 06 08 | 704 | 0.9− | 0.8+ | 2005 06 04 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 704 | 0.0 | 0.0 |
| 2000 06 08 | 704 | 0.4− | 0.4+ | 2005 06 04 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 704 | 0.8+ | 0.5− |
| 2000 08 03 | 704 | 0.2+ | 0.2+ | 2005 06 04 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 704 | 0.8+ | 0.0 |
| 2000 08 03 | 704 | 0.4+ | 0.5− | 2005 06 04 | 704 | 0.0 | 0.5+ | 2006 10 21 | 704 | 0.7+ | 0.1− |
| 2000 08 03 | 704 | 0.4+ | 0.2+ | 2005 06 04 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 704 | 0.4+ | 0.1+ |
| 2000 08 03 | 704 | 0.6− | 0.1− | 2005 06 11 | 703 | 0.5− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2000 08 03 | 704 | 0.5− | 0.4− | 2005 06 11 | 703 | 0.8− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 09 26 | 704 | 1.0+ | 0.9+ | 2005 06 11 | 703 | 0.4+ | 1.4+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.3+ | 0.7+ | 2005 06 11 | 703 | 0.8− | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 09 26 | 704 | (0.0 | 1.7+) | 2005 07 05 | 644 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2001 09 26 | 704 | 0.4− | 0.0 | 2005 07 05 | 644 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 1.2− | 0.1− | 2005 07 05 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.3− | 0.7− | 2005 07 12 | G96 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 0.5+ | 0.4+ | 2005 07 12 | G96 | 0.8− | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2001 11 09 | 704 | 0.3− | 0.5− | 2005 07 12 | G96 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2005 07 12 | G96 | 0.3− | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2005 07 27 | 644 | 0.2+ | 0.3− | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 1.4+ | 2005 07 27 | 644 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2001 11 20 | 704 | 0.3− | 0.3− | 2005 07 27 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.2+ | 1.4− |
| 2001 12 11 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 703 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.3+ | 1.0+ |
| 2001 12 11 | 704 | 0.7− | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2001 12 11 | 704 | 0.3+ | 0.8+ | 2006 09 28 | 703 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.0 |
| 2001 12 11 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.4+ |
| 2001 12 14 | 704 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | (2.4− | 0.4−) |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 17 | 704 | 1.4− | 1.0− |
| 2001 12 17 | 704 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | (3.9− | 0.5+) |
| 2001 12 17 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.9+ | 0.6+ | 2006 11 17 | 704 | 1.1− | 0.4− |
| 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.1− | 0.6− | | |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.2+ | 2006 11 29 | 704 | 0.7− | 0.4− | | |
| 2005 05 30 | E12 | 0.8+ | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.7+ | 2006 11 29 | 704 | 0.7− | 0.1− | | |
| 2005 05 30 | E12 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.5− | | |

**(141126)∗ 2001 XT$_{83}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.48296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17516218 | $\omega$ | 289.37783 | | −0.04593818 | −0.99858493 | |
| $a$ | 3.1635581 | $\Omega$ | 163.18788 | | +0.94775954 | −0.05204384 | |
| $e$ | 0.1410823 | $i$ | 5.31503 | | +0.31566047 | +0.01093537 | |
| $P$ | 5.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.2+ | 1.0− | 2003 03 24 | 691 | 0.8+ | 1.2+ | 2006 09 28 | 691 | 0.3− | 0.4+ | | |
| 2001 11 17 | 704 | 0.4+ | 0.5− | 2003 03 24 | 691 | 0.6+ | 1.5+ | 2006 09 28 | 691 | 0.1− | 0.5+ | | |
| 2001 11 17 | 704 | 0.2− | 0.9− | 2003 03 31 | 704 | 0.4+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 2001 11 17 | 704 | 0.4+ | 0.4− | 2003 03 31 | 704 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 17 | 704 | 0.0 | 0.2− | 2003 03 31 | 704 | 0.8+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.0 | | |
| 2001 12 11 | 704 | 0.6+ | 0.1+ | 2003 03 31 | 704 | (0.1− | 1.9+) | 2006 10 10 | 644 | 0.1− | 0.3+ | | |
| 2001 12 11 | 704 | 0.6+ | 0.0 | 2003 04 07 | 691 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2001 12 11 | 704 | 0.6+ | 0.3− | 2003 04 07 | 691 | 0.4+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2003 04 07 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.8+ | 0.5+ | | |
| 2001 12 14 | 704 | 0.9+ | 0.9+ | 2003 04 24 | 691 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.5+ | | |
| 2001 12 14 | 704 | 0.7+ | 0.8+ | 2003 04 24 | 691 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.8− | 1.1+ | | |
| 2001 12 14 | 704 | 0.2− | 1.0+ | 2003 04 24 | 691 | 0.6− | 0.1+ | 2006 10 16 | 703 | (1.8− | 0.2+) | | |
| 2001 12 14 | 704 | 1.0− | 0.9+ | 2005 07 18 | 644 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 12 18 | 704 | 0.6− | 0.1+ | 2005 07 18 | 644 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2001 12 18 | 704 | 0.4− | 0.5+ | 2005 07 18 | 644 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.4− | 0.6+ | | |
| 2001 12 18 | 704 | 0.4− | 0.1+ | 2005 08 28 | 691 | 0.0 | 0.7+ | 2006 10 22 | 703 | 0.7+ | 1.5+ | | |
| 2002 01 09 | 704 | 0.5− | 0.7− | 2005 08 28 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | (2.2+ | 0.1+) | | |
| 2002 01 09 | 704 | (1.1− | 1.5−) | 2005 08 28 | 691 | 0.2− | 0.6+ | 2006 10 22 | 703 | 1.1+ | 0.6+ | | |
| 2002 01 09 | 704 | 0.1− | 1.0− | 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.4+ | | |
| 2002 01 09 | 704 | 1.2− | 0.3− | 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.9− | | |
| 2002 01 14 | 704 | 0.4− | 0.8+ | 2006 09 17 | 691 | 0.5− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 1.4− | | |
| 2002 01 14 | 704 | (1.5− | 1.7+) | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.5+ | 0.6− | | |
| 2002 01 14 | 704 | 0.4+ | 1.5+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.0 | | |
| 2002 01 14 | 704 | 0.3− | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.2+ | | | | | | |
| 2003 03 24 | 691 | (0.5+ | 1.6+) | 2006 09 28 | 691 | 0.1− | 0.4+ | | | | | | |

**(141127)∗ 2001 XC$_{85}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.48324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16800884 | $\omega$ | 357.93694 | | −0.42714650 | −0.89569775 | |
| $a$ | 3.2527296 | $\Omega$ | 117.32996 | | +0.83155038 | −0.44281816 | |
| $e$ | 0.1743775 | $i$ | 7.99605 | | +0.35506314 | −0.04046758 | |
| $P$ | 5.87 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 1.1− | 0.0 | 2002 01 19 | 704 | 0.7+ | 0.1− | 2006 09 20 | 644 | 0.3− | 0.5+ | | |
| 2001 12 11 | 704 | 0.7− | 0.3+ | 2002 01 19 | 704 | 0.6− | 1.5+ | 2006 09 20 | 644 | 0.1− | 0.5+ | | |
| 2001 12 11 | 704 | 0.8− | 0.0 | 2002 01 19 | 704 | 0.3+ | 0.2− | 2006 09 21 | 699 | (2.1− | 2.1+) | | |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2002 01 19 | 704 | 1.1− | 1.3+ | 2006 09 21 | 699 | (2.3+ | 0.3+) | | |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2003 03 29 | 699 | 0.5− | 1.1− | 2006 09 21 | 699 | 1.3+ | 0.4+ | | |
| 2001 12 14 | 704 | 0.3+ | 0.3− | 2003 03 29 | 699 | 0.7− | 0.2+ | 2006 09 21 | 699 | (2.4+ | 1.7+) | | |
| 2001 12 14 | 704 | 0.0 | 0.7− | 2003 03 29 | 699 | 1.1− | 0.1− | 2006 09 26 | 703 | 0.7− | 0.5+ | | |
| 2001 12 17 | 704 | 0.4− | 0.4+ | 2003 03 29 | 699 | (0.4+ | 2.1+) | 2006 09 26 | 703 | 0.0 | 1.2+ | | |
| 2001 12 17 | 704 | 0.1− | 0.2− | 2003 04 01 | 704 | 0.7− | 0.4− | 2006 09 26 | 703 | 0.5− | 0.5+ | | |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2003 04 01 | 704 | 0.5− | 0.3− | 2006 09 26 | 703 | (1.6− | 1.1+) | | |
| 2001 12 17 | 704 | 0.4− | 0.1− | 2003 04 01 | 704 | 0.1− | 1.1− | 2006 09 30 | 704 | 0.4+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.3− | 0.0 | 2003 04 01 | 704 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.1− | 1.1+ | | |
| 2001 12 20 | 704 | 0.3+ | 0.5− | 2003 04 08 | 704 | 0.0 | 0.4− | 2006 09 30 | 704 | 0.1− | 0.2+ | | |
| 2001 12 20 | 704 | 0.6+ | 0.6− | 2003 04 08 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.1+ | | |
| 2001 12 20 | 704 | 0.4+ | 0.3− | 2003 04 08 | 704 | (0.1− | 1.5+) | 2006 10 16 | 703 | 0.1+ | 0.5+ | | |
| 2001 12 20 | 704 | 1.1− | 0.9+ | 2003 04 08 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.1+ | | |
| 2001 12 21 | 704 | (0.7− | 2.4+) | 2003 04 08 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.9+ | | |
| 2001 12 21 | 704 | 0.8+ | 0.5+ | 2003 04 10 | 691 | 0.7+ | 1.5+ | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 2001 12 21 | 704 | (1.6+ | 0.1−) | 2003 04 10 | 691 | 0.8+ | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.7+ | | |
| 2002 01 09 | 704 | 0.5+ | 0.5+ | 2003 04 10 | 691 | 1.0+ | 1.4+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2002 01 09 | 704 | 0.6+ | 0.4+ | 2003 04 25 | 699 | 1.3− | 0.4+ | 2006 10 22 | 703 | 0.5− | 1.4+ | | |
| 2002 01 09 | 704 | 0.1+ | 0.4+ | 2003 04 25 | 699 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.0 | 1.2− | | |
| 2002 01 09 | 704 | 0.5+ | 0.6+ | 2003 04 25 | 699 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.0 | 1.0+ | | |
| 2002 01 09 | 704 | 0.5+ | 1.0+ | 2003 04 25 | 699 | 0.9− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.8+ | | |
| 2002 01 13 | 704 | 0.2− | 0.8+ | 2005 07 18 | 644 | 0.5− | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.6+ | | |
| 2002 01 13 | 704 | 0.8+ | 0.3− | 2005 07 18 | 644 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.2− | 1.0+ | | |
| 2002 01 13 | 704 | 0.0 | 0.7− | 2005 07 18 | 644 | 0.6− | 1.3+ | 2006 10 22 | 644 | 0.3− | 0.6+ | | |
| 2002 01 15 | 704 | 0.2+ | 0.2+ | 2005 07 27 | 644 | 0.2− | 1.1+ | 2006 10 28 | 703 | 0.4− | 0.5+ | | |
| 2002 01 15 | 704 | 0.2+ | 0.2+ | 2005 07 27 | 644 | 0.4− | 0.5+ | 2006 10 28 | 703 | 0.0 | 0.4+ | | |
| 2002 01 15 | 704 | 1.2+ | 0.1− | 2005 07 27 | 644 | 0.1− | 0.7+ | 2006 10 28 | 703 | 0.9− | 0.6− | | |
| 2002 01 15 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.4+ | 0.5+ | | |
| 2002 01 19 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.2+ | | |
| 2002 01 19 | 704 | 1.1− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.8+ | 2006 11 16 | 703 | 0.4+ | 1.4− | | |
| 2002 01 19 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 1.1+ | 2006 11 16 | 703 | 0.4− | 1.0− | | |
| 2002 01 19 | 704 | 1.0− | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.5+ | 2006 11 16 | 703 | (2.4− | 4.2−) | | |

**(141128)∗ 2001 XR$_{88}$**

Discovered 2001 Dec. 10 by T. Pauwels at Uccle.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.59717 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17293845 | $\omega$ | 199.04721 | | +0.39120105 | −0.91879111 | |
| $a$ | 3.1906194 | $\Omega$ | 227.96166 | | +0.85331894 | +0.38360547 | |
| $e$ | 0.1565463 | $i$ | 4.07438 | | +0.34468613 | +0.09311148 | |
| $P$ | 5.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.6+ | 1.0+ | 2002 01 15 | 704 | 0.8− | 0.8− | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2002 01 15 | 704 | 0.1+ | 0.9− | 2006 09 30 | 691 | 0.1− | 0.4+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.2− | 2002 01 19 | 704 | 0.8− | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.2+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2002 01 19 | 704 | 0.6− | 1.0− | 2006 10 17 | 703 | 0.2− | 0.5+ | | |
| 2001 12 10 | 012 | 1.0− | 0.3+ | 2002 01 19 | 704 | (0.5− | 1.7−) | 2006 10 17 | 703 | 0.3− | 0.6+ | | |
| 2001 12 10 | 012 | 0.4+ | 0.3+ | 2003 03 26 | 644 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.9+ | | |
| 2001 12 10 | 012 | 1.3− | 0.2+ | 2003 03 26 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.3+ | | |
| 2001 12 10 | 012 | 0.2− | 0.9+ | 2003 03 26 | 644 | 0.5+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.0 | | |
| 2001 12 15 | 012 | 0.6− | 0.8+ | 2003 04 07 | 691 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.0 | | |
| 2001 12 15 | 012 | (1.5+ | 1.6−) | 2003 04 07 | 691 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.0 | | |
| 2001 12 15 | 012 | 0.5− | 0.9+ | 2003 04 07 | 691 | 0.4+ | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2001 12 17 | 704 | 0.7+ | 0.1− | 2003 04 29 | 691 | 0.1+ | 1.2+ | 2006 10 19 | 644 | 0.2+ | 0.8+ | | |
| 2001 12 17 | 704 | 0.1+ | 0.1− | 2003 04 29 | 691 | 0.2− | 0.9+ | 2006 10 19 | 644 | 0.4+ | 0.6+ | | |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2003 04 29 | 691 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.7+ | 0.4+ | | |
| 2001 12 17 | 704 | 0.4− | 0.5− | 2005 07 11 | G96 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.6+ | | |
| 2001 12 20 | 704 | (1.7+ | 0.6−) | 2005 07 11 | G96 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2001 12 20 | 704 | 1.5+ | 0.5− | 2005 07 11 | G96 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2001 12 20 | 704 | 1.3+ | 0.9− | 2005 07 11 | G96 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2001 12 20 | 704 | 1.2+ | 0.7− | 2006 09 14 | 703 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.9+ | | |
| 2002 01 09 | 704 | 0.2− | 0.8− | 2006 09 14 | 703 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.5+ | | |
| 2002 01 09 | 704 | 0.1− | 1.3− | 2006 09 14 | 703 | 0.4− | 0.7− | 2006 11 11 | 703 | 0.6− | 1.1− | | |
| 2002 01 09 | 704 | 0.5− | 0.8− | 2006 09 14 | 703 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.9+ | | |
| 2002 01 09 | 012 | 0.5− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.6+ | | |
| 2002 01 09 | 012 | 0.4− | 0.0 | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.1− | | |
| 2002 01 09 | 012 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.5+ | 2006 11 15 | G96 | 0.4− | 0.1+ | | |
| 2002 01 09 | 012 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.1+ | | |
| 2002 01 09 | 012 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.7− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.0 | | |
| 2002 01 09 | 012 | 1.1+ | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.2+ | | |
| 2002 01 15 | 704 | (1.8− | 0.5+) | 2006 09 29 | 704 | 0.6− | 1.0+ | | | | | | |

**(141129)∗ 2001 $XA_{90}$ = 2003 $CS_8$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40914)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 253.03579 | | (2000.0) | | | |
| $n$ | 0.18740094 | $\omega$ | 92.12111 | | −0.82282339 | −0.50157319 |
| $a$ | 3.0242768 | $\Omega$ | 57.88071 | | +0.30842465 | −0.78901096 |
| $e$ | 0.1215265 | $i$ | 18.38894 | | +0.47732160 | −0.35480423 |
| $P$ | 5.26 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 02 | 704 | (2.9− | 0.2+) | 2001 11 21 | 704 | 0.4+ | 0.4+ | 2003 02 26 | 704 | 0.2+ | 0.1− |
| 1998 04 02 | 704 | 1.6− | 0.7− | 2001 11 21 | 704 | 1.0+ | 0.2+ | 2003 02 26 | 704 | 0.7+ | 0.9+ |
| 1998 04 02 | 704 | 0.4− | 1.5− | 2001 11 21 | 704 | 0.9+ | 0.1+ | 2003 02 26 | 704 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.3− | 0.2+ | 2001 11 21 | 704 | 0.5+ | 0.0 | 2003 02 26 | 704 | 0.3+ | 1.0+ |
| 2001 10 23 | 704 | 0.8− | 0.1+ | 2001 11 21 | 704 | 0.4+ | 0.1+ | 2003 02 26 | 704 | (1.9+ | 0.5−) |
| 2001 10 23 | 704 | 0.2+ | 0.3− | 2001 12 07 | 691 | 0.2+ | 0.4− | 2003 03 03 | 704 | 0.5+ | 0.6− |
| 2001 10 23 | 704 | 0.0 | 1.4+ | 2001 12 07 | 691 | 0.1+ | 0.4− | 2003 03 03 | 704 | 0.6− | 0.5+ |
| 2001 10 24 | 049 | 0.2− | 0.0 | 2001 12 07 | 691 | 0.2+ | 0.2− | 2003 03 03 | 704 | 0.2+ | 1.2+ |
| 2001 10 24 | 049 | 0.3+ | 0.0 | 2001 12 10 | 704 | (0.3− | 1.9+) | 2003 03 03 | 704 | 0.0 | 0.7+ |
| 2001 10 24 | 049 | 0.6+ | 0.5+ | 2001 12 10 | 704 | 0.2+ | 0.3− | 2003 03 03 | 704 | 0.3+ | 0.0 |
| 2001 10 24 | 704 | 0.5− | 1.2− | 2001 12 10 | 704 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.8− | 1.2+ |
| 2001 10 24 | 704 | (2.0+ | 3.8−) | 2001 12 10 | 704 | 0.5− | 0.1+ | 2006 10 22 | 703 | (0.2− | 2.8+) |
| 2001 10 24 | 704 | 0.0 | 0.7− | 2001 12 15 | 704 | 0.9− | 1.0+ | 2006 10 22 | 703 | 0.4− | 0.8+ |
| 2001 10 24 | 704 | 0.1− | 0.3+ | 2001 12 15 | 704 | (0.1+ | 1.6+) | 2006 10 22 | 703 | 0.1+ | 1.2+ |
| 2001 11 09 | 704 | 0.4− | 0.4− | 2001 12 15 | 704 | 0.5− | 0.6+ | 2006 11 17 | 704 | 1.2− | 0.6+ |
| 2001 11 09 | 704 | 0.1− | 0.7− | 2001 12 18 | 704 | 0.8+ | 0.1− | 2006 11 17 | 704 | 0.6− | 0.0 |
| 2001 11 09 | 704 | 0.7− | 0.5+ | 2001 12 18 | 704 | (0.6− | 1.6+) | 2006 11 17 | 704 | 0.6+ | 0.1+ |
| 2001 11 09 | 704 | 0.5− | 0.3− | 2001 12 18 | 704 | (1.4− | 1.6+) | 2006 11 19 | 703 | 0.1− | 1.0− |
| 2001 11 09 | 704 | 0.7− | 0.0 | 2003 02 01 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 1.0− | 0.3− |
| 2001 11 18 | 291 | 0.3+ | 0.3− | 2003 02 01 | 644 | 0.0 | 0.3− | 2006 11 19 | 703 | 0.2− | 0.1− |
| 2001 11 18 | 291 | 0.2+ | 0.3− | 2003 02 01 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.5− | 0.4+ |
| 2001 11 18 | 291 | 0.0 | 0.3− | 2003 02 04 | 699 | (0.7+ | 1.6−) | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2001 11 19 | 704 | (0.3+ | 1.7+) | 2003 02 04 | 699 | 0.7− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2001 11 19 | 704 | 0.5+ | 1.1+ | 2003 02 04 | 699 | 0.4+ | 1.0− | 2006 11 23 | G96 | 0.6+ | 0.0 |
| 2001 11 19 | 704 | 0.7− | 1.2+ | 2003 02 04 | 699 | 0.5+ | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.2+ |

**(141130)∗ 2001 $XE_{90}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 243.59731 | | (2000.0) | | | |
| $n$ | 0.19282340 | $\omega$ | 276.56078 | | −0.91489502 | −0.37237381 |
| $a$ | 2.9673099 | $\Omega$ | 241.67525 | | +0.40333792 | −0.85934613 |
| $e$ | 0.0294251 | $i$ | 10.20115 | | −0.01690061 | −0.35051672 |
| $P$ | 5.11 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 1.5+ | 1.0− | 2001 12 19 | 704 | 0.2− | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2000 08 31 | 704 | 0.6+ | 0.4− | 2001 12 19 | 644 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2000 08 31 | 704 | 0.2+ | 1.5+ | 2001 12 19 | 644 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.5− | 0.7+ | 2001 12 19 | 704 | 0.8+ | 0.6− | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2001 11 09 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 1.2+ | 0.4− | 2006 10 21 | 691 | 0.2+ | 0.5− |
| 2001 11 09 | 704 | 0.5+ | 0.2+ | 2003 03 10 | 699 | 0.9+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.5+ | 0.3+ | 2003 03 10 | 699 | 1.1+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2001 11 09 | 704 | 0.5+ | 0.2+ | 2003 03 10 | 699 | 0.6+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 11 16 | 644 | 0.3− | 0.4+ | 2003 03 10 | 699 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2001 11 16 | 291 | 0.1− | 0.0 | 2004 05 14 | 599 | (0.2+ | 2.4+) | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2001 11 16 | 644 | 0.3− | 0.6+ | 2004 05 14 | 599 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 11 16 | 291 | 0.3− | 0.2− | 2004 05 14 | 599 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 11 16 | 644 | 0.2− | 0.5+ | 2004 05 14 | 599 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2001 11 16 | 291 | 0.3− | 0.1− | 2004 05 15 | 704 | 0.7− | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.3+ | 0.5+ | 2004 05 15 | 704 | 0.3− | 0.5+ | 2006 11 10 | 644 | 0.3+ | 0.2+ |
| 2001 11 19 | 699 | 0.4− | 1.0+ | 2004 05 15 | 704 | 0.1− | 0.7− | 2006 11 11 | 703 | (0.7− | 2.3−) |
| 2001 11 19 | 699 | 1.0− | 0.3+ | 2004 05 16 | 704 | 0.1+ | 0.2− | 2006 11 11 | 703 | (0.7− | 1.9+) |
| 2001 11 19 | 699 | 0.8− | 0.1+ | 2004 05 16 | 704 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.5+ | 1.0− |
| 2001 11 19 | 704 | 0.2+ | 0.8− | 2004 05 16 | 704 | 0.3− | 0.7− | 2006 11 11 | 703 | 1.1+ | 0.6− |
| 2001 11 19 | 704 | 0.5+ | 1.4− | 2004 05 16 | 704 | 0.8− | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 0.6+ | 0.5+ | 2004 05 19 | 704 | 0.1− | 1.0+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 1.0− | 2004 05 19 | 704 | (0.3− | 1.6+) | 2006 11 13 | 644 | 0.4+ | 0.2+ |
| 2001 11 21 | 704 | 1.3− | 0.4+ | 2004 05 19 | 704 | 0.3− | 0.9+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 1.2− | 0.2+ | 2004 05 19 | 704 | 0.5− | 0.5+ | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2001 11 21 | 704 | 1.1− | 0.3+ | 2004 06 06 | 644 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.6− |
| 2001 11 21 | 704 | 1.2− | 1.0+ | 2004 06 06 | 644 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2001 11 21 | 704 | 0.8− | 0.2+ | 2004 06 06 | 644 | 0.3− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2001 12 10 | 704 | 0.5+ | 0.2+ | 2004 06 14 | 704 | 1.1+ | 1.0− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2001 12 10 | 704 | 0.1− | 0.5− | 2004 06 14 | 704 | 1.3− | 1.3+ | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2001 12 10 | 704 | 0.1− | 0.1+ | 2004 06 14 | 704 | 0.7+ | 0.7+ | 2006 11 15 | 704 | (1.1− | 2.7+) |
| 2001 12 10 | 704 | 1.1− | 0.3+ | 2004 06 14 | 704 | (1.2+ | 1.6−) | 2006 11 15 | 704 | 1.3− | 0.7− |
| 2001 12 15 | 704 | (3.2+ | 0.8+) | 2004 06 14 | 704 | 0.9+ | 0.2− | 2006 11 15 | 704 | (2.3− | 0.3−) |
| 2001 12 15 | 704 | (3.0+ | 0.2−) | 2005 07 31 | 644 | 0.2− | 0.5+ | 2006 11 15 | 704 | 0.9− | 0.7+ |
| 2001 12 15 | 704 | (2.4+ | 0.6+) | 2005 07 31 | 644 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.6+ |
| 2001 12 15 | 704 | (1.5+ | 0.6+) | 2005 07 31 | 644 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.8+ | 0.3+ |
| 2001 12 17 | 704 | 0.4+ | 0.6+ | 2005 08 29 | 644 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.6− | 0.9− |
| 2001 12 17 | 704 | 1.3+ | 1.1+ | 2005 08 29 | 644 | 0.1+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2001 12 17 | 704 | 0.5+ | 0.9+ | 2005 08 29 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2001 12 17 | 704 | 0.8+ | 1.3+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.6+ |
| 2001 12 17 | 704 | (2.0+ | 1.5+) | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 1.1+ | 0.6+ |
| 2001 12 18 | 691 | 0.3+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 1.0− | 0.8+ |
| 2001 12 18 | 691 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2001 12 18 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.0 | 0.8+ |
| 2001 12 19 | 704 | 0.0 | 0.6− | 2006 10 17 | 691 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 0.7− | 0.3+ |
| 2001 12 19 | 704 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 29 | 704 | 1.2+ | 0.6+ |
| 2001 12 19 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.5+ | | | | |

**(141131)∗ 2001 $XG_{90}$ = 2003 $FD_{106}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47002)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 309.76813 | | (2000.0) | | | |
| $n$ | 0.28425540 | $\omega$ | 189.95116 | | −0.34886222 | +0.92988390 |
| $a$ | 2.2908513 | $\Omega$ | 59.71472 | | −0.85028647 | −0.26170795 |
| $e$ | 0.0646278 | $i$ | 7.76469 | | −0.39409145 | −0.25850508 |
| $P$ | 3.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 691 | 0.3− | 0.0 | 2002 01 06 | 691 | 0.0 | 0.2+ | 2003 04 09 | 704 | 0.3+ | 0.8+ |
| 2001 11 17 | 691 | 1.0− | 0.2− | 2002 01 06 | 691 | 0.1+ | 0.1+ | 2003 04 09 | 704 | 0.3+ | 0.9+ |
| 2001 11 17 | 691 | 1.4− | 0.6+ | 2002 01 06 | 691 | 0.1− | 0.0 | 2003 04 09 | 691 | 0.1+ | 0.3− |
| 2001 11 19 | 704 | 0.2+ | 0.2− | 2003 03 24 | 683 | 0.5− | 1.0+ | 2004 09 06 | 644 | 1.0− | 0.6+ |
| 2001 11 19 | 704 | 0.9+ | 0.1+ | 2003 03 24 | 683 | 0.5− | 0.4+ | 2004 09 06 | 644 | 0.8− | 0.5+ |
| 2001 11 19 | 704 | 0.4+ | 0.7− | 2003 03 24 | 683 | (3.7− | 0.6−) | 2004 09 06 | 644 | 0.2− | 0.3+ |
| 2001 11 19 | 704 | 0.1− | 0.4− | 2003 03 26 | 644 | 0.5+ | 0.1+ | 2004 09 21 | 704 | 0.6− | 0.6+ |
| 2001 11 21 | 704 | 0.5+ | 0.8+ | 2003 03 26 | 644 | 0.2+ | 0.0 | 2004 09 21 | 704 | 0.0 | 0.7+ |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2003 03 26 | 644 | 0.2+ | 0.2+ | 2004 09 21 | 704 | 1.1− | 0.7+ |
| 2001 11 21 | 704 | 0.2− | 1.0+ | 2003 03 27 | 699 | 0.5− | 0.9+ | 2004 09 21 | 704 | 0.1− | 1.5+ |
| 2001 11 21 | 704 | 0.3+ | 0.8+ | 2003 03 27 | 699 | 0.2+ | 0.4− | 2004 09 21 | 704 | 0.0 | 1.1+ |
| 2001 12 07 | 691 | 1.1+ | 0.7− | 2003 03 27 | 699 | 0.3− | 0.6+ | 2006 01 05 | 703 | 0.3+ | 0.9− |
| 2001 12 07 | 691 | 0.3+ | 0.6− | 2003 03 27 | 699 | 1.6− | 1.3+ | 2006 01 05 | 703 | 1.1− | 1.9− |
| 2001 12 07 | 691 | 0.7+ | 0.0 | 2003 04 01 | 704 | 0.6+ | 1.7+ | 2006 01 05 | 703 | 0.1− | 1.1− |
| 2001 12 10 | 704 | 1.2+ | 0.4− | 2003 04 01 | 704 | 0.2− | 0.1− | 2006 01 05 | 703 | 0.7− | 1.0− |
| 2001 12 10 | 704 | 0.2+ | 1.4+ | 2003 04 01 | 704 | 0.3+ | 1.3+ | 2006 01 06 | 704 | 0.3+ | 0.7− |
| 2001 12 10 | 704 | 0.4+ | 0.0 | 2003 04 01 | 704 | 0.5− | 0.7+ | 2006 01 06 | 704 | 0.1+ | 0.0 |
| 2001 12 13 | 644 | 0.3+ | 0.9+ | 2003 04 01 | 704 | 1.0+ | 1.8+ | 2006 01 06 | 704 | 0.5+ | 0.2− |
| 2001 12 13 | 644 | 0.3+ | 1.0+ | 2003 04 01 | 704 | 0.5− | 0.5+ | 2006 01 06 | 704 | 0.3+ | 0.4− |
| 2001 12 13 | 644 | 0.4+ | 1.1+ | 2003 04 01 | 704 | 0.1+ | 1.5+ | 2006 01 20 | 699 | 0.8+ | 0.4+ |
| 2001 12 15 | 704 | 0.0 | 0.8+ | 2003 04 01 | 704 | 0.2+ | 1.4+ | 2006 01 20 | 699 | 1.3− | 0.5+ |
| 2001 12 15 | 704 | 0.8− | 0.8+ | 2003 04 08 | 644 | 0.5− | 0.3+ | 2006 01 20 | 699 | 0.6− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 1.3− | 0.7+ | 2003 04 08 | 644 | 0.1− | 0.6+ | 2006 01 20 | 699 | 1.1− | 0.6+ |
| 2001 12 15 | 704 | 1.1− | 0.3+ | 2003 04 08 | 644 | 0.3− | 0.5+ | 2006 01 25 | 703 | 0.2− | 0.8− |
| 2001 12 15 | 704 | 0.9− | 0.0 | 2003 04 09 | 704 | 0.1+ | 0.5+ | 2006 01 25 | 703 | 0.6+ | 0.2− |
| 2001 12 18 | 704 | 0.2− | 0.0 | 2003 04 09 | 691 | 0.3+ | 0.3− | 2006 01 25 | 703 | 0.5+ | 0.3+ |
| 2001 12 18 | 704 | 1.0− | 0.4+ | 2003 04 09 | 704 | 0.5+ | 0.2− | 2006 01 25 | 703 | 0.8+ | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.5+ | 2003 04 09 | 704 | 1.6+ | 1.2+ | | | | |
| 2001 12 18 | 704 | 0.1− | 1.6+ | 2003 04 09 | 691 | 0.8+ | 0.9− | | | | |

**(141132)∗ 2001 XL$_{91}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.56916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17129005 | $\omega$ | 343.27389 | | +0.74621599 | −0.64182969 | |
| $a$ | 3.2110565 | $\Omega$ | 57.99941 | | +0.63213951 | +0.59996912 | |
| $e$ | 0.0818750 | $i$ | 12.02511 | | +0.20871354 | +0.47758947 | |
| $P$ | 5.75 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.1− | 1.3+ | 2001 12 10 | 704 | 0.1− | 1.2− | 2003 03 08 | 644 | 0.4+ | 0.4+ |
| 2001 10 23 | 704 | 0.2− | 0.3− | 2001 12 10 | 704 | 0.0 | 0.3− | 2004 04 20 | 704 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | (1.4− | 2.0+) | 2001 12 15 | 704 | 0.6− | 0.1− | 2004 04 20 | 704 | 0.8+ | 0.8+ |
| 2001 10 23 | 704 | (2.4− | 2.2+) | 2001 12 15 | 704 | 0.1− | 0.1− | 2004 04 20 | 704 | 0.7+ | 0.1− |
| 2001 10 25 | 644 | 0.0 | 0.9+ | 2001 12 15 | 704 | 0.2+ | 0.2− | 2004 04 20 | 704 | 0.0 | 0.3+ |
| 2001 10 25 | 644 | 0.3+ | 1.1+ | 2001 12 15 | 704 | 0.5− | 0.5+ | 2004 04 20 | 704 | 0.4+ | 1.3+ |
| 2001 10 25 | 644 | 0.1+ | 1.1+ | 2001 12 15 | 704 | 0.3+ | 0.7− | 2004 04 23 | 691 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 0.2− | 0.0 | 2001 12 18 | 704 | 0.4+ | 0.6+ | 2004 04 23 | 691 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | 0.3+ | 1.0− | 2001 12 18 | 704 | 0.4+ | 0.4+ | 2004 04 23 | 691 | 0.1+ | 0.3+ |
| 2001 11 09 | 704 | 0.4+ | 0.1− | 2001 12 18 | 704 | 0.6− | 1.2+ | 2006 08 19 | 644 | 0.1− | 0.5+ |
| 2001 11 09 | 704 | (0.7− | 1.5−) | 2001 12 18 | 704 | 1.1+ | 0.7+ | 2006 08 19 | 644 | 0.2− | 0.8+ |
| 2001 11 09 | 704 | 0.2− | 0.5− | 2001 12 19 | 704 | 0.1+ | 0.9+ | 2006 08 19 | 644 | 0.4− | 0.6+ |
| 2001 11 16 | 644 | 0.7− | 0.4− | 2001 12 19 | 704 | 0.4+ | 0.0 | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 2001 11 16 | 644 | 0.4− | 0.0 | 2001 12 19 | 704 | 0.5+ | 1.1+ | 2006 08 20 | 644 | 0.1− | 0.4+ |
| 2001 11 16 | 644 | 0.5− | 0.0 | 2001 12 19 | 704 | 0.5+ | 1.0+ | 2006 08 20 | 644 | 0.2− | 0.4+ |
| 2001 11 17 | 691 | 0.4+ | 0.3− | 2003 01 29 | 644 | 0.5+ | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.3+ |
| 2001 11 17 | 691 | 0.1+ | 0.0 | 2003 01 29 | 644 | 0.5+ | 0.4+ | 2006 08 30 | 699 | (0.1+ | 1.7+) |
| 2001 11 17 | 691 | 0.2+ | 0.0 | 2003 01 29 | 644 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 0.3+ | 0.1+ |
| 2001 11 19 | 704 | 0.3− | 0.0 | 2003 02 01 | 644 | 0.3+ | 0.3+ | 2006 08 30 | 699 | 0.4− | 1.0+ |
| 2001 11 19 | 704 | 0.0 | 0.2+ | 2003 02 01 | 644 | 0.6+ | 0.5+ | 2006 09 19 | F84 | 0.3+ | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.3− | 2003 02 01 | 644 | 0.6+ | 0.8+ | 2006 09 19 | F84 | 0.4− | 0.1+ |
| 2001 11 19 | 704 | 0.3+ | 0.2+ | 2003 02 19 | 644 | 0.1− | 0.3− | 2006 09 19 | F84 | 0.1+ | 0.4+ |
| 2001 11 19 | 704 | 0.1+ | 0.1− | 2003 02 19 | 644 | 0.1− | 0.7− | 2006 09 20 | 703 | 1.3− | 0.3− |
| 2001 11 21 | 704 | 0.9− | 0.3− | 2003 02 19 | 644 | 0.3+ | 0.4− | 2006 09 20 | 703 | 1.1− | 1.3+ |
| 2001 11 21 | 704 | 0.5− | 0.3− | 2003 02 26 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 703 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2003 02 26 | 704 | 0.5− | 0.6− | 2006 09 20 | 703 | 0.5+ | 0.5− |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2003 02 26 | 704 | 0.7− | 0.7− | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.5− | 0.1− | 2003 02 26 | 704 | 0.8− | 0.4+ | 2006 09 26 | 703 | 1.0+ | 0.5− |
| 2001 11 21 | 704 | (0.8− | 2.3−) | 2003 02 26 | 704 | 0.7− | 0.7− | 2006 09 26 | 703 | 0.4− | 0.1− |
| 2001 11 21 | 704 | 0.1+ | 0.0 | 2003 03 08 | 644 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.8− | 0.3− |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2003 03 08 | 644 | 0.0 | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.6+ |
| 2001 11 21 | 704 | 0.2− | 0.4− | 2003 03 08 | 644 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 2001 12 10 | 704 | 0.5− | 0.1+ | 2003 03 08 | 644 | 0.3+ | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2001 12 10 | 704 | 0.3− | 0.2+ | 2003 03 08 | 644 | 0.3+ | 0.3+ | | | | |

**(141133)∗ 2001 XM$_{91}$ = 2004 JT$_{17}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65204)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.86095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18938988 | $\omega$ | 352.78172 | | −0.48774088 | +0.85925072 | |
| $a$ | 3.0030659 | $\Omega$ | 247.91939 | | −0.79240089 | −0.50990392 | |
| $e$ | 0.0483419 | $i$ | 9.58279 | | −0.36634637 | −0.04106330 | |
| $P$ | 5.20 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.2+ | 0.5+ | 2002 01 09 | 691 | 0.0 | 0.5− | 2004 05 19 | 704 | 0.3− | 0.5− |
| 2001 11 19 | 704 | 0.6− | 1.0+ | 2002 01 09 | 691 | 0.2− | 0.5+ | 2005 07 31 | 644 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 0.3+ | 0.4+ | 2002 01 09 | 691 | 0.3+ | 0.5+ | 2005 07 31 | 644 | 0.0 | 0.4+ |
| 2001 11 19 | 704 | 0.0 | 0.9+ | 2002 11 13 | 645 | 0.0 | 0.0 | 2005 07 31 | 644 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2002 11 13 | 645 | 0.0 | 0.1− | 2005 08 26 | 644 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.1− | 2003 01 29 | 644 | 0.3+ | 0.4+ | 2005 08 26 | 644 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.9− | 0.2+ | 2003 01 29 | 644 | 0.4+ | 0.6+ | 2005 08 26 | 644 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.2+ | 0.3− | 2003 01 29 | 644 | 0.2+ | 0.7+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.8− | 2003 02 22 | 644 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2001 12 10 | 704 | 0.4− | 0.4+ | 2003 02 22 | 644 | 0.3+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2001 12 10 | 704 | 0.2+ | 0.4+ | 2003 02 22 | 644 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2001 12 10 | 704 | 0.2− | 0.2− | 2004 05 12 | E12 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.7+ | 0.3− |
| 2001 12 15 | 704 | 0.4+ | 0.7− | 2004 05 12 | E12 | 0.8− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.3+ |
| 2001 12 15 | 704 | 0.6− | 0.1+ | 2004 05 12 | E12 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.7− |
| 2001 12 15 | 704 | 1.1− | 0.9− | 2004 05 12 | E12 | 1.1+ | 0.7+ | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 2001 12 15 | 704 | 0.5+ | 0.1+ | 2004 05 15 | 704 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2001 12 15 | 704 | 0.2+ | 0.5+ | 2004 05 15 | 704 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 1.2+ | 0.5− | 2004 05 15 | 704 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 12 18 | 704 | 0.2+ | 0.3+ | 2004 05 15 | 704 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.4+ | 0.2− | 2004 05 15 | 704 | 0.3− | 0.3+ | 2006 11 18 | G96 | 1.2− | 0.4− |
| 2001 12 18 | 704 | 0.0 | 0.2− | 2004 05 19 | 704 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.5+ | 0.0 |
| 2001 12 18 | 704 | 0.3− | 0.9+ | 2004 05 19 | 704 | 0.6− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.2− |

**(141134)∗ 2001 XO$_{91}$ = 1998 HR$_{64}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23220)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.65749 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18083043 | $\omega$ | 90.76606 | | −0.73668452 | −0.67575249 | |
| $a$ | 3.0970986 | $\Omega$ | 46.72179 | | +0.60562026 | −0.67611524 | |
| $e$ | 0.1296659 | $i$ | 2.01378 | | +0.30086546 | −0.29364391 | |
| $P$ | 5.45 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.7+ | 0.3+ | 2001 12 19 | 704 | 0.5+ | 0.2− | 2003 04 03 | 699 | 0.5+ | 0.1− |
| 1998 04 21 | 704 | (2.6+ | 0.6+) | 2001 12 19 | 704 | 0.1+ | 0.3− | 2003 04 09 | 691 | 0.4− | 0.0 |
| 1998 04 21 | 704 | 0.8− | 1.0+ | 2002 01 07 | 691 | 0.2+ | 0.0 | 2003 04 09 | 691 | 0.4− | 0.1+ |
| 1998 04 21 | 704 | 0.0 | 1.3+ | 2002 01 07 | 691 | 0.2+ | 0.1− | 2003 04 09 | 691 | 0.3− | 0.1− |
| 1998 04 21 | 704 | 1.0+ | 0.5+ | 2002 01 07 | 691 | 0.1+ | 0.2+ | 2003 04 09 | 608 | 0.7+ | 1.2− |
| 1998 04 22 | 704 | (2.0− | 1.2−) | 2003 01 04 | 704 | 0.4− | 0.7+ | 2003 04 09 | 608 | 0.2+ | 1.0− |
| 1998 04 22 | 704 | 0.7+ | 1.0− | 2003 01 04 | 704 | (1.0+ | 2.2+) | 2003 04 09 | 608 | 0.1− | 1.0− |
| 1998 04 22 | 704 | 0.2− | 0.5− | 2003 01 04 | 704 | (1.8+ | 1.2+) | 2003 05 29 | 807 | 0.5+ | 0.1− |
| 1998 04 22 | 704 | 0.4+ | 0.0 | 2003 01 31 | 699 | 0.0 | 0.2− | 2003 05 30 | 807 | 0.2− | 0.0 |
| 1998 05 23 | 691 | 0.1− | 0.1+ | 2003 01 31 | 699 | 0.9+ | 0.0 | 2005 07 27 | 644 | 0.4− | 0.6+ |
| 1998 05 23 | 691 | 0.3+ | 0.5+ | 2003 01 31 | 699 | 0.4− | 0.6+ | 2005 07 27 | 644 | 0.4− | 0.5+ |
| 1998 05 23 | 691 | 0.3− | 0.3+ | 2003 01 31 | 699 | 0.4+ | 0.2− | 2005 07 27 | 644 | 0.3− | 0.9+ |
| 2001 10 21 | 704 | 0.5+ | 0.5+ | 2003 02 01 | 704 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.8+ | 0.7+ |
| 2001 10 21 | 704 | 0.3+ | 0.2− | 2003 02 01 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.3− |
| 2001 10 21 | 704 | 0.5+ | 0.2− | 2003 02 01 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.5+ |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2003 02 01 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.9− | 0.3− |
| 2001 10 21 | 704 | 0.4− | 0.3− | 2003 02 01 | 704 | 0.1− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2001 11 09 | 644 | 0.3+ | 0.7− | 2003 02 03 | 699 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2001 11 09 | 644 | 0.8+ | 0.5− | 2003 02 03 | 699 | 0.4− | 0.3− | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2001 11 09 | 644 | 0.3+ | 0.4− | 2003 02 03 | 699 | 0.5+ | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.6+ |
| 2001 11 19 | 704 | 0.4− | 1.0− | 2003 02 03 | 699 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.6+ |
| 2001 11 19 | 704 | 0.5− | 0.9− | 2003 02 04 | 704 | 1.1+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.8+ |
| 2001 11 19 | 704 | 0.5− | 1.0− | 2003 02 04 | 704 | 0.0 | 0.9+ | 2006 09 29 | 691 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 0.7− | 0.9− | 2003 02 04 | 704 | 0.9+ | 0.9+ | 2006 09 29 | 691 | 0.3− | 0.4+ |
| 2001 11 19 | 704 | 0.7− | 1.1− | 2003 02 04 | 704 | 0.6+ | 0.8+ | 2006 09 29 | 691 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | 1.3− | 0.2+ | 2003 02 09 | 608 | 0.2+ | 0.5− | 2006 10 03 | 691 | 0.3− | 0.3+ |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2003 02 09 | 608 | 0.6+ | 0.5− | 2006 10 03 | 691 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.2− | 1.3− | 2003 02 09 | 608 | 0.7+ | 0.2− | 2006 10 03 | 691 | 0.3− | 0.5+ |
| 2001 11 21 | 704 | 0.5− | 0.3+ | 2003 02 22 | 644 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.5+ | 0.9+ |
| 2001 11 21 | 704 | 0.5− | 0.9− | 2003 02 22 | 644 | 0.4+ | 0.1+ | 2006 10 15 | 703 | 0.9+ | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.6+ | 0.6− | 2003 02 22 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 703 | (1.1+ | 2.5+) |
| 2001 11 21 | 704 | 0.8− | 0.6− | 2003 03 06 | 704 | 0.5+ | 0.7+ | 2006 10 15 | 703 | 0.3+ | 1.0+ |
| 2001 11 21 | 704 | 0.6− | 1.0− | 2003 03 06 | 704 | (1.6+ | 0.2+) | 2006 10 16 | 691 | 0.4− | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.3+ | 2003 03 06 | 704 | 0.3− | 0.6+ | 2006 10 16 | 691 | 0.4− | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2003 03 06 | 704 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.4− | 0.0 |
| 2001 11 21 | 704 | (1.6+ | 1.1−) | 2003 03 06 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 703 | 0.3− | 1.1+ |
| 2001 11 21 | 704 | 1.1− | 0.6− | 2003 03 06 | 699 | (1.7+ | 1.1+) | 2006 10 21 | 703 | (1.2− | 4.2+) |
| 2001 11 21 | 704 | 0.9− | 0.9− | 2003 03 06 | 699 | 0.2+ | 1.1+ | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 2001 11 21 | 704 | 1.4− | 1.4− | 2003 03 06 | 699 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.4+ | 1.1+ |
| 2001 12 07 | 691 | 0.4+ | 0.2+ | 2003 03 06 | 699 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 12 07 | 691 | 0.4+ | 0.1+ | 2003 03 07 | 699 | 1.4+ | 0.7− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 12 07 | 691 | 0.4+ | 0.0 | 2003 03 07 | 699 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 12 10 | 704 | 0.1− | 0.0 | 2003 03 07 | 699 | 0.7+ | 0.5+ | 2006 10 28 | 691 | 0.6− | 0.4+ |
| 2001 12 10 | 704 | 0.4+ | 0.1− | 2003 03 07 | 699 | 0.6+ | 0.8+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2001 12 10 | 704 | 0.5+ | 0.5+ | 2003 03 10 | 704 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 12 10 | 704 | 0.7+ | 0.4+ | 2003 03 10 | 704 | 0.8+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.6− |
| 2001 12 10 | 704 | 0.4− | 0.2− | 2003 03 10 | 704 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.6+ |
| 2001 12 13 | 644 | 0.2+ | 0.4− | 2003 03 11 | 704 | 1.1+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2001 12 13 | 644 | 0.0 | 0.4− | 2003 03 11 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 12 13 | 644 | 0.2+ | 0.3− | 2003 03 11 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 12 15 | 704 | 0.7+ | 0.1− | 2003 03 11 | 704 | 0.6− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2001 12 15 | 704 | 0.6+ | 0.0 | 2003 03 11 | 704 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2001 12 15 | 704 | 0.1− | 0.3+ | 2003 03 27 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 12 15 | 704 | 0.0 | 0.4− | 2003 03 27 | 691 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2001 12 15 | 704 | 0.5+ | 0.5− | 2003 03 27 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 12 18 | 704 | 0.2+ | 0.5− | 2003 03 30 | 704 | 0.4+ | 0.8+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.4+ | 0.3− | 2003 03 30 | 704 | 0.8− | 1.2+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.3+ | 0.2− | 2003 03 30 | 704 | 0.2− | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2003 03 30 | 704 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 12 18 | 704 | 0.1− | 0.2− | 2003 04 03 | 699 | 0.9+ | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 0.4− | 2003 04 03 | 699 | 0.6+ | 0.7− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | 0.4+ | 0.7− | 2003 04 03 | 699 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.1+ |

**(141135)∗ 2001 XD$_{92}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 128.86611 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17630752 | $\omega$ | 181.70497 | | −0.43052377 | | +0.86307322 | | |
| $a$ | 3.1498424 | $\Omega$ | 62.86992 | | −0.82454845 | | −0.25707174 | | |
| $e$ | 0.0326001 | $i$ | 17.26318 | | −0.36710916 | | −0.43476285 | | |
| $P$ | 5.59 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.4− | 1.5− | 2001 12 18 | 704 | 0.5− | 0.4+ | 2005 07 04 | E12 | 0.0 | 1.3+ |
| 2001 10 23 | 704 | 1.4− | 0.0 | 2001 12 18 | 704 | 1.1− | 0.5− | 2006 09 19 | 703 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | (1.7− | 0.1−) | 2002 01 07 | 691 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 0.3+ | 0.1+ |
| 2001 11 16 | 691 | 0.7− | 0.2− | 2002 01 07 | 691 | 0.8+ | 0.8+ | 2006 09 19 | 703 | 0.3− | 0.4+ |
| 2001 11 16 | 691 | 0.4− | 0.5− | 2002 01 07 | 691 | 0.6+ | 0.5+ | 2006 09 19 | 703 | 0.7+ | 0.8+ |
| 2001 11 16 | 691 | 0.3− | 0.4− | 2003 01 27 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.6− | 0.9− |
| 2001 11 20 | 704 | 0.1− | 0.9+ | 2003 01 27 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.4+ |
| 2001 11 20 | 704 | 0.4− | 0.7+ | 2004 04 11 | 644 | 0.6+ | 0.5+ | 2006 09 25 | 699 | 0.9+ | 0.2− |
| 2001 11 20 | 704 | 0.8− | 0.8+ | 2004 04 11 | 644 | 0.9+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.8− |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2004 04 11 | 644 | 0.7+ | 0.4+ | 2006 10 02 | 703 | 0.4+ | 0.7+ |
| 2001 11 20 | 704 | 0.3− | 0.7+ | 2004 04 13 | 703 | (1.7+ | 1.3+) | 2006 10 02 | 703 | 0.8− | 1.1+ |
| 2001 11 21 | 704 | 0.5− | 0.6+ | 2004 04 13 | 703 | 0.6− | 1.0+ | 2006 10 02 | 703 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2004 04 13 | 703 | 0.8− | 0.3− | 2006 10 02 | 703 | 0.4− | 0.5+ |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2004 04 13 | 703 | 0.2− | 1.2+ | 2006 10 10 | 644 | 0.4− | 0.5− |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2004 04 14 | 699 | (0.5− | 1.6−) | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 1.2+ | 0.3+ | 2004 04 14 | 699 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.4+ | 0.5− |
| 2001 11 24 | 704 | 0.0 | 0.4− | 2004 04 14 | 699 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.5− |
| 2001 11 24 | 704 | (1.0− | 2.4−) | 2004 04 14 | 699 | (1.0− | 2.0−) | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 11 24 | 704 | 0.0 | 0.2− | 2004 04 16 | 704 | (2.2+ | 0.1+) | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2001 11 24 | 704 | 1.2+ | 0.5− | 2004 04 16 | 704 | (2.5+ | 1.5+) | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 11 24 | 704 | 1.4+ | 0.7+ | 2004 04 16 | 704 | (1.7+ | 0.0 ) | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 12 10 | 704 | 0.2+ | 0.6− | 2004 04 16 | 704 | (1.7+ | 0.2+) | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2004 05 14 | 704 | 1.1+ | 0.3− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2001 12 10 | 704 | 0.3+ | 0.8+ | 2004 05 14 | 704 | (2.2+ | 0.4−) | 2006 10 17 | 703 | 1.0− | 0.7− |
| 2001 12 10 | 704 | 0.1+ | 0.2+ | 2004 05 14 | 704 | (1.7+ | 0.7−) | 2006 10 17 | 703 | 0.9− | 0.6− |
| 2001 12 10 | 704 | 0.8− | 0.3+ | 2004 05 18 | 704 | 0.0 | 0.8+ | 2006 10 17 | 703 | (0.2− | 1.9−) |
| 2001 12 15 | 704 | 0.9− | 0.2+ | 2004 05 18 | 704 | 1.0+ | 1.2+ | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2001 12 15 | 704 | 0.8− | 0.4+ | 2004 05 18 | 704 | 1.4+ | 0.7+ | 2006 10 28 | 703 | 1.3+ | 0.7+ |
| 2001 12 15 | 704 | 0.2− | 0.8+ | 2004 05 18 | 704 | 0.4+ | 0.8+ | 2006 10 28 | 703 | 0.8+ | 0.8− |
| 2001 12 18 | 704 | 0.4− | 0.1− | 2005 07 04 | E12 | 0.7+ | 0.6+ | 2006 10 28 | 703 | 0.7− | 1.7+ |
| 2001 12 18 | 704 | 0.7− | 0.2+ | 2005 07 04 | E12 | 0.6− | 0.6+ | | | | |
| 2001 12 18 | 704 | 0.8− | 0.1+ | 2005 07 04 | E12 | 0.1− | 0.1+ | | | | |

**(141136)∗ 2001 XX$_{92}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 27.55758 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18023456 | $\omega$ | 90.25649 | | +0.94187156 | | +0.29257895 | | |
| $a$ | 3.1039211 | $\Omega$ | 252.73495 | | −0.33306679 | | +0.87764198 | | |
| $e$ | 0.1026328 | $i$ | 9.95913 | | +0.04409626 | | +0.37966054 | | |
| $P$ | 5.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 1.5+ | 0.1− | 2001 12 15 | 704 | 0.3− | 0.7+ | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2000 08 31 | 704 | 0.7+ | 0.1− | 2001 12 19 | 704 | 0.2− | 0.0 | 2006 08 12 | 644 | 0.3− | 0.4+ |
| 2000 08 31 | 704 | 1.0+ | 1.1+ | 2001 12 19 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.6− | 0.4− |
| 2000 10 02 | 645 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.5− |
| 2000 10 02 | 645 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.7+ | 0.8+ | 2006 09 28 | 703 | 0.3− | 0.3+ |
| 2001 11 19 | 704 | 0.2+ | 0.6+ | 2001 12 19 | 704 | (2.5− | 1.4−) | 2006 09 28 | 703 | 0.8− | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.2+ | 2001 12 19 | 704 | (2.3− | 0.3−) | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2001 11 19 | 704 | (1.8+ | 1.1+) | 2001 12 19 | 704 | (2.4− | 0.9−) | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | (1.7− | 0.5+) | 2001 12 19 | 704 | (3.0− | 0.2−) | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 1.2+ | 2002 01 14 | 291 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 1.1− | 0.8+ | 2002 01 14 | 291 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.6− |
| 2001 11 21 | 704 | 0.1− | 0.4− | 2002 01 14 | 291 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2001 12 10 | 704 | 0.7− | 1.4− | 2002 01 15 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | (2.2− | 3.4−) |
| 2001 12 10 | 704 | 0.1− | 1.0− | 2002 01 15 | 691 | 0.0 | 0.2+ | 2006 10 31 | 703 | 0.4− | 0.2+ |
| 2001 12 10 | 704 | 0.2− | 1.4− | 2002 01 15 | 691 | 0.3+ | 1.1− | 2006 10 31 | 703 | 0.9+ | 0.1+ |
| 2001 12 10 | 704 | (0.7+ | 1.5−) | 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.7+ | 0.1− |
| 2001 12 15 | 704 | 0.5− | 0.5+ | 2002 11 13 | 645 | 0.0 | 0.1− | 2006 10 31 | 703 | 0.5+ | 0.7− |
| 2001 12 15 | 704 | 0.3+ | 0.0 | 2006 08 12 | 644 | 0.4− | 0.3+ | | | | |

**(141137)∗ 2001 XY$_{93}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 294.50462 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18416607 | $\omega$ | 52.60007 | | −0.07750637 | | −0.99001073 | | |
| $a$ | 3.0595881 | $\Omega$ | 42.31930 | | +0.85051244 | | −0.12729564 | | |
| $e$ | 0.0726117 | $i$ | 10.07491 | | +0.52021279 | | +0.06061825 | | |
| $P$ | 5.35 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | (2.7+ | 0.2−) | 2001 12 20 | 644 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.6+ | 0.8− | 2003 02 28 | 608 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | (2.2+ | 0.9−) | 2003 02 28 | 608 | 0.1− | 1.0− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 1.0− | 0.4− | 2003 02 28 | 608 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 10 21 | 704 | 0.0 | 0.6− | 2003 03 08 | 704 | 0.6+ | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 11 12 | 704 | 0.8+ | 0.5− | 2003 03 08 | 704 | 0.5+ | 0.1− | 2006 10 21 | G96 | (1.5− | 2.8−) |
| 2001 11 12 | 704 | 0.5+ | 0.5+ | 2003 03 08 | 704 | 0.2− | 0.2+ | 2006 10 21 | G96 | (1.2+ | 2.4−) |
| 2001 11 12 | 704 | 1.4+ | 0.1+ | 2003 03 08 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.6+ | 0.5+ | 2003 03 08 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 11 24 | 704 | 0.4− | 1.3− | 2003 03 08 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 11 24 | 704 | 0.4− | 0.4− | 2003 03 08 | 644 | 0.3− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | 0.6− | 0.9− | 2003 03 23 | 644 | 0.2+ | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.1+ | 0.9− | 2003 03 23 | 644 | (0.1− | 1.6+) | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 12 10 | 704 | 0.3+ | 0.4+ | 2003 03 23 | 644 | 0.3+ | 1.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 704 | 1.1+ | 0.5− | 2004 05 15 | E12 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2001 12 10 | 704 | 0.3− | 0.3− | 2004 05 15 | E12 | 1.2+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 12 15 | 704 | 0.6− | 0.3+ | 2004 05 15 | E12 | 0.1− | 1.4+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2001 12 15 | 704 | 0.8− | 0.6+ | 2004 05 15 | E12 | (1.9+ | 2.3+) | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2001 12 15 | 704 | 0.4− | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 1.0+ | 0.9− |
| 2001 12 15 | 704 | 0.5− | 0.7+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.6− |
| 2001 12 15 | 704 | 0.2− | 1.0+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2001 12 18 | 704 | 0.9− | 1.1+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.7− | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 1.4− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.3− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 12 19 | 704 | (1.5+ | 1.8+) | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.7− | 0.4− |
| 2001 12 19 | 704 | 0.3+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.6+ | 0.3+ | 2006 10 15 | 703 | 0.3+ | 0.8− | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2001 12 19 | 704 | 0.7− | 0.3+ | 2006 10 15 | 703 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.8− | 1.0− |
| 2001 12 20 | 644 | 0.1+ | 0.2− | 2006 10 15 | 703 | 0.2+ | 0.6+ | | | | |
| 2001 12 20 | 644 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.4+ | | | | |

**(141138)∗ 2001 XC$_{94}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.13444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17641059 | $\omega$ | 185.55929 | | +0.07057686 | −0.97034472 | |
| $a$ | 3.1486154 | $\Omega$ | 260.54647 | | +0.92398871 | +0.15092401 | |
| $e$ | 0.2270616 | $i$ | 13.55482 | | +0.37585073 | −0.18882018 | |
| $P$ | 5.59 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.1− | 2001 12 17 | 704 | 0.1− | 0.0 | 2002 01 11 | 699 | 0.3+ | 0.6+ |
| 2000 10 02 | 645 | 0.0 | 0.2− | 2001 12 17 | 704 | 0.1− | 0.2+ | 2002 01 11 | 699 | 0.4− | 0.3+ |
| 2001 09 20 | 704 | 0.5+ | 0.9− | 2001 12 17 | 704 | 0.0 | 0.2+ | 2002 01 14 | 704 | 0.3− | 0.8− |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2001 12 17 | 704 | 0.5− | 0.1− | 2002 01 14 | 691 | 0.7+ | 0.2− |
| 2001 09 20 | 704 | 0.8+ | 0.5− | 2001 12 17 | 704 | 0.4− | 0.2− | 2002 01 14 | 704 | 0.3− | 0.7− |
| 2001 10 21 | 704 | 1.2− | 0.5− | 2001 12 18 | 704 | 0.0 | 0.5+ | 2002 01 14 | 691 | 0.5+ | 0.1− |
| 2001 10 21 | 704 | 0.2− | 0.6− | 2001 12 18 | 704 | 0.2− | 0.2− | 2002 01 14 | 704 | 0.0 | 0.8− |
| 2001 10 21 | 704 | (2.2− | 0.3+) | 2001 12 18 | 704 | 0.1− | 0.5+ | 2002 01 14 | 691 | 0.6+ | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.7− | 2001 12 18 | 704 | 0.1− | 0.3− | 2002 01 14 | 704 | 0.6− | 1.4− |
| 2001 10 21 | 704 | 1.2− | 0.2− | 2001 12 18 | 704 | 0.2− | 0.2+ | 2002 01 21 | 704 | 0.7− | 0.1+ |
| 2001 11 11 | 704 | 0.4− | 0.6+ | 2001 12 18 | 704 | 0.3− | 0.0 | 2002 01 21 | 704 | 0.8− | 0.2− |
| 2001 11 11 | 704 | 0.2− | 0.4− | 2001 12 18 | 704 | 0.2+ | 0.1+ | 2002 01 21 | 704 | 0.2− | 0.3+ |
| 2001 11 11 | 704 | 0.6− | 0.1− | 2001 12 18 | 704 | 0.1− | 0.1− | 2002 01 21 | 704 | 0.7− | 0.7+ |
| 2001 11 11 | 704 | 0.5− | 0.2− | 2001 12 18 | 704 | 0.1− | 0.6+ | 2003 03 23 | 644 | 0.4− | 0.3+ |
| 2001 11 11 | 704 | 1.0− | 0.7− | 2001 12 18 | 704 | 0.4− | 0.5− | 2003 03 23 | 644 | 0.2− | 0.7+ |
| 2001 11 21 | 704 | (1.2+ | 2.7−) | 2001 12 18 | 704 | 0.2− | 0.5+ | 2003 03 23 | 644 | 0.4− | 0.2+ |
| 2001 11 21 | 704 | (1.7+ | 3.2−) | 2001 12 18 | 704 | 0.3+ | 0.7+ | 2003 04 07 | 704 | 1.0+ | 0.3+ |
| 2001 11 21 | 704 | (1.0+ | 3.5−) | 2001 12 18 | 704 | 0.1+ | 0.3+ | 2003 04 07 | 704 | 0.7− | 1.1+ |
| 2001 11 21 | 704 | (0.9+ | 3.7−) | 2001 12 18 | 704 | 0.1+ | 0.4+ | 2003 04 07 | 704 | (2.0− | 0.1−) |
| 2001 11 21 | 704 | (1.4+ | 2.7−) | 2001 12 18 | 704 | 0.2+ | 0.3+ | 2005 06 09 | 691 | 0.5+ | 0.4+ |
| 2001 11 24 | 704 | 0.0 | 0.2− | 2001 12 19 | 704 | 0.2− | 0.7+ | 2005 06 09 | 691 | 0.5+ | 0.3+ |
| 2001 11 24 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.1− | 0.8+ | 2005 06 09 | 691 | 0.3− | 0.3+ |
| 2001 11 24 | 704 | 0.1+ | 0.0 | 2001 12 19 | 704 | 0.1− | 1.0+ | 2006 08 29 | 699 | (0.3− | 1.6+) |
| 2001 11 24 | 704 | 0.1+ | 0.2+ | 2001 12 19 | 704 | 0.0 | 1.0+ | 2006 08 29 | 699 | (0.3+ | 1.8+) |
| 2001 11 24 | 704 | 0.2− | 0.3+ | 2001 12 20 | 704 | (0.8− | 2.6−) | 2006 08 29 | 699 | 0.5+ | 1.3+ |
| 2001 11 24 | 704 | 0.7+ | 1.3− | 2001 12 20 | 704 | 0.4− | 0.3− | 2006 08 29 | 699 | 0.2− | 0.8+ |
| 2001 11 24 | 704 | 0.2+ | 1.5− | 2001 12 20 | 704 | 0.4− | 0.1+ | 2006 09 06 | 644 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 1.1+ | 1.0− | 2001 12 20 | 704 | 0.6+ | 0.4− | 2006 09 06 | 644 | 0.2+ | 0.2+ |
| 2001 11 24 | 704 | 0.7+ | 0.9− | 2001 12 20 | 704 | 0.0 | 0.2− | 2006 09 06 | 644 | 0.2+ | 0.3− |
| 2001 12 08 | 699 | 0.1+ | 0.6− | 2002 01 06 | 644 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.4+ |
| 2001 12 08 | 699 | 0.6+ | 0.1− | 2002 01 06 | 644 | 0.1− | 0.5+ | 2006 09 16 | 703 | 1.3− | 0.1− |
| 2001 12 08 | 699 | 0.3+ | 1.0+ | 2002 01 06 | 644 | 0.4− | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.6− |
| 2001 12 08 | 699 | 0.1− | 0.0 | 2002 01 07 | 691 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.7+ |
| 2001 12 10 | 704 | 0.5− | 1.4+ | 2002 01 07 | 691 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.8+ | 0.7+ |
| 2001 12 10 | 704 | 0.3+ | 1.1+ | 2002 01 07 | 691 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.6− | 0.2− |
| 2001 12 10 | 704 | 0.2− | 0.4+ | 2002 01 08 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.5− | 0.8+ |
| 2001 12 10 | 704 | 0.2− | 0.9+ | 2002 01 08 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 703 | (1.1+ | 1.9+) |
| 2001 12 10 | 704 | 0.6+ | 1.0+ | 2002 01 08 | 691 | 0.6+ | 0.1+ | 2006 10 26 | 703 | 0.6− | 0.5+ |
| 2001 12 15 | 704 | 0.2− | 0.1− | 2002 01 09 | 704 | 0.3+ | 0.4− | 2006 10 26 | 703 | 1.1− | 0.6− |
| 2001 12 15 | 704 | 0.3− | 0.0 | 2002 01 09 | 704 | 0.0 | 0.2− | 2006 10 26 | 703 | 0.5− | 0.6+ |
| 2001 12 15 | 704 | 0.8− | 0.2− | 2002 01 09 | 704 | 0.1− | 0.3− | 2006 10 26 | 703 | 0.0 | 0.6+ |
| 2001 12 17 | 704 | 0.1+ | 0.5− | 2002 01 09 | 704 | 0.1+ | 0.3+ | 2006 11 25 | 703 | 1.3− | 0.8+ |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.4+ | 0.7− | 2006 11 25 | 703 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.7+ | 0.2− | 2002 01 11 | 699 | 0.2− | 0.1+ | 2006 11 25 | 703 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.5− | 0.0 | 2002 01 11 | 699 | 0.9+ | 0.2− | 2006 11 25 | 703 | 0.5− | 0.1+ |

**(141139)∗ 2001 XQ$_{95}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.88906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17938705 | $\omega$ | 18.94090 | | +0.12972135 | −0.99090580 | |
| $a$ | 3.1136897 | $\Omega$ | 63.61899 | | +0.90449969 | +0.10348319 | |
| $e$ | 0.1692462 | $i$ | 2.28705 | | +0.40626677 | +0.08600537 | |
| $P$ | 5.49 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.2− | 0.2− | 2002 01 08 | 704 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.7+ |
| 2001 11 09 | 704 | 0.1− | 1.1− | 2002 01 08 | 704 | 0.1+ | 0.9− | 2006 09 14 | 703 | 0.6− | 1.4+ |
| 2001 11 09 | 704 | 0.3+ | 0.4− | 2002 01 08 | 704 | 0.7− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.5+ |
| 2001 11 09 | 704 | 0.3+ | 0.8− | 2003 03 06 | 704 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.8+ |
| 2001 11 09 | 704 | 0.4+ | 0.3− | 2003 03 06 | 704 | 0.4+ | 0.8+ | 2006 09 16 | 644 | 0.2+ | 0.4+ |
| 2001 11 12 | 704 | 0.2− | 0.1+ | 2003 03 06 | 704 | (0.2+ | 1.6+) | 2006 09 16 | 644 | 0.4− | 0.1+ |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2003 03 06 | 704 | (0.4+ | 1.9+) | 2006 09 16 | 644 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.3+ | 0.2+ | 2003 03 06 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 644 | 0.1− | 0.4+ |
| 2001 11 12 | 704 | 0.7+ | 0.7+ | 2003 03 10 | 699 | 0.5− | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.7+ |
| 2001 11 12 | 704 | 0.4+ | 0.5+ | 2003 03 10 | 699 | 0.0 | 1.0+ | 2006 09 16 | 644 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.1+ | 2003 03 10 | 699 | 0.6− | 0.7+ | 2006 09 18 | 699 | 0.9+ | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2003 03 10 | 699 | 0.6+ | 0.6− | 2006 09 18 | 699 | 0.7− | 0.5+ |
| 2001 11 20 | 704 | 0.2+ | 0.1+ | 2003 03 10 | 599 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.2+ | 2003 03 11 | 599 | 0.4− | 0.4− | 2006 09 18 | 699 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2003 03 11 | 599 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.8+ |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2003 03 11 | 599 | 0.9− | 0.3+ | 2006 09 20 | 704 | 0.7+ | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2003 03 24 | 683 | (0.7− | 2.6+) | 2006 09 20 | 704 | 0.6− | 0.4+ |
| 2001 11 21 | 704 | 0.2+ | 0.2+ | 2003 03 24 | 683 | (0.6+ | 1.9+) | 2006 09 20 | 644 | 0.1+ | 0.4+ |
| 2001 11 21 | 704 | 0.3+ | 0.7+ | 2003 03 24 | 683 | (2.0+ | 0.8−) | 2006 09 20 | 644 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 0.5+ | 0.6+ | 2003 03 25 | 699 | 1.1+ | 0.5− | 2006 09 20 | 644 | 0.1− | 0.7+ |
| 2001 11 24 | 704 | 0.1+ | 0.1− | 2003 03 25 | 699 | 1.2− | 0.7− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 1.2− | 0.1− | 2003 03 25 | 699 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2001 11 24 | 704 | 0.3+ | 0.1+ | 2003 03 25 | 699 | (0.1− | 1.5+) | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2003 03 26 | 644 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.3+ |
| 2001 12 10 | 704 | 0.8− | 0.3+ | 2003 03 26 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2001 12 10 | 704 | 1.3− | 0.4− | 2003 03 26 | 644 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.1− |
| 2001 12 10 | 704 | 0.5− | 0.8− | 2003 04 01 | 683 | 1.0+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.2− |
| 2001 12 15 | 704 | 0.6− | 0.3+ | 2003 04 01 | 683 | (2.3+ | 0.2−) | 2006 10 15 | 703 | 0.4− | 0.1− |
| 2001 12 15 | 704 | 0.1− | 0.4+ | 2003 04 01 | 683 | (0.9+ | 2.0−) | 2006 10 15 | 703 | 0.2− | 0.4+ |
| 2001 12 15 | 704 | 0.1− | 0.9+ | 2003 04 03 | 699 | 0.8− | 0.2− | 2006 10 15 | 703 | 0.9− | 0.0 |
| 2001 12 17 | 291 | 0.1+ | 0.1− | 2003 04 03 | 699 | 1.1− | 0.5+ | 2006 10 15 | 703 | 0.5− | 0.2+ |
| 2001 12 17 | 291 | 0.0 | 0.1− | 2003 04 03 | 699 | 1.0− | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2001 12 17 | 291 | 0.2− | 0.1− | 2003 04 03 | 699 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.2+ | 0.0 | 2003 04 05 | 691 | 0.8+ | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.6+ |
| 2001 12 18 | 704 | 0.2+ | 0.0 | 2003 04 05 | 691 | 0.7+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2001 12 18 | 704 | 0.0 | 0.5− | 2003 04 05 | 691 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.4+ | 0.2− | 2003 04 09 | 704 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.2− | 2003 04 09 | 704 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.3+ |
| 2001 12 19 | 703 | 0.0 | 0.3− | 2003 04 09 | 704 | 0.1− | 1.0− | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 2001 12 19 | 703 | 0.5− | 0.5− | 2003 04 09 | 704 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.6− |
| 2001 12 19 | 704 | 0.2− | 0.9+ | 2003 05 01 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.1+ |
| 2001 12 19 | 703 | 0.0 | 0.8− | 2003 05 01 | 691 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 1.1+ | 2003 05 01 | 691 | 0.3+ | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2001 12 19 | 703 | 0.1+ | 0.1− | 2005 07 02 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 1.0+ | 2005 07 02 | 691 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.1− | 0.5+ | 2005 07 02 | 691 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2001 12 19 | 704 | 0.1+ | 0.9+ | 2005 07 07 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2001 12 20 | 704 | (2.3+ | 2.3+) | 2005 07 07 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 1.1− | 1.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 704 | (0.1− | 2.4+) | 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.1+ | | |
| 2001 12 20 | 704 | (1.3− | 1.7+) | 2005 07 11 | 691 | 0.0 | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.3− | | |
| 2001 12 20 | 704 | 0.5+ | 1.3+ | 2005 07 11 | 691 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2001 12 20 | 704 | 0.3− | 0.6+ | 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2002 01 08 | 704 | 0.9+ | 0.8− | 2005 08 08 | 807 | 0.2+ | 0.7+ | 2006 11 14 | G96 | 0.0 | 0.1− | | |
| 2002 01 08 | 704 | 0.2− | 0.2− | 2005 08 08 | 807 | 0.1− | 0.5+ | | | | | | |

**(141140)∗ 2001 XZ$_{95}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 279.32589 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18857898 | $\omega$ | 101.18973 | | −0.90592198 | | −0.42263662 | | |
| $a$ | 3.0116687 | $\Omega$ | 53.81431 | | +0.37476598 | | −0.82899260 | | |
| $e$ | 0.2745709 | $i$ | 1.85645 | | +0.19711881 | | −0.36626431 | | |
| $P$ | 5.23 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.2− | 0.3− | 2002 01 08 | 704 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2001 11 17 | 291 | 0.1− | 0.3− | 2002 01 14 | 704 | (1.6− | 0.5−) | 2006 11 12 | 703 | 0.1− | 0.2+ | | |
| 2001 11 17 | 291 | 0.1− | 0.2− | 2002 01 14 | 704 | 0.6− | 0.8− | 2006 11 12 | 703 | 0.3+ | 0.5+ | | |
| 2001 11 19 | 704 | 0.6+ | 0.0 | 2002 01 14 | 704 | (0.3+ | 1.8−) | 2006 11 12 | 703 | 0.9− | 0.1− | | |
| 2001 11 19 | 704 | 0.9+ | 0.4+ | 2002 01 14 | 704 | (0.3− | 2.2−) | 2006 11 12 | 703 | 0.7+ | 0.4− | | |
| 2001 11 19 | 704 | 0.6+ | 0.1+ | 2002 01 14 | 704 | (0.3− | 1.9−) | 2006 11 12 | G96 | 0.0 | 0.5− | | |
| 2001 11 21 | 704 | 0.9+ | 0.8− | 2004 08 15 | 807 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2001 11 21 | 704 | 1.4+ | 0.0 | 2004 08 15 | 807 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2005 09 12 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.6− | | |
| 2001 12 10 | 704 | 0.1+ | 0.4− | 2005 09 12 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.3+ | | |
| 2001 12 10 | 704 | 0.1+ | 0.5− | 2005 09 12 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | | |
| 2001 12 10 | 704 | 0.4− | 0.1+ | 2005 10 03 | G96 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.4+ | | |
| 2001 12 15 | 704 | 0.3+ | 0.2+ | 2005 10 03 | G96 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.1− | 1.4+ | | |
| 2001 12 15 | 704 | 0.3+ | 0.1− | 2005 10 03 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.7+ | | |
| 2001 12 15 | 704 | 0.1− | 0.3+ | 2005 10 03 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 1.0− | 1.0+ | | |
| 2001 12 17 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1− | 1.2+ | | |
| 2001 12 17 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 1.0+ | 0.5+ | | |
| 2001 12 17 | 691 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | (0.5− | 1.5+) | | |
| 2001 12 18 | 704 | 0.7− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | (0.9+ | 2.1−) | | |
| 2001 12 18 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.7− | 0.9+ | | |
| 2001 12 18 | 704 | 0.2+ | 0.8+ | 2006 10 16 | 691 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.8− | | |
| 2001 12 18 | 704 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.5− | 2006 11 27 | 703 | 0.2+ | 0.3− | | |
| 2001 12 18 | 704 | 0.3+ | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.3+ | 0.5− | | |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.2− | 0.7− | | |
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.0 | 2006 11 27 | 703 | 1.1+ | 0.5− | | |
| 2001 12 19 | 704 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.1− | 1.1− | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| 2001 12 19 | 704 | 0.9+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.1− | 0.1− | | |
| 2002 01 08 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | (0.3− | 2.2−) | 2006 12 01 | G96 | 0.3+ | 0.2+ | | |
| 2002 01 08 | 704 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.0 | 0.7− | 2006 12 01 | G96 | 0.2− | 0.5− | | |
| 2002 01 08 | 704 | 0.4− | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.5− | | | | | | |
| 2002 01 08 | 704 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.5− | | | | | | |

**(141141)∗ 2001 XH$_{96}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 11.93583 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18157945 | $\omega$ | 298.16953 | | +0.96160410 | | −0.19549632 | | |
| $a$ | 3.0885757 | $\Omega$ | 73.64337 | | +0.26284979 | | +0.85787368 | | |
| $e$ | 0.1038703 | $i$ | 11.57992 | | −0.07891474 | | +0.47521989 | | |
| $P$ | 5.43 | $H$ | 14.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.8− | 0.1− | 2002 01 08 | 704 | (1.5− | 0.7−) | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2001 11 20 | 704 | 0.4− | 0.7− | 2002 01 08 | 704 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.3− | 0.4+ | | |
| 2001 11 20 | 704 | 0.4− | 0.7− | 2002 01 08 | 704 | 0.8− | 0.7− | 2006 10 11 | 644 | 0.3− | 0.4+ | | |
| 2001 11 20 | 704 | (1.8− | 0.8+) | 2002 01 08 | 704 | 0.6− | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2001 11 20 | 704 | 0.2− | 0.0 | 2002 01 14 | 704 | (1.7+ | 0.1−) | 2006 10 11 | 644 | 0.1− | 0.6+ | | |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2002 01 14 | 704 | 1.3+ | 0.6− | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2001 11 21 | 704 | 0.0 | 0.3− | 2002 01 14 | 704 | (1.9+ | 0.7−) | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2001 11 21 | 704 | 1.2+ | 0.1− | 2002 01 14 | 704 | 0.8+ | 1.3− | 2006 10 12 | 644 | 0.0 | 0.4+ | | |
| 2001 11 21 | 704 | 0.4+ | 0.1− | 2003 02 21 | 644 | 0.7+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.5+ | | |
| 2001 11 21 | 704 | 0.8+ | 0.2− | 2003 02 21 | 644 | 0.6+ | 0.9+ | 2006 10 16 | 703 | 1.0− | 0.7− | | |
| 2001 12 10 | 704 | 0.7+ | 0.3− | 2003 02 21 | 644 | 0.5+ | 0.9+ | 2006 10 16 | 703 | 0.6− | 0.9− | | |
| 2001 12 10 | 704 | 0.4+ | 1.2− | 2003 03 08 | 644 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.4− | | |
| 2001 12 10 | 704 | 0.3− | 0.4− | 2003 03 08 | 644 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.7− | | |
| 2001 12 10 | 704 | 0.4+ | 0.4+ | 2003 03 08 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.2− | | |
| 2001 12 12 | 644 | 0.3− | 0.0 | 2004 04 16 | 704 | (1.0− | 1.8+) | 2006 10 22 | 703 | 0.5− | 0.3− | | |
| 2001 12 12 | 644 | 0.5+ | 0.3+ | 2004 04 16 | 704 | 0.4− | 0.7+ | 2006 10 22 | 703 | 0.9+ | 0.1− | | |
| 2001 12 12 | 644 | 0.2+ | 0.3+ | 2004 04 16 | 704 | (0.3− | 1.7+) | 2006 10 22 | 703 | 0.7+ | 0.2− | | |
| 2001 12 15 | 704 | 0.5− | 0.2+ | 2004 04 16 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2001 12 15 | 704 | 0.1− | 0.1− | 2004 04 16 | 704 | (0.8+ | 2.6+) | 2006 10 22 | 644 | 0.1+ | 0.4+ | | |
| 2001 12 15 | 704 | 0.5− | 0.6+ | 2004 04 24 | 704 | 0.9+ | 1.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2001 12 17 | 704 | (0.3− | 3.1+) | 2004 04 24 | 704 | 0.4− | 0.1+ | 2006 11 13 | 703 | (1.5+ | 0.6+) | | |
| 2001 12 17 | 704 | (0.7+ | 2.8+) | 2004 04 24 | 704 | 0.3+ | 0.7+ | 2006 11 13 | 703 | (1.8+ | 0.6+) | | |
| 2001 12 17 | 704 | (0.9+ | 3.0+) | 2004 04 24 | 704 | 0.2− | 0.4− | 2006 11 13 | 703 | 0.5+ | 0.3+ | | |
| 2001 12 17 | 704 | (0.7+ | 2.5+) | 2005 07 06 | E12 | 0.1− | 1.0+ | 2006 11 13 | 703 | 0.4− | 0.6+ | | |
| 2001 12 17 | 704 | (0.6+ | 2.7+) | 2005 07 06 | E12 | 0.5+ | 0.1+ | 2006 11 14 | 644 | 0.1+ | 0.4+ | | |
| 2001 12 18 | 704 | 0.3− | 0.9+ | 2005 07 06 | E12 | 0.4− | 0.7+ | 2006 11 14 | 644 | 0.0 | 0.1+ | | |
| 2001 12 18 | 704 | (0.0 | 1.7+) | 2005 07 06 | E12 | 0.0 | 0.6+ | 2006 11 14 | 644 | 0.0 | 0.4+ | | |
| 2001 12 18 | 704 | 1.1− | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 11 17 | 644 | 0.2− | 0.4+ | | |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.7− | 0.7+ | 2006 11 17 | 644 | 0.1+ | 0.3+ | | |
| 2001 12 18 | 704 | 0.1− | 0.5− | 2006 09 29 | 699 | 0.2+ | 0.6+ | 2006 11 17 | 644 | 0.1+ | 0.3+ | | |
| 2001 12 19 | 703 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.3− | 1.1+ | 2006 11 19 | 703 | 0.5+ | 0.2+ | | |
| 2001 12 19 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 11 19 | 703 | 0.0 | 0.4+ | | |
| 2001 12 19 | 703 | 0.4− | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.5+ | 2006 11 19 | 703 | 0.1− | 0.4− | | |
| 2001 12 19 | 703 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 19 | 703 | 0.1− | 1.0− | | |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2001 12 19 | 703 | 0.0 | 0.5+ | 2006 10 01 | 704 | (0.5− | 1.7+) | 2006 11 24 | G96 | 0.4+ | 0.0 | | |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 10 01 | 704 | 1.1− | 0.8+ | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 10 01 | 704 | (0.6− | 1.9+) | 2006 11 24 | G96 | 0.6+ | 0.1− | | |
| 2001 12 19 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 1.0− | 0.3+ | | | | | | |

**(141142)∗ 2001 XF$_{97}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 63.24754 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22290821 | $\omega$ | 135.16556 | | +0.71811564 | | −0.59712610 | | |
| $a$ | 2.6939240 | $\Omega$ | 264.93767 | | +0.49417857 | | +0.79916242 | | |
| $e$ | 0.0519319 | $i$ | 21.02784 | | +0.48999741 | | +0.06913638 | | |
| $P$ | 4.42 | $H$ | 14.5 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.3− | 0.4+ | 2001 12 21 | 704 | 0.6− | 0.1+ | 2005 11 04 | 699 | 0.7+ | 0.2+ | | |
| 2000 09 22 | 704 | 0.1+ | 0.4− | 2001 12 21 | 704 | 1.0+ | 0.1+ | 2005 11 04 | 699 | 0.1− | 0.2+ | | |
| 2000 09 22 | 704 | 0.8− | 0.0 | 2001 12 21 | 704 | 0.8+ | 0.7+ | 2005 11 04 | 699 | 0.2+ | 0.1+ | | |
| 2001 09 28 | 704 | 1.1+ | 0.5+ | 2002 01 08 | 704 | 0.1+ | 0.2+ | 2005 11 04 | 699 | 0.2+ | 0.2+ | | |
| 2001 09 28 | 704 | 0.7+ | 0.6+ | 2002 01 08 | 704 | 0.1− | 0.0 | 2005 11 10 | 703 | (2.3+ | 0.9+) | | |
| 2001 09 28 | 704 | 0.6+ | 1.1+ | 2002 01 08 | 704 | 0.0 | 0.0 | 2005 11 10 | 703 | 0.5+ | 0.2+ | | |
| 2001 11 11 | 704 | 0.1− | 0.3+ | 2002 01 08 | 704 | 0.0 | 0.1− | 2005 11 10 | 703 | 0.3+ | 0.7+ | | |
| 2001 11 11 | 704 | 0.9+ | 0.2+ | 2002 01 08 | 704 | 0.2+ | 0.1− | 2005 11 10 | 703 | 0.3+ | 0.3− | | |
| 2001 11 11 | 704 | 0.3− | 0.3− | 2002 01 13 | 704 | 0.4+ | 0.7− | 2005 11 21 | 644 | 0.1− | 0.1+ | | |
| 2001 11 11 | 704 | 0.2− | 0.0 | 2002 01 13 | 704 | 0.4+ | 0.6− | 2005 11 21 | 644 | 0.3− | 0.0 | | |
| 2001 11 11 | 704 | 0.3+ | 0.3− | 2002 01 13 | 704 | 0.4+ | 0.6− | 2005 11 21 | 644 | 0.0 | 0.1− | | |
| 2001 11 24 | 704 | 0.6− | 0.5+ | 2002 01 13 | 704 | 0.8+ | 0.7− | 2005 12 04 | 703 | 0.1− | 0.5+ | | |
| 2001 11 24 | 704 | 0.8− | 0.5− | 2002 01 13 | 704 | 0.7+ | 0.9− | 2005 12 04 | 703 | 0.3− | 0.3− | | |
| 2001 11 24 | 704 | (2.0− | 0.8+) | 2002 01 15 | 704 | 0.0 | 0.7+ | 2005 12 04 | 703 | 0.9+ | 0.2+ | | |
| 2001 11 24 | 704 | 0.5+ | 0.6+ | 2002 01 15 | 704 | 0.0 | 0.4+ | 2005 12 04 | 703 | 0.1+ | 0.5− | | |
| 2001 11 24 | 704 | 0.0 | 0.2− | 2002 01 15 | 704 | 0.1+ | 0.4+ | 2005 12 07 | 699 | 0.5− | 0.1+ | | |
| 2001 12 10 | 704 | 1.2− | 0.4− | 2002 01 15 | 704 | 0.0 | 0.3+ | 2005 12 07 | 699 | 1.0− | 0.4− | | |
| 2001 12 10 | 704 | 0.9− | 0.3− | 2002 01 15 | 704 | 0.2+ | 0.7+ | 2005 12 07 | 699 | 0.2− | 1.3+ | | |
| 2001 12 10 | 704 | 0.8− | 1.3− | 2002 01 19 | 704 | 0.8+ | 0.0 | 2005 12 07 | 699 | 1.3+ | 0.7+ | | |
| 2001 12 10 | 704 | 0.4− | 0.2− | 2002 01 19 | 704 | 0.4+ | 0.5− | 2006 01 05 | 703 | 0.7− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.2+ | 0.2+ | 2002 01 19 | 704 | 0.7− | 0.1+ | 2006 01 05 | 703 | 0.5+ | 0.3− |
| 2001 12 15 | 704 | 0.3+ | 0.4+ | 2002 01 19 | 704 | 0.5+ | 1.0+ | 2006 01 05 | 703 | 0.7− | 0.1− |
| 2001 12 15 | 704 | 0.3+ | 0.8+ | 2002 01 19 | 704 | 0.4− | 0.1− | 2006 01 05 | 703 | 0.5− | 0.8− |
| 2001 12 15 | 704 | 0.1+ | 0.8+ | 2003 03 31 | 644 | 0.5+ | 0.1+ | 2006 01 05 | 704 | 0.3− | 0.9+ |
| 2001 12 18 | 704 | 0.1− | 0.1− | 2003 03 31 | 644 | 0.7+ | 0.3+ | 2006 01 05 | 704 | 0.5− | 1.3+ |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2003 03 31 | 644 | 0.3+ | 0.3+ | 2006 01 05 | 704 | (0.9− | 1.6+) |
| 2001 12 18 | 704 | 0.3− | 0.3− | 2005 10 11 | 699 | 0.0 | 0.1− | 2006 01 05 | 704 | 0.7+ | 0.0 |
| 2001 12 18 | 704 | 0.6− | 0.3− | 2005 10 11 | 699 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.4− | 1.0+ |
| 2001 12 18 | 704 | 0.5− | 0.4− | 2005 10 11 | 699 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.0 | 1.0− |
| 2001 12 19 | 704 | 0.2− | 0.1− | 2005 10 11 | 699 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.5− | 1.0+ |
| 2001 12 19 | 704 | 0.3− | 0.1− | 2005 10 31 | 703 | 0.5− | 0.0 | 2006 10 21 | 703 | 1.2+ | 1.5− |
| 2001 12 19 | 704 | 0.5− | 0.1+ | 2005 10 31 | 703 | 0.1− | 0.4− | 2006 10 30 | 703 | 0.5+ | 0.3− |
| 2001 12 19 | 704 | 0.4− | 0.0 | 2005 10 31 | 703 | 0.4+ | 0.3− | 2006 10 30 | 703 | 0.9+ | 1.0+ |
| 2001 12 19 | 704 | 0.6− | 0.2− | 2005 10 31 | 703 | 1.0− | 0.3− | 2006 10 30 | 703 | 0.3− | 0.1+ |
| 2001 12 20 | 704 | 0.8+ | 0.2+ | 2005 10 31 | 703 | 0.4+ | 0.1− | 2006 10 30 | 703 | 0.1+ | 1.1+ |
| 2001 12 20 | 704 | 0.1− | 0.4− | 2005 10 31 | 703 | 0.5− | 0.3− | 2006 12 01 | 703 | 0.8− | 0.2+ |
| 2001 12 20 | 704 | 0.4− | 0.3+ | 2005 10 31 | 703 | 0.1+ | 0.4− | 2006 12 01 | 703 | 0.2− | 0.1− |
| 2001 12 20 | 704 | 0.3+ | 1.1− | 2005 11 03 | A30 | 0.1+ | 0.4− | 2006 12 01 | 703 | 0.2+ | 0.3− |
| 2001 12 20 | 704 | 0.1− | 0.1+ | 2005 11 03 | A30 | 0.3+ | 0.1− | 2006 12 01 | 703 | 0.8− | 0.2− |
| 2001 12 21 | 704 | 0.3− | 0.1− | 2005 11 03 | A30 | 0.2+ | 0.1− | | | | |

**(141143)∗ 2001 XL$_{98}$ = 2000 QR$_{154}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23225)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.93084 | | (2000.0) | | | |
| $n$ | 0.19046546 | $\omega$ | 135.05289 | | +0.73881989 | −0.65539073 |
| $a$ | 2.9917496 | $\Omega$ | 266.56573 | | +0.56568434 | +0.72965305 |
| $e$ | 0.1155746 | $i$ | 9.04163 | | +0.36626001 | +0.19511386 |
| $P$ | 5.17 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.2− | 0.3− | 2002 01 15 | 704 | 0.9− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2000 08 31 | 704 | 0.1+ | 0.6− | 2002 01 15 | 704 | 0.7+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2000 08 31 | 704 | 0.8+ | 0.2− | 2002 01 15 | 704 | 0.9+ | 0.2+ | 2006 11 14 | 703 | 0.8+ | 0.4+ |
| 2000 08 31 | 704 | 0.3− | 0.9+ | 2002 01 15 | 704 | 0.4+ | 0.6− | 2006 11 14 | 703 | 0.8+ | 0.5− |
| 2000 08 31 | 704 | 0.2+ | 0.5− | 2005 06 29 | 691 | 0.8+ | 0.3+ | 2006 11 14 | 703 | 1.3+ | 0.6− |
| 2000 09 03 | 704 | 0.0 | 0.9− | 2005 06 29 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.2− |
| 2000 09 03 | 704 | 0.6+ | 0.5+ | 2005 06 29 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2000 09 03 | 704 | 0.7− | 0.6− | 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2000 09 03 | 704 | 0.0 | 0.1+ | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | (4.7− | 1.6−) |
| 2000 09 03 | 704 | 0.4− | 0.4+ | 2005 07 04 | 691 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 2001 11 12 | 704 | 0.0 | 0.3− | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.5− | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.4− | 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.3− |
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.5− |
| 2001 11 12 | 704 | 1.1+ | 0.3+ | 2005 07 08 | 691 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.0 | 0.8− |
| 2001 11 12 | 704 | 0.7− | 0.3+ | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.3− |
| 2001 11 21 | 704 | 0.1− | 0.7+ | 2005 07 08 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.8+ | 0.6− |
| 2001 11 21 | 704 | 0.2− | 0.6+ | 2005 07 11 | 703 | 0.5− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 1.2− | 0.4+ | 2005 07 11 | 703 | 0.8− | 0.9− | 2006 11 16 | 704 | 0.1+ | 1.1− |
| 2001 11 21 | 704 | 0.1− | 0.7+ | 2005 07 11 | 703 | (0.4− | 1.8−) | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2001 12 10 | 704 | 0.4− | 0.6+ | 2005 07 11 | 703 | 0.5− | 0.0 | 2006 11 16 | 704 | 0.6− | 0.3− |
| 2001 12 10 | 704 | 0.7+ | 0.0 | 2005 07 26 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4+ | 1.4− |
| 2001 12 10 | 704 | 0.8+ | 0.3− | 2005 07 26 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.4− |
| 2001 12 15 | 704 | (0.7− | 1.7+) | 2005 07 26 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.8− |
| 2001 12 15 | 704 | 1.0− | 0.5+ | 2005 07 30 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.4+ | 0.4+ |
| 2001 12 15 | 704 | 0.8− | 0.6+ | 2005 07 30 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2− | 1.2+ |
| 2001 12 18 | 704 | 0.2− | 0.3+ | 2005 07 30 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.0 | 0.5+ | 2005 08 06 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2001 12 18 | 704 | 0.2+ | 1.1+ | 2005 08 06 | 644 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.1+ | 0.4+ | 2005 08 06 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.7+ | 2005 09 19 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2001 12 19 | 704 | 0.1− | 0.3− | 2005 09 19 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.9− | 0.2− |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2005 09 19 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.5− | 1.0− |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2005 09 19 | 644 | 0.6− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.5− |
| 2001 12 19 | 704 | 0.1+ | 0.1+ | 2005 09 19 | 644 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.3+ | 2005 09 19 | 644 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.7− | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2002 01 08 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.6− | 2006 11 28 | 704 | 0.5− | 0.3+ |
| 2002 01 08 | 704 | 0.7+ | 1.1+ | 2006 10 19 | 703 | 0.7− | 0.2− | 2006 11 28 | 704 | 0.3− | 0.0 |
| 2002 01 08 | 704 | 0.7+ | 0.1− | 2006 10 19 | 703 | 0.9− | 0.7− | 2006 11 28 | 704 | 0.3− | 0.1− |
| 2002 01 13 | 704 | 0.2− | 0.6+ | 2006 10 27 | 703 | (0.3− | 2.0+) | 2006 11 28 | 704 | 0.5− | 0.0 |
| 2002 01 13 | 704 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2002 01 13 | 704 | 0.2+ | 1.0+ | 2006 10 27 | 703 | 0.8− | 0.6− | 2006 11 28 | 704 | 0.3− | 0.9− |
| 2002 01 13 | 704 | 0.1− | 0.8+ | 2006 10 27 | 703 | (1.8− | 2.3−) | 2006 11 28 | 704 | 3.0+ | 0.8+ |
| 2002 01 13 | 704 | 0.5− | 1.2+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.2+ |

**(141144)∗ 2001 XU$_{99}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.51818 | | (2000.0) | | | |
| $n$ | 0.17977771 | $\omega$ | 336.59131 | | +0.33499840 | −0.93512770 |
| $a$ | 3.1091772 | $\Omega$ | 93.67449 | | +0.88171198 | +0.26795187 |
| $e$ | 0.1535285 | $i$ | 6.63918 | | +0.33220483 | +0.23181454 |
| $P$ | 5.48 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.1− | 0.2− | 2002 01 08 | 704 | 0.3− | 0.6+ | 2005 07 03 | 644 | 0.4− | 0.5+ |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2002 01 08 | 644 | 0.7+ | 0.8− | 2006 10 16 | 703 | 0.5− | 1.0+ |
| 2001 11 09 | 704 | 0.9+ | 0.4+ | 2002 01 14 | 704 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2001 12 10 | 704 | 0.1+ | 0.4+ | 2002 01 14 | 704 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2001 12 10 | 704 | 0.8− | 0.5+ | 2002 01 14 | 704 | 0.6+ | 0.5− | 2006 10 16 | 703 | 0.8− | 0.6+ |
| 2001 12 10 | 704 | 0.6− | 1.3+ | 2002 01 14 | 704 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.1− | 0.9+ |
| 2001 12 15 | 704 | 0.8− | 0.6− | 2002 01 14 | 704 | 0.7+ | 0.5− | 2006 10 22 | 703 | 0.2− | 0.3+ |
| 2001 12 15 | 704 | 0.5− | 0.7− | 2002 01 21 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2001 12 15 | 704 | 0.0 | 1.2− | 2002 01 21 | 704 | 0.9+ | 0.1− | 2006 10 22 | 703 | 0.0 | 0.9+ |
| 2001 12 15 | 704 | 1.4− | 1.3− | 2002 01 21 | 704 | 0.4+ | 0.4− | 2006 11 01 | 703 | 1.3+ | 0.6+ |
| 2001 12 17 | 644 | 0.0 | 1.1+ | 2002 01 21 | 704 | 0.6+ | 0.4− | 2006 11 01 | 703 | 0.3− | 0.2+ |
| 2001 12 17 | 644 | 0.2− | 0.9+ | 2002 02 06 | 704 | 0.3− | 0.7+ | 2006 11 01 | 703 | 0.3− | 0.4+ |
| 2001 12 17 | 644 | 0.1− | 1.0+ | 2002 02 06 | 704 | 0.6+ | 1.0− | 2006 11 01 | 703 | 0.2− | 0.6+ |
| 2001 12 18 | 644 | (0.5− | 1.9+) | 2002 02 06 | 704 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2001 12 18 | 644 | (0.7− | 1.9+) | 2002 02 06 | 704 | 0.8− | 1.1+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.0 | 0.5+ | 2002 02 07 | 704 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2002 02 07 | 704 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2001 12 18 | 644 | (0.6− | 1.9+) | 2002 02 07 | 704 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2001 12 18 | 704 | 0.5− | 0.5+ | 2002 02 07 | 704 | 0.8− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.5− | 0.5+ | 2002 02 10 | 704 | 0.1− | 1.1− | 2006 11 10 | 644 | 0.1− | 0.5+ |
| 2001 12 18 | 704 | 0.6− | 1.1+ | 2002 02 10 | 704 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.5+ |
| 2001 12 19 | 704 | 0.2− | 0.2− | 2002 02 10 | 704 | 0.0 | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 2001 12 19 | 704 | 0.2− | 0.0 | 2002 02 10 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2001 12 19 | 704 | 0.5− | 0.3+ | 2002 02 10 | 704 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2003 03 26 | 644 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 12 20 | 704 | 0.7+ | 0.5+ | 2003 03 26 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2001 12 20 | 704 | 0.0 | 0.2− | 2003 03 26 | 644 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.3− | 0.3− |
| 2001 12 20 | 704 | 0.5− | 0.0 | 2003 03 27 | 699 | (2.1+ | 1.1+) | 2006 11 14 | 704 | 0.1− | 0.2+ |
| 2001 12 20 | 704 | 0.9+ | 0.7− | 2003 03 27 | 699 | 0.9− | 0.2+ | 2006 11 14 | 704 | 0.6+ | 0.5− |
| 2001 12 20 | 704 | 0.3− | 0.9− | 2003 03 27 | 683 | (3.1− | 2.4+) | 2006 11 14 | 704 | 0.2− | 0.0 |
| 2001 12 21 | 704 | 0.6+ | 0.2− | 2003 03 27 | 699 | (0.1+ | 1.6+) | 2006 11 14 | 704 | 0.4− | 0.3+ |
| 2001 12 21 | 704 | (1.7+ | 0.9+) | 2003 03 27 | 683 | (1.8− | 0.1+) | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2001 12 21 | 704 | 0.8+ | 0.2− | 2003 03 27 | 699 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 2001 12 21 | 704 | 0.9+ | 0.8+ | 2003 03 27 | 683 | 0.9− | 0.6− | 2006 11 17 | 704 | 0.0 | 0.4− |
| 2001 12 21 | 704 | 1.0+ | 1.3+ | 2003 03 27 | 691 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2001 12 25 | 608 | (0.2− | 1.6−) | 2003 03 27 | 691 | 0.5− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2001 12 25 | 608 | (0.4− | 1.7−) | 2003 03 27 | 691 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2001 12 25 | 608 | 0.8− | 1.5− | 2003 04 09 | 704 | (1.9+ | 0.5−) | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 01 03 | 106 | 0.5− | 0.7− | 2003 04 09 | 704 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2002 01 03 | 106 | 0.1+ | 0.1+ | 2003 04 09 | 704 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.1+ |
| 2002 01 03 | 106 | 0.0 | 1.0+ | 2003 04 09 | 704 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.9+ | 0.1− |
| 2002 01 06 | 644 | 0.2− | 0.1+ | 2003 04 09 | 691 | 0.7+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 1.2− |
| 2002 01 06 | 644 | 0.1− | 0.0 | 2003 04 09 | 691 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.3− | 0.8− |
| 2002 01 06 | 644 | 0.1+ | 0.1+ | 2003 04 09 | 691 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.9− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 644 | 0.1+ | 0.2+ | 2003 04 27 | 699 | 1.4+ | 1.2− | 2006 11 20 | 704 | 0.6+ | 1.3− |
| 2002 01 08 | 704 | 0.2− | 0.1− | 2003 04 27 | 699 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 1.3− |
| 2002 01 08 | 644 | 0.2+ | 0.1− | 2003 04 27 | 699 | 1.4+ | 0.9− | 2006 11 20 | 704 | 0.7+ | 1.0− |
| 2002 01 08 | 704 | 0.0 | 0.3+ | 2003 04 27 | 699 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.4+ | 0.7− |
| 2002 01 08 | 704 | 0.1+ | 0.4− | 2005 07 03 | 644 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.6+ | 1.5− |
| 2002 01 08 | 704 | 1.5− | 0.1+ | 2005 07 03 | 644 | 0.2− | 0.7+ | | | | |

**(141145)∗ 2001 XQ$_{104}$**

Discovered 2001 Dec. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.24716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18349821 | $\omega$ | 248.94720 | | +0.66239227 | +0.74853368 | |
| $a$ | 3.0670074 | $\Omega$ | 62.57294 | | −0.67392524 | +0.61319310 | |
| $e$ | 0.1744963 | $i$ | 1.97298 | | −0.32720215 | +0.25237186 | |
| $P$ | 5.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.4− | 1.0+ | 2001 12 17 | 291 | 0.1− | 0.1− | 2006 10 13 | D35 | 0.1− | 0.2+ |
| 1999 03 19 | 691 | 0.1+ | 0.6+ | 2001 12 17 | 291 | 0.1+ | 0.0 | 2006 10 13 | D35 | 0.2+ | 0.2+ |
| 1999 03 19 | 691 | 0.1+ | 1.3+ | 2002 01 09 | 691 | 0.5+ | 0.1+ | 2006 10 13 | D35 | 0.5+ | 0.4+ |
| 1999 03 23 | 691 | 0.6+ | 0.2+ | 2002 01 09 | 691 | 0.5+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.2− |
| 1999 03 23 | 691 | 0.3+ | 0.6+ | 2002 01 09 | 691 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 1999 03 23 | 691 | 0.6+ | 0.6+ | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2000 08 07 | 608 | 0.5− | 0.3− | 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2000 08 07 | 608 | 0.4− | 0.2− | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.1− | 0.0 |
| 2000 08 07 | 608 | 0.7− | 0.6− | 2003 02 01 | 645 | 0.1− | 0.0 | 2006 10 20 | 703 | 0.5− | 0.2− |
| 2000 08 26 | 704 | 0.6+ | 1.0+ | 2004 02 26 | 695 | 0.4+ | 0.1− | 2006 10 20 | 703 | 0.5− | 0.9+ |
| 2000 08 26 | 704 | 1.4+ | 1.3+ | 2004 02 26 | 695 | 0.3+ | 0.1+ | 2006 10 20 | 703 | 1.3+ | 1.8− |
| 2000 08 26 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.7+ | 0.7− |
| 2001 11 17 | 691 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.7+ | 1.2− |
| 2001 11 17 | 691 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.2+ | 1.6+ |
| 2001 11 17 | 691 | 0.3− | 0.1+ | 2006 09 23 | 691 | (1.6+ | 0.2+) | 2006 10 21 | 703 | 0.3+ | 0.6+ |
| 2001 11 21 | 704 | (1.8+ | 0.4+) | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 1.2+ | 0.4− | 2006 09 23 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 0.8+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 12 14 | 291 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 12 14 | 291 | 0.4− | 0.6+ | 2006 10 12 | A13 | 0.4+ | 0.9− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 12 14 | 291 | 0.4− | 0.3+ | 2006 10 12 | A13 | 0.2− | 0.2− | | | | |
| 2001 12 17 | 291 | 0.6− | 0.1+ | 2006 10 12 | A13 | 0.3− | 0.6− | | | | |

**(141146)∗ 2001 XU$_{105}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.27398 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17666137 | $\omega$ | 125.13901 | | +0.93683069 | −0.25721438 | |
| $a$ | 3.1456349 | $\Omega$ | 250.80009 | | +0.17820599 | +0.93411523 | |
| $e$ | 0.0776081 | $i$ | 14.53692 | | +0.30098320 | +0.24752676 | |
| $P$ | 5.58 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.6+ | 0.6+ | 2001 11 24 | 704 | (1.4− | 2.0−) | 2004 04 13 | 644 | 1.5+ | 0.1− |
| 2001 08 25 | 704 | 0.2− | 0.1+ | 2001 11 24 | 704 | (0.7− | 2.1−) | 2006 08 10 | 644 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.3− | 0.8+ | 2001 11 24 | 704 | (0.8− | 2.6−) | 2006 08 10 | 644 | 0.2− | 0.3− |
| 2001 09 21 | 699 | 0.1+ | 0.8+ | 2001 12 10 | 704 | 0.5− | 0.7+ | 2006 08 10 | 644 | 0.1+ | 0.3+ |
| 2001 09 21 | 699 | 0.2+ | 0.2− | 2001 12 10 | 704 | 0.9− | 0.4− | 2006 08 25 | 704 | 0.3− | 0.4− |
| 2001 09 21 | 699 | 0.9− | 0.4− | 2001 12 10 | 704 | 0.2− | 0.9+ | 2006 08 25 | 704 | 0.4+ | 0.2+ |
| 2001 09 21 | 699 | 0.3− | 0.6+ | 2001 12 10 | 704 | 0.9− | 0.5+ | 2006 08 25 | 704 | 1.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.4+ | 0.4− | 2001 12 10 | 704 | 0.1− | 1.1+ | 2006 08 25 | 704 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 1.4+ | 1.4− | 2001 12 17 | 704 | 0.7+ | 1.0+ | 2006 08 29 | 699 | 0.6− | 0.4+ |
| 2001 09 25 | 704 | 0.4+ | 0.8− | 2001 12 17 | 704 | 0.9− | 0.9+ | 2006 08 29 | 699 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.6+ | 0.6− | 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 08 29 | 699 | 0.6− | 0.4+ |
| 2001 09 25 | 704 | 0.2− | 0.0 | 2001 12 17 | 704 | 0.1− | 1.0+ | 2006 08 29 | 699 | 0.0 | 0.5+ |
| 2001 10 09 | 704 | 0.7− | 0.1− | 2001 12 20 | 644 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.5− | 0.3− |
| 2001 10 09 | 704 | 0.1− | 0.3− | 2001 12 20 | 644 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.4+ | 0.1− |
| 2001 10 09 | 704 | 0.8− | 0.8+ | 2001 12 20 | 644 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 0.3− | 0.1+ |
| 2001 10 09 | 704 | 0.6− | 0.6+ | 2002 01 09 | 704 | 0.6+ | 0.7+ | 2006 09 01 | 704 | 0.0 | 0.8+ |
| 2001 10 09 | 704 | 0.4− | 0.5+ | 2002 01 09 | 704 | 0.6− | 0.7+ | 2006 09 06 | 644 | 0.1− | 0.3+ |
| 2001 10 19 | 704 | 0.3+ | 0.3+ | 2002 01 09 | 704 | (0.2+ | 1.9+) | 2006 09 06 | 644 | 0.2− | 0.3+ |
| 2001 10 19 | 704 | 0.1+ | 0.7− | 2002 01 09 | 704 | 0.4+ | 0.7+ | 2006 09 06 | 644 | 0.1+ | 0.1+ |
| 2001 10 19 | 704 | 0.6− | 1.1− | 2002 01 21 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 703 | 0.3+ | 0.2+ |
| 2001 10 19 | 704 | 0.9+ | 0.7− | 2002 01 21 | 704 | 0.2+ | 0.4− | 2006 09 16 | 703 | 0.6+ | 0.9− |
| 2001 10 19 | 704 | 0.1+ | 0.1− | 2002 01 21 | 704 | 0.7− | 1.0+ | 2006 09 16 | 703 | 0.5+ | 0.7− |
| 2001 11 11 | 699 | 0.2+ | 0.2− | 2003 01 25 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.4− |
| 2001 11 11 | 699 | 0.6+ | 0.2− | 2003 01 25 | 644 | 0.8+ | 0.1+ | 2006 09 21 | 699 | 1.3− | 0.3+ |
| 2001 11 11 | 699 | 0.4+ | 0.0 | 2003 01 25 | 644 | 0.3+ | 0.1+ | 2006 09 21 | 699 | 0.9− | 0.3+ |
| 2001 11 11 | 644 | 0.3+ | 0.4− | 2003 01 28 | 704 | 0.3+ | 0.2− | 2006 09 21 | 699 | 0.8+ | 0.2+ |
| 2001 11 11 | 699 | 1.3+ | 0.3+ | 2003 01 28 | 704 | 0.4− | 0.1− | 2006 09 21 | 699 | 0.1+ | 0.7+ |
| 2001 11 11 | 644 | 0.4+ | 0.3− | 2003 01 28 | 704 | 0.9− | 0.8− | 2006 09 27 | 703 | 0.4+ | 0.3− |
| 2001 11 11 | 644 | 0.1− | 0.3− | 2003 01 28 | 704 | 0.5− | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.2− | 2003 02 04 | 644 | 0.4+ | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.2− | 0.1− | 2003 02 04 | 644 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.4− | 0.3− | 2003 02 04 | 644 | 0.1+ | 0.2+ | 2006 10 26 | 703 | 0.8− | 0.2+ |
| 2001 11 12 | 704 | 0.5− | 0.3− | 2004 03 16 | E12 | 0.1− | 0.5+ | 2006 10 26 | 703 | 0.5− | 0.0 |
| 2001 11 12 | 704 | 0.6− | 0.5− | 2004 03 16 | E12 | 0.8+ | 0.3+ | 2006 10 26 | 703 | (0.9+ | 2.6−) |
| 2001 11 21 | 704 | 0.2+ | 0.6− | 2004 03 16 | E12 | 1.0− | 0.6+ | 2006 10 26 | 703 | (0.1− | 1.9−) |
| 2001 11 21 | 704 | 0.4+ | 0.8− | 2004 03 16 | E12 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.7+ |
| 2001 11 21 | 704 | 0.2+ | 0.3− | 2004 03 26 | 704 | 0.3− | 0.2− | 2006 11 14 | 703 | 0.6+ | 0.8+ |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2004 03 26 | 704 | 0.2+ | 0.7+ | 2006 11 14 | 703 | 0.1− | 1.1− |
| 2001 11 21 | 704 | 0.2− | 0.7− | 2004 03 26 | 704 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.3− | 0.6+ |
| 2001 11 24 | 704 | (0.7− | 1.9−) | 2004 04 13 | 644 | 0.0 | 0.4+ | | | | |
| 2001 11 24 | 704 | 0.6− | 1.3− | 2004 04 13 | 644 | 0.2+ | 0.4+ | | | | |

**(141147)∗ 2001 XT$_{106}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.67565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22335103 | $\omega$ | 49.85338 | | +0.83621558 | +0.51863965 | |
| $a$ | 2.6903622 | $\Omega$ | 278.20411 | | −0.54179067 | +0.73100137 | |
| $e$ | 0.1827295 | $i$ | 10.37243 | | −0.08489038 | +0.44345227 | |
| $P$ | 4.41 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.4− | 0.2+ | 2004 05 22 | 704 | 0.2− | 0.4+ | 2005 10 29 | 703 | 0.0 | 0.1+ |
| 2001 11 11 | 704 | 0.0 | 0.1− | 2004 05 22 | 704 | (1.8+ | 0.3−) | 2005 10 29 | 703 | 0.2− | 0.6+ |
| 2001 11 11 | 704 | 0.1− | 0.0 | 2005 08 09 | 704 | 0.4+ | 0.3− | 2005 10 29 | 703 | 0.6− | 0.0 |
| 2001 11 11 | 704 | 1.2+ | 1.3+ | 2005 08 09 | 704 | 0.5+ | 0.1+ | 2005 11 01 | 699 | 0.1− | 0.5− |
| 2001 11 24 | 704 | (0.1+ | 1.6+) | 2005 08 09 | 704 | 0.4− | 0.9+ | 2005 11 01 | 699 | 0.5− | 0.5− |
| 2001 11 24 | 704 | 0.1+ | 0.9− | 2005 08 09 | 704 | (1.8− | 0.3+) | 2005 11 01 | 699 | 0.4− | 0.3− |
| 2001 11 24 | 704 | 0.3− | 0.7− | 2005 08 09 | 704 | (1.9+ | 1.0+) | 2005 11 01 | 699 | 0.4+ | 0.1+ |
| 2001 11 24 | 704 | 0.6+ | 0.2− | 2005 09 01 | 704 | 0.5+ | 0.7+ | 2005 11 03 | 704 | 0.3+ | 0.2− |
| 2001 11 24 | 704 | 0.5− | 0.0 | 2005 09 01 | 704 | 1.0+ | 0.5+ | 2005 11 03 | 704 | 0.4− | 0.1− |
| 2001 12 10 | 704 | 0.6+ | 0.8+ | 2005 09 01 | 704 | 0.0 | 0.6− | 2005 11 03 | 704 | 1.0+ | 0.3− |
| 2001 12 10 | 704 | 0.6+ | 0.5+ | 2005 09 01 | 704 | 0.3− | 0.2+ | 2005 11 03 | 704 | 0.3− | 0.5+ |
| 2001 12 10 | 704 | 0.7+ | 0.7+ | 2005 09 01 | 644 | 0.3− | 0.1+ | 2005 11 03 | 704 | (1.9+ | 0.3+) |
| 2001 12 10 | 704 | 0.8+ | 0.0 | 2005 09 01 | 644 | 0.3− | 0.0 | 2005 11 03 | 704 | 0.5+ | 0.6+ |
| 2001 12 17 | 704 | 0.2+ | 0.2− | 2005 09 01 | 644 | 0.3− | 0.0 | 2005 11 06 | 704 | 0.5+ | 0.1+ |
| 2001 12 17 | 704 | 0.6− | 0.4− | 2005 09 10 | 699 | 0.3+ | 0.3+ | 2005 11 06 | 704 | 0.4+ | 0.4+ |
| 2001 12 17 | 704 | 0.2− | 0.9+ | 2005 09 10 | 699 | 0.0 | 0.2+ | 2005 11 06 | 704 | 0.1− | 0.5+ |
| 2002 01 08 | 704 | 0.1+ | 0.8+ | 2005 09 10 | 699 | 0.1+ | 0.5− | 2005 11 06 | 704 | 0.8+ | 0.4+ |
| 2002 01 08 | 704 | 0.2+ | 0.3− | 2005 09 13 | 704 | (0.7− | 1.7−) | 2005 11 06 | 704 | 0.7+ | 0.2− |
| 2002 01 08 | 704 | 0.9− | 0.3− | 2005 09 13 | 704 | 0.0 | 0.8− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2002 01 08 | 704 | 0.8− | 0.5− | 2005 09 13 | 704 | 0.1− | 0.8− | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2002 01 08 | 704 | 0.2− | 0.0 | 2005 09 13 | 704 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.5− | 0.1+ | 2005 09 13 | 704 | 0.4− | 0.8− | 2006 09 25 | G96 | 0.4− | 0.8− |
| 2002 01 14 | 704 | 0.1− | 0.8+ | 2005 10 05 | 703 | 0.3− | 0.3− | 2006 10 03 | G96 | 0.3− | 0.3− |
| 2002 01 14 | 704 | 0.6− | 0.6+ | 2005 10 05 | 703 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.6+ | 0.3− |
| 2002 01 14 | 704 | 0.6− | 0.6+ | 2005 10 05 | 703 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2004 03 17 | E12 | (0.4+ | 2.0−) | 2005 10 05 | 703 | 0.6− | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2004 03 17 | E12 | 1.2+ | 1.3− | 2005 10 13 | 704 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | E12 | 0.2+ | 0.5− | 2005 10 13 | 704 | 0.8+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.0 | | |
| 2004 03 17 | E12 | (0.6+ | 2.2−) | 2005 10 13 | 704 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.3+ | | |
| 2004 04 20 | E12 | (1.0− | 1.7+) | 2005 10 13 | 704 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.6− | | |
| 2004 04 20 | E12 | 0.3− | 0.7+ | 2005 10 13 | 704 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.4− | | |
| 2004 04 20 | E12 | 0.7+ | 0.5+ | 2005 10 23 | 644 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.4− | 0.0 | | |
| 2004 04 20 | E12 | (1.1− | 1.9+) | 2005 10 23 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2004 05 13 | 703 | 0.7− | 0.1+ | 2005 10 23 | 644 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.6− | 0.3− | | |
| 2004 05 13 | 703 | 0.1+ | 0.8− | 2005 10 23 | 703 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2004 05 13 | 703 | 1.0− | 1.3+ | 2005 10 23 | 703 | 0.9− | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2004 05 13 | 703 | 0.0 | 0.7+ | 2005 10 23 | 703 | 0.3− | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1+ | | |
| 2004 05 22 | 704 | 0.8+ | 0.2+ | 2005 10 23 | 703 | 0.1− | 1.3− | 2006 10 31 | G96 | 0.3− | 0.3+ | | |
| 2004 05 22 | 704 | 0.1+ | 0.3+ | 2005 10 29 | 703 | 0.7− | 0.5+ | | | | | | |

**(141148)∗ 2001 XV$_{106}$ = 2001 XL$_{255}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 314.23232 | | (2000.0) | | | |
| *n* | 0.18336180 | $\omega$ | 197.40913 | | +0.25639620 | −0.96528487 |
| *a* | 3.0685284 | $\Omega$ | 237.76062 | | +0.89368029 | +0.25639753 |
| *e* | 0.1016013 | *i* | 3.37950 | | +0.36823435 | +0.04985400 |
| *P* | 5.38 | *H* | 15.8 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 691 | 0.1− | 0.0 | 2001 12 20 | 704 | 0.7− | 0.3− | 2006 10 21 | 703 | 1.3− | 1.5+ | | |
| 1998 04 23 | 691 | 0.3+ | 0.6+ | 2002 01 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.1− | 0.3+ | | |
| 1998 04 23 | 691 | 0.7+ | 0.8+ | 2002 01 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.1− | | |
| 2001 11 09 | 704 | 0.4+ | 0.3+ | 2002 01 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.4+ | | |
| 2001 11 09 | 704 | 0.3− | 0.3+ | 2003 04 05 | 691 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2001 11 09 | 704 | 0.1− | 0.2+ | 2003 04 05 | 691 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 11 16 | 691 | 0.1− | 0.0 | 2003 04 05 | 691 | 0.1+ | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 16 | 691 | 0.1− | 0.1− | 2005 06 18 | G96 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.5+ | | |
| 2001 11 16 | 691 | 0.1− | 0.1− | 2005 06 18 | G96 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.2− | | |
| 2001 11 20 | 704 | 0.3+ | 1.2− | 2005 06 18 | G96 | 0.1− | 0.1+ | 2006 11 10 | 291 | 0.5+ | 0.7+ | | |
| 2001 11 20 | 704 | 0.9− | 0.7+ | 2005 06 18 | G96 | 0.1+ | 0.2+ | 2006 11 10 | 291 | 0.1+ | 0.0 | | |
| 2001 11 20 | 704 | 0.7− | 0.2+ | 2005 07 10 | 691 | 0.3− | 0.6+ | 2006 11 10 | 291 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2005 07 10 | 691 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2001 11 21 | 704 | 1.1− | 0.0 | 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2001 11 21 | 704 | (2.3− | 1.6+) | 2005 07 11 | G96 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.6+ | 0.3− | | |
| 2001 11 21 | 704 | (1.8− | 0.8+) | 2005 07 11 | G96 | 0.7− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.2− | | |
| 2001 12 07 | 644 | (4.2− | 0.4+) | 2005 07 11 | G96 | 0.2− | 0.3+ | 2006 11 11 | 291 | 0.0 | 0.1+ | | |
| 2001 12 07 | 644 | (4.0− | 0.8+) | 2005 07 11 | G96 | 0.6− | 0.6+ | 2006 11 11 | 291 | 0.0 | 0.1+ | | |
| 2001 12 07 | 644 | (4.3− | 0.1+) | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 11 | 291 | 0.1+ | 0.1+ | | |
| 2001 12 10 | 704 | 1.0+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 11 | 291 | 0.1− | 0.1+ | | |
| 2001 12 10 | 704 | (0.1+ | 1.7+) | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 11 | 291 | 0.0 | 0.1+ | | |
| 2001 12 10 | 704 | 0.1+ | 1.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 11 | 291 | 0.1+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.9+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2001 12 17 | 704 | 1.4+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.4− | 0.1+ | | |
| 2001 12 17 | 704 | 0.5− | 1.1+ | 2006 10 17 | 703 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.0 | | |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1+ | | |
| 2001 12 20 | 704 | 0.6+ | 0.9− | 2006 10 17 | 703 | 0.3− | 0.6+ | 2006 11 18 | 691 | 0.2+ | 0.3− | | |
| 2001 12 20 | 704 | (0.5+ | 1.5−) | 2006 10 21 | 703 | 0.4− | 0.1+ | | | | | | |

**(141149)∗ 2001 XB$_{107}$ = 1997 CG$_{13}$**

Discovered 2001 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23233)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 340.66461 | | (2000.0) | | | |
| *n* | 0.17082047 | $\omega$ | 49.15849 | | +0.98223346 | −0.18004219 |
| *a* | 3.2169387 | $\Omega$ | 321.12854 | | +0.13653435 | +0.87912679 |
| *e* | 0.1570714 | *i* | 4.83867 | | +0.12874704 | +0.44127190 |
| *P* | 5.77 | *H* | 15.0 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 04 | 691 | 0.3+ | 0.1− | 2001 12 10 | 704 | 0.4+ | 1.0− | 2006 08 21 | 704 | 0.3− | 0.0 | | |
| 1997 02 04 | 691 | 0.2+ | 0.3− | 2001 12 10 | 704 | 0.1− | 0.3− | 2006 08 21 | 704 | 0.3+ | 0.1+ | | |
| 1997 02 04 | 691 | 0.4+ | 0.1− | 2001 12 10 | 704 | 0.4− | 0.6+ | 2006 08 21 | 704 | 0.6+ | 0.3+ | | |
| 1997 02 06 | 691 | 0.3− | 0.6+ | 2001 12 10 | 704 | 0.6− | 0.1+ | 2006 08 21 | 704 | 0.0 | 0.1+ | | |
| 1997 02 06 | 691 | 0.0 | 0.3+ | 2001 12 17 | 704 | 0.3− | 0.4+ | 2006 08 21 | 704 | 0.1+ | 0.0 | | |
| 1997 02 06 | 691 | 0.4− | 0.1+ | 2001 12 17 | 704 | 0.7− | 1.3+ | 2006 08 25 | 704 | 0.6− | 0.1+ | | |
| 1997 02 14 | 691 | 0.0 | 0.3− | 2001 12 17 | 704 | (1.7− | 1.2+) | 2006 08 25 | 704 | 0.1− | 0.6+ | | |
| 1997 02 14 | 691 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.3+ | 0.3− | 2006 08 25 | 704 | 0.1− | 1.2+ | | |
| 1997 02 14 | 691 | 0.2+ | 0.4− | 2003 01 27 | 704 | 0.8+ | 0.1+ | 2006 08 25 | 704 | 0.3− | 0.2+ | | |
| 1998 03 24 | 691 | 0.3+ | 0.3− | 2003 01 27 | 704 | 1.4+ | 0.0 | 2006 08 25 | 704 | 0.5− | 0.9+ | | |
| 1998 03 24 | 691 | 0.4+ | 0.3+ | 2003 01 27 | 704 | (2.1+ | 0.4+) | 2006 08 29 | 691 | 0.3− | 0.1+ | | |
| 1998 03 24 | 691 | 0.4+ | 0.3+ | 2003 02 03 | 291 | 0.1− | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.2+ | | |
| 2000 07 24 | 691 | 0.3− | 0.3+ | 2003 02 03 | 291 | 0.4− | 0.6+ | 2006 08 29 | 691 | 0.3− | 0.0 | | |
| 2000 07 24 | 691 | 0.4− | 0.3+ | 2003 02 03 | 291 | 0.2+ | 1.1+ | 2006 09 14 | 703 | 0.5− | 0.2− | | |
| 2000 07 24 | 691 | 0.4− | 0.2+ | 2003 02 04 | 291 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.5− | 0.3− | | |
| 2001 10 15 | 704 | 0.1+ | 0.3− | 2003 02 04 | 291 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.5− | 0.2+ | | |
| 2001 10 15 | 704 | 0.8+ | 0.3− | 2003 02 04 | 291 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.2+ | | |
| 2001 10 15 | 704 | 0.1+ | 0.1− | 2003 02 06 | 291 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.6+ | | |
| 2001 11 11 | 704 | 0.8+ | 0.4+ | 2003 02 06 | 291 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 1.2+ | 0.8+ | | |
| 2001 11 11 | 704 | 0.4+ | 0.3+ | 2003 02 06 | 291 | 0.1− | 0.4+ | 2006 09 20 | 704 | 1.3+ | 0.6+ | | |
| 2001 11 11 | 704 | 0.9+ | 0.1+ | 2006 08 01 | A50 | 0.4+ | 0.1− | 2006 09 20 | 704 | 1.2+ | 0.8+ | | |
| 2001 11 11 | 704 | 0.2+ | 1.3+ | 2006 08 01 | A50 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.1− | 1.3+ | | |
| 2001 11 11 | 704 | 0.2+ | 0.9+ | 2006 08 14 | 958 | 0.2− | 0.9+ | 2006 09 27 | 704 | 0.4+ | 1.3+ | | |
| 2001 11 21 | 704 | 0.0 | 1.0− | 2006 08 14 | 958 | 0.9+ | 0.8− | 2006 09 27 | G96 | 0.1+ | 0.1− | | |
| 2001 11 21 | 704 | (0.1− | 1.9−) | 2006 08 15 | 958 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.1+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.4− | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.1− | | |
| 2001 11 21 | 704 | (0.4− | 3.8−) | 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− | | |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.1− | | |
| 2001 11 24 | 704 | (0.4− | 1.7−) | 2006 08 18 | 699 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 1.7− | | |
| 2001 11 24 | 704 | 0.1+ | 1.5− | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.7+ | | |
| 2001 11 24 | 704 | 0.6− | 1.3− | 2006 08 18 | 699 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.9+ | | |
| 2001 11 24 | 704 | 0.8+ | 0.3− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.6− | | |
| 2001 11 24 | 704 | 0.2+ | 0.9− | 2006 08 18 | 699 | 1.1− | 0.9+ | | | | | | |
| 2001 11 24 | 704 | 0.7− | 0.7+ | 2006 08 18 | 644 | 0.1+ | 0.0 | | | | | | |

**(141150)∗ 2001 XK$_{109}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 286.40294 | | (2000.0) | | | |
| *n* | 0.17893252 | $\omega$ | 167.86223 | | −0.25418718 | −0.95708202 |
| *a* | 3.1189604 | $\Omega$ | 296.72725 | | +0.87380054 | −0.16555693 |
| *e* | 0.0688149 | *i* | 8.96765 | | +0.41456180 | −0.23787584 |
| *P* | 5.51 | *H* | 14.9 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1− | 0.3+ | 2002 01 08 | 704 | 0.2− | 1.2+ | 2005 08 31 | 691 | 0.2− | 0.4+ | | |
| 2001 11 11 | 704 | 0.2− | 0.2− | 2002 01 08 | 704 | 0.4+ | 0.2− | 2005 09 13 | 691 | 0.1+ | 0.1− | | |
| 2001 11 11 | 704 | 0.6− | 0.4− | 2002 01 08 | 704 | 0.3+ | 0.9+ | 2005 09 13 | 691 | 0.1− | 0.3+ | | |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2003 03 07 | 704 | 0.6+ | 0.9+ | 2005 09 13 | 691 | 0.0 | 0.4+ | | |
| 2001 11 11 | 704 | 0.0 | 0.2− | 2003 03 07 | 704 | 0.7+ | 0.0 | 2006 09 17 | 703 | 1.1− | 0.2+ | | |
| 2001 12 09 | 704 | 0.7+ | 0.4+ | 2003 03 07 | 704 | 0.9+ | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.6+ | | |
| 2001 12 09 | 704 | 0.9+ | 0.1− | 2003 03 07 | 704 | 1.0+ | 1.4+ | 2006 09 17 | 703 | 0.1− | 0.0 | | |
| 2001 12 09 | 704 | (2.5− | 1.2+) | 2003 03 07 | 704 | 0.4− | 1.2+ | 2006 09 17 | 703 | (1.8− | 0.9+) | | |
| 2001 12 09 | 704 | 0.2+ | 0.9− | 2003 03 07 | 704 | 0.1+ | 1.2+ | 2006 09 28 | 703 | 0.4− | 0.3− | | |
| 2001 12 11 | 704 | 0.4− | 0.6+ | 2003 03 07 | 704 | 0.8+ | 0.6+ | 2006 09 28 | 703 | 0.7− | 0.2+ | | |
| 2001 12 11 | 704 | 0.4− | 0.5+ | 2003 03 07 | 704 | 1.0+ | 0.1+ | 2006 09 28 | 703 | 0.3+ | 0.3+ | | |
| 2001 12 11 | 704 | 0.5− | 0.8+ | 2003 03 07 | 704 | 0.2− | 1.3+ | 2006 09 28 | 703 | 0.9+ | 0.2− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | (1.8− | 0.5+) | 2003 03 10 | 699 | (1.3+ | 1.6+) | 2006 10 18 | A50 | 0.2+ | 0.4− |
| 2001 12 11 | 704 | 0.5− | 0.2+ | 2003 03 10 | 699 | 0.3− | 0.0 | 2006 10 18 | A50 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2003 03 10 | 699 | 0.0 | 1.0+ | 2006 10 19 | 703 | 1.3− | 1.2+ |
| 2001 12 17 | 704 | 0.0 | 0.3+ | 2003 03 10 | 699 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.3− |
| 2001 12 17 | 704 | 0.7+ | 0.0 | 2005 06 28 | 644 | 0.0 | 0.3+ | 2006 10 19 | 703 | (1.6− | 4.6+) |
| 2001 12 17 | 704 | 0.2+ | 0.4+ | 2005 06 28 | 644 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2001 12 17 | 704 | 0.7+ | 0.5+ | 2005 06 28 | 644 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 12 22 | 704 | 0.8+ | 1.3− | 2005 06 30 | 644 | 0.7− | 0.7+ | 2006 10 23 | 644 | 0.4− | 0.2− |
| 2001 12 22 | 704 | 0.2− | 0.7− | 2005 06 30 | 644 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2001 12 22 | 704 | 1.2− | 0.2+ | 2005 06 30 | 644 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.7− |
| 2001 12 22 | 704 | (1.8+ | 1.3−) | 2005 07 05 | 644 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.7+ | 0.1− |
| 2001 12 25 | 291 | 0.1− | 0.1+ | 2005 07 05 | 644 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 1.1+ | 0.5− |
| 2001 12 25 | 291 | 0.0 | 0.0 | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2001 12 25 | 291 | 0.1− | 0.1+ | 2005 08 25 | 644 | 0.7+ | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.7− |
| 2001 12 25 | 291 | 0.0 | 0.1+ | 2005 08 25 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.3+ | 0.5+ |
| 2001 12 25 | 291 | 0.1+ | 0.1+ | 2005 08 25 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.7+ | 0.3− |
| 2001 12 25 | 291 | 0.0 | 0.1+ | 2005 08 31 | 691 | 0.5− | 0.3+ | 2006 11 15 | 703 | 1.0− | 1.2+ |
| 2002 01 08 | 704 | 0.7− | 1.4+ | 2005 08 31 | 691 | 0.2− | 0.4+ | | | | |

**(141151)∗ 2001 XG$_{110}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.64781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18694577 | $\omega$ | 359.44279 | | +0.01908185 | −0.98582804 | |
| $a$ | 3.0291838 | $\Omega$ | 89.45604 | | +0.91795858 | −0.04878723 | |
| $e$ | 0.0344017 | $i$ | 9.59471 | | +0.39621703 | +0.16050818 | |
| $P$ | 5.27 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 644 | 0.3− | 0.6+ | 2002 01 13 | 704 | 0.4− | 0.6+ | 2006 09 29 | 699 | 1.0+ | 1.3+ |
| 2001 10 25 | 644 | 0.2− | 0.5+ | 2002 01 13 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 1.4− | 0.4− |
| 2001 10 25 | 644 | 0.1+ | 0.6+ | 2002 01 13 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.7− | 0.9+ |
| 2001 11 17 | 704 | 0.3+ | 1.0+ | 2002 01 13 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.5− | 0.4− |
| 2001 11 17 | 704 | 0.0 | 1.2− | 2003 01 26 | 608 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 2001 11 17 | 704 | 1.2+ | 0.7− | 2003 01 26 | 608 | 0.9+ | 1.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 11 19 | 699 | 0.3− | 0.5+ | 2003 01 26 | 608 | 0.9+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 11 19 | 699 | (2.2− | 1.2−) | 2003 01 31 | 704 | (0.2− | 2.2+) | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.3− | 0.8+ | 2003 01 31 | 704 | 1.0+ | 1.2+ | 2006 10 16 | 703 | 0.7+ | 0.0 |
| 2001 11 19 | 699 | 0.4− | 1.0− | 2003 01 31 | 704 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2001 12 11 | 704 | 0.8+ | 0.9− | 2004 04 20 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | (1.5− | 1.0−) |
| 2001 12 11 | 704 | 0.8+ | 0.4+ | 2004 04 20 | 704 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.8− | 0.5− |
| 2001 12 11 | 704 | 0.5+ | 1.0− | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | (0.5− | 1.6+) |
| 2001 12 11 | 704 | 0.3+ | 0.2− | 2004 04 20 | 704 | 0.5− | 0.7+ | 2006 10 22 | 703 | (2.1− | 1.4+) |
| 2001 12 17 | 704 | 0.5− | 0.5+ | 2004 05 18 | 704 | 0.7+ | 1.0− | 2006 10 22 | 703 | 0.8+ | 1.1+ |
| 2001 12 17 | 704 | 1.1− | 0.1− | 2004 05 18 | 704 | 1.0+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.3+ |
| 2001 12 17 | 704 | 0.7− | 0.8+ | 2004 05 18 | 704 | 0.5+ | 0.8+ | 2006 11 13 | 703 | 0.4− | 0.7+ |
| 2001 12 17 | 704 | 0.8+ | 0.1− | 2004 06 16 | 691 | 0.0 | 0.6+ | 2006 11 13 | 703 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | (1.8− | 1.3+) | 2004 06 16 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 1.2− | 0.9+ |
| 2001 12 18 | 644 | 0.3− | 0.3+ | 2004 06 16 | 691 | 0.1− | 0.6+ | 2006 11 13 | 703 | 1.0− | 0.3− |
| 2001 12 18 | 644 | 0.3− | 0.5+ | 2005 07 03 | 644 | 0.3+ | 0.5+ | 2006 11 17 | 644 | 0.3− | 0.0 |
| 2001 12 18 | 644 | 0.2− | 0.3+ | 2005 07 03 | 644 | 0.4+ | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2001 12 20 | 704 | 0.4− | 0.7− | 2005 07 03 | 644 | 0.5+ | 0.5+ | 2006 11 17 | 644 | 0.2− | 0.2− |
| 2001 12 20 | 704 | 0.5− | 0.2− | 2005 07 26 | 644 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.5+ | 0.8+ |
| 2001 12 20 | 704 | 0.3+ | 1.3− | 2005 07 26 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.0 |
| 2001 12 20 | 704 | 0.3− | 0.8+ | 2005 07 26 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.0 |
| 2002 01 08 | 644 | 0.0 | 0.0 | 2006 09 29 | 699 | (1.9+ | 0.8+) | 2006 11 19 | 703 | 0.2− | 0.8+ |
| 2002 01 08 | 644 | 0.2− | 0.9+ | 2006 09 29 | 699 | 0.6− | 1.1+ | | | | |
| 2002 01 08 | 644 | 0.7+ | 0.6− | 2006 09 29 | 699 | 0.4+ | 0.1− | | | | |

**(141152)∗ 2001 XX$_{111}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.55711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18050229 | $\omega$ | 230.06837 | | −0.28577105 | −0.93248637 | |
| $a$ | 3.1008510 | $\Omega$ | 237.88556 | | +0.93941610 | −0.22705785 | |
| $e$ | 0.0860014 | $i$ | 15.11908 | | +0.18929422 | −0.28091620 | |
| $P$ | 5.46 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 699 | 1.1− | 0.9+ | 2001 12 17 | 704 | 0.8− | 0.4+ | 2006 10 19 | 703 | 0.4+ | 1.1− |
| 2000 09 22 | 699 | 0.2− | 0.6− | 2001 12 17 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2000 09 22 | 699 | 0.1− | 0.4− | 2001 12 17 | 704 | 1.1− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2000 09 22 | 699 | 1.0+ | 0.5+ | 2001 12 17 | 704 | 1.2− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.1− | 0.9− | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2000 10 04 | 704 | 0.1− | 0.4+ | 2001 12 18 | 704 | 0.8− | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.2− |
| 2000 10 04 | 704 | 0.5+ | 0.0 | 2001 12 18 | 704 | 0.4− | 0.9− | 2006 10 27 | 703 | 0.7− | 1.1− |
| 2000 10 04 | 704 | 0.2− | 1.5+ | 2002 01 06 | 699 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.7− | 0.5+ |
| 2000 10 04 | 704 | 0.3− | 0.8+ | 2002 01 06 | 699 | (2.4+ | 0.6−) | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2000 10 04 | 704 | 0.2− | 0.3+ | 2002 01 06 | 699 | 0.1− | 0.5+ | 2006 11 07 | 644 | 0.1− | 0.2− |
| 2001 08 27 | 644 | (1.8+ | 0.1−) | 2002 01 06 | 699 | 1.1+ | 1.4+ | 2006 11 07 | 644 | 0.1− | 0.6+ |
| 2001 08 27 | 644 | 1.4+ | 0.3+ | 2002 01 08 | 644 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.1+ |
| 2001 08 27 | 644 | 1.2+ | 0.2− | 2002 01 08 | 644 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.4− |
| 2001 10 24 | 704 | 0.4+ | 0.2+ | 2002 01 08 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.5− |
| 2001 10 24 | 704 | 0.2− | 0.6− | 2002 01 09 | 704 | 0.5− | 0.8− | 2006 11 14 | 703 | 0.2+ | 0.4+ |
| 2001 10 24 | 704 | 0.3+ | 0.3+ | 2002 01 09 | 704 | 0.8− | 0.2− | 2006 11 14 | 703 | 0.7+ | 0.3+ |
| 2001 10 24 | 704 | 0.7+ | 0.2− | 2002 01 09 | 704 | 0.1+ | 1.0− | 2006 11 14 | 703 | 0.6+ | 0.5+ |
| 2001 10 24 | 704 | 0.2+ | 0.1+ | 2002 01 09 | 704 | 1.3+ | 0.6− | 2006 11 14 | 703 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 1.3+ | 0.2− | 2002 01 11 | 699 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 1.0+ | 0.4+ | 2002 01 11 | 699 | (0.4− | 1.6−) | 2006 11 19 | 704 | 0.6+ | 0.6+ |
| 2001 11 20 | 704 | 1.1+ | 0.2− | 2002 01 11 | 699 | (1.6− | 0.5+) | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | (0.4+ | 2.9−) | 2002 01 11 | 699 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.8+ |
| 2001 11 20 | 704 | 0.5− | 1.0− | 2005 06 30 | 644 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 0.3− | 1.0+ | 2005 06 30 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | (1.8+ | 1.4+) | 2005 06 30 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2001 11 24 | 704 | 0.9− | 1.0+ | 2005 07 08 | 703 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.0 |
| 2001 11 24 | 704 | 0.6+ | 0.3− | 2005 07 08 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.5− | 0.9+ |
| 2001 11 24 | 704 | 0.7+ | 0.6+ | 2005 07 08 | 703 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.7− | 0.7+ |
| 2001 12 11 | 704 | (3.1+ | 0.2−) | 2005 07 08 | 703 | 0.2− | 0.5+ | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2001 12 11 | 704 | (3.5+ | 0.4+) | 2005 08 29 | 644 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2001 12 11 | 704 | (4.0+ | 0.3−) | 2005 08 29 | 644 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 12 11 | 704 | (3.8+ | 0.1+) | 2005 08 29 | 644 | 0.5+ | 0.1− | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2001 12 11 | 704 | (4.0+ | 0.3−) | 2006 10 19 | 703 | 0.1+ | 0.2− | | | | |
| 2001 12 17 | 704 | 0.7− | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.2− | | | | |

**(141153)∗ 2001 XB$_{112}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.41838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18300578 | $\omega$ | 305.59313 | | +0.24592996 | −0.96829063 | |
| $a$ | 3.0725067 | $\Omega$ | 130.10931 | | +0.90685800 | +0.21384341 | |
| $e$ | 0.2046114 | $i$ | 3.29439 | | +0.34223824 | +0.12916754 | |
| $P$ | 5.39 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3− | 0.3− | 2002 01 13 | 704 | 1.1− | 1.4+ | 2006 10 02 | G96 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.3+ | 0.7− | 2002 01 13 | 704 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.1+ | 0.3− | 2002 01 13 | 704 | (2.0− | 0.2−) | 2006 10 10 | 644 | 0.3− | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.4− | 2002 01 13 | 704 | 1.4− | 0.4+ | 2006 10 10 | 644 | 0.5− | 0.5+ |
| 2001 11 20 | 704 | 0.1− | 0.7− | 2003 03 26 | 691 | 0.6− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.5+ |
| 2001 12 11 | 704 | 0.1− | 0.4+ | 2003 03 26 | 691 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.7+ |
| 2001 12 11 | 704 | 0.2+ | 0.1+ | 2003 03 26 | 691 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2001 12 11 | 704 | 0.4+ | 0.1+ | 2003 04 07 | 691 | 0.5+ | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.7+ |
| 2001 12 11 | 704 | 0.5+ | 0.4+ | 2003 04 07 | 691 | 1.4+ | 0.8+ | 2006 10 15 | 703 | 0.3+ | 0.1+ |
| 2001 12 14 | 704 | 1.2− | 0.6− | 2003 04 07 | 691 | 0.6+ | 1.1+ | 2006 10 15 | 703 | 0.5− | 0.6− |
| 2001 12 14 | 704 | 1.1− | 0.6− | 2005 07 07 | 568 | 0.4− | 0.9+ | 2006 10 15 | 703 | (0.1− | 1.8+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.7− | 0.8− | 2005 07 07 | 568 | 0.3− | 0.7+ | 2006 10 15 | 703 | 0.5− | 0.5+ | | |
| 2001 12 14 | 704 | (0.0 | 2.9−) | 2005 07 07 | 568 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.5+ | | |
| 2001 12 14 | 704 | (1.2− | 3.3−) | 2005 07 08 | 568 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.5+ | | |
| 2001 12 17 | 644 | 0.6+ | 1.3+ | 2005 07 10 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.6+ | | |
| 2001 12 17 | 644 | 0.4− | 0.6+ | 2005 07 10 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.2+ | | |
| 2001 12 17 | 704 | 0.5+ | 0.3+ | 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.7+ | | |
| 2001 12 17 | 704 | 0.4+ | 0.0 | 2005 07 15 | G96 | 0.2+ | 0.2+ | 2006 10 21 | 703 | (0.3+ | 2.7−) | | |
| 2001 12 17 | 704 | 1.1+ | 0.1− | 2005 07 15 | G96 | 1.0− | 0.6− | 2006 10 21 | 703 | 0.5− | 0.3− | | |
| 2001 12 17 | 644 | 0.2+ | 1.2+ | 2005 07 15 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.8+ | | |
| 2001 12 17 | 644 | 0.3− | 0.3+ | 2005 07 15 | G96 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 1.1+ | | |
| 2001 12 17 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2001 12 17 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | (1.2− | 2.2+) | 2006 10 22 | G96 | 0.1+ | 0.3+ | | |
| 2001 12 17 | 644 | 0.4+ | 1.2+ | 2006 09 30 | 703 | (1.4+ | 3.5+) | 2006 10 22 | G96 | 0.2+ | 0.1+ | | |
| 2001 12 17 | 644 | 0.1− | 0.6+ | 2006 09 30 | 703 | 1.0− | 0.9+ | 2006 10 22 | G96 | 0.2+ | 0.1+ | | |
| 2001 12 20 | 704 | 0.4+ | 0.7− | 2006 09 30 | 703 | 1.3− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2001 12 20 | 704 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 11 09 | 644 | 0.8+ | 0.9+ | | |
| 2001 12 20 | 704 | 0.0 | 0.4− | 2006 09 30 | 703 | 1.1− | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.8+ | | |
| 2001 12 20 | 704 | 0.3+ | 1.0− | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.5− | 0.9+ | | |
| 2001 12 20 | 704 | 0.0 | 1.1− | 2006 10 02 | G96 | 0.1+ | 0.1+ | | | | | | |
| 2002 01 13 | 704 | 0.2+ | 1.2− | 2006 10 02 | G96 | 0.2+ | 0.3+ | | | | | | |

**(141154)∗ 2001 XZ$_{113}$ = 1989 QR**

Discovered 2001 Dec. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 29738)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.17840 | | (2000.0) | | | |
| $n$ | 0.18035805 | $\omega$ | 279.20917 | | +0.93008394 | +0.24645355 |
| $a$ | 3.1025041 | $\Omega$ | 66.91310 | | −0.08785926 | +0.86926720 |
| $e$ | 0.2401915 | $i$ | 17.22477 | | −0.35668559 | +0.42852676 |
| $P$ | 5.46 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 08 26 | 413 | 0.3+ | 0.1− | 2001 12 23 | 704 | (2.9+ | 3.3−) | 2006 10 12 | 644 | 0.3− | 0.0 | | |
| 1989 08 26 | 413 | 0.6+ | 0.5− | 2001 12 23 | 704 | (3.7+ | 4.2−) | 2006 10 16 | 703 | 0.3+ | 0.0 | | |
| 1989 09 03 | 413 | 0.8− | 0.5− | 2001 12 23 | 704 | (3.0+ | 3.6−) | 2006 10 16 | 703 | 0.2+ | 0.3+ | | |
| 1989 09 03 | 413 | 0.9− | 0.4+ | 2001 12 23 | 704 | (3.6+ | 3.8−) | 2006 10 16 | 703 | 0.1+ | 0.3− | | |
| 1989 09 03 | 413 | 0.9+ | 0.2− | 2001 12 23 | 704 | (3.8+ | 4.0−) | 2006 10 16 | 703 | 0.1+ | 0.5− | | |
| 1989 09 03 | 413 | 0.2+ | 1.4− | 2002 01 08 | 704 | 1.0− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.2− | | |
| 2001 11 11 | 704 | 0.4− | 0.1+ | 2002 01 08 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.0 | | |
| 2001 11 11 | 704 | 0.2+ | 0.6− | 2002 01 08 | 704 | (2.5+ | 1.8+) | 2006 10 22 | 703 | 0.1− | 0.4− | | |
| 2001 11 11 | 704 | 0.8− | 0.1− | 2002 01 15 | 704 | (0.4+ | 1.5−) | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2001 11 11 | 704 | 0.1− | 0.1+ | 2002 01 15 | 704 | 1.3+ | 0.7− | 2006 10 31 | 704 | 0.1− | 0.4+ | | |
| 2001 11 11 | 704 | 0.4− | 0.1+ | 2002 01 15 | 704 | (1.6+ | 1.3−) | 2006 10 31 | 704 | 0.7− | 0.4+ | | |
| 2001 12 13 | 704 | 0.4+ | 0.1+ | 2002 01 15 | 704 | (0.5+ | 2.2−) | 2006 10 31 | 704 | 0.2− | 0.0 | | |
| 2001 12 13 | 704 | 0.1− | 0.1+ | 2003 04 26 | 645 | 0.0 | 0.1− | 2006 10 31 | 704 | 0.4− | 0.3− | | |
| 2001 12 13 | 704 | 0.2− | 0.2+ | 2003 04 26 | 645 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.4− | 0.2− | | |
| 2001 12 13 | 704 | 0.5− | 0.1− | 2006 09 30 | 699 | 0.5+ | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.5+ | | |
| 2001 12 13 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 699 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.8− | | |
| 2001 12 17 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 699 | 1.0+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.5+ | | |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.2− | 0.4+ | 2006 11 19 | 703 | 0.7− | 0.8− | | |
| 2001 12 17 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 1.2+ | 0.6+ | 2006 11 19 | 703 | 0.9− | 0.9− | | |
| 2001 12 17 | 704 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.3+ | 0.5− | 2006 11 19 | 703 | 0.9− | 1.0− | | |
| 2001 12 22 | 704 | 0.9+ | 1.1− | 2006 10 01 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.9− | 0.1− | | |
| 2001 12 22 | 704 | 0.9− | 0.3− | 2006 10 01 | 704 | 0.2− | 0.5− | 2006 11 21 | 704 | 1.4+ | 0.7+ | | |
| 2001 12 22 | 704 | 0.5− | 0.9− | 2006 10 01 | 704 | 0.4− | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.7+ | | |
| 2001 12 22 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6+ | 1.1+ | | |
| 2001 12 22 | 704 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.3+ | | |

**(141155)∗ 2001 XN$_{114}$**

Discovered 2001 Dec. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.65458 | | (2000.0) | | | |
| $n$ | 0.18325551 | $\omega$ | 350.50132 | | +0.88096946 | −0.47053440 |
| $a$ | 3.0697147 | $\Omega$ | 37.69837 | | +0.43930879 | +0.77417894 |
| $e$ | 0.2919613 | $i$ | 4.68082 | | +0.17578563 | +0.42337260 |
| $P$ | 5.38 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.8− | 0.2− | 2006 08 28 | 703 | 0.8+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.2+ | | |
| 1995 08 30 | 809 | 0.6− | 0.1+ | 2006 08 30 | 699 | 0.8− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.1+ | | |
| 1995 08 30 | 809 | 1.3+ | 0.2− | 2006 08 30 | 699 | 0.6− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.3+ | | |
| 1995 08 31 | 809 | 0.8+ | 0.3− | 2006 08 30 | 699 | 0.3− | 0.7+ | 2006 10 21 | 703 | 0.6+ | 0.2+ | | |
| 1995 09 29 | 809 | 0.2− | 1.0− | 2006 08 30 | 699 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 1997 01 09 | 691 | 0.3− | 0.5− | 2006 08 31 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 1997 01 09 | 691 | 0.3− | 0.5− | 2006 08 31 | 704 | 1.2− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 1997 01 09 | 691 | 0.3− | 0.7− | 2006 08 31 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 704 | 0.5− | 0.3+ | | |
| 2001 11 24 | 704 | 1.0− | 0.4+ | 2006 08 31 | 704 | 0.7+ | 0.6− | 2006 10 23 | 704 | 0.3+ | 0.3+ | | |
| 2001 11 24 | 704 | 0.2− | 0.5− | 2006 08 31 | 704 | 0.0 | 1.2+ | 2006 10 23 | 704 | 0.2− | 0.5+ | | |
| 2001 11 24 | 704 | 0.1− | 0.4− | 2006 08 31 | 704 | (1.6+ | 1.1−) | 2006 10 23 | 704 | 0.4− | 0.1+ | | |
| 2001 11 24 | 704 | 0.2− | 0.8− | 2006 08 31 | 704 | 1.0+ | 0.0 | 2006 10 23 | 704 | 0.4− | 0.1+ | | |
| 2001 11 24 | 704 | 0.6− | 0.3− | 2006 08 31 | 704 | (1.8+ | 0.9−) | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2001 12 13 | 704 | 0.1+ | 0.5+ | 2006 09 15 | 644 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 2001 12 13 | 704 | 1.2+ | 0.1+ | 2006 09 15 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− | | |
| 2001 12 13 | 704 | 0.7+ | 0.2− | 2006 09 15 | 644 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.4− | | |
| 2001 12 13 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.3− | 0.4+ | | |
| 2001 12 17 | 704 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2001 12 17 | 704 | 0.1− | 0.2− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.1− | 0.2+ | | |
| 2001 12 17 | 704 | 0.7+ | 0.3− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 28 | 704 | 0.1+ | 0.3− | | |
| 2001 12 17 | 704 | 0.3− | 0.0 | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.3+ | | |
| 2001 12 20 | 704 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.4+ | 0.1− | 2006 10 28 | 704 | 0.3+ | 0.2− | | |
| 2001 12 20 | 704 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 10 28 | 704 | 0.0 | 0.3− | | |
| 2001 12 20 | 704 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.0 | | |
| 2001 12 20 | 704 | 0.6+ | 0.4+ | 2006 09 27 | 704 | 1.0+ | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2001 12 20 | 704 | 0.2+ | 0.6− | 2006 09 27 | 704 | 1.2− | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2001 12 20 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 704 | 0.4+ | 0.0 | 2006 11 09 | 958 | 0.4− | 0.1+ | | |
| 2001 12 20 | 704 | 0.3+ | 0.6− | 2006 09 28 | 704 | 0.7+ | 0.4− | 2006 11 09 | 958 | 0.8− | 0.2− | | |
| 2001 12 20 | 704 | 0.2+ | 0.6+ | 2006 09 28 | 704 | (0.0 | 1.6−) | 2006 11 09 | 958 | (1.3+ | 2.2+) | | |
| 2001 12 20 | 704 | 0.6+ | 0.5− | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.0 | | |
| 2001 12 20 | 704 | 0.6+ | 0.8+ | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.2− | | |
| 2001 12 22 | 704 | (1.7+ | 0.8−) | 2006 09 28 | 691 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 2001 12 22 | 704 | (1.3+ | 2.0−) | 2006 10 03 | 704 | 0.2− | 0.9+ | 2006 11 11 | 703 | 0.8− | 0.0 | | |
| 2001 12 22 | 704 | (1.9+ | 1.1−) | 2006 10 03 | 704 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.3+ | 0.4− | | |
| 2001 12 22 | 704 | (1.0+ | 1.8−) | 2006 10 03 | 704 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2002 01 08 | 704 | 0.7− | 1.0+ | 2006 10 03 | 704 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.3− | | |
| 2002 01 08 | 704 | 0.8− | 0.2+ | 2006 10 03 | 704 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.4− | | |
| 2002 01 08 | 704 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.8+ | 0.3− | | |
| 2002 01 08 | 704 | 0.4− | 1.0+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.3− | | |
| 2002 01 08 | 704 | 0.8− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.2− | | |
| 2002 01 15 | 704 | 0.4+ | 1.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 1.3+ | 0.6+ | | |
| 2002 01 15 | 704 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.3+ | | |
| 2002 01 15 | 704 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.1− | | |
| 2003 04 07 | 691 | 0.5+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.7+ | | |
| 2003 04 07 | 691 | 0.1− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.6+ | | |
| 2003 04 07 | 691 | 0.6+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2004 04 24 | 691 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.4+ | | |
| 2004 04 24 | 691 | 0.7+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.8+ | | |
| 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3− | 0.4+ | | |
| 2006 08 21 | 704 | 0.2+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.5− | | |
| 2006 08 21 | 704 | 0.4− | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.2+ | | |
| 2006 08 21 | 704 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.5+ | 0.1+ | | |
| 2006 08 21 | 704 | 0.2− | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 20 | G96 | 1.2+ | 0.3− | | |
| 2006 08 21 | 704 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.4+ | | |
| 2006 08 25 | 704 | 0.1+ | 1.3+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.4− | | |
| 2006 08 25 | 704 | 0.8+ | 1.0+ | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.2− | | |
| 2006 08 25 | 704 | 0.6+ | 0.5+ | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4+ | | |
| 2006 08 25 | 704 | (0.4− | 1.6+) | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.5+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2006 08 28 | 703 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2006 08 28 | 703 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.1− |

**(141156)∗ 2001 XN$_{116}$**

Discovered 2001 Dec. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.86128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17376296 | $\omega$ | 99.89528 | | +0.03769290 | −0.99917732 | |
| $a$ | 3.1805184 | $\Omega$ | 347.91432 | | +0.88654518 | +0.04034629 | |
| $e$ | 0.1602044 | $i$ | 4.09845 | | +0.46110399 | +0.00410556 | |
| $P$ | 5.67 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.1− | 0.0 | 2002 01 14 | 704 | 0.7+ | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.2+ |
| 1995 11 18 | 691 | 0.0 | 0.0 | 2002 01 14 | 704 | 1.2+ | 0.0 | 2006 09 15 | 691 | 0.8− | 0.2+ |
| 1995 11 18 | 691 | 0.1+ | 0.0 | 2002 01 14 | 704 | 0.7+ | 0.6+ | 2006 09 15 | 691 | 0.2− | 0.5+ |
| 2001 12 13 | 704 | 1.1− | 0.4− | 2002 01 14 | 704 | 0.8+ | 0.0 | 2006 09 15 | 691 | 0.4− | 0.6+ |
| 2001 12 13 | 704 | 0.2− | 0.2− | 2002 01 14 | 704 | 1.3+ | 0.4− | 2006 09 21 | A50 | 0.1− | 0.2− |
| 2001 12 13 | 704 | (2.1− | 0.0 ) | 2003 03 24 | 691 | 0.8+ | 0.3+ | 2006 09 22 | A50 | 0.3− | 0.1− |
| 2001 12 13 | 704 | 0.0 | 1.0− | 2003 03 24 | 691 | 0.6+ | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 1.5− | 0.4+ | 2003 03 24 | 691 | 0.9+ | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.8+ | 2003 04 07 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.3− | 1.0+ | 2003 04 07 | 691 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 0.7− | 0.3+ | 2003 04 07 | 691 | 0.3− | 0.3− | 2006 10 25 | 246 | 1.0+ | 0.3+ |
| 2001 12 17 | 704 | 1.0− | 0.4+ | 2003 04 24 | 691 | 0.2+ | 0.3+ | 2006 10 25 | 246 | 0.4+ | 1.6+ |
| 2001 12 22 | 704 | (1.3+ | 2.5−) | 2003 04 24 | 691 | 0.6− | 0.8+ | 2006 10 25 | 246 | 0.4+ | 0.7− |
| 2001 12 22 | 704 | 0.6+ | 0.6− | 2003 04 24 | 691 | 0.3− | 0.1− | 2006 10 25 | 246 | 1.1+ | 0.6+ |
| 2001 12 22 | 704 | 0.2+ | 0.9− | 2006 07 22 | G96 | 0.0 | 0.6+ | 2006 10 25 | 246 | 0.8+ | 0.7+ |
| 2001 12 22 | 704 | 0.0 | 0.4− | 2006 07 22 | G96 | 1.5− | 0.8+ | | | | |
| 2001 12 22 | 704 | 0.2+ | 0.3− | 2006 07 22 | G96 | 0.1− | 0.2− | | | | |

**(141157)∗ 2001 XR$_{120}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.60875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19531157 | $\omega$ | 265.90891 | | +0.95145750 | −0.29931032 | |
| $a$ | 2.9420547 | $\Omega$ | 111.49542 | | +0.30401106 | +0.87759337 | |
| $e$ | 0.1005239 | $i$ | 4.42004 | | +0.04801976 | +0.37449060 | |
| $P$ | 5.05 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.0− | 0.7+ | 2004 04 20 | 704 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.4− | 0.1− | 2005 06 16 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | (0.1+ | 1.6+) | 2005 06 16 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 11 17 | 704 | 0.2+ | 0.4+ | 2005 06 16 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.5+ |
| 2001 11 17 | 704 | 0.4− | 0.8+ | 2005 06 28 | G96 | 0.5− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | (0.1+ | 1.7+) | 2005 06 28 | G96 | 0.4− | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2001 11 19 | 608 | 1.1− | 0.7− | 2005 06 28 | G96 | 0.5− | 0.5+ | 2006 11 11 | 703 | 1.4+ | 0.5+ |
| 2001 11 19 | 608 | 1.3− | 0.3− | 2005 06 28 | G96 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2001 11 19 | 608 | 1.1− | 0.3− | 2005 07 15 | G96 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.6+ |
| 2001 12 14 | 704 | 0.2+ | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 0.5+ | 2005 07 15 | G96 | 0.0 | 0.5+ | 2006 11 14 | 704 | 1.0+ | 0.2+ |
| 2001 12 14 | 704 | 0.4+ | 0.7+ | 2005 07 15 | G96 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.8+ | 1.0+ |
| 2001 12 14 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.6− | 0.1+ | 2006 11 14 | 704 | (2.2+ | 0.7+) |
| 2001 12 14 | 704 | 1.0+ | 1.1+ | 2006 09 30 | 703 | 0.9+ | 0.1− | 2006 11 17 | 704 | 1.4+ | 1.1+ |
| 2001 12 17 | 704 | 0.8+ | 0.3− | 2006 09 30 | 703 | 0.9− | 0.7+ | 2006 11 17 | 704 | 0.1− | 0.9+ |
| 2001 12 17 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 11 17 | 704 | (0.6+ | 2.8−) |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.7− | 0.7+ |
| 2001 12 17 | 704 | 0.4+ | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 17 | 704 | (0.5+ | 1.7+) |
| 2001 12 17 | 704 | 0.5+ | 0.4− | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 12 20 | 691 | 0.1+ | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2001 12 20 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2001 12 20 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2003 02 21 | 644 | 0.2+ | 1.1+ | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (1.8+ | 0.2−) |
| 2003 02 21 | 644 | 0.3+ | 1.4+ | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 2003 02 21 | 644 | 0.1− | 1.5+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2004 04 11 | 644 | 0.2− | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 1.1+ | 0.5+ |
| 2004 04 11 | 644 | 0.2+ | 0.9+ | 2006 11 01 | 703 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2004 04 11 | 644 | 0.8+ | 0.3+ | 2006 11 01 | 703 | 0.3+ | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2004 04 20 | 704 | 0.2+ | 0.9+ | 2006 11 01 | 703 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.5+ |
| 2004 04 20 | 704 | 1.1+ | 0.6+ | 2006 11 01 | 703 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.7+ |

**(141158)∗ 2001 XZ$_{120}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.67926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18575819 | $\omega$ | 50.49611 | | −0.82073295 | −0.56922492 | |
| $a$ | 3.0420807 | $\Omega$ | 94.75470 | | +0.50799543 | −0.76618396 | |
| $e$ | 0.1104429 | $i$ | 2.80621 | | +0.26141550 | −0.29823670 | |
| $P$ | 5.31 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 19 | 691 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 1990 10 19 | 691 | 0.2+ | 0.2− | 2001 11 21 | 704 | 0.4− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 1990 10 19 | 691 | 0.4− | 0.7+ | 2001 12 14 | 704 | 1.0+ | 1.1− | 2006 09 23 | 691 | 0.2+ | 0.4+ |
| 1998 03 20 | 704 | 0.8− | 1.0− | 2001 12 14 | 704 | 0.3+ | 0.7− | 2006 09 23 | 691 | 0.0 | 0.7+ |
| 1998 03 20 | 704 | 0.9+ | 0.8− | 2001 12 14 | 704 | 0.3+ | 0.7− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1998 03 20 | 704 | 0.4− | 0.6+ | 2001 12 17 | 704 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 1998 03 20 | 704 | 0.9+ | 0.6+ | 2001 12 17 | 704 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1998 03 20 | 704 | (1.6+ | 2.9+) | 2001 12 17 | 704 | 0.1− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 1998 03 21 | 691 | 0.4− | 0.5− | 2001 12 17 | 704 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 1998 03 21 | 691 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.2− | 0.8− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 1998 03 21 | 691 | 0.2− | 0.2− | 2002 12 14 | 645 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.6− | 0.5− | 2002 12 14 | 645 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.1+ | 0.2− | 2003 01 26 | 608 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.6− | 0.0 |
| 2001 10 24 | 704 | 0.3− | 0.0 | 2003 01 26 | 608 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.3+ |
| 2001 11 09 | 704 | (0.3− | 1.7−) | 2003 01 26 | 608 | 0.2+ | 0.8+ | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2001 11 09 | 704 | 1.0− | 1.4− | 2003 03 06 | 699 | 0.4+ | 1.1+ | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2001 11 09 | 704 | 0.6− | 0.7− | 2003 03 06 | 699 | 0.4+ | 0.9+ | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2001 11 09 | 704 | 0.0 | 1.1− | 2003 03 06 | 699 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2001 11 19 | 699 | 1.3+ | 0.2+ | 2003 03 06 | 699 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 11 19 | 699 | 0.2+ | 0.1− | 2003 03 06 | 704 | 1.0+ | 0.6+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2001 11 19 | 699 | 0.2− | 0.0 | 2003 03 06 | 704 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2001 11 19 | 699 | (1.9+ | 0.0 ) | 2003 03 06 | 704 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 2.2+ | 1.5− |
| 2001 11 20 | 704 | 0.5+ | 0.4+ | 2003 03 06 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 1.2− |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2003 03 07 | 699 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.5− | 0.6− |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2003 03 07 | 699 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.7− | 0.8+ |
| 2001 11 20 | 704 | 0.1+ | 0.4+ | 2003 03 07 | 699 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.2+ | 0.6+ | 2003 03 07 | 699 | 0.2− | 0.9+ | 2006 11 18 | G96 | 0.5+ | 0.5− |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.5− |

**(141159)∗ 2001 XF$_{122}$ = 2004 HQ$_{15}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61210)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.86239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19087729 | $\omega$ | 136.34525 | | +0.99725524 | +0.06339346 | |
| $a$ | 2.9874447 | $\Omega$ | 220.06739 | | −0.07286868 | +0.93188943 | |
| $e$ | 0.0983109 | $i$ | 3.40693 | | +0.01312042 | +0.35716014 | |
| $P$ | 5.16 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 691 | 0.2− | 0.4− | 2003 02 07 | 644 | 0.5+ | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 1999 05 17 | 691 | 0.6− | 0.2+ | 2003 02 07 | 644 | 0.3+ | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 691 | 0.8− | 0.0 | 2004 04 16 | 691 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 11 09 | 704 | 0.0 | 0.2− | 2004 04 16 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.8+ | 0.1+ | 2004 04 16 | 691 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 11 09 | 704 | 0.4− | 1.3+ | 2004 04 21 | 291 | 0.9+ | 1.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2001 11 18 | 291 | 0.2+ | 0.5+ | 2004 04 21 | 291 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2001 11 18 | 291 | 0.1+ | 0.6+ | 2004 04 21 | 291 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2001 11 18 | 291 | 0.1+ | 0.5+ | 2004 04 30 | 291 | 0.6+ | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 2001 11 20 | 704 | (1.5− | 2.8+) | 2004 04 30 | 291 | 0.8+ | 0.8+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2001 11 20 | 704 | 1.3+ | 0.3− | 2004 04 30 | 291 | 1.1+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.6+ |
| 2001 11 20 | 704 | 0.5+ | 1.2− | 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | (2.6+ | 2.1−) | 2005 06 05 | 691 | 0.0 | 0.6+ | 2006 11 01 | 691 | 1.2− | 0.6+ |
| 2001 11 21 | 704 | 0.2− | 0.2− | 2005 06 05 | 691 | 0.1− | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2005 06 10 | 691 | 0.1+ | 1.2+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.5+ | 0.4− | 2005 06 10 | 691 | 0.0 | 0.7+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.5− | 0.6− | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 11 21 | 704 | (0.6− | 1.9−) | 2005 06 14 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.4+ | 0.7+ | 2005 06 14 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 12 14 | 704 | 0.1− | 0.8+ | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.3+ | 0.6+ | 2005 07 07 | G92 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 12 14 | 704 | 0.8− | 1.3+ | 2005 07 07 | G92 | 0.6− | 0.8+ | 2006 11 17 | 703 | (0.4− | 1.6−) |
| 2001 12 14 | 704 | 0.6− | 0.1+ | 2005 07 07 | G92 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.4+ | 1.1− |
| 2001 12 17 | 704 | 0.4− | 1.2+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | (0.5+ | 2.0−) |
| 2001 12 17 | 704 | 0.6− | 0.9+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.1− | 0.4+ |
| 2001 12 17 | 704 | 0.1+ | 0.7+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 1.0− | 0.6+ |
| 2001 12 17 | 704 | 0.7+ | 1.0+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2001 12 17 | 704 | 0.6+ | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2003 01 28 | 645 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 2.3− | 0.5+ |
| 2003 01 28 | 645 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.1+ |
| 2003 02 07 | 644 | 0.4+ | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.4− | 2.6− |

**(141160)∗ 2001 XS$_{124}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.69914 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18752982 | $\omega$ | 143.80822 | | +0.78765781 | +0.61610780 |
| $a$ | 3.0228910 | $\Omega$ | 178.15352 | | −0.58205528 | +0.74545253 |
| $e$ | 0.0631238 | $i$ | 4.48649 | | −0.20200698 | +0.25438496 |
| $P$ | 5.26 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3− | 0.7+ | 2001 12 17 | 704 | 0.8− | 0.1− | 2006 09 18 | 699 | 0.4− | 0.7+ |
| 1995 09 26 | 691 | 0.0 | 0.5+ | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.0 |
| 1995 09 26 | 691 | 0.3− | 0.4+ | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | (2.4+ | 0.4−) | 2004 03 16 | 691 | 0.5− | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.7+ | 0.6− | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.4+ | 0.3− | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.3− | 0.1+ | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2004 03 27 | 704 | 1.0+ | 0.7+ | 2006 10 15 | 703 | 0.3− | 0.0 |
| 2001 10 18 | 644 | 0.3− | 0.8+ | 2004 03 27 | 704 | 0.7+ | 0.6− | 2006 10 15 | 703 | 0.4+ | 1.1− |
| 2001 10 24 | 704 | 0.1+ | 0.8+ | 2004 03 27 | 704 | 0.8+ | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.1− | 1.1+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 10 15 | 703 | 0.4− | 0.9− |
| 2001 10 24 | 704 | 0.1+ | 0.8+ | 2004 03 27 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2004 04 09 | E12 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.6− | 0.5+ | 2004 04 09 | E12 | 0.3+ | 0.6− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2001 11 10 | 704 | 0.6+ | 0.7+ | 2004 04 09 | E12 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.4+ | 0.4+ | 2004 04 09 | E12 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 11 10 | 704 | 0.5− | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 11 10 | 704 | 0.4− | 0.9+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 1.2+ |
| 2001 11 10 | 704 | (1.2+ | 1.8+) | 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | (1.0+ | 1.6−) |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.2− |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.1+ | 2004 05 09 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.1− | 1.1− | 2004 05 09 | 691 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.4− | 1.1+ | 2004 05 09 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.0 | 0.9+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 12 14 | 704 | (0.8+ | 1.7+) | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.0 | 0.8− |
| 2001 12 17 | 704 | 0.5− | 0.7+ | 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 11 20 | G96 | 1.1+ | 0.4− |
| 2001 12 17 | 704 | 0.1− | 0.7− | 2006 09 18 | 699 | 0.1+ | 0.8− | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2001 12 17 | 704 | 0.8+ | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 11 20 | G96 | 0.5− | 0.5− |
| 2001 12 17 | 704 | 0.2− | 0.8+ | 2006 09 18 | 699 | 1.4+ | 0.6− | | | | |

**(141161)∗ 2001 XE$_{125}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.88423 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17871474 | $\omega$ | 60.43436 | | −0.95660378 | −0.28830211 |
| $a$ | 3.1214937 | $\Omega$ | 102.78218 | | +0.25007969 | −0.88682318 |
| $e$ | 0.1064160 | $i$ | 2.48724 | | +0.14956389 | −0.36114614 |
| $P$ | 5.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | (3.4− | 0.3−) | 2001 12 14 | 704 | 0.1− | 0.7+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 1998 03 29 | 704 | 0.5+ | 1.3+ | 2001 12 17 | 704 | 0.0 | 0.5+ | 2006 09 17 | 691 | 0.2− | 0.1− |
| 1998 03 29 | 704 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 1998 03 29 | 704 | (6.0− | 0.9−) | 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 09 27 | 691 | 0.8+ | 0.3+ |
| 2001 11 14 | 691 | 0.4− | 0.1− | 2002 12 28 | 291 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 11 14 | 691 | 0.4− | 0.1− | 2002 12 28 | 291 | 0.1+ | 0.4− | 2006 10 01 | 691 | 0.4− | 0.3+ |
| 2001 11 14 | 691 | 0.1− | 0.1+ | 2002 12 28 | 291 | 0.5+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.9+ | 0.0 | 2003 02 12 | 608 | 0.7+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.0 | 0.8− | 2003 02 12 | 608 | 0.0 | 0.6− | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.7− | 0.0 | 2003 02 12 | 608 | 0.5+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.5− | 1.1− | 2003 02 21 | 644 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2001 11 21 | 704 | 1.0+ | 0.0 | 2003 02 21 | 644 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.6+ | 0.3− | 2003 02 21 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.9+ | 0.4− | 2003 02 21 | 049 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2003 02 21 | 049 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.5− | 0.1− |
| 2001 11 21 | 704 | 0.3+ | 0.4− | 2003 02 21 | 049 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.7− | 0.7− |
| 2001 12 10 | 691 | 0.2+ | 0.1− | 2003 03 06 | 704 | 0.2+ | 1.1+ | 2006 11 16 | G96 | 0.6− | 0.2− |
| 2001 12 10 | 691 | 0.2+ | 0.3− | 2003 03 06 | 704 | 0.4− | 1.1+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 12 10 | 691 | 0.2+ | 0.1− | 2003 03 06 | 704 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2003 03 06 | 704 | 0.3+ | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2003 03 06 | 704 | 1.4− | 0.2+ | | | | |
| 2001 12 14 | 704 | 0.4− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.1+ | | | | |

**(141162)∗ 2001 XL$_{127}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.84135 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17443438 | $\omega$ | 83.31630 | | −0.99734778 | −0.05230227 |
| $a$ | 3.1723517 | $\Omega$ | 93.67706 | | +0.02816089 | −0.91855843 |
| $e$ | 0.1258460 | $i$ | 2.90725 | | +0.06711455 | −0.39180976 |
| $P$ | 5.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.7− | 1.1− | 2001 12 14 | 704 | 0.6+ | 1.1+ | 2004 07 16 | 807 | 0.3− | 0.2− |
| 1998 04 21 | 704 | 1.7+ | 0.3− | 2001 12 14 | 704 | 0.5+ | 0.3+ | 2004 07 16 | 807 | 0.2− | 0.0 |
| 1998 04 21 | 704 | 0.4+ | 0.4+ | 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.6+ | 0.4− |
| 1998 04 21 | 704 | (2.2− | 1.3+) | 2001 12 17 | 704 | 0.1+ | 0.8− | 2006 09 30 | 703 | 0.7− | 1.1+ |
| 1998 04 29 | 566 | 0.8+ | 0.2+ | 2001 12 17 | 704 | (1.5+ | 1.2−) | 2006 09 30 | 703 | 0.3− | 1.0− |
| 1998 04 29 | 566 | 0.6+ | 0.6+ | 2001 12 17 | 704 | (1.1+ | 2.1−) | 2006 09 30 | 703 | 0.5− | 0.1− |
| 1998 04 29 | 566 | 0.6+ | 1.8− | 2002 12 14 | 645 | 0.1− | 0.2− | 2006 10 15 | 703 | 1.0− | 0.8− |
| 2000 10 01 | 691 | 0.2− | 0.3− | 2002 12 14 | 645 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.1+ | 1.0+ |
| 2000 10 01 | 691 | 0.1+ | 0.4− | 2003 01 26 | 699 | 1.0+ | 0.7+ | 2006 10 15 | 703 | 0.4− | 1.1+ |
| 2000 10 01 | 691 | 0.2− | 0.5− | 2003 01 26 | 699 | 0.4− | 0.4+ | 2006 10 15 | 703 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 1.1− | 2003 01 26 | 699 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 1.1+ | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.7− | 2003 01 26 | 699 | 0.7+ | 0.2+ | 2006 10 17 | G96 | (1.9+ | 0.6−) |
| 2001 11 20 | 704 | 0.3− | 1.4− | 2003 02 26 | 608 | 1.2+ | 1.1+ | 2006 10 17 | G96 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3− | 0.5− | 2003 02 26 | 608 | 0.9+ | 1.1+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2003 02 26 | 608 | 1.2+ | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.6+ |
| 2001 11 21 | 704 | 0.2+ | 0.6− | 2003 03 06 | 704 | 0.3+ | 1.2+ | 2006 10 28 | 691 | 0.6− | 0.1+ |
| 2001 11 21 | 704 | (0.2− | 3.1−) | 2003 03 06 | 704 | 0.4− | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.6+ |
| 2001 11 21 | 704 | 0.8− | 0.8− | 2003 03 06 | 704 | 0.1− | 1.0+ | 2006 11 18 | G96 | 0.9+ | 0.3− |
| 2001 12 11 | 291 | 0.2− | 0.0 | 2003 03 06 | 704 | 0.7− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2001 12 11 | 291 | 0.5− | 0.0 | 2003 03 06 | 704 | 0.7− | 0.7+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2001 12 11 | 291 | 0.3− | 0.0 | 2004 06 14 | 704 | 0.6− | 0.9+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.2− | 0.7+ | 2004 06 14 | 704 | 0.7− | 1.2+ | 2006 11 19 | 691 | 0.8+ | 0.3+ |
| 2001 12 14 | 704 | 0.2− | 0.8+ | 2004 06 14 | 704 | 1.1− | 0.4+ | 2006 11 19 | 691 | 0.4+ | 0.5+ |
| 2001 12 14 | 704 | 0.2− | 0.7+ | 2004 06 14 | 704 | 0.6− | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.6+ |

**(141163)∗ 2001 XY$_{128}$ = 1990 RB$_{16}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23241)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.41565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18902227 | $\omega$ | 196.44239 | | +0.74159189 | +0.66935791 | |
| $a$ | 3.0069583 | $\Omega$ | 121.45319 | | −0.60943869 | +0.70007787 | |
| $e$ | 0.2473866 | $i$ | 3.00615 | | −0.28040319 | +0.24869853 | |
| $P$ | 5.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 15 | 809 | (1.3+ | 2.1+) | 2001 12 09 | 644 | 0.0 | 0.8+ | 2006 10 18 | 691 | 0.0 | 0.2− |
| 1990 09 15 | 809 | 0.9+ | 1.7+ | 2001 12 09 | 644 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.2− |
| 1990 09 15 | 809 | 0.2+ | 1.3+ | 2001 12 14 | 704 | 0.8− | 0.9+ | 2006 10 22 | 691 | 0.6− | 0.0 |
| 1990 09 25 | 809 | 1.0+ | 1.5− | 2001 12 14 | 704 | 0.9− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 1990 09 25 | 809 | 0.6+ | 1.3− | 2001 12 14 | 704 | 0.3− | 0.9+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 1990 09 25 | 809 | (0.2+ | 2.4−) | 2001 12 14 | 704 | 0.7− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1995 07 22 | 691 | 0.4− | 0.0 | 2001 12 14 | 704 | 0.7− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 1995 07 22 | 691 | 0.3− | 0.1+ | 2001 12 17 | 704 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1995 07 22 | 691 | 0.4− | 0.2− | 2001 12 17 | 704 | 0.1+ | 0.4− | 2006 11 10 | 644 | 0.0 | 0.1− |
| 1998 02 03 | 691 | 0.5− | 0.3− | 2001 12 17 | 704 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 1998 02 03 | 691 | 0.1+ | 0.0 | 2001 12 17 | 704 | 0.1+ | 0.4− | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 1998 02 03 | 691 | 0.5− | 0.3− | 2001 12 17 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 1.0+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.3− | 2006 11 11 | 703 | 0.5+ | 1.2+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 1.6− | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2000 08 01 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.6− | 1.0+ |
| 2000 08 01 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.2− |
| 2000 08 01 | 704 | 0.0 | 0.4− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.2+ | 1.4+ |
| 2000 08 01 | 704 | 0.5+ | 0.7− | 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2000 09 20 | 704 | 1.0+ | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2000 09 20 | 704 | 0.6− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.1− | 0.9− |
| 2000 09 20 | 704 | 0.7+ | 1.1+ | 2006 10 15 | D35 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2000 09 20 | 704 | 0.9− | 1.8+ | 2006 10 15 | D35 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2001 11 20 | 704 | 0.3− | 0.5− | 2006 10 15 | D35 | 0.3− | 0.1− | 2006 11 28 | 704 | 1.1+ | 1.4+ |
| 2001 11 20 | 704 | 0.9+ | 0.9+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 1.6+ | 1.1+ |
| 2001 11 20 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 11 28 | 704 | 1.8+ | 0.3− |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 28 | 704 | 1.6+ | 1.1+ |
| 2001 11 20 | 704 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.9− | 2006 11 28 | 704 | 2.0+ | 1.6+ |
| 2001 12 09 | 644 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.2− | | | | |

**(141164)∗ 2001 XH$_{136}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.95140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19171931 | $\omega$ | 323.33360 | | +0.80275997 | −0.59564104 | |
| $a$ | 2.9786911 | $\Omega$ | 73.24830 | | +0.55382498 | +0.72729761 | |
| $e$ | 0.1626432 | $i$ | 1.68007 | | +0.22103012 | +0.34095445 | |
| $P$ | 5.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.0 | 0.1− | 2002 01 14 | 704 | 0.1− | 0.7− | 2006 11 11 | 703 | 1.3+ | 1.3+ |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2003 03 12 | 291 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.5+ | 2003 03 12 | 291 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (0.9+ | 2.0+) |
| 2001 11 20 | 704 | 0.5− | 0.2+ | 2003 03 12 | 291 | 0.3+ | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.1+ | 2004 04 28 | 691 | 0.4− | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 0.3+ | 2004 04 28 | 691 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2004 04 28 | 691 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2004 05 13 | 691 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2001 11 21 | 704 | 0.5+ | 0.6+ | 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2001 12 07 | 691 | 0.4+ | 0.0 | 2004 05 13 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2001 12 07 | 691 | 0.2+ | 0.2− | 2005 07 02 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2001 12 07 | 691 | 0.3+ | 0.3− | 2005 07 02 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2001 12 14 | 704 | 0.2+ | 0.0 | 2005 07 02 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2+ | 1.1+ |
| 2001 12 14 | 704 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 19 | 704 | 1.3− | 0.6+ |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.3− | 0.7+ |
| 2001 12 17 | 704 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.5− |
| 2001 12 17 | 704 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.3+ |
| 2001 12 17 | 704 | 0.9+ | 0.0 | 2006 10 17 | G96 | 1.0− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.5+ | 1.0− | 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2001 12 19 | 704 | 0.7− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2001 12 19 | 704 | 0.8− | 0.1+ | 2006 10 17 | G96 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2001 12 19 | 704 | 0.7− | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 1.0− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.5− | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2002 01 05 | 691 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.3+ | 0.1− |
| 2002 01 05 | 691 | 0.2− | 0.8− | 2006 11 10 | 691 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.6− | 0.3− |
| 2002 01 05 | 691 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.5+ | 0.5+ |
| 2002 01 14 | 704 | 1.3+ | 1.2− | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.4+ |
| 2002 01 14 | 704 | 0.1+ | 0.7− | 2006 11 11 | 703 | 0.9+ | 0.4+ | | | | |

**(141165)∗ 2001 XT$_{139}$ = 2000 SP$_{333}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23246)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.29233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17040904 | $\omega$ | 279.03443 | | +0.94383225 | −0.32658556 | |
| $a$ | 3.2221145 | $\Omega$ | 100.03943 | | +0.31965278 | +0.86395727 | |
| $e$ | 0.0772051 | $i$ | 2.92370 | | +0.08368261 | +0.38330106 | |
| $P$ | 5.78 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 691 | 0.1+ | 0.3+ | 2002 12 14 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 1998 03 22 | 691 | 0.2− | 1.1+ | 2003 03 06 | 699 | 0.1+ | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 1998 03 22 | 691 | 0.1− | 0.0 | 2003 03 06 | 699 | (2.3+ | 0.2−) | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2000 09 26 | 608 | 1.6+ | 1.6+ | 2003 03 06 | 699 | 1.3+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2000 09 26 | 608 | 1.7+ | 1.9+ | 2003 03 06 | 699 | 0.6+ | 1.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2000 09 26 | 608 | 1.5+ | 1.7+ | 2004 04 19 | 704 | 0.5+ | 0.9+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 1.3− | 0.1− | 2004 04 19 | 704 | 0.3+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2000 10 02 | 704 | 0.8− | 0.2− | 2004 04 19 | 704 | 0.4+ | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2000 10 02 | 704 | 1.4− | 0.1− | 2004 04 19 | 704 | (0.6− | 1.9+) | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 0.8− | 0.6− | 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2000 10 02 | 704 | 0.6− | 1.1+ | 2006 08 24 | 644 | 0.4− | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.7+ |
| 2001 12 14 | 704 | 0.2− | 1.3− | 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 10 01 | 704 | (1.1− | 1.8+) |
| 2001 12 14 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.7− | 0.7+ |
| 2001 12 14 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.2− | 1.0+ |
| 2001 12 14 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.0 | 1.1− | 2006 10 01 | 704 | 0.6− | 1.1+ |
| 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 15 | 106 | 0.5+ | 0.4− |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.9+ | 1.2− | 2006 10 15 | 106 | 0.3− | 0.5− |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.8− | 0.2+ | 2006 10 15 | 106 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 15 | 106 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.4− | 1.1+ | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2001 12 17 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 1.5− | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2001 12 20 | 704 | 0.2− | 1.4+ | 2006 09 18 | 699 | 0.8− | 0.4+ | 2006 10 16 | 703 | (2.5− | 1.1−) |
| 2001 12 20 | 704 | (0.3+ | 1.7+) | 2006 09 18 | 699 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 704 | (0.2+ | 1.7+) | 2006 09 22 | 704 | 0.0 | 1.1− | 2006 10 20 | 644 | 0.3− | 0.3− | | |
| 2001 12 20 | 704 | 1.1+ | 0.0 | 2006 09 22 | 704 | 0.0 | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.4− | | |
| 2002 01 15 | 704 | 0.1+ | 0.7− | 2006 09 22 | 704 | 0.7+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.2− | | |
| 2002 01 15 | 704 | 0.4− | 0.3− | 2006 09 22 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.5− | 0.0 | | |
| 2002 01 15 | 704 | 0.5− | 0.1+ | 2006 09 22 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 01 15 | 704 | 0.4− | 0.8− | 2006 09 26 | 704 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 01 15 | 704 | 0.4− | 1.0− | 2006 09 26 | 704 | 0.5+ | 0.4+ | | | | | | |
| 2002 12 14 | 645 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.6+ | | | | | | |

**(141166)∗ 2001 XL$_{142}$ = 2003 FC$_{25}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47025)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.80071 | | (2000.0) | | | |
| $n$ | 0.18776391 | $\omega$ | 344.15672 | | −0.44903561 | −0.89325871 |
| $a$ | 3.0203780 | $\Omega$ | 132.51969 | | +0.82289677 | −0.42273985 |
| $e$ | 0.0663328 | $i$ | 1.66005 | | +0.34814928 | −0.15290486 |
| $P$ | 5.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2003 03 24 | 691 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 2001 12 14 | 704 | 0.1+ | 0.0 | 2003 03 24 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | | |
| 2001 12 14 | 691 | 0.4+ | 0.7− | 2003 03 24 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.2+ | | |
| 2001 12 14 | 704 | 0.5+ | 0.6+ | 2003 03 26 | 644 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.1+ | | |
| 2001 12 14 | 691 | 0.1+ | 0.4− | 2003 03 26 | 644 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 | | |
| 2001 12 14 | 691 | 0.0 | 0.3− | 2003 03 26 | 644 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2001 12 17 | 704 | 0.5− | 0.1+ | 2003 04 07 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 0.3+ | 0.4− | 2003 04 07 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.5+ | | |
| 2001 12 17 | 704 | 0.4− | 0.7+ | 2003 04 07 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.6− | | |
| 2001 12 17 | 704 | 0.1+ | 0.7+ | 2005 07 11 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.4− | | |
| 2001 12 17 | 704 | 0.1+ | 0.8+ | 2005 07 11 | G96 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.0 | | |
| 2001 12 19 | 704 | 0.6+ | 0.6+ | 2005 07 11 | G96 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1− | 1.7+ | | |
| 2001 12 19 | 704 | 0.9− | 0.5+ | 2005 07 11 | G96 | 0.5− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.8− | | |
| 2001 12 19 | 704 | 0.8− | 0.9+ | 2005 08 27 | 644 | 0.0 | 1.2+ | 2006 11 13 | G96 | 0.2− | 0.6− | | |
| 2001 12 19 | 704 | 0.7− | 0.9+ | 2005 08 27 | 644 | 0.0 | 1.2+ | 2006 11 13 | G96 | 0.2+ | 0.6− | | |
| 2001 12 19 | 704 | 1.0− | 0.6+ | 2005 08 27 | 644 | 0.2− | 1.0+ | 2006 11 13 | G96 | 0.1− | 0.8− | | |
| 2003 02 27 | 599 | (2.0− | 1.0+) | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.7− | | |
| 2003 02 27 | 599 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 1.0− | | |
| 2003 02 27 | 599 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.2− | | |
| 2003 02 27 | 599 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.7− | 0.1− | | |

**(141167)∗ 2001 XT$_{145}$ = 2003 FB$_{30}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.91735 | | (2000.0) | | | |
| $n$ | 0.17144395 | $\omega$ | 71.66123 | | −0.90816247 | −0.40454173 |
| $a$ | 3.2091346 | $\Omega$ | 84.36121 | | +0.33150244 | −0.85201154 |
| $e$ | 0.1133005 | $i$ | 6.20960 | | +0.25563071 | −0.33229856 |
| $P$ | 5.75 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 28 | 691 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.8− | 0.4+ | 2003 04 01 | 704 | 0.5+ | 0.1− | | |
| 1995 12 28 | 691 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.0 | 0.5+ | 2003 04 01 | 704 | 0.2+ | 0.2− | | |
| 1995 12 28 | 691 | 0.1+ | 0.1+ | 2001 12 19 | 704 | 0.2− | 1.2+ | 2003 04 01 | 704 | 0.4+ | 0.1+ | | |
| 2001 11 20 | 704 | 1.1− | 0.5+ | 2001 12 20 | 704 | (0.2− | 1.9−) | 2003 04 01 | 704 | 0.6+ | 0.4− | | |
| 2001 11 20 | 704 | (1.6− | 0.1−) | 2001 12 20 | 704 | (0.9+ | 1.9−) | 2003 04 01 | 704 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | 1.4− | 0.2+ | 2001 12 20 | 704 | 1.3+ | 1.5− | 2003 04 01 | 704 | 0.1+ | 0.6+ | | |
| 2001 11 20 | 704 | 0.2− | 0.4+ | 2002 01 08 | 704 | (2.4− | 0.0 ) | 2003 04 01 | 704 | 0.1− | 0.7+ | | |
| 2001 11 20 | 704 | (2.0− | 0.5−) | 2002 01 08 | 704 | 0.7− | 0.2− | 2003 04 01 | 704 | 1.0+ | 0.4− | | |
| 2001 11 21 | 704 | 0.0 | 0.8+ | 2002 01 08 | 704 | 0.0 | 1.2+ | 2003 04 01 | 704 | 0.3+ | 0.3− | | |
| 2001 11 21 | 704 | 1.0− | 0.2− | 2002 01 12 | 291 | 0.0 | 0.2− | 2003 04 05 | 699 | 1.3− | 0.2− | | |
| 2001 11 21 | 704 | 0.1− | 0.2− | 2002 01 12 | 291 | 0.1− | 0.3− | 2003 04 05 | 699 | 0.4− | 0.2+ | | |
| 2001 11 21 | 704 | 0.3− | 0.2− | 2002 01 12 | 291 | 0.1+ | 0.7− | 2003 04 05 | 699 | 1.0− | 0.2+ | | |
| 2001 12 14 | 704 | 0.6− | 0.4− | 2003 03 11 | 644 | 0.1+ | 0.9+ | 2003 04 05 | 699 | 1.0− | 0.2− | | |
| 2001 12 14 | 704 | 0.3+ | 0.8+ | 2003 03 11 | 644 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.2+ | | |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2003 03 11 | 644 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 0.4− | 0.1+ | | |
| 2001 12 14 | 704 | 0.5+ | 0.2+ | 2003 03 25 | 644 | 0.2+ | 0.3− | 2006 09 30 | 703 | 1.1− | 0.4− | | |
| 2001 12 14 | 704 | 1.0+ | 0.4− | 2003 03 25 | 644 | 0.3+ | 0.2− | 2006 09 30 | 703 | (1.7− | 0.3−) | | |
| 2001 12 17 | 704 | 0.1+ | 0.1− | 2003 03 25 | 644 | 0.5+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3+ | | |
| 2001 12 17 | 704 | 0.4+ | 0.0 | 2003 03 26 | 644 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.3+ | | |
| 2001 12 17 | 704 | 0.3+ | 0.0 | 2003 03 26 | 699 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.4+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2003 03 26 | 699 | 0.3− | 0.4− | 2006 10 02 | G96 | 0.4+ | 0.1+ | | |
| 2001 12 18 | 704 | 1.3+ | 0.7− | 2003 03 26 | 699 | 0.8− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1+ | | |
| 2001 12 18 | 704 | (0.3+ | 2.2−) | 2003 03 26 | 699 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.3+ | | |
| 2001 12 18 | 704 | 1.0+ | 0.9− | 2003 03 26 | 644 | 0.6+ | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.3+ | | |
| 2001 12 18 | 704 | 0.7+ | 0.1− | 2003 03 26 | 644 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.5+ | | |

**(141168)∗ 2001 XV$_{145}$ = 2003 EM$_{45}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47026), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 234.46606 | | (2000.0) | | | |
| $n$ | 0.21590525 | $\omega$ | 330.29122 | | −0.64462248 | +0.76158683 |
| $a$ | 2.7518658 | $\Omega$ | 259.48725 | | −0.68736657 | −0.61555793 |
| $e$ | 0.0962721 | $i$ | 3.88919 | | −0.33464765 | −0.20266704 |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4+ | 0.6+ | 2003 03 28 | 699 | 0.5+ | 0.2+ | 2005 11 03 | G96 | 0.3+ | 0.3− | | |
| 2001 12 14 | 704 | 0.2− | 0.1+ | 2003 03 28 | 691 | 0.1+ | 0.3+ | 2005 11 03 | G96 | 0.2− | 0.1+ | | |
| 2001 12 14 | 704 | 0.4+ | 0.3− | 2003 03 31 | 704 | 0.2− | 0.0 | 2005 11 03 | G96 | 0.2− | 0.1+ | | |
| 2001 12 14 | 704 | 0.2+ | 0.7+ | 2003 03 31 | 704 | 0.5+ | 0.2+ | 2005 11 04 | G96 | 0.2− | 0.0 | | |
| 2001 12 14 | 704 | 0.8+ | 0.0 | 2003 03 31 | 704 | 0.1− | 0.0 | 2005 11 04 | G96 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 0.3− | 0.4− | 2003 03 31 | 704 | 0.2− | 0.8+ | 2005 11 04 | G96 | 0.3− | 0.1+ | | |
| 2001 12 17 | 704 | 0.4− | 0.3+ | 2003 03 31 | 704 | 0.8+ | 0.2+ | 2005 11 04 | G96 | 0.1− | 0.0 | | |
| 2001 12 17 | 704 | 0.6− | 0.4+ | 2004 07 11 | 704 | 0.2− | 0.5+ | 2005 11 05 | G96 | 0.2+ | 0.1− | | |
| 2001 12 17 | 704 | 0.3− | 0.1+ | 2004 07 11 | 704 | 0.9+ | 0.4+ | 2005 11 05 | G96 | 0.1− | 0.1− | | |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2004 07 11 | 704 | 0.0 | 0.6+ | 2005 11 05 | G96 | 0.1+ | 0.1+ | | |
| 2001 12 19 | 704 | 0.9− | 0.2+ | 2004 07 16 | 704 | 0.5− | 0.8+ | 2005 11 05 | G96 | 0.2+ | 0.1− | | |
| 2001 12 19 | 704 | 1.3− | 0.3+ | 2004 07 16 | 704 | 0.8− | 0.5+ | 2005 11 05 | G96 | 0.1− | 0.2− | | |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2004 07 16 | 704 | 0.8− | 1.3+ | 2005 11 05 | G96 | 0.0 | 0.0 | | |
| 2001 12 20 | 704 | 0.2+ | 1.2− | 2005 10 10 | 691 | 0.1− | 0.5+ | 2005 11 05 | G96 | 0.2+ | 0.0 | | |
| 2001 12 20 | 704 | 0.3+ | 0.3− | 2005 10 10 | 691 | 0.3− | 1.1+ | 2005 11 05 | G96 | 0.4+ | 0.0 | | |
| 2001 12 20 | 704 | 1.3+ | 0.7− | 2005 10 10 | 691 | 0.1+ | 0.6+ | 2005 11 09 | 703 | 0.3− | 0.4+ | | |
| 2003 03 07 | 704 | 0.7+ | 0.9− | 2005 10 23 | 703 | (1.2− | 1.6−) | 2005 11 09 | 703 | 1.2− | 0.4+ | | |
| 2003 03 07 | 704 | 0.3+ | 0.4+ | 2005 10 23 | 703 | (1.4− | 2.1+) | 2005 11 09 | 703 | (1.6− | 0.7+) | | |
| 2003 03 07 | 704 | 0.2− | 1.2+ | 2005 10 23 | 703 | 0.4+ | 0.3+ | 2005 11 09 | 703 | 0.5− | 0.3+ | | |
| 2003 03 07 | 704 | 0.0 | 0.0 | 2005 10 23 | 703 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.6− | 0.3+ | | |
| 2003 03 07 | 704 | 0.3+ | 0.8+ | 2005 11 03 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.7− | 0.3+ | | |
| 2003 03 11 | 644 | 0.2− | 0.4+ | 2005 11 03 | G96 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.4− | 0.3+ | | |
| 2003 03 11 | 644 | 0.0 | 0.4+ | 2005 11 03 | G96 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2003 03 11 | 644 | 0.2− | 0.5+ | 2005 11 03 | G96 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2003 03 28 | 691 | 0.1− | 0.7+ | 2005 11 03 | G96 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.8+ | 0.4− | | |
| 2003 03 28 | 699 | 0.1− | 0.3− | 2005 11 03 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.3− | | |
| 2003 03 28 | 699 | 0.1− | 1.0− | 2005 11 03 | G96 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.2+ | 1.0− | | |
| 2003 03 28 | 691 | 0.4+ | 0.4+ | 2005 11 03 | G96 | 0.2− | 0.0 | | | | | | |
| 2003 03 28 | 699 | 0.9+ | 0.7+ | 2005 11 03 | G96 | 0.2+ | 0.0 | | | | | | |

**(141169)∗ 2001 XQ$_{146}$ = 1978 WZ$_{12}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75235)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.70361 | | (2000.0) | | | |
| $n$ | 0.17331324 | $\omega$ | 125.34501 | | +0.96242713 | −0.26472137 |
| $a$ | 3.1860180 | $\Omega$ | 250.07231 | | +0.22356888 | +0.89889312 |
| $e$ | 0.1944063 | $i$ | 3.68788 | | +0.15411348 | +0.34916149 |
| $P$ | 5.69 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 29 | 675 | 1.0+ | 0.6− | 2006 09 01 | 185 | 1.3− | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.1− |
| 1978 11 30 | 675 | 1.0− | 0.5− | 2006 09 01 | 185 | (2.0− | 2.5−) | 2006 10 01 | 704 | 0.2+ | 0.1− |
| 2000 08 21 | 699 | 0.2− | 1.3+ | 2006 09 14 | A50 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.0 |
| 2000 08 21 | 699 | 0.3− | 0.1+ | 2006 09 14 | A50 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.8+ | 0.3− |
| 2000 08 21 | 699 | 1.6− | 1.3+ | 2006 09 15 | 704 | 1.3− | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.2− |
| 2000 08 21 | 699 | 0.8+ | 0.8+ | 2006 09 15 | 704 | 0.2+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2006 09 15 | 704 | 0.9− | 0.4− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 1.0+ | 0.4+ | 2006 09 15 | 704 | 0.6+ | 1.1− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 0.4− | 2006 09 15 | A50 | 0.3− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.4− | 2006 09 15 | A50 | 0.2− | 0.4− | 2006 10 11 | 691 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 1.1− | 0.6− | 2006 10 11 | 691 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.8− | 0.0 | 2006 09 17 | 703 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.5− | 0.2+ | 2006 09 17 | 703 | (1.5+ | 0.0 ) | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | 1.0− | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 12 14 | 704 | 0.7− | 0.3+ | 2006 09 18 | 704 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 1.2− | 0.6+ | 2006 09 18 | 704 | 0.4+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 1.0− | 0.9+ | 2006 09 18 | 704 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.8− | 0.4+ | 2006 09 18 | 704 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.8− | 0.8+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 12 17 | 704 | 0.7− | 0.8+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 12 20 | 704 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 12 20 | 704 | 0.5− | 0.7+ | 2006 09 19 | 699 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2001 12 20 | 704 | 0.3+ | 1.1+ | 2006 09 25 | 704 | 0.2+ | 1.0− | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2001 12 20 | 704 | 0.4− | 1.0+ | 2006 09 25 | 704 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 2001 12 20 | 704 | 0.0 | 0.7+ | 2006 09 25 | 704 | 0.3− | 0.7− | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 01 13 | 704 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.1− | 1.1− | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2002 01 13 | 704 | 0.6+ | 0.7− | 2006 09 25 | 704 | 0.2+ | 0.9− | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 01 13 | 704 | 0.7+ | 0.2− | 2006 09 29 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 01 13 | 704 | (0.0 | 1.7−) | 2006 09 29 | 704 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 01 14 | 291 | 0.9+ | 0.1− | 2006 09 29 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 01 14 | 291 | 0.6+ | 0.2− | 2006 09 29 | 699 | 0.3+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 01 14 | 291 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.6+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.6+ | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.2+ | 2006 11 06 | 644 | 0.4+ | 0.2+ |
| 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.5+ | 2006 11 06 | 644 | 0.1− | 0.4+ |
| 2006 08 30 | 704 | 0.3+ | 0.2− | 2006 09 29 | 699 | 0.4+ | 0.7+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2006 08 30 | 704 | 0.7− | 1.0+ | 2006 10 01 | 703 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2006 08 30 | 704 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2006 08 30 | 704 | 0.2− | 0.0 | 2006 10 01 | 703 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2006 08 30 | 704 | 0.4− | 0.1− | 2006 10 01 | 703 | 1.2+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.5− |

**(141170)∗ 2001 XX$_{147}$ = 2000 SA$_{42}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 29738)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 121.64051 | | (2000.0) | | | |
| $n$ | 0.18524095 | $\omega$ | 40.92107 | | +0.17863703 | +0.97704527 |
| $a$ | 3.0477410 | $\Omega$ | 239.66848 | | −0.93413698 | +0.13136943 |
| $e$ | 0.0662339 | $i$ | 7.72816 | | −0.30899340 | +0.16770397 |
| $P$ | 5.32 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 12 | 691 | 0.5− | 0.6− | 2004 05 16 | 704 | 0.8+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 1994 06 12 | 691 | 0.2+ | 0.0 | 2004 05 16 | 704 | 0.7+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.0 |
| 1994 06 12 | 691 | 0.1+ | 0.1− | 2004 05 16 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2000 09 24 | 704 | 0.1− | 0.7− | 2004 05 19 | 704 | 0.3− | 0.4− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.2+ | 0.1− | 2004 05 19 | 704 | 0.9+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2000 09 24 | 704 | 0.7+ | 0.1− | 2004 05 19 | 704 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2000 09 25 | 704 | 0.3+ | 1.0+ | 2004 05 19 | 704 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2000 09 25 | 704 | 0.2− | 0.2− | 2004 05 19 | 704 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2000 09 25 | 704 | 0.3+ | 0.4− | 2004 05 19 | 704 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2000 09 25 | 704 | 0.3− | 0.2+ | 2004 05 19 | 704 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2000 09 25 | 704 | 0.4− | 0.6+ | 2004 05 19 | 704 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2000 10 03 | 704 | 0.5+ | 0.2+ | 2004 05 19 | 704 | 0.7− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2000 10 03 | 704 | 0.4+ | 0.0 | 2004 05 19 | 704 | 0.4+ | 0.6− | 2006 11 11 | 703 | 0.5+ | 0.9− |
| 2000 10 03 | 704 | 0.3− | 0.6+ | 2004 05 19 | 599 | 0.5− | 0.6− | 2006 11 11 | 703 | 1.1+ | 0.5− |
| 2000 10 03 | 704 | 0.5+ | 0.2+ | 2004 05 20 | 599 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.9− |
| 2000 10 03 | 704 | 0.9+ | 1.8+ | 2004 05 22 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.6+ |
| 2000 10 03 | 704 | 0.1+ | 1.3+ | 2004 05 22 | 704 | 0.5+ | 0.7+ | 2006 11 14 | 691 | 0.3− | 0.1+ |
| 2000 10 03 | 704 | 0.4− | 0.5+ | 2004 05 22 | 704 | 0.0 | 0.7+ | 2006 11 14 | 691 | 0.1− | 0.4− |
| 2000 10 03 | 704 | 0.6+ | 0.5− | 2004 05 22 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.4− | 0.2+ |
| 2000 10 03 | 704 | 0.3+ | 0.6− | 2004 05 22 | 704 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.4+ |
| 2000 10 03 | 704 | 0.2+ | 0.5+ | 2004 05 22 | 704 | 0.5+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2001 12 14 | 704 | 0.3− | 0.3+ | 2004 05 22 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.6+ | 0.5− | 2004 05 22 | 704 | 0.1+ | 0.4+ | 2006 11 20 | 703 | 1.3+ | 0.3− |
| 2001 12 14 | 704 | 0.3+ | 0.4+ | 2004 05 22 | 704 | 0.7+ | 0.4+ | 2006 11 20 | 703 | 0.1− | 0.2− |
| 2001 12 14 | 704 | 0.9− | 0.6+ | 2004 05 22 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 703 | 0.3− | 0.4− |
| 2001 12 17 | 704 | 0.4+ | 0.0 | 2004 05 23 | 704 | 0.7− | 0.7+ | 2006 11 20 | 703 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.0 | 0.7− | 2004 05 23 | 704 | 0.4+ | 0.2+ | 2006 11 21 | 704 | (0.0 | 1.6+) |
| 2001 12 17 | 704 | 0.6+ | 0.7− | 2004 05 23 | 704 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2001 12 17 | 704 | 0.2+ | 0.9+ | 2004 06 12 | E12 | (2.4+ | 1.9+) | 2006 11 21 | 704 | 0.5− | 0.3− |
| 2001 12 17 | 704 | 0.4+ | 0.4− | 2004 06 12 | E12 | 0.7+ | 0.7+ | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2002 01 09 | 291 | 0.1+ | 0.1+ | 2004 06 12 | E12 | (2.0+ | 0.8+) | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 01 09 | 291 | 0.3− | 0.2+ | 2004 06 12 | E12 | 1.3+ | 1.4+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 01 09 | 291 | 0.9− | 0.5+ | 2005 08 27 | 699 | 0.6− | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2002 01 13 | 704 | 0.9+ | 0.8− | 2005 08 27 | 699 | 1.1− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2002 01 13 | 704 | (1.2+ | 1.7−) | 2005 08 27 | 699 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2002 01 13 | 704 | (1.5+ | 1.7−) | 2005 08 27 | 699 | 0.1− | 0.8− | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2002 01 13 | 704 | 1.1+ | 0.7− | 2005 08 30 | 644 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2002 01 13 | 704 | (2.0+ | 0.7−) | 2005 08 30 | 644 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.2+ | 0.7+ |
| 2004 05 15 | 704 | 0.6− | 0.5− | 2005 08 30 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.2− | 1.6+ |
| 2004 05 15 | 704 | 0.5− | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.1− | 1.1+ |
| 2004 05 15 | 704 | 1.1− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.0 | 1.0+ |

**(141171)∗ 2001 XT$_{148}$ = 1995 VS$_{13}$ = 2005 NN$_{62}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85328)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.60574 | | (2000.0) | | | |
| $n$ | 0.17877663 | $\omega$ | 307.14394 | | +0.29443052 | −0.95416440 |
| $a$ | 3.1207732 | $\Omega$ | 125.64784 | | +0.89642452 | +0.25627295 |
| $e$ | 0.0822429 | $i$ | 3.78725 | | +0.33126086 | +0.15457839 |
| $P$ | 5.51 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.1+ | 0.0 | 2003 03 07 | 699 | (2.6+ | 0.0 ) | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 1995 11 15 | 691 | 0.1+ | 0.1− | 2003 03 07 | 699 | 0.9+ | 1.5+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 1995 11 27 | 691 | 0.3+ | 1.7− | 2003 03 07 | 699 | 1.1+ | 1.4− | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 1995 11 27 | 691 | 0.1− | 0.0 | 2003 03 24 | 691 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 1995 11 27 | 691 | 0.0 | 0.3− | 2003 03 24 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2001 12 14 | 704 | 1.1+ | 0.1+ | 2003 03 24 | 691 | 0.9− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2001 12 14 | 704 | 1.0+ | 0.8+ | 2005 07 03 | G96 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 1.1+ | 0.3+ | 2005 07 03 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2001 12 14 | 704 | (1.5+ | 0.9+) | 2005 07 03 | G96 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.7− | 0.2+ |
| 2001 12 14 | 704 | 0.9+ | 1.0+ | 2005 07 03 | G96 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 1.0+ | 2005 07 11 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | (0.7− | 1.8−) |
| 2001 12 17 | 704 | 0.6− | 1.0+ | 2005 07 11 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 2001 12 17 | 704 | 0.5− | 1.1+ | 2005 07 11 | 691 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.8+ |
| 2001 12 17 | 704 | 0.2+ | 1.1+ | 2005 07 12 | G96 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.9− | 1.2− |
| 2001 12 17 | 704 | (0.3− | 1.6+) | 2005 07 12 | G96 | 0.9− | 0.1− | 2006 11 13 | 291 | 0.1+ | 0.3+ |
| 2002 01 13 | 704 | 0.3− | 0.8− | 2005 07 12 | G96 | 0.3− | 0.5+ | 2006 11 13 | 291 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.1− | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.2+ | 2006 11 13 | 291 | 0.1+ | 0.4+ | | |
| 2002 01 13 | 704 | 0.1− | 0.8− | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 13 | 703 | 1.6+ | 0.8− | | |
| 2003 02 07 | 291 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 13 | 703 | 0.5− | 0.5− | | |
| 2003 02 07 | 291 | 0.6+ | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.2− | 0.7− | | |
| 2003 02 07 | 291 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.9+ | 0.6− | | |
| 2003 03 07 | 699 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.6+ | 0.5+ | | | | | | |

**(141172)∗ 2001 XL$_{150}$ = 1993 FP$_{62}$ = 2005 QQ$_{45}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85329)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.35629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19034298 | $\omega$ | 191.79536 | | +0.15002209 | +0.98706556 | |
| $a$ | 2.9930328 | $\Omega$ | 86.85181 | | −0.90243342 | +0.16006440 | |
| $e$ | 0.0420107 | $i$ | 3.24521 | | −0.40386545 | +0.00899848 | |
| $P$ | 5.18 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 1.6+ | 0.7− | 2003 03 31 | 645 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.0 | 0.2+ | | |
| 1993 03 20 | 809 | 0.5+ | 0.6+ | 2003 03 31 | 645 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.1+ | 0.3+ | | |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2004 06 14 | 704 | 0.1+ | 0.7+ | 2005 09 11 | 691 | 0.0 | 0.2+ | | |
| 2001 12 14 | 704 | 0.5+ | 0.5− | 2004 06 14 | 704 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2001 12 14 | 704 | 0.1− | 0.1+ | 2004 06 14 | 704 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.5− | | |
| 2001 12 14 | 704 | 0.4− | 0.9− | 2004 06 14 | 704 | 0.6+ | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2001 12 17 | 704 | 0.4− | 0.5− | 2005 07 30 | 644 | 0.0 | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2001 12 17 | 704 | 0.7− | 0.5− | 2005 07 30 | 644 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.5+ | | |
| 2001 12 17 | 704 | 0.7− | 0.7− | 2005 07 30 | 644 | 0.3+ | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.3+ | | |
| 2001 12 17 | 704 | 1.3− | 1.0− | 2005 08 26 | 644 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.6+ | | |
| 2001 12 19 | 704 | 0.7+ | 0.3− | 2005 08 26 | 644 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.3+ | | |
| 2001 12 19 | 704 | 0.4− | 0.6+ | 2005 08 26 | 644 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 12 19 | 704 | 0.5− | 0.9+ | 2005 08 26 | 644 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.2− | | |
| 2001 12 19 | 704 | (1.6− | 1.0+) | 2005 08 26 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.0 | | |
| 2003 03 07 | 699 | 0.1+ | 0.2− | 2005 08 26 | 644 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.2+ | | |
| 2003 03 07 | 699 | (0.4− | 1.9+) | 2005 08 28 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2003 03 07 | 699 | 0.3− | 0.8+ | 2005 08 28 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2003 03 07 | 699 | (2.2+ | 3.4+) | 2005 08 28 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2003 03 10 | 644 | 0.8+ | 0.6+ | 2005 09 01 | 691 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2− | | |
| 2003 03 10 | 644 | 0.7+ | 0.8+ | 2005 09 01 | 691 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.1− | | |
| 2003 03 10 | 644 | 0.8+ | 0.8+ | 2005 09 01 | 691 | 0.6− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2003 03 23 | 645 | 0.1− | 0.1+ | 2005 09 07 | A50 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1− | | |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2005 09 07 | A50 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.0 | | |

**(141173)∗ 2001 XQ$_{151}$ = 2003 FG$_{43}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47029)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.16373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22125821 | $\omega$ | 193.29543 | | +0.37785149 | −0.92566813 | |
| $a$ | 2.7073004 | $\Omega$ | 234.50711 | | +0.85160289 | +0.35558673 | |
| $e$ | 0.0718309 | $i$ | 1.34784 | | +0.36331911 | +0.12921530 | |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.1− | 0.1+ | 2002 01 13 | 704 | 0.3+ | 0.7− | 2005 10 23 | 683 | 0.9+ | 0.7+ | | |
| 1996 10 07 | 691 | 0.5+ | 0.1− | 2002 01 13 | 704 | 0.5− | 0.6− | 2005 10 23 | 683 | (0.9+ | 2.9+) | | |
| 1996 10 07 | 691 | 0.2+ | 0.1+ | 2002 01 13 | 704 | 0.4+ | 0.5− | 2005 10 23 | 703 | 0.3− | 0.1+ | | |
| 2001 12 14 | 704 | 0.2− | 0.1− | 2002 01 15 | 704 | 0.1+ | 0.7− | 2005 10 23 | 703 | (3.1− | 1.1−) | | |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2002 01 15 | 704 | 0.5+ | 0.3− | 2005 10 23 | 703 | 0.2− | 0.3+ | | |
| 2001 12 14 | 704 | 1.0− | 0.4+ | 2002 01 15 | 704 | 0.3+ | 0.8− | 2005 10 24 | 699 | 0.2− | 0.9− | | |
| 2001 12 14 | 704 | 0.8+ | 0.7+ | 2002 01 15 | 704 | (1.7+ | 1.4−) | 2005 10 24 | 699 | 1.1+ | 0.2− | | |
| 2001 12 14 | 704 | 0.7− | 0.0 | 2002 01 15 | 704 | 0.7− | 0.0 | 2005 10 24 | 699 | 0.2+ | 0.3+ | | |
| 2001 12 17 | 704 | (0.1+ | 1.6+) | 2003 03 23 | 291 | 0.5− | 0.3+ | 2005 10 24 | 699 | 0.8+ | 0.4+ | | |
| 2001 12 17 | 704 | 0.6− | 0.7+ | 2003 03 23 | 291 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.1+ | 0.1− | | |
| 2001 12 17 | 704 | 0.4− | 0.7+ | 2003 03 23 | 291 | 0.3− | 0.3+ | 2005 10 28 | G96 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 1.1− | 0.8+ | 2003 03 27 | 644 | 0.3+ | 0.9+ | 2005 10 28 | G96 | 0.0 | 0.1+ | | |
| 2001 12 18 | 691 | 0.2− | 0.1+ | 2003 03 27 | 644 | 0.6− | 1.0+ | 2005 10 28 | G96 | 0.0 | 0.2− | | |
| 2001 12 18 | 691 | 0.3− | 0.0 | 2003 03 27 | 691 | 0.2+ | 0.8+ | 2005 10 29 | 703 | 0.9− | 1.3+ | | |
| 2001 12 18 | 691 | 0.1− | 0.4− | 2003 03 27 | 644 | 0.4+ | 0.9+ | 2005 10 29 | 703 | 1.0− | 0.6+ | | |
| 2001 12 19 | 704 | 1.0− | 1.4+ | 2003 03 27 | 691 | 0.0 | 0.8+ | 2005 10 29 | 703 | 0.9+ | 0.3− | | |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2003 03 27 | 691 | 0.0 | 0.6+ | 2005 10 29 | 703 | 0.4+ | 0.0 | | |
| 2001 12 19 | 704 | (1.6+ | 0.2+) | 2003 04 04 | 691 | 0.5+ | 0.5+ | 2005 10 29 | 703 | 0.2− | 0.8− | | |
| 2001 12 20 | 704 | 0.2− | 0.2− | 2003 04 04 | 691 | 0.7+ | 0.7+ | 2005 10 29 | 703 | 0.3+ | 0.1− | | |
| 2001 12 20 | 704 | (1.2+ | 1.7−) | 2003 04 04 | 691 | 0.6+ | 0.3+ | 2005 10 29 | 703 | 0.3− | 0.2− | | |
| 2001 12 20 | 704 | 0.2− | 0.9+ | 2003 04 08 | 644 | 0.4+ | 0.3− | 2005 10 29 | 703 | 0.2+ | 0.4− | | |
| 2001 12 20 | 704 | 0.5− | 0.2− | 2003 04 08 | 644 | 0.4+ | 0.4+ | 2005 10 30 | 691 | 0.1+ | 0.1+ | | |
| 2001 12 20 | 704 | 0.9+ | 0.4+ | 2003 04 08 | 644 | 0.3− | 0.1− | 2005 10 30 | 691 | 0.2+ | 0.0 | | |
| 2001 12 20 | 704 | 0.1+ | 0.1− | 2005 08 30 | 644 | 0.3− | 0.3+ | 2005 10 30 | 691 | 0.1+ | 0.2− | | |
| 2001 12 20 | 704 | 0.8− | 0.1− | 2005 08 30 | 644 | 0.2− | 0.3+ | 2005 11 05 | 704 | 1.0− | 0.6+ | | |
| 2001 12 20 | 704 | 0.3+ | 1.3+ | 2005 08 30 | 644 | 0.0 | 0.2+ | 2005 11 05 | 704 | 0.5+ | 0.1− | | |
| 2001 12 20 | 704 | 0.8− | 0.2+ | 2005 09 24 | 691 | 0.2− | 0.3+ | 2005 11 05 | 704 | 0.5+ | 0.8+ | | |
| 2001 12 20 | 704 | 0.1+ | 0.2− | 2005 09 24 | 691 | 0.2− | 0.4+ | 2005 11 09 | 703 | 1.1− | 0.5+ | | |
| 2001 12 20 | 704 | 1.1+ | 0.6+ | 2005 09 24 | 691 | 0.1− | 0.5+ | 2005 11 09 | 703 | 0.5− | 1.1− | | |
| 2001 12 20 | 704 | 0.5− | 1.0+ | 2005 09 30 | 691 | 0.0 | 0.2+ | 2005 11 09 | 703 | 0.6+ | 0.8+ | | |
| 2001 12 20 | 704 | 0.5+ | 0.4+ | 2005 09 30 | 691 | 0.4− | 0.3+ | 2005 11 09 | 703 | 0.2+ | 0.4− | | |
| 2001 12 21 | 704 | 0.8+ | 0.6− | 2005 09 30 | 691 | 0.1− | 0.3+ | 2005 11 26 | G96 | 0.6− | 0.2+ | | |
| 2001 12 21 | 704 | 0.2+ | 0.2− | 2005 10 06 | 699 | 0.1− | 1.3+ | 2005 11 26 | G96 | 0.3− | 0.0 | | |
| 2001 12 21 | 704 | 0.2+ | 1.0− | 2005 10 06 | 699 | 1.3− | 1.3+ | 2005 11 26 | G96 | 0.1− | 0.3+ | | |
| 2001 12 21 | 704 | 0.5− | 0.0 | 2005 10 06 | 703 | 1.5+ | 0.3+ | 2005 11 26 | G96 | 0.1+ | 0.2− | | |
| 2001 12 23 | 704 | 0.1− | 0.9+ | 2005 10 06 | 703 | (1.1+ | 1.6+) | 2006 01 04 | G96 | 0.4− | 0.1− | | |
| 2001 12 23 | 704 | 0.4+ | 0.5+ | 2005 10 06 | 703 | 0.4− | 0.4− | 2006 01 04 | G96 | 0.6+ | 0.1− | | |
| 2001 12 23 | 704 | 0.4+ | 0.1− | 2005 10 06 | 699 | 0.7+ | 0.6− | 2006 01 04 | G96 | 0.5− | 0.7− | | |
| 2001 12 23 | 704 | 1.1+ | 0.4+ | 2005 10 06 | 703 | 0.7− | 0.2+ | 2006 01 04 | G96 | 0.0 | 1.0+ | | |
| 2001 12 23 | 704 | 0.7+ | 0.0 | 2005 10 06 | 699 | 0.8− | 0.1+ | 2006 02 24 | G96 | 0.5+ | 0.0 | | |
| 2002 01 09 | 704 | 0.1− | 0.1+ | 2005 10 07 | 691 | 0.1− | 0.2+ | 2006 02 24 | G96 | 0.4+ | 0.8+ | | |
| 2002 01 09 | 704 | 0.4+ | 0.8− | 2005 10 07 | 691 | 0.2− | 0.2+ | 2006 02 24 | G96 | 0.6− | 0.0 | | |
| 2002 01 09 | 704 | 0.2+ | 0.7− | 2005 10 07 | 691 | 0.1+ | 0.4+ | 2006 02 24 | G96 | 0.7− | 0.5− | | |
| 2002 01 09 | 704 | 0.5+ | 0.8− | 2005 10 22 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.8− | 0.5− | | |
| 2002 01 09 | 599 | 1.0+ | 0.7− | 2005 10 22 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.1− | | |
| 2002 01 09 | 599 | 0.1+ | 0.4+ | 2005 10 22 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2002 01 13 | 691 | 0.2− | 0.0 | 2005 10 22 | 703 | 0.6− | 0.6− | 2006 10 21 | G96 | 0.8− | 0.2+ | | |
| 2002 01 13 | 691 | 0.2− | 0.0 | 2005 10 22 | 703 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.6+ | 0.7− | | |
| 2002 01 13 | 691 | 0.4− | 0.2− | 2005 10 22 | 703 | 0.9− | 0.4+ | 2006 10 23 | 691 | 0.8+ | 0.3− | | |
| 2002 01 13 | 704 | 0.4+ | 1.1− | 2005 10 22 | 703 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.5+ | 0.4− | | |
| 2002 01 13 | 704 | 0.0 | 1.1− | 2005 10 23 | 683 | (1.8+ | 0.1−) | | | | | | |

**(141174)∗ 2001 XS$_{151}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.97291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18977361 | $\omega$ | 306.76647 | | +0.75545700 | −0.65311834 | |
| $a$ | 2.9990164 | $\Omega$ | 94.07250 | | +0.61656695 | +0.68172345 | |
| $e$ | 0.1053929 | $i$ | 2.99774 | | +0.22165269 | +0.32968101 | |
| $P$ | 5.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 21 | 691 | 0.0 | 0.4− | 2002 01 12 | 291 | 0.3− | 0.0 | 2005 11 06 | G96 | 0.1− | 0.1− | | |
| 1998 03 21 | 691 | 0.1− | 0.4− | 2002 01 12 | 291 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.8+ | 0.5− | | |
| 1998 03 21 | 691 | 0.1− | 0.3− | 2002 01 15 | 704 | (1.7− | 1.1−) | 2006 09 28 | G96 | 0.0 | 0.3− | | |
| 2001 12 14 | 704 | 0.2− | 1.0+ | 2002 01 15 | 704 | 0.5− | 1.3− | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2001 12 14 | 704 | 0.3+ | 0.6+ | 2002 01 15 | 704 | 0.8− | 1.0− | 2006 09 28 | G96 | 0.3+ | 0.4− | | |
| 2001 12 14 | 704 | 0.3+ | 0.4+ | 2003 04 01 | 645 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.5+ | 0.3+ | | |
| 2001 12 14 | 704 | 0.3+ | 0.0 | 2003 04 01 | 645 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.8− | 0.1+ | | |
| 2001 12 14 | 704 | 0.5+ | 0.2+ | 2003 04 07 | 691 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.3− | 0.8− | | |
| 2001 12 17 | 704 | 0.7− | 1.0+ | 2003 04 07 | 691 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.6− | 0.7+ | | |
| 2001 12 17 | 704 | 0.4+ | 1.2+ | 2003 04 07 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 1.1+ | 0.2− | | |
| 2001 12 17 | 704 | 0.3+ | 1.4+ | 2005 07 04 | 644 | 0.2− | 0.6+ | 2006 11 18 | 704 | 0.7− | 0.5− | | |
| 2001 12 17 | 704 | 0.2+ | 1.4+ | 2005 07 04 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.8+ | | |
| 2001 12 19 | 704 | 0.3+ | 0.9− | 2005 07 04 | 644 | 0.1− | 0.7+ | 2006 11 18 | 704 | 0.6+ | 0.5− | | |
| 2001 12 19 | 704 | 0.2− | 0.6− | 2005 07 18 | 644 | 0.1− | 0.7+ | 2006 11 18 | 704 | (0.3+ | 1.5+) | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.2− | 1.1− | 2005 07 18 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.3− |
| 2001 12 20 | 704 | 0.2+ | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | 1.0− | 0.4− |
| 2001 12 20 | 704 | 0.1+ | 0.0 | 2005 07 27 | 644 | 0.0 | 0.6+ | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2001 12 20 | 704 | 0.1− | 0.4− | 2005 07 27 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.4+ | 1.0+ |
| 2001 12 20 | 704 | 0.0 | 0.3− | 2005 07 27 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2001 12 20 | 704 | 0.1+ | 0.4− | 2005 09 01 | 644 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.7+ |
| 2002 01 08 | 704 | 0.5− | 0.2+ | 2005 09 01 | 644 | 0.4− | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.9− |
| 2002 01 08 | 704 | 0.4− | 0.0 | 2005 09 01 | 644 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.6− | 0.4+ |
| 2002 01 08 | 704 | 0.2+ | 0.4− | 2005 11 06 | G96 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.3+ | 1.0+ |
| 2002 01 08 | 704 | 0.9+ | 1.4− | 2005 11 06 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.5+ |
| 2002 01 12 | 291 | 0.2+ | 0.1− | 2005 11 06 | G96 | 0.1− | 0.5− | | | | |

**(141175)∗ 2001 XT$_{151}$ = 1997 ET$_{14}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23249)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 344.92433 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.18112775 | $\omega$ | 146.25239 | +0.70022645 | −0.71094585 | |
| $a$ | 3.0937085 | $\Omega$ | 259.20605 | +0.63949136 | +0.66515390 | |
| $e$ | 0.1582266 | $i$ | 3.80033 | +0.31738576 | +0.22831181 | |
| $P$ | 5.44 | $H$ | 15.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.2+ | 0.6+ | 2002 01 13 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 |
| 1997 03 04 | 691 | 0.4+ | 0.5+ | 2002 01 13 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 1997 03 04 | 691 | 0.0 | 0.1+ | 2002 01 13 | 704 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1997 03 10 | 691 | 0.5− | 0.2+ | 2002 01 13 | 704 | 0.7− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 1997 03 10 | 691 | 0.4− | 0.0 | 2002 01 13 | 704 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 1997 03 10 | 691 | 0.7− | 0.2+ | 2002 01 13 | 704 | 0.6− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.7+ | 0.6+ | 2002 01 13 | 704 | 1.2− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2001 12 14 | 704 | 1.0+ | 0.2+ | 2002 01 15 | 704 | 1.1+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 1.3+ | 0.2− | 2002 01 15 | 704 | (1.3+ | 1.8−) | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 12 14 | 704 | 1.0+ | 0.0 | 2002 01 15 | 704 | 0.8+ | 1.0− | 2006 10 17 | 691 | 0.3− | 0.2+ |
| 2001 12 17 | 704 | 0.4+ | 1.0+ | 2002 01 15 | 704 | 0.7− | 1.4− | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | (0.1+ | 1.9+) | 2002 01 15 | 704 | 0.2− | 1.2− | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | (0.3+ | 1.9+) | 2002 01 19 | 704 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.8+ | 2002 01 19 | 704 | 0.1− | 0.7− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 12 17 | 704 | (0.3+ | 1.8+) | 2002 01 19 | 704 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 0.4+ | 2003 03 13 | 291 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 12 17 | 704 | (0.2+ | 1.9+) | 2003 03 13 | 291 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 1.0+ | 2003 03 13 | 291 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 12 17 | 704 | (0.1+ | 1.7+) | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.0 | 0.6+ | 2004 05 13 | 691 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.7+ |
| 2001 12 18 | 704 | 1.4+ | 0.3+ | 2004 05 13 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.6+ | 0.1+ | 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2001 12 18 | 704 | 1.0+ | 0.2+ | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.6− | 0.3+ |
| 2001 12 18 | 704 | 0.7+ | 0.1+ | 2005 06 10 | 691 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 0.7+ | 0.9+ | 2005 07 04 | G96 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.7− | 0.8− |
| 2001 12 19 | 704 | 0.1− | 0.5+ | 2005 07 04 | G96 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.8+ | 1.2− |
| 2001 12 19 | 704 | 0.6− | 0.7+ | 2005 07 04 | G96 | 1.4− | 0.6− | 2006 11 14 | 703 | 0.0 | 0.4+ |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2005 07 04 | G96 | 0.6− | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.7− |
| 2001 12 20 | 704 | 0.6+ | 0.4− | 2005 07 06 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 2001 12 20 | 704 | 0.2+ | 0.6− | 2005 07 06 | 691 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2001 12 20 | 704 | 0.2− | 0.7− | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 12 20 | 704 | 0.6+ | 0.5− | 2006 09 20 | 699 | (2.1+ | 0.2+) | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 12 20 | 704 | 0.8− | 1.1− | 2006 09 20 | 699 | 0.1− | 0.8+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | 1.3+ | 1.3− | 2006 09 20 | 699 | (0.7− | 1.5+) | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 01 08 | 704 | 1.3+ | 1.1− | 2006 09 20 | 699 | 1.4− | 0.6+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2002 01 08 | 704 | (0.4+ | 1.6−) | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.2− | 0.3− |
| 2002 01 08 | 704 | (0.4+ | 1.8−) | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2002 01 13 | 691 | 0.0 | 0.5− | 2006 09 26 | 691 | 0.3+ | 0.0 | | | | |

**(141176)∗ 2001 XV$_{151}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 0.46650 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.20547356 | $\omega$ | 356.56914 | +0.13841804 | −0.98203224 | |
| $a$ | 2.8442346 | $\Omega$ | 85.44586 | +0.91168590 | +0.07575392 | |
| $e$ | 0.0661706 | $i$ | 7.39309 | +0.38687113 | +0.17284103 | |
| $P$ | 4.80 | $H$ | 15.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.7− | 0.3+ | 2002 01 14 | 704 | 1.1+ | 0.8+ | 2005 09 23 | 703 | 1.3+ | 0.2+ |
| 2001 11 21 | 704 | 0.3− | 0.4+ | 2002 01 14 | 704 | (1.6+ | 1.2+) | 2005 09 23 | 703 | (1.4− | 2.0+) |
| 2001 11 21 | 704 | 0.2+ | 0.8+ | 2003 03 26 | 644 | 0.5+ | 0.5− | 2005 10 05 | 703 | 1.3+ | 0.5+ |
| 2001 11 21 | 704 | 1.0− | 0.2+ | 2003 03 26 | 644 | 0.4+ | 0.4− | 2005 10 05 | 703 | 0.1− | 0.5− |
| 2001 11 21 | 704 | 0.3− | 0.8+ | 2003 03 26 | 644 | 0.5+ | 0.2− | 2005 10 05 | 703 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | (0.0 | 2.0+) | 2003 03 26 | 691 | 0.1− | 0.4+ | 2005 10 05 | 703 | 0.3− | 0.4− |
| 2001 12 14 | 704 | 0.5+ | 0.3+ | 2003 03 26 | 691 | 0.2− | 0.3+ | 2005 10 08 | 699 | 1.2− | 0.5+ |
| 2001 12 14 | 704 | 0.8+ | 0.2− | 2003 03 26 | 691 | 0.3− | 0.2− | 2005 10 08 | 699 | 0.4+ | 0.3+ |
| 2001 12 14 | 704 | 0.2− | 0.6+ | 2003 04 01 | 704 | 1.3+ | 1.0+ | 2005 10 08 | 699 | 0.2+ | 0.9+ |
| 2001 12 14 | 704 | 0.1− | 0.2+ | 2003 04 01 | 704 | 0.5+ | 0.1+ | 2005 10 08 | 699 | 0.9− | 1.0+ |
| 2001 12 17 | 704 | 0.0 | 0.1+ | 2003 04 01 | 704 | 1.0+ | 0.7+ | 2006 09 18 | 691 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.1− | 0.6− | 2003 04 01 | 704 | (1.6+ | 0.9+) | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 2001 12 17 | 704 | 0.4− | 0.4− | 2003 04 01 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.1− | 0.6− | 2003 04 01 | 704 | 0.6+ | 0.9+ | 2006 09 28 | 691 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.4− | 0.5− | 2003 04 01 | 645 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.3+ | 0.0 |
| 2001 12 19 | 704 | 0.1+ | 0.3− | 2003 04 01 | 645 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.5+ | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2003 04 08 | 608 | (1.7+ | 0.6−) | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.3− | 2003 04 08 | 608 | 0.5+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2003 04 08 | 608 | 0.6+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 0.7− | 2003 04 09 | 691 | 0.1+ | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 12 20 | 704 | 0.0 | 0.0 | 2003 04 09 | 691 | 0.1− | 0.8+ | 2006 10 29 | G96 | 0.6− | 0.4− |
| 2001 12 20 | 704 | 0.0 | 1.1+ | 2003 04 09 | 704 | (3.7+ | 1.0−) | 2006 10 29 | G96 | 0.1− | 0.2− |
| 2001 12 20 | 704 | 0.4− | 0.2+ | 2003 04 09 | 691 | 0.1− | 1.2+ | 2006 10 29 | G96 | 0.4− | 0.4− |
| 2001 12 20 | 704 | (2.1+ | 1.5−) | 2003 04 09 | 704 | 0.3+ | 0.4+ | 2006 10 29 | G96 | 0.3− | 0.2+ |
| 2002 01 08 | 704 | (0.4+ | 1.7+) | 2003 04 09 | 704 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2002 01 08 | 704 | 0.5− | 0.7+ | 2003 04 09 | 704 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 01 08 | 704 | 0.2− | 0.3+ | 2005 09 13 | 703 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 01 08 | 704 | 1.0− | 0.3+ | 2005 09 13 | 703 | 1.1− | 0.5+ | 2006 11 15 | G96 | 0.6− | 0.5− |
| 2002 01 08 | 704 | 0.6− | 0.2+ | 2005 09 13 | 703 | 0.8− | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2002 01 14 | 704 | (1.9+ | 0.9+) | 2005 09 13 | 703 | 0.4− | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2002 01 14 | 704 | 1.2+ | 0.4+ | 2005 09 23 | 703 | 0.6− | 0.0 | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2002 01 14 | 704 | 1.3+ | 1.2+ | 2005 09 23 | 703 | 0.6− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.4− |

**(141177)∗ 2001 XD$_{152}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 276.29166 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.19020467 | $\omega$ | 80.07211 | −0.95951440 | −0.27653934 | |
| $a$ | 2.9944835 | $\Omega$ | 83.85933 | +0.23273947 | −0.88534916 | |
| $e$ | 0.2149768 | $i$ | 3.08226 | +0.15863305 | −0.37374171 | |
| $P$ | 5.18 | $H$ | 14.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.8− | 0.1+ | 2002 01 21 | 704 | 0.2− | 0.7− | 2003 06 04 | 691 | 0.5+ | 0.8+ |
| 2001 12 14 | 704 | 0.9− | 0.4+ | 2003 04 01 | 704 | 0.7+ | 1.2− | 2003 06 04 | 691 | 0.3+ | 0.8+ |
| 2001 12 14 | 704 | 0.6− | 0.3+ | 2003 04 01 | 704 | (1.0+ | 1.6+) | 2005 08 25 | 644 | 0.3− | 0.5+ |
| 2001 12 14 | 704 | 1.0− | 0.2+ | 2003 04 01 | 704 | 0.1− | 1.2+ | 2005 08 25 | 644 | 0.3− | 0.8+ |
| 2001 12 14 | 704 | 0.7− | 0.1− | 2003 04 01 | 704 | 0.7− | 0.6+ | 2005 08 25 | 644 | 0.2− | 0.6+ |
| 2001 12 17 | 704 | 0.5+ | 0.1− | 2003 04 08 | 608 | 0.0 | 0.6+ | 2005 09 30 | G96 | 0.4+ | 0.4+ |
| 2001 12 17 | 704 | 1.0− | 0.1− | 2003 04 08 | 608 | 0.1− | 0.9+ | 2005 09 30 | G96 | 0.6− | 0.1+ |
| 2001 12 17 | 704 | 0.5− | 0.5− | 2003 04 08 | 608 | 0.1+ | 0.6+ | 2005 09 30 | G96 | 0.4− | 0.4+ |
| 2001 12 17 | 704 | 1.1+ | 0.3− | 2003 04 24 | 699 | 0.3− | 1.0− | 2005 09 30 | G96 | 0.1− | 0.4+ |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2003 04 24 | 699 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2001 12 17 | 704 | (2.2+ | 0.4−) | 2003 04 24 | 699 | 0.9+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.3− | 0.3− | 2003 04 24 | 699 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 1.0+ | 0.6− | 2003 04 28 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.4− | 2003 04 28 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.9+ | 0.1− | 2003 04 28 | 704 | 0.1+ | 0.5− | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2001 12 19 | 704 | 0.8− | 0.4− | 2003 04 28 | 704 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.2+ | 2003 04 28 | 704 | 0.2− | 1.0− | 2006 11 15 | 703 | 0.4− | 0.3− |
| 2001 12 19 | 704 | 0.2+ | 0.3+ | 2003 04 28 | 704 | 0.8+ | 0.6+ | 2006 11 15 | 703 | 0.9− | 0.4− |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2003 04 28 | 704 | 0.4− | 0.5− | 2006 11 15 | 703 | 0.5− | 0.2− |
| 2001 12 20 | 704 | 0.1− | 0.3− | 2003 04 28 | 704 | 0.9+ | 0.7− | 2006 11 15 | 703 | 0.5− | 0.0 |
| 2001 12 20 | 704 | 0.2− | 0.4− | 2003 04 29 | 608 | 0.3− | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2001 12 20 | 704 | 0.2+ | 0.0 | 2003 04 29 | 608 | 0.3− | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2001 12 20 | 704 | 0.1− | 0.3+ | 2003 04 29 | 608 | 0.2− | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2001 12 20 | 704 | 0.1− | 0.2+ | 2003 05 02 | 703 | 0.4− | 0.2+ | 2006 11 21 | 704 | (1.7+ | 0.5+) |
| 2001 12 21 | 704 | 0.8+ | 0.4+ | 2003 05 02 | 703 | 0.2+ | 0.0 | 2006 11 21 | 704 | (0.1+ | 1.5+) |
| 2001 12 21 | 704 | 0.8+ | 0.2− | 2003 05 02 | 703 | 1.4− | 0.4+ | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2001 12 21 | 704 | 1.2+ | 0.6− | 2003 05 02 | 703 | 0.0 | 0.4− | 2006 11 21 | 704 | (1.2+ | 2.0+) |
| 2001 12 21 | 704 | 0.1− | 0.2− | 2003 05 05 | 704 | 0.2− | 0.7+ | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2001 12 21 | 704 | 0.0 | 0.1− | 2003 05 05 | 704 | 1.2+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2002 01 08 | 704 | 0.0 | 0.0 | 2003 05 05 | 704 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2002 01 08 | 704 | 0.1− | 0.3− | 2003 05 05 | 704 | 1.2− | 0.8+ | 2006 11 24 | G96 | 0.4− | 0.0 |
| 2002 01 08 | 704 | 0.3+ | 0.8− | 2003 05 05 | 704 | 0.5− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2002 01 08 | 704 | 0.0 | 0.3− | 2003 05 13 | 608 | 0.5− | 1.2− | 2006 11 24 | G96 | 0.6− | 0.2− |
| 2002 01 08 | 704 | 0.4+ | 0.4− | 2003 05 13 | 608 | 0.3− | 1.1− | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 01 12 | 691 | 0.1+ | 0.3+ | 2003 05 13 | 608 | 0.4− | 1.0− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2002 01 12 | 691 | 0.1+ | 0.3+ | 2003 05 26 | 608 | 0.5+ | 1.0− | 2006 11 27 | 691 | 0.4− | 0.6+ |
| 2002 01 12 | 691 | 0.3+ | 0.1+ | 2003 05 26 | 608 | 0.3+ | 1.0− | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2002 01 14 | 704 | (1.8+ | 1.6−) | 2003 05 26 | 608 | 0.2+ | 0.9− | 2006 12 01 | 704 | 0.7− | 0.7+ |
| 2002 01 14 | 704 | (1.0− | 2.3−) | 2003 05 29 | 704 | 1.0+ | 0.6+ | 2006 12 01 | 704 | 0.3− | 0.4+ |
| 2002 01 14 | 704 | 0.7− | 0.0 | 2003 05 29 | 704 | 0.2+ | 0.6+ | 2006 12 01 | 704 | 0.3− | 0.9+ |
| 2002 01 14 | 704 | 0.4− | 0.7− | 2003 05 29 | 704 | 0.1+ | 0.5− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2002 01 14 | 704 | 0.8− | 0.4− | 2003 06 03 | 704 | 0.9+ | 1.2+ | 2006 12 01 | 704 | 0.6− | 0.1− |
| 2002 01 21 | 704 | 0.5− | 0.3+ | 2003 06 03 | 704 | 0.8− | 0.4+ | 2006 12 01 | 704 | 1.6− | 0.5− |
| 2002 01 21 | 704 | 0.1− | 0.0 | 2003 06 03 | 704 | 0.4− | 1.3− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2002 01 21 | 704 | 0.6+ | 1.3+ | 2003 06 03 | 704 | 0.1+ | 0.6+ | 2006 12 01 | 691 | 2.7+ | 1.4− |
| 2002 01 21 | 704 | 0.1− | 0.3+ | 2003 06 04 | 691 | 0.3+ | 1.0+ | | | | |

**(141178)∗ 2001 XH$_{153}$ = 1998 HJ$_{109}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23251)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.94445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18795591 | $\omega$ | 69.35062 | | −0.95149443 | | −0.22065163 |
| $a$ | 3.0183208 | $\Omega$ | 97.41567 | | +0.13217355 | | −0.92245994 |
| $e$ | 0.0633353 | $i$ | 12.48696 | | +0.27782820 | | −0.31682886 |
| $P$ | 5.24 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.2+ | 0.2+ | 2001 12 20 | 704 | 0.7+ | 0.1− | 2003 04 05 | 699 | 0.1− | 0.9− |
| 1993 04 17 | 691 | 0.2− | 0.3+ | 2001 12 22 | 691 | 1.1− | 0.2− | 2003 04 05 | 699 | 0.2− | 0.2− |
| 1993 04 17 | 691 | 0.6+ | 0.2+ | 2001 12 22 | 691 | 0.8− | 0.3− | 2003 04 05 | 699 | 0.6− | 0.4+ |
| 1998 04 23 | 704 | 0.4− | 0.4− | 2001 12 22 | 691 | 1.0− | 0.1− | 2003 04 09 | 644 | 0.2+ | 0.4+ |
| 1998 04 23 | 704 | 0.0 | 0.3− | 2002 01 09 | 704 | (1.6+ | 0.5+) | 2003 04 09 | 644 | 0.4+ | 0.4+ |
| 1998 04 23 | 704 | 1.6− | 0.1− | 2002 01 09 | 704 | 0.8+ | 0.4+ | 2003 04 09 | 644 | 0.4+ | 0.3+ |
| 1998 04 23 | 704 | 1.0+ | 1.8− | 2002 01 09 | 704 | 0.5− | 0.1− | 2005 08 28 | 699 | 1.1− | 0.6+ |
| 1998 04 24 | 704 | 0.9+ | 0.4+ | 2002 01 09 | 704 | 0.4− | 0.6− | 2005 08 28 | 699 | 1.2− | 1.1+ |
| 1998 04 24 | 704 | 1.3+ | 0.5− | 2002 01 13 | 704 | 0.8− | 0.3+ | 2005 08 28 | 699 | 0.3− | 0.2− |
| 1998 04 24 | 704 | 0.1+ | 0.2− | 2002 01 13 | 704 | 1.2− | 0.1+ | 2005 08 28 | 699 | 0.5+ | 0.0 |
| 1998 04 24 | 704 | 1.6− | 0.1+ | 2002 01 13 | 704 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1998 04 24 | 704 | 1.4− | 0.9− | 2002 01 14 | 291 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | 0.3+ | 0.1− | 2002 01 14 | 291 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.5+ | 0.1+ |
| 2001 11 20 | 704 | 0.0 | 0.6− | 2002 01 14 | 291 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.6+ |
| 2001 11 20 | 704 | 0.2+ | 0.6− | 2002 01 15 | 704 | 0.6+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2001 11 20 | 704 | 0.1− | 0.6− | 2002 01 15 | 704 | 1.0+ | 0.4+ | 2006 11 15 | 703 | 0.5+ | 0.6− |
| 2001 11 20 | 704 | 0.3+ | 0.9− | 2002 01 15 | 704 | 1.0+ | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2001 12 14 | 704 | 0.9− | 0.5− | 2002 01 19 | 704 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2001 12 14 | 704 | 1.0− | 1.5− | 2002 01 19 | 704 | 0.3+ | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 1.1− | 0.7− | 2002 01 19 | 704 | 1.3+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 1.4− | 0.5− | 2002 01 19 | 704 | 1.3+ | 1.1+ | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2001 12 14 | 704 | (1.5− | 0.9−) | 2003 03 13 | 704 | (2.2− | 0.4+) | 2006 11 22 | G96 | 0.5+ | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 0.2+ | 2003 03 13 | 704 | (1.7− | 1.2+) | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 0.8+ | 0.1− | 2003 03 13 | 704 | (2.6− | 0.3+) | 2006 11 22 | G96 | 0.5+ | 0.4+ |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2003 03 13 | 704 | (2.1− | 2.5+) | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.2+ | 2003 03 13 | 704 | 0.8− | 0.6+ | 2006 11 23 | 683 | (0.4− | 2.1+) |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2003 03 13 | 704 | 0.9− | 1.2+ | 2006 11 23 | 683 | (3.1− | 1.0+) |
| 2001 12 19 | 704 | (1.7+ | 0.6−) | 2003 03 13 | 704 | 0.4− | 0.9+ | 2006 11 28 | 683 | 0.8+ | 1.0+ |
| 2001 12 19 | 704 | 1.4+ | 0.8− | 2003 03 13 | 704 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.9+ | 0.7− | 2003 03 13 | 704 | (1.9− | 1.3+) | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2001 12 19 | 704 | (2.0+ | 0.7−) | 2003 03 25 | 644 | 0.8+ | 0.2+ | 2006 11 28 | 704 | 0.3− | 0.0 |
| 2001 12 20 | 704 | 0.6+ | 0.3− | 2003 03 25 | 644 | 0.8+ | 0.1+ | 2006 11 28 | 683 | 1.3− | 1.2+ |
| 2001 12 20 | 704 | 0.9+ | 0.1− | 2003 03 25 | 644 | 0.5+ | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2001 12 20 | 704 | 0.9+ | 0.5− | 2003 04 05 | 699 | 0.9+ | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.3+ |

**(141179)∗ 2001 XR$_{159}$ = 2000 SZ$_{369}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25480)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.33158 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18082650 | $\omega$ | 318.37887 | | +0.59575268 | | −0.78296217 |
| $a$ | 3.0971435 | $\Omega$ | 94.28331 | | +0.77615696 | | +0.50391431 |
| $e$ | 0.0725979 | $i$ | 10.34202 | | +0.20654083 | | +0.36474732 |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 0.2− | 0.8+ | 2002 01 08 | 704 | 0.8+ | 0.1+ | 2005 09 08 | E12 | 0.8− | 0.7+ |
| 2000 09 24 | 699 | 0.1+ | 1.9+ | 2002 01 08 | 704 | (0.8− | 2.0−) | 2005 09 08 | E12 | (1.8+ | 0.5+) |
| 2000 09 24 | 699 | 0.5− | 1.0+ | 2002 01 08 | 704 | 1.3+ | 0.9+ | 2006 10 16 | 703 | 0.2+ | 1.2− |
| 2000 09 24 | 699 | 0.6− | 0.7+ | 2002 01 08 | 704 | (0.9− | 2.5−) | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2000 10 01 | 704 | 1.0− | 0.2+ | 2002 01 08 | 704 | 0.6+ | 0.0 | 2006 10 16 | 703 | (0.1+ | 2.8−) |
| 2000 10 01 | 704 | 0.1− | 0.5− | 2002 12 11 | 645 | 0.1− | 0.1+ | 2006 11 01 | 703 | 1.1+ | 0.1− |
| 2000 10 01 | 704 | 0.4− | 0.2+ | 2002 12 11 | 645 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.9− | 0.1+ |
| 2000 10 01 | 704 | 0.2− | 0.7+ | 2003 02 28 | 704 | 0.9+ | 1.2+ | 2006 11 01 | 703 | 0.7− | 0.9− |
| 2001 11 21 | 704 | 0.2− | 0.2− | 2003 02 28 | 704 | 0.4+ | 0.2− | 2006 11 01 | 703 | 1.1− | 1.4+ |
| 2001 11 21 | 704 | 0.5− | 0.4+ | 2003 02 28 | 704 | 0.8+ | 0.5− | 2006 11 13 | 644 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 1.1− | 0.1+ | 2003 02 28 | 704 | 1.1− | 0.8+ | 2006 11 13 | 644 | 0.4− | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2003 03 12 | 644 | 0.0 | 0.7+ | 2006 11 13 | 644 | 0.5− | 0.4+ |
| 2001 12 14 | 704 | 0.8+ | 0.5− | 2003 03 12 | 644 | 0.9+ | 0.8+ | 2006 11 19 | 704 | 0.2+ | 1.0+ |
| 2001 12 14 | 704 | 0.7+ | 0.5− | 2003 03 12 | 644 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2001 12 14 | 704 | 0.7+ | 0.4− | 2003 03 12 | 644 | 0.8+ | 0.7+ | 2006 11 19 | 704 | 0.5+ | 1.3+ |
| 2001 12 14 | 704 | 1.0+ | 0.1− | 2003 03 12 | 644 | 0.2+ | 0.6+ | 2006 11 19 | 703 | 1.1− | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2003 03 12 | 644 | 1.0+ | 0.7+ | 2006 11 19 | 704 | 1.0− | 0.6+ |
| 2001 12 17 | 704 | 0.9− | 0.1− | 2003 03 25 | 644 | 0.5+ | 1.0+ | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2001 12 17 | 704 | 0.9− | 1.0− | 2003 03 25 | 644 | 0.4+ | 0.9+ | 2006 11 19 | 703 | 0.6+ | 0.5− |
| 2001 12 17 | 704 | 0.6− | 1.3− | 2003 03 25 | 644 | 0.4+ | 1.0+ | 2006 11 19 | 704 | 0.2+ | 1.2+ |
| 2001 12 21 | 704 | 0.1+ | 0.4+ | 2005 08 04 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 1.4+ | 0.3+ |
| 2001 12 21 | 704 | 0.7− | 0.9+ | 2005 08 04 | 644 | 0.3+ | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2001 12 21 | 704 | 0.1+ | 0.0 | 2005 08 04 | 644 | 0.1− | 0.6+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2002 01 08 | 704 | (0.3− | 1.7−) | 2005 09 08 | E12 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2002 01 08 | 704 | (1.1− | 2.1−) | 2005 09 08 | E12 | 0.0 | 0.8+ | 2006 11 25 | G96 | 0.2− | 0.3− |

**(141180)∗ 2001 XF$_{160}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.65203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17574205 | $\omega$ | 271.43589 | | −0.96819295 | | −0.01104944 |
| $a$ | 3.1565955 | $\Omega$ | 267.97662 | | +0.10783752 | | −0.91990110 |
| $e$ | 0.1831976 | $i$ | 14.48441 | | −0.22577308 | | −0.39199474 |
| $P$ | 5.61 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | (1.1+ | 1.9+) | 2002 01 15 | 704 | (0.7− | 1.5−) | 2005 10 06 | 703 | 1.4− | 0.3+ |
| 2001 12 14 | 704 | (2.2+ | 0.9+) | 2002 01 15 | 704 | (1.7+ | 1.6−) | 2005 10 06 | 703 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.9+ | 1.2+ | 2002 01 15 | 704 | 0.6+ | 0.1+ | 2005 10 06 | 703 | 0.2+ | 0.6+ | | |
| 2001 12 14 | 704 | 0.4+ | 1.5+ | 2002 01 19 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 703 | (2.9+ | 0.7+) | | |
| 2001 12 14 | 704 | (2.8+ | 0.1−) | 2002 01 19 | 704 | 1.4− | 0.7+ | 2006 10 23 | 703 | (0.4− | 1.6−) | | |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2002 01 19 | 704 | 0.3− | 0.7+ | 2006 10 23 | 703 | 0.6+ | 0.5− | | |
| 2001 12 17 | 704 | 0.0 | 0.4− | 2002 01 19 | 704 | 0.4− | 0.3+ | 2006 10 23 | 703 | 0.5− | 0.5+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.0 | 2002 02 11 | 704 | 1.2+ | 1.2+ | 2006 10 29 | 703 | 0.2+ | 0.7+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2002 02 11 | 704 | 0.4+ | 0.0 | 2006 10 29 | 703 | 0.8− | 1.0− | | |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2002 02 11 | 704 | 0.4+ | 1.0+ | 2006 10 29 | 703 | 0.1− | 0.7+ | | |
| 2001 12 19 | 704 | 0.5− | 0.6− | 2002 02 11 | 704 | 0.4− | 0.2+ | 2006 10 29 | 703 | 0.9+ | 0.4− | | |
| 2001 12 19 | 704 | 0.8− | 1.2− | 2003 05 08 | 428 | 0.1− | 0.3+ | 2006 11 02 | G96 | 0.3+ | 0.6− | | |
| 2001 12 19 | 704 | 0.2+ | 0.6− | 2003 05 09 | 428 | (1.9− | 0.1−) | 2006 11 02 | G96 | 0.2+ | 0.3− | | |
| 2001 12 20 | 704 | 0.1+ | 0.2− | 2003 05 10 | 428 | 0.5+ | 0.0 | 2006 11 02 | G96 | 0.2+ | 0.4− | | |
| 2001 12 20 | 704 | 0.0 | 0.2− | 2003 05 10 | 428 | (1.6+ | 1.0−) | 2006 11 02 | G96 | 0.2+ | 0.3− | | |
| 2001 12 20 | 704 | 0.1− | 0.2− | 2004 06 17 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.3+ | | |
| 2002 01 09 | 704 | 0.3− | 0.0 | 2004 06 17 | 644 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.2− | | |
| 2002 01 09 | 704 | 0.2− | 0.6+ | 2004 06 17 | 644 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.4− | | |
| 2002 01 09 | 704 | 0.2− | 0.1− | 2004 07 16 | 704 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.5+ | 0.3− | | |
| 2002 01 13 | 704 | 0.3+ | 0.0 | 2004 07 16 | 704 | 0.5+ | 0.3+ | 2006 11 21 | 703 | 0.4− | 1.3+ | | |
| 2002 01 13 | 704 | 0.4− | 0.0 | 2004 07 16 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 703 | 0.6− | 0.6− | | |
| 2002 01 13 | 704 | 0.3− | 0.2− | 2004 07 16 | 704 | 1.3− | 0.2+ | 2006 11 21 | 703 | 0.3− | 0.5− | | |
| 2002 01 15 | 704 | 0.5− | 0.5− | 2005 10 06 | 703 | 0.8+ | 0.8+ | 2006 11 21 | 703 | 0.5− | 0.4− | | |

**(141181)∗ 2001 XT$_{168}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.67249 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17621657 | $\omega$ | 264.83465 | | −0.02605666 | −0.99966002 | |
| $a$ | 3.1509261 | $\Omega$ | 186.65868 | | +0.92038715 | −0.02361929 | |
| $e$ | 0.1617935 | $i$ | 0.46964 | | +0.39013914 | −0.01104453 | |
| $P$ | 5.59 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 16 | 691 | 0.2− | 0.0 | 2005 07 03 | G96 | 0.3+ | 0.0 | 2006 10 20 | 703 | 0.2− | 0.0 | | |
| 1998 06 16 | 691 | 0.5− | 0.2− | 2005 07 03 | G96 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 1998 06 16 | 691 | 0.3− | 0.2+ | 2005 07 03 | G96 | 0.5+ | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.2− | | |
| 2001 11 20 | 704 | 0.1+ | 0.5+ | 2005 07 03 | G96 | 0.0 | 0.4− | 2006 10 20 | 703 | 0.7− | 0.3+ | | |
| 2001 11 20 | 704 | 0.7+ | 0.8− | 2005 07 03 | G96 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2001 11 20 | 704 | 0.8+ | 0.9+ | 2005 07 03 | G96 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.4+ | 0.5+ | | |
| 2001 11 20 | 704 | 0.7+ | 0.0 | 2005 07 03 | G96 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.2+ | | |
| 2001 12 14 | 704 | 0.4− | 0.1− | 2005 07 11 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.1− | | |
| 2001 12 14 | 704 | 0.3− | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.0 | | |
| 2001 12 14 | 704 | 0.4− | 0.4+ | 2005 07 11 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 12 14 | 704 | 0.3− | 0.5+ | 2006 09 18 | 699 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 12 17 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 12 17 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2001 12 17 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 1.3+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2001 12 20 | 704 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2001 12 20 | 704 | 0.3− | 0.4− | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2001 12 20 | 704 | 0.7− | 0.2− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.4− | 0.1− | | |
| 2001 12 20 | 704 | 0.3− | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.3− | | |
| 2001 12 21 | 704 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.3− | | |
| 2001 12 21 | 704 | 0.1+ | 0.8+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2001 12 21 | 704 | 0.4− | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.3− | 0.3− | | |
| 2001 12 21 | 704 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.5− | | |
| 2002 01 08 | 704 | (4.4− | 0.7−) | 2006 09 27 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2002 01 08 | 704 | 0.6− | 0.3− | 2006 09 27 | 704 | 0.3+ | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.2+ | | |
| 2002 01 08 | 704 | 0.7− | 0.7− | 2006 09 27 | 704 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2002 01 08 | 704 | 0.5− | 0.3− | 2006 09 27 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 2002 01 10 | 106 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | (1.4+ | 1.6−) | | |
| 2002 01 10 | 106 | 1.1− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.7− | | |
| 2002 01 10 | 106 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.2− | | |
| 2002 01 13 | 704 | 0.3+ | 0.1− | 2006 10 02 | 691 | 0.4− | 0.2+ | 2006 11 13 | 704 | 0.3+ | 0.1− | | |
| 2002 01 13 | 704 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.3− | 0.2+ | 2006 11 13 | 704 | 0.4+ | 0.0 | | |
| 2002 01 13 | 704 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.7− | 0.3+ | 2006 11 13 | 704 | 0.5+ | 0.4+ | | |
| 2002 01 15 | 704 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.3− | 2006 11 13 | 704 | 0.8+ | 0.2− | | |
| 2002 01 15 | 704 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 13 | 704 | 0.6− | 0.0 | | |
| 2002 01 15 | 704 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.8+ | | |
| 2002 01 15 | 704 | 0.6+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.8+ | 0.6− | | |
| 2002 01 15 | 704 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1+ | 1.2+ | | |
| 2002 01 19 | 704 | 1.0+ | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.1− | | |
| 2002 01 19 | 704 | 0.9+ | 0.1− | 2006 10 16 | 185 | 0.3+ | 0.5− | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2002 01 19 | 704 | 1.3+ | 0.1− | 2006 10 16 | 185 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.2− | 0.2+ | | |
| 2003 02 22 | 291 | 0.1+ | 0.3+ | 2006 10 16 | 185 | 0.5+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2003 02 22 | 291 | 0.4+ | 0.6+ | 2006 10 17 | 185 | (1.6+ | 0.8−) | 2006 11 20 | G96 | 0.4+ | 0.0 | | |
| 2003 02 22 | 291 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.2− | 0.3− | | |
| 2003 03 24 | 691 | 0.1+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.2− | 0.1− | | |
| 2003 03 24 | 691 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.3− | | |
| 2003 03 24 | 691 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.5+ | | |
| 2005 06 30 | 691 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.5− | | |
| 2005 06 30 | 691 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.2− | | |
| 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.3+ | | |
| 2005 07 03 | G96 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2+ | 1.8− | | |

**(141182)∗ 2001 XC$_{169}$ = 2003 FX$_{41}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.69729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17217259 | $\omega$ | 69.64032 | | −0.97903969 | −0.16684490 | |
| $a$ | 3.2000741 | $\Omega$ | 100.61441 | | +0.11210433 | −0.92027277 | |
| $e$ | 0.1206510 | $i$ | 6.82523 | | +0.17004088 | −0.35392204 | |
| $P$ | 5.72 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 06 | 691 | 0.1− | 0.1+ | 2002 01 19 | 704 | 0.9+ | 0.7− | 2003 04 07 | 644 | 0.4+ | 0.4− | | |
| 1992 05 06 | 691 | 0.0 | 0.3+ | 2003 03 09 | 704 | 0.2+ | 0.3+ | 2003 04 08 | 608 | 0.3+ | 0.1+ | | |
| 1992 05 06 | 691 | 0.1− | 0.3+ | 2003 03 09 | 704 | 1.2+ | 0.7+ | 2003 04 08 | 608 | 0.3+ | 0.2+ | | |
| 1999 08 04 | I03 | 0.1+ | 0.4+ | 2003 03 09 | 704 | 0.3− | 0.0 | 2003 04 08 | 608 | 0.2+ | 0.3− | | |
| 1999 08 04 | I03 | 0.2− | 0.3+ | 2003 03 09 | 704 | 0.5+ | 0.7+ | 2003 04 09 | 691 | 0.0 | 0.1+ | | |
| 1999 08 04 | I03 | 0.6− | 0.0 | 2003 03 09 | 704 | 0.3+ | 0.4+ | 2003 04 09 | 691 | 0.1− | 0.1+ | | |
| 2000 10 01 | 645 | 0.0 | 0.2+ | 2003 03 15 | 608 | 0.6+ | 0.6+ | 2003 04 09 | 704 | 0.0 | 0.8+ | | |
| 2000 10 01 | 645 | 0.0 | 0.3+ | 2003 03 15 | 608 | 0.0 | 0.7+ | 2003 04 09 | 691 | 0.1− | 0.2+ | | |
| 2001 12 14 | 704 | 0.6+ | 0.3+ | 2003 03 15 | 608 | 0.0 | 0.6+ | 2003 04 09 | 704 | 0.0 | 0.4+ | | |
| 2001 12 14 | 704 | 1.2+ | 0.1+ | 2003 03 25 | 608 | 0.4+ | 1.0+ | 2003 04 09 | 704 | 0.5− | 0.0 | | |
| 2001 12 14 | 704 | 0.6+ | 0.3− | 2003 03 25 | 608 | 0.1− | 1.1+ | 2003 04 09 | 704 | 1.3− | 1.4+ | | |
| 2001 12 14 | 704 | 1.2+ | 0.6+ | 2003 03 25 | 608 | (0.2− | 3.0+) | 2005 08 27 | 644 | 0.1− | 0.5+ | | |
| 2001 12 17 | 704 | 1.0− | 1.2+ | 2003 03 26 | 644 | 0.4+ | 1.0+ | 2005 08 27 | 644 | 0.0 | 0.6+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2003 03 26 | 644 | 0.4+ | 0.9+ | 2005 08 27 | 644 | 0.1− | 0.4+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.7+ | 2003 03 26 | 644 | 0.4+ | 0.9+ | 2005 08 31 | 644 | 0.0 | 0.6+ | | |
| 2001 12 17 | 704 | 0.5+ | 0.3− | 2003 03 26 | 691 | 0.6+ | 0.4+ | 2005 08 31 | 644 | 0.0 | 0.5+ | | |
| 2001 12 17 | 704 | 0.8+ | 0.3+ | 2003 03 26 | 691 | 0.5+ | 0.4+ | 2005 08 31 | 644 | 0.0 | 0.8+ | | |
| 2001 12 20 | 704 | 0.3− | 0.7+ | 2003 03 26 | 691 | 0.7+ | 0.3+ | 2006 10 15 | D35 | 0.0 | 1.0+ | | |
| 2001 12 20 | 704 | 0.0 | 0.7+ | 2003 03 27 | 644 | 0.2+ | 0.8+ | 2006 10 15 | D35 | 0.4− | 0.5+ | | |
| 2001 12 20 | 704 | 0.5− | 0.2+ | 2003 03 27 | 644 | 0.5+ | 1.0+ | 2006 10 15 | D35 | 0.6− | 0.8+ | | |
| 2001 12 20 | 704 | 0.5+ | 0.1+ | 2003 03 27 | 644 | 0.2+ | 1.0+ | 2006 10 22 | 703 | 0.9− | 0.3− | | |
| 2002 01 08 | 704 | 0.5− | 0.1+ | 2003 03 31 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.6+ | | |
| 2002 01 08 | 704 | 0.9− | 0.2+ | 2003 03 31 | 699 | 0.6+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.6− | | |
| 2002 01 08 | 704 | 1.2− | 0.2+ | 2003 03 31 | 699 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.8− | 0.1− | | |
| 2002 01 08 | 704 | 0.9− | 0.5− | 2003 03 31 | 699 | 0.4+ | 0.6− | 2006 11 08 | 644 | 0.4− | 0.3− | | |
| 2002 01 13 | 704 | 0.5+ | 0.7+ | 2003 04 01 | 645 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.3− | 0.5+ | | |
| 2002 01 13 | 704 | 0.3+ | 0.8− | 2003 04 01 | 645 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.3− | 0.2+ | | |
| 2002 01 13 | 704 | 0.8+ | 0.8− | 2003 04 01 | 704 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.3+ | | |
| 2002 01 13 | 704 | 0.8− | 0.7− | 2003 04 01 | 704 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.3− | 0.2+ | | |
| 2002 01 15 | 704 | 0.3− | 0.6− | 2003 04 01 | 704 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2− | 0.3+ | | |
| 2002 01 15 | 704 | 0.6− | 0.0 | 2003 04 01 | 704 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.3− | 0.0 | | |
| 2002 01 15 | 704 | 0.5− | 0.3− | 2003 04 01 | 704 | 0.5+ | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2002 01 19 | 704 | 0.8+ | 0.3− | 2003 04 07 | 644 | 0.1+ | 0.8− | 2006 11 24 | G96 | 0.2− | 0.0 | | |
| 2002 01 19 | 704 | 0.2+ | 0.9− | 2003 04 07 | 644 | 0.2+ | 0.8− | 2006 11 24 | G96 | 0.1− | 0.1+ | | |

**(141183)∗ 2001 XP$_{171}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.77486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20719383 | $\omega$ | 260.42768 | | +0.95979221 | | −0.27760255 |
| $a$ | 2.8284695 | $\Omega$ | 115.67994 | | +0.27226168 | | +0.88445100 |
| $e$ | 0.0616161 | $i$ | 2.64962 | | +0.06835558 | | +0.37507765 |
| $P$ | 4.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 02 | 691 | 0.2− | 0.3+ | 2002 01 09 | 704 | (1.6− | 0.3+) | 2005 10 20 | 644 | 0.4+ | 0.1+ |
| 1991 11 02 | 691 | 0.1+ | 0.3+ | 2002 01 09 | 704 | 0.4+ | 1.3+ | 2005 10 20 | 644 | 0.2+ | 0.1− |
| 1991 11 02 | 691 | 0.4− | 0.1− | 2002 01 09 | 704 | 0.3− | 0.7+ | 2005 10 20 | 644 | 0.1+ | 0.1+ |
| 1993 01 29 | 691 | 0.1− | 0.1+ | 2005 09 23 | 703 | 1.2+ | 0.7− | 2005 10 25 | 691 | 0.3− | 0.1− |
| 1993 01 29 | 691 | 0.0 | 0.2− | 2005 09 23 | 703 | 0.0 | 0.3− | 2005 10 25 | 691 | 0.2− | 0.0 |
| 1993 01 29 | 691 | 0.3− | 0.1+ | 2005 09 23 | 703 | 0.7− | 1.3− | 2005 10 25 | 691 | 0.6− | 0.8+ |
| 1993 01 29 | 691 | 0.0 | 0.6− | 2005 09 23 | 703 | 0.3− | 1.4− | 2005 11 03 | 691 | 0.2+ | 0.0 |
| 1993 01 29 | 691 | 0.0 | 0.4− | 2005 09 29 | 699 | 0.1− | 0.0 | 2005 11 03 | 691 | 0.1− | 0.0 |
| 1993 01 29 | 691 | 0.1+ | 0.5− | 2005 09 29 | 644 | 0.2+ | 0.1− | 2005 11 03 | 691 | 0.1− | 0.1+ |
| 1998 03 05 | 691 | 0.3+ | 0.3− | 2005 09 29 | 699 | 0.3+ | 0.5+ | 2005 11 06 | G96 | 0.0 | 0.1− |
| 1998 03 05 | 691 | 0.5+ | 0.2+ | 2005 09 29 | 644 | 0.0 | 0.1− | 2005 11 06 | G96 | 0.1+ | 0.3− |
| 1998 03 05 | 691 | 0.4+ | 0.2− | 2005 09 29 | 699 | 0.3+ | 0.1+ | 2005 11 06 | G96 | 0.3+ | 0.4− |
| 1998 03 21 | 691 | 0.1− | 0.1− | 2005 09 29 | 644 | 0.1+ | 0.2+ | 2005 11 06 | G96 | 0.1− | 0.1− |
| 1998 03 21 | 691 | 1.1− | 1.1+ | 2005 09 29 | 699 | 0.1+ | 0.4+ | 2005 12 01 | G96 | 0.1− | 0.1− |
| 1998 03 21 | 691 | 0.2− | 0.1+ | 2005 10 01 | 704 | 1.2+ | 0.9+ | 2005 12 01 | G96 | 0.6+ | 0.2+ |
| 2000 09 03 | 645 | 0.1+ | 0.1− | 2005 10 01 | 704 | (0.5− | 1.9+) | 2005 12 01 | G96 | 0.2+ | 0.2− |
| 2000 09 03 | 645 | 0.1+ | 0.2− | 2005 10 01 | 704 | (1.0− | 2.0+) | 2005 12 01 | G96 | 0.2− | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.4+ | 2005 10 01 | 704 | 0.3+ | 1.1+ | 2006 09 28 | G96 | 0.1+ | 0.6− |
| 2001 12 14 | 704 | 0.7+ | 0.5+ | 2005 10 05 | 704 | 0.1− | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2005 10 05 | 704 | 0.7− | 1.2+ | 2006 09 28 | G96 | 0.7+ | 0.8− |
| 2001 12 17 | 704 | 0.6+ | 0.7− | 2005 10 05 | 704 | 0.7− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.3+ |
| 2001 12 17 | 704 | 0.5+ | 0.9− | 2005 10 05 | 704 | 1.1− | 0.8− | 2006 11 16 | G96 | 0.9− | 0.3− |
| 2001 12 17 | 704 | 0.9+ | 0.4− | 2005 10 05 | 704 | 1.1− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 12 17 | 704 | 0.4+ | 0.8− | 2005 10 11 | 291 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.5− | 1.2− |
| 2001 12 17 | 704 | 0.6+ | 0.4− | 2005 10 11 | 291 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2002 01 09 | 704 | 0.9− | 1.5+ | 2005 10 11 | 291 | 0.1+ | 0.1− | | | | |

**(141184)∗ 2001 XA$_{173}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.91206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17330597 | $\omega$ | 258.63536 | | −0.88881880 | | −0.45306304 |
| $a$ | 3.1861071 | $\Omega$ | 254.39309 | | +0.44336601 | | −0.81221340 |
| $e$ | 0.0906299 | $i$ | 4.09703 | | +0.11587804 | | −0.36748235 |
| $P$ | 5.69 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 644 | 0.2− | 0.2+ | 2003 04 08 | 644 | 0.2− | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 12 13 | 644 | 0.1+ | 0.0 | 2003 04 28 | 699 | 0.9+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2001 12 13 | 644 | 0.2+ | 0.0 | 2003 04 28 | 699 | 1.3+ | 0.4− | 2006 10 27 | 703 | 0.1− | 0.8− |
| 2001 12 14 | 704 | 1.3− | 0.2+ | 2003 04 28 | 699 | 0.4+ | 0.9+ | 2006 10 27 | 703 | 0.6− | 0.6+ |
| 2001 12 14 | 704 | 0.2− | 0.0 | 2003 04 28 | 699 | 0.7− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.9− |
| 2001 12 14 | 704 | 0.3− | 0.0 | 2003 05 03 | 691 | (0.6+ | 1.7+) | 2006 10 27 | 703 | 0.8+ | 0.1+ |
| 2001 12 14 | 704 | 0.5− | 0.5+ | 2003 05 03 | 691 | 0.7+ | 1.5+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.5− | 1.3+ | 2003 05 03 | 691 | 0.4+ | 1.2+ | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.9+ | 2005 07 31 | 644 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.5+ | 0.8+ | 2005 07 31 | 644 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.2+ | 0.2+ |
| 2001 12 17 | 704 | (0.3+ | 1.5+) | 2005 07 31 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2001 12 17 | 704 | 0.4+ | 1.0+ | 2005 08 30 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.6+ |
| 2002 01 13 | 704 | 0.8+ | 0.5− | 2005 08 30 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.7+ |
| 2002 01 13 | 704 | 0.6+ | 0.8− | 2005 08 30 | 691 | 0.4− | 0.4+ | 2006 11 11 | 703 | 1.4− | 0.3+ |
| 2002 01 13 | 704 | 0.4+ | 0.2− | 2005 09 25 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2002 01 13 | 704 | 0.1+ | 0.9− | 2005 09 25 | 691 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2003 03 31 | 699 | 0.3− | 0.3+ | 2005 09 25 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2003 03 31 | 699 | 0.2− | 0.5+ | 2005 10 07 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.6+ | 0.0 |
| 2003 03 31 | 699 | 0.1− | 0.5+ | 2005 10 07 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.8+ | 0.2+ |
| 2003 03 31 | 704 | 0.8− | 0.7+ | 2005 10 07 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 1.2− | 0.2+ |
| 2003 03 31 | 699 | 0.2+ | 0.7+ | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 1.6− | 0.5+ |
| 2003 03 31 | 704 | 1.3+ | 1.4+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2003 03 31 | 704 | 0.4+ | 0.1+ | 2006 10 13 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.5+ | 0.9+ |
| 2003 03 31 | 704 | 0.3+ | 1.0+ | 2006 10 17 | 691 | 0.4+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2003 03 31 | 704 | 0.3+ | 0.6+ | 2006 10 17 | 691 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 1.6− | 0.1+ |
| 2003 04 08 | 644 | 0.0 | 1.1− | 2006 10 17 | 691 | 0.3+ | 0.2+ | | | | |
| 2003 04 08 | 644 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.4− | 0.1+ | | | | |

**(141185)∗ 2001 XB$_{173}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.43811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20965598 | $\omega$ | 247.50255 | | −0.64666683 | | −0.76124992 |
| $a$ | 2.8062814 | $\Omega$ | 242.87881 | | +0.71821538 | | −0.58640770 |
| $e$ | 0.1435155 | $i$ | 3.10256 | | +0.25688261 | | −0.27681143 |
| $P$ | 4.70 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 17 | 691 | 0.2+ | 0.1− | 2001 12 17 | 704 | 0.1− | 0.4+ | 2005 10 06 | 699 | 1.0− | 0.2+ |
| 1996 12 17 | 691 | 0.4+ | 0.1− | 2001 12 17 | 704 | 0.2− | 0.5+ | 2005 10 13 | 691 | 0.2− | 0.3− |
| 1996 12 17 | 691 | 0.4+ | 0.2+ | 2001 12 17 | 704 | 0.5− | 0.2+ | 2005 10 13 | 691 | 0.3− | 0.3− |
| 1998 03 20 | 704 | 1.6− | 0.3− | 2001 12 25 | 608 | 0.4− | 0.8+ | 2005 10 13 | 691 | 0.3− | 0.2− |
| 1998 03 20 | 704 | 1.7− | 1.5− | 2001 12 25 | 608 | 0.3− | 0.9+ | 2005 10 22 | 703 | 0.8− | 0.7+ |
| 1998 03 20 | 704 | 0.8− | 0.2− | 2001 12 25 | 608 | 0.2− | 0.6+ | 2005 10 22 | 703 | 1.4− | 0.8− |
| 1998 03 20 | 704 | (3.8− | 2.8+) | 2002 01 09 | 704 | 0.4+ | 0.0 | 2005 10 22 | 703 | 0.5− | 1.3+ |
| 1998 03 25 | 704 | 2.0− | 0.2− | 2002 01 09 | 704 | 0.1− | 0.3+ | 2005 10 22 | 703 | 0.5− | 1.1+ |
| 1998 03 25 | 704 | 1.6− | 1.3− | 2002 01 09 | 704 | 0.0 | 0.2+ | 2005 10 22 | 703 | 0.9− | 0.3− |
| 1998 03 25 | 704 | 0.1− | 0.9+ | 2002 01 09 | 704 | 0.4+ | 0.1+ | 2005 10 22 | 703 | 0.9− | 0.3− |
| 1998 03 25 | 704 | (6.3− | 0.1−) | 2002 01 09 | 704 | 0.3+ | 0.1− | 2005 10 22 | 703 | (1.4+ | 1.8+) |
| 1998 03 29 | 704 | 1.2− | 1.1− | 2002 01 15 | 704 | 0.2+ | 0.4− | 2005 10 22 | 703 | 0.3− | 1.1+ |
| 1998 03 29 | 704 | 0.8− | 1.4+ | 2002 01 15 | 704 | 0.1− | 0.9− | 2005 10 28 | 703 | 0.2− | 0.2− |
| 1998 03 29 | 704 | 0.6− | 0.7− | 2002 01 15 | 704 | 0.2− | 0.4− | 2005 10 28 | 703 | (0.1− | 1.6+) |
| 1998 03 29 | 704 | 0.1− | 0.4− | 2002 01 15 | 704 | 0.2− | 1.2− | 2005 10 28 | 703 | 0.6+ | 0.6+ |
| 1998 03 29 | 704 | (4.2− | 0.2−) | 2002 01 15 | 704 | 0.1− | 1.1− | 2005 10 28 | 703 | (1.9− | 1.1−) |
| 1998 04 01 | 704 | 1.1+ | 0.7+ | 2002 01 19 | 704 | 0.6+ | 0.6− | 2005 11 06 | G96 | 0.3− | 0.3− |
| 1998 04 01 | 704 | 0.7− | 1.4− | 2002 01 19 | 704 | 0.3+ | 0.1+ | 2005 11 06 | G96 | 0.1− | 0.3− |
| 1998 04 01 | 704 | 0.5+ | 0.9+ | 2002 01 19 | 704 | 0.1+ | 0.0 | 2005 11 06 | G96 | 0.0 | 0.3− |
| 1998 04 01 | 704 | (2.1− | 1.4−) | 2002 01 19 | 704 | 0.6− | 0.9+ | 2005 11 06 | G96 | 0.4− | 0.2− |
| 1998 04 01 | 704 | (4.2− | 0.4−) | 2002 01 19 | 704 | 0.6− | 0.6+ | 2005 11 28 | G96 | 0.1+ | 0.1+ |
| 2000 09 04 | 691 | 0.4+ | 0.1− | 2002 01 19 | 704 | (1.7+ | 0.3+) | 2005 11 28 | G96 | 0.3− | 0.2− |
| 2000 09 04 | 691 | 0.7+ | 0.1− | 2003 06 04 | 691 | 0.7+ | 0.9+ | 2005 11 28 | G96 | 0.0 | 0.4− |
| 2000 09 04 | 691 | 0.9+ | 0.1+ | 2003 06 04 | 691 | 0.8+ | 0.8+ | 2005 11 28 | G96 | 0.3− | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.7− | 2003 06 04 | 691 | 0.6+ | 0.9+ | 2006 10 23 | 691 | 1.1+ | 0.2+ |
| 2001 12 14 | 704 | 0.1− | 0.4− | 2005 09 24 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.8+ | 0.6+ |
| 2001 12 14 | 704 | 0.5+ | 0.1+ | 2005 09 24 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.6+ | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.7+ | 2005 09 24 | 691 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.2+ | 0.7+ | 2005 10 06 | 699 | 0.4− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.9+ | 2005 10 06 | 699 | 0.7− | 0.5− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.0 | 0.7+ | 2005 10 06 | 699 | 0.3− | 1.5+ | 2006 11 23 | G96 | 1.4− | 1.2− |

**(141186)∗ 2001 XD$_{175}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.13545 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18034832 | $\omega$ | 47.12265 | | −0.94390049 | | −0.32780554 |
| $a$ | 3.1026157 | $\Omega$ | 113.70574 | | +0.28884121 | | −0.87816590 |
| $e$ | 0.1740480 | $i$ | 2.50021 | | +0.16007066 | | −0.34837937 |
| $P$ | 5.47 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1+ | 0.4+ | 2002 01 15 | 704 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.8+ | 1.1− | 2003 04 29 | 699 | 1.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2003 04 29 | 699 | (1.7− | 0.2−) | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2001 12 14 | 704 | 1.0+ | 0.3− | 2003 04 29 | 699 | 1.0− | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2003 04 29 | 699 | 0.8− | 1.0+ | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.5+ | 0.2− | 2003 05 05 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 2001 12 17 | 704 | 0.2+ | 0.3+ | 2003 05 05 | 704 | 0.0 | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 2001 12 17 | 704 | 1.4+ | 0.2− | 2003 05 05 | 704 | 1.3+ | 1.0+ | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2001 12 17 | 704 | 0.3+ | 0.7− | 2003 05 05 | 704 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.6+ |
| 2001 12 18 | 644 | 0.5− | 0.6+ | 2003 05 05 | 704 | (1.2+ | 1.7+) | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2001 12 18 | 644 | 0.5− | 0.4+ | 2003 05 24 | 691 | 0.9+ | 1.0+ | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2001 12 18 | 644 | 0.2− | 0.4+ | 2003 05 24 | 691 | 0.3+ | 0.9+ | 2006 11 23 | 691 | 0.3− | 0.5+ |
| 2002 01 08 | 704 | 0.2− | 0.2− | 2003 05 24 | 691 | 0.5+ | 0.9+ | 2006 11 23 | 691 | 0.3− | 0.3+ |
| 2002 01 08 | 704 | 0.0 | 0.5− | 2005 09 11 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.5+ | 0.0 |
| 2002 01 08 | 704 | 0.6− | 0.2+ | 2005 09 11 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.7+ |
| 2002 01 13 | 704 | 0.1+ | 0.1+ | 2005 09 11 | 691 | 0.5− | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.6+ |
| 2002 01 13 | 704 | 0.7− | 0.3+ | 2005 10 06 | G96 | 0.4− | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.6+ |
| 2002 01 13 | 704 | 0.7− | 0.3+ | 2005 10 06 | G96 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2002 01 13 | 704 | 0.2− | 0.3+ | 2005 10 06 | G96 | 0.2− | 0.7+ | 2006 11 27 | 703 | 1.0− | 2.8− |
| 2002 01 15 | 704 | 0.2− | 0.3+ | 2005 10 06 | G96 | 0.2− | 0.5+ | 2006 11 27 | 703 | 1.2+ | 1.2− |
| 2002 01 15 | 704 | 0.5− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 27 | 703 | (0.3− | 3.9−) |
| 2002 01 15 | 704 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.0 | | | | |
| 2002 01 15 | 704 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3+ | | | | |

**(141187)∗ 2001 XE$_{175}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.72369 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17940080 | $\omega$ | 135.52887 | | −0.44981750 | +0.88394091 |
| $a$ | 3.1135305 | $\Omega$ | 107.35272 | | −0.85218417 | −0.38198977 |
| $e$ | 0.0485305 | $i$ | 7.68989 | | −0.26729451 | −0.26968923 |
| $P$ | 5.49 | $H$ | 14.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 14 | 691 | 0.1− | 0.0 | 2003 03 27 | 704 | 0.5− | 0.2+ | 2005 10 04 | 644 | 0.1+ | 0.3+ |
| 1996 01 14 | 691 | 0.2− | 0.3+ | 2003 03 31 | 699 | 0.6− | 0.3− | 2005 10 04 | 644 | 0.1+ | 0.5+ |
| 1996 01 14 | 691 | 0.2− | 0.1− | 2003 03 31 | 699 | 0.5− | 0.3− | 2005 10 07 | 699 | 1.2− | 0.5− |
| 1997 02 15 | 691 | 0.4− | 0.2− | 2003 03 31 | 699 | 0.0 | 0.5+ | 2005 10 07 | 699 | 0.3− | 0.8− |
| 1997 02 15 | 691 | 0.4− | 0.4− | 2003 03 31 | 699 | 0.3− | 0.4+ | 2005 10 07 | 699 | 1.4+ | 0.4+ |
| 1997 02 15 | 691 | 0.0 | 0.6− | 2003 03 31 | 704 | 0.3+ | 0.2+ | 2005 10 07 | 699 | 0.8− | 0.1− |
| 1998 04 23 | 704 | 0.6+ | 1.2− | 2003 03 31 | 704 | 0.4+ | 0.4+ | 2005 10 10 | 703 | 0.2− | 0.5+ |
| 1998 04 23 | 704 | 0.7− | 0.9− | 2003 03 31 | 704 | 0.1+ | 1.0+ | 2005 10 10 | 703 | 0.4− | 0.1− |
| 1998 04 23 | 704 | 1.5+ | 0.3+ | 2003 03 31 | 704 | (0.8− | 1.7+) | 2005 10 10 | 703 | 0.1− | 0.2+ |
| 1998 04 23 | 704 | 1.1+ | 1.4+ | 2003 04 02 | 608 | 0.9− | 1.4+ | 2005 10 10 | 703 | 0.7+ | 0.2− |
| 2001 12 14 | 704 | 0.7+ | 0.5− | 2003 04 02 | 608 | 1.2− | 1.2+ | 2006 11 02 | G96 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.4+ | 0.4− | 2003 04 02 | 608 | 0.6− | 0.9+ | 2006 11 02 | G96 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 0.8+ | 0.6− | 2003 04 03 | 704 | 0.1+ | 0.9+ | 2006 11 02 | G96 | 0.0 | 0.1+ |
| 2001 12 14 | 704 | 0.8+ | 0.4− | 2003 04 03 | 704 | 0.9+ | 0.5+ | 2006 11 02 | G96 | 0.2− | 0.2− |
| 2001 12 17 | 704 | 0.4+ | 0.4− | 2003 04 03 | 704 | 1.1+ | 0.7− | 2006 11 20 | H55 | 0.3− | 0.3+ |
| 2001 12 17 | 704 | 0.7+ | 0.5− | 2003 04 03 | 704 | 1.3+ | 0.1− | 2006 11 20 | H55 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.0 | 0.6− | 2003 04 03 | 704 | 0.8+ | 0.2− | 2006 11 20 | H55 | 0.1− | 0.4+ |
| 2001 12 17 | 704 | 0.3+ | 0.3− | 2003 04 03 | 704 | (1.8+ | 0.7+) | 2006 11 20 | H55 | 0.2− | 0.2+ |
| 2002 01 08 | 644 | 0.3− | 0.3+ | 2003 04 03 | 704 | 0.7+ | 0.3− | 2006 11 20 | H55 | 0.4− | 0.3+ |
| 2002 01 08 | 704 | 0.2+ | 0.1+ | 2003 04 03 | 704 | 0.9+ | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.1− |
| 2002 01 08 | 644 | 0.5− | 0.2+ | 2003 04 03 | 704 | 0.5+ | 1.0+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2002 01 08 | 704 | 0.3+ | 0.5+ | 2003 04 10 | 691 | (0.2+ | 1.7+) | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2002 01 08 | 704 | 0.1− | 0.1− | 2003 04 10 | 691 | (0.5+ | 1.7+) | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2002 01 08 | 704 | 0.0 | 0.7+ | 2003 04 10 | 691 | 0.4+ | 1.4+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 01 08 | 704 | 0.5+ | 0.1+ | 2005 08 26 | 644 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2002 01 08 | 644 | 0.1− | 0.4+ | 2005 08 26 | 644 | 0.5− | 0.7+ | 2006 11 20 | 704 | 0.5− | 0.0 |
| 2002 01 13 | 704 | 0.8− | 0.7+ | 2005 08 26 | 644 | 0.1− | 0.8+ | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2002 01 13 | 704 | 0.7− | 0.5− | 2005 09 24 | 644 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.5− | 0.2− |
| 2002 01 13 | 704 | 0.2− | 0.1+ | 2005 09 24 | 644 | 0.4− | 0.9+ | 2006 11 20 | G96 | 0.1− | 0.1+ |
| 2002 01 13 | 704 | 1.5+ | 0.3− | 2005 09 24 | 644 | 0.1− | 0.6+ | 2006 11 20 | G96 | 0.0 | 0.2+ |
| 2002 01 15 | 704 | 0.6+ | 0.5+ | 2005 09 25 | 703 | 1.0− | 0.0 | 2006 11 20 | G96 | 0.2− | 0.2+ |
| 2002 01 15 | 704 | 0.3− | 0.1− | 2005 09 25 | 703 | 0.6+ | 0.5+ | 2006 11 20 | G96 | 0.0 | 0.3+ |
| 2002 01 15 | 704 | 0.2− | 0.3+ | 2005 09 25 | 703 | 1.0− | 1.2+ | 2006 11 20 | G96 | 0.2− | 0.0 |
| 2002 01 15 | 704 | 0.4+ | 0.3+ | 2005 09 25 | 703 | 0.5− | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.1+ |
| 2002 01 15 | 704 | 0.2+ | 0.4+ | 2005 09 26 | I10 | 0.7− | 0.7+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2003 03 09 | 704 | 0.4− | 0.6+ | 2005 09 26 | I10 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.4+ | 0.0 |
| 2003 03 09 | 704 | 0.2− | 0.4+ | 2005 09 26 | I10 | (0.3+ | 1.8−) | 2006 11 29 | 704 | 0.1− | 1.0+ |
| 2003 03 09 | 704 | 0.2+ | 0.4+ | 2005 09 27 | 704 | 0.2− | 0.5+ | 2006 11 29 | 704 | 0.6+ | 0.9+ |
| 2003 03 09 | 704 | 0.0 | 0.5+ | 2005 09 27 | 704 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.6+ | 0.1− |
| 2003 03 09 | 704 | 0.6− | 1.1+ | 2005 09 27 | 704 | 0.3− | 1.1+ | 2006 11 29 | 704 | 0.4+ | 0.9+ |
| 2003 03 27 | 704 | 0.2− | 0.6+ | 2005 09 27 | 704 | 0.2− | 0.6+ | 2006 11 29 | 704 | 0.5+ | 0.1− |
| 2003 03 27 | 704 | 0.3+ | 0.3+ | 2005 09 27 | 704 | 0.3− | 0.3+ | | | | |
| 2003 03 27 | 704 | 0.5+ | 0.6+ | 2005 10 04 | 644 | 0.1+ | 0.5+ | | | | |

**(141188)∗ 2001 XH$_{176}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.17227 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18175825 | $\omega$ | 146.93968 | | +0.45816680 | −0.88331513 |
| $a$ | 3.0865498 | $\Omega$ | 275.61708 | | +0.79236537 | +0.45643970 |
| $e$ | 0.2317219 | $i$ | 5.71977 | | +0.40279064 | +0.10685118 |
| $P$ | 5.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.0 | 1.4+ | 2002 01 09 | 704 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2000 08 21 | 699 | (2.1− | 0.3+) | 2002 01 09 | 704 | 0.1+ | 0.1− | 2006 11 03 | J95 | 0.2+ | 0.1+ |
| 2000 08 21 | 699 | 0.2− | 0.3+ | 2002 01 09 | 704 | 0.0 | 0.3− | 2006 11 03 | J95 | 0.3+ | 0.1− |
| 2000 08 21 | 699 | 0.4− | 0.3+ | 2002 01 09 | 704 | 1.1+ | 0.2+ | 2006 11 04 | J95 | 0.3+ | 0.5− |
| 2000 09 03 | 704 | 0.3+ | 0.1+ | 2002 01 13 | 704 | 0.7+ | 0.1− | 2006 11 04 | J95 | 0.2+ | 0.1+ |
| 2000 09 03 | 704 | 0.0 | 0.0 | 2002 01 13 | 704 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.1+ |
| 2000 09 03 | 704 | 0.3+ | 0.7+ | 2002 01 13 | 704 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2000 09 03 | 704 | 0.5− | 1.1+ | 2002 01 15 | 704 | 0.6− | 1.0− | 2006 11 16 | 704 | 0.4+ | 0.0 |
| 2000 09 28 | 691 | 0.1+ | 0.1− | 2002 01 15 | 704 | 1.0− | 0.9− | 2006 11 16 | 704 | 0.5+ | 0.4+ |
| 2000 09 28 | 691 | 0.2+ | 0.3− | 2002 01 15 | 704 | 0.3− | 1.2− | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2000 09 28 | 691 | 0.2− | 0.6− | 2002 01 15 | 704 | 0.4− | 0.9− | 2006 11 17 | 704 | 0.6+ | 0.3− |
| 2001 12 14 | 704 | 0.4+ | 1.1+ | 2005 06 14 | G96 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 1.0+ | 0.1− |
| 2001 12 14 | 704 | (0.9+ | 1.8+) | 2005 06 14 | G96 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.9− | 0.9+ |
| 2001 12 14 | 704 | (0.8+ | 1.8+) | 2005 06 14 | G96 | 0.4− | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | (1.0+ | 1.9+) | 2005 06 14 | G96 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2001 12 14 | 704 | (1.1+ | 1.9+) | 2005 07 04 | G96 | 0.1− | 0.9+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2001 12 17 | 644 | 0.0 | 0.1+ | 2005 07 04 | G96 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2001 12 17 | 644 | 0.2+ | 0.3+ | 2005 07 04 | G96 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2001 12 17 | 644 | 0.3− | 0.4+ | 2005 07 04 | G96 | 0.3− | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.8+ | 1.1+ | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2001 12 17 | 704 | (3.1+ | 1.6+) | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2001 12 17 | 704 | 1.0+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.5− |
| 2001 12 17 | 704 | 1.0+ | 0.6+ | 2006 10 19 | 703 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2001 12 18 | 644 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.4− |
| 2001 12 18 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2001 12 18 | 644 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.1− | 0.2− | 2006 11 22 | 704 | 1.0− | 0.1+ |
| 2001 12 20 | 704 | 0.5− | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2001 12 20 | 704 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5− | 0.2+ |
| 2001 12 20 | 704 | 0.4− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2001 12 20 | 704 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.9− | 0.5+ |
| 2001 12 20 | 704 | 0.5− | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2001 12 21 | 704 | 0.2− | 0.5+ | 2006 10 27 | 703 | 0.7− | 0.2− | 2006 11 22 | 704 | 1.0− | 0.3+ |
| 2001 12 21 | 704 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.7− | 0.2− | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2001 12 21 | 704 | 1.0− | 0.8− | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.7− | 0.5+ |
| 2001 12 21 | 704 | 0.4− | 0.3− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2001 12 21 | 704 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2002 01 04 | 608 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 01 04 | 608 | 0.6+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2002 01 04 | 608 | 0.6+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.1− | | | | |
| 2002 01 09 | 704 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.2− | | | | |

**(141189)∗ 2001 XV$_{179}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 289.89053 | | (2000.0) | | | |
| $n$ | 0.17523668 | $\omega$ | 10.46511 | | −0.51079609 | −0.84294257 |
| $a$ | 3.1626615 | $\Omega$ | 110.43778 | | +0.77516398 | −0.53655818 |
| $e$ | 0.0479664 | $i$ | 10.38557 | | +0.37176359 | −0.03940996 |
| $P$ | 5.62 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.7− | 0.0 | 2002 01 09 | 704 | 0.2− | 0.1+ | 2002 02 06 | 704 | 0.5+ | 0.7− |
| 2001 12 14 | 704 | 0.8− | 0.3− | 2002 01 09 | 704 | 0.6+ | 0.2+ | 2002 02 06 | 704 | 0.7− | 0.6+ |
| 2001 12 14 | 704 | 0.8− | 0.0 | 2002 01 09 | 704 | 0.5− | 0.6− | 2002 02 06 | 704 | 0.0 | 1.2+ |
| 2001 12 14 | 704 | 0.7− | 1.1− | 2002 01 09 | 704 | 1.4+ | 1.4+ | 2002 02 06 | 704 | 0.8− | 0.0 |
| 2001 12 14 | 704 | 1.2− | 0.0 | 2002 01 09 | 704 | 0.1− | 0.0 | 2002 02 06 | 704 | 0.3− | 1.0+ |
| 2001 12 17 | 704 | 0.5+ | 0.7+ | 2002 01 09 | 621 | 0.0 | 0.4− | 2003 03 13 | 291 | 0.1− | 0.2+ |
| 2001 12 17 | 644 | 0.4+ | 0.1+ | 2002 01 09 | 621 | 0.3− | 0.3− | 2003 03 13 | 291 | 0.7− | 0.0 |
| 2001 12 17 | 644 | 0.6+ | 0.0 | 2002 01 09 | 621 | 0.0 | 0.4− | 2003 03 13 | 291 | 0.5− | 0.3+ |
| 2001 12 17 | 704 | 0.3+ | 0.3+ | 2002 01 09 | 621 | 0.3+ | 0.0 | 2003 03 26 | 644 | 0.5+ | 0.7+ |
| 2001 12 17 | 644 | 0.5− | 0.3+ | 2002 01 10 | 106 | 0.1− | 0.5− | 2003 03 26 | 644 | 0.6+ | 0.8+ |
| 2001 12 17 | 704 | 0.7+ | 0.3+ | 2002 01 11 | 106 | 0.4+ | 0.2+ | 2003 03 26 | 644 | 0.8+ | 0.1− |
| 2001 12 17 | 704 | 0.5+ | 0.5+ | 2002 01 11 | 106 | (1.9+ | 0.4+) | 2003 04 01 | 645 | 0.1+ | 0.0 |
| 2001 12 19 | 644 | 0.1+ | 0.2− | 2002 01 12 | 106 | 0.4− | 0.2− | 2003 04 01 | 645 | 0.1+ | 0.1− |
| 2001 12 19 | 644 | 0.1+ | 0.2− | 2002 01 12 | 106 | 1.3− | 0.0 | 2005 08 31 | 644 | 0.2− | 0.8+ |
| 2001 12 19 | 644 | 0.4+ | 0.2− | 2002 01 12 | 106 | 0.6− | 0.7− | 2005 08 31 | 644 | 0.2− | 0.5+ |
| 2001 12 20 | 704 | 0.6+ | 0.6− | 2002 01 15 | 704 | 0.6− | 0.3− | 2005 08 31 | 644 | 0.3− | 0.7+ |
| 2001 12 20 | 704 | 0.9+ | 0.4− | 2002 01 15 | 704 | 0.3− | 1.3− | 2006 10 30 | 703 | 0.4+ | 0.8+ |
| 2001 12 20 | 704 | 0.9+ | 0.3− | 2002 01 15 | 704 | 0.2+ | 1.2− | 2006 10 30 | 703 | 1.3+ | 0.3+ |
| 2001 12 20 | 704 | 0.1− | 0.5− | 2002 01 15 | 704 | 0.2+ | 1.1− | 2006 10 30 | 703 | 1.1− | 0.2− |
| 2002 01 09 | 704 | 0.6+ | 0.6− | 2002 01 15 | 704 | (0.5− | 1.6−) | 2006 10 30 | 703 | 0.2− | 0.1− |
| 2002 01 09 | 704 | 0.2+ | 1.0+ | 2002 01 19 | 704 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.1− |
| 2002 01 09 | 704 | 0.4+ | 0.7− | 2002 01 19 | 704 | 0.1+ | 0.9+ | 2006 11 19 | 703 | 0.9− | 0.2− |
| 2002 01 09 | 704 | 0.5− | 0.6+ | 2002 01 19 | 704 | 0.6− | 0.1+ | 2006 11 19 | 703 | 0.5+ | 0.2− |
| 2002 01 09 | 704 | 0.0 | 0.5− | 2002 01 19 | 704 | 0.4+ | 0.9+ | 2006 11 19 | 703 | 0.6− | 0.7− |
| 2002 01 09 | 704 | 0.4+ | 1.4+ | 2002 01 19 | 704 | 0.2− | 0.6+ | 2006 11 20 | 703 | 0.7+ | 1.2+ |
| 2002 01 09 | 704 | 0.2+ | 0.4− | 2002 01 21 | 704 | 0.4− | 1.4+ | 2006 11 20 | 703 | 0.2+ | 0.3− |
| 2002 01 09 | 704 | 0.1− | 0.7+ | 2002 01 21 | 704 | 0.6+ | 0.2+ | 2006 11 20 | 703 | 0.1− | 0.0 |
| 2002 01 09 | 704 | 0.2− | 0.7− | 2002 01 21 | 704 | 0.2+ | 0.5+ | 2006 11 20 | 703 | 0.4− | 0.2+ |

**(141190)∗ 2001 XV$_{181}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.83887 | | (2000.0) | | | |
| $n$ | 0.21108682 | $\omega$ | 3.56383 | | −0.48584368 | −0.86864237 |
| $a$ | 2.7935855 | $\Omega$ | 115.52526 | | +0.79923894 | −0.48645497 |
| $e$ | 0.1108759 | $i$ | 6.17316 | | +0.35379802 | −0.09392547 |
| $P$ | 4.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.4− | 0.5− | 2002 01 13 | 704 | 0.1− | 0.0 | 2003 05 26 | 691 | 0.3+ | 0.7+ |
| 1997 01 09 | 691 | 1.2− | 1.4− | 2002 01 13 | 704 | 0.1− | 0.3− | 2003 05 26 | 691 | 0.2+ | 0.6+ |
| 1997 01 09 | 691 | 0.3+ | 0.2− | 2002 01 13 | 704 | 0.2− | 0.4− | 2005 10 01 | 703 | 0.8− | 1.4+ |
| 2000 11 27 | 645 | 0.3+ | 0.3+ | 2002 01 15 | 704 | 0.1− | 0.5+ | 2005 10 01 | 703 | 0.3− | 0.1− |
| 2000 11 27 | 645 | 0.2+ | 0.4+ | 2002 01 15 | 704 | 0.1+ | 0.5+ | 2005 10 01 | 703 | 1.5+ | 0.5− |
| 2001 12 14 | 704 | 0.2− | 0.5− | 2002 01 15 | 704 | 0.1+ | 0.3+ | 2005 10 01 | 703 | 0.1− | 0.9− |
| 2001 12 14 | 704 | 0.0 | 0.4− | 2002 01 15 | 704 | 0.0 | 0.9+ | 2005 10 07 | 703 | 0.8− | 0.1+ |
| 2001 12 14 | 704 | 0.0 | 0.1− | 2002 01 19 | 704 | 0.4+ | 0.0 | 2005 10 07 | 699 | 0.5− | 0.1+ |
| 2001 12 14 | 704 | 0.2− | 0.3+ | 2002 01 19 | 704 | 1.2+ | 0.0 | 2005 10 07 | 703 | 0.5− | 0.6− |
| 2001 12 14 | 704 | 0.1+ | 0.2+ | 2002 01 19 | 704 | 1.0+ | 0.1− | 2005 10 07 | 703 | 1.3− | 0.7− |
| 2001 12 15 | 049 | 0.3+ | 0.3+ | 2002 01 19 | 704 | 1.3+ | 0.2+ | 2005 10 07 | 703 | 0.9− | 0.5− |
| 2001 12 15 | 049 | 0.3+ | 0.1+ | 2002 01 19 | 704 | 1.1+ | 0.0 | 2005 10 07 | 699 | 0.2− | 0.1− |
| 2001 12 15 | 049 | 0.3+ | 0.1− | 2002 01 21 | 691 | 0.3− | 0.2− | 2005 10 07 | 699 | (0.3+ | 1.6+) |
| 2001 12 17 | 704 | 0.4− | 0.3+ | 2002 01 21 | 691 | 0.2− | 0.2− | 2005 10 07 | 699 | 0.1− | 0.9+ |
| 2001 12 17 | 704 | 0.1+ | 0.9+ | 2002 01 21 | 691 | 0.3− | 0.2− | 2005 10 27 | 644 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 0.0 | 0.9+ | 2002 02 05 | 644 | 0.3− | 0.1− | 2005 10 27 | 644 | 0.0 | 0.2+ |
| 2001 12 17 | 644 | 0.3+ | 0.4+ | 2002 02 05 | 644 | 0.5+ | 0.1+ | 2005 10 27 | 644 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.0 | 1.2+ | 2002 02 05 | 644 | 0.3+ | 0.1− | 2005 10 28 | 703 | 0.3− | 0.2+ |
| 2001 12 17 | 644 | 0.1+ | 0.4+ | 2002 02 07 | 704 | 0.9+ | 0.0 | 2005 10 28 | 703 | 1.0− | 0.1+ |
| 2001 12 17 | 644 | 0.4+ | 0.5+ | 2002 02 07 | 704 | 0.7+ | 0.2+ | 2005 10 28 | 703 | 0.7− | 0.1+ |
| 2001 12 20 | 704 | 1.2+ | 0.9+ | 2002 02 07 | 704 | 0.2+ | 0.3+ | 2005 10 28 | 703 | 1.0− | 0.3− |
| 2001 12 20 | 704 | 0.2− | 0.7+ | 2002 02 07 | 704 | 0.8+ | 0.6+ | 2005 11 03 | 703 | 0.5− | 0.3+ |
| 2001 12 20 | 704 | 1.0+ | 0.7+ | 2002 02 07 | 704 | 0.6+ | 0.4+ | 2005 11 03 | 703 | 0.3− | 0.0 |
| 2001 12 20 | 704 | 1.2+ | 1.1+ | 2002 02 09 | 704 | 0.5+ | 0.4− | 2005 11 03 | 703 | 0.0 | 1.4+ |
| 2002 01 09 | 704 | 0.2− | 0.3+ | 2002 02 09 | 704 | 0.2− | 0.5− | 2005 11 03 | 703 | 0.2− | 1.0+ |
| 2002 01 09 | 704 | 0.3− | 0.7− | 2002 02 09 | 704 | 0.8+ | 0.2+ | 2005 11 06 | 699 | 0.0 | 1.0− |
| 2002 01 09 | 704 | 0.2− | 0.7− | 2002 02 09 | 704 | 0.7+ | 0.4− | 2005 11 06 | 699 | 0.2− | 0.6+ |
| 2002 01 09 | 704 | 0.2− | 0.1+ | 2002 02 09 | 704 | 1.4+ | 1.0+ | 2005 11 06 | 699 | 0.6− | 0.4− |
| 2002 01 09 | 608 | 0.8− | 0.5+ | 2002 02 12 | 704 | 0.8− | 0.2+ | 2005 11 06 | 699 | 0.7− | 0.3− |
| 2002 01 09 | 608 | 0.7− | 0.3+ | 2002 02 12 | 704 | 0.4− | 0.5+ | 2006 10 23 | 691 | 0.2+ | 0.3− |
| 2002 01 09 | 704 | 0.4− | 0.1− | 2002 02 12 | 704 | 0.6− | 0.4+ | 2006 10 23 | 691 | 0.6+ | 0.2− |
| 2002 01 09 | 608 | 0.4− | 0.2+ | 2002 02 12 | 704 | 0.4− | 0.5+ | 2006 10 23 | 691 | 0.7+ | 0.4− |
| 2002 01 09 | 608 | 0.3− | 0.6+ | 2003 05 05 | 704 | 0.4− | 1.4+ | 2006 11 24 | G96 | 0.3− | 0.2+ |
| 2002 01 09 | 608 | 0.1+ | 0.8+ | 2003 05 05 | 704 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.7− | 0.2− |
| 2002 01 09 | 608 | 0.3+ | 0.4+ | 2003 05 05 | 704 | 0.5− | 0.4+ | 2006 11 24 | G96 | 0.6− | 0.2− |
| 2002 01 13 | 704 | 0.5− | 0.1+ | 2003 05 26 | 691 | 0.5− | 0.8+ | 2006 11 24 | G96 | 0.4− | 0.3− |

**(141191)∗ 2001 XA$_{182}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 306.34541 | | (2000.0) | | | |
| $n$ | 0.17894658 | $\omega$ | 337.96220 | | −0.37602478 | −0.92246588 |
| $a$ | 3.1187971 | $\Omega$ | 134.00149 | | +0.86727733 | −0.38363345 |
| $e$ | 0.1455650 | $i$ | 6.98956 | | +0.32624437 | −0.04338294 |
| $P$ | 5.51 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 03 | 691 | 0.0 | 1.0+ | 2002 01 13 | 704 | 0.6− | 0.3− | 2003 05 01 | 691 | 0.1+ | 0.7+ |
| 1999 08 03 | 691 | 0.3− | 1.0+ | 2002 01 13 | 704 | 0.4− | 0.1− | 2003 05 01 | 691 | 0.1+ | 0.5+ |
| 1999 08 03 | 691 | 0.3− | 1.0+ | 2002 01 13 | 704 | 0.6− | 0.7− | 2003 05 01 | 691 | 0.0 | 0.4+ |
| 2001 12 14 | 704 | 0.7+ | 0.0 | 2002 01 15 | 704 | 0.6− | 0.3+ | 2005 08 27 | 644 | 0.4+ | 0.5+ |
| 2001 12 14 | 704 | 0.8+ | 0.1− | 2002 01 15 | 704 | 0.6− | 0.3− | 2005 08 27 | 644 | 0.1− | 0.3+ |
| 2001 12 14 | 704 | 0.4+ | 0.5− | 2002 01 15 | 704 | 0.3− | 0.1− | 2005 08 27 | 644 | 0.2− | 0.6+ |
| 2001 12 14 | 704 | 0.4+ | 0.1+ | 2002 01 15 | 704 | 0.6− | 0.4− | 2005 10 07 | G96 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2002 01 15 | 704 | 0.2− | 0.3− | 2005 10 07 | G96 | 0.2+ | 0.4+ |
| 2001 12 17 | 691 | (0.7− | 3.7+) | 2002 01 19 | 704 | 0.0 | 0.2+ | 2005 10 07 | G96 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.4+ | 0.5+ | 2002 01 19 | 704 | 1.0− | 0.6+ | 2005 10 07 | G96 | 0.1+ | 0.2+ |
| 2001 12 17 | 691 | (0.6− | 3.5+) | 2002 01 19 | 704 | 0.3+ | 1.1− | 2006 11 01 | 703 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2002 01 19 | 704 | 0.2+ | 0.8+ | 2006 11 01 | 703 | 0.7+ | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.7+ | 2002 02 05 | 644 | 0.0 | 0.1+ | 2006 11 01 | 703 | 0.7− | 0.2− |
| 2001 12 17 | 691 | (0.6− | 3.4+) | 2002 02 05 | 644 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 0.5− | 1.1+ |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2002 02 05 | 644 | 0.0 | 0.5+ | 2006 11 15 | 958 | 0.8− | 0.7− |
| 2001 12 17 | 704 | 0.4− | 0.1+ | 2002 02 06 | 644 | 0.1− | 0.6− | 2006 11 15 | 958 | 0.1− | 0.1+ |
| 2001 12 20 | 704 | 0.1+ | 0.5+ | 2002 02 06 | 644 | 0.0 | 0.4− | 2006 11 15 | 958 | 1.0+ | 0.2− |
| 2001 12 20 | 704 | 0.5+ | 1.3+ | 2002 02 06 | 644 | 0.0 | 0.4− | 2006 11 15 | G92 | 0.1− | 0.2+ |
| 2001 12 20 | 704 | 0.2− | 1.0+ | 2002 02 07 | 704 | 0.7+ | 0.3+ | 2006 11 15 | G92 | 0.0 | 0.5+ |
| 2001 12 20 | 704 | 0.3+ | 0.8+ | 2002 02 07 | 704 | 0.3+ | 1.1− | 2006 11 15 | G92 | 0.4− | 0.4+ |
| 2001 12 20 | 704 | 0.5+ | 0.3+ | 2002 02 07 | 704 | 0.5− | 0.2+ | 2006 11 18 | G92 | 0.4− | 0.8+ |
| 2001 12 26 | 608 | 0.3+ | 0.7+ | 2002 02 07 | 704 | 0.4+ | 0.1− | 2006 11 18 | G92 | 0.6− | 0.1+ |
| 2001 12 26 | 608 | 0.1− | 0.6+ | 2002 02 07 | 704 | 0.4+ | 0.1+ | 2006 11 18 | G92 | 0.1+ | 0.2+ |
| 2001 12 26 | 608 | 0.1+ | 0.3+ | 2002 02 09 | 704 | 0.3+ | 0.9− | 2006 11 19 | 703 | 0.2− | 0.1− |
| 2002 01 05 | 608 | 0.3+ | 0.1+ | 2002 02 09 | 704 | 0.4+ | 0.8− | 2006 11 19 | 703 | 0.9− | 0.6+ |
| 2002 01 05 | 608 | 0.1− | 0.5+ | 2002 02 09 | 704 | 0.1+ | 1.3− | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2002 01 05 | 608 | 0.2+ | 0.6+ | 2002 02 09 | 704 | 0.4+ | 0.5− | 2006 11 19 | 703 | 0.5− | 0.5− |
| 2002 01 08 | 644 | 0.6+ | 1.0+ | 2002 02 11 | 704 | 0.1+ | 1.3+ | 2006 11 23 | G96 | 0.5+ | 0.0 |
| 2002 01 08 | 644 | 0.4+ | 1.1+ | 2002 02 11 | 704 | 0.4+ | 0.7+ | 2006 11 23 | G96 | 0.5+ | 0.0 |
| 2002 01 08 | 644 | 0.6+ | 1.2+ | 2002 02 11 | 704 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2002 01 09 | 704 | 0.7− | 0.6+ | 2002 02 11 | 704 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2002 01 09 | 704 | 0.8− | 1.2+ | 2002 02 11 | 704 | 0.0 | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2002 01 09 | 704 | 0.2− | 1.3+ | 2003 04 09 | 704 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.6− | 0.1+ | 2003 04 09 | 704 | 0.6+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.0 | | |
| 2002 01 13 | 704 | 0.2− | 0.1− | 2003 04 09 | 704 | 1.0+ | 1.1+ | 2006 11 25 | G96 | 0.0 | 0.0 | | |

**(141192)∗ 2001 XM$_{183}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.67934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18603316 | $\omega$ | 202.59542 | | +0.51640074 | −0.85575776 | |
| $a$ | 3.0390824 | $\Omega$ | 216.33535 | | +0.79364898 | +0.49219426 | |
| $e$ | 0.2730382 | $i$ | 3.07301 | | +0.32163888 | +0.15944737 | |
| $P$ | 5.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 19 | 691 | 0.4− | 0.4+ | 2002 01 15 | 704 | 1.3+ | 0.1+ | 2006 11 10 | 644 | 0.5+ | 0.4− | | |
| 1990 11 19 | 691 | 0.0 | 0.1+ | 2002 01 15 | 704 | 1.3+ | 0.3− | 2006 11 10 | 644 | 0.2− | 0.3− | | |
| 1990 11 19 | 691 | 0.2+ | 0.2+ | 2002 01 15 | 704 | 0.3+ | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.1+ | | |
| 2001 11 17 | 704 | 0.3− | 1.2+ | 2002 01 15 | 704 | (1.6+ | 0.2−) | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2001 11 17 | 704 | 0.7− | 0.4− | 2002 01 15 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2001 11 17 | 704 | 0.1+ | 0.0 | 2002 01 15 | 704 | 1.5+ | 0.4− | 2006 11 11 | 691 | 0.2− | 0.1− | | |
| 2001 11 17 | 704 | 0.8+ | 0.5+ | 2002 01 15 | 704 | 0.6+ | 0.1− | 2006 11 12 | 703 | 0.0 | 0.1− | | |
| 2001 12 09 | 699 | 0.3− | 0.5− | 2002 01 15 | 704 | (1.6+ | 0.4−) | 2006 11 12 | 703 | 0.3+ | 0.3+ | | |
| 2001 12 09 | 699 | 0.2− | 0.5− | 2002 01 15 | 704 | 0.8+ | 0.1+ | 2006 11 12 | 703 | 0.3− | 0.0 | | |
| 2001 12 09 | 699 | 1.0+ | 0.1− | 2002 01 15 | 704 | 0.4+ | 0.3− | 2006 11 12 | 703 | 0.8− | 0.0 | | |
| 2001 12 09 | 699 | 1.1− | 0.5+ | 2002 01 15 | 704 | 0.4+ | 0.0 | 2006 11 17 | 704 | 1.4− | 0.3+ | | |
| 2001 12 14 | 704 | 1.1+ | 0.1− | 2002 01 15 | 704 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.6+ | | |
| 2001 12 14 | 704 | 0.6− | 0.1+ | 2002 01 19 | 704 | 0.1− | 0.6− | 2006 11 17 | 704 | 1.2− | 0.2− | | |
| 2001 12 14 | 704 | 0.5+ | 0.3+ | 2002 01 19 | 704 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6− | 0.0 | | |
| 2001 12 14 | 704 | 0.1+ | 0.3+ | 2002 01 19 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.2− | | |
| 2001 12 14 | 704 | 0.1+ | 0.2+ | 2002 01 19 | 704 | 0.3+ | 0.2− | 2006 11 17 | 644 | 0.1+ | 0.0 | | |
| 2001 12 17 | 691 | 0.6− | 0.1+ | 2002 01 19 | 704 | (1.7− | 1.2−) | 2006 11 17 | 644 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 0.2+ | 1.2+ | 2002 02 11 | 704 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.2+ | | |
| 2001 12 17 | 704 | 0.1+ | 1.4+ | 2002 02 11 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.6− | | |
| 2001 12 17 | 691 | 0.8− | 0.1− | 2002 02 11 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1− | 0.2+ | | |
| 2001 12 17 | 704 | 0.1+ | 1.0+ | 2002 02 11 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.4+ | | |
| 2001 12 17 | 691 | 0.9− | 0.1+ | 2002 02 11 | 704 | 0.7+ | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.3− | | |
| 2001 12 17 | 704 | (0.6− | 2.3+) | 2005 06 18 | G96 | 1.4− | 0.9+ | 2006 11 19 | 691 | 0.2+ | 0.0 | | |
| 2001 12 17 | 704 | 1.0− | 0.5+ | 2005 06 18 | G96 | 0.9− | 0.9+ | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2001 12 20 | 704 | 0.0 | 0.6− | 2005 06 18 | G96 | 0.6− | 1.0+ | 2006 11 19 | 691 | 0.2+ | 0.0 | | |
| 2001 12 20 | 704 | 0.2+ | 0.0 | 2005 06 18 | G96 | 0.2− | 1.1+ | 2006 11 21 | 704 | 1.0+ | 0.1− | | |
| 2001 12 20 | 704 | 0.8− | 0.6+ | 2005 06 29 | 691 | 0.1+ | 0.9+ | 2006 11 21 | 704 | 0.1+ | 0.4− | | |
| 2001 12 20 | 704 | 0.2+ | 0.5+ | 2005 06 29 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.3− | | |
| 2001 12 24 | 644 | 0.6+ | 0.4+ | 2005 06 29 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.4+ | 0.1+ | | |
| 2001 12 24 | 644 | 0.3+ | 0.8+ | 2006 08 29 | 703 | (2.6− | 3.9+) | 2006 11 21 | 704 | 0.3− | 0.3+ | | |
| 2001 12 24 | 644 | 0.0 | 0.8+ | 2006 08 29 | 703 | 0.1− | 0.9+ | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2001 12 24 | 644 | 0.2+ | 1.2+ | 2006 08 29 | 703 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2001 12 24 | 644 | 0.5+ | 0.4+ | 2006 08 29 | 703 | 0.7− | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2001 12 24 | 644 | 0.5+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.3− | 0.3− | | |
| 2002 01 09 | 704 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.2− | 0.4− | | |
| 2002 01 09 | 704 | 0.3+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 1.0+ | 1.0− | | |
| 2002 01 09 | 704 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.9+ | 1.4− | | |
| 2002 01 09 | 704 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 1.0+ | 1.1− | | |
| 2002 01 09 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.5+ | 2006 11 29 | 704 | 1.5+ | 1.6− | | |
| 2002 01 13 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 29 | 704 | 1.4+ | 0.4+ | | |
| 2002 01 13 | 704 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.0 | 0.1− | | |
| 2002 01 13 | 704 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.2− | 0.1+ | | |
| 2002 01 13 | 704 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.4− | 0.2− | | |
| 2002 01 13 | 704 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | | | | | | |

**(141193)∗ 2001 XD$_{184}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.69503 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17698265 | $\omega$ | 325.46905 | | −0.02074505 | −0.98620781 | |
| $a$ | 3.1418269 | $\Omega$ | 125.17834 | | +0.95661332 | −0.06732214 | |
| $e$ | 0.1522456 | $i$ | 11.58948 | | +0.29062107 | +0.15120147 | |
| $P$ | 5.57 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.1+ | 0.1− | 2002 01 09 | 704 | 0.1+ | 0.1+ | 2002 02 11 | 704 | 0.4− | 0.7− | | |
| 2000 09 27 | 645 | 0.2+ | 0.1− | 2002 01 09 | 704 | 0.1− | 0.2− | 2002 02 11 | 704 | (1.8− | 0.4+) | | |
| 2000 10 02 | 699 | 1.7− | 1.2+ | 2002 01 09 | 704 | 0.5− | 0.1+ | 2002 02 11 | 704 | 0.3− | 0.5+ | | |
| 2000 10 02 | 699 | 1.0− | 0.0 | 2002 01 13 | 704 | 0.2+ | 0.0 | 2005 08 04 | 644 | 0.1− | 0.7+ | | |
| 2000 10 02 | 699 | 1.8− | 0.8− | 2002 01 13 | 704 | 0.1+ | 0.2− | 2005 08 04 | 644 | 0.4− | 0.5+ | | |
| 2000 10 02 | 699 | 0.2− | 0.3− | 2002 01 13 | 704 | 0.0 | 0.4− | 2005 08 04 | 644 | 0.0 | 0.7+ | | |
| 2001 12 14 | 704 | 0.5+ | 0.1− | 2002 01 13 | 704 | 0.2+ | 0.5− | 2005 08 05 | 644 | 0.1+ | 0.5+ | | |
| 2001 12 14 | 704 | 0.3+ | 1.0− | 2002 01 14 | 704 | 0.3− | 0.2+ | 2005 08 05 | 644 | 0.1+ | 0.5+ | | |
| 2001 12 14 | 704 | 0.7+ | 0.5− | 2002 01 14 | 704 | (1.6− | 0.6+) | 2005 08 05 | 644 | 0.1+ | 0.6+ | | |
| 2001 12 14 | 704 | 1.1+ | 0.2+ | 2002 01 14 | 704 | 0.4+ | 0.3+ | 2005 09 01 | 644 | 0.6− | 0.5+ | | |
| 2001 12 14 | 704 | 0.5+ | 0.3+ | 2002 01 14 | 704 | 1.2− | 0.8+ | 2005 09 01 | 644 | 0.0 | 0.3+ | | |
| 2001 12 17 | 704 | 0.8− | 0.7− | 2002 01 14 | 704 | 0.5+ | 0.4+ | 2005 09 01 | 644 | 0.1− | 0.6+ | | |
| 2001 12 17 | 704 | 0.7− | 0.3− | 2002 01 14 | 704 | (1.7− | 0.6+) | 2006 10 12 | 291 | 0.2− | 0.2+ | | |
| 2001 12 17 | 704 | 0.6− | 0.5− | 2002 01 14 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 291 | 0.0 | 0.4+ | | |
| 2001 12 17 | 704 | 0.6− | 0.7− | 2002 01 14 | 704 | 1.2− | 0.3+ | 2006 10 12 | 291 | 0.0 | 0.3+ | | |
| 2001 12 20 | 704 | 0.0 | 0.4− | 2002 01 14 | 704 | 0.6+ | 0.7+ | 2006 10 28 | 703 | (1.4− | 2.0−) | | |
| 2001 12 20 | 704 | 0.5− | 0.1+ | 2002 01 14 | 704 | 0.5− | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.0 | | |
| 2001 12 20 | 704 | 0.3+ | 0.3+ | 2002 01 15 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.8+ | 1.1+ | | |
| 2001 12 20 | 704 | 0.1+ | 0.1+ | 2002 01 15 | 704 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.4+ | 0.2+ | | |
| 2001 12 20 | 704 | 0.1+ | 0.4+ | 2002 01 15 | 704 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.5+ | 0.8− | | |
| 2002 01 05 | 608 | 0.3+ | 0.1+ | 2002 02 05 | 644 | 0.2− | 0.0 | 2006 11 13 | 703 | (0.3+ | 1.7−) | | |
| 2002 01 05 | 608 | 0.5+ | 0.4− | 2002 02 05 | 644 | 0.5− | 0.2− | 2006 11 13 | 703 | 0.4− | 0.1− | | |
| 2002 01 05 | 608 | 1.1+ | 0.7− | 2002 02 05 | 644 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.3− | | |
| 2002 01 07 | 644 | 0.1− | 0.0 | 2002 02 07 | 704 | 0.2+ | 1.1+ | 2006 11 19 | 703 | 0.8− | 0.3− | | |
| 2002 01 07 | 644 | 0.3+ | 0.4+ | 2002 02 07 | 704 | 0.2+ | 0.9+ | 2006 11 19 | 703 | 0.1+ | 0.5− | | |
| 2002 01 07 | 644 | 0.2− | 0.2+ | 2002 02 07 | 704 | (0.1+ | 2.3+) | 2006 11 19 | 703 | 0.3− | 1.3− | | |
| 2002 01 09 | 704 | 0.2+ | 0.1− | 2002 02 11 | 704 | 0.9− | 0.3+ | 2006 11 19 | 703 | 0.6− | 0.6− | | |
| 2002 01 09 | 704 | 0.5+ | 0.9+ | 2002 02 11 | 704 | 0.2+ | 0.2+ | | | | | | |

**(141194)∗ 2001 XE$_{186}$ = 2000 QX$_{42}$ = 2003 FB$_{22}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23265), A. Doppler (*MPO* 47043)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.59952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17686076 | $\omega$ | 215.35824 | | +0.67359452 | −0.73903621 | |
| $a$ | 3.1432703 | $\Omega$ | 192.30675 | | +0.68824928 | +0.63202449 | |
| $e$ | 0.2252095 | $i$ | 2.63343 | | +0.26941297 | +0.23317488 | |
| $P$ | 5.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 16 | 691 | 0.3− | 0.6+ | 2003 03 25 | 291 | 0.7+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.2− | | |
| 1991 01 16 | 691 | 0.8+ | 0.2+ | 2003 03 25 | 291 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.0 | | |
| 1991 01 16 | 691 | 0.4+ | 0.1+ | 2003 03 30 | 291 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1− | | |
| 1997 03 11 | 691 | 0.6− | 0.6− | 2003 03 30 | 291 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 1997 03 11 | 691 | 0.3− | 0.3− | 2003 03 30 | 291 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 1997 03 11 | 691 | 0.7− | 0.1− | 2003 04 07 | 691 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2000 07 31 | 807 | 0.1− | 0.0 | 2003 04 07 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2000 07 31 | 807 | 0.5+ | 0.0 | 2003 04 07 | 691 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2000 08 24 | 704 | 0.2− | 1.2+ | 2004 05 19 | 291 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2000 08 24 | 704 | 0.1+ | 0.0 | 2004 05 19 | 291 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2000 08 24 | 704 | 0.1+ | 0.1− | 2004 05 19 | 291 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2000 08 24 | 704 | 0.0 | 0.7+ | 2006 09 18 | 699 | 0.3− | 0.8− | 2006 10 28 | 691 | 0.1− | 0.2+ | | |
| 2000 08 24 | 704 | 0.1− | 1.0+ | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2000 08 29 | 704 | 1.3− | 1.5+ | 2006 09 18 | 699 | 0.9− | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.4+ | | |
| 2000 08 29 | 704 | 0.0 | 0.8+ | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 28 | 704 | 0.0 | 0.2− | | |
| 2000 08 29 | 704 | 0.4− | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 10 28 | 704 | 0.2+ | 0.6− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.1− | 0.5+ | 2006 10 28 | 704 | 0.6− | 0.2+ | | |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.7+ | 2006 10 28 | 704 | 0.2+ | 0.5+ | | |
| 2001 12 14 | 704 | 0.7− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2001 12 14 | 704 | 1.0− | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.6+ | | |
| 2001 12 14 | 704 | 1.1− | 0.1− | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.4+ | | |
| 2001 12 14 | 704 | 1.1− | 0.8− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.1− | 0.1+ | | |
| 2001 12 17 | 644 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.0 | | |
| 2001 12 17 | 644 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.7− | 0.1− | 2006 11 06 | 644 | 0.7− | 0.0 | | |
| 2001 12 17 | 704 | 0.3+ | 0.6− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.2− | 0.3− | | |
| 2001 12 17 | 644 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 2001 12 17 | 704 | 0.7+ | 1.2− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.0− | 0.1− | | |
| 2001 12 17 | 704 | 1.1+ | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 2001 12 17 | 704 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.3− | 1.5+ | 2006 11 16 | 691 | 0.2− | 0.3+ | | |
| 2001 12 21 | 704 | 0.2− | 1.3− | 2006 09 27 | 704 | 0.4− | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.3+ | | |
| 2001 12 21 | 704 | 0.7+ | 0.0 | 2006 09 27 | 704 | 0.7+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.3+ | | |
| 2001 12 21 | 704 | 0.8+ | 0.2− | 2006 09 27 | 704 | 0.7− | 0.6+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2002 01 13 | 704 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.7− | | |
| 2002 01 13 | 704 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.3− | 1.4+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2002 01 13 | 704 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.6+ | 2006 11 20 | G96 | 0.3+ | 0.3+ | | |
| 2002 01 13 | 704 | 0.3− | 0.4− | 2006 09 29 | 704 | 0.9+ | 1.0+ | 2006 11 20 | G96 | 0.2+ | 0.1− | | |
| 2002 01 15 | 704 | 0.5− | 0.7+ | 2006 10 03 | 691 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.2− | | |
| 2002 01 15 | 704 | 0.1+ | 0.9+ | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.2− | | |
| 2002 01 15 | 704 | 0.1− | 0.5+ | 2006 10 03 | 691 | 0.1+ | 0.2− | | | | | | |
| 2003 03 25 | 291 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.1− | | | | | | |

**(141195)∗ 2001 XS$_{188}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.74291 | | (2000.0) | | | |
| $n$ | 0.18175546 | $\omega$ | 279.32940 | | +0.84108581 | −0.53163048 |
| $a$ | 3.0865814 | $\Omega$ | 112.84564 | | +0.52897507 | +0.76994143 |
| $e$ | 0.1817829 | $i$ | 6.21193 | | +0.11296033 | +0.35292949 |
| $P$ | 5.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 0.1+ | 0.2+ | 2002 01 13 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.6+ | | |
| 2000 09 21 | 699 | 0.1− | 0.1− | 2002 01 13 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2000 09 21 | 699 | 0.0 | 0.1+ | 2002 01 14 | 645 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2000 09 21 | 699 | 0.8− | 0.3+ | 2002 01 14 | 645 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2000 10 01 | 704 | 0.4+ | 1.8+ | 2002 01 15 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 704 | 0.4+ | 1.1+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.7+ | 2002 01 15 | 704 | 0.5+ | 0.3+ | 2006 11 14 | 704 | 0.5+ | 0.3+ | | |
| 2000 10 01 | 704 | 0.3− | 0.4+ | 2002 01 15 | 704 | 0.1+ | 0.8+ | 2006 11 14 | 704 | 0.1− | 0.7+ | | |
| 2000 10 01 | 704 | 0.1− | 0.7+ | 2002 01 21 | 691 | 0.0 | 0.3+ | 2006 11 14 | 704 | 1.2+ | 1.3+ | | |
| 2001 12 14 | 704 | 0.1+ | 0.8+ | 2002 01 21 | 691 | 0.3+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2001 12 14 | 704 | 0.1− | 0.9+ | 2002 01 21 | 691 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.2− | 0.2− | | |
| 2001 12 14 | 704 | 0.2− | 1.3+ | 2002 01 21 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.2− | | |
| 2001 12 14 | 704 | 0.0 | 0.3+ | 2002 01 21 | 704 | 1.2+ | 0.5+ | 2006 11 17 | 704 | 0.2+ | 0.6+ | | |
| 2001 12 17 | 704 | 1.3− | 0.7+ | 2002 01 21 | 704 | (2.2+ | 1.1−) | 2006 11 17 | 704 | 0.4+ | 0.7+ | | |
| 2001 12 17 | 704 | 1.2− | 0.6+ | 2002 02 07 | 704 | 0.1− | 0.3− | 2006 11 17 | 704 | 1.1− | 0.7+ | | |
| 2001 12 17 | 704 | 1.2− | 0.9+ | 2002 02 07 | 704 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.7+ | | |
| 2001 12 17 | 644 | 0.4+ | 0.0 | 2002 02 07 | 704 | 0.2+ | 1.0+ | 2006 11 18 | 704 | 0.0 | 0.5+ | | |
| 2001 12 17 | 644 | 0.3+ | 0.5+ | 2003 04 01 | 645 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4− | 0.5+ | | |
| 2001 12 17 | 704 | 0.6− | 0.7+ | 2003 04 01 | 645 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.4− | | |
| 2001 12 17 | 644 | 0.1+ | 0.0 | 2003 04 10 | 691 | 0.7+ | 1.1+ | 2006 11 18 | 704 | 0.6+ | 0.3− | | |
| 2001 12 17 | 644 | 0.2+ | 0.1+ | 2003 04 10 | 691 | 0.5+ | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2001 12 17 | 644 | 0.4+ | 0.1+ | 2003 04 10 | 691 | 0.3+ | 0.6+ | 2006 11 20 | 691 | 0.2− | 0.0 | | |
| 2001 12 17 | 704 | 0.9− | 1.4+ | 2005 07 05 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.7− | | |
| 2001 12 17 | 644 | 0.0 | 0.0 | 2005 07 05 | 691 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2002 01 09 | 704 | (2.7+ | 1.0−) | 2005 07 05 | 691 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.1− | | |
| 2002 01 09 | 704 | (2.2+ | 0.8−) | 2005 07 09 | 691 | (2.4− | 3.3−) | 2006 11 20 | 704 | 0.3− | 0.3+ | | |
| 2002 01 09 | 704 | (3.5+ | 0.2−) | 2005 07 09 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.9− | | |
| 2002 01 13 | 291 | 1.0+ | 1.1+ | 2005 07 09 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.1− | | |
| 2002 01 13 | 291 | 0.1− | 0.0 | 2005 07 16 | 691 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.7+ | 0.1− | | |
| 2002 01 13 | 291 | 0.1+ | 0.0 | 2005 07 16 | 691 | 0.6− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.3+ | | |
| 2002 01 13 | 704 | 0.2+ | 0.2+ | 2005 07 16 | 691 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.3− | 0.2+ | | |
| 2002 01 13 | 704 | 0.6+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.0 | | |
| 2002 01 13 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.2+ | | |

**(141196)∗ 2001 XX$_{189}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 261.11092 | | (2000.0) | | | |
| $n$ | 0.18107622 | $\omega$ | 21.46220 | | −0.97997984 | −0.19538654 |
| $a$ | 3.0942954 | $\Omega$ | 147.19695 | | +0.17084516 | −0.92391836 |
| $e$ | 0.0540384 | $i$ | 4.04944 | | +0.10223227 | −0.32893611 |
| $P$ | 5.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.2+ | 0.3− | 2002 01 13 | 704 | 0.2+ | 0.6+ | 2005 09 28 | 644 | 0.0 | 0.1− | | |
| 1995 12 27 | 691 | 0.1+ | 0.4− | 2002 01 13 | 704 | 0.2+ | 0.6+ | 2005 09 28 | 644 | 0.2− | 0.0 | | |
| 1995 12 27 | 691 | 0.1+ | 0.3− | 2002 01 15 | 704 | 0.4+ | 0.8+ | 2005 09 28 | 644 | 0.2+ | 0.3+ | | |
| 1997 02 10 | 691 | 0.1+ | 0.0 | 2002 01 15 | 704 | 0.0 | 0.8+ | 2005 09 30 | 699 | (0.5− | 2.0+) | | |
| 1997 02 10 | 691 | 0.4− | 0.1− | 2002 01 15 | 704 | 0.2− | 0.6+ | 2005 09 30 | 699 | 1.1+ | 0.2− | | |
| 1997 02 10 | 691 | 0.3− | 0.3+ | 2002 02 11 | 704 | 0.5+ | 0.1+ | 2005 09 30 | 699 | 0.1− | 0.3+ | | |
| 1997 02 16 | 691 | 0.3− | 0.0 | 2002 02 11 | 704 | 0.9+ | 0.3− | 2005 09 30 | 699 | 0.7− | 0.1+ | | |
| 1997 02 16 | 691 | 0.1+ | 0.1− | 2002 02 11 | 704 | 0.3+ | 0.3+ | 2005 10 06 | G96 | 0.3− | 0.4− | | |
| 1997 02 16 | 691 | 0.3+ | 0.2− | 2002 02 11 | 704 | 0.3+ | 0.4+ | 2005 10 06 | G96 | 0.5− | 0.2− | | |
| 2000 09 27 | 691 | 0.2− | 0.1− | 2002 02 11 | 704 | 1.1+ | 0.4+ | 2005 10 06 | G96 | 0.3− | 0.1− | | |
| 2000 09 27 | 691 | 0.0 | 0.0 | 2003 04 04 | 699 | 0.9+ | 0.2+ | 2005 10 06 | G96 | 0.1+ | 0.3− | | |
| 2000 09 27 | 691 | 0.0 | 0.3+ | 2003 04 04 | 699 | 0.1− | 0.2− | 2005 11 03 | G96 | 0.1− | 0.2− | | |
| 2001 12 14 | 691 | 0.3− | 0.2− | 2003 04 04 | 691 | (0.3− | 2.6+) | 2005 11 03 | G96 | 0.0 | 0.5− | | |
| 2001 12 14 | 704 | 0.8+ | 0.8+ | 2003 04 04 | 699 | 0.8− | 0.2+ | 2005 11 03 | G96 | 0.2+ | 0.8− | | |
| 2001 12 14 | 691 | 0.9− | 0.3+ | 2003 04 04 | 699 | 0.4+ | 0.2+ | 2005 11 03 | G96 | 0.2− | 0.1− | | |
| 2001 12 14 | 704 | 0.6+ | 0.5+ | 2003 04 04 | 691 | (0.0 | 2.8+) | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2001 12 14 | 704 | 1.5+ | 1.1+ | 2003 04 04 | 691 | (0.1− | 2.7+) | 2006 11 17 | G96 | 0.1− | 0.4− | | |
| 2001 12 14 | 691 | 0.6− | 0.3− | 2005 08 27 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.6− | 0.3− | | |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2005 08 27 | 691 | 0.1− | 1.2+ | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2001 12 17 | 704 | 0.4+ | 0.3− | 2005 08 27 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.3− | | |
| 2001 12 17 | 704 | 1.1+ | 0.5+ | 2005 09 03 | 644 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.2− | 0.3− | | |
| 2001 12 17 | 704 | 0.4+ | 0.2− | 2005 09 03 | 644 | 0.3− | 0.3+ | 2006 11 18 | 691 | 1.0+ | 1.1+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.7− | 2005 09 03 | 644 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.4− | 0.2− | | |
| 2002 01 09 | 704 | 0.8+ | 0.3− | 2005 09 24 | 644 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.2− | | |
| 2002 01 09 | 704 | 0.4+ | 0.4− | 2005 09 24 | 644 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.4− | 0.3− | | |
| 2002 01 13 | 704 | 0.5+ | 0.8+ | 2005 09 24 | 644 | 0.4− | 0.5− | | | | | | |

**(141197)∗ 2001 XV$_{192}$ = 1996 XS$_{6}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25487)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.27402 | | (2000.0) | | | |
| $n$ | 0.21919444 | $\omega$ | 290.02936 | | +0.28345843 | −0.95864575 |
| $a$ | 2.7242672 | $\Omega$ | 143.47327 | | +0.89508022 | +0.25493611 |
| $e$ | 0.0587004 | $i$ | 2.45433 | | +0.34421318 | +0.12651445 |
| $P$ | 4.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.4+ | 0.3− | 2002 01 09 | 704 | 0.1+ | 0.6+ | 2005 11 01 | G96 | 0.1− | 0.1− | | |
| 1996 12 01 | 691 | 0.4+ | 0.4− | 2002 01 09 | 704 | 0.7+ | 1.4+ | 2005 11 01 | G96 | 0.2− | 0.1− | | |
| 1996 12 01 | 691 | 0.3+ | 0.4+ | 2002 01 09 | 704 | 0.2− | 0.1− | 2005 11 01 | G96 | 0.3+ | 0.0 | | |
| 1996 12 08 | 691 | 0.1− | 0.6− | 2002 01 09 | 704 | 0.4− | 1.0+ | 2005 11 01 | G96 | 0.2+ | 0.1+ | | |
| 1996 12 08 | 691 | 0.1− | 0.6− | 2002 01 13 | 704 | 1.0+ | 0.6− | 2005 11 01 | 691 | 0.0 | 0.1− | | |
| 1996 12 08 | 691 | 1.6− | 0.4+ | 2002 01 13 | 704 | 0.0 | 0.3− | 2005 11 01 | 691 | 0.1− | 0.3+ | | |
| 2000 10 01 | 704 | 0.5+ | 0.1+ | 2002 01 13 | 704 | 1.4+ | 1.1− | 2005 11 01 | 691 | 0.2+ | 0.1− | | |
| 2000 10 01 | 704 | 0.5+ | 0.4− | 2002 01 13 | 704 | 0.6+ | 0.6− | 2005 11 06 | 704 | 0.4− | 0.8+ | | |
| 2000 10 01 | 704 | 0.8+ | 0.2+ | 2002 02 11 | 704 | (1.3+ | 2.2+) | 2005 11 06 | 704 | 0.3+ | 1.1+ | | |
| 2000 10 01 | 704 | 0.4+ | 0.4+ | 2002 02 11 | 704 | (0.4− | 2.3+) | 2005 11 06 | 704 | (0.1+ | 2.5+) | | |
| 2000 10 01 | 704 | 0.3+ | 1.1− | 2002 02 11 | 704 | (0.4+ | 2.7+) | 2005 11 06 | 704 | (1.6− | 1.3+) | | |
| 2000 10 01 | 699 | 0.9+ | 0.7+ | 2002 02 11 | 704 | (0.6+ | 1.9+) | 2006 01 24 | G96 | 0.8− | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 699 | 1.3+ | 1.2− | 2002 02 12 | 691 | 0.1− | 0.4− | 2006 01 24 | G96 | 0.2− | 0.8− |
| 2000 10 01 | 699 | 1.7− | 0.5+ | 2002 02 12 | 691 | 0.4+ | 0.5− | 2006 01 24 | G96 | 0.5− | 0.1− |
| 2000 10 01 | 699 | 0.1+ | 0.7+ | 2002 02 12 | 691 | 0.6+ | 0.4− | 2006 01 24 | G96 | 0.2+ | 0.3− |
| 2001 12 14 | 704 | 0.6− | 0.1− | 2003 05 10 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 1.1− | 0.0 |
| 2001 12 14 | 704 | 0.1− | 0.1+ | 2003 05 10 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.5− | 0.2− |
| 2001 12 14 | 704 | 0.7− | 1.0+ | 2003 05 10 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.9− | 0.7− |
| 2001 12 17 | 704 | (0.2+ | 1.9+) | 2004 08 21 | E12 | 0.2− | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2001 12 17 | 644 | 0.3+ | 0.7+ | 2004 08 21 | E12 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.8− | 0.2+ |
| 2001 12 17 | 704 | 0.2− | 1.0+ | 2004 08 21 | E12 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.4− | 0.3− |
| 2001 12 17 | 644 | 0.1− | 0.5+ | 2004 08 21 | E12 | 0.3− | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.1+ |
| 2001 12 17 | 644 | 0.1+ | 0.5+ | 2005 10 28 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.5− | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 1.2+ | 2005 10 28 | 691 | 0.2− | 0.1+ | | | | |
| 2001 12 17 | 704 | 0.4− | 1.2+ | 2005 10 28 | 691 | 0.1− | 0.1+ | | | | |

**(141198)∗ 2001 XR$_{199}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.08048 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20948239 | $\omega$ | 256.88086 | | +0.79597238 | −0.60164412 | |
| $a$ | 2.8078314 | $\Omega$ | 140.05030 | | +0.58782167 | +0.74191445 | |
| $e$ | 0.0172520 | $i$ | 5.96469 | | +0.14454636 | +0.29595153 | |
| $P$ | 4.70 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.8+ | 0.0 | 2002 02 09 | 704 | 1.1− | 0.1− | 2005 10 25 | 703 | 0.4− | 0.0 |
| 2001 12 14 | 704 | 0.5+ | 0.2+ | 2002 02 11 | 704 | (2.8− | 0.1−) | 2005 10 25 | 703 | 1.1− | 0.3+ |
| 2001 12 14 | 704 | 1.1+ | 1.4+ | 2002 02 11 | 704 | (2.3− | 0.1−) | 2005 10 25 | 703 | (1.4+ | 1.8+) |
| 2001 12 14 | 704 | 0.6+ | 1.4+ | 2002 02 11 | 704 | 1.4− | 0.6+ | 2005 10 31 | 703 | 1.2+ | 0.3− |
| 2001 12 14 | 704 | (0.3+ | 1.7+) | 2002 02 11 | 704 | 1.4− | 0.2− | 2005 10 31 | 703 | 0.5+ | 0.1+ |
| 2001 12 17 | 704 | 0.7− | 0.2− | 2002 02 11 | 704 | (2.0− | 1.3+) | 2005 10 31 | 703 | (1.7− | 0.2−) |
| 2001 12 17 | 704 | 1.0+ | 1.4+ | 2003 05 05 | 704 | 1.3+ | 0.1+ | 2005 10 31 | 703 | 0.2− | 0.9+ |
| 2001 12 17 | 704 | 0.9− | 0.1− | 2003 05 05 | 704 | (1.8+ | 0.6−) | 2005 11 26 | 703 | 0.0 | 0.9− |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2003 05 05 | 704 | 0.7+ | 0.8+ | 2005 11 26 | 703 | 0.5− | 0.3− |
| 2002 01 13 | 704 | 0.1− | 0.0 | 2004 08 08 | 704 | 0.4− | 1.0+ | 2005 11 26 | 703 | 0.4− | 1.1− |
| 2002 01 13 | 704 | 0.3− | 0.1− | 2004 08 08 | 704 | 0.2− | 0.3+ | 2005 11 26 | 703 | 0.2+ | 0.8+ |
| 2002 01 13 | 704 | 0.1+ | 0.2− | 2004 08 08 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2+ |
| 2002 01 13 | 704 | 0.0 | 0.0 | 2004 08 08 | 704 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.7+ | 0.2− |
| 2002 01 13 | 704 | 0.2+ | 1.0− | 2004 08 22 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.2− |
| 2002 01 22 | 704 | 0.3− | 0.0 | 2004 08 22 | 691 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2002 01 22 | 704 | 0.6+ | 0.7+ | 2004 08 22 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2002 01 22 | 704 | 0.6+ | 0.9+ | 2005 10 25 | 703 | (1.8+ | 0.4+) | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2002 01 22 | 704 | 0.2+ | 0.5+ | 2005 10 25 | 703 | 0.7+ | 1.1+ | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2002 02 09 | 704 | 0.2+ | 0.3+ | 2005 10 25 | 703 | 1.2+ | 0.6− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2002 02 09 | 704 | 0.3+ | 0.4+ | 2005 10 25 | 703 | (2.2+ | 0.1−) | | | | |
| 2002 02 09 | 704 | 0.7− | 0.4− | 2005 10 25 | 703 | 0.3+ | 0.5+ | | | | |

**(141199)∗ 2001 XF$_{203}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.38632 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22247762 | $\omega$ | 350.26085 | | −0.06208059 | −0.98358900 | |
| $a$ | 2.6973988 | $\Omega$ | 103.15421 | | +0.92702061 | −0.11971972 | |
| $e$ | 0.0328419 | $i$ | 10.01882 | | +0.36983618 | +0.13498102 | |
| $P$ | 4.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.7+ | 0.7+ | 2002 01 09 | 704 | 0.9− | 1.4+ | 2005 09 14 | 703 | 0.2+ | 0.2+ |
| 2001 09 17 | 704 | 0.6+ | 0.4+ | 2002 01 09 | 704 | (1.8− | 0.4+) | 2005 09 14 | 703 | 0.1+ | 1.3+ |
| 2001 09 17 | 704 | (0.0 | 1.8+) | 2002 01 09 | 704 | 1.0− | 0.7− | 2005 09 30 | 699 | 0.1− | 0.9+ |
| 2001 09 17 | 704 | 1.3+ | 0.8+ | 2002 01 09 | 704 | 1.1− | 0.4− | 2005 09 30 | 699 | 0.4+ | 1.0+ |
| 2001 09 17 | 704 | 1.0+ | 0.2+ | 2002 01 12 | 608 | 0.2+ | 0.4− | 2005 09 30 | 699 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | 0.5− | 0.5− | 2002 01 12 | 608 | 0.3− | 0.1− | 2005 09 30 | 699 | 0.0 | 0.7+ |
| 2001 10 17 | 704 | 0.0 | 1.4− | 2002 01 12 | 608 | 1.0− | 0.2− | 2005 10 03 | 703 | 0.6+ | 0.3− |
| 2001 10 17 | 704 | 0.0 | 0.7− | 2002 12 11 | 645 | 0.1− | 0.0 | 2005 10 03 | 703 | 0.3− | 0.1− |
| 2001 10 25 | 644 | 0.0 | 0.1− | 2002 12 11 | 645 | 0.1− | 0.0 | 2005 10 03 | 703 | 0.2+ | 0.6− |
| 2001 10 25 | 644 | 0.3+ | 0.1− | 2003 02 28 | 704 | 0.2− | 0.6+ | 2005 10 03 | 703 | 0.3− | 0.6− |
| 2001 10 25 | 644 | 0.2− | 0.4− | 2003 02 28 | 704 | 1.0+ | 0.1+ | 2005 10 22 | 644 | 0.3− | 0.1− |
| 2001 11 19 | 699 | 0.4+ | 0.2+ | 2003 02 28 | 704 | 1.4+ | 0.2− | 2005 10 22 | 644 | 0.0 | 0.1− |
| 2001 11 19 | 699 | 0.2+ | 1.2+ | 2003 02 28 | 704 | 0.1− | 0.5+ | 2005 10 22 | 644 | 0.2+ | 0.1− |
| 2001 11 19 | 699 | 0.1+ | 0.5+ | 2003 02 28 | 704 | 0.2+ | 0.1− | 2005 10 26 | 704 | 0.6− | 0.1+ |
| 2001 11 19 | 699 | 0.1+ | 0.3+ | 2003 03 08 | 699 | 0.2− | 0.1− | 2005 10 26 | 704 | 0.5− | 0.2− |
| 2001 12 11 | 704 | 1.0+ | 0.0 | 2003 03 08 | 699 | 0.4− | 0.3− | 2005 10 26 | 704 | 0.5− | 1.2+ |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2003 03 08 | 699 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2001 12 11 | 704 | 0.8+ | 0.3− | 2003 03 08 | 699 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2001 12 11 | 704 | 0.6+ | 0.5− | 2003 03 08 | 644 | 0.7+ | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2001 12 11 | 704 | 0.0 | 0.1− | 2003 03 08 | 644 | 0.6+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.8− |
| 2001 12 18 | 644 | 0.1− | 0.1+ | 2003 03 08 | 644 | 0.5+ | 0.6+ | 2006 11 01 | G96 | 0.5+ | 0.3− |
| 2001 12 18 | 644 | 0.2+ | 0.1+ | 2003 04 06 | 699 | 0.4− | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 12 18 | 644 | 0.1− | 0.2+ | 2003 04 06 | 699 | (1.7− | 0.3−) | 2006 11 01 | G96 | 0.5− | 0.6− |
| 2001 12 18 | 704 | 0.2− | 0.0 | 2003 04 06 | 699 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.2+ | 2003 04 06 | 699 | 0.0 | 0.6+ | 2006 11 28 | G96 | 0.3+ | 0.5− |
| 2001 12 18 | 704 | 0.4− | 0.4+ | 2003 04 09 | 644 | 0.0 | 0.5+ | 2006 11 28 | G96 | 0.3+ | 0.5− |
| 2002 01 08 | 644 | 0.5− | 0.1+ | 2003 04 09 | 644 | 0.3+ | 0.6+ | 2006 11 28 | G96 | 0.2+ | 0.6− |
| 2002 01 08 | 644 | 0.4− | 0.3+ | 2003 04 09 | 644 | 0.1+ | 0.5+ | 2006 11 28 | G96 | 0.4− | 0.2− |
| 2002 01 08 | 644 | 0.1− | 0.6+ | 2005 09 14 | 703 | 0.1+ | 0.7− | | | | |
| 2002 01 09 | 704 | 0.7− | 0.1+ | 2005 09 14 | 703 | 1.5− | 0.3− | | | | |

**(141200)∗ 2001 XP$_{203}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.93517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20212346 | $\omega$ | 247.04413 | | +0.93011115 | +0.28131554 | |
| $a$ | 2.8755764 | $\Omega$ | 95.95382 | | −0.18382674 | +0.91315320 | |
| $e$ | 0.1155373 | $i$ | 13.73344 | | −0.31796379 | +0.29497932 | |
| $P$ | 4.88 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 25 | 691 | 0.0 | 0.4− | 2003 03 03 | 644 | 0.2− | 0.1+ | 2005 08 30 | 699 | 1.4− | 0.4− |
| 1993 01 25 | 691 | 0.2− | 0.4− | 2003 03 03 | 644 | 0.1+ | 0.8+ | 2005 08 30 | 699 | (1.7− | 2.3+) |
| 1993 01 25 | 691 | 0.2+ | 0.5− | 2003 03 08 | 644 | 0.0 | 0.0 | 2005 08 30 | 699 | 0.5− | 0.8− |
| 2001 11 18 | 704 | 0.3+ | 0.8− | 2003 03 08 | 644 | 0.1+ | 0.5+ | 2005 08 30 | 699 | 0.1+ | 0.1− |
| 2001 11 18 | 704 | 0.5− | 0.8− | 2003 03 08 | 644 | 0.5+ | 0.9+ | 2005 09 01 | E12 | 0.1+ | 0.3− |
| 2001 11 18 | 704 | 0.2+ | 1.0− | 2004 04 11 | 644 | 0.3+ | 0.9+ | 2005 09 01 | E12 | 0.5− | 0.1− |
| 2001 12 11 | 704 | 0.6+ | 0.7+ | 2004 04 11 | 644 | 0.3+ | 0.8+ | 2005 09 01 | E12 | 0.4+ | 0.4− |
| 2001 12 11 | 704 | 0.2+ | 0.8+ | 2004 04 11 | 644 | 0.2− | 0.9+ | 2005 09 01 | E12 | 0.4+ | 0.3− |
| 2001 12 11 | 704 | 0.1+ | 1.4+ | 2005 07 19 | 644 | 0.1− | 0.3+ | 2005 09 08 | E12 | 0.1+ | 0.5+ |
| 2001 12 11 | 704 | 0.5+ | 0.5+ | 2005 07 19 | 644 | 0.1+ | 0.4+ | 2005 09 08 | E12 | 0.2+ | 0.1+ |
| 2001 12 11 | 704 | 0.2− | 0.9+ | 2005 07 19 | 644 | 0.1+ | 0.3+ | 2005 09 08 | E12 | 0.2+ | 0.4+ |
| 2001 12 14 | 644 | 0.2− | 0.0 | 2005 07 26 | 644 | 0.1+ | 0.2+ | 2005 09 08 | E12 | 0.4+ | 0.1+ |
| 2001 12 14 | 644 | 0.1− | 0.0 | 2005 07 26 | 644 | 0.3+ | 0.8+ | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 2001 12 14 | 644 | 0.2+ | 0.2+ | 2005 07 26 | 644 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.8+ | 0.6+ |
| 2001 12 18 | 704 | 0.0 | 0.6− | 2005 08 04 | 644 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.9+ |
| 2001 12 18 | 704 | 0.9− | 0.2− | 2005 08 04 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2001 12 18 | 704 | (2.2− | 0.5+) | 2005 08 04 | 644 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2001 12 18 | 704 | 0.8− | 0.5− | 2005 08 05 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2001 12 18 | 704 | 0.4− | 0.1+ | 2005 08 05 | 644 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2002 01 08 | 644 | 0.1− | 0.2+ | 2005 08 05 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 01 08 | 644 | 0.1− | 0.2+ | 2005 08 15 | E12 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2002 01 08 | 644 | 0.1− | 0.3+ | 2005 08 15 | E12 | 1.3+ | 0.5− | 2006 11 29 | 704 | 0.8− | 0.0 |
| 2003 02 21 | 644 | 0.5+ | 0.4+ | 2005 08 15 | E12 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2003 02 21 | 644 | 0.5+ | 1.0+ | 2005 08 15 | E12 | 1.3− | 0.2+ | 2006 11 29 | 704 | 0.6− | 0.3− |
| 2003 02 21 | 644 | 0.1+ | 0.7+ | 2005 08 16 | 428 | 0.6− | 0.3− | 2006 11 29 | 704 | 1.0− | 0.7+ |
| 2003 03 03 | 644 | 0.1− | 0.5+ | 2005 08 16 | 428 | 0.1− | 0.2− | | | | |

**(141201)∗ 2001 XD$_{206}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.91455 | | (2000.0) | | | |
| $n$ | 0.17073267 | $\omega$ | 282.47757 | | +0.90773198 | −0.31771448 |
| $a$ | 3.2180413 | $\Omega$ | 96.55103 | | +0.40229080 | +0.84452061 |
| $e$ | 0.1284556 | $i$ | 16.01020 | | −0.11909983 | +0.43109448 |
| $P$ | 5.77 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 699 | 0.2− | 0.6− | 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 07 28 | E12 | 0.6− | 0.6+ |
| 2000 07 10 | 699 | 0.1− | 0.7− | 2001 12 19 | 704 | 0.2− | 0.0 | 2006 07 28 | E12 | 0.4− | 0.2+ |
| 2000 07 10 | 699 | 0.4− | 0.9− | 2001 12 20 | 644 | 0.1+ | 0.3+ | 2006 07 28 | E12 | 0.9+ | 0.1+ |
| 2000 07 10 | 699 | 0.8− | 0.8− | 2001 12 20 | 644 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2000 08 26 | 704 | 0.9+ | 0.8+ | 2001 12 20 | 644 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.1− | 0.1− |
| 2000 08 26 | 704 | 0.2+ | 1.1+ | 2002 01 07 | 699 | 0.5+ | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.4+ |
| 2000 08 26 | 704 | 0.1− | 0.7+ | 2002 01 07 | 699 | 0.4− | 0.9+ | 2006 09 22 | E12 | 0.0 | 0.4+ |
| 2001 11 17 | 704 | 0.6+ | 0.2− | 2002 01 07 | 699 | (0.6− | 1.8−) | 2006 09 22 | E12 | 1.0+ | 0.8+ |
| 2001 11 17 | 704 | 0.6+ | 0.3+ | 2002 01 07 | 699 | 0.7− | 0.8+ | 2006 09 22 | E12 | 1.2− | 0.2− |
| 2001 11 17 | 704 | 0.8+ | 0.4+ | 2002 01 09 | 704 | 0.3+ | 0.8+ | 2006 09 22 | E12 | 1.1− | 0.4− |
| 2001 11 17 | 704 | 0.7− | 0.3+ | 2002 01 09 | 704 | 0.4− | 0.5+ | 2006 10 03 | E12 | 1.0+ | 1.1− |
| 2001 11 17 | 704 | 0.4+ | 0.6+ | 2002 01 09 | 704 | 1.0− | 0.5− | 2006 10 03 | E12 | 1.2− | 1.1− |
| 2001 12 11 | 704 | 0.1− | 0.1− | 2002 01 09 | 704 | 0.1− | 0.7− | 2006 10 03 | E12 | 0.9+ | 0.2− |
| 2001 12 11 | 704 | 0.1+ | 0.1− | 2002 01 09 | 704 | 0.0 | 0.7− | 2006 10 03 | E12 | 1.0− | 0.2+ |
| 2001 12 11 | 704 | 0.6+ | 0.1+ | 2003 02 21 | 644 | 0.2− | 0.2+ | 2006 10 12 | E12 | 0.5− | 0.6+ |
| 2001 12 11 | 704 | 0.3+ | 0.0 | 2003 02 21 | 644 | 0.2+ | 0.3+ | 2006 10 12 | E12 | 0.3+ | 0.4+ |
| 2001 12 11 | 704 | 0.9+ | 0.1+ | 2003 02 21 | 644 | 0.2+ | 0.5+ | 2006 10 12 | E12 | 0.2+ | 0.2+ |
| 2001 12 18 | 704 | 0.3+ | 0.5− | 2003 02 26 | 704 | 0.3+ | 0.9+ | 2006 10 12 | E12 | 0.1− | 1.2+ |
| 2001 12 18 | 704 | 0.7− | 0.3− | 2003 02 26 | 704 | 0.1+ | 0.4+ | 2006 10 28 | E12 | 0.1+ | 1.0+ |
| 2001 12 18 | 704 | 0.4+ | 0.5− | 2003 02 26 | 704 | 0.1+ | 0.3+ | 2006 10 28 | E12 | 0.3− | 0.7+ |
| 2001 12 18 | 704 | 0.6+ | 0.6− | 2003 02 26 | 704 | 1.0− | 0.4+ | 2006 10 28 | E12 | 0.6+ | 0.6+ |
| 2001 12 19 | 704 | 0.2− | 0.9− | 2003 03 08 | 699 | (1.2+ | 1.8+) | 2006 10 28 | E12 | 0.0 | 0.5+ |
| 2001 12 19 | 704 | 0.1+ | 0.4− | 2003 03 08 | 699 | 1.4− | 0.7− | 2006 11 17 | 644 | 0.4− | 0.2+ |
| 2001 12 19 | 704 | 0.1+ | 0.4− | 2003 03 08 | 699 | 0.4+ | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.4+ |
| 2001 12 19 | 704 | 0.4− | 0.7− | 2003 03 08 | 699 | 0.5− | 0.7+ | 2006 11 17 | 644 | 0.2− | 0.3+ |
| 2001 12 19 | 704 | 0.9+ | 0.0 | 2003 03 08 | 644 | 0.9+ | 1.1+ | 2006 11 17 | 644 | 0.3− | 0.0 |
| 2001 12 19 | 704 | 0.7− | 0.8− | 2003 03 08 | 644 | 0.9+ | 1.2+ | 2006 11 17 | 644 | 0.3+ | 0.2+ |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2003 03 08 | 644 | 0.8+ | 1.3+ | 2006 11 17 | 644 | 0.2− | 0.3+ |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2006 07 28 | E12 | 0.1+ | 0.3+ | | | | |

**(141202)∗ 2001 XV$_{207}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 318.39314 | | (2000.0) | | | |
| $n$ | 0.18668218 | $\omega$ | 214.93918 | | +0.01073194 | −0.98763233 |
| $a$ | 3.0320345 | $\Omega$ | 234.94089 | | +0.95545053 | +0.05627053 |
| $e$ | 0.1201981 | $i$ | 11.01650 | | +0.29495610 | −0.14634210 |
| $P$ | 5.28 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2+ | 0.8+ | 2002 02 03 | 209 | 1.2+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 11 20 | 704 | (0.5− | 1.9+) | 2003 04 07 | 644 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.3+ | 1.5+ | 2003 04 07 | 644 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.9+ |
| 2001 11 20 | 704 | 0.4+ | 1.1+ | 2003 04 07 | 644 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2001 12 11 | 704 | 0.2− | 0.3− | 2005 07 31 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.7+ |
| 2001 12 11 | 704 | 0.1− | 0.3− | 2005 07 31 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 2001 12 11 | 704 | (1.3− | 1.5−) | 2005 07 31 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2001 12 11 | 704 | 0.9− | 0.8+ | 2005 08 26 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 12 11 | 704 | 0.0 | 0.6− | 2005 08 26 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.7+ |
| 2001 12 18 | 704 | 0.3+ | 0.1+ | 2005 08 26 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | (2.0+ | 0.2+) | 2006 08 29 | 703 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2001 12 18 | 704 | (0.9+ | 1.6+) | 2006 08 29 | 703 | 0.2+ | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 1.2+ | 0.5+ | 2006 08 29 | 703 | 0.3+ | 0.8− | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | (1.6+ | 0.7+) | 2006 08 29 | 703 | 0.4− | 1.1− | 2006 11 12 | G96 | 0.6+ | 0.1− |
| 2001 12 21 | 704 | 0.8− | 0.9− | 2006 10 17 | 691 | 0.3− | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2001 12 21 | 704 | 0.6+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2001 12 21 | 704 | 0.2− | 0.8− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.6− |
| 2001 12 21 | 704 | 0.3+ | 0.8− | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2001 12 21 | 704 | 1.3+ | 0.8+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 2001 12 23 | 644 | 0.7− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2001 12 23 | 704 | 0.5− | 0.4− | 2006 10 27 | 703 | (0.2+ | 2.0−) | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2001 12 23 | 644 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.3− | 1.2− | 2006 11 18 | 704 | 1.4− | 1.4+ |
| 2001 12 23 | 704 | 0.2+ | 0.7− | 2006 10 27 | 703 | 0.2+ | 0.3− | 2006 11 18 | 704 | (1.7+ | 0.3+) |
| 2001 12 23 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.0 | 2006 11 18 | 704 | (2.2+ | 0.1−) |
| 2001 12 23 | 704 | 0.3− | 0.2− | 2006 10 29 | 704 | 0.4− | 0.3− | 2006 11 18 | 704 | (1.3− | 2.8+) |
| 2001 12 23 | 704 | 0.2− | 0.6− | 2006 10 29 | 704 | 0.6− | 0.5+ | 2006 11 18 | 704 | 1.4− | 0.7+ |
| 2001 12 23 | 644 | 0.3− | 0.2+ | 2006 10 29 | 704 | 0.8− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 01 09 | 704 | 0.5− | 0.1− | 2006 10 29 | 704 | (1.9− | 1.2+) | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2002 01 09 | 704 | 1.3− | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 01 09 | 704 | (1.8− | 0.2+) | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2002 01 14 | 704 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.6+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2002 01 14 | 704 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.5− | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2002 01 14 | 704 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2002 01 14 | 704 | 1.0− | 0.5− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2002 02 03 | 209 | 1.3+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.1− | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2002 02 03 | 209 | 1.5+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | | | | |

**(141203)∗ 2001 XB$_{208}$ = 2000 RH$_{39}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23280)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.66745 | | (2000.0) | | | |
| $n$ | 0.18562846 | $\omega$ | 197.66344 | | +0.42834012 | −0.89368252 |
| $a$ | 3.0434979 | $\Omega$ | 227.21011 | | +0.84947930 | +0.44866724 |
| $e$ | 0.1022170 | $i$ | 10.49158 | | +0.30807411 | +0.00540956 |
| $P$ | 5.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.1− | 0.8+ | 2003 03 10 | 699 | 0.5− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 09 01 | 704 | 1.4− | 0.3− | 2003 03 10 | 699 | 1.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2000 09 01 | 704 | 0.5− | 0.6+ | 2003 03 10 | 699 | 0.1+ | 1.1− | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2000 09 01 | 704 | 0.2+ | 0.1+ | 2003 03 27 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2000 09 06 | 704 | 0.8− | 0.7− | 2003 03 27 | 644 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.1− |
| 2000 09 06 | 704 | 1.0+ | 0.3− | 2003 03 27 | 644 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2000 09 06 | 704 | 0.6+ | 0.1+ | 2005 07 31 | 644 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2000 09 06 | 704 | 0.2+ | 0.7− | 2005 07 31 | 644 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 11 17 | 704 | 0.0 | 0.5+ | 2005 07 31 | 644 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2001 11 17 | 704 | 0.3+ | 0.4− | 2005 08 24 | 644 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2001 11 17 | 704 | 1.0+ | 0.5− | 2005 08 24 | 644 | 0.1+ | 0.9+ | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 2001 11 17 | 704 | 0.2+ | 0.2− | 2005 08 24 | 644 | 0.2− | 0.4+ | 2006 11 17 | 703 | (1.5+ | 1.0−) |
| 2001 11 17 | 704 | 1.2+ | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2001 12 11 | 704 | 0.4− | 1.4+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | (2.4− | 0.8+) |
| 2001 12 11 | 704 | 0.2− | 1.2+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2001 12 11 | 704 | 0.1− | 1.2+ | 2006 09 30 | G96 | 0.3− | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2001 12 11 | 704 | 0.4− | 1.4+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2001 12 18 | 704 | (2.5+ | 0.9+) | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2001 12 18 | 704 | 1.0+ | 0.2+ | 2006 10 13 | 691 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.5+ | 0.3− |
| 2001 12 18 | 704 | 1.2+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2002 01 09 | 704 | 0.4− | 0.4− | 2006 10 20 | 691 | 0.7− | 0.6+ | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2002 01 09 | 704 | 0.6− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2002 01 09 | 704 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 01 09 | 704 | 0.3+ | 0.9− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.7− |
| 2002 02 03 | 209 | 0.7− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 1.0− |
| 2002 02 03 | 209 | 0.7− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.3− | 0.1+ |
| 2002 02 03 | 209 | 0.8− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.3+ | 1.0− |
| 2003 03 10 | 699 | 0.9− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1− | | | | |

**(141204)∗ 2001 XJ$_{208}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.76047 | | (2000.0) | | | |
| $n$ | 0.21785237 | $\omega$ | 289.47934 | | +0.64422142 | −0.75893683 |
| $a$ | 2.7354442 | $\Omega$ | 120.04435 | | +0.73638243 | +0.58195857 |
| $e$ | 0.0593686 | $i$ | 6.28966 | | +0.20668738 | +0.29212860 |
| $P$ | 4.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.4+ | 0.4+ | 2002 01 13 | 704 | 0.6+ | 0.3− | 2005 10 03 | 703 | 0.5+ | 0.8+ | |
| 2001 11 17 | 704 | 0.2+ | 0.3+ | 2002 01 13 | 704 | 0.1+ | 0.6+ | 2005 10 03 | 703 | 0.2− | 0.6+ | |
| 2001 11 17 | 704 | 0.5+ | 0.1− | 2003 03 26 | 691 | 0.4+ | 0.4+ | 2005 10 03 | 703 | 1.0− | 0.7+ | |
| 2001 11 17 | 704 | 0.4+ | 0.6− | 2003 03 26 | 691 | 0.4+ | 0.5+ | 2005 10 27 | 704 | 0.1+ | 0.1− | |
| 2001 12 11 | 704 | 1.1− | 0.7− | 2003 03 26 | 691 | 0.3− | 1.0+ | 2005 10 27 | 704 | 0.1− | 0.3+ | |
| 2001 12 11 | 704 | 0.6− | 0.3− | 2003 04 01 | 645 | 0.0 | 0.1+ | 2005 10 27 | 704 | 0.1+ | 0.8+ | |
| 2001 12 11 | 704 | 1.1− | 0.2− | 2003 04 01 | 645 | 0.0 | 0.2+ | 2005 11 01 | 703 | 1.0− | 0.9+ | |
| 2001 12 18 | 704 | 0.7+ | 1.2+ | 2003 04 27 | 291 | 0.4+ | 0.0 | 2005 11 01 | 703 | 1.0− | 0.3+ | |
| 2001 12 18 | 704 | 0.1− | 0.1− | 2003 04 27 | 291 | 0.1+ | 0.3+ | 2005 11 01 | 703 | 1.1− | 1.2+ | |
| 2001 12 18 | 704 | 1.0− | 0.4− | 2003 04 27 | 291 | 0.3+ | 0.0 | 2005 11 01 | 703 | 0.1− | 0.0 | |
| 2001 12 23 | 644 | 0.4− | 0.9+ | 2005 09 03 | 644 | 0.6+ | 0.3+ | 2006 10 21 | G96 | 0.4− | 0.0 | |
| 2001 12 23 | 704 | 0.4− | 0.0 | 2005 09 03 | 644 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.4− | 0.4− | |
| 2001 12 23 | 644 | 0.6− | 0.7+ | 2005 09 03 | 644 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.4− | 0.6− | |
| 2001 12 23 | 704 | 0.6+ | 0.1− | 2005 09 24 | 644 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.7− | |
| 2001 12 23 | 704 | 0.5+ | 0.5− | 2005 09 24 | 644 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 1.1− | |
| 2001 12 23 | 704 | 0.1+ | 0.4− | 2005 09 24 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | (1.8+ | 0.2−) | |
| 2001 12 23 | 704 | 0.0 | 0.1− | 2005 09 29 | 644 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.6+ | 0.7− | |
| 2001 12 23 | 644 | 0.4− | 1.0+ | 2005 09 29 | 644 | 0.5− | 0.7+ | 2006 11 15 | G96 | 0.8− | 0.7+ | |
| 2002 01 09 | 704 | 0.6+ | 0.5− | 2005 09 29 | 644 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.4+ | 0.8− | |
| 2002 01 09 | 704 | 0.0 | 0.3− | 2005 10 01 | 699 | 0.6+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.5− | |
| 2002 01 09 | 704 | 0.5+ | 0.0 | 2005 10 01 | 699 | 0.2+ | 1.1+ | 2006 11 27 | G96 | 0.2+ | 0.4− | |
| 2002 01 09 | 704 | 1.0+ | 0.1− | 2005 10 01 | 699 | 1.2− | 1.1+ | 2006 11 27 | G96 | 0.4+ | 0.7− | |
| 2002 01 09 | 704 | 0.0 | 0.2− | 2005 10 01 | 699 | 0.7− | 1.0+ | | | | | |
| 2002 01 13 | 704 | 0.3+ | 0.6+ | 2005 10 03 | 703 | (1.1− | 2.4+) | | | | | |

**(141205)∗ 2001 XP$_{209}$ = 2004 FO$_{99}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69032)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.18357 | | (2000.0) | | | |
| $n$ | 0.18601798 | $\omega$ | 229.66375 | | +0.97874025 | +0.14060625 |
| $a$ | 3.0392477 | $\Omega$ | 121.75802 | | −0.08932340 | +0.94757662 |
| $e$ | 0.0934029 | $i$ | 10.11455 | | −0.18463165 | +0.28692932 |
| $P$ | 5.30 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.0 | 0.2− | 2004 03 26 | 291 | 0.0 | 0.2− | 2005 07 27 | 644 | 0.3− | 0.0 | |
| 2000 09 20 | 704 | 0.5− | 0.1+ | 2004 03 26 | 291 | 0.1− | 0.0 | 2005 07 27 | 644 | 0.2− | 0.1+ | |
| 2000 09 20 | 704 | 0.3− | 0.5+ | 2005 06 13 | G96 | 0.0 | 0.0 | 2005 07 31 | E12 | 0.3+ | 0.3+ | |
| 2001 12 11 | 704 | 0.4+ | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.3− | 2005 07 31 | E12 | 0.4− | 0.0 | |
| 2001 12 11 | 704 | 0.6− | 0.0 | 2005 06 13 | G96 | 0.3+ | 0.1+ | 2005 07 31 | E12 | 0.3− | 0.4+ | |
| 2001 12 11 | 704 | 1.1− | 0.7+ | 2005 06 13 | G96 | 0.4+ | 0.1− | 2005 07 31 | E12 | 0.4− | 0.1− | |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2005 06 29 | 644 | 0.1+ | 0.2+ | 2005 08 02 | 704 | 0.1− | 0.6+ | |
| 2001 12 18 | 704 | 0.4− | 1.0+ | 2005 06 29 | 644 | 0.1− | 0.1+ | 2005 08 02 | 704 | 0.5+ | 0.1+ | |
| 2001 12 18 | 704 | 0.2− | 0.1− | 2005 06 29 | 644 | 0.2+ | 0.0 | 2005 08 02 | 704 | 0.8+ | 0.5+ | |
| 2002 01 14 | 704 | 1.5+ | 0.1− | 2005 06 30 | 691 | 0.3− | 0.3+ | 2005 08 06 | 704 | 0.9+ | 1.0− | |
| 2002 01 14 | 704 | 0.6+ | 0.9+ | 2005 06 30 | 691 | 0.5+ | 0.4+ | 2005 08 06 | 704 | 0.5− | 0.1− | |
| 2002 01 14 | 704 | 0.2+ | 0.2− | 2005 06 30 | 691 | 0.2− | 0.3+ | 2005 08 06 | 704 | 1.1+ | 0.5+ | |
| 2002 12 14 | 645 | 0.1+ | 0.1+ | 2005 07 10 | 703 | 0.7− | 0.6+ | 2006 11 18 | 461 | 0.4+ | 0.5+ | |
| 2002 12 14 | 645 | 0.1− | 0.0 | 2005 07 10 | 703 | 0.3− | 0.0 | 2006 11 18 | 461 | 0.1− | 0.4+ | |
| 2003 03 07 | 644 | 0.3+ | 0.2+ | 2005 07 10 | 703 | 0.3− | 0.6− | 2006 11 18 | 461 | 0.0 | 0.3+ | |
| 2003 03 07 | 644 | 0.3+ | 0.5+ | 2005 07 10 | 703 | 0.6+ | 0.9− | 2006 11 19 | 703 | 0.3+ | 0.7− | |
| 2003 03 07 | 644 | 0.4+ | 0.5+ | 2005 07 12 | G96 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.8− | 0.7+ | |
| 2004 03 21 | 291 | 0.0 | 0.4+ | 2005 07 12 | G96 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.8− | 0.3− | |
| 2004 03 21 | 291 | 0.0 | 0.4+ | 2005 07 12 | G96 | 0.5− | 0.0 | 2006 11 19 | 703 | 0.3− | 0.3− | |
| 2004 03 21 | 291 | 0.2+ | 0.3+ | 2005 07 12 | G96 | 0.1− | 0.1+ | | | | | |
| 2004 03 26 | 291 | 0.2− | 0.3− | 2005 07 27 | 644 | 0.1− | 0.1− | | | | | |

**(141206)∗ 2001 XX$_{209}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.12469 | | (2000.0) | | | |
| $n$ | 0.17468852 | $\omega$ | 320.49379 | | +0.19434496 | −0.96929034 |
| $a$ | 3.1692741 | $\Omega$ | 117.81885 | | +0.93759182 | +0.13839580 |
| $e$ | 0.0849468 | $i$ | 9.80973 | | +0.28836022 | +0.20328020 |
| $P$ | 5.64 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.5+ | 1.2+ | 2003 02 28 | 704 | (0.3− | 1.7+) | 2006 10 12 | 644 | 0.1− | 0.2− | |
| 2001 11 17 | 704 | 0.2− | 0.4− | 2005 07 05 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2− | |
| 2001 11 17 | 704 | 0.5+ | 0.3+ | 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.4− | |
| 2001 11 17 | 704 | 0.0 | 0.1− | 2005 07 05 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− | |
| 2001 11 17 | 704 | 0.4+ | 0.2+ | 2005 07 09 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | (2.2− | 1.5+) | |
| 2001 12 11 | 704 | 0.1+ | 0.2− | 2005 07 09 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.6− | 0.9+ | |
| 2001 12 11 | 704 | 0.8+ | 0.6− | 2005 07 09 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.4+ | |
| 2001 12 11 | 704 | 0.6− | 0.4− | 2005 07 16 | 691 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1− | 0.2+ | |
| 2001 12 11 | 704 | 0.4− | 0.2+ | 2005 07 16 | 691 | 0.0 | 0.1+ | 2006 10 28 | 703 | 1.3+ | 0.3− | |
| 2001 12 11 | 704 | 0.0 | 0.6+ | 2005 07 16 | 691 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.1+ | |
| 2001 12 18 | 704 | 0.3− | 0.6− | 2006 09 18 | 703 | (2.3− | 0.1+) | 2006 10 28 | 703 | 0.5− | 0.2− | |
| 2001 12 18 | 704 | (2.1+ | 0.1−) | 2006 09 18 | 703 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.7+ | |
| 2001 12 18 | 704 | 0.4+ | 0.2− | 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 11 11 | 291 | 0.0 | 0.1− | |
| 2001 12 18 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.8+ | 1.1− | 2006 11 11 | 291 | 0.3− | 0.0 | |
| 2002 01 09 | 704 | 0.5+ | 0.7− | 2006 09 29 | 699 | 0.9+ | 0.0 | 2006 11 11 | 291 | 0.2− | 0.1− | |
| 2002 01 09 | 704 | 0.5+ | 0.8− | 2006 09 29 | 699 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1+ | 2.8+ | |
| 2002 01 09 | 704 | 0.6+ | 0.9− | 2006 09 29 | 699 | 0.2+ | 1.0− | 2006 11 11 | G96 | (0.2+ | 3.2+) | |
| 2002 01 09 | 704 | 0.4+ | 0.7− | 2006 09 29 | 699 | 1.2− | 1.0− | 2006 11 11 | G96 | (0.2− | 3.3+) | |
| 2002 01 14 | 704 | 1.1− | 0.3− | 2006 09 30 | 704 | 0.0 | 1.3− | 2006 11 11 | G96 | 0.0 | 1.9+ | |
| 2002 01 14 | 704 | 1.3− | 0.7+ | 2006 09 30 | 704 | 0.3− | 1.4− | 2006 11 16 | 703 | 0.4+ | 1.3− | |
| 2002 01 14 | 704 | 0.6− | 0.1− | 2006 09 30 | 704 | (2.3− | 0.3+) | 2006 11 16 | 703 | 0.4+ | 1.5− | |
| 2002 01 14 | 704 | (1.6− | 0.7+) | 2006 09 30 | 704 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.6− | 0.6− | |
| 2003 02 28 | 704 | 0.1− | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 16 | 703 | 0.6+ | 0.6+ | |
| 2003 02 28 | 704 | 1.0+ | 1.4+ | 2006 10 12 | 644 | 0.2− | 0.2− | | | | | |

**(141207)∗ 2001 XF$_{210}$ = 2001 YU$_{120}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 27870)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.14287 | | (2000.0) | | | |
| $n$ | 0.22925566 | $\omega$ | 109.45245 | | −0.77889510 | +0.38812530 |
| $a$ | 2.6439668 | $\Omega$ | 96.11817 | | −0.56972310 | −0.76626432 |
| $e$ | 0.3352135 | $i$ | 29.69935 | | +0.26217936 | −0.51205248 |
| $P$ | 4.30 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 24 | 566 | 0.6− | 0.2− | 2002 01 13 | 704 | 0.2− | 0.1− | 2005 11 12 | 703 | 0.9− | 0.3+ | |
| 1998 01 24 | 566 | 0.4− | 0.1+ | 2002 01 13 | 704 | 0.3+ | 0.2+ | 2005 11 27 | 699 | 0.3+ | 0.2− | |
| 1998 01 24 | 566 | 0.4− | 0.2− | 2002 01 13 | 704 | 0.4+ | 0.0 | 2005 11 27 | 699 | 0.5− | 0.3− | |
| 2001 11 17 | 704 | 1.0− | 0.4− | 2002 01 15 | 704 | (0.3− | 1.7−) | 2005 11 27 | 699 | 0.4+ | 0.9− | |
| 2001 11 17 | 704 | 0.9− | 0.2+ | 2002 01 15 | 704 | (0.7− | 2.6−) | 2005 11 27 | 699 | 0.0 | 0.0 | |
| 2001 11 17 | 704 | 0.7− | 0.2− | 2002 01 15 | 704 | (0.3− | 2.7−) | 2005 11 28 | 644 | 0.3+ | 0.2+ | |
| 2001 11 17 | 704 | 0.6− | 0.6− | 2002 01 15 | 704 | (2.1− | 2.0−) | 2005 11 28 | 644 | 0.2+ | 0.0 | |
| 2001 12 11 | 704 | 0.8+ | 0.2− | 2002 01 19 | 704 | 1.4− | 0.6+ | 2005 11 28 | 644 | 0.1+ | 0.0 | |
| 2001 12 11 | 704 | 1.2+ | 0.6− | 2002 01 19 | 704 | 1.0− | 0.6+ | 2005 12 05 | 703 | 0.2− | 0.8− | |
| 2001 12 11 | 704 | 0.9+ | 0.5− | 2002 01 19 | 704 | 1.3− | 1.0+ | 2005 12 05 | 703 | 0.5− | 0.7− | |
| 2001 12 11 | 704 | 0.5+ | 0.1+ | 2002 01 19 | 704 | 1.2− | 0.8+ | 2005 12 05 | 703 | 0.3− | 0.9− | |
| 2001 12 11 | 704 | 0.7+ | 0.5− | 2002 01 19 | 704 | 1.3− | 1.0+ | 2005 12 05 | 703 | 0.4− | 0.8− | |
| 2001 12 18 | 704 | (1.6+ | 0.2−) | 2002 02 07 | 704 | 0.2− | 0.7+ | 2005 12 29 | 644 | 0.3− | 0.1− | |
| 2001 12 18 | 704 | 1.4+ | 0.7− | 2002 02 07 | 704 | 0.2+ | 0.8+ | 2005 12 29 | 644 | 0.4+ | 0.0 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.3+ | 0.7− | 2002 02 07 | 704 | 0.7+ | 0.6+ | 2005 12 29 | 644 | 0.4− | 0.0 | |
| 2001 12 18 | 704 | 1.0+ | 0.7− | 2002 02 20 | 704 | 1.3+ | 0.2− | 2006 01 05 | 699 | (1.6− | 0.4+) | |
| 2001 12 21 | 704 | (0.6− | 1.8−) | 2002 02 20 | 704 | 0.9+ | 0.5+ | 2006 01 05 | 699 | 1.2− | 1.0+ | |
| 2001 12 21 | 704 | 0.1+ | 0.3+ | 2002 02 20 | 704 | 0.4+ | 0.4+ | 2006 01 05 | 699 | 0.8− | 0.4+ | |
| 2001 12 21 | 704 | 0.2+ | 0.3+ | 2003 05 05 | 608 | 0.0 | 1.1+ | 2006 01 05 | 699 | 1.1− | 0.8− | |
| 2001 12 21 | 704 | 0.0 | 0.1+ | 2003 05 05 | 608 | 0.1+ | 1.0+ | 2006 01 18 | 644 | 0.3+ | 0.1+ | |
| 2001 12 21 | 704 | 0.5+ | 0.5− | 2003 05 05 | 608 | 0.2− | 1.1+ | 2006 01 18 | 644 | 0.0 | 0.4+ | |
| 2001 12 21 | 704 | 0.7+ | 0.4+ | 2003 06 27 | 704 | 0.7+ | 1.4− | 2006 01 18 | 644 | 0.1+ | 0.1+ | |
| 2001 12 21 | 704 | 0.3+ | 0.9− | 2003 06 27 | 704 | (0.7+ | 2.0−) | 2006 11 17 | 703 | 1.5− | 0.1+ | |
| 2001 12 21 | 704 | 0.0 | 0.3− | 2003 06 27 | 704 | (0.7+ | 2.5−) | 2006 11 17 | 703 | 0.7− | 0.8+ | |
| 2001 12 21 | 704 | 0.1− | 0.6− | 2005 10 25 | 703 | 0.3+ | 1.2+ | 2006 11 17 | 703 | 0.3− | 0.1+ | |
| 2002 01 09 | 704 | 0.3+ | 0.0 | 2005 10 25 | 703 | 0.4+ | 1.0+ | 2006 11 17 | 703 | 0.6− | 0.4+ | |
| 2002 01 09 | 704 | 0.1− | 0.5+ | 2005 10 25 | 703 | 1.0+ | 0.3+ | 2006 12 01 | 704 | 1.1+ | 0.0 | |
| 2002 01 09 | 704 | 0.2− | 1.0+ | 2005 10 25 | 703 | 1.5− | 0.7+ | 2006 12 01 | 704 | 0.3− | 0.7− | |
| 2002 01 09 | 704 | (0.1− | 1.8+) | 2005 11 12 | 703 | 0.4− | 0.5+ | 2006 12 01 | 704 | 0.0 | 0.1− | |
| 2002 01 13 | 704 | 0.3− | 0.1+ | 2005 11 12 | 703 | 0.3− | 0.1+ | 2006 12 01 | 704 | 1.5+ | 0.7− | |
| 2002 01 13 | 704 | 0.2+ | 0.2− | 2005 11 12 | 703 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.1− | 0.6− | |

**(141208)∗ 2001 XG$_{212}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.27653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18642018 | $\omega$ | 307.83488 | | +0.66465526 | −0.68711942 | |
| $a$ | 3.0348747 | $\Omega$ | 97.75762 | | +0.74407875 | +0.57316626 | |
| $e$ | 0.1290249 | $i$ | 17.22584 | | +0.06767713 | +0.44648330 | |
| $P$ | 5.29 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2− | 1.4+ | 2002 01 15 | 704 | 0.4− | 0.3+ | 2006 10 20 | 703 | 0.4+ | 0.3+ | |
| 2001 11 20 | 704 | 0.1+ | 0.4+ | 2002 01 15 | 704 | 0.4− | 0.6+ | 2006 10 20 | 703 | 0.3− | 0.0 | |
| 2001 11 20 | 704 | (0.7+ | 1.7+) | 2002 01 19 | 704 | 1.4+ | 0.0 | 2006 10 20 | 703 | 0.2+ | 0.6+ | |
| 2001 11 20 | 704 | 1.5+ | 0.1+ | 2002 01 19 | 704 | 0.4+ | 0.3− | 2006 10 20 | 703 | 0.5− | 0.5+ | |
| 2001 12 11 | 704 | 0.1+ | 0.8+ | 2002 01 19 | 704 | 0.7− | 0.0 | 2006 10 28 | 703 | 0.3− | 0.1− | |
| 2001 12 11 | 704 | 0.1+ | 1.2+ | 2003 03 08 | 699 | 0.2+ | 1.5+ | 2006 10 28 | 703 | 0.3+ | 0.4− | |
| 2001 12 11 | 704 | 0.7− | 1.3+ | 2003 03 08 | 699 | 0.5+ | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.2− | |
| 2001 12 18 | 704 | 0.7+ | 0.1− | 2003 03 08 | 699 | 0.4− | 0.2− | 2006 10 28 | 703 | 1.0− | 0.9+ | |
| 2001 12 18 | 704 | 0.3+ | 0.7− | 2003 03 08 | 699 | 0.2− | 0.1− | 2006 11 10 | 704 | 0.4− | 0.1− | |
| 2001 12 18 | 704 | 0.1+ | 0.1− | 2003 03 08 | 704 | 0.3− | 0.9+ | 2006 11 10 | 704 | 0.7− | 0.1+ | |
| 2001 12 18 | 704 | 0.2+ | 0.9− | 2003 03 08 | 704 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.6− | 0.5+ | |
| 2001 12 18 | 704 | 0.5− | 1.0− | 2003 03 08 | 704 | 1.4+ | 1.3+ | 2006 11 10 | 704 | 0.3+ | 0.1+ | |
| 2002 01 09 | 704 | 0.0 | 0.0 | 2003 03 08 | 704 | (2.1+ | 2.0+) | 2006 11 16 | 703 | 0.0 | 0.0 | |
| 2002 01 09 | 704 | 0.6− | 0.4− | 2003 03 09 | 644 | 0.5+ | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.4+ | |
| 2002 01 09 | 704 | 0.3− | 0.7− | 2003 03 09 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.5+ | 0.6+ | |
| 2002 01 09 | 704 | 0.4− | 0.4− | 2003 03 09 | 644 | 0.1− | 0.2+ | 2006 11 16 | 703 | 1.0+ | 0.1+ | |
| 2002 01 09 | 704 | 0.3− | 0.5− | 2005 08 24 | E12 | 0.4+ | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.2+ | |
| 2002 01 13 | 704 | 0.4+ | 0.8− | 2005 08 24 | E12 | 1.2+ | 1.0+ | 2006 11 16 | 703 | 0.1− | 0.1− | |
| 2002 01 13 | 704 | 0.1+ | 0.5− | 2005 08 24 | E12 | 0.1− | 0.9− | 2006 11 16 | 703 | 0.1− | 0.6+ | |
| 2002 01 13 | 704 | 0.6+ | 0.2− | 2005 08 24 | E12 | 0.5− | 0.6+ | 2006 11 16 | 703 | 0.8− | 1.0− | |
| 2002 01 13 | 704 | 0.4+ | 0.6− | 2005 08 25 | E12 | 0.3− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.2− | |
| 2002 01 15 | 704 | 0.3− | 0.2− | 2005 08 25 | E12 | 0.3− | 1.1+ | 2006 12 01 | G96 | 0.2+ | 0.4+ | |
| 2002 01 15 | 704 | 0.7− | 0.4− | 2005 08 25 | E12 | 0.3− | 0.4+ | 2006 12 01 | G96 | 1.0+ | 0.1+ | |
| 2002 01 15 | 704 | 0.3− | 0.4+ | 2005 08 25 | E12 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.3− | |

**(141209)∗ 2001 XO$_{212}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.69035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18231358 | $\omega$ | 174.99370 | | +0.59522183 | −0.79450107 | |
| $a$ | 3.0802788 | $\Omega$ | 238.42469 | | +0.73226377 | +0.59795891 | |
| $e$ | 0.1419214 | $i$ | 8.11954 | | +0.33090897 | +0.10589235 | |
| $P$ | 5.41 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 704 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.2− | 0.0 | |
| 2000 08 31 | 704 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 13 | 104 | 0.0 | 0.1+ | |
| 2000 08 31 | 704 | 1.3− | 0.1+ | 2006 10 21 | 704 | 0.9+ | 0.9+ | 2006 11 13 | 104 | 0.1− | 0.1+ | |
| 2000 09 23 | 704 | 0.1− | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 13 | 104 | 0.1+ | 0.1+ | |
| 2000 09 23 | 704 | 0.7− | 0.8+ | 2006 10 21 | 691 | 0.5− | 0.2− | 2006 11 16 | 704 | 0.2− | 1.0+ | |
| 2000 09 23 | 704 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.5− | 1.0+ | |
| 2001 12 11 | 704 | 0.9+ | 1.3− | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.1− | |
| 2001 12 11 | 704 | 0.4+ | 0.9− | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.0 | |
| 2001 12 11 | 704 | 0.2+ | 1.2− | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1− | 0.3+ | |
| 2001 12 11 | 704 | 0.0 | 1.0− | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.1+ | |
| 2001 12 18 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.2+ | |
| 2001 12 18 | 704 | 0.6+ | 0.1+ | 2006 10 26 | A24 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.9+ | |
| 2001 12 18 | 704 | 0.5+ | 0.3+ | 2006 10 26 | A24 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.2− | |
| 2001 12 18 | 704 | 0.6+ | 0.6+ | 2006 10 26 | A24 | 0.2− | 0.8+ | 2006 11 17 | 704 | 0.0 | 0.6− | |
| 2002 01 09 | 704 | 1.3− | 1.2+ | 2006 10 27 | 703 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.3− | |
| 2002 01 09 | 704 | 0.2− | 1.1+ | 2006 10 27 | 703 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.4− | 0.4− | |
| 2002 01 09 | 704 | (0.9− | 1.5+) | 2006 10 27 | 703 | 0.4− | 0.4− | 2006 11 17 | 703 | 0.7+ | 0.6+ | |
| 2002 01 09 | 704 | 0.3− | 0.7+ | 2006 10 27 | 703 | 0.6− | 0.2− | 2006 11 17 | 703 | (1.8− | 0.0 ) | |
| 2002 01 09 | 704 | 0.9− | 1.4+ | 2006 10 29 | 704 | 0.5+ | 0.6+ | 2006 11 18 | 704 | 0.1− | 0.3− | |
| 2002 01 14 | 704 | 0.4− | 0.6+ | 2006 10 29 | 704 | (1.1− | 1.6+) | 2006 11 18 | 704 | 0.8− | 0.1− | |
| 2002 01 14 | 704 | 0.3+ | 0.5− | 2006 10 29 | 704 | (1.4− | 2.1+) | 2006 11 18 | 704 | 0.0 | 0.4+ | |
| 2002 01 14 | 704 | 0.2− | 0.4+ | 2006 10 29 | 704 | 0.6− | 1.0+ | 2006 11 18 | 704 | 1.3− | 0.3+ | |
| 2003 03 24 | 291 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.6− | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.2+ | |
| 2003 03 24 | 291 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.5+ | |
| 2003 03 24 | 291 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.6− | 0.6+ | |
| 2005 07 12 | 703 | 0.3− | 1.0+ | 2006 11 01 | G96 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.4− | 0.7+ | |
| 2005 07 12 | 703 | (2.1− | 0.8−) | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.2+ | |
| 2005 07 12 | 703 | 0.6− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.1+ | |
| 2005 07 12 | 703 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3+ | |
| 2005 07 29 | 644 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.5− | 0.5+ | |
| 2005 07 29 | 644 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.8+ | |
| 2005 07 29 | 644 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.2+ | |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.4+ | |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.5+ | |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.7+ | |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.2+ | |
| 2006 10 13 | 691 | 0.3+ | 0.3− | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.4+ | |
| 2006 10 13 | 691 | 0.5+ | 0.5− | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.5+ | |
| 2006 10 13 | 691 | 0.2+ | 0.3− | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.3− | |
| 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.3− | |
| 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.5− | 0.2− | |
| 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.4− | 0.3− | |
| 2006 10 21 | 704 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.1− | |
| 2006 10 21 | 704 | (1.5+ | 0.4+) | 2006 11 13 | 644 | 0.1+ | 0.1− | | | | | |
| 2006 10 21 | 704 | 0.6+ | 1.3+ | 2006 11 13 | 644 | 0.0 | 0.1− | | | | | |

**(141210)∗ 2001 XS$_{212}$**

Discovered 2001 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.29498 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17313972 | $\omega$ | 91.63929 | | −0.89328107 | −0.08048181 | |
| $a$ | 3.1881463 | $\Omega$ | 83.91504 | | −0.11586133 | −0.90937050 | |
| $e$ | 0.2118972 | $i$ | 26.40674 | | +0.43430988 | −0.40812739 | |
| $P$ | 5.69 | $H$ | 13.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.1+ | 0.4+ | 2002 01 15 | 704 | 0.3+ | 0.1− | 2003 04 01 | 644 | 0.1− | 0.0 | |
| 2001 11 17 | 704 | 0.0 | 0.5− | 2002 01 15 | 704 | 0.2+ | 0.0 | 2003 04 01 | 644 | 0.1+ | 0.1+ | |
| 2001 11 17 | 704 | 0.5− | 0.1+ | 2002 01 15 | 704 | 0.5+ | 0.1− | 2003 04 01 | 644 | 0.1− | 0.1+ | |
| 2001 11 17 | 704 | 1.1− | 0.2− | 2002 01 19 | 704 | 0.3+ | 0.7− | 2003 04 22 | 704 | 0.1− | 0.8+ | |
| 2001 11 20 | 704 | 0.8+ | 0.4+ | 2002 01 19 | 704 | 1.3− | 0.7− | 2003 04 22 | 704 | 0.4+ | 0.4+ | |
| 2001 11 20 | 704 | 0.1+ | 0.4+ | 2002 01 19 | 704 | (0.0 | 1.8+) | 2003 04 22 | 704 | 0.5− | 0.9+ | |
| 2001 11 20 | 704 | (2.9+ | 2.4+) | 2002 01 19 | 704 | (0.2− | 1.9+) | 2003 04 22 | 704 | 0.8+ | 0.1+ | |
| 2001 11 20 | 704 | 0.0 | 0.7− | 2002 02 05 | 699 | 0.6− | 0.2+ | 2003 04 22 | 704 | 0.2− | 1.3+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.4− | 0.3+ | 2002 02 05 | 699 | 0.2− | 0.1− | 2003 04 22 | 704 | 0.5+ | 0.1− |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2002 02 05 | 699 | 1.0+ | 0.3− | 2003 04 22 | 704 | 0.7+ | 0.1− |
| 2001 12 11 | 704 | 0.5+ | 0.3− | 2002 02 05 | 699 | 0.5− | 1.2+ | 2003 04 22 | 704 | 0.4− | 0.8+ |
| 2001 12 11 | 704 | 0.6+ | 0.1− | 2002 12 14 | 704 | 1.0− | 0.8− | 2003 04 22 | 704 | 1.0+ | 0.5+ |
| 2001 12 18 | 704 | 0.6− | 0.9+ | 2002 12 14 | 704 | 1.1− | 0.7− | 2003 05 28 | 704 | 0.0 | 0.7+ |
| 2001 12 18 | 704 | 0.8− | 0.7+ | 2002 12 14 | 704 | 0.2− | 0.1+ | 2003 05 28 | 704 | 0.4− | 0.5+ |
| 2001 12 18 | 704 | 0.8− | 0.3+ | 2002 12 14 | 704 | 0.5− | 0.1+ | 2003 05 28 | 704 | 0.4+ | 0.4+ |
| 2001 12 18 | 704 | 0.3− | 0.5+ | 2002 12 14 | 704 | 0.0 | 0.4+ | 2003 06 21 | 704 | 0.7+ | 0.0 |
| 2001 12 23 | 704 | 0.0 | 0.2+ | 2003 01 11 | 704 | 0.6− | 0.0 | 2003 06 21 | 704 | 1.1− | 0.7+ |
| 2001 12 23 | 704 | 0.3+ | 0.3+ | 2003 01 11 | 704 | 0.4+ | 0.1− | 2003 06 21 | 704 | (1.4+ | 1.5−) |
| 2001 12 23 | 704 | 0.1− | 0.0 | 2003 01 11 | 704 | 0.1+ | 0.1− | 2003 06 21 | 704 | 0.6+ | 0.2− |
| 2001 12 23 | 704 | 0.1+ | 0.0 | 2003 01 11 | 704 | 0.1− | 0.2− | 2003 06 29 | 699 | 0.7− | 0.4− |
| 2001 12 23 | 704 | 0.1+ | 0.1+ | 2003 01 11 | 704 | 1.1+ | 0.5− | 2003 06 29 | 699 | 0.3+ | 0.4+ |
| 2002 01 06 | 699 | 0.6− | 0.1− | 2003 02 06 | 699 | 0.3− | 0.2− | 2003 06 29 | 699 | 0.6+ | 0.7+ |
| 2002 01 06 | 699 | 0.5− | 0.4− | 2003 02 06 | 699 | 0.1+ | 0.3+ | 2003 06 29 | 699 | 0.7− | 0.3+ |
| 2002 01 06 | 699 | 0.5− | 0.2+ | 2003 02 06 | 699 | 0.4+ | 0.2− | 2004 05 19 | 704 | 0.1+ | 0.4+ |
| 2002 01 06 | 699 | 0.3+ | 0.2+ | 2003 02 06 | 699 | 0.1− | 0.1− | 2004 05 19 | 704 | 0.4− | 0.8+ |
| 2002 01 08 | 644 | 0.2− | 0.9+ | 2003 02 11 | 704 | 0.2+ | 0.3− | 2004 05 19 | 704 | 0.3+ | 0.2− |
| 2002 01 08 | 644 | 0.1− | 0.7+ | 2003 02 11 | 704 | 0.1− | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2002 01 08 | 644 | 0.3− | 0.8+ | 2003 02 11 | 704 | 0.2− | 1.3− | 2006 09 19 | 703 | 1.2+ | 0.1+ |
| 2002 01 09 | 704 | (0.2+ | 1.9−) | 2003 02 11 | 704 | 0.5− | 1.5− | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2002 01 09 | 704 | 0.1+ | 0.6− | 2003 03 13 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.1+ |
| 2002 01 09 | 704 | 0.2− | 1.3− | 2003 03 13 | 644 | 0.0 | 0.0 | 2006 11 18 | 703 | 1.0+ | 0.9+ |
| 2002 01 09 | 704 | 0.7+ | 0.4+ | 2003 03 13 | 644 | 0.0 | 0.1+ | 2006 11 18 | 703 | 0.9− | 0.7+ |
| 2002 01 09 | 704 | 0.3− | 0.3+ | 2003 03 20 | 644 | 0.1− | 0.3+ | 2006 11 18 | 703 | 0.2− | 0.9+ |
| 2002 01 13 | 704 | 0.4− | 0.5− | 2003 03 20 | 644 | 0.1− | 0.1+ | 2006 11 18 | 703 | 0.5− | 0.7− |
| 2002 01 13 | 704 | 0.2+ | 0.3− | 2003 03 20 | 644 | 0.2− | 0.3+ | 2006 11 24 | 703 | 1.0− | 0.4− |
| 2002 01 13 | 704 | 0.7+ | 0.1− | 2003 03 24 | 704 | 0.3+ | 0.1+ | 2006 11 24 | 703 | 0.7− | 1.0+ |
| 2002 01 13 | 704 | 0.6+ | 0.4+ | 2003 03 24 | 704 | 0.1+ | 0.4− | 2006 11 24 | 703 | 0.4− | 0.4− |
| 2002 01 13 | 704 | 0.5+ | 0.6− | 2003 03 24 | 704 | 0.0 | 0.6− | 2006 11 24 | 703 | 1.5+ | 0.9− |
| 2002 01 15 | 704 | 0.0 | 0.1+ | 2003 03 24 | 704 | 0.6+ | 0.3+ | | | | |
| 2002 01 15 | 704 | 0.8+ | 0.2− | 2003 03 24 | 704 | 0.0 | 0.1+ | | | | |

**(141211)∗ 2001 XJ$_{218}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.61087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18041919 | $\omega$ | 40.69634 | | +0.91040582 | +0.41075113 | |
| $a$ | 3.1018031 | $\Omega$ | 294.98731 | | −0.39232062 | +0.81919932 | |
| $e$ | 0.2083625 | $i$ | 3.12705 | | −0.13132317 | +0.40024490 | |
| $P$ | 5.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.2+ | 0.3− | 2005 02 13 | 809 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 1995 07 26 | 691 | 0.1+ | 0.4− | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.0 |
| 1995 07 26 | 691 | 0.2+ | 0.5− | 2006 08 15 | 644 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.6− |
| 2001 10 19 | 644 | 0.5+ | 0.9+ | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.0 |
| 2001 10 19 | 644 | 0.1+ | 0.6+ | 2006 08 24 | 704 | (1.0+ | 1.6−) | 2006 09 25 | 704 | 0.7− | 0.2− |
| 2001 10 19 | 644 | 0.3+ | 0.9+ | 2006 08 24 | 704 | 0.9− | 1.1+ | 2006 09 25 | 704 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 0.1− | 0.6− | 2006 08 24 | 704 | (0.3− | 1.6+) | 2006 09 25 | 704 | 0.5− | 0.1− |
| 2001 10 21 | 704 | 0.1− | 0.6− | 2006 08 24 | 704 | 0.3+ | 1.0+ | 2006 09 25 | 704 | 0.7− | 0.3− |
| 2001 10 21 | 704 | 0.5− | 0.3− | 2006 08 27 | 699 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.4− | 0.4+ |
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.2+ |
| 2001 10 26 | 644 | 0.0 | 0.8+ | 2006 08 27 | 699 | 0.6− | 0.6− | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2001 10 26 | 644 | 0.2+ | 0.6+ | 2006 08 29 | 703 | 0.7− | 0.1− | 2006 09 25 | 699 | 0.0 | 0.1− |
| 2001 10 26 | 644 | 0.4+ | 0.7+ | 2006 08 29 | 703 | 0.8− | 0.3− | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 2001 11 10 | 704 | 0.5+ | 0.9+ | 2006 08 29 | 703 | 0.6+ | 0.6− | 2006 09 26 | 704 | 1.1+ | 0.2+ |
| 2001 11 10 | 704 | 1.0+ | 0.7+ | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.3+ |
| 2001 11 10 | 704 | 0.2+ | 0.3− | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.6+ |
| 2001 11 10 | 644 | 0.2− | 0.2− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.2− |
| 2001 11 10 | 644 | 0.1+ | 0.4− | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 1.2− | 0.9+ |
| 2001 11 10 | 644 | 0.1− | 0.4− | 2006 08 30 | 704 | 0.7+ | 0.2+ | 2006 09 29 | 704 | 0.9+ | 1.1− |
| 2001 11 19 | 704 | 0.4− | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.5− | 2006 09 29 | 704 | (1.8+ | 1.1−) |
| 2001 11 19 | 704 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.9+ |
| 2001 11 19 | 704 | 0.8− | 0.1− | 2006 08 30 | 704 | 0.5+ | 0.1− | 2006 09 30 | 699 | 0.1+ | 0.7+ |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.8+ | 0.1+ |
| 2001 11 24 | 704 | (2.2− | 1.0−) | 2006 09 01 | 704 | 0.8+ | 0.4− | 2006 09 30 | 699 | 0.4− | 0.7− |
| 2001 11 24 | 704 | 0.2− | 1.2+ | 2006 09 01 | 704 | 0.4+ | 1.3− | 2006 09 30 | 704 | 0.6+ | 0.4− |
| 2001 11 24 | 704 | 1.2− | 1.2+ | 2006 09 01 | 704 | 0.1+ | 0.5− | 2006 09 30 | 699 | 0.1+ | 0.1− |
| 2001 11 24 | 704 | 0.3− | 0.6+ | 2006 09 01 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.5+ |
| 2001 12 15 | 704 | 0.3+ | 0.6+ | 2006 09 01 | 704 | 0.0 | 0.1− | 2006 09 30 | 699 | 0.2− | 0.2− |
| 2001 12 15 | 704 | 0.7+ | 0.4+ | 2006 09 13 | 644 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2001 12 15 | 704 | 0.9− | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2001 12 15 | 704 | 0.1− | 0.7− | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2001 12 15 | 704 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.0 | 0.5− |
| 2001 12 18 | 704 | 0.1− | 0.5+ | 2006 09 16 | 699 | 0.1+ | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.7+ | 0.9+ | 2006 09 16 | 699 | 0.5− | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2001 12 18 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.5− | 0.1− | 2006 09 18 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2006 09 18 | 704 | 0.5− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 01 11 | 291 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 01 11 | 291 | 0.3− | 0.0 | 2006 09 18 | 704 | 0.3+ | 1.3− | 2006 11 10 | 704 | 0.2+ | 0.2+ |
| 2003 01 11 | 291 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.8+ | 0.4+ | 2006 11 10 | 704 | 0.3+ | 0.1− |
| 2003 02 01 | 645 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 11 10 | 704 | 0.8+ | 0.5− |
| 2003 02 01 | 645 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 11 10 | 704 | 0.6+ | 1.6− |
| 2005 02 13 | 809 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 11 10 | 704 | 0.1− | 1.3+ |
| 2005 02 13 | 809 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.3+ | | | | |

**(141212)∗ 2001 XK$_{218}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.97534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19243968 | $\omega$ | 326.27938 | | +0.99949091 | +0.02477660 | |
| $a$ | 2.9712530 | $\Omega$ | 32.31890 | | −0.01383681 | +0.90431220 | |
| $e$ | 0.0647530 | $i$ | 2.15470 | | −0.02874840 | +0.42615204 | |
| $P$ | 5.12 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.3− | 1.1+ | 2001 12 18 | 704 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.4+ |
| 2000 07 31 | 807 | 0.4− | 1.0+ | 2001 12 18 | 704 | 0.6+ | 0.9− | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2001 10 21 | 704 | 0.0 | 1.1+ | 2001 12 19 | 704 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.9+ |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2001 12 19 | 704 | 0.7− | 0.0 | 2006 10 12 | 644 | 0.7− | 0.1+ |
| 2001 10 21 | 704 | 0.0 | 0.5+ | 2001 12 19 | 704 | 0.5− | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 0.3+ | 2004 03 23 | 291 | 0.0 | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.7− | 0.2+ | 2004 03 23 | 291 | 0.5+ | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2001 11 12 | 704 | (1.9− | 0.6+) | 2004 03 23 | 291 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | (1.5− | 0.2+) | 2004 04 21 | 291 | 0.3+ | 0.9+ | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2001 11 12 | 704 | (1.5− | 1.7+) | 2004 04 21 | 291 | 0.2+ | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2001 11 12 | 704 | 0.9− | 0.3+ | 2004 04 21 | 291 | 0.3+ | 0.7+ | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.2+ | 0.6− | 2006 07 21 | G96 | 0.1+ | 0.7+ | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2001 11 21 | 704 | 0.7+ | 0.1− | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.8+ | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.8+ |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 12 07 | 704 | 0.5− | 0.9+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2001 12 07 | 704 | 0.7− | 0.7+ | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2001 12 07 | 704 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.0 |
| 2001 12 15 | 704 | 0.5+ | 0.8− | 2006 09 27 | G96 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2001 12 15 | 704 | 0.8+ | 0.5− | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 12 15 | 704 | 0.2+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 1.0+ |
| 2001 12 15 | 704 | 0.5+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (1.5− | 1.7+) |
| 2001 12 18 | 704 | 0.6− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.5− | 0.7+ |
| 2001 12 18 | 704 | 0.7− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | (0.5+ | 2.1+) |
| 2001 12 18 | 704 | 0.8+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.4+ | | | | |

**(141213)∗ 2001 XY$_{218}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.37078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18416150 | $\omega$ | 67.25255 | | −0.23553690 | −0.97123214 | |
| $a$ | 3.0596387 | $\Omega$ | 36.42711 | | +0.86859628 | −0.22656299 | |
| $e$ | 0.0702060 | $i$ | 3.38669 | | +0.43596201 | −0.07333033 | |
| $P$ | 5.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.2+ | 1.1+ | 2001 12 18 | 704 | 0.2+ | 0.2− | 2006 10 15 | 703 | (1.6− | 0.8−) |
| 1998 03 29 | 704 | 0.9+ | 1.0+ | 2001 12 18 | 704 | 0.8+ | 0.1+ | 2006 10 15 | 703 | (2.2− | 0.4−) |
| 1998 03 29 | 704 | 0.9− | 0.5− | 2001 12 18 | 704 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.4− | 0.1− |
| 1998 03 29 | 704 | 0.9+ | 0.9+ | 2001 12 18 | 704 | 0.9− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 1998 03 29 | 704 | (0.7− | 3.1−) | 2003 01 26 | 608 | 0.6+ | 0.9− | 2006 10 16 | 691 | 0.4− | 0.1+ |
| 2001 10 26 | 644 | 0.2− | 0.2+ | 2003 01 26 | 608 | 0.3+ | 0.4− | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 2001 10 26 | 644 | 0.3− | 0.4+ | 2003 01 26 | 608 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.3− | 1.5+ |
| 2001 10 26 | 644 | 0.2− | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2001 11 09 | 704 | 0.8+ | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.5+ |
| 2001 11 09 | 704 | 1.2+ | 0.7+ | 2003 02 21 | 644 | 0.4+ | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.9+ | 0.5+ | 2003 02 21 | 644 | 0.1+ | 0.9+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | 1.0+ | 0.2+ | 2003 02 21 | 644 | 0.4+ | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2001 11 09 | 704 | 0.5+ | 0.5+ | 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.2− | 0.2+ | 2004 04 21 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.5− | 0.1+ |
| 2001 11 19 | 704 | 0.7− | 0.6+ | 2004 04 21 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.6+ |
| 2001 11 19 | 704 | 0.4− | 0.2+ | 2004 06 11 | 691 | 0.4− | 0.5− | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 11 19 | 704 | 0.4+ | 0.1+ | 2004 06 11 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 1.0− | 0.0 | 2004 06 11 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.7− | 0.1− | 2004 06 17 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 11 21 | 704 | 0.6− | 0.2+ | 2004 06 17 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.8− |
| 2001 11 21 | 704 | 0.3− | 0.5+ | 2004 06 17 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2001 11 21 | 704 | 0.4− | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 0.7− | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2001 12 15 | 704 | (0.7+ | 1.5−) | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2001 12 15 | 704 | 0.8+ | 1.1− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.4+ | 0.1+ |
| 2001 12 15 | 704 | 0.8+ | 1.4− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.8+ | 1.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2001 12 15 | 704 | 0.2+ | 1.3− | 2006 10 15 | 703 | 0.9− | 0.9+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2001 12 18 | 704 | 1.0− | 0.5− | 2006 10 15 | 703 | 0.9− | 0.9− | 2006 11 22 | G96 | 0.0 | 0.2− |

**(141214)∗ 2001 XC$_{219}$ = 2004 KK$_5$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69034)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.87654 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20257806 | $\omega$ | 239.85777 | | +0.29608853 | +0.95452458 | |
| $a$ | 2.8712727 | $\Omega$ | 47.40787 | | −0.85925430 | +0.28211527 | |
| $e$ | 0.0317849 | $i$ | 2.71317 | | −0.41714942 | +0.09640436 | |
| $P$ | 4.87 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 12 | 691 | 0.5+ | 0.5+ | 2001 12 18 | 704 | 0.0 | 0.4+ | 2004 06 13 | 691 | 0.2+ | 0.0 |
| 1994 04 12 | 691 | 0.4+ | 0.0 | 2001 12 18 | 704 | (0.1− | 1.7+) | 2005 08 04 | 644 | 0.0 | 0.4+ |
| 1994 04 12 | 691 | 0.1− | 0.4+ | 2004 05 16 | 704 | 0.5+ | 0.3− | 2005 08 04 | 644 | 0.1+ | 0.5+ |
| 1996 10 08 | 691 | 0.0 | 0.1+ | 2004 05 16 | 704 | 0.5− | 0.6+ | 2005 08 04 | 644 | 0.2+ | 0.7+ |
| 1996 10 08 | 691 | 0.1− | 0.2− | 2004 05 16 | 704 | 0.6+ | 0.3+ | 2005 09 22 | 644 | 0.1− | 0.8+ |
| 1996 10 08 | 691 | 0.0 | 0.2− | 2004 05 16 | 704 | 0.2− | 0.1+ | 2005 09 22 | 644 | 0.3− | 0.5+ |
| 1996 10 18 | 691 | 0.5− | 0.2− | 2004 05 16 | 704 | 0.2− | 0.2− | 2005 09 22 | 644 | 0.1+ | 0.1+ |
| 1996 10 18 | 691 | 0.3− | 0.1+ | 2004 05 16 | 704 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 1996 10 18 | 691 | 0.3− | 0.3+ | 2004 05 16 | 704 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.4− |
| 2001 11 11 | 691 | 0.0 | 0.3+ | 2004 05 16 | 704 | 0.7+ | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2001 11 11 | 691 | 0.3− | 0.1+ | 2004 05 16 | 704 | 0.2+ | 0.8+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2001 11 11 | 691 | 0.1+ | 0.2+ | 2004 05 16 | 704 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.6+ | 0.1+ | 2004 05 16 | 704 | 0.4+ | 0.3− | 2006 10 29 | G96 | 0.2− | 0.5− |
| 2001 11 21 | 704 | 0.6+ | 0.2− | 2004 05 16 | 704 | 0.0 | 0.3+ | 2006 10 29 | G96 | 0.3− | 0.7− |
| 2001 11 21 | 704 | 1.4+ | 0.5− | 2004 05 16 | 704 | 0.5+ | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 1.0+ | 0.3+ | 2004 05 16 | E12 | 0.1+ | 1.0+ | 2006 11 11 | 691 | 0.4+ | 0.0 |
| 2001 12 15 | 704 | 0.3+ | 0.7+ | 2004 05 16 | E12 | 0.4− | 1.2+ | 2006 11 11 | 691 | 0.2− | 0.2− |
| 2001 12 15 | 704 | 0.4− | 0.3+ | 2004 05 16 | E12 | 0.5− | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2001 12 15 | 704 | (0.1− | 1.6+) | 2004 05 16 | E12 | 0.5− | 0.7+ | 2006 11 22 | H07 | 1.4− | 0.5+ |
| 2001 12 15 | 704 | 0.1− | 1.3+ | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 11 22 | H07 | 0.5− | 0.4− |
| 2001 12 15 | 704 | 0.3+ | 0.6+ | 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 11 22 | H07 | 0.7− | 1.2+ |
| 2001 12 18 | 704 | 0.9+ | 0.6+ | 2004 05 21 | 691 | 0.2− | 0.1+ | 2006 11 22 | H07 | 0.8− | 0.7+ |
| 2001 12 18 | 704 | 0.1− | 0.1− | 2004 06 13 | 691 | 0.1+ | 0.0 | | | | |
| 2001 12 18 | 704 | 0.1+ | 0.6+ | 2004 06 13 | 691 | 0.5− | 1.4− | | | | |

**(141215)∗ 2001 XO$_{219}$ = 2004 FY$_{103}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 72437)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.68474 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17344608 | $\omega$ | 243.99458 | | +0.22731699 | +0.96719701 | |
| $a$ | 3.1843911 | $\Omega$ | 39.68181 | | −0.81789717 | +0.25281915 | |
| $e$ | 0.1589308 | $i$ | 10.22878 | | −0.52855578 | +0.02474715 | |
| $P$ | 5.68 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 08 | 699 | 0.8+ | 0.3− | 2004 02 17 | 704 | 0.0 | 1.0+ | 2006 09 26 | 704 | 0.1+ | 0.5+ |
| 1999 05 08 | 699 | 0.5+ | 1.3+ | 2004 02 17 | 704 | 0.7+ | 0.8+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 1999 05 08 | 699 | 1.1+ | 1.0+ | 2004 02 17 | 704 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 1999 05 10 | 704 | (2.3− | 0.3−) | 2004 03 15 | 704 | 1.2+ | 0.3− | 2006 09 27 | 691 | 0.4− | 0.1+ |
| 1999 05 10 | 704 | (2.9+ | 0.2−) | 2004 03 15 | 704 | 1.1+ | 0.6+ | 2006 09 27 | 704 | 0.1+ | 0.6+ |
| 1999 05 10 | 704 | 0.7− | 0.0 | 2004 03 15 | 704 | (1.7+ | 0.5+) | 2006 09 27 | 704 | 0.4− | 0.4+ |
| 1999 05 10 | 704 | 0.1− | 0.4+ | 2004 03 15 | 704 | 0.8+ | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.4− |
| 1999 05 18 | 699 | 0.4+ | 1.7+ | 2004 03 23 | 704 | 1.1+ | 0.9+ | 2006 09 29 | 704 | 0.3+ | 1.3+ |
| 1999 05 18 | 699 | 0.2+ | 1.8+ | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 704 | 0.4− | 0.8+ |
| 1999 05 18 | 699 | 0.2+ | 0.9− | 2004 03 23 | 704 | 0.5+ | 0.9+ | 2006 09 29 | 704 | 1.0+ | 0.6+ |
| 2000 08 26 | 704 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.8+ | 1.4+ | 2006 09 29 | 704 | 0.4+ | 0.9+ |
| 2000 08 26 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.3+ | 1.0+ | 2006 09 30 | H06 | 0.8+ | 0.5+ |
| 2000 08 26 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 09 30 | H06 | 0.4+ | 0.3+ |
| 2000 08 26 | 704 | 0.1+ | 0.1− | 2004 03 27 | 691 | 0.0 | 0.3+ | 2006 09 30 | H06 | (0.0 | 2.0−) |
| 2000 08 26 | 704 | 0.3+ | 0.7+ | 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.4+ |
| 2000 09 20 | 704 | 0.6− | 0.5+ | 2004 04 25 | 699 | 0.5+ | 1.3− | 2006 09 30 | 704 | 0.4− | 0.1+ |
| 2000 09 20 | 704 | 0.9− | 0.3− | 2004 04 25 | 699 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.4− | 0.8+ |
| 2000 09 20 | 704 | 0.7− | 0.7− | 2004 04 25 | 699 | (0.6+ | 1.9−) | 2006 09 30 | 704 | 1.1+ | 0.7+ |
| 2001 11 19 | 704 | 0.8− | 0.7+ | 2004 04 25 | 699 | 0.7− | 1.1+ | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2001 11 19 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.4− | 1.0+ |
| 2001 11 19 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2001 11 19 | 704 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.9+ |
| 2001 12 15 | 704 | (0.7+ | 2.3−) | 2006 09 18 | 703 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.3− | 0.4− |
| 2001 12 15 | 704 | 0.7+ | 0.7− | 2006 09 18 | 699 | 0.3− | 1.0+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2001 12 15 | 704 | (0.4− | 1.7−) | 2006 09 18 | 699 | 1.4− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 12 15 | 704 | (0.0 | 1.6−) | 2006 09 18 | 699 | 0.5− | 0.0 | 2006 10 22 | 703 | 0.4− | 1.1+ |
| 2001 12 15 | 704 | 0.7− | 0.3− | 2006 09 18 | 699 | 0.7− | 0.6+ | 2006 10 22 | 703 | 0.5− | 0.3− |
| 2001 12 18 | 704 | 0.5− | 0.6− | 2006 09 20 | 644 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2001 12 18 | 704 | 1.1+ | 0.7+ | 2006 09 20 | 644 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2001 12 18 | 704 | 0.0 | 0.4− | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2001 12 19 | 704 | 1.0+ | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.6− | 0.7+ | | | | |

**(141216)∗ 2001 XC$_{220}$ = 2004 GA$_{72}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61212)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.90567 | | (2000.0) | | | |
| $n$ | 0.18565749 | $\omega$ | 265.64038 | | +0.68263070 | +0.71808915 |
| $a$ | 3.0431807 | $\Omega$ | 48.38512 | | −0.57774341 | +0.64387825 |
| $e$ | 0.0842255 | $i$ | 10.44290 | | −0.44746830 | +0.26413779 |
| $P$ | 5.31 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.2+ | 0.5− | 2005 07 05 | E12 | 0.1+ | 0.9+ | 2006 11 09 | 691 | 0.0 | 0.2− |
| 2001 11 19 | 704 | 0.6+ | 0.9− | 2005 07 05 | E12 | 0.0 | 0.6+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.7− | 2005 08 06 | E12 | 0.5− | 0.9+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 0.5− | 2005 08 06 | E12 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2001 12 15 | 704 | 1.1+ | 0.7+ | 2005 08 06 | E12 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 12 15 | 704 | 0.2− | 0.8− | 2005 08 06 | E12 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 12 15 | 704 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.2+ | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 0.5− | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.0 | 0.2+ | 2006 10 03 | G96 | 1.1− | 1.1+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.6− | 1.1+ | 2006 10 16 | 703 | 0.3− | 1.1+ | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2001 12 18 | 704 | 0.3− | 1.0+ | 2006 10 16 | 703 | (1.6− | 0.6+) | 2006 11 11 | 703 | 0.4+ | 0.9+ |
| 2001 12 18 | 704 | 0.9− | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.6+ | 2006 11 11 | 703 | 1.5− | 0.5+ |
| 2001 12 18 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.7+ | 1.0− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.3+ |
| 2001 12 19 | 704 | 0.9− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.6+ | 0.3− | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 15 | G92 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | (0.9+ | 1.5+) | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 15 | G92 | 0.4− | 0.2− |
| 2001 12 19 | 704 | 0.6− | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.9+ | 2006 11 15 | G92 | 0.2+ | 0.0 |
| 2003 02 01 | 644 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 17 | G92 | 0.0 | 1.0+ |
| 2003 02 01 | 644 | 0.6+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 17 | G92 | 0.6+ | 0.1− |
| 2003 02 01 | 644 | 0.5+ | 0.8+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 17 | G92 | 0.3+ | 0.7+ |
| 2004 04 14 | 691 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 18 | G92 | 0.0 | 0.1+ |
| 2004 04 14 | 691 | 0.3+ | 0.7+ | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 18 | G92 | 0.9+ | 1.0+ |
| 2004 04 14 | 691 | 0.2+ | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 18 | G92 | 0.9+ | 0.3+ |
| 2004 04 20 | 704 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 18 | G92 | 0.2+ | 0.6+ |
| 2004 04 20 | 704 | 0.6+ | 0.6+ | 2006 11 01 | G96 | 0.8+ | 1.1− | 2006 11 18 | G92 | 0.5+ | 0.1− |
| 2004 04 20 | 704 | 0.3+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 18 | G92 | 0.3− | 0.4+ |
| 2004 04 20 | 704 | (1.8+ | 0.8+) | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 19 | G92 | 0.0 | 0.2− |
| 2005 07 05 | E12 | 0.6− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.1− | 2006 11 19 | G92 | 0.6− | 0.4+ |
| 2005 07 05 | E12 | 0.2+ | 1.3+ | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 19 | G92 | 0.5− | 0.5+ |

**(141217)∗ 2001 XN$_{220}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.24234 | | (2000.0) | | | |
| $n$ | 0.18932715 | $\omega$ | 36.04107 | | +0.78270765 | +0.61654771 |
| $a$ | 3.0037292 | $\Omega$ | 285.67252 | | −0.58971517 | +0.69094925 |
| $e$ | 0.2359823 | $i$ | 5.06924 | | −0.19900943 | +0.37743617 |
| $P$ | 5.21 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 23 | 691 | 0.2− | 0.7+ | 2001 12 19 | 704 | 1.1+ | 0.8+ | 2006 11 14 | 703 | 0.6+ | 0.5− |
| 1995 07 23 | 691 | 0.3− | 0.6+ | 2003 02 21 | 621 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.5− | 0.0 |
| 1995 07 23 | 691 | 0.3− | 0.6+ | 2003 02 21 | 621 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.6− | 0.7− |
| 1995 09 02 | 691 | 0.2+ | 0.6− | 2003 02 21 | 621 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.9+ | 0.3− |
| 1995 09 02 | 691 | 0.3+ | 0.7− | 2003 02 23 | 621 | 0.4− | 0.5− | 2006 11 14 | 703 | 0.9+ | 1.1+ |
| 1995 09 02 | 691 | 0.3+ | 0.7− | 2003 02 23 | 621 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.3+ |
| 2000 07 07 | 704 | 0.5− | 0.5− | 2003 02 23 | 621 | (3.9− | 0.8+) | 2006 11 14 | 703 | 1.4− | 0.9+ |
| 2000 07 07 | 704 | 0.2+ | 0.4− | 2005 01 26 | 809 | 0.1− | 0.6+ | 2006 11 16 | 704 | 1.1+ | 0.2+ |
| 2000 07 07 | 704 | 0.2+ | 0.1+ | 2005 01 26 | 809 | 0.3− | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.2− |
| 2000 07 07 | 704 | 0.2− | 0.4+ | 2005 01 26 | 809 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.8− | 1.4+ |
| 2000 07 07 | 704 | 0.0 | 0.0 | 2005 07 29 | 460 | 0.5+ | 0.9+ | 2006 11 19 | 704 | 0.4+ | 0.9− |
| 2001 10 21 | 704 | 0.3+ | 0.5− | 2005 07 29 | 460 | 0.7+ | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.5− |
| 2001 10 21 | 704 | 0.1+ | 1.0− | 2005 07 29 | 460 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.7− |
| 2001 10 21 | 704 | 0.2+ | 1.3− | 2006 10 19 | 703 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.5+ | 0.0 | 2006 10 19 | 703 | (1.7− | 0.5−) | 2006 11 19 | 704 | 0.3+ | 1.9− |
| 2001 11 12 | 704 | 0.5− | 0.5− | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2001 11 12 | 704 | (1.9− | 0.2−) | 2006 10 19 | 703 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.0 |
| 2001 11 12 | 704 | 0.5− | 0.7− | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.4− | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.7− | 0.3− |
| 2001 11 24 | 704 | 0.2− | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2001 11 24 | 704 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 1.0− | 0.0 |
| 2001 11 24 | 704 | 1.4− | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2001 12 15 | 704 | 0.2− | 0.5− | 2006 10 23 | 644 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2001 12 15 | 704 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.4+ | 2006 11 21 | 704 | 1.4− | 0.3+ |
| 2001 12 15 | 704 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.1− | 1.0+ | 2006 11 22 | 704 | 1.8+ | 0.5+ |
| 2001 12 15 | 704 | 1.1+ | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.7+ | 2006 11 22 | 704 | 0.5+ | 0.2− |
| 2001 12 18 | 704 | 0.1− | 1.2+ | 2006 10 27 | 703 | 0.1− | 0.8− | 2006 11 22 | 704 | 0.4− | 0.6+ |
| 2001 12 18 | 704 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.1− | 1.1+ |
| 2001 12 18 | 704 | 0.4+ | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2001 12 18 | 704 | 0.0 | 0.6+ | 2006 11 01 | G96 | 0.4+ | 0.4− | 2006 11 23 | G96 | 0.4− | 0.3− |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.1+ | 0.7+ | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2001 12 19 | 704 | 0.4+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.2+ | | | | |

**(141218)∗ 2001 XV$_{220}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 258.08729 | | (2000.0) | | | |
| $n$ | 0.17828079 | $\omega$ | 233.06057 | | −0.61187578 | −0.76368975 |
| $a$ | 3.1265570 | $\Omega$ | 255.95547 | | +0.77627451 | −0.52990533 |
| $e$ | 0.0956427 | $i$ | 12.25263 | | +0.15167702 | −0.36875237 |
| $P$ | 5.53 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.1− | 0.4+ | 2001 12 18 | 704 | 0.3− | 0.1− | 2003 03 08 | 699 | 1.1+ | 0.6+ |
| 2001 11 12 | 704 | (2.6+ | 2.4−) | 2001 12 18 | 704 | 0.4− | 0.5+ | 2003 03 29 | 699 | 0.1+ | 0.5+ |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2001 12 18 | 704 | 0.6− | 0.4+ | 2003 03 29 | 699 | 0.5− | 0.3+ |
| 2001 11 12 | 704 | 0.1+ | 0.1+ | 2001 12 18 | 704 | 0.4− | 0.5+ | 2003 03 29 | 699 | (0.0 | 2.3+) |
| 2001 11 19 | 704 | 0.1+ | 0.1+ | 2001 12 18 | 704 | 0.7− | 1.0+ | 2003 03 29 | 699 | (2.2− | 0.8+) |
| 2001 11 19 | 704 | 0.2+ | 0.2− | 2001 12 18 | 704 | 0.3− | 0.7+ | 2005 07 10 | 691 | 0.1+ | 0.3+ |
| 2001 11 19 | 704 | 0.9+ | 0.4+ | 2001 12 18 | 704 | 0.1+ | 0.1− | 2005 07 10 | 691 | 0.2− | 0.2+ |
| 2001 11 19 | 704 | 0.7+ | 0.1+ | 2001 12 18 | 704 | 0.1+ | 0.0 | 2005 07 10 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.5+ | 0.3+ | 2001 12 18 | 704 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.5− | 0.6+ |
| 2001 11 21 | 704 | 0.9+ | 1.0+ | 2001 12 18 | 704 | 0.0 | 0.4− | 2005 07 29 | 644 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 1.0+ | 0.3+ | 2001 12 18 | 704 | 0.4− | 0.5− | 2005 07 29 | 644 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 1.1+ | 0.8+ | 2001 12 19 | 704 | 0.2− | 0.4− | 2005 09 02 | 644 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 1.0+ | 0.1+ | 2001 12 19 | 704 | 0.3− | 0.1+ | 2005 09 02 | 644 | 0.2− | 0.5+ |
| 2001 11 21 | 704 | 0.6+ | 0.5− | 2001 12 19 | 704 | 0.5− | 0.1+ | 2005 09 02 | 644 | 0.2− | 0.5+ |
| 2001 11 24 | 704 | 0.8− | 0.1− | 2001 12 19 | 704 | 0.5− | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.0 |
| 2001 11 24 | 704 | 0.9− | 0.0 | 2001 12 19 | 704 | 0.4− | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.6+ |
| 2001 11 24 | 704 | 0.6− | 0.4− | 2001 12 19 | 704 | 1.0+ | 0.4− | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | 0.6− | 0.2− | 2001 12 19 | 704 | 0.4+ | 0.8− | 2006 09 17 | 703 | 0.0 | 1.3+ |
| 2001 11 24 | 704 | 0.1− | 1.0− | 2001 12 19 | 704 | 1.0+ | 0.6− | 2006 10 19 | 703 | (0.4+ | 2.1+) |
| 2001 11 24 | 704 | 0.9− | 0.8− | 2001 12 19 | 704 | 0.7+ | 0.8− | 2006 10 19 | 703 | 0.5+ | 0.1− |
| 2001 11 24 | 704 | 0.3+ | 0.4− | 2001 12 19 | 704 | (1.6+ | 0.5−) | 2006 10 19 | 703 | (1.7− | 0.5−) |
| 2001 11 24 | 704 | 0.2+ | 0.0 | 2001 12 19 | 704 | 0.7+ | 0.6− | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2001 11 24 | 704 | 0.3− | 0.8+ | 2001 12 19 | 704 | 1.0+ | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 12 10 | 704 | 0.8− | 0.2− | 2001 12 19 | 704 | 0.6+ | 0.5− | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2001 12 10 | 704 | (0.3+ | 1.9+) | 2001 12 19 | 704 | 0.3+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2001 12 10 | 704 | 0.3− | 0.3+ | 2001 12 19 | 704 | 0.6+ | 0.7− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2001 12 10 | 704 | (0.8+ | 1.8+) | 2001 12 20 | 704 | 0.1+ | 0.6+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2001 12 14 | 644 | 0.4− | 0.4+ | 2001 12 20 | 704 | 0.0 | 0.9+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2001 12 14 | 644 | 0.4− | 0.4+ | 2001 12 20 | 704 | 0.5+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 1.0− |
| 2001 12 14 | 644 | 0.1− | 0.5+ | 2001 12 20 | 704 | 0.1− | 1.1+ | 2006 10 27 | 703 | 0.5− | 0.1− |
| 2001 12 15 | 704 | 0.3− | 0.3− | 2001 12 20 | 704 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.8− |
| 2001 12 15 | 704 | 1.0− | 0.4− | 2003 02 07 | 644 | 0.2+ | 0.8+ | 2006 10 27 | 703 | 0.9+ | 0.7− |
| 2001 12 15 | 704 | 0.5− | 0.2− | 2003 02 07 | 644 | 0.4+ | 0.7+ | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2001 12 15 | 704 | 0.4− | 0.2− | 2003 02 07 | 644 | 0.2+ | 1.0+ | 2006 11 14 | 703 | 0.7− | 0.2− |
| 2001 12 15 | 704 | 0.2− | 0.2− | 2003 03 08 | 699 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.8− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.7− | 0.3+ | 2003 03 08 | 699 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.1+ | | |
| 2001 12 18 | 704 | 0.3− | 0.0 | 2003 03 08 | 699 | 0.1+ | 0.3+ | | | | | | |

**(141219)∗ 2001 XC$_{221}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.45111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22344153 | $\omega$ | 308.02388 | | −0.99205760 | +0.11330312 | |
| $a$ | 2.6896357 | $\Omega$ | 238.54408 | | −0.08565090 | −0.92654621 | |
| $e$ | 0.0263977 | $i$ | 3.67162 | | −0.09211758 | −0.35871231 | |
| $P$ | 4.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.7− | 0.8+ | 2001 12 15 | 704 | 0.4+ | 0.0 | 2005 10 05 | G96 | 0.1+ | 0.0 | |
| 2000 08 01 | 704 | 0.8− | 1.7+ | 2001 12 18 | 704 | 0.4+ | 0.3+ | 2005 10 06 | 703 | 0.0 | 0.0 | |
| 2000 08 01 | 704 | 0.4− | 1.0+ | 2001 12 18 | 704 | 0.1− | 0.9+ | 2005 10 06 | 703 | 0.7− | 1.2+ | |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2001 12 18 | 704 | 0.6− | 1.4+ | 2005 10 06 | 703 | 1.0− | 1.3− | |
| 2001 10 21 | 704 | 0.6+ | 0.2− | 2001 12 18 | 704 | 0.3+ | 0.5+ | 2005 10 06 | 703 | 0.2− | 0.4+ | |
| 2001 10 21 | 704 | 0.9+ | 0.1+ | 2001 12 19 | 704 | 0.1− | 0.8+ | 2005 10 07 | 704 | (1.8+ | 1.4+) | |
| 2001 10 21 | 704 | (1.6+ | 0.6+) | 2001 12 19 | 704 | 0.9+ | 0.5+ | 2005 10 07 | 704 | 0.4+ | 0.2+ | |
| 2001 10 21 | 704 | (0.4− | 1.6+) | 2001 12 19 | 704 | 0.4+ | 0.6− | 2005 10 07 | 704 | 0.4+ | 0.9+ | |
| 2001 11 09 | 644 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.2− | 1.2− | 2005 10 07 | 704 | 1.1+ | 0.0 | |
| 2001 11 09 | 644 | 0.0 | 0.3− | 2003 02 12 | 608 | 0.5+ | 0.7− | 2005 10 07 | G96 | (0.4+ | 1.8−) | |
| 2001 11 09 | 644 | 0.5− | 0.2+ | 2003 02 12 | 608 | 0.0 | 0.9− | 2005 10 07 | G96 | (1.9+ | 1.1−) | |
| 2001 11 19 | 704 | 0.2+ | 0.5+ | 2003 02 12 | 608 | 0.3− | 1.2− | 2005 10 07 | G96 | 0.1+ | 0.0 | |
| 2001 11 19 | 704 | 0.1+ | 0.7+ | 2003 03 06 | 699 | 1.3+ | 0.0 | 2005 10 07 | G96 | 0.4+ | 0.0 | |
| 2001 11 19 | 704 | 0.4− | 0.2+ | 2003 03 06 | 699 | 0.2+ | 1.1+ | 2005 11 01 | G96 | 0.1− | 0.5− | |
| 2001 11 19 | 704 | 0.5− | 0.1+ | 2003 03 06 | 699 | 0.6+ | 0.2+ | 2005 11 01 | G96 | 0.0 | 0.3− | |
| 2001 11 19 | 704 | 0.4− | 0.0 | 2003 03 06 | 699 | 0.1− | 0.7+ | 2005 11 01 | G96 | 0.3+ | 0.4− | |
| 2001 11 19 | 608 | 0.4− | 0.1− | 2003 03 09 | 704 | 0.8− | 1.2+ | 2005 11 01 | G96 | 0.1+ | 0.4− | |
| 2001 11 19 | 608 | 0.3− | 0.5− | 2003 03 09 | 704 | 0.8+ | 0.5+ | 2005 11 01 | G96 | 0.3− | 0.3− | |
| 2001 11 19 | 608 | 0.5− | 0.8− | 2003 03 09 | 704 | 0.1− | 1.3+ | 2005 11 01 | G96 | 0.2+ | 0.4− | |
| 2001 11 21 | 704 | 0.7− | 0.9+ | 2003 03 09 | 704 | (1.2+ | 1.7+) | 2005 11 01 | G96 | 0.1− | 0.4− | |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2003 03 09 | 704 | 0.1− | 0.8+ | 2005 11 01 | G96 | 0.0 | 0.4− | |
| 2001 11 21 | 704 | 0.6− | 1.0+ | 2005 10 01 | 703 | 1.2+ | 0.8− | 2006 09 26 | 691 | 0.2− | 0.1− | |
| 2001 11 21 | 704 | 0.7− | 0.9+ | 2005 10 01 | 703 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.3− | |
| 2001 11 21 | 704 | (1.5− | 1.1+) | 2005 10 01 | 703 | 0.3− | 0.8− | 2006 09 26 | 691 | 0.1− | 0.5− | |
| 2001 12 08 | 699 | (0.1− | 1.5−) | 2005 10 01 | 703 | 0.7− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1+ | |
| 2001 12 08 | 699 | (1.6+ | 2.2−) | 2005 10 04 | 644 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.3+ | 0.1+ | |
| 2001 12 08 | 699 | 0.8+ | 0.5− | 2005 10 04 | 644 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.8− | 0.5+ | |
| 2001 12 08 | 699 | 0.2− | 0.3− | 2005 10 04 | 644 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.6− | |
| 2001 12 15 | 704 | 0.2+ | 0.2+ | 2005 10 05 | G96 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.3− | 0.4− | |
| 2001 12 15 | 704 | 0.5+ | 0.5+ | 2005 10 05 | G96 | 1.1+ | 1.0+ | 2006 11 01 | G96 | 0.3+ | 0.2+ | |
| 2001 12 15 | 704 | 0.1+ | 0.1+ | 2005 10 05 | G96 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.8− | |

**(141220)∗ 2001 XW$_{221}$ = 2001 YW$_{156}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.72726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22338258 | $\omega$ | 95.46750 | | +0.98485165 | −0.14974191 | |
| $a$ | 2.6901088 | $\Omega$ | 273.16565 | | +0.10285339 | +0.91042411 | |
| $e$ | 0.0289103 | $i$ | 5.02365 | | +0.13960092 | +0.38562326 | |
| $P$ | 4.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.4− | 0.2+ | 2001 12 19 | 704 | 0.8+ | 0.9− | 2005 10 08 | 704 | 0.4+ | 0.2+ | |
| 2000 08 01 | 704 | 0.3+ | 0.9+ | 2001 12 19 | 704 | 0.5+ | 0.6− | 2005 10 08 | 703 | 0.1− | 1.0− | |
| 2000 08 01 | 704 | 0.3+ | 0.1− | 2001 12 19 | 704 | 0.1− | 0.7− | 2005 10 08 | 703 | 0.5+ | 0.3− | |
| 2000 08 01 | 704 | 0.3− | 0.6− | 2003 03 07 | 704 | 0.4− | 0.3+ | 2005 10 08 | 704 | 0.1+ | 0.1− | |
| 2001 10 14 | 704 | 0.2+ | 0.8− | 2003 03 07 | 704 | 0.3+ | 1.4+ | 2005 10 08 | 704 | 0.4+ | 0.1− | |
| 2001 10 14 | 704 | 0.4− | 1.4− | 2003 03 07 | 704 | 0.5+ | 0.4− | 2005 10 08 | 704 | 0.5+ | 0.0 | |
| 2001 10 14 | 704 | 0.2+ | 1.0− | 2003 03 07 | 704 | 0.7+ | 0.5+ | 2005 10 10 | 557 | 0.3+ | 1.2− | |
| 2001 10 14 | 704 | 0.5− | 0.5− | 2003 03 07 | 704 | 0.3+ | 0.3− | 2005 10 10 | 557 | 0.1− | 0.7− | |
| 2001 10 21 | 704 | 0.4+ | 0.5+ | 2003 03 07 | 704 | 0.2− | 0.7− | 2005 10 10 | 557 | 0.4+ | 0.1− | |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2003 03 07 | 704 | 1.0− | 0.4− | 2005 10 11 | 704 | (0.4+ | 1.7+) | |
| 2001 10 21 | 704 | 0.2+ | 0.2− | 2005 08 30 | 704 | 0.1+ | 0.1− | 2005 10 11 | 704 | (1.6− | 2.1+) | |
| 2001 10 21 | 704 | 0.5+ | 0.6− | 2005 08 30 | 704 | 0.6+ | 1.1− | 2005 10 11 | 704 | (2.2− | 1.1+) | |
| 2001 10 21 | 704 | 0.6+ | 0.5+ | 2005 08 30 | 704 | 0.4+ | 0.3+ | 2005 10 12 | 683 | 0.9− | 1.1− | |
| 2001 11 12 | 704 | 0.5+ | 0.3− | 2005 08 30 | 704 | 0.4− | 0.0 | 2005 10 12 | 683 | 1.0− | 1.2+ | |
| 2001 11 12 | 704 | 0.1+ | 0.6− | 2005 08 30 | 644 | 0.1+ | 0.2− | 2005 10 12 | 683 | 1.0− | 0.1+ | |
| 2001 11 12 | 704 | 0.4+ | 0.2− | 2005 08 30 | 644 | 0.0 | 0.0 | 2005 10 28 | 703 | (0.7+ | 1.7+) | |
| 2001 11 12 | 704 | 0.7+ | 0.4− | 2005 08 30 | 644 | 0.1− | 0.1+ | 2005 10 28 | 703 | 0.2− | 0.5+ | |
| 2001 11 19 | 699 | 0.2− | 0.9− | 2005 09 12 | 704 | 0.3− | 0.3+ | 2005 10 28 | 703 | 0.5+ | 0.1− | |
| 2001 11 19 | 699 | 0.8+ | 0.3− | 2005 09 12 | 704 | 0.8+ | 0.2+ | 2005 10 28 | 703 | 1.0+ | 0.1+ | |
| 2001 11 19 | 699 | 0.4− | 0.3− | 2005 09 12 | 704 | 0.0 | 0.1+ | 2005 10 30 | 704 | 0.8− | 0.0 | |
| 2001 11 19 | 699 | 0.0 | 0.6+ | 2005 09 12 | 704 | 0.5− | 0.8+ | 2005 10 30 | 704 | 0.5− | 0.3+ | |
| 2001 11 24 | 704 | 0.6− | 0.4+ | 2005 09 12 | 704 | (1.9+ | 0.3+) | 2005 10 30 | 704 | 1.1− | 1.2+ | |
| 2001 11 24 | 704 | 0.2− | 0.2+ | 2005 09 23 | 703 | 0.6− | 0.0 | 2005 10 30 | 704 | (2.4− | 1.5+) | |
| 2001 11 24 | 704 | 1.2− | 0.4+ | 2005 09 23 | 703 | 1.0− | 0.3+ | 2005 11 02 | 704 | 0.1+ | 0.7+ | |
| 2001 11 24 | 704 | 0.2− | 1.3+ | 2005 09 23 | 703 | 1.4− | 0.6+ | 2005 11 02 | 704 | 0.4+ | 0.0 | |
| 2001 11 24 | 704 | 0.1+ | 0.8+ | 2005 09 23 | 703 | 0.2− | 0.3− | 2005 11 02 | 704 | (5.9+ | 2.8−) | |
| 2001 12 10 | 704 | 1.0− | 0.4+ | 2005 10 03 | 704 | 0.7+ | 0.0 | 2005 11 02 | 704 | 0.6+ | 0.9+ | |
| 2001 12 10 | 704 | 0.6− | 0.3+ | 2005 10 03 | 704 | 0.4+ | 0.3+ | 2005 11 02 | 704 | 0.4+ | 0.6− | |
| 2001 12 10 | 704 | 0.1− | 1.3+ | 2005 10 03 | 704 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.0 | |
| 2001 12 10 | 704 | 0.3− | 0.6+ | 2005 10 03 | 704 | 0.7+ | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.1− | |
| 2001 12 15 | 704 | 0.6− | 0.7+ | 2005 10 03 | 703 | 0.2+ | 1.1− | 2006 11 01 | G96 | 0.1− | 0.2− | |
| 2001 12 15 | 704 | 0.3− | 0.6+ | 2005 10 03 | 703 | 0.4+ | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.1+ | |
| 2001 12 15 | 704 | 0.5+ | 0.8+ | 2005 10 03 | 703 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.1− | |
| 2001 12 15 | 704 | 0.3+ | 1.3+ | 2005 10 03 | 703 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.1+ | |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2005 10 07 | 683 | 0.8− | 0.7− | 2006 11 15 | G96 | 0.1− | 0.0 | |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2005 10 07 | 683 | (0.2+ | 2.3−) | 2006 11 15 | G96 | 0.6+ | 0.2− | |
| 2001 12 18 | 704 | 0.6− | 0.6+ | 2005 10 07 | 683 | (0.2− | 1.7−) | 2006 11 27 | G96 | 0.0 | 0.3− | |
| 2001 12 18 | 704 | 0.6− | 0.2− | 2005 10 08 | 704 | 0.5+ | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.2− | |
| 2001 12 18 | 704 | 0.1− | 0.2− | 2005 10 08 | 703 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1− | |
| 2001 12 19 | 704 | 0.6+ | 0.9− | 2005 10 08 | 703 | 0.0 | 0.6− | | | | | |

**(141221)∗ 2001 XX$_{223}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.24666 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18018380 | $\omega$ | 106.21946 | | −0.95461154 | −0.18790993 | |
| $a$ | 3.1045040 | $\Omega$ | 63.44413 | | +0.05257247 | −0.86999789 | |
| $e$ | 0.0912744 | $i$ | 14.97251 | | +0.29317732 | −0.45584375 | |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 691 | 0.2+ | 0.4− | 2001 12 18 | 704 | 0.1− | 0.5− | 2003 03 08 | 699 | 0.3+ | 0.7− | |
| 2001 11 15 | 691 | 0.3− | 0.6− | 2001 12 18 | 704 | 0.2+ | 1.0− | 2003 03 08 | 699 | 0.4− | 0.4+ | |
| 2001 11 15 | 691 | 0.0 | 0.4− | 2001 12 19 | 704 | 0.1− | 0.6+ | 2003 03 08 | 699 | 1.1− | 0.3+ | |
| 2001 11 20 | 704 | 0.9+ | 0.4+ | 2001 12 19 | 704 | 0.2− | 0.3− | 2003 03 09 | 644 | 0.2− | 0.2− | |
| 2001 11 20 | 704 | 0.5+ | 0.1− | 2001 12 19 | 704 | 0.0 | 0.4+ | 2003 03 09 | 644 | 0.2− | 0.3− | |
| 2001 11 20 | 704 | 0.3+ | 0.4− | 2001 12 19 | 704 | 0.1+ | 0.5+ | 2003 03 09 | 644 | 0.1− | 0.3− | |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2001 12 19 | 704 | 0.1− | 0.1− | 2003 04 08 | 644 | 0.1− | 1.0+ | |
| 2001 11 20 | 704 | 0.4+ | 0.9− | 2001 12 19 | 704 | 0.1+ | 0.8+ | 2003 04 08 | 644 | 0.2− | 0.9+ | |
| 2001 11 21 | 704 | 0.4+ | 0.8+ | 2001 12 19 | 704 | 0.5− | 0.5− | 2003 04 08 | 644 | 0.2− | 0.8+ | |
| 2001 11 21 | 704 | 0.5+ | 0.7+ | 2001 12 19 | 704 | 0.5− | 0.6+ | 2004 06 13 | 644 | 0.3+ | 0.5+ | |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2001 12 19 | 704 | 0.2− | 0.3− | 2004 06 13 | 644 | 0.2+ | 0.0 | |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2001 12 19 | 704 | 0.1− | 1.0+ | 2004 06 13 | 644 | 0.1− | 0.0 | |
| 2001 11 21 | 704 | 1.1+ | 1.1+ | 2001 12 19 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.2− | |
| 2001 11 24 | 704 | (0.5− | 2.6+) | 2001 12 19 | 704 | (1.8− | 0.6+) | 2006 10 16 | 703 | (2.0+ | 1.2−) | |
| 2001 11 24 | 704 | 0.3− | 0.7− | 2001 12 19 | 704 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.1− | |
| 2001 11 24 | 704 | 0.6− | 0.4− | 2003 02 01 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.1− | |
| 2001 11 24 | 704 | 0.3− | 0.1+ | 2003 02 01 | 644 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.5+ | |
| 2001 11 24 | 704 | 0.1+ | 0.1− | 2003 02 01 | 644 | 0.6+ | 0.1− | 2006 10 22 | 703 | (0.7− | 1.9+) | |
| 2001 12 15 | 704 | 0.2+ | 0.7− | 2003 02 21 | 644 | 0.6+ | 0.4+ | 2006 10 22 | 703 | (0.1− | 2.0+) | |
| 2001 12 15 | 704 | 0.1− | 0.5− | 2003 02 21 | 644 | 0.7+ | 0.7+ | 2006 10 22 | 703 | (4.0− | 5.3+) | |
| 2001 12 15 | 704 | 0.2− | 0.3+ | 2003 02 21 | 644 | 0.5+ | 0.0 | 2006 11 19 | 703 | 2.4− | 0.4+ | |
| 2001 12 15 | 704 | 0.1+ | 0.0 | 2003 02 26 | 704 | 0.5− | 0.2+ | 2006 11 19 | 703 | 0.9− | 0.6− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3+ | 0.6+ | 2003 02 26 | 704 | 0.3+ | 0.3− | 2006 11 19 | 703 | 1.2+ | 1.9+ |
| 2001 12 18 | 704 | 1.3− | 0.9+ | 2003 02 26 | 704 | 0.2− | 0.7− | 2006 11 19 | 703 | 0.6− | 0.8+ |
| 2001 12 18 | 704 | 0.3− | 0.6+ | 2003 03 08 | 699 | 0.1− | 0.4− | | | | |

**(141222)∗ 2001 XM$_{225}$ = 2003 FY$_{120}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.26844 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19874855 | $\omega$ | 56.70177 | | −0.12706636 | | −0.99173091 |
| $a$ | 2.9080379 | $\Omega$ | 40.61034 | | +0.90060484 | | −0.12295660 |
| $e$ | 0.0991660 | $i$ | 1.58450 | | +0.41565016 | | −0.03676247 |
| $P$ | 4.96 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 291 | 0.9− | 0.2− | 2001 12 18 | 704 | 1.0− | 0.5+ | 2005 10 06 | G96 | 0.2− | 0.2+ |
| 2001 10 24 | 291 | 0.2+ | 0.2− | 2001 12 18 | 704 | (1.5− | 0.7−) | 2005 10 06 | G96 | 0.2− | 0.7+ |
| 2001 10 24 | 291 | 0.6− | 0.3− | 2001 12 18 | 704 | 1.3− | 1.1− | 2005 10 06 | G96 | 0.6− | 0.4+ |
| 2001 11 12 | 691 | 0.1− | 0.0 | 2001 12 18 | 704 | (1.8− | 0.8−) | 2005 11 06 | G96 | 0.5− | 0.6+ |
| 2001 11 12 | 691 | 0.2− | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.9+ | 2005 11 06 | G96 | 0.5+ | 0.6+ |
| 2001 11 12 | 691 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.2− | 0.3+ | 2005 11 06 | G96 | 0.7− | 0.8+ |
| 2001 11 19 | 704 | 0.4− | 1.3+ | 2001 12 19 | 704 | 0.6− | 0.2+ | 2005 11 06 | G96 | 0.2− | 0.7+ |
| 2001 11 19 | 704 | 0.4− | 0.9+ | 2002 01 07 | 691 | 0.8+ | 0.6− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 11 19 | 704 | 0.3− | 1.2+ | 2002 01 07 | 691 | 1.0+ | 0.5− | 2006 09 27 | G96 | 0.0 | 0.6− |
| 2001 11 19 | 704 | 0.2− | 1.1+ | 2002 01 07 | 691 | 0.7+ | 0.7− | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2001 11 19 | 704 | 0.7− | 1.1+ | 2003 03 25 | 699 | (1.7− | 1.0−) | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2001 11 21 | 704 | 0.3+ | 0.5+ | 2003 03 25 | 699 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.2+ | 1.0+ | 2003 03 25 | 699 | 0.2− | 0.8− | 2006 11 01 | G96 | 0.1− | 0.7− |
| 2001 11 21 | 704 | 0.0 | 0.7+ | 2003 03 25 | 699 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 11 21 | 704 | 0.4+ | 1.2+ | 2003 03 29 | 291 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 704 | (1.2+ | 2.4+) | 2003 03 29 | 291 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2001 12 09 | 644 | 0.0 | 0.0 | 2003 03 29 | 291 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 12 09 | 644 | 0.2+ | 0.0 | 2003 05 01 | 691 | 0.8+ | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 12 09 | 644 | 0.0 | 0.0 | 2003 05 01 | 691 | 0.5+ | 0.8+ | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2001 12 15 | 704 | 0.1− | 0.4+ | 2003 05 01 | 691 | 0.3+ | 0.8+ | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2001 12 15 | 704 | 0.3+ | 0.1+ | 2005 08 06 | 644 | 0.4− | 1.1+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2001 12 15 | 704 | 0.2+ | 0.4+ | 2005 08 06 | 644 | 0.1− | 0.8+ | 2006 11 30 | 691 | 0.2− | 0.1− |
| 2001 12 15 | 704 | 0.4+ | 1.2+ | 2005 08 06 | 644 | 0.5− | 1.0+ | 2006 11 30 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.4− | 2005 10 06 | G96 | 0.2+ | 0.5+ | 2006 11 30 | 691 | 0.2+ | 0.8+ |

**(141223)∗ 2001 XZ$_{225}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.01653 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18907189 | $\omega$ | 69.25896 | | +0.09420284 | | −0.99554387 |
| $a$ | 3.0064322 | $\Omega$ | 15.33746 | | +0.90729292 | | +0.08408535 |
| $e$ | 0.0142235 | $i$ | 0.92481 | | +0.40981140 | | +0.04268554 |
| $P$ | 5.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 05 | 327 | 0.2− | 0.6− | 2003 02 23 | 699 | 0.2− | 0.9− | 2006 11 11 | 703 | 0.5− | 0.3− |
| 1998 03 05 | 327 | 0.4+ | 0.4− | 2003 02 23 | 699 | 0.5− | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.1− |
| 1998 03 05 | 327 | 0.2+ | 0.7− | 2003 02 23 | 699 | (1.7+ | 0.8+) | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2001 11 17 | 291 | 1.0− | 0.0 | 2003 02 23 | 699 | 0.2+ | 0.9+ | 2006 11 12 | G96 | 0.4+ | 0.1− |
| 2001 11 17 | 291 | 0.1+ | 0.1− | 2003 03 06 | 644 | 0.4− | 0.4+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2001 11 17 | 291 | 0.6− | 0.4+ | 2003 03 06 | 644 | 0.7+ | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | (0.7+ | 2.0−) | 2003 03 06 | 644 | 0.4+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2001 11 21 | 704 | (0.1+ | 1.8−) | 2003 03 30 | 645 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | (1.9− | 1.9−) | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.1− |
| 2001 11 21 | 704 | (0.0 | 2.2−) | 2005 07 12 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.8− |
| 2001 12 15 | 704 | 0.6+ | 0.3+ | 2005 07 12 | G96 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.6− |
| 2001 12 15 | 704 | 0.1+ | 0.3+ | 2005 07 12 | G96 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.5+ |
| 2001 12 15 | 704 | 0.4+ | 0.9+ | 2005 07 12 | G96 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.9− |
| 2001 12 15 | 704 | 0.2+ | 0.7+ | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.1+ |
| 2001 12 18 | 704 | (2.2+ | 0.2−) | 2005 08 06 | 644 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.4− | 1.1− |
| 2001 12 18 | 704 | 0.2+ | 0.4− | 2005 08 06 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2001 12 18 | 704 | 0.3− | 0.3+ | 2005 10 25 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2005 10 25 | G96 | 0.3− | 0.4− | 2006 11 27 | 703 | 1.6+ | 0.9+ |
| 2001 12 19 | 704 | 0.0 | 1.2+ | 2005 10 25 | G96 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.7− | 1.7− |
| 2001 12 19 | 704 | 0.3+ | 0.8+ | 2005 10 25 | G96 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.8+ |
| 2001 12 19 | 704 | 0.7+ | 0.6+ | 2006 10 27 | G96 | 0.5− | 0.4− | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 12 01 | G96 | 0.4+ | 0.2− |
| 2001 12 19 | 704 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.1− | 0.7− |
| 2003 02 22 | 644 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 12 01 | G96 | 0.8+ | 0.7− |
| 2003 02 22 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.4+ | 2006 12 01 | G96 | 0.2+ | 0.7− |
| 2003 02 22 | 644 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.8− | | | | |

**(141224)∗ 2001 XK$_{226}$ = 2000 QN$_{200}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.56244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19377502 | $\omega$ | 289.95836 | | +0.67497391 | | +0.73759877 |
| $a$ | 2.9575869 | $\Omega$ | 22.52792 | | −0.65714281 | | +0.61261877 |
| $e$ | 0.1122473 | $i$ | 2.83180 | | −0.33551982 | | +0.28398292 |
| $P$ | 5.09 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.2+ | 0.5+ | 2004 05 21 | 691 | 0.2− | 0.2+ | 2005 09 24 | 644 | 0.1+ | 0.2+ |
| 1995 09 25 | 691 | 0.4− | 0.1+ | 2004 05 21 | 691 | 0.4+ | 0.3+ | 2005 09 24 | 644 | 0.1+ | 0.3+ |
| 1995 09 25 | 691 | 0.2− | 0.6+ | 2004 05 21 | 691 | 0.3+ | 0.5+ | 2005 09 24 | 644 | 0.3− | 0.6+ |
| 2000 08 07 | 608 | 0.9− | 0.8− | 2004 05 29 | 691 | 0.2− | 0.3+ | 2005 09 24 | 644 | 0.1+ | 0.3+ |
| 2000 08 07 | 608 | 1.4− | 0.6− | 2004 05 29 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.5− | 0.0 |
| 2000 08 07 | 608 | 1.0− | 0.6− | 2004 05 29 | 691 | (1.8+ | 1.5+) | 2006 10 20 | G96 | 0.5− | 0.2− |
| 2000 08 29 | 704 | 1.0+ | 0.5+ | 2005 07 04 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.5− | 0.0 |
| 2000 08 29 | 704 | 0.7+ | 0.2− | 2005 07 04 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 2000 08 29 | 704 | 0.7+ | 0.9+ | 2005 07 04 | 644 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.0 |
| 2000 09 19 | 695 | 0.3+ | 0.4+ | 2005 07 27 | 644 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.6− | 0.0 |
| 2000 09 19 | 695 | 0.3+ | 0.4+ | 2005 07 27 | 644 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | (5.7+ | 0.9+) | 2005 07 27 | 644 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.6− | 0.2+ |
| 2001 11 21 | 704 | (5.8+ | 0.6+) | 2005 07 27 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | (6.5+ | 0.3−) | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 1.2+ | 0.1+ |
| 2001 11 21 | 704 | (4.8+ | 0.3−) | 2005 07 27 | 644 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.5+ | 1.0− |
| 2001 12 15 | 704 | 0.7+ | 0.0 | 2005 08 22 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2001 12 15 | 704 | 0.8+ | 0.6+ | 2005 08 22 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.3− | 0.1+ |
| 2001 12 15 | 704 | 0.6− | 0.5+ | 2005 08 22 | 644 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2005 08 22 | E12 | 0.2− | 1.1− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.7− | 1.0+ | 2005 08 22 | E12 | (2.0+ | 3.9−) | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2005 08 22 | E12 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.3− | 0.1+ | 2005 08 22 | E12 | 0.0 | 0.4+ | 2006 11 21 | 691 | 0.4− | 0.1+ |
| 2001 12 18 | 704 | 0.6− | 0.2+ | 2005 08 27 | E12 | 1.1− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.8− | 0.5+ | 2005 08 27 | E12 | (0.1+ | 1.8+) | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2005 08 27 | E12 | 0.1+ | 1.1− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 1.0− | 0.4− | 2005 08 27 | E12 | 0.7+ | 0.6− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2005 08 29 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.8+ | 0.4− |
| 2001 12 19 | 704 | 0.1+ | 0.4+ | 2005 08 29 | 704 | 0.3− | 0.9− | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2004 04 21 | 704 | 0.7− | 0.5+ | 2005 08 29 | 704 | 0.6− | 0.3− | 2006 11 25 | 691 | 0.2+ | 0.3+ |
| 2004 04 21 | 704 | 0.3+ | 0.2− | 2005 08 29 | 704 | 0.2− | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2004 04 21 | 704 | 0.5+ | 0.4+ | 2005 09 24 | 644 | 0.2+ | 0.7− | | | | |
| 2004 04 21 | 704 | 1.1+ | 1.0+ | 2005 09 24 | 644 | 0.6− | 0.4− | | | | |

**(141225)∗ 2001 XH$_{227}$ = 2000 SG$_{365}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47062)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.47996 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17094817 | $\omega$ | 253.73960 | | +0.54870756 | +0.83312275 | |
| $a$ | 3.2153363 | $\Omega$ | 49.74751 | | −0.72806590 | +0.51704792 | |
| $e$ | 0.1010538 | $i$ | 5.22275 | | −0.41090152 | +0.19638718 | |
| $P$ | 5.77 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.3+ | 0.4− | 2004 03 19 | 704 | 0.4− | 0.7− | 2006 10 01 | 704 | 0.7+ | 0.3+ |
| 1995 11 20 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.6− | 0.0 | 2006 10 01 | 704 | 0.9+ | 1.2− |
| 1995 11 20 | 691 | 0.1− | 0.2− | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 1995 11 20 | 691 | 0.2− | 0.2− | 2004 03 26 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2000 09 21 | 699 | 0.6− | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2000 09 21 | 699 | 0.4+ | 0.1+ | 2004 03 28 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2000 09 21 | 699 | 0.3− | 0.7− | 2004 03 28 | 704 | 0.9− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 09 21 | 699 | 0.8+ | 1.0+ | 2004 03 28 | 704 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2000 09 24 | 704 | 0.3+ | 0.1+ | 2004 03 28 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.2+ | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2000 09 24 | 704 | 0.3− | 0.0 | 2004 04 19 | 704 | (3.1+ | 0.7+) | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2000 09 24 | 704 | 0.5+ | 0.5+ | 2004 04 19 | 704 | 1.1+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 0.5− | 2004 04 19 | 704 | 1.4− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.2+ | 0.2+ | 2004 04 19 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2001 11 21 | 704 | 0.3− | 0.5+ | 2004 04 19 | 704 | 1.1+ | 0.2− | 2006 10 16 | 703 | 0.8− | 0.6− |
| 2001 11 21 | 704 | 0.5+ | 0.0 | 2006 09 21 | 699 | (1.6− | 2.1+) | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.8− | 0.3− | 2006 09 21 | 699 | 1.2− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 12 15 | 704 | 0.4+ | 0.1− | 2006 09 21 | 699 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 12 15 | 704 | 0.2+ | 0.3− | 2006 09 21 | 699 | 1.1− | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 12 15 | 704 | 0.1+ | 0.6− | 2006 09 28 | 704 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 12 18 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 0.4− | 0.4− | 2006 09 28 | 704 | 0.4− | 1.0− | 2006 10 22 | 703 | 0.4− | 1.1− |
| 2001 12 18 | 704 | 0.8+ | 0.7+ | 2006 09 28 | 691 | 0.3− | 1.0+ | 2006 10 22 | 703 | 1.0− | 0.3+ |
| 2001 12 18 | 704 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.7− |
| 2001 12 18 | 704 | 0.4− | 0.9− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.6− |
| 2001 12 19 | 704 | 0.1− | 0.9+ | 2006 09 30 | 703 | 0.7− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.7+ | 1.1+ | 2006 09 30 | 703 | 0.8+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.1+ | 1.1+ | 2006 09 30 | 703 | 0.8+ | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2004 03 19 | 704 | 0.3+ | 0.7− | 2006 10 01 | 704 | 0.3+ | 0.3+ | | | | |
| 2004 03 19 | 704 | (1.6− | 0.9+) | 2006 10 01 | 704 | 0.7+ | 0.3− | | | | |

**(141226)∗ 2001 XJ$_{230}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.97132 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18103386 | $\omega$ | 78.29947 | | −0.81852969 | −0.57441715 | |
| $a$ | 3.0947781 | $\Omega$ | 66.64128 | | +0.52389141 | −0.75166130 | |
| $e$ | 0.1176716 | $i$ | 0.45896 | | +0.23568397 | −0.32411451 | |
| $P$ | 5.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 09 | 809 | 0.1+ | 0.7− | 2001 12 23 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 1995 10 28 | 691 | 0.0 | 0.1− | 2001 12 23 | 291 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.6+ |
| 1995 10 28 | 691 | 0.1+ | 0.2− | 2001 12 23 | 291 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 1995 10 28 | 691 | 0.1+ | 0.3− | 2003 03 23 | 691 | 1.3+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.4+ | 0.3− | 2003 03 23 | 691 | (0.2− | 2.0+) | 2006 10 20 | 691 | 0.0 | 0.5+ |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2003 03 23 | 691 | 0.9+ | 0.8+ | 2006 10 20 | 691 | 0.8− | 0.7+ |
| 2001 11 20 | 704 | 0.7− | 0.4− | 2003 03 23 | 691 | (0.5− | 2.2+) | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 11 20 | 704 | 0.3+ | 0.2+ | 2003 03 23 | 691 | 1.2+ | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.3− | 2003 03 23 | 691 | (0.6− | 2.4+) | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.5− | 0.0 | 2003 03 29 | 291 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.5− | 0.3− | 2003 03 29 | 291 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 12 12 | 644 | (0.6− | 1.6+) | 2003 03 29 | 291 | 0.4− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 12 12 | 644 | (0.3− | 1.7+) | 2003 04 06 | 691 | 0.7− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2001 12 12 | 644 | (0.6− | 1.7+) | 2003 04 06 | 691 | 0.5− | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.2− |
| 2001 12 15 | 704 | 0.9+ | 0.3− | 2003 04 06 | 691 | 0.6− | 0.1+ | 2006 10 29 | G96 | 0.2− | 0.5− |
| 2001 12 15 | 704 | 0.7+ | 0.2− | 2005 07 11 | G96 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.1+ |
| 2001 12 15 | 704 | 0.3+ | 0.4+ | 2005 07 11 | G96 | 0.3− | 0.5+ | 2006 10 29 | G96 | 0.2+ | 0.4− |
| 2001 12 17 | 291 | 0.2− | 0.2− | 2005 07 11 | G96 | 0.4− | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.2− |
| 2001 12 17 | 291 | 0.1+ | 0.1− | 2005 07 11 | G96 | 0.1+ | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.2− |
| 2001 12 17 | 291 | 0.4− | 0.4− | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.5+ | 0.2− |
| 2001 12 18 | 704 | 0.9− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.6+ | 0.3− |
| 2001 12 18 | 704 | 1.0− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.3− | 0.8+ |
| 2001 12 18 | 704 | (1.7− | 0.3−) | 2006 09 26 | G96 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.5+ |
| 2001 12 18 | 704 | 0.3+ | 0.7− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.9− | 0.7− | 2006 10 04 | G96 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2001 12 19 | 704 | 0.6+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.7+ | 0.9− | 2006 10 04 | G96 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 1.4+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 0.6+ | 1.0− | 2006 10 12 | 691 | 0.1+ | 0.1+ | | | | |
| 2001 12 19 | 704 | 0.7+ | 1.2− | 2006 10 12 | 691 | 0.0 | 0.4+ | | | | |

**(141227)∗ 2001 XD$_{232}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.33529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20279978 | $\omega$ | 321.29516 | | +0.98923590 | −0.14216026 | |
| $a$ | 2.8691796 | $\Omega$ | 46.91493 | | +0.14327297 | +0.89278657 | |
| $e$ | 0.0833068 | $i$ | 2.72180 | | +0.02975210 | +0.42746065 | |
| $P$ | 4.86 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 07 | 691 | 0.2+ | 0.1+ | 2001 12 18 | 704 | 0.3− | 0.2+ | 2005 08 29 | 704 | 0.4+ | 0.2+ |
| 1991 11 07 | 691 | 0.1− | 0.4+ | 2001 12 19 | 704 | 0.0 | 0.3+ | 2005 08 29 | 704 | 0.5+ | 0.6+ |
| 1991 11 07 | 691 | 0.0 | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.0 | 2005 08 29 | 704 | 0.9+ | 0.3+ |
| 1998 01 23 | 691 | 0.1+ | 0.0 | 2001 12 19 | 704 | 0.4− | 0.3+ | 2005 08 29 | 704 | 0.4− | 0.3+ |
| 1998 01 23 | 691 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.4− | 0.4+ | 2005 08 31 | 691 | 0.2− | 0.2+ |
| 1998 01 23 | 691 | 0.2+ | 0.1+ | 2001 12 19 | 704 | 0.2− | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.1+ |
| 1998 01 29 | 691 | 0.1− | 0.0 | 2001 12 20 | 644 | 0.1− | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.5+ |
| 1998 01 29 | 691 | 0.1− | 0.1− | 2001 12 20 | 704 | 0.7+ | 0.4+ | 2005 09 14 | 691 | 0.1+ | 0.3+ |
| 1998 01 29 | 691 | 0.2− | 0.2− | 2001 12 20 | 704 | 1.1+ | 0.1+ | 2005 09 14 | 691 | 0.0 | 0.1+ |
| 2000 08 07 | 608 | 0.7− | 1.0− | 2001 12 20 | 704 | 0.9+ | 0.5+ | 2005 09 14 | 691 | 0.0 | 0.5+ |
| 2000 08 07 | 608 | 0.8− | 1.3− | 2001 12 20 | 704 | 0.0 | 0.5+ | 2005 09 22 | 644 | 0.4− | 0.2− |
| 2000 08 07 | 608 | 0.7− | 0.9− | 2001 12 20 | 704 | 0.4+ | 1.1+ | 2005 09 22 | 644 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 0.3+ | 1.0− | 2001 12 20 | 644 | 0.1− | 0.1+ | 2005 09 22 | 644 | 0.2− | 0.1− |
| 2001 11 09 | 704 | 0.1+ | 0.5− | 2001 12 20 | 644 | 0.3+ | 0.1+ | 2005 09 26 | 703 | 1.1− | 0.4− |
| 2001 11 09 | 704 | 0.8+ | 0.3+ | 2003 03 23 | 645 | 0.1+ | 0.2+ | 2005 09 26 | 703 | 0.6− | 0.7− |
| 2001 11 21 | 704 | 0.4− | 0.4− | 2003 03 23 | 645 | 0.1+ | 0.2+ | 2005 09 26 | 703 | (1.8− | 2.0+) |
| 2001 11 21 | 704 | 0.6− | 0.6− | 2005 07 29 | 644 | 0.2+ | 0.2+ | 2005 09 26 | 703 | (1.9− | 1.1+) |
| 2001 11 21 | 704 | 0.1+ | 0.4− | 2005 07 29 | 644 | 0.3+ | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.1+ | 0.8− | 2005 07 29 | 644 | 0.1+ | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2001 12 15 | 704 | 0.2− | 0.8− | 2005 08 06 | 644 | 0.0 | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2001 12 15 | 704 | 0.7− | 0.7− | 2005 08 06 | 644 | 0.3− | 0.5+ | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.3− | 0.6− | 2005 08 06 | 644 | 0.1− | 0.5+ | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2005 08 27 | 644 | 0.3+ | 0.1− | 2006 12 01 | 691 | 0.4− | 0.2+ |
| 2001 12 18 | 704 | 0.4− | 0.5− | 2005 08 27 | 644 | 0.2+ | 0.0 | | | | |
| 2001 12 18 | 704 | 0.3− | 0.3+ | 2005 08 27 | 644 | 0.1− | 0.1+ | | | | |

**(141228)∗ 2001 XA$_{233}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.97453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18220211 | $\omega$ | 193.07984 | | −0.53169142 | −0.84421473 | |
| $a$ | 3.0815351 | $\Omega$ | 289.07733 | | +0.78337180 | −0.45974683 | |
| $e$ | 0.1246784 | $i$ | 4.11792 | | +0.32192057 | −0.27556186 | |
| $P$ | 5.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.1+ | 0.5+ | 2001 12 18 | 704 | 0.4− | 0.3+ | 2003 03 31 | 691 | 0.5+ | 1.1+ |
| 2000 08 30 | 691 | 0.0 | 0.5+ | 2001 12 18 | 704 | 0.3+ | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2000 08 30 | 691 | 0.0 | 0.6+ | 2001 12 18 | 704 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.1+ |
| 2000 09 21 | 695 | 0.1+ | 1.2+ | 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2000 09 21 | 695 | 0.1+ | 0.9+ | 2001 12 19 | 704 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2000 09 29 | 691 | 0.8− | 0.7+ | 2001 12 19 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2000 09 29 | 691 | 0.7− | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2000 09 29 | 691 | 0.5− | 0.7+ | 2001 12 19 | 704 | 0.2− | 0.9+ | 2006 10 21 | 691 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.2+ | 0.4+ | 2001 12 19 | 704 | 0.5− | 1.3− | 2006 10 27 | 703 | 0.1+ | 0.9− |
| 2001 11 21 | 704 | 1.4+ | 1.2+ | 2001 12 19 | 704 | (0.2− | 1.9−) | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 0.2+ | 0.6+ | 2001 12 19 | 704 | (1.4− | 2.1−) | 2006 10 27 | 703 | 0.4+ | 1.3− |
| 2001 11 21 | 704 | 0.0 | 0.9+ | 2001 12 19 | 704 | (1.8− | 1.2−) | 2006 10 27 | 703 | 1.5+ | 1.3− |
| 2001 12 15 | 704 | 0.4− | 0.0 | 2003 03 26 | 644 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.7− |
| 2001 12 15 | 704 | 0.5− | 0.0 | 2003 03 26 | 644 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2001 12 15 | 704 | 0.9− | 0.5− | 2003 03 26 | 644 | 0.5+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2001 12 18 | 704 | 0.2+ | 0.3− | 2003 03 31 | 691 | 0.4+ | 1.2+ | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2001 12 18 | 704 | 0.3− | 0.6+ | 2003 03 31 | 691 | 0.5+ | 1.0+ | | | | |

**(141229)∗ 2001 XE$_{234}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.84603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17278935 | $\omega$ | 53.48625 | | −0.07216970 | −0.99561465 | |
| $a$ | 3.1924546 | $\Omega$ | 40.77786 | | +0.88348267 | −0.09150928 | |
| $e$ | 0.1507981 | $i$ | 5.22894 | | +0.46287138 | +0.01943014 | |
| $P$ | 5.70 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.4− | 0.5+ | 2003 03 26 | 644 | 0.8+ | 0.5+ |
| 2000 09 03 | 645 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.8− | 0.8+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.0 | 1.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2000 09 05 | 645 | 0.1+ | 0.1− | 2002 01 08 | 704 | 0.2+ | 1.0− | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2000 09 23 | 691 | 0.3− | 0.1+ | 2002 01 08 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.3− | 1.1− |
| 2000 09 23 | 691 | 0.1− | 0.1+ | 2002 01 08 | 704 | 0.4+ | 0.9− | 2006 09 30 | 703 | 0.2+ | 0.8+ |
| 2000 09 23 | 691 | 0.6− | 0.2+ | 2002 01 08 | 704 | (0.3− | 2.0−) | 2006 09 30 | 703 | (2.8+ | 3.4+) |
| 2001 11 12 | 704 | 0.0 | 0.7− | 2002 01 08 | 704 | 0.6− | 0.6− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 1.1+ | 0.0 | 2002 01 14 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.6+ | 1.3+ |
| 2001 11 12 | 704 | 0.4+ | 0.6+ | 2002 01 14 | 704 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.3− | 0.5+ | 2002 01 14 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2001 12 15 | 704 | 0.1+ | 0.1+ | 2003 03 06 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.6− | 0.2+ |
| 2001 12 15 | 704 | 1.2+ | 0.0 | 2003 03 06 | 704 | 1.1+ | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 12 15 | 704 | 0.5+ | 0.6+ | 2003 03 06 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.7− | 2003 03 26 | 699 | (0.1− | 2.0+) | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 12 18 | 704 | 1.3− | 0.2− | 2003 03 26 | 644 | 0.6+ | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2001 12 18 | 704 | 0.2− | 0.1− | 2003 03 26 | 699 | (0.5− | 2.6+) | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.2− | 0.8− | 2003 03 26 | 699 | 1.4− | 1.0+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 12 18 | 704 | 0.4− | 1.2− | 2003 03 26 | 644 | 0.8+ | 0.7+ | | | | |
| 2001 12 19 | 704 | 0.5+ | 0.0 | 2003 03 26 | 699 | 0.7− | 0.5+ | | | | |

**(141230)∗ 2001 XS$_{234}$ = 2000 QQ$_{157}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 35134)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.34985 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18755399 | $\omega$ | 106.77944 | | +0.93036852 | −0.33806547 | |
| $a$ | 3.0226313 | $\Omega$ | 273.15775 | | +0.25825032 | +0.87895845 | |
| $e$ | 0.0785216 | $i$ | 8.16836 | | +0.26023295 | +0.33636851 | |
| $P$ | 5.26 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.3+ | 1.0+ | 2006 11 15 | 704 | 1.1− | 0.6− |
| 2000 08 31 | 704 | 0.3− | 0.7+ | 2002 01 14 | 704 | 0.2− | 1.2+ | 2006 11 16 | 704 | 0.7− | 0.7+ |
| 2000 08 31 | 704 | 0.4− | 0.7− | 2002 01 14 | 704 | (0.0 | 1.6+) | 2006 11 16 | 704 | 0.3+ | 0.9+ |
| 2000 08 31 | 704 | 0.6− | 0.3+ | 2005 07 08 | 691 | 0.2− | 0.2+ | 2006 11 16 | 704 | 1.2+ | 1.3+ |
| 2000 09 03 | 704 | 0.1+ | 0.6+ | 2005 07 08 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2000 09 03 | 704 | 1.3+ | 1.2+ | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.6+ | 0.4+ |
| 2000 09 03 | 704 | 0.2+ | 0.7+ | 2005 09 03 | 644 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.1− |
| 2000 09 03 | 704 | 0.4+ | 1.0+ | 2005 09 03 | 644 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2000 10 02 | 645 | 0.0 | 0.2− | 2005 09 03 | 644 | 0.4− | 0.4+ | 2006 11 19 | 704 | 1.2+ | 0.8+ |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 10 17 | A50 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.8− | 0.1+ |
| 2001 12 15 | 704 | 0.3− | 0.4− | 2006 10 17 | A50 | 1.0− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 1.9+ |
| 2001 12 15 | 704 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.8− | 1.3− | 2006 11 19 | 704 | 0.7− | 0.2− |
| 2001 12 15 | 704 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.9− | 2006 11 19 | 704 | 0.4− | 1.3+ |
| 2001 12 18 | 704 | 0.6− | 1.5+ | 2006 10 19 | 703 | 0.7− | 0.6− | 2006 11 19 | 704 | 0.6− | 0.4− |
| 2001 12 18 | 704 | 0.8− | 1.2+ | 2006 10 19 | 703 | 1.5− | 1.2− | 2006 11 19 | 704 | 1.1+ | 0.5+ |
| 2001 12 18 | 704 | (1.1− | 1.6+) | 2006 11 02 | 703 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.3− | 0.3− |
| 2001 12 18 | 704 | 0.8+ | 0.4+ | 2006 11 02 | 703 | 0.3+ | 1.0+ | 2006 11 22 | 703 | 0.1+ | 0.6− |
| 2001 12 18 | 704 | (1.2− | 1.8+) | 2006 11 02 | 703 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.0 | 1.0− |
| 2001 12 19 | 704 | 1.1+ | 0.1+ | 2006 11 02 | 703 | 0.3− | 1.1− | 2006 11 22 | 703 | 0.5− | 0.1+ |
| 2001 12 19 | 704 | 0.4+ | 1.1− | 2006 11 14 | 703 | 0.4+ | 0.1− | 2006 11 22 | 703 | 0.1− | 0.4− |
| 2001 12 19 | 704 | 0.3− | 0.8− | 2006 11 14 | 703 | 0.6− | 0.6− | 2006 11 22 | 703 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | 0.1+ | 1.2− | 2006 11 14 | 703 | 0.4− | 0.6− | 2006 11 22 | 703 | 0.0 | 0.8− |
| 2001 12 20 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.4− | 2006 11 22 | 703 | 1.1+ | 0.3− |
| 2001 12 20 | 704 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 11 23 | 703 | 1.2+ | 0.3+ |
| 2001 12 20 | 704 | 1.0− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2− | 2006 11 23 | 703 | 0.8+ | 0.1− |
| 2001 12 20 | 704 | 0.6+ | 0.8+ | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 23 | 703 | 0.2− | 0.7− |
| 2002 01 14 | 704 | 0.4+ | 1.0+ | 2006 11 15 | 704 | 0.1− | 0.4− | 2006 11 23 | 703 | 0.9+ | 0.5+ |
| 2002 01 14 | 704 | 0.1− | 1.1+ | 2006 11 15 | 704 | 0.2− | 0.7+ | | | | |

**(141231)∗ 2001 XF$_{235}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.78690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17851784 | $\omega$ | 255.92662 | | +0.83157631 | +0.50819312 | |
| $a$ | 3.1237886 | $\Omega$ | 73.09834 | | −0.37462924 | +0.81110015 | |
| $e$ | 0.0604604 | $i$ | 13.54544 | | −0.41004119 | +0.28957951 | |
| $P$ | 5.52 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.2+ | 0.5− | 2004 03 18 | 291 | 0.3− | 0.1+ | 2005 08 13 | E12 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2004 04 11 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.7+ | 0.2− |
| 2001 11 12 | 704 | 0.2+ | 1.4+ | 2004 04 11 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 703 | (2.1+ | 1.7+) |
| 2001 11 12 | 704 | 0.6+ | 0.2+ | 2004 04 11 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.4− |
| 2001 11 21 | 704 | 0.7− | 0.5+ | 2004 04 16 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 1.0− |
| 2001 11 21 | 704 | 0.5− | 0.3+ | 2004 04 16 | 704 | 0.7+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.5− | 0.3− | 2004 04 16 | 704 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.5− |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2004 04 16 | 704 | 0.6+ | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.7+ |
| 2001 12 15 | 704 | 0.1+ | 0.2+ | 2004 04 23 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2001 12 15 | 704 | 0.5+ | 0.4+ | 2004 04 23 | 704 | 0.5+ | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 12 15 | 704 | 0.0 | 0.2+ | 2004 04 23 | 704 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2001 12 15 | 704 | 0.1− | 0.3+ | 2004 04 23 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | (0.6+ | 2.4−) |
| 2001 12 18 | 704 | 0.7− | 0.4+ | 2004 04 23 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.1− |
| 2001 12 18 | 704 | 0.3− | 0.8+ | 2004 04 26 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2004 04 26 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 1.0− | 0.3− |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2004 04 26 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.4− | 1.0− |
| 2001 12 19 | 704 | 0.1− | 0.4+ | 2004 05 01 | 703 | (2.1− | 0.5+) | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2001 12 19 | 704 | 0.7+ | 0.2+ | 2004 05 01 | 703 | 0.3+ | 1.2− | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2004 05 01 | 703 | 1.0− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.8− | 2004 05 01 | 703 | 0.7− | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 2002 01 14 | 704 | 0.1+ | 0.2− | 2004 05 08 | 941 | 0.5+ | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2002 01 14 | 704 | 0.1− | 0.1− | 2004 05 08 | 941 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 2002 01 14 | 704 | 0.0 | 0.1+ | 2004 05 08 | 941 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.3− | 0.9+ |
| 2002 01 14 | 704 | 0.4− | 0.3+ | 2005 08 07 | E12 | 0.3− | 1.0+ | 2006 11 13 | 703 | 1.4− | 0.3− |
| 2002 01 14 | 704 | 0.2− | 0.0 | 2005 08 07 | E12 | 0.1− | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.9− |
| 2003 03 08 | 699 | 0.1+ | 0.1+ | 2005 08 07 | E12 | 0.0 | 0.5+ | 2006 11 13 | 703 | (1.9+ | 2.0−) |
| 2003 03 08 | 699 | 0.0 | 0.5− | 2005 08 07 | E12 | 0.6+ | 0.1− | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2003 03 08 | 699 | 0.0 | 0.0 | 2005 08 08 | E12 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.1− |
| 2003 03 08 | 699 | 0.4+ | 0.9− | 2005 08 08 | E12 | 0.8+ | 0.7+ | 2006 11 19 | 703 | 0.8+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 644 | 0.3+ | 0.7+ | 2005 08 08 | E12 | 0.2− | 0.5+ | 2006 11 19 | 703 | 0.5+ | 0.2+ |
| 2003 03 08 | 644 | 0.5+ | 0.6+ | 2005 08 08 | E12 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2003 03 08 | 644 | 0.5+ | 0.5+ | 2005 08 13 | E12 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2004 03 18 | 291 | 0.2− | 0.1+ | 2005 08 13 | E12 | 0.6− | 0.6+ | 2006 11 24 | G96 | 0.4+ | 0.2+ |
| 2004 03 18 | 291 | 0.5− | 0.0 | 2005 08 13 | E12 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.5+ | 0.3+ |

**(141232)∗ 2001 XY$_{236}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.95733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21323940 | $\omega$ | 83.47187 | | +0.53744132 | −0.84324452 | |
| $a$ | 2.7747535 | $\Omega$ | 334.01114 | | +0.76463248 | +0.49216018 | |
| $e$ | 0.0996321 | $i$ | 1.27797 | | +0.35565996 | +0.21614125 | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 09 | 691 | 0.5− | 0.4− | 2001 12 19 | 704 | 0.7+ | 0.3+ | 2005 11 29 | G96 | 0.8− | 0.4+ |
| 1991 09 09 | 691 | 0.2+ | 0.1− | 2002 01 14 | 704 | (1.9− | 0.1+) | 2005 11 29 | G96 | 0.9− | 0.5+ |
| 1991 09 09 | 691 | 0.1− | 0.2+ | 2002 01 14 | 704 | (1.6− | 0.8+) | 2005 11 29 | G96 | 0.5− | 0.1− |
| 2000 09 04 | 691 | 0.2− | 0.2+ | 2002 01 14 | 704 | (1.5− | 0.8+) | 2005 12 04 | G96 | 0.4+ | 0.4+ |
| 2000 09 04 | 691 | 0.2− | 0.0 | 2002 01 14 | 704 | 1.4− | 0.2+ | 2005 12 04 | G96 | 0.4− | 0.1+ |
| 2000 09 04 | 691 | 1.0+ | 0.4− | 2002 01 14 | 704 | 1.2− | 1.2+ | 2005 12 04 | G96 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 0.2+ | 0.5+ | 2003 03 24 | 691 | 0.1− | 0.3+ | 2005 12 04 | G96 | 0.3+ | 0.1+ |
| 2001 11 19 | 704 | 1.0+ | 0.3+ | 2003 03 24 | 691 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.6− | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.1+ | 2003 03 24 | 691 | 0.3− | 0.5+ | 2006 10 04 | G96 | 0.4− | 0.1− |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2003 04 07 | 691 | 0.6+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2001 12 14 | 291 | 0.3− | 0.1− | 2003 04 07 | 691 | 0.6+ | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.2− |
| 2001 12 14 | 291 | 0.5+ | 0.0 | 2003 04 07 | 691 | 0.9+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2001 12 14 | 291 | 0.3+ | 0.1− | 2003 04 24 | 691 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.4− | 0.0 |
| 2001 12 15 | 704 | 0.3− | 0.1− | 2003 04 24 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.4− | 0.5− |
| 2001 12 15 | 704 | 0.3+ | 0.9− | 2003 04 24 | 691 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2001 12 15 | 704 | (1.4− | 2.1−) | 2005 08 30 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2001 12 18 | 704 | 0.3+ | 0.2− | 2005 08 30 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2001 12 18 | 704 | 0.6+ | 0.2− | 2005 08 30 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.8− | 0.5− |
| 2001 12 18 | 704 | 0.3+ | 0.2+ | 2005 09 22 | 461 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2001 12 18 | 704 | 0.8+ | 0.1+ | 2005 09 22 | 461 | 0.7− | 0.1+ | 2006 11 28 | G96 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.2− | 2005 10 30 | G96 | 0.2− | 0.0 | 2006 11 28 | G96 | 0.3− | 0.1+ |
| 2001 12 19 | 704 | 0.6− | 0.1+ | 2005 10 30 | G96 | 0.5− | 0.0 | 2006 11 28 | G96 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2005 10 30 | G96 | 0.5− | 0.1+ | 2006 11 28 | G96 | 0.4− | 0.6+ |
| 2001 12 19 | 704 | 0.0 | 0.5+ | 2005 10 30 | G96 | 0.3− | 0.0 | | | | |
| 2001 12 19 | 704 | 0.2+ | 0.5+ | 2005 11 29 | G96 | 0.2+ | 1.1+ | | | | |

**(141233)∗ 2001 XC$_{237}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.27869 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18850441 | $\omega$ | 62.20954 | | −0.60966058 | −0.77876669 | |
| $a$ | 3.0124629 | $\Omega$ | 66.12799 | | +0.65846345 | −0.60135233 | |
| $e$ | 0.0341816 | $i$ | 9.29953 | | +0.44129339 | −0.17859961 | |
| $P$ | 5.23 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | (2.8− | 0.5+) | 2002 01 14 | 704 | 0.8+ | 1.1− | 2006 11 15 | 691 | 0.3− | 0.0 |
| 1998 04 24 | 704 | (2.0− | 2.2+) | 2002 01 14 | 704 | (0.2− | 1.6−) | 2006 11 17 | 704 | 0.8− | 1.0+ |
| 1998 04 24 | 704 | 1.2− | 0.9+ | 2003 02 28 | 704 | 0.4− | 0.9+ | 2006 11 17 | 704 | 0.3+ | 1.0+ |
| 1998 04 24 | 704 | 0.7+ | 0.3+ | 2003 02 28 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 704 | 1.4− | 0.0 |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2003 02 28 | 704 | 0.7− | 0.3+ | 2006 11 17 | 704 | (2.3+ | 0.3−) |
| 2001 11 21 | 704 | 0.3− | 0.2− | 2003 02 28 | 704 | 0.5+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2001 11 21 | 704 | 0.4− | 0.4+ | 2003 02 28 | 704 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 1.0− |
| 2001 11 21 | 704 | 0.3− | 1.2+ | 2003 03 27 | 049 | 0.2+ | 0.6− | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2001 12 15 | 704 | 0.7− | 0.2− | 2003 03 27 | 049 | 0.9+ | 0.6− | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2001 12 15 | 704 | 0.1+ | 0.1− | 2003 03 27 | 049 | 0.5+ | 0.3− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 1.1− | 0.4+ | 2005 07 29 | 644 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 12 15 | 704 | 0.6+ | 0.8− | 2005 07 29 | 644 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.9+ | 0.1− |
| 2001 12 18 | 704 | 1.2+ | 1.5+ | 2005 07 29 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.9+ |
| 2001 12 18 | 704 | (0.6+ | 1.8+) | 2005 08 28 | E12 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.8+ |
| 2001 12 18 | 704 | 0.3+ | 0.8+ | 2005 08 28 | E12 | 0.7+ | 1.0+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2001 12 18 | 704 | 0.7+ | 0.5+ | 2005 08 28 | E12 | (0.7+ | 1.7+) | 2006 11 21 | 704 | 0.7− | 0.9+ |
| 2001 12 18 | 704 | 0.7+ | 0.5− | 2005 08 28 | E12 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2001 12 19 | 703 | 0.3+ | 0.8+ | 2005 09 01 | 644 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2001 12 19 | 703 | 0.2+ | 0.7+ | 2005 09 01 | 644 | 0.4− | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.2− | 0.5+ | 2005 09 01 | 644 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 12 19 | 703 | 1.4+ | 0.7+ | 2006 10 19 | 695 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 12 19 | 703 | (1.0+ | 3.0−) | 2006 10 19 | 695 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.9+ | 0.1+ |
| 2001 12 19 | 704 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.1− | 0.3− |
| 2001 12 19 | 704 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.0 | 0.7+ |
| 2001 12 19 | 704 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.4− | 0.4− |
| 2001 12 19 | 704 | 0.3− | 0.5− | 2006 10 21 | G96 | 1.0− | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.4+ |
| 2001 12 19 | 704 | 0.2− | 0.4− | 2006 11 11 | 703 | (3.9+ | 1.1−) | 2006 11 29 | 704 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.5− | 0.2− |
| 2001 12 19 | 704 | 1.4− | 0.8− | 2006 11 11 | 703 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2002 01 14 | 704 | 0.5+ | 0.8− | 2006 11 11 | 703 | 0.7+ | 0.3− | 2006 11 29 | 704 | 0.4+ | 0.7− |
| 2002 01 14 | 704 | 0.6+ | 1.4− | 2006 11 15 | 691 | 0.1− | 0.1+ | | | | |
| 2002 01 14 | 704 | 0.3+ | 1.0− | 2006 11 15 | 691 | 0.0 | 0.1− | | | | |

**(141234)∗ 2001 XC$_{245}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.49036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18960024 | $\omega$ | 256.10064 | | +0.97687053 | +0.03957293 | |
| $a$ | 3.0008442 | $\Omega$ | 101.31757 | | +0.03736055 | +0.93602337 | |
| $e$ | 0.1427369 | $i$ | 12.37477 | | −0.21054254 | +0.34970593 | |
| $P$ | 5.20 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.6+ | 0.4+ | 2001 12 15 | 704 | 0.1+ | 0.9+ | 2004 03 28 | 703 | 0.7− | 0.6+ |
| 2000 07 07 | 704 | 0.3− | 1.3+ | 2001 12 15 | 704 | 0.7− | 0.8+ | 2004 03 28 | 703 | (0.2+ | 2.2+) |
| 2000 07 07 | 704 | 0.2− | 1.1+ | 2001 12 15 | 704 | 0.1− | 0.7+ | 2004 03 28 | 703 | 0.1+ | 1.4+ |
| 2001 08 20 | 644 | 0.9− | 0.6+ | 2001 12 19 | 704 | 0.8+ | 0.8+ | 2004 03 28 | 703 | 1.0+ | 0.4+ |
| 2001 08 20 | 644 | 0.6− | 0.6+ | 2001 12 19 | 704 | 0.0 | 1.0− | 2006 09 19 | 703 | 0.3− | 0.5+ |
| 2001 08 20 | 644 | 0.8− | 0.5+ | 2001 12 19 | 704 | 0.5− | 0.4− | 2006 09 19 | 703 | 0.1− | 0.9+ |
| 2001 09 17 | 699 | 0.8− | 0.1+ | 2001 12 19 | 704 | 0.5− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2001 09 17 | 699 | 0.4+ | 0.0 | 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.0 |
| 2001 09 17 | 699 | 0.3+ | 0.1+ | 2002 12 31 | 704 | (1.6+ | 0.8−) | 2006 09 25 | 699 | 0.8− | 0.2− |
| 2001 09 17 | 699 | 0.4− | 0.2− | 2002 12 31 | 704 | 0.7+ | 0.3− | 2006 09 25 | 699 | 0.6− | 0.7+ |
| 2001 10 14 | 699 | 0.6− | 0.1− | 2002 12 31 | 704 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.8+ | 0.8+ |
| 2001 10 14 | 699 | 0.0 | 0.1+ | 2003 01 05 | 699 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.4+ | 0.1+ |
| 2001 10 14 | 699 | 0.8+ | 0.3− | 2003 01 05 | 699 | 0.5+ | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2001 10 14 | 699 | 0.4+ | 0.0 | 2003 01 05 | 699 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2001 10 15 | 683 | 1.4+ | 0.9+ | 2003 01 05 | 699 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.3+ | 0.2− |
| 2001 10 15 | 683 | (1.7+ | 0.3−) | 2003 01 31 | 699 | 0.3− | 0.9+ | 2006 09 29 | 699 | 0.3+ | 0.8− |
| 2001 10 15 | 683 | 0.3+ | 0.4− | 2003 01 31 | 704 | 0.7− | 0.2+ | 2006 09 29 | 699 | 0.9− | 0.2− |
| 2001 10 16 | 704 | 0.2+ | 0.6+ | 2003 01 31 | 699 | 0.5+ | 1.3+ | 2006 09 29 | 699 | 0.2+ | 0.1+ |
| 2001 10 16 | 704 | 1.1− | 0.4+ | 2003 01 31 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.1− |
| 2001 10 16 | 704 | 0.8− | 0.0 | 2003 01 31 | 699 | 1.4− | 1.4+ | 2006 10 02 | 703 | 0.1+ | 0.1− |
| 2001 10 16 | 704 | 0.2− | 0.0 | 2003 01 31 | 704 | 0.4+ | 1.4− | 2006 10 02 | 703 | 0.2+ | 0.1− |
| 2001 10 16 | 704 | 0.3− | 0.3+ | 2003 01 31 | 699 | 0.6− | 0.2+ | 2006 10 02 | 703 | 0.3+ | 0.0 |
| 2001 10 21 | 683 | 0.5− | 0.8+ | 2003 02 02 | 644 | 0.4+ | 0.4− | 2006 10 02 | 703 | 0.1+ | 0.2− |
| 2001 10 21 | 683 | 0.6+ | 0.2+ | 2003 02 02 | 644 | 0.5+ | 1.2− | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2001 10 21 | 683 | (3.3+ | 1.2−) | 2003 02 02 | 644 | 0.7+ | 1.2− | 2006 10 10 | 644 | 0.1− | 0.3− |
| 2001 10 23 | 644 | 0.3− | 0.3+ | 2003 03 03 | 644 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.3− |
| 2001 10 23 | 644 | 0.3− | 0.3+ | 2003 03 03 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2001 10 23 | 644 | 0.2− | 0.4+ | 2003 03 03 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 11 07 | 644 | 0.0 | 0.6+ | 2003 03 07 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.4− |
| 2001 11 07 | 644 | 0.2− | 0.3+ | 2003 03 07 | 644 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2001 11 07 | 644 | 0.3− | 0.7+ | 2003 03 07 | 644 | 0.8+ | 0.2+ | 2006 10 31 | 703 | 0.3+ | 0.9+ |
| 2001 11 18 | 704 | 0.0 | 0.1+ | 2003 04 26 | 645 | 0.1− | 0.2− | 2006 10 31 | 703 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.8− | 0.2− | 2003 04 26 | 645 | 0.1− | 0.2− | 2006 10 31 | 703 | 0.8+ | 0.9+ | | |
| 2001 11 18 | 704 | 0.6+ | 0.4+ | 2004 03 21 | 691 | 0.3+ | 0.6+ | 2006 10 31 | 703 | 0.4− | 0.6+ | | |
| 2001 11 18 | 704 | 0.4+ | 0.3− | 2004 03 21 | 691 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.3− | 1.1− | | |
| 2001 12 07 | 704 | 0.3− | 0.0 | 2004 03 21 | 691 | 0.3+ | 0.7+ | 2006 11 17 | 703 | 0.2+ | 0.8− | | |
| 2001 12 07 | 704 | 0.4− | 0.1− | 2004 03 22 | 699 | 0.8+ | 0.8+ | 2006 11 17 | 703 | 0.2+ | 0.7− | | |
| 2001 12 07 | 704 | 0.2− | 1.0+ | 2004 03 22 | 699 | 0.0 | 0.6− | 2006 11 17 | 703 | 0.2+ | 0.4− | | |
| 2001 12 07 | 704 | 0.3− | 0.0 | 2004 03 22 | 699 | (0.5− | 1.8+) | | | | | | |
| 2001 12 15 | 704 | 0.3+ | 0.5+ | 2004 03 22 | 699 | (0.1− | 2.1+) | | | | | | |

**(141235)∗ 2001 XG$_{246}$ = 2000 QG$_{164}$**

Discovered 2001 Dec. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23296)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.19794 | | (2000.0) | | | |
| $n$ | 0.17280434 | $\omega$ | 218.71244 | | +0.68286154 | −0.73003039 |
| $a$ | 3.1922700 | $\Omega$ | 188.34858 | | +0.70850320 | +0.67096124 |
| $e$ | 0.1355106 | $i$ | 10.91406 | | +0.17811043 | +0.12987165 |
| $P$ | 5.70 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 18 | 691 | 0.6− | 0.6− | 2001 12 19 | 704 | 0.4− | 1.0+ | 2006 09 12 | 703 | 0.6− | 0.7− | | |
| 1993 05 18 | 691 | 0.3− | 0.3+ | 2001 12 19 | 704 | 0.4− | 0.9+ | 2006 09 12 | 703 | 0.4− | 0.4− | | |
| 1993 05 18 | 691 | 0.2+ | 0.2− | 2001 12 19 | 704 | 0.1− | 1.1+ | 2006 09 12 | 703 | 0.2− | 1.1− | | |
| 2000 08 31 | 704 | 0.7+ | 0.0 | 2003 03 06 | 699 | 0.6+ | 0.5+ | 2006 09 16 | 699 | 0.6+ | 0.1− | | |
| 2000 08 31 | 704 | 0.0 | 0.1+ | 2003 03 06 | 699 | 0.2− | 1.3+ | 2006 09 16 | 699 | 0.2+ | 0.7+ | | |
| 2000 08 31 | 704 | 0.2+ | 0.2+ | 2003 03 06 | 699 | 0.3+ | 1.2+ | 2006 09 16 | 699 | 0.2− | 0.2+ | | |
| 2000 08 31 | 704 | 0.6+ | 1.5+ | 2003 03 06 | 699 | 0.2+ | 0.6+ | 2006 09 16 | 699 | 0.1+ | 0.4+ | | |
| 2000 09 03 | 704 | 0.9+ | 0.2− | 2003 03 07 | 704 | 0.1− | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.3+ | | |
| 2000 09 03 | 704 | 0.0 | 0.1+ | 2003 03 07 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 704 | 1.1+ | 0.2− | | |
| 2000 09 03 | 704 | 0.4+ | 0.6+ | 2003 03 07 | 704 | 0.1− | 0.5+ | 2006 09 18 | 704 | 0.8+ | 0.5− | | |
| 2000 09 03 | 704 | 0.4+ | 0.2− | 2003 03 07 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.1+ | | |
| 2001 09 17 | 704 | 0.4+ | 0.6− | 2003 03 07 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 704 | 0.3− | 0.2− | | |
| 2001 09 17 | 704 | 1.1+ | 0.5− | 2004 04 22 | 704 | (2.2+ | 1.5+) | 2006 09 19 | 699 | 1.1+ | 0.1+ | | |
| 2001 09 17 | 704 | 0.2+ | 0.5− | 2004 04 22 | 704 | 1.5+ | 0.7− | 2006 09 19 | 703 | 0.1− | 0.4− | | |
| 2001 09 17 | 704 | 0.1− | 0.9− | 2004 04 22 | 704 | (2.0+ | 1.9+) | 2006 09 19 | 699 | 0.1+ | 0.5+ | | |
| 2001 09 17 | 704 | 1.1+ | 0.4− | 2004 04 22 | 704 | (2.0+ | 0.4−) | 2006 09 19 | 703 | 0.3+ | 0.4− | | |
| 2001 09 22 | 644 | 0.0 | 0.2+ | 2006 08 20 | 691 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.6− | | |
| 2001 09 22 | 644 | 0.2+ | 0.2+ | 2006 08 20 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.3− | | |
| 2001 09 22 | 644 | 0.1− | 0.3+ | 2006 08 20 | 691 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.9− | 1.2− | | |
| 2001 10 17 | 704 | 1.4+ | 0.6− | 2006 08 24 | 704 | (2.6− | 0.0 ) | 2006 09 19 | 699 | 0.5+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.0 | 0.5− | 2006 08 24 | 704 | (2.0− | 0.2−) | 2006 09 25 | 704 | 0.5− | 1.1+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.0 | 2006 08 24 | 704 | 0.8− | 1.0+ | 2006 09 25 | 704 | 0.5+ | 1.4+ | | |
| 2001 10 17 | 704 | 1.2+ | 0.2− | 2006 08 27 | 699 | 0.4+ | 1.0+ | 2006 09 25 | 699 | 0.4− | 0.0 | | |
| 2001 10 17 | 704 | 0.4+ | 0.4− | 2006 08 27 | 699 | 0.7+ | 0.3− | 2006 09 25 | 704 | 1.0+ | 0.6− | | |
| 2001 11 12 | 699 | 0.5+ | 0.4+ | 2006 08 27 | 699 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 1.2− | 0.2− | | |
| 2001 11 12 | 699 | 0.1− | 0.3− | 2006 08 28 | 704 | 0.8− | 0.4+ | 2006 09 25 | 699 | 1.0+ | 1.2+ | | |
| 2001 11 12 | 699 | 0.3− | 0.7− | 2006 08 28 | 704 | 1.1− | 0.8+ | 2006 09 25 | 704 | 0.6− | 0.1− | | |
| 2001 11 12 | 699 | 0.1− | 0.4+ | 2006 08 28 | 704 | 1.4− | 1.0− | 2006 09 25 | 699 | 0.2− | 0.4+ | | |
| 2001 11 13 | 608 | 0.1− | 0.7− | 2006 08 28 | 704 | 1.1− | 0.5+ | 2006 09 25 | 699 | 0.4+ | 0.4+ | | |
| 2001 11 13 | 608 | 0.0 | 0.7− | 2006 08 29 | 703 | 1.5+ | 0.9− | 2006 09 29 | 704 | 0.7− | 0.1+ | | |
| 2001 11 13 | 608 | 0.2+ | 1.1− | 2006 08 29 | 703 | 0.4+ | 0.7− | 2006 09 29 | 704 | 0.6+ | 0.6+ | | |
| 2001 11 21 | 608 | 0.4+ | 0.6− | 2006 08 29 | 703 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.5+ | 0.0 | | |
| 2001 11 21 | 608 | 0.6+ | 0.4− | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.0 | 0.1+ | | |
| 2001 11 21 | 608 | 0.2+ | 0.3− | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 1.1+ | 0.2+ | | |
| 2001 12 08 | 699 | 1.3− | 0.2− | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2001 12 08 | 699 | 0.6− | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− | | |
| 2001 12 08 | 699 | 0.5− | 0.3+ | 2006 08 30 | 704 | 0.8− | 0.8+ | 2006 10 20 | G96 | 0.1− | 0.6− | | |
| 2001 12 08 | 699 | 0.3+ | 0.3− | 2006 08 30 | 704 | 0.7+ | 0.9+ | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2001 12 15 | 704 | 0.1− | 0.5− | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.4− | 0.4− | | |
| 2001 12 15 | 704 | 1.4− | 0.1+ | 2006 09 01 | 704 | 1.0− | 0.2− | 2006 11 21 | G96 | 0.2− | 0.4− | | |
| 2001 12 15 | 704 | 0.1− | 0.5− | 2006 09 01 | 704 | 0.7− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2001 12 19 | 704 | 0.9− | 1.0+ | 2006 09 01 | 704 | 1.2− | 0.4+ | 2006 11 21 | G96 | 0.4− | 0.1− | | |
| 2001 12 19 | 704 | 1.1− | 1.1+ | 2006 09 12 | 703 | 0.4− | 0.2− | | | | | | |

**(141236)∗ 2001 XA$_{248}$ = 2003 HS$_{12}$**

Discovered 2001 Dec. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69041)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.58280 | | (2000.0) | | | |
| $n$ | 0.17445921 | $\omega$ | 41.74935 | | −0.93532419 | −0.35194150 |
| $a$ | 3.1720507 | $\Omega$ | 117.61087 | | +0.31283860 | −0.87043196 |
| $e$ | 0.1025952 | $i$ | 2.33720 | | +0.16522912 | −0.34421706 |
| $P$ | 5.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 644 | 0.6+ | 0.8+ | 2003 04 27 | 699 | 0.5− | 1.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− | | |
| 2001 12 13 | 644 | 0.2+ | 0.9+ | 2003 04 27 | 699 | 0.6− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.1+ | | |
| 2001 12 13 | 644 | 0.3+ | 0.8+ | 2003 05 08 | 691 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.0 | | |
| 2001 12 17 | 704 | 0.6− | 0.3+ | 2003 05 08 | 691 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.0 | | |
| 2001 12 17 | 704 | 0.6− | 1.2+ | 2003 05 08 | 691 | 0.7+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.2− | | |
| 2001 12 17 | 704 | 0.4+ | 0.6+ | 2005 08 26 | 644 | 0.3− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.2+ | | |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2005 08 26 | 644 | 0.6+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.0 | | |
| 2001 12 18 | 644 | 0.3+ | 0.6+ | 2005 08 26 | 644 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.2+ | | |
| 2001 12 18 | 644 | 0.2+ | 0.6+ | 2005 08 30 | 691 | 0.1− | 1.0+ | 2006 11 12 | G96 | 0.2− | 0.2+ | | |
| 2001 12 18 | 644 | 0.0 | 0.5+ | 2005 08 30 | 691 | 0.0 | 0.6+ | 2006 11 12 | G96 | 0.7+ | 0.1+ | | |
| 2003 04 11 | 691 | 0.2− | 0.6+ | 2005 08 30 | 691 | 0.1− | 0.5+ | 2006 11 12 | G96 | 0.1− | 0.1− | | |
| 2003 04 11 | 691 | 0.6− | 0.4+ | 2005 09 14 | 691 | 0.7− | 0.5+ | 2006 11 12 | G96 | 0.3− | 0.3+ | | |
| 2003 04 11 | 691 | 0.1− | 0.9+ | 2005 09 14 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.2+ | | |
| 2003 04 24 | 691 | 0.2+ | 0.1− | 2005 09 14 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2+ | | |
| 2003 04 24 | 691 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.3+ | | |
| 2003 04 24 | 691 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1− | 1.0+ | | |
| 2003 04 27 | 699 | 1.2− | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.1− | | | | | | |
| 2003 04 27 | 699 | 0.0 | 0.8− | 2006 09 30 | G96 | 0.2+ | 0.0 | | | | | | |

**(141237)∗ 2001 XE$_{251}$ = 1995 OS$_{13}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23298)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.07608 | | (2000.0) | | | |
| $n$ | 0.19071484 | $\omega$ | 251.51117 | | +0.95235543 | −0.30247889 |
| $a$ | 2.9891409 | $\Omega$ | 126.07738 | | +0.29487695 | +0.88048677 |
| $e$ | 0.2003892 | $i$ | 2.77006 | | +0.07788916 | +0.36503364 |
| $P$ | 5.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.4− | 0.8− | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 1993 03 23 | 691 | 0.3− | 1.2− | 2005 06 08 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 1993 03 23 | 691 | 0.4− | 0.9− | 2005 06 08 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 1995 07 22 | 691 | 0.0 | 0.2− | 2005 06 28 | G96 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.4− | | |
| 1995 07 22 | 691 | 0.1+ | 0.1− | 2005 06 28 | G96 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.8+ | 0.3− | | |
| 1995 07 22 | 691 | 0.2+ | 0.3− | 2005 06 28 | G96 | 0.3+ | 0.7+ | 2006 11 17 | 704 | 0.7+ | 0.3− | | |
| 1995 07 27 | 691 | 0.3+ | 0.2− | 2005 06 28 | G96 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.2− | 1.3+ | | |
| 1995 07 27 | 691 | 0.2+ | 0.2− | 2005 07 07 | 701 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.4− | | |
| 1995 07 27 | 691 | 0.6+ | 0.1+ | 2005 07 07 | 701 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 1995 08 01 | 691 | 0.6− | 0.1+ | 2005 07 07 | 701 | (1.4+ | 2.4+) | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 1995 08 01 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.1− | | |
| 1995 08 01 | 691 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.9+ | 0.1− | | |
| 1998 02 23 | 691 | 0.8+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 1.1+ | 1.5− | | |
| 1998 02 23 | 691 | 0.2− | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.2− | | |
| 2001 12 14 | 704 | 0.0 | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.9− | | |
| 2001 12 14 | 704 | 0.5+ | 0.9+ | 2006 10 23 | G96 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.2− | 0.0 | | |
| 2001 12 14 | 704 | 0.2+ | 0.9+ | 2006 10 23 | G96 | 0.4− | 0.1− | 2006 11 24 | 691 | 0.2− | 0.1+ | | |
| 2001 12 14 | 704 | 0.6+ | 0.5+ | 2006 11 14 | 704 | 0.9+ | 0.6− | 2006 11 24 | 691 | 0.1− | 0.1− | | |
| 2001 12 20 | 704 | (0.2− | 1.5+) | 2006 11 14 | 704 | 0.2+ | 1.2− | 2006 11 29 | 704 | 0.2+ | 0.1+ | | |
| 2001 12 20 | 704 | (0.1+ | 2.6+) | 2006 11 14 | 704 | 0.2− | 0.0 | 2006 11 29 | 704 | 1.0+ | 0.3+ | | |
| 2001 12 20 | 704 | (0.2+ | 1.8+) | 2006 11 14 | 704 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.1− | 1.6+ | | |
| 2001 12 20 | 704 | (1.2− | 2.3+) | 2006 11 14 | 704 | 0.4+ | 0.5− | 2006 11 29 | 704 | 0.3+ | 0.5+ | | |
| 2002 01 15 | 704 | 0.8− | 0.4+ | 2006 11 14 | 704 | 0.4+ | 0.9− | 2006 11 29 | 704 | 0.4+ | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 15 | 704 | 0.3− | 0.3− | 2006 11 14 | 704 | 0.1− | 0.7− | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2002 01 15 | 704 | 0.8− | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2002 01 15 | 704 | (0.9− | 1.8−) | 2006 11 16 | 691 | 0.4− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2005 06 08 | 691 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2005 06 08 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1− | | | | |
| 2005 06 08 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.4− | | | | |

**(141238)∗ 2001 XG$_{251}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 292.42741 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17612989 | $\omega$ | 13.33856 | | −0.29920721 | | −0.94735597 | | |
| $a$ | 3.1519598 | $\Omega$ | 94.16198 | | +0.86462866 | | −0.31970855 | | |
| $e$ | 0.1467445 | $i$ | 6.56224 | | +0.40359922 | | −0.01740974 | | |
| $P$ | 5.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 26 | 691 | 0.4− | 0.4− | 2002 01 13 | 704 | 0.2+ | 0.2+ | 2003 04 08 | 644 | 0.8+ | 1.1+ |
| 1992 04 26 | 691 | 0.4− | 0.5+ | 2002 01 13 | 704 | 0.1− | 1.0+ | 2003 04 08 | 644 | 0.6+ | 1.0+ |
| 1992 04 26 | 691 | 0.1+ | 0.6+ | 2002 01 15 | 704 | 0.5+ | 0.6+ | 2003 04 09 | 704 | 0.5+ | 0.4+ |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2002 01 15 | 704 | 0.3+ | 0.7+ | 2003 04 09 | 704 | 1.4+ | 1.2+ |
| 2000 09 26 | 645 | 0.1+ | 0.0 | 2002 01 15 | 704 | 0.4+ | 0.8+ | 2003 04 09 | 704 | 0.8+ | 0.8+ |
| 2000 09 27 | 645 | 0.0 | 0.1+ | 2002 01 15 | 704 | 0.3+ | 0.8+ | 2003 04 09 | 704 | 1.0+ | 0.8− |
| 2000 09 27 | 645 | 0.1+ | 0.2+ | 2002 01 15 | 704 | 0.0 | 1.3+ | 2003 04 09 | 704 | (2.1+ | 0.5+) |
| 2000 11 27 | 645 | 0.0 | 0.1+ | 2002 01 19 | 704 | 0.1− | 0.1+ | 2005 09 01 | 644 | 0.2− | 0.6+ |
| 2000 11 27 | 645 | 0.1− | 0.0 | 2002 01 19 | 704 | 0.3+ | 0.5− | 2005 09 01 | 644 | 0.1+ | 0.5+ |
| 2001 11 21 | 704 | 0.6+ | 0.5+ | 2002 01 19 | 704 | 0.0 | 0.9− | 2005 09 01 | 644 | 0.2− | 0.7+ |
| 2001 11 21 | 704 | 1.0+ | 0.8+ | 2002 01 19 | 704 | (0.4− | 1.5−) | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.7+ | 0.1+ | 2002 01 21 | 704 | 1.0− | 0.1+ | 2006 09 30 | 703 | 0.8− | 1.1+ |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2002 01 21 | 704 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 2001 12 14 | 704 | 0.1− | 0.9− | 2002 01 21 | 704 | 0.6− | 0.8− | 2006 09 30 | 703 | 1.1− | 0.5− |
| 2001 12 14 | 704 | 0.2+ | 0.5− | 2002 01 21 | 704 | 0.8− | 1.1− | 2006 10 16 | 703 | 0.8− | 0.8− |
| 2001 12 14 | 704 | 0.1− | 0.6− | 2003 03 25 | 683 | (1.1+ | 1.7+) | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2001 12 14 | 704 | (1.8+ | 0.2−) | 2003 03 25 | 683 | (3.2+ | 1.7+) | 2006 10 16 | 703 | (0.3− | 1.8−) |
| 2001 12 20 | 704 | 0.1+ | 0.0 | 2003 03 25 | 683 | (2.4+ | 0.2−) | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2001 12 20 | 704 | 0.3− | 0.3+ | 2003 03 26 | 644 | (0.5+ | 1.8+) | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 12 20 | 704 | 0.3− | 0.6+ | 2003 03 26 | 644 | (0.8+ | 2.1+) | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 12 20 | 704 | 0.4− | 0.2+ | 2003 03 26 | 644 | (0.5+ | 1.8+) | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 12 21 | 704 | 0.3+ | 0.3− | 2003 03 27 | 699 | 0.0 | 0.8+ | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2001 12 21 | 704 | 0.5+ | 0.3− | 2003 03 27 | 699 | 0.7+ | 0.0 | 2006 10 28 | 703 | 1.1− | 1.1+ |
| 2001 12 21 | 704 | 0.3+ | 0.2− | 2003 03 27 | 699 | 0.6− | 0.5+ | 2006 10 28 | 703 | 1.1− | 0.7+ |
| 2001 12 21 | 704 | 0.2+ | 0.5− | 2003 03 27 | 699 | 0.1− | 1.0+ | 2006 10 28 | 703 | 1.2− | 1.1+ |
| 2002 01 08 | 704 | 0.2+ | 0.5+ | 2003 04 01 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 703 | 0.8− | 0.1+ |
| 2002 01 08 | 704 | 0.4+ | 0.2+ | 2003 04 01 | 704 | 0.1− | 1.4+ | 2006 11 13 | 703 | (1.9− | 0.8+) |
| 2002 01 08 | 704 | 0.2+ | 0.3+ | 2003 04 01 | 704 | 0.3+ | 0.3− | 2006 11 13 | 703 | (0.8− | 1.9+) |
| 2002 01 08 | 704 | 0.3+ | 0.1− | 2003 04 01 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 703 | 0.8− | 0.5+ |
| 2002 01 08 | 704 | 0.2− | 0.4− | 2003 04 03 | 683 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2002 01 13 | 704 | 0.1+ | 0.1+ | 2003 04 03 | 683 | 0.2− | 0.6− | 2006 11 24 | G96 | 0.4− | 0.4− |
| 2002 01 13 | 704 | 0.8+ | 0.1− | 2003 04 03 | 683 | (1.7+ | 0.9−) | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 01 13 | 704 | 1.3− | 0.3− | 2003 04 08 | 644 | 0.7+ | 1.4+ | 2006 11 24 | G96 | 0.1+ | 0.4− |

**(141239)∗ 2001 XQ$_{251}$ = 1997 CM$_{24}$ = 2000 QO$_{196}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23299)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 18.33441 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18303665 | $\omega$ | 240.15135 | | +0.97867041 | | −0.19812085 | | |
| $a$ | 3.0721612 | $\Omega$ | 131.21858 | | +0.20442707 | | +0.91299123 | | |
| $e$ | 0.1999948 | $i$ | 4.14239 | | +0.02034210 | | +0.35664427 | | |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 09 | 691 | 0.3− | 0.7− | 2002 01 09 | 704 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 1997 02 09 | 691 | 0.6− | 0.7− | 2002 01 15 | 704 | 0.3− | 0.8+ | 2006 11 14 | 704 | 0.1− | 0.0 |
| 1997 02 09 | 691 | 0.5− | 0.6− | 2002 01 15 | 704 | 1.2+ | 1.1− | 2006 11 14 | 704 | 0.0 | 0.0 |
| 1997 02 14 | 691 | 0.0 | 0.2− | 2002 01 15 | 704 | 1.2+ | 1.2− | 2006 11 14 | 704 | 0.5− | 1.1+ |
| 1997 02 14 | 691 | 0.2+ | 0.4− | 2002 01 15 | 704 | 1.1+ | 0.6− | 2006 11 14 | 704 | 0.1+ | 0.2+ |
| 1998 03 22 | 691 | 0.3+ | 0.6− | 2002 01 22 | 704 | 0.7+ | 0.3− | 2006 11 15 | 683 | 0.3+ | 0.4+ |
| 1998 03 22 | 691 | 0.3+ | 0.2− | 2002 01 22 | 704 | 0.9+ | 0.8+ | 2006 11 15 | 683 | 0.7+ | 0.7+ |
| 1998 03 22 | 691 | 0.5+ | 0.5− | 2002 01 22 | 704 | 0.6+ | 0.1− | 2006 11 17 | 704 | 0.7− | 0.0 |
| 2000 08 29 | 704 | 0.8+ | 0.1− | 2003 03 23 | 645 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.6− | 0.2− |
| 2000 08 29 | 704 | 0.1+ | 0.2+ | 2003 03 23 | 645 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2000 08 29 | 704 | 0.3− | 0.4+ | 2003 03 31 | 645 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.6+ |
| 2000 08 29 | 704 | 0.1− | 0.6+ | 2003 03 31 | 645 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.6− | 0.6+ |
| 2000 09 05 | 704 | 0.0 | 0.2+ | 2006 08 29 | 703 | (0.8− | 2.0−) | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2000 09 05 | 704 | 0.6− | 0.4− | 2006 08 29 | 703 | 1.3− | 1.2− | 2006 11 19 | 704 | 0.7+ | 1.0− |
| 2000 09 05 | 704 | 0.7− | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2000 09 05 | 704 | 0.6− | 0.5+ | 2006 08 29 | 703 | (2.3− | 1.6−) | 2006 11 19 | 704 | 0.3− | 0.7− |
| 2000 09 05 | 704 | 0.7− | 1.3+ | 2006 09 17 | G92 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.8+ | 1.1+ |
| 2001 11 20 | 704 | 0.3− | 0.1− | 2006 09 17 | G92 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2001 11 20 | 704 | (0.4+ | 1.5−) | 2006 09 17 | G92 | 1.3− | 0.6+ | 2006 11 20 | 704 | 0.6+ | 0.5+ |
| 2001 11 20 | 704 | 0.7+ | 0.7− | 2006 10 27 | 704 | 0.4− | 0.3− | 2006 11 20 | 704 | 1.2− | 0.5+ |
| 2001 11 20 | 704 | 0.8+ | 0.5− | 2006 10 27 | 704 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2001 12 14 | 704 | 0.3− | 0.2− | 2006 10 27 | 704 | 0.7+ | 0.8+ | 2006 11 20 | 704 | 0.8− | 1.5+ |
| 2001 12 14 | 704 | 0.3− | 0.4+ | 2006 11 02 | 703 | 0.7− | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.7+ |
| 2001 12 14 | 704 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.6+ | 1.1+ |
| 2001 12 20 | 704 | 0.2− | 0.7+ | 2006 11 02 | 703 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.5− | 1.1+ |
| 2001 12 20 | 704 | 0.8− | 0.7+ | 2006 11 02 | 703 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.3− | 0.5+ |
| 2001 12 20 | 704 | 0.5− | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.4− | 2006 11 22 | 683 | 0.3+ | 0.4+ |
| 2001 12 20 | 704 | 0.3− | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 22 | 683 | (1.0− | 1.8+) |
| 2002 01 08 | 012 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 22 | 683 | (1.9− | 0.5+) |
| 2002 01 08 | 012 | 1.1− | 0.4− | 2006 11 10 | 683 | (2.2+ | 1.0−) | 2006 11 28 | 683 | 0.4+ | 0.3+ |
| 2002 01 08 | 012 | 0.1+ | 0.9− | 2006 11 10 | 683 | (2.5+ | 0.6−) | 2006 11 28 | 683 | (0.8+ | 1.8+) |
| 2002 01 08 | 012 | 0.3− | 0.0 | 2006 11 10 | 683 | (2.2+ | 0.5−) | 2006 11 28 | 683 | 0.1+ | 0.8+ |
| 2002 01 08 | 012 | 0.2− | 0.3− | 2006 11 13 | 683 | 0.3− | 1.3− | 2006 11 28 | 704 | 0.6+ | 1.3+ |
| 2002 01 08 | 012 | 0.5− | 0.5− | 2006 11 13 | 683 | 0.4− | 0.9− | 2006 11 28 | 704 | 0.2+ | 0.9+ |
| 2002 01 08 | 012 | 0.3+ | 0.3+ | 2006 11 13 | 683 | 1.0− | 0.7− | 2006 11 28 | 704 | 0.5+ | 0.6+ |
| 2002 01 08 | 012 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.8+ | 1.1− | 2006 11 28 | 704 | 0.8+ | 0.6+ |
| 2002 01 09 | 704 | 0.6+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.5− | 2006 11 28 | 704 | 0.7+ | 0.9+ |
| 2002 01 09 | 704 | 0.4+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.5− | | | | |
| 2002 01 09 | 704 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.2− | | | | |

**(141240)∗ 2001 XQ$_{252}$**

Discovered 2001 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 314.89277 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17560195 | $\omega$ | 278.37572 | | +0.11248815 | | −0.99364060 | | |
| $a$ | 3.1582742 | $\Omega$ | 165.16276 | | +0.91913648 | | +0.10214807 | | |
| $e$ | 0.1749222 | $i$ | 1.11361 | | +0.37753747 | | +0.04737219 | | |
| $P$ | 5.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 807 | 0.1− | 0.1+ | 2005 07 03 | G96 | 1.4− | 1.1+ | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2000 08 28 | 807 | 0.0 | 0.1+ | 2005 07 03 | G96 | 0.1+ | 0.7+ | 2006 10 21 | 703 | 0.7− | 0.0 |
| 2001 12 14 | 704 | 0.4− | 0.3+ | 2006 07 21 | G96 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 1.5− | 0.4− |
| 2001 12 14 | 704 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.1− | 0.6+ | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 12 20 | 704 | 0.1+ | 0.2− | 2006 07 21 | G96 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 12 20 | 704 | 0.7− | 0.3+ | 2006 09 18 | 691 | (0.8+ | 1.5+) | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 12 20 | 704 | 1.1− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2002 01 09 | 704 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.6+ |
| 2002 01 09 | 704 | 0.8+ | 1.4− | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 01 09 | 704 | 0.7+ | 1.3− | 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 01 13 | 704 | 0.0 | 0.2− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 01 13 | 704 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 07 | 644 | 0.3− | 0.3+ |
| 2002 01 13 | 704 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.7+ | 2006 11 07 | 644 | 0.3− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 15 | 704 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 07 | 644 | 0.6− | 0.1+ | | |
| 2002 01 15 | 704 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.8+ | | |
| 2002 01 15 | 704 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | (0.9+ | 1.6−) | | |
| 2003 04 07 | 291 | 0.3+ | 0.6+ | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 1.4− | 0.3+ | | |
| 2003 04 07 | 291 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.8− | 1.4− | | |
| 2003 04 07 | 291 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2003 04 09 | 291 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.4− | 0.3− | | |
| 2003 04 09 | 291 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2003 04 09 | 291 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.5− | | |
| 2003 04 30 | 691 | 0.7+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.5+ | | |
| 2003 04 30 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.0 | | |
| 2003 04 30 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.0 | | |
| 2005 07 03 | G96 | 0.0 | 1.0+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | | | | | | |
| 2005 07 03 | G96 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.2− | | | | | | |

**(141241)∗ 2001 XK$_{256}$ = 2003 DA$_{20}$**

Discovered 2001 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43213)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.80740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17448247 | $\omega$ | 289.15091 | | −0.11083126 | −0.99312508 | |
| $a$ | 3.1717688 | $\Omega$ | 167.03885 | | +0.96324554 | −0.11667445 | |
| $e$ | 0.0784301 | $i$ | 9.66869 | | +0.24469258 | +0.00946837 | |
| $P$ | 5.65 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 13 | 608 | 0.5− | 0.5− | 2003 02 23 | 699 | 0.3+ | 0.6− | 2004 06 09 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 13 | 608 | 0.3− | 0.1+ | 2003 02 23 | 699 | 0.2+ | 0.1+ | 2004 06 09 | 691 | 0.2+ | 0.5+ | | |
| 2001 11 13 | 608 | 0.5− | 1.1− | 2003 02 23 | 699 | 0.4+ | 0.4− | 2004 06 16 | 691 | 0.1− | 0.1− | | |
| 2001 12 07 | 704 | 0.9+ | 0.9+ | 2003 02 23 | 699 | 0.2− | 0.2+ | 2004 06 16 | 691 | 0.2− | 0.2+ | | |
| 2001 12 07 | 704 | 0.3− | 1.0+ | 2003 02 23 | 699 | 0.5+ | 0.1+ | 2004 06 16 | 691 | 0.1+ | 0.4+ | | |
| 2001 12 07 | 704 | 0.0 | 0.8+ | 2003 02 23 | 699 | 0.8+ | 0.7+ | 2005 06 06 | 691 | 0.2− | 0.5+ | | |
| 2001 12 07 | 704 | 0.0 | 0.2+ | 2003 02 23 | 699 | 0.8+ | 0.3− | 2005 06 06 | 691 | 0.1− | 0.1+ | | |
| 2001 12 07 | 704 | 0.7+ | 1.0+ | 2003 02 23 | 699 | 0.3− | 0.5+ | 2005 06 06 | 691 | 0.1− | 0.4+ | | |
| 2001 12 08 | 699 | 0.4− | 0.1+ | 2003 02 28 | 608 | 0.5+ | 0.8+ | 2005 06 11 | 691 | 0.1+ | 0.3+ | | |
| 2001 12 08 | 699 | 0.5− | 1.3+ | 2003 02 28 | 608 | 0.8+ | 1.0+ | 2005 06 11 | 691 | 0.0 | 0.4+ | | |
| 2001 12 08 | 699 | 0.5+ | 0.4− | 2003 02 28 | 608 | 0.9+ | 0.7+ | 2005 06 11 | 691 | 0.1− | 0.2+ | | |
| 2001 12 08 | 699 | (1.8− | 1.6+) | 2003 03 05 | 704 | 0.6− | 0.0 | 2006 09 12 | 703 | 0.5+ | 0.3+ | | |
| 2001 12 19 | 704 | 0.1− | 0.1+ | 2003 03 05 | 704 | 0.6+ | 0.8+ | 2006 09 12 | 703 | 0.8− | 0.1− | | |
| 2001 12 19 | 704 | 0.6− | 1.0+ | 2003 03 05 | 704 | 0.2− | 0.1+ | 2006 09 12 | 703 | 0.5− | 1.0− | | |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2003 03 06 | 699 | 0.0 | 1.2+ | 2006 09 12 | 703 | 0.9+ | 0.0 | | |
| 2001 12 19 | 704 | 0.1− | 1.4+ | 2003 03 06 | 699 | 0.4+ | 0.4− | 2006 09 28 | 704 | 0.4− | 0.6+ | | |
| 2003 01 28 | 704 | 0.9+ | 0.6+ | 2003 03 06 | 699 | 0.1− | 0.3− | 2006 09 28 | 704 | 0.2+ | 0.8+ | | |
| 2003 01 28 | 704 | 0.5− | 0.5− | 2003 03 06 | 699 | 0.6+ | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.5+ | | |
| 2003 01 28 | 704 | 0.3− | 0.7+ | 2003 03 06 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.1+ | 0.2+ | | |
| 2003 01 28 | 704 | 0.8− | 1.1+ | 2003 03 06 | 644 | 0.4+ | 0.7+ | 2006 09 30 | 704 | 0.7+ | 1.0+ | | |
| 2003 02 03 | 699 | 0.2− | 0.3+ | 2003 03 06 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.1+ | | |
| 2003 02 03 | 699 | 0.3+ | 0.2+ | 2003 03 14 | 608 | 0.6+ | 0.4+ | 2006 10 19 | 644 | 0.5− | 0.7+ | | |
| 2003 02 03 | 699 | 0.3− | 0.1− | 2003 03 14 | 608 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2003 02 03 | 699 | 0.9+ | 0.0 | 2003 03 14 | 608 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.9− | 0.6+ | | |
| 2003 02 22 | 644 | 0.4+ | 0.7+ | 2003 03 31 | 645 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.6+ | | |
| 2003 02 22 | 644 | 0.3+ | 0.4+ | 2003 03 31 | 645 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.6+ | | |
| 2003 02 22 | 644 | 0.4+ | 0.6+ | 2004 06 09 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.2+ | | |

**(141242)∗ 2001 XV$_{257}$**

Discovered 2001 Dec. 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.12898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19227340 | $\omega$ | 193.90957 | | −0.50858781 | −0.83675031 | |
| $a$ | 2.9729658 | $\Omega$ | 287.00934 | | +0.80886718 | −0.38354516 | |
| $e$ | 0.1141682 | $i$ | 12.25308 | | +0.29508022 | −0.39082226 | |
| $P$ | 5.13 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.2− | 0.4+ | 2003 01 28 | 704 | 0.4− | 0.8+ | 2005 08 05 | 644 | 0.1− | 1.1+ | | |
| 2001 10 15 | 704 | 0.5− | 0.5+ | 2003 01 28 | 704 | 0.7− | 0.1+ | 2005 08 05 | 644 | 0.3− | 0.8+ | | |
| 2001 10 15 | 704 | 0.3− | 0.4− | 2003 01 28 | 704 | 0.2+ | 1.2+ | 2006 09 17 | 703 | 0.7− | 0.2− | | |
| 2001 10 15 | 704 | 0.3− | 0.1− | 2003 02 03 | 699 | 0.6− | 0.1− | 2006 09 17 | 703 | 1.4+ | 0.4− | | |
| 2001 10 15 | 704 | 0.3− | 0.5− | 2003 02 03 | 699 | 0.0 | 0.2+ | 2006 09 17 | 703 | (1.5+ | 0.0 ) | | |
| 2001 11 11 | 704 | 0.9+ | 0.3+ | 2003 02 03 | 699 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.6− | 1.1+ | | |
| 2001 11 11 | 704 | 0.4+ | 0.6+ | 2003 02 03 | 699 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.2+ | | |
| 2001 11 11 | 704 | 0.2+ | 0.1+ | 2003 02 04 | 608 | 0.6+ | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.8+ | | |
| 2001 11 11 | 704 | (1.9− | 0.5−) | 2003 02 04 | 608 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.0 | 0.4+ | | |
| 2001 12 07 | 644 | 0.4− | 0.8+ | 2003 02 04 | 608 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.8+ | | |
| 2001 12 07 | 644 | 0.0 | 0.8+ | 2003 02 09 | 608 | 0.2− | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2001 12 07 | 644 | 0.4− | 0.7+ | 2003 02 09 | 608 | 0.2+ | 1.0+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 10 | 704 | 0.3+ | 0.4+ | 2003 02 09 | 608 | 0.2− | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2001 12 10 | 704 | 0.0 | 0.4− | 2003 02 24 | 608 | 0.5+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.3− | | |
| 2001 12 10 | 704 | 0.6− | 0.6− | 2003 02 24 | 608 | 0.6+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 14 | 704 | 0.3+ | 1.0+ | 2003 02 24 | 608 | 0.2+ | 0.9− | 2006 10 12 | 644 | 0.4+ | 0.5+ | | |
| 2001 12 14 | 704 | 0.7+ | 1.2+ | 2003 02 24 | 240 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.3− | 0.6− | | |
| 2001 12 14 | 704 | 0.2+ | 0.1− | 2003 02 24 | 240 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.0 | | |
| 2001 12 14 | 704 | (2.0− | 0.2+) | 2003 02 24 | 240 | 0.2− | 0.7+ | 2006 10 19 | 703 | 0.8− | 0.0 | | |
| 2002 01 08 | 704 | 0.3+ | 0.1+ | 2003 03 07 | 683 | (0.5+ | 1.9+) | 2006 10 19 | 703 | 0.6− | 0.2+ | | |
| 2002 01 08 | 704 | 0.1− | 0.1+ | 2003 03 07 | 683 | (1.9+ | 0.4+) | 2006 10 19 | 703 | 0.4+ | 0.1− | | |
| 2002 01 08 | 704 | 0.1− | 0.1− | 2003 03 07 | 683 | (1.7+ | 0.4−) | 2006 10 19 | 703 | 0.4+ | 0.3− | | |
| 2002 01 08 | 704 | 0.8− | 0.3− | 2003 03 08 | 699 | 1.5+ | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.5+ | | |
| 2002 01 08 | 704 | 0.8− | 1.3− | 2003 03 08 | 699 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.1+ | | |
| 2002 12 30 | 608 | 0.4+ | 1.0+ | 2003 03 08 | 699 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.1− | 0.6− | | |
| 2002 12 30 | 608 | 0.4+ | 0.8+ | 2003 03 08 | 699 | 0.3− | 0.8+ | 2006 10 19 | 703 | 0.5− | 0.2− | | |
| 2002 12 30 | 608 | 0.3+ | 0.1+ | 2003 03 09 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.4+ | | |
| 2003 01 07 | 704 | 1.1+ | 0.5+ | 2003 03 09 | 704 | 0.2+ | 0.7− | 2006 10 19 | 703 | 0.2+ | 0.2− | | |
| 2003 01 07 | 704 | 0.4+ | 0.9+ | 2003 03 09 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.9+ | 0.3− | 2003 03 09 | 704 | 0.7+ | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2003 01 07 | 704 | 0.7+ | 1.1+ | 2003 03 09 | 704 | 0.9+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2003 01 07 | 704 | 1.0+ | 1.0+ | 2005 05 19 | G96 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.8− | 0.3− | | |
| 2003 01 08 | 704 | (0.2+ | 1.6+) | 2005 05 19 | G96 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.0 | 0.3− | | |
| 2003 01 08 | 704 | 0.1+ | 1.0+ | 2005 05 19 | G96 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.6− | | |
| 2003 01 08 | 704 | 0.5− | 1.4+ | 2005 05 19 | G96 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.1− | | |
| 2003 01 10 | 683 | 0.7+ | 0.3+ | 2005 06 28 | 644 | 0.5− | 0.7+ | 2006 11 15 | 703 | 0.6− | 0.8− | | |
| 2003 01 10 | 683 | 0.8+ | 0.2− | 2005 06 28 | 644 | 0.3− | 0.8+ | 2006 11 15 | 703 | 0.2− | 0.1− | | |
| 2003 01 10 | 683 | 0.7− | 0.6− | 2005 06 28 | 644 | 0.3− | 1.0+ | 2006 11 15 | 703 | 0.6+ | 0.3− | | |
| 2003 01 11 | 683 | 0.2+ | 0.6+ | 2005 07 01 | 691 | 0.3− | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.2− | | |
| 2003 01 11 | 683 | 0.1− | 0.1− | 2005 07 01 | 691 | 0.0 | 0.8+ | 2006 11 22 | 703 | 0.3+ | 0.2+ | | |
| 2003 01 16 | 644 | 0.1+ | 0.1− | 2005 07 01 | 691 | 0.5− | 0.6+ | 2006 11 22 | 703 | 0.1− | 0.6− | | |
| 2003 01 16 | 644 | 0.1+ | 0.4+ | 2005 07 05 | 644 | 0.3− | 0.6+ | 2006 11 22 | 703 | 1.0+ | 0.5+ | | |
| 2003 01 16 | 644 | 0.2− | 0.9+ | 2005 07 05 | 644 | 0.3− | 0.5+ | 2006 11 22 | 703 | 0.6+ | 0.7− | | |
| 2003 01 25 | 644 | 0.2− | 0.0 | 2005 07 05 | 644 | 0.0 | 0.7+ | 2006 11 23 | 703 | 0.7+ | 0.2+ | | |
| 2003 01 25 | 644 | 0.4− | 0.1+ | 2005 07 27 | 644 | 0.6− | 0.9+ | 2006 11 23 | 703 | 0.3− | 0.2+ | | |
| 2003 01 25 | 644 | 0.2− | 0.1− | 2005 07 27 | 644 | 0.6− | 0.6+ | 2006 11 23 | 703 | 0.2+ | 1.2+ | | |
| 2003 01 28 | 704 | 0.4− | 0.0 | 2005 07 27 | 644 | 0.4− | 0.7+ | 2006 11 23 | 703 | 0.3− | 0.2+ | | |
| 2003 01 28 | 704 | 0.1+ | 0.4+ | 2005 08 05 | 644 | 0.2− | 0.7+ | | | | | | |

**(141243)∗ 2001 XA$_{258}$**

Discovered 2001 Dec. 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.93025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18043609 | $\omega$ | 133.95477 | | −0.94730558 | −0.23243099 | |
| $a$ | 3.1016094 | $\Omega$ | 34.42773 | | +0.03000215 | −0.74947459 | |
| $e$ | 0.2504794 | $i$ | 22.94723 | | +0.31892321 | −0.61989005 | |
| $P$ | 5.46 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.4− | 0.3+ | 2003 02 04 | 699 | 0.1+ | 0.0 | 2004 06 09 | E12 | 0.1− | 0.9+ | | |
| 2001 08 22 | 704 | 0.6− | 0.0 | 2003 02 04 | 699 | 0.4− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.0 | | |
| 2001 08 22 | 704 | 0.4+ | 0.8− | 2003 02 04 | 699 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.3− | | |
| 2001 10 14 | 704 | 0.3− | 0.9− | 2003 02 07 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.5− | | |
| 2001 10 14 | 704 | 1.2+ | 1.3− | 2003 02 07 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 1.0+ | 0.2− | | |
| 2001 10 14 | 704 | 0.2+ | 0.4− | 2003 02 07 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4+ | | |
| 2001 10 14 | 704 | 0.4+ | 0.4− | 2003 02 07 | 704 | 0.1− | 1.0+ | 2006 09 30 | 703 | 0.1+ | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1− | 0.0 | 2003 02 26 | 704 | 1.1− | 0.5+ | 2006 09 30 | 703 | 1.1− | 1.1+ | | |
| 2001 11 11 | 699 | 0.8+ | 0.3− | 2003 02 26 | 704 | 1.2− | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.3+ | | |
| 2001 11 11 | 704 | 0.3+ | 1.1− | 2003 02 26 | 704 | 1.1− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1− | | |
| 2001 11 11 | 704 | 0.1+ | 0.7− | 2003 02 26 | 704 | 0.8− | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.1− | | |
| 2001 11 11 | 699 | 0.3− | 0.1+ | 2003 03 14 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1− | | |
| 2001 11 11 | 704 | 0.1− | 1.3− | 2003 03 14 | 704 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.2− | 0.0 | | |
| 2001 11 11 | 699 | 0.1+ | 0.5− | 2003 03 14 | 704 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2001 11 11 | 704 | 0.2+ | 1.0− | 2003 03 30 | 333 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2001 11 11 | 699 | 0.0 | 0.4− | 2003 03 30 | 333 | 0.5− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2001 11 11 | 644 | 0.1+ | 0.2+ | 2003 03 30 | 333 | 0.3− | 0.2− | 2006 10 15 | 703 | 0.7+ | 0.2+ | | |
| 2001 11 11 | 644 | 0.1− | 0.2− | 2003 03 30 | 333 | 0.3− | 0.4+ | 2006 10 15 | 703 | 0.1− | 0.9+ | | |
| 2001 11 11 | 644 | 0.1+ | 0.2+ | 2003 04 01 | 699 | 0.5− | 0.1+ | 2006 10 15 | 703 | (1.4− | 2.0+) | | |
| 2001 12 07 | 644 | 0.2− | 0.0 | 2003 04 01 | 699 | 0.6− | 0.0 | 2006 10 15 | 703 | 0.0 | 0.4− | | |
| 2001 12 07 | 644 | 0.2− | 0.2− | 2003 04 01 | 699 | 0.7− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.2+ | | |
| 2001 12 07 | 644 | 0.4− | 0.4− | 2003 04 01 | 699 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.3− | 0.4+ | | |
| 2001 12 10 | 704 | 0.1− | 0.5+ | 2003 04 10 | 704 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3+ | | |
| 2001 12 10 | 704 | 0.4− | 0.8+ | 2003 04 10 | 704 | 0.8+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.1+ | | |
| 2001 12 10 | 704 | 0.8+ | 0.2+ | 2003 04 10 | 704 | 0.5+ | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.0 | | |
| 2001 12 10 | 704 | 1.3+ | 1.3+ | 2003 04 10 | 704 | 0.9+ | 0.7− | 2006 10 31 | G96 | 0.2− | 0.1+ | | |
| 2001 12 18 | 699 | 0.7− | 1.3+ | 2003 04 10 | 704 | 0.7+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2001 12 18 | 699 | 0.0 | 0.5+ | 2003 04 24 | 704 | 0.7+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.2+ | | |
| 2001 12 18 | 699 | 0.7+ | 0.3− | 2003 04 24 | 704 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.9+ | | |
| 2001 12 18 | 699 | 1.4+ | 0.1+ | 2003 04 24 | 704 | (1.9− | 1.4+) | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 2002 02 10 | 704 | 0.8− | 0.2+ | 2003 04 24 | 704 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.5+ | | |
| 2002 02 10 | 704 | 0.5− | 0.2+ | 2003 04 24 | 704 | 0.8+ | 0.3− | 2006 11 11 | 703 | 0.7+ | 1.3+ | | |
| 2002 02 10 | 704 | 0.6+ | 0.3− | 2003 05 03 | 608 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.0 | | |
| 2002 02 10 | 704 | 0.8− | 0.2+ | 2003 05 03 | 608 | 0.4− | 0.4− | 2006 11 11 | 703 | 1.1− | 0.8+ | | |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2003 05 03 | 608 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.8− | 0.2− | | |
| 2002 12 14 | 704 | 0.4− | 0.5− | 2003 05 15 | 608 | 0.1+ | 0.8− | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2002 12 14 | 704 | 0.6+ | 0.1+ | 2003 05 15 | 608 | 0.2+ | 1.0− | 2006 11 16 | G96 | 0.1− | 0.0 | | |
| 2002 12 14 | 704 | 0.3+ | 0.1− | 2003 05 15 | 608 | 0.6+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2002 12 14 | 704 | 0.7+ | 0.2− | 2003 06 02 | 704 | 0.8+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2003 01 11 | 704 | 0.2− | 1.4+ | 2003 06 02 | 704 | 0.7+ | 0.3+ | 2006 11 17 | 703 | (2.2+ | 0.6+) | | |
| 2003 01 11 | 704 | 1.0+ | 0.4+ | 2003 06 02 | 704 | 0.3+ | 0.7+ | 2006 11 17 | 703 | 0.4− | 0.2+ | | |
| 2003 01 11 | 704 | 1.0+ | 0.4− | 2003 06 02 | 704 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.1+ | | |
| 2003 01 11 | 704 | 1.4+ | 0.5+ | 2003 06 28 | 699 | 1.2− | 1.0+ | 2006 11 17 | 703 | 0.7− | 1.3− | | |
| 2003 01 11 | 704 | (2.0+ | 0.6−) | 2003 06 28 | 699 | 0.8+ | 0.3− | 2006 11 27 | 703 | 1.0− | 0.7+ | | |
| 2003 01 17 | 699 | 1.2+ | 0.7+ | 2003 06 28 | 699 | 0.9− | 0.9+ | 2006 11 27 | 703 | 0.6+ | 0.0 | | |
| 2003 01 17 | 699 | 0.7+ | 0.8+ | 2003 06 28 | 699 | 0.9− | 0.6− | 2006 11 27 | 703 | 0.3+ | 0.7− | | |
| 2003 01 17 | 699 | 0.1+ | 1.0− | 2004 06 09 | E12 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.8− | 0.8+ | | |
| 2003 01 17 | 699 | 0.5+ | 0.7+ | 2004 06 09 | E12 | 0.3− | 1.0+ | | | | | | |
| 2003 02 04 | 699 | 0.0 | 0.1+ | 2004 06 09 | E12 | 0.1+ | 0.1− | | | | | | |

**(141244)∗ 2001 XM$_{259}$**

Discovered 2001 Dec. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.73551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17555847 | $\omega$ | 259.13141 | | −0.39563708 | −0.90908400 | |
| $a$ | 3.1587956 | $\Omega$ | 215.09729 | | +0.90610038 | −0.36318461 | |
| $e$ | 0.1969539 | $i$ | 13.12160 | | +0.14984458 | −0.20411568 | |
| $P$ | 5.61 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 644 | 0.4− | 0.3+ | 2001 12 18 | 704 | 0.7− | 0.8− | 2006 09 06 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 25 | 644 | 0.2− | 0.5+ | 2001 12 18 | 704 | 0.2+ | 1.0− | 2006 09 16 | 703 | 0.3− | 0.6+ | | |
| 2001 09 25 | 644 | 0.3− | 0.1+ | 2003 02 27 | 608 | 0.8+ | 1.1− | 2006 09 16 | 703 | 0.2+ | 1.0− | | |
| 2001 11 09 | 704 | 0.1− | 0.8+ | 2003 02 27 | 608 | 0.6+ | 0.9− | 2006 09 16 | 683 | 0.3− | 0.7− | | |
| 2001 11 09 | 704 | 1.4− | 0.6+ | 2003 02 27 | 608 | (0.7+ | 1.5−) | 2006 09 16 | 703 | 0.2− | 0.2+ | | |
| 2001 11 09 | 704 | 0.1− | 0.8+ | 2003 03 11 | 704 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.6+ | 0.4− | | |
| 2001 11 09 | 704 | 0.6− | 0.5+ | 2003 03 11 | 704 | 0.1− | 0.4+ | 2006 09 16 | 683 | 0.8+ | 0.3− | | |
| 2001 11 19 | 699 | 0.9+ | 0.0 | 2003 03 11 | 704 | 0.7+ | 1.0+ | 2006 09 16 | 683 | (0.9+ | 2.0−) | | |
| 2001 11 19 | 699 | 1.0+ | 0.4+ | 2003 03 11 | 704 | 0.2+ | 0.9+ | 2006 09 16 | 703 | 0.1− | 0.2− | | |
| 2001 11 19 | 699 | 0.1− | 0.0 | 2003 03 11 | 704 | 0.0 | 0.8+ | 2006 09 16 | 703 | 0.1− | 0.2− | | |
| 2001 11 19 | 699 | 0.2+ | 0.5+ | 2003 03 28 | 644 | 0.1+ | 0.7+ | 2006 09 16 | 703 | 1.2− | 1.3+ | | |
| 2001 11 20 | 704 | 1.1+ | 1.3− | 2003 03 28 | 644 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.7− | 0.9+ | | |
| 2001 11 20 | 704 | 1.2+ | 0.1− | 2003 03 28 | 644 | 0.0 | 0.8+ | 2006 09 19 | 683 | 0.1− | 0.2− | | |
| 2001 11 20 | 704 | 0.5+ | 0.4− | 2003 03 28 | 691 | (0.1+ | 1.9+) | 2006 09 19 | 683 | (1.2− | 2.1+) | | |
| 2001 11 20 | 704 | 0.0 | 0.8− | 2003 03 28 | 699 | 0.1− | 0.2+ | 2006 09 19 | 683 | (1.6− | 0.7+) | | |
| 2001 11 20 | 704 | 0.6+ | 0.2− | 2003 03 28 | 699 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.8+ | 0.3− | | |
| 2001 11 24 | 704 | 0.1+ | 0.5− | 2003 03 28 | 691 | (0.2+ | 1.7+) | 2006 09 19 | 699 | 0.1+ | 0.3− | | |
| 2001 11 24 | 704 | 0.7− | 0.5+ | 2003 03 28 | 699 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.5+ | 1.0+ | | |
| 2001 11 24 | 704 | 0.1+ | 0.2− | 2003 03 28 | 691 | (0.2+ | 2.2+) | 2006 09 19 | 699 | 0.1+ | 0.2+ | | |
| 2001 11 24 | 704 | 0.1+ | 0.1− | 2003 03 28 | 699 | 0.2− | 0.6+ | 2006 09 27 | 703 | (0.0 | 2.0+) | | |
| 2001 11 24 | 704 | 0.1+ | 0.6− | 2003 04 04 | 699 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.3− | 1.2+ | | |
| 2001 12 08 | 699 | 0.8+ | 1.1+ | 2003 04 04 | 699 | 0.2+ | 0.3+ | 2006 09 27 | 703 | (0.4+ | 1.7+) | | |
| 2001 12 08 | 699 | 0.7+ | 0.5+ | 2003 04 04 | 699 | 1.0− | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.0 | | |
| 2001 12 08 | 699 | (1.9+ | 1.0−) | 2003 04 04 | 699 | 0.6− | 0.0 | 2006 09 27 | 703 | 0.1+ | 0.4+ | | |
| 2001 12 08 | 699 | 0.0 | 0.7+ | 2004 07 08 | 691 | 0.3− | 0.2− | 2006 09 27 | 703 | 0.3− | 0.1− | | |
| 2001 12 11 | 704 | 0.8− | 0.6+ | 2004 07 08 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.3− | | |
| 2001 12 11 | 704 | 0.7− | 0.5+ | 2004 07 08 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.5− | 0.6− | | |
| 2001 12 11 | 704 | 0.7− | 0.9+ | 2005 06 27 | 644 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.3+ | | |
| 2001 12 11 | 704 | 0.3− | 1.2+ | 2005 06 27 | 644 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.2+ | | |
| 2001 12 18 | 704 | 0.7+ | 1.0− | 2005 06 27 | 644 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.7+ | | |
| 2001 12 18 | 704 | 0.9− | 0.5− | 2006 09 06 | 644 | 0.1+ | 0.1+ | | | | | | |
| 2001 12 18 | 704 | 0.4− | 0.5− | 2006 09 06 | 644 | 0.0 | 0.4+ | | | | | | |

**(141245)∗ 2001 XX$_{259}$**

Discovered 2001 Dec. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.64515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18600979 | $\omega$ | 341.44193 | | +0.49733862 | −0.81443212 | |
| $a$ | 3.0393369 | $\Omega$ | 77.74447 | | +0.82966565 | +0.34577676 | |
| $e$ | 0.0726774 | $i$ | 17.81193 | | +0.25359258 | +0.46598151 | |
| $P$ | 5.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.4− | 0.3+ | 2001 12 11 | 704 | 0.4− | 0.3− | 2003 04 01 | 644 | 0.0 | 0.3+ | | |
| 2001 11 19 | 699 | 0.5+ | 0.2+ | 2001 12 11 | 704 | 0.6− | 0.8+ | 2003 04 26 | 645 | 0.1− | 0.1− | | |
| 2001 11 19 | 699 | 0.1− | 0.8+ | 2001 12 18 | 644 | 0.1− | 0.4+ | 2003 04 26 | 645 | 0.1− | 0.2− | | |
| 2001 11 19 | 699 | 0.3+ | 0.4+ | 2001 12 18 | 644 | 0.5− | 0.1+ | 2004 03 30 | 291 | 0.1+ | 0.8+ | | |
| 2001 11 24 | 704 | 0.0 | 0.3+ | 2001 12 18 | 644 | 0.5+ | 0.0 | 2004 03 30 | 291 | 0.6+ | 0.6+ | | |
| 2001 11 24 | 704 | 0.9− | 0.2+ | 2003 01 26 | 699 | 0.4− | 0.0 | 2004 03 30 | 291 | 0.4+ | 0.6+ | | |
| 2001 11 24 | 704 | 0.0 | 0.7+ | 2003 01 26 | 699 | 0.2− | 0.8− | 2006 09 25 | 703 | 0.3− | 0.5+ | | |
| 2001 11 24 | 704 | 0.1− | 1.4+ | 2003 01 26 | 699 | 1.4+ | 0.2− | 2006 09 25 | 703 | 0.1+ | 0.8+ | | |
| 2001 11 24 | 704 | 0.3− | 0.6+ | 2003 01 26 | 699 | 1.0− | 0.4+ | 2006 09 25 | 703 | 0.1+ | 0.0 | | |
| 2001 11 24 | 704 | 0.2− | 0.8+ | 2003 02 01 | 644 | 0.5+ | 0.4− | 2006 09 25 | 703 | 0.5+ | 1.5+ | | |
| 2001 11 24 | 704 | 0.1+ | 0.0 | 2003 02 01 | 644 | 0.7+ | 0.9+ | 2006 10 21 | 703 | 0.2+ | 0.2+ | | |
| 2001 11 24 | 704 | 0.4+ | 0.1+ | 2003 02 01 | 644 | 0.6+ | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.7+ | | |
| 2001 11 24 | 704 | 0.2+ | 0.0 | 2003 02 01 | 644 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.8− | | |
| 2001 12 09 | 699 | 0.4− | 1.0+ | 2003 02 01 | 644 | 0.4+ | 0.4− | 2006 10 21 | 703 | 0.5− | 0.1− | | |
| 2001 12 09 | 699 | 0.1− | 0.2− | 2003 02 01 | 644 | 0.4+ | 0.8+ | 2006 11 17 | 703 | 0.1− | 0.2+ | | |
| 2001 12 09 | 699 | 0.1− | 0.1− | 2003 02 19 | 644 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.5− | 0.2− | | |
| 2001 12 09 | 699 | 0.4+ | 0.1− | 2003 02 19 | 644 | 0.5+ | 0.6+ | 2006 11 17 | 703 | 0.9− | 0.8− | | |
| 2001 12 11 | 704 | 0.6− | 1.4− | 2003 02 19 | 644 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 1.0− | | |
| 2001 12 11 | 704 | 0.6− | 0.0 | 2003 04 01 | 644 | 0.1+ | 0.5+ | | | | | | |
| 2001 12 11 | 704 | 0.3− | 1.0− | 2003 04 01 | 644 | 0.0 | 0.8+ | | | | | | |

**(141246)∗ 2001 XK$_{263}$**

Discovered 2001 Dec. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.69575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17874337 | $\omega$ | 169.96148 | | −0.09162557 | −0.98672888 | |
| $a$ | 3.1211604 | $\Omega$ | 285.20182 | | +0.90372055 | −0.02585970 | |
| $e$ | 0.0479661 | $i$ | 7.98515 | | +0.41820320 | −0.16030404 | |
| $P$ | 5.51 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2− | 0.1− | 2003 03 06 | 699 | 0.1+ | 0.1+ | 2005 07 11 | G96 | 0.9+ | 0.7− | | |
| 2001 11 11 | 704 | 0.7− | 0.4+ | 2003 03 06 | 699 | 0.1− | 0.2− | 2005 07 30 | E12 | 0.2+ | 0.2− | | |
| 2001 11 11 | 704 | 0.1− | 0.4+ | 2003 03 06 | 699 | 0.2+ | 0.6+ | 2005 07 30 | E12 | 0.1+ | 0.8+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.5+ | 1.4+ | 2003 03 07 | 683 | 0.5+ | 0.4− | 2005 07 30 | E12 | 0.5+ | 0.1+ | | |
| 2001 11 24 | 704 | 0.7+ | 0.6− | 2003 03 07 | 704 | 1.0+ | 1.0+ | 2005 07 30 | E12 | 0.2− | 0.2− | | |
| 2001 11 24 | 704 | 0.2+ | 1.4− | 2003 03 07 | 683 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.1− | | |
| 2001 11 24 | 704 | 0.8+ | 0.5− | 2003 03 07 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.7+ | | |
| 2001 11 24 | 704 | (0.5+ | 1.6+) | 2003 03 07 | 704 | 1.1+ | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.0 | | |
| 2001 11 24 | 704 | 0.7− | 0.5+ | 2003 03 07 | 704 | 1.0− | 0.6+ | 2006 09 16 | 703 | 0.7− | 0.2+ | | |
| 2001 11 24 | 704 | 0.1+ | 0.5+ | 2003 03 08 | 704 | 0.6− | 0.8+ | 2006 09 28 | 703 | 0.6− | 0.4+ | | |
| 2001 11 24 | 704 | (2.6− | 1.1+) | 2003 03 08 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.4+ | | |
| 2001 11 24 | 704 | 0.0 | 0.6+ | 2003 03 08 | 704 | (0.7+ | 1.6+) | 2006 09 28 | 703 | 1.3+ | 0.2− | | |
| 2001 12 14 | 644 | 0.2− | 0.2− | 2003 03 08 | 704 | 0.5+ | 0.7+ | 2006 09 28 | 703 | 0.0 | 0.3− | | |
| 2001 12 14 | 644 | 0.3− | 0.1− | 2005 06 29 | 691 | 0.0 | 0.6+ | 2006 10 17 | 703 | (1.7− | 0.1−) | | |
| 2001 12 14 | 644 | 0.2+ | 0.1− | 2005 06 29 | 691 | 0.1− | 0.4+ | 2006 10 17 | 703 | (0.3+ | 1.7+) | | |
| 2001 12 17 | 704 | (0.2+ | 2.1+) | 2005 06 29 | 691 | 0.2− | 0.4+ | 2006 10 17 | 703 | 1.2+ | 0.6+ | | |
| 2001 12 17 | 704 | 0.6− | 0.8+ | 2005 07 04 | G96 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.2+ | | |
| 2001 12 17 | 704 | 0.3− | 1.0+ | 2005 07 04 | G96 | 0.0 | 0.1+ | 2006 10 31 | 703 | 1.1+ | 0.3− | | |
| 2002 01 08 | 704 | 0.1+ | 0.1+ | 2005 07 04 | G96 | 0.5− | 0.1+ | 2006 10 31 | 703 | 0.4− | 0.1− | | |
| 2002 01 08 | 704 | 1.2+ | 0.4+ | 2005 07 04 | G96 | 0.4− | 0.2+ | 2006 10 31 | 703 | 0.4− | 0.8− | | |
| 2002 01 08 | 704 | 1.3− | 0.1− | 2005 07 11 | G96 | 0.1− | 0.0 | 2006 10 31 | 703 | 1.4− | 0.0 | | |
| 2002 01 08 | 704 | 0.2+ | 0.1+ | 2005 07 11 | G96 | 0.4− | 0.2+ | | | | | | |
| 2003 03 06 | 699 | 0.3+ | 0.8+ | 2005 07 11 | G96 | 1.3− | 0.5− | | | | | | |

**(141247)∗ 2001 XU$_{263}$**

Discovered 2001 Dec. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.34159 | | (2000.0) | | | |
| $n$ | 0.18706511 | $\omega$ | 257.26473 | | +0.93469771 | −0.29909004 |
| $a$ | 3.0278953 | $\Omega$ | 119.85344 | | +0.34491249 | +0.89375567 |
| $e$ | 0.2312165 | $i$ | 12.79365 | | −0.08588115 | +0.33428424 |
| $P$ | 5.27 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 10 | 691 | 0.1− | 0.3− | 2001 12 18 | 704 | 0.6− | 1.0+ | 2006 09 20 | 703 | 0.7− | 0.6− | | |
| 1992 01 10 | 691 | 0.1− | 0.2+ | 2001 12 18 | 704 | 0.0 | 1.5+ | 2006 09 20 | 703 | 0.4+ | 0.5+ | | |
| 1992 01 10 | 691 | 0.0 | 0.3+ | 2001 12 18 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 703 | 0.5+ | 1.3+ | | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2001 12 18 | 704 | (0.2− | 1.7+) | 2006 09 20 | 703 | (0.2+ | 1.9+) | | |
| 2001 09 19 | 645 | 0.1+ | 0.0 | 2001 12 18 | 704 | 0.3− | 1.5+ | 2006 09 26 | 703 | 0.9− | 0.1− | | |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2002 01 08 | 645 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.7− | | |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2002 01 08 | 645 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.1− | | |
| 2001 10 14 | 699 | (3.7+ | 2.0+) | 2004 03 21 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.1+ | | |
| 2001 10 14 | 699 | 0.2− | 0.5+ | 2004 03 21 | 691 | 0.2− | 0.4+ | 2006 10 12 | E12 | 0.1+ | 0.3+ | | |
| 2001 10 14 | 699 | 0.2− | 0.0 | 2004 03 21 | 691 | 0.3+ | 0.1− | 2006 10 12 | E12 | 1.0+ | 0.2− | | |
| 2001 10 14 | 699 | 0.1− | 0.2+ | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 12 | E12 | 0.3− | 0.5+ | | |
| 2001 10 28 | 644 | 0.6− | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 12 | E12 | 0.1− | 0.1− | | |
| 2001 10 28 | 644 | 0.6− | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.1− | | |
| 2001 10 28 | 644 | 0.6− | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2001 12 07 | 704 | 0.5+ | 0.0 | 2005 07 04 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2001 12 07 | 704 | 0.2+ | 0.3− | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2001 12 07 | 704 | 0.1+ | 0.9− | 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2001 12 07 | 704 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2− | | |
| 2001 12 07 | 704 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.1− | 1.1+ | | |
| 2001 12 14 | 699 | 0.1− | 1.1+ | 2006 09 17 | 699 | 0.2− | 0.4− | 2006 11 19 | 703 | 1.6+ | 0.4+ | | |
| 2001 12 14 | 699 | 1.0− | 0.6− | 2006 09 17 | 699 | 0.3+ | 0.1− | 2006 11 19 | 703 | 0.2− | 1.1− | | |
| 2001 12 14 | 699 | 1.1− | 0.5− | 2006 09 17 | 699 | 0.8− | 0.4− | 2006 11 19 | 703 | 0.5− | 0.0 | | |
| 2001 12 14 | 699 | 0.7− | 0.0 | 2006 09 17 | 699 | 0.9− | 0.3+ | | | | | | |

**(141248)∗ 2001 XE$_{266}$**

Discovered 2001 Dec. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.55805 | | (2000.0) | | | |
| $n$ | 0.17402260 | $\omega$ | 144.25410 | | +0.27370692 | −0.94616251 |
| $a$ | 3.1773541 | $\Omega$ | 289.30491 | | +0.83442419 | +0.32294643 |
| $e$ | 0.0406210 | $i$ | 10.55030 | | +0.47835216 | −0.02195682 |
| $P$ | 5.66 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.7+ | 1.7+ | 2001 12 22 | 704 | 0.5+ | 0.7+ | 2005 07 11 | G96 | 0.6− | 0.0 | | |
| 2000 09 03 | 704 | 0.2+ | 0.9+ | 2001 12 22 | 704 | 1.1+ | 0.1+ | 2005 07 11 | G96 | 0.3− | 0.2− | | |
| 2000 09 03 | 704 | 0.3+ | 0.3+ | 2001 12 22 | 704 | 0.8+ | 0.5+ | 2006 09 17 | 703 | 1.1+ | 0.9− | | |
| 2000 09 27 | 704 | 0.1+ | 0.2− | 2001 12 22 | 704 | 0.6+ | 0.7+ | 2006 09 17 | 703 | 0.1− | 0.1+ | | |
| 2000 09 27 | 704 | 0.6− | 1.4− | 2001 12 22 | 704 | 1.2+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.0 | | |
| 2000 09 27 | 704 | 0.5− | 0.7− | 2002 01 08 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 703 | 1.2+ | 0.2− | | |
| 2000 09 27 | 704 | 0.0 | 0.2− | 2002 01 08 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 703 | 1.0− | 0.4− | | |
| 2001 12 09 | 704 | 0.4− | 0.6+ | 2002 01 08 | 704 | (1.7+ | 1.3+) | 2006 09 28 | 703 | 1.1− | 1.2− | | |
| 2001 12 09 | 704 | 0.2+ | 0.2− | 2003 03 10 | 699 | (3.3+ | 0.1+) | 2006 09 28 | 703 | (1.8+ | 0.5−) | | |
| 2001 12 09 | 704 | 0.4− | 0.0 | 2003 03 10 | 699 | 0.4+ | 0.7+ | 2006 09 28 | 703 | (2.6+ | 1.4+) | | |
| 2001 12 09 | 704 | 0.5− | 0.7+ | 2003 03 10 | 699 | 1.1+ | 0.8+ | 2006 10 19 | 703 | 0.3+ | 0.1+ | | |
| 2001 12 09 | 704 | 0.6− | 0.0 | 2003 03 10 | 699 | 0.2+ | 1.0+ | 2006 10 19 | 703 | 0.6+ | 0.2+ | | |
| 2001 12 17 | 704 | 1.2− | 0.4+ | 2005 06 15 | G96 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2001 12 17 | 704 | 0.6− | 0.5+ | 2005 06 15 | G96 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 1.0− | | |
| 2001 12 17 | 704 | (1.7− | 1.0+) | 2005 06 15 | G96 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.6+ | 0.1+ | | |
| 2001 12 17 | 704 | (2.5− | 2.1+) | 2005 06 15 | G96 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.4+ | 0.0 | | |
| 2001 12 17 | 704 | 1.1− | 1.0+ | 2005 07 05 | 691 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2001 12 17 | 704 | 0.2− | 0.7+ | 2005 07 05 | 691 | 0.2− | 0.7+ | 2006 10 27 | 703 | 0.7− | 0.3+ | | |
| 2001 12 17 | 704 | 0.1+ | 0.1+ | 2005 07 05 | 691 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.4+ | 0.0 | | |
| 2001 12 17 | 704 | 0.9− | 0.2+ | 2005 07 11 | G96 | 0.7− | 0.1− | 2006 10 27 | 703 | 0.1− | 0.0 | | |
| 2001 12 17 | 704 | (0.6− | 1.8+) | 2005 07 11 | G96 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.0 | 0.0 | | |

**(141249)∗ 2001 YP$_5$ = 2003 EB$_{13}$**

Discovered 2001 Dec. 17 by the Asiago-DLR Asteroid Survey at Cima Ekar. Id. G. V. Williams (*MPO* 43214)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.15437 | | (2000.0) | | | |
| $n$ | 0.17855097 | $\omega$ | 276.41801 | | −0.20108542 | −0.97938967 |
| $a$ | 3.1234021 | $\Omega$ | 185.29717 | | +0.96025929 | −0.19325340 |
| $e$ | 0.1245826 | $i$ | 11.86857 | | +0.19356329 | −0.05872815 |
| $P$ | 5.52 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 21 | 260 | 0.4+ | 2.2+ | 2003 03 27 | 703 | (2.9+ | 0.8−) | 2006 09 18 | 699 | 0.3+ | 0.5+ | | |
| 1989 10 21 | 260 | 0.3+ | 2.0+ | 2003 03 27 | 703 | 0.7+ | 1.4+ | 2006 09 20 | 644 | 0.2+ | 0.7+ | | |
| 2000 08 31 | 704 | 0.1+ | 0.5+ | 2003 03 31 | 703 | (1.9− | 2.9+) | 2006 09 20 | 644 | 0.4+ | 0.4+ | | |
| 2000 08 31 | 704 | 0.3− | 0.5+ | 2003 03 31 | 703 | (1.9− | 3.5+) | 2006 09 20 | 644 | 0.2+ | 0.4+ | | |
| 2000 08 31 | 704 | 0.9+ | 0.9+ | 2003 03 31 | 703 | (1.6− | 2.7+) | 2006 09 30 | 703 | 1.4+ | 1.2− | | |
| 2001 12 07 | 704 | 0.2+ | 0.2+ | 2003 03 31 | 703 | (4.0− | 4.2+) | 2006 09 30 | 703 | 0.5+ | 1.1− | | |
| 2001 12 07 | 704 | 0.1− | 0.5+ | 2003 04 01 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.7+ | 1.2− | | |
| 2001 12 07 | 704 | 0.3+ | 0.4+ | 2003 04 01 | 704 | 1.2+ | 0.2+ | 2006 09 30 | 703 | 1.2− | 0.2− | | |
| 2001 12 07 | 704 | 1.1− | 0.3+ | 2003 04 01 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.3− | 1.0− | | |
| 2001 12 17 | 209 | 0.2− | 0.3− | 2003 04 01 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 703 | 0.9− | 0.0 | | |
| 2001 12 17 | 209 | 0.6− | 0.0 | 2003 04 01 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.8− | | |
| 2001 12 18 | 209 | 0.6− | 0.2+ | 2003 04 03 | 699 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.7− | | |
| 2001 12 18 | 209 | 0.5− | 0.0 | 2003 04 03 | 699 | 0.5+ | 0.9+ | 2006 10 01 | 704 | (1.6+ | 0.6−) | | |
| 2001 12 18 | 209 | 0.2− | 0.1− | 2003 04 03 | 699 | 0.4+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.4+ | | |
| 2001 12 18 | 209 | 0.3− | 0.3− | 2003 04 03 | 699 | 0.0 | 0.5− | 2006 10 01 | 704 | 1.2+ | 1.2+ | | |
| 2001 12 19 | 704 | 0.7− | 0.3+ | 2004 06 17 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.9+ | | |
| 2001 12 19 | 704 | 0.1− | 0.6+ | 2004 06 17 | 691 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2001 12 19 | 704 | 0.7− | 0.9+ | 2004 06 17 | 691 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2001 12 19 | 704 | 0.7− | 0.9+ | 2005 08 29 | 691 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.5+ | | |
| 2001 12 19 | 704 | 0.8− | 0.7+ | 2005 08 29 | 691 | 0.3− | 0.5+ | 2006 10 15 | 703 | 0.2− | 0.5− | | |
| 2002 01 07 | 699 | (2.5+ | 0.5−) | 2005 08 29 | 691 | 0.6− | 1.2+ | 2006 10 15 | 703 | 1.0− | 0.2+ | | |
| 2002 01 07 | 699 | (0.1− | 1.6+) | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 15 | 703 | 1.0+ | 0.1+ | | |
| 2002 01 07 | 699 | (1.7+ | 0.4+) | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.2+ | 1.5− | | |
| 2002 01 07 | 699 | 0.1+ | 1.5+ | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.8− | 0.5− | | |
| 2002 01 10 | 644 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 10 | 644 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.9+ | 0.5+ | 2006 10 21 | 703 | (2.0− | 0.4−) |
| 2002 01 10 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.4− | 2006 10 21 | 703 | 0.1− | 0.6− |
| 2003 03 06 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2003 03 06 | 704 | 0.3− | 1.0+ | 2006 09 14 | 703 | 1.1+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 03 06 | 704 | 0.5− | 0.2− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 03 07 | 704 | 1.2+ | 1.0+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.5− | 0.2+ |
| 2003 03 07 | 704 | 0.7+ | 0.9+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.5− | 0.2+ |
| 2003 03 07 | 704 | 0.0 | 1.0+ | 2006 09 17 | 704 | 0.2+ | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2003 03 10 | 704 | 0.0 | 0.6+ | 2006 09 17 | 704 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2003 03 10 | 704 | 0.8− | 1.4− | 2006 09 17 | 704 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2003 03 10 | 704 | 0.5− | 0.2− | 2006 09 17 | 704 | 0.3− | 0.8+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2003 03 10 | 704 | 0.4− | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2003 03 23 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2003 03 23 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 03 23 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2003 03 27 | 703 | (0.5− | 4.4+) | 2006 09 18 | 699 | 0.1+ | 1.4+ | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2003 03 27 | 703 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.6− | | | | |

**(141250)∗ 2001 YP$_6$ = 2003 EV$_{20}$**

Discovered 2001 Dec. 20 by the Asiago-DLR Asteroid Survey at Cima Ekar.

Id. G. V. Williams (*MPO* 43215)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.14588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17533493 | $\omega$ | 300.49693 | | −0.27746317 | −0.95974217 | |
| $a$ | 3.1614798 | $\Omega$ | 165.41573 | | +0.93019301 | −0.27974068 | |
| $e$ | 0.1296584 | $i$ | 9.99274 | | +0.24032301 | −0.02530047 | |
| $P$ | 5.62 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 02 | 691 | 0.1− | 0.1− | 2003 03 06 | 699 | (1.6+ | 0.1+) | 2005 07 03 | 705 | 0.1+ | 0.0 |
| 1994 09 02 | 691 | 0.5− | 0.4+ | 2003 03 07 | 699 | 0.3− | 1.1+ | 2005 07 04 | 691 | 0.1+ | 0.4+ |
| 1994 09 02 | 691 | 0.2+ | 0.0 | 2003 03 07 | 699 | 0.1+ | 0.9+ | 2005 07 04 | 691 | 0.2+ | 0.6+ |
| 1998 04 04 | 691 | 1.0+ | 1.4− | 2003 03 07 | 699 | 0.0 | 1.1+ | 2005 07 04 | 691 | 0.1+ | 0.3+ |
| 1998 04 04 | 691 | 0.6− | 0.1+ | 2003 03 07 | 699 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.4− | 0.3+ |
| 1998 04 04 | 691 | 0.6− | 0.3+ | 2003 03 09 | 704 | 0.7+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 12 07 | 704 | 0.3− | 0.9+ | 2003 03 09 | 704 | 0.7+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2001 12 07 | 704 | 0.7+ | 0.5− | 2003 03 09 | 704 | 0.8+ | 0.6+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2001 12 07 | 704 | 1.0+ | 0.0 | 2003 03 09 | 704 | 0.3+ | 0.4− | 2006 10 03 | G96 | 0.2− | 0.1+ |
| 2001 12 07 | 704 | 0.6+ | 0.2+ | 2003 03 26 | 644 | 0.1+ | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.3+ |
| 2001 12 19 | 704 | (1.2− | 1.8+) | 2003 03 26 | 644 | 0.5+ | 0.1− | 2006 10 03 | G96 | 0.2− | 0.3+ |
| 2001 12 19 | 704 | (0.5− | 2.0+) | 2003 03 26 | 644 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2001 12 19 | 704 | (1.8− | 1.1+) | 2003 03 26 | 699 | 0.6+ | 0.5− | 2006 10 16 | 703 | 0.4− | 1.3+ |
| 2001 12 19 | 704 | (0.4− | 2.8+) | 2003 03 26 | 699 | 1.2+ | 0.5+ | 2006 10 16 | 703 | 1.1− | 0.2− |
| 2001 12 19 | 704 | 1.3− | 1.3+ | 2003 03 26 | 699 | 0.5+ | 0.4+ | 2006 10 16 | 703 | (0.9− | 2.0+) |
| 2001 12 20 | 209 | 0.4+ | 0.5+ | 2003 03 26 | 699 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.9+ |
| 2001 12 20 | 209 | 0.1− | 0.4+ | 2003 04 06 | 691 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.7− | 0.3+ |
| 2001 12 20 | 209 | 0.7+ | 0.3+ | 2003 04 06 | 691 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.7+ |
| 2001 12 23 | 209 | 0.4+ | 0.4+ | 2003 04 06 | 691 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.4− |
| 2001 12 23 | 209 | 0.1− | 0.2+ | 2004 06 12 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.5+ |
| 2001 12 23 | 209 | 0.2+ | 0.4+ | 2004 06 12 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 03 06 | 699 | 0.2+ | 0.5+ | 2004 06 12 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2003 03 06 | 699 | 0.2− | 0.6+ | 2005 07 03 | 705 | 0.6+ | 0.3+ | | | | |
| 2003 03 06 | 699 | 0.5+ | 0.8+ | 2005 07 03 | 705 | 0.4− | 0.0 | | | | |

**(141251)∗ 2001 YR$_8$ = 2000 SR$_{312}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25500)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.24960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17506006 | $\omega$ | 252.31335 | | −0.93859511 | −0.23193157 | |
| $a$ | 3.1647884 | $\Omega$ | 273.68017 | | +0.32093230 | −0.85867492 | |
| $e$ | 0.1257712 | $i$ | 14.83064 | | −0.12665574 | −0.45703953 | |
| $P$ | 5.63 | $H$ | 13.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 0.3− | 0.4+ | 2002 01 08 | 704 | 0.0 | 0.0 | 2003 04 29 | 608 | 0.0 | 0.1+ |
| 2000 09 27 | 704 | 0.3− | 0.5− | 2002 01 08 | 704 | 0.7− | 0.4+ | 2003 04 30 | 704 | 0.0 | 0.5+ |
| 2000 09 27 | 704 | 0.2− | 0.2+ | 2002 01 08 | 704 | 0.7− | 0.9+ | 2003 04 30 | 704 | 0.0 | 0.7+ |
| 2000 09 27 | 704 | 1.0− | 0.6+ | 2002 01 13 | 704 | 1.2+ | 0.5+ | 2003 04 30 | 704 | 0.7− | 0.9+ |
| 2000 10 04 | 704 | 0.4− | 0.5+ | 2002 01 13 | 704 | 0.9+ | 0.4+ | 2003 04 30 | 704 | 0.1+ | 0.5+ |
| 2000 10 04 | 704 | 0.1− | 0.0 | 2002 01 13 | 704 | 1.5+ | 0.2+ | 2003 04 30 | 704 | 0.2+ | 1.0+ |
| 2000 10 04 | 704 | 0.0 | 0.4+ | 2002 01 13 | 704 | 1.5+ | 0.3+ | 2003 05 04 | 608 | (1.5+ | 1.5+) |
| 2000 10 04 | 704 | 0.3− | 0.6− | 2002 01 13 | 704 | 1.1+ | 0.1− | 2003 05 04 | 608 | (1.5+ | 1.7+) |
| 2001 11 12 | 704 | 0.9+ | 0.2− | 2002 01 15 | 704 | 0.6− | 0.5+ | 2003 05 04 | 608 | 1.1+ | 1.0+ |
| 2001 11 12 | 704 | 1.0+ | 0.0 | 2002 01 15 | 704 | 0.5− | 0.5+ | 2005 08 29 | 644 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.7+ | 0.2− | 2002 01 15 | 704 | 0.2− | 0.2+ | 2005 08 29 | 644 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.9+ | 0.7− | 2002 01 15 | 704 | 0.4− | 0.3+ | 2005 08 29 | 644 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.9+ | 0.8− | 2002 01 15 | 704 | 0.1− | 0.4+ | 2005 09 11 | 704 | 0.7+ | 1.0+ |
| 2001 11 21 | 704 | 0.1+ | 0.3+ | 2002 01 19 | 704 | 0.0 | 0.2− | 2005 09 11 | 704 | 0.4+ | 0.1− |
| 2001 11 21 | 704 | 0.4+ | 0.2− | 2002 01 19 | 704 | 0.6+ | 0.9+ | 2005 09 11 | 704 | 0.2+ | 0.8+ |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2002 01 19 | 704 | 0.5− | 0.2+ | 2005 09 11 | 704 | 0.2+ | 0.5+ |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2002 01 19 | 704 | 0.6+ | 1.0− | 2006 10 02 | 704 | (0.4− | 1.8+) |
| 2001 11 24 | 704 | (2.0+ | 0.2−) | 2002 01 22 | 704 | 0.5− | 0.6+ | 2006 10 02 | 704 | 0.4− | 0.3+ |
| 2001 11 24 | 704 | 1.3+ | 0.1− | 2002 01 22 | 704 | 0.5− | 0.3+ | 2006 10 02 | 704 | 0.8− | 0.4+ |
| 2001 11 24 | 704 | (1.6+ | 0.5+) | 2002 01 22 | 704 | 1.0− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 11 24 | 704 | 0.9+ | 0.6− | 2002 01 22 | 704 | (2.3− | 8.4+) | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.2− | 2003 01 30 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.9− | 0.1+ | 2003 01 30 | 704 | 0.8+ | 0.5+ | 2006 10 20 | 644 | 0.6− | 0.1+ |
| 2001 12 17 | 704 | 0.4− | 0.1− | 2003 01 30 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.5− | 0.2− |
| 2001 12 17 | 704 | 0.3− | 1.4− | 2003 01 30 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 12 18 | 704 | 1.2− | 0.2− | 2003 02 23 | 699 | 0.8+ | 0.7− | 2006 10 23 | 703 | 0.0 | 0.5− |
| 2001 12 18 | 704 | 1.3− | 0.3− | 2003 02 23 | 699 | 0.4+ | 0.1− | 2006 10 23 | 703 | 0.2+ | 0.2− |
| 2001 12 18 | 704 | 1.0− | 0.0 | 2003 02 23 | 699 | 0.4− | 0.2+ | 2006 10 23 | 703 | 0.1− | 0.6− |
| 2001 12 18 | 704 | 0.9− | 0.2+ | 2003 02 23 | 699 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.5+ | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2003 03 08 | 699 | 0.7− | 0.6+ | 2006 11 15 | 703 | 1.3+ | 0.8− |
| 2001 12 19 | 704 | 0.1+ | 0.0 | 2003 03 08 | 699 | 0.5− | 0.6+ | 2006 11 15 | 703 | 1.6+ | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.4− | 2003 03 08 | 699 | 0.0 | 0.1+ | 2006 11 15 | 703 | 1.0+ | 0.1+ |
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2003 03 08 | 699 | 0.5− | 0.1− | 2006 11 15 | 703 | 0.5− | 0.1+ |
| 2001 12 20 | 704 | 0.3− | 0.0 | 2003 03 12 | 704 | 0.6+ | 0.3− | 2006 11 15 | 704 | 0.4− | 0.6+ |
| 2001 12 20 | 704 | 0.5+ | 0.0 | 2003 03 12 | 704 | 0.3− | 1.0− | 2006 11 15 | 704 | 0.7− | 0.8− |
| 2001 12 20 | 704 | 0.0 | 0.4+ | 2003 03 12 | 704 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.6− | 0.2+ |
| 2001 12 20 | 704 | 0.7+ | 0.3+ | 2003 03 12 | 704 | 0.2− | 0.6− | 2006 11 15 | 704 | 0.8+ | 0.3− |
| 2001 12 20 | 704 | 0.3+ | 0.7+ | 2003 03 12 | 704 | 0.3− | 1.1− | 2006 11 15 | 704 | 0.1+ | 0.5+ |
| 2001 12 21 | 704 | 0.1+ | 1.2− | 2003 04 06 | 704 | 0.3− | 0.3− | 2006 11 21 | 703 | 0.5− | 0.3− |
| 2001 12 21 | 704 | 0.2− | 0.1− | 2003 04 06 | 704 | 0.3− | 0.4− | 2006 11 21 | 703 | 0.6− | 0.1− |
| 2001 12 21 | 704 | 0.3+ | 0.6− | 2003 04 06 | 704 | 0.2− | 0.8− | 2006 11 21 | 703 | 0.2− | 0.1− |
| 2001 12 21 | 704 | 0.4− | 0.1+ | 2003 04 08 | 428 | 0.2− | 0.4+ | 2006 11 21 | 703 | 0.8− | 0.1− |
| 2002 01 08 | 704 | 0.2+ | 0.2+ | 2003 04 29 | 608 | 0.1+ | 0.2− | | | | |
| 2002 01 08 | 704 | 0.0 | 0.1+ | 2003 04 29 | 608 | 0.1+ | 0.0 | | | | |

**(141252)∗ 2001 YU$_8$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.53810 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16942540 | $\omega$ | 263.13915 | | +0.90278600 | +0.26961724 | |
| $a$ | 3.2345736 | $\Omega$ | 80.80232 | | −0.11108819 | +0.89885183 | |
| $e$ | 0.1454017 | $i$ | 19.84352 | | −0.41549591 | +0.34550243 | |
| $P$ | 5.82 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.4− | 0.4− | 2001 12 18 | 704 | 0.3+ | 0.8− | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2000 09 20 | 704 | 1.4− | 0.0 | 2001 12 18 | 704 | (0.1− | 1.9−) | 2006 09 19 | 703 | 0.2− | 0.3+ |
| 2000 09 20 | 704 | 1.2− | 1.5+ | 2001 12 18 | 704 | (1.8+ | 1.0−) | 2006 09 19 | 703 | 0.7− | 0.2− |
| 2000 09 20 | 704 | 0.6− | 0.1− | 2001 12 22 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.3− |
| 2000 09 28 | 699 | 1.0+ | 0.1+ | 2001 12 22 | 704 | 0.8− | 0.7+ | 2006 09 27 | 703 | 0.3− | 0.4− |
| 2000 09 28 | 699 | 0.5+ | 1.0− | 2001 12 22 | 704 | 0.4− | 0.5+ | 2006 09 27 | 703 | 0.0 | 0.9+ |
| 2000 09 28 | 699 | 0.4+ | 0.4+ | 2001 12 22 | 704 | 1.4− | 0.5+ | 2006 09 27 | 703 | 0.8− | 0.8+ |
| 2000 09 28 | 699 | 1.1+ | 0.5+ | 2002 01 15 | 704 | 0.5+ | 0.9− | 2006 10 20 | 703 | 0.5+ | 0.5− |
| 2001 12 09 | 704 | 0.2+ | 0.4− | 2002 01 15 | 704 | 0.2− | 0.4− | 2006 10 20 | 703 | 0.4− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.5− | 0.5− | 2002 01 15 | 704 | 0.2+ | 0.9− | 2006 10 20 | 703 | (3.4− | 0.1−) |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2003 02 01 | 644 | 0.6+ | 0.1+ | 2006 10 21 | 703 | 0.4+ | 1.1− |
| 2001 12 09 | 704 | 0.3− | 0.6+ | 2003 02 01 | 644 | 0.7+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2001 12 09 | 704 | 0.2− | 0.5− | 2003 02 01 | 644 | 0.9+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.7− |
| 2001 12 17 | 704 | 0.6+ | 0.5+ | 2003 03 09 | 644 | 0.1+ | 1.1+ | 2006 10 21 | 703 | 0.5+ | 0.1+ |
| 2001 12 17 | 704 | 0.3+ | 0.5− | 2003 03 09 | 644 | 0.4+ | 0.9+ | 2006 10 28 | 703 | 0.6− | 0.0 |
| 2001 12 17 | 704 | 0.8+ | 0.2+ | 2003 03 09 | 644 | 0.3+ | 0.9+ | 2006 10 28 | 703 | 0.6− | 1.0+ |
| 2001 12 17 | 704 | 0.4− | 0.9− | 2003 03 09 | 644 | 0.4+ | 0.4+ | 2006 10 28 | 703 | 0.4+ | 1.1+ |
| 2001 12 17 | 704 | 0.6+ | 0.1− | 2003 03 09 | 644 | 0.1− | 0.8+ | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2003 03 09 | 644 | 0.3+ | 0.2+ | 2006 11 23 | 703 | 1.7+ | 0.3− |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2004 04 15 | 704 | (0.2+ | 1.6+) | 2006 11 23 | 703 | 0.9− | 0.1+ |
| 2001 12 17 | 704 | 0.4+ | 0.4− | 2004 04 15 | 704 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.6− | 0.4+ |
| 2001 12 18 | 704 | 0.0 | 0.2− | 2004 04 15 | 704 | 1.2− | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.3− | 0.6− | 2006 09 19 | 703 | 0.2− | 0.8+ | | | | |

**(141253)∗ 2001 YD$_9$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.52852 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18254866 | $\omega$ | 317.63558 | | +0.70252693 | −0.68153399 | |
| $a$ | 3.0776339 | $\Omega$ | 86.56986 | | +0.69549526 | +0.59651085 | |
| $e$ | 0.1679566 | $i$ | 11.84279 | | +0.15080538 | +0.42389412 | |
| $P$ | 5.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.7+ | 0.8+ | 2002 01 14 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 1.0+ | 0.9+ | 2002 01 14 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2001 12 17 | 704 | 1.3+ | 0.7+ | 2002 01 21 | 704 | 0.8+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2001 12 17 | 704 | 1.0+ | 1.1+ | 2002 01 21 | 704 | 0.9+ | 1.3− | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2001 12 17 | 704 | 0.9+ | 0.8+ | 2002 01 21 | 704 | (1.7+ | 0.5−) | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.3− | 0.4+ | 2002 12 11 | 645 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2001 12 18 | 704 | 0.8− | 0.5− | 2002 12 11 | 645 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.0 |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2003 03 08 | 699 | (1.7+ | 1.1−) | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2001 12 21 | 704 | (0.3− | 1.6+) | 2003 03 08 | 699 | 0.2− | 0.8+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2001 12 21 | 704 | 0.1+ | 0.5+ | 2003 03 08 | 699 | 0.5+ | 0.6− | 2006 11 13 | 703 | 0.2− | 0.3+ |
| 2001 12 21 | 704 | 0.4− | 0.1− | 2003 03 08 | 699 | 1.1+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.3+ |
| 2001 12 24 | 691 | 0.3− | 0.2+ | 2004 06 16 | 691 | 0.1− | 0.5+ | 2006 11 13 | 644 | 0.3+ | 0.4+ |
| 2001 12 24 | 691 | 0.3− | 0.2+ | 2004 06 16 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.2+ | 0.4+ |
| 2001 12 24 | 691 | 0.3− | 0.3+ | 2004 06 16 | 691 | 0.3+ | 0.5+ | 2006 11 14 | 644 | 0.4+ | 0.2+ |
| 2002 01 08 | 704 | 0.4− | 0.0 | 2005 02 18 | 809 | 0.1− | 0.3+ | 2006 11 14 | 644 | 0.0 | 0.7+ |
| 2002 01 08 | 704 | 0.5− | 0.2− | 2005 02 18 | 809 | 0.3+ | 0.5+ | 2006 11 14 | 644 | 0.2+ | 0.1+ |
| 2002 01 08 | 704 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 19 | 703 | 0.4+ | 0.1+ |
| 2002 01 08 | 704 | 1.2− | 0.7− | 2006 10 16 | 703 | 0.6− | 0.7− | 2006 11 19 | 703 | 0.2+ | 0.1− |
| 2002 01 14 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 19 | 703 | 0.1− | 1.0− |
| 2002 01 14 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.7− | 2006 11 19 | 703 | 0.4+ | 0.4− |
| 2002 01 14 | 704 | 0.4− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.1− | | | | |

**(141254)∗ 2001 YT$_{10}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.09615 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18237446 | $\omega$ | 335.38868 | | +0.74761261 | −0.66202064 | |
| $a$ | 3.0795933 | $\Omega$ | 66.17218 | | +0.61851998 | +0.66500773 | |
| $e$ | 0.1003294 | $i$ | 3.31856 | | +0.24188514 | +0.34567817 | |
| $P$ | 5.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 645 | 0.0 | 0.1− | 2002 01 14 | 704 | 0.4− | 0.7+ | 2005 11 06 | G96 | 0.6− | 0.1− |
| 2001 12 15 | 645 | 0.0 | 0.1− | 2002 01 14 | 704 | 0.3+ | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2001 12 17 | 704 | 1.4+ | 0.3+ | 2002 01 14 | 704 | 0.0 | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.2+ |
| 2001 12 17 | 704 | 1.1+ | 0.7+ | 2003 03 26 | 691 | 0.6+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2003 03 26 | 691 | 0.7+ | 0.1− | 2006 09 28 | G96 | 0.6+ | 0.3− |
| 2001 12 17 | 704 | 0.7− | 0.5+ | 2003 03 26 | 691 | 0.6+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.5− | 0.5+ | 2003 04 10 | 691 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 04 10 | 691 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 04 10 | 691 | 0.9− | 0.6+ | 2006 10 28 | G96 | 0.6+ | 0.8− |
| 2001 12 18 | 704 | 0.6− | 0.5+ | 2005 08 05 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2001 12 18 | 704 | (1.5− | 1.0+) | 2005 08 05 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 12 19 | 645 | 0.1− | 0.2− | 2005 08 05 | 644 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2001 12 19 | 645 | 0.1− | 0.2− | 2005 08 26 | 699 | (1.9− | 0.6+) | 2006 11 11 | G96 | 0.5− | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2005 08 26 | 699 | (2.0+ | 0.7+) | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2005 08 26 | 699 | 0.1+ | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.1− | 1.3+ | 2005 08 26 | 699 | 0.7+ | 1.0− | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2001 12 19 | 704 | (0.1− | 2.2+) | 2005 08 30 | 644 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 0.2+ | 0.3+ | 2005 08 30 | 644 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2002 01 08 | 704 | 0.6+ | 1.0+ | 2005 08 30 | 644 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | (0.5+ | 2.6+) | 2005 11 06 | G96 | 0.6− | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2002 01 14 | 704 | 0.2+ | 0.1− | 2005 11 06 | G96 | 0.1− | 0.4+ | 2006 12 01 | 691 | 0.4− | 0.4+ |
| 2002 01 14 | 704 | 0.3+ | 0.5− | 2005 11 06 | G96 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.0 | 0.6+ |

**(141255)∗ 2001 YD$_{12}$ = 2003 EB$_{30}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43215)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.35359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19725073 | $\omega$ | 64.71008 | | −0.81349499 | +0.58115014 | |
| $a$ | 2.9227409 | $\Omega$ | 150.80627 | | −0.54857986 | −0.75414661 | |
| $e$ | 0.0241926 | $i$ | 2.60223 | | −0.19309593 | −0.30582250 | |
| $P$ | 5.00 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 1.2− | 2003 03 06 | 644 | 0.3− | 1.0+ | 2005 09 11 | 691 | 0.1+ | 0.4+ |
| 2001 11 20 | 704 | 1.0+ | 0.2− | 2003 03 06 | 644 | 0.1− | 1.2+ | 2005 09 23 | 703 | 0.9− | 0.2− |
| 2001 11 20 | 704 | 0.8+ | 1.4+ | 2003 03 09 | 291 | 0.4+ | 0.6+ | 2005 09 23 | 703 | (0.4+ | 1.8−) |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2003 03 09 | 291 | 0.1− | 0.7+ | 2005 09 23 | 703 | 1.0− | 0.7− |
| 2001 11 20 | 704 | 0.9+ | 0.3− | 2003 03 09 | 291 | 0.0 | 1.0+ | 2005 09 23 | 703 | (1.9− | 0.6−) |
| 2001 11 21 | 704 | 0.8+ | 0.1− | 2003 03 12 | 644 | 0.3+ | 0.3− | 2005 10 01 | G96 | 0.3+ | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.5− | 2003 03 12 | 644 | 0.5+ | 0.4− | 2005 10 01 | G96 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 1.3− | 0.4+ | 2003 03 12 | 644 | 0.6+ | 0.0 | 2005 10 01 | G96 | 0.7+ | 0.8+ |
| 2001 11 21 | 704 | 0.1+ | 0.4+ | 2005 06 17 | G96 | 0.3− | 0.0 | 2005 10 01 | G96 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2005 06 17 | G96 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2005 06 17 | G96 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 0.4+ | 2005 06 17 | G96 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2001 12 19 | 704 | 1.0− | 0.3− | 2005 06 18 | G96 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.6− |
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2005 06 18 | G96 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 1.0− | 0.2− | 2005 06 18 | G96 | 0.4− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2005 06 18 | G96 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.3− | 0.7+ | 2005 08 25 | 644 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 12 07 | 645 | 0.1− | 0.1− | 2005 08 25 | 644 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 12 07 | 645 | 0.0 | 0.1− | 2005 08 25 | 644 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 2003 01 30 | 699 | 0.6+ | 0.4− | 2005 08 28 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2003 01 30 | 699 | 0.4+ | 0.9+ | 2005 08 28 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2003 01 30 | 699 | 0.9− | 0.4+ | 2005 08 28 | 691 | 0.2− | 0.0 | 2006 11 12 | 703 | 0.5− | 0.3− |
| 2003 01 30 | 699 | 0.5− | 0.9+ | 2005 08 29 | 699 | 0.3− | 0.8+ | 2006 11 12 | 703 | 0.4+ | 0.3+ |
| 2003 02 22 | 644 | 0.6+ | 0.1+ | 2005 08 29 | 699 | (2.7− | 1.3+) | 2006 11 12 | 703 | 0.2− | 0.6+ |
| 2003 02 22 | 644 | 0.6+ | 0.0 | 2005 08 29 | 699 | (0.9− | 1.7+) | 2006 11 12 | 703 | 0.7+ | 0.8+ |
| 2003 02 22 | 699 | (0.5− | 1.6−) | 2005 08 29 | 699 | 0.2+ | 0.9− | 2006 11 27 | 703 | 1.1− | 1.5− |
| 2003 02 22 | 699 | 1.1+ | 1.2+ | 2005 09 01 | 691 | 0.6− | 0.4+ | 2006 11 27 | 703 | 0.9− | 0.3− |
| 2003 02 22 | 699 | 0.7+ | 0.5− | 2005 09 01 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.2− | 1.3+ |
| 2003 02 22 | 699 | 0.1+ | 0.4+ | 2005 09 01 | 691 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.0 | 0.4+ |
| 2003 02 22 | 644 | 0.9+ | 0.3+ | 2005 09 11 | 691 | 0.2+ | 0.7+ | | | | |
| 2003 03 06 | 644 | 0.2− | 1.2+ | 2005 09 11 | 691 | 0.1+ | 0.6+ | | | | |

**(141256)∗ 2001 YO$_{14}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.86210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18993957 | $\omega$ | 192.40031 | | +0.11461119 | +0.97880106 | |
| $a$ | 2.9972692 | $\Omega$ | 84.36154 | | −0.89624673 | +0.17558251 | |
| $e$ | 0.0503509 | $i$ | 9.82087 | | −0.42849279 | −0.10544796 | |
| $P$ | 5.19 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 1.3+ | 0.8+ | 2001 12 20 | 704 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2− |
| 1998 03 25 | 704 | 1.7− | 0.2+ | 2001 12 20 | 704 | (0.1+ | 1.7+) | 2006 10 23 | G96 | 0.2− | 0.3− |
| 1998 03 25 | 704 | 0.0 | 1.6+ | 2004 03 01 | 691 | 0.4+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 1998 03 25 | 704 | 0.5+ | 0.9+ | 2004 03 01 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.5− | 0.2+ |
| 2000 10 01 | 704 | 0.3− | 0.6− | 2004 03 01 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.3− |
| 2000 10 01 | 704 | 0.6+ | 0.9+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2000 10 01 | 704 | 1.3− | 1.6+ | 2004 04 14 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2000 10 01 | 704 | 1.0− | 1.8+ | 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.9− | 0.1+ | 2004 04 20 | 704 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2004 04 20 | 704 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.0 | 1.3− | 2004 04 20 | 704 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 12 14 | 691 | 0.2+ | 0.2+ | 2004 05 15 | 704 | 0.1+ | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.5+ |
| 2001 12 14 | 691 | 0.0 | 0.2+ | 2004 05 15 | 704 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2001 12 14 | 691 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.1− | 1.2− | 2006 11 20 | 704 | 0.5+ | 0.5+ |
| 2001 12 17 | 704 | 0.3+ | 0.0 | 2004 05 15 | 704 | 0.4− | 0.9+ | 2006 11 20 | 704 | 0.1− | 1.2+ |
| 2001 12 17 | 704 | 0.7− | 0.8− | 2004 05 18 | 704 | 0.9+ | 1.1+ | 2006 11 20 | 704 | 1.3+ | 1.2+ |
| 2001 12 17 | 704 | 1.0+ | 0.2+ | 2004 05 18 | 704 | 0.8+ | 1.0+ | 2006 11 24 | 691 | 0.4− | 0.2+ |
| 2001 12 17 | 704 | 1.4− | 0.6+ | 2004 05 18 | 704 | 0.5+ | 0.7+ | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.9+ | 0.5+ | 2004 05 18 | 704 | 0.4+ | 0.9+ | 2006 11 24 | 691 | 0.4− | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.2+ | 2005 07 27 | 644 | 0.3− | 0.6+ | 2006 11 28 | 704 | 0.3− | 1.6− |
| 2001 12 19 | 704 | 0.3+ | 1.0+ | 2005 07 27 | 644 | 0.5− | 0.6+ | 2006 11 28 | 704 | 0.4− | 1.0+ |
| 2001 12 19 | 704 | 0.1− | 0.6+ | 2005 07 27 | 644 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.7− | 0.8+ |
| 2001 12 20 | 704 | 0.7+ | 0.8+ | 2006 10 23 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2001 12 20 | 704 | 0.4+ | 0.9+ | 2006 10 23 | G96 | 0.1+ | 0.2− | | | | |

**(141257)**∗ **2001 YK$_{20}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.49391 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20348345 | $\omega$ | 292.21411 | | +0.75537875 | +0.65506212 | |
| $a$ | 2.8627494 | $\Omega$ | 26.87093 | | −0.58631311 | +0.68737071 | |
| $e$ | 0.0631765 | $i$ | 2.18353 | | −0.29264291 | +0.31371186 | |
| $P$ | 4.84 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 691 | 0.1− | 0.1− | 2003 01 27 | 704 | 0.4+ | 1.1+ | 2006 09 27 | G96 | 0.2− | 0.6− |
| 1996 10 08 | 691 | 0.2− | 0.1− | 2004 04 21 | 704 | 0.9+ | 1.2+ | 2006 09 27 | G96 | 0.4− | 0.6− |
| 1996 10 08 | 691 | 0.3− | 0.2− | 2004 04 21 | 704 | 0.3+ | 0.7+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 1.1− | 0.0 | 2004 04 21 | 704 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2004 04 21 | 704 | 1.0+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.5− |
| 2001 10 21 | 704 | 0.1− | 0.5− | 2004 05 23 | 691 | 0.3+ | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.6− |
| 2001 10 21 | 704 | 0.7− | 0.3− | 2004 05 23 | 691 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2001 11 09 | 704 | 1.1− | 0.5+ | 2004 05 23 | 691 | 0.3+ | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.6− |
| 2001 11 09 | 704 | 0.9− | 0.0 | 2005 07 28 | 644 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2001 11 09 | 704 | 0.3+ | 0.4− | 2005 07 28 | 644 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.6− |
| 2001 11 11 | 691 | 0.4+ | 0.1− | 2005 07 28 | 644 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2001 11 11 | 691 | 0.6+ | 0.1+ | 2005 08 01 | E12 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2001 11 11 | 691 | 0.5+ | 0.1− | 2005 08 01 | E12 | 0.1+ | 1.2+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.2− | 0.8+ | 2005 08 01 | E12 | 0.6+ | 1.4+ | 2006 11 10 | 691 | 0.4− | 0.6+ |
| 2001 11 19 | 704 | 0.7− | 0.7+ | 2005 08 01 | E12 | (0.6+ | 1.8−) | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.3− | 0.5+ | 2005 08 04 | 644 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.3+ | 0.5− | 2005 08 04 | 644 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.5− | 2005 08 04 | 644 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 1.2+ | 0.7+ | 2005 08 04 | 644 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 1.0+ | 0.8+ | 2005 08 04 | 644 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.4− | 1.1+ | 2005 08 04 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2001 12 18 | 704 | 0.3+ | 0.4+ | 2005 08 05 | 644 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2001 12 18 | 704 | 0.9+ | 0.2− | 2005 08 05 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 1.4+ |
| 2001 12 18 | 704 | 0.6+ | 0.8− | 2005 08 05 | 644 | 0.3− | 0.2+ | 2006 11 21 | 704 | 1.1+ | 0.4+ |
| 2001 12 18 | 704 | 0.2+ | 0.3+ | 2005 08 22 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.7− | 0.6+ | 2005 08 22 | 644 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2001 12 19 | 704 | 0.0 | 1.4+ | 2005 08 22 | 644 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.8− | 1.3+ | 2005 11 03 | G96 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.8− | 0.8+ | 2005 11 03 | G96 | 0.0 | 0.0 | 2006 11 23 | H07 | 1.5− | 0.6+ |
| 2001 12 19 | 704 | 0.5− | 0.6+ | 2005 11 03 | G96 | 0.4− | 0.5− | 2006 11 23 | H07 | 0.4+ | 1.1+ |
| 2003 01 27 | 704 | 0.2+ | 0.3+ | 2005 11 03 | G96 | 0.2− | 0.2− | 2006 11 23 | H07 | 0.8− | 0.7+ |
| 2003 01 27 | 704 | 0.7− | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.4− | | | | |

**(141258)**∗ **2001 YL$_{20}$ = 1993 FU$_{78}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 27350)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.50043 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18185434 | $\omega$ | 350.58187 | | +0.99990377 | +0.01282559 | |
| $a$ | 3.0854624 | $\Omega$ | 8.68849 | | −0.00931387 | +0.90312227 | |
| $e$ | 0.0660156 | $i$ | 2.00612 | | −0.01028163 | +0.42919188 | |
| $P$ | 5.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.1+ | 1.7+ | 2004 04 25 | 691 | 0.1+ | 0.6+ | 2006 10 02 | 291 | 0.4+ | 0.4+ |
| 1993 03 22 | 809 | 1.2+ | 1.0+ | 2004 04 25 | 691 | 0.2+ | 0.5+ | 2006 10 02 | 291 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | 1.0+ | 0.8− | 2004 04 25 | 691 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.1+ | 0.3− | 2004 05 10 | 691 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2004 05 10 | 691 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.3+ | 2004 05 10 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 26 | 644 | 0.4− | 1.0+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 26 | 644 | 0.3− | 0.9+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2001 10 26 | 644 | 0.4− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.1− | 0.5− | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2001 11 09 | 704 | (0.5+ | 1.6−) | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 11 09 | 704 | 0.4+ | 0.6− | 2006 09 06 | 644 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2001 11 09 | 704 | 0.3− | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.4− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2001 11 09 | 704 | 0.2− | 0.7− | 2006 09 14 | 703 | 0.4− | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2001 11 19 | 704 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2001 11 19 | 704 | 0.6− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.5− | 0.2− |
| 2001 11 19 | 704 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2001 11 19 | 704 | 1.1− | 0.3− | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.8− | 1.1− |
| 2001 11 21 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.8+ | 1.0− |
| 2001 11 21 | 704 | 1.0+ | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 1.4− | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.4− |
| 2001 11 21 | 704 | 1.0+ | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 11 24 | 704 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 11 24 | 704 | 0.1+ | 1.2+ | 2006 09 18 | 699 | (0.6+ | 1.6+) | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 11 24 | 704 | 0.5− | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2001 11 24 | 704 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2001 12 10 | 704 | (1.7+ | 0.8+) | 2006 09 18 | 699 | 0.6+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 12 10 | 704 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 12 10 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2001 12 18 | 704 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.2− | 1.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2001 12 18 | 704 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8− | 1.5+ |
| 2001 12 18 | 704 | 0.4− | 0.5− | 2006 09 26 | 691 | 0.5− | 0.2− | 2006 11 11 | 703 | 1.2− | 0.3+ |
| 2001 12 18 | 704 | 0.2− | 0.6− | 2006 09 29 | 704 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.0 | 1.1+ |
| 2001 12 19 | 704 | 0.4− | 0.4− | 2006 09 29 | 704 | 0.4− | 1.0+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2001 12 19 | 704 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.5− | 0.9+ | 2006 11 13 | G96 | 0.5+ | 0.5− |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.5− | 1.1+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2004 04 12 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | | | |
| 2004 04 12 | 691 | 0.5+ | 0.3+ | 2006 10 02 | 291 | 0.3+ | 0.3+ | | | | |

**(141259)∗ 2001 YV$_{20}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.10772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16850104 | $\omega$ | 297.63498 | | +0.90383318 | +0.42409254 | |
| $a$ | 3.2463922 | $\Omega$ | 37.35007 | | −0.35210143 | +0.81264486 | |
| $e$ | 0.0811040 | $i$ | 5.37617 | | −0.24312581 | +0.39969220 | |
| $P$ | 5.85 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.5− | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.8− | 2004 03 28 | 704 | (0.9+ | 1.6+) |
| 1998 02 23 | 691 | 0.5− | 0.2− | 2001 11 21 | 704 | 0.9− | 1.0− | 2004 03 28 | 704 | 0.5− | 1.0+ |
| 1998 02 26 | 691 | 0.4+ | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.5− | 2004 03 28 | 704 | 0.4− | 1.3+ |
| 1998 02 26 | 691 | 0.1+ | 0.2− | 2001 12 15 | 704 | 0.4− | 0.1− | 2004 04 14 | 691 | 0.2+ | 0.3+ |
| 1998 02 26 | 691 | 0.6+ | 0.2− | 2001 12 15 | 704 | 0.5+ | 0.2+ | 2004 04 14 | 691 | 0.0 | 0.2+ |
| 1998 02 28 | 691 | 0.5+ | 0.1− | 2001 12 15 | 704 | 0.2+ | 0.8+ | 2004 04 14 | 691 | 0.1+ | 0.3+ |
| 1998 02 28 | 691 | (3.3+ | 2.6+) | 2001 12 15 | 704 | 0.5+ | 0.9+ | 2006 08 30 | 699 | 0.2− | 0.1+ |
| 1998 02 28 | 691 | 0.1+ | 0.3− | 2001 12 15 | 704 | 0.9− | 1.2+ | 2006 08 30 | 699 | 1.3+ | 0.0 |
| 1998 03 04 | 691 | 0.7− | 0.0 | 2001 12 18 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 0.5− | 1.1+ |
| 1998 03 04 | 691 | (1.1+ | 4.5−) | 2001 12 18 | 704 | 0.8+ | 0.7+ | 2006 08 30 | 699 | 0.0 | 0.5+ |
| 1998 03 04 | 691 | 0.5− | 0.0 | 2001 12 18 | 704 | 0.5+ | 0.4+ | 2006 09 12 | 704 | 0.4− | 0.2+ |
| 2001 10 21 | 704 | 0.7− | 1.2− | 2001 12 18 | 704 | 0.3− | 0.5+ | 2006 09 12 | 704 | 0.1+ | 0.6+ |
| 2001 10 21 | 704 | 0.6− | 1.0− | 2001 12 18 | 704 | 0.6+ | 0.3− | 2006 09 12 | 704 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.7− | 0.8− | 2001 12 19 | 704 | 0.2+ | 0.6+ | 2006 09 12 | 704 | (0.5− | 2.0+) |
| 2001 11 09 | 704 | (1.6+ | 1.4−) | 2001 12 19 | 704 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 0.7− | 1.4− |
| 2001 11 09 | 704 | 0.9+ | 1.3− | 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.7− |
| 2001 11 09 | 704 | (0.4+ | 2.0−) | 2001 12 19 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.1− |
| 2001 11 09 | 704 | (1.8+ | 1.3−) | 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.8+ | 0.3− | 2004 03 19 | 704 | 0.2− | 0.4+ | 2006 09 21 | 699 | 0.5+ | 1.2+ |
| 2001 11 19 | 704 | 0.7− | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 09 21 | 699 | 0.1+ | 1.0+ |
| 2001 11 19 | 704 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.8+ | 0.3+ | 2006 09 21 | 699 | 0.9− | 1.0+ |
| 2001 11 19 | 704 | 0.7− | 0.5+ | 2004 03 22 | 704 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.4− | 0.7− |
| 2001 11 19 | 704 | 0.2− | 1.0+ | 2004 03 22 | 704 | 0.9+ | 0.5+ | 2006 11 27 | G96 | 0.2+ | 0.1+ |
| 2001 11 19 | 704 | 0.4− | 1.1+ | 2004 03 22 | 704 | 0.9+ | 0.3+ | 2006 11 27 | G96 | 0.7− | 0.7− |
| 2001 11 21 | 704 | 0.8− | 0.1− | 2004 03 28 | 704 | 0.5+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 0.7− | 2004 03 28 | 704 | (0.0 | 1.8+) | 2006 11 27 | G96 | 0.2− | 0.1− |

**(141260)∗ 2001 YL$_{21}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.54447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18015842 | $\omega$ | 45.52191 | | +0.05041197 | −0.98768822 | |
| $a$ | 3.1047956 | $\Omega$ | 42.26397 | | +0.84241113 | −0.03759687 | |
| $e$ | 0.1498085 | $i$ | 12.72034 | | +0.53647192 | +0.15185013 | |
| $P$ | 5.47 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 699 | 0.1+ | 0.8+ | 2002 12 11 | 645 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2000 09 30 | 699 | 0.4− | 0.1+ | 2002 12 11 | 645 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2000 09 30 | 699 | 0.5− | 0.1− | 2003 03 25 | 644 | 0.4+ | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.3− |
| 2000 09 30 | 699 | (2.6+ | 0.7+) | 2003 03 25 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.2+ | 0.4− |
| 2001 11 24 | 704 | 0.6− | 1.1− | 2003 03 25 | 644 | 0.5+ | 0.5+ | 2006 10 15 | 703 | 0.5− | 0.1+ |
| 2001 11 24 | 704 | 1.3+ | 0.1− | 2003 04 06 | 699 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | (2.5+ | 0.8−) | 2003 04 06 | 699 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.9− | 0.5− | 2003 04 06 | 699 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | 1.0− | 0.5− | 2003 04 06 | 699 | 0.8+ | 1.0+ | 2006 10 21 | 703 | 0.4+ | 0.2− |
| 2001 12 09 | 704 | 1.1− | 0.2− | 2006 09 18 | 703 | (1.9− | 0.7−) | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 2001 12 09 | 704 | 0.6− | 0.3− | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2001 12 09 | 704 | 0.8− | 0.0 | 2006 09 18 | 703 | 0.2− | 0.9− | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.6− | 2006 09 18 | 703 | 1.4− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2001 12 18 | 704 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.3− | 0.7− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2001 12 18 | 704 | 1.3+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 1.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 1.3+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | (1.6+ | 0.6−) | 2006 09 30 | 703 | 0.9− | 1.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 2001 12 18 | 704 | 0.2− | 0.7+ | 2006 10 01 | 704 | 0.6− | 1.3+ | 2006 11 09 | 644 | 0.4+ | 0.4+ |
| 2001 12 19 | 704 | (2.0+ | 1.3−) | 2006 10 01 | 704 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2001 12 19 | 704 | 0.9+ | 0.7− | 2006 10 01 | 704 | 0.4− | 0.8+ | 2006 11 13 | 703 | 1.4− | 0.5+ |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2006 10 01 | 704 | (0.8+ | 1.6+) | 2006 11 13 | 703 | 0.4− | 1.1− |
| 2001 12 22 | 704 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.8− |
| 2001 12 22 | 704 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 12 22 | 704 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2001 12 22 | 704 | 0.9+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 12 22 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2002 01 07 | 704 | 0.4+ | 0.5− | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 11 20 | G96 | 0.5+ | 0.1− |
| 2002 01 07 | 704 | 0.4− | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.1+ |
| 2002 01 07 | 704 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.3− |

**(141261)∗ 2001 YN$_{21}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.34391 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17470022 | $\omega$ | 16.67231 | | +0.47244279 | −0.87293185 | |
| $a$ | 3.1691326 | $\Omega$ | 45.32988 | | +0.78786555 | +0.35644237 | |
| $e$ | 0.0875510 | $i$ | 9.84561 | | +0.39505149 | +0.33307480 | |
| $P$ | 5.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.5− | 0.2+ | 2001 12 15 | 704 | 0.8− | 0.6− | 2004 05 14 | 691 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.9− | 0.0 | 2001 12 15 | 704 | 0.1− | 0.3+ | 2004 05 14 | 691 | 0.3+ | 0.4+ |
| 2001 10 21 | 704 | 0.3− | 0.9− | 2001 12 15 | 704 | 0.5− | 0.5+ | 2006 09 17 | 699 | 0.4− | 0.2+ |
| 2001 10 21 | 704 | (0.0 | 1.7−) | 2001 12 15 | 704 | 0.3− | 0.0 | 2006 09 17 | 699 | 0.1+ | 0.5+ |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2001 12 18 | 704 | 1.0+ | 0.5+ | 2006 09 17 | 699 | (1.3− | 1.6+) |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2001 12 18 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 699 | 1.3− | 0.6− |
| 2001 11 12 | 704 | 0.1+ | 0.7+ | 2001 12 18 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 1.0+ | 1.3+ |
| 2001 11 12 | 704 | 0.4+ | 0.3− | 2001 12 18 | 704 | 0.4− | 1.0+ | 2006 09 19 | 703 | 0.4+ | 0.7+ |
| 2001 11 12 | 704 | 0.4+ | 0.4− | 2001 12 18 | 704 | 0.2+ | 1.2+ | 2006 09 19 | 703 | 0.2− | 0.6+ |
| 2001 11 19 | 699 | 0.4− | 0.2+ | 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.6+ |
| 2001 11 19 | 699 | 0.6− | 0.2+ | 2001 12 19 | 704 | 0.9+ | 0.6+ | 2006 09 25 | 703 | 0.1− | 0.1− |
| 2001 11 19 | 699 | 0.6+ | 0.1+ | 2001 12 19 | 704 | 0.4− | 0.9+ | 2006 09 25 | 703 | 0.2− | 0.2+ |
| 2001 11 19 | 699 | 0.3+ | 0.2− | 2001 12 19 | 704 | 0.9+ | 0.4+ | 2006 09 25 | 703 | 0.1− | 0.9+ |
| 2001 11 24 | 704 | 0.6+ | 0.8− | 2001 12 19 | 704 | 0.6− | 0.7+ | 2006 09 25 | 703 | 1.2− | 0.1− |
| 2001 11 24 | 704 | 0.1+ | 0.6− | 2003 02 21 | 644 | 0.6+ | 0.8+ | 2006 10 19 | 703 | (1.6− | 0.7−) |
| 2001 11 24 | 704 | 0.2+ | 0.4− | 2003 02 21 | 644 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2001 11 24 | 704 | 0.4− | 0.1+ | 2003 02 21 | 644 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.6− |
| 2001 11 24 | 704 | 0.4− | 0.3− | 2004 04 21 | 333 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.4+ |
| 2001 12 10 | 704 | (0.8+ | 1.6−) | 2004 04 21 | 333 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.4− | 0.1+ |
| 2001 12 10 | 704 | 0.5− | 0.2− | 2004 04 21 | 333 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2001 12 10 | 704 | (2.4− | 0.1−) | 2004 04 21 | 333 | 0.9− | 0.1+ | 2006 10 23 | 644 | 0.6− | 0.1+ |
| 2001 12 15 | 704 | 0.6− | 0.8− | 2004 05 14 | 691 | 0.2+ | 0.5+ | | | | |

**(141262)∗ 2001 YT$_{25}$ = 1999 KJ$_3$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 27351)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.66995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18489575 | $\omega$ | 287.70628 | | +0.98060203 | +0.13206103 | |
| $a$ | 3.0515332 | $\Omega$ | 64.90991 | | −0.05253543 | +0.88900206 | |
| $e$ | 0.1245117 | $i$ | 9.20308 | | −0.18883771 | +0.43844638 | |
| $P$ | 5.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 691 | 0.1− | 0.1− | 2001 12 19 | 704 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 1999 05 17 | 691 | 0.0 | 0.1− | 2001 12 19 | 704 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.2− |
| 1999 05 17 | 691 | 0.2− | 0.3− | 2001 12 19 | 704 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.3− |
| 1999 05 20 | 691 | 0.0 | 0.3− | 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 1999 05 20 | 691 | 0.2− | 0.1+ | 2004 03 16 | 691 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2001 11 20 | 704 | 0.4− | 0.0 | 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.4− | 0.2+ |
| 2001 11 20 | 704 | 0.3− | 0.2− | 2004 03 31 | 691 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.6− | 0.3+ |
| 2001 11 20 | 704 | 0.4− | 0.2− | 2004 03 31 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2001 11 20 | 704 | 0.3− | 0.5− | 2004 03 31 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.2− | 2004 04 23 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 0.8− | 0.2− | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.3− | 0.2− | 2004 04 23 | 691 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2001 11 21 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 1.2− | 1.0+ | 2006 11 13 | 703 | 0.9− | 0.4− |
| 2001 12 17 | 691 | 0.3+ | 0.2− | 2006 09 29 | 699 | 0.1− | 0.3+ | 2006 11 13 | 703 | 1.3+ | 0.9+ |
| 2001 12 17 | 691 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.5+ | 0.1+ | 2006 11 13 | 703 | (1.9+ | 1.5+) |
| 2001 12 17 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.2− | 1.3+ |
| 2001 12 18 | 704 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.6− | 0.7− | 2006 11 17 | 704 | 0.1− | 1.0+ |
| 2001 12 18 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.2− | 0.9+ |
| 2001 12 18 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.8+ | 2006 11 17 | 704 | 0.5− | 0.7− |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.2− | 1.2− | | | | |

**(141263)∗ 2001 YW$_{25}$ = 2005 LM$_{39}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75250)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.82522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18113596 | $\omega$ | 79.25765 | | +0.89249064 | +0.42097394 | |
| $a$ | 3.0936149 | $\Omega$ | 255.68560 | | −0.45076744 | +0.81933635 | |
| $e$ | 0.0613655 | $i$ | 9.62403 | | −0.01640628 | +0.38919004 | |
| $P$ | 5.44 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2001 12 23 | 291 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.8− |
| 2001 11 21 | 704 | 0.1+ | 0.2+ | 2001 12 23 | 291 | 0.2+ | 0.1− | 2006 10 19 | 703 | 1.2− | 0.2− |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2001 12 23 | 291 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.9− | 1.4− |
| 2001 11 21 | 704 | 1.2− | 0.4+ | 2004 04 16 | E12 | 0.0 | 1.4+ | 2006 10 19 | A50 | 0.5+ | 0.2− |
| 2001 12 09 | 644 | 0.3+ | 1.4+ | 2004 04 16 | E12 | 0.1+ | 1.3+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 12 09 | 644 | (0.8+ | 1.7+) | 2004 04 16 | E12 | 0.6+ | 0.5+ | 2006 10 22 | 644 | 0.5+ | 0.1− |
| 2001 12 09 | 644 | 0.6+ | 1.3+ | 2004 04 16 | E12 | 0.6+ | 1.4+ | 2006 10 22 | 644 | 0.7+ | 0.2− |
| 2001 12 17 | 291 | 0.0 | 0.3− | 2004 05 15 | 704 | 0.5+ | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.5+ |
| 2001 12 17 | 291 | 0.5+ | 0.3− | 2004 05 15 | 704 | 0.8− | 0.6− | 2006 10 27 | 703 | 0.9− | 0.3+ |
| 2001 12 17 | 291 | 0.0 | 0.4+ | 2004 05 15 | 704 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.1+ |
| 2001 12 18 | 704 | 0.6− | 0.1− | 2005 06 11 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.5− | 0.5+ | 2005 06 11 | 691 | 0.4− | 0.3+ | 2006 11 14 | 703 | 1.2+ | 0.2− |
| 2001 12 18 | 704 | 0.1− | 0.5+ | 2005 06 11 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.6+ |
| 2001 12 18 | 704 | 0.2− | 0.6+ | 2005 06 15 | 691 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.9+ |
| 2001 12 18 | 704 | 0.4− | 0.4+ | 2005 06 15 | 691 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.3+ | 0.9− |
| 2001 12 19 | 704 | 0.3− | 0.2+ | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 1.3− | 0.0 |
| 2001 12 19 | 704 | 0.3− | 0.0 | 2005 07 01 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2001 12 19 | 704 | 0.6− | 0.5+ | 2005 07 01 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2001 12 19 | 704 | 0.9− | 0.8+ | 2005 07 01 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2001 12 19 | 704 | 1.0− | 0.3+ | 2006 10 19 | 703 | 0.0 | 1.1− | 2006 11 19 | 704 | 0.6− | 1.0+ |

**(141264)∗ 2001 YJ$_{27}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.67093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22177161 | $\omega$ | 103.56577 | | +0.96423847 | −0.25138886 | |
| $a$ | 2.7031206 | $\Omega$ | 271.04297 | | +0.19887966 | +0.89566855 | |
| $e$ | 0.0377467 | $i$ | 4.81652 | | +0.17518861 | +0.36685350 | |
| $P$ | 4.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 18 | 910 | 0.7+ | 0.3− | 2003 03 09 | 704 | 0.8+ | 0.7+ | 2005 10 12 | 704 | 0.2+ | 0.5+ |
| 1998 01 18 | 910 | 0.7+ | 0.4− | 2003 03 09 | 704 | 0.0 | 0.1+ | 2005 10 12 | 704 | 0.4+ | 0.3+ |
| 1998 01 18 | 910 | 0.5+ | 0.5− | 2003 03 10 | 699 | 0.0 | 0.7− | 2005 10 22 | 703 | 0.8− | 0.1+ |
| 2001 11 19 | 704 | (1.6+ | 0.3−) | 2003 03 10 | 699 | 0.3+ | 0.4+ | 2005 10 22 | 703 | 0.1− | 0.6+ |
| 2001 11 19 | 704 | 0.3− | 1.3− | 2003 03 10 | 704 | 0.5+ | 1.4+ | 2005 10 22 | 703 | 0.6− | 0.5− |
| 2001 11 19 | 704 | (1.5+ | 0.9−) | 2003 03 10 | 699 | 1.0− | 0.1+ | 2005 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 11 19 | 704 | 0.0 | 1.4− | 2003 03 10 | 704 | 0.5+ | 0.7+ | 2005 10 22 | 703 | 1.1− | 0.5+ |
| 2001 11 19 | 704 | 0.8+ | 0.2− | 2003 03 10 | 699 | 0.4+ | 0.3+ | 2005 10 22 | 644 | 0.0 | 0.7+ |
| 2001 11 19 | 704 | 0.1+ | 0.8− | 2003 03 10 | 704 | 0.0 | 0.3+ | 2005 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 11 19 | 704 | 0.8+ | 1.4− | 2003 03 10 | 704 | 0.5+ | 0.2+ | 2005 10 24 | 699 | (1.6+ | 0.0 ) |
| 2001 11 19 | 704 | 0.9+ | 1.3− | 2003 03 27 | 644 | (0.0 | 1.6+) | 2005 10 24 | 699 | 1.0+ | 0.4− |
| 2001 11 21 | 704 | 0.7− | 0.4+ | 2003 03 27 | 644 | 0.3+ | 1.4+ | 2005 10 24 | 699 | 0.4+ | 0.4+ |
| 2001 11 21 | 704 | 0.6− | 0.3+ | 2003 03 27 | 644 | 0.1+ | 1.4+ | 2005 10 24 | 699 | 0.6+ | 1.0+ |
| 2001 11 21 | 704 | 0.5− | 0.5− | 2003 03 30 | 644 | 0.3− | 0.4+ | 2005 10 28 | 703 | 0.3+ | 0.7− |
| 2001 11 21 | 704 | 0.3− | 0.0 | 2003 03 30 | 644 | 0.4− | 0.7+ | 2005 10 28 | 703 | 0.9+ | 1.1− |
| 2001 11 21 | 704 | 0.3− | 0.2− | 2003 03 30 | 644 | 0.3− | 0.8+ | 2005 10 28 | 703 | 0.4+ | 0.8− |
| 2001 12 18 | 704 | 0.1+ | 0.5+ | 2003 03 31 | 644 | 0.2+ | 0.1− | 2005 10 28 | 703 | 0.1+ | 0.9− |
| 2001 12 18 | 704 | 0.2− | 0.9+ | 2003 03 31 | 644 | 0.4+ | 0.0 | 2005 10 30 | 704 | 0.5− | 0.2− |
| 2001 12 18 | 704 | 0.5− | 1.1+ | 2003 03 31 | 644 | 0.7+ | 0.4+ | 2005 10 30 | 704 | 0.9+ | 1.2+ |
| 2001 12 18 | 704 | 0.0 | 1.0+ | 2005 09 30 | 691 | 0.0 | 0.3+ | 2005 10 30 | 704 | 0.7+ | 0.6+ |
| 2001 12 18 | 704 | 0.2− | 0.6+ | 2005 09 30 | 691 | 0.1− | 0.3+ | 2005 11 02 | 704 | 0.2− | 0.5− |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2005 09 30 | 691 | 0.0 | 0.2+ | 2005 11 02 | 704 | 0.2+ | 1.2+ |
| 2001 12 19 | 704 | 0.1+ | 0.4+ | 2005 10 01 | 703 | 0.2− | 0.7− | 2005 11 02 | 704 | 0.5− | 0.3+ |
| 2001 12 19 | 704 | 0.3+ | 0.5+ | 2005 10 01 | 703 | 0.0 | 0.2+ | 2005 11 02 | 704 | 0.1− | 0.7+ |
| 2001 12 19 | 704 | 0.8+ | 0.4+ | 2005 10 01 | 703 | 0.4− | 0.5− | 2005 11 02 | 704 | 0.0 | 0.7+ |
| 2001 12 19 | 704 | 0.3+ | 1.0+ | 2005 10 01 | 703 | 0.2− | 0.1− | 2005 11 06 | 704 | 0.3+ | 0.4+ |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2005 10 02 | 644 | 0.4− | 0.1− | 2005 11 06 | 704 | 0.2− | 0.6+ |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2005 10 02 | 644 | 0.5− | 0.2+ | 2005 11 06 | 704 | 0.3+ | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2005 10 02 | 644 | 0.6− | 0.3+ | 2005 11 06 | 704 | 1.1− | 0.1+ |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2005 10 08 | 704 | (1.6+ | 0.8+) | 2006 09 28 | G96 | 0.5− | 0.4− |
| 2002 01 08 | 704 | 0.1− | 0.1+ | 2005 10 08 | 704 | 0.8+ | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2002 01 08 | 704 | 0.3− | 0.6− | 2005 10 08 | 704 | 0.4− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.8− |
| 2002 01 08 | 704 | 0.6− | 0.8− | 2005 10 08 | 703 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.7− |
| 2002 01 08 | 704 | 0.9− | 0.0 | 2005 10 08 | 703 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.6+ | 0.7− |
| 2002 01 14 | 704 | 1.3− | 0.3+ | 2005 10 08 | 704 | 0.2+ | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 01 14 | 704 | 1.1− | 0.8− | 2005 10 08 | 703 | 0.8− | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 01 14 | 704 | 0.3− | 0.6− | 2005 10 08 | 704 | 0.9+ | 1.0− | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2002 01 14 | 704 | 0.8− | 0.7− | 2005 10 08 | 703 | 0.7− | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2002 01 14 | 704 | (1.8− | 0.3−) | 2005 10 10 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.4− |
| 2003 03 07 | 704 | 1.0− | 1.0− | 2005 10 10 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2003 03 07 | 704 | 0.2+ | 0.6− | 2005 10 10 | 691 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 03 07 | 704 | 0.6+ | 0.6+ | 2005 10 12 | 704 | 0.1− | 0.3+ | | | | |
| 2003 03 09 | 704 | 0.5+ | 0.9+ | 2005 10 12 | 704 | 1.2+ | 0.2+ | | | | |

**(141265)∗ 2001 YE$_{28}$ = 2004 LS$_{15}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69049)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.53166 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17733166 | $\omega$ | 103.32187 | | −0.90283462 | +0.29034373 | |
| $a$ | 3.1377033 | $\Omega$ | 94.27242 | | −0.39698429 | −0.84623011 | |
| $e$ | 0.1014714 | $i$ | 18.54464 | | +0.16520632 | −0.44676069 | |
| $P$ | 5.56 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 704 | 0.7− | 1.1− | 2001 12 19 | 704 | 0.4+ | 0.5+ | 2004 05 23 | 704 | 0.5+ | 0.5+ |
| 1998 04 28 | 704 | 0.2− | 0.2− | 2001 12 20 | 644 | 0.5− | 0.5+ | 2004 05 23 | 704 | 0.2− | 0.7+ |
| 1998 04 28 | 704 | 0.4+ | 0.4− | 2001 12 20 | 644 | 0.4− | 0.3+ | 2004 05 23 | 704 | 0.6− | 0.1+ |
| 1998 04 28 | 704 | 1.1+ | 0.9− | 2001 12 20 | 644 | 0.2− | 0.3+ | 2004 05 23 | 704 | 0.2+ | 1.1+ |
| 1998 04 28 | 704 | 0.1− | 1.0− | 2003 01 26 | 699 | 0.1+ | 0.3+ | 2004 05 23 | 704 | 0.2− | 0.2+ |
| 1998 05 23 | 704 | 0.3− | 0.4− | 2003 01 26 | 699 | 0.7+ | 0.5− | 2004 06 12 | 704 | 0.2+ | 0.8+ |
| 1998 05 23 | 704 | 0.9+ | 1.5+ | 2003 01 26 | 699 | 0.7+ | 0.5− | 2004 06 12 | 704 | 0.8+ | 0.3+ |
| 1998 05 23 | 704 | 0.9− | 1.0+ | 2003 01 26 | 699 | 0.4− | 0.4+ | 2004 06 12 | 704 | 1.0+ | 0.6+ |
| 1998 05 23 | 704 | 0.2− | 1.8+ | 2003 02 01 | 644 | 0.2+ | 0.1+ | 2004 06 12 | 704 | 0.2+ | 0.5+ |
| 1998 05 23 | 704 | (5.1− | 1.8+) | 2003 02 01 | 644 | 0.3+ | 0.0 | 2004 06 16 | 704 | (1.6+ | 0.5+) |
| 1998 05 28 | 704 | 0.6− | 1.7+ | 2003 02 01 | 644 | 0.2+ | 0.0 | 2004 06 16 | 704 | 0.0 | 0.0 |
| 1998 05 28 | 704 | 1.3+ | 0.4+ | 2003 02 26 | 704 | (0.6− | 2.0+) | 2004 06 16 | 704 | 0.1+ | 0.3+ |
| 1998 05 28 | 704 | 1.0+ | 0.8− | 2003 02 26 | 704 | 0.6− | 1.1+ | 2004 06 17 | 644 | 0.3+ | 0.4+ |
| 1998 05 28 | 704 | 1.9− | 0.2+ | 2003 02 26 | 704 | 1.3− | 1.0+ | 2004 06 17 | 644 | 0.3+ | 0.4+ |
| 2001 12 18 | 704 | 0.5− | 1.3+ | 2003 03 08 | 699 | 0.3− | 1.3− | 2004 06 17 | 644 | 0.4+ | 0.4+ |
| 2001 12 18 | 704 | (1.3− | 2.0+) | 2003 03 08 | 699 | 0.7− | 0.2+ | 2006 10 11 | 644 | 0.4− | 1.1+ |
| 2001 12 18 | 704 | (0.1+ | 1.5+) | 2003 03 08 | 699 | 0.1− | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.7+ | 2003 03 08 | 699 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.6− | 0.8+ |
| 2001 12 19 | 704 | 0.3+ | 0.7+ | 2003 03 09 | 644 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.2+ | 1.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.2+ | 2003 03 09 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.4+ | 1.6+ |
| 2001 12 19 | 704 | 0.6− | 0.1+ | 2003 03 09 | 644 | 0.2+ | 0.3+ | 2006 11 23 | 703 | 0.9− | 0.9+ |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2003 04 01 | 644 | 0.5+ | 0.0 | 2006 11 23 | 703 | 2.2− | 0.8− |
| 2001 12 19 | 704 | 0.1+ | 1.4− | 2003 04 01 | 644 | 0.5+ | 0.1− | | | | |
| 2001 12 19 | 704 | 0.2+ | 0.5+ | 2003 04 01 | 644 | 0.3+ | 0.4− | | | | |

## (141266)∗ 2001 YZ$_{31}$ = 2004 GO$_{24}$

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61214)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 44.22803 | | (2000.0) | **P** | **Q** |
| $n$ | 0.18852100 | $\omega$ | 276.58143 | +0.95403544 | +0.23775805 |
| $a$ | 3.0122861 | $\Omega$ | 69.78535 | −0.13341808 | +0.88207411 |
| $e$ | 0.1244870 | $i$ | 11.21109 | −0.26835796 | +0.40671412 |
| $P$ | 5.23 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 699 | 0.1− | 0.2− | 2004 04 20 | 704 | 1.3+ | 0.0 | 2006 11 10 | 644 | 0.4− | 0.0 |
| 2000 07 10 | 699 | 0.7− | 0.6− | 2004 04 20 | 704 | 0.6+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2000 07 10 | 699 | 0.9− | 0.1− | 2004 04 20 | 704 | 1.4+ | 1.5+ | 2006 11 10 | 644 | 0.6− | 0.7+ |
| 2000 07 10 | 699 | 0.4− | 0.6− | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2001 11 19 | 704 | 1.2− | 0.2+ | 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 2001 11 19 | 704 | 1.3− | 0.5+ | 2005 07 29 | E12 | 0.6+ | 1.0+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2001 11 19 | 704 | 0.3+ | 1.0+ | 2005 07 29 | E12 | 0.6+ | 0.7+ | 2006 11 11 | 703 | 0.9+ | 0.3− |
| 2001 11 21 | 704 | 0.0 | 1.3+ | 2005 07 29 | E12 | 0.6+ | 1.2+ | 2006 11 14 | 704 | 1.1− | 0.5− |
| 2001 11 21 | 704 | (0.5− | 1.9+) | 2005 07 29 | E12 | 1.0+ | 1.2+ | 2006 11 14 | 704 | 0.7− | 0.6− |
| 2001 11 21 | 704 | 0.0 | 1.4+ | 2005 08 24 | E12 | 0.1+ | 0.8+ | 2006 11 14 | 704 | 0.0 | 0.1− |
| 2001 11 21 | 704 | (0.1− | 2.0+) | 2005 08 24 | E12 | 0.3+ | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.1− | 1.0+ | 2005 08 24 | E12 | 0.4+ | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 12 18 | 704 | 0.6+ | 0.3+ | 2005 08 24 | E12 | 1.0− | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2001 12 18 | 704 | 0.2− | 1.4+ | 2005 09 01 | E12 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 12 18 | 704 | 0.7+ | 1.0+ | 2005 09 01 | E12 | 0.5+ | 0.8+ | 2006 11 17 | 703 | 1.0− | 0.5+ |
| 2001 12 18 | 704 | 0.4+ | 0.5+ | 2005 09 01 | E12 | 0.8− | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2001 12 19 | 704 | 1.0− | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2001 12 19 | 704 | 0.5+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.7− |
| 2001 12 19 | 704 | 0.6+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.6+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2001 12 19 | 704 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.3− |
| 2001 12 20 | 644 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2001 12 20 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2001 12 20 | 644 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.4− | 1.2− |
| 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 11 02 | 703 | 0.4+ | 0.7+ | 2006 11 23 | G96 | 0.5+ | 1.2− |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 02 | 703 | (0.7− | 2.1+) | 2006 11 28 | 704 | 0.6+ | 0.5+ |
| 2004 04 16 | 704 | 1.4+ | 0.9+ | 2006 11 02 | 703 | 0.3+ | 1.1+ | 2006 11 28 | 704 | 0.8+ | 0.3+ |
| 2004 04 16 | 704 | 1.0− | 0.2+ | 2006 11 02 | 703 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2004 04 16 | 704 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.1− | 1.5+ |
| 2004 04 16 | 704 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | | | | |
| 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 | | | | |

## (141267)∗ 2001 YB$_{32}$

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 260.53371 | | (2000.0) | **P** | **Q** |
| $n$ | 0.17322842 | $\omega$ | 79.06968 | −0.64602936 | −0.75902962 |
| $a$ | 3.1870579 | $\Omega$ | 51.48183 | +0.65382018 | −0.60484645 |
| $e$ | 0.1451908 | $i$ | 5.92365 | +0.39391019 | −0.24090416 |
| $P$ | 5.69 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 07 | 691 | 0.1− | 0.9+ | 2002 01 08 | 704 | (0.5− | 1.7−) | 2003 03 31 | 699 | 0.3− | 0.3− |
| 1992 05 07 | 691 | 0.0 | 0.4− | 2002 01 08 | 704 | (2.2− | 1.2−) | 2003 04 01 | 645 | 0.1− | 0.0 |
| 1992 05 07 | 691 | 0.5+ | 0.6+ | 2002 01 08 | 704 | (0.2+ | 2.6−) | 2003 04 01 | 645 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.8− | 2002 01 08 | 704 | 0.1+ | 0.7− | 2003 04 02 | 608 | 0.2+ | 0.2− |
| 2001 11 12 | 704 | 0.1− | 0.7− | 2002 01 14 | 704 | 1.5+ | 1.0+ | 2003 04 02 | 608 | 0.5+ | 0.1+ |
| 2001 11 12 | 704 | 0.1+ | 0.3− | 2002 01 14 | 704 | 1.5+ | 0.0 | 2003 04 02 | 608 | 0.6+ | 0.2− |
| 2001 11 12 | 704 | 0.1− | 0.4+ | 2002 01 14 | 704 | 0.8+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2001 11 24 | 704 | (2.4− | 0.5+) | 2003 03 06 | 704 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.4+ |
| 2001 11 24 | 704 | 0.2+ | 0.5+ | 2003 03 06 | 704 | 0.3+ | 0.3− | 2006 09 27 | 691 | 0.2− | 0.5+ |
| 2001 11 24 | 704 | 1.0− | 0.6− | 2003 03 06 | 704 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.6− | 0.5+ |
| 2001 11 24 | 704 | 0.0 | 0.2+ | 2003 03 06 | 704 | 0.1− | 0.5+ | 2006 10 15 | 703 | 0.8− | 0.1− |
| 2001 11 24 | 704 | 1.0+ | 0.3− | 2003 03 09 | 704 | 0.5+ | 0.5+ | 2006 10 15 | 703 | 0.6− | 0.2− |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2003 03 09 | 704 | 0.4+ | 0.2− | 2006 10 15 | 703 | 0.2+ | 1.0− |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2003 03 09 | 704 | 0.6+ | 0.6− | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2001 12 18 | 704 | 0.0 | 0.1+ | 2003 03 09 | 704 | 0.5+ | 0.9− | 2006 10 20 | 644 | 0.5+ | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2003 03 09 | 704 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2001 12 18 | 704 | 0.2+ | 0.1+ | 2003 03 30 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 12 19 | 704 | 0.7− | 0.1+ | 2003 03 30 | 704 | (2.0+ | 0.8+) | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 12 19 | 704 | 0.9− | 0.3+ | 2003 03 30 | 704 | 0.8− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.9− | 0.6+ | 2003 03 30 | 704 | (1.1+ | 2.0−) | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.9− | 0.4+ | 2003 03 31 | 699 | 0.0 | 1.2+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 1.0− | 0.8+ | 2003 03 31 | 699 | 0.8+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2002 01 08 | 704 | (0.7− | 2.2−) | 2003 03 31 | 699 | 0.2+ | 1.0+ | 2006 10 22 | G96 | 0.4+ | 0.1+ |

## (141268)∗ 2001 YG$_{32}$ = 2000 SG$_{363}$

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23309), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 338.55832 | | (2000.0) | **P** | **Q** |
| $n$ | 0.17985527 | $\omega$ | 127.24757 | +0.67055012 | −0.72361432 |
| $a$ | 3.1082833 | $\Omega$ | 279.79711 | +0.61721877 | +0.66646425 |
| $e$ | 0.0842502 | $i$ | 9.55294 | +0.41158659 | +0.17946509 |
| $P$ | 5.48 | $H$ | 14.5 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 0.2− | 0.5+ | 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.5+ |
| 2000 09 21 | 699 | (1.2+ | 2.7+) | 2001 12 19 | 704 | 0.7+ | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.2+ |
| 2000 09 21 | 699 | 1.2− | 0.3+ | 2001 12 19 | 704 | 0.2+ | 0.3+ | 2006 10 17 | A50 | 0.1+ | 0.3+ |
| 2000 09 21 | 699 | 0.7+ | 0.4+ | 2001 12 19 | 704 | 0.5+ | 0.3+ | 2006 10 17 | A50 | 0.1− | 0.2− |
| 2000 09 23 | 704 | 0.1− | 0.3− | 2001 12 20 | 704 | (2.0+ | 1.4+) | 2006 10 18 | A50 | 0.0 | 0.7− |
| 2000 09 23 | 704 | 0.2+ | 1.1+ | 2001 12 20 | 704 | (0.8+ | 1.6−) | 2006 10 18 | A50 | 0.1+ | 0.2+ |
| 2000 09 23 | 704 | 0.1+ | 0.7+ | 2001 12 20 | 704 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.8+ | 0.2− |
| 2000 09 23 | 704 | 0.6+ | 0.3− | 2001 12 20 | 704 | 0.9+ | 0.9+ | 2006 10 19 | 703 | 0.5+ | 0.2+ |
| 2000 09 23 | 704 | 0.1− | 0.7− | 2002 01 08 | 704 | 0.6− | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.2+ |
| 2000 09 23 | 704 | 0.6− | 0.5− | 2002 01 08 | 704 | 0.4+ | 1.3+ | 2006 10 19 | 703 | 0.4− | 0.2+ |
| 2000 09 23 | 704 | 0.8+ | 0.6+ | 2002 01 08 | 704 | 1.0− | 0.4− | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2000 09 23 | 704 | 1.2− | 0.0 | 2002 01 08 | 704 | (2.0− | 0.7−) | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 0.4− | 2002 01 14 | 704 | 0.1− | 0.9− | 2006 10 19 | 703 | 0.3− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.7− | 0.6+ | 2002 01 14 | 704 | 0.3− | 1.1− | 2006 10 19 | 703 | 0.6+ | 0.1+ | | |
| 2001 11 21 | 704 | 1.2+ | 1.2+ | 2002 01 14 | 704 | 0.0 | 1.2− | 2006 10 21 | 704 | 0.6− | 2.1− | | |
| 2001 11 21 | 704 | 0.7− | 1.4+ | 2002 01 14 | 704 | 0.1+ | 0.9− | 2006 10 21 | 704 | 2.8+ | 1.5− | | |
| 2001 11 24 | 704 | 0.7− | 0.4− | 2002 01 14 | 704 | 0.2− | 0.9− | 2006 10 21 | 704 | 0.5+ | 0.3− | | |
| 2001 11 24 | 704 | 0.0 | 0.3− | 2005 06 18 | G96 | 0.5− | 0.1+ | 2006 10 21 | 704 | 1.3+ | 1.4− | | |
| 2001 11 24 | 704 | 0.2+ | 0.5− | 2005 06 18 | G96 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 24 | 704 | 0.3+ | 0.1+ | 2005 06 18 | G96 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 12 18 | 704 | 0.1− | 1.3+ | 2005 06 18 | G96 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2001 12 18 | 704 | 0.5− | 0.8+ | 2005 07 08 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.3+ | | |
| 2001 12 18 | 704 | (0.2− | 1.9+) | 2005 07 08 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.3− | | |
| 2001 12 18 | 704 | 0.1− | 1.1+ | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.6− | 0.1+ | | |
| 2001 12 18 | 704 | 0.1+ | 1.2+ | 2006 09 28 | 703 | 0.9− | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.0 | | |
| 2001 12 19 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 703 | 1.3− | 0.1− | | | | | | |

**(141269)∗ 2001 YK$_{32}$ = 2004 KD$_{17}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75250)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.29085 | | | | | |
| $n$ | 0.17923755 | $\omega$ | 213.07744 | | +0.03854575 | +0.98598145 |
| $a$ | 3.1154208 | $\Omega$ | 59.61404 | | −0.87108865 | +0.11275781 |
| $e$ | 0.0652813 | $i$ | 10.84730 | | −0.48961086 | −0.12298882 |
| $P$ | 5.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.8− | 0.9+ | 2004 06 08 | 691 | 0.0 | 0.3+ | | |
| 2000 09 05 | 645 | 0.1+ | 0.1+ | 2004 04 22 | 704 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.1+ | | |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2004 04 22 | 704 | 0.5+ | 0.7+ | 2006 10 03 | G96 | 0.1+ | 0.2− | | |
| 2000 09 27 | 645 | 0.1− | 0.1− | 2004 04 22 | 704 | 0.8+ | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.0 | | |
| 2001 11 21 | 704 | 0.7− | 0.2− | 2004 05 21 | 704 | 1.1+ | 1.3+ | 2006 10 03 | G96 | 0.4+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.0 | 0.8+ | 2004 05 21 | 704 | 0.6− | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.3+ | | |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2004 05 21 | 704 | 0.0 | 1.1− | 2006 10 18 | 691 | 0.0 | 0.5+ | | |
| 2001 12 18 | 704 | 0.2+ | 0.6− | 2004 05 28 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.2+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.6+ | 2004 05 28 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2001 12 18 | 704 | 0.3+ | 0.5+ | 2004 05 28 | 691 | 0.6− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.7− | 2004 05 29 | 291 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ | | |
| 2001 12 19 | 704 | 0.4+ | 0.0 | 2004 05 29 | 291 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2+ | | |
| 2001 12 19 | 704 | 0.2+ | 0.2− | 2004 05 29 | 291 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.5− | 0.2+ | | |
| 2001 12 19 | 704 | 0.4− | 0.3+ | 2004 06 08 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.0 | | |
| 2001 12 19 | 704 | 0.1− | 0.7+ | 2004 06 08 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |

**(141270)∗ 2001 YA$_{38}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.47144 | | | | | |
| $n$ | 0.18833773 | $\omega$ | 122.22686 | | +0.79554613 | −0.58404390 |
| $a$ | 3.0142400 | $\Omega$ | 274.00392 | | +0.48716491 | +0.77481661 |
| $e$ | 0.1042054 | $i$ | 9.30192 | | +0.36024534 | +0.24197510 |
| $P$ | 5.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.7+ | 0.6− | 2005 07 01 | 691 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.6− | | |
| 2000 08 31 | 704 | 1.1− | 0.1− | 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 11 02 | G96 | 0.5− | 0.5− | | |
| 2000 08 31 | 704 | 0.0 | 0.5+ | 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.3− | | |
| 2000 08 31 | 704 | 0.0 | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1− | | |
| 2001 11 19 | 704 | 0.7− | 0.8− | 2005 07 05 | 644 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2001 11 19 | 704 | 0.1+ | 0.1− | 2005 07 05 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2001 11 19 | 704 | 0.5− | 0.3− | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.1+ | | |
| 2001 11 24 | 704 | 0.4+ | 0.5+ | 2005 07 26 | 644 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.4− | 0.4+ | | |
| 2001 11 24 | 704 | 0.2+ | 1.1+ | 2005 07 26 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.4− | | |
| 2001 11 24 | 704 | 0.5+ | 1.4+ | 2005 07 26 | 644 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.5− | | |
| 2001 12 18 | 704 | 0.4+ | 0.2+ | 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2001 12 18 | 704 | 0.1− | 0.3− | 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.6− | | |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2005 07 30 | 644 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2001 12 18 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.9− | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.5− | | |
| 2001 12 18 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.5+ | 2006 11 20 | G96 | 0.1+ | 0.6− | | |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.5+ | 2006 11 20 | G96 | 0.0 | 0.3− | | |
| 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 1.0− | 0.8− | 2006 11 20 | G96 | 0.3+ | 0.3− | | |
| 2001 12 19 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 703 | 0.3− | 0.6− | 2006 11 22 | 703 | 1.0+ | 0.8+ | | |
| 2001 12 19 | 704 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.4− | 0.6− | 2006 11 22 | 703 | 0.7+ | 0.4+ | | |
| 2002 01 14 | 704 | 0.1− | 1.0+ | 2006 10 19 | 703 | 0.6+ | 1.1− | 2006 11 22 | 703 | 0.4+ | 0.4+ | | |
| 2002 01 14 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.7+ | 0.4− | 2006 11 22 | 703 | 0.2+ | 0.2+ | | |
| 2002 01 14 | 704 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.7− | 1.0+ | 2006 11 23 | 703 | 0.1+ | 0.7+ | | |
| 2002 01 14 | 704 | 0.7− | 1.0+ | 2006 10 27 | 703 | 0.2+ | 0.6− | 2006 11 23 | 703 | 0.3+ | 0.8+ | | |
| 2002 01 14 | 704 | 0.5− | 0.8+ | 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.5− | 0.9+ | | |
| 2005 07 01 | 691 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3− | 1.2− | 2006 11 23 | 703 | 1.1+ | 0.3− | | |
| 2005 07 01 | 691 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.5− | | | | | | |

**(141271)∗ 2001 YA$_{39}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.21256 | | | | | |
| $n$ | 0.21681389 | $\omega$ | 33.83440 | | −0.20151325 | −0.97758959 |
| $a$ | 2.7441719 | $\Omega$ | 67.85639 | | +0.88346585 | −0.20826218 |
| $e$ | 0.1281866 | $i$ | 3.77100 | | +0.42294267 | −0.03074823 |
| $P$ | 4.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.0− | 0.1+ | 2001 12 23 | 691 | 0.1− | 0.2− | 2005 10 06 | 691 | 0.0 | 0.2+ | | |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2001 12 23 | 691 | 1.1− | 0.3− | 2005 10 12 | 691 | 0.0 | 0.2+ | | |
| 2001 11 20 | 704 | 0.1− | 0.4− | 2001 12 23 | 691 | 0.0 | 0.4− | 2005 10 12 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.4− | 2002 01 08 | 704 | (0.1− | 2.1−) | 2005 10 12 | 691 | 0.3+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.2+ | 0.8− | 2002 01 08 | 704 | 0.6− | 0.2+ | 2005 11 01 | G96 | 0.0 | 0.1− | | |
| 2001 11 21 | 704 | 0.4+ | 0.6+ | 2002 01 08 | 704 | 0.5+ | 1.3+ | 2005 11 01 | G96 | 0.2+ | 0.1− | | |
| 2001 11 21 | 704 | 0.3+ | 0.4+ | 2002 01 14 | 704 | 0.2− | 0.3+ | 2005 11 01 | G96 | 0.1− | 0.3− | | |
| 2001 11 21 | 704 | 0.6+ | 0.8− | 2002 01 14 | 704 | 0.1+ | 0.6− | 2005 11 01 | G96 | 0.4− | 0.2+ | | |
| 2001 11 21 | 704 | 0.6+ | 0.3+ | 2002 01 14 | 704 | 0.1+ | 0.3− | 2005 11 04 | 691 | 0.2− | 0.1− | | |
| 2001 12 17 | 291 | 0.3+ | 0.7+ | 2002 01 14 | 704 | 0.5+ | 0.5− | 2005 11 04 | 691 | 0.1+ | 0.0 | | |
| 2001 12 17 | 291 | 0.0 | 0.8+ | 2002 01 14 | 704 | 0.4+ | 0.1+ | 2005 11 04 | 691 | 0.1+ | 0.2+ | | |
| 2001 12 17 | 291 | 0.2+ | 0.8+ | 2003 04 04 | 691 | 0.4+ | 0.9+ | 2005 12 01 | G96 | 0.1+ | 0.1− | | |
| 2001 12 18 | 704 | 0.0 | 0.2− | 2003 04 04 | 691 | 0.3+ | 0.7+ | 2005 12 01 | G96 | 0.6− | 0.1+ | | |
| 2001 12 18 | 704 | 0.3+ | 0.3− | 2003 04 04 | 691 | 0.3+ | 1.0+ | 2005 12 01 | G96 | 0.3− | 0.2− | | |
| 2001 12 18 | 704 | 0.1+ | 0.7− | 2005 09 25 | 691 | 0.3− | 0.3+ | 2005 12 01 | G96 | 0.1− | 0.2− | | |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2005 09 25 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.5− | 0.6− | | |
| 2001 12 18 | 704 | 0.3− | 0.5− | 2005 09 25 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2001 12 19 | 704 | 0.2+ | 0.3+ | 2005 09 30 | 699 | 0.6+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.5+ | | |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2005 09 30 | 699 | 0.7− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2001 12 19 | 704 | 0.5+ | 0.4+ | 2005 09 30 | 699 | (2.9+ | 1.4−) | 2006 11 25 | G96 | 0.2+ | 0.2− | | |
| 2001 12 19 | 704 | 0.2+ | 0.3− | 2005 09 30 | 699 | (0.7+ | 2.3−) | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2001 12 19 | 704 | 0.8− | 0.4− | 2005 10 01 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.7− | 0.6− | | |
| 2001 12 19 | 704 | 0.5− | 0.1+ | 2005 10 01 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.5− | | |
| 2001 12 19 | 704 | 0.3+ | 0.3+ | 2005 10 01 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.1− | | |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2005 10 06 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.2− | | |
| 2001 12 19 | 704 | 0.4+ | 1.1+ | 2005 10 06 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1− | 1.0− | | |

**(141272)∗ 2001 YJ$_{42}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 293.14652 | | | | | |
| $n$ | 0.18062570 | $\omega$ | 58.03563 | | −0.34614375 | −0.93309258 |
| $a$ | 3.0994385 | $\Omega$ | 52.52833 | | +0.81393422 | −0.35040234 |
| $e$ | 0.1142167 | $i$ | 7.06273 | | +0.46657860 | −0.08097181 |
| $P$ | 5.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.2− | 0.2+ | 2003 03 26 | 644 | 0.0 | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2000 09 05 | 645 | 0.1− | 0.1+ | 2003 03 26 | 644 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.5+ | 0.8+ | 2003 03 26 | 644 | 0.2+ | 0.4+ | 2006 10 27 | 683 | (0.5+ | 1.6−) |
| 2001 11 12 | 704 | 0.4− | 0.3− | 2003 04 10 | 691 | 0.4+ | 0.6+ | 2006 10 27 | 683 | (1.2+ | 2.3−) |
| 2001 11 12 | 704 | 1.3+ | 0.4+ | 2003 04 10 | 691 | 0.3+ | 0.7+ | 2006 10 27 | 683 | 0.7+ | 0.9− |
| 2001 11 12 | 704 | 0.4− | 0.3− | 2003 04 10 | 691 | 0.0 | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.4+ |
| 2001 12 18 | 704 | 0.2− | 0.5− | 2005 08 05 | 644 | 0.3+ | 1.3+ | 2006 10 27 | 691 | 0.3+ | 0.4+ |
| 2001 12 18 | 704 | 0.3− | 0.0 | 2005 08 05 | 644 | 0.2− | 0.8+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.4− | 2005 08 05 | 644 | 0.4+ | 1.1+ | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2001 12 18 | 704 | 0.3− | 0.8− | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 12 19 | 704 | 0.9+ | 1.2− | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.6+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 12 19 | 704 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.9+ | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 01 08 | 704 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 01 08 | 704 | 0.2+ | 1.0− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 01 08 | 704 | 0.2+ | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2002 01 14 | 704 | (0.1− | 1.5+) | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.9− | 0.3− |
| 2002 01 14 | 704 | 0.3− | 0.9+ | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 01 14 | 704 | 0.2+ | 0.8+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.4− |
| 2002 01 14 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.9+ |
| 2002 01 14 | 704 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2003 03 09 | 704 | 0.6+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2003 03 09 | 704 | 0.2+ | 0.5− | 2006 10 22 | 683 | (2.3− | 3.0+) | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2003 03 09 | 704 | 1.3+ | 1.4+ | 2006 10 22 | 683 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2003 03 09 | 704 | 0.3+ | 0.9+ | 2006 10 22 | 683 | 0.6− | 0.1− | 2006 11 17 | 703 | 1.6− | 0.6+ |
| 2003 03 09 | 704 | 1.0+ | 0.2− | 2006 10 23 | 683 | (0.3+ | 1.8−) | 2006 11 17 | 703 | 0.4− | 0.7+ |
| 2003 03 26 | 691 | 0.0 | 0.2+ | 2006 10 23 | 683 | (1.6− | 2.5−) | 2006 11 17 | 703 | 0.7− | 0.2+ |
| 2003 03 26 | 691 | 0.0 | 0.6+ | 2006 10 23 | 683 | 0.2− | 1.2− | 2006 11 17 | 703 | 1.1− | 0.4− |
| 2003 03 26 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3+ | | | | |

**(141273)∗ 2001 YM$_{42}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.93349 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21544158 | $\omega$ | 158.83044 | | +0.13200264 | −0.98324238 |
| $a$ | 2.7558127 | $\Omega$ | 283.41385 | | +0.88987599 | +0.17342710 |
| $e$ | 0.1979910 | $i$ | 7.42701 | | +0.43668755 | −0.05619126 |
| $P$ | 4.57 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.4− | 0.5+ | 2002 01 14 | 704 | 0.2− | 0.6+ | 2005 10 02 | 699 | 0.1+ | 0.8+ |
| 2000 07 31 | 807 | 0.2+ | 0.5+ | 2002 01 14 | 704 | 0.1− | 0.6+ | 2005 10 07 | 703 | 0.7− | 0.7+ |
| 2001 11 24 | 704 | 0.2+ | 0.1− | 2002 01 14 | 704 | 0.5− | 0.5+ | 2005 10 07 | 703 | 0.2+ | 0.3− |
| 2001 11 24 | 704 | 0.5− | 0.1− | 2002 01 14 | 704 | 0.2− | 0.5+ | 2005 10 07 | 703 | 0.4− | 0.3− |
| 2001 11 24 | 704 | 0.3+ | 0.1+ | 2002 02 06 | 704 | (0.6− | 2.0+) | 2005 10 07 | 703 | (1.0+ | 1.7+) |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2002 02 06 | 704 | 0.7+ | 1.4+ | 2005 10 28 | 703 | 0.3− | 1.1− |
| 2001 12 18 | 704 | 0.2− | 0.0 | 2002 02 06 | 704 | 0.1− | 1.4+ | 2005 10 28 | 703 | 0.0 | 0.5− |
| 2001 12 18 | 704 | 0.1+ | 0.1− | 2002 02 06 | 704 | (0.7− | 2.5+) | 2005 10 28 | 703 | 0.4− | 0.4− |
| 2001 12 18 | 704 | 0.1+ | 0.3− | 2005 09 11 | 704 | 0.2− | 0.2+ | 2005 10 28 | 703 | 0.3− | 0.4− |
| 2001 12 19 | 704 | 0.2+ | 0.7− | 2005 09 11 | 704 | 0.1+ | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.3+ |
| 2001 12 19 | 704 | 0.1+ | 0.5− | 2005 09 11 | 704 | 0.2− | 0.2− | 2006 10 12 | 691 | 0.2− | 0.4+ |
| 2001 12 19 | 704 | 0.2+ | 0.5− | 2005 09 11 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.2− | 2005 09 11 | 704 | 1.2+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.5− |
| 2001 12 20 | 704 | 0.1+ | 0.3− | 2005 09 30 | 644 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.5− | 0.1− |
| 2001 12 20 | 704 | 0.2+ | 0.5− | 2005 09 30 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.5− | 0.3+ |
| 2001 12 20 | 704 | 0.4+ | 0.1− | 2005 09 30 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.5− | 0.3− |
| 2001 12 20 | 704 | 0.4+ | 0.2− | 2005 10 01 | 703 | 0.3− | 0.6+ | 2006 10 23 | 691 | 0.5+ | 0.1− |
| 2001 12 20 | 704 | 0.4+ | 0.1+ | 2005 10 01 | 703 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.6+ | 0.5− |
| 2002 01 08 | 704 | 0.1+ | 0.0 | 2005 10 01 | 703 | 1.0+ | 0.2+ | 2006 10 23 | 691 | 0.5+ | 0.2+ |
| 2002 01 08 | 704 | 0.3− | 0.1− | 2005 10 01 | 703 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2002 01 08 | 704 | 0.6− | 0.0 | 2005 10 02 | 699 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.5− | 0.0 |
| 2002 01 08 | 704 | 0.5− | 0.0 | 2005 10 02 | 699 | 0.7− | 0.6− | 2006 11 23 | G96 | 0.8− | 0.3+ |
| 2002 01 08 | 704 | 1.3− | 0.6− | 2005 10 02 | 699 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.6− | 0.3+ |

**(141274)∗ 2001 YY$_{42}$ = 1998 HH$_{58}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 94426)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.86401 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18164025 | $\omega$ | 166.44446 | | −0.69215595 | +0.72106102 |
| $a$ | 3.0878864 | $\Omega$ | 59.74385 | | −0.66554256 | −0.62077146 |
| $e$ | 0.1144944 | $i$ | 2.08874 | | −0.27923688 | −0.30775608 |
| $P$ | 5.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.8− | 0.3− | 2001 12 19 | 704 | 0.7− | 1.0+ | 2005 12 01 | G96 | 0.5− | 0.2+ |
| 1998 03 29 | 704 | (3.0+ | 0.3+) | 2001 12 19 | 704 | 0.2− | 1.4+ | 2005 12 01 | G96 | 0.3− | 0.1− |
| 1998 03 29 | 704 | 1.9− | 0.4+ | 2002 12 11 | 645 | 0.1− | 0.1− | 2005 12 01 | G96 | 0.1− | 0.1+ |
| 1998 03 29 | 704 | (4.5− | 0.3−) | 2002 12 11 | 645 | 0.0 | 0.3− | 2005 12 01 | G96 | 0.0 | 0.3− |
| 1998 04 21 | 704 | 0.4+ | 0.3+ | 2003 02 22 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 1998 04 21 | 704 | 0.9+ | 0.5+ | 2003 02 22 | 644 | 0.5+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 1998 04 21 | 704 | 0.0 | 0.6− | 2003 02 22 | 644 | 0.6+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 1998 04 21 | 704 | (2.5− | 1.2−) | 2003 02 28 | 608 | 0.9+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 1.3− |
| 1998 04 22 | 704 | 0.6+ | 0.5− | 2003 02 28 | 608 | 0.9+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 1998 04 22 | 704 | 0.1+ | 0.1+ | 2003 02 28 | 608 | 1.1+ | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.3− |
| 1998 04 22 | 704 | 0.3− | 0.6+ | 2003 03 06 | 704 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 1998 04 22 | 704 | 0.7− | 1.1+ | 2003 03 06 | 704 | 0.5− | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.0 |
| 1998 04 22 | 704 | 1.7− | 0.7− | 2003 03 06 | 704 | 1.4− | 0.3− | 2006 11 14 | 691 | 0.3− | 0.0 |
| 2000 09 27 | 691 | 0.5+ | 0.2+ | 2003 03 06 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2000 09 27 | 691 | 0.4+ | 0.2+ | 2003 03 23 | 645 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2000 09 27 | 691 | 0.3+ | 0.1+ | 2003 03 23 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.2− | 0.3− |
| 2001 12 14 | 557 | 1.2− | 0.3+ | 2003 03 24 | 691 | 1.0+ | 0.2+ | 2006 11 14 | 691 | 0.4+ | 0.2− |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2003 03 24 | 691 | 0.7+ | 0.4+ | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 2001 12 18 | 704 | 0.7− | 0.3+ | 2003 03 24 | 691 | 0.8+ | 0.4+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.2+ | 0.4+ | 2003 03 30 | 645 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.7− | 0.9+ | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 0.1+ | 2003 04 05 | 691 | (0.2− | 1.7+) | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2003 04 05 | 691 | (0.0 | 1.6+) | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2003 04 05 | 691 | 0.2+ | 1.4+ | 2006 11 27 | G96 | 0.3+ | 0.1+ |

**(141275)∗ 2001 YH$_{43}$ = 1995 SQ$_{22}$ = 2005 PA$_{7}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85366), A. Doppler (*MPO* 94426)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.78325 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18823424 | $\omega$ | 296.32655 | | +0.99897175 | −0.01380774 |
| $a$ | 3.0153447 | $\Omega$ | 64.49087 | | +0.03055318 | +0.90874727 |
| $e$ | 0.0974303 | $i$ | 2.74251 | | −0.03349547 | +0.41711839 |
| $P$ | 5.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.2+ | 2004 05 19 | 291 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.6− |
| 1995 09 19 | 691 | 0.4− | 0.1+ | 2004 05 19 | 291 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.6− | 0.2− |
| 1995 09 19 | 691 | 0.3− | 0.0 | 2004 05 19 | 291 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.1+ |
| 1995 09 30 | 691 | (0.8+ | 2.1−) | 2005 07 18 | 644 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 1995 09 30 | 691 | 0.5+ | 0.4− | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 1995 09 30 | 691 | 0.2+ | 0.2+ | 2005 07 18 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 1998 02 26 | 691 | 0.3− | 0.9− | 2005 08 01 | E12 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.6− |
| 1998 02 26 | 691 | 0.3− | 0.1− | 2005 08 01 | E12 | 0.7− | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.5+ |
| 1998 02 26 | 691 | 0.6− | 0.2+ | 2005 08 01 | E12 | 0.8+ | 0.2− | 2006 11 10 | 691 | 0.4− | 0.1− |
| 2001 12 18 | 704 | (2.0+ | 0.5−) | 2005 08 01 | E12 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | (2.1+ | 1.2−) | 2005 08 05 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.0 | 1.3− |
| 2001 12 18 | 704 | 0.8+ | 1.0− | 2005 08 05 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2001 12 19 | 704 | 0.3+ | 0.1− | 2005 08 05 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 1.0+ |
| 2001 12 19 | 704 | 0.4+ | 0.0 | 2005 08 22 | 644 | 0.0 | 0.3− | 2006 11 11 | 703 | (1.1− | 1.7+) |
| 2001 12 19 | 704 | 0.8+ | 1.0− | 2005 08 22 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2005 08 22 | 644 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.3− | 0.4+ | | |
| 2002 01 05 | 691 | 0.1− | 0.1+ | 2005 11 06 | G96 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.3+ | | |
| 2002 01 05 | 691 | 0.5+ | 0.2+ | 2005 11 06 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.8− | 0.1+ | | |
| 2002 01 05 | 691 | 0.1− | 0.2− | 2005 11 06 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.1+ | | |
| 2003 03 30 | 645 | 0.2+ | 0.1+ | 2005 11 06 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.5− | 0.2− | | |
| 2003 03 30 | 645 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.2− | | | | | | |

**(141276)∗ 2001 YR$_{46}$ = 2003 FU$_{47}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47084)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.29578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21854975 | $\omega$ | 253.80278 | | −0.72163811 | +0.69209119 | |
| $a$ | 2.7296220 | $\Omega$ | 329.98760 | | −0.62250722 | −0.65870376 | |
| $e$ | 0.1264173 | $i$ | 1.80501 | | −0.30285837 | −0.29515952 | |
| $P$ | 4.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 25 | 691 | 0.1− | 0.7− | 2003 03 10 | 704 | (0.2+ | 2.2−) | 2003 04 28 | 699 | 0.9+ | 0.3− | | |
| 1998 01 25 | 691 | 0.0 | 0.6− | 2003 03 10 | 704 | (0.5− | 2.8+) | 2003 04 28 | 699 | (1.9− | 1.4+) | | |
| 1998 01 25 | 691 | 0.1− | 0.5− | 2003 03 24 | 691 | 0.9+ | 0.6+ | 2003 04 28 | 699 | 0.3− | 0.8− | | |
| 2000 10 01 | 699 | 1.3− | 0.3+ | 2003 03 24 | 691 | 0.8+ | 0.7+ | 2005 10 26 | 691 | 0.1+ | 0.6+ | | |
| 2000 10 01 | 699 | 0.2+ | 0.8+ | 2003 03 24 | 691 | 0.6+ | 0.7+ | 2005 10 26 | 691 | 0.4− | 0.3+ | | |
| 2000 10 01 | 699 | 1.1+ | 0.1− | 2003 03 27 | 644 | 0.6+ | 0.6+ | 2005 10 26 | 691 | 0.2− | 0.1+ | | |
| 2000 10 01 | 699 | 0.7+ | 0.9+ | 2003 03 27 | 699 | 0.4− | 1.0− | 2005 10 27 | 691 | 0.1− | 0.5+ | | |
| 2000 10 02 | 704 | 0.4− | 0.6− | 2003 03 27 | 699 | 0.1+ | 0.1− | 2005 10 27 | 691 | 0.2− | 0.3+ | | |
| 2000 10 02 | 704 | 0.1+ | 0.5+ | 2003 03 27 | 644 | 0.5+ | 0.7+ | 2005 10 27 | 691 | 0.3− | 0.1+ | | |
| 2000 10 02 | 704 | 0.3− | 1.5+ | 2003 03 27 | 699 | 0.5+ | 0.2+ | 2005 11 04 | 691 | 0.3− | 0.4+ | | |
| 2000 10 02 | 704 | (1.6− | 2.8+) | 2003 03 27 | 699 | 0.3+ | 1.1− | 2005 11 04 | 691 | 0.0 | 0.2+ | | |
| 2001 12 18 | 704 | 0.9+ | 0.1− | 2003 03 27 | 644 | 0.5+ | 0.5+ | 2005 11 04 | 691 | 0.2+ | 0.3+ | | |
| 2001 12 18 | 704 | 0.3− | 0.5− | 2003 04 01 | 704 | 0.5+ | 0.3+ | 2005 11 10 | 691 | 0.1− | 0.4+ | | |
| 2001 12 18 | 704 | 0.0 | 0.4+ | 2003 04 01 | 704 | 0.2+ | 0.4+ | 2005 11 10 | 691 | 0.1− | 0.4+ | | |
| 2001 12 19 | 704 | 1.1− | 0.7+ | 2003 04 01 | 704 | 0.2+ | 0.3+ | 2005 11 10 | 691 | 0.0 | 0.2+ | | |
| 2001 12 19 | 704 | 0.4− | 0.3+ | 2003 04 01 | 704 | (1.8+ | 0.7+) | 2006 10 23 | G96 | 0.3+ | 0.1− | | |
| 2001 12 19 | 704 | 0.2− | 0.9+ | 2003 04 01 | 704 | 0.2+ | 0.7+ | 2006 10 23 | G96 | 0.3+ | 0.5− | | |
| 2001 12 19 | 704 | 0.1− | 0.9+ | 2003 04 08 | 691 | 0.0 | 0.6+ | 2006 10 23 | G96 | 0.5+ | 0.7− | | |
| 2001 12 19 | 704 | 0.0 | 1.0+ | 2003 04 08 | 704 | 1.3− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2002 01 08 | 704 | 0.2− | 0.8− | 2003 04 08 | 691 | 0.4+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 1.2− | | |
| 2002 01 08 | 704 | 0.3− | 0.5− | 2003 04 08 | 704 | 0.6− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.0 | | |
| 2002 01 08 | 704 | 0.4− | 0.0 | 2003 04 08 | 704 | 1.2+ | 0.9− | 2006 11 22 | G96 | 0.3− | 0.5− | | |
| 2002 01 08 | 704 | 0.4− | 1.2− | 2003 04 08 | 704 | 0.3+ | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.3− | | |
| 2003 01 13 | 291 | 0.8− | 0.4+ | 2003 04 08 | 691 | 0.4+ | 0.6+ | 2006 11 27 | G96 | 0.1+ | 0.8− | | |
| 2003 01 13 | 291 | 0.8− | 0.5+ | 2003 04 25 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.8+ | 0.5− | | |
| 2003 01 13 | 291 | 0.9− | 1.4+ | 2003 04 25 | 691 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.5+ | 0.8− | | |
| 2003 03 10 | 704 | 0.4− | 1.4− | 2003 04 25 | 691 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.4− | | |
| 2003 03 10 | 704 | 0.1− | 1.2− | 2003 04 28 | 699 | 0.2− | 1.1+ | | | | | | |

**(141277)∗ 2001 YT$_{47}$ = 2004 JS$_{3}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65249)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.33674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18518731 | $\omega$ | 274.89435 | | +0.96433979 | +0.25469503 | |
| $a$ | 3.0483294 | $\Omega$ | 70.36405 | | −0.20228107 | +0.88461145 | |
| $e$ | 0.1243871 | $i$ | 4.38226 | | −0.17067849 | +0.39063157 | |
| $P$ | 5.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.7− | 0.2+ | 2004 05 13 | 291 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.2+ | | |
| 2001 12 14 | 291 | 1.3− | 0.2+ | 2004 05 13 | 291 | 0.6+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ | | |
| 2001 12 14 | 291 | 0.2+ | 0.2+ | 2004 05 14 | 291 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.5+ | | |
| 2001 12 18 | 704 | 0.7+ | 0.3− | 2004 05 14 | 291 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.5+ | | |
| 2001 12 18 | 704 | 0.6+ | 0.1+ | 2004 05 14 | 291 | 0.4+ | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2+ | | |
| 2001 12 18 | 704 | (1.9+ | 0.6−) | 2004 05 23 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.4+ | | |
| 2001 12 18 | 704 | 1.0+ | 0.2+ | 2004 05 23 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.2+ | | |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2004 05 23 | 691 | 0.0 | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.4+ | | |
| 2001 12 19 | 704 | 0.5+ | 0.2+ | 2004 05 28 | 291 | 0.2+ | 0.5+ | 2006 11 14 | 691 | 0.2− | 0.6+ | | |
| 2001 12 19 | 704 | 0.5+ | 0.4+ | 2004 05 28 | 291 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.6+ | | |
| 2001 12 19 | 704 | 0.1− | 0.4− | 2004 05 28 | 291 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 1.0+ | 1.0+ | | |
| 2001 12 20 | 291 | 0.3+ | 0.2− | 2005 07 03 | 644 | 0.9− | 0.9+ | 2006 11 18 | 704 | 0.8− | 1.1+ | | |
| 2001 12 20 | 291 | 0.3+ | 0.2− | 2005 07 03 | 644 | 0.6− | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.3+ | | |
| 2001 12 20 | 291 | 0.2+ | 0.3− | 2005 07 03 | 644 | 0.2− | 0.4+ | 2006 11 21 | 691 | 0.2− | 0.4+ | | |
| 2002 01 14 | 704 | 0.0 | 1.0− | 2005 07 31 | E12 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.3+ | | |
| 2002 01 14 | 704 | 0.5+ | 0.4− | 2005 07 31 | E12 | 1.0+ | 1.2+ | 2006 11 21 | 691 | 0.0 | 0.4+ | | |
| 2002 01 14 | 704 | 0.3− | 0.8− | 2005 07 31 | E12 | 1.2+ | 0.2− | 2006 11 21 | 704 | 0.3− | 1.0+ | | |
| 2002 01 14 | 704 | 0.1+ | 0.9− | 2005 07 31 | E12 | 1.0− | 0.5− | 2006 11 21 | 704 | 0.3− | 0.4+ | | |
| 2002 01 14 | 704 | 1.0+ | 0.7− | 2005 08 12 | E12 | 0.5+ | 0.8+ | 2006 11 21 | 704 | 0.1+ | 0.4− | | |
| 2004 03 26 | 291 | 0.3− | 0.4+ | 2005 08 12 | E12 | (0.0 | 1.8+) | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 2004 03 26 | 291 | 0.0 | 0.3+ | 2005 08 12 | E12 | 0.6− | 1.0− | 2006 11 21 | 704 | 0.4+ | 0.6+ | | |
| 2004 03 26 | 291 | 0.2− | 0.3+ | 2005 08 12 | E12 | 0.3− | 1.0+ | 2006 11 27 | 703 | 0.2− | 0.2− | | |
| 2004 04 19 | 291 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.1− | 0.7+ | | |
| 2004 04 19 | 291 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.4− | | |
| 2004 04 19 | 291 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.6− | 0.2− | | |
| 2004 05 09 | 291 | 0.2− | 1.1+ | 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.5− | 1.2+ | | |
| 2004 05 09 | 291 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.0 | 1.5+ | | |
| 2004 05 09 | 291 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.8− | 0.8+ | | |
| 2004 05 13 | 291 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1− | | | | | | |

**(141278)∗ 2001 YW$_{52}$ = 2003 EU$_{46}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43218)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.05697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17911576 | $\omega$ | 40.62615 | | +0.85866786 | −0.51251911 | |
| $a$ | 3.1168329 | $\Omega$ | 350.20358 | | +0.46443124 | +0.78111309 | |
| $e$ | 0.1343053 | $i$ | 1.24530 | | +0.21677900 | +0.35663216 | |
| $P$ | 5.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 1.0− | 0.8+ | 2005 06 03 | 691 | 0.0 | 0.9+ | 2006 11 09 | 691 | 0.0 | 0.2+ | | |
| 2000 08 24 | 704 | 1.1− | 1.1+ | 2005 06 03 | 691 | 0.1− | 0.7+ | 2006 11 09 | 691 | 0.2− | 0.1+ | | |
| 2000 08 24 | 704 | (2.3− | 1.6+) | 2005 06 03 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2000 08 24 | 704 | 0.5− | 1.7+ | 2006 07 22 | G96 | 0.2− | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2001 12 18 | 704 | (1.9+ | 2.2−) | 2006 07 22 | G96 | 0.3− | 0.6− | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2001 12 18 | 704 | (2.6+ | 1.1−) | 2006 07 22 | G96 | 1.2− | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.0 | | |
| 2001 12 18 | 704 | 1.3+ | 1.2− | 2006 07 22 | G96 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.1+ | | |
| 2001 12 18 | 704 | (2.0+ | 1.1−) | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 2001 12 18 | 704 | (1.9+ | 1.4−) | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.2+ | | |
| 2001 12 19 | 704 | (0.1− | 1.8−) | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.5+ | | |
| 2001 12 19 | 704 | (0.1+ | 2.1−) | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 1.4− | 0.3+ | | |
| 2001 12 19 | 704 | 0.5− | 1.4− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.1+ | | |
| 2001 12 19 | 704 | (0.1+ | 1.7−) | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.0 | | |
| 2002 01 14 | 704 | 0.5− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.1− | | |
| 2002 01 14 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.4+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.4+ | | |
| 2002 01 14 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.7− | 0.5+ | | |
| 2002 01 14 | 704 | 1.1+ | 0.5− | 2006 10 19 | 644 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.4+ | | |
| 2002 01 14 | 704 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.4+ | 0.1− | | |
| 2003 03 08 | 291 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.6+ | | |
| 2003 03 08 | 291 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 2003 03 08 | 291 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.5+ | | |
| 2003 03 09 | 699 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.5+ | | |
| 2003 03 09 | 699 | 1.1− | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.5+ | | |
| 2003 03 09 | 699 | 0.6− | 0.8+ | 2006 10 27 | 224 | 0.2− | 0.3+ | 2006 11 21 | 704 | 1.1− | 0.3− | | |
| 2003 03 09 | 699 | 0.3+ | 1.1+ | 2006 10 27 | 224 | 0.5+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1+ | | |
| 2003 03 31 | 691 | 0.2+ | 0.8+ | 2006 10 27 | 224 | 0.8+ | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.3+ | | |
| 2003 03 31 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 704 | 0.5− | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.0 | | |
| 2003 03 31 | 691 | 0.4+ | 0.4+ | 2006 10 28 | 704 | 1.3− | 1.0+ | 2006 11 23 | 691 | 0.3− | 0.1+ | | |
| 2003 04 01 | 695 | 0.4+ | 0.2+ | 2006 10 28 | 704 | 0.8− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 695 | 0.6+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2003 04 09 | 691 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2003 04 09 | 691 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2003 04 09 | 691 | 0.8− | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.5+ | 0.0 |

**(141279)∗ 2001 YQ$_{53}$ = 2000 TM$_{23}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43218)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 264.77039 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17754350 | ω | 82.25467 | | −0.81671721 | −0.57628727 | |
| *a* | 3.1352069 | Ω | 62.55089 | | +0.51549286 | −0.75157613 | |
| *e* | 0.1306200 | *i* | 1.90032 | | +0.25930696 | −0.32097711 | |
| *P* | 5.55 | *H* | 14.9 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.4− | 0.4+ | 2003 03 27 | 699 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | (2.2− | 0.8+) | 2003 03 27 | 644 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.4+ | 0.8+ | 2003 04 01 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.4− | 1.4+ | 2003 04 01 | 704 | 0.4− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2003 04 01 | 704 | 0.5+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.4− | 2003 04 01 | 704 | 0.6+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 0.9− | 2003 04 01 | 704 | 1.2+ | 0.0 | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 1.1+ | 1.1− | 2003 04 03 | 699 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 1.3− | 2003 04 03 | 699 | 0.7− | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2001 11 21 | 704 | (1.8+ | 0.3−) | 2003 04 03 | 699 | 0.5− | 1.4+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 1.1+ | 0.8− | 2003 04 03 | 699 | 1.2− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2001 12 18 | 704 | 0.5− | 0.0 | 2003 04 08 | 691 | 0.8+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.4− | 0.2+ | 2003 04 08 | 704 | 1.0− | 0.7+ | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2003 04 08 | 704 | 1.4− | 0.9+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 12 19 | 704 | 0.3+ | 0.1− | 2003 04 08 | 691 | 0.7+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.7+ | 0.3− | 2003 04 08 | 704 | (1.2− | 1.6+) | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 1.2− | 0.6− | 2003 04 08 | 691 | 0.8+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2001 12 19 | 704 | 0.4− | 0.1+ | 2003 04 27 | 704 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2002 01 08 | 704 | 0.2− | 0.0 | 2003 04 27 | 704 | 0.5+ | 1.3+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 01 08 | 704 | 0.6− | 0.3− | 2003 04 27 | 699 | 0.4− | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 01 08 | 704 | 0.3− | 0.6− | 2003 04 27 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2002 01 08 | 704 | 0.8− | 0.2− | 2003 04 27 | 699 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2002 01 08 | 704 | 0.8+ | 0.2− | 2003 04 27 | 704 | 0.9− | 0.2− | 2006 11 11 | 703 | 0.9− | 0.1− |
| 2002 01 14 | 704 | 0.1+ | 0.1+ | 2003 04 27 | 699 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 01 14 | 704 | 0.5+ | 0.5− | 2003 04 27 | 704 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2002 01 14 | 704 | 0.8− | 0.0 | 2003 04 27 | 699 | 0.3− | 0.8+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2002 01 14 | 704 | 0.1+ | 0.3+ | 2005 11 06 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 2002 01 14 | 704 | 0.2+ | 0.5+ | 2005 11 06 | G96 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2003 03 09 | 599 | 0.5+ | 0.5+ | 2005 11 06 | G96 | 0.9− | 0.0 | 2006 11 17 | 703 | 1.0− | 0.0 |
| 2003 03 09 | 599 | 0.6− | 0.1+ | 2005 11 06 | G96 | 0.8− | 0.7+ | 2006 11 17 | 703 | 0.8− | 0.6+ |
| 2003 03 09 | 599 | 1.3+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.8+ |
| 2003 03 10 | 599 | 0.1+ | 0.9+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.1+ |
| 2003 03 10 | 599 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2003 03 10 | 599 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2003 03 10 | 599 | (1.7+ | 1.3+) | 2006 09 30 | 703 | (0.8+ | 1.5+) | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2003 03 11 | 599 | (3.4+ | 1.3−) | 2006 09 30 | 703 | 0.5+ | 1.3+ | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2003 03 11 | 599 | 0.0 | 0.6− | 2006 09 30 | 703 | (1.7+ | 1.0+) | 2006 11 21 | 704 | 0.1− | 1.0+ |
| 2003 03 11 | 599 | (2.1+ | 1.5−) | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.3+ | 0.9+ |
| 2003 03 27 | 644 | 0.0 | 0.6+ | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.2− | 2.4+ |
| 2003 03 27 | 699 | 0.3− | 0.6+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.9+ | 1.8+ |
| 2003 03 27 | 644 | 0.2+ | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.6− | 0.0 |
| 2003 03 27 | 699 | 0.2+ | 0.3− | 2006 10 15 | 691 | 0.0 | 0.2+ | | | | |
| 2003 03 27 | 699 | 0.1+ | 1.4+ | 2006 10 15 | 691 | 0.0 | 0.2− | | | | |

**(141280)∗ 2001 YS$_{53}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 250.77214 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17091597 | ω | 72.20264 | | −0.84063457 | −0.52074605 | |
| *a* | 3.2157402 | Ω | 76.17933 | | +0.42046974 | −0.80072185 | |
| *e* | 0.1318543 | *i* | 8.81767 | | +0.34137768 | −0.29608794 | |
| *P* | 5.77 | *H* | 14.1 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2− | 0.4− | 2003 03 26 | 608 | 0.8+ | 0.5− | 2006 09 20 | 699 | 0.8+ | 0.9+ |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2003 03 26 | 608 | 0.2+ | 0.1− | 2006 09 20 | 699 | 1.0+ | 1.3+ |
| 2001 12 18 | 704 | 0.0 | 0.1+ | 2003 03 31 | 699 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.5+ |
| 2001 12 18 | 704 | 0.1+ | 0.5+ | 2003 03 31 | 699 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.1− | 1.1+ |
| 2001 12 19 | 704 | 1.3+ | 0.5− | 2003 03 31 | 699 | 0.6+ | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2003 03 31 | 699 | 0.8− | 0.8+ | 2006 09 30 | 703 | 0.5− | 1.1+ |
| 2001 12 19 | 704 | 0.7+ | 0.2− | 2003 03 31 | 704 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.7+ |
| 2001 12 19 | 704 | (1.3+ | 1.7−) | 2003 03 31 | 704 | 0.1+ | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 12 20 | 704 | 0.9+ | 0.6− | 2003 03 31 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 2001 12 20 | 704 | 0.2− | 0.6+ | 2003 03 31 | 704 | 1.0+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.7+ |
| 2001 12 20 | 704 | (1.1− | 1.6+) | 2003 03 31 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.9− |
| 2001 12 20 | 704 | 1.0− | 0.2+ | 2003 03 31 | 704 | 1.1+ | 1.2+ | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2001 12 20 | 704 | 0.3− | 0.0 | 2003 03 31 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.4+ |
| 2001 12 20 | 704 | 0.7− | 0.3+ | 2003 03 31 | 704 | 1.2+ | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.6+ |
| 2001 12 20 | 704 | 0.2− | 0.2+ | 2003 04 01 | 645 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2001 12 21 | 704 | 0.1+ | 0.9+ | 2003 04 01 | 645 | 0.2− | 0.0 | 2006 10 19 | 644 | 1.1− | 0.4+ |
| 2001 12 21 | 704 | 0.4+ | 1.2− | 2003 04 09 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2001 12 21 | 704 | 0.6+ | 0.8− | 2003 04 09 | 704 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2001 12 21 | 704 | (1.6+ | 0.2−) | 2003 04 09 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2002 01 08 | 704 | 0.2+ | 0.5− | 2003 04 09 | 704 | 0.9+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2002 01 08 | 704 | 0.9− | 0.6− | 2003 04 09 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 01 08 | 704 | 0.6− | 0.7− | 2003 04 20 | 608 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2002 01 08 | 704 | 0.6− | 1.5− | 2003 04 20 | 608 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 01 08 | 704 | (0.8− | 1.5−) | 2003 04 20 | 608 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.7+ |
| 2002 01 14 | 704 | (1.7+ | 0.3+) | 2003 04 26 | 704 | (0.1+ | 1.6+) | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2002 01 14 | 704 | (2.3+ | 1.1−) | 2003 04 26 | 704 | (0.1+ | 1.6+) | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 2002 01 14 | 704 | 0.4+ | 0.1+ | 2003 04 26 | 704 | (0.0 | 1.7+) | 2006 10 22 | 703 | 0.2− | 0.3+ |
| 2002 01 14 | 704 | 0.1+ | 0.3+ | 2003 04 26 | 704 | 0.3+ | 1.5+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2002 01 14 | 704 | 0.2+ | 0.2+ | 2003 05 05 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2003 01 28 | 704 | 0.2− | 0.7+ | 2003 05 05 | 704 | (0.4− | 1.6+) | 2006 11 13 | 703 | 0.3− | 1.0− |
| 2003 01 28 | 704 | 0.0 | 0.4+ | 2003 05 05 | 704 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.7− | 0.2+ |
| 2003 01 28 | 704 | 0.8− | 1.3+ | 2003 05 10 | 703 | 1.1− | 1.2+ | 2006 11 13 | 703 | 1.1− | 0.1+ |
| 2003 03 03 | 704 | 0.3+ | 0.0 | 2003 05 10 | 703 | 0.6− | 0.6+ | 2006 11 13 | 703 | 0.5− | 0.5− |
| 2003 03 03 | 704 | 0.6+ | 0.8− | 2003 05 10 | 703 | 0.3− | 0.3− | 2006 11 19 | 703 | 0.5+ | 0.6+ |
| 2003 03 03 | 704 | 1.0+ | 0.1+ | 2003 05 10 | 703 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.1− | 1.1+ |
| 2003 03 03 | 704 | 0.5+ | 0.6+ | 2005 07 04 | 644 | 0.5− | 0.4+ | 2006 11 19 | 703 | 0.1− | 1.0+ |
| 2003 03 03 | 704 | 0.6+ | 0.1− | 2005 07 04 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | (0.8− | 1.7+) |
| 2003 03 09 | 704 | 0.5+ | 0.1+ | 2005 07 04 | 644 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2003 03 09 | 704 | 1.0+ | 0.1+ | 2005 07 27 | 644 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2003 03 09 | 704 | 0.5+ | 0.4+ | 2005 07 27 | 644 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2003 03 09 | 704 | 1.0+ | 0.6+ | 2005 07 27 | 644 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2003 03 09 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.8+ | 0.3+ | | | | |
| 2003 03 26 | 608 | 0.2+ | 0.1− | 2006 09 20 | 699 | (0.0 | 1.7−) | | | | |

**(141281)∗ 2001 YD$_{56}$ = 1995 UE$_{40}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23315)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 44.99748 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18712922 | ω | 1.26990 | | +0.97521857 | +0.22073893 | |
| *a* | 3.0272037 | Ω | 345.95065 | | −0.20352555 | +0.86860277 | |
| *e* | 0.1385815 | *i* | 3.52725 | | −0.08675301 | +0.44362547 | |
| *P* | 5.27 | *H* | 15.3 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.4− | 0.2− | 2002 01 14 | 704 | 0.8+ | 0.9− | 2006 11 15 | 704 | 0.8− | 0.3+ | |
| 1995 10 23 | 691 | 0.4+ | 0.0 | 2002 01 14 | 704 | 1.0+ | 0.1+ | 2006 11 15 | 704 | 0.1− | 1.4+ | |
| 1995 10 23 | 691 | 0.2− | 0.7− | 2002 01 14 | 704 | 1.1+ | 0.2− | 2006 11 16 | 704 | (0.2+ | 2.6+) | |
| 1995 10 28 | 691 | 0.1+ | 0.0 | 2002 12 07 | 645 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1+ | 1.3+ | |
| 1995 10 28 | 691 | 0.3+ | 0.2− | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 11 16 | 704 | (0.1+ | 2.0+) | |
| 2000 08 24 | 704 | 0.4+ | 0.0 | 2005 07 30 | E12 | 0.5+ | 0.0 | 2006 11 16 | 704 | (0.2+ | 1.7+) | |
| 2000 08 24 | 704 | 1.6− | 0.2+ | 2005 07 30 | E12 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.1+ | |
| 2000 08 24 | 704 | 0.6+ | 1.0+ | 2005 07 30 | E12 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.5+ | |
| 2000 08 24 | 704 | 0.0 | 0.8+ | 2005 07 30 | E12 | 0.5+ | 0.3− | 2006 11 19 | 704 | 1.0+ | 0.5+ | |
| 2000 09 05 | 704 | (0.4− | 2.1+) | 2005 08 06 | 704 | 0.2− | 0.7+ | 2006 11 19 | 704 | 1.0+ | 0.3− | |
| 2000 09 05 | 704 | 0.6− | 0.8+ | 2005 08 06 | 704 | 0.1+ | 0.8+ | 2006 11 19 | 704 | 0.3+ | 0.7+ | |
| 2000 09 05 | 704 | 0.3+ | 0.2− | 2005 08 06 | 704 | 0.3− | 1.0+ | 2006 11 22 | 704 | 0.0 | 0.5+ | |
| 2001 12 18 | 704 | 0.5+ | 0.5+ | 2005 08 06 | 704 | 0.3− | 0.5− | 2006 11 22 | 704 | 0.4− | 1.0− | |
| 2001 12 18 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3+ | |
| 2001 12 18 | 704 | 0.3+ | 0.7− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.5− | |
| 2001 12 19 | 704 | 0.3− | 1.2− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.5− | |
| 2001 12 19 | 704 | 0.2+ | 1.4− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 23 | 703 | (0.1− | 2.7−) | |
| 2001 12 19 | 704 | (0.2− | 1.6−) | 2006 11 09 | 644 | 0.3+ | 0.3− | 2006 11 23 | 703 | (1.0+ | 2.0−) | |
| 2001 12 19 | 704 | (0.2− | 1.7−) | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.6+ | 0.8− | |
| 2001 12 22 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.4− | 0.4− | |
| 2001 12 22 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.5+ | 2006 11 24 | 703 | 0.2+ | 0.4− | |
| 2001 12 22 | 691 | 0.6− | 0.0 | 2006 11 09 | 644 | 0.5+ | 0.2+ | 2006 11 24 | 703 | 0.1− | 0.0 | |
| 2002 01 08 | 704 | 1.0+ | 1.0+ | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 11 24 | 703 | 0.4− | 0.5+ | |
| 2002 01 08 | 704 | 0.3− | 1.1+ | 2006 11 13 | 644 | 0.1+ | 0.2− | 2006 11 24 | 703 | 0.6− | 0.1+ | |
| 2002 01 08 | 704 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.4− | |
| 2002 01 08 | 704 | 0.6+ | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.5− | 0.4− | |
| 2002 01 08 | 704 | 0.9+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.7+ | 2006 12 01 | G96 | 0.3− | 0.1− | |
| 2002 01 14 | 704 | 1.0+ | 0.2− | 2006 11 13 | 644 | 0.5+ | 0.2− | 2006 12 01 | G96 | 0.1− | 0.3− | |
| 2002 01 14 | 704 | 0.9+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.2− | | | | | |

**(141282)∗ 2001 YU$_{58}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.98191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17824328 | $\omega$ | 3.92273 | | +0.18671824 | +0.96875152 | |
| $a$ | 3.1269956 | $\Omega$ | 276.89253 | | −0.90576294 | +0.10539920 | |
| $e$ | 0.0855989 | $i$ | 9.46573 | | −0.38043368 | +0.22452505 | |
| $P$ | 5.53 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.4− | 0.7− | 2003 02 11 | 608 | 0.4− | 1.1+ | 2005 08 24 | 644 | 0.2+ | 0.1+ | |
| 2000 09 23 | 704 | 0.4+ | 0.3+ | 2003 02 11 | 608 | (0.5− | 1.6+) | 2005 08 24 | 644 | 0.3+ | 0.2− | |
| 2000 09 23 | 704 | 0.2− | 0.2+ | 2004 04 25 | 704 | 0.1− | 1.5+ | 2005 08 24 | 644 | 0.2+ | 0.0 | |
| 2001 12 18 | 704 | 0.4− | 0.3+ | 2004 04 25 | 704 | 0.7+ | 0.2− | 2005 09 02 | 644 | 0.0 | 0.3+ | |
| 2001 12 18 | 704 | 0.6+ | 0.5+ | 2004 04 25 | 704 | 0.6+ | 1.4+ | 2005 09 02 | 644 | 0.0 | 0.1+ | |
| 2001 12 18 | 704 | 0.5+ | 0.7+ | 2004 04 25 | 704 | 0.1− | 0.5+ | 2005 09 02 | 644 | 0.0 | 0.1+ | |
| 2001 12 19 | 704 | 0.1− | 1.2+ | 2005 06 23 | 644 | 0.2− | 0.1+ | 2006 10 27 | 703 | 1.2+ | 0.3− | |
| 2001 12 19 | 704 | 1.0+ | 0.2+ | 2005 06 23 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.1− | |
| 2001 12 19 | 704 | 0.3+ | 0.9+ | 2005 06 23 | 644 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.3− | |
| 2001 12 19 | 704 | 0.9+ | 0.2− | 2005 07 11 | 703 | 0.8− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.6+ | |
| 2001 12 19 | 704 | 1.2− | 0.8− | 2005 07 11 | 703 | 0.1+ | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.3− | |
| 2001 12 19 | 704 | 0.5− | 0.2− | 2005 07 11 | 703 | 1.1− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | |
| 2001 12 19 | 704 | 0.2− | 0.8+ | 2005 07 11 | 703 | 0.6− | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.4− | |
| 2001 12 19 | 704 | (0.2+ | 1.6+) | 2005 08 06 | 644 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.9− | 0.5+ | |
| 2001 12 19 | 704 | 0.8+ | 0.8+ | 2005 08 06 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 703 | (0.6+ | 1.7−) | |
| 2002 01 14 | 704 | 0.3− | 0.5− | 2005 08 06 | 644 | 0.0 | 0.1+ | 2006 11 22 | 703 | (1.3− | 2.0−) | |
| 2002 01 14 | 704 | 0.2− | 0.4+ | 2005 08 24 | 644 | 0.3− | 0.0 | 2006 11 22 | 703 | (1.2− | 2.2−) | |
| 2002 01 14 | 704 | 0.1+ | 0.7+ | 2005 08 24 | 644 | 0.0 | 0.2+ | | | | | |
| 2003 02 11 | 608 | 0.0 | 0.4+ | 2005 08 24 | 644 | 0.1+ | 0.2+ | | | | | |

**(141283)∗ 2001 YV$_{58}$ = 2004 GN$_{68}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69054)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.55715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18729406 | $\omega$ | 265.73123 | | +0.88771043 | +0.43264678 | |
| $a$ | 3.0254273 | $\Omega$ | 68.56966 | | −0.32595526 | +0.83209546 | |
| $e$ | 0.1434339 | $i$ | 9.73736 | | −0.32515130 | +0.34703587 | |
| $P$ | 5.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | (0.2− | 1.7−) | 2005 02 14 | 809 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.6− | |
| 2001 11 21 | 704 | 0.1+ | 1.2− | 2005 02 14 | 809 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.8− | |
| 2001 11 21 | 704 | 0.9− | 0.2− | 2005 07 10 | E12 | (0.3+ | 1.7+) | 2006 11 11 | G96 | 0.1− | 0.4− | |
| 2001 12 18 | 704 | 0.3+ | 0.1+ | 2005 07 10 | E12 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.7− | |
| 2001 12 18 | 704 | 0.4− | 0.2+ | 2005 07 10 | E12 | 0.5− | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.5− | |
| 2001 12 18 | 704 | 0.5+ | 0.2+ | 2005 07 10 | E12 | 0.4+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2005 07 29 | E12 | 0.5+ | 0.8+ | 2006 11 15 | 691 | 0.0 | 0.0 | |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2005 07 29 | E12 | 0.8− | 1.5+ | 2006 11 15 | 691 | 0.2− | 0.1+ | |
| 2001 12 19 | 704 | 0.3+ | 0.7+ | 2005 07 29 | E12 | 0.3+ | 0.8+ | 2006 11 19 | 691 | 0.3− | 0.8+ | |
| 2001 12 19 | 704 | 0.4− | 0.1− | 2005 07 29 | E12 | 0.5− | 0.8− | 2006 11 19 | 691 | 0.1− | 0.4+ | |
| 2001 12 19 | 704 | 0.3+ | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.1+ | |
| 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.4− | 1.2+ | |
| 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.9+ | |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 1.3− | 1.0+ | |
| 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 | |
| 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.4+ | |
| 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.0 | |
| 2004 07 16 | 807 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.4− | |
| 2004 07 17 | 807 | (1.6− | 1.1+) | 2006 11 11 | 703 | 0.6− | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.1+ | |
| 2005 02 14 | 809 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.9− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1+ | |

**(141284)∗ 2001 YX$_{59}$ = 1996 XS$_{29}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25506)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.78345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18106695 | $\omega$ | 88.08553 | | +0.93546368 | −0.31684907 | |
| $a$ | 3.0944010 | $\Omega$ | 290.36038 | | +0.21942571 | +0.86797535 | |
| $e$ | 0.0679408 | $i$ | 9.61371 | | +0.27705607 | +0.38239438 | |
| $P$ | 5.44 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 05 | 691 | 0.2+ | 0.1− | 2001 12 18 | 704 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.4− | 0.4+ | |
| 1996 12 05 | 691 | 0.4+ | 0.1− | 2001 12 19 | 704 | 0.4− | 0.1− | 2005 07 29 | 644 | 0.1− | 0.5+ | |
| 1996 12 05 | 691 | 0.2+ | 0.4− | 2001 12 19 | 704 | 0.0 | 1.1+ | 2005 07 29 | 644 | 0.4− | 0.5+ | |
| 1996 12 07 | 691 | 0.4− | 0.5+ | 2001 12 19 | 704 | 0.0 | 0.7+ | 2005 08 11 | A50 | 0.8− | 0.9+ | |
| 1996 12 07 | 691 | 0.5− | 0.0 | 2001 12 19 | 704 | 0.3− | 1.3+ | 2005 08 11 | A50 | 0.8− | 0.4+ | |
| 1996 12 07 | 691 | 0.3− | 0.2+ | 2002 01 14 | 704 | 0.4+ | 0.1+ | 2005 08 11 | A50 | (1.7− | 1.4+) | |
| 1996 12 13 | 691 | 0.4+ | 0.4+ | 2002 01 14 | 704 | 0.3+ | 0.2− | 2006 10 29 | 703 | 1.2− | 0.9− | |
| 1996 12 13 | 691 | 0.5+ | 0.3− | 2002 01 14 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 703 | 1.1− | 0.4− | |
| 1996 12 13 | 691 | 0.1+ | 0.1− | 2003 03 10 | 695 | 0.0 | 0.1+ | 2006 10 29 | 703 | 0.2− | 0.4− | |
| 1996 12 17 | 691 | 0.2− | 0.1− | 2003 03 10 | 695 | 0.1+ | 0.0 | 2006 10 29 | 703 | 0.8+ | 0.5+ | |
| 1996 12 17 | 691 | 0.1+ | 0.4+ | 2003 03 10 | 695 | 0.1− | 0.0 | 2006 11 02 | G96 | 0.4+ | 0.1− | |
| 1996 12 17 | 691 | 0.1+ | 0.0 | 2005 06 29 | 644 | 0.4− | 0.4+ | 2006 11 02 | G96 | 0.6+ | 0.1− | |
| 1997 02 16 | 691 | 0.0 | 0.5+ | 2005 06 29 | 644 | 0.0 | 0.3+ | 2006 11 02 | G96 | 0.4+ | 0.1− | |
| 1997 02 16 | 691 | 0.4− | 0.1− | 2005 06 29 | 644 | 0.3− | 0.5+ | 2006 11 02 | G96 | 0.1+ | 0.2− | |
| 1997 02 16 | 691 | 0.3+ | 0.4+ | 2005 07 11 | 703 | (0.8− | 1.6−) | 2006 11 21 | 703 | 0.4− | 0.4− | |
| 2001 12 18 | 704 | 0.0 | 0.7− | 2005 07 11 | 703 | 0.6− | 0.4+ | 2006 11 21 | 703 | 0.1− | 0.3+ | |
| 2001 12 18 | 704 | 0.2+ | 0.3− | 2005 07 11 | 703 | 1.1+ | 0.1+ | 2006 11 21 | 703 | 0.2− | 0.6+ | |
| 2001 12 18 | 704 | 0.0 | 0.4− | 2005 07 11 | 703 | 0.3+ | 0.6+ | 2006 11 21 | 703 | 1.0+ | 0.4− | |

**(141285)∗ 2001 YC$_{65}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.68925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18176419 | $\omega$ | 61.64715 | | −0.58587515 | −0.80969435 | |
| $a$ | 3.0864825 | $\Omega$ | 64.25727 | | +0.72975701 | −0.54527465 | |
| $e$ | 0.1350024 | $i$ | 2.15324 | | +0.35242732 | −0.21695762 | |
| $P$ | 5.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 691 | 0.2+ | 0.1+ | 2003 04 25 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2000 10 01 | 691 | 0.3+ | 0.1+ | 2003 04 25 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2000 10 01 | 691 | 0.4+ | 0.1+ | 2003 05 05 | 691 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2003 05 05 | 691 | 0.5− | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2003 05 05 | 691 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2001 12 18 | 704 | 0.5− | 0.2+ | 2003 05 10 | 691 | 0.6+ | 0.8+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 12 18 | 704 | 0.5− | 0.1− | 2003 05 10 | 691 | 1.1+ | 0.7+ | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.2+ | 0.8− | 2003 05 10 | 691 | 0.4+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2001 12 19 | 704 | 0.1− | 0.5+ | 2005 08 31 | 691 | 0.4− | 0.4+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2005 08 31 | 691 | 0.8+ | 0.8+ | 2006 11 21 | 691 | 0.3− | 0.1+ |
| 2001 12 19 | 704 | 0.0 | 0.6+ | 2005 08 31 | 691 | 0.1− | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.3− | 0.4+ | 2005 12 02 | 695 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.7− | 0.3− |
| 2002 01 06 | 644 | 0.1+ | 0.3+ | 2005 12 02 | 695 | 0.3− | 0.6+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2002 01 06 | 644 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2002 01 06 | 644 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2002 01 08 | 704 | (1.9+ | 1.8+) | 2006 10 12 | 691 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.4+ |
| 2002 01 08 | 704 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2002 01 08 | 704 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2002 01 08 | 704 | 1.0+ | 1.0− | 2006 10 17 | G96 | 0.5− | 0.2− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2002 01 14 | 704 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2002 01 14 | 704 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.5− | 0.3− |
| 2002 01 14 | 704 | 0.6+ | 0.4+ | 2006 10 27 | G96 | 0.7+ | 0.0 | 2006 11 27 | 703 | 0.6− | 0.8+ |
| 2002 01 14 | 704 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.7− | 0.0 |
| 2003 04 25 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2− | | | | |

**(141286)∗ 2001 YF$_{67}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.15201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17488173 | $\omega$ | 41.58462 | | −0.10924582 | −0.99101928 | |
| $a$ | 3.1669394 | $\Omega$ | 54.82670 | | +0.88527367 | −0.13228129 | |
| $e$ | 0.1414548 | $i$ | 5.41308 | | +0.45205739 | +0.01955600 | |
| $P$ | 5.64 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 05 | 691 | 0.3− | 0.2− | 2002 01 15 | 704 | 0.4+ | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 1991 02 05 | 691 | 0.2+ | 0.1− | 2002 01 19 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 1991 02 05 | 691 | 0.2+ | 0.1− | 2002 01 19 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 1992 05 07 | 691 | 0.1− | 0.8+ | 2002 01 19 | 704 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 1992 05 07 | 691 | 0.5+ | 0.7+ | 2002 01 19 | 704 | 1.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 1992 05 07 | 691 | 0.0 | 1.1+ | 2003 03 22 | 644 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2000 09 24 | 704 | 0.3+ | 0.1+ | 2003 03 22 | 644 | 0.2− | 0.8+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2000 09 24 | 704 | 0.7− | 1.4+ | 2003 03 22 | 644 | 0.2− | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.2+ | 1.5+ | 2003 03 29 | 699 | 1.0− | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2000 09 24 | 704 | 0.3+ | 1.2+ | 2003 03 29 | 699 | 0.1+ | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 0.1+ | 0.8− | 2003 03 29 | 699 | (1.7− | 0.3+) | 2006 11 15 | G92 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 0.6+ | 0.5− | 2003 03 29 | 699 | (1.6− | 1.2+) | 2006 11 15 | G92 | 0.3− | 0.2+ |
| 2001 11 19 | 704 | 0.5+ | 0.6+ | 2003 04 09 | 691 | 0.6+ | 0.1+ | 2006 11 15 | G92 | 0.1+ | 0.1− |
| 2001 12 18 | 644 | 0.1+ | 0.6+ | 2003 04 09 | 691 | 0.6+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2001 12 18 | 644 | 0.2− | 0.3+ | 2003 04 09 | 691 | 0.6+ | 0.3+ | 2006 11 17 | 703 | 0.1+ | 1.1+ |
| 2001 12 18 | 644 | 0.2− | 0.0 | 2005 08 05 | 644 | 0.7− | 0.1+ | 2006 11 17 | 703 | 1.4− | 0.8+ |
| 2001 12 18 | 704 | 0.2− | 0.7+ | 2005 08 05 | 644 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.7− |
| 2001 12 18 | 704 | 0.3+ | 0.2− | 2005 08 05 | 644 | 0.1− | 0.2+ | 2006 11 18 | G92 | 0.4− | 0.0 |
| 2001 12 18 | 704 | 0.2− | 0.3− | 2005 09 03 | 644 | 0.8− | 0.6+ | 2006 11 18 | G92 | 0.4− | 0.9+ |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2005 09 03 | 644 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2001 12 18 | 704 | 0.0 | 0.8− | 2005 09 03 | 644 | 0.0 | 0.3+ | 2006 11 18 | G92 | 0.4+ | 0.3+ |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2006 09 30 | 703 | 1.2− | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2001 12 19 | 704 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.9− | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2001 12 19 | 704 | 0.7− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.8− | 2006 11 19 | 704 | 0.1− | 1.2+ |
| 2001 12 19 | 704 | 1.0− | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.8+ | 2006 11 19 | 704 | 0.2− | 1.2+ |
| 2001 12 19 | 704 | 1.3− | 0.4− | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2002 01 06 | 644 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.9+ |
| 2002 01 06 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8− | 0.6+ |
| 2002 01 06 | 644 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2002 01 08 | 704 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2002 01 08 | 704 | 1.2− | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2002 01 08 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2002 01 08 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2002 01 08 | 704 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 25 | 703 | 0.4+ | 0.9− |
| 2002 01 15 | 704 | (0.7− | 1.5+) | 2006 10 28 | 704 | 1.0− | 1.3+ | 2006 11 25 | 703 | 0.4+ | 0.9− |
| 2002 01 15 | 704 | 0.6− | 0.3+ | 2006 10 28 | 704 | 0.6+ | 0.0 | 2006 11 25 | 703 | 0.8+ | 0.6− |
| 2002 01 15 | 704 | 0.3+ | 1.2+ | 2006 10 28 | 704 | (1.7+ | 2.9+) | 2006 11 25 | 703 | 0.8+ | 1.0− |
| 2002 01 15 | 704 | 0.2− | 1.0+ | 2006 10 28 | 704 | (2.1+ | 0.1−) | | | | |

**(141287)∗ 2001 YL$_{69}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.26564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18157748 | $\omega$ | 327.61164 | | +0.62695061 | −0.77785430 | |
| $a$ | 3.0885980 | $\Omega$ | 83.52565 | | +0.72373863 | +0.56095641 | |
| $e$ | 0.1593874 | $i$ | 2.49811 | | +0.28833196 | +0.28332066 | |
| $P$ | 5.43 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 04 | 566 | 0.5+ | 0.1− | 2002 01 08 | 644 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 1997 02 04 | 566 | 1.0+ | 0.1+ | 2002 01 14 | 704 | 1.0+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1997 02 04 | 566 | 0.5+ | 0.2− | 2002 01 14 | 704 | 1.1+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2000 09 02 | 699 | 1.4− | 0.0 | 2002 01 14 | 704 | 1.5+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2000 09 02 | 699 | 1.3− | 0.6− | 2002 01 14 | 704 | 0.8+ | 0.4− | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2000 09 02 | 699 | 1.1− | 0.7+ | 2002 01 14 | 704 | 0.7+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2000 09 02 | 699 | 1.3− | 0.8+ | 2002 01 21 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2000 09 24 | 704 | 0.5− | 0.7+ | 2002 01 21 | 704 | 1.0− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2000 09 24 | 704 | 0.2+ | 0.1− | 2002 01 21 | 704 | 0.4− | 1.1+ | 2006 11 14 | 691 | 0.2− | 0.1− |
| 2000 09 24 | 704 | 0.4+ | 0.2+ | 2002 02 06 | 704 | 0.4+ | 0.1− | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2000 09 24 | 704 | 0.4+ | 0.8+ | 2002 02 06 | 704 | 0.4+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2000 09 24 | 704 | 0.7+ | 0.2+ | 2002 02 06 | 704 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.9− |
| 2000 10 02 | 699 | 0.6+ | 0.5+ | 2002 02 06 | 704 | 0.6+ | 0.4− | 2006 11 17 | 703 | 0.5− | 0.6− |
| 2000 10 02 | 699 | 0.2− | 0.3+ | 2003 03 23 | 691 | 0.4+ | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2000 10 02 | 699 | 0.1+ | 0.9+ | 2003 03 23 | 691 | 0.3+ | 0.7+ | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2000 10 02 | 699 | 0.1− | 0.4+ | 2003 03 23 | 691 | 0.2+ | 0.8+ | 2006 11 17 | 703 | 0.7− | 0.2− |
| 2001 12 10 | 704 | 0.9− | 0.4+ | 2003 03 26 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2001 12 10 | 704 | 0.0 | 0.5+ | 2003 03 26 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2001 12 10 | 704 | 0.3+ | 0.2+ | 2003 03 26 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2001 12 10 | 704 | 0.1+ | 1.0+ | 2005 07 05 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2001 12 15 | 704 | (2.2+ | 0.2−) | 2005 07 05 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | (0.9+ | 1.6+) |
| 2001 12 15 | 704 | (1.9+ | 0.6−) | 2005 07 05 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2001 12 15 | 704 | (0.2− | 2.3+) | 2006 08 28 | 703 | 0.8+ | 0.7− | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2001 12 17 | 644 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.4− | 1.4+ | 2006 11 18 | 704 | 0.1+ | 1.1+ |
| 2001 12 17 | 644 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.9+ |
| 2001 12 17 | 644 | 0.3− | 0.4+ | 2006 08 28 | 703 | 0.6+ | 0.8+ | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 12 18 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.8+ |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.6+ |
| 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2001 12 18 | 704 | 1.2− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2001 12 19 | 704 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2001 12 19 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2001 12 19 | 704 | 1.4− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2001 12 20 | 704 | 0.7− | 1.1+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2001 12 20 | 704 | 0.1− | 1.3+ | 2006 10 28 | 704 | 1.0+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2001 12 20 | 704 | 0.2− | 0.6+ | 2006 10 28 | 704 | 0.7− | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2001 12 25 | 608 | 0.1− | 1.4− | 2006 10 28 | 704 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 25 | 608 | 0.1− | 1.0− | 2006 10 28 | 704 | (1.9− | 1.3+) | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2001 12 25 | 608 | 0.0 | 0.7− | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.4− |
| 2002 01 08 | 644 | 0.3− | 0.7− | 2006 10 28 | 704 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2002 01 08 | 704 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2002 01 08 | 644 | 0.4− | 0.7− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.8− |
| 2002 01 08 | 704 | 0.5+ | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.6− |
| 2002 01 08 | 704 | 0.3+ | 1.3+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.4− | 1.3− |

**(141288)∗ 2001 YK$_{71}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 67.03466 | | (2000.0) | | +0.97418589 | +0.06640699 |
| $n$ | 0.18699555 | $\omega$ | 261.02603 | | +0.01892292 | +0.92836954 |
| $a$ | 3.0286461 | $\Omega$ | 94.95452 | | −0.22495284 | +0.36567759 |
| $e$ | 0.0452701 | $i$ | 12.50755 | | | |
| $P$ | 5.27 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.3+ | 0.4+ | 2001 12 19 | 704 | 0.2+ | 0.1− | 2003 03 25 | 644 | 0.5+ | 0.4+ |
| 1993 04 19 | 691 | 1.0+ | 1.1+ | 2001 12 19 | 704 | 0.0 | 0.1+ | 2003 03 25 | 644 | 0.3+ | 0.3+ |
| 1993 04 19 | 691 | 0.2− | 0.8+ | 2002 01 08 | 704 | 0.4− | 0.1− | 2003 03 25 | 644 | 0.5+ | 0.5+ |
| 2000 09 27 | 645 | 0.1− | 0.1+ | 2002 01 08 | 704 | 0.1− | 0.0 | 2003 04 05 | 699 | 0.2+ | 0.1− |
| 2000 09 27 | 645 | 0.0 | 0.1+ | 2002 01 08 | 704 | 0.5+ | 0.4+ | 2003 04 05 | 699 | 0.3− | 0.4+ |
| 2000 10 02 | 699 | 0.6− | 1.0+ | 2002 01 08 | 704 | 0.0 | 0.1− | 2003 04 05 | 699 | 0.6− | 0.9+ |
| 2000 10 02 | 699 | 0.3− | 0.7+ | 2002 01 14 | 704 | 0.1− | 0.5+ | 2003 04 05 | 699 | 1.2− | 1.0+ |
| 2000 10 02 | 699 | 1.3− | 0.0 | 2002 01 14 | 704 | 0.3+ | 0.2− | 2005 09 25 | 703 | 0.2− | 0.7+ |
| 2000 10 02 | 699 | 1.0− | 0.0 | 2002 01 14 | 704 | 0.5+ | 0.1+ | 2005 09 25 | 703 | 0.6+ | 0.4− |
| 2001 12 07 | 691 | 0.5− | 0.1− | 2002 01 14 | 704 | 0.8+ | 0.3− | 2005 09 25 | 703 | 0.1− | 0.1+ |
| 2001 12 07 | 691 | 0.2− | 0.3− | 2002 01 14 | 704 | 0.7+ | 0.1+ | 2005 09 25 | 703 | (2.3− | 1.4+) |
| 2001 12 07 | 691 | 0.3− | 0.0 | 2002 01 15 | 704 | 1.1− | 0.0 | 2005 10 02 | E12 | 0.5− | 0.7+ |
| 2001 12 17 | 644 | 0.6+ | 1.0+ | 2002 01 15 | 704 | 0.1− | 1.1+ | 2005 10 02 | E12 | 0.2+ | 0.9+ |
| 2001 12 17 | 644 | 0.7+ | 1.1+ | 2002 01 15 | 704 | 1.3+ | 0.1− | 2005 10 02 | E12 | 0.5− | 0.4+ |
| 2001 12 17 | 644 | 1.0+ | 1.4+ | 2002 01 15 | 704 | 0.5+ | 0.4+ | 2005 10 02 | E12 | 0.9+ | 1.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.4+ | 2002 01 18 | 704 | 0.8+ | 0.8− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 0.2+ | 2002 01 18 | 704 | 0.1− | 1.4− | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.3+ | 0.9+ | 2002 01 18 | 704 | 0.1+ | 1.2− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.1+ | 2002 02 10 | 704 | 0.5+ | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.5− |
| 2001 12 18 | 704 | 0.3− | 1.0+ | 2002 02 10 | 704 | 0.0 | 0.6− | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2001 12 19 | 644 | 0.1− | 0.3+ | 2002 02 10 | 704 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 1.0+ |
| 2001 12 19 | 644 | 0.1+ | 0.3+ | 2002 02 10 | 704 | 0.8− | 0.1− | 2006 11 29 | 704 | 0.2− | 0.8+ |
| 2001 12 19 | 644 | 0.0 | 0.6+ | 2002 02 12 | 704 | 0.2− | 0.6+ | 2006 12 01 | 691 | 0.6− | 0.8+ |
| 2001 12 19 | 704 | 0.4− | 0.0 | 2002 02 12 | 704 | 0.2+ | 0.2− | 2006 12 01 | 691 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.5+ | 0.3− | 2002 02 12 | 704 | 0.2+ | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2002 02 12 | 704 | 0.3− | 0.2− | | | | |

**(141289)∗ 2001 YX$_{72}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 109.52663 | | (2000.0) | | +0.95424912 | −0.18930495 |
| $n$ | 0.23137103 | $\omega$ | 277.74516 | | +0.26697381 | +0.88800678 |
| $a$ | 2.6278267 | $\Omega$ | 93.38106 | | −0.13466106 | +0.41905560 |
| $e$ | 0.2098535 | $i$ | 13.40663 | | | |
| $P$ | 4.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 24 | 691 | 0.3− | 0.1− | 2003 03 07 | 291 | 0.1+ | 0.5− | 2005 11 30 | 704 | 0.3− | 0.0 |
| 1995 04 24 | 691 | 0.1+ | 0.1− | 2003 03 07 | 291 | 0.0 | 0.1− | 2005 11 30 | 644 | 0.3− | 0.4− |
| 1995 04 24 | 691 | 0.2+ | 0.1− | 2003 03 07 | 291 | 0.1+ | 0.2− | 2005 12 07 | 704 | 1.0− | 0.8+ |
| 2001 11 16 | 049 | 0.1+ | 1.0− | 2003 05 30 | 645 | 0.0 | 0.0 | 2005 12 07 | 704 | 0.5− | 0.3+ |
| 2001 11 16 | 049 | 0.1+ | 1.4− | 2003 05 30 | 645 | 0.1− | 0.1+ | 2005 12 07 | 704 | 0.7− | 0.2+ |
| 2001 11 16 | 049 | 0.4− | 0.6− | 2005 09 30 | 703 | 0.0 | 0.8− | 2005 12 07 | 704 | 0.9− | 0.6+ |
| 2001 12 07 | 691 | 0.2− | 0.2+ | 2005 09 30 | 703 | 0.1− | 0.1+ | 2005 12 07 | 704 | 0.8− | 0.3+ |
| 2001 12 07 | 691 | 0.4− | 0.0 | 2005 09 30 | 703 | 0.0 | 0.6− | 2005 12 08 | 704 | 0.5− | 0.4− |
| 2001 12 07 | 691 | 0.3− | 0.1+ | 2005 09 30 | 703 | 0.1− | 0.4− | 2005 12 08 | 704 | 0.9+ | 0.8− |
| 2001 12 10 | 704 | 0.1− | 0.1+ | 2005 10 30 | 683 | 1.0+ | 0.6− | 2005 12 08 | 704 | 0.7+ | 0.9− |
| 2001 12 10 | 704 | 0.3+ | 0.5+ | 2005 10 30 | 683 | (2.1+ | 1.0+) | 2005 12 08 | 704 | 0.7+ | 1.0− |
| 2001 12 10 | 704 | 0.8+ | 0.0 | 2005 10 30 | 683 | 0.1+ | 0.1− | 2005 12 08 | 704 | 0.2− | 0.8+ |
| 2001 12 10 | 704 | 0.8+ | 0.1+ | 2005 10 31 | 683 | 2.0+ | 1.2− | 2005 12 27 | 699 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.6+ | 1.2+ | 2005 10 31 | 683 | 0.3− | 0.5− | 2005 12 27 | 699 | 0.9+ | 0.2− |
| 2001 12 18 | 704 | 0.3− | 0.4+ | 2005 10 31 | 683 | 0.7+ | 0.3− | 2005 12 27 | 699 | 0.9+ | 0.7+ |
| 2001 12 18 | 704 | 0.5+ | 0.3+ | 2005 11 01 | 683 | (0.7+ | 2.5−) | 2006 01 04 | 699 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.9− | 0.9− | 2005 11 01 | 683 | 1.1+ | 0.6− | 2006 01 04 | 699 | 0.2+ | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.1+ | 2005 11 01 | 683 | (2.3+ | 0.6−) | 2006 01 04 | 699 | 0.2− | 0.8− |
| 2001 12 19 | 644 | 0.4− | 0.0 | 2005 11 05 | 704 | 0.3+ | 0.9+ | 2006 01 04 | 699 | 0.2− | 0.5− |
| 2001 12 19 | 644 | 0.4− | 0.1− | 2005 11 05 | 704 | 0.4− | 0.8+ | 2006 01 18 | 703 | 0.3− | 0.8− |
| 2001 12 19 | 644 | 0.2− | 0.0 | 2005 11 05 | 704 | 1.1− | 1.0+ | 2006 01 18 | 703 | 0.2+ | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.6+ | 2005 11 05 | 704 | 0.1+ | 0.4+ | 2006 01 18 | 703 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | 0.1+ | 0.6+ | 2005 11 20 | 644 | 0.2− | 0.2− | 2006 01 18 | 703 | 0.8− | 0.2− |
| 2001 12 19 | 704 | 0.3+ | 0.3+ | 2005 11 20 | 644 | 0.4− | 0.3− | 2006 01 24 | 704 | 0.2+ | 0.9+ |
| 2001 12 19 | 704 | 0.1+ | 0.3+ | 2005 11 20 | 644 | 0.0 | 0.3− | 2006 01 24 | 704 | 0.6+ | 0.1+ |
| 2001 12 19 | 704 | 0.6− | 0.0 | 2005 11 25 | 703 | 0.1− | 0.3+ | 2006 01 24 | 704 | 1.4+ | 0.2+ |
| 2002 01 08 | 704 | 0.2− | 0.0 | 2005 11 25 | 703 | 0.0 | 0.1+ | 2006 02 20 | G96 | 0.6− | 0.1− |
| 2002 01 08 | 704 | 0.1− | 0.1+ | 2005 11 25 | 703 | 0.1− | 0.1− | 2006 02 20 | G96 | 0.3− | 0.2− |
| 2002 01 08 | 704 | 0.3+ | 1.1+ | 2005 11 25 | 703 | 0.5− | 0.4+ | 2006 02 20 | G96 | 0.0 | 0.2− |
| 2002 01 08 | 704 | 0.1+ | 0.1+ | 2005 11 30 | 704 | 0.3+ | 0.3+ | 2006 02 20 | G96 | 0.3− | 0.3− |
| 2002 01 08 | 704 | 0.0 | 0.0 | 2005 11 30 | 704 | 0.0 | 0.4− | 2006 03 03 | G96 | 0.2− | 0.1+ |
| 2002 01 21 | 704 | 0.3− | 0.9+ | 2005 11 30 | 644 | 0.1+ | 0.1− | 2006 03 03 | G96 | 0.3− | 0.0 |
| 2002 01 21 | 704 | 0.1+ | 0.9− | 2005 11 30 | 704 | 0.1+ | 0.3+ | 2006 03 03 | G96 | 0.3− | 0.1− |
| 2002 01 21 | 704 | 0.8+ | 1.0− | 2005 11 30 | 704 | 0.3+ | 0.4+ | 2006 03 03 | G96 | 0.6+ | 0.7+ |
| 2002 01 21 | 704 | 1.6+ | 0.5− | 2005 11 30 | 644 | 0.1− | 0.2− | | | | |

**(141290)∗ 2001 YT$_{74}$ = 1995 UL$_{30}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23322)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.87037 | | (2000.0) | | +0.92170706 | −0.37051370 |
| $n$ | 0.18092144 | $\omega$ | 314.64516 | | +0.38168669 | +0.81365356 |
| $a$ | 3.0960600 | $\Omega$ | 67.41298 | | +0.06907506 | +0.44798157 |
| $e$ | 0.1829554 | $i$ | 7.14156 | | | |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1− | 0.4− | 2006 09 30 | 699 | 0.7+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.6− |
| 1995 10 20 | 691 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.6− |
| 1995 10 20 | 691 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 1995 10 25 | 691 | 0.3+ | 0.2− | 2006 09 30 | 699 | 0.1+ | 1.1+ | 2006 11 11 | 703 | 0.5− | 0.0 |
| 1995 10 25 | 691 | 0.4+ | 0.2− | 2006 09 30 | 703 | (3.0− | 0.6+) | 2006 11 13 | 644 | 0.0 | 0.0 |
| 1995 10 25 | 691 | 0.2+ | 0.3− | 2006 09 30 | 703 | 1.3− | 0.9+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 08 26 | 704 | 0.4− | 0.4− | 2006 10 03 | 704 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.2− |
| 2000 08 26 | 704 | 0.1− | 0.3− | 2006 10 03 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2000 08 26 | 704 | 0.4+ | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2000 08 26 | 704 | 0.1+ | 0.9+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.4+ | 0.6− | 2006 11 14 | 704 | 0.8− | 1.2+ |
| 2001 11 21 | 704 | 0.5+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.4− | 1.1+ |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 14 | 704 | 0.6− | 0.9+ |
| 2001 11 21 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.6+ | 0.8− | 2006 11 14 | 704 | 0.6+ | 0.7+ |
| 2001 12 18 | 644 | 0.6− | 0.8+ | 2006 10 16 | 703 | 0.6+ | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.6+ |
| 2001 12 18 | 644 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.9− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2001 12 18 | 644 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.7− | 1.0− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.1+ | 1.2− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.3− | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.7+ | 0.5− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | (1.5− | 1.2+) |
| 2001 12 18 | 704 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.5+ |
| 2001 12 19 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.7+ | 0.5+ |
| 2001 12 19 | 704 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.6− | 0.4+ |
| 2001 12 19 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 1.0− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 21 | 704 | 0.7+ | 0.5− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2001 12 21 | 704 | 0.6+ | 0.8− | 2006 10 27 | 704 | (2.1+ | 1.4+) | 2006 11 19 | 704 | 1.0− | 1.3+ |
| 2001 12 21 | 704 | 0.3− | 1.0− | 2006 10 27 | 704 | 1.2+ | 1.1+ | 2006 11 20 | 704 | 1.0− | 0.4+ |
| 2002 01 08 | 704 | 0.5+ | 0.0 | 2006 10 27 | 704 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2002 01 08 | 704 | 0.1+ | 0.2− | 2006 10 27 | 704 | 0.8+ | 0.8+ | 2006 11 20 | 704 | 0.1+ | 0.5− |
| 2002 01 08 | 704 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.9+ | 1.3+ |
| 2002 01 14 | 704 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.4− | 0.7+ |
| 2002 01 14 | 704 | 0.5− | 0.9− | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.7− | 1.8+ |
| 2002 01 14 | 704 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.5+ | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.4+ |
| 2006 09 30 | 699 | 1.0− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.1− | 0.2− |
| 2006 09 30 | 699 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.1+ |

**(141291)∗ 2001 YO$_{81}$ = 1997 EE$_{39}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23326)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.28312 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18859738 | $\omega$ | 209.36211 | | −0.91820050 | | −0.39598388 |
| $a$ | 3.0114728 | $\Omega$ | 307.30697 | | +0.36589113 | | −0.83796432 |
| $e$ | 0.1974315 | $i$ | 0.73675 | | +0.15176139 | | −0.37551640 |
| $P$ | 5.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 11 | 691 | 0.4+ | 0.1− | 2002 01 05 | 608 | 1.1+ | 0.2− | 2005 10 01 | 691 | 0.1+ | 0.2+ |
| 1997 02 11 | 691 | (3.9+ | 1.0−) | 2002 01 09 | 704 | 0.7− | 0.6− | 2005 10 01 | 691 | 0.3+ | 0.0 |
| 1997 02 11 | 691 | 0.0 | 0.4− | 2002 01 09 | 704 | 0.3− | 0.6− | 2005 10 01 | 691 | 0.2+ | 0.1− |
| 1997 03 05 | 704 | 0.3+ | 0.5+ | 2002 01 09 | 704 | 0.2− | 0.0 | 2005 10 01 | G96 | 0.1− | 0.1− |
| 1997 03 05 | 704 | 0.9+ | 0.2+ | 2002 01 09 | 704 | 0.3− | 0.2− | 2005 10 01 | G96 | 0.1− | 0.2− |
| 1997 03 06 | 704 | 1.2+ | 0.4− | 2002 01 09 | 608 | 1.1+ | 0.4+ | 2005 10 01 | G96 | 0.1+ | 0.0 |
| 1997 03 06 | 704 | 1.2+ | 0.1+ | 2002 01 09 | 704 | 0.1+ | 0.7− | 2005 10 01 | G96 | 0.2+ | 0.0 |
| 1999 09 03 | 691 | 0.2− | 0.3+ | 2002 01 09 | 608 | 1.1+ | 0.5+ | 2005 10 01 | 703 | 0.5+ | 0.8− |
| 1999 09 03 | 691 | 0.1− | 0.8− | 2002 01 09 | 608 | 1.4+ | 0.5+ | 2005 10 01 | 703 | 0.4− | 0.7+ |
| 1999 09 03 | 691 | 0.1− | 0.8− | 2002 01 12 | 691 | 0.6− | 0.2+ | 2005 10 01 | 703 | (1.9+ | 0.4−) |
| 2000 11 18 | 691 | 0.3− | 0.3+ | 2002 01 12 | 691 | 1.3− | 0.1+ | 2005 10 01 | 703 | (1.6+ | 0.5−) |
| 2000 11 18 | 691 | 0.2− | 0.4− | 2002 01 12 | 691 | 0.7− | 0.1+ | 2005 10 01 | G96 | 0.1+ | 0.0 |
| 2000 11 18 | 691 | 0.0 | 0.1− | 2002 01 13 | 704 | (3.4+ | 1.3−) | 2005 10 01 | G96 | 0.1+ | 0.0 |
| 2001 12 10 | 704 | 0.2− | 0.1− | 2002 01 13 | 704 | (3.8+ | 1.8−) | 2005 10 01 | G96 | 0.2− | 0.1+ |
| 2001 12 10 | 704 | 1.1+ | 0.9+ | 2002 01 13 | 704 | (2.9+ | 1.9−) | 2005 10 01 | G96 | 0.2− | 0.1− |
| 2001 12 10 | 704 | 0.4+ | 0.8+ | 2002 01 13 | 704 | (6.3+ | 2.3−) | 2005 10 05 | 691 | 0.2+ | 0.0 |
| 2001 12 10 | 704 | 0.8+ | 0.1+ | 2002 01 13 | 704 | (3.7+ | 2.2−) | 2005 10 05 | 691 | 0.0 | 0.1+ |
| 2001 12 14 | 333 | 0.9− | 0.9− | 2002 01 14 | 645 | 0.2− | 0.2− | 2005 10 05 | 691 | 0.2+ | 0.1+ |
| 2001 12 14 | 291 | 0.5− | 0.2+ | 2002 01 14 | 645 | 0.2− | 0.2− | 2005 10 07 | 703 | 0.5+ | 0.8− |
| 2001 12 14 | 291 | 0.1− | 0.3+ | 2002 01 15 | 608 | 1.5+ | 1.2+ | 2005 10 07 | 703 | 0.3+ | 0.3+ |
| 2001 12 14 | 333 | 0.3− | 0.5− | 2002 01 15 | 608 | 1.3+ | 0.7+ | 2005 10 07 | 703 | 0.7+ | 1.5− |
| 2001 12 14 | 291 | 0.8− | 0.3+ | 2002 01 15 | 608 | (0.8+ | 1.7+) | 2005 10 07 | 703 | 0.1− | 0.0 |
| 2001 12 14 | 333 | 0.7− | 0.3− | 2002 01 18 | 704 | 0.1+ | 0.2− | 2005 10 10 | 691 | 0.1− | 0.3+ |
| 2001 12 17 | 644 | 0.1+ | 0.5+ | 2002 01 18 | 704 | 0.4+ | 0.5− | 2005 10 10 | 691 | 1.0− | 0.8− |
| 2001 12 17 | 644 | 0.1+ | 0.6+ | 2002 01 18 | 704 | 0.3+ | 0.7− | 2005 10 10 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 644 | 0.4+ | 0.6+ | 2002 01 21 | 704 | 0.1− | 0.8− | 2005 10 27 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 1.1+ | 0.8− | 2002 01 21 | 704 | 0.0 | 0.9− | 2005 10 27 | G96 | 0.9+ | 0.2− |
| 2001 12 18 | 704 | 0.1+ | 0.6− | 2002 01 21 | 704 | 0.3+ | 0.4− | 2005 10 27 | G96 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.8+ | 0.1− | 2002 01 21 | 704 | 1.4− | 0.8− | 2005 10 27 | G96 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 1.0− | 2002 02 05 | 644 | 0.3− | 0.2+ | 2005 11 03 | 691 | 0.3+ | 0.3+ |
| 2001 12 18 | 704 | 0.5+ | 1.0− | 2002 02 05 | 644 | 0.3− | 0.4+ | 2005 11 03 | 691 | 0.1+ | 0.2+ |
| 2001 12 19 | 291 | 0.7+ | 0.1+ | 2002 02 05 | 644 | 0.1− | 0.3+ | 2005 11 03 | 691 | 0.1+ | 0.5+ |
| 2001 12 19 | 291 | 0.9+ | 0.3+ | 2002 02 09 | 704 | 0.1− | 0.3− | 2005 11 05 | 691 | 0.1− | 0.3+ |
| 2001 12 19 | 291 | 0.8+ | 0.2+ | 2002 02 09 | 704 | 0.3+ | 0.0 | 2005 11 05 | 691 | 0.2+ | 0.5+ |
| 2001 12 19 | 704 | 0.8+ | 0.3+ | 2002 02 09 | 704 | 0.2− | 0.1+ | 2005 11 05 | 691 | 0.0 | 0.6+ |
| 2001 12 19 | 704 | 0.5+ | 0.0 | 2002 02 09 | 704 | 0.7+ | 0.8+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.4+ | 0.2− | 2002 02 11 | 704 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.8+ | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2002 02 11 | 704 | 0.0 | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2001 12 20 | 291 | 1.3− | 0.7+ | 2002 02 11 | 704 | 0.6+ | 1.0+ | 2006 12 01 | 704 | 0.1− | 0.4+ |
| 2001 12 20 | 291 | 0.5− | 0.1− | 2002 02 11 | 704 | 0.2− | 1.1+ | 2006 12 01 | 704 | 0.8− | 1.3+ |
| 2001 12 20 | 291 | 0.3− | 0.1− | 2005 09 27 | 691 | 0.3+ | 0.2− | 2006 12 01 | 704 | 0.8+ | 0.4+ |
| 2002 01 05 | 608 | (1.5+ | 0.0 ) | 2005 09 27 | 691 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.3+ |
| 2002 01 05 | 608 | 1.3+ | 0.1+ | 2005 09 27 | 691 | 0.0 | 0.1− | | | | |

**(141292)∗ 2001 YR$_{81}$ = 2000 QL$_{11}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23326)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.16747 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18594590 | $\omega$ | 81.12749 | | +0.73018918 | | −0.68250943 |
| $a$ | 3.0400331 | $\Omega$ | 321.90272 | | +0.60494323 | | +0.66737523 |
| $e$ | 0.2763350 | $i$ | 2.94464 | | +0.31759634 | | +0.29797848 |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 24 | 691 | 0.5− | 0.3+ | 2002 01 09 | 608 | 0.2− | 1.1− | 2006 09 18 | 703 | 1.0− | 0.1− |
| 2000 07 24 | 691 | 0.4− | 0.3+ | 2002 01 09 | 608 | 0.5− | 1.1− | 2006 11 13 | 691 | 0.1+ | 0.4+ |
| 2000 07 24 | 691 | 0.3− | 0.5+ | 2002 01 09 | 608 | 0.5− | 0.3− | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 2000 08 24 | 704 | 0.9+ | 0.4+ | 2002 01 14 | 704 | 0.1− | 1.2+ | 2006 11 13 | 691 | 0.0 | 0.5+ |
| 2000 08 24 | 704 | 0.1+ | 1.4+ | 2002 01 14 | 704 | (0.2+ | 1.5+) | 2006 11 14 | 703 | 0.2− | 0.1− |
| 2000 08 24 | 704 | 0.3− | 0.4+ | 2002 01 14 | 704 | 0.4+ | 1.1+ | 2006 11 14 | 703 | 0.3− | 0.1− |
| 2000 08 24 | 704 | 0.2− | 0.9+ | 2002 01 14 | 704 | (0.1− | 1.8+) | 2006 11 14 | 703 | 0.3− | 0.6+ |
| 2000 08 26 | 704 | 0.2+ | 0.8+ | 2002 01 14 | 704 | 0.8+ | 1.3+ | 2006 11 14 | 703 | (1.7+ | 1.1+) |
| 2000 08 26 | 704 | 0.3− | 0.8+ | 2002 01 15 | 608 | 0.3− | 0.2− | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2000 08 26 | 704 | 0.0 | 1.7+ | 2002 01 15 | 608 | 0.2− | 0.0 | 2006 11 15 | 704 | (1.9+ | 0.6+) |
| 2000 08 26 | 704 | 0.5+ | 1.4+ | 2002 01 15 | 608 | 0.3− | 0.1+ | 2006 11 15 | 704 | (1.8+ | 0.0 ) |
| 2000 08 26 | 704 | 0.3− | 0.3+ | 2002 01 18 | 704 | 0.5+ | 1.4+ | 2006 11 15 | 704 | (1.6+ | 0.1+) |
| 2001 11 12 | 704 | (0.9+ | 1.5+) | 2002 01 18 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 1.1+ | 0.2+ |
| 2001 11 12 | 704 | 1.3+ | 0.3+ | 2002 01 18 | 704 | 0.3− | 0.8+ | 2006 11 16 | 704 | 1.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.8+ | 0.4− | 2002 01 18 | 704 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2001 12 10 | 704 | 0.3+ | 0.8− | 2002 01 18 | 704 | 0.3+ | 1.2+ | 2006 11 16 | 704 | 0.6− | 0.1− |
| 2001 12 10 | 704 | 0.5− | 0.7− | 2002 01 18 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 704 | (1.7+ | 0.1+) |
| 2001 12 10 | 704 | 0.4− | 1.0− | 2002 01 18 | 704 | (0.5+ | 1.8+) | 2006 11 16 | 704 | 0.2+ | 0.3− |
| 2001 12 10 | 704 | 0.3+ | 0.8− | 2002 01 18 | 704 | (0.5− | 1.9+) | 2006 11 16 | 704 | 1.1+ | 0.4+ |
| 2001 12 18 | 644 | 0.1− | 0.5+ | 2002 01 21 | 704 | 0.9+ | 0.8+ | 2006 11 16 | 704 | 0.2− | 0.4− |
| 2001 12 18 | 644 | 0.0 | 0.4+ | 2002 01 21 | 704 | (0.5− | 3.1+) | 2006 11 16 | 704 | 0.9+ | 0.0 |
| 2001 12 18 | 644 | 0.0 | 0.4+ | 2002 01 21 | 704 | (4.5− | 2.4+) | 2006 11 16 | 704 | 0.4− | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.1− | 2002 01 21 | 704 | (2.6− | 3.2+) | 2006 11 17 | 691 | 0.2− | 0.2+ |
| 2001 12 18 | 704 | 0.1+ | 0.5− | 2002 02 04 | 644 | 0.0 | 0.7− | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.7+ | 0.0 | 2002 02 04 | 644 | 0.3+ | 1.1− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.5+ | 0.0 | 2002 02 04 | 644 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2001 12 18 | 704 | 0.6+ | 0.6+ | 2002 02 05 | 644 | 0.2+ | 0.6− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2001 12 19 | 704 | 0.6+ | 0.1+ | 2002 02 05 | 644 | 0.1− | 0.8− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2001 12 19 | 704 | 0.1+ | 0.4− | 2002 02 05 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2001 12 19 | 704 | 0.0 | 0.5− | 2002 02 07 | 704 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.5+ | 0.9− | 2002 02 07 | 704 | 0.6+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.1− | 1.1− | 2002 02 07 | 704 | (1.7+ | 0.0 ) | 2006 11 21 | G96 | 0.5− | 0.2− |
| 2001 12 24 | 644 | 0.2− | 0.2+ | 2002 02 10 | 704 | 1.1+ | 1.1+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 12 24 | 644 | 0.0 | 0.4+ | 2002 02 10 | 704 | (0.7+ | 1.6+) | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 12 24 | 644 | 0.3− | 0.1+ | 2002 02 10 | 704 | 0.5+ | 1.3+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 12 26 | 608 | 0.7− | 0.1− | 2002 02 10 | 704 | 0.6+ | 1.3+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2001 12 26 | 608 | 0.6− | 0.3+ | 2003 03 23 | 691 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 12 26 | 608 | 0.5− | 0.5+ | 2003 03 23 | 691 | 0.5− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2002 01 05 | 608 | 0.0 | 0.2− | 2003 03 23 | 691 | 0.7− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2002 01 05 | 608 | 0.1+ | 0.6− | 2003 03 26 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.5− |
| 2002 01 05 | 608 | 0.3+ | 0.3− | 2003 03 26 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 01 05 | 608 | 0.1+ | 0.5− | 2003 03 26 | 691 | 0.8+ | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2002 01 05 | 608 | 0.0 | 0.4− | 2003 04 07 | 691 | 0.8+ | 1.1+ | 2006 11 23 | 644 | 0.2− | 0.3+ |
| 2002 01 05 | 608 | 0.0 | 0.4− | 2003 04 07 | 691 | 1.1+ | 0.9+ | 2006 11 23 | 644 | 0.0 | 0.2+ |
| 2002 01 07 | 644 | 0.1− | 1.3+ | 2003 04 07 | 691 | 1.0+ | 1.3+ | 2006 11 23 | 644 | 0.0 | 0.3+ |
| 2002 01 07 | 644 | 0.4+ | 1.4+ | 2006 08 29 | 703 | 0.4+ | 0.9+ | 2006 11 25 | 691 | 0.1− | 0.3+ |
| 2002 01 07 | 644 | 0.0 | 1.3+ | 2006 08 29 | 703 | 0.0 | 1.0− | 2006 11 25 | 691 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 0.0 | 0.3+ | 2006 08 29 | 703 | 1.0+ | 1.0− | 2006 11 25 | 691 | 0.1− | 0.3+ |
| 2002 01 08 | 704 | 0.1− | 0.5+ | 2006 08 29 | 703 | 0.8− | 0.7+ | 2006 11 27 | 704 | 0.2+ | 0.7+ |
| 2002 01 08 | 704 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.8+ | 2006 11 27 | 704 | 0.1+ | 0.1− |
| 2002 01 08 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.9− | 1.2− | 2006 11 27 | 704 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 645 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 11 27 | 704 | 0.2+ | 0.2+ |
| 2002 01 09 | 645 | 0.2− | 0.2− | 2006 09 18 | 703 | 1.1− | 0.8− | 2006 11 28 | 704 | 0.0 | 0.2− |
| 2002 01 09 | 608 | 0.2− | 0.3− | 2006 09 18 | 703 | (1.7− | 1.2+) | 2006 11 28 | 704 | 0.6− | 0.4+ |
| 2002 01 09 | 608 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.1+ |
| 2002 01 09 | 608 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.6− | 0.3+ |

**(141293)∗ 2001 YD$_{86}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.97172 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17770761 | $\omega$ | 71.94106 | | −0.92488405 | −0.36435331 | |
| $a$ | 3.1332764 | $\Omega$ | 86.57770 | | +0.29445122 | −0.86729185 | |
| $e$ | 0.1160019 | $i$ | 6.25701 | | +0.24059919 | −0.33919245 | |
| $P$ | 5.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.0− | 0.7+ | 2002 01 21 | 704 | 0.2+ | 1.4+ | 2003 04 27 | 699 | 0.6− | 0.9− |
| 2001 12 18 | 704 | 0.9− | 1.1+ | 2002 02 06 | 704 | 0.3− | 0.0 | 2003 04 27 | 699 | 0.3+ | 0.2− |
| 2001 12 18 | 704 | (1.2− | 1.8+) | 2002 02 06 | 704 | 1.4+ | 0.6− | 2003 04 27 | 699 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.6− | 0.0 | 2002 02 06 | 704 | 0.4+ | 0.4− | 2003 04 27 | 699 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2002 02 06 | 704 | 0.8− | 0.4+ | 2003 05 01 | 704 | 0.8− | 0.4+ |
| 2001 12 19 | 704 | 0.1− | 0.8+ | 2002 02 06 | 704 | 0.3+ | 0.4− | 2003 05 01 | 704 | 0.2− | 0.4+ |
| 2001 12 19 | 704 | 0.2+ | 0.7+ | 2002 02 07 | 291 | 0.1+ | 0.0 | 2003 05 01 | 704 | 0.4− | 0.4+ |
| 2001 12 19 | 704 | 0.9− | 0.6+ | 2002 02 07 | 291 | 0.1+ | 0.0 | 2005 10 22 | 291 | 0.0 | 0.4+ |
| 2002 01 08 | 704 | 0.1+ | 0.3+ | 2002 02 07 | 291 | 0.5− | 0.0 | 2005 10 22 | 291 | 0.4− | 0.4+ |
| 2002 01 08 | 704 | 0.4+ | 0.5+ | 2002 02 07 | 704 | (0.7+ | 1.5−) | 2005 10 22 | 291 | 0.1− | 0.3+ |
| 2002 01 08 | 704 | 0.9+ | 0.8+ | 2002 02 07 | 704 | 0.6+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2002 01 08 | 704 | 0.3+ | 0.3+ | 2002 02 07 | 704 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2002 01 14 | 704 | 0.5− | 0.9+ | 2002 02 07 | 704 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.4+ | 0.4− |
| 2002 01 14 | 704 | 0.3+ | 0.0 | 2002 02 07 | 704 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2002 02 07 | 704 | 0.4+ | 0.6− | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2002 02 07 | 704 | 0.5+ | 0.5− | 2006 11 16 | 691 | 0.2− | 0.2− |
| 2002 01 14 | 704 | 0.3− | 0.6− | 2002 02 07 | 704 | 0.9+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 01 17 | 644 | 0.3+ | 0.3+ | 2002 02 07 | 704 | 0.2− | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2002 01 17 | 644 | 0.2+ | 0.6+ | 2002 02 12 | 704 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.7− | 0.2− |
| 2002 01 17 | 644 | 0.2− | 0.4+ | 2002 02 12 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 01 18 | 704 | 0.1− | 0.5+ | 2002 02 12 | 704 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.5+ | 0.3+ |
| 2002 01 18 | 704 | 0.2− | 0.3+ | 2002 02 12 | 704 | 0.2+ | 0.6+ | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2002 01 18 | 704 | 0.9− | 0.3+ | 2002 02 12 | 704 | 0.1+ | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2002 01 21 | 704 | 0.3+ | 0.9− | 2003 04 11 | 691 | 0.4+ | 0.5+ | 2006 12 01 | G96 | 0.7+ | 0.2− |
| 2002 01 21 | 704 | 0.5+ | 0.0 | 2003 04 11 | 691 | 0.1− | 0.7+ | | | | |
| 2002 01 21 | 704 | (2.0+ | 0.1+) | 2003 04 11 | 691 | 0.3+ | 0.6− | | | | |

**(141294)∗ 2001 YK$_{90}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.78613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17345154 | $\omega$ | 295.96321 | | +0.80607546 | −0.51956838 | |
| $a$ | 3.1843242 | $\Omega$ | 96.55957 | | +0.59136117 | +0.72583632 | |
| $e$ | 0.1928273 | $i$ | 16.57223 | | −0.02311527 | +0.45078856 | |
| $P$ | 5.68 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 10 | 704 | 0.2− | 0.2+ | 2002 01 17 | 644 | 0.4+ | 0.7+ | 2006 10 28 | 703 | 0.8+ | 0.2+ |
| 2000 08 10 | 704 | 0.0 | 0.4− | 2002 01 17 | 644 | 0.5+ | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2000 08 10 | 704 | 1.1+ | 0.2+ | 2002 01 17 | 644 | 0.2+ | 0.7+ | 2006 10 28 | 703 | 0.5+ | 0.3+ |
| 2000 08 10 | 704 | 0.1− | 0.6+ | 2002 01 20 | 699 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.3− |
| 2000 08 10 | 704 | 0.6− | 1.0+ | 2002 01 20 | 699 | 0.3+ | 0.2+ | 2006 10 29 | 106 | (1.7+ | 1.3−) |
| 2000 09 20 | 704 | 0.1+ | 0.1+ | 2002 01 20 | 699 | 0.2− | 0.1− | 2006 10 29 | 106 | 0.5+ | 0.2+ |
| 2000 09 20 | 704 | 0.0 | 0.0 | 2002 01 20 | 699 | 0.4− | 0.5+ | 2006 10 29 | 106 | 0.2+ | 0.1− |
| 2000 09 20 | 704 | 0.6+ | 1.0+ | 2004 05 19 | 691 | 0.4+ | 0.6+ | 2006 10 29 | 106 | 1.2+ | 0.1+ |
| 2000 09 20 | 704 | 1.2+ | 0.5− | 2004 05 19 | 691 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2000 09 20 | 704 | 0.4− | 0.4+ | 2004 05 19 | 691 | 0.5+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2000 09 28 | 699 | 0.3− | 0.7+ | 2005 07 06 | E12 | 0.2+ | 1.2+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2000 09 28 | 699 | 0.8− | 0.3+ | 2005 07 06 | E12 | 0.7− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2000 09 28 | 699 | 1.9− | 0.2− | 2005 07 06 | E12 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2000 09 28 | 699 | 0.1+ | 0.0 | 2005 07 06 | E12 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2001 12 18 | 644 | 0.1+ | 0.1+ | 2005 07 10 | E12 | 0.6− | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.7+ |
| 2001 12 18 | 644 | 0.3+ | 0.3+ | 2005 07 10 | E12 | 0.5+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2001 12 18 | 644 | 0.1+ | 0.1+ | 2005 07 10 | E12 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2001 12 18 | 704 | 0.2+ | 0.6+ | 2005 07 10 | E12 | 0.9− | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2001 12 18 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 22 | 704 | 1.0− | 0.3− |
| 2001 12 18 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | (2.4− | 0.3−) |
| 2001 12 19 | 704 | (1.7− | 0.1−) | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | 1.2− | 0.6− |
| 2001 12 19 | 704 | (1.8− | 0.8+) | 2006 10 20 | 703 | 0.6− | 0.7− | 2006 11 22 | 704 | (1.8− | 0.8−) |
| 2001 12 19 | 704 | 1.1− | 0.4+ | 2006 10 20 | 703 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.9− | 0.6+ |
| 2001 12 19 | 704 | 1.2− | 0.8+ | 2006 10 20 | 703 | 0.4− | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.0 |
| 2001 12 19 | 704 | 1.5− | 0.2+ | 2006 10 20 | 703 | 0.5+ | 0.4− | 2006 11 23 | 703 | 0.3− | 0.1− |
| 2002 01 05 | 699 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.0 | 2006 11 23 | 703 | (1.3+ | 2.3−) |
| 2002 01 05 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.7+ | 2006 11 23 | 703 | 0.6+ | 0.3− |
| 2002 01 05 | 699 | 0.1+ | 0.7+ | 2006 10 21 | 703 | 0.7− | 0.3+ | | | | |
| 2002 01 05 | 699 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.7+ | 0.0 | | | | |

**(141295)∗ 2001 YD$_{91}$**

Discovered 2001 Dec. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.09307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17423627 | $\omega$ | 8.17238 | | −0.02547992 | −0.99858520 | |
| $a$ | 3.1747559 | $\Omega$ | 83.29661 | | +0.91450643 | −0.04214099 | |
| $e$ | 0.0934171 | $i$ | 2.69356 | | +0.40376819 | +0.03243034 | |
| $P$ | 5.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 699 | 0.1+ | 1.2+ | 2002 01 21 | 704 | 0.6− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2000 10 07 | 699 | 0.5− | 0.2+ | 2002 01 21 | 704 | 0.3+ | 0.3− | 2006 11 02 | 703 | 0.2− | 0.8+ |
| 2000 10 07 | 699 | 0.5− | 0.8+ | 2002 01 21 | 704 | 1.0+ | 0.3+ | 2006 11 02 | 703 | 0.4+ | 0.7+ |
| 2000 10 07 | 699 | 0.1+ | 0.2− | 2002 01 21 | 704 | 0.5+ | 1.0− | 2006 11 02 | 703 | 0.6+ | 1.3+ |
| 2001 12 17 | 644 | 0.1− | 0.7+ | 2002 02 03 | 608 | 0.0 | 0.4− | 2006 11 02 | 703 | 1.4+ | 1.3+ |
| 2001 12 17 | 644 | 0.4− | 0.7+ | 2002 02 03 | 608 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2001 12 17 | 644 | 0.1+ | 0.4+ | 2002 02 03 | 608 | 0.3− | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 12 18 | 644 | 0.3+ | 0.5+ | 2002 02 06 | 704 | (0.6− | 1.7+) | 2006 11 09 | 644 | 0.5− | 0.1+ |
| 2001 12 18 | 644 | 0.3+ | 0.4+ | 2002 02 06 | 704 | 0.6+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 12 18 | 644 | 0.2+ | 0.6+ | 2002 02 06 | 704 | 0.5+ | 1.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 1.0− | 0.3− | 2002 02 06 | 704 | (0.9+ | 1.6+) | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2001 12 18 | 704 | 0.8− | 0.6+ | 2002 02 06 | 704 | 1.4+ | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | (0.2− | 1.5+) | 2002 02 07 | 704 | 1.5+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.7− |
| 2001 12 18 | 704 | (0.4− | 1.6+) | 2002 02 07 | 704 | 1.4+ | 1.1− | 2006 11 11 | 703 | 0.9− | 1.0+ |
| 2002 01 08 | 704 | (4.6− | 1.5+) | 2002 02 07 | 704 | 1.2+ | 0.5− | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2002 01 08 | 704 | (4.5− | 1.6+) | 2002 02 07 | 704 | (2.9+ | 0.6−) | 2006 11 13 | G96 | 0.3+ | 1.1− |
| 2002 01 08 | 704 | (4.8− | 2.0+) | 2003 04 11 | 691 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2002 01 08 | 704 | (4.4− | 1.0+) | 2003 04 11 | 691 | 0.5+ | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2002 01 08 | 704 | (4.5− | 2.2+) | 2003 04 11 | 691 | 0.8+ | 0.6+ | 2006 11 13 | G96 | 0.0 | 0.8− |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2003 04 24 | 691 | 0.3− | 0.3+ | 2006 11 13 | 644 | 0.5+ | 0.4+ |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2003 04 24 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 01 14 | 704 | 0.2− | 0.1+ | 2003 04 24 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1− | 0.5+ |
| 2002 01 14 | 704 | 0.5− | 0.3− | 2003 05 08 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 1.0− |
| 2002 01 14 | 704 | 0.4− | 0.2− | 2003 05 08 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.9+ | 0.3+ |
| 2002 01 14 | 704 | 0.6− | 0.1− | 2003 05 08 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.3− |
| 2002 01 18 | 704 | 0.9+ | 0.2+ | 2005 08 05 | 644 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2002 01 18 | 704 | 0.2− | 0.0 | 2005 08 05 | 644 | 0.3− | 0.5+ | 2006 11 18 | 704 | (0.2+ | 1.7+) |
| 2002 01 18 | 704 | 0.4+ | 0.1+ | 2005 08 05 | 644 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2002 01 20 | 699 | 0.2− | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.0 | 1.0+ |
| 2002 01 20 | 699 | 0.8− | 0.8− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | (1.5+ | 1.6+) |
| 2002 01 20 | 699 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2002 01 20 | 699 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1− | | | | |
| 2002 01 21 | 704 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1− | | | | |

**(141296)∗ 2001 YV$_{91}$**

Discovered 2001 Dec. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.44870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17956002 | $\omega$ | 345.04635 | | −0.12657893 | −0.98661795 | |
| $a$ | 3.1116897 | $\Omega$ | 112.14036 | | +0.92111195 | −0.15535854 | |
| $e$ | 0.1216450 | $i$ | 6.37049 | | +0.36814474 | +0.04948478 | |
| $P$ | 5.49 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 0.3− | 0.7+ | 2002 01 14 | 704 | 0.3+ | 0.2− | 2003 03 24 | 691 | 0.1+ | 0.7+ |
| 2000 10 02 | 704 | 0.2+ | 0.7+ | 2002 01 14 | 704 | 0.3+ | 0.4− | 2003 05 01 | 691 | 0.6+ | 1.4+ |
| 2000 10 02 | 704 | 0.0 | 0.3+ | 2002 01 18 | 644 | 0.1− | 0.1+ | 2003 05 01 | 691 | 0.5+ | 1.2+ |
| 2000 10 02 | 699 | 0.5− | 0.8+ | 2002 01 18 | 644 | 0.1+ | 0.3+ | 2003 05 01 | 691 | 0.6+ | 1.1+ |
| 2000 10 02 | 704 | 0.3− | 0.1+ | 2002 01 18 | 644 | 0.1+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.8+ |
| 2000 10 02 | 699 | 0.5+ | 1.2+ | 2002 01 21 | 704 | 0.7− | 0.7+ | 2005 09 22 | 644 | 0.4− | 0.7+ |
| 2000 10 02 | 704 | 0.9− | 1.4+ | 2002 01 21 | 704 | 0.4+ | 1.2− | 2005 09 22 | 644 | 0.4− | 0.7+ |
| 2000 10 02 | 704 | 0.0 | 0.7+ | 2002 01 21 | 704 | 1.3− | 0.6+ | 2005 09 24 | 644 | 0.2− | 0.3+ |
| 2000 10 02 | 699 | 0.3− | 0.2− | 2002 01 21 | 704 | 1.3− | 0.1+ | 2005 09 24 | 644 | 0.2− | 0.7+ |
| 2000 10 02 | 645 | 0.1− | 0.3+ | 2002 01 21 | 704 | 0.9− | 0.8+ | 2005 09 24 | 644 | 0.5− | 0.9+ |
| 2000 10 02 | 645 | 0.1− | 0.2+ | 2002 01 26 | 644 | 0.4+ | 1.2+ | 2005 10 03 | 703 | 0.2− | 0.5+ |
| 2001 12 17 | 644 | 0.2+ | 0.4+ | 2002 01 26 | 644 | 0.3+ | 1.2+ | 2005 10 03 | 703 | 0.2+ | 0.5+ |
| 2001 12 17 | 644 | 0.0 | 0.3+ | 2002 01 26 | 644 | 0.2+ | 1.0+ | 2005 10 03 | 703 | 1.1− | 0.4− |
| 2001 12 17 | 644 | 0.3+ | 0.2+ | 2002 02 03 | 699 | 0.4− | 0.1− | 2005 10 03 | 703 | 0.8− | 0.8+ |
| 2001 12 18 | 704 | 0.1− | 0.3− | 2002 02 03 | 699 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.4− |
| 2001 12 18 | 644 | 0.2+ | 0.6− | 2002 02 03 | 699 | 0.2+ | 0.6+ | 2006 11 02 | G96 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.3+ | 2002 02 03 | 699 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.3+ | 0.3− |
| 2001 12 18 | 644 | 0.6+ | 0.7− | 2002 02 05 | 644 | 0.1− | 0.5+ | 2006 11 02 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 644 | 0.3− | 0.5− | 2002 02 05 | 644 | 0.5− | 0.3+ | 2006 11 17 | 704 | (1.7+ | 0.4+) |
| 2001 12 18 | 704 | 0.5+ | 0.3+ | 2002 02 05 | 644 | 0.4− | 0.5+ | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2001 12 18 | 704 | 0.1+ | 1.3+ | 2002 02 07 | 704 | 0.3− | 0.2− | 2006 11 17 | 704 | (0.5+ | 1.5+) |
| 2001 12 20 | 704 | 0.8+ | 0.2+ | 2002 02 07 | 704 | 0.6− | 0.5− | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2001 12 20 | 704 | 0.8+ | 0.9− | 2002 02 07 | 704 | 0.5− | 0.3− | 2006 11 17 | 704 | 0.3+ | 1.0+ |
| 2001 12 20 | 704 | 1.1+ | 0.7− | 2002 02 07 | 704 | 0.7− | 0.1− | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2001 12 20 | 704 | 0.2+ | 0.7+ | 2002 02 07 | 704 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2001 12 21 | 704 | 0.7+ | 0.4+ | 2002 02 10 | 704 | 0.5− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2001 12 21 | 704 | 0.3+ | 0.1+ | 2002 02 10 | 704 | 0.8− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2001 12 21 | 704 | 0.1− | 1.0+ | 2002 02 10 | 704 | 0.4− | 0.6+ | 2006 11 20 | 704 | 0.3+ | 0.7+ |
| 2002 01 05 | 104 | 0.5+ | 0.1+ | 2002 02 10 | 704 | 0.5− | 0.5+ | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2002 01 05 | 104 | 0.3+ | 0.7− | 2002 02 12 | 704 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2002 01 05 | 104 | 0.5+ | 0.5+ | 2002 02 12 | 704 | 0.5+ | 0.6+ | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2002 01 06 | 104 | 1.0+ | 0.4− | 2002 02 12 | 704 | 0.7+ | 0.4− | 2006 11 20 | 704 | 0.8+ | 0.7+ |
| 2002 01 06 | 104 | 0.7+ | 0.4− | 2002 02 12 | 704 | 0.9+ | 0.4− | 2006 11 25 | 703 | 0.4− | 0.1+ |
| 2002 01 06 | 104 | 0.2+ | 0.2− | 2002 02 12 | 704 | 0.8+ | 0.7− | 2006 11 25 | 703 | 0.1+ | 0.5− |
| 2002 01 09 | 704 | 0.1− | 0.9− | 2002 02 20 | 704 | 0.5− | 0.3+ | 2006 11 25 | 703 | 0.3− | 0.1+ |
| 2002 01 09 | 704 | 0.6− | 0.1+ | 2002 02 20 | 704 | 0.5− | 0.2− | 2006 11 25 | 703 | 0.2+ | 0.1− |
| 2002 01 09 | 704 | 0.0 | 0.1+ | 2002 02 20 | 704 | 0.5− | 0.9+ | 2006 11 29 | 704 | 0.6− | 0.2+ |
| 2002 01 09 | 704 | 0.0 | 0.4− | 2002 02 20 | 704 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2002 01 14 | 704 | 0.0 | 0.0 | 2002 02 20 | 704 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.3− |
| 2002 01 14 | 704 | 0.0 | 0.3− | 2003 03 24 | 691 | 0.0 | 0.7+ | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 0.3− | 0.3− | 2003 03 24 | 691 | 0.3+ | 0.6+ | | | | |

**(141297)∗ 2001 YZ$_{93}$**

Discovered 2001 Dec. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.29123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37431334 | $\omega$ | 219.04418 | | +0.89988623 | +0.25821640 | |
| $a$ | 1.9068324 | $\Omega$ | 122.42876 | | −0.21534229 | +0.96387089 | |
| $e$ | 0.1034168 | $i$ | 24.60758 | | −0.37925253 | +0.06540028 | |
| $P$ | 2.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 608 | 0.0 | 0.6− | 2002 01 12 | 704 | 1.1+ | 0.7− | 2005 03 08 | 703 | 0.7− | 0.5+ |
| 2001 11 18 | 608 | 0.2+ | 0.8− | 2002 01 12 | 704 | 0.0 | 0.0 | 2005 03 08 | 703 | 0.7− | 0.1− |
| 2001 11 18 | 608 | 0.1+ | 0.3− | 2002 01 12 | 704 | 0.1+ | 0.4− | 2005 03 08 | 704 | 1.3+ | 0.2− |
| 2001 12 13 | 644 | 0.2+ | 0.4+ | 2003 06 07 | 704 | 0.6− | 0.1− | 2005 03 08 | 704 | 1.3+ | 0.3+ |
| 2001 12 13 | 644 | 0.3+ | 0.6+ | 2003 06 07 | 704 | 0.7− | 0.5− | 2005 03 08 | 704 | 0.3− | 1.3+ |
| 2001 12 13 | 644 | 0.2− | 0.1+ | 2003 06 07 | 704 | 0.0 | 0.7− | 2006 09 30 | E12 | 0.0 | 0.3− |
| 2001 12 17 | 699 | 0.4− | 0.5+ | 2003 07 23 | 644 | 0.2+ | 0.4+ | 2006 09 30 | E12 | 0.2− | 0.0 |
| 2001 12 17 | 699 | 0.1+ | 0.1− | 2003 07 23 | 644 | 0.5+ | 0.6+ | 2006 09 30 | E12 | 0.2+ | 0.3+ |
| 2001 12 17 | 699 | 0.6+ | 0.0 | 2003 07 23 | 644 | 0.4+ | 0.4+ | 2006 09 30 | E12 | 0.0 | 0.3+ |
| 2001 12 17 | 699 | 0.6+ | 0.5+ | 2004 12 20 | G96 | 0.5− | 0.3− | 2006 10 25 | E12 | 0.4− | 0.1+ |
| 2001 12 19 | 699 | 0.7+ | 1.0+ | 2004 12 20 | G96 | 0.3− | 0.4− | 2006 10 25 | E12 | 0.8+ | 0.3− |
| 2001 12 19 | 699 | 0.9− | 0.1+ | 2004 12 20 | G96 | 0.6− | 0.4− | 2006 10 25 | E12 | 1.1− | 0.8+ |
| 2001 12 19 | 699 | 0.1− | 0.3− | 2004 12 20 | G96 | 0.5− | 0.0 | 2006 10 25 | E12 | (0.0 | 1.9+) |
| 2001 12 19 | 699 | 0.7− | 0.5+ | 2005 03 08 | 703 | (1.7+ | 0.1+) | 2006 11 13 | E12 | 0.4+ | 0.1− |
| 2001 12 22 | 608 | 0.1− | 0.9− | 2005 03 08 | 703 | 0.6+ | 0.4− | 2006 11 13 | E12 | 0.3− | 0.4+ |
| 2001 12 22 | 608 | 0.2− | 0.9− | 2005 03 08 | 703 | 0.5+ | 0.4+ | 2006 11 13 | E12 | 0.7+ | 0.7+ |
| 2001 12 22 | 608 | 0.4− | 0.5− | 2005 03 08 | 703 | 0.1− | 0.4+ | 2006 11 13 | E12 | 0.1− | 0.1+ |
| 2001 12 23 | 446 | 1.0− | 0.7+ | 2005 03 08 | 703 | 0.5− | 0.3+ | | | | |
| 2001 12 23 | 446 | 1.1+ | 0.0 | 2005 03 08 | 703 | 0.5− | 0.5+ | | | | |

**(141298)∗ 2001 YH$_{99}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.83232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21789820 | $\omega$ | 13.11148 | | −0.54494971 | −0.83115375 | |
| $a$ | 2.7350606 | $\Omega$ | 110.01090 | | +0.75827761 | −0.54478126 | |
| $e$ | 0.0583860 | $i$ | 6.75444 | | +0.35783359 | −0.11134104 | |
| $P$ | 4.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.3− | 0.3− | 2002 01 13 | 704 | 0.8+ | 0.7− | 2005 10 27 | 644 | 0.3− | 0.1− |
| 2001 12 17 | 704 | 1.0− | 0.7− | 2002 01 13 | 704 | 1.2+ | 0.0 | 2005 10 27 | 644 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 1.0− | 0.0 | 2003 03 31 | 699 | (1.3+ | 2.3+) | 2005 10 27 | 644 | 0.1− | 0.4+ |
| 2001 12 17 | 704 | 0.7− | 0.2+ | 2003 03 31 | 699 | 1.3+ | 1.0+ | 2005 11 01 | 644 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 0.8− | 0.4− | 2003 03 31 | 699 | 0.3+ | 0.5− | 2005 11 01 | 644 | 0.3− | 0.0 |
| 2001 12 20 | 704 | 1.2− | 0.8+ | 2003 03 31 | 699 | 0.2+ | 0.1+ | 2005 11 01 | 644 | 0.2+ | 0.2+ |
| 2001 12 20 | 704 | 0.8− | 0.4+ | 2003 04 07 | 691 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.2+ |
| 2001 12 20 | 704 | 1.1+ | 1.5+ | 2003 04 07 | 691 | 0.8+ | 0.6− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 12 20 | 704 | (1.6− | 0.9+) | 2003 04 07 | 691 | 0.6+ | 0.3− | 2006 10 21 | G96 | 0.4− | 0.5− |
| 2001 12 23 | 704 | 0.4+ | 0.2+ | 2003 04 08 | 291 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 12 23 | 704 | 1.2+ | 1.0+ | 2003 04 08 | 291 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.5+ |
| 2001 12 23 | 704 | 0.1− | 1.1− | 2003 04 08 | 291 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2001 12 23 | 704 | 0.2− | 0.6+ | 2003 04 11 | 691 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.5− |
| 2001 12 23 | 704 | 0.5− | 0.6− | 2003 04 11 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 2001 12 23 | 704 | 0.7+ | 1.4+ | 2003 04 11 | 691 | 0.6+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 12 23 | 704 | 0.9− | 0.6− | 2003 04 21 | 691 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2002 01 09 | 704 | 0.4+ | 0.2+ | 2003 04 21 | 691 | 0.8− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 01 09 | 704 | 0.2− | 0.4+ | 2003 04 21 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 01 09 | 704 | 0.6+ | 0.8+ | 2003 05 02 | 691 | 0.8− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.7− |
| 2002 01 09 | 704 | 0.8− | 0.1+ | 2003 05 02 | 691 | 0.6− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.7− |
| 2002 01 13 | 704 | 0.9+ | 0.0 | 2003 05 02 | 691 | 1.0− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.6− |
| 2002 01 13 | 704 | 1.2+ | 0.5− | 2005 09 26 | A50 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.5− |

**(141299)∗ 2001 YO$_{99}$ = 2129 T-3**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23335)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.74974 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17069256 | $\omega$ | 90.03557 | | +0.98410728 | +0.17344666 | |
| $a$ | 3.2185455 | $\Omega$ | 259.97618 | | −0.17439139 | +0.90358557 | |
| $e$ | 0.0727744 | $i$ | 2.21545 | | −0.03347384 | +0.39172613 | |
| $P$ | 5.77 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.6+ | 1.2− | 2004 05 14 | 691 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.1− |
| 1977 10 11 | 675 | 0.3− | 1.3− | 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 1977 10 12 | 675 | 0.8+ | 0.3+ | 2005 06 08 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1977 10 12 | 675 | 0.6− | 0.9− | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | (0.9+ | 3.0−) | 2005 06 08 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.6− | 0.0 |
| 1977 10 16 | 675 | (1.1+ | 2.7−) | 2005 06 14 | G96 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 1977 10 17 | 675 | 0.4− | 1.0− | 2005 06 14 | G96 | 0.5− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 1977 10 17 | 675 | 1.3+ | 0.8− | 2005 06 14 | G96 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2000 09 24 | 699 | 1.6+ | 1.4− | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.0 |
| 2000 09 24 | 699 | 0.5− | 0.0 | 2005 06 26 | 644 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 2000 09 24 | 699 | 0.0 | 1.1+ | 2005 06 26 | 644 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2000 09 24 | 699 | 0.1− | 0.2− | 2005 06 26 | 644 | 0.5+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | (2.4+ | 0.1+) | 2005 07 03 | G96 | 0.4+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.8+ | 0.3+ | 2005 07 03 | G96 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.4+ |
| 2001 12 17 | 704 | 1.4+ | 0.5+ | 2005 07 03 | G96 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.7+ | 3.5+) |
| 2001 12 17 | 704 | (1.6+ | 0.0 ) | 2005 07 03 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.3+ |
| 2001 12 20 | 704 | 0.9+ | 0.9+ | 2005 07 03 | G96 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4+ | 1.1− |
| 2001 12 20 | 704 | 1.2+ | 0.1+ | 2005 07 03 | G96 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.3+ |
| 2001 12 20 | 704 | 1.1+ | 0.8+ | 2005 07 03 | G96 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.4− | 0.0 |
| 2001 12 20 | 704 | 0.3− | 0.4+ | 2005 07 03 | G96 | 0.1− | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2002 01 12 | 691 | 0.4− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2002 01 12 | 691 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2002 01 12 | 691 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 01 13 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 01 13 | 704 | 0.8− | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.6+ | 0.3− |
| 2002 01 13 | 704 | 0.4+ | 1.0− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2002 01 13 | 704 | 0.9− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2002 01 15 | 704 | 1.2− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2002 01 15 | 704 | 0.9− | 0.6− | 2006 09 30 | 691 | (2.4+ | 0.5+) | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2002 01 15 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.5− | 0.2+ |
| 2003 02 22 | 644 | 0.2+ | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2003 02 22 | 644 | 0.4+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.6+ |
| 2003 02 22 | 644 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | | | | |
| 2004 05 14 | 691 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.3− | 0.0 | | | | |

**(141300)∗ 2001 YK$_{104}$ = 2000 RO$_{58}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25517)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.35636 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18483715 | $\omega$ | 236.07709 | | −0.62902435 | −0.77570844 |
| $a$ | 3.0521781 | $\Omega$ | 252.98450 | | +0.72969597 | −0.56652139 |
| $e$ | 0.0756370 | $i$ | 3.05953 | | +0.26808984 | −0.27808261 |
| $P$ | 5.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 691 | 0.2+ | 0.1+ | 2002 01 15 | 704 | 0.8− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2000 09 07 | 691 | 0.0 | 0.5− | 2002 01 15 | 704 | (1.6− | 1.4−) | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2000 09 07 | 691 | 0.4+ | 0.2− | 2002 01 15 | 704 | 1.3− | 0.7− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2000 09 08 | 691 | 0.0 | 0.3− | 2002 01 15 | 704 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2000 09 08 | 691 | 0.0 | 0.2− | 2002 01 15 | 704 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2000 09 08 | 691 | 0.1− | 0.2− | 2002 01 15 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2000 11 23 | 691 | 0.2+ | 0.7− | 2002 01 15 | 704 | 0.1− | 0.1− | 2006 11 21 | 704 | 1.1+ | 1.1+ |
| 2000 11 23 | 691 | 0.4+ | 0.5+ | 2002 01 15 | 704 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2000 11 23 | 691 | 0.0 | 0.3− | 2002 01 15 | 704 | 0.8− | 0.9− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.5+ | 0.2− | 2003 04 24 | 699 | 1.1+ | 0.2− | 2006 11 23 | 691 | 0.6− | 0.2− |
| 2001 12 17 | 704 | 0.7+ | 0.0 | 2003 04 24 | 699 | 1.0+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2003 04 24 | 699 | 0.5− | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.5+ | 0.0 | 2003 04 24 | 699 | 1.1− | 0.5+ | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2005 08 27 | 644 | 0.7− | 0.7+ | 2006 11 30 | 918 | 0.0 | 0.5+ |
| 2001 12 18 | 644 | 0.1+ | 0.0 | 2005 08 27 | 644 | 0.4− | 0.6+ | 2006 11 30 | 918 | 0.1− | 0.6+ |
| 2001 12 18 | 644 | 0.4+ | 0.2− | 2005 08 27 | 644 | 0.4− | 0.7+ | 2006 11 30 | 918 | 0.0 | 0.8+ |
| 2001 12 18 | 644 | 0.3+ | 0.2+ | 2005 09 09 | 704 | 1.0− | 0.7+ | 2006 11 30 | 918 | 0.1− | 0.1+ |
| 2001 12 20 | 704 | 1.0+ | 0.8+ | 2005 09 09 | 704 | 1.2+ | 0.1+ | 2006 12 01 | 704 | 1.1+ | 0.1+ |
| 2001 12 20 | 704 | 0.9− | 1.3+ | 2005 09 09 | 704 | 0.9− | 0.1− | 2006 12 01 | 704 | 1.1+ | 0.6+ |
| 2001 12 20 | 704 | 0.5− | 1.3+ | 2005 09 09 | 704 | 0.1+ | 0.9+ | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2001 12 20 | 704 | 0.3+ | 0.4+ | 2005 09 22 | 644 | 0.9− | 0.8+ | 2006 12 01 | 704 | 0.5+ | 0.2+ |
| 2002 01 09 | 704 | 0.3− | 0.2+ | 2005 09 22 | 644 | 0.4− | 0.9+ | 2006 12 01 | 704 | 1.2+ | 0.7− |
| 2002 01 09 | 704 | 0.1− | 0.1− | 2005 09 22 | 644 | 0.8− | 0.7+ | 2006 12 01 | 691 | 0.1+ | 0.2− |
| 2002 01 09 | 704 | 0.1+ | 0.5− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.1− | 1.1+ |
| 2002 01 09 | 704 | 0.3− | 0.5+ | 2006 11 11 | 691 | 0.6− | 0.1− | 2006 12 01 | 691 | 0.1− | 0.2− |
| 2002 01 09 | 704 | 0.3− | 0.4− | 2006 11 11 | 691 | 0.2+ | 0.1+ | | | | |

**(141301)∗ 2001 YL$_{104}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.98528 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17980595 | $\omega$ | 283.58796 | | +0.80584714 | −0.56875065 |
| $a$ | 3.1088517 | $\Omega$ | 111.31577 | | +0.58823983 | +0.73715103 |
| $e$ | 0.1317920 | $i$ | 10.18442 | | +0.06770739 | +0.36487129 |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.5− | 0.9+ | 2002 01 15 | 704 | 0.2− | 0.6+ | 2005 06 29 | 644 | 0.4− | 0.7+ |
| 2000 10 01 | 704 | 0.3− | 0.8+ | 2002 01 15 | 704 | 0.2+ | 0.0 | 2005 06 29 | 644 | 0.0 | 0.2+ |
| 2000 10 01 | 704 | 1.0− | 0.1− | 2002 01 15 | 704 | 0.2+ | 0.0 | 2005 06 29 | 644 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.3− | 0.3− | 2002 01 19 | 704 | 0.3+ | 0.1+ | 2005 07 26 | 644 | 0.0 | 0.6+ |
| 2000 10 01 | 704 | 1.4+ | 0.5− | 2002 01 19 | 704 | 0.4+ | 1.0+ | 2005 07 26 | 644 | 0.1− | 0.6+ |
| 2001 12 17 | 704 | (0.9− | 1.6+) | 2002 01 19 | 704 | 0.0 | 0.5+ | 2005 07 26 | 644 | 1.1+ | 0.6+ |
| 2001 12 17 | 644 | 0.2+ | 0.1− | 2002 01 21 | 691 | (2.1+ | 0.4−) | 2005 07 31 | E12 | 0.7+ | 1.1+ |
| 2001 12 17 | 644 | 0.3+ | 0.3+ | 2002 01 21 | 691 | (1.6+ | 0.3−) | 2005 07 31 | E12 | 0.5− | 1.0+ |
| 2001 12 17 | 704 | (1.7− | 2.2+) | 2002 01 21 | 691 | 0.8+ | 0.0 | 2005 07 31 | E12 | 0.4− | 0.1+ |
| 2001 12 17 | 644 | 0.1+ | 0.0 | 2002 01 21 | 704 | (0.6− | 1.6+) | 2005 07 31 | E12 | 0.5− | 0.3+ |
| 2001 12 17 | 704 | 0.9− | 1.2+ | 2002 01 21 | 704 | 0.5+ | 0.8+ | 2005 09 08 | E12 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.6− | 1.1+ | 2002 01 21 | 704 | 0.1+ | 0.9+ | 2005 09 08 | E12 | 0.1+ | 1.1− |
| 2001 12 20 | 704 | 0.4− | 1.2+ | 2002 01 21 | 704 | 1.0− | 0.1+ | 2005 09 08 | E12 | 0.2+ | 0.2+ |
| 2001 12 20 | 704 | 1.2− | 0.5+ | 2002 02 06 | 704 | 0.1+ | 0.7− | 2005 09 08 | E12 | 0.7− | 0.1+ |
| 2001 12 20 | 704 | (0.4− | 1.6+) | 2002 02 06 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 1.0+ | 0.1+ |
| 2001 12 25 | 608 | 0.2+ | 0.6− | 2002 02 06 | 704 | 0.3+ | 0.0 | 2006 09 18 | 703 | (0.1+ | 1.7+) |
| 2001 12 25 | 608 | 0.1− | 0.6− | 2002 02 06 | 704 | 0.1+ | 0.7− | 2006 09 18 | 703 | 1.3− | 0.8− |
| 2001 12 25 | 608 | 0.0 | 0.2− | 2002 02 06 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 0.2− |
| 2002 01 05 | 608 | 0.1− | 0.2+ | 2002 02 07 | 704 | 0.0 | 0.5− | 2006 10 30 | 703 | 0.8− | 0.4+ |
| 2002 01 05 | 608 | 0.0 | 0.4+ | 2002 02 07 | 704 | 0.6+ | 0.5− | 2006 10 30 | 703 | 0.5− | 0.1+ |
| 2002 01 05 | 608 | 0.0 | 0.1− | 2002 02 07 | 704 | 1.2+ | 1.3+ | 2006 10 30 | 703 | 0.5+ | 0.1− |
| 2002 01 05 | 608 | 0.1− | 0.3+ | 2002 02 07 | 704 | 0.3+ | 0.2+ | 2006 10 30 | 703 | 0.9− | 0.7+ |
| 2002 01 05 | 608 | 0.1− | 0.2+ | 2002 02 12 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.4+ |
| 2002 01 05 | 608 | 0.1− | 0.4− | 2002 02 12 | 704 | 0.6+ | 0.0 | 2006 11 13 | 703 | 0.8+ | 0.4+ |
| 2002 01 09 | 704 | 0.6+ | 0.4− | 2002 02 12 | 704 | 0.6− | 0.5− | 2006 11 13 | 703 | 0.2− | 0.6+ |
| 2002 01 09 | 704 | 0.4+ | 0.2− | 2003 03 12 | 644 | 0.7+ | 0.5+ | 2006 11 19 | 703 | 0.5− | 0.0 |
| 2002 01 09 | 704 | 0.7+ | 0.1− | 2003 03 12 | 644 | 0.6+ | 0.6+ | 2006 11 19 | 703 | 0.1− | 0.1+ |
| 2002 01 09 | 704 | 0.6+ | 1.0− | 2003 03 12 | 644 | 0.8+ | 0.8+ | 2006 11 19 | 703 | 0.4+ | 0.1+ |
| 2002 01 09 | 704 | 0.4+ | 0.0 | 2003 03 23 | 645 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2002 01 13 | 704 | 1.3− | 0.8+ | 2003 03 23 | 645 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2002 01 13 | 704 | 1.3− | 0.6+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 11 20 | 704 | 2.0+ | 2.1− |
| 2002 01 13 | 704 | 1.3− | 0.5+ | 2003 03 31 | 645 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.7− | 0.9+ |
| 2002 01 13 | 704 | 1.3− | 1.3+ | 2004 04 30 | 691 | 0.5+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.2− |
| 2002 01 15 | 704 | 0.8− | 0.2+ | 2004 04 30 | 691 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.6− |
| 2002 01 15 | 704 | 0.3− | 0.3+ | 2004 04 30 | 691 | 0.0 | 0.4+ | | | | |

**(141302)∗ 2001 YU$_{106}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.06722 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.16954077 | $\omega$ | 262.25344 | | −0.98937812 | −0.13115469 |
| $a$ | 3.2331060 | $\Omega$ | 270.19492 | | +0.14528852 | −0.90616275 |
| $e$ | 0.0887928 | $i$ | 3.59395 | | −0.00470918 | −0.40207899 |
| $P$ | 5.81 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.5− | 0.6+ | 2002 02 09 | 704 | 0.1− | 0.3+ | 2005 10 01 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2002 02 09 | 704 | 0.5+ | 1.1+ | 2005 10 01 | 703 | 0.3− | 0.8+ |
| 2001 12 17 | 704 | 0.4+ | 0.5+ | 2002 02 09 | 704 | 0.2+ | 0.5+ | 2005 10 01 | 703 | 0.9− | 1.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.6+ | 0.2+ | 2002 02 11 | 704 | 0.2− | 0.7− | 2005 10 01 | 703 | 0.6+ | 0.5− |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2002 02 11 | 704 | 0.1+ | 1.3− | 2005 10 01 | 703 | (1.7− | 0.7−) |
| 2001 12 20 | 704 | 1.0− | 0.6+ | 2002 02 11 | 704 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 12 20 | 704 | 0.0 | 0.6+ | 2002 02 11 | 704 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2001 12 20 | 704 | 0.4+ | 0.1− | 2002 02 11 | 704 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2002 01 09 | 704 | 0.4− | 0.1− | 2002 02 15 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2002 01 09 | 704 | 0.2− | 0.7− | 2002 02 15 | 691 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2002 01 09 | 704 | 0.6− | 0.2+ | 2002 02 15 | 691 | 0.4+ | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.3+ |
| 2002 01 09 | 704 | 0.5+ | 0.1− | 2003 03 31 | 644 | 0.8+ | 0.6+ | 2006 11 09 | 691 | 0.1+ | 0.3− |
| 2002 01 09 | 704 | 0.0 | 0.4− | 2003 03 31 | 644 | 0.8+ | 0.4+ | 2006 11 09 | 691 | 0.1− | 0.2− |
| 2002 01 12 | 333 | 0.5+ | 0.4+ | 2003 03 31 | 644 | 0.9+ | 0.5+ | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2002 01 12 | 333 | 0.2+ | 0.0 | 2003 04 04 | 699 | 1.2− | 0.0 | 2006 11 11 | 703 | 0.5+ | 1.3− |
| 2002 01 12 | 333 | 0.7+ | 0.5− | 2003 04 04 | 699 | 1.0+ | 0.1+ | 2006 11 11 | 703 | 1.5− | 1.4− |
| 2002 01 13 | 704 | 0.1+ | 0.4+ | 2003 04 04 | 699 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2002 01 13 | 704 | 0.7− | 0.1+ | 2003 04 04 | 699 | 0.0 | 1.3+ | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2002 01 13 | 704 | 0.1− | 0.6+ | 2003 04 07 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2002 01 13 | 704 | 0.1+ | 0.4− | 2003 04 07 | 704 | 0.0 | 1.3+ | 2006 11 13 | 691 | 0.4+ | 0.4− |
| 2002 01 13 | 704 | 0.5+ | 0.1+ | 2003 04 07 | 704 | (0.1+ | 1.9+) | 2006 11 13 | 691 | 0.4+ | 0.4− |
| 2002 01 15 | 704 | 0.5+ | 0.1+ | 2003 04 07 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 01 15 | 704 | 0.2+ | 0.2− | 2003 04 07 | 704 | (0.9+ | 1.6+) | 2006 11 18 | 691 | 0.2+ | 0.3− |
| 2002 01 15 | 704 | 0.4+ | 0.2+ | 2003 04 25 | 599 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.5− | 0.9+ |
| 2002 01 22 | 704 | 1.2− | 0.9+ | 2003 04 25 | 599 | 0.1− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 1.3+ |
| 2002 01 22 | 704 | 0.3− | 1.1+ | 2003 04 25 | 599 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 0.6− | 0.4+ |
| 2002 01 22 | 704 | (1.1− | 1.8+) | 2003 04 29 | 608 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2002 02 04 | 608 | 1.0− | 0.2− | 2003 04 29 | 608 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.9+ | 0.8+ |
| 2002 02 04 | 608 | 0.6− | 0.4+ | 2003 04 29 | 608 | 0.2− | 0.4− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 02 04 | 608 | 0.9− | 0.2− | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 02 06 | 644 | 0.5+ | 1.4+ | 2005 08 27 | 644 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.2− |
| 2002 02 06 | 644 | 0.1+ | 0.9+ | 2005 08 27 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.0+ |
| 2002 02 06 | 644 | (0.5+ | 1.6+) | 2005 08 31 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 1.2+ | 1.3+ |
| 2002 02 07 | 704 | 0.0 | 0.9+ | 2005 08 31 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.0− | 1.2+ |
| 2002 02 07 | 704 | 0.6+ | 0.1− | 2005 08 31 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | (0.8− | 1.8+) |
| 2002 02 07 | 704 | 0.3+ | 0.2+ | 2005 09 14 | 691 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.2− |
| 2002 02 07 | 704 | 0.4+ | 0.1− | 2005 09 14 | 691 | 0.2− | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2002 02 07 | 704 | 0.1+ | 0.1− | 2005 09 14 | 691 | 0.2− | 0.4+ | 2006 12 01 | G96 | 0.4− | 0.5− |
| 2002 02 09 | 704 | 0.2− | 0.5− | 2005 10 01 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.6+ | 0.5− |
| 2002 02 09 | 704 | 0.1− | 0.1− | 2005 10 01 | 691 | 0.3− | 0.5+ | | | | |

**(141303)∗ 2001 YD$_{108}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.82168 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18398475 | $\omega$ | 312.87125 | | +0.21930085 | −0.97067326 |
| $a$ | 3.0615980 | $\Omega$ | 124.20733 | | +0.92627764 | +0.17542961 |
| $e$ | 0.2292661 | $i$ | 6.83979 | | +0.30645861 | +0.16437114 |
| $P$ | 5.36 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.0 | 0.1+ | 2002 01 13 | 608 | 1.2+ | 0.2+ | 2002 02 12 | 704 | 0.5+ | 1.3+ |
| 2000 09 05 | 645 | 0.0 | 0.1+ | 2002 01 13 | 608 | 1.0+ | 1.0+ | 2002 02 12 | 704 | 0.5+ | 1.0+ |
| 2000 09 24 | 704 | 0.2+ | 0.4+ | 2002 01 14 | 333 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.2+ | 1.0+ |
| 2000 09 24 | 704 | 0.0 | 0.8+ | 2002 01 14 | 333 | 0.2− | 1.0− | 2002 02 12 | 704 | 0.5+ | 0.9+ |
| 2000 09 24 | 704 | 0.0 | 0.5+ | 2002 01 14 | 333 | 0.0 | 0.4− | 2002 02 12 | 704 | 0.9+ | 0.8+ |
| 2000 09 24 | 704 | 0.3− | 1.0+ | 2002 01 14 | 704 | 0.2+ | 0.4− | 2002 02 20 | 704 | 0.3+ | 0.1− |
| 2000 10 02 | 699 | 0.0 | 1.1+ | 2002 01 14 | 704 | 0.2+ | 0.0 | 2002 02 20 | 704 | 0.1+ | 0.0 |
| 2000 10 02 | 699 | 0.3− | 0.3− | 2002 01 14 | 704 | 0.1+ | 0.0 | 2002 02 20 | 704 | 0.2+ | 0.1+ |
| 2000 10 02 | 699 | 0.1− | 0.6+ | 2002 01 14 | 704 | 0.4+ | 0.0 | 2002 02 20 | 704 | 0.5+ | 0.2+ |
| 2000 10 02 | 699 | 0.1+ | 0.8+ | 2002 01 14 | 704 | 0.4+ | 0.4+ | 2002 02 20 | 704 | 0.2+ | 0.3+ |
| 2001 11 17 | 704 | 0.9+ | 0.0 | 2002 01 20 | 691 | 0.0 | 0.6− | 2003 03 24 | 691 | 0.3+ | 0.2+ |
| 2001 11 17 | 704 | 0.3+ | 0.3− | 2002 01 20 | 691 | 0.5− | 0.9− | 2003 03 24 | 691 | 0.7+ | 0.3+ |
| 2001 11 17 | 704 | 0.6− | 0.4− | 2002 01 20 | 691 | 0.5− | 1.0− | 2003 03 24 | 691 | 0.6+ | 0.2+ |
| 2001 12 17 | 704 | 0.3− | 0.3− | 2002 01 21 | 704 | 1.1+ | 0.2+ | 2003 05 01 | 691 | 0.2+ | 0.9+ |
| 2001 12 17 | 704 | 0.3+ | 0.7+ | 2002 01 21 | 704 | 0.4+ | 0.4+ | 2003 05 01 | 691 | 0.0 | 0.4+ |
| 2001 12 17 | 704 | 0.1+ | 1.4+ | 2002 01 21 | 704 | 0.3+ | 0.2− | 2003 05 01 | 691 | 0.3− | 0.6+ |
| 2001 12 18 | 699 | 0.3+ | 0.3+ | 2002 01 21 | 704 | 0.6+ | 0.0 | 2005 07 18 | 644 | 0.6− | 0.5+ |
| 2001 12 18 | 699 | 0.9+ | 0.6+ | 2002 01 21 | 704 | 0.2+ | 0.1− | 2005 07 18 | 644 | 0.6− | 0.4+ |
| 2001 12 18 | 699 | 0.2+ | 0.3− | 2002 01 26 | 644 | 0.0 | 0.7+ | 2005 07 18 | 644 | 0.5− | 0.2+ |
| 2001 12 18 | 699 | 1.1− | 0.7+ | 2002 01 26 | 644 | 0.2− | 0.6+ | 2005 07 27 | 644 | 0.4− | 0.2+ |
| 2001 12 20 | 704 | 0.4+ | 0.1− | 2002 01 26 | 644 | 0.0 | 0.5+ | 2005 07 27 | 644 | 0.9− | 0.1+ |
| 2001 12 20 | 704 | 0.6+ | 0.6+ | 2002 02 07 | 704 | 0.3− | 0.5+ | 2005 07 27 | 644 | 0.6− | 0.3+ |
| 2001 12 20 | 704 | 0.2− | 0.4+ | 2002 02 07 | 704 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.4+ |
| 2001 12 20 | 704 | 1.1+ | 0.3+ | 2002 02 07 | 704 | 0.5− | 0.5+ | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2001 12 20 | 704 | 0.4+ | 0.6+ | 2002 02 07 | 704 | 0.5− | 0.7+ | 2006 11 15 | 703 | 0.3− | 0.0 |
| 2002 01 05 | 691 | 1.0− | 0.2− | 2002 02 07 | 704 | 0.6− | 0.9+ | 2006 11 15 | 703 | 0.4− | 0.5+ |
| 2002 01 05 | 691 | 0.7− | 0.3− | 2002 02 09 | 644 | 0.2+ | 0.3+ | 2006 11 25 | 704 | 0.3+ | 0.3+ |
| 2002 01 05 | 691 | 0.8− | 0.2− | 2002 02 09 | 644 | 0.1+ | 0.4+ | 2006 11 25 | 704 | 0.2− | 1.0+ |
| 2002 01 07 | 644 | 0.0 | 0.3+ | 2002 02 09 | 644 | 0.1+ | 0.4+ | 2006 11 25 | 704 | 1.2+ | 1.2+ |
| 2002 01 07 | 644 | 0.1+ | 0.3+ | 2002 02 10 | 704 | 0.4+ | 0.5+ | 2006 11 25 | 704 | 0.3+ | 1.0+ |
| 2002 01 07 | 644 | 0.1+ | 0.3+ | 2002 02 10 | 704 | 0.6+ | 0.0 | 2006 11 25 | 704 | 0.3− | 2.0+ |
| 2002 01 09 | 704 | 0.7+ | 0.3+ | 2002 02 10 | 704 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.2− |
| 2002 01 09 | 704 | 0.2+ | 0.2− | 2002 02 10 | 704 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.6− |
| 2002 01 09 | 704 | 0.4+ | 0.2− | 2002 02 10 | 704 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2002 01 09 | 704 | 0.4+ | 0.1+ | 2002 02 11 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.5− |
| 2002 01 09 | 704 | 0.2+ | 0.1− | 2002 02 11 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.3− |
| 2002 01 13 | 608 | 1.3+ | 1.0+ | 2002 02 11 | 691 | 0.2− | 0.1+ | | | | |

**(141304)∗ 2001 YS$_{108}$ = 2000 SJ$_{48}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23341)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.87401 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17843568 | $\omega$ | 129.03455 | | +0.70871899 | −0.69105272 |
| $a$ | 3.1247474 | $\Omega$ | 275.18910 | | +0.59519417 | +0.69374169 |
| $e$ | 0.0961823 | $i$ | 8.19733 | | +0.37876284 | +0.20290050 |
| $P$ | 5.52 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 1.8− | 1.0+ | 2001 12 19 | 704 | 0.0 | 0.2+ | 2004 05 13 | 644 | 0.0 | 0.3+ |
| 1992 03 25 | 691 | 0.7+ | 0.3+ | 2001 12 19 | 704 | 0.1− | 0.5+ | 2004 05 13 | 644 | 0.3− | 0.0 |
| 1992 03 25 | 691 | 0.6+ | 0.1+ | 2001 12 19 | 704 | 0.1− | 0.4+ | 2005 06 18 | G96 | 0.4− | 0.2+ |
| 2000 09 01 | 704 | 1.8+ | 1.2+ | 2001 12 19 | 704 | 0.3− | 1.0+ | 2005 06 18 | G96 | 0.5− | 0.3+ |
| 2000 09 01 | 704 | 0.6− | 0.9+ | 2001 12 19 | 704 | 0.3+ | 0.7− | 2005 06 18 | G96 | 0.1+ | 0.3+ |
| 2000 09 01 | 704 | 1.0− | 1.5+ | 2001 12 19 | 704 | 0.0 | 0.1+ | 2005 06 18 | G96 | 0.0 | 0.4+ |
| 2000 09 03 | 704 | 0.7+ | 0.5+ | 2001 12 19 | 704 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.7− |
| 2000 09 03 | 704 | 0.6+ | 0.0 | 2001 12 19 | 704 | 0.2− | 1.0+ | 2006 09 17 | 703 | 1.1+ | 0.5+ |
| 2000 09 03 | 704 | 0.8+ | 0.0 | 2001 12 19 | 704 | 0.4− | 1.0+ | 2006 09 17 | 703 | 0.5− | 0.5− |
| 2000 09 03 | 704 | 0.4− | 0.2− | 2001 12 19 | 704 | 0.3+ | 0.6− | 2006 09 17 | 703 | 0.0 | 0.4− |
| 2000 09 23 | 704 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2000 09 23 | 704 | 0.1+ | 1.4+ | 2001 12 19 | 704 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.4− | 0.5− |
| 2000 09 23 | 704 | 0.6+ | 0.5+ | 2001 12 19 | 704 | 0.1+ | 1.0+ | 2006 09 28 | 703 | 0.2− | 0.4+ |
| 2000 09 23 | 704 | 0.3+ | 0.9+ | 2001 12 19 | 704 | 0.8− | 1.1+ | 2006 09 28 | 703 | 0.4− | 0.3+ |
| 2000 09 26 | 704 | 1.4− | 0.7+ | 2001 12 19 | 704 | (0.3+ | 2.8−) | 2006 10 19 | 703 | 0.0 | 0.7− |
| 2000 09 26 | 704 | 1.1+ | 0.6+ | 2001 12 19 | 704 | 0.5+ | 1.1− | 2006 10 19 | 703 | 0.2− | 1.0− |
| 2000 09 26 | 704 | 0.7− | 0.4− | 2001 12 19 | 704 | 0.8+ | 0.5− | 2006 10 19 | 703 | 0.2− | 0.4− |
| 2000 09 26 | 704 | 0.1− | 1.7− | 2001 12 20 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.6− |
| 2001 11 19 | 704 | 0.2+ | 0.1− | 2001 12 20 | 704 | 0.2+ | 0.2− | 2006 10 21 | 704 | 0.8− | 0.4+ |
| 2001 11 19 | 704 | 0.0 | 0.1− | 2001 12 20 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 704 | 1.2− | 1.1+ |
| 2001 11 19 | 704 | 0.3+ | 0.0 | 2001 12 20 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 704 | 1.1− | 0.2+ |
| 2001 12 10 | 704 | 0.5− | 0.2+ | 2001 12 20 | 704 | 0.5− | 0.5+ | 2006 10 21 | 704 | 0.3− | 1.2+ |
| 2001 12 10 | 704 | 0.3− | 1.2+ | 2002 01 05 | 691 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 12 10 | 704 | 0.3− | 0.7+ | 2002 01 05 | 691 | 0.3+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 12 10 | 704 | 0.6+ | 1.4− | 2002 01 05 | 691 | 0.4+ | 0.5− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 0.2− | 0.1− | 2002 01 08 | 704 | 0.3+ | 0.7− | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 2001 12 18 | 704 | 0.1+ | 0.2+ | 2002 01 08 | 704 | 0.6+ | 0.4− | 2006 10 27 | 703 | 0.0 | 0.9− |
| 2001 12 18 | 704 | 0.1− | 0.2+ | 2002 01 08 | 704 | 0.1− | 0.8− | 2006 10 27 | 703 | 0.3+ | 0.9− |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2002 01 08 | 704 | 0.2+ | 0.9− | 2006 11 07 | 644 | 0.4− | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.3+ | 2002 01 08 | 704 | 0.7+ | 0.8− | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2002 01 14 | 704 | (0.9− | 1.8+) | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.3+ | 2002 01 14 | 704 | 0.6− | 0.5− | 2006 11 15 | 703 | 0.2+ | 0.4+ |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2002 01 14 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.7− |
| 2001 12 19 | 704 | 1.0− | 0.3+ | 2002 01 14 | 704 | 0.5+ | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.3− | 0.6+ | 2003 01 27 | 608 | 0.7+ | 0.0 | 2006 11 15 | 703 | 0.7+ | 0.2− |
| 2001 12 19 | 704 | 0.3− | 0.7+ | 2003 01 27 | 608 | 0.8+ | 0.4− | 2006 11 29 | 704 | 0.9− | 0.9− |
| 2001 12 19 | 704 | 0.1− | 1.1+ | 2003 01 27 | 608 | 0.5+ | 0.0 | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2003 02 08 | 608 | 0.6+ | 0.9− | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2003 02 08 | 608 | 0.6+ | 0.5− | 2006 11 29 | 704 | 0.5− | 0.8− |
| 2001 12 19 | 704 | 0.1− | 1.0+ | 2003 02 08 | 608 | 0.0 | 0.5− | 2006 11 29 | 704 | 0.7+ | 1.2− |
| 2001 12 19 | 704 | 0.4+ | 0.4− | 2004 05 13 | 644 | 0.1− | 0.3+ | | | | |

**(141305)∗ 2001 YB$_{111}$**

Discovered 2001 Dec. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.55173 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21206681 | $\omega$ | 12.46969 | | +0.48189494 | −0.86852072 | |
| $a$ | 2.7849726 | $\Omega$ | 48.84784 | | +0.79011669 | +0.37349653 | |
| $e$ | 0.2154832 | $i$ | 8.85983 | | +0.37880454 | +0.32584060 | |
| $P$ | 4.65 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.1+ | 0.1− | 2001 12 22 | 704 | 0.6+ | 0.8+ | 2005 08 30 | G92 | 0.8+ | 0.1+ |
| 1996 11 08 | 691 | 0.0 | 0.2− | 2002 01 05 | 644 | 0.2+ | 0.1+ | 2005 08 30 | G92 | 0.4+ | 1.8+ |
| 1996 11 08 | 691 | 0.1+ | 0.1− | 2002 01 05 | 644 | 0.1− | 0.4+ | 2005 08 30 | G92 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.8+ | 0.6− | 2002 01 05 | 644 | 0.2+ | 0.2+ | 2005 08 31 | G92 | 0.3+ | 0.3+ |
| 2001 10 14 | 704 | 0.1− | 0.4+ | 2002 01 14 | 644 | 0.0 | 0.0 | 2005 08 31 | G92 | 0.3− | 0.4+ |
| 2001 10 14 | 704 | 0.1+ | 0.6− | 2002 01 14 | 644 | 0.1+ | 0.1+ | 2005 08 31 | G92 | 0.4− | 0.2+ |
| 2001 11 11 | 704 | 0.3− | 0.5+ | 2002 01 14 | 644 | 0.2+ | 0.1+ | 2005 09 13 | 703 | 1.1+ | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.1+ | 2002 01 18 | 699 | 0.3− | 0.2+ | 2005 09 13 | 703 | 0.7− | 0.4+ |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2002 01 18 | 699 | 0.1+ | 0.1+ | 2005 09 13 | 703 | 0.9− | 0.0 |
| 2001 11 11 | 704 | 0.8+ | 1.1+ | 2002 01 18 | 699 | 0.6− | 0.1+ | 2005 09 13 | 703 | 0.3− | 0.0 |
| 2001 11 11 | 704 | 1.4+ | 0.8+ | 2002 01 18 | 699 | 0.2+ | 1.1+ | 2005 09 23 | A50 | 0.0 | 0.2+ |
| 2001 11 20 | 699 | (0.4+ | 3.9−) | 2002 01 23 | 704 | 0.6+ | 0.6+ | 2005 09 23 | A50 | 0.3− | 0.2+ |
| 2001 11 20 | 699 | 0.4+ | 1.2− | 2002 01 23 | 704 | 0.5+ | 0.6+ | 2005 09 24 | 703 | 0.8− | 0.1− |
| 2001 11 20 | 699 | 0.6− | 1.5+ | 2002 01 23 | 704 | 0.0 | 0.1+ | 2005 09 24 | 703 | 0.4− | 0.1+ |
| 2001 11 20 | 699 | 0.1+ | 0.8− | 2002 01 23 | 704 | 0.5+ | 0.7+ | 2005 09 24 | 703 | 1.1− | 0.8+ |
| 2001 11 24 | 704 | 0.1+ | 0.3− | 2002 02 03 | 699 | 0.6+ | 0.3+ | 2005 09 24 | 703 | 0.8− | 0.8+ |
| 2001 11 24 | 704 | 0.3− | 0.4− | 2002 02 03 | 644 | 0.0 | 0.8+ | 2005 09 24 | 699 | 0.2− | 0.7+ |
| 2001 11 24 | 704 | 0.1+ | 0.6+ | 2002 02 03 | 699 | 0.4− | 0.3+ | 2005 09 24 | 699 | 1.3− | 0.4+ |
| 2001 12 14 | 704 | 0.3+ | 1.3+ | 2002 02 03 | 644 | 0.0 | 0.7+ | 2005 09 24 | 699 | 0.0 | 0.8+ |
| 2001 12 14 | 704 | 0.2+ | 1.0+ | 2002 02 03 | 699 | 0.3− | 0.3− | 2005 09 24 | 699 | 0.3+ | 0.8+ |
| 2001 12 14 | 704 | 0.4+ | 0.8+ | 2002 02 03 | 644 | 0.2+ | 0.5+ | 2005 09 28 | 644 | 0.3− | 0.2+ |
| 2001 12 14 | 704 | 0.8+ | 0.9+ | 2002 02 03 | 699 | 0.3+ | 0.4+ | 2005 09 28 | 644 | 0.6− | 0.4+ |
| 2001 12 14 | 704 | 0.4− | 1.2+ | 2002 02 07 | 699 | 1.2+ | 0.4+ | 2005 09 28 | 644 | 0.1− | 0.3+ |
| 2001 12 18 | 699 | 0.4− | 0.3− | 2002 02 07 | 699 | 0.4− | 0.4+ | 2005 10 05 | 703 | 0.2+ | 0.0 |
| 2001 12 18 | 699 | 0.6− | 0.7− | 2002 02 07 | 699 | 0.5+ | 0.6+ | 2005 10 05 | 703 | 0.6− | 0.5+ |
| 2001 12 18 | 699 | 0.3− | 1.9+ | 2002 02 07 | 699 | 0.2+ | 0.5+ | 2005 10 05 | 703 | 0.2+ | 0.1− |
| 2001 12 18 | 699 | 1.5+ | 0.5− | 2002 02 13 | 644 | 0.1− | 0.2+ | 2005 10 05 | 703 | 1.0+ | 1.0+ |
| 2001 12 19 | 644 | 0.2− | 0.1+ | 2002 02 13 | 644 | 0.1+ | 0.3+ | 2005 10 31 | 699 | 1.1− | 0.6+ |
| 2001 12 19 | 644 | 0.1− | 0.4+ | 2002 02 13 | 644 | 0.1− | 0.2+ | 2005 10 31 | 699 | 0.0 | 0.2+ |
| 2001 12 19 | 644 | 0.1− | 0.4+ | 2002 02 13 | 644 | 0.1+ | 0.2+ | 2005 10 31 | 699 | 0.6− | 0.7+ |
| 2001 12 20 | 645 | 0.1− | 0.3− | 2002 02 13 | 644 | 0.0 | 0.3+ | 2005 11 30 | 704 | 0.7− | 0.8+ |
| 2001 12 20 | 645 | 0.1− | 0.3− | 2002 02 13 | 644 | 0.1+ | 0.2+ | 2005 11 30 | 704 | 0.4− | 0.1+ |
| 2001 12 22 | 704 | 1.3− | 0.3− | 2003 03 23 | 291 | 0.4+ | 0.4+ | 2005 11 30 | 704 | 1.1− | 1.2+ |
| 2001 12 22 | 704 | 0.7− | 0.4− | 2003 03 23 | 291 | 0.3+ | 0.1+ | 2005 11 30 | 704 | 0.3+ | 1.3+ |
| 2001 12 22 | 704 | 0.9− | 1.1− | 2003 03 23 | 291 | 0.2+ | 0.5+ | 2005 11 30 | 704 | 0.1+ | 1.6+ |
| 2001 12 22 | 704 | 0.1− | 0.7− | 2003 04 30 | 691 | (0.4+ | 2.2+) | 2005 11 30 | 703 | 0.8− | 2.0− |
| 2001 12 22 | 704 | 1.1+ | 1.1+ | 2003 04 30 | 691 | 0.7+ | 1.8+ | 2005 11 30 | 703 | 0.8+ | 0.7+ |
| 2001 12 22 | 704 | 0.4+ | 0.2+ | 2003 04 30 | 691 | 0.6+ | 1.5+ | 2005 11 30 | 703 | 0.5− | 0.7− |
| 2001 12 22 | 704 | 0.2− | 0.2− | 2005 08 27 | 699 | 0.6− | 0.5+ | 2005 11 30 | 703 | 0.9− | 0.5− |
| 2001 12 22 | 704 | 0.4+ | 0.5+ | 2005 08 27 | 699 | 0.0 | 0.7+ | 2006 01 28 | G96 | 0.4− | 0.3+ |
| 2001 12 22 | 704 | 0.3+ | 0.5+ | 2005 08 27 | 699 | 0.2+ | 0.2+ | 2006 01 28 | G96 | 0.1− | 0.3− |
| 2001 12 22 | 704 | 0.5+ | 0.3+ | 2005 08 27 | 699 | 1.1− | 0.7+ | 2006 01 28 | G96 | 0.1+ | 0.2+ |
| 2001 12 22 | 704 | 0.0 | 0.1− | 2005 08 29 | G92 | 0.3− | 0.8+ | 2006 01 28 | G96 | 0.2+ | 0.4− |
| 2001 12 22 | 704 | 0.8+ | 0.7+ | 2005 08 29 | G92 | 0.2+ | 0.6+ | | | | |
| 2001 12 22 | 704 | 0.3− | 1.1+ | 2005 08 29 | G92 | 0.2+ | 0.4+ | | | | |

**(141306)∗ 2001 YJ$_{111}$ = 2000 TA$_{68}$**

Discovered 2001 Dec. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 25519)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.64717 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17359260 | $\omega$ | 45.93063 | | −0.06513113 | −0.99168123 | |
| $a$ | 3.1825989 | $\Omega$ | 48.14709 | | +0.86764642 | −0.11123584 | |
| $e$ | 0.0825214 | $i$ | 8.57206 | | +0.49289718 | +0.06476819 | |
| $P$ | 5.68 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 699 | 0.1+ | 1.0+ | 2002 02 03 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.7+ |
| 2000 10 06 | 699 | 1.4− | 1.0+ | 2002 02 03 | 644 | 0.5+ | 0.7+ | 2006 11 11 | 703 | (0.3+ | 1.6+) |
| 2000 10 06 | 699 | (0.8− | 3.4+) | 2002 02 03 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.7+ |
| 2000 10 06 | 699 | 0.7+ | 0.2+ | 2002 02 03 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2000 10 07 | 699 | 0.1− | 0.1− | 2002 02 08 | 704 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2000 10 07 | 699 | 1.7− | 0.5+ | 2002 02 08 | 704 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2000 10 07 | 699 | 0.9− | 1.6+ | 2002 02 08 | 704 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2000 10 07 | 699 | 0.5− | 1.2+ | 2002 02 08 | 704 | 0.9− | 0.3− | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2001 12 18 | 699 | 0.6+ | 1.4+ | 2002 02 08 | 704 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2001 12 18 | 699 | 0.2+ | 0.2− | 2002 02 13 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2001 12 18 | 699 | 0.1− | 0.9− | 2002 02 13 | 644 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.8− | 0.4+ |
| 2001 12 18 | 699 | 0.0 | 0.7+ | 2002 02 13 | 644 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.2− |
| 2001 12 19 | 644 | 0.4+ | 0.3+ | 2003 03 28 | 691 | 0.9− | 0.7+ | 2006 11 16 | 703 | 0.7− | 0.3− |
| 2001 12 19 | 644 | 0.0 | 0.1+ | 2003 03 28 | 691 | 0.8+ | 0.3− | 2006 11 16 | 703 | 0.4− | 0.1+ |
| 2001 12 19 | 644 | 0.4+ | 0.2+ | 2003 03 28 | 691 | 0.9− | 0.5+ | 2006 11 18 | 704 | (0.7+ | 1.5+) |
| 2001 12 22 | 704 | 0.5+ | 1.4+ | 2003 04 07 | 691 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2001 12 22 | 704 | 0.7+ | 0.8+ | 2003 04 07 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.7+ |
| 2001 12 22 | 704 | 0.2+ | 0.8+ | 2003 04 07 | 691 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2002 01 05 | 699 | 0.4− | 0.5+ | 2003 05 02 | 691 | 1.0+ | 0.9+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2002 01 05 | 699 | 0.0 | 0.9+ | 2003 05 02 | 691 | 1.1+ | 1.0+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 01 05 | 699 | 0.4− | 0.1+ | 2003 05 02 | 691 | 0.9+ | 1.0+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 01 05 | 699 | 0.3− | 0.1− | 2005 09 01 | 644 | 0.4+ | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2002 01 08 | 704 | 0.0 | 0.3+ | 2005 09 01 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.5+ | 0.2+ |
| 2002 01 08 | 704 | 0.0 | 0.4− | 2005 09 01 | 644 | 0.1− | 0.6+ | 2006 11 27 | 703 | 0.2− | 0.2+ |
| 2002 01 08 | 704 | 0.6+ | 0.1− | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.3− | 0.3− |
| 2002 01 08 | 704 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.8− | 0.4− | 2006 11 27 | 703 | 1.5− | 1.1+ |
| 2002 01 08 | 704 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.6− | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 2002 01 09 | 645 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 01 09 | 645 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.5− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2002 02 03 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.1+ |
| 2002 02 03 | 644 | 0.5+ | 0.9+ | 2006 11 09 | 644 | 0.3− | 0.1+ | | | | |

**(141307)∗ 2001 YK$_{112}$ = 2003 FA$_{56}$**

Discovered 2001 Dec. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47103)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.59934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15189002 | $\omega$ | 62.64360 | | +0.54704355 | −0.83693814 | |
| $a$ | 3.4789637 | $\Omega$ | 354.10909 | | +0.69915436 | +0.46775506 | |
| $e$ | 0.0640294 | $i$ | 9.34764 | | +0.46035479 | +0.28414742 | |
| $P$ | 6.49 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.5− | 0.6+ | 2003 02 22 | 291 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.4− | 0.4+ |
| 2000 10 03 | 704 | 0.2− | 0.4+ | 2003 02 22 | 291 | 0.0 | 0.2+ | 2006 09 19 | 703 | 1.5− | 1.8+ |
| 2000 10 03 | 704 | 0.7− | 1.1+ | 2003 03 09 | 704 | 0.6+ | 0.3− | 2006 09 19 | 703 | 0.9+ | 1.0+ |
| 2000 10 03 | 704 | 0.8− | 0.1+ | 2003 03 09 | 704 | 0.5− | 1.0+ | 2006 09 19 | 703 | 0.0 | 0.6+ |
| 2000 10 25 | 704 | 0.2+ | 0.2+ | 2003 03 09 | 704 | (0.6+ | 2.4+) | 2006 09 19 | 703 | 0.3+ | 0.1− |
| 2000 10 25 | 704 | 0.7− | 0.2+ | 2003 03 09 | 704 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.1+ | 1.3+ |
| 2000 10 25 | 704 | 1.2− | 0.7− | 2003 03 26 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.6+ |
| 2000 11 30 | 645 | 0.1+ | 0.1− | 2003 03 26 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 645 | 0.2+ | 0.1− | 2003 03 26 | 644 | 0.7+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.2− | | |
| 2001 12 18 | 699 | 0.7− | 0.8− | 2003 03 27 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 1.9− | 0.1− | | |
| 2001 12 18 | 699 | 0.3− | 0.8+ | 2003 03 27 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.4+ | | |
| 2001 12 18 | 699 | 0.3+ | 0.4+ | 2003 03 27 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.4+ | | |
| 2001 12 18 | 699 | 0.1+ | 1.1+ | 2003 04 11 | 691 | 0.6+ | 1.0+ | 2006 09 25 | G96 | 0.6− | 0.3+ | | |
| 2001 12 19 | 644 | 0.1+ | 0.0 | 2003 04 11 | 691 | 0.7+ | 0.4+ | 2006 09 25 | G96 | 0.6− | 0.2+ | | |
| 2001 12 19 | 644 | 0.1+ | 0.2+ | 2003 04 11 | 691 | 1.2+ | 0.6+ | 2006 09 25 | 699 | 0.2− | 1.0+ | | |
| 2001 12 19 | 644 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.5+ | 1.6+ | 2006 09 25 | 699 | 1.4− | 0.2− | | |
| 2001 12 22 | 704 | 0.2− | 0.1+ | 2006 08 28 | 703 | 1.2− | 0.6+ | 2006 09 30 | 704 | 0.3+ | 1.4+ | | |
| 2001 12 22 | 704 | 0.4+ | 0.5+ | 2006 08 28 | 703 | 0.7− | 1.1+ | 2006 09 30 | 704 | 0.1− | 0.4+ | | |
| 2001 12 22 | 704 | 0.7+ | 0.3+ | 2006 08 28 | 703 | 1.3− | 0.7+ | 2006 09 30 | 704 | 0.5− | 0.5+ | | |
| 2001 12 22 | 704 | 0.1− | 0.9− | 2006 09 14 | 644 | 0.4− | 0.7+ | | | | | | |
| 2003 02 22 | 291 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.3− | 0.5+ | | | | | | |

**(141308)∗ 2001 YT$_{119}$**

Discovered 2001 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.52435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17667186 | $\omega$ | 333.35441 | | −0.20634703 | −0.97463523 | |
| $a$ | 3.1455104 | $\Omega$ | 128.42777 | | +0.91631274 | −0.22353719 | |
| $e$ | 0.1118608 | $i$ | 6.34991 | | +0.34320820 | +0.01082986 | |
| $P$ | 5.58 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 608 | 0.9− | 1.3+ | 2003 03 09 | 704 | 0.5+ | 0.5+ | 2005 07 18 | 644 | 0.1+ | 0.5+ | | |
| 2000 09 26 | 608 | 0.9− | 1.3+ | 2003 03 09 | 704 | (0.2+ | 2.0+) | 2005 07 18 | 644 | 0.6+ | 0.7+ | | |
| 2000 09 26 | 608 | 0.8− | 0.9+ | 2003 03 09 | 704 | (1.2+ | 1.6+) | 2005 07 18 | 644 | 0.3+ | 0.9+ | | |
| 2001 11 17 | 704 | (1.6+ | 0.9−) | 2003 03 14 | 608 | 0.6− | 1.0+ | 2006 09 30 | 703 | 0.4− | 0.9+ | | |
| 2001 11 17 | 704 | 0.5+ | 1.1− | 2003 03 14 | 608 | 0.3− | 1.0+ | 2006 09 30 | 703 | 0.1+ | 0.1− | | |
| 2001 11 17 | 704 | 0.8+ | 0.4− | 2003 03 14 | 608 | 0.2+ | 1.4+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | | |
| 2001 11 17 | 704 | 0.1+ | 1.3− | 2003 03 26 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | (0.9− | 2.0+) | | |
| 2001 12 11 | 704 | 0.6− | 1.2+ | 2003 03 26 | 644 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.4+ | | |
| 2001 12 11 | 704 | 0.6− | 0.4+ | 2003 03 26 | 644 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2001 12 11 | 704 | 0.3− | 0.4+ | 2003 03 27 | 644 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2001 12 11 | 704 | 0.9− | 0.2+ | 2003 03 27 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.2+ | | |
| 2001 12 19 | 704 | 0.3+ | 0.2− | 2003 03 27 | 644 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2001 12 19 | 704 | 0.4− | 0.2+ | 2003 03 30 | 704 | (0.7− | 1.6−) | 2006 10 16 | 703 | 0.8− | 0.1− | | |
| 2001 12 19 | 704 | 1.4+ | 0.2+ | 2003 03 30 | 704 | 0.5+ | 0.5− | 2006 10 16 | 703 | 0.6− | 0.5+ | | |
| 2001 12 19 | 704 | 0.3− | 0.1− | 2003 03 30 | 704 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.0 | 0.6+ | | |
| 2001 12 19 | 704 | 0.4− | 0.0 | 2003 04 02 | 608 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.1+ | | |
| 2001 12 19 | 704 | 1.3+ | 0.1− | 2003 04 02 | 608 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.2+ | | |
| 2001 12 19 | 704 | 0.2+ | 0.5+ | 2003 04 02 | 608 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.1− | | |
| 2001 12 21 | 704 | 0.4− | 0.1+ | 2003 04 10 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.9+ | 0.4− | | |
| 2001 12 21 | 704 | 0.1− | 0.8− | 2003 04 10 | 691 | 0.4+ | 0.6+ | 2006 11 19 | 703 | 0.4− | 0.1+ | | |
| 2001 12 21 | 704 | (0.9− | 2.2−) | 2003 04 10 | 691 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.4+ | 0.5− | | |
| 2002 01 09 | 704 | 0.1+ | 0.0 | 2005 06 30 | 691 | 0.3− | 0.1+ | 2006 11 19 | 703 | 1.5− | 1.6+ | | |
| 2002 01 09 | 704 | 0.4+ | 0.1+ | 2005 06 30 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.8+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.7+ | 2005 06 30 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.7+ | | |
| 2002 01 09 | 704 | 0.2+ | 0.4+ | 2005 07 12 | G96 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.3− | | |
| 2002 01 09 | 704 | 0.0 | 0.4+ | 2005 07 12 | G96 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.9+ | 0.5+ | | |
| 2003 03 09 | 704 | 0.9+ | 1.0+ | 2005 07 12 | G96 | 0.1+ | 0.3+ | | | | | | |
| 2003 03 09 | 704 | 0.1− | 0.6+ | 2005 07 12 | G96 | 0.4+ | 0.7+ | | | | | | |

**(141309)∗ 2001 YP$_{120}$ = 1992 AR$_4$**

Discovered 2001 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 27366)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.06999 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19995730 | $\omega$ | 42.21041 | | −0.52984630 | −0.84430577 | |
| $a$ | 2.8963067 | $\Omega$ | 79.93279 | | +0.75476219 | −0.51248658 | |
| $e$ | 0.2648652 | $i$ | 4.66437 | | +0.38677764 | −0.15654161 | |
| $P$ | 4.93 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 02 | 033 | 0.0 | 0.8− | 2002 01 25 | 704 | 0.3− | 0.1+ | 2002 04 17 | 704 | 0.7+ | 0.7+ | | |
| 1992 01 03 | 033 | 0.4+ | 1.0− | 2002 01 25 | 704 | 0.4− | 0.5+ | 2002 04 17 | 704 | 0.9+ | 0.2+ | | |
| 2000 09 24 | 704 | 1.1− | 0.0 | 2002 01 25 | 704 | 0.5− | 0.8+ | 2003 06 02 | 807 | 0.0 | 0.4+ | | |
| 2000 09 24 | 704 | 0.7− | 0.6+ | 2002 01 25 | 704 | 0.5− | 0.7+ | 2003 06 02 | 807 | 0.4− | 0.5+ | | |
| 2000 09 24 | 704 | 0.6− | 0.2+ | 2002 01 26 | 704 | 0.1+ | 0.4+ | 2005 08 31 | 644 | 0.4− | 0.1+ | | |
| 2000 09 24 | 704 | 1.3+ | 1.2+ | 2002 01 26 | 704 | 0.7+ | 0.6+ | 2005 08 31 | 644 | 0.4− | 0.3+ | | |
| 2000 09 24 | 704 | 0.0 | 1.0+ | 2002 01 26 | 704 | 0.6+ | 0.0 | 2005 08 31 | 644 | 0.4− | 0.4+ | | |
| 2001 11 19 | 608 | 0.8+ | 0.0 | 2002 02 03 | 699 | 0.5+ | 0.1− | 2005 09 22 | 644 | 0.1− | 0.8+ | | |
| 2001 11 19 | 608 | 0.4− | 0.6− | 2002 02 03 | 699 | 0.1− | 0.3− | 2005 09 22 | 644 | 0.3− | 0.1− | | |
| 2001 11 19 | 608 | 0.6− | 0.3+ | 2002 02 03 | 699 | 0.3+ | 0.0 | 2005 09 22 | 644 | 0.3− | 0.4+ | | |
| 2001 12 18 | 704 | (0.3+ | 2.2−) | 2002 02 03 | 699 | 0.1+ | 0.0 | 2005 09 25 | 644 | 0.2− | 0.4+ | | |
| 2001 12 18 | 704 | 0.5+ | 0.6− | 2002 02 06 | 704 | 0.2− | 0.3+ | 2005 09 25 | 644 | 0.0 | 0.5+ | | |
| 2001 12 18 | 704 | 1.4+ | 0.5− | 2002 02 06 | 704 | 0.4+ | 0.1− | 2005 09 25 | 644 | 1.1− | 0.0 | | |
| 2001 12 18 | 644 | 0.2+ | 0.1− | 2002 02 06 | 704 | 0.3− | 0.2+ | 2005 09 30 | 699 | 0.3+ | 0.3+ | | |
| 2001 12 18 | 644 | 0.2+ | 0.1− | 2002 02 06 | 704 | 0.7+ | 0.5+ | 2005 09 30 | 699 | 0.2− | 0.3+ | | |
| 2001 12 18 | 704 | (2.8+ | 0.2+) | 2002 02 06 | 704 | 0.6− | 0.3− | 2005 09 30 | 699 | (0.7− | 1.7+) | | |
| 2001 12 18 | 644 | 0.1+ | 0.1− | 2002 02 07 | 704 | 0.5− | 0.5− | 2005 09 30 | 699 | 0.4− | 1.3+ | | |
| 2001 12 18 | 704 | 0.1− | 0.5+ | 2002 02 07 | 704 | 1.0− | 0.5− | 2005 10 05 | 703 | 1.2+ | 0.4− | | |
| 2001 12 20 | 704 | 0.3+ | 0.4+ | 2002 02 07 | 704 | 1.3− | 0.4− | 2005 10 05 | 703 | 0.2− | 1.1− | | |
| 2001 12 20 | 704 | 0.1+ | 1.3+ | 2002 02 07 | 704 | 0.3− | 0.4− | 2005 10 05 | 703 | 1.2+ | 0.1− | | |
| 2001 12 20 | 704 | 0.2− | 0.5− | 2002 02 07 | 704 | 0.7− | 0.8− | 2005 10 05 | 703 | (1.2+ | 2.4−) | | |
| 2001 12 20 | 704 | 0.4− | 1.4+ | 2002 02 08 | 704 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.6− | | |
| 2001 12 21 | 704 | 0.1+ | 0.4− | 2002 02 08 | 704 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.7− | | |
| 2001 12 21 | 704 | 0.6+ | 0.2− | 2002 02 08 | 704 | 0.5− | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.5− | | |
| 2001 12 21 | 704 | 0.2+ | 0.0 | 2002 02 08 | 704 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.4− | | |
| 2001 12 21 | 704 | 0.3− | 1.2+ | 2002 02 08 | 704 | 0.2− | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.8− | | |
| 2002 01 07 | 699 | 0.0 | 0.3+ | 2002 02 08 | 704 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.5− | | |
| 2002 01 07 | 699 | 0.1− | 0.1− | 2002 02 08 | 704 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.5− | | |
| 2002 01 07 | 699 | 0.1− | 0.2− | 2002 02 08 | 704 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.6− | | |
| 2002 01 07 | 699 | 0.4− | 0.6+ | 2002 02 08 | 704 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.5− | | |
| 2002 01 08 | 704 | 0.3+ | 0.3+ | 2002 02 08 | 704 | 0.3− | 0.1+ | 2006 10 23 | G96 | (2.2+ | 0.2−) | | |
| 2002 01 08 | 704 | 0.5+ | 0.3+ | 2002 02 12 | 704 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2002 01 08 | 704 | 0.3+ | 0.0 | 2002 02 12 | 704 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.8+ | 0.4− | | |
| 2002 01 08 | 704 | 0.5+ | 0.4+ | 2002 02 12 | 704 | 0.3− | 0.3− | 2006 11 06 | 644 | 0.2− | 0.2− | | |
| 2002 01 08 | 704 | 0.5+ | 0.3+ | 2002 02 12 | 704 | 0.1+ | 0.0 | 2006 11 06 | 644 | 0.4+ | 0.2− | | |
| 2002 01 09 | 644 | 0.1− | 0.1+ | 2002 02 12 | 704 | 0.4− | 0.3− | 2006 11 06 | 644 | 0.3− | 0.2+ | | |
| 2002 01 09 | 644 | 0.1− | 0.2+ | 2002 04 01 | 699 | 0.3− | 0.3+ | 2006 11 15 | 703 | 1.2− | 0.7− | | |
| 2002 01 09 | 644 | 0.3+ | 0.1− | 2002 04 01 | 699 | 0.5+ | 0.2− | 2006 11 15 | 703 | 0.6− | 0.1+ | | |
| 2002 01 12 | 608 | 0.1− | 0.0 | 2002 04 01 | 699 | 0.9+ | 1.0+ | 2006 11 15 | 703 | 0.0 | 0.5− | | |
| 2002 01 12 | 608 | 0.4− | 0.3+ | 2002 04 01 | 699 | (1.6+ | 0.1−) | 2006 11 15 | 703 | 0.8− | 0.1+ | | |
| 2002 01 12 | 608 | 0.3− | 0.2+ | 2002 04 04 | 704 | 0.9+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.5− | | |
| 2002 01 20 | 699 | 0.2+ | 0.1+ | 2002 04 04 | 704 | 0.1+ | 0.7+ | 2006 11 24 | G96 | 0.5+ | 0.9− | | |
| 2002 01 20 | 699 | 0.1− | 0.1+ | 2002 04 04 | 704 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.8− | | |
| 2002 01 20 | 699 | 0.1+ | 0.5− | 2002 04 04 | 704 | 0.5+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.4− | | |
| 2002 01 20 | 699 | 0.3+ | 0.1− | 2002 04 04 | 704 | 0.5+ | 0.7+ | | | | | | |
| 2002 01 25 | 704 | (1.6− | 0.9−) | 2002 04 17 | 704 | 0.8+ | 0.1− | | | | | | |

**(141310)∗ 2001 YC$_{121}$ = 1997 XS$_1$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23351)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.64557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21275619 | $\omega$ | 135.04577 | | +0.40326451 | −0.90429856 | |
| $a$ | 2.7789533 | $\Omega$ | 290.70435 | | +0.79185540 | +0.42156756 | |
| $e$ | 0.1222835 | $i$ | 8.61240 | | +0.45863141 | +0.06726746 | |
| $P$ | 4.63 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 691 | 0.1+ | 0.1− | 2001 12 22 | 704 | 0.2− | 0.8− | 2005 09 24 | 703 | (1.1− | 1.8−) | | |
| 1997 12 04 | 691 | 0.0 | 0.2− | 2001 12 22 | 704 | 0.5− | 0.3− | 2005 09 24 | 703 | (2.2− | 2.0−) | | |
| 1997 12 04 | 691 | 0.2+ | 0.2− | 2001 12 22 | 704 | 0.8+ | 0.6− | 2005 09 24 | 703 | (0.7− | 2.5−) | | |
| 1997 12 05 | 691 | 0.6− | 0.2− | 2001 12 22 | 704 | (0.3− | 1.5−) | 2005 09 24 | 703 | (1.9+ | 4.3−) | | |
| 1997 12 05 | 691 | 0.2− | 0.3− | 2001 12 23 | 704 | 0.7− | 0.4− | 2005 10 01 | 703 | 0.2− | 0.4− | | |
| 1997 12 05 | 691 | 0.4− | 0.3− | 2001 12 23 | 704 | 0.5− | 0.2− | 2005 10 01 | 703 | 0.7− | 0.7− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.9+ | 0.2− | 2001 12 23 | 704 | 0.9− | 0.0 | 2005 10 01 | 703 | 1.0+ | 0.9− |
| 2001 11 11 | 704 | 0.7+ | 0.0 | 2001 12 23 | 704 | 0.5− | 0.5− | 2005 10 01 | 703 | 1.0+ | 1.3− |
| 2001 11 11 | 704 | 0.0 | 1.1+ | 2001 12 23 | 704 | 0.8− | 0.4− | 2005 10 07 | 703 | 0.2− | 0.9+ |
| 2001 11 11 | 704 | (0.1+ | 1.5+) | 2002 01 08 | 704 | 0.2+ | 0.1− | 2005 10 07 | 703 | 0.2+ | 0.3− |
| 2001 11 11 | 704 | 0.1− | 0.9+ | 2002 01 08 | 704 | 0.2+ | 0.4− | 2005 10 07 | 703 | 0.2+ | 0.0 |
| 2001 11 24 | 704 | 0.2− | 0.4+ | 2002 01 08 | 704 | 0.5+ | 0.3+ | 2005 10 07 | 703 | 0.0 | 0.1− |
| 2001 11 24 | 704 | 0.7+ | 0.3+ | 2002 01 08 | 704 | 0.0 | 0.8− | 2005 10 28 | 703 | 0.3+ | 0.5+ |
| 2001 11 24 | 704 | 0.3+ | 0.1+ | 2002 01 14 | 704 | 0.3+ | 0.7+ | 2005 10 28 | 703 | 0.2− | 0.0 |
| 2001 11 24 | 704 | 0.2− | 0.5− | 2002 01 14 | 704 | 0.5+ | 0.4+ | 2005 10 28 | 703 | 1.2− | 0.4+ |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2002 01 14 | 704 | 0.4+ | 1.0+ | 2005 10 28 | 703 | 0.6− | 0.7− |
| 2001 12 09 | 704 | 0.1+ | 0.3+ | 2002 01 14 | 704 | 0.1+ | 0.7+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2001 12 09 | 704 | 0.2− | 0.2+ | 2005 08 29 | 644 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2001 12 09 | 704 | 0.1− | 0.0 | 2005 08 29 | 644 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2001 12 09 | 704 | 0.1+ | 0.9+ | 2005 08 29 | 644 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2001 12 09 | 704 | 0.1+ | 0.2+ | 2005 08 31 | 699 | 1.2+ | 0.5+ | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2001 12 17 | 704 | 0.8− | 0.1− | 2005 08 31 | 699 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2001 12 17 | 704 | 0.2+ | 0.4+ | 2005 08 31 | 699 | 1.2− | 0.7− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.7+ | 2005 08 31 | 699 | 1.1+ | 1.0+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.0 | 0.7+ | 2005 09 11 | 704 | 0.4+ | 0.2− | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2005 09 11 | 704 | 0.1+ | 1.3− | 2006 11 27 | G96 | 0.5+ | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 0.3+ | 2005 09 11 | 704 | 0.4+ | 0.2− | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2001 12 17 | 704 | 0.4+ | 0.0 | 2005 09 11 | 704 | 0.1+ | 0.5− | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2005 09 11 | 704 | (1.1+ | 1.7−) | | | | |

**(141311)∗ 2001 YD$_{121}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.79657 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17885865 | $\omega$ | 74.47081 | | −0.62163455 | −0.76126617 | |
| $a$ | 3.1198192 | $\Omega$ | 55.45553 | | +0.60499964 | −0.61623754 | |
| $e$ | 0.2258983 | $i$ | 12.94446 | | +0.49753987 | −0.20180465 | |
| $P$ | 5.51 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.7− | 0.1− | 2003 03 29 | 699 | 0.5− | 0.1+ | 2003 05 25 | 703 | (2.5+ | 0.6+) |
| 2001 10 18 | 704 | 0.4− | 1.1+ | 2003 03 29 | 699 | 0.0 | 0.6− | 2005 07 04 | 644 | 0.8− | 0.6+ |
| 2001 10 18 | 704 | 0.3− | 0.2+ | 2003 03 29 | 699 | 0.1− | 0.1− | 2005 07 04 | 644 | 0.5− | 0.7+ |
| 2001 11 11 | 704 | 0.2+ | 0.1− | 2003 03 29 | 699 | 0.8− | 0.3− | 2005 07 04 | 644 | 0.8− | 0.5+ |
| 2001 11 11 | 704 | 0.5− | 0.1+ | 2003 03 30 | 704 | 0.3+ | 0.8− | 2005 08 04 | 644 | 0.4− | 0.8+ |
| 2001 11 11 | 704 | 0.3− | 0.4+ | 2003 03 30 | 704 | 1.4+ | 1.0− | 2005 08 04 | 644 | 0.3− | 0.5+ |
| 2001 11 11 | 704 | 0.2− | 0.7+ | 2003 03 30 | 704 | 0.5+ | 0.1− | 2005 08 04 | 644 | 0.5− | 0.9+ |
| 2001 11 11 | 704 | 0.6− | 0.4+ | 2003 03 31 | 699 | (1.9+ | 1.0+) | 2006 09 16 | 699 | 0.9− | 1.5− |
| 2001 11 19 | 704 | 0.5− | 0.1+ | 2003 03 31 | 699 | 1.1+ | 0.0 | 2006 09 16 | 699 | 0.1+ | 0.6− |
| 2001 11 19 | 704 | 1.0− | 0.0 | 2003 03 31 | 699 | 0.7− | 0.2− | 2006 09 16 | 699 | 0.8− | 0.3+ |
| 2001 11 19 | 704 | 0.4− | 0.0 | 2003 03 31 | 699 | 0.4− | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.4+ |
| 2001 11 19 | 704 | 0.5− | 0.2+ | 2003 04 02 | 704 | 1.2+ | 0.5+ | 2006 09 29 | 699 | (1.5+ | 0.3+) |
| 2001 11 24 | 704 | 0.3+ | 0.2− | 2003 04 02 | 704 | 0.1+ | 0.8+ | 2006 09 29 | 699 | 1.1− | 0.3+ |
| 2001 11 24 | 704 | 0.8− | 1.2− | 2003 04 02 | 704 | (0.4+ | 1.6+) | 2006 09 29 | 699 | 0.2+ | 0.2+ |
| 2001 11 24 | 704 | 0.5+ | 0.7− | 2003 04 02 | 704 | (2.2+ | 0.9+) | 2006 09 29 | 699 | 1.1+ | 0.6+ |
| 2001 11 24 | 704 | 0.2− | 0.2− | 2003 04 02 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 2001 12 09 | 704 | 0.5− | 0.3− | 2003 04 04 | 608 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 1.0− | 0.2+ |
| 2001 12 09 | 704 | 0.1+ | 0.7− | 2003 04 04 | 608 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.9+ |
| 2001 12 09 | 704 | 0.2− | 0.4− | 2003 04 04 | 608 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | 0.3+ | 0.5− | 2003 04 08 | 704 | 0.9− | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 2001 12 09 | 704 | 0.3+ | 0.5− | 2003 04 08 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 704 | (0.1+ | 1.7+) |
| 2001 12 17 | 704 | 0.2+ | 0.4+ | 2003 04 08 | 704 | 0.0 | 0.6− | 2006 10 01 | 704 | 0.9− | 0.5+ |
| 2001 12 17 | 704 | 0.1− | 0.6+ | 2003 04 08 | 704 | 0.2− | 0.7+ | 2006 10 01 | 704 | (0.1− | 2.4+) |
| 2001 12 17 | 704 | 0.1− | 0.8+ | 2003 04 08 | 704 | 1.1− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2001 12 17 | 704 | 0.2− | 0.9+ | 2003 04 09 | 608 | 0.3+ | 0.7− | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 2001 12 17 | 704 | 0.3− | 0.9+ | 2003 04 09 | 608 | 0.6+ | 0.3− | 2006 10 10 | 644 | 0.2− | 0.5+ |
| 2001 12 17 | 704 | 0.7− | 0.4+ | 2003 04 09 | 608 | 0.0 | 1.4− | 2006 10 16 | 703 | 0.7− | 1.3− |
| 2001 12 17 | 704 | 0.5− | 0.6+ | 2003 04 14 | 699 | 0.7− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.8− |
| 2001 12 17 | 704 | 0.4− | 0.3+ | 2003 04 14 | 699 | 0.8+ | 0.6− | 2006 10 16 | 703 | 1.0− | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2003 04 14 | 699 | (0.4+ | 1.6+) | 2006 10 16 | 703 | 0.6− | 0.6− |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2003 04 14 | 699 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.5− | 0.5+ |
| 2001 12 22 | 704 | 0.0 | 0.1− | 2003 04 26 | 608 | (1.2+ | 1.6+) | 2006 10 20 | 644 | 0.4− | 0.5+ |
| 2001 12 22 | 704 | 0.5+ | 0.2− | 2003 04 26 | 608 | (1.5+ | 1.2+) | 2006 10 20 | 644 | 0.6− | 0.4+ |
| 2001 12 22 | 704 | 0.3+ | 0.0 | 2003 04 26 | 608 | 1.3+ | 1.2+ | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2001 12 22 | 704 | 0.2+ | 0.1+ | 2003 04 27 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.6+ |
| 2001 12 22 | 704 | 0.2+ | 0.3+ | 2003 04 27 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 01 08 | 704 | 0.9+ | 0.5+ | 2003 04 27 | 699 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2002 01 08 | 704 | 0.8+ | 0.2+ | 2003 04 27 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 01 08 | 704 | 0.7+ | 0.4+ | 2003 04 27 | 699 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 01 08 | 704 | 0.4+ | 0.6+ | 2003 04 27 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 704 | 0.7+ | 0.5+ |
| 2002 01 08 | 704 | 0.5+ | 1.0+ | 2003 04 27 | 699 | 0.5− | 0.2+ | 2006 10 22 | 704 | 1.0+ | 0.3− |
| 2002 01 15 | 704 | 1.2+ | 0.5− | 2003 04 27 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 704 | 0.4− | 0.3+ |
| 2002 01 15 | 704 | 0.4+ | 0.7+ | 2003 04 27 | 699 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.7− | 0.5+ |
| 2002 01 15 | 704 | 0.6− | 0.3+ | 2003 04 30 | 691 | 0.3− | 0.3+ | 2006 10 27 | 704 | 0.8− | 0.8+ |
| 2002 01 19 | 704 | 0.8+ | 0.7− | 2003 04 30 | 691 | 0.2− | 0.3+ | 2006 10 27 | 704 | 0.7− | 0.3+ |
| 2002 01 19 | 704 | 1.4+ | 1.1− | 2003 04 30 | 691 | 0.2− | 0.3+ | 2006 10 27 | 704 | 0.5− | 0.2− |
| 2002 01 19 | 704 | 0.4+ | 0.4+ | 2003 04 30 | 608 | 1.3+ | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.7+ |
| 2002 01 19 | 704 | (0.1− | 2.1−) | 2003 04 30 | 608 | 0.7+ | 0.9+ | 2006 10 28 | 703 | 0.2− | 0.1+ |
| 2002 01 19 | 704 | 1.5− | 0.7+ | 2003 04 30 | 608 | 0.7+ | 1.0+ | 2006 10 28 | 703 | 1.3+ | 0.4+ |
| 2002 02 08 | 704 | 0.2− | 0.6− | 2003 05 01 | 704 | 0.4− | 0.6+ | 2006 10 28 | 703 | 0.9− | 0.5− |
| 2002 02 08 | 704 | 0.4+ | 0.4− | 2003 05 01 | 704 | 0.4− | 0.6+ | 2006 11 07 | 644 | 0.4− | 0.4+ |
| 2002 02 08 | 704 | 0.1+ | 0.0 | 2003 05 01 | 704 | (1.6− | 0.6+) | 2006 11 07 | 644 | 0.2− | 0.5+ |
| 2002 02 08 | 704 | 0.8− | 0.5− | 2003 05 01 | 704 | 0.2+ | 0.3− | 2006 11 07 | 644 | 0.6− | 0.6+ |
| 2002 02 08 | 704 | 0.3− | 0.7− | 2003 05 01 | 704 | 1.3− | 0.1+ | 2006 11 13 | 703 | (0.1+ | 3.4+) |
| 2002 02 12 | 704 | (1.2+ | 1.6+) | 2003 05 08 | 704 | 1.1+ | 0.3− | 2006 11 13 | 703 | 0.6+ | 0.4+ |
| 2002 02 12 | 704 | 0.6+ | 0.9+ | 2003 05 08 | 704 | 1.0+ | 0.5− | 2006 11 13 | 703 | (0.1+ | 1.7+) |
| 2002 02 12 | 704 | 0.3− | 0.6+ | 2003 05 08 | 703 | 0.3+ | 1.0+ | 2006 11 13 | 703 | 1.2+ | 0.2− |
| 2002 02 12 | 704 | (0.9+ | 1.9+) | 2003 05 08 | 704 | 0.9+ | 0.3− | 2006 11 14 | 704 | (0.4− | 1.7+) |
| 2003 03 24 | 691 | 0.1+ | 0.4+ | 2003 05 08 | 703 | 0.3+ | 1.4+ | 2006 11 14 | 704 | 0.6− | 0.8+ |
| 2003 03 24 | 291 | 0.3− | 0.4+ | 2003 05 08 | 704 | 1.3+ | 0.3− | 2006 11 14 | 704 | 0.3+ | 1.0+ |
| 2003 03 24 | 691 | 0.4+ | 0.3+ | 2003 05 08 | 703 | 0.4+ | 1.2+ | 2006 11 14 | 704 | 0.2+ | 1.3+ |
| 2003 03 24 | 291 | 0.2− | 0.4+ | 2003 05 08 | 704 | 0.8+ | 0.6− | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2003 03 24 | 691 | 0.4+ | 0.3+ | 2003 05 08 | 703 | (0.4+ | 1.5+) | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2003 03 24 | 291 | 0.4− | 0.2+ | 2003 05 25 | 699 | (1.3− | 1.6+) | 2006 11 21 | 704 | 1.0− | 1.7+ |
| 2003 03 26 | 608 | 1.2+ | 0.4+ | 2003 05 25 | 699 | 1.2− | 1.3− | 2006 11 21 | 704 | 0.0 | 1.8+ |
| 2003 03 26 | 608 | 0.8+ | 0.0 | 2003 05 25 | 699 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2003 03 26 | 608 | 1.2+ | 0.2+ | 2003 05 25 | 703 | 1.5+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2003 03 27 | 644 | 0.5+ | 1.2+ | 2003 05 25 | 699 | 0.1+ | 0.4− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2003 03 27 | 644 | 0.2+ | 1.2+ | 2003 05 25 | 703 | 1.2+ | 1.1− | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2003 03 27 | 644 | 0.2+ | 0.9+ | 2003 05 25 | 703 | (2.6+ | 0.6−) | | | | |

**(141312)∗ 2001 YU$_{121}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.44752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19290960 | $\omega$ | 83.55826 | | −0.64600453 | −0.74491936 | |
| $a$ | 2.9664258 | $\Omega$ | 48.10719 | | +0.58145180 | −0.62165949 | |
| $e$ | 0.0738540 | $i$ | 12.93687 | | +0.49456239 | −0.24214589 | |
| $P$ | 5.11 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 704 | 0.3+ | 0.5+ | 2003 03 12 | 704 | 0.5+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 1998 04 20 | 704 | (1.0− | 2.3+) | 2003 03 12 | 704 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 1998 04 20 | 704 | (3.3+ | 0.2−) | 2003 03 12 | 704 | 0.2+ | 0.6+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 1998 04 20 | 704 | 0.8− | 1.9+ | 2003 03 12 | 704 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 10 14 | 704 | 1.2− | 0.7+ | 2003 03 12 | 704 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2001 10 14 | 704 | (0.5− | 1.9+) | 2003 03 12 | 644 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | (0.4− | 2.8+) | 2003 03 12 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2001 11 11 | 704 | 0.4− | 0.9+ | 2003 03 12 | 644 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2001 11 11 | 704 | 0.4+ | 0.3+ | 2003 03 13 | 608 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2001 11 11 | 704 | 0.2+ | 1.4+ | 2003 03 13 | 608 | 0.1+ | 1.0− | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2001 11 11 | 704 | 0.6+ | 0.6+ | 2003 03 13 | 608 | 0.1+ | 1.1− | 2006 11 15 | 704 | 0.6− | 0.2+ |
| 2001 11 11 | 704 | (0.0 | 1.5+) | 2003 03 14 | 636 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.1+ | 1.0− |
| 2001 11 24 | 704 | 0.1− | 0.3+ | 2003 03 14 | 636 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.9+ | 0.2+ |
| 2001 11 24 | 704 | 0.2+ | 0.3+ | 2003 03 14 | 636 | 0.3− | 0.3+ | 2006 11 16 | 704 | (2.2+ | 1.0−) |
| 2001 11 24 | 704 | 0.1− | 0.2+ | 2003 03 25 | 644 | 0.4+ | 0.9+ | 2006 11 16 | 704 | 0.8+ | 1.2− |
| 2001 11 24 | 704 | 0.1+ | 0.2+ | 2003 03 25 | 644 | 0.4+ | 1.3+ | 2006 11 16 | 704 | 1.2+ | 0.5− |
| 2001 12 09 | 704 | 0.6+ | 0.3+ | 2003 03 25 | 644 | 0.3+ | 1.2+ | 2006 11 16 | 704 | (2.2+ | 0.0 ) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.1+ | 0.2+ | 2003 04 01 | 703 | 0.8− | 0.2+ | 2006 11 16 | 704 | 1.4+ | 0.4− |
| 2001 12 09 | 704 | 0.3+ | 0.0 | 2003 04 01 | 703 | 0.8− | 0.2− | 2006 11 16 | 704 | 1.5+ | 0.3− |
| 2001 12 09 | 704 | 0.2+ | 0.3+ | 2003 04 01 | 703 | 0.8+ | 0.5+ | 2006 11 16 | 704 | 1.3+ | 0.4− |
| 2001 12 09 | 704 | 0.2− | 0.0 | 2003 04 01 | 703 | 0.1− | 1.4− | 2006 11 16 | 704 | (0.9+ | 2.3−) |
| 2001 12 17 | 704 | 0.4+ | 0.2+ | 2003 04 04 | 704 | 0.6+ | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.5− |
| 2001 12 17 | 704 | 0.8− | 0.0 | 2003 04 04 | 704 | 0.2− | 0.7+ | 2006 11 16 | 704 | 0.6− | 0.7+ |
| 2001 12 17 | 704 | 0.3− | 0.1+ | 2003 04 04 | 704 | 0.9+ | 0.6− | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.4− | 0.3+ | 2003 04 05 | 699 | 0.8− | 0.4− | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.5− | 0.4+ | 2003 04 05 | 699 | 0.8− | 0.1− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2001 12 22 | 704 | 0.8+ | 0.6− | 2003 04 05 | 699 | 0.6− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2001 12 22 | 704 | 0.4+ | 0.5− | 2003 04 05 | 699 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2001 12 22 | 704 | 0.9+ | 0.6− | 2005 07 28 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2001 12 22 | 704 | 0.3+ | 1.2− | 2005 07 28 | 644 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 0.5− | 0.2− |
| 2001 12 22 | 704 | 0.4+ | 1.2− | 2005 07 28 | 644 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.6− |
| 2002 01 08 | 704 | 0.2+ | 0.1− | 2005 08 30 | 699 | 0.0 | 0.7+ | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 01 08 | 704 | 0.2+ | 0.2− | 2005 08 30 | 699 | 0.9− | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 01 08 | 704 | 0.7+ | 0.8− | 2005 08 30 | 699 | 1.3− | 0.5+ | 2006 11 21 | 691 | 0.9+ | 0.0 |
| 2002 01 08 | 704 | 0.4− | 0.8− | 2005 08 30 | 699 | 0.7− | 0.8+ | 2006 11 22 | 704 | 1.3− | 0.9+ |
| 2003 02 28 | 704 | 0.3+ | 1.1− | 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 22 | 704 | 1.0− | 0.8+ |
| 2003 02 28 | 704 | 0.7+ | 0.3− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.3− | 0.8+ |
| 2003 02 28 | 704 | 1.0+ | 0.8− | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 1.3− | 1.0+ |
| 2003 03 12 | 704 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8− | 0.6+ |
| 2003 03 12 | 704 | 0.8+ | 0.3− | 2006 10 17 | G96 | 0.8− | 0.7− | 2006 11 27 | 704 | 0.0 | 0.0 |
| 2003 03 12 | 704 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.0 | 0.0 |
| 2003 03 12 | 704 | 1.1− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 27 | 704 | 0.5− | 0.2+ |
| 2003 03 12 | 704 | 0.3+ | 1.3+ | 2006 10 20 | G96 | 0.4+ | 0.0 | | | | |

**(141313)∗ 2001 YK$_{122}$ = 2000 SW$_{347}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.30594 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17424293 | $\omega$ | 243.89237 | | −0.88782895 | −0.35593118 |
| $a$ | 3.1746750 | $\Omega$ | 274.07612 | | +0.45116929 | −0.79804571 |
| $e$ | 0.1165967 | $i$ | 17.00241 | | −0.09058714 | −0.48624690 |
| $P$ | 5.66 | $H$ | 13.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.0 | 0.3+ | 2001 12 22 | 704 | 0.2− | 0.3+ | 2003 04 03 | 608 | 0.4+ | 0.0 |
| 2000 09 22 | 704 | 0.3+ | 0.5+ | 2001 12 22 | 704 | 0.5− | 0.2+ | 2003 04 03 | 608 | 0.2+ | 0.5− |
| 2000 09 22 | 704 | 0.2+ | 0.2− | 2002 01 08 | 704 | 0.6− | 0.6+ | 2003 04 03 | 608 | 0.3+ | 0.5− |
| 2000 09 22 | 704 | 0.2− | 0.1+ | 2002 01 08 | 704 | 0.3− | 0.5+ | 2003 04 07 | 704 | 0.2− | 0.2+ |
| 2000 10 04 | 704 | 0.4+ | 0.4− | 2002 01 08 | 704 | 0.4− | 0.4+ | 2003 04 07 | 704 | 0.2+ | 0.6+ |
| 2000 10 04 | 704 | 0.9− | 0.2+ | 2002 01 08 | 704 | 0.4+ | 0.5+ | 2003 04 07 | 704 | 0.6+ | 0.6+ |
| 2000 10 04 | 704 | 0.2− | 0.0 | 2002 01 08 | 704 | 0.2− | 0.4− | 2003 04 07 | 704 | 0.6+ | 0.3+ |
| 2000 10 04 | 704 | 0.8+ | 0.5+ | 2002 01 15 | 704 | 0.6+ | 1.4+ | 2003 04 07 | 704 | 0.5+ | 1.4+ |
| 2001 11 11 | 704 | 0.2− | 0.0 | 2002 01 15 | 704 | 0.4+ | 0.5+ | 2006 08 12 | 644 | 0.2+ | 0.3+ |
| 2001 11 11 | 704 | 0.8− | 0.5− | 2002 01 15 | 704 | 1.2+ | 0.5+ | 2006 08 12 | 644 | 0.4+ | 0.4+ |
| 2001 11 11 | 704 | 1.0− | 0.2− | 2002 01 21 | 704 | 0.0 | 0.7− | 2006 08 12 | 644 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 0.4+ | 0.8+ | 2002 01 21 | 704 | 0.2+ | 0.7− | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | (1.7+ | 1.3+) | 2002 01 21 | 704 | 0.1− | 0.7− | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.9+ | 0.5+ | 2002 02 06 | 704 | 0.3− | 1.4− | 2006 09 19 | 703 | 0.4+ | 0.8+ |
| 2001 11 21 | 704 | 0.5+ | 1.2+ | 2002 02 06 | 704 | 0.2+ | 0.8− | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2001 12 09 | 704 | 1.0− | 0.4+ | 2002 02 06 | 704 | 0.2+ | 0.4− | 2006 09 25 | 703 | 1.2− | 0.5+ |
| 2001 12 09 | 704 | (2.4− | 0.3−) | 2002 02 06 | 704 | 0.6+ | 0.3− | 2006 09 25 | 703 | 0.5− | 0.3+ |
| 2001 12 09 | 704 | (1.6− | 0.2−) | 2002 02 06 | 704 | 0.2− | 0.9− | 2006 09 25 | 703 | 0.1+ | 0.1− |
| 2001 12 09 | 704 | 1.5− | 0.2− | 2003 01 30 | 704 | 0.8− | 0.1+ | 2006 09 25 | 703 | 0.8+ | 0.7+ |
| 2001 12 09 | 704 | 1.3− | 0.3− | 2003 01 30 | 704 | 0.8− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 0.5+ | 0.8− | 2003 01 30 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 2001 12 17 | 704 | 0.1− | 0.9− | 2003 03 11 | 704 | 1.1+ | 0.3− | 2006 10 27 | 703 | 0.3− | 0.5+ |
| 2001 12 17 | 704 | 1.3+ | 1.1− | 2003 03 11 | 704 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2001 12 17 | 704 | 0.6+ | 1.3− | 2003 03 11 | 704 | 1.4+ | 1.2− | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2001 12 20 | 644 | 0.1− | 1.0− | 2003 03 11 | 704 | 0.3+ | 1.3+ | 2006 11 15 | 703 | 0.4− | 0.2+ |
| 2001 12 20 | 644 | 0.0 | 0.6+ | 2003 03 11 | 704 | 0.9+ | 0.3+ | 2006 11 15 | 703 | 0.0 | 1.0+ |
| 2001 12 20 | 644 | 0.0 | 0.9− | 2003 03 11 | 704 | 0.7− | 0.7+ | 2006 11 15 | 703 | 0.2+ | 0.3+ |
| 2001 12 20 | 644 | 0.1+ | 0.8+ | 2003 03 11 | 704 | 1.2− | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2001 12 20 | 644 | 0.1− | 1.1− | 2003 03 11 | 704 | (1.8+ | 0.5−) | 2006 11 22 | 703 | 0.2+ | 0.5− |
| 2001 12 20 | 644 | 0.0 | 0.8+ | 2003 03 11 | 704 | 0.6− | 0.4+ | 2006 11 22 | 703 | 0.6− | 0.7+ |
| 2001 12 22 | 704 | 0.1− | 0.3+ | 2003 03 20 | 608 | 0.7+ | 0.5+ | 2006 11 22 | 703 | 0.0 | 0.9+ |
| 2001 12 22 | 704 | 0.2+ | 0.1+ | 2003 03 20 | 608 | 0.2+ | 0.3+ | | | | |
| 2001 12 22 | 704 | 0.5− | 0.1− | 2003 03 20 | 608 | 0.2+ | 0.0 | | | | |

**(141314)∗ 2001 YR$_{122}$ = 2000 QO$_{163}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.22014 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21870748 | $\omega$ | 332.31726 | | −0.08849360 | +0.98355518 |
| $a$ | 2.7283095 | $\Omega$ | 292.24522 | | −0.87956732 | −0.15134116 |
| $e$ | 0.0835500 | $i$ | 9.79379 | | −0.46747215 | +0.09856501 |
| $P$ | 4.51 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1− | 0.3+ | 2001 12 22 | 704 | 1.2+ | 1.0− | 2005 09 29 | 703 | 0.8− | 0.6− |
| 2000 08 31 | 704 | 0.1+ | 0.0 | 2002 01 04 | 735 | 0.1− | 0.7+ | 2005 10 23 | 703 | 1.4+ | 1.3+ |
| 2000 08 31 | 704 | 0.9− | 0.7+ | 2002 01 04 | 735 | 0.3− | 0.3+ | 2005 10 23 | 703 | 0.8+ | 0.8+ |
| 2000 08 31 | 704 | 0.1− | 0.5− | 2002 01 04 | 735 | 0.5− | 0.4− | 2005 10 23 | 703 | (2.3+ | 1.0+) |
| 2000 09 03 | 704 | 0.3+ | 0.5+ | 2002 01 08 | 735 | 0.2− | 0.1+ | 2005 10 23 | 703 | (1.7+ | 0.9+) |
| 2000 09 03 | 704 | 0.5− | 0.5+ | 2002 01 08 | 735 | 0.6− | 0.1+ | 2005 10 29 | 703 | 0.7− | 0.9+ |
| 2000 09 03 | 704 | 0.8+ | 0.6+ | 2002 01 08 | 735 | 0.1− | 0.4+ | 2005 10 29 | 703 | 0.2+ | 0.5+ |
| 2001 12 09 | 704 | (2.6+ | 0.5−) | 2003 04 01 | 691 | 0.8+ | 0.5+ | 2005 10 29 | 703 | 0.0 | 1.2+ |
| 2001 12 09 | 704 | (2.1+ | 0.4−) | 2003 04 01 | 691 | 0.2+ | 1.1+ | 2005 10 29 | 703 | 0.9− | 0.2+ |
| 2001 12 09 | 704 | (1.8+ | 0.8−) | 2003 04 01 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.3− | 0.1− |
| 2001 12 17 | 704 | 0.4− | 0.6+ | 2004 06 11 | 704 | 0.1+ | 1.1+ | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2001 12 17 | 704 | (1.6− | 0.6−) | 2004 06 11 | 704 | 0.3− | 1.2+ | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2001 12 17 | 704 | 0.8− | 0.7− | 2004 06 11 | 704 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2001 12 17 | 704 | 0.7− | 0.5− | 2004 06 11 | 704 | 0.3− | 1.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 1.1− | 0.1− | 2004 06 14 | 704 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 12 22 | 704 | 0.4+ | 0.8+ | 2004 06 14 | 704 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 12 22 | 704 | 0.8− | 0.4+ | 2004 06 14 | 704 | 0.0 | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2001 12 22 | 704 | 1.2+ | 0.1− | 2004 06 14 | 704 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 12 22 | 704 | 0.4+ | 0.1+ | 2005 09 29 | 703 | 1.0− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 12 22 | 704 | 0.9+ | 1.3− | 2005 09 29 | 703 | 0.6− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 12 22 | 704 | 0.1+ | 0.2− | 2005 09 29 | 703 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.2− |

**(141315)∗ 2001 YZ$_{124}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.38264 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23665935 | $\omega$ | 8.67022 | | +0.99963548 | +0.02372341 |
| $a$ | 2.5885324 | $\Omega$ | 349.94341 | | −0.02699494 | +0.88575453 |
| $e$ | 0.1803738 | $i$ | 4.23267 | | +0.00042311 | +0.46354731 |
| $P$ | 4.16 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 21 | 691 | 0.1− | 0.3− | 2005 10 23 | 644 | 0.1+ | 0.2+ | 2005 11 28 | 703 | 0.2− | 0.2+ |
| 1994 01 21 | 691 | 0.1− | 1.3− | 2005 10 23 | 644 | 0.0 | 0.1+ | 2005 12 02 | 704 | 0.2+ | 0.1− |
| 1994 01 21 | 691 | 0.6− | 0.4− | 2005 10 29 | 703 | 1.4− | 1.5+ | 2005 12 02 | 704 | 0.3+ | 0.3+ |
| 2001 11 11 | 704 | 0.4+ | 0.2+ | 2005 10 29 | 703 | 0.4− | 0.9+ | 2005 12 02 | 704 | 0.5− | 0.6+ |
| 2001 11 11 | 704 | 0.1+ | 0.7+ | 2005 10 29 | 703 | 0.4+ | 0.8+ | 2005 12 02 | 704 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 0.1− | 1.0+ | 2005 10 29 | 703 | 1.1+ | 1.2+ | 2005 12 02 | 704 | 0.5+ | 0.3+ |
| 2001 11 11 | 704 | (2.0− | 0.6+) | 2005 10 30 | 704 | 0.2− | 0.8− | 2005 12 05 | 704 | 0.8− | 0.3+ |
| 2001 11 24 | 704 | 0.3+ | 0.4+ | 2005 10 30 | 704 | 0.2+ | 0.3− | 2005 12 05 | 704 | 0.2− | 1.1+ |
| 2001 11 24 | 704 | 0.6− | 0.3− | 2005 10 30 | 704 | 0.2+ | 0.5− | 2005 12 05 | 704 | 0.1− | 0.8+ |
| 2001 11 24 | 704 | 0.1− | 0.9+ | 2005 10 30 | 704 | 0.1− | 0.8− | 2005 12 05 | 704 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.5+ | 0.4+ | 2005 10 30 | 704 | 0.0 | 1.1− | 2005 12 05 | 704 | 0.1+ | 0.3+ |
| 2001 12 09 | 704 | 0.5+ | 0.2+ | 2005 11 02 | 704 | 0.2+ | 0.5− | 2005 12 08 | 703 | 0.1+ | 0.8− |
| 2001 12 09 | 704 | 0.7+ | 0.5+ | 2005 11 02 | 704 | 0.2− | 0.5− | 2005 12 08 | 703 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.3− | 0.4+ | 2005 11 02 | 704 | 0.3+ | 0.3− | 2005 12 08 | 703 | 0.3− | 0.4− |
| 2001 12 09 | 704 | 0.8+ | 0.4+ | 2005 11 02 | 704 | (0.4− | 2.6−) | 2005 12 08 | 703 | 0.3+ | 0.7− |
| 2001 12 17 | 704 | 0.5− | 0.7− | 2005 11 02 | 704 | 0.0 | 0.7− | 2005 12 23 | 644 | 0.3− | 0.1− |
| 2001 12 17 | 704 | 0.3− | 1.0− | 2005 11 08 | 704 | 0.3+ | 0.5− | 2005 12 23 | 644 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.6− | 0.7− | 2005 11 08 | 704 | 0.1− | 0.5− | 2005 12 23 | 644 | 0.2− | 0.5+ |
| 2001 12 17 | 704 | 0.6+ | 1.4− | 2005 11 08 | 704 | 0.6+ | 0.5− | 2006 01 21 | 703 | 1.1− | 0.6+ |
| 2001 12 17 | 704 | (1.9− | 1.4−) | 2005 11 08 | 704 | 0.8+ | 0.4− | 2006 01 21 | 703 | 0.7+ | 0.5+ |
| 2001 12 22 | 704 | 0.1− | 0.9+ | 2005 11 08 | 704 | 0.5+ | 0.8− | 2006 01 21 | 703 | 0.5+ | 1.0+ |
| 2001 12 22 | 704 | 0.2+ | 0.8+ | 2005 11 10 | 461 | (1.8+ | 0.2+) | 2006 01 21 | 703 | (0.8+ | 1.5+) |
| 2001 12 22 | 704 | 0.0 | 0.5+ | 2005 11 10 | 461 | 0.2+ | 0.1+ | 2006 01 22 | 703 | 0.6− | 0.8− |
| 2002 01 14 | 704 | 0.6− | 0.9+ | 2005 11 21 | 703 | 0.3− | 0.0 | 2006 01 22 | 703 | 0.7− | 0.7− |
| 2002 01 14 | 704 | 0.2+ | 1.1+ | 2005 11 21 | 703 | 0.2− | 0.4+ | 2006 01 22 | 703 | 0.6− | 0.1− |
| 2002 01 14 | 704 | 0.1+ | 0.9+ | 2005 11 21 | 703 | 0.2− | 0.6+ | 2006 01 22 | 703 | 0.3+ | 0.6− |
| 2003 02 26 | 599 | 0.1+ | 0.3+ | 2005 11 21 | 703 | 0.4− | 0.3− | 2006 01 22 | 703 | 0.4+ | 0.8− |
| 2003 02 26 | 599 | 0.2+ | 0.0 | 2005 11 21 | 644 | 0.3− | 0.9+ | 2006 01 22 | 703 | 0.4− | 1.1− |
| 2003 02 26 | 599 | 0.1+ | 0.3+ | 2005 11 21 | 644 | 0.2− | 0.4+ | 2006 01 22 | 703 | 0.5− | 0.1+ |
| 2003 02 26 | 599 | 0.5+ | 0.3+ | 2005 11 21 | 644 | 0.2− | 0.1+ | 2006 01 22 | 703 | 0.7+ | 1.4− |
| 2003 03 26 | 644 | 0.2+ | 0.4+ | 2005 11 28 | 699 | 0.6− | 0.8+ | 2006 03 04 | G96 | 0.0 | 0.1− |
| 2003 03 26 | 644 | 0.5+ | 0.5+ | 2005 11 28 | 704 | 0.3− | 0.2+ | 2006 03 04 | G96 | 0.1+ | 0.1− |
| 2003 03 26 | 644 | 0.2+ | 0.2+ | 2005 11 28 | 699 | 0.1+ | 1.0+ | 2006 03 04 | G96 | 0.1+ | 0.2− |
| 2003 03 27 | 691 | 0.0 | 0.1− | 2005 11 28 | 704 | 0.3+ | 0.2− | 2006 03 04 | G96 | 0.1− | 0.2+ |
| 2003 03 27 | 691 | 0.0 | 0.1− | 2005 11 28 | 704 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2003 03 27 | 691 | 0.0 | 0.3+ | 2005 11 28 | 699 | 0.4+ | 1.3+ | 2006 11 01 | G96 | 0.1− | 0.3+ |
| 2005 09 13 | 704 | 0.3+ | 0.1+ | 2005 11 28 | 704 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.2+ |
| 2005 09 13 | 704 | 0.9+ | 0.2− | 2005 11 28 | 699 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2005 09 13 | 704 | 0.6+ | 0.6− | 2005 11 28 | 704 | 0.2− | 0.5− | 2006 11 17 | 691 | 0.8+ | 0.1+ |
| 2005 09 13 | 704 | 0.3+ | 0.0 | 2005 11 28 | 703 | 0.5− | 0.3− | 2006 11 17 | 691 | 0.0 | 0.6+ |
| 2005 09 13 | 704 | 0.3+ | 0.9− | 2005 11 28 | 703 | 0.3− | 0.9− | 2006 11 17 | 691 | 0.3− | 0.1+ |
| 2005 10 23 | 644 | 0.0 | 0.1+ | 2005 11 28 | 703 | 0.5− | 0.1+ | | | | |

**(141316)∗ 2001 YX$_{125}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.28654 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17944736 | $\omega$ | 336.21329 | | +0.66645840 | −0.68619405 |
| $a$ | 3.1129919 | $\Omega$ | 70.54416 | | +0.72398614 | +0.50233072 |
| $e$ | 0.1329720 | $i$ | 18.00806 | | +0.17798110 | +0.52611935 |
| $P$ | 5.49 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.7+ | 0.4+ | 2003 03 09 | 644 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.3+ | 0.3+ | 2003 03 09 | 644 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.1− | 0.4+ | 2003 03 09 | 644 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.9+ |
| 2001 11 12 | 704 | (1.8+ | 1.2+) | 2003 03 26 | 704 | 1.1+ | 1.0+ | 2006 10 17 | 703 | 0.6+ | 1.1+ |
| 2001 11 12 | 704 | 0.5+ | 0.1− | 2003 03 26 | 704 | 0.3+ | 1.0+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2001 11 24 | 704 | (1.8+ | 0.1+) | 2003 03 26 | 704 | (1.0+ | 1.7+) | 2006 10 28 | 703 | 0.1+ | 0.5+ |
| 2001 11 24 | 704 | (3.3+ | 0.2−) | 2003 03 26 | 704 | 0.4+ | 1.1+ | 2006 10 28 | 703 | 0.0 | 1.2+ |
| 2001 11 24 | 704 | 0.7+ | 0.2− | 2003 04 01 | 699 | 0.7+ | 1.1+ | 2006 10 28 | 703 | 0.2+ | 0.6+ |
| 2001 11 24 | 704 | 1.0+ | 0.1− | 2003 04 01 | 699 | 0.3− | 0.4+ | 2006 10 28 | 703 | 0.1− | 0.4+ |
| 2001 12 09 | 704 | 0.0 | 0.5− | 2003 04 01 | 699 | (0.2+ | 1.7+) | 2006 11 10 | 704 | 0.3− | 0.3+ |
| 2001 12 09 | 704 | 0.4+ | 1.4− | 2003 04 01 | 699 | 1.3+ | 0.7+ | 2006 11 10 | 704 | 0.3− | 0.3+ |
| 2001 12 09 | 704 | 0.1− | 0.0 | 2004 06 17 | 691 | 0.1− | 0.3+ | 2006 11 10 | 704 | 0.8− | 0.1+ |
| 2001 12 09 | 704 | 0.3+ | 0.1− | 2004 06 17 | 691 | 0.3+ | 0.5+ | 2006 11 10 | 704 | 0.1− | 0.7+ |
| 2001 12 17 | 704 | 0.4− | 0.3+ | 2004 06 17 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.2− | 0.3+ |
| 2001 12 17 | 704 | 0.7− | 0.3+ | 2005 07 05 | E12 | 0.6+ | 0.0 | 2006 11 14 | 644 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.4+ | 2005 07 05 | E12 | 0.5− | 0.5+ | 2006 11 14 | 644 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.3− | 0.1+ | 2005 07 05 | E12 | 0.3− | 0.0 | 2006 11 14 | 644 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.5− | 0.1+ | 2005 07 05 | E12 | 0.1− | 1.1+ | 2006 11 17 | 644 | 0.1− | 0.3+ |
| 2001 12 22 | 704 | (2.9+ | 1.1−) | 2006 09 30 | 699 | 0.8− | 0.8− | 2006 11 17 | 644 | 0.2− | 0.3+ |
| 2001 12 22 | 704 | (3.8+ | 1.8−) | 2006 09 30 | 704 | (1.6+ | 0.4+) | 2006 11 17 | 644 | 0.1− | 0.4+ |
| 2001 12 22 | 704 | (3.0+ | 1.8−) | 2006 09 30 | 699 | 0.5− | 1.0+ | 2006 11 19 | 703 | 0.4− | 0.1− |
| 2001 12 22 | 704 | (3.4+ | 1.8−) | 2006 09 30 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.4+ | 0.5− |
| 2001 12 22 | 704 | (3.6+ | 2.2−) | 2006 09 30 | 699 | 0.1− | 0.5+ | 2006 11 19 | 703 | 0.1+ | 0.2− |
| 2001 12 23 | 704 | 0.2− | 1.2− | 2006 09 30 | 704 | 0.5+ | 1.2− | 2006 11 19 | 703 | 0.2− | 0.4− |
| 2001 12 23 | 704 | 0.3− | 1.2− | 2006 09 30 | 704 | (1.7+ | 1.3−) | 2006 11 21 | 704 | 1.2− | 0.7− |
| 2001 12 23 | 704 | (0.9+ | 3.2−) | 2006 09 30 | 699 | 0.2− | 1.1+ | 2006 11 21 | 704 | 1.2− | 1.3+ |
| 2001 12 23 | 704 | (0.4− | 2.0−) | 2006 10 12 | 644 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2001 12 23 | 704 | (0.3− | 2.0−) | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.9+ |

**(141317)∗ 2001 YB$_{127}$ = 2000 TB$_{64}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23355)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.63016 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17146397 | $\omega$ | 65.88116 | | −0.05404142 | −0.99770784 |
| $a$ | 3.2088848 | $\Omega$ | 27.31154 | | +0.88089672 | −0.06684082 |
| $e$ | 0.1402829 | $i$ | 5.09230 | | +0.47021324 | +0.01055331 |
| $P$ | 5.75 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 04 | 704 | 0.1− | 1.4+ | 2003 03 24 | 691 | 0.4+ | 0.7+ | 2006 09 29 | 691 | 0.0 | 0.1+ |
| 2000 10 04 | 704 | 0.5+ | 0.2+ | 2003 03 24 | 691 | 0.4+ | 1.0+ | 2006 09 29 | 691 | 0.1+ | 0.2+ |
| 2000 10 04 | 704 | 0.7− | 0.0 | 2003 03 24 | 691 | 0.7+ | 1.1+ | 2006 09 29 | 691 | 0.3− | 0.3+ |
| 2000 10 04 | 704 | 0.2+ | 0.5+ | 2003 03 27 | 699 | 1.1+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2000 10 06 | 691 | 0.5− | 0.6+ | 2003 03 27 | 699 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2000 10 06 | 691 | 0.4− | 0.5+ | 2003 03 27 | 699 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2000 10 06 | 691 | 0.3− | 0.7+ | 2003 03 27 | 699 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | 0.5+ | 0.0 | 2003 04 08 | 704 | 0.8− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2003 04 08 | 704 | (0.4+ | 1.6+) | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2001 11 24 | 704 | 0.2+ | 0.8− | 2003 04 08 | 608 | 0.7+ | 0.5+ | 2006 10 15 | 703 | 0.2− | 0.2− |
| 2001 11 24 | 704 | (0.3− | 2.1−) | 2003 04 08 | 704 | 0.5− | 0.1+ | 2006 10 15 | 703 | 0.3− | 0.5− |
| 2001 12 09 | 704 | 0.8− | 0.5− | 2003 04 08 | 608 | 0.7+ | 0.9+ | 2006 10 15 | 703 | 0.7+ | 0.9+ |
| 2001 12 09 | 704 | 0.4− | 0.6− | 2003 04 08 | 704 | 1.0+ | 0.5+ | 2006 10 15 | 703 | 0.0 | 0.3− |
| 2001 12 09 | 704 | 0.4+ | 0.4− | 2003 04 08 | 608 | 0.7+ | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2001 12 09 | 704 | 0.1− | 0.6− | 2003 04 25 | 691 | (0.5+ | 1.9+) | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 12 09 | 704 | 0.6+ | 0.0 | 2003 04 25 | 691 | (0.1+ | 1.8+) | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2001 12 17 | 704 | 0.2+ | 0.5− | 2003 04 25 | 691 | (0.3+ | 1.8+) | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.3+ |
| 2001 12 17 | 704 | 0.5− | 0.0 | 2006 09 18 | 699 | (1.7− | 0.8−) | 2006 10 17 | G96 | 0.3− | 0.4− |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.3− |
| 2001 12 22 | 704 | (1.1− | 1.7−) | 2006 09 18 | 699 | 1.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 12 22 | 704 | 0.8− | 1.2− | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 12 22 | 704 | (1.9− | 0.5−) | 2006 09 18 | 699 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 12 22 | 704 | (1.7− | 0.1+) | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 01 08 | 704 | 0.0 | 0.8+ | 2006 09 25 | 691 | 0.9+ | 0.2+ | 2006 11 11 | 703 | (1.7− | 0.7+) |
| 2002 01 08 | 704 | 0.2− | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.8+ |
| 2002 01 08 | 704 | 0.5− | 1.0+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 1.1− | 1.0+ |
| 2002 01 08 | 704 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.7+ | 1.1+ |
| 2002 01 08 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.3− | 1.0+ |
| 2002 01 15 | 704 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2002 01 15 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2002 01 15 | 704 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.8+ | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2002 01 15 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.9− | 0.1− | | | | |

**(141318)∗ 2001 YU$_{127}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.27538 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18125194 | $\omega$ | 351.16941 | | +0.15899081 | −0.85959424 |
| $a$ | 3.0922952 | $\Omega$ | 88.55904 | | +0.93288707 | −0.03020721 |
| $e$ | 0.1184196 | $i$ | 29.06269 | | +0.32317742 | +0.51008359 |
| $P$ | 5.44 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.4+ | 0.7− | 2002 01 07 | 704 | 0.0 | 0.8− | 2006 10 20 | 703 | 1.0+ | 0.0 |
| 2001 11 09 | 704 | 0.7+ | 0.5− | 2002 01 07 | 704 | 0.3+ | 0.4− | 2006 10 20 | 703 | 0.4+ | 0.2− |
| 2001 11 09 | 704 | 0.5+ | 0.1− | 2002 01 07 | 704 | 1.2+ | 0.6− | 2006 10 20 | 703 | 0.5+ | 0.1− |
| 2001 11 09 | 644 | 0.0 | 0.1+ | 2002 01 07 | 704 | (2.2+ | 0.8−) | 2006 10 28 | 703 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 644 | 0.4− | 0.2+ | 2002 01 21 | 704 | 1.2− | 0.8+ | 2006 10 28 | 703 | 0.3− | 0.1+ | 2003 02 28 | 704 | 0.0 | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | (0.5+ | 2.3+) |
| 2001 11 09 | 644 | 0.2+ | 0.1+ | 2002 01 21 | 704 | 0.8− | 1.4+ | 2006 10 28 | 703 | 0.0 | 0.4+ | 2003 02 28 | 704 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 1.0+ |
| 2001 11 16 | 291 | 0.1− | 0.5− | 2002 01 21 | 704 | 0.6− | 0.7+ | 2006 10 28 | 703 | 0.2− | 0.3− | 2003 03 03 | 704 | (0.4+ | 1.6+) | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.0 | 0.9− |
| 2001 11 16 | 291 | 0.1− | 0.2− | 2002 01 21 | 704 | 0.5− | 0.4+ | 2006 11 10 | 704 | (2.6− | 0.1+) | 2003 03 03 | 704 | 0.3− | 1.2+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2001 11 16 | 291 | 0.1− | 0.3− | 2002 02 03 | 644 | 0.1+ | 1.0− | 2006 11 10 | 704 | 0.1+ | 1.0+ | 2003 03 03 | 704 | (0.3− | 2.3+) | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2001 11 19 | 704 | 0.3− | 0.2− | 2002 02 03 | 644 | 0.5+ | 0.2+ | 2006 11 10 | 704 | 0.4− | 0.4− | 2003 03 03 | 704 | 1.1+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 0.7− | 0.1− | 2002 02 03 | 644 | 0.1+ | 0.9− | 2006 11 10 | 704 | 0.2− | 0.2− | 2003 03 03 | 704 | (0.9− | 1.6+) | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2001 11 19 | 704 | 0.6− | 0.0 | 2002 02 03 | 644 | 0.3+ | 0.4+ | 2006 11 16 | 703 | 0.1− | 0.1+ | 2003 03 03 | 704 | 0.3+ | 1.4+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2001 11 19 | 704 | 1.0− | 0.7+ | 2002 02 03 | 644 | 0.2+ | 1.1− | 2006 11 16 | 703 | 1.0− | 0.1+ | 2003 03 03 | 704 | 0.7− | 0.9+ | 2006 10 18 | 691 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2001 11 19 | 704 | 0.6− | 0.6+ | 2002 02 03 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 703 | (1.7+ | 1.4−) | 2003 03 03 | 704 | (0.3− | 1.6+) | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2003 04 08 | 644 | 0.3+ | 1.3+ | 2006 11 16 | 703 | 0.5+ | 0.2+ | 2003 03 14 | 608 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2001 12 17 | 704 | 0.5+ | 0.7+ | 2003 04 08 | 644 | 0.4+ | 1.0+ | 2006 11 22 | 704 | 0.0 | 0.8+ | 2003 03 14 | 608 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 1.1+ | 0.8+ | 2003 04 08 | 644 | 1.0+ | 0.7+ | 2006 11 22 | 704 | 0.3− | 0.6+ | 2003 03 14 | 608 | 1.0+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 0.4+ | 1.1+ | 2005 07 27 | E12 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.5+ | 1.2+ | 2003 03 22 | 608 | 1.2+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.4+ | 1.1+ | 2005 07 27 | E12 | 0.4− | 0.6− | 2006 11 22 | 704 | 1.0− | 1.6+ | 2003 03 22 | 608 | 0.9+ | 1.2+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 27 | 703 | 1.6+ | 0.4− |
| 2001 12 18 | 644 | 0.3+ | 0.2− | 2005 07 27 | E12 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.7− | 0.8+ | 2003 03 22 | 608 | 0.1+ | 1.4+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.7+ | 0.1− |
| 2001 12 18 | 644 | 0.4+ | 0.0 | 2005 07 27 | E12 | 0.6+ | 0.3+ | 2006 11 22 | 703 | 0.3− | 0.9− | 2003 03 27 | 704 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 27 | 703 | 0.7− | 0.2− |
| 2001 12 18 | 644 | 0.3+ | 0.2− | 2005 08 10 | E12 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.6+ | 0.7− | 2003 03 27 | 704 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.0 | 0.2− |
| 2001 12 22 | 704 | 0.3− | 0.6− | 2005 08 10 | E12 | 0.4− | 0.4+ | 2006 11 22 | 703 | 0.0 | 1.0− | 2003 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.3− |
| 2001 12 22 | 704 | 0.0 | 0.2+ | 2005 08 10 | E12 | 0.5− | 0.3+ | 2006 11 22 | 703 | 0.7− | 0.5− | 2003 03 27 | 704 | 0.2+ | 1.4+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2001 12 22 | 704 | 0.2− | 0.0 | 2005 08 10 | E12 | 0.1− | 0.4+ | | | | | 2003 03 31 | 704 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2001 12 22 | 704 | 0.5− | 0.0 | 2006 10 20 | 703 | 0.1− | 0.5+ | | | | | 2003 03 31 | 704 | 0.6+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.6− |
| | | | | | | | | | | | | 2003 03 31 | 704 | 0.0 | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.8− | 0.2+ |
| | | | | | | | | | | | | 2003 03 31 | 704 | 0.9+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | | | |

**(141319)∗ 2001 YC$_{128}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.58356 | | (2000.0) | | −0.91514681 | −0.37864939 |
| $n$ | 0.18135526 | $\omega$ | 107.65679 | | +0.26672062 | −0.82601216 |
| $a$ | 3.0911205 | $\Omega$ | 50.32822 | | +0.30226881 | −0.41752670 |
| $e$ | 0.0984080 | $i$ | 10.35207 | | | |
| $P$ | 5.43 | $H$ | 14.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 24 | 691 | 0.6− | 0.6− | 2003 03 31 | 704 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2003 02 28 | 704 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 1992 02 24 | 691 | 0.5− | 1.7− | 2003 03 31 | 704 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2003 02 28 | 704 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 1992 02 24 | 691 | 1.2− | 1.2− | 2003 03 31 | 704 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2003 03 03 | 704 | (0.4+ | 1.6+) | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.0 | 0.9− |
| 1998 04 21 | 704 | 1.0+ | 2.0+ | 2003 03 31 | 704 | 0.1− | 0.9+ | 2006 11 08 | 644 | 0.8− | 0.0 | 2003 03 03 | 704 | 0.3− | 1.2+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 1998 04 21 | 704 | (2.1+ | 0.5+) | 2003 03 31 | 704 | 0.4− | 0.1− | 2006 11 08 | 644 | 0.5+ | 0.5− | 2003 03 03 | 704 | (0.3− | 2.3+) | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 1998 04 21 | 704 | 0.3− | 1.0+ | 2003 03 31 | 704 | 0.6+ | 1.0+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2003 03 03 | 704 | 1.1+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 1.6+ | 0.5+ | 2003 04 02 | 608 | 1.3+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2003 03 03 | 704 | (0.9− | 1.6+) | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 1998 04 21 | 704 | 1.4− | 0.1+ | 2003 04 02 | 608 | 1.2+ | 0.9− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2003 03 03 | 704 | 0.3+ | 1.4+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2000 09 23 | 699 | 0.5− | 1.4+ | 2003 04 02 | 608 | 1.4+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.0 | 2003 03 03 | 704 | 0.7− | 0.9+ | 2006 10 18 | 691 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2000 09 23 | 699 | 0.5− | 1.1+ | 2003 04 03 | 704 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1− | 2003 03 03 | 704 | (0.3− | 1.6+) | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2000 09 23 | 699 | 0.8+ | 0.2− | 2003 04 03 | 704 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2003 03 14 | 608 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2000 09 23 | 699 | 0.7− | 0.3+ | 2003 04 03 | 704 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2003 03 14 | 608 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | 0.7+ | 0.0 | 2003 04 05 | 699 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | 2003 03 14 | 608 | 1.0+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2001 11 24 | 704 | 0.8+ | 0.1+ | 2003 04 05 | 699 | 0.8+ | 1.2+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2003 03 22 | 608 | 1.2+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2001 11 24 | 704 | 0.4+ | 0.2− | 2003 04 05 | 699 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.0 | 2003 03 22 | 608 | 0.9+ | 1.2+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 27 | 703 | 1.6+ | 0.4− |
| 2001 11 24 | 704 | 0.3+ | 0.8+ | 2003 04 05 | 699 | 0.1+ | 0.5+ | 2006 11 10 | 644 | 0.5− | 0.3− | 2003 03 22 | 608 | 0.1+ | 1.4+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.7+ | 0.1− |
| 2001 12 09 | 704 | 0.2+ | 0.1+ | 2003 04 25 | 704 | 0.5+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.2+ | 2003 03 27 | 704 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 27 | 703 | 0.7− | 0.2− |
| 2001 12 09 | 704 | 0.4+ | 0.3+ | 2003 04 25 | 704 | 0.3+ | 1.3+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2003 03 27 | 704 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.0 | 0.2− |
| 2001 12 09 | 704 | 0.2− | 0.2+ | 2003 04 25 | 704 | 0.2− | 0.8+ | 2006 11 10 | 644 | 0.3− | 0.2+ | 2003 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.3− |
| 2001 12 09 | 704 | 0.6+ | 0.4+ | 2003 04 25 | 704 | 0.4+ | 0.1+ | 2006 11 10 | 644 | 0.5− | 0.5+ | 2003 03 27 | 704 | 0.2+ | 1.4+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2001 12 09 | 704 | 0.1+ | 0.5+ | 2003 04 25 | 704 | 0.5− | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.5+ | 2003 03 31 | 704 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2001 12 17 | 704 | (2.2+ | 1.1−) | 2003 04 29 | 608 | 0.2+ | 0.7− | 2006 11 10 | 644 | 0.1− | 0.3+ | 2003 03 31 | 704 | 0.6+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.6− |
| 2001 12 17 | 704 | (2.1+ | 0.5−) | 2003 04 29 | 608 | 0.5+ | 0.5− | 2006 11 10 | 644 | 0.2− | 0.0 | 2003 03 31 | 704 | 0.0 | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.8− | 0.2+ |
| 2001 12 17 | 704 | (1.9+ | 0.3−) | 2003 04 29 | 608 | 0.1+ | 0.5− | 2006 11 10 | 644 | 0.4− | 0.3+ | 2003 03 31 | 704 | 0.9+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | | | |
| 2001 12 22 | 704 | 0.1+ | 0.4− | 2005 08 28 | E12 | 0.2+ | 0.8− | 2006 11 10 | 644 | 0.3− | 0.2+ | | | | | | | | | | | | |
| 2001 12 22 | 704 | 0.7+ | 0.3+ | 2005 08 28 | E12 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 1.0− | | | | | | | | | | | | |
| 2001 12 22 | 704 | 0.2+ | 0.5+ | 2005 08 28 | E12 | 0.1− | 1.3+ | 2006 11 11 | 703 | 0.6− | 0.3+ | | | | | | | | | | | | |
| 2001 12 22 | 704 | 0.1− | 0.1+ | 2005 08 28 | E12 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.8− | | | | | | | | | | | | |
| 2001 12 22 | 704 | 0.5+ | 0.3+ | 2005 09 01 | 644 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.2− | | | | | | | | | | | | |
| 2002 12 11 | 645 | 0.1− | 0.2− | 2005 09 01 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.5+ | | | | | | | | | | | | |
| 2002 12 11 | 645 | 0.1− | 0.2+ | 2005 09 01 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.2− | 1.2+ | | | | | | | | | | | | |
| 2003 02 28 | 704 | 0.5+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | (1.7+ | 0.2−) | | | | | | | | | | | | |
| 2003 02 28 | 704 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.4+ | | | | | | | | | | | | |

**(141320)∗ 2001 YA$_{129}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.84509 | | (2000.0) | | +0.59281330 | −0.77769154 |
| $n$ | 0.18406241 | $\omega$ | 337.32101 | | +0.76804027 | +0.46780441 |
| $a$ | 3.0607367 | $\Omega$ | 75.69261 | | +0.24225303 | +0.41994630 |
| $e$ | 0.1442194 | $i$ | 12.46864 | | | |
| $P$ | 5.35 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 13 | 691 | 0.3+ | 0.4+ | 2006 09 17 | 683 | 0.1− | 1.2− | 2006 11 18 | 704 | 0.0 | 0.4+ | 2006 09 17 | 683 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 1993 06 13 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 683 | 0.7+ | 1.2− | 2006 11 18 | 704 | 0.9− | 0.1− | 2006 09 17 | 683 | 0.7+ | 1.2− | 2006 11 18 | 704 | 0.9− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.8+ | 2006 09 17 | 683 | 0.9+ | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 683 | 0.9+ | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 0.9− | 1.3+ | 2006 09 18 | 703 | 0.8− | 1.0− | 2006 11 20 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.8− | 1.0− | 2006 11 20 | 704 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | 0.4+ | 1.1− | 2006 11 20 | 704 | 1.1− | 0.3− | 2006 09 18 | 703 | 0.4+ | 1.1− | 2006 11 20 | 704 | 1.1− | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 12 18 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.9+ | 2006 11 20 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.4− | 0.9+ | 2006 11 20 | 704 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 12 18 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.8− | 0.5− | 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.8− | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2001 12 18 | 644 | 0.1− | 0.3+ | 2006 10 30 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.3− | 0.3− | 2006 10 30 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2001 12 22 | 704 | 0.6− | 0.2− | 2006 10 30 | 703 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 12 22 | 704 | 0.5+ | 0.8− | 2006 10 30 | 703 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2001 12 22 | 704 | 1.1− | 0.4− | 2006 10 30 | 703 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.2+ | 2006 10 30 | 703 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 12 22 | 704 | 0.6+ | 0.8− | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 25 | 704 | 0.1+ | 2.4+ | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 25 | 704 | 0.1+ | 2.4+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2002 01 08 | 704 | 1.2+ | 0.5− | 2006 11 10 | 644 | 0.0 | 0.4− | 2006 11 25 | 704 | 0.6+ | 1.6+ | 2006 11 10 | 644 | 0.0 | 0.4− | 2006 11 25 | 704 | 0.6+ | 1.6+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2002 01 08 | 704 | 1.2− | 0.1+ | 2006 11 10 | 644 | 0.4− | 0.2− | 2006 11 25 | 704 | (3.5+ | 0.4−) | 2006 11 10 | 644 | 0.4− | 0.2− | 2006 11 25 | 704 | (3.5+ | 0.4−) | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2002 01 08 | 704 | 0.9+ | 0.0 | 2006 11 13 | 703 | 0.6+ | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2002 01 08 | 704 | 1.1+ | 0.5− | 2006 11 13 | 703 | 0.5− | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.5− | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.6− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.6− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2002 01 15 | 704 | 0.3− | 0.4+ | 2006 11 14 | 704 | (1.1+ | 2.0+) | 2006 11 27 | 291 | 0.1− | 0.1+ | 2006 11 14 | 704 | (1.1+ | 2.0+) | 2006 11 27 | 291 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2002 01 15 | 704 | 0.2+ | 0.1− | 2006 11 14 | 704 | 1.4+ | 1.2+ | 2006 11 27 | 291 | 0.0 | 0.1+ | 2006 11 14 | 704 | 1.4+ | 1.2+ | 2006 11 27 | 291 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2002 01 15 | 704 | 0.4− | 0.7− | 2006 11 14 | 704 | (0.2− | 1.6+) | 2006 11 27 | 291 | 0.0 | 0.1+ | 2006 11 14 | 704 | (0.2− | 1.6+) | 2006 11 27 | 291 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2002 01 15 | 704 | 1.2+ | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2002 01 15 | 704 | 0.4− | 0.9− | 2006 11 16 | 691 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.8+ | 2006 11 16 | 691 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.8+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2002 12 11 | 645 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.7+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.4− | 0.0 | 2006 12 01 | 691 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.0 | 2006 12 01 | 691 | 0.5− | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 04 06 | 699 | 0.4+ | 1.1+ | 2006 11 17 | 704 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.4− | 0.1− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 04 06 | 699 | 0.4− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.8+ | 2006 12 01 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.8+ | 2006 12 01 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 04 06 | 699 | 0.1− | 0.8− | 2006 11 18 | 704 | 0.5− | 0.3− | | | | | 2006 11 18 | 704 | 0.5− | 0.3− | | | | | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 04 06 | 699 | 1.2+ | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.2+ | | | | | 2006 11 18 | 704 | 0.4− | 0.2+ | | | | | 2006 11 27 | 691 | 0.2− | 0.1+ |

**(141321)∗ 2001 $YL_{130}$ = 2000 $SK_{371}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. B. G. Marsden (*MPO* 23356)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 292.74016 | | (2000.0) | | | |
| $n$ | 0.17222929 | $\omega$ | 111.79390 | | −0.35597576 | −0.93449406 |
| $a$ | 3.1993718 | $\Omega$ | 359.05573 | | +0.82161266 | −0.31223614 |
| $e$ | 0.1451725 | $i$ | 5.04644 | | +0.44523464 | −0.17096618 |
| $P$ | 5.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 691 | 0.2+ | 0.6+ | 2002 01 16 | 046 | 0.9− | 0.2− | 2003 05 06 | 691 | 0.4+ | 1.0+ |
| 2000 09 21 | 691 | 1.0− | 0.7+ | 2002 01 16 | 046 | 0.1+ | 0.1− | 2003 05 06 | 691 | 0.6+ | 0.9+ |
| 2000 09 21 | 691 | 0.2− | 0.3+ | 2002 01 16 | 046 | 0.4− | 0.0 | 2003 05 06 | 691 | 0.5+ | 1.2+ |
| 2000 10 01 | 704 | 0.4+ | 0.7+ | 2002 01 16 | 046 | 0.8− | 0.8+ | 2006 10 21 | 691 | 0.3− | 0.4+ |
| 2000 10 01 | 704 | 0.3− | 0.5+ | 2002 01 16 | 046 | 0.6− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.4+ |
| 2000 10 01 | 704 | 0.2− | 1.0+ | 2002 01 16 | 046 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.5− | 0.4+ |
| 2001 12 17 | 704 | 0.4+ | 0.5+ | 2002 01 16 | 046 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.4− | 0.2+ |
| 2001 12 17 | 704 | 1.2+ | 0.0 | 2002 01 16 | 046 | 1.3− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 0.6− | 0.7+ | 2002 01 16 | 046 | 0.7+ | 0.7− | 2006 11 15 | 691 | 0.4− | 0.1+ |
| 2001 12 19 | 644 | 0.2− | 0.5+ | 2002 01 16 | 046 | 1.3+ | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.9+ |
| 2001 12 19 | 644 | 0.2+ | 0.7+ | 2002 01 16 | 046 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2001 12 19 | 644 | 0.1+ | 0.3+ | 2002 01 16 | 046 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2001 12 22 | 704 | 0.0 | 0.2− | 2002 01 16 | 046 | 0.7+ | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2001 12 22 | 704 | (1.6+ | 0.6−) | 2003 04 05 | 691 | 0.1+ | 0.8+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2001 12 22 | 704 | 1.0− | 0.4− | 2003 04 05 | 691 | 0.6+ | 0.9+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2001 12 22 | 704 | 0.3− | 0.6− | 2003 04 05 | 691 | 0.6+ | 0.7+ | | | | |

**(141322)∗ 2001 $YN_{130}$ = 1995 $YZ_6$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 23357)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 298.16965 | | (2000.0) | | | |
| $n$ | 0.18041081 | $\omega$ | 46.03444 | | −0.50747114 | −0.84373949 |
| $a$ | 3.1018992 | $\Omega$ | 75.22713 | | +0.72971902 | −0.52873962 |
| $e$ | 0.0558969 | $i$ | 10.41868 | | +0.45823923 | −0.09240170 |
| $P$ | 5.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.2− | 0.3+ | 2001 12 22 | 704 | (0.4+ | 1.9−) | 2003 05 02 | 704 | 0.3+ | 0.5− |
| 1995 12 16 | 691 | 0.2− | 0.2+ | 2002 01 08 | 704 | 0.5− | 0.2+ | 2003 05 02 | 691 | 0.0 | 0.8+ |
| 1995 12 16 | 691 | 0.7− | 0.3+ | 2002 01 08 | 704 | 0.3− | 1.1− | 2005 08 31 | 644 | 0.3− | 0.2+ |
| 1995 12 22 | 691 | 0.4− | 0.2+ | 2002 01 08 | 704 | 0.8− | 0.6− | 2005 08 31 | 644 | 0.4− | 0.8+ |
| 1995 12 22 | 691 | 0.0 | 0.2− | 2002 01 08 | 704 | (1.8− | 1.5−) | 2005 08 31 | 644 | 0.4− | 0.5+ |
| 1995 12 22 | 691 | 0.1+ | 0.0 | 2002 02 08 | 644 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 1995 12 28 | 691 | 0.0 | 0.3+ | 2002 02 08 | 644 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 1995 12 28 | 691 | 0.3+ | 0.4+ | 2002 02 08 | 644 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.6− | 0.0 |
| 1995 12 28 | 691 | 0.0 | 0.2+ | 2002 02 08 | 704 | 0.3− | 1.1− | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 1996 01 12 | 691 | 0.1+ | 0.1+ | 2002 02 08 | 704 | 0.4+ | 0.8− | 2006 11 12 | G96 | 0.1− | 0.1+ |
| 1996 01 12 | 691 | 0.1+ | 0.1+ | 2002 02 08 | 704 | 0.5− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 1996 01 12 | 691 | 0.1+ | 0.1+ | 2003 04 09 | 704 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.5− | 0.0 |
| 2001 12 17 | 704 | (0.2+ | 1.8+) | 2003 04 09 | 704 | 0.2+ | 0.5− | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.4+ | 1.0+ | 2003 04 09 | 704 | 1.2+ | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 0.3+ | 2003 04 09 | 704 | 0.5+ | 0.8− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 0.1+ | 0.7+ | 2003 04 10 | 704 | 0.3− | 1.3+ | 2006 11 24 | 691 | 0.2− | 0.3+ |
| 2001 12 17 | 704 | 0.0 | 0.0 | 2003 04 10 | 704 | 0.7− | 1.0+ | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2003 04 10 | 704 | 1.3+ | 1.4+ | 2006 11 29 | 704 | 0.0 | 1.3+ |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2003 04 10 | 704 | (2.1+ | 0.5+) | 2006 11 29 | 704 | 0.5+ | 0.5+ |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2003 05 02 | 691 | 0.1+ | 0.8+ | 2006 11 29 | 704 | 0.9+ | 0.6+ |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2003 05 02 | 704 | 1.1+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 1.4+ |
| 2001 12 22 | 704 | (1.8+ | 1.0−) | 2003 05 02 | 691 | 0.2+ | 0.5+ | | | | |
| 2001 12 22 | 704 | 0.1− | 0.5− | 2003 05 02 | 704 | 0.5+ | 0.4− | | | | |

**(141323)∗ 2001 $YZ_{131}$ = 2000 $SQ_{26}$**

Discovered 2001 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23357)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.65870 | | (2000.0) | | | |
| $n$ | 0.17809494 | $\omega$ | 54.35074 | | +0.99251796 | +0.02351415 |
| $a$ | 3.1287318 | $\Omega$ | 304.01110 | | −0.07732766 | +0.88045712 |
| $e$ | 0.0662734 | $i$ | 8.31062 | | +0.09449096 | +0.47354234 |
| $P$ | 5.53 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.8− | 1.5+ | 2001 12 19 | 704 | 1.1− | 0.8+ | 2006 09 16 | 703 | 0.1− | 0.3− |
| 2000 09 03 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 699 | 0.7− | 0.4+ |
| 2000 09 03 | 704 | 0.3− | 0.3− | 2001 12 19 | 704 | 1.0− | 0.7+ | 2006 09 20 | 699 | 0.5− | 0.6+ |
| 2000 09 03 | 704 | 0.6+ | 0.1− | 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.3+ |
| 2000 09 03 | 704 | 0.3− | 1.2+ | 2001 12 22 | 704 | 1.0+ | 1.3− | 2006 09 20 | 699 | 0.4+ | 0.1− |
| 2000 09 23 | 704 | 0.2+ | 0.1− | 2001 12 22 | 704 | 0.5+ | 1.1− | 2006 09 28 | 703 | 0.2+ | 0.2− |
| 2000 09 23 | 704 | 0.5− | 0.2− | 2001 12 22 | 704 | (1.3+ | 2.0−) | 2006 09 28 | 703 | 0.9− | 0.5− |
| 2000 09 23 | 704 | 0.3− | 0.3+ | 2001 12 22 | 704 | (2.1+ | 2.0−) | 2006 09 28 | 703 | 0.0 | 0.1− |
| 2000 09 25 | 704 | 0.1+ | 1.1+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.0 | 0.8+ |
| 2000 09 25 | 704 | 0.1− | 0.3− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2000 09 25 | 704 | 1.5− | 1.1+ | 2003 02 22 | 644 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2000 09 25 | 704 | 0.4− | 1.1+ | 2003 02 22 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2001 11 11 | 704 | 0.4+ | 0.1− | 2003 02 22 | 644 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 11 11 | 704 | 1.5+ | 0.7+ | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2001 11 11 | 704 | 0.3− | 1.3− | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.4+ |
| 2001 11 11 | 704 | 0.3+ | 0.7− | 2004 04 16 | E12 | (2.3+ | 0.7+) | 2006 10 17 | 703 | 0.7− | 0.1− |
| 2001 11 24 | 704 | 0.9+ | 1.0+ | 2004 04 16 | E12 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 1.1− | 0.0 |
| 2001 11 24 | 704 | 0.1− | 0.9+ | 2004 04 16 | E12 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2001 11 24 | 704 | 1.4− | 1.2+ | 2004 04 16 | E12 | 1.1+ | 1.3+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2001 11 24 | 704 | (0.5+ | 1.6+) | 2006 08 06 | 699 | (2.0+ | 0.3−) | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 12 09 | 704 | 0.3− | 0.5− | 2006 08 06 | 699 | (0.4− | 2.1+) | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 12 09 | 704 | 0.2+ | 0.5− | 2006 08 06 | 699 | (3.2+ | 0.3+) | 2006 10 22 | 644 | 0.2+ | 0.4− |
| 2001 12 09 | 704 | 0.2− | 1.3− | 2006 08 06 | 699 | 0.6+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.5− |
| 2001 12 09 | 704 | (0.4+ | 1.6−) | 2006 09 16 | G92 | (2.2+ | 0.3−) | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 09 16 | G92 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 09 16 | G92 | 0.5+ | 0.4− | 2006 10 31 | 703 | 0.7− | 0.4+ |
| 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.4− | 0.5+ | 2006 10 31 | 703 | 0.3+ | 0.2− |
| 2001 12 19 | 704 | 0.4− | 0.1− | 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 31 | 703 | 0.8+ | 1.0− |
| 2001 12 19 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.3+ | 0.6− | 2006 10 31 | 703 | 1.4+ | 0.7− |

**(141324)∗ 2001 $YV_{133}$**

Discovered 2001 Dec. 20 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.63498 | | (2000.0) | | | |
| $n$ | 0.16007175 | $\omega$ | 2.19912 | | +0.60363682 | −0.79505888 |
| $a$ | 3.3593836 | $\Omega$ | 50.67632 | | +0.73029828 | +0.52162716 |
| $e$ | 0.0375723 | $i$ | 4.38857 | | +0.31982341 | +0.30949392 |
| $P$ | 6.16 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 691 | 0.4− | 0.3+ | 2005 07 04 | 644 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2000 11 29 | 691 | 0.6− | 0.6+ | 2005 07 04 | 644 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2000 11 29 | 691 | 0.3− | 0.7+ | 2005 07 04 | 644 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 12 20 | 691 | 0.2+ | 0.1+ | 2005 09 01 | 644 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2001 12 20 | 691 | 0.3+ | 0.1+ | 2005 09 01 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.3− |
| 2001 12 20 | 691 | 0.4+ | 0.1− | 2005 09 01 | 644 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.7− |
| 2001 12 23 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.2+ |
| 2001 12 23 | 691 | 0.4− | 0.3− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.6− | 1.0− |
| 2001 12 23 | 691 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 12 24 | 291 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 12 24 | 291 | 0.1− | 0.4− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 12 24 | 291 | 0.5+ | 0.0 | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2002 02 07 | 291 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.8− | 2006 11 14 | G96 | 0.3− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 291 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.7− |
| 2002 02 07 | 291 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.6− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2003 03 26 | 691 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.8+ | 2006 11 17 | 703 | (1.8− | 0.3−) |
| 2003 03 26 | 691 | 0.2+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2003 03 26 | 691 | 0.1− | 0.8+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3− | 0.8− |
| 2003 04 01 | 649 | 0.0 | 0.7+ | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.3− | 1.5− |
| 2003 04 01 | 649 | 0.0 | 0.9+ | 2006 10 15 | 691 | 0.0 | 0.5+ | 2006 11 27 | 703 | 1.1− | 0.3− |
| 2003 04 01 | 649 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.1− | 0.1− |
| 2004 06 14 | 704 | (2.0+ | 1.1+) | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.1− | 0.7+ |
| 2004 06 14 | 704 | (1.7+ | 0.3+) | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 1.0+ | 1.6+ |
| 2004 06 14 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | | | |

**(141325)∗ 2001 YK$_{134}$ = 2003 EY$_{47}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47113)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.84694 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17393427 | $\omega$ | 323.74050 | | −0.55976244 | +0.80362894 | |
| $a$ | 3.1784297 | $\Omega$ | 271.37170 | | −0.70475677 | −0.58998204 | |
| $e$ | 0.0469369 | $i$ | 11.66349 | | −0.43587144 | −0.07811353 | |
| $P$ | 5.67 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.2− | 0.2+ | 2003 03 11 | 704 | 0.2+ | 0.5− | 2006 10 19 | 703 | (0.3+ | 2.2−) |
| 2000 09 28 | 704 | 0.3+ | 0.1+ | 2004 07 16 | E12 | 0.7− | 0.5+ | 2006 10 27 | 703 | 0.7+ | 0.4+ |
| 2000 09 28 | 704 | 1.4+ | 0.0 | 2004 07 16 | E12 | 0.3+ | 0.9+ | 2006 10 27 | 703 | 0.4+ | 1.1+ |
| 2000 09 28 | 704 | 0.1− | 0.0 | 2004 07 16 | E12 | 1.0− | 0.1+ | 2006 10 27 | 703 | 1.0+ | 1.0− |
| 2001 11 15 | 691 | 0.7− | 0.1− | 2004 07 16 | E12 | (1.9− | 0.7+) | 2006 10 27 | 703 | 0.1− | 0.5− |
| 2001 11 15 | 691 | 0.4− | 0.0 | 2005 08 05 | 644 | 0.2− | 0.3+ | 2006 11 02 | G96 | 0.2+ | 0.4− |
| 2001 11 15 | 691 | 0.6− | 0.1− | 2005 08 05 | 644 | 0.3− | 0.1+ | 2006 11 02 | G96 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.1− | 2005 08 05 | 644 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.3+ | 0.2− |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2005 09 09 | 704 | 0.8+ | 0.6+ | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2005 09 09 | 704 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 2001 12 17 | 704 | 0.5+ | 0.1+ | 2005 09 09 | 704 | 0.3− | 0.5− | 2006 11 09 | 644 | 0.6+ | 0.1+ |
| 2001 12 23 | 704 | 0.7+ | 0.6+ | 2005 09 09 | 704 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 12 23 | 704 | 0.2+ | 0.6− | 2005 09 09 | 704 | 0.3+ | 0.4− | 2006 11 15 | 703 | 0.4+ | 0.7+ |
| 2001 12 23 | 704 | 0.5+ | 0.0 | 2005 09 22 | 185 | 1.3+ | 0.2+ | 2006 11 15 | 703 | 1.4+ | 0.5+ |
| 2002 01 15 | 704 | 0.2− | 0.4− | 2005 09 22 | 185 | 0.5− | 0.4− | 2006 11 15 | 703 | 0.5− | 0.7− |
| 2002 01 15 | 704 | 0.4− | 0.3+ | 2005 09 25 | A50 | 0.1+ | 0.3− | 2006 11 15 | 703 | 0.6− | 0.8− |
| 2002 01 15 | 704 | 1.1+ | 0.5+ | 2005 09 25 | A50 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.6− | 1.4+ |
| 2002 01 15 | 704 | 0.7+ | 0.3+ | 2005 11 04 | G96 | 0.5− | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.6+ |
| 2003 03 09 | 699 | 0.3+ | 0.6+ | 2005 11 04 | G96 | 0.5− | 0.1+ | 2006 11 15 | 704 | 0.0 | 1.3+ |
| 2003 03 09 | 699 | 1.0+ | 0.4− | 2005 11 04 | G96 | 0.5− | 0.1+ | 2006 11 15 | 704 | 0.8− | 1.0+ |
| 2003 03 09 | 699 | 0.1+ | 0.6+ | 2005 11 04 | G96 | 0.5− | 0.1− | 2006 11 22 | 703 | 0.8− | 0.4− |
| 2003 03 09 | 699 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.5− | 0.5+ |
| 2003 03 11 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 1.0− | 0.1+ | 2006 11 22 | 703 | 1.3− | 0.1− |
| 2003 03 11 | 704 | 0.2+ | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.4+ | 0.8− |

**(141326)∗ 2001 YM$_{136}$**

Discovered 2001 Dec. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.85990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17811196 | $\omega$ | 71.66052 | | −0.46743450 | −0.85942157 | |
| $a$ | 3.1285324 | $\Omega$ | 48.03366 | | +0.66877125 | −0.49699912 | |
| $e$ | 0.0697091 | $i$ | 16.17446 | | +0.57814359 | −0.11994351 | |
| $P$ | 5.53 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 1.7− | 0.6− | 2001 12 23 | 704 | 0.5+ | 0.3− | 2005 08 13 | E12 | 1.0+ | 0.4+ |
| 1998 04 23 | 704 | 1.5− | 0.5− | 2001 12 23 | 704 | 1.0+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.6+ |
| 1998 04 23 | 704 | 1.6− | 0.3− | 2001 12 23 | 704 | 0.7+ | 0.0 | 2006 09 26 | 703 | 0.6− | 0.5+ |
| 1998 04 23 | 704 | 0.4+ | 0.2− | 2002 01 08 | 704 | 0.6− | 0.6− | 2006 09 26 | 703 | 1.2− | 1.4− |
| 2001 10 21 | 704 | 0.9+ | 0.1− | 2002 01 08 | 704 | 0.4− | 0.9− | 2006 09 26 | 703 | 0.7− | 0.7− |
| 2001 10 21 | 704 | 0.7+ | 0.0 | 2002 01 08 | 704 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.7+ | 0.7+ |
| 2001 10 21 | 704 | 0.6+ | 0.1− | 2003 01 26 | 704 | 0.1− | 0.6+ | 2006 09 29 | 699 | 0.7− | 0.1− |
| 2001 10 21 | 704 | 0.6+ | 0.7+ | 2003 01 26 | 704 | 0.3+ | 0.1+ | 2006 09 29 | 699 | (0.1− | 1.8+) |
| 2001 11 11 | 704 | 0.7+ | 0.2+ | 2003 01 26 | 704 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.1+ | 0.2+ |
| 2001 11 11 | 704 | 0.6+ | 0.8− | 2003 01 26 | 704 | 1.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 2001 11 11 | 704 | 0.2− | 0.6− | 2003 02 01 | 644 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2001 11 11 | 704 | 0.1+ | 1.0− | 2003 02 01 | 644 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.7+ |
| 2001 11 21 | 704 | (1.2− | 2.1+) | 2003 02 01 | 644 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2001 11 21 | 704 | 0.2− | 1.2+ | 2003 02 21 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.4+ | 0.5+ | 2003 02 21 | 644 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 1.3− |
| 2001 11 24 | 704 | 0.1+ | 0.9+ | 2003 02 21 | 644 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2001 11 24 | 704 | 0.0 | 0.5+ | 2003 03 09 | 644 | 0.5+ | 0.5+ | 2006 10 22 | 703 | (1.9− | 2.3−) |
| 2001 11 24 | 704 | 0.5+ | 0.4+ | 2003 03 09 | 644 | 0.4+ | 0.1− | 2006 10 22 | 703 | (0.4− | 2.7−) |
| 2001 11 24 | 704 | (0.5+ | 1.6+) | 2003 03 09 | 644 | 0.8+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2001 11 24 | 704 | 0.6− | 0.7+ | 2003 03 22 | 644 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2001 12 17 | 704 | 0.5− | 0.9− | 2003 03 22 | 644 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2001 12 17 | 704 | (0.7− | 1.7−) | 2003 03 22 | 644 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2001 12 17 | 704 | (0.5− | 1.7−) | 2003 04 07 | 644 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2001 12 17 | 704 | 0.3+ | 0.8− | 2003 04 07 | 644 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.8− |
| 2001 12 22 | 704 | 0.2− | 0.0 | 2003 04 07 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 703 | 0.8− | 2.1− |
| 2001 12 22 | 704 | 0.4− | 0.5− | 2005 08 06 | E12 | (1.7+ | 0.3+) | 2006 11 16 | 703 | 0.1− | 1.1+ |
| 2001 12 22 | 704 | 0.6− | 0.8+ | 2005 08 13 | E12 | 0.5+ | 0.5+ | 2006 11 16 | 703 | 0.4− | 0.8− |
| 2001 12 22 | 704 | 0.7− | 1.1− | 2005 08 13 | E12 | 0.7+ | 0.8+ | | | | |
| 2001 12 23 | 704 | 0.9+ | 0.2+ | 2005 08 13 | E12 | 0.0 | 0.9+ | | | | |

**(141327)∗ 2001 YB$_{137}$ = 2005 RH$_2$**

Discovered 2001 Dec. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85382)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.66084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22588695 | $\omega$ | 45.55730 | | +0.96560391 | +0.15802193 | |
| $a$ | 2.6701887 | $\Omega$ | 304.28374 | | −0.24450587 | +0.82201023 | |
| $e$ | 0.1911424 | $i$ | 14.47218 | | +0.08846452 | +0.54710900 | |
| $P$ | 4.36 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 07 | 691 | 0.0 | 0.1+ | 2005 09 15 | 704 | 1.2+ | 0.3− | 2005 12 04 | 703 | 0.0 | 0.2− |
| 1996 09 07 | 691 | 0.1− | 0.0 | 2005 09 15 | 704 | 0.3+ | 1.3+ | 2005 12 04 | 703 | 0.3+ | 0.6+ |
| 1996 09 07 | 691 | 0.3− | 0.2+ | 2005 09 29 | 703 | 0.0 | 0.4+ | 2005 12 07 | 699 | 0.2+ | 0.8− |
| 2001 12 09 | 704 | 0.1− | 0.7− | 2005 09 29 | 703 | 0.8− | 0.1− | 2005 12 07 | 699 | 0.6+ | 0.2− |
| 2001 12 09 | 704 | 0.1− | 0.1+ | 2005 09 29 | 703 | 0.2− | 0.3− | 2005 12 07 | 699 | 0.0 | 0.2− |
| 2001 12 09 | 704 | 0.3+ | 0.5− | 2005 09 29 | 703 | 0.1− | 0.1+ | 2005 12 07 | 699 | 0.8+ | 0.4+ |
| 2001 12 09 | 704 | 0.1− | 0.7− | 2005 10 03 | 644 | 0.4− | 0.2− | 2005 12 24 | 703 | 0.8− | 0.1− |
| 2001 12 09 | 704 | 0.7+ | 0.0 | 2005 10 03 | 644 | 0.3− | 0.1− | 2005 12 24 | 703 | 0.4+ | 1.5− |
| 2001 12 22 | 704 | 0.0 | 0.6+ | 2005 10 03 | 644 | 0.3− | 0.2− | 2005 12 24 | 703 | 1.5− | 0.8− |
| 2001 12 22 | 704 | 0.2+ | 0.1+ | 2005 10 11 | 699 | 0.3− | 0.5+ | 2005 12 24 | 703 | 1.2− | 0.8− |
| 2001 12 22 | 704 | 0.0 | 0.4+ | 2005 10 11 | 699 | 0.2− | 0.5+ | 2006 01 05 | 703 | 1.0− | 0.9+ |
| 2001 12 22 | 704 | 1.1+ | 0.1+ | 2005 10 11 | 699 | 0.2− | 0.0 | 2006 01 05 | 703 | 0.1+ | 0.7+ |
| 2001 12 22 | 704 | 0.1+ | 0.4+ | 2005 10 11 | 699 | 0.2− | 0.4+ | 2006 01 05 | 703 | 0.6− | 0.2+ |
| 2001 12 23 | 704 | 0.0 | 0.1+ | 2005 10 14 | 703 | 0.2+ | 0.2− | 2006 01 05 | 703 | 0.1+ | 1.4− |
| 2001 12 23 | 704 | 0.1− | 0.1− | 2005 10 14 | 703 | 0.5− | 0.1− | 2006 01 05 | 704 | 0.7− | 0.6+ |
| 2001 12 23 | 704 | 0.1+ | 0.2+ | 2005 10 14 | 703 | 0.1+ | 0.4− | 2006 01 05 | 704 | (0.1+ | 1.9+) |
| 2001 12 23 | 704 | 0.0 | 0.2− | 2005 10 14 | 703 | 0.6− | 0.1− | 2006 01 05 | 704 | 0.1− | 0.1− |
| 2001 12 23 | 704 | 0.4+ | 0.2− | 2005 10 15 | 699 | 0.8+ | 0.0 | 2006 01 05 | 704 | 0.2− | 0.4+ |
| 2002 01 07 | 704 | 0.3− | 0.2− | 2005 10 15 | 699 | 1.1+ | 0.8− | 2006 01 05 | 704 | 0.0 | 0.0 |
| 2002 01 07 | 704 | 0.0 | 0.3− | 2005 10 15 | 699 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.3+ | 0.3− |
| 2002 01 07 | 704 | 0.6− | 0.5+ | 2005 10 24 | 644 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.8+ | 0.4− |
| 2002 01 07 | 704 | (0.5− | 1.6+) | 2005 10 24 | 644 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.4+ | 0.1− |
| 2003 03 10 | 699 | 0.6+ | 0.8+ | 2005 10 24 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2003 03 10 | 699 | 1.0+ | 0.2− | 2005 10 25 | 703 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2003 03 10 | 699 | 0.1− | 1.4− | 2005 10 25 | 703 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.5− | 0.5− |
| 2003 03 10 | 699 | 0.4+ | 0.6+ | 2005 10 25 | 703 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.3− | 0.2+ |
| 2005 08 09 | 704 | 0.9+ | 0.5+ | 2005 10 25 | 703 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2005 08 09 | 704 | 1.1+ | 0.6+ | 2005 11 02 | 644 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2005 08 09 | 704 | 1.1+ | 0.9+ | 2005 11 02 | 644 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 09 | 704 | 0.2+ | 0.7+ | 2005 11 02 | 703 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.4− | 0.2+ | | |
| 2005 08 09 | 704 | 0.6+ | 0.3+ | 2005 11 02 | 703 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.0 | | |
| 2005 09 02 | 644 | 0.3− | 0.2+ | 2005 11 02 | 644 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2005 09 02 | 644 | 0.2− | 0.2+ | 2005 11 02 | 703 | 0.6+ | 0.5− | 2006 11 09 | 291 | 0.3− | 0.3+ | | |
| 2005 09 02 | 644 | 0.3− | 0.2+ | 2005 11 02 | 703 | 0.1+ | 0.6− | 2006 11 09 | 291 | 0.1− | 0.3+ | | |
| 2005 09 03 | 644 | 0.3− | 0.2+ | 2005 11 21 | 644 | 0.3− | 0.0 | 2006 11 09 | 291 | 0.0 | 0.3+ | | |
| 2005 09 03 | 644 | 0.2− | 0.1+ | 2005 11 21 | 703 | 0.0 | 1.0− | 2006 11 09 | 291 | 0.2− | 0.2+ | | |
| 2005 09 03 | 644 | 0.3− | 0.3+ | 2005 11 21 | 644 | 0.2− | 0.1+ | 2006 11 09 | 291 | 0.2− | 0.3+ | | |
| 2005 09 11 | 699 | 0.3+ | 0.3− | 2005 11 21 | 703 | 0.0 | 0.2− | 2006 11 09 | 291 | 0.0 | 0.1+ | | |
| 2005 09 11 | 699 | 0.2+ | 0.2+ | 2005 11 21 | 703 | 0.6− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2005 09 11 | 699 | 0.2+ | 0.1+ | 2005 11 21 | 703 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2005 09 15 | 704 | 1.2+ | 0.1+ | 2005 11 21 | 644 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2005 09 15 | 704 | 0.9+ | 0.6+ | 2005 12 04 | 703 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.5− | | |
| 2005 09 15 | 704 | 0.2+ | 0.6+ | 2005 12 04 | 703 | 0.4− | 0.1+ | | | | | | |

**(141328)∗ 2001 YB$_{138}$ = 2000 SY$_{197}$**

Discovered 2001 Dec. 20 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 23360)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.45942 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18322058 | $\omega$ | 120.67564 | | −0.49602962 | | −0.86829680 |
| $a$ | 3.0701049 | $\Omega$ | 359.03590 | | +0.69579253 | | −0.39478229 |
| $e$ | 0.0896178 | $i$ | 13.43394 | | +0.51944910 | | −0.30034581 |
| $P$ | 5.38 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.4− | 0.8+ | 2002 01 06 | 704 | 0.0 | 0.6+ | 2003 04 26 | 691 | 0.5+ | 0.4+ | | |
| 2000 09 24 | 704 | 0.1+ | 0.3+ | 2002 01 14 | 704 | 0.9− | 0.4− | 2003 04 26 | 691 | 0.2+ | 0.4+ | | |
| 2000 09 24 | 704 | 0.0 | 0.2− | 2002 01 14 | 704 | 0.5− | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.0 | | |
| 2000 09 24 | 704 | 0.5− | 0.2− | 2002 01 14 | 704 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 | | |
| 2000 10 01 | 704 | 1.2+ | 0.1− | 2002 01 14 | 704 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1+ | | |
| 2000 10 01 | 704 | 0.0 | 0.4+ | 2003 03 23 | 691 | 0.6− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.1+ | | |
| 2000 10 01 | 704 | 0.0 | 0.4− | 2003 03 23 | 691 | 0.4− | 0.4− | 2006 10 23 | 703 | 0.5− | 0.2+ | | |
| 2000 10 01 | 704 | 0.4− | 0.8− | 2003 03 23 | 691 | 0.7− | 0.2− | 2006 10 23 | 703 | 1.4+ | 1.2+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.2+ | 2003 03 26 | 691 | 0.6+ | 0.1+ | 2006 10 23 | 703 | 0.3− | 0.2+ | | |
| 2001 12 20 | 644 | 0.3+ | 0.0 | 2003 03 26 | 691 | 0.0 | 0.0 | 2006 10 23 | 703 | (2.0− | 1.1+) | | |
| 2001 12 20 | 644 | 0.0 | 0.2− | 2003 03 26 | 691 | 0.1+ | 0.0 | 2006 10 29 | 703 | 1.1+ | 0.5− | | |
| 2001 12 20 | 644 | 0.1− | 0.0 | 2003 03 27 | 644 | 0.4+ | 0.0 | 2006 10 29 | 703 | 0.1− | 0.3− | | |
| 2001 12 23 | 644 | 0.1− | 0.8+ | 2003 03 27 | 644 | 0.6+ | 0.4− | 2006 10 29 | 703 | 0.9+ | 0.5+ | | |
| 2001 12 23 | 644 | 0.4+ | 0.3− | 2003 03 27 | 644 | 0.4+ | 0.0 | 2006 10 29 | 703 | 0.6+ | 0.7− | | |
| 2001 12 23 | 644 | 0.6+ | 0.0 | 2003 03 31 | 704 | (0.6+ | 4.3−) | 2006 11 21 | 703 | 0.3− | 0.2− | | |
| 2002 01 06 | 704 | 0.1+ | 0.6− | 2003 03 31 | 704 | (0.4+ | 3.1−) | 2006 11 21 | 703 | 0.6− | 0.2+ | | |
| 2002 01 06 | 704 | 0.2+ | 0.2+ | 2003 03 31 | 704 | (0.2− | 3.7−) | 2006 11 21 | 703 | 0.6− | 0.7+ | | |
| 2002 01 06 | 704 | 0.1+ | 0.5− | 2003 03 31 | 704 | (0.9+ | 3.2−) | 2006 11 21 | 703 | 1.5− | 0.1+ | | |
| 2002 01 06 | 704 | 0.6+ | 0.9− | 2003 04 26 | 691 | 0.2+ | 0.4+ | | | | | | |

**(141329)∗ 2001 YR$_{144}$**

Discovered 2001 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.85820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17353021 | $\omega$ | 94.86920 | | −0.72490835 | | −0.68555854 |
| $a$ | 3.1833617 | $\Omega$ | 41.87391 | | +0.58535534 | | −0.66449721 |
| $e$ | 0.1246582 | $i$ | 5.77903 | | +0.36313498 | | −0.29741039 |
| $P$ | 5.68 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.1+ | 0.4+ | 2002 01 19 | 704 | (0.1− | 2.3−) | 2006 11 02 | 691 | 0.1− | 0.2+ | | |
| 2000 10 01 | 704 | 0.5− | 0.7+ | 2002 01 19 | 704 | 1.4+ | 1.0+ | 2006 11 02 | 691 | 0.2− | 0.0 | | |
| 2000 10 01 | 704 | 0.5− | 0.5− | 2002 02 14 | 644 | 0.6− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 2000 11 16 | 691 | 0.0 | 0.1+ | 2002 02 14 | 644 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2000 11 16 | 691 | 0.0 | 0.0 | 2002 02 14 | 644 | 0.7− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2000 11 16 | 691 | 0.0 | 0.1+ | 2003 04 28 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (2.4− | 1.0+) | | |
| 2001 12 17 | 704 | (0.1+ | 1.8−) | 2003 04 28 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.6+ | | |
| 2001 12 17 | 704 | (0.2− | 1.8−) | 2003 04 28 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.1+ | 0.5− | | |
| 2001 12 17 | 704 | (0.8− | 2.5−) | 2003 05 29 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 1.2− | | |
| 2001 12 18 | 644 | 0.7− | 1.1− | 2003 05 29 | 691 | 0.0 | 0.6+ | 2006 11 11 | G96 | 1.4+ | 0.1− | | |
| 2001 12 18 | 644 | 0.6− | 1.5− | 2003 05 29 | 691 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.6− | | |
| 2001 12 18 | 644 | 0.6− | 1.3− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2002 01 08 | 704 | 0.5− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.0 | | |
| 2002 01 08 | 704 | 0.3+ | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.0 | | |
| 2002 01 08 | 704 | 0.5− | 0.9− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.1+ | | |
| 2002 01 08 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2002 01 17 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 1.0+ | | |
| 2002 01 17 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.3− | 1.0+ | | |
| 2002 01 17 | 644 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2002 01 19 | 704 | 0.9+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.1− | 1.2+ | | |
| 2002 01 19 | 704 | 1.3+ | 1.0+ | 2006 11 02 | 691 | 0.2− | 0.0 | | | | | | |

**(141330)∗ 2001 YX$_{145}$**

Discovered 2001 Dec. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.63519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21498760 | $\omega$ | 222.24094 | | −0.87079374 | | −0.44948105 |
| $a$ | 2.7596909 | $\Omega$ | 290.02965 | | +0.48840420 | | −0.74438267 |
| $e$ | 0.1070798 | $i$ | 12.24169 | | +0.05638793 | | −0.49382306 |
| $P$ | 4.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 691 | 0.2− | 0.4− | 2001 12 18 | 699 | 0.0 | 0.4+ | 2003 04 08 | 599 | 0.7+ | 0.5+ | | |
| 1998 03 03 | 691 | 0.5− | 0.2− | 2001 12 18 | 699 | 1.0+ | 0.1− | 2005 09 10 | 699 | 0.1− | 0.1− | | |
| 1998 03 03 | 691 | 0.2− | 0.2− | 2001 12 22 | 704 | 0.6+ | 0.4− | 2005 09 10 | 699 | 0.3+ | 0.4+ | | |
| 2000 10 02 | 645 | 0.1+ | 0.0 | 2001 12 22 | 704 | 1.3+ | 1.5− | 2005 09 10 | 699 | 0.1− | 0.8+ | | |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2001 12 22 | 704 | 0.4+ | 0.3− | 2005 09 10 | 699 | 0.0 | 0.2− | | |
| 2001 10 25 | 704 | 0.1+ | 0.6− | 2001 12 22 | 704 | 0.3+ | 1.0− | 2005 10 06 | 703 | 0.3− | 0.7− | | |
| 2001 10 25 | 704 | 0.6− | 1.0− | 2001 12 22 | 704 | 0.5+ | 0.8− | 2005 10 06 | 703 | 0.9− | 0.6+ | | |
| 2001 10 25 | 704 | 0.1+ | 0.7− | 2003 03 09 | 699 | 0.1+ | 0.4+ | 2005 10 06 | 703 | 0.4− | 0.0 | | |
| 2001 11 11 | 704 | 0.9− | 0.9+ | 2003 03 09 | 699 | 0.3− | 0.1+ | 2005 10 06 | 703 | 1.0− | 0.4− | | |
| 2001 11 11 | 704 | 0.3− | 0.3+ | 2003 03 09 | 699 | 0.9+ | 0.1+ | 2005 10 28 | 703 | 0.2− | 0.7− | | |
| 2001 11 11 | 704 | 0.3− | 0.8+ | 2003 03 09 | 699 | 0.1− | 0.5+ | 2005 10 28 | 703 | 0.1+ | 1.4+ | | |
| 2001 11 11 | 704 | 0.5− | 1.1+ | 2003 03 11 | 704 | 0.7+ | 1.1− | 2005 10 28 | 703 | 0.9− | 0.8+ | | |
| 2001 11 11 | 704 | 0.1− | 1.0+ | 2003 03 11 | 704 | 0.4− | 0.2− | 2005 10 28 | 703 | 1.0− | 0.1− | | |
| 2001 12 09 | 704 | 0.0 | 0.4+ | 2003 03 11 | 704 | 1.3− | 0.6+ | 2006 11 17 | 644 | 0.2+ | 0.5+ | | |
| 2001 12 09 | 704 | 0.4+ | 0.5− | 2003 03 11 | 704 | 0.8+ | 0.8− | 2006 11 17 | 644 | 0.1+ | 0.4+ | | |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2003 04 07 | 704 | 0.5+ | 1.1+ | 2006 11 17 | 644 | 0.1− | 0.4+ | | |
| 2001 12 09 | 704 | 0.2+ | 0.6+ | 2003 04 07 | 704 | 0.5+ | 1.1+ | 2006 11 25 | G96 | 0.6+ | 0.2+ | | |
| 2001 12 09 | 704 | 0.1+ | 0.8+ | 2003 04 07 | 704 | 0.5+ | 1.2+ | 2006 11 25 | G96 | 0.1− | 0.0 | | |
| 2001 12 18 | 699 | 0.2− | 1.4+ | 2003 04 07 | 704 | 0.1+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.0 | | |
| 2001 12 18 | 699 | 0.4+ | 0.6+ | 2003 04 08 | 599 | 0.8+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.0 | | |

**(141331)∗ 2001 YF$_{146}$ = 1995 ST$_{77}$ = 2002 AC$_{203}$**

Discovered 2001 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 35139), G. V. Williams (*MPO* 33520)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.68797 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18609276 | $\omega$ | 343.49444 | | +0.71290372 | | −0.70013004 |
| $a$ | 3.0384335 | $\Omega$ | 61.01283 | | +0.64843131 | | +0.63650584 |
| $e$ | 0.0927540 | $i$ | 2.60964 | | +0.26703019 | | +0.32354018 |
| $P$ | 5.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.2+ | 0.0 | 2002 01 05 | 691 | 0.4− | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.3+ | | |
| 1995 09 25 | 691 | 0.1+ | 0.2− | 2002 01 05 | 691 | 0.5− | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.3+ | | |
| 1995 09 25 | 691 | 0.1− | 0.4+ | 2002 01 14 | 704 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.4+ | 0.4+ | | |
| 1995 09 30 | 691 | 0.2− | 0.1− | 2002 01 14 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.8+ | 1.3− | | |
| 1995 09 30 | 691 | 0.1− | 0.2+ | 2002 01 14 | 704 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.5− | | |
| 1995 09 30 | 691 | 0.3− | 0.0 | 2002 01 14 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | (1.5+ | 0.2−) | | |
| 1998 04 24 | 691 | 0.2+ | 1.1− | 2002 01 14 | 704 | 0.6− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 691 | 0.0 | 0.6− | 2003 03 07 | 615 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 1998 04 24 | 691 | 0.1− | 0.2− | 2003 03 07 | 615 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 12 18 | 704 | 0.9+ | 0.0 | 2003 03 07 | 615 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.7+ | 0.9+ | 2003 03 31 | 691 | 0.1− | 0.8+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2001 12 18 | 704 | 1.2+ | 0.2+ | 2003 03 31 | 691 | 0.0 | 0.8+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2001 12 18 | 704 | (2.0+ | 0.8−) | 2003 03 31 | 691 | 0.4+ | 0.8+ | 2006 11 17 | 703 | 0.5− | 0.6− |
| 2001 12 18 | 704 | 0.9+ | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.8+ | 0.0 | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2001 12 18 | 704 | 0.7+ | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.2− |
| 2001 12 18 | 704 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 2001 12 18 | 704 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2001 12 18 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 2001 12 18 | 704 | 0.5− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.6− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.1− |
| 2001 12 19 | 704 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.4− | 1.1+ |
| 2001 12 19 | 704 | 0.8+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 1.1+ | 0.7+ |
| 2001 12 19 | 704 | (1.7+ | 0.1−) | 2006 10 28 | 691 | 0.5+ | 0.4+ | 2006 11 29 | 704 | 0.4+ | 1.3+ |
| 2001 12 19 | 704 | (1.6+ | 0.4−) | 2006 10 28 | 691 | 0.6− | 0.3− | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2001 12 19 | 704 | 1.5+ | 0.3− | 2006 11 01 | 691 | 1.2− | 0.7− | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 1.2+ | 0.2− | 2006 11 01 | 691 | 0.4+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2002 01 05 | 691 | 0.7− | 0.4− | 2006 11 01 | 691 | 0.5+ | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.1− |

**(141332)∗ 2001 YB$_{153}$**

Discovered 2001 Dec. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.68964 | | (2000.0) | | | |
| $n$ | 0.17491359 | $\omega$ | 45.53526 | | +0.14421502 | −0.97442714 |
| $a$ | 3.1665549 | $\Omega$ | 37.20765 | | +0.80761280 | +0.01527597 |
| $e$ | 0.0961465 | $i$ | 16.55665 | | +0.57180731 | +0.22418384 |
| $P$ | 5.63 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 608 | 0.8− | 0.3− | 2003 04 09 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.9+ |
| 2000 09 21 | 608 | 0.4− | 0.1− | 2003 04 09 | 644 | 0.4+ | 1.1+ | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2000 09 21 | 608 | 0.6− | 0.5− | 2003 04 09 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 2000 10 02 | 704 | 0.0 | 0.4+ | 2003 04 09 | 691 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 1.0− | 0.2− |
| 2000 10 02 | 704 | 0.2− | 0.5+ | 2003 04 09 | 644 | 0.5+ | 1.0+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2000 10 02 | 704 | 0.3+ | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 10 02 | 704 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2000 10 02 | 704 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 12 19 | 699 | 0.5− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 699 | 0.6− | 0.4− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 12 19 | 699 | 0.4− | 0.5− | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2001 12 19 | 699 | 0.5+ | 0.4− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.3+ | 1.3+ |
| 2001 12 23 | 704 | 0.6+ | 0.8− | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 16 | 704 | (0.4+ | 2.0+) |
| 2001 12 23 | 704 | 0.1+ | 0.8− | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.2− | 1.2+ |
| 2001 12 23 | 704 | 0.5+ | 0.3− | 2006 10 13 | 691 | 0.1− | 0.5+ | 2006 11 16 | 704 | 1.3− | 0.4+ |
| 2001 12 23 | 704 | 0.8− | 1.0− | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.6− | 0.6+ |
| 2001 12 23 | 704 | 1.0− | 0.6− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 1.2− | 0.3+ |
| 2002 01 06 | 704 | 0.4− | 0.6− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.9+ |
| 2002 01 06 | 704 | (0.7− | 1.7−) | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.5− | 0.5− |
| 2002 01 06 | 704 | 0.8− | 1.3− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.9− | 1.4+ |
| 2002 01 06 | 704 | 0.6− | 1.4− | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2002 01 25 | 704 | 0.5+ | 1.4− | 2006 10 17 | 691 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.3− |
| 2002 01 25 | 704 | (0.8+ | 1.9−) | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2002 01 25 | 704 | 0.9+ | 0.7− | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.6− | 0.6+ |
| 2002 02 21 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 1.0+ | 0.3+ |
| 2002 02 21 | 704 | 0.4+ | 0.4+ | 2006 11 01 | G96 | 0.3− | 0.4− | 2006 11 22 | 704 | 1.2− | 0.8+ |
| 2002 02 21 | 704 | 0.7+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2003 03 12 | 291 | 0.3+ | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.8+ |
| 2003 03 12 | 291 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.8− |
| 2003 03 12 | 291 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 12 01 | 704 | 0.1+ | 0.5− |
| 2003 04 01 | 704 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.7+ | 0.2+ |
| 2003 04 01 | 704 | 0.6+ | 0.7+ | 2006 11 08 | 644 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.9− | 2.7− |
| 2003 04 01 | 704 | 0.8+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 12 01 | 704 | 0.6+ | 0.2+ |
| 2003 04 01 | 704 | 0.9+ | 0.5− | 2006 11 09 | 644 | 0.2− | 0.3+ | | | | |
| 2003 04 09 | 644 | 0.7+ | 1.4+ | 2006 11 09 | 644 | 0.2− | 0.2− | | | | |

**(141333)∗ 2001 YD$_{153}$ = 2003 FQ$_{54}$**

Discovered 2001 Dec. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 47117)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.81436 | | (2000.0) | | | |
| $n$ | 0.17591838 | $\omega$ | 95.86612 | | −0.73526871 | −0.64507214 |
| $a$ | 3.1544857 | $\Omega$ | 44.20565 | | +0.44103515 | −0.68838183 |
| $e$ | 0.1085147 | $i$ | 17.35634 | | +0.51465320 | −0.33168116 |
| $P$ | 5.60 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 699 | 0.5− | 0.1− | 2003 04 02 | 704 | 0.1− | 0.0 | 2003 05 25 | 291 | 0.2+ | 0.0 |
| 2001 12 19 | 699 | 0.3− | 0.7− | 2003 04 02 | 704 | 0.1− | 1.0− | 2005 09 02 | 644 | 1.0− | 0.9+ |
| 2001 12 19 | 699 | 1.0− | 0.3+ | 2003 04 02 | 704 | 0.9− | 1.0− | 2005 09 02 | 644 | 0.3− | 0.5+ |
| 2001 12 19 | 699 | 0.6− | 0.4− | 2003 04 04 | 691 | 0.1− | 0.0 | 2005 09 02 | 644 | 0.4− | 0.9+ |
| 2001 12 23 | 704 | 0.5+ | 0.4− | 2003 04 04 | 691 | 0.1+ | 0.5− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2001 12 23 | 704 | 1.1+ | 1.1+ | 2003 04 04 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.4− | 0.2− |
| 2001 12 23 | 704 | 0.1− | 0.3+ | 2003 04 08 | 704 | 0.6− | 0.6− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2001 12 23 | 704 | 0.1− | 0.7− | 2003 04 08 | 704 | (1.0+ | 1.9+) | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2001 12 23 | 704 | 0.2− | 0.7+ | 2003 04 08 | 704 | 0.3+ | 0.2− | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2002 01 06 | 704 | 0.1+ | 0.1+ | 2003 04 08 | 704 | 0.5+ | 1.4+ | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2002 01 06 | 704 | 0.0 | 0.4− | 2003 04 08 | 704 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.5− | 0.3− |
| 2002 01 06 | 704 | 0.1+ | 0.5− | 2003 04 08 | 608 | 0.5+ | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.1+ |
| 2002 01 06 | 704 | 0.0 | 0.1+ | 2003 04 08 | 608 | 0.7+ | 0.5− | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 2002 01 06 | 704 | 0.2− | 0.4− | 2003 04 08 | 608 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 01 25 | 704 | 0.1− | 0.4− | 2003 04 14 | 699 | 0.1+ | 0.9− | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 2002 01 25 | 704 | 0.3+ | 0.3− | 2003 04 14 | 699 | (0.6+ | 2.4−) | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2002 01 25 | 704 | 0.2+ | 0.0 | 2003 04 14 | 699 | 1.2− | 0.7− | 2006 11 13 | 691 | 0.3− | 0.5+ |
| 2002 01 25 | 704 | 0.4+ | 0.4− | 2003 04 14 | 699 | 0.4− | 1.3+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2002 01 25 | 704 | 0.5+ | 0.2+ | 2003 04 25 | 699 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2003 03 25 | 608 | 0.2− | 0.4+ | 2003 04 25 | 699 | 0.7− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2003 03 25 | 608 | 0.2− | 1.0+ | 2003 04 25 | 699 | 0.1+ | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2003 03 25 | 608 | 0.0 | 0.8+ | 2003 04 25 | 699 | 0.2+ | 0.3− | 2006 11 16 | 704 | (0.6+ | 1.6+) |
| 2003 03 27 | 644 | 0.7+ | 0.5− | 2003 04 27 | 704 | 0.1− | 1.4+ | 2006 11 16 | 704 | 0.4− | 1.1+ |
| 2003 03 27 | 644 | 0.3+ | 0.0 | 2003 04 27 | 704 | 0.1− | 0.5+ | 2006 11 16 | 704 | (0.5− | 1.8+) |
| 2003 03 27 | 644 | 0.2+ | 0.2− | 2003 04 27 | 704 | 0.0 | 0.8+ | 2006 11 19 | 704 | 0.6− | 0.3+ |
| 2003 03 29 | 699 | 0.1− | 0.3− | 2003 04 27 | 704 | 0.7− | 0.7+ | 2006 11 19 | 704 | 0.4− | 1.0+ |
| 2003 03 29 | 699 | 1.2+ | 0.4+ | 2003 04 30 | 608 | 1.1+ | 1.1+ | 2006 11 19 | 704 | 1.3− | 0.3+ |
| 2003 03 29 | 699 | 1.1+ | 0.3− | 2003 04 30 | 608 | 1.5+ | 0.9+ | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2003 03 29 | 699 | 0.9− | 0.2+ | 2003 04 30 | 608 | 1.0+ | 1.2+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2003 03 31 | 699 | 0.1+ | 0.4+ | 2003 05 01 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.6+ | 0.5+ |
| 2003 03 31 | 699 | 0.8+ | 0.1− | 2003 05 01 | 704 | (0.1+ | 1.6+) | 2006 11 22 | 704 | 0.6+ | 0.6− |
| 2003 03 31 | 699 | 0.4+ | 0.1+ | 2003 05 01 | 704 | 0.1− | 1.3+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2003 03 31 | 699 | 0.7− | 0.2− | 2003 05 01 | 704 | 0.6+ | 1.1+ | 2006 11 22 | 704 | 0.7+ | 0.3− |
| 2003 04 02 | 704 | 0.8+ | 0.8+ | 2003 05 25 | 291 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2003 04 02 | 704 | 0.1− | 0.2+ | 2003 05 25 | 291 | 0.1+ | 0.0 | | | | |

**(141334)∗ 2001 YP$_{154}$ = 1994 RV$_4$**

Discovered 2001 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33520)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 219.75692 | | (2000.0) | | | |
| $n$ | 0.17892600 | $\omega$ | 106.26533 | | −0.87831089 | +0.47474751 |
| $a$ | 3.1190362 | $\Omega$ | 102.10731 | | −0.45772312 | −0.80092952 |
| $e$ | 0.0991888 | $i$ | 3.30883 | | −0.13805627 | −0.36486534 |
| $P$ | 5.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 05 | 691 | 0.2+ | 0.2+ | 2003 03 10 | 291 | 0.0 | 0.5+ | 2003 05 02 | 691 | 0.2+ | 0.5+ |
| 1994 09 05 | 691 | 0.2− | 0.5+ | 2003 03 10 | 291 | 0.0 | 0.2+ | 2003 05 05 | 704 | 0.4− | 0.7+ |
| 1994 09 05 | 691 | 0.0 | 0.1− | 2003 03 10 | 291 | 0.2+ | 0.4+ | 2003 05 05 | 704 | 0.2+ | 0.1− |
| 1994 09 09 | 691 | 0.4+ | 0.0 | 2003 03 13 | 608 | 0.1+ | 0.2− | 2003 05 05 | 704 | 0.1+ | 0.2+ |
| 1994 09 09 | 691 | 0.1− | 0.4+ | 2003 03 13 | 608 | 0.0 | 0.1+ | 2003 05 05 | 704 | 0.3+ | 0.2− |
| 1994 09 09 | 691 | 0.8− | 0.2+ | 2003 03 13 | 608 | 0.2+ | 0.1− | 2003 05 05 | 704 | 0.3− | 0.5+ |
| 2001 12 19 | 704 | (1.9+ | 1.7+) | 2003 03 30 | 704 | (2.3+ | 0.3+) | 2005 10 09 | 691 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 0.9+ | 1.3+ | 2003 03 30 | 704 | 1.5+ | 0.1− | 2005 10 09 | 691 | 0.0 | 0.3+ |
| 2001 12 19 | 704 | (1.7+ | 0.7+) | 2003 03 30 | 704 | (0.7+ | 1.9−) | 2005 10 09 | 691 | 0.4− | 0.3+ |
| 2001 12 20 | 691 | 0.2− | 0.2− | 2003 04 07 | 691 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2001 12 20 | 691 | 0.1− | 0.1− | 2003 04 07 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 1.0+ | 0.3+ |
| 2001 12 20 | 691 | 0.0 | 0.3− | 2003 04 07 | 691 | 0.6+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2002 01 08 | 704 | 0.1− | 0.9+ | 2003 04 25 | 699 | 0.5− | 0.8+ | 2006 11 24 | G96 | 0.6+ | 0.1− |
| 2002 01 08 | 704 | 0.1+ | 1.0+ | 2003 04 25 | 699 | 0.1− | 1.2+ | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2002 01 08 | 704 | 1.0− | 0.7− | 2003 04 25 | 699 | 0.4− | 0.1+ | 2006 12 01 | 691 | 0.1+ | 0.6+ |
| 2002 01 14 | 691 | 0.1+ | 0.2− | 2003 04 25 | 699 | 0.6+ | 0.9− | 2006 12 01 | 691 | 0.4− | 0.5+ |
| 2002 01 14 | 691 | 0.0 | 0.3− | 2003 05 02 | 691 | 0.3− | 0.5+ | | | | |
| 2002 01 14 | 691 | 0.1− | 0.1− | 2003 05 02 | 691 | 0.2+ | 0.4+ | | | | |

## (141335)∗ 2001 $YP_{156}$

Discovered 2001 Dec. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.31432 | | (2000.0) | | +0.65000823 | −0.72468733 |
| $n$ | 0.18391389 | $\omega$ | 352.00865 | | +0.71141580 | +0.47447759 |
| $a$ | 3.0623844 | $\Omega$ | 57.11549 | | +0.26716447 | +0.49969920 |
| $e$ | 0.1014839 | $i$ | 15.80556 | | | |
| $P$ | 5.36 | $H$ | 14.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 28 | 691 | 0.1− | 0.0 | 2003 04 06 | 699 | 1.0− | 0.2− | 2006 11 15 | 703 | (3.9− | 2.5−) |
| 1995 11 28 | 691 | 0.1− | 0.0 | 2005 08 28 | E12 | 0.2− | 0.1− | 2006 11 15 | 703 | (1.0− | 3.2−) |
| 1995 11 28 | 691 | 0.2+ | 0.3− | 2005 08 28 | E12 | 0.9+ | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.7− |
| 2001 11 11 | 704 | 0.2− | 0.9− | 2005 08 28 | E12 | 0.2+ | 0.5− | 2006 11 15 | 703 | 0.7− | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 1.5− | 2005 08 28 | E12 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.2+ | 1.4+ |
| 2001 11 11 | 704 | 0.2+ | 0.6− | 2005 10 25 | E12 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2001 12 14 | 704 | 0.6− | 0.1− | 2005 10 25 | E12 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.4+ | 1.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2005 10 25 | E12 | (1.9+ | 1.7+) | 2006 11 16 | 704 | (1.6− | 0.1+) |
| 2001 12 14 | 704 | 0.5− | 0.1− | 2005 10 25 | E12 | 0.3− | 0.4− | 2006 11 16 | 704 | 1.2− | 1.2+ |
| 2001 12 14 | 704 | 0.6− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 18 | 691 | 0.4− | 0.0 |
| 2001 12 20 | 644 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 18 | 691 | 0.8− | 0.6+ |
| 2001 12 20 | 644 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 12 20 | 644 | 0.0 | 0.5− | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.7− | 0.8+ |
| 2001 12 22 | 704 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2001 12 22 | 704 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2001 12 22 | 704 | 1.4+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2001 12 22 | 704 | 0.6+ | 0.2− | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2001 12 22 | 704 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.7− | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2002 01 05 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2002 01 05 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.5+ | 0.6− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 01 05 | 644 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.7+ |
| 2002 01 14 | 644 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.3+ |
| 2002 01 14 | 644 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.6− | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2002 01 14 | 644 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.5− | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2002 01 25 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.6+ | 0.4− | 2006 11 22 | 704 | 0.9+ | 0.1+ |
| 2002 01 25 | 704 | 0.5+ | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.6+ | 0.5+ |
| 2002 01 25 | 704 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.2− | 0.2− | 2006 11 27 | 704 | 0.8+ | 0.6− |
| 2003 03 23 | 645 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.4+ | 2006 11 27 | 704 | 0.5+ | 0.2+ |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.0− | 0.1+ | 2006 11 27 | 704 | 1.3+ | 0.6+ |
| 2003 03 25 | 644 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 0.6− | 0.6− | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2003 03 25 | 644 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2− | 2006 11 28 | 704 | 1.9+ | 1.1+ |
| 2003 03 25 | 644 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.7+ | 0.6+ | 2006 11 28 | 704 | 0.5+ | 0.7+ |
| 2003 04 06 | 699 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.6− | 0.6+ |
| 2003 04 06 | 699 | 1.0− | 0.3+ | 2006 11 15 | 704 | 0.5− | 0.6+ | | | | |
| 2003 04 06 | 699 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.3− | 0.4− | | | | |

## (141336)∗ 2002 $AH_2$

Discovered 2002 Jan. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.63953 | | (2000.0) | | −0.20009757 | −0.95119754 |
| $n$ | 0.17858085 | $\omega$ | 71.75860 | | +0.65162971 | −0.30824682 |
| $a$ | 3.1230538 | $\Omega$ | 32.77940 | | +0.73166911 | +0.01439240 |
| $e$ | 0.2557721 | $i$ | 25.71499 | | | |
| $P$ | 5.52 | $H$ | 14.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.3− | 0.2− | 2003 05 11 | 608 | 0.0 | 0.7− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1995 10 22 | 691 | 0.2+ | 0.5− | 2003 05 11 | 608 | 0.3+ | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 1995 10 22 | 691 | 0.4+ | 0.1− | 2005 08 10 | E12 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2000 09 30 | 699 | 1.4+ | 1.3+ | 2005 08 10 | E12 | 0.9− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2000 09 30 | 699 | (2.1+ | 0.2+) | 2005 08 10 | E12 | 0.1− | 0.8+ | 2006 10 20 | 691 | 0.5− | 0.1− |
| 2000 09 30 | 699 | 0.2+ | 0.4+ | 2005 08 10 | E12 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2000 09 30 | 699 | 1.7+ | 0.4− | 2005 08 10 | E12 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 10 24 | 699 | 0.3+ | 0.7+ | 2005 08 10 | E12 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 10 24 | 699 | 0.2+ | 0.4+ | 2005 08 10 | E12 | 0.1+ | 1.2+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 24 | 699 | 0.7+ | 0.0 | 2005 08 10 | E12 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 10 24 | 699 | 0.9+ | 0.5+ | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 10 25 | 704 | 1.5− | 1.1− | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 10 25 | 704 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.2− | 0.3− | 2006 10 23 | 704 | 0.1+ | 0.6− |
| 2001 10 25 | 704 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.3− | 2006 10 23 | 704 | 0.3− | 0.2− |
| 2001 10 25 | 704 | 0.4+ | 0.0 | 2006 09 16 | 704 | 0.3− | 0.0 | 2006 10 23 | 704 | 0.3− | 0.5− |
| 2001 11 11 | 699 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 0.3− | 0.0 | 2006 10 23 | 704 | 0.8− | 1.0− |
| 2001 11 11 | 699 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.3− | 0.7+ | 2006 10 23 | 704 | 0.2− | 0.4− |
| 2001 11 11 | 699 | 0.8− | 0.6+ | 2006 09 16 | 704 | 0.5− | 0.8− | 2006 10 26 | 704 | 0.1+ | 1.0− |
| 2001 11 11 | 699 | 0.1− | 0.8+ | 2006 09 19 | 704 | 0.5− | 1.1− | 2006 10 26 | 704 | 0.1− | 0.3− |
| 2001 11 19 | 699 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.4− | 0.9+ | 2006 10 26 | 704 | 0.1+ | 1.3− |
| 2001 11 19 | 699 | 0.1− | 0.3+ | 2006 09 19 | 704 | 0.3− | 0.8− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 11 19 | 699 | 0.3− | 0.1+ | 2006 09 19 | 704 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2001 11 19 | 699 | 0.2− | 0.2+ | 2006 09 21 | 683 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2002 01 03 | 704 | 1.2− | 0.7+ | 2006 09 21 | 683 | (0.2− | 1.8+) | 2006 10 27 | 224 | 0.6− | 0.4− |
| 2002 01 03 | 704 | (1.7− | 0.9−) | 2006 09 21 | 683 | 0.3+ | 1.1+ | 2006 10 27 | 224 | 1.0− | 0.7− |
| 2002 01 03 | 704 | (1.8− | 1.1−) | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 224 | 1.1− | 0.6− |
| 2002 01 08 | 704 | 0.0 | 0.5− | 2006 09 22 | 704 | 0.5+ | 0.9+ | 2006 10 28 | 704 | 0.6− | 0.4− |
| 2002 01 08 | 704 | 0.7+ | 0.7− | 2006 09 22 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.4− | 0.0 |
| 2002 01 08 | 704 | 0.4+ | 0.7− | 2006 09 22 | 704 | 0.6+ | 0.3− | 2006 10 28 | 704 | 0.8− | 0.2− |
| 2002 01 08 | 704 | 0.2+ | 0.6− | 2006 09 22 | 704 | 0.3+ | 0.6+ | 2006 10 28 | 704 | 0.2+ | 0.1− |
| 2002 01 08 | 704 | 0.1+ | 0.7− | 2006 09 22 | 683 | 0.5+ | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.2+ |
| 2002 01 09 | 704 | 0.2− | 0.3+ | 2006 09 22 | 683 | 0.6+ | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2002 01 09 | 704 | 0.1− | 0.4+ | 2006 09 22 | 683 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2002 01 09 | 704 | 0.0 | 0.4+ | 2006 09 22 | 699 | 0.5+ | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2002 01 09 | 704 | 0.0 | 0.4+ | 2006 09 22 | 699 | 0.7− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 01 09 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 699 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2002 02 01 | 704 | 0.2− | 0.4+ | 2006 09 22 | 699 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 02 01 | 704 | 0.1− | 0.1+ | 2006 09 25 | 683 | 0.2− | 1.1− | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2002 02 01 | 704 | 0.0 | 0.8− | 2006 09 25 | 683 | 0.4+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 02 01 | 704 | 0.3− | 0.9− | 2006 09 25 | 683 | 0.4− | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 02 01 | 704 | 0.1+ | 1.1− | 2006 09 26 | 683 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2002 02 02 | 636 | 0.0 | 0.6+ | 2006 09 26 | 683 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2002 02 02 | 636 | 0.4+ | 0.4+ | 2006 09 26 | 683 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.4− | 0.0 |
| 2002 02 02 | 636 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.0 | 0.9+ | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2002 02 06 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 02 06 | 704 | 0.2+ | 0.3− | 2006 09 27 | 704 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 02 06 | 704 | 0.2+ | 0.6− | 2006 09 27 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2002 02 06 | 704 | 0.4− | 0.7− | 2006 09 27 | 683 | 0.3+ | 0.5− | 2006 11 16 | 704 | 1.1+ | 0.2+ |
| 2002 02 06 | 704 | 0.7− | 0.8− | 2006 09 27 | 683 | 0.2+ | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 2002 02 06 | 704 | 0.3+ | 0.1− | 2006 09 27 | 683 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.3+ |
| 2002 02 06 | 704 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.8+ | 1.2+ | 2006 11 16 | 704 | 0.6+ | 0.4+ |
| 2002 02 06 | 704 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.7+ |
| 2002 02 06 | 704 | 0.7+ | 0.2+ | 2006 09 28 | 704 | 0.9+ | 0.3− | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2002 02 06 | 704 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2002 02 22 | 704 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.6− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 22 | 704 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2002 02 22 | 704 | 0.3− | 0.9+ | 2006 09 30 | 703 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2002 02 22 | 704 | 0.3− | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 02 22 | 704 | 0.6− | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2002 03 03 | 704 | (2.3+ | 1.0+) | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2002 03 03 | 704 | (1.8+ | 0.9+) | 2006 09 30 | 703 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2002 03 03 | 704 | 0.6+ | 0.6+ | 2006 10 03 | 704 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.5− | 0.8+ |
| 2002 03 03 | 704 | 0.5+ | 1.3+ | 2006 10 03 | 704 | (1.6+ | 0.4+) | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2002 04 02 | 704 | 0.3+ | 0.1− | 2006 10 03 | 704 | 1.0+ | 0.5+ | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2002 04 02 | 704 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.9+ | 1.3+ | 2006 11 22 | 704 | 0.4− | 0.8+ |
| 2002 04 02 | 704 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2003 04 30 | 704 | 0.4+ | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2003 04 30 | 704 | 0.2− | 1.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2003 04 30 | 704 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2003 04 30 | 704 | 0.6− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2003 05 01 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2003 05 01 | 704 | 0.2− | 0.2+ | 2006 10 18 | 704 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.7+ | 1.1+ |
| 2003 05 01 | 704 | 0.5− | 0.1+ | 2006 10 18 | 704 | 0.6− | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.4+ |
| 2003 05 11 | 608 | 0.3− | 0.6− | 2006 10 18 | 704 | 0.6+ | 0.1+ | | | | |

**(141337)∗ 2002 AO$_2$ = 1998 UP$_{19}$**

Discovered 2002 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25525)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.79556 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36169403 | $\omega$ | 250.46890 | | −0.19392430 | −0.96253397 | |
| $a$ | 1.9509306 | $\Omega$ | 212.61435 | | +0.97897732 | −0.17742489 | |
| $e$ | 0.0947047 | $i$ | 20.58797 | | +0.06322006 | −0.20505797 | |
| $P$ | 2.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 11 | 699 | 0.0 | 0.9+ | 2002 01 09 | 704 | 0.3− | 0.5+ | 2006 09 16 | 703 | 0.1+ | 0.7+ |
| 1998 10 11 | 699 | 0.6+ | 0.8+ | 2002 01 09 | 704 | 0.8− | 0.5+ | 2006 09 16 | 703 | (1.9− | 0.5+) |
| 1998 10 11 | 699 | (0.0 | 2.1+) | 2002 02 13 | 704 | 1.1− | 0.7− | 2006 09 16 | 703 | 0.4− | 0.2− |
| 1998 10 21 | 910 | 0.2+ | 1.7+ | 2002 02 13 | 704 | (0.9− | 1.7+) | 2006 09 16 | 703 | 0.2+ | 0.3+ |
| 1998 10 21 | 910 | 0.2+ | 1.7+ | 2002 02 13 | 704 | 0.4− | 0.1+ | 2006 09 16 | 703 | 0.4+ | 0.1− |
| 1998 10 22 | 910 | 0.2+ | 1.6+ | 2002 02 13 | 704 | 0.5− | 0.6+ | 2006 09 21 | 699 | 0.8+ | 0.3− |
| 1998 10 28 | 704 | (1.9− | 2.6−) | 2002 02 13 | 704 | 0.5+ | 0.2− | 2006 09 21 | 699 | 0.7− | 1.1− |
| 1998 10 28 | 704 | (2.5− | 2.4−) | 2002 02 15 | 704 | 0.8− | 0.6− | 2006 09 21 | 699 | 0.9− | 0.4+ |
| 1998 10 28 | 704 | (2.0− | 0.2+) | 2002 02 15 | 704 | 0.7− | 1.2− | 2006 09 21 | 699 | 0.5+ | 0.6+ |
| 1998 10 28 | 704 | 0.1+ | 0.8− | 2002 02 15 | 704 | 1.2− | 0.3− | 2006 09 28 | 703 | 0.5− | 0.5+ |
| 1998 10 29 | 704 | 0.5+ | 0.5− | 2005 04 03 | 704 | 0.3− | 1.2+ | 2006 09 28 | 703 | 0.1− | 0.5− |
| 1998 10 29 | 704 | 1.0− | 0.9+ | 2005 04 03 | 704 | 0.0 | 1.2+ | 2006 09 28 | 703 | 0.0 | 0.1+ |
| 1998 10 29 | 704 | 0.8+ | 1.4− | 2005 04 03 | 704 | 1.2+ | 0.4+ | 2006 09 28 | 703 | 0.6− | 0.3− |
| 1998 10 29 | 704 | 1.0− | 0.8− | 2005 04 03 | 704 | (0.1− | 1.8+) | 2006 10 29 | 703 | 0.7− | 0.7+ |
| 1998 10 29 | 704 | 0.1+ | 0.8+ | 2005 04 03 | 704 | 0.3+ | 1.0+ | 2006 10 29 | 703 | 0.4− | 0.0 |
| 2002 01 05 | 704 | 0.8+ | 0.1+ | 2005 04 03 | 704 | 0.3− | 0.1+ | 2006 10 29 | 703 | 0.4− | 0.0 |
| 2002 01 05 | 704 | 0.5+ | 0.5+ | 2005 04 03 | 704 | 1.0+ | 0.9+ | 2006 10 29 | 703 | 0.3− | 0.4+ |
| 2002 01 05 | 704 | 0.5+ | 0.1− | 2005 04 03 | 704 | 0.2+ | 0.9+ | 2006 11 19 | 703 | 1.0+ | 1.2− |
| 2002 01 08 | 704 | 0.4+ | 0.6− | 2005 04 15 | 699 | (0.6− | 1.6+) | 2006 11 19 | 703 | 0.9− | 1.0− |
| 2002 01 08 | 704 | 0.7+ | 0.4− | 2005 04 15 | 699 | 0.8+ | 0.1+ | 2006 11 19 | 703 | 0.6+ | 0.8− |
| 2002 01 08 | 704 | 0.2− | 0.8− | 2005 04 15 | 699 | (2.0+ | 0.9+) | 2006 11 19 | 703 | 0.2− | 0.8+ |
| 2002 01 08 | 704 | 0.1− | 0.4− | 2005 04 15 | 699 | 0.9− | 0.6+ | 2006 11 22 | 291 | 0.4+ | 0.1+ |
| 2002 01 09 | 704 | 0.6− | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.2+ | 2006 11 22 | 291 | 0.4+ | 0.2+ |
| 2002 01 09 | 704 | 0.2+ | 0.9+ | 2006 09 16 | 703 | 0.6− | 0.0 | 2006 11 22 | 291 | 0.3+ | 0.1− |
| 2002 01 09 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.5− | 0.4+ | | | | |

**(141338)∗ 2002 AD$_4$**

Discovered 2002 Jan. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.43978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35833016 | $\omega$ | 291.56653 | | +0.24627471 | +0.96827134 | |
| $a$ | 1.9631213 | $\Omega$ | 352.31146 | | −0.72978156 | +0.15645960 | |
| $e$ | 0.0928743 | $i$ | 18.48530 | | −0.63778338 | +0.19486149 | |
| $P$ | 2.75 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2003 09 17 | 704 | 0.1+ | 0.4− | 2005 03 11 | 703 | 0.1+ | 0.1− |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2003 09 17 | 704 | 0.2− | 0.6+ | 2005 03 11 | 703 | 0.0 | 0.2+ |
| 2001 12 15 | 645 | 0.1− | 0.1− | 2003 09 17 | 704 | 1.1− | 0.4+ | 2005 03 11 | 703 | 0.2− | 0.2− |
| 2001 12 15 | 645 | 0.1− | 0.1− | 2003 09 17 | 608 | (0.4+ | 1.8−) | 2005 03 11 | 699 | (2.0+ | 0.5−) |
| 2001 12 19 | 645 | 0.1− | 0.0 | 2003 09 17 | 608 | 0.4+ | 0.3− | 2005 03 11 | 699 | 0.9+ | 0.5+ |
| 2001 12 19 | 645 | 0.1− | 0.1+ | 2003 09 17 | 608 | 0.0 | 0.8− | 2005 03 11 | 699 | (2.1+ | 1.1+) |
| 2001 12 23 | 704 | 0.1− | 1.0+ | 2003 09 28 | 704 | 0.1+ | 0.3+ | 2005 03 11 | 699 | 0.9+ | 0.5+ |
| 2001 12 23 | 704 | 1.0+ | 0.9+ | 2003 09 28 | 704 | 0.1− | 0.6+ | 2005 03 12 | 704 | 0.1+ | 0.4− |
| 2001 12 23 | 704 | 1.2+ | 1.0+ | 2003 09 28 | 704 | 0.2+ | 0.3+ | 2005 03 12 | 704 | 0.3− | 0.7− |
| 2001 12 23 | 704 | 1.2+ | 0.7+ | 2003 09 28 | 704 | 0.3+ | 0.9+ | 2005 03 12 | 704 | 0.6− | 0.5− |
| 2002 01 06 | 704 | 0.7+ | 0.5+ | 2003 09 28 | 704 | 0.3+ | 0.1+ | 2005 03 12 | 704 | 0.2− | 0.7− |
| 2002 01 06 | 704 | 0.3− | 0.4− | 2003 09 29 | 704 | 0.6+ | 0.5+ | 2005 03 12 | 704 | 0.3− | 0.5− |
| 2002 01 06 | 704 | 0.4+ | 0.1+ | 2003 09 29 | 704 | 0.6+ | 0.1+ | 2005 03 16 | 704 | 0.9+ | 1.3+ |
| 2002 01 06 | 704 | 0.0 | 0.9− | 2003 09 29 | 704 | 0.1+ | 0.2+ | 2005 03 16 | 704 | 0.2+ | 0.7+ |
| 2002 01 09 | 704 | 0.1+ | 0.7+ | 2003 09 29 | 704 | 0.5+ | 0.3− | 2005 03 16 | 704 | 1.0+ | 0.3+ |
| 2002 01 09 | 704 | 0.6+ | 0.3− | 2003 10 01 | 699 | 0.3− | 0.7− | 2005 04 02 | 703 | 0.9− | 0.2− |
| 2002 01 09 | 704 | 0.2− | 0.5+ | 2003 10 01 | 699 | 0.1− | 0.1− | 2005 04 02 | 703 | 0.5+ | 0.1+ |
| 2002 01 09 | 704 | 0.1+ | 0.6+ | 2003 10 01 | 699 | (1.9− | 0.2−) | 2005 04 02 | 703 | 1.3− | 0.4+ |
| 2002 01 09 | 704 | 0.3+ | 0.1+ | 2003 10 01 | 699 | 0.1− | 0.5− | 2005 04 02 | 703 | 0.7− | 0.3+ |
| 2002 01 19 | 699 | 0.1+ | 0.9+ | 2003 10 03 | 608 | 0.4− | 1.5− | 2005 04 05 | 699 | 0.4+ | 0.2+ |
| 2002 01 19 | 699 | 0.3− | 0.4+ | 2003 10 03 | 608 | 0.5− | 1.0− | 2005 04 05 | 699 | 0.7+ | 0.1+ |
| 2002 01 19 | 699 | 0.9− | 1.3+ | 2003 10 03 | 608 | 0.1+ | 0.8− | 2005 04 05 | 699 | 0.1+ | 0.3− |
| 2002 01 19 | 699 | (0.7+ | 2.5+) | 2003 10 17 | 699 | (0.6+ | 2.1−) | 2005 04 05 | 699 | 0.8+ | 0.1− |
| 2002 02 21 | 704 | 0.3+ | 0.0 | 2003 10 17 | 699 | 0.1+ | 0.1− | 2005 04 13 | 703 | 0.1− | 0.3− |
| 2002 02 21 | 704 | 0.9+ | 0.9+ | 2003 10 17 | 699 | 0.4+ | 0.4− | 2005 04 13 | 703 | 0.4+ | 0.1+ |
| 2002 02 21 | 704 | 0.5+ | 0.8+ | 2003 10 17 | 699 | 0.1− | 0.2+ | 2005 04 13 | 703 | 0.5− | 1.0+ |
| 2002 02 21 | 704 | 0.4− | 0.3+ | 2003 10 18 | 704 | 0.6− | 0.8+ | 2005 04 13 | 703 | 0.0 | 0.3+ |
| 2002 03 05 | 704 | 0.1− | 1.4− | 2003 10 18 | 704 | 0.4− | 0.7+ | 2006 09 17 | 703 | 0.7− | 0.8− |
| 2002 03 05 | 704 | 0.5− | 0.4− | 2003 10 18 | 704 | 0.8− | 0.4+ | 2006 09 17 | 703 | 0.2+ | 0.8− |
| 2002 03 05 | 704 | 0.3− | 0.5− | 2003 10 18 | 704 | 0.6− | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.1− |
| 2002 03 05 | 704 | 0.4+ | 0.1− | 2003 10 24 | 704 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.8− | 0.9− |
| 2003 08 31 | 704 | 0.0 | 0.0 | 2003 10 24 | 704 | (1.9− | 0.7+) | 2006 10 17 | 106 | 0.1+ | 0.3+ |
| 2003 08 31 | 704 | 0.1− | 0.8+ | 2003 10 24 | 704 | 0.4+ | 0.8+ | 2006 10 17 | 106 | 0.8+ | 0.5+ |
| 2003 08 31 | 704 | 0.1+ | 0.5+ | 2003 10 24 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 106 | 0.5+ | 0.1+ |
| 2003 08 31 | 704 | 0.1+ | 0.7+ | 2003 11 20 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 106 | 0.1+ | 0.5− |
| 2003 09 13 | 608 | 0.0 | 0.6− | 2003 11 20 | 704 | (0.5+ | 1.8+) | 2006 10 23 | 703 | 0.3+ | 0.2− |
| 2003 09 13 | 608 | 0.2− | 0.8− | 2003 11 20 | 704 | 0.9+ | 0.7+ | 2006 10 23 | 703 | 0.0 | 0.2− |
| 2003 09 13 | 608 | 0.3− | 0.1− | 2003 11 20 | 704 | 0.7+ | 1.4+ | 2006 10 23 | 703 | 0.3+ | 0.2− |
| 2003 09 14 | 636 | 0.4− | 0.5− | 2005 02 01 | 703 | (1.8+ | 0.4−) | 2006 10 23 | 703 | 0.3− | 0.5+ |
| 2003 09 14 | 636 | 1.0− | 0.5+ | 2005 02 01 | 703 | 0.4− | 0.4− | 2006 11 22 | 703 | 0.6+ | 0.3+ |
| 2003 09 14 | 636 | 0.6+ | 0.6+ | 2005 02 01 | 703 | 0.1− | 0.9− | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2003 09 17 | 704 | 0.1+ | 0.6+ | 2005 02 01 | 703 | 1.1− | 0.0 | 2006 11 22 | 703 | 0.9− | 0.0 |
| 2003 09 17 | 704 | 0.8− | 0.2+ | 2005 03 11 | 703 | 0.3+ | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.1− |

**(141339)∗ 2002 AZ$_4$**

Discovered 2002 Jan. 5 by the Asiago-DLR Asteroid Survey at Cima Ekar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.75946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36569629 | $\omega$ | 14.11680 | | −0.38754610 | −0.83419024 | |
| $a$ | 1.9366702 | $\Omega$ | 99.92646 | | +0.80242876 | −0.51476708 | |
| $e$ | 0.0683843 | $i$ | 23.47243 | | +0.45377980 | +0.19784207 | |
| $P$ | 2.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 704 | 1.1− | 0.1+ | 2002 01 09 | 644 | 0.2+ | 0.6+ | 2004 12 19 | 699 | 0.9− | 0.2+ |
| 2000 05 04 | 704 | 0.6+ | 0.1− | 2002 01 09 | 704 | 0.7+ | 0.5+ | 2004 12 19 | 699 | 0.1− | 0.3+ |
| 2000 05 04 | 704 | 0.5+ | 1.1+ | 2002 01 09 | 704 | 0.6+ | 0.5+ | 2005 01 15 | 703 | 0.3+ | 0.1+ |
| 2001 11 17 | 608 | 0.4− | 0.6− | 2002 01 09 | 644 | 0.2+ | 0.5+ | 2005 01 15 | 703 | 0.4+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 608 | 0.4− | 0.3− | 2002 01 09 | 704 | 0.2+ | 0.2+ | 2005 01 15 | 703 | 0.6+ | 0.4+ | | |
| 2001 11 17 | 608 | 0.1− | 0.1− | 2002 01 09 | 209 | 0.3− | 0.2− | 2005 01 15 | 703 | 0.3+ | 0.1+ | | |
| 2001 12 07 | 704 | 0.1+ | 0.3− | 2002 01 09 | 209 | 0.4− | 0.1− | 2005 01 16 | 699 | 0.3+ | 0.4− | | |
| 2001 12 07 | 704 | 0.6+ | 0.5− | 2002 01 09 | 209 | 0.4+ | 1.3− | 2005 01 16 | 699 | 0.1− | 0.0 | | |
| 2001 12 07 | 704 | 0.5+ | 0.8− | 2002 01 09 | 209 | 0.0 | 0.8+ | 2005 01 16 | 699 | 0.1− | 0.3− | | |
| 2001 12 07 | 704 | 0.4+ | 0.3− | 2002 01 09 | 209 | 0.1+ | 0.1+ | 2005 01 16 | 699 | 0.1− | 0.7− | | |
| 2001 12 07 | 704 | 0.7+ | 0.7− | 2002 01 09 | 209 | 0.0 | 0.3+ | 2005 01 19 | 704 | (2.3+ | 0.9−) | | |
| 2001 12 18 | 209 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.4+ | 0.9+ | 2005 01 19 | 704 | 0.5+ | 0.7− | | |
| 2001 12 18 | 209 | 0.2+ | 0.2+ | 2002 01 14 | 704 | 0.1− | 0.6+ | 2005 01 19 | 704 | 0.8+ | 0.1− | | |
| 2001 12 18 | 209 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.3− | 1.2+ | 2005 01 31 | 704 | 0.0 | 1.0+ | | |
| 2001 12 19 | 704 | 0.8− | 0.5− | 2002 01 14 | 704 | 0.9− | 0.1+ | 2005 01 31 | 704 | 0.2+ | 0.3+ | | |
| 2001 12 19 | 704 | 1.0− | 0.4− | 2002 01 14 | 608 | 0.7+ | 0.6+ | 2005 01 31 | 704 | 0.2− | 0.8+ | | |
| 2001 12 19 | 704 | 1.1− | 0.6− | 2002 01 14 | 608 | 0.9+ | 0.8+ | 2006 08 26 | E12 | 0.0 | 0.1+ | | |
| 2001 12 19 | 704 | 1.0− | 0.9− | 2002 01 14 | 608 | 0.6+ | 1.1+ | 2006 08 26 | E12 | 1.0− | 1.0+ | | |
| 2001 12 19 | 704 | 0.9− | 0.9− | 2004 12 09 | 703 | 0.7− | 0.9+ | 2006 08 26 | E12 | 0.3+ | 0.5+ | | |
| 2002 01 05 | 209 | 0.4− | 0.1+ | 2004 12 09 | 703 | 0.2+ | 0.1+ | 2006 08 26 | E12 | 0.4+ | 1.0+ | | |
| 2002 01 05 | 209 | 0.4− | 0.2+ | 2004 12 09 | 703 | 0.8− | 0.7+ | 2006 09 18 | E12 | 0.6− | 0.9+ | | |
| 2002 01 05 | 209 | 0.6− | 0.0 | 2004 12 09 | 703 | 0.1− | 1.2+ | 2006 09 18 | E12 | 0.6− | 0.0 | | |
| 2002 01 08 | 608 | 0.9+ | 0.1+ | 2004 12 14 | 703 | 0.3− | 0.6− | 2006 09 18 | E12 | (0.7− | 2.4+) | | |
| 2002 01 08 | 608 | 0.4+ | 0.6− | 2004 12 14 | 703 | 0.7− | 1.1− | 2006 09 18 | E12 | 1.2+ | 0.4+ | | |
| 2002 01 08 | 608 | 0.6+ | 1.2− | 2004 12 14 | 703 | 0.5− | 0.3− | 2006 09 29 | E12 | 0.0 | 1.2+ | | |
| 2002 01 09 | 704 | 0.1− | 0.4+ | 2004 12 14 | 703 | 0.4− | 0.4− | 2006 09 29 | E12 | 0.3− | 1.1− | | |
| 2002 01 09 | 644 | 0.0 | 0.5+ | 2004 12 19 | 699 | 1.1+ | 0.4+ | 2006 09 29 | E12 | 0.2− | 0.0 | | |
| 2002 01 09 | 704 | 1.0+ | 0.2+ | 2004 12 19 | 699 | 1.0− | 1.8+ | 2006 09 29 | E12 | 0.6− | 0.6+ | | |

**(141340)∗ 2002 AE$_5$ = 2001 YO$_{11}$**

Discovered 2002 Jan. 8 by J. M. Roe at Oaxaca.

Id. G. V. Williams (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 341.33405 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18325086 | ω | 143.65381 | | +0.25506826 | −0.96686074 | |
| *a* | 3.0697667 | Ω | 291.56629 | | +0.88432883 | +0.23785623 | |
| *e* | 0.2453558 | *i* | 0.67627 | | +0.39102775 | +0.09276162 | |
| *P* | 5.38 | *H* | 16.0 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.2+ | 0.3+ | 2002 01 13 | 704 | 1.1+ | 0.7+ | 2006 10 28 | G96 | 0.3− | 0.6− | | |
| 1995 10 28 | 691 | 0.3+ | 0.2+ | 2002 01 13 | 704 | 0.7+ | 0.8+ | 2006 10 28 | G96 | 0.4− | 0.4− | | |
| 1995 10 28 | 691 | 0.3+ | 0.4+ | 2002 01 13 | 704 | 0.7+ | 1.1+ | 2006 10 28 | G96 | 0.4− | 0.2− | | |
| 1995 11 15 | 691 | 0.2− | 0.5− | 2002 01 13 | 704 | 1.0+ | 1.2+ | 2006 10 28 | G96 | 0.3− | 0.2− | | |
| 1995 11 15 | 691 | 0.1− | 0.4− | 2002 01 16 | 732 | 0.2− | 1.1+ | 2006 11 11 | 691 | 0.0 | 0.5+ | | |
| 1995 11 15 | 691 | 0.2− | 0.3− | 2002 01 16 | 732 | 0.7+ | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.3+ | | |
| 1995 11 20 | 691 | 0.5+ | 0.1− | 2002 01 21 | 704 | (0.7− | 1.8+) | 2006 11 11 | 691 | 0.1+ | 0.3+ | | |
| 1995 11 20 | 691 | 0.3+ | 0.1− | 2002 01 21 | 704 | (1.0+ | 1.9+) | 2006 11 11 | 703 | 0.7+ | 0.9+ | | |
| 1995 11 20 | 691 | 0.6+ | 0.4− | 2002 01 21 | 704 | 0.0 | 1.4+ | 2006 11 11 | 703 | 0.1− | 1.3+ | | |
| 1995 11 25 | 691 | 0.5− | 0.0 | 2002 01 21 | 704 | (1.0+ | 1.9+) | 2006 11 11 | 703 | 0.1− | 0.7+ | | |
| 1995 11 25 | 691 | 0.2− | 0.4− | 2002 02 06 | 732 | (0.9+ | 2.1−) | 2006 11 11 | 703 | (0.5− | 1.7+) | | |
| 1995 11 25 | 691 | 0.3− | 0.0 | 2002 02 06 | 732 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.0 | 0.2+ | | |
| 2000 09 19 | 691 | 0.1+ | 0.5− | 2002 02 06 | 732 | 0.5+ | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.3+ | | |
| 2000 09 19 | 691 | 0.1− | 0.0 | 2002 02 07 | 704 | 0.6+ | 1.0− | 2006 11 15 | 691 | 0.0 | 0.4+ | | |
| 2000 09 19 | 691 | 0.1+ | 0.3− | 2002 02 07 | 704 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.4+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.4+ | 2002 02 07 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.7+ | | |
| 2001 12 17 | 704 | 0.5+ | 1.4+ | 2002 02 07 | 704 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.3+ | | |
| 2001 12 17 | 644 | 0.1− | 0.9+ | 2002 02 09 | 691 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.4− | 1.1+ | | |
| 2001 12 17 | 644 | 0.2+ | 1.1+ | 2002 02 09 | 691 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.2+ | 1.4+ | | |
| 2001 12 17 | 704 | 0.1+ | 1.5+ | 2002 02 09 | 691 | 0.1− | 0.5− | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2001 12 17 | 644 | 0.2+ | 1.3+ | 2002 02 09 | 704 | 0.2− | 0.4− | 2006 11 19 | 691 | 0.6+ | 0.3+ | | |
| 2001 12 18 | 291 | 1.2+ | 1.1+ | 2002 02 09 | 704 | 0.1− | 0.5+ | 2006 11 19 | 691 | 0.3+ | 0.2+ | | |
| 2001 12 18 | 291 | 0.0 | 0.4+ | 2002 02 09 | 704 | 0.7− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.3+ | | |
| 2001 12 18 | 704 | 0.8+ | 0.2+ | 2002 02 11 | 704 | 0.9+ | 0.7− | 2006 11 21 | 704 | 0.1+ | 0.1+ | | |
| 2001 12 18 | 291 | 0.3+ | 0.8+ | 2002 02 11 | 704 | (1.3+ | 2.8−) | 2006 11 21 | 704 | 0.5− | 0.5− | | |
| 2001 12 18 | 704 | 0.3− | 0.0 | 2002 02 11 | 704 | (0.3− | 2.1−) | 2006 11 21 | 704 | 0.4+ | 0.1+ | | |
| 2001 12 18 | 704 | 0.7− | 0.3+ | 2002 02 11 | 704 | 0.3+ | 1.5− | 2006 11 27 | 691 | 0.1− | 0.3− | | |
| 2002 01 08 | 732 | 0.5− | 0.2+ | 2002 02 20 | 704 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.3− | 0.3+ | | |
| 2002 01 08 | 732 | 1.5− | 1.0− | 2002 02 20 | 704 | 0.1− | 1.4− | 2006 11 27 | 691 | 0.1− | 0.3− | | |
| 2002 01 08 | 732 | 0.2− | 0.2− | 2002 02 20 | 704 | 0.1− | 0.5− | 2006 11 27 | 703 | 0.1− | 0.2+ | | |
| 2002 01 09 | 732 | 1.1− | 0.1+ | 2005 07 03 | G96 | 1.2− | 0.3+ | 2006 11 27 | 703 | 0.8− | 0.0 | | |
| 2002 01 09 | 704 | 0.8− | 0.6+ | 2005 07 03 | G96 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3− | | |
| 2002 01 09 | 704 | 1.2− | 0.1+ | 2005 07 03 | G96 | 0.2− | 0.6+ | 2006 11 27 | 703 | 0.1− | 0.1+ | | |
| 2002 01 09 | 704 | 0.7− | 0.1− | 2005 07 03 | G96 | (0.0 | 1.6+) | 2006 12 01 | 691 | 0.8− | 1.1− | | |
| 2002 01 09 | 732 | 0.5− | 0.5− | 2005 07 12 | 291 | 0.2− | 1.2+ | 2006 12 01 | 691 | 0.0 | 0.6− | | |
| 2002 01 09 | 732 | 0.0 | 0.5− | 2005 07 12 | 291 | 0.1− | 0.8+ | 2006 12 01 | 691 | 0.0 | 0.7− | | |
| 2002 01 09 | 704 | 1.0− | 0.2− | 2005 07 12 | 291 | 0.3− | 0.9+ | 2006 12 01 | 704 | 0.3+ | 0.5− | | |
| 2002 01 09 | 704 | 0.7− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 12 01 | 704 | 1.4+ | 0.3+ | | |
| 2002 01 11 | 732 | 0.1+ | 0.9− | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 12 01 | 704 | 0.2+ | 0.0 | | |
| 2002 01 11 | 732 | (1.5− | 0.2+) | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.0 | 1.1− | | |
| 2002 01 12 | 732 | 0.6− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2− | | | | | | |

**(141341)∗ 2002 AZ$_6$ = 2000 SD$_{350}$**

Discovered 2002 Jan. 9 by the Asiago-DLR Asteroid Survey at Cima Ekar.

Id. G. V. Williams (*MPO* 25528)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 342.04578 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17547822 | ω | 278.76796 | | +0.36952084 | −0.91129415 | |
| *a* | 3.1597586 | Ω | 147.59887 | | +0.92847076 | +0.35423673 | |
| *e* | 0.1651087 | *i* | 19.81604 | | +0.03736837 | +0.20990311 | |
| *P* | 5.62 | *H* | 14.9 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 699 | 1.0+ | 0.5− | 2002 02 08 | 704 | (1.4− | 2.6+) | 2006 09 20 | 699 | 0.6− | 0.4− | | |
| 2000 09 29 | 699 | 0.6− | 0.9+ | 2002 02 11 | 704 | 0.7+ | 0.5− | 2006 09 20 | 699 | 1.0− | 0.8+ | | |
| 2000 09 29 | 699 | 0.6− | 0.0 | 2002 02 11 | 704 | 0.0 | 0.4− | 2006 09 20 | 699 | 0.7− | 1.0+ | | |
| 2000 09 29 | 699 | 0.7− | 0.7+ | 2002 02 11 | 704 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.4− | 0.6− | | |
| 2000 09 30 | 699 | 0.4− | 0.3− | 2002 02 11 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 703 | 0.6+ | 0.6− | | |
| 2000 09 30 | 699 | 0.5+ | 0.0 | 2002 02 11 | 704 | 0.7+ | 0.8− | 2006 09 28 | 703 | 0.4+ | 0.1− | | |
| 2000 09 30 | 699 | 0.3− | 0.3+ | 2002 02 16 | 644 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.2+ | 0.1− | | |
| 2000 09 30 | 699 | 1.6+ | 0.3− | 2002 02 16 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.2+ | | |
| 2002 01 09 | 209 | 0.3− | 0.1− | 2002 02 16 | 644 | 0.1− | 0.4+ | 2006 10 21 | 703 | 1.2+ | 0.1− | | |
| 2002 01 09 | 209 | 0.5− | 0.0 | 2002 02 17 | 644 | 0.3+ | 1.3+ | 2006 10 21 | 703 | 1.0+ | 0.1− | | |
| 2002 01 10 | 209 | 0.3− | 0.1+ | 2002 02 17 | 644 | 0.3− | 1.4+ | 2006 10 21 | 703 | 0.1− | 0.2+ | | |
| 2002 01 10 | 209 | 0.7− | 0.0 | 2002 02 17 | 644 | 0.1+ | 1.4+ | 2006 11 01 | 703 | 0.5+ | 0.9+ | | |
| 2002 01 10 | 209 | 0.7+ | 0.3− | 2003 05 30 | 645 | 0.0 | 0.1+ | 2006 11 01 | 703 | 0.3− | 0.6+ | | |
| 2002 01 10 | 209 | 0.5+ | 0.5− | 2003 05 30 | 645 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.1+ | 0.7+ | | |
| 2002 01 22 | 704 | 0.5+ | 0.4− | 2003 05 30 | 645 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.2− | 0.2+ | | |
| 2002 01 22 | 704 | 0.6− | 0.1− | 2003 05 30 | 645 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.4− | 0.2− | | |
| 2002 01 22 | 704 | 0.1− | 0.6+ | 2005 07 29 | 644 | 0.5− | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.7− | | |
| 2002 02 07 | 644 | 0.4− | 0.5− | 2005 07 29 | 644 | 0.4− | 0.7+ | 2006 11 17 | 703 | 0.2− | 0.4+ | | |
| 2002 02 07 | 644 | 0.5− | 0.5− | 2005 07 29 | 644 | 0.4− | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.0 | | |
| 2002 02 07 | 644 | 0.5− | 0.7− | 2005 10 25 | G96 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.0 | 0.4+ | | |
| 2002 02 08 | 704 | (0.3+ | 2.1+) | 2005 10 25 | G96 | 0.5+ | 0.4− | 2006 11 23 | 703 | 1.2+ | 0.2+ | | |
| 2002 02 08 | 704 | (0.3− | 2.2+) | 2005 10 25 | G96 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.3+ | 0.1− | | |
| 2002 02 08 | 704 | (0.6− | 2.5+) | 2005 10 25 | G96 | 0.1− | 0.4+ | 2006 11 23 | 703 | 0.4+ | 0.1− | | |
| 2002 02 08 | 704 | (0.1− | 1.6+) | 2006 09 20 | 699 | 1.2− | 0.8− | | | | | | |

**(141342)∗ 2002 AN$_9$**

Discovered 2002 Jan. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 324.78569 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17964290 | ω | 156.60743 | | −0.20115531 | −0.97786122 | |
| *a* | 3.1107326 | Ω | 304.94996 | | +0.88725418 | −0.15694234 | |
| *e* | 0.1226551 | *i* | 4.03349 | | +0.41511030 | −0.13840715 | |
| *P* | 5.49 | *H* | 15.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 699 | 0.0 | 0.5− | 2002 01 24 | 691 | 0.6− | 0.3− | 2005 08 25 | 644 | 0.2− | 0.3+ | | |
| 2000 10 06 | 699 | 0.7+ | 0.1− | 2002 01 24 | 691 | 0.3− | 0.6− | 2005 09 13 | 691 | 0.1+ | 0.3+ | | |
| 2000 10 06 | 699 | 0.8− | 0.4+ | 2002 01 26 | 644 | 0.0 | 0.3+ | 2005 09 13 | 691 | 0.1− | 0.1+ | | |
| 2000 10 06 | 699 | 0.3+ | 0.7+ | 2002 01 26 | 644 | 0.2+ | 0.4+ | 2005 09 13 | 691 | 0.3− | 0.3+ | | |
| 2000 11 26 | 695 | 0.0 | 0.1+ | 2002 01 26 | 644 | 0.4+ | 0.6+ | 2006 08 19 | 291 | 0.2− | 0.2+ | | |
| 2000 11 26 | 695 | 0.2− | 0.1− | 2002 02 05 | 644 | 0.0 | 0.1+ | 2006 08 19 | 291 | 0.0 | 0.6+ | | |
| 2000 11 26 | 695 | 0.3− | 1.0− | 2002 02 05 | 644 | 0.5+ | 0.0 | 2006 08 19 | 291 | 0.2− | 0.3+ | | |
| 2000 11 26 | 695 | 0.2+ | 0.1+ | 2002 02 05 | 644 | 0.3+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 695 | 0.4+ | 0.2− | 2002 02 06 | 695 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.6− | | |
| 2000 11 26 | 695 | 0.0 | 0.1− | 2002 02 06 | 695 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.3− | | |
| 2000 11 26 | 695 | 0.0 | 0.2− | 2002 02 07 | 704 | 0.7+ | 0.6− | 2006 11 12 | G96 | 0.5+ | 0.2− | | |
| 2002 01 09 | 704 | 0.1+ | 0.6+ | 2002 02 07 | 704 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.2− | | |
| 2002 01 09 | 704 | 0.7+ | 0.5+ | 2002 02 07 | 704 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.3− | | |
| 2002 01 09 | 704 | 1.0+ | 0.5+ | 2002 02 07 | 704 | 0.5+ | 0.3+ | 2006 11 13 | 691 | 1.1− | 0.2− | | |
| 2002 01 09 | 704 | 0.2+ | 1.0+ | 2002 02 07 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 1.4− | 0.6− | | |
| 2002 01 09 | 704 | 0.6+ | 1.3+ | 2002 02 08 | 704 | 0.4+ | 1.2− | 2006 11 15 | 704 | 0.8+ | 0.9+ | | |
| 2002 01 11 | 333 | 0.5− | 0.4+ | 2002 02 08 | 704 | 0.3− | 1.0− | 2006 11 15 | 704 | 0.0 | 0.4− | | |
| 2002 01 11 | 333 | 0.3− | 0.9+ | 2002 02 08 | 704 | 0.0 | 1.0− | 2006 11 15 | 704 | 0.7+ | 0.3− | | |
| 2002 01 11 | 333 | 0.1+ | 1.2+ | 2002 02 08 | 704 | 0.1− | 0.8− | 2006 11 16 | 704 | 0.1+ | 1.3+ | | |
| 2002 01 12 | 333 | 0.0 | 0.4− | 2002 02 08 | 704 | 0.7+ | 0.4+ | 2006 11 16 | 704 | 0.6+ | 1.4+ | | |
| 2002 01 12 | 333 | 0.9− | 0.5− | 2002 02 11 | 704 | 0.1− | 0.6− | 2006 11 16 | 704 | 0.2+ | 0.0 | | |
| 2002 01 12 | 333 | 0.5− | 0.0 | 2002 02 11 | 704 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.1+ | | |
| 2002 01 13 | 704 | 0.3− | 0.1− | 2002 02 11 | 704 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.0 | 0.1− | | |
| 2002 01 13 | 704 | 0.4+ | 0.9+ | 2002 02 11 | 704 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.6+ | | |
| 2002 01 13 | 704 | 0.2+ | 0.5+ | 2002 02 11 | 704 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.5+ | | |
| 2002 01 13 | 704 | 0.4+ | 0.4+ | 2002 02 12 | 291 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.7+ | 1.0+ | | |
| 2002 01 20 | 691 | (0.1− | 1.9−) | 2002 02 12 | 291 | 0.2+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2002 01 20 | 691 | (0.6+ | 2.3−) | 2002 02 12 | 291 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2002 01 20 | 691 | (0.4+ | 2.2−) | 2005 08 25 | 644 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.2− | | |
| 2002 01 21 | 704 | (2.4+ | 0.3+) | 2005 08 25 | 644 | 0.1+ | 0.3+ | 2006 11 25 | 691 | 0.2+ | 0.3− | | |
| 2002 01 21 | 704 | 0.3+ | 0.7+ | 2005 08 25 | 644 | 0.4− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.5− | | |
| 2002 01 21 | 704 | (0.8− | 3.1+) | 2005 08 25 | 644 | 0.0 | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.4− | | |
| 2002 01 24 | 691 | 0.0 | 0.2− | 2005 08 25 | 644 | 0.4− | 0.3+ | | | | | | |

**(141343)∗ 2002 AK$_{13}$**

Discovered 2002 Jan. 9 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.79688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17910735 | $\omega$ | 304.56577 | | −0.03242542 | −0.96134284 | |
| $a$ | 3.1169304 | $\Omega$ | 144.09973 | | +0.99936548 | −0.03521930 | |
| $e$ | 0.2300795 | $i$ | 27.79562 | | +0.01473865 | +0.27309257 | |
| $P$ | 5.50 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 13 | 327 | 0.9− | 0.1+ | 2002 01 13 | 704 | (2.0− | 0.4+) | 2006 07 31 | E12 | (1.7+ | 0.7−) | | |
| 1997 02 13 | 327 | 0.6+ | 0.1+ | 2002 01 13 | 704 | 0.2− | 0.1+ | 2006 07 31 | E12 | 0.3+ | 0.3+ | | |
| 1997 02 13 | 327 | 0.0 | 0.5+ | 2003 03 08 | 704 | 0.5− | 0.3− | 2006 09 14 | 644 | 0.2− | 0.0 | | |
| 1997 02 13 | 327 | 0.1+ | 0.5− | 2003 03 08 | 704 | 1.1+ | 0.7+ | 2006 09 14 | 644 | 0.3− | 0.5− | | |
| 2001 12 18 | 608 | 0.6+ | 0.1− | 2003 03 08 | 704 | 0.0 | 1.1− | 2006 09 14 | 644 | 0.1− | 0.3+ | | |
| 2001 12 18 | 608 | 0.2+ | 0.4− | 2003 03 08 | 704 | 0.2+ | 0.7− | 2006 09 27 | 703 | 0.4− | 0.4+ | | |
| 2001 12 18 | 608 | 1.0+ | 0.1− | 2003 03 08 | 704 | 0.2− | 0.7− | 2006 09 27 | 703 | 0.1− | 0.6− | | |
| 2002 01 09 | 608 | 0.2+ | 0.6− | 2003 03 26 | 704 | 0.3− | 0.6+ | 2006 09 27 | 703 | 0.1− | 0.4− | | |
| 2002 01 09 | 608 | 0.0 | 0.7− | 2003 03 26 | 704 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.4+ | | |
| 2002 01 09 | 608 | 0.6+ | 0.0 | 2003 03 26 | 704 | 0.4+ | 0.5+ | 2006 10 12 | E12 | 0.4+ | 0.5+ | | |
| 2002 01 13 | 644 | 0.0 | 0.6+ | 2003 04 08 | 644 | 0.2− | 0.6+ | 2006 10 12 | E12 | 0.5+ | 0.5+ | | |
| 2002 01 13 | 644 | 0.3− | 0.7+ | 2003 04 08 | 644 | 0.3− | 1.3+ | 2006 10 12 | E12 | 0.1+ | 0.4+ | | |
| 2002 01 13 | 644 | 0.4− | 0.3+ | 2003 04 08 | 644 | 0.2− | 0.9+ | 2006 10 12 | E12 | 0.7+ | 0.1− | | |
| 2002 01 13 | 704 | 0.9− | 0.5+ | 2006 07 31 | E12 | 1.1− | 0.8+ | | | | | | |
| 2002 01 13 | 704 | 0.5− | 0.1+ | 2006 07 31 | E12 | 0.5− | 0.2+ | | | | | | |

**(141344)∗ 2002 AD$_{15}$ = 2003 FU$_{114}$**

Discovered 2002 Jan. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47123)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.29811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17942278 | $\omega$ | 131.37595 | | −0.97110910 | −0.01634695 | |
| $a$ | 3.1132762 | $\Omega$ | 49.14350 | | −0.12516562 | −0.81451640 | |
| $e$ | 0.1496206 | $i$ | 18.34685 | | +0.20317650 | −0.57991018 | |
| $P$ | 5.49 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 1.0+ | 0.1− | 2003 04 21 | 703 | 0.6+ | 0.7+ | 2004 07 14 | E12 | 1.0+ | 0.7+ | | |
| 2001 12 23 | 704 | 0.9+ | 0.3+ | 2003 04 24 | 699 | 0.5− | 0.3− | 2004 07 14 | E12 | 0.0 | 0.2+ | | |
| 2001 12 23 | 704 | 1.2+ | 0.5+ | 2003 04 24 | 699 | 0.3+ | 0.1− | 2004 07 14 | E12 | 0.0 | 0.6+ | | |
| 2001 12 23 | 704 | 1.3+ | 0.5+ | 2003 04 24 | 699 | 0.2− | 0.1+ | 2004 08 09 | E12 | 0.0 | 0.5+ | | |
| 2002 01 06 | 704 | 0.2− | 0.4+ | 2003 04 24 | 699 | 0.1− | 0.2− | 2004 08 09 | E12 | 0.6− | 1.1+ | | |
| 2002 01 06 | 704 | 0.5− | 0.4− | 2003 04 24 | 599 | 0.2+ | 0.7+ | 2004 08 09 | E12 | 0.9− | 0.6− | | |
| 2002 01 06 | 704 | 0.5− | 0.5− | 2003 04 24 | 599 | 0.4+ | 0.9+ | 2004 08 09 | E12 | 0.7+ | 0.0 | | |
| 2002 01 06 | 704 | 1.2− | 0.7− | 2003 04 25 | 599 | 0.1+ | 0.6+ | 2004 08 10 | E12 | 0.1+ | 0.4+ | | |
| 2002 01 06 | 704 | 0.6+ | 0.7− | 2003 04 28 | 704 | (2.2+ | 0.9+) | 2004 08 10 | E12 | 0.2− | 0.2+ | | |
| 2002 01 08 | 704 | 0.2− | 0.5− | 2003 04 28 | 704 | 0.1+ | 0.4+ | 2004 08 10 | E12 | 0.4− | 0.5− | | |
| 2002 01 08 | 704 | 0.6− | 0.5+ | 2003 04 28 | 704 | (2.2+ | 0.5−) | 2004 08 10 | E12 | 0.3+ | 0.6− | | |
| 2002 01 08 | 704 | (0.2+ | 1.8+) | 2003 04 28 | 704 | (1.6− | 2.1+) | 2004 08 20 | E12 | 0.4− | 0.9+ | | |
| 2002 01 08 | 704 | 0.5+ | 0.0 | 2003 04 28 | 704 | (2.0+ | 0.2+) | 2004 08 20 | E12 | 0.0 | 0.1− | | |
| 2002 01 19 | 699 | 0.0 | 0.7+ | 2003 04 28 | 608 | 0.5− | 0.7− | 2004 08 20 | E12 | 0.4− | 0.1− | | |
| 2002 01 19 | 699 | 0.0 | 0.3+ | 2003 04 28 | 608 | 0.3+ | 1.2− | 2004 08 20 | E12 | 0.0 | 0.7+ | | |
| 2002 01 19 | 699 | 0.4+ | 0.4+ | 2003 04 28 | 608 | 0.3+ | 1.3− | 2006 09 17 | 291 | 0.7− | 0.5+ | | |
| 2002 01 19 | 699 | 0.4− | 0.3− | 2003 04 29 | 699 | 0.2− | 0.2+ | 2006 09 17 | 291 | 0.6− | 0.4+ | | |
| 2002 01 25 | 704 | 0.6− | 0.3− | 2003 04 29 | 699 | 0.1+ | 0.5+ | 2006 09 17 | 291 | 0.8− | 0.4+ | | |
| 2002 01 25 | 704 | 0.3− | 0.6+ | 2003 04 29 | 699 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.4+ | | |
| 2002 01 25 | 704 | 0.4− | 1.1− | 2003 04 29 | 699 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.2− | | |
| 2002 01 25 | 704 | 0.8− | 0.3− | 2003 05 01 | 704 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.7+ | 0.2− | | |
| 2002 01 25 | 704 | 1.3− | 0.4− | 2003 05 01 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.1+ | | |
| 2002 02 21 | 704 | 0.1+ | 0.5+ | 2003 05 01 | 704 | 0.6− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.1+ | | |
| 2002 02 21 | 704 | 0.2+ | 0.3+ | 2003 05 01 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.3+ | | |
| 2002 02 21 | 704 | 0.0 | 0.2+ | 2003 05 01 | 704 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.2− | | |
| 2002 02 21 | 704 | 0.4+ | 0.9+ | 2003 05 05 | 704 | 0.7+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.8− | | |
| 2002 02 21 | 704 | 0.6+ | 0.1+ | 2003 05 05 | 704 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.4− | | |
| 2003 03 26 | 699 | 0.2− | 0.5− | 2003 05 05 | 704 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.6− | | |
| 2003 03 26 | 699 | 0.7− | 1.0+ | 2003 05 05 | 704 | 0.4+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.2+ | | |
| 2003 03 26 | 699 | 1.3− | 0.4+ | 2003 05 05 | 704 | 0.1+ | 0.4− | 2006 11 21 | 691 | 0.2+ | 0.2+ | | |
| 2003 03 26 | 699 | 0.1+ | 0.3+ | 2003 05 12 | 608 | 0.3− | 0.8− | 2006 11 21 | 691 | 0.1− | 0.2+ | | |
| 2003 03 31 | 691 | (0.7− | 2.7+) | 2003 05 12 | 608 | 0.1− | 0.7− | 2006 11 22 | 704 | 0.4− | 0.9+ | | |
| 2003 03 31 | 691 | (0.9− | 2.2+) | 2003 05 12 | 608 | 0.0 | 0.9− | 2006 11 22 | 704 | 1.0− | 0.9+ | | |
| 2003 03 31 | 691 | (0.1+ | 2.2+) | 2003 05 20 | 699 | 0.2+ | 0.9− | 2006 11 22 | 704 | (0.2− | 1.7+) | | |
| 2003 04 03 | 699 | 0.4+ | 0.2− | 2003 05 20 | 699 | 0.4− | 0.7+ | 2006 11 23 | 644 | 0.0 | 0.1+ | | |
| 2003 04 03 | 699 | 0.4− | 0.9+ | 2003 05 20 | 699 | 0.1− | 0.2− | 2006 11 23 | 644 | 0.1− | 0.1− | | |
| 2003 04 03 | 699 | 0.4+ | 1.0+ | 2003 05 20 | 699 | 0.7− | 0.1− | 2006 11 23 | 644 | 0.2− | 0.0 | | |
| 2003 04 03 | 699 | 0.6+ | 0.8+ | 2003 06 01 | 691 | 0.3+ | 0.7+ | 2006 11 27 | 704 | 0.0 | 0.1+ | | |
| 2003 04 21 | 703 | 0.4+ | 0.1+ | 2003 06 01 | 691 | (0.4+ | 2.0+) | 2006 11 27 | 704 | 0.5+ | 0.3+ | | |
| 2003 04 21 | 703 | 0.7+ | 0.5+ | 2003 06 01 | 691 | 0.3+ | 0.5+ | 2006 11 27 | 704 | 0.8+ | 0.3+ | | |
| 2003 04 21 | 703 | 1.0+ | 0.9− | 2004 07 14 | E12 | 0.2− | 0.6+ | 2006 11 27 | 704 | 0.0 | 0.1− | | |

**(141345)∗ 2002 AQ$_{15}$**

Discovered 2002 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.91433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17718993 | $\omega$ | 160.18448 | | −0.13738652 | −0.90871733 | |
| $a$ | 3.1393761 | $\Omega$ | 295.93176 | | +0.83940087 | +0.10444699 | |
| $e$ | 0.2873738 | $i$ | 25.99437 | | +0.52586226 | −0.40413321 | |
| $P$ | 5.56 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.3+ | 0.8− | 2002 01 19 | 704 | 0.7+ | 0.4− | 2005 07 06 | 691 | 0.1− | 0.3+ | | |
| 2000 09 01 | 704 | 0.3− | 0.2+ | 2002 01 19 | 704 | 1.0+ | 0.1+ | 2005 07 06 | 691 | 0.1+ | 0.4+ | | |
| 2000 09 01 | 704 | 0.4+ | 0.1+ | 2002 01 19 | 704 | 0.5+ | 0.5+ | 2005 07 06 | 691 | 0.1− | 0.4+ | | |
| 2000 09 01 | 704 | 0.2+ | 1.0+ | 2002 01 19 | 704 | 0.6+ | 0.1− | 2005 07 12 | G96 | 0.1+ | 0.2− | | |
| 2000 09 27 | 704 | 0.5− | 0.0 | 2002 02 06 | 704 | 0.6+ | 0.5− | 2005 07 12 | G96 | 0.0 | 0.3− | | |
| 2000 09 27 | 704 | 1.0+ | 1.0+ | 2002 02 06 | 704 | 0.6+ | 0.5− | 2005 07 12 | G96 | 0.1− | 0.3− | | |
| 2000 09 27 | 704 | 0.9− | 0.0 | 2002 02 06 | 704 | 0.6+ | 0.6− | 2005 07 12 | G96 | 0.2− | 0.4− | | |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2002 02 06 | 704 | 1.0+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.3+ | | |
| 2000 09 27 | 704 | 1.6+ | 0.1− | 2002 02 07 | 704 | 0.9− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.0 | | |
| 2001 10 25 | 704 | 0.5− | 0.3− | 2002 02 07 | 704 | 0.1+ | 1.0+ | 2006 09 18 | 703 | 0.0 | 0.5+ | | |
| 2001 10 25 | 704 | 0.3− | 0.3− | 2002 02 07 | 704 | 0.5− | 0.6+ | 2006 09 18 | 703 | 0.3+ | 0.2− | | |
| 2001 10 25 | 704 | 0.3− | 0.3− | 2002 02 07 | 704 | 0.5− | 0.6+ | 2006 09 18 | 704 | 0.0 | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.3− | 0.6+ | 2002 02 10 | 704 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.1− | 0.4+ | | |
| 2001 10 25 | 704 | 0.7− | 0.1− | 2002 02 10 | 704 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.5− | 0.2+ | | |
| 2001 10 25 | 704 | 1.2− | 0.4+ | 2002 02 10 | 704 | 0.1− | 0.2+ | 2006 09 18 | 704 | 1.1+ | 0.4− | | |
| 2001 11 17 | 699 | 0.1− | 0.1+ | 2002 02 10 | 704 | 0.6− | 0.6+ | 2006 09 25 | 703 | 0.0 | 0.1+ | | |
| 2001 11 17 | 699 | 0.3− | 0.2− | 2002 02 10 | 704 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.1− | 0.9+ | | |
| 2001 11 17 | 699 | 0.4− | 0.2− | 2002 02 12 | 704 | 0.3+ | 0.3− | 2006 09 25 | 703 | 0.0 | 0.6+ | | |
| 2001 11 17 | 699 | 0.4− | 0.5− | 2002 02 12 | 704 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.0 | 0.7+ | | |
| 2001 12 20 | 644 | 0.2− | 0.2+ | 2002 02 12 | 704 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.6− | 0.5− | | |
| 2001 12 20 | 644 | 0.1− | 0.2+ | 2002 02 12 | 704 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 0.6− | 0.1+ | | |
| 2001 12 20 | 644 | 0.2− | 0.2+ | 2002 02 16 | 628 | 0.3+ | 1.5+ | 2006 10 02 | 703 | 1.1− | 0.0 | | |
| 2001 12 23 | 704 | 0.4− | 0.4+ | 2002 02 16 | 628 | (0.0 | 2.0+) | 2006 10 02 | 703 | 0.3− | 0.1+ | | |
| 2001 12 23 | 704 | 0.4− | 0.2+ | 2002 02 16 | 628 | (0.5+ | 1.9+) | 2006 10 03 | 704 | 0.4− | 1.0− | | |
| 2001 12 23 | 704 | 0.4− | 0.3+ | 2002 02 20 | 704 | 0.7+ | 0.1+ | 2006 10 03 | 704 | 0.7− | 0.3− | | |
| 2001 12 23 | 704 | 0.6− | 0.1− | 2002 02 20 | 704 | 0.6+ | 0.3+ | 2006 10 03 | 704 | 1.0− | 0.2+ | | |
| 2001 12 23 | 704 | 0.7− | 0.0 | 2002 02 20 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 704 | 0.4− | 0.2− | | |
| 2002 01 04 | 644 | 0.3− | 0.1− | 2002 02 20 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 704 | 0.9+ | 0.1+ | | |
| 2002 01 04 | 644 | 0.2− | 0.1− | 2002 03 06 | 704 | 0.1− | 0.2+ | 2006 10 16 | 704 | 0.9+ | 0.1+ | | |
| 2002 01 04 | 644 | 0.6+ | 0.7+ | 2002 03 06 | 704 | 0.2− | 0.2− | 2006 10 16 | 704 | 0.3+ | 0.7− | | |
| 2002 01 07 | 704 | 0.1+ | 0.3− | 2002 03 06 | 704 | 0.1+ | 0.9+ | 2006 10 16 | 704 | 0.3+ | 0.5+ | | |
| 2002 01 07 | 704 | 0.0 | 0.5− | 2002 03 06 | 704 | (0.3− | 1.8−) | 2006 11 01 | G96 | 0.4+ | 0.0 | | |
| 2002 01 07 | 704 | 0.0 | 0.6− | 2002 04 05 | 704 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.1− | | |
| 2002 01 07 | 704 | 0.4− | 0.6− | 2002 04 05 | 704 | 0.6+ | 0.7+ | 2006 11 01 | G96 | 0.5+ | 0.0 | | |
| 2002 01 08 | 704 | 0.1− | 0.3+ | 2002 04 05 | 704 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.4+ | 0.1− | | |
| 2002 01 08 | 704 | 0.0 | 0.0 | 2002 04 05 | 704 | 0.7+ | 0.1− | 2006 11 01 | 703 | 0.1− | 0.5+ | | |
| 2002 01 08 | 704 | 0.0 | 0.2− | 2005 06 18 | G96 | 0.2− | 0.2+ | 2006 11 01 | 703 | 0.4+ | 0.8+ | | |
| 2002 01 08 | 704 | (1.8+ | 1.2−) | 2005 06 18 | G96 | 0.1− | 0.4− | 2006 11 01 | 703 | 0.9+ | 0.1+ | | |
| 2002 01 08 | 704 | 0.2+ | 0.4− | 2005 06 18 | G96 | 0.7− | 0.1+ | 2006 11 01 | 703 | 0.5− | 0.5− | | |
| 2002 01 15 | 644 | 0.0 | 0.3+ | 2005 06 18 | G96 | 0.7− | 0.0 | 2006 11 21 | 703 | 0.8− | 0.1+ | | |
| 2002 01 15 | 644 | 0.2− | 0.2+ | 2005 06 29 | 691 | 0.3− | 0.2+ | 2006 11 21 | 703 | 0.6− | 0.3− | | |
| 2002 01 15 | 644 | 0.0 | 0.5+ | 2005 06 29 | 691 | 0.2− | 0.4+ | 2006 11 21 | 703 | 0.0 | 0.2− | | |
| 2002 01 19 | 704 | 0.5+ | 0.1+ | 2005 06 29 | 691 | 0.2− | 0.1+ | 2006 11 21 | 703 | 0.2− | 0.0 | | |

**(141346)∗ 2002 AF$_{16}$ = 1995 YV$_1$**

Discovered 2002 Jan. 4 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 25535)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.67225 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17773287 | $\omega$ | 286.25753 | | +0.71420766 | | −0.67111400 |
| $a$ | 3.1329794 | $\Omega$ | 116.38061 | | +0.69644737 | | +0.65307799 |
| $e$ | 0.3941390 | $i$ | 12.81987 | | +0.06977446 | | +0.35084917 |
| $P$ | 5.55 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 413 | 0.1+ | 0.5− | 2002 01 21 | 704 | 0.7− | 1.0+ | 2002 02 12 | 704 | 0.1− | 0.2+ | | |
| 1995 12 18 | 413 | 0.3+ | 0.7− | 2002 01 21 | 704 | 0.0 | 0.8+ | 2002 02 12 | 704 | 0.5+ | 0.8− | | |
| 1995 12 20 | 413 | 0.6+ | 1.6− | 2002 01 21 | 704 | 0.2− | 1.2+ | 2002 02 12 | 704 | 0.1+ | 0.9− | | |
| 2000 07 31 | 807 | 0.2− | 0.1+ | 2002 02 03 | 699 | 0.7+ | 0.3− | 2002 02 12 | 704 | 0.2− | 0.3+ | | |
| 2000 07 31 | 807 | 0.1− | 0.1+ | 2002 02 03 | 699 | 0.2− | 0.6+ | 2002 02 12 | 704 | 0.9+ | 0.8− | | |
| 2001 12 17 | 644 | 0.4+ | 0.2− | 2002 02 03 | 699 | 0.1− | 1.0+ | 2002 02 12 | 704 | 0.0 | 0.1+ | | |
| 2001 12 17 | 644 | 0.1+ | 0.3+ | 2002 02 03 | 699 | 0.9+ | 0.7+ | 2002 02 12 | 704 | 0.7− | 0.2+ | | |
| 2001 12 17 | 644 | 0.3+ | 0.5+ | 2002 02 03 | 608 | 1.1− | 0.4− | 2006 08 05 | E12 | 0.5− | 0.9− | | |
| 2002 01 04 | 608 | 0.2− | 0.5− | 2002 02 03 | 608 | 1.0− | 0.7− | 2006 08 05 | E12 | 0.0 | 0.7+ | | |
| 2002 01 04 | 608 | 0.1− | 0.9− | 2002 02 03 | 608 | 0.9− | 1.0− | 2006 08 05 | E12 | 0.0 | 0.1+ | | |
| 2002 01 04 | 608 | 0.0 | 0.8− | 2002 02 04 | 644 | 0.0 | 0.4+ | 2006 08 05 | E12 | 0.1+ | 0.3+ | | |
| 2002 01 08 | 608 | 0.6− | 0.4+ | 2002 02 04 | 644 | 0.0 | 0.5+ | 2006 08 10 | 644 | 0.1− | 0.0 | | |
| 2002 01 08 | 608 | 0.3− | 0.5+ | 2002 02 04 | 644 | 0.0 | 0.5+ | 2006 08 10 | 644 | 0.1+ | 0.1+ | | |
| 2002 01 08 | 608 | 0.4− | 0.2+ | 2002 02 06 | 704 | 0.6+ | 0.0 | 2006 08 10 | 644 | 0.0 | 0.2+ | | |
| 2002 01 09 | 704 | 0.8+ | 0.8+ | 2002 02 06 | 704 | 0.4+ | 0.2− | 2006 08 23 | F84 | 0.1+ | 0.1− | | |
| 2002 01 09 | 704 | 0.2+ | 0.0 | 2002 02 06 | 704 | 0.9+ | 0.6− | 2006 08 23 | F84 | 0.4+ | 0.2− | | |
| 2002 01 09 | 704 | 0.9+ | 0.7+ | 2002 02 06 | 704 | 0.8+ | 0.5− | 2006 08 23 | F84 | 0.2+ | 0.4− | | |
| 2002 01 09 | 704 | 0.2+ | 0.7+ | 2002 02 06 | 704 | 0.2+ | 0.2− | 2006 09 22 | 703 | 0.1− | 0.4+ | | |
| 2002 01 09 | 704 | 0.6+ | 0.5+ | 2002 02 07 | 608 | 0.4− | 0.4− | 2006 09 22 | 703 | 0.3− | 0.1+ | | |
| 2002 01 14 | 608 | 0.3− | 0.5− | 2002 02 07 | 608 | 0.5− | 0.1+ | 2006 09 22 | 703 | 0.2+ | 0.1+ | | |
| 2002 01 14 | 608 | 0.6+ | 0.6− | 2002 02 07 | 608 | 0.4− | 0.2+ | 2006 09 22 | 703 | 0.1+ | 0.1+ | | |
| 2002 01 14 | 608 | 0.5+ | 0.6− | 2002 02 08 | 704 | 0.7− | 0.1+ | 2006 09 24 | 699 | 0.1+ | 0.5+ | | |
| 2002 01 14 | 704 | 0.8+ | 0.6− | 2002 02 08 | 704 | 0.7− | 0.6+ | 2006 09 24 | 699 | 0.1+ | 0.2+ | | |
| 2002 01 14 | 704 | 0.3+ | 0.2+ | 2002 02 08 | 704 | 1.3− | 1.0+ | 2006 09 24 | 699 | 0.1+ | 0.3+ | | |
| 2002 01 14 | 704 | 0.4+ | 0.4− | 2002 02 11 | 732 | 0.4− | 0.5− | 2006 09 24 | 699 | 0.1− | 0.3+ | | |
| 2002 01 14 | 704 | 0.6+ | 0.2− | 2002 02 11 | 732 | 0.9− | 0.6+ | 2006 11 25 | 703 | 0.3− | 0.1− | | |
| 2002 01 14 | 704 | 0.3− | 0.5− | 2002 02 11 | 732 | 0.8− | 0.1+ | 2006 11 25 | 703 | 0.1+ | 0.2+ | | |
| 2002 01 21 | 704 | 0.3+ | 0.4+ | 2002 02 12 | 704 | 0.2− | 0.2+ | 2006 11 25 | 703 | 0.5− | 0.4+ | | |
| 2002 01 21 | 704 | 0.7+ | 0.7+ | 2002 02 12 | 704 | 0.0 | 1.0− | 2006 11 25 | 703 | 0.7− | 0.0 | | |

**(141347)∗ 2002 AR$_{18}$**

Discovered 2002 Jan. 8 at George Observatory, Needville.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.53078 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17829125 | $\omega$ | 29.58246 | | −0.75629829 | | −0.48999181 |
| $a$ | 3.1264347 | $\Omega$ | 114.57064 | | +0.46646642 | | −0.86847045 |
| $e$ | 0.1289209 | $i$ | 28.46751 | | +0.45871775 | | +0.07528014 |
| $P$ | 5.53 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 10 25 | 260 | 0.4− | 0.8− | 2002 01 14 | 704 | (0.9+ | 1.6+) | 2003 04 01 | 699 | 0.3− | 0.2+ | | |
| 1978 10 25 | 260 | 0.6+ | 0.5− | 2002 01 16 | 735 | 0.3+ | 0.1+ | 2003 04 01 | 699 | 1.1− | 0.0 | | |
| 2001 12 11 | 704 | 0.1− | 0.3+ | 2002 01 16 | 735 | 0.3+ | 0.0 | 2003 05 28 | 704 | 0.3− | 0.2+ | | |
| 2001 12 11 | 704 | 0.0 | 0.8− | 2002 01 16 | 735 | 0.3+ | 0.0 | 2003 05 28 | 704 | 0.3− | 0.3+ | | |
| 2001 12 11 | 704 | 0.4− | 0.3+ | 2002 02 07 | 704 | 0.0 | 0.6− | 2003 05 28 | 704 | 0.3− | 0.9+ | | |
| 2001 12 11 | 704 | 0.2− | 0.4+ | 2002 02 07 | 704 | 0.5− | 0.3+ | 2003 05 28 | 704 | 0.2− | 0.2+ | | |
| 2001 12 19 | 704 | 1.0+ | 0.0 | 2002 02 07 | 704 | (2.1− | 0.4−) | 2005 10 01 | 735 | 0.0 | 0.8− | | |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2002 02 07 | 704 | 0.4− | 0.1− | 2005 10 01 | 735 | 0.6+ | 0.4− | | |
| 2001 12 19 | 704 | 0.9+ | 0.3− | 2002 02 09 | 704 | 0.5− | 0.4− | 2005 10 01 | 735 | 0.1− | 0.6+ | | |
| 2001 12 19 | 704 | 0.2− | 0.7− | 2002 02 09 | 704 | 0.4− | 0.4+ | 2005 10 25 | 735 | 0.6+ | 1.5+ | | |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2002 02 09 | 704 | 0.6− | 0.6+ | 2005 10 25 | 735 | 0.4+ | 1.3+ | | |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2002 02 09 | 704 | 0.0 | 0.3+ | 2005 10 25 | 735 | 0.2+ | 0.3+ | | |
| 2001 12 19 | 704 | 1.3+ | 0.3− | 2002 02 09 | 735 | 0.4+ | 0.5+ | 2006 11 01 | 703 | 1.0+ | 1.0+ | | |
| 2002 01 08 | 735 | 0.6− | 0.0 | 2002 02 09 | 735 | 0.7+ | 0.3+ | 2006 11 01 | 703 | 0.2− | 1.1+ | | |
| 2002 01 08 | 735 | 0.6− | 0.2+ | 2002 02 09 | 735 | 1.2+ | 0.7− | 2006 11 01 | 703 | 0.9− | 0.4+ | | |
| 2002 01 08 | 735 | 0.5− | 0.0 | 2003 01 27 | 704 | 0.5+ | 0.7+ | 2006 11 01 | 703 | 0.5+ | 0.6− | | |
| 2002 01 09 | 704 | 0.7− | 1.1− | 2003 01 27 | 704 | 0.8+ | 0.9+ | 2006 11 20 | 703 | 1.4− | 0.6+ | | |
| 2002 01 09 | 704 | 0.2− | 0.3− | 2003 01 27 | 704 | 0.8+ | 0.2+ | 2006 11 20 | 703 | 0.4− | 0.7+ | | |
| 2002 01 09 | 704 | 0.2− | 1.1− | 2003 01 27 | 704 | 0.7+ | 0.4− | 2006 11 20 | 703 | 0.6− | 0.2− | | |
| 2002 01 13 | 735 | 0.7− | 1.4+ | 2003 02 08 | 608 | 0.4+ | 0.3− | 2006 11 20 | 703 | 0.4+ | 1.2− | | |
| 2002 01 13 | 735 | 0.4+ | 0.3+ | 2003 02 08 | 608 | 0.6+ | 0.8− | 2006 11 24 | 703 | 0.4− | 0.2− | | |
| 2002 01 14 | 704 | 0.4+ | 0.5+ | 2003 02 08 | 608 | 0.5+ | 0.9− | 2006 11 24 | 703 | 0.6+ | 1.1− | | |
| 2002 01 14 | 704 | 0.0 | 1.1+ | 2003 04 01 | 699 | 0.1− | 0.2+ | 2006 11 24 | 703 | 0.4− | 0.6− | | |
| 2002 01 14 | 704 | 0.3+ | 0.9+ | 2003 04 01 | 699 | 1.2− | 0.1+ | 2006 11 24 | 703 | 0.4− | 0.0 | | |

**(141348)∗ 2002 AJ$_{19}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.87431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20957534 | $\omega$ | 114.83194 | | +0.75146639 | | −0.64683163 |
| $a$ | 2.8070012 | $\Omega$ | 285.75018 | | +0.54601310 | | +0.72033134 |
| $e$ | 0.1621179 | $i$ | 7.76439 | | +0.37036193 | | +0.25046279 |
| $P$ | 4.70 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 05 | 691 | 0.4+ | 0.1+ | 2002 01 08 | 704 | 0.3− | 0.3+ | 2005 09 06 | 704 | 0.0 | 0.1− | | |
| 2000 07 05 | 691 | 0.2+ | 0.2− | 2002 01 08 | 704 | 0.1− | 0.1− | 2005 09 06 | 704 | 0.2− | 0.9+ | | |
| 2000 07 05 | 691 | 0.2+ | 0.0 | 2002 01 08 | 704 | 0.2− | 0.2+ | 2005 09 06 | 704 | 1.1+ | 0.2− | | |
| 2000 08 05 | 608 | 1.1− | 0.5+ | 2002 01 08 | 704 | 0.2+ | 0.4− | 2005 09 23 | 644 | 0.0 | 0.3− | | |
| 2000 08 05 | 608 | 1.3− | 0.9+ | 2002 01 08 | 704 | 0.3+ | 0.3− | 2005 09 23 | 644 | 0.1− | 0.3− | | |
| 2000 08 05 | 608 | 0.8− | 0.0 | 2002 01 09 | 704 | 0.3− | 0.4+ | 2005 09 23 | 644 | 0.0 | 0.0 | | |
| 2001 10 15 | 704 | 0.5− | 0.1− | 2002 01 09 | 704 | 1.0− | 0.5− | 2005 09 30 | 699 | 0.3− | 0.1− | | |
| 2001 10 15 | 704 | 0.5− | 0.6+ | 2002 01 09 | 704 | 1.2+ | 0.4+ | 2005 09 30 | 699 | 0.1+ | 0.0 | | |
| 2001 10 15 | 704 | 0.4+ | 0.5+ | 2002 01 09 | 704 | (0.3− | 1.5−) | 2005 09 30 | 699 | 0.5− | 0.1− | | |
| 2001 10 15 | 704 | 0.8+ | 0.4+ | 2002 01 09 | 704 | 0.1− | 0.3+ | 2005 09 30 | 699 | 0.9+ | 0.8+ | | |
| 2001 10 15 | 704 | 0.7+ | 0.1+ | 2002 01 09 | 704 | 0.4− | 1.0+ | 2005 10 30 | 704 | 0.1− | 0.9− | | |
| 2001 11 11 | 704 | 0.4+ | 0.3+ | 2002 01 09 | 704 | 0.7− | 0.8+ | 2005 10 30 | 704 | 1.0− | 0.8− | | |
| 2001 11 11 | 704 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.0 | 0.5+ | 2005 10 30 | 704 | 0.1+ | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2− | 0.3− | 2002 01 09 | 704 | 0.5− | 0.2− | 2005 10 30 | 704 | 0.5+ | 0.6− |
| 2001 11 11 | 704 | 0.1+ | 0.5+ | 2002 01 14 | 704 | 0.1+ | 0.4− | 2006 09 25 | 691 | 0.5− | 0.1− |
| 2001 11 11 | 704 | 0.5+ | 0.1+ | 2002 01 14 | 704 | 0.2+ | 0.9− | 2006 09 25 | 691 | 0.7+ | 0.1+ |
| 2001 11 24 | 704 | 0.3− | 0.1− | 2002 01 14 | 704 | 0.4+ | 1.0− | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2001 11 24 | 704 | 0.2− | 0.2− | 2002 01 14 | 704 | 0.0 | 0.9− | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 0.8− | 0.5− | 2002 01 14 | 704 | (0.2− | 1.8−) | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2001 11 24 | 704 | 0.3− | 0.2− | 2002 01 21 | 704 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2001 12 17 | 704 | 0.2+ | 0.6+ | 2002 01 21 | 704 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2002 01 21 | 704 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2005 07 31 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.3+ | 0.4+ | 2005 07 31 | 644 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2005 07 31 | 644 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.1− |

**(141349)∗ 2002 AO$_{22}$**

Discovered 2002 Jan. 7 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.35882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18839985 | $\omega$ | 31.62335 | | −0.93112287 | −0.36381115 | |
| $a$ | 3.0135774 | $\Omega$ | 127.02083 | | +0.32758878 | −0.86507385 | |
| $e$ | 0.2306360 | $i$ | 1.83219 | | +0.16029905 | −0.34538193 | |
| $P$ | 5.23 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 07 | 691 | 0.0 | 0.0 | 2002 02 24 | 644 | 0.3− | 0.3+ | 2002 05 14 | 704 | 0.3− | 0.0 |
| 2002 01 07 | 691 | 0.1− | 0.2− | 2002 02 24 | 644 | 0.2− | 0.1+ | 2002 05 14 | 704 | 0.4+ | 0.2− |
| 2002 01 07 | 691 | 0.1+ | 0.1− | 2002 02 24 | 644 | 0.1− | 0.3+ | 2002 05 14 | 704 | (2.1+ | 0.7+) |
| 2002 01 07 | 608 | 0.3− | 1.3− | 2002 03 07 | 209 | 0.8+ | 0.1+ | 2002 05 16 | 704 | 0.1+ | 1.3+ |
| 2002 01 07 | 608 | 0.3+ | 1.5− | 2002 03 08 | 209 | 0.6+ | 0.1+ | 2002 05 16 | 704 | 0.6− | 0.4− |
| 2002 01 07 | 608 | 0.8− | 0.4− | 2002 03 08 | 209 | 1.1+ | 0.1+ | 2002 05 16 | 704 | 0.4− | 0.0 |
| 2002 01 11 | 608 | 0.9+ | 0.9− | 2002 03 09 | 644 | 0.2+ | 0.4+ | 2002 05 16 | 704 | 0.2− | 0.2+ |
| 2002 01 11 | 608 | 1.0+ | 0.5− | 2002 03 09 | 704 | 0.3− | 0.2− | 2004 08 23 | 691 | 0.2− | 0.8+ |
| 2002 01 11 | 608 | 0.2+ | 0.3− | 2002 03 09 | 704 | 0.1− | 0.6− | 2004 08 23 | 691 | 0.2− | 0.9+ |
| 2002 01 18 | 704 | 1.0− | 0.8+ | 2002 03 09 | 704 | 0.4− | 0.2− | 2004 08 23 | 691 | 0.4− | 0.6+ |
| 2002 01 18 | 704 | 0.5+ | 1.5+ | 2002 03 09 | 704 | 0.4− | 0.4− | 2005 10 01 | G96 | 0.3+ | 0.2+ |
| 2002 01 18 | 704 | 0.3+ | 0.3− | 2002 03 09 | 644 | 0.2+ | 0.3+ | 2005 10 01 | G96 | 0.0 | 0.3+ |
| 2002 01 18 | 704 | 0.8+ | 0.3− | 2002 03 09 | 704 | 0.0 | 0.3− | 2005 10 01 | G96 | 0.2+ | 0.4+ |
| 2002 01 18 | 704 | 1.2+ | 0.7− | 2002 03 09 | 644 | 0.3+ | 0.2+ | 2005 10 01 | G96 | 0.0 | 0.3+ |
| 2002 02 06 | 699 | 0.2+ | 0.1− | 2002 03 10 | 704 | 0.1+ | 0.3+ | 2005 10 04 | G96 | 0.1+ | 0.1+ |
| 2002 02 06 | 699 | 0.0 | 0.8+ | 2002 03 10 | 704 | 0.7+ | 0.3− | 2005 10 04 | G96 | 0.1− | 0.3+ |
| 2002 02 06 | 699 | 0.0 | 0.6+ | 2002 03 10 | 704 | 0.8− | 0.6+ | 2005 10 04 | G96 | 0.3− | 0.2+ |
| 2002 02 06 | 699 | 0.6+ | 0.3+ | 2002 03 12 | 644 | 0.1+ | 1.2+ | 2005 10 04 | G96 | 0.1− | 0.1+ |
| 2002 02 07 | 704 | 0.2+ | 0.2+ | 2002 03 12 | 704 | 0.2− | 0.1− | 2005 10 22 | 703 | 0.0 | 0.2+ |
| 2002 02 07 | 704 | 0.0 | 0.2− | 2002 03 12 | 704 | 0.1− | 0.9+ | 2005 10 22 | 703 | 0.5− | 0.1− |
| 2002 02 07 | 704 | 0.3− | 0.5+ | 2002 03 12 | 644 | 0.0 | 1.2+ | 2005 10 22 | 703 | 0.5+ | 0.9+ |
| 2002 02 07 | 704 | 1.1− | 0.0 | 2002 03 12 | 704 | 0.4− | 0.5− | 2005 10 22 | 703 | 0.4− | 0.3− |
| 2002 02 07 | 704 | 0.4− | 0.5+ | 2002 03 12 | 704 | 0.1− | 0.8+ | 2005 10 29 | G96 | 0.2+ | 0.1+ |
| 2002 02 10 | 704 | 0.1− | 1.0− | 2002 03 12 | 704 | 0.1− | 0.2− | 2005 10 29 | G96 | 0.1+ | 0.1+ |
| 2002 02 10 | 704 | 0.0 | 0.9− | 2002 03 12 | 704 | 0.1− | 1.2+ | 2005 10 29 | G96 | 0.3− | 0.1− |
| 2002 02 10 | 704 | 0.2+ | 0.1− | 2002 03 12 | 704 | 0.3− | 0.1+ | 2005 10 29 | G96 | 0.2+ | 0.3+ |
| 2002 02 10 | 704 | 0.3− | 1.2− | 2002 03 12 | 704 | 0.2+ | 1.1+ | 2005 10 29 | G96 | 0.1− | 0.3+ |
| 2002 02 10 | 704 | 0.6− | 0.3− | 2002 03 12 | 644 | 0.0 | 1.2+ | 2005 10 29 | G96 | 0.3− | 0.4+ |
| 2002 02 12 | 704 | 0.0 | 0.1+ | 2002 03 12 | 704 | 0.3+ | 0.1+ | 2005 10 29 | G96 | 0.1− | 0.4+ |
| 2002 02 12 | 704 | 0.5− | 0.3− | 2002 03 12 | 704 | 0.2+ | 1.3+ | 2005 10 29 | G96 | 0.2+ | 0.3+ |
| 2002 02 12 | 704 | 0.2+ | 1.1+ | 2002 03 14 | 704 | 0.5+ | 0.0 | 2005 11 03 | 704 | 0.9− | 0.7+ |
| 2002 02 12 | 704 | 0.2+ | 0.9+ | 2002 03 14 | 704 | 0.1+ | 0.1+ | 2005 11 03 | 704 | 0.5− | 1.2+ |
| 2002 02 12 | 704 | 0.7+ | 0.4− | 2002 03 14 | 704 | 0.4− | 0.1+ | 2005 11 03 | 704 | 0.2− | 1.3+ |
| 2002 02 13 | 333 | 0.3+ | 1.4+ | 2002 03 14 | 704 | 0.5+ | 0.2− | 2005 11 09 | 703 | 1.2− | 1.0+ |
| 2002 02 13 | 333 | 0.2+ | 0.9+ | 2002 03 14 | 704 | 0.1+ | 0.5− | 2005 11 09 | 703 | 0.8− | 1.1+ |
| 2002 02 13 | 333 | (0.7+ | 1.6+) | 2002 03 16 | 704 | 0.2+ | 0.6+ | 2005 11 09 | 703 | 0.3− | 1.0+ |
| 2002 02 14 | 333 | (0.1+ | 1.7+) | 2002 03 16 | 704 | 0.1+ | 0.7+ | 2005 11 09 | 703 | 0.0 | 0.4+ |
| 2002 02 14 | 333 | 0.5+ | 0.1+ | 2002 03 16 | 704 | 0.2+ | 0.5+ | 2005 12 01 | G96 | 0.4− | 0.0 |
| 2002 02 14 | 333 | 0.5+ | 1.0+ | 2002 03 16 | 704 | 0.2+ | 0.7+ | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2002 02 14 | 333 | 0.5+ | 0.5− | 2002 03 16 | 704 | 0.1+ | 0.5+ | 2005 12 01 | G96 | 0.2+ | 0.1+ |
| 2002 02 14 | 333 | (0.2+ | 2.3+) | 2002 03 20 | 704 | 0.2+ | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2002 02 14 | 333 | 0.7+ | 1.0− | 2002 03 20 | 704 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2002 02 15 | 691 | 0.3− | 0.0 | 2002 03 20 | 704 | 0.6+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2002 02 15 | 691 | 0.4− | 0.1+ | 2002 03 20 | 704 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2002 02 15 | 691 | 0.4− | 0.1+ | 2002 03 20 | 704 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2002 02 16 | 561 | 0.0 | 0.2− | 2002 03 21 | 704 | 0.5+ | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.6− |
| 2002 02 17 | 561 | 0.1− | 0.0 | 2002 03 21 | 704 | 0.5+ | 0.4+ | 2006 11 01 | G96 | 0.4+ | 0.2− |
| 2002 02 17 | 561 | 0.2− | 0.1− | 2002 03 21 | 704 | 0.5+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2002 02 19 | 333 | 0.0 | 0.6− | 2002 03 21 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 02 19 | 333 | 0.2− | 0.2− | 2002 03 21 | 704 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 02 19 | 333 | 0.1− | 0.5− | 2002 04 03 | 699 | 0.5+ | 0.7− | 2006 11 15 | G96 | 0.7+ | 0.1− |
| 2002 02 20 | 704 | 0.1+ | 0.2+ | 2002 04 03 | 699 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2002 02 20 | 704 | 0.2+ | 0.0 | 2002 04 03 | 699 | 0.5+ | 0.3− | 2006 11 27 | 703 | 1.0− | 0.6− |
| 2002 02 20 | 704 | 0.4+ | 0.6+ | 2002 04 03 | 699 | 1.2+ | 1.3+ | 2006 11 27 | 703 | 0.1− | 0.1− |
| 2002 02 20 | 291 | 0.4− | 0.4+ | 2002 04 06 | 704 | 0.1− | 0.7− | 2006 11 27 | 703 | 0.2− | 0.8− |
| 2002 02 20 | 704 | 0.0 | 0.3+ | 2002 04 06 | 704 | 0.0 | 0.8+ | 2006 11 27 | 703 | 1.3− | 0.6− |
| 2002 02 20 | 704 | 0.2+ | 1.1− | 2002 04 06 | 704 | 1.3− | 0.5+ | 2006 11 28 | G96 | 0.2+ | 0.5− |
| 2002 02 20 | 291 | 0.1− | 0.6+ | 2002 04 06 | 704 | 0.5− | 0.0 | 2006 11 28 | G96 | 0.0 | 0.3− |
| 2002 02 20 | 291 | 0.0 | 0.4+ | 2002 04 11 | 699 | 0.3+ | 1.1− | 2006 11 28 | G96 | 0.2− | 0.2− |
| 2002 02 21 | 333 | 0.2+ | 0.4+ | 2002 04 11 | 699 | 0.4− | 0.1+ | 2006 11 28 | G96 | 0.1+ | 0.6− |
| 2002 02 21 | 333 | 0.0 | 0.3− | 2002 04 11 | 699 | 0.8+ | 0.6− | | | | |
| 2002 02 21 | 333 | 0.1− | 0.3− | 2002 04 11 | 699 | 1.2+ | 0.3+ | | | | |

**(141350)∗ 2002 AR$_{22}$**

Discovered 2002 Jan. 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.28739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17740120 | $\omega$ | 55.34501 | | −0.18066061 | −0.98175068 | |
| $a$ | 3.1368832 | $\Omega$ | 45.18261 | | +0.87277454 | −0.18786163 | |
| $e$ | 0.0930105 | $i$ | 4.80275 | | +0.45346041 | −0.02955679 | |
| $P$ | 5.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.2+ | 0.1+ | 2002 02 04 | 644 | 0.1+ | 0.1− | 2005 09 11 | 691 | 0.1− | 0.5+ |
| 2000 10 01 | 704 | 0.1− | 0.6+ | 2002 02 06 | 704 | 0.2− | 0.7+ | 2005 09 11 | 691 | 0.0 | 0.3+ |
| 2000 10 01 | 704 | 0.7− | 0.4+ | 2002 02 06 | 704 | 0.7+ | 0.5+ | 2006 11 16 | 704 | 0.9− | 1.4+ |
| 2000 10 01 | 704 | 0.6− | 0.7+ | 2002 02 06 | 704 | 0.4− | 0.0 | 2006 11 16 | 704 | (1.5− | 0.4+) |
| 2000 10 01 | 704 | 0.7− | 0.7+ | 2003 05 11 | 691 | 0.2+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2000 11 02 | 691 | 0.3+ | 0.0 | 2003 05 11 | 691 | 0.2+ | 1.2+ | 2006 11 16 | 704 | 0.6+ | 0.8+ |
| 2000 11 02 | 691 | 0.2− | 0.2− | 2003 05 11 | 691 | 0.0 | 0.6+ | 2006 11 16 | 704 | 0.8+ | 0.3+ |
| 2000 11 02 | 691 | 0.5+ | 0.0 | 2003 05 25 | 691 | 1.1+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.4+ |
| 2002 01 08 | 704 | 0.3+ | 0.3+ | 2003 05 25 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2002 01 08 | 704 | 0.5− | 0.3+ | 2003 05 25 | 691 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2002 01 08 | 704 | 0.1− | 0.5+ | 2005 08 26 | 644 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2002 01 08 | 704 | 0.1− | 0.0 | 2005 08 26 | 644 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 01 08 | 608 | 0.1+ | 0.1− | 2005 08 26 | 644 | 0.7− | 0.1+ | 2006 11 24 | 691 | 0.3+ | 0.1+ |
| 2002 01 08 | 608 | 0.0 | 0.3− | 2005 08 28 | 691 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.2+ | 0.2− |
| 2002 01 08 | 608 | 0.3+ | 1.0− | 2005 08 28 | 691 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2002 01 11 | 644 | 0.1− | 0.4+ | 2005 08 28 | 691 | 0.4− | 0.0 | 2006 11 27 | 704 | 0.1+ | 0.7+ |
| 2002 01 11 | 644 | 0.1− | 0.1+ | 2005 09 01 | 691 | 0.1− | 0.2+ | 2006 11 27 | 704 | 1.2− | 0.8+ |
| 2002 01 11 | 644 | 0.3− | 0.2+ | 2005 09 01 | 691 | 0.0 | 0.1− | 2006 11 27 | 704 | 0.1− | 0.6+ |
| 2002 02 04 | 644 | 0.2− | 0.5+ | 2005 09 01 | 691 | 0.0 | 0.0 | | | | |
| 2002 02 04 | 644 | 0.2− | 0.1+ | 2005 09 11 | 691 | 0.3− | 0.3+ | | | | |

**(141351)∗ 2002 AE$_{25}$**

Discovered 2002 Jan. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.32554 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17436878 | $\omega$ | 342.18410 | | −0.74204170 | −0.66915541 | |
| $a$ | 3.1731473 | $\Omega$ | 155.67049 | | +0.62626678 | −0.71331715 | |
| $e$ | 0.0965697 | $i$ | 5.58069 | | +0.23909003 | −0.20834991 | |
| $P$ | 5.65 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.0 | 0.5+ | 2002 02 06 | 644 | 0.4+ | 1.3+ | 2005 09 12 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.7− | 0.5+ | 2002 02 07 | 704 | 0.6− | 1.0− | 2005 10 06 | G96 | 0.2+ | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.9+ | 2002 02 07 | 704 | 1.3− | 1.1− | 2005 10 06 | G96 | 0.1− | 0.3+ |
| 2001 12 17 | 704 | (0.6− | 1.9+) | 2002 02 07 | 704 | 0.1− | 0.9− | 2005 10 06 | G96 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 0.8− | 1.4+ | 2002 02 07 | 704 | 0.0 | 0.1+ | 2005 10 06 | G96 | 0.2− | 0.2+ |
| 2002 01 08 | 644 | 0.6+ | 0.4+ | 2002 02 11 | 704 | 0.4+ | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 644 | 0.7+ | 0.1+ | 2002 02 11 | 704 | 0.9+ | 0.3+ | 2006 10 23 | G96 | 0.5− | 0.0 |
| 2002 01 08 | 644 | 0.8+ | 0.2+ | 2002 02 11 | 704 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2002 01 09 | 644 | 0.2+ | 0.6− | 2002 02 11 | 704 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2002 01 09 | 644 | 0.2+ | 0.4− | 2002 02 13 | 704 | 0.8+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2002 01 09 | 644 | 0.0 | 0.0 | 2002 02 13 | 704 | 0.0 | 1.1+ | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2002 01 13 | 704 | 0.1− | 1.1− | 2002 02 13 | 704 | 0.9− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 01 13 | 704 | 0.5− | 0.7− | 2002 02 16 | 644 | 0.3+ | 1.4+ | 2006 11 17 | 644 | 1.0+ | 0.2− |
| 2002 01 13 | 704 | 0.7− | 1.0− | 2002 02 16 | 644 | 0.1+ | 1.4+ | 2006 11 17 | 644 | 0.2+ | 0.1+ |
| 2002 01 13 | 704 | 0.6− | 0.4− | 2002 02 16 | 644 | 0.0 | 1.2+ | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2002 01 13 | 704 | 0.2− | 1.2− | 2003 04 29 | 691 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2002 01 13 | 704 | 0.6− | 0.6− | 2003 04 29 | 691 | 0.1− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 01 13 | 704 | 0.5+ | 0.0 | 2003 04 29 | 691 | 0.2− | 0.7+ | 2006 11 20 | 704 | (1.2− | 2.8+) |
| 2002 01 13 | 704 | 0.5− | 0.9− | 2003 05 06 | 691 | 0.4− | 0.4+ | 2006 11 20 | 704 | 1.0+ | 1.4+ |
| 2002 01 22 | 704 | 0.6+ | 0.0 | 2003 05 06 | 691 | 0.6− | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2002 01 22 | 704 | 0.0 | 0.4+ | 2003 05 06 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.7+ |
| 2002 01 22 | 704 | 0.8+ | 0.3− | 2003 05 29 | 691 | 0.9+ | 0.4+ | 2006 11 20 | 704 | 0.5− | 1.0− |
| 2002 01 22 | 704 | 0.8+ | 0.2+ | 2003 05 29 | 691 | 0.8+ | 0.2− | 2006 11 20 | 704 | 0.8− | 0.6− |
| 2002 01 26 | 644 | 0.2+ | 0.7+ | 2003 05 29 | 691 | 0.9+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2002 01 26 | 644 | 0.2+ | 0.9+ | 2005 08 25 | 644 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2002 01 26 | 644 | 0.1+ | 0.6+ | 2005 08 25 | 644 | 0.7− | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2002 02 04 | 699 | (0.7+ | 1.5+) | 2005 08 25 | 644 | 0.3+ | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 02 04 | 699 | 0.2− | 0.2− | 2005 08 29 | 691 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.6+ |
| 2002 02 04 | 699 | 0.0 | 0.8+ | 2005 08 29 | 691 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.7− | 0.0 |
| 2002 02 04 | 699 | 0.6− | 0.1+ | 2005 08 29 | 691 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2002 02 06 | 644 | 0.0 | 1.2+ | 2005 09 12 | 691 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.6− | 0.4+ |
| 2002 02 06 | 644 | (0.4+ | 1.7+) | 2005 09 12 | 691 | 0.1− | 0.5+ | | | | |

**(141352)∗ 2002 AD$_{27}$ = 1998 KE$_{17}$ = 2000 SY$_{350}$**

Discovered 2002 Jan. 14 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. A. Doppler (*MPO* 25539)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.21330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17688887 | $\omega$ | 312.93369 | | +0.22859834 | −0.93641249 | |
| $a$ | 3.1429372 | $\Omega$ | 121.99716 | | +0.95936155 | +0.17021608 | |
| $e$ | 0.2304098 | $i$ | 18.29528 | | +0.16543344 | +0.30685199 | |
| $P$ | 5.57 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 27 | 691 | 0.0 | 0.1+ | 2002 01 15 | 608 | 0.4− | 0.5+ | 2002 03 21 | 644 | 0.1− | 0.1− |
| 1998 05 27 | 691 | 0.3+ | 0.3+ | 2002 01 15 | 608 | 0.3− | 0.4+ | 2002 04 01 | 644 | 0.1+ | 0.1+ |
| 1998 05 27 | 691 | 0.4+ | 0.0 | 2002 01 15 | 608 | 0.4− | 0.3− | 2002 04 01 | 644 | 0.2+ | 0.4+ |
| 1998 05 30 | 691 | 0.2+ | 0.7+ | 2002 01 19 | 333 | 0.2− | 0.4− | 2002 04 01 | 644 | 0.9+ | 0.0 |
| 1998 05 30 | 691 | 0.4+ | 0.4+ | 2002 01 19 | 333 | 1.4− | 0.8− | 2002 04 01 | 644 | 0.1− | 0.2+ |
| 1998 05 30 | 691 | 0.4+ | 0.1− | 2002 01 19 | 333 | 0.5− | 1.2− | 2002 04 01 | 644 | 0.5+ | 0.2+ |
| 2000 09 29 | 699 | 0.1+ | 1.2+ | 2002 02 03 | 699 | 0.2+ | 0.0 | 2002 04 01 | 644 | 0.2+ | 0.3+ |
| 2000 09 29 | 699 | 0.3− | 1.4+ | 2002 02 03 | 699 | 0.0 | 0.4+ | 2003 04 25 | 645 | 0.1− | 0.0 |
| 2000 09 29 | 699 | 1.0− | 0.2+ | 2002 02 03 | 699 | 0.3− | 0.3+ | 2003 04 25 | 645 | 0.1− | 0.0 |
| 2000 09 29 | 699 | 0.1− | 0.4− | 2002 02 03 | 699 | 0.1− | 0.5− | 2006 09 20 | 703 | 0.9− | 0.4+ |
| 2000 09 30 | 699 | 1.5− | 0.4+ | 2002 02 04 | 644 | 0.3− | 0.3− | 2006 09 20 | 703 | 0.1+ | 0.2+ |
| 2000 09 30 | 699 | 0.3− | 1.7+ | 2002 02 04 | 644 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.3+ | 0.3+ |
| 2000 09 30 | 699 | 0.5+ | 0.1+ | 2002 02 04 | 644 | 0.1+ | 0.3− | 2006 09 20 | 703 | 0.4− | 0.4+ |
| 2000 09 30 | 699 | 1.0− | 1.2+ | 2002 02 06 | 704 | 0.7− | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 11 17 | 704 | 0.1− | 0.3+ | 2002 02 06 | 704 | 0.9− | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 11 17 | 704 | 0.1+ | 0.4− | 2002 02 06 | 704 | 1.1− | 1.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 11 17 | 704 | 0.8− | 0.2+ | 2002 02 06 | 704 | 1.2− | 0.6+ | 2006 10 20 | 703 | 0.0 | 0.9+ |
| 2001 11 17 | 704 | 0.7+ | 0.0 | 2002 02 06 | 704 | (0.8− | 2.1+) | 2006 10 20 | 703 | 0.5+ | 0.4+ |
| 2001 11 17 | 704 | 0.5+ | 0.2+ | 2002 02 08 | 704 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.6− | 0.6+ |
| 2001 12 20 | 704 | 0.6+ | 0.4+ | 2002 02 08 | 704 | 0.1+ | 0.2− | 2006 10 20 | 703 | 0.0 | 0.2+ |
| 2001 12 20 | 704 | 0.8− | 0.1+ | 2002 02 08 | 704 | 0.3+ | 0.1− | 2006 10 28 | 703 | 0.2+ | 0.1+ |
| 2001 12 20 | 704 | 0.4− | 0.4+ | 2002 02 08 | 704 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.1+ |
| 2001 12 20 | 704 | 0.1+ | 0.6+ | 2002 02 08 | 704 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.6+ | 0.2− |
| 2001 12 20 | 704 | 0.1− | 0.5+ | 2002 02 12 | 704 | 0.8+ | 0.6+ | 2006 10 28 | 703 | 0.3+ | 0.2− |
| 2001 12 26 | 608 | 0.0 | 1.2− | 2002 02 12 | 704 | 0.5+ | 1.1+ | 2006 11 10 | 704 | 0.0 | 0.1− |
| 2001 12 26 | 608 | 0.1+ | 1.1− | 2002 02 12 | 704 | 0.6+ | 0.4+ | 2006 11 10 | 704 | 0.5− | 0.1+ |
| 2001 12 26 | 608 | (0.2+ | 1.5−) | 2002 02 12 | 704 | 0.9+ | 1.1+ | 2006 11 10 | 704 | 0.3− | 0.0 |
| 2002 01 09 | 704 | 0.1+ | 0.0 | 2002 02 12 | 704 | 1.0+ | 0.9+ | 2006 11 10 | 704 | 0.5− | 0.1+ |
| 2002 01 09 | 704 | 0.0 | 0.3− | 2002 02 14 | 644 | 0.4− | 0.8+ | 2006 11 10 | 704 | 0.1− | 0.6− |
| 2002 01 09 | 704 | 0.8+ | 0.4− | 2002 02 14 | 644 | 0.3− | 0.5+ | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2002 01 09 | 704 | 0.1+ | 0.4− | 2002 02 14 | 644 | 0.2− | 0.6+ | 2006 11 16 | 703 | 0.0 | 0.1− |
| 2002 01 09 | 704 | 0.5+ | 0.3− | 2002 02 23 | 644 | 0.2+ | 0.8+ | 2006 11 16 | 703 | 0.6+ | 0.1− |
| 2002 01 14 | 333 | 0.8+ | 0.2− | 2002 02 23 | 644 | 0.1+ | 0.8+ | 2006 11 16 | 703 | 0.8+ | 0.3− |
| 2002 01 14 | 333 | 0.6+ | 0.7− | 2002 02 23 | 644 | 0.0 | 0.9+ | 2006 11 22 | 704 | (3.7− | 1.2−) |
| 2002 01 14 | 333 | 0.7+ | 0.9− | 2002 03 05 | 699 | 0.3− | 0.4+ | 2006 11 22 | 704 | 1.1+ | 0.5+ |
| 2002 01 14 | 704 | 0.2+ | 0.3+ | 2002 03 05 | 699 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.1+ | 1.1+ |
| 2002 01 14 | 704 | 0.4+ | 0.2+ | 2002 03 05 | 699 | 0.6− | 0.5+ | 2006 11 22 | 704 | 1.3+ | 0.4+ |
| 2002 01 14 | 704 | 0.4+ | 0.2+ | 2002 03 05 | 699 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.2+ | 0.1+ |
| 2002 01 14 | 704 | 0.6+ | 0.3+ | 2002 03 11 | 644 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.1− |
| 2002 01 14 | 704 | 0.5+ | 0.1+ | 2002 03 11 | 644 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2002 01 15 | 333 | 0.4− | 1.1− | 2002 03 11 | 644 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2002 01 15 | 333 | 0.4− | 0.4− | 2002 03 21 | 644 | 0.1+ | 0.6− | | | | |
| 2002 01 15 | 333 | 0.1− | 0.3− | 2002 03 21 | 644 | 0.3+ | 0.1+ | | | | |

**(141353)∗ 2002 AD$_{28}$ = 1991 FV$_5$**

Discovered 2002 Jan. 7 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 25539)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.40865 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17292697 | $\omega$ | 135.76573 | | −0.55248826 | −0.83333359 | |
| $a$ | 3.1907606 | $\Omega$ | 347.73690 | | +0.73981638 | −0.48050807 | |
| $e$ | 0.1552906 | $i$ | 4.76909 | | +0.38396411 | −0.27325285 | |
| $P$ | 5.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 21 | 809 | 0.6+ | 0.0 | 2002 02 03 | 699 | (1.9+ | 0.1+) | 2006 10 23 | 691 | 0.5− | 0.8+ |
| 1991 03 21 | 809 | 0.1− | 0.3+ | 2002 02 06 | 704 | 0.4+ | 0.6− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 1991 03 21 | 809 | 0.8− | 0.1+ | 2002 02 06 | 704 | 1.0− | 0.5− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 1997 04 03 | 704 | 0.2+ | 1.4− | 2002 02 06 | 704 | 0.5− | 0.5− | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 1997 04 03 | 704 | 0.5+ | 1.2− | 2002 02 06 | 704 | 0.6− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2000 10 25 | 704 | 0.9+ | 0.1+ | 2002 02 06 | 704 | 0.2+ | 0.6− | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2000 10 25 | 704 | 1.1+ | 0.1+ | 2002 02 06 | 608 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.5− |
| 2000 10 25 | 704 | 0.4+ | 1.0+ | 2002 02 06 | 608 | (0.1+ | 2.1+) | 2006 11 11 | 703 | 0.1− | 1.0− |
| 2000 11 20 | 704 | 0.5− | 0.6− | 2002 02 06 | 608 | (0.6+ | 1.7+) | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 2000 11 20 | 704 | 0.0 | 1.3− | 2002 02 07 | 704 | 0.6+ | 1.2+ | 2006 11 11 | 703 | 0.9+ | 0.1− |
| 2000 11 20 | 704 | 0.8− | 0.1− | 2002 02 07 | 704 | 0.5+ | 1.4+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2001 12 24 | 608 | 0.2+ | 0.9− | 2002 02 07 | 704 | 0.1+ | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2001 12 24 | 608 | 0.2− | 0.8− | 2002 02 07 | 704 | 1.2+ | 1.4+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2001 12 24 | 608 | 0.2− | 0.6− | 2002 02 07 | 704 | 0.4+ | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2002 01 07 | 699 | 0.5− | 0.4+ | 2002 02 10 | 704 | 0.4− | 0.7+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2002 01 07 | 699 | 0.5+ | 0.7− | 2002 02 10 | 704 | 0.3− | 0.5+ | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2002 01 07 | 699 | 1.5+ | 1.3+ | 2002 02 10 | 704 | 0.4− | 0.9+ | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2002 01 07 | 699 | 0.7− | 0.5− | 2002 02 10 | 704 | 0.4− | 1.0+ | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | 0.9− | 0.6+ | 2002 02 10 | 704 | 0.6− | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.7− |
| 2002 01 08 | 704 | 1.1− | 0.5+ | 2002 02 12 | 704 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2002 01 08 | 704 | 0.3− | 0.5+ | 2002 02 12 | 704 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2002 01 08 | 704 | 0.8− | 1.2+ | 2002 02 12 | 704 | 0.0 | 1.1+ | 2006 11 16 | 704 | 0.8− | 0.4− |
| 2002 01 08 | 704 | (0.8− | 1.6+) | 2002 02 12 | 704 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2002 01 11 | 699 | 0.0 | 0.2− | 2002 02 12 | 704 | 0.2+ | 0.9+ | 2006 11 16 | 704 | 0.3+ | 0.0 |
| 2002 01 11 | 699 | 0.2+ | 0.6− | 2002 02 20 | 704 | 0.3− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.6− |
| 2002 01 11 | 699 | (1.6+ | 0.2+) | 2002 02 20 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.3− | 0.4− |
| 2002 01 11 | 699 | 1.0− | 0.6+ | 2002 02 20 | 704 | 0.1− | 0.9+ | 2006 11 16 | 704 | 0.8− | 0.9− |
| 2002 01 13 | 691 | 0.3+ | 0.1+ | 2002 02 20 | 704 | 0.3− | 0.6+ | 2006 11 16 | 704 | 1.4+ | 0.6+ |
| 2002 01 13 | 691 | 0.5+ | 0.2+ | 2005 08 26 | 644 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2002 01 13 | 691 | 0.4+ | 0.0 | 2005 08 26 | 644 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.9− | 0.1− |
| 2002 01 14 | 704 | 0.0 | 0.3− | 2005 08 26 | 644 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.7− |
| 2002 01 14 | 704 | 0.1+ | 0.5− | 2005 08 28 | 691 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2002 01 14 | 704 | 0.4− | 0.2− | 2005 08 28 | 691 | 0.1− | 0.6+ | 2006 11 16 | 704 | 1.3− | 0.2− |
| 2002 01 14 | 704 | 0.2− | 0.2− | 2005 08 28 | 691 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.8− |
| 2002 01 14 | 704 | 0.5+ | 0.6+ | 2005 09 01 | 691 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.1− | 1.0+ |
| 2002 01 15 | 704 | 0.0 | 0.3+ | 2005 09 01 | 691 | 0.0 | 0.6+ | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2002 01 15 | 704 | 0.3− | 0.4+ | 2005 09 01 | 691 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2002 01 15 | 704 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.9+ |
| 2002 01 15 | 704 | 0.5+ | 0.4− | 2005 09 29 | G96 | (2.1− | 1.3−) | 2006 11 19 | 704 | 0.7+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 20 | 699 | 0.9+ | 0.6+ | 2005 09 29 | G96 | 0.2− | 0.5+ | 2006 11 22 | 704 | (0.2+ | 1.7+) |
| 2002 01 20 | 699 | 0.1− | 0.9+ | 2005 11 25 | G96 | 0.2− | 0.1+ | 2006 11 22 | 704 | (0.6+ | 3.3+) |
| 2002 01 20 | 699 | 0.2+ | 0.2+ | 2005 11 25 | G96 | 0.6− | 0.2− | 2006 11 22 | 704 | 0.2+ | 1.2+ |
| 2002 01 20 | 699 | 0.1+ | 0.5+ | 2005 11 25 | G96 | 0.0 | 0.3+ | 2006 11 22 | 704 | (0.3+ | 2.1+) |
| 2002 01 21 | 704 | 0.3+ | 0.8− | 2005 11 25 | G96 | 1.0− | 0.1− | 2006 11 22 | 704 | (2.5+ | 2.3+) |
| 2002 01 21 | 704 | 0.0 | 0.0 | 2006 10 18 | A50 | 0.0 | 0.7+ | 2006 12 01 | G96 | 0.0 | 1.0− |
| 2002 01 21 | 704 | 0.0 | 0.1− | 2006 10 18 | A50 | 0.2− | 1.2+ | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2002 01 21 | 704 | (0.8+ | 1.8−) | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2002 01 21 | 704 | 0.6+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.4+ | 0.6− |
| 2002 02 03 | 699 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.1+ |
| 2002 02 03 | 699 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.7+ | 0.0 | 2006 12 01 | 704 | 1.0− | 0.4− |
| 2002 02 03 | 699 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.1+ | 1.0− |

**(141354)∗ 2002 AJ$_{29}$**

Discovered 2002 Jan. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 215.76375 | | (2000.0) | | | |
| $n$ | 0.35132415 | $\omega$ | 0.30550 | | −0.91093622 | +0.40524288 |
| $a$ | 1.9891340 | $\Omega$ | 204.06492 | | −0.37890553 | −0.89593896 |
| $e$ | 0.4519579 | $i$ | 10.92577 | | −0.16317416 | −0.18185596 |
| $P$ | 2.81 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 06 16 | 261 | 0.3− | 0.1+ | 2002 03 12 | 422 | 0.0 | 0.0 | 2002 06 20 | 704 | 0.4+ | 0.1+ |
| 1988 06 16 | 261 | 0.4+ | 0.5+ | 2002 04 16 | 474 | 0.4− | 0.4+ | 2002 06 20 | 704 | 0.5+ | 0.0 |
| 2002 01 14 | 699 | 0.8− | 0.3+ | 2002 04 16 | 474 | 0.4− | 0.5+ | 2002 06 20 | 704 | 0.1+ | 0.4+ |
| 2002 01 14 | 699 | 0.0 | 0.2+ | 2002 04 16 | 474 | 0.0 | 0.3+ | 2002 07 05 | 056 | 1.1− | 0.3+ |
| 2002 01 14 | 699 | 0.0 | 0.2− | 2002 05 07 | 704 | 0.3+ | 0.5− | 2002 07 05 | 056 | (1.6− | 1.3+) |
| 2002 01 14 | 699 | 0.4+ | 0.1+ | 2002 05 07 | 704 | 0.6+ | 0.1+ | 2002 07 07 | 859 | 0.0 | 0.7+ |
| 2002 01 15 | 649 | 0.3+ | 0.2+ | 2002 05 07 | 704 | 0.3+ | 0.0 | 2002 07 07 | 859 | 1.3− | 0.4− |
| 2002 01 15 | 649 | 0.2+ | 0.2+ | 2002 05 07 | 704 | 0.4+ | 0.2− | 2002 07 07 | 611 | 0.1+ | 0.8− |
| 2002 01 15 | 649 | 0.1+ | 0.1− | 2002 05 07 | 704 | 0.3+ | 0.4− | 2002 07 07 | 611 | 0.3+ | 1.0− |
| 2002 01 15 | 711 | 0.0 | 0.2− | 2002 05 12 | 071 | 0.1+ | 1.2+ | 2002 07 07 | 560 | 0.7− | 0.7− |
| 2002 01 15 | 711 | 0.3+ | 0.1+ | 2002 05 12 | 071 | (0.5− | 1.8+) | 2002 07 07 | 560 | (2.9− | 0.3+) |
| 2002 01 15 | 474 | 0.4+ | 0.6− | 2002 05 12 | 071 | (2.6+ | 1.1+) | 2002 07 07 | 560 | (4.5− | 0.4+) |
| 2002 01 15 | 474 | 0.0 | 0.4− | 2002 05 12 | 071 | (3.1+ | 1.0+) | 2002 07 07 | 560 | (4.4+ | 0.6+) |
| 2002 01 15 | 474 | 0.1+ | 0.2− | 2002 05 15 | 704 | 0.7− | 0.2− | 2002 07 07 | 560 | (2.4+ | 1.7+) |
| 2002 01 15 | 711 | 0.2− | 0.2− | 2002 05 15 | 704 | 0.1− | 0.9− | 2002 07 09 | 198 | 1.1+ | 0.3− |
| 2002 01 17 | 046 | 1.4+ | 0.5− | 2002 05 15 | 704 | 0.1− | 0.5− | 2002 07 09 | 198 | 0.6+ | 0.2+ |
| 2002 01 17 | 046 | 0.1+ | 0.7− | 2002 05 15 | 704 | 0.4+ | 1.1− | 2002 07 09 | 198 | 0.6+ | 0.5+ |
| 2002 01 17 | 046 | 0.6+ | 1.1− | 2002 05 15 | 704 | 0.0 | 1.0− | 2002 07 10 | 240 | 0.9+ | 0.5+ |
| 2002 01 17 | 046 | 0.7− | 0.2− | 2002 05 15 | 215 | (1.6− | 0.1−) | 2002 07 10 | 240 | 0.3− | 0.5+ |
| 2002 01 17 | 046 | 0.2− | 0.5− | 2002 05 15 | 215 | 0.1− | 0.4− | 2002 07 10 | 240 | 0.3− | 0.5+ |
| 2002 01 17 | 428 | 0.1+ | 0.3− | 2002 05 15 | 215 | 0.1− | 0.9− | 2002 07 12 | 157 | 0.4+ | 0.1+ |
| 2002 01 17 | 428 | 0.2− | 0.2+ | 2002 05 16 | 198 | 0.1− | 0.2− | 2002 07 12 | 157 | 0.5− | 0.4− |
| 2002 01 17 | 428 | 0.8− | 0.4− | 2002 05 16 | 198 | 0.4+ | 0.0 | 2002 07 12 | 157 | 0.0 | 0.0 |
| 2002 01 17 | 422 | 0.2+ | 0.1+ | 2002 05 16 | 198 | 0.2+ | 0.2+ | 2002 07 12 | 157 | 0.4+ | 0.6+ |
| 2002 01 17 | 422 | 0.1+ | 0.1+ | 2002 05 16 | 198 | 0.1− | 0.3+ | 2002 07 12 | 560 | 0.1+ | 0.1− |
| 2002 01 17 | 422 | 0.0 | 0.4+ | 2002 05 21 | 544 | 0.3− | 0.2+ | 2002 07 12 | 560 | 0.4+ | 0.1− |
| 2002 01 18 | 428 | 0.4− | 0.6+ | 2002 05 21 | 544 | 0.2− | 0.0 | 2002 07 12 | 560 | 0.3+ | 0.6+ |
| 2002 01 18 | 428 | 0.4+ | 0.7+ | 2002 05 21 | 544 | 0.2− | 0.1− | 2002 07 12 | 560 | 0.1+ | 0.0 |
| 2002 01 20 | 428 | 1.2− | 0.4− | 2002 05 21 | 544 | 0.2+ | 0.1+ | 2002 07 12 | 560 | (2.4− | 0.2−) |
| 2002 01 20 | 428 | 0.4− | 0.6− | 2002 05 21 | 544 | 0.1− | 0.4− | 2002 07 15 | 071 | (1.7− | 1.3−) |
| 2002 01 30 | 413 | 0.1+ | 0.2+ | 2002 05 21 | 544 | 0.2− | 0.3− | 2002 07 15 | 071 | (0.1+ | 1.6−) |
| 2002 01 30 | 413 | 0.1− | 0.3+ | 2002 05 21 | 544 | 0.4− | 0.3− | 2002 07 15 | 071 | 0.9+ | 0.1+ |
| 2002 01 30 | 413 | 0.1− | 0.1+ | 2002 05 21 | 544 | 0.8− | 0.2− | 2002 07 15 | 071 | 0.2+ | 0.2− |
| 2002 02 03 | 670 | 0.6+ | 0.3− | 2002 06 01 | 544 | 0.2− | 0.1− | 2002 07 15 | 071 | 0.7+ | 0.0 |
| 2002 02 03 | 670 | 0.3− | 0.3− | 2002 06 01 | 151 | 0.1− | 0.3+ | 2002 07 19 | 185 | 0.1+ | 0.3+ |
| 2002 02 03 | 670 | 0.2+ | 0.8+ | 2002 06 01 | 544 | 0.0 | 0.1+ | 2002 07 19 | 185 | 0.3− | 0.0 |
| 2002 02 08 | 322 | (4.1− | 0.8−) | 2002 06 02 | 544 | 0.0 | 0.3− | 2002 07 19 | 185 | 0.1− | 0.0 |
| 2002 02 08 | 322 | (2.6− | 3.6+) | 2002 06 02 | 151 | 0.2− | 0.7+ | 2002 07 19 | 151 | 0.0 | 0.1+ |
| 2002 02 08 | 322 | (1.8+ | 0.2−) | 2002 06 02 | 151 | 1.2− | 0.4+ | 2002 07 19 | 151 | 0.2+ | 0.4+ |
| 2002 02 09 | 413 | 0.2− | 0.0 | 2002 06 02 | 544 | 0.0 | 0.4− | 2002 07 19 | 151 | 0.5− | 0.3+ |
| 2002 02 09 | 413 | 0.2− | 0.0 | 2002 06 02 | 544 | 0.1− | 0.6− | 2002 07 19 | 151 | 0.3− | 0.1− |
| 2002 02 09 | 413 | 0.2+ | 0.0 | 2002 06 02 | 151 | 0.2+ | 0.0 | 2002 07 20 | 198 | 0.4− | 1.2+ |
| 2002 02 10 | 322 | (3.9+ | 2.7+) | 2002 06 02 | 544 | 0.4− | 0.5− | 2002 07 20 | 198 | 0.1+ | 0.0 |
| 2002 02 10 | 322 | 1.1− | 0.2− | 2002 06 02 | 704 | 0.7+ | 0.9+ | 2002 07 20 | 198 | 0.1− | 0.3− |
| 2002 02 10 | 322 | 1.4+ | 1.1+ | 2002 06 02 | 704 | 0.1+ | 0.4+ | 2002 07 20 | 198 | (0.8+ | 2.8−) |
| 2002 02 11 | 322 | (3.2− | 4.4+) | 2002 06 02 | 704 | 0.6+ | 0.1+ | 2005 01 25 | 809 | 0.2+ | 0.1− |
| 2002 02 11 | 322 | (1.6− | 0.2−) | 2002 06 02 | 704 | 0.3+ | 0.3+ | 2005 01 25 | 809 | 0.0 | 0.0 |
| 2002 02 11 | 322 | (0.1− | 2.3+) | 2002 06 03 | 544 | 0.3− | 0.3+ | 2005 01 25 | 809 | 0.2− | 0.0 |
| 2002 02 12 | 413 | 0.1− | 0.3+ | 2002 06 03 | 544 | 0.4− | 0.3− | 2005 08 31 | 461 | 0.2− | 0.0 |
| 2002 02 12 | 413 | 0.0 | 0.0 | 2002 06 03 | 544 | 0.2− | 0.2− | 2005 08 31 | 461 | 0.5− | 0.3− |
| 2002 02 13 | 322 | 1.1− | 0.4+ | 2002 06 03 | 544 | 0.1− | 0.0 | 2005 09 09 | 711 | 0.9+ | 0.8+ |
| 2002 02 13 | 322 | (1.2+ | 1.5+) | 2002 06 03 | 544 | 0.6− | 0.1+ | 2005 09 09 | 711 | 0.0 | 0.6+ |
| 2002 02 13 | 322 | 0.1− | 0.3− | 2002 06 03 | 544 | 0.1− | 0.3+ | 2005 09 09 | 711 | 0.9+ | 0.6+ |
| 2002 02 19 | 413 | 0.0 | 0.3+ | 2002 06 13 | 151 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.5+ | 0.7− |
| 2002 02 19 | 413 | 0.3− | 0.1+ | 2002 06 13 | 151 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 2002 03 05 | 322 | (2.4− | 3.7−) | 2002 06 13 | 151 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.4− |
| 2002 03 05 | 322 | 0.0 | 0.4+ | 2002 06 16 | 704 | 0.0 | 0.8− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2002 03 05 | 413 | 0.0 | 0.2− | 2002 06 16 | 704 | (2.2+ | 1.5−) | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 03 05 | 413 | 0.1− | 0.0 | 2002 06 16 | 704 | 0.0 | 0.7− | 2006 10 22 | 691 | 0.3− | 0.3− |
| 2002 03 05 | 413 | 0.0 | 0.1+ | 2002 06 16 | 704 | 0.3+ | 1.0− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2002 03 11 | 428 | 0.3+ | 0.2− | 2002 06 16 | 704 | 0.3+ | 0.8− | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2002 03 12 | 422 | 0.1− | 0.0 | 2002 06 17 | 704 | 0.8− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2002 03 12 | 422 | 0.2+ | 0.1+ | 2002 06 17 | 704 | 0.5− | 0.4− | 2006 11 17 | G96 | 0.8− | 0.1+ |
| 2002 03 12 | 422 | 0.0 | 0.2+ | 2002 06 17 | 704 | (1.9− | 0.7−) | | | | |

**(141355)∗ 2002 AK$_{29}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.17696 | | (2000.0) | | | |
| $n$ | 0.23071063 | $\omega$ | 116.70066 | | +0.21821302 | −0.96680357 |
| $a$ | 2.6328390 | $\Omega$ | 319.96576 | | +0.80575615 | +0.25534456 |
| $e$ | 0.1342361 | $i$ | 11.92763 | | +0.55058161 | +0.00948756 |
| $P$ | 4.27 | $H$ | 14.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.9− | 0.3+ | 2002 02 08 | 704 | 0.0 | 0.4− | 2005 09 09 | 704 | 0.9− | 0.5+ |
| 2001 08 22 | 704 | 0.4− | 0.4− | 2002 02 08 | 704 | 1.1+ | 1.3+ | 2005 09 09 | 704 | 0.4− | 0.6+ |
| 2001 08 22 | 704 | 0.0 | 0.3+ | 2002 02 08 | 704 | 0.4+ | 0.4− | 2005 09 09 | 704 | 0.7− | 0.9+ |
| 2001 08 22 | 704 | 0.8+ | 0.1+ | 2002 02 08 | 704 | 0.8+ | 0.2+ | 2005 09 23 | 644 | 0.1− | 0.2+ |
| 2001 08 22 | 704 | 0.4+ | 0.0 | 2003 01 02 | 704 | 0.5− | 1.2+ | 2005 09 23 | 644 | 0.1− | 0.2+ |
| 2001 08 22 | 644 | 0.1− | 0.1+ | 2003 01 02 | 704 | 0.1− | 0.5+ | 2005 09 23 | 644 | 0.2− | 0.2+ |
| 2001 08 22 | 644 | 0.0 | 0.2+ | 2003 01 02 | 704 | 0.6+ | 0.4+ | 2005 09 24 | 699 | 0.4− | 0.5+ |
| 2001 08 22 | 644 | 0.0 | 0.2+ | 2003 01 02 | 704 | 0.5+ | 0.6+ | 2005 09 24 | 703 | 0.5+ | 0.7+ |
| 2001 09 10 | 704 | 0.9+ | 0.5+ | 2003 01 02 | 704 | (1.6+ | 0.4+) | 2005 09 24 | 703 | 0.6+ | 0.9+ |
| 2001 09 10 | 704 | 0.1− | 0.1− | 2003 01 07 | 704 | 0.7+ | 0.4+ | 2005 09 24 | 699 | 0.1− | 0.0 |
| 2001 09 10 | 704 | (1.6+ | 0.1+) | 2003 01 07 | 704 | 0.4+ | 0.0 | 2005 09 24 | 703 | 0.2+ | 0.8+ |
| 2001 09 10 | 704 | 0.1+ | 0.4+ | 2003 01 07 | 704 | 0.5+ | 0.4+ | 2005 09 24 | 703 | 0.2− | 0.5+ |
| 2001 09 10 | 704 | 0.8+ | 0.2+ | 2003 01 07 | 704 | 0.1+ | 0.5+ | 2005 09 24 | 699 | 0.3− | 0.9+ |
| 2001 09 22 | 699 | 0.8− | 0.4+ | 2003 01 07 | 704 | 0.9+ | 0.8− | 2005 09 24 | 699 | 0.2− | 0.4+ |
| 2001 09 22 | 699 | 0.4− | 0.0 | 2003 02 01 | 699 | 0.6+ | 1.1+ | 2005 09 29 | 644 | 0.1− | 0.1+ |
| 2001 09 22 | 699 | 0.2+ | 0.4− | 2003 02 01 | 699 | 0.8+ | 0.4+ | 2005 09 29 | 644 | 0.1− | 0.1+ |
| 2001 09 22 | 699 | 0.5− | 0.3− | 2003 02 01 | 699 | (1.5+ | 0.6+) | 2005 09 29 | 644 | 0.0 | 0.3+ |
| 2001 10 18 | 704 | 0.4− | 0.6+ | 2003 02 01 | 699 | 1.0+ | 1.2+ | 2005 10 01 | 703 | 0.9− | 0.0 |
| 2001 10 18 | 704 | 0.3− | 0.2+ | 2003 02 02 | 704 | 0.4+ | 0.3+ | 2005 10 01 | 703 | 0.0 | 0.6+ |
| 2001 10 18 | 704 | 0.2− | 0.1+ | 2003 02 02 | 704 | 0.7+ | 1.3+ | 2005 10 01 | 699 | 0.3− | 0.2+ |
| 2001 10 18 | 704 | 0.4− | 0.1− | 2003 02 02 | 704 | 0.7+ | 1.0+ | 2005 10 01 | 703 | 0.7− | 0.3+ |
| 2001 10 18 | 704 | 0.3− | 0.0 | 2003 02 02 | 704 | 0.8+ | 0.9+ | 2005 10 01 | 703 | 0.8− | 0.1− |
| 2001 10 20 | 699 | 0.4− | 0.3− | 2003 03 02 | 704 | 0.1− | 0.4+ | 2005 10 01 | 699 | 0.2− | 0.0 |
| 2001 10 20 | 699 | 0.2− | 0.4− | 2003 03 02 | 704 | 0.6− | 0.1+ | 2005 10 01 | 699 | 0.6− | 0.1− |
| 2001 10 20 | 699 | 0.6− | 0.3− | 2003 03 02 | 704 | 0.2− | 0.0 | 2005 10 21 | 644 | 0.3+ | 0.0 |
| 2001 10 20 | 699 | 0.7− | 0.2− | 2003 03 02 | 704 | 0.9− | 0.1− | 2005 10 21 | 644 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.0 | 0.6+ | 2003 03 07 | 704 | 0.1− | 0.8+ | 2005 10 21 | 644 | 0.2+ | 0.0 |
| 2001 11 12 | 704 | 0.1+ | 0.0 | 2003 03 07 | 704 | 0.2− | 0.6+ | 2005 11 19 | 644 | 0.4+ | 0.0 |
| 2001 11 12 | 704 | 0.1− | 0.0 | 2003 03 07 | 704 | 0.3− | 0.5+ | 2005 11 19 | 644 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.3− | 0.0 | 2003 03 07 | 704 | 0.3− | 0.6+ | 2005 11 19 | 644 | 0.3+ | 0.1+ |
| 2001 11 12 | 704 | 0.1− | 0.4− | 2003 03 07 | 704 | 0.3− | 0.8+ | 2005 11 29 | 699 | 0.5− | 0.6− |
| 2001 11 19 | 644 | 0.1− | 0.7− | 2003 03 10 | 699 | 0.8+ | 0.1− | 2005 11 29 | 699 | 0.7+ | 0.2− |
| 2001 11 19 | 644 | 0.1+ | 0.7− | 2003 03 10 | 699 | 0.5+ | 1.0+ | 2005 11 29 | 699 | 0.1− | 0.6+ |
| 2001 11 19 | 644 | 0.1+ | 0.9− | 2003 03 10 | 704 | 0.5+ | 0.6+ | 2005 11 29 | 699 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 644 | 0.1+ | 0.4+ | 2003 03 10 | 699 | 0.4+ | 0.4+ | 2005 12 02 | 703 | 0.2− | 0.9+ |
| 2001 12 07 | 644 | 0.9+ | 0.3+ | 2003 03 10 | 704 | 0.5+ | 0.4+ | 2005 12 02 | 703 | 0.5− | 0.2+ |
| 2001 12 07 | 644 | 0.5+ | 0.0 | 2003 03 10 | 699 | 0.7+ | 0.3+ | 2005 12 02 | 703 | 0.3− | 0.5+ |
| 2001 12 10 | 704 | 0.3+ | 0.2+ | 2003 03 10 | 704 | 0.6+ | 0.0 | 2005 12 02 | 703 | 0.7− | 0.0 |
| 2001 12 10 | 704 | 1.3+ | 0.0 | 2003 03 10 | 704 | 0.2+ | 0.8+ | 2006 01 07 | 703 | 1.5+ | 0.4+ |
| 2001 12 10 | 704 | 1.0+ | 0.4− | 2003 03 10 | 704 | 0.8+ | 0.9+ | 2006 01 07 | 703 | 0.5+ | 0.6+ |
| 2001 12 10 | 704 | 1.1+ | 0.7− | 2003 03 30 | 704 | (1.8+ | 0.7−) | 2006 01 07 | 703 | 0.1+ | 0.3+ |
| 2001 12 21 | 704 | 0.1− | 0.1− | 2003 03 30 | 704 | (1.9+ | 0.3−) | 2006 01 07 | 703 | (1.9+ | 0.8−) |
| 2001 12 21 | 704 | 0.7+ | 0.4− | 2003 03 30 | 704 | 0.8+ | 0.6− | 2006 10 21 | 703 | 1.1− | 0.4− |
| 2001 12 21 | 704 | 1.0+ | 0.4+ | 2003 03 30 | 704 | (1.6+ | 0.6−) | 2006 10 21 | 703 | 0.2+ | 1.1+ |
| 2001 12 21 | 704 | 1.0+ | 0.5− | 2003 03 30 | 704 | 1.4+ | 0.5− | 2006 10 21 | 703 | 0.6− | 0.4− |
| 2002 01 06 | 699 | 0.6− | 0.2− | 2005 07 03 | 703 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.8− |
| 2002 01 06 | 699 | 0.6− | 0.2− | 2005 07 03 | 703 | (1.7− | 0.7+) | 2006 10 29 | 704 | 0.9+ | 0.1− |
| 2002 01 06 | 699 | 0.2− | 1.0− | 2005 07 03 | 703 | 1.3− | 0.9+ | 2006 10 29 | 704 | 0.2+ | 0.2− |
| 2002 01 06 | 699 | 0.2− | 0.5− | 2005 07 03 | 703 | 0.9− | 0.4+ | 2006 10 29 | 704 | 0.5+ | 0.5− |
| 2002 01 08 | 704 | 0.0 | 0.1− | 2005 07 09 | 699 | 0.4+ | 1.2+ | 2006 10 29 | 704 | 0.3− | 0.9+ |
| 2002 01 08 | 704 | 0.1+ | 0.6− | 2005 07 09 | 699 | 0.2+ | 1.2+ | 2006 11 16 | 704 | 0.5+ | 0.4− |
| 2002 01 08 | 704 | 0.4− | 0.5− | 2005 07 09 | 699 | 0.7− | 0.5+ | 2006 11 16 | 704 | (2.8+ | 0.6−) |
| 2002 01 08 | 704 | 0.0 | 0.6− | 2005 07 09 | 699 | 1.5− | 0.1− | 2006 11 16 | 704 | (2.4+ | 0.2+) |
| 2002 01 12 | 704 | 0.0 | 0.2− | 2005 08 03 | 704 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.1− | 0.3− |
| 2002 01 12 | 704 | 0.2− | 0.6+ | 2005 08 03 | 704 | (0.3+ | 1.7−) | 2006 11 19 | 704 | 0.1− | 0.7+ |
| 2002 01 12 | 704 | 1.0− | 0.6+ | 2005 08 03 | 704 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2002 01 12 | 704 | 0.1− | 1.0+ | 2005 08 31 | 699 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 01 12 | 704 | 0.4− | 0.5+ | 2005 08 31 | 704 | (0.5+ | 2.2+) | 2006 11 19 | 704 | 0.2+ | 1.2+ |
| 2002 01 12 | 704 | 0.1+ | 0.6+ | 2005 08 31 | 704 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2002 01 12 | 704 | 0.4+ | 0.5+ | 2005 08 31 | 699 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 01 12 | 704 | 0.1+ | 0.7+ | 2005 08 31 | 704 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2002 01 12 | 704 | 0.5+ | 1.0+ | 2005 08 31 | 699 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.8+ |
| 2002 01 12 | 704 | 0.0 | 0.4− | 2005 08 31 | 699 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 02 06 | 704 | 0.7− | 0.1− | 2005 09 01 | 608 | 0.8− | 0.6+ | 2006 11 22 | 704 | 0.6− | 0.2+ |
| 2002 02 06 | 704 | 0.2+ | 0.8− | 2005 09 01 | 608 | 0.5− | 0.7+ | 2006 11 29 | 704 | 0.9+ | 0.3− |
| 2002 02 06 | 704 | 0.7− | 0.7− | 2005 09 01 | 608 | 0.5− | 0.6+ | 2006 11 29 | 704 | 0.0 | 0.7− |
| 2002 02 06 | 704 | 0.5− | 0.4− | 2005 09 09 | 704 | 0.5− | 0.6+ | 2006 11 29 | 704 | 0.3+ | 0.6− |
| 2002 02 06 | 704 | 0.1− | 0.8− | 2005 09 09 | 704 | 1.1− | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.5− |

**(141356)∗ 2002 AN$_{29}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 12.04812 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21766814 | $\omega$ | 162.67321 | | +0.12514395 | | −0.98210957 | |
| $a$ | 2.7369875 | $\Omega$ | 279.96392 | | +0.89250699 | | +0.17338284 | |
| $e$ | 0.1399616 | $i$ | 8.21376 | | +0.43332466 | | −0.07347916 | |
| $P$ | 4.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2− | 0.4+ | 2002 01 12 | 704 | 0.2− | 0.0 | 2005 10 02 | 699 | 0.3+ | 0.2+ |
| 2001 11 11 | 704 | 0.5− | 0.1+ | 2002 01 12 | 704 | 0.7+ | 0.2+ | 2005 10 02 | 699 | 1.1+ | 0.2− |
| 2001 11 11 | 704 | 0.5+ | 0.5− | 2002 01 12 | 704 | 0.2+ | 0.7+ | 2005 10 02 | 699 | 0.3+ | 1.0+ |
| 2001 11 11 | 704 | 0.0 | 0.0 | 2002 01 14 | 704 | (0.3− | 2.3+) | 2005 10 02 | 699 | 0.6− | 0.5− |
| 2001 11 11 | 704 | 0.5− | 0.5+ | 2002 01 14 | 704 | 0.2+ | 0.3+ | 2005 10 07 | 703 | 0.3− | 0.5− |
| 2001 11 21 | 704 | 0.4+ | 0.3+ | 2002 01 14 | 704 | 0.5− | 1.3+ | 2005 10 07 | 703 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2002 01 14 | 704 | 0.3+ | 1.1+ | 2005 10 07 | 703 | 0.4− | 0.3− |
| 2001 11 21 | 704 | 0.6+ | 0.1− | 2002 01 14 | 704 | 0.2− | 1.0+ | 2005 10 07 | 703 | 0.9− | 1.1+ |
| 2001 11 21 | 704 | 1.1− | 0.5+ | 2003 03 29 | 699 | 0.6+ | 0.1− | 2005 10 22 | 644 | 0.2+ | 0.2− |
| 2001 11 24 | 704 | 1.2+ | 0.0 | 2003 03 29 | 699 | 0.0 | 1.1+ | 2005 10 22 | 644 | 0.1+ | 0.3− |
| 2001 11 24 | 704 | (0.7+ | 1.9−) | 2003 03 29 | 699 | (0.3− | 2.3+) | 2005 10 22 | 644 | 0.2− | 0.4− |
| 2001 11 24 | 704 | 0.5+ | 0.9− | 2003 03 29 | 699 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.6− |
| 2001 11 24 | 704 | 0.5+ | 0.4− | 2005 09 11 | 683 | 0.1+ | 0.5− | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2001 11 24 | 704 | 0.7+ | 0.1+ | 2005 09 11 | 704 | 0.6+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2001 12 10 | 704 | 0.8− | 0.1− | 2005 09 11 | 683 | (0.6+ | 2.1−) | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2001 12 10 | 704 | 0.2− | 0.2− | 2005 09 11 | 704 | 0.4+ | 0.5+ | 2006 10 21 | G96 | 0.5− | 0.1− |
| 2001 12 10 | 704 | (1.8− | 0.3−) | 2005 09 11 | 683 | 1.2− | 1.2− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 12 10 | 704 | (1.9+ | 0.1−) | 2005 09 11 | 704 | 0.7+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 1.0− | 0.0 | 2005 09 11 | 704 | 0.3+ | 1.3+ | 2006 10 21 | G96 | 0.4− | 0.5− |
| 2001 12 17 | 704 | 0.9− | 0.2− | 2005 09 11 | 704 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2001 12 17 | 704 | 1.2− | 0.4− | 2005 09 26 | 703 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.9− | 0.2− | 2005 09 26 | 703 | 0.3− | 0.8− | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2002 01 08 | 704 | 0.7+ | 0.4− | 2005 09 26 | 703 | 1.0− | 0.7− | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2002 01 08 | 704 | 0.7+ | 0.6− | 2005 09 26 | 703 | 0.3+ | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | 0.7+ | 0.2− | 2005 10 01 | 703 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2002 01 08 | 704 | 0.5+ | 0.1+ | 2005 10 01 | 703 | 0.2− | 0.6+ | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2002 01 12 | 704 | 0.1+ | 0.4+ | 2005 10 01 | 703 | 0.6+ | 0.8+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2002 01 12 | 704 | 0.2− | 0.2+ | 2005 10 01 | 703 | 0.1+ | 0.0 | | | | |

**(141357)∗ 2002 AU$_{29}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 271.98827 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17267116 | $\omega$ | 54.97756 | | −0.84215572 | | −0.53336832 | |
| $a$ | 3.1939112 | $\Omega$ | 92.66641 | | +0.46525997 | | −0.79308296 | |
| $e$ | 0.0868359 | $i$ | 4.55453 | | +0.27259291 | | −0.29417284 | |
| $P$ | 5.71 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.4− | 0.0 | 2002 02 07 | 704 | 0.8− | 1.5+ | 2005 08 28 | 691 | 0.3− | 0.3+ |
| 2001 12 18 | 704 | 1.0− | 0.2+ | 2002 02 07 | 704 | (0.3− | 1.7+) | 2005 08 28 | 691 | 0.3− | 0.2+ |
| 2001 12 18 | 704 | 0.2− | 0.1− | 2002 02 07 | 704 | (0.7− | 1.6+) | 2005 08 28 | 691 | 0.1− | 0.4+ |
| 2001 12 18 | 704 | 0.8+ | 0.6+ | 2002 02 07 | 704 | (0.8− | 1.9+) | 2006 10 22 | G96 | 0.4+ | 0.9− |
| 2002 01 05 | 644 | 0.4+ | 0.8− | 2002 02 07 | 704 | (0.4− | 2.1+) | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 01 05 | 644 | 0.2− | 1.0− | 2002 02 10 | 704 | 1.1+ | 1.3− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2002 01 05 | 644 | 0.0 | 0.1− | 2002 02 10 | 704 | 0.6+ | 0.7− | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2002 01 08 | 704 | 0.4+ | 0.9+ | 2002 02 10 | 704 | (2.0+ | 1.6−) | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | 0.5+ | 0.1− | 2002 02 10 | 704 | 0.8+ | 0.7− | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2002 01 08 | 704 | 0.0 | 0.8− | 2002 02 12 | 704 | 1.0+ | 0.6+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2002 01 08 | 704 | 0.6− | 0.5− | 2002 02 12 | 704 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2002 01 12 | 704 | (0.3− | 1.8−) | 2002 02 12 | 704 | 0.4+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2002 01 12 | 704 | 0.5− | 0.8− | 2002 02 12 | 704 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2002 01 12 | 704 | 0.3− | 0.2+ | 2002 02 12 | 704 | 0.4+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 01 12 | 704 | 0.3− | 0.2− | 2002 02 20 | 704 | 0.9+ | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2002 01 12 | 704 | 0.4+ | 0.6− | 2002 02 20 | 704 | 0.1+ | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 01 14 | 704 | 0.8− | 0.3+ | 2002 02 20 | 704 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 01 14 | 704 | 0.4− | 0.8+ | 2002 02 20 | 704 | 0.6+ | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 01 14 | 704 | 1.0− | 0.2+ | 2002 02 20 | 704 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 0.3− | 0.7+ | 2003 04 04 | 699 | 0.2− | 1.2− | 2006 11 27 | 691 | 0.9− | 0.9+ |
| 2002 01 14 | 704 | 1.3− | 0.6+ | 2003 04 04 | 699 | 1.4+ | 1.0− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 0.2− | 0.9+ | 2003 04 04 | 699 | 0.7− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2002 01 14 | 704 | 0.8+ | 0.0 | 2003 04 04 | 699 | 1.2− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.7+ |
| 2002 01 14 | 704 | 0.4− | 0.9+ | 2003 04 26 | 608 | 0.4− | 0.7− | 2006 11 29 | 704 | 0.6− | 0.5− |
| 2002 01 14 | 704 | 0.1+ | 0.6+ | 2003 04 26 | 608 | 0.6+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2002 02 04 | 644 | 0.3− | 0.4+ | 2003 04 26 | 608 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.8− | 1.0− |
| 2002 02 04 | 644 | 0.0 | 0.6+ | 2003 05 01 | 691 | 0.1+ | 0.7+ | 2006 11 29 | 704 | 1.1− | 0.3− |
| 2002 02 04 | 644 | 0.1− | 0.6+ | 2003 05 01 | 691 | 0.3+ | 0.6+ | 2006 12 01 | 691 | 0.3+ | 0.0 |
| 2002 02 06 | 704 | 0.2+ | 0.1+ | 2003 05 01 | 691 | 0.3+ | 0.7+ | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2002 02 06 | 704 | 0.4− | 0.0 | 2005 08 26 | 644 | 0.1+ | 0.5+ | 2006 12 01 | 691 | 0.4− | 0.1+ |
| 2002 02 06 | 704 | (0.1+ | 1.5+) | 2005 08 26 | 644 | 0.5+ | 0.6+ | | | | |
| 2002 02 06 | 704 | 0.3+ | 0.2− | 2005 08 26 | 644 | 0.4+ | 0.1+ | | | | |

**(141358)∗ 2002 AZ$_{32}$**

Discovered 2002 Jan. 12 by J. M. Roe at Oaxaca.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 228.73253 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18829087 | $\omega$ | 141.29452 | | −0.51808075 | | +0.84500077 | |
| $a$ | 3.0147401 | $\Omega$ | 97.12871 | | −0.81422467 | | −0.43976527 | |
| $e$ | 0.1615439 | $i$ | 7.67590 | | −0.26197428 | | −0.30426995 | |
| $P$ | 5.23 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.2− | 0.4− | 2002 01 19 | 732 | 0.4− | 0.5+ | 2003 05 11 | 608 | 0.4+ | 0.3+ |
| 1997 02 02 | 691 | 0.1− | 0.3− | 2002 01 20 | 732 | 0.3− | 0.1− | 2003 05 11 | 608 | 0.1− | 0.3+ |
| 1997 02 02 | 691 | 0.2− | 0.4− | 2002 01 20 | 732 | (1.9− | 0.4+) | 2003 06 06 | 691 | 0.3+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 691 | 0.4− | 0.4+ | 2002 02 04 | 644 | 0.0 | 0.5+ | 2003 06 06 | 691 | 0.1+ | 1.3+ | | |
| 2000 12 29 | 691 | 0.3+ | 0.5+ | 2002 02 04 | 644 | 0.1+ | 0.7+ | 2003 06 06 | 691 | 0.0 | 0.9+ | | |
| 2000 12 29 | 691 | 0.1− | 0.6+ | 2002 02 04 | 644 | 0.2+ | 0.3+ | 2004 09 21 | 704 | 0.4− | 0.1+ | | |
| 2002 01 07 | 691 | 0.2+ | 0.3+ | 2002 02 05 | 732 | (2.0− | 0.4−) | 2004 09 21 | 704 | 0.4− | 0.7+ | | |
| 2002 01 07 | 691 | 0.0 | 0.0 | 2002 02 05 | 732 | 0.0 | 1.4− | 2004 09 21 | 704 | 0.1− | 0.3+ | | |
| 2002 01 07 | 691 | 0.0 | 0.2+ | 2002 02 05 | 732 | 0.0 | 0.6+ | 2004 09 21 | 704 | 0.5+ | 0.0 | | |
| 2002 01 09 | 704 | 0.3+ | 0.9+ | 2002 02 06 | 704 | 0.6+ | 1.0− | 2005 10 22 | 691 | 0.3− | 0.5+ | | |
| 2002 01 09 | 704 | 0.2+ | 0.9+ | 2002 02 06 | 704 | 0.4+ | 0.3− | 2005 10 22 | 691 | 0.5− | 0.5+ | | |
| 2002 01 09 | 704 | 0.4− | 0.1+ | 2002 02 06 | 704 | 0.6+ | 1.2+ | 2005 10 22 | 691 | 0.1− | 0.2+ | | |
| 2002 01 09 | 704 | 0.3− | 0.4+ | 2002 02 07 | 704 | 0.0 | 0.8+ | 2005 10 25 | 703 | 0.5− | 1.1+ | | |
| 2002 01 09 | 704 | 0.5+ | 0.5+ | 2002 02 07 | 704 | 0.4− | 1.1+ | 2005 10 25 | 703 | 0.6+ | 0.4− | | |
| 2002 01 12 | 732 | 0.2− | 0.0 | 2002 02 07 | 704 | 0.9+ | 0.4+ | 2005 10 25 | 703 | (0.1+ | 1.7+) | | |
| 2002 01 12 | 732 | 0.0 | 0.2+ | 2002 02 07 | 704 | (1.7+ | 0.2+) | 2005 10 25 | 703 | (0.3− | 2.3+) | | |
| 2002 01 12 | 732 | 1.0− | 0.4+ | 2002 02 08 | 704 | 1.0− | 0.8− | 2005 10 27 | 691 | 0.3− | 0.5+ | | |
| 2002 01 14 | 608 | 0.3+ | 0.6− | 2002 02 08 | 704 | 0.4− | 0.1− | 2005 10 27 | 691 | 0.1− | 0.6+ | | |
| 2002 01 14 | 608 | 1.0+ | 0.6− | 2002 02 08 | 704 | 0.3− | 0.8− | 2005 10 27 | 691 | 0.1− | 0.4+ | | |
| 2002 01 14 | 608 | 0.6+ | 0.3− | 2002 02 12 | 704 | 0.4+ | 0.2+ | 2006 09 28 | G96 | 0.7− | 0.1− | | |
| 2002 01 15 | 704 | 0.3− | 0.1+ | 2002 02 12 | 704 | 0.5− | 0.3− | 2006 09 28 | G96 | 0.7− | 0.1+ | | |
| 2002 01 15 | 704 | 0.9− | 0.4+ | 2002 02 12 | 704 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.0 | | |
| 2002 01 15 | 704 | 0.6+ | 1.0+ | 2003 05 02 | 704 | 0.2− | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.0 | | |
| 2002 01 16 | 732 | 0.2+ | 0.0 | 2003 05 02 | 704 | 0.3+ | 1.0+ | 2006 10 22 | G96 | 0.6+ | 0.3+ | | |
| 2002 01 16 | 732 | 1.1+ | 0.0 | 2003 05 02 | 704 | (0.6+ | 1.6+) | 2006 10 22 | G96 | 0.1+ | 0.2− | | |
| 2002 01 16 | 732 | 0.5+ | 0.5− | 2003 05 08 | 704 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.0 | | |
| 2002 01 17 | 732 | 1.1− | 0.3+ | 2003 05 08 | 704 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.5− | 0.3− | | |
| 2002 01 17 | 732 | 0.4+ | 0.2+ | 2003 05 08 | 704 | 1.3+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2002 01 17 | 732 | 0.1− | 0.1+ | 2003 05 08 | 704 | 0.8− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− | | |
| 2002 01 18 | 732 | 0.2− | 0.8+ | 2003 05 09 | 704 | 0.8+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2002 01 18 | 732 | 0.8− | 0.1+ | 2003 05 09 | 704 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.8+ | 0.1+ | | |
| 2002 01 19 | 732 | 0.4− | 0.2+ | 2003 05 09 | 704 | 0.5+ | 0.4+ | | | | | | |
| 2002 01 19 | 732 | 1.3+ | 0.3− | 2003 05 11 | 608 | 0.5+ | 0.1+ | | | | | | |

**(141359)∗ 2002 AN$_{36}$ = 1994 AJ$_{11}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33522), M. E. Sansaturio (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.42863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36579009 | $\omega$ | 235.58912 | | +0.92306905 | +0.08190481 | |
| $a$ | 1.9363391 | $\Omega$ | 117.00551 | | −0.01190185 | +0.98267918 | |
| $e$ | 0.0728425 | $i$ | 24.94860 | | −0.38445010 | +0.16623247 | |
| $P$ | 2.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 09 | 691 | 0.8+ | 0.4− | 2002 01 13 | 704 | 1.1+ | 0.6− | 2005 03 12 | 704 | 0.1− | 0.2− | | |
| 1994 01 09 | 691 | 0.4+ | 0.2+ | 2002 01 13 | 704 | 0.1+ | 1.1− | 2005 03 12 | 704 | 1.1− | 0.9+ | | |
| 1994 01 09 | 691 | 0.3− | 0.3− | 2002 01 13 | 704 | 0.7+ | 1.5− | 2005 03 12 | 704 | 0.4+ | 0.0 | | |
| 1994 01 17 | 691 | 0.1+ | 0.3+ | 2002 02 07 | 704 | 0.0 | 0.3+ | 2006 09 19 | E12 | 0.9− | 0.4− | | |
| 1994 01 17 | 691 | 0.0 | 0.1+ | 2002 02 07 | 704 | 0.4− | 0.9+ | 2006 09 19 | E12 | 0.4+ | 0.9+ | | |
| 1994 01 17 | 691 | 0.1+ | 0.1+ | 2002 02 07 | 704 | 0.7− | 1.2+ | 2006 09 19 | E12 | 0.0 | 0.7+ | | |
| 1994 01 19 | 691 | 0.6− | 0.3+ | 2003 06 26 | 704 | 0.1− | 0.1+ | 2006 09 19 | E12 | 0.4+ | 0.6− | | |
| 1994 01 19 | 691 | 0.4− | 0.4− | 2003 06 26 | 704 | 0.2− | 0.0 | 2006 10 01 | E12 | 0.2− | 1.0+ | | |
| 2000 04 13 | 608 | 0.0 | 0.1− | 2003 06 26 | 704 | 0.1− | 0.0 | 2006 10 01 | E12 | 0.2+ | 0.0 | | |
| 2000 04 13 | 608 | 0.5+ | 0.3+ | 2003 06 26 | 704 | 0.3+ | 1.2− | 2006 10 01 | E12 | 0.3+ | 0.2+ | | |
| 2000 04 13 | 608 | 0.2− | 0.7+ | 2003 07 23 | 704 | 0.4− | 0.4− | 2006 10 01 | E12 | 0.1− | 0.4+ | | |
| 2002 01 09 | 704 | 0.2− | 0.2+ | 2003 07 23 | 704 | 0.2+ | 0.4+ | 2006 10 18 | E12 | 0.4+ | 0.3+ | | |
| 2002 01 09 | 704 | 0.4− | 0.1− | 2003 07 23 | 704 | 0.6− | 0.2+ | 2006 10 18 | E12 | 0.8− | 0.2+ | | |
| 2002 01 09 | 704 | 0.3− | 0.2− | 2005 03 12 | 704 | 0.8+ | 0.1− | | | | | | |
| 2002 01 09 | 704 | 0.3− | 0.0 | 2005 03 12 | 704 | 0.3+ | 0.9+ | | | | | | |

**(141360)∗ 2002 AV$_{36}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.11056 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21458393 | $\omega$ | 314.35733 | | +0.32150452 | −0.94096998 | |
| $a$ | 2.7631508 | $\Omega$ | 116.61632 | | +0.89897279 | +0.26818938 | |
| $e$ | 0.0436556 | $i$ | 6.80146 | | +0.29746053 | +0.20651866 | |
| $P$ | 4.59 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 691 | 0.2− | 0.2+ | 2003 03 09 | 704 | 0.4− | 0.8+ | 2005 09 24 | 644 | 0.0 | 0.1− | | |
| 1996 11 18 | 691 | 0.3− | 0.1− | 2003 03 26 | 644 | 0.3+ | 0.7+ | 2005 09 24 | 703 | 0.7− | 0.1− | | |
| 1996 11 18 | 691 | 0.2− | 0.1− | 2003 03 26 | 644 | 0.4+ | 0.9+ | 2005 10 01 | 699 | 0.4+ | 0.8− | | |
| 2001 12 11 | 704 | 1.2+ | 0.2− | 2003 03 26 | 644 | 0.4+ | 0.9+ | 2005 10 01 | 699 | 0.4+ | 0.3− | | |
| 2001 12 11 | 704 | 0.5+ | 0.9+ | 2003 04 04 | 608 | 0.7+ | 0.6− | 2005 10 01 | 699 | 0.7− | 1.0+ | | |
| 2001 12 11 | 704 | 0.4+ | 0.0 | 2003 04 04 | 608 | 0.3+ | 0.7− | 2005 10 01 | 699 | 0.4− | 1.3− | | |
| 2002 01 09 | 704 | 0.7+ | 0.3− | 2003 04 04 | 608 | 0.1+ | 1.3− | 2005 10 31 | 699 | 1.2− | 1.0+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.1+ | 2003 04 08 | 608 | 0.3+ | 0.0 | 2005 10 31 | 699 | 0.4+ | 1.1+ | | |
| 2002 01 09 | 704 | 0.5− | 0.1− | 2003 04 08 | 608 | 0.6+ | 0.5− | 2005 10 31 | 699 | 0.1− | 0.2+ | | |
| 2002 01 09 | 704 | 0.7+ | 0.8− | 2003 04 08 | 608 | 0.1+ | 0.4− | 2005 10 31 | 699 | 0.5+ | 0.5+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.4+ | 2003 04 09 | 704 | 1.0− | 0.4− | 2006 10 21 | G96 | 0.5− | 0.3− | | |
| 2002 01 13 | 704 | 1.1+ | 0.7+ | 2003 04 09 | 704 | (0.3− | 1.7+) | 2006 10 21 | G96 | 0.3+ | 1.0+ | | |
| 2002 01 13 | 704 | 1.0− | 0.4+ | 2003 04 09 | 704 | 0.4− | 1.0+ | 2006 10 21 | G96 | 0.5− | 0.1− | | |
| 2002 01 13 | 704 | 0.2+ | 0.3+ | 2003 04 09 | 704 | 0.6− | 1.3+ | 2006 10 21 | G96 | 0.7− | 0.3+ | | |
| 2002 01 13 | 704 | 0.3+ | 0.0 | 2004 06 12 | 926 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.3− | | |
| 2002 01 15 | 704 | 0.1+ | 0.1− | 2004 06 12 | 926 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.1− | | |
| 2002 01 15 | 704 | 0.0 | 0.2+ | 2004 06 12 | 926 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2002 01 15 | 704 | 0.2+ | 0.4− | 2005 08 31 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.0 | | |
| 2002 01 15 | 704 | 0.0 | 0.2− | 2005 08 31 | 644 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.2+ | | |
| 2002 01 15 | 704 | 0.6+ | 0.3− | 2005 08 31 | 644 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.7− | 0.0 | | |
| 2002 01 19 | 704 | 0.4− | 0.5− | 2005 09 03 | 644 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.0 | | |
| 2002 01 19 | 704 | 0.1+ | 1.3+ | 2005 09 03 | 644 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.6− | 0.3− | | |
| 2002 01 19 | 704 | 0.4− | 0.7− | 2005 09 03 | 644 | 0.1+ | 0.0 | 2006 11 28 | G96 | 0.1+ | 0.1− | | |
| 2002 01 19 | 704 | 0.4+ | 0.1+ | 2005 09 24 | 644 | 0.4+ | 0.1+ | 2006 11 28 | G96 | 0.2− | 0.1+ | | |
| 2002 01 19 | 704 | 0.8+ | 0.3− | 2005 09 24 | 644 | 0.4+ | 0.1− | 2006 11 28 | G96 | 0.0 | 0.2− | | |
| 2003 03 09 | 704 | 0.3+ | 0.5+ | 2005 09 24 | 703 | (1.9− | 0.3+) | 2006 11 28 | G96 | 0.5− | 0.0 | | |
| 2003 03 09 | 704 | 0.4+ | 1.2+ | 2005 09 24 | 703 | 1.4− | 0.2− | | | | | | |
| 2003 03 09 | 704 | (1.7+ | 0.9+) | 2005 09 24 | 703 | 0.0 | 1.0+ | | | | | | |

**(141361)∗ 2002 AK$_{37}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.47407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18269847 | $\omega$ | 316.96677 | | +0.26731993 | −0.94391166 | |
| $a$ | 3.0759512 | $\Omega$ | 116.66331 | | +0.93247785 | +0.20268070 | |
| $e$ | 0.2650564 | $i$ | 12.52684 | | +0.24295083 | +0.26067471 | |
| $P$ | 5.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 704 | 0.4+ | 0.9− | 2002 03 06 | 704 | 0.8+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2001 12 13 | 704 | 0.7− | 0.0 | 2002 03 06 | 704 | (1.5+ | 1.0+) | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2001 12 13 | 704 | 0.2− | 0.1+ | 2002 03 06 | 704 | 1.2+ | 0.5− | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.7+ | | |
| 2001 12 18 | 704 | 0.7+ | 0.1+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.2− | 1.1+ | | |
| 2001 12 18 | 704 | (2.4+ | 0.0 ) | 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.2+ | | |
| 2001 12 18 | 704 | 0.3− | 0.2+ | 2003 04 01 | 645 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.7+ | | |
| 2002 01 09 | 704 | 0.1+ | 0.2+ | 2003 04 28 | 645 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.4+ | | |
| 2002 01 09 | 704 | 0.0 | 0.2+ | 2003 04 28 | 645 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.6+ | | |
| 2002 01 09 | 704 | 0.4− | 0.6+ | 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.3+ | 0.3+ | | |
| 2002 01 09 | 704 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2002 01 09 | 704 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.3+ | | |
| 2002 01 13 | 704 | 0.3− | 0.1+ | 2005 06 13 | G96 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.4+ | | |
| 2002 01 13 | 704 | 0.4− | 0.2+ | 2005 07 04 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.2+ | | |
| 2002 01 13 | 704 | 0.3− | 0.2+ | 2005 07 04 | 691 | 0.6− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.0 | | |
| 2002 01 13 | 704 | 0.7− | 0.5+ | 2005 07 04 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.9− | 0.1+ | | |
| 2002 01 15 | 704 | 0.1+ | 0.4− | 2005 07 11 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.1− | | |
| 2002 01 15 | 704 | 0.2+ | 0.7− | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.6+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 15 | 704 | 0.4+ | 0.8− | 2005 07 11 | 691 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.5− | 0.3+ | | |
| 2002 01 15 | 704 | 0.6+ | 1.0− | 2005 07 15 | G96 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.9+ | | |
| 2002 01 15 | 704 | 0.3+ | 1.0− | 2005 07 15 | G96 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.4− | 0.7− | | |
| 2002 01 19 | 704 | 0.4− | 0.3− | 2005 07 15 | G96 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.3+ | 0.5+ | | |
| 2002 01 19 | 704 | 0.0 | 0.6− | 2005 07 15 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.2+ | 0.3+ | | |
| 2002 01 19 | 704 | 0.4+ | 1.1− | 2006 09 29 | 699 | 0.5+ | 0.5+ | 2006 11 23 | 703 | 0.0 | 0.8+ | | |
| 2002 01 19 | 704 | (1.8− | 0.1−) | 2006 09 29 | 699 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.4+ | 0.8+ | | |
| 2002 01 19 | 704 | 0.6− | 0.5− | 2006 09 29 | 699 | 0.9− | 0.2− | | | | | | |
| 2002 03 06 | 704 | 0.7+ | 1.4+ | 2006 09 29 | 699 | 0.6+ | 0.9+ | | | | | | |

**(141362)∗ 2002 AP$_{37}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.74288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18140328 | $\omega$ | 176.56499 | | +0.18050848 | +0.96937379 | |
| $a$ | 3.0905750 | $\Omega$ | 103.78419 | | −0.90644833 | +0.22967322 | |
| $e$ | 0.0152616 | $i$ | 9.87300 | | −0.38179590 | −0.08697504 | |
| $P$ | 5.43 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 1.3− | 0.2− | 2002 01 15 | 704 | 0.5− | 0.4+ | 2005 09 01 | 644 | 0.6+ | 0.8+ | | |
| 2000 10 02 | 699 | 0.7− | 0.6+ | 2002 01 15 | 704 | (0.2− | 1.7+) | 2006 09 30 | 703 | 0.9+ | 0.1− | | |
| 2000 10 02 | 699 | 0.7− | 1.4+ | 2002 01 15 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.9+ | | |
| 2000 10 02 | 699 | 0.6− | 1.9+ | 2002 01 15 | 704 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.1− | | |
| 2001 11 17 | 704 | 0.2+ | 0.6+ | 2002 01 15 | 704 | 0.2+ | 1.4+ | 2006 09 30 | 703 | 0.6− | 1.0− | | |
| 2001 11 17 | 704 | 0.0 | 0.5+ | 2003 01 27 | 704 | 0.6+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.4+ | | |
| 2001 11 17 | 704 | 0.1− | 0.3+ | 2003 01 27 | 704 | 1.1+ | 0.4+ | 2006 10 12 | 644 | 0.5− | 0.4+ | | |
| 2001 12 11 | 704 | 0.3+ | 0.3+ | 2003 01 27 | 704 | 1.1− | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2001 12 11 | 704 | 0.3− | 0.5+ | 2003 01 27 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.7− | | |
| 2001 12 11 | 704 | 0.2− | 1.0+ | 2003 03 23 | 644 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.9− | | |
| 2001 12 11 | 704 | 0.8− | 0.1− | 2003 03 23 | 644 | 0.0 | 0.6+ | 2006 10 16 | 703 | (0.7+ | 2.2−) | | |
| 2001 12 11 | 704 | (1.5+ | 2.0+) | 2003 03 23 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 1.3− | | |
| 2001 12 20 | 704 | 0.4− | 0.7− | 2004 05 20 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | (0.6− | 2.5+) | | |
| 2001 12 20 | 704 | 0.0 | 0.6+ | 2004 05 20 | 691 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.3+ | | |
| 2001 12 20 | 704 | 0.6− | 0.3+ | 2004 05 20 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | (0.5− | 1.8+) | | |
| 2001 12 20 | 704 | 0.6+ | 0.2+ | 2004 05 23 | 704 | (0.3+ | 1.7+) | 2006 10 22 | 703 | 0.0 | 0.3− | | |
| 2001 12 20 | 704 | 0.0 | 0.1+ | 2004 05 23 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.3+ | 1.4− | | |
| 2002 01 09 | 704 | 1.4+ | 0.3− | 2004 05 23 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.3− | | |
| 2002 01 09 | 704 | (1.6+ | 0.5−) | 2004 05 23 | 704 | 0.6− | 0.5+ | 2006 11 13 | 703 | 0.7− | 0.9+ | | |
| 2002 01 09 | 704 | (1.7+ | 1.0−) | 2004 05 23 | 704 | 0.1− | 0.8+ | 2006 11 13 | 703 | 1.3− | 0.1+ | | |
| 2002 01 09 | 704 | 1.4+ | 0.2+ | 2005 08 05 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.6+ | 1.9+ | | |
| 2002 01 13 | 704 | 0.2+ | 0.1+ | 2005 08 05 | 644 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.2− | | |
| 2002 01 13 | 704 | 0.1− | 0.3+ | 2005 08 05 | 644 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.2+ | 0.3− | | |
| 2002 01 13 | 704 | 0.4− | 0.4+ | 2005 09 01 | 644 | 0.7+ | 0.8+ | 2006 11 19 | 703 | 0.8+ | 1.0− | | |
| 2002 01 13 | 704 | 0.5− | 0.1+ | 2005 09 01 | 644 | 0.8+ | 0.8+ | | | | | | |

**(141363)∗ 2002 AJ$_{38}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.27927 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28962797 | $\omega$ | 346.16738 | | −0.30129915 | −0.95291437 | |
| $a$ | 2.2624330 | $\Omega$ | 121.35840 | | +0.87861653 | −0.29140421 | |
| $e$ | 0.0311357 | $i$ | 2.29864 | | +0.37047512 | −0.08389155 | |
| $P$ | 3.40 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.2− | 0.2− | 2004 10 09 | 704 | (1.4− | 2.4+) | 2006 03 24 | 704 | 1.3+ | 0.5+ | | |
| 1996 05 11 | 691 | 0.1− | 0.2− | 2004 10 09 | 704 | 0.0 | 1.4+ | 2006 03 24 | 704 | 1.2+ | 1.8+ | | |
| 1996 05 11 | 691 | 0.1− | 0.5− | 2004 10 09 | 704 | (2.5+ | 0.9+) | 2006 03 24 | 704 | 0.5+ | 0.0 | | |
| 2001 11 21 | 704 | 1.2+ | 1.1− | 2004 10 20 | 704 | 0.4− | 0.5+ | 2006 03 25 | 691 | 0.3− | 0.0 | | |
| 2001 11 21 | 704 | 1.3+ | 1.2− | 2004 10 20 | 704 | 0.9− | 0.7+ | 2006 03 25 | 691 | 0.2+ | 0.0 | | |
| 2001 11 21 | 704 | 0.7+ | 1.0− | 2004 10 20 | 704 | 0.3− | 0.8+ | 2006 03 25 | 691 | 0.1− | 0.1+ | | |
| 2001 11 21 | 704 | 1.2+ | 1.1− | 2004 10 20 | 704 | 0.1+ | 0.6+ | 2006 03 26 | 699 | 0.9+ | 0.2− | | |
| 2001 11 21 | 704 | 0.4− | 1.7− | 2004 11 04 | 699 | (0.2+ | 2.6−) | 2006 03 26 | 699 | 0.3+ | 0.1− | | |
| 2001 12 17 | 704 | 0.6+ | 0.6+ | 2004 11 04 | 699 | 0.2+ | 0.5+ | 2006 03 26 | 699 | 0.4− | 0.3− | | |
| 2001 12 17 | 704 | 0.2+ | 1.4+ | 2004 11 04 | 699 | 0.1− | 0.7− | 2006 03 26 | 699 | 0.9+ | 0.1− | | |
| 2001 12 17 | 704 | 0.5+ | 0.7+ | 2004 11 04 | 699 | 0.8− | 0.7− | 2006 03 29 | 691 | 0.1+ | 0.0 | | |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2006 03 02 | G96 | 0.3− | 0.2− | 2006 03 29 | 691 | 0.1+ | 0.2− | | |
| 2002 01 09 | 704 | 0.4− | 0.4+ | 2006 03 02 | G96 | 0.5− | 0.2− | 2006 03 29 | 691 | 0.0 | 0.1+ | | |
| 2002 01 09 | 704 | 0.1− | 0.1+ | 2006 03 02 | G96 | 0.3− | 0.1− | 2006 03 29 | 704 | 0.8+ | 0.5− | | |
| 2002 01 09 | 704 | 0.2− | 0.2+ | 2006 03 02 | G96 | 0.6− | 0.6− | 2006 03 29 | 704 | 1.0+ | 1.0+ | | |
| 2002 01 09 | 704 | 0.4− | 0.7+ | 2006 03 03 | 691 | 0.0 | 0.0 | 2006 03 29 | 704 | 0.5− | 0.6− | | |
| 2002 01 13 | 704 | 0.3− | 0.7− | 2006 03 03 | 691 | 0.0 | 0.0 | 2006 03 31 | 704 | 1.0− | 0.1− | | |
| 2002 01 13 | 704 | 0.4− | 0.2+ | 2006 03 03 | 691 | 0.2− | 0.0 | 2006 03 31 | 704 | 0.9+ | 0.4+ | | |
| 2002 01 13 | 704 | 0.8− | 0.0 | 2006 03 03 | 408 | 1.2− | 0.1+ | 2006 03 31 | 704 | 0.8+ | 1.2+ | | |
| 2002 01 13 | 704 | 1.4− | 1.2+ | 2006 03 03 | 408 | 0.7− | 0.8+ | 2006 04 18 | 291 | 0.1+ | 0.2+ | | |
| 2002 01 15 | 704 | 0.3− | 0.9− | 2006 03 04 | 408 | 1.9− | 0.1− | 2006 04 18 | 291 | 0.2+ | 0.2+ | | |
| 2002 01 15 | 704 | 0.7− | 1.2− | 2006 03 04 | 408 | 2.0− | 0.2+ | 2006 04 18 | 291 | 0.1+ | 0.3+ | | |
| 2002 01 15 | 704 | 0.3+ | 1.3− | 2006 03 23 | 691 | 0.1+ | 0.0 | 2006 04 20 | 699 | 0.1− | 0.3− | | |
| 2004 10 08 | 699 | 0.1+ | 1.3+ | 2006 03 23 | 691 | 0.2+ | 0.2+ | 2006 04 20 | 699 | 0.1− | 0.4+ | | |
| 2004 10 08 | 699 | 0.9− | 1.3+ | 2006 03 23 | 691 | 0.1+ | 0.1+ | 2006 04 20 | 699 | 0.6− | 0.2+ | | |
| 2004 10 08 | 699 | 0.1− | 0.7+ | 2006 03 24 | 704 | 1.6+ | 0.0 | 2006 04 20 | 699 | 0.1− | 0.4+ | | |
| 2004 10 08 | 699 | 0.1+ | 0.6+ | 2006 03 24 | 704 | 0.6+ | 0.5+ | | | | | | |

**(141364)∗ 2002 AM$_{38}$ = 2003 FD$_{67}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47129)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.21540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21014768 | $\omega$ | 289.06300 | | +0.67542723 | −0.73348033 | |
| $a$ | 2.8019023 | $\Omega$ | 118.20688 | | +0.70491310 | +0.61185199 | |
| $e$ | 0.1023605 | $i$ | 4.95971 | | +0.21655388 | +0.29604686 | |
| $P$ | 4.69 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.0 | 0.1+ | 2005 08 31 | 699 | 0.1− | 0.1+ | 2005 10 10 | 703 | 0.2+ | 0.3− | | |
| 1993 01 29 | 691 | 0.3− | 0.3+ | 2005 08 31 | 699 | (0.9− | 1.5+) | 2005 10 10 | 703 | 0.3+ | 0.3+ | | |
| 1993 01 29 | 691 | 0.5+ | 0.2+ | 2005 08 31 | 699 | 0.9+ | 1.4+ | 2005 10 20 | 644 | 0.1− | 0.3+ | | |
| 1993 01 29 | 691 | 0.2− | 0.1− | 2005 08 31 | 699 | 0.1+ | 0.8− | 2005 10 20 | 644 | 0.1+ | 0.4+ | | |
| 1993 01 29 | 691 | 0.3− | 0.0 | 2005 09 23 | 691 | 0.2− | 0.0 | 2005 10 20 | 644 | 0.2− | 0.5+ | | |
| 1993 01 29 | 691 | 0.1− | 0.1− | 2005 09 23 | 691 | 0.2− | 0.2− | 2005 10 26 | 704 | 1.4+ | 0.7+ | | |
| 2000 09 24 | 704 | 0.3− | 0.8− | 2005 09 23 | 691 | 0.2− | 0.0 | 2005 10 26 | 704 | 0.8+ | 0.1+ | | |
| 2000 09 24 | 704 | 0.7− | 0.1− | 2005 09 24 | 703 | 0.1− | 1.0− | 2005 10 26 | 704 | 0.2+ | 0.5+ | | |
| 2000 09 24 | 704 | 0.2+ | 0.9+ | 2005 09 24 | 703 | (1.9− | 0.1+) | 2005 10 26 | 704 | 0.8+ | 0.7+ | | |
| 2001 12 14 | 704 | 1.5+ | 0.1− | 2005 09 24 | 703 | 0.4− | 0.2− | 2005 10 26 | 704 | 0.0 | 0.7+ | | |
| 2001 12 14 | 704 | (3.8+ | 0.6+) | 2005 09 24 | 703 | 0.2− | 0.3+ | 2005 10 31 | 699 | 0.0 | 0.9+ | | |
| 2001 12 14 | 704 | 1.5+ | 0.2− | 2005 09 24 | 644 | 0.0 | 0.0 | 2005 10 31 | 699 | 0.2− | 0.5− | | |
| 2001 12 14 | 704 | (1.7+ | 0.1−) | 2005 09 24 | 699 | 0.1− | 0.4+ | 2005 10 31 | 699 | 0.5− | 0.1+ | | |
| 2001 12 14 | 704 | 0.7+ | 1.2− | 2005 09 24 | 699 | 0.7+ | 0.3− | 2005 10 31 | 699 | 1.1− | 0.2+ | | |
| 2001 12 17 | 704 | 0.0 | 0.2− | 2005 09 24 | 644 | 0.0 | 0.3+ | 2005 11 03 | 703 | 0.6+ | 0.6− | | |
| 2001 12 17 | 704 | 0.2− | 0.3− | 2005 09 24 | 699 | 1.0+ | 0.0 | 2005 11 03 | 703 | 0.2+ | 0.1− | | |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2005 09 24 | 699 | 0.6− | 0.5− | 2005 11 03 | 703 | 0.2− | 1.2− | | |
| 2001 12 17 | 704 | 0.6− | 0.0 | 2005 09 24 | 644 | 0.4− | 0.0 | 2005 11 03 | 703 | 0.6− | 0.8− | | |
| 2002 01 09 | 704 | 0.7+ | 0.1+ | 2005 09 28 | 644 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1+ | | |
| 2002 01 09 | 704 | 0.1+ | 0.2+ | 2005 09 28 | 644 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.2− | | |
| 2002 01 09 | 704 | 0.6+ | 0.2+ | 2005 09 28 | 644 | 0.6− | 0.0 | 2006 10 21 | G96 | 0.6− | 0.3− | | |
| 2002 01 09 | 704 | 0.3− | 0.3− | 2005 09 30 | 699 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.3− | | |
| 2002 01 13 | 704 | 0.1+ | 0.7+ | 2005 09 30 | 699 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.6− | 0.2+ | | |
| 2002 01 13 | 704 | 0.8+ | 0.6+ | 2005 09 30 | 699 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.3− | 0.2− | | |
| 2002 01 13 | 704 | 0.4+ | 0.2+ | 2005 09 30 | 699 | 0.4− | 0.8+ | 2006 11 01 | G96 | 0.4− | 0.1− | | |
| 2002 01 15 | 704 | 0.7− | 0.7+ | 2005 10 03 | 703 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.3+ | | |
| 2002 01 15 | 704 | 0.1+ | 1.1+ | 2005 10 03 | 703 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.4− | 0.1+ | | |
| 2002 01 15 | 704 | (0.0 | 1.6+) | 2005 10 03 | 703 | 0.1− | 0.6+ | 2006 11 15 | G96 | 0.6− | 0.3− | | |
| 2002 01 15 | 704 | (1.1+ | 2.2+) | 2005 10 03 | 703 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.4− | 0.0 | | |
| 2003 03 26 | 644 | 0.5+ | 0.7+ | 2005 10 09 | 703 | 1.5+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.0 | | |
| 2003 03 26 | 644 | 0.5+ | 0.5+ | 2005 10 09 | 703 | 0.7− | 0.7+ | 2006 11 28 | G96 | 0.2− | 0.1+ | | |
| 2003 03 26 | 644 | 0.7+ | 0.7+ | 2005 10 09 | 703 | 0.6− | 1.0− | 2006 11 28 | G96 | 0.1+ | 0.3− | | |
| 2003 04 09 | 691 | 0.1+ | 0.2− | 2005 10 09 | 703 | 0.0 | 0.3− | 2006 11 28 | G96 | 0.6− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 691 | 0.1+ | 0.3+ | 2005 10 10 | 703 | 0.1+ | 0.4+ | 2006 11 28 | G96 | 0.7− | 0.1+ |
| 2003 04 09 | 691 | 0.1+ | 0.0 | 2005 10 10 | 703 | 0.1− | 0.3− | | | | |

**(141365)∗ 2002 AE$_{39}$ = 2000 SW$_{339}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23379)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.52867 | | (2000.0) | | | |
| $n$ | 0.17369106 | $\omega$ | 246.30691 | | −0.81041605 | −0.58225245 |
| $a$ | 3.1813961 | $\Omega$ | 258.02297 | | +0.55877032 | −0.73492013 |
| $e$ | 0.1241905 | $i$ | 3.80219 | | +0.17607259 | −0.34767009 |
| $P$ | 5.67 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 691 | 0.2+ | 0.1− | 2002 01 22 | 704 | 0.3− | 0.8− | 2003 05 02 | 704 | 0.0 | 1.1+ |
| 2000 09 25 | 691 | 0.4+ | 0.1+ | 2002 01 26 | 644 | 0.2− | 0.2− | 2003 05 02 | 704 | 0.0 | 0.5+ |
| 2000 09 25 | 691 | 0.2+ | 0.3− | 2002 01 26 | 644 | 0.1− | 0.0 | 2003 05 02 | 704 | 0.0 | 0.3+ |
| 2000 10 02 | 704 | 0.6+ | 0.7+ | 2002 01 26 | 644 | 0.1− | 0.0 | 2003 05 10 | 691 | 0.1− | 0.5+ |
| 2000 10 02 | 704 | 0.4− | 1.7+ | 2002 02 06 | 644 | 0.1+ | 0.9− | 2003 05 10 | 691 | 0.1+ | 0.5+ |
| 2000 10 02 | 704 | 0.3− | 1.1+ | 2002 02 06 | 644 | 0.1+ | 0.9− | 2003 05 10 | 691 | 0.0 | 0.7+ |
| 2000 11 30 | 645 | 0.1− | 0.1+ | 2002 02 06 | 644 | 0.1+ | 0.8− | 2005 08 27 | 644 | 0.1− | 0.5+ |
| 2000 11 30 | 645 | 0.1− | 0.1+ | 2002 02 07 | 704 | 0.1− | 0.0 | 2005 08 27 | 644 | 0.4− | 0.5+ |
| 2001 12 14 | 704 | 0.4+ | 0.1− | 2002 02 07 | 704 | 0.2+ | 0.3− | 2005 08 27 | 644 | 0.2− | 0.7+ |
| 2001 12 14 | 704 | 0.4+ | 0.3− | 2002 02 07 | 704 | 0.6− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.2+ | 0.2− | 2002 02 07 | 704 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2001 12 14 | 704 | 0.2+ | 0.5+ | 2002 02 07 | 704 | 0.2+ | 0.6− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2001 12 17 | 644 | 0.3+ | 0.0 | 2002 02 09 | 704 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2001 12 17 | 644 | 0.2+ | 0.1+ | 2002 02 09 | 704 | 0.7+ | 0.5− | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2001 12 17 | 644 | 0.1+ | 0.1− | 2002 02 09 | 704 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 691 | 0.4− | 0.1− | 2002 02 09 | 704 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2001 12 19 | 691 | 0.6− | 0.1− | 2002 02 11 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.9+ |
| 2001 12 19 | 691 | 0.7− | 0.1+ | 2002 02 11 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 2002 01 05 | 644 | 0.1− | 0.3+ | 2002 02 11 | 704 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.8+ |
| 2002 01 05 | 644 | 0.1− | 0.6+ | 2002 02 11 | 704 | 0.6+ | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.2− |
| 2002 01 05 | 644 | 0.1+ | 0.5+ | 2002 02 11 | 704 | 0.4− | 0.5− | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2002 01 09 | 704 | 0.1− | 0.8+ | 2002 02 13 | 704 | 0.6+ | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2002 01 09 | 704 | 0.6+ | 1.0+ | 2002 02 13 | 704 | (1.8+ | 1.3+) | 2006 11 18 | 691 | 0.2− | 0.3− |
| 2002 01 09 | 704 | 0.2− | 0.0 | 2002 02 13 | 704 | 0.4+ | 1.1+ | 2006 11 18 | 691 | 0.1+ | 1.0+ |
| 2002 01 09 | 704 | 0.1+ | 0.5+ | 2002 02 13 | 704 | 1.1+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2002 01 09 | 704 | 0.5+ | 0.2+ | 2002 02 13 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.6− |
| 2002 01 13 | 704 | 0.1+ | 0.0 | 2002 02 20 | 704 | 0.3− | 0.7+ | 2006 11 18 | 704 | (0.9− | 1.9+) |
| 2002 01 13 | 704 | 0.3+ | 0.0 | 2002 02 20 | 704 | 0.4+ | 0.6− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2002 01 13 | 704 | 0.1− | 0.1− | 2002 02 20 | 704 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 01 13 | 704 | 0.0 | 0.1− | 2002 02 20 | 704 | 0.1− | 0.1+ | 2006 11 20 | 703 | 0.9+ | 0.1+ |
| 2002 01 13 | 704 | 0.3− | 0.3+ | 2002 02 20 | 704 | 0.6+ | 0.1+ | 2006 11 20 | 703 | 0.3− | 0.0 |
| 2002 01 14 | 699 | 0.4− | 0.6+ | 2002 03 05 | 644 | 0.0 | 0.3+ | 2006 11 20 | 703 | 0.1− | 0.1− |
| 2002 01 14 | 699 | 0.6− | 0.5+ | 2002 03 05 | 644 | 0.0 | 0.0 | 2006 11 20 | 703 | 0.3− | 0.7+ |
| 2002 01 14 | 699 | 0.0 | 0.7+ | 2002 03 05 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2002 01 14 | 699 | 0.6− | 0.8+ | 2003 04 28 | 699 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.3− | 1.4+ |
| 2002 01 15 | 704 | 0.2+ | 0.1− | 2003 04 28 | 699 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 1.2+ |
| 2002 01 15 | 704 | 0.2+ | 0.1+ | 2003 04 28 | 699 | 0.0 | 0.9− | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2002 01 15 | 704 | 0.4+ | 0.4+ | 2003 04 28 | 699 | 0.2+ | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2002 01 22 | 704 | 0.4+ | 0.7− | 2003 04 29 | 704 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2002 01 22 | 704 | 0.0 | 0.3− | 2003 04 29 | 704 | 1.3+ | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2002 01 22 | 704 | 0.4− | 0.6− | 2003 04 29 | 704 | 0.6+ | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.2− |

**(141366)∗ 2002 AJ$_{44}$ = 1995 SE$_{67}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23380)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.27681 | | (2000.0) | | | |
| $n$ | 0.19985390 | $\omega$ | 274.70794 | | +0.40152976 | −0.91561578 |
| $a$ | 2.8973055 | $\Omega$ | 151.59057 | | +0.85645403 | +0.36745439 |
| $e$ | 0.0852255 | $i$ | 2.47348 | | +0.32443849 | +0.16317174 |
| $P$ | 4.93 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.4− | 0.9+ | 2002 01 13 | 704 | 0.1+ | 0.8− | 2005 10 01 | G96 | 0.2− | 0.2− |
| 1995 09 17 | 691 | 0.4− | 0.3+ | 2002 01 15 | 704 | 0.4+ | 0.4+ | 2005 10 01 | G96 | 0.4− | 0.2− |
| 1995 09 17 | 691 | 0.0 | 0.7− | 2002 01 15 | 704 | 0.3+ | 1.0+ | 2005 10 01 | G96 | 0.1− | 0.2− |
| 1995 09 22 | 691 | 0.2+ | 0.3+ | 2002 01 15 | 704 | 0.6+ | 0.1+ | 2005 10 06 | 691 | 0.1+ | 0.4+ |
| 1995 09 22 | 691 | 0.3− | 0.5+ | 2002 01 15 | 704 | 0.2+ | 0.4− | 2005 10 06 | 691 | 0.2− | 0.1+ |
| 1995 09 22 | 691 | 0.1− | 0.3+ | 2002 01 19 | 704 | 1.1+ | 1.2+ | 2005 10 06 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.3− | 0.7+ | 2002 01 19 | 704 | 1.1+ | 0.1+ | 2005 10 12 | 691 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.1+ | 0.7+ | 2002 01 19 | 704 | 0.8− | 0.5− | 2005 10 12 | 691 | 0.4− | 0.1+ |
| 2000 10 01 | 704 | 0.6− | 0.3+ | 2002 01 19 | 704 | 0.6+ | 0.4+ | 2005 10 12 | 691 | 0.0 | 0.0 |
| 2000 10 01 | 704 | 0.7+ | 0.6+ | 2003 04 05 | 691 | 0.4+ | 0.1+ | 2005 10 28 | G96 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.0 | 0.3+ | 2003 04 05 | 691 | 0.5+ | 0.4+ | 2005 10 28 | G96 | 0.2+ | 0.4− |
| 2002 01 06 | 691 | 0.1+ | 0.5+ | 2003 04 05 | 691 | 0.5+ | 0.4+ | 2005 10 28 | G96 | 0.3+ | 0.2+ |
| 2002 01 06 | 691 | 0.3+ | 0.2+ | 2003 04 29 | 691 | 0.4− | 0.7+ | 2005 10 28 | G96 | 0.2− | 0.2− |
| 2002 01 06 | 691 | 0.2− | 0.3+ | 2003 04 29 | 691 | 0.1− | 0.8+ | 2006 11 01 | G96 | 0.0 | 1.1− |
| 2002 01 09 | 704 | 0.1+ | 0.4+ | 2003 04 29 | 691 | 0.2+ | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2002 01 09 | 704 | 0.1− | 0.6+ | 2005 09 24 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.7− | 1.4+ |
| 2002 01 09 | 704 | (1.7+ | 0.9+) | 2005 09 24 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.1+ |
| 2002 01 09 | 704 | 0.4+ | 0.8+ | 2005 09 24 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.3+ |
| 2002 01 09 | 704 | 0.2− | 0.6+ | 2005 09 30 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.5− | 0.1+ |
| 2002 01 13 | 704 | 0.7− | 0.8− | 2005 09 30 | 691 | (1.2+ | 1.6+) | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2002 01 13 | 704 | 0.3− | 0.9− | 2005 09 30 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.7− | 0.0 |
| 2002 01 13 | 704 | 1.3− | 1.2− | 2005 10 01 | G96 | 0.1+ | 0.2− | | | | |

**(141367)∗ 2002 AL$_{44}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 136.76565 | | (2000.0) | | | |
| $n$ | 0.30091985 | $\omega$ | 19.76936 | | −0.68796305 | −0.72219062 |
| $a$ | 2.2054751 | $\Omega$ | 113.77498 | | +0.65486598 | −0.66034411 |
| $e$ | 0.0716229 | $i$ | 4.49659 | | +0.31282166 | −0.20587950 |
| $P$ | 3.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 18 | 691 | 0.1− | 0.2+ | 2002 01 13 | 291 | 0.0 | 0.1− | 2002 02 12 | 704 | 0.3− | 0.2+ |
| 1996 05 18 | 691 | 0.2+ | 0.0 | 2002 01 13 | 291 | 0.0 | 0.1+ | 2002 02 12 | 704 | 0.1+ | 0.7+ |
| 1996 05 18 | 691 | 0.1− | 0.1− | 2002 01 13 | 704 | 0.4− | 0.2+ | 2002 02 12 | 704 | 0.2+ | 0.4+ |
| 2001 12 14 | 704 | 0.9− | 0.1+ | 2002 01 13 | 704 | 0.3+ | 0.1+ | 2004 11 04 | 691 | 0.0 | 0.1+ |
| 2001 12 14 | 704 | 0.3− | 0.8+ | 2002 01 13 | 704 | 0.1− | 0.2− | 2004 11 04 | 691 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 1.5− | 0.4− | 2002 01 13 | 704 | 0.1+ | 0.0 | 2004 11 04 | 691 | 0.1− | 0.2+ |
| 2001 12 14 | 704 | 1.5− | 0.2+ | 2002 01 13 | 704 | 0.1+ | 0.5+ | 2004 12 12 | 413 | 0.1+ | 0.1+ |
| 2001 12 19 | 691 | 0.2+ | 0.4+ | 2002 01 15 | 704 | 0.3− | 0.2− | 2004 12 12 | 413 | 0.1+ | 0.1− |
| 2001 12 19 | 691 | 0.4+ | 0.1− | 2002 01 15 | 704 | 0.2− | 0.6− | 2004 12 12 | 413 | 0.0 | 0.0 |
| 2001 12 19 | 691 | 0.3+ | 0.1+ | 2002 01 15 | 704 | 0.5+ | 1.1− | 2006 05 07 | G96 | 0.3+ | 0.1+ |
| 2002 01 09 | 704 | 0.3+ | 0.3+ | 2002 01 15 | 704 | 0.5+ | 0.8− | 2006 05 07 | G96 | 0.2− | 0.2+ |
| 2002 01 09 | 704 | 1.8+ | 0.1+ | 2002 01 21 | 691 | 0.0 | 0.1+ | 2006 05 07 | G96 | 0.1− | 0.0 |
| 2002 01 09 | 704 | 0.6+ | 0.4− | 2002 01 21 | 691 | 0.1+ | 0.1− | 2006 05 07 | G96 | 0.2− | 0.1+ |
| 2002 01 09 | 704 | 0.9+ | 0.1− | 2002 01 21 | 691 | 0.0 | 0.1+ | 2006 06 02 | 691 | 1.0− | 0.5− |
| 2002 01 09 | 608 | 0.6− | 0.6+ | 2002 02 06 | 704 | 0.6− | 1.0− | 2006 06 02 | 691 | 0.3+ | 0.3+ |
| 2002 01 09 | 704 | 0.5+ | 0.7− | 2002 02 06 | 704 | 0.7− | 0.1+ | 2006 06 02 | 691 | 0.1+ | 0.1+ |
| 2002 01 09 | 608 | 0.2− | 0.3+ | 2002 02 06 | 704 | 1.4− | 0.7+ | 2006 06 16 | 691 | 0.2+ | 0.1+ |
| 2002 01 09 | 608 | 0.4− | 0.5+ | 2002 02 06 | 704 | 0.2− | 1.0− | 2006 06 16 | 691 | 0.4+ | 0.2+ |
| 2002 01 13 | 291 | 0.2− | 0.0 | 2002 02 12 | 704 | 0.2− | 0.3− | 2006 06 16 | 691 | 0.2+ | 0.0 |

**(141368)∗ 2002 AB$_{45}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.48724 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16850237 | $\omega$ | 4.94703 | | +0.34835076 | +0.93479042 | |
| $a$ | 3.2463752 | $\Omega$ | 285.45264 | | −0.86246645 | +0.29063011 | |
| $e$ | 0.0874427 | $i$ | 4.13000 | | −0.36715579 | +0.20420824 | |
| $P$ | 5.85 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.5− | 0.0 | 2005 08 26 | 699 | 1.0− | 0.4− | 2005 09 29 | 691 | 0.3+ | 0.0 |
| 2000 11 20 | 704 | 0.4+ | 0.1+ | 2005 08 27 | 644 | 0.3− | 0.2+ | 2005 09 30 | 703 | 0.2+ | 0.3+ |
| 2000 11 20 | 704 | 0.5+ | 0.5− | 2005 08 27 | 644 | 0.3− | 0.2+ | 2005 09 30 | 703 | 0.8− | 0.9− |
| 2001 12 14 | 704 | 1.3+ | 1.2+ | 2005 08 27 | 644 | 0.3− | 0.1− | 2005 09 30 | 703 | 0.4+ | 1.3− |
| 2001 12 14 | 704 | 0.2− | 0.4+ | 2005 08 29 | 699 | 0.1− | 1.2+ | 2005 09 30 | 703 | 0.1+ | 0.7+ |
| 2001 12 14 | 704 | (0.9+ | 1.8+) | 2005 08 29 | 699 | (1.3+ | 1.7+) | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2001 12 14 | 704 | (1.1+ | 1.6+) | 2005 08 29 | 699 | 1.2+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2002 01 09 | 704 | 0.0 | 0.2+ | 2005 08 29 | 699 | 0.6+ | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2002 01 09 | 704 | 0.1− | 0.3+ | 2005 08 29 | 699 | 0.7− | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2002 01 09 | 704 | 0.4− | 0.2+ | 2005 08 29 | 699 | 0.3− | 1.2+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2002 01 09 | 704 | 0.6+ | 1.3+ | 2005 08 29 | 699 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2002 01 13 | 704 | 0.3− | 1.2+ | 2005 08 29 | 699 | 0.9+ | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2002 01 13 | 704 | 0.2+ | 1.4+ | 2005 08 31 | 691 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2002 01 13 | 704 | (0.7+ | 2.6+) | 2005 08 31 | 691 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.3− |
| 2002 01 13 | 704 | 0.3+ | 1.5+ | 2005 08 31 | 691 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2005 09 06 | 704 | 0.2− | 0.4+ | 2006 11 19 | 704 | (1.6+ | 1.3−) |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2005 09 06 | 704 | 1.0− | 0.4− | 2006 11 19 | 704 | 1.1+ | 0.1− |
| 2003 03 10 | 699 | (0.6− | 2.3+) | 2005 09 06 | 704 | 0.7− | 0.7+ | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2003 03 10 | 699 | 0.9+ | 1.5+ | 2005 09 12 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 1.0− | 0.3+ |
| 2003 03 10 | 699 | 0.4+ | 1.1+ | 2005 09 12 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.5− |
| 2003 03 10 | 699 | (1.5+ | 1.3+) | 2005 09 12 | 691 | 0.2+ | 0.0 | 2006 11 20 | 704 | (0.9+ | 1.6−) |
| 2003 03 25 | 699 | 0.8+ | 1.1− | 2005 09 14 | 703 | (1.7+ | 0.7+) | 2006 11 21 | 704 | (0.3− | 2.8−) |
| 2003 03 25 | 699 | (0.3+ | 1.7+) | 2005 09 14 | 703 | 0.4− | 1.0+ | 2006 11 21 | 704 | 0.7− | 0.7− |
| 2003 03 25 | 699 | 0.6− | 1.0+ | 2005 09 14 | 703 | (2.3+ | 1.7+) | 2006 11 21 | 704 | 0.4+ | 1.4− |
| 2003 03 25 | 699 | 0.1− | 0.4− | 2005 09 14 | 703 | 1.1+ | 0.4+ | 2006 11 22 | 704 | 0.4− | 0.2+ |
| 2004 06 16 | 704 | 0.3− | 0.1− | 2005 09 24 | 703 | 0.7− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 1.1+ |
| 2004 06 16 | 704 | 0.1+ | 0.2+ | 2005 09 24 | 703 | (1.6− | 1.0−) | 2006 11 22 | 704 | 0.5+ | 0.6+ |
| 2004 06 16 | 704 | 0.1+ | 0.0 | 2005 09 24 | 703 | 0.5− | 0.3− | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2005 08 26 | 699 | 0.7− | 0.1− | 2005 09 24 | 703 | 0.6+ | 0.7+ | 2006 11 25 | 691 | 0.3− | 0.1− |
| 2005 08 26 | 699 | 0.4− | 1.2+ | 2005 09 29 | 691 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.1− | 0.3+ |
| 2005 08 26 | 699 | 0.3− | 0.1+ | 2005 09 29 | 691 | 0.4+ | 0.2− | 2006 11 25 | 691 | 0.1− | 0.2− |

## (141369)∗ 2002 AX$_{45}$ = 1997 GC$_{31}$

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23381)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.01948 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17252708 | $\omega$ | 14.70375 | | −0.98086525 | −0.19423492 | |
| $a$ | 3.1956892 | $\Omega$ | 154.08483 | | +0.17541634 | −0.91128969 | |
| $e$ | 0.1219030 | $i$ | 1.74031 | | +0.08445398 | −0.36307562 | |
| $P$ | 5.71 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.1− | 0.1+ | 2002 01 09 | 704 | 1.4+ | 0.4+ | 2005 08 28 | 691 | 0.3+ | 0.0 |
| 1994 10 09 | 691 | 0.1− | 0.1− | 2002 01 09 | 704 | (1.8+ | 0.1−) | 2005 08 28 | 691 | 0.1+ | 0.3+ |
| 1994 10 09 | 691 | 0.4+ | 0.6− | 2002 01 09 | 704 | (2.4+ | 0.2+) | 2005 08 28 | 691 | 0.3+ | 0.2+ |
| 1997 04 07 | 691 | 0.5− | 0.5− | 2002 01 09 | 704 | 1.5+ | 0.6− | 2005 10 01 | G96 | 0.0 | 0.2+ |
| 1997 04 07 | 691 | 0.5− | 0.5− | 2002 01 13 | 704 | (1.8+ | 0.5−) | 2005 10 01 | G96 | 0.8+ | 0.3+ |
| 1997 04 07 | 691 | 0.5− | 0.4− | 2002 01 13 | 704 | 1.1+ | 1.2− | 2005 10 01 | G96 | 0.4+ | 0.1− |
| 1997 04 12 | 691 | 0.3− | 0.6+ | 2002 01 13 | 704 | (1.1+ | 1.7−) | 2005 10 01 | G96 | 0.6+ | 0.4− |
| 1997 04 12 | 691 | 0.0 | 0.5− | 2002 01 13 | 704 | 1.5+ | 1.4− | 2006 10 17 | G96 | 0.3− | 0.7− |
| 1997 04 12 | 691 | 0.1− | 0.5− | 2002 01 13 | 704 | (0.6+ | 2.3−) | 2006 10 17 | G96 | 0.3+ | 1.4− |
| 1997 04 16 | 691 | 0.4− | 0.2− | 2002 02 07 | 704 | 1.4− | 0.6− | 2006 10 17 | G96 | 0.2− | 0.7− |
| 1997 04 16 | 691 | 0.3+ | 0.3− | 2002 02 07 | 704 | 1.1− | 0.5+ | 2006 10 17 | G96 | 0.2− | 1.1− |
| 1997 04 16 | 691 | 0.1− | 0.5− | 2002 02 07 | 704 | 0.7− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.5− |
| 2001 12 14 | 291 | 0.2+ | 0.2+ | 2002 02 07 | 704 | (1.9− | 0.2+) | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 12 14 | 291 | 0.1− | 0.3+ | 2002 02 11 | 704 | 0.8+ | 0.4− | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2001 12 14 | 291 | 0.1− | 0.4+ | 2002 02 11 | 704 | 0.6+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2002 02 11 | 704 | 1.0+ | 0.4− | 2006 11 14 | 691 | 0.7− | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2002 02 11 | 704 | 0.6− | 0.6+ | 2006 11 14 | 691 | 0.5− | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 0.9+ | 2002 02 11 | 704 | 0.1− | 1.0+ | 2006 11 21 | 691 | 0.3− | 0.2− |
| 2002 01 06 | 691 | 0.3+ | 0.3+ | 2003 05 05 | 704 | 1.0+ | 0.2+ | 2006 11 21 | 691 | 0.3− | 0.4− |
| 2002 01 06 | 691 | 0.3+ | 0.4+ | 2003 05 05 | 704 | 0.2+ | 0.6+ | 2006 11 21 | 691 | 0.2− | 0.2− |
| 2002 01 06 | 691 | 0.4+ | 0.4+ | 2003 05 05 | 704 | 0.2+ | 0.9+ | | | | |
| 2002 01 09 | 704 | 1.4+ | 0.1+ | 2003 05 05 | 704 | 0.4− | 0.9+ | | | | |

## (141370)∗ 2002 AG$_{48}$

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.21751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16831415 | $\omega$ | 135.26639 | | +0.72397318 | −0.68501705 | |
| $a$ | 3.2487949 | $\Omega$ | 268.15601 | | +0.60793922 | +0.68929672 | |
| $e$ | 0.0547026 | $i$ | 4.66741 | | +0.32599499 | +0.23584246 | |
| $P$ | 5.86 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 704 | 0.3+ | 0.5− | 2002 02 11 | 704 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2000 11 03 | 704 | 0.9− | 0.2+ | 2002 02 11 | 704 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2000 11 03 | 704 | 0.2− | 0.2+ | 2002 02 11 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.0 |
| 2000 11 03 | 704 | 0.2+ | 0.5+ | 2005 07 30 | 599 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.5− | 0.3− |
| 2000 11 03 | 704 | 0.1+ | 1.2+ | 2005 07 30 | 599 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.3− | 1.0− |
| 2001 12 14 | 704 | 1.1+ | 0.6− | 2005 07 30 | 599 | 0.0 | 0.2+ | 2006 10 27 | 703 | 1.2+ | 0.0 |
| 2001 12 14 | 704 | 0.4− | 0.1+ | 2005 07 31 | 599 | 0.4+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.5− |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2005 08 24 | 644 | 0.3− | 0.2+ | 2006 10 27 | 703 | (1.7− | 0.6−) |
| 2001 12 14 | 704 | 0.9− | 0.5+ | 2005 08 24 | 644 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 0.2− | 0.6+ | 2005 08 24 | 644 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2002 01 09 | 704 | 0.4+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.3− | 0.1− |
| 2002 01 09 | 704 | 1.1− | 0.7+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 01 09 | 704 | 0.9− | 1.3+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2002 01 13 | 704 | 0.5+ | 0.3− | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 2002 01 13 | 704 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2002 01 13 | 704 | 0.9+ | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2002 01 13 | 704 | 0.4+ | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2002 02 11 | 704 | 0.8− | 0.8− | 2006 10 19 | 703 | 0.6− | 0.1+ | 2006 11 19 | 704 | 0.9+ | 0.1− |

## (141371)∗ 2002 AJ$_{49}$ = 2000 SQ$_{341}$

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 23382)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.90532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17565546 | $\omega$ | 203.25694 | | +0.30740340 | −0.95147536 | |
| $a$ | 3.1576327 | $\Omega$ | 228.84337 | | +0.87596458 | +0.28871922 | |
| $e$ | 0.2195981 | $i$ | 1.07031 | | +0.37173809 | +0.10647000 | |
| $P$ | 5.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.4− | 0.4− | 2002 02 05 | 644 | 0.2+ | 0.5+ | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 1997 03 02 | 691 | 0.5− | 0.6− | 2002 02 05 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.3− | 0.0 |
| 1997 03 02 | 691 | 0.2− | 0.4− | 2002 02 05 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2000 09 24 | 704 | 0.4− | 0.4− | 2002 02 09 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2000 09 24 | 704 | 0.5− | 0.4+ | 2002 02 09 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.3+ | 0.5+ | 2002 02 09 | 704 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.1+ |
| 2000 09 27 | 691 | 0.0 | 0.1+ | 2002 02 09 | 704 | 0.3− | 0.2+ | 2006 10 28 | 704 | 0.5− | 0.2− |
| 2000 09 27 | 691 | 0.0 | 0.0 | 2002 02 11 | 704 | (0.8+ | 1.5+) | 2006 10 28 | 704 | 0.0 | 0.2+ |
| 2000 09 27 | 691 | 0.1− | 0.0 | 2002 02 11 | 704 | 0.9+ | 1.1+ | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.6+ | 2002 02 11 | 704 | 1.1+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.6− | 0.0 | 2002 02 11 | 704 | 1.3+ | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.5+ | 2002 02 11 | 704 | 1.0+ | 0.1− | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2001 12 17 | 704 | 0.4− | 0.3− | 2002 02 15 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | (1.7− | 0.7−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 291 | 0.4− | 0.3+ | 2002 02 15 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.5− | | |
| 2002 01 08 | 291 | 0.1− | 0.2+ | 2002 02 15 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.2+ | | |
| 2002 01 08 | 291 | 0.1− | 0.2+ | 2003 04 25 | 291 | 0.2− | 0.7+ | 2006 11 13 | 644 | 0.1− | 0.2+ | | |
| 2002 01 09 | 704 | 0.1− | 0.1+ | 2003 04 25 | 291 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.2+ | | |
| 2002 01 09 | 704 | 0.0 | 0.8− | 2003 04 25 | 291 | 0.1− | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.3+ | | |
| 2002 01 09 | 704 | 0.1− | 0.4+ | 2003 04 29 | 691 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2002 01 09 | 704 | 0.3+ | 0.8+ | 2003 04 29 | 691 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.5− | | |
| 2002 01 09 | 704 | 0.4+ | 0.6+ | 2003 04 29 | 691 | 0.7+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.3− | | |
| 2002 01 10 | 599 | 0.2+ | 0.2+ | 2004 07 16 | 807 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2002 01 10 | 599 | 0.4− | 0.2+ | 2004 07 16 | 807 | 0.4− | 0.5− | 2006 11 17 | 703 | 0.7− | 0.7− | | |
| 2002 01 10 | 599 | 0.0 | 0.2+ | 2005 06 15 | G96 | 0.1− | 0.7+ | 2006 11 17 | 703 | 0.5− | 0.5+ | | |
| 2002 01 11 | 699 | 0.0 | 1.1+ | 2005 06 15 | G96 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.8+ | | |
| 2002 01 11 | 699 | 0.1− | 0.5+ | 2005 06 15 | G96 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.4+ | 1.5+ | | |
| 2002 01 11 | 699 | 0.3+ | 0.7+ | 2005 06 15 | G96 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 1.3− | 0.6+ | | |
| 2002 01 11 | 699 | 0.7− | 0.2+ | 2005 07 04 | G96 | 0.4− | 0.4+ | 2006 11 18 | 704 | 0.2− | 1.1− | | |
| 2002 01 13 | 704 | 0.1+ | 0.0 | 2005 07 04 | G96 | 0.6− | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.6+ | | |
| 2002 01 13 | 704 | 0.8+ | 0.5− | 2005 07 04 | G96 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 1.1+ | | |
| 2002 01 13 | 704 | 0.4+ | 0.2− | 2005 07 04 | G96 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.8+ | | |
| 2002 01 13 | 704 | 0.3+ | 0.0 | 2005 07 07 | 691 | 0.4+ | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.2− | | |
| 2002 01 13 | 704 | 1.0+ | 0.4− | 2005 07 07 | 691 | 0.3− | 0.9+ | 2006 11 27 | G96 | 0.3+ | 0.2− | | |
| 2002 01 15 | 704 | 0.1+ | 0.5+ | 2005 07 07 | 691 | 0.4− | 0.9+ | 2006 11 27 | G96 | 0.4+ | 0.3− | | |
| 2002 01 15 | 704 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.5+ | 0.3− | | |
| 2002 01 15 | 704 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 28 | 704 | 1.1+ | 0.2− | | |
| 2002 01 21 | 291 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.3− | | |
| 2002 01 21 | 291 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.9− | 0.5+ | | |
| 2002 01 21 | 291 | 0.3− | 0.6− | 2006 10 12 | 691 | 0.4− | 0.0 | | | | | | |

**(141372)∗ 2002 AA$_{52}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.94537 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23988294 | $\omega$ | 291.33634 | | −0.65896774 | +0.73513995 | |
| $a$ | 2.5652900 | $\Omega$ | 296.42294 | | −0.60733414 | −0.64486071 | |
| $e$ | 0.2568550 | $i$ | 10.23713 | | −0.44374177 | −0.20910267 | |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 31 | 691 | 0.1+ | 0.4− | 2002 02 16 | 644 | 0.3+ | 0.6+ | 2005 12 30 | 691 | 0.1+ | 0.2+ | | |
| 1995 08 31 | 691 | 0.1+ | 0.1− | 2002 02 20 | 704 | 0.5+ | 0.5+ | 2005 12 30 | 699 | 0.7− | 0.4+ | | |
| 1995 08 31 | 691 | 0.1− | 0.0 | 2002 02 20 | 704 | 0.6+ | 1.4+ | 2005 12 30 | 691 | 0.3+ | 0.5− | | |
| 2002 01 05 | 691 | 0.1− | 0.1+ | 2002 02 20 | 704 | 0.3+ | 1.7+ | 2005 12 30 | 699 | 1.0− | 0.5− | | |
| 2002 01 05 | 691 | 0.0 | 0.2+ | 2002 02 20 | 704 | 0.4+ | 0.5+ | 2005 12 30 | 699 | (2.4− | 1.1+) | | |
| 2002 01 05 | 691 | 0.0 | 0.2+ | 2002 03 05 | 644 | 0.0 | 0.6+ | 2006 01 04 | G96 | 0.1+ | 0.2− | | |
| 2002 01 09 | 704 | 1.1− | 0.4+ | 2002 03 05 | 644 | 0.7− | 0.5+ | 2006 01 04 | G96 | 0.2+ | 0.3− | | |
| 2002 01 09 | 704 | 0.1− | 0.2− | 2002 03 05 | 644 | 0.5+ | 0.9+ | 2006 01 04 | G96 | 0.3+ | 0.1+ | | |
| 2002 01 09 | 704 | 0.1+ | 0.3− | 2003 07 07 | 691 | 0.3− | 0.5+ | 2006 01 04 | G96 | 0.1− | 0.0 | | |
| 2002 01 09 | 704 | 0.1+ | 0.5− | 2003 07 07 | 691 | 0.7− | 0.5+ | 2006 01 04 | 691 | 0.1+ | 0.1+ | | |
| 2002 01 09 | 704 | 0.8− | 0.6− | 2003 07 07 | 691 | 0.3− | 0.5+ | 2006 01 04 | 691 | 0.1− | 0.3+ | | |
| 2002 01 13 | 704 | 0.4− | 0.1+ | 2003 07 22 | 608 | 0.2− | 0.2− | 2006 01 04 | 691 | 0.3− | 0.1+ | | |
| 2002 01 13 | 704 | 0.0 | 0.3+ | 2003 07 22 | 608 | 0.3+ | 0.1− | 2006 01 10 | G96 | 0.2+ | 0.2− | | |
| 2002 01 13 | 704 | 0.0 | 0.6+ | 2003 07 22 | 608 | 0.5+ | 0.8− | 2006 01 10 | G96 | 0.4+ | 0.1− | | |
| 2002 01 13 | 704 | 0.8− | 1.0+ | 2003 07 24 | 644 | 0.2+ | 1.0+ | 2006 01 10 | G96 | 0.2+ | 0.2− | | |
| 2002 01 22 | 704 | 0.9+ | 0.5− | 2003 07 24 | 644 | 0.2+ | 0.9+ | 2006 01 21 | G96 | 0.1+ | 0.2− | | |
| 2002 01 22 | 704 | 0.5+ | 0.3+ | 2003 07 24 | 644 | 0.2+ | 1.2+ | 2006 01 21 | G96 | 0.3− | 0.0 | | |
| 2002 01 22 | 704 | 0.8+ | 1.3− | 2003 08 04 | 246 | 0.0 | 0.2+ | 2006 01 21 | G96 | 0.2− | 0.2− | | |
| 2002 01 22 | 704 | 0.7+ | 0.0 | 2003 08 04 | 246 | 0.3− | 0.4+ | 2006 01 21 | G96 | 0.1− | 0.4− | | |
| 2002 02 06 | 644 | 0.2− | 0.8+ | 2003 08 04 | 246 | 0.4− | 0.0 | 2006 01 24 | 704 | 0.4+ | 0.2+ | | |
| 2002 02 06 | 644 | 0.2+ | 0.1− | 2003 08 04 | 246 | 0.6+ | 0.2+ | 2006 01 24 | 704 | 0.3− | 0.2+ | | |
| 2002 02 06 | 644 | 0.8+ | 0.3+ | 2003 08 04 | 246 | 0.4− | 0.3− | 2006 01 24 | 704 | 0.0 | 0.5− | | |
| 2002 02 07 | 704 | 0.3− | 0.2+ | 2003 08 04 | 246 | 0.1− | 0.4− | 2006 01 24 | 704 | 0.3− | 0.6− | | |
| 2002 02 07 | 704 | 0.1+ | 0.2− | 2003 08 05 | 704 | 0.1− | 1.1+ | 2006 01 24 | 704 | 0.1− | 0.0 | | |
| 2002 02 07 | 704 | 0.3− | 0.5+ | 2003 08 05 | 704 | 1.0− | 0.9+ | 2006 02 01 | 691 | 0.1+ | 0.1− | | |
| 2002 02 07 | 704 | 0.1+ | 0.2− | 2003 08 05 | 704 | 0.1+ | 1.1+ | 2006 02 01 | 691 | 0.0 | 0.1+ | | |
| 2002 02 11 | 704 | (3.9+ | 3.3−) | 2003 08 05 | 704 | 0.7− | 1.5+ | 2006 02 01 | 691 | 0.0 | 0.1+ | | |
| 2002 02 11 | 704 | (4.0+ | 2.8−) | 2003 08 24 | 704 | 0.4+ | 1.0+ | 2006 02 03 | 691 | 0.0 | 0.2− | | |
| 2002 02 11 | 704 | (3.5+ | 3.4−) | 2003 08 24 | 704 | 0.5− | 0.2− | 2006 02 03 | 691 | 0.0 | 0.0 | | |
| 2002 02 11 | 704 | (3.7+ | 3.0−) | 2003 08 24 | 704 | 0.5+ | 0.1− | 2006 02 03 | 691 | 0.1− | 0.1− | | |
| 2002 02 11 | 704 | (3.5+ | 4.7−) | 2003 08 24 | 704 | 0.6− | 0.4− | 2006 02 07 | 691 | 0.5− | 0.3+ | | |
| 2002 02 13 | 704 | 0.1− | 0.1+ | 2005 12 28 | G96 | 0.2− | 0.0 | 2006 02 07 | 691 | 0.1+ | 1.3+ | | |
| 2002 02 13 | 704 | 0.7+ | 0.9+ | 2005 12 28 | G96 | 0.1− | 0.1− | 2006 02 07 | 691 | 0.1+ | 0.1− | | |
| 2002 02 13 | 704 | 0.7+ | 0.3− | 2005 12 28 | G96 | 0.1+ | 0.0 | 2006 02 20 | G96 | 0.2− | 0.2− | | |
| 2002 02 13 | 704 | 1.3+ | 0.1+ | 2005 12 28 | G96 | 0.2− | 0.1− | 2006 02 20 | G96 | 0.1+ | 0.0 | | |
| 2002 02 16 | 644 | 0.2+ | 0.5+ | 2005 12 30 | 699 | 0.7+ | 0.4+ | 2006 02 20 | G96 | 0.1+ | 0.5− | | |
| 2002 02 16 | 644 | 0.4+ | 0.3+ | 2005 12 30 | 691 | 0.3+ | 0.0 | 2006 02 20 | G96 | 0.4+ | 0.3− | | |

**(141373)∗ 2002 AS$_{52}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.90723 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17245767 | $\omega$ | 285.86706 | | +0.56585142 | −0.81613145 | |
| $a$ | 3.1965466 | $\Omega$ | 129.07436 | | +0.80241588 | +0.51240537 | |
| $e$ | 0.0477811 | $i$ | 8.68482 | | +0.18958093 | +0.26715201 | |
| $P$ | 5.72 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.0 | 0.5− | 2002 02 06 | 333 | 0.1− | 0.7− | 2003 04 21 | 049 | 0.2− | 0.1+ | | |
| 1997 03 02 | 691 | 0.1− | 0.5− | 2002 02 06 | 333 | 0.1+ | 1.3− | 2003 04 21 | 049 | 0.1+ | 0.4+ | | |
| 1997 03 02 | 691 | 0.2− | 0.5− | 2002 02 06 | 333 | 0.4+ | 0.2− | 2003 04 21 | 049 | 0.3− | 0.3+ | | |
| 2000 11 26 | 704 | 0.5+ | 0.4+ | 2002 02 07 | 704 | 0.6− | 0.7− | 2005 08 09 | 185 | 1.0− | 0.8− | | |
| 2000 11 26 | 704 | 0.3− | 0.0 | 2002 02 07 | 704 | 0.2+ | 0.1+ | 2005 08 09 | 185 | (0.7− | 2.1+) | | |
| 2000 11 26 | 704 | 0.7+ | 0.1+ | 2002 02 07 | 704 | 0.2− | 1.1+ | 2005 08 09 | 185 | (1.3− | 1.8+) | | |
| 2000 11 26 | 704 | 1.2− | 0.3+ | 2002 02 07 | 704 | 1.0− | 0.9+ | 2005 08 27 | 644 | 0.3− | 0.6+ | | |
| 2002 01 09 | 704 | 0.8+ | 0.5+ | 2002 02 10 | 704 | 0.1− | 0.7+ | 2005 08 27 | 644 | 0.4− | 0.7+ | | |
| 2002 01 09 | 704 | 0.7+ | 1.1+ | 2002 02 10 | 704 | 0.5− | 0.4+ | 2005 08 27 | 644 | 0.2− | 0.7+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.7+ | 2002 02 10 | 704 | 0.6− | 1.1+ | 2005 08 28 | 699 | 1.0+ | 1.2+ | | |
| 2002 01 09 | 704 | 1.2+ | 0.8+ | 2002 02 10 | 704 | (1.0− | 2.2+) | 2005 08 28 | 699 | 0.1+ | 0.2+ | | |
| 2002 01 09 | 704 | 0.9+ | 0.4+ | 2002 02 10 | 704 | 0.1+ | 0.2− | 2005 08 28 | 699 | 0.2− | 1.0+ | | |
| 2002 01 10 | 644 | 0.1+ | 0.1+ | 2002 02 12 | 704 | 0.4+ | 0.2− | 2005 08 28 | 699 | 0.4− | 1.2+ | | |
| 2002 01 10 | 644 | 0.4+ | 0.0 | 2002 02 12 | 704 | 0.5− | 0.3+ | 2005 10 10 | 703 | 0.1+ | 0.3+ | | |
| 2002 01 10 | 644 | 0.6+ | 0.1+ | 2002 02 12 | 704 | 0.2− | 0.1+ | 2005 10 10 | 703 | (1.1+ | 2.4+) | | |
| 2002 01 13 | 704 | 0.3+ | 0.8− | 2002 02 12 | 704 | 0.3+ | 0.8+ | 2005 10 10 | 703 | 0.6− | 0.2+ | | |
| 2002 01 13 | 704 | 0.3+ | 0.3+ | 2002 02 12 | 704 | 0.3− | 0.1− | 2005 10 10 | 703 | 0.7− | 0.1+ | | |
| 2002 01 13 | 704 | 0.7+ | 0.4+ | 2002 02 20 | 704 | 0.1− | 0.2+ | 2006 11 25 | 703 | 0.4− | 1.0− | | |
| 2002 01 21 | 704 | 0.1− | 0.5− | 2002 02 20 | 704 | 0.7− | 0.3− | 2006 11 25 | 703 | 0.5− | 0.0 | | |
| 2002 01 21 | 704 | 0.2− | 0.5+ | 2002 02 20 | 704 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.5+ | 0.2+ | | |
| 2002 01 21 | 704 | 0.2− | 0.3+ | 2002 02 20 | 704 | 0.5− | 0.1+ | 2006 11 25 | 703 | 0.5− | 0.2− | | |
| 2002 01 21 | 704 | 0.2− | 0.0 | 2002 02 20 | 704 | 0.4− | 0.0 | 2006 11 25 | 703 | 0.2− | 0.5+ | | |
| 2002 01 21 | 704 | 0.4− | 0.1− | 2002 03 06 | 704 | 0.8− | 0.0 | 2006 11 25 | 703 | 0.2− | 0.3− | | |
| 2002 01 22 | 291 | 0.1+ | 0.0 | 2002 03 06 | 704 | 0.4− | 1.2− | 2006 11 25 | 703 | 0.5+ | 0.4− | | |
| 2002 01 22 | 291 | 0.1+ | 0.0 | 2002 03 06 | 704 | 1.1− | 0.7− | 2006 11 25 | 703 | 0.1+ | 0.2− | | |
| 2002 01 22 | 291 | 0.1+ | 0.0 | 2003 04 09 | 704 | 0.8+ | 1.1+ | 2006 11 28 | 704 | 0.4+ | 0.5+ | | |
| 2002 01 26 | 644 | 0.2− | 0.1+ | 2003 04 09 | 704 | 0.6+ | 1.2+ | 2006 11 28 | 704 | 0.3+ | 0.6+ | | |
| 2002 01 26 | 644 | 0.1− | 0.0 | 2003 04 09 | 704 | 1.3+ | 1.2+ | 2006 11 28 | 704 | 0.3+ | 0.9+ | | |
| 2002 01 26 | 644 | 0.2− | 0.1− | 2003 04 09 | 704 | 0.8+ | 1.0+ | 2006 11 28 | 704 | 0.0 | 0.8+ | | |
| 2002 02 05 | 644 | 0.1− | 0.0 | 2003 04 10 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.5+ | 1.2+ | | |
| 2002 02 05 | 644 | 0.0 | 0.4+ | 2003 04 10 | 691 | 0.1+ | 0.5+ | | | | | | |
| 2002 02 05 | 644 | 0.3− | 0.4− | 2003 04 10 | 691 | 0.0 | 0.6+ | | | | | | |

**(141374)∗ 2002 AW$_{52}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.80211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17093864 | $\omega$ | 30.25617 | | −0.92289647 | −0.37668030 | |
| $a$ | 3.2154559 | $\Omega$ | 127.40058 | | +0.33006367 | −0.88069412 | |
| $e$ | 0.0920872 | $i$ | 5.76794 | | +0.19829290 | −0.28721041 | |
| $P$ | 5.77 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 04 | 608 | 0.3+ | 0.2− | 2002 02 07 | 704 | 0.2+ | 0.0 | 2005 09 13 | 691 | 0.5− | 0.3+ |
| 2002 01 04 | 608 | 0.3+ | 0.1− | 2002 02 07 | 704 | 0.1+ | 0.6+ | 2005 10 01 | 703 | 0.8+ | 0.8− |
| 2002 01 04 | 608 | 0.3+ | 0.1− | 2002 02 07 | 704 | 0.1− | 0.6+ | 2005 10 01 | 703 | (1.6− | 0.3+) |
| 2002 01 09 | 704 | 0.4+ | 0.8+ | 2002 02 10 | 704 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.1+ | 0.1+ |
| 2002 01 09 | 704 | (1.3− | 1.5+) | 2002 02 10 | 704 | 0.4− | 0.1+ | 2005 10 01 | 703 | 0.2+ | 1.3− |
| 2002 01 09 | 704 | 0.8− | 0.7+ | 2002 02 10 | 704 | 0.2− | 0.1+ | 2005 10 01 | 703 | 0.9+ | 0.8+ |
| 2002 01 09 | 704 | 0.8+ | 0.7+ | 2002 02 10 | 704 | 0.0 | 0.9+ | 2005 10 01 | 703 | 0.1+ | 0.6+ |
| 2002 01 09 | 704 | 0.7+ | 0.2+ | 2002 02 10 | 704 | 0.1− | 0.1+ | 2005 10 01 | 703 | 0.8+ | 0.1− |
| 2002 01 13 | 704 | 1.1+ | 0.6+ | 2002 02 12 | 704 | (2.0+ | 0.4−) | 2005 10 01 | 703 | 0.7+ | 0.4− |
| 2002 01 13 | 704 | 0.8+ | 0.5+ | 2002 02 12 | 704 | 1.1+ | 0.0 | 2006 10 23 | G96 | 0.5+ | 0.0 |
| 2002 01 13 | 704 | 0.8+ | 0.3+ | 2002 02 12 | 704 | (1.7+ | 0.8−) | 2006 10 23 | G96 | 0.9+ | 0.1− |
| 2002 01 13 | 704 | 0.8+ | 0.4+ | 2002 02 12 | 704 | 1.4+ | 0.8− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 01 13 | 704 | 1.1+ | 0.6+ | 2002 02 12 | 704 | (1.9+ | 1.3−) | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2002 01 14 | 691 | 0.4− | 0.1+ | 2002 02 20 | 704 | (0.0 | 2.2+) | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2002 01 14 | 691 | 0.5− | 0.3+ | 2002 02 20 | 704 | 0.3+ | 1.0+ | 2006 10 31 | G96 | 0.2+ | 0.3+ |
| 2002 01 14 | 691 | 0.4− | 0.3+ | 2002 02 20 | 704 | 0.6+ | 1.3+ | 2006 10 31 | G96 | 0.1− | 0.5+ |
| 2002 01 20 | 333 | 1.2+ | 1.2− | 2002 02 20 | 704 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2002 01 20 | 333 | 0.9− | 0.2+ | 2003 03 31 | 691 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 01 20 | 333 | 0.2+ | 0.2+ | 2003 03 31 | 691 | 0.1+ | 1.0+ | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2002 01 21 | 704 | 0.0 | 0.5+ | 2003 03 31 | 691 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 01 21 | 704 | 1.2+ | 0.7+ | 2003 04 30 | 691 | 0.8+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2002 01 21 | 704 | 1.3− | 1.0+ | 2003 04 30 | 691 | 0.7+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2002 01 21 | 704 | 0.5− | 1.0− | 2003 04 30 | 691 | 1.2+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 01 22 | 291 | 0.3− | 0.1+ | 2003 05 11 | 691 | 0.9− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 01 22 | 291 | 0.4− | 1.4− | 2003 05 11 | 691 | 0.8− | 0.2+ | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2002 01 22 | 291 | 0.1+ | 0.1+ | 2003 05 11 | 691 | 0.8− | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 02 03 | 608 | 0.5− | 0.2− | 2003 06 01 | 691 | (0.3− | 2.0+) | 2006 11 24 | 691 | 0.3− | 0.0 |
| 2002 02 03 | 608 | 0.0 | 0.4− | 2003 06 01 | 691 | (0.4− | 2.1+) | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2002 02 03 | 608 | 0.1− | 0.3− | 2003 06 01 | 691 | (0.1− | 1.9+) | 2006 11 24 | G96 | 0.4− | 0.2+ |
| 2002 02 05 | 644 | 0.2+ | 0.1+ | 2005 08 30 | 691 | 0.2− | 0.6+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2002 02 05 | 644 | 0.3+ | 0.1+ | 2005 08 30 | 691 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.2− | 0.3+ |
| 2002 02 05 | 644 | 0.4+ | 0.4+ | 2005 08 30 | 691 | 0.6− | 0.8+ | 2006 11 28 | 704 | 0.3+ | 1.1− |
| 2002 02 07 | 704 | 0.0 | 0.7+ | 2005 09 13 | 691 | 0.4− | 0.5+ | 2006 11 28 | 704 | 0.9+ | 0.4− |
| 2002 02 07 | 704 | 0.4− | 0.6+ | 2005 09 13 | 691 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.8+ | 0.2− |

**(141375)∗ 2002 AL$_{57}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.14473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23905945 | $\omega$ | 237.89248 | | +0.86837818 | −0.49486667 | |
| $a$ | 2.5711778 | $\Omega$ | 151.73047 | | +0.47472549 | +0.81088154 | |
| $e$ | 0.2646742 | $i$ | 3.87849 | | +0.14337028 | +0.31237494 | |
| $P$ | 4.12 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 15 | 566 | 0.0 | 0.3+ | 2002 02 20 | 704 | (0.8+ | 2.5−) | 2005 12 30 | 704 | 0.3− | 0.1− |
| 1996 08 15 | 566 | 0.2− | 0.3+ | 2002 02 20 | 704 | (1.1+ | 3.4−) | 2005 12 30 | 704 | 0.8− | 0.2− |
| 1996 08 15 | 566 | 0.3− | 0.4+ | 2002 03 05 | 644 | 0.3+ | 1.2+ | 2005 12 30 | 704 | 1.2− | 0.4− |
| 2001 11 17 | 704 | 0.8+ | 0.0 | 2002 03 05 | 644 | 0.2+ | 1.2+ | 2006 01 02 | G96 | 0.2+ | 0.5− |
| 2001 11 17 | 704 | 1.4+ | 0.0 | 2002 03 05 | 644 | 0.8+ | 1.2+ | 2006 01 02 | G96 | 0.3− | 0.4− |
| 2001 11 17 | 704 | 0.4+ | 1.1+ | 2002 04 17 | 704 | 1.4− | 0.8− | 2006 01 02 | G96 | 0.2− | 0.4− |
| 2001 11 17 | 704 | 0.7+ | 0.7+ | 2002 04 17 | 704 | 1.6+ | 0.1− | 2006 01 04 | 704 | 0.3+ | 0.6− |
| 2001 12 20 | 704 | 0.1− | 1.3− | 2002 04 17 | 704 | 0.4+ | 0.3− | 2006 01 04 | 704 | 0.2− | 0.3− |
| 2001 12 20 | 704 | 0.6− | 1.3− | 2002 04 17 | 704 | 0.4+ | 1.0+ | 2006 01 04 | 704 | 0.8+ | 0.1− |
| 2001 12 20 | 704 | 0.2+ | 0.3− | 2003 03 23 | 291 | 0.1− | 0.0 | 2006 01 05 | 699 | 0.1− | 0.1+ |
| 2001 12 20 | 704 | 1.0− | 1.6− | 2003 03 23 | 291 | 0.3− | 0.0 | 2006 01 05 | 699 | 0.0 | 0.2+ |
| 2001 12 20 | 704 | 0.5− | 0.6+ | 2003 03 23 | 291 | 0.3− | 0.1− | 2006 01 05 | 699 | 0.8− | 0.5+ |
| 2002 01 09 | 704 | 0.7+ | 0.0 | 2003 04 04 | 691 | 0.5+ | 0.1+ | 2006 01 05 | 699 | 0.2− | 0.4+ |
| 2002 01 09 | 704 | 0.4+ | 1.1+ | 2003 04 04 | 691 | 0.6+ | 0.3+ | 2006 01 07 | 691 | 0.3− | 0.1− |
| 2002 01 09 | 704 | 1.3+ | 0.1− | 2003 04 04 | 691 | 0.1+ | 0.4+ | 2006 01 07 | 691 | 0.2− | 0.1+ |
| 2002 01 09 | 704 | 1.2+ | 0.2+ | 2005 10 12 | 704 | 1.5+ | 1.6+ | 2006 01 07 | 691 | 0.3− | 0.0 |
| 2002 01 09 | 704 | 1.1+ | 0.1+ | 2005 10 12 | 704 | (1.7+ | 2.3+) | 2006 01 18 | 703 | 0.5+ | 0.7− |
| 2002 01 13 | 704 | 0.0 | 0.1+ | 2005 10 12 | 704 | 1.4+ | 1.8+ | 2006 01 18 | 703 | 0.3+ | 0.2− |
| 2002 01 13 | 704 | 0.2− | 0.0 | 2005 10 12 | 704 | 0.8+ | 0.6+ | 2006 01 18 | 703 | 0.5− | 0.2− |
| 2002 01 13 | 704 | 0.0 | 0.6− | 2005 10 26 | 703 | 1.2+ | 0.1+ | 2006 01 20 | 699 | 0.1− | 0.2+ |
| 2002 01 13 | 704 | 0.1+ | 0.5− | 2005 10 26 | 703 | 0.4− | 1.0+ | 2006 01 20 | 699 | 0.4+ | 0.1+ |
| 2002 01 13 | 704 | 0.0 | 0.1− | 2005 10 26 | 703 | (1.5− | 2.2+) | 2006 01 20 | 699 | 0.5− | 0.8+ |
| 2002 01 22 | 704 | 0.1+ | 0.3− | 2005 10 26 | 703 | 0.6− | 0.5+ | 2006 01 20 | 699 | 0.3− | 0.9+ |
| 2002 01 22 | 704 | 0.2− | 0.3+ | 2005 10 30 | 644 | 0.2− | 0.2+ | 2006 01 23 | 704 | 0.8+ | 0.3+ |
| 2002 01 22 | 704 | 0.2− | 0.2+ | 2005 10 30 | 644 | 0.1− | 0.3+ | 2006 01 23 | 704 | 1.2+ | 0.0 |
| 2002 01 22 | 704 | 0.2− | 0.2+ | 2005 10 30 | 644 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.7− | 0.4− |
| 2002 01 22 | 704 | 0.0 | 0.1− | 2005 10 31 | 704 | 0.3+ | 0.3− | 2006 01 23 | 704 | 1.2+ | 0.7+ |
| 2002 02 03 | 608 | 0.3+ | 0.9− | 2005 10 31 | 704 | 0.4− | 0.0 | 2006 01 23 | G96 | 0.6− | 0.4− |
| 2002 02 03 | 608 | 0.0 | 0.9− | 2005 10 31 | 704 | 1.1− | 1.2− | 2006 01 23 | 704 | 0.4+ | 0.4+ |
| 2002 02 03 | 608 | 0.4− | 1.0− | 2005 10 31 | 704 | 0.5− | 0.0 | 2006 01 23 | G96 | 0.3− | 0.3− |
| 2002 02 04 | 106 | 0.1+ | 0.1+ | 2005 11 06 | 704 | 1.3+ | 0.6+ | 2006 01 23 | G96 | 0.3− | 0.3− |
| 2002 02 04 | 106 | 0.2+ | 0.1− | 2005 11 06 | 704 | 0.7+ | 0.7+ | 2006 01 23 | 704 | 0.7+ | 0.6+ |
| 2002 02 05 | 106 | 0.8+ | 0.2+ | 2005 11 06 | 704 | 0.1+ | 0.6− | 2006 02 04 | 291 | 0.1− | 0.1+ |
| 2002 02 06 | 333 | 0.1+ | 0.5− | 2005 11 06 | 704 | 0.2− | 0.2− | 2006 02 04 | 291 | 0.1− | 0.1+ |
| 2002 02 06 | 333 | 0.1− | 0.7− | 2005 11 06 | 704 | 1.2+ | 1.9− | 2006 02 04 | 291 | 0.0 | 0.2+ |
| 2002 02 06 | 333 | 0.7− | 0.4− | 2005 11 25 | 644 | 0.5− | 0.0 | 2006 02 06 | 704 | 0.2+ | 0.1− |
| 2002 02 07 | 704 | 0.9− | 0.3+ | 2005 11 25 | 644 | 0.4− | 0.2+ | 2006 02 06 | 704 | 0.3− | 0.3+ |
| 2002 02 07 | 704 | 0.7− | 0.1+ | 2005 11 25 | 644 | 0.3− | 0.0 | 2006 02 06 | 704 | 0.4+ | 0.1+ |
| 2002 02 07 | 704 | 0.4− | 0.2− | 2005 12 08 | 704 | 0.7+ | 0.1− | 2006 02 06 | 704 | 0.2− | 0.3− |
| 2002 02 07 | 704 | 0.0 | 0.5− | 2005 12 08 | 704 | 0.1− | 0.9+ | 2006 02 06 | 704 | 0.5− | 0.3− |
| 2002 02 07 | 704 | 1.0− | 0.1− | 2005 12 08 | 704 | 1.4+ | 1.4+ | 2006 02 07 | 704 | 0.3+ | 0.6− |
| 2002 02 07 | 608 | 0.8− | 0.5+ | 2005 12 08 | 704 | 0.9+ | 0.5+ | 2006 02 07 | 704 | 0.2+ | 0.9+ |
| 2002 02 07 | 608 | 1.0− | 0.5+ | 2005 12 08 | 704 | 0.4− | 0.5+ | 2006 02 07 | 704 | 0.2+ | 0.3+ |
| 2002 02 07 | 608 | 0.8− | 0.2− | 2005 12 25 | 699 | 0.1− | 0.7− | 2006 02 24 | G96 | 0.1− | 0.5− |
| 2002 02 11 | 704 | 0.2+ | 0.5− | 2005 12 25 | 699 | 1.2+ | 0.0 | 2006 02 24 | G96 | 0.4− | 0.5− |
| 2002 02 11 | 704 | 0.1+ | 0.7− | 2005 12 25 | 699 | 0.2− | 0.2+ | 2006 02 24 | G96 | 0.5− | 0.4− |
| 2002 02 11 | 704 | 0.2+ | 0.5− | 2005 12 25 | 699 | 0.6+ | 0.7− | 2006 02 24 | G96 | 0.1− | 0.3− |
| 2002 02 11 | 704 | 0.2+ | 0.5− | 2005 12 27 | 704 | 0.9+ | 1.1+ | 2006 03 25 | G96 | 0.5− | 0.2− |
| 2002 02 11 | 704 | 0.3− | 1.1− | 2005 12 27 | 704 | 1.6+ | 0.4− | 2006 03 25 | G96 | 0.5− | 0.0 |
| 2002 02 13 | 704 | 0.2− | 1.1+ | 2005 12 27 | 704 | 1.0+ | 0.2− | 2006 03 25 | G96 | 0.1− | 0.3− |
| 2002 02 13 | 704 | 0.8− | 0.5+ | 2005 12 27 | 704 | 1.1+ | 0.0 | 2006 03 25 | G96 | 0.7− | 0.4− |
| 2002 02 13 | 704 | 0.1− | 0.0 | 2005 12 27 | 691 | 0.2− | 0.1− | 2006 04 20 | G96 | 0.1− | 0.1− |
| 2002 02 13 | 704 | 0.2− | 0.8+ | 2005 12 27 | 704 | 0.7+ | 1.3+ | 2006 04 20 | G96 | 0.2− | 0.0 |
| 2002 02 13 | 704 | 0.3− | 1.4+ | 2005 12 27 | 691 | 0.1− | 0.2− | 2006 04 20 | G96 | 0.3− | 0.4− |
| 2002 02 20 | 704 | (1.1+ | 2.8−) | 2005 12 27 | 691 | 0.4− | 0.1− | 2006 04 20 | G96 | 0.6− | 0.2− |
| 2002 02 20 | 704 | (1.0+ | 2.4−) | 2005 12 30 | 704 | 1.1− | 0.4+ | | | | |
| 2002 02 20 | 704 | (0.5+ | 2.1−) | 2005 12 30 | 704 | 0.6− | 0.4− | | | | |

**(141376)∗ 2002 AZ$_{60}$**

Discovered 2002 Jan. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.70060 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36813247 | $\omega$ | 301.44644 | | +0.20834179 | −0.93348288 | |
| $a$ | 1.9281166 | $\Omega$ | 133.44740 | | +0.97679575 | +0.18344468 | |
| $e$ | 0.1170949 | $i$ | 23.70687 | | +0.04963621 | +0.30815216 | |
| $P$ | 2.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 699 | 0.1− | 0.1− | 2002 02 04 | 106 | 0.3− | 0.5− | 2002 03 21 | 644 | 0.3− | 0.3+ |
| 2001 12 23 | 699 | 0.4− | 0.1+ | 2002 02 04 | 106 | 0.5− | 0.8+ | 2002 03 21 | 644 | 0.2− | 0.6+ |
| 2001 12 23 | 699 | 0.6+ | 1.1+ | 2002 02 04 | 106 | 0.4− | 0.3− | 2002 03 31 | 644 | 0.3+ | 0.0 |
| 2001 12 23 | 699 | 0.1− | 0.3+ | 2002 02 04 | 106 | 0.5− | 0.4− | 2002 03 31 | 644 | 0.8+ | 0.2+ |
| 2002 01 06 | 608 | 0.2+ | 0.0 | 2002 02 04 | 106 | 0.1− | 0.1+ | 2002 03 31 | 644 | 0.7+ | 0.5+ |
| 2002 01 06 | 608 | 0.2− | 0.2+ | 2002 02 05 | 106 | 0.0 | 0.0 | 2003 07 25 | 704 | 0.3+ | 0.1+ |
| 2002 01 06 | 608 | 0.0 | 0.1+ | 2002 02 05 | 699 | 0.7− | 0.4− | 2003 07 25 | 704 | 1.3+ | 0.1+ |
| 2002 01 11 | 704 | 0.0 | 0.7+ | 2002 02 05 | 699 | 0.5− | 0.1+ | 2003 07 25 | 704 | (0.3+ | 2.9+) |
| 2002 01 11 | 704 | 0.2− | 0.1− | 2002 02 05 | 699 | 0.2− | 0.3− | 2003 07 25 | 704 | 0.0 | 1.0+ |
| 2002 01 11 | 704 | 0.2+ | 0.5+ | 2002 02 05 | 699 | 0.6− | 0.4− | 2003 08 04 | 704 | 0.2− | 1.0+ |
| 2002 01 11 | 704 | 0.1− | 0.2+ | 2002 02 12 | 704 | 0.6− | 0.2+ | 2003 08 04 | 704 | 0.3− | 0.8+ |
| 2002 01 13 | 704 | 0.4− | 0.8− | 2002 02 12 | 704 | (2.0− | 0.3+) | 2003 08 04 | 704 | 1.1− | 1.0+ |
| 2002 01 13 | 704 | 0.7− | 0.6− | 2002 02 12 | 704 | 0.6− | 0.6+ | 2005 04 14 | 704 | 0.3+ | 0.1+ |
| 2002 01 13 | 704 | 0.6− | 0.9− | 2002 02 12 | 704 | 0.6− | 0.5+ | 2005 04 14 | 704 | 0.6+ | 0.1+ |
| 2002 01 13 | 704 | 0.8− | 0.8− | 2002 02 12 | 704 | 0.5− | 0.6+ | 2005 04 14 | 704 | 0.2+ | 0.2+ |
| 2002 01 15 | 608 | 0.9+ | 0.1− | 2002 02 14 | 704 | 1.0+ | 0.1− | 2005 04 14 | 704 | 1.0+ | 0.3+ |
| 2002 01 15 | 608 | 0.4+ | 0.7− | 2002 02 14 | 704 | 0.6+ | 0.3− | 2005 04 30 | 703 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 15 | 608 | 0.1+ | 0.0 | 2002 02 14 | 704 | 0.6+ | 0.4+ | 2005 04 30 | 703 | (1.8− | 2.5−) | | |
| 2002 01 19 | 704 | 0.9+ | 1.1+ | 2002 02 14 | 704 | 1.4+ | 0.0 | 2005 04 30 | 703 | 0.4− | 0.9+ | | |
| 2002 01 19 | 704 | 1.3+ | 1.0+ | 2002 02 14 | 644 | 0.2+ | 0.4+ | 2005 04 30 | 703 | 1.2− | 0.7+ | | |
| 2002 01 19 | 704 | 1.1+ | 1.4+ | 2002 02 14 | 644 | 0.1+ | 0.5+ | 2006 10 13 | E12 | 0.5− | 0.3+ | | |
| 2002 01 19 | 704 | 0.7+ | 1.1+ | 2002 02 14 | 644 | 0.0 | 0.4+ | 2006 10 13 | E12 | 0.4− | 0.5+ | | |
| 2002 01 22 | 704 | 0.0 | 0.1+ | 2002 02 23 | 644 | 0.0 | 0.4− | 2006 10 13 | E12 | 0.4− | 0.6+ | | |
| 2002 01 22 | 704 | 0.4+ | 0.3− | 2002 02 23 | 644 | 0.3+ | 0.4+ | 2006 10 13 | E12 | 0.3− | 0.6+ | | |
| 2002 01 22 | 704 | 0.2− | 0.1− | 2002 02 23 | 644 | 0.1− | 0.4− | 2006 10 30 | E12 | 0.1+ | 0.1+ | | |
| 2002 01 22 | 704 | 0.1− | 0.1+ | 2002 02 23 | 644 | 0.0 | 0.4+ | 2006 10 30 | E12 | 0.2+ | 0.0 | | |
| 2002 01 22 | 704 | 0.3− | 0.2− | 2002 02 23 | 644 | 0.3− | 0.5− | 2006 10 30 | E12 | 0.2+ | 0.9+ | | |
| 2002 01 26 | 644 | 0.4+ | 0.3− | 2002 02 23 | 644 | 0.5+ | 0.4+ | 2006 10 30 | E12 | 0.5− | 0.2+ | | |
| 2002 01 26 | 644 | 0.0 | 0.3− | 2002 03 05 | 704 | 0.9− | 0.5− | 2006 11 18 | E12 | 0.1− | 0.3− | | |
| 2002 01 26 | 644 | 0.0 | 0.5− | 2002 03 05 | 704 | 0.2− | 0.6− | 2006 11 18 | E12 | 0.2− | 0.5− | | |
| 2002 02 04 | 644 | 0.2+ | 0.4+ | 2002 03 05 | 704 | 1.3− | 0.4− | 2006 11 18 | E12 | 0.3+ | 0.3− | | |
| 2002 02 04 | 644 | 0.2+ | 0.1+ | 2002 03 05 | 704 | 0.5− | 0.3− | 2006 11 18 | E12 | 0.8+ | 0.0 | | |
| 2002 02 04 | 644 | 0.2+ | 0.1+ | 2002 03 21 | 644 | 0.2+ | 0.5+ | | | | | | |

**(141377)∗ 2002 AJ$_{64}$**

Discovered 2002 Jan. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.87194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16202937 | $\omega$ | 67.48390 | | −0.72864665 | +0.68174742 | |
| $a$ | 3.3322702 | $\Omega$ | 155.34132 | | −0.67182751 | −0.69287225 | |
| $e$ | 0.0995823 | $i$ | 9.03702 | | −0.13312345 | −0.23483718 | |
| $P$ | 6.08 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 06 | 608 | 0.6+ | 0.8− | 2002 03 13 | 704 | 0.4+ | 0.3+ | 2004 07 14 | 704 | 0.7+ | 0.5+ | | |
| 2002 01 06 | 608 | 0.6+ | 0.5− | 2002 03 13 | 644 | 0.1− | 0.2+ | 2004 07 14 | 704 | 1.2+ | 0.6+ | | |
| 2002 01 06 | 608 | 0.1− | 1.2+ | 2002 03 13 | 644 | 0.1− | 0.1− | 2004 07 14 | 704 | 1.1+ | 0.4+ | | |
| 2002 01 11 | 704 | 0.4− | 0.4+ | 2002 03 15 | 704 | 0.1− | 0.8+ | 2004 07 14 | 704 | 0.1− | 0.9+ | | |
| 2002 01 11 | 704 | 0.4+ | 0.3− | 2002 03 15 | 704 | 0.4− | 0.8+ | 2004 07 14 | 704 | 0.3− | 0.4+ | | |
| 2002 01 11 | 704 | 0.1+ | 0.5+ | 2002 03 15 | 704 | 0.1+ | 1.3+ | 2004 07 16 | 704 | 0.3− | 0.6+ | | |
| 2002 01 13 | 704 | 0.4+ | 0.1+ | 2002 03 15 | 704 | (0.1+ | 1.9+) | 2004 07 16 | 704 | 0.0 | 0.0 | | |
| 2002 01 13 | 704 | 0.4+ | 0.1+ | 2002 03 15 | 704 | 0.4+ | 1.1+ | 2004 07 16 | 704 | 1.3+ | 0.9+ | | |
| 2002 01 13 | 704 | 0.1+ | 0.7− | 2002 03 23 | 644 | 0.4+ | 0.7+ | 2004 07 16 | 704 | 0.6+ | 1.2+ | | |
| 2002 01 13 | 704 | 0.5+ | 0.3+ | 2002 03 23 | 644 | 0.2− | 0.9+ | 2004 07 18 | 704 | 0.2+ | 1.0+ | | |
| 2002 01 13 | 704 | 0.8+ | 0.3+ | 2002 03 23 | 644 | 0.3− | 0.4+ | 2004 07 18 | 704 | 0.2− | 1.2+ | | |
| 2002 01 19 | 704 | 0.1− | 0.2+ | 2003 04 03 | 699 | 0.7− | 0.3+ | 2004 07 18 | 704 | (0.0 | 1.6+) | | |
| 2002 01 19 | 704 | 0.2+ | 0.3+ | 2003 04 03 | 699 | 0.9− | 0.0 | 2004 07 18 | 704 | 0.0 | 0.7+ | | |
| 2002 01 19 | 704 | 0.3− | 0.3+ | 2003 04 03 | 699 | 0.5− | 0.2− | 2004 08 08 | 704 | 0.1− | 0.6+ | | |
| 2002 01 19 | 704 | 0.2− | 0.9+ | 2003 04 03 | 699 | 0.1− | 0.7− | 2004 08 08 | 704 | 0.5− | 0.0 | | |
| 2002 01 22 | 704 | 0.6+ | 1.0+ | 2003 04 04 | 699 | 0.5− | 0.4+ | 2004 08 08 | 704 | 0.7+ | 0.4− | | |
| 2002 01 22 | 704 | 0.2+ | 0.6+ | 2003 04 04 | 699 | 1.0− | 0.6− | 2004 08 08 | 704 | 0.3− | 0.1− | | |
| 2002 01 22 | 704 | 0.5− | 0.3+ | 2003 04 04 | 699 | 0.9− | 0.1− | 2004 08 11 | 704 | 0.2− | 0.1− | | |
| 2002 01 26 | 644 | 0.2+ | 0.1− | 2003 04 04 | 699 | 0.3+ | 0.3− | 2004 08 11 | 704 | 0.2+ | 0.5+ | | |
| 2002 01 26 | 644 | 0.4+ | 0.1− | 2003 04 08 | 704 | 0.7+ | 0.4+ | 2004 08 11 | 704 | 0.2− | 0.6+ | | |
| 2002 01 26 | 644 | 0.9+ | 0.1− | 2003 04 08 | 704 | (2.7+ | 0.7+) | 2004 08 11 | 704 | 0.2− | 0.2+ | | |
| 2002 02 06 | 644 | 0.1+ | 0.1− | 2003 04 08 | 704 | 0.8+ | 0.6− | 2004 08 11 | 704 | 0.8− | 0.6− | | |
| 2002 02 06 | 644 | 0.2− | 0.2− | 2003 04 08 | 704 | 0.5+ | 0.0 | 2004 08 23 | 691 | 0.0 | 0.4+ | | |
| 2002 02 06 | 644 | 0.0 | 0.3− | 2003 04 27 | 704 | 0.4+ | 0.4+ | 2004 08 23 | 691 | 0.1− | 0.5+ | | |
| 2002 02 07 | 704 | 0.8− | 1.3− | 2003 04 27 | 704 | 0.6+ | 0.5+ | 2004 08 23 | 691 | 0.0 | 0.6+ | | |
| 2002 02 07 | 704 | 0.3+ | 0.5− | 2003 04 27 | 704 | 0.1+ | 0.5+ | 2004 09 10 | 704 | 1.0+ | 0.3+ | | |
| 2002 02 07 | 704 | 0.6+ | 0.8− | 2003 04 27 | 704 | 0.5+ | 0.6+ | 2004 09 10 | 704 | 0.4− | 0.1− | | |
| 2002 02 07 | 704 | 0.3+ | 0.6− | 2003 05 02 | 704 | 0.0 | 1.3+ | 2004 09 10 | 704 | 0.4− | 0.9+ | | |
| 2002 02 07 | 704 | 0.5+ | 0.8− | 2003 05 02 | 704 | (0.3+ | 1.9+) | 2004 09 10 | 704 | 0.2+ | 1.1+ | | |
| 2002 02 10 | 608 | 0.1+ | 0.6+ | 2003 05 02 | 704 | 0.5+ | 0.3+ | 2005 09 24 | 703 | 0.9− | 1.1+ | | |
| 2002 02 10 | 608 | 0.5− | 1.5+ | 2003 05 02 | 704 | 0.6+ | 0.4− | 2005 09 24 | 703 | 1.0− | 0.6+ | | |
| 2002 02 10 | 608 | 0.1+ | 1.2+ | 2003 05 09 | 704 | 0.5− | 0.3+ | 2005 09 24 | 703 | 1.1− | 1.2+ | | |
| 2002 02 11 | 704 | 0.1+ | 0.9+ | 2003 05 09 | 704 | 0.5+ | 1.2+ | 2005 09 24 | 703 | 0.8− | 1.0+ | | |
| 2002 02 11 | 704 | 0.1+ | 0.8+ | 2003 05 09 | 704 | 0.3− | 0.5+ | 2005 09 24 | 644 | 0.6− | 0.5+ | | |
| 2002 02 11 | 704 | 0.3+ | 1.1+ | 2003 05 09 | 704 | 0.5+ | 0.4+ | 2005 09 24 | 644 | 0.3− | 0.4+ | | |
| 2002 02 11 | 704 | 0.1+ | 1.2+ | 2003 05 09 | 704 | 0.0 | 0.5+ | 2005 09 24 | 644 | 0.4− | 0.3+ | | |
| 2002 02 11 | 704 | 0.1+ | 1.5+ | 2003 05 20 | 699 | 0.1+ | 1.0+ | 2005 09 30 | 699 | 0.6− | 1.3+ | | |
| 2002 02 16 | 644 | 0.2+ | 0.1+ | 2003 05 20 | 699 | 0.1+ | 0.6+ | 2005 09 30 | 699 | (1.7− | 2.2+) | | |
| 2002 02 16 | 644 | 0.0 | 0.2+ | 2003 05 20 | 699 | 0.6− | 0.2+ | 2005 09 30 | 699 | 1.4+ | 0.7+ | | |
| 2002 02 16 | 644 | 0.2+ | 0.1+ | 2003 05 20 | 699 | 0.2− | 0.0 | 2005 09 30 | 699 | 0.7− | 1.4+ | | |
| 2002 02 20 | 704 | 0.0 | 1.0+ | 2003 05 21 | 699 | 0.1− | 0.1+ | 2006 10 22 | 703 | (1.4+ | 2.1+) | | |
| 2002 02 20 | 704 | 0.9− | 0.9+ | 2003 05 21 | 699 | 0.2− | 0.6+ | 2006 10 22 | 703 | 1.0+ | 0.9− | | |
| 2002 02 20 | 704 | 0.1− | 1.0+ | 2003 05 21 | 699 | 0.4− | 0.3− | 2006 10 22 | 703 | (1.6− | 0.4+) | | |
| 2002 02 20 | 704 | 0.1+ | 0.6+ | 2003 05 21 | 699 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.0 | 1.1− | | |
| 2002 02 20 | 704 | 0.5− | 0.6+ | 2003 05 26 | 691 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.1+ | 0.0 | | |
| 2002 02 21 | 704 | 0.2− | 0.4+ | 2003 05 26 | 691 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.5− | 1.1+ | | |
| 2002 02 21 | 704 | 0.5+ | 0.1− | 2003 05 26 | 691 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.6− | 0.5+ | | |
| 2002 02 21 | 704 | 0.3+ | 0.6+ | 2003 05 27 | 699 | (1.5− | 0.3+) | 2006 11 15 | 703 | 0.4+ | 0.2− | | |
| 2002 02 21 | 704 | 0.2+ | 0.0 | 2003 05 27 | 699 | 0.1+ | 1.4− | 2006 11 25 | 703 | 0.4+ | 0.4− | | |
| 2002 02 21 | 704 | 1.5− | 0.3− | 2003 05 27 | 699 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.2+ | 0.1+ | | |
| 2002 03 05 | 644 | 0.2+ | 0.4+ | 2003 05 27 | 699 | 0.4− | 0.2+ | 2006 11 25 | 703 | 0.3+ | 0.4− | | |
| 2002 03 05 | 644 | 0.5+ | 0.3+ | 2003 06 02 | 703 | 1.1+ | 0.0 | 2006 11 25 | 703 | 0.6+ | 0.2− | | |
| 2002 03 05 | 644 | 0.0 | 0.4+ | 2003 06 02 | 703 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.7− | 1.3+ | | |
| 2002 03 13 | 704 | 0.0 | 1.1+ | 2003 06 02 | 703 | 0.5− | 1.3+ | 2006 11 28 | 704 | 0.4+ | 0.0 | | |
| 2002 03 13 | 704 | 0.1+ | 0.6+ | 2003 06 02 | 703 | 0.9+ | 0.6− | 2006 11 28 | 704 | 0.4− | 1.0+ | | |
| 2002 03 13 | 704 | 0.3− | 1.4+ | 2004 06 16 | 691 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.7− | 0.2− | | |
| 2002 03 13 | 704 | 0.1+ | 1.1+ | 2004 06 16 | 691 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.3+ | 1.3+ | | |
| 2002 03 13 | 644 | 0.1− | 0.2− | 2004 06 16 | 691 | 0.2− | 0.2+ | | | | | | |

**(141378)∗ 2002 AW$_{65}$ = 2000 SN$_{357}$**

Discovered 2002 Jan. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25555)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.57224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17395337 | $\omega$ | 259.18088 | | +0.89399063 | −0.40088654 | |
| $a$ | 3.1781970 | $\Omega$ | 124.16450 | | +0.44306231 | +0.85756123 | |
| $e$ | 0.1613824 | $i$ | 14.00026 | | −0.06690692 | +0.32230222 | |
| $P$ | 5.67 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 699 | 0.7+ | 0.7+ | 2002 02 12 | 704 | 0.0 | 0.3− | 2005 07 09 | 691 | 0.2− | 0.6+ | | |
| 2000 09 28 | 699 | 0.1− | 0.4+ | 2002 02 12 | 704 | 1.2− | 0.8+ | 2005 07 12 | G96 | 0.1− | 0.6+ | | |
| 2000 09 28 | 699 | 0.7+ | 0.1+ | 2002 02 12 | 704 | 0.6− | 0.5+ | 2005 07 12 | G96 | 0.0 | 0.1+ | | |
| 2000 09 28 | 699 | 0.0 | 0.8+ | 2002 02 12 | 704 | (0.1+ | 1.6+) | 2005 07 12 | G96 | 0.3− | 0.1+ | | |
| 2000 10 05 | 704 | 0.6− | 0.4− | 2002 02 13 | 049 | 0.1− | 0.3− | 2005 07 12 | G96 | 0.1− | 0.1− | | |
| 2000 10 05 | 704 | 1.2− | 0.3+ | 2002 02 13 | 049 | 0.7− | 0.7+ | 2005 07 30 | E12 | 0.3− | 0.4− | | |
| 2000 10 05 | 704 | 0.3− | 0.0 | 2002 02 13 | 049 | 0.7+ | 0.9+ | 2005 07 30 | E12 | 0.2+ | 0.3+ | | |
| 2001 12 14 | 704 | 0.6− | 1.4+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2005 07 30 | E12 | 0.2− | 0.3+ | | |
| 2001 12 14 | 704 | 0.3+ | 1.5+ | 2005 05 19 | G96 | 0.0 | 0.4− | 2005 07 30 | E12 | 0.1+ | 0.5− | | |
| 2001 12 14 | 704 | 0.7+ | 1.4+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.1+ | | |
| 2001 12 19 | 691 | 0.2− | 0.5+ | 2005 05 19 | G96 | 0.2− | 0.2− | 2006 10 28 | 703 | 0.1− | 0.2+ | | |
| 2001 12 19 | 691 | 0.2− | 0.3+ | 2005 06 27 | 691 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.0 | 0.4− | | |
| 2001 12 19 | 691 | 0.2− | 0.5+ | 2005 06 27 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 703 | (0.6+ | 1.6+) | | |
| 2002 01 12 | 704 | 0.2+ | 0.6− | 2005 06 27 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.3− | | |
| 2002 01 12 | 704 | 0.2− | 0.4− | 2005 07 02 | 691 | 0.0 | 0.8+ | 2006 11 13 | 703 | 0.5+ | 1.1− | | |
| 2002 01 12 | 704 | 0.1+ | 0.2+ | 2005 07 02 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.9− | | |
| 2002 01 12 | 704 | 0.1− | 1.3+ | 2005 07 02 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.4+ | 0.9− | | |
| 2002 01 13 | 704 | 1.0+ | 0.9+ | 2005 07 03 | G96 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.9+ | 0.4− | | |
| 2002 01 13 | 704 | 0.7+ | 0.4− | 2005 07 03 | G96 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.3− | | |
| 2002 01 13 | 704 | 0.5+ | 0.9+ | 2005 07 03 | G96 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.5− | | |
| 2002 01 13 | 704 | 0.6+ | 0.4+ | 2005 07 03 | G96 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.4+ | 0.1− | | |
| 2002 01 13 | 704 | 0.9+ | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.4+ | 2006 11 23 | G92 | 0.8− | 0.2+ | | |
| 2002 02 10 | 704 | 0.6+ | 0.3+ | 2005 07 04 | 644 | 0.2− | 0.3+ | 2006 11 23 | G92 | 0.3− | 0.6+ | | |
| 2002 02 10 | 704 | 0.2− | 0.7+ | 2005 07 04 | 644 | 0.1− | 0.2+ | 2006 11 23 | G92 | 0.1+ | 0.0 | | |
| 2002 02 10 | 704 | 0.5− | 0.5− | 2005 07 09 | 691 | 0.3+ | 0.3− | | | | | | |
| 2002 02 10 | 704 | 0.0 | 0.4+ | 2005 07 09 | 691 | 0.0 | 0.1− | | | | | | |

**(141379)∗ 2002 AP$_{66}$**

Discovered 2002 Jan. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.41682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17206052 | $\omega$ | 278.71166 | | +0.22817374 | −0.95593545 | |
| $a$ | 3.2014636 | $\Omega$ | 155.55338 | | +0.97179598 | +0.23521913 | |
| $e$ | 0.1719401 | $i$ | 26.51090 | | −0.05957614 | +0.17566839 | |
| $P$ | 5.73 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 699 | 0.7+ | 0.8+ | 2002 02 06 | 699 | (1.5− | 1.8−) | 2006 09 25 | 703 | 0.2+ | 0.3− |
| 2000 09 28 | 699 | (0.1− | 2.2−) | 2002 02 07 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.6− | 1.0− |
| 2000 09 28 | 699 | 0.7− | 0.4+ | 2002 02 07 | 644 | 0.6+ | 0.1+ | 2006 09 25 | 703 | 0.2+ | 0.5− |
| 2000 09 28 | 699 | 0.3− | 1.1+ | 2002 02 07 | 644 | 0.5+ | 0.1+ | 2006 10 22 | E12 | 0.6+ | 0.7− |
| 2002 01 12 | 704 | 0.3+ | 0.4+ | 2002 02 07 | 608 | 0.4− | 0.4+ | 2006 10 22 | E12 | 0.0 | 0.0 |
| 2002 01 12 | 704 | 0.9+ | 0.2− | 2002 02 07 | 608 | 0.5− | 0.7+ | 2006 10 22 | E12 | 0.2− | 0.8+ |
| 2002 01 12 | 704 | 0.8− | 0.2− | 2002 02 07 | 608 | 0.2− | 0.7+ | 2006 10 22 | E12 | 0.2− | 0.7+ |
| 2002 01 12 | 704 | (0.8+ | 1.6+) | 2002 02 08 | 644 | 0.3+ | 0.4+ | 2006 11 01 | 703 | 0.6− | 0.8− |
| 2002 01 12 | 704 | 0.2+ | 0.3− | 2002 02 08 | 644 | 0.1+ | 0.3+ | 2006 11 01 | 703 | 0.2− | 0.8− |
| 2002 01 13 | 704 | 0.2− | 0.9+ | 2002 02 08 | 644 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.2+ | 0.2+ |
| 2002 01 13 | 704 | 0.8+ | 1.1+ | 2002 02 13 | 645 | 0.0 | 0.1− | 2006 11 01 | 703 | 0.5− | 0.3+ |
| 2002 01 13 | 704 | 0.7+ | 0.9+ | 2002 02 13 | 645 | 0.0 | 0.0 | 2006 11 20 | 703 | 0.4+ | 0.4+ |
| 2002 01 13 | 704 | 0.5− | 0.4− | 2005 07 30 | 644 | 0.5+ | 0.4+ | 2006 11 20 | 703 | 0.7+ | 0.4+ |
| 2002 01 13 | 704 | 0.4+ | 0.1− | 2005 07 30 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 703 | (2.0− | 0.2+) |
| 2002 01 14 | 704 | 0.1− | 0.5+ | 2005 07 30 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 703 | 0.6− | 0.2+ |
| 2002 01 14 | 704 | 1.1− | 0.7+ | 2005 10 26 | G96 | 0.2− | 0.2+ | 2006 11 20 | E12 | 0.7+ | 0.9− |
| 2002 01 14 | 704 | 0.8+ | 0.2+ | 2005 10 26 | G96 | 0.4+ | 0.4+ | 2006 11 20 | E12 | 0.0 | 0.0 |
| 2002 01 14 | 704 | 0.0 | 0.8+ | 2005 10 26 | G96 | 0.5− | 0.2+ | 2006 11 20 | E12 | 0.3− | 0.5− |
| 2002 02 03 | 608 | 0.1− | 0.6− | 2005 10 26 | G96 | 0.1+ | 0.2− | 2006 11 20 | E12 | 0.1+ | 0.6− |
| 2002 02 03 | 608 | 0.4− | 0.5− | 2005 10 26 | G96 | 0.7− | 0.6+ | 2006 11 25 | 703 | 0.0 | 0.1+ |
| 2002 02 03 | 608 | 0.5− | 0.4− | 2005 10 26 | G96 | 0.2+ | 0.6+ | 2006 11 25 | 703 | 0.2+ | 0.1− |
| 2002 02 06 | 699 | (1.8− | 1.0+) | 2005 10 26 | G96 | 0.1− | 0.5+ | 2006 11 25 | 703 | 0.0 | 0.3+ |
| 2002 02 06 | 699 | 0.5− | 0.3+ | 2005 10 26 | G96 | 0.2+ | 0.3+ | 2006 11 25 | 703 | 0.1+ | 1.2− |
| 2002 02 06 | 699 | 0.4− | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.6+ | | | | |

**(141380)∗ 2002 AF$_{68}$**

Discovered 2002 Jan. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.77435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17444714 | $\omega$ | 197.49726 | | −0.68826343 | −0.70716502 | |
| $a$ | 3.1721970 | $\Omega$ | 296.34672 | | +0.68533570 | −0.56060745 | |
| $e$ | 0.0337528 | $i$ | 10.40849 | | +0.23792523 | −0.43085603 | |
| $P$ | 5.65 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.8− | 0.3+ | 2002 01 14 | 691 | 0.1+ | 0.5− | 2003 03 23 | 644 | 0.4− | 0.5+ |
| 2000 10 03 | 704 | 1.0+ | 0.1− | 2002 01 14 | 691 | 0.0 | 0.2+ | 2003 03 23 | 644 | 0.9− | 0.9+ |
| 2000 10 03 | 704 | 0.3− | 0.0 | 2002 01 14 | 704 | 0.0 | 0.5+ | 2003 03 23 | 644 | 0.4− | 0.2+ |
| 2000 10 03 | 704 | 0.1− | 0.7+ | 2002 01 14 | 704 | 0.4+ | 0.3+ | 2003 04 07 | 704 | 0.6+ | 0.4+ |
| 2000 10 03 | 704 | 0.5− | 0.1+ | 2002 01 14 | 704 | 0.3+ | 0.5+ | 2003 04 07 | 704 | 0.0 | 0.8+ |
| 2000 11 19 | 704 | 0.4− | 0.2+ | 2002 01 14 | 704 | 0.2+ | 0.4+ | 2003 04 07 | 704 | 0.0 | 0.4+ |
| 2000 11 19 | 704 | 0.3+ | 1.0− | 2002 01 14 | 704 | 0.3+ | 0.4+ | 2003 04 11 | 699 | 0.5+ | 0.8+ |
| 2000 11 19 | 704 | 0.5− | 0.2− | 2002 01 21 | 704 | 0.4+ | 0.1− | 2003 04 11 | 699 | 1.0+ | 0.7+ |
| 2000 11 19 | 704 | 0.1− | 0.2+ | 2002 01 21 | 704 | 0.1− | 1.0+ | 2003 04 11 | 699 | 0.9+ | 0.8− |
| 2000 11 19 | 704 | 0.0 | 1.3+ | 2002 01 21 | 704 | 0.2− | 0.5+ | 2003 04 11 | 699 | (4.3+ | 1.3+) |
| 2001 12 18 | 644 | 0.3− | 0.3+ | 2002 01 21 | 704 | 0.4+ | 0.3+ | 2005 05 14 | 691 | 0.2+ | 0.6+ |
| 2001 12 18 | 644 | 0.4− | 0.3+ | 2002 02 05 | 644 | 0.3− | 0.0 | 2005 05 14 | 691 | 0.7− | 0.4+ |
| 2001 12 18 | 644 | 0.2− | 0.3+ | 2002 02 05 | 644 | 0.0 | 0.0 | 2005 05 14 | 691 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.5− | 0.4+ | 2002 02 05 | 644 | 0.1− | 0.1+ | 2005 09 24 | 703 | 0.6+ | 0.5+ |
| 2001 12 19 | 704 | 0.8− | 0.3+ | 2002 02 06 | 704 | 1.0− | 0.9+ | 2005 09 24 | 703 | 1.3− | 0.4− |
| 2001 12 19 | 704 | 0.2− | 0.4− | 2002 02 06 | 704 | 1.1− | 0.7− | 2005 09 24 | 703 | 0.5− | 0.2+ |
| 2001 12 19 | 704 | 0.2− | 0.6− | 2002 02 06 | 704 | 0.4− | 0.7+ | 2005 09 24 | 703 | 1.4+ | 0.2+ |
| 2001 12 19 | 704 | 0.3− | 0.2− | 2002 02 06 | 704 | 0.9− | 0.5− | 2006 11 13 | 644 | 0.1− | 0.5− |
| 2002 01 07 | 644 | 0.3+ | 0.2+ | 2002 02 07 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.3− |
| 2002 01 07 | 644 | 0.1+ | 0.1+ | 2002 02 07 | 704 | 0.5+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.3− |
| 2002 01 07 | 644 | 0.2− | 0.7+ | 2002 02 07 | 704 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.3− | 1.2+ |
| 2002 01 08 | 704 | 0.9− | 0.4+ | 2002 02 09 | 704 | 0.2+ | 0.3− | 2006 11 15 | 703 | 0.8− | 0.4+ |
| 2002 01 08 | 704 | 0.2− | 1.1+ | 2002 02 09 | 704 | 0.1+ | 0.5− | 2006 11 15 | 703 | 0.5+ | 0.5+ |
| 2002 01 08 | 704 | 0.3− | 0.7+ | 2002 02 09 | 704 | 0.8+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2002 01 08 | 704 | 0.6− | 0.9+ | 2002 02 09 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 703 | 0.7+ | 0.6− |
| 2002 01 11 | 291 | 0.5+ | 0.1− | 2002 02 20 | 704 | 0.2+ | 0.3− | 2006 11 21 | 703 | 0.1− | 0.3− |
| 2002 01 11 | 291 | 0.5+ | 0.6− | 2002 02 20 | 704 | 0.1+ | 1.1− | 2006 11 21 | 703 | 0.0 | 0.5− |
| 2002 01 11 | 291 | 0.3+ | 0.1− | 2002 02 20 | 704 | 0.4+ | 0.1− | 2006 11 21 | 703 | 0.3− | 0.0 |
| 2002 01 14 | 691 | 0.0 | 0.2− | 2002 02 20 | 704 | 0.4− | 0.4− | | | | |

**(141381)∗ 2002 AP$_{69}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.15374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18259445 | $\omega$ | 194.24139 | | −0.30255452 | −0.93736614 | |
| $a$ | 3.0771193 | $\Omega$ | 273.59234 | | +0.89053697 | −0.21345035 | |
| $e$ | 0.0566946 | $i$ | 9.96128 | | +0.33971262 | −0.27528835 | |
| $P$ | 5.40 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3+ | 1.0− | 2002 01 14 | 704 | 0.3− | 0.1+ | 2005 07 29 | 644 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | 0.8+ | 0.5− | 2002 01 14 | 704 | 0.9− | 0.5+ | 2005 07 29 | 644 | 0.3− | 0.2+ |
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2002 01 14 | 704 | 0.0 | 0.6+ | 2005 07 29 | 644 | 0.2− | 0.3+ |
| 2001 11 11 | 704 | (2.8+ | 4.3−) | 2002 01 14 | 704 | 0.7− | 0.3+ | 2005 08 08 | A13 | 0.3− | 0.4− |
| 2001 11 11 | 704 | 1.2+ | 1.0− | 2002 01 14 | 704 | 0.4− | 0.9− | 2005 08 08 | A13 | 0.8− | 0.1− |
| 2001 11 11 | 704 | 1.3+ | 0.8− | 2003 01 28 | 704 | 0.6+ | 0.5+ | 2005 08 08 | A13 | 0.6− | 0.4− |
| 2001 11 11 | 704 | (1.0+ | 1.6−) | 2003 01 28 | 704 | 1.2+ | 0.4+ | 2006 09 28 | 703 | 1.3+ | 0.5+ |
| 2001 11 11 | 704 | (1.7+ | 2.1−) | 2003 01 28 | 704 | (2.4+ | 0.1−) | 2006 09 28 | 703 | 1.1+ | 0.5+ |
| 2001 11 21 | 704 | 0.2− | 0.2− | 2003 01 28 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.8+ | 0.8− |
| 2001 11 21 | 704 | 1.2+ | 0.4+ | 2003 03 10 | 699 | 0.8− | 0.3+ | 2006 09 28 | 703 | 0.6+ | 0.7+ |
| 2001 11 21 | 704 | 0.6+ | 0.0 | 2003 03 10 | 699 | 0.3− | 0.6+ | 2006 10 17 | A50 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | 0.2− | 0.0 | 2003 03 10 | 699 | 0.6+ | 0.8+ | 2006 10 17 | A50 | 0.0 | 0.8+ |
| 2001 11 24 | 704 | 0.1− | 0.4+ | 2003 03 10 | 699 | 0.4+ | 0.9+ | 2006 10 18 | A50 | 0.8+ | 0.7+ |
| 2001 11 24 | 704 | 0.5− | 0.2+ | 2005 06 28 | 644 | 0.2− | 0.1+ | 2006 10 18 | A50 | 0.3− | 0.2− |
| 2001 11 24 | 704 | 0.7− | 0.2+ | 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.5− |
| 2001 11 24 | 704 | 0.6− | 0.4+ | 2005 06 28 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2001 12 17 | 704 | 1.2− | 0.3+ | 2005 07 01 | 691 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 0.7− | 0.3+ | 2005 07 01 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.8+ | 0.1− |
| 2001 12 17 | 704 | 0.7− | 0.2+ | 2005 07 01 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 0.7− | 0.8+ | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.3− | 0.8+ | 2005 07 05 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2002 01 06 | 644 | 0.1− | 0.2+ | 2005 07 05 | 644 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.3− | 0.3− |
| 2002 01 06 | 644 | 0.5+ | 0.5+ | 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | (1.6− | 0.2+) |
| 2002 01 06 | 644 | 0.3+ | 0.3+ | 2005 07 10 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 703 | (1.5− | 0.3+) |
| 2002 01 08 | 704 | 0.4+ | 1.3+ | 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2002 01 08 | 704 | 0.3+ | 0.5+ | 2005 07 12 | 703 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 1.5− | 1.6− |
| 2002 01 08 | 704 | 0.8+ | 0.1+ | 2005 07 12 | 703 | 0.0 | 0.4− | 2006 11 15 | 703 | 1.5− | 0.2− |
| 2002 01 08 | 704 | 0.2+ | 0.3− | 2005 07 12 | 703 | 1.2− | 0.3− | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2002 01 08 | 704 | 0.2− | 0.4− | 2005 07 12 | 703 | 0.8− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.1+ |

**(141382)∗ 2002 AW$_{71}$ = 2003 FX$_{84}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 49957)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.21534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17813118 | $\omega$ | 155.83552 | | −0.21105768 | −0.97095189 | |
| $a$ | 3.1283073 | $\Omega$ | 306.15914 | | +0.87254555 | −0.13516315 | |
| $e$ | 0.0504932 | $i$ | 8.02580 | | +0.44058928 | −0.19744203 | |
| $P$ | 5.53 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.2− | 0.2+ | 2003 03 30 | 699 | 0.1− | 0.6− | 2006 10 19 | 703 | 1.0+ | 0.2− |
| 2001 12 09 | 704 | 0.2+ | 0.4− | 2003 03 30 | 699 | 1.1− | 0.3− | 2006 10 19 | 703 | 0.7+ | 0.1− |
| 2001 12 09 | 704 | 0.2+ | 0.1− | 2003 03 30 | 699 | (1.7− | 0.4+) | 2006 10 27 | 703 | 1.1+ | 1.2− |
| 2002 01 08 | 704 | 0.5+ | 0.2− | 2005 07 29 | 644 | 0.0 | 0.3+ | 2006 10 27 | 703 | 1.3− | 0.2+ |
| 2002 01 08 | 704 | 1.3+ | 0.3+ | 2005 07 29 | 644 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.6+ | 0.7− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.5+ | 0.2+ | 2005 07 29 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2002 01 08 | 704 | 0.5+ | 1.0− | 2005 08 24 | 644 | 0.3+ | 0.0 | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2002 01 14 | 704 | 1.0− | 0.1+ | 2005 08 24 | 644 | 0.3− | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 1.2− | 0.5+ | 2005 08 24 | 644 | 0.1− | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.4+ |
| 2002 01 14 | 704 | (1.7− | 0.7+) | 2005 10 30 | G96 | 0.4− | 0.5− | 2006 11 22 | 703 | 0.6− | 0.6− |
| 2002 01 14 | 704 | 0.9− | 0.5+ | 2005 10 30 | G96 | 0.3+ | 0.0 | 2006 11 22 | 703 | 0.4+ | 0.2− |
| 2003 03 28 | 691 | 0.3+ | 0.3+ | 2005 10 30 | G96 | 0.3− | 0.1− | 2006 11 22 | 703 | 0.7− | 0.4+ |
| 2003 03 28 | 691 | 0.1+ | 0.0 | 2005 10 30 | G96 | 0.6− | 0.0 | 2006 11 22 | 703 | 0.6+ | 1.1+ |
| 2003 03 28 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 1.3− | 0.4+ | | | | |
| 2003 03 30 | 699 | 0.6− | 0.9+ | 2006 10 19 | 703 | 0.6− | 0.7+ | | | | |

**(141383)∗ 2002 AY$_{71}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 42.73914 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19682156 | $\omega$ | 306.38832 | | | +0.98697402 | | −0.15526271 | |
| $a$ | 2.9269879 | $\Omega$ | 62.57815 | | | +0.15858103 | | +0.89478443 | |
| $e$ | 0.1073987 | $i$ | 2.72109 | | | +0.02709867 | | +0.41863386 | |
| $P$ | 5.01 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 15 | 691 | 0.1− | 0.3+ | 2002 01 14 | 704 | 0.4− | 0.0 | 2005 08 04 | 644 | 0.0 | 0.2+ |
| 1999 05 15 | 691 | 0.1− | 0.3+ | 2002 01 14 | 704 | 0.1+ | 1.1+ | 2005 08 04 | 644 | 0.1+ | 0.3+ |
| 1999 05 15 | 691 | 0.2+ | 0.1+ | 2002 01 14 | 704 | 0.1+ | 0.9+ | 2005 08 04 | 644 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2002 01 14 | 704 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.1+ | 0.6− | 2002 01 14 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.8− | 0.1− | 2003 03 23 | 645 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2003 03 23 | 645 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | 0.4− | 0.3− | 2003 03 31 | 645 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.2− | 2003 03 31 | 645 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.5+ | 0.8+ | 2004 04 21 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.6+ | 0.1+ | 2004 04 21 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | (1.7− | 0.9−) |
| 2001 12 19 | 704 | 0.5− | 0.7+ | 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2001 12 19 | 704 | 0.3− | 0.6− | 2004 05 21 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | (1.1− | 1.8+) |
| 2001 12 19 | 704 | 0.9+ | 0.5− | 2004 05 21 | 691 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.5+ | 0.5− | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2002 01 08 | 704 | 0.1− | 0.4− | 2005 07 27 | 644 | 0.2− | 0.9+ | 2006 12 01 | G96 | 0.5− | 0.3+ |
| 2002 01 08 | 704 | 0.7− | 0.7+ | 2005 07 27 | 644 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.2− | 0.0 |
| 2002 01 08 | 704 | 0.2+ | 0.2− | 2005 07 27 | 644 | 0.3+ | 0.3+ | | | | |

**(141384)∗ 2002 AV$_{74}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 293.56988 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17943518 | $\omega$ | 134.16854 | | | −0.57467035 | | −0.81832279 | |
| $a$ | 3.1131329 | $\Omega$ | 350.89184 | | | +0.73149436 | | −0.50808812 | |
| $e$ | 0.1035596 | $i$ | 3.65452 | | | +0.36697411 | | −0.26868993 | |
| $P$ | 5.49 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 15 | 691 | 0.7− | 0.2+ | 2003 04 29 | 691 | 0.0 | 1.2+ | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 1997 02 15 | 691 | 1.3+ | 0.9− | 2003 04 29 | 691 | 0.7− | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 1997 02 15 | 691 | 1.0− | 0.1+ | 2003 05 06 | 691 | 0.9− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2003 05 06 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2003 05 06 | 691 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.7+ | 1.4+ | 2005 08 28 | 691 | 0.4+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.5− |
| 2001 12 19 | 704 | 0.3+ | 0.2− | 2005 08 28 | 691 | 0.7+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2005 08 28 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2002 01 08 | 704 | 0.4+ | 0.2− | 2005 09 11 | 691 | 0.3− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.8+ |
| 2002 01 08 | 704 | 0.4+ | 0.1− | 2005 09 11 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2002 01 08 | 704 | 0.2− | 0.5+ | 2005 09 11 | 691 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2002 01 08 | 704 | 0.1− | 0.2− | 2005 10 01 | G96 | 0.8− | 0.7− | 2006 11 23 | 703 | 1.0+ | 0.5+ |
| 2002 01 14 | 704 | 1.2− | 1.3+ | 2005 10 01 | G96 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.1+ | 0.4− |
| 2002 01 14 | 704 | 0.3+ | 1.0+ | 2005 10 01 | G96 | 0.7− | 0.3+ | 2006 11 23 | 703 | 1.4− | 0.5+ |
| 2002 01 14 | 704 | 0.9+ | 0.2− | 2005 10 01 | G96 | 0.4− | 0.3+ | 2006 11 23 | 703 | 0.5+ | 0.5− |
| 2003 04 05 | 691 | 1.1+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2003 04 05 | 691 | 1.3+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.5+ | 2006 11 23 | G96 | 0.5+ | 0.1+ |
| 2003 04 05 | 691 | 1.1+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2003 04 29 | 691 | 0.3− | 1.0+ | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.0 |

**(141385)∗ 2002 AK$_{75}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 17.27685 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18359951 | $\omega$ | 300.70761 | | | +0.91506240 | | −0.40102215 | |
| $a$ | 3.0658792 | $\Omega$ | 82.96414 | | | +0.38324582 | | +0.83144784 | |
| $e$ | 0.1984007 | $i$ | 2.47851 | | | +0.12563221 | | +0.38454614 | |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 16 | 691 | 0.4− | 0.5− | 2005 07 07 | 691 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.7− |
| 2001 12 16 | 691 | 0.1− | 0.6− | 2005 07 07 | 691 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.1− |
| 2001 12 16 | 691 | 0.5− | 0.9− | 2005 08 08 | 807 | 0.0 | 1.0+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 1.0+ | 2005 08 08 | 807 | 0.0 | 1.0+ | 2006 11 15 | 703 | 0.3+ | 0.1+ |
| 2001 12 18 | 704 | 1.2+ | 1.0+ | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.7− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.4− | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2002 01 08 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 0.1+ | 1.2+ | 2006 10 29 | G96 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2002 01 08 | 704 | 0.3+ | 0.8+ | 2006 10 29 | G96 | 0.3− | 0.1− | 2006 11 19 | 691 | (0.9− | 2.3−) |
| 2002 01 08 | 704 | 0.8+ | 0.5+ | 2006 10 29 | G96 | 0.5− | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.0 | 0.2− | 2006 10 29 | G96 | 0.4+ | 0.5− | 2006 11 23 | 691 | 0.3+ | 0.2+ |
| 2002 01 14 | 704 | 0.4+ | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 1.2+ | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2002 01 14 | 704 | 0.4+ | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2003 04 05 | 691 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.9+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2003 04 05 | 691 | 0.3+ | 0.8+ | 2006 11 11 | 703 | (1.9+ | 0.2+) | 2006 12 01 | 691 | 0.0 | 0.3− |
| 2003 04 05 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.0+ | 2.4+) | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2005 07 07 | 691 | 0.4− | 0.4+ | 2006 11 11 | 703 | (0.9− | 1.6−) | 2006 12 01 | 691 | 0.1− | 0.1− |

**(141386)∗ 2002 AV$_{79}$ = 2004 MQ$_4$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 65281)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 175.86460 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25883317 | $\omega$ | 37.42373 | | | +0.95712872 | | +0.24922406 | |
| $a$ | 2.4385000 | $\Omega$ | 307.49278 | | | −0.28965345 | | +0.81935458 | |
| $e$ | 0.2997614 | $i$ | 10.72261 | | | −0.00234490 | | +0.51628039 | |
| $P$ | 3.81 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.1+ | 0.1+ | 2002 01 17 | 644 | 0.1+ | 0.1− | 2006 01 04 | 691 | 0.1+ | 0.0 |
| 1995 02 25 | 691 | 0.0 | 0.0 | 2002 01 17 | 644 | 0.2+ | 0.4− | 2006 01 04 | 691 | 0.1+ | 0.0 |
| 1995 02 25 | 691 | 0.0 | 0.1+ | 2002 01 17 | 644 | 0.1+ | 0.3+ | 2006 01 04 | 691 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2004 06 21 | 428 | 0.0 | 0.8+ | 2006 01 08 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.5+ | 1.0+ | 2004 06 22 | 428 | 0.3− | 0.7+ | 2006 01 08 | 691 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 1.3+ | 0.8+ | 2004 06 23 | 428 | 0.4− | 0.2+ | 2006 01 08 | 691 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2004 06 23 | 428 | 0.1+ | 0.5+ | 2006 01 22 | G96 | 0.4− | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.6+ | 2004 07 11 | 704 | 1.4+ | 0.8+ | 2006 01 22 | G96 | 0.5− | 0.3− |
| 2001 12 18 | 644 | 0.1+ | 0.6− | 2004 07 11 | 704 | 0.4− | 0.8+ | 2006 01 22 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 644 | 0.2− | 0.7− | 2004 07 11 | 704 | 0.1+ | 0.8+ | 2006 01 23 | 691 | 0.1+ | 0.1+ |
| 2001 12 18 | 644 | 0.3− | 0.8− | 2004 07 11 | 704 | 0.4− | 0.3+ | 2006 01 23 | 691 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.1+ | 0.2+ | 2004 07 15 | 704 | 0.1+ | 0.6− | 2006 01 23 | 691 | 0.2+ | 0.4+ |
| 2002 01 08 | 704 | 0.2− | 0.3+ | 2004 07 15 | 704 | 0.0 | 0.1+ | 2006 01 24 | 704 | 0.2+ | 0.3+ |
| 2002 01 08 | 704 | 0.3− | 1.2+ | 2004 07 15 | 704 | 0.2− | 0.1− | 2006 01 24 | 704 | 0.5+ | 0.3+ |
| 2002 01 08 | 704 | 0.3+ | 0.7+ | 2004 07 15 | 704 | 0.1+ | 0.0 | 2006 01 24 | 704 | 1.0+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 0.0 | 0.2− | 2004 07 15 | 704 | 0.8− | 1.0− | 2006 01 24 | 704 | 0.4+ | 0.0 |
| 2002 01 14 | 704 | 0.3− | 0.3+ | 2004 09 07 | 704 | 0.2− | 0.7+ | 2006 01 24 | 704 | 0.0 | 0.5− |
| 2002 01 14 | 704 | 0.2− | 0.1− | 2004 09 07 | 704 | 0.6− | 1.1+ | 2006 02 20 | G96 | 0.2− | 0.1− |
| 2002 01 14 | 704 | 0.3− | 0.3+ | 2004 09 07 | 704 | 0.9− | 1.0+ | 2006 02 20 | G96 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.4− | 0.3+ | 2005 12 28 | G96 | 0.0 | 0.4− | 2006 02 20 | G96 | 0.2− | 0.3− |
| 2002 01 15 | 704 | 0.7+ | 0.6+ | 2005 12 28 | G96 | 0.1− | 0.5− | 2006 02 20 | G96 | 0.1+ | 0.2− |
| 2002 01 15 | 704 | 0.3+ | 0.2− | 2005 12 28 | G96 | 0.7− | 0.4− | | | | |
| 2002 01 15 | 704 | 0.3+ | 0.7+ | 2005 12 28 | G96 | 0.3− | 0.0 | | | | |

**(141387)∗ 2002 AV$_{80}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.99126 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19252204 | $\omega$ | 290.84853 | | +0.74250332 | −0.63904148 | |
| $a$ | 2.9704055 | $\Omega$ | 109.44757 | | +0.66597806 | +0.67212348 | |
| $e$ | 0.1220494 | $i$ | 12.29435 | | +0.07184739 | +0.37400002 | |
| $P$ | 5.12 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 699 | 0.5+ | 0.5+ | 2002 01 09 | 209 | 0.1− | 0.5+ | 2005 08 12 | E12 | 0.5+ | 1.0− |
| 2001 12 08 | 699 | 0.5− | 0.8+ | 2002 01 14 | 704 | 0.2+ | 0.4− | 2005 08 12 | E12 | 0.5− | 0.7+ |
| 2001 12 08 | 699 | 0.1− | 0.1− | 2002 01 14 | 704 | 1.3− | 0.1+ | 2005 08 12 | E12 | 0.1− | 0.2+ |
| 2001 12 08 | 699 | 1.1+ | 0.5+ | 2002 01 14 | 704 | 0.4+ | 0.2+ | 2005 08 12 | E12 | 0.4+ | 0.4+ |
| 2001 12 11 | 704 | 0.1− | 0.4− | 2002 01 14 | 704 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.9+ | 0.9+ |
| 2001 12 11 | 704 | 0.1− | 0.4− | 2002 01 14 | 704 | 0.9− | 0.9+ | 2006 10 28 | 703 | 0.1+ | 0.7+ |
| 2001 12 11 | 704 | 0.3− | 0.2+ | 2003 01 28 | 645 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.3− | 0.1− |
| 2001 12 11 | 704 | 0.1− | 0.4− | 2003 01 28 | 645 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.0 | 0.9+ |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2003 03 08 | 704 | (0.1+ | 1.8−) | 2006 10 30 | 703 | 0.4− | 0.0 |
| 2001 12 17 | 644 | 0.4+ | 0.3+ | 2003 03 08 | 704 | 1.1+ | 0.7− | 2006 10 30 | 703 | (2.2− | 2.0−) |
| 2001 12 17 | 644 | 0.1− | 0.1− | 2003 03 08 | 704 | 0.8+ | 0.7+ | 2006 10 30 | 703 | 0.3+ | 0.4− |
| 2001 12 17 | 644 | 0.1− | 0.1− | 2003 03 08 | 644 | 0.4+ | 0.3+ | 2006 10 30 | 703 | (2.0+ | 0.0 ) |
| 2001 12 24 | 608 | 0.1+ | 0.9− | 2003 03 08 | 644 | 1.3+ | 0.1+ | 2006 10 31 | 704 | 1.0+ | 0.4− |
| 2001 12 24 | 608 | 0.4− | 0.7− | 2003 03 08 | 644 | 0.0 | 0.1+ | 2006 10 31 | 704 | 0.4− | 0.6+ |
| 2001 12 24 | 608 | 0.3− | 0.8− | 2003 03 31 | 644 | 0.5+ | 1.0+ | 2006 10 31 | 704 | 1.1− | 0.1+ |
| 2002 01 08 | 644 | 0.2+ | 0.4+ | 2003 03 31 | 644 | 0.7+ | 0.6+ | 2006 11 13 | 703 | 0.1+ | 0.1− |
| 2002 01 08 | 644 | 0.5+ | 0.3+ | 2003 03 31 | 644 | 0.1+ | 0.8+ | 2006 11 13 | 703 | (0.5− | 2.4+) |
| 2002 01 08 | 644 | 0.1+ | 0.2+ | 2004 06 09 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.8+ |
| 2002 01 09 | 704 | 0.0 | 0.6+ | 2004 06 09 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.9− | 0.4+ |
| 2002 01 09 | 704 | 0.6+ | 0.3+ | 2004 06 09 | 691 | 0.5− | 0.4+ | 2006 11 19 | 703 | 0.1+ | 0.2− |
| 2002 01 09 | 704 | 0.2+ | 0.3− | 2005 07 03 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.2− |
| 2002 01 09 | 209 | 0.1− | 0.4+ | 2005 07 03 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.9− | 0.1− |
| 2002 01 09 | 209 | 0.4− | 0.5+ | 2005 07 03 | 644 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.3+ | 0.0 |

**(141388)∗ 2002 AQ$_{85}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.76012 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16981697 | $\omega$ | 334.21308 | | −0.35748640 | −0.91809686 | |
| $a$ | 3.2295994 | $\Omega$ | 136.16049 | | +0.89392219 | −0.38944459 | |
| $e$ | 0.1159865 | $i$ | 14.30816 | | +0.27038232 | +0.07369571 | |
| $P$ | 5.80 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 691 | 0.0 | 0.6+ | 2002 02 03 | 608 | 0.7+ | 1.2+ | 2005 08 05 | 644 | 0.2− | 0.3+ |
| 1999 09 07 | 691 | 0.0 | 0.4+ | 2002 02 03 | 608 | 0.3+ | 1.3+ | 2006 10 11 | 644 | 0.5+ | 0.4+ |
| 1999 09 07 | 691 | 0.0 | 1.1+ | 2002 02 07 | 704 | (0.0 | 2.1+) | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 01 05 | 608 | 0.3+ | 0.3− | 2002 02 07 | 704 | 0.2− | 1.3+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2002 01 05 | 608 | 0.4− | 0.4− | 2002 02 07 | 704 | 0.1+ | 1.4+ | 2006 10 28 | 703 | 0.1− | 1.2− |
| 2002 01 05 | 608 | 0.0 | 0.4− | 2002 02 07 | 704 | 1.3− | 1.5+ | 2006 10 28 | 703 | 0.3+ | 0.1− |
| 2002 01 09 | 704 | 0.4+ | 0.0 | 2002 02 07 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 703 | (1.9+ | 1.0−) |
| 2002 01 09 | 704 | 0.1− | 0.2− | 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.7− | 0.0 |
| 2002 01 09 | 704 | 0.1+ | 0.2− | 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2002 01 09 | 704 | 0.0 | 0.2+ | 2003 04 28 | 645 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2002 01 09 | 704 | 0.2− | 0.3− | 2003 04 28 | 645 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2002 01 14 | 704 | (1.7− | 1.0+) | 2005 07 12 | G96 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.5− |
| 2002 01 14 | 704 | 0.1+ | 0.7+ | 2005 07 12 | G96 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.8+ |
| 2002 01 14 | 704 | 0.1+ | 0.4+ | 2005 07 12 | G96 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.0 | 0.9+ |
| 2002 01 14 | 704 | 0.9− | 0.6+ | 2005 07 12 | G96 | 0.0 | 0.4+ | 2006 11 17 | 703 | (1.6+ | 0.3−) |
| 2002 01 14 | 704 | 0.9− | 0.6+ | 2005 08 05 | 644 | 0.4− | 0.6+ | | | | |
| 2002 02 03 | 608 | 1.1+ | 1.3+ | 2005 08 05 | 644 | 0.3− | 0.6+ | | | | |

**(141389)∗ 2002 AU$_{85}$ = 2000 SF$_{97}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25557)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.86185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22176678 | $\omega$ | 179.35429 | | +0.61452373 | −0.78561680 | |
| $a$ | 2.7031598 | $\Omega$ | 232.72572 | | +0.72339454 | +0.59750602 | |
| $e$ | 0.0414512 | $i$ | 5.18266 | | +0.31473945 | +0.16060136 | |
| $P$ | 4.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.1+ | 0.2− | 2004 07 18 | 704 | 1.0− | 1.1+ | 2005 11 30 | G96 | 0.2+ | 0.0 |
| 1996 11 08 | 691 | 0.2− | 0.1− | 2005 09 30 | G96 | 0.0 | 0.2+ | 2005 11 30 | G96 | 0.2+ | 0.1+ |
| 1996 11 08 | 691 | 0.3− | 0.7− | 2005 09 30 | G96 | 0.1+ | 0.1− | 2005 11 30 | G96 | 0.3− | 0.1− |
| 2000 09 23 | 704 | 0.6+ | 0.2− | 2005 09 30 | G96 | 0.1+ | 0.1− | 2005 12 01 | 704 | 1.2+ | 0.8+ |
| 2000 09 23 | 704 | 0.1+ | 2.2+ | 2005 09 30 | G96 | 0.2+ | 0.1+ | 2005 12 01 | 704 | 0.6− | 1.4+ |
| 2000 09 23 | 704 | 0.8+ | 1.3+ | 2005 10 23 | 703 | 0.9+ | 0.4− | 2005 12 01 | 704 | 1.0+ | 0.4− |
| 2000 09 23 | 704 | 0.4+ | 1.6+ | 2005 10 23 | 703 | 0.2− | 0.6− | 2005 12 01 | 704 | 0.8− | 1.0+ |
| 2000 09 27 | 704 | 0.1− | 0.9+ | 2005 10 23 | 703 | 0.9+ | 0.3− | 2005 12 01 | 704 | 0.5− | 1.2+ |
| 2000 09 27 | 704 | 0.7− | 1.1+ | 2005 10 23 | 703 | 0.9+ | 0.8+ | 2005 12 04 | 704 | 0.6− | 0.5+ |
| 2000 09 27 | 704 | 0.2− | 1.0+ | 2005 10 25 | G96 | 0.2+ | 0.4− | 2005 12 04 | 704 | (2.3− | 0.2+) |
| 2000 09 27 | 704 | 1.2− | 1.0+ | 2005 10 25 | G96 | 0.1+ | 0.3− | 2005 12 04 | 704 | 0.8− | 1.3+ |
| 2000 09 27 | 704 | 0.3+ | 0.7+ | 2005 10 25 | G96 | 0.1− | 0.2− | 2005 12 04 | 704 | 1.1− | 1.0+ |
| 2002 01 08 | 644 | 0.1− | 0.1− | 2005 10 25 | G96 | 0.2− | 0.2− | 2005 12 04 | 704 | 0.4− | 0.1+ |
| 2002 01 08 | 644 | 0.4− | 0.4− | 2005 10 28 | 704 | 0.7+ | 0.5+ | 2005 12 05 | 703 | 0.3− | 0.0 |
| 2002 01 08 | 644 | 0.4− | 0.1+ | 2005 10 28 | 704 | 1.0− | 0.6+ | 2005 12 05 | G96 | 0.0 | 0.1− |
| 2002 01 09 | 704 | 0.4+ | 0.3+ | 2005 10 28 | 704 | 1.2− | 0.7+ | 2005 12 05 | 703 | 0.2+ | 0.1− |
| 2002 01 09 | 704 | 0.9+ | 0.4+ | 2005 10 28 | 704 | 0.4+ | 0.5− | 2005 12 05 | G96 | 0.1− | 0.1+ |
| 2002 01 09 | 704 | 1.0+ | 0.5+ | 2005 11 04 | 691 | 0.0 | 0.5+ | 2005 12 05 | G96 | 0.2− | 0.1− |
| 2002 01 09 | 704 | 0.0 | 0.1+ | 2005 11 04 | 691 | 0.1− | 0.3+ | 2005 12 05 | 703 | 0.5+ | 0.3− |
| 2002 01 14 | 704 | 0.5+ | 0.4+ | 2005 11 04 | 691 | 0.2+ | 0.3+ | 2005 12 05 | G96 | 0.2+ | 0.0 |
| 2002 01 14 | 704 | 0.5+ | 0.6+ | 2005 11 05 | 691 | 0.1+ | 0.0 | 2005 12 05 | 703 | 0.6− | 0.1+ |
| 2002 01 14 | 704 | 0.1− | 0.6+ | 2005 11 05 | 691 | 0.0 | 0.1+ | 2005 12 05 | G96 | 0.0 | 0.0 |
| 2002 01 14 | 704 | 0.3− | 0.9+ | 2005 11 05 | 691 | 0.0 | 0.1+ | 2005 12 05 | G96 | 0.2− | 0.1− |
| 2002 01 14 | 704 | 0.1− | 1.3+ | 2005 11 21 | 699 | 0.1+ | 0.1− | 2005 12 05 | G96 | 0.2+ | 0.1− |
| 2003 04 26 | 691 | 0.5+ | 0.6+ | 2005 11 21 | 699 | 0.6+ | 0.1+ | 2005 12 05 | G96 | 0.0 | 0.1− |
| 2003 04 26 | 691 | 0.7+ | 0.5+ | 2005 11 21 | 699 | 0.5− | 1.9+ | 2005 12 09 | 704 | 0.4− | 0.2+ |
| 2003 04 26 | 691 | 0.6+ | 0.6+ | 2005 11 21 | 699 | 0.0 | 1.1+ | 2005 12 09 | 704 | 0.6+ | 1.0− |
| 2003 05 22 | 691 | 0.8− | 0.2− | 2005 11 21 | 703 | 0.0 | 0.4− | 2005 12 09 | 704 | 0.6− | 0.0 |
| 2003 05 22 | 691 | 0.6− | 0.0 | 2005 11 21 | 703 | 0.7− | 0.5− | 2005 12 21 | 699 | 0.8− | 0.4+ |
| 2003 05 22 | 691 | 0.8− | 0.1− | 2005 11 21 | 703 | 0.4+ | 0.4− | 2005 12 21 | 699 | 0.2+ | 0.2− |
| 2003 06 05 | 691 | 0.6+ | 1.0+ | 2005 11 21 | 703 | 1.4− | 0.9− | 2005 12 21 | 699 | 0.1− | 1.6+ |
| 2003 06 05 | 691 | 0.7+ | 1.3+ | 2005 11 28 | 703 | 0.4+ | 0.5+ | 2005 12 21 | 699 | 1.3+ | 0.6− |
| 2003 06 05 | 691 | 0.7+ | 1.2+ | 2005 11 28 | 703 | 0.0 | 0.3+ | 2006 01 04 | 699 | 0.8− | 1.4+ |
| 2004 07 18 | 704 | 1.2− | 1.2+ | 2005 11 28 | 703 | (1.5+ | 4.0−) | 2006 01 04 | 699 | 0.2− | 1.9+ |
| 2004 07 18 | 704 | 1.3− | 1.1+ | 2005 11 28 | 703 | 0.6− | 0.0 | 2006 01 04 | 699 | 0.4+ | 0.1+ |
| 2004 07 18 | 704 | 0.2− | 0.9+ | 2005 11 30 | G96 | 0.3+ | 0.1− | 2006 01 04 | 699 | 0.1+ | 0.5− |

**(141390)∗ 2002 AH$_{87}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.80441 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17793676 | $\omega$ | 265.44697 | | +0.74317346 | −0.56538155 | |
| $a$ | 3.1305857 | $\Omega$ | 128.50565 | | +0.63071789 | +0.77047153 | |
| $e$ | 0.1821059 | $i$ | 27.21004 | | −0.22335656 | +0.29447807 | |
| $P$ | 5.54 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.5− | 0.1+ | 2002 02 11 | 704 | 0.2− | 1.1+ | 2005 08 06 | 704 | 0.1+ | 0.9+ | |
| 2000 08 01 | 704 | 0.2+ | 0.8+ | 2002 02 11 | 704 | (0.4− | 2.0+) | 2005 08 06 | 704 | 0.0 | 0.5+ | |
| 2000 08 01 | 704 | 0.1+ | 0.3− | 2002 02 16 | 644 | 0.3+ | 1.3+ | 2005 08 06 | 704 | 0.3+ | 0.4+ | |
| 2002 01 08 | 644 | 0.2− | 0.1+ | 2002 02 16 | 644 | 0.2+ | 1.4+ | 2005 08 06 | 704 | 0.2+ | 1.4− | |
| 2002 01 08 | 644 | 0.0 | 0.2+ | 2002 02 16 | 644 | 0.3+ | 1.3+ | 2006 08 24 | E12 | 0.2− | 0.1+ | |
| 2002 01 08 | 644 | 0.1− | 0.2+ | 2002 02 20 | 704 | 1.1− | 0.5+ | 2006 08 24 | E12 | 0.3+ | 1.4− | |
| 2002 01 09 | 704 | 0.4− | 0.0 | 2002 02 20 | 704 | 0.9+ | 0.6+ | 2006 08 24 | E12 | 0.3− | 0.6+ | |
| 2002 01 09 | 704 | 0.3− | 0.5+ | 2002 02 20 | 704 | (1.5+ | 1.6+) | 2006 08 24 | E12 | 0.7+ | 0.5− | |
| 2002 01 09 | 704 | 0.9− | 0.5+ | 2002 03 05 | 644 | 1.1− | 0.1− | 2006 10 01 | E12 | 0.3+ | 0.9+ | |
| 2002 01 09 | 704 | 0.1+ | 0.1− | 2002 03 05 | 644 | 0.9− | 0.2+ | 2006 10 01 | E12 | 1.0+ | 0.7− | |
| 2002 01 09 | 704 | 0.2− | 0.3− | 2002 03 05 | 644 | 1.1− | 0.2− | 2006 10 01 | E12 | 0.1+ | 0.6− | |
| 2002 01 14 | 704 | 0.1− | 1.2− | 2003 03 11 | 644 | 0.1+ | 1.1+ | 2006 10 01 | E12 | 0.8− | 0.4+ | |
| 2002 01 14 | 704 | 0.2− | 1.0− | 2003 03 11 | 644 | 0.1+ | 0.9+ | 2006 10 25 | E12 | 0.4+ | 0.2+ | |
| 2002 01 14 | 704 | (0.4− | 1.6−) | 2003 03 11 | 644 | 0.6+ | 0.7+ | 2006 10 25 | E12 | 0.5+ | 0.4+ | |
| 2002 01 14 | 704 | 0.1− | 1.2− | 2005 06 21 | 644 | 0.1+ | 0.2+ | 2006 10 25 | E12 | 0.1+ | 0.1− | |
| 2002 01 22 | 704 | 0.7+ | 0.5− | 2005 06 21 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.5− | 0.4+ | |
| 2002 01 22 | 704 | 1.0+ | 0.2− | 2005 06 21 | 644 | 0.5+ | 0.6+ | 2006 11 19 | 703 | 0.3+ | 0.0 | |
| 2002 01 22 | 704 | 0.7+ | 0.4− | 2005 06 29 | 703 | 0.5− | 0.0 | 2006 11 19 | 703 | 0.1− | 0.0 | |
| 2002 02 04 | 608 | 0.1− | 0.2+ | 2005 06 29 | 703 | 0.9− | 0.3+ | 2006 11 19 | 703 | 0.0 | 0.5+ | |
| 2002 02 04 | 608 | 0.2− | 0.5+ | 2005 06 29 | 703 | 0.7− | 0.2− | 2006 11 24 | 703 | 0.1+ | 0.4+ | |
| 2002 02 04 | 608 | 0.7+ | 0.2+ | 2005 06 29 | 703 | 0.0 | 0.2+ | 2006 11 24 | 703 | 0.4+ | 0.1+ | |
| 2002 02 07 | 704 | 0.8− | 0.3+ | 2005 07 01 | 691 | 0.3+ | 0.7+ | 2006 11 24 | 703 | 0.6− | 0.3− | |
| 2002 02 07 | 704 | 0.5− | 0.0 | 2005 07 01 | 691 | 0.2+ | 0.8+ | 2006 11 24 | 703 | 0.2+ | 0.2+ | |
| 2002 02 07 | 704 | 0.7− | 0.7+ | 2005 07 01 | 691 | 0.2+ | 0.7+ | 2006 11 24 | 703 | 0.2− | 0.0 | |
| 2002 02 07 | 704 | 0.4− | 0.5+ | 2005 07 05 | 644 | 0.1+ | 0.5+ | 2006 11 24 | 703 | 0.4− | 0.2+ | |
| 2002 02 09 | 704 | 0.2+ | 0.8+ | 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 11 24 | 703 | 0.3− | 0.6+ | |
| 2002 02 09 | 704 | 0.7+ | 0.6+ | 2005 07 05 | 644 | 0.0 | 0.6+ | 2006 11 24 | 703 | 0.6− | 0.2+ | |
| 2002 02 09 | 704 | 0.7+ | 0.9+ | 2005 07 12 | 703 | (2.1− | 1.6+) | 2006 11 24 | 703 | 0.4− | 0.2+ | |
| 2002 02 09 | 704 | 0.2+ | 1.1+ | 2005 07 12 | 703 | (1.6− | 3.8+) | 2006 11 24 | 703 | 0.5− | 0.1− | |
| 2002 02 11 | 704 | 0.2− | 1.0+ | 2005 07 12 | 703 | 0.0 | 1.2+ | 2006 11 24 | 703 | 0.7− | 0.6+ | |
| 2002 02 11 | 704 | 0.1+ | 1.1+ | 2005 07 12 | 703 | 0.5+ | 0.5+ | | | | | |

**(141391)∗ 2002 AA$_{106}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.70725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19276249 | $\omega$ | 317.98880 | | +0.79994062 | −0.59826922 | |
| $a$ | 2.9679348 | $\Omega$ | 78.81603 | | +0.56242810 | +0.72043030 | |
| $e$ | 0.0389875 | $i$ | 2.72105 | | +0.20921193 | +0.35079071 | |
| $P$ | 5.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 699 | 0.8− | 0.9+ | 2002 02 06 | 704 | 0.7− | 0.1− | 2005 10 20 | 644 | 0.0 | 0.2+ | |
| 2000 10 07 | 699 | (3.1− | 1.3+) | 2002 02 06 | 704 | 0.1− | 0.3− | 2005 10 20 | 644 | 0.1− | 0.8+ | |
| 2000 10 07 | 699 | 0.5− | 1.0+ | 2002 02 06 | 704 | 0.5+ | 0.6+ | 2005 10 20 | 644 | 0.5− | 0.6+ | |
| 2000 10 07 | 699 | 1.2− | 1.0+ | 2002 02 07 | 704 | 0.3− | 0.9+ | 2005 10 22 | 703 | 0.1− | 0.4+ | |
| 2002 01 09 | 704 | 0.5+ | 0.3− | 2002 02 07 | 704 | 0.1+ | 0.7+ | 2005 10 22 | 703 | 0.8+ | 0.4+ | |
| 2002 01 09 | 704 | 0.9+ | 0.4− | 2002 02 07 | 704 | 1.0− | 0.6+ | 2005 10 22 | 703 | 0.6− | 0.8+ | |
| 2002 01 09 | 704 | 0.7+ | 0.4− | 2002 02 12 | 704 | 0.2+ | 0.7+ | 2005 10 22 | 703 | 0.1− | 1.2+ | |
| 2002 01 09 | 704 | 0.3+ | 0.1− | 2002 02 12 | 704 | (1.5− | 0.7+) | 2005 10 29 | G96 | 0.9− | 1.3+ | |
| 2002 01 09 | 704 | 0.8+ | 0.5+ | 2002 02 12 | 704 | 0.4− | 0.4+ | 2005 10 29 | G96 | 0.2− | 0.0 | |
| 2002 01 14 | 704 | 0.4+ | 0.1− | 2002 02 12 | 704 | 0.3− | 0.6+ | 2005 10 29 | G96 | 0.3− | 0.0 | |
| 2002 01 14 | 704 | 1.1− | 0.5− | 2002 02 12 | 704 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.3− | |
| 2002 01 14 | 704 | 0.7− | 0.4− | 2003 04 01 | 695 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.5− | 0.4− | |
| 2002 01 14 | 704 | 0.4+ | 0.7− | 2003 04 01 | 695 | 0.6− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.1− | |
| 2002 01 14 | 704 | 0.0 | 0.9− | 2003 04 29 | 691 | 0.2+ | 1.0+ | 2006 10 22 | G96 | 0.1− | 0.6− | |
| 2002 01 20 | 699 | 0.5+ | 0.8+ | 2003 04 29 | 691 | 0.9+ | 1.2+ | 2006 11 15 | G96 | 0.3+ | 0.5− | |
| 2002 01 20 | 699 | 1.2+ | 0.7+ | 2003 04 29 | 691 | 0.4+ | 1.1+ | 2006 11 15 | G96 | 0.2− | 0.3+ | |
| 2002 01 20 | 699 | 0.0 | 1.1+ | 2005 10 01 | 691 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.1− | |
| 2002 01 20 | 699 | 0.2− | 0.8+ | 2005 10 01 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.3− | |
| 2002 01 25 | 704 | 0.8+ | 0.1− | 2005 10 01 | 691 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.1− | |
| 2002 01 25 | 704 | 0.1+ | 0.6+ | 2005 10 07 | 703 | 0.5− | 1.0− | 2006 12 01 | G96 | 0.2− | 0.2− | |
| 2002 01 25 | 704 | 0.3− | 0.1+ | 2005 10 07 | 703 | 1.4− | 0.2+ | 2006 12 01 | G96 | 0.7− | 0.3− | |
| 2002 01 25 | 704 | 0.4− | 0.8− | 2005 10 07 | 703 | 0.0 | 1.0+ | 2006 12 01 | G96 | 0.0 | 0.1− | |
| 2002 02 06 | 704 | 0.0 | 0.3− | 2005 10 07 | 703 | 1.5+ | 0.3+ | | | | | |

**(141392)∗ 2002 AO$_{108}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.13587 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18128458 | $\omega$ | 75.35510 | | −0.13916590 | −0.99019646 | |
| $a$ | 3.0919240 | $\Omega$ | 22.65494 | | +0.89615156 | −0.13108289 | |
| $e$ | 0.2226845 | $i$ | 1.78415 | | +0.42136117 | −0.04825183 | |
| $P$ | 5.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 18 | 599 | 0.2− | 0.4− | 2002 02 10 | 704 | 0.6+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− | |
| 1997 03 18 | 599 | 0.1− | 0.4− | 2002 02 10 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 704 | 0.6− | 0.3+ | |
| 2000 09 24 | 704 | (2.4− | 3.3−) | 2002 02 12 | 704 | 0.3+ | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.4− | |
| 2000 09 24 | 704 | 0.4− | 0.3− | 2002 02 12 | 704 | 0.0 | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.0 | |
| 2000 09 24 | 704 | (0.1− | 2.9+) | 2002 02 12 | 704 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2− | |
| 2000 10 01 | 704 | 0.0 | 1.0+ | 2002 02 12 | 704 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | |
| 2000 10 01 | 704 | 0.3− | 1.2+ | 2002 02 12 | 704 | 0.1+ | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.0 | |
| 2000 10 01 | 704 | 0.4− | 1.6+ | 2002 02 20 | 704 | 0.8+ | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.0 | |
| 2000 10 01 | 704 | 0.8− | 1.8+ | 2002 02 20 | 704 | 0.7+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1− | |
| 2002 01 06 | 644 | 0.2+ | 0.7− | 2002 02 20 | 704 | (1.5+ | 0.1−) | 2006 11 11 | 703 | 0.9− | 0.2+ | |
| 2002 01 06 | 644 | 0.9+ | 0.7− | 2003 05 24 | 691 | (0.1+ | 2.6+) | 2006 11 11 | 703 | 0.7− | 0.1− | |
| 2002 01 06 | 644 | 0.0 | 0.8− | 2003 05 24 | 691 | (0.3+ | 2.3+) | 2006 11 11 | 703 | 0.5− | 0.2+ | |
| 2002 01 09 | 704 | 0.3− | 0.3+ | 2003 05 24 | 691 | (0.2+ | 2.2+) | 2006 11 11 | 703 | 0.1+ | 0.1+ | |
| 2002 01 09 | 704 | 0.2+ | 0.2+ | 2003 06 01 | 691 | 0.3+ | 0.8+ | 2006 11 14 | 691 | 0.1− | 0.1− | |
| 2002 01 09 | 704 | 0.4− | 0.8+ | 2003 06 01 | 691 | 0.0 | 0.6+ | 2006 11 14 | 691 | 0.1+ | 0.2− | |
| 2002 01 09 | 704 | 0.4− | 0.4+ | 2003 06 01 | 691 | 0.5+ | 0.5+ | 2006 11 14 | 691 | 0.1− | 0.2− | |
| 2002 01 09 | 704 | 0.6− | 0.5+ | 2005 07 12 | G96 | 0.7− | 0.3+ | 2006 11 17 | 704 | 0.8− | 1.1+ | |
| 2002 01 13 | 608 | 0.1− | 0.7+ | 2005 07 12 | G96 | 0.7− | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.6+ | |
| 2002 01 13 | 608 | 0.4− | 1.3+ | 2005 07 12 | G96 | 0.8− | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.5+ | |
| 2002 01 13 | 608 | 0.5− | 1.0+ | 2005 07 12 | G96 | 0.7− | 0.4+ | 2006 11 17 | 704 | 0.7+ | 0.2− | |
| 2002 01 14 | 704 | 0.2− | 0.1− | 2005 08 04 | 644 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.3+ | |
| 2002 01 14 | 704 | 0.0 | 0.3− | 2005 08 04 | 644 | 0.4− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1− | |
| 2002 01 14 | 704 | 0.1− | 0.3− | 2005 08 04 | 644 | 0.4− | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.3− | |
| 2002 01 14 | 704 | 0.3+ | 0.4− | 2005 08 05 | 644 | 0.1+ | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.2− | |
| 2002 01 14 | 704 | 0.1+ | 0.7− | 2005 08 05 | 644 | 0.1+ | 1.0+ | 2006 11 18 | 704 | 0.1− | 0.2+ | |
| 2002 01 20 | 699 | 0.0 | 0.2+ | 2005 08 05 | 644 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.3+ | |
| 2002 01 20 | 699 | 0.4+ | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | |
| 2002 01 20 | 699 | 0.2+ | 0.3+ | 2005 08 27 | 644 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.8+ | 0.1+ | |
| 2002 01 20 | 699 | 0.1+ | 0.5+ | 2005 08 27 | 644 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.2+ | 0.4+ | |
| 2002 01 21 | 704 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 1.0+ | 0.0 | |
| 2002 01 21 | 704 | 0.9− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 1.1+ | 0.1+ | |
| 2002 01 21 | 704 | (0.6− | 1.6+) | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.6+ | |
| 2002 01 21 | 704 | (1.8− | 0.0 ) | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.1+ | |
| 2002 01 21 | 704 | 0.6+ | 0.8− | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.1− | |
| 2002 02 07 | 704 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.3+ | 0.6+ | |
| 2002 02 07 | 704 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.3+ | 2006 11 27 | 704 | 0.0 | 0.2− | |
| 2002 02 07 | 704 | 0.9− | 0.6+ | 2006 10 17 | G96 | 0.6− | 0.2− | 2006 11 27 | 704 | 0.1+ | 0.3+ | |
| 2002 02 07 | 704 | 0.3− | 1.0+ | 2006 10 28 | 704 | 0.1+ | 1.4+ | 2006 12 01 | 704 | 0.6− | 0.5− | |
| 2002 02 07 | 704 | 0.0 | 1.2+ | 2006 10 28 | 704 | 0.3− | 0.3+ | 2006 12 01 | 704 | 1.2− | 0.1− | |
| 2002 02 10 | 704 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 12 01 | 704 | 0.4− | 0.7+ | |
| 2002 02 10 | 704 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 12 01 | 704 | 0.7− | 0.2− | |
| 2002 02 10 | 704 | 0.6+ | 0.2− | 2006 10 28 | 704 | (0.5− | 2.5+) | 2006 12 01 | 704 | 0.1− | 0.2− | |

**(141393)∗ 2002 AU$_{108}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.29025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19716306 | $\omega$ | 319.38889 | | +0.77603382 | −0.62858656 | |
| $a$ | 2.9236072 | $\Omega$ | 79.63246 | | +0.59135436 | +0.69682620 | |
| $e$ | 0.0959077 | $i$ | 3.00006 | | +0.21925221 | +0.34541595 | |
| $P$ | 5.00 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.0 | 0.2+ | 2002 02 07 | 704 | 0.3+ | 0.6+ | 2005 10 07 | 703 | (0.9− | 2.2−) |
| 1995 10 26 | 691 | 0.1+ | 0.2− | 2002 02 07 | 704 | (0.4+ | 1.6+) | 2005 10 07 | 703 | (1.6+ | 1.5−) |
| 1995 10 26 | 691 | 0.1+ | 0.3− | 2002 02 07 | 704 | 0.8+ | 0.2+ | 2005 10 11 | A50 | (0.7− | 1.6−) |
| 2000 10 02 | 704 | 0.8− | 0.5− | 2002 02 10 | 704 | 0.4− | 0.1− | 2005 10 11 | A50 | 0.2− | 0.1− |
| 2000 10 02 | 704 | 0.4+ | 1.2+ | 2002 02 10 | 704 | 1.3− | 0.1− | 2005 10 20 | 644 | 0.3+ | 0.2− |
| 2000 10 02 | 704 | 0.1− | 0.5− | 2002 02 10 | 704 | 0.4− | 0.0 | 2005 10 20 | 644 | 0.0 | 0.4+ |
| 2000 10 02 | 704 | 0.7+ | 1.7+ | 2002 02 10 | 704 | 1.1− | 0.8+ | 2005 10 20 | 644 | 0.5+ | 0.2− |
| 2000 10 02 | 704 | 0.9− | 0.6+ | 2002 02 12 | 704 | (0.5− | 1.6−) | 2005 10 22 | 703 | 0.8− | 0.1+ |
| 2000 11 30 | 691 | 0.1− | 0.2− | 2002 02 12 | 704 | 0.3− | 0.8− | 2005 10 22 | 703 | 0.2+ | 0.4+ |
| 2000 11 30 | 691 | 0.1− | 0.2− | 2002 02 12 | 704 | 0.2− | 1.2− | 2005 10 22 | 703 | 0.3− | 1.1+ |
| 2000 11 30 | 691 | 0.0 | 0.2− | 2002 02 12 | 704 | 0.1+ | 1.2− | 2005 10 22 | 703 | 0.5− | 0.8+ |
| 2002 01 09 | 704 | 0.7+ | 0.6+ | 2002 02 12 | 704 | 0.4− | 1.0− | 2005 10 28 | 703 | 0.1− | 0.8+ |
| 2002 01 09 | 704 | 1.2+ | 0.0 | 2003 04 29 | 691 | 0.1− | 0.5+ | 2005 10 28 | 703 | 0.1− | 1.5+ |
| 2002 01 09 | 704 | 0.3+ | 0.9+ | 2003 04 29 | 691 | 0.3+ | 0.4+ | 2005 10 28 | 703 | 0.3− | 0.3− |
| 2002 01 09 | 704 | 1.2+ | 0.5+ | 2003 04 29 | 691 | 0.4+ | 0.7+ | 2005 10 28 | 703 | 1.1− | 0.3− |
| 2002 01 09 | 704 | 0.6+ | 0.4− | 2005 09 24 | 703 | 1.4− | 0.3+ | 2005 10 30 | G96 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.4− | 0.6+ | 2005 09 24 | 703 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.2− | 0.5+ | 2005 09 24 | 703 | 0.9− | 0.3− | 2005 10 30 | G96 | 0.3+ | 0.1− |
| 2002 01 14 | 704 | 0.1− | 0.9+ | 2005 09 24 | 703 | 1.1− | 0.7− | 2005 10 30 | G96 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.1+ | 1.4+ | 2005 10 01 | 704 | 0.8+ | 1.5+ | 2006 10 04 | G96 | 0.9− | 0.6− |
| 2002 01 14 | 704 | 0.1+ | 1.1+ | 2005 10 01 | 704 | 0.9+ | 1.0+ | 2006 10 04 | G96 | 0.3− | 0.7− |
| 2002 01 21 | 704 | 0.1− | 0.5+ | 2005 10 01 | 704 | 0.3− | 1.4+ | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2002 01 21 | 704 | 0.1+ | 0.3− | 2005 10 01 | 704 | 0.3+ | 0.3− | 2006 10 04 | G96 | 0.4+ | 0.7− |
| 2002 01 21 | 704 | 1.3+ | 0.7+ | 2005 10 01 | 704 | 0.9+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2002 01 21 | 704 | 0.0 | 0.7− | 2005 10 05 | 704 | (0.2+ | 2.4+) | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2002 01 21 | 704 | 0.3+ | 0.1− | 2005 10 05 | 704 | 1.4+ | 0.6+ | 2006 10 23 | G96 | 0.3− | 0.8− |
| 2002 02 04 | 644 | 0.2+ | 0.4+ | 2005 10 05 | 704 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 02 04 | 644 | 0.1+ | 0.4+ | 2005 10 05 | 704 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.9− |
| 2002 02 04 | 644 | 0.2+ | 0.1+ | 2005 10 07 | 703 | 0.6− | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2002 02 07 | 704 | 0.0 | 0.3+ | 2005 10 07 | 703 | 0.2− | 0.6− | 2006 11 16 | G96 | 0.7− | 0.1− |

**(141394)∗ 2002 AS$_{109}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.34105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16515489 | $\omega$ | 134.19852 | | +0.10111188 | −0.99451933 | |
| $a$ | 3.2900949 | $\Omega$ | 309.97921 | | +0.90259394 | +0.10294711 | |
| $e$ | 0.1276474 | $i$ | 1.98951 | | +0.41845019 | +0.01825374 | |
| $P$ | 5.97 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.5+ | 0.9− | 2002 02 10 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 01 09 | 704 | 0.5+ | 1.3− | 2002 02 10 | 704 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 01 09 | 704 | 1.2+ | 1.2− | 2002 02 10 | 704 | 1.1+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 01 09 | 704 | 0.3+ | 1.1− | 2002 02 20 | 704 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2002 01 09 | 704 | 0.2− | 0.8− | 2002 02 20 | 704 | 0.4+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 01 14 | 704 | 0.4+ | 0.1+ | 2002 02 20 | 704 | 0.7+ | 1.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 0.4+ | 0.6− | 2003 05 05 | 691 | 0.4+ | 0.7+ | 2006 11 10 | 644 | 0.2− | 0.7+ |
| 2002 01 14 | 704 | 1.2− | 1.0− | 2003 05 05 | 691 | 0.3+ | 1.3+ | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 0.8+ | 0.2− | 2003 05 05 | 691 | 0.4+ | 0.6+ | 2006 11 10 | 644 | 0.5− | 0.1+ |
| 2002 01 21 | 704 | 0.8+ | 0.9+ | 2005 07 05 | G96 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2002 01 21 | 704 | 0.7+ | 0.2− | 2005 07 05 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2002 01 21 | 704 | 0.1− | 0.7+ | 2005 07 05 | G96 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2002 01 22 | 291 | 0.4− | 0.3+ | 2005 07 05 | G96 | 0.0 | 0.6+ | 2006 11 11 | 703 | (1.9− | 0.2+) |
| 2002 01 22 | 291 | 0.5− | 0.4+ | 2005 07 28 | 644 | 0.3− | 0.8+ | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2002 01 22 | 291 | 0.5− | 0.3+ | 2005 07 28 | 644 | 0.4− | 0.6+ | 2006 11 15 | 691 | 0.3− | 0.1− |
| 2002 02 05 | 644 | 0.0 | 0.3− | 2005 07 28 | 644 | 0.6− | 0.7+ | 2006 11 15 | 691 | 0.5+ | 0.1− |
| 2002 02 05 | 644 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.1− | 0.5+ |
| 2002 02 05 | 644 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2002 02 07 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.1− | 0.3+ |
| 2002 02 07 | 704 | 0.6+ | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 02 07 | 704 | 0.0 | 0.6+ | 2006 10 17 | 691 | 0.4− | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 02 08 | 691 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.6− | 0.3− |
| 2002 02 08 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.4+ | 0.3+ |
| 2002 02 08 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.8+ | 0.2+ |
| 2002 02 10 | 704 | 1.0+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2002 02 10 | 704 | 0.7+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | | | | |

**(141395)∗ 2002 AX$_{128}$**

Discovered 2002 Jan. 14 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.23430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18879799 | $\omega$ | 125.24337 | | −0.49965398 | +0.84848930 | |
| $a$ | 3.0093392 | $\Omega$ | 113.86873 | | −0.84374651 | −0.43115737 | |
| $e$ | 0.1890501 | $i$ | 10.99360 | | −0.19605540 | −0.30687004 | |
| $P$ | 5.22 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 08 | 691 | 0.2− | 0.1+ | 2002 03 19 | 704 | 0.2− | 1.2+ | 2002 06 10 | 704 | 0.0 | 0.0 |
| 1991 02 08 | 691 | 0.2+ | 0.3+ | 2002 03 20 | 704 | 0.3+ | 0.3− | 2002 06 10 | 704 | (1.0+ | 1.7+) |
| 1991 02 08 | 691 | 0.4+ | 0.3+ | 2002 03 20 | 704 | 0.6+ | 0.4− | 2002 06 10 | 704 | (1.6+ | 1.9+) |
| 1999 10 09 | 704 | 0.2+ | 1.2+ | 2002 03 20 | 704 | 0.6+ | 0.4− | 2002 06 10 | 704 | 1.0+ | 0.2+ |
| 1999 10 09 | 704 | 1.5− | 0.3+ | 2002 03 20 | 704 | 0.5+ | 0.0 | 2003 07 02 | 704 | 0.2+ | 0.8+ |
| 1999 10 09 | 704 | 0.8− | 1.1+ | 2002 03 20 | 704 | 0.6+ | 0.2− | 2003 07 02 | 704 | 0.2+ | 0.8+ |
| 2002 01 14 | 333 | 0.4− | 0.2+ | 2002 03 31 | 644 | 0.8− | 0.1+ | 2003 07 02 | 704 | 0.8+ | 0.1− |
| 2002 01 14 | 333 | 0.5− | 0.6− | 2002 03 31 | 644 | 0.6− | 0.1+ | 2003 07 02 | 608 | 0.1− | 0.2− |
| 2002 01 14 | 333 | 0.3+ | 0.1+ | 2002 03 31 | 644 | 0.5− | 0.3+ | 2003 07 02 | 608 | 0.5+ | 0.5− |
| 2002 01 19 | 333 | 1.5− | 0.1+ | 2002 04 11 | 644 | 0.4− | 0.2− | 2003 07 02 | 608 | 0.2− | 0.6− |
| 2002 01 19 | 333 | 0.9− | 0.1− | 2002 04 11 | 644 | 0.0 | 0.2− | 2003 07 10 | 608 | 0.1+ | 0.7+ |
| 2002 01 19 | 333 | 0.3− | 0.6− | 2002 04 11 | 699 | 0.4− | 0.4+ | 2003 07 10 | 608 | 0.5− | 1.4+ |
| 2002 02 09 | 699 | 0.1− | 0.7+ | 2002 04 11 | 644 | 0.2− | 0.2− | 2003 07 10 | 608 | 0.2− | 1.1+ |
| 2002 02 09 | 699 | 0.6− | 0.1+ | 2002 04 11 | 699 | 0.1− | 0.2+ | 2003 07 23 | 704 | 0.0 | 0.0 |
| 2002 02 09 | 699 | (1.7+ | 1.5+) | 2002 04 11 | 699 | 0.7− | 0.2− | 2003 07 23 | 704 | 0.3+ | 0.8+ |
| 2002 02 09 | 699 | 0.7+ | 0.3+ | 2002 04 11 | 699 | 0.5− | 0.2+ | 2003 07 23 | 704 | 0.7− | 0.2− |
| 2002 02 10 | 704 | 0.2− | 0.7− | 2002 04 17 | 704 | 0.5− | 0.4+ | 2003 07 23 | 704 | 0.3− | 0.2+ |
| 2002 02 10 | 704 | 0.3− | 0.3− | 2002 04 17 | 704 | 0.3− | 0.2+ | 2003 07 23 | 704 | 0.3− | 0.1+ |
| 2002 02 10 | 704 | 0.1+ | 0.1− | 2002 04 17 | 704 | 0.3− | 0.4+ | 2005 12 01 | 691 | 0.1− | 0.2+ |
| 2002 02 10 | 704 | 0.2+ | 0.7− | 2002 04 17 | 704 | 0.4− | 0.2+ | 2005 12 01 | 691 | 0.1− | 0.2+ |
| 2002 02 10 | 704 | 0.7− | 0.5− | 2002 04 17 | 704 | 0.4− | 0.5+ | 2005 12 01 | 691 | 0.1+ | 0.2+ |
| 2002 03 10 | 644 | 0.6+ | 0.1+ | 2002 05 06 | 644 | 0.1+ | 0.3− | 2006 02 01 | G96 | 0.2− | 0.1− |
| 2002 03 10 | 644 | 0.5+ | 0.1− | 2002 05 06 | 644 | 0.6+ | 0.4+ | 2006 02 01 | G96 | 0.0 | 0.1− |
| 2002 03 10 | 644 | 0.3+ | 0.0 | 2002 05 06 | 644 | 0.4+ | 0.2+ | 2006 02 01 | G96 | 0.3− | 0.0 |
| 2002 03 10 | 608 | 0.4− | 0.0 | 2002 05 06 | 704 | (1.7+ | 0.1−) | 2006 02 01 | G96 | 0.1− | 0.1− |
| 2002 03 10 | 608 | 0.0 | 0.2− | 2002 05 06 | 704 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 03 10 | 608 | 0.4− | 0.1− | 2002 05 06 | 704 | 0.5+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 03 18 | 608 | 0.8+ | 1.2+ | 2002 05 14 | 704 | 0.1+ | 0.9+ | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 03 18 | 608 | 1.0+ | 1.3+ | 2002 05 14 | 704 | 0.3+ | 0.5+ | 2006 11 28 | 691 | 0.3+ | 0.7− |
| 2002 03 18 | 608 | 0.4+ | 1.4+ | 2002 05 14 | 704 | 0.4− | 0.7+ | 2006 11 28 | 691 | 0.1+ | 0.2− |
| 2002 03 19 | 704 | 0.5+ | 0.4+ | 2002 05 28 | 608 | 0.1− | 1.3− | 2006 11 28 | 691 | 0.0 | 0.1− |
| 2002 03 19 | 704 | 0.5+ | 0.7+ | 2002 05 28 | 608 | 0.0 | 0.9− | | | | |
| 2002 03 19 | 704 | 0.5+ | 1.0+ | 2002 05 28 | 608 | 0.4− | 1.1− | | | | |

**(141396)∗ 2002 AC$_{129}$**

Discovered 2002 Jan. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.54349 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29510456 | $\omega$ | 122.33408 | | −0.12249364 | +0.94693973 | |
| $a$ | 2.2343546 | $\Omega$ | 137.27297 | | −0.99210729 | −0.10874548 | |
| $e$ | 0.2362093 | $i$ | 25.97335 | | −0.02680362 | −0.30245590 | |
| $P$ | 3.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 25 | 699 | 0.4− | 0.9− | 2002 02 08 | 608 | 0.0 | 0.3− | 2002 02 13 | 704 | 0.2− | 0.9+ |
| 1999 03 25 | 699 | 0.2− | 0.3− | 2002 02 08 | 608 | 0.1− | 0.1− | 2002 02 13 | 704 | 0.2− | 0.5+ |
| 1999 03 25 | 699 | 0.4+ | 0.3− | 2002 02 09 | 691 | 0.3− | 0.0 | 2002 02 20 | 704 | 0.0 | 0.0 |
| 1999 04 09 | 704 | 0.2− | 0.3+ | 2002 02 09 | 691 | 0.2− | 0.0 | 2002 02 20 | 704 | 0.0 | 0.1+ |
| 1999 04 09 | 704 | (2.2− | 1.9+) | 2002 02 09 | 691 | 0.2− | 0.0 | 2002 02 20 | 704 | 0.2− | 0.1− |
| 1999 04 09 | 704 | 0.4+ | 0.9− | 2002 02 09 | 333 | 0.2+ | 1.1− | 2002 02 20 | 704 | 0.2− | 0.5− |
| 1999 04 09 | 704 | 1.4− | 0.4+ | 2002 02 09 | 333 | 1.6+ | 0.3− | 2002 02 20 | 704 | 0.1− | 0.4− |
| 1999 04 09 | 704 | 0.9+ | 0.2+ | 2002 02 09 | 333 | 0.3+ | 0.3+ | 2002 03 06 | 704 | 0.1+ | 1.2+ |
| 2002 01 13 | 704 | 0.8+ | 1.4− | 2002 02 09 | 333 | 0.3+ | 0.4− | 2002 03 06 | 704 | 1.1− | 1.2+ |
| 2002 01 13 | 704 | (0.4+ | 2.1−) | 2002 02 09 | 333 | 0.6− | 0.2− | 2002 03 06 | 704 | 0.1− | 0.6+ |
| 2002 01 13 | 704 | 0.4+ | 1.4− | 2002 02 09 | 333 | 0.6− | 0.3− | 2002 03 06 | 704 | 0.4+ | 1.0+ |
| 2002 01 13 | 704 | (0.1+ | 2.0−) | 2002 02 09 | 333 | 0.3− | 0.6− | 2002 03 06 | 704 | 0.4+ | 1.7+ |
| 2002 01 13 | 704 | (0.3− | 2.1−) | 2002 02 09 | 333 | 0.3− | 0.7− | 2003 09 28 | 699 | 0.6− | 0.7+ |
| 2002 01 19 | 704 | 0.2− | 0.3− | 2002 02 09 | 333 | 0.2+ | 0.0 | 2003 09 28 | 699 | 0.9+ | 0.2+ |
| 2002 01 19 | 704 | 0.3− | 0.2− | 2002 02 10 | 333 | 0.8− | 1.0− | 2003 09 28 | 699 | 1.2+ | 0.3+ |
| 2002 01 19 | 704 | 0.5− | 0.5− | 2002 02 10 | 333 | 0.4+ | 1.2− | 2003 09 28 | 699 | 1.2− | 1.2− |
| 2002 01 19 | 704 | 1.0− | 0.5− | 2002 02 10 | 704 | 0.0 | 0.1+ | 2006 07 24 | 151 | 0.6+ | 0.2+ |
| 2002 01 22 | 704 | 0.3− | 0.3+ | 2002 02 10 | 704 | 1.2+ | 0.0 | 2006 07 24 | 151 | 0.4+ | 0.2+ |
| 2002 01 22 | 704 | 0.5+ | 0.3+ | 2002 02 10 | 333 | 0.7+ | 0.8− | 2006 07 24 | 151 | 0.2+ | 0.1+ |
| 2002 01 22 | 704 | 0.4+ | 0.1+ | 2002 02 10 | 333 | 0.3− | 0.7− | 2006 08 29 | 704 | 1.1− | 0.4− |
| 2002 01 22 | 704 | 0.8+ | 0.4− | 2002 02 10 | 704 | 1.1+ | 0.3− | 2006 08 29 | 704 | 1.0− | 0.5+ |
| 2002 01 26 | 644 | 0.6+ | 0.2+ | 2002 02 10 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 704 | 0.8− | 0.5+ |
| 2002 01 26 | 644 | 0.4+ | 0.4+ | 2002 02 10 | 333 | 0.1+ | 1.6− | 2006 08 29 | 704 | 1.5− | 0.3+ |
| 2002 01 26 | 644 | 0.4+ | 0.6− | 2002 02 10 | 704 | 1.2+ | 0.9− | 2006 09 08 | 644 | 0.0 | 0.3+ |
| 2002 02 05 | 644 | 0.3+ | 0.5+ | 2002 02 10 | 333 | 0.5− | 0.3+ | 2006 09 08 | 644 | 0.1− | 0.3− |
| 2002 02 05 | 644 | 0.2− | 0.6+ | 2002 02 12 | 691 | 0.3− | 0.2+ | 2006 09 08 | 644 | 0.6+ | 0.4+ |
| 2002 02 05 | 644 | 0.4+ | 0.4+ | 2002 02 12 | 704 | 0.6+ | 0.3+ | 2006 09 08 | 644 | 0.3+ | 0.1+ |
| 2002 02 07 | 704 | 0.3+ | 0.3+ | 2002 02 12 | 704 | 0.6+ | 0.1+ | 2006 09 08 | 644 | 0.5+ | 0.1+ |
| 2002 02 07 | 704 | 0.3+ | 0.6+ | 2002 02 12 | 691 | 0.3− | 0.7+ | 2006 09 08 | 644 | 0.9+ | 0.0 |
| 2002 02 07 | 704 | 0.1− | 0.2+ | 2002 02 12 | 704 | 0.5+ | 0.6+ | 2006 09 14 | 644 | 0.2+ | 0.1− |
| 2002 02 07 | 704 | 0.0 | 0.2+ | 2002 02 12 | 691 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.1+ |
| 2002 02 07 | 704 | 0.1+ | 0.5+ | 2002 02 12 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 644 | 0.1+ | 0.1+ |
| 2002 02 08 | 333 | 0.6− | 0.2+ | 2002 02 12 | 704 | 0.6+ | 0.2+ | 2006 09 15 | 644 | 0.4+ | 0.2+ |
| 2002 02 08 | 333 | 0.2+ | 0.8+ | 2002 02 13 | 704 | 0.1− | 0.6+ | 2006 09 15 | 644 | 0.6+ | 0.1− |
| 2002 02 08 | 333 | 0.8− | 0.2− | 2002 02 13 | 704 | 0.4− | 0.0 | 2006 09 15 | 644 | 0.0 | 0.0 |
| 2002 02 08 | 608 | 0.2− | 0.3− | 2002 02 13 | 704 | 0.5− | 0.1+ | | | | |

**(141397)∗ 2002 AS$_{129}$**

Discovered 2002 Jan. 15 by J. V. McClusky at Kingsnake Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 353.67150 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.17781667 | $\omega$ | 4.43817 | | | +0.76744201 | | −0.59545855 | |
| $a$ | 3.1319951 | $\Omega$ | 35.78477 | | | +0.57499828 | | +0.47534532 | |
| $e$ | 0.1689681 | $i$ | 23.97652 | | | +0.28356611 | | +0.64766963 | |
| $P$ | 5.54 | $H$ | 14.5 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 23 | 691 | 1.0+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 1998 05 23 | 691 | 1.5+ | 1.2+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 1998 05 23 | 691 | 0.7+ | 1.3+ | 2006 09 22 | 224 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.5− |
| 2000 09 20 | 704 | 0.4+ | 0.6− | 2006 09 22 | 224 | 0.4+ | 0.3− | 2006 11 14 | 703 | 0.0 | 0.5− |
| 2000 09 20 | 704 | 0.4+ | 0.1− | 2006 09 22 | 224 | 0.3+ | 0.7+ | 2006 11 14 | 703 | 0.3− | 0.2− |
| 2000 09 20 | 704 | 0.2− | 0.5+ | 2006 09 22 | 699 | 0.6+ | 0.0 | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2000 09 20 | 704 | (0.1+ | 2.6+) | 2006 09 22 | 699 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.9− |
| 2000 10 18 | 699 | 1.4− | 1.6− | 2006 09 22 | 699 | 1.1+ | 0.6+ | 2006 11 14 | 703 | 0.4− | 0.7− |
| 2000 10 18 | 699 | 0.6− | 0.3+ | 2006 09 22 | 699 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2000 10 18 | 699 | 0.7+ | 1.6+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.1− | 0.1− |
| 2000 10 18 | 699 | 0.1+ | 0.9− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.0 | 0.2− |
| 2002 01 12 | 699 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.7− | 0.0 |
| 2002 01 12 | 699 | 0.5+ | 0.7− | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.6+ |
| 2002 01 12 | 699 | 0.2+ | 0.6− | 2006 09 27 | 704 | 0.4− | 0.2+ | 2006 11 17 | 704 | (0.0 | 1.8+) |
| 2002 01 12 | 699 | 0.2+ | 0.6− | 2006 09 27 | 704 | 0.0 | 0.6+ | 2006 11 17 | 704 | (2.4− | 0.7+) |
| 2002 01 15 | 446 | 0.6− | 0.9− | 2006 09 27 | 704 | 0.4+ | 1.2+ | 2006 11 17 | 704 | 1.0+ | 0.3+ |
| 2002 01 15 | 446 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.2− |
| 2002 01 15 | 446 | 1.3− | 0.4− | 2006 09 27 | 704 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 1.0+ | 0.4+ |
| 2002 01 20 | 446 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2002 01 20 | 446 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2002 01 20 | 446 | 1.1+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2002 02 06 | 704 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 02 06 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 1.1+ | 0.5+ |
| 2002 02 06 | 704 | 0.5− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2002 02 06 | 704 | 0.3− | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2002 02 06 | 704 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2002 02 07 | 446 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.7+ |
| 2002 03 04 | 446 | 0.9− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2002 03 04 | 446 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2002 03 04 | 446 | 0.4+ | 0.7− | 2006 10 20 | 691 | 0.7− | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2002 03 05 | 446 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2003 04 05 | 699 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2003 04 05 | 699 | (1.6− | 0.0 ) | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2003 04 05 | 699 | (0.3− | 1.6+) | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.3− |
| 2003 04 05 | 699 | 0.7− | 1.3+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.4− |
| 2006 09 16 | 703 | 1.1− | 0.6− | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.5+ |
| 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 10 29 | 704 | 0.6− | 0.5+ | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2006 09 16 | 703 | 0.1− | 0.5− | 2006 10 29 | 704 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 704 | 1.5+ | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.7+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2006 09 17 | 704 | 0.5+ | 0.8− | 2006 10 29 | 704 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2006 09 17 | 704 | 0.8+ | 0.7− | 2006 10 29 | 704 | (0.1− | 1.9+) | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2006 09 17 | 704 | 0.1− | 0.1+ | 2006 11 01 | H07 | (1.6− | 1.2+) | 2006 11 23 | 703 | 0.8− | 0.5− |
| 2006 09 20 | 704 | 0.1− | 0.4+ | 2006 11 01 | H07 | 1.2− | 0.4+ | 2006 11 23 | 703 | 0.3− | 0.7− |
| 2006 09 20 | 704 | (1.8− | 0.5+) | 2006 11 01 | H07 | 1.1− | 0.4− | 2006 11 23 | 703 | 0.3− | 0.7− |
| 2006 09 20 | 704 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.1+ | 0.3− |
| 2006 09 20 | 704 | 0.3+ | 1.2+ | 2006 11 08 | 644 | 0.0 | 0.0 | | | | |
| 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.0 | | | | |

**(141398)∗ 2002 AV$_{129}$ = 1998 RK$_4$**

Discovered 2002 Jan. 15 by J. V. McClusky at Kingsnake Observatory.

Id. M. E. Sansaturio (*MPO* 27406)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 308.55953 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.37005572 | $\omega$ | 71.86235 | | | +0.42525432 | | −0.90389586 | |
| $a$ | 1.9214303 | $\Omega$ | 352.46485 | | | +0.63851098 | | +0.33576630 | |
| $e$ | 0.0921704 | $i$ | 20.61145 | | | +0.64145342 | | +0.26501559 | |
| $P$ | 2.66 | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 1.2− | 1.4+ | 2005 03 08 | 699 | (1.6+ | 0.6−) | 2006 09 25 | 683 | 0.3+ | 1.2− |
| 1998 09 14 | 704 | 0.2− | 0.5+ | 2005 03 08 | 699 | 0.6+ | 0.6+ | 2006 09 25 | 683 | 0.9+ | 0.2− |
| 1998 09 14 | 704 | 0.5+ | 0.2− | 2005 03 13 | 703 | 0.5− | 0.1+ | 2006 09 25 | 683 | 0.4− | 0.2+ |
| 1998 09 18 | 704 | 0.8+ | 1.6− | 2005 03 13 | 703 | 1.2− | 0.3− | 2006 09 26 | 683 | 0.1+ | 0.1+ |
| 1998 09 18 | 704 | 0.5+ | 0.6− | 2005 03 13 | 703 | 0.1+ | 0.4− | 2006 09 26 | 683 | 0.1− | 0.1− |
| 1998 09 18 | 704 | 0.8+ | 0.4+ | 2005 03 13 | 703 | 0.8− | 0.2+ | 2006 09 26 | 683 | 0.1+ | 0.0 |
| 1998 09 18 | 704 | 1.1+ | 1.2+ | 2005 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 699 | 0.4+ | 0.8+ |
| 1998 09 18 | 704 | 1.7− | 1.5− | 2005 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 699 | 0.1+ | 0.5− |
| 2002 01 12 | 699 | 0.7+ | 0.5− | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 699 | 0.1+ | 0.1+ |
| 2002 01 12 | 699 | 0.0 | 0.2− | 2005 04 02 | 644 | 0.1+ | 0.6+ | 2006 09 27 | 699 | 0.4+ | 0.1− |
| 2002 01 12 | 699 | 0.2+ | 0.3+ | 2005 04 02 | 644 | 0.3+ | 0.6+ | 2006 09 27 | 683 | 1.2+ | 0.6− |
| 2002 01 12 | 699 | 0.2+ | 0.2− | 2005 04 02 | 644 | 0.6+ | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.3− |
| 2002 01 15 | 446 | 1.4− | 1.2− | 2005 04 09 | 704 | 0.6+ | 0.5− | 2006 09 27 | 683 | 1.1+ | 0.7− |
| 2002 01 15 | 446 | 1.3− | 0.9− | 2005 04 09 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 703 | 0.9− | 0.2− |
| 2002 01 15 | 446 | (1.6− | 1.7−) | 2005 04 09 | 704 | 0.8+ | 0.3− | 2006 09 27 | 703 | 0.1− | 0.6+ |
| 2002 01 20 | 446 | 0.3+ | 0.1+ | 2005 04 09 | 704 | 0.9+ | 0.9− | 2006 09 27 | 683 | 0.7+ | 0.2+ |
| 2002 01 20 | 446 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.9− | 0.4+ | 2006 09 27 | 703 | (1.9− | 0.3−) |
| 2002 01 20 | 446 | 0.7+ | 0.5+ | 2006 08 25 | 704 | (0.0 | 1.6+) | 2006 09 27 | 703 | 0.5− | 0.3+ |
| 2002 02 01 | 704 | 0.1− | 0.6+ | 2006 08 25 | 704 | (0.6− | 1.6+) | 2006 09 27 | 703 | 0.4+ | 1.2− |
| 2002 02 01 | 704 | 0.7− | 0.6− | 2006 08 25 | 704 | 0.2+ | 0.4− | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 2002 02 01 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.1+ |
| 2002 02 01 | 704 | 0.5− | 0.6+ | 2006 08 28 | 703 | (1.6+ | 0.6+) | 2006 10 03 | 704 | 0.2+ | 0.5+ |
| 2002 02 01 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.2− | 0.5+ | 2006 10 03 | 704 | 0.6− | 0.3+ |
| 2002 02 06 | 704 | 0.2+ | 0.1+ | 2006 08 28 | 703 | (1.7− | 0.7−) | 2006 10 03 | 704 | 0.6+ | 0.8+ |
| 2002 02 06 | 704 | 0.7+ | 0.3+ | 2006 09 04 | A13 | 0.7− | 0.5+ | 2006 10 03 | 703 | 0.1+ | 0.3+ |
| 2002 02 06 | 704 | 0.4+ | 0.5+ | 2006 09 04 | A13 | 1.0− | 0.4+ | 2006 10 03 | 703 | 0.5− | 1.2+ |
| 2002 02 06 | 704 | 0.8+ | 0.1− | 2006 09 15 | 704 | 0.4+ | 0.1+ | 2006 10 03 | 703 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 446 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.8− | 2006 10 03 | 703 | 0.4+ | 0.9+ |
| 2002 02 08 | 446 | 0.4+ | 1.4+ | 2006 09 15 | 704 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 02 08 | 446 | (1.4− | 3.6+) | 2006 09 17 | 703 | 0.6− | 0.2− | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2002 02 08 | 446 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.6− | 0.5+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2002 02 17 | 446 | 0.2− | 0.5− | 2006 09 17 | 703 | 1.0− | 0.7+ | 2006 10 20 | 703 | 0.4− | 0.4− |
| 2002 02 17 | 446 | 0.3− | 1.0− | 2006 09 17 | 703 | 0.8− | 0.5+ | 2006 10 20 | 703 | 0.8− | 0.4+ |
| 2002 02 17 | 446 | 0.0 | 0.8− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 20 | 703 | 0.7− | 0.4− |
| 2005 03 04 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 20 | 703 | 0.4+ | 0.1+ |
| 2005 03 04 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 31 | 703 | 0.5− | 0.4− |
| 2005 03 04 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.6+ | 1.0+ | 2006 10 31 | 703 | 0.1− | 0.4+ |
| 2005 03 08 | 699 | (1.6+ | 0.1−) | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 10 31 | 703 | 0.8− | 0.3− |
| 2005 03 08 | 699 | 1.1+ | 0.8− | 2006 09 19 | 699 | 0.0 | 0.7+ | 2006 10 31 | 703 | 0.3− | 0.0 |

**(141399)∗ 2002 AN$_{131}$ = 2000 NS$_{22}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25581)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.01735 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37158433 | $\omega$ | 102.51700 | | −0.77850674 | | +0.49896742 |
| $a$ | 1.9161572 | $\Omega$ | 108.56514 | | −0.60561793 | | −0.75646307 |
| $e$ | 0.0636094 | $i$ | 23.68041 | | +0.16478528 | | −0.42284175 |
| $P$ | 2.65 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 26 | 691 | 0.7+ | 1.0+ | 2002 01 25 | 704 | 0.2− | 0.2− | 2005 05 09 | 704 | (0.2+ | 1.7+) |
| 2000 05 26 | 691 | 0.9+ | 1.1+ | 2002 01 25 | 704 | 0.9+ | 0.2− | 2005 05 09 | 704 | (1.9+ | 0.2−) |
| 2000 05 26 | 691 | 0.9+ | 1.2+ | 2002 01 25 | 704 | 0.1+ | 0.3− | 2005 05 09 | 704 | 0.9+ | 0.5+ |
| 2000 07 07 | 704 | 0.1+ | 1.4+ | 2002 02 02 | 644 | 0.3− | 0.4− | 2005 05 09 | 704 | (0.1− | 1.9−) |
| 2000 07 07 | 704 | 1.3− | 1.4+ | 2002 02 02 | 644 | 0.4− | 0.2− | 2005 05 16 | 703 | 1.1− | 0.1− |
| 2000 07 07 | 704 | (0.9− | 2.4+) | 2002 02 02 | 644 | 0.4− | 0.3− | 2005 05 16 | 703 | 0.3+ | 0.2− |
| 2000 07 07 | 704 | 0.2− | 1.9+ | 2002 02 12 | 644 | 0.5+ | 0.7+ | 2005 05 16 | 703 | 0.8− | 0.2− |
| 2000 07 08 | 608 | 1.4− | 1.8− | 2002 02 12 | 644 | 0.3+ | 0.7+ | 2005 05 16 | 703 | 0.8− | 0.2− |
| 2000 07 08 | 608 | (0.9− | 2.2−) | 2002 02 12 | 644 | 0.4+ | 0.7+ | 2005 06 01 | 703 | 0.2− | 0.2− |
| 2000 07 08 | 608 | 1.7− | 1.9− | 2002 02 19 | 704 | 0.2− | 0.1− | 2005 06 01 | 703 | 0.1− | 0.2+ |
| 2001 12 18 | 644 | 0.4+ | 0.3+ | 2002 02 19 | 704 | 0.6− | 0.1− | 2005 06 01 | 703 | 0.6− | 0.2− |
| 2001 12 18 | 644 | 0.3+ | 0.4+ | 2002 02 19 | 704 | 0.2− | 0.2− | 2005 06 01 | 703 | 0.5− | 0.3− |
| 2001 12 18 | 644 | 0.2+ | 0.3+ | 2002 02 19 | 704 | 0.2+ | 0.2+ | 2005 06 07 | 704 | 1.3+ | 0.8− |
| 2001 12 21 | 704 | 0.1− | 1.1− | 2002 02 21 | 704 | 0.6+ | 0.6+ | 2005 06 07 | 704 | 0.2+ | 0.4+ |
| 2001 12 21 | 704 | 0.8− | 0.3+ | 2002 02 21 | 704 | 0.5+ | 0.4+ | 2005 06 07 | 704 | 0.8+ | 0.0 |
| 2001 12 21 | 704 | 0.7− | 0.1+ | 2002 02 21 | 704 | 0.2+ | 0.3+ | 2005 06 07 | 704 | 0.7+ | 1.1− |
| 2001 12 21 | 704 | 0.6+ | 0.1+ | 2002 02 21 | 704 | 0.6+ | 1.0+ | 2005 06 07 | 704 | (2.0+ | 0.6+) |
| 2001 12 25 | 608 | 0.3+ | 0.5− | 2002 02 21 | 704 | 0.5+ | 0.8+ | 2005 06 08 | 704 | 0.5+ | 0.4+ |
| 2001 12 25 | 608 | 0.0 | 0.8− | 2002 04 02 | 704 | 0.0 | 0.2− | 2005 06 08 | 704 | 1.3+ | 0.1− |
| 2001 12 25 | 608 | 0.5+ | 0.8− | 2002 04 02 | 704 | 0.1+ | 0.3+ | 2005 06 08 | 704 | (2.0+ | 0.2+) |
| 2002 01 08 | 704 | 0.5− | 0.4+ | 2002 04 02 | 704 | 0.0 | 0.1+ | 2005 06 08 | 704 | 1.0+ | 0.4− |
| 2002 01 08 | 704 | 0.5− | 0.4+ | 2005 03 13 | 704 | 0.4− | 1.1+ | 2005 06 08 | 704 | 1.4+ | 0.3− |
| 2002 01 08 | 704 | 0.3− | 0.5+ | 2005 03 13 | 704 | 0.4+ | 0.1− | 2005 07 05 | 703 | 1.0− | 0.1+ |
| 2002 01 08 | 704 | 0.4− | 0.7+ | 2005 03 13 | 704 | 0.3+ | 0.9+ | 2005 07 05 | 703 | 0.9− | 0.3+ |
| 2002 01 08 | 704 | 0.3− | 0.8+ | 2005 03 13 | 704 | 1.0+ | 0.1− | 2005 07 05 | 703 | 1.2− | 0.6− |
| 2002 01 11 | 699 | 1.2− | 0.3+ | 2005 03 13 | 704 | 1.1+ | 0.7− | 2005 07 05 | 703 | 1.0− | 0.0 |
| 2002 01 11 | 699 | 0.2− | 0.2− | 2005 04 19 | 703 | (3.0− | 0.0 ) | 2006 10 30 | 703 | 0.6+ | 0.2+ |
| 2002 01 11 | 699 | 0.3− | 0.0 | 2005 04 19 | 703 | (1.7− | 1.3−) | 2006 10 30 | 703 | 0.5− | 0.2+ |
| 2002 01 11 | 699 | 0.5− | 0.0 | 2005 04 19 | 703 | (0.4− | 1.8−) | 2006 10 30 | 703 | 1.1− | 0.1+ |
| 2002 01 23 | 704 | 0.3− | 1.3+ | 2005 04 19 | 703 | (1.5+ | 2.6−) | 2006 10 30 | 703 | 0.6− | 0.4+ |
| 2002 01 23 | 704 | 0.3+ | 0.6+ | 2005 05 06 | 703 | 0.7− | 0.6+ | 2006 11 23 | 703 | 0.6− | 0.2− |
| 2002 01 23 | 704 | 0.3− | 0.4+ | 2005 05 06 | 703 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.1− | 1.0+ |
| 2002 01 23 | 704 | 0.1+ | 0.3+ | 2005 05 06 | 703 | 0.2− | 0.1− | 2006 11 23 | 703 | 0.5+ | 0.5+ |
| 2002 01 25 | 704 | 0.1+ | 0.1+ | 2005 05 06 | 703 | 0.4− | 0.6− | 2006 11 23 | 703 | 0.9− | 0.7+ |
| 2002 01 25 | 704 | 0.4+ | 0.2− | 2005 05 08 | 704 | 0.4− | 0.1− | 2006 12 01 | 703 | 2.1− | 0.8− |
| 2002 01 25 | 704 | 0.5+ | 0.1− | 2005 05 08 | 704 | 0.9− | 0.3+ | 2006 12 01 | 703 | 0.0 | 1.2+ |
| 2002 01 25 | 704 | 0.0 | 0.3− | 2005 05 08 | 704 | 0.5− | 0.1+ | 2006 12 01 | 703 | 0.0 | 1.4+ |
| 2002 01 25 | 704 | 0.1− | 0.3+ | 2005 05 08 | 704 | 0.2− | 0.3+ | 2006 12 01 | 703 | 1.1+ | 1.3+ |
| 2002 01 25 | 704 | 0.1+ | 0.7− | 2005 05 08 | 704 | 0.3+ | 0.7− | | | | |

**(141400)∗ 2002 AD$_{132}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.93576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18588389 | $\omega$ | 27.25781 | | −0.47486888 | | −0.87504670 |
| $a$ | 3.0407092 | $\Omega$ | 91.22449 | | +0.78938677 | | −0.47062394 |
| $e$ | 0.0363254 | $i$ | 5.38176 | | +0.38906051 | | −0.11316527 |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.5− | 0.2− | 2003 03 25 | 644 | 0.4+ | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 0.0 | 2003 03 25 | 644 | 0.5+ | 0.6+ | 2006 11 02 | 703 | 0.3− | 0.6− |
| 2001 11 20 | 704 | 0.0 | 0.4+ | 2003 03 25 | 644 | 0.2+ | 0.5+ | 2006 11 02 | 703 | 1.1+ | 0.7− |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2005 07 28 | 644 | 0.6− | 0.4+ | 2006 11 02 | 703 | 0.5− | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.5− | 2005 07 28 | 644 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.9− | 0.2+ |
| 2001 12 17 | 704 | 0.7− | 0.2+ | 2005 07 28 | 644 | 0.4− | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.5− |
| 2001 12 17 | 704 | 0.4− | 0.4+ | 2005 08 04 | 644 | 0.0 | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2001 12 18 | 691 | 0.2− | 0.2+ | 2005 08 04 | 644 | 0.2− | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2001 12 18 | 691 | 0.3− | 0.1+ | 2005 08 04 | 644 | 0.0 | 0.6+ | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2001 12 18 | 691 | 0.2− | 0.1+ | 2005 08 05 | 644 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 01 08 | 704 | 0.5+ | 0.2− | 2005 08 05 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 01 08 | 704 | 0.8+ | 0.5+ | 2005 08 05 | 644 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 01 08 | 704 | 0.5+ | 0.4− | 2005 08 30 | 644 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 01 08 | 704 | 0.1− | 0.0 | 2005 08 30 | 644 | 0.5− | 0.5+ | 2006 11 16 | 691 | 0.2+ | 0.5+ |
| 2002 01 15 | 704 | 0.4+ | 0.3+ | 2005 08 30 | 699 | 0.3+ | 0.4− | 2006 11 16 | 691 | 0.0 | 0.5+ |
| 2002 01 15 | 704 | 0.7+ | 0.3+ | 2005 08 30 | 644 | 0.5− | 0.3+ | 2006 11 16 | 691 | 1.2− | 0.3+ |
| 2002 01 15 | 704 | 0.4+ | 0.6+ | 2005 08 30 | 699 | 1.2+ | 0.5+ | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2002 01 15 | 704 | 0.4+ | 0.1+ | 2005 08 30 | 699 | 0.9− | 0.9+ | 2006 11 20 | 704 | 0.2+ | 1.1+ |
| 2003 02 28 | 704 | 0.6− | 0.7+ | 2005 08 30 | 699 | 1.3+ | 0.6+ | 2006 11 20 | 704 | 0.4+ | 0.7+ |
| 2003 02 28 | 704 | 0.1+ | 0.2+ | 2005 08 31 | 644 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.1+ | 1.2+ |
| 2003 02 28 | 704 | (1.7− | 0.8−) | 2005 08 31 | 644 | 0.4− | 0.3+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2003 02 28 | 704 | 0.1+ | 0.9+ | 2005 08 31 | 644 | 0.5− | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2003 03 11 | 644 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2003 03 11 | 644 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.3− | 0.4− |
| 2003 03 11 | 644 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.3− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2003 03 25 | 644 | 0.5+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.2− |
| 2003 03 25 | 644 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.4+ | 0.2+ | | | | |
| 2003 03 25 | 644 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.3+ | 0.2− | | | | |

**(141401)∗ 2002 AD$_{134}$**

Discovered 2002 Jan. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.08226 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18399770 | $\omega$ | 339.21212 | | +0.61174167 | | −0.79100703 |
| $a$ | 3.0614543 | $\Omega$ | 73.07126 | | +0.72709476 | | +0.55778760 |
| $e$ | 0.0575875 | $i$ | 0.53573 | | +0.31161728 | | +0.25135808 |
| $P$ | 5.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.1+ | 1.1+ | 2002 01 09 | 704 | 0.5+ | 1.3+ | 2005 10 01 | G96 | 0.0 | 0.2+ |
| 2000 10 01 | 704 | 0.8− | 0.9+ | 2002 01 09 | 704 | 0.3+ | 0.6+ | 2005 10 01 | G96 | 0.0 | 0.2+ |
| 2000 10 01 | 704 | 0.4+ | 0.8+ | 2002 01 15 | 704 | 0.0 | 0.1+ | 2005 10 01 | G96 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.3+ | 2002 01 15 | 704 | 0.1+ | 0.1− | 2006 11 15 | 703 | 1.4+ | 0.3− |
| 2000 10 01 | 704 | 0.3+ | 0.2+ | 2002 01 15 | 704 | 0.2+ | 0.8+ | 2006 11 15 | 703 | 0.8− | 0.1+ |
| 2000 11 20 | 691 | 0.1− | 0.0 | 2003 03 24 | 691 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.7− | 0.9− |
| 2000 11 20 | 691 | 0.2− | 0.3− | 2003 03 24 | 691 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.7+ |
| 2000 11 20 | 691 | 0.0 | 0.3− | 2003 03 24 | 691 | 0.1+ | 0.8+ | 2006 11 15 | 691 | 0.2+ | 0.8− |
| 2001 12 19 | 644 | 0.0 | 0.1+ | 2003 05 01 | 291 | 1.2+ | 0.9+ | 2006 11 15 | 691 | 0.5+ | 0.1+ |
| 2001 12 19 | 644 | 0.1+ | 0.3+ | 2003 05 01 | 291 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.2− | 0.3− |
| 2001 12 19 | 644 | 0.1+ | 0.4+ | 2003 05 01 | 291 | 0.4+ | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 1.1− | 0.4− | 2005 08 28 | 691 | 0.6− | 0.6+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.6− | 0.5+ | 2005 08 28 | 691 | 0.6+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.5− | 1.1+ | 2005 08 28 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2005 09 01 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.4− | 0.3+ |
| 2001 12 19 | 704 | 1.1− | 0.6+ | 2005 09 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 12 20 | 691 | 0.2+ | 0.4− | 2005 09 01 | 691 | 0.4− | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2001 12 20 | 691 | 0.2+ | 0.2− | 2005 09 11 | 691 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2001 12 20 | 691 | 0.3+ | 0.1− | 2005 09 11 | 691 | 0.3− | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.6+ |
| 2002 01 09 | 704 | 0.1+ | 0.1− | 2005 09 11 | 691 | 0.4− | 0.4+ | | | | |
| 2002 01 09 | 704 | 0.6+ | 1.3+ | 2005 10 01 | G96 | 0.1+ | 0.2+ | | | | |

**(141402)∗ 2002 AE$_{145}$**

Discovered 2002 Jan. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.47365 | | (2000.0) | | | |
| $n$ | 0.18116448 | $\omega$ | 322.67285 | | −0.21627598 | −0.97617058 |
| $a$ | 3.0932904 | $\Omega$ | 139.80884 | | +0.90227721 | −0.20679073 |
| $e$ | 0.1458767 | $i$ | 1.57771 | | +0.37298865 | −0.06579203 |
| $P$ | 5.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.4+ | 0.5− | 2002 02 11 | 704 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.1+ |
| 1995 12 16 | 691 | 0.5+ | 0.5− | 2002 02 11 | 704 | 1.3+ | 0.2− | 2006 11 15 | 703 | 0.4+ | 1.2− |
| 1996 01 14 | 691 | 0.5− | 0.4− | 2002 02 11 | 704 | 1.2+ | 0.5− | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 1996 01 14 | 691 | 0.0 | 0.2− | 2002 02 11 | 704 | 0.4+ | 0.4− | 2006 11 15 | 691 | 0.3− | 0.3− |
| 1996 01 14 | 691 | 0.3− | 0.1+ | 2003 04 26 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.2+ |
| 2001 12 17 | 704 | 0.4+ | 0.6+ | 2003 04 26 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.3+ | 0.3− | 2003 04 26 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | (1.9+ | 0.2−) |
| 2001 12 17 | 704 | 0.4+ | 0.3+ | 2005 08 08 | 807 | 0.2− | 0.8+ | 2006 11 18 | 704 | (1.6+ | 0.2+) |
| 2001 12 24 | 691 | 0.2− | 0.2− | 2005 08 08 | 807 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2001 12 24 | 691 | 1.4− | 0.5+ | 2005 10 01 | G96 | 0.3− | 0.6+ | 2006 11 19 | 691 | 0.6+ | 0.1+ |
| 2001 12 24 | 691 | 0.5− | 0.2− | 2005 10 01 | G96 | 0.4− | 0.8+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2002 01 13 | 704 | 0.8+ | 0.1− | 2005 10 01 | G96 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2002 01 13 | 704 | 0.6+ | 0.5+ | 2005 10 01 | G96 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2002 01 13 | 704 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.9+ |
| 2002 01 15 | 704 | 0.6+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 1.2− | 0.3− |
| 2002 01 15 | 704 | 0.6+ | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.7− |
| 2002 01 15 | 704 | 1.3+ | 1.0− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | (0.9+ | 3.1+) |
| 2002 01 15 | 704 | (1.7+ | 0.1−) | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 02 07 | 704 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2002 02 07 | 704 | 0.1− | 1.5+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 02 07 | 704 | 1.2+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2002 02 07 | 704 | (2.0+ | 1.5+) | 2006 11 11 | 691 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2002 02 11 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 02 11 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.5− | 0.1+ | 2006 12 01 | 691 | 0.2+ | 0.2+ |
| 2002 02 11 | 691 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2002 02 11 | 704 | 0.5− | 0.6− | 2006 11 15 | 703 | 0.5+ | 0.2+ | | | | |

**(141403)∗ 2002 AH$_{149}$**

Discovered 2002 Jan. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 290.30318 | | (2000.0) | | | |
| $n$ | 0.17623857 | $\omega$ | 128.63463 | | −0.63582238 | −0.77183539 |
| $a$ | 3.1506639 | $\Omega$ | 0.84643 | | +0.70454411 | −0.58047854 |
| $e$ | 0.1423526 | $i$ | 0.65528 | | +0.31519438 | −0.25945094 |
| $P$ | 5.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.9− | 0.6+ | 2002 02 12 | 704 | 0.0 | 0.9− | 2006 10 21 | 691 | 0.5− | 0.3+ |
| 1994 09 11 | 691 | 0.0 | 0.1− | 2002 02 12 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 1994 09 11 | 691 | 0.2− | 0.2+ | 2003 04 26 | 691 | 0.5− | 1.1+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2001 12 18 | 291 | (1.2+ | 1.5+) | 2003 04 26 | 691 | 0.1− | 0.8+ | 2006 10 31 | G96 | 0.2− | 0.8− |
| 2001 12 18 | 291 | 0.7+ | 1.3+ | 2003 04 26 | 691 | 0.1− | 1.1+ | 2006 10 31 | G96 | 0.0 | 0.7− |
| 2001 12 18 | 291 | 0.2+ | 0.6+ | 2003 05 03 | 691 | (0.6+ | 1.6+) | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2002 01 12 | 691 | 0.2+ | 0.1+ | 2003 05 03 | 691 | 0.8+ | 1.4+ | 2006 11 09 | 691 | 0.2− | 0.0 |
| 2002 01 12 | 691 | 0.4+ | 0.1+ | 2003 05 03 | 691 | 0.9+ | 0.6+ | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2002 01 12 | 691 | 0.5+ | 0.2− | 2005 08 28 | 291 | 0.1+ | 0.8+ | 2006 11 09 | 691 | 0.4− | 0.1− |
| 2002 01 14 | 704 | 0.2− | 0.5+ | 2005 08 28 | 291 | 0.1+ | 0.5+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2002 01 14 | 704 | 0.3− | 0.3+ | 2005 08 28 | 291 | 0.1− | 0.7+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 0.4+ | 0.8+ | 2005 09 01 | 691 | 0.4+ | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.4+ |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2005 09 01 | 691 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2002 01 14 | 704 | 0.3+ | 0.7+ | 2005 09 01 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2002 01 14 | 645 | 0.1− | 0.2− | 2005 09 29 | G96 | 0.2+ | 1.3+ | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2002 01 18 | 704 | 0.8+ | 1.4+ | 2005 09 29 | G96 | 0.5− | 1.4+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 01 18 | 704 | 1.2+ | 0.4+ | 2005 09 29 | G96 | 0.9+ | 1.3+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2002 01 18 | 704 | 0.6+ | 1.0+ | 2005 09 29 | G96 | 0.3+ | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2002 01 18 | 104 | (1.7− | 0.2−) | 2005 10 01 | G96 | 0.6+ | 0.1+ | 2006 11 16 | 703 | 0.6− | 1.0+ |
| 2002 01 18 | 104 | 0.2− | 0.2+ | 2005 10 01 | G96 | 0.3− | 0.8+ | 2006 11 16 | 703 | 0.3+ | 0.9+ |
| 2002 01 18 | 104 | 0.4− | 0.7+ | 2005 10 01 | G96 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.8+ | 1.1+ |
| 2002 01 18 | 104 | 0.5+ | 0.8+ | 2005 10 01 | G96 | 0.3+ | 0.4+ | 2006 11 16 | 703 | 0.1+ | 0.7+ |
| 2002 01 20 | 699 | 0.0 | 1.1+ | 2006 10 17 | G96 | 0.2− | 0.9− | 2006 11 27 | G96 | 0.5+ | 0.3− |
| 2002 01 20 | 699 | 0.7− | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.7− | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2002 01 20 | 699 | 0.1− | 1.2+ | 2006 10 17 | G96 | (0.3− | 1.6+) | 2006 11 27 | G96 | 0.1− | 0.6− |
| 2002 01 20 | 699 | 0.2+ | 0.7+ | 2006 10 17 | G96 | 0.6+ | 1.4+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2002 02 12 | 704 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.1− | | | | |

**(141404)∗ 2002 AV$_{150}$ = 2003 FA$_{116}$**

Discovered 2002 Jan. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47151)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 218.37808 | | (2000.0) | | | |
| $n$ | 0.16822422 | $\omega$ | 95.03752 | | −0.85220221 | +0.51252979 |
| $a$ | 3.2499527 | $\Omega$ | 115.83111 | | −0.51431187 | −0.78367568 |
| $e$ | 0.0658799 | $i$ | 6.71123 | | −0.09609731 | −0.35094963 |
| $P$ | 5.86 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 691 | 0.4− | 0.4+ | 2002 02 20 | 704 | (1.2− | 2.4+) | 2003 05 27 | 691 | 0.2+ | 0.0 |
| 2000 12 30 | 691 | 0.2− | 0.4+ | 2002 02 20 | 704 | (1.3+ | 2.6−) | 2003 05 27 | 691 | 0.3− | 0.1− |
| 2000 12 30 | 691 | 0.2− | 0.4+ | 2002 02 20 | 704 | (2.3+ | 1.7−) | 2003 05 27 | 691 | 0.0 | 0.0 |
| 2002 01 14 | 704 | 0.6+ | 0.5+ | 2002 02 20 | 704 | 1.2+ | 0.9− | 2003 05 27 | 699 | 0.2+ | 1.0+ |
| 2002 01 14 | 704 | 0.6+ | 0.4+ | 2002 03 12 | 644 | 0.3+ | 1.2+ | 2003 05 27 | 699 | 0.9− | 0.1+ |
| 2002 01 14 | 704 | 0.8+ | 0.4+ | 2002 03 12 | 644 | 0.2+ | 1.2+ | 2003 05 27 | 699 | 0.1− | 0.3+ |
| 2002 01 14 | 704 | 0.5+ | 0.3+ | 2002 03 12 | 644 | 0.1+ | 1.2+ | 2003 05 27 | 699 | 1.2− | 1.2− |
| 2002 01 14 | 704 | 0.8+ | 0.7+ | 2002 03 16 | 704 | 0.1− | 0.5+ | 2004 06 22 | 691 | 0.1− | 0.5+ |
| 2002 01 18 | 704 | 0.2+ | 0.1+ | 2002 03 16 | 704 | 0.3− | 0.1− | 2004 06 22 | 691 | 0.1+ | 0.7+ |
| 2002 01 18 | 704 | 1.0+ | 1.2− | 2002 03 16 | 704 | 0.0 | 0.1− | 2004 06 22 | 691 | 0.2+ | 0.4+ |
| 2002 01 18 | 704 | 0.9+ | 0.4+ | 2002 03 16 | 704 | 0.9− | 0.6+ | 2004 07 21 | E12 | 0.1+ | 0.2+ |
| 2002 01 18 | 704 | (1.7+ | 0.4−) | 2003 03 31 | 691 | 0.1− | 0.0 | 2004 07 21 | E12 | 0.5+ | 0.7+ |
| 2002 01 21 | 704 | 0.8+ | 1.2− | 2003 03 31 | 691 | 0.4+ | 0.1− | 2004 07 21 | E12 | 0.0 | 0.7+ |
| 2002 01 21 | 704 | (1.6− | 1.8−) | 2003 03 31 | 691 | 0.3− | 0.2+ | 2004 07 21 | E12 | 0.2− | 0.3+ |
| 2002 01 21 | 704 | 0.4− | 1.1− | 2003 04 04 | 699 | 0.0 | 0.3− | 2004 08 21 | E12 | (0.3+ | 1.5+) |
| 2002 01 21 | 704 | (0.5− | 2.0−) | 2003 04 04 | 699 | 0.2− | 0.1+ | 2004 08 21 | E12 | 0.0 | 0.3+ |
| 2002 02 07 | 704 | 0.4− | 0.6− | 2003 04 04 | 699 | 1.1+ | 1.5+ | 2004 08 21 | E12 | 0.3− | 0.8+ |
| 2002 02 07 | 704 | 0.7− | 0.0 | 2003 04 04 | 699 | 0.0 | 0.7+ | 2004 08 21 | E12 | 0.3− | 0.9+ |
| 2002 02 07 | 704 | (0.2− | 1.7+) | 2003 04 27 | 699 | 0.6− | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 02 07 | 704 | 0.6− | 0.6+ | 2003 04 27 | 699 | 0.3+ | 0.5+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2002 02 07 | 704 | 0.3− | 0.6+ | 2003 04 27 | 699 | 0.9− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 02 10 | 704 | 0.1− | 0.9+ | 2003 04 27 | 699 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 02 10 | 704 | 0.1− | 0.7+ | 2003 04 30 | 691 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 02 10 | 704 | 0.2− | 0.7− | 2003 04 30 | 691 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 02 10 | 704 | 0.2− | 0.7+ | 2003 04 30 | 691 | 0.0 | 0.6− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 02 10 | 704 | 0.5+ | 0.7+ | 2003 05 02 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.1− |
| 2002 02 12 | 704 | 0.5− | 1.0+ | 2003 05 02 | 704 | 0.8+ | 0.4+ | 2006 11 20 | 704 | 0.9− | 0.1− |
| 2002 02 12 | 704 | 0.1− | 0.8+ | 2003 05 02 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.9− | 1.0− |
| 2002 02 12 | 704 | 0.2− | 0.8+ | 2003 05 02 | 704 | 0.8+ | 0.4+ | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2002 02 12 | 704 | 0.2+ | 0.4+ | 2003 05 05 | 704 | 0.8− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 02 12 | 704 | 0.4+ | 0.5+ | 2003 05 05 | 704 | 0.0 | 0.3− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 02 13 | 704 | 0.4+ | 0.1+ | 2003 05 05 | 704 | 0.4− | 0.6− | 2006 11 29 | 704 | 0.9+ | 1.3+ |
| 2002 02 13 | 704 | 0.4− | 1.0− | 2003 05 21 | 699 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.0 | 0.6+ |
| 2002 02 13 | 704 | 1.0+ | 1.2− | 2003 05 21 | 699 | 0.2− | 1.2− | 2006 11 29 | 704 | 0.1− | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 704 | 0.5− | 0.5− | 2003 05 21 | 699 | 0.1− | 0.6− | 2006 11 29 | 704 | 1.2+ | 0.5+ | | |
| 2002 02 13 | 704 | 0.0 | 0.4− | 2003 05 21 | 699 | (1.5− | 0.6+) | | | | | | |

**(141405)∗ 2002 AP$_{152}$**

Discovered 2002 Jan. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.65931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17164222 | $\omega$ | 112.57281 | | −0.50446405 | −0.86343122 | |
| $a$ | 3.2066628 | $\Omega$ | 7.72356 | | +0.78774862 | −0.46100293 | |
| $e$ | 0.1635004 | $i$ | 0.68188 | | +0.35350833 | −0.20484832 | |
| $P$ | 5.74 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 09 | 691 | 0.1− | 0.4+ | 2002 02 07 | 691 | 0.4+ | 0.3+ | 2005 09 11 | 691 | 0.5− | 0.3+ | | |
| 1994 11 09 | 691 | 0.3+ | 0.2− | 2002 02 07 | 704 | 0.1+ | 0.1− | 2005 09 11 | 691 | 0.4− | 0.6+ | | |
| 1994 11 09 | 691 | 0.1− | 0.1− | 2002 02 07 | 691 | 0.8+ | 0.3+ | 2005 09 11 | 691 | 0.2− | 0.5+ | | |
| 1994 11 10 | 691 | 0.3− | 0.7+ | 2002 02 07 | 704 | 0.4+ | 0.2− | 2006 09 27 | G96 | 0.2− | 0.2− | | |
| 1994 11 10 | 691 | 0.2− | 0.1+ | 2002 02 07 | 704 | (0.6− | 1.8−) | 2006 09 27 | G96 | 0.0 | 0.1+ | | |
| 1994 11 10 | 691 | 0.2− | 0.3+ | 2002 02 10 | 704 | 0.5− | 0.9+ | 2006 09 27 | G96 | 0.3− | 0.0 | | |
| 1997 05 05 | 691 | 0.3+ | 0.1− | 2002 02 10 | 704 | 0.8− | 1.4+ | 2006 09 27 | G96 | 0.1− | 0.2− | | |
| 1997 05 05 | 691 | 0.4+ | 0.7− | 2002 02 10 | 704 | 0.9− | 1.1+ | 2006 10 17 | G96 | 0.3+ | 0.1− | | |
| 1997 05 05 | 691 | 0.1+ | 0.3− | 2002 02 10 | 704 | 1.2− | 0.7+ | 2006 10 17 | G96 | 0.3+ | 0.1− | | |
| 1999 08 08 | 691 | 1.5− | 0.7+ | 2002 02 10 | 704 | 0.9− | 1.4+ | 2006 10 17 | G96 | 0.0 | 0.0 | | |
| 1999 08 08 | 691 | 0.0 | 0.4+ | 2002 02 12 | 333 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.4+ | 0.1− | | |
| 1999 08 08 | 691 | 0.3− | 0.2+ | 2002 02 12 | 333 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.0 | | |
| 2000 11 30 | 691 | 0.4+ | 0.0 | 2002 02 12 | 333 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2000 11 30 | 691 | 0.1+ | 0.4− | 2002 02 12 | 704 | 0.8− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | | |
| 2000 11 30 | 691 | 0.2+ | 0.2− | 2002 02 12 | 704 | 0.1− | 0.9+ | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2002 01 12 | 691 | 0.2− | 0.2+ | 2002 02 12 | 704 | 0.4− | 0.8+ | 2006 11 11 | 703 | 0.8+ | 0.4− | | |
| 2002 01 12 | 691 | 0.1+ | 0.3+ | 2002 02 12 | 704 | 0.0 | 1.0+ | 2006 11 11 | 703 | 0.4− | 0.9− | | |
| 2002 01 12 | 691 | 0.1− | 0.0 | 2002 02 12 | 704 | 0.1− | 0.9+ | 2006 11 11 | 703 | 1.1+ | 0.2− | | |
| 2002 01 14 | 704 | 0.3+ | 0.7+ | 2002 02 13 | 333 | 0.2− | 0.2− | 2006 11 11 | 703 | (2.0+ | 0.3+) | | |
| 2002 01 14 | 704 | 0.7+ | 0.3+ | 2002 02 13 | 333 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.1− | 0.0 | | |
| 2002 01 14 | 704 | 0.5− | 0.8− | 2002 02 20 | 704 | 0.6+ | 0.3− | 2006 11 14 | 691 | 0.1− | 0.0 | | |
| 2002 01 14 | 704 | 0.1− | 0.8+ | 2002 02 20 | 704 | 0.4+ | 0.4− | 2006 11 14 | 691 | 0.2− | 0.0 | | |
| 2002 01 14 | 704 | 0.4− | 0.2+ | 2002 02 20 | 704 | 0.4+ | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.3− | | |
| 2002 01 18 | 704 | 0.4+ | 0.7+ | 2002 02 20 | 704 | 0.3+ | 0.3− | 2006 11 18 | 691 | 0.1− | 0.4− | | |
| 2002 01 18 | 704 | (2.0+ | 0.1+) | 2002 02 20 | 704 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.5− | | |
| 2002 01 18 | 704 | 0.2− | 0.2+ | 2002 02 20 | 699 | 0.8− | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.2− | | |
| 2002 01 18 | 704 | 0.3− | 0.6+ | 2002 02 20 | 699 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.1− | | |
| 2002 02 05 | 699 | 0.3+ | 0.8+ | 2002 02 20 | 699 | 0.9− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.1− | | |
| 2002 02 05 | 699 | 0.2− | 0.2+ | 2002 02 20 | 699 | 0.3+ | 0.0 | 2006 11 18 | 704 | 1.0+ | 0.2− | | |
| 2002 02 05 | 699 | 0.0 | 0.5+ | 2002 03 05 | 291 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.9+ | 0.3− | | |
| 2002 02 05 | 699 | 0.4− | 0.4− | 2002 03 05 | 291 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.5+ | | |
| 2002 02 05 | 644 | 0.3+ | 0.0 | 2002 03 05 | 291 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.4− | 0.6+ | | |
| 2002 02 05 | 644 | 0.3+ | 0.3+ | 2002 03 14 | 704 | 1.1+ | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.1− | | |
| 2002 02 05 | 644 | 0.2+ | 0.2+ | 2002 03 14 | 704 | 1.2+ | 0.8+ | 2006 11 21 | 704 | 0.3+ | 0.7− | | |
| 2002 02 07 | 291 | 0.2+ | 0.3+ | 2002 03 14 | 704 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.0 | | |
| 2002 02 07 | 291 | 0.3− | 0.2+ | 2002 03 14 | 704 | 1.2+ | 0.2− | 2006 12 01 | G96 | 0.4+ | 0.6− | | |
| 2002 02 07 | 291 | 0.5− | 0.3+ | 2002 03 14 | 704 | 0.7+ | 0.6− | 2006 12 01 | G96 | 0.1− | 0.6− | | |
| 2002 02 07 | 691 | 0.3+ | 0.2+ | 2005 09 01 | 691 | 0.1+ | 0.6+ | 2006 12 01 | G96 | 0.2− | 0.5− | | |
| 2002 02 07 | 704 | 0.1− | 0.4+ | 2005 09 01 | 691 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.3+ | 0.3− | | |
| 2002 02 07 | 704 | 0.4− | 0.1+ | 2005 09 01 | 691 | 0.1− | 0.8+ | | | | | | |

**(141406)∗ 2002 AR$_{162}$**

Discovered 2002 Jan. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.11876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27585428 | $\omega$ | 334.23920 | | −0.88864496 | −0.45859363 | |
| $a$ | 2.3371302 | $\Omega$ | 178.46223 | | +0.42936471 | −0.83308517 | |
| $e$ | 0.1026293 | $i$ | 3.03049 | | +0.16110889 | −0.30929110 | |
| $P$ | 3.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.0 | 0.2+ | 2002 02 11 | 704 | 0.0 | 0.2− | 2004 11 19 | 703 | 0.7− | 0.4− | | |
| 2000 09 27 | 691 | 0.0 | 0.5+ | 2002 02 11 | 704 | 0.0 | 0.2− | 2004 11 19 | 703 | 0.1− | 0.1− | | |
| 2000 09 27 | 691 | 0.3− | 0.4+ | 2002 02 15 | 608 | 0.2+ | 1.0+ | 2004 12 15 | 691 | 0.2+ | 0.0 | | |
| 2002 01 10 | 599 | 0.4− | 0.6− | 2002 02 15 | 608 | 0.4− | 1.1+ | 2004 12 15 | 691 | 0.2+ | 0.0 | | |
| 2002 01 10 | 599 | 0.1+ | 0.8− | 2002 02 15 | 608 | 0.6− | 1.4+ | 2004 12 15 | 691 | 0.3+ | 0.0 | | |
| 2002 01 10 | 599 | 0.9+ | 0.1− | 2002 02 16 | 644 | 0.1+ | 0.1− | 2006 03 25 | 691 | 0.4+ | 0.3+ | | |
| 2002 01 13 | 704 | (2.7− | 1.0+) | 2002 02 16 | 644 | 0.0 | 0.1− | 2006 03 25 | 691 | 0.3+ | 0.0 | | |
| 2002 01 13 | 704 | (2.1− | 0.4+) | 2002 02 16 | 644 | 0.2+ | 0.0 | 2006 03 25 | 691 | 0.3+ | 0.1− | | |
| 2002 01 13 | 704 | (2.9− | 1.1+) | 2002 02 20 | 704 | 0.5− | 0.4+ | 2006 04 02 | 691 | 0.3+ | 0.3+ | | |
| 2002 01 13 | 704 | (2.1− | 1.4+) | 2002 02 20 | 704 | 0.5+ | 0.0 | 2006 04 02 | 691 | 0.3+ | 0.2+ | | |
| 2002 01 19 | 704 | 0.1+ | 0.2+ | 2002 02 20 | 704 | 0.7+ | 0.2− | 2006 04 02 | 691 | 0.4+ | 0.4+ | | |
| 2002 01 19 | 704 | 0.8+ | 0.7− | 2002 02 20 | 704 | 0.7+ | 0.1− | 2006 04 07 | 691 | 0.2+ | 0.4+ | | |
| 2002 01 19 | 704 | 0.7− | 0.5+ | 2002 02 20 | 704 | 0.3+ | 0.3+ | 2006 04 07 | 691 | 0.1+ | 0.2+ | | |
| 2002 01 19 | 704 | 1.5+ | 1.5− | 2002 03 05 | 644 | 0.2− | 0.3+ | 2006 04 07 | 691 | 0.4+ | 0.2+ | | |
| 2002 01 22 | 704 | 0.3− | 0.7− | 2002 03 05 | 644 | 0.0 | 0.1+ | 2006 04 19 | 699 | 0.2− | 0.6+ | | |
| 2002 01 22 | 704 | 0.2+ | 0.4+ | 2002 03 05 | 644 | 0.6− | 0.0 | 2006 04 19 | 699 | 0.2+ | 1.0− | | |
| 2002 01 22 | 704 | 0.0 | 0.3− | 2002 03 05 | 644 | 0.2− | 0.3+ | 2006 04 19 | 699 | 1.1+ | 0.9+ | | |
| 2002 01 22 | 704 | 0.1+ | 0.3− | 2002 03 05 | 644 | 0.1+ | 0.5+ | 2006 04 19 | 699 | 0.3+ | 0.1+ | | |
| 2002 01 22 | 704 | 0.0 | 0.6− | 2002 03 05 | 644 | 0.1+ | 0.1+ | 2006 04 19 | 703 | 0.3+ | 0.1− | | |
| 2002 01 26 | 644 | 0.4+ | 0.1+ | 2002 03 13 | 644 | 0.3− | 0.0 | 2006 04 19 | 703 | 2.0− | 0.4− | | |
| 2002 01 26 | 644 | 0.4+ | 0.1− | 2002 03 13 | 704 | 0.6+ | 0.8+ | 2006 04 19 | 703 | 0.0 | 0.5− | | |
| 2002 01 26 | 644 | 0.2+ | 0.0 | 2002 03 13 | 704 | 1.2− | 0.1+ | 2006 04 19 | 703 | 1.2− | 0.3− | | |
| 2002 02 06 | 644 | 0.2+ | 0.7+ | 2002 03 13 | 644 | 0.0 | 0.0 | 2006 04 24 | 704 | 0.3+ | 0.7+ | | |
| 2002 02 06 | 644 | 0.0 | 0.7+ | 2002 03 13 | 704 | 1.2− | 0.6− | 2006 04 24 | 704 | 0.4+ | 1.4+ | | |
| 2002 02 06 | 644 | 0.1+ | 0.5+ | 2002 03 13 | 644 | 0.1− | 0.1+ | 2006 04 24 | 704 | 0.2+ | 0.1+ | | |
| 2002 02 07 | 704 | 0.4+ | 0.2− | 2002 03 13 | 704 | 0.8− | 0.2+ | 2006 04 24 | 704 | 0.0 | 0.5+ | | |
| 2002 02 07 | 704 | 0.8+ | 0.4− | 2004 10 09 | 691 | 0.3− | 0.0 | 2006 04 24 | 704 | 0.8− | 0.3− | | |
| 2002 02 07 | 704 | 1.4+ | 0.5− | 2004 10 09 | 691 | 0.0 | 0.2+ | 2006 05 19 | 703 | 1.3− | 1.0− | | |
| 2002 02 07 | 704 | 0.5+ | 0.4− | 2004 10 09 | 691 | 0.4− | 0.1− | 2006 05 19 | 703 | (2.4− | 1.0−) | | |
| 2002 02 07 | 704 | 0.0 | 0.4− | 2004 10 13 | 691 | 0.1− | 0.3+ | 2006 05 19 | 703 | 0.3− | 0.3− | | |
| 2002 02 08 | 704 | 0.8− | 0.9+ | 2004 10 13 | 691 | 0.1+ | 0.1− | 2006 05 19 | 703 | 0.9− | 0.1− | | |
| 2002 02 08 | 704 | 0.8− | 1.0+ | 2004 10 13 | 691 | 0.0 | 0.1+ | 2006 05 25 | 699 | 0.4+ | 0.8+ | | |
| 2002 02 08 | 704 | 0.9− | 0.6+ | 2004 11 03 | 691 | 0.0 | 0.3+ | 2006 05 25 | 699 | 0.2− | 0.2+ | | |
| 2002 02 08 | 704 | 1.3− | 0.1+ | 2004 11 03 | 691 | 0.1+ | 0.1+ | 2006 05 25 | 699 | 0.3− | 1.1+ | | |
| 2002 02 08 | 704 | 0.1− | 0.6+ | 2004 11 03 | 691 | 0.0 | 0.3+ | 2006 05 25 | 699 | 0.3− | 0.2+ | | |
| 2002 02 08 | 608 | 0.1− | 0.2+ | 2004 11 04 | 703 | 1.1− | 0.2+ | 2006 05 25 | 703 | 2.0− | 0.1+ | | |
| 2002 02 08 | 608 | 0.4− | 0.6− | 2004 11 04 | 703 | 1.2+ | 0.2+ | 2006 05 25 | 703 | 1.4− | 1.6+ | | |
| 2002 02 08 | 608 | 0.2− | 0.7− | 2004 11 04 | 703 | 0.7− | 0.6+ | 2006 05 25 | 703 | 0.3+ | 1.2− | | |
| 2002 02 09 | 333 | 0.2− | 0.3− | 2004 11 04 | 703 | 0.5+ | 1.4+ | 2006 05 25 | 703 | 0.3− | 0.6− | | |
| 2002 02 09 | 333 | 0.4+ | 1.2− | 2004 11 11 | 715 | 0.1− | 0.5− | 2006 05 26 | G96 | 0.2+ | 0.2+ | | |
| 2002 02 09 | 333 | 0.0 | 0.6− | 2004 11 11 | 715 | 0.1+ | 0.0 | 2006 05 26 | G96 | 0.2− | 0.2+ | | |
| 2002 02 11 | 704 | 0.0 | 0.1+ | 2004 11 11 | 715 | 0.3− | 0.0 | 2006 05 26 | G96 | 0.1− | 0.2+ | | |
| 2002 02 11 | 704 | 0.1− | 0.3− | 2004 11 19 | 703 | 0.5− | 1.2+ | 2006 05 26 | G96 | 0.3− | 0.4− | | |
| 2002 02 11 | 704 | 0.2+ | 0.1+ | 2004 11 19 | 703 | 0.7− | 0.5+ | | | | | | |

**(141407)∗ 2002 AC$_{165}$**

Discovered 2002 Jan. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.52542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17147912 | $\omega$ | 338.48850 | | −0.84754496 | −0.53044787 | |
| $a$ | 3.2086958 | $\Omega$ | 169.42553 | | +0.49951412 | −0.80817960 | |
| $e$ | 0.1187881 | $i$ | 5.34827 | | +0.17931307 | −0.25587261 | |
| $P$ | 5.75 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 691 | 0.2− | 0.2+ | 2002 02 11 | 333 | (0.4− | 1.6−) | 2005 09 11 | 691 | 0.1+ | 0.6+ | | |
| 1999 08 12 | 691 | 0.3− | 0.2+ | 2002 02 16 | 644 | 0.5+ | 0.4+ | 2005 09 11 | 691 | 0.1+ | 0.1− | | |
| 1999 08 12 | 691 | 0.1− | 0.4+ | 2002 02 16 | 644 | 0.1+ | 0.7+ | 2005 09 11 | 691 | 0.2− | 0.4+ | | |
| 2002 01 13 | 704 | (0.2+ | 1.9+) | 2002 02 16 | 644 | 0.4+ | 0.6+ | 2005 09 29 | G96 | 0.2+ | 0.5+ | | |
| 2002 01 13 | 704 | 0.1− | 1.2+ | 2002 02 20 | 704 | (0.1− | 2.3+) | 2005 09 29 | G96 | 0.1+ | 0.1+ | | |
| 2002 01 13 | 704 | (0.2− | 2.5+) | 2002 02 20 | 704 | (0.7+ | 2.5+) | 2005 09 29 | G96 | 0.0 | 0.4+ | | |
| 2002 01 19 | 704 | 0.1− | 0.1− | 2002 02 20 | 704 | (0.3− | 2.4+) | 2005 09 29 | G96 | 0.3+ | 0.1+ | | |
| 2002 01 19 | 704 | 0.9+ | 0.7+ | 2002 03 05 | 644 | 0.1+ | 0.4+ | 2005 10 28 | G96 | 0.7− | 0.1− | | |
| 2002 01 19 | 704 | 0.5+ | 0.6+ | 2002 03 05 | 644 | 0.4+ | 0.1+ | 2005 10 28 | G96 | 0.7− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 05 | 699 | 0.1+ | 0.2− | 2002 03 05 | 644 | 0.8+ | 0.5+ | 2005 10 28 | G96 | 0.1− | 0.0 |
| 2002 02 05 | 699 | 0.1− | 0.5+ | 2002 03 13 | 644 | 0.3+ | 0.5+ | 2005 10 28 | G96 | 0.0 | 0.1+ |
| 2002 02 05 | 699 | 0.6− | 0.1+ | 2002 03 13 | 644 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.2+ |
| 2002 02 05 | 699 | 0.1− | 0.6− | 2002 03 13 | 644 | 0.4+ | 0.9+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2002 02 07 | 704 | 1.2− | 0.3− | 2003 04 25 | 691 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2002 02 07 | 704 | 0.6+ | 0.7− | 2003 04 25 | 691 | 0.1+ | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2002 02 07 | 704 | 1.1+ | 0.6+ | 2003 04 25 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 704 | (2.1+ | 0.1−) |
| 2002 02 07 | 704 | 0.2− | 0.2+ | 2003 05 28 | 691 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 2002 02 07 | 704 | 0.1− | 0.9+ | 2003 05 28 | 691 | 0.0 | 0.8+ | 2006 11 14 | 704 | (1.2− | 2.6+) |
| 2002 02 11 | 704 | 0.3+ | 0.8+ | 2003 05 28 | 691 | 0.4+ | 0.6+ | 2006 11 16 | 691 | 0.3+ | 0.8+ |
| 2002 02 11 | 704 | 0.3− | 0.9+ | 2005 08 28 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2002 02 11 | 704 | (1.0+ | 2.7+) | 2005 08 28 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2002 02 11 | 704 | 0.2+ | 1.4+ | 2005 08 28 | 691 | 0.0 | 0.5+ | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2002 02 11 | 333 | (0.0 | 2.0−) | 2005 09 01 | 691 | 0.0 | 0.1+ | 2006 11 24 | 691 | 0.3− | 0.0 |
| 2002 02 11 | 704 | (0.3+ | 1.6+) | 2005 09 01 | 691 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.3− | 0.2+ |
| 2002 02 11 | 333 | (0.3+ | 1.9−) | 2005 09 01 | 691 | 0.1− | 0.6+ | | | | |

**(141408)∗ 2002 AH$_{172}$**

Discovered 2002 Jan. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.68760 | | (2000.0) | | | |
| $n$ | 0.18082076 | $\omega$ | 312.48469 | | +0.25564199 | −0.96300679 |
| $a$ | 3.0972090 | $\Omega$ | 122.51485 | | +0.91400605 | +0.21201939 |
| $e$ | 0.1303690 | $i$ | 5.80134 | | +0.31502398 | +0.16633009 |
| $P$ | 5.45 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 26 | 691 | 0.3− | 0.2+ | 2002 01 21 | 704 | 0.2+ | 0.3+ | 2005 08 05 | 644 | 0.3− | 0.5+ |
| 1995 12 26 | 691 | 0.5− | 0.2+ | 2002 01 22 | 291 | 0.3− | 0.1− | 2005 08 05 | 644 | 0.1− | 0.1+ |
| 1995 12 26 | 691 | 0.8− | 0.2+ | 2002 01 22 | 291 | 0.0 | 0.3− | 2005 08 27 | 644 | 0.4+ | 0.6+ |
| 1996 01 15 | 691 | 0.5+ | 0.2− | 2002 01 22 | 291 | 0.3+ | 0.1− | 2005 08 27 | 644 | 0.1+ | 0.8+ |
| 1996 01 15 | 691 | 0.4+ | 0.1− | 2002 02 12 | 691 | 0.4+ | 0.2+ | 2005 08 27 | 644 | 0.3+ | 0.4+ |
| 1996 01 15 | 691 | 0.3+ | 0.1+ | 2002 02 12 | 704 | 0.4+ | 0.2+ | 2005 10 07 | G96 | 0.1+ | 0.9+ |
| 2000 10 02 | 691 | 0.1− | 0.1+ | 2002 02 12 | 691 | 0.3+ | 0.2+ | 2005 10 07 | G96 | 0.1+ | 0.7+ |
| 2000 10 02 | 691 | 0.0 | 0.2− | 2002 02 12 | 704 | 0.7+ | 0.1+ | 2005 10 07 | G96 | 0.0 | 0.5+ |
| 2000 10 02 | 691 | 0.1+ | 0.1+ | 2002 02 12 | 704 | (0.0 | 1.9+) | 2005 10 07 | G96 | 0.0 | 0.8+ |
| 2002 01 14 | 704 | 0.2− | 0.4− | 2002 02 12 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3+ |
| 2002 01 14 | 704 | 0.1− | 0.0 | 2003 04 26 | 291 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 1.4− | 0.1− |
| 2002 01 14 | 704 | 0.4− | 0.7− | 2003 04 26 | 291 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.3+ |
| 2002 01 14 | 704 | 0.1− | 0.5− | 2003 04 26 | 291 | 0.2+ | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2002 01 21 | 704 | 0.7+ | 1.2+ | 2003 04 26 | 291 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2002 01 21 | 704 | 0.2− | 1.0+ | 2003 04 26 | 291 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.5− | 0.0 |
| 2002 01 21 | 704 | 0.4− | 0.0 | 2003 04 26 | 291 | 0.7− | 0.2+ | 2006 12 01 | G96 | (1.9− | 0.1+) |
| 2002 01 21 | 704 | 0.8+ | 0.2− | 2005 08 05 | 644 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.7− | 0.1+ |

**(141409)∗ 2002 AV$_{177}$**

Discovered 2002 Jan. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 136.46770 | | (2000.0) | | | |
| $n$ | 0.26915581 | $\omega$ | 83.90697 | | +0.12636779 | −0.99198337 |
| $a$ | 2.3757471 | $\Omega$ | 358.83305 | | +0.90206261 | +0.11508308 |
| $e$ | 0.1536963 | $i$ | 1.14196 | | +0.41269145 | +0.05220028 |
| $P$ | 3.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.2− | 0.7− | 2002 02 10 | 704 | 0.2+ | 0.6+ | 2004 10 08 | 699 | 0.1− | 0.6− |
| 1995 03 27 | 691 | 0.1− | 0.2+ | 2002 02 10 | 333 | 1.7− | 0.1+ | 2004 10 08 | 699 | 0.8+ | 0.5+ |
| 1995 03 27 | 691 | 0.0 | 0.3− | 2002 02 11 | 333 | (2.6− | 0.0 ) | 2004 10 08 | 699 | 0.0 | 0.4− |
| 2002 01 14 | 704 | 0.5+ | 0.3− | 2002 02 11 | 333 | 0.4− | 1.6− | 2004 10 11 | 691 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 0.1+ | 1.0+ | 2002 02 11 | 333 | 0.3+ | 0.0 | 2004 10 11 | 691 | 0.1+ | 0.3+ |
| 2002 01 14 | 704 | 0.0 | 0.3− | 2002 02 11 | 333 | 1.4− | 0.9− | 2004 10 11 | 691 | 0.0 | 0.3+ |
| 2002 01 14 | 704 | 0.7+ | 0.9− | 2002 02 11 | 333 | 0.7− | 1.7− | 2004 10 15 | 691 | 0.1− | 0.2+ |
| 2002 01 14 | 704 | 0.9− | 0.7− | 2002 02 12 | 333 | 0.3+ | 0.6− | 2004 10 15 | 691 | 0.4− | 0.3+ |
| 2002 01 20 | 291 | 0.2− | 0.1− | 2002 02 12 | 333 | 0.5+ | 0.1+ | 2004 10 15 | 691 | 0.4− | 0.3+ |
| 2002 01 20 | 291 | 0.1+ | 0.0 | 2002 02 12 | 333 | 0.4+ | 0.9− | 2006 01 27 | G96 | 0.5− | 0.2+ |
| 2002 01 20 | 291 | 0.1+ | 0.1− | 2002 02 12 | 333 | 1.1− | 0.4+ | 2006 01 27 | G96 | 0.3+ | 0.2− |
| 2002 01 21 | 704 | 0.0 | 0.4+ | 2002 02 12 | 704 | 0.5− | 0.2+ | 2006 01 27 | G96 | 0.6− | 0.1+ |
| 2002 01 21 | 704 | 0.0 | 1.0+ | 2002 02 12 | 333 | 0.4− | 0.1− | 2006 01 27 | G96 | 0.2− | 0.1+ |
| 2002 01 21 | 704 | 0.3+ | 0.6+ | 2002 02 12 | 704 | 0.2− | 0.2+ | 2006 02 24 | 691 | 0.8+ | 0.1+ |
| 2002 02 05 | 699 | (0.9+ | 2.1−) | 2002 02 12 | 704 | 0.0 | 0.4+ | 2006 02 24 | 691 | 0.7+ | 0.6+ |
| 2002 02 05 | 699 | 0.6− | 0.7− | 2002 02 12 | 704 | 0.0 | 0.3+ | 2006 02 24 | 691 | 0.3+ | 0.1+ |
| 2002 02 05 | 699 | 1.0+ | 0.3+ | 2002 02 12 | 704 | 0.3+ | 0.6+ | 2006 03 02 | 691 | 0.3+ | 0.5+ |
| 2002 02 05 | 699 | 0.7+ | 0.7+ | 2002 02 20 | 704 | 0.5− | 0.2+ | 2006 03 02 | 691 | 0.3+ | 0.4+ |
| 2002 02 05 | 644 | 0.2− | 0.6− | 2002 02 20 | 704 | 0.4+ | 0.3− | 2006 03 02 | 691 | 0.3+ | 0.4+ |
| 2002 02 05 | 644 | 0.0 | 0.4− | 2002 02 20 | 704 | 0.2+ | 0.1− | 2006 03 25 | G96 | 0.2+ | 0.4+ |
| 2002 02 05 | 644 | 0.3− | 0.5− | 2002 02 20 | 704 | 0.7− | 0.0 | 2006 03 25 | G96 | 0.3− | 0.4+ |
| 2002 02 07 | 704 | 0.2+ | 0.1− | 2002 02 20 | 704 | 0.1+ | 0.7− | 2006 03 25 | G96 | 0.1+ | 0.5+ |
| 2002 02 07 | 704 | 0.1+ | 0.6+ | 2002 03 12 | 644 | 0.3− | 0.0 | 2006 03 25 | G96 | 0.2− | 0.5+ |
| 2002 02 07 | 704 | 0.4+ | 0.6+ | 2002 03 12 | 644 | 0.3+ | 0.0 | 2006 04 07 | G96 | 0.2− | 0.9+ |
| 2002 02 07 | 704 | 0.2+ | 0.2+ | 2002 03 12 | 644 | 0.4+ | 0.0 | 2006 04 07 | G96 | 0.1+ | 1.0+ |
| 2002 02 07 | 704 | 0.4+ | 0.6+ | 2004 09 22 | 704 | 0.0 | 0.8+ | 2006 04 07 | G96 | 0.2− | 0.9+ |
| 2002 02 09 | 691 | 0.1+ | 0.1− | 2004 09 22 | 704 | 1.0− | 0.9+ | 2006 04 07 | G96 | 0.1+ | 0.6+ |
| 2002 02 09 | 691 | 0.1+ | 0.1− | 2004 09 22 | 704 | 0.7− | 0.1− | 2006 04 19 | G96 | 0.3− | 0.6+ |
| 2002 02 09 | 691 | 0.2+ | 0.0 | 2004 09 22 | 704 | 0.1+ | 0.2+ | 2006 04 19 | G96 | 0.6− | 0.5+ |
| 2002 02 10 | 333 | 0.2− | 0.9− | 2004 09 22 | 704 | 0.3− | 0.1+ | 2006 04 19 | G96 | 0.0 | 0.5+ |
| 2002 02 10 | 704 | 0.2+ | 1.0+ | 2004 10 07 | 704 | 0.4− | 0.4+ | 2006 04 19 | G96 | 0.2− | 0.4+ |
| 2002 02 10 | 704 | 0.1− | 1.1+ | 2004 10 07 | 704 | 0.2+ | 0.8+ | 2006 05 05 | G96 | 0.1− | 0.3+ |
| 2002 02 10 | 333 | 0.2− | 0.2− | 2004 10 07 | 704 | 0.1− | 0.2− | 2006 05 05 | G96 | 0.3− | 0.5+ |
| 2002 02 10 | 704 | 0.0 | 0.7+ | 2004 10 07 | 704 | 0.6+ | 1.5+ | 2006 05 05 | G96 | 0.1− | 0.3+ |
| 2002 02 10 | 704 | 0.2+ | 0.6+ | 2004 10 08 | 699 | 0.6− | 1.3+ | 2006 05 05 | G96 | 0.1+ | 0.3+ |

**(141410)∗ 2002 AZ$_{179}$**

Discovered 2002 Jan. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.78783 | | (2000.0) | | | |
| $n$ | 0.17660422 | $\omega$ | 75.00578 | | −0.75988781 | −0.47738809 |
| $a$ | 3.1463136 | $\Omega$ | 74.66070 | | +0.26159055 | −0.84592070 |
| $e$ | 0.0983049 | $i$ | 27.22680 | | +0.59509739 | −0.23773677 |
| $P$ | 5.58 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 22 | 608 | 0.4− | 0.5− | 2002 02 21 | 704 | 0.3+ | 0.3− | 2006 10 21 | D35 | 0.2+ | 0.2+ |
| 2000 11 22 | 608 | 0.6− | 0.2+ | 2002 02 21 | 704 | 0.7+ | 0.2− | 2006 10 21 | D35 | 0.2+ | 0.2+ |
| 2000 11 22 | 608 | 0.6− | 0.3− | 2002 02 21 | 704 | 0.8+ | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2001 12 09 | 704 | 0.8+ | 0.1− | 2003 05 09 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | (2.1+ | 0.9+) | 2003 05 09 | 704 | (1.9+ | 0.0 ) | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.6+ | 0.9+ | 2003 05 09 | 704 | 0.6+ | 1.5+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 12 09 | 704 | 1.1+ | 0.1− | 2003 05 20 | 699 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2001 12 09 | 704 | 1.4+ | 0.2+ | 2003 05 20 | 699 | 1.0+ | 1.3+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2001 12 23 | 704 | 0.6− | 0.1+ | 2003 05 20 | 699 | 0.4+ | 0.7+ | 2006 11 21 | 704 | 0.4− | 0.4− |
| 2001 12 23 | 704 | 0.5− | 0.2+ | 2003 05 20 | 699 | 1.1+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2001 12 23 | 704 | 0.4− | 0.1+ | 2003 06 22 | 699 | 0.9− | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2001 12 23 | 704 | 0.2− | 0.7+ | 2003 06 22 | 699 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.8− | 0.9+ |
| 2001 12 23 | 704 | 0.8− | 0.2− | 2003 06 22 | 699 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2002 01 06 | 704 | 0.0 | 0.5+ | 2003 06 22 | 699 | 0.8− | 1.0+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 01 06 | 704 | 0.7+ | 0.1− | 2004 06 16 | E12 | 0.5+ | 0.7− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 01 06 | 704 | 0.9+ | 0.2+ | 2004 06 16 | E12 | 0.6− | 1.2+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2002 01 06 | 704 | 0.8+ | 0.1+ | 2004 06 16 | E12 | (2.5+ | 1.4−) | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2002 01 25 | 704 | 0.0 | 1.4− | 2004 06 16 | E12 | 0.7+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2002 01 25 | 704 | 0.4+ | 1.2− | 2004 07 14 | E12 | 0.5+ | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2002 01 25 | 704 | 0.6− | 0.2− | 2004 07 14 | E12 | 1.1+ | 0.6− | 2006 12 01 | 704 | 0.6− | 0.1− |
| 2002 01 25 | 704 | 0.3− | 0.5− | 2004 07 14 | E12 | 0.7+ | 0.2+ | 2006 12 01 | 704 | 0.5+ | 0.3+ |
| 2002 02 01 | 699 | 1.0− | 0.7+ | 2004 07 14 | E12 | 0.8− | 0.2+ | 2006 12 01 | 704 | 0.1− | 0.2+ |
| 2002 02 01 | 699 | 0.6− | 0.1+ | 2005 09 29 | E12 | (1.2− | 1.7+) | 2006 12 01 | 704 | 0.7+ | 0.6+ |
| 2002 02 01 | 699 | 0.2− | 0.1− | 2005 09 29 | E12 | 1.0− | 1.3+ | 2006 12 01 | 691 | 0.3− | 0.9− |
| 2002 02 01 | 699 | 0.0 | 0.1+ | 2005 09 29 | E12 | 0.8+ | 0.8− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2002 02 21 | 704 | 0.2+ | 0.3− | 2005 09 29 | E12 | 0.9− | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2002 02 21 | 704 | 0.6− | 0.2− | 2006 10 21 | D35 | 0.2+ | 0.2+ | | | | |

**(141411)∗ 2002 AB$_{182}$**

Discovered 2002 Jan. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.50247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18095333 | $\omega$ | 116.66431 | | −0.98656440 | −0.12945959 | |
| $a$ | 3.0956962 | $\Omega$ | 56.05307 | | +0.07028485 | −0.88697167 | |
| $e$ | 0.0889594 | $i$ | 6.89957 | | +0.14748129 | −0.44330743 | |
| $P$ | 5.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 23 | 691 | 0.1+ | 0.2− | 2002 02 12 | 704 | 0.1+ | 1.0+ | 2003 05 01 | 704 | 0.4+ | 0.7+ |
| 1992 04 23 | 691 | 0.3− | 0.1+ | 2002 02 12 | 704 | 0.0 | 0.3− | 2003 05 01 | 704 | 0.0 | 1.4+ |
| 1992 04 23 | 691 | 0.6− | 0.4− | 2003 03 25 | 291 | 0.6− | 0.3+ | 2003 05 01 | 704 | 0.7+ | 0.6+ |
| 1997 03 12 | 691 | 0.2+ | 0.4− | 2003 03 25 | 291 | 0.2− | 0.8+ | 2003 05 03 | 691 | 0.8+ | 0.1+ |
| 1997 03 12 | 691 | 0.1− | 0.4− | 2003 03 25 | 291 | 0.0 | 0.4+ | 2003 05 03 | 691 | 0.9+ | 0.1− |
| 1997 03 12 | 691 | 0.1+ | 0.8− | 2003 04 24 | 699 | 0.9− | 0.4+ | 2003 05 03 | 691 | (2.2+ | 0.2+) |
| 2000 12 05 | 691 | 0.3+ | 0.2+ | 2003 04 24 | 699 | 0.7+ | 0.4+ | 2003 05 05 | 704 | 0.1− | 0.1+ |
| 2000 12 05 | 691 | 0.1+ | 0.2− | 2003 04 24 | 699 | (2.7− | 0.1−) | 2003 05 05 | 704 | 0.0 | 0.0 |
| 2000 12 05 | 691 | 0.0 | 0.2+ | 2003 04 24 | 699 | 0.6− | 0.7+ | 2003 05 05 | 704 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | (1.7− | 1.2+) | 2003 04 24 | 246 | 0.4+ | 0.6+ | 2003 05 05 | 704 | 0.2+ | 0.5+ |
| 2001 12 17 | 704 | 0.5− | 1.2+ | 2003 04 24 | 246 | 0.6− | 0.6+ | 2003 05 05 | 704 | 0.2− | 0.2− |
| 2001 12 17 | 704 | (1.7+ | 1.7+) | 2003 04 24 | 246 | 0.6− | 0.1− | 2005 09 24 | 703 | 0.5− | 1.1+ |
| 2002 01 05 | 644 | 0.1− | 1.0+ | 2003 04 24 | 246 | 0.2− | 0.2+ | 2005 09 24 | 703 | 0.2+ | 0.4− |
| 2002 01 05 | 644 | 0.2+ | 1.1+ | 2003 04 24 | 246 | 0.3+ | 0.1+ | 2005 09 24 | 703 | (1.6+ | 1.6+) |
| 2002 01 05 | 644 | 0.2+ | 1.0+ | 2003 04 24 | 246 | 0.5+ | 0.0 | 2005 09 24 | 703 | 1.4− | 1.5+ |
| 2002 01 08 | 704 | 0.8+ | 0.2− | 2003 04 24 | 557 | 0.0 | 0.1− | 2005 09 30 | 699 | (2.2+ | 1.5+) |
| 2002 01 08 | 704 | 0.3+ | 0.2− | 2003 04 24 | 557 | 0.5+ | 0.7+ | 2005 09 30 | 699 | (0.1+ | 2.9+) |
| 2002 01 08 | 704 | 0.1− | 0.7− | 2003 04 24 | 557 | 0.0 | 0.4− | 2005 09 30 | 699 | 0.0 | 0.4+ |
| 2002 01 08 | 704 | 0.1+ | 0.1− | 2003 04 24 | 557 | 0.2− | 0.9− | 2005 09 30 | 699 | 1.1− | 0.5+ |
| 2002 01 08 | 704 | 0.3+ | 0.7− | 2003 04 24 | 557 | 0.1− | 0.3+ | 2005 10 03 | 703 | 0.5− | 0.6+ |
| 2002 01 11 | 699 | 0.8+ | 0.2+ | 2003 04 25 | 246 | 0.7+ | 0.3+ | 2005 10 03 | 703 | 0.4+ | 0.1− |
| 2002 01 11 | 699 | 0.4− | 1.3+ | 2003 04 25 | 246 | 0.5+ | 0.1+ | 2005 10 03 | 703 | 0.3+ | 0.1+ |
| 2002 01 11 | 699 | 0.2− | 0.4+ | 2003 04 25 | 246 | 0.0 | 0.1+ | 2005 10 03 | 703 | (1.6− | 2.8+) |
| 2002 01 11 | 699 | 0.7− | 0.2+ | 2003 04 25 | 246 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.5+ |
| 2002 01 14 | 645 | 0.1− | 0.0 | 2003 04 25 | 246 | 0.4+ | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.7+ |
| 2002 01 14 | 645 | 0.1− | 0.0 | 2003 04 25 | 246 | 0.5− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2002 02 04 | 644 | 0.1− | 0.6− | 2003 04 28 | 704 | 1.1+ | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2002 02 04 | 644 | 0.3− | 0.1− | 2003 04 28 | 704 | 0.8+ | 0.2− | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2002 02 04 | 644 | 0.7− | 0.2− | 2003 04 28 | 704 | 0.5− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 02 12 | 704 | 0.9+ | 0.6+ | 2003 05 01 | 704 | 0.6+ | 0.5+ | | | | |

**(141412)∗ 2002 AW$_{184}$**

Discovered 2002 Jan. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.99910 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17285478 | $\omega$ | 311.43448 | | +0.19006658 | −0.97473930 | |
| $a$ | 3.1916489 | $\Omega$ | 127.22853 | | +0.93897130 | +0.14558775 | |
| $e$ | 0.0770245 | $i$ | 8.47122 | | +0.28671865 | +0.16937386 | |
| $P$ | 5.70 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.1− | 0.6− | 2003 03 07 | 699 | (2.7+ | 0.5−) | 2006 09 18 | 699 | 0.2+ | 0.5+ |
| 2001 11 17 | 704 | 0.5+ | 1.3− | 2003 03 07 | 699 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.7+ |
| 2001 11 17 | 704 | (2.8− | 1.0+) | 2003 03 07 | 699 | (0.7+ | 2.0+) | 2006 09 19 | 703 | 0.7+ | 0.5+ |
| 2001 11 17 | 704 | 0.3+ | 0.5+ | 2003 03 24 | 608 | (1.0+ | 1.5+) | 2006 09 19 | 703 | (0.2+ | 1.8+) |
| 2001 11 17 | 704 | 1.1+ | 1.1− | 2003 03 24 | 608 | 0.8+ | 1.2+ | 2006 09 19 | 703 | 0.4+ | 0.9+ |
| 2001 12 05 | 608 | 0.7− | 0.2+ | 2003 03 24 | 608 | 0.5+ | 0.2+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 2001 12 05 | 608 | 0.5− | 0.8+ | 2005 05 15 | G96 | 0.4+ | 0.1+ | 2006 10 02 | 703 | 0.5+ | 0.6− |
| 2001 12 05 | 608 | 0.8− | 0.8− | 2005 05 15 | G96 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.2+ | 0.7+ |
| 2001 12 11 | 704 | 0.7− | 1.3+ | 2005 05 15 | G96 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.8− | 0.3− |
| 2001 12 11 | 704 | (1.9+ | 1.6+) | 2005 05 15 | G96 | 0.2+ | 0.6+ | 2006 10 02 | 703 | 0.3− | 0.3+ |
| 2001 12 11 | 704 | 0.3+ | 0.9+ | 2005 06 27 | 599 | 0.4+ | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.5+ |
| 2001 12 11 | 704 | 0.4− | 0.3+ | 2005 06 27 | 599 | 0.7− | 0.7+ | 2006 10 02 | 703 | 0.1− | 0.2+ |
| 2001 12 11 | 704 | 0.4+ | 0.2+ | 2005 06 27 | 599 | 0.3− | 0.6+ | 2006 10 02 | 703 | 0.2− | 0.2+ |
| 2002 01 08 | 644 | 0.3+ | 0.3− | 2005 07 04 | G96 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2002 01 08 | 644 | 0.0 | 0.1− | 2005 07 04 | G96 | 1.1− | 0.4+ | 2006 10 17 | 703 | 0.4− | 1.2+ |
| 2002 01 08 | 644 | 0.4+ | 0.2+ | 2005 07 04 | G96 | (0.2− | 3.1+) | 2006 10 17 | 703 | (2.1− | 1.4−) |
| 2002 01 09 | 209 | 0.1− | 0.2+ | 2005 07 04 | G96 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 1.0+ | 0.5− |
| 2002 01 09 | 209 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 01 09 | 209 | 0.2− | 0.2+ | 2006 09 18 | 703 | 1.3+ | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2003 02 28 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 1.1− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2003 02 28 | 704 | 0.8− | 1.3+ | 2006 09 18 | 703 | 0.2+ | 1.0− | 2006 10 23 | 644 | 1.4− | 0.1+ |
| 2003 02 28 | 704 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2003 02 28 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2003 03 07 | 699 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.0 | | | | |

**(141413)∗ 2002 AM$_{199}$**

Discovered 2002 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.80059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17984405 | $\omega$ | 2.41523 | | +0.63311589 | −0.77323892 | |
| $a$ | 3.1084126 | $\Omega$ | 48.30703 | | +0.70938235 | +0.56121128 | |
| $e$ | 0.0581199 | $i$ | 2.73099 | | +0.30974337 | +0.29520073 | |
| $P$ | 5.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 691 | 0.1+ | 0.0 | 2002 01 08 | 704 | 0.3− | 1.0− | 2006 11 11 | 691 | 0.5+ | 0.0 |
| 2000 08 25 | 691 | 0.0 | 0.0 | 2002 01 14 | 704 | (1.6+ | 1.0+) | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2000 08 25 | 691 | 0.5− | 0.2+ | 2002 01 14 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2000 10 01 | 704 | 0.3+ | 0.2+ | 2002 01 14 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.7− | 0.4+ | 2002 01 14 | 704 | 0.1− | 1.5+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2000 10 01 | 704 | 0.3− | 0.9+ | 2003 03 23 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.9+ | 0.5+ | 2003 03 23 | 691 | 0.1+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2001 12 15 | 645 | 0.0 | 0.0 | 2003 03 23 | 691 | 0.7+ | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2001 12 15 | 645 | 0.1+ | 0.1− | 2003 03 26 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.2+ | 0.9+ | 2003 03 26 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | (1.2− | 2.0+) |
| 2001 12 17 | 704 | 0.6− | 1.0+ | 2003 03 26 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.6+ |
| 2001 12 17 | 704 | 0.9+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.1− | 1.0− |
| 2001 12 17 | 704 | 0.5− | 0.4− | 2006 09 27 | G96 | 0.6− | 0.1− | 2006 11 21 | 704 | (0.2+ | 1.8+) |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 12 19 | 645 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2002 01 08 | 704 | 0.4+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2002 01 08 | 704 | (0.8+ | 1.9+) | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2002 01 08 | 704 | 1.0+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2002 01 08 | 704 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2− |

**(141414)∗ 2002 AK$_{205}$ = 2004 EG$_2$**

Discovered 2002 Jan. 8 by the Sloan Digital Sky Survey at Apache Point. Id. A. Doppler (*MPO* 100142)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.26621 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17256720 | $\omega$ | 226.03997 | | +0.97262743 | −0.20155777 | |
| $a$ | 3.1951939 | $\Omega$ | 145.10900 | | +0.22410162 | +0.94519880 | |
| $e$ | 0.0856671 | $i$ | 11.66240 | | −0.06143569 | +0.25685345 | |
| $P$ | 5.71 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | 0.8− | 0.5+ | 2003 01 27 | 644 | 0.4− | 0.6+ | 2006 08 21 | 644 | 0.5− | 0.1+ |
| 2001 09 17 | 699 | 0.2− | 0.9+ | 2003 01 27 | 644 | 0.3− | 0.6+ | 2006 08 24 | 644 | 0.3− | 0.2− |
| 2001 09 17 | 699 | 0.4− | 1.6+ | 2003 01 27 | 644 | 0.4− | 0.5+ | 2006 08 24 | 644 | 0.3− | 0.1− |
| 2001 09 17 | 699 | 0.8+ | 0.2− | 2004 03 12 | 644 | 0.5+ | 0.6+ | 2006 08 24 | 644 | 0.0 | 0.1− |
| 2001 10 15 | 644 | 0.3+ | 0.6+ | 2004 03 12 | 644 | 0.4+ | 0.5+ | 2006 08 28 | 691 | 0.3+ | 0.0 |
| 2001 10 15 | 644 | 0.1+ | 0.3+ | 2004 03 12 | 644 | 0.7+ | 0.5+ | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 2001 10 15 | 644 | 0.1+ | 0.1+ | 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.3+ | 0.6+ |
| 2001 10 23 | 644 | 0.6− | 0.9+ | 2004 03 14 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 2001 10 23 | 644 | 0.7− | 0.9+ | 2004 03 14 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.1− |
| 2001 10 23 | 644 | 0.6− | 0.7+ | 2005 06 15 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2005 06 15 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.2− | 0.0 |
| 2001 11 12 | 645 | 0.1+ | 0.1+ | 2005 06 15 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 699 | 0.4− | 0.6+ | 2005 06 29 | 691 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.9− | 0.3− |
| 2001 12 14 | 699 | 1.6− | 0.8+ | 2005 06 29 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 699 | 0.6+ | 1.3+ |
| 2001 12 14 | 699 | 1.2− | 0.7+ | 2005 06 29 | 691 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.5− |
| 2001 12 14 | 699 | 0.1+ | 0.6+ | 2006 08 01 | A50 | 0.8− | 0.4− | 2006 09 15 | 704 | 1.0− | 0.4+ |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.8+ | 0.1− |
| 2001 12 18 | 645 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.0 | 0.6− |
| 2002 01 08 | 645 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 09 15 | 704 | 0.1− | 1.5− |
| 2002 01 08 | 645 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 15 | 704 | 0.3+ | 0.7− |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.5− |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 1.2+ | 1.0+ |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.9+ |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.0 | 0.2− | 2006 09 18 | 699 | 1.4− | 1.1+ |

**(141415)∗ 2002 BR$_4$ = 1997 JT$_{10}$**

Discovered 2002 Jan. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 25612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.96468 | | (2000.0) | | | |
| $n$ | 0.17453297 | $\omega$ | 85.81317 | | −0.89333824 | −0.15797172 |
| $a$ | 3.1711570 | $\Omega$ | 84.70242 | | −0.02434496 | −0.91778985 |
| $e$ | 0.3166194 | $i$ | 24.99306 | | +0.44872498 | −0.36428936 |
| $P$ | 5.65 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 06 | 691 | 0.4− | 0.0 | 2001 12 22 | 704 | 0.1− | 0.1− | 2002 02 21 | 704 | 0.2+ | 0.1− |
| 1997 05 06 | 691 | 0.6− | 0.1− | 2001 12 22 | 704 | 0.5− | 0.2− | 2002 03 21 | 704 | 0.0 | 0.1+ |
| 1997 05 06 | 691 | 0.4− | 0.2+ | 2001 12 22 | 704 | 0.1+ | 0.6− | 2002 03 21 | 704 | 0.3+ | 0.2+ |
| 1997 05 09 | 691 | 0.1− | 0.4− | 2002 01 06 | 704 | 0.2− | 0.2+ | 2002 03 21 | 704 | 1.0+ | 0.6+ |
| 1997 05 09 | 691 | 0.1− | 0.6− | 2002 01 06 | 704 | 0.2+ | 0.5+ | 2002 03 21 | 704 | 0.5+ | 0.8+ |
| 1997 05 09 | 691 | 0.2− | 0.4− | 2002 01 06 | 704 | 0.3+ | 0.7+ | 2002 03 21 | 704 | 0.4+ | 0.6+ |
| 1997 05 14 | 691 | 0.1+ | 0.4− | 2002 01 06 | 704 | 0.1− | 0.7+ | 2002 04 02 | 704 | 0.8− | 0.0 |
| 1997 05 14 | 691 | 0.2+ | 0.3− | 2002 01 06 | 704 | 0.4+ | 0.6+ | 2002 04 02 | 704 | 0.1− | 0.2− |
| 1997 05 14 | 691 | 0.2+ | 0.0 | 2002 01 19 | 699 | 0.3+ | 0.6− | 2002 04 02 | 704 | 0.1− | 0.1+ |
| 2000 09 26 | 645 | 0.1+ | 0.0 | 2002 01 19 | 699 | 0.3+ | 0.7− | 2002 04 02 | 704 | 0.0 | 0.1+ |
| 2000 09 26 | 645 | 0.1+ | 0.0 | 2002 01 19 | 699 | 0.3+ | 0.4− | 2002 04 02 | 704 | 0.4− | 0.3+ |
| 2000 11 27 | 645 | 0.0 | 0.2− | 2002 01 19 | 699 | 0.5+ | 0.6− | 2002 05 03 | 704 | 0.1+ | 0.1+ |
| 2000 11 27 | 645 | 0.1+ | 0.1− | 2002 01 21 | 699 | 0.1+ | 0.4− | 2002 05 03 | 704 | 0.1+ | 0.8+ |
| 2001 11 11 | 704 | 1.4− | 0.4− | 2002 01 21 | 699 | 0.1+ | 0.3− | 2002 05 03 | 704 | 0.0 | 0.3+ |
| 2001 11 11 | 704 | 0.8− | 0.2− | 2002 01 21 | 699 | 0.1− | 0.1− | 2002 05 03 | 704 | 0.2− | 0.9+ |
| 2001 11 11 | 704 | 1.5− | 0.3− | 2002 01 21 | 699 | 0.1− | 0.2− | 2002 05 03 | 704 | 0.2− | 0.9+ |
| 2001 11 11 | 704 | 0.9− | 0.3+ | 2002 01 25 | 704 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.3− | 0.2− |
| 2001 11 11 | 704 | 0.8− | 0.1+ | 2002 01 25 | 704 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.8+ | 0.9+ |
| 2001 12 09 | 704 | 0.2− | 0.6− | 2002 01 25 | 704 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.8+ | 0.5− |
| 2001 12 09 | 704 | 0.5− | 0.2− | 2002 01 25 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.5+ |
| 2001 12 09 | 704 | 0.4− | 0.1+ | 2002 01 25 | 704 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.9− | 0.4+ |
| 2001 12 09 | 704 | 0.3− | 0.2+ | 2002 02 01 | 699 | 0.0 | 0.5− | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2001 12 09 | 704 | 0.3− | 0.5+ | 2002 02 01 | 699 | 0.4− | 0.3− | 2006 11 13 | 703 | 0.5− | 0.1− |
| 2001 12 18 | 699 | 0.2+ | 1.2− | 2002 02 01 | 699 | 0.1+ | 0.4− | 2006 11 13 | 703 | (1.7+ | 0.6−) |
| 2001 12 18 | 699 | 0.8+ | 0.1+ | 2002 02 01 | 699 | 0.1− | 0.1− | 2006 11 19 | 703 | 1.0+ | 0.5− |
| 2001 12 18 | 699 | 0.1+ | 1.0− | 2002 02 21 | 704 | 0.0 | 0.4− | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2001 12 18 | 699 | 0.9− | 0.1+ | 2002 02 21 | 704 | 0.2+ | 0.7− | 2006 11 19 | 703 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | 0.1− | 0.3− | 2002 02 21 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.4+ | 0.0 |
| 2001 12 22 | 704 | 0.7+ | 0.1+ | 2002 02 21 | 704 | 0.1− | 0.1− | | | | |

**(141416)∗ 2002 BR$_{19}$ = 1997 GG$_{42}$**

Discovered 2002 Jan. 21 by NEAT at Palomar.

Id. A. Doppler (*MPO* 25625)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.00679 | | (2000.0) | | | |
| $n$ | 0.18209065 | $\omega$ | 59.56994 | | −0.78826429 | −0.60919893 |
| $a$ | 3.0827924 | $\Omega$ | 82.75943 | | +0.53033738 | −0.74405181 |
| $e$ | 0.2655038 | $i$ | 5.01359 | | +0.31206035 | −0.27434205 |
| $P$ | 5.41 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 06 | 691 | 0.4− | 0.3+ | 2002 02 08 | 704 | 0.9− | 0.1− | 2002 05 06 | 704 | 1.0− | 0.3+ |
| 1994 09 06 | 691 | 0.3+ | 0.1+ | 2002 02 08 | 704 | 0.1− | 0.0 | 2002 05 06 | 704 | 0.8− | 0.4+ |
| 1994 09 06 | 691 | 0.1− | 0.4+ | 2002 02 12 | 704 | 0.5+ | 0.4− | 2002 05 06 | 704 | 0.5− | 1.5+ |
| 1997 04 09 | 809 | 1.0+ | 1.3+ | 2002 02 12 | 704 | 0.5+ | 0.5− | 2002 05 06 | 704 | 0.5− | 0.9+ |
| 1997 04 09 | 809 | (0.0 | 2.6+) | 2002 02 12 | 704 | 0.5+ | 0.8− | 2005 08 27 | 691 | 0.1− | 0.4+ |
| 1997 04 09 | 809 | 0.7− | 1.9+ | 2002 02 12 | 704 | 0.4+ | 0.4− | 2005 08 27 | 691 | 0.3− | 0.4+ |
| 1997 04 10 | 809 | 0.0 | 0.3+ | 2002 02 12 | 704 | 1.0+ | 1.0− | 2005 08 27 | 691 | 0.1− | 0.3+ |
| 1997 04 10 | 809 | 0.9− | 0.0 | 2002 02 23 | 644 | 0.3+ | 0.3+ | 2005 09 11 | 691 | 0.1− | 0.2+ |
| 1997 04 10 | 809 | 0.2+ | 1.7− | 2002 02 23 | 644 | 0.0 | 0.4+ | 2005 09 11 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.8+ | 0.3− | 2002 02 23 | 644 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2002 03 09 | 699 | 0.8− | 0.1+ | 2005 09 24 | 703 | (0.9− | 2.0+) |
| 2001 12 17 | 704 | 0.5− | 0.4− | 2002 03 09 | 699 | 0.4+ | 0.0 | 2005 09 24 | 703 | (3.0− | 0.5−) |
| 2002 01 09 | 704 | (1.8− | 0.6+) | 2002 03 09 | 699 | 0.1− | 0.3+ | 2005 09 24 | 703 | (1.7− | 1.2+) |
| 2002 01 09 | 704 | 1.3− | 0.2+ | 2002 03 09 | 699 | 0.1+ | 0.2− | 2005 09 24 | 703 | (0.1+ | 1.9+) |
| 2002 01 09 | 704 | (1.6− | 0.4+) | 2002 03 11 | 644 | 0.1− | 0.1+ | 2005 10 02 | G96 | 0.2− | 0.3+ |
| 2002 01 09 | 704 | (1.6− | 0.4+) | 2002 03 11 | 644 | 0.2− | 0.2+ | 2005 10 02 | G96 | 0.3− | 0.2+ |
| 2002 01 09 | 704 | (1.7− | 0.0 ) | 2002 03 11 | 644 | 0.0 | 0.1+ | 2005 10 02 | G96 | 0.5− | 0.4+ |
| 2002 01 19 | 704 | (0.3− | 1.6−) | 2002 03 11 | 106 | 0.3− | 0.4+ | 2005 10 02 | G96 | (1.7− | 0.7+) |
| 2002 01 19 | 704 | 0.6− | 0.4− | 2002 03 11 | 106 | 0.5− | 0.1+ | 2005 11 02 | 291 | 0.1+ | 0.6+ |
| 2002 01 19 | 704 | 0.5+ | 0.0 | 2002 03 16 | 608 | 0.2+ | 0.7+ | 2005 11 02 | 291 | 0.0 | 0.8+ |
| 2002 01 19 | 704 | 0.9+ | 0.6+ | 2002 03 16 | 608 | 0.4+ | 0.6+ | 2005 11 02 | 291 | 0.3+ | 0.3+ |
| 2002 01 19 | 704 | 0.3− | 0.1− | 2002 03 16 | 608 | 0.1− | 0.6+ | 2006 08 21 | 691 | 0.3− | 0.5− |
| 2002 01 20 | 699 | 0.7+ | 0.3+ | 2002 03 17 | 704 | 0.6− | 1.0+ | 2006 08 21 | 691 | 0.5− | 0.2− |
| 2002 01 20 | 699 | 0.8+ | 0.8+ | 2002 03 17 | 704 | (0.5− | 1.5+) | 2006 08 21 | 691 | 0.2− | 0.4− |
| 2002 01 20 | 699 | 0.0 | 0.6+ | 2002 03 17 | 704 | (0.3− | 2.9+) | 2006 11 18 | 704 | 0.9+ | 1.5− |
| 2002 01 20 | 699 | 1.3+ | 1.0+ | 2002 03 17 | 704 | (0.8− | 1.6+) | 2006 11 18 | 704 | 0.6+ | 1.6− |
| 2002 01 21 | 644 | 0.1+ | 0.1+ | 2002 03 17 | 704 | (0.4− | 1.8+) | 2006 11 18 | 704 | (2.0+ | 0.9−) |
| 2002 01 21 | 644 | 0.1+ | 0.1+ | 2002 03 22 | 644 | 0.3− | 0.8+ | 2006 11 18 | 704 | 0.3+ | 1.1− |
| 2002 01 21 | 644 | 0.1− | 0.2+ | 2002 03 22 | 644 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.1− | 1.6− |
| 2002 01 22 | 644 | 0.6+ | 0.2− | 2002 03 22 | 644 | 0.2− | 0.8+ | 2006 11 21 | 704 | 0.9− | 0.3− |
| 2002 01 22 | 644 | 0.8+ | 0.2+ | 2002 04 02 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2002 01 22 | 644 | 0.7+ | 0.1− | 2002 04 02 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2002 02 08 | 699 | (2.0+ | 0.4+) | 2002 04 02 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2002 02 08 | 699 | 1.4+ | 0.6− | 2002 04 16 | 704 | (0.2+ | 2.1+) | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2002 02 08 | 699 | 0.7+ | 0.3− | 2002 04 16 | 704 | (1.9+ | 1.2+) | 2006 12 01 | 704 | 0.2+ | 1.2+ |
| 2002 02 08 | 704 | 0.2+ | 0.6+ | 2002 04 16 | 704 | 0.4− | 0.5+ | 2006 12 01 | 704 | 0.2− | 1.3+ |
| 2002 02 08 | 699 | (1.8+ | 0.4−) | 2002 04 16 | 704 | 1.4+ | 0.4+ | 2006 12 01 | 704 | 0.4+ | 0.9+ |
| 2002 02 08 | 704 | 0.3− | 0.0 | 2002 04 16 | 704 | 1.5+ | 1.1− | 2006 12 01 | 704 | 0.5+ | 0.4+ |
| 2002 02 08 | 704 | 0.8− | 0.3− | 2002 05 06 | 704 | 0.7− | 0.7+ | | | | |

**(141417)∗ 2002 BM$_{20}$**

Discovered 2002 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 258.71956 | | (2000.0) | | | |
| $n$ | 0.35903939 | $\omega$ | 335.38878 | | −0.38433123 | −0.87717101 |
| $a$ | 1.9605352 | $\Omega$ | 135.62043 | | +0.90046839 | −0.42494035 |
| $e$ | 0.0826029 | $i$ | 24.30345 | | +0.20358337 | +0.22359948 |
| $P$ | 2.75 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 24 | 644 | 0.2− | 0.4− | 2002 03 09 | 704 | 1.0− | 1.1+ | 2005 03 12 | 704 | 0.0 | 0.1+ |
| 2001 12 24 | 644 | 0.6− | 0.3− | 2002 03 09 | 704 | 0.1− | 0.4+ | 2005 03 12 | 704 | 0.2− | 0.6+ |
| 2001 12 24 | 644 | 0.3− | 0.0 | 2002 03 09 | 704 | 0.0 | 0.9+ | 2005 03 12 | 704 | 0.2− | 0.6+ |
| 2002 01 22 | 704 | 0.2− | 0.3+ | 2002 03 09 | 704 | 0.2+ | 0.4+ | 2005 03 12 | 704 | 0.2+ | 0.4+ |
| 2002 01 22 | 704 | 0.1− | 0.8+ | 2002 03 09 | 704 | 0.8+ | 0.3− | 2005 03 12 | 704 | 0.2+ | 0.0 |
| 2002 01 22 | 704 | 0.1− | 0.5+ | 2002 04 09 | 699 | 0.1+ | 0.2− | 2005 03 21 | 704 | 0.1+ | 0.8− |
| 2002 01 25 | 704 | 0.2− | 0.0 | 2002 04 09 | 699 | 0.6− | 1.4+ | 2005 03 21 | 704 | (0.9+ | 2.0+) |
| 2002 01 25 | 704 | 0.2− | 0.1− | 2002 04 09 | 699 | (2.1+ | 0.5+) | 2005 03 21 | 704 | 1.2+ | 0.9+ |
| 2002 01 25 | 704 | 0.2− | 0.0 | 2002 04 09 | 699 | 1.3+ | 0.4+ | 2005 03 21 | 704 | 0.2+ | 1.1+ |
| 2002 01 25 | 704 | 0.2− | 0.2− | 2003 07 10 | 608 | (0.3+ | 1.6+) | 2005 03 21 | 704 | (1.8+ | 1.4+) |
| 2002 02 04 | 608 | (1.6+ | 2.9+) | 2003 07 10 | 608 | (0.5+ | 2.0+) | 2005 03 31 | 703 | 0.4+ | 0.3+ |
| 2002 02 04 | 608 | (1.4+ | 2.5+) | 2003 07 10 | 608 | (0.4+ | 2.2+) | 2005 03 31 | 703 | 0.2− | 0.2− |
| 2002 02 04 | 608 | (1.4+ | 2.3+) | 2003 07 24 | 644 | 0.3+ | 0.9+ | 2005 03 31 | 703 | 0.4− | 0.1− |
| 2002 02 06 | 644 | 0.2− | 0.1− | 2003 07 24 | 644 | 0.2+ | 1.0+ | 2005 03 31 | 703 | 0.3− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.2− | 0.2− | 2003 07 24 | 644 | 0.5+ | 0.9+ | 2005 04 11 | 703 | 0.9+ | 0.4+ | | |
| 2002 02 06 | 644 | 0.3− | 0.1− | 2003 07 25 | 704 | 0.5− | 0.8+ | 2005 04 11 | 703 | (1.8+ | 0.2+) | | |
| 2002 02 07 | 644 | 0.1+ | 0.7+ | 2003 07 25 | 704 | 0.0 | 0.1+ | 2005 04 11 | 703 | 0.3+ | 1.0+ | | |
| 2002 02 07 | 644 | 0.0 | 0.7+ | 2003 07 25 | 704 | 0.2− | 0.2+ | 2005 04 11 | 703 | 0.1− | 0.7+ | | |
| 2002 02 07 | 644 | 0.3+ | 1.1+ | 2003 07 25 | 704 | 0.2− | 1.3+ | 2005 06 06 | 703 | 0.3+ | 0.9− | | |
| 2002 02 08 | 704 | 0.6− | 0.5− | 2003 07 25 | 704 | 0.2+ | 0.9+ | 2005 06 06 | 703 | 0.7− | 0.5− | | |
| 2002 02 08 | 704 | 0.1+ | 0.3− | 2003 07 30 | 608 | 0.4− | 0.3+ | 2005 06 06 | 703 | 0.2− | 0.1+ | | |
| 2002 02 08 | 704 | 0.1− | 0.0 | 2003 07 30 | 608 | 0.0 | 0.0 | 2005 06 06 | 703 | 0.0 | 0.3+ | | |
| 2002 02 11 | 704 | 0.7+ | 0.4− | 2003 07 30 | 608 | 0.6− | 0.2− | 2006 08 20 | 644 | 0.1− | 0.1+ | | |
| 2002 02 11 | 704 | 0.1− | 0.0 | 2004 12 19 | 703 | 1.4− | 0.7+ | 2006 08 20 | 644 | 0.4− | 0.0 | | |
| 2002 02 11 | 704 | 0.0 | 0.3+ | 2004 12 19 | 703 | 0.9− | 0.1− | 2006 08 20 | 644 | 0.4− | 0.2+ | | |
| 2002 02 11 | 704 | 0.4+ | 0.3− | 2004 12 19 | 703 | 0.4− | 1.0− | 2006 09 16 | E12 | 0.2− | 0.2+ | | |
| 2002 02 16 | 644 | 0.2− | 0.1+ | 2004 12 19 | 703 | 0.5− | 0.1+ | 2006 09 16 | E12 | 0.1− | 0.6+ | | |
| 2002 02 16 | 644 | 0.1− | 0.4− | 2005 01 07 | 704 | 0.5+ | 0.4− | 2006 09 16 | E12 | 0.0 | 0.1− | | |
| 2002 02 16 | 644 | 0.2− | 0.1+ | 2005 01 07 | 704 | 1.1+ | 0.4− | 2006 09 16 | E12 | 0.5− | 0.1+ | | |
| 2002 02 16 | 644 | 0.3− | 0.0 | 2005 01 07 | 704 | 0.1− | 0.2− | 2006 09 23 | E12 | 0.1+ | 0.1− | | |
| 2002 02 16 | 644 | 0.1− | 0.0 | 2005 01 07 | 704 | 0.1+ | 0.2− | 2006 09 23 | E12 | 0.2+ | 0.1− | | |
| 2002 02 16 | 644 | 0.4− | 0.1+ | 2005 03 05 | 941 | 0.2− | 0.0 | 2006 09 23 | E12 | 0.3− | 0.5+ | | |
| 2002 02 20 | 704 | 0.3+ | 0.4+ | 2005 03 05 | 941 | 0.2− | 0.0 | 2006 09 23 | E12 | 0.3+ | 0.0 | | |
| 2002 02 20 | 704 | 1.0+ | 0.5+ | 2005 03 05 | 941 | 0.1− | 0.1+ | 2006 10 13 | E12 | 0.0 | 0.8+ | | |
| 2002 02 20 | 704 | 0.4+ | 0.2+ | 2005 03 05 | 941 | 0.0 | 0.0 | 2006 10 13 | E12 | 0.3− | 1.1+ | | |
| 2002 02 20 | 704 | 0.4+ | 0.2− | 2005 03 05 | 941 | 0.1− | 0.1− | 2006 10 13 | E12 | 0.2+ | 0.7+ | | |
| 2002 02 20 | 704 | 0.7+ | 0.1+ | 2005 03 09 | 703 | 0.0 | 0.6− | 2006 10 13 | E12 | 0.2+ | 0.4+ | | |
| 2002 03 06 | 704 | 0.0 | 0.6+ | 2005 03 09 | 703 | 0.1− | 0.0 | 2006 10 28 | E12 | 0.1− | 0.9− | | |
| 2002 03 06 | 704 | 0.0 | 0.6+ | 2005 03 09 | 703 | 0.1− | 0.5− | 2006 10 28 | E12 | 0.6+ | 0.4+ | | |
| 2002 03 06 | 704 | 0.2+ | 0.0 | 2005 03 09 | 703 | 0.7− | 0.3+ | 2006 10 28 | E12 | 1.8+ | 0.2+ | | |

**(141418)∗ 2002 BD$_{21}$**

Discovered 2002 Jan. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.19694 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36489835 | $\omega$ | 96.20756 | | −0.75135468 | −0.60172627 | |
| $a$ | 1.9394925 | $\Omega$ | 47.19990 | | +0.35713384 | −0.71599811 | |
| $e$ | 0.0760644 | $i$ | 21.66766 | | +0.55490681 | −0.35393815 | |
| $P$ | 2.70 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 1.6+ | 0.1+ | 2005 05 09 | 704 | 0.6+ | 0.3+ | 2006 10 30 | G96 | 0.2+ | 0.4− | | |
| 1998 12 12 | 704 | 1.0− | 0.2− | 2005 05 09 | 704 | 0.9+ | 0.8+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | | |
| 1998 12 12 | 704 | (3.4+ | 0.5+) | 2005 05 09 | 699 | 0.7+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 1998 12 12 | 704 | 0.4− | 1.5− | 2005 05 09 | 704 | 1.1+ | 0.2+ | 2006 11 01 | 691 | 0.5+ | 0.1+ | | |
| 2002 01 25 | 704 | 0.0 | 0.0 | 2005 05 09 | 699 | 0.9+ | 0.9+ | 2006 11 11 | 703 | 0.9+ | 0.3+ | | |
| 2002 01 25 | 704 | 0.0 | 0.0 | 2005 05 09 | 699 | 0.4+ | 1.4+ | 2006 11 11 | 703 | 0.9+ | 0.9+ | | |
| 2002 01 25 | 704 | 0.6+ | 0.4− | 2005 05 09 | 699 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.6− | | |
| 2002 01 25 | 704 | 0.4+ | 0.8− | 2005 05 13 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | (1.1+ | 1.5+) | | |
| 2002 01 25 | 704 | 0.6+ | 0.8− | 2005 05 13 | 704 | 0.4+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.3− | | |
| 2002 01 26 | 704 | 0.1+ | 0.3− | 2005 05 13 | 704 | 1.1+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.5− | | |
| 2002 01 26 | 704 | 0.3+ | 0.3− | 2005 05 13 | G96 | 0.0 | 0.4+ | 2006 11 12 | G96 | 0.4+ | 0.4− | | |
| 2002 01 26 | 704 | 0.0 | 0.5− | 2005 05 13 | 704 | 0.6+ | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.2− | | |
| 2002 01 26 | 704 | 0.4+ | 0.1+ | 2005 05 13 | G96 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.1− | | |
| 2002 01 26 | 704 | 0.2+ | 0.1+ | 2005 05 13 | 704 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2002 03 16 | 699 | (0.5+ | 1.8+) | 2005 05 13 | G96 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2002 03 16 | 699 | 0.2− | 0.5+ | 2005 05 13 | G96 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.0 | | |
| 2002 03 16 | 699 | 0.2+ | 1.0+ | 2005 05 19 | 644 | 0.2+ | 0.6+ | 2006 11 15 | 704 | 0.8− | 1.2+ | | |
| 2002 03 16 | 699 | 1.3− | 0.4− | 2005 05 19 | 644 | 0.4+ | 0.5+ | 2006 11 15 | 704 | 0.3− | 0.6+ | | |
| 2002 03 21 | 446 | 0.3− | 0.7− | 2005 05 19 | 644 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.0 | | |
| 2002 03 21 | 446 | 0.2− | 0.6+ | 2005 06 03 | 703 | 1.1− | 0.8+ | 2006 11 15 | 704 | 0.6+ | 0.0 | | |
| 2002 03 23 | 446 | 0.6+ | 0.2+ | 2005 06 03 | 703 | (2.6− | 1.3+) | 2006 11 16 | 704 | (0.1+ | 2.6+) | | |
| 2002 03 23 | 446 | 0.6− | 0.3+ | 2005 06 03 | 703 | 1.3− | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.0 | | |
| 2005 03 31 | 691 | 0.2+ | 0.1+ | 2005 06 03 | 703 | 1.4− | 0.8+ | 2006 11 16 | 704 | 0.1− | 1.2+ | | |
| 2005 03 31 | 691 | 0.2− | 0.4+ | 2005 06 09 | 703 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.1− | | |
| 2005 03 31 | 691 | 0.4+ | 0.3+ | 2005 06 09 | 703 | (0.9+ | 1.5−) | 2006 11 17 | 704 | 0.2+ | 0.4+ | | |
| 2005 04 05 | 703 | 1.3− | 0.2+ | 2005 06 09 | 703 | 0.6+ | 0.2− | 2006 11 17 | 704 | 0.5− | 0.2+ | | |
| 2005 04 05 | 703 | 0.8− | 0.8+ | 2005 06 09 | 703 | 0.6+ | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.3+ | | |
| 2005 04 05 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 1.1− | 1.2− | 2006 11 17 | 704 | 0.0 | 0.3+ | | |
| 2005 04 05 | 703 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.3− | | |
| 2005 04 05 | 703 | (1.6− | 1.3−) | 2006 09 30 | 703 | 1.4− | 0.3− | 2006 11 19 | 704 | 0.9− | 0.1− | | |
| 2005 04 05 | 704 | 0.8+ | 0.1− | 2006 09 30 | 703 | 1.0− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.5+ | | |
| 2005 04 05 | 704 | 1.2+ | 0.9+ | 2006 10 16 | 703 | (1.2− | 2.5−) | 2006 11 19 | 704 | 0.2+ | 0.7+ | | |
| 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.0 | | |
| 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.2+ | | |
| 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 703 | (0.8− | 2.3−) | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2005 05 04 | 699 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.6− | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.3+ | | |
| 2005 05 04 | 699 | 0.5− | 0.3+ | 2006 10 18 | 691 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.2− | | |
| 2005 05 04 | 704 | 0.3+ | 0.9+ | 2006 10 18 | 691 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.0 | | |
| 2005 05 04 | 699 | 0.4− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.4− | 0.3− | | |
| 2005 05 04 | 704 | (1.3+ | 2.3+) | 2006 10 22 | 691 | 0.4− | 0.6+ | 2006 11 20 | 704 | 0.6− | 0.6+ | | |
| 2005 05 04 | 699 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.7+ | 2006 11 20 | 704 | 0.7+ | 0.7+ | | |
| 2005 05 04 | 704 | 0.2− | 0.8+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.0 | 1.1+ | | |
| 2005 05 04 | 704 | (2.6+ | 1.1+) | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 2.5− | 1.5− | | |
| 2005 05 08 | 699 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 1.2− | 1.5+ | | |
| 2005 05 08 | 699 | 1.1+ | 0.7− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.0 | | |
| 2005 05 08 | 699 | 0.7+ | 0.1+ | 2006 10 30 | G96 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.6− | 0.8+ | | |
| 2005 05 08 | 699 | 0.1− | 1.0− | 2006 10 30 | G96 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.3− | 0.5− | | |
| 2005 05 09 | 704 | 1.2+ | 0.3+ | 2006 10 30 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.2− | 0.3+ | | |

**(141419)∗ 2002 BM$_{21}$ = 2000 SG$_{353}$**

Discovered 2002 Jan. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25626)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.76079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17211717 | $\omega$ | 34.75935 | | +0.19977479 | −0.92078875 | |
| $a$ | 3.2007611 | $\Omega$ | 46.44142 | | +0.76100728 | −0.06956900 | |
| $e$ | 0.1756170 | $i$ | 27.53603 | | +0.61721792 | +0.38380755 | |
| $P$ | 5.73 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 699 | 1.7− | 0.5+ | 2002 02 01 | 704 | 0.4− | 0.1+ | 2006 08 29 | 703 | (0.3− | 1.7+) | | |
| 2000 09 30 | 699 | 1.2− | 0.1+ | 2002 02 01 | 704 | 0.1+ | 0.2+ | 2006 08 29 | 703 | (0.5− | 2.4+) | | |
| 2000 09 30 | 699 | 0.6− | 0.5+ | 2002 02 01 | 704 | 0.3+ | 0.9− | 2006 10 04 | G96 | 0.3+ | 0.1+ | | |
| 2000 09 30 | 699 | 1.7− | 0.4+ | 2002 02 06 | 704 | 1.3− | 1.0− | 2006 10 04 | G96 | 0.2+ | 0.2+ | | |
| 2000 10 01 | 704 | 1.3+ | 1.2+ | 2002 02 06 | 704 | 0.5− | 1.2− | 2006 10 04 | G96 | 0.5+ | 0.1+ | | |
| 2000 10 01 | 704 | 1.1+ | 0.7− | 2002 02 06 | 704 | 1.1− | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.1+ | | |
| 2000 10 01 | 704 | 1.4+ | 0.1− | 2002 02 06 | 704 | 0.8− | 0.7− | 2006 10 19 | 703 | 0.7− | 0.2+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.4+ | 2002 02 06 | 704 | 1.0− | 1.0− | 2006 10 19 | 703 | 0.1− | 0.1+ | | |
| 2000 11 02 | 704 | 0.7− | 1.2+ | 2002 02 07 | 704 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.7− | 0.6+ | | |
| 2000 11 02 | 704 | 0.3− | 1.2+ | 2002 02 07 | 704 | 0.7+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.9+ | | |
| 2000 11 02 | 704 | 0.7− | 1.1+ | 2002 02 07 | 704 | 1.1+ | 0.2− | 2006 10 27 | 703 | 0.4− | 0.6+ | | |
| 2000 11 02 | 704 | 0.7− | 1.2+ | 2002 02 07 | 704 | 0.3− | 0.3− | 2006 10 27 | 703 | 0.0 | 0.6+ | | |
| 2000 11 19 | 699 | 1.8− | 0.4+ | 2002 02 07 | 704 | 0.4+ | 0.5+ | 2006 10 29 | 703 | 0.1− | 0.6+ | | |
| 2000 11 19 | 699 | 1.0− | 0.2− | 2002 02 08 | 704 | 0.2− | 1.3− | 2006 10 29 | 703 | 0.4+ | 0.1+ | | |
| 2000 11 19 | 699 | 1.1− | 0.9+ | 2002 02 08 | 704 | 0.4+ | 0.6+ | 2006 10 29 | 703 | 0.5+ | 0.0 | | |
| 2000 11 19 | 699 | 0.9− | 0.8+ | 2002 02 08 | 704 | 0.9+ | 1.0+ | 2006 10 29 | 703 | 0.1+ | 1.0+ | | |
| 2000 12 30 | 699 | 0.4− | 0.2− | 2002 02 08 | 704 | 0.8+ | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.4+ | | |
| 2000 12 30 | 699 | 0.6− | 0.9− | 2002 02 21 | 704 | 0.5− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.4+ | | |
| 2000 12 30 | 699 | 1.1− | 0.3+ | 2002 02 21 | 704 | 0.3+ | 0.4− | 2006 11 13 | 644 | 0.2− | 0.3+ | | |
| 2000 12 30 | 699 | 0.3− | 1.4+ | 2002 02 21 | 704 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.9− | 0.4+ | | |
| 2002 01 25 | 704 | 0.4+ | 0.9+ | 2003 05 01 | 691 | 1.4+ | 1.0+ | 2006 11 14 | 704 | 0.5− | 0.8+ | | |
| 2002 01 25 | 704 | 0.2− | 0.4+ | 2003 05 01 | 691 | 1.4+ | 1.0+ | 2006 11 14 | 704 | 0.7− | 1.0+ | | |
| 2002 01 25 | 704 | 1.4− | 0.7+ | 2003 05 01 | 691 | 1.0+ | 0.8+ | 2006 11 14 | 704 | 1.1− | 0.3− | | |
| 2002 01 26 | 704 | 0.3− | 0.7− | 2003 06 01 | 691 | 0.5+ | 0.9+ | 2006 11 14 | 704 | 1.3− | 0.2− | | |
| 2002 01 26 | 704 | 0.5− | 0.3+ | 2003 06 01 | 691 | 0.1+ | 0.7+ | 2006 11 22 | 703 | 0.1+ | 0.2+ | | |
| 2002 01 26 | 704 | 0.3− | 0.1− | 2003 06 01 | 691 | 0.5+ | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.1− | | |
| 2002 01 26 | 704 | 0.4− | 1.2+ | 2006 08 29 | 703 | (2.9− | 1.6−) | 2006 11 22 | 703 | 0.3− | 0.3+ | | |
| 2002 02 01 | 704 | 1.1+ | 0.5− | 2006 08 29 | 703 | 1.0− | 0.7+ | 2006 11 22 | 703 | 0.3− | 0.2+ | | |

**(141420)∗ 2002 BG$_{24}$**

Discovered 2002 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 355.83338 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.15747675 | $\omega$ | 4.29034 | | +0.91525992 | | −0.39824727 | |
| $a$ | 3.3961882 | $\Omega$ | 19.52628 | | +0.36399489 | | +0.75278600 | |
| $e$ | 0.0773680 | $i$ | 10.48329 | | +0.17264704 | | +0.52413009 | |
| $P$ | 6.26 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 704 | 0.6− | 0.4− | 2003 04 29 | 691 | 0.8− | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.4+ |
| 2000 11 03 | 704 | 0.8− | 0.1+ | 2005 07 10 | E12 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2000 11 03 | 704 | 0.4− | 0.9+ | 2005 07 10 | E12 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2000 11 03 | 704 | 0.6− | 0.9+ | 2005 07 10 | E12 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2000 11 03 | 704 | 1.1− | 0.2+ | 2005 07 10 | E12 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.3− |
| 2000 11 20 | 704 | 0.3− | 0.5+ | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.7+ |
| 2000 11 20 | 704 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2000 11 20 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 0.4+ | 1.0+ | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.5− | 1.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 12 19 | 704 | (0.9− | 2.5−) | 2006 09 18 | 699 | 0.3− | 0.9− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | (1.1− | 1.8−) | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2002 01 13 | 644 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2002 01 13 | 644 | 0.6+ | 0.6− | 2006 09 18 | 699 | 0.4+ | 0.5− | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2002 01 13 | 644 | 0.8+ | 0.4− | 2006 09 18 | 699 | 1.0− | 1.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2002 01 23 | 704 | 0.7+ | 0.5− | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2002 01 23 | 704 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.4− | 0.4− | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2002 01 23 | 704 | 0.6− | 1.1− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 01 23 | 704 | 0.6− | 0.9− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2002 01 25 | 704 | (2.0+ | 0.7+) | 2006 09 27 | 704 | 0.5− | 1.4+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 01 25 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.9− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2002 01 25 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.9− |
| 2002 02 10 | 704 | 0.5+ | 1.0+ | 2006 09 27 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.1− |
| 2002 02 10 | 704 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.8− | 0.6+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2002 02 10 | 704 | 0.5− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.3+ | 0.1− |
| 2002 02 10 | 704 | 0.6− | 0.6+ | 2006 09 30 | 691 | 0.4+ | 0.1− | 2006 11 13 | 691 | 0.4+ | 0.1− |
| 2003 04 24 | 691 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2003 04 24 | 691 | 0.5+ | 1.3+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.5− | 0.0 |
| 2003 04 24 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2003 04 29 | 691 | 0.4+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2003 04 29 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.2− | 0.4+ | | | | |

**(141421)∗ 2002 BB$_{29}$ = 2002 CQ$_{290}$**

Discovered 2002 Jan. 20 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (d, *MPO* 29767)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 16.50982 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17606481 | $\omega$ | 295.88241 | | +0.87859704 | | −0.36536360 | |
| $a$ | 3.1527365 | $\Omega$ | 86.85774 | | +0.46707911 | | +0.79161622 | |
| $e$ | 0.2288572 | $i$ | 17.93852 | | −0.09952059 | | +0.48974809 | |
| $P$ | 5.60 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.9+ | 1.0− | 2002 01 23 | 704 | 1.0− | 1.3+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2000 09 20 | 704 | 0.1+ | 0.2− | 2002 01 23 | 704 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2000 09 20 | 704 | 0.3+ | 0.1+ | 2002 01 23 | 704 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.6− |
| 2000 09 20 | 704 | 0.4+ | 0.9− | 2002 01 23 | 704 | 0.9− | 0.1− | 2006 11 19 | 704 | 1.0− | 0.7+ |
| 2000 09 20 | 704 | 0.5+ | 0.1− | 2002 02 02 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2000 10 18 | 699 | 0.7− | 0.2+ | 2002 02 02 | 644 | 0.4− | 0.5+ | 2006 11 19 | 704 | 1.0− | 0.4+ |
| 2000 10 18 | 699 | 0.6− | 1.0+ | 2002 02 02 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.4− |
| 2000 10 18 | 699 | 0.6− | 1.8+ | 2002 02 10 | 704 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.6+ |
| 2000 10 18 | 699 | 1.1− | 0.5+ | 2002 02 10 | 704 | 1.3− | 0.6− | 2006 11 22 | 683 | 0.4+ | 0.2+ |
| 2000 11 17 | 704 | 0.1+ | 0.3− | 2002 02 10 | 704 | 0.3− | 1.1− | 2006 11 22 | 683 | (0.6+ | 1.6+) |
| 2000 11 17 | 704 | 0.2− | 1.1− | 2002 02 10 | 704 | (0.4− | 1.7−) | 2006 11 22 | 683 | 0.0 | 1.0+ |
| 2000 11 17 | 704 | 0.1− | 0.6+ | 2002 02 12 | 644 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2000 11 17 | 704 | 0.0 | 0.9− | 2002 02 12 | 644 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2000 11 17 | 704 | 0.7+ | 0.3− | 2002 02 12 | 644 | 0.3+ | 0.6+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2000 12 22 | 704 | 0.3− | 0.7+ | 2005 02 15 | 809 | 0.0 | 1.0+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2000 12 22 | 704 | 0.7+ | 0.5+ | 2005 02 15 | 809 | 0.4− | 0.8+ | 2006 11 23 | 683 | 1.5+ | 0.6− |
| 2000 12 22 | 704 | 0.2− | 0.4+ | 2005 02 15 | 809 | 0.2+ | 0.2+ | 2006 11 23 | 683 | 1.2+ | 1.0− |
| 2001 12 23 | 704 | 0.5− | 0.1− | 2005 02 18 | 809 | 0.0 | 0.4+ | 2006 11 23 | 683 | 0.9+ | 0.4+ |
| 2001 12 23 | 704 | 0.0 | 0.5− | 2005 02 18 | 809 | 0.1+ | 0.5+ | 2006 11 25 | 704 | 1.0− | 0.3− |
| 2001 12 23 | 704 | 0.5+ | 0.0 | 2005 07 05 | E12 | (0.1+ | 1.5+) | 2006 11 25 | 704 | 0.8− | 0.1+ |
| 2001 12 23 | 704 | 0.9+ | 0.1− | 2005 07 05 | E12 | 0.2+ | 0.8+ | 2006 11 25 | 704 | 0.7− | 0.1− |
| 2001 12 23 | 704 | 0.5+ | 0.9+ | 2005 07 05 | E12 | 0.0 | 0.7+ | 2006 11 25 | 683 | 0.1− | 0.0 |
| 2002 01 08 | 704 | 0.3+ | 0.2− | 2005 07 05 | E12 | 0.3+ | 1.1+ | 2006 11 25 | 704 | 0.3− | 0.0 |
| 2002 01 08 | 704 | 0.7+ | 0.3− | 2006 09 19 | 703 | 0.4− | 0.3− | 2006 11 25 | 683 | 0.0 | 0.6+ |
| 2002 01 08 | 704 | 0.8+ | 0.2− | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 11 25 | 704 | 0.4− | 0.5+ |
| 2002 01 08 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 11 25 | 683 | 0.8− | 0.8+ |
| 2002 01 08 | 704 | 0.8+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.4− | 2006 11 28 | 704 | 0.0 | 0.0 |
| 2002 01 20 | 699 | 0.5+ | 1.0+ | 2006 11 05 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2− | 0.2+ |
| 2002 01 20 | 699 | 0.1+ | 0.3+ | 2006 11 05 | 644 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.2+ |
| 2002 01 20 | 699 | 0.2− | 0.7+ | 2006 11 05 | 644 | 0.1+ | 0.2− | 2006 11 28 | 704 | 1.0− | 0.3+ |
| 2002 01 20 | 699 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.3− | | | | |

**(141422)∗ 2002 BU$_{29}$**

Discovered 2002 Jan. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 248.75903 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17246093 | $\omega$ | 114.50659 | | −0.97773040 | | −0.11131435 | |
| $a$ | 3.1965064 | $\Omega$ | 59.54596 | | +0.01125685 | | −0.87433792 | |
| $e$ | 0.1371147 | $i$ | 11.91058 | | +0.20956275 | | −0.47237942 | |
| $P$ | 5.71 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.2+ | 0.8− | 2002 02 13 | 644 | 0.4+ | 0.8− | 2003 05 19 | 699 | 0.1+ | 1.1− |
| 2001 12 14 | 704 | 0.5+ | 0.7+ | 2003 03 26 | 699 | 0.0 | 0.7+ | 2004 07 12 | E12 | 0.4− | 0.1− |
| 2001 12 14 | 704 | 0.4− | 0.6+ | 2003 03 26 | 699 | 0.3− | 1.4− | 2004 07 12 | E12 | 0.5− | 0.9+ |
| 2001 12 19 | 644 | 0.9+ | 0.1− | 2003 03 26 | 699 | 0.6− | 1.1+ | 2004 07 12 | E12 | 0.1− | 0.6+ |
| 2001 12 19 | 644 | 0.2− | 1.4+ | 2003 03 26 | 699 | (2.1− | 1.4−) | 2004 07 12 | E12 | 0.7+ | 0.0 |
| 2001 12 19 | 644 | 0.9+ | 0.2+ | 2003 04 02 | 704 | 1.0+ | 0.3+ | 2004 08 09 | E12 | 0.9− | 0.6+ |
| 2001 12 19 | 644 | 0.1− | 1.5+ | 2003 04 02 | 704 | 0.8+ | 0.6+ | 2004 08 09 | E12 | 0.3+ | 0.3+ |
| 2001 12 19 | 644 | 0.4+ | 0.5+ | 2003 04 02 | 704 | 1.3− | 1.5+ | 2004 08 09 | E12 | 0.5− | 0.3+ |
| 2001 12 19 | 644 | 0.2− | 1.5+ | 2003 04 03 | 699 | 0.2− | 0.5+ | 2004 08 09 | E12 | 0.1+ | 0.7+ |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2003 04 03 | 699 | 1.2+ | 0.7− | 2005 10 13 | G96 | 0.1− | 0.3+ |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2003 04 03 | 699 | 0.3+ | 0.5+ | 2005 10 13 | G96 | 0.3− | 0.5+ |
| 2001 12 22 | 704 | 0.2+ | 1.0− | 2003 04 03 | 699 | 1.0− | 0.3+ | 2005 10 13 | G96 | 0.1+ | 0.3+ |
| 2001 12 22 | 704 | 0.4− | 0.8− | 2003 04 04 | 699 | 0.0 | 0.5+ | 2005 10 13 | G96 | 0.1− | 0.3+ |
| 2001 12 22 | 704 | 0.5− | 0.3− | 2003 04 04 | 699 | 1.0− | 0.4− | 2006 10 17 | G96 | 0.2− | 0.1+ |
| 2001 12 22 | 704 | 0.7− | 0.5+ | 2003 04 04 | 699 | 1.1− | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 2002 01 08 | 644 | 0.1− | 0.1+ | 2003 04 04 | 699 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.3+ |
| 2002 01 08 | 644 | 0.2+ | 0.2+ | 2003 04 27 | 699 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.5− | 0.1− |
| 2002 01 08 | 644 | 0.3+ | 0.0 | 2003 04 27 | 699 | 0.1+ | 1.1+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2002 01 14 | 644 | 0.1− | 0.1− | 2003 04 27 | 699 | (0.5+ | 1.6+) | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2002 01 14 | 644 | 0.4+ | 0.7− | 2003 04 27 | 699 | 0.2− | 0.8− | 2006 10 19 | G96 | 0.5− | 0.3+ |
| 2002 01 14 | 644 | 0.1− | 0.1− | 2003 04 28 | 704 | 1.1+ | 0.3− | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2002 01 14 | 644 | 0.6+ | 0.1+ | 2003 04 28 | 704 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2002 01 14 | 644 | 0.0 | 0.0 | 2003 04 28 | 704 | 0.6+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.4+ |
| 2002 01 14 | 644 | 1.1+ | 0.5+ | 2003 04 28 | 704 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2002 01 21 | 699 | 0.1+ | 0.3+ | 2003 04 29 | 691 | 0.7+ | 1.3+ | 2006 11 14 | 691 | 0.4− | 0.6+ |
| 2002 01 21 | 699 | 0.1+ | 0.2− | 2003 04 29 | 691 | 0.5+ | 1.3+ | 2006 11 14 | 691 | 0.4− | 0.6+ |
| 2002 01 21 | 699 | 0.1− | 0.0 | 2003 04 29 | 691 | 0.6+ | 1.2+ | 2006 11 14 | 691 | 0.4− | 0.5+ |
| 2002 01 21 | 699 | 0.2− | 0.9+ | 2003 05 01 | 704 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 0.4− | 1.1+ |
| 2002 01 23 | 704 | 0.1− | 0.8− | 2003 05 01 | 704 | 0.8+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2002 01 23 | 704 | 0.4− | 0.6− | 2003 05 01 | 704 | (3.4+ | 1.1−) | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2002 01 23 | 704 | 0.4− | 0.7− | 2003 05 05 | 704 | 0.6+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.8− |
| 2002 01 23 | 704 | 0.2− | 0.7− | 2003 05 05 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2002 02 03 | 644 | 0.2+ | 0.9− | 2003 05 05 | 699 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.3− | 0.4+ |
| 2002 02 03 | 644 | 0.2+ | 0.2+ | 2003 05 05 | 704 | 0.6+ | 0.2+ | 2006 11 22 | 691 | 0.5− | 0.2+ |
| 2002 02 03 | 644 | 0.4+ | 0.1+ | 2003 05 05 | 699 | 0.1+ | 0.9− | 2006 11 27 | 703 | 0.6− | 0.4+ |
| 2002 02 10 | 704 | 0.3+ | 0.1+ | 2003 05 05 | 704 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.1+ | 1.1+ |
| 2002 02 10 | 704 | 0.2+ | 0.1+ | 2003 05 05 | 704 | 0.5+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.2− | 0.0 | 2003 05 05 | 699 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.8+ | 2.3+ |
| 2002 02 10 | 704 | 0.1+ | 0.2+ | 2003 05 05 | 699 | 0.7+ | 0.6− | 2006 11 29 | 704 | 0.7+ | 0.6− |
| 2002 02 10 | 704 | 0.2− | 0.5+ | 2003 05 19 | 699 | (2.9− | 0.9−) | 2006 11 29 | 704 | 0.3+ | 0.6+ |
| 2002 02 13 | 644 | 0.0 | 0.6− | 2003 05 19 | 699 | 0.6− | 1.1+ | 2006 11 29 | 704 | 0.5+ | 0.8+ |
| 2002 02 13 | 644 | 0.3+ | 0.5− | 2003 05 19 | 699 | (1.8− | 1.6+) | | | | |

**(141423)∗ 2002 BZ$_{29}$**

Discovered 2002 Jan. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.68782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17802376 | $\omega$ | 323.53531 | | +0.68159225 | −0.67685012 | |
| $a$ | 3.1295656 | $\Omega$ | 81.61165 | | +0.72006793 | +0.55284600 | |
| $e$ | 0.1894753 | $i$ | 16.32265 | | +0.13013142 | +0.48604035 | |
| $P$ | 5.54 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.1− | 0.0 | 2002 01 11 | 699 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 1998 04 17 | 691 | 0.3+ | 0.1+ | 2002 01 21 | 699 | 0.5+ | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.6− |
| 1998 04 17 | 691 | 1.0+ | 0.2− | 2002 01 21 | 699 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.7+ | 0.5− |
| 2000 09 20 | 704 | 0.6− | 0.7− | 2002 01 21 | 699 | 0.2+ | 1.0+ | 2006 11 18 | 704 | 1.4− | 0.2+ |
| 2000 09 20 | 704 | 0.7− | 0.2− | 2002 01 21 | 699 | 0.6+ | 0.7+ | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2000 09 20 | 704 | 0.2− | 1.0− | 2002 01 23 | 704 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2000 09 20 | 704 | 0.8− | 0.6+ | 2002 01 23 | 704 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.0 |
| 2000 09 30 | 699 | 0.3+ | 0.0 | 2002 01 23 | 704 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2000 09 30 | 699 | 0.9+ | 0.2− | 2002 02 02 | 644 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2000 09 30 | 699 | 0.3+ | 0.0 | 2002 02 02 | 644 | 0.6− | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2000 09 30 | 699 | 0.5+ | 0.4+ | 2002 02 02 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2000 10 18 | 704 | 0.3− | 0.2+ | 2002 02 12 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2000 10 18 | 704 | 0.4− | 0.3+ | 2002 02 12 | 644 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.5+ | 0.5+ |
| 2000 10 18 | 704 | 0.4+ | 0.6+ | 2002 02 12 | 644 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.3− | 0.2+ |
| 2000 10 18 | 704 | 0.3− | 0.7− | 2003 03 23 | 645 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.3− | 0.0 |
| 2000 11 17 | 704 | 0.6− | 0.3− | 2003 03 23 | 645 | 0.1− | 0.0 | 2006 11 25 | 704 | 0.7+ | 0.5+ |
| 2000 11 17 | 704 | 0.1+ | 1.0+ | 2005 08 06 | E12 | 0.2+ | 0.3+ | 2006 11 25 | 704 | 1.2+ | 0.8+ |
| 2000 11 17 | 704 | 0.5− | 0.1+ | 2005 08 06 | E12 | 0.1− | 0.9+ | 2006 11 25 | 704 | 0.2+ | 0.5− |
| 2000 11 17 | 704 | 1.3+ | 0.6+ | 2005 08 06 | E12 | 0.5− | 0.5+ | 2006 11 25 | 704 | 0.1− | 0.5+ |
| 2000 11 29 | 699 | 0.9− | 0.4+ | 2005 08 06 | E12 | 0.6+ | 0.7+ | 2006 11 29 | 704 | 0.5− | 0.1− |
| 2000 11 29 | 699 | 0.2− | 1.0+ | 2006 11 14 | 704 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.4− | 0.5− |
| 2000 11 29 | 699 | 0.1− | 0.6− | 2006 11 14 | 704 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.3− |
| 2000 11 29 | 699 | 1.2− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 0.8− | 2006 11 14 | 704 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.3− |
| 2001 12 14 | 704 | 0.7− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2001 12 14 | 704 | 0.3− | 0.6− | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.5− | 0.5− |
| 2001 12 14 | 704 | 1.3+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2002 01 11 | 699 | 1.2− | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.8− | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2002 01 11 | 699 | 0.7+ | 0.7+ | 2006 11 17 | 704 | 0.0 | 0.3− | | | | |
| 2002 01 11 | 699 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.1+ | | | | |

**(141424)∗ 2002 CD**

Discovered 2002 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.18766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 1.01612385 | $\omega$ | 331.56631 | | +0.94105143 | +0.33777230 | |
| $a$ | 0.9798771 | $\Omega$ | 8.75110 | | −0.28322267 | +0.81623886 | |
| $e$ | 0.1766893 | $i$ | 6.87918 | | −0.18495168 | +0.46868326 | |
| $P$ | 0.97 | $H$ | 20.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 01 | 704 | 1.0− | 1.2− | 2004 02 26 | 240 | 1.0− | 0.7− | 2005 03 29 | 084 | 0.4+ | 0.1+ |
| 2002 02 01 | 704 | 0.4− | 0.3− | 2004 02 26 | 240 | 0.4− | 0.0 | 2005 03 31 | 379 | 0.9− | 0.4− |
| 2002 02 01 | 704 | 0.8− | 1.2− | 2004 02 26 | 240 | 0.1− | 0.9+ | 2005 03 31 | 379 | 0.1− | 1.1− |
| 2002 02 01 | 704 | 0.7+ | 0.7− | 2004 02 28 | 170 | 0.5− | 0.5− | 2005 03 31 | 084 | 0.3− | 0.2− |
| 2002 02 01 | 046 | 0.1+ | 0.8− | 2004 02 28 | 170 | 0.6− | 0.4− | 2005 03 31 | 084 | 0.2− | 0.0 |
| 2002 02 01 | 046 | (0.0 | 1.6+) | 2004 03 03 | 240 | 0.4− | 0.2+ | 2005 04 03 | A13 | 0.9− | 0.3− |
| 2002 02 02 | 734 | 0.7− | 1.0+ | 2004 03 03 | 240 | 0.5− | 0.1+ | 2005 04 03 | A13 | 0.8− | 0.5− |
| 2002 02 02 | 734 | 0.4+ | 1.2− | 2004 03 03 | 240 | 0.0 | 0.0 | 2005 04 03 | A13 | 0.6− | 0.3− |
| 2002 02 02 | 734 | (1.0+ | 2.5−) | 2004 03 03 | 240 | 0.1+ | 0.1+ | 2005 04 03 | A13 | 0.7− | 0.2− |
| 2002 02 02 | 046 | 0.6− | 0.0 | 2004 03 10 | 644 | 0.2+ | 0.2+ | 2005 04 03 | A13 | 0.8− | 0.2− |
| 2002 02 02 | 046 | 0.3+ | 0.8− | 2004 03 10 | 644 | 0.2+ | 0.2+ | 2005 04 03 | 084 | 0.6+ | 0.3− |
| 2002 02 02 | 046 | 0.5+ | 0.2+ | 2004 03 10 | 644 | 0.3+ | 0.2+ | 2005 04 03 | 084 | 0.7+ | 0.4− |
| 2002 02 02 | 046 | 0.2− | 0.7− | 2004 03 10 | 084 | 0.8+ | 0.4+ | 2005 04 04 | 355 | 0.5+ | 0.5+ |
| 2002 02 02 | 611 | 0.1− | 0.4− | 2004 03 11 | 185 | 0.4+ | 0.3− | 2005 04 04 | 355 | 0.1+ | 0.9+ |
| 2002 02 02 | 611 | (3.1− | 1.4−) | 2004 03 11 | 185 | 0.7− | 1.0− | 2005 04 04 | 355 | 0.1+ | 0.1− |
| 2002 02 04 | 587 | 1.2+ | 0.2+ | 2004 03 11 | 185 | 0.3+ | 0.0 | 2005 04 04 | 355 | 0.2+ | 0.0 |
| 2002 02 04 | 587 | 0.5− | 1.2+ | 2004 03 11 | 185 | 0.4+ | 0.2+ | 2005 04 04 | 379 | 0.2− | 0.0 |
| 2002 02 04 | 587 | 0.3+ | 0.4− | 2004 03 11 | 185 | 1.3+ | 0.1+ | 2005 04 04 | 379 | 0.1+ | 0.2− |
| 2002 02 04 | 587 | 0.5− | 1.2− | 2004 03 12 | 084 | 0.4+ | 0.0 | 2005 04 04 | 379 | 0.0 | 0.7+ |
| 2002 02 12 | 696 | 0.1+ | 0.2− | 2004 03 14 | 704 | 0.0 | 0.4+ | 2005 04 04 | 379 | 0.6− | 0.7+ |
| 2002 02 12 | 696 | 0.1− | 0.1− | 2004 03 14 | 704 | 0.1+ | 1.0+ | 2005 04 04 | 084 | 0.2+ | 0.2− |
| 2002 02 14 | 649 | 0.4+ | 0.1− | 2004 03 14 | 704 | 0.5+ | 0.3+ | 2005 04 04 | 084 | 0.1+ | 0.3− |
| 2002 02 14 | 649 | 0.3+ | 0.2− | 2004 03 14 | 704 | 0.0 | 0.6+ | 2005 04 04 | A13 | 0.6− | 0.1− |
| 2002 02 14 | 649 | 0.0 | 0.1+ | 2004 03 14 | 151 | 0.1− | 0.1− | 2005 04 04 | A13 | 0.5− | 0.4− |
| 2002 02 26 | 715 | (2.3− | 0.4−) | 2004 03 14 | 151 | 0.2− | 0.1+ | 2005 04 04 | A13 | 0.4− | 0.3− |
| 2002 02 26 | 715 | (2.4− | 0.2+) | 2004 03 14 | 151 | 0.2− | 0.1+ | 2005 04 04 | A13 | 0.5− | 0.0 |
| 2002 02 26 | 715 | (2.2− | 0.1+) | 2004 03 14 | 151 | 0.1− | 0.2+ | 2005 04 04 | A13 | 0.5− | 0.1− |
| 2002 03 09 | 966 | 0.9+ | 0.1+ | 2004 03 14 | A28 | 0.0 | 0.1+ | 2005 04 05 | 644 | 0.3+ | 0.2+ |
| 2002 03 09 | 966 | 0.2+ | 0.5− | 2004 03 14 | A28 | 0.2+ | 0.5+ | 2005 04 05 | 644 | 0.4+ | 0.2+ |
| 2002 04 07 | 696 | 1.0+ | 0.0 | 2004 03 14 | A28 | 0.0 | 0.2+ | 2005 04 05 | 699 | 0.3− | 0.4+ |
| 2002 04 07 | 696 | 0.7+ | 0.2+ | 2004 03 14 | A28 | 0.2+ | 0.2+ | 2005 04 05 | 644 | 0.3+ | 0.2+ |
| 2002 05 05 | 696 | 0.2+ | 0.3+ | 2004 03 14 | A28 | 0.1+ | 0.1+ | 2005 04 05 | 699 | 0.2+ | 0.4+ |
| 2002 05 05 | 696 | (2.6− | 0.8+) | 2004 03 14 | A28 | 0.2− | 0.3+ | 2005 04 05 | 699 | 0.1− | 0.2+ |
| 2002 05 05 | 696 | (1.6− | 0.1+) | 2004 03 16 | 750 | 0.5+ | 0.6− | 2005 04 06 | 699 | 0.4+ | 0.3+ |
| 2002 12 09 | 926 | 0.3− | 0.1− | 2004 03 16 | 750 | 0.5+ | 0.1− | 2005 04 06 | 699 | 0.5+ | 0.9+ |
| 2002 12 09 | 926 | 0.2− | 0.1+ | 2004 03 17 | A16 | 1.4− | 0.6− | 2005 04 06 | 699 | 0.8+ | 0.1+ |
| 2002 12 09 | 926 | 0.4− | 0.1+ | 2004 03 17 | A16 | (1.8− | 0.5−) | 2005 04 06 | 699 | 0.6+ | 0.2+ |
| 2002 12 10 | 557 | 0.4+ | 0.1− | 2004 03 18 | 703 | 0.6+ | 0.5+ | 2005 04 06 | 704 | 0.4+ | 0.2+ |
| 2002 12 10 | 557 | 0.8+ | 0.8+ | 2004 03 18 | 703 | 0.2+ | 0.6+ | 2005 04 06 | 704 | 0.9+ | 0.2+ |
| 2003 01 14 | 704 | 0.0 | 0.4− | 2004 03 18 | 703 | 0.4+ | 0.1+ | 2005 04 06 | 704 | 0.8+ | 0.0 |
| 2003 01 14 | 704 | 0.3+ | 0.3− | 2004 03 18 | 703 | 0.1+ | 0.7+ | 2005 04 06 | 704 | 1.1+ | 0.5+ |
| 2003 01 14 | 704 | 0.3+ | 0.8− | 2004 03 19 | 130 | 0.1− | 0.7+ | 2005 04 06 | 704 | 0.6+ | 0.1+ |
| 2003 01 14 | 704 | 0.1− | 0.4− | 2004 03 19 | 130 | 0.2− | 0.3+ | 2005 04 06 | I04 | 0.4− | 0.1− |
| 2003 01 14 | 704 | 0.8+ | 0.2− | 2004 03 19 | 130 | 0.1− | 0.2+ | 2005 04 06 | I04 | 0.1− | 0.4− |
| 2003 01 26 | 670 | 0.8− | 0.7− | 2004 03 19 | 130 | 0.5− | 0.1− | 2005 04 06 | I04 | 0.5− | 0.2− |
| 2003 01 26 | 670 | 0.2+ | 1.2+ | 2004 03 19 | 084 | 0.4+ | 0.4+ | 2005 04 06 | 084 | 0.1+ | 0.1+ |
| 2003 01 26 | 670 | 1.5− | 0.3+ | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2005 04 06 | 084 | 0.5− | 0.3+ |
| 2003 01 26 | 670 | 0.5+ | 0.4− | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2005 04 08 | 844 | 0.7− | 0.3− |
| 2003 02 13 | 118 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2005 04 08 | 844 | 0.2− | 0.0 |
| 2003 02 13 | 118 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2005 04 08 | 844 | 0.7− | 0.2− |
| 2003 02 13 | 118 | 0.5− | 0.8− | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2005 04 08 | 844 | 0.3− | 0.0 |
| 2003 02 23 | 240 | 0.1+ | 0.2− | 2004 03 28 | 046 | 0.3+ | 0.5− | 2005 04 08 | 844 | 0.2− | 0.3− |
| 2003 02 23 | 240 | 0.1− | 0.4− | 2004 03 28 | 046 | 0.8+ | 0.3− | 2005 04 13 | H45 | 0.7− | 0.2− |
| 2003 02 23 | 240 | 0.2+ | 0.2− | 2004 03 28 | 046 | 1.0+ | 0.8+ | 2005 04 13 | H45 | 0.3− | 0.2− |
| 2003 02 23 | 240 | 0.0 | 0.1− | 2004 03 28 | 046 | 0.6+ | 0.6+ | 2005 04 13 | H45 | 0.6− | 0.2− |
| 2003 02 23 | 240 | 0.0 | 0.1− | 2004 03 28 | 046 | 0.5− | 0.2− | 2005 04 13 | 608 | 0.6+ | 0.3− |
| 2003 02 23 | 240 | 0.3+ | 0.3− | 2004 03 28 | 046 | 1.1+ | 0.1− | 2005 04 13 | 608 | 0.6+ | 0.3− |
| 2003 02 23 | 240 | 0.1− | 0.1− | 2004 03 28 | 084 | 0.3+ | 0.3+ | 2005 04 13 | 608 | 0.4+ | 0.1− |
| 2003 02 23 | 240 | 0.0 | 0.1− | 2004 03 29 | 084 | 0.7+ | 0.1+ | 2005 04 14 | 379 | 0.0 | 0.3+ |
| 2003 02 23 | 240 | 0.1− | 0.5− | 2004 04 12 | 699 | 0.6− | 0.3− | 2005 04 14 | 379 | 0.2− | 1.2+ |
| 2003 02 25 | 704 | (1.0+ | 1.7+) | 2004 04 12 | 699 | 1.0− | 0.2− | 2005 04 15 | 699 | 0.4+ | 0.1+ |
| 2003 02 25 | 704 | 0.9+ | 0.3− | 2004 04 12 | 699 | 0.3− | 0.5+ | 2005 04 15 | 699 | 0.7+ | 0.0 |
| 2003 02 25 | 704 | 0.7+ | 0.2− | 2004 04 12 | 699 | 0.0 | 0.0 | 2005 04 15 | 699 | 0.9− | 0.4+ |
| 2003 02 25 | 704 | 0.8+ | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.7+ | 2005 04 15 | 699 | 0.1+ | 0.3+ |
| 2003 03 08 | 644 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.3− | 1.3− | 2005 04 18 | 844 | 0.1+ | 0.5− |
| 2003 03 08 | 644 | 0.3− | 0.2+ | 2004 04 20 | 704 | 1.3− | 0.9− | 2005 04 18 | 844 | 0.7+ | 0.4− |
| 2003 03 08 | 644 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.4− | 1.3− | 2005 04 18 | 844 | 0.0 | 0.6− |
| 2003 03 09 | 699 | 0.7+ | 0.9+ | 2005 03 10 | 699 | 0.2+ | 0.1− | 2005 04 18 | 844 | 0.4+ | 0.1− |
| 2003 03 09 | 699 | 0.4+ | 0.8− | 2005 03 10 | 699 | 0.7− | 0.7+ | 2005 04 18 | 844 | 0.3− | 0.4− |
| 2003 03 09 | 699 | 0.4+ | 0.4+ | 2005 03 10 | 699 | 0.8+ | 0.4+ | 2005 04 18 | E12 | 0.1− | 0.3+ |
| 2003 03 09 | 699 | 1.4+ | 0.4+ | 2005 03 10 | 699 | 0.3+ | 0.1+ | 2005 04 18 | E12 | 0.0 | 0.0 |
| 2004 01 18 | J95 | 0.6+ | 0.1− | 2005 03 11 | 844 | 1.4− | 1.1− | 2005 04 18 | E12 | 0.0 | 0.3+ |
| 2004 01 18 | J95 | 0.4+ | 0.2− | 2005 03 11 | 844 | (1.6− | 1.7−) | 2005 04 18 | E12 | 0.0 | 0.0 |
| 2004 01 18 | J95 | 0.1+ | 0.4− | 2005 03 11 | 844 | (1.9− | 1.0−) | 2005 04 21 | 844 | 0.5− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 704 | 0.3+ | 0.2+ | 2005 03 11 | 844 | 0.6− | 0.8− | 2005 04 21 | 844 | 1.0− | 0.4− |
| 2004 01 30 | 704 | 0.8+ | 1.4+ | 2005 03 11 | 844 | (1.2− | 2.0−) | 2005 04 21 | 844 | 0.7− | 0.0 |
| 2004 01 30 | 704 | (0.1− | 1.9+) | 2005 03 13 | 084 | 0.3+ | 0.4+ | 2005 04 21 | 844 | (1.7− | 0.1−) |
| 2004 01 30 | 704 | 0.3− | 0.2+ | 2005 03 13 | 084 | 0.1− | 0.4+ | 2005 04 21 | 844 | 0.7− | 0.5− |
| 2004 01 30 | 704 | 0.7+ | 0.8+ | 2005 03 16 | 084 | 0.1− | 0.5+ | 2005 04 21 | 844 | 0.2− | 0.2+ |
| 2004 02 15 | 704 | 0.1− | 0.9+ | 2005 03 16 | 084 | 0.1− | 0.5− | 2005 04 21 | 844 | 0.7− | 0.1− |
| 2004 02 15 | 704 | (1.8+ | 0.1−) | 2005 03 18 | 703 | 0.6+ | 1.2− | 2005 04 21 | 844 | 0.8− | 0.4− |
| 2004 02 15 | 704 | 1.0+ | 0.5− | 2005 03 18 | 703 | 0.0 | 0.2− | 2005 04 21 | 844 | 0.4+ | 0.2+ |
| 2004 02 16 | 830 | 0.6+ | 0.2− | 2005 03 18 | 703 | 0.2− | 0.0 | 2005 04 21 | 844 | 0.3− | 0.3− |
| 2004 02 16 | 830 | 0.2+ | 0.3+ | 2005 03 18 | 703 | 0.1+ | 0.2− | 2005 04 28 | 428 | 0.6+ | 0.3+ |
| 2004 02 18 | 704 | 0.3− | 0.8+ | 2005 03 21 | 084 | 0.2− | 0.2− | 2005 04 28 | 428 | 0.3+ | 0.2− |
| 2004 02 18 | 704 | 0.2− | 0.5+ | 2005 03 21 | 084 | 0.3− | 0.4− | 2005 04 28 | 428 | 0.3+ | 0.3+ |
| 2004 02 18 | 704 | 0.6− | 0.2+ | 2005 03 23 | 608 | 1.0+ | 0.2− | 2005 04 28 | 428 | 0.1− | 0.2− |
| 2004 02 18 | 704 | 0.1+ | 0.3+ | 2005 03 23 | 608 | 1.0+ | 0.4− | 2006 03 05 | G96 | 0.0 | 0.1− |
| 2004 02 18 | 704 | 0.3− | 0.4− | 2005 03 23 | 608 | 0.9+ | 0.1− | 2006 03 05 | G96 | 0.3+ | 0.3+ |
| 2004 02 25 | A16 | 1.0− | 0.3+ | 2005 03 28 | 084 | 0.2+ | 0.0 | 2006 03 05 | G96 | 0.5− | 0.0 |
| 2004 02 25 | A16 | 0.6− | 0.4− | 2005 03 28 | 084 | 0.1− | 0.4+ | 2006 03 05 | G96 | 0.3− | 0.3+ |
| 2004 02 25 | A16 | 1.3− | 1.0+ | 2005 03 29 | 084 | 0.0 | 0.0 | | | | |

**(141425)∗ 2002 CV$_1$**

Discovered 2002 Feb. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 147.92010 | | (2000.0) | | | |
| $n$ | 0.27161380 | $\omega$ | 71.34485 | | +0.26067338 | −0.96540627 |
| $a$ | 2.3613924 | $\Omega$ | 3.56333 | | +0.84290583 | +0.22438751 |
| $e$ | 0.0489732 | $i$ | 5.85008 | | +0.47070070 | +0.13281938 |
| $P$ | 3.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.4− | 0.6− | 2002 02 12 | 704 | 0.6− | 0.4− | 2004 11 04 | 703 | 0.3− | 1.8− |
| 1995 02 25 | 691 | 0.3− | 1.3− | 2004 09 17 | 691 | 0.3− | 0.2+ | 2004 11 04 | 703 | 1.0− | 1.2− |
| 1995 02 25 | 691 | 0.8− | 0.9− | 2004 09 17 | 691 | 0.4− | 0.3+ | 2004 11 13 | 703 | 0.5− | 0.7+ |
| 2002 01 08 | 704 | 0.6+ | 0.9− | 2004 09 17 | 691 | 0.2− | 0.3+ | 2004 11 13 | 703 | 0.3+ | 0.7− |
| 2002 01 08 | 704 | 0.2− | 0.2+ | 2004 10 05 | 691 | 0.2+ | 0.3+ | 2004 11 13 | 703 | 0.1+ | 0.1+ |
| 2002 01 08 | 704 | 1.0+ | 0.8− | 2004 10 05 | 691 | 0.2+ | 0.2+ | 2004 11 13 | 703 | 0.3− | 0.1+ |
| 2002 01 08 | 704 | 0.2+ | 0.1+ | 2004 10 05 | 691 | 0.3+ | 0.2+ | 2006 02 24 | 691 | 0.6+ | 0.6+ |
| 2002 01 08 | 704 | 0.1+ | 0.1+ | 2004 10 05 | 691 | 0.2+ | 0.2+ | 2006 02 24 | 691 | 0.2+ | 0.3+ |
| 2002 01 10 | 644 | 0.3− | 0.5+ | 2004 10 05 | 691 | 0.0 | 0.1+ | 2006 02 24 | 691 | 0.3+ | 0.5+ |
| 2002 01 10 | 644 | 0.2− | 0.5+ | 2004 10 05 | 691 | 0.2+ | 0.4+ | 2006 03 02 | 691 | 0.2− | 0.4+ |
| 2002 01 10 | 644 | 0.1− | 0.4+ | 2004 10 09 | 691 | 0.2+ | 0.1− | 2006 03 02 | 691 | 0.1+ | 0.4+ |
| 2002 02 03 | 644 | 0.5+ | 0.1+ | 2004 10 09 | 691 | 0.2+ | 0.1− | 2006 03 02 | 691 | (3.1+ | 1.6−) |
| 2002 02 03 | 644 | 0.2+ | 0.1− | 2004 10 09 | 691 | 0.1+ | 0.1− | 2006 03 03 | G96 | 0.1− | 0.0 |
| 2002 02 03 | 644 | 0.0 | 0.1+ | 2004 10 10 | 704 | 0.0 | 0.3− | 2006 03 03 | G96 | 0.2+ | 0.3− |
| 2002 02 04 | 644 | 1.1+ | 1.4+ | 2004 10 10 | 704 | 0.8− | 0.3+ | 2006 03 03 | G96 | 0.3+ | 0.3− |
| 2002 02 04 | 644 | 1.0+ | 1.7+ | 2004 10 10 | 704 | 0.7+ | 0.1− | 2006 03 03 | G96 | 0.5+ | 0.1− |
| 2002 02 04 | 644 | 1.3+ | 1.3+ | 2004 10 10 | 704 | 0.7− | 0.7− | 2006 03 06 | 691 | 0.1+ | 0.4+ |
| 2002 02 06 | 704 | 0.2− | 0.4− | 2004 10 21 | 704 | 0.1+ | 0.4+ | 2006 03 06 | 691 | 0.2+ | 0.4+ |
| 2002 02 06 | 704 | 0.5+ | 1.0− | 2004 10 21 | 704 | 0.4− | 0.1+ | 2006 03 06 | 691 | 0.2+ | 0.5+ |
| 2002 02 06 | 704 | 1.4+ | 0.1− | 2004 10 21 | 704 | 0.1+ | 0.0 | 2006 03 21 | G96 | 0.3− | 0.4− |
| 2002 02 06 | 704 | 0.3+ | 0.6− | 2004 10 21 | 704 | 0.2+ | 0.2+ | 2006 03 21 | G96 | 0.1+ | 0.4− |
| 2002 02 08 | 704 | 1.1− | 0.0 | 2004 10 21 | 704 | 0.3+ | 0.3+ | 2006 03 21 | G96 | 0.0 | 0.3− |
| 2002 02 08 | 704 | 0.4+ | 0.5− | 2004 11 04 | 699 | 0.0 | 0.6+ | 2006 03 21 | G96 | 0.2− | 0.1+ |
| 2002 02 08 | 704 | 0.6− | 0.5− | 2004 11 04 | 699 | 0.2− | 0.5+ | 2006 04 21 | G96 | 0.2− | 0.4+ |
| 2002 02 08 | 704 | 1.0− | 0.3+ | 2004 11 04 | 699 | 0.7− | 1.7− | 2006 04 21 | G96 | 0.3+ | 0.7+ |
| 2002 02 12 | 704 | 0.5− | 0.7+ | 2004 11 04 | 699 | 0.6+ | 0.1+ | 2006 04 21 | G96 | 0.6+ | 0.3+ |
| 2002 02 12 | 704 | 1.6− | 0.2+ | 2004 11 04 | 703 | 1.2− | 0.4− | 2006 04 21 | G96 | 0.1− | 0.0 |
| 2002 02 12 | 704 | 1.5− | 0.1+ | 2004 11 04 | 703 | 0.4− | 0.5− | | | | |

**(141426)∗ 2002 CX$_6$**

Discovered 2002 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.72745 | | (2000.0) | | | |
| $n$ | 0.36779670 | $\omega$ | 304.14212 | | +0.94619348 | +0.09851482 |
| $a$ | 1.9292899 | $\Omega$ | 52.22339 | | +0.10705853 | +0.80359798 |
| $e$ | 0.0402972 | $i$ | 22.95319 | | −0.30537906 | +0.58696262 |
| $P$ | 2.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 704 | (1.6+ | 2.4+) | 2005 04 06 | 644 | 0.7+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 1998 10 29 | 704 | 0.4+ | 0.4+ | 2005 04 06 | 644 | 0.5+ | 0.5+ | 2006 11 14 | 704 | 0.1+ | 0.3+ |
| 1998 10 29 | 704 | 0.1− | 0.0 | 2005 04 06 | 644 | 0.7+ | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.2+ |
| 1998 10 29 | 704 | 1.1− | 0.3+ | 2005 04 07 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.1+ |
| 1998 10 29 | 704 | 0.5+ | 0.2+ | 2005 04 07 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 1998 11 11 | 910 | (2.7+ | 1.3−) | 2005 04 07 | 644 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.3− | 0.2+ |
| 1998 11 11 | 910 | (2.4+ | 1.2−) | 2005 04 30 | 703 | 0.7− | 0.3+ | 2006 11 15 | 683 | 1.0+ | 0.0 |
| 1998 11 11 | 910 | (2.7+ | 0.7−) | 2005 04 30 | 703 | 0.9− | 1.0− | 2006 11 15 | 683 | (1.5− | 1.8+) |
| 1998 11 17 | 691 | 0.1− | 0.6− | 2005 04 30 | 703 | 0.8− | 0.3− | 2006 11 15 | 683 | 0.3+ | 0.8+ |
| 1998 11 17 | 691 | 0.1+ | 0.5− | 2005 04 30 | 703 | 0.7− | 0.8− | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 1998 11 17 | 691 | 0.2+ | 0.7− | 2006 09 30 | 699 | 1.0− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 1998 11 18 | 704 | 1.2+ | 0.6+ | 2006 09 30 | 699 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 1998 11 18 | 704 | 1.0+ | 0.5− | 2006 09 30 | 699 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 1998 11 18 | 704 | 0.8+ | 1.3− | 2006 09 30 | 699 | 1.0+ | 1.1+ | 2006 11 17 | 703 | 0.6− | 0.2+ |
| 1998 11 18 | 704 | (0.3+ | 2.5+) | 2006 09 30 | 703 | 0.7− | 0.5− | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 1998 11 18 | 704 | 0.8+ | 1.1+ | 2006 09 30 | 703 | 1.1− | 0.4− | 2006 11 17 | 703 | 0.1− | 0.7− |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.3− | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2002 01 13 | 699 | 0.8− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.9− | 0.5+ |
| 2002 01 13 | 699 | 0.3− | 1.3+ | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 01 13 | 699 | 1.1+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.5− | 2006 11 19 | 704 | (0.1+ | 1.7+) |
| 2002 01 13 | 699 | 0.4+ | 1.2+ | 2006 10 22 | 703 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 1.4+ |
| 2002 02 01 | 704 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.5+ | 2006 11 19 | 704 | 1.1− | 0.2− |
| 2002 02 01 | 704 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.7− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2002 02 01 | 704 | 0.3− | 0.2− | 2006 11 01 | 703 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.7+ | 1.0+ |
| 2002 02 01 | 704 | 0.3− | 0.3− | 2006 11 01 | 703 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2002 02 06 | 704 | 1.2+ | 0.5+ | 2006 11 01 | 703 | 0.6− | 0.3− | 2006 11 21 | 704 | 1.2+ | 0.7+ |
| 2002 02 06 | 704 | 0.5+ | 0.2+ | 2006 11 01 | 703 | 0.9− | 0.1+ | 2006 11 21 | 704 | 1.4+ | 0.7+ |
| 2002 02 06 | 704 | 0.8+ | 0.4+ | 2006 11 08 | 644 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2002 02 06 | 704 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2002 02 06 | 704 | 0.7+ | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2005 03 01 | 703 | 0.6+ | 0.6− | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.6− | 0.3− |
| 2005 03 01 | 703 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.6− |
| 2005 03 01 | 703 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.3− |
| 2005 03 01 | 703 | 0.7− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.2+ | 2.7+ |
| 2005 03 12 | 704 | 0.7+ | 0.8− | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.2− |
| 2005 03 12 | 704 | 0.9+ | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.8+ | 0.3− |
| 2005 03 12 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.5+ | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2005 03 12 | 704 | 0.9+ | 0.5− | 2006 11 11 | 703 | 1.1− | 0.3− | 2006 11 29 | 704 | 0.1− | 0.1− |
| 2005 04 01 | 703 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.6− | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.4− |
| 2005 04 01 | 703 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2005 04 01 | 703 | 0.3− | 1.4+ | 2006 11 13 | 644 | 0.2− | 0.2+ | | | | |
| 2005 04 01 | 703 | 0.8− | 0.8+ | 2006 11 13 | 644 | 0.2− | 0.4+ | | | | |

**(141427)∗ 2002 CB$_7$ = 2005 GL$_{128}$**

Discovered 2002 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85424)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.44891 | | (2000.0) | | | |
| $n$ | 0.37033648 | $\omega$ | 86.81130 | | +0.03919916 | −0.99921298 |
| $a$ | 1.9204590 | $\Omega$ | 1.00427 | | +0.72259725 | +0.02415095 |
| $e$ | 0.1398221 | $i$ | 20.26179 | | +0.69015697 | +0.03146661 |
| $P$ | 2.66 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.1+ | 1.0− | 2005 04 14 | 703 | (1.6− | 0.4+) | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 1998 09 25 | 699 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.6+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.4− |
| 1998 09 25 | 699 | 1.3+ | 0.1+ | 2005 05 01 | 644 | 0.6+ | 0.4− | 2006 09 29 | 704 | 0.3− | 0.9+ |
| 2002 02 01 | 704 | 0.1− | 0.6+ | 2005 05 01 | 644 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2002 02 01 | 704 | 0.4− | 0.7+ | 2006 08 19 | 699 | 1.2− | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.5+ |
| 2002 02 01 | 704 | 0.9− | 1.3+ | 2006 08 19 | 699 | 0.8− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.5+ |
| 2002 02 06 | 704 | 0.2+ | 0.3− | 2006 08 19 | 699 | 0.6+ | 0.7− | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2002 02 06 | 704 | 0.3− | 0.8− | 2006 08 19 | 699 | 0.4+ | 0.3− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 02 06 | 704 | 1.0+ | 0.2− | 2006 09 12 | 703 | 0.3+ | 0.8− | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2002 02 06 | 704 | 0.6+ | 0.1− | 2006 09 12 | 703 | 0.1− | 1.2− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2002 02 06 | 704 | 0.7− | 0.7− | 2006 09 12 | 703 | 0.6− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 02 06 | 704 | 0.3+ | 0.6+ | 2006 09 12 | 703 | (1.6− | 0.8−) | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 02 06 | 704 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.8+ | 0.1+ |
| 2002 02 06 | 704 | 0.2+ | 0.6− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.9+ | 0.6− |
| 2002 02 09 | 699 | 0.1+ | 0.9+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.4+ |
| 2002 02 09 | 699 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.8− | 0.4+ | 2006 10 17 | 703 | 0.9+ | 0.2− |
| 2002 02 09 | 699 | (0.2− | 2.4+) | 2006 09 20 | 704 | (2.1+ | 0.9−) | 2006 10 23 | 703 | 0.2+ | 0.7− |
| 2002 02 09 | 699 | (1.5− | 2.0+) | 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 10 23 | 703 | (2.5− | 1.3−) |
| 2005 03 09 | 691 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 1.1− | 2006 10 23 | 703 | 0.0 | 0.6− |
| 2005 03 09 | 691 | 0.7+ | 0.4+ | 2006 09 21 | A50 | 0.1+ | 0.3− | 2006 10 23 | 703 | 0.2− | 0.3+ |
| 2005 03 09 | 691 | 0.7+ | 0.0 | 2006 09 21 | A50 | 0.6− | 0.1− | 2006 10 24 | 644 | 0.2− | 0.0 |
| 2005 04 03 | 644 | 0.8+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2005 04 03 | 644 | 0.7+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2005 04 03 | 644 | 0.7+ | 0.3+ | 2006 09 25 | 704 | 1.2− | 1.3+ | 2006 11 14 | 703 | 0.5− | 1.4− |
| 2005 04 14 | 703 | 0.7+ | 0.1+ | 2006 09 25 | 691 | 0.4− | 0.1+ | 2006 11 14 | 703 | 1.0− | 0.3− |
| 2005 04 14 | 703 | 0.1− | 1.5+ | 2006 09 25 | 704 | 0.8− | 0.9+ | 2006 11 14 | 703 | 0.4− | 0.5+ |
| 2005 04 14 | 703 | 1.3− | 1.2+ | 2006 09 25 | 704 | 0.7− | 1.0+ | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2005 04 14 | 703 | 0.2+ | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 11 25 | 703 | 1.3− | 0.8+ |
| 2005 04 14 | 703 | 1.4− | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.8+ | 1.1+ |
| 2005 04 14 | 703 | (1.8− | 1.0+) | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 11 25 | 703 | 1.1+ | 0.3+ |
| 2005 04 14 | 703 | 0.0 | 0.3+ | 2006 09 29 | 704 | 1.1+ | 0.1− | 2006 11 25 | 703 | 0.8+ | 0.1+ |

**(141428)∗ 2002 $CR_7$**

Discovered 2002 Feb. 6 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 127.32773 | | (2000.0) | | | |
| $n$ | 0.27118596 | $\omega$ | 197.42886 | | −0.32358834 | −0.94583781 |
| $a$ | 2.3638754 | $\Omega$ | 271.45740 | | +0.87120110 | −0.28706253 |
| $e$ | 0.1607639 | $i$ | 1.49630 | | +0.36918724 | −0.15161113 |
| $P$ | 3.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 0.8− | 1.0+ | 2002 02 12 | 704 | 1.2+ | 0.3− | 2002 03 15 | 704 | 0.3− | 0.3+ |
| 1997 11 29 | 704 | 0.6− | 0.3− | 2002 02 14 | 291 | 0.8− | 0.8− | 2002 03 15 | 704 | 0.4+ | 0.0 |
| 1997 11 29 | 704 | 0.3+ | 1.6− | 2002 02 14 | 291 | 0.2− | 0.5− | 2004 09 17 | 691 | 0.2+ | 1.2+ |
| 1997 11 29 | 704 | 1.0+ | 0.1+ | 2002 02 14 | 291 | 0.2− | 0.5− | 2004 09 17 | 691 | 0.1− | 0.3+ |
| 2001 12 20 | 704 | 0.7+ | 0.2− | 2002 02 14 | 608 | 0.9− | 0.2− | 2004 09 17 | 691 | 0.3− | 0.3+ |
| 2001 12 20 | 704 | 0.8+ | 0.3+ | 2002 02 14 | 608 | 1.1− | 0.5− | 2004 10 09 | 704 | 0.4− | 0.2− |
| 2001 12 20 | 704 | 1.7+ | 1.0+ | 2002 02 14 | 608 | 1.0− | 0.0 | 2004 10 09 | 691 | 0.1+ | 0.1+ |
| 2001 12 20 | 704 | (2.3+ | 0.0 ) | 2002 02 16 | 644 | 0.2+ | 0.6+ | 2004 10 09 | 704 | 0.2+ | 0.3+ |
| 2002 02 05 | 644 | 0.1+ | 0.3+ | 2002 02 16 | 644 | 0.4+ | 0.7+ | 2004 10 09 | 704 | 0.1+ | 0.1+ |
| 2002 02 05 | 644 | 0.6+ | 0.1− | 2002 02 16 | 644 | 0.3+ | 0.5+ | 2004 10 09 | 704 | 0.7+ | 0.5+ |
| 2002 02 05 | 644 | 0.5+ | 0.2+ | 2002 02 16 | 644 | 0.5+ | 0.7+ | 2004 10 09 | 691 | 0.3− | 0.1+ |
| 2002 02 06 | 333 | 0.1− | 0.6− | 2002 02 16 | 644 | 0.7+ | 0.9+ | 2004 10 09 | 704 | 0.0 | 0.5+ |
| 2002 02 06 | 333 | 0.6+ | 0.9− | 2002 02 16 | 644 | 0.7+ | 0.4+ | 2004 10 09 | 691 | 0.2− | 0.1+ |
| 2002 02 06 | 333 | 0.9− | 0.7− | 2002 02 20 | 704 | 0.0 | 0.4+ | 2004 10 13 | 691 | 0.1+ | 0.3+ |
| 2002 02 07 | 333 | 0.3+ | 0.6+ | 2002 02 20 | 704 | 0.4+ | 0.1− | 2004 10 13 | 691 | 0.1− | 0.2+ |
| 2002 02 07 | 333 | 0.2− | 1.0+ | 2002 02 20 | 704 | 0.3− | 0.1+ | 2004 10 13 | 691 | 0.0 | 0.2+ |
| 2002 02 07 | 704 | 0.9+ | 0.1+ | 2002 02 20 | 704 | 0.0 | 0.7+ | 2004 12 12 | 201 | 0.2+ | 1.2− |
| 2002 02 07 | 333 | 0.1− | 0.2+ | 2002 02 20 | 704 | 0.9− | 0.9+ | 2004 12 12 | 201 | 0.5− | 0.2− |
| 2002 02 07 | 704 | 0.1+ | 0.0 | 2002 02 21 | 691 | 0.2− | 0.4+ | 2004 12 12 | 201 | 0.5+ | 0.8− |
| 2002 02 07 | 704 | 1.1+ | 0.3− | 2002 02 21 | 691 | 0.3− | 0.6+ | 2005 03 10 | G96 | 0.3− | 0.9+ |
| 2002 02 07 | 704 | 0.5+ | 0.5− | 2002 02 21 | 691 | 0.2− | 0.2+ | 2005 03 10 | G96 | 0.5− | 0.4− |
| 2002 02 07 | 704 | 1.1+ | 0.3− | 2002 03 04 | 703 | 0.8− | 0.5+ | 2005 03 10 | G96 | 0.8− | 0.6− |
| 2002 02 08 | 608 | 0.3− | 1.1− | 2002 03 04 | 703 | 0.1− | 0.7+ | 2005 03 10 | G96 | 1.1− | 0.4− |
| 2002 02 08 | 608 | 0.4+ | 0.5− | 2002 03 04 | 703 | 0.5− | 0.4− | 2006 04 09 | 691 | 0.4+ | 0.1− |
| 2002 02 08 | 608 | 0.3− | 0.3− | 2002 03 04 | 703 | 0.0 | 0.3+ | 2006 04 09 | 691 | 0.3+ | 0.1+ |
| 2002 02 09 | 704 | 1.3+ | 0.1− | 2002 03 05 | 644 | 0.7+ | 0.9+ | 2006 04 09 | 691 | 0.3+ | 0.8+ |
| 2002 02 09 | 704 | 1.4+ | 1.3− | 2002 03 05 | 644 | 0.1+ | 0.2+ | 2006 04 25 | G96 | 0.0 | 0.2+ |
| 2002 02 09 | 704 | 0.7+ | 2.0− | 2002 03 05 | 644 | 0.2+ | 0.2+ | 2006 04 25 | G96 | 0.1− | 0.1+ |
| 2002 02 09 | 704 | 1.4+ | 0.7− | 2002 03 12 | 645 | 0.2− | 0.0 | 2006 04 25 | G96 | 0.2− | 0.1+ |
| 2002 02 11 | 704 | 0.2+ | 0.1+ | 2002 03 12 | 645 | 0.2− | 0.0 | 2006 04 25 | G96 | 0.3− | 0.1− |
| 2002 02 11 | 704 | 0.2+ | 0.0 | 2002 03 13 | 704 | 0.1+ | 0.8+ | 2006 04 30 | 699 | 0.5− | 0.8+ |
| 2002 02 11 | 704 | 0.1+ | 0.3+ | 2002 03 13 | 704 | 0.8+ | 0.2+ | 2006 04 30 | 699 | 0.2+ | 0.9+ |
| 2002 02 11 | 704 | 0.4+ | 0.3+ | 2002 03 13 | 704 | 0.5+ | 0.2+ | 2006 04 30 | 699 | 0.7+ | 0.5+ |
| 2002 02 11 | 704 | 0.6+ | 0.9+ | 2002 03 13 | 704 | 0.1+ | 0.3+ | 2006 04 30 | 699 | 0.3+ | 0.6+ |
| 2002 02 12 | 704 | 1.0+ | 0.1+ | 2002 03 13 | 704 | 0.5+ | 0.1+ | 2006 05 03 | G96 | 0.4− | 0.0 |
| 2002 02 12 | 704 | 0.5+ | 0.2− | 2002 03 15 | 704 | 1.1+ | 0.0 | 2006 05 03 | G96 | 0.5− | 0.3+ |
| 2002 02 12 | 704 | 0.1+ | 0.2+ | 2002 03 15 | 704 | 0.2− | 0.3+ | 2006 05 03 | G96 | 0.7− | 0.3+ |
| 2002 02 12 | 704 | 0.6+ | 0.2+ | 2002 03 15 | 704 | 0.3+ | 0.4+ | | | | |

**(141429)∗ 2002 $CL_9$ = 1993 $FM_{53}$ = 1998 $HO_{146}$**

Discovered 2002 Feb. 6 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 25634)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.10632 | | (2000.0) | | | |
| $n$ | 0.20968481 | $\omega$ | 134.58049 | | −0.18588124 | +0.98035496 |
| $a$ | 2.8060241 | $\Omega$ | 124.59700 | | −0.92267644 | −0.15107271 |
| $e$ | 0.0455918 | $i$ | 4.59686 | | −0.33781113 | −0.12681160 |
| $P$ | 4.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | (3.2− | 3.5+) | 2002 02 07 | 291 | 0.1+ | 0.2+ | 2004 09 09 | 704 | 0.7− | 0.0 |
| 1993 03 18 | 809 | 0.7− | 1.0− | 2002 02 07 | 291 | 0.1+ | 0.2+ | 2004 09 09 | 704 | 1.1− | 0.9+ |
| 1998 04 22 | 704 | 1.2− | 0.2+ | 2002 02 10 | 704 | 0.6− | 1.0+ | 2004 09 14 | 699 | (1.5− | 1.7+) |
| 1998 04 22 | 704 | 0.7− | 0.5− | 2002 02 10 | 704 | 0.5− | 0.9+ | 2004 09 14 | 699 | 0.0 | 1.1− |
| 1998 04 22 | 704 | 0.2+ | 0.2− | 2002 02 10 | 704 | 0.1− | 0.7+ | 2004 09 14 | 699 | 0.3+ | 1.2− |
| 1998 04 22 | 704 | 0.9+ | 1.4− | 2002 02 12 | 704 | 0.1− | 1.1+ | 2004 09 14 | 699 | 0.3+ | 0.4+ |
| 1998 04 23 | 704 | 1.2− | 1.1+ | 2002 02 12 | 704 | 0.6+ | 0.9+ | 2005 12 25 | 691 | 0.4− | 0.3− |
| 1998 04 23 | 704 | 0.2− | 1.2+ | 2002 02 12 | 704 | 0.9+ | 1.2+ | 2005 12 25 | 691 | 0.2− | 0.4− |
| 1998 04 23 | 704 | 1.5− | 0.9+ | 2002 02 12 | 704 | 0.4+ | 0.3+ | 2005 12 25 | 691 | 0.5+ | 1.2+ |
| 1998 04 23 | 704 | (3.1− | 0.5+) | 2002 02 12 | 704 | 0.4+ | 0.5+ | 2006 02 25 | G96 | 0.0 | 0.8− |
| 1999 09 05 | 691 | 0.4+ | 0.5+ | 2002 02 15 | 691 | 0.0 | 0.1+ | 2006 02 25 | G96 | 0.6− | 0.4− |
| 1999 09 05 | 691 | 0.2+ | 0.3+ | 2002 02 15 | 691 | 0.6+ | 0.3+ | 2006 02 25 | G96 | 0.1− | 0.2− |
| 1999 09 05 | 691 | 0.2+ | 0.6+ | 2002 02 15 | 691 | 0.4+ | 0.1+ | 2006 02 25 | G96 | 0.2− | 1.0− |
| 2002 01 07 | 691 | 0.2− | 0.3− | 2002 02 19 | 291 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.9− |
| 2002 01 07 | 691 | 0.0 | 0.2− | 2002 02 19 | 291 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 01 07 | 691 | 0.4− | 0.3+ | 2002 02 19 | 291 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.9+ | 1.2− |
| 2002 01 14 | 704 | 0.8+ | 0.9− | 2002 03 14 | 704 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2002 01 14 | 704 | 0.7+ | 0.4− | 2002 03 14 | 704 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2002 01 14 | 704 | 0.2− | 0.0 | 2002 03 14 | 704 | 0.0 | 0.1− | 2006 11 18 | G96 | 1.0+ | 0.1+ |
| 2002 02 06 | 291 | 0.1− | 0.1− | 2003 05 30 | 704 | (1.5+ | 1.7+) | 2006 11 18 | G96 | 0.0 | 0.6+ |
| 2002 02 06 | 291 | 0.1− | 0.2− | 2003 05 30 | 704 | 1.4+ | 0.8+ | 2006 11 18 | G96 | 0.2+ | 0.5+ |
| 2002 02 06 | 291 | 0.3− | 0.1− | 2003 05 30 | 704 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.4− | 0.1+ |
| 2002 02 07 | 704 | (1.7+ | 0.4+) | 2004 09 08 | 704 | 1.5− | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 02 07 | 704 | 0.2+ | 0.3− | 2004 09 08 | 704 | 1.2− | 0.4+ | 2006 11 24 | G96 | 0.6− | 0.1− |
| 2002 02 07 | 704 | 0.3+ | 1.4− | 2004 09 08 | 704 | (0.3− | 1.8+) | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2002 02 07 | 291 | 0.2+ | 0.4+ | 2004 09 09 | 704 | (2.1− | 0.7+) | | | | |

**(141430)∗ 2002 $CO_{10}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.96730 | | (2000.0) | | | |
| $n$ | 0.35275459 | $\omega$ | 9.24012 | | +0.93836369 | −0.33962747 |
| $a$ | 1.9837530 | $\Omega$ | 11.26847 | | +0.29240912 | +0.68089486 |
| $e$ | 0.0790559 | $i$ | 19.19294 | | +0.18431085 | +0.64887239 |
| $P$ | 2.79 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 704 | 0.4− | 1.1− | 2003 08 25 | 644 | 0.1− | 0.4+ | 2006 09 25 | 704 | (0.3+ | 1.9+) |
| 1999 01 14 | 704 | 0.4+ | 1.1− | 2003 08 25 | 644 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.5+ |
| 1999 01 14 | 704 | 0.4− | 0.9− | 2003 09 26 | 644 | 0.5− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.4+ |
| 1999 01 14 | 704 | 0.5− | 0.5− | 2003 09 26 | 644 | 0.5− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.5+ |
| 1999 01 14 | 704 | 1.2+ | 0.3− | 2003 09 26 | 644 | 0.4− | 0.2+ | 2006 09 29 | 704 | 1.0+ | 0.2+ |
| 2002 02 06 | 704 | 0.0 | 0.6+ | 2003 10 26 | 699 | 0.6+ | 1.0− | 2006 09 29 | 704 | 1.2− | 0.1− |
| 2002 02 06 | 704 | 0.1+ | 0.4+ | 2003 10 26 | 699 | 0.8− | 1.3− | 2006 09 29 | 704 | 0.2− | 0.8+ |
| 2002 02 06 | 704 | 0.2+ | 0.6+ | 2003 10 26 | 699 | (2.3+ | 0.8−) | 2006 09 29 | 704 | 0.6+ | 0.6− |
| 2002 02 06 | 704 | 0.0 | 0.8+ | 2003 10 26 | 699 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.6− | 1.2+ |
| 2002 02 06 | 704 | 0.2− | 0.3+ | 2005 03 09 | 699 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.3− |
| 2002 02 07 | 704 | 0.4+ | 0.8− | 2005 03 09 | 699 | 0.9+ | 1.0− | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2002 02 07 | 704 | 0.8+ | 0.4− | 2005 03 09 | 699 | 1.1+ | 1.4− | 2006 09 30 | 703 | 0.3+ | 0.5− |
| 2002 02 07 | 704 | 0.1+ | 0.0 | 2005 03 09 | 699 | (1.6+ | 0.2+) | 2006 10 18 | A50 | 0.1− | 0.4+ |
| 2002 02 07 | 704 | 0.4+ | 0.3− | 2005 04 04 | 703 | 1.0− | 0.7− | 2006 10 18 | A50 | 0.4+ | 0.0 |
| 2002 02 07 | 704 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2002 02 20 | 699 | 0.3− | 0.5− | 2005 04 04 | 703 | 1.1− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.5− |
| 2002 02 20 | 699 | 0.1+ | 0.2+ | 2005 04 04 | 703 | 1.1+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 1.1− |
| 2002 02 20 | 699 | 0.3− | 1.2+ | 2005 04 04 | G96 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.5− |
| 2002 02 20 | 699 | 0.5+ | 0.5− | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2002 02 21 | 704 | 0.4+ | 0.1− | 2005 04 04 | G96 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.6− |
| 2002 02 21 | 704 | 0.0 | 0.1− | 2005 04 04 | G96 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2002 02 21 | 704 | 0.9− | 0.5+ | 2006 08 30 | 699 | 0.1+ | 0.5− | 2006 10 19 | 703 | 0.5− | 0.3− |
| 2002 02 21 | 704 | 0.3− | 0.2+ | 2006 08 30 | 699 | (1.7− | 0.6+) | 2006 10 21 | 704 | 0.2− | 0.3+ |
| 2002 02 21 | 704 | 0.4− | 0.6+ | 2006 08 30 | 699 | 0.1− | 0.1+ | 2006 10 21 | 704 | 0.3− | 0.3+ |
| 2002 03 20 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.9+ | 1.5+ | 2006 10 21 | 704 | 0.4− | 0.5+ |
| 2002 03 20 | 644 | 0.4+ | 0.7+ | 2006 08 31 | 704 | 0.6− | 1.0+ | 2006 10 21 | 704 | 0.3− | 0.0 |
| 2002 03 20 | 704 | 0.5+ | 1.2+ | 2006 08 31 | 704 | (1.7− | 0.2+) | 2006 10 21 | 704 | 0.1− | 0.2+ |
| 2002 03 20 | 704 | 0.2+ | 0.9+ | 2006 08 31 | 704 | (2.3− | 0.6+) | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 03 20 | 644 | 0.3+ | 0.4+ | 2006 09 13 | G92 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 03 20 | 704 | 0.5+ | 0.5+ | 2006 09 13 | G92 | 0.6+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 03 20 | 704 | 0.2− | 0.6+ | 2006 09 13 | G92 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2002 03 20 | 704 | 0.5+ | 0.8+ | 2006 09 15 | 703 | (0.9− | 2.6−) | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2002 04 01 | 644 | 0.2− | 0.5+ | 2006 09 15 | 703 | 1.1− | 0.8− | 2006 10 27 | 703 | 1.1− | 0.5+ |
| 2002 04 01 | 644 | 0.7+ | 0.9+ | 2006 09 15 | 703 | 1.2− | 0.7− | 2006 10 27 | 703 | 0.6+ | 0.2+ |
| 2002 04 01 | 644 | 0.1− | 0.9+ | 2006 09 15 | 703 | 0.8− | 0.6− | 2006 11 15 | 703 | 0.7+ | 0.5− |
| 2002 04 16 | 704 | 0.2+ | 1.1+ | 2006 09 17 | 704 | 0.7+ | 0.8+ | 2006 11 15 | 703 | 0.6+ | 0.5− |
| 2002 04 16 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.7+ | 2006 11 15 | 703 | 0.1− | 0.9− |
| 2002 04 16 | 704 | 0.3− | 1.4+ | 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.2− |
| 2002 04 18 | 291 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 11 22 | 703 | 0.6+ | 0.2+ |
| 2002 04 18 | 291 | 0.1+ | 0.3− | 2006 09 25 | 704 | 0.7+ | 0.9+ | 2006 11 22 | 703 | 0.1− | 0.3+ |
| 2002 04 18 | 291 | 0.1+ | 0.1− | 2006 09 25 | 704 | 1.3+ | 0.0 | 2006 11 22 | 703 | 0.2− | 0.8− |
| 2003 08 25 | 644 | 0.4− | 0.3+ | 2006 09 25 | 704 | 0.3− | 1.0− | 2006 11 22 | 703 | 0.5+ | 0.9− |

**(141431)∗ 2002 CS$_{10}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.18147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35528779 | $\omega$ | 23.95172 | | +0.34246065 | −0.89685428 | |
| $a$ | 1.9743123 | $\Omega$ | 47.38539 | | +0.78884924 | +0.11262556 | |
| $e$ | 0.0997997 | $i$ | 22.35899 | | +0.51033084 | +0.42774745 | |
| $P$ | 2.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 704 | 0.4− | 1.1− | 2005 05 08 | 704 | 0.8+ | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 1999 02 09 | 704 | (2.4− | 2.2−) | 2005 05 08 | 704 | 0.7+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 1999 02 09 | 704 | (3.3− | 0.5+) | 2005 05 08 | 703 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1999 02 09 | 704 | 1.0− | 0.3− | 2005 05 08 | 703 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 01 08 | 704 | 0.1+ | 0.6+ | 2005 05 08 | 703 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2002 01 08 | 704 | 0.2+ | 0.5− | 2005 05 08 | 703 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 01 08 | 704 | 0.5+ | 0.6− | 2005 05 14 | 644 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 02 06 | 704 | 1.4+ | 0.9+ | 2005 05 14 | 704 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2002 02 06 | 704 | 1.2+ | 0.6+ | 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2002 02 06 | 704 | (2.9+ | 0.4+) | 2005 05 14 | 704 | (0.8− | 1.8−) | 2006 11 11 | 703 | (1.5+ | 2.3−) |
| 2002 02 06 | 704 | (1.9+ | 0.5+) | 2005 05 14 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 02 06 | 704 | (1.8+ | 0.3−) | 2005 05 14 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2002 02 07 | 704 | 0.1+ | 0.9+ | 2005 05 14 | 644 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 02 07 | 704 | 0.1− | 0.3+ | 2005 05 14 | 704 | 0.0 | 0.7+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2002 02 07 | 704 | 0.7− | 1.1+ | 2005 05 29 | E12 | 0.1− | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2002 02 07 | 704 | 0.1+ | 0.5+ | 2005 05 29 | E12 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 02 07 | 704 | 0.2+ | 0.6+ | 2005 05 29 | E12 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2002 02 22 | 704 | 0.1+ | 0.1− | 2005 05 29 | E12 | 1.0+ | 0.9+ | 2006 11 17 | 703 | 0.7− | 0.4+ |
| 2002 02 22 | 704 | 0.3+ | 0.3− | 2005 06 04 | 703 | (1.9+ | 0.6−) | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2002 02 22 | 704 | 0.8+ | 0.2− | 2005 06 04 | 703 | 0.2+ | 0.9+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2002 02 22 | 704 | 0.8+ | 0.2− | 2005 06 04 | 703 | 0.5− | 1.2+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2002 02 22 | 704 | 0.5+ | 0.1+ | 2005 06 04 | 703 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2002 04 04 | 704 | 1.3+ | 0.1− | 2005 06 11 | 703 | (1.5+ | 1.1−) | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2002 04 04 | 704 | 0.5− | 0.1− | 2005 06 11 | 703 | 1.3+ | 0.7+ | 2006 11 19 | 704 | 1.0+ | 0.9− |
| 2002 04 04 | 704 | (0.1− | 3.1−) | 2005 06 11 | 703 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.5+ | 1.0− |
| 2002 04 04 | 704 | 1.4− | 1.5− | 2005 06 11 | 703 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.0 | 1.0− |
| 2002 04 04 | 704 | 0.3+ | 0.4− | 2005 06 14 | G96 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.7+ |
| 2002 04 10 | 644 | 0.5+ | 0.3− | 2005 06 14 | G96 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2002 04 10 | 644 | 0.3− | 0.2− | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2002 04 10 | 644 | 0.0 | 0.4− | 2005 06 14 | G96 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2002 04 21 | 644 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.6− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2002 04 21 | 644 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.7− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2002 04 21 | 644 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2002 05 05 | 704 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 05 05 | 704 | 0.6− | 0.8+ | 2006 09 30 | 699 | 0.8− | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 05 05 | 704 | 0.3+ | 0.0 | 2006 09 30 | 699 | 0.9− | 0.5+ | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2002 05 05 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 699 | 0.6− | 0.2+ | 2006 11 23 | 683 | 1.2+ | 0.6− |
| 2005 04 09 | 704 | 0.9+ | 1.3− | 2006 09 30 | 699 | 0.7− | 0.4+ | 2006 11 23 | 683 | (2.0+ | 1.1−) |
| 2005 04 09 | 704 | 0.9+ | 0.2− | 2006 10 01 | 704 | 0.5− | 0.1+ | 2006 11 23 | 683 | 0.8+ | 0.2− |
| 2005 04 09 | 704 | 0.3+ | 0.5− | 2006 10 01 | 704 | 0.4− | 0.1− | 2006 11 25 | 683 | 0.0 | 1.2− |
| 2005 04 09 | 704 | 1.0+ | 0.0 | 2006 10 01 | 704 | 0.7− | 0.2+ | 2006 11 25 | 704 | 0.1+ | 0.7+ |
| 2005 04 12 | 699 | 0.6+ | 1.2+ | 2006 10 01 | 704 | 0.3− | 0.5+ | 2006 11 25 | 683 | 0.1− | 0.4+ |
| 2005 04 12 | 699 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.6− | 0.1+ | 2006 11 25 | 704 | 0.5− | 0.5+ |
| 2005 04 12 | 699 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 25 | 704 | 0.4− | 0.4+ |
| 2005 04 12 | 699 | 0.1− | 0.8+ | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 26 | 704 | 0.1+ | 0.5+ |
| 2005 04 18 | 703 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 26 | 704 | 0.2− | 0.2+ |
| 2005 04 18 | 703 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 26 | 704 | 0.2− | 0.1+ |
| 2005 04 18 | 703 | 0.7− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.4+ | 2006 11 26 | 704 | 0.2− | 0.0 |
| 2005 04 18 | 703 | (1.9− | 0.1−) | 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 11 26 | 704 | 0.4− | 0.4+ |
| 2005 05 03 | 704 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2005 05 03 | 704 | 0.9+ | 1.0+ | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2005 05 03 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2005 05 03 | 704 | 1.4+ | 1.3+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2005 05 07 | 703 | 0.9− | 0.7− | 2006 10 22 | 703 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.2+ |
| 2005 05 07 | 703 | 0.5− | 0.7− | 2006 10 22 | 703 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2005 05 07 | 703 | 1.3− | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.5+ |
| 2005 05 07 | 703 | 0.7+ | 0.5− | 2006 10 22 | 703 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.2− |
| 2005 05 08 | 704 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1+ | | | | |

**(141432)∗ 2002 CQ$_{11}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.32811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 1.01767236 | $\omega$ | 272.77233 | | +0.99399637 | +0.10084669 | |
| $a$ | 0.9788829 | $\Omega$ | 81.44228 | | −0.07530718 | +0.91197701 | |
| $e$ | 0.4284080 | $i$ | 2.45977 | | −0.07937281 | +0.39765295 | |
| $P$ | 0.97 | $H$ | 20.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 704 | 0.8− | 1.0+ | 2003 01 17 | 170 | 0.9+ | 0.3− | 2004 01 30 | 704 | 0.3− | 0.3+ |
| 2002 02 06 | 704 | 0.7− | 0.3+ | 2003 01 17 | 170 | 0.6+ | 0.2+ | 2004 01 30 | 704 | 0.5+ | 0.4+ |
| 2002 02 06 | 704 | (0.2− | 2.1+) | 2003 01 18 | 151 | 0.6+ | 0.1− | 2004 01 31 | 704 | 0.5+ | 0.2− |
| 2002 02 06 | 704 | (0.1+ | 1.9+) | 2003 01 18 | 151 | 0.7+ | 0.1− | 2004 01 31 | 704 | 0.1+ | 0.2− |
| 2002 02 07 | 704 | 0.2+ | 0.1+ | 2003 01 18 | 151 | 0.4+ | 0.5− | 2004 01 31 | 704 | 0.0 | 0.1− |
| 2002 02 07 | 704 | 0.4− | 0.2+ | 2003 01 18 | 151 | 0.2+ | 0.5− | 2004 01 31 | 704 | 0.3+ | 0.0 |
| 2002 02 07 | 704 | 0.1− | 0.5+ | 2003 01 18 | 151 | 0.1+ | 0.2+ | 2004 01 31 | 704 | 0.3+ | 0.1− |
| 2002 02 07 | 704 | 1.3+ | 0.4+ | 2003 01 18 | 151 | 0.3− | 0.1− | 2004 02 01 | 859 | (2.5+ | 0.1−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 649 | 0.1+ | 0.4+ | 2003 01 18 | 151 | 0.3+ | 0.3+ | 2004 02 01 | 859 | 0.4+ | 0.2− |
| 2002 02 08 | 649 | 0.4+ | 0.4+ | 2003 01 18 | 151 | 0.4− | 0.4− | 2004 02 01 | 859 | 0.3+ | 0.0 |
| 2002 02 08 | 649 | 0.3+ | 0.7+ | 2003 01 18 | 151 | 0.5+ | 0.0 | 2004 02 10 | 084 | 0.9+ | 0.1+ |
| 2002 02 08 | 704 | 0.2+ | 0.6+ | 2003 01 18 | 151 | 0.1− | 0.3− | 2004 02 12 | 097 | 0.4+ | 0.0 |
| 2002 02 08 | 704 | 0.5+ | 0.3+ | 2003 01 18 | 151 | 0.3+ | 0.3− | 2004 02 12 | 097 | 0.7− | 0.1− |
| 2002 02 08 | 704 | 0.1− | 0.6+ | 2003 01 18 | 151 | 0.3+ | 0.3+ | 2004 02 12 | 097 | 0.4+ | 0.3− |
| 2002 02 08 | 448 | (1.8− | 1.0+) | 2003 01 18 | 941 | 0.8+ | 0.3+ | 2004 02 12 | 097 | 0.7− | 0.2− |
| 2002 02 08 | 704 | 0.0 | 0.5+ | 2003 01 18 | 941 | 0.1− | 0.0 | 2004 02 12 | 097 | 0.2+ | 0.1− |
| 2002 02 08 | 448 | 1.3− | 1.3+ | 2003 01 18 | 941 | 0.2+ | 0.0 | 2004 02 12 | 097 | 0.5+ | 0.3− |
| 2002 02 08 | 448 | (1.5− | 0.4−) | 2003 01 18 | 941 | 0.5+ | 0.1− | 2004 02 12 | 097 | 0.8+ | 0.8+ |
| 2002 02 08 | 704 | 0.5− | 0.8+ | 2003 01 21 | 726 | 0.6+ | 0.1− | 2004 02 13 | 097 | 0.1+ | 0.0 |
| 2002 02 08 | 448 | (1.7− | 0.8+) | 2003 01 21 | 726 | 1.1+ | 0.1− | 2004 02 13 | 097 | 0.5+ | 0.2− |
| 2002 02 12 | 696 | 0.1+ | 0.2+ | 2003 01 21 | 726 | 0.9− | 0.1+ | 2004 02 13 | 097 | 0.1− | 0.1− |
| 2002 02 12 | 696 | 0.0 | 0.3+ | 2003 01 21 | 726 | 0.9+ | 0.3+ | 2004 02 13 | 097 | 1.0+ | 0.0 |
| 2002 02 14 | 649 | 1.1− | 0.6− | 2003 01 21 | 726 | 0.3+ | 0.3+ | 2004 02 13 | 097 | 0.0 | 0.4− |
| 2002 02 14 | 649 | (1.6− | 1.1−) | 2003 01 21 | 726 | 0.5+ | 1.3− | 2004 02 13 | 097 | 0.6+ | 0.0 |
| 2002 02 14 | 649 | 1.2− | 0.8− | 2003 01 23 | 170 | 0.4+ | 0.1+ | 2004 02 13 | 097 | 0.5+ | 0.4− |
| 2002 02 14 | 696 | 0.1− | 0.1− | 2003 01 23 | 170 | 0.1− | 0.2− | 2004 02 13 | 699 | 0.7+ | 0.3+ |
| 2002 02 14 | 696 | 0.1− | 0.3− | 2003 01 23 | 170 | 0.6− | 0.1− | 2004 02 13 | 699 | 0.2+ | 1.5− |
| 2002 02 26 | 715 | 0.9− | 0.7− | 2003 01 23 | 170 | 0.4− | 0.1+ | 2004 02 13 | 703 | 0.5− | 1.4− |
| 2002 02 26 | 715 | 1.2− | 1.0− | 2003 01 23 | 170 | 0.1+ | 0.1− | 2004 02 13 | 699 | 0.2+ | 0.4− |
| 2002 03 03 | 715 | (2.5− | 0.2−) | 2003 01 23 | 170 | 0.7− | 0.3+ | 2004 02 13 | 703 | 0.0 | 0.1− |
| 2002 03 03 | 715 | 0.7− | 1.4+ | 2003 01 23 | 170 | 0.1+ | 0.2+ | 2004 02 13 | 699 | 0.2− | 0.1− |
| 2002 03 04 | 715 | (3.2− | 0.3+) | 2003 01 23 | 170 | 0.2− | 0.0 | 2004 02 13 | 703 | 0.2− | 0.7+ |
| 2002 03 04 | 715 | 0.3− | 0.2− | 2003 01 24 | 636 | 0.4+ | 0.2− | 2004 02 13 | 703 | 0.4+ | 0.0 |
| 2002 03 04 | 715 | (1.6+ | 0.6−) | 2003 01 24 | 636 | 0.0 | 0.2+ | 2004 02 14 | 704 | 0.3− | 1.0+ |
| 2002 03 05 | 649 | (1.7− | 0.5+) | 2003 01 24 | 636 | 0.7− | 0.0 | 2004 02 14 | 704 | 0.4+ | 0.4+ |
| 2002 03 05 | 649 | 0.2+ | 0.7+ | 2003 01 24 | 636 | 0.2+ | 0.1− | 2004 02 14 | 704 | 0.0 | 1.1+ |
| 2002 03 05 | 649 | 0.5− | 0.8+ | 2003 01 25 | 941 | 0.3− | 0.6+ | 2004 02 14 | 704 | 0.3− | 0.9+ |
| 2002 05 07 | 291 | 0.8− | 0.6+ | 2003 01 25 | 941 | 0.0 | 0.4+ | 2004 02 14 | 704 | 0.1− | 1.1+ |
| 2002 05 07 | 291 | 0.2+ | 0.4+ | 2003 01 25 | 941 | 0.0 | 0.1+ | 2004 12 10 | 291 | 0.1+ | 0.5+ |
| 2002 05 07 | 291 | 0.6− | 0.3− | 2003 01 25 | 941 | 0.2− | 0.2+ | 2004 12 10 | 291 | 0.1+ | 0.7+ |
| 2002 05 07 | 291 | 0.3+ | 0.6− | 2003 01 25 | 941 | 0.2− | 0.3+ | 2004 12 10 | 291 | 0.2+ | 0.7+ |
| 2002 05 07 | 291 | 0.1+ | 0.1− | 2003 01 29 | 670 | 0.4+ | 0.1− | 2005 01 17 | 703 | 0.1+ | 0.2− |
| 2003 01 10 | 448 | 0.1+ | 0.6+ | 2003 01 29 | 670 | 0.3− | 1.1− | 2005 01 17 | 703 | 0.3− | 0.7− |
| 2003 01 10 | 448 | 0.2+ | 0.2+ | 2003 01 30 | 046 | 0.5− | 0.6+ | 2005 01 17 | 703 | 0.6− | 0.1+ |
| 2003 01 10 | 448 | (2.4+ | 1.5+) | 2003 01 30 | 046 | 0.2− | 0.2+ | 2005 01 17 | 703 | 0.5− | 0.4+ |
| 2003 01 10 | 448 | 0.7+ | 0.7+ | 2003 01 30 | 046 | 0.1− | 0.2+ | 2005 02 16 | H36 | 0.4− | 0.4− |
| 2003 01 10 | 448 | 0.7+ | 1.6+ | 2003 01 30 | 046 | 0.0 | 0.4+ | 2005 02 16 | H36 | 0.3− | 0.4+ |
| 2003 01 11 | 448 | 0.0 | 0.1+ | 2003 01 30 | 046 | 0.7− | 0.7+ | 2005 02 16 | H36 | 0.6− | 0.4− |
| 2003 01 11 | 448 | 0.6+ | 0.7+ | 2003 01 31 | 704 | 0.0 | 0.5+ | 2005 05 12 | 291 | 0.9− | 1.1+ |
| 2003 01 11 | 448 | (1.9+ | 0.5+) | 2003 01 31 | 704 | 0.0 | 0.2+ | 2005 05 12 | 291 | 1.2+ | 0.3+ |
| 2003 01 11 | 448 | (3.0+ | 1.2+) | 2003 01 31 | 704 | 0.2− | 0.2+ | 2005 05 12 | 291 | 0.3− | 1.1+ |
| 2003 01 12 | 670 | 0.4− | 0.2− | 2003 01 31 | 704 | 0.2− | 0.5+ | 2006 02 21 | 703 | 0.7− | 0.2− |
| 2003 01 12 | 670 | 0.3− | 0.5− | 2003 01 31 | 704 | 0.2+ | 0.6+ | 2006 02 21 | 703 | 1.0− | 0.0 |
| 2003 01 12 | 670 | 0.1− | 0.4− | 2003 02 01 | 106 | 0.7+ | 0.5+ | 2006 02 21 | 703 | 0.4− | 0.3+ |
| 2003 01 13 | 704 | 0.3− | 1.3− | 2003 02 01 | 106 | 0.1− | 0.5− | 2006 02 21 | 703 | 1.1− | 0.8− |
| 2003 01 13 | 704 | 1.4− | 1.4− | 2003 02 01 | 106 | 0.2+ | 0.0 | 2006 02 21 | 703 | 0.9− | 1.2+ |
| 2003 01 13 | 704 | 0.6− | 0.7− | 2003 02 01 | 113 | 0.2+ | 0.1− | 2006 02 21 | 703 | 1.1− | 0.2+ |
| 2003 01 13 | 704 | 0.9+ | 0.1+ | 2003 02 01 | 113 | 0.2− | 0.2+ | 2006 02 21 | 703 | 0.9− | 0.7+ |
| 2003 01 13 | 649 | 0.3− | 0.1− | 2003 02 01 | 113 | 0.3+ | 0.1− | 2006 02 23 | 699 | 1.1+ | 0.2− |
| 2003 01 13 | 649 | 0.3− | 0.3+ | 2003 02 01 | 113 | 0.3+ | 0.1+ | 2006 02 23 | 699 | 0.4+ | 0.2+ |
| 2003 01 13 | 649 | 0.0 | 0.1− | 2003 02 01 | 113 | 0.2+ | 0.0 | 2006 02 23 | 699 | 0.8+ | 0.3− |
| 2003 01 15 | 118 | 0.1− | 0.0 | 2003 02 25 | 621 | 0.3− | 0.0 | 2006 02 23 | 699 | 0.3+ | 0.3+ |
| 2003 01 15 | 118 | 0.5− | 0.2− | 2003 02 25 | 621 | 0.3− | 0.0 | 2006 02 28 | 703 | (0.9− | 1.7−) |
| 2003 01 15 | 118 | 0.6− | 0.1− | 2003 02 25 | 621 | 0.0 | 0.2− | 2006 02 28 | 703 | 0.1− | 0.5− |
| 2003 01 15 | 118 | 0.5− | 0.1− | 2003 02 25 | 621 | 0.2+ | 0.3− | 2006 02 28 | 703 | 0.9− | 1.3− |
| 2003 01 15 | 118 | 0.3− | 0.1− | 2003 02 25 | 621 | 0.0 | 0.3− | 2006 02 28 | 703 | 0.7− | 0.3− |
| 2003 01 15 | 151 | (1.8+ | 0.4+) | 2003 02 25 | 621 | 0.4+ | 0.6− | 2006 03 01 | A62 | 0.4+ | 0.5− |
| 2003 01 15 | 151 | 0.1+ | 0.8− | 2003 12 27 | 704 | 1.1+ | 1.2− | 2006 03 01 | A62 | 0.3+ | 0.4− |
| 2003 01 15 | 151 | 0.3+ | 0.2− | 2003 12 27 | 704 | 0.3+ | 0.1+ | 2006 03 01 | A62 | 0.2+ | 0.4− |
| 2003 01 15 | 151 | 0.3+ | 0.3+ | 2003 12 27 | 704 | 0.4+ | 0.5+ | 2006 03 01 | A62 | 0.1+ | 0.4− |
| 2003 01 15 | 151 | 0.6− | 0.3− | 2003 12 27 | 704 | 0.8+ | 0.2+ | 2006 03 01 | A62 | 0.3+ | 0.3− |
| 2003 01 15 | 151 | 0.4+ | 0.6+ | 2003 12 28 | 704 | 1.4+ | 0.8− | 2006 03 01 | A62 | 0.2+ | 0.2− |
| 2003 01 15 | 151 | 0.6+ | 0.2+ | 2003 12 28 | 704 | 0.8+ | 0.7− | 2006 03 01 | A62 | 0.2+ | 0.1− |
| 2003 01 15 | 151 | 0.2− | 0.4+ | 2003 12 28 | 704 | (0.7+ | 1.6−) | 2006 03 01 | A62 | 0.1+ | 0.2− |
| 2003 01 15 | 151 | 0.0 | 0.1− | 2003 12 28 | 704 | 0.4+ | 0.5− | 2006 03 01 | A62 | 0.3+ | 0.4− |
| 2003 01 15 | 151 | 0.7+ | 0.0 | 2004 01 19 | 170 | 0.3− | 0.5+ | 2006 03 01 | A62 | 0.0 | 0.3− |
| 2003 01 16 | 670 | 0.4− | 0.1− | 2004 01 19 | 170 | 0.0 | 0.2+ | 2006 03 01 | A62 | 0.0 | 0.3− |
| 2003 01 16 | 670 | 0.3− | 0.1+ | 2004 01 19 | 170 | 0.8+ | 0.4− | 2006 03 01 | A62 | 0.1− | 0.4− |
| 2003 01 16 | 670 | 0.0 | 0.2− | 2004 01 24 | 084 | 0.1+ | 0.1− | 2006 03 01 | A62 | 0.1− | 0.4− |
| 2003 01 16 | 670 | 0.5+ | 0.3− | 2004 01 25 | 084 | 0.8+ | 0.0 | 2006 03 01 | A62 | 0.0 | 0.4− |
| 2003 01 16 | 170 | 0.7− | 0.2+ | 2004 01 28 | 703 | 0.4− | 0.1+ | 2006 03 01 | A62 | 0.0 | 0.5− |
| 2003 01 16 | 170 | 0.4+ | 0.1+ | 2004 01 28 | 703 | 0.1− | 0.1+ | 2006 03 05 | H08 | 0.0 | 0.1− |
| 2003 01 16 | 170 | 0.1+ | 0.1− | 2004 01 28 | 703 | 0.1− | 0.1+ | 2006 03 05 | H08 | 0.1− | 0.2− |
| 2003 01 16 | 170 | 0.4+ | 0.2− | 2004 01 28 | 703 | 0.0 | 0.4+ | 2006 03 05 | H08 | 0.2− | 0.2− |
| 2003 01 17 | 170 | 0.5+ | 0.6− | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 03 06 | H08 | 0.1− | 0.0 |
| 2003 01 17 | 170 | 0.4− | 0.7− | 2004 01 30 | 704 | 0.2− | 0.3+ | 2006 03 06 | H08 | 0.1− | 0.1− |
| 2003 01 17 | 170 | 0.3+ | 0.2− | 2004 01 30 | 704 | 0.3+ | 0.2+ | 2006 03 06 | H08 | 0.1− | 0.1− |

**(141433)∗ 2002 CX$_{12}$**

Discovered 2002 Feb. 8 by C. W. Juels and P. R. Holvorcem at Fountain Hills.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.33964 | | (2000.0) | | | |
| $n$ | 0.19030409 | $\omega$ | 13.99065 | | −0.44506358 | −0.89475456 |
| $a$ | 2.9934405 | $\Omega$ | 102.44732 | | +0.81796718 | −0.42278479 |
| $e$ | 0.2683093 | $i$ | 2.14249 | | +0.36448334 | −0.14376127 |
| $P$ | 5.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 691 | 0.1− | 0.4+ | 2002 02 12 | 704 | 0.5+ | 0.4+ | 2002 03 16 | 704 | 0.0 | 0.5+ |
| 2000 09 30 | 691 | 0.3− | 0.4+ | 2002 02 12 | 704 | 0.6+ | 0.4+ | 2002 03 16 | 704 | 0.7− | 1.4+ |
| 2000 09 30 | 691 | 0.2− | 0.4+ | 2002 02 12 | 704 | 0.4+ | 0.5+ | 2002 03 16 | 704 | 0.5− | 1.0+ |
| 2002 01 14 | 704 | (0.3+ | 2.9+) | 2002 02 12 | 704 | 0.6+ | 0.4+ | 2002 03 23 | 644 | 0.2− | 0.0 |
| 2002 01 14 | 704 | (0.8− | 3.5+) | 2002 02 13 | 678 | 0.7− | 0.0 | 2002 03 23 | 644 | 0.1+ | 0.1+ |
| 2002 01 14 | 704 | (1.2+ | 4.5+) | 2002 02 13 | 678 | 0.3− | 0.8+ | 2002 03 23 | 644 | 0.0 | 0.3− |
| 2002 01 14 | 691 | 0.2− | 0.3+ | 2002 02 13 | 678 | 0.1− | 0.9+ | 2002 04 03 | 644 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | (0.1− | 2.3+) | 2002 02 14 | 644 | 0.3+ | 0.3+ | 2002 04 03 | 644 | 0.1− | 0.2− |
| 2002 01 14 | 704 | (0.7− | 3.1+) | 2002 02 14 | 644 | 0.4+ | 0.1+ | 2002 04 03 | 644 | 0.2+ | 0.1+ |
| 2002 01 14 | 691 | 0.2− | 0.3+ | 2002 02 14 | 644 | 0.1− | 0.3+ | 2003 06 07 | 291 | 0.0 | 0.1− |
| 2002 01 14 | 691 | 0.1− | 0.3+ | 2002 02 19 | 678 | 0.2− | 0.7− | 2003 06 07 | 291 | 0.2+ | 0.8+ |
| 2002 01 21 | 704 | 0.3− | 0.6+ | 2002 02 19 | 678 | 0.3− | 1.1− | 2003 06 07 | 291 | 0.1− | 0.2+ |
| 2002 01 21 | 704 | 1.0− | 0.7− | 2002 02 19 | 678 | 0.3− | 1.0+ | 2005 08 30 | 691 | 0.1+ | 0.3+ |
| 2002 01 21 | 704 | 0.3− | 0.4+ | 2002 02 20 | 704 | 0.2+ | 0.2− | 2005 08 30 | 691 | 0.1+ | 0.1+ |
| 2002 01 21 | 704 | 0.5+ | 0.5+ | 2002 02 20 | 704 | 0.5+ | 0.2+ | 2005 08 30 | 691 | (1.2+ | 1.6−) |
| 2002 02 04 | 699 | 0.9− | 0.2− | 2002 02 20 | 704 | 0.3+ | 0.2+ | 2005 09 13 | 691 | 0.4− | 0.4+ |
| 2002 02 04 | 699 | 0.1− | 0.1+ | 2002 02 20 | 704 | 0.3+ | 0.3+ | 2005 09 13 | 691 | 0.2− | 0.5+ |
| 2002 02 04 | 699 | 0.2− | 0.4+ | 2002 02 20 | 704 | 0.1− | 0.3+ | 2005 09 13 | 691 | 0.4− | 0.6+ |
| 2002 02 04 | 699 | (1.9− | 0.4−) | 2002 03 03 | 703 | 0.0 | 0.4− | 2005 10 06 | G96 | 0.1+ | 0.1+ |
| 2002 02 05 | 644 | 0.2− | 0.1+ | 2002 03 03 | 703 | 0.6− | 0.6− | 2005 10 06 | G96 | 0.3+ | 0.5+ |
| 2002 02 05 | 644 | 0.2− | 0.1− | 2002 03 03 | 703 | 0.3+ | 0.5− | 2005 10 06 | G96 | 0.1+ | 0.4+ |
| 2002 02 05 | 644 | 0.2+ | 0.1+ | 2002 03 03 | 703 | 0.0 | 0.3+ | 2005 10 06 | G96 | 0.1− | 0.1+ |
| 2002 02 07 | 704 | 0.7+ | 0.1− | 2002 03 04 | 644 | 0.1+ | 0.0 | 2005 10 29 | G96 | 0.2+ | 0.1− |
| 2002 02 07 | 704 | 1.0+ | 0.0 | 2002 03 04 | 644 | 0.0 | 0.1− | 2005 10 29 | G96 | 0.2− | 0.5+ |
| 2002 02 07 | 704 | 0.5+ | 0.4+ | 2002 03 04 | 644 | 0.1− | 0.1+ | 2005 10 29 | G96 | 0.2− | 0.1− |
| 2002 02 07 | 704 | 0.7+ | 0.3+ | 2002 03 09 | 704 | 0.3− | 0.0 | 2005 10 29 | G96 | 0.3− | 0.5+ |
| 2002 02 07 | 704 | 0.7+ | 0.5+ | 2002 03 09 | 704 | (0.2− | 2.0+) | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2002 02 08 | 678 | 0.2− | 0.7− | 2002 03 09 | 704 | 0.5− | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2002 02 08 | 678 | (0.5+ | 2.4+) | 2002 03 09 | 704 | 0.1+ | 0.7− | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2002 02 08 | 704 | 1.4+ | 1.0− | 2002 03 13 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2002 02 08 | 704 | 0.2− | 0.4+ | 2002 03 13 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.9− | 0.7+ |
| 2002 02 08 | 704 | 1.2+ | 1.0− | 2002 03 13 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.7− |
| 2002 02 08 | 704 | 1.3+ | 0.3− | 2002 03 13 | 644 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 2002 02 08 | 704 | 0.8+ | 1.2− | 2002 03 13 | 644 | 0.4+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 02 09 | 678 | (2.0+ | 0.5−) | 2002 03 13 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.8− |
| 2002 02 09 | 678 | 0.0 | 0.2− | 2002 03 14 | 704 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.9− |
| 2002 02 10 | 704 | 0.3+ | 0.3+ | 2002 03 14 | 704 | 0.6− | 0.4+ | 2006 11 17 | 703 | 0.1− | 2.4− |
| 2002 02 10 | 704 | 0.1+ | 0.3+ | 2002 03 14 | 704 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.4− | 1.1− |
| 2002 02 10 | 704 | 0.1+ | 0.0 | 2002 03 14 | 704 | 0.0 | 0.4+ | 2006 11 24 | 644 | 0.1− | 0.6+ |
| 2002 02 10 | 704 | 0.5+ | 0.3+ | 2002 03 14 | 704 | 0.1− | 0.6+ | 2006 11 24 | 644 | 0.3− | 0.1− |
| 2002 02 10 | 704 | 0.5− | 0.1+ | 2002 03 16 | 704 | 0.3− | 0.2+ | 2006 11 24 | 644 | 0.1− | 0.3+ |
| 2002 02 12 | 704 | 0.2+ | 0.9+ | 2002 03 16 | 704 | 0.1− | 0.5+ | | | | |

**(141434)∗ 2002 CP$_{14}$ = 2000 SW$_{305}$**

Discovered 2002 Feb. 9 by R. Ferrand at Observatorio Pla D'Arguines.

Id. T. B. Spahr (*MPO* 25636)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.66687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17850065 | $\omega$ | 207.79322 | | −0.07878608 | −0.97616002 | |
| $a$ | 3.1239891 | $\Omega$ | 247.32715 | | +0.95046470 | −0.01236251 | |
| $e$ | 0.2584484 | $i$ | 12.66128 | | +0.30068191 | −0.21669976 | |
| $P$ | 5.52 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 21 | 566 | 0.4+ | 0.6+ | 2002 02 15 | 941 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 1995 12 21 | 566 | 0.5+ | 0.6+ | 2002 02 15 | 941 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 1.3− | 1.0− |
| 1995 12 21 | 566 | 0.4+ | 0.3+ | 2002 02 15 | 941 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2000 09 30 | 704 | 0.4− | 0.1+ | 2002 02 15 | 941 | 0.3+ | 1.1+ | 2006 10 29 | 704 | 0.7− | 0.1− |
| 2000 09 30 | 704 | 1.5− | 0.2+ | 2002 02 22 | 941 | 1.4− | 1.6+ | 2006 10 29 | 704 | 1.6− | 0.5+ |
| 2000 09 30 | 704 | 0.8− | 0.4− | 2002 02 22 | 941 | 0.1+ | 1.3+ | 2006 10 29 | 704 | 1.1− | 0.3− |
| 2000 10 04 | 608 | 0.2− | 0.6− | 2002 02 22 | 941 | (1.1+ | 2.6+) | 2006 10 29 | 704 | 0.3− | 0.3+ |
| 2000 10 04 | 608 | 0.3− | 0.3− | 2002 02 23 | 941 | (2.7− | 0.9+) | 2006 11 14 | 703 | (2.5+ | 2.1−) |
| 2000 10 04 | 608 | 0.0 | 0.6− | 2002 02 23 | 941 | 0.2− | 0.6+ | 2006 11 14 | 703 | 0.6+ | 0.0 |
| 2001 12 25 | 608 | 0.0 | 0.9− | 2002 02 23 | 941 | 0.9+ | 1.0+ | 2006 11 14 | 703 | 0.4− | 0.8+ |
| 2001 12 25 | 608 | 0.1− | 0.7− | 2002 02 23 | 941 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2001 12 25 | 608 | 0.5+ | 1.1− | 2002 02 23 | 941 | (2.4+ | 0.9−) | 2006 11 16 | 704 | 0.8+ | 0.0 |
| 2002 01 10 | 644 | 0.0 | 0.1− | 2002 02 23 | 941 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.8+ |
| 2002 01 10 | 644 | 0.1+ | 0.2− | 2002 03 08 | 941 | 1.8− | 1.3− | 2006 11 16 | 704 | 0.9+ | 0.6+ |
| 2002 01 10 | 644 | 0.2− | 0.4− | 2002 03 08 | 941 | 1.3− | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.7+ |
| 2002 01 12 | 704 | 1.7+ | 0.0 | 2002 03 08 | 941 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2002 01 12 | 704 | 1.6+ | 0.6− | 2002 03 10 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 01 12 | 704 | (2.2− | 2.2−) | 2002 03 10 | 704 | 0.7+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2002 02 08 | 941 | 0.9− | 0.5+ | 2002 03 10 | 704 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 02 08 | 941 | 0.6− | 0.5+ | 2002 03 10 | 704 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2002 02 08 | 941 | 0.4− | 0.4+ | 2005 07 30 | 941 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 1.6+ | 0.3− |
| 2002 02 08 | 941 | 0.8− | 0.3+ | 2005 07 30 | 941 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 1.8+ | 0.1− |
| 2002 02 08 | 941 | 0.8− | 0.4− | 2005 07 30 | 941 | 0.6+ | 0.8+ | 2006 11 22 | 704 | 1.7+ | 0.4− |
| 2002 02 09 | 941 | 1.7− | 0.2− | 2005 07 30 | 941 | 1.0+ | 0.7+ | 2006 11 22 | 704 | 1.6+ | 0.2− |
| 2002 02 09 | 941 | (2.1− | 0.4+) | 2005 08 05 | 941 | 0.4− | 0.4+ | 2006 11 22 | 704 | 1.6+ | 0.3− |
| 2002 02 09 | 941 | 0.4− | 0.1− | 2005 08 05 | 941 | 0.4− | 0.4+ | 2006 11 27 | 704 | 0.5− | 0.3+ |
| 2002 02 09 | 941 | 1.6− | 0.3+ | 2005 08 05 | 941 | 0.2− | 0.4+ | 2006 11 27 | 704 | 0.5− | 0.2− |
| 2002 02 09 | 644 | 0.3+ | 0.4+ | 2005 08 05 | 941 | 0.3+ | 0.6+ | 2006 11 27 | 704 | 0.2+ | 0.7− |
| 2002 02 09 | 644 | 0.5+ | 0.9+ | 2005 08 26 | 644 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.4− | 0.8+ |
| 2002 02 09 | 644 | 0.6+ | 0.7+ | 2005 08 26 | 644 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.8− |
| 2002 02 09 | 941 | (32.5+ | 6.0+) | 2005 08 26 | 644 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.8− |
| 2002 02 09 | 941 | (29.2+ | 6.5+) | 2006 10 19 | 703 | 0.4− | 1.4+ | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2002 02 09 | 941 | (27.3+ | 7.1+) | 2006 10 19 | 703 | 0.8− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2002 02 15 | 704 | 0.5+ | 0.8− | 2006 10 19 | 703 | 1.2− | 0.2+ | 2006 12 01 | 704 | 0.4+ | 0.3− |
| 2002 02 15 | 704 | 2.0+ | 1.1− | 2006 10 19 | 703 | (0.7− | 2.7−) | 2006 12 01 | 704 | 0.9− | 0.1− |
| 2002 02 15 | 704 | 1.2+ | 0.1− | 2006 10 20 | 704 | 0.7+ | 0.1− | 2006 12 01 | 704 | 0.8− | 0.2+ |
| 2002 02 15 | 704 | 0.1− | 1.7− | 2006 10 20 | 704 | 0.3+ | 0.8− | 2006 12 01 | 704 | 0.5− | 0.5− |
| 2002 02 15 | 941 | 0.8+ | 0.0 | 2006 10 20 | 704 | 0.2+ | 0.0 | 2006 12 01 | 704 | 1.0− | 0.4+ |
| 2002 02 15 | 941 | 0.6− | 0.3+ | 2006 10 20 | 704 | 0.3+ | 0.3+ | | | | |
| 2002 02 15 | 941 | 1.3+ | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.4− | | | | |

**(141435)∗ 2002 CU$_{20}$**

Discovered 2002 Feb. 4 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.14685 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19269969 | $\omega$ | 17.76686 | | −0.76197880 | −0.62371896 | |
| $a$ | 2.9685797 | $\Omega$ | 122.36512 | | +0.56630919 | −0.77227424 | |
| $e$ | 0.0418695 | $i$ | 11.90544 | | +0.31413725 | −0.12069447 | |
| $P$ | 5.11 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 14 | 691 | (3.3+ | 3.3+) | 2002 02 13 | 644 | 0.5− | 0.2+ | 2003 05 22 | 691 | 0.5+ | 0.2+ |
| 1994 09 14 | 691 | (3.1+ | 4.1+) | 2002 02 14 | 644 | 0.3+ | 0.6+ | 2004 08 08 | 704 | 0.8+ | 1.3+ |
| 2002 02 04 | 699 | 0.1+ | 0.8+ | 2002 02 14 | 644 | 0.1− | 0.7+ | 2004 08 08 | 704 | 0.1+ | 0.6+ |
| 2002 02 04 | 699 | 0.3− | 0.0 | 2002 02 14 | 644 | 0.1+ | 0.6+ | 2004 08 08 | 704 | 0.1+ | 0.8+ |
| 2002 02 04 | 699 | 0.3+ | 0.7+ | 2002 03 02 | 644 | 0.0 | 0.1+ | 2004 08 08 | 704 | 0.2− | 0.3+ |
| 2002 02 04 | 699 | 0.5− | 0.2− | 2002 03 02 | 644 | 0.0 | 0.6+ | 2004 08 11 | 704 | 0.5+ | 0.1− |
| 2002 02 04 | 644 | 0.3+ | 0.3− | 2002 03 02 | 644 | 0.0 | 0.4+ | 2004 08 11 | 704 | 0.0 | 0.3− |
| 2002 02 04 | 644 | 0.2+ | 0.5− | 2002 03 06 | 704 | 0.3− | 0.6+ | 2004 08 11 | 704 | 0.2− | 0.2+ |
| 2002 02 04 | 644 | 0.1+ | 0.8− | 2002 03 06 | 704 | 0.4− | 0.6+ | 2004 08 11 | 704 | 0.7− | 0.8− |
| 2002 02 07 | 608 | 0.9− | 0.3− | 2002 03 06 | 704 | 0.0 | 0.4− | 2004 08 22 | E12 | 0.2− | 0.6+ |
| 2002 02 07 | 608 | 0.5− | 0.4− | 2002 03 11 | 644 | 0.0 | 0.1− | 2004 08 22 | E12 | 0.8− | 0.9+ |
| 2002 02 07 | 608 | 0.9− | 0.1− | 2002 03 11 | 644 | 0.1+ | 0.0 | 2004 08 22 | E12 | 0.4+ | 0.7+ |
| 2002 02 08 | 704 | 1.1− | 1.1+ | 2002 03 11 | 644 | 0.2− | 0.0 | 2004 08 22 | E12 | 0.7+ | 0.9+ |
| 2002 02 08 | 704 | 0.4+ | 0.5− | 2002 03 17 | 704 | 0.2− | 0.8− | 2005 10 24 | 644 | 0.6− | 0.5+ |
| 2002 02 08 | 704 | 1.3+ | 0.2+ | 2002 03 17 | 704 | 0.6+ | 0.8− | 2005 10 24 | 644 | 0.3− | 0.4+ |
| 2002 02 08 | 704 | 0.2+ | 0.3− | 2002 03 17 | 704 | 0.4− | 1.3+ | 2005 10 24 | 644 | 0.4− | 0.8+ |
| 2002 02 08 | 704 | 0.5+ | 0.5− | 2002 03 21 | 644 | 0.0 | 0.0 | 2005 10 27 | 703 | 0.1+ | 0.1+ |
| 2002 02 12 | 704 | 0.3+ | 0.1− | 2002 03 21 | 644 | 0.2+ | 0.2+ | 2005 10 27 | 703 | 0.4− | 0.6+ |
| 2002 02 12 | 704 | 0.5+ | 0.5+ | 2002 03 21 | 644 | 0.0 | 0.1+ | 2005 10 27 | 703 | 0.3+ | 0.5+ |
| 2002 02 12 | 704 | 0.5+ | 0.2− | 2002 03 22 | 644 | 0.2+ | 0.4+ | 2005 10 27 | 703 | 0.8− | 0.5− |
| 2002 02 12 | 704 | 0.8+ | 0.0 | 2002 03 22 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.4+ |
| 2002 02 12 | 704 | 0.3− | 0.4− | 2002 03 22 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4+ | 0.1+ |
| 2002 02 12 | 704 | 0.1+ | 0.1− | 2002 04 01 | 644 | 0.3+ | 0.7− | 2006 10 20 | 691 | 0.4+ | 0.0 |
| 2002 02 12 | 704 | 0.1+ | 0.1+ | 2002 04 01 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2002 02 12 | 704 | 0.2+ | 0.2− | 2002 04 01 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2002 02 12 | 704 | 0.6+ | 0.0 | 2002 04 02 | 644 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.0 |
| 2002 02 12 | 704 | 0.2− | 0.5+ | 2002 04 02 | 644 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 02 12 | 704 | 0.4+ | 0.0 | 2002 04 02 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2002 02 12 | 704 | 0.4+ | 0.2− | 2003 05 02 | 691 | 0.5− | 0.2− | 2006 11 15 | G96 | 1.0− | 0.3− |
| 2002 02 12 | 704 | 0.5− | 0.3+ | 2003 05 02 | 691 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2002 02 12 | 704 | 0.1− | 0.6+ | 2003 05 02 | 691 | 0.4− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 02 13 | 644 | 0.0 | 0.3+ | 2003 05 22 | 691 | 0.2+ | 0.5+ | | | | |
| 2002 02 13 | 644 | 0.1− | 0.7+ | 2003 05 22 | 691 | 0.4+ | 0.5+ | | | | |

**(141436)∗ 2002 CZ$_{20}$**

Discovered 2002 Feb. 4 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.00738 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27392762 | $\omega$ | 89.56946 | | −0.76349782 | −0.64449625 | |
| $a$ | 2.3480761 | $\Omega$ | 50.30200 | | +0.56919358 | −0.70167351 | |
| $e$ | 0.1030030 | $i$ | 3.06786 | | +0.30510614 | −0.30377437 | |
| $P$ | 3.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 691 | 0.3− | 0.9+ | 2004 10 14 | 691 | 0.2− | 0.3+ | 2006 04 02 | 691 | 0.1+ | 0.2+ |
| 2000 10 06 | 691 | 0.5− | 1.1+ | 2004 10 14 | 691 | 0.2− | 0.2+ | 2006 04 02 | 691 | 0.3+ | 0.2+ |
| 2000 10 06 | 691 | 0.5− | 0.7+ | 2004 10 15 | G96 | 0.2+ | 0.2− | 2006 04 06 | 691 | 0.3+ | 0.2− |
| 2002 01 22 | 644 | 0.5+ | 0.2+ | 2004 10 15 | G96 | 0.2− | 0.3− | 2006 04 06 | 691 | 0.1+ | 0.0 |
| 2002 01 22 | 644 | 0.6+ | 0.2+ | 2004 10 15 | G96 | 0.0 | 0.2− | 2006 04 06 | 691 | 0.2+ | 0.6+ |
| 2002 01 22 | 644 | 0.7+ | 0.2− | 2004 10 15 | G96 | 0.1+ | 0.2− | 2006 04 19 | G96 | 0.2+ | 0.4+ |
| 2002 02 04 | 644 | 0.1+ | 0.1+ | 2004 10 23 | 691 | 0.0 | 0.4+ | 2006 04 19 | G96 | 0.0 | 0.3+ |
| 2002 02 04 | 644 | 0.1+ | 0.1+ | 2004 10 23 | 691 | 0.0 | 0.3+ | 2006 04 19 | G96 | 0.4− | 0.2+ |
| 2002 02 04 | 644 | 0.6+ | 0.1+ | 2004 10 23 | 691 | 0.0 | 0.3+ | 2006 04 19 | G96 | 0.3− | 0.3+ |
| 2002 02 07 | 608 | 0.1+ | 0.7− | 2004 11 04 | 703 | 0.4− | 0.1− | 2006 04 30 | 699 | 1.2+ | 1.9+ |
| 2002 02 07 | 608 | 0.5− | 0.1− | 2004 11 04 | 703 | 0.1− | 0.4+ | 2006 04 30 | 699 | 1.5+ | 0.9+ |
| 2002 02 07 | 608 | 0.2− | 0.4− | 2004 11 04 | 703 | 2.0− | 0.4− | 2006 04 30 | 699 | 0.5+ | 0.2+ |
| 2002 02 08 | 704 | 0.4+ | 0.7− | 2004 11 04 | 703 | 1.1− | 0.1− | 2006 04 30 | 699 | 0.5+ | 0.2+ |
| 2002 02 08 | 704 | 0.0 | 0.3− | 2004 11 07 | 704 | 0.3+ | 1.0+ | 2006 05 01 | 704 | 1.1+ | 1.3+ |
| 2002 02 08 | 704 | 1.0− | 0.8− | 2004 11 07 | 704 | 0.5+ | 0.4+ | 2006 05 01 | 704 | 0.1− | 1.1+ |
| 2002 02 08 | 704 | 1.0− | 0.4+ | 2004 11 07 | 704 | 0.7+ | 0.7+ | 2006 05 01 | 704 | 0.2+ | 0.2+ |
| 2002 02 08 | 704 | 0.1− | 0.4− | 2004 11 10 | 691 | 0.1+ | 0.1− | 2006 05 01 | 704 | 0.1+ | 0.7+ |
| 2002 02 12 | 704 | 0.2+ | 0.6+ | 2004 11 10 | 691 | 0.0 | 0.1+ | 2006 05 01 | 704 | 0.0 | 0.7+ |
| 2002 02 12 | 704 | 0.6− | 1.0+ | 2004 11 10 | 691 | 0.0 | 0.1+ | 2006 05 04 | G96 | 0.6− | 0.1+ |
| 2002 02 12 | 704 | 1.0− | 0.6+ | 2004 11 18 | 704 | 0.3− | 0.4+ | 2006 05 04 | G96 | 0.5− | 0.2+ |
| 2002 02 12 | 704 | 0.5− | 0.5+ | 2004 11 18 | 704 | 1.2+ | 0.2+ | 2006 05 04 | G96 | (1.7− | 3.0+) |
| 2002 03 11 | 644 | 0.6+ | 0.4+ | 2004 11 18 | 704 | 0.8+ | 1.0+ | 2006 05 22 | G96 | 0.4− | 0.3+ |
| 2002 03 11 | 644 | 0.3+ | 0.5+ | 2004 11 18 | 704 | 0.5+ | 0.5+ | 2006 05 22 | G96 | 0.3− | 0.2+ |
| 2002 03 11 | 644 | 0.4+ | 0.3+ | 2004 11 19 | 703 | 0.5− | 0.2+ | 2006 05 22 | G96 | 0.3− | 0.2+ |
| 2002 03 12 | 644 | 0.8+ | 1.3+ | 2004 11 19 | 703 | 0.8+ | 0.1+ | 2006 05 22 | G96 | 0.3− | 0.5+ |
| 2002 03 12 | 644 | 1.0+ | 1.1+ | 2004 11 19 | 703 | 1.3− | 0.1+ | 2006 05 25 | 644 | 0.3− | 0.0 |
| 2002 03 12 | 644 | 0.8+ | 1.2+ | 2004 11 19 | 703 | 0.0 | 1.1+ | 2006 05 25 | 644 | 0.0 | 0.4+ |
| 2004 10 14 | 691 | 0.2− | 0.1+ | 2006 04 02 | 691 | 0.0 | 0.4+ | 2006 05 25 | 644 | 0.2− | 0.5+ |

**(141437)∗ 2002 CQ$_{26}$ = 2000 OM$_{34}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 27456)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 337.78649 | | (2000.0) | | | |
| $n$ | 0.18233093 | $\omega$ | 115.60893 | | +0.80201772 | −0.49167582 |
| $a$ | 3.0800835 | $\Omega$ | 275.55050 | | +0.34770899 | +0.84599777 |
| $e$ | 0.1301032 | $i$ | 19.92241 | | +0.48566041 | +0.20625872 |
| $P$ | 5.41 | $H$ | 13.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.6− | 0.8+ | 2002 01 05 | 644 | 0.3− | 0.1+ | 2003 02 06 | 644 | 0.3+ | 0.5− |
| 2000 07 30 | 704 | 0.8− | 0.9+ | 2002 01 05 | 644 | 0.3− | 0.2+ | 2003 02 06 | 644 | 0.3+ | 0.4− |
| 2000 07 30 | 704 | 0.2− | 1.0− | 2002 01 08 | 704 | 0.5+ | 0.3− | 2003 02 06 | 644 | 0.3+ | 0.4− |
| 2000 08 02 | 704 | 0.8− | 0.9+ | 2002 01 08 | 704 | 0.1+ | 0.0 | 2003 03 08 | 699 | 0.4− | 0.2− |
| 2000 08 02 | 704 | 0.4− | 0.2− | 2002 01 08 | 704 | 0.3− | 0.1− | 2003 03 08 | 699 | 0.1− | 0.2− |
| 2000 08 02 | 704 | 0.0 | 0.7+ | 2002 01 08 | 704 | 0.1+ | 0.2+ | 2003 03 08 | 699 | 0.8− | 0.7+ |
| 2000 08 02 | 704 | (2.4+ | 1.5−) | 2002 01 08 | 704 | 0.9+ | 0.2− | 2003 03 08 | 699 | 0.1+ | 0.5− |
| 2000 08 31 | 704 | 0.7+ | 0.4+ | 2002 01 14 | 644 | 0.2− | 0.6+ | 2006 05 19 | G96 | 0.3− | 0.4− |
| 2000 08 31 | 704 | 0.1− | 0.5+ | 2002 01 14 | 644 | 0.1− | 0.6+ | 2006 05 19 | G96 | 0.0 | 0.3+ |
| 2000 08 31 | 704 | 0.3+ | 0.4− | 2002 01 14 | 644 | 0.1− | 0.5+ | 2006 05 19 | G96 | 0.2− | 0.3− |
| 2000 08 31 | 704 | 0.5+ | 1.4+ | 2002 02 06 | 704 | (2.1+ | 0.1−) | 2006 05 19 | G96 | 0.5− | 0.1+ |
| 2001 10 25 | 704 | (2.0+ | 0.4+) | 2002 02 06 | 704 | (2.2+ | 0.4−) | 2006 09 17 | 703 | 0.5− | 0.1− |
| 2001 10 25 | 704 | 0.1+ | 0.8− | 2002 02 06 | 704 | (2.0+ | 0.5+) | 2006 09 17 | 703 | 0.8− | 0.1+ |
| 2001 10 25 | 704 | 0.2+ | 0.7− | 2002 02 08 | 704 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.5+ |
| 2001 10 25 | 704 | 0.3− | 0.8− | 2002 02 08 | 704 | 0.8+ | 0.2− | 2006 10 18 | 106 | 0.5+ | 0.1− |
| 2001 10 25 | 704 | 0.3+ | 0.5− | 2002 02 08 | 704 | 0.2+ | 0.4− | 2006 10 18 | 106 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.0 | 1.4+ | 2002 02 08 | 704 | 0.2+ | 0.1− | 2006 10 18 | 106 | 0.2− | 0.0 |
| 2001 11 11 | 704 | 0.4+ | 1.0+ | 2002 02 12 | 704 | 0.5+ | 0.7− | 2006 10 18 | 106 | 0.0 | 0.4− |
| 2001 11 11 | 704 | (0.4+ | 2.2+) | 2002 02 12 | 704 | 0.8− | 0.5− | 2006 10 20 | 704 | 0.8+ | 0.9+ |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2002 02 12 | 704 | 0.8− | 0.1− | 2006 10 20 | 704 | 0.1+ | 0.8+ |
| 2001 12 09 | 704 | 0.5+ | 0.1− | 2002 12 06 | 608 | 0.4− | 0.1− | 2006 10 20 | 703 | 0.2+ | 0.2− |
| 2001 12 09 | 704 | 0.3+ | 0.2− | 2002 12 06 | 608 | 0.0 | 0.0 | 2006 10 20 | 704 | 1.0+ | 0.9+ |
| 2001 12 09 | 704 | 0.6+ | 0.1+ | 2002 12 06 | 608 | 0.4− | 0.2+ | 2006 10 20 | 703 | 0.6− | 0.1+ |
| 2001 12 09 | 704 | 0.3+ | 0.3− | 2003 01 14 | 644 | 0.3+ | 0.9+ | 2006 10 20 | 704 | 0.1− | 0.7+ |
| 2001 12 22 | 704 | 1.2− | 0.0 | 2003 01 14 | 644 | 0.5+ | 1.1+ | 2006 10 20 | 704 | 0.3+ | 1.4+ |
| 2001 12 22 | 704 | (0.1− | 2.0−) | 2003 01 14 | 644 | 0.5+ | 0.9+ | 2006 10 20 | 703 | 0.4− | 0.4+ |
| 2001 12 22 | 704 | 0.1− | 0.6− | 2003 02 01 | 699 | 0.7− | 1.4+ | 2006 10 20 | 703 | 0.2− | 0.2− |
| 2001 12 22 | 704 | 0.8− | 0.2− | 2003 02 01 | 699 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.6− | 0.7− |
| 2001 12 22 | 704 | 0.3− | 0.3− | 2003 02 01 | 699 | (0.6− | 1.9+) | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2001 12 22 | 704 | 0.4− | 0.0 | 2003 02 01 | 699 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.9− | 0.4− |
| 2001 12 22 | 704 | 0.2+ | 0.8− | 2003 02 03 | 704 | 0.9+ | 0.4+ | 2006 10 27 | 703 | 0.8− | 0.0 |
| 2001 12 22 | 704 | 0.7− | 0.1+ | 2003 02 03 | 704 | 0.2+ | 1.0+ | 2006 11 23 | 703 | 0.1− | 0.6+ |
| 2001 12 22 | 704 | 0.0 | 0.8− | 2003 02 03 | 704 | 0.3+ | 1.0+ | 2006 11 23 | 703 | 0.0 | 0.1+ |
| 2001 12 22 | 704 | 0.3− | 0.1− | 2003 02 03 | 704 | 1.3+ | 0.1+ | 2006 11 23 | 703 | 1.0+ | 0.4+ |
| 2002 01 05 | 644 | 0.3− | 0.3+ | 2003 02 03 | 704 | 1.4+ | 0.4+ | 2006 11 23 | 703 | 0.5+ | 0.5+ |

**(141438)∗ 2002 CC$_{29}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.22211 | | (2000.0) | | | |
| $n$ | 0.17927051 | $\omega$ | 346.45251 | | −0.01081803 | −0.98229624 |
| $a$ | 3.1150389 | $\Omega$ | 103.92320 | | +0.93444740 | −0.07650673 |
| $e$ | 0.0781411 | $i$ | 11.10939 | | +0.35593684 | +0.17099944 |
| $P$ | 5.50 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 1.5+ | 1.1+ | 2002 02 06 | 704 | 0.4+ | 0.1− | 2003 05 02 | 704 | 1.0+ | 0.3+ |
| 2000 09 26 | 699 | 1.7− | 0.9− | 2002 02 06 | 704 | 0.4+ | 0.4+ | 2003 05 02 | 704 | 0.5+ | 0.5+ |
| 2000 09 26 | 699 | 0.9− | 1.6+ | 2002 02 06 | 704 | 0.5+ | 0.2+ | 2003 05 02 | 704 | 1.1+ | 0.8+ |
| 2000 09 26 | 699 | 0.4+ | 1.4+ | 2002 02 06 | 704 | 0.2+ | 0.2+ | 2003 05 02 | 704 | 0.3+ | 0.2− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 06 | 704 | 0.0 | 0.5+ | 2003 05 02 | 704 | 0.3+ | 0.1+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 08 | 704 | 0.9− | 0.4+ | 2005 08 27 | 644 | 0.3− | 0.5+ |
| 2002 01 06 | 691 | 0.1− | 0.0 | 2002 02 08 | 704 | 0.2− | 0.1− | 2005 08 27 | 644 | 0.4− | 0.3+ |
| 2002 01 06 | 691 | 0.1− | 0.1+ | 2002 02 08 | 704 | 0.0 | 0.2+ | 2005 08 27 | 644 | 0.4− | 0.3+ |
| 2002 01 06 | 691 | 0.3− | 0.2− | 2002 02 08 | 704 | 0.4− | 0.8+ | 2005 09 25 | 703 | 1.5− | 1.2+ |
| 2002 01 08 | 704 | 0.4+ | 0.1+ | 2002 02 08 | 704 | 1.2− | 1.1+ | 2005 09 25 | 703 | 1.1+ | 1.1+ |
| 2002 01 08 | 704 | 0.6+ | 0.0 | 2002 02 12 | 704 | 0.0 | 0.0 | 2005 09 25 | 703 | (0.8− | 1.5+) |
| 2002 01 08 | 704 | 0.8+ | 0.1+ | 2002 02 12 | 704 | 0.4+ | 0.5+ | 2005 09 25 | 703 | (1.2− | 2.0+) |
| 2002 01 08 | 704 | 0.2+ | 0.2+ | 2002 02 12 | 704 | 0.4+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 1.4− |
| 2002 01 08 | 704 | 0.6+ | 0.1− | 2002 02 12 | 704 | 0.5+ | 0.9− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2002 01 12 | 644 | 0.1+ | 0.2+ | 2002 03 11 | 644 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2002 01 12 | 644 | 0.3+ | 0.1+ | 2002 03 11 | 644 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2002 01 12 | 644 | 0.7+ | 0.9+ | 2002 03 11 | 644 | 0.4+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2002 02 03 | 699 | 0.1− | 0.2+ | 2003 03 29 | 699 | 0.8− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 02 03 | 699 | (1.7− | 0.2−) | 2003 03 29 | 699 | 0.6− | 0.2+ | 2006 11 29 | 704 | 0.6+ | 1.8− |
| 2002 02 03 | 699 | 0.4− | 0.1+ | 2003 03 29 | 699 | 0.2+ | 0.6− | 2006 11 29 | 704 | 0.1+ | 0.4− |
| 2002 02 03 | 699 | 0.7− | 0.0 | 2003 03 29 | 699 | 1.2− | 0.9+ | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2002 02 04 | 644 | 0.1− | 0.1− | 2003 05 02 | 704 | 0.4+ | 1.0+ | 2006 11 29 | 704 | 1.0+ | 1.3+ |
| 2002 02 04 | 644 | 0.2+ | 0.2+ | 2003 05 02 | 704 | (1.7+ | 0.3+) | | | | |
| 2002 02 04 | 644 | 0.1− | 0.3+ | 2003 05 02 | 704 | 0.4− | 0.0 | | | | |

**(141439)∗ 2002 CQ$_{29}$ = 1994 TD$_{10}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 25642)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 260.94492 | | (2000.0) | | | |
| $n$ | 0.17222209 | $\omega$ | 139.13591 | | −0.98385747 | −0.17009051 |
| $a$ | 3.1994609 | $\Omega$ | 31.20265 | | +0.12306813 | −0.86874139 |
| $e$ | 0.1204064 | $i$ | 6.16331 | | +0.12991810 | −0.46514258 |
| $P$ | 5.72 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 07 | 691 | 1.7− | 1.6− | 2002 02 03 | 699 | 1.1− | 0.3+ | 2005 08 27 | 644 | 0.5− | 0.1+ |
| 1991 03 07 | 691 | 0.0 | 0.0 | 2002 02 04 | 644 | 0.8+ | 0.2+ | 2005 08 27 | 644 | 0.4− | 0.5+ |
| 1991 03 07 | 691 | 0.8+ | 0.3+ | 2002 02 04 | 644 | 0.9+ | 0.3+ | 2005 08 28 | 691 | 0.1− | 0.3+ |
| 1994 10 08 | 691 | 0.2− | 0.0 | 2002 02 04 | 644 | 0.8+ | 0.1− | 2005 08 28 | 691 | 0.0 | 0.2+ |
| 1994 10 08 | 691 | 0.2+ | 0.0 | 2002 02 06 | 704 | 0.4− | 0.1+ | 2005 08 28 | 691 | 0.1+ | 0.2+ |
| 1994 10 08 | 691 | 0.0 | 0.4− | 2002 02 06 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 1994 10 10 | 691 | 0.1− | 0.1+ | 2002 02 06 | 704 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 1994 10 10 | 691 | 0.2− | 0.3− | 2002 02 06 | 704 | 0.4+ | 0.6+ | 2006 11 13 | 691 | 0.8− | 0.6− |
| 1994 10 10 | 691 | 0.1+ | 0.1+ | 2002 02 06 | 704 | 0.7+ | 0.6+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2000 10 26 | 691 | 0.2+ | 0.6− | 2002 02 08 | 704 | 1.1+ | 1.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2000 10 26 | 691 | 0.3+ | 0.6− | 2002 02 08 | 704 | 0.3+ | 0.6+ | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2000 10 26 | 691 | 0.2+ | 0.4− | 2002 02 08 | 704 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2000 11 20 | 704 | 0.2+ | 0.2+ | 2002 02 08 | 704 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.4+ | 1.3− |
| 2000 11 20 | 704 | 1.0+ | 0.3+ | 2002 02 08 | 704 | 0.3− | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.7+ |
| 2000 11 20 | 704 | 0.0 | 1.0+ | 2002 02 12 | 704 | (0.6− | 2.1+) | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 0.9+ | 1.1+ | 2002 02 12 | 704 | (0.4− | 1.9+) | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2000 11 20 | 704 | 0.2+ | 0.0 | 2002 02 12 | 704 | (0.2+ | 1.6+) | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2002 01 08 | 704 | 0.1− | 0.7− | 2002 03 11 | 644 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2002 01 08 | 704 | 1.0+ | 0.9− | 2002 03 11 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.5− |
| 2002 01 08 | 704 | 0.5+ | 0.4− | 2002 03 11 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 1.3+ | 0.4+ |
| 2002 01 08 | 704 | 1.4+ | 1.0+ | 2002 03 11 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 704 | (1.2+ | 2.0+) |
| 2002 01 11 | 699 | 0.4− | 0.3− | 2002 03 11 | 644 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 01 11 | 699 | 1.2− | 0.3+ | 2002 03 11 | 644 | 0.4+ | 0.5+ | 2006 11 21 | 691 | 0.2− | 0.7+ |
| 2002 01 11 | 699 | 0.1− | 0.1− | 2003 04 30 | 704 | 0.6+ | 0.1+ | 2006 11 21 | 691 | 0.3+ | 0.2+ |
| 2002 01 11 | 699 | 0.9− | 0.4+ | 2003 04 30 | 704 | 0.2− | 0.9+ | 2006 11 22 | 704 | 1.1− | 0.2+ |
| 2002 01 14 | 608 | (0.4+ | 1.6+) | 2003 04 30 | 704 | 0.7+ | 0.5+ | 2006 11 22 | 704 | 0.8− | 0.4− |
| 2002 01 14 | 608 | (0.2+ | 2.0+) | 2003 04 30 | 704 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2002 01 14 | 608 | 0.5+ | 1.4+ | 2004 08 07 | E12 | 1.0− | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.4− |
| 2002 01 21 | 704 | 0.5+ | 0.1+ | 2004 08 07 | E12 | 0.5− | 0.4+ | 2006 11 25 | 691 | 0.3− | 0.1+ |
| 2002 01 21 | 704 | 0.5− | 1.0+ | 2004 08 07 | E12 | 0.6− | 0.4+ | 2006 11 25 | 691 | 0.2− | 0.0 |
| 2002 01 21 | 704 | 0.6+ | 0.4+ | 2004 08 07 | E12 | 0.1− | 0.6+ | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2002 01 21 | 704 | 0.5+ | 0.1+ | 2005 08 27 | 691 | 0.1− | 0.4+ | 2006 11 27 | 704 | 0.7+ | 0.6+ |
| 2002 02 03 | 699 | 0.3− | 0.7+ | 2005 08 27 | 691 | 0.0 | 0.4+ | 2006 11 27 | 704 | 1.1− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 03 | 699 | 0.3− | 0.1− | 2005 08 27 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 704 | 0.3+ | 0.2+ | |
| 2002 02 03 | 699 | 0.0 | 0.9+ | 2005 08 27 | 644 | 0.1+ | 0.5+ | 2006 11 27 | 704 | 0.0 | 0.5+ | |

**(141440)∗ 2002 CC$_{31}$ = 2000 UP$_{31}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. S. Nakano (*MPO* 31447)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.95684 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17163467 | $\omega$ | 61.20913 | | −0.43987849 | −0.89380324 | |
| $a$ | 3.2067569 | $\Omega$ | 55.14772 | | +0.78240986 | −0.42914086 | |
| $e$ | 0.1358019 | $i$ | 6.10735 | | +0.44084206 | −0.13020712 | |
| $P$ | 5.74 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.4− | 0.2+ | 2002 02 12 | 704 | 0.2− | 0.9− | 2006 11 11 | 703 | 0.9+ | 0.2− | |
| 2000 10 02 | 691 | 0.6− | 0.1+ | 2002 02 12 | 704 | 0.0 | 0.4− | 2006 11 14 | 691 | 0.1− | 0.1+ | |
| 2000 10 02 | 691 | 0.4− | 0.0 | 2002 02 12 | 704 | 0.3+ | 1.3− | 2006 11 14 | 691 | 0.0 | 0.3+ | |
| 2000 10 29 | 691 | 0.1+ | 0.3+ | 2002 03 11 | 644 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.3+ | |
| 2000 10 29 | 691 | 0.7+ | 1.0+ | 2002 03 11 | 644 | 0.4− | 0.1− | 2006 11 18 | 704 | 1.3+ | 0.6+ | |
| 2000 10 29 | 691 | 0.1− | 0.1+ | 2002 03 11 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | (0.4− | 2.8+) | |
| 2000 10 31 | 704 | 0.9+ | 0.7− | 2003 05 01 | 291 | 0.7+ | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.4+ | |
| 2000 10 31 | 704 | 0.1+ | 0.3+ | 2003 05 01 | 291 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.6− | 1.1+ | |
| 2000 10 31 | 704 | 0.8− | 0.5+ | 2003 05 01 | 291 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 1.2+ | |
| 2000 11 02 | 691 | 0.2− | 0.4+ | 2003 05 01 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.0− | 0.3+ | |
| 2000 11 02 | 691 | 0.2− | 0.4+ | 2003 05 01 | 691 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.1− | |
| 2000 11 02 | 691 | 0.3− | 0.3+ | 2003 05 01 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.4− | 1.5+ | |
| 2002 01 08 | 704 | 1.2+ | 0.2+ | 2003 05 02 | 291 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.0 | |
| 2002 01 08 | 704 | 0.4+ | 0.1− | 2003 05 02 | 291 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.3+ | |
| 2002 01 08 | 704 | 1.2+ | 1.0+ | 2003 05 02 | 291 | 0.2+ | 0.6+ | 2006 11 20 | 703 | (0.9+ | 1.7−) | |
| 2002 01 08 | 704 | 0.4− | 0.2− | 2003 05 02 | 926 | 0.0 | 0.0 | 2006 11 20 | 703 | 0.1− | 0.1− | |
| 2002 01 08 | 704 | 0.1− | 0.4+ | 2003 05 02 | 926 | 0.0 | 0.2+ | 2006 11 20 | 703 | 0.9+ | 1.0− | |
| 2002 01 21 | 704 | (1.6− | 1.0+) | 2003 05 02 | 926 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.7− | |
| 2002 01 21 | 704 | (2.7− | 0.8+) | 2003 05 02 | 926 | 0.1+ | 0.2+ | 2006 11 20 | 703 | 0.8+ | 0.6− | |
| 2002 01 21 | 704 | 1.3− | 0.7+ | 2003 05 24 | 691 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.6− | 0.3− | |
| 2002 01 21 | 704 | (2.4− | 0.1−) | 2003 05 24 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 704 | (0.2− | 2.0+) | |
| 2002 01 21 | 704 | (1.2− | 2.3−) | 2003 05 24 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.1− | |
| 2002 02 04 | 644 | 0.6+ | 0.0 | 2005 08 27 | 644 | 0.1+ | 1.0+ | 2006 11 20 | 704 | 0.2+ | 1.3+ | |
| 2002 02 04 | 644 | 0.7+ | 0.0 | 2005 08 27 | 644 | 0.5− | 0.8+ | 2006 11 20 | 704 | 0.2+ | 0.4+ | |
| 2002 02 04 | 644 | 0.6− | 0.3+ | 2005 08 27 | 644 | 0.1+ | 1.1+ | 2006 11 20 | 704 | (0.3+ | 1.6+) | |
| 2002 02 06 | 704 | 0.7− | 0.2+ | 2006 10 17 | G96 | 0.6− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.4+ | |
| 2002 02 06 | 704 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | (1.2− | 2.3+) | |
| 2002 02 06 | 704 | 0.7+ | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.2− | 0.1+ | |
| 2002 02 06 | 704 | 1.0+ | 0.6− | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.1+ | |
| 2002 02 06 | 704 | 1.4+ | 1.2+ | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2+ | |
| 2002 02 08 | 704 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.0 | |
| 2002 02 08 | 704 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.0 | |
| 2002 02 08 | 704 | 0.5+ | 1.0+ | 2006 10 27 | G96 | 1.1+ | 0.3− | 2006 11 24 | G96 | 0.4− | 0.2− | |
| 2002 02 08 | 704 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.0 | 2006 11 24 | G96 | 0.3− | 0.0 | |
| 2002 02 08 | 704 | 1.2− | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.2− | | | | | |
| 2002 02 12 | 704 | 0.6− | 0.5− | 2006 11 11 | 703 | 0.5− | 0.1− | | | | | |

**(141441)∗ 2002 CB$_{33}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.12804 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28875822 | $\omega$ | 13.03646 | | +0.60387435 | −0.79247360 | |
| $a$ | 2.2669737 | $\Omega$ | 39.90853 | | +0.71881825 | +0.49504851 | |
| $e$ | 0.1695904 | $i$ | 7.66434 | | +0.34443591 | +0.35624791 | |
| $P$ | 3.41 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 1.9+ | 0.9− | 2004 09 09 | 704 | 0.8+ | 1.1+ | 2004 11 19 | 704 | 0.3+ | 0.0 | |
| 1997 10 30 | 704 | 1.4− | 0.4− | 2004 09 17 | 704 | 0.5+ | 0.0 | 2004 11 19 | 704 | 0.5+ | 0.7+ | |
| 1997 10 30 | 704 | 0.1− | 0.4+ | 2004 09 17 | 704 | 0.6+ | 0.9+ | 2004 11 19 | 704 | 1.2+ | 0.0 | |
| 1997 10 30 | 704 | 0.5− | 1.2+ | 2004 09 17 | 704 | 0.6+ | 0.7+ | 2004 11 19 | 704 | 1.7− | 1.7+ | |
| 1999 03 21 | 645 | 0.1− | 0.1− | 2004 09 17 | 704 | 0.2+ | 0.2+ | 2004 12 02 | 699 | 0.2− | 0.2− | |
| 1999 03 21 | 645 | 0.1− | 0.1− | 2004 09 17 | 704 | 1.6− | 0.5+ | 2004 12 02 | 699 | 0.4− | 0.2− | |
| 2002 01 08 | 704 | 1.3− | 0.4+ | 2004 09 19 | A35 | 0.0 | 0.5+ | 2004 12 02 | 704 | 0.1− | 0.6+ | |
| 2002 01 08 | 704 | 1.1− | 0.1− | 2004 09 19 | A35 | 0.2+ | 0.0 | 2004 12 02 | 699 | 0.3− | 0.2+ | |
| 2002 01 08 | 704 | (2.3− | 0.6+) | 2004 09 19 | A35 | 0.1+ | 0.4+ | 2004 12 02 | 704 | 0.6− | 0.4− | |
| 2002 01 08 | 704 | 0.3− | 0.3+ | 2004 10 07 | 699 | 0.4− | 0.5+ | 2004 12 02 | 704 | 2.0− | 0.2+ | |
| 2002 01 08 | 704 | 0.1− | 0.2− | 2004 10 07 | 699 | 0.1+ | 0.0 | 2004 12 02 | 699 | 0.2+ | 0.2− | |
| 2002 01 23 | 704 | 1.2+ | 0.4− | 2004 10 07 | 699 | 0.4+ | 0.6+ | 2004 12 02 | 704 | 0.4− | 0.6− | |
| 2002 01 23 | 704 | 0.4− | 0.4− | 2004 10 07 | 699 | 0.5− | 0.4+ | 2004 12 11 | 703 | 0.7− | 0.5− | |
| 2002 01 23 | 704 | 0.8+ | 0.4− | 2004 10 09 | 704 | 0.0 | 0.5+ | 2004 12 11 | 703 | 0.7− | 1.2− | |
| 2002 01 23 | 704 | 0.3− | 0.4− | 2004 10 09 | 704 | 0.4+ | 0.4+ | 2004 12 11 | 703 | 0.1− | 1.1− | |
| 2002 01 23 | 704 | 0.0 | 1.0− | 2004 10 09 | 704 | 0.7+ | 0.9+ | 2004 12 11 | 703 | 0.2− | 0.2− | |
| 2002 02 03 | 699 | 0.1− | 1.4+ | 2004 10 09 | 704 | 0.2+ | 0.7+ | 2004 12 15 | 704 | 0.6+ | 0.1+ | |
| 2002 02 03 | 699 | 0.7+ | 1.3+ | 2004 10 09 | 704 | 0.2− | 1.4+ | 2004 12 15 | 704 | 0.3− | 0.4+ | |
| 2002 02 03 | 699 | 1.0+ | 0.3+ | 2004 10 10 | 691 | 0.1− | 0.0 | 2004 12 15 | 704 | 0.3+ | 0.4+ | |
| 2002 02 03 | 699 | 0.2− | 0.7− | 2004 10 10 | 691 | 0.0 | 0.0 | 2004 12 15 | 704 | 0.1+ | 0.2+ | |
| 2002 02 03 | 644 | 0.3+ | 0.7− | 2004 10 10 | 691 | 0.1− | 0.0 | 2004 12 15 | 704 | 0.9− | 0.3+ | |
| 2002 02 03 | 644 | 0.3+ | 1.0− | 2004 10 14 | 704 | 0.2+ | 0.2+ | 2005 01 07 | 704 | 0.1+ | 0.5+ | |
| 2002 02 03 | 644 | 0.2− | 1.0− | 2004 10 14 | 704 | 0.5− | 0.3+ | 2005 01 07 | 704 | 0.1− | 0.5− | |
| 2002 02 06 | 704 | 0.1+ | 0.8+ | 2004 10 14 | 704 | 0.3+ | 1.3+ | 2005 01 07 | 704 | 0.1− | 0.6− | |
| 2002 02 06 | 704 | 0.5− | 0.5+ | 2004 10 14 | 704 | 0.2− | 0.5− | 2005 01 07 | 704 | 1.0+ | 0.3+ | |
| 2002 02 06 | 704 | 0.3+ | 0.4− | 2004 10 14 | 704 | 0.5− | 0.5+ | 2005 01 07 | 704 | 1.1+ | 0.6− | |
| 2002 02 06 | 704 | 0.3− | 0.5+ | 2004 10 20 | 704 | 0.3+ | 0.1+ | 2005 01 12 | 704 | 0.1+ | 0.2− | |
| 2002 02 06 | 704 | 0.7+ | 0.1− | 2004 10 20 | 704 | 0.2+ | 0.1− | 2005 01 12 | 704 | 0.2− | 0.1+ | |
| 2002 02 08 | 704 | 0.2− | 0.4− | 2004 10 20 | 704 | 1.1+ | 0.3+ | 2005 01 12 | 704 | 0.5+ | 0.1+ | |
| 2002 02 08 | 704 | 0.3− | 0.0 | 2004 10 20 | 704 | 0.7+ | 0.2+ | 2005 01 12 | 704 | 0.4+ | 1.0− | |
| 2002 02 08 | 704 | 0.9+ | 0.2− | 2004 10 23 | 691 | 0.1+ | 0.1− | 2006 03 25 | 691 | 0.0 | 1.1+ | |
| 2002 02 08 | 704 | 0.3+ | 0.1− | 2004 10 23 | 691 | 0.0 | 0.1− | 2006 03 25 | 691 | 0.5+ | 0.4+ | |
| 2002 02 08 | 704 | 1.1+ | 0.7− | 2004 10 23 | 691 | 0.0 | 0.2− | 2006 03 25 | 691 | 0.3+ | 0.2+ | |
| 2002 02 10 | 704 | 0.0 | 0.1− | 2004 11 02 | 333 | 0.2+ | 0.3− | 2006 03 26 | G96 | 0.0 | 0.3+ | |
| 2002 02 10 | 704 | 0.2− | 0.0 | 2004 11 02 | 333 | 0.7+ | 0.8− | 2006 03 26 | G96 | 0.4− | 0.2+ | |
| 2002 02 10 | 704 | 0.1− | 0.1− | 2004 11 02 | 333 | 0.2− | 0.6− | 2006 03 26 | G96 | 0.2− | 0.4+ | |
| 2002 02 10 | 704 | 0.6− | 0.0 | 2004 11 02 | 333 | 0.4− | 0.7− | 2006 03 26 | G96 | 0.1+ | 0.3+ | |
| 2002 02 10 | 704 | 0.6− | 0.9+ | 2004 11 02 | 333 | 0.2− | 0.3− | 2006 04 07 | 691 | 0.3+ | 0.4+ | |
| 2002 02 22 | 644 | 0.3− | 0.1− | 2004 11 02 | 333 | 0.7− | 0.3− | 2006 04 07 | 691 | 0.4+ | 0.6+ | |
| 2002 02 22 | 644 | 0.2− | 0.1− | 2004 11 04 | 703 | 0.4− | 0.3− | 2006 04 07 | 691 | 0.3+ | 0.1+ | |
| 2002 02 22 | 644 | 0.1− | 0.1+ | 2004 11 04 | 703 | 0.1− | 0.7− | 2006 04 30 | 699 | (0.2+ | 2.9−) | |
| 2002 03 21 | 644 | 0.3− | 0.0 | 2004 11 04 | 703 | 0.4− | 0.3− | 2006 04 30 | 699 | 0.3+ | 1.4− | |
| 2002 03 21 | 644 | 0.2+ | 0.0 | 2004 11 04 | 703 | 0.7− | 0.1+ | 2006 04 30 | 699 | 0.6+ | 0.3− | |
| 2002 03 21 | 644 | 0.1+ | 0.1+ | 2004 11 07 | 704 | 0.0 | 0.3+ | 2006 04 30 | 699 | (0.8+ | 2.6+) | |
| 2002 04 01 | 644 | 1.2+ | 1.6+ | 2004 11 07 | 704 | 0.1− | 0.6+ | 2006 05 03 | G96 | 0.0 | 0.1+ | |
| 2002 04 01 | 644 | 0.3+ | 0.0 | 2004 11 07 | 704 | 0.0 | 1.0+ | 2006 05 03 | G96 | 0.1− | 0.1+ | |
| 2002 04 01 | 644 | 1.6+ | 0.2+ | 2004 11 07 | 704 | 0.1− | 0.6+ | 2006 05 03 | G96 | 0.4− | 0.1+ | |
| 2002 04 02 | 644 | 0.3− | 1.0+ | 2004 11 07 | 704 | 0.4+ | 0.4+ | 2006 05 03 | G96 | 0.2− | 0.1+ | |
| 2002 04 02 | 644 | 0.0 | 0.6+ | 2004 11 09 | 703 | 0.1− | 0.0 | 2006 05 22 | G96 | 0.1+ | 0.1+ | |
| 2002 04 02 | 644 | 0.4− | 0.8+ | 2004 11 09 | 703 | 0.2− | 0.2+ | 2006 05 22 | G96 | 0.2− | 0.3+ | |
| 2004 09 09 | 704 | 0.3+ | 0.6+ | 2004 11 09 | 703 | 0.1+ | 0.3− | 2006 05 22 | G96 | 0.3− | 0.2− | |
| 2004 09 09 | 704 | 0.3+ | 0.2+ | 2004 11 09 | 703 | 0.8− | 0.2− | 2006 05 22 | G96 | 0.2− | 0.1+ | |
| 2004 09 09 | 704 | 0.4− | 0.2+ | 2004 11 19 | 704 | 0.3+ | 0.5− | | | | | |

**(141442)∗ 2002 CJ$_{34}$ = 2003 FT$_{93}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47172)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.61660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19318482 | $\omega$ | 210.93613 | | +0.60089131 | +0.77211612 | |
| $a$ | 2.9636077 | $\Omega$ | 96.80426 | | −0.68417444 | +0.63059083 | |
| $e$ | 0.0555853 | $i$ | 12.02082 | | −0.41332187 | +0.07868863 | |
| $P$ | 5.10 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.0 | 0.9− | 2003 04 04 | 049 | 0.8+ | 0.3+ | 2005 11 06 | 699 | 0.9− | 0.2+ | |
| 2002 01 08 | 704 | 0.1− | 1.1− | 2003 04 04 | 049 | (1.6+ | 0.1+) | 2005 11 06 | 699 | 0.0 | 0.4+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.1+ | 0.4− | 2003 04 04 | 683 | 0.7+ | 0.0 | 2005 11 06 | 699 | 0.4− | 0.5+ |
| 2002 01 08 | 704 | 0.3+ | 1.3− | 2003 04 04 | 683 | (2.3− | 1.5−) | 2005 11 09 | 703 | 0.0 | 0.5+ |
| 2002 02 06 | 704 | (1.8+ | 2.7+) | 2003 04 04 | 683 | 0.5− | 0.8− | 2005 11 09 | 703 | 0.2− | 0.2− |
| 2002 02 06 | 704 | (0.6+ | 1.9+) | 2003 04 09 | 704 | 0.4+ | 0.1+ | 2005 11 09 | 703 | 0.3− | 0.1− |
| 2002 02 06 | 704 | 0.1− | 1.0+ | 2003 04 09 | 704 | 0.3+ | 0.6+ | 2005 11 09 | 703 | 0.8+ | 0.9+ |
| 2002 02 08 | 704 | 0.1− | 0.1+ | 2003 04 09 | 704 | 0.1+ | 0.5+ | 2005 11 22 | 703 | 0.1+ | 0.5− |
| 2002 02 08 | 704 | 0.8+ | 0.3− | 2003 04 09 | 704 | 0.0 | 0.2+ | 2005 11 22 | 703 | 1.2− | 0.2+ |
| 2002 02 08 | 704 | 0.1− | 0.4+ | 2003 04 09 | 704 | 0.5+ | 1.0+ | 2005 11 22 | 703 | 0.3+ | 0.0 |
| 2002 02 08 | 704 | 0.2− | 0.3+ | 2004 07 11 | 704 | 0.7− | 0.0 | 2005 11 22 | 703 | 0.8− | 0.7− |
| 2002 02 12 | 704 | 0.3− | 0.7+ | 2004 07 11 | 704 | 0.3+ | 0.6+ | 2005 12 05 | 699 | (0.7− | 1.8+) |
| 2002 02 12 | 704 | 0.4− | 0.9+ | 2004 07 11 | 704 | 0.1+ | 1.0+ | 2005 12 05 | 699 | (1.0− | 1.6+) |
| 2002 02 12 | 704 | 0.1− | 0.1+ | 2004 07 11 | 704 | 0.0 | 0.0 | 2005 12 05 | 699 | 0.6+ | 0.9+ |
| 2002 02 12 | 704 | 0.7+ | 1.4+ | 2005 10 22 | 703 | 1.4− | 0.9+ | 2005 12 05 | 699 | 0.4+ | 0.8+ |
| 2002 02 13 | 644 | 0.1− | 0.3+ | 2005 10 22 | 703 | 0.0 | 0.6+ | 2006 10 03 | G96 | 0.3− | 0.2− |
| 2002 02 13 | 644 | 0.1+ | 0.6+ | 2005 10 22 | 703 | 0.8− | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2002 02 13 | 644 | 0.0 | 0.6+ | 2005 10 22 | 703 | 1.1− | 0.2− | 2006 10 03 | G96 | 0.1− | 0.6− |
| 2003 03 29 | 699 | 0.9+ | 0.4+ | 2005 10 28 | 703 | 0.5+ | 0.3− | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2003 03 29 | 699 | (0.5− | 1.7−) | 2005 10 28 | 703 | 0.7+ | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2003 03 29 | 699 | 1.2− | 0.5− | 2005 10 28 | 703 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2003 03 29 | 699 | 0.5− | 0.6+ | 2005 10 28 | 703 | 0.6+ | 0.7− | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2003 03 31 | 699 | (1.6+ | 0.5−) | 2005 10 30 | 699 | 0.1− | 0.9+ | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2003 03 31 | 699 | 0.2+ | 0.5− | 2005 10 30 | 699 | 0.1+ | 0.7+ | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2003 03 31 | 699 | 0.4− | 1.3+ | 2005 10 30 | 699 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2003 03 31 | 699 | 0.9− | 0.5+ | 2005 10 30 | 699 | 1.1+ | 1.0− | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2003 04 04 | 049 | 1.1+ | 0.2+ | 2005 11 06 | 699 | 0.3− | 0.3− | 2006 11 25 | G96 | 0.0 | 0.0 |

**(141443)∗ 2002 CX$_{42}$**

Discovered 2002 Feb. 12 by C. W. Juels and P. R. Holvorcem at Fountain Hills.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.01912 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18289406 | $\omega$ | 53.67477 | | −0.84430048 | −0.49634039 | |
| $a$ | 3.0737579 | $\Omega$ | 95.75364 | | +0.40312489 | −0.83664989 | |
| $e$ | 0.1629264 | $i$ | 11.71362 | | +0.35305385 | −0.23165314 | |
| $P$ | 5.39 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 704 | 0.3+ | 0.6− | 2002 02 11 | 678 | 0.2+ | 1.5− | 2002 05 05 | 704 | 0.5+ | 0.4+ |
| 2000 11 26 | 704 | 0.3+ | 0.6− | 2002 02 12 | 678 | (0.7− | 2.1−) | 2002 05 13 | 704 | 0.2− | 0.0 |
| 2000 11 26 | 704 | 0.6+ | 1.5− | 2002 02 12 | 678 | 0.3− | 0.7+ | 2002 05 13 | 704 | 0.1− | 1.0+ |
| 2002 01 09 | 704 | 0.1+ | 0.1+ | 2002 02 12 | 678 | (0.0 | 1.5−) | 2002 05 13 | 704 | (0.1− | 2.2+) |
| 2002 01 09 | 704 | 0.1− | 0.7+ | 2002 02 21 | 678 | 0.8− | 0.0 | 2002 05 13 | 704 | 0.4− | 0.3− |
| 2002 01 09 | 704 | 0.1− | 0.4+ | 2002 02 21 | 678 | (1.5+ | 0.8−) | 2002 05 13 | 704 | (0.5− | 1.7+) |
| 2002 01 09 | 704 | 0.1− | 0.5+ | 2002 03 06 | 704 | 0.3− | 0.0 | 2005 10 01 | 699 | 0.6+ | 0.5+ |
| 2002 01 09 | 704 | 0.4+ | 0.6+ | 2002 03 06 | 704 | 0.5− | 0.7+ | 2005 10 01 | 699 | (3.2+ | 1.1+) |
| 2002 01 21 | 704 | 0.3+ | 0.8+ | 2002 03 06 | 704 | 0.3− | 0.3+ | 2005 10 01 | 699 | 0.4+ | 0.4+ |
| 2002 01 21 | 704 | 0.3+ | 0.3+ | 2002 03 20 | 644 | 0.2+ | 0.2+ | 2005 10 01 | 699 | 1.0− | 0.9+ |
| 2002 01 21 | 704 | 1.3+ | 0.1− | 2002 03 20 | 644 | 0.3+ | 0.5+ | 2005 10 31 | 699 | 1.3− | 0.1+ |
| 2002 01 21 | 704 | (3.2+ | 2.0+) | 2002 03 20 | 704 | 1.3− | 0.1+ | 2005 10 31 | 699 | 1.1− | 0.3− |
| 2002 01 23 | 704 | 0.3+ | 0.3+ | 2002 03 20 | 704 | 1.0− | 0.6− | 2005 10 31 | 699 | 0.4− | 1.0+ |
| 2002 01 23 | 704 | 0.3+ | 0.3+ | 2002 03 20 | 644 | 0.2+ | 0.1+ | 2005 10 31 | 699 | (1.8+ | 0.5+) |
| 2002 01 23 | 704 | 0.4+ | 0.0 | 2002 03 20 | 704 | 0.4− | 0.3− | 2005 11 10 | 291 | 0.4+ | 0.0 |
| 2002 01 23 | 704 | 0.3+ | 0.0 | 2002 03 20 | 704 | 0.9− | 0.0 | 2005 11 10 | 291 | 0.2− | 0.4+ |
| 2002 01 23 | 704 | 0.6+ | 0.4− | 2002 03 20 | 704 | 0.9− | 0.0 | 2005 11 10 | 291 | 0.3− | 0.5+ |
| 2002 02 08 | 699 | 0.2+ | 0.0 | 2002 03 31 | 644 | 0.8+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.3− |
| 2002 02 08 | 699 | 0.3+ | 0.6− | 2002 03 31 | 644 | 0.7+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2002 02 08 | 699 | 0.5+ | 0.0 | 2002 03 31 | 644 | 0.7+ | 0.2+ | 2006 09 26 | 691 | 0.3+ | 0.1− |
| 2002 02 08 | 699 | 0.0 | 0.1+ | 2002 04 16 | 704 | 0.5− | 0.7− | 2006 11 23 | 644 | 0.3− | 0.0 |
| 2002 02 10 | 704 | 0.2+ | 0.0 | 2002 04 16 | 704 | (1.0− | 1.6−) | 2006 11 23 | 644 | 0.1− | 0.1+ |
| 2002 02 10 | 704 | 0.2+ | 0.5+ | 2002 04 16 | 704 | 1.1− | 1.0− | 2006 11 23 | 644 | 0.0 | 0.1+ |
| 2002 02 10 | 704 | 0.3+ | 0.3+ | 2002 04 16 | 704 | (1.4− | 1.5−) | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2002 02 10 | 704 | 0.2+ | 0.3− | 2002 05 05 | 704 | 0.1+ | 0.6+ | 2006 11 27 | G96 | 0.3− | 0.5− |
| 2002 02 10 | 704 | 0.1− | 0.1− | 2002 05 05 | 704 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.5− |
| 2002 02 11 | 678 | (0.1− | 2.0−) | 2002 05 05 | 704 | 0.0 | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2002 02 11 | 678 | 0.5+ | 1.2− | 2002 05 05 | 704 | 0.4+ | 0.4+ | | | | |

**(141444)∗ 2002 CU$_{45}$**

Discovered 2002 Feb. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.01585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36848417 | $\omega$ | 27.79722 | | −0.97638463 | +0.17798254 | |
| $a$ | 1.9268896 | $\Omega$ | 161.21159 | | −0.18377415 | −0.98224687 | |
| $e$ | 0.0367129 | $i$ | 22.34656 | | +0.11357867 | −0.05927314 | |
| $P$ | 2.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 644 | 0.5− | 0.2+ | 2003 09 01 | 704 | 0.2+ | 1.3+ | 2005 04 12 | 704 | 0.7+ | 0.8+ |
| 2002 02 08 | 644 | 0.2− | 0.3+ | 2003 09 01 | 704 | 0.3− | 0.7+ | 2005 04 12 | 704 | 0.7+ | 0.8+ |
| 2002 02 08 | 644 | 0.3− | 0.3+ | 2003 09 01 | 704 | 0.6+ | 0.5+ | 2005 04 12 | 704 | 0.2− | 0.5+ |
| 2002 02 09 | 644 | 0.4− | 0.8+ | 2003 09 17 | 704 | 0.3− | 0.4+ | 2005 04 12 | 704 | 0.3+ | 0.9+ |
| 2002 02 09 | 644 | 0.1+ | 0.2− | 2003 09 17 | 704 | 0.5− | 1.1+ | 2005 04 17 | 703 | 0.2− | 0.2+ |
| 2002 02 09 | 644 | 0.1− | 0.1− | 2003 09 17 | 704 | (0.2− | 1.7+) | 2005 04 17 | 703 | 0.3+ | 0.3+ |
| 2002 02 15 | 704 | 0.6+ | 0.1+ | 2003 09 17 | 704 | 0.1+ | 0.7+ | 2005 04 17 | 703 | 0.2+ | 0.5+ |
| 2002 02 15 | 704 | 0.3+ | 1.3+ | 2003 09 21 | 608 | 0.1− | 0.5− | 2005 04 17 | 703 | (0.6− | 2.2+) |
| 2002 02 15 | 704 | (0.6+ | 1.5+) | 2003 09 21 | 608 | 0.3+ | 0.5− | 2005 04 30 | 703 | 0.0 | 0.5+ |
| 2002 02 15 | 704 | 0.1+ | 0.7+ | 2003 09 21 | 608 | 0.1+ | 0.7− | 2005 04 30 | 703 | 0.4+ | 0.6+ |
| 2002 02 15 | 704 | 0.3+ | 0.5+ | 2003 09 28 | 608 | 0.1+ | 0.3− | 2005 04 30 | 703 | 0.2− | 0.2+ |
| 2002 02 20 | 644 | 0.5− | 0.0 | 2003 09 28 | 608 | 1.1− | 0.5− | 2005 04 30 | 703 | 0.2− | 0.2+ |
| 2002 02 20 | 644 | 0.3− | 0.0 | 2003 09 28 | 608 | 0.2+ | 0.1− | 2005 05 09 | 704 | 0.0 | 1.0+ |
| 2002 02 20 | 644 | 0.3− | 0.0 | 2003 10 02 | 608 | (0.8+ | 2.0−) | 2005 05 09 | 704 | 0.6+ | 0.4+ |
| 2002 03 16 | 704 | 0.7+ | 1.3+ | 2003 10 02 | 608 | (0.7+ | 1.8−) | 2005 05 09 | 704 | 0.1+ | 1.4+ |
| 2002 03 16 | 704 | 0.3+ | 0.3+ | 2003 10 02 | 608 | (0.7+ | 3.7−) | 2005 05 09 | 704 | 1.0+ | 0.1− |
| 2002 03 16 | 704 | 0.0 | 0.1− | 2005 03 10 | 703 | 0.0 | 0.7− | 2005 05 09 | 704 | (0.5+ | 1.8−) |
| 2002 03 16 | 704 | (2.0− | 0.2+) | 2005 03 10 | 703 | 0.1+ | 0.2− | 2005 05 16 | 703 | 0.6− | 0.6− |
| 2002 03 16 | 704 | 1.0+ | 0.2+ | 2005 03 10 | 703 | 0.2− | 0.6− | 2005 05 16 | 703 | 0.5− | 0.7− |
| 2003 08 22 | 608 | 1.1+ | 0.5− | 2005 03 10 | 703 | 0.1+ | 0.0 | 2005 05 16 | 703 | 0.5− | 0.1− |
| 2003 08 22 | 608 | 0.6+ | 0.9− | 2005 03 13 | 703 | 0.3− | 0.1+ | 2005 05 16 | 703 | 0.1− | 0.6− |
| 2003 08 22 | 608 | 0.4+ | 0.9− | 2005 03 13 | 703 | 0.4+ | 0.2+ | 2006 10 23 | E12 | 1.2+ | 0.9+ |
| 2003 08 23 | 704 | 0.2+ | 0.5+ | 2005 03 13 | 703 | 0.1+ | 0.4+ | 2006 10 23 | E12 | 0.3− | 0.0 |
| 2003 08 23 | 704 | 0.1− | 0.4+ | 2005 03 13 | 703 | 0.5+ | 0.2− | 2006 10 23 | E12 | 0.3+ | 0.2+ |
| 2003 08 23 | 704 | 0.5− | 0.5+ | 2005 04 03 | A35 | 0.0 | 0.2+ | 2006 10 23 | E12 | 0.7+ | 0.5+ |
| 2003 08 23 | 704 | 0.2+ | 0.8+ | 2005 04 03 | A35 | 0.3− | 0.3+ | 2006 10 23 | E12 | 0.2+ | 0.2+ |
| 2003 08 23 | 704 | 0.4− | 0.9+ | 2005 04 09 | 703 | 0.3+ | 0.7+ | 2006 11 20 | E12 | 0.3− | 0.8+ |
| 2003 08 26 | 704 | 0.4− | 0.8+ | 2005 04 09 | 703 | 0.3− | 0.5+ | 2006 11 20 | E12 | 0.6+ | 0.2− |
| 2003 08 26 | 704 | 0.9− | 1.3+ | 2005 04 09 | 703 | 0.6− | 0.3+ | 2006 11 20 | E12 | 0.2− | 0.0 |
| 2003 08 26 | 704 | 0.3− | 1.1+ | 2005 04 09 | 703 | 0.3− | 0.6+ | 2006 11 20 | E12 | 0.9− | 0.3− |
| 2003 08 26 | 704 | 0.3− | 1.4+ | 2005 04 12 | 699 | 0.5+ | 0.2+ | 2006 11 25 | 703 | 0.1− | 0.3+ |
| 2003 08 26 | 704 | 0.3− | 1.3+ | 2005 04 12 | 699 | 0.1− | 0.6+ | 2006 11 25 | 703 | 0.3− | 1.0+ |
| 2003 09 01 | 704 | (0.5+ | 1.5+) | 2005 04 12 | 699 | 0.4− | 0.7+ | 2006 11 25 | 703 | 0.8− | 0.5+ |
| 2003 09 01 | 704 | 0.1− | 1.0+ | 2005 04 12 | 699 | 0.3− | 0.2− | 2006 11 25 | 703 | 0.1− | 0.7+ |

**(141445)∗ 2002 CA$_{55}$ = 2000 TC$_{36}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 25648)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.19653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18890997 | $\omega$ | 206.88575 | | −0.34131542 | −0.93915107 | |
| $a$ | 3.0081498 | $\Omega$ | 263.09211 | | +0.86924979 | −0.29970233 | |
| $e$ | 0.1924500 | $i$ | 2.23514 | | +0.35764310 | −0.16785045 | |
| $P$ | 5.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 699 | 0.8− | 1.4+ | 2002 02 21 | 704 | 1.0− | 0.9+ | 2005 09 24 | 644 | 0.2− | 0.0 |
| 2000 10 06 | 699 | 0.6− | 0.3+ | 2002 02 21 | 704 | 0.0 | 0.8+ | 2005 09 24 | A50 | (1.8− | 0.4+) |
| 2000 10 06 | 699 | 0.0 | 0.5+ | 2002 02 21 | 704 | 0.5+ | 0.5+ | 2005 09 25 | 703 | 0.7+ | 0.4+ |
| 2000 10 06 | 699 | 0.0 | 0.5+ | 2002 02 21 | 704 | 0.4+ | 0.4+ | 2005 09 25 | 703 | 0.0 | 0.6+ |
| 2000 10 07 | 699 | 0.3− | 0.6− | 2002 02 21 | 704 | 0.7+ | 0.2− | 2005 09 25 | 703 | 0.1− | 0.7+ |
| 2000 10 07 | 699 | 1.6− | 0.2+ | 2002 03 04 | 703 | 1.0− | 0.1+ | 2005 09 25 | 703 | (0.7− | 4.2+) |
| 2000 10 07 | 699 | 0.7− | 0.2+ | 2002 03 04 | 703 | 1.4+ | 1.3+ | 2005 09 26 | 644 | 0.2+ | 0.2+ |
| 2000 10 07 | 699 | 0.5+ | 0.0 | 2002 03 04 | 703 | 0.5+ | 1.2+ | 2005 09 26 | 644 | 0.2− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 691 | 0.3+ | 0.5− | 2002 03 04 | 703 | 0.1− | 0.2+ | 2005 09 26 | 644 | 0.1− | 0.0 | | |
| 2000 11 26 | 691 | 0.5+ | 0.4− | 2002 03 05 | 645 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.2− | 0.8+ | | |
| 2000 11 26 | 691 | 0.5+ | 0.7− | 2002 03 05 | 645 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.6+ | 1.0+ | | |
| 2002 02 06 | 644 | 0.2+ | 0.2− | 2002 03 05 | 644 | 0.9+ | 1.0+ | 2005 10 01 | 703 | 0.5− | 0.7+ | | |
| 2002 02 06 | 644 | 0.1+ | 0.2− | 2002 03 05 | 644 | 0.4+ | 0.5+ | 2005 10 01 | 703 | 0.2− | 1.3+ | | |
| 2002 02 06 | 644 | 0.2+ | 0.2− | 2002 03 05 | 644 | 0.3+ | 0.3+ | 2005 10 01 | 703 | 1.4− | 0.3+ | | |
| 2002 02 07 | 704 | 0.4− | 0.1+ | 2002 03 12 | 645 | 0.2− | 0.1− | 2005 10 01 | 703 | 1.5+ | 0.9+ | | |
| 2002 02 07 | 704 | 0.7+ | 0.8− | 2002 03 12 | 645 | 0.1− | 0.1− | 2005 10 01 | 703 | 1.0+ | 1.3+ | | |
| 2002 02 07 | 704 | 0.4+ | 0.3+ | 2002 03 12 | 704 | (0.1+ | 2.7+) | 2005 10 01 | 703 | 0.0 | 0.4+ | | |
| 2002 02 09 | 704 | 0.5+ | 0.2+ | 2002 03 12 | 704 | 0.2+ | 0.4+ | 2005 10 04 | 644 | 0.5− | 0.0 | | |
| 2002 02 09 | 704 | 1.2+ | 0.3− | 2002 03 12 | 704 | (0.2+ | 1.6+) | 2005 10 04 | 644 | 0.0 | 0.5+ | | |
| 2002 02 09 | 704 | 1.2+ | 0.1+ | 2002 03 12 | 704 | 1.2+ | 0.8+ | 2005 10 04 | 644 | 0.5− | 0.2− | | |
| 2002 02 11 | 704 | 0.0 | 0.5+ | 2002 03 13 | 704 | 0.5− | 1.2+ | 2005 10 06 | 699 | (1.3− | 2.1+) | | |
| 2002 02 11 | 704 | 0.1− | 0.6+ | 2002 03 13 | 704 | 0.6− | 0.9+ | 2005 10 06 | 699 | 0.0 | 0.5+ | | |
| 2002 02 11 | 704 | 0.1− | 0.9+ | 2002 03 13 | 704 | 0.0 | 1.2+ | 2005 10 06 | 699 | 0.6+ | 1.4+ | | |
| 2002 02 11 | 704 | 0.1+ | 1.2+ | 2002 03 13 | 704 | 0.9+ | 0.5+ | 2005 10 06 | 699 | 0.0 | 0.3+ | | |
| 2002 02 11 | 704 | 0.4+ | 1.3+ | 2002 03 14 | 704 | (3.2− | 1.2+) | 2005 10 07 | 703 | 0.3+ | 0.8− | | |
| 2002 02 12 | 704 | 1.0+ | 1.1+ | 2002 03 14 | 704 | (2.6− | 0.0 ) | 2005 10 07 | 703 | 0.2− | 0.0 | | |
| 2002 02 12 | 704 | 0.4+ | 0.0 | 2002 03 14 | 704 | (3.9− | 0.3+) | 2005 10 07 | 703 | 0.8− | 0.3+ | | |
| 2002 02 12 | 704 | 0.8+ | 0.4− | 2002 03 15 | 704 | 0.9+ | 0.5− | 2005 10 07 | 703 | 0.3− | 0.2− | | |
| 2002 02 12 | 704 | 0.0 | 0.2+ | 2002 03 15 | 704 | 0.0 | 0.1+ | 2005 11 01 | G96 | 0.2− | 0.4− | | |
| 2002 02 12 | 704 | 1.1+ | 0.2+ | 2002 03 15 | 704 | 1.0+ | 0.4+ | 2005 11 01 | G96 | 0.4− | 0.0 | | |
| 2002 02 12 | 704 | (0.2− | 1.7+) | 2002 03 15 | 704 | 0.6+ | 0.1+ | 2005 11 01 | G96 | 0.3− | 0.2− | | |
| 2002 02 12 | 704 | 0.1+ | 0.1+ | 2002 03 15 | 704 | 0.9+ | 0.1+ | 2005 11 01 | G96 | 0.2− | 0.3− | | |
| 2002 02 12 | 704 | 0.9− | 0.1− | 2002 03 15 | 704 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.4− | 0.4− | | |
| 2002 02 12 | 704 | 0.9+ | 1.1+ | 2002 03 15 | 704 | (0.7+ | 1.8+) | 2006 11 01 | G96 | 0.5− | 0.3− | | |
| 2002 02 14 | 608 | 0.0 | 0.6+ | 2005 08 29 | 644 | 0.4− | 0.7− | 2006 11 01 | G96 | 0.4− | 0.0 | | |
| 2002 02 14 | 608 | 0.0 | 0.9+ | 2005 08 29 | 644 | 0.7− | 0.3− | 2006 11 01 | G96 | 0.4− | 0.5− | | |
| 2002 02 14 | 608 | 0.2+ | 0.6+ | 2005 08 29 | 644 | 0.3+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2002 02 16 | 644 | 0.2+ | 0.6+ | 2005 08 31 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.4− | | |
| 2002 02 16 | 644 | 0.4+ | 0.2+ | 2005 08 31 | 691 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.9− | | |
| 2002 02 16 | 644 | 0.3+ | 0.4+ | 2005 08 31 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.4− | 0.4− | | |
| 2002 02 20 | 704 | 0.1+ | 0.2+ | 2005 09 22 | 644 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.7− | | |
| 2002 02 20 | 704 | 0.4+ | 0.1− | 2005 09 22 | 644 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.2− | 0.6− | | |
| 2002 02 20 | 704 | 0.1+ | 0.0 | 2005 09 22 | 644 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.6− | | |
| 2002 02 20 | 704 | 0.1− | 0.3− | 2005 09 24 | 644 | 0.4− | 0.2+ | | | | | | |
| 2002 02 20 | 704 | 0.3− | 0.3+ | 2005 09 24 | 644 | 0.1− | 0.2− | | | | | | |

### (141446)∗ 2002 CC$_{58}$

Discovered 2002 Feb. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 99.35090 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18644204 | $\omega$ | 28.76221 | | +0.98670857 | | +0.16050787 | | |
| $a$ | 3.0346374 | $\Omega$ | 321.97482 | | −0.15585975 | | +0.89062193 | | |
| $e$ | 0.0734018 | $i$ | 2.35998 | | −0.04597764 | | +0.42547597 | | |
| $P$ | 5.29 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 15 | 691 | 0.4− | 0.8− | 2002 02 10 | 691 | 0.2+ | 0.4+ | 2005 10 09 | 691 | 0.2− | 0.0 | | |
| 1997 03 15 | 691 | 0.3− | 0.6− | 2002 02 10 | 691 | 0.0 | 0.5+ | 2005 10 09 | 691 | 0.4− | 0.3+ | | |
| 1997 03 15 | 691 | 0.5− | 0.6− | 2002 02 12 | 704 | 0.9+ | 0.3+ | 2005 10 13 | 691 | 0.2− | 0.3− | | |
| 2002 01 14 | 704 | 0.8+ | 0.5− | 2002 02 12 | 704 | 0.8+ | 0.5− | 2005 10 13 | 691 | 0.2− | 0.1+ | | |
| 2002 01 14 | 704 | (2.1+ | 0.5+) | 2002 02 12 | 704 | 1.5+ | 0.3+ | 2005 10 13 | 691 | 0.4− | 0.1− | | |
| 2002 01 14 | 704 | 0.9+ | 0.1+ | 2002 02 12 | 704 | 0.8+ | 0.7+ | 2005 10 24 | 699 | 0.4+ | 1.2− | | |
| 2002 01 14 | 704 | 0.2+ | 0.2− | 2002 02 12 | 704 | 0.8+ | 0.8+ | 2005 10 24 | 699 | 0.5− | 0.3− | | |
| 2002 01 14 | 704 | (0.7+ | 1.6−) | 2002 02 13 | 704 | (0.6+ | 1.7+) | 2005 10 24 | 699 | 0.4− | 0.7+ | | |
| 2002 01 19 | 291 | 0.1+ | 0.1+ | 2002 02 13 | 704 | 0.3− | 0.7+ | 2005 10 24 | 699 | 0.3+ | 0.4− | | |
| 2002 01 19 | 291 | 0.3− | 0.1+ | 2002 02 13 | 704 | 0.5+ | 0.0 | 2005 10 28 | 703 | 0.0 | 0.1− | | |
| 2002 01 19 | 291 | 0.7− | 0.2− | 2002 02 20 | 704 | 0.5− | 0.2+ | 2005 10 28 | 703 | 0.4+ | 0.1− | | |
| 2002 02 05 | 644 | 0.2+ | 0.1+ | 2002 02 20 | 704 | 0.2+ | 0.2+ | 2005 10 28 | 703 | 0.5− | 0.5+ | | |
| 2002 02 05 | 644 | 0.4− | 0.5+ | 2002 02 20 | 704 | 0.4− | 0.5+ | 2005 11 05 | 699 | 1.5+ | 0.3+ | | |
| 2002 02 05 | 644 | 0.2− | 0.5+ | 2003 04 28 | 691 | 0.1− | 0.4+ | 2005 11 05 | 699 | 0.8+ | 0.1+ | | |
| 2002 02 07 | 691 | (0.2− | 1.6−) | 2003 04 28 | 691 | 0.3+ | 0.6+ | 2005 11 05 | 699 | 0.6+ | 0.4+ | | |
| 2002 02 07 | 691 | 0.0 | 0.0 | 2003 04 28 | 691 | 0.2+ | 1.0+ | 2005 11 05 | 699 | 0.2+ | 1.0+ | | |
| 2002 02 07 | 691 | 0.2− | 0.2− | 2004 06 20 | 691 | 0.0 | 0.2− | 2005 11 06 | 704 | 0.4+ | 0.2+ | | |
| 2002 02 07 | 704 | (1.2+ | 1.8+) | 2004 06 20 | 691 | 0.2− | 0.3− | 2005 11 06 | 704 | 0.1+ | 0.9+ | | |
| 2002 02 07 | 704 | 0.5+ | 0.6− | 2004 06 20 | 691 | 0.3+ | 0.3− | 2005 11 06 | 704 | 0.2− | 0.7+ | | |
| 2002 02 07 | 704 | 0.1+ | 0.7+ | 2004 07 15 | E12 | 0.2− | 0.8+ | 2006 10 23 | G96 | 0.6− | 0.3+ | | |
| 2002 02 07 | 704 | 0.3+ | 0.5+ | 2004 07 15 | E12 | 0.3− | 0.6+ | 2006 10 23 | G96 | 0.3− | 0.3− | | |
| 2002 02 07 | 704 | 0.5+ | 0.2+ | 2004 07 15 | E12 | 0.4− | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.4− | | |
| 2002 02 10 | 704 | 0.4+ | 0.1− | 2004 07 15 | E12 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.6− | | |
| 2002 02 10 | 704 | 0.5+ | 0.2− | 2004 08 08 | 704 | 1.0+ | 1.0+ | 2006 11 16 | G96 | 0.2+ | 0.7− | | |
| 2002 02 10 | 704 | 0.4+ | 0.3+ | 2004 08 08 | 704 | 0.4− | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2002 02 10 | 704 | 0.2+ | 0.2+ | 2004 08 08 | 704 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− | | |
| 2002 02 10 | 704 | 0.7+ | 0.4+ | 2004 08 08 | 704 | 0.9+ | 0.4+ | | | | | | |
| 2002 02 10 | 691 | 0.0 | 0.5+ | 2005 10 09 | 691 | 0.2− | 0.6+ | | | | | | |

### (141447)∗ 2002 CW$_{59}$

Discovered 2002 Feb. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 75.63586 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26852808 | $\omega$ | 7.26589 | | −0.92086109 | | −0.29382430 | | |
| $a$ | 2.3794481 | $\Omega$ | 151.19984 | | +0.32558815 | | −0.94113305 | | |
| $e$ | 0.5070712 | $i$ | 32.13942 | | +0.21449290 | | +0.16714027 | | |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 704 | 0.5+ | 0.8+ | 2002 02 19 | 413 | 0.2+ | 0.1− | 2002 05 31 | 540 | (0.3+ | 1.6−) | | |
| 2002 02 13 | 704 | 1.0+ | 1.3+ | 2002 02 19 | 422 | 0.5+ | 0.4− | 2002 05 31 | 540 | 0.6+ | 1.1− | | |
| 2002 02 13 | 704 | 0.6+ | 0.5+ | 2002 02 19 | 422 | 0.9+ | 0.2+ | 2002 05 31 | 540 | 0.6+ | 1.1− | | |
| 2002 02 13 | 704 | 1.0+ | 0.4− | 2002 03 03 | 118 | 0.5+ | 1.4− | 2002 07 08 | 540 | 0.2− | 0.3+ | | |
| 2002 02 13 | 704 | 0.7+ | 1.3+ | 2002 03 03 | 118 | 0.1+ | 0.5+ | 2002 07 08 | 540 | 0.7+ | 0.5+ | | |
| 2002 02 14 | 711 | 0.5+ | 0.0 | 2002 03 03 | 118 | 0.1+ | 0.2+ | 2004 09 07 | 568 | 0.1− | 0.0 | | |
| 2002 02 14 | 711 | 0.2− | 0.5+ | 2002 03 04 | 715 | 1.3− | 1.4− | 2004 09 07 | 568 | 0.1− | 0.1+ | | |
| 2002 02 14 | 711 | 0.2+ | 0.4+ | 2002 03 04 | 715 | (1.6− | 1.7−) | 2004 09 09 | 568 | 0.1+ | 0.1− | | |
| 2002 02 14 | 649 | 0.0 | 0.3+ | 2002 03 04 | 715 | 0.9− | 1.1− | 2004 09 09 | 568 | 0.0 | 0.0 | | |
| 2002 02 14 | 649 | 0.3+ | 0.3+ | 2002 03 06 | 413 | 0.9+ | 0.6+ | 2005 12 01 | 703 | 0.1+ | 1.1+ | | |
| 2002 02 14 | 649 | 0.4+ | 0.3+ | 2002 03 06 | 413 | 0.9+ | 0.6+ | 2005 12 01 | 703 | 1.1− | 0.5+ | | |
| 2002 02 15 | 711 | 0.0 | 0.0 | 2002 03 06 | 413 | 0.4+ | 0.5+ | 2005 12 01 | 703 | 1.4+ | 0.6− | | |
| 2002 02 15 | 711 | 0.1+ | 1.1− | 2002 03 10 | 113 | (1.7− | 1.0−) | 2005 12 28 | 696 | 0.5− | 0.1+ | | |
| 2002 02 15 | 711 | (0.4− | 1.9+) | 2002 03 10 | 113 | 1.3− | 1.1− | 2005 12 28 | 696 | 0.4− | 0.2− | | |
| 2002 02 15 | 704 | 0.1− | 0.2+ | 2002 03 10 | 113 | 1.3− | 1.0− | 2006 05 27 | A13 | (0.5+ | 1.9+) | | |
| 2002 02 15 | 704 | 0.5− | 0.8+ | 2002 03 11 | 118 | 0.5+ | 1.0+ | 2006 05 28 | A13 | 0.0 | 0.6+ | | |
| 2002 02 15 | 704 | 0.4+ | 1.1+ | 2002 03 11 | 118 | 0.3− | 1.2+ | 2006 05 28 | A13 | 0.5+ | 0.3− | | |
| 2002 02 15 | 448 | 1.5− | 0.6− | 2002 03 16 | 715 | 0.9− | 0.8− | 2006 06 24 | 198 | 0.7+ | 0.1− | | |
| 2002 02 15 | 448 | 0.8− | 0.3− | 2002 03 16 | 715 | 0.8− | 0.7− | 2006 06 24 | 198 | 0.7+ | 0.3+ | | |
| 2002 02 15 | 448 | 1.0− | 0.5+ | 2002 03 16 | 715 | 0.9− | 1.0− | 2006 06 24 | 198 | 0.6+ | 0.5+ | | |
| 2002 02 15 | 474 | 0.6+ | 0.1+ | 2002 04 03 | 413 | 0.6+ | 0.5+ | 2006 06 24 | 198 | 0.7+ | 0.5+ | | |
| 2002 02 15 | 474 | 0.7+ | 0.4− | 2002 04 03 | 413 | 0.0 | 0.4+ | 2006 07 16 | H55 | 0.9− | 0.6+ | | |
| 2002 02 15 | 474 | 0.6+ | 0.0 | 2002 04 03 | 413 | 0.3+ | 0.3+ | 2006 07 16 | H55 | 0.4− | 0.2+ | | |
| 2002 02 19 | 413 | 0.2+ | 0.1− | 2002 04 25 | 649 | 1.0− | 0.7+ | | | | | | |
| 2002 02 19 | 413 | 0.2+ | 0.3− | 2002 04 25 | 649 | 1.2− | 0.0 | | | | | | |

### (141448)∗ 2002 CF$_{61}$

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 237.76284 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17029641 | $\omega$ | 107.04009 | | −0.96559770 | | +0.16495574 | | |
| $a$ | 3.2235350 | $\Omega$ | 82.80508 | | −0.23621493 | | −0.87965387 | | |
| $e$ | 0.0222187 | $i$ | 11.69019 | | +0.10873636 | | −0.44609266 | | |
| $P$ | 5.79 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 28 | 691 | 0.3− | 0.7+ | 2002 03 21 | 644 | 0.1+ | 0.1+ | 2005 10 05 | 703 | 0.4+ | 1.3+ | | |
| 2000 12 28 | 691 | 0.1− | 0.3+ | 2002 04 01 | 644 | 0.2− | 0.1+ | 2005 10 05 | 703 | (0.8− | 1.7+) | | |
| 2000 12 28 | 691 | 0.0 | 0.5+ | 2002 04 01 | 644 | 0.3− | 0.0 | 2005 10 05 | 703 | (1.7− | 0.4−) | | |
| 2001 01 19 | 691 | 0.3− | 0.1+ | 2002 04 01 | 644 | 0.1− | 0.3+ | 2005 10 05 | 703 | 0.7− | 1.0+ | | |
| 2001 01 19 | 691 | 0.0 | 0.2+ | 2003 04 11 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.3+ | | |
| 2001 01 19 | 691 | 0.5− | 0.3+ | 2003 04 11 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.3+ | | |
| 2002 02 06 | 704 | 1.0+ | 0.1− | 2003 04 11 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 704 | (1.7+ | 0.6+) | 2003 04 27 | 699 | 0.1+ | 0.8− | 2006 11 15 | 691 | 0.2+ | 0.1+ | |
| 2002 02 06 | 704 | 1.1+ | 0.2+ | 2003 04 27 | 699 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.0 | |
| 2002 02 06 | 704 | 1.1+ | 0.8+ | 2003 04 27 | 699 | 0.3− | 0.5+ | 2006 11 15 | 691 | 0.3+ | 0.3+ | |
| 2002 02 10 | 704 | 0.5− | 0.4+ | 2003 04 27 | 699 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.0 | |
| 2002 02 10 | 704 | 0.7+ | 0.9+ | 2003 05 02 | 704 | 0.4+ | 0.6+ | 2006 11 19 | 691 | 0.2+ | 0.1− | |
| 2002 02 10 | 704 | 0.3+ | 0.2− | 2003 05 02 | 704 | 0.9+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.1− | |
| 2002 02 10 | 704 | 0.8+ | 1.0− | 2003 05 02 | 704 | 0.0 | 0.2+ | 2006 11 27 | 691 | (0.7− | 3.3−) | |
| 2002 02 10 | 704 | 0.1− | 0.3+ | 2003 05 02 | 704 | 0.1− | 1.0+ | 2006 11 27 | 691 | 0.0 | 0.1− | |
| 2002 02 13 | 644 | 0.3− | 0.8+ | 2003 05 02 | 704 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.1− | |
| 2002 02 13 | 644 | 0.6− | 1.1+ | 2004 07 16 | E12 | 0.2+ | 0.6+ | 2006 12 01 | 691 | 0.4− | 0.4+ | |
| 2002 02 13 | 644 | 0.1+ | 1.3+ | 2004 07 16 | E12 | 0.1− | 0.6+ | 2006 12 01 | 691 | 0.1− | 0.1+ | |
| 2002 03 21 | 644 | 0.1− | 0.0 | 2004 07 16 | E12 | 0.1− | 0.7+ | 2006 12 01 | 691 | 0.1− | 0.1+ | |
| 2002 03 21 | 644 | 0.0 | 0.2+ | 2004 07 16 | E12 | 0.8+ | 1.1+ | | | | | |

**(141449)∗ 2002 CZ$_{64}$**

Discovered 2002 Feb. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.28137 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18312840 | $\omega$ | 329.21950 | | +0.55352262 | −0.80625194 | |
| $a$ | 3.0711350 | $\Omega$ | 86.39083 | | +0.80034911 | +0.44563739 | |
| $e$ | 0.0963879 | $i$ | 12.07256 | | +0.23033454 | +0.38905671 | |
| $P$ | 5.38 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 16 | 691 | 0.0 | 0.4+ | 2002 04 01 | 644 | 0.5+ | 0.2+ | 2006 09 24 | 691 | 0.3+ | 0.2+ | |
| 1998 06 16 | 691 | 0.1+ | 0.5+ | 2002 04 01 | 644 | 0.5+ | 0.6+ | 2006 09 24 | 691 | 0.3+ | 0.4+ | |
| 1998 06 16 | 691 | 0.3+ | 0.5+ | 2005 09 27 | 704 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.6− | 0.5− | |
| 2002 01 23 | 704 | 1.0+ | 1.2+ | 2005 09 27 | 704 | 0.5− | 1.3+ | 2006 10 21 | G96 | 0.6− | 0.4− | |
| 2002 01 23 | 704 | 0.9+ | 0.0 | 2005 09 27 | 704 | 0.2+ | 0.7− | 2006 10 21 | G96 | 0.1− | 0.4− | |
| 2002 01 23 | 704 | 0.3+ | 0.8+ | 2005 09 27 | 704 | 0.3− | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.5− | |
| 2002 01 23 | 704 | (2.2+ | 0.5−) | 2005 10 05 | 703 | 0.3− | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.3− | |
| 2002 02 06 | 704 | (0.6− | 1.8+) | 2005 10 05 | 703 | 1.3− | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.0 | |
| 2002 02 06 | 704 | (0.2− | 1.8+) | 2005 10 05 | 703 | 0.6− | 0.4+ | 2006 10 29 | G96 | 0.5+ | 1.0− | |
| 2002 02 06 | 704 | 1.2− | 1.4+ | 2005 10 05 | 703 | 0.6− | 0.8+ | 2006 10 29 | G96 | 0.0 | 0.1+ | |
| 2002 02 10 | 704 | 0.1+ | 0.0 | 2005 10 05 | 703 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.1− | |
| 2002 02 10 | 704 | 0.2+ | 0.5− | 2005 10 05 | 703 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.4+ | 0.3+ | |
| 2002 02 10 | 704 | 0.4− | 0.1+ | 2005 10 05 | 703 | 0.5− | 1.5+ | 2006 11 15 | G96 | 0.2− | 0.3+ | |
| 2002 02 10 | 704 | 0.6− | 0.4+ | 2005 10 05 | 703 | 0.5+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.3+ | |
| 2002 02 10 | 704 | 0.4+ | 0.2+ | 2005 11 06 | 699 | (2.8+ | 0.6−) | 2006 11 22 | G96 | 0.7− | 0.0 | |
| 2002 03 21 | 644 | 0.6+ | 1.3+ | 2005 11 06 | 699 | 0.0 | 0.9+ | 2006 11 22 | G96 | 0.4− | 0.2− | |
| 2002 03 21 | 644 | 0.3+ | 1.3+ | 2005 11 06 | 699 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.5− | |
| 2002 03 21 | 644 | 0.2+ | 1.2+ | 2005 11 06 | 699 | (1.7+ | 0.2−) | 2006 11 22 | G96 | 0.3− | 0.2− | |
| 2002 04 01 | 644 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.3− | 0.0 | | | | | |

**(141450)∗ 2002 CT$_{66}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.38995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17563820 | $\omega$ | 153.99405 | | −0.99977480 | −0.01288950 | |
| $a$ | 3.1578395 | $\Omega$ | 25.28455 | | +0.00438389 | −0.90271758 | |
| $e$ | 0.1121704 | $i$ | 2.26208 | | +0.02076357 | −0.43004050 | |
| $P$ | 5.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 02 | 910 | 0.9− | 0.6− | 2002 02 07 | 704 | 0.5+ | 0.6+ | 2005 09 29 | G96 | 0.2− | 0.3− | |
| 1997 05 02 | 910 | 0.3− | 1.5− | 2002 02 10 | 704 | 0.1− | 0.1− | 2005 09 29 | G96 | 0.1+ | 0.4− | |
| 1997 05 02 | 910 | 0.5− | 0.8− | 2002 02 10 | 704 | 0.8+ | 0.2+ | 2005 09 29 | G96 | 0.1− | 0.1− | |
| 2002 01 08 | 291 | 0.0 | 0.2− | 2002 02 10 | 704 | 0.7+ | 0.1+ | 2005 10 25 | 691 | 0.0 | 0.2+ | |
| 2002 01 08 | 291 | 0.0 | 0.1+ | 2002 02 10 | 704 | 0.1+ | 0.7+ | 2005 10 25 | 691 | 0.7− | 1.0+ | |
| 2002 01 08 | 291 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.2− | 0.2+ | 2005 10 25 | 691 | 0.4− | 0.9+ | |
| 2002 01 21 | 704 | 0.2− | 1.4+ | 2002 02 12 | 704 | 0.2+ | 0.4+ | 2005 10 26 | G96 | 0.2+ | 0.4+ | |
| 2002 01 21 | 704 | 0.2− | 0.0 | 2002 02 12 | 704 | 0.1− | 0.6− | 2005 10 26 | G96 | 0.2+ | 0.0 | |
| 2002 01 21 | 704 | 1.2+ | 1.2+ | 2002 02 12 | 704 | 0.5+ | 0.3− | 2005 10 26 | G96 | 0.4+ | 0.3+ | |
| 2002 01 21 | 704 | 0.9+ | 0.2− | 2003 05 07 | 561 | 0.8+ | 0.8+ | 2005 10 26 | G96 | 0.5+ | 0.1− | |
| 2002 02 06 | 644 | (0.0 | 1.5+) | 2003 05 07 | 561 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ | |
| 2002 02 06 | 644 | 0.4− | 0.9+ | 2003 05 07 | 561 | 0.4− | 1.1+ | 2006 11 16 | 691 | 0.1+ | 0.5+ | |
| 2002 02 06 | 644 | 0.4− | 0.9+ | 2003 06 04 | 691 | 0.3+ | 0.8+ | 2006 11 16 | 691 | 0.2− | 0.2− | |
| 2002 02 07 | 704 | 0.0 | 0.1− | 2003 06 04 | 691 | 0.2+ | 0.8+ | 2006 11 24 | 691 | 0.0 | 0.0 | |
| 2002 02 07 | 704 | 0.9− | 0.8+ | 2003 06 04 | 691 | 0.5+ | 0.8+ | 2006 11 24 | 691 | 0.1− | 0.2+ | |
| 2002 02 07 | 704 | 0.2− | 0.4+ | 2005 09 29 | G96 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.1− | 0.0 | |

**(141451)∗ 2002 CQ$_{80}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.01993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18335748 | $\omega$ | 75.53289 | | −0.94770508 | +0.31407725 | |
| $a$ | 3.0685766 | $\Omega$ | 122.74342 | | −0.31257775 | −0.87761271 | |
| $e$ | 0.0811507 | $i$ | 3.86272 | | −0.06442222 | −0.36214833 | |
| $P$ | 5.38 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 06 | 691 | 0.7− | 0.2− | 2002 02 13 | 704 | (2.4+ | 0.6+) | 2004 08 22 | 691 | 0.3− | 0.6+ | |
| 1992 05 06 | 691 | 0.4+ | 0.4− | 2002 02 13 | 704 | 1.5+ | 0.2+ | 2004 08 22 | 691 | 0.1− | 0.6+ | |
| 1992 05 06 | 691 | 0.1− | 0.0 | 2002 02 13 | 704 | (1.7+ | 1.0+) | 2004 08 22 | 691 | 0.2− | 0.5+ | |
| 2002 02 04 | 699 | (1.2+ | 1.7−) | 2002 02 13 | 704 | 1.0+ | 0.8+ | 2004 09 10 | 691 | 0.3− | 0.6+ | |
| 2002 02 04 | 699 | 0.1+ | 0.9− | 2002 02 13 | 644 | 0.1+ | 1.2+ | 2004 09 10 | 691 | 0.2− | 0.4+ | |
| 2002 02 04 | 699 | (1.6− | 1.7+) | 2002 02 13 | 704 | 1.0+ | 0.7+ | 2004 09 10 | 691 | 0.4− | 0.5+ | |
| 2002 02 04 | 699 | (1.7− | 0.1−) | 2002 02 13 | 644 | 0.3+ | 1.3+ | 2004 09 22 | 691 | 0.1− | 0.2+ | |
| 2002 02 05 | 644 | 0.2+ | 0.3+ | 2002 02 20 | 704 | 0.1− | 0.9+ | 2004 09 22 | 691 | 0.2+ | 0.4+ | |
| 2002 02 05 | 644 | 0.0 | 0.5+ | 2002 02 20 | 704 | 1.0+ | 1.3+ | 2004 09 22 | 691 | 0.0 | 0.4+ | |
| 2002 02 05 | 644 | 0.2+ | 0.3+ | 2002 02 20 | 704 | 0.6+ | 0.3+ | 2005 10 30 | G96 | 0.4+ | 0.1− | |
| 2002 02 07 | 704 | 0.1+ | 0.9+ | 2002 02 20 | 704 | 0.4− | 1.2+ | 2005 10 30 | G96 | 0.2+ | 0.0 | |
| 2002 02 07 | 704 | 1.5+ | 1.3+ | 2002 02 20 | 704 | 0.1+ | 1.4+ | 2005 10 30 | G96 | 0.2+ | 0.0 | |
| 2002 02 07 | 704 | 0.1+ | 0.5+ | 2002 02 24 | 644 | 0.3− | 0.1− | 2005 10 30 | G96 | 0.6+ | 0.0 | |
| 2002 02 07 | 704 | 0.1+ | 0.2− | 2002 02 24 | 644 | 0.1− | 0.2− | 2005 11 17 | J95 | 1.2− | 1.2− | |
| 2002 02 07 | 704 | 0.4+ | 0.4+ | 2002 02 24 | 644 | 0.3− | 0.1+ | 2005 11 17 | J95 | 1.3+ | 1.0+ | |
| 2002 02 10 | 704 | 1.2+ | 0.6− | 2002 03 12 | 644 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.5− | |
| 2002 02 10 | 704 | 0.9+ | 0.2− | 2002 03 12 | 644 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− | |
| 2002 02 10 | 704 | 1.0+ | 0.7− | 2002 03 12 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.7− | |
| 2002 02 10 | 704 | 1.0+ | 0.9− | 2002 03 16 | 704 | 1.4+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.3− | |
| 2002 02 10 | 704 | 1.0+ | 0.4+ | 2002 03 16 | 704 | 0.9− | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.0 | |
| 2002 02 10 | 691 | 0.3+ | 0.0 | 2002 03 16 | 704 | 0.7− | 0.6+ | 2006 11 01 | G96 | 0.2+ | 0.3− | |
| 2002 02 10 | 691 | 0.2− | 0.1+ | 2002 03 19 | 608 | 0.2− | 0.3− | 2006 11 01 | G96 | 0.1− | 0.4− | |
| 2002 02 10 | 691 | 0.3− | 0.1+ | 2002 03 19 | 608 | 0.5− | 0.5− | 2006 11 01 | G96 | 0.4− | 0.3− | |
| 2002 02 12 | 704 | 0.1+ | 0.6+ | 2002 03 19 | 608 | 0.9− | 0.1+ | 2006 11 15 | G96 | 0.9− | 0.3− | |
| 2002 02 12 | 704 | 0.5− | 0.4+ | 2002 03 23 | 644 | 0.0 | 0.9+ | 2006 11 15 | G96 | 1.0− | 0.1+ | |
| 2002 02 12 | 704 | 0.2− | 0.5+ | 2002 03 23 | 644 | 0.0 | 1.0+ | 2006 11 15 | G96 | 0.6− | 0.6− | |
| 2002 02 12 | 704 | 0.3− | 0.6+ | 2002 03 23 | 644 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.7− | 0.0 | |
| 2002 02 12 | 704 | 0.5− | 0.3+ | 2004 07 17 | 807 | 0.1− | 0.5+ | | | | | |
| 2002 02 13 | 644 | 0.1+ | 1.4+ | 2004 07 17 | 807 | 0.1− | 0.6+ | | | | | |

**(141452)∗ 2002 CV$_{83}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.29504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18538928 | $\omega$ | 74.51083 | | −0.23245973 | −0.97254148 | |
| $a$ | 3.0461151 | $\Omega$ | 28.93847 | | +0.88323709 | −0.21590974 | |
| $e$ | 0.1596647 | $i$ | 1.32689 | | +0.40725265 | −0.08686805 | |
| $P$ | 5.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 14 | 691 | 0.5− | 0.2− | 2002 02 12 | 704 | 0.0 | 0.3+ | 2005 10 06 | 691 | 0.4− | 0.4+ | |
| 1997 04 14 | 691 | 0.3− | 0.4− | 2002 02 12 | 704 | 1.6+ | 0.4− | 2005 10 06 | 691 | 0.6− | 0.1+ | |
| 1997 04 14 | 691 | 0.2− | 0.6− | 2002 02 12 | 704 | 1.1− | 0.3− | 2005 10 06 | 691 | 0.3− | 0.4+ | |
| 2000 10 01 | 704 | 0.4− | 0.2− | 2002 02 16 | 644 | 0.4+ | 0.0 | 2005 10 12 | 691 | 0.7− | 0.3+ | |
| 2000 10 01 | 704 | 0.7− | 0.3+ | 2002 02 16 | 644 | 0.2+ | 0.4− | 2005 10 12 | 691 | 0.3+ | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.2− | 0.5+ | 2002 02 16 | 644 | 0.5+ | 0.0 | 2005 10 12 | 691 | 0.2− | 0.2+ | | |
| 2000 11 20 | 691 | 0.2+ | 0.1− | 2002 03 09 | 644 | 0.0 | 0.0 | 2005 10 24 | 691 | 0.8+ | 0.4− | | |
| 2000 11 20 | 691 | 0.2− | 0.1− | 2002 03 09 | 644 | 0.3+ | 0.4+ | 2005 10 24 | 691 | 0.2+ | 0.1+ | | |
| 2000 11 20 | 691 | 0.4+ | 0.0 | 2002 03 09 | 644 | 0.2+ | 0.2+ | 2005 10 24 | 691 | 0.7+ | 0.3− | | |
| 2002 02 07 | 704 | 0.3+ | 0.2+ | 2002 03 12 | 644 | 0.2+ | 0.3+ | 2005 10 25 | G96 | 0.1− | 0.3− | | |
| 2002 02 07 | 704 | 0.7+ | 0.3− | 2002 03 12 | 644 | 0.0 | 0.4+ | 2005 10 25 | G96 | 0.2− | 0.4− | | |
| 2002 02 07 | 704 | 0.2+ | 0.1− | 2002 03 12 | 644 | 0.5+ | 0.0 | 2005 10 25 | G96 | 0.1− | 0.1+ | | |
| 2002 02 07 | 704 | 0.1+ | 0.6− | 2002 03 14 | 704 | 0.5+ | 1.1+ | 2005 10 25 | G96 | 0.0 | 0.7− | | |
| 2002 02 10 | 704 | 0.6− | 0.1+ | 2002 03 14 | 704 | 0.7+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 1.0− | | |
| 2002 02 10 | 704 | 0.6− | 0.2+ | 2002 03 14 | 704 | 0.8+ | 0.6+ | 2006 10 31 | G96 | 0.1− | 0.9− | | |
| 2002 02 10 | 704 | 0.2− | 0.1+ | 2002 03 14 | 704 | 0.4+ | 0.6+ | 2006 10 31 | G96 | 0.9− | 0.4− | | |
| 2002 02 10 | 704 | 0.8− | 1.3+ | 2002 03 14 | 704 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2002 02 10 | 704 | 1.2− | 0.4+ | 2002 03 16 | 704 | 1.2+ | 0.7+ | 2006 11 16 | G96 | 0.9− | 1.2− | | |
| 2002 02 12 | 704 | 0.1− | 0.8+ | 2002 03 16 | 704 | 1.5+ | 0.1+ | 2006 11 16 | G96 | 0.6− | 1.0− | | |
| 2002 02 12 | 704 | 0.7− | 0.0 | 2002 03 16 | 704 | (1.3+ | 1.8+) | 2006 11 16 | G96 | 0.6− | 0.7− | | |
| 2002 02 12 | 704 | 0.2− | 0.3+ | 2002 03 16 | 704 | 1.3+ | 1.0+ | | | | | | |
| 2002 02 12 | 704 | 0.2+ | 0.9+ | 2002 03 16 | 704 | (1.1+ | 2.1+) | | | | | | |

**(141453)∗ 2002 CE$_{87}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.08742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28627611 | $\omega$ | 266.44365 | | +0.87317350 | −0.48681793 | |
| $a$ | 2.2800584 | $\Omega$ | 122.68661 | | +0.45775041 | +0.80212593 | |
| $e$ | 0.0729607 | $i$ | 1.63453 | | +0.16742937 | +0.34583566 | |
| $P$ | 3.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.2+ | 0.1− | 2002 02 06 | 291 | 0.2+ | 0.1− | 2004 09 13 | 691 | 0.4− | 0.2+ | | |
| 1997 11 22 | 691 | 0.1− | 0.1− | 2002 02 06 | 291 | 0.3− | 0.1− | 2004 11 11 | 691 | 0.1+ | 0.1+ | | |
| 1997 11 22 | 691 | 0.0 | 0.0 | 2002 02 07 | 704 | 1.1− | 0.6+ | 2004 11 11 | 691 | 0.2+ | 0.0 | | |
| 1997 12 07 | 910 | 0.5+ | 0.7− | 2002 02 07 | 704 | 0.2+ | 0.1+ | 2004 11 11 | 691 | 0.0 | 0.2+ | | |
| 1997 12 07 | 910 | 0.9+ | 0.6− | 2002 02 07 | 704 | 0.2− | 0.2+ | 2004 12 10 | 704 | 0.9− | 0.1+ | | |
| 1997 12 07 | 910 | 0.8+ | 0.8− | 2002 02 10 | 704 | 0.3+ | 0.1+ | 2004 12 10 | 704 | 0.5+ | 0.5− | | |
| 2000 08 07 | 608 | 0.9− | 0.2+ | 2002 02 10 | 704 | 0.4+ | 0.9+ | 2004 12 10 | 704 | 0.6− | 1.0− | | |
| 2000 08 07 | 608 | 0.9− | 0.1− | 2002 02 10 | 704 | 0.1+ | 0.3+ | 2004 12 10 | 704 | 0.2− | 0.5+ | | |
| 2000 08 07 | 608 | 1.0− | 0.6− | 2002 02 10 | 704 | 0.1+ | 0.3+ | 2006 03 26 | G96 | 0.5+ | 0.6− | | |
| 2000 08 27 | 807 | 0.2+ | 0.9+ | 2002 02 12 | 704 | 0.0 | 0.5+ | 2006 03 26 | G96 | 0.1− | 0.3− | | |
| 2000 08 27 | 807 | 0.5+ | 1.1+ | 2002 02 12 | 704 | 0.2− | 0.2+ | 2006 03 26 | G96 | 0.1− | 0.2− | | |
| 2002 01 19 | 291 | 0.0 | 0.0 | 2002 02 12 | 704 | 0.6− | 0.5− | 2006 03 26 | G96 | 0.1+ | 0.3− | | |
| 2002 01 19 | 291 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.7− | 0.3+ | 2006 05 24 | G96 | 0.3+ | 0.1− | | |
| 2002 01 19 | 291 | 0.2− | 0.1− | 2002 02 12 | 704 | 0.3+ | 1.0+ | 2006 05 24 | G96 | 0.2− | 0.3− | | |
| 2002 02 05 | 644 | 0.8+ | 1.2+ | 2002 02 18 | 344 | 0.2− | 0.2− | 2006 05 24 | G96 | 0.3+ | 0.4− | | |
| 2002 02 05 | 644 | 0.9+ | 1.1+ | 2002 02 18 | 344 | 0.0 | 0.2− | 2006 05 24 | G96 | 0.4+ | 0.5− | | |
| 2002 02 05 | 644 | 0.4+ | 0.2+ | 2004 09 13 | 691 | 0.2+ | 0.0 | | | | | | |
| 2002 02 06 | 291 | 0.0 | 0.0 | 2004 09 13 | 691 | 0.2+ | 0.2+ | | | | | | |

**(141454)∗ 2002 CW$_{92}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.96836 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18611830 | $\omega$ | 144.23605 | | −0.26726375 | +0.96029951 | |
| $a$ | 3.0381555 | $\Omega$ | 110.14384 | | −0.90272892 | −0.22047800 | |
| $e$ | 0.1204969 | $i$ | 4.88630 | | −0.33712102 | −0.17092193 | |
| $P$ | 5.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 01 | 691 | 0.1− | 0.0 | 2003 05 01 | 704 | 0.3+ | 0.3+ | 2004 09 09 | 704 | 1.2+ | 1.9+ | | |
| 2000 12 01 | 691 | 0.1+ | 0.1− | 2003 05 01 | 704 | 1.2+ | 0.7+ | 2005 10 22 | 691 | 0.2− | 0.2+ | | |
| 2000 12 01 | 691 | 0.5− | 0.1− | 2003 05 05 | 704 | 0.1+ | 0.1+ | 2005 10 22 | 691 | 0.0 | 0.0 | | |
| 2002 02 07 | 704 | 0.5− | 0.5+ | 2003 05 05 | 704 | 0.7+ | 0.3+ | 2005 10 22 | 691 | 0.2− | 0.1+ | | |
| 2002 02 07 | 704 | 0.6− | 0.1+ | 2003 05 05 | 704 | 0.2− | 0.2− | 2005 10 27 | 691 | 0.0 | 0.2+ | | |
| 2002 02 07 | 704 | 0.3+ | 0.9+ | 2003 05 05 | 704 | 0.3− | 0.9+ | 2005 10 27 | 691 | 0.1− | 0.0 | | |
| 2002 02 10 | 704 | 0.9+ | 0.2+ | 2003 05 25 | 291 | 0.4− | 0.2+ | 2005 10 27 | 691 | 0.2− | 0.2+ | | |
| 2002 02 10 | 704 | 0.2+ | 0.1+ | 2003 05 25 | 291 | 0.4− | 0.3+ | 2005 10 29 | 691 | 0.3+ | 0.4+ | | |
| 2002 02 10 | 704 | 0.4+ | 0.8+ | 2003 05 25 | 291 | 0.6− | 0.2+ | 2005 10 29 | 691 | 0.1− | 0.6+ | | |
| 2002 02 10 | 704 | 0.2+ | 0.8+ | 2003 05 30 | 704 | 0.1− | 1.0+ | 2005 10 29 | 691 | 0.1− | 0.6+ | | |
| 2002 02 10 | 704 | 0.5+ | 1.4+ | 2003 05 30 | 704 | 0.6− | 0.8+ | 2005 10 31 | 691 | 0.2+ | 0.5+ | | |
| 2002 02 12 | 704 | 0.7+ | 0.3− | 2003 05 30 | 704 | 0.4− | 0.6+ | 2005 10 31 | 691 | 0.0 | 0.1+ | | |
| 2002 02 12 | 704 | 0.2+ | 0.1+ | 2003 05 30 | 704 | 0.4+ | 0.8+ | 2005 10 31 | 691 | 0.1+ | 0.1− | | |
| 2002 02 12 | 704 | 0.4+ | 0.4+ | 2003 05 30 | 704 | 1.3+ | 1.9+ | 2005 11 01 | G96 | 0.1− | 0.0 | | |
| 2002 02 12 | 704 | 1.1+ | 0.2+ | 2003 06 05 | 926 | 0.5+ | 0.7+ | 2005 11 01 | G96 | 0.1+ | 0.0 | | |
| 2002 02 12 | 704 | 0.5+ | 0.4− | 2003 06 05 | 926 | 0.4+ | 1.1+ | 2005 11 01 | G96 | 0.2− | 0.0 | | |
| 2002 02 20 | 704 | 0.1+ | 0.0 | 2003 06 06 | 691 | 0.2+ | 0.3+ | 2005 11 01 | G96 | 0.7− | 0.0 | | |
| 2002 02 20 | 704 | 0.5− | 0.7+ | 2003 06 06 | 691 | 0.2+ | 0.1+ | 2005 11 02 | G96 | 0.3− | 0.2− | | |
| 2002 02 20 | 704 | 0.1+ | 0.3+ | 2003 06 06 | 691 | 0.1+ | 0.3+ | 2005 11 02 | G96 | 0.2+ | 0.0 | | |
| 2002 02 20 | 704 | 0.8+ | 1.7+ | 2004 08 15 | 807 | 0.1+ | 0.7+ | 2005 11 02 | G96 | 0.1+ | 0.2− | | |
| 2002 03 12 | 644 | 0.0 | 0.2− | 2004 08 15 | 807 | 0.2+ | 0.7+ | 2005 11 02 | G96 | 0.5+ | 0.0 | | |
| 2002 03 12 | 644 | 0.7+ | 0.7+ | 2004 09 07 | 704 | 0.9− | 1.1+ | 2005 11 06 | 691 | 0.2− | 0.2+ | | |
| 2002 03 12 | 644 | 0.2− | 0.0 | 2004 09 07 | 704 | 1.2− | 2.4+ | 2005 11 06 | 691 | 0.2− | 0.3+ | | |
| 2002 03 12 | 644 | 0.1− | 1.0+ | 2004 09 07 | 704 | 0.4+ | 0.3+ | 2005 11 06 | 691 | 0.1+ | 0.1+ | | |
| 2002 03 12 | 644 | 0.2− | 0.0 | 2004 09 07 | 704 | 0.8+ | 0.3− | 2005 11 10 | 691 | 0.1− | 0.0 | | |
| 2002 03 12 | 644 | 1.3+ | 0.5+ | 2004 09 07 | 704 | 1.3− | 1.2+ | 2005 11 10 | 691 | 0.4− | 0.2+ | | |
| 2003 05 01 | 704 | 1.4+ | 0.8+ | 2004 09 09 | 704 | 0.3+ | 0.1+ | 2005 11 10 | 691 | 0.2− | 0.1+ | | |
| 2003 05 01 | 704 | 1.1+ | 0.1− | 2004 09 09 | 704 | 0.5− | 1.3+ | | | | | | |

**(141455)∗ 2002 CE$_{95}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.51984 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26247469 | $\omega$ | 171.29808 | | −0.92514069 | −0.37955011 | |
| $a$ | 2.4158934 | $\Omega$ | 346.38876 | | +0.34634958 | −0.83578432 | |
| $e$ | 0.1149204 | $i$ | 1.82905 | | +0.15542416 | −0.39674460 | |
| $P$ | 3.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.2− | 0.1− | 2002 02 24 | 644 | 0.1− | 0.2− | 2002 03 21 | 291 | 0.1+ | 0.1− | | |
| 1997 11 23 | 691 | 0.3− | 0.5− | 2002 02 24 | 644 | 0.5− | 0.0 | 2002 03 21 | 291 | 0.2+ | 0.2− | | |
| 1997 11 23 | 691 | 0.5− | 0.7− | 2002 02 24 | 644 | 0.2− | 0.2− | 2002 03 21 | 291 | 0.0 | 0.0 | | |
| 1997 12 27 | 688 | 0.9+ | 0.3− | 2002 03 03 | 608 | 1.5− | 1.3− | 2004 10 06 | 691 | 0.1+ | 0.3+ | | |
| 1997 12 27 | 688 | 0.8+ | 0.7− | 2002 03 03 | 608 | 0.8− | 1.2− | 2004 10 06 | 691 | 0.1− | 0.5+ | | |
| 2002 02 05 | 644 | 0.1− | 0.5+ | 2002 03 03 | 608 | 1.2− | 1.5− | 2004 10 06 | 691 | 0.3+ | 0.6+ | | |
| 2002 02 05 | 644 | 0.2− | 0.3+ | 2002 03 09 | 704 | 0.4+ | 0.2− | 2004 11 04 | 703 | 0.5− | 0.0 | | |
| 2002 02 05 | 644 | 0.2+ | 0.8+ | 2002 03 09 | 704 | 0.8+ | 0.6− | 2004 11 04 | 703 | 0.7− | 0.3− | | |
| 2002 02 07 | 704 | 0.1− | 0.1+ | 2002 03 09 | 704 | 0.5+ | 1.1+ | 2004 11 04 | 703 | 1.4− | 1.2+ | | |
| 2002 02 07 | 704 | 0.8+ | 0.1+ | 2002 03 09 | 704 | 0.1− | 1.0+ | 2004 11 04 | 703 | 0.3− | 0.2− | | |
| 2002 02 07 | 704 | 0.1+ | 0.2+ | 2002 03 09 | 704 | 0.2+ | 0.9+ | 2006 03 30 | H06 | 0.2+ | 0.6− | | |
| 2002 02 07 | 704 | 0.1+ | 0.2− | 2002 03 13 | 608 | 1.4− | 0.9− | 2006 03 30 | H06 | (0.7− | 2.1−) | | |
| 2002 02 07 | 704 | 0.1+ | 0.1− | 2002 03 13 | 608 | 1.1− | 0.8− | 2006 03 30 | H06 | 0.5− | 0.4− | | |
| 2002 02 10 | 704 | 1.3+ | 0.0 | 2002 03 13 | 608 | 0.8− | 0.8− | 2006 04 06 | 704 | 1.9+ | 0.3+ | | |
| 2002 02 10 | 704 | 0.5+ | 0.2+ | 2002 03 14 | 704 | 0.7+ | 0.7+ | 2006 04 06 | 704 | 0.9+ | 0.4− | | |
| 2002 02 10 | 704 | 1.1+ | 0.3− | 2002 03 14 | 704 | 0.4+ | 0.0 | 2006 04 06 | 704 | 1.6+ | 1.0+ | | |
| 2002 02 10 | 704 | 0.3+ | 0.2− | 2002 03 14 | 704 | 0.1− | 0.4+ | 2006 04 06 | 704 | (2.4+ | 0.2−) | | |
| 2002 02 10 | 704 | 0.3+ | 0.6− | 2002 03 14 | 704 | 0.5+ | 0.3+ | 2006 04 18 | 644 | 0.5− | 0.5− | | |
| 2002 02 12 | 704 | 0.2− | 0.5− | 2002 03 14 | 704 | 0.5+ | 0.8+ | 2006 04 18 | 644 | 0.2− | 0.2− | | |
| 2002 02 12 | 704 | 0.5− | 0.7+ | 2002 03 15 | 704 | 0.3+ | 1.3+ | 2006 04 18 | 644 | 0.0 | 0.4− | | |
| 2002 02 12 | 704 | 0.2− | 0.7+ | 2002 03 15 | 704 | 0.3+ | 0.7+ | 2006 04 20 | 703 | 0.4− | 1.1+ | | |
| 2002 02 12 | 704 | 0.6− | 0.8+ | 2002 03 15 | 704 | 0.1− | 0.6+ | 2006 04 20 | 703 | 1.8− | 0.3+ | | |
| 2002 02 13 | 691 | (2.3− | 1.3+) | 2002 03 15 | 704 | 0.3− | 0.4+ | 2006 04 20 | 703 | 1.0− | 0.1− | | |
| 2002 02 13 | 691 | 0.1− | 0.1− | 2002 03 15 | 704 | 0.1+ | 0.5+ | 2006 04 20 | 703 | 1.3− | 0.4+ | | |
| 2002 02 13 | 691 | 0.0 | 0.1− | 2002 03 16 | 704 | 1.0+ | 1.0+ | 2006 05 01 | 704 | 1.2+ | 0.4+ | | |
| 2002 02 20 | 704 | 0.0 | 0.2+ | 2002 03 16 | 704 | 0.8+ | 0.8+ | 2006 05 01 | 704 | 0.2+ | 0.2− | | |
| 2002 02 20 | 704 | 0.0 | 0.1− | 2002 03 16 | 691 | 0.2− | 0.3+ | 2006 05 01 | 704 | 0.3− | 0.2− | | |
| 2002 02 20 | 704 | 0.2+ | 0.3+ | 2002 03 16 | 704 | 0.1+ | 0.9+ | 2006 05 03 | 691 | 0.1− | 0.2− | | |
| 2002 02 20 | 704 | 0.3+ | 0.3− | 2002 03 16 | 704 | 0.2+ | 1.2+ | 2006 05 03 | 691 | 0.2+ | 0.0 | | |
| 2002 02 24 | 644 | 0.8− | 0.1+ | 2002 03 16 | 691 | 0.4+ | 0.4− | 2006 05 03 | 691 | 0.0 | 0.0 | | |
| 2002 02 24 | 644 | 0.1+ | 0.4− | 2002 03 16 | 704 | 0.4+ | 0.3− | | | | | | |
| 2002 02 24 | 644 | 0.8− | 0.1+ | 2002 03 16 | 691 | (0.3+ | 2.7−) | | | | | | |

**(141456)∗ 2002 CP$_{95}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.95137 | | | (2000.0) | | |
| $n$ | 0.28237884 | $\omega$ | 105.80978 | | −0.23346803 | +0.97097081 |
| $a$ | 2.3009894 | $\Omega$ | 150.53232 | | −0.92771476 | −0.20639609 |
| $e$ | 0.0921594 | $i$ | 6.07274 | | −0.29126963 | −0.12089809 |
| $P$ | 3.49 | $H$ | 16.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 704 | 0.2− | 0.4+ | 2002 03 14 | 704 | (1.5− | 4.5+) | 2006 05 20 | 644 | 0.4+ | 0.2− |
| 2002 02 07 | 704 | 1.0+ | 0.4+ | 2002 03 14 | 704 | (3.2− | 3.3+) | 2006 05 20 | 644 | 0.2+ | 0.1− |
| 2002 02 07 | 704 | 1.5+ | 0.2− | 2002 03 14 | 704 | (1.2− | 5.1+) | 2006 05 20 | 644 | 0.4+ | 0.0 |
| 2002 02 10 | 704 | 0.4+ | 0.2− | 2002 03 14 | 704 | (1.5− | 5.2+) | 2006 05 20 | 644 | 0.3+ | 0.2− |
| 2002 02 10 | 704 | 0.1− | 0.6− | 2002 03 16 | 704 | 1.4− | 0.4− | 2006 05 20 | 644 | 0.3+ | 0.3− |
| 2002 02 10 | 704 | 0.9− | 0.3− | 2002 03 16 | 704 | 0.5− | 0.2− | 2006 05 20 | 644 | 0.3+ | 0.2+ |
| 2002 02 10 | 704 | 0.6+ | 0.1+ | 2002 03 16 | 704 | 0.3+ | 0.7+ | 2006 05 21 | E12 | 0.9+ | 0.2− |
| 2002 02 11 | 691 | 0.9+ | 0.0 | 2002 03 16 | 704 | 1.9− | 0.1+ | 2006 05 21 | E12 | 0.2+ | 0.2+ |
| 2002 02 11 | 691 | 0.4+ | 0.1+ | 2002 03 19 | 644 | 0.2− | 0.3+ | 2006 05 21 | E12 | 0.4+ | 0.1+ |
| 2002 02 11 | 691 | 0.5+ | 0.3+ | 2002 03 19 | 644 | 0.1− | 0.2+ | 2006 05 21 | E12 | 0.1− | 0.5+ |
| 2002 02 12 | 704 | 0.3+ | 1.2+ | 2002 03 19 | 644 | 0.1− | 0.2+ | 2006 05 28 | 703 | 0.2− | 0.2− |
| 2002 02 12 | 704 | 0.6+ | 1.0+ | 2003 07 25 | 644 | 0.9− | 0.6+ | 2006 05 28 | 703 | 0.5− | 0.3− |
| 2002 02 12 | 704 | 0.2+ | 1.6+ | 2003 07 25 | 644 | 1.0− | 0.4+ | 2006 05 28 | 703 | 1.1− | 0.4+ |
| 2002 02 22 | 644 | 0.2− | 0.0 | 2003 07 25 | 644 | 0.6− | 0.5+ | 2006 05 28 | 703 | 1.9− | 0.4+ |
| 2002 02 22 | 644 | 0.3− | 0.1+ | 2003 08 25 | 704 | 0.2+ | 1.3+ | 2006 06 16 | 699 | 0.8+ | 0.7− |
| 2002 02 22 | 644 | 0.0 | 0.0 | 2003 08 25 | 704 | 0.5− | 1.1+ | 2006 06 16 | 699 | 0.2+ | 0.4− |
| 2002 03 04 | 644 | 0.0 | 0.4− | 2003 08 25 | 704 | 0.5− | 1.3+ | 2006 06 16 | 699 | 0.2+ | 1.1+ |
| 2002 03 04 | 644 | 0.3+ | 0.4− | 2003 08 25 | 704 | 0.4+ | 0.9+ | 2006 06 16 | 699 | 0.7− | 0.6− |
| 2002 03 04 | 644 | 0.1− | 0.2+ | 2003 08 25 | 704 | 0.8+ | 0.7+ | 2006 06 20 | 691 | 0.1− | 0.2+ |
| 2002 03 09 | 291 | 0.3− | 0.0 | 2004 12 19 | 291 | 0.1+ | 0.1+ | 2006 06 20 | 691 | 0.4+ | 0.2+ |
| 2002 03 09 | 291 | 0.3− | 0.0 | 2004 12 19 | 291 | 0.4− | 0.2+ | 2006 06 20 | 691 | 0.3+ | 0.1+ |
| 2002 03 09 | 291 | 0.3− | 0.2+ | 2004 12 19 | 291 | 0.2+ | 0.1+ | 2006 06 20 | 703 | 0.1− | 0.3− |
| 2002 03 12 | 644 | 0.2− | 0.2+ | 2006 04 30 | 703 | 0.1+ | 0.2− | 2006 06 20 | 703 | 0.4− | 0.8+ |
| 2002 03 12 | 644 | 0.4− | 0.2+ | 2006 04 30 | 703 | 0.2− | 0.6+ | 2006 06 20 | 703 | 0.3− | 0.1− |
| 2002 03 12 | 644 | 0.2− | 0.1− | 2006 04 30 | 703 | 1.0− | 0.5− | 2006 06 20 | 703 | 1.0+ | 0.9− |
| 2002 03 14 | 704 | (0.8− | 3.7+) | 2006 04 30 | 703 | 0.8− | 0.2− | | | | |

**(141457)∗ 2002 CG$_{98}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 93.40365 | | | (2000.0) | | |
| $n$ | 0.30967313 | $\omega$ | 250.09316 | | −0.56444161 | +0.82546758 |
| $a$ | 2.1637165 | $\Omega$ | 345.54214 | | −0.75280473 | −0.51623595 |
| $e$ | 0.1240297 | $i$ | 0.68654 | | −0.33866017 | −0.22826241 |
| $P$ | 3.18 | $H$ | 17.6 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 704 | 0.9+ | 0.7+ | 2002 03 15 | 704 | 1.0+ | 0.3+ | 2005 02 02 | 704 | 0.0 | 0.1+ |
| 2002 02 07 | 704 | 0.5− | 0.1+ | 2002 03 20 | 644 | 0.2− | 0.5+ | 2005 02 14 | 701 | 0.0 | 0.2− |
| 2002 02 07 | 704 | 0.1− | 0.1− | 2002 03 20 | 644 | 0.3− | 0.2+ | 2005 02 14 | 701 | 0.0 | 0.2− |
| 2002 02 07 | 704 | 0.0 | 0.0 | 2002 03 20 | 644 | 0.2+ | 0.6+ | 2005 02 14 | 701 | 0.0 | 0.2− |
| 2002 02 07 | 704 | 0.3+ | 0.7+ | 2002 03 20 | 644 | 0.0 | 0.4+ | 2005 03 08 | 715 | 0.0 | 0.4− |
| 2002 02 10 | 704 | 0.5+ | 0.3+ | 2002 03 20 | 644 | 0.4+ | 0.4+ | 2005 03 08 | 715 | 0.5+ | 0.5− |
| 2002 02 10 | 704 | 0.2+ | 0.4− | 2002 03 20 | 644 | 0.0 | 0.7+ | 2005 03 08 | 715 | 0.2− | 0.5− |
| 2002 02 10 | 704 | 0.6+ | 0.8+ | 2002 03 23 | 644 | 0.4+ | 0.6+ | 2006 08 01 | A50 | 2.0− | 1.2− |
| 2002 02 10 | 704 | 1.1+ | 0.4+ | 2002 03 23 | 644 | 0.4+ | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.7+ |
| 2002 02 10 | 704 | 1.0+ | 1.4+ | 2002 03 23 | 644 | 0.3− | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.8+ |
| 2002 02 13 | 645 | 0.2− | 0.1− | 2003 08 30 | 291 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.5+ |
| 2002 02 13 | 645 | 0.3− | 0.1− | 2003 08 30 | 291 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.0 | 0.0 |
| 2002 02 20 | 704 | 0.3+ | 0.0 | 2003 08 30 | 291 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.1− |
| 2002 02 20 | 704 | 1.5+ | 0.7+ | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.4− | 0.1− |
| 2002 02 20 | 704 | 0.3+ | 0.8− | 2003 10 18 | 645 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.2− | 0.1+ |
| 2002 02 20 | 704 | 0.6+ | 0.3+ | 2003 11 20 | 645 | 0.1− | 0.0 | 2006 08 25 | 704 | 0.4+ | 0.3− |
| 2002 02 20 | 704 | 0.9− | 0.7− | 2003 11 20 | 645 | 0.1− | 0.0 | 2006 08 25 | 704 | 0.8+ | 0.7+ |
| 2002 02 22 | 644 | 0.8+ | 0.4+ | 2005 01 19 | 691 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.9+ | 0.7+ |
| 2002 02 22 | 644 | 0.6+ | 0.5+ | 2005 01 19 | 691 | 0.8− | 0.3+ | 2006 08 27 | 691 | 0.3+ | 0.4+ |
| 2002 02 22 | 644 | 0.7+ | 0.0 | 2005 01 19 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.6− | 0.9+ |
| 2002 03 13 | 704 | 1.0+ | 0.7+ | 2005 01 19 | 291 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.5− | 0.7+ |
| 2002 03 13 | 704 | 0.3+ | 1.2+ | 2005 01 19 | 291 | 0.4+ | 0.4− | 2006 08 28 | 703 | 1.4− | 0.1− |
| 2002 03 13 | 704 | 0.9+ | 0.1− | 2005 01 19 | 291 | 0.0 | 0.6+ | 2006 08 28 | 703 | 1.6− | 1.4+ |
| 2002 03 15 | 704 | 0.7+ | 1.2+ | 2005 02 02 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.5+ |
| 2002 03 15 | 704 | 0.7+ | 0.7+ | 2005 02 02 | 704 | 0.8− | 0.9+ | | | | |
| 2002 03 15 | 704 | 0.7+ | 1.7+ | 2005 02 02 | 704 | 0.8+ | 1.5+ | | | | |

**(141458)∗ 2002 CB$_{100}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.81469 | | | (2000.0) | | |
| $n$ | 0.17761511 | $\omega$ | 60.44089 | | −0.84698621 | −0.53044968 |
| $a$ | 3.1343640 | $\Omega$ | 87.50261 | | +0.47475354 | −0.78451093 |
| $e$ | 0.0861355 | $i$ | 2.01789 | | +0.23921420 | −0.32119424 |
| $P$ | 5.55 | $H$ | 15.1 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 10 | 691 | 0.4− | 0.7+ | 2002 03 05 | 699 | 1.1− | 0.5− | 2005 10 01 | 691 | 0.4− | 0.4+ |
| 1994 10 10 | 691 | 0.2− | 0.7+ | 2002 03 05 | 699 | 0.8− | 1.0− | 2005 10 01 | 691 | 0.4− | 0.3+ |
| 1994 10 10 | 691 | 0.6− | 0.9+ | 2002 03 05 | 699 | 0.7+ | 0.5− | 2005 10 01 | 691 | 0.2− | 0.4+ |
| 1997 05 01 | 910 | 1.1+ | 0.1+ | 2002 03 09 | 704 | 0.6+ | 0.1+ | 2005 10 28 | 704 | 0.4− | 0.8+ |
| 1997 05 01 | 910 | 0.7+ | 0.0 | 2002 03 09 | 704 | 0.2− | 0.2+ | 2005 10 28 | 704 | (0.9+ | 1.8+) |
| 1997 05 01 | 910 | 0.6+ | 0.1− | 2002 03 09 | 704 | 0.6− | 0.0 | 2005 10 28 | 704 | 0.7+ | 1.1+ |
| 2000 11 29 | 691 | 0.6+ | 0.5− | 2002 03 09 | 704 | 0.7− | 0.6+ | 2005 10 28 | 704 | 1.0+ | 1.5+ |
| 2000 11 29 | 691 | 0.7+ | 0.5− | 2002 03 09 | 704 | 1.0− | 0.5+ | 2005 10 28 | G96 | 0.2+ | 0.1+ |
| 2000 11 29 | 691 | 0.4− | 1.7− | 2002 03 12 | 645 | 0.1− | 0.0 | 2005 10 28 | G96 | 0.2− | 0.1− |
| 2002 02 07 | 704 | 0.9+ | 1.1+ | 2002 03 12 | 645 | 0.1− | 0.0 | 2005 10 28 | G96 | 0.0 | 0.0 |
| 2002 02 07 | 704 | 0.3+ | 0.9+ | 2002 03 12 | 644 | 0.5+ | 0.5+ | 2005 10 28 | G96 | 0.6− | 0.6− |
| 2002 02 07 | 704 | 0.4+ | 1.3+ | 2002 03 12 | 644 | 0.5+ | 0.5+ | 2005 10 29 | G96 | 0.2+ | 0.2− |
| 2002 02 07 | 704 | (0.6+ | 1.8+) | 2002 03 12 | 644 | 0.2+ | 0.6+ | 2005 10 29 | G96 | 0.1+ | 0.3− |
| 2002 02 10 | 704 | 0.1+ | 1.4+ | 2002 03 14 | 704 | 0.4+ | 0.6+ | 2005 10 29 | G96 | 0.0 | 0.3− |
| 2002 02 10 | 704 | (0.2+ | 1.8+) | 2002 03 14 | 704 | 0.5− | 0.9− | 2005 10 29 | G96 | 0.3+ | 0.3− |
| 2002 02 10 | 704 | 0.8+ | 1.5+ | 2002 03 14 | 704 | 0.6− | 0.2+ | 2005 12 01 | 695 | 0.0 | 0.1+ |
| 2002 02 10 | 704 | 0.1− | 1.5+ | 2002 03 14 | 704 | 0.5− | 0.2+ | 2005 12 01 | G96 | 0.3− | 0.1+ |
| 2002 02 10 | 704 | (0.6+ | 2.0+) | 2002 03 16 | 704 | 0.5+ | 0.1+ | 2005 12 01 | G96 | 0.6+ | 0.1+ |
| 2002 02 12 | 704 | 1.0+ | 0.8+ | 2002 03 16 | 704 | 0.5+ | 0.1+ | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2002 02 12 | 704 | (2.2+ | 0.6+) | 2002 03 16 | 704 | 0.2− | 0.2+ | 2005 12 01 | 695 | 0.1− | 0.1+ |
| 2002 02 12 | 704 | (2.4+ | 0.5−) | 2002 03 16 | 704 | 0.2+ | 0.4+ | 2005 12 01 | G96 | 0.1− | 0.2− |
| 2002 02 12 | 704 | (2.0+ | 1.3−) | 2002 03 16 | 704 | 0.2+ | 0.3− | 2005 12 02 | 695 | 0.2− | 0.2+ |
| 2002 02 13 | 645 | 0.0 | 0.0 | 2002 03 20 | 691 | 0.4+ | 0.4+ | 2005 12 28 | G96 | 0.0 | 0.2+ |
| 2002 02 13 | 645 | 0.0 | 0.0 | 2002 03 20 | 691 | 0.4+ | 0.4+ | 2005 12 28 | G96 | 0.2+ | 0.4− |
| 2002 02 20 | 704 | 0.1− | 0.1+ | 2002 03 20 | 691 | 0.5+ | 0.5+ | 2005 12 28 | G96 | 0.5+ | 0.0 |
| 2002 02 20 | 704 | 0.2− | 0.6+ | 2004 08 21 | E12 | (1.6− | 0.1+) | 2005 12 28 | G96 | 0.8+ | 0.1+ |
| 2002 02 20 | 704 | 0.2+ | 0.6+ | 2004 08 21 | E12 | 0.8− | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.4− |
| 2002 02 20 | 704 | 0.5+ | 0.2+ | 2004 08 21 | E12 | 0.0 | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2002 02 20 | 704 | 0.1− | 0.0 | 2004 08 21 | E12 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2002 02 24 | 644 | 0.0 | 0.3− | 2005 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.4− |
| 2002 02 24 | 644 | 0.1+ | 0.2− | 2005 09 25 | 691 | 0.0 | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2002 02 24 | 644 | 0.3+ | 0.1− | 2005 09 25 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.6+ | 0.6− |
| 2002 02 25 | 644 | 0.1+ | 1.4+ | 2005 10 01 | 704 | 0.7− | 0.6+ | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2002 02 25 | 644 | (0.0 | 1.7+) | 2005 10 01 | 704 | 0.8− | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2002 02 25 | 644 | (0.3+ | 1.7+) | 2005 10 01 | 704 | 0.7− | 0.4− | | | | |
| 2002 03 05 | 699 | 0.3+ | 0.1− | 2005 10 01 | 704 | 0.5− | 0.8+ | | | | |

**(141459)∗ 2002 CQ$_{100}$ = 2004 RC$_{49}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 69205)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.62632 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19650381 | $\omega$ | 97.09955 | | −0.49157957 | +0.87027293 | |
| $a$ | 2.9301424 | $\Omega$ | 143.40258 | | −0.81821870 | −0.44931068 | |
| $e$ | 0.0231448 | $i$ | 3.00152 | | −0.29810684 | −0.20185375 | |
| $P$ | 5.02 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | (0.0 | 3.3+) | 2002 03 12 | 704 | (0.2+ | 2.1+) | 2004 09 16 | 691 | 0.3− | 0.5+ | |
| 1999 09 14 | 704 | 0.1− | 1.1+ | 2002 03 12 | 704 | (0.5+ | 2.3+) | 2004 09 16 | 691 | 0.3− | 0.3+ | |
| 1999 09 14 | 704 | 0.5+ | 0.7+ | 2002 03 12 | 644 | 0.6+ | 0.5+ | 2004 09 16 | 691 | 0.1− | 0.4+ | |
| 1999 09 14 | 704 | 0.4− | 0.4+ | 2002 03 12 | 644 | 0.2+ | 0.4+ | 2004 09 17 | 704 | 0.1− | 0.2− | |
| 2002 02 07 | 704 | 0.3− | 0.6+ | 2002 03 12 | 644 | 0.4+ | 0.5+ | 2004 09 17 | 704 | 0.0 | 0.5− | |
| 2002 02 07 | 704 | 0.7+ | 0.6+ | 2002 03 14 | 704 | 1.2− | 0.9+ | 2004 09 17 | 704 | 0.7− | 0.3− | |
| 2002 02 07 | 704 | 0.4+ | 0.8+ | 2002 03 14 | 704 | 0.0 | 0.4− | 2004 09 17 | 704 | 0.9− | 1.2− | |
| 2002 02 07 | 704 | 0.2+ | 1.1+ | 2002 03 14 | 704 | 0.1− | 0.7+ | 2004 09 17 | 704 | 0.6− | 1.2− | |
| 2002 02 07 | 704 | 0.3− | 0.9+ | 2002 03 14 | 704 | 0.4+ | 0.9+ | 2004 09 23 | 691 | 0.0 | 0.6+ | |
| 2002 02 10 | 704 | 0.2+ | 0.7+ | 2002 03 16 | 704 | 1.2+ | 0.8+ | 2004 09 23 | 691 | 0.2− | 0.6+ | |
| 2002 02 10 | 704 | 0.5+ | 1.0+ | 2002 03 16 | 704 | 1.0+ | 0.2+ | 2004 09 23 | 691 | 0.3− | 0.5+ | |
| 2002 02 10 | 704 | 0.6+ | 0.9+ | 2002 03 16 | 704 | 0.9+ | 0.5+ | 2004 10 11 | 691 | 0.4− | 0.3+ | |
| 2002 02 10 | 704 | 0.8+ | 1.2+ | 2002 03 16 | 704 | (1.7+ | 0.9+) | 2004 10 11 | 691 | 0.0 | 0.3+ | |
| 2002 02 10 | 704 | (0.5+ | 1.8+) | 2002 03 16 | 704 | 1.1+ | 0.0 | 2004 10 11 | 691 | 0.4− | 0.2+ | |
| 2002 02 10 | 691 | 0.5+ | 0.8+ | 2002 03 16 | 608 | 1.0− | 0.4− | 2004 10 15 | G96 | 0.3+ | 0.2− | |
| 2002 02 10 | 691 | 0.4+ | 0.4+ | 2002 03 16 | 608 | 0.8− | 0.5− | 2004 10 15 | G96 | 0.0 | 0.3− | |
| 2002 02 10 | 691 | 0.1− | 0.7+ | 2002 03 16 | 608 | 1.1− | 0.4− | 2004 10 15 | G96 | 0.1+ | 0.1+ | |
| 2002 02 12 | 704 | (0.0 | 1.6+) | 2002 03 23 | 644 | 0.6+ | 0.9+ | 2004 10 15 | G96 | 0.4+ | 0.1− | |
| 2002 02 12 | 704 | (1.3+ | 1.8+) | 2002 03 23 | 644 | 0.5+ | 0.3− | 2005 12 01 | 691 | 0.3+ | 0.1− | |
| 2002 02 12 | 704 | (0.8+ | 2.4+) | 2002 03 23 | 644 | 0.3− | 0.6+ | 2005 12 01 | 691 | 0.0 | 0.2− | |
| 2002 02 12 | 704 | (0.6+ | 1.9+) | 2004 09 08 | 704 | 0.0 | 0.6+ | 2005 12 01 | 691 | 0.1+ | 0.3− | |
| 2002 02 13 | 291 | 0.4+ | 0.4+ | 2004 09 08 | 704 | 0.5− | 1.0+ | 2005 12 07 | 691 | 0.0 | 0.5− | |
| 2002 02 13 | 291 | 0.4+ | 0.5+ | 2004 09 08 | 704 | 0.1− | 0.8+ | 2005 12 07 | 691 | 0.1− | 0.2− | |
| 2002 02 13 | 291 | 0.6+ | 0.6+ | 2004 09 08 | 704 | 0.6− | 0.7+ | 2005 12 07 | 691 | 0.2− | 0.2− | |
| 2002 02 20 | 704 | 0.2− | 0.1+ | 2004 09 08 | 704 | 0.4− | 0.5+ | 2005 12 07 | 704 | 0.8+ | 0.1+ | |
| 2002 02 20 | 704 | 0.4+ | 0.2− | 2004 09 09 | 704 | 0.2− | 1.1+ | 2005 12 07 | 704 | 0.1− | 0.0 | |
| 2002 02 20 | 704 | 1.3+ | 0.1− | 2004 09 09 | 704 | 0.5− | 0.7+ | 2005 12 07 | 704 | 0.7+ | 0.4+ | |
| 2002 02 20 | 704 | 0.4+ | 0.0 | 2004 09 09 | 704 | 0.1− | 0.4+ | 2006 02 25 | G96 | 0.0 | 0.3− | |
| 2002 02 24 | 644 | 0.6+ | 0.5+ | 2004 09 09 | 704 | 0.3+ | 0.8+ | 2006 02 25 | G96 | 0.5− | 0.2− | |
| 2002 02 24 | 644 | 0.6+ | 0.3+ | 2004 09 09 | 704 | 0.3− | 1.0+ | 2006 02 25 | G96 | 0.4− | 0.7− | |
| 2002 02 24 | 644 | 0.6+ | 0.4+ | 2004 09 09 | 699 | 1.0− | 0.2− | 2006 02 25 | G96 | 0.1+ | 0.2− | |
| 2002 02 25 | 644 | 0.2+ | 0.4+ | 2004 09 09 | 699 | 0.6+ | 0.6+ | 2006 10 27 | G96 | 1.4− | 0.6− | |
| 2002 02 25 | 644 | 0.3+ | 0.3+ | 2004 09 09 | 699 | 0.2+ | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.5− | |
| 2002 02 25 | 644 | 0.0 | 0.3+ | 2004 09 09 | 699 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.8− | |
| 2002 03 05 | 645 | 0.2− | 0.0 | 2004 09 11 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.6− | 0.0 | |
| 2002 03 05 | 645 | 0.2− | 0.1− | 2004 09 11 | 691 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.3+ | 0.2− | |
| 2002 03 05 | 608 | (1.1− | 2.5+) | 2004 09 11 | 691 | 0.0 | 0.3+ | 2006 11 20 | G96 | 0.5− | 0.0 | |
| 2002 03 05 | 608 | (1.8− | 3.0+) | 2004 09 13 | 699 | 0.4− | 0.4+ | 2006 11 20 | G96 | 0.8− | 0.1− | |
| 2002 03 05 | 608 | (1.5− | 2.5+) | 2004 09 13 | 699 | 0.7− | 0.5+ | 2006 11 20 | G96 | 0.0 | 0.3− | |
| 2002 03 09 | 704 | 0.2+ | 0.5− | 2004 09 13 | 699 | 0.7+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1+ | |
| 2002 03 09 | 704 | 0.7− | 0.9+ | 2004 09 13 | 699 | 0.2− | 1.1+ | 2006 11 21 | 691 | 0.2+ | 0.4+ | |
| 2002 03 09 | 704 | 0.5− | 0.7+ | 2004 09 14 | 699 | 0.3− | 0.9+ | 2006 11 21 | 691 | 0.0 | 0.4+ | |
| 2002 03 09 | 704 | 0.8+ | 0.9+ | 2004 09 14 | 699 | 0.1− | 0.7+ | 2006 11 25 | 691 | 0.5+ | 0.3+ | |
| 2002 03 12 | 704 | (0.1− | 1.7+) | 2004 09 14 | 699 | 0.0 | 0.8+ | 2006 11 25 | 691 | 0.2+ | 0.0 | |
| 2002 03 12 | 704 | 0.1− | 1.2+ | 2004 09 14 | 699 | 0.0 | 0.5− | 2006 11 25 | 691 | 0.4+ | 0.2+ | |

**(141460)∗ 2002 CM$_{111}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.49772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18496817 | $\omega$ | 354.52763 | | −0.73077304 | −0.68205016 | |
| $a$ | 3.0507366 | $\Omega$ | 142.41850 | | +0.62801455 | −0.68777060 | |
| $e$ | 0.1000133 | $i$ | 2.62185 | | +0.26752287 | −0.24855418 | |
| $P$ | 5.33 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 02 | 691 | 0.0 | 0.9+ | 2002 03 16 | 704 | 0.1+ | 0.2+ | 2005 10 31 | 704 | 0.8+ | 0.1− | |
| 1994 10 02 | 691 | 0.4− | 0.2+ | 2002 03 16 | 704 | 0.1− | 0.6+ | 2005 10 31 | 683 | 0.4− | 0.4+ | |
| 1994 10 02 | 691 | 0.4− | 0.0 | 2002 03 16 | 704 | 0.1+ | 1.1+ | 2005 10 31 | 704 | (0.8+ | 3.5+) | |
| 2000 11 29 | 691 | 0.3+ | 0.5− | 2002 03 23 | 608 | 1.1− | 0.1− | 2005 10 31 | 704 | 0.3+ | 0.3− | |
| 2000 11 29 | 691 | 0.2+ | 0.4− | 2002 03 23 | 608 | 0.7− | 0.2+ | 2005 10 31 | 704 | 0.6− | 0.4+ | |
| 2000 11 29 | 691 | 0.2+ | 0.5− | 2002 03 23 | 608 | 0.8− | 0.1+ | 2005 10 31 | 704 | 0.5+ | 0.2− | |
| 2002 02 07 | 704 | 0.4− | 0.5− | 2002 04 03 | 644 | 0.4+ | 0.4+ | 2005 11 01 | 691 | 0.1− | 0.2+ | |
| 2002 02 07 | 704 | 0.7− | 0.2− | 2002 04 03 | 644 | 0.1+ | 0.1+ | 2005 11 01 | 691 | 0.1− | 0.2+ | |
| 2002 02 07 | 704 | 0.1− | 0.7+ | 2002 04 03 | 644 | 0.2+ | 0.5+ | 2005 11 01 | 691 | 0.3− | 0.2+ | |
| 2002 02 07 | 704 | 0.0 | 0.4− | 2002 04 04 | 644 | 0.0 | 0.5+ | 2005 11 01 | G96 | 0.1+ | 0.1− | |
| 2002 02 10 | 704 | 0.4− | 0.3− | 2002 04 04 | 644 | 0.4+ | 0.4+ | 2005 11 01 | G96 | 0.1− | 0.0 | |
| 2002 02 10 | 704 | (1.5− | 0.0 ) | 2002 04 04 | 644 | 0.2+ | 0.4+ | 2005 11 01 | G96 | 0.3+ | 0.1− | |
| 2002 02 10 | 704 | 0.9− | 0.1− | 2002 04 15 | 704 | 0.5+ | 0.1+ | 2005 11 01 | G96 | 0.1+ | 0.1− | |
| 2002 02 10 | 704 | 0.4− | 0.0 | 2002 04 15 | 704 | 0.3+ | 0.3− | 2005 11 03 | 704 | 0.3− | 0.0 | |
| 2002 02 10 | 704 | 1.0− | 0.2+ | 2002 04 15 | 704 | 0.2+ | 0.1− | 2005 11 03 | 704 | 0.5+ | 0.6+ | |
| 2002 02 12 | 704 | 0.4+ | 0.2+ | 2002 04 17 | 704 | 0.2+ | 0.5− | 2005 11 03 | 704 | 0.4+ | 0.7+ | |
| 2002 02 12 | 704 | 0.2− | 0.4− | 2002 04 17 | 704 | 0.5+ | 0.5+ | 2005 11 03 | 704 | 0.7+ | 0.8+ | |
| 2002 02 12 | 704 | (0.1− | 2.1+) | 2002 04 17 | 704 | 0.1− | 0.3− | 2005 11 05 | 704 | 0.2+ | 0.5− | |
| 2002 02 12 | 704 | 0.5+ | 1.4+ | 2002 04 17 | 704 | 1.2+ | 0.4+ | 2005 11 05 | 704 | (1.0+ | 1.6+) | |
| 2002 02 12 | 704 | 0.0 | 0.2+ | 2004 08 10 | 704 | (0.6− | 1.6+) | 2005 11 05 | 704 | 0.1− | 0.3− | |
| 2002 02 20 | 704 | 0.8+ | 0.1+ | 2004 08 10 | 704 | (1.2+ | 1.7+) | 2005 11 05 | 704 | 0.4− | 1.1+ | |
| 2002 02 20 | 704 | 0.8+ | 0.9− | 2004 08 10 | 704 | (2.1+ | 1.1+) | 2005 11 10 | 703 | (1.5− | 1.3−) | |
| 2002 02 20 | 704 | 0.6+ | 0.2− | 2004 08 11 | 704 | 0.5− | 0.0 | 2005 11 10 | 703 | 0.0 | 1.3− | |
| 2002 02 20 | 704 | 1.0+ | 0.7+ | 2004 08 11 | 704 | 0.1+ | 0.6+ | 2005 11 10 | 703 | 1.0− | 1.3− | |
| 2002 03 09 | 704 | 0.5− | 0.4+ | 2004 08 11 | 704 | 0.1+ | 0.6+ | 2005 11 10 | 703 | 0.6− | 0.3− | |
| 2002 03 09 | 704 | (0.3+ | 1.8+) | 2004 08 11 | 704 | 0.2− | 1.4+ | 2005 11 10 | 703 | 0.2+ | 0.2− | |
| 2002 03 09 | 704 | 0.4+ | 0.4+ | 2004 08 11 | 704 | (0.6+ | 1.6+) | 2005 11 10 | 703 | 0.5− | 0.1+ | |
| 2002 03 09 | 704 | (0.4+ | 1.6+) | 2005 10 22 | 703 | 0.7+ | 0.3+ | 2005 11 10 | 703 | 0.7− | 0.4− | |
| 2002 03 09 | 704 | 0.9+ | 0.6+ | 2005 10 22 | 703 | 0.5− | 0.7− | 2005 11 10 | 703 | 0.5− | 0.0 | |
| 2002 03 10 | 704 | (0.2− | 1.6+) | 2005 10 22 | 703 | 0.4− | 0.2+ | 2005 11 20 | 644 | 0.1+ | 0.2+ | |
| 2002 03 10 | 704 | 1.0+ | 0.9− | 2005 10 22 | 703 | 0.1+ | 0.4− | 2005 11 20 | 644 | 0.3+ | 0.5+ | |
| 2002 03 10 | 704 | 1.1+ | 1.0− | 2005 10 25 | 691 | 0.2− | 0.3+ | 2005 11 20 | 644 | 0.2+ | 0.2+ | |
| 2002 03 12 | 699 | 0.4+ | 0.6− | 2005 10 25 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.5+ | 0.2+ | |
| 2002 03 12 | 644 | 0.0 | 0.2+ | 2005 10 25 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 2002 03 12 | 699 | 0.4+ | 0.5+ | 2005 10 26 | 683 | (2.1+ | 1.0−) | 2006 10 20 | 691 | 0.2+ | 0.1+ | |
| 2002 03 12 | 699 | 0.0 | 0.2+ | 2005 10 26 | 683 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.8− | |
| 2002 03 12 | 704 | 0.3+ | 0.9+ | 2005 10 26 | 683 | 0.9+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.1− | |
| 2002 03 12 | 699 | 0.3+ | 0.7+ | 2005 10 27 | 683 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.1+ | |
| 2002 03 12 | 704 | 0.4− | 0.6+ | 2005 10 27 | 683 | 1.0+ | 1.0− | 2006 10 27 | G96 | 0.2− | 0.3− | |
| 2002 03 12 | 644 | 0.0 | 0.3+ | 2005 10 27 | 683 | 0.4− | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.2− | |
| 2002 03 12 | 704 | 0.3+ | 1.2+ | 2005 10 28 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.7− | |
| 2002 03 12 | 704 | 0.3− | 0.9+ | 2005 10 28 | 704 | 0.1− | 1.1+ | 2006 11 15 | G96 | 0.8− | 0.6− | |
| 2002 03 12 | 704 | 0.3− | 0.8+ | 2005 10 28 | 683 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.5− | 0.5− | |
| 2002 03 12 | 644 | 0.1+ | 0.3+ | 2005 10 28 | 704 | 0.4− | 0.7+ | 2006 11 21 | G96 | 0.4− | 0.2− | |
| 2002 03 12 | 644 | 0.0 | 0.4+ | 2005 10 28 | 704 | 0.4− | 0.8+ | 2006 11 21 | G96 | 0.5− | 0.3− | |
| 2002 03 12 | 644 | 0.1+ | 0.2+ | 2005 10 28 | 683 | 0.4+ | 0.7− | 2006 11 21 | G96 | 1.3− | 0.2− | |
| 2002 03 12 | 644 | 0.0 | 0.2+ | 2005 10 28 | 683 | (1.8− | 0.9+) | 2006 11 21 | G96 | 0.4− | 0.3− | |
| 2002 03 16 | 704 | 0.3− | 0.2− | 2005 10 31 | 683 | 0.2− | 0.5+ | | | | | |
| 2002 03 16 | 704 | 0.0 | 0.6+ | 2005 10 31 | 683 | 0.2+ | 1.1+ | | | | | |

**(141461)∗ 2002 CU$_{119}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.07802 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17309059 | $\omega$ | 276.46166 | | −0.68234539 | −0.73089501 | |
| $a$ | 3.1887495 | $\Omega$ | 216.57842 | | +0.67967804 | −0.62722258 | |
| $e$ | 0.0635847 | $i$ | 1.35050 | | +0.26915150 | −0.26904336 | |
| $P$ | 5.69 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 691 | 0.2− | 0.0 | 2002 02 11 | 704 | 1.3+ | 1.3+ | 2006 10 19 | G96 | 0.2+ | 0.5− | |
| 2002 01 05 | 691 | 0.4− | 0.2− | 2003 05 25 | 691 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.3− | |
| 2002 01 05 | 691 | 0.3− | 0.5+ | 2003 05 25 | 691 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1− | |
| 2002 01 13 | 704 | 0.4+ | 0.2+ | 2003 05 25 | 691 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.3− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.1+ | 0.1+ | 2005 08 30 | 599 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.1+ | | |
| 2002 01 13 | 704 | 0.1− | 0.2+ | 2005 08 30 | 599 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | | |
| 2002 01 13 | 704 | 0.3− | 0.5+ | 2005 08 30 | 599 | 0.0 | 0.7− | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2002 01 13 | 704 | 0.3− | 0.2− | 2005 08 30 | 599 | 0.6− | 1.2+ | 2006 11 11 | 691 | 0.3+ | 0.0 | | |
| 2002 01 22 | 704 | 0.0 | 0.7+ | 2005 09 13 | 691 | 0.2− | 0.5+ | 2006 11 19 | 691 | 0.2+ | 0.1+ | | |
| 2002 01 22 | 704 | 0.4− | 0.1− | 2005 09 13 | 691 | 0.3− | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2002 01 22 | 704 | 0.2+ | 0.3+ | 2005 09 13 | 691 | 0.0 | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.1− | | |
| 2002 02 05 | 644 | 0.7− | 0.7+ | 2005 11 25 | G96 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2002 02 05 | 644 | 0.2+ | 0.1+ | 2005 11 25 | G96 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.0 | | |
| 2002 02 05 | 644 | 0.9+ | 0.4+ | 2005 11 25 | G96 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 2002 02 07 | 704 | 0.2− | 0.7− | 2005 11 25 | G96 | 0.9− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2002 02 07 | 704 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.5− | 0.1+ | | |
| 2002 02 07 | 704 | 0.6+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2002 02 07 | 704 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.2− | 0.1− | | |
| 2002 02 11 | 704 | 0.9+ | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.3− | | |
| 2002 02 11 | 704 | 1.3+ | 1.0+ | 2006 10 19 | G96 | 0.3− | 0.2− | 2006 12 01 | 691 | 0.3− | 0.0 | | |
| 2002 02 11 | 704 | 0.4+ | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.2− | 0.3+ | | |
| 2002 02 11 | 704 | (2.0+ | 1.3+) | 2006 10 19 | G96 | 0.1− | 0.5− | | | | | | |

**(141462)∗ 2002 $CB_{121}$ = 1997 $CA_{23}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 35157)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.47586 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19905939 | $\omega$ | 316.58799 | | −0.36566408 | | +0.93061802 |
| $a$ | 2.9050098 | $\Omega$ | 291.95808 | | −0.84931345 | | −0.34043208 |
| $e$ | 0.0282375 | $i$ | 0.95687 | | −0.38073145 | | −0.13437302 |
| $P$ | 4.95 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.2− | 0.3− | 2002 02 11 | 704 | 1.2+ | 0.5+ | 2005 11 10 | 691 | 0.1+ | 0.2+ | | |
| 1995 10 22 | 691 | 0.3+ | 0.2+ | 2002 02 11 | 704 | 0.1+ | 0.7+ | 2005 11 10 | 691 | 0.1+ | 0.1+ | | |
| 1995 10 22 | 691 | 0.3+ | 0.5+ | 2002 02 11 | 704 | 0.4+ | 0.4+ | 2005 11 10 | 691 | 0.1+ | 0.0 | | |
| 1997 02 04 | 691 | 0.0 | 0.3− | 2004 08 10 | 704 | 0.1+ | 0.1+ | 2005 12 04 | 691 | 0.2− | 0.1+ | | |
| 1997 02 04 | 691 | 0.2− | 0.4+ | 2004 08 10 | 704 | 0.6+ | 0.3− | 2005 12 04 | 691 | 0.0 | 0.1+ | | |
| 1997 02 04 | 691 | 0.1− | 0.3− | 2004 08 10 | 704 | 0.1+ | 0.0 | 2005 12 04 | 691 | 0.2+ | 0.0 | | |
| 1997 02 14 | 691 | 0.2− | 0.3− | 2004 08 10 | 704 | (0.4+ | 1.9+) | 2005 12 06 | 691 | 0.2− | 0.2− | | |
| 1997 02 14 | 691 | 0.4− | 0.5− | 2004 08 10 | 704 | 1.0− | 0.0 | 2005 12 06 | 691 | 0.2− | 0.0 | | |
| 1997 02 14 | 691 | 0.3− | 0.7− | 2004 08 10 | 704 | 0.2+ | 0.0 | 2005 12 06 | 691 | 0.2− | 0.0 | | |
| 2002 01 13 | 704 | 0.2+ | 1.4+ | 2004 08 10 | 704 | 0.1+ | 0.2− | 2006 10 20 | 695 | 0.2+ | 0.1+ | | |
| 2002 01 13 | 704 | (1.8+ | 1.3+) | 2004 08 10 | 704 | 0.3− | 0.4+ | 2006 10 20 | 695 | 0.3+ | 0.2− | | |
| 2002 01 13 | 704 | 1.2+ | 1.3+ | 2005 10 24 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2002 01 13 | 704 | (2.2+ | 0.9+) | 2005 10 24 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.6− | | |
| 2002 01 13 | 704 | (2.5+ | 1.8+) | 2005 10 24 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3− | 0.5− | | |
| 2002 02 07 | 704 | 0.9+ | 0.2+ | 2005 10 27 | G96 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.4− | 0.7− | | |
| 2002 02 07 | 704 | 0.7+ | 0.4− | 2005 10 27 | G96 | 0.0 | 0.4− | 2006 11 27 | G96 | 0.3− | 0.3− | | |
| 2002 02 07 | 704 | 0.4+ | 1.2+ | 2005 10 27 | G96 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.4+ | 0.2− | | |
| 2002 02 08 | 691 | 0.0 | 0.4+ | 2005 10 27 | G96 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.3− | | |
| 2002 02 08 | 691 | 0.0 | 0.0 | 2005 11 01 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.4− | | |
| 2002 02 08 | 691 | 0.3− | 0.4+ | 2005 11 01 | 691 | 0.2− | 0.2− | | | | | | |
| 2002 02 11 | 704 | 0.3+ | 0.5+ | 2005 11 01 | 691 | 0.1+ | 0.0 | | | | | | |

**(141463)∗ 2002 $CC_{127}$**

Discovered 2002 Feb. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.57045 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17512143 | $\omega$ | 310.00031 | | −0.01357102 | | −0.98573714 |
| $a$ | 3.1640489 | $\Omega$ | 139.80376 | | +0.97822396 | | −0.04783612 |
| $e$ | 0.2724901 | $i$ | 15.06438 | | +0.20710795 | | +0.16135052 |
| $P$ | 5.63 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 699 | 0.6+ | 0.7− | 2002 02 13 | 704 | 0.4− | 0.4+ | 2002 04 17 | 704 | 0.3+ | 0.4− | | |
| 2001 12 18 | 699 | 0.1+ | 0.2− | 2002 02 13 | 704 | 0.3− | 0.9+ | 2002 04 17 | 704 | 0.4+ | 0.6+ | | |
| 2001 12 18 | 699 | 0.6+ | 0.9− | 2002 02 13 | 704 | 0.3− | 0.6+ | 2002 04 17 | 704 | 0.8+ | 0.8− | | |
| 2001 12 18 | 704 | 0.7+ | 0.7− | 2002 02 20 | 704 | 0.1+ | 0.2− | 2002 04 17 | 704 | 0.0 | 0.2− | | |
| 2001 12 18 | 704 | 0.0 | 0.1+ | 2002 02 20 | 704 | 0.0 | 0.1− | 2003 06 02 | 691 | 0.1+ | 0.1− | | |
| 2001 12 18 | 699 | 0.9+ | 0.2+ | 2002 02 20 | 704 | 0.2− | 0.3+ | 2003 06 02 | 691 | 0.0 | 0.5− | | |
| 2001 12 18 | 704 | 0.3+ | 0.6− | 2002 02 20 | 704 | 0.2− | 0.3+ | 2003 06 02 | 691 | 0.5− | 0.2+ | | |
| 2001 12 18 | 704 | 1.0+ | 0.3+ | 2002 02 20 | 704 | 0.4− | 0.3+ | 2005 07 01 | 691 | 0.0 | 0.7+ | | |
| 2001 12 18 | 704 | 0.5+ | 0.1− | 2002 02 21 | 049 | 0.1+ | 0.1− | 2005 07 01 | 691 | 0.5+ | 0.9+ | | |
| 2002 01 04 | 608 | 0.7− | 1.0− | 2002 02 21 | 049 | 0.5+ | 0.1− | 2005 07 01 | 691 | 0.3− | 1.0+ | | |
| 2002 01 04 | 608 | 0.4− | 1.1− | 2002 02 21 | 049 | 0.2+ | 0.1+ | 2005 07 09 | 691 | 0.0 | 0.8+ | | |
| 2002 01 04 | 608 | 0.4− | 1.0− | 2002 03 04 | 699 | 0.1+ | 0.1− | 2005 07 09 | 691 | 0.1− | 0.8+ | | |
| 2002 01 08 | 644 | 0.2+ | 0.2+ | 2002 03 04 | 699 | 0.6− | 0.1+ | 2005 07 09 | 691 | 0.0 | 0.6+ | | |
| 2002 01 08 | 644 | 0.0 | 0.0 | 2002 03 04 | 699 | 0.8− | 0.1+ | 2005 08 06 | 644 | 0.0 | 0.9+ | | |
| 2002 01 08 | 644 | 0.2+ | 0.1+ | 2002 03 04 | 699 | 1.2− | 0.1− | 2005 08 06 | 644 | 0.1− | 0.5+ | | |
| 2002 01 11 | 644 | 0.2+ | 0.0 | 2002 03 05 | 644 | 0.5+ | 1.4+ | 2005 08 06 | 644 | 0.2+ | 0.9+ | | |
| 2002 01 11 | 644 | 0.0 | 0.1+ | 2002 03 05 | 644 | 0.4+ | 1.3+ | 2005 10 28 | G96 | 0.5− | 0.7+ | | |
| 2002 01 11 | 644 | 0.1+ | 0.1+ | 2002 03 05 | 644 | 0.7+ | 1.2+ | 2005 10 28 | G96 | 0.2− | 0.2− | | |
| 2002 01 14 | 704 | 0.6− | 0.1+ | 2002 03 06 | 704 | 0.4+ | 0.5+ | 2005 10 28 | G96 | 0.0 | 0.1− | | |
| 2002 01 14 | 704 | 0.1− | 0.3+ | 2002 03 06 | 704 | 0.3+ | 0.8+ | 2005 10 28 | G96 | 0.1+ | 0.4+ | | |
| 2002 01 14 | 704 | 0.1− | 0.8+ | 2002 03 06 | 704 | 0.6+ | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.3+ | | |
| 2002 01 14 | 704 | 0.1+ | 0.7+ | 2002 03 06 | 704 | 0.3+ | 1.1+ | 2006 09 26 | 703 | 0.2− | 0.3+ | | |
| 2002 01 14 | 704 | 0.3− | 0.5+ | 2002 03 09 | 704 | (1.2− | 2.8−) | 2006 09 26 | 703 | 0.0 | 0.2− | | |
| 2002 01 22 | 704 | 0.3+ | 0.6+ | 2002 03 09 | 704 | (0.7− | 2.7−) | 2006 09 26 | 703 | 0.5− | 0.1+ | | |
| 2002 01 22 | 704 | 0.3− | 0.1+ | 2002 03 09 | 704 | (2.5− | 2.0−) | 2006 10 02 | 703 | 0.2− | 0.5+ | | |
| 2002 01 22 | 704 | 0.6+ | 0.0 | 2002 03 09 | 704 | (0.2− | 2.3−) | 2006 10 02 | 703 | 0.6+ | 1.3+ | | |
| 2002 02 03 | 608 | 0.2− | 0.2− | 2002 03 12 | 644 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.2+ | 0.0 | | |
| 2002 02 03 | 608 | 0.3− | 0.1− | 2002 03 12 | 644 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.5+ | 1.0+ | | |
| 2002 02 03 | 608 | 0.5− | 0.1+ | 2002 03 12 | 644 | 0.2− | 0.1+ | 2006 10 31 | 703 | 0.3− | 0.3− | | |
| 2002 02 07 | 704 | 0.1− | 0.4+ | 2002 03 14 | 704 | 0.7− | 0.5+ | 2006 10 31 | 703 | 0.6+ | 0.4+ | | |
| 2002 02 07 | 704 | 0.3− | 0.3+ | 2002 03 14 | 704 | 0.5− | 1.2+ | 2006 10 31 | 703 | 0.2− | 0.3− | | |
| 2002 02 07 | 704 | 0.1− | 0.2+ | 2002 03 14 | 704 | 1.0− | 1.4+ | 2006 10 31 | 703 | 0.4− | 0.0 | | |
| 2002 02 07 | 704 | 0.5− | 0.2+ | 2002 03 14 | 704 | 1.0− | 1.5+ | 2006 11 17 | 703 | 0.3+ | 0.3− | | |
| 2002 02 07 | 608 | 0.6+ | 0.5+ | 2002 03 16 | 704 | 0.3− | 1.0+ | 2006 11 17 | 703 | 0.5− | 0.1+ | | |
| 2002 02 07 | 608 | 0.6+ | 0.5+ | 2002 03 16 | 704 | 0.6+ | 1.1+ | 2006 11 17 | 703 | 0.4− | 0.9+ | | |
| 2002 02 07 | 608 | 0.9+ | 0.6+ | 2002 03 16 | 704 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.6− | | |
| 2002 02 11 | 704 | (0.1− | 1.5+) | 2002 03 16 | 704 | 0.6+ | 0.9+ | 2006 11 23 | 703 | 0.8+ | 0.6− | | |
| 2002 02 11 | 704 | (0.8+ | 1.5+) | 2002 03 16 | 704 | (0.1− | 1.6+) | 2006 11 23 | 703 | 0.2− | 0.4− | | |
| 2002 02 11 | 704 | (0.9+ | 1.8+) | 2002 03 19 | 699 | 0.0 | 1.2+ | 2006 11 23 | 703 | 0.6− | 0.4+ | | |
| 2002 02 11 | 704 | (1.0+ | 1.9+) | 2002 03 19 | 699 | 0.2+ | 0.1− | 2006 11 23 | 703 | 0.1+ | 0.1+ | | |
| 2002 02 13 | 704 | 0.1− | 0.8+ | 2002 03 19 | 699 | 0.1− | 0.3− | | | | | | |
| 2002 02 13 | 704 | 0.7− | 0.6+ | 2002 03 19 | 699 | 0.3+ | 0.1+ | | | | | | |

**(141464)∗ 2002 $CS_{140}$**

Discovered 2002 Feb. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.94594 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19159793 | $\omega$ | 175.63987 | | +0.05338449 | | −0.98729418 |
| $a$ | 2.9799490 | $\Omega$ | 271.25082 | | +0.91158708 | | +0.10936627 |
| $e$ | 0.0626979 | $i$ | 8.60971 | | +0.40762617 | | −0.11527887 |
| $P$ | 5.14 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.4− | 0.1− | 2005 09 26 | 644 | 0.0 | 0.1+ | 2005 10 28 | 703 | 1.1+ | 1.4− | | |
| 2001 12 17 | 704 | 0.3+ | 0.3+ | 2005 09 26 | 644 | 0.1+ | 0.1+ | 2005 10 28 | 703 | 0.6+ | 0.4− | | |
| 2001 12 17 | 704 | 0.2− | 0.7+ | 2005 09 26 | 644 | 0.1+ | 0.3+ | 2005 10 28 | 703 | 0.4− | 0.4+ | | |
| 2001 12 17 | 704 | 0.3+ | 1.2+ | 2005 09 30 | 699 | 0.7+ | 0.3− | 2005 12 01 | 695 | 0.0 | 0.1+ | | |
| 2001 12 17 | 704 | 0.3+ | 0.0 | 2005 09 30 | 699 | 0.6− | 0.8− | 2005 12 02 | 695 | 0.1+ | 0.2+ | | |
| 2002 01 08 | 644 | 0.5+ | 0.3+ | 2005 09 30 | 699 | 0.0 | 0.2− | 2005 12 02 | 695 | 0.1+ | 0.3+ | | |
| 2002 01 08 | 644 | 0.4+ | 0.0 | 2005 09 30 | 699 | 1.1− | 0.7+ | 2006 09 24 | 691 | 0.2− | 0.0 | | |
| 2002 01 08 | 644 | 0.4+ | 0.0 | 2005 10 02 | 644 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.2− | 0.0 | | |
| 2002 02 08 | 704 | 0.4− | 0.0 | 2005 10 02 | 644 | 0.0 | 0.3+ | 2006 09 24 | 691 | 0.0 | 0.1+ | | |
| 2002 02 08 | 704 | (1.7+ | 0.0 ) | 2005 10 02 | 644 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.9− | 0.8− | | |
| 2002 02 08 | 704 | 1.4+ | 1.1+ | 2005 10 05 | 703 | 0.1+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.4+ | 0.6− | 2005 10 05 | 703 | (1.4+ | 1.7+) | 2006 09 28 | G96 | 0.4+ | 0.4− |
| 2002 02 11 | 704 | 0.4− | 0.7+ | 2005 10 05 | 703 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.4+ |
| 2002 02 11 | 704 | 0.3+ | 0.1− | 2005 10 05 | 703 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2002 02 11 | 704 | 0.6− | 0.5− | 2005 10 10 | A50 | 0.7− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2002 02 11 | 704 | 1.0− | 0.3+ | 2005 10 10 | A50 | 0.7− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.5− |
| 2004 07 11 | 704 | 0.1− | 0.1+ | 2005 10 12 | 704 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2004 07 11 | 704 | 0.2+ | 0.3+ | 2005 10 12 | 704 | 0.3+ | 1.0+ | 2006 11 16 | G96 | 0.3− | 0.7− |
| 2004 07 11 | 704 | 0.3− | 0.2+ | 2005 10 12 | 704 | 1.1− | 1.0+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2005 09 23 | 703 | (1.6− | 1.5+) | 2005 10 22 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2005 09 23 | 703 | 0.4− | 1.1− | 2005 10 22 | 644 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2005 09 23 | 703 | 0.7− | 0.9− | 2005 10 22 | 644 | 0.5+ | 0.4+ | | | | |
| 2005 09 23 | 703 | 0.7+ | 0.2− | 2005 10 28 | 703 | 0.4− | 0.1− | | | | |

**(141465)∗ 2002 CC$_{141}$ = 1997 JM$_3$**

Discovered 2002 Feb. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 27523)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 301.97266 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17187869 | $\omega$ | 269.39574 | | | −0.63577422 | | −0.77036277 | |
| $a$ | 3.2037211 | $\Omega$ | 220.21607 | | | +0.73459993 | | −0.58467769 | |
| $e$ | 0.1190661 | $i$ | 4.28955 | | | +0.23696850 | | −0.25434856 | |
| $P$ | 5.73 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 05 | 691 | 0.3+ | 0.2− | 2002 02 16 | 644 | 0.2+ | 0.2+ | 2005 08 29 | 691 | 0.6+ | 0.3+ |
| 1997 05 05 | 691 | 0.6+ | 0.4− | 2002 02 16 | 644 | 0.2+ | 0.2+ | 2005 10 01 | 703 | 0.7− | 0.4− |
| 1997 05 05 | 691 | 0.4+ | 0.1+ | 2002 03 05 | 699 | 1.0+ | 1.2+ | 2005 10 01 | 703 | 0.3− | 0.4+ |
| 1997 05 06 | 691 | 0.4− | 0.2− | 2002 03 05 | 699 | 0.3+ | 0.4− | 2005 10 01 | 703 | 1.1− | 0.1+ |
| 1997 05 06 | 691 | 0.4− | 0.0 | 2002 03 05 | 699 | 0.5− | 0.8− | 2005 10 01 | 703 | 1.3− | 0.7+ |
| 1997 05 06 | 691 | 0.4− | 0.1+ | 2002 03 05 | 699 | 0.1− | 0.9+ | 2005 10 30 | G96 | 0.2− | 0.1− |
| 2002 01 11 | 704 | 0.3+ | 0.6+ | 2002 03 06 | 644 | 0.3+ | 0.0 | 2005 10 30 | G96 | 0.1− | 0.1− |
| 2002 01 11 | 704 | 0.5− | 0.5+ | 2002 03 06 | 644 | 0.1+ | 0.2− | 2005 10 30 | G96 | 0.2+ | 0.0 |
| 2002 01 11 | 704 | 0.2− | 0.0 | 2002 03 06 | 644 | 0.1− | 0.1+ | 2005 10 30 | G96 | 0.3− | 0.0 |
| 2002 01 11 | 704 | (2.3+ | 0.8+) | 2002 03 13 | 704 | (0.2− | 1.6+) | 2006 11 01 | A13 | 0.2− | 0.0 |
| 2002 02 06 | 644 | 0.1+ | 0.1− | 2002 03 13 | 704 | 0.3− | 0.9+ | 2006 11 02 | A13 | 0.0 | 0.5+ |
| 2002 02 06 | 644 | 0.2+ | 0.0 | 2002 03 13 | 704 | 0.6+ | 0.2+ | 2006 11 02 | A13 | 0.5− | 0.5− |
| 2002 02 06 | 644 | 0.0 | 0.2+ | 2002 03 13 | 704 | 0.2+ | 1.0+ | 2006 11 11 | 691 | 0.1+ | 0.3− |
| 2002 02 08 | 704 | 1.0+ | 0.0 | 2002 03 15 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.4− |
| 2002 02 08 | 704 | 0.2− | 0.1− | 2002 03 15 | 704 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.3− | 0.2− |
| 2002 02 08 | 704 | 0.9+ | 0.3+ | 2002 03 15 | 704 | (0.1+ | 1.7+) | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2002 02 11 | 704 | 0.1− | 0.2− | 2002 03 15 | 704 | 0.5+ | 0.9+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 02 11 | 704 | 0.3+ | 0.1− | 2003 06 02 | 807 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2002 02 11 | 704 | 1.3− | 0.5+ | 2003 06 02 | 807 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.4+ |
| 2002 02 11 | 704 | 1.1− | 1.3+ | 2005 08 29 | 691 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.7+ | 0.7+ |
| 2002 02 16 | 644 | 0.3− | 0.2+ | 2005 08 29 | 691 | 0.4− | 0.8+ | 2006 11 29 | 704 | 0.7+ | 0.2+ |

**(141466)∗ 2002 CU$_{145}$**

Discovered 2002 Feb. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 301.71577 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.35253192 | $\omega$ | 281.88299 | | | +0.13282822 | | −0.98045641 | |
| $a$ | 1.9845883 | $\Omega$ | 158.76365 | | | +0.99113625 | | +0.13104633 | |
| $e$ | 0.0876872 | $i$ | 23.61974 | | | +0.00236824 | | +0.14673814 | |
| $P$ | 2.80 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 12 | 704 | 0.4+ | 0.2− | 2002 03 11 | 644 | 0.1+ | 0.3+ | 2005 03 08 | 704 | 0.1− | 0.7− |
| 2002 01 12 | 704 | 1.4+ | 0.6− | 2002 03 11 | 644 | 0.4+ | 0.1+ | 2005 03 13 | 703 | 1.1+ | 0.2− |
| 2002 01 12 | 704 | (1.7+ | 0.4−) | 2002 03 11 | 644 | 0.1+ | 0.4+ | 2005 03 13 | 703 | 0.1+ | 0.2− |
| 2002 02 09 | 704 | 0.5+ | 0.5− | 2002 03 11 | 644 | 0.3+ | 0.3+ | 2005 03 13 | 703 | 0.6− | 0.0 |
| 2002 02 09 | 291 | 0.0 | 0.2− | 2002 03 11 | 644 | 0.1+ | 1.2+ | 2005 03 13 | 703 | 1.0− | 0.4+ |
| 2002 02 09 | 704 | 0.2+ | 0.0 | 2002 03 11 | 644 | 1.0+ | 0.6+ | 2005 04 02 | 703 | 0.5+ | 0.3− |
| 2002 02 09 | 704 | 0.2− | 0.0 | 2002 03 12 | 644 | 0.0 | 0.5+ | 2005 04 02 | 703 | (4.5− | 0.8+) |
| 2002 02 09 | 291 | 0.1+ | 0.0 | 2002 03 12 | 644 | 0.3+ | 0.3+ | 2005 04 02 | 703 | 0.0 | 0.3− |
| 2002 02 09 | 704 | 0.2+ | 0.1+ | 2002 03 12 | 644 | 0.3+ | 0.5+ | 2005 04 02 | 703 | 0.8− | 0.2+ |
| 2002 02 09 | 291 | 0.1+ | 0.0 | 2002 03 18 | 608 | (1.1− | 2.3+) | 2005 04 17 | 703 | 0.8+ | 0.0 |
| 2002 02 09 | 704 | 0.0 | 0.3− | 2002 03 18 | 608 | (1.1− | 2.6+) | 2005 04 17 | 703 | 0.2− | 0.2− |
| 2002 02 11 | 704 | 0.4+ | 0.7+ | 2002 03 18 | 608 | (0.8− | 2.3+) | 2005 04 17 | 703 | 0.7− | 1.2+ |
| 2002 02 11 | 704 | 0.5+ | 0.5+ | 2002 04 01 | 644 | 0.0 | 0.5+ | 2005 04 17 | 703 | 0.2− | 0.6− |
| 2002 02 11 | 704 | 0.4+ | 0.7+ | 2002 04 01 | 644 | 0.1− | 0.3+ | 2005 05 05 | 644 | 0.1− | 0.1− |
| 2002 02 12 | 333 | 0.1+ | 0.5+ | 2002 04 01 | 644 | 0.1− | 0.4+ | 2005 05 05 | 644 | 0.0 | 0.2− |
| 2002 02 12 | 333 | 0.9− | 0.8+ | 2003 08 22 | 704 | 0.2− | 0.4+ | 2005 05 05 | 644 | 0.3+ | 0.1− |
| 2002 02 12 | 691 | 0.3− | 0.1− | 2003 08 22 | 704 | 0.3− | 1.5+ | 2005 05 10 | 703 | 0.1+ | 0.4+ |
| 2002 02 12 | 691 | 0.4− | 0.2− | 2003 08 22 | 704 | (0.1− | 2.2+) | 2005 05 10 | 703 | 0.6− | 0.9+ |
| 2002 02 12 | 333 | 0.2+ | 0.5− | 2003 08 25 | 704 | (0.4− | 3.1+) | 2005 05 10 | 703 | (1.0− | 1.9−) |
| 2002 02 12 | 691 | 0.4− | 0.3− | 2003 08 25 | 704 | (1.0− | 2.8+) | 2005 05 10 | 703 | 0.7− | 0.2− |
| 2002 02 12 | 704 | 0.4− | 1.5+ | 2003 08 25 | 704 | 1.2+ | 1.2+ | 2006 09 22 | 703 | 0.4− | 0.8+ |
| 2002 02 12 | 704 | (0.6+ | 1.9+) | 2003 08 25 | 704 | 0.6+ | 0.5+ | 2006 09 22 | 703 | 0.5− | 0.6+ |
| 2002 02 12 | 704 | (0.1− | 1.8+) | 2003 08 28 | 644 | 0.1− | 0.8+ | 2006 09 22 | 703 | 0.5− | 0.2− |
| 2002 02 12 | 704 | (0.6− | 2.0+) | 2003 08 28 | 644 | 0.1+ | 0.8+ | 2006 09 24 | 699 | (1.9+ | 1.1+) |
| 2002 02 12 | 704 | (1.5+ | 2.6+) | 2003 08 28 | 644 | 0.3+ | 1.3+ | 2006 09 24 | 699 | 0.1+ | 0.1+ |
| 2002 02 20 | 704 | 0.1− | 0.1+ | 2003 09 17 | 704 | 0.1− | 0.9+ | 2006 09 24 | 699 | (1.6− | 1.4+) |
| 2002 02 20 | 704 | 0.4− | 0.1+ | 2003 09 17 | 704 | 1.1− | 0.6+ | 2006 09 24 | 699 | 0.3+ | 0.3+ |
| 2002 02 20 | 704 | 0.1− | 0.4+ | 2003 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 11 | E12 | 0.7+ | 0.4+ |
| 2002 02 20 | 704 | 0.4− | 0.3+ | 2003 09 17 | 608 | 0.6− | 0.0 | 2006 10 11 | E12 | 0.1− | 0.2− |
| 2002 02 20 | 704 | 0.3− | 0.1+ | 2003 09 17 | 608 | 0.5− | 0.5+ | 2006 10 11 | E12 | 0.4+ | 0.4+ |
| 2002 02 24 | 644 | 0.4+ | 1.1+ | 2003 09 17 | 608 | 0.0 | 0.1+ | 2006 10 11 | E12 | 0.0 | 0.3− |
| 2002 02 24 | 644 | 0.6+ | 1.2+ | 2003 09 21 | 608 | 0.0 | 0.0 | 2006 10 30 | E12 | 1.1− | 0.6+ |
| 2002 02 24 | 644 | 0.5+ | 1.1+ | 2003 09 21 | 608 | 0.3+ | 0.5− | 2006 10 30 | E12 | 0.1− | 0.4+ |
| 2002 03 10 | 608 | 0.0 | 0.1− | 2003 09 21 | 608 | 0.0 | 0.3+ | 2006 10 30 | E12 | 1.0+ | 1.3+ |
| 2002 03 10 | 608 | 0.7− | 0.8+ | 2005 03 08 | 704 | 1.0+ | 0.2+ | 2006 10 30 | E12 | 0.3+ | 0.4− |
| 2002 03 10 | 608 | 0.5− | 0.5+ | 2005 03 08 | 704 | 0.7+ | 0.6+ | | | | |

**(141467)∗ 2002 CO$_{152}$**

Discovered 2002 Feb. 7 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 275.45591 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17240432 | $\omega$ | 272.33595 | | | −0.94898573 | | +0.22692751 | |
| $a$ | 3.1972060 | $\Omega$ | 280.83955 | | | −0.11619507 | | −0.89712155 | |
| $e$ | 0.1718506 | $i$ | 12.87980 | | | −0.29312932 | | −0.37904726 | |
| $P$ | 5.72 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.0 | 0.3+ | 2002 04 09 | 704 | 0.5+ | 0.8+ | 2005 11 21 | 703 | 0.4− | 0.7− |
| 2001 01 19 | 704 | 0.6− | 0.3+ | 2002 04 09 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2001 01 19 | 704 | 0.6+ | 0.7+ | 2002 04 09 | 704 | 0.9− | 0.3− | 2006 09 25 | 691 | 0.9+ | 0.9+ |
| 2002 02 07 | 608 | 0.3− | 0.1+ | 2002 05 09 | 704 | (1.7+ | 0.2−) | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2002 02 07 | 608 | 0.2− | 0.2− | 2002 05 09 | 704 | 0.6+ | 0.1− | 2006 10 23 | G96 | 0.8− | 1.4− |
| 2002 02 07 | 608 | 0.3− | 0.5− | 2002 05 09 | 704 | (1.7+ | 0.1+) | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2002 02 11 | 644 | 0.4+ | 0.7+ | 2005 10 25 | 703 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.5− | 1.2− |
| 2002 02 11 | 644 | 0.5+ | 0.5+ | 2005 10 25 | 703 | 1.0+ | 0.4+ | 2006 10 23 | G96 | 0.9− | 0.7− |
| 2002 02 11 | 644 | 0.2+ | 0.2+ | 2005 10 25 | 703 | 0.5+ | 0.8+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 03 21 | 699 | 0.1− | 0.5− | 2005 10 25 | 703 | 0.5+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 03 21 | 699 | 0.1− | 0.0 | 2005 11 02 | 703 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2002 03 21 | 699 | 0.5+ | 0.7+ | 2005 11 02 | 703 | 0.9− | 0.9+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2002 03 21 | 699 | 0.3+ | 0.3− | 2005 11 02 | 703 | 0.7− | 1.2+ | 2006 12 01 | G96 | 0.6− | 0.3− |
| 2002 03 25 | 704 | 0.1+ | 0.3+ | 2005 11 02 | 703 | 0.5+ | 0.9− | 2006 12 01 | G96 | 0.5− | 0.3− |
| 2002 03 25 | 704 | 0.1− | 0.2+ | 2005 11 21 | 703 | 0.7− | 0.8− | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2002 03 25 | 704 | 0.6− | 1.0− | 2005 11 21 | 703 | 0.1− | 1.4+ | 2006 12 01 | G96 | 0.6− | 0.1− |
| 2002 04 09 | 704 | (3.2+ | 1.3−) | 2005 11 21 | 703 | 0.0 | 0.4− | | | | |

**(141468)∗ 2002 CL$_{161}$**

Discovered 2002 Feb. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.45360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28290685 | $\omega$ | 27.66254 | | +0.06753961 | −0.99657696 | |
| $a$ | 2.2981255 | $\Omega$ | 58.50034 | | +0.90475165 | +0.04103549 | |
| $e$ | 0.1293821 | $i$ | 3.20522 | | +0.42055065 | +0.07176661 | |
| $P$ | 3.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 30 | I03 | 0.1+ | 0.6+ | 2004 10 07 | 699 | 0.8− | 0.6+ | 2004 12 18 | G96 | 0.0 | 0.1− |
| 2000 06 30 | I03 | 0.1− | 0.9+ | 2004 10 07 | 699 | 0.5+ | 0.8+ | 2004 12 18 | G96 | 0.0 | 0.7− |
| 2000 06 30 | I03 | 0.4− | 0.8+ | 2004 10 07 | 699 | 0.9− | 0.1− | 2006 03 25 | 691 | 0.3+ | 0.1− |
| 2000 07 31 | 807 | 0.6− | 0.7+ | 2004 10 07 | 699 | 0.1− | 0.9− | 2006 03 25 | 691 | 0.5+ | 0.1− |
| 2000 07 31 | 807 | 0.6− | 0.8+ | 2004 10 09 | 704 | 0.3− | 0.6− | 2006 03 25 | 691 | 0.2+ | 0.1+ |
| 2002 01 09 | 704 | 0.1+ | 0.0 | 2004 10 09 | 704 | 1.1− | 1.5+ | 2006 04 02 | 691 | 0.1+ | 0.4+ |
| 2002 01 09 | 704 | 0.7+ | 0.2+ | 2004 10 09 | 704 | 0.6− | 0.1+ | 2006 04 02 | 691 | 0.1− | 0.4+ |
| 2002 01 09 | 704 | 0.1+ | 0.1− | 2004 10 20 | 704 | 0.7+ | 1.3+ | 2006 04 02 | 691 | 0.1− | 0.2+ |
| 2002 02 04 | 644 | 0.1+ | 0.4− | 2004 10 20 | 704 | 0.1+ | 1.1+ | 2006 04 02 | 691 | 0.2− | 0.5+ |
| 2002 02 04 | 644 | 0.0 | 0.2− | 2004 10 20 | 704 | 0.4− | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.3+ |
| 2002 02 04 | 644 | 0.1− | 0.5− | 2004 10 20 | 704 | 0.3+ | 1.0+ | 2006 04 02 | 691 | 0.0 | 0.3+ |
| 2002 02 08 | 704 | 0.3− | 1.3+ | 2004 10 20 | 704 | 1.1+ | 0.9+ | 2006 04 07 | 691 | 0.3+ | 0.1+ |
| 2002 02 08 | 704 | 0.6− | 0.6+ | 2004 11 03 | 644 | 0.2− | 0.3+ | 2006 04 07 | 691 | 0.2+ | 0.1− |
| 2002 02 08 | 704 | 0.3+ | 0.7+ | 2004 11 03 | 644 | 0.1− | 0.3+ | 2006 04 07 | 691 | 0.2+ | 0.0 |
| 2002 02 08 | 704 | 0.1− | 0.2− | 2004 11 03 | 644 | 0.2− | 0.2+ | 2006 04 26 | 691 | 0.0 | 0.3+ |
| 2002 02 08 | 704 | 0.2+ | 0.0 | 2004 11 04 | 703 | 0.5− | 1.1+ | 2006 04 26 | 691 | 0.0 | 0.3+ |
| 2002 02 12 | 704 | 0.3+ | 0.5+ | 2004 11 04 | 703 | 0.0 | 0.5+ | 2006 04 26 | 691 | 0.1+ | 0.4+ |
| 2002 02 12 | 704 | 0.1− | 0.2− | 2004 11 04 | 703 | 0.7− | 0.0 | 2006 05 02 | G96 | 0.4− | 0.1− |
| 2002 02 12 | 704 | 0.1+ | 1.0+ | 2004 11 04 | 703 | 0.0 | 0.9+ | 2006 05 02 | G96 | 0.0 | 0.0 |
| 2002 02 12 | 704 | 0.2+ | 0.3+ | 2004 11 07 | 704 | 0.8− | 0.3− | 2006 05 02 | G96 | 0.7− | 0.0 |
| 2002 03 12 | 644 | 0.1+ | 0.2− | 2004 11 07 | 704 | 0.3+ | 1.1+ | 2006 05 02 | G96 | 0.3− | 0.1− |
| 2002 03 12 | 644 | 0.0 | 0.0 | 2004 11 07 | 704 | (0.1+ | 4.3+) | 2006 05 22 | G96 | 0.1+ | 0.2− |
| 2002 03 12 | 644 | 0.0 | 0.4− | 2004 11 07 | 704 | 0.1+ | 0.0 | 2006 05 22 | G96 | 0.4− | 0.2+ |
| 2004 10 06 | 644 | 0.0 | 0.3+ | 2004 11 07 | 704 | 0.0 | 0.7+ | 2006 05 22 | G96 | 0.5− | 0.1− |
| 2004 10 06 | 644 | 0.2− | 0.3+ | 2004 12 18 | G96 | 0.1+ | 0.3− | 2006 05 22 | G96 | 0.6+ | 0.1− |
| 2004 10 06 | 644 | 0.5− | 0.9+ | 2004 12 18 | G96 | 0.1− | 0.4− | | | | |

**(141469)∗ 2002 CO$_{163}$**

Discovered 2002 Feb. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.18712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26325160 | $\omega$ | 97.63404 | | −0.95571924 | −0.29022506 | |
| $a$ | 2.4111378 | $\Omega$ | 65.50490 | | +0.24448529 | −0.87514091 | |
| $e$ | 0.1515872 | $i$ | 3.06675 | | +0.16379159 | −0.38716637 | |
| $P$ | 3.74 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 691 | 0.3− | 0.2− | 2002 02 12 | 704 | 0.3− | 0.4+ | 2004 10 15 | 691 | 0.0 | 0.2+ |
| 2000 09 29 | 691 | 0.2− | 0.8+ | 2002 02 12 | 704 | 0.6+ | 0.8− | 2004 10 15 | 691 | 0.1− | 0.5+ |
| 2000 09 29 | 691 | 0.1− | 0.5+ | 2002 02 12 | 704 | 0.9+ | 0.1− | 2006 04 02 | 691 | 0.5+ | 0.2+ |
| 2002 01 06 | 691 | 0.2− | 0.4− | 2002 02 12 | 704 | 0.2+ | 0.7+ | 2006 04 02 | 691 | 0.6+ | 0.2+ |
| 2002 01 06 | 691 | 0.4− | 0.4− | 2002 02 14 | 644 | 0.5+ | 0.3+ | 2006 04 02 | 691 | 0.5+ | 0.2+ |
| 2002 01 06 | 691 | 0.5− | 0.4− | 2002 02 14 | 644 | 0.3+ | 0.0 | 2006 04 08 | G96 | 0.3− | 0.1+ |
| 2002 01 14 | 704 | 0.7+ | 0.4− | 2002 02 14 | 644 | 0.3+ | 0.0 | 2006 04 08 | G96 | 0.3− | 0.2+ |
| 2002 01 14 | 704 | 0.8+ | 0.1+ | 2002 03 12 | 644 | 0.0 | 0.9− | 2006 04 08 | G96 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 0.5+ | 0.0 | 2002 03 12 | 644 | 0.3+ | 0.4+ | 2006 04 09 | G96 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 0.4− | 0.6− | 2002 03 12 | 644 | 0.1− | 0.7− | 2006 04 09 | G96 | 0.4− | 0.0 |
| 2002 02 04 | 644 | 0.3+ | 0.1+ | 2002 03 12 | 644 | 0.8+ | 0.0 | 2006 04 09 | G96 | 0.4− | 0.0 |
| 2002 02 04 | 644 | 0.3+ | 0.0 | 2002 03 12 | 644 | 0.3+ | 0.7− | 2006 04 09 | G96 | 0.1− | 0.2+ |
| 2002 02 04 | 644 | 0.1− | 0.2+ | 2002 03 12 | 644 | 0.8+ | 0.2+ | 2006 04 21 | 691 | 0.0 | 0.4+ |
| 2002 02 05 | 699 | 0.6− | 0.7+ | 2002 03 13 | 644 | 0.2+ | 0.8+ | 2006 04 21 | 691 | 0.3+ | 0.5+ |
| 2002 02 05 | 699 | 0.2+ | 0.2− | 2002 03 13 | 644 | 0.2+ | 0.5+ | 2006 04 21 | 691 | 0.1− | 1.0+ |
| 2002 02 05 | 699 | 0.8− | 0.2+ | 2002 03 13 | 644 | 0.1+ | 0.9+ | 2006 05 25 | G96 | 0.6− | 0.3+ |
| 2002 02 05 | 699 | 1.0− | 0.3+ | 2004 10 04 | 691 | 0.2− | 0.4+ | 2006 05 25 | G96 | 0.0 | 0.2+ |
| 2002 02 08 | 704 | 0.8− | 1.5+ | 2004 10 04 | 691 | 0.1+ | 0.1+ | 2006 05 25 | G96 | 0.5− | 0.3+ |
| 2002 02 08 | 704 | 0.3− | 0.6+ | 2004 10 04 | 691 | 0.7− | 0.6+ | 2006 05 25 | G96 | 0.0 | 0.1− |
| 2002 02 08 | 704 | (2.3− | 0.9+) | 2004 10 15 | 691 | 0.1+ | 0.6+ | | | | |

**(141470)∗ 2002 CH$_{183}$ = 2005 SF$_{238}$**

Discovered 2002 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 89240)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.99666 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18601795 | $\omega$ | 265.30616 | | −0.54994358 | +0.83503528 | |
| $a$ | 3.0392481 | $\Omega$ | 331.31088 | | −0.75185112 | −0.50365776 | |
| $e$ | 0.0474979 | $i$ | 1.99091 | | −0.36370586 | −0.22146095 | |
| $P$ | 5.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 691 | 0.2− | 0.1+ | 2005 10 06 | G96 | 0.1+ | 0.5− | 2005 11 05 | G96 | 0.0 | 0.2− |
| 1999 08 07 | 691 | 0.3− | 0.2− | 2005 10 06 | G96 | 0.2− | 0.2− | 2005 11 05 | G96 | 0.0 | 0.0 |
| 1999 08 07 | 691 | 0.1+ | 0.1+ | 2005 10 06 | G96 | 0.1+ | 0.1− | 2005 11 10 | 291 | 0.3− | 0.3+ |
| 1999 08 12 | 691 | 0.2− | 0.3+ | 2005 10 06 | G96 | 0.1− | 0.3− | 2005 11 10 | 291 | 0.2− | 0.2+ |
| 1999 08 12 | 691 | (1.5+ | 3.2−) | 2005 10 09 | 691 | 0.2+ | 0.2+ | 2005 11 10 | 291 | 0.1− | 0.3+ |
| 1999 08 12 | 691 | 0.2− | 0.5+ | 2005 10 09 | 691 | 0.3− | 0.0 | 2005 11 10 | G96 | 0.0 | 0.1+ |
| 2002 01 21 | 691 | 0.4+ | 0.1+ | 2005 10 09 | 691 | 0.4− | 0.2+ | 2005 11 10 | G96 | 0.1+ | 0.1+ |
| 2002 01 21 | 691 | 0.3+ | 0.2+ | 2005 10 13 | 621 | 0.2+ | 0.3− | 2005 11 10 | G96 | 0.1− | 0.2− |
| 2002 01 21 | 691 | 0.3+ | 0.4+ | 2005 10 13 | 621 | 0.6− | 0.1+ | 2005 11 10 | G96 | 0.6+ | 0.4+ |
| 2002 02 10 | 691 | 0.3+ | 0.2− | 2005 10 13 | 621 | 1.1+ | 0.3+ | 2005 12 01 | 691 | 0.2+ | 0.0 |
| 2002 02 10 | 704 | 0.9+ | 1.0+ | 2005 10 13 | 691 | 0.1− | 0.3+ | 2005 12 01 | 691 | 0.1+ | 0.3− |
| 2002 02 10 | 704 | (0.4+ | 1.7+) | 2005 10 13 | 691 | 0.1− | 0.3+ | 2005 12 01 | 691 | 0.3+ | 0.2− |
| 2002 02 10 | 691 | 0.1− | 0.3+ | 2005 10 13 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.7− |
| 2002 02 10 | 704 | (0.7− | 1.8+) | 2005 10 23 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 2002 02 10 | 691 | 0.1− | 0.3+ | 2005 10 23 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 02 10 | 704 | (0.5+ | 2.4+) | 2005 10 23 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2002 02 10 | 704 | 0.6− | 1.3+ | 2005 10 29 | A50 | 1.0+ | 0.1− | 2006 10 31 | G96 | 0.7− | 0.2− |
| 2002 02 12 | 704 | 0.6− | 0.9+ | 2005 11 01 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.4+ |
| 2002 02 12 | 704 | 0.5− | 0.6− | 2005 11 01 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 02 12 | 704 | 0.5− | 0.8− | 2005 11 01 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2003 05 01 | 691 | 0.3+ | 0.4+ | 2005 11 03 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.4− | 0.1− |
| 2003 05 01 | 691 | 0.3+ | 0.6+ | 2005 11 03 | G96 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.0 |
| 2003 05 01 | 691 | 0.1− | 0.2+ | 2005 11 03 | G96 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.4− | 0.3− |
| 2005 09 29 | 691 | 0.2− | 0.1+ | 2005 11 03 | G96 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2005 09 29 | 691 | 0.1+ | 0.0 | 2005 11 05 | G96 | 0.1− | 0.4− | | | | |
| 2005 09 29 | 691 | 0.1+ | 0.2− | 2005 11 05 | G96 | 0.1− | 0.3− | | | | |

**(141471)∗ 2002 CW$_{205}$**

Discovered 2002 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.49813 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27392422 | $\omega$ | 277.39134 | | +0.59882986 | −0.80078251 | |
| $a$ | 2.3480955 | $\Omega$ | 135.81487 | | +0.74155128 | +0.54862702 | |
| $e$ | 0.1713571 | $i$ | 1.00746 | | +0.30249711 | +0.24032429 | |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 291 | 0.1− | 0.0 | 2002 03 14 | 704 | 1.2+ | 0.1− | 2004 10 15 | 699 | 0.4+ | 0.8+ |
| 2002 02 08 | 291 | 0.2− | 0.1+ | 2002 03 14 | 704 | 0.9+ | 0.8+ | 2004 10 20 | 704 | 1.8+ | 0.7− |
| 2002 02 08 | 291 | 0.0 | 0.2+ | 2003 05 30 | 807 | 0.0 | 0.3+ | 2004 10 20 | 704 | 0.4+ | 0.0 |
| 2002 02 10 | 704 | 0.0 | 0.3+ | 2003 05 30 | 807 | 0.1+ | 0.4+ | 2004 10 20 | 704 | 0.0 | 0.5+ |
| 2002 02 10 | 704 | 0.2+ | 0.1− | 2004 10 04 | 691 | 0.2− | 0.1− | 2004 10 20 | 704 | 1.0+ | 0.5+ |
| 2002 02 10 | 704 | 0.6− | 0.6+ | 2004 10 04 | 691 | 0.1− | 0.3+ | 2004 10 20 | 704 | 1.0+ | 0.0 |
| 2002 02 10 | 704 | 0.2− | 0.4+ | 2004 10 04 | 691 | 0.2− | 0.1+ | 2004 11 07 | 704 | (0.4− | 2.2−) |
| 2002 02 12 | 704 | 0.5− | 0.7− | 2004 10 08 | 691 | 0.3− | 0.2+ | 2004 11 07 | 704 | 0.2+ | 0.4− |
| 2002 02 12 | 704 | 1.2− | 0.1− | 2004 10 08 | 691 | 0.2− | 0.2+ | 2004 11 07 | 704 | 0.1− | 0.6+ |
| 2002 02 12 | 704 | 0.2+ | 0.2+ | 2004 10 08 | 691 | 0.2− | 0.1+ | 2006 03 23 | 691 | 0.1− | 0.2− |
| 2002 02 12 | 704 | 0.2+ | 0.4− | 2004 10 09 | 704 | 0.3− | 1.0+ | 2006 03 23 | 691 | 0.1+ | 0.0 |
| 2002 02 12 | 704 | 0.1+ | 0.3− | 2004 10 09 | 704 | 1.5+ | 0.6+ | 2006 03 23 | 691 | 0.4+ | 0.1− |
| 2002 02 12 | 704 | 0.3− | 0.2− | 2004 10 09 | 704 | 1.0− | 1.0− | 2006 03 24 | G96 | 0.2+ | 0.6+ |
| 2002 02 12 | 704 | 0.1+ | 0.3− | 2004 10 09 | 704 | 0.6− | 0.0 | 2006 03 24 | G96 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 704 | 0.0 | 0.7− | 2004 10 09 | 704 | 0.4− | 0.8+ | 2006 03 24 | G96 | 0.4+ | 0.1+ |
| 2002 02 12 | 704 | 0.6+ | 0.2+ | 2004 10 12 | 691 | 0.3− | 0.0 | 2006 03 24 | G96 | 0.0 | 0.3+ |
| 2002 02 12 | 704 | 0.1+ | 0.5+ | 2004 10 12 | 691 | 0.4− | 0.1− | 2006 04 30 | 691 | 0.1− | 0.8+ |
| 2002 02 20 | 704 | 0.4+ | 0.0 | 2004 10 12 | 691 | 0.3− | 0.1− | 2006 04 30 | 691 | 0.1+ | 0.3+ |
| 2002 02 20 | 704 | 0.2+ | 0.1− | 2004 10 14 | 704 | 0.5+ | 0.3+ | 2006 04 30 | 691 | 0.3+ | 0.5+ |
| 2002 02 20 | 704 | 0.0 | 0.4− | 2004 10 14 | 704 | 0.0 | 0.1+ | 2006 05 01 | 691 | 0.6− | 0.1− |
| 2002 02 20 | 704 | 0.1+ | 0.5+ | 2004 10 14 | 704 | 0.4− | 0.2+ | 2006 05 01 | 691 | 0.6+ | 0.1− |
| 2002 02 20 | 704 | 0.1+ | 0.3− | 2004 10 14 | 704 | 0.2+ | 0.1− | 2006 05 01 | 691 | 0.4+ | 0.5+ |
| 2002 03 04 | 291 | 0.1− | 0.3− | 2004 10 14 | 704 | 0.2+ | 0.0 | 2006 05 19 | G96 | 0.0 | 0.1+ |
| 2002 03 04 | 291 | 0.2− | 0.2+ | 2004 10 15 | 699 | 0.9+ | 0.0 | 2006 05 19 | G96 | 0.0 | 0.3+ |
| 2002 03 04 | 291 | 0.1− | 0.1− | 2004 10 15 | 699 | 0.7+ | 1.1+ | 2006 05 19 | G96 | 0.5− | 0.3+ |
| 2002 03 14 | 704 | 0.9+ | 0.2− | 2004 10 15 | 699 | 0.3− | 0.2+ | 2006 05 19 | G96 | 0.3− | 0.3− |

**(141472)∗ 2002 CQ$_{207}$ = 2000 TT$_{46}$**

Discovered 2002 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 27547)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.51120 | | (2000.0) | | | |
| $n$ | 0.18924665 | $\omega$ | 1.06316 | | +0.36236676 | −0.93149617 |
| $a$ | 3.0045810 | $\Omega$ | 67.69184 | | +0.85487280 | +0.31862176 |
| $e$ | 0.2334969 | $i$ | 1.96391 | | +0.37132577 | +0.17548518 |
| $P$ | 5.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.5− | 0.4− | 2002 02 20 | 704 | 0.5+ | 0.2− | 2005 09 23 | 703 | (2.0− | 0.3+) |
| 1997 02 03 | 691 | 0.6− | 0.0 | 2002 02 20 | 704 | 0.3+ | 0.4+ | 2005 09 23 | 703 | (1.9− | 1.6−) |
| 1997 02 03 | 691 | 0.2− | 0.5+ | 2002 02 20 | 704 | 1.0+ | 0.3+ | 2005 09 23 | 703 | 0.9+ | 0.1− |
| 2000 10 01 | 699 | 0.1+ | 1.5+ | 2002 03 12 | 644 | 0.2− | 0.1+ | 2005 09 23 | 703 | 1.0− | 0.2− |
| 2000 10 01 | 699 | 0.3− | 1.0+ | 2002 03 12 | 644 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.0 |
| 2000 10 01 | 699 | 0.3− | 1.5+ | 2002 03 12 | 644 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2000 10 01 | 699 | (0.4+ | 2.6+) | 2002 03 14 | 704 | 0.5+ | 1.4+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 0.3+ | 0.9− | 2002 03 14 | 704 | 0.7+ | 0.9+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2000 10 02 | 704 | 0.8− | 1.3− | 2002 03 14 | 704 | 0.4+ | 1.2+ | 2006 10 03 | G96 | 0.7− | 0.5− |
| 2000 10 02 | 704 | 0.4+ | 0.2+ | 2002 03 14 | 704 | 1.0+ | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.6− |
| 2000 10 02 | 704 | 0.7+ | 0.1+ | 2002 03 14 | 704 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.6+ | 0.4− |
| 2002 02 10 | 704 | 0.5+ | 0.5+ | 2005 08 30 | 691 | 0.0 | 0.5+ | 2006 10 03 | G96 | 0.5− | 0.2+ |
| 2002 02 10 | 704 | 0.1+ | 0.6+ | 2005 08 30 | 691 | 0.1+ | 0.8+ | 2006 10 04 | G96 | 0.3− | 0.4− |
| 2002 02 10 | 704 | 0.5+ | 0.5+ | 2005 08 30 | 691 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2002 02 10 | 704 | 0.4+ | 0.4+ | 2005 09 07 | A50 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2002 02 10 | 704 | (1.2+ | 2.7+) | 2005 09 07 | A50 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.4− | 1.3− |
| 2002 02 12 | 704 | (0.3− | 2.0+) | 2005 09 14 | 691 | 0.2− | 0.3− | 2006 10 23 | G96 | 0.6− | 0.0 |
| 2002 02 12 | 704 | 0.6+ | 0.6+ | 2005 09 14 | 691 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2002 02 12 | 704 | 0.5+ | 0.8+ | 2005 09 14 | 691 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.5− | 0.4− |
| 2002 02 12 | 704 | 1.0+ | 1.0+ | 2005 09 22 | 644 | 0.4− | 0.5+ | 2006 10 23 | G96 | 0.5− | 0.1− |
| 2002 02 20 | 704 | 1.2+ | 0.2+ | 2005 09 22 | 644 | 0.5− | 0.4+ | | | | |
| 2002 02 20 | 704 | 0.5+ | 0.4+ | 2005 09 22 | 644 | 0.1+ | 0.8+ | | | | |

**(141473)∗ 2002 CE$_{215}$**

Discovered 2002 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.03277 | | (2000.0) | | | |
| $n$ | 0.18451914 | $\omega$ | 309.10196 | | +0.09976956 | −0.99438506 |
| $a$ | 3.0556840 | $\Omega$ | 135.13270 | | +0.92764519 | +0.08013334 |
| $e$ | 0.0840775 | $i$ | 2.86618 | | +0.35988949 | +0.06911580 |
| $P$ | 5.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 699 | 0.5− | 0.3+ | 2002 02 24 | 644 | 0.4+ | 0.2+ | 2005 10 10 | 691 | 0.4− | 0.1+ |
| 2000 11 20 | 699 | 0.2− | 0.7+ | 2002 02 24 | 644 | 0.5+ | 0.3+ | 2005 10 10 | 691 | 0.2− | 0.1+ |
| 2000 11 20 | 699 | 1.0− | 0.6+ | 2002 03 04 | 209 | 0.7− | 0.0 | 2005 10 10 | 691 | 0.2− | 0.0 |
| 2000 11 20 | 699 | 0.6+ | 1.0+ | 2002 03 04 | 209 | 1.0− | 0.2− | 2005 10 22 | 703 | 0.5+ | 0.7− |
| 2000 12 01 | 691 | 0.1+ | 0.2− | 2002 03 04 | 209 | 0.9− | 0.3− | 2005 10 22 | 703 | 0.3+ | 1.0+ |
| 2000 12 01 | 691 | 0.4+ | 0.2− | 2002 03 12 | 644 | 0.3+ | 0.2+ | 2005 10 22 | 703 | (1.9− | 0.2+) |
| 2000 12 01 | 691 | 0.1+ | 0.4− | 2002 03 12 | 644 | 0.4+ | 0.3+ | 2005 10 22 | 703 | 0.0 | 0.3+ |
| 2002 02 10 | 704 | 1.0− | 0.4+ | 2002 03 12 | 644 | 0.2+ | 0.3+ | 2005 10 28 | 703 | (0.2− | 1.5−) |
| 2002 02 10 | 704 | (1.6− | 0.2+) | 2002 03 20 | 695 | 0.2− | 0.2+ | 2005 10 28 | 703 | 1.2− | 0.3+ |
| 2002 02 10 | 704 | (1.7− | 1.6+) | 2002 03 20 | 695 | 0.1− | 0.2+ | 2005 10 28 | 703 | 0.1− | 0.1+ |
| 2002 02 10 | 704 | 1.0− | 1.5+ | 2004 07 21 | E12 | 0.6− | 0.6+ | 2005 10 28 | 703 | (0.6− | 1.8−) |
| 2002 02 12 | 704 | (1.7+ | 1.0+) | 2004 07 21 | E12 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.4− |
| 2002 02 12 | 704 | 0.7+ | 1.0− | 2004 07 21 | E12 | 0.6+ | 0.3+ | 2006 10 21 | G96 | 0.8+ | 0.4− |
| 2002 02 12 | 704 | (0.2+ | 1.6+) | 2004 07 21 | E12 | 0.4+ | 1.1+ | 2006 10 21 | G96 | 0.5+ | 0.8− |
| 2002 02 12 | 704 | 0.2+ | 0.4+ | 2005 09 25 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.7− |
| 2002 02 13 | 691 | 0.5+ | 0.3+ | 2005 09 25 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2002 02 13 | 691 | 0.5+ | 0.3+ | 2005 09 25 | 691 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.5− | 0.4− |
| 2002 02 13 | 691 | 0.3+ | 0.3+ | 2005 10 01 | 691 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2002 02 20 | 704 | (0.5− | 1.5−) | 2005 10 01 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2002 02 20 | 704 | 0.3+ | 0.6+ | 2005 10 01 | 691 | 0.0 | 0.2+ | 2006 11 28 | G96 | 0.2− | 0.5− |
| 2002 02 20 | 704 | 0.0 | 0.7+ | 2005 10 07 | 703 | (0.2+ | 2.2+) | 2006 11 28 | G96 | 0.1+ | 0.4− |
| 2002 02 20 | 704 | 1.2− | 0.1+ | 2005 10 07 | 703 | (1.6+ | 1.3+) | 2006 11 28 | G96 | 0.4+ | 0.4− |
| 2002 02 20 | 704 | 0.3− | 0.8+ | 2005 10 07 | 703 | (2.7− | 0.3−) | 2006 11 28 | G96 | 0.1+ | 0.4− |
| 2002 02 24 | 644 | 0.2+ | 0.2+ | 2005 10 07 | 703 | 0.0 | 0.4− | | | | |

**(141474)∗ 2002 CM$_{219}$**

Discovered 2002 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.82645 | | (2000.0) | | | |
| $n$ | 0.18517700 | $\omega$ | 49.29352 | | −0.79144938 | −0.60980033 |
| $a$ | 3.0484426 | $\Omega$ | 93.09003 | | +0.54740100 | −0.73759520 |
| $e$ | 0.0894298 | $i$ | 2.40203 | | +0.27195592 | −0.28999460 |
| $P$ | 5.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.6+ | 0.2− | 2002 03 16 | 704 | 0.3+ | 0.5+ | 2005 10 29 | G96 | 0.1+ | 0.1− |
| 2002 02 10 | 704 | 1.2− | 0.3− | 2002 03 16 | 704 | 0.0 | 0.2− | 2005 10 29 | G96 | 0.1+ | 0.0 |
| 2002 02 10 | 704 | 0.5+ | 0.8− | 2002 03 16 | 704 | 0.1+ | 0.7+ | 2005 11 01 | 691 | 0.0 | 0.4+ |
| 2002 02 10 | 704 | 0.5+ | 0.2− | 2002 03 19 | 699 | 0.2− | 0.5+ | 2005 11 01 | 691 | 0.2− | 0.4+ |
| 2002 02 12 | 704 | 0.2+ | 0.2− | 2002 03 19 | 699 | 0.3− | 0.8+ | 2005 11 01 | 691 | 0.0 | 0.3+ |
| 2002 02 12 | 704 | 0.2+ | 0.0 | 2002 03 19 | 699 | 0.5− | 0.1− | 2005 12 04 | G96 | 0.1+ | 0.1− |
| 2002 02 12 | 704 | 0.5− | 0.8+ | 2002 03 19 | 699 | 1.2+ | 0.2+ | 2005 12 04 | G96 | 0.1− | 0.5− |
| 2002 02 12 | 704 | 0.2+ | 1.3− | 2004 08 22 | 691 | 0.1− | 0.1+ | 2005 12 04 | G96 | 0.2− | 0.1− |
| 2002 02 21 | 691 | 0.6+ | 0.3+ | 2004 08 22 | 691 | 0.1− | 0.3+ | 2005 12 04 | G96 | 0.3− | 0.1− |
| 2002 02 21 | 691 | 0.4+ | 0.1+ | 2004 08 22 | 691 | 0.3− | 0.5+ | 2006 10 27 | G96 | 1.0− | 0.4+ |
| 2002 02 21 | 691 | 0.3+ | 0.4+ | 2004 09 10 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.8− |
| 2002 03 09 | 644 | 0.3+ | 0.2− | 2004 09 10 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.8− | 1.0− |
| 2002 03 09 | 644 | 0.2+ | 0.1− | 2004 09 10 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2002 03 09 | 691 | 0.0 | 0.3+ | 2005 10 07 | G96 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2002 03 09 | 691 | 0.3− | 0.3+ | 2005 10 07 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.5+ | 0.1− |
| 2002 03 09 | 691 | 0.2− | 0.4+ | 2005 10 07 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2002 03 09 | 644 | 0.4+ | 0.2− | 2005 10 07 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.7− | 0.7− |
| 2002 03 13 | 291 | 0.2− | 0.4+ | 2005 10 25 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2002 03 13 | 291 | 0.2− | 0.4+ | 2005 10 25 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2002 03 13 | 291 | 0.4+ | 0.3+ | 2005 10 25 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2002 03 16 | 704 | 0.3− | 0.4− | 2005 10 29 | G96 | 0.3+ | 0.1− | | | | |
| 2002 03 16 | 704 | 0.0 | 0.4− | 2005 10 29 | G96 | 0.4+ | 0.1− | | | | |

**(141475)∗ 2002 CM$_{236}$ = 2000 WY$_{161}$**

Discovered 2002 Feb. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 27554)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.67055 | | (2000.0) | | | |
| $n$ | 0.18407128 | $\omega$ | 295.11806 | | +0.59085127 | −0.78895281 |
| $a$ | 3.0606385 | $\Omega$ | 117.61565 | | +0.79167628 | +0.52671382 |
| $e$ | 0.1262254 | $i$ | 10.97330 | | +0.15538161 | +0.31642694 |
| $P$ | 5.35 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 699 | 1.1+ | 0.8− | 2002 02 13 | 291 | 0.3+ | 0.2− | 2005 10 31 | 699 | 0.1+ | 0.2+ |
| 2000 11 20 | 699 | 0.1− | 0.6+ | 2002 02 15 | 291 | 0.2− | 0.2+ | 2005 10 31 | 699 | 0.2+ | 0.6+ |
| 2000 11 20 | 699 | 0.0 | 0.3+ | 2002 02 15 | 291 | 0.1+ | 0.0 | 2005 10 31 | 644 | 0.1+ | 0.1+ |
| 2000 11 20 | 699 | 0.3+ | 0.1+ | 2002 02 15 | 291 | 0.1+ | 0.0 | 2005 10 31 | 699 | 0.0 | 1.1+ |
| 2000 11 26 | 704 | 0.2− | 0.3− | 2002 02 16 | 291 | 0.5+ | 0.7+ | 2005 10 31 | 644 | 0.4+ | 0.1− |
| 2000 11 26 | 704 | 0.1+ | 0.2− | 2002 02 16 | 291 | 0.0 | 0.5+ | 2005 10 31 | 699 | 0.7− | 0.5+ |
| 2000 11 26 | 704 | 0.0 | 0.8+ | 2002 02 16 | 291 | 0.0 | 0.1+ | 2005 10 31 | 644 | 0.1+ | 0.3− |
| 2000 11 26 | 704 | 0.8− | 0.1+ | 2002 02 19 | 291 | 0.2− | 0.2+ | 2005 11 05 | 703 | 0.2− | 0.6− |
| 2000 12 03 | 608 | (2.6+ | 0.4−) | 2002 02 19 | 291 | 0.2− | 0.1+ | 2005 11 05 | 703 | 0.5− | 0.6− |
| 2000 12 03 | 608 | (2.5+ | 0.6−) | 2002 02 19 | 291 | 1.1− | 0.4+ | 2005 11 05 | 703 | (1.9+ | 0.2−) |
| 2000 12 03 | 608 | (2.7+ | 1.0−) | 2002 03 11 | 644 | 0.4+ | 1.2+ | 2005 11 05 | 703 | 0.8− | 0.1+ |
| 2002 01 21 | 644 | 0.3+ | 0.1− | 2002 03 11 | 644 | 0.1+ | 1.2+ | 2006 10 21 | G96 | 0.0 | 0.7− |
| 2002 01 21 | 644 | 0.8+ | 0.5+ | 2002 03 11 | 644 | 0.3+ | 1.3+ | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 2002 01 21 | 644 | 0.3+ | 0.1+ | 2005 10 01 | 699 | 1.2+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.8− |
| 2002 02 08 | 699 | 0.3+ | 0.8− | 2005 10 01 | 699 | 0.6+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.8− |
| 2002 02 08 | 699 | 0.4+ | 0.5− | 2005 10 01 | 699 | 0.0 | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.7− |
| 2002 02 08 | 699 | 0.7− | 0.5− | 2005 10 01 | 699 | 0.4− | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.8− |
| 2002 02 08 | 699 | 0.4− | 0.8− | 2005 10 03 | 703 | 1.4− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.7− |
| 2002 02 08 | 704 | 0.8+ | 0.1+ | 2005 10 03 | 703 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.3+ | 0.7− |
| 2002 02 08 | 704 | 0.4+ | 1.4+ | 2005 10 03 | 703 | 0.3− | 0.5+ | 2006 11 28 | G96 | 0.1− | 0.8− |
| 2002 02 08 | 704 | 0.3+ | 0.3− | 2005 10 03 | 703 | 0.4− | 0.4− | 2006 11 28 | G96 | 0.3− | 0.7− |
| 2002 02 08 | 704 | (0.7+ | 2.0−) | 2005 10 26 | 704 | 0.3− | 0.9+ | 2006 11 28 | G96 | 0.1+ | 0.7− |
| 2002 02 13 | 291 | 0.1+ | 0.2− | 2005 10 26 | 704 | 0.3− | 0.6+ | 2006 11 28 | G96 | 0.2− | 0.9− |
| 2002 02 13 | 291 | 0.3+ | 0.2− | 2005 10 26 | 704 | 0.1+ | 0.3+ | | | | |

### (141476)∗ 2002 CD$_{241}$

Discovered 2002 Feb. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 198.57811 | | (2000.0) | | | |
| $n$ | 0.22170916 | $\omega$ | 12.65465 | | +0.94828131 | +0.31338678 |
| $a$ | 2.7036282 | $\Omega$ | 328.93595 | | −0.29910233 | +0.82885442 |
| $e$ | 0.0420505 | $i$ | 5.61761 | | −0.10630311 | +0.46345343 |
| $P$ | 4.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 14 | 691 | 0.2− | 0.3− | 2002 04 12 | 704 | 0.1+ | 1.7+ | 2005 12 28 | G96 | 0.0 | 0.6− |
| 1996 12 14 | 691 | 0.1+ | 0.5− | 2002 04 12 | 704 | 0.2+ | 0.8+ | 2006 01 19 | 703 | 0.4− | 1.2− |
| 1996 12 14 | 691 | 0.5− | 0.3− | 2002 04 12 | 704 | 0.2+ | 1.0+ | 2006 01 19 | 703 | 0.7+ | 0.4+ |
| 2002 02 11 | 704 | 0.4+ | 0.4+ | 2002 04 14 | 704 | 0.3+ | 0.7+ | 2006 01 19 | 703 | 0.8+ | 0.0 |
| 2002 02 11 | 704 | 0.2+ | 0.2− | 2002 04 14 | 704 | 0.2+ | 0.8+ | 2006 01 19 | 703 | 0.7− | 1.9+ |
| 2002 02 11 | 704 | 1.0+ | 0.4+ | 2002 04 14 | 704 | 0.1− | 0.6+ | 2006 01 25 | 691 | (0.8− | 2.8+) |
| 2002 02 11 | 704 | 0.6− | 0.2− | 2002 04 14 | 704 | 0.5+ | 0.7+ | 2006 01 25 | 691 | 0.2− | 0.2− |
| 2002 02 11 | 704 | 0.2+ | 0.6+ | 2002 04 14 | 704 | 0.6+ | 0.9+ | 2006 01 25 | 691 | 0.1− | 0.1+ |
| 2002 02 15 | 704 | 0.1+ | 0.5− | 2004 09 18 | 704 | 0.2+ | 0.9+ | 2006 01 26 | 703 | 0.2− | 1.1− |
| 2002 02 15 | 704 | 0.1+ | 0.3+ | 2004 09 18 | 704 | 0.1− | 1.2+ | 2006 01 26 | 703 | 0.6+ | 0.4− |
| 2002 02 15 | 704 | 0.6+ | 0.7+ | 2004 09 18 | 704 | 0.1− | 1.4+ | 2006 01 26 | 703 | 0.1− | 0.4− |
| 2002 02 15 | 704 | 0.2− | 1.4+ | 2004 09 18 | 704 | 0.7− | 0.7+ | 2006 01 26 | 703 | 0.6+ | 0.1+ |
| 2002 02 15 | 704 | 0.6+ | 1.2+ | 2004 09 18 | 704 | 0.2− | 0.3+ | 2006 01 27 | G96 | 0.3− | 0.1− |
| 2002 03 10 | 608 | 0.1+ | 0.5+ | 2004 10 10 | 704 | 0.3− | 1.1+ | 2006 01 27 | G96 | 0.2− | 0.3− |
| 2002 03 10 | 608 | 0.6− | 0.8+ | 2004 10 10 | 704 | 0.0 | 0.8+ | 2006 01 27 | G96 | 0.0 | 0.3− |
| 2002 03 10 | 608 | 0.2− | 0.3+ | 2004 10 10 | 704 | 1.1− | 0.3+ | 2006 01 27 | G96 | 0.3− | 0.3− |
| 2002 03 12 | 291 | 0.3+ | 0.2+ | 2004 10 21 | 704 | 0.7− | 0.9+ | 2006 01 27 | 699 | 0.4+ | 0.6+ |
| 2002 03 12 | 291 | 0.4+ | 0.3+ | 2004 10 21 | 704 | 0.3− | 1.2+ | 2006 01 27 | 699 | 0.2+ | 0.2− |
| 2002 03 12 | 291 | 0.6+ | 0.1+ | 2004 10 21 | 704 | 0.1+ | 0.1+ | 2006 01 27 | 699 | 0.4− | 0.1+ |
| 2002 03 13 | 704 | 0.1+ | 0.5− | 2004 10 21 | 704 | 0.4− | 1.0+ | 2006 01 27 | 699 | 0.5− | 0.3− |
| 2002 03 13 | 704 | 1.0+ | 0.3+ | 2004 10 21 | 704 | 0.1− | 1.0+ | 2006 01 30 | 691 | 0.3+ | 0.1+ |
| 2002 03 13 | 704 | 0.3+ | 0.1− | 2004 11 02 | 699 | 0.8+ | 0.3− | 2006 01 30 | 691 | 0.7− | 0.2+ |
| 2002 03 13 | 704 | 0.1− | 0.8− | 2004 11 02 | 699 | 0.1+ | 0.4+ | 2006 01 30 | 691 | 0.2+ | 0.2+ |
| 2002 03 13 | 644 | 0.1+ | 0.2+ | 2004 11 02 | 699 | 0.2+ | 1.1− | 2006 02 02 | 703 | 0.2− | 0.1+ |
| 2002 03 13 | 644 | 0.3+ | 0.4+ | 2004 11 02 | 699 | 0.3+ | 1.2+ | 2006 02 02 | 703 | 1.1+ | 0.5− |
| 2002 03 13 | 644 | 0.2+ | 0.1+ | 2004 11 13 | 703 | 0.4+ | 0.1+ | 2006 02 02 | 703 | 0.5− | 0.5− |
| 2002 03 15 | 704 | 0.2− | 0.1− | 2004 11 13 | 703 | 0.2+ | 0.3+ | 2006 02 02 | 703 | 0.3− | 0.1+ |
| 2002 03 15 | 704 | 0.4− | 1.4− | 2004 11 13 | 703 | 0.6− | 0.7+ | 2006 02 07 | G96 | 0.5− | 0.2− |
| 2002 03 15 | 704 | 0.1− | 0.5− | 2004 11 13 | 703 | 0.8− | 0.8+ | 2006 02 07 | G96 | 0.2− | 0.7− |
| 2002 03 15 | 704 | 0.5+ | 0.3+ | 2004 11 19 | 703 | 0.5− | 0.8− | 2006 02 07 | G96 | 0.0 | 0.4− |
| 2002 03 15 | 704 | 0.8− | 0.1+ | 2004 11 19 | 703 | 1.1− | 0.3+ | 2006 02 07 | G96 | 0.5− | 0.4− |
| 2002 04 04 | 644 | 0.3+ | 0.3+ | 2004 11 19 | 703 | 0.2+ | 0.9+ | 2006 04 19 | G96 | 0.7+ | 0.5+ |
| 2002 04 04 | 644 | 0.1+ | 0.2+ | 2004 11 19 | 703 | 1.5− | 0.4+ | 2006 04 19 | G96 | 0.0 | 0.1− |
| 2002 04 04 | 644 | 0.3+ | 0.3+ | 2005 12 28 | G96 | 0.2+ | 0.5− | 2006 04 19 | G96 | 0.3− | 0.3− |
| 2002 04 12 | 704 | 0.6− | 0.8+ | 2005 12 28 | G96 | 0.4− | 0.7− | 2006 04 19 | G96 | 0.4− | 0.1− |
| 2002 04 12 | 704 | 0.1+ | 1.6+ | 2005 12 28 | G96 | 0.0 | 0.7− | | | | |

### (141477)∗ 2002 CP$_{245}$

Discovered 2002 Feb. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.12442 | | (2000.0) | | | |
| $n$ | 0.29972701 | $\omega$ | 333.82393 | | +0.62753490 | +0.77858553 |
| $a$ | 2.2113227 | $\Omega$ | 335.04438 | | −0.71345317 | +0.57394023 |
| $e$ | 0.1707304 | $i$ | 0.28892 | | −0.31174432 | +0.25376601 |
| $P$ | 3.29 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 19 | 691 | (1.2− | 3.2−) | 2003 09 26 | 704 | 0.3+ | 0.2+ | 2005 02 10 | 568 | 0.3− | 0.9+ |
| 1999 05 19 | 691 | 0.0 | 0.7+ | 2003 09 26 | 704 | 0.0 | 0.2− | 2005 02 10 | 568 | 0.3− | 0.8+ |
| 1999 05 19 | 691 | 0.2+ | 0.5+ | 2003 09 26 | 333 | 0.8− | 0.3+ | 2005 03 04 | G96 | (0.9+ | 6.5+) |
| 2002 02 13 | 691 | 0.2+ | 0.4+ | 2003 09 26 | 704 | 0.4+ | 0.6+ | 2005 03 04 | G96 | (1.4+ | 5.9+) |
| 2002 02 13 | 691 | 0.4+ | 0.2+ | 2003 09 26 | 333 | 0.1+ | 1.0+ | 2005 03 04 | G96 | (0.4+ | 7.1+) |
| 2002 02 13 | 691 | 0.2+ | 0.4+ | 2003 09 26 | 704 | 0.1− | 0.2+ | 2005 03 04 | G96 | (0.1+ | 7.3+) |
| 2002 02 16 | 291 | 0.2− | 0.3+ | 2003 09 29 | 704 | 0.4− | 1.0+ | 2006 07 20 | 644 | 0.3+ | 0.5+ |
| 2002 02 16 | 291 | 0.2+ | 0.4+ | 2003 09 29 | 704 | 0.1+ | 0.0 | 2006 07 20 | 644 | 0.3− | 0.4+ |
| 2002 02 16 | 291 | 0.3− | 0.3− | 2003 09 29 | 704 | 0.1− | 0.1− | 2006 07 20 | 644 | 0.1+ | 0.5+ |
| 2002 03 05 | 691 | 0.0 | 0.3+ | 2003 09 29 | 704 | 0.4+ | 0.2+ | 2006 07 21 | 704 | 0.4+ | 0.6− |
| 2002 03 05 | 691 | 0.4+ | 0.2+ | 2003 09 29 | 704 | 0.5− | 0.6+ | 2006 07 21 | 704 | 0.9− | 0.4+ |
| 2002 03 05 | 691 | 0.1+ | 0.1+ | 2003 09 30 | 691 | 0.0 | 0.1+ | 2006 07 21 | 704 | 0.4+ | 0.8+ |
| 2002 03 12 | 291 | 0.1+ | 0.3+ | 2003 09 30 | 691 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.3+ |
| 2002 03 12 | 291 | 0.4+ | 0.4+ | 2003 09 30 | 691 | 0.1+ | 0.1+ | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 2002 03 12 | 291 | 0.4+ | 0.3+ | 2003 10 19 | 691 | 0.1− | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 2003 09 06 | 049 | 0.8− | 0.0 | 2003 10 19 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.4− | 0.0 |
| 2003 09 06 | 049 | (1.7− | 0.4−) | 2003 10 19 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2− | 0.5+ |
| 2003 09 06 | 049 | (1.9− | 0.1−) | 2003 10 20 | 704 | (0.6+ | 1.8+) | 2006 09 30 | G96 | 0.1− | 0.5+ |
| 2003 09 18 | 291 | 0.3− | 0.1+ | 2003 10 20 | 704 | (0.2− | 1.9+) | 2006 09 30 | G96 | 0.3− | 0.2+ |
| 2003 09 18 | 291 | 0.2− | 0.2+ | 2003 10 20 | 704 | (1.0+ | 1.7+) | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2003 09 18 | 291 | 0.3− | 0.1+ | 2003 10 23 | 704 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.4+ |
| 2003 09 19 | 699 | 0.6+ | 0.0 | 2003 10 23 | 704 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.3+ |
| 2003 09 19 | 699 | 1.2− | 0.9+ | 2003 10 23 | 704 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.4+ |
| 2003 09 19 | 699 | 0.3− | 0.3+ | 2003 10 28 | 704 | 0.3− | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2003 09 19 | 699 | 0.1− | 0.2+ | 2003 10 28 | 704 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2003 09 21 | 644 | 0.1+ | 0.4+ | 2003 10 28 | 704 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.8− | 0.3− |
| 2003 09 21 | 644 | 0.2+ | 0.3+ | 2003 10 28 | 704 | 0.3− | 0.7+ | 2006 11 18 | G96 | 0.2− | 0.4+ |
| 2003 09 21 | 644 | 0.4+ | 0.4+ | 2005 02 10 | 568 | 0.2− | 0.6+ | | | | |

### (141478)∗ 2002 CN$_{256}$

Discovered 2002 Feb. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.71568 | | (2000.0) | | | |
| $n$ | 0.18724950 | $\omega$ | 340.82794 | | +0.50964325 | −0.84996556 |
| $a$ | 3.0259072 | $\Omega$ | 78.33185 | | +0.80612672 | +0.41749059 |
| $e$ | 0.0507300 | $i$ | 7.83479 | | +0.30070496 | +0.32134119 |
| $P$ | 5.26 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 1.0− | 1.5+ | 2003 05 05 | 704 | 2.1+ | 1.8− | 2005 10 07 | 699 | 0.2− | 0.5+ |
| 2000 11 21 | 704 | 0.1+ | 1.3+ | 2003 05 05 | 704 | 0.5+ | 1.0− | 2005 10 07 | 699 | 0.2+ | 0.4+ |
| 2000 11 21 | 704 | 0.2− | 1.3+ | 2003 05 05 | 704 | 0.7+ | 0.8− | 2005 10 07 | 699 | 0.4+ | 0.2− |
| 2000 11 21 | 704 | 0.6− | 0.1− | 2003 05 05 | 704 | 1.1+ | 0.7− | 2005 10 21 | 644 | 0.1− | 0.6+ |
| 2002 02 03 | 644 | 0.4− | 0.7+ | 2003 05 27 | 691 | 0.2+ | 2.6+ | 2005 10 21 | 644 | 0.0 | 0.7+ |
| 2002 02 03 | 644 | 0.2+ | 0.3+ | 2003 05 27 | 691 | 0.0 | 2.4+ | 2005 10 21 | 644 | 0.1− | 0.5+ |
| 2002 02 03 | 644 | 0.4+ | 0.3+ | 2003 05 27 | 691 | 0.6+ | 1.7+ | 2005 10 21 | 644 | 0.3− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 04 | 699 | 0.7− | 0.0 | 2004 07 21 | 428 | 0.3− | 0.8+ | 2005 10 21 | 644 | 0.9− | 0.5+ |
| 2002 02 04 | 699 | 0.1+ | 0.2− | 2004 07 21 | 428 | 0.4+ | 0.1− | 2005 10 21 | 644 | 0.6− | 0.6+ |
| 2002 02 04 | 699 | 0.4− | 0.0 | 2004 07 22 | 428 | 0.6+ | 0.4+ | 2005 10 22 | 703 | 0.4− | 0.2+ |
| 2002 02 04 | 699 | 0.7+ | 0.0 | 2004 07 22 | 428 | 0.7− | 0.0 | 2005 10 22 | 703 | 0.4+ | 0.4+ |
| 2002 02 08 | 704 | 0.1− | 0.4+ | 2005 09 27 | 644 | 0.4− | 0.4+ | 2005 10 22 | 703 | 0.1+ | 0.2− |
| 2002 02 08 | 704 | 0.0 | 0.7+ | 2005 09 27 | 644 | 0.1+ | 0.3+ | 2005 10 22 | 703 | 0.8− | 0.6+ |
| 2002 02 08 | 704 | 0.3− | 1.5− | 2005 09 27 | 644 | 0.1− | 0.6+ | 2005 10 28 | 703 | 0.0 | 0.6+ |
| 2002 02 08 | 704 | 0.8+ | 0.1+ | 2005 09 27 | 644 | 0.0 | 0.6+ | 2005 10 28 | 703 | 0.0 | 0.2− |
| 2002 02 08 | 704 | 0.4− | 0.3+ | 2005 09 27 | 644 | 0.1− | 0.3+ | 2005 10 28 | 703 | 0.4− | 0.7+ |
| 2002 02 22 | 644 | 0.2− | 0.1+ | 2005 09 27 | 644 | 0.2− | 0.8+ | 2005 10 28 | 703 | 0.8− | 1.2+ |
| 2002 02 22 | 644 | 0.2− | 0.1+ | 2005 09 27 | 644 | 0.2+ | 0.5+ | 2005 10 30 | 699 | 0.1+ | 0.9+ |
| 2002 02 22 | 644 | 0.2+ | 0.3+ | 2005 09 27 | 644 | 0.5− | 0.5+ | 2005 10 30 | 699 | 0.3− | 0.8+ |
| 2002 03 11 | 644 | 0.1− | 0.1− | 2005 09 27 | 644 | 0.4− | 0.5+ | 2005 10 30 | 699 | 0.2+ | 0.8+ |
| 2002 03 11 | 644 | 0.3+ | 0.5+ | 2005 10 01 | 703 | 0.9+ | 0.5− | 2005 10 30 | 699 | 0.0 | 0.6+ |
| 2002 03 11 | 644 | 0.1− | 0.2− | 2005 10 01 | 703 | 0.1+ | 0.4+ | 2005 11 06 | 699 | 1.4+ | 0.3+ |
| 2002 03 11 | 644 | 0.3+ | 0.4+ | 2005 10 01 | 703 | 0.7− | 0.0 | 2005 11 06 | 699 | 0.6− | 0.9+ |
| 2002 03 11 | 644 | 0.2+ | 0.1− | 2005 10 01 | 703 | 1.0− | 0.0 | 2005 11 06 | 699 | 0.1− | 0.3+ |
| 2002 03 11 | 644 | 0.3+ | 0.8+ | 2005 10 07 | 703 | 0.1− | 1.0+ | 2005 11 06 | 699 | 0.1− | 0.3+ |
| 2002 04 02 | 644 | 0.8+ | 1.5+ | 2005 10 07 | 699 | 0.4− | 0.0 | 2005 11 09 | 703 | 0.5− | 0.7+ |
| 2002 04 02 | 644 | 0.7+ | 1.5+ | 2005 10 07 | 703 | 1.1− | 0.8− | 2005 11 09 | 703 | 0.4− | 0.9+ |
| 2002 04 02 | 644 | 1.1+ | 1.2+ | 2005 10 07 | 703 | 0.0 | 0.5− | 2005 11 09 | 703 | 0.9− | 1.0− |
| 2003 05 05 | 704 | 0.6− | 2.9− | 2005 10 07 | 703 | 0.7+ | 0.2− | | | | |

**(141479)∗ 2002 $CA_{265}$**

Discovered 2002 Feb. 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.13140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27387265 | $\omega$ | 179.47962 | | +0.10406046 | | +0.98816397 |
| $a$ | 2.3483903 | $\Omega$ | 96.49006 | | −0.91291035 | | +0.13987132 |
| $e$ | 0.2239455 | $i$ | 6.51344 | | −0.39467217 | | −0.06299196 |
| $P$ | 3.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 291 | 0.2− | 0.3+ | 2002 05 18 | 608 | 0.8+ | 0.3− | 2002 07 06 | 699 | 1.1− | 0.4− |
| 2002 02 08 | 291 | 0.6− | 0.0 | 2002 05 18 | 608 | 0.3+ | 1.1+ | 2002 07 06 | 699 | 0.6− | 0.7− |
| 2002 02 08 | 291 | 0.3+ | 0.6+ | 2002 05 23 | 644 | 0.2+ | 0.1− | 2002 07 06 | 699 | 0.5− | 0.1− |
| 2002 02 09 | 291 | 1.6− | 0.6+ | 2002 05 23 | 644 | 0.0 | 0.1− | 2002 07 06 | 699 | 0.1+ | 0.3− |
| 2002 02 09 | 291 | 0.3− | 0.1+ | 2002 05 23 | 644 | 0.0 | 0.1− | 2003 11 24 | 699 | 0.1+ | 1.5+ |
| 2002 02 09 | 291 | 0.2− | 0.3+ | 2002 05 28 | 608 | 0.1− | 0.5+ | 2003 11 24 | 699 | 0.4+ | 1.0− |
| 2002 03 17 | 691 | 0.4− | 0.1+ | 2002 05 28 | 608 | 0.4− | 0.4+ | 2003 11 24 | 699 | 0.4+ | 1.0− |
| 2002 03 17 | 691 | 0.3− | 0.3− | 2002 05 28 | 608 | 0.2+ | 0.3+ | 2003 11 24 | 699 | 0.3− | 0.1+ |
| 2002 03 17 | 691 | 0.1+ | 0.2+ | 2002 06 04 | 699 | 0.5− | 0.5+ | 2003 12 01 | 704 | (0.0 | 2.6+) |
| 2002 05 04 | 644 | 0.3− | 0.1+ | 2002 06 04 | 699 | 0.0 | 0.3− | 2003 12 01 | 704 | (0.8+ | 2.5+) |
| 2002 05 04 | 644 | 0.4− | 0.1+ | 2002 06 04 | 699 | 0.2+ | 0.4− | 2003 12 01 | 704 | 0.1+ | 0.2+ |
| 2002 05 04 | 644 | 0.2− | 0.1+ | 2002 06 04 | 704 | 0.3+ | 0.3+ | 2003 12 01 | 704 | 0.6− | 1.1+ |
| 2002 05 08 | 704 | 0.3− | 0.1− | 2002 06 04 | 699 | 0.1+ | 0.4+ | 2005 02 04 | 691 | 0.5+ | 0.4+ |
| 2002 05 08 | 704 | 0.3− | 0.2− | 2002 06 04 | 704 | (2.4+ | 1.1+) | 2005 02 04 | 691 | 0.3+ | 0.7+ |
| 2002 05 08 | 704 | 0.1+ | 0.5+ | 2002 06 04 | 704 | 0.3+ | 0.0 | 2005 02 04 | 691 | 0.4+ | 0.6+ |
| 2002 05 08 | 704 | 0.1+ | 0.6+ | 2002 06 04 | 704 | 0.5+ | 0.2− | 2006 08 07 | E12 | 0.2− | 0.1− |
| 2002 05 08 | 704 | 0.3+ | 0.2+ | 2002 06 04 | 704 | 0.5+ | 0.3− | 2006 08 07 | E12 | 0.7+ | 0.4+ |
| 2002 05 08 | 608 | 0.1+ | 0.3− | 2002 06 07 | 608 | 0.4+ | 1.0− | 2006 08 07 | E12 | 0.2+ | 0.3+ |
| 2002 05 08 | 608 | 0.3+ | 0.3− | 2002 06 07 | 608 | 0.6+ | 0.8− | 2006 08 07 | E12 | 0.4− | 1.3+ |
| 2002 05 08 | 608 | 0.1+ | 0.2− | 2002 06 07 | 608 | 0.2+ | 0.5− | 2006 08 19 | 644 | 0.4− | 0.2+ |
| 2002 05 10 | 644 | 0.3− | 0.2+ | 2002 06 09 | 704 | 0.3+ | 0.2− | 2006 08 19 | 644 | 0.4− | 0.0 |
| 2002 05 10 | 333 | 0.8− | 0.3− | 2002 06 09 | 704 | 0.6+ | 0.7− | 2006 08 19 | 644 | 0.3− | 0.0 |
| 2002 05 10 | 333 | 0.3− | 0.0 | 2002 06 09 | 704 | 0.3+ | 0.6− | 2006 08 23 | 644 | 0.1− | 0.1− |
| 2002 05 10 | 333 | 0.8− | 0.9− | 2002 06 09 | 704 | 0.8+ | 0.4− | 2006 08 23 | 644 | 0.1− | 0.1+ |
| 2002 05 10 | 644 | 0.3− | 0.2+ | 2002 06 09 | 704 | 1.5− | 0.7− | 2006 08 23 | 644 | 0.1− | 0.2+ |
| 2002 05 10 | 644 | 0.0 | 0.4+ | 2002 06 10 | 644 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.3+ | 0.1+ |
| 2002 05 12 | 704 | 0.2+ | 0.1+ | 2002 06 10 | 644 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.6− | 0.7+ |
| 2002 05 12 | 704 | 0.3+ | 0.1− | 2002 06 10 | 704 | 1.1+ | 0.8+ | 2006 08 30 | 699 | 0.8− | 0.4+ |
| 2002 05 12 | 704 | 0.2− | 0.9− | 2002 06 10 | 644 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.4+ | 0.0 |
| 2002 05 12 | 704 | 1.1+ | 0.0 | 2002 06 10 | 704 | 0.8+ | 1.1+ | 2006 09 21 | 699 | 0.2− | 0.0 |
| 2002 05 12 | 704 | 0.9+ | 0.2+ | 2002 06 10 | 704 | 0.8+ | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.3+ |
| 2002 05 14 | 699 | 0.0 | 0.3+ | 2002 06 10 | 704 | 1.2+ | 0.3+ | 2006 09 26 | 703 | (0.1− | 3.3+) |
| 2002 05 14 | 699 | 0.4+ | 0.3+ | 2002 06 10 | 704 | 0.9+ | 1.4+ | 2006 09 26 | 703 | 0.8− | 0.2+ |
| 2002 05 14 | 699 | 0.3+ | 0.6− | 2002 07 05 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.5− |
| 2002 05 14 | 699 | 0.1+ | 0.0 | 2002 07 05 | 704 | 0.3− | 0.5+ | | | | |
| 2002 05 18 | 608 | 0.3− | 1.0− | 2002 07 05 | 704 | 0.6− | 0.4+ | | | | |

**(141480)∗ 2002 $CD_{273}$**

Discovered 2002 Feb. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.93934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27628559 | $\omega$ | 116.40383 | | −0.99537580 | | −0.00662071 |
| $a$ | 2.3346972 | $\Omega$ | 63.34811 | | −0.03635384 | | −0.89745207 |
| $e$ | 0.1705903 | $i$ | 6.15517 | | +0.08891242 | | −0.44106230 |
| $P$ | 3.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.1− | 0.1+ | 2002 03 12 | 644 | 0.1− | 0.0 | 2004 11 17 | 599 | 0.2+ | 0.4+ |
| 2000 10 02 | 645 | 0.0 | 0.2+ | 2002 03 12 | 644 | 0.1+ | 0.2− | 2004 12 10 | 599 | 0.1+ | 1.0+ |
| 2002 01 09 | 704 | 1.3− | 0.7+ | 2002 03 20 | 704 | 0.0 | 0.1− | 2004 12 10 | 599 | 0.3− | 0.5+ |
| 2002 01 09 | 704 | 0.5− | 0.0 | 2002 03 20 | 704 | 0.7+ | 0.3− | 2004 12 10 | 599 | 0.2− | 0.2+ |
| 2002 01 09 | 704 | 0.0 | 0.5− | 2002 03 20 | 704 | 0.5+ | 0.4+ | 2004 12 11 | 599 | 0.1+ | 0.0 |
| 2002 01 09 | 704 | 0.0 | 0.6− | 2002 03 20 | 704 | 0.1+ | 0.2+ | 2004 12 11 | 599 | 0.4+ | 0.0 |
| 2002 01 21 | 644 | 0.5+ | 0.1+ | 2002 03 20 | 704 | 0.2− | 0.0 | 2004 12 11 | 599 | 0.1+ | 0.4+ |
| 2002 01 21 | 644 | 0.7+ | 0.5+ | 2002 03 21 | 704 | 0.7+ | 0.1− | 2004 12 19 | G96 | 0.0 | 0.1+ |
| 2002 01 21 | 644 | 0.3+ | 0.3+ | 2002 03 21 | 704 | 0.4− | 0.2+ | 2004 12 19 | G96 | 0.4− | 0.3− |
| 2002 02 08 | 699 | 0.0 | 0.4− | 2002 03 21 | 704 | 0.3+ | 0.1+ | 2004 12 19 | G96 | 0.1− | 0.2− |
| 2002 02 08 | 699 | 0.3+ | 0.3+ | 2002 03 21 | 704 | 0.3+ | 0.1+ | 2004 12 19 | G96 | 0.2− | 0.4− |
| 2002 02 08 | 699 | 0.2− | 0.0 | 2002 03 21 | 644 | 0.5+ | 0.3+ | 2006 05 02 | 673 | 0.0 | 0.1+ |
| 2002 02 08 | 699 | 0.1− | 0.1+ | 2002 03 21 | 644 | 0.2+ | 0.2− | 2006 05 02 | 673 | 0.5− | 0.1+ |
| 2002 02 10 | 704 | 0.1+ | 1.0+ | 2002 03 21 | 644 | 0.5+ | 0.2+ | 2006 05 02 | 673 | 0.4− | 0.0 |
| 2002 02 10 | 704 | 0.2− | 0.8+ | 2002 04 01 | 644 | 0.4− | 0.3+ | 2006 05 02 | 673 | 0.4− | 0.0 |
| 2002 02 10 | 704 | 0.3− | 1.0+ | 2002 04 01 | 644 | 0.1− | 0.2+ | 2006 05 25 | 568 | 0.0 | 1.1+ |
| 2002 02 10 | 704 | 0.4− | 1.3+ | 2002 04 01 | 644 | 0.1− | 0.3+ | 2006 05 25 | 568 | 0.0 | 1.0+ |
| 2002 02 10 | 704 | 0.6+ | 0.9+ | 2002 04 16 | 704 | 0.2− | 0.6− | 2006 05 25 | 568 | 0.1− | 0.9+ |
| 2002 03 06 | 704 | (0.1+ | 2.1−) | 2002 04 16 | 704 | 0.7− | 0.7− | 2006 06 07 | E12 | 0.1+ | 0.5+ |
| 2002 03 06 | 704 | (0.1+ | 3.5−) | 2002 04 16 | 704 | 0.1+ | 0.0 | 2006 06 07 | E12 | 1.2+ | 0.3+ |
| 2002 03 06 | 704 | 0.2− | 0.6− | 2002 04 16 | 704 | 0.0 | 0.3− | 2006 06 07 | E12 | 1.0+ | 0.4+ |
| 2002 03 06 | 704 | 0.3+ | 1.8− | 2002 04 16 | 704 | 0.0 | 0.9+ | 2006 06 07 | E12 | 0.1+ | 0.6+ |
| 2002 03 12 | 644 | 0.0 | 0.1+ | 2004 11 17 | 599 | 0.0 | 0.0 | | | | |

**(141481)∗ 2002 $CM_{288}$ = 1999 $TM_{334}$**

Discovered 2002 Feb. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75299)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.94029 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15236321 | $\omega$ | 34.26301 | | +0.99267830 | | −0.12036858 |
| $a$ | 3.4717568 | $\Omega$ | 332.64511 | | +0.10533963 | | +0.90346263 |
| $e$ | 0.0384422 | $i$ | 1.25449 | | +0.05910466 | | +0.41142032 |
| $P$ | 6.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 691 | 0.3− | 0.2− | 2003 04 08 | 691 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1999 10 01 | 691 | 0.3− | 0.1− | 2003 04 08 | 691 | 1.2+ | 0.6+ | 2006 09 27 | H55 | 0.2− | 0.4+ |
| 1999 10 01 | 691 | 0.2− | 0.3+ | 2003 04 08 | 691 | 0.6+ | 0.0 | 2006 09 27 | H55 | 1.4− | 0.7− |
| 1999 10 14 | 691 | 0.1− | 0.4+ | 2003 04 25 | 691 | 0.2+ | 1.3+ | 2006 09 27 | H55 | 0.5− | 0.4− |
| 1999 10 14 | 691 | 0.1+ | 0.2+ | 2003 04 25 | 691 | 0.1+ | 1.1+ | 2006 10 03 | 691 | 0.2+ | 0.3+ |
| 1999 10 14 | 691 | 0.2+ | 0.8+ | 2003 04 25 | 691 | 0.3+ | 1.1+ | 2006 10 03 | 691 | 0.0 | 0.3+ |
| 2002 01 14 | 691 | 0.1− | 0.6− | 2005 07 05 | G96 | 0.2− | 1.1+ | 2006 10 03 | 691 | 0.1− | 0.5+ |
| 2002 01 14 | 691 | 0.1+ | 0.8− | 2005 07 05 | G96 | 0.0 | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2002 01 14 | 691 | 0.2− | 0.4− | 2005 07 05 | G96 | 0.2+ | 1.0+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2002 01 22 | 291 | 0.1− | 0.6+ | 2005 07 05 | G96 | 0.3− | 1.1+ | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2002 01 22 | 291 | 0.0 | 0.4+ | 2005 11 25 | G96 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2002 01 22 | 291 | 0.2− | 0.4+ | 2005 11 25 | G96 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 2002 02 10 | 704 | 0.5− | 0.1− | 2005 11 25 | G96 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2002 02 10 | 704 | 0.4− | 0.5− | 2005 11 25 | G96 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2002 02 10 | 704 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.4+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.6− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.3+ | | |
| 2002 02 10 | 704 | (0.1+ | 1.6−) | 2006 09 25 | 691 | 0.4− | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.1+ | | |
| 2002 02 12 | 704 | 1.0+ | 0.3− | 2006 09 26 | J95 | 0.3+ | 0.3− | 2006 11 17 | 691 | 0.0 | 0.2+ | | |
| 2002 02 12 | 704 | 1.2+ | 0.5+ | 2006 09 26 | J95 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.0 | 0.4+ | | |
| 2002 02 12 | 704 | 0.3− | 0.0 | 2006 09 26 | 649 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.3+ | | |
| 2002 02 14 | 291 | 0.0 | 0.1+ | 2006 09 26 | 649 | 1.1+ | 0.5− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2002 02 14 | 291 | 0.3+ | 0.1− | 2006 09 26 | 649 | 0.5− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2002 02 14 | 291 | 0.1+ | 0.2− | 2006 09 26 | 649 | 1.4+ | 1.4+ | 2006 11 21 | 691 | 0.2− | 0.0 | | |
| 2003 03 24 | 691 | 0.5− | 0.9+ | 2006 09 26 | 649 | 0.5+ | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.1+ | | |
| 2003 03 24 | 691 | 0.1− | 0.7+ | 2006 09 26 | 291 | 0.3− | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.0 | | |
| 2003 03 24 | 691 | 0.1+ | 0.7+ | 2006 09 26 | 291 | 0.4− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.5+ | | |
| 2003 04 07 | 291 | 0.4+ | 0.2+ | 2006 09 26 | 291 | 0.5− | 0.3+ | 2006 11 21 | 691 | 0.3+ | 0.1− | | |
| 2003 04 07 | 291 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2− | 0.1+ | | |
| 2003 04 07 | 291 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− | | | | | | |

**(141482)∗ 2002 DV$_1$**

Discovered 2002 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.91028 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36932918 | $\omega$ | 41.88800 | | −0.86792623 | −0.33394846 | |
| $a$ | 1.9239493 | $\Omega$ | 115.03420 | | +0.27416377 | −0.93935870 | |
| $e$ | 0.0641902 | $i$ | 23.94089 | | +0.41417182 | −0.07799785 | |
| $P$ | 2.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.0 | 0.1− | 2002 02 21 | 704 | 0.1− | 0.6+ | 2005 05 16 | 703 | 0.9− | 0.3− | | |
| 2000 07 07 | 704 | 0.1+ | 0.0 | 2002 02 21 | 704 | 0.3+ | 0.2+ | 2005 05 16 | 703 | 0.3− | 0.3+ | | |
| 2000 07 07 | 704 | 0.2− | 1.5+ | 2002 02 21 | 704 | 0.7+ | 0.6− | 2005 05 16 | 703 | 0.1+ | 1.0− | | |
| 2000 07 07 | 704 | 0.1+ | 0.1− | 2002 02 21 | 704 | 0.0 | 0.3+ | 2005 05 16 | 703 | 0.1+ | 0.1− | | |
| 2002 01 08 | 704 | 1.0+ | 0.7− | 2002 02 21 | 704 | 0.4+ | 0.1+ | 2005 06 01 | A35 | 0.1− | 0.3− | | |
| 2002 01 08 | 704 | 0.3+ | 0.3− | 2002 04 02 | 704 | 0.0 | 0.2+ | 2005 06 01 | A35 | 0.1+ | 0.1+ | | |
| 2002 01 08 | 704 | 0.8+ | 0.2− | 2002 04 02 | 704 | 0.2+ | 0.7+ | 2005 06 01 | A35 | 0.0 | 0.0 | | |
| 2002 01 08 | 704 | 0.0 | 1.4− | 2002 04 02 | 704 | 0.3+ | 1.3+ | 2005 06 03 | 699 | 0.2− | 0.1+ | | |
| 2002 01 08 | 704 | 0.4+ | 1.0− | 2002 04 02 | 704 | 0.2+ | 0.9+ | 2005 06 03 | 699 | 0.1− | 0.2− | | |
| 2002 01 23 | 704 | 0.6− | 0.5− | 2005 05 02 | 695 | 0.3− | 0.0 | 2005 06 03 | 699 | 0.4− | 0.4+ | | |
| 2002 01 23 | 704 | 1.1− | 0.3− | 2005 05 02 | 695 | 0.4− | 0.2+ | 2005 06 03 | 699 | 0.2+ | 0.3+ | | |
| 2002 01 23 | 704 | 1.1− | 0.1+ | 2005 05 07 | 703 | 0.2+ | 0.6+ | 2005 07 09 | 703 | 0.5− | 0.4+ | | |
| 2002 01 23 | 704 | 0.5− | 0.4+ | 2005 05 07 | 703 | 0.7− | 0.4− | 2005 07 09 | 703 | 0.3− | 0.1− | | |
| 2002 01 23 | 704 | 1.2− | 0.1− | 2005 05 07 | 703 | 0.5+ | 0.4+ | 2005 07 09 | 703 | 0.6− | 0.2− | | |
| 2002 02 19 | 704 | (2.5+ | 0.9−) | 2005 05 07 | 703 | 0.9− | 0.6+ | 2005 07 09 | 703 | 0.4− | 0.6+ | | |
| 2002 02 19 | 704 | (3.0+ | 1.4−) | 2005 05 08 | 695 | 1.3+ | 0.1− | 2006 11 01 | 703 | (0.2+ | 1.7−) | | |
| 2002 02 19 | 704 | (2.7+ | 1.3−) | 2005 05 08 | 695 | 0.7+ | 0.2− | 2006 11 01 | 703 | 0.3− | 0.0 | | |
| 2002 02 21 | 704 | 0.8− | 0.1− | 2005 05 08 | 695 | 0.7+ | 0.2− | 2006 11 01 | 703 | 1.3− | 0.5+ | | |
| 2002 02 21 | 704 | 0.2+ | 0.7+ | 2005 05 08 | 695 | 0.4+ | 0.1− | 2006 11 01 | 703 | 1.1− | 0.2+ | | |
| 2002 02 21 | 704 | 0.0 | 0.0 | 2005 05 10 | 704 | 0.0 | 0.3− | 2006 11 19 | 703 | (0.9+ | 2.2+) | | |
| 2002 02 21 | 704 | 0.1+ | 0.1+ | 2005 05 10 | 704 | 0.3+ | 1.4+ | 2006 11 19 | 703 | 0.0 | 0.3− | | |
| 2002 02 21 | 704 | 0.2+ | 0.5+ | 2005 05 10 | 704 | 0.1+ | 0.8− | 2006 11 19 | 703 | 0.2+ | 1.3+ | | |
| 2002 02 21 | 704 | 0.2− | 0.2+ | 2005 05 10 | 704 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.4+ | 1.4+ | | |
| 2002 02 21 | 704 | 0.5+ | 0.3+ | 2005 05 11 | 704 | 0.1+ | 1.5− | 2006 11 24 | 703 | 0.4− | 0.3+ | | |
| 2002 02 21 | 704 | 0.1− | 0.2+ | 2005 05 11 | 704 | 0.2+ | 0.3− | 2006 11 24 | 703 | 0.4+ | 0.6− | | |
| 2002 02 21 | 704 | 0.3+ | 0.2− | 2005 05 11 | 704 | 0.4− | 0.3+ | 2006 11 24 | 703 | 0.6+ | 0.5+ | | |
| 2002 02 21 | 704 | 0.0 | 0.2+ | 2005 05 11 | 704 | 0.8+ | 1.0+ | 2006 11 24 | 703 | 0.2− | 0.0 | | |

**(141483)∗ 2002 DP$_2$ = 1998 XO$_{16}$**

Discovered 2002 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 27559)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.88810 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36950794 | $\omega$ | 290.16602 | | +0.91984571 | −0.07958555 | |
| $a$ | 1.9233288 | $\Omega$ | 75.97163 | | +0.26299270 | +0.85166337 | |
| $e$ | 0.1210797 | $i$ | 23.32403 | | −0.29106478 | +0.51801124 | |
| $P$ | 2.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | (1.1− | 3.1−) | 2003 12 14 | 644 | 0.4− | 0.5+ | 2005 05 30 | 703 | 0.2+ | 0.3+ | | |
| 1998 12 14 | 704 | (2.6− | 2.1−) | 2005 04 01 | 699 | (1.8− | 0.6+) | 2005 05 30 | 703 | 0.6− | 0.3− | | |
| 1998 12 14 | 704 | 0.7− | 1.3− | 2005 04 01 | 699 | (1.6− | 1.8+) | 2005 05 30 | 703 | 0.8− | 1.0+ | | |
| 1998 12 14 | 704 | (2.9− | 1.2−) | 2005 04 01 | 699 | 0.9+ | 1.2+ | 2005 06 02 | 704 | 1.1+ | 0.2+ | | |
| 1998 12 17 | 704 | 0.2+ | 1.1− | 2005 04 01 | 699 | 1.0+ | 0.1+ | 2005 06 02 | 704 | 0.9+ | 0.1+ | | |
| 1998 12 17 | 704 | 0.5− | 1.7− | 2005 04 02 | 703 | 0.5+ | 0.4+ | 2005 06 02 | 704 | 0.1+ | 1.3− | | |
| 1998 12 17 | 704 | 0.8+ | 1.3− | 2005 04 02 | 703 | 0.4+ | 0.4+ | 2005 06 02 | 704 | 0.5− | 0.9− | | |
| 1998 12 17 | 704 | 0.6+ | 1.2− | 2005 04 02 | 703 | 0.7+ | 0.8− | 2005 06 02 | 704 | 0.8+ | 0.4− | | |
| 2002 02 19 | 704 | 0.4+ | 1.2+ | 2005 04 02 | 703 | 0.2+ | 0.2− | 2005 06 07 | 703 | (1.6− | 0.8−) | | |
| 2002 02 19 | 704 | 0.5+ | 0.7+ | 2005 04 09 | 703 | 0.3− | 0.4− | 2005 06 07 | 703 | 1.3− | 0.2− | | |
| 2002 02 19 | 704 | 0.7+ | 0.2+ | 2005 04 09 | 703 | 0.5− | 0.2+ | 2005 06 07 | 703 | 1.1− | 0.1− | | |
| 2002 02 21 | 704 | 0.7+ | 0.6− | 2005 04 09 | 703 | 0.6− | 0.0 | 2005 06 07 | 703 | 0.3+ | 0.5+ | | |
| 2002 02 21 | 704 | 0.5+ | 0.2− | 2005 04 09 | 703 | 0.8− | 0.2− | 2006 11 16 | 704 | (1.6− | 2.6+) | | |
| 2002 02 21 | 704 | 0.0 | 0.2− | 2005 04 16 | 703 | 0.8− | 0.1− | 2006 11 16 | 704 | 0.6− | 1.3+ | | |
| 2002 02 21 | 704 | 0.7+ | 0.3− | 2005 04 16 | 703 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.5+ | | |
| 2002 02 21 | 704 | 0.1+ | 0.3− | 2005 04 16 | 703 | (2.4+ | 2.5+) | 2006 11 19 | 704 | 1.0− | 0.3+ | | |
| 2002 02 22 | 704 | 0.2+ | 0.2+ | 2005 04 16 | 703 | 1.3− | 0.0 | 2006 11 19 | 704 | (4.2− | 0.5+) | | |
| 2002 02 22 | 704 | 1.3+ | 1.3+ | 2005 05 02 | 703 | 0.3− | 0.1+ | 2006 11 19 | 704 | (2.1− | 0.2+) | | |
| 2002 02 22 | 704 | 0.3− | 0.0 | 2005 05 02 | 703 | 0.5− | 0.2− | 2006 11 19 | 704 | 1.2− | 0.0 | | |
| 2002 02 22 | 704 | 0.0 | 0.3+ | 2005 05 02 | 703 | 1.1− | 0.4− | 2006 11 19 | 704 | 0.9− | 0.0 | | |
| 2002 02 25 | 704 | (1.8− | 0.2−) | 2005 05 02 | 703 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.0 | | |
| 2002 02 25 | 704 | 1.0+ | 0.4+ | 2005 05 09 | 703 | 0.6− | 1.2− | 2006 11 22 | 704 | 0.5+ | 0.4− | | |
| 2002 02 25 | 704 | 0.4+ | 0.2− | 2005 05 09 | 703 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.4+ | 0.4+ | | |
| 2002 02 25 | 704 | 0.1+ | 0.9+ | 2005 05 09 | 703 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.2− | 0.7+ | | |
| 2003 11 18 | 704 | 0.4− | 0.5+ | 2005 05 09 | 703 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.0 | 1.1− | | |
| 2003 11 18 | 704 | 0.5+ | 0.7+ | 2005 05 11 | 704 | 0.9+ | 0.3+ | 2006 11 27 | 704 | 0.2+ | 0.1− | | |
| 2003 11 18 | 704 | 0.4− | 0.1+ | 2005 05 11 | 704 | 0.6+ | 0.5+ | 2006 11 27 | 704 | 0.1− | 0.1+ | | |
| 2003 11 18 | 704 | 0.0 | 1.1+ | 2005 05 11 | 704 | 0.0 | 0.7+ | 2006 11 27 | 704 | 0.6+ | 0.3+ | | |
| 2003 11 18 | 704 | 0.0 | 0.1+ | 2005 05 11 | 704 | 1.3+ | 0.5+ | 2006 11 27 | 704 | 0.9+ | 0.0 | | |
| 2003 12 14 | 644 | 0.5− | 0.5+ | 2005 05 11 | 704 | 0.1− | 0.1+ | | | | | | |
| 2003 12 14 | 644 | 0.5− | 0.6+ | 2005 05 30 | 703 | 0.7− | 0.4+ | | | | | | |

**(141484)∗ 2002 DB$_4$**

Discovered 2002 Feb. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.14668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 1.24078370 | $\omega$ | 94.09900 | | +0.81835574 | +0.52574590 | |
| $a$ | 0.8577064 | $\Omega$ | 234.34542 | | −0.57125829 | +0.78834646 | |
| $e$ | 0.3694434 | $i$ | 16.59977 | | +0.06291150 | +0.31953264 | |
| $P$ | 0.79 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 26 | 699 | 0.7+ | 0.1+ | 2002 04 03 | 649 | 0.5− | 0.0 | 2003 03 12 | E14 | (0.3+ | 1.6+) | | |
| 2002 02 26 | 699 | 0.0 | 0.5+ | 2002 04 15 | 448 | (2.7− | 2.5−) | 2003 03 12 | E14 | 0.5− | 0.4+ | | |
| 2002 02 26 | 699 | 1.0+ | 0.3+ | 2002 04 15 | 448 | (3.3− | 1.6−) | 2003 03 12 | E14 | 0.4− | 0.3+ | | |
| 2002 02 26 | 699 | 1.0− | 1.2+ | 2002 04 15 | 448 | (2.3− | 2.5−) | 2003 03 14 | 322 | 0.4− | 0.3− | | |
| 2002 02 27 | 448 | (2.0− | 2.5−) | 2002 04 15 | 448 | (4.7− | 6.0−) | 2003 03 14 | 322 | 0.3− | 0.3− | | |
| 2002 02 27 | 448 | (1.7− | 2.6−) | 2002 04 16 | 649 | 0.1− | 0.2+ | 2003 03 23 | 428 | 0.0 | 0.2− | | |
| 2002 02 27 | 448 | (2.0− | 2.3−) | 2002 04 16 | 649 | 0.1+ | 0.1− | 2003 03 23 | 428 | 0.4+ | 0.1− | | |
| 2002 02 28 | 046 | 0.8− | 0.1− | 2002 04 16 | 649 | 0.0 | 0.5+ | 2003 03 23 | 428 | 0.2+ | 0.3− | | |
| 2002 02 28 | 046 | 0.4− | 0.9− | 2002 04 23 | 413 | 0.0 | 0.1+ | 2003 03 26 | 322 | 0.2− | 0.5− | | |
| 2002 02 28 | 557 | 0.5+ | 0.2− | 2002 04 23 | 413 | 0.1+ | 0.0 | 2003 03 26 | 322 | 0.4− | 0.2− | | |
| 2002 02 28 | 046 | 0.4− | 0.3− | 2002 04 23 | 413 | 0.1− | 0.0 | 2003 03 26 | 322 | 0.1− | 0.9− | | |
| 2002 02 28 | 046 | 1.0+ | 1.0− | 2002 05 01 | 413 | 0.1+ | 0.1+ | 2003 04 02 | 809 | 0.2− | 0.2− | | |
| 2002 02 28 | 046 | 1.4+ | 0.6+ | 2002 05 01 | 413 | 0.0 | 0.0 | 2003 04 02 | 809 | 0.2− | 0.1− | | |
| 2002 02 28 | 046 | 0.0 | 0.2− | 2002 05 01 | 413 | 0.1− | 0.1− | 2003 04 02 | 809 | 0.1− | 0.1− | | |
| 2002 02 28 | 046 | 0.6− | 0.4+ | 2002 06 05 | 413 | 0.4+ | 0.2− | 2003 04 03 | H72 | (0.2− | 1.8+) | | |
| 2002 02 28 | 046 | 1.1+ | 0.1− | 2002 06 05 | 413 | 0.5+ | 0.1− | 2003 04 03 | H72 | 0.8− | 0.2+ | | |
| 2002 02 28 | 557 | 0.2− | 0.3+ | 2002 06 05 | 413 | 0.5+ | 0.0 | 2003 04 03 | H72 | 0.1− | 0.6+ | | |
| 2002 02 28 | 557 | 0.3+ | 0.2+ | 2002 06 23 | 413 | 0.1+ | 0.3+ | 2003 04 03 | H72 | 0.8− | 1.2+ | | |
| 2002 03 01 | 699 | 0.5− | 0.0 | 2002 06 23 | 413 | 0.1+ | 0.1− | 2003 04 09 | E14 | 0.0 | 0.3− | | |
| 2002 03 01 | 699 | 0.1+ | 0.0 | 2002 06 23 | 413 | 0.2− | 0.1− | 2003 04 09 | E14 | 0.0 | 0.4− | | |
| 2002 03 01 | 699 | 0.4− | 0.8+ | 2002 11 07 | 649 | 0.3− | 0.2+ | 2003 04 09 | E14 | 0.1− | 0.2− | | |
| 2002 03 01 | 699 | 0.6− | 0.2− | 2002 11 07 | 649 | 0.8+ | 0.4+ | 2003 04 09 | E14 | 0.1− | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 03 | 651 | 0.8− | 0.6+ | 2002 11 07 | 649 | 0.2− | 0.2+ | 2003 04 09 | E14 | 0.2+ | 0.1− |
| 2002 03 03 | 651 | 0.8+ | 1.3+ | 2002 11 12 | 649 | 0.0 | 0.1+ | 2003 04 10 | 170 | 0.2+ | 0.4− |
| 2002 03 03 | 651 | 1.4+ | 1.2+ | 2002 11 12 | 649 | 0.1− | 0.1− | 2003 04 10 | 170 | 0.8+ | 0.1− |
| 2002 03 03 | 428 | 0.4+ | 0.3+ | 2002 11 12 | 649 | 0.1− | 0.0 | 2003 04 10 | 170 | 1.1+ | 0.1+ |
| 2002 03 03 | 428 | (1.8+ | 0.2+) | 2002 12 13 | 670 | 0.3− | 0.1− | 2003 04 20 | 151 | 0.6+ | 0.4+ |
| 2002 03 03 | 428 | 0.2+ | 0.0 | 2002 12 13 | 670 | 0.3+ | 0.2+ | 2003 04 20 | 151 | 0.4+ | 0.2+ |
| 2002 03 03 | 428 | (2.3+ | 0.0 ) | 2002 12 28 | 423 | (1.4− | 1.6−) | 2003 04 20 | 151 | 0.7+ | 0.4− |
| 2002 03 03 | 046 | 0.1− | 0.1+ | 2002 12 28 | 423 | (0.0 | 2.1−) | 2003 04 20 | 151 | 0.5+ | 0.2+ |
| 2002 03 03 | 046 | 0.8+ | 0.5− | 2002 12 29 | 423 | 0.1+ | 0.1− | 2003 04 20 | 151 | 0.2− | 0.8+ |
| 2002 03 03 | 046 | 0.6− | 0.9+ | 2002 12 29 | 423 | 0.7− | 1.2− | 2003 04 20 | 151 | 0.1− | 0.0 |
| 2002 03 03 | 046 | 0.5+ | 1.1+ | 2003 01 01 | 474 | 0.3+ | 0.0 | 2003 04 20 | 151 | 0.3− | 1.1+ |
| 2002 03 03 | 046 | 0.3+ | 0.7+ | 2003 01 01 | 474 | 0.2+ | 0.1− | 2003 04 21 | E14 | 0.0 | 0.1− |
| 2002 03 03 | 046 | 0.1− | 0.2− | 2003 01 01 | 474 | 0.3+ | 0.1− | 2003 04 21 | E14 | 0.0 | 0.1− |
| 2002 03 03 | 046 | 1.2+ | 0.1− | 2003 01 07 | 322 | 0.1− | 0.5− | 2003 04 21 | E14 | 0.0 | 0.1− |
| 2002 03 03 | 046 | 0.6− | 1.0+ | 2003 01 07 | 322 | 0.2− | 0.5− | 2003 05 02 | J87 | (0.5+ | 3.4−) |
| 2002 03 06 | 413 | 0.3+ | 0.2− | 2003 01 07 | 322 | 0.0 | 0.4− | 2003 05 02 | J87 | (2.0+ | 0.6+) |
| 2002 03 06 | 413 | 0.2+ | 0.2− | 2003 01 10 | 428 | 0.1+ | 0.1+ | 2004 01 02 | 474 | 0.5+ | 0.0 |
| 2002 03 06 | 413 | 0.2+ | 0.0 | 2003 01 10 | 428 | 0.0 | 0.1− | 2004 01 02 | 474 | 0.7+ | 0.4+ |
| 2002 03 07 | 413 | 0.1+ | 0.3− | 2003 01 10 | 428 | 0.4+ | 0.0 | 2004 01 02 | 474 | 0.5+ | 0.6+ |
| 2002 03 07 | 413 | 0.3+ | 0.3− | 2003 01 17 | 322 | 0.0 | 0.8− | 2004 01 02 | 474 | 0.4− | 0.3+ |
| 2002 03 07 | 413 | 0.2+ | 0.3− | 2003 01 17 | 322 | 0.1− | 0.8− | 2004 01 02 | 474 | 0.1+ | 0.2+ |
| 2002 03 11 | 422 | 0.7+ | 0.1+ | 2003 01 17 | 322 | 0.1− | 0.4− | 2006 02 07 | 448 | 0.1+ | 0.1− |
| 2002 03 12 | 715 | 1.5− | 0.0 | 2003 01 26 | 428 | 0.0 | 0.2+ | 2006 02 07 | 448 | 0.4+ | 0.0 |
| 2002 03 12 | 715 | (1.7− | 0.1−) | 2003 01 26 | 428 | 0.1+ | 0.5+ | 2006 02 07 | 448 | 0.1+ | 0.2+ |
| 2002 03 12 | 715 | 1.2− | 0.7− | 2003 01 26 | 428 | 0.1+ | 0.4+ | 2006 04 02 | 703 | 0.5− | 0.5+ |
| 2002 03 16 | 715 | 0.9− | 0.5+ | 2003 02 08 | 428 | 0.1+ | 0.0 | 2006 04 02 | 703 | 0.8+ | 0.5− |
| 2002 03 16 | 715 | 1.2− | 0.4− | 2003 02 08 | 428 | 0.2− | 0.3+ | 2006 04 02 | 703 | 1.0+ | 0.0 |
| 2002 03 16 | 715 | (1.7− | 1.0−) | 2003 02 10 | 428 | 0.4+ | 0.1+ | 2006 04 02 | 703 | 0.3− | 0.6+ |
| 2002 04 02 | 413 | 0.2+ | 0.2− | 2003 02 10 | 428 | 0.1+ | 0.2+ | 2006 06 28 | E12 | 0.6− | 0.2+ |
| 2002 04 02 | 413 | 0.2+ | 0.1− | 2003 03 03 | 428 | 0.1+ | 0.3+ | 2006 06 28 | E12 | 0.8− | 0.4− |
| 2002 04 02 | 413 | 0.2+ | 0.0 | 2003 03 03 | 428 | 0.2+ | 0.1+ | 2006 06 28 | E12 | 0.8− | 0.2+ |
| 2002 04 02 | 413 | 0.2+ | 0.2− | 2003 03 03 | 428 | 0.3+ | 0.0 | 2006 06 28 | E12 | 0.9− | 0.0 |
| 2002 04 02 | 413 | 0.3+ | 0.0 | 2003 03 03 | 428 | 0.2+ | 0.1− | 2006 11 18 | 703 | 0.2− | 0.3− |
| 2002 04 03 | 649 | 0.4− | 0.1+ | 2003 03 08 | 428 | 0.1− | 0.1− | 2006 11 18 | 703 | 0.3− | 0.0 |
| 2002 04 03 | 649 | 0.5− | 1.2− | 2003 03 08 | 428 | 0.1+ | 0.0 | | | | |

**(141485)∗ 2002 DG$_8$ = 1991 GW$_{14}$ = 1997 GP$_{39}$**

Discovered 2002 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33535), A. Doppler (*MPO* 94673)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.30542 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16879694 | $\omega$ | 109.78077 | | −0.92217091 | | −0.32670131 |
| $a$ | 3.2425972 | $\Omega$ | 51.71985 | | +0.17344881 | | −0.82775635 |
| $e$ | 0.0954362 | $i$ | 15.29286 | | +0.34571132 | | −0.45616409 |
| $P$ | 5.84 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 10 | 493 | 0.0 | 0.2+ | 2003 04 24 | 699 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 1991 04 10 | 493 | 0.1+ | 0.4− | 2003 04 24 | 699 | (2.1+ | 0.7−) | 2006 10 20 | G96 | 0.0 | 0.4− |
| 1991 04 10 | 493 | 0.0 | 0.7− | 2003 04 28 | 704 | 0.9+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.4− |
| 1991 04 12 | 493 | 0.3− | 0.4+ | 2003 04 28 | 704 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.4+ |
| 1991 04 12 | 493 | 0.3− | 0.1+ | 2003 04 28 | 704 | 0.4− | 0.3+ | 2006 11 16 | 704 | 0.6+ | 0.1− |
| 1991 04 12 | 493 | 0.2− | 0.2− | 2003 04 29 | 704 | 0.5+ | 0.4+ | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 1997 04 07 | 809 | (1.1+ | 3.2−) | 2003 04 29 | 704 | (1.2− | 2.4−) | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 1997 04 07 | 809 | (1.1+ | 2.9−) | 2003 04 29 | 704 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.8− | 0.4+ |
| 1997 04 07 | 809 | (0.2− | 3.5−) | 2003 04 29 | 704 | 1.3+ | 1.0+ | 2006 11 16 | 704 | 0.3+ | 0.2− |
| 2000 11 21 | 704 | 0.3+ | 0.3+ | 2003 04 29 | 704 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2000 11 21 | 704 | 0.5+ | 0.6− | 2003 04 29 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 1.3+ | 0.0 |
| 2000 11 21 | 704 | 0.1− | 0.4− | 2003 04 29 | 608 | 0.5− | 0.7+ | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2002 01 11 | 699 | 0.6+ | 0.6− | 2003 04 29 | 608 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2002 01 11 | 699 | 1.4− | 0.6+ | 2003 04 29 | 608 | 0.6− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2002 01 11 | 699 | 0.3− | 0.1− | 2003 05 05 | 704 | 0.8− | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.0 |
| 2002 01 11 | 699 | 0.4+ | 1.0+ | 2003 05 05 | 704 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 02 19 | 704 | 0.1+ | 0.1− | 2003 05 05 | 704 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 02 19 | 704 | 0.1− | 0.2− | 2003 05 05 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 02 19 | 704 | 0.3+ | 0.6− | 2003 05 05 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2002 02 21 | 704 | 0.8+ | 0.3+ | 2004 08 09 | E12 | 0.6+ | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2002 02 21 | 704 | 0.1− | 0.3+ | 2004 08 09 | E12 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2002 02 21 | 704 | 0.1− | 0.4+ | 2004 08 09 | E12 | 0.3+ | 1.5+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2002 02 21 | 704 | (0.7+ | 1.6+) | 2004 08 09 | E12 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.7+ | 0.6+ |
| 2002 02 21 | 704 | 0.5+ | 0.0 | 2005 08 27 | 644 | 0.5− | 0.6+ | 2006 11 22 | 704 | 0.6+ | 0.5+ |
| 2002 02 21 | 704 | 0.2+ | 0.4+ | 2005 08 27 | 644 | 0.6− | 0.3+ | 2006 11 22 | 704 | (0.0 | 2.5+) |
| 2002 02 21 | 704 | 0.1− | 0.3+ | 2005 08 27 | 644 | 0.6− | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2002 02 21 | 704 | 0.3+ | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2002 02 21 | 704 | 0.7+ | 0.3+ | 2006 09 27 | G96 | 0.6− | 0.3− | 2006 11 25 | 691 | 0.3+ | 0.5+ |
| 2002 02 21 | 704 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.5− | 0.6− | 2006 11 25 | 691 | 0.2− | 0.1+ |
| 2003 04 24 | 699 | 0.4− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2003 04 24 | 699 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.4− | 0.3− | | | | |

**(141486)∗ 2002 DZ$_{10}$ = 2005 PF$_3$**

Discovered 2002 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85458)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.26731 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17924992 | $\omega$ | 358.20523 | | +0.99981058 | | −0.00460112 |
| $a$ | 3.1152774 | $\Omega$ | 2.32612 | | +0.01762030 | | +0.62665518 |
| $e$ | 0.1052295 | $i$ | 27.77093 | | −0.00826607 | | +0.77928308 |
| $P$ | 5.50 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 19 | 704 | 0.0 | 0.4+ | 2005 09 08 | 704 | 0.4− | 0.2+ | 2005 10 06 | 699 | 0.1+ | 0.2− |
| 2002 02 19 | 704 | 0.8− | 0.5+ | 2005 09 08 | 704 | 0.2+ | 0.3− | 2005 10 06 | 703 | 0.4− | 0.7− |
| 2002 02 19 | 704 | 0.6− | 0.2+ | 2005 09 09 | 704 | 0.1+ | 0.4+ | 2005 10 06 | 703 | 0.4+ | 0.1− |
| 2002 02 21 | 704 | 1.2+ | 0.8+ | 2005 09 09 | 704 | 0.1− | 0.4+ | 2005 10 06 | 699 | 0.2+ | 0.1+ |
| 2002 02 21 | 704 | 1.5+ | 1.3+ | 2005 09 09 | 704 | 0.0 | 0.3+ | 2005 10 06 | 699 | 0.4+ | 0.2+ |
| 2002 02 21 | 704 | 0.8+ | 0.9+ | 2005 09 09 | 704 | 0.0 | 0.4+ | 2005 10 07 | 704 | 0.4+ | 0.5+ |
| 2002 02 21 | 704 | 1.3+ | 0.7+ | 2005 09 09 | 704 | 0.6− | 0.7+ | 2005 10 07 | 704 | 0.1+ | 0.7+ |
| 2002 02 21 | 704 | 0.7+ | 0.9+ | 2005 09 14 | 691 | 0.1− | 0.2− | 2005 10 07 | 704 | 1.1+ | 0.4+ |
| 2002 03 05 | 704 | 0.3− | 0.6+ | 2005 09 14 | 691 | 0.2− | 0.2− | 2005 10 07 | 704 | 0.5+ | 0.1+ |
| 2002 03 05 | 704 | 1.1+ | 0.2+ | 2005 09 14 | 691 | 0.0 | 0.2− | 2005 10 07 | 704 | 0.3+ | 0.3+ |
| 2002 03 05 | 704 | 0.7− | 0.5− | 2005 09 15 | 703 | 0.4− | 0.1+ | 2005 10 21 | 644 | 0.3+ | 0.2− |
| 2002 03 05 | 704 | 1.1− | 0.5− | 2005 09 15 | 703 | 0.3+ | 0.4− | 2005 10 21 | 644 | 0.2+ | 0.1− |
| 2002 03 19 | 644 | 0.1+ | 0.1+ | 2005 09 15 | 703 | 0.0 | 0.1+ | 2005 10 21 | 644 | 0.1+ | 0.3− |
| 2002 03 19 | 644 | 0.3+ | 0.0 | 2005 09 15 | 703 | 0.2− | 0.5+ | 2005 10 30 | 704 | 0.1− | 0.5+ |
| 2002 03 19 | 644 | 0.1+ | 0.1+ | 2005 09 23 | 703 | 0.1+ | 0.5− | 2005 10 30 | 699 | 0.9+ | 1.0+ |
| 2002 03 19 | 644 | 1.1+ | 0.3+ | 2005 09 23 | 703 | 0.5− | 0.1+ | 2005 10 30 | 704 | 0.1+ | 0.5+ |
| 2002 03 19 | 644 | 0.5+ | 0.0 | 2005 09 23 | 703 | 0.0 | 0.3− | 2005 10 30 | 704 | 0.0 | 0.4+ |
| 2002 03 19 | 644 | 0.7+ | 0.2+ | 2005 09 23 | 703 | 0.2− | 0.3− | 2005 10 30 | 699 | 1.0− | 0.1− |
| 2003 03 31 | 699 | 0.0 | 0.7− | 2005 09 24 | 644 | 0.1− | 0.1− | 2005 10 30 | 704 | 0.1− | 0.2+ |
| 2003 03 31 | 699 | 0.1− | 0.8+ | 2005 09 24 | 644 | 0.1− | 0.1− | 2005 10 30 | 704 | 0.4− | 0.0 |
| 2003 03 31 | 699 | 0.8+ | 1.1+ | 2005 09 24 | 644 | 0.1− | 0.0 | 2005 10 30 | 699 | 1.0− | 1.0+ |
| 2003 03 31 | 699 | 0.1+ | 0.1+ | 2005 09 24 | 699 | 0.0 | 0.5+ | 2005 11 02 | 704 | 0.5+ | 0.3− |
| 2005 07 12 | 703 | 0.9− | 0.2+ | 2005 09 24 | 699 | (1.7− | 1.0+) | 2005 11 02 | 704 | 0.8− | 0.7+ |
| 2005 07 12 | 703 | 0.2+ | 0.7− | 2005 09 24 | 699 | 0.7+ | 0.8− | 2005 11 02 | 704 | 0.3+ | 0.0 |
| 2005 07 12 | 703 | 0.7+ | 0.2+ | 2005 09 25 | 703 | 0.1+ | 0.2− | 2005 11 02 | 704 | 0.6− | 0.2− |
| 2005 07 12 | 703 | 0.1+ | 0.5− | 2005 09 25 | 703 | 0.1− | 0.4− | 2005 11 02 | 704 | 0.3+ | 0.4+ |
| 2005 08 02 | 704 | 0.5− | 0.3+ | 2005 09 25 | 703 | 0.3− | 0.1− | 2005 11 05 | 704 | 0.1− | 0.1+ |
| 2005 08 02 | 704 | 0.3+ | 0.8+ | 2005 09 25 | 703 | 0.1− | 0.3− | 2005 11 05 | 704 | 0.0 | 0.1+ |
| 2005 08 02 | 704 | 0.4+ | 0.7+ | 2005 09 26 | 644 | 0.1− | 0.2− | 2005 11 05 | 704 | 0.4+ | 0.5+ |
| 2005 08 02 | 704 | 0.4+ | 0.9+ | 2005 09 26 | 644 | 0.1− | 0.1− | 2005 11 05 | 704 | 0.3+ | 0.5+ |
| 2005 08 06 | 704 | 0.3− | 0.2− | 2005 09 26 | 644 | 0.2− | 0.1− | 2005 11 05 | 704 | 0.1+ | 0.1− |
| 2005 08 06 | 704 | 0.2− | 0.1+ | 2005 09 29 | 699 | 0.2+ | 0.4− | 2005 11 18 | 699 | 0.3− | 0.2+ |
| 2005 08 06 | 704 | 0.8− | 0.3+ | 2005 09 29 | 699 | 0.2+ | 0.3+ | 2005 11 18 | 699 | 0.1− | 0.9+ |
| 2005 08 27 | 644 | 0.2− | 0.1+ | 2005 09 29 | 699 | 0.2− | 0.0 | 2005 11 18 | 699 | 0.6+ | 0.1− |
| 2005 08 27 | 644 | 0.3− | 0.0 | 2005 09 29 | 699 | 0.3+ | 0.3+ | 2005 11 18 | 699 | 0.8+ | 0.9− |
| 2005 08 27 | 644 | 0.3− | 0.2+ | 2005 10 01 | 703 | 0.0 | 0.2− | 2005 12 02 | 703 | 0.6− | 0.4− |
| 2005 08 29 | 704 | 0.3+ | 0.8+ | 2005 10 01 | 703 | 0.0 | 1.1− | 2005 12 02 | 703 | 1.3− | 0.5− |
| 2005 08 29 | 704 | 0.0 | 1.0+ | 2005 10 01 | 703 | 0.1− | 0.4− | 2005 12 02 | 703 | 0.8− | 0.7− |
| 2005 08 29 | 704 | 0.0 | 0.0 | 2005 10 01 | 703 | 0.3− | 0.3− | 2005 12 02 | 703 | 1.1− | 0.1+ |
| 2005 08 29 | 704 | 0.5− | 0.7+ | 2005 10 01 | 703 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 29 | 704 | 0.4− | 0.1− | 2005 10 01 | 703 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 1.0+ | 0.4− |
| 2005 08 29 | 699 | 0.2− | 0.1+ | 2005 10 01 | 703 | 0.2+ | 0.4+ | 2006 10 21 | 703 | (1.1+ | 3.1−) |
| 2005 08 29 | 699 | 0.3− | 0.3+ | 2005 10 01 | 703 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 1.4− | 1.1− |
| 2005 08 29 | 699 | 0.1+ | 0.1+ | 2005 10 02 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2005 08 29 | 699 | 0.3− | 0.3+ | 2005 10 02 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.4+ |
| 2005 08 30 | 691 | 0.2− | 0.0 | 2005 10 02 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.7+ | 1.1− |
| 2005 08 30 | 691 | 0.0 | 0.0 | 2005 10 04 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3− | 0.9− |
| 2005 08 30 | 691 | 0.1− | 0.0 | 2005 10 04 | 644 | 0.3− | 0.1− | 2006 11 20 | 703 | 0.2− | 0.2− |
| 2005 09 08 | 704 | 0.0 | 0.1+ | 2005 10 04 | 644 | 0.1− | 0.1− | 2006 11 20 | 703 | 0.1− | 0.7− |
| 2005 09 08 | 704 | 0.1+ | 0.2+ | 2005 10 06 | 703 | 0.0 | 0.2− | 2006 11 20 | 703 | 0.3+ | 1.2− |
| 2005 09 08 | 704 | 0.4+ | 0.0 | 2005 10 06 | 703 | 0.3− | 0.5− | 2006 11 20 | 703 | 0.6− | 0.8− |

**(141487)∗ 2002 DP$_{16}$**

Discovered 2002 Feb. 20 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.87259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31378450 | $\omega$ | 32.07357 | | +0.00304374 | +0.99990191 | |
| $a$ | 2.1447749 | $\Omega$ | 238.10417 | | −0.92084562 | −0.00252830 | |
| $e$ | 0.1711273 | $i$ | 0.92268 | | −0.38991549 | +0.01377635 | |
| $P$ | 3.14 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.2+ | 0.6− | 2002 02 22 | 291 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 1.3+ | 0.8− |
| 1999 03 10 | 691 | 0.3+ | 0.4− | 2002 02 22 | 291 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 0.9+ | 0.5+ |
| 1999 03 10 | 691 | 0.2+ | 0.4− | 2002 03 21 | 291 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.6− | 0.2+ |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2002 03 21 | 291 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2002 03 21 | 291 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 2002 02 11 | 691 | 0.1− | 0.0 | 2003 10 15 | 699 | 0.4− | 1.3+ | 2006 09 12 | 703 | 0.3− | 0.9− |
| 2002 02 11 | 691 | 0.0 | 0.3− | 2003 10 15 | 699 | 0.3+ | 0.9− | 2006 09 12 | 703 | 0.4− | 1.0− |
| 2002 02 11 | 691 | 0.3− | 0.6+ | 2003 10 15 | 699 | 0.4+ | 0.3− | 2006 09 12 | 703 | 0.7+ | 0.4− |
| 2002 02 13 | 645 | 0.2− | 0.1− | 2003 10 15 | 699 | 0.3+ | 1.3− | 2006 09 12 | 703 | 0.1− | 0.1− |
| 2002 02 13 | 645 | 0.2− | 0.1− | 2003 10 19 | 691 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2002 02 20 | 691 | 0.0 | 0.3+ | 2003 10 19 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.3+ |
| 2002 02 20 | 691 | 0.0 | 0.4+ | 2003 10 19 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 2002 02 20 | 691 | 0.0 | 0.4+ | 2003 10 23 | 704 | 0.3+ | 0.5− | 2006 09 20 | 704 | 0.6− | 0.4+ |
| 2002 02 21 | 291 | 0.3+ | 0.1− | 2003 10 23 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.7+ | 0.4+ |
| 2002 02 21 | 291 | 0.5+ | 0.1− | 2003 10 23 | 704 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.3+ |
| 2002 02 21 | 291 | 1.4+ | 0.4+ | 2005 01 17 | 691 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.5+ |
| 2002 02 22 | 291 | 1.3− | 0.3− | 2005 01 17 | 691 | 0.1+ | 0.7− | 2006 09 20 | 704 | 0.3− | 0.2− |
| 2002 02 22 | 291 | 0.4+ | 0.3− | 2005 01 17 | 691 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.5+ | 0.8− |
| 2002 02 22 | 291 | 0.5+ | 0.1+ | 2005 02 04 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2002 02 22 | 291 | 0.5+ | 0.4+ | 2005 02 04 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.3− | 0.4− |
| 2002 02 22 | 291 | 0.3+ | 0.5+ | 2005 02 04 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 02 22 | 291 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 1.3+ | 0.0 | 2006 10 20 | 695 | 0.2− | 0.0 |
| 2002 02 22 | 291 | 0.2+ | 0.5+ | 2006 08 27 | 699 | 0.3− | 0.9− | 2006 10 20 | 695 | 0.0 | 0.0 |

**(141488)∗ 2002 DK$_{18}$**

Discovered 2002 Feb. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.69072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35905275 | $\omega$ | 173.37381 | | −0.99361387 | +0.08427379 | |
| $a$ | 1.9604866 | $\Omega$ | 12.24430 | | −0.11274848 | −0.71569331 | |
| $e$ | 0.0424330 | $i$ | 20.71855 | | −0.00438803 | −0.69331163 | |
| $P$ | 2.75 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.7− | 1.1+ | 2003 09 18 | 608 | 0.2− | 0.6− | 2005 03 17 | 704 | (1.1+ | 2.6−) |
| 2001 12 09 | 704 | 1.3− | 1.4+ | 2003 09 19 | 699 | 0.3− | 0.2+ | 2005 03 17 | 704 | (0.7+ | 2.4−) |
| 2001 12 09 | 704 | (1.7− | 0.0 ) | 2003 09 19 | 699 | 1.1− | 0.4+ | 2005 03 17 | 704 | (1.7+ | 2.2+) |
| 2001 12 09 | 704 | 0.0 | 1.2+ | 2003 09 19 | 699 | 0.9− | 0.0 | 2005 03 17 | 704 | (1.8+ | 1.3+) |
| 2002 02 04 | 699 | 1.4+ | 0.2+ | 2003 09 19 | 699 | 0.7− | 0.7+ | 2005 04 03 | E12 | 0.2− | 0.7+ |
| 2002 02 04 | 699 | 1.3+ | 0.7+ | 2003 09 22 | 608 | 0.1− | 0.7+ | 2005 04 03 | E12 | 0.3− | 0.8+ |
| 2002 02 04 | 699 | 1.1+ | 1.0+ | 2003 09 22 | 608 | 0.2+ | 0.5− | 2005 04 03 | E12 | 0.2+ | 0.7+ |
| 2002 02 04 | 699 | 1.4+ | 0.4+ | 2003 09 22 | 608 | 0.3+ | 0.1− | 2005 04 03 | E12 | 0.5− | 0.3+ |
| 2002 02 13 | 678 | 0.3+ | 0.0 | 2003 09 24 | 644 | 0.4− | 1.0+ | 2005 04 06 | 699 | 0.6+ | 0.2+ |
| 2002 02 13 | 678 | 0.0 | 0.1+ | 2003 09 24 | 644 | 0.5− | 0.8+ | 2005 04 06 | 699 | (1.8+ | 0.6+) |
| 2002 02 13 | 678 | 1.1+ | 0.2− | 2003 09 24 | 644 | 0.5− | 1.1+ | 2005 04 06 | 691 | 0.5+ | 0.4+ |
| 2002 02 21 | 704 | 0.0 | 0.9+ | 2003 09 28 | 704 | 0.4− | 0.6+ | 2005 04 06 | 699 | 0.5+ | 0.9+ |
| 2002 02 21 | 704 | 0.5+ | 1.3+ | 2003 09 28 | 704 | 0.2− | 0.6+ | 2005 04 06 | 691 | 0.3+ | 0.5+ |
| 2002 02 21 | 704 | 0.1− | 1.3+ | 2003 09 28 | 704 | (0.4− | 1.8+) | 2005 04 06 | 699 | 0.5+ | 0.5+ |
| 2002 02 21 | 704 | (0.5+ | 1.6+) | 2003 09 28 | 704 | 0.4− | 0.4+ | 2005 04 06 | 691 | 0.4+ | 0.5+ |
| 2002 02 21 | 704 | (0.1− | 2.3+) | 2003 09 28 | 704 | 0.2− | 0.5+ | 2005 04 06 | 704 | 1.4+ | 0.8+ |
| 2002 02 22 | 704 | 0.6− | 0.7+ | 2003 10 03 | 608 | 0.4− | 0.4+ | 2005 04 06 | 704 | 0.5+ | 0.7+ |
| 2002 02 22 | 704 | 0.8− | 1.0+ | 2003 10 03 | 608 | 0.1− | 0.6+ | 2005 04 06 | 704 | 1.4+ | 0.0 |
| 2002 02 22 | 704 | 0.7− | 0.7+ | 2003 10 03 | 608 | 0.1− | 0.3+ | 2005 04 06 | 704 | 1.2+ | 0.8+ |
| 2002 02 22 | 704 | 0.8− | 0.5+ | 2003 10 15 | 699 | 1.0− | 0.4+ | 2005 04 06 | 704 | 0.4+ | 0.6+ |
| 2002 02 22 | 704 | 1.0− | 0.8+ | 2003 10 15 | 699 | 0.1− | 1.0+ | 2005 04 18 | 703 | 0.6− | 0.2− |
| 2002 03 05 | 704 | 0.7+ | 0.0 | 2003 10 15 | 699 | 0.1+ | 0.5− | 2005 04 18 | 703 | 0.4− | 0.6+ |
| 2002 03 05 | 704 | 0.7+ | 0.3+ | 2003 10 15 | 699 | 0.3− | 0.7+ | 2005 04 18 | 703 | 0.4− | 0.0 |
| 2002 03 05 | 704 | 1.2+ | 0.1− | 2003 10 16 | 644 | 0.7− | 0.5+ | 2005 04 18 | 703 | 0.6− | 0.1+ |
| 2002 03 05 | 704 | 1.1+ | 0.1+ | 2003 10 16 | 644 | 0.7− | 0.6+ | 2005 04 18 | E12 | 0.2− | 0.5+ |
| 2002 03 19 | 644 | 0.4+ | 0.1− | 2003 10 16 | 644 | 0.4− | 0.3+ | 2005 04 18 | E12 | 0.2+ | 0.5+ |
| 2002 03 19 | 644 | 0.4+ | 0.0 | 2003 10 16 | 644 | 0.2− | 0.6+ | 2005 04 18 | E12 | 0.1+ | 0.4+ |
| 2002 03 19 | 644 | 0.5+ | 0.0 | 2003 10 16 | 644 | 0.4− | 0.5+ | 2005 04 18 | E12 | 0.3+ | 0.2+ |
| 2002 03 20 | 644 | 0.4+ | 0.6− | 2003 10 16 | 644 | 0.4− | 0.6+ | 2005 05 02 | E12 | 0.1− | 0.4+ |
| 2002 03 20 | 644 | 0.3+ | 0.6− | 2003 10 19 | 704 | 0.3− | 0.9+ | 2005 05 02 | E12 | 0.3− | 0.5+ |
| 2002 03 20 | 644 | 0.4+ | 0.7− | 2003 10 19 | 704 | 0.7− | 0.7+ | 2005 05 02 | E12 | 0.1− | 0.2+ |
| 2002 03 21 | 704 | (0.3− | 2.4+) | 2003 10 19 | 704 | 0.6− | 0.4+ | 2005 05 02 | E12 | 0.3+ | 0.4+ |
| 2002 03 21 | 704 | (0.0 | 2.7+) | 2003 10 19 | 704 | 0.8− | 0.6+ | 2005 05 12 | 703 | (1.5− | 0.1+) |
| 2002 03 21 | 704 | (0.2+ | 2.7+) | 2003 10 19 | 704 | 1.3− | 0.5+ | 2005 05 12 | 703 | 1.0+ | 1.0+ |
| 2002 03 21 | 704 | (0.3− | 2.4+) | 2003 10 24 | 691 | 0.3− | 0.5+ | 2005 05 12 | 703 | 0.5− | 0.1+ |
| 2002 03 21 | 704 | (0.2+ | 1.8+) | 2003 10 24 | 691 | 0.3− | 0.4+ | 2005 05 12 | 703 | 1.3+ | 1.1− |
| 2002 04 04 | 704 | 0.3+ | 0.4+ | 2003 10 24 | 691 | 0.3− | 0.3+ | 2006 08 29 | 703 | 1.3− | 0.8+ |
| 2002 04 04 | 704 | 0.6+ | 0.6+ | 2003 10 24 | 704 | 0.1− | 0.6+ | 2006 08 29 | 703 | 0.2+ | 0.6+ |
| 2002 04 04 | 704 | 0.3+ | 0.2− | 2003 10 24 | 704 | 0.5+ | 1.1+ | 2006 08 29 | 703 | 0.2− | 0.2+ |
| 2002 04 04 | 704 | 0.3+ | 0.4− | 2003 10 24 | 704 | 0.3+ | 1.0+ | 2006 08 29 | 703 | 0.2− | 0.7+ |
| 2002 04 04 | 704 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.4+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 04 09 | 699 | 0.3− | 0.2+ | 2003 10 24 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 04 09 | 699 | 0.6+ | 0.5− | 2003 10 27 | 608 | 0.1− | 1.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 04 09 | 699 | 0.7+ | 0.0 | 2003 10 27 | 608 | (0.3− | 1.8+) | 2006 10 23 | 703 | 1.0− | 0.2− |
| 2002 04 09 | 699 | 0.2+ | 0.1+ | 2003 10 27 | 608 | 0.4− | 1.2+ | 2006 10 23 | 703 | (0.4+ | 1.7−) |
| 2002 04 16 | 704 | 0.0 | 0.4+ | 2003 11 19 | 645 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.2− | 0.5− |
| 2002 04 16 | 704 | 0.6+ | 0.5+ | 2003 11 19 | 645 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.2− | 0.8− |
| 2002 04 16 | 704 | 0.5+ | 0.4+ | 2003 11 20 | 645 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.7− | 0.5+ |
| 2002 04 16 | 704 | 0.5+ | 0.6+ | 2003 11 20 | 645 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.8+ | 0.9+ |
| 2003 09 01 | 704 | 0.7− | 0.3+ | 2003 11 20 | 704 | 0.3− | 0.3+ | 2006 10 29 | 703 | 0.4+ | 0.4+ |
| 2003 09 01 | 704 | 0.3− | 0.4− | 2003 11 20 | 704 | 0.4+ | 0.2− | 2006 10 29 | 703 | 1.0+ | 0.6− |
| 2003 09 01 | 704 | (0.5− | 1.5+) | 2003 11 20 | 704 | 0.4− | 0.2− | 2006 11 14 | 704 | 0.2− | 0.5− |
| 2003 09 01 | 704 | 0.7− | 0.8− | 2003 11 20 | 704 | 0.5+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.2+ |
| 2003 09 01 | 704 | 1.1+ | 0.4− | 2003 11 24 | 704 | 0.2+ | 0.9+ | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 2003 09 01 | 704 | (2.0− | 0.8+) | 2003 11 24 | 704 | 0.0 | 1.0+ | 2006 11 14 | 704 | 0.1+ | 1.1− |
| 2003 09 01 | 704 | 0.2+ | 1.2+ | 2003 11 24 | 704 | (1.7+ | 0.5+) | 2006 11 14 | 704 | 0.3+ | 0.7− |
| 2003 09 01 | 704 | 1.4− | 1.0+ | 2003 12 28 | 704 | 0.0 | 0.7+ | 2006 11 21 | 703 | (3.8+ | 1.7−) |
| 2003 09 01 | 704 | 0.5− | 0.2+ | 2003 12 28 | 704 | 0.6− | 0.9+ | 2006 11 21 | 703 | 0.5+ | 0.6− |
| 2003 09 17 | 704 | 0.6− | 0.4+ | 2003 12 28 | 704 | 0.4− | 0.2+ | 2006 11 21 | 703 | 1.0+ | 0.4+ |
| 2003 09 17 | 704 | 0.2+ | 0.6+ | 2005 03 03 | 704 | 1.1+ | 0.6+ | 2006 11 21 | 703 | 0.7+ | 0.7− |
| 2003 09 17 | 704 | 0.2− | 0.8+ | 2005 03 03 | 704 | 0.0 | 0.4+ | 2006 11 21 | 703 | 0.5+ | 0.3+ |
| 2003 09 17 | 704 | 0.1− | 0.8+ | 2005 03 03 | 704 | 1.0+ | 0.3+ | 2006 11 21 | 703 | 0.1+ | 0.3− |
| 2003 09 17 | 704 | 0.3− | 0.2+ | 2005 03 08 | 699 | 0.8+ | 0.1+ | 2006 11 21 | 703 | 0.7+ | 0.3+ |
| 2003 09 18 | 608 | 0.4− | 0.3− | 2005 03 08 | 699 | 1.2+ | 0.0 | 2006 11 21 | 703 | 0.0 | 0.8− |
| 2003 09 18 | 608 | 0.3− | 0.5− | 2005 03 08 | 699 | 0.5+ | 0.1+ | | | | |

**(141489)∗ 2002 DR$_{18}$ = 2005 EQ$_{56}$**

Discovered 2002 Feb. 22 by NEAT at Palomar.

Id. A. Doppler (*MPO* 75302)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.49402 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31325383 | $\omega$ | 97.82354 | | −0.60773244 | | +0.79389112 |
| $a$ | 2.1471965 | $\Omega$ | 134.73070 | | −0.73923210 | | −0.55635221 |
| $e$ | 0.1742606 | $i$ | 1.60951 | | −0.29016751 | | −0.24537543 |
| $P$ | 3.15 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 22 | 644 | 0.4+ | 0.7+ | 2003 10 19 | 691 | 0.0 | 0.4+ | 2005 04 09 | G96 | 0.1− | 0.5+ |
| 2002 02 22 | 644 | 0.7+ | 0.5+ | 2003 10 19 | 691 | 0.1+ | 0.2+ | 2005 04 09 | G96 | 0.1+ | 0.2− |
| 2002 02 22 | 644 | 0.0 | 0.3+ | 2005 01 16 | 691 | 0.2− | 0.2− | 2005 04 09 | G96 | 0.1− | 0.0 |
| 2002 02 24 | 644 | 0.1− | 0.6+ | 2005 01 16 | 691 | 0.1+ | 0.4− | 2005 04 09 | G96 | 0.1+ | 0.4− |
| 2002 02 24 | 644 | 0.0 | 1.0+ | 2005 01 16 | 691 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.2− | 0.2+ |
| 2002 02 24 | 644 | 0.2− | 0.5+ | 2005 03 04 | G96 | 0.3− | 0.6− | 2006 08 18 | 691 | 0.2− | 0.3+ |
| 2002 03 05 | 691 | 0.2+ | 0.4+ | 2005 03 04 | G96 | 0.2− | 0.7− | 2006 08 18 | 691 | 0.1+ | 0.6+ |
| 2002 03 05 | 691 | 0.1+ | 0.5+ | 2005 03 04 | G96 | 0.1− | 0.6− | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2002 03 05 | 691 | 0.3+ | 0.5+ | 2005 03 04 | G96 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2003 09 30 | 691 | 0.4+ | 0.2− | 2005 03 08 | G96 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 2003 09 30 | 691 | 0.1+ | 0.1− | 2005 03 08 | G96 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2003 09 30 | 691 | 0.1+ | 0.1+ | 2005 03 08 | G96 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2003 10 19 | 691 | 1.0− | 0.1+ | 2005 03 08 | G96 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.5− | 0.0 |

**(141490)∗ 2002 EH**

Discovered 2002 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.38910 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37890092 | $\omega$ | 22.74795 | | +0.26746866 | | −0.91170982 |
| $a$ | 1.8914097 | $\Omega$ | 53.18726 | | +0.81327672 | | +0.04003696 |
| $e$ | 0.0773871 | $i$ | 22.92413 | | +0.51676057 | | +0.40887927 |
| $P$ | 2.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 704 | (2.9+ | 3.8−) | 2002 03 05 | 704 | 0.3+ | 0.2+ | 2005 06 01 | 699 | 0.2− | 0.1− |
| 1998 10 16 | 704 | 0.2+ | 0.3+ | 2005 04 07 | 699 | 0.5+ | 0.6− | 2005 06 01 | 699 | 0.0 | 0.8+ |
| 1998 10 16 | 704 | 1.5− | 0.1− | 2005 04 07 | 699 | 0.0 | 0.2+ | 2005 06 01 | 699 | 0.3+ | 0.9+ |
| 1998 10 16 | 704 | 0.7− | 1.5+ | 2005 04 07 | 699 | 0.7− | 0.3− | 2005 06 04 | 703 | (0.5− | 4.7+) |
| 1998 10 16 | 704 | 1.4− | 1.5+ | 2005 04 07 | 699 | 0.0 | 0.0 | 2005 06 04 | 703 | 1.4− | 0.8+ |
| 2001 12 20 | 645 | 0.2− | 0.2− | 2005 04 09 | 704 | 1.5+ | 1.3+ | 2005 06 04 | 703 | 0.2− | 0.8− |
| 2001 12 20 | 645 | 0.2− | 0.2− | 2005 04 09 | 704 | 0.8+ | 1.0+ | 2005 06 04 | 703 | 1.0− | 1.0+ |
| 2001 12 23 | 704 | 0.2+ | 1.4+ | 2005 04 09 | 704 | 0.6+ | 0.7+ | 2005 06 12 | G96 | 0.7− | 0.2− |
| 2001 12 23 | 704 | 1.2− | 1.6+ | 2005 04 09 | 704 | 0.6+ | 0.5+ | 2005 06 12 | G96 | 0.5− | 0.1+ |
| 2001 12 23 | 704 | 0.6− | 0.6+ | 2005 04 09 | 704 | 1.4+ | 0.3+ | 2005 06 27 | 644 | 0.4+ | 0.3+ |
| 2001 12 23 | 704 | 0.4− | 0.6+ | 2005 04 12 | 699 | 0.5+ | 0.1− | 2005 06 27 | 644 | 0.4+ | 0.3+ |
| 2001 12 23 | 704 | 0.6− | 1.2+ | 2005 04 12 | 699 | 0.4+ | 0.0 | 2005 06 27 | 644 | 0.4+ | 0.4+ |
| 2002 01 26 | 704 | 0.1− | 0.4− | 2005 04 12 | 699 | 0.3+ | 0.4+ | 2006 10 17 | 106 | 0.0 | 0.4+ |
| 2002 01 26 | 704 | 0.5− | 0.3+ | 2005 04 12 | 699 | 0.2− | 0.5+ | 2006 10 17 | 106 | 0.2− | 0.4+ |
| 2002 01 26 | 704 | 0.4− | 1.4+ | 2005 04 30 | 644 | 0.4− | 0.0 | 2006 10 17 | 106 | 1.0− | 0.4+ |
| 2002 01 26 | 704 | 0.1− | 0.5+ | 2005 04 30 | 644 | 0.4− | 0.0 | 2006 10 17 | 106 | 1.2− | 0.5+ |
| 2002 01 26 | 704 | 0.6+ | 0.3+ | 2005 04 30 | 644 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2002 02 11 | 699 | 0.1− | 0.1− | 2005 05 07 | 703 | (2.0− | 0.7+) | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2002 02 11 | 699 | 0.4− | 0.0 | 2005 05 07 | 703 | (0.3+ | 2.4+) | 2006 10 19 | G96 | 0.4− | 0.2+ |
| 2002 02 11 | 699 | 1.2− | 0.4+ | 2005 05 07 | 703 | (2.1− | 1.4+) | 2006 10 28 | 704 | 0.5− | 0.4+ |
| 2002 02 11 | 699 | 0.5− | 0.6+ | 2005 05 07 | 703 | 0.1− | 0.8+ | 2006 10 28 | 704 | 0.3+ | 1.3− |
| 2002 03 03 | 704 | 1.8+ | 0.2− | 2005 05 08 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.5− | 0.2+ |
| 2002 03 03 | 704 | 1.7+ | 0.8− | 2005 05 08 | 704 | 0.7+ | 0.2+ | 2006 10 28 | 704 | 0.7− | 0.4+ |
| 2002 03 03 | 704 | 0.8+ | 1.2− | 2005 05 08 | 704 | 0.6+ | 0.1− | 2006 10 29 | 704 | 1.5+ | 1.5+ |
| 2002 03 03 | 704 | 1.1+ | 0.1− | 2005 05 11 | 699 | 0.5+ | 1.1+ | 2006 10 29 | 704 | 0.2+ | 1.3+ |
| 2002 03 03 | 704 | 1.8+ | 0.5+ | 2005 05 11 | 699 | 1.0+ | 0.5+ | 2006 10 29 | 704 | 0.2− | 0.3+ |
| 2002 03 05 | 704 | 0.7+ | 0.5+ | 2005 05 11 | 699 | 1.2+ | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 2002 03 05 | 704 | 0.9+ | 0.7− | 2005 05 11 | 699 | 0.7+ | 1.6+ | 2006 11 15 | 704 | 0.1− | 0.1− |
| 2002 03 05 | 704 | 0.4+ | 0.4+ | 2005 05 14 | 704 | 1.1+ | 0.4− | 2006 11 15 | 704 | 0.1+ | 0.7+ |
| 2002 03 05 | 704 | 0.6+ | 0.8− | 2005 05 14 | 704 | 0.4+ | 0.3− | 2006 11 15 | 704 | 0.2+ | 0.6+ |
| 2002 03 05 | 704 | 0.6+ | 0.5+ | 2005 05 14 | 704 | 0.4+ | 0.2+ | 2006 11 15 | 704 | 0.0 | 1.3+ |
| 2002 03 05 | 704 | 0.3+ | 1.6− | 2005 05 14 | 704 | 0.3− | 0.5+ | 2006 12 02 | 704 | 1.5− | 1.1+ |
| 2002 03 05 | 704 | 0.1− | 0.4+ | 2005 05 14 | 704 | (0.8− | 2.5+) | 2006 12 02 | 704 | 1.0− | 0.4+ |
| 2002 03 05 | 704 | 1.2+ | 0.5+ | 2005 06 01 | 699 | 0.5− | 0.5+ | 2006 12 02 | 704 | 0.2− | 0.8+ |

**(141491)∗ 2002 EL = 1998 XC$_{12}$**

Discovered 2002 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 27561)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.82980 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36703363 | $\omega$ | 246.03939 | | +0.81606330 | | +0.41259659 |
| $a$ | 1.9319630 | $\Omega$ | 87.38464 | | −0.25991475 | | +0.88744882 |
| $e$ | 0.0737610 | $i$ | 23.90053 | | −0.51622186 | | +0.20542311 |
| $P$ | 2.69 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 704 | 0.1− | 0.2− | 2002 03 05 | 704 | 0.0 | 0.3+ | 2005 04 18 | 704 | 0.9+ | 1.4+ |
| 1998 11 23 | 704 | 0.1− | 0.3− | 2002 03 05 | 704 | 0.1+ | 0.4+ | 2005 04 18 | 704 | 1.4+ | 0.7+ |
| 1998 11 23 | 704 | (1.0+ | 2.2−) | 2002 03 27 | 644 | 0.2+ | 0.7+ | 2005 04 18 | 704 | 0.2− | 0.5+ |
| 1998 11 23 | 704 | 1.4+ | 0.8− | 2002 03 27 | 644 | 0.0 | 1.2+ | 2005 04 18 | 704 | 0.2+ | 0.8+ |
| 1998 11 23 | 704 | 0.0 | 0.3+ | 2002 03 27 | 644 | 0.1+ | 0.7+ | 2005 04 18 | 704 | 0.9+ | 0.8+ |
| 1998 12 15 | 704 | 1.0+ | 1.0+ | 2002 04 02 | 704 | 0.5+ | 0.6− | 2005 04 19 | 704 | 0.2+ | 0.0 |
| 1998 12 15 | 704 | 1.3+ | 0.5+ | 2002 04 02 | 704 | 0.1+ | 0.4− | 2005 04 19 | 704 | 0.7+ | 0.8+ |
| 1998 12 15 | 704 | 0.8+ | 0.4− | 2002 04 02 | 704 | 0.7− | 0.6− | 2005 04 19 | 704 | 0.2+ | 0.1− |
| 1998 12 15 | 704 | 0.2− | 0.6− | 2002 04 02 | 704 | 0.2+ | 0.6− | 2005 04 19 | 704 | 0.2+ | 0.0 |
| 1998 12 15 | 704 | 0.8− | 1.2− | 2002 04 02 | 704 | 0.1− | 0.1− | 2005 04 19 | 704 | 0.0 | 0.4+ |
| 1998 12 16 | 704 | 0.1− | 1.1− | 2002 05 03 | 704 | 0.1+ | 0.1− | 2005 04 19 | 703 | 0.4− | 0.6− |
| 1998 12 16 | 704 | (0.1− | 2.4−) | 2002 05 03 | 704 | 1.2+ | 0.5+ | 2005 04 19 | 703 | 0.6− | 0.2− |
| 1998 12 16 | 704 | (0.3+ | 3.1−) | 2002 05 03 | 704 | 0.2+ | 0.3+ | 2005 04 19 | 703 | 0.8− | 0.0 |
| 1998 12 16 | 704 | (0.3+ | 3.1−) | 2002 05 03 | 704 | 0.1− | 0.1− | 2005 04 19 | 703 | 0.5− | 0.4− |
| 1998 12 22 | 704 | 0.7− | 0.4− | 2002 05 03 | 704 | 0.0 | 0.1+ | 2005 05 09 | 704 | 0.0 | 0.5+ |
| 1998 12 22 | 704 | 0.2+ | 1.7− | 2002 05 04 | 704 | 0.2− | 0.1− | 2005 05 09 | 704 | 0.1− | 1.4+ |
| 1998 12 22 | 704 | 0.0 | 0.8− | 2002 05 04 | 704 | 0.4− | 1.4+ | 2005 05 09 | 704 | 0.1+ | 1.3+ |
| 1998 12 22 | 704 | 1.0+ | 1.7− | 2002 05 04 | 704 | 1.2+ | 0.7+ | 2005 05 09 | 704 | 0.2− | 0.3− |
| 1998 12 22 | 704 | 1.1− | 1.6− | 2003 11 24 | 699 | 1.5− | 0.9+ | 2005 05 09 | 704 | 0.0 | 0.2+ |
| 1999 01 11 | 704 | 0.3+ | 0.3+ | 2003 11 24 | 699 | 0.6− | 0.2+ | 2005 05 16 | 703 | 0.6− | 0.2+ |
| 1999 01 11 | 704 | 0.6− | 0.3− | 2003 11 24 | 699 | 0.4+ | 1.4+ | 2005 05 16 | 703 | 0.1− | 0.1+ |
| 1999 01 11 | 704 | 0.7+ | 0.4+ | 2003 11 24 | 699 | (0.8+ | 1.5+) | 2005 05 16 | 703 | 1.1− | 0.6+ |
| 1999 01 11 | 704 | (3.1− | 0.1+) | 2003 11 27 | 699 | (2.0− | 2.2+) | 2005 05 16 | 703 | 0.7− | 0.2+ |
| 2001 12 09 | 704 | 0.3− | 0.2− | 2003 11 27 | 699 | 0.4+ | 0.4+ | 2005 06 01 | 703 | 0.5− | 0.4− |
| 2001 12 09 | 704 | 0.3− | 0.1+ | 2003 11 27 | 699 | (2.3− | 2.1+) | 2005 06 01 | 703 | 0.5− | 1.3− |
| 2001 12 09 | 704 | 0.2− | 0.1+ | 2003 11 27 | 699 | (1.2− | 1.7+) | 2005 06 01 | 703 | 0.6− | 1.3− |
| 2001 12 09 | 704 | 0.0 | 0.3− | 2003 12 16 | 704 | 0.1− | 0.9+ | 2005 06 01 | 703 | 0.2+ | 0.5− |
| 2001 12 09 | 704 | 0.3+ | 0.1+ | 2003 12 16 | 704 | 0.6− | 1.3+ | 2005 07 05 | 703 | 0.1+ | 0.4+ |
| 2001 12 22 | 704 | 0.5+ | 0.1− | 2003 12 16 | 704 | 1.1− | 0.1+ | 2005 07 05 | 703 | 1.0− | 0.2+ |
| 2001 12 22 | 704 | 0.1− | 0.5+ | 2003 12 16 | 704 | 0.7− | 1.0+ | 2005 07 05 | 703 | 0.1− | 0.4− |
| 2001 12 22 | 704 | 0.7+ | 0.4+ | 2005 03 13 | 704 | 1.0+ | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.6+ |
| 2001 12 22 | 704 | 0.6+ | 0.6− | 2005 03 13 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.4− | 0.7+ |
| 2002 01 25 | 704 | 0.3+ | 0.5− | 2005 03 13 | 704 | 0.6+ | 0.0 | 2006 09 20 | 703 | 0.3+ | 0.3− |
| 2002 01 25 | 704 | 0.3+ | 0.9− | 2005 03 13 | 704 | 0.4+ | 1.1+ | 2006 09 20 | 703 | 0.7− | 0.4+ |
| 2002 01 25 | 704 | 0.5+ | 0.4− | 2005 03 31 | 703 | 0.1− | 1.0− | 2006 10 31 | 704 | 0.6+ | 0.6+ |
| 2002 01 25 | 704 | 1.0+ | 0.5− | 2005 03 31 | 703 | 0.5− | 0.9− | 2006 10 31 | 704 | 0.6− | 0.8+ |
| 2002 01 25 | 704 | 0.8+ | 1.0− | 2005 03 31 | 703 | 0.6− | 0.6− | 2006 10 31 | 704 | 0.2− | 1.2+ |
| 2002 02 22 | 704 | 0.8− | 0.6− | 2005 03 31 | 703 | 1.0− | 0.3− | 2006 10 31 | 704 | 0.2− | 0.7− |
| 2002 02 22 | 704 | 0.1− | 0.4− | 2005 04 14 | 704 | 0.5+ | 0.0 | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2002 02 22 | 704 | 0.5− | 0.2+ | 2005 04 14 | 704 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.3− | 0.6+ |
| 2002 02 22 | 704 | 0.2+ | 0.1+ | 2005 04 14 | 704 | 0.7− | 1.0+ | 2006 11 15 | 703 | 0.1− | 0.7+ |
| 2002 02 22 | 704 | 0.3− | 0.5+ | 2005 04 14 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.7− | 0.1+ |
| 2002 03 04 | 704 | (0.5+ | 2.0+) | 2005 04 16 | 704 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.4+ | 2.4+ |
| 2002 03 04 | 704 | 0.6− | 0.8+ | 2005 04 16 | 704 | 1.0+ | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.8+ |
| 2002 03 04 | 704 | (0.8+ | 1.6+) | 2005 04 16 | 704 | 0.6+ | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.4+ |
| 2002 03 04 | 704 | 1.0+ | 0.0 | 2005 04 16 | 704 | 0.8+ | 0.9+ | 2006 11 20 | 704 | 0.8− | 0.2− |
| 2002 03 05 | 704 | 0.8− | 0.5+ | 2005 04 16 | 704 | 0.6+ | 0.5+ | 2006 11 20 | 704 | 0.8− | 0.8+ |

**(141492)∗ 2002 EB$_7$**

Discovered 2002 Mar. 6 by R. H. McNaught at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.33236 | | (2000.0) | | | |
| $n$ | 0.30583956 | $\omega$ | 292.40332 | | +0.33917933 | +0.94072033 |
| $a$ | 2.1817598 | $\Omega$ | 357.42192 | | −0.84928228 | +0.30546815 |
| $e$ | 0.1677517 | $i$ | 2.06792 | | −0.40457013 | +0.14742612 |
| $P$ | 3.22 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 06 | 413 | 0.0 | 0.2+ | 2003 11 30 | 691 | 0.6+ | 0.2− | 2006 09 17 | 704 | 0.2+ | 0.1+ |
| 2002 03 06 | 413 | 0.4+ | 0.5+ | 2005 02 02 | 691 | 0.3− | 0.5+ | 2006 09 17 | 704 | 0.5− | 1.2− |
| 2002 03 06 | 413 | 0.0 | 0.2+ | 2005 02 02 | 691 | 0.1− | 0.6+ | 2006 09 17 | 704 | 0.7− | 0.3+ |
| 2002 03 07 | 413 | 0.0 | 0.3+ | 2005 02 02 | 691 | 0.6+ | 0.1− | 2006 09 18 | 699 | 0.4− | 0.5+ |
| 2002 03 07 | 413 | 0.2+ | 0.2+ | 2005 03 10 | G96 | 0.6+ | 0.7− | 2006 09 18 | 699 | 1.2+ | 0.2− |
| 2002 03 15 | 644 | 0.7+ | 0.5+ | 2005 03 10 | G96 | 0.4+ | 0.4− | 2006 09 18 | 699 | 1.2− | 0.7+ |
| 2002 03 15 | 644 | 0.3+ | 0.8+ | 2005 03 10 | G96 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.4− | 0.1− |
| 2002 03 15 | 644 | 1.4+ | 1.1+ | 2005 03 10 | G96 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2002 03 20 | 691 | 0.3+ | 0.8+ | 2005 04 02 | G96 | 0.4− | 0.6− | 2006 09 19 | 691 | 0.4− | 0.5+ |
| 2002 03 20 | 691 | 0.3+ | 0.7+ | 2005 04 02 | G96 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.4+ |
| 2002 03 20 | 691 | 0.5+ | 0.6+ | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.3+ |
| 2002 04 04 | 644 | (0.5+ | 1.9+) | 2005 04 02 | G96 | 0.4− | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.5+ |
| 2002 04 04 | 644 | (0.7+ | 1.8+) | 2005 04 12 | 695 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 2002 04 04 | 644 | (0.5+ | 1.7+) | 2005 04 12 | 695 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2002 04 08 | 691 | 0.3+ | 0.6+ | 2006 08 21 | 807 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2002 04 08 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | (0.9− | 1.8+) | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2002 04 08 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2002 05 01 | 413 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 1.2− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 05 01 | 413 | 0.0 | 0.3+ | 2006 08 28 | 703 | 1.2− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 05 01 | 413 | 0.2+ | 0.7+ | 2006 09 13 | 644 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2003 10 21 | 691 | 0.0 | 0.2− | 2006 09 13 | 644 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2003 10 21 | 691 | 0.5− | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.5− | 0.3− |
| 2003 10 21 | 691 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.4− |
| 2003 11 19 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.4− |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.8+ | 0.5− |
| 2003 11 19 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2003 11 30 | 691 | 0.0 | 0.0 | 2006 09 16 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.0 |
| 2003 11 30 | 691 | 0.1− | 0.1− | 2006 09 16 | 691 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.1− |

**(141493)∗ 2002 ES$_7$**

Discovered 2002 Mar. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.41727 | | (2000.0) | | | |
| $n$ | 0.29900188 | $\omega$ | 286.10431 | | −0.19934422 | +0.97808758 |
| $a$ | 2.2148965 | $\Omega$ | 332.17903 | | −0.84270821 | −0.20238395 |
| $e$ | 0.1608640 | $i$ | 7.39312 | | −0.50010475 | −0.04884075 |
| $P$ | 3.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 09 | 291 | 0.1− | 0.1+ | 2002 03 13 | 704 | 1.2+ | 0.7+ | 2005 01 17 | 691 | 0.1+ | 0.1− |
| 2002 02 09 | 291 | 0.2− | 0.2+ | 2002 03 13 | 704 | 0.2+ | 0.5+ | 2005 01 17 | 691 | 0.4− | 0.1− |
| 2002 02 09 | 291 | 0.0 | 0.1+ | 2002 03 13 | 644 | 0.2+ | 0.1+ | 2005 01 17 | 691 | 0.0 | 0.2− |
| 2002 02 11 | 704 | 0.2+ | 0.1+ | 2002 03 13 | 644 | 0.1− | 0.3+ | 2006 08 19 | 699 | 0.1− | 0.5+ |
| 2002 02 11 | 704 | 0.1− | 0.2+ | 2002 03 13 | 644 | 0.2+ | 0.1+ | 2006 08 19 | 699 | 0.3− | 0.7+ |
| 2002 02 11 | 704 | 0.2− | 0.1− | 2002 03 15 | 704 | (1.9+ | 0.8−) | 2006 08 19 | 699 | (0.7+ | 1.7+) |
| 2002 02 11 | 704 | 0.7− | 0.8+ | 2002 03 15 | 704 | (1.9+ | 0.4+) | 2006 08 19 | 699 | 0.1+ | 0.8+ |
| 2002 02 20 | 704 | 1.5+ | 0.2− | 2002 03 15 | 704 | (1.9+ | 0.1+) | 2006 08 21 | 807 | 0.5− | 0.3+ |
| 2002 02 20 | 704 | 1.1+ | 0.8− | 2002 03 15 | 704 | 0.8+ | 0.2+ | 2006 08 21 | 807 | 0.6− | 0.3+ |
| 2002 02 20 | 704 | (1.8+ | 0.2+) | 2002 04 12 | 704 | 1.4+ | 0.3+ | 2006 08 29 | 704 | (0.6− | 1.7+) |
| 2002 02 20 | 704 | 1.0+ | 0.9− | 2002 04 12 | 704 | 0.7+ | 0.3− | 2006 08 29 | 704 | 0.1− | 1.4+ |
| 2002 02 21 | 704 | 0.9+ | 0.3− | 2002 04 12 | 704 | 1.5+ | 0.7− | 2006 08 29 | 704 | 0.3− | 0.1+ |
| 2002 02 21 | 704 | 0.5+ | 0.3+ | 2003 09 30 | 704 | 0.7− | 0.2+ | 2006 08 29 | 704 | 0.2− | 0.9+ |
| 2002 02 21 | 704 | 0.4+ | 0.6+ | 2003 09 30 | 704 | 0.2+ | 0.7+ | 2006 09 13 | 644 | 0.2− | 0.6+ |
| 2002 02 21 | 704 | 0.0 | 0.2− | 2003 09 30 | 704 | 1.3+ | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 2002 02 21 | 704 | 0.1+ | 0.4− | 2003 09 30 | 704 | 0.6+ | 0.3− | 2006 09 13 | 644 | 0.0 | 0.6+ |
| 2002 03 05 | 644 | 0.1+ | 0.5+ | 2003 09 30 | 704 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2002 03 05 | 644 | 0.3+ | 0.5+ | 2003 10 01 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2002 03 05 | 644 | 0.0 | 0.4+ | 2003 10 01 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2002 03 09 | 691 | 0.2− | 0.5+ | 2003 10 01 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.2+ |
| 2002 03 09 | 691 | 0.3− | 0.4+ | 2003 10 17 | 699 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.4+ |
| 2002 03 09 | 691 | 0.3− | 0.5+ | 2003 10 17 | 699 | 0.5+ | 1.1+ | 2006 09 27 | G96 | 0.1− | 0.2+ |
| 2002 03 12 | 704 | 0.0 | 1.3+ | 2003 10 17 | 699 | 1.0− | 1.3+ | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2002 03 12 | 704 | 0.8+ | 1.3+ | 2003 10 17 | 699 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2002 03 12 | 704 | 0.2+ | 1.4+ | 2003 10 18 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2002 03 13 | 704 | 0.3+ | 0.5+ | 2003 10 18 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2002 03 13 | 704 | 0.4+ | 0.3+ | 2003 10 18 | 691 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1− |

**(141494)∗ 2002 EB$_9$**

Discovered 2002 Mar. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.58742 | | (2000.0) | | | |
| $n$ | 0.34915562 | $\omega$ | 228.63202 | | +0.43072604 | −0.89615674 |
| $a$ | 1.9973616 | $\Omega$ | 196.82134 | | +0.89819124 | +0.43718579 |
| $e$ | 0.0501943 | $i$ | 21.62931 | | +0.08790666 | −0.07597156 |
| $P$ | 2.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 21 | 644 | 0.8+ | 0.2+ | 2003 10 25 | 704 | (4.0− | 0.4−) | 2006 08 30 | 704 | 0.7+ | 0.6+ |
| 2002 02 21 | 644 | 0.3+ | 0.4+ | 2003 11 15 | 699 | 0.6− | 0.6+ | 2006 08 30 | 704 | 0.9+ | 0.4− |
| 2002 02 21 | 644 | (0.8− | 1.7+) | 2003 11 15 | 699 | 0.3− | 0.5− | 2006 09 15 | 703 | 1.2− | 0.3+ |
| 2002 03 10 | 644 | 0.1+ | 0.9+ | 2003 11 15 | 699 | (2.1+ | 0.6−) | 2006 09 15 | 703 | 0.2− | 0.2− |
| 2002 03 10 | 644 | 0.1+ | 0.6+ | 2003 11 15 | 699 | 0.4+ | 0.9− | 2006 09 15 | 703 | 0.2+ | 0.2− |
| 2002 03 10 | 644 | 0.1− | 0.9+ | 2003 11 21 | 704 | 0.6− | 1.3+ | 2006 09 20 | 704 | 0.4+ | 0.3− |
| 2002 03 13 | 704 | 0.6− | 1.1+ | 2003 11 21 | 704 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.9− |
| 2002 03 13 | 704 | 0.2+ | 0.6+ | 2003 11 21 | 704 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.8+ | 0.4− |
| 2002 03 13 | 704 | 0.4+ | 1.1+ | 2003 11 21 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2002 03 14 | 704 | 0.3− | 0.4+ | 2003 11 21 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 1.0+ | 0.1− |
| 2002 03 14 | 704 | 0.4− | 0.0 | 2003 11 21 | 704 | (1.4− | 2.7+) | 2006 09 22 | 699 | 0.5− | 0.7+ |
| 2002 03 14 | 704 | 0.2+ | 0.2+ | 2003 11 21 | 704 | 0.7+ | 0.4− | 2006 09 22 | 699 | 0.5− | 1.1+ |
| 2002 03 15 | 704 | 0.7+ | 0.8+ | 2003 11 21 | 704 | 0.2− | 0.3+ | 2006 09 22 | 699 | (2.0+ | 0.2+) |
| 2002 03 15 | 704 | 0.1+ | 0.8+ | 2005 03 17 | 704 | 0.5− | 0.1+ | 2006 09 22 | 699 | 0.2− | 0.4− |
| 2002 03 15 | 704 | 0.3+ | 0.4+ | 2005 03 17 | 704 | 0.0 | 0.5− | 2006 09 26 | 704 | 1.2+ | 1.0+ |
| 2002 03 15 | 704 | (0.5+ | 1.7+) | 2005 03 17 | 704 | (0.1− | 2.1+) | 2006 09 26 | 704 | 1.4+ | 1.0+ |
| 2002 03 16 | 704 | 0.7+ | 0.7+ | 2005 03 17 | 704 | (1.2+ | 2.7+) | 2006 09 26 | 704 | (2.3+ | 1.4−) |
| 2002 03 16 | 704 | 0.1− | 1.1+ | 2005 04 04 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.2+ | 0.9+ |
| 2002 03 16 | 704 | 0.2+ | 0.3+ | 2005 04 04 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2002 03 16 | 704 | (0.2+ | 1.5+) | 2005 04 04 | 704 | 0.3− | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.3+ |
| 2002 03 16 | 704 | 0.5+ | 0.2+ | 2005 04 04 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2002 03 23 | 704 | 0.8− | 0.6+ | 2005 04 09 | 704 | 0.1+ | 1.3+ | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2002 03 23 | 704 | 0.1− | 0.0 | 2005 04 09 | 704 | 0.7+ | 1.0+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2002 03 23 | 704 | 0.1+ | 0.0 | 2005 04 09 | 704 | 1.4− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 03 23 | 704 | 0.6− | 0.6+ | 2005 04 09 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 03 23 | 704 | 0.8− | 0.2− | 2005 04 11 | 699 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.6− | 1.1− |
| 2003 09 18 | 608 | 0.6+ | 0.1− | 2005 04 11 | 699 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.9− |
| 2003 09 18 | 608 | 0.9+ | 0.1+ | 2005 04 11 | 699 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.5+ |
| 2003 09 18 | 608 | 1.2+ | 0.3− | 2005 04 11 | 699 | (1.6+ | 1.2+) | 2006 10 22 | 703 | 0.8+ | 0.4− |
| 2003 09 21 | 699 | 0.6+ | 0.9+ | 2005 04 13 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2003 09 21 | 699 | 0.6+ | 0.2− | 2005 04 13 | 704 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2003 09 21 | 699 | 1.2+ | 0.2− | 2005 04 13 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.6+ |
| 2003 09 21 | 699 | 0.2+ | 0.0 | 2005 04 13 | 704 | 0.2− | 0.8− | 2006 10 28 | 703 | 0.2− | 0.2− |
| 2003 09 21 | 704 | 0.3− | 0.8+ | 2005 04 15 | 699 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.5+ |
| 2003 09 21 | 704 | 0.2− | 0.4+ | 2005 04 15 | 699 | (0.8− | 2.6+) | 2006 10 28 | 703 | 0.4+ | 0.6+ |
| 2003 09 21 | 704 | (1.6+ | 0.0 ) | 2005 04 15 | 699 | 0.5− | 0.8+ | 2006 10 28 | 703 | 0.3− | 0.2− |
| 2003 09 21 | 704 | 1.1+ | 0.9+ | 2005 04 15 | 699 | (0.8− | 1.5+) | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2003 09 21 | 704 | 1.4+ | 0.3+ | 2005 05 03 | 691 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2003 09 30 | 704 | 0.6− | 1.1+ | 2005 05 03 | 691 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2003 09 30 | 704 | 0.4+ | 1.3+ | 2005 05 03 | 691 | 0.0 | 0.5+ | 2006 11 10 | 704 | 1.2− | 0.7+ |
| 2003 09 30 | 704 | 0.6+ | 0.6+ | 2005 05 04 | 683 | 0.3− | 0.7+ | 2006 11 10 | 704 | 0.6− | 0.2+ |
| 2003 09 30 | 704 | 0.2+ | 0.8+ | 2005 05 04 | 683 | (0.8+ | 1.7+) | 2006 11 10 | 704 | 0.3− | 0.1+ |
| 2003 09 30 | 704 | 0.1+ | 1.0+ | 2005 05 04 | 683 | 0.2+ | 0.5+ | 2006 11 10 | 704 | 0.1+ | 1.4+ |
| 2003 10 02 | 291 | 0.6− | 0.5+ | 2005 05 06 | 704 | (1.6+ | 0.2−) | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2003 10 02 | 291 | 0.6− | 0.5+ | 2005 05 06 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 703 | 0.5+ | 1.0+ |
| 2003 10 02 | 291 | 0.6− | 0.6+ | 2005 05 06 | 704 | 1.1+ | 1.1+ | 2006 11 17 | 644 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 683 | 0.8+ | 0.3+ | 2005 05 06 | 704 | (2.4+ | 0.3−) | 2006 11 17 | 703 | 0.6+ | 0.5+ | | |
| 2003 10 20 | 683 | (0.5+ | 1.6+) | 2005 05 11 | 703 | 0.7− | 0.3− | 2006 11 17 | 703 | 0.7+ | 0.7+ | | |
| 2003 10 20 | 683 | 0.6− | 0.3+ | 2005 05 11 | 703 | (1.8− | 0.6+) | 2006 11 17 | 703 | 0.8+ | 0.9+ | | |
| 2003 10 21 | 683 | 0.6+ | 1.4+ | 2005 05 11 | 703 | 1.1− | 0.6− | 2006 11 17 | 644 | 0.2− | 0.2− | | |
| 2003 10 21 | 683 | (0.6+ | 3.0+) | 2005 05 11 | 703 | 0.8− | 0.7+ | 2006 11 23 | 703 | 0.6− | 0.3− | | |
| 2003 10 21 | 683 | 1.4− | 0.7+ | 2006 08 29 | 703 | 0.4− | 0.0 | 2006 11 23 | 703 | 0.0 | 0.5+ | | |
| 2003 10 25 | 704 | (2.1− | 0.5+) | 2006 08 29 | 703 | 0.2+ | 0.8− | 2006 11 23 | 703 | 0.3− | 0.6+ | | |
| 2003 10 25 | 704 | 1.4− | 0.2− | 2006 08 29 | 703 | 0.3− | 0.1− | 2006 11 23 | 703 | 0.2− | 0.5− | | |
| 2003 10 25 | 704 | (2.8− | 0.4+) | 2006 08 29 | 703 | 1.3− | 0.1− | | | | | | |
| 2003 10 25 | 704 | 1.2− | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.3+ | | | | | | |

**(141495)∗ 2002 EZ$_{11}$**

Discovered 2002 Mar. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.39834 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.83831068 | $\omega$ | 317.50100 | | +0.98542191 | −0.16702029 | |
| $a$ | 1.1139509 | $\Omega$ | 52.14207 | | +0.16502501 | +0.89214495 | |
| $e$ | 0.8021724 | $i$ | 2.34980 | | +0.04135710 | +0.41973993 | |
| $P$ | 1.18 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 24 | 644 | 0.2+ | 0.0 | 2003 02 21 | 151 | 0.3− | 0.6+ | 2003 03 07 | 644 | 0.2+ | 0.1+ | | |
| 2002 03 15 | 644 | 0.9+ | 0.1− | 2003 02 22 | 163 | 0.4− | 0.1− | 2003 03 07 | 644 | 0.5+ | 0.1+ | | |
| 2002 03 15 | 644 | 0.5+ | 0.0 | 2003 02 22 | 163 | 0.0 | 0.1+ | 2003 03 07 | 552 | 0.1− | 0.2− | | |
| 2002 03 15 | 644 | 0.6+ | 0.2+ | 2003 02 22 | 163 | 0.0 | 0.0 | 2003 03 07 | 552 | 0.2+ | 0.5− | | |
| 2002 03 16 | 704 | (1.5+ | 0.5+) | 2003 02 22 | 163 | 0.2− | 0.1+ | 2003 03 07 | 552 | 0.6+ | 0.3− | | |
| 2002 03 16 | 704 | 1.0+ | 1.3+ | 2003 02 23 | 198 | 0.0 | 0.3− | 2003 03 07 | 552 | 0.2+ | 0.0 | | |
| 2002 03 16 | 704 | 0.1+ | 0.2− | 2003 02 23 | 198 | 0.8+ | 0.4− | 2003 03 07 | 552 | 0.2+ | 0.3+ | | |
| 2002 03 16 | 704 | 0.7+ | 0.2+ | 2003 02 23 | 198 | 0.2+ | 0.4− | 2003 03 07 | 552 | 0.5+ | 0.8− | | |
| 2002 03 16 | 704 | 1.0+ | 0.2+ | 2003 02 23 | 198 | 0.6+ | 0.3− | 2003 03 07 | 552 | 0.1+ | 0.4− | | |
| 2002 03 16 | 344 | 0.5+ | 0.2+ | 2003 02 23 | 198 | 0.8+ | 0.4− | 2003 03 07 | 552 | 0.8+ | 0.3+ | | |
| 2002 03 16 | 344 | 0.5+ | 1.0− | 2003 02 23 | H43 | 0.4+ | 0.0 | 2003 03 07 | 552 | 0.6− | 0.6− | | |
| 2002 03 18 | 651 | 0.0 | 0.1+ | 2003 02 23 | H43 | 0.2+ | 0.6− | 2003 03 08 | 704 | 0.1+ | 0.7+ | | |
| 2002 03 18 | 651 | 1.0+ | 0.2+ | 2003 02 23 | H43 | 1.2+ | 0.7− | 2003 03 08 | 704 | 0.3− | 0.3+ | | |
| 2002 03 18 | 651 | 0.5+ | 1.0+ | 2003 02 23 | 333 | (2.4− | 1.1+) | 2003 03 08 | 704 | 0.1− | 1.0+ | | |
| 2002 03 21 | 715 | (0.5− | 1.6−) | 2003 02 23 | H43 | (1.9− | 0.1−) | 2003 03 08 | 704 | 0.1− | 0.8+ | | |
| 2002 03 21 | 715 | (0.9− | 1.5−) | 2003 02 23 | 333 | 1.0− | 0.9− | 2003 03 08 | 704 | 0.4+ | 0.3+ | | |
| 2002 03 21 | 715 | 0.6− | 1.4− | 2003 02 23 | 333 | (2.4− | 0.1−) | 2003 03 08 | 704 | 0.1+ | 0.3+ | | |
| 2002 03 21 | 950 | 0.2+ | 0.6+ | 2003 02 23 | 333 | (3.4− | 1.6+) | 2003 03 08 | 704 | 0.4+ | 0.7+ | | |
| 2002 03 21 | 950 | 0.0 | 0.4+ | 2003 02 23 | 127 | 0.0 | 0.0 | 2003 03 08 | 704 | 0.3+ | 0.1− | | |
| 2002 03 21 | 950 | 0.1+ | 0.3+ | 2003 02 23 | 127 | 0.1+ | 0.0 | 2003 03 08 | 704 | 0.4+ | 0.5+ | | |
| 2002 03 22 | 649 | 0.0 | 0.1+ | 2003 02 23 | 127 | 0.0 | 0.2+ | 2003 03 08 | 704 | 0.5+ | 0.4+ | | |
| 2002 03 22 | 649 | 0.4− | 0.9− | 2003 02 24 | H43 | 0.8+ | 0.2− | 2003 03 08 | 170 | 0.1− | 0.9+ | | |
| 2002 03 22 | 649 | 0.2+ | 0.7− | 2003 02 24 | H43 | 0.9+ | 0.2− | 2003 03 08 | 170 | 0.2+ | 0.1− | | |
| 2002 03 23 | 649 | 0.4+ | 0.4− | 2003 02 24 | H43 | 0.4− | 0.4− | 2003 03 08 | 170 | 0.8+ | 0.6+ | | |
| 2002 03 23 | 649 | 0.2− | 0.4− | 2003 02 24 | H43 | 1.2+ | 0.3− | 2003 03 08 | 170 | 0.9− | 0.2− | | |
| 2002 03 23 | 649 | 0.1+ | 0.3− | 2003 02 24 | 379 | 0.1− | 0.4+ | 2003 03 08 | 941 | 0.4− | 0.6− | | |
| 2002 03 23 | 649 | 0.1− | 0.5− | 2003 02 24 | 379 | 0.4− | 0.3+ | 2003 03 08 | 941 | 0.7− | 0.6− | | |
| 2002 03 30 | 540 | 1.3− | 0.5+ | 2003 02 24 | 379 | 0.1− | 0.4+ | 2003 03 08 | 941 | 0.7− | 0.4− | | |
| 2002 03 30 | 540 | (1.4− | 1.9−) | 2003 02 24 | 127 | 0.0 | 0.1+ | 2003 03 08 | 941 | 0.5− | 0.4− | | |
| 2002 03 31 | 246 | 0.6+ | 1.1+ | 2003 02 24 | 127 | 0.0 | 0.0 | 2003 03 08 | 941 | 0.1− | 0.3− | | |
| 2002 03 31 | 246 | 1.4+ | 0.1− | 2003 02 24 | 127 | 0.1+ | 0.0 | 2003 03 09 | 621 | 0.8+ | 0.1+ | | |
| 2002 03 31 | 246 | 0.4+ | 0.6+ | 2003 02 24 | 127 | 0.0 | 0.0 | 2003 03 09 | 621 | 0.3+ | 0.4+ | | |
| 2002 04 01 | 246 | 0.5− | 0.1+ | 2003 02 24 | 127 | 0.2+ | 0.0 | 2003 03 09 | 621 | 0.4+ | 0.4+ | | |
| 2002 04 01 | 246 | 0.6− | 0.0 | 2003 02 25 | 198 | 0.2+ | 0.1− | 2003 03 09 | 621 | 0.3− | 0.3+ | | |
| 2002 04 01 | 246 | 1.0+ | 1.0− | 2003 02 25 | 198 | 0.5+ | 0.0 | 2003 03 10 | 552 | 0.1+ | 0.0 | | |
| 2002 04 01 | 246 | (1.7+ | 0.9+) | 2003 02 25 | 113 | 0.2− | 0.2+ | 2003 03 10 | 552 | 0.3+ | 0.7+ | | |
| 2002 04 01 | 540 | 0.3− | 0.5− | 2003 02 25 | 113 | 0.3+ | 0.1− | 2003 03 10 | 552 | 0.7+ | 0.0 | | |
| 2002 04 01 | 540 | 1.1+ | 0.7− | 2003 02 25 | 113 | 0.2− | 0.2+ | 2003 03 10 | 552 | 0.1+ | 0.1− | | |
| 2002 04 01 | 540 | 0.3+ | 0.7+ | 2003 02 25 | 113 | 0.0 | 0.0 | 2003 03 10 | 552 | 0.3− | 0.3− | | |
| 2002 04 01 | 966 | 0.6− | 0.6− | 2003 02 25 | 198 | 0.1+ | 0.2− | 2003 03 10 | 552 | 0.3+ | 0.6+ | | |
| 2002 04 01 | 966 | 0.2− | 0.1+ | 2003 02 25 | 113 | 0.0 | 0.0 | 2003 03 10 | 552 | 0.3+ | 0.3− | | |
| 2002 04 03 | 413 | 0.8− | 0.4+ | 2003 02 25 | 118 | 0.1+ | 0.0 | 2003 03 10 | 552 | 0.0 | 0.4− | | |
| 2002 04 03 | 413 | 0.1− | 0.3+ | 2003 02 25 | 118 | 0.1+ | 0.1− | 2003 03 10 | 552 | 0.0 | 0.1+ | | |
| 2002 04 03 | 413 | 0.4+ | 0.1− | 2003 02 25 | 118 | 0.3+ | 0.1− | 2003 03 13 | 644 | 0.1+ | 0.2+ | | |
| 2002 04 03 | 413 | 0.1+ | 0.4+ | 2003 02 25 | 198 | 0.0 | 0.3− | 2003 03 13 | 644 | 0.0 | 0.1+ | | |
| 2002 04 04 | 649 | 0.7+ | 1.2− | 2003 02 25 | 198 | 0.2+ | 0.3− | 2003 03 13 | 644 | 0.0 | 0.3+ | | |
| 2002 04 04 | 649 | 1.1− | 0.2+ | 2003 02 25 | 118 | 0.1+ | 0.2− | 2003 03 13 | 608 | 0.0 | 1.1+ | | |
| 2002 04 05 | 649 | 0.1+ | 0.0 | 2003 02 25 | 057 | (3.4− | 0.5+) | 2003 03 13 | 608 | 0.1− | 1.3+ | | |
| 2002 04 05 | 649 | 0.8− | 0.5+ | 2003 02 25 | 057 | 0.8− | 0.2− | 2003 03 13 | 608 | 0.2− | 1.0+ | | |
| 2002 04 07 | 246 | 0.9+ | 0.7− | 2003 02 25 | 057 | (1.9− | 0.5−) | 2003 03 23 | 246 | 0.3+ | 0.2− | | |
| 2002 04 07 | 246 | 0.5+ | 0.8+ | 2003 02 25 | 057 | (5.4+ | 1.3−) | 2003 03 23 | 246 | 0.4+ | 0.3+ | | |
| 2002 04 07 | 246 | (1.6+ | 0.5+) | 2003 02 25 | 057 | (7.4+ | 1.2−) | 2003 03 23 | 246 | 0.1+ | 0.1+ | | |
| 2002 04 07 | 246 | 1.3+ | 0.4+ | 2003 02 25 | 215 | 0.3− | 0.1+ | 2003 03 23 | 246 | 0.4+ | 0.1+ | | |
| 2002 04 09 | 568 | 0.2− | 0.0 | 2003 02 25 | 215 | 0.3− | 0.1+ | 2003 03 23 | 246 | 0.5+ | 0.0 | | |
| 2002 04 09 | 568 | 0.1− | 0.1+ | 2003 02 25 | 215 | 0.2− | 0.0 | 2003 03 23 | 246 | 0.4+ | 0.2+ | | |
| 2002 04 14 | 598 | 0.4+ | 0.3− | 2003 02 26 | 118 | 0.1+ | 0.3− | 2003 03 26 | 246 | 0.9+ | 0.1+ | | |
| 2002 04 14 | 598 | 0.6+ | 0.5+ | 2003 02 26 | 118 | 0.1− | 0.2− | 2003 03 26 | 246 | 0.2− | 0.3+ | | |
| 2002 04 14 | 598 | 0.1− | 0.5− | 2003 02 26 | 118 | 0.1+ | 0.1− | 2003 03 26 | 246 | 0.4− | 0.3− | | |
| 2002 04 14 | 598 | 0.4− | 0.3− | 2003 02 26 | 118 | 0.1+ | 0.2− | 2003 03 26 | 246 | 0.2− | 0.1− | | |
| 2002 04 14 | 598 | 0.7− | 0.5− | 2003 02 27 | H72 | (3.2− | 0.7−) | 2003 03 26 | 246 | 0.1− | 0.0 | | |
| 2002 04 16 | 649 | 0.1− | 0.9− | 2003 02 27 | H72 | (1.8− | 0.5−) | 2003 03 26 | 246 | 0.2+ | 0.1+ | | |
| 2002 04 16 | 649 | 0.6+ | 0.9+ | 2003 02 27 | H72 | (2.9− | 0.7−) | 2003 03 26 | 246 | 0.0 | 1.0+ | | |
| 2002 04 16 | 649 | 0.4+ | 1.1+ | 2003 02 27 | H72 | (3.2− | 0.2−) | 2004 04 15 | 696 | 0.1− | 0.0 | | |
| 2002 04 22 | 413 | 0.1− | 0.2+ | 2003 02 27 | H72 | (2.2− | 0.2−) | 2004 04 15 | 696 | 0.1+ | 0.3− | | |
| 2002 05 06 | 696 | 0.5− | 0.3− | 2003 02 27 | H72 | (3.7− | 0.1−) | 2006 02 27 | G96 | 0.8− | 0.3− | | |
| 2002 05 06 | 696 | 0.5+ | 0.1+ | 2003 02 27 | H72 | (3.2− | 0.7−) | 2006 02 27 | G96 | 1.1− | 0.1+ | | |
| 2002 07 09 | 568 | 0.2+ | 0.3+ | 2003 02 27 | 300 | 0.6+ | 0.6+ | 2006 02 27 | G96 | 0.5− | 0.3+ | | |
| 2002 07 09 | 568 | 0.0 | 0.6+ | 2003 02 27 | 300 | 0.6− | 1.0+ | 2006 02 27 | G96 | 0.4− | 0.2− | | |
| 2003 02 05 | 620 | 0.2+ | 0.6− | 2003 02 27 | 300 | 0.5+ | 0.2+ | 2006 04 21 | 703 | 0.9− | 0.3− | | |
| 2003 02 05 | 620 | 0.1− | 1.2+ | 2003 03 02 | 232 | 1.0− | 0.1+ | 2006 04 21 | 703 | 0.3− | 0.3+ | | |
| 2003 02 05 | 620 | 0.7+ | 0.7+ | 2003 03 02 | 232 | 0.7− | 0.3− | 2006 04 21 | 703 | 0.7− | 0.3− | | |
| 2003 02 05 | 620 | 0.7− | 0.7− | 2003 03 02 | 232 | 0.9− | 0.2+ | 2006 04 23 | 704 | 1.4+ | 0.2− | | |
| 2003 02 05 | 620 | 0.2− | 0.5+ | 2003 03 02 | 232 | 0.2− | 0.5− | 2006 04 23 | 704 | 0.1+ | 0.0 | | |
| 2003 02 05 | 620 | 0.1− | 0.5+ | 2003 03 02 | 734 | 0.3− | 0.3− | 2006 04 23 | 704 | 0.3+ | 0.1+ | | |
| 2003 02 05 | 620 | 0.2− | 0.2− | 2003 03 02 | 734 | 0.3− | 0.3− | 2006 04 23 | 704 | 0.1− | 0.1+ | | |
| 2003 02 05 | 620 | 1.0+ | 0.6+ | 2003 03 03 | 670 | 0.1− | 0.1− | 2006 04 23 | 704 | 0.9+ | 0.6− | | |
| 2003 02 06 | 620 | 0.6+ | 0.2+ | 2003 03 03 | 670 | 0.1− | 0.1− | 2006 04 24 | 691 | 0.0 | 0.1− | | |
| 2003 02 08 | 428 | 0.7+ | 0.5+ | 2003 03 03 | 670 | 0.4− | 0.7+ | 2006 04 24 | 691 | 0.1+ | 0.0 | | |
| 2003 02 08 | 428 | 0.7+ | 0.8+ | 2003 03 04 | 712 | (2.5− | 0.9+) | 2006 04 24 | 691 | 0.0 | 0.2− | | |
| 2003 02 08 | 428 | 1.2− | 0.6+ | 2003 03 04 | 712 | 0.7+ | 0.5− | 2006 04 24 | 704 | 0.5− | 1.3+ | | |
| 2003 02 08 | 428 | 0.1− | 0.5+ | 2003 03 04 | 712 | 0.7+ | 0.0 | 2006 04 24 | 704 | 0.8+ | 0.2+ | | |
| 2003 02 10 | J95 | 0.2− | 0.2− | 2003 03 04 | 322 | 0.4− | 0.5− | 2006 04 24 | 704 | 0.6+ | 0.5+ | | |
| 2003 02 10 | J95 | 0.4+ | 0.2− | 2003 03 04 | 322 | 0.2− | 0.1− | 2006 04 24 | 704 | 1.0+ | 0.1+ | | |
| 2003 02 10 | J95 | 0.2+ | 0.1− | 2003 03 04 | 322 | (1.5+ | 1.1+) | 2006 04 24 | 704 | 0.4+ | 0.9+ | | |
| 2003 02 14 | 118 | 0.5− | 0.5− | 2003 03 05 | H72 | 1.3− | 0.2− | 2006 04 24 | 379 | 0.4+ | 0.7+ | | |
| 2003 02 14 | 118 | 1.1− | 0.0 | 2003 03 05 | H72 | 1.5− | 0.7− | 2006 04 24 | 379 | 1.2− | 0.3+ | | |
| 2003 02 14 | 118 | 0.5− | 0.0 | 2003 03 05 | H72 | (2.0− | 0.2−) | 2006 04 25 | 379 | 0.6+ | 0.3+ | | |
| 2003 02 14 | 118 | 0.5+ | 1.0− | 2003 03 05 | H72 | (1.9− | 0.4−) | 2006 04 25 | 379 | 0.6+ | 0.7+ | | |
| 2003 02 15 | 118 | 0.3− | 0.3− | 2003 03 05 | H72 | (2.2− | 0.3−) | 2006 04 25 | 379 | 0.4− | 0.3+ | | |
| 2003 02 16 | 170 | 0.1− | 0.4− | 2003 03 05 | H72 | (2.0− | 0.2+) | 2006 04 27 | 084 | 1.0− | 0.1+ | | |
| 2003 02 16 | 170 | 0.3− | 0.1+ | 2003 03 05 | H72 | 1.4− | 0.6+ | 2006 04 28 | 704 | 0.1+ | 0.1− | | |
| 2003 02 16 | 170 | 0.5+ | 0.6+ | 2003 03 05 | H72 | 0.7− | 0.4+ | 2006 04 28 | 704 | 0.3− | 0.1− | | |
| 2003 02 16 | 170 | 0.6− | 0.4+ | 2003 03 05 | H72 | 0.9− | 0.2+ | 2006 04 28 | 704 | 0.1− | 0.2− | | |
| 2003 02 16 | 170 | 0.1+ | 0.1+ | 2003 03 05 | H72 | 0.9− | 0.2+ | 2006 04 28 | 704 | 0.2+ | 0.1+ | | |
| 2003 02 16 | 170 | 0.4− | 0.1+ | 2003 03 05 | H72 | 1.5− | 0.2+ | 2006 04 28 | 704 | 0.3+ | 0.2+ | | |
| 2003 02 17 | J95 | 0.1− | 0.4− | 2003 03 05 | H72 | (1.8− | 0.6−) | 2006 04 29 | 084 | 0.2− | 0.4− | | |
| 2003 02 17 | J95 | 0.3− | 0.6− | 2003 03 05 | H72 | (1.9− | 0.7+) | 2006 04 29 | 084 | 0.5− | 0.1+ | | |
| 2003 02 17 | 711 | 0.1− | 0.0 | 2003 03 05 | H72 | (1.6− | 0.2−) | 2006 04 30 | 097 | 0.3− | 0.2− | | |
| 2003 02 17 | 711 | 0.2− | 0.1− | 2003 03 05 | 704 | 0.0 | 0.3− | 2006 04 30 | 097 | 0.2+ | 0.0 | | |
| 2003 02 17 | 711 | 0.6− | 0.2− | 2003 03 05 | 704 | 0.0 | 0.1− | 2006 04 30 | 097 | 0.0 | 0.0 | | |
| 2003 02 18 | 240 | 0.0 | 0.0 | 2003 03 05 | 704 | 0.2+ | 0.1− | 2006 04 30 | 097 | 0.2+ | 0.0 | | |
| 2003 02 18 | 240 | 0.0 | 0.0 | 2003 03 05 | 704 | 0.0 | 0.1− | 2006 04 30 | 097 | 0.1− | 0.0 | | |
| 2003 02 18 | 240 | 0.1+ | 0.2+ | 2003 03 05 | 704 | 0.1− | 0.3− | 2006 05 01 | 704 | 0.3+ | 0.2+ | | |
| 2003 02 18 | 240 | 0.4+ | 0.2+ | 2003 03 05 | 704 | 0.1− | 0.1− | 2006 05 01 | 704 | 0.3+ | 0.2+ | | |
| 2003 02 18 | 240 | 0.0 | 0.1+ | 2003 03 05 | 704 | 0.0 | 0.2− | 2006 05 01 | 704 | 0.7+ | 0.2+ | | |
| 2003 02 18 | 240 | 0.2− | 0.1+ | 2003 03 05 | 704 | 0.1− | 0.1+ | 2006 05 01 | 704 | 0.6+ | 0.2+ | | |
| 2003 02 18 | 240 | 0.5+ | 0.4+ | 2003 03 05 | 704 | 0.2+ | 0.2− | 2006 05 01 | 704 | 0.5+ | 0.2+ | | |
| 2003 02 19 | 204 | 0.4− | 0.0 | 2003 03 05 | 704 | 0.0 | 0.2+ | 2006 05 01 | 097 | 0.1+ | 0.1+ | | |
| 2003 02 19 | 204 | 0.3− | 0.5+ | 2003 03 05 | 151 | 0.4− | 0.5+ | 2006 05 01 | 097 | 0.4− | 0.2+ | | |
| 2003 02 19 | 204 | 1.0− | 0.3+ | 2003 03 05 | 151 | 0.5+ | 0.4− | 2006 05 01 | 097 | 0.0 | 0.1+ | | |
| 2003 02 19 | 204 | 0.9− | 0.3+ | 2003 03 05 | 151 | 0.6− | 0.3+ | 2006 05 01 | 097 | 0.2− | 0.1+ | | |
| 2003 02 19 | 204 | 1.2− | 0.3+ | 2003 03 05 | 151 | 1.1− | 0.5− | 2006 05 01 | 084 | 0.7− | 0.6− | | |
| 2003 02 19 | 163 | 0.3+ | 0.4+ | 2003 03 05 | 198 | 0.7− | 0.7− | 2006 05 01 | 084 | 0.5− | 0.3− | | |
| 2003 02 19 | 163 | 0.2− | 0.0 | 2003 03 05 | 198 | 0.3+ | 0.1− | 2006 05 01 | 097 | 0.1+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 19 | 163 | 0.2+ | 0.2+ | 2003 03 05 | 198 | 0.5+ | 0.1− | 2006 05 01 | 097 | 0.1− | 0.1+ |
| 2003 02 19 | 163 | 0.2+ | 0.2+ | 2003 03 06 | H72 | (1.6− | 0.8−) | 2006 05 02 | 071 | 0.1− | 0.1− |
| 2003 02 20 | 322 | 0.3− | 0.4+ | 2003 03 06 | H72 | (1.1− | 1.9−) | 2006 05 02 | 071 | 0.4− | 0.1+ |
| 2003 02 20 | 322 | 0.4− | 0.0 | 2003 03 06 | H72 | (0.2− | 28.2−) | 2006 05 02 | 097 | 0.4+ | 0.1− |
| 2003 02 20 | 127 | 0.8+ | 0.3+ | 2003 03 06 | 712 | 0.7+ | 0.1+ | 2006 05 02 | 097 | 0.6+ | 0.0 |
| 2003 02 20 | 127 | 1.0+ | 0.2+ | 2003 03 06 | 712 | 0.4+ | 0.2+ | 2006 05 02 | 097 | 0.5− | 1.0+ |
| 2003 02 20 | 127 | 1.2+ | 0.1+ | 2003 03 06 | H72 | 1.0− | 0.9− | 2006 05 02 | 097 | 0.0 | 0.0 |
| 2003 02 20 | 127 | 0.8+ | 0.3+ | 2003 03 06 | H72 | 1.0− | 0.2+ | 2006 05 02 | 097 | 0.2+ | 0.0 |
| 2003 02 21 | 670 | 0.0 | 0.2− | 2003 03 06 | H72 | (2.2− | 0.5−) | 2006 05 03 | 097 | 0.1+ | 0.4− |
| 2003 02 21 | 670 | 0.1− | 0.2− | 2003 03 06 | 670 | 0.2− | 0.2− | 2006 05 03 | 097 | 0.1− | 0.3− |
| 2003 02 21 | 670 | 0.5+ | 0.5− | 2003 03 06 | 704 | 0.1+ | 0.2+ | 2006 05 03 | 097 | 0.0 | 0.4− |
| 2003 02 21 | 670 | 0.6− | 0.5− | 2003 03 06 | 670 | 0.0 | 0.0 | 2006 05 03 | 097 | 0.2− | 0.3− |
| 2003 02 21 | 379 | 0.4+ | 0.4− | 2003 03 06 | 704 | 0.4+ | 0.3+ | 2006 05 05 | G96 | 0.5− | 0.2− |
| 2003 02 21 | 379 | 0.8+ | 0.0 | 2003 03 06 | 704 | 0.4+ | 0.4+ | 2006 05 05 | G96 | 0.3− | 0.0 |
| 2003 02 21 | 379 | 1.0+ | 0.7− | 2003 03 06 | 704 | 0.4+ | 0.2+ | 2006 05 05 | G96 | 0.5− | 0.3− |
| 2003 02 21 | 379 | 0.4+ | 0.9− | 2003 03 06 | 704 | 0.5+ | 0.2+ | 2006 05 05 | G96 | 0.2− | 0.3− |
| 2003 02 21 | 379 | 0.9+ | 0.7− | 2003 03 06 | 670 | 0.2+ | 0.4+ | 2006 05 06 | A89 | 0.1+ | 0.2− |
| 2003 02 21 | 379 | 1.0+ | 0.4− | 2003 03 07 | H72 | 0.6− | 0.8+ | 2006 05 06 | A89 | 0.0 | 0.7− |
| 2003 02 21 | 151 | 1.3− | 1.3+ | 2003 03 07 | H72 | 0.3+ | 0.5− | 2006 05 07 | 084 | 0.4− | 0.2− |
| 2003 02 21 | 151 | 0.1− | 1.0+ | 2003 03 07 | H72 | 0.9− | 0.2− | 2006 05 08 | 703 | 0.6− | 0.8− |
| 2003 02 21 | 151 | 0.3+ | 0.3+ | 2003 03 07 | H72 | 0.7− | 0.6− | 2006 05 08 | 703 | 0.1− | 0.4− |
| 2003 02 21 | 151 | 0.9− | 0.7+ | 2003 03 07 | H72 | 1.1− | 0.2+ | 2006 05 08 | 703 | 0.4− | 0.8− |
| 2003 02 21 | 151 | 0.5+ | 0.2+ | 2003 03 07 | 644 | 0.3+ | 0.2+ | 2006 05 08 | 703 | 0.3− | 0.7− |

**(141496)∗ 2002 ED$_{13}$**

Discovered 2002 Mar. 15 at Moletai Astronomical Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.91842 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25554072 | $\omega$ | 157.01449 | | −0.93088556 | | +0.36434025 |
| $a$ | 2.4594008 | $\Omega$ | 44.38119 | | −0.34079922 | | −0.83988142 |
| $e$ | 0.1260593 | $i$ | 2.18063 | | −0.13155976 | | −0.40231254 |
| $P$ | 3.86 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 691 | 0.1+ | 0.1+ | 2002 04 10 | 704 | 1.2+ | 0.7− | 2006 04 19 | 699 | 1.1− | 0.5+ |
| 1996 10 08 | 691 | 0.5+ | 0.2+ | 2002 04 10 | 704 | 0.2+ | 0.4+ | 2006 04 19 | G96 | 0.2+ | 0.0 |
| 1996 10 08 | 691 | 0.3+ | 0.7+ | 2002 04 10 | 704 | 0.1− | 0.8− | 2006 04 19 | G96 | 0.3− | 0.1+ |
| 1996 10 15 | 691 | 0.5− | 0.5+ | 2002 04 10 | 704 | 1.1+ | 0.0 | 2006 04 19 | G96 | 0.3− | 0.1+ |
| 1996 10 15 | 691 | 0.6− | 0.5+ | 2002 04 10 | 704 | 0.9+ | 0.3− | 2006 04 19 | G96 | 0.3− | 0.0 |
| 1996 10 15 | 691 | 0.6− | 0.7+ | 2002 04 14 | 644 | 0.2+ | 0.4+ | 2006 04 19 | 644 | 0.2+ | 0.0 |
| 1998 03 04 | 704 | (2.2− | 0.1+) | 2002 04 14 | 644 | 0.0 | 0.4+ | 2006 04 19 | 644 | 0.1+ | 0.1+ |
| 1998 03 04 | 704 | (2.7− | 1.4−) | 2002 04 14 | 644 | 0.1+ | 0.5+ | 2006 04 19 | 644 | 0.0 | 0.1− |
| 1998 03 04 | 704 | (3.3− | 2.1−) | 2002 04 14 | 691 | 0.3+ | 0.2− | 2006 04 24 | 704 | (0.7− | 2.2+) |
| 1998 03 04 | 704 | (5.3− | 0.3+) | 2002 04 14 | 691 | 0.1+ | 0.0 | 2006 04 24 | 704 | 0.7+ | 0.3+ |
| 1998 03 25 | 691 | 0.2− | 0.2− | 2002 04 14 | 691 | 0.1+ | 0.1+ | 2006 04 24 | 704 | 0.2+ | 0.9+ |
| 1998 03 25 | 691 | 0.3+ | 0.1− | 2002 04 17 | 704 | 0.2+ | 0.4− | 2006 04 24 | 704 | 0.4+ | 0.0 |
| 1998 03 25 | 691 | 0.5+ | 0.3− | 2002 04 17 | 704 | 0.3+ | 0.3+ | 2006 04 25 | 644 | 0.2+ | 0.0 |
| 1998 04 03 | 691 | 0.7− | 0.4− | 2002 04 17 | 704 | 0.1+ | 0.8+ | 2006 04 25 | 644 | 0.3+ | 0.2+ |
| 1998 04 03 | 691 | 0.5− | 0.3− | 2002 04 17 | 704 | 0.6+ | 0.3+ | 2006 04 25 | 644 | 0.1+ | 0.1− |
| 1998 04 03 | 691 | 0.5− | 0.5− | 2002 04 17 | 704 | 0.2+ | 0.4+ | 2006 04 28 | 704 | 0.9− | 0.5+ |
| 2002 02 24 | 644 | 0.2+ | 1.2− | 2002 04 21 | 691 | 0.1− | 0.2+ | 2006 04 28 | 704 | 1.5+ | 0.5+ |
| 2002 02 24 | 644 | 1.3+ | 0.5− | 2002 04 21 | 691 | 0.1− | 0.1+ | 2006 04 28 | 704 | 0.3+ | 0.6− |
| 2002 02 24 | 644 | 0.1+ | 0.8− | 2002 04 21 | 691 | 0.3− | 0.3+ | 2006 04 28 | 704 | 0.8− | 0.4− |
| 2002 03 14 | 699 | 0.3− | 0.9+ | 2004 11 04 | 691 | 0.2− | 0.0 | 2006 05 01 | 704 | 1.1+ | 0.8+ |
| 2002 03 14 | 699 | 0.4− | 0.2− | 2004 11 04 | 691 | 0.3− | 0.2+ | 2006 05 01 | 704 | 0.7+ | 1.0+ |
| 2002 03 14 | 699 | 0.8+ | 0.1+ | 2004 11 04 | 691 | 0.4+ | 0.1+ | 2006 05 01 | 704 | 0.9+ | 1.2+ |
| 2002 03 14 | 699 | 0.9− | 0.7+ | 2006 03 02 | G96 | 0.0 | 0.1− | 2006 05 01 | 704 | 0.4+ | 0.3+ |
| 2002 03 15 | 152 | 0.4+ | 0.3+ | 2006 03 02 | G96 | 0.8− | 0.4− | 2006 05 01 | 704 | 0.8+ | 0.1+ |
| 2002 03 15 | 152 | 0.3− | 1.1+ | 2006 03 02 | G96 | 0.1− | 0.4− | 2006 05 01 | 568 | 0.8+ | 0.5− |
| 2002 03 15 | 152 | 0.1+ | 0.6+ | 2006 03 02 | G96 | 0.2− | 0.1+ | 2006 05 01 | 568 | 0.5+ | 0.4− |
| 2002 03 16 | 152 | 0.7− | 0.3− | 2006 03 02 | G96 | 0.5+ | 0.1+ | 2006 05 01 | 568 | 0.1+ | 0.4− |
| 2002 03 16 | 704 | 0.0 | 0.8+ | 2006 03 02 | G96 | 0.6− | 0.4− | 2006 05 02 | 568 | 0.1− | 0.0 |
| 2002 03 16 | 704 | 0.4+ | 0.7+ | 2006 03 02 | G96 | 0.7+ | 0.5− | 2006 05 06 | G96 | 0.1− | 0.0 |
| 2002 03 16 | 704 | 0.4− | 0.5+ | 2006 03 02 | G96 | 0.0 | 0.1− | 2006 05 06 | G96 | 0.1− | 0.1− |
| 2002 03 16 | 704 | 0.0 | 1.0+ | 2006 03 24 | G96 | 0.5− | 0.2− | 2006 05 06 | G96 | 0.1+ | 0.1− |
| 2002 03 16 | 152 | 0.3+ | 0.9+ | 2006 03 24 | G96 | 0.3− | 0.1+ | 2006 05 06 | G96 | 0.5− | 0.0 |
| 2002 03 17 | 152 | 0.8+ | 0.1+ | 2006 03 24 | G96 | 0.2− | 0.1− | 2006 05 19 | G96 | 0.5− | 0.2− |
| 2002 03 17 | 152 | 1.5− | 0.2+ | 2006 03 24 | G96 | 0.0 | 0.1− | 2006 05 19 | G96 | 0.4− | 0.1− |
| 2002 03 17 | 152 | (2.6− | 0.2−) | 2006 03 25 | 691 | 0.3+ | 0.0 | 2006 05 19 | G96 | 0.4− | 0.1− |
| 2002 03 17 | 152 | 0.2− | 1.3− | 2006 03 25 | 691 | 0.1+ | 0.1− | 2006 05 19 | 703 | 0.0 | 0.7− |
| 2002 03 17 | 152 | 1.1+ | 0.4− | 2006 03 25 | 691 | 0.3+ | 0.1+ | 2006 05 19 | 703 | 0.0 | 0.1+ |
| 2002 03 21 | 644 | 0.1− | 0.4+ | 2006 04 07 | 691 | 0.1− | 0.3+ | 2006 05 19 | 703 | 1.0− | 1.4+ |
| 2002 03 21 | 644 | 0.0 | 0.2+ | 2006 04 07 | 691 | 0.1− | 0.2+ | 2006 05 19 | 703 | 1.4− | 0.5− |
| 2002 03 21 | 644 | 0.1+ | 0.3+ | 2006 04 07 | 691 | 0.2− | 0.3+ | 2006 05 23 | G96 | 0.3− | 0.1+ |
| 2002 04 03 | 644 | 0.4+ | 1.7+ | 2006 04 19 | 699 | 0.6+ | 0.4− | 2006 05 23 | G96 | 0.1+ | 0.0 |
| 2002 04 03 | 644 | 0.0 | 0.0 | 2006 04 19 | 699 | 0.5+ | 1.1+ | 2006 05 23 | G96 | 0.1− | 0.0 |
| 2002 04 03 | 644 | 0.0 | 0.2+ | 2006 04 19 | 699 | 0.1− | 0.5+ | 2006 05 23 | G96 | 0.3− | 0.1+ |

**(141497)∗ 2002 EW$_{13}$ = 2000 YR$_{137}$**

Discovered 2002 Mar. 3 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 29946)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.94573 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17618340 | $\omega$ | 4.48061 | | −0.62055038 | | −0.78337567 |
| $a$ | 3.1513216 | $\Omega$ | 123.87999 | | +0.71813440 | | −0.58575745 |
| $e$ | 0.1397318 | $i$ | 2.43074 | | +0.31496064 | | −0.20787197 |
| $P$ | 5.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 08 | 691 | 0.2− | 0.4− | 2002 03 15 | 644 | 0.1+ | 0.3+ | 2005 09 23 | 691 | 0.1+ | 0.1+ |
| 1991 04 08 | 691 | 0.2− | 0.4− | 2002 03 16 | 704 | 0.4− | 0.1+ | 2005 10 05 | 704 | 0.0 | 0.2+ |
| 1991 04 08 | 691 | 0.2+ | 0.1+ | 2002 03 16 | 704 | 0.3− | 0.3− | 2005 10 05 | 704 | 0.2+ | 0.1− |
| 2000 12 24 | 691 | 0.8+ | 0.0 | 2002 03 16 | 704 | 0.5− | 0.4− | 2005 10 05 | 704 | 0.0 | 0.3+ |
| 2000 12 24 | 691 | 0.7+ | 0.0 | 2002 03 16 | 704 | 0.5− | 0.4− | 2005 10 05 | 704 | 0.1+ | 0.3+ |
| 2000 12 24 | 691 | 1.8− | 0.2− | 2002 03 16 | 704 | 0.3− | 0.8− | 2005 10 10 | A50 | 0.2− | 0.4− |
| 2000 12 30 | 704 | 0.3− | 0.2+ | 2002 03 20 | 704 | 0.9+ | 1.1+ | 2005 10 12 | 691 | 0.1− | 0.2+ |
| 2000 12 30 | 704 | 0.7+ | 0.3+ | 2002 03 20 | 704 | 1.0+ | 1.4+ | 2005 10 12 | 691 | 0.2− | 0.1+ |
| 2000 12 30 | 704 | 0.4+ | 0.1− | 2002 03 20 | 704 | 1.1+ | 1.3+ | 2005 10 12 | 691 | 0.1− | 0.3+ |
| 2000 12 30 | 704 | 0.5− | 0.1+ | 2002 03 20 | 704 | 0.9+ | 0.7+ | 2005 10 21 | 644 | 0.3− | 0.5+ |
| 2000 12 30 | 704 | 0.1− | 0.4+ | 2002 03 21 | 699 | 0.9+ | 0.0 | 2005 10 21 | 644 | 0.7− | 0.5+ |
| 2002 02 15 | 608 | 0.4− | 0.3− | 2002 03 21 | 699 | (2.1+ | 0.8+) | 2005 10 21 | 644 | 0.3− | 0.2+ |
| 2002 02 15 | 608 | 0.4− | 0.5− | 2002 03 21 | 699 | (2.3+ | 0.1+) | 2005 10 29 | G96 | 0.1+ | 0.1+ |
| 2002 02 15 | 608 | 1.2− | 0.7− | 2002 03 21 | 699 | (2.2+ | 0.8−) | 2005 10 29 | G96 | 0.3+ | 0.1+ |
| 2002 02 24 | 644 | 0.3+ | 0.4+ | 2002 04 03 | 699 | 0.9+ | 1.0+ | 2005 10 29 | G96 | 0.3+ | 0.0 |
| 2002 02 24 | 644 | 0.1+ | 0.6+ | 2002 04 03 | 699 | 1.2− | 1.2+ | 2005 10 29 | G96 | 1.0+ | 0.0 |
| 2002 02 24 | 644 | 0.4+ | 0.3+ | 2002 04 03 | 699 | 0.5+ | 0.2+ | 2005 10 29 | G96 | 0.2− | 0.1+ |
| 2002 03 03 | 608 | 0.9− | 1.2+ | 2002 04 03 | 699 | 0.2− | 1.3+ | 2005 10 29 | G96 | 0.2+ | 0.1+ |
| 2002 03 03 | 608 | 0.6− | 1.1+ | 2002 04 03 | 644 | 0.2+ | 0.5− | 2005 10 29 | G96 | 0.1+ | 0.1− |
| 2002 03 03 | 608 | 0.2− | 1.2+ | 2002 04 03 | 644 | 0.5+ | 0.6− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2002 03 06 | 644 | 0.2+ | 0.7− | 2002 04 03 | 644 | 0.5+ | 0.8− | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2002 03 06 | 644 | 0.0 | 0.6− | 2002 04 04 | 644 | 0.1+ | 0.9+ | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 2002 03 06 | 644 | 0.1− | 0.5− | 2002 04 04 | 644 | 0.1− | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2002 03 09 | 704 | (1.6+ | 1.4+) | 2002 04 04 | 644 | 0.2− | 0.8+ | 2006 10 21 | G96 | 0.5− | 1.2− |
| 2002 03 09 | 704 | 1.2− | 0.1+ | 2002 04 17 | 704 | 0.7+ | 0.4− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 03 09 | 704 | 0.2+ | 0.1− | 2002 04 17 | 704 | 0.7+ | 0.4+ | 2006 10 21 | G96 | 0.5− | 0.6− |
| 2002 03 09 | 704 | 0.2+ | 0.4− | 2002 04 17 | 704 | 0.2+ | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2002 03 09 | 704 | 0.0 | 0.3− | 2002 04 17 | 704 | 0.6+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.9− |
| 2002 03 15 | 644 | 0.0 | 0.2− | 2005 09 23 | 691 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.0 | 1.2− |
| 2002 03 15 | 644 | 0.3− | 0.1+ | 2005 09 23 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.2− |

**(141498)∗ 2002 EZ$_{16}$**

Discovered 2002 Mar. 8 by D. J. Tholen at Mauna Kea.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.07755 | | (2000.0) | | **P** | | **Q** |
| $n$ | 1.11400203 | $\omega$ | 25.30694 | | +0.25580252 | | +0.82834336 |
| $a$ | 0.9216062 | $\Omega$ | 262.94417 | | −0.95020498 | | +0.12052236 |
| $e$ | 0.5664094 | $i$ | 30.14653 | | −0.17797633 | | +0.54710295 |
| $P$ | 0.88 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 01 | 261 | 1.0− | 0.5+ | 2003 01 20 | 246 | (1.7− | 0.2−) | 2004 01 18 | 699 | 0.4+ | 0.9+ |
| 1995 12 01 | 261 | 1.2+ | 0.2− | 2003 01 20 | 246 | 1.3− | 0.7+ | 2004 01 18 | 699 | 0.0 | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 08 | 568 | 0.3+ | 0.1+ | 2003 01 20 | 246 | 0.3− | 0.1+ | 2004 01 18 | 699 | 0.7− | 0.4− |
| 2002 03 08 | 568 | 0.4+ | 0.0 | 2003 01 20 | 246 | 0.6− | 0.4+ | 2004 01 18 | 699 | 0.1+ | 0.7+ |
| 2002 03 09 | 568 | 0.2+ | 0.3+ | 2003 10 25 | 568 | 0.0 | 0.1− | 2004 12 09 | 246 | 0.7+ | 0.8− |
| 2002 03 09 | 568 | 0.1+ | 0.6+ | 2003 10 25 | 568 | 0.0 | 0.1− | 2004 12 09 | 246 | 0.3+ | 0.6+ |
| 2002 03 10 | 568 | 0.1+ | 0.1− | 2003 11 20 | 704 | 0.3+ | 0.2+ | 2004 12 09 | 246 | 0.4+ | 0.8− |
| 2002 03 10 | 568 | 0.1+ | 0.1− | 2003 11 20 | 704 | 0.2− | 0.1− | 2004 12 09 | 246 | 0.2+ | 0.3− |
| 2002 03 11 | 568 | 0.3+ | 0.2− | 2003 11 20 | 704 | 0.1+ | 0.0 | 2004 12 09 | 246 | 0.2− | 0.2− |
| 2002 03 11 | 568 | 0.2+ | 0.3− | 2003 11 20 | 704 | 0.2+ | 0.2− | 2004 12 09 | 246 | 0.0 | 0.3+ |
| 2002 04 08 | 568 | 0.0 | 0.2− | 2003 11 20 | 704 | 0.2− | 0.2− | 2004 12 18 | 703 | 0.7− | 0.4+ |
| 2002 04 08 | 568 | 0.1+ | 0.0 | 2003 11 23 | 703 | 0.3+ | 0.7+ | 2004 12 18 | 703 | 0.9− | 0.2− |
| 2002 04 08 | 568 | 0.2− | 0.2− | 2003 11 23 | 703 | 0.4+ | 0.4+ | 2004 12 18 | 703 | 0.3− | 0.1+ |
| 2002 04 09 | 568 | 0.3− | 0.1+ | 2003 11 23 | 703 | 0.9+ | 0.1+ | 2004 12 18 | 703 | 1.2− | 0.6− |
| 2002 04 09 | 568 | 0.2− | 0.1+ | 2003 11 23 | 703 | 0.4+ | 0.9− | 2004 12 18 | 703 | 0.8− | 1.1+ |
| 2002 12 21 | 926 | 0.5− | 0.1− | 2003 12 01 | 704 | 0.2+ | 0.1− | 2004 12 18 | 703 | 0.6− | 0.9− |
| 2002 12 27 | 678 | (1.9+ | 0.1−) | 2003 12 01 | 704 | 0.2− | 0.5+ | 2004 12 18 | 703 | 0.4+ | 0.7+ |
| 2002 12 27 | 678 | (0.1+ | 2.1−) | 2003 12 01 | 704 | 0.0 | 0.3− | 2004 12 18 | 703 | 0.7− | 0.9− |
| 2002 12 27 | 678 | 0.9+ | 0.7− | 2003 12 01 | 704 | 0.1− | 0.0 | 2005 02 04 | 474 | 0.0 | 0.1− |
| 2002 12 27 | 678 | (2.1+ | 0.0 ) | 2003 12 19 | H72 | 0.5− | 0.8− | 2005 02 04 | 474 | 0.3+ | 0.2− |
| 2002 12 31 | 704 | (1.6− | 0.4+) | 2003 12 19 | H72 | (0.9− | 2.0−) | 2005 02 04 | 474 | 0.2+ | 0.2− |
| 2002 12 31 | 704 | 0.5− | 0.7+ | 2003 12 19 | H72 | (0.3− | 2.2−) | 2005 02 04 | 474 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.8− | 0.9+ | 2003 12 19 | H72 | 1.2− | 0.9− | 2005 12 31 | 568 | 0.1+ | 0.1− |
| 2002 12 31 | 926 | 0.1− | 0.2− | 2003 12 28 | 670 | 0.4− | 0.0 | 2005 12 31 | 568 | 0.0 | 0.0 |
| 2002 12 31 | 926 | 0.1+ | 0.3− | 2003 12 28 | 670 | 0.1+ | 0.1− | 2005 12 31 | 568 | 0.0 | 0.1+ |
| 2002 12 31 | 926 | 0.0 | 0.3− | 2003 12 28 | 670 | 0.1− | 0.1+ | 2005 12 31 | 568 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.8− | 0.6+ | 2003 12 29 | 683 | 0.7− | 0.1− | 2006 01 01 | 568 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.8− | 1.1+ | 2003 12 29 | 683 | 1.1− | 1.1+ | | | | |
| 2003 01 20 | 246 | 0.4− | 0.2+ | 2003 12 29 | 683 | (2.6− | 1.3−) | | | | |

**(141499)∗ 2002 ES$_{20}$**

Discovered 2002 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.13333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29513037 | $\omega$ | 89.36913 | | −0.30656156 | +0.95111696 | |
| $a$ | 2.2342243 | $\Omega$ | 162.63728 | | −0.91552575 | −0.28389246 | |
| $e$ | 0.2521581 | $i$ | 7.19389 | | −0.26044694 | −0.12157962 | |
| $P$ | 3.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 0.1− | 0.8− | 2002 04 15 | 699 | 0.7− | 0.5+ | 2005 03 16 | 691 | 0.5+ | 0.1+ |
| 1995 03 10 | 691 | 0.1− | 0.3− | 2002 04 15 | 699 | 0.8− | 0.2+ | 2005 04 05 | G96 | 0.3+ | 0.0 |
| 1995 03 10 | 691 | 0.1− | 0.9− | 2002 04 15 | 699 | 0.5− | 0.3+ | 2005 04 05 | G96 | 0.4− | 0.3+ |
| 1999 09 04 | 703 | 0.0 | 1.2+ | 2002 04 16 | 704 | (0.0 | 2.1+) | 2005 04 05 | G96 | 0.6− | 0.2+ |
| 1999 09 04 | 703 | 0.3+ | 1.4− | 2002 04 16 | 704 | (0.4− | 2.5+) | 2005 04 05 | G96 | 0.3− | 0.1+ |
| 1999 09 04 | 703 | 0.1+ | 0.3+ | 2002 04 16 | 704 | 0.3− | 1.5+ | 2005 04 06 | G96 | 0.0 | 0.3− |
| 1999 09 04 | 703 | (2.2− | 0.8−) | 2002 04 16 | 704 | 0.3− | 1.2+ | 2005 04 06 | G96 | 0.0 | 0.3− |
| 2002 02 20 | 704 | 0.5+ | 0.7+ | 2002 04 16 | 704 | (0.0 | 1.7+) | 2005 04 06 | G96 | 0.0 | 0.2− |
| 2002 02 20 | 704 | 1.0+ | 0.9+ | 2002 05 07 | 704 | 0.2+ | 0.7+ | 2005 04 06 | G96 | 0.0 | 0.1− |
| 2002 02 20 | 704 | (0.5− | 1.6+) | 2002 05 07 | 704 | 0.7+ | 0.3+ | 2006 09 18 | 703 | 1.5+ | 0.7− |
| 2002 03 09 | 704 | 0.2+ | 0.9+ | 2002 05 07 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 1.0+ |
| 2002 03 09 | 704 | 0.3+ | 0.5− | 2002 05 07 | 704 | 0.8+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 1.2− |
| 2002 03 09 | 704 | 0.2+ | 0.7− | 2002 05 07 | 704 | 0.3− | 0.0 | 2006 09 18 | 703 | (2.6− | 1.5+) |
| 2002 03 09 | 704 | 0.3+ | 0.6+ | 2002 05 13 | 704 | 0.1+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.6+ |
| 2002 03 09 | 704 | 0.8+ | 1.2+ | 2002 05 13 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.6+ |
| 2002 03 11 | 704 | (1.1+ | 2.1+) | 2002 05 13 | 704 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.8+ |
| 2002 03 11 | 704 | 0.7+ | 0.7+ | 2002 05 13 | 704 | 0.0 | 0.6+ | 2006 10 02 | 691 | 0.2− | 1.1+ |
| 2002 03 11 | 704 | (1.6+ | 1.2+) | 2002 05 13 | 704 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.4− | 0.5+ |
| 2002 03 18 | 608 | 0.3− | 0.2+ | 2002 06 10 | 704 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2002 03 18 | 608 | 0.3− | 0.2+ | 2002 06 10 | 704 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.3− | 0.6+ |
| 2002 03 18 | 608 | 0.3+ | 0.7+ | 2002 06 10 | 704 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.3+ |
| 2002 04 10 | 704 | 0.0 | 1.1+ | 2002 06 10 | 704 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.2− | 0.2+ |
| 2002 04 10 | 704 | 0.2− | 1.3+ | 2005 02 02 | 704 | 0.9+ | 1.0+ | 2006 10 16 | 703 | 1.4+ | 0.5+ |
| 2002 04 10 | 704 | 0.2− | 0.8+ | 2005 02 02 | 704 | 1.1+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.9− |
| 2002 04 10 | 704 | 0.1− | 1.0+ | 2005 02 02 | 703 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 1.0+ |
| 2002 04 10 | 704 | 0.1− | 0.6+ | 2005 02 02 | 704 | 0.1− | 1.2+ | 2006 10 16 | 703 | 0.6+ | 0.8+ |
| 2002 04 11 | 704 | 0.0 | 0.3− | 2005 02 02 | 703 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.8+ |
| 2002 04 11 | 704 | 0.1+ | 0.3− | 2005 02 02 | 703 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2002 04 11 | 704 | 0.1− | 0.1− | 2005 02 02 | 703 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.5− | 0.6+ |
| 2002 04 11 | 704 | 0.4+ | 0.3− | 2005 02 02 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 1.6− | 0.9+ |
| 2002 04 11 | 704 | 0.8+ | 0.6+ | 2005 03 04 | 691 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.0 |
| 2002 04 13 | 644 | 0.1+ | 0.1+ | 2005 03 04 | 691 | 0.0 | 0.4+ | 2006 10 22 | 703 | 1.7− | 1.0− |
| 2002 04 13 | 644 | 0.1+ | 0.0 | 2005 03 04 | 691 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.1+ | 1.0− |
| 2002 04 13 | 644 | 0.2− | 0.0 | 2005 03 16 | 691 | 0.0 | 0.0 | | | | |
| 2002 04 15 | 699 | 0.1+ | 0.0 | 2005 03 16 | 691 | 0.2+ | 0.2+ | | | | |

**(141500)∗ 2002 EO$_{37}$**

Discovered 2002 Mar. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.17158 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31834469 | $\omega$ | 257.06480 | | +0.53078455 | +0.84658426 | |
| $a$ | 2.1242435 | $\Omega$ | 45.06650 | | −0.75431774 | +0.49317186 | |
| $e$ | 0.0421095 | $i$ | 3.20125 | | −0.38635801 | +0.20019143 | |
| $P$ | 3.10 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.6+ | 0.4+ | 2002 03 22 | 644 | 0.5+ | 0.7+ | 2005 03 10 | 185 | 0.8− | 0.6− |
| 1996 04 12 | 691 | 0.2+ | 0.2+ | 2002 03 23 | 704 | 0.3− | 0.6− | 2005 03 10 | 185 | (2.1− | 0.3+) |
| 1996 04 12 | 691 | 0.2+ | 0.2+ | 2002 03 23 | 704 | 0.4− | 0.3− | 2005 03 16 | 703 | 1.3− | 0.7− |
| 1999 03 21 | 645 | 0.2− | 0.1− | 2002 03 23 | 704 | 1.0− | 0.8− | 2005 03 16 | 703 | 1.1+ | 0.3− |
| 1999 03 21 | 645 | 0.2− | 0.1− | 2003 09 17 | 644 | 0.4− | 0.4+ | 2005 03 16 | 703 | 0.5− | 1.0+ |
| 2002 02 21 | 691 | 0.4+ | 0.2+ | 2003 09 17 | 644 | 0.4− | 0.4+ | 2005 03 16 | 703 | 0.5− | 0.9+ |
| 2002 02 21 | 691 | 0.2+ | 0.1+ | 2003 09 17 | 644 | 0.4− | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.5+ |
| 2002 02 21 | 691 | 0.3+ | 0.8+ | 2003 09 20 | 699 | 0.1+ | 0.9− | 2006 08 22 | 644 | 0.3− | 0.1+ |
| 2002 03 09 | 691 | 0.1+ | 0.4+ | 2003 09 20 | 699 | 0.1+ | 1.4+ | 2006 08 22 | 644 | 0.4− | 0.3+ |
| 2002 03 09 | 691 | 0.2+ | 0.3+ | 2003 09 20 | 699 | 1.2+ | 1.2+ | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 2002 03 09 | 691 | 0.1+ | 0.1+ | 2003 09 20 | 699 | 0.7+ | 0.9+ | 2006 08 22 | 644 | 0.1+ | 0.4+ |
| 2002 03 12 | 644 | (0.8+ | 1.6+) | 2003 09 21 | 691 | 0.3− | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.7+ |
| 2002 03 12 | 644 | (0.9+ | 1.7+) | 2003 09 21 | 691 | 0.4− | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2002 03 12 | 644 | (1.0+ | 1.6+) | 2003 09 21 | 691 | 0.4− | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.4+ |
| 2002 03 13 | 291 | 0.1+ | 0.6+ | 2003 09 21 | 608 | 0.1− | 0.7+ | 2006 08 22 | 644 | 0.1− | 0.5+ |
| 2002 03 13 | 291 | 0.3+ | 0.5+ | 2003 09 21 | 608 | 0.2− | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2002 03 13 | 291 | 0.1+ | 0.6+ | 2003 09 21 | 608 | 0.2− | 0.8+ | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2002 03 16 | 704 | 0.3+ | 1.0+ | 2003 09 24 | 644 | 0.4− | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 03 16 | 704 | 0.4− | 0.7+ | 2003 09 24 | 644 | 0.2− | 0.4+ | 2006 08 28 | 699 | 0.5+ | 0.1+ |
| 2002 03 16 | 704 | 0.1+ | 0.0 | 2003 09 24 | 644 | 0.2− | 0.3+ | 2006 08 28 | 699 | 1.4− | 0.4− |
| 2002 03 16 | 704 | 0.4+ | 0.0 | 2003 09 28 | 704 | 0.0 | 0.4− | 2006 08 28 | 699 | 1.1− | 0.7+ |
| 2002 03 21 | 704 | 1.3+ | 0.3− | 2003 09 28 | 704 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.3+ | 0.1+ |
| 2002 03 21 | 704 | 1.1− | 1.1+ | 2003 09 28 | 704 | (1.2− | 1.5+) | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 03 21 | 704 | 0.7+ | 0.4+ | 2003 09 28 | 704 | 0.0 | 1.0+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2002 03 21 | 704 | 1.4+ | 1.5+ | 2005 02 09 | 691 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2002 03 22 | 644 | 0.5+ | 0.4+ | 2005 02 09 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 03 22 | 644 | 0.1+ | 0.3+ | 2005 02 09 | 691 | 0.4+ | 0.1+ | | | | |

**(141501)∗ 2002 ES$_{42}$**

Discovered 2002 Mar. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.26069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26213164 | $\omega$ | 73.13893 | | −0.30381441 | +0.95273111 | |
| $a$ | 2.4180007 | $\Omega$ | 179.17373 | | −0.88666055 | −0.28255513 | |
| $e$ | 0.1466924 | $i$ | 1.96702 | | −0.34861134 | −0.11165141 | |
| $P$ | 3.76 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 291 | 0.5− | 0.2+ | 2002 03 15 | 704 | 0.9+ | 0.5+ | 2006 03 24 | G96 | 0.2+ | 0.2− |
| 2002 01 14 | 291 | 0.8− | 0.4+ | 2002 03 15 | 704 | 0.9− | 0.5− | 2006 03 24 | G96 | 0.0 | 0.0 |
| 2002 01 14 | 291 | 0.4− | 0.4+ | 2002 03 15 | 704 | 0.6+ | 0.2+ | 2006 03 24 | G96 | 0.2− | 0.1− |
| 2002 02 09 | 291 | 0.1− | 0.2− | 2002 03 20 | 695 | 0.0 | 0.1+ | 2006 03 24 | G96 | 0.2+ | 0.1− |
| 2002 02 09 | 291 | 0.1+ | 0.2+ | 2002 03 20 | 695 | 0.2− | 0.2+ | 2006 03 24 | G96 | 0.1+ | 0.3− |
| 2002 02 09 | 291 | 0.3+ | 0.2+ | 2003 08 21 | 599 | 0.3− | 0.7+ | 2006 03 24 | G96 | 0.1+ | 0.1− |
| 2002 03 12 | 704 | 0.7+ | 1.1+ | 2003 08 21 | 599 | 0.0 | 0.6+ | 2006 03 24 | G96 | 0.1+ | 0.1− |
| 2002 03 12 | 704 | 0.9+ | 1.0+ | 2003 08 21 | 599 | 0.7− | 0.7+ | 2006 03 25 | G96 | 0.5− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 704 | 0.6− | 1.9+ | 2003 09 21 | 691 | 0.1− | 0.8+ | 2006 03 25 | G96 | 0.1+ | 0.0 |
| 2002 03 12 | 704 | 0.4+ | 0.9+ | 2003 09 21 | 691 | 0.3− | 0.5+ | 2006 03 25 | G96 | 0.4− | 0.1+ |
| 2002 03 13 | 704 | 1.4+ | 1.0+ | 2003 09 21 | 691 | 0.3− | 0.8+ | 2006 03 25 | G96 | 0.3− | 0.0 |
| 2002 03 13 | 704 | 0.0 | 0.1− | 2003 09 22 | 644 | 0.6− | 0.5+ | 2006 04 18 | 699 | 0.3− | 0.2− |
| 2002 03 13 | 704 | 0.9+ | 0.4+ | 2003 09 22 | 644 | 0.3− | 0.7+ | 2006 04 18 | 699 | 0.5+ | 0.8− |
| 2002 03 13 | 704 | (0.9+ | 2.5+) | 2003 09 22 | 644 | 0.2− | 0.9+ | 2006 04 18 | 699 | 0.3+ | 0.2− |
| 2002 03 13 | 644 | 0.5+ | 1.9− | 2003 09 30 | 701 | (0.2− | 2.0+) | 2006 04 18 | 699 | 0.5+ | 0.6− |
| 2002 03 13 | 644 | 0.4+ | 0.2+ | 2003 09 30 | 701 | 0.2− | 1.8+ | 2006 04 19 | G96 | 0.0 | 0.1+ |
| 2002 03 13 | 644 | 0.2+ | 0.2+ | 2004 12 14 | 691 | 0.2− | 0.1+ | 2006 04 19 | G96 | 0.1+ | 0.1+ |
| 2002 03 14 | 704 | 1.3+ | 0.3− | 2004 12 14 | 691 | 0.2+ | 0.1+ | 2006 04 19 | G96 | 0.0 | 0.2+ |
| 2002 03 14 | 704 | 0.1+ | 0.4+ | 2004 12 14 | 691 | 0.0 | 0.1+ | 2006 04 19 | G96 | 0.2+ | 0.2+ |
| 2002 03 14 | 704 | 0.6+ | 0.5+ | 2006 03 23 | 691 | 0.4+ | 0.3+ | 2006 05 06 | G96 | 0.1+ | 0.1− |
| 2002 03 14 | 704 | 0.2+ | 0.7+ | 2006 03 23 | 691 | 0.1+ | 0.4+ | 2006 05 06 | G96 | 0.5− | 0.3− |
| 2002 03 15 | 704 | 0.9+ | 0.2+ | 2006 03 23 | 691 | 0.2− | 0.7+ | 2006 05 06 | G96 | 0.0 | 0.3− |
| 2002 03 15 | 704 | 0.0 | 0.6+ | 2006 03 24 | G96 | 0.1+ | 0.0 | 2006 05 06 | G96 | 0.6− | 0.1− |

**(141502)∗ 2002 ET$_{46}$**

Discovered 2002 Mar. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 77.36184 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26104374 | $\omega$ | 280.43165 | −0.97833891 | −0.20560361 | |
| $a$ | 2.4247141 | $\Omega$ | 247.70684 | +0.19865323 | −0.89974484 | |
| $e$ | 0.1370925 | $i$ | 1.49168 | +0.05822264 | −0.38494984 | |
| $P$ | 3.78 | $H$ | 16.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 608 | 1.7− | 0.3− | 2002 03 23 | 691 | 0.0 | 1.4+ | 2004 10 11 | 691 | 0.1+ | 0.1− |
| 2002 03 11 | 608 | 1.2− | 0.8− | 2002 03 23 | 608 | 0.8− | 0.3− | 2004 10 11 | 691 | 0.2− | 0.4− |
| 2002 03 11 | 608 | 1.6− | 0.6− | 2002 03 23 | 608 | 0.2+ | 0.2− | 2004 10 15 | 691 | 0.2− | 0.2+ |
| 2002 03 12 | 699 | 0.3− | 0.6− | 2002 03 23 | 691 | 0.0 | 1.4+ | 2004 10 15 | 691 | 0.1− | 0.1+ |
| 2002 03 12 | 699 | 0.3− | 0.2+ | 2002 03 23 | 691 | 0.0 | 1.7+ | 2004 10 15 | 691 | 0.1+ | 0.1− |
| 2002 03 12 | 699 | 1.0+ | 0.5+ | 2002 04 04 | 644 | 0.3− | 0.6− | 2004 11 11 | 291 | 0.0 | 0.6+ |
| 2002 03 12 | 699 | 0.0 | 0.3+ | 2002 04 04 | 644 | 0.1+ | 0.6− | 2004 11 11 | 291 | 0.3+ | 0.5+ |
| 2002 03 13 | 704 | 0.2+ | 0.2− | 2002 04 04 | 644 | 0.1− | 0.4− | 2004 11 11 | 291 | 0.2+ | 0.4+ |
| 2002 03 13 | 704 | 0.2+ | 0.1+ | 2002 04 10 | 704 | 1.1+ | 0.7− | 2004 11 19 | 691 | 0.0 | 0.4+ |
| 2002 03 13 | 704 | 0.2+ | 0.1+ | 2002 04 10 | 704 | 1.4+ | 1.3− | 2004 11 19 | 691 | 0.0 | 0.5+ |
| 2002 03 13 | 704 | 0.2+ | 0.5− | 2002 04 10 | 704 | 1.8+ | 1.0− | 2004 11 19 | 691 | 0.3− | 0.5+ |
| 2002 03 13 | 704 | 0.4+ | 0.6− | 2002 04 10 | 704 | 0.7+ | 0.7− | 2006 03 26 | 691 | 0.0 | 0.0 |
| 2002 03 13 | 644 | 0.2+ | 0.4− | 2002 04 12 | 704 | 0.0 | 0.1− | 2006 03 26 | 691 | 0.0 | 0.4− |
| 2002 03 13 | 644 | 0.2+ | 0.2− | 2002 04 12 | 704 | 0.3− | 0.2+ | 2006 03 26 | 691 | 0.1+ | 0.4− |
| 2002 03 13 | 644 | 0.3+ | 0.2− | 2002 04 12 | 704 | 0.3− | 0.5− | 2006 04 28 | 704 | 0.3+ | 1.0+ |
| 2002 03 15 | 704 | 0.9+ | 0.5− | 2002 04 12 | 704 | 1.0+ | 0.1− | 2006 04 28 | 704 | 0.3+ | 0.1− |
| 2002 03 15 | 704 | 0.2+ | 1.0+ | 2002 04 12 | 704 | 0.1+ | 0.1+ | 2006 04 28 | 704 | 0.8− | 1.1+ |
| 2002 03 15 | 704 | 0.4+ | 0.4− | 2003 07 06 | 691 | 0.6− | 0.7+ | 2006 05 25 | G96 | 0.1− | 0.2− |
| 2002 03 15 | 704 | 0.8+ | 0.1+ | 2003 07 06 | 691 | 0.0 | 0.9+ | 2006 05 25 | G96 | 0.4− | 0.3− |
| 2002 03 15 | 704 | 1.1+ | 0.3− | 2003 07 06 | 691 | 0.2− | 0.9+ | 2006 05 25 | G96 | 0.2− | 0.3− |
| 2002 03 23 | 608 | 1.7− | 0.6+ | 2004 10 11 | 691 | 0.7− | 0.9− | | | | |

**(141503)∗ 2002 EW$_{58}$ = 2003 FJ$_{117}$**

Discovered 2002 Mar. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47194)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 89.24850 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.12498623 | $\omega$ | 113.39542 | +0.45777885 | +0.88902221 | |
| $a$ | 3.9618187 | $\Omega$ | 183.88268 | −0.85589605 | +0.43798935 | |
| $e$ | 0.2043818 | $i$ | 7.49557 | −0.24058361 | +0.13343476 | |
| $P$ | 7.89 | $H$ | 13.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.5+ | 0.5+ | 2003 05 01 | 704 | 0.6− | 0.4+ | 2005 10 05 | 704 | 0.9− | 0.2+ |
| 2002 02 11 | 704 | 0.4+ | 0.6+ | 2003 05 01 | 704 | 0.8+ | 0.4+ | 2005 10 07 | 704 | (1.3− | 2.7+) |
| 2002 02 11 | 704 | 0.1+ | 0.9+ | 2003 05 05 | 704 | 0.7+ | 1.0+ | 2005 10 07 | 704 | (1.7− | 0.6+) |
| 2002 02 11 | 704 | 0.3+ | 0.4+ | 2003 05 05 | 704 | 1.3+ | 0.9+ | 2005 10 07 | 704 | (1.7− | 2.1+) |
| 2002 03 13 | 704 | 0.5+ | 0.4− | 2003 05 05 | 704 | 0.5+ | 0.2+ | 2005 10 07 | 704 | 1.0− | 1.4+ |
| 2002 03 13 | 704 | 0.4+ | 0.8+ | 2003 05 05 | 704 | 1.0+ | 0.4− | 2005 10 07 | 704 | 0.9− | 1.0+ |
| 2002 03 13 | 704 | 0.2− | 0.4+ | 2003 05 05 | 704 | 1.0+ | 0.5+ | 2005 10 07 | 703 | 0.1− | 0.2+ |
| 2002 03 13 | 644 | 0.2− | 0.5+ | 2003 05 08 | 703 | 0.6− | 1.0+ | 2005 10 07 | 703 | 0.7− | 0.1− |
| 2002 03 13 | 644 | 0.0 | 0.4+ | 2003 05 08 | 703 | 0.8− | 1.4+ | 2005 10 07 | 703 | 1.2− | 0.2− |
| 2002 03 13 | 644 | 0.0 | 0.2+ | 2003 05 08 | 703 | 0.8− | 1.4+ | 2005 10 07 | 703 | 0.2− | 0.2− |
| 2002 03 15 | 704 | 1.4− | 0.1+ | 2003 05 08 | 703 | 0.8− | 0.3+ | 2005 10 13 | 691 | 0.0 | 0.2+ |
| 2002 03 15 | 704 | 0.4− | 0.8+ | 2003 05 10 | 691 | 0.3+ | 0.6+ | 2005 10 13 | 691 | 0.2+ | 0.2+ |
| 2002 03 15 | 704 | 0.1− | 0.9+ | 2003 05 10 | 691 | 0.2+ | 0.2+ | 2005 10 13 | 691 | 0.1+ | 0.2+ |
| 2002 03 15 | 704 | 0.6− | 0.9+ | 2003 05 10 | 691 | 0.3+ | 0.1+ | 2005 10 20 | 644 | 0.0 | 0.5+ |
| 2002 03 16 | 704 | 1.1− | 0.2+ | 2003 05 25 | 699 | (1.3+ | 1.9+) | 2005 10 20 | 644 | 0.2− | 0.1+ |
| 2002 03 16 | 704 | 0.5− | 0.1+ | 2003 05 25 | 699 | 0.2+ | 0.2+ | 2005 10 20 | 644 | 0.1− | 0.1+ |
| 2002 03 16 | 704 | 0.4− | 1.4+ | 2003 05 25 | 699 | 0.4− | 0.5+ | 2005 10 20 | 644 | 0.3+ | 0.4+ |
| 2002 03 16 | 704 | 0.4+ | 0.8+ | 2003 05 25 | 699 | 1.4− | 0.5+ | 2005 10 20 | 644 | 0.0 | 0.4+ |
| 2002 03 16 | 704 | 0.2+ | 0.4− | 2005 08 25 | 644 | 0.1− | 0.2+ | 2005 10 20 | 644 | 0.0 | 0.3+ |
| 2002 03 17 | 291 | 0.3+ | 0.8+ | 2005 08 25 | 644 | 0.1− | 0.2+ | 2005 10 22 | 703 | 0.6+ | 0.1+ |
| 2002 03 17 | 291 | 0.4+ | 0.8+ | 2005 08 25 | 644 | 0.2− | 0.2+ | 2005 10 22 | 703 | 0.8− | 0.8− |
| 2002 03 17 | 291 | 0.5+ | 0.8+ | 2005 08 28 | 608 | 0.1− | 1.2+ | 2005 10 22 | 703 | 0.5− | 0.3− |
| 2002 03 20 | 291 | 0.2+ | 0.2+ | 2005 08 28 | 608 | 0.3− | 1.3+ | 2005 10 22 | 703 | 0.3− | 0.4− |
| 2002 03 20 | 291 | 0.1+ | 0.2+ | 2005 08 28 | 608 | 0.1− | 1.1+ | 2005 10 25 | 699 | 0.4− | 0.9+ |
| 2002 03 20 | 291 | 0.2+ | 0.5+ | 2005 08 29 | 699 | 0.1− | 0.2+ | 2005 10 25 | 699 | 0.5− | 0.7+ |
| 2002 04 12 | 704 | 0.4+ | 0.2+ | 2005 08 29 | 699 | 0.1+ | 0.0 | 2005 10 25 | 699 | 0.2+ | 0.9+ |
| 2002 04 12 | 704 | 0.3+ | 0.7+ | 2005 08 29 | 699 | 0.0 | 0.1+ | 2005 10 25 | 699 | 0.2+ | 0.5+ |
| 2002 04 12 | 704 | 1.1+ | 0.6+ | 2005 08 29 | 699 | 0.6+ | 0.1− | 2005 11 18 | 644 | 0.9− | 0.3+ |
| 2002 04 12 | 704 | 0.6+ | 0.6+ | 2005 08 30 | 704 | 1.0− | 0.0 | 2005 11 18 | 644 | 0.6− | 0.1+ |
| 2002 04 12 | 704 | (1.6− | 0.7+) | 2005 08 30 | 704 | 0.8− | 1.0+ | 2005 11 18 | 644 | 0.4− | 0.3+ |
| 2003 03 14 | 608 | 0.1+ | 0.5− | 2005 08 30 | 704 | 0.5− | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.1+ |
| 2003 03 14 | 608 | 0.5+ | 0.6− | 2005 08 30 | 704 | (1.7− | 0.4+) | 2005 12 01 | G96 | 0.3+ | 0.1− |
| 2003 03 14 | 608 | 0.4+ | 0.3− | 2005 08 30 | 704 | 1.4− | 0.2− | 2005 12 01 | G96 | 0.2− | 0.3− |
| 2003 03 24 | 608 | 0.4+ | 1.3− | 2005 08 31 | 691 | 0.2+ | 0.3+ | 2005 12 01 | G96 | 0.0 | 0.1+ |
| 2003 03 24 | 608 | 0.2− | 0.8− | 2005 08 31 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 2003 03 24 | 608 | 0.2− | 0.7− | 2005 08 31 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 1.2+ |
| 2003 03 26 | 699 | 0.9− | 0.3+ | 2005 09 08 | 704 | 1.1− | 0.5+ | 2006 10 16 | 703 | 0.9+ | 0.3+ |
| 2003 03 26 | 699 | 0.3− | 0.9+ | 2005 09 08 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2003 03 26 | 699 | 0.5+ | 1.2− | 2005 09 08 | 704 | 0.7− | 1.2+ | 2006 10 30 | 703 | 0.7− | 0.6− |
| 2003 03 26 | 699 | 0.2+ | 0.6+ | 2005 09 08 | 704 | 0.4+ | 0.7+ | 2006 10 30 | 703 | 0.4− | 0.1− |
| 2003 04 01 | 704 | 0.5+ | 0.4+ | 2005 09 08 | 704 | 0.1+ | 1.1+ | 2006 10 30 | 703 | 0.2− | 0.3− |
| 2003 04 01 | 704 | 0.1− | 1.2+ | 2005 09 09 | 704 | 0.2+ | 1.5+ | 2006 10 30 | 703 | 0.0 | 0.2− |
| 2003 04 01 | 704 | (1.2+ | 1.7+) | 2005 09 09 | 704 | 0.1+ | 1.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2003 04 02 | 608 | 0.1− | 1.3+ | 2005 09 09 | 704 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2003 04 02 | 608 | (0.4− | 1.8+) | 2005 09 09 | 704 | 0.6+ | 1.2+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2003 04 02 | 608 | 0.2− | 1.4+ | 2005 09 09 | 704 | 0.3+ | 0.7+ | 2006 11 13 | 703 | 0.9− | 0.1− |
| 2003 04 04 | 699 | 1.0− | 0.6+ | 2005 09 23 | 699 | 0.2− | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.0 |
| 2003 04 04 | 699 | 0.9− | 0.1− | 2005 09 23 | 699 | 0.3− | 0.2− | 2006 11 13 | 703 | (1.4− | 3.2+) |
| 2003 04 04 | 699 | 1.1− | 0.3− | 2005 09 23 | 699 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.1− | 0.6− |
| 2003 04 04 | 699 | 0.5− | 0.6+ | 2005 09 23 | 699 | 0.8+ | 0.7+ | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2003 04 21 | 703 | (2.2+ | 3.0−) | 2005 09 29 | 699 | 1.0+ | 0.8+ | 2006 11 17 | 704 | 1.0+ | 0.6− |
| 2003 04 21 | 703 | 0.3− | 0.7+ | 2005 09 29 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 1.2+ | 1.1− |
| 2003 04 21 | 703 | 0.5− | 1.0+ | 2005 09 29 | 699 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.6− |
| 2003 04 21 | 703 | (1.0− | 1.7+) | 2005 09 29 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2003 04 27 | 704 | (1.9+ | 0.5+) | 2005 09 29 | 699 | 0.1+ | 1.0+ | 2006 11 20 | 704 | 0.4− | 1.0+ |
| 2003 04 27 | 704 | 0.2+ | 0.8+ | 2005 09 29 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.5− |
| 2003 04 27 | 704 | 0.6+ | 1.0+ | 2005 09 29 | 699 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.6− |
| 2003 04 27 | 704 | 0.5− | 0.1+ | 2005 10 03 | G96 | 0.2− | 0.2+ | 2006 11 20 | 704 | 1.0− | 1.0− |
| 2003 04 28 | 704 | 0.1− | 1.4− | 2005 10 03 | G96 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.6+ |
| 2003 04 28 | 704 | 1.1+ | 0.1− | 2005 10 03 | G96 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2003 04 28 | 704 | 1.1+ | 1.0− | 2005 10 03 | G96 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 2003 04 28 | 704 | 0.7+ | 1.0− | 2005 10 05 | 704 | 0.6− | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2003 05 01 | 704 | 0.1− | 0.4+ | 2005 10 05 | 704 | 0.7− | 0.7+ | 2006 11 28 | 704 | 0.6− | 0.2+ |
| 2003 05 01 | 704 | 0.2+ | 0.2− | 2005 10 05 | 704 | 0.6− | 0.2+ | | | | |
| 2003 05 01 | 704 | 0.5+ | 0.7+ | 2005 10 05 | 704 | 0.2− | 0.1+ | | | | |

**(141504)∗ 2002 ET$_{66}$ = 2000 WW$_{43}$**

Discovered 2002 Mar. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 30006)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.40603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17397153 | $\omega$ | 271.03018 | | +0.00059792 | −0.99999883 | |
| $a$ | 3.1779758 | $\Omega$ | 178.93250 | | +0.94494672 | +0.00010371 | |
| $e$ | 0.1651672 | $i$ | 4.33964 | | +0.32722368 | +0.00152778 | |
| $P$ | 5.67 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 24 | 691 | 0.7− | 1.0+ | 2002 03 20 | 704 | 0.2− | 0.6+ | 2005 10 01 | G96 | 0.1− | 0.0 | |
| 1993 07 24 | 691 | (3.9+ | 1.7+) | 2002 03 20 | 704 | 0.7+ | 0.2− | 2005 10 01 | G96 | 0.0 | 0.1+ | |
| 1993 07 24 | 691 | 0.2− | 0.3+ | 2002 03 20 | 704 | 0.6− | 0.6+ | 2005 10 01 | 704 | 0.5− | 0.2+ | |
| 2000 11 21 | 704 | 1.1+ | 0.2+ | 2002 03 20 | 704 | 0.3+ | 0.4+ | 2005 10 01 | G96 | 0.1+ | 0.1+ | |
| 2000 11 21 | 704 | 0.5+ | 0.0 | 2002 03 20 | 704 | 0.1+ | 0.4+ | 2005 10 01 | 704 | (0.1− | 1.7+) | |
| 2000 11 21 | 704 | 0.1− | 0.2+ | 2002 03 21 | 704 | 0.2− | 0.4+ | 2005 10 01 | 704 | 0.2+ | 0.8+ | |
| 2000 11 27 | 704 | 0.4+ | 0.1+ | 2002 03 21 | 704 | 0.4− | 0.4+ | 2005 10 04 | 644 | 0.1− | 0.5+ | |
| 2000 11 27 | 704 | 0.3+ | 0.4+ | 2002 03 21 | 704 | 1.1+ | 1.3+ | 2005 10 04 | 644 | 0.3− | 0.4+ | |
| 2000 11 27 | 704 | 0.0 | 0.3+ | 2002 03 21 | 704 | 0.1+ | 1.0+ | 2005 10 04 | 644 | 0.0 | 0.6+ | |
| 2000 11 27 | 704 | 0.1− | 1.3+ | 2002 03 23 | 704 | 0.4+ | 0.2+ | 2005 10 05 | 704 | 0.4− | 0.2− | |
| 2000 11 27 | 704 | 0.4− | 1.1+ | 2002 03 23 | 704 | (1.9+ | 0.3+) | 2005 10 05 | 704 | 0.2− | 0.1+ | |
| 2002 02 11 | 704 | 0.1− | 0.5+ | 2002 03 23 | 704 | 0.8+ | 1.1+ | 2005 10 05 | 704 | (0.9+ | 1.5+) | |
| 2002 02 11 | 704 | 0.8+ | 0.3+ | 2002 03 23 | 704 | 0.2− | 0.4+ | 2005 10 05 | 704 | 0.7+ | 0.4+ | |
| 2002 02 11 | 704 | 0.1− | 0.4+ | 2002 03 23 | 704 | 1.1+ | 0.7+ | 2005 10 05 | 704 | (0.5− | 2.1+) | |
| 2002 02 11 | 704 | 1.0+ | 1.0+ | 2002 04 15 | 704 | (0.4− | 1.6+) | 2005 10 06 | 691 | 0.1+ | 0.2+ | |
| 2002 02 11 | 704 | 0.7+ | 1.4+ | 2002 04 15 | 704 | 0.4+ | 0.9+ | 2005 10 06 | 691 | 0.1+ | 0.5+ | |
| 2002 03 06 | 644 | 0.2+ | 0.4+ | 2002 04 15 | 704 | 0.6− | 1.1+ | 2005 10 06 | 691 | 0.1+ | 0.4+ | |
| 2002 03 06 | 644 | 0.2+ | 0.6+ | 2002 04 17 | 704 | 1.0− | 0.7+ | 2005 10 06 | 699 | 0.3− | 0.7+ | |
| 2002 03 06 | 644 | 0.6+ | 0.9+ | 2002 04 17 | 704 | 0.1− | 0.5− | 2005 10 06 | 699 | 0.0 | 1.2+ | |
| 2002 03 11 | 691 | 0.3− | 0.5+ | 2002 04 17 | 704 | 0.0 | 0.6+ | 2005 10 06 | 699 | 0.3+ | 0.7+ | |
| 2002 03 11 | 691 | 0.1+ | 0.6+ | 2002 04 17 | 704 | 0.1+ | 1.4+ | 2005 10 06 | 699 | 0.5+ | 0.9+ | |
| 2002 03 11 | 691 | 0.1+ | 0.3+ | 2003 04 28 | 691 | 0.4+ | 0.8+ | 2005 10 07 | 703 | 0.0 | 1.4+ | |
| 2002 03 13 | 704 | 0.0 | 0.8+ | 2003 04 28 | 691 | 0.3+ | 0.5+ | 2005 10 07 | 703 | 0.4− | 1.4+ | |
| 2002 03 13 | 704 | 0.6+ | 0.1+ | 2003 04 28 | 691 | 0.0 | 0.6+ | 2005 10 07 | 703 | 1.4− | 1.1− | |
| 2002 03 13 | 704 | 1.2+ | 1.4+ | 2003 06 04 | 691 | (0.6+ | 2.7+) | 2005 10 07 | 703 | 0.9− | 0.4+ | |
| 2002 03 13 | 704 | 0.2− | 0.0 | 2003 06 04 | 691 | (0.6+ | 3.2+) | 2005 10 12 | 691 | 0.1+ | 0.3+ | |
| 2002 03 13 | 704 | (1.5+ | 0.8−) | 2003 06 04 | 691 | (0.5+ | 3.1+) | 2005 10 12 | 691 | 0.1+ | 0.5+ | |
| 2002 03 13 | 644 | 0.4+ | 0.7+ | 2005 09 13 | 691 | 0.3+ | 0.2+ | 2005 10 12 | 691 | 0.1+ | 0.3+ | |
| 2002 03 13 | 644 | 0.4+ | 0.6+ | 2005 09 13 | 691 | 0.3− | 0.4+ | 2005 10 21 | 699 | 0.2+ | 0.6− | |
| 2002 03 13 | 644 | 0.6+ | 0.9+ | 2005 09 13 | 691 | 0.1− | 0.6+ | 2005 10 21 | 699 | 0.1+ | 1.4+ | |
| 2002 03 14 | 644 | 0.0 | 0.2− | 2005 09 14 | 291 | 0.6− | 0.4+ | 2005 10 21 | 699 | 0.1+ | 0.0 | |
| 2002 03 14 | 644 | 0.5+ | 0.1− | 2005 09 14 | 291 | 0.8− | 0.6+ | 2005 10 21 | 699 | 1.2+ | 0.2+ | |
| 2002 03 14 | 644 | 0.3+ | 0.1+ | 2005 09 14 | 291 | 0.8− | 0.5+ | 2005 10 27 | 704 | 0.2+ | 0.7− | |
| 2002 03 15 | 704 | 0.9+ | 0.6+ | 2005 09 22 | 644 | 0.0 | 0.3+ | 2005 10 27 | 704 | (0.3+ | 1.8−) | |
| 2002 03 15 | 704 | 0.4+ | 1.1+ | 2005 09 22 | 644 | 0.2+ | 0.3+ | 2005 10 27 | 704 | 0.8− | 1.2+ | |
| 2002 03 15 | 704 | 0.4+ | 0.8+ | 2005 09 22 | 644 | 0.4− | 0.6+ | 2005 10 27 | 704 | 0.0 | 0.1+ | |
| 2002 03 15 | 704 | 0.5+ | 1.1+ | 2005 09 25 | 644 | 0.2− | 0.6+ | 2005 10 28 | G96 | 0.1+ | 0.1+ | |
| 2002 03 15 | 704 | 0.5+ | 0.2− | 2005 09 25 | 644 | 0.2+ | 0.5+ | 2005 10 28 | G96 | 0.3− | 0.1+ | |
| 2002 03 15 | 644 | 0.4+ | 0.7+ | 2005 09 25 | 644 | 0.4− | 0.4+ | 2005 10 28 | G96 | 0.0 | 0.0 | |
| 2002 03 15 | 644 | 0.5+ | 0.8+ | 2005 09 25 | 644 | 0.4− | 0.1+ | 2005 10 28 | G96 | 0.1+ | 0.0 | |
| 2002 03 15 | 644 | 0.5+ | 1.0+ | 2005 09 25 | 644 | 0.2− | 0.5+ | 2006 11 02 | 703 | 1.0− | 0.5+ | |
| 2002 03 18 | 704 | 0.6+ | 0.3+ | 2005 09 25 | 644 | 0.1+ | 0.6+ | 2006 11 02 | 703 | 0.3− | 1.0+ | |
| 2002 03 18 | 704 | 0.1+ | 1.1+ | 2005 09 29 | 699 | 0.9− | 0.2− | 2006 11 02 | 703 | (1.5− | 0.9−) | |
| 2002 03 18 | 704 | (0.1− | 1.8+) | 2005 09 29 | 699 | 0.1− | 1.2+ | 2006 11 02 | 703 | 0.2− | 1.4− | |
| 2002 03 18 | 704 | (0.6+ | 2.4+) | 2005 09 29 | 699 | 0.9− | 1.0+ | 2006 11 05 | 644 | 0.0 | 0.5+ | |
| 2002 03 19 | 699 | 0.7− | 0.9+ | 2005 09 29 | 699 | 1.2− | 0.1− | 2006 11 05 | 644 | 0.5− | 0.6+ | |
| 2002 03 19 | 699 | 0.6+ | 1.1+ | 2005 10 01 | 704 | (0.7− | 1.9+) | 2006 11 05 | 644 | 0.0 | 1.0+ | |
| 2002 03 19 | 699 | 0.9− | 1.1+ | 2005 10 01 | G96 | 0.1− | 0.1+ | | | | | |
| 2002 03 19 | 699 | 0.2− | 0.4+ | 2005 10 01 | 704 | (0.1− | 2.0+) | | | | | |

**(141505)∗ 2002 ED$_{73}$**

Discovered 2002 Mar. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.05487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29821133 | $\omega$ | 252.12685 | | −0.45291658 | +0.89131124 | |
| $a$ | 2.2188092 | $\Omega$ | 350.85886 | | −0.76052425 | −0.39839799 | |
| $e$ | 0.1789054 | $i$ | 7.50755 | | −0.46526276 | −0.21643319 | |
| $P$ | 3.31 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 704 | 0.4+ | 0.7− | 2002 04 12 | 704 | (0.4− | 1.6+) | 2003 10 19 | 291 | 0.4− | 0.0 | |
| 2002 03 13 | 704 | 1.1+ | 0.0 | 2002 04 12 | 608 | (2.1− | 0.4−) | 2003 10 19 | 291 | 0.4− | 0.2+ | |
| 2002 03 13 | 704 | 0.7− | 0.2+ | 2002 04 12 | 608 | (2.1− | 0.0 ) | 2003 10 19 | 291 | 0.3− | 0.4+ | |
| 2002 03 15 | 704 | (0.8− | 3.4+) | 2002 04 12 | 608 | (1.9− | 0.7+) | 2005 03 11 | 691 | 0.1+ | 0.1− | |
| 2002 03 15 | 704 | (0.3− | 3.3+) | 2002 04 14 | 704 | 0.1+ | 0.1+ | 2005 03 11 | 691 | 0.1+ | 0.1− | |
| 2002 03 15 | 704 | (0.4− | 2.9+) | 2002 04 14 | 704 | 0.7− | 0.9+ | 2005 03 11 | 691 | 0.1− | 0.1+ | |
| 2002 03 15 | 704 | (0.6− | 3.3+) | 2002 04 14 | 704 | 0.9− | 0.4+ | 2005 03 16 | G96 | 0.6− | 0.5− | |
| 2002 03 23 | 704 | (0.5− | 2.4+) | 2002 04 18 | 644 | 0.7+ | 1.4+ | 2005 03 16 | G96 | 0.8− | 0.2− | |
| 2002 03 23 | 704 | (0.5− | 2.3+) | 2002 04 18 | 644 | 0.4+ | 1.2+ | 2005 03 16 | G96 | 0.3− | 0.1− | |
| 2002 03 23 | 704 | 0.1− | 0.8+ | 2002 04 18 | 644 | 0.5+ | 1.3+ | 2005 03 16 | G96 | 0.4− | 0.7− | |
| 2002 03 23 | 704 | (0.6− | 2.2+) | 2002 04 30 | 644 | 0.6+ | 1.1+ | 2006 09 12 | 703 | 1.0+ | 0.8− | |
| 2002 04 04 | 644 | 0.2− | 0.8+ | 2002 04 30 | 644 | 0.5+ | 0.8+ | 2006 09 12 | 703 | 0.5− | 0.3+ | |
| 2002 04 04 | 644 | 0.0 | 0.8+ | 2002 04 30 | 644 | 0.7+ | 1.2+ | 2006 09 12 | 703 | 1.5− | 0.7+ | |
| 2002 04 04 | 644 | 0.0 | 1.0+ | 2003 09 30 | 691 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.2− | 0.5+ | |
| 2002 04 10 | 704 | 0.9+ | 0.3+ | 2003 09 30 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3+ | |
| 2002 04 10 | 704 | 1.4+ | 1.4− | 2003 09 30 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3+ | |
| 2002 04 10 | 704 | 1.3+ | 0.5+ | 2003 10 17 | 691 | 0.5− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.3+ | |
| 2002 04 10 | 704 | 0.6+ | 0.3+ | 2003 10 17 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1+ | |
| 2002 04 10 | 704 | 0.9+ | 0.5+ | 2003 10 17 | 691 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.3+ | |
| 2002 04 12 | 704 | 0.9+ | 0.6+ | 2003 10 18 | 691 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.4+ | |
| 2002 04 12 | 704 | (1.0− | 1.9+) | 2003 10 18 | 691 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.2+ | |
| 2002 04 12 | 704 | 0.3+ | 0.7+ | 2003 10 18 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.5+ | |

**(141506)∗ 2002 EO$_{74}$**

Discovered 2002 Mar. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.59733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30863211 | $\omega$ | 277.32320 | | −0.65197689 | +0.75814903 | |
| $a$ | 2.1685793 | $\Omega$ | 311.97912 | | −0.68933043 | −0.59906604 | |
| $e$ | 0.1825479 | $i$ | 0.89947 | | −0.31583175 | −0.25754597 | |
| $P$ | 3.19 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 704 | 0.1+ | 0.3− | 2002 04 15 | 644 | 0.4+ | 0.4+ | 2005 02 09 | G96 | 0.4− | 0.4− | |
| 2002 03 13 | 704 | 0.1+ | 0.5− | 2002 04 15 | 699 | 0.2+ | 0.0 | 2005 03 02 | 703 | 0.5+ | 1.0+ | |
| 2002 03 13 | 704 | 0.0 | 0.1− | 2002 04 18 | 644 | 0.2+ | 0.6+ | 2005 03 02 | 703 | 0.5− | 0.1+ | |
| 2002 03 13 | 704 | 0.2+ | 0.2+ | 2002 04 18 | 644 | 0.3+ | 0.3+ | 2005 03 02 | 703 | 0.2− | 0.0 | |
| 2002 03 15 | 704 | 1.4+ | 0.1− | 2002 04 18 | 644 | 0.3+ | 0.2+ | 2005 03 02 | 703 | 0.3− | 0.1− | |
| 2002 03 15 | 704 | 0.4+ | 1.0+ | 2002 04 29 | 644 | 0.1+ | 0.7+ | 2005 03 08 | 704 | 0.2− | 0.1+ | |
| 2002 03 15 | 704 | 1.0+ | 1.1+ | 2002 04 29 | 644 | 0.2+ | 0.8+ | 2005 03 08 | 704 | 0.3+ | 0.1+ | |
| 2002 03 15 | 704 | (0.3+ | 1.7+) | 2002 04 29 | 644 | 0.1− | 0.5+ | 2005 03 08 | 704 | 1.0+ | 0.1− | |
| 2002 03 15 | 704 | 0.1− | 0.9+ | 2002 05 04 | 699 | 0.3− | 0.9+ | 2005 03 08 | 704 | 0.4+ | 0.1− | |
| 2002 03 23 | 704 | 0.3+ | 0.8− | 2002 05 04 | 699 | 0.1− | 1.4+ | 2005 03 08 | 704 | 0.1+ | 0.7+ | |
| 2002 03 23 | 704 | 0.3− | 1.2− | 2002 05 04 | 699 | 0.5+ | 0.0 | 2005 03 10 | 699 | 0.9+ | 0.9− | |
| 2002 03 23 | 704 | 0.1− | 1.3− | 2002 05 04 | 699 | 0.5− | 0.9+ | 2005 03 10 | 699 | 0.8− | 0.5+ | |
| 2002 03 23 | 704 | 0.4− | 0.5− | 2002 05 29 | 608 | 0.5+ | 0.6+ | 2005 03 10 | 699 | 0.5− | 0.3− | |
| 2002 03 23 | 704 | 0.6− | 0.9− | 2002 05 29 | 608 | 0.8+ | 0.1− | 2005 03 10 | 699 | 0.3+ | 0.5+ | |
| 2002 04 04 | 644 | 0.2− | 0.2+ | 2002 05 29 | 608 | 0.4+ | 0.2+ | 2005 03 11 | 695 | 0.3+ | 0.3+ | |
| 2002 04 04 | 644 | 0.1− | 0.0 | 2003 09 22 | 691 | 0.5− | 0.5+ | 2005 03 11 | 695 | 0.0 | 0.1− | |
| 2002 04 04 | 644 | 0.3− | 0.3+ | 2003 09 22 | 691 | 0.1− | 0.2+ | 2005 03 30 | 644 | 0.2− | 0.3− | |
| 2002 04 10 | 704 | 0.2− | 0.3+ | 2003 09 22 | 691 | 0.3− | 0.3+ | 2005 03 30 | 644 | 0.0 | 0.4+ | |
| 2002 04 10 | 704 | 0.2− | 0.5+ | 2003 10 16 | 691 | 0.3− | 0.8+ | 2005 03 30 | 644 | 0.4+ | 0.2+ | |
| 2002 04 10 | 704 | 0.1− | 0.5+ | 2003 10 16 | 691 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.4− | 0.4− | |
| 2002 04 10 | 704 | 0.1+ | 0.5+ | 2003 10 16 | 691 | 0.1− | 0.4+ | 2005 05 13 | G96 | 0.3− | 0.1+ | |
| 2002 04 10 | 704 | 0.2+ | 0.6+ | 2003 10 24 | 704 | 0.0 | 0.6+ | 2005 05 13 | G96 | 1.0− | 0.8− | |
| 2002 04 11 | 704 | 0.4− | 0.1− | 2003 10 24 | 704 | 0.5+ | 1.2− | 2005 05 13 | G96 | 0.5− | 0.3− | |
| 2002 04 11 | 704 | 0.3− | 0.0 | 2003 10 24 | 704 | 0.9+ | 0.3− | 2006 09 17 | 691 | 0.2− | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 11 | 704 | 0.4+ | 0.1− | 2003 10 24 | 704 | 0.6+ | 0.9+ | 2006 09 17 | 691 | 0.0 | 0.5+ |
| 2002 04 11 | 704 | 0.0 | 0.3+ | 2003 10 25 | 291 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.4+ |
| 2002 04 12 | 704 | 0.9+ | 0.3+ | 2003 10 25 | 291 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2002 04 12 | 704 | 1.0+ | 0.4+ | 2003 10 25 | 291 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2002 04 12 | 704 | 0.6+ | 0.5+ | 2005 02 09 | 699 | 0.3+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2002 04 12 | 704 | 0.9+ | 0.4+ | 2005 02 09 | 699 | 0.6+ | 0.1+ | 2006 10 02 | 691 | 0.4+ | 0.2+ |
| 2002 04 14 | 704 | 0.0 | 0.6+ | 2005 02 09 | 699 | 0.2− | 0.8+ | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2002 04 14 | 704 | 0.0 | 0.6+ | 2005 02 09 | 704 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.2− |
| 2002 04 14 | 704 | 0.1+ | 0.7+ | 2005 02 09 | 704 | (1.6+ | 0.1+) | 2006 10 22 | G96 | 0.0 | 0.4+ |
| 2002 04 14 | 704 | 0.1− | 0.5+ | 2005 02 09 | 699 | 0.5− | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 04 14 | 704 | 0.0 | 0.7+ | 2005 02 09 | 704 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2002 04 15 | 699 | 0.3+ | 0.6+ | 2005 02 09 | 704 | 1.1+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2002 04 15 | 644 | 0.5+ | 0.2+ | 2005 02 09 | 704 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.5− | 0.3+ |
| 2002 04 15 | 699 | 0.1− | 0.5+ | 2005 02 09 | G96 | 0.1+ | 0.7− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2002 04 15 | 644 | 0.5+ | 0.3+ | 2005 02 09 | G96 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.2+ | 1.3+ |
| 2002 04 15 | 699 | 1.2− | 1.0+ | 2005 02 09 | G96 | 1.3− | 1.0+ | 2006 10 28 | G96 | 0.3+ | 0.1+ |

**(141507)∗ 2002 ER$_{79}$**

Discovered 2002 Mar. 10 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.78084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29046122 | $\omega$ | 289.60848 | | +0.03283057 | | +0.99869419 |
| $a$ | 2.2581040 | $\Omega$ | 342.13750 | | −0.86251500 | | +0.00852384 |
| $e$ | 0.1712237 | $i$ | 7.33140 | | −0.50496538 | | +0.05037129 |
| $P$ | 3.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 608 | 0.8− | 0.2+ | 2005 02 03 | 704 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.4− | 0.5+ |
| 2002 03 10 | 608 | 0.9− | 0.5− | 2005 02 03 | 704 | 0.3− | 1.4+ | 2006 08 28 | 699 | 0.0 | 0.2− |
| 2002 03 10 | 608 | 0.3− | 0.1− | 2005 02 03 | 704 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.4− |
| 2002 03 14 | 644 | 0.4− | 0.0 | 2005 02 09 | 699 | 1.0+ | 0.4− | 2006 08 28 | 699 | 0.2− | 1.0+ |
| 2002 03 14 | 644 | 0.5− | 0.0 | 2005 02 09 | 699 | 0.8+ | 0.8+ | 2006 08 28 | 699 | 0.4− | 0.1+ |
| 2002 03 14 | 644 | 0.1− | 0.5− | 2005 02 09 | 699 | 0.0 | 0.4+ | 2006 08 28 | 699 | 0.1− | 0.0 |
| 2002 03 23 | 704 | 0.6− | 0.5− | 2005 02 09 | 699 | 0.6+ | 0.2+ | 2006 08 29 | 704 | 0.4− | 0.5+ |
| 2002 03 23 | 704 | 0.3− | 0.2− | 2005 02 14 | 704 | 0.0 | 1.2+ | 2006 08 29 | 704 | 0.2− | 1.0+ |
| 2002 03 23 | 704 | 0.7+ | 0.2+ | 2005 02 14 | 704 | 0.5+ | 0.7+ | 2006 08 29 | 704 | 0.2+ | 1.0+ |
| 2002 03 23 | 704 | 1.3+ | 0.3+ | 2005 02 14 | 704 | 0.4+ | 0.5+ | 2006 08 29 | 704 | 0.7− | 1.3+ |
| 2002 03 23 | 704 | 0.1− | 0.1+ | 2005 02 14 | 704 | 0.4+ | 0.5+ | 2006 08 29 | 704 | 0.2− | 0.8+ |
| 2002 04 05 | 644 | (0.3+ | 1.6+) | 2005 02 14 | 704 | 0.4+ | 0.3+ | 2006 08 31 | 704 | (0.7− | 1.6+) |
| 2002 04 05 | 644 | (0.2+ | 1.6+) | 2005 03 04 | 691 | 0.1− | 0.4+ | 2006 08 31 | 704 | 0.3− | 0.9+ |
| 2002 04 05 | 644 | 0.3+ | 1.3+ | 2005 03 04 | 691 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.0 | 0.6+ |
| 2002 04 09 | 704 | (1.8+ | 0.2−) | 2005 03 04 | 691 | 0.1+ | 0.3+ | 2006 08 31 | 704 | 0.1− | 0.4+ |
| 2002 04 09 | 704 | 1.0+ | 0.4+ | 2005 03 09 | 703 | 1.1− | 1.0+ | 2006 09 12 | 699 | 1.1− | 0.4− |
| 2002 04 09 | 704 | 0.5+ | 0.2+ | 2005 03 09 | 703 | 0.4− | 1.2+ | 2006 09 12 | 699 | 0.2− | 0.9+ |
| 2002 04 09 | 704 | 0.5+ | 0.7+ | 2005 03 09 | 703 | (3.7− | 0.9+) | 2006 09 12 | 699 | 0.1− | 0.9+ |
| 2002 04 10 | 704 | 0.1+ | 0.2+ | 2005 03 09 | 703 | 0.8− | 1.2− | 2006 09 12 | 699 | 0.9+ | 1.0+ |
| 2002 04 10 | 704 | 0.3+ | 0.2+ | 2005 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 704 | 0.5+ | 0.1+ |
| 2002 04 10 | 704 | 0.3+ | 0.4+ | 2005 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 12 | 704 | 0.3+ | 0.3+ |
| 2002 04 10 | 704 | 0.9+ | 0.6+ | 2005 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 704 | 0.2+ | 0.3+ |
| 2002 04 10 | 704 | 0.3+ | 1.0+ | 2005 03 16 | G96 | 0.0 | 0.1− | 2006 09 12 | 704 | 0.2+ | 1.1− |
| 2002 04 11 | 704 | 1.0− | 0.1− | 2005 03 16 | G96 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2002 04 11 | 704 | 0.5− | 0.3+ | 2005 03 16 | G96 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.8− | 0.4+ |
| 2002 04 11 | 704 | 0.2− | 0.4+ | 2005 03 16 | G96 | 0.1+ | 0.5− | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2002 04 12 | 608 | (2.7− | 0.0 ) | 2005 04 09 | G96 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.6− |
| 2002 04 12 | 608 | (2.3− | 0.3+) | 2005 04 09 | G96 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.3− |
| 2002 04 12 | 608 | (2.4− | 0.1+) | 2005 04 09 | G96 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.0 | 0.3+ |
| 2002 04 14 | 704 | 1.0+ | 0.1+ | 2005 04 09 | G96 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2− | 0.1− |
| 2002 04 14 | 704 | 1.4+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.0 |
| 2002 04 14 | 704 | 1.1+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.7+ | 0.5+ |
| 2002 04 14 | 704 | (1.9+ | 0.4+) | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.5− | 0.9+ |
| 2002 04 30 | 644 | 0.2− | 0.5+ | 2006 08 18 | 699 | 0.7− | 0.6+ | 2006 09 20 | 704 | 0.8− | 1.4+ |
| 2002 04 30 | 644 | 0.1+ | 0.8+ | 2006 08 18 | 699 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.1− | 0.0 |
| 2002 04 30 | 644 | 0.2+ | 0.8+ | 2006 08 18 | 699 | 0.6− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2003 10 21 | 691 | 0.1− | 0.0 | 2006 08 18 | 699 | 0.5+ | 0.6+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2003 10 21 | 691 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.2− | 1.0− | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2003 10 21 | 691 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2003 10 27 | 691 | 0.0 | 0.1+ | 2006 08 23 | 704 | 0.5− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2003 10 27 | 691 | 0.1− | 0.4+ | 2006 08 23 | 704 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2003 10 27 | 691 | 0.1− | 0.1− | 2006 08 23 | 704 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2005 01 19 | 691 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2005 01 19 | 691 | 0.4+ | 0.3− | 2006 08 24 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2005 01 19 | 691 | 0.5+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2005 02 03 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | (1.7+ | 0.4−) | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2005 02 03 | 704 | 0.8− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.5− | 0.1+ |

**(141508)∗ 2002 EY$_{79}$ = 1996 DF$_{7}$**

Discovered 2002 Mar. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 75309)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.22876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17592961 | $\omega$ | 27.23129 | | −0.99981451 | | +0.00231800 |
| $a$ | 3.1543515 | $\Omega$ | 152.88108 | | −0.00910521 | | −0.93167670 |
| $e$ | 0.0314905 | $i$ | 2.40396 | | +0.01697184 | | −0.36328109 |
| $P$ | 5.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 10 | 691 | 0.1+ | 0.6− | 2002 03 16 | 704 | 0.6− | 1.2− | 2005 11 06 | G96 | 0.1+ | 0.1− |
| 1991 04 10 | 691 | 0.6+ | 0.5+ | 2002 03 16 | 704 | 0.0 | 0.8− | 2005 11 06 | G96 | 0.3− | 0.1− |
| 1991 04 10 | 691 | 0.7− | 0.0 | 2002 03 21 | 699 | 0.3+ | 0.6− | 2005 11 06 | G96 | 0.1+ | 0.1− |
| 1996 02 16 | 010 | 0.7+ | 0.8− | 2002 03 21 | 699 | 0.3− | 0.1− | 2005 11 06 | G96 | 0.2− | 0.2− |
| 1996 02 16 | 010 | (0.2+ | 2.8−) | 2002 03 21 | 699 | 0.7+ | 1.1+ | 2005 11 26 | 703 | 0.2− | 0.4+ |
| 1996 02 16 | 010 | (2.7+ | 4.1−) | 2002 03 21 | 699 | 0.1− | 0.1+ | 2005 11 26 | 703 | 0.3− | 0.9+ |
| 1998 07 02 | 691 | 0.5− | 0.2+ | 2002 04 18 | 691 | 0.3+ | 1.2+ | 2005 11 26 | 703 | 1.3+ | 0.3− |
| 1998 07 02 | 691 | 0.4− | 0.2+ | 2002 04 18 | 691 | 0.3+ | 0.9+ | 2005 11 26 | 703 | 0.3+ | 0.7− |
| 1998 07 02 | 691 | 0.4− | 0.2+ | 2002 04 18 | 691 | 0.4+ | 0.8+ | 2005 12 07 | 691 | 0.2− | 0.2+ |
| 1999 11 13 | 691 | 0.1+ | 0.5− | 2004 09 08 | 705 | 0.5+ | 0.1− | 2005 12 07 | 691 | 0.1− | 0.4+ |
| 1999 11 13 | 691 | 0.4+ | 0.5− | 2004 09 08 | 705 | 0.4+ | 0.4− | 2005 12 07 | 691 | 0.3− | 0.3+ |
| 1999 11 13 | 691 | 0.0 | 0.1− | 2004 09 08 | 705 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2002 03 12 | 644 | 0.4+ | 0.8+ | 2004 09 16 | 691 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2002 03 12 | 644 | 0.1+ | 0.8+ | 2004 09 16 | 691 | 0.2− | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 2002 03 12 | 644 | 0.1+ | 0.6+ | 2004 09 16 | 691 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2002 03 13 | 691 | 0.1+ | 0.4+ | 2004 09 22 | 691 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2002 03 13 | 691 | 0.3+ | 0.1+ | 2004 09 22 | 691 | 0.1+ | 0.5+ | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2002 03 13 | 691 | 0.2+ | 0.3+ | 2004 09 22 | 691 | 0.2− | 1.0+ | 2006 11 20 | G96 | 0.4− | 0.5− |
| 2002 03 15 | 644 | 0.5+ | 0.8+ | 2005 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.3− | 0.2− |
| 2002 03 15 | 644 | 0.1− | 0.7+ | 2005 10 29 | 691 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2002 03 15 | 644 | 0.5+ | 0.9+ | 2005 10 29 | 691 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2002 03 16 | 704 | 0.2+ | 0.2− | 2005 11 06 | 691 | 0.7− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2002 03 16 | 704 | 0.6+ | 0.7+ | 2005 11 06 | 691 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2002 03 16 | 704 | 0.5− | 0.1− | 2005 11 06 | 691 | 0.3− | 0.4+ | | | | |

**(141509)∗ 2002 ET$_{84}$**

Discovered 2002 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.56815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29197347 | $\omega$ | 237.50547 | | +0.08280902 | | +0.99578427 |
| $a$ | 2.2503002 | $\Omega$ | 37.30691 | | −0.89110416 | | +0.09171138 |
| $e$ | 0.1599477 | $i$ | 3.73209 | | −0.44617937 | | +0.00164849 |
| $P$ | 3.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 704 | (0.8+ | 2.5+) | 2002 04 15 | 704 | 0.6+ | 0.1− | 2006 07 25 | 644 | 0.2− | 0.6+ |
| 2002 03 09 | 704 | 0.6− | 1.0+ | 2003 09 17 | 644 | 0.0 | 0.6+ | 2006 07 25 | 644 | 0.1− | 0.5+ |
| 2002 03 09 | 704 | 0.8+ | 0.3+ | 2003 09 17 | 644 | 0.2+ | 0.6+ | 2006 07 25 | 644 | 0.2− | 0.5+ |
| 2002 03 09 | 704 | 0.8+ | 0.4+ | 2003 09 17 | 644 | 0.1+ | 0.6+ | 2006 08 12 | 644 | 0.0 | 0.6+ |
| 2002 03 10 | 691 | 0.1+ | 0.9+ | 2003 09 19 | 699 | 0.0 | 0.6− | 2006 08 12 | 644 | 0.1− | 0.6+ |
| 2002 03 10 | 691 | 0.1+ | 0.6+ | 2003 09 19 | 699 | 1.5− | 0.5+ | 2006 08 12 | 644 | 0.1− | 0.5+ |
| 2002 03 10 | 691 | 0.3+ | 0.7+ | 2003 09 19 | 699 | 0.3− | 1.6+ | 2006 08 13 | 644 | 0.3− | 0.6+ |
| 2002 03 12 | 644 | 0.1+ | 0.8+ | 2003 09 19 | 699 | 0.5− | 0.9+ | 2006 08 13 | 644 | 0.2− | 0.5+ |
| 2002 03 12 | 644 | 0.2− | 1.2+ | 2003 10 18 | 691 | 0.1− | 0.8+ | 2006 08 13 | 644 | 0.3− | 0.6+ |
| 2002 03 12 | 644 | 0.1+ | 1.2+ | 2003 10 18 | 691 | 0.0 | 0.5+ | 2006 08 19 | 644 | 0.1− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 704 | 0.4+ | 0.8+ | 2003 10 18 | 691 | 0.1− | 0.5+ | 2006 08 19 | 644 | 0.0 | 0.6+ |
| 2002 03 16 | 704 | 0.5+ | 0.7+ | 2003 10 21 | 644 | 0.2− | 0.3+ | 2006 08 19 | 644 | 0.4− | 0.4+ |
| 2002 03 16 | 704 | 0.3+ | 1.3+ | 2003 10 21 | 644 | 0.4− | 0.4+ | 2006 08 23 | 704 | 0.3− | 0.0 |
| 2002 03 16 | 704 | 0.5+ | 0.8+ | 2003 10 21 | 644 | 0.3− | 0.5+ | 2006 08 23 | 704 | 0.2+ | 1.1+ |
| 2002 03 22 | 644 | 0.7+ | 0.3+ | 2003 10 24 | 704 | 0.9− | 0.0 | 2006 08 23 | 704 | 0.4+ | 0.4+ |
| 2002 03 22 | 644 | 0.2+ | 0.5+ | 2003 10 24 | 704 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.0 | 0.5− |
| 2002 03 22 | 644 | 0.5+ | 0.1+ | 2003 10 24 | 704 | 0.4− | 0.9+ | 2006 08 23 | 704 | 0.5− | 0.3+ |
| 2002 04 02 | 644 | 0.4+ | 0.4+ | 2003 10 24 | 704 | 0.6− | 0.1− | 2006 08 23 | 644 | 0.1− | 0.4+ |
| 2002 04 02 | 644 | 0.5+ | 0.3+ | 2003 10 24 | 704 | 0.3− | 0.3− | 2006 08 23 | 644 | 0.1− | 0.5+ |
| 2002 04 02 | 644 | 0.2+ | 0.1+ | 2005 01 13 | 691 | 0.3+ | 0.3+ | 2006 08 23 | 644 | 0.4− | 0.7+ |
| 2002 04 15 | 704 | 0.6+ | 0.2− | 2005 01 13 | 691 | 0.3+ | 0.0 | | | | |
| 2002 04 15 | 704 | 0.4+ | 0.3− | 2005 01 13 | 691 | 0.3− | 0.1+ | | | | |

**(141510)∗ 2002 EU$_{88}$**

Discovered 2002 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.47503 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21535203 | $\omega$ | 136.96801 | | −0.97318652 | +0.21922765 | |
| $a$ | 2.7565766 | $\Omega$ | 55.82167 | | −0.22719727 | −0.86891244 | |
| $e$ | 0.0925968 | $i$ | 4.82752 | | −0.03590805 | −0.44376843 | |
| $P$ | 4.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.2− | 0.2+ | 2002 04 14 | 644 | 0.2+ | 1.1+ | 2005 12 28 | 703 | 0.2+ | 0.7− |
| 1995 12 19 | 691 | 0.4+ | 0.4− | 2002 04 14 | 644 | 0.1+ | 1.0+ | 2005 12 28 | 703 | 0.3− | 0.2+ |
| 1995 12 19 | 691 | 0.2− | 0.2+ | 2002 04 17 | 704 | 0.7+ | 0.0 | 2005 12 29 | 704 | 0.4+ | 0.2+ |
| 2002 03 09 | 704 | 0.2+ | 0.1− | 2002 04 17 | 704 | 1.9+ | 1.2+ | 2005 12 29 | 704 | 0.7+ | 0.4+ |
| 2002 03 09 | 704 | 0.0 | 0.1+ | 2002 04 17 | 704 | 0.6+ | 0.3− | 2005 12 29 | 704 | (0.1− | 2.3+) |
| 2002 03 09 | 704 | 0.2+ | 0.4− | 2002 04 17 | 704 | 1.0+ | 0.2+ | 2005 12 30 | 699 | 0.1− | 0.9− |
| 2002 03 09 | 704 | 0.4+ | 0.8+ | 2002 04 17 | 704 | 1.4+ | 0.6− | 2005 12 30 | 699 | 0.8+ | 0.7+ |
| 2002 03 10 | 699 | 0.6− | 0.5+ | 2002 05 08 | 644 | 0.7+ | 1.5+ | 2005 12 30 | 699 | (2.6− | 0.4−) |
| 2002 03 10 | 699 | 0.2+ | 1.6+ | 2002 05 08 | 644 | 0.4+ | 1.5+ | 2005 12 30 | 699 | 0.2− | 1.8− |
| 2002 03 10 | 699 | 0.1+ | 0.7+ | 2002 05 08 | 644 | 0.1+ | 1.4+ | 2006 01 20 | 699 | 0.5+ | 0.7+ |
| 2002 03 10 | 699 | 0.1+ | 0.3+ | 2002 06 02 | 644 | 0.5+ | 1.0+ | 2006 01 20 | 699 | 1.0+ | 0.3− |
| 2002 03 16 | 704 | 0.0 | 0.4+ | 2002 06 02 | 644 | 0.0 | 1.0+ | 2006 01 20 | 699 | 1.0+ | 0.1− |
| 2002 03 16 | 704 | 0.4+ | 0.8− | 2002 06 02 | 644 | 0.2+ | 0.9+ | 2006 01 20 | 699 | 0.8− | 1.1+ |
| 2002 03 16 | 704 | 0.7− | 0.2+ | 2004 10 07 | 691 | 0.3− | 0.8+ | 2006 01 27 | 699 | 0.1− | 0.1+ |
| 2002 03 16 | 704 | 0.1− | 0.6+ | 2004 10 07 | 691 | 0.2− | 0.6+ | 2006 01 27 | 699 | 0.2+ | 0.2+ |
| 2002 03 23 | 608 | 1.3− | 0.0 | 2004 10 07 | 691 | 0.2− | 0.6+ | 2006 01 27 | 699 | 0.2+ | 0.5+ |
| 2002 03 23 | 608 | 0.3− | 0.4− | 2004 10 11 | 691 | 0.4− | 0.7+ | 2006 01 27 | 699 | 0.2+ | 0.3− |
| 2002 03 23 | 608 | 0.9− | 0.3− | 2004 10 11 | 691 | 0.2− | 0.6+ | 2006 02 02 | 703 | 0.5− | 0.6+ |
| 2002 04 10 | 704 | 0.2− | 0.2− | 2004 10 11 | 691 | 0.4− | 0.5+ | 2006 02 02 | 703 | 1.0− | 0.3− |
| 2002 04 10 | 704 | 1.5+ | 0.6+ | 2004 11 04 | 699 | 0.5− | 0.3− | 2006 02 02 | 703 | 0.4+ | 0.3− |
| 2002 04 10 | 704 | 1.1+ | 0.0 | 2004 11 04 | 699 | 1.1+ | 0.7− | 2006 02 02 | 703 | 0.2− | 0.0 |
| 2002 04 10 | 704 | 1.0+ | 0.1+ | 2004 11 04 | 699 | 0.2− | 0.7+ | 2006 02 18 | 699 | 0.3+ | 0.3+ |
| 2002 04 10 | 704 | 1.7+ | 0.2+ | 2004 11 04 | 699 | 0.9− | 1.3+ | 2006 02 18 | 699 | 0.3+ | 0.3− |
| 2002 04 12 | 704 | 0.8− | 0.1+ | 2005 12 22 | 703 | 0.1+ | 1.6− | 2006 02 18 | 699 | 0.4− | 0.2− |
| 2002 04 12 | 704 | 0.7− | 0.2+ | 2005 12 22 | 703 | 0.2− | 0.2+ | 2006 02 18 | 699 | 0.3+ | 0.0 |
| 2002 04 12 | 704 | 0.3− | 0.6+ | 2005 12 22 | 703 | 0.0 | 0.1+ | 2006 02 22 | 699 | 0.4− | 1.9− |
| 2002 04 12 | 704 | 0.5− | 0.3+ | 2005 12 22 | 703 | 1.2− | 0.7− | 2006 02 22 | 699 | 0.2− | 0.1− |
| 2002 04 12 | 704 | 0.7− | 0.9+ | 2005 12 28 | 703 | 1.2− | 0.8+ | 2006 02 22 | 699 | 0.0 | 0.3+ |
| 2002 04 14 | 644 | (2.2− | 0.7+) | 2005 12 28 | 703 | 0.2− | 0.1− | 2006 02 22 | 699 | 0.0 | 0.5− |

**(141511)∗ 2002 EK$_{90}$**

Discovered 2002 Mar. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.03720 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18047763 | $\omega$ | 52.18882 | | −0.78990446 | −0.61073929 | |
| $a$ | 3.1011335 | $\Omega$ | 90.10050 | | +0.54385113 | −0.73929169 | |
| $e$ | 0.1131904 | $i$ | 3.16508 | | +0.28333177 | −0.28362884 | |
| $P$ | 5.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 20 | 691 | 0.1− | 0.3− | 2002 03 16 | 704 | 0.3− | 0.4+ | 2005 10 22 | 703 | (2.2− | 0.2−) |
| 1991 02 20 | 691 | 0.1− | 0.1− | 2002 03 16 | 704 | 0.5− | 0.5+ | 2005 10 22 | 703 | 0.8− | 1.2− |
| 1991 02 20 | 691 | 0.1+ | 0.3− | 2002 03 16 | 704 | (0.0 | 1.9+) | 2005 10 22 | 703 | 0.1+ | 0.6+ |
| 1991 02 21 | 691 | 0.2− | 0.0 | 2002 03 16 | 704 | (1.1+ | 1.6+) | 2005 10 22 | 703 | (1.6− | 0.6−) |
| 1991 02 21 | 691 | 0.1− | 0.2− | 2002 03 18 | 704 | 0.5+ | 0.8+ | 2005 10 28 | 703 | 0.6+ | 0.6+ |
| 1991 02 21 | 691 | 0.5− | 0.1− | 2002 03 18 | 704 | 0.5− | 0.2+ | 2005 10 28 | 703 | (1.8+ | 1.4+) |
| 1997 05 02 | 910 | 0.8+ | 0.5− | 2002 03 18 | 704 | 0.8+ | 0.3+ | 2005 10 28 | 703 | 0.8+ | 0.3− |
| 1997 05 02 | 910 | 1.0+ | 0.7− | 2002 03 19 | 699 | 0.1+ | 0.3− | 2005 10 28 | 703 | (0.1− | 2.1+) |
| 1997 05 03 | 910 | 0.9+ | 0.6− | 2002 03 19 | 699 | 0.1− | 1.1+ | 2005 11 01 | G96 | 0.1− | 0.2+ |
| 2000 11 24 | 691 | 0.5+ | 0.3− | 2002 03 19 | 699 | 1.1− | 0.8+ | 2005 11 01 | G96 | 0.6− | 0.3+ |
| 2000 11 24 | 691 | 0.5+ | 0.4− | 2002 03 19 | 699 | 0.6+ | 0.2+ | 2005 11 01 | G96 | 0.5− | 0.3+ |
| 2000 11 24 | 691 | 0.5+ | 0.3− | 2002 03 20 | 704 | 1.2+ | 0.0 | 2005 11 01 | G96 | 0.6− | 0.1+ |
| 2002 02 10 | 704 | 0.9+ | 0.6− | 2002 03 20 | 704 | 0.1− | 0.1+ | 2005 12 01 | G96 | 0.3− | 0.3+ |
| 2002 02 10 | 704 | 0.1+ | 0.3+ | 2002 03 20 | 704 | 0.1+ | 0.4+ | 2005 12 01 | G96 | 0.2− | 0.1+ |
| 2002 02 10 | 704 | 0.8+ | 0.2− | 2002 03 20 | 704 | 0.4+ | 0.9+ | 2005 12 01 | G96 | 0.2− | 0.4+ |
| 2002 02 20 | 704 | 0.1+ | 0.5+ | 2002 03 20 | 704 | 0.2− | 0.2+ | 2005 12 01 | G96 | 0.2− | 0.4+ |
| 2002 02 20 | 704 | 0.7+ | 0.0 | 2002 03 21 | 704 | 0.2− | 0.8+ | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 2002 02 20 | 704 | 1.1+ | 0.3− | 2002 03 21 | 704 | 0.1+ | 0.8+ | 2006 09 25 | G96 | 0.5+ | 0.6+ |
| 2002 03 05 | 699 | 0.4− | 0.7+ | 2002 03 21 | 704 | 0.6− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2002 03 05 | 699 | 0.7− | 0.3+ | 2002 03 21 | 704 | 0.2+ | 0.8+ | 2006 09 25 | G96 | 0.2− | 1.0− |
| 2002 03 05 | 699 | 0.6+ | 1.3− | 2002 03 22 | 644 | 0.6+ | 0.4+ | 2006 10 23 | G96 | 0.9+ | 0.2+ |
| 2002 03 05 | 699 | 0.1− | 0.4− | 2002 03 22 | 644 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2002 03 12 | 704 | 0.3− | 0.8+ | 2002 03 22 | 644 | 0.1+ | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2002 03 12 | 704 | 0.2− | 1.3+ | 2002 04 02 | 644 | 0.5+ | 0.3− | 2006 10 23 | G96 | 0.8− | 0.7− |
| 2002 03 12 | 704 | 0.0 | 0.0 | 2002 04 02 | 644 | 0.5+ | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2002 03 13 | 291 | 0.1− | 0.3+ | 2002 04 02 | 644 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2002 03 13 | 291 | 0.0 | 0.2+ | 2005 10 12 | 691 | 0.6− | 0.7+ | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2002 03 13 | 291 | 0.4− | 0.2+ | 2005 10 12 | 691 | 0.6− | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2002 03 16 | 704 | 0.1− | 1.5+ | 2005 10 12 | 691 | 0.5− | 0.5+ | | | | |

**(141512)∗ 2002 EO$_{90}$**

Discovered 2002 Mar. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.79102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30439350 | $\omega$ | 257.12562 | | −0.08669250 | +0.99614432 | |
| $a$ | 2.1886642 | $\Omega$ | 7.93783 | | −0.87209982 | −0.06935688 | |
| $e$ | 0.1637139 | $i$ | 5.58917 | | −0.48158729 | −0.05372259 | |
| $P$ | 3.24 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.4− | 0.4− | 2002 04 06 | 691 | 0.5+ | 0.3+ | 2006 08 24 | 644 | 0.5− | 0.3+ |
| 1999 05 13 | 704 | 0.2− | 0.1+ | 2002 04 06 | 691 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.7− | 0.3− |
| 1999 05 13 | 704 | 0.8− | 0.1− | 2002 04 06 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.4− |
| 1999 05 13 | 704 | (5.3− | 1.2+) | 2002 04 16 | 704 | 0.9+ | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.6− |
| 1999 05 13 | 704 | (1.1+ | 2.3+) | 2002 04 16 | 704 | (2.4+ | 1.4+) | 2006 08 28 | 703 | 0.6− | 0.6+ |
| 1999 05 13 | 704 | 1.7+ | 1.2+ | 2002 04 16 | 704 | (2.5+ | 1.2+) | 2006 09 12 | 703 | 0.2− | 0.4+ |
| 1999 05 13 | 699 | 0.4+ | 0.7+ | 2002 04 17 | 691 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.1− | 0.7− |
| 1999 05 13 | 704 | (0.4+ | 2.5+) | 2002 04 17 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.1+ | 0.0 |
| 1999 05 13 | 699 | 0.4+ | 0.2− | 2002 04 17 | 691 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.0 | 0.1+ |
| 1999 05 13 | 704 | (1.1− | 3.6+) | 2003 09 22 | 691 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.6+ |
| 1999 05 13 | 704 | (0.8− | 2.3+) | 2003 09 22 | 691 | 0.3− | 0.1+ | 2006 09 19 | 699 | 1.0− | 0.8+ |
| 1999 05 13 | 699 | 0.5+ | 0.1− | 2003 09 22 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.7+ |
| 2002 03 06 | 644 | 0.1+ | 0.2− | 2003 09 27 | 691 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.3− | 1.1+ |
| 2002 03 06 | 644 | 0.2+ | 0.2− | 2003 09 27 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.5+ |
| 2002 03 06 | 644 | 0.5+ | 0.2− | 2003 09 27 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.6+ |
| 2002 03 12 | 699 | 0.9+ | 1.0+ | 2003 10 18 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.5+ |
| 2002 03 12 | 699 | (0.1+ | 1.7+) | 2003 10 18 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2002 03 12 | 699 | (1.8+ | 1.7+) | 2003 10 18 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2002 03 12 | 704 | 0.6− | 1.0+ | 2003 10 25 | 704 | 1.0+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.2+ |
| 2002 03 12 | 699 | 0.5+ | 0.1+ | 2003 10 25 | 704 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.2+ |
| 2002 03 12 | 704 | 0.1− | 0.5+ | 2003 10 25 | 704 | 0.0 | 0.5− | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2002 03 12 | 704 | 0.3− | 0.6+ | 2003 10 25 | 704 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.1+ |
| 2002 03 12 | 644 | 0.3+ | 0.5+ | 2005 01 19 | 691 | 0.6+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2002 03 12 | 644 | 0.3+ | 0.6+ | 2005 01 19 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 644 | 0.1+ | 0.6+ | 2005 01 19 | 691 | 0.6− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2002 03 16 | 704 | 0.2+ | 1.0+ | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3+ |
| 2002 03 16 | 704 | 0.1+ | 0.9+ | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.8− | 0.5− |
| 2002 03 16 | 704 | 0.1+ | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2002 03 16 | 704 | 0.6+ | 1.1+ | 2006 08 24 | 644 | 0.1+ | 0.3+ | | | | |
| 2002 03 16 | 704 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.2+ | | | | |

**(141513)∗ 2002 EZ$_{93}$**

Discovered 2002 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.06290 | | (2000.0) | | | |
| $n$ | 0.15001796 | $\omega$ | 260.20047 | | +0.43482686 | −0.89911784 |
| $a$ | 3.5078463 | $\Omega$ | 163.74127 | | +0.88037282 | +0.41273505 |
| $e$ | 0.0670740 | $i$ | 10.31390 | | +0.18939194 | +0.14572883 |
| $P$ | 6.57 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 695 | 0.5− | 0.4+ | 2003 06 01 | 691 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.9+ | 0.1− |
| 2002 02 06 | 695 | 0.5− | 0.4+ | 2003 06 01 | 691 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.2− | 0.6+ |
| 2002 02 11 | 704 | 0.6− | 0.6+ | 2005 08 06 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2002 02 11 | 704 | 0.5+ | 0.2− | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.4+ |
| 2002 02 11 | 704 | 0.4− | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.6+ | 0.7+ |
| 2002 02 11 | 704 | 0.1+ | 0.6+ | 2005 08 28 | 691 | 0.0 | 0.4+ | 2006 10 31 | A50 | 0.6− | 0.1+ |
| 2002 03 13 | 644 | (0.2+ | 1.8+) | 2005 08 28 | 691 | 0.2− | 0.4+ | 2006 10 31 | A50 | 0.3− | 0.3+ |
| 2002 03 13 | 644 | (0.2+ | 1.9+) | 2005 08 28 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 1.0− | 0.4− |
| 2002 03 13 | 644 | (0.6+ | 2.0+) | 2005 09 11 | 691 | 0.4− | 0.5+ | 2006 11 01 | 703 | 0.4− | 0.0 |
| 2002 03 14 | 704 | 0.1− | 1.0+ | 2005 09 11 | 691 | 0.4− | 0.4+ | 2006 11 01 | 703 | 1.2+ | 1.2+ |
| 2002 03 14 | 704 | 1.1+ | 1.0+ | 2005 09 11 | 691 | 0.2− | 0.4+ | 2006 11 01 | 703 | 0.4− | 0.5− |
| 2002 03 14 | 704 | 0.1+ | 0.5+ | 2005 09 29 | G96 | 0.5+ | 0.3− | 2006 11 13 | 703 | 0.2− | 0.7− |
| 2002 03 16 | 704 | 1.1+ | 0.8+ | 2005 09 29 | G96 | 0.5+ | 0.4− | 2006 11 13 | 703 | 0.6− | 0.6+ |
| 2002 03 16 | 704 | (0.2− | 2.4+) | 2005 09 29 | G96 | 0.4+ | 0.3− | 2006 11 13 | 703 | 0.3− | 0.4+ |
| 2002 03 16 | 704 | 0.1− | 1.3+ | 2005 09 29 | G96 | 0.3+ | 0.5− | 2006 11 13 | 703 | 0.5+ | 0.5+ |
| 2002 03 16 | 704 | 0.9+ | 0.8+ | 2005 12 01 | 695 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.1− | 0.5+ |
| 2002 03 16 | 704 | 0.2+ | 1.3+ | 2005 12 02 | 695 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.5− | 1.4+ |
| 2003 03 31 | 691 | 0.3+ | 0.2+ | 2005 12 02 | 695 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.5− | 1.2+ |
| 2003 03 31 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.7+ | 2006 11 19 | 703 | 0.2+ | 0.8+ |
| 2003 03 31 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.1− | | | | |
| 2003 06 01 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.2+ | | | | |

**(141514)∗ 2002 EC$_{94}$ = 1999 OS$_5$**

Discovered 2002 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75311)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.85468 | | (2000.0) | | | |
| $n$ | 0.18128016 | $\omega$ | 255.86579 | | +0.86266148 | −0.50499043 |
| $a$ | 3.0919742 | $\Omega$ | 134.45584 | | +0.47798811 | +0.79570050 |
| $e$ | 0.2078563 | $i$ | 2.27072 | | +0.16535580 | +0.33443292 |
| $P$ | 5.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 20 | 691 | 0.1+ | 0.6+ | 2005 09 29 | 699 | 0.4− | 0.3+ | 2005 10 28 | 704 | 1.4− | 1.4+ |
| 1999 07 20 | 691 | 0.1− | 0.2+ | 2005 09 29 | 699 | 0.6− | 0.5+ | 2005 10 28 | 704 | 1.2− | 0.9+ |
| 1999 07 20 | 691 | 0.2− | 0.1+ | 2005 10 01 | 704 | 1.1+ | 0.1+ | 2005 10 28 | 704 | (1.2− | 1.6+) |
| 2000 12 30 | 704 | 0.1− | 0.1+ | 2005 10 01 | 704 | 0.6+ | 0.5+ | 2005 10 28 | 704 | 1.2− | 0.8+ |
| 2000 12 30 | 704 | 0.1+ | 0.5− | 2005 10 01 | 704 | 0.2+ | 0.3+ | 2005 10 29 | G96 | 0.4+ | 0.2− |
| 2000 12 30 | 704 | 0.8+ | 0.4+ | 2005 10 01 | 691 | 0.2+ | 0.4+ | 2005 10 29 | G96 | 0.3+ | 0.3− |
| 2002 02 10 | 704 | 0.4+ | 0.1− | 2005 10 01 | 704 | 0.1− | 0.9+ | 2005 10 29 | G96 | 0.3+ | 0.2− |
| 2002 02 10 | 704 | (1.9+ | 2.0+) | 2005 10 01 | 691 | 0.2+ | 0.3+ | 2005 10 29 | G96 | 0.3+ | 0.2− |
| 2002 02 10 | 704 | (2.7+ | 1.7+) | 2005 10 01 | 704 | 0.3+ | 0.1+ | 2005 10 31 | 704 | 0.8− | 0.2− |
| 2002 02 10 | 704 | (1.8+ | 1.1+) | 2005 10 01 | 691 | 0.1+ | 0.4+ | 2005 10 31 | 704 | 0.3− | 0.1− |
| 2002 02 13 | 291 | 0.4+ | 0.5+ | 2005 10 05 | 704 | 0.3+ | 0.4+ | 2005 10 31 | 704 | 0.2− | 0.0 |
| 2002 02 13 | 291 | 0.4+ | 0.5+ | 2005 10 05 | 704 | 0.0 | 0.3+ | 2005 10 31 | 704 | 0.2− | 0.2+ |
| 2002 02 13 | 291 | 0.1+ | 0.7+ | 2005 10 05 | 704 | 0.4− | 0.1+ | 2005 10 31 | 704 | 0.2− | 0.9+ |
| 2002 02 25 | 644 | 0.3+ | 0.2− | 2005 10 05 | 704 | 0.1− | 0.3+ | 2005 11 03 | 704 | 0.3− | 0.5+ |
| 2002 02 25 | 644 | 0.7+ | 0.3+ | 2005 10 05 | 704 | 0.2− | 0.2+ | 2005 11 03 | 704 | 0.2+ | 0.5+ |
| 2002 02 25 | 644 | 0.0 | 0.2+ | 2005 10 06 | 699 | 0.4− | 0.0 | 2005 11 03 | 704 | 0.2− | 0.1+ |
| 2002 03 05 | 645 | 0.1− | 0.1+ | 2005 10 06 | 699 | 0.1− | 0.0 | 2005 11 03 | 704 | 0.9− | 0.9+ |
| 2002 03 05 | 645 | 0.0 | 0.2+ | 2005 10 06 | 699 | 0.2− | 0.1+ | 2005 11 04 | 704 | 0.4+ | 0.7+ |
| 2002 03 14 | 704 | (0.3+ | 2.0+) | 2005 10 06 | 699 | 0.3− | 0.4+ | 2005 11 04 | 704 | 1.2+ | 1.0+ |
| 2002 03 14 | 704 | 0.5− | 1.1+ | 2005 10 07 | 703 | 0.2+ | 0.0 | 2005 11 04 | 704 | (1.4− | 1.6+) |
| 2002 03 14 | 704 | 0.4+ | 0.6+ | 2005 10 07 | 703 | 0.4− | 0.3+ | 2005 11 04 | 704 | 0.9+ | 0.2+ |
| 2002 03 16 | 704 | (1.9+ | 0.9+) | 2005 10 07 | 703 | 0.0 | 0.2+ | 2005 11 04 | 704 | 0.9− | 0.7+ |
| 2002 03 16 | 704 | 0.9+ | 0.8+ | 2005 10 07 | 703 | 0.0 | 0.3+ | 2005 11 18 | 644 | 0.1− | 0.3− |
| 2002 03 16 | 704 | 0.5+ | 0.8+ | 2005 10 10 | A50 | 0.0 | 0.1− | 2005 11 18 | 644 | 0.1+ | 0.2+ |
| 2003 04 26 | 691 | 0.3+ | 0.3+ | 2005 10 10 | A50 | 0.2+ | 0.3+ | 2005 11 18 | 644 | 0.2+ | 0.5+ |
| 2003 04 26 | 691 | 0.0 | 0.9+ | 2005 10 12 | 691 | 0.1− | 0.1+ | 2005 12 04 | 699 | 0.3+ | 0.3− |
| 2003 04 26 | 691 | 0.2+ | 0.8+ | 2005 10 12 | 691 | 0.0 | 0.1+ | 2005 12 04 | 699 | 0.9− | 0.4+ |
| 2003 05 03 | 691 | 0.4+ | 1.3+ | 2005 10 12 | 691 | 0.0 | 0.2+ | 2005 12 04 | 699 | 0.1+ | 0.8+ |
| 2003 05 03 | 691 | 0.7+ | 0.8+ | 2005 10 13 | 704 | 0.2+ | 0.6+ | 2005 12 04 | 699 | 0.2+ | 0.8+ |
| 2003 05 03 | 691 | (1.7+ | 0.9+) | 2005 10 13 | 704 | 0.3− | 0.1− | 2005 12 21 | 703 | 0.4+ | 0.4− |
| 2005 09 15 | 703 | 0.1− | 1.0+ | 2005 10 13 | 704 | 1.0− | 0.1+ | 2005 12 21 | 703 | 0.6+ | 1.2− |
| 2005 09 15 | 703 | 0.5+ | 0.3− | 2005 10 13 | 704 | 0.2− | 0.1+ | 2005 12 21 | 703 | 0.7− | 0.8− |
| 2005 09 15 | 703 | 0.0 | 0.6− | 2005 10 13 | 704 | 0.1− | 0.0 | 2005 12 21 | 703 | 0.4− | 1.0− |
| 2005 09 15 | 703 | 0.5− | 1.2+ | 2005 10 13 | 704 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.3+ |
| 2005 09 23 | 691 | 0.0 | 0.1− | 2005 10 13 | 704 | 0.5− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2005 09 23 | 691 | 0.2+ | 0.1+ | 2005 10 13 | 704 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1+ |
| 2005 09 23 | 691 | 0.3+ | 0.0 | 2005 10 13 | 704 | 0.5− | 0.6+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2005 09 24 | 703 | 0.8+ | 0.4− | 2005 10 13 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.5− | 0.5− |
| 2005 09 24 | 703 | 0.7− | 0.2− | 2005 10 21 | 644 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.8− |
| 2005 09 24 | 703 | 0.1− | 0.6− | 2005 10 21 | 644 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2005 09 24 | 703 | 0.4− | 0.3− | 2005 10 21 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.7− |
| 2005 09 24 | 644 | 0.5− | 0.1− | 2005 10 22 | 703 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2005 09 24 | 644 | 0.1− | 0.1− | 2005 10 22 | 703 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2005 09 24 | 644 | 0.3− | 0.2+ | 2005 10 22 | 703 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2005 09 27 | 691 | 0.4− | 0.1+ | 2005 10 22 | 703 | 0.1− | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2005 09 27 | 691 | 0.7− | 0.0 | 2005 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.4− |
| 2005 09 27 | 691 | 0.5− | 0.0 | 2005 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2005 09 29 | 699 | 1.0+ | 0.1+ | 2005 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.8+ | 0.4− |
| 2005 09 29 | 699 | 0.2− | 0.0 | 2005 10 28 | 704 | 1.3− | 1.4+ | | | | |

**(141515)∗ 2002 EU$_{97}$**

Discovered 2002 Mar. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.45807 | | (2000.0) | | | |
| $n$ | 0.19295875 | $\omega$ | 182.68043 | | +0.87559008 | +0.47386961 |
| $a$ | 2.9659220 | $\Omega$ | 148.48151 | | −0.43979132 | +0.86229383 |
| $e$ | 0.0535671 | $i$ | 10.33116 | | −0.19981392 | +0.17859715 |
| $P$ | 5.11 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.5− | 0.1+ | 2003 07 01 | 704 | 0.5− | 1.0+ | 2004 10 04 | 644 | 0.1− | 0.5+ |
| 1999 10 08 | 704 | 0.4+ | 1.5− | 2004 09 08 | 704 | 0.0 | 0.3− | 2004 10 04 | 644 | 0.0 | 0.5+ |
| 1999 10 08 | 704 | 0.1− | 0.6− | 2004 09 08 | 704 | 0.4+ | 0.3+ | 2004 10 06 | 704 | 0.7− | 0.6+ |
| 1999 10 08 | 704 | 0.2− | 0.8− | 2004 09 08 | 704 | 0.6+ | 0.4− | 2004 10 06 | 704 | 0.9+ | 0.4− |
| 1999 10 08 | 704 | 0.4+ | 0.3− | 2004 09 09 | 704 | 0.1+ | 0.2+ | 2004 10 06 | 704 | (1.7+ | 0.4+) |
| 2002 03 11 | 644 | 0.0 | 0.9+ | 2004 09 09 | 704 | 0.6− | 0.0 | 2004 10 06 | 704 | 0.4+ | 1.0+ |
| 2002 03 11 | 644 | 0.2− | 1.0+ | 2004 09 09 | 704 | 0.5+ | 0.2− | 2004 10 09 | 704 | 0.7− | 0.4− |
| 2002 03 11 | 644 | 0.2+ | 0.9+ | 2004 09 09 | 704 | 0.3+ | 0.6− | 2004 10 09 | 704 | 0.1− | 0.2+ |
| 2002 03 12 | 704 | (0.9+ | 1.7+) | 2004 09 09 | 704 | 0.4− | 1.0− | 2004 10 09 | 704 | 0.2− | 0.8+ |
| 2002 03 12 | 704 | 0.7+ | 1.2+ | 2004 09 15 | 699 | 0.6+ | 0.2+ | 2004 10 09 | 704 | 0.0 | 0.1− |
| 2002 03 12 | 704 | (1.0+ | 2.6+) | 2004 09 15 | 699 | 0.1+ | 0.4− | 2004 10 12 | 704 | 0.5− | 0.0 |
| 2002 03 12 | 704 | 0.2+ | 0.5+ | 2004 09 15 | 699 | 0.3− | 1.0+ | 2004 10 12 | 704 | 0.9− | 0.7+ |
| 2002 03 12 | 704 | (0.7+ | 1.7+) | 2004 09 15 | 699 | 0.6+ | 0.0 | 2004 10 12 | 704 | 0.0 | 1.3+ |
| 2002 03 17 | 704 | 0.5+ | 0.3+ | 2004 09 17 | 704 | 1.2+ | 1.0+ | 2004 10 13 | 704 | 0.1+ | 0.8+ |
| 2002 03 17 | 704 | (1.2+ | 1.5+) | 2004 09 17 | 704 | 0.2− | 0.6+ | 2004 10 13 | 704 | 0.8− | 0.6+ |
| 2002 03 17 | 704 | 1.1+ | 1.2+ | 2004 09 17 | 704 | 0.0 | 0.1+ | 2004 10 13 | 704 | 0.5− | 0.1+ |
| 2002 03 22 | 644 | 0.2+ | 0.4+ | 2004 09 17 | 704 | 0.3− | 1.1+ | 2006 01 02 | 704 | 1.2− | 0.1− |
| 2002 03 22 | 644 | 0.3+ | 0.5+ | 2004 09 17 | 704 | 0.1+ | 0.3+ | 2006 01 02 | 704 | 0.9+ | 0.8+ |
| 2002 03 22 | 644 | 0.6− | 0.5+ | 2004 09 17 | 704 | 0.9− | 1.1+ | 2006 01 02 | 704 | 0.2− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 02 | 644 | 0.6+ | 1.0+ | 2004 09 17 | 704 | 1.3− | 0.1+ | 2006 01 02 | 704 | 1.3+ | 0.9+ | | |
| 2002 04 02 | 644 | 0.1+ | 0.6+ | 2004 09 17 | 704 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.4− | | |
| 2002 04 02 | 644 | 0.3+ | 0.5+ | 2004 09 17 | 704 | 0.2+ | 0.9+ | 2006 11 20 | G96 | 0.3− | 0.5− | | |
| 2003 06 03 | 704 | 0.9− | 0.0 | 2004 09 17 | 704 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.5− | 0.5− | | |
| 2003 06 03 | 704 | 0.9+ | 1.3− | 2004 09 21 | 704 | 0.2+ | 0.8− | 2006 11 20 | G96 | 1.3− | 0.0 | | |
| 2003 06 03 | 704 | 0.9+ | 1.3− | 2004 09 21 | 704 | 0.0 | 0.6+ | 2006 12 01 | G96 | 0.1− | 0.3− | | |
| 2003 07 01 | 704 | 0.0 | 1.1+ | 2004 09 21 | 704 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.1− | 0.2− | | |
| 2003 07 01 | 704 | 0.1+ | 0.1+ | 2004 09 21 | 704 | 0.2+ | 0.6+ | 2006 12 01 | G96 | 0.3− | 0.1− | | |
| 2003 07 01 | 704 | 0.4− | 0.3+ | 2004 09 21 | 704 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.1+ | | |
| 2003 07 01 | 704 | 0.2− | 0.6+ | 2004 10 04 | 644 | 0.0 | 0.6+ | | | | | | |

**(141516)∗ 2002 ER$_{98}$**

Discovered 2002 Mar. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.02086 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29461043 | $\omega$ | 25.64987 | | −0.43871761 | +0.89775416 | |
| $a$ | 2.2368523 | $\Omega$ | 218.36286 | | −0.83505665 | −0.42354751 | |
| $e$ | 0.1646273 | $i$ | 3.65377 | | −0.33197477 | −0.12101641 | |
| $P$ | 3.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 704 | 0.6+ | 0.6+ | 2002 04 14 | 704 | 0.2+ | 0.4+ | 2006 08 18 | 704 | 1.5+ | 1.3+ | | |
| 2002 03 13 | 704 | 0.1+ | 1.1+ | 2002 04 14 | 704 | 1.0+ | 0.1− | 2006 08 18 | 699 | 0.2− | 0.2− | | |
| 2002 03 13 | 704 | 0.9+ | 0.7+ | 2002 04 14 | 704 | 0.2− | 0.7− | 2006 08 18 | 704 | 0.2+ | 0.9+ | | |
| 2002 03 13 | 704 | 0.2− | 1.3+ | 2002 04 14 | 704 | 0.6+ | 0.1+ | 2006 08 18 | 699 | 0.4+ | 0.3− | | |
| 2002 03 13 | 644 | 0.0 | 0.4+ | 2002 04 14 | 704 | 0.3+ | 0.7− | 2006 08 18 | 699 | 0.0 | 0.5+ | | |
| 2002 03 13 | 644 | 0.0 | 0.4+ | 2002 04 15 | 644 | 0.4+ | 0.4+ | 2006 08 24 | 704 | 0.4+ | 0.4+ | | |
| 2002 03 13 | 644 | 0.2+ | 0.2+ | 2002 04 15 | 644 | 0.0 | 0.5+ | 2006 08 24 | 704 | 1.3+ | 0.3+ | | |
| 2002 03 18 | 704 | 0.3+ | 0.7+ | 2002 04 15 | 644 | 0.2+ | 0.5+ | 2006 08 24 | 704 | 0.6− | 0.1+ | | |
| 2002 03 18 | 704 | 0.5− | 0.5− | 2002 04 16 | 704 | 0.8+ | 0.1− | 2006 08 24 | 704 | 0.4+ | 0.3+ | | |
| 2002 03 18 | 704 | 0.3+ | 0.3+ | 2002 04 16 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 1.2− | 0.4− | | |
| 2002 03 18 | 704 | 0.7− | 0.6− | 2002 04 16 | 704 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.8+ | | |
| 2002 03 20 | 699 | 0.0 | 0.4− | 2002 04 16 | 704 | 1.0+ | 0.7+ | 2006 08 28 | 699 | 0.1+ | 0.3+ | | |
| 2002 03 20 | 699 | 1.1− | 0.1+ | 2002 04 16 | 704 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.4− | 0.3+ | | |
| 2002 03 20 | 699 | 0.1− | 1.1+ | 2003 09 28 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.2+ | | |
| 2002 03 20 | 699 | 0.5− | 1.1+ | 2003 09 28 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.2+ | 0.1− | | |
| 2002 03 23 | 704 | 0.3− | 1.1+ | 2003 09 28 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.5− | 0.1+ | | |
| 2002 03 23 | 704 | 0.0 | 1.0+ | 2003 10 16 | 691 | 0.3− | 0.2+ | 2006 08 28 | 699 | 1.0+ | 0.6+ | | |
| 2002 03 23 | 704 | 0.1+ | 1.5+ | 2003 10 16 | 691 | 0.1− | 0.4− | 2006 08 29 | 691 | 0.1− | 0.3− | | |
| 2002 03 23 | 704 | 0.4− | 1.6+ | 2003 10 16 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.1− | | |
| 2002 03 23 | 704 | 0.3+ | 1.4+ | 2003 10 18 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.2− | | |
| 2002 04 04 | 644 | 0.2+ | 0.7+ | 2003 10 18 | 691 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.3− | | |
| 2002 04 04 | 644 | 0.3+ | 0.8+ | 2003 10 18 | 691 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.3− | 0.4+ | | |
| 2002 04 04 | 644 | 0.3+ | 0.8+ | 2003 10 23 | 291 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.9− | 0.2+ | | |
| 2002 04 10 | 704 | 0.3+ | 0.4− | 2003 10 23 | 291 | 0.1− | 0.6+ | 2006 08 30 | 704 | 0.0 | 0.4− | | |
| 2002 04 10 | 704 | 0.4− | 0.3− | 2003 10 23 | 291 | 0.1− | 0.5+ | 2006 09 17 | 291 | 0.2+ | 0.3+ | | |
| 2002 04 10 | 704 | 0.1− | 0.4− | 2005 01 07 | 703 | 0.8+ | 1.2+ | 2006 09 17 | 291 | 0.2− | 0.4+ | | |
| 2002 04 10 | 704 | 0.6+ | 1.1− | 2005 01 07 | 703 | 0.2+ | 0.9+ | 2006 09 17 | 291 | 0.1+ | 0.4+ | | |
| 2002 04 10 | 704 | 0.2− | 0.3− | 2005 01 07 | 703 | 0.7+ | 0.3− | 2006 09 19 | 691 | 0.3− | 0.2+ | | |
| 2002 04 11 | 704 | 0.5+ | 0.6+ | 2005 01 07 | 703 | 1.0− | 2.1+ | 2006 09 19 | 691 | 0.2− | 0.3+ | | |
| 2002 04 11 | 704 | 0.9+ | 0.4+ | 2006 08 18 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 691 | 0.4− | 0.4+ | | |
| 2002 04 11 | 704 | 0.1− | 0.6+ | 2006 08 18 | 699 | 0.1− | 0.5+ | | | | | | |

**(141517)∗ 2002 EG$_{102}$**

Discovered 2002 Mar. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.28495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30012800 | $\omega$ | 39.12964 | | +0.18257173 | +0.97822005 | |
| $a$ | 2.2093527 | $\Omega$ | 241.59455 | | −0.92790032 | +0.13822309 | |
| $e$ | 0.1568777 | $i$ | 6.44649 | | −0.32506702 | +0.15485447 | |
| $P$ | 3.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 05 | 699 | 0.1+ | 0.2+ | 2003 10 25 | 704 | 0.3+ | 0.6− | 2006 09 15 | 704 | 0.8− | 1.0+ | | |
| 1999 06 05 | 699 | 0.8+ | 0.6+ | 2003 10 25 | 704 | (0.1− | 1.6+) | 2006 09 15 | 704 | 0.5− | 0.5+ | | |
| 1999 06 05 | 699 | 0.5− | 1.0+ | 2003 10 27 | 704 | 0.6+ | 0.3− | 2006 09 15 | 704 | 0.7− | 0.5+ | | |
| 2002 03 06 | 644 | 0.1+ | 0.6+ | 2003 10 27 | 704 | 0.1+ | 0.5− | 2006 09 15 | 704 | 0.9+ | 0.8− | | |
| 2002 03 06 | 644 | 0.1+ | 0.7+ | 2003 10 27 | 704 | 0.5− | 0.9+ | 2006 09 16 | 644 | 0.1− | 0.1+ | | |
| 2002 03 06 | 644 | 0.3+ | 0.7+ | 2003 11 02 | 704 | 0.3+ | 0.4− | 2006 09 16 | 644 | 0.1+ | 0.1− | | |
| 2002 03 06 | 644 | 0.2− | 0.4+ | 2003 11 02 | 704 | 0.2− | 1.3− | 2006 09 16 | 644 | 0.2+ | 0.3+ | | |
| 2002 03 06 | 644 | 0.2+ | 0.4+ | 2003 11 02 | 704 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.2− | | |
| 2002 03 06 | 644 | 0.0 | 0.3+ | 2003 11 02 | 704 | 0.3+ | 1.2+ | 2006 09 20 | 699 | 0.5+ | 0.3− | | |
| 2002 03 09 | 644 | 0.3+ | 0.5+ | 2003 11 19 | 691 | 0.5− | 0.1+ | 2006 09 20 | 699 | 0.3− | 0.0 | | |
| 2002 03 09 | 644 | 0.5+ | 0.4+ | 2003 11 19 | 691 | 0.3− | 0.2− | 2006 09 20 | 699 | 0.5+ | 0.0 | | |
| 2002 03 09 | 644 | 0.1+ | 0.7+ | 2003 11 19 | 691 | 0.2− | 0.3+ | 2006 09 22 | 703 | 0.2− | 0.2− | | |
| 2002 03 09 | 644 | 0.5+ | 0.6+ | 2003 11 24 | 704 | 0.5+ | 0.7− | 2006 09 22 | 703 | 0.7− | 0.3− | | |
| 2002 03 09 | 644 | 0.1− | 0.4+ | 2003 11 24 | 704 | 0.8+ | 0.9+ | 2006 09 22 | 703 | 0.6− | 0.2+ | | |
| 2002 03 09 | 644 | 0.2+ | 0.2+ | 2003 11 24 | 704 | 0.1− | 0.8+ | 2006 09 22 | 703 | 0.8− | 0.3− | | |
| 2002 04 04 | 608 | 1.4− | 1.1+ | 2003 11 24 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.4− | | |
| 2002 04 04 | 608 | 1.3− | 0.6+ | 2003 11 26 | 699 | 0.7− | 0.7+ | 2006 09 29 | 699 | 0.0 | 0.6+ | | |
| 2002 04 04 | 608 | 1.4− | 1.1+ | 2003 11 26 | 699 | 1.2+ | 1.3+ | 2006 09 29 | 699 | 1.0+ | 0.8− | | |
| 2002 04 10 | 704 | 1.0+ | 0.9− | 2003 11 26 | 699 | (1.3− | 2.0+) | 2006 09 29 | 699 | (1.6+ | 0.5+) | | |
| 2002 04 10 | 704 | 0.6+ | 0.5+ | 2003 11 26 | 699 | (0.5+ | 2.6+) | 2006 10 18 | 691 | 0.2− | 0.5+ | | |
| 2002 04 10 | 704 | 1.2+ | 0.6+ | 2006 08 29 | 699 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.3− | 0.0 | | |
| 2002 04 10 | 704 | 1.2+ | 0.2+ | 2006 08 29 | 699 | 0.2− | 0.9− | 2006 10 18 | 691 | 0.1+ | 0.3+ | | |
| 2002 04 30 | 644 | 0.4+ | 0.6+ | 2006 08 29 | 699 | 1.2− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.1+ | | |
| 2002 04 30 | 644 | 0.6+ | 0.5+ | 2006 08 31 | 704 | 0.5− | 0.6+ | 2006 10 20 | 691 | 0.3+ | 0.3+ | | |
| 2002 04 30 | 644 | 0.7+ | 0.5+ | 2006 08 31 | 704 | 0.3− | 0.6+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | | |
| 2003 10 25 | 704 | (0.5+ | 2.7+) | 2006 08 31 | 704 | 0.4− | 0.8+ | 2006 10 22 | 691 | 0.0 | 0.0 | | |
| 2003 10 25 | 704 | 0.3− | 0.6+ | 2006 08 31 | 704 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.2+ | | |
| 2003 10 25 | 704 | 0.8− | 1.1+ | 2006 08 31 | 704 | 0.8+ | 0.6− | 2006 10 22 | 691 | 0.0 | 0.1+ | | |

**(141518)∗ 2002 EB$_{136}$**

Discovered 2002 Mar. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.05118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12370967 | $\omega$ | 151.29457 | | +0.63143872 | +0.77322789 | |
| $a$ | 3.9890268 | $\Omega$ | 157.70183 | | −0.73758235 | +0.62213744 | |
| $e$ | 0.1350640 | $i$ | 8.84508 | | −0.23928522 | +0.12273398 | |
| $P$ | 7.97 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 291 | 0.3− | 0.6+ | 2005 07 30 | 644 | 0.2− | 0.3+ | 2005 09 11 | 691 | 0.2− | 0.4+ | | |
| 2002 02 08 | 291 | 0.2+ | 0.7+ | 2005 07 30 | 644 | 0.0 | 0.1+ | 2005 10 01 | 699 | 0.2− | 0.3+ | | |
| 2002 02 08 | 291 | 0.2+ | 0.9+ | 2005 08 26 | 644 | 0.2− | 0.1+ | 2005 10 01 | 699 | 0.1+ | 0.3− | | |
| 2002 03 12 | 691 | 0.2+ | 0.6+ | 2005 08 26 | 644 | 0.2− | 0.0 | 2005 10 01 | 699 | 0.1− | 0.2− | | |
| 2002 03 12 | 691 | 0.3+ | 0.0 | 2005 08 26 | 644 | 0.3− | 0.1+ | 2005 10 01 | 699 | 0.8+ | 0.4+ | | |
| 2002 03 12 | 691 | 0.2+ | 0.7+ | 2005 08 28 | 691 | 0.0 | 0.2+ | 2005 10 06 | G96 | 0.0 | 0.3+ | | |
| 2002 03 16 | 704 | 0.3+ | 0.2− | 2005 08 28 | 691 | 0.3+ | 0.1+ | 2005 10 06 | G96 | 0.1− | 0.1+ | | |
| 2002 03 16 | 704 | 0.6+ | 0.5+ | 2005 08 28 | 691 | 0.0 | 0.2+ | 2005 10 06 | G96 | 0.3− | 0.1+ | | |
| 2002 03 16 | 704 | 0.3+ | 0.2− | 2005 08 29 | 704 | 0.7− | 0.2− | 2005 10 06 | G96 | 0.2+ | 0.1+ | | |
| 2002 03 16 | 704 | 0.7+ | 1.0− | 2005 08 29 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.4+ | | |
| 2002 04 06 | 807 | 0.6− | 0.3+ | 2005 08 29 | 704 | 0.4− | 0.6− | 2006 10 16 | 703 | (1.6+ | 0.3−) | | |
| 2002 04 06 | 807 | 0.3− | 0.2+ | 2005 08 29 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.0 | | |
| 2002 04 08 | 807 | 0.3− | 0.5+ | 2005 08 29 | 704 | 0.5+ | 1.4+ | 2006 10 16 | 703 | 0.3+ | 0.3− | | |
| 2002 04 09 | 807 | 0.2− | 0.6+ | 2005 09 01 | 691 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.2+ | | |
| 2003 03 24 | 691 | 0.2+ | 0.1+ | 2005 09 01 | 691 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.5− | | |
| 2003 03 24 | 691 | 0.1− | 0.1+ | 2005 09 01 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.6+ | | |
| 2003 03 24 | 691 | 0.5+ | 0.3− | 2005 09 08 | 704 | 0.3+ | 1.3+ | 2006 10 22 | 703 | 1.0− | 1.0− | | |
| 2003 05 01 | 691 | 0.3− | 0.3+ | 2005 09 08 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 703 | 1.9+ | 2.1+ | | |
| 2003 05 01 | 691 | 0.0 | 0.4+ | 2005 09 08 | 704 | 1.2+ | 0.5− | 2006 11 19 | 703 | 0.7− | 1.8+ | | |
| 2003 05 01 | 691 | 0.0 | 0.4+ | 2005 09 11 | 691 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.5− | 0.2+ | | |
| 2005 07 30 | 644 | 0.4− | 0.3− | 2005 09 11 | 691 | 0.2− | 0.4+ | 2006 11 19 | 703 | 1.1+ | 1.0+ | | |

**(141519)∗ 2002 ED$_{137}$ = 1997 LN$_{8}$**

Discovered 2002 Mar. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 30079)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.46755 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17921266 | $\omega$ | 100.18716 | | −0.36332054 | +0.93136356 | |
| $a$ | 3.1157092 | $\Omega$ | 148.47613 | | −0.87152862 | −0.33078132 | |
| $e$ | 0.1593434 | $i$ | 2.59434 | | −0.32929628 | −0.15213692 | |
| $P$ | 5.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 07 | 809 | 1.3+ | 0.4+ | 2002 03 16 | 704 | 0.6+ | 0.8+ | 2004 11 04 | 691 | 0.0 | 0.8+ |
| 1997 06 07 | 809 | 0.3+ | 0.7+ | 2002 03 16 | 704 | 1.0+ | 0.3+ | 2004 11 04 | 691 | 0.3+ | 0.6+ |
| 1997 06 07 | 809 | 1.1+ | 0.8+ | 2002 03 19 | 699 | 0.0 | 0.8+ | 2004 11 04 | 691 | 0.7+ | 0.8+ |
| 1997 06 08 | 809 | 0.3+ | 1.3+ | 2002 03 19 | 699 | 0.1− | 1.3+ | 2005 10 29 | G96 | 0.3+ | 0.4− |
| 1997 06 08 | 809 | 0.3− | 1.2+ | 2002 03 19 | 699 | 0.5+ | 0.4− | 2005 10 29 | G96 | 0.1− | 0.4− |
| 1997 06 08 | 809 | 0.3− | 0.5+ | 2002 03 19 | 699 | 0.1+ | 0.4+ | 2005 10 29 | G96 | 0.1− | 0.5− |
| 2002 02 09 | 291 | 0.0 | 0.9+ | 2004 10 05 | 691 | 0.0 | 0.1+ | 2005 10 29 | G96 | 0.3+ | 0.3− |
| 2002 02 09 | 291 | 0.1− | 0.8+ | 2004 10 05 | 691 | 0.1− | 0.1+ | 2005 12 01 | G96 | 0.2− | 0.3− |
| 2002 02 09 | 291 | 0.2+ | 0.7+ | 2004 10 05 | 691 | 0.0 | 0.3+ | 2005 12 01 | G96 | 0.1+ | 0.3− |
| 2002 02 20 | 704 | 0.8+ | 0.1+ | 2004 10 06 | 291 | 0.8− | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.3− |
| 2002 02 20 | 704 | 0.6+ | 0.3+ | 2004 10 06 | 291 | 0.9− | 0.3+ | 2005 12 01 | G96 | 0.5+ | 0.5− |
| 2002 02 20 | 704 | (2.0+ | 1.5+) | 2004 10 06 | 291 | 0.8− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2002 03 05 | 691 | 0.1− | 0.4+ | 2004 10 07 | 291 | 0.3+ | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2002 03 05 | 691 | 0.0 | 0.3+ | 2004 10 07 | 291 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.6+ | 0.3− |
| 2002 03 05 | 691 | 0.2+ | 0.5+ | 2004 10 07 | 291 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2002 03 12 | 644 | 0.2+ | 0.2+ | 2004 10 08 | 691 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.7− |
| 2002 03 12 | 644 | 0.1+ | 0.3+ | 2004 10 08 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2002 03 12 | 644 | 0.3+ | 0.2+ | 2004 10 08 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.5+ | 0.7− |
| 2002 03 16 | 704 | 0.1− | 0.3+ | 2004 10 12 | 691 | 0.4− | 0.4+ | 2006 11 23 | G96 | 0.1− | 1.0− |
| 2002 03 16 | 704 | 0.5− | 0.3− | 2004 10 12 | 691 | 0.3+ | 0.4+ | | | | |
| 2002 03 16 | 704 | 0.3+ | 0.2− | 2004 10 12 | 691 | 0.2+ | 0.6+ | | | | |

**(141520)∗ 2002 EL$_{144}$**

Discovered 2002 Mar. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.32333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23250169 | $\omega$ | 343.83566 | | −0.70315582 | −0.71070347 | |
| $a$ | 2.6193004 | $\Omega$ | 150.83421 | | +0.65720232 | −0.66128367 | |
| $e$ | 0.0589694 | $i$ | 2.55638 | | +0.27139824 | −0.24000936 | |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 17 | 691 | 0.3+ | 0.3− | 2002 04 18 | 691 | 0.6+ | 0.8+ | 2006 02 07 | 691 | 0.3− | 0.4− |
| 2000 11 17 | 691 | 0.0 | 0.6− | 2002 04 18 | 691 | 0.3+ | 1.1+ | 2006 02 20 | 703 | 0.3+ | 0.1+ |
| 2000 11 17 | 691 | 0.2+ | 0.5− | 2004 09 17 | 691 | 0.5− | 0.2+ | 2006 02 20 | 703 | 0.9− | 0.7+ |
| 2002 03 06 | 644 | 0.4+ | 0.1+ | 2004 09 17 | 691 | 0.2− | 0.2+ | 2006 02 20 | 703 | 1.0− | 0.2+ |
| 2002 03 06 | 644 | 0.6+ | 0.3+ | 2004 09 17 | 691 | 0.1− | 0.6+ | 2006 02 20 | 703 | 0.5+ | 1.0− |
| 2002 03 06 | 644 | 0.8+ | 0.1+ | 2004 10 05 | 691 | 0.1− | 0.3+ | 2006 03 09 | G96 | 0.4− | 0.3+ |
| 2002 03 13 | 691 | 0.1− | 0.3+ | 2004 10 05 | 691 | 0.2+ | 0.0 | 2006 03 09 | G96 | 0.3− | 0.1− |
| 2002 03 13 | 691 | 0.3− | 0.1+ | 2004 10 05 | 691 | 0.1− | 0.2+ | 2006 03 09 | G96 | 0.3− | 0.7− |
| 2002 03 13 | 691 | 0.1− | 0.2+ | 2004 10 09 | 691 | 0.0 | 0.6+ | 2006 03 09 | G96 | 0.1− | 0.2− |
| 2002 03 16 | 704 | 1.0+ | 0.8+ | 2004 10 09 | 691 | 0.1− | 0.5+ | 2006 03 24 | G96 | 0.1− | 0.2− |
| 2002 03 16 | 704 | 0.1+ | 0.6+ | 2004 10 09 | 691 | 0.0 | 0.4+ | 2006 03 24 | G96 | 0.1− | 0.2+ |
| 2002 03 16 | 704 | 1.7+ | 0.2− | 2004 10 13 | 691 | 0.3− | 0.3+ | 2006 03 24 | G96 | 0.1− | 0.0 |
| 2002 03 16 | 704 | 1.1− | 0.7+ | 2004 10 13 | 691 | 0.2− | 0.5+ | 2006 03 24 | G96 | 0.1+ | 0.1− |
| 2002 03 16 | 704 | 0.4− | 1.2− | 2004 10 13 | 691 | 0.1− | 0.4+ | 2006 05 03 | G96 | 0.4− | 0.3+ |
| 2002 03 21 | 699 | 0.0 | 0.6+ | 2006 01 31 | 691 | 0.1+ | 0.1+ | 2006 05 03 | G96 | 0.4− | 0.2+ |
| 2002 03 21 | 699 | (0.3− | 2.4+) | 2006 01 31 | 691 | 0.2+ | 0.0 | 2006 05 03 | G96 | 0.6+ | 0.2− |
| 2002 03 21 | 699 | 1.1− | 0.3+ | 2006 01 31 | 691 | 0.1+ | 0.0 | 2006 05 03 | G96 | 0.5− | 0.2+ |
| 2002 03 21 | 699 | 0.3− | 0.3− | 2006 02 07 | 691 | 0.3+ | 0.2− | | | | |
| 2002 04 18 | 691 | 0.6+ | 0.8+ | 2006 02 07 | 691 | 0.2+ | 0.1− | | | | |

**(141521)∗ 2002 ER$_{144}$ = 2006 HH$_{36}$**

Discovered 2002 Mar. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 100217)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.79167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26168313 | $\omega$ | 148.74303 | | +0.29875324 | +0.95365889 | |
| $a$ | 2.4207628 | $\Omega$ | 138.60950 | | −0.88637520 | +0.29118470 | |
| $e$ | 0.2010819 | $i$ | 3.10329 | | −0.35367430 | +0.07580361 | |
| $P$ | 3.77 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 01 | 691 | 0.2+ | 0.0 | 2003 09 28 | 704 | 0.6+ | 0.9− | 2006 04 27 | 691 | 0.1+ | 0.0 |
| 1998 03 01 | 691 | 0.7− | 0.3− | 2003 09 28 | 699 | 0.6+ | 0.8+ | 2006 04 27 | 691 | 0.1+ | 0.0 |
| 1998 03 01 | 691 | 0.2+ | 0.2− | 2003 09 28 | 704 | 0.0 | 0.6+ | 2006 04 27 | 704 | 0.2+ | 0.5+ |
| 1999 08 22 | 703 | 0.2+ | 0.8+ | 2003 09 28 | 699 | 0.8+ | 0.5+ | 2006 04 27 | 704 | 0.8+ | 0.0 |
| 1999 08 22 | 703 | 1.1− | 0.6− | 2003 10 20 | 704 | (0.1+ | 2.3+) | 2006 04 27 | 704 | 1.2+ | 0.1− |
| 1999 08 22 | 703 | 0.8+ | 0.6+ | 2003 10 20 | 704 | 0.3− | 1.9+ | 2006 04 27 | 704 | 1.1+ | 0.6+ |
| 1999 08 22 | 703 | 2.0+ | 0.4− | 2003 10 20 | 704 | 1.6− | 1.7+ | 2006 04 27 | 704 | 0.7+ | 0.7+ |
| 1999 09 09 | 704 | 0.1− | 0.4+ | 2003 10 22 | 645 | 0.1− | 0.2+ | 2006 04 30 | 699 | 0.2− | 0.8− |
| 1999 09 09 | 704 | 0.9− | 0.4+ | 2003 10 22 | 645 | 0.0 | 0.2+ | 2006 04 30 | 699 | 0.1− | 0.4+ |
| 1999 09 09 | 704 | 0.9− | 0.3+ | 2003 10 24 | 645 | 0.1− | 0.1+ | 2006 04 30 | 699 | 0.6− | 1.3+ |
| 1999 09 09 | 704 | 1.9− | 1.1+ | 2003 10 24 | 645 | 0.1− | 0.1+ | 2006 04 30 | 704 | (0.2+ | 2.4+) |
| 1999 09 09 | 704 | 0.0 | 1.1+ | 2004 12 13 | 691 | 0.2− | 0.4+ | 2006 04 30 | 699 | 1.0+ | 0.7+ |
| 1999 09 09 | 704 | 0.0 | 0.2+ | 2004 12 13 | 691 | 0.0 | 0.3+ | 2006 04 30 | 704 | 0.6+ | 0.8− |
| 1999 09 09 | 704 | 0.5− | 0.2− | 2004 12 13 | 691 | 0.0 | 0.8+ | 2006 04 30 | 704 | 0.1+ | 0.0 |
| 2002 03 13 | 691 | 0.1+ | 0.7+ | 2006 04 20 | 691 | 0.0 | 0.3+ | 2006 04 30 | 704 | (1.0+ | 2.8+) |
| 2002 03 13 | 691 | 0.1− | 0.5+ | 2006 04 20 | 691 | 0.1+ | 0.4+ | 2006 05 01 | 703 | 0.7− | 1.1− |
| 2002 03 13 | 691 | 0.2+ | 0.6+ | 2006 04 20 | 691 | 0.1+ | 0.0 | 2006 05 01 | 703 | 0.0 | 0.4− |
| 2002 03 16 | 704 | 0.7+ | 1.0+ | 2006 04 23 | 704 | 0.6+ | 0.3+ | 2006 05 01 | 703 | 0.0 | 0.3+ |
| 2002 03 16 | 704 | 1.0+ | 1.5+ | 2006 04 23 | 704 | 0.3− | 0.7+ | 2006 05 01 | 703 | 1.0− | 0.3− |
| 2002 03 16 | 704 | 0.8+ | 0.1− | 2006 04 23 | 704 | 0.1+ | 0.9+ | 2006 05 06 | 691 | 0.2+ | 0.5+ |
| 2002 03 16 | 704 | 0.3+ | 0.2+ | 2006 04 23 | 704 | 0.8− | 0.3+ | 2006 05 06 | 691 | 0.3+ | 0.3+ |
| 2002 03 16 | 704 | 1.3+ | 0.9− | 2006 04 23 | 704 | (0.4+ | 2.3+) | 2006 05 06 | 691 | 0.2+ | 0.4+ |
| 2002 03 19 | 699 | 0.3+ | 0.0 | 2006 04 23 | 704 | 0.4− | 0.5+ | 2006 05 26 | 703 | 0.1− | 0.8+ |
| 2002 03 19 | 699 | 0.1+ | 0.9+ | 2006 04 23 | 704 | 1.1+ | 1.0+ | 2006 05 26 | 703 | 0.1− | 0.2− |
| 2002 03 19 | 699 | 1.3+ | 0.3− | 2006 04 23 | 704 | 1.1− | 0.6+ | 2006 05 26 | 703 | 0.7− | 0.6− |
| 2002 03 19 | 699 | 0.2+ | 0.7− | 2006 04 24 | 704 | 0.2+ | 0.1− | 2006 05 26 | 703 | 1.3− | 1.0− |
| 2003 09 28 | 704 | 0.2+ | 0.1− | 2006 04 24 | 704 | 0.0 | 0.4+ | 2006 05 30 | G96 | 0.6− | 0.3+ |
| 2003 09 28 | 699 | 0.9+ | 0.2− | 2006 04 24 | 704 | 0.1+ | 0.1+ | 2006 05 30 | G96 | 0.3− | 0.0 |
| 2003 09 28 | 704 | 0.8− | 0.2− | 2006 04 24 | 704 | 0.2− | 0.2+ | 2006 05 30 | G96 | 0.6− | 0.2+ |
| 2003 09 28 | 699 | 0.2− | 0.5+ | 2006 04 27 | 691 | 0.1+ | 0.1− | 2006 05 30 | G96 | 0.8− | 0.2+ |

**(141522)∗ 2002 EF$_{147}$ = 1998 SZ$_{10}$**

Discovered 2002 Mar. 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 30083)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.53334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17248732 | $\omega$ | 314.51882 | | −0.27240304 | +0.95672021 | |
| $a$ | 3.1961803 | $\Omega$ | 299.41733 | | −0.84609301 | −0.28884761 | |
| $e$ | 0.0666539 | $i$ | 6.75026 | | −0.45817376 | −0.03540479 | |
| $P$ | 5.71 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 17 | 910 | 0.4− | 0.2+ | 2004 08 12 | 704 | 0.3+ | 0.1− | 2004 09 13 | 704 | 0.7+ | 0.2− |
| 1998 09 17 | 910 | 0.5− | 0.4− | 2004 08 12 | 704 | 0.3+ | 0.1+ | 2004 09 13 | 704 | 0.1+ | 0.5+ |
| 1998 09 17 | 910 | 0.3+ | 0.0 | 2004 08 12 | 704 | 1.3− | 1.4+ | 2004 09 18 | 704 | 0.3− | 1.1− |
| 1998 09 22 | 910 | 0.8− | 0.9+ | 2004 08 23 | 691 | 0.2− | 0.2+ | 2004 09 18 | 704 | (0.0 | 1.5+) |
| 1998 09 22 | 910 | 0.0 | 0.2+ | 2004 08 23 | 691 | 0.4− | 0.1+ | 2004 09 18 | 704 | 0.0 | 0.2+ |
| 1998 09 22 | 910 | 0.7+ | 0.0 | 2004 08 23 | 691 | 0.1− | 0.0 | 2004 09 18 | 704 | 0.5− | 0.5+ |
| 2002 03 14 | 644 | 0.4+ | 0.6+ | 2004 09 08 | 704 | 0.3+ | 1.0+ | 2004 09 18 | 704 | 0.7+ | 0.8− |
| 2002 03 14 | 644 | 0.4+ | 0.6+ | 2004 09 08 | 704 | (0.6+ | 2.2+) | 2004 10 04 | 683 | 0.9+ | 1.0+ |
| 2002 03 14 | 644 | 0.6+ | 0.3+ | 2004 09 08 | 704 | (0.6+ | 1.6+) | 2004 10 04 | 683 | (2.8− | 1.9+) |
| 2002 03 16 | 704 | 0.7+ | 0.2+ | 2004 09 08 | 704 | (0.3+ | 2.1+) | 2005 11 29 | 704 | 0.7− | 0.6+ |
| 2002 03 16 | 704 | 0.4+ | 0.6+ | 2004 09 08 | 704 | (1.0+ | 1.9+) | 2005 11 29 | 704 | (0.0 | 2.7+) |
| 2002 03 16 | 704 | 0.0 | 0.5+ | 2004 09 10 | 704 | 0.1− | 0.1− | 2005 11 29 | 704 | 0.3+ | 1.0+ |
| 2002 03 23 | 704 | (0.0 | 2.0+) | 2004 09 10 | 704 | 0.7− | 0.5+ | 2005 11 29 | 704 | (1.8− | 1.8+) |
| 2002 03 23 | 704 | 0.4+ | 0.9+ | 2004 09 10 | 704 | 0.5− | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.2+ |
| 2002 03 23 | 704 | (0.3+ | 2.1+) | 2004 09 10 | 704 | 0.2− | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2002 03 23 | 704 | (0.1+ | 2.5+) | 2004 09 10 | 704 | 0.0 | 0.5+ | 2006 10 04 | G96 | 0.3− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 644 | 0.5+ | 0.6+ | 2004 09 12 | 691 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3+ |
| 2002 04 05 | 644 | 0.4+ | 0.4+ | 2004 09 12 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2002 04 05 | 644 | 0.3+ | 0.5+ | 2004 09 12 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.6− | 0.1+ |
| 2002 04 18 | 644 | 0.2− | 0.8+ | 2004 09 13 | 704 | 0.6− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2002 04 18 | 644 | 0.1− | 0.9+ | 2004 09 13 | 704 | 0.7− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2002 04 18 | 644 | (6.8− | 0.7+) | 2004 09 13 | 704 | 0.5+ | 0.1+ | | | | |

**(141523)∗ 2002 EQ$_{149}$**

Discovered 2002 Mar. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.55146 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.08581330 | $\omega$ | 306.62488 | | +0.72307109 | −0.68917114 | |
| $a$ | 5.0905689 | $\Omega$ | 96.99225 | | +0.64793627 | +0.65305748 | |
| $e$ | 0.0258825 | $i$ | 2.71554 | | +0.23947190 | +0.31394118 | |
| $P$ | 11.49 | $H$ | 13.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 14 | 809 | 0.2− | 0.3− | 2002 03 06 | 644 | 0.5+ | 0.5+ | 2003 05 11 | 691 | 0.5− | 0.4− |
| 1996 10 08 | 809 | 0.4+ | 0.2+ | 2002 03 15 | 644 | 0.5+ | 0.0 | 2003 05 22 | 691 | 0.3+ | 0.9+ |
| 1999 12 05 | 691 | 0.3− | 0.4+ | 2002 03 15 | 644 | 0.3+ | 0.3+ | 2003 05 22 | 691 | 0.3+ | 0.8+ |
| 1999 12 05 | 691 | 0.3− | 0.4+ | 2002 03 15 | 644 | 0.2− | 0.6+ | 2003 05 22 | 691 | 0.6+ | 0.8+ |
| 1999 12 05 | 691 | 0.2− | 0.5+ | 2002 03 16 | 704 | 0.5+ | 0.6− | 2003 06 06 | 691 | 0.5+ | 0.0 |
| 1999 12 16 | 691 | 0.3+ | 0.5− | 2002 03 16 | 704 | 0.8− | 0.2− | 2003 06 06 | 691 | 0.1+ | 0.5− |
| 1999 12 16 | 691 | 0.2+ | 0.3− | 2002 03 16 | 704 | 0.4− | 0.9− | 2003 06 06 | 691 | 0.5+ | 0.3− |
| 1999 12 16 | 691 | 0.0 | 0.5− | 2002 03 16 | 704 | 0.6+ | 0.5− | 2006 08 14 | 644 | 0.3− | 0.4+ |
| 2001 02 17 | 704 | 0.1− | 0.1+ | 2002 03 16 | 704 | 1.0− | 0.7− | 2006 08 14 | 644 | 0.2− | 0.3+ |
| 2001 02 17 | 704 | 0.4+ | 0.5+ | 2002 04 18 | 608 | 0.0 | 0.7− | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2001 02 17 | 704 | 0.3+ | 0.3+ | 2002 04 18 | 608 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2001 02 17 | 704 | 0.1+ | 1.1+ | 2003 04 25 | 691 | 0.2− | 0.2− | 2006 10 23 | G96 | 0.6+ | 0.3+ |
| 2002 02 24 | 644 | 0.3+ | 0.8− | 2003 04 25 | 691 | 0.2− | 0.2− | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 2002 02 24 | 644 | 0.4+ | 0.6− | 2003 04 25 | 691 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2002 03 06 | 644 | 0.2+ | 0.6+ | 2003 05 11 | 691 | 0.5− | 0.5− | | | | |
| 2002 03 06 | 644 | 0.3+ | 0.8+ | 2003 05 11 | 691 | 0.8− | 0.4− | | | | |

**(141524)∗ 2002 FE$_5$**

Discovered 2002 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.53288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35751005 | $\omega$ | 46.84146 | | +0.25146295 | −0.95115489 | |
| $a$ | 1.9661224 | $\Omega$ | 30.02140 | | +0.75121823 | +0.07513751 | |
| $e$ | 0.0873716 | $i$ | 20.97341 | | +0.61027661 | +0.29943069 | |
| $P$ | 2.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 20 | 703 | 0.3− | 0.9− | 2002 04 17 | 704 | 0.1− | 0.2− | 2003 10 21 | 704 | 0.1− | 0.4+ |
| 1999 01 20 | 703 | 0.1− | 1.1− | 2002 04 17 | 704 | 0.2+ | 0.7+ | 2003 10 21 | 704 | 0.3− | 0.3+ |
| 1999 01 20 | 703 | 0.4− | 1.0− | 2002 05 07 | 704 | 0.4+ | 0.1− | 2003 10 27 | 704 | 0.7+ | 0.2− |
| 1999 02 09 | 704 | 0.2− | 0.1+ | 2002 05 07 | 704 | 0.3− | 0.3+ | 2003 10 27 | 704 | 0.7− | 0.7+ |
| 1999 02 09 | 704 | 0.1+ | 1.1+ | 2002 05 07 | 704 | 0.2+ | 0.8− | 2003 10 27 | 704 | 0.1− | 0.9+ |
| 1999 02 09 | 704 | 0.3− | 0.4+ | 2002 05 07 | 704 | 0.5− | 0.1+ | 2003 10 27 | 704 | 1.0+ | 0.0 |
| 1999 02 09 | 704 | 1.9− | 1.3+ | 2002 05 07 | 704 | 0.0 | 0.4+ | 2003 10 27 | 704 | 0.2+ | 0.2+ |
| 1999 02 09 | 704 | 0.1− | 1.8+ | 2002 05 08 | 699 | 2.0+ | 1.3+ | 2003 11 21 | 683 | 0.6+ | 0.7+ |
| 1999 03 12 | 704 | (0.8+ | 2.1−) | 2002 05 08 | 699 | (1.5+ | 2.0+) | 2003 11 21 | 683 | 0.3− | 0.8+ |
| 1999 03 12 | 704 | 0.3+ | 1.0+ | 2002 05 08 | 699 | 1.4+ | 0.4+ | 2003 11 21 | 704 | 0.0 | 0.5+ |
| 1999 03 12 | 704 | 1.5+ | 1.0− | 2002 05 08 | 699 | 0.4+ | 0.7+ | 2003 11 21 | 683 | 0.6+ | 0.8+ |
| 1999 03 12 | 704 | (5.6− | 1.8−) | 2002 05 14 | 704 | 0.6+ | 0.1− | 2003 11 21 | 704 | 0.1− | 0.1+ |
| 2002 03 12 | 704 | 1.1− | 1.1− | 2002 05 14 | 704 | 0.9+ | 0.0 | 2003 11 21 | 704 | 0.1− | 0.2+ |
| 2002 03 12 | 704 | 0.4− | 1.1+ | 2002 05 14 | 704 | 0.1+ | 0.4− | 2003 11 21 | 704 | 0.2+ | 0.0 |
| 2002 03 12 | 704 | 0.5+ | 0.8+ | 2002 05 16 | 704 | 0.4+ | 0.1− | 2003 11 22 | 683 | 0.7− | 0.6− |
| 2002 03 12 | 704 | 0.9+ | 1.5+ | 2002 05 16 | 704 | 0.2+ | 0.3− | 2003 11 22 | 683 | 0.6− | 0.0 |
| 2002 03 12 | 704 | 0.7+ | 1.5+ | 2002 05 16 | 704 | 0.7− | 0.5− | 2003 11 23 | 683 | 0.1+ | 1.3− |
| 2002 03 20 | 704 | 0.3+ | 1.0+ | 2002 05 16 | 704 | 0.2− | 0.9+ | 2003 11 23 | 683 | 1.1− | 0.3− |
| 2002 03 20 | 704 | 0.4+ | 0.6− | 2003 08 31 | 608 | 0.1+ | 1.2− | 2003 11 23 | 683 | 0.5− | 0.1− |
| 2002 03 20 | 704 | 0.6+ | 0.9− | 2003 08 31 | 608 | 0.2+ | 0.8− | 2003 11 28 | 699 | 0.1+ | 1.2− |
| 2002 03 20 | 704 | 1.5+ | 0.9− | 2003 08 31 | 608 | 0.1− | 0.6− | 2003 11 28 | 699 | 0.0 | 0.1+ |
| 2002 03 20 | 704 | 0.8+ | 0.5− | 2003 09 17 | 704 | 0.8− | 0.3+ | 2003 11 28 | 699 | 0.5− | 0.7+ |
| 2002 03 21 | 704 | 0.3+ | 0.6+ | 2003 09 17 | 704 | 0.7− | 0.7+ | 2003 11 28 | 699 | 1.4− | 1.0+ |
| 2002 03 21 | 704 | 0.6+ | 0.7+ | 2003 09 17 | 704 | 0.4− | 0.5+ | 2003 12 28 | 704 | 0.5+ | 0.5+ |
| 2002 03 21 | 704 | 0.3+ | 0.3+ | 2003 09 17 | 704 | 1.0− | 0.5+ | 2003 12 28 | 704 | 0.1− | 0.5+ |
| 2002 03 21 | 704 | 0.6+ | 0.0 | 2003 09 21 | 608 | 1.0− | 1.3+ | 2003 12 28 | 704 | 0.3+ | 0.4+ |
| 2002 03 21 | 704 | 0.2+ | 0.2+ | 2003 09 21 | 608 | 0.7− | 1.0+ | 2003 12 28 | 704 | 0.9− | 0.3+ |
| 2002 04 06 | 704 | (2.1+ | 2.0+) | 2003 09 21 | 608 | 1.0− | 1.2+ | 2003 12 28 | 704 | 0.7+ | 0.3− |
| 2002 04 06 | 704 | (1.9+ | 2.8+) | 2003 10 16 | 699 | 0.1+ | 0.0 | 2005 04 30 | E12 | 0.6− | 1.1+ |
| 2002 04 06 | 704 | (4.2+ | 2.0+) | 2003 10 16 | 699 | 0.0 | 0.3− | 2005 04 30 | E12 | 0.6− | 0.5+ |
| 2002 04 11 | 704 | 1.1+ | 0.5+ | 2003 10 16 | 699 | 0.5+ | 0.0 | 2005 04 30 | E12 | 0.6− | 0.5+ |
| 2002 04 11 | 704 | 0.3+ | 0.1+ | 2003 10 16 | 699 | 0.6− | 0.3− | 2005 04 30 | E12 | 0.6− | 1.0+ |
| 2002 04 11 | 704 | 0.5+ | 0.3+ | 2003 10 18 | 699 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.9− | 1.1+ |
| 2002 04 11 | 704 | 0.6+ | 0.5+ | 2003 10 18 | 699 | 1.5− | 0.4− | 2006 08 29 | 703 | (2.7+ | 0.1−) |
| 2002 04 11 | 704 | 0.7+ | 0.1+ | 2003 10 18 | 699 | 0.5− | 0.2+ | 2006 08 29 | 703 | 1.4+ | 0.2− |
| 2002 04 13 | 644 | 0.3+ | 0.5+ | 2003 10 18 | 699 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.4− | 1.0+ |
| 2002 04 13 | 644 | 0.6+ | 0.4+ | 2003 10 19 | 704 | 0.5− | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.6+ |
| 2002 04 13 | 644 | 0.5+ | 0.3+ | 2003 10 19 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.5− |
| 2002 04 16 | 704 | 0.2+ | 0.2+ | 2003 10 19 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.9+ | 0.4+ |
| 2002 04 16 | 704 | 0.5+ | 0.4+ | 2003 10 19 | 704 | 0.4− | 0.8+ | 2006 09 18 | 703 | 0.1+ | 0.2+ |
| 2002 04 16 | 704 | 0.3− | 0.0 | 2003 10 19 | 704 | 0.3− | 1.1+ | 2006 09 25 | 704 | 0.6+ | 0.8− |
| 2002 04 16 | 704 | 0.3− | 0.2− | 2003 10 21 | 704 | 0.3− | 0.9+ | 2006 09 25 | 704 | 0.2+ | 0.8− |
| 2002 04 16 | 704 | 0.2+ | 0.3+ | 2003 10 21 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 1.5− | 0.1+ |
| 2002 04 17 | 704 | 0.5− | 0.4− | 2003 10 21 | 704 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.8− |

**(141525)∗ 2002 FV$_5$**

Discovered 2002 Mar. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.40657 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.86981332 | $\omega$ | 308.03250 | | +0.88959706 | +0.29158572 | |
| $a$ | 1.0868894 | $\Omega$ | 38.94415 | | +0.06462127 | +0.68161419 | |
| $e$ | 0.7247761 | $i$ | 34.00801 | | −0.45215170 | +0.67110347 | |
| $P$ | 1.13 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 704 | 0.2+ | 1.0+ | 2002 04 15 | 198 | 0.4− | 0.7− | 2002 04 26 | 941 | 1.0− | 0.4+ |
| 2002 03 21 | 704 | 0.3+ | 0.3+ | 2002 04 15 | 198 | 0.0 | 0.5− | 2002 04 28 | 854 | 0.9− | 0.0 |
| 2002 03 21 | 704 | 0.7+ | 0.5+ | 2002 04 15 | 151 | 0.1− | 0.3+ | 2002 04 28 | 854 | 0.6− | 0.5− |
| 2002 03 21 | 704 | 0.1+ | 0.2+ | 2002 04 15 | 151 | 0.5− | 0.3+ | 2002 04 28 | 854 | 0.5+ | 0.3− |
| 2002 03 21 | 704 | 1.1+ | 0.1+ | 2002 04 15 | 151 | 0.0 | 0.2+ | 2002 04 28 | 854 | (1.6+ | 0.6−) |
| 2002 03 22 | 734 | 0.5+ | 0.3+ | 2002 04 15 | 151 | 0.0 | 0.1+ | 2002 04 28 | 854 | 0.8− | 0.6− |
| 2002 03 22 | 734 | 0.3+ | 0.7+ | 2002 04 15 | 938 | 1.0+ | 1.3− | 2002 04 29 | 649 | 0.0 | 0.0 |
| 2002 03 23 | 468 | 0.3+ | 0.6+ | 2002 04 15 | 938 | 1.0+ | 1.4− | 2002 04 29 | 649 | 0.2+ | 0.1+ |
| 2002 03 23 | 468 | 0.0 | 0.4+ | 2002 04 16 | 452 | 0.3− | 0.3+ | 2002 04 29 | 649 | 0.4+ | 0.1− |
| 2002 03 23 | 468 | 0.1− | 0.1+ | 2002 04 16 | 452 | 0.4− | 0.7+ | 2002 04 29 | 649 | 0.4+ | 0.1− |
| 2002 03 23 | 012 | 0.5− | 1.0+ | 2002 04 16 | 452 | 0.2− | 0.7+ | 2002 04 30 | 108 | 0.8+ | 0.3− |
| 2002 03 23 | 012 | 0.7− | 0.6+ | 2002 04 16 | 452 | 0.2− | 0.1+ | 2002 04 30 | 108 | (1.9− | 2.0−) |
| 2002 03 23 | 012 | 0.5− | 0.8+ | 2002 04 17 | 711 | 0.6− | 0.1+ | 2002 04 30 | 108 | (13.3+ | 1.1+) |
| 2002 03 23 | 649 | 0.3− | 0.4− | 2002 04 17 | 711 | 0.4+ | 0.4− | 2002 04 30 | 108 | 1.2− | 0.3− |
| 2002 03 23 | 649 | 1.0+ | 0.6+ | 2002 04 17 | 711 | (5.2− | 0.2+) | 2002 04 30 | 108 | 0.1− | 0.0 |
| 2002 03 23 | 649 | 0.2+ | 0.5+ | 2002 04 17 | 198 | 0.2− | 0.1+ | 2002 04 30 | 941 | 0.7+ | 0.1− |
| 2002 03 23 | 850 | 0.5+ | 0.6+ | 2002 04 17 | 198 | 0.4− | 0.0 | 2002 04 30 | 941 | 1.2− | 0.7− |
| 2002 03 23 | 448 | (0.1+ | 1.6−) | 2002 04 17 | 198 | 0.5− | 0.4− | 2002 04 30 | 941 | 0.1− | 0.0 |
| 2002 03 23 | 448 | 0.1− | 1.4− | 2002 04 17 | 198 | 0.6− | 0.4− | 2002 04 30 | 941 | 1.5− | 0.3− |
| 2002 03 23 | 850 | 1.0+ | 0.7+ | 2002 04 18 | 046 | 0.1− | 0.1+ | 2002 04 30 | 941 | 0.1− | 0.9− |
| 2002 03 23 | 448 | 0.4− | 1.4− | 2002 04 18 | 046 | 0.0 | 0.0 | 2002 05 01 | 176 | 0.1+ | 0.1+ |
| 2002 03 23 | 850 | 0.6+ | 0.1− | 2002 04 18 | 046 | 0.0 | 0.2+ | 2002 05 01 | 176 | 0.1+ | 0.1+ |
| 2002 03 23 | 448 | (0.6− | 2.1−) | 2002 04 18 | 046 | 0.0 | 0.1− | 2002 05 01 | 176 | 0.1+ | 0.1+ |
| 2002 03 24 | 422 | 0.2− | 0.5− | 2002 04 18 | 046 | 0.1+ | 0.1+ | 2002 05 01 | 176 | 0.1+ | 0.1+ |
| 2002 03 24 | 422 | 0.3− | 0.5− | 2002 04 18 | 046 | 0.1+ | 0.0 | 2002 05 02 | 413 | 0.1+ | 0.0 |
| 2002 03 24 | 422 | 0.2− | 0.1+ | 2002 04 18 | 670 | 0.2− | 0.5− | 2002 05 02 | 413 | 0.4+ | 0.1+ |
| 2002 03 27 | 649 | 0.2− | 0.4− | 2002 04 18 | 670 | 0.3− | 0.3− | 2002 05 02 | 413 | 0.0 | 0.1− |
| 2002 03 27 | 649 | 0.1− | 1.2− | 2002 04 18 | 670 | 0.2− | 0.1+ | 2002 05 03 | 670 | 0.1+ | 0.4+ |
| 2002 03 27 | 649 | 0.1+ | 1.1− | 2002 04 19 | 151 | 0.4+ | 0.2− | 2002 05 03 | 670 | 0.0 | 0.5+ |
| 2002 04 01 | 198 | 0.2− | 0.9+ | 2002 04 19 | 151 | 0.1+ | 0.1− | 2002 05 03 | 670 | 0.1− | 0.1+ |
| 2002 04 02 | 413 | 0.1+ | 0.2− | 2002 04 19 | 151 | 0.0 | 0.3+ | 2002 05 04 | 704 | 0.6+ | 1.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 02 | 413 | 0.1− | 0.1− | 2002 04 19 | 151 | 0.5+ | 0.0 | 2002 05 04 | 704 | 0.3+ | 0.2+ |
| 2002 04 02 | 413 | 0.1− | 0.0 | 2002 04 21 | 941 | 0.0 | 0.2− | 2002 05 04 | 704 | 0.0 | 0.0 |
| 2002 04 02 | 113 | (2.3+ | 2.7−) | 2002 04 21 | 941 | 0.0 | 0.1+ | 2002 05 04 | 704 | 0.3+ | 0.2− |
| 2002 04 02 | 113 | (2.1+ | 2.8−) | 2002 04 21 | 941 | 0.1+ | 0.6+ | 2002 05 06 | 118 | 0.5+ | 0.8− |
| 2002 04 02 | 113 | (2.2+ | 2.8−) | 2002 04 21 | 941 | 0.1+ | 0.4− | 2002 05 06 | 118 | (1.9+ | 0.7−) |
| 2002 04 03 | 246 | 0.1+ | 0.3+ | 2002 04 21 | 232 | 1.1− | 0.6− | 2002 05 06 | 118 | 0.2− | 0.5− |
| 2002 04 03 | 246 | 0.2− | 0.1+ | 2002 04 21 | 232 | (0.8+ | 2.7−) | 2003 01 31 | 291 | 0.4+ | 0.4+ |
| 2002 04 03 | 246 | 1.0+ | 0.2+ | 2002 04 21 | 232 | (1.1+ | 2.5−) | 2003 01 31 | 291 | 0.3+ | 0.4− |
| 2002 04 03 | 246 | 0.2+ | 0.4+ | 2002 04 21 | 232 | 0.8− | 1.1− | 2003 01 31 | 291 | 1.2− | 0.9− |
| 2002 04 03 | 246 | 0.3+ | 0.3+ | 2002 04 21 | 232 | 0.9− | 1.0− | 2003 02 27 | 246 | 0.3+ | 0.2− |
| 2002 04 03 | 413 | 0.2− | 0.2− | 2002 04 21 | 642 | 0.4− | 0.3− | 2003 02 27 | 246 | 0.1− | 0.4− |
| 2002 04 03 | 413 | 0.1− | 0.2− | 2002 04 21 | 642 | 0.4+ | 0.4− | 2003 02 27 | 246 | 1.0+ | 1.0− |
| 2002 04 03 | 413 | 0.2− | 0.1− | 2002 04 21 | 642 | 1.0− | 0.1+ | 2003 02 27 | 246 | 0.9+ | 0.3− |
| 2002 04 04 | 198 | 1.0− | 0.4+ | 2002 04 21 | 642 | 0.2+ | 0.2− | 2003 02 27 | 246 | 0.1+ | 0.0 |
| 2002 04 04 | 198 | 0.9− | 0.3+ | 2002 04 21 | 611 | 0.1− | 0.1+ | 2003 03 27 | 240 | 0.0 | 0.2+ |
| 2002 04 04 | 198 | 0.2− | 1.0+ | 2002 04 21 | 611 | 1.1+ | 0.1− | 2003 03 27 | 240 | 0.4+ | 0.0 |
| 2002 04 04 | 198 | 1.3+ | 1.0+ | 2002 04 21 | 201 | 0.0 | 0.4+ | 2003 03 27 | 240 | 0.3− | 0.4+ |
| 2002 04 05 | 670 | 0.1+ | 0.6+ | 2002 04 21 | 201 | 0.6+ | 0.1+ | 2003 03 27 | 240 | (1.8− | 0.1+) |
| 2002 04 05 | 670 | 0.3− | 0.0 | 2002 04 21 | 201 | 0.6+ | 0.2+ | 2003 03 27 | 240 | (2.7− | 0.2+) |
| 2002 04 06 | 215 | 0.3+ | 0.4− | 2002 04 21 | 201 | 0.4− | 0.4+ | 2003 03 29 | 246 | 0.4+ | 0.3+ |
| 2002 04 06 | 215 | 1.5+ | 0.3+ | 2002 04 21 | 636 | (0.3− | 1.8+) | 2003 03 29 | 246 | 0.5+ | 0.2− |
| 2002 04 06 | 215 | 0.0 | 0.5+ | 2002 04 21 | 636 | 0.6+ | 0.3+ | 2003 03 29 | 246 | 0.1+ | 0.4− |
| 2002 04 06 | 198 | 0.4+ | 0.2+ | 2002 04 21 | 636 | 0.4+ | 0.2+ | 2003 03 29 | 246 | 0.2+ | 0.2− |
| 2002 04 06 | 198 | 0.3+ | 0.1+ | 2002 04 21 | 636 | 0.0 | 0.2+ | 2003 03 29 | 246 | 1.2+ | 0.0 |
| 2002 04 06 | 198 | 0.3+ | 0.1+ | 2002 04 21 | 636 | 0.2− | 1.0+ | 2003 04 07 | 644 | 0.0 | 0.5+ |
| 2002 04 07 | 198 | 0.1+ | 0.1+ | 2002 04 21 | 611 | 0.9+ | 0.7− | 2003 04 07 | 644 | 0.2+ | 0.0 |
| 2002 04 07 | 198 | 0.5+ | 0.1+ | 2002 04 21 | 611 | (1.5− | 0.5+) | 2003 04 07 | 644 | 0.2+ | 0.7+ |
| 2002 04 07 | 670 | 0.7− | 0.1+ | 2002 04 21 | 587 | 0.2+ | 0.2− | 2004 03 09 | 673 | 0.4+ | 0.5− |
| 2002 04 07 | 670 | 0.7− | 0.6− | 2002 04 21 | 587 | 0.2+ | 0.2+ | 2004 03 09 | 673 | 0.1+ | 0.6− |
| 2002 04 07 | 636 | 0.6+ | 0.6− | 2002 04 21 | 587 | 0.3+ | 0.1+ | 2004 03 09 | 673 | 0.1+ | 0.2+ |
| 2002 04 07 | 636 | 0.1− | 0.7+ | 2002 04 21 | 587 | 0.1+ | 0.1− | 2004 03 09 | 673 | 0.1+ | 0.4− |
| 2002 04 07 | 636 | (0.8− | 1.6−) | 2002 04 21 | 587 | 0.4+ | 0.1+ | 2004 03 10 | 673 | 0.4− | 0.1− |
| 2002 04 09 | 636 | 0.4− | 0.4+ | 2002 04 22 | 704 | 0.5+ | 0.3+ | 2004 03 10 | 673 | 0.5+ | 0.4− |
| 2002 04 09 | 246 | 0.1− | 0.1+ | 2002 04 22 | 704 | 1.0+ | 0.3− | 2004 03 10 | 673 | 0.2+ | 0.6− |
| 2002 04 09 | 246 | 0.3− | 0.6+ | 2002 04 22 | 704 | 0.5+ | 0.5+ | 2004 03 10 | 673 | 1.2+ | 0.9− |
| 2002 04 09 | 246 | 0.3− | 0.6+ | 2002 04 22 | 704 | 0.5+ | 0.6+ | 2005 02 25 | 649 | 1.1− | 1.1+ |
| 2002 04 09 | 246 | 0.1− | 0.4+ | 2002 04 22 | 704 | 0.4+ | 0.8+ | 2005 02 25 | 649 | 1.5− | 0.9+ |
| 2002 04 09 | 636 | 0.5− | 0.3+ | 2002 04 23 | 670 | 0.5+ | 0.3+ | 2005 02 25 | 649 | 0.0 | 0.1+ |
| 2002 04 09 | 246 | 0.2− | 0.6+ | 2002 04 23 | 670 | 0.1− | 0.2+ | 2005 06 01 | 291 | 0.4− | 1.0+ |
| 2002 04 09 | 246 | 0.2− | 0.5+ | 2002 04 25 | 185 | 0.0 | 0.8+ | 2005 06 01 | 291 | 1.1+ | 1.2− |
| 2002 04 09 | 636 | 0.5− | 1.0+ | 2002 04 25 | 185 | 0.3− | 0.3− | 2005 06 01 | 291 | (0.1+ | 1.6+) |
| 2002 04 09 | 422 | 0.3− | 0.2− | 2002 04 25 | 185 | 0.2+ | 0.3+ | 2005 12 28 | 696 | 0.3+ | 0.1+ |
| 2002 04 09 | 422 | 0.1− | 0.0 | 2002 04 25 | 185 | 0.3+ | 0.0 | 2005 12 28 | 696 | 0.0 | 0.3− |
| 2002 04 09 | 422 | 0.0 | 0.0 | 2002 04 25 | 185 | 0.2− | 0.2+ | 2005 12 29 | 696 | 0.1+ | 0.4− |
| 2002 04 11 | 322 | 1.1+ | 1.0− | 2002 04 25 | 185 | 0.1+ | 0.1− | 2006 02 27 | A74 | 0.6− | 0.5− |
| 2002 04 11 | 322 | 0.2− | 1.5− | 2002 04 26 | 941 | 0.3+ | 0.2− | 2006 02 27 | A74 | 0.3− | 0.7− |
| 2002 04 11 | 322 | (1.5− | 0.7−) | 2002 04 26 | 941 | 0.6+ | 0.9+ | 2006 02 27 | A74 | 1.1− | 0.8− |
| 2002 04 15 | 198 | 1.0− | 0.4− | 2002 04 26 | 941 | 0.3− | 1.1+ | 2006 02 27 | A74 | 1.2− | 0.7+ |
| 2002 04 15 | 198 | 0.7− | 0.4− | 2002 04 26 | 941 | (2.1+ | 1.0+) | 2006 02 27 | A74 | 0.4− | 0.0 |

**(141526)∗ 2002 FA$_6$**

Discovered 2002 Mar. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.95107 | | (2000.0) | | | |
| $n$ | 0.96573886 | $\omega$ | 173.37351 | | +0.97994354 | +0.19387461 |
| $a$ | 1.0136692 | $\Omega$ | 174.72785 | | −0.19797155 | +0.97355530 |
| $e$ | 0.3223384 | $i$ | 30.09785 | | −0.02275773 | −0.12084167 |
| $P$ | 1.02 | $H$ | 19.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 23 | 608 | 0.5+ | 0.3+ | 2003 01 29 | 809 | 0.4+ | 0.3+ | 2004 03 28 | 704 | 1.1+ | 0.1+ |
| 2001 03 23 | 608 | 0.3− | 0.7+ | 2003 01 29 | 809 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 0.5− | 0.0 |
| 2001 03 23 | 608 | 0.1+ | 0.3+ | 2003 01 30 | 809 | 0.1+ | 0.2+ | 2004 03 28 | 704 | 0.5+ | 0.1+ |
| 2002 03 21 | 699 | 0.5− | 0.3+ | 2003 01 30 | 809 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.7− | 0.5+ |
| 2002 03 21 | 699 | 0.9− | 0.1− | 2003 01 30 | 809 | 0.5+ | 0.3+ | 2005 02 21 | 474 | 0.6− | 0.1+ |
| 2002 03 21 | 699 | 1.0− | 0.3+ | 2003 03 14 | 474 | 0.5+ | 0.1− | 2005 02 21 | 474 | 0.2− | 0.2+ |
| 2002 03 21 | 699 | 1.0− | 0.0 | 2003 03 14 | 474 | (2.5− | 0.7−) | 2005 02 21 | 474 | 0.2− | 0.6+ |
| 2002 03 23 | 649 | 1.2+ | 0.2− | 2003 03 14 | 474 | 0.7− | 1.3− | 2005 03 14 | 704 | 0.8+ | 0.3− |
| 2002 03 23 | 649 | 0.3+ | 0.8− | 2003 03 14 | 474 | 0.2+ | 0.8− | 2005 03 14 | 704 | 0.3+ | 0.5− |
| 2002 03 23 | 649 | 0.1+ | 0.0 | 2003 03 26 | 704 | 0.3+ | 1.3+ | 2005 03 14 | 704 | 0.2+ | 0.4− |
| 2002 03 24 | 422 | 1.2+ | 0.9− | 2003 03 26 | 704 | (0.3− | 1.7+) | 2005 03 14 | 704 | 0.4+ | 0.4− |
| 2002 03 24 | 422 | 1.0− | 0.0 | 2003 03 26 | 704 | (0.3− | 1.8+) | 2005 03 14 | 704 | 0.4+ | 0.1− |
| 2002 03 24 | 422 | 0.4+ | 1.3− | 2003 03 26 | 704 | 0.3− | 1.5+ | 2005 03 17 | 704 | 0.7− | 0.4− |
| 2002 04 01 | 540 | 1.1− | 1.2− | 2003 04 07 | 644 | 0.6− | 1.1+ | 2005 03 17 | 704 | 0.1+ | 0.3+ |
| 2002 04 01 | 540 | (1.2− | 1.6−) | 2003 04 07 | 644 | 0.1− | 1.4+ | 2005 03 17 | 704 | 0.2+ | 0.4− |
| 2002 04 06 | 649 | 0.3+ | 0.1− | 2003 04 07 | 644 | (1.1− | 2.2+) | 2005 03 17 | 704 | 0.8+ | 0.2+ |
| 2002 04 06 | 649 | 0.0 | 0.6+ | 2004 03 15 | 704 | 0.1+ | 0.0 | 2005 03 17 | 704 | 1.0+ | 0.2− |
| 2002 04 06 | 649 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.6− | 0.1− | 2006 03 18 | 240 | 0.1− | 0.3+ |
| 2002 04 22 | 649 | 0.2− | 0.5− | 2004 03 15 | 704 | 0.1− | 0.6+ | 2006 03 18 | 240 | 0.7− | 0.2+ |
| 2002 04 22 | 649 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.5− | 0.5− | 2006 03 18 | 240 | 0.6− | 0.1+ |
| 2002 04 22 | 649 | 0.5+ | 0.2− | 2004 03 15 | 704 | 0.6− | 0.1+ | 2006 03 18 | 240 | 0.8− | 0.1+ |
| 2002 05 04 | 649 | 0.3− | 0.6+ | 2004 03 25 | 704 | 0.3+ | 0.3+ | 2006 03 23 | 703 | 0.8− | 1.2− |
| 2002 05 04 | 649 | 0.3− | 0.2− | 2004 03 25 | 704 | (0.9+ | 2.1+) | 2006 03 23 | 703 | (1.7+ | 1.9−) |
| 2002 05 04 | 649 | 0.2+ | 0.4− | 2004 03 25 | 704 | 0.8+ | 0.1+ | 2006 03 23 | 703 | 0.3+ | 0.8+ |
| 2003 01 29 | 809 | 0.2+ | 0.4+ | 2004 03 25 | 704 | 0.6+ | 0.7− | 2006 03 23 | 703 | 0.1− | 0.0 |

**(141527)∗ 2002 FG$_7$**

Discovered 2002 Mar. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 189.86418 | | (2000.0) | | | |
| $n$ | 0.52916003 | $\omega$ | 247.32453 | | +0.25843655 | −0.96578493 |
| $a$ | 1.5138332 | $\Omega$ | 187.79360 | | +0.93459812 | +0.25564333 |
| $e$ | 0.6269940 | $i$ | 9.19974 | | +0.24441133 | +0.04365734 |
| $P$ | 1.86 | $H$ | 18.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 07 23 | 261 | 0.9+ | 0.4+ | 2002 04 03 | 246 | 0.6+ | 0.1+ | 2002 04 23 | 413 | 0.4+ | 0.3+ |
| 1990 07 23 | 261 | 0.3+ | 0.2− | 2002 04 03 | 246 | 0.2+ | 0.0 | 2002 04 23 | 413 | 0.2+ | 0.2+ |
| 1990 08 14 | 261 | 1.1− | 0.8+ | 2002 04 03 | 246 | 0.2+ | 0.1− | 2002 05 03 | 291 | 0.2− | 0.2− |
| 1990 08 14 | 261 | 0.1− | 0.0 | 2002 04 03 | 246 | 0.3+ | 0.2− | 2002 05 03 | 291 | 0.2− | 0.1− |
| 2002 03 28 | 608 | (5.1− | 3.2+) | 2002 04 03 | 246 | 0.6+ | 0.0 | 2002 05 03 | 291 | 0.2− | 0.1− |
| 2002 03 28 | 608 | (5.4− | 3.1+) | 2002 04 04 | 608 | (6.5− | 5.5+) | 2002 05 07 | 644 | 0.2− | 0.1+ |
| 2002 03 28 | 608 | (5.8− | 2.3+) | 2002 04 04 | 608 | (6.5− | 5.4+) | 2002 05 07 | 644 | 0.2− | 0.3− |
| 2002 04 01 | 649 | 0.0 | 0.4− | 2002 04 04 | 608 | (6.3− | 5.6+) | 2002 05 07 | 644 | 0.4− | 0.1+ |
| 2002 04 01 | 649 | 1.3+ | 1.1− | 2002 04 07 | 670 | (0.5+ | 1.8−) | 2002 05 14 | 649 | 0.1− | 0.1+ |
| 2002 04 01 | 649 | 0.5− | 0.8− | 2002 04 07 | 670 | 1.1+ | 0.3− | 2002 05 14 | 649 | (1.8− | 0.2+) |
| 2002 04 01 | 644 | 0.3+ | 0.4+ | 2002 04 07 | 670 | 0.2− | 0.6+ | 2002 06 06 | 696 | 0.4+ | 0.6− |
| 2002 04 01 | 644 | 0.2+ | 0.4+ | 2002 04 08 | 422 | 0.2− | 0.9− | 2002 06 06 | 696 | 0.2+ | 0.7− |
| 2002 04 01 | 644 | 0.1+ | 0.3+ | 2002 04 08 | 422 | 0.6+ | 0.4− | 2003 07 03 | 413 | 0.2+ | 0.1+ |
| 2002 04 01 | 611 | 0.6− | 0.1− | 2002 04 08 | 422 | 0.0 | 0.2− | 2003 07 03 | 413 | 0.2− | 0.1− |
| 2002 04 01 | 611 | 1.2− | 0.7+ | 2002 04 10 | 704 | 0.1+ | 0.7+ | 2003 07 03 | 413 | 0.2− | 0.1+ |
| 2002 04 01 | 611 | 0.0 | 0.4− | 2002 04 10 | 704 | 0.3− | 0.4+ | 2003 07 03 | 413 | 0.1− | 0.1− |
| 2002 04 01 | 587 | 0.3+ | 0.9+ | 2002 04 10 | 704 | 0.4− | 0.4+ | 2003 07 06 | 461 | 0.1− | 0.2− |
| 2002 04 01 | 587 | 0.4− | 1.3+ | 2002 04 10 | 704 | 0.3− | 0.0 | 2003 07 06 | 461 | (1.6− | 0.2+) |
| 2002 04 01 | 587 | (1.7+ | 0.8+) | 2002 04 10 | 704 | 0.4− | 0.7+ | 2003 07 18 | 413 | 0.4− | 0.0 |
| 2002 04 01 | 246 | 0.7+ | 0.1+ | 2002 04 13 | 644 | 0.2+ | 0.3+ | 2003 07 18 | 413 | 0.5− | 0.0 |
| 2002 04 01 | 246 | 0.3+ | 0.1+ | 2002 04 13 | 644 | 0.0 | 0.2+ | 2003 08 03 | 671 | 0.2− | 0.3− |
| 2002 04 01 | 246 | 0.3+ | 0.2+ | 2002 04 13 | 644 | 0.4+ | 0.3+ | 2003 08 03 | 671 | 1.0− | 0.1− |
| 2002 04 01 | 246 | 0.4+ | 0.1+ | 2002 04 15 | 333 | 0.6− | 0.0 | 2003 08 03 | 671 | 0.3− | 0.2+ |
| 2002 04 01 | 246 | 0.5+ | 0.1+ | 2002 04 15 | 333 | 0.5− | 0.1− | 2003 08 03 | 671 | 0.1+ | 0.1− |
| 2002 04 01 | 246 | 0.5+ | 0.3+ | 2002 04 15 | 333 | 0.2+ | 0.2− | 2003 09 29 | 448 | 0.9+ | 0.5− |
| 2002 04 02 | 858 | 0.2+ | 0.5+ | 2002 04 15 | 333 | 0.1− | 0.5− | 2003 09 29 | 448 | (1.9+ | 1.5−) |
| 2002 04 02 | 858 | 0.7+ | 0.4+ | 2002 04 15 | 333 | 0.7− | 0.5− | 2003 09 29 | 448 | (1.3+ | 2.4−) |
| 2002 04 02 | 858 | 0.0 | 0.3+ | 2002 04 15 | 333 | 0.3+ | 0.2− | 2003 09 30 | 448 | 0.6+ | 0.1+ |
| 2002 04 02 | 474 | (1.6− | 0.5+) | 2002 04 16 | 333 | 0.1− | 1.0+ | 2003 09 30 | 448 | 0.5+ | 0.0 |
| 2002 04 02 | 474 | 1.4− | 0.2− | 2002 04 16 | 333 | 0.5+ | 0.3− | 2003 09 30 | 448 | (2.3+ | 3.1+) |
| 2002 04 02 | 474 | 1.1− | 0.8+ | 2002 04 16 | 704 | 0.3+ | 0.4+ | 2004 03 24 | 696 | 0.3+ | 0.1− |
| 2002 04 02 | 413 | 0.0 | 0.1− | 2002 04 16 | 333 | 0.9+ | 0.4− | 2004 03 24 | 696 | 0.2+ | 0.3− |
| 2002 04 02 | 413 | 0.1− | 0.1− | 2002 04 16 | 704 | 0.1+ | 0.3+ | 2004 03 29 | 291 | 0.2− | 0.1− |
| 2002 04 02 | 413 | 0.2− | 0.1− | 2002 04 16 | 704 | 0.4+ | 0.0 | 2004 03 29 | 291 | 0.8+ | 0.8− |
| 2002 04 03 | 807 | 0.4+ | 0.1+ | 2002 04 16 | 704 | 0.2+ | 0.2+ | 2004 03 29 | 291 | 0.1+ | 0.7+ |
| 2002 04 03 | 807 | 0.3+ | 0.1− | 2002 04 16 | 704 | 0.8+ | 0.4+ | 2005 05 15 | 291 | 0.4− | 0.5+ |
| 2002 04 03 | 644 | 0.2+ | 0.2+ | 2002 04 18 | 333 | 0.6− | 0.4+ | 2005 05 15 | 291 | 0.9− | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 03 | 644 | 0.3+ | 0.3− | 2002 04 18 | 333 | 0.5− | 0.2− | 2005 05 15 | 291 | 1.0+ | 0.7+ |
| 2002 04 03 | 422 | 0.6− | 0.2− | 2002 04 18 | 333 | 1.2− | 1.1− | 2005 06 15 | 291 | 0.3+ | 0.5+ |
| 2002 04 03 | 422 | 0.6− | 0.0 | 2002 04 19 | 658 | 0.4− | 0.1− | 2005 06 15 | 291 | 1.1+ | 0.1− |
| 2002 04 03 | 422 | 0.6− | 0.3− | 2002 04 19 | 658 | 0.2− | 0.5− | 2006 05 23 | 691 | 0.9− | 0.1+ |
| 2002 04 03 | 644 | 0.3+ | 0.2− | 2002 04 19 | 658 | 0.2− | 0.4− | 2006 05 23 | 691 | 0.3+ | 0.5− |
| 2002 04 03 | 246 | 0.3+ | 0.0 | 2002 04 23 | 413 | 0.1− | 0.4+ | | | | |

**(141528)∗ 2002 FN$_{21}$ = 1996 BH$_{17}$**

Discovered 2002 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 30107), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.92294 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18211270 | $\omega$ | 35.79483 | | −0.90209796 | | −0.39687883 |
| $a$ | 3.0825435 | $\Omega$ | 119.97211 | | +0.33625374 | | −0.89256087 |
| $e$ | 0.1329708 | $i$ | 11.27894 | | +0.27046754 | | −0.21406140 |
| $P$ | 5.41 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 17 | 595 | 0.6+ | 1.3− | 2002 03 31 | 644 | 0.1− | 0.5+ | 2005 11 01 | 703 | 0.3− | 0.0 |
| 1996 01 17 | 595 | 0.1+ | 1.1− | 2002 03 31 | 644 | 0.1− | 0.6+ | 2005 11 01 | 703 | 1.2+ | 0.6− |
| 1996 01 17 | 595 | 0.2− | 1.3− | 2002 03 31 | 644 | 0.3− | 0.5+ | 2005 11 01 | 703 | 0.6− | 0.7+ |
| 1996 01 19 | 595 | 0.7+ | 1.3− | 2002 04 01 | 644 | 0.1− | 0.5+ | 2005 11 06 | 699 | (1.0− | 2.0+) |
| 1996 01 19 | 595 | 1.5− | 0.2+ | 2002 04 01 | 644 | 0.2− | 0.5+ | 2005 11 06 | 699 | 0.9− | 1.4+ |
| 2000 12 01 | 608 | 0.4+ | 0.5+ | 2002 04 01 | 644 | 0.3− | 0.4+ | 2005 11 06 | 699 | 0.4− | 0.7+ |
| 2000 12 01 | 608 | 0.7+ | 0.5+ | 2002 04 16 | 704 | 0.3+ | 0.3− | 2005 11 06 | 699 | 0.1− | 0.3+ |
| 2000 12 01 | 608 | 0.2+ | 0.6+ | 2002 04 16 | 704 | 0.3− | 1.0− | 2005 11 28 | 291 | 0.0 | 0.5+ |
| 2002 01 11 | 704 | 0.4− | 0.6+ | 2002 04 16 | 704 | 0.5+ | 0.9− | 2005 11 28 | 291 | 0.0 | 0.3+ |
| 2002 01 11 | 704 | 0.3− | 0.4+ | 2002 04 16 | 704 | 0.0 | 0.4− | 2005 11 28 | 291 | 0.2− | 0.2+ |
| 2002 01 11 | 704 | 0.1+ | 0.5+ | 2002 04 16 | 704 | 0.2− | 0.4− | 2005 11 29 | 703 | 1.1− | 1.4− |
| 2002 01 11 | 704 | 0.5− | 0.3− | 2002 05 13 | 704 | 0.2+ | 0.5+ | 2005 11 29 | 703 | 0.3+ | 0.7− |
| 2002 02 08 | 704 | 0.3− | 0.0 | 2002 05 13 | 704 | 0.7+ | 0.1+ | 2005 11 29 | 703 | (0.5+ | 2.1−) |
| 2002 02 08 | 704 | 0.0 | 0.2− | 2002 05 13 | 704 | 0.8− | 0.6+ | 2005 11 29 | 703 | 0.2− | 0.8− |
| 2002 02 08 | 704 | 1.2− | 0.6+ | 2002 05 13 | 704 | 0.5− | 0.4+ | 2005 12 06 | 703 | 0.4− | 0.1+ |
| 2002 03 11 | 644 | 0.5− | 0.2+ | 2004 08 21 | E12 | 0.0 | 0.4+ | 2005 12 06 | 703 | 0.5− | 0.1+ |
| 2002 03 11 | 644 | 0.4− | 0.1+ | 2004 08 21 | E12 | 0.2− | 0.2+ | 2005 12 06 | 703 | 1.0+ | 0.7+ |
| 2002 03 11 | 644 | 0.5− | 0.3+ | 2004 08 21 | E12 | 0.6− | 0.5− | 2005 12 06 | 703 | 0.1− | 0.8− |
| 2002 03 19 | 704 | (1.8+ | 1.5+) | 2004 08 21 | E12 | 0.5− | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2002 03 19 | 704 | 0.8+ | 0.8+ | 2005 10 22 | 644 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 03 19 | 704 | 1.4+ | 1.0+ | 2005 10 22 | 644 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 03 20 | 704 | 1.3+ | 0.8+ | 2005 10 22 | 644 | 0.5− | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 03 20 | 704 | 1.2+ | 1.1+ | 2005 10 27 | 704 | 0.0 | 0.9+ | 2006 11 28 | G96 | 0.1+ | 0.3− |
| 2002 03 20 | 704 | 1.3+ | 0.7+ | 2005 10 27 | 704 | 0.5− | 0.8+ | 2006 11 28 | G96 | 0.2− | 0.2− |
| 2002 03 20 | 704 | 0.7+ | 1.1+ | 2005 10 27 | 704 | 0.2+ | 0.8+ | 2006 11 28 | G96 | 0.2− | 0.4− |
| 2002 03 20 | 704 | 1.1+ | 0.4+ | 2005 11 01 | 703 | 0.4+ | 0.3+ | 2006 11 28 | G96 | 0.1+ | 0.2− |

**(141529)∗ 2002 FG$_{24}$ = 2000 SY$_{358}$**

Discovered 2002 Mar. 19 by NEAT at Palomar.

Id. A. Doppler (*MPO* 30109)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.69361 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17784246 | $\omega$ | 40.42743 | | +0.04034028 | | −0.97236956 |
| $a$ | 3.1316923 | $\Omega$ | 48.60285 | | +0.81934411 | | −0.09951811 |
| $e$ | 0.2236846 | $i$ | 17.84971 | | +0.57188102 | | +0.21117195 |
| $P$ | 5.54 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 608 | 1.0− | 1.2+ | 2003 05 01 | 691 | (1.5+ | 1.7+) | 2006 11 15 | 704 | 0.3+ | 1.0+ |
| 2000 09 25 | 608 | 0.8− | 1.5+ | 2003 05 01 | 691 | 1.2+ | 1.5+ | 2006 11 15 | 704 | 0.1+ | 1.3+ |
| 2000 09 25 | 608 | 0.5− | 1.7+ | 2003 05 24 | 691 | 0.3+ | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.9+ |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2003 05 24 | 691 | 0.5+ | 0.9+ | 2006 11 15 | 704 | (0.4+ | 2.2+) |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2003 05 24 | 691 | 0.4+ | 0.8+ | 2006 11 15 | 704 | 0.1+ | 1.3+ |
| 2000 09 29 | 699 | 0.6+ | 0.1+ | 2003 06 02 | 291 | 0.3+ | 0.0 | 2006 11 15 | 704 | 0.0 | 1.2+ |
| 2000 09 29 | 699 | 0.4+ | 1.1+ | 2003 06 02 | 291 | 0.4+ | 0.4+ | 2006 11 15 | 704 | 0.2+ | 0.8+ |
| 2000 09 29 | 699 | 0.7+ | 0.6− | 2003 06 02 | 291 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.6+ | 0.9+ |
| 2000 09 29 | 699 | 0.3+ | 1.0+ | 2005 08 28 | E12 | 0.5− | 0.7− | 2006 11 15 | 704 | 0.0 | 1.0+ |
| 2001 12 09 | 704 | 0.1− | 0.4+ | 2005 08 28 | E12 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.5+ | 1.2+ |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2005 08 28 | E12 | 0.0 | 0.9+ | 2006 11 16 | 704 | 0.2+ | 0.8+ |
| 2001 12 09 | 704 | 0.1− | 0.5+ | 2005 08 28 | E12 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | 0.1− | 0.0 | 2006 09 16 | 703 | (1.7− | 0.2−) | 2006 11 16 | 704 | 0.2+ | 1.1+ |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.9+ |
| 2001 12 22 | 704 | 0.5− | 0.1+ | 2006 09 16 | 703 | 0.6− | 0.1+ | 2006 11 17 | 691 | 0.4− | 0.0 |
| 2001 12 22 | 704 | 0.2+ | 0.4− | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 12 22 | 704 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.3− | 0.1+ |
| 2001 12 22 | 704 | 0.4− | 0.4+ | 2006 09 27 | G96 | 0.5− | 0.2− | 2006 11 17 | 644 | 0.1− | 0.4− |
| 2001 12 22 | 704 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 17 | 644 | 0.1− | 0.2− |
| 2002 02 21 | 704 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 644 | 0.1− | 0.4− |
| 2002 02 21 | 704 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.5− | 0.8+ |
| 2002 02 21 | 704 | 0.7− | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.7− | 0.8+ |
| 2002 02 21 | 704 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.6− | 0.8+ |
| 2002 02 21 | 704 | 0.2+ | 0.5− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.8− | 0.3+ |
| 2002 03 05 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.8− | 0.8+ |
| 2002 03 05 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.3− |
| 2002 03 05 | 704 | (0.1− | 2.3−) | 2006 10 16 | 703 | 0.5+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.3− |
| 2002 03 05 | 704 | 1.4+ | 0.6− | 2006 10 16 | 703 | 0.3+ | 0.6+ | 2006 11 21 | 691 | 0.1− | 0.2− |
| 2002 03 09 | 699 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2002 03 09 | 699 | 0.6+ | 0.4− | 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2002 03 09 | 699 | 0.3− | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2002 03 09 | 699 | 0.4+ | 0.5− | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.9+ |
| 2002 03 19 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 1.0+ |
| 2002 03 19 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.3− |
| 2002 03 19 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.8− | 0.4− | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2002 03 21 | 704 | (1.9− | 1.3−) | 2006 10 27 | 703 | 0.7− | 0.4− | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2002 03 21 | 704 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.3+ | 2.0+ |
| 2002 03 21 | 704 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.0 | 0.9+ |
| 2002 03 21 | 704 | 0.2− | 0.5− | 2006 11 13 | 644 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2002 03 30 | 644 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.8− | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2002 03 30 | 644 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.6− | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2002 03 30 | 644 | 0.5− | 0.5+ | 2006 11 14 | 703 | 0.8− | 0.1+ | | | | |
| 2003 05 01 | 691 | (0.9+ | 1.9+) | 2006 11 14 | 703 | 1.2+ | 0.2− | | | | |

**(141530)∗ 2002 FE$_{37}$**

Discovered 2002 Mar. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.69821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35778049 | $\omega$ | 94.03020 | | −0.35732271 | | −0.92460638 |
| $a$ | 1.9651315 | $\Omega$ | 18.66008 | | +0.60554246 | | −0.33694325 |
| $e$ | 0.0152195 | $i$ | 24.36544 | | +0.71108284 | | −0.17768592 |
| $P$ | 2.75 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 21 | 704 | 0.1− | 0.8− | 2003 09 24 | 644 | 0.4− | 0.7+ | 2005 04 12 | 691 | 0.1+ | 0.3+ |
| 2002 02 21 | 704 | 1.0− | 0.0 | 2003 09 24 | 644 | 0.5− | 0.5+ | 2005 04 12 | 691 | 0.3+ | 0.4+ |
| 2002 02 21 | 704 | 0.6− | 0.0 | 2003 09 24 | 644 | 0.7− | 0.5+ | 2005 04 12 | 691 | 0.4+ | 0.2+ |
| 2002 02 21 | 704 | 0.0 | 0.3+ | 2003 09 24 | 608 | 0.4− | 0.2+ | 2005 04 18 | 703 | 0.3− | 0.8+ |
| 2002 02 21 | 704 | 0.6− | 0.5− | 2003 09 24 | 608 | 0.4− | 0.4+ | 2005 04 18 | 703 | 0.9− | 0.2− |
| 2002 03 05 | 704 | 0.2+ | 0.4+ | 2003 09 24 | 608 | 0.3− | 0.1− | 2005 04 18 | 703 | 0.5− | 0.5− |
| 2002 03 05 | 704 | 0.4− | 1.4+ | 2003 10 19 | 704 | 0.2+ | 0.3+ | 2005 04 18 | 703 | 1.2− | 0.6− |
| 2002 03 05 | 704 | 0.8+ | 1.4− | 2003 10 19 | 704 | 0.7− | 0.7+ | 2005 05 04 | 644 | 0.3+ | 0.1+ |
| 2002 03 05 | 704 | 1.1+ | 0.1− | 2003 10 19 | 704 | 0.2− | 1.0+ | 2005 05 04 | 644 | 0.3+ | 0.4+ |
| 2002 03 05 | 704 | 0.5+ | 1.2+ | 2003 10 19 | 704 | 0.2− | 0.4+ | 2005 05 04 | 644 | 0.4+ | 0.2+ |
| 2002 03 21 | 704 | 0.5+ | 0.5+ | 2003 10 19 | 704 | 0.1+ | 0.5+ | 2005 05 10 | 699 | 0.7+ | 0.1− |
| 2002 03 21 | 704 | 0.0 | 0.4+ | 2003 10 19 | 704 | 0.0 | 0.8+ | 2005 05 10 | 699 | 0.2− | 0.6+ |
| 2002 03 21 | 704 | 0.8+ | 0.9+ | 2003 10 19 | 704 | 0.2− | 0.9+ | 2005 05 10 | 699 | 0.0 | 0.7− |
| 2002 03 21 | 704 | 0.8+ | 0.7+ | 2003 10 19 | 704 | 0.4− | 0.1+ | 2005 05 10 | 699 | 0.5+ | 0.1+ |
| 2002 03 30 | 644 | 0.1− | 0.2− | 2003 10 19 | 704 | 0.9− | 0.4+ | 2005 05 12 | 703 | 0.1− | 0.1+ |
| 2002 03 30 | 644 | 0.9+ | 0.5+ | 2003 11 16 | 645 | 0.1− | 0.1− | 2005 05 12 | 703 | 0.6+ | 1.1− |
| 2002 03 30 | 644 | 0.2+ | 0.3+ | 2003 11 16 | 645 | 0.1− | 0.0 | 2005 05 12 | 703 | 0.3− | 1.0− |
| 2002 03 30 | 644 | 0.8+ | 0.3+ | 2003 11 18 | 699 | 0.3+ | 1.1+ | 2005 05 12 | 703 | 0.5− | 0.6+ |
| 2002 03 30 | 644 | 0.2+ | 0.5+ | 2003 11 18 | 699 | (1.6+ | 0.0 ) | 2005 05 12 | 644 | 0.5+ | 0.3+ |
| 2002 03 30 | 644 | 0.5+ | 0.4+ | 2003 11 18 | 699 | 0.6+ | 0.2+ | 2005 05 12 | 644 | 0.5+ | 0.2+ |
| 2002 03 31 | 644 | 0.3+ | 0.4+ | 2003 11 18 | 699 | 0.1− | 0.7+ | 2005 05 12 | 644 | 0.6+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 31 | 644 | 0.5+ | 0.2+ | 2003 11 19 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.9+ | | |
| 2002 03 31 | 644 | 0.4+ | 0.4+ | 2003 11 19 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.8+ | | |
| 2002 04 16 | 704 | 1.0+ | 0.2+ | 2003 11 20 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.8− | 1.2+ | | |
| 2002 04 16 | 704 | (1.3+ | 2.0−) | 2003 11 20 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.7− | | |
| 2002 04 16 | 704 | (0.8+ | 1.8+) | 2003 11 21 | 704 | 0.0 | 0.8+ | 2006 09 28 | 703 | 0.1− | 0.4− | | |
| 2002 04 16 | 704 | 0.2− | 0.5+ | 2003 11 21 | 704 | (0.0 | 1.9+) | 2006 09 28 | 703 | 0.2+ | 0.1+ | | |
| 2002 04 16 | 704 | 0.9+ | 0.3+ | 2003 11 21 | 704 | 1.3− | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.6− | | |
| 2003 08 31 | 704 | 0.9+ | 1.5+ | 2003 11 21 | 704 | 0.0 | 0.7+ | 2006 09 28 | 703 | 0.3− | 0.3+ | | |
| 2003 08 31 | 704 | 0.6+ | 0.9+ | 2003 11 21 | 704 | 0.1− | 0.6+ | 2006 10 02 | 703 | 0.3+ | 0.4− | | |
| 2003 08 31 | 704 | 0.8+ | 1.3+ | 2005 02 09 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.1− | 1.1− | | |
| 2003 09 17 | 704 | 0.6− | 0.6− | 2005 02 09 | 691 | 1.4+ | 0.6+ | 2006 10 02 | 703 | 0.1− | 0.4− | | |
| 2003 09 17 | 704 | 0.9− | 0.9+ | 2005 02 09 | 691 | 0.0 | 0.1+ | 2006 10 02 | 703 | (5.5− | 5.7+) | | |
| 2003 09 17 | 704 | 0.1− | 1.0+ | 2005 03 13 | G96 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.5− | 0.5− | | |
| 2003 09 17 | 704 | 0.2+ | 0.1+ | 2005 03 13 | G96 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.3− | 0.2+ | | |
| 2003 09 21 | 644 | 0.3− | 0.5+ | 2005 03 13 | G96 | 0.2− | 0.2+ | 2006 10 23 | 703 | 0.2+ | 0.5− | | |
| 2003 09 21 | 644 | 0.3− | 0.5+ | 2005 03 13 | G96 | 0.3− | 0.2− | 2006 11 20 | 703 | 1.2+ | 1.3+ | | |
| 2003 09 21 | 644 | 0.2+ | 0.8+ | 2005 04 03 | E12 | 0.4− | 0.9+ | 2006 11 20 | 703 | 0.8+ | 0.3− | | |
| 2003 09 22 | 644 | 0.3− | 0.4+ | 2005 04 03 | E12 | 0.3− | 0.2+ | 2006 11 20 | 703 | 0.9+ | 0.1− | | |
| 2003 09 22 | 644 | 0.3− | 0.4+ | 2005 04 03 | E12 | 0.0 | 0.7+ | 2006 11 20 | 703 | 0.1+ | 1.0+ | | |
| 2003 09 22 | 644 | 0.4− | 0.6+ | 2005 04 03 | E12 | 0.1− | 0.2+ | | | | | | |

**(141531)∗ 2002 GB**

Discovered 2002 Apr. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.15512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.99715742 | $\omega$ | 8.30762 | | +0.66101008 | −0.70716887 | |
| $a$ | 0.9922632 | $\Omega$ | 40.86519 | | +0.66453276 | +0.39635183 | |
| $e$ | 0.5290200 | $i$ | 22.55415 | | +0.34851382 | +0.58550612 | |
| $P$ | 0.99 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 01 | 704 | 0.4− | 0.5− | 2002 05 03 | 448 | 0.3− | 0.8+ | 2005 04 01 | 704 | 0.1− | 0.0 | | |
| 2002 04 01 | 704 | 0.4+ | 0.5− | 2002 05 03 | 448 | 0.9+ | 0.4+ | 2005 04 30 | 703 | 1.2+ | 1.0− | | |
| 2002 04 01 | 704 | 0.0 | 0.1− | 2002 05 03 | 448 | 1.2− | 0.8+ | 2005 04 30 | 703 | 0.0 | 0.2+ | | |
| 2002 04 01 | 704 | 0.7+ | 0.4− | 2002 05 03 | 649 | 0.2− | 0.4+ | 2005 04 30 | 703 | 0.6− | 0.2− | | |
| 2002 04 01 | 704 | 0.2+ | 0.9− | 2002 05 03 | 649 | 0.3+ | 0.8+ | 2005 04 30 | 703 | 0.8− | 0.2+ | | |
| 2002 04 02 | 704 | 0.3+ | 0.3+ | 2002 05 03 | 649 | 0.1+ | 1.1+ | 2006 03 12 | 941 | 0.6+ | 0.2− | | |
| 2002 04 02 | 704 | 0.6+ | 0.4+ | 2002 05 13 | 715 | 0.8− | 0.2+ | 2006 03 12 | 941 | 0.3+ | 0.0 | | |
| 2002 04 02 | 704 | 0.4− | 0.5+ | 2002 05 13 | 715 | 1.0+ | 0.2− | 2006 03 12 | 941 | 0.4+ | 0.0 | | |
| 2002 04 02 | 704 | 0.6+ | 0.7+ | 2002 05 13 | 715 | 1.2− | 1.5− | 2006 03 12 | 941 | 0.0 | 0.3− | | |
| 2002 04 02 | 704 | (1.7− | 1.0+) | 2003 03 31 | 446 | 0.2− | 0.7+ | 2006 03 12 | 941 | 0.3+ | 0.1− | | |
| 2002 04 02 | 704 | 0.4− | 1.5+ | 2003 03 31 | 446 | 1.3+ | 0.2+ | 2006 03 14 | A13 | 1.1− | 0.6+ | | |
| 2002 04 02 | 704 | 0.3− | 0.7+ | 2003 03 31 | 446 | 0.3+ | 0.9+ | 2006 03 14 | A13 | 1.4− | 0.2+ | | |
| 2002 04 02 | 658 | 0.1+ | 0.3− | 2003 04 01 | 446 | 0.3− | 0.3− | 2006 04 02 | 704 | 0.9+ | 0.1+ | | |
| 2002 04 02 | 658 | 0.2− | 0.8− | 2003 04 01 | 446 | 0.0 | 0.2− | 2006 04 02 | 704 | 0.5+ | 0.1+ | | |
| 2002 04 02 | 658 | 0.4− | 0.3+ | 2003 04 01 | 446 | 0.4+ | 0.2+ | 2006 04 02 | 704 | 0.5+ | 0.2− | | |
| 2002 04 02 | 557 | 0.3+ | 0.1+ | 2003 04 01 | 446 | 1.1+ | 0.1− | 2006 04 02 | 704 | 0.7+ | 0.0 | | |
| 2002 04 02 | 557 | 0.0 | 0.1− | 2003 04 07 | 670 | 0.7+ | 0.1− | 2006 04 02 | 704 | 0.5+ | 0.1+ | | |
| 2002 04 02 | 046 | 0.7− | 1.3+ | 2003 04 07 | 670 | 0.1− | 0.3− | 2006 04 03 | H45 | 0.4− | 1.0− | | |
| 2002 04 02 | 046 | 0.8+ | 0.3+ | 2003 04 07 | 670 | 0.8+ | 1.0− | 2006 04 03 | H45 | 0.1+ | 0.0 | | |
| 2002 04 02 | 557 | 0.0 | 1.2− | 2004 03 23 | 649 | 0.0 | 0.5+ | 2006 04 03 | H45 | 0.4− | 0.2− | | |
| 2002 04 02 | 046 | (0.3− | 2.4+) | 2004 03 23 | 649 | 0.1+ | 0.9+ | 2006 04 03 | H45 | 0.0 | 0.1+ | | |
| 2002 04 02 | 557 | 0.2− | 0.8− | 2004 03 23 | 649 | 0.5− | 0.3+ | 2006 04 03 | A94 | (1.9− | 0.8−) | | |
| 2002 04 02 | 046 | 1.3− | 0.7+ | 2004 03 24 | 696 | 0.2− | 0.2+ | 2006 04 03 | A94 | 0.4− | 0.0 | | |
| 2002 04 02 | 557 | 0.3− | 0.5+ | 2004 03 24 | 696 | 0.3− | 0.3+ | 2006 04 03 | A94 | 1.0− | 0.5− | | |
| 2002 04 02 | 046 | (2.3− | 1.3+) | 2004 03 31 | 699 | 0.6− | 0.4+ | 2006 04 03 | A94 | 1.0− | 0.4− | | |
| 2002 04 04 | 540 | 0.3− | 0.2+ | 2004 03 31 | 699 | (1.8− | 1.8−) | 2006 04 04 | A94 | (2.2− | 1.0−) | | |
| 2002 04 04 | 540 | (0.5− | 2.2−) | 2004 03 31 | 699 | 0.2+ | 0.5− | 2006 04 04 | A94 | (2.8+ | 1.0+) | | |
| 2002 04 04 | 540 | 0.2+ | 1.0− | 2004 03 31 | 699 | 0.5− | 0.4− | 2006 04 04 | A94 | (3.8+ | 1.2+) | | |
| 2002 04 07 | 966 | 0.5− | 0.0 | 2004 04 05 | 170 | 0.5− | 0.9+ | 2006 04 07 | 699 | 0.6+ | 0.3+ | | |
| 2002 04 07 | 966 | 1.1+ | 0.2− | 2004 04 05 | 170 | 0.3− | 1.0+ | 2006 04 07 | 699 | 0.9− | 0.3+ | | |
| 2002 04 07 | 966 | 0.1+ | 0.7− | 2004 04 11 | H36 | 0.0 | 0.1− | 2006 04 07 | 699 | 1.0+ | 0.6+ | | |
| 2002 04 07 | 118 | 0.1− | 0.0 | 2004 04 11 | H36 | 0.1− | 0.9− | 2006 04 26 | 703 | 0.5+ | 0.5+ | | |
| 2002 04 07 | 118 | 0.6− | 1.1− | 2004 04 16 | 703 | 0.2+ | 0.7+ | 2006 04 26 | 703 | 0.2− | 0.9− | | |
| 2002 04 07 | 118 | 1.4− | 0.7− | 2004 04 16 | 703 | 0.1+ | 0.7+ | 2006 04 26 | 703 | 1.1+ | 0.1+ | | |
| 2002 04 14 | 858 | 0.6+ | 0.5− | 2004 04 16 | 703 | 0.7− | 0.9− | 2006 04 26 | 703 | 1.0− | 0.2− | | |
| 2002 04 14 | 858 | 0.8+ | 0.3− | 2004 04 16 | 703 | (1.9+ | 3.3+) | 2006 05 03 | H55 | (1.9+ | 0.5+) | | |
| 2002 04 14 | 858 | 0.5− | 0.3+ | 2005 03 21 | 118 | 0.2+ | 0.2− | 2006 05 03 | H55 | 0.8+ | 0.2+ | | |
| 2002 04 19 | 658 | 0.3+ | 0.2− | 2005 03 21 | 118 | 0.4+ | 0.1− | 2006 05 03 | H55 | 0.2+ | 0.5+ | | |
| 2002 04 19 | 658 | 0.3+ | 0.9− | 2005 03 21 | 118 | 0.3+ | 0.3− | 2006 05 03 | 703 | 0.4− | 0.9− | | |
| 2002 04 22 | 649 | 0.5+ | 0.3+ | 2005 04 01 | 704 | 0.2+ | 0.1+ | 2006 05 03 | 703 | 0.7− | 0.0 | | |
| 2002 04 22 | 649 | 0.3+ | 0.0 | 2005 04 01 | 704 | 0.0 | 0.1+ | 2006 05 03 | 703 | (2.0− | 0.7−) | | |
| 2002 04 22 | 649 | 0.4+ | 0.4+ | 2005 04 01 | 704 | 0.2+ | 0.0 | 2006 05 03 | 703 | 0.6− | 0.5+ | | |
| 2002 05 03 | 448 | 0.3+ | 0.0 | 2005 04 01 | 704 | 0.0 | 0.1+ | | | | | | |

**(141532)∗ 2002 GE$_3$ = 4229 T-2**

Discovered 2002 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 30120)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.33833 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29796398 | $\omega$ | 247.17714 | | +0.01351333 | +0.99869222 | |
| $a$ | 2.2200370 | $\Omega$ | 23.75711 | | −0.86666708 | +0.03629278 | |
| $e$ | 0.1887749 | $i$ | 7.03028 | | −0.49870389 | −0.03600956 | |
| $P$ | 3.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 29 | 675 | 1.0+ | 1.4− | 2002 04 17 | 704 | 0.7− | 0.8− | 2006 09 16 | 704 | 0.1− | 0.2+ | | |
| 1973 09 29 | 675 | (3.2+ | 3.6−) | 2002 04 17 | 704 | 1.2− | 0.1− | 2006 09 16 | 704 | 0.1+ | 0.0 | | |
| 1973 09 30 | 675 | 1.9+ | 0.0 | 2002 04 17 | 704 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.3− | 0.1− | | |
| 1973 09 30 | 675 | 1.7+ | 0.1+ | 2002 04 17 | 704 | 1.3− | 0.6+ | 2006 09 20 | 644 | 0.5− | 0.2− | | |
| 1973 10 04 | 675 | 0.8− | 0.1+ | 2002 04 17 | 704 | 1.1− | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.1− | | |
| 1973 10 04 | 675 | 0.8− | 0.5+ | 2003 10 21 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.1+ | | |
| 1973 10 05 | 675 | 0.6+ | 1.7− | 2003 10 21 | 691 | 0.4− | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.2− | | |
| 1973 10 05 | 675 | 1.5− | 1.2− | 2003 10 21 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.9+ | 0.3+ | | |
| 2002 03 09 | 704 | 0.9+ | 0.1− | 2003 10 23 | 699 | 0.2− | 0.7− | 2006 09 22 | 704 | 0.0 | 0.4+ | | |
| 2002 03 09 | 704 | 0.2+ | 0.5− | 2003 10 23 | 699 | 1.3+ | 0.1− | 2006 09 22 | 704 | 0.3+ | 0.2− | | |
| 2002 03 09 | 704 | 0.6− | 0.9+ | 2003 10 23 | 699 | 0.5− | 0.7− | 2006 09 26 | 704 | 0.9+ | 0.5+ | | |
| 2002 03 09 | 704 | 0.3+ | 0.5− | 2003 10 23 | 699 | 1.0− | 0.5+ | 2006 09 26 | 704 | (0.5− | 3.1+) | | |
| 2002 03 14 | 699 | 0.3− | 0.9+ | 2003 10 24 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.4+ | 1.0+ | | |
| 2002 03 14 | 699 | 1.0− | 0.9+ | 2003 10 24 | 704 | 0.8+ | 0.9+ | 2006 09 26 | 704 | 0.1− | 0.5+ | | |
| 2002 03 14 | 699 | 0.2+ | 0.8+ | 2003 10 24 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.4+ | 1.0+ | | |
| 2002 03 14 | 699 | 0.4+ | 1.5+ | 2003 10 24 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.8− | | |
| 2002 03 16 | 704 | 1.3+ | 0.6+ | 2003 10 29 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.8− | | |
| 2002 03 16 | 704 | 1.2+ | 0.7+ | 2003 10 29 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1+ | | |
| 2002 03 16 | 704 | 1.3+ | 0.4+ | 2003 10 29 | 704 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2002 03 16 | 704 | (1.6+ | 0.6+) | 2003 11 24 | 704 | 0.7− | 0.7− | 2006 10 11 | 644 | 0.5− | 0.1+ | | |
| 2002 03 16 | 704 | 0.8+ | 0.2+ | 2003 11 24 | 704 | 1.2+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2002 04 04 | 608 | (2.5− | 1.3+) | 2003 11 24 | 704 | (0.7+ | 2.3+) | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2002 04 04 | 608 | (2.2− | 1.5+) | 2003 11 24 | 704 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.4− | 0.2+ | | |
| 2002 04 04 | 608 | (2.6− | 1.3+) | 2006 08 17 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.1+ | | |
| 2002 04 06 | 704 | 0.1+ | 1.0+ | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.5− | | |
| 2002 04 06 | 704 | 1.3+ | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 1.4− | 0.3+ | | |
| 2002 04 06 | 704 | 0.7+ | 0.1− | 2006 08 21 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.4+ | | |
| 2002 04 09 | 704 | 0.0 | 0.7− | 2006 08 21 | 644 | 0.5− | 0.1+ | 2006 10 19 | 703 | 1.1+ | 1.0+ | | |
| 2002 04 09 | 704 | 0.5− | 0.4+ | 2006 08 21 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2002 04 09 | 704 | 0.4+ | 0.2+ | 2006 08 30 | 699 | 1.2− | 1.1+ | 2006 10 20 | 644 | 0.4− | 0.5+ | | |
| 2002 04 09 | 704 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 04 09 | 704 | 0.5− | 0.4+ | 2006 08 30 | 699 | 0.4− | 0.2− | 2006 10 28 | 941 | 0.4+ | 0.1+ | | |
| 2002 04 09 | 704 | 0.5+ | 0.6+ | 2006 08 30 | 699 | 0.2+ | 0.5+ | 2006 10 28 | 941 | 0.4+ | 0.1+ | | |
| 2002 04 09 | 704 | 0.5− | 0.5− | 2006 09 14 | 703 | 0.5− | 0.4+ | 2006 10 28 | 941 | 0.3+ | 0.0 | | |
| 2002 04 15 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.6+ | 0.1+ | | |
| 2002 04 15 | 704 | 0.7+ | 0.5+ | 2006 09 14 | 703 | 1.0− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.6+ | | |
| 2002 04 15 | 704 | (1.6+ | 1.9+) | 2006 09 14 | 703 | 1.3− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.3+ | | |
| 2002 04 15 | 704 | 0.9+ | 0.6+ | 2006 09 16 | 704 | 0.4− | 1.2+ | | | | | | |
| 2002 04 15 | 704 | 1.0+ | 0.8+ | 2006 09 16 | 704 | (2.3− | 0.2+) | | | | | | |

**(141533)∗ 2002 GG$_3$**

Discovered 2002 Apr. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.60570 | | (2000.0) | | | |
| $n$ | 0.37190438 | $\omega$ | 191.52941 | | +0.39501119 | +0.82845847 |
| $a$ | 1.9150576 | $\Omega$ | 102.79456 | | −0.80718787 | +0.51933859 |
| $e$ | 0.0483934 | $i$ | 24.02443 | | −0.43865009 | −0.20962823 |
| $P$ | 2.65 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 11 | 704 | 0.1− | 1.2− | 2002 04 22 | 704 | 0.6+ | 0.4+ | 2003 12 14 | 704 | 0.3− | 0.4+ |
| 1999 02 11 | 704 | 0.1+ | 1.1− | 2002 04 22 | 704 | 0.8+ | 0.1+ | 2003 12 14 | 704 | 0.7− | 0.5+ |
| 1999 02 11 | 704 | (2.1− | 0.8−) | 2002 04 22 | 704 | 0.3+ | 0.5+ | 2003 12 21 | 683 | 0.2− | 0.4+ |
| 1999 02 11 | 704 | 0.1+ | 0.7− | 2002 04 22 | 704 | 0.3+ | 0.4− | 2003 12 21 | 683 | 0.2+ | 1.0+ |
| 1999 02 11 | 704 | 1.8+ | 0.2− | 2002 04 22 | 704 | 0.4+ | 0.5+ | 2003 12 21 | 683 | 0.3− | 0.8+ |
| 1999 02 18 | 704 | 0.4− | 1.0− | 2002 05 13 | 699 | 0.2− | 0.3+ | 2003 12 25 | 704 | 0.2+ | 0.1− |
| 1999 02 18 | 704 | 0.0 | 0.5− | 2002 05 13 | 699 | 0.3− | 0.4− | 2003 12 25 | 704 | 0.4− | 0.1+ |
| 1999 02 18 | 704 | 1.6+ | 0.3− | 2002 05 13 | 699 | 0.4+ | 0.0 | 2003 12 25 | 704 | 0.3− | 0.1+ |
| 1999 02 18 | 704 | 1.3− | 0.9+ | 2002 05 13 | 699 | 0.9+ | 0.2+ | 2003 12 25 | 704 | 0.3+ | 0.2+ |
| 2002 02 22 | 704 | 0.4+ | 0.4− | 2002 05 17 | 704 | 0.1+ | 0.4+ | 2004 01 18 | 644 | 0.5− | 0.3+ |
| 2002 02 22 | 704 | 0.4+ | 0.2+ | 2002 05 17 | 704 | 0.3+ | 0.3− | 2004 01 18 | 644 | 0.4− | 0.1+ |
| 2002 02 22 | 704 | 0.7+ | 0.1+ | 2002 05 17 | 704 | 0.3− | 0.6+ | 2004 01 18 | 644 | 0.3− | 0.1+ |
| 2002 02 22 | 704 | 0.2− | 0.5+ | 2002 05 17 | 704 | (1.7+ | 0.8−) | 2004 01 23 | 699 | 0.4− | 0.3− |
| 2002 02 22 | 704 | 0.5+ | 0.8− | 2002 05 17 | 704 | 1.0+ | 0.0 | 2004 01 23 | 699 | 1.3+ | 0.3+ |
| 2002 04 03 | 704 | 0.7− | 1.3+ | 2003 11 19 | 644 | 0.3− | 0.1− | 2004 01 23 | 699 | 0.1+ | 0.4+ |
| 2002 04 03 | 704 | 0.2+ | 0.2− | 2003 11 19 | 644 | 0.3− | 0.2+ | 2004 01 23 | 699 | 1.2+ | 0.6− |
| 2002 04 03 | 704 | 0.8+ | 0.4+ | 2003 11 19 | 644 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 04 03 | 704 | 0.3− | 0.1− | 2003 11 24 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2002 04 06 | 704 | 0.6− | 0.3+ | 2003 11 24 | 644 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.6− |
| 2002 04 06 | 704 | 0.0 | 0.0 | 2003 11 24 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2002 04 06 | 704 | 0.1+ | 0.5+ | 2003 11 29 | 704 | 0.2− | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.7− |
| 2002 04 06 | 704 | 1.2+ | 0.3+ | 2003 11 29 | 704 | 0.4− | 0.6+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2002 04 09 | 704 | 0.8− | 0.3+ | 2003 11 29 | 704 | 0.4− | 0.3− | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2002 04 09 | 704 | 0.5− | 0.5+ | 2003 11 29 | 704 | 0.4+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.7− |
| 2002 04 09 | 704 | 1.2− | 0.3+ | 2003 12 05 | 703 | 0.1− | 0.0 | 2006 11 19 | 704 | 1.4+ | 0.5− |
| 2002 04 09 | 704 | 0.2− | 1.0+ | 2003 12 05 | 703 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 04 18 | 699 | 0.7− | 0.2− | 2003 12 05 | 703 | 0.1− | 0.4− | 2006 11 19 | 704 | 1.0+ | 0.3+ |
| 2002 04 18 | 699 | 0.1+ | 0.0 | 2003 12 05 | 703 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.1− | 1.2+ |
| 2002 04 18 | 699 | 0.7− | 0.2− | 2003 12 14 | 704 | (1.9− | 0.4+) | | | | |
| 2002 04 18 | 699 | 0.4− | 0.0 | 2003 12 14 | 704 | 0.5− | 0.1− | | | | |

**(141534)∗ 2002 GJ$_3$**

Discovered 2002 Apr. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.73283 | | (2000.0) | | | |
| $n$ | 0.35892810 | $\omega$ | 357.55936 | | +0.46970347 | −0.81000491 |
| $a$ | 1.9609405 | $\Omega$ | 64.22846 | | +0.81643636 | +0.24724633 |
| $e$ | 0.1047577 | $i$ | 22.94695 | | +0.33587249 | +0.53175305 |
| $P$ | 2.75 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 704 | 0.6− | 0.5− | 2003 10 19 | 704 | 0.9− | 0.1− | 2003 12 11 | 699 | 0.3+ | 0.2+ |
| 1999 02 09 | 704 | 0.7− | 0.3+ | 2003 10 21 | 699 | 0.4− | 0.2− | 2003 12 11 | 699 | 0.4− | 0.2− |
| 1999 02 09 | 704 | 0.8− | 1.7+ | 2003 10 21 | 699 | 0.2− | 0.4+ | 2003 12 11 | 699 | 0.1+ | 0.1+ |
| 1999 02 09 | 704 | 0.6+ | 0.2+ | 2003 10 21 | 699 | 0.1− | 0.2+ | 2003 12 11 | 699 | 0.2− | 0.1+ |
| 1999 02 09 | 704 | 1.2− | 0.3+ | 2003 10 21 | 699 | 0.1− | 0.3+ | 2003 12 12 | 644 | 0.3+ | 0.2+ |
| 1999 04 10 | 704 | 1.4+ | 1.3+ | 2003 10 27 | 699 | 0.4− | 0.0 | 2003 12 12 | 644 | 0.6+ | 0.2+ |
| 1999 04 10 | 704 | 1.4+ | 0.6+ | 2003 10 27 | 699 | 0.6− | 0.8+ | 2003 12 12 | 644 | 0.6+ | 0.3+ |
| 1999 04 10 | 704 | 0.9− | 0.4− | 2003 10 27 | 699 | 0.0 | 0.1+ | 2003 12 17 | 699 | 0.5+ | 0.1+ |
| 1999 04 10 | 704 | 1.3+ | 0.7+ | 2003 10 27 | 699 | 0.0 | 0.3+ | 2003 12 17 | 699 | 0.4+ | 0.1+ |
| 1999 04 10 | 704 | (4.5− | 0.7−) | 2003 11 19 | 644 | 0.3− | 0.2+ | 2003 12 17 | 699 | 0.5− | 0.2+ |
| 2002 03 21 | 704 | 0.2+ | 0.1+ | 2003 11 19 | 644 | 0.1− | 0.1+ | 2003 12 17 | 699 | 0.1+ | 0.5+ |
| 2002 03 21 | 704 | 0.9− | 0.5+ | 2003 11 19 | 644 | 0.1− | 0.2+ | 2003 12 20 | 704 | 0.0 | 0.0 |
| 2002 03 21 | 704 | (0.1− | 1.7−) | 2003 11 20 | 703 | 0.8− | 0.4+ | 2003 12 20 | 704 | 0.3+ | 0.3− |
| 2002 04 08 | 704 | 0.7+ | 0.0 | 2003 11 20 | 703 | 0.8− | 0.1+ | 2003 12 20 | 704 | 0.3+ | 0.4− |
| 2002 04 08 | 704 | 0.2+ | 1.2− | 2003 11 20 | 703 | 0.3− | 0.1+ | 2003 12 20 | 704 | 0.3+ | 0.3− |
| 2002 04 08 | 704 | 1.1+ | 0.8− | 2003 11 20 | 703 | 0.9− | 0.2+ | 2003 12 20 | 704 | 0.1− | 0.2− |
| 2002 04 08 | 704 | 0.5− | 0.7− | 2003 11 20 | 246 | 0.4− | 0.4+ | 2003 12 21 | 704 | 0.0 | 0.0 |
| 2002 04 08 | 704 | (0.1+ | 1.7−) | 2003 11 20 | 246 | 0.2− | 0.4+ | 2003 12 21 | 704 | 0.2− | 0.6+ |
| 2002 04 09 | 704 | 1.1+ | 0.1+ | 2003 11 20 | 246 | 0.3− | 0.5+ | 2003 12 21 | 704 | 0.2− | 0.1+ |
| 2002 04 09 | 704 | 1.1+ | 0.9+ | 2003 11 20 | 246 | 0.2− | 0.1+ | 2003 12 21 | 704 | 0.1+ | 0.1+ |
| 2002 04 09 | 704 | 1.3+ | 0.8+ | 2003 11 20 | 246 | 0.1+ | 0.2+ | 2003 12 21 | 704 | 0.3− | 0.3+ |
| 2002 04 09 | 704 | (1.6+ | 0.7+) | 2003 11 20 | 246 | 0.1− | 0.4+ | 2004 01 11 | 699 | 0.4+ | 0.7+ |
| 2002 04 10 | 704 | 0.2+ | 0.3− | 2003 11 20 | 246 | 0.2− | 0.1+ | 2004 01 11 | 699 | 0.8− | 0.1− |
| 2002 04 10 | 704 | 1.0+ | 0.6+ | 2003 11 20 | 246 | 0.4− | 0.3+ | 2004 01 11 | 699 | 0.4+ | 0.2− |
| 2002 04 10 | 704 | 0.5− | 0.4− | 2003 11 23 | 703 | 0.6− | 0.4− | 2004 01 11 | 699 | 0.2+ | 0.6− |
| 2002 04 10 | 704 | 0.5+ | 0.1− | 2003 11 23 | 703 | 0.3− | 0.1+ | 2004 01 18 | 699 | 0.0 | 0.1− |
| 2002 04 10 | 704 | 0.0 | 0.6+ | 2003 11 23 | 683 | 0.7+ | 0.9− | 2004 01 18 | 699 | 0.1− | 0.1+ |
| 2002 04 22 | 644 | 0.2+ | 0.1+ | 2003 11 23 | 703 | 0.1− | 0.2+ | 2004 01 18 | 699 | 0.1+ | 0.1− |
| 2002 04 22 | 644 | 0.3+ | 0.1− | 2003 11 23 | 683 | 0.7+ | 0.3− | 2004 01 18 | 699 | 0.1+ | 0.2− |
| 2002 04 22 | 644 | 0.3+ | 0.3+ | 2003 11 23 | 703 | 0.6− | 0.9+ | 2005 05 30 | E12 | 0.4+ | 0.8+ |
| 2002 05 05 | 644 | 0.0 | 0.4+ | 2003 11 23 | 683 | 0.0 | 0.4− | 2005 05 30 | E12 | 0.5− | 1.1+ |
| 2002 05 05 | 644 | 0.1+ | 0.5+ | 2003 11 23 | 699 | 0.5+ | 0.0 | 2005 05 30 | E12 | 0.5− | 0.8+ |
| 2002 05 05 | 644 | 0.2− | 0.5+ | 2003 11 23 | 699 | 0.1+ | 0.3+ | 2005 05 30 | E12 | 0.0 | 0.6+ |
| 2002 05 07 | 699 | 0.3+ | 0.7+ | 2003 11 23 | 699 | 0.1+ | 0.0 | 2005 06 26 | 644 | 0.2+ | 0.8+ |
| 2002 05 07 | 699 | 0.8+ | 1.1+ | 2003 11 23 | 699 | 0.2− | 0.1− | 2005 06 26 | 644 | 0.2+ | 0.7+ |
| 2002 05 07 | 699 | 0.1− | 0.9+ | 2003 11 24 | 683 | 0.5+ | 0.2− | 2005 06 26 | 644 | 0.2+ | 0.8+ |
| 2002 05 07 | 699 | 1.4+ | 0.1+ | 2003 11 24 | 683 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.2− |
| 2003 09 01 | 704 | (1.9− | 0.4−) | 2003 11 24 | 683 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.9− | 0.1− |
| 2003 09 01 | 704 | 0.4− | 0.0 | 2003 11 30 | 704 | 0.8− | 0.2+ | 2006 09 30 | 691 | 0.4+ | 0.1− |
| 2003 09 01 | 704 | 0.5− | 0.8+ | 2003 11 30 | 704 | 0.7+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.9+ |
| 2003 09 01 | 704 | 0.0 | 0.4+ | 2003 11 30 | 704 | 0.2+ | 1.2+ | 2006 10 28 | 703 | 1.2+ | 0.9− |
| 2003 10 19 | 704 | 1.0− | 0.0 | 2003 12 01 | 703 | 0.6+ | 0.3+ | 2006 10 28 | 703 | 0.6+ | 0.9− |
| 2003 10 19 | 704 | 1.4− | 0.2+ | 2003 12 01 | 703 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.4+ | 0.4+ |
| 2003 10 19 | 704 | 1.1− | 0.7+ | 2003 12 01 | 703 | 0.0 | 0.2+ | | | | |
| 2003 10 19 | 704 | 0.8− | 0.5+ | 2003 12 01 | 703 | 0.2+ | 0.7+ | | | | |

**(141535)∗ 2002 GG$_5$**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.11199 | | (2000.0) | | | |
| $n$ | 0.29423295 | $\omega$ | 97.58472 | | +0.25705610 | +0.96638263 |
| $a$ | 2.2387650 | $\Omega$ | 187.31692 | | −0.90190193 | +0.23797411 |
| $e$ | 0.2799848 | $i$ | 2.32865 | | −0.34712401 | +0.09732903 |
| $P$ | 3.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 1.1+ | 0.8+ | 2002 04 17 | 704 | 0.2− | 0.2− | 2006 09 21 | 683 | 0.4+ | 0.8+ |
| 1999 07 13 | 704 | 0.1+ | 0.9+ | 2002 04 17 | 704 | 0.1− | 0.8− | 2006 09 21 | 683 | 0.5− | 0.4− |
| 1999 07 13 | 704 | 0.8+ | 0.6− | 2002 04 20 | 644 | (0.4+ | 2.3+) | 2006 09 27 | 704 | 0.6+ | 0.4+ |
| 1999 07 13 | 704 | 0.1− | 0.2− | 2002 04 20 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 1.3+ | 0.4+ |
| 1999 07 13 | 704 | (6.7− | 2.6−) | 2002 04 20 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.1+ |
| 1999 09 05 | 699 | 1.2− | 0.9+ | 2002 05 07 | 704 | 0.6+ | 0.9+ | 2006 09 27 | 704 | 0.6+ | 0.2+ |
| 1999 09 05 | 699 | 1.1− | 1.3+ | 2002 05 07 | 704 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.3+ |
| 1999 09 05 | 699 | 0.8− | 0.2− | 2002 05 07 | 704 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.3− | 0.2+ |
| 1999 09 09 | 704 | 0.4− | 1.2+ | 2002 05 07 | 704 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 1999 09 09 | 704 | 0.3− | 0.3+ | 2002 05 10 | 644 | 0.6+ | 0.3+ | 2006 10 11 | 691 | 0.4− | 0.1+ |
| 1999 09 09 | 704 | 0.1− | 0.3+ | 2002 05 10 | 644 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.4+ |
| 1999 09 09 | 704 | 0.3+ | 1.1+ | 2002 05 10 | 644 | 0.1− | 0.5+ | 2006 10 15 | 691 | 0.2+ | 0.4+ |
| 1999 10 04 | 691 | 0.3− | 0.1− | 2005 02 09 | 704 | 1.0+ | 1.2− | 2006 10 15 | 691 | 0.1+ | 0.4+ |
| 1999 10 04 | 691 | 0.3− | 0.1− | 2005 02 09 | 704 | 0.5− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.6+ |
| 1999 10 04 | 691 | 0.4− | 0.1− | 2005 02 09 | 704 | 0.8+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.5+ |
| 1999 10 15 | 704 | 1.2+ | 0.1+ | 2005 02 09 | 704 | 0.6+ | 0.6− | 2006 10 19 | 691 | 0.1− | 0.5+ |
| 1999 10 15 | 704 | 1.0+ | 0.2− | 2005 02 09 | 704 | 1.0+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 1999 10 15 | 704 | 1.2+ | 0.2+ | 2005 03 01 | 691 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.3+ | 0.1+ |
| 1999 10 15 | 704 | 1.1+ | 0.4+ | 2005 03 01 | 691 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.1+ | 0.3+ |
| 1999 10 15 | 704 | 0.5+ | 0.4+ | 2005 03 01 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2002 03 13 | 704 | (1.1+ | 1.6+) | 2005 03 08 | 704 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.5+ | 0.7− |
| 2002 03 13 | 704 | 0.4− | 1.4+ | 2005 03 08 | 704 | 0.2− | 0.5− | 2006 10 20 | 703 | 0.7+ | 0.5− |
| 2002 03 13 | 704 | 0.8+ | 0.9+ | 2005 03 08 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2002 03 13 | 704 | 0.5− | 0.4+ | 2005 03 08 | 704 | (1.7− | 0.1+) | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2002 03 13 | 704 | 0.1+ | 0.9+ | 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.6+ |
| 2002 03 18 | 704 | (0.2+ | 1.7+) | 2005 03 09 | G96 | 0.2− | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 18 | 704 | 0.2+ | 0.8+ | 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 10 21 | 703 | 1.3− | 0.7− |
| 2002 03 18 | 704 | 0.8− | 1.1+ | 2005 03 09 | G96 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 03 20 | 691 | 0.5+ | 1.0+ | 2005 03 11 | 704 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 03 20 | 691 | 0.3+ | 0.4+ | 2005 03 11 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2002 03 20 | 691 | 0.3+ | 0.6+ | 2005 03 11 | 704 | 0.1+ | 0.8− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2002 04 05 | 699 | 0.4+ | 0.1+ | 2005 03 11 | 704 | 0.9− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2002 04 05 | 699 | 1.0+ | 0.6+ | 2005 04 05 | G96 | 0.1− | 0.7− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2002 04 05 | 699 | 0.5+ | 0.8+ | 2005 04 05 | G96 | 0.0 | 1.0− | 2006 10 23 | 691 | 0.5− | 0.4+ |
| 2002 04 05 | 699 | 1.5+ | 0.8+ | 2005 04 05 | G96 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2002 04 06 | 291 | 0.1− | 0.6+ | 2005 04 05 | G96 | 0.6− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2002 04 06 | 291 | 0.2− | 0.6+ | 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 04 06 | 291 | 0.2− | 0.8+ | 2006 07 22 | G96 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2002 04 10 | 704 | 0.6+ | 0.9+ | 2006 07 22 | G96 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.7− | 0.0 |
| 2002 04 10 | 704 | 1.3+ | 0.8+ | 2006 07 22 | G96 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2002 04 10 | 704 | 0.7+ | 0.9+ | 2006 09 17 | 704 | 0.7− | 0.0 | 2006 11 11 | 703 | 0.1− | 1.2− |
| 2002 04 10 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 704 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2002 04 10 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 704 | 0.4+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2002 04 12 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 704 | 0.6− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2002 04 12 | 704 | 0.0 | 0.1+ | 2006 09 18 | 683 | 0.6+ | 1.1− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2002 04 12 | 704 | 0.7+ | 0.5+ | 2006 09 18 | 683 | 0.4+ | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2002 04 12 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 683 | 0.7− | 0.5+ | 2006 11 11 | 703 | 0.3− | 1.1− |
| 2002 04 14 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2002 04 14 | 644 | 0.7+ | 0.2+ | 2006 09 18 | 691 | 0.5− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 04 14 | 704 | 0.4− | 0.7+ | 2006 09 18 | 691 | 0.6− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2002 04 14 | 644 | 0.3+ | 0.3+ | 2006 09 19 | 683 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 04 14 | 704 | 0.4+ | 0.6+ | 2006 09 19 | 683 | 1.4+ | 0.6+ | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2002 04 14 | 704 | 0.0 | 0.3+ | 2006 09 19 | 683 | 0.9+ | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2002 04 14 | 704 | 0.0 | 0.7+ | 2006 09 20 | 699 | 0.6− | 0.2− | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2002 04 14 | 704 | 0.2+ | 0.8+ | 2006 09 20 | 699 | 0.8− | 0.7+ | 2006 11 20 | G96 | 0.1+ | 0.4+ |
| 2002 04 17 | 704 | 0.7− | 0.7+ | 2006 09 20 | 699 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.2− | 0.1− |
| 2002 04 17 | 704 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.2− | 0.4+ | 2006 11 20 | G96 | 0.9+ | 0.1− |
| 2002 04 17 | 704 | 0.1− | 0.2+ | 2006 09 21 | 683 | (1.8+ | 1.4−) | 2006 11 20 | G96 | 0.3+ | 0.5+ |

**(141536)∗ 2002 GM$_7$ = 1999 LS$_{10}$**

Discovered 2002 Apr. 14 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 30125)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.25380 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.30357047 | $\omega$ | 114.35916 | | +0.01424328 | +0.99871501 |
| $a$ | 2.1926183 | $\Omega$ | 156.30277 | | −0.95564766 | +0.02790686 |
| $e$ | 0.1202518 | $i$ | 6.95063 | | −0.29416779 | −0.04230292 |
| $P$ | 3.25 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 08 | 704 | 0.5+ | 0.2+ | 2002 04 21 | 333 | 0.4− | 0.5+ | 2006 09 12 | 703 | 0.3− | 1.4+ |
| 1999 06 08 | 704 | 0.7+ | 0.3+ | 2002 05 07 | 704 | 0.7− | 0.3+ | 2006 09 12 | 703 | 0.6− | 1.4+ |
| 1999 06 08 | 704 | 0.5− | 0.2− | 2002 05 07 | 704 | 0.1− | 0.6+ | 2006 09 12 | 703 | 1.0− | 0.6+ |
| 1999 06 08 | 704 | 0.0 | 0.5− | 2002 05 07 | 704 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.5+ | 0.5+ |
| 1999 06 08 | 704 | 0.7+ | 0.4+ | 2005 02 02 | 691 | 0.2+ | 0.6+ | 2006 09 13 | 644 | 0.5+ | 0.2+ |
| 1999 06 14 | 704 | 0.5− | 0.5+ | 2005 02 02 | 691 | 0.5+ | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 1999 06 14 | 704 | 0.7− | 0.5+ | 2005 02 02 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1+ |
| 1999 06 14 | 704 | 1.4+ | 0.7− | 2005 03 04 | G96 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.9+ | 0.2− |
| 1999 06 14 | 704 | 1.0− | 0.3+ | 2005 03 04 | G96 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.4− |
| 2002 04 04 | 608 | (0.4− | 2.2+) | 2005 03 04 | G96 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.2+ |
| 2002 04 04 | 608 | (0.6− | 2.4+) | 2005 03 04 | G96 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.7− |
| 2002 04 04 | 608 | (0.4− | 1.9+) | 2005 03 08 | 699 | 0.1+ | 0.7− | 2006 09 18 | 703 | 0.5+ | 0.2− |
| 2002 04 09 | 699 | (1.6+ | 1.4+) | 2005 03 08 | 699 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.2− |
| 2002 04 09 | 699 | 0.0 | 0.5+ | 2005 03 08 | 699 | 1.1− | 1.0+ | 2006 09 18 | 703 | 0.0 | 0.1− |
| 2002 04 09 | 699 | 0.1− | 0.2+ | 2005 03 08 | 699 | 0.6+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.3+ |
| 2002 04 09 | 699 | 0.4+ | 1.0+ | 2005 03 08 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.7− | 0.5+ |
| 2002 04 10 | 704 | (1.7− | 2.4+) | 2005 03 08 | 704 | 1.0+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.3+ |
| 2002 04 10 | 704 | (1.2− | 2.5+) | 2005 03 08 | 704 | 0.3+ | 0.8− | 2006 09 18 | 699 | 0.1− | 1.0+ |
| 2002 04 10 | 704 | (1.6− | 2.4+) | 2005 03 08 | 704 | 0.7+ | 0.1+ | 2006 09 22 | 704 | 0.4+ | 0.7+ |
| 2002 04 10 | 704 | (1.2− | 2.6+) | 2005 03 08 | 704 | (1.6+ | 0.5−) | 2006 09 22 | 704 | 0.6− | 0.6− |
| 2002 04 10 | 704 | (1.3− | 2.7+) | 2005 03 09 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.2+ | 0.4+ |
| 2002 04 11 | 704 | 0.1+ | 0.3+ | 2005 03 09 | 704 | 1.1+ | 0.1− | 2006 09 22 | 704 | 0.4+ | 0.4+ |
| 2002 04 11 | 704 | 1.0+ | 0.1+ | 2005 03 09 | 704 | 0.8+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.4+ |
| 2002 04 11 | 704 | 0.2− | 0.6− | 2005 03 09 | 704 | 0.4+ | 0.9+ | 2006 09 26 | 704 | 0.5− | 0.7+ |
| 2002 04 11 | 704 | 0.3+ | 0.6− | 2005 03 16 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.9+ |
| 2002 04 11 | 704 | 0.9+ | 0.2+ | 2005 03 16 | 704 | 0.2− | 1.1+ | 2006 09 30 | 703 | 0.7− | 0.9+ |
| 2002 04 13 | 644 | 0.1+ | 0.4+ | 2005 03 16 | 704 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.4+ | 1.4+ |
| 2002 04 13 | 644 | 0.0 | 0.4+ | 2005 03 16 | 704 | 1.2+ | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2002 04 13 | 644 | 0.2+ | 0.5+ | 2005 03 30 | 703 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.2− |
| 2002 04 14 | 333 | 1.2+ | 0.2+ | 2005 03 30 | 703 | 0.7− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2002 04 14 | 333 | 0.0 | 0.6− | 2005 03 30 | 703 | 0.9+ | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2002 04 14 | 333 | 0.1− | 0.5− | 2005 03 30 | 703 | 1.3− | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2002 04 15 | 333 | 0.2− | 0.1+ | 2005 04 06 | 699 | (1.5− | 0.7+) | 2006 10 16 | 703 | 1.3− | 0.0 |
| 2002 04 15 | 333 | 0.3− | 0.3− | 2005 04 06 | 699 | (1.4− | 1.6+) | 2006 10 16 | 703 | 0.3− | 1.0− |
| 2002 04 15 | 333 | 0.0 | 0.3+ | 2005 04 06 | 699 | 1.0− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2002 04 16 | 704 | (1.3+ | 2.6+) | 2005 04 06 | 699 | 0.8− | 0.3− | 2006 10 16 | 703 | 0.1− | 1.2− |
| 2002 04 16 | 704 | 0.3− | 0.5+ | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 04 16 | 704 | 0.1− | 0.4+ | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.6− |
| 2002 04 16 | 704 | 0.0 | 0.9+ | 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 04 16 | 704 | (0.2+ | 1.6+) | 2006 08 21 | 704 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2002 04 21 | 333 | 1.0− | 0.4+ | 2006 08 21 | 704 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2002 04 21 | 333 | 0.4− | 0.0 | 2006 08 21 | 704 | 0.6+ | 0.6+ | 2006 10 23 | 644 | 0.6− | 0.3+ |
| 2002 04 21 | 333 | 0.1+ | 0.1+ | 2006 08 21 | 704 | 0.7− | 0.5+ | | | | |
| 2002 04 21 | 333 | 0.3+ | 0.8− | 2006 09 12 | 703 | 0.9− | 0.6+ | | | | |

**(141537)∗ 2002 GY$_{10}$**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.10077 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.29692599 | $\omega$ | 249.68461 | | +0.42466673 | +0.90176994 |
| $a$ | 2.2252078 | $\Omega$ | 45.71427 | | −0.78308554 | +0.41044897 |
| $e$ | 0.1921869 | $i$ | 6.45107 | | −0.45435142 | +0.13543489 |
| $P$ | 3.32 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 26 | 691 | 0.4− | 0.4− | 2003 11 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 1992 04 26 | 691 | 0.4− | 0.6− | 2003 11 21 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.1+ |
| 1992 04 26 | 691 | 0.2− | 0.4− | 2003 11 21 | 704 | 0.4− | 0.8+ | 2006 09 30 | 703 | 1.0+ | 0.2+ |
| 2002 04 02 | 644 | 0.2+ | 0.7+ | 2003 11 21 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.7− |
| 2002 04 02 | 644 | 0.1− | 0.5+ | 2003 11 21 | 704 | 0.6− | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.4− |
| 2002 04 02 | 644 | 0.4− | 0.2+ | 2003 11 21 | 704 | 0.5− | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.6− |
| 2002 04 10 | 704 | (1.1+ | 1.5+) | 2005 03 16 | 703 | 0.7− | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.5− |
| 2002 04 10 | 704 | 0.0 | 0.7+ | 2005 03 16 | 703 | 0.6+ | 0.1+ | 2006 10 10 | 644 | 0.6− | 0.2+ |
| 2002 04 10 | 704 | 0.6+ | 1.3+ | 2005 03 16 | 703 | 0.6− | 0.3+ | 2006 10 10 | 644 | 0.5− | 0.0 |
| 2002 04 10 | 704 | 0.8+ | 0.3+ | 2005 03 16 | 703 | 0.4− | 0.8+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2002 04 10 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 699 | 0.9+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 04 17 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 04 17 | 704 | 1.3+ | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2002 04 17 | 704 | 0.6+ | 1.1+ | 2006 08 28 | 699 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.4− | 1.4+ |
| 2002 04 17 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 04 17 | 704 | 0.9+ | 1.0+ | 2006 08 30 | 704 | 0.4− | 1.1+ | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2002 05 15 | 644 | 0.4+ | 0.7+ | 2006 08 30 | 704 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2002 05 15 | 644 | 0.4+ | 0.9+ | 2006 08 30 | 704 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.3+ | 1.1+ |
| 2002 05 15 | 644 | 0.9+ | 0.7+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 16 | 703 | (1.6− | 0.1−) |
| 2002 05 17 | 644 | 0.6+ | 0.9+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.9− |
| 2002 05 17 | 644 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.7+ | 0.2+ |
| 2002 05 17 | 644 | 0.3+ | 0.7+ | 2006 09 18 | 699 | 0.7− | 1.4+ | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2002 06 10 | 644 | 0.5+ | 1.3+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2002 06 10 | 644 | 0.6+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 1.5− | 0.0 |
| 2002 06 10 | 644 | 0.7+ | 1.1+ | 2006 09 26 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 703 | 1.1− | 0.7− |
| 2003 10 18 | 691 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.3+ | 0.0 |
| 2003 10 18 | 691 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 1.1+ | 0.1− |
| 2003 10 18 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2003 10 29 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 2003 10 29 | 704 | 0.7− | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2003 10 29 | 704 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.3− | 0.9− | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2003 11 15 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2003 11 15 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.3− |

**(141538)∗ 2002 GA$_{11}$**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.53764 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29881869 | $\omega$ | 271.60954 | | +0.56012617 | | +0.82569767 |
| $a$ | 2.2158016 | $\Omega$ | 32.74304 | | −0.70230698 | | +0.51617069 |
| $e$ | 0.2007863 | $i$ | 7.11018 | | −0.43934449 | | +0.22757675 |
| $P$ | 3.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 23 | 704 | (2.1+ | 0.6+) | 2003 11 24 | 704 | 0.6− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.4+ |
| 2002 03 23 | 704 | 0.4+ | 0.8+ | 2003 12 18 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.4− | 0.4+ |
| 2002 03 23 | 704 | 0.5− | 0.9+ | 2003 12 18 | 691 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.2− |
| 2002 03 23 | 704 | 1.4− | 0.1+ | 2003 12 18 | 704 | (1.6+ | 2.2+) | 2006 09 29 | 699 | 0.5− | 0.1− |
| 2002 04 08 | 644 | 0.1− | 0.8+ | 2003 12 18 | 704 | 0.4− | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.0 |
| 2002 04 08 | 644 | 0.1− | 0.7+ | 2003 12 18 | 691 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.2− | 0.2+ |
| 2002 04 08 | 644 | 0.1− | 0.9+ | 2003 12 18 | 704 | 0.9+ | 1.1+ | 2006 10 01 | 704 | 1.0− | 0.7+ |
| 2002 04 10 | 704 | 0.1− | 1.2+ | 2003 12 18 | 704 | (1.6+ | 2.1+) | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 2002 04 10 | 704 | 0.1+ | 0.4+ | 2003 12 28 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3− | 1.1+ |
| 2002 04 10 | 704 | 0.2+ | 0.5+ | 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.8+ |
| 2002 04 10 | 704 | 0.4+ | 0.1+ | 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | (0.4+ | 2.6−) |
| 2002 04 17 | 704 | 0.3+ | 0.8+ | 2005 03 16 | 704 | 0.5+ | 0.3− | 2006 10 15 | 703 | 0.2− | 1.4− |
| 2002 04 17 | 704 | 0.2+ | 0.8+ | 2005 03 16 | 704 | 0.1+ | 0.6+ | 2006 10 15 | 703 | 0.4+ | 0.0 |
| 2002 04 17 | 704 | 0.4+ | 0.6+ | 2005 03 16 | 704 | 0.9− | 0.6+ | 2006 10 15 | 703 | 0.0 | 0.3− |
| 2002 04 17 | 704 | 0.6+ | 1.1+ | 2005 03 16 | 704 | 1.5+ | 0.5+ | 2006 10 15 | 703 | 0.2+ | 0.3− |
| 2002 04 17 | 704 | 0.6+ | 0.4+ | 2006 08 19 | 699 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.2− |
| 2002 05 09 | 644 | 0.2+ | 0.0 | 2006 08 19 | 699 | 0.6+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2002 05 09 | 644 | 0.3+ | 0.6− | 2006 08 19 | 699 | 0.3+ | 1.0+ | 2006 10 21 | 703 | 0.6− | 0.3− |
| 2002 05 09 | 644 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2002 05 11 | 704 | 0.5+ | 0.8+ | 2006 09 06 | 644 | 0.5− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 05 11 | 704 | 0.4+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 05 11 | 704 | 0.3+ | 0.3+ | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 05 11 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 704 | 1.2+ | 0.4− | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2002 05 11 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 05 13 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 704 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 05 13 | 704 | 0.6+ | 0.2− | 2006 09 16 | 704 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 05 13 | 704 | 0.7+ | 0.3+ | 2006 09 21 | 699 | 0.5− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2002 05 13 | 704 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.3+ | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.5+ |
| 2002 05 13 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.1− | 0.7− | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2003 10 16 | 691 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.5− | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.1− |
| 2003 10 16 | 691 | 0.3+ | 0.0 | 2006 09 22 | 704 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2003 10 16 | 691 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2003 10 24 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.5+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2003 10 24 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.8− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2003 10 24 | 704 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.4+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2003 10 24 | 704 | 0.2− | 1.1+ | 2006 09 25 | 699 | 0.9− | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2003 11 20 | 704 | 0.6+ | 0.4− | 2006 09 25 | 699 | 0.5+ | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2003 11 20 | 704 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2003 11 20 | 704 | 0.2+ | 0.4− | 2006 09 25 | 699 | 0.5+ | 0.9+ | 2006 11 25 | G92 | 0.6− | 0.5+ |
| 2003 11 20 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.6− | 0.2+ | 2006 11 25 | G92 | 0.1− | 0.4+ |
| 2003 11 24 | 704 | 0.0 | 1.1+ | 2006 09 26 | 704 | 0.4+ | 0.4+ | 2006 11 25 | G92 | 0.1+ | 1.6+ |
| 2003 11 24 | 704 | 0.5− | 0.4− | 2006 09 26 | 704 | 0.4+ | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2003 11 24 | 704 | 0.6− | 0.5+ | 2006 09 26 | 704 | 0.7− | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.2+ |
| 2003 11 24 | 704 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.3− |

**(141539)∗ 2002 GA$_{14}$**

Discovered 2002 Apr. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.02264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30585907 | $\omega$ | 68.06557 | | −0.43788164 | | +0.89903115 |
| $a$ | 2.1816670 | $\Omega$ | 175.96451 | | −0.83317025 | | −0.40511985 |
| $e$ | 0.0980862 | $i$ | 1.32936 | | −0.33776766 | | −0.16619538 |
| $P$ | 3.22 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 691 | 0.3− | 0.2+ | 2002 04 14 | 704 | 0.4+ | 0.4− | 2005 03 08 | G96 | 0.2+ | 0.0 |
| 2002 03 16 | 691 | 0.0 | 0.1− | 2002 04 17 | 704 | 0.4− | 0.0 | 2005 03 08 | G96 | 0.3− | 0.0 |
| 2002 03 16 | 691 | 0.0 | 0.1− | 2002 04 17 | 704 | 0.9− | 1.1+ | 2005 03 08 | G96 | 0.2− | 0.3− |
| 2002 03 19 | 699 | 1.3+ | 0.9− | 2002 04 17 | 704 | 0.0 | 0.5− | 2006 08 19 | 691 | 0.0 | 0.2+ |
| 2002 03 19 | 699 | 1.4+ | 1.4+ | 2002 04 17 | 704 | 0.4+ | 1.1− | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 2002 03 19 | 699 | 1.0+ | 0.1− | 2003 09 16 | 691 | 0.4− | 0.4− | 2006 08 19 | 691 | 0.1+ | 0.4+ |
| 2002 03 19 | 699 | 1.7+ | 0.7+ | 2003 09 16 | 691 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.4− |
| 2002 03 24 | 691 | 0.2+ | 0.3− | 2003 09 16 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.2+ | 1.6+ |
| 2002 03 24 | 691 | 0.4+ | 0.4− | 2003 10 16 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.4− |
| 2002 03 24 | 691 | 0.2+ | 0.2− | 2003 10 16 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.3+ | 0.6− |
| 2002 04 05 | 699 | 0.8+ | 1.1+ | 2003 10 16 | 691 | 0.0 | 0.5+ | 2006 08 28 | 691 | 0.3− | 0.2+ |
| 2002 04 05 | 699 | 1.2+ | 0.4+ | 2003 10 18 | 691 | 0.7+ | 0.3− | 2006 08 28 | 691 | 0.2− | 0.6+ |
| 2002 04 05 | 699 | 0.7+ | 1.2+ | 2003 10 18 | 691 | 0.3− | 0.5+ | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 2002 04 05 | 699 | 0.8+ | 1.2+ | 2003 10 18 | 691 | 0.5− | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.2− |
| 2002 04 06 | 291 | 0.3− | 0.4+ | 2005 02 09 | 699 | 0.9+ | 0.5+ | 2006 09 19 | 703 | 0.5+ | 1.5+ |
| 2002 04 06 | 291 | 0.1− | 0.5+ | 2005 02 09 | 699 | 1.2+ | 1.1+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2002 04 06 | 291 | 0.3− | 0.4+ | 2005 02 09 | 699 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2002 04 10 | 704 | 1.3− | 0.1− | 2005 02 09 | 699 | 1.2+ | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.3+ |
| 2002 04 10 | 704 | 1.1− | 0.4− | 2005 03 03 | 703 | 1.5− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2002 04 10 | 704 | 1.5− | 0.5− | 2005 03 03 | 703 | 1.1+ | 1.1+ | 2006 09 25 | G96 | 0.6− | 0.2+ |
| 2002 04 10 | 704 | 0.5− | 1.1+ | 2005 03 03 | 703 | 0.3− | 0.6+ | 2006 09 25 | G96 | 0.3− | 0.0 |
| 2002 04 14 | 704 | 0.8+ | 0.7+ | 2005 03 03 | 703 | 0.9− | 1.4+ | | | | |
| 2002 04 14 | 704 | 0.2− | 1.1+ | 2005 03 08 | G96 | 0.0 | 0.1+ | | | | |

**(141540)∗ 2002 GC$_{14}$**

Discovered 2002 Apr. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.19035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29015800 | $\omega$ | 45.06787 | | −0.32968264 | | +0.94283727 |
| $a$ | 2.2596769 | $\Omega$ | 205.79978 | | −0.89461918 | | −0.32845524 |
| $e$ | 0.0802421 | $i$ | 6.41854 | | −0.30160550 | | −0.05634751 |
| $P$ | 3.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 704 | 0.2− | 1.6+ | 2002 05 18 | 704 | 0.1+ | 0.2+ | 2005 02 09 | 699 | 0.2− | 1.0+ |
| 2002 04 09 | 704 | 0.0 | 1.6+ | 2002 05 18 | 704 | 0.9− | 0.2− | 2005 02 09 | 699 | 1.1+ | 0.2− |
| 2002 04 09 | 704 | 0.2+ | 0.9+ | 2002 05 19 | 644 | 0.3+ | 0.2+ | 2005 02 09 | 699 | 0.4+ | 0.4+ |
| 2002 04 10 | 704 | 0.5+ | 0.6+ | 2002 05 19 | 644 | 0.1+ | 0.3+ | 2005 02 09 | 699 | (3.0+ | 1.1+) |
| 2002 04 10 | 704 | 0.6+ | 1.0+ | 2002 05 19 | 644 | 0.4+ | 0.0 | 2005 02 14 | 703 | 0.3− | 1.6+ |
| 2002 04 10 | 704 | 0.0 | 1.1+ | 2003 09 16 | 691 | 0.3+ | 0.5+ | 2005 02 14 | 703 | 0.1− | 0.3− |
| 2002 04 10 | 704 | 0.4+ | 0.9+ | 2003 09 16 | 691 | 0.1+ | 0.3+ | 2005 02 14 | 703 | 0.3+ | 0.2+ |
| 2002 04 10 | 704 | 0.2+ | 1.5+ | 2003 09 16 | 691 | 0.2+ | 0.2+ | 2005 02 14 | 703 | 0.2− | 1.6+ |
| 2002 04 14 | 704 | 0.3+ | 0.6+ | 2003 09 17 | 644 | 0.2− | 0.5+ | 2005 03 03 | 703 | 0.1− | 1.2+ |
| 2002 04 14 | 704 | 0.0 | 0.4+ | 2003 09 17 | 644 | 0.2+ | 1.0+ | 2005 03 03 | 703 | 1.3− | 0.8+ |
| 2002 04 14 | 704 | 0.3− | 0.5+ | 2003 09 17 | 644 | 0.4− | 0.7+ | 2005 03 03 | 703 | 0.3+ | 0.7+ |
| 2002 04 14 | 704 | 0.4+ | 0.8+ | 2003 09 19 | 291 | 0.3− | 0.5+ | 2005 03 03 | 703 | 0.6− | 0.2− |
| 2002 04 14 | 704 | 0.1+ | 0.8+ | 2003 09 19 | 291 | 0.3− | 0.4+ | 2005 03 10 | 703 | 0.6− | 0.4− |
| 2002 04 14 | 644 | 0.1− | 0.6+ | 2003 09 19 | 291 | 0.4− | 0.5+ | 2005 03 10 | 703 | 0.3+ | 0.3+ |
| 2002 04 14 | 644 | 0.2+ | 0.5+ | 2003 09 26 | 704 | 1.4− | 1.5+ | 2005 03 10 | 703 | 0.3+ | 0.1+ |
| 2002 04 14 | 644 | 0.1− | 0.3+ | 2003 09 26 | 704 | 0.2− | 0.7+ | 2005 03 10 | 703 | 0.8+ | 1.1+ |
| 2002 04 17 | 704 | 0.3− | 0.1+ | 2003 09 26 | 704 | 0.0 | 0.0 | 2005 03 17 | 703 | 0.3+ | 0.6+ |
| 2002 04 17 | 704 | 0.5− | 0.1− | 2003 09 28 | 691 | 0.1+ | 0.2+ | 2005 03 17 | 703 | 0.4− | 0.4+ |
| 2002 04 17 | 704 | 0.6− | 0.4− | 2003 09 28 | 691 | 0.0 | 0.2+ | 2005 03 17 | 703 | 0.0 | 0.2− |
| 2002 04 17 | 704 | 0.8− | 0.0 | 2003 09 28 | 691 | 0.0 | 0.1+ | 2005 03 17 | 703 | 0.2+ | 0.2− |
| 2002 04 17 | 704 | 0.3− | 0.4− | 2003 10 03 | 608 | 0.7− | 0.0 | 2005 03 30 | 644 | 1.0+ | 0.9+ |
| 2002 05 09 | 704 | 0.3+ | 1.8+ | 2003 10 03 | 608 | 0.1+ | 0.1+ | 2005 03 30 | 644 | 0.9+ | 1.2+ |
| 2002 05 09 | 704 | 1.0+ | 1.1+ | 2003 10 03 | 608 | 0.7+ | 0.1+ | 2005 03 30 | 644 | 0.9+ | 0.7+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 1.3+ | 0.6+ | 2003 10 16 | 691 | 0.0 | 0.4+ | 2006 07 21 | 703 | 0.4− | 1.0+ |
| 2002 05 09 | 704 | 0.7− | 1.6+ | 2003 10 16 | 691 | 0.1− | 0.5+ | 2006 07 21 | 703 | 0.6− | 0.8+ |
| 2002 05 09 | 704 | 0.1− | 1.6+ | 2003 10 16 | 691 | 0.1+ | 0.4+ | 2006 07 21 | 703 | 0.8− | 0.3+ |
| 2002 05 12 | 704 | 0.2− | 0.0 | 2003 10 21 | 699 | 1.0+ | 0.8+ | 2006 07 21 | 703 | 0.6− | 0.8+ |
| 2002 05 12 | 704 | 0.4+ | 0.5− | 2003 10 21 | 699 | 1.2− | 0.0 | 2006 07 21 | 644 | 0.2+ | 0.0 |
| 2002 05 12 | 704 | 0.1− | 0.5− | 2003 10 21 | 699 | 0.1− | 0.4+ | 2006 07 21 | 644 | 0.2− | 0.1− |
| 2002 05 13 | 704 | 0.4− | 0.2+ | 2003 10 21 | 644 | 0.0 | 0.9+ | 2006 07 21 | 644 | 0.3− | 0.0 |
| 2002 05 13 | 704 | 0.6+ | 0.0 | 2003 10 21 | 699 | 0.2− | 0.6+ | 2006 08 29 | 703 | 0.3− | 0.6+ |
| 2002 05 13 | 704 | 0.5+ | 0.0 | 2003 10 21 | 644 | 0.0 | 0.8+ | 2006 08 29 | 703 | 0.4− | 0.8− |
| 2002 05 13 | 704 | 0.4+ | 0.4− | 2003 10 21 | 644 | 0.0 | 0.7+ | 2006 08 29 | 703 | 1.2− | 0.4− |
| 2002 05 13 | 704 | 0.6+ | 0.0 | 2003 10 23 | 704 | 0.4− | 0.4+ | 2006 08 29 | 703 | 1.4− | 0.8− |
| 2002 05 14 | 699 | (3.0+ | 0.0 ) | 2003 10 23 | 704 | 0.7− | 0.4+ | 2006 09 16 | 691 | 0.2+ | 0.0 |
| 2002 05 14 | 699 | 0.2+ | 0.5+ | 2003 10 23 | 704 | 0.4− | 0.1+ | 2006 09 16 | 691 | 0.2+ | 0.1+ |
| 2002 05 14 | 699 | 1.2+ | 0.4+ | 2003 10 23 | 704 | 0.8− | 0.6+ | 2006 09 16 | 691 | 0.1− | 0.1+ |
| 2002 05 14 | 699 | 1.3+ | 0.8+ | 2003 10 23 | 704 | 0.8− | 1.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2002 05 16 | 704 | 0.9+ | 0.3− | 2003 10 24 | 701 | 0.7− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2002 05 16 | 704 | 0.1− | 0.2+ | 2003 10 24 | 701 | 0.4− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2002 05 16 | 704 | 0.2+ | 0.3+ | 2003 10 24 | 701 | 0.1− | 0.5+ | 2006 09 24 | 699 | (3.4+ | 0.1−) |
| 2002 05 18 | 704 | 0.6− | 0.4− | 2005 02 02 | 683 | 1.5+ | 1.1− | 2006 09 24 | 699 | 1.1+ | 0.5− |
| 2002 05 18 | 704 | 0.7− | 0.2+ | 2005 02 02 | 683 | (0.5+ | 2.2+) | 2006 09 24 | 699 | 0.8+ | 0.5+ |
| 2002 05 18 | 704 | 0.2− | 0.5+ | 2005 02 02 | 683 | 0.9− | 1.6+ | 2006 09 24 | 699 | 0.6− | 0.0 |

**(141541)∗ 2002 GL$_{14}$**

Discovered 2002 Apr. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 93.97963 | | (2000.0) | | | |
| $n$ | 0.31143059 | $\omega$ | 239.84473 | | +0.18217086 | +0.98159776 |
| $a$ | 2.1555687 | $\Omega$ | 40.77827 | | −0.86928630 | +0.18799900 |
| $e$ | 0.1274269 | $i$ | 5.03026 | | −0.45951616 | +0.03349949 |
| $P$ | 3.16 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 14 | 691 | 0.0 | 0.6+ | 2003 11 19 | 691 | 0.0 | 0.0 | 2005 04 12 | 704 | 0.2+ | 0.2− |
| 2002 02 14 | 691 | 0.0 | 0.3+ | 2003 11 19 | 691 | 0.2+ | 0.5+ | 2005 05 09 | G96 | 0.3− | 0.2− |
| 2002 02 14 | 691 | 0.1+ | 0.5+ | 2003 11 19 | 691 | 0.1+ | 0.1+ | 2005 05 09 | G96 | 0.3− | 0.1− |
| 2002 04 14 | 704 | 0.7+ | 0.8+ | 2003 11 20 | 704 | 0.5− | 0.2+ | 2005 05 09 | G96 | 0.4− | 0.2− |
| 2002 04 14 | 704 | 0.2+ | 0.0 | 2003 11 20 | 704 | 0.4+ | 0.7− | 2005 05 09 | G96 | 0.4− | 0.3− |
| 2002 04 14 | 704 | 1.4+ | 0.2+ | 2003 11 20 | 704 | 0.2+ | 0.5+ | 2005 05 10 | 691 | 0.0 | 0.3+ |
| 2002 04 17 | 704 | 0.1+ | 0.3+ | 2003 11 24 | 704 | 0.5+ | 0.4+ | 2005 05 10 | 691 | 0.2+ | 0.1+ |
| 2002 04 17 | 704 | 0.6+ | 0.6+ | 2003 11 24 | 704 | 0.0 | 1.0+ | 2005 05 10 | 691 | 0.0 | 0.2+ |
| 2002 04 17 | 704 | 0.2− | 0.3− | 2003 11 24 | 704 | (0.4+ | 2.1+) | 2006 09 26 | G96 | (2.1+ | 1.7−) |
| 2002 05 09 | 704 | 0.5− | 0.4+ | 2003 11 24 | 704 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2002 05 09 | 704 | 0.1+ | 0.4+ | 2003 11 24 | 704 | 0.6+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2002 05 09 | 704 | 0.4− | 0.7+ | 2003 12 22 | 704 | (1.6+ | 1.0+) | 2006 09 26 | G96 | 0.5− | 0.3+ |
| 2002 05 09 | 704 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1− | 0.3+ |
| 2002 05 09 | 704 | 0.0 | 0.5+ | 2003 12 22 | 704 | 0.7− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.6+ |
| 2002 05 09 | 644 | 0.0 | 0.4+ | 2003 12 22 | 704 | 0.8− | 0.2− | 2006 10 11 | 691 | 0.2− | 0.5+ |
| 2002 05 09 | 644 | 0.2− | 0.3+ | 2005 03 10 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 2002 05 09 | 644 | 0.1− | 0.5+ | 2005 03 10 | 691 | 0.1− | 0.3− | 2006 10 15 | 691 | 0.4+ | 0.5+ |
| 2002 05 11 | 704 | 0.0 | 0.3− | 2005 03 10 | 691 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.2− | 0.2+ |
| 2002 05 11 | 704 | 0.2+ | 0.1+ | 2005 03 18 | 703 | 0.5− | 0.7− | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2002 05 11 | 704 | 0.2+ | 0.2− | 2005 03 18 | 703 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 2002 05 11 | 704 | 0.0 | 0.4+ | 2005 03 18 | 703 | (1.9− | 0.4−) | 2006 10 27 | G96 | 0.3− | 0.2+ |
| 2002 05 11 | 704 | 0.3+ | 0.3+ | 2005 03 18 | 703 | 1.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.5+ |
| 2002 05 13 | 704 | 0.5+ | 0.2+ | 2005 04 01 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 05 13 | 704 | 1.0+ | 0.4+ | 2005 04 01 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2002 05 13 | 704 | 0.6+ | 0.5+ | 2005 04 01 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2002 05 13 | 704 | 0.2− | 0.6+ | 2005 04 04 | 703 | 0.7+ | 0.4− | 2006 11 08 | 644 | 0.3− | 0.5+ |
| 2002 05 13 | 704 | 0.5+ | 0.4+ | 2005 04 04 | 703 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.0 | 0.5+ |
| 2002 05 18 | 644 | 0.1− | 0.5+ | 2005 04 04 | 703 | 0.6− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.6+ |
| 2002 05 18 | 644 | 0.0 | 0.6+ | 2005 04 04 | 703 | 1.4− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2002 05 18 | 644 | 0.1− | 0.6+ | 2005 04 05 | 699 | 1.4+ | 0.6− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2002 05 21 | 704 | 0.7+ | 0.3− | 2005 04 05 | 699 | 1.1+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2002 05 21 | 704 | 0.6− | 0.2− | 2005 04 05 | 699 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2002 05 21 | 704 | 0.7− | 0.3− | 2005 04 05 | 699 | 0.4+ | 0.8+ | 2006 11 18 | 704 | (0.4− | 1.6+) |
| 2002 06 08 | 704 | 1.1+ | 1.2+ | 2005 04 09 | 704 | 0.6+ | 0.0 | 2006 11 18 | 704 | 0.0 | 1.0− |
| 2002 06 08 | 704 | 0.4+ | 0.1− | 2005 04 09 | 704 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2002 06 08 | 704 | 0.3− | 0.6+ | 2005 04 09 | 704 | 0.1+ | 1.0+ | 2006 11 18 | 704 | (1.6− | 3.0+) |
| 2002 06 08 | 704 | 0.0 | 1.0+ | 2005 04 09 | 704 | 0.7+ | 0.7+ | 2006 11 27 | G96 | 0.1+ | 0.2+ |
| 2002 06 08 | 704 | 0.6+ | 0.8+ | 2005 04 09 | 704 | 0.6− | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2003 10 27 | 691 | 0.1− | 0.2+ | 2005 04 12 | 704 | 0.8+ | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2003 10 27 | 691 | 0.1− | 0.1+ | 2005 04 12 | 704 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.4− | 1.3− |
| 2003 10 27 | 691 | 0.3− | 0.2+ | 2005 04 12 | 704 | 0.1+ | 0.6+ | | | | |

**(141542)∗ 2002 GO$_{18}$**

Discovered 2002 Apr. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.58755 | | (2000.0) | | | |
| $n$ | 0.30524085 | $\omega$ | 266.38756 | | +0.14044784 | +0.98977034 |
| $a$ | 2.1846118 | $\Omega$ | 11.77557 | | −0.85260007 | +0.13378432 |
| $e$ | 0.1787716 | $i$ | 7.05958 | | −0.50333639 | +0.04956245 |
| $P$ | 3.23 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 26 | 691 | 0.1+ | 0.6− | 2002 05 11 | 704 | 0.7− | 0.9+ | 2005 04 09 | 691 | 0.1+ | 0.2+ |
| 1992 02 26 | 691 | 0.1− | 0.6− | 2002 05 11 | 704 | 1.2− | 0.1+ | 2005 04 09 | 691 | 0.3− | 0.1+ |
| 1992 02 26 | 691 | 0.6− | 0.3− | 2002 05 11 | 704 | 0.3− | 0.3− | 2006 10 03 | 691 | 0.4− | 0.1+ |
| 2002 03 16 | 608 | 0.9− | 0.7− | 2002 05 11 | 704 | 1.4− | 1.3+ | 2006 10 03 | 691 | 0.4− | 0.2+ |
| 2002 03 16 | 608 | 0.8− | 0.3− | 2002 05 17 | 644 | (0.7+ | 1.6+) | 2006 10 03 | 691 | 0.2− | 0.0 |
| 2002 03 16 | 608 | 0.9− | 0.9− | 2002 05 17 | 644 | 0.3+ | 1.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2002 04 04 | 644 | 0.4+ | 0.6+ | 2002 05 17 | 644 | 0.8+ | 1.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2002 04 04 | 644 | 0.2+ | 0.6+ | 2003 12 01 | 691 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.5+ |
| 2002 04 04 | 644 | 0.2+ | 0.4+ | 2003 12 01 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | (1.3+ | 1.7+) |
| 2002 04 09 | 704 | 0.6+ | 0.4− | 2003 12 01 | 691 | 0.3− | 0.0 | 2006 10 17 | 703 | (0.9+ | 1.6+) |
| 2002 04 09 | 704 | 1.2+ | 0.0 | 2003 12 19 | 691 | 0.2+ | 0.4− | 2006 10 17 | 703 | (0.1+ | 2.2+) |
| 2002 04 09 | 704 | 0.4+ | 0.1− | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | (0.3− | 1.8+) |
| 2002 04 12 | 704 | 0.7+ | 0.7+ | 2003 12 19 | 691 | 0.4− | 0.1+ | 2006 10 19 | 644 | 1.0− | 0.2+ |
| 2002 04 12 | 704 | 0.5+ | 0.4+ | 2005 03 04 | 704 | 0.8+ | 0.9+ | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 2002 04 12 | 704 | 0.7+ | 0.4+ | 2005 03 04 | 704 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.0 | 0.5+ |
| 2002 04 12 | 704 | 0.6+ | 0.9+ | 2005 03 04 | 704 | 0.2− | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2002 04 12 | 608 | (1.6− | 0.5+) | 2005 03 04 | 704 | 0.2+ | 0.6− | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2002 04 12 | 608 | (1.8− | 0.1+) | 2005 03 09 | 704 | 0.8+ | 0.9+ | 2006 10 20 | 691 | 0.3− | 0.4+ |
| 2002 04 12 | 608 | (1.6− | 0.2+) | 2005 03 09 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 04 14 | 704 | 0.6+ | 0.5+ | 2005 03 09 | 704 | 0.1+ | 0.7− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 04 14 | 704 | 0.4+ | 0.3+ | 2005 03 09 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 04 14 | 704 | 0.7+ | 0.3+ | 2005 03 10 | 699 | 0.3+ | 0.4− | 2006 10 21 | 703 | 0.7− | 0.9+ |
| 2002 04 14 | 704 | 0.3− | 0.7− | 2005 03 10 | 699 | 1.0+ | 0.6+ | 2006 10 21 | 703 | 1.1+ | 0.9+ |
| 2002 04 14 | 704 | 0.3+ | 0.1− | 2005 03 10 | 699 | 0.7− | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2002 04 18 | 608 | 0.2+ | 1.2+ | 2005 03 10 | 699 | 1.1+ | 0.4− | 2006 10 21 | 703 | 0.1+ | 1.1+ |
| 2002 04 18 | 608 | 0.4+ | 0.9+ | 2005 03 12 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2002 04 18 | 608 | 0.2+ | 0.8+ | 2005 03 12 | 704 | (1.7+ | 1.2+) | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2002 05 08 | 608 | 0.4+ | 0.5− | 2005 03 12 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2002 05 08 | 608 | 0.9+ | 0.7− | 2005 03 12 | 704 | 0.5+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2002 05 08 | 608 | 0.5+ | 0.2− | 2005 03 16 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2002 05 09 | 644 | 0.7+ | 0.9+ | 2005 03 16 | 704 | 1.2− | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2002 05 09 | 644 | 0.7+ | 0.9+ | 2005 03 16 | 704 | 0.3+ | 1.4+ | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2002 05 09 | 644 | 0.9+ | 1.0+ | 2005 03 16 | 704 | 0.4+ | 1.0+ | 2006 11 13 | 691 | 0.1+ | 0.8+ |
| 2002 05 11 | 704 | 0.9− | 1.2+ | 2005 04 09 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |

**(141543)∗ 2002 GX$_{22}$**

Discovered 2002 Apr. 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 126.37929 | | (2000.0) | | | |
| $n$ | 0.29661504 | $\omega$ | 304.32961 | | −0.91310571 | +0.40001009 |
| $a$ | 2.2267627 | $\Omega$ | 259.36117 | | −0.34271561 | −0.85787058 |
| $e$ | 0.0998794 | $i$ | 4.60639 | | −0.22087094 | −0.32256781 |
| $P$ | 3.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 608 | 1.4− | 0.4− | 2002 05 30 | 644 | 0.8+ | 0.9+ | 2005 03 10 | 703 | 1.2− | 0.5+ |
| 2002 04 14 | 608 | 1.4− | 0.3− | 2002 05 30 | 644 | 0.7+ | 0.4+ | 2005 03 17 | 703 | 0.1− | 0.4− |
| 2002 04 14 | 608 | 1.4− | 0.2− | 2002 05 30 | 644 | 0.6+ | 0.8+ | 2005 03 17 | 703 | 0.9− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 18 | 608 | 0.0 | 0.4− | 2003 09 19 | 644 | 0.0 | 0.8+ | 2005 03 17 | 703 | 0.4− | 0.5+ |
| 2002 04 18 | 608 | 0.3+ | 0.5− | 2003 09 19 | 644 | 0.0 | 0.6+ | 2005 03 17 | 703 | 0.6+ | 0.5+ |
| 2002 04 18 | 608 | 0.1− | 0.7− | 2003 09 19 | 644 | 0.0 | 0.7+ | 2006 08 29 | 703 | 1.2− | 0.4− |
| 2002 04 20 | 644 | 0.1− | 0.2+ | 2003 10 01 | 691 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.6− | 1.1− |
| 2002 04 20 | 644 | 0.1+ | 0.5+ | 2003 10 01 | 691 | 0.2− | 0.6+ | 2006 08 29 | 703 | 0.0 | 0.3+ |
| 2002 04 20 | 644 | 0.0 | 0.3+ | 2003 10 01 | 691 | 0.4− | 0.7+ | 2006 08 29 | 703 | (1.0− | 2.0+) |
| 2002 05 01 | 644 | 0.1+ | 0.3− | 2003 10 16 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 2002 05 01 | 644 | 0.7+ | 0.4− | 2003 10 16 | 691 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.4+ | 0.0 |
| 2002 05 01 | 644 | 0.3− | 0.5− | 2003 10 16 | 691 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.2+ |
| 2002 05 11 | 704 | 0.1+ | 0.8+ | 2005 02 14 | 703 | 0.7+ | 0.6+ | 2006 09 17 | 691 | 0.2+ | 0.3+ |
| 2002 05 11 | 704 | 0.7+ | 0.1+ | 2005 02 14 | 703 | 0.3+ | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2002 05 11 | 704 | 0.6− | 0.0 | 2005 02 14 | 703 | 0.9+ | 1.2+ | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2002 05 11 | 704 | 0.6− | 0.6+ | 2005 02 14 | 703 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2002 05 11 | 704 | 0.4+ | 0.1+ | 2005 03 03 | 703 | 0.3+ | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2002 05 17 | 644 | 0.7+ | 1.1+ | 2005 03 03 | 703 | 0.3+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2002 05 17 | 644 | 1.2+ | 1.1+ | 2005 03 03 | 703 | 0.2− | 0.8+ | 2006 09 23 | 691 | 0.2− | 0.1− |
| 2002 05 17 | 644 | 1.0+ | 1.2+ | 2005 03 03 | 703 | 0.5+ | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.4− |
| 2002 05 28 | 644 | 0.5+ | 1.3+ | 2005 03 10 | 703 | 0.5+ | 1.3+ | 2006 09 23 | 691 | 0.2+ | 0.2+ |
| 2002 05 28 | 644 | 0.7+ | 0.7+ | 2005 03 10 | 703 | 1.2+ | 0.0 | | | | |
| 2002 05 28 | 644 | 0.5+ | 0.5+ | 2005 03 10 | 703 | 0.1+ | 0.3+ | | | | |

**(141544)∗ 2002 GY$_{22}$**

Discovered 2002 Apr. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.36055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17817030 | $\omega$ | 351.63200 | | −0.14251696 | +0.98704360 | |
| $a$ | 3.1278494 | $\Omega$ | 270.15156 | | −0.90379613 | −0.16013650 | |
| $e$ | 0.0938403 | $i$ | 4.22739 | | −0.40353620 | +0.01006178 | |
| $P$ | 5.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 27 | 691 | 0.2+ | 0.1− | 2002 04 18 | 644 | 0.4+ | 1.3+ | 2005 11 21 | 691 | 0.2− | 0.1− |
| 2000 12 27 | 691 | 0.3− | 0.3+ | 2002 04 30 | 644 | 0.3+ | 0.2− | 2005 11 25 | 691 | 0.1− | 0.2+ |
| 2000 12 27 | 691 | 0.0 | 0.0 | 2002 04 30 | 644 | 0.0 | 0.1+ | 2005 11 25 | 691 | 0.1− | 0.0 |
| 2002 03 23 | 704 | 0.3− | 0.0 | 2002 04 30 | 644 | 0.0 | 0.3+ | 2005 11 25 | 691 | 0.2− | 0.1− |
| 2002 03 23 | 704 | 0.2+ | 0.6+ | 2004 09 10 | 704 | 1.4− | 0.4+ | 2005 11 26 | G96 | 0.1− | 0.0 |
| 2002 03 23 | 704 | 0.7− | 0.3+ | 2004 09 10 | 704 | 0.7− | 1.3+ | 2005 11 26 | G96 | 0.0 | 0.1− |
| 2002 03 23 | 704 | 0.4− | 0.6+ | 2004 09 10 | 704 | 1.2− | 1.1+ | 2005 11 26 | G96 | 0.0 | 0.1− |
| 2002 04 05 | 699 | 0.7+ | 1.1− | 2004 09 10 | 704 | 1.0− | 1.5+ | 2005 11 26 | G96 | 0.2− | 0.2− |
| 2002 04 05 | 644 | 0.5+ | 1.5+ | 2004 09 11 | 644 | 0.5− | 0.7+ | 2005 12 04 | 704 | 1.8+ | 0.1− |
| 2002 04 05 | 699 | 0.3+ | 1.3+ | 2004 09 11 | 644 | 0.6− | 0.8+ | 2005 12 04 | 704 | 1.2+ | 0.5− |
| 2002 04 05 | 644 | 0.3+ | 1.2+ | 2004 09 11 | 644 | 0.6− | 0.7+ | 2005 12 04 | 704 | 0.3+ | 1.7+ |
| 2002 04 05 | 699 | 0.5+ | 0.2+ | 2004 09 13 | 699 | 0.5− | 1.1+ | 2005 12 04 | 704 | 0.1+ | 0.1+ |
| 2002 04 05 | 644 | 0.4+ | 0.9+ | 2004 09 13 | 699 | 0.8− | 0.3+ | 2005 12 25 | G96 | 0.2+ | 0.2− |
| 2002 04 05 | 699 | 0.7+ | 0.3− | 2004 09 13 | 699 | 0.1− | 1.5+ | 2005 12 25 | G96 | 0.2− | 0.2− |
| 2002 04 10 | 704 | 1.0+ | 2.0+ | 2004 09 13 | 699 | 0.3+ | 1.1+ | 2005 12 25 | G96 | 0.5− | 0.3− |
| 2002 04 10 | 704 | 0.1+ | 1.7+ | 2004 09 18 | 704 | 0.4− | 0.6+ | 2005 12 25 | G96 | 0.3− | 0.4− |
| 2002 04 10 | 704 | 1.0+ | 1.2+ | 2004 09 18 | 704 | 0.0 | 1.5+ | 2006 01 21 | G96 | 0.3+ | 0.1+ |
| 2002 04 10 | 704 | 1.0+ | 1.2+ | 2004 09 18 | 704 | 1.2− | 0.9+ | 2006 01 21 | G96 | 0.3+ | 0.4+ |
| 2002 04 14 | 704 | 0.6− | 1.3− | 2004 09 18 | 704 | 0.1+ | 1.1+ | 2006 01 21 | G96 | 0.2+ | 0.1− |
| 2002 04 14 | 704 | 0.2− | 0.3− | 2004 09 18 | 704 | 0.3+ | 0.1+ | 2006 01 21 | G96 | 0.5− | 0.1− |
| 2002 04 14 | 704 | 0.3+ | 0.3− | 2004 10 05 | 699 | 0.6+ | 0.8+ | 2006 02 20 | G96 | 0.2+ | 0.1+ |
| 2002 04 15 | 644 | 0.3+ | 0.8+ | 2004 10 05 | 699 | 0.1− | 0.2+ | 2006 02 20 | G96 | 0.1− | 0.3+ |
| 2002 04 15 | 644 | 0.3+ | 0.7+ | 2004 10 05 | 699 | 0.4+ | 0.6+ | 2006 02 20 | G96 | 0.0 | 0.1+ |
| 2002 04 15 | 644 | 0.0 | 0.7+ | 2004 10 05 | 699 | 0.8+ | 0.6+ | 2006 02 20 | G96 | 0.7− | 0.1+ |
| 2002 04 18 | 644 | 0.5+ | 1.5+ | 2005 11 21 | 691 | 0.1+ | 0.1+ | | | | |
| 2002 04 18 | 644 | 0.6+ | 1.2+ | 2005 11 21 | 691 | 0.3− | 0.1− | | | | |

**(141545)∗ 2002 GH$_{26}$**

Discovered 2002 Apr. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.62530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30560667 | $\omega$ | 28.35032 | | +0.36634061 | +0.92412846 | |
| $a$ | 2.1828681 | $\Omega$ | 263.31384 | | −0.87301329 | +0.30100880 | |
| $e$ | 0.1604858 | $i$ | 6.27406 | | −0.32193532 | +0.23533018 | |
| $P$ | 3.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 15 | 691 | 0.2− | 0.8+ | 2003 11 19 | 691 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.6− | 0.1+ |
| 1996 05 15 | 691 | 0.0 | 0.4+ | 2003 11 19 | 691 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.3− | 0.4+ |
| 1996 05 15 | 691 | 0.2− | 0.4+ | 2003 11 20 | 704 | 0.8+ | 0.7− | 2006 10 19 | 703 | 0.8− | 0.8− |
| 2002 04 14 | 704 | 0.0 | 0.4+ | 2003 11 20 | 704 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.3− |
| 2002 04 14 | 704 | 0.1+ | 0.9− | 2003 11 20 | 704 | 0.5− | 0.1+ | 2006 10 19 | 703 | 1.0− | 0.5− |
| 2002 04 14 | 704 | 0.5+ | 0.0 | 2003 11 20 | 704 | 1.1− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2002 04 21 | 704 | 0.5− | 0.0 | 2003 11 21 | 704 | 0.4+ | 0.1+ | 2006 10 19 | A50 | 0.0 | 0.5+ |
| 2002 04 21 | 704 | 0.8− | 1.2+ | 2003 11 21 | 704 | 0.2+ | 0.6+ | 2006 10 19 | A50 | 0.1+ | 0.1+ |
| 2002 04 21 | 704 | 0.5− | 1.0+ | 2003 11 21 | 704 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 04 21 | 704 | 0.7− | 1.4+ | 2003 11 21 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 04 21 | 704 | 0.1− | 1.1+ | 2003 11 21 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.5+ |
| 2002 05 01 | 644 | 0.1− | 0.0 | 2003 11 24 | 704 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 05 01 | 644 | 0.2+ | 0.1− | 2003 11 24 | 704 | 0.7− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 05 01 | 644 | 0.4+ | 0.3− | 2003 11 24 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 05 09 | 704 | 0.2+ | 0.2+ | 2003 11 24 | 704 | 0.9− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 05 09 | 704 | 0.9− | 0.2− | 2003 12 01 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 05 09 | 704 | 0.1− | 0.1+ | 2003 12 01 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2002 05 09 | 704 | 0.5− | 0.1+ | 2003 12 01 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.1− | 0.8+ |
| 2002 05 09 | 704 | 0.3− | 0.2− | 2003 12 19 | 704 | 1.1+ | 0.7− | 2006 11 14 | 703 | 1.2− | 0.3− |
| 2002 05 17 | 644 | 0.2+ | 0.3+ | 2003 12 19 | 704 | 0.5− | 0.6− | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 2002 05 17 | 644 | 0.2+ | 0.2+ | 2003 12 19 | 704 | 0.5− | 0.3− | 2006 11 14 | 703 | 0.8− | 0.6+ |
| 2002 05 17 | 644 | 0.6+ | 0.2+ | 2003 12 19 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 704 | (0.3− | 2.5+) |
| 2002 05 21 | 704 | 0.1− | 0.7− | 2003 12 22 | 704 | 0.7− | 1.0+ | 2006 11 16 | 704 | (0.5+ | 2.0+) |
| 2002 05 21 | 704 | 0.6+ | 0.2− | 2003 12 22 | 704 | 0.2− | 0.6+ | 2006 11 16 | 704 | (1.8− | 3.8+) |
| 2002 05 21 | 704 | 0.3− | 0.4+ | 2003 12 22 | 704 | 0.3− | 0.8+ | 2006 11 16 | 704 | (1.6− | 3.0+) |
| 2002 05 21 | 704 | 0.3+ | 1.1+ | 2003 12 22 | 704 | 0.3− | 1.1+ | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2002 05 28 | 608 | 0.2+ | 0.3+ | 2003 12 22 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2002 05 28 | 608 | 0.2− | 1.1+ | 2005 03 10 | E12 | (0.9+ | 1.9+) | 2006 11 19 | 704 | 0.4+ | 0.9+ |
| 2002 05 28 | 608 | 0.5+ | 0.3+ | 2005 03 10 | E12 | 1.3− | 0.9+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 06 08 | 704 | 0.7+ | 0.5+ | 2005 03 10 | E12 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.3− | 1.1+ |
| 2002 06 08 | 704 | 0.4+ | 0.4+ | 2005 03 10 | E12 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.7− |
| 2002 06 08 | 704 | 1.2+ | 0.8+ | 2005 04 01 | 699 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.4+ | 0.9+ |
| 2002 06 08 | 704 | 0.6+ | 1.4+ | 2005 04 01 | 699 | 0.8+ | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.6+ |
| 2003 09 21 | 599 | 0.1− | 0.0 | 2005 04 01 | 699 | 0.5+ | 0.0 | 2006 11 22 | 704 | 1.2+ | 0.1+ |
| 2003 09 21 | 599 | 0.2+ | 0.7+ | 2005 04 01 | 699 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2003 09 21 | 599 | 0.6− | 0.9+ | 2005 04 05 | 703 | 0.1− | 0.4+ | 2006 11 23 | 703 | 0.7+ | 0.1− |
| 2003 10 24 | 704 | (2.2+ | 0.5−) | 2005 04 05 | 703 | 0.4− | 1.2+ | 2006 11 23 | 703 | 0.7+ | 0.4+ |
| 2003 10 24 | 704 | 0.9+ | 1.0+ | 2005 04 05 | 703 | 1.3+ | 0.4+ | 2006 11 23 | 703 | 0.8+ | 0.1− |
| 2003 10 24 | 704 | (1.6+ | 2.4−) | 2005 04 05 | 703 | (0.8− | 1.8+) | 2006 11 23 | 703 | 1.4− | 0.0 |
| 2003 10 29 | 704 | 0.3− | 0.6+ | 2005 04 09 | 699 | 0.3+ | 0.4+ | 2006 11 25 | G96 | 0.9+ | 0.6+ |
| 2003 10 29 | 704 | 0.1− | 0.2+ | 2005 04 09 | 699 | (0.3+ | 2.2+) | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2003 10 29 | 704 | 0.2+ | 0.0 | 2005 04 09 | 699 | 0.7+ | 0.0 | 2006 11 25 | G96 | 0.7− | 0.0 |
| 2003 10 29 | 704 | (1.0+ | 2.9−) | 2005 04 09 | 699 | 0.7+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2003 10 29 | 704 | (0.8− | 1.6−) | 2006 09 28 | 703 | 0.2+ | 0.3+ | | | | |
| 2003 11 19 | 691 | 0.1− | 0.4+ | 2006 09 28 | 703 | 1.1− | 0.0 | | | | |

**(141546)∗ 2002 GD$_{45}$ = 2004 RW$_{337}$**

Discovered 2002 Apr. 4 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 69335)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.90096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21370204 | $\omega$ | 75.69730 | | +0.02950032 | −0.99935297 | |
| $a$ | 2.7707475 | $\Omega$ | 12.66595 | | +0.87710935 | +0.01600833 | |
| $e$ | 0.0553449 | $i$ | 5.38460 | | +0.47938389 | +0.03220836 | |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.1+ | 0.0 | 2002 04 14 | 704 | 0.5+ | 0.5+ | 2004 10 12 | 699 | 0.8− | 0.1+ |
| 1995 11 18 | 691 | 0.1− | 0.1+ | 2002 04 14 | 704 | 1.0+ | 0.1+ | 2004 10 20 | 704 | 0.6− | 1.1+ |
| 1995 11 18 | 691 | 0.1− | 0.1+ | 2002 04 14 | 704 | 0.3− | 0.2− | 2004 10 20 | 704 | 0.5− | 0.9+ |
| 1999 09 08 | 703 | 0.1+ | 2.0+ | 2003 07 07 | 644 | 0.4− | 0.4+ | 2004 10 20 | 704 | 1.7− | 1.5+ |
| 1999 09 08 | 703 | 0.3+ | 0.8+ | 2003 07 07 | 644 | 0.3− | 0.4+ | 2004 11 04 | 699 | 0.7− | 0.6+ |
| 1999 09 08 | 703 | 1.9− | 1.4+ | 2003 07 07 | 644 | 0.5− | 0.1− | 2004 11 04 | 699 | 0.9− | 1.0+ |
| 1999 09 08 | 703 | 1.3− | 0.8+ | 2004 09 07 | 691 | 0.0 | 0.2+ | 2004 11 04 | 699 | 1.6+ | 0.1− |
| 2002 03 21 | 691 | 0.2− | 0.7+ | 2004 09 07 | 691 | 0.2− | 0.5+ | 2004 11 04 | 699 | 0.6− | 0.5− |
| 2002 03 21 | 691 | 0.1− | 0.6+ | 2004 09 07 | 691 | 0.1+ | 0.2+ | 2006 01 04 | 703 | 1.0+ | 0.7− |
| 2002 03 21 | 691 | 0.3+ | 0.8+ | 2004 09 15 | 691 | 0.1− | 0.3+ | 2006 01 04 | 703 | 0.3− | 0.4− |
| 2002 04 04 | 291 | 0.3+ | 0.2+ | 2004 09 15 | 691 | 0.0 | 0.1+ | 2006 01 04 | 703 | 0.1− | 1.2+ |
| 2002 04 04 | 291 | 0.4+ | 0.2+ | 2004 09 15 | 691 | 0.1+ | 0.3+ | 2006 01 04 | 703 | 0.9− | 1.0− |
| 2002 04 04 | 291 | 0.4+ | 0.2+ | 2004 09 22 | 691 | 0.2+ | 0.2+ | 2006 01 26 | 703 | 0.1− | 1.5+ |
| 2002 04 04 | 644 | 0.4+ | 0.2− | 2004 09 22 | 691 | 0.5+ | 0.2+ | 2006 01 26 | 703 | 0.0 | 0.0 |
| 2002 04 04 | 644 | 0.4+ | 0.3− | 2004 09 22 | 691 | 0.2− | 0.1+ | 2006 01 26 | 703 | 0.3− | 0.4− |
| 2002 04 04 | 644 | 0.5+ | 0.2− | 2004 10 08 | 691 | 0.1− | 0.1+ | 2006 01 26 | 703 | 0.6− | 1.4− |
| 2002 04 05 | 699 | 0.8+ | 1.1+ | 2004 10 08 | 691 | 0.1− | 0.0 | 2006 01 27 | 691 | 0.3− | 0.0 |
| 2002 04 05 | 699 | 1.5− | 0.7+ | 2004 10 08 | 691 | 0.0 | 0.0 | 2006 01 27 | 691 | 0.1− | 0.2+ |
| 2002 04 05 | 699 | 0.8− | 0.3− | 2004 10 09 | 704 | 1.4− | 0.2− | 2006 01 27 | 691 | 0.0 | 0.3+ |
| 2002 04 05 | 699 | 1.3+ | 0.9+ | 2004 10 09 | 704 | 0.4− | 0.1+ | 2006 01 27 | 699 | 0.0 | 0.0 |
| 2002 04 09 | 807 | 0.0 | 0.1− | 2004 10 09 | 704 | 0.9− | 0.1+ | 2006 01 27 | 699 | 1.6+ | 0.0 |
| 2002 04 09 | 807 | 0.3+ | 0.1− | 2004 10 09 | 704 | 0.7− | 1.0+ | 2006 01 27 | 699 | 1.7+ | 0.4− |
| 2002 04 12 | 704 | 0.6+ | 0.2+ | 2004 10 12 | 699 | 0.3− | 0.9+ | 2006 01 27 | 699 | 0.5+ | 0.0 |
| 2002 04 12 | 704 | 0.7+ | 0.3+ | 2004 10 12 | 691 | 0.2+ | 0.4− | 2006 01 31 | 691 | 0.0 | 0.1+ |
| 2002 04 12 | 704 | 0.3+ | 0.5+ | 2004 10 12 | 691 | 0.0 | 0.1− | 2006 01 31 | 691 | 0.2− | 0.4+ |
| 2002 04 12 | 704 | 0.8+ | 0.9+ | 2004 10 12 | 699 | 0.5+ | 0.2− | 2006 01 31 | 691 | 0.1− | 0.1+ |
| 2002 04 14 | 704 | 0.3+ | 0.1+ | 2004 10 12 | 691 | 0.3+ | 0.1− | | | | |
| 2002 04 14 | 704 | 0.1+ | 0.3− | 2004 10 12 | 699 | 0.1+ | 0.0 | | | | |

**(141547)∗ 2002 GS$_{46}$**

Discovered 2002 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.01104 | | (2000.0) | | | |
| $n$ | 0.30406846 | $\omega$ | 216.64031 | | −0.30849725 | +0.95081904 |
| $a$ | 2.1902236 | $\Omega$ | 35.41497 | | −0.86095029 | −0.26667542 |
| $e$ | 0.0625388 | $i$ | 2.74929 | | −0.40446761 | −0.15756706 |
| $P$ | 3.24 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 26 | 691 | 0.1+ | 0.4− | 2002 04 20 | 644 | 0.3− | 0.3+ | 2005 03 04 | 704 | 0.6+ | 0.1+ |
| 1992 02 26 | 691 | 0.5− | 0.4− | 2003 09 29 | 704 | 0.1− | 0.2+ | 2005 03 04 | 704 | (2.0+ | 0.1+) |
| 2002 04 05 | 699 | 1.5+ | 1.2+ | 2003 09 29 | 704 | (1.7− | 0.9+) | 2005 03 04 | 704 | (0.7+ | 1.6+) |
| 2002 04 05 | 699 | (1.5+ | 1.5+) | 2003 09 29 | 704 | 0.9− | 0.4− | 2005 03 12 | 704 | 1.6+ | 0.6− |
| 2002 04 05 | 699 | 0.3− | 0.5− | 2003 09 29 | 704 | (2.1− | 1.0+) | 2005 03 12 | 704 | 0.9+ | 1.3+ |
| 2002 04 05 | 644 | 0.4+ | 0.7+ | 2003 09 30 | 691 | 0.1+ | 0.4+ | 2005 03 12 | 704 | 0.5− | 0.5+ |
| 2002 04 05 | 699 | (1.8+ | 0.7+) | 2003 09 30 | 691 | 0.2+ | 0.5+ | 2005 03 12 | 704 | 0.4+ | 0.5+ |
| 2002 04 05 | 644 | 0.4+ | 0.5+ | 2003 09 30 | 691 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 2002 04 05 | 644 | 0.4+ | 0.3+ | 2003 10 01 | 699 | 0.4+ | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.1+ |
| 2002 04 06 | 291 | 0.1+ | 0.6+ | 2003 10 01 | 699 | (0.3− | 1.7+) | 2006 08 16 | 644 | 0.3− | 0.4+ |
| 2002 04 06 | 291 | 0.0 | 0.4+ | 2003 10 01 | 699 | (0.2− | 1.9+) | 2006 08 17 | 644 | 0.1+ | 0.5+ |
| 2002 04 06 | 291 | 0.1+ | 0.4+ | 2003 10 01 | 699 | 0.9− | 0.3− | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2002 04 10 | 704 | 0.3+ | 1.1+ | 2003 10 17 | 291 | 0.4− | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 2002 04 10 | 704 | 0.3+ | 0.4+ | 2003 10 17 | 291 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.2− | 0.7+ |
| 2002 04 10 | 704 | 0.4+ | 0.9+ | 2003 10 17 | 291 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.1− | 1.2+ |
| 2002 04 17 | 704 | 0.8+ | 0.1+ | 2003 10 19 | 691 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.5+ | 0.6+ |
| 2002 04 17 | 704 | 0.1− | 0.2− | 2003 10 19 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.7− |
| 2002 04 17 | 704 | 1.0+ | 1.0+ | 2003 10 19 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 1.2− | 0.4+ |
| 2002 04 17 | 704 | 0.1+ | 1.3+ | 2003 10 21 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 1.2− | 0.5+ |
| 2002 04 17 | 704 | 1.2− | 0.4− | 2003 10 21 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.8+ | 0.3− |
| 2002 04 18 | 691 | 0.1− | 0.3− | 2003 10 21 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | (2.2− | 0.6−) |
| 2002 04 18 | 691 | 0.0 | 0.1− | 2005 02 09 | 691 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2002 04 18 | 691 | 0.1− | 0.3− | 2005 02 09 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 2002 04 20 | 644 | 0.1+ | 0.4+ | 2005 02 09 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2002 04 20 | 644 | 1.4+ | 0.4+ | 2005 03 04 | 704 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.4− | 0.1− |

**(141548)∗ 2002 GW$_{46}$ = 2004 TS$_{350}$**

Discovered 2002 Apr. 5 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 72593)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 159.47933 | | (2000.0) | | | |
| $n$ | 0.22817794 | $\omega$ | 10.80781 | | +0.70556016 | −0.70812675 |
| $a$ | 2.6522855 | $\Omega$ | 34.32734 | | +0.64651919 | +0.62749220 |
| $e$ | 0.0414892 | $i$ | 2.76752 | | +0.29016857 | +0.32374378 |
| $P$ | 4.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 07 | 691 | 0.1+ | 0.7+ | 2002 04 18 | 691 | 0.4− | 0.4− | 2006 01 21 | 691 | 0.8− | 0.6+ |
| 1991 11 07 | 691 | 0.5+ | 0.3+ | 2004 10 10 | 695 | 0.1− | 0.2− | 2006 01 25 | 691 | 0.6+ | 0.8+ |
| 1991 11 07 | 691 | 0.6+ | 0.2+ | 2004 10 10 | 695 | 0.2+ | 0.2+ | 2006 01 25 | 691 | 0.1− | 0.9+ |
| 1995 09 19 | 691 | 0.7− | 0.1− | 2004 10 13 | 691 | 0.2− | 0.0 | 2006 01 25 | 691 | 0.1− | 0.2+ |
| 1995 09 19 | 691 | 0.4− | 0.0 | 2004 10 13 | 691 | 0.1+ | 0.1− | 2006 02 24 | 691 | 0.1− | 0.5− |
| 1995 09 19 | 691 | 0.4− | 0.4+ | 2004 10 13 | 691 | 0.1− | 0.2− | 2006 02 24 | 691 | 0.1+ | 0.4− |
| 2000 12 17 | 691 | 0.7− | 0.8− | 2004 11 04 | 691 | 0.2− | 0.6+ | 2006 02 24 | 691 | 0.2+ | 0.5− |
| 2000 12 17 | 691 | 0.8− | 1.1− | 2004 11 04 | 691 | 0.1+ | 0.5+ | 2006 03 04 | G96 | 0.5+ | 0.2− |
| 2000 12 17 | 691 | 0.5− | 0.9− | 2004 11 04 | 691 | 0.2+ | 0.4+ | 2006 03 04 | G96 | 0.2− | 0.2+ |
| 2002 04 05 | 644 | 0.1− | 0.4+ | 2004 11 10 | 691 | 0.0 | 0.1− | 2006 03 04 | G96 | 0.1− | 0.3− |
| 2002 04 05 | 644 | 0.3+ | 0.6+ | 2004 11 10 | 691 | 0.4+ | 0.2+ | 2006 03 04 | G96 | 0.2− | 0.3− |
| 2002 04 05 | 644 | 0.5+ | 0.7+ | 2004 11 10 | 691 | 0.3+ | 0.3+ | 2006 03 08 | 691 | 0.1+ | 0.1+ |
| 2002 04 06 | 291 | 1.0+ | 0.8+ | 2004 12 13 | 691 | 0.0 | 0.4+ | 2006 03 08 | 691 | 0.3+ | 0.1− |
| 2002 04 06 | 291 | 0.3− | 0.6+ | 2004 12 13 | 691 | 0.0 | 0.3+ | 2006 03 08 | 691 | 0.4+ | 0.2− |
| 2002 04 06 | 291 | 0.2− | 0.6+ | 2004 12 13 | 691 | 0.2− | 0.3+ | 2006 03 29 | 691 | 0.7+ | 0.2+ |
| 2002 04 18 | 691 | 0.1+ | 0.3− | 2006 01 21 | 691 | 0.2+ | 0.2− | 2006 03 29 | 691 | 0.0 | 0.0 |
| 2002 04 18 | 691 | 0.4+ | 0.3− | 2006 01 21 | 691 | 0.2− | 0.8+ | 2006 03 29 | 691 | 0.2− | 0.2− |

**(141549)∗ 2002 GT$_{50}$**

Discovered 2002 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.37387 | | (2000.0) | | | |
| $n$ | 0.29111364 | $\omega$ | 69.18875 | | −0.44278296 | +0.89656222 |
| $a$ | 2.2547290 | $\Omega$ | 174.49238 | | −0.85916147 | −0.42076240 |
| $e$ | 0.1275204 | $i$ | 6.53804 | | −0.25648551 | −0.13832999 |
| $P$ | 3.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 704 | 0.2− | 1.6+ | 2002 04 14 | 644 | 0.3+ | 1.2+ | 2006 07 21 | 703 | 0.1− | 0.3− |
| 2002 03 16 | 704 | 0.7− | 0.6+ | 2002 04 14 | 644 | 0.2+ | 1.3+ | 2006 07 21 | 703 | 0.1− | 0.4− |
| 2002 03 16 | 704 | 0.6− | 0.8+ | 2002 04 17 | 704 | 0.1+ | 1.0+ | 2006 07 21 | 703 | (2.0+ | 2.0+) |
| 2002 03 16 | 704 | 0.4− | 1.2+ | 2002 04 17 | 704 | 0.7+ | 0.3+ | 2006 08 14 | 644 | 0.3+ | 0.2+ |
| 2002 03 23 | 608 | (0.0 | 2.2+) | 2002 04 17 | 704 | 0.4+ | 0.2− | 2006 08 14 | 644 | 0.4+ | 0.2+ |
| 2002 03 23 | 608 | (0.0 | 3.1+) | 2002 04 17 | 704 | 0.6+ | 0.2+ | 2006 08 14 | 644 | 0.2+ | 0.2+ |
| 2002 03 23 | 608 | (0.3− | 2.5+) | 2002 04 17 | 704 | 0.8+ | 1.2− | 2006 08 17 | 644 | 0.3+ | 0.1+ |
| 2002 04 05 | 699 | 0.1− | 0.9+ | 2003 09 16 | 691 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2002 04 05 | 699 | 0.1− | 1.3+ | 2003 09 16 | 691 | 0.4− | 0.1+ | 2006 08 17 | 644 | 0.2+ | 0.2+ |
| 2002 04 05 | 699 | 0.5+ | 0.5+ | 2003 09 16 | 691 | 0.6− | 0.0 | 2006 08 19 | 699 | 0.7+ | 0.7+ |
| 2002 04 05 | 699 | 0.2+ | 0.3+ | 2003 10 01 | 691 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.4− | 0.7+ |
| 2002 04 08 | 644 | 0.2+ | 0.4+ | 2003 10 01 | 691 | 0.1+ | 0.4+ | 2006 08 19 | 699 | 0.2+ | 1.3+ |
| 2002 04 08 | 644 | 0.1+ | 0.4+ | 2003 10 01 | 691 | 0.1− | 0.3+ | 2006 08 19 | 699 | 1.2+ | 0.5+ |
| 2002 04 08 | 644 | 0.5+ | 0.4+ | 2003 11 20 | 645 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.8+ | 0.3+ |
| 2002 04 10 | 704 | 0.4− | 0.7− | 2003 11 20 | 645 | 0.0 | 0.2+ | 2006 08 28 | 703 | 1.3− | 0.7+ |
| 2002 04 10 | 704 | 1.0+ | 0.9− | 2005 02 02 | 703 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.2+ |
| 2002 04 10 | 704 | 0.9+ | 0.4+ | 2005 02 02 | 703 | 0.4− | 0.6+ | 2006 08 28 | 703 | 1.1− | 0.0 |
| 2002 04 10 | 704 | 0.0 | 0.6+ | 2005 02 02 | 703 | 0.8+ | 1.3+ | 2006 09 27 | G96 | 0.2+ | 0.3+ |
| 2002 04 12 | 704 | 0.3− | 0.4+ | 2005 02 02 | 703 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.7+ | 0.2+ |
| 2002 04 12 | 704 | 0.5− | 0.1+ | 2006 07 21 | 703 | 0.8− | 0.9− | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2002 04 12 | 704 | 0.4+ | 0.2+ | 2006 07 21 | 703 | 1.6− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2002 04 12 | 704 | 0.5− | 0.4+ | 2006 07 21 | 703 | 1.9− | 0.2+ | 2006 09 28 | G96 | 0.5+ | 0.0 |
| 2002 04 12 | 704 | 0.2+ | 0.2+ | 2006 07 21 | 703 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.2+ |
| 2002 04 14 | 644 | 0.1+ | 1.3+ | 2006 07 21 | 703 | 0.1+ | 0.9− | 2006 09 28 | G96 | 0.1+ | 0.2− |

**(141550)∗ 2002 GW$_{52}$**

Discovered 2002 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.80715 | | | (2000.0) | | |
| $n$ | 0.28783868 | $\omega$ | 119.31310 | | +0.20860071 | +0.97787068 |
| $a$ | 2.2717992 | $\Omega$ | 162.70536 | | −0.91488895 | +0.20088018 |
| $e$ | 0.2298694 | $i$ | 3.07717 | | −0.34563557 | +0.05844728 |
| $P$ | 3.42 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.0 | 1.0− | 2002 05 08 | 704 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 0.5+ | 1.2− | 2002 05 08 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.0 | 0.3− |
| 1999 09 07 | 704 | 0.5+ | 0.5− | 2002 05 08 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 2002 04 05 | 699 | (0.7+ | 2.0+) | 2002 05 19 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 1.0− | 0.3− |
| 2002 04 05 | 699 | 0.0 | 0.3− | 2002 05 19 | 644 | 0.1+ | 0.0 | 2006 09 19 | 703 | (1.2+ | 2.1−) |
| 2002 04 05 | 699 | 0.2− | 0.6+ | 2002 05 19 | 644 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.2+ |
| 2002 04 05 | 699 | 1.4− | 0.8+ | 2005 03 08 | G96 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2002 04 08 | 644 | 0.3+ | 0.2+ | 2005 03 08 | G96 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2002 04 08 | 644 | 0.3+ | 0.4+ | 2005 03 08 | G96 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2002 04 08 | 644 | 0.3+ | 0.3+ | 2005 03 08 | G96 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 04 09 | 644 | 0.2+ | 0.6+ | 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 09 27 | 691 | (3.3− | 0.6+) |
| 2002 04 09 | 704 | 0.6− | 0.8+ | 2005 04 02 | G96 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 1.1+ |
| 2002 04 09 | 704 | 0.2− | 0.5+ | 2005 04 02 | G96 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.9− | 0.7+ |
| 2002 04 09 | 644 | 0.3+ | 0.7+ | 2005 04 02 | G96 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 1.4− | 0.8+ |
| 2002 04 09 | 704 | 0.3− | 0.5− | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.8− | 0.1+ |
| 2002 04 09 | 704 | (1.7+ | 0.6−) | 2006 07 21 | G96 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 04 09 | 644 | 0.3+ | 0.8+ | 2006 07 21 | G96 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2002 04 10 | 704 | (1.8+ | 1.0+) | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 04 10 | 704 | 0.5− | 0.2− | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.8+ | 1.4+ |
| 2002 04 10 | 704 | 0.6− | 0.4− | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 10 17 | 703 | (2.7− | 1.2+) |
| 2002 04 14 | 644 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.4+ | 2006 10 17 | 703 | (0.4+ | 3.4+) |
| 2002 04 14 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2002 04 14 | 644 | (1.4+ | 1.6−) | 2006 09 06 | 644 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2002 05 02 | 699 | 0.5+ | 0.6+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2002 05 02 | 699 | 0.1+ | 0.5+ | 2006 09 06 | 644 | 0.5− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2002 05 02 | 699 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2002 05 02 | 699 | 1.0+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.2+ | | | | |

**(141551)∗ 2002 GO$_{55}$ = 2005 CU$_{39}$**

Discovered 2002 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 75324)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.25338 | | | (2000.0) | | |
| $n$ | 0.29223773 | $\omega$ | 288.00515 | | −0.34353411 | +0.93862463 |
| $a$ | 2.2489434 | $\Omega$ | 321.85700 | | −0.84146440 | −0.32234807 |
| $e$ | 0.1488069 | $i$ | 2.88767 | | −0.41703954 | −0.12278247 |
| $P$ | 3.37 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.6+ | 0.6+ | 2003 09 29 | 691 | 0.0 | 0.5+ | 2005 03 13 | 691 | 0.4+ | 0.6− |
| 2002 04 04 | 644 | 0.5+ | 0.8+ | 2003 09 29 | 691 | 0.2− | 0.3+ | 2006 08 19 | 691 | 0.3− | 0.6+ |
| 2002 04 04 | 644 | 0.3+ | 0.6+ | 2003 10 17 | 691 | 0.5− | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.9+ |
| 2002 04 05 | 699 | 0.3− | 0.9− | 2003 10 17 | 691 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.7+ |
| 2002 04 05 | 699 | (0.5− | 1.6+) | 2003 10 17 | 691 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.1+ |
| 2002 04 05 | 699 | 0.7− | 0.9+ | 2003 11 02 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.5+ | 0.3− |
| 2002 04 05 | 699 | 0.0 | 1.4+ | 2003 11 02 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.3+ |
| 2002 04 09 | 704 | 0.6+ | 0.6+ | 2003 11 02 | 691 | 0.4− | 0.5+ | 2006 08 28 | 699 | 0.2+ | 0.1+ |
| 2002 04 09 | 704 | 0.3+ | 0.2+ | 2005 01 16 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | (1.7− | 0.7+) |
| 2002 04 09 | 704 | 0.5+ | 0.5+ | 2005 01 16 | 691 | 0.5+ | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.7+ |
| 2002 04 09 | 704 | 0.1− | 0.2− | 2005 01 16 | 691 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.6− | 0.0 |
| 2002 04 15 | 644 | 0.5+ | 0.4+ | 2005 02 04 | 691 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.5− | 0.7− |
| 2002 04 15 | 699 | 0.4+ | 0.8− | 2005 02 04 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2002 04 15 | 644 | 0.1+ | 0.8+ | 2005 02 04 | 691 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2002 04 15 | 699 | 1.3+ | 0.8+ | 2005 02 04 | 621 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.3+ |
| 2002 04 15 | 699 | 1.0+ | 1.5+ | 2005 02 04 | 621 | 0.4+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2002 04 15 | 644 | 0.4+ | 0.9+ | 2005 02 04 | 621 | 0.4− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2002 04 15 | 699 | 0.1− | 1.0+ | 2005 03 03 | 691 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2002 04 30 | 644 | 0.4+ | 1.5+ | 2005 03 03 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 04 30 | 644 | 0.1+ | 1.4+ | 2005 03 03 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2002 04 30 | 644 | 0.6+ | 1.2+ | 2005 03 13 | 691 | 0.0 | 0.4+ | | | | |
| 2003 09 29 | 691 | 0.1− | 0.3+ | 2005 03 13 | 691 | 0.1− | 0.7+ | | | | |

**(141552)∗ 2002 GC$_{56}$**

Discovered 2002 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.44522 | | | (2000.0) | | |
| $n$ | 0.29723756 | $\omega$ | 82.92483 | | −0.02710692 | +0.99957564 |
| $a$ | 2.2236525 | $\Omega$ | 185.55538 | | −0.95513339 | −0.02904674 |
| $e$ | 0.2149568 | $i$ | 6.32532 | | −0.29493290 | +0.00219742 |
| $P$ | 3.32 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 1.0+ | 0.0 | 2002 04 17 | 704 | 0.6+ | 0.9− | 2005 05 13 | G96 | 0.8− | 0.3− |
| 1999 07 13 | 704 | 0.5− | 0.2− | 2002 05 08 | 704 | (0.1− | 2.1−) | 2005 05 13 | G96 | 0.0 | 0.1+ |
| 1999 07 13 | 704 | 1.0− | 0.3− | 2002 05 08 | 704 | 0.1− | 1.1− | 2006 09 30 | 703 | (2.7− | 0.4+) |
| 1999 07 13 | 704 | 0.6+ | 0.4+ | 2002 05 08 | 704 | (1.2+ | 1.7−) | 2006 09 30 | 703 | (1.2+ | 2.5+) |
| 1999 07 13 | 704 | 0.1− | 0.3− | 2002 05 08 | 704 | 0.2− | 0.8− | 2006 09 30 | 703 | 0.5− | 0.3+ |
| 2002 04 05 | 699 | 0.3− | 1.0+ | 2002 05 18 | 704 | 0.2− | 0.7− | 2006 09 30 | 703 | 1.4− | 0.2− |
| 2002 04 05 | 699 | 0.9− | 0.7+ | 2002 05 18 | 704 | (1.9− | 1.0−) | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2002 04 05 | 699 | 0.6+ | 0.9+ | 2002 05 18 | 704 | 1.1− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.6+ |
| 2002 04 05 | 699 | 0.5− | 0.9+ | 2002 05 18 | 704 | 0.8− | 1.1+ | 2006 10 01 | 691 | 0.2+ | 0.7+ |
| 2002 04 09 | 704 | 1.1+ | 0.2− | 2005 03 17 | G96 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.4+ |
| 2002 04 09 | 704 | 0.4− | 0.4+ | 2005 03 17 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.1− |
| 2002 04 09 | 704 | 0.7+ | 0.8+ | 2005 03 17 | G96 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.4− | 1.0+ |
| 2002 04 14 | 644 | 0.4+ | 0.9+ | 2005 03 17 | G96 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.1− |
| 2002 04 14 | 644 | 0.8+ | 1.0+ | 2005 04 12 | G96 | 1.0+ | 0.4− | 2006 10 21 | G96 | 0.5− | 0.2− |
| 2002 04 14 | 644 | 0.5+ | 0.7+ | 2005 04 12 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2002 04 17 | 704 | 0.2− | 0.6+ | 2005 04 12 | G96 | 0.5− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 04 17 | 704 | 0.9+ | 0.0 | 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2002 04 17 | 704 | 0.1− | 0.4+ | 2005 05 13 | G96 | 0.2+ | 0.2− | | | | |
| 2002 04 17 | 704 | 0.6+ | 0.1+ | 2005 05 13 | G96 | 0.2− | 0.1− | | | | |

**(141553)∗ 2002 GL$_{58}$ = 2005 BE$_{9}$**

Discovered 2002 Apr. 8 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 72596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.71121 | | | (2000.0) | | |
| $n$ | 0.29058720 | $\omega$ | 286.69706 | | −0.21979289 | +0.97127105 |
| $a$ | 2.2574513 | $\Omega$ | 330.13149 | | −0.81064948 | −0.23386808 |
| $e$ | 0.1447152 | $i$ | 10.55601 | | −0.54271402 | −0.04402583 |
| $P$ | 3.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.6+ | 0.4+ | 2005 01 16 | 704 | 0.9+ | 0.2+ | 2006 08 21 | 807 | 0.6− | 0.2+ |
| 2002 04 08 | 644 | 0.8+ | 0.6+ | 2005 01 18 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.6− | 0.6+ |
| 2002 04 08 | 644 | 0.7+ | 0.3+ | 2005 01 18 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.2− | 0.3+ |
| 2002 04 09 | 704 | 0.1+ | 0.6+ | 2005 01 18 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.9− | 0.6− |
| 2002 04 09 | 704 | 1.0+ | 1.3+ | 2005 02 01 | 703 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.1− |
| 2002 04 09 | 704 | 0.2+ | 1.3+ | 2005 02 01 | 703 | (2.9− | 0.4+) | 2006 08 29 | 704 | 0.2+ | 0.0 |
| 2002 04 19 | 644 | 0.4+ | 0.3+ | 2005 02 01 | 703 | 1.8− | 0.6+ | 2006 08 29 | 704 | 0.2+ | 0.9+ |
| 2002 04 19 | 644 | 0.1+ | 0.4+ | 2005 02 01 | 703 | 0.5− | 0.5− | 2006 08 29 | 704 | 0.2− | 0.9+ |
| 2002 04 19 | 644 | 0.2+ | 0.2+ | 2005 02 03 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 704 | 0.4− | 0.3+ |
| 2003 09 17 | 644 | 0.5+ | 0.2+ | 2005 02 03 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 704 | 0.2+ | 0.0 |
| 2003 09 17 | 644 | 0.4+ | 0.3+ | 2005 02 03 | 704 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.3+ |
| 2003 09 17 | 644 | 0.4+ | 0.1+ | 2005 02 03 | 704 | 0.4+ | 1.3+ | 2006 09 14 | 703 | 0.1+ | 0.0 |
| 2003 09 21 | 691 | 0.0 | 0.1+ | 2005 02 03 | 704 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 691 | 0.0 | 0.1+ | 2005 02 14 | 704 | 0.0 | 0.9− | 2006 09 14 | 703 | 0.7− | 0.5− |
| 2003 09 21 | 691 | 0.1− | 0.1− | 2005 02 14 | 704 | 1.4+ | 0.8+ | 2006 09 17 | 704 | 0.2+ | 0.3− |
| 2003 09 30 | 704 | 0.2− | 0.2+ | 2005 02 14 | 704 | 0.3− | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.6+ |
| 2003 09 30 | 704 | 0.3− | 0.0 | 2005 02 14 | 704 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.4− | 1.0+ |
| 2003 09 30 | 704 | 0.6+ | 0.3+ | 2006 08 19 | 699 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 2003 09 30 | 704 | 1.4− | 0.1− | 2006 08 19 | 699 | 0.5+ | 0.4+ | 2006 09 27 | 704 | 0.8− | 0.8+ |
| 2003 10 20 | 644 | 0.0 | 0.2+ | 2006 08 19 | 699 | 0.8+ | 0.9+ | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2003 10 20 | 644 | 0.3− | 0.4+ | 2006 08 19 | 699 | 0.6+ | 0.7+ | 2006 09 27 | 704 | 0.7− | 0.7+ |
| 2003 10 20 | 644 | 0.3− | 0.5+ | 2006 08 20 | 644 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.0 |
| 2005 01 16 | 704 | 0.8+ | 1.2+ | 2006 08 20 | 644 | 0.4− | 0.4+ | 2006 09 27 | 704 | 1.0+ | 1.4+ |
| 2005 01 16 | 704 | 0.9+ | 0.4+ | 2006 08 20 | 644 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.2+ |
| 2005 01 16 | 704 | 0.2+ | 0.8+ | 2006 08 21 | 807 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.0 |

**(141554)∗ 2002 GV$_{58}$ = 2003 TA$_{44}$**

Discovered 2002 Apr. 8 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69338)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.77950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28955638 | $\omega$ | 87.35503 | | +0.17048030 | | +0.98516366 |
| $a$ | 2.2628058 | $\Omega$ | 192.51297 | | −0.93636585 | | +0.15573771 |
| $e$ | 0.1335516 | $i$ | 5.22314 | | −0.30684763 | | +0.07209938 |
| $P$ | 3.40 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.0 | 0.4+ | 2003 10 21 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.1− |
| 2002 04 08 | 644 | 0.2− | 0.6+ | 2005 02 09 | 699 | 0.1− | 1.3+ | 2006 08 30 | 704 | 0.2+ | 0.5+ |
| 2002 04 08 | 644 | 0.2− | 0.5+ | 2005 02 09 | 699 | 1.2+ | 1.1+ | 2006 08 30 | 704 | 0.5+ | 0.1− |
| 2002 04 09 | 644 | (0.5+ | 1.5+) | 2005 02 09 | 699 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.7− | 0.5+ |
| 2002 04 09 | 644 | 0.4+ | 1.5+ | 2005 02 09 | 699 | 0.2+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.8+ |
| 2002 04 09 | 644 | 0.4+ | 1.5+ | 2005 02 14 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 2002 04 10 | 704 | 0.5+ | 0.6− | 2005 02 14 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.5+ |
| 2002 04 10 | 704 | (1.7+ | 0.4+) | 2005 02 14 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.3− | 0.5+ |
| 2002 04 10 | 704 | 1.0+ | 0.1+ | 2005 03 17 | G96 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.4+ |
| 2002 04 10 | 704 | 1.3+ | 0.3+ | 2005 03 17 | G96 | 0.4− | 0.4+ | 2006 09 17 | 691 | 0.3− | 0.4+ |
| 2002 04 17 | 704 | 0.1+ | 1.4+ | 2005 03 17 | G96 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2002 04 17 | 704 | (1.8− | 1.9+) | 2005 03 17 | G96 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 04 17 | 704 | 0.1− | 0.1+ | 2006 08 24 | 704 | 1.0+ | 0.8− | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2002 04 17 | 704 | 0.3− | 1.0+ | 2006 08 24 | 704 | 1.2+ | 0.3− | 2006 10 19 | G96 | 0.4− | 0.2+ |
| 2002 05 08 | 644 | 0.7− | 0.4+ | 2006 08 24 | 704 | 0.2− | 0.9− | 2006 10 19 | G96 | 0.4− | 0.1+ |
| 2002 05 08 | 644 | 0.7+ | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2002 05 08 | 644 | 0.6− | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.5+ |
| 2003 10 02 | 691 | 0.1− | 0.6+ | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.8− |
| 2003 10 02 | 691 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.1+ | 0.7− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2003 10 02 | 691 | 0.1− | 0.6+ | 2006 08 29 | 703 | 0.2+ | 0.2− | 2006 11 16 | G96 | 1.3− | 0.6− |
| 2003 10 21 | 691 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2003 10 21 | 691 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.3+ | | | | |

**(141555)∗ 2002 GW$_{67}$ = 1999 RQ$_{59}$ = 2002 GO$_{69}$**

Discovered 2002 Apr. 8 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 31536)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.86221 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28694181 | $\omega$ | 214.67392 | | +0.47481037 | | +0.87947385 |
| $a$ | 2.2765306 | $\Omega$ | 83.69323 | | −0.79979533 | | +0.44677968 |
| $e$ | 0.2508024 | $i$ | 1.89550 | | −0.36726360 | | +0.16405384 |
| $P$ | 3.43 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 22 | 691 | 0.1− | 0.6− | 2002 05 02 | 699 | 0.9+ | 0.6− | 2006 09 18 | 703 | 0.6− | 0.4+ |
| 1999 06 22 | 691 | 0.1− | 0.3− | 2002 05 02 | 699 | 0.6− | 0.6+ | 2006 09 18 | 703 | 0.9− | 0.7− |
| 1999 06 22 | 691 | 0.2− | 0.0 | 2002 05 02 | 699 | 0.3− | 0.9+ | 2006 09 18 | 703 | 0.2− | 0.9− |
| 1999 08 08 | 699 | 0.8+ | 0.0 | 2002 05 02 | 699 | 0.7− | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.1+ |
| 1999 08 08 | 699 | 0.1+ | 1.2+ | 2002 05 08 | 704 | 1.2+ | 0.1− | 2006 09 18 | 699 | 0.6− | 0.9+ |
| 1999 08 08 | 699 | 0.8+ | 1.9+ | 2002 05 08 | 704 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.6− | 0.3− |
| 1999 09 07 | 704 | 1.0− | 1.0− | 2002 05 08 | 704 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.1+ | 0.5− |
| 1999 09 07 | 704 | 0.3− | 0.5+ | 2002 05 08 | 704 | 0.9+ | 0.9+ | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 1999 09 07 | 704 | 0.1+ | 0.3+ | 2002 05 08 | 704 | 1.1+ | 0.7+ | 2006 09 20 | 691 | 0.2+ | 0.1+ |
| 1999 09 07 | 704 | 0.1− | 1.5+ | 2002 05 08 | 644 | 0.4+ | 0.0 | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 0.7+ | 0.5+ | 2002 05 08 | 644 | 0.8+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 1999 09 09 | 704 | 0.1− | 1.1+ | 2002 05 08 | 644 | 0.9+ | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 1999 09 09 | 704 | 0.6− | 1.1+ | 2003 11 15 | 291 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 1.3− | 0.7− | 2003 11 15 | 291 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.2+ |
| 2002 04 08 | 644 | 0.4+ | 0.8+ | 2003 11 15 | 291 | 0.4− | 0.7+ | 2006 09 26 | 704 | 0.2+ | 1.2+ |
| 2002 04 08 | 644 | 0.6+ | 0.8+ | 2003 12 14 | 691 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.1− | 0.9+ |
| 2002 04 08 | 644 | 0.6+ | 0.8+ | 2003 12 14 | 691 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.6− | 1.2+ |
| 2002 04 08 | 644 | 0.1+ | 0.8+ | 2003 12 14 | 691 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.2− | 1.0+ |
| 2002 04 08 | 644 | 0.3+ | 0.9+ | 2003 12 17 | 291 | 0.8+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 04 08 | 644 | 0.1+ | 0.7+ | 2003 12 17 | 291 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 04 10 | 704 | (3.7+ | 0.3+) | 2003 12 17 | 291 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 04 10 | 704 | (2.8+ | 1.3+) | 2005 02 09 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | (1.6+ | 1.1+) |
| 2002 04 10 | 704 | (1.8+ | 1.7+) | 2005 02 09 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 1.5+ | 0.8+ |
| 2002 04 10 | 644 | (0.6+ | 1.8+) | 2005 02 09 | 691 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.6+ |
| 2002 04 10 | 644 | (0.4+ | 1.6+) | 2005 03 16 | G96 | 0.7− | 0.2+ | 2006 10 17 | 703 | 1.0+ | 0.2+ |
| 2002 04 10 | 644 | (0.4+ | 1.6+) | 2005 03 16 | G96 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2002 04 14 | 644 | 0.1+ | 0.6+ | 2005 03 16 | G96 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 04 14 | 644 | 0.2+ | 0.5+ | 2005 03 16 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 04 14 | 644 | 0.2+ | 0.8+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2002 04 15 | 644 | 0.4+ | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 04 15 | 644 | 0.3+ | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 04 15 | 644 | 0.5+ | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 04 17 | 704 | 0.2− | 0.7+ | 2006 09 12 | 703 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2002 04 17 | 704 | 0.2+ | 1.4+ | 2006 09 12 | 703 | 0.7− | 0.5− | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2002 04 17 | 704 | 0.1− | 1.2+ | 2006 09 12 | 703 | 0.3+ | 1.1− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 04 17 | 704 | 0.2− | 1.1+ | 2006 09 18 | 703 | 0.2− | 0.0 | | | | |

**(141556)∗ 2002 GT$_{69}$**

Discovered 2002 Apr. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.43418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31330021 | $\omega$ | 129.75938 | | +0.64195624 | | +0.76674122 |
| $a$ | 2.1469846 | $\Omega$ | 180.17917 | | −0.72772062 | | +0.60917258 |
| $e$ | 0.1144388 | $i$ | 5.06830 | | −0.24148475 | | +0.20252571 |
| $P$ | 3.15 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.0 | 0.3+ | 2003 11 18 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.3+ |
| 2002 04 08 | 644 | 0.2+ | 0.1+ | 2003 11 18 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2002 04 08 | 644 | 0.0 | 0.2+ | 2003 11 19 | 699 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 04 10 | 704 | 0.4+ | 0.0 | 2003 11 19 | 699 | 0.6+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 04 10 | 704 | 0.8+ | 0.2+ | 2003 11 19 | 699 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2002 04 10 | 704 | 0.0 | 0.8+ | 2003 11 19 | 699 | (0.4+ | 1.8−) | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2002 04 12 | 704 | 0.3+ | 0.7+ | 2003 11 19 | 599 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 04 12 | 704 | 1.4+ | 1.2− | 2003 11 19 | 599 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 04 12 | 704 | 1.1+ | 0.0 | 2003 11 19 | 599 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 04 12 | 704 | (5.2− | 0.5+) | 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 04 14 | 644 | 0.0 | 0.3+ | 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2002 04 14 | 644 | 0.1+ | 0.3+ | 2003 12 22 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 04 14 | 644 | 0.1+ | 0.4+ | 2004 01 18 | 644 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 04 21 | 691 | 0.3− | 1.0+ | 2004 01 18 | 644 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 04 21 | 691 | 0.2− | 0.6+ | 2004 01 18 | 644 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 04 21 | 691 | 0.3− | 0.4+ | 2005 03 04 | G96 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2002 05 08 | 644 | 0.1− | 0.8+ | 2005 03 04 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.4+ |
| 2002 05 08 | 644 | 0.1− | 0.8+ | 2005 03 04 | G96 | 0.1− | 0.8− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2002 05 08 | 644 | 1.3+ | 0.7+ | 2005 03 04 | G96 | 0.1+ | 0.9− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 05 13 | 704 | 0.8+ | 0.4+ | 2006 07 22 | G96 | 0.7− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 05 13 | 704 | 0.5+ | 0.7+ | 2006 07 22 | G96 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.3+ |
| 2002 05 13 | 704 | 0.1− | 0.5+ | 2006 07 22 | G96 | 0.5− | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.3+ |
| 2002 05 13 | 704 | (1.6+ | 1.1+) | 2006 07 22 | G96 | 0.6− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2002 05 13 | 704 | 0.7+ | 1.2+ | 2006 09 20 | 699 | (0.9− | 1.9+) | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2003 10 25 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 1.0+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.4+ |
| 2003 10 25 | 704 | 0.0 | 1.2+ | 2006 09 20 | 699 | (0.9− | 1.7+) | 2006 11 13 | 703 | 0.5− | 0.1− |
| 2003 10 25 | 704 | 1.4− | 0.9+ | 2006 09 20 | 699 | 0.5+ | 1.5+ | 2006 11 13 | 703 | 1.2− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | 1.1− | 1.5− | 2006 09 30 | 703 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.7− | 0.8+ |
| 2003 10 25 | 704 | 0.7+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.7+ | | | | |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5+ | | | | |

**(141557)∗ 2002 GY$_{69}$**

Discovered 2002 Apr. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.68299 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12400065 | $\omega$ | 150.73554 | | −0.49087767 | | +0.86832642 |
| $a$ | 3.9827838 | $\Omega$ | 89.78489 | | −0.81251713 | | −0.42684161 |
| $e$ | 0.1190801 | $i$ | 4.07442 | | −0.31441218 | | −0.25261722 |
| $P$ | 7.95 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 23 | 691 | 0.1− | 0.1+ | 2002 05 08 | 644 | (0.9+ | 2.1+) | 2005 10 13 | 291 | 0.4− | 0.4+ |
| 1998 12 23 | 691 | 0.3− | 0.3− | 2002 05 08 | 644 | 0.4+ | 1.3+ | 2005 10 13 | 291 | 0.3− | 0.2+ |
| 1998 12 23 | 691 | 0.4+ | 0.3− | 2002 05 08 | 644 | 0.1− | 1.0+ | 2005 10 13 | 291 | 0.1− | 0.4+ |
| 2002 04 08 | 644 | 0.5+ | 0.7+ | 2002 05 10 | 704 | 1.4+ | 0.2− | 2006 10 21 | G96 | 0.7+ | 0.7− |
| 2002 04 08 | 644 | 0.5+ | 0.6+ | 2002 05 10 | 704 | 1.1+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 1.2− |
| 2002 04 08 | 644 | 0.1+ | 0.5+ | 2002 05 10 | 704 | 0.6+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 04 10 | 704 | 0.9+ | 0.1− | 2002 05 19 | 644 | 0.5+ | 1.5+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 04 10 | 704 | 0.5+ | 0.8+ | 2002 05 19 | 644 | 0.4+ | 1.3+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2002 04 10 | 704 | 0.3+ | 0.4+ | 2002 05 19 | 644 | 0.9+ | 1.2+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 04 10 | 704 | 0.6+ | 0.4− | 2004 08 07 | 644 | 0.2+ | 0.7+ | 2006 11 15 | 691 | 0.3− | 0.2+ |
| 2002 04 10 | 704 | 0.6+ | 0.2− | 2004 08 07 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2002 04 14 | 644 | 0.1+ | 0.4+ | 2004 08 07 | 644 | 0.4+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2002 04 14 | 644 | 0.3+ | 0.4+ | 2004 08 11 | 704 | (1.5+ | 1.1+) | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2002 04 14 | 644 | 0.2− | 0.2+ | 2004 08 11 | 704 | 0.5− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2002 04 14 | 608 | (1.5− | 0.1+) | 2004 08 11 | 704 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 04 14 | 608 | (1.7− | 0.7−) | 2004 09 07 | 704 | 0.9− | 0.8+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 04 14 | 608 | 1.4− | 0.3+ | 2004 09 07 | 704 | 0.5− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.5+ |
| 2002 04 15 | 699 | 0.4+ | 1.1+ | 2004 09 07 | 704 | 0.5− | 0.6+ | 2006 11 27 | 691 | 0.4− | 0.4+ |
| 2002 04 15 | 699 | 0.6− | 0.6+ | 2004 09 07 | 704 | 0.7− | 0.4− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2002 04 15 | 699 | 0.4− | 0.3+ | 2005 09 23 | 691 | 0.1− | 0.5+ | 2006 11 27 | 703 | 1.0− | 0.5− |
| 2002 04 15 | 699 | 0.4− | 0.3+ | 2005 09 23 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 1.8+ | 0.3− |
| 2002 04 17 | 704 | 0.4− | 0.3− | 2005 09 23 | 691 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.7+ | 0.2+ |
| 2002 04 17 | 704 | (0.5+ | 1.8+) | 2005 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 1.0− | 0.0 |
| 2002 04 17 | 704 | 0.2− | 0.7+ | 2005 10 12 | 691 | 0.1+ | 0.2+ | | | | |
| 2002 04 17 | 704 | 0.1− | 0.6+ | 2005 10 12 | 691 | 0.0 | 0.3+ | | | | |

**(141558)∗ 2002 GZ$_{73}$**

Discovered 2002 Apr. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.34213 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31126248 | $\omega$ | 75.95648 | | −0.97924060 | | +0.18467806 |
| $a$ | 2.1563448 | $\Omega$ | 114.63144 | | −0.20248297 | | −0.91034092 |
| $e$ | 0.0412717 | $i$ | 5.27418 | | +0.00940759 | | −0.37036930 |
| $P$ | 3.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 14 | 704 | 1.0− | 0.8− | 2002 04 16 | 704 | 1.0+ | 0.9− | 2005 03 09 | 704 | 1.3+ | 0.1+ |
| 1999 06 14 | 704 | 0.7− | 1.2− | 2002 04 16 | 704 | 0.8+ | 1.3+ | 2005 03 13 | 152 | 1.2− | 0.3− |
| 1999 06 14 | 704 | 0.2− | 0.7− | 2002 04 16 | 704 | 0.0 | 0.2− | 2005 03 13 | 152 | 1.2− | 0.4+ |
| 1999 06 14 | 704 | 0.8− | 1.0− | 2002 04 16 | 704 | 1.0+ | 1.7− | 2005 03 16 | 703 | 0.3− | 0.1+ |
| 1999 06 14 | 704 | 0.7+ | 0.3− | 2002 04 16 | 704 | 0.2− | 0.1− | 2005 03 16 | 703 | (2.4− | 0.6−) |
| 2002 03 16 | 608 | 0.1− | 1.1+ | 2002 05 05 | 699 | 0.1+ | 1.3− | 2005 03 16 | 703 | 1.1− | 0.3+ |
| 2002 03 16 | 608 | 0.2− | 1.0+ | 2002 05 05 | 699 | 0.7− | 1.6+ | 2005 03 16 | 703 | 0.3− | 0.5− |
| 2002 03 16 | 608 | 0.3− | 0.6+ | 2002 05 05 | 699 | 0.9− | 1.3+ | 2005 03 16 | 704 | 0.3− | 1.0+ |
| 2002 04 09 | 699 | 0.4+ | 0.8− | 2002 05 05 | 699 | 0.4+ | 0.3+ | 2005 03 16 | 704 | 0.3− | 0.8+ |
| 2002 04 09 | 699 | 1.3+ | 0.6− | 2002 05 07 | 704 | 0.6+ | 0.7− | 2005 03 16 | 704 | 1.2− | 0.2+ |
| 2002 04 09 | 699 | 0.3− | 0.3− | 2002 05 07 | 704 | 0.3+ | 0.2+ | 2005 03 16 | 704 | 0.4− | 0.2− |
| 2002 04 09 | 699 | 0.2+ | 0.3+ | 2002 05 07 | 704 | 1.1+ | 0.5− | 2005 04 03 | 138 | 0.2− | 0.2− |
| 2002 04 10 | 704 | 0.3+ | 0.2+ | 2002 05 18 | 644 | 0.3+ | 0.1+ | 2005 04 03 | 138 | 0.2− | 0.4− |
| 2002 04 10 | 704 | 1.1− | 1.2+ | 2002 05 18 | 644 | 0.5+ | 0.3+ | 2005 04 03 | 138 | 0.2− | 0.1+ |
| 2002 04 10 | 704 | 0.0 | 0.7+ | 2002 05 18 | 644 | 0.2+ | 0.2+ | 2005 04 11 | 699 | 0.2+ | 0.0 |
| 2002 04 10 | 704 | 0.3+ | 0.4+ | 2003 09 20 | 644 | 0.2− | 0.8+ | 2005 04 11 | 699 | 0.4+ | 0.5− |
| 2002 04 11 | 704 | 0.5+ | 0.8+ | 2003 09 20 | 644 | 0.1− | 0.7+ | 2005 04 11 | 699 | 0.5− | 0.5− |
| 2002 04 11 | 704 | 0.6+ | 0.1+ | 2003 09 20 | 644 | 0.2+ | 0.6+ | 2005 04 11 | 699 | 0.4+ | 0.4+ |
| 2002 04 11 | 704 | 0.5+ | 0.5+ | 2003 10 18 | 644 | 0.3− | 0.8+ | 2005 04 16 | 691 | 0.3+ | 0.1+ |
| 2002 04 11 | 704 | 0.3+ | 0.2+ | 2003 10 18 | 644 | 0.2− | 0.7+ | 2005 04 16 | 691 | 0.2+ | 0.0 |
| 2002 04 12 | 608 | 1.1− | 0.2+ | 2003 10 18 | 644 | 0.1− | 1.0+ | 2005 04 16 | 691 | 0.2+ | 0.3+ |
| 2002 04 12 | 608 | 1.5− | 0.9+ | 2005 03 03 | 703 | 0.5− | 0.3− | 2006 08 30 | 699 | 1.2− | 0.1+ |
| 2002 04 12 | 608 | 1.9− | 0.3+ | 2005 03 03 | 703 | 0.4+ | 0.1− | 2006 08 30 | 699 | 0.2− | 0.6+ |
| 2002 04 13 | 644 | 0.2+ | 0.5+ | 2005 03 03 | 703 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.0 | 1.8+ |
| 2002 04 13 | 644 | 0.2+ | 0.4+ | 2005 03 03 | 703 | 0.3+ | 0.1− | 2006 08 30 | 699 | 0.7+ | 1.4+ |
| 2002 04 13 | 644 | 0.2+ | 0.2+ | 2005 03 09 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 703 | 1.4− | 0.4− |
| 2002 04 14 | 644 | 0.2+ | 0.1+ | 2005 03 09 | 704 | 1.3+ | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.2+ |
| 2002 04 14 | 644 | 0.2+ | 0.1+ | 2005 03 09 | 704 | 0.6+ | 0.3− | 2006 09 14 | 703 | 0.1− | 0.6− |
| 2002 04 14 | 644 | 0.2+ | 0.1− | 2005 03 09 | 704 | 0.7+ | 0.3− | 2006 09 14 | 703 | 0.1− | 0.6+ |

**(141559)∗ 2002 GQ$_{76}$ = 2003 UA$_{63}$**

Discovered 2002 Apr. 7 by W. Bickel at Bergisch Gladbach.

Id. G. V. Williams (*MPO* 52966)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.93787 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27213665 | $\omega$ | 259.15169 | | +0.86232833 | | +0.49348730 |
| $a$ | 2.3583668 | $\Omega$ | 71.19370 | | −0.40504962 | | +0.80668334 |
| $e$ | 0.1734855 | $i$ | 6.88045 | | −0.30384972 | | +0.32516500 |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 30 | 691 | 0.2+ | 0.7+ | 2003 08 26 | 704 | 0.6− | 0.4+ | 2003 10 19 | 704 | 0.4− | 0.5+ |
| 1995 05 30 | 691 | 0.6+ | 0.1+ | 2003 08 26 | 704 | 0.5− | 1.0− | 2003 10 22 | 608 | 0.4− | 0.1+ |
| 1995 05 30 | 691 | 0.2+ | 0.8+ | 2003 08 26 | 704 | 0.5+ | 0.1− | 2003 10 22 | 608 | 0.2− | 0.3− |
| 1996 12 17 | 691 | 0.5− | 0.0 | 2003 09 28 | 645 | 0.0 | 0.2− | 2003 10 22 | 608 | 0.4− | 0.1+ |
| 1996 12 17 | 691 | 0.6− | 0.1+ | 2003 09 28 | 645 | 0.1− | 0.2− | 2003 10 23 | 691 | 0.0 | 0.3+ |
| 1996 12 17 | 691 | 0.6− | 0.1+ | 2003 09 28 | 699 | 0.2− | 0.5+ | 2003 10 23 | 691 | 0.0 | 0.1+ |
| 1997 01 10 | 691 | 0.6+ | 0.2+ | 2003 09 28 | 699 | 0.3− | 0.5+ | 2003 10 23 | 691 | 0.0 | 0.2+ |
| 1997 01 10 | 691 | 0.0 | 0.2− | 2003 09 28 | 699 | 0.1− | 0.2− | 2003 10 27 | 704 | 0.7+ | 1.1+ |
| 1997 01 10 | 691 | 0.3+ | 0.1− | 2003 09 28 | 699 | 0.1+ | 0.3+ | 2003 10 27 | 704 | 0.4+ | 0.7+ |
| 2002 04 07 | 621 | 1.6+ | 0.6− | 2003 09 30 | 645 | 0.1+ | 0.0 | 2003 10 27 | 704 | 0.7+ | 0.4+ |
| 2002 04 07 | 621 | 0.4+ | 0.1+ | 2003 09 30 | 645 | 0.1+ | 0.0 | 2003 10 27 | 704 | 0.9+ | 1.4+ |
| 2002 04 07 | 621 | 0.1− | 0.1− | 2003 10 05 | 691 | 0.4+ | 0.1+ | 2003 10 29 | 699 | 0.1− | 0.4+ |
| 2002 04 07 | 621 | 0.1+ | 0.1+ | 2003 10 05 | 691 | 0.1− | 0.2+ | 2003 10 29 | 699 | 0.2− | 0.1+ |
| 2002 04 07 | 621 | 0.7+ | 0.6+ | 2003 10 05 | 691 | 0.0 | 0.2+ | 2003 10 29 | 699 | 0.2+ | 0.3− |
| 2002 04 11 | 704 | 0.2+ | 0.7+ | 2003 10 16 | 699 | 0.9− | 0.1− | 2003 10 29 | 699 | 0.7− | 0.3− |
| 2002 04 11 | 704 | 0.2+ | 1.9+ | 2003 10 16 | 699 | 0.1+ | 0.8+ | 2003 11 16 | 645 | 0.1+ | 0.1+ |
| 2002 04 11 | 704 | 0.7+ | 1.9+ | 2003 10 16 | 699 | 0.7− | 0.1+ | 2003 11 16 | 645 | 0.1+ | 0.1+ |
| 2002 04 13 | 644 | 0.6+ | 0.6+ | 2003 10 16 | 699 | 0.5− | 1.0+ | 2003 11 20 | 645 | 0.0 | 0.1+ |
| 2002 04 13 | 644 | 0.3+ | 0.8+ | 2003 10 16 | 644 | 0.5− | 0.4+ | 2003 11 20 | 645 | 0.0 | 0.2+ |
| 2002 04 13 | 644 | 0.7+ | 0.5+ | 2003 10 16 | 644 | 0.4− | 0.5+ | 2006 05 20 | E12 | 0.7− | 0.2+ |
| 2002 04 16 | 704 | 0.5+ | 0.9+ | 2003 10 16 | 644 | 0.5− | 0.5+ | 2006 05 20 | E12 | 0.5− | 0.5+ |
| 2002 04 16 | 704 | 0.4+ | 0.0 | 2003 10 19 | 704 | 0.9− | 0.3− | 2006 06 04 | G96 | 0.6− | 0.0 |
| 2002 04 16 | 704 | 0.9+ | 1.0+ | 2003 10 19 | 704 | 1.0− | 0.3+ | 2006 06 04 | G96 | 0.6− | 0.0 |
| 2002 04 16 | 704 | 0.8+ | 1.0+ | 2003 10 19 | 704 | 1.0− | 0.5+ | 2006 06 04 | G96 | 0.9− | 0.2− |
| 2003 08 26 | 704 | 0.1+ | 0.4+ | 2003 10 19 | 704 | 1.5− | 0.0 | 2006 06 04 | G96 | 0.5− | 0.2− |

**(141560)∗ 2002 GE$_{78}$**

Discovered 2002 Apr. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.53180 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27743546 | $\omega$ | 316.52699 | | −0.55283681 | | +0.83278495 |
| $a$ | 2.3282418 | $\Omega$ | 279.89096 | | −0.75624762 | | −0.51603282 |
| $e$ | 0.1786532 | $i$ | 1.68657 | | −0.34994427 | | −0.20044788 |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 704 | 0.3− | 0.1− | 2002 04 15 | 644 | 0.1+ | 0.4+ | 2006 07 20 | 644 | 0.0 | 0.5− | | |
| 2002 03 13 | 704 | 1.5− | 1.9− | 2002 04 15 | 644 | 0.3+ | 0.5+ | 2006 07 20 | 644 | 0.2− | 0.1− | | |
| 2002 03 13 | 704 | 0.8− | 1.1− | 2002 04 15 | 644 | 0.2+ | 0.4+ | 2006 07 20 | 644 | 0.2− | 0.1+ | | |
| 2002 04 04 | 644 | 0.6+ | 0.6+ | 2002 04 29 | 644 | 0.3+ | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.2+ | | |
| 2002 04 04 | 644 | 0.5+ | 0.5+ | 2002 04 29 | 644 | 0.4+ | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.0 | | |
| 2002 04 04 | 644 | 0.5+ | 0.6+ | 2002 04 29 | 644 | 0.3+ | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.0 | | |
| 2002 04 09 | 704 | 0.1+ | 0.3− | 2003 10 19 | 691 | 0.4− | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.1+ | | |
| 2002 04 09 | 704 | 0.1− | 0.1− | 2003 10 19 | 691 | 0.9− | 0.2− | 2006 07 21 | G96 | 0.1− | 0.0 | | |
| 2002 04 09 | 704 | 0.2− | 0.5+ | 2003 10 19 | 691 | 0.7− | 0.7+ | 2006 07 21 | G96 | 0.1+ | 0.1+ | | |
| 2002 04 09 | 704 | 0.2+ | 0.2+ | 2003 10 20 | 291 | 0.1+ | 0.5+ | 2006 07 21 | G96 | 0.0 | 0.0 | | |
| 2002 04 11 | 704 | 0.7+ | 0.8+ | 2003 10 20 | 291 | 0.3− | 0.3+ | 2006 07 22 | G96 | 0.0 | 0.1+ | | |
| 2002 04 11 | 704 | 0.6+ | 0.9+ | 2003 10 20 | 291 | 0.4− | 0.5+ | 2006 07 22 | G96 | 0.2− | 0.1+ | | |
| 2002 04 11 | 704 | 0.2− | 1.4+ | 2003 10 21 | 291 | 0.5+ | 0.2+ | 2006 07 22 | G96 | 0.0 | 0.3+ | | |
| 2002 04 11 | 704 | 0.1+ | 0.7+ | 2003 10 21 | 291 | 0.4+ | 0.2+ | 2006 07 22 | G96 | 0.2− | 0.2+ | | |
| 2002 04 12 | 704 | (1.0+ | 2.2+) | 2003 10 21 | 291 | 0.3− | 1.9+ | 2006 07 22 | G96 | 0.1+ | 0.2+ | | |
| 2002 04 12 | 704 | 1.2+ | 1.9+ | 2004 12 12 | 691 | 0.4− | 0.1+ | 2006 07 22 | G96 | 0.1− | 0.2+ | | |
| 2002 04 12 | 704 | 0.6+ | 1.2+ | 2004 12 12 | 691 | 0.3+ | 0.0 | 2006 07 22 | G96 | 0.3− | 0.3+ | | |
| 2002 04 12 | 704 | 1.6+ | 1.7+ | 2004 12 12 | 691 | 0.1− | 0.0 | 2006 07 22 | G96 | 0.5− | 0.1+ | | |
| 2002 04 14 | 704 | 0.3+ | 0.4+ | 2005 01 16 | 691 | 0.0 | 0.5+ | 2006 08 14 | 644 | 0.3+ | 0.2+ | | |
| 2002 04 14 | 704 | 0.4− | 0.5+ | 2005 01 16 | 691 | 0.3+ | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.1+ | | |
| 2002 04 14 | 704 | 0.2+ | 0.2− | 2005 01 16 | 691 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.4+ | 0.0 | | |
| 2002 04 14 | 704 | 0.1+ | 0.1− | 2006 06 18 | 644 | 0.1+ | 0.3+ | 2006 08 14 | 644 | 0.3+ | 0.0 | | |
| 2002 04 14 | 704 | 0.1+ | 0.1− | 2006 06 18 | 644 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.6+ | 0.4+ | | |
| 2002 04 14 | 704 | 0.3− | 0.6+ | 2006 06 18 | 644 | 0.1− | 0.3+ | 2006 08 14 | 644 | 0.2+ | 0.0 | | |
| 2002 04 14 | 704 | 0.1− | 0.9+ | 2006 06 19 | G96 | 0.1− | 0.3− | 2006 08 20 | 644 | 0.1− | 0.1+ | | |
| 2002 04 14 | 704 | 0.1+ | 0.9+ | 2006 06 19 | G96 | 0.1+ | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.3+ | | |
| 2002 04 14 | 704 | 0.7+ | 0.5+ | 2006 06 19 | G96 | 0.2− | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.0 | | |
| 2002 04 14 | 704 | 0.1− | 0.3+ | 2006 06 19 | G96 | 0.0 | 0.1− | | | | | | |

**(141561)∗ 2002 GL$_{79}$**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.20549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31207586 | $\omega$ | 295.57096 | | −0.14653802 | +0.98868463 | |
| $a$ | 2.1525964 | $\Omega$ | 325.95461 | | −0.88577542 | −0.14558572 | |
| $e$ | 0.1190526 | $i$ | 3.28521 | | −0.44037316 | −0.03615942 | |
| $P$ | 3.16 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 09 | 699 | 1.1+ | 0.2+ | 2002 04 15 | 644 | 0.2+ | 0.3+ | 2005 03 30 | 644 | 0.4+ | 0.5+ | | |
| 1999 05 09 | 699 | 0.3+ | 0.3+ | 2003 10 25 | 704 | 0.1+ | 0.2+ | 2005 03 30 | 644 | 0.4+ | 0.8+ | | |
| 1999 05 09 | 699 | 0.6+ | 0.4+ | 2003 10 25 | 704 | 0.0 | 1.0+ | 2005 04 02 | 691 | 0.2− | 0.4+ | | |
| 1999 05 13 | 704 | 0.0 | 0.7+ | 2003 10 25 | 704 | 0.3+ | 0.8+ | 2005 04 02 | 691 | 0.3+ | 0.1+ | | |
| 1999 05 13 | 699 | 0.9+ | 0.1+ | 2003 10 27 | 691 | 0.2− | 0.0 | 2005 04 02 | 691 | 0.3+ | 0.1+ | | |
| 1999 05 13 | 704 | 0.8− | 1.1+ | 2003 10 27 | 691 | 0.0 | 0.3− | 2005 04 04 | 704 | 0.5+ | 0.3+ | | |
| 1999 05 13 | 704 | (3.6+ | 2.5+) | 2003 10 27 | 691 | 0.1− | 0.2− | 2005 04 04 | 704 | 0.3+ | 0.5+ | | |
| 1999 05 13 | 699 | 0.9+ | 0.5+ | 2003 11 02 | 704 | 0.2+ | 0.0 | 2005 04 04 | 704 | 0.7+ | 0.5+ | | |
| 1999 05 13 | 704 | (0.6− | 2.5+) | 2003 11 02 | 704 | 0.2− | 0.3+ | 2005 04 12 | G96 | 0.1+ | 0.0 | | |
| 1999 05 13 | 704 | (3.7− | 2.6+) | 2003 11 02 | 704 | (1.1+ | 2.2+) | 2005 04 12 | G96 | 0.3− | 0.2− | | |
| 1999 05 13 | 699 | 0.1− | 0.4+ | 2003 11 02 | 704 | 0.8− | 1.2+ | 2005 04 12 | G96 | 0.3− | 0.3− | | |
| 2002 03 13 | 704 | 0.2+ | 0.3+ | 2005 02 02 | 644 | 0.0 | 0.1− | 2005 04 12 | G96 | 0.2− | 0.1− | | |
| 2002 03 13 | 704 | 0.6+ | 0.1− | 2005 02 02 | 644 | 0.3− | 0.6+ | 2006 09 17 | 703 | 0.9− | 0.6+ | | |
| 2002 03 13 | 704 | 0.1+ | 0.8− | 2005 02 02 | 644 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.3+ | | |
| 2002 03 13 | 704 | 0.0 | 0.3+ | 2005 02 09 | 704 | 0.1+ | 1.1− | 2006 09 17 | 691 | 0.3− | 0.1+ | | |
| 2002 03 13 | 704 | 0.6+ | 0.3+ | 2005 02 09 | 704 | 0.3+ | 0.2− | 2006 09 17 | 703 | 0.1− | 0.4+ | | |
| 2002 03 23 | 704 | (1.7+ | 0.4+) | 2005 02 09 | 704 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.9− | 0.1+ | | |
| 2002 03 23 | 704 | 0.3+ | 1.1− | 2005 02 09 | 704 | 0.7+ | 1.3+ | 2006 09 17 | 703 | 0.3+ | 0.5+ | | |
| 2002 03 23 | 704 | (1.5+ | 0.1−) | 2005 02 09 | 704 | 0.3+ | 0.8+ | 2006 09 17 | 691 | 0.7+ | 0.3+ | | |
| 2002 03 23 | 704 | 0.7+ | 0.4− | 2005 03 03 | 703 | 0.6− | 0.4− | 2006 09 19 | 699 | 0.2− | 0.2+ | | |
| 2002 03 23 | 704 | 0.6+ | 0.2− | 2005 03 03 | 703 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.7+ | 0.8+ | | |
| 2002 04 04 | 644 | 0.6+ | 0.6+ | 2005 03 03 | 703 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.6+ | 0.1− | | |
| 2002 04 04 | 644 | 0.5+ | 0.6+ | 2005 03 03 | 703 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.1+ | | |
| 2002 04 04 | 644 | 0.5+ | 0.4+ | 2005 03 03 | 704 | 0.1− | 0.9− | 2006 09 26 | 691 | 0.4− | 0.0 | | |
| 2002 04 10 | 704 | 0.4+ | 0.0 | 2005 03 03 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.4− | 0.1+ | | |
| 2002 04 10 | 704 | 0.8− | 0.0 | 2005 03 03 | 703 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 2002 04 10 | 704 | 0.8− | 0.1− | 2005 03 03 | 704 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.3+ | | |
| 2002 04 10 | 704 | 0.4− | 0.1+ | 2005 03 03 | 703 | 0.4− | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.4+ | | |
| 2002 04 11 | 704 | 0.8− | 0.8− | 2005 03 03 | 703 | 0.2− | 0.5− | 2006 09 30 | 691 | 0.3− | 0.3+ | | |
| 2002 04 11 | 704 | 0.0 | 0.7− | 2005 03 03 | 703 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2002 04 11 | 704 | 0.5− | 0.3− | 2005 03 08 | 699 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.3+ | | |
| 2002 04 11 | 704 | 0.0 | 1.1− | 2005 03 08 | 699 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | | |
| 2002 04 12 | 704 | (1.5+ | 0.4+) | 2005 03 08 | 699 | 0.4− | 1.0+ | 2006 10 17 | 703 | (1.7+ | 1.3−) | | |
| 2002 04 12 | 704 | 0.3+ | 0.1− | 2005 03 08 | 704 | 0.6+ | 0.2− | 2006 10 17 | 703 | 0.0 | 0.5+ | | |
| 2002 04 12 | 704 | 0.0 | 0.5− | 2005 03 08 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 1.0+ | 0.1− | | |
| 2002 04 12 | 704 | 0.0 | 0.6+ | 2005 03 08 | 704 | 1.0+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 2002 04 12 | 704 | 0.6+ | 0.3− | 2005 03 08 | 704 | 1.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.6+ | | |
| 2002 04 14 | 704 | 0.0 | 0.7+ | 2005 03 08 | 704 | 1.0+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 04 14 | 704 | 0.1+ | 0.5+ | 2005 03 09 | G96 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2002 04 14 | 704 | 0.7− | 1.3+ | 2005 03 09 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.1− | | |
| 2002 04 14 | 704 | 0.9− | 0.2+ | 2005 03 09 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2002 04 14 | 704 | 1.2− | 0.3+ | 2005 03 09 | G96 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2002 04 14 | 608 | 1.1− | 0.2+ | 2005 03 30 | 703 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.4− | | |
| 2002 04 14 | 608 | 1.2− | 0.5+ | 2005 03 30 | 703 | (1.9− | 1.7+) | 2006 10 31 | G96 | 0.1+ | 0.0 | | |
| 2002 04 14 | 608 | 0.9− | 0.6+ | 2005 03 30 | 703 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.1− | | |
| 2002 04 15 | 644 | 0.6+ | 0.7+ | 2005 03 30 | 644 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 1.3− | | |
| 2002 04 15 | 644 | 0.2+ | 0.6+ | 2005 03 30 | 703 | 0.4− | 0.8− | 2006 10 31 | G96 | 0.1− | 0.1− | | |

**(141562)∗ 2002 GY$_{86}$**

Discovered 2002 Apr. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.59443 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18209043 | $\omega$ | 319.63290 | | −0.15913402 | −0.96685748 | |
| $a$ | 3.0827950 | $\Omega$ | 138.37105 | | +0.96544045 | −0.19468194 | |
| $e$ | 0.1078136 | $i$ | 17.49069 | | +0.20640033 | +0.16518339 | |
| $P$ | 5.41 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 645 | 0.1− | 0.2− | 2005 09 14 | 703 | 1.0− | 0.1+ | 2005 11 13 | 699 | (1.6+ | 2.7−) | | |
| 2002 03 12 | 645 | 0.1− | 0.2− | 2005 09 14 | 703 | 1.0+ | 0.5− | 2005 11 30 | 699 | 0.4− | 0.0 | | |
| 2002 03 20 | 704 | 0.9+ | 1.3+ | 2005 10 08 | 699 | (1.6− | 0.4+) | 2005 11 30 | 699 | 0.2+ | 0.1+ | | |
| 2002 03 20 | 704 | 0.4− | 1.2+ | 2005 10 08 | 699 | 0.4− | 0.7− | 2005 11 30 | 699 | 0.3+ | 0.3− | | |
| 2002 03 20 | 704 | 0.2+ | 0.5+ | 2005 10 08 | 699 | 1.1− | 0.0 | 2005 11 30 | 699 | 0.4− | 0.1− | | |
| 2002 03 20 | 704 | 0.0 | 0.5+ | 2005 10 08 | 699 | 0.8− | 0.4+ | 2005 12 07 | 703 | 1.0+ | 0.1+ | | |
| 2002 03 20 | 704 | 1.5− | 0.9− | 2005 10 31 | 699 | (0.4+ | 1.6−) | 2005 12 07 | 703 | 0.8− | 1.4− | | |
| 2002 04 10 | 644 | 0.7+ | 0.8+ | 2005 10 31 | 699 | 0.6− | 1.4+ | 2005 12 07 | 703 | 0.2+ | 0.3− | | |
| 2002 04 10 | 644 | 0.7+ | 0.8+ | 2005 10 31 | 699 | 1.0+ | 0.9− | 2005 12 07 | 703 | (2.2+ | 0.2−) | | |
| 2002 04 10 | 644 | 0.9+ | 0.8+ | 2005 10 31 | 699 | 0.1− | 0.5+ | 2006 01 06 | 699 | (2.0− | 1.1+) | | |
| 2002 04 11 | 699 | 0.0 | 0.8+ | 2005 11 01 | 703 | 0.2+ | 0.6+ | 2006 01 06 | 699 | 1.0+ | 0.9− | | |
| 2002 04 11 | 699 | (0.3+ | 1.9+) | 2005 11 01 | 703 | 0.1− | 0.2+ | 2006 01 06 | 699 | 1.2+ | 1.1+ | | |
| 2002 04 11 | 699 | 0.5− | 0.5+ | 2005 11 01 | 703 | 0.1− | 0.1+ | 2006 01 06 | 699 | 1.0+ | 1.1+ | | |
| 2002 04 11 | 699 | 0.4− | 0.4− | 2005 11 01 | 703 | (1.7+ | 1.2−) | 2006 10 27 | G96 | 0.2− | 0.6− | | |
| 2002 04 22 | 644 | 0.0 | 0.4− | 2005 11 05 | 703 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.2− | 0.2+ | | |
| 2002 04 22 | 644 | 0.1+ | 0.4− | 2005 11 05 | 703 | 0.4+ | 0.5− | 2006 10 27 | G96 | 0.4− | 0.4− | | |
| 2002 04 22 | 644 | 0.4+ | 0.2− | 2005 11 05 | 703 | 0.7+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.6− | | |
| 2002 05 05 | 644 | 0.4+ | 0.0 | 2005 11 05 | 703 | 0.5+ | 0.2− | 2006 11 17 | 691 | 0.2− | 0.2+ | | |
| 2002 05 05 | 644 | 0.6+ | 0.1− | 2005 11 12 | 703 | 1.0− | 0.2− | 2006 11 17 | 691 | 0.1− | 0.4+ | | |
| 2002 05 05 | 644 | 0.5+ | 0.2+ | 2005 11 12 | 703 | 1.3− | 1.1− | 2006 11 17 | 691 | 0.0 | 0.2+ | | |
| 2004 09 07 | 704 | 1.3+ | 0.3− | 2005 11 12 | 703 | 1.1+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 2004 09 07 | 704 | 0.4− | 0.2− | 2005 11 12 | 703 | 0.3− | 0.6+ | 2006 11 22 | 691 | 0.2+ | 0.2+ | | |
| 2004 09 07 | 704 | 0.6− | 0.3− | 2005 11 13 | 699 | 0.8− | 0.8+ | 2006 11 22 | 691 | 0.3+ | 0.2− | | |
| 2005 09 14 | 703 | 0.7− | 0.3− | 2005 11 13 | 699 | (0.2− | 1.8−) | | | | | | |
| 2005 09 14 | 703 | (1.8+ | 0.6+) | 2005 11 13 | 699 | (1.1− | 3.0−) | | | | | | |

**(141563)∗ 2002 GQ$_{94}$**

Discovered 2002 Apr. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.12477 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26404153 | $\omega$ | 29.62952 | | −0.11337825 | +0.98997167 | |
| $a$ | 2.4063265 | $\Omega$ | 233.98587 | | −0.93082848 | −0.13549662 | |
| $e$ | 0.0645571 | $i$ | 5.98006 | | −0.34742439 | +0.03995936 | |
| $P$ | 3.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.0 | 0.1+ | 2003 09 20 | 691 | 0.0 | 0.0 | 2006 05 20 | 691 | 0.0 | 0.0 | |
| 1996 11 17 | 691 | 0.1+ | 0.4+ | 2003 09 20 | 691 | 0.1+ | 0.2+ | 2006 05 20 | E12 | 0.1+ | 0.3− | |
| 1996 11 17 | 691 | 0.3− | 0.2+ | 2003 09 22 | 699 | 0.1+ | 0.3+ | 2006 05 20 | E12 | 1.1− | 0.9+ | |
| 2002 04 09 | 704 | 0.8+ | 1.1+ | 2003 09 22 | 699 | 0.2− | 0.4− | 2006 05 20 | E12 | 0.7− | 0.2+ | |
| 2002 04 09 | 704 | 0.9+ | 0.5+ | 2003 09 22 | 699 | 0.1− | 0.2+ | 2006 05 20 | E12 | 0.5+ | 0.2− | |
| 2002 04 09 | 704 | 1.4+ | 0.2− | 2003 09 22 | 699 | 1.2− | 0.4+ | 2006 05 22 | E12 | 0.7− | 0.2− | |
| 2002 04 09 | 704 | 1.6+ | 0.0 | 2003 09 23 | 608 | 0.2+ | 0.8+ | 2006 05 22 | E12 | 0.4− | 0.8− | |
| 2002 04 12 | 704 | 0.2+ | 0.8+ | 2003 09 23 | 608 | 0.5− | 1.3+ | 2006 05 22 | E12 | 0.2− | 0.4− | |
| 2002 04 12 | 704 | 1.5− | 0.1+ | 2003 09 23 | 608 | 0.2− | 1.2+ | 2006 05 22 | E12 | 0.3− | 0.6− | |
| 2002 04 12 | 704 | 0.7− | 0.6− | 2003 09 27 | 704 | 1.4+ | 0.3+ | 2006 05 25 | 644 | 0.2+ | 0.0 | |
| 2002 04 12 | 704 | 0.7− | 0.6+ | 2003 09 27 | 704 | 0.6+ | 0.2+ | 2006 05 25 | 704 | 0.9+ | 0.4− | |
| 2002 04 14 | 704 | 0.1− | 0.8+ | 2003 09 27 | 704 | 0.3− | 0.2+ | 2006 05 25 | 704 | 0.4+ | 0.1− | |
| 2002 04 14 | 704 | 0.3− | 1.7+ | 2003 09 27 | 704 | 1.2+ | 1.0+ | 2006 05 25 | 644 | 0.2+ | 0.2− | |
| 2002 04 14 | 704 | 0.0 | 0.3+ | 2003 09 27 | 704 | 0.1+ | 0.1+ | 2006 05 25 | 704 | 0.1+ | 0.4+ | |
| 2002 04 15 | 699 | 0.6+ | 0.2+ | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 05 25 | 644 | 0.0 | 0.0 | |
| 2002 04 15 | 699 | 0.5− | 0.5− | 2003 10 24 | 645 | 0.1− | 0.1− | 2006 05 27 | 704 | 0.1+ | 0.9− | |
| 2002 04 15 | 699 | 0.6+ | 0.2− | 2003 11 20 | 645 | 0.1− | 0.0 | 2006 05 27 | 704 | 0.3+ | 0.3− | |
| 2002 04 15 | 699 | 0.3− | 1.5+ | 2003 11 20 | 645 | 0.1− | 0.0 | 2006 05 27 | 704 | 0.2− | 0.2− | |
| 2002 04 30 | 644 | 0.9+ | 1.4+ | 2006 05 07 | G96 | 0.1+ | 0.2− | 2006 05 27 | 704 | 0.5− | 0.3− | |
| 2002 04 30 | 644 | (0.6+ | 2.1+) | 2006 05 07 | G96 | 0.1+ | 0.2− | 2006 06 15 | 691 | 0.3+ | 0.1+ | |
| 2002 04 30 | 644 | 0.9+ | 1.9+ | 2006 05 07 | G96 | 0.2− | 0.3− | 2006 06 15 | 691 | 0.1− | 0.3+ | |
| 2003 09 18 | 644 | 0.2+ | 0.1+ | 2006 05 07 | G96 | 0.1− | 0.3− | 2006 06 15 | 691 | 0.1− | 0.1− | |
| 2003 09 18 | 644 | 0.2+ | 0.4+ | 2006 05 19 | G96 | 0.1− | 0.4− | 2006 06 16 | 644 | 0.1− | 0.3− | |
| 2003 09 18 | 644 | 0.2+ | 0.3+ | 2006 05 19 | G96 | 0.4− | 0.3− | 2006 06 16 | 644 | 0.8− | 0.0 | |
| 2003 09 18 | 599 | 0.4+ | 0.1+ | 2006 05 19 | G96 | 0.0 | 0.1− | 2006 06 16 | 644 | 0.5− | 0.5− | |
| 2003 09 18 | 599 | 0.4− | 0.1− | 2006 05 19 | G96 | 0.2− | 0.2− | 2006 06 16 | 691 | 0.1+ | 0.3+ | |
| 2003 09 18 | 599 | 0.7+ | 0.4+ | 2006 05 20 | 691 | 0.0 | 0.1− | 2006 06 16 | 691 | 0.1+ | 0.1+ | |
| 2003 09 20 | 691 | 0.1+ | 0.2+ | 2006 05 20 | 691 | 0.1− | 0.2− | 2006 06 16 | 691 | 0.4+ | 0.4+ | |

**(141564)∗ 2002 GE$_{101}$**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.72390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29565517 | $\omega$ | 315.38355 | | +0.60039792 | +0.79968171 | |
| $a$ | 2.2315797 | $\Omega$ | 351.50948 | | −0.72268233 | +0.53955522 | |
| $e$ | 0.1695116 | $i$ | 2.17855 | | −0.34242164 | +0.26341856 | |
| $P$ | 3.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.5+ | 0.4+ | 2003 11 16 | 691 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.2+ | |
| 2002 04 04 | 644 | 0.7+ | 0.2+ | 2003 11 19 | 699 | 0.3− | 0.1− | 2006 08 27 | 699 | 0.1− | 0.4+ | |
| 2002 04 04 | 644 | 0.4+ | 0.2+ | 2003 11 19 | 699 | 0.2+ | 0.9+ | 2006 08 27 | 699 | 0.1− | 0.2+ | |
| 2002 04 10 | 704 | 0.7+ | 1.3+ | 2003 11 19 | 699 | 0.7− | 0.2+ | 2006 08 27 | 699 | 0.4− | 0.2+ | |
| 2002 04 10 | 704 | 0.9+ | 0.5+ | 2003 11 19 | 699 | 0.5+ | 0.1+ | 2006 08 27 | 699 | 0.1− | 0.3− | |
| 2002 04 10 | 704 | 0.6+ | 0.8+ | 2003 11 20 | 704 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.4− | |
| 2002 04 10 | 704 | 0.6+ | 0.7+ | 2003 11 20 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.4− | |
| 2002 04 10 | 704 | 0.1− | 1.1+ | 2003 11 20 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.1− | 0.3+ | |
| 2002 04 12 | 704 | 0.1− | 0.1+ | 2003 11 20 | 704 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.8− | 0.5+ | |
| 2002 04 12 | 704 | 0.0 | 0.5+ | 2003 11 20 | 704 | 0.2+ | 0.6− | 2006 08 30 | 704 | 0.1+ | 0.3− | |
| 2002 04 12 | 704 | 0.7− | 1.0+ | 2003 11 24 | 704 | 1.3− | 0.4− | 2006 08 30 | 704 | 0.6+ | 0.6+ | |
| 2002 04 12 | 704 | 0.8− | 0.4− | 2003 11 24 | 704 | 0.7− | 0.5+ | 2006 08 30 | 704 | 0.1− | 0.6− | |
| 2002 04 15 | 644 | 0.1− | 0.7+ | 2003 11 24 | 704 | 0.8− | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.3+ | |
| 2002 04 15 | 644 | 0.3+ | 0.8+ | 2005 02 01 | 691 | 0.3+ | 0.5+ | 2006 08 31 | 704 | 0.8− | 0.2+ | |
| 2002 04 15 | 644 | 0.3+ | 0.8+ | 2005 02 01 | 691 | 0.2+ | 0.4+ | 2006 08 31 | 704 | 0.8− | 0.4+ | |
| 2002 05 11 | 704 | 0.2+ | 0.9+ | 2005 02 01 | 691 | 0.3+ | 0.8+ | 2006 08 31 | 704 | 0.5− | 0.5+ | |
| 2002 05 11 | 704 | (1.2+ | 1.6+) | 2005 03 03 | 703 | 1.0+ | 0.7+ | 2006 09 14 | 703 | 0.3+ | 0.1+ | |
| 2002 05 11 | 704 | 0.7+ | 0.6+ | 2005 03 03 | 703 | 1.2+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.6+ | |
| 2002 05 11 | 704 | 0.4+ | 0.4− | 2005 03 03 | 703 | 0.7− | 1.1− | 2006 09 14 | 703 | 0.3+ | 0.1+ | |
| 2003 10 18 | 699 | (0.7+ | 3.0−) | 2005 03 03 | 703 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.1+ | |
| 2003 10 18 | 699 | 0.5+ | 0.7− | 2005 03 04 | G96 | 0.2− | 0.2+ | 2006 09 17 | 704 | (0.4− | 2.3+) | |
| 2003 10 18 | 699 | 0.4− | 0.0 | 2005 03 04 | G96 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.5+ | 0.3+ | |
| 2003 10 18 | 699 | 0.4− | 0.6+ | 2005 03 04 | G96 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.7+ | 0.4+ | |
| 2003 10 22 | 704 | 0.4+ | 0.5+ | 2005 03 04 | G96 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.6+ | 0.1− | |
| 2003 10 22 | 704 | (0.8+ | 1.9+) | 2006 08 14 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.2+ | |
| 2003 10 22 | 704 | 1.1− | 1.0+ | 2006 08 14 | 644 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.4+ | 0.3+ | |
| 2003 10 23 | 699 | 0.3+ | 0.8+ | 2006 08 14 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.4+ | |
| 2003 10 23 | 699 | (1.6− | 0.7+) | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.2+ | |
| 2003 10 23 | 699 | (1.3− | 1.6+) | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.1− | 0.1− | |
| 2003 10 23 | 699 | 0.9− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.4− | 0.2+ | |
| 2003 10 24 | 704 | 0.4+ | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.2− | 2006 09 20 | 704 | 1.4+ | 0.6− | |
| 2003 10 24 | 704 | 0.6+ | 0.3− | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.1+ | |
| 2003 10 24 | 704 | 1.1+ | 0.2− | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.5+ | |
| 2003 10 24 | 704 | 0.3+ | 0.2+ | 2006 08 18 | 704 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.6+ | |
| 2003 10 24 | 704 | 0.5+ | 0.2+ | 2006 08 18 | 704 | 0.6− | 0.4+ | 2006 09 25 | 699 | 0.5− | 0.2− | |
| 2003 10 29 | 704 | 0.3+ | 0.3+ | 2006 08 18 | 704 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.1− | |
| 2003 10 29 | 704 | 0.2− | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.0 | |
| 2003 10 29 | 704 | 0.2+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.3− | |
| 2003 10 29 | 704 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− | |
| 2003 10 29 | 704 | 0.4+ | 0.3− | 2006 08 20 | A50 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.2+ | |
| 2003 10 29 | 703 | 0.5− | 0.2+ | 2006 08 20 | A50 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.1+ | |
| 2003 10 29 | 703 | (12.4− | 5.4+) | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | |
| 2003 10 29 | 703 | 0.0 | 0.9+ | 2006 08 21 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− | |
| 2003 10 29 | 703 | 1.4− | 0.6+ | 2006 08 21 | 691 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 2003 10 30 | 704 | 0.2− | 0.8+ | 2006 08 23 | 807 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 | |
| 2003 10 30 | 704 | 0.3+ | 0.3− | 2006 08 23 | 807 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 2003 10 30 | 704 | 0.1+ | 1.0− | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.5− | |
| 2003 10 30 | 704 | 0.4+ | 0.6− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.3− | |
| 2003 11 02 | 704 | 0.5+ | 0.5+ | 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− | |
| 2003 11 02 | 704 | 0.4− | 0.5+ | 2006 08 25 | 704 | 0.3+ | 1.3+ | 2006 11 13 | G96 | 0.1+ | 0.5− | |
| 2003 11 02 | 704 | 0.1− | 0.1+ | 2006 08 25 | 704 | 0.9+ | 0.5+ | 2006 11 13 | G96 | 0.6− | 0.7− | |
| 2003 11 02 | 704 | 0.4+ | 0.5− | 2006 08 25 | 704 | 0.3+ | 1.0+ | 2006 11 13 | G96 | 0.8+ | 0.3− | |
| 2003 11 16 | 691 | 0.0 | 0.2+ | 2006 08 27 | 691 | (1.6+ | 2.1−) | 2006 11 13 | G96 | 0.9− | 1.1− | |
| 2003 11 16 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.2+ | | | | | |

**(141565)∗ 2002 GS$_{103}$ = 6684 P-L**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31577)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.52898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29989442 | $\omega$ | 279.03782 | | +0.36530209 | +0.93081172 | |
| $a$ | 2.2104997 | $\Omega$ | 12.40872 | | −0.83064323 | +0.33175382 | |
| $e$ | 0.1568577 | $i$ | 3.20037 | | −0.42022162 | +0.15339146 | |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.6+ | 0.7− | 2003 10 29 | 704 | 0.7− | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.5+ | |
| 1960 09 24 | 675 | 0.0 | 1.1− | 2003 10 29 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.5+ | |
| 1960 09 26 | 675 | 0.7− | 1.4− | 2003 10 29 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.6+ | |
| 1960 09 26 | 675 | 0.4+ | 0.8− | 2003 11 18 | 644 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.4+ | |
| 1960 09 27 | 675 | 0.4+ | 0.0 | 2003 11 18 | 644 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.4+ | |
| 1960 09 27 | 675 | 1.2+ | 0.8+ | 2003 11 18 | 644 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.8+ | 0.2+ | |
| 1960 09 28 | 675 | 0.2− | 0.5− | 2003 11 30 | 691 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.9+ | 0.8+ | |
| 1960 09 28 | 675 | 0.2+ | 0.1− | 2003 11 30 | 691 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.2+ | |
| 2002 03 16 | 691 | 0.1+ | 0.2+ | 2003 11 30 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.5+ | |
| 2002 03 16 | 691 | 0.3− | 0.1+ | 2005 03 16 | G96 | 0.4− | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.8+ | |
| 2002 03 16 | 691 | 0.4− | 0.0 | 2005 03 16 | G96 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.1+ | |
| 2002 03 24 | 691 | 0.6+ | 0.3− | 2005 03 16 | G96 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.6− | 0.1− | |
| 2002 03 24 | 691 | 0.2+ | 0.8− | 2005 03 16 | G96 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.0 | |
| 2002 03 24 | 691 | 0.1+ | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.8+ | 0.2+ | |
| 2002 04 05 | 699 | 0.2− | 0.2− | 2006 08 16 | 644 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.1+ | 1.1+ | |
| 2002 04 05 | 699 | 0.3+ | 1.4+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.9− | 0.6+ | |
| 2002 04 05 | 699 | 0.2+ | 1.2+ | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.1− | 0.6− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 699 | 0.7+ | 1.0+ | 2006 08 18 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2002 04 10 | 704 | 0.7+ | 0.6− | 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2002 04 10 | 704 | 0.4+ | 0.8+ | 2006 08 21 | 704 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2002 04 10 | 704 | (2.0+ | 0.9+) | 2006 08 21 | 704 | 0.7+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2002 04 12 | 704 | 0.2+ | 0.9+ | 2006 08 21 | 704 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.4− |
| 2002 04 12 | 704 | 0.4+ | 0.4+ | 2006 08 27 | 691 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.5− |
| 2002 04 12 | 704 | 1.1+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2002 04 12 | 704 | 0.4+ | 0.0 | 2006 08 27 | 691 | 0.5+ | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 04 14 | 704 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.7+ | 0.3− | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 04 14 | 704 | 0.1− | 1.1+ | 2006 08 28 | 699 | 1.1− | 0.8+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 04 14 | 704 | 0.1− | 0.8+ | 2006 08 28 | 699 | 0.7− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2002 04 14 | 704 | 0.5− | 0.3+ | 2006 08 28 | 699 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2002 04 14 | 704 | 0.1+ | 1.0+ | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 10 22 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2003 10 22 | 691 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2003 10 22 | 691 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2003 10 23 | 699 | 0.1+ | 1.4− | 2006 09 17 | 704 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2003 10 23 | 699 | 0.5− | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2003 10 23 | 699 | 0.5+ | 0.2+ | 2006 09 17 | 704 | 0.1+ | 1.0− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2003 10 23 | 699 | (1.7− | 0.6+) | 2006 09 17 | 704 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2003 10 24 | 704 | (1.7− | 0.2+) | 2006 09 17 | 704 | 0.0 | 0.9− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2003 10 24 | 704 | (1.9− | 1.6+) | 2006 09 19 | 699 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2003 10 24 | 704 | (0.6− | 1.7+) | 2006 09 19 | 703 | 0.3+ | 0.2+ | | | | |
| 2003 10 29 | 704 | 0.3− | 0.7− | 2006 09 19 | 699 | 0.5+ | 0.1+ | | | | |

**(141566)∗ 2002 GB$_{107}$**

Discovered 2002 Apr. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.38375 | | (2000.0) | | | |
| $n$ | 0.28827808 | $\omega$ | 129.50809 | | −0.55669000 | +0.82702486 |
| $a$ | 2.2694902 | $\Omega$ | 106.49426 | | −0.78502926 | −0.49291419 |
| $e$ | 0.1830462 | $i$ | 4.68219 | | −0.27170811 | −0.27030627 |
| $P$ | 3.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.4+ | 0.5− | 2002 04 11 | 704 | 0.1+ | 0.6+ | 2005 01 17 | 691 | 0.2+ | 0.0 |
| 1999 07 16 | 704 | 0.2+ | 0.8+ | 2002 04 12 | 644 | (0.4− | 2.1−) | 2005 01 17 | 691 | 0.3+ | 0.1+ |
| 1999 07 16 | 704 | 1.1+ | 0.2− | 2002 04 12 | 644 | 0.5− | 1.4− | 2005 01 17 | 691 | 0.3+ | 0.0 |
| 2000 11 25 | 691 | 0.3− | 0.3+ | 2002 04 12 | 644 | 0.3− | 0.7+ | 2005 01 17 | 704 | 1.0+ | 0.1+ |
| 2000 11 25 | 691 | 0.5− | 0.3+ | 2002 04 12 | 608 | (2.2− | 0.4+) | 2005 01 17 | 704 | 0.6+ | 0.5− |
| 2000 11 25 | 691 | 0.1− | 0.1+ | 2002 04 12 | 608 | (2.1− | 0.7+) | 2005 01 17 | 704 | 0.5− | 0.5+ |
| 2002 03 12 | 704 | 0.3+ | 1.4+ | 2002 04 12 | 608 | (2.1− | 0.0 ) | 2005 03 16 | G96 | 0.0 | 0.2+ |
| 2002 03 12 | 704 | 0.3− | 0.2− | 2002 04 16 | 704 | 0.3− | 0.4+ | 2005 03 16 | G96 | 0.4− | 0.2− |
| 2002 03 12 | 704 | 0.1− | 0.1+ | 2002 04 16 | 704 | 0.4+ | 0.5− | 2005 03 16 | G96 | 0.3− | 0.1+ |
| 2002 03 12 | 704 | 0.4+ | 0.4+ | 2002 04 16 | 704 | 0.2− | 0.1+ | 2005 03 16 | G96 | 0.4− | 0.4− |
| 2002 03 18 | 608 | 0.5+ | 1.3+ | 2002 04 16 | 704 | 0.1+ | 0.1− | 2006 07 25 | 644 | 0.3− | 0.7+ |
| 2002 03 18 | 608 | 0.6+ | 0.8+ | 2002 04 16 | 704 | 0.0 | 0.8− | 2006 07 25 | 644 | 0.6− | 0.8+ |
| 2002 03 18 | 608 | 0.3+ | 0.8+ | 2004 12 18 | G96 | 0.6− | 0.2+ | 2006 07 25 | 644 | 0.4− | 0.5+ |
| 2002 04 06 | 704 | 0.9− | 0.3+ | 2004 12 18 | G96 | 0.2+ | 0.5+ | 2006 08 16 | E12 | 0.6+ | 0.7+ |
| 2002 04 06 | 704 | 0.0 | 0.5+ | 2004 12 18 | G96 | 0.1+ | 0.3− | 2006 08 16 | E12 | (1.8− | 1.6+) |
| 2002 04 06 | 704 | 0.2− | 0.5− | 2004 12 18 | G96 | 0.2− | 0.3− | 2006 08 16 | E12 | 0.7− | 0.4+ |
| 2002 04 06 | 704 | 0.2− | 0.5− | 2005 01 15 | 704 | 0.2− | 0.5+ | 2006 08 16 | E12 | 0.5+ | 0.8− |
| 2002 04 06 | 704 | 0.1+ | 0.3+ | 2005 01 15 | 704 | 0.9+ | 0.4− | 2006 08 28 | E12 | 0.5− | 1.0+ |
| 2002 04 11 | 704 | 0.4+ | 1.0+ | 2005 01 15 | 704 | 0.8+ | 0.3− | 2006 10 20 | 695 | 0.5− | 0.4+ |
| 2002 04 11 | 704 | 0.7− | 0.4+ | 2005 01 15 | 704 | 0.2− | 0.7− | 2006 10 20 | 695 | 0.5− | 0.4+ |

**(141567)∗ 2002 GC$_{108}$**

Discovered 2002 Apr. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.39644 | | (2000.0) | | | |
| $n$ | 0.29324768 | $\omega$ | 187.20475 | | +0.67222569 | +0.73487026 |
| $a$ | 2.2437768 | $\Omega$ | 125.08240 | | −0.67365755 | +0.65750378 |
| $e$ | 0.1609226 | $i$ | 6.30571 | | −0.30707999 | +0.16629635 |
| $P$ | 3.36 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 25 | 691 | 0.0 | 0.5− | 2003 10 22 | 704 | 0.8− | 0.8+ | 2006 08 23 | 644 | 0.2− | 0.0 |
| 1998 01 25 | 691 | 0.2− | 0.2− | 2003 10 22 | 704 | 0.0 | 1.2+ | 2006 08 23 | 644 | 0.1− | 0.1− |
| 1998 01 25 | 691 | 0.3− | 0.2− | 2003 10 24 | 704 | 0.4+ | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.0 |
| 2002 04 04 | 608 | (2.5− | 1.2+) | 2003 10 24 | 704 | 0.4− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.1− |
| 2002 04 04 | 608 | (2.2− | 0.8+) | 2003 10 24 | 704 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1− |
| 2002 04 04 | 608 | (1.8− | 1.1+) | 2003 10 24 | 704 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.1− |
| 2002 04 11 | 704 | 0.2+ | 1.3+ | 2003 10 24 | 704 | 0.3− | 0.2+ | 2006 08 28 | 704 | 0.2− | 0.0 |
| 2002 04 11 | 704 | 0.2+ | 0.1− | 2003 10 29 | 691 | 0.0 | 0.2+ | 2006 08 28 | 704 | 0.5− | 0.7+ |
| 2002 04 11 | 704 | 0.9+ | 0.1+ | 2003 10 29 | 691 | 0.2− | 0.2+ | 2006 08 28 | 704 | 0.7− | 0.3+ |
| 2002 04 11 | 704 | (0.7+ | 1.9+) | 2003 10 29 | 691 | 0.1− | 0.3+ | 2006 08 28 | 704 | 0.8− | 0.6+ |
| 2002 04 11 | 704 | 0.5+ | 0.6+ | 2003 11 19 | 644 | 0.0 | 0.6+ | 2006 08 28 | 704 | 0.8− | 0.2+ |
| 2002 04 12 | 608 | (2.1− | 0.5+) | 2003 11 19 | 644 | 0.0 | 0.5+ | 2006 08 28 | 699 | (0.2+ | 1.6+) |
| 2002 04 12 | 608 | (2.8− | 0.5+) | 2003 11 19 | 644 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.5+ | 1.0+ |
| 2002 04 12 | 608 | (2.4− | 0.2+) | 2005 03 01 | A44 | 0.1− | 0.9− | 2006 08 28 | 699 | (0.2− | 1.8+) |
| 2002 04 13 | 644 | 0.1− | 0.6+ | 2005 03 01 | A44 | 0.1− | 0.8− | 2006 08 31 | 704 | 0.3+ | 1.2+ |
| 2002 04 13 | 644 | 0.5+ | 0.6+ | 2005 03 01 | A44 | 0.3+ | 1.0− | 2006 08 31 | 704 | 0.2− | 0.5− |
| 2002 04 13 | 644 | 0.2+ | 1.0+ | 2005 03 02 | A44 | 0.3+ | 1.1− | 2006 08 31 | 704 | 0.3− | 0.7+ |
| 2002 04 15 | 644 | 0.3+ | 0.7+ | 2005 03 02 | A44 | 0.1+ | 1.0− | 2006 08 31 | 704 | 0.2− | 0.3+ |
| 2002 04 15 | 644 | 0.4+ | 0.8+ | 2005 03 02 | A44 | 0.8− | 0.8− | 2006 09 16 | 704 | 0.3− | 0.6+ |
| 2002 04 15 | 644 | 0.4+ | 0.9+ | 2005 03 04 | 704 | 0.1− | 0.9+ | 2006 09 16 | 704 | 0.6+ | 0.0 |
| 2002 04 16 | 704 | (2.9+ | 0.5−) | 2005 03 04 | 704 | 0.3+ | 0.1− | 2006 09 16 | 704 | 0.1+ | 0.9− |
| 2002 04 16 | 704 | (3.2+ | 1.3−) | 2005 03 04 | 704 | 0.8− | 0.8+ | 2006 09 20 | 644 | 0.1− | 0.9− |
| 2002 04 16 | 704 | (4.8+ | 1.8−) | 2005 03 04 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.1− |
| 2002 05 07 | 644 | (0.3+ | 1.8+) | 2006 05 26 | G96 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.1− | 0.3− |
| 2002 05 07 | 644 | 0.3+ | 1.5+ | 2006 05 26 | G96 | 0.2+ | 0.2− | 2006 09 22 | 704 | 0.4+ | 0.3+ |
| 2002 05 07 | 644 | (0.8+ | 1.7+) | 2006 05 26 | G96 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.9+ | 0.3− |
| 2003 10 19 | 699 | 0.4+ | 0.3+ | 2006 05 26 | G96 | 0.2+ | 0.5− | 2006 09 22 | 704 | 1.4+ | 0.0 |
| 2003 10 19 | 699 | 0.2− | 0.9− | 2006 06 20 | G96 | 0.2+ | 0.4− | 2006 09 22 | 704 | 0.3− | 1.1− |
| 2003 10 19 | 699 | 0.3− | 0.6+ | 2006 06 20 | G96 | 0.0 | 0.3− | 2006 09 26 | 704 | 0.1+ | 1.4− |
| 2003 10 19 | 699 | 0.8+ | 0.2+ | 2006 06 20 | G96 | 0.5− | 0.7− | 2006 09 26 | 704 | 0.8+ | 0.6− |
| 2003 10 22 | 704 | 0.2− | 0.4+ | 2006 07 25 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.6+ | 0.5− |
| 2003 10 22 | 704 | 0.8− | 1.1+ | 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.7+ | 0.6− |
| 2003 10 22 | 704 | 0.4+ | 0.0 | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.2− |
| 2003 10 22 | 704 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2003 10 22 | 704 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2003 10 22 | 704 | 0.3− | 0.8− | 2006 08 16 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |

**(141568)∗ 2002 GG$_{111}$ = 1990 ST$_{24}$ = 2003 WU$_{1}$**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69349)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.44280 | | (2000.0) | | | |
| $n$ | 0.30909878 | $\omega$ | 160.97294 | | +0.77924774 | +0.62603152 |
| $a$ | 2.1663960 | $\Omega$ | 160.18107 | | −0.58562042 | +0.74399612 |
| $e$ | 0.1529315 | $i$ | 4.95472 | | −0.22320770 | +0.23356864 |
| $P$ | 3.19 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 25 | 809 | (0.6− | 2.3+) | 2003 11 19 | 699 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.7+ | 0.1+ |
| 1990 09 25 | 809 | 0.4− | 1.5+ | 2005 03 03 | 691 | 0.2− | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.2− |
| 1990 09 25 | 809 | (0.9+ | 2.4+) | 2005 03 03 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.5− | 0.2+ |
| 1999 05 13 | 704 | 0.1+ | 1.4− | 2005 03 03 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.3− | 0.9+ |
| 1999 05 13 | 704 | (2.0− | 2.2+) | 2005 03 10 | G96 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.8+ | 1.1+ |
| 1999 05 13 | 704 | 1.0− | 1.9+ | 2005 03 10 | G96 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 1999 05 13 | 704 | 0.3− | 1.6+ | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 04 10 | 704 | 0.0 | 0.4− | 2005 03 10 | G96 | 0.5− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 10 | 704 | 0.4+ | 0.1+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2002 04 10 | 704 | 0.8+ | 0.7+ | 2005 04 17 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.2+ | | |
| 2002 04 10 | 704 | 1.0+ | 0.0 | 2005 04 17 | 691 | 0.8+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2002 04 13 | 644 | 0.5+ | 0.7+ | 2006 07 21 | G96 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.4− | | |
| 2002 04 13 | 644 | 0.2+ | 0.9+ | 2006 07 21 | G96 | 0.7+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.1− | | |
| 2002 04 13 | 644 | 0.5+ | 0.8+ | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.1+ | | |
| 2002 04 14 | 644 | 0.1− | 0.7+ | 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.1− | | |
| 2002 04 14 | 644 | 0.2+ | 1.0+ | 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 04 14 | 644 | 0.5+ | 0.4+ | 2006 08 18 | 644 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2002 04 17 | 704 | 0.9− | 0.6+ | 2006 08 18 | 644 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.4+ | | |
| 2002 04 17 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 644 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2002 04 17 | 704 | 0.3+ | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2002 04 17 | 704 | 0.8+ | 0.8+ | 2006 09 16 | 644 | 0.3− | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2003 11 01 | 704 | 1.4+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.6+ | | |
| 2003 11 01 | 704 | 1.0+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2003 11 01 | 704 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2003 11 01 | 704 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.1− | | |
| 2003 11 16 | 703 | 1.0− | 0.6− | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.7− | 1.2− | | |
| 2003 11 16 | 703 | 0.6− | 0.8+ | 2006 09 18 | 699 | 0.6− | 1.3+ | 2006 10 22 | 703 | 0.5− | 1.2− | | |
| 2003 11 16 | 703 | 1.0− | 0.6− | 2006 09 25 | 699 | 0.1+ | 0.8− | 2006 10 22 | 703 | 0.4+ | 0.2− | | |
| 2003 11 16 | 703 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.8− | 0.1− | | |
| 2003 11 18 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.1+ | | |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.2+ | | |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.5+ | 2006 10 22 | 703 | 1.1− | 0.3+ | | |
| 2003 11 19 | 699 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | | |
| 2003 11 19 | 699 | 0.7+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | | |
| 2003 11 19 | 699 | 0.9− | 0.5− | 2006 09 26 | 704 | 0.2− | 0.9− | 2006 11 10 | 644 | 0.3+ | 0.2− | | |

**(141569)∗ 2002 GT$_{111}$ = 2005 ED$_{111}$**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 89276)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.10244 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28956917 | $\omega$ | 144.41624 | | +0.48878566 | +0.87094361 | |
| $a$ | 2.2627392 | $\Omega$ | 154.73026 | | −0.82528192 | +0.48036114 | |
| $e$ | 0.1400015 | $i$ | 6.78805 | | −0.28283977 | +0.10349108 | |
| $P$ | 3.40 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.1− | 0.2− | 2005 03 04 | G96 | 0.2+ | 0.4+ | 2006 08 21 | 704 | 0.2+ | 0.8+ | | |
| 1995 03 26 | 691 | 0.5− | 0.0 | 2005 03 04 | G96 | 0.3+ | 0.2+ | 2006 08 21 | 704 | 0.5+ | 0.9+ | | |
| 1995 03 26 | 691 | 0.5+ | 0.2+ | 2005 03 10 | G96 | 0.2+ | 0.4+ | 2006 08 21 | 704 | 0.0 | 0.1− | | |
| 2002 04 10 | 704 | 0.1− | 0.7− | 2005 03 10 | G96 | 0.3+ | 0.2+ | 2006 08 25 | 704 | 1.3+ | 0.2+ | | |
| 2002 04 10 | 704 | 1.8+ | 0.1+ | 2005 03 10 | G96 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.7+ | 0.5+ | | |
| 2002 04 10 | 704 | 0.2+ | 0.2− | 2005 03 10 | G96 | 0.0 | 0.1− | 2006 08 25 | 704 | 0.4− | 0.7+ | | |
| 2002 04 10 | 704 | 0.0 | 0.6+ | 2006 08 01 | A50 | 0.7+ | 0.0 | 2006 08 25 | 704 | 0.3− | 0.1− | | |
| 2002 04 13 | 644 | 0.3+ | 0.6+ | 2006 08 05 | 941 | 0.5+ | 0.8− | 2006 08 25 | 704 | 1.5+ | 0.3+ | | |
| 2002 04 13 | 644 | 0.2+ | 0.8+ | 2006 08 05 | 941 | 0.3+ | 0.8− | 2006 08 27 | 691 | 0.2− | 0.2− | | |
| 2002 04 13 | 644 | 0.6− | 1.8+ | 2006 08 05 | 941 | 0.3− | 1.6− | 2006 08 27 | 691 | 0.2− | 0.2− | | |
| 2002 04 16 | 704 | (2.1+ | 1.3+) | 2006 08 14 | 644 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.2− | | |
| 2002 04 16 | 704 | 0.2+ | 1.2+ | 2006 08 14 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.2− | 0.1+ | | |
| 2002 04 16 | 704 | 0.1+ | 0.8+ | 2006 08 14 | 644 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.7+ | | |
| 2002 05 07 | 644 | 0.1− | 0.8+ | 2006 08 16 | 644 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.0 | | |
| 2002 05 07 | 644 | 0.1+ | 0.9+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.2− | 0.2+ | | |
| 2002 05 07 | 644 | 0.5+ | 0.7+ | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.5− | 0.3+ | | |
| 2003 10 29 | 691 | 0.1+ | 0.4+ | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.4+ | | |
| 2003 10 29 | 691 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.2− | 0.0 | | |
| 2003 10 29 | 691 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.4+ | 0.2− | | |
| 2003 11 29 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 699 | 1.3− | 0.3+ | 2006 08 30 | 704 | 0.7− | 0.8+ | | |
| 2003 11 29 | 691 | 0.4− | 0.3+ | 2006 08 18 | 699 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.0 | 0.6+ | | |
| 2003 11 29 | 691 | 0.2− | 0.5+ | 2006 08 18 | 699 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.2− | 1.2+ | | |
| 2005 02 09 | G96 | 0.3+ | 0.4+ | 2006 08 18 | 699 | 1.8− | 0.9+ | 2006 08 30 | 704 | 0.1+ | 0.5− | | |
| 2005 02 09 | G96 | 0.1− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 30 | 704 | 1.0− | 0.2+ | | |
| 2005 02 09 | G96 | 0.6− | 0.9+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1− | | |
| 2005 02 09 | G96 | 0.7− | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.2− | 0.1+ | | |
| 2005 03 04 | G96 | 0.3+ | 0.3+ | 2006 08 21 | 704 | 0.4+ | 0.4+ | 2006 09 14 | 644 | 0.3+ | 0.2− | | |
| 2005 03 04 | G96 | 0.6+ | 0.2+ | 2006 08 21 | 704 | 0.5+ | 0.5+ | | | | | | |

**(141570)∗ 2002 GT$_{125}$**

Discovered 2002 Apr. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.48016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27996893 | $\omega$ | 65.20119 | | −0.15554825 | +0.98776486 | |
| $a$ | 2.3141748 | $\Omega$ | 195.86230 | | −0.92046246 | −0.14904462 | |
| $e$ | 0.2042268 | $i$ | 2.34740 | | −0.35854372 | −0.04589431 | |
| $P$ | 3.52 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 691 | 0.2− | 0.6+ | 2002 04 22 | 691 | 0.2+ | 0.7+ | 2006 05 07 | G96 | 0.2+ | 0.0 | | |
| 2002 03 21 | 691 | 0.0 | 0.3+ | 2003 09 27 | 691 | 0.2− | 0.6+ | 2006 05 07 | G96 | 0.2− | 0.2− | | |
| 2002 03 21 | 691 | 0.1− | 0.5+ | 2003 09 27 | 691 | 0.1− | 0.4+ | 2006 05 07 | G96 | 0.3+ | 0.5− | | |
| 2002 04 04 | 644 | 0.5+ | 0.0 | 2003 09 27 | 691 | 0.4− | 0.6+ | 2006 05 30 | G96 | 0.1+ | 0.1− | | |
| 2002 04 04 | 644 | 0.8+ | 0.4+ | 2003 10 16 | 691 | 0.4− | 0.7+ | 2006 05 30 | G96 | 0.3+ | 0.1+ | | |
| 2002 04 04 | 644 | 0.0 | 0.3− | 2003 10 16 | 691 | 0.5− | 0.7+ | 2006 05 30 | G96 | 0.0 | 0.2+ | | |
| 2002 04 12 | 704 | 0.6− | 0.3− | 2003 10 16 | 691 | 0.1+ | 0.6+ | 2006 05 30 | G96 | 0.1+ | 0.1+ | | |
| 2002 04 12 | 704 | 0.5− | 1.9+ | 2003 10 23 | 704 | 0.6+ | 0.2− | 2006 07 20 | 644 | 0.3− | 0.4+ | | |
| 2002 04 12 | 704 | 1.2− | 0.9− | 2003 10 23 | 704 | 0.9− | 0.3+ | 2006 07 20 | 644 | 0.1− | 0.7+ | | |
| 2002 04 12 | 704 | 1.7+ | 1.1+ | 2003 10 23 | 704 | (2.6− | 1.1+) | 2006 07 20 | 644 | 0.2− | 0.3+ | | |
| 2002 04 14 | 704 | 0.4+ | 0.6+ | 2003 10 25 | 691 | 0.1− | 0.2+ | 2006 07 25 | 644 | 0.1+ | 0.4+ | | |
| 2002 04 14 | 704 | (2.8+ | 1.0+) | 2003 10 25 | 691 | 0.2− | 0.2− | 2006 07 25 | 644 | 0.0 | 0.5+ | | |
| 2002 04 14 | 704 | 0.9+ | 0.1− | 2003 10 25 | 691 | 0.4+ | 0.5+ | 2006 07 25 | 644 | 0.1− | 0.3+ | | |
| 2002 04 14 | 704 | 1.2+ | 0.4+ | 2005 01 19 | 691 | 0.0 | 0.1− | 2006 08 12 | 644 | 0.3− | 0.1+ | | |
| 2002 04 14 | 704 | 1.7+ | 0.4+ | 2005 01 19 | 691 | 0.1+ | 0.1− | 2006 08 12 | 644 | 0.3− | 0.5+ | | |
| 2002 04 22 | 691 | 0.2+ | 0.3+ | 2005 01 19 | 691 | 0.2− | 0.0 | 2006 08 12 | 644 | 0.3− | 0.2+ | | |
| 2002 04 22 | 691 | 0.2+ | 0.6+ | 2006 05 07 | G96 | 0.2+ | 0.1− | | | | | | |

**(141571)∗ 2002 GA$_{127}$ = 2003 SR$_{201}$**

Discovered 2002 Apr. 12 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 52982)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.97236 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23781583 | $\omega$ | 125.53059 | | +0.75770013 | +0.65252995 | |
| $a$ | 2.5801337 | $\Omega$ | 193.74559 | | −0.61125748 | +0.70438051 | |
| $e$ | 0.2188347 | $i$ | 2.35318 | | −0.22859312 | +0.27937925 | |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.2+ | 0.1− | 2003 10 02 | 333 | 0.4− | 0.0 | 2003 10 26 | 703 | 0.5− | 1.2+ | | |
| 1999 11 04 | 691 | 0.4− | 0.2− | 2003 10 02 | 333 | 0.8− | 0.1− | 2003 10 26 | 703 | 0.0 | 0.7+ | | |
| 1999 11 04 | 691 | 0.1+ | 0.2+ | 2003 10 02 | 333 | 0.2− | 0.6+ | 2003 10 26 | 703 | 0.3− | 1.5− | | |
| 1999 12 04 | 703 | 0.6+ | 0.6+ | 2003 10 02 | 333 | 0.6+ | 0.2+ | 2003 10 28 | 704 | 0.2+ | 0.5+ | | |
| 1999 12 04 | 703 | 0.9+ | 0.0 | 2003 10 02 | 333 | 0.4− | 0.2+ | 2003 10 28 | 704 | 0.5+ | 0.3− | | |
| 1999 12 04 | 703 | 0.3− | 0.4+ | 2003 10 02 | 333 | 0.3− | 0.3+ | 2003 10 28 | 704 | 0.2− | 0.5+ | | |
| 1999 12 04 | 703 | 0.8− | 0.1+ | 2003 10 02 | 333 | 0.4− | 0.1+ | 2003 10 28 | 704 | 0.1+ | 0.7+ | | |
| 2002 04 06 | 807 | 0.2+ | 0.7+ | 2003 10 06 | 333 | 0.4+ | 0.2+ | 2003 10 28 | 704 | 0.1− | 0.7+ | | |
| 2002 04 06 | 807 | 0.1+ | 0.5+ | 2003 10 06 | 333 | 0.3− | 0.0 | 2003 11 01 | 704 | 0.8+ | 0.5− | | |
| 2002 04 12 | 644 | 0.3+ | 0.5+ | 2003 10 06 | 333 | 0.3+ | 0.0 | 2003 11 01 | 704 | 0.5+ | 1.1− | | |
| 2002 04 12 | 644 | 0.1+ | 0.7+ | 2003 10 09 | 333 | 1.1+ | 0.6− | 2003 11 01 | 704 | 0.7+ | 1.1− | | |
| 2002 04 12 | 644 | 0.6+ | 0.7+ | 2003 10 09 | 333 | 1.8+ | 0.9+ | 2003 11 01 | 704 | 0.6+ | 1.3− | | |
| 2002 04 14 | 704 | 0.2+ | 0.8+ | 2003 10 18 | 291 | 0.1− | 0.1− | 2003 11 01 | 704 | 1.1+ | 1.2− | | |
| 2002 04 14 | 704 | 0.1− | 0.2+ | 2003 10 18 | 291 | 0.2− | 0.1− | 2003 11 21 | 704 | 0.1− | 0.4+ | | |
| 2002 04 14 | 704 | 0.3− | 0.6+ | 2003 10 18 | 291 | 0.5− | 0.1− | 2003 11 21 | 704 | 0.1+ | 0.5+ | | |
| 2002 04 14 | 704 | 0.7+ | 0.4+ | 2003 10 21 | 704 | 0.8− | 0.1− | 2003 11 21 | 704 | 0.2+ | 0.9+ | | |
| 2002 04 14 | 704 | 0.3− | 0.1+ | 2003 10 21 | 704 | 1.0− | 0.5+ | 2003 11 21 | 704 | 0.0 | 0.4+ | | |
| 2003 09 26 | 704 | 0.0 | 0.0 | 2003 10 21 | 704 | 0.3− | 0.3+ | 2003 11 26 | 699 | 0.4+ | 0.8+ | | |
| 2003 09 26 | 333 | 0.1− | 0.3+ | 2003 10 21 | 704 | 0.7− | 0.2− | 2003 11 26 | 699 | 0.6− | 1.1− | | |
| 2003 09 26 | 704 | 0.0 | 1.1+ | 2003 10 21 | 644 | 0.0 | 0.2+ | 2003 11 26 | 699 | 1.1+ | 0.5− | | |
| 2003 09 26 | 704 | 0.2+ | 0.9+ | 2003 10 21 | 644 | 0.0 | 0.1− | 2003 11 26 | 699 | 0.0 | 1.3− | | |
| 2003 09 26 | 333 | 0.1− | 0.5+ | 2003 10 21 | 644 | 0.1− | 0.6+ | 2006 03 25 | G96 | 0.2− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 704 | 0.4+ | 1.5+ | 2003 10 23 | 699 | 0.1− | 0.1− | 2006 03 25 | G96 | 0.2− | 0.4− |
| 2003 09 26 | 704 | 0.5− | 0.1+ | 2003 10 23 | 699 | 0.1− | 0.2+ | 2006 03 25 | G96 | 0.0 | 0.4+ |
| 2003 09 26 | 333 | 0.2− | 0.3+ | 2003 10 23 | 699 | 0.4− | 0.1+ | 2006 03 25 | G96 | 0.3− | 0.1− |
| 2003 09 27 | 333 | 0.1− | 0.2+ | 2003 10 23 | 699 | 0.0 | 0.3− | 2006 04 19 | G96 | 0.1− | 0.1+ |
| 2003 09 27 | 333 | 0.5− | 1.0+ | 2003 10 23 | 704 | 0.1+ | 0.6+ | 2006 04 19 | G96 | 0.2− | 0.0 |
| 2003 09 27 | 333 | 0.3− | 0.4+ | 2003 10 23 | 704 | 0.1+ | 0.4+ | 2006 04 19 | G96 | 0.1+ | 0.2+ |
| 2003 09 29 | 704 | 0.4− | 0.1+ | 2003 10 23 | 704 | 0.2+ | 0.3+ | 2006 04 19 | G96 | 0.1− | 0.0 |
| 2003 09 29 | 704 | 0.1+ | 0.9+ | 2003 10 23 | 704 | 0.1− | 0.7+ | 2006 04 24 | 691 | 0.1+ | 0.6+ |
| 2003 09 29 | 704 | 0.7− | 0.8+ | 2003 10 23 | 704 | 0.6+ | 0.7+ | 2006 04 24 | 691 | 0.2+ | 0.4+ |
| 2003 09 29 | 704 | 0.2− | 0.6+ | 2003 10 24 | 291 | 0.0 | 0.2+ | 2006 04 24 | 691 | 0.1+ | 0.4+ |
| 2003 09 29 | 704 | 0.4+ | 0.6+ | 2003 10 24 | 291 | 0.1− | 0.1+ | 2006 05 03 | 691 | 0.3+ | 0.4+ |
| 2003 10 02 | 333 | 0.5− | 0.3+ | 2003 10 24 | 291 | 0.0 | 0.2+ | 2006 05 03 | 691 | 0.3+ | 0.3+ |
| 2003 10 02 | 333 | 0.7− | 0.4+ | 2003 10 26 | 703 | 0.7− | 0.3+ | 2006 05 03 | 691 | 0.2+ | 0.5+ |

**(141572)∗ 2002 GB$_{128}$ = 2006 FY$_{41}$**

Discovered 2002 Apr. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 100243)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.18948 | | (2000.0) | | +0.97469981 | −0.22051209 |
| $n$ | 0.26392113 | $\omega$ | 179.27582 | | +0.20428646 | +0.94518441 |
| $a$ | 2.4070583 | $\Omega$ | 193.63069 | | +0.09070461 | +0.24083364 |
| $e$ | 0.2184003 | $i$ | 8.91822 | | | |
| $P$ | 3.73 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 691 | 0.6− | 0.4+ | 2002 04 09 | 807 | 0.4− | 0.5+ | 2006 04 02 | 691 | 0.3+ | 0.1+ |
| 1996 09 13 | 691 | 0.2+ | 0.1+ | 2002 04 12 | 704 | 0.6− | 0.0 | 2006 04 07 | 691 | 0.3+ | 0.3+ |
| 1996 09 13 | 691 | 0.2+ | 0.2+ | 2002 04 12 | 704 | 0.3+ | 0.6+ | 2006 04 07 | 691 | 0.0 | 0.0 |
| 1996 10 16 | 566 | 0.0 | 0.1− | 2002 04 12 | 704 | 0.7+ | 0.4+ | 2006 04 07 | 691 | 0.4+ | 0.2+ |
| 1996 10 16 | 566 | 0.2− | 0.2− | 2002 04 12 | 704 | 0.6+ | 0.5+ | 2006 04 19 | 703 | (1.5− | 2.2−) |
| 1996 10 16 | 566 | 0.1+ | 0.1− | 2002 04 14 | 704 | 1.2+ | 0.4+ | 2006 04 19 | 703 | 0.7− | 1.0− |
| 2000 10 31 | 704 | 0.2− | 0.0 | 2002 04 14 | 704 | 0.3− | 1.9− | 2006 04 19 | 703 | 1.2− | 1.4− |
| 2000 10 31 | 704 | 0.2+ | 0.3+ | 2002 04 14 | 704 | 0.9− | 0.1− | 2006 04 19 | 703 | 1.6− | 0.6− |
| 2000 10 31 | 704 | 0.1+ | 0.7+ | 2002 04 14 | 704 | 0.2+ | 0.0 | 2006 04 24 | 704 | 0.9+ | 0.4+ |
| 2000 10 31 | 704 | 0.9− | 0.5+ | 2002 04 14 | 704 | 0.0 | 1.7− | 2006 04 24 | 704 | 0.9+ | 0.4+ |
| 2001 01 04 | 704 | 0.2− | 0.5+ | 2005 01 18 | 703 | 0.6− | 0.5− | 2006 04 24 | 704 | 1.5+ | 1.4+ |
| 2001 01 04 | 704 | 0.5+ | 0.3+ | 2005 01 18 | 703 | 0.1− | 0.6+ | 2006 05 01 | 703 | 0.3− | 0.4+ |
| 2001 01 04 | 704 | 1.1+ | 0.4− | 2005 01 18 | 703 | 1.1− | 0.3− | 2006 05 01 | 703 | 0.1− | 0.2+ |
| 2001 01 04 | 704 | 0.2+ | 0.4− | 2005 01 18 | 703 | 0.4− | 0.0 | 2006 05 01 | 703 | 0.3− | 0.6+ |
| 2001 01 04 | 704 | 1.1+ | 0.1− | 2006 01 27 | G96 | 0.2− | 0.1− | 2006 05 01 | 703 | 1.6− | 1.5+ |
| 2001 01 04 | 704 | 0.0 | 0.4+ | 2006 01 27 | G96 | 0.5− | 0.3− | 2006 05 16 | 644 | 0.2+ | 0.3+ |
| 2001 01 04 | 704 | 0.2+ | 0.0 | 2006 01 27 | G96 | 0.2− | 0.2− | 2006 05 16 | 644 | 0.4+ | 0.0 |
| 2001 01 04 | 704 | 0.2− | 0.9+ | 2006 01 27 | G96 | 0.5− | 0.6− | 2006 05 16 | 644 | 0.3+ | 0.0 |
| 2001 01 04 | 704 | 0.4+ | 0.2− | 2006 03 26 | G96 | 0.3− | 0.1+ | 2006 05 30 | G96 | 0.3− | 0.1− |
| 2001 01 04 | 704 | 0.3− | 0.0 | 2006 03 26 | G96 | 0.1+ | 0.0 | 2006 05 30 | G96 | 0.5− | 0.1+ |
| 2002 04 04 | 644 | 0.3+ | 0.6+ | 2006 03 26 | G96 | 0.2− | 0.0 | 2006 05 30 | G96 | 0.1+ | 0.1+ |
| 2002 04 04 | 644 | 0.6− | 0.2+ | 2006 03 26 | G96 | 0.2− | 0.3− | 2006 05 30 | G96 | 0.5− | 0.1+ |
| 2002 04 04 | 644 | 0.4− | 0.1− | 2006 04 02 | 691 | 0.2+ | 0.1+ | | | | |
| 2002 04 09 | 807 | 0.1− | 0.2+ | 2006 04 02 | 691 | 0.2+ | 0.2+ | | | | |

**(141573)∗ 2002 GC$_{132}$ = 2004 TB$_{63}$**

Discovered 2002 Apr. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 69354)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.63412 | | (2000.0) | | −0.02438370 | −0.99935172 |
| $n$ | 0.21929066 | $\omega$ | 73.74296 | | +0.88076407 | −0.03400905 |
| $a$ | 2.7234702 | $\Omega$ | 17.71781 | | +0.47292716 | +0.01181167 |
| $e$ | 0.0780302 | $i$ | 4.99302 | | | |
| $P$ | 4.49 | $H$ | 15.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.1+ | 0.0 | 2004 10 05 | 691 | 0.1− | 0.3+ | 2005 11 12 | 691 | 0.0 | 0.3− |
| 1995 11 18 | 691 | 0.3− | 0.1+ | 2004 10 05 | 691 | 0.4+ | 0.0 | 2005 11 12 | 691 | 0.2+ | 0.3− |
| 1995 11 18 | 691 | 0.1− | 0.2+ | 2004 10 07 | 699 | 0.9− | 0.2+ | 2005 11 12 | 691 | 0.0 | 0.3− |
| 2002 04 04 | 644 | 0.2+ | 0.2− | 2004 10 07 | 699 | 0.4+ | 0.7+ | 2006 02 09 | 644 | 0.2− | 0.2− |
| 2002 04 04 | 644 | 0.2+ | 0.2− | 2004 10 07 | 699 | 1.2− | 1.4+ | 2006 02 09 | 644 | 0.3− | 0.2− |
| 2002 04 04 | 644 | 0.6+ | 0.2− | 2004 10 07 | 699 | 0.4+ | 0.1− | 2006 02 09 | 644 | 0.3− | 0.1− |
| 2002 04 12 | 704 | 0.3+ | 1.6+ | 2004 10 09 | 704 | 0.2− | 1.1− | 2006 02 21 | 699 | 0.1+ | 0.0 |
| 2002 04 12 | 704 | 0.5− | 0.2− | 2004 10 09 | 704 | 0.4− | 1.3+ | 2006 02 21 | 699 | 0.6− | 0.4− |
| 2002 04 12 | 704 | 0.7+ | 1.0+ | 2004 10 09 | 704 | 0.6− | 0.2− | 2006 02 21 | 699 | 1.1+ | 0.1+ |
| 2002 04 12 | 704 | 0.0 | 1.1+ | 2004 10 09 | 704 | 0.2+ | 0.2+ | 2006 02 21 | 699 | 0.3− | 0.1+ |
| 2002 04 14 | 704 | 1.2+ | 0.9+ | 2004 10 13 | 691 | 0.3+ | 0.1+ | 2006 02 22 | 704 | 0.3− | 2.0+ |
| 2002 04 14 | 704 | 1.0+ | 0.7+ | 2004 10 13 | 691 | 0.4+ | 0.0 | 2006 02 22 | 704 | 0.5− | 0.0 |
| 2002 04 14 | 704 | 0.8+ | 1.0+ | 2004 10 13 | 691 | 0.5+ | 0.0 | 2006 02 22 | 704 | 0.0 | 0.1− |
| 2002 04 14 | 704 | 0.3+ | 1.3+ | 2004 10 20 | 704 | 0.8+ | 0.1+ | 2006 02 22 | 704 | 0.2− | 0.2− |
| 2002 04 14 | 704 | 0.2+ | 1.4+ | 2004 10 20 | 704 | 0.1+ | 0.3− | 2006 02 22 | 704 | 0.4+ | 0.0 |
| 2002 04 15 | 644 | 0.2− | 0.3− | 2004 10 20 | 704 | 0.1+ | 0.2− | 2006 02 22 | 704 | 0.5+ | 0.3+ |
| 2002 04 15 | 644 | 0.1+ | 0.2− | 2004 10 20 | 704 | 0.2− | 0.5+ | 2006 02 22 | 704 | 1.0+ | 0.0 |
| 2002 04 15 | 644 | 0.0 | 0.2+ | 2004 10 20 | 704 | 0.7+ | 0.8+ | 2006 02 22 | 704 | 1.0+ | 0.7+ |
| 2002 04 22 | 644 | 0.0 | 0.2+ | 2004 11 03 | 644 | 0.2+ | 0.3+ | 2006 02 22 | 704 | 0.2+ | 0.9+ |
| 2002 04 22 | 644 | 0.1+ | 0.6+ | 2004 11 03 | 644 | 0.1− | 0.1+ | 2006 03 03 | 699 | 0.2− | 0.0 |
| 2002 04 22 | 644 | 0.4+ | 0.8+ | 2004 11 03 | 644 | 0.2+ | 0.2+ | 2006 03 03 | 699 | 1.1− | 0.4+ |
| 2004 09 17 | 691 | 1.0− | 0.3+ | 2004 11 12 | 703 | 0.7− | 0.1+ | 2006 03 03 | 699 | 0.5− | 0.0 |
| 2004 09 17 | 691 | 0.8− | 0.3+ | 2004 11 12 | 703 | 0.5+ | 0.7− | 2006 03 03 | 699 | 0.7− | 0.4− |
| 2004 09 17 | 691 | 1.3− | 0.1− | 2004 11 12 | 703 | 1.0+ | 1.7+ | | | | |
| 2004 10 05 | 691 | 0.0 | 0.2+ | 2004 11 12 | 703 | 0.7+ | 0.2+ | | | | |

**(141574)∗ 2002 GZ$_{137}$**

Discovered 2002 Apr. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 258.66615 | | (2000.0) | | −0.46055040 | +0.87162898 |
| $n$ | 0.17948830 | $\omega$ | 135.07689 | | −0.85567006 | −0.38568823 |
| $a$ | 3.1125185 | $\Omega$ | 106.82276 | | −0.23605525 | −0.30250207 |
| $e$ | 0.0453963 | $i$ | 10.09613 | | | |
| $P$ | 5.49 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 20 | 691 | 0.3− | 0.0 | 2002 04 14 | 644 | 0.6+ | 0.3+ | 2004 10 07 | 704 | 0.5− | 1.0+ |
| 1991 04 20 | 691 | 0.1− | 0.2+ | 2002 04 14 | 644 | 0.4+ | 0.1− | 2004 10 20 | 703 | 0.4+ | 0.6+ |
| 1991 04 20 | 691 | 0.1− | 0.2− | 2002 04 14 | 644 | 0.3+ | 0.0 | 2004 10 20 | 703 | 0.9− | 0.0 |
| 2001 01 04 | 704 | 1.0+ | 0.0 | 2002 04 16 | 704 | 1.2+ | 0.1+ | 2004 10 20 | 703 | 0.0 | 1.0+ |
| 2001 01 04 | 704 | 0.2− | 0.4+ | 2002 04 16 | 704 | 0.6+ | 0.2− | 2004 10 20 | 703 | 0.1− | 0.1− |
| 2001 01 04 | 704 | 0.0 | 0.1− | 2002 04 16 | 704 | 1.1+ | 0.9− | 2006 03 25 | G96 | 0.1+ | 0.1+ |
| 2001 01 04 | 704 | 0.1+ | 0.2− | 2002 04 16 | 704 | 0.7+ | 0.1+ | 2006 03 25 | G96 | 0.5− | 0.2+ |
| 2001 01 19 | 704 | 0.6+ | 0.6− | 2002 05 05 | 699 | 0.6− | 0.1+ | 2006 03 25 | G96 | 0.4− | 0.1− |
| 2001 01 19 | 704 | (0.3− | 1.7−) | 2002 05 05 | 699 | (1.9− | 1.4+) | 2006 03 25 | G96 | 0.3− | 0.1+ |
| 2001 01 19 | 704 | 0.5+ | 0.2+ | 2002 05 05 | 699 | 0.4+ | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 01 19 | 704 | 1.1+ | 0.5+ | 2002 05 05 | 699 | 0.5− | 0.5− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2002 03 12 | 691 | 0.1− | 0.0 | 2002 05 06 | 644 | 0.6+ | 0.1+ | 2006 11 23 | 691 | 0.6− | 0.0 |
| 2002 03 12 | 691 | 0.2− | 0.1+ | 2002 05 06 | 644 | 0.3+ | 0.1+ | 2006 11 28 | 691 | 0.0 | 0.1+ |
| 2002 03 12 | 691 | 0.3− | 0.9+ | 2002 05 06 | 644 | 0.2+ | 0.1+ | 2006 11 28 | 691 | 0.2− | 0.2+ |
| 2002 04 12 | 644 | 0.5+ | 0.1+ | 2004 10 07 | 704 | 0.4+ | 0.5+ | 2006 11 28 | 691 | 0.2− | 0.1+ |
| 2002 04 12 | 644 | 0.0 | 0.2+ | 2004 10 07 | 704 | 0.4− | 0.4+ | | | | |
| 2002 04 12 | 644 | 0.5+ | 0.1− | 2004 10 07 | 704 | 0.6− | 0.4+ | | | | |

**(141575)∗ 2002 GD$_{142}$**

Discovered 2002 Apr. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.18090 | | (2000.0) | | −0.74973543 | −0.66050147 |
| $n$ | 0.24122366 | $\omega$ | 26.82416 | | +0.59904996 | −0.70339997 |
| $a$ | 2.5557760 | $\Omega$ | 111.77772 | | +0.28113331 | −0.26261433 |
| $e$ | 0.0854059 | $i$ | 2.49529 | | | |
| $P$ | 4.09 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 0.3+ | 0.0 | 2004 11 10 | 691 | 0.1+ | 0.0 | 2006 04 19 | 703 | 1.1− | 0.8− |
| 2000 11 21 | 704 | 0.9+ | 0.8− | 2004 12 10 | 704 | 0.4− | 0.2+ | 2006 04 19 | 703 | 1.0− | 0.2− |
| 2000 11 21 | 704 | 0.8+ | 0.1− | 2004 12 10 | 704 | 0.6− | 0.0 | 2006 04 19 | 703 | 1.8− | 0.1+ |
| 2000 11 21 | 704 | 0.8+ | 1.0− | 2004 12 10 | 704 | 0.1− | 0.3+ | 2006 04 19 | 703 | 1.6− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.4− | 0.2+ | 2004 12 10 | 704 | 0.5+ | 0.9+ | 2006 04 20 | 703 | 0.3+ | 0.8− |
| 2000 12 30 | 704 | 1.5− | 0.6+ | 2004 12 10 | 704 | 0.5− | 1.1+ | 2006 04 20 | 703 | 0.9− | 1.1− |
| 2000 12 30 | 704 | 0.6− | 1.1+ | 2006 03 23 | 691 | 0.1+ | 0.2− | 2006 04 20 | 703 | 0.2+ | 0.0 |
| 2000 12 30 | 704 | 0.4− | 0.5+ | 2006 03 23 | 691 | 0.2− | 0.3− | 2006 04 20 | 703 | 0.5− | 0.2+ |
| 2002 04 13 | 644 | 0.3+ | 1.2+ | 2006 03 23 | 691 | 0.0 | 0.2− | 2006 04 24 | 704 | 0.6− | 0.6+ |
| 2002 04 13 | 644 | 0.5+ | 1.3+ | 2006 04 02 | 691 | 0.1+ | 0.4− | 2006 04 24 | 704 | 0.2+ | 0.1+ |
| 2002 04 13 | 644 | 0.1+ | 1.6+ | 2006 04 02 | 691 | 0.1+ | 0.2− | 2006 04 24 | 704 | 0.7+ | 0.2− |
| 2002 04 14 | 644 | 0.3+ | 0.7+ | 2006 04 02 | 691 | 0.2+ | 0.2− | 2006 04 24 | 704 | 0.2− | 0.5+ |
| 2002 04 14 | 644 | 0.2+ | 0.4+ | 2006 04 02 | G96 | 0.2− | 0.4− | 2006 04 27 | 704 | 1.1+ | 0.5+ |
| 2002 04 14 | 644 | 0.1+ | 0.6+ | 2006 04 02 | G96 | 0.1+ | 0.3− | 2006 04 27 | 704 | 1.5+ | 0.4+ |
| 2002 04 17 | 704 | 0.5+ | 0.7+ | 2006 04 02 | G96 | 0.2− | 0.5− | 2006 04 27 | 704 | 0.5+ | 1.4+ |
| 2002 04 17 | 704 | 1.3+ | 0.8+ | 2006 04 09 | 704 | 0.6− | 0.2− | 2006 04 27 | 704 | 1.7+ | 0.3− |
| 2002 04 17 | 704 | 1.5+ | 1.4+ | 2006 04 09 | G96 | 0.7− | 0.2− | 2006 05 06 | G96 | 0.2− | 0.4− |
| 2002 05 08 | 704 | 0.1+ | 0.0 | 2006 04 09 | G96 | 0.2− | 0.2− | 2006 05 06 | G96 | 0.2− | 0.1− |
| 2002 05 08 | 704 | 0.1+ | 0.9+ | 2006 04 09 | G96 | 0.3− | 0.2− | 2006 05 06 | G96 | 0.3− | 0.2− |
| 2002 05 08 | 704 | 1.4− | 0.2+ | 2006 04 09 | 704 | 0.0 | 0.2− | 2006 05 06 | G96 | 0.3− | 0.2− |
| 2002 05 08 | 704 | 0.0 | 0.0 | 2006 04 09 | G96 | 0.5− | 0.3− | 2006 05 28 | G96 | 0.1− | 0.5+ |
| 2002 05 19 | 644 | 0.2− | 0.4+ | 2006 04 09 | 704 | 0.2+ | 0.7+ | 2006 05 28 | G96 | 0.0 | 0.3+ |
| 2002 05 19 | 644 | 0.1+ | 0.2+ | 2006 04 09 | 704 | 0.0 | 0.3+ | 2006 05 28 | G96 | 0.2+ | 0.1+ |
| 2002 05 19 | 644 | 0.1+ | 0.4+ | 2006 04 18 | 644 | 0.2+ | 0.5− | 2006 05 28 | G96 | 0.2− | 0.0 |
| 2004 11 10 | 691 | 0.1+ | 0.1− | 2006 04 18 | 644 | 0.0 | 0.5− | | | | |
| 2004 11 10 | 691 | 0.0 | 0.1+ | 2006 04 18 | 644 | 0.0 | 0.5− | | | | |

**(141576)∗ 2002 GH$_{142}$**

Discovered 2002 Apr. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 350.68155 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25965045 | $\omega$ | 237.63860 | | +0.46054806 | | +0.88187820 | | |
| $a$ | 2.4333803 | $\Omega$ | 60.10576 | | −0.77026010 | | +0.45356402 | | |
| $e$ | 0.1152057 | $i$ | 6.68536 | | −0.44112907 | | +0.12872654 | | |
| $P$ | 3.80 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 19 | 704 | 1.1+ | 0.4+ | 2002 05 28 | 608 | 0.2− | 0.3− | 2003 10 22 | 704 | 0.9− | 0.5− |
| 1998 04 19 | 704 | 0.8− | 0.6− | 2002 05 28 | 608 | 0.2− | 0.4− | 2003 10 22 | 704 | 0.1+ | 0.1− |
| 1998 04 19 | 704 | (2.7− | 1.5−) | 2002 05 28 | 608 | 0.1+ | 0.2− | 2003 10 25 | 704 | 0.6+ | 0.6− |
| 1998 04 19 | 704 | 0.3− | 0.7− | 2003 09 20 | 699 | 0.3− | 0.2− | 2003 10 25 | 704 | 0.1− | 0.6+ |
| 2002 04 13 | 644 | 0.4+ | 0.1+ | 2003 09 20 | 699 | 1.1− | 0.9+ | 2003 10 25 | 704 | 0.7+ | 0.0 |
| 2002 04 13 | 644 | 0.1+ | 0.1− | 2003 09 20 | 699 | 0.1− | 0.4+ | 2003 10 25 | 704 | 0.4− | 0.1− |
| 2002 04 13 | 644 | 0.1+ | 0.1− | 2003 09 20 | 699 | 1.6− | 0.7− | 2003 10 25 | 704 | 0.1+ | 0.4+ |
| 2002 04 14 | 644 | 0.3+ | 0.4+ | 2003 09 28 | 704 | 0.2− | 0.1+ | 2003 11 16 | 703 | 0.5− | 0.6+ |
| 2002 04 14 | 644 | 0.1+ | 0.3+ | 2003 09 28 | 704 | 0.8+ | 0.8− | 2003 11 16 | 703 | 0.1+ | 1.1+ |
| 2002 04 14 | 644 | 0.1+ | 0.5+ | 2003 09 28 | 704 | 0.1+ | 0.0 | 2003 11 16 | 703 | 0.6+ | 0.2− |
| 2002 05 02 | 699 | 0.2+ | 0.3− | 2003 09 28 | 704 | 0.1+ | 0.2+ | 2003 11 16 | 703 | 0.6− | 0.3+ |
| 2002 05 02 | 699 | 0.4− | 1.8− | 2003 09 28 | 704 | 0.6+ | 0.1+ | 2006 05 25 | 568 | 0.2− | 0.0 |
| 2002 05 02 | 699 | 0.4+ | 0.7+ | 2003 10 20 | 691 | 0.1− | 0.0 | 2006 05 25 | 568 | 0.2− | 0.1+ |
| 2002 05 02 | 699 | 1.6+ | 0.2− | 2003 10 20 | 704 | 0.7+ | 0.1+ | 2006 05 25 | 568 | 0.3− | 0.0 |
| 2002 05 08 | 704 | 1.7+ | 1.5+ | 2003 10 20 | 704 | 0.4+ | 0.1+ | 2006 05 27 | 704 | 0.6+ | 0.9− |
| 2002 05 08 | 704 | 0.7− | 1.0+ | 2003 10 20 | 704 | 0.7+ | 0.1+ | 2006 05 27 | 704 | 0.7+ | 0.6+ |
| 2002 05 08 | 704 | 1.0− | 0.2− | 2003 10 20 | 691 | 0.2− | 0.0 | 2006 05 27 | 704 | 0.4+ | 0.3− |
| 2002 05 08 | 704 | 0.8− | 0.5+ | 2003 10 20 | 704 | 0.2+ | 0.4− | 2006 05 27 | 704 | 0.3+ | 1.4− |
| 2002 05 08 | 704 | 0.6− | 0.7+ | 2003 10 20 | 704 | 0.4− | 0.1+ | 2006 06 27 | E12 | 0.3− | 0.3+ |
| 2002 05 19 | 644 | 0.2− | 0.5+ | 2003 10 20 | 691 | 0.1− | 0.1+ | 2006 06 27 | E12 | 0.9− | 0.3− |
| 2002 05 19 | 644 | 0.1+ | 0.5+ | 2003 10 22 | 704 | 0.0 | 0.2− | 2006 06 27 | E12 | 0.4− | 0.1+ |
| 2002 05 19 | 644 | 0.2− | 0.5+ | 2003 10 22 | 704 | 0.4+ | 0.2+ | 2006 06 27 | E12 | 0.2+ | 0.3+ |

**(141577)∗ 2002 GS$_{149}$**

Discovered 2002 Apr. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 292.30392 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.08328043 | $\omega$ | 42.10601 | | +0.77773418 | | −0.62858405 | | |
| $a$ | 5.1932682 | $\Omega$ | 356.83396 | | +0.55898987 | | +0.69408935 | | |
| $e$ | 0.0451298 | $i$ | 3.54239 | | +0.28750630 | | +0.35088754 | | |
| $P$ | 11.83 | $H$ | 13.2 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 809 | 0.6+ | 1.1+ | 2002 04 04 | 644 | 0.7+ | 0.5− | 2002 05 29 | 608 | 0.2− | 0.1− |
| 1995 09 22 | 809 | 0.6− | 0.3+ | 2002 04 04 | 644 | 0.6+ | 0.4− | 2002 06 08 | 608 | 0.7− | 0.4+ |
| 1996 10 11 | 566 | 0.1+ | 0.2+ | 2002 04 04 | 644 | 0.2+ | 0.5− | 2003 04 29 | 608 | 0.7− | 0.6+ |
| 1996 10 11 | 566 | 0.3− | 0.3+ | 2002 04 14 | 704 | 1.0+ | 0.2+ | 2003 04 29 | 608 | 0.4− | 0.6− |
| 1996 10 16 | 566 | 0.4− | 0.1+ | 2002 04 14 | 704 | 1.0+ | 1.3+ | 2003 04 29 | 608 | 0.4− | 0.1+ |
| 1996 10 16 | 566 | 0.1− | 0.5+ | 2002 04 14 | 704 | (1.7+ | 0.9+) | 2003 05 13 | 608 | 0.5− | 0.2+ |
| 1996 10 16 | 566 | 0.8− | 0.9+ | 2002 04 14 | 704 | 0.0 | 0.4+ | 2006 08 15 | 644 | 0.1+ | 0.2+ |
| 1996 10 18 | 566 | 0.4+ | 0.2− | 2002 04 14 | 704 | 0.3+ | 0.2+ | 2006 08 15 | 644 | 0.1− | 0.2+ |
| 1997 11 28 | 327 | 0.0 | 0.2+ | 2002 04 15 | 644 | 0.1+ | 0.5+ | 2006 08 15 | 644 | 0.2+ | 0.5+ |
| 1997 11 28 | 327 | 0.3− | 0.2+ | 2002 04 15 | 644 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.2− | 0.5+ |
| 1997 11 28 | 327 | 0.6− | 0.1+ | 2002 04 15 | 644 | 0.4− | 0.8+ | 2006 08 17 | 644 | 0.1− | 0.3+ |
| 2001 03 21 | 608 | 0.3− | 0.3− | 2002 04 16 | 608 | (1.7− | 0.8+) | 2006 08 17 | 644 | 0.4− | 0.6+ |
| 2001 03 27 | 691 | 0.2+ | 0.1+ | 2002 04 16 | 608 | (1.9− | 0.1−) | 2006 10 19 | 695 | 0.0 | 0.1+ |
| 2001 03 27 | 691 | 0.3+ | 0.3+ | 2002 04 29 | 644 | 0.2− | 0.6− | 2006 10 20 | 695 | 0.1− | 0.2+ |
| 2001 03 27 | 691 | 0.2+ | 0.4+ | 2002 04 29 | 644 | 0.5− | 0.0 | 2006 10 20 | 695 | 0.1− | 0.2+ |
| 2002 03 23 | 608 | 0.6− | 0.1− | 2002 05 02 | 608 | 1.2+ | 0.2− | | | | |
| 2002 03 23 | 608 | 0.1+ | 0.3− | 2002 05 29 | 608 | 0.2− | 0.3+ | | | | |

**(141578)∗ 2002 GT$_{159}$**

Discovered 2002 Apr. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 87.25573 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29888961 | $\omega$ | 267.89475 | | −0.45249445 | | +0.89049459 | | |
| $a$ | 2.2154511 | $\Omega$ | 335.02825 | | −0.76677345 | | −0.41578293 | | |
| $e$ | 0.1432805 | $i$ | 6.47732 | | −0.45531005 | | −0.18478078 | | |
| $P$ | 3.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 23 | 704 | 0.4+ | 1.3+ | 2003 10 17 | 691 | 0.1− | 0.1+ | 2005 03 13 | 691 | 0.2− | 0.2+ |
| 2002 03 23 | 704 | (1.7+ | 2.6+) | 2005 01 19 | 691 | 0.0 | 0.5+ | 2005 03 13 | 691 | 0.1− | 0.3+ |
| 2002 03 23 | 704 | (2.8− | 0.8+) | 2005 01 19 | 691 | 0.1+ | 0.6+ | 2005 04 09 | G96 | 0.1− | 0.2+ |
| 2002 03 23 | 704 | (1.3+ | 3.5+) | 2005 01 19 | 691 | 0.2+ | 0.2+ | 2005 04 09 | G96 | 0.0 | 0.3+ |
| 2002 04 05 | 644 | 0.8+ | 0.2− | 2005 02 03 | 704 | 0.3+ | 1.1+ | 2005 04 09 | G96 | 0.2− | 0.0 |
| 2002 04 05 | 644 | 0.5+ | 0.3− | 2005 02 03 | 704 | 0.7− | 0.6+ | 2005 04 09 | G96 | 0.0 | 0.1+ |
| 2002 04 05 | 644 | 0.6+ | 0.0 | 2005 02 03 | 704 | 0.6− | 0.7+ | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2002 04 14 | 704 | 0.9+ | 1.0+ | 2005 02 03 | 704 | 0.6+ | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.5− |
| 2002 04 14 | 704 | 0.2+ | 1.5+ | 2005 02 03 | 704 | 0.8+ | 0.6− | 2006 08 22 | 644 | 0.1− | 0.0 |
| 2002 04 14 | 704 | 0.4+ | 1.0+ | 2005 02 04 | G96 | 0.7− | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.6+ |
| 2002 04 16 | 704 | 0.0 | 0.4+ | 2005 02 04 | G96 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.1− | 0.5+ |
| 2002 04 16 | 704 | 0.4− | 0.9+ | 2005 02 04 | G96 | 0.2− | 0.0 | 2006 08 27 | 691 | 1.2− | 1.9+ |
| 2002 04 16 | 704 | 0.1− | 1.1+ | 2005 02 04 | G96 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.6− | 1.0+ |
| 2002 04 16 | 704 | 0.3+ | 0.6+ | 2005 02 09 | 699 | 0.3+ | 0.7− | 2006 08 28 | 703 | 0.5+ | 0.8− |
| 2002 04 30 | 644 | 1.2+ | 0.8+ | 2005 02 09 | 699 | 0.5+ | 0.6+ | 2006 08 28 | 703 | (1.1− | 2.3+) |
| 2002 04 30 | 644 | 0.7+ | 0.9+ | 2005 02 09 | 699 | 1.0+ | 1.1+ | 2006 08 28 | 703 | 0.4− | 0.6+ |
| 2002 04 30 | 644 | 0.8+ | 1.0+ | 2005 02 09 | 699 | (2.8+ | 0.6+) | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 2003 09 21 | 691 | 0.1+ | 0.4+ | 2005 02 09 | 699 | 0.8− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2003 09 21 | 691 | 0.5− | 0.4+ | 2005 02 09 | 699 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2003 09 21 | 691 | 0.1− | 0.4+ | 2005 02 09 | 699 | 1.7+ | 0.4− | 2006 09 27 | G96 | 0.0 | 0.0 |
| 2003 10 17 | 691 | 0.1− | 0.2+ | 2005 02 09 | 699 | 1.7+ | 1.6− | | | | |
| 2003 10 17 | 691 | 0.1− | 0.0 | 2005 03 13 | 691 | 0.2+ | 0.2+ | | | | |

**(141579)∗ 2002 GJ$_{161}$**

Discovered 2002 Apr. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 54.57073 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28530892 | $\omega$ | 194.52969 | | −0.08543079 | | +0.98800678 | | |
| $a$ | 2.2852084 | $\Omega$ | 70.69655 | | −0.89998876 | | −0.02113725 | | |
| $e$ | 0.0740418 | $i$ | 7.83299 | | −0.42745972 | | −0.15295690 | | |
| $P$ | 3.45 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 10 | 704 | (0.8+ | 2.5+) | 2002 05 08 | 704 | 0.3− | 0.6+ | 2005 03 09 | 703 | 0.0 | 0.0 |
| 2002 04 10 | 704 | 0.8+ | 0.7+ | 2003 09 28 | 699 | 0.2+ | 1.2− | 2005 03 09 | 703 | 0.6+ | 0.2− |
| 2002 04 10 | 704 | 0.3− | 1.1+ | 2003 09 28 | 699 | 1.0− | 0.2− | 2005 03 09 | 703 | 0.0 | 0.0 |
| 2002 04 10 | 704 | 0.4+ | 0.3+ | 2003 09 28 | 699 | 0.7+ | 0.6− | 2005 03 09 | 703 | 0.6+ | 0.9+ |
| 2002 04 10 | 704 | 0.3+ | 1.1+ | 2003 09 28 | 699 | 1.0− | 0.4+ | 2006 07 31 | E12 | 0.6− | 0.1− |
| 2002 04 15 | 699 | 0.4− | 1.4+ | 2003 10 19 | 704 | 0.7− | 0.9+ | 2006 07 31 | E12 | 0.2− | 0.5− |
| 2002 04 15 | 699 | 0.9− | 0.5+ | 2003 10 19 | 704 | 0.1+ | 0.8+ | 2006 07 31 | E12 | 0.7+ | 0.3− |
| 2002 04 15 | 699 | 0.4+ | 1.2+ | 2003 10 19 | 704 | 0.8+ | 0.7+ | 2006 07 31 | E12 | 0.1− | 0.3+ |
| 2002 04 15 | 699 | 0.8+ | 0.4− | 2003 10 23 | 691 | 0.4− | 0.7+ | 2006 08 14 | 644 | 0.1− | 0.0 |
| 2002 04 16 | 704 | 0.3+ | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 08 14 | 644 | 0.3− | 0.1+ |
| 2002 04 16 | 704 | 0.6+ | 0.2− | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2002 04 16 | 704 | 0.6+ | 0.1− | 2003 10 23 | 691 | 0.3− | 0.6+ | 2006 08 14 | 644 | 0.2+ | 0.2+ |
| 2002 04 16 | 704 | 0.2− | 0.6+ | 2003 10 23 | 691 | 0.3− | 0.4+ | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 2002 04 16 | 704 | 0.1+ | 0.0 | 2003 11 20 | 645 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2002 04 29 | 644 | 0.1− | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.2+ | 2006 08 19 | 644 | 0.2+ | 0.2+ |
| 2002 04 29 | 644 | 0.5+ | 0.2+ | 2005 03 01 | 703 | 0.1+ | 0.7− | 2006 08 19 | 644 | 0.0 | 0.1+ |
| 2002 04 29 | 644 | 0.2+ | 0.3+ | 2005 03 01 | 703 | 0.4+ | 0.6+ | 2006 08 19 | 644 | 0.0 | 0.1+ |
| 2002 05 08 | 704 | 0.2+ | 1.0+ | 2005 03 01 | 703 | 0.7− | 0.1− | | | | |
| 2002 05 08 | 704 | 1.0+ | 0.5+ | 2005 03 01 | 703 | 0.1− | 0.8+ | | | | |

**(141580)∗ 2002 GU$_{164}$ = 2006 FY$_{17}$**

Discovered 2002 Apr. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 100247)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 119.72404 | | (2000.0) | | | |
| $n$ | 0.24527503 | $\omega$ | 314.17163 | | −0.55371527 | −0.83261354 |
| $a$ | 2.5275543 | $\Omega$ | 169.42989 | | +0.78200057 | −0.52506282 |
| $e$ | 0.0433145 | $i$ | 3.88013 | | +0.28613720 | −0.17624903 |
| $P$ | 4.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.5− | 0.1+ | 2005 01 13 | 704 | 0.3− | 0.7− | 2006 04 07 | 691 | 0.1+ | 0.0 |
| 2002 04 08 | 644 | 0.1− | 0.2+ | 2005 01 13 | 704 | 0.7− | 0.9+ | 2006 04 09 | G96 | 0.3+ | 0.2− |
| 2002 04 08 | 644 | 0.4− | 0.1+ | 2005 02 06 | 644 | 0.4+ | 0.3+ | 2006 04 09 | G96 | 0.2− | 0.1− |
| 2002 04 14 | 644 | 0.3− | 0.3+ | 2005 02 06 | 644 | 0.5+ | 0.2+ | 2006 04 09 | G96 | 0.2− | 0.1− |
| 2002 04 14 | 644 | 0.1− | 0.3+ | 2005 02 06 | 644 | 0.7+ | 0.4+ | 2006 04 09 | G96 | 0.0 | 0.3− |
| 2002 04 14 | 644 | 0.1− | 0.4+ | 2006 01 08 | 691 | 0.7+ | 0.6+ | 2006 04 23 | 704 | 0.6+ | 0.1− |
| 2002 04 17 | 704 | 1.6+ | 0.3+ | 2006 01 08 | 691 | 0.5+ | 0.2− | 2006 04 23 | 704 | 1.2+ | 0.2+ |
| 2002 04 17 | 704 | 0.4+ | 0.0 | 2006 01 08 | 691 | 0.2− | 0.1+ | 2006 04 23 | 704 | 0.0 | 0.1− |
| 2002 04 17 | 704 | 1.4+ | 1.9− | 2006 02 07 | G96 | 0.0 | 0.5− | 2006 04 24 | 704 | 1.2+ | 0.5− |
| 2002 04 17 | 704 | (0.9− | 2.0−) | 2006 02 07 | G96 | 0.9− | 0.2− | 2006 04 24 | 704 | 0.3− | 1.5+ |
| 2002 05 16 | 704 | 0.7− | 1.0+ | 2006 02 07 | G96 | 0.5− | 0.4− | 2006 04 24 | 704 | 0.4+ | 0.1+ |
| 2002 05 16 | 704 | 0.3+ | 1.5+ | 2006 02 07 | G96 | 0.6− | 0.5− | 2006 04 24 | 704 | 1.2+ | 0.2− |
| 2002 05 16 | 704 | 0.5− | 0.1+ | 2006 03 23 | 691 | 0.1− | 0.1− | 2006 04 30 | 699 | 0.5− | 0.8+ |
| 2002 05 16 | 704 | 0.0 | 1.4+ | 2006 03 23 | 691 | 0.1+ | 0.1+ | 2006 04 30 | 699 | 0.5− | 0.1+ |
| 2003 08 28 | 608 | 0.6− | 1.0− | 2006 03 23 | 691 | 0.1+ | 0.1− | 2006 04 30 | 699 | 0.5− | 1.2+ |
| 2003 08 28 | 608 | 0.3+ | 1.3− | 2006 03 24 | 699 | 1.1− | 1.0− | 2006 04 30 | 704 | 1.7+ | 0.1− |
| 2003 08 28 | 608 | 0.1− | 0.1+ | 2006 03 24 | 699 | 0.7− | 0.7+ | 2006 04 30 | 704 | 0.2+ | 0.2+ |
| 2003 09 18 | 291 | 0.2− | 0.8+ | 2006 03 24 | 699 | 0.2+ | 0.8+ | 2006 04 30 | 699 | 0.9+ | 0.8+ |
| 2003 09 18 | 291 | 0.1+ | 0.7+ | 2006 03 24 | 699 | 0.8+ | 1.8+ | 2006 04 30 | 704 | 0.5+ | 0.2+ |
| 2003 09 18 | 291 | 0.1− | 0.8+ | 2006 03 26 | G96 | 0.5− | 0.1− | 2006 04 30 | 704 | 1.7+ | 0.6− |
| 2004 12 09 | 691 | 0.1− | 0.4+ | 2006 03 26 | G96 | 0.3− | 0.3− | 2006 05 26 | 703 | 1.4− | 0.2− |
| 2004 12 09 | 691 | 0.0 | 0.3+ | 2006 03 26 | G96 | 0.2− | 0.0 | 2006 05 26 | 703 | 0.5− | 0.1− |
| 2004 12 09 | 691 | 0.1+ | 0.4+ | 2006 03 26 | G96 | 0.6− | 0.1+ | 2006 05 26 | 703 | 1.4− | 1.0− |
| 2005 01 13 | 704 | 1.2− | 0.8+ | 2006 04 07 | 691 | 0.5− | 0.0 | 2006 05 26 | 703 | 0.6− | 0.6− |
| 2005 01 13 | 704 | 0.1+ | 0.9+ | 2006 04 07 | 691 | 0.2− | 0.2+ | | | | |

**(141581)∗ 2002 GQ$_{167}$**

Discovered 2002 Apr. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.13697 | | (2000.0) | | | |
| $n$ | 0.29191861 | $\omega$ | 291.69756 | | +0.85648086 | +0.51303440 |
| $a$ | 2.2505821 | $\Omega$ | 37.50199 | | −0.43230063 | +0.77315713 |
| $e$ | 0.1611506 | $i$ | 5.36180 | | −0.28205797 | +0.37285890 |
| $P$ | 3.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 809 | (1.8+ | 2.5−) | 2003 10 29 | 704 | 0.7− | 0.9+ | 2003 11 26 | 704 | 0.4− | 0.4+ |
| 1996 10 07 | 809 | 1.1+ | 1.8− | 2003 10 29 | 704 | 0.6− | 0.8+ | 2003 11 26 | 704 | 0.4+ | 0.4− |
| 1996 10 07 | 809 | 1.0+ | 1.8− | 2003 10 29 | 704 | 0.1− | 1.1+ | 2003 12 01 | 703 | (1.6+ | 0.1−) |
| 2002 04 09 | 644 | 0.8+ | 0.6+ | 2003 10 29 | 699 | 0.4− | 0.6+ | 2003 12 01 | 703 | 0.6+ | 0.0 |
| 2002 04 09 | 704 | (1.6+ | 0.4+) | 2003 10 29 | 704 | 0.1− | 0.6+ | 2003 12 01 | 703 | 0.7− | 0.9− |
| 2002 04 09 | 644 | 0.5+ | 0.4+ | 2003 10 29 | 699 | 1.1− | 0.1− | 2003 12 01 | 703 | 0.1− | 0.8− |
| 2002 04 09 | 704 | 0.8+ | 0.2− | 2003 10 29 | 703 | 0.5+ | 0.2+ | 2003 12 10 | 644 | 0.4− | 0.1+ |
| 2002 04 09 | 704 | 1.4+ | 1.2− | 2003 10 29 | 699 | 0.4− | 0.3− | 2003 12 10 | 644 | 0.1+ | 0.0 |
| 2002 04 09 | 704 | 0.5+ | 0.8− | 2003 10 29 | 703 | 0.2− | 0.5+ | 2003 12 10 | 644 | 0.2− | 0.0 |
| 2002 04 09 | 644 | 0.9+ | 0.6+ | 2003 10 29 | 703 | 0.3− | 0.3+ | 2004 01 11 | 644 | 0.2+ | 0.4− |
| 2002 04 14 | 704 | 0.3− | 0.4+ | 2003 10 29 | 699 | 0.3− | 1.2+ | 2004 01 11 | 644 | 0.2− | 0.4+ |
| 2002 04 14 | 704 | 0.5− | 0.9+ | 2003 10 29 | 703 | 0.5− | 0.2+ | 2004 01 11 | 644 | 0.2− | 0.3+ |
| 2002 04 14 | 704 | 0.2− | 0.1+ | 2003 11 02 | 704 | 0.1+ | 0.4+ | 2005 03 10 | 699 | 0.4+ | 1.0+ |
| 2002 04 14 | 704 | 0.5− | 0.7+ | 2003 11 02 | 704 | 0.2+ | 0.5+ | 2005 03 10 | 699 | 0.9+ | 0.2− |
| 2002 04 14 | 704 | 0.1− | 0.1+ | 2003 11 02 | 704 | 1.2+ | 0.8+ | 2005 03 10 | 699 | (2.3+ | 0.5+) |
| 2002 04 14 | 644 | 0.5+ | 0.9+ | 2003 11 02 | 704 | 0.2− | 0.1+ | 2005 03 10 | 699 | (0.2− | 1.8+) |
| 2002 04 14 | 644 | 0.6+ | 1.0+ | 2003 11 02 | 704 | 0.1+ | 0.4+ | 2006 08 15 | 428 | 0.9− | 0.3+ |
| 2002 04 14 | 644 | 0.8+ | 0.5+ | 2003 11 16 | 691 | 0.1+ | 0.1− | 2006 08 15 | 428 | 1.0− | 0.4+ |
| 2002 04 19 | 691 | 0.2− | 0.5+ | 2003 11 16 | 691 | 0.1+ | 0.0 | 2006 08 16 | 428 | 0.9+ | 0.6+ |
| 2002 04 19 | 691 | 0.1− | 0.4+ | 2003 11 16 | 691 | 0.2+ | 0.2− | 2006 08 16 | 428 | 0.1− | 0.1+ |
| 2002 04 19 | 691 | 0.0 | 0.6+ | 2003 11 20 | 704 | 0.4− | 0.2+ | 2006 08 16 | E12 | 0.0 | 0.1+ |
| 2002 05 13 | 704 | (1.4− | 1.5−) | 2003 11 20 | 704 | 0.0 | 0.0 | 2006 08 16 | E12 | 0.4− | 0.5+ |
| 2002 05 13 | 704 | 0.6− | 0.6− | 2003 11 20 | 704 | 0.0 | 0.6+ | 2006 08 16 | E12 | 0.2+ | 0.0 |
| 2002 05 13 | 704 | 0.6+ | 0.3+ | 2003 11 20 | 704 | 0.0 | 0.0 | 2006 08 16 | E12 | 0.4− | 0.4+ |
| 2003 10 18 | 699 | 0.2− | 0.4+ | 2003 11 20 | 704 | 0.3− | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.3+ |
| 2003 10 18 | 699 | 0.1+ | 0.0 | 2003 11 24 | 704 | 0.1− | 0.1− | 2006 08 17 | 644 | 0.1− | 0.4+ |
| 2003 10 18 | 699 | 0.2− | 0.1− | 2003 11 24 | 704 | 0.6+ | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2003 10 18 | 699 | 0.8− | 0.2+ | 2003 11 24 | 699 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 2003 10 20 | 691 | 0.0 | 0.0 | 2003 11 24 | 704 | 0.3+ | 0.1− | 2006 08 17 | 644 | 0.2+ | 0.2+ |
| 2003 10 20 | 691 | 0.0 | 0.1+ | 2003 11 24 | 704 | 0.2+ | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.3+ |
| 2003 10 20 | 691 | 0.2+ | 0.0 | 2003 11 24 | 699 | 0.4− | 0.3− | 2006 09 14 | 644 | 0.1+ | 0.6+ |
| 2003 10 23 | 704 | 0.6− | 0.4+ | 2003 11 24 | 704 | 0.6− | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2003 10 23 | 704 | 0.2− | 0.0 | 2003 11 24 | 699 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2003 10 23 | 704 | 0.4− | 0.3− | 2003 11 24 | 699 | 1.0+ | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.3+ |
| 2003 10 23 | 704 | 0.6− | 0.3+ | 2003 11 26 | 704 | 0.1− | 1.2+ | 2006 10 21 | 703 | 0.2+ | 0.4− |
| 2003 10 23 | 704 | 0.4− | 0.5+ | 2003 11 26 | 704 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.8− | 1.3+ |
| 2003 10 29 | 704 | 0.3+ | 0.1+ | 2003 11 26 | 704 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.9− | 0.0 |

**(141582)∗ 2002 GC$_{169}$ = 2003 UE$_{178}$**

Discovered 2002 Apr. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 61227)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.04798 | | (2000.0) | | | |
| $n$ | 0.28752312 | $\omega$ | 262.14665 | | −0.00327425 | +0.99988508 |
| $a$ | 2.2734611 | $\Omega$ | 7.71223 | | −0.86851913 | +0.00449334 |
| $e$ | 0.0934252 | $i$ | 6.33277 | | −0.49564483 | −0.01447897 |
| $P$ | 3.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.1+ | 0.6+ | 2003 09 28 | 691 | 0.0 | 0.2+ | 2005 01 13 | 691 | 0.3+ | 0.4+ |
| 2002 04 04 | 644 | 0.1+ | 0.6+ | 2003 09 28 | 691 | 0.0 | 0.2+ | 2005 03 12 | 704 | 0.5+ | 0.8+ |
| 2002 04 04 | 644 | 0.0 | 0.8+ | 2003 10 16 | 691 | 0.1− | 0.2+ | 2005 03 12 | 704 | 1.3+ | 0.8− |
| 2002 04 09 | 704 | 0.9+ | 0.1+ | 2003 10 16 | 691 | 0.0 | 0.3+ | 2005 03 12 | 704 | 0.0 | 1.4+ |
| 2002 04 09 | 704 | 0.2+ | 0.9+ | 2003 10 16 | 691 | 0.2− | 0.2+ | 2005 03 12 | 704 | 0.6+ | 0.8+ |
| 2002 04 09 | 704 | 0.0 | 0.9+ | 2003 10 21 | 644 | 0.4− | 0.4+ | 2006 07 18 | E12 | 0.0 | 0.4− |
| 2002 04 09 | 704 | 0.3+ | 0.7+ | 2003 10 21 | 644 | 0.4− | 0.4+ | 2006 07 18 | E12 | 0.5− | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.7+ | 0.6+ | 2003 10 21 | 644 | 0.4− | 0.4+ | 2006 07 18 | E12 | 0.3− | 0.0 |
| 2002 04 14 | 704 | 0.7+ | 0.9+ | 2003 10 24 | 704 | 0.3− | 0.4+ | 2006 07 18 | E12 | 0.2+ | 0.0 |
| 2002 04 14 | 704 | 1.2+ | 0.7+ | 2003 10 24 | 704 | 0.4− | 0.4+ | 2006 08 12 | 644 | 0.1− | 0.5+ |
| 2002 04 14 | 704 | 0.0 | 0.1+ | 2003 10 24 | 704 | 0.1− | 0.9+ | 2006 08 12 | 644 | 0.1− | 0.6+ |
| 2002 05 17 | 644 | 0.9+ | 1.5+ | 2003 10 24 | 704 | 0.1+ | 0.9+ | 2006 08 12 | 644 | 0.0 | 0.7+ |
| 2002 05 17 | 644 | 0.7+ | 1.6+ | 2003 10 24 | 704 | 0.6− | 0.9+ | 2006 08 14 | 644 | 0.1− | 0.3+ |
| 2002 05 17 | 644 | 0.1+ | 1.6+ | 2003 10 27 | 691 | 0.2− | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.4+ |
| 2003 09 17 | 644 | 0.4− | 0.4+ | 2003 10 27 | 691 | 0.3− | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.4+ |
| 2003 09 17 | 644 | 0.3− | 0.8+ | 2003 10 27 | 691 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 2003 09 17 | 644 | 0.1− | 0.6+ | 2005 01 13 | 691 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.4+ |
| 2003 09 28 | 691 | 0.2+ | 0.1+ | 2005 01 13 | 691 | 0.0 | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.5+ |

**(141583)∗ 2002 GB$_{171}$**

Discovered 2002 Apr. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.31606 | | (2000.0) | | | |
| $n$ | 0.28725302 | $\omega$ | 323.53336 | | −0.59323577 | +0.80303706 |
| $a$ | 2.2748860 | $\Omega$ | 270.01185 | | −0.72457463 | −0.56326120 |
| $e$ | 0.1181696 | $i$ | 3.24429 | | −0.35080325 | −0.19459779 |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 18 | 704 | 0.0 | 0.4+ | 2003 09 16 | 699 | 0.1− | 1.0+ | 2004 12 20 | G96 | 0.1− | 0.1+ |
| 2002 03 18 | 704 | 0.0 | 1.0+ | 2003 09 16 | 699 | 0.1− | 1.3+ | 2005 01 20 | 704 | 0.4− | 0.9− |
| 2002 03 18 | 704 | 0.9+ | 0.4+ | 2003 09 16 | 699 | 0.4+ | 0.3− | 2005 01 20 | 704 | 0.2− | 0.7− |
| 2002 03 23 | 704 | 0.2− | 0.0 | 2003 09 20 | 691 | 0.2− | 0.5+ | 2005 01 20 | 704 | 0.3+ | 0.4+ |
| 2002 03 23 | 704 | 0.4+ | 1.3+ | 2003 09 20 | 691 | 0.4− | 0.5+ | 2006 05 24 | G96 | 0.7+ | 0.1+ |
| 2002 03 23 | 704 | 0.2− | 1.4+ | 2003 09 20 | 691 | 0.4− | 0.3+ | 2006 05 24 | G96 | 0.4+ | 0.1+ |
| 2002 03 23 | 704 | 0.9− | 1.4+ | 2003 09 21 | 644 | 0.0 | 0.4+ | 2006 05 24 | G96 | 0.5+ | 0.1− |
| 2002 03 23 | 704 | (0.3− | 1.8+) | 2003 09 21 | 644 | 0.3− | 0.5+ | 2006 05 24 | G96 | 0.6+ | 0.2− |
| 2002 04 05 | 644 | 0.5+ | 0.4+ | 2003 09 21 | 644 | 0.1+ | 0.4+ | 2006 05 25 | G96 | 0.4− | 0.3− |
| 2002 04 05 | 644 | 0.2+ | 0.2+ | 2003 10 01 | 699 | 0.1+ | 0.1+ | 2006 05 25 | G96 | 0.2− | 0.0 |
| 2002 04 05 | 644 | 0.5+ | 0.4+ | 2003 10 01 | 699 | (0.8+ | 2.4−) | 2006 05 25 | G96 | 0.1− | 0.0 |
| 2002 04 10 | 704 | 0.3+ | 0.4− | 2003 10 01 | 699 | 1.1+ | 0.9− | 2006 05 25 | G96 | 0.1+ | 0.0 |
| 2002 04 10 | 704 | 0.5+ | 0.8+ | 2003 10 01 | 699 | 0.5+ | 0.3− | 2006 07 23 | G96 | 0.1+ | 0.3− |
| 2002 04 10 | 704 | 0.4+ | 0.2+ | 2003 10 25 | 704 | 0.8− | 0.2+ | 2006 07 23 | G96 | 0.1+ | 0.2− |
| 2002 04 10 | 704 | 0.1+ | 0.0 | 2003 10 25 | 704 | 0.1− | 0.2− | 2006 07 23 | G96 | 0.0 | 0.2− |
| 2002 04 10 | 704 | 0.3+ | 0.2+ | 2003 10 25 | 704 | 0.2+ | 0.1− | 2006 07 23 | G96 | 0.1+ | 0.2− |
| 2002 04 14 | 704 | 0.6− | 0.6− | 2003 10 25 | 704 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.6− | 0.5+ |
| 2002 04 14 | 704 | 0.3+ | 1.1− | 2004 12 20 | G96 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.8− | 1.5+ |
| 2002 04 14 | 704 | (1.6+ | 0.1−) | 2004 12 20 | G96 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2003 09 16 | 699 | 0.4+ | 0.8− | 2004 12 20 | G96 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 1.1− |

**(141584)∗ 2002 GU$_{178}$ = 2000 CN$_{57}$**

Discovered 2002 Apr. 15 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 72627)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.98039 | | (2000.0) | | | |
| $n$ | 0.08562501 | $\omega$ | 164.49978 | | +0.12975710 | −0.99006036 |
| $a$ | 5.0980291 | $\Omega$ | 278.02170 | | +0.90380188 | +0.14060171 |
| $e$ | 0.0220296 | $i$ | 3.14086 | | +0.40780542 | +0.00341161 |
| $P$ | 11.51 | $H$ | 12.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 704 | 0.8+ | 0.2+ | 2005 06 03 | 691 | 0.4− | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.3+ |
| 2000 02 05 | 704 | 0.1− | 0.0 | 2005 06 03 | 691 | 0.5+ | 0.3+ | 2006 08 20 | 644 | 0.4− | 0.6+ |
| 2000 02 05 | 704 | 0.0 | 1.2+ | 2005 06 03 | 691 | 0.1+ | 0.2− | 2006 08 22 | 644 | 0.5− | 0.4+ |
| 2000 02 05 | 704 | 0.8+ | 0.3+ | 2005 06 08 | 691 | 0.1+ | 0.3− | 2006 08 22 | 644 | 0.0 | 0.4+ |
| 2000 02 06 | 704 | 0.4− | 0.7+ | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.3− | 0.3+ |
| 2000 02 06 | 704 | 0.3− | 0.2+ | 2005 06 08 | 691 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.3− | 0.3+ |
| 2000 02 06 | 704 | 0.3+ | 0.3+ | 2005 06 12 | 691 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.2+ | 0.4+ |
| 2000 02 06 | 704 | 0.1− | 0.2+ | 2005 06 12 | 691 | 0.0 | 0.2− | 2006 08 22 | 644 | 0.4− | 0.6+ |
| 2002 04 04 | 644 | 0.2+ | 0.3+ | 2005 06 12 | 691 | 0.1+ | 0.4− | 2006 08 22 | 644 | 0.1− | 0.4+ |
| 2002 04 04 | 644 | 0.2− | 0.5+ | 2005 06 14 | G96 | 0.9− | 0.4− | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2002 04 04 | 644 | 0.2+ | 0.4+ | 2005 06 14 | G96 | 0.6+ | 0.5− | 2006 08 22 | 644 | 0.2− | 0.4+ |
| 2002 04 14 | 704 | 0.3+ | 0.6+ | 2005 06 14 | G96 | 0.1+ | 0.2− | 2006 08 28 | 699 | 1.4− | 0.5+ |
| 2002 04 14 | 704 | 0.3+ | 0.3+ | 2005 06 14 | G96 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.1− | 1.3+ |
| 2002 04 14 | 704 | 0.2− | 0.7+ | 2005 07 15 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.5+ | 1.0+ |
| 2002 04 14 | 704 | 0.4+ | 0.6+ | 2005 07 15 | G96 | 0.4− | 0.2+ | 2006 08 28 | 703 | (1.8− | 0.8+) |
| 2002 04 14 | 704 | 0.4− | 0.7+ | 2005 07 15 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.8+ |
| 2002 04 15 | 644 | 0.7+ | 0.5+ | 2005 07 15 | G96 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.5− | 0.4+ |
| 2002 04 15 | 644 | 0.1− | 0.9+ | 2006 07 28 | A50 | 0.4− | 0.7− | 2006 08 28 | 703 | 0.2+ | 0.3+ |
| 2002 04 15 | 644 | 0.9+ | 0.0 | 2006 07 28 | A50 | 0.3− | 0.4− | 2006 08 28 | 699 | 0.0 | 0.4− |
| 2002 04 18 | 644 | 0.3− | 0.1+ | 2006 08 16 | A50 | 0.8+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.4+ |
| 2002 04 18 | 644 | 0.2+ | 0.2+ | 2006 08 16 | A50 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2002 04 18 | 644 | 0.1− | 0.5− | 2006 08 18 | 644 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.2+ |
| 2002 04 29 | 644 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.5− | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.3+ |
| 2002 04 29 | 644 | 0.2+ | 0.2− | 2006 08 18 | 644 | 0.3− | 0.3+ | | | | |
| 2002 04 29 | 644 | 0.2+ | 0.3+ | 2006 08 20 | 644 | 0.0 | 0.8+ | | | | |

**(141585)∗ 2002 HE = 2000 SZ$_4$**

Discovered 2002 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 30156)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.05626 | | (2000.0) | | | |
| $n$ | 0.35653286 | $\omega$ | 10.74116 | | +0.50861394 | −0.81172515 |
| $a$ | 1.9697133 | $\Omega$ | 49.38403 | | +0.75925894 | +0.26562250 |
| $e$ | 0.0905838 | $i$ | 22.22148 | | +0.40600212 | +0.52014130 |
| $P$ | 2.76 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.0 | 0.1+ | 2002 05 15 | 608 | 0.8+ | 0.4+ | 2003 10 29 | 704 | 0.7− | 0.9+ |
| 2000 09 20 | 704 | 0.5+ | 0.2+ | 2002 05 15 | 608 | 0.7+ | 0.5+ | 2003 10 29 | 704 | 0.3− | 0.5+ |
| 2000 09 20 | 704 | 1.7− | 0.0 | 2002 05 15 | 608 | 0.7+ | 0.9+ | 2003 10 29 | 704 | 0.5− | 1.0+ |
| 2000 09 20 | 704 | 2.0− | 0.1+ | 2002 05 16 | 704 | 0.5+ | 0.2+ | 2003 10 29 | 704 | 0.6− | 0.8+ |
| 2000 09 20 | 704 | 0.2− | 0.7− | 2002 05 16 | 704 | 0.8+ | 0.2+ | 2003 11 02 | 704 | 0.2− | 0.4+ |
| 2000 09 23 | 704 | 0.2+ | 0.6− | 2002 05 16 | 704 | 0.4+ | 0.1+ | 2003 11 02 | 704 | 0.6− | 0.1+ |
| 2000 09 23 | 704 | 0.3− | 0.9+ | 2002 05 16 | 704 | 0.5+ | 0.5+ | 2003 11 02 | 704 | 0.3− | 0.8+ |
| 2000 09 23 | 704 | 1.2− | 0.5+ | 2002 05 19 | 644 | 0.0 | 0.4+ | 2003 11 02 | 704 | 0.8− | 0.3+ |
| 2000 09 23 | 704 | 0.4+ | 0.9+ | 2002 05 19 | 644 | 0.3+ | 0.3+ | 2003 11 02 | 704 | 0.6− | 0.3+ |
| 2002 03 21 | 691 | 0.2− | 0.2+ | 2002 05 19 | 644 | 0.0 | 0.4+ | 2003 11 20 | 704 | 0.1+ | 0.5+ |
| 2002 03 21 | 691 | 0.3− | 0.1+ | 2002 06 08 | 704 | 0.1+ | 0.0 | 2003 11 20 | 704 | 0.0 | 0.5+ |
| 2002 03 21 | 691 | 0.0 | 0.1+ | 2002 06 08 | 704 | 0.4+ | 0.5+ | 2003 11 20 | 704 | 0.1+ | 0.5+ |
| 2002 04 09 | 704 | 0.1+ | 0.9+ | 2002 06 08 | 704 | 0.4+ | 0.6+ | 2003 11 20 | 704 | 0.0 | 0.6+ |
| 2002 04 09 | 704 | 1.2+ | 0.8+ | 2002 06 08 | 704 | 0.1+ | 1.3+ | 2003 11 20 | 704 | 0.3− | 0.2+ |
| 2002 04 09 | 704 | 0.8− | 0.6+ | 2002 06 08 | 704 | 1.2+ | 0.8+ | 2003 12 03 | 704 | 0.5+ | 0.3+ |
| 2002 04 09 | 704 | 0.1− | 1.1+ | 2002 06 09 | 704 | 1.3− | 1.0+ | 2003 12 03 | 704 | 0.4− | 0.6+ |
| 2002 04 16 | 704 | 1.2+ | 0.3+ | 2002 06 09 | 704 | (1.9− | 0.9+) | 2003 12 03 | 704 | 0.5+ | 0.2+ |
| 2002 04 16 | 704 | 1.2+ | 0.5+ | 2002 06 09 | 704 | 0.9− | 0.2+ | 2003 12 03 | 704 | 0.2− | 0.5+ |
| 2002 04 16 | 704 | 1.1+ | 0.1+ | 2002 06 12 | 704 | 0.4+ | 0.7+ | 2003 12 03 | 704 | 0.3− | 0.0 |
| 2002 04 16 | 704 | 0.8+ | 0.0 | 2002 06 12 | 704 | 0.6+ | 0.9+ | 2003 12 17 | 704 | 0.1+ | 0.0 |
| 2002 04 16 | 704 | (1.9+ | 0.2−) | 2002 06 12 | 704 | 0.5+ | 0.9+ | 2003 12 17 | 704 | 0.2+ | 0.1− |
| 2002 04 17 | 704 | 0.7+ | 0.0 | 2002 06 12 | 704 | 0.1− | 1.1+ | 2003 12 17 | 704 | 0.2+ | 0.0 |
| 2002 04 17 | 704 | 0.4+ | 0.1+ | 2002 06 13 | 699 | 1.2+ | 0.4− | 2003 12 17 | 704 | 0.1+ | 0.0 |
| 2002 04 17 | 704 | 0.9+ | 0.1+ | 2002 06 13 | 699 | 1.1+ | 0.3+ | 2003 12 17 | 704 | 0.2− | 0.2− |
| 2002 04 17 | 704 | 0.2+ | 0.8+ | 2002 06 13 | 699 | (2.1+ | 1.2+) | 2003 12 30 | 704 | 0.5+ | 0.7+ |
| 2002 04 17 | 704 | 0.8+ | 0.1+ | 2002 06 13 | 699 | 0.5+ | 0.4+ | 2003 12 30 | 704 | 0.5+ | 0.4+ |
| 2002 05 08 | 644 | 0.0 | 1.1+ | 2003 09 03 | 608 | 0.4− | 1.2+ | 2003 12 30 | 704 | 0.7+ | 0.1+ |
| 2002 05 08 | 644 | 0.6− | 0.6+ | 2003 09 03 | 608 | 0.8− | 0.9+ | 2003 12 30 | 704 | 0.8+ | 0.4+ |
| 2002 05 08 | 644 | 0.3− | 0.9+ | 2003 09 03 | 608 | 0.4− | 1.0+ | 2003 12 30 | 704 | 0.3+ | 0.3+ |
| 2002 05 09 | 704 | (1.8+ | 0.2+) | 2003 09 28 | 704 | 0.0 | 1.2+ | 2004 01 19 | 704 | 0.3+ | 0.5+ |
| 2002 05 09 | 704 | 0.2+ | 0.3− | 2003 09 28 | 704 | 0.5− | 1.4− | 2004 01 19 | 704 | 0.3+ | 0.3+ |
| 2002 05 09 | 704 | (2.2+ | 0.7+) | 2003 09 28 | 704 | (0.0 | 1.7+) | 2004 01 19 | 704 | 0.3+ | 0.4+ |
| 2002 05 09 | 704 | 0.7+ | 0.1+ | 2003 09 28 | 704 | (1.1− | 2.4−) | 2004 01 19 | 704 | 0.1+ | 0.2+ |
| 2002 05 09 | 704 | (1.8+ | 1.0+) | 2003 09 28 | 704 | 0.2− | 0.5+ | 2004 01 19 | 704 | 0.6+ | 0.3+ |
| 2002 05 09 | 704 | 0.6+ | 0.1− | 2003 10 22 | 704 | 1.0− | 0.7+ | 2004 02 17 | 201 | 0.1− | 0.1− |
| 2002 05 09 | 704 | (1.9+ | 0.8+) | 2003 10 22 | 704 | (0.3− | 1.9+) | 2004 02 17 | 201 | 0.3− | 0.4+ |
| 2002 05 09 | 704 | 0.6− | 0.7− | 2003 10 22 | 704 | 0.5− | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.8+ |
| 2002 05 09 | 704 | (2.8+ | 0.6+) | 2003 10 22 | 704 | 0.7− | 0.5+ | 2006 10 27 | 703 | 1.0− | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.9− | 0.8− | 2003 10 22 | 704 | (0.3− | 1.6+) | 2006 10 27 | 703 | 0.5− | 1.0− |
| 2002 05 11 | 704 | 1.4+ | 0.0 | 2003 10 23 | 704 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.3+ |
| 2002 05 11 | 704 | 0.4+ | 0.5− | 2003 10 23 | 704 | 0.3− | 0.6+ | 2006 11 13 | 704 | 0.1− | 0.1− |
| 2002 05 11 | 704 | 0.7+ | 0.4− | 2003 10 23 | 704 | 0.1− | 0.8+ | 2006 11 13 | 704 | 0.0 | 1.4+ |
| 2002 05 11 | 704 | 1.1+ | 0.3− | 2003 10 23 | 704 | 0.4− | 0.3+ | 2006 11 13 | 704 | 0.2+ | 0.5+ |
| 2002 05 11 | 704 | 0.0 | 0.3+ | 2003 10 23 | 704 | 0.2− | 0.4+ | 2006 11 13 | 704 | 0.4+ | 0.5− |
| 2002 05 14 | 699 | 0.0 | 0.3− | 2003 10 26 | 608 | 0.8− | 0.2− | 2006 11 20 | 703 | 0.5− | 0.4+ |
| 2002 05 14 | 699 | 0.2− | 0.8+ | 2003 10 26 | 608 | 1.0− | 0.1+ | 2006 11 20 | 703 | 0.1− | 0.1+ |
| 2002 05 14 | 699 | 0.1− | 0.5+ | 2003 10 26 | 608 | 0.9− | 0.0 | 2006 11 20 | 703 | 0.3− | 0.2− |
| 2002 05 14 | 699 | 0.0 | 0.8+ | 2003 10 29 | 704 | 0.4− | 0.8+ | 2006 11 20 | 703 | 0.6− | 0.2− |

**(141586)∗ 2002 HQ**

Discovered 2002 Apr. 16 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.16204 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28470936 | $\omega$ | 191.53111 | | +0.28002349 | +0.95350184 | |
| $a$ | 2.2884155 | $\Omega$ | 94.80511 | | −0.87164434 | +0.30118137 | |
| $e$ | 0.1610632 | $i$ | 6.42157 | | −0.40227229 | +0.01113641 | |
| $P$ | 3.46 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 10 13 | 260 | 0.6− | 0.8− | 2002 05 12 | 704 | 0.7− | 0.1− | 2003 11 18 | 703 | 0.5+ | 0.7+ |
| 1982 10 13 | 260 | 0.1+ | 0.4− | 2002 05 12 | 704 | 0.3+ | 0.5− | 2003 11 19 | 699 | 0.3+ | 1.0− |
| 1982 11 19 | 260 | 0.5− | 0.4− | 2002 05 12 | 704 | 0.7+ | 0.7+ | 2003 11 19 | 699 | 0.8− | 0.5+ |
| 1982 11 19 | 260 | 0.3+ | 0.5+ | 2002 05 18 | 704 | 0.7+ | 0.7+ | 2003 11 19 | 699 | 1.1− | 0.0 |
| 1999 09 11 | 704 | 0.8+ | 0.4− | 2002 05 18 | 704 | 0.1+ | 0.9+ | 2003 11 19 | 699 | (0.2− | 2.1+) |
| 1999 09 11 | 704 | 0.8+ | 0.4+ | 2002 05 18 | 704 | 0.3+ | 0.5+ | 2003 11 29 | 691 | 0.1+ | 0.3+ |
| 1999 09 11 | 704 | 0.1− | 0.1− | 2002 05 18 | 704 | 0.7+ | 1.1+ | 2003 11 29 | 691 | 0.1+ | 0.1+ |
| 1999 09 11 | 704 | 0.6+ | 0.3+ | 2002 05 18 | 704 | 0.9+ | 1.3+ | 2003 11 29 | 691 | 0.0 | 0.2+ |
| 2002 04 10 | 704 | 0.1+ | 1.1+ | 2002 05 19 | 608 | (1.8+ | 1.5+) | 2003 11 30 | 704 | 0.7+ | 0.2+ |
| 2002 04 10 | 704 | 0.1+ | 1.0+ | 2002 05 19 | 608 | (1.6+ | 2.5+) | 2003 11 30 | 704 | (0.6− | 1.7+) |
| 2002 04 10 | 704 | 0.5+ | 1.2+ | 2002 05 19 | 608 | (2.0+ | 3.2+) | 2003 11 30 | 704 | 0.5− | 0.9+ |
| 2002 04 11 | 704 | 0.4+ | 0.4+ | 2002 05 28 | 608 | 0.2− | 1.1− | 2003 11 30 | 704 | 0.9− | 0.4+ |
| 2002 04 11 | 704 | 1.0+ | 0.1− | 2002 05 28 | 608 | 0.0 | 0.7− | 2003 11 30 | 704 | 0.4+ | 0.7+ |
| 2002 04 11 | 704 | 0.5− | 0.3+ | 2002 05 28 | 608 | 0.1+ | 1.0− | 2006 08 15 | 644 | 0.1− | 0.2+ |
| 2002 04 11 | 704 | 0.1+ | 0.1− | 2002 06 09 | 704 | 0.9+ | 0.6− | 2006 08 15 | 644 | 0.2− | 0.2+ |
| 2002 04 13 | 644 | 0.6+ | 0.4+ | 2002 06 09 | 704 | 0.4+ | 0.7+ | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2002 04 13 | 644 | 0.2+ | 0.4+ | 2002 06 09 | 704 | 0.4+ | 0.0 | 2006 08 28 | E12 | 0.3− | 0.7+ |
| 2002 04 13 | 644 | 0.3+ | 0.5+ | 2003 10 27 | 704 | 1.4− | 0.4+ | 2006 08 28 | E12 | 0.1− | 0.5+ |
| 2002 04 16 | 333 | 0.3− | 0.1+ | 2003 10 27 | 704 | 1.4− | 0.3− | 2006 08 28 | E12 | 0.2− | 0.1− |
| 2002 04 16 | 333 | 0.6− | 0.0 | 2003 10 27 | 704 | 0.7− | 0.6+ | 2006 08 28 | E12 | 0.0 | 0.2− |
| 2002 04 16 | 333 | 0.3− | 0.3− | 2003 10 27 | 704 | (1.5− | 0.8+) | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2002 04 16 | 704 | 0.2− | 0.4+ | 2003 10 29 | 704 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.1− |
| 2002 04 16 | 704 | 0.4− | 0.6+ | 2003 10 29 | 704 | 0.1+ | 0.9+ | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 2002 04 16 | 704 | 0.5+ | 0.9+ | 2003 10 29 | 704 | 0.1− | 0.4+ | 2006 09 17 | 699 | 0.2− | 0.0 |
| 2002 04 16 | 704 | 0.0 | 1.4+ | 2003 10 29 | 699 | 0.2+ | 0.3+ | 2006 09 17 | 699 | 1.0− | 0.4− |
| 2002 04 16 | 704 | 0.4+ | 1.2+ | 2003 10 29 | 699 | 0.2− | 1.0+ | 2006 09 17 | 699 | 0.1− | 0.7+ |
| 2002 04 18 | 333 | 0.0 | 0.2+ | 2003 10 29 | 699 | 0.8− | 0.6+ | 2006 09 17 | 699 | 0.3− | 0.1− |
| 2002 04 18 | 333 | 0.6− | 0.8+ | 2003 10 29 | 699 | 0.1− | 0.3− | 2006 09 20 | 703 | 1.2− | 0.2+ |
| 2002 04 18 | 333 | 0.7− | 0.1+ | 2003 10 30 | 704 | 0.1− | 0.7− | 2006 09 20 | 703 | 0.4+ | 0.6+ |
| 2002 04 21 | 333 | 0.3− | 0.6+ | 2003 10 30 | 704 | 0.9− | 0.1+ | 2006 09 20 | 703 | 0.5− | 0.3− |
| 2002 04 21 | 333 | 0.1− | 0.1+ | 2003 10 30 | 704 | 0.8+ | 1.1+ | 2006 09 20 | 703 | 0.6+ | 0.4+ |
| 2002 04 21 | 333 | 0.5+ | 0.4+ | 2003 10 30 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2002 04 29 | 644 | 0.2+ | 0.0 | 2003 10 30 | 704 | 0.7+ | 0.3− | 2006 09 26 | 703 | 0.4− | 0.6− |
| 2002 04 29 | 644 | 0.3+ | 1.2+ | 2003 11 01 | 704 | (0.9+ | 1.8+) | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2002 04 29 | 644 | 0.6+ | 0.0 | 2003 11 01 | 704 | 1.0+ | 0.9+ | 2006 09 26 | 703 | 0.8− | 0.2+ |
| 2002 05 07 | 699 | 0.4− | 0.3+ | 2003 11 01 | 704 | (0.8+ | 1.9+) | 2006 10 11 | E12 | 0.1− | 0.4+ |
| 2002 05 07 | 699 | 0.2− | 0.9+ | 2003 11 05 | 699 | 0.5− | 1.5+ | 2006 10 11 | E12 | 0.5+ | 0.1+ |
| 2002 05 07 | 699 | 0.3− | 1.4+ | 2003 11 05 | 699 | 0.5− | 0.4+ | 2006 10 11 | E12 | 0.4+ | 0.0 |
| 2002 05 07 | 699 | 0.5− | 1.0+ | 2003 11 05 | 699 | 0.1+ | 0.8+ | 2006 10 11 | E12 | 0.0 | 0.4+ |
| 2002 05 08 | 704 | 0.6+ | 0.5− | 2003 11 05 | 699 | 1.1+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2002 05 08 | 704 | 0.0 | 0.6+ | 2003 11 17 | 703 | (2.1− | 1.5+) | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2002 05 08 | 704 | 0.9− | 0.7+ | 2003 11 17 | 703 | 1.4− | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 05 08 | 704 | 0.2+ | 0.7− | 2003 11 17 | 703 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.2+ |
| 2002 05 08 | 704 | 0.5+ | 0.3− | 2003 11 17 | 703 | 0.3− | 1.3+ | 2006 10 28 | 703 | 1.5− | 0.3− |
| 2002 05 10 | 704 | 0.3+ | 0.4+ | 2003 11 18 | 703 | 0.9+ | 0.4+ | 2006 10 28 | 703 | 0.7+ | 0.7+ |
| 2002 05 10 | 704 | 0.8+ | 0.9− | 2003 11 18 | 703 | 1.0+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.8− |
| 2002 05 10 | 704 | 1.0+ | 0.3+ | 2003 11 18 | 703 | 0.9− | 1.3+ | | | | |

**(141587)∗ 2002 HW$_2$ = 2005 EL**

Discovered 2002 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75335)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.94341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30200839 | $\omega$ | 53.08962 | | −0.93806922 | +0.34321533 | |
| $a$ | 2.2001724 | $\Omega$ | 146.90836 | | −0.33896943 | −0.88109200 | |
| $e$ | 0.0775609 | $i$ | 4.96112 | | −0.07159509 | −0.32539227 | |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 09 | 691 | 0.5− | 0.0 | 2003 09 22 | 691 | 0.1+ | 0.7+ | 2005 03 02 | 703 | 0.7− | 0.2− |
| 1992 02 09 | 691 | 1.4− | 1.1− | 2003 09 22 | 691 | 0.1− | 0.5+ | 2005 03 02 | 703 | 0.4+ | 0.2+ |
| 1992 02 09 | 691 | 1.2+ | 0.7− | 2003 09 22 | 691 | 0.0 | 0.4+ | 2005 03 02 | 703 | 0.9− | 0.5− |
| 2002 04 09 | 699 | 0.4+ | 0.7+ | 2003 09 28 | 704 | 0.1− | 0.8+ | 2005 03 08 | 704 | 0.1+ | 0.4+ |
| 2002 04 09 | 699 | 0.1− | 1.3+ | 2003 09 28 | 704 | 0.2+ | 0.5+ | 2005 03 08 | 704 | 0.7+ | 0.7+ |
| 2002 04 09 | 699 | 0.1+ | 0.3+ | 2003 09 28 | 704 | 0.4− | 0.3− | 2005 03 08 | 704 | 1.0+ | 0.7+ |
| 2002 04 09 | 699 | 0.3+ | 0.2+ | 2005 02 02 | 691 | 0.0 | 0.1+ | 2005 03 08 | 704 | 0.2+ | 1.1+ |
| 2002 04 10 | 704 | 0.4− | 0.3+ | 2005 02 02 | 703 | 0.2− | 0.8+ | 2005 03 08 | 704 | 0.4+ | 0.6− |
| 2002 04 10 | 704 | 0.1+ | 0.1+ | 2005 02 02 | 704 | 0.8+ | 0.4+ | 2005 03 16 | 703 | 0.1− | 0.2+ |
| 2002 04 10 | 704 | 0.8+ | 0.5− | 2005 02 02 | 691 | 0.1− | 0.0 | 2005 03 16 | 703 | 0.7− | 0.3+ |
| 2002 04 10 | 704 | 0.2− | 0.0 | 2005 02 02 | 703 | 0.5+ | 1.1+ | 2005 03 16 | 703 | 0.9− | 1.5− |
| 2002 04 11 | 704 | 0.4+ | 0.6+ | 2005 02 02 | 703 | 1.0− | 0.5+ | 2005 03 16 | 703 | (1.8− | 0.7−) |
| 2002 04 11 | 704 | 0.6+ | 0.8+ | 2005 02 02 | 704 | 1.0+ | 1.1+ | 2006 07 18 | G96 | 1.0− | 0.1+ |
| 2002 04 11 | 704 | 0.5− | 0.4+ | 2005 02 02 | 703 | 0.0 | 0.0 | 2006 07 18 | G96 | 0.9− | 0.3+ |
| 2002 04 11 | 704 | 0.3+ | 0.6+ | 2005 02 02 | 704 | 0.9+ | 0.2+ | 2006 07 18 | G96 | 0.8− | 0.2+ |
| 2002 04 11 | 704 | 0.2− | 0.4+ | 2005 02 02 | 691 | 0.2+ | 0.1+ | 2006 07 18 | G96 | 0.9− | 0.1+ |
| 2002 04 13 | 644 | 0.4+ | 0.4+ | 2005 02 02 | 704 | 0.5+ | 0.6+ | 2006 08 15 | 644 | 0.4− | 0.1+ |
| 2002 04 13 | 644 | 0.4+ | 0.4+ | 2005 02 04 | 699 | 0.7− | 0.7+ | 2006 08 15 | 644 | 0.3− | 0.3+ |
| 2002 04 13 | 644 | 0.5+ | 0.3+ | 2005 02 04 | 699 | 0.4+ | 0.9+ | 2006 08 15 | 644 | 0.2− | 0.4+ |
| 2002 04 16 | 704 | 0.2+ | 0.8− | 2005 02 04 | 699 | 1.5− | 1.2+ | 2006 08 17 | A50 | 0.1− | 0.9+ |
| 2002 04 16 | 704 | 0.1+ | 0.0 | 2005 02 04 | 699 | 0.6− | 0.2+ | 2006 08 17 | A50 | 0.8+ | 0.9+ |
| 2002 04 16 | 704 | 0.4+ | 0.0 | 2005 02 09 | 704 | 0.0 | 0.3+ | 2006 08 28 | 703 | (3.9− | 3.1−) |
| 2002 04 16 | 704 | 0.5+ | 0.7− | 2005 02 09 | 704 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.9+ | 1.1− |
| 2002 04 16 | 704 | 0.4+ | 0.6+ | 2005 02 09 | 704 | 1.0+ | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.6+ |
| 2002 04 17 | 704 | 0.0 | 0.8− | 2005 02 09 | 704 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.5+ | 0.3− |
| 2002 04 17 | 704 | 1.2− | 0.4+ | 2005 02 09 | 704 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.3+ |
| 2002 04 17 | 704 | 0.4− | 0.2− | 2005 03 01 | 691 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2002 05 07 | 644 | 0.1− | 0.0 | 2005 03 01 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2002 05 07 | 644 | 0.0 | 0.0 | 2005 03 01 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.1+ |
| 2002 05 07 | 644 | 0.3+ | 0.2+ | 2005 03 02 | 703 | 0.8− | 0.4− | | | | |

**(141588)∗ 2002 HY$_2$**

Discovered 2002 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.87631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30436635 | $\omega$ | 89.78438 | | −0.35001156 | +0.93636886 | |
| $a$ | 2.1887943 | $\Omega$ | 159.66543 | | −0.88698100 | −0.32216665 | |
| $e$ | 0.1620194 | $i$ | 4.38294 | | −0.30125837 | −0.13936287 | |
| $P$ | 3.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 14 | 704 | 0.5− | 1.2− | 2002 04 13 | 644 | (1.8− | 0.4−) | 2005 03 08 | G96 | 0.3− | 0.0 |
| 1999 06 14 | 704 | 0.1+ | 0.2+ | 2002 04 14 | 644 | 0.1+ | 1.0+ | 2005 03 08 | G96 | 0.5− | 0.1+ |
| 1999 06 14 | 704 | 0.7− | 0.0 | 2002 04 14 | 644 | 0.0 | 1.1+ | 2005 03 08 | G96 | 0.4− | 0.0 |
| 1999 06 14 | 704 | 0.2+ | 0.3− | 2002 04 14 | 644 | 0.1+ | 0.9+ | 2005 04 02 | G96 | 0.7− | 0.4− |
| 1999 06 14 | 704 | 0.7− | 0.1− | 2002 04 16 | 704 | 0.0 | 0.1+ | 2005 04 02 | G96 | 0.6− | 0.4− |
| 1999 07 13 | 704 | 1.4− | 0.5− | 2002 04 16 | 704 | 0.2− | 0.0 | 2005 04 02 | G96 | 0.7− | 0.1− |
| 1999 07 13 | 704 | 0.5− | 0.2− | 2002 04 16 | 704 | 0.2+ | 0.0 | 2005 04 02 | G96 | 0.6− | 0.3+ |
| 1999 07 13 | 704 | 0.4+ | 0.3+ | 2002 04 16 | 704 | 0.1+ | 0.9+ | 2006 07 21 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.2− | 0.1− | 2002 04 16 | 704 | 0.1+ | 0.8+ | 2006 07 21 | G96 | 0.1− | 0.1− |
| 1999 07 13 | 704 | 0.2− | 0.1+ | 2002 04 17 | 704 | 1.1+ | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.3− |
| 2002 03 16 | 704 | 0.6+ | 1.1+ | 2002 04 17 | 704 | 0.9+ | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.2− |
| 2002 03 16 | 704 | 0.3+ | 1.1+ | 2002 04 17 | 704 | 0.6+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.4+ |
| 2002 03 16 | 704 | 0.1+ | 0.7+ | 2002 04 17 | 704 | 0.1+ | 0.9+ | 2006 09 15 | 691 | 0.1− | 0.3+ |
| 2002 03 16 | 704 | 0.5+ | 0.9+ | 2002 04 17 | 704 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.2+ |
| 2002 03 16 | 704 | 0.5+ | 0.7+ | 2002 05 07 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2002 03 19 | 699 | 0.0 | 1.1+ | 2002 05 07 | 644 | 0.5+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.5+ |
| 2002 03 19 | 699 | 1.1+ | 0.0 | 2002 05 07 | 644 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.6+ |
| 2002 03 19 | 699 | 0.1− | 0.3+ | 2002 05 07 | 644 | 0.4+ | 0.6+ | 2006 09 23 | 691 | 0.3− | 0.5+ |
| 2002 03 19 | 699 | 0.2+ | 0.2+ | 2002 05 07 | 644 | 0.6+ | 0.6+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 2002 03 20 | 699 | 0.4+ | 0.4+ | 2002 05 07 | 644 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 2002 03 20 | 699 | (1.6+ | 0.4+) | 2002 05 08 | 699 | 0.1+ | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 03 20 | 699 | 0.6− | 0.0 | 2002 05 08 | 699 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2002 03 20 | 699 | 1.0+ | 0.5+ | 2002 05 08 | 699 | 0.9+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 03 27 | 644 | 0.5+ | 1.0+ | 2002 05 08 | 699 | 0.2+ | 1.1+ | 2006 09 30 | 704 | (1.5− | 0.1+) |
| 2002 03 27 | 644 | 0.6+ | 1.0+ | 2003 10 23 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.0 | 0.1+ |
| 2002 03 27 | 644 | 0.3+ | 0.8+ | 2003 10 23 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 704 | (1.6− | 0.5−) |
| 2002 04 05 | 699 | 0.2+ | 0.2− | 2003 10 23 | 691 | 0.0 | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.8+ |
| 2002 04 05 | 699 | 0.7+ | 0.3+ | 2005 03 03 | 703 | 1.2− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 04 05 | 699 | 0.1+ | 0.3− | 2005 03 03 | 703 | 1.1− | 0.7+ | 2006 10 11 | 644 | 0.5− | 0.6+ |
| 2002 04 05 | 699 | 0.4+ | 0.5+ | 2005 03 03 | 703 | (0.2+ | 1.6+) | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2002 04 10 | 704 | (2.9+ | 0.6+) | 2005 03 03 | 703 | 0.3− | 0.4− | 2006 10 12 | 644 | 0.7− | 0.4+ |
| 2002 04 10 | 704 | 0.1+ | 0.1+ | 2005 03 08 | 704 | 0.9+ | 1.3+ | 2006 10 12 | 644 | 0.6− | 0.6+ |
| 2002 04 10 | 704 | 0.3− | 0.4+ | 2005 03 08 | 704 | 0.4− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 04 10 | 704 | 0.1− | 0.1− | 2005 03 08 | 704 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2002 04 10 | 704 | 0.2+ | 0.1− | 2005 03 08 | 704 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2002 04 13 | 644 | 0.1− | 0.2+ | 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2002 04 13 | 644 | 0.2+ | 0.4+ | 2005 03 08 | 704 | 0.6+ | 0.4+ | | | | |

**(141589)∗ 2002 HA$_3$ = 1999 NM$_{34}$**

Discovered 2002 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 56336)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.02858 | | (2000.0) | | +0.41306832 | +0.90904121 |
| $n$ | 0.29780510 | $\omega$ | 245.60013 | | −0.80692161 | +0.39329932 |
| $a$ | 2.2208265 | $\Omega$ | 48.91254 | | −0.42219910 | +0.13769428 |
| $e$ | 0.1775688 | $i$ | 4.18033 | | | |
| $P$ | 3.31 | $H$ | 16.9 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.3+ | 0.1− | 2002 05 14 | 699 | (1.6+ | 1.0+) | 2006 10 17 | G96 | 0.5+ | 0.4+ |
| 1999 07 14 | 704 | 0.7+ | 0.3− | 2002 05 14 | 699 | 1.4+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 1999 07 14 | 704 | 0.4+ | 0.1− | 2002 05 19 | 644 | 0.3− | 0.9+ | 2006 10 17 | G96 | 0.4+ | 0.2+ |
| 1999 07 14 | 704 | 0.1+ | 0.8− | 2002 05 19 | 644 | 0.3− | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.3+ |
| 1999 07 16 | 704 | 0.3+ | 0.0 | 2002 05 19 | 644 | 0.0 | 0.7+ | 2006 10 17 | A13 | 0.4+ | 0.3− |
| 1999 07 16 | 704 | 0.3− | 0.3+ | 2002 06 05 | 291 | 0.4+ | 0.6+ | 2006 10 17 | A13 | 0.1+ | 0.5− |
| 1999 07 16 | 704 | 1.0− | 1.7+ | 2002 06 05 | 291 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2002 04 14 | 644 | 0.3+ | 0.7+ | 2002 06 05 | 291 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2002 04 14 | 644 | 0.2− | 0.4+ | 2003 11 19 | 691 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2002 04 14 | 644 | 0.3+ | 0.8+ | 2003 11 19 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.3− | 1.0+ |
| 2002 04 16 | 704 | 0.6− | 0.4− | 2003 11 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.1− |
| 2002 04 16 | 704 | 0.6+ | 0.0 | 2003 11 30 | 691 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.6+ |
| 2002 04 16 | 704 | 0.6+ | 0.2− | 2003 11 30 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.1+ |
| 2002 04 16 | 704 | 0.2+ | 0.3− | 2003 11 30 | 691 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2002 04 17 | 704 | 0.4+ | 0.1− | 2005 03 12 | 704 | (0.0 | 2.2+) | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2002 04 17 | 704 | 0.3+ | 1.0+ | 2005 03 12 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 04 17 | 704 | 0.7− | 0.4+ | 2005 03 12 | 704 | (0.9− | 1.7+) | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2002 05 09 | 704 | 0.5− | 0.5+ | 2005 03 12 | 704 | (0.9− | 1.9+) | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 05 09 | 644 | 0.6+ | 0.5− | 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 05 09 | 704 | 0.5+ | 0.3− | 2005 04 16 | 691 | 0.6+ | 0.5+ | 2006 11 11 | 691 | 0.2− | 0.6+ |
| 2002 05 09 | 644 | 0.2+ | 0.4− | 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2002 05 09 | 704 | 0.1− | 0.4+ | 2005 05 11 | G96 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2002 05 09 | 644 | 0.3+ | 0.6− | 2005 05 11 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.5− |
| 2002 05 11 | 704 | 0.4+ | 1.1+ | 2005 05 11 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2002 05 11 | 704 | 0.0 | 0.0 | 2005 05 11 | G96 | 0.0 | 0.3+ | 2006 11 17 | 703 | 1.0− | 0.1− |
| 2002 05 11 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 2.5− | 0.1− |
| 2002 05 11 | 704 | (1.1+ | 2.1+) | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2002 05 11 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2002 05 13 | 704 | 0.4+ | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2002 05 13 | 704 | 0.3− | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.5− | 0.0 |
| 2002 05 13 | 704 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 05 13 | 704 | 0.3− | 0.7+ | 2006 10 15 | 703 | 0.7− | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.4+ |
| 2002 05 13 | 704 | 0.0 | 1.2+ | 2006 10 15 | 703 | 0.7− | 0.4+ | 2006 11 20 | G96 | 0.1− | 0.4+ |
| 2002 05 14 | 699 | 1.3+ | 1.5+ | 2006 10 15 | 703 | 0.6− | 1.0− | | | | |
| 2002 05 14 | 699 | (0.7+ | 1.9+) | 2006 10 15 | 703 | 0.5− | 0.2− | | | | |

**(141590)∗ 2002 HS$_6$ = 1999 NG$_{26}$**

Discovered 2002 Apr. 18 by NEAT at Palomar.

Id. A. Doppler (*MPO* 31609)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.33491 | | (2000.0) | | +0.51619865 | +0.85522498 |
| $n$ | 0.29386999 | $\omega$ | 338.84632 | | −0.77459518 | +0.44318731 |
| $a$ | 2.2406080 | $\Omega$ | 322.18932 | | −0.36543298 | +0.26865451 |
| $e$ | 0.1936722 | $i$ | 4.31661 | | | |
| $P$ | 3.35 | $H$ | 17.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | (2.4− | 1.9−) | 2005 03 17 | G96 | 0.1− | 0.1− | 2006 09 28 | 683 | 0.9− | 0.1− |
| 1999 07 14 | 704 | 1.1− | 0.3− | 2005 03 17 | G96 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.9+ | 0.1+ |
| 1999 07 14 | 704 | 0.9+ | 0.0 | 2005 04 04 | 691 | 0.5+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 1999 07 16 | 704 | 0.5+ | 0.4+ | 2005 04 04 | 691 | 0.4+ | 0.1− | 2006 09 29 | 704 | 1.4+ | 0.3+ |
| 1999 07 16 | 704 | 0.1+ | 0.3+ | 2005 04 04 | 691 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.2− | 0.7+ |
| 1999 07 16 | 704 | 0.9− | 0.1− | 2005 04 15 | 691 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.9+ | 0.3− |
| 1999 07 16 | 704 | 0.7+ | 0.2− | 2005 04 15 | 691 | 0.7+ | 0.4+ | 2006 09 30 | 683 | 0.2− | 1.5− |
| 2002 04 18 | 644 | 0.2+ | 0.4+ | 2005 04 15 | 691 | 0.2− | 0.4+ | 2006 09 30 | 683 | 1.0+ | 0.4− |
| 2002 04 18 | 644 | 0.3+ | 0.0 | 2006 08 29 | 699 | (0.6+ | 1.7−) | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 2002 04 18 | 644 | 0.1+ | 0.5− | 2006 08 29 | 699 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2002 04 18 | 608 | 0.8− | 0.6− | 2006 08 29 | 699 | 0.1− | 0.4+ | 2006 09 30 | 683 | 1.1− | 1.0− |
| 2002 04 18 | 608 | 1.3− | 0.3− | 2006 08 29 | 699 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2002 04 18 | 608 | 0.9− | 0.2− | 2006 09 16 | 703 | 0.8− | 0.4− | 2006 09 30 | 703 | 0.6− | 0.8− |
| 2002 04 20 | 644 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.5− | 0.2− | 2006 10 03 | 704 | (0.2+ | 1.6+) |
| 2002 04 20 | 644 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 10 03 | 704 | 0.4− | 0.7+ |
| 2002 04 20 | 644 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.2− | 2006 10 03 | 704 | (2.4− | 1.0+) |
| 2002 05 01 | 644 | 0.1+ | 0.3− | 2006 09 18 | 704 | 0.5+ | 0.5+ | 2006 10 03 | 704 | 0.7+ | 1.4+ |
| 2002 05 01 | 644 | 0.5+ | 0.3+ | 2006 09 18 | 704 | 1.3− | 0.5+ | 2006 10 03 | 704 | (0.4− | 1.5+) |
| 2002 05 01 | 644 | 0.0 | 0.4+ | 2006 09 18 | 704 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2002 05 17 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 1.1− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2002 05 17 | 644 | 0.8+ | 0.2+ | 2006 09 18 | 699 | (0.6− | 1.6−) | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2002 05 17 | 644 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2003 11 20 | 704 | 0.5− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2003 11 20 | 704 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.5− | 0.9+ | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2003 11 20 | 704 | 0.6+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 1.3+ | 2006 10 12 | 644 | 0.4− | 0.3+ |
| 2003 11 20 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 0.2− | 1.0+ | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 2003 11 20 | 704 | 0.7+ | 0.8+ | 2006 09 25 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2003 11 21 | 704 | 1.4+ | 0.0 | 2006 09 25 | 683 | (0.9+ | 1.7−) | 2006 10 17 | 703 | 0.6+ | 0.6+ |
| 2003 11 21 | 704 | 0.2+ | 1.2− | 2006 09 25 | 683 | 0.8+ | 0.5− | 2006 10 17 | 703 | (1.0+ | 1.7+) |
| 2003 11 21 | 704 | 1.0+ | 0.1+ | 2006 09 25 | 683 | 1.1+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2003 12 18 | 691 | 0.2− | 0.3− | 2006 09 26 | 683 | 0.3− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2003 12 18 | 691 | 0.5− | 0.1− | 2006 09 26 | 683 | 0.9− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2003 12 18 | 691 | 0.3− | 0.2− | 2006 09 26 | 683 | 0.7− | 1.2− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 03 04 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 683 | 0.3+ | 0.9− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2005 03 04 | 691 | 0.4− | 0.4+ | 2006 09 27 | 683 | (0.0 | 3.0−) | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 03 04 | 691 | 0.0 | 0.5+ | 2006 09 27 | 683 | (1.8− | 1.8−) | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2005 03 17 | G96 | 0.1+ | 0.2− | 2006 09 28 | 683 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2005 03 17 | G96 | 0.2− | 0.1− | 2006 09 28 | 683 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |

**(141591)∗ 2002 HC$_9$**

Discovered 2002 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.23431 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30385079 | $\omega$ | 81.09666 | | −0.28152098 | +0.95943828 | |
| $a$ | 2.1912696 | $\Omega$ | 172.50151 | | −0.91929540 | −0.26520454 | |
| $e$ | 0.1586230 | $i$ | 6.58755 | | −0.27503075 | −0.09562817 | |
| $P$ | 3.24 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 704 | 0.2+ | 0.7+ | 2002 04 22 | 704 | 0.4+ | 0.3+ | 2005 03 11 | G96 | 0.3− | 0.2− |
| 2002 03 16 | 704 | 0.2− | 0.3+ | 2002 04 22 | 704 | 1.3+ | 0.0 | 2005 04 06 | G96 | 0.1+ | 0.2+ |
| 2002 03 16 | 704 | 0.3− | 1.8+ | 2002 04 22 | 704 | 0.5+ | 0.4+ | 2005 04 06 | G96 | 0.2− | 0.2+ |
| 2002 03 19 | 699 | 0.8+ | 1.5+ | 2002 05 07 | 704 | 0.6+ | 0.7+ | 2005 04 06 | G96 | 0.3− | 1.1+ |
| 2002 03 19 | 699 | 1.2+ | 1.3+ | 2002 05 07 | 704 | 0.6− | 0.2− | 2005 04 06 | G96 | 0.6− | 0.6+ |
| 2002 03 19 | 699 | 0.2− | 1.2+ | 2002 05 07 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 1.4− | 0.4− |
| 2002 03 19 | 699 | 1.5+ | 1.0+ | 2002 05 07 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.1− |
| 2002 04 10 | 704 | 0.2− | 0.5− | 2003 10 23 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.3+ |
| 2002 04 10 | 704 | 0.9− | 0.7− | 2003 10 23 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.5+ |
| 2002 04 10 | 704 | 0.7− | 1.3− | 2003 10 23 | 691 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.4+ | 0.7+ |
| 2002 04 10 | 704 | 0.9− | 1.5− | 2005 03 03 | 703 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.3+ |
| 2002 04 13 | 644 | 0.0 | 0.2+ | 2005 03 03 | 703 | 1.3+ | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.4+ |
| 2002 04 13 | 644 | 0.0 | 0.3+ | 2005 03 03 | 703 | 0.4− | 1.1+ | 2006 09 26 | G96 | 0.5− | 0.4− |
| 2002 04 13 | 644 | 0.0 | 0.4+ | 2005 03 03 | 703 | 0.8− | 0.9− | 2006 09 26 | G96 | 0.6+ | 0.1+ |
| 2002 04 14 | 644 | 0.5− | 0.2− | 2005 03 08 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2002 04 14 | 644 | 0.0 | 0.5+ | 2005 03 08 | 704 | 0.7+ | 1.1+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 04 14 | 644 | 0.1− | 0.1+ | 2005 03 08 | 704 | 0.8+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 04 16 | 704 | 0.1+ | 0.7+ | 2005 03 09 | 704 | 0.5− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2002 04 16 | 704 | 0.1+ | 0.8+ | 2005 03 09 | 704 | 0.8+ | 0.7− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 04 16 | 704 | 0.3+ | 0.9+ | 2005 03 09 | 704 | 0.2− | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2002 04 16 | 704 | 0.0 | 1.1+ | 2005 03 09 | 704 | 0.7+ | 1.0− | 2006 09 28 | 691 | 0.4− | 0.2+ |
| 2002 04 16 | 704 | 0.0 | 1.7+ | 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2002 04 22 | 704 | 0.1+ | 0.3− | 2005 03 11 | G96 | 0.2− | 0.2+ | | | | |
| 2002 04 22 | 704 | 0.5+ | 0.3+ | 2005 03 11 | G96 | 0.3− | 0.2− | | | | |

**(141592)∗ 2002 HN$_{10}$**

Discovered 2002 Apr. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.55278 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28209005 | $\omega$ | 41.40438 | | −0.13202890 | +0.99080385 | |
| $a$ | 2.3025595 | $\Omega$ | 221.03429 | | −0.92089961 | −0.13365268 | |
| $e$ | 0.1532745 | $i$ | 2.58406 | | −0.36675914 | −0.02108753 | |
| $P$ | 3.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 644 | 0.1− | 0.3+ | 2002 05 03 | 699 | 0.8+ | 0.1+ | 2003 10 23 | 704 | 1.3+ | 0.0 |
| 2002 04 09 | 704 | 0.3+ | 1.1− | 2002 05 03 | 699 | 0.4− | 0.1− | 2003 10 23 | 704 | 0.3+ | 0.6− |
| 2002 04 09 | 704 | 0.0 | 1.0− | 2002 05 05 | 291 | 0.1− | 0.2+ | 2003 10 28 | 704 | 1.4+ | 0.4+ |
| 2002 04 09 | 644 | 0.2− | 0.4+ | 2002 05 05 | 291 | 0.1− | 0.3+ | 2003 10 28 | 704 | 0.3+ | 1.2+ |
| 2002 04 09 | 704 | 0.6+ | 0.9− | 2002 05 05 | 291 | 0.0 | 0.1+ | 2003 10 28 | 704 | 1.2− | 1.5+ |
| 2002 04 09 | 704 | 1.1+ | 1.5− | 2002 05 08 | 704 | 1.9+ | 0.4+ | 2003 11 28 | 691 | 0.9+ | 0.6+ |
| 2002 04 09 | 644 | 0.1− | 0.4+ | 2002 05 08 | 704 | 0.5− | 0.4− | 2003 11 28 | 691 | 0.7− | 0.4+ |
| 2002 04 14 | 704 | 0.1− | 0.6+ | 2002 05 08 | 704 | 0.1− | 0.3+ | 2003 11 28 | 691 | 0.4− | 0.1+ |
| 2002 04 14 | 704 | 0.2− | 0.1− | 2002 05 08 | 704 | 0.0 | 0.7+ | 2005 01 13 | 691 | 0.1+ | 0.3+ |
| 2002 04 14 | 704 | 0.1− | 0.2+ | 2002 05 09 | 644 | 0.2+ | 0.1− | 2005 01 13 | 691 | 0.1− | 0.5+ |
| 2002 04 14 | 704 | 0.5− | 0.5+ | 2002 05 09 | 644 | 0.3+ | 0.1− | 2005 01 13 | 691 | 0.1+ | 0.3+ |
| 2002 04 14 | 704 | 0.3− | 0.3+ | 2002 05 09 | 644 | 0.5+ | 0.4+ | 2005 02 02 | 691 | 0.1+ | 0.2+ |
| 2002 04 18 | 704 | 1.5− | 0.5+ | 2002 05 11 | 704 | 0.0 | 0.5+ | 2005 02 02 | 691 | 0.3+ | 0.4− |
| 2002 04 18 | 704 | 1.5+ | 1.0+ | 2002 05 11 | 704 | 0.5+ | 1.1− | 2005 02 02 | 691 | 0.1+ | 0.1+ |
| 2002 04 18 | 704 | 0.0 | 0.6− | 2002 05 11 | 704 | 0.0 | 0.6+ | 2005 03 13 | 691 | 0.2− | 0.3+ |
| 2002 04 18 | 704 | 0.7− | 0.2− | 2002 05 11 | 704 | 0.3− | 0.2− | 2005 03 13 | 691 | 0.0 | 0.0 |
| 2002 04 21 | 291 | 0.1+ | 0.2+ | 2002 05 11 | 704 | 0.6− | 0.2+ | 2005 03 13 | 691 | 0.1− | 0.1− |
| 2002 04 21 | 291 | 0.0 | 0.4+ | 2002 05 13 | 704 | 0.8+ | 0.9+ | 2006 07 21 | 703 | 0.1+ | 0.2+ |
| 2002 04 21 | 291 | 0.2− | 0.4+ | 2002 05 13 | 704 | 0.6− | 1.5− | 2006 07 21 | 703 | 0.9− | 0.5+ |
| 2002 04 22 | 704 | 0.5− | 0.4+ | 2002 05 13 | 704 | 0.9+ | 0.1+ | 2006 07 21 | 703 | 0.3− | 0.7+ |
| 2002 04 22 | 704 | 0.2+ | 1.2− | 2002 05 13 | 704 | 0.6+ | 0.7+ | 2006 07 21 | 703 | 0.2− | 0.4+ |
| 2002 04 22 | 704 | 0.3− | 0.4+ | 2002 05 18 | 644 | 0.1+ | 0.8+ | 2006 07 28 | A50 | 0.1− | 0.3+ |
| 2002 04 22 | 704 | 0.7− | 0.4+ | 2002 05 18 | 644 | 0.4+ | 1.0+ | 2006 07 28 | A50 | 0.3− | 0.3+ |
| 2002 04 29 | 644 | 0.4+ | 0.4− | 2002 05 18 | 644 | 0.3+ | 1.0+ | 2006 09 13 | 644 | 0.1+ | 0.5+ |
| 2002 04 29 | 644 | 0.4− | 1.1− | 2003 10 02 | 691 | 0.5− | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.5+ |
| 2002 04 29 | 644 | 0.3+ | 0.6− | 2003 10 02 | 691 | 0.4− | 0.2+ | 2006 09 13 | 644 | 0.3+ | 0.8+ |
| 2002 05 03 | 699 | 0.3+ | 0.4+ | 2003 10 02 | 691 | 0.7− | 0.3+ | | | | |
| 2002 05 03 | 699 | 0.5− | 0.3+ | 2003 10 23 | 704 | 1.8+ | 0.7− | | | | |

**(141593)∗ 2002 HK$_{12}$**

Discovered 2002 Apr. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.39917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.34813456 | $\omega$ | 2.01748 | | +0.63196394 | +0.77430304 | |
| $a$ | 2.0012651 | $\Omega$ | 307.17945 | | −0.71162196 | +0.56299811 | |
| $e$ | 0.5298719 | $i$ | 2.35997 | | −0.30694587 | +0.28894278 | |
| $P$ | 2.83 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc (radar residuals in s.d.)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 06 11 | 260 | 0.2+ | 1.4+ | 2002 09 07 | 557 | 0.3− | 0.3− | 2002 10 07 | 587 | 0.2− | 0.3+ |
| 1985 06 11 | 260 | 0.9− | 0.5− | 2002 09 07 | 557 | 0.1− | 0.1− | 2002 10 07 | 587 | 0.0+ | 0.1+ |
| 2002 04 04 | 644 | 0.4− | 0.7+ | 2002 09 07 | 557 | 0.1+ | 0.0+ | 2002 10 07 | 587 | 0.0+ | 0.4+ |
| 2002 04 04 | 644 | 0.5+ | 0.7+ | 2002 09 08 | 557 | 0.0+ | 0.0− | 2002 10 07 | 587 | 0.1+ | 0.1+ |
| 2002 04 04 | 644 | 0.0+ | 0.8+ | 2002 09 08 | 557 | 0.1+ | 0.0+ | 2002 10 08 | 785 | 0.3+ | 0.2+ |
| 2002 04 09 | 704 | (3.4+ | 1.1+) | 2002 09 08 | 557 | 0.1+ | 0.1− | 2002 10 08 | 785 | 0.2+ | 0.1+ |
| 2002 04 09 | 704 | (4.2+ | 0.5+) | 2002 09 08 | 557 | 0.0+ | 0.1− | 2002 10 08 | 322 | 0.6− | 0.6− |
| 2002 04 09 | 704 | (3.2+ | 0.7+) | 2002 09 08 | 557 | 0.1− | 0.0− | 2002 10 08 | 322 | 0.4− | 0.7− |
| 2002 04 09 | 704 | (3.1+ | 0.0−) | 2002 09 08 | 557 | 0.1+ | 0.1+ | 2002 10 08 | 322 | 0.6− | 0.8− |
| 2002 04 12 | 704 | 0.6+ | 0.4+ | 2002 09 08 | 151 | 0.3+ | 0.1+ | 2002 10 08 | 127 | 0.0− | 0.2+ |
| 2002 04 12 | 704 | 0.3+ | 0.1− | 2002 09 08 | 151 | 0.1+ | 0.2− | 2002 10 08 | 127 | 0.1+ | 0.2+ |
| 2002 04 12 | 704 | 0.2− | 0.1+ | 2002 09 08 | 151 | 0.6+ | 0.3− | 2002 10 08 | 127 | 0.2+ | 0.3+ |
| 2002 04 30 | 644 | 0.1+ | 0.5+ | 2002 09 08 | 151 | 0.1− | 0.3+ | 2002 10 08 | 240 | 0.0+ | 0.0− |
| 2002 04 30 | 644 | 0.2+ | 0.4+ | 2002 09 08 | 151 | 0.8+ | 0.6+ | 2002 10 08 | 240 | 0.1+ | 0.3+ |
| 2002 04 30 | 644 | 0.2− | 0.6+ | 2002 09 08 | 151 | 0.2+ | 0.1− | 2002 10 08 | 240 | 0.0− | 0.2+ |
| 2002 04 30 | 941 | 0.5− | 0.3+ | 2002 09 08 | 151 | 0.1− | 0.0+ | 2002 10 09 | 322 | 0.3− | 0.3− |
| 2002 04 30 | 941 | 0.3+ | 0.9+ | 2002 09 08 | 151 | 0.1+ | 0.0− | 2002 10 09 | 322 | 0.2− | 0.3− |
| 2002 04 30 | 941 | 0.1− | 0.2− | 2002 09 09 | 118 | 0.2+ | 0.0+ | 2002 10 09 | 322 | 0.3− | 0.1− |
| 2002 04 30 | 941 | 0.1+ | 0.4+ | 2002 09 09 | 118 | 0.5+ | 0.1+ | 2002 10 09 | 151 | 0.1− | 0.4+ |
| 2002 04 30 | 246 | 0.7+ | 0.9+ | 2002 09 09 | 118 | 0.0− | 0.2− | 2002 10 09 | 151 | 0.0+ | 0.4+ |
| 2002 04 30 | 941 | 0.2− | 1.2+ | 2002 09 09 | 118 | 0.1+ | 0.2− | 2002 10 09 | 151 | 0.1+ | 0.2+ |
| 2002 04 30 | 246 | 0.1+ | 0.6+ | 2002 09 10 | 071 | 1.6+ | 0.8+ | 2002 10 09 | 151 | 0.6+ | 0.1+ |
| 2002 04 30 | 246 | 0.8+ | 0.4+ | 2002 09 10 | 071 | 0.6+ | 1.1+ | 2002 10 10 | 704 | 0.3− | 0.1− |
| 2002 04 30 | 246 | 0.2+ | 0.5+ | 2002 09 10 | 071 | 0.7+ | 0.8+ | 2002 10 10 | 704 | 0.2− | 0.0− |
| 2002 04 30 | 246 | 0.5+ | 0.2+ | 2002 09 10 | J93 | 0.7+ | 0.4− | 2002 10 10 | 704 | 0.4− | 0.1− |
| 2002 04 30 | 246 | 0.3+ | 0.1+ | 2002 09 10 | J93 | 0.4+ | 0.1− | 2002 10 10 | 704 | 0.3+ | 0.5− |
| 2002 04 30 | 108 | 0.4− | 0.5− | 2002 09 10 | J93 | 0.2+ | 0.1− | 2002 10 10 | 704 | 0.4− | 0.4− |
| 2002 04 30 | 118 | 0.1+ | 0.3+ | 2002 09 11 | 118 | 0.0+ | 0.1+ | 2002 10 10 | 355 | 0.1+ | 0.2− |
| 2002 04 30 | 118 | 0.0+ | 1.1+ | 2002 09 11 | 118 | 0.3− | 0.1− | 2002 10 10 | 355 | 0.0+ | 0.6− |
| 2002 04 30 | 118 | 2.2− | 0.1+ | 2002 09 11 | 118 | 0.3+ | 0.2+ | 2002 10 10 | 355 | 0.3+ | 0.3+ |
| 2002 04 30 | 620 | 0.2+ | 2.1+ | 2002 09 11 | 118 | 0.2+ | 0.1− | 2002 10 10 | 355 | 0.1+ | 0.1− |
| 2002 04 30 | 620 | 1.2− | 0.1− | 2002 09 11 | 118 | 0.2+ | 0.1+ | 2002 10 12 | 232 | 0.5− | 0.1− |
| 2002 04 30 | 620 | 1.0− | 0.2− | 2002 09 12 | 379 | 0.3+ | 0.5− | 2002 10 12 | 232 | 0.4− | 0.8+ |
| 2002 05 01 | 644 | 0.4+ | 0.5+ | 2002 09 12 | 379 | 0.1+ | 0.2− | 2002 10 12 | 232 | 0.3− | 1.3+ |
| 2002 05 01 | 644 | 0.4+ | 0.6+ | 2002 09 12 | 379 | 0.0− | 0.0+ | 2002 10 12 | 232 | 0.2− | 1.8+ |
| 2002 05 01 | 644 | 0.5+ | 0.7+ | 2002 09 12 | 379 | 0.3+ | 0.3− | 2002 10 12 | 704 | 0.9− | 0.3+ |
| 2002 05 01 | 448 | 0.5− | 1.3− | 2002 09 12 | 379 | 0.1− | 0.3− | 2002 10 12 | 704 | 1.4+ | 0.4+ |
| 2002 05 01 | 448 | 0.5− | 1.6− | 2002 09 12 | 118 | 0.0+ | 0.1+ | 2002 10 12 | 704 | 0.6− | 0.2+ |
| 2002 05 01 | 448 | 0.0+ | 1.5− | 2002 09 12 | 118 | 0.2+ | 0.0− | 2002 10 12 | 704 | 1.3+ | 0.6+ |
| 2002 05 01 | 413 | 0.2+ | 0.5+ | 2002 09 12 | 127 | 0.0+ | 0.0+ | 2002 10 12 | 704 | 0.8− | 0.2+ |
| 2002 05 01 | 413 | 0.1− | 0.1+ | 2002 09 12 | 127 | 0.1− | 0.0+ | 2002 10 12 | 704 | 1.1+ | 0.4+ |
| 2002 05 01 | 413 | 0.0+ | 0.2+ | 2002 09 12 | 127 | 0.1+ | 0.0− | 2002 10 12 | 704 | 0.9− | 0.1+ |
| 2002 05 02 | 413 | 0.2− | 0.3+ | 2002 09 12 | 127 | 0.1− | 0.1− | 2002 10 12 | 704 | 1.0+ | 0.4+ |
| 2002 05 02 | 413 | 0.3− | 0.3+ | 2002 09 12 | 118 | 0.0+ | 0.1+ | 2002 10 12 | 704 | 0.8− | 0.0+ |
| 2002 05 02 | 413 | 0.2− | 0.2+ | 2002 09 13 | 215 | 0.3− | 0.2+ | 2002 10 12 | 704 | 1.0+ | 0.3+ |
| 2002 05 03 | 927 | 0.9− | 2.0+ | 2002 09 13 | 215 | 0.2− | 0.3+ | 2002 10 12 | 367 | 0.3− | 0.0− |
| 2002 05 03 | 941 | 1.9+ | 0.5− | 2002 09 13 | 215 | 0.2− | 0.2+ | 2002 10 12 | 367 | 0.5+ | 1.1+ |
| 2002 05 03 | 941 | 1.6+ | 0.1+ | 2002 09 13 | 127 | 0.1− | 0.1+ | 2002 10 12 | 379 | 0.0+ | 0.2+ |
| 2002 05 03 | 941 | 0.3− | 1.1+ | 2002 09 13 | 127 | 0.1− | 0.3+ | 2002 10 12 | 379 | 0.0− | 0.3+ |
| 2002 05 04 | 734 | 0.4+ | 1.1+ | 2002 09 13 | 127 | 0.0+ | 0.1+ | 2002 10 12 | 379 | 0.0− | 0.2+ |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 04 | 734 | 0.1− | 1.1+ | 2002 09 13 | 151 | 0.2− | 0.0− | 2002 10 12 | 379 | 0.1+ | 0.1+ | 2002 05 29 | 474 | 0.3+ | 0.4+ | 2002 09 23 | 379 | 0.1− | 0.0− | 2002 10 26 | 941 | 0.7− | 0.7+ |
| 2002 05 05 | 807 | 0.0+ | 0.6+ | 2002 09 13 | 151 | 0.0+ | 0.2+ | 2002 10 12 | 379 | 0.4− | 0.3+ | 2002 05 29 | 474 | 0.2+ | 0.1+ | 2002 09 23 | 379 | 0.1+ | 0.0+ | 2002 10 26 | J87 | 0.8− | 0.6+ |
| 2002 05 05 | 807 | 0.0+ | 0.6+ | 2002 09 13 | 151 | 0.2− | 0.1+ | 2002 10 12 | 379 | 0.3− | 0.1− | 2002 05 29 | 474 | 0.2+ | 0.2+ | 2002 09 23 | 379 | 0.1− | 0.2+ | 2002 10 26 | J87 | 1.3− | 0.7+ |
| 2002 05 05 | 807 | 0.1+ | 0.6+ | 2002 09 13 | 151 | 0.1− | 0.2+ | 2002 10 12 | J93 | 0.2+ | 0.9+ | 2002 06 04 | 704 | 0.7+ | 0.3+ | 2002 09 23 | 379 | 0.3− | 0.2− | 2002 10 26 | J87 | 0.5− | 0.1− |
| 2002 05 05 | 422 | 0.1− | 0.4+ | 2002 09 14 | 196 | 0.2+ | 0.1+ | 2002 10 12 | J93 | (3.0− | 0.6−) | 2002 06 04 | 704 | 0.4− | 0.9+ | 2002 09 23 | 379 | 0.1+ | 0.1+ | 2002 10 27 | 084 | 0.1+ | 0.4+ |
| 2002 05 05 | 422 | 0.2− | 0.3+ | 2002 09 14 | 196 | 0.1+ | 0.1+ | 2002 10 12 | J87 | 0.7+ | 0.4+ | 2002 06 04 | 704 | 0.8− | 0.2+ | 2002 09 23 | 379 | 0.1+ | 0.4− | 2002 10 31 | 644 | 0.0− | 0.1− |
| 2002 05 05 | 422 | 0.0+ | 0.3+ | 2002 09 14 | 170 | 0.5+ | 0.5− | 2002 10 12 | J87 | 0.3− | 0.1+ | 2002 06 04 | 118 | 0.4+ | 1.2+ | 2002 09 23 | 379 | 0.4+ | 0.0− | 2002 10 31 | 644 | 0.1− | 0.0− |
| 2002 05 05 | 474 | 0.3+ | 1.2+ | 2002 09 14 | 170 | 0.1+ | 0.4− | 2002 10 12 | J87 | 0.7− | 0.7− | 2002 06 04 | 118 | 0.5+ | 0.8+ | 2002 09 24 | 379 | 0.3+ | 0.2− | 2002 10 31 | 644 | 0.0− | 0.1− |
| 2002 05 05 | 474 | 0.3+ | 1.1+ | 2002 09 14 | 170 | 0.5+ | 0.4− | 2002 10 12 | J87 | 0.1− | 0.3− | 2002 06 16 | 858 | 0.1− | 0.7+ | 2002 09 24 | 379 | 0.2− | 0.0− | 2002 11 01 | 176 | 0.4+ | 0.1− |
| 2002 05 05 | 474 | 1.1+ | 1.6+ | 2002 09 14 | 170 | 0.7+ | 0.3− | 2002 10 12 | J87 | 0.0− | 0.1− | 2002 06 16 | 858 | 0.0− | 0.3+ | 2002 09 24 | 379 | 0.5+ | 0.7+ | 2002 11 01 | 176 | 0.4+ | 0.1− |
| 2002 05 06 | 808 | 1.6− | 1.8+ | 2002 09 14 | 170 | 0.1+ | 0.4− | 2002 10 12 | J87 | 0.2− | 0.5+ | 2002 06 16 | 858 | 0.6+ | 0.4− | 2002 09 24 | 379 | 0.2− | 0.4− | 2002 11 01 | 176 | 0.3+ | 0.0+ |
| 2002 05 06 | 808 | 1.6− | 0.2+ | 2002 09 14 | 170 | 0.4+ | 0.7− | 2002 10 12 | J87 | 0.2− | 0.3+ | 2002 06 29 | 428 | 0.6+ | 0.5+ | 2002 09 24 | 379 | 0.2− | 0.5− | 2002 11 01 | 176 | 0.4+ | 0.1− |
| 2002 05 06 | 699 | 0.4+ | 0.2+ | 2002 09 14 | 196 | 0.3− | 0.0+ | 2002 10 12 | J87 | 0.2− | 0.1+ | 2002 06 29 | 428 | 0.3+ | 0.5+ | 2002 09 24 | 379 | 0.6− | 0.1+ | 2002 11 01 | 176 | 0.2+ | 0.0+ |
| 2002 05 06 | 699 | 1.0+ | 0.1− | 2002 09 14 | 196 | 0.0− | 0.1+ | 2002 10 12 | J87 | 0.7− | 0.1− | 2002 07 07 | 422 | 0.4− | 0.2− | 2002 09 24 | J93 | 0.0− | 1.0+ | 2002 11 01 | 212 | 0.4+ | 0.1+ |
| 2002 05 06 | 699 | 0.8+ | 0.9+ | 2002 09 14 | 151 | 0.3− | 0.1− | 2002 10 12 | J87 | 0.4− | 0.1− | 2002 07 07 | 422 | 0.1+ | 1.0+ | 2002 09 24 | J93 | 0.3+ | 0.2− | 2002 11 01 | 212 | 0.2+ | 0.4+ |
| 2002 05 06 | 699 | 1.5+ | 0.9+ | 2002 09 14 | 151 | 0.1+ | 0.0− | 2002 10 12 | 941 | 0.6+ | 0.2+ | 2002 07 30 | 413 | 0.1− | 0.4+ | 2002 09 24 | J93 | 0.4+ | 0.4− | 2002 11 03 | 704 | 0.3− | 1.0+ |
| 2002 05 06 | 333 | 0.2− | 0.5+ | 2002 09 14 | 151 | 0.2− | 0.1− | 2002 10 12 | 941 | 0.4+ | 0.1+ | 2002 07 30 | 413 | 0.2− | 0.0+ | 2002 09 24 | J93 | 0.2− | 1.0− | 2002 11 03 | 704 | 0.2− | 0.1− |
| 2002 05 06 | 333 | 0.5+ | 1.5+ | 2002 09 14 | 151 | 0.2+ | 0.1+ | 2002 10 12 | 941 | 0.1− | 0.4+ | 2002 07 30 | 413 | 0.3+ | 0.4− | 2002 09 25 | 084 | 0.1+ | 0.3+ | 2002 11 03 | 704 | 0.2+ | 0.6+ |
| 2002 05 06 | 333 | 0.0+ | 0.9+ | 2002 09 14 | 151 | 0.0− | 0.3+ | 2002 10 12 | 941 | 0.7+ | 0.2+ | 2002 07 31 | 413 | 0.1− | 0.1+ | 2002 09 27 | 939 | 0.4− | 0.4+ | 2002 11 03 | 704 | 0.1+ | 0.6+ |
| 2002 05 08 | 608 | 0.6+ | 0.1− | 2002 09 14 | 151 | 0.1− | 0.3+ | 2002 10 12 | 941 | 0.4+ | 0.3+ | 2002 07 31 | 413 | 0.1+ | 0.1+ | 2002 09 27 | 939 | 0.6− | 0.2+ | 2002 11 05 | 233 | 0.1+ | 0.0− |
| 2002 05 08 | 608 | 0.8+ | 0.2+ | 2002 09 14 | 151 | 0.1+ | 0.1+ | 2002 10 12 | 941 | 0.2+ | 0.1+ | 2002 08 19 | 251/ | 251 | 0.170+ D | 2002 09 27 | 939 | 0.8− | 0.1+ | 2002 11 05 | 233 | 0.9− | 0.1+ |
| 2002 05 08 | 608 | 0.7+ | 0.0− | 2002 09 14 | 151 | 0.1+ | 0.1+ | 2002 10 12 | 941 | 0.2+ | 0.1+ | 2002 08 31 | 176 | 0.0+ | 0.6+ | 2002 09 28 | 642 | 0.1− | 0.3+ | 2002 11 05 | 233 | 1.6− | 0.2− |
| 2002 05 09 | 704 | 1.1+ | 0.3+ | 2002 09 14 | 151 | 0.2− | 0.2+ | 2002 10 12 | 939 | 0.0+ | 0.5+ | 2002 08 31 | 176 | 0.2− | 0.5+ | 2002 09 28 | 642 | 0.0+ | 0.2+ | 2002 11 05 | 233 | 1.3− | 0.1− |
| 2002 05 09 | 704 | 1.0+ | 0.4+ | 2002 09 14 | 151 | 0.1+ | 0.2+ | 2002 10 12 | 170 | 0.4+ | 0.1+ | 2002 08 31 | 176 | 0.4− | 0.3+ | 2002 09 28 | 642 | 0.1− | 0.2+ | 2002 11 05 | 233 | 2.1− | 0.7+ |
| 2002 05 09 | 670 | 0.1− | 0.2− | 2002 09 16 | 699 | 0.5+ | 0.1+ | 2002 10 12 | 170 | 1.1− | 0.3+ | 2002 08 31 | 176 | 0.6− | 0.3+ | 2002 09 28 | 196 | 0.4+ | 0.0− | 2002 11 08 | 704 | 0.1− | 0.5+ |
| 2002 05 09 | 704 | 0.9+ | 0.7+ | 2002 09 16 | 699 | 0.2− | 0.3+ | 2002 10 12 | 939 | 0.0+ | 0.3+ | 2002 08 31 | 118 | 0.2+ | 0.1+ | 2002 09 28 | 084 | 0.0+ | 0.4+ | 2002 11 08 | 704 | 0.3+ | 0.5+ |
| 2002 05 09 | 704 | 0.8+ | 0.3+ | 2002 09 16 | 699 | 0.1− | 0.2+ | 2002 10 12 | 170 | 0.8+ | 0.1+ | 2002 08 31 | 176 | 0.6− | 0.2+ | 2002 09 28 | 196 | 0.0+ | 0.6+ | 2002 11 08 | 704 | 0.4+ | 0.5+ |
| 2002 05 09 | 704 | 1.3+ | 0.0+ | 2002 09 16 | 699 | 0.2+ | 1.1− | 2002 10 12 | 939 | 0.2+ | 0.5+ | 2002 08 31 | 118 | 0.3− | 0.3− | 2002 09 29 | 939 | 0.1− | 1.0+ | 2002 11 08 | 704 | 0.1+ | 1.1+ |
| 2002 05 09 | 670 | 0.1− | 0.3+ | 2002 09 17 | 379 | 0.4+ | 0.1+ | 2002 10 13 | 379 | 0.8− | 0.2+ | 2002 08 31 | 118 | 0.1− | 0.4− | 2002 09 29 | 939 | 0.1− | 0.2+ | 2002 11 08 | 704 | 0.5+ | 0.6+ |
| 2002 05 09 | 608 | 0.6− | 0.6− | 2002 09 17 | 379 | 0.2+ | 0.2− | 2002 10 13 | 379 | 0.1− | 0.3− | 2002 08 31 | 118 | 0.3+ | 0.2− | 2002 09 29 | 939 | 0.4− | 0.2− | 2002 11 12 | 644 | 0.1+ | 1.0+ |
| 2002 05 09 | 608 | 0.0+ | 0.6− | 2002 09 17 | 379 | 0.0+ | 0.1− | 2002 10 13 | 084 | 0.0+ | 0.1+ | 2002 08 31 | 848 | 0.1− | 0.2− | 2002 09 29 | 196 | 0.3+ | 0.4+ | 2002 11 12 | 704 | 0.5+ | 0.6+ |
| 2002 05 09 | 608 | 0.4− | 0.3− | 2002 09 17 | 379 | 0.3+ | 0.1− | 2002 10 14 | 367 | 0.1+ | 0.1− | 2002 08 31 | 848 | 1.0− | 0.1+ | 2002 09 29 | 240 | 0.1+ | 0.5+ | 2002 11 12 | 644 | 0.2− | 1.5+ |
| 2002 05 10 | 807 | 0.1+ | 0.1+ | 2002 09 17 | 240 | 0.1+ | 0.2− | 2002 10 14 | 367 | 0.1+ | 0.0− | 2002 08 31 | 848 | 1.8+ | 0.6− | 2002 09 29 | 240 | 0.1+ | 0.4+ | 2002 11 12 | 704 | 0.5− | 0.8+ |
| 2002 05 10 | 807 | 0.3+ | 0.0+ | 2002 09 17 | 240 | 0.0+ | 0.1+ | 2002 10 14 | 367 | 0.2− | 0.1− | 2002 09 02 | 127 | 0.5+ | 0.1− | 2002 09 29 | 240 | 0.0+ | 0.5+ | 2002 11 12 | 644 | 0.3− | 1.5+ |
| 2002 05 10 | 807 | 0.2+ | 0.2+ | 2002 09 17 | 240 | 0.0− | 0.2+ | 2002 10 14 | 084 | 0.4+ | 0.5+ | 2002 09 02 | 127 | 0.4+ | 0.0+ | 2002 09 29 | 196 | 0.1+ | 0.5+ | 2002 11 12 | 704 | 0.6− | 0.9+ |
| 2002 05 10 | 428 | 0.3− | 0.2+ | 2002 09 17 | 240 | 0.2+ | 0.4+ | 2002 10 15 | 704 | 0.1− | 0.1+ | 2002 09 02 | 127 | 0.4+ | 0.3+ | 2002 09 29 | 196 | 0.2+ | 0.5+ | 2002 11 12 | 704 | 0.3+ | 0.9+ |
| 2002 05 10 | 428 | 1.4− | 0.5− | 2002 09 17 | 636 | 0.1− | 0.0+ | 2002 10 15 | 704 | 0.2+ | 0.0− | 2002 09 02 | 127 | 0.0+ | 0.0+ | 2002 09 30 | 785 | 0.1+ | 0.1− | 2002 11 12 | 704 | 0.8+ | 1.0+ |
| 2002 05 11 | 704 | 0.9+ | 0.2− | 2002 09 17 | 636 | 0.2+ | 0.2+ | 2002 10 15 | 704 | 0.0− | 0.4− | 2002 09 02 | 127 | 0.2+ | 0.4− | 2002 09 30 | 785 | 0.1+ | 0.9+ | 2002 11 13 | 704 | 0.0+ | 0.4+ |
| 2002 05 11 | 704 | 0.7+ | 0.5+ | 2002 09 17 | 636 | 0.4+ | 0.2+ | 2002 10 15 | 704 | 0.1+ | 0.3− | 2002 09 06 | 557 | 0.1+ | 0.1− | 2002 09 30 | 785 | 0.9+ | 1.3+ | 2002 11 13 | 704 | 0.4− | 0.6+ |
| 2002 05 11 | 704 | 1.1+ | 0.1+ | 2002 09 17 | 636 | 0.0− | 0.1− | 2002 10 15 | 704 | 0.0+ | 0.2− | 2002 09 06 | 557 | 0.1+ | 0.1− | 2002 09 30 | A20 | 0.9− | 0.3− | 2002 11 13 | 704 | 0.0+ | 0.9+ |
| 2002 05 11 | 704 | 1.3+ | 0.1+ | 2002 09 19 | 379 | 0.2+ | 0.4+ | 2002 10 16 | 379 | 0.5− | 0.2+ | 2002 09 06 | 557 | 0.0+ | 0.0− | 2002 09 30 | A20 | 1.2− | 0.4− | 2002 11 13 | 704 | 0.4− | 0.3+ |
| 2002 05 11 | 704 | 1.7+ | 0.1+ | 2002 09 19 | 379 | 0.2+ | 0.2+ | 2002 10 16 | 379 | 0.1− | 0.4− | 2002 09 06 | 557 | 0.1− | 0.1− | 2002 09 30 | A20 | 1.7− | 0.6− | 2002 11 13 | 704 | 0.2− | 0.6+ |
| 2002 05 14 | 670 | 0.4+ | 1.3− | 2002 09 19 | 379 | 0.4+ | 0.3+ | 2002 10 17 | 704 | 0.8+ | 0.9− | 2002 09 06 | 196 | 0.3− | 0.3+ | 2002 10 01 | 642 | 0.0− | 0.3+ | 2004 01 28 | 291 | 0.5+ | 1.4+ |
| 2002 05 14 | 670 | 1.0− | 0.5+ | 2002 09 21 | 939 | 0.0− | 0.3+ | 2002 10 17 | 704 | 0.0+ | 1.6− | 2002 09 06 | 557 | 0.1− | 0.0− | 2002 10 01 | 642 | 0.2+ | 0.0+ | 2004 01 28 | 291 | 0.0+ | 1.1+ |
| 2002 05 15 | 608 | 1.2− | 0.7− | 2002 09 21 | 939 | 0.6− | 0.1+ | 2002 10 17 | 704 | 0.3+ | 1.6− | 2002 09 07 | 196 | 0.2+ | 0.1− | 2002 10 01 | 642 | 0.1− | 0.3+ | 2004 01 28 | 291 | 0.1− | 1.9+ |
| 2002 05 15 | 608 | 0.5+ | 0.6− | 2002 09 21 | 939 | 0.6− | 0.2+ | 2002 10 18 | 560 | 0.1− | 0.1− | 2002 09 07 | 557 | 0.3− | 0.3− | 2002 10 02 | 355 | 0.3− | 1.0− | 2005 05 18 | E12 | 0.1− | 0.8+ |
| 2002 05 15 | 608 | 0.5+ | 0.6− | 2002 09 22 | 232 | 0.8− | 0.3+ | 2002 10 18 | 560 | 0.0+ | 0.1+ | 2002 09 07 | 557 | 0.4− | 0.2− | 2002 10 02 | 355 | 0.2+ | 1.0− | 2005 05 18 | E12 | 0.8− | 1.4− |
| 2002 05 15 | 118 | 0.2− | 0.1− | 2002 09 22 | 232 | 0.8− | 0.3+ | 2002 10 18 | 560 | 0.2− | 0.0− | 2002 09 07 | 196 | 0.1+ | 0.3− | 2002 10 02 | 355 | 0.0− | 1.2− | 2005 05 18 | E12 | 0.1− | 0.2+ |
| 2002 05 15 | 118 | 0.3+ | 0.1− | 2002 09 22 | 232 | 0.8− | 0.3+ | 2002 10 18 | 560 | 0.4+ | 0.1+ | 2002 09 07 | 557 | 0.2− | 0.2− | 2002 10 02 | 355 | 0.2+ | 0.8− | 2005 05 18 | E12 | 0.4+ | 0.5− |
| 2002 05 15 | 118 | 0.5− | 0.0+ | 2002 09 22 | 232 | 0.9− | 0.3+ | 2002 10 19 | 941 | 0.8− | 0.2− | 2002 09 07 | 196 | 0.4+ | 0.0+ | 2002 10 03 | 379 | 1.0− | 0.9− | 2005 11 25 | 691 | 0.5− | 0.5+ |
| 2002 05 16 | 246 | 0.1− | 0.3+ | 2002 09 22 | 232 | 0.8− | 0.7+ | 2002 10 19 | 941 | 0.6+ | 0.1− | 2002 09 07 | 557 | 0.1+ | 0.1− | 2002 10 03 | 379 | 0.1+ | 0.0− | 2005 11 25 | 691 | 0.2− | 0.4+ |
| 2002 05 16 | 246 | 0.0+ | 1.6+ | 2002 09 22 | 232 | 0.7− | 0.5+ | 2002 10 19 | 941 | 0.8− | 0.2+ | 2002 09 07 | 557 | 0.1+ | 0.1− | 2002 10 03 | 379 | 0.4+ | 0.5− | 2005 11 25 | 691 | 0.3− | 0.0+ |
| 2002 05 16 | 246 | 0.4+ | 1.2+ | 2002 09 22 | 941 | 0.6+ | 0.1− | 2002 10 19 | 941 | 0.0− | 0.0+ | 2002 09 07 | 557 | 0.2− | 0.0− | 2002 10 03 | 084 | 0.2+ | 0.4+ | 2005 11 29 | 691 | 0.1− | 0.1+ |
| 2002 05 16 | 246 | 0.6+ | 1.0+ | 2002 09 22 | 941 | 0.0+ | 0.2− | 2002 10 19 | 941 | 0.4− | 0.2+ | 2002 09 07 | 557 | 0.2− | 0.1− | 2002 10 04 | J93 | 0.5− | 0.0− | 2005 11 29 | 691 | 0.5− | 0.2+ |
| 2002 05 17 | 644 | 0.3+ | 0.6+ | 2002 09 22 | 941 | 0.0+ | 0.1− | 2002 10 19 | 176 | 0.4− | 1.0+ | 2002 09 07 | 557 | 0.2− | 0.3− | 2002 10 04 | J93 | 0.0− | 0.7− | 2005 11 29 | 691 | 0.2− | 0.2− |
| 2002 05 17 | 644 | 0.3+ | 0.5+ | 2002 09 22 | 941 | 0.0+ | 0.1− | 2002 10 19 | 176 | 0.4− | 0.7+ | 2002 09 07 | 557 | 0.1− | 0.2− | 2002 10 04 | J93 | 0.8+ | 1.2− | 2005 12 02 | 691 | 0.7− | 0.2− |
| 2002 05 17 | 644 | 0.3+ | 0.4+ | 2002 09 22 | 941 | 0.1+ | 0.0+ | 2002 10 19 | 176 | 0.4− | 0.6+ | 2002 09 07 | 176 | 0.2+ | 0.3− | 2002 10 04 | A20 | 1.6− | 1.7− | 2005 12 02 | 691 | 0.6− | 0.5+ |
| 2002 05 18 | 711 | 0.8+ | 0.9+ | 2002 09 22 | 926 | 0.4+ | 0.4+ | 2002 10 19 | 176 | 0.4− | 0.4+ | 2002 09 07 | 176 | 0.1− | 0.4− | 2002 10 04 | A20 | (4.1− | 0.6−) | 2005 12 02 | 691 | 0.4− | 0.3+ |
| 2002 05 18 | 711 | 0.6− | 1.7+ | 2002 09 22 | 926 | 0.4− | 0.1− | 2002 10 19 | 939 | 0.5− | 0.9+ | 2002 09 07 | 176 | 0.3− | 0.4− | 2002 10 04 | A20 | 1.5− | 0.6− | 2005 12 06 | 691 | 0.5− | 0.3+ |
| 2002 05 18 | 711 | 0.1+ | 0.8+ | 2002 09 22 | 926 | 0.5− | 0.4− | 2002 10 19 | 176 | 0.3− | 0.2+ | 2002 09 07 | 176 | 0.3− | 0.4− | 2002 10 05 | A20 | 2.1− | 0.6+ | 2005 12 06 | 691 | 0.9− | 0.2+ |
| 2002 05 19 | 608 | 0.4+ | 0.1− | 2002 09 22 | 926 | 0.1+ | 0.0− | 2002 10 19 | 939 | 0.1− | 0.9+ | 2002 09 07 | 176 | 0.6− | 0.4− | 2002 10 05 | A20 | (7.7− | 2.0+) | 2005 12 06 | 691 | 0.4− | 0.4+ |
| 2002 05 19 | 608 | 0.6+ | 0.5+ | 2002 09 22 | 926 | 0.2− | 0.4+ | 2002 10 19 | 939 | 0.2+ | 1.0+ | 2002 09 07 | 920 | 0.8− | 0.3− | 2002 10 05 | A20 | 1.0+ | 0.3− | 2005 12 10 | 691 | 0.6− | 0.6+ |
| 2002 05 19 | 608 | 0.5+ | 0.0− | 2002 09 22 | 926 | 0.1− | 0.2+ | 2002 10 25 | 170 | 0.1+ | 0.3− | 2002 09 07 | 920 | 1.0− | 0.9− | 2002 10 05 | 704 | 0.1− | 0.4+ | 2005 12 10 | 691 | 0.3− | 0.1+ |
| 2002 05 28 | 448 | 0.6+ | 1.5− | 2002 09 22 | 926 | 0.0+ | 0.1− | 2002 10 25 | 170 | 0.3− | 0.0− | 2002 09 07 | 920 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.3− | 0.3+ | 2005 12 10 | 691 | 0.4− | 0.4+ |
| 2002 05 28 | 448 | 0.3+ | 1.0− | 2002 09 22 | 926 | 0.5− | 0.2− | 2002 10 25 | 170 | 1.3+ | 0.4− | 2002 09 07 | 920 | 0.5+ | 0.1+ | 2002 10 05 | 704 | 0.3− | 0.3+ | 2005 12 28 | G96 | 0.6− | 0.3− |
| 2002 05 28 | 448 | 0.6+ | 1.0− | 2002 09 22 | 926 | 0.2+ | 0.3− | 2002 10 26 | 941 | 0.0− | 0.7+ | 2002 09 07 | 557 | 0.2+ | 0.1+ | 2002 10 05 | 704 | 0.1− | 0.4+ | 2005 12 28 | G96 | 0.6− | 0.0− |
| 2002 05 29 | 670 | 1.1+ | 0.3− | 2002 09 22 | 926 | 0.1+ | 0.1+ | 2002 10 26 | 941 | 0.5− | 0.6+ | 2002 09 07 | 557 | 0.2− | 0.1− | 2002 10 05 | 704 | 0.4+ | 0.3+ | 2005 12 28 | G96 | 0.2− | 0.2− |
| 2002 05 29 | 670 | 0.2+ | 0.1+ | 2002 09 23 | 379 | 0.2+ | 0.3+ | 2002 10 26 | 941 | 0.2− | 0.6+ | 2002 09 07 | J93 | 0.3+ | 0.4+ | 2002 10 05 | 084 | 0.0− | 0.5+ | 2005 12 28 | G96 | 0.1− | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | J93 | 0.4+ | 0.2+ | 2002 10 07 | 084 | 0.1− | 0.0+ | |
| 2002 09 07 | J93 | 0.2+ | 0.3− | 2002 10 07 | 084 | 0.4− | 0.0− | |

**(141594)∗ 2002 HN$_{12}$**

Discovered 2002 Apr. 30 at George Observatory, Needville.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.41777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29892230 | $\omega$ | 174.13474 | | −0.38793488 | +0.92164871 | |
| $a$ | 2.2152896 | $\Omega$ | 73.03896 | | −0.84598672 | −0.35245082 | |
| $e$ | 0.1741079 | $i$ | 0.50183 | | −0.36580460 | −0.16230241 | |
| $P$ | 3.30 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 16 | 691 | 0.2+ | 0.0 | 2002 05 11 | 704 | 0.2+ | 0.2+ | 2005 03 03 | J95 | 0.2− | 0.9+ | |
| 2002 02 16 | 691 | 0.4+ | 0.1+ | 2002 05 11 | 704 | 0.1− | 0.9+ | 2005 03 04 | G96 | 0.0 | 0.0 | |
| 2002 02 16 | 691 | 0.4+ | 0.0 | 2002 05 13 | 704 | 1.5+ | 0.4+ | 2005 03 04 | G96 | 0.1+ | 0.4− | |
| 2002 04 02 | 291 | 0.1− | 0.6+ | 2002 05 13 | 704 | 1.4+ | 0.4− | 2005 03 04 | G96 | 0.3+ | 0.2− | |
| 2002 04 02 | 291 | 0.6− | 0.3+ | 2002 05 13 | 704 | 0.7+ | 0.6− | 2005 03 04 | G96 | 0.1+ | 0.1+ | |
| 2002 04 02 | 291 | 0.4− | 0.5+ | 2002 05 13 | 704 | 0.7+ | 0.8− | 2005 04 04 | G96 | 0.4+ | 0.0 | |
| 2002 04 14 | 704 | 0.3− | 0.1− | 2002 05 13 | 704 | 0.6+ | 0.2+ | 2005 04 04 | G96 | 0.4+ | 0.2− | |
| 2002 04 14 | 704 | 0.7− | 0.4− | 2002 05 14 | 699 | 0.2− | 0.5+ | 2005 04 04 | G96 | 0.3+ | 0.4− | |
| 2002 04 14 | 704 | 0.6− | 0.2− | 2002 05 14 | 699 | 0.8− | 0.1− | 2005 04 04 | G96 | 0.3+ | 0.1− | |
| 2002 04 14 | 704 | 0.6− | 0.3− | 2002 05 14 | 699 | 0.1+ | 0.6+ | 2005 05 10 | G96 | 0.3− | 0.8− | |
| 2002 04 14 | 704 | 0.7− | 1.0+ | 2002 05 14 | 699 | 0.6− | 0.5+ | 2005 05 10 | G96 | 0.2− | 0.7− | |
| 2002 04 30 | 735 | 0.3− | 0.6+ | 2002 05 18 | 644 | 0.4+ | 0.5+ | 2005 05 10 | G96 | 0.3+ | 0.2− | |
| 2002 04 30 | 735 | (1.8+ | 1.0+) | 2002 05 18 | 644 | 0.5+ | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.1− | |
| 2002 04 30 | 735 | 0.0 | 0.7− | 2002 05 18 | 644 | 0.7+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | |
| 2002 05 02 | 735 | 0.5− | 0.5− | 2002 05 18 | 644 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.1− | |
| 2002 05 02 | 735 | 0.9+ | 0.5− | 2002 05 18 | 644 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.6+ | |
| 2002 05 02 | 735 | 0.6+ | 0.4− | 2002 05 18 | 644 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ | |
| 2002 05 06 | 735 | (4.7+ | 1.0−) | 2002 05 19 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1− | |
| 2002 05 06 | 735 | (1.9− | 0.0 ) | 2002 05 19 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | |
| 2002 05 06 | 735 | (2.0− | 1.4+) | 2002 05 19 | 644 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.1+ | |
| 2002 05 08 | 608 | 1.1+ | 1.4+ | 2002 06 03 | 735 | 0.1− | 0.6+ | 2006 09 24 | 691 | 0.1− | 0.3+ | |
| 2002 05 08 | 608 | (1.3+ | 1.9+) | 2002 06 03 | 735 | 0.3− | 0.2− | 2006 09 24 | 691 | 0.3+ | 0.1+ | |
| 2002 05 08 | 608 | (1.0+ | 2.5+) | 2002 06 03 | 735 | 1.3− | 0.1− | 2006 09 28 | 691 | 0.3− | 0.1+ | |
| 2002 05 09 | 704 | 0.4− | 0.3− | 2002 06 03 | 735 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.3+ | |
| 2002 05 09 | 704 | 0.1− | 0.2+ | 2002 06 03 | 735 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.7− | 0.1+ | |
| 2002 05 09 | 704 | 0.2− | 0.4+ | 2002 06 03 | 735 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.5+ | |
| 2002 05 09 | 704 | 0.3− | 0.7− | 2003 11 30 | 291 | 0.6− | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.6+ | |
| 2002 05 09 | 704 | 0.6+ | 0.6− | 2003 11 30 | 291 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.5+ | |
| 2002 05 09 | 644 | 0.4+ | 0.0 | 2003 11 30 | 291 | 0.0 | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.5+ | |
| 2002 05 09 | 644 | 0.2+ | 0.0 | 2005 02 01 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.1+ | |
| 2002 05 09 | 644 | 0.4+ | 0.1− | 2005 02 01 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1+ | |
| 2002 05 11 | 704 | 0.2− | 0.3+ | 2005 02 01 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.6− | |
| 2002 05 11 | 704 | 0.4+ | 0.3+ | 2005 03 03 | J95 | 0.7− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | |
| 2002 05 11 | 704 | 0.1− | 0.6+ | 2005 03 03 | J95 | 0.2+ | 0.4− | | | | | |

**(141595)∗ 2002 HY$_{12}$**

Discovered 2002 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.73484 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35479816 | $\omega$ | 306.49603 | | +0.80129545 | −0.43428712 | |
| $a$ | 1.9761283 | $\Omega$ | 82.67707 | | +0.58836229 | +0.69668050 | |
| $e$ | 0.0487672 | $i$ | 24.51109 | | −0.10842240 | +0.57099123 | |
| $P$ | 2.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 704 | 0.2− | 0.2+ | 2003 11 29 | 704 | 0.3− | 1.2+ | 2005 06 11 | 691 | 0.1+ | 0.5+ | |
| 1999 02 09 | 704 | 0.6− | 0.3− | 2003 11 29 | 704 | 0.3− | 0.0 | 2005 06 11 | 691 | 0.3− | 0.5− | |
| 1999 02 09 | 704 | 0.8− | 1.8+ | 2003 12 12 | 644 | 0.5− | 0.1− | 2005 06 11 | 691 | 0.4+ | 0.5+ | |
| 1999 02 09 | 704 | 1.6− | 0.5− | 2003 12 12 | 644 | 0.2− | 0.2+ | 2005 06 16 | 691 | 0.2+ | 0.6+ | |
| 2002 03 21 | 699 | (1.9+ | 1.4−) | 2003 12 12 | 644 | 0.2− | 1.1− | 2005 06 16 | 691 | 0.1+ | 0.3+ | |
| 2002 03 21 | 699 | 0.4+ | 0.1+ | 2003 12 14 | 703 | (0.1+ | 2.4+) | 2005 06 16 | 691 | 0.3+ | 0.3+ | |
| 2002 03 21 | 699 | 0.2+ | 0.3− | 2003 12 14 | 703 | 0.3− | 1.3+ | 2005 06 23 | 644 | 0.2− | 0.3+ | |
| 2002 03 21 | 699 | 0.1− | 0.1− | 2003 12 14 | 703 | 0.2− | 1.1+ | 2005 06 23 | 644 | 0.2− | 0.5+ | |
| 2002 04 21 | 704 | 1.2+ | 0.2+ | 2003 12 14 | 703 | 0.9− | 1.5+ | 2005 06 23 | 644 | 0.0 | 0.4+ | |
| 2002 04 21 | 704 | 0.9+ | 0.6− | 2003 12 20 | 703 | 0.6− | 0.4− | 2005 06 23 | 644 | 0.1− | 0.3+ | |
| 2002 04 21 | 704 | 1.1+ | 0.5− | 2003 12 20 | 703 | 0.4+ | 0.1− | 2005 06 23 | 644 | 0.1− | 0.4+ | |
| 2002 04 21 | 704 | 0.6− | 0.2+ | 2003 12 20 | 703 | 0.6− | 0.3+ | 2005 06 23 | 644 | 0.1− | 0.4+ | |
| 2002 04 21 | 704 | 0.6+ | 0.0 | 2003 12 20 | 703 | (1.1+ | 1.9+) | 2005 07 04 | 644 | 0.0 | 0.3+ | |
| 2002 05 05 | 704 | 0.9+ | 0.3+ | 2003 12 22 | 691 | 0.3− | 0.4+ | 2005 07 04 | 644 | 0.0 | 0.3+ | |
| 2002 05 05 | 704 | 1.0+ | 0.3− | 2003 12 22 | 691 | 0.6− | 0.3+ | 2005 07 04 | 644 | 0.2− | 0.3+ | |
| 2002 05 05 | 704 | 1.1+ | 0.6+ | 2003 12 22 | 691 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.5− | 0.3− | |
| 2002 05 06 | 704 | 0.0 | 1.0+ | 2003 12 28 | 699 | 0.0 | 1.0+ | 2006 11 15 | G96 | 0.4− | 0.3− | |
| 2002 05 06 | 704 | 0.9+ | 1.1+ | 2003 12 28 | 699 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.3− | |
| 2002 05 06 | 704 | 0.7+ | 0.9+ | 2003 12 28 | 699 | 0.7− | 0.9+ | 2006 11 15 | G96 | 0.2− | 0.2− | |
| 2002 05 06 | 704 | 0.5+ | 1.3+ | 2003 12 28 | 699 | 1.2− | 0.1− | 2006 11 19 | 704 | (1.7+ | 0.0 ) | |
| 2002 05 06 | 704 | 0.5+ | 1.0+ | 2004 01 21 | 704 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.7+ | |
| 2002 06 16 | 704 | 0.6+ | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.6+ | 2006 11 19 | 704 | 1.0+ | 0.7− | |
| 2002 06 16 | 704 | 0.7+ | 1.1− | 2004 01 21 | 704 | 0.5+ | 0.1− | 2006 11 19 | 704 | 1.2+ | 0.9+ | |
| 2002 06 16 | 704 | 1.3+ | 0.8− | 2004 01 21 | 704 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.2+ | |
| 2002 06 16 | 704 | 0.5− | 0.3+ | 2004 01 21 | 704 | 0.1+ | 0.7− | 2006 11 22 | G96 | 0.6− | 0.5− | |
| 2003 10 01 | 699 | 0.2− | 0.7+ | 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.3− | |
| 2003 10 01 | 699 | 0.4− | 0.2+ | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.3− | 1.3+ | |
| 2003 10 01 | 699 | 0.6− | 0.8+ | 2004 02 10 | 644 | 0.6+ | 0.3− | 2006 11 22 | 704 | 0.7+ | 0.8+ | |
| 2003 10 01 | 699 | 1.3+ | 0.7+ | 2005 05 16 | 704 | 0.5− | 0.6+ | 2006 11 22 | G96 | 0.6− | 0.5− | |
| 2003 10 19 | 704 | 0.5− | 0.5+ | 2005 05 16 | 704 | 0.9+ | 0.6− | 2006 11 22 | 704 | 1.5+ | 0.4+ | |
| 2003 10 19 | 704 | 0.6− | 1.2+ | 2005 05 16 | 704 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.4+ | |
| 2003 10 19 | 704 | 0.3− | 1.1+ | 2005 05 16 | 704 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.2− | |
| 2003 10 19 | 704 | 0.9− | 0.7+ | 2005 05 16 | 704 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.6− | 0.4− | |
| 2003 10 19 | 704 | 0.6− | 0.8+ | 2005 06 01 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.7− | 0.5− | |
| 2003 11 21 | 644 | 0.5− | 0.7+ | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.3− | 0.4− | |
| 2003 11 21 | 644 | 0.2− | 0.4+ | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.8+ | 0.6− | |
| 2003 11 21 | 644 | 0.3− | 0.3+ | 2005 06 10 | 704 | 0.5+ | 0.2− | 2006 11 28 | 704 | 0.8− | 0.0 | |
| 2003 11 29 | 704 | 0.6− | 0.3+ | 2005 06 10 | 704 | (0.1+ | 1.7−) | 2006 11 28 | 704 | 0.2+ | 1.0+ | |
| 2003 11 29 | 704 | 0.3− | 0.6+ | 2005 06 10 | 704 | 0.2+ | 0.1− | | | | | |
| 2003 11 29 | 704 | 0.3− | 0.2+ | 2005 06 10 | 704 | 0.3+ | 1.3+ | | | | | |

**(141596)∗ 2002 HA$_{14}$**

Discovered 2002 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.26759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26934262 | $\omega$ | 160.94893 | | +0.50814364 | +0.81751654 | |
| $a$ | 2.3746485 | $\Omega$ | 138.34478 | | −0.83365404 | +0.54591258 | |
| $e$ | 0.2075757 | $i$ | 24.06540 | | −0.21635848 | −0.18342890 | |
| $P$ | 3.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 704 | 1.2+ | 0.1+ | 2002 06 02 | 704 | 1.0+ | 0.1− | 2005 03 09 | 703 | 0.7− | 0.5− | |
| 1998 04 28 | 704 | 1.1− | 0.1− | 2002 06 02 | 704 | 0.2+ | 0.2− | 2005 03 09 | 703 | 0.5− | 0.1+ | |
| 1998 04 28 | 704 | 1.0− | 0.1− | 2002 06 02 | 704 | 1.1+ | 0.0 | 2005 04 01 | 703 | (0.9+ | 1.7+) | |
| 1998 04 28 | 704 | 1.0− | 0.5− | 2002 06 02 | 704 | 0.4+ | 1.0− | 2005 04 01 | 703 | 0.4− | 0.9+ | |
| 1998 04 28 | 704 | (5.4− | 1.7+) | 2002 06 18 | 704 | 0.8− | 0.9− | 2005 04 01 | 703 | 0.0 | 0.5− | |
| 2001 02 02 | 704 | 0.6+ | 0.6+ | 2002 06 18 | 704 | 1.0− | 0.3− | 2005 04 01 | 703 | 0.2+ | 0.1− | |
| 2001 02 02 | 704 | 0.6+ | 0.9+ | 2002 06 18 | 704 | 0.7− | 0.4− | 2006 06 20 | 703 | 0.1− | 0.2+ | |
| 2001 02 02 | 704 | (0.3− | 1.6+) | 2002 06 18 | 704 | 0.7− | 0.5− | 2006 06 20 | 703 | 0.3+ | 0.6+ | |
| 2001 02 02 | 704 | (0.1+ | 2.3+) | 2002 06 18 | 704 | 0.7− | 0.0 | 2006 06 20 | 703 | 0.2− | 0.1+ | |
| 2002 04 21 | 704 | 0.8+ | 0.2+ | 2002 07 07 | 644 | 0.1− | 0.0 | 2006 06 20 | 703 | 0.9− | 0.2+ | |
| 2002 04 21 | 704 | 0.0 | 0.6+ | 2002 07 07 | 644 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.3− | 0.1− | |
| 2002 04 21 | 704 | 1.1+ | 0.3− | 2002 07 07 | 644 | 0.2− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.2− | |
| 2002 04 21 | 704 | 0.8+ | 0.1+ | 2002 07 13 | 704 | (2.7+ | 0.5+) | 2006 08 20 | 644 | 0.2− | 0.3− | |
| 2002 05 06 | 704 | 0.0 | 0.0 | 2002 07 13 | 704 | (3.6+ | 0.1−) | 2006 08 28 | E12 | 0.4− | 0.4− | |
| 2002 05 06 | 704 | 0.0 | 0.1+ | 2002 07 13 | 704 | (3.1+ | 0.7−) | 2006 08 28 | E12 | 0.1− | 0.1+ | |
| 2002 05 06 | 704 | 0.1+ | 0.3+ | 2002 07 13 | 704 | (2.8+ | 0.0 ) | 2006 08 28 | E12 | 0.3+ | 0.4+ | |
| 2002 05 06 | 704 | 0.4− | 0.0 | 2002 07 13 | 704 | (2.8+ | 0.3+) | 2006 08 28 | E12 | 0.0 | 0.5+ | |
| 2002 05 06 | 704 | 0.0 | 0.1+ | 2002 07 14 | 704 | 0.0 | 0.2+ | 2006 09 28 | E12 | 0.1+ | 0.1+ | |
| 2002 05 17 | 704 | 0.5+ | 0.1+ | 2002 07 14 | 704 | 0.1+ | 0.2+ | 2006 09 28 | E12 | 0.1+ | 0.3+ | |
| 2002 05 17 | 704 | 0.5− | 0.2+ | 2002 07 14 | 704 | 0.0 | 0.2+ | 2006 09 28 | E12 | 0.1+ | 0.5+ | |
| 2002 05 17 | 704 | 0.6+ | 0.5+ | 2002 07 14 | 704 | 0.0 | 0.2+ | 2006 09 28 | E12 | 0.5+ | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 704 | 0.2+ | 0.2+ | 2002 07 14 | 704 | 0.1− | 0.2+ | 2006 10 09 | E12 | 0.0 | 0.0 |
| 2002 05 17 | 704 | 0.3+ | 0.1+ | 2002 08 12 | 704 | 0.6+ | 0.3+ | 2006 10 09 | E12 | 0.3+ | 0.4+ |
| 2002 05 18 | 704 | 0.3− | 0.1+ | 2002 08 12 | 704 | 0.5+ | 0.4+ | 2006 10 09 | E12 | 0.3− | 0.4+ |
| 2002 05 18 | 704 | 0.3− | 0.5− | 2002 08 12 | 704 | 0.3+ | 0.4− | 2006 10 09 | E12 | 0.5+ | 0.6+ |
| 2002 05 18 | 704 | 1.3− | 0.1+ | 2002 08 12 | 704 | 0.7+ | 0.3− | 2006 11 08 | E12 | 0.0 | 0.8− |
| 2002 05 18 | 704 | 0.3− | 0.1+ | 2002 08 14 | 704 | 0.8− | 0.0 | 2006 11 08 | E12 | 0.5− | 0.5− |
| 2002 06 01 | 636 | 0.1− | 1.4+ | 2002 08 14 | 704 | 0.5+ | 0.8− | 2006 11 08 | E12 | 0.4− | 0.5− |
| 2002 06 01 | 636 | (1.0+ | 2.0+) | 2002 08 14 | 704 | 0.4+ | 0.2− | 2006 11 08 | E12 | 0.0 | 0.3− |
| 2002 06 01 | 636 | (1.8+ | 1.7+) | 2005 03 09 | 703 | 0.2+ | 0.6+ | | | | |
| 2002 06 02 | 704 | 1.0+ | 0.1− | 2005 03 09 | 703 | 0.8+ | 0.0 | | | | |

**(141597)∗ 2002 HG$_{17}$**

Discovered 2002 Apr. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.89008 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23186706 | $\omega$ | 116.38924 | | +0.41150185 | +0.91140841 | |
| $a$ | 2.6240776 | $\Omega$ | 177.90925 | | −0.84536994 | +0.38208184 | |
| $e$ | 0.0573534 | $i$ | 1.52016 | | −0.34061106 | +0.15280112 | |
| $P$ | 4.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.2− | 0.3+ | 2003 08 25 | 704 | 0.6− | 0.8− | 2006 03 19 | D35 | 1.5− | 1.0+ |
| 1995 09 26 | 691 | 0.1− | 0.1+ | 2003 08 25 | 704 | 1.5− | 0.5+ | 2006 03 19 | D35 | 1.0− | 0.3+ |
| 1995 09 26 | 691 | 0.2− | 0.2+ | 2003 08 25 | 704 | 0.1+ | 0.6− | 2006 03 21 | G96 | 0.3− | 0.6+ |
| 2002 04 04 | 691 | 0.6+ | 0.6+ | 2003 08 25 | 704 | 0.6+ | 1.2+ | 2006 03 21 | G96 | 0.2+ | 0.0 |
| 2002 04 04 | 691 | 0.3+ | 0.5+ | 2003 09 20 | 291 | 0.0 | 0.5+ | 2006 03 21 | G96 | 0.1+ | 0.1− |
| 2002 04 04 | 691 | 0.4+ | 0.5+ | 2003 09 20 | 291 | 0.0 | 0.6+ | 2006 03 21 | G96 | 0.6+ | 0.5− |
| 2002 04 19 | 691 | 0.0 | 0.4+ | 2003 09 20 | 291 | 0.1+ | 0.4+ | 2006 04 25 | G96 | 0.3− | 0.9− |
| 2002 04 19 | 691 | 0.0 | 0.3+ | 2004 12 10 | 691 | 0.1+ | 0.1+ | 2006 04 25 | G96 | 0.0 | 0.6− |
| 2002 04 19 | 691 | 0.1+ | 0.5+ | 2004 12 10 | 691 | 0.2+ | 0.3+ | 2006 04 25 | G96 | 0.2− | 0.7− |
| 2002 04 22 | 644 | 0.1+ | 0.4+ | 2004 12 10 | 691 | 0.2+ | 0.3+ | 2006 04 25 | G96 | 0.1+ | 0.3− |
| 2002 04 22 | 644 | 0.0 | 0.0 | 2004 12 18 | 691 | 0.5− | 0.6+ | 2006 05 20 | G96 | 1.4− | 0.3− |
| 2002 04 22 | 644 | 0.5+ | 0.2+ | 2004 12 18 | 691 | 0.2+ | 0.1+ | 2006 05 20 | G96 | 0.5− | 0.1− |
| 2003 07 24 | 644 | 0.4− | 0.5+ | 2004 12 18 | 691 | 0.0 | 0.4+ | 2006 05 20 | G96 | 0.1− | 0.1− |
| 2003 07 24 | 644 | 0.5− | 0.5+ | 2006 02 20 | 691 | 0.1+ | 0.2+ | 2006 05 20 | G96 | 0.4− | 0.3− |
| 2003 07 24 | 644 | 0.3− | 0.4+ | 2006 02 20 | 691 | 0.0 | 0.2+ | | | | |
| 2003 08 25 | 704 | 0.1− | 0.2− | 2006 02 20 | 691 | 0.3+ | 0.1+ | | | | |

**(141598)∗ 2002 JJ**

Discovered 2002 May 3 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.34164 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27822999 | $\omega$ | 71.18634 | | −0.51437532 | +0.85726628 | |
| $a$ | 2.3238072 | $\Omega$ | 167.78112 | | −0.82157346 | −0.48504747 | |
| $e$ | 0.0974674 | $i$ | 6.14060 | | −0.24583545 | −0.17269475 | |
| $P$ | 3.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 23 | 704 | 0.1+ | 0.2+ | 2002 05 05 | 333 | 0.6+ | 0.7+ | 2005 01 07 | 703 | 0.0 | 0.4+ |
| 2002 03 23 | 704 | 0.3− | 0.4− | 2002 05 07 | 699 | 0.2+ | 0.3− | 2005 01 07 | 703 | 0.6− | 0.1− |
| 2002 03 23 | 704 | 0.0 | 0.2− | 2002 05 07 | 644 | 0.0 | 0.4+ | 2005 01 13 | 704 | (1.6+ | 1.5+) |
| 2002 04 05 | 699 | (1.8− | 0.8+) | 2002 05 07 | 699 | 0.3− | 0.4− | 2005 01 13 | 704 | 0.1− | 0.6+ |
| 2002 04 05 | 699 | 0.9− | 0.2− | 2002 05 07 | 644 | 0.1− | 0.4+ | 2005 01 13 | 704 | 0.5+ | 0.7+ |
| 2002 04 05 | 699 | 0.2− | 0.6+ | 2002 05 07 | 699 | 0.6+ | 0.1+ | 2005 02 02 | 704 | 0.6+ | 0.1− |
| 2002 04 05 | 699 | 0.2− | 0.2+ | 2002 05 07 | 644 | 0.0 | 0.4+ | 2005 02 02 | 704 | 0.6+ | 1.2+ |
| 2002 04 10 | 704 | 0.5− | 0.6+ | 2002 05 07 | 699 | 0.0 | 0.6+ | 2005 02 02 | 704 | 0.8+ | 0.6+ |
| 2002 04 10 | 704 | (0.2− | 1.8−) | 2002 05 08 | 704 | 0.4− | 0.1− | 2005 02 02 | 704 | 0.6− | 0.6+ |
| 2002 04 10 | 704 | 0.4+ | 1.4− | 2002 05 08 | 704 | 0.2− | 1.0− | 2005 03 13 | G96 | 0.1− | 0.1− |
| 2002 04 10 | 704 | 0.5+ | 1.1− | 2002 05 08 | 704 | 0.1+ | 0.1+ | 2005 03 13 | G96 | 0.0 | 0.4− |
| 2002 04 16 | 704 | 0.6+ | 0.3+ | 2002 05 08 | 704 | 0.5− | 0.1+ | 2005 03 13 | G96 | 0.2− | 0.1+ |
| 2002 04 16 | 704 | (0.2− | 1.8+) | 2002 05 08 | 704 | 0.3+ | 0.6+ | 2005 03 13 | G96 | 0.2− | 0.1− |
| 2002 04 16 | 704 | 0.4+ | 0.6+ | 2002 05 10 | 704 | 0.4− | 1.1+ | 2005 03 13 | G96 | 0.3− | 0.0 |
| 2002 04 16 | 704 | 0.5+ | 1.1+ | 2002 05 10 | 704 | (0.2+ | 1.9+) | 2005 03 13 | G96 | 0.2− | 0.2− |
| 2002 04 29 | 644 | 0.0 | 0.5+ | 2002 05 10 | 704 | 0.6− | 1.1+ | 2005 03 13 | G96 | 0.2+ | 0.1− |
| 2002 04 29 | 644 | 0.1− | 0.3+ | 2002 05 10 | 704 | 0.1+ | 1.2+ | 2005 03 13 | G96 | 0.2− | 0.1− |
| 2002 04 29 | 644 | 0.1− | 0.2+ | 2002 05 18 | 704 | 0.5+ | 0.2+ | 2006 05 05 | G96 | 0.2+ | 0.0 |
| 2002 05 03 | 333 | 0.7+ | 0.0 | 2002 05 18 | 704 | 0.7+ | 0.5+ | 2006 05 05 | G96 | 0.2− | 0.2− |
| 2002 05 03 | 333 | 0.1+ | 0.6+ | 2002 05 18 | 704 | 0.4+ | 0.1+ | 2006 05 05 | G96 | 0.1+ | 0.0 |
| 2002 05 03 | 333 | 0.6− | 0.0 | 2002 05 18 | 704 | (1.7+ | 1.1+) | 2006 05 05 | G96 | 0.3+ | 0.1+ |
| 2002 05 04 | 333 | 0.7− | 1.0− | 2002 05 18 | 704 | 1.3+ | 0.9+ | 2006 08 11 | 644 | 0.1− | 0.3+ |
| 2002 05 04 | 333 | 0.3− | 0.5− | 2003 09 28 | 704 | 0.1+ | 0.9+ | 2006 08 11 | 644 | 0.2− | 0.1+ |
| 2002 05 04 | 333 | 0.0 | 0.3− | 2003 09 28 | 704 | 0.5+ | 0.5+ | 2006 08 11 | 644 | 0.1+ | 0.1+ |
| 2002 05 05 | 333 | 0.7− | 0.3+ | 2003 09 28 | 704 | 0.2+ | 1.0+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2002 05 05 | 333 | 0.1+ | 0.2+ | 2003 10 22 | 645 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.5− |
| 2002 05 05 | 333 | 0.4+ | 0.2+ | 2003 10 22 | 645 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.6− | 0.4− |
| 2002 05 05 | 333 | 0.3+ | 0.1− | 2005 01 07 | 703 | 0.6+ | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2002 05 05 | 333 | 0.2+ | 0.0 | 2005 01 07 | 703 | 0.1− | 0.6+ | | | | |

**(141599)∗ 2002 JL**

Discovered 2002 May 3 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.88266 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29501478 | $\omega$ | 56.90189 | | −0.60957552 | +0.79268559 | |
| $a$ | 2.2348079 | $\Omega$ | 175.51320 | | −0.75776563 | −0.57962180 | |
| $e$ | 0.1047398 | $i$ | 6.01643 | | −0.23282812 | −0.18891297 | |
| $P$ | 3.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 699 | 0.1+ | 0.5+ | 2002 05 12 | 704 | 0.1− | 0.5+ | 2005 03 10 | 699 | 0.4+ | 0.0 |
| 2002 04 05 | 699 | 0.9+ | 0.4+ | 2002 05 12 | 704 | 1.6+ | 0.3− | 2005 03 11 | G96 | 0.0 | 0.0 |
| 2002 04 05 | 699 | 0.4− | 0.7− | 2002 05 14 | 699 | 1.3+ | 0.2+ | 2005 03 11 | G96 | 0.0 | 0.0 |
| 2002 04 05 | 699 | 0.4− | 0.4+ | 2002 05 14 | 699 | 1.1+ | 1.5+ | 2005 03 11 | G96 | 0.2− | 0.0 |
| 2002 04 08 | 644 | 0.2+ | 0.5− | 2002 05 14 | 699 | 0.2+ | 0.1− | 2005 03 11 | G96 | 0.2− | 0.0 |
| 2002 04 08 | 644 | 0.2+ | 0.4− | 2002 05 14 | 699 | 0.0 | 0.8+ | 2005 03 13 | G96 | 0.1− | 0.3+ |
| 2002 04 08 | 644 | 0.1+ | 0.5− | 2002 05 18 | 704 | 0.4− | 0.8+ | 2005 03 13 | G96 | 0.3− | 0.2− |
| 2002 04 10 | 704 | 0.2− | 0.2− | 2002 05 18 | 704 | 0.5− | 0.6+ | 2005 03 13 | G96 | 0.2− | 0.1+ |
| 2002 04 10 | 704 | 0.6− | 0.5+ | 2002 05 18 | 704 | 0.1+ | 0.9+ | 2005 03 13 | G96 | 0.4− | 0.1+ |
| 2002 04 10 | 704 | 0.4+ | 1.1+ | 2002 05 18 | 704 | 0.5− | 0.7+ | 2005 04 05 | G96 | 0.5− | 0.0 |
| 2002 04 10 | 704 | 0.5− | 0.9+ | 2002 05 18 | 704 | 0.3− | 0.3+ | 2005 04 05 | G96 | 0.2− | 0.2− |
| 2002 04 10 | 704 | 0.2− | 0.3+ | 2003 09 19 | 691 | 0.1+ | 0.1+ | 2005 04 05 | G96 | 0.1− | 0.1− |
| 2002 04 14 | 644 | 0.7+ | 1.3+ | 2003 09 19 | 691 | 0.0 | 0.3+ | 2005 04 05 | G96 | 0.2+ | 0.5− |
| 2002 04 14 | 644 | 0.7+ | 1.2+ | 2003 09 19 | 691 | 0.2− | 0.4+ | 2005 04 06 | G96 | 0.2− | 0.1− |
| 2002 04 14 | 644 | (0.2+ | 3.3+) | 2003 09 20 | 699 | 0.6+ | 0.7+ | 2005 04 06 | G96 | 0.4− | 0.1− |
| 2002 04 15 | 699 | 0.1+ | 0.5− | 2003 09 20 | 699 | 0.8+ | 1.0+ | 2005 04 06 | G96 | 0.2− | 0.1− |
| 2002 04 15 | 699 | 0.1− | 0.8− | 2003 09 20 | 699 | 0.9+ | 0.4− | 2005 04 06 | G96 | 0.2− | 0.2+ |
| 2002 04 15 | 699 | 0.2− | 0.5+ | 2003 09 20 | 699 | 0.1− | 0.1+ | 2006 08 18 | 699 | 0.5+ | 0.5+ |
| 2002 04 15 | 699 | 0.4− | 0.6+ | 2003 09 28 | 691 | 0.2− | 0.1+ | 2006 08 18 | 699 | 0.1+ | 0.4+ |
| 2002 04 16 | 704 | 0.0 | 0.5+ | 2003 09 28 | 691 | 0.0 | 0.3+ | 2006 08 18 | 699 | 0.0 | 0.5+ |
| 2002 04 16 | 704 | 0.1+ | 0.9+ | 2003 09 28 | 691 | 0.0 | 0.1+ | 2006 08 18 | 699 | 0.7+ | 0.8+ |
| 2002 04 16 | 704 | 0.1+ | 0.3+ | 2003 10 16 | 691 | 0.1− | 0.6+ | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2002 04 16 | 704 | 0.2− | 0.2+ | 2003 10 16 | 691 | 0.3− | 0.5+ | 2006 08 22 | 644 | 0.4+ | 0.1− |
| 2002 05 03 | 333 | 0.9+ | 1.2− | 2003 10 16 | 691 | 0.4− | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.2+ |
| 2002 05 03 | 333 | 0.4+ | 0.5+ | 2003 10 25 | 704 | 1.6− | 1.2+ | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2002 05 03 | 333 | 0.9− | 0.1+ | 2003 10 25 | 704 | 0.0 | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.3+ |
| 2002 05 04 | 333 | 1.4− | 0.1+ | 2003 10 25 | 704 | 0.8− | 0.9+ | 2006 08 29 | 691 | 0.2+ | 0.3+ |
| 2002 05 04 | 333 | 0.5− | 0.1+ | 2005 02 01 | 644 | 0.6+ | 0.6+ | 2006 09 14 | 703 | 0.5− | 0.4− |
| 2002 05 04 | 333 | 1.3− | 0.3− | 2005 02 01 | 644 | 0.8+ | 0.8+ | 2006 09 14 | 703 | 1.3− | 0.2− |
| 2002 05 08 | 704 | 0.3− | 0.5+ | 2005 02 01 | 644 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 1.3+ |
| 2002 05 08 | 704 | (2.5− | 0.7+) | 2005 02 09 | 699 | 0.8+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.0 |
| 2002 05 08 | 704 | 0.1+ | 0.1− | 2005 02 09 | 699 | 1.1− | 0.1+ | 2006 09 25 | 699 | 1.3− | 0.4+ |
| 2002 05 08 | 704 | 0.3+ | 0.4+ | 2005 02 09 | 699 | 1.3+ | 0.8+ | 2006 09 25 | 699 | 0.4− | 0.4+ |
| 2002 05 09 | 333 | 0.4+ | 0.0 | 2005 02 09 | 699 | 0.7+ | 0.6− | 2006 09 25 | 699 | 0.2− | 0.1+ |
| 2002 05 09 | 333 | 0.1+ | 0.0 | 2005 02 14 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.4− | 0.4− |
| 2002 05 09 | 333 | 0.8+ | 0.3+ | 2005 02 14 | 691 | 0.0 | 0.7+ | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2002 05 10 | 704 | 1.0+ | 0.4+ | 2005 02 14 | 691 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2002 05 10 | 704 | 0.3+ | 0.6− | 2005 03 10 | 699 | (2.5+ | 1.7−) | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2002 05 10 | 704 | 0.3− | 0.0 | 2005 03 10 | 699 | 0.1− | 1.2− | 2006 09 27 | G96 | 0.1+ | 1.0− |
| 2002 05 12 | 704 | 0.7+ | 0.4+ | 2005 03 10 | 699 | 1.1+ | 1.1+ | | | | |

**(141600)∗ 2002 JA$_2$**

Discovered 2002 May 4 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.43801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29351904 | $\omega$ | 341.62359 | | −0.90570894 | −0.42370924 | |
| $a$ | 2.2423937 | $\Omega$ | 173.26588 | | +0.40125592 | −0.86661713 | |
| $e$ | 0.1862883 | $i$ | 6.22729 | | +0.13669310 | −0.26352464 | |
| $P$ | 3.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 06 23 | 260 | 0.0 | 1.2+ | 2003 09 19 | 691 | 0.3− | 0.7+ | 2005 03 10 | 699 | 0.2+ | 0.3+ |
| 1992 06 23 | 260 | 0.1+ | 1.1+ | 2004 12 13 | 699 | (1.5+ | 0.5+) | 2005 03 10 | 699 | 0.0 | 0.0 |
| 1995 02 26 | 261 | 0.2− | 0.6+ | 2004 12 13 | 699 | (0.5+ | 2.1+) | 2005 03 13 | G96 | 0.2− | 0.2− |
| 1995 02 26 | 261 | 0.3+ | 0.1+ | 2004 12 13 | 699 | 0.8+ | 0.3+ | 2005 03 13 | G96 | 0.2− | 0.3− |
| 2002 04 09 | 704 | 0.6+ | 0.2− | 2004 12 13 | 699 | 0.5+ | 0.2+ | 2005 03 13 | G96 | 0.2− | 0.2− |
| 2002 04 09 | 704 | 0.8+ | 0.0 | 2004 12 19 | 703 | 0.2− | 0.3+ | 2005 03 13 | G96 | 0.2− | 0.3− |
| 2002 04 09 | 704 | 0.8+ | 0.4+ | 2004 12 19 | 703 | 0.0 | 0.2− | 2005 03 16 | 704 | 0.3+ | 0.2+ |
| 2002 04 09 | 704 | 0.9+ | 0.4− | 2004 12 19 | 703 | (1.8− | 0.1−) | 2005 03 16 | 704 | 0.9+ | 0.5+ |
| 2002 04 11 | 704 | 0.1+ | 0.6− | 2004 12 19 | 703 | 0.7− | 0.7+ | 2005 03 16 | 704 | 1.0+ | 0.6+ |
| 2002 04 11 | 704 | 0.3− | 0.2− | 2005 01 13 | 704 | 0.9+ | 0.1− | 2005 03 16 | 704 | 0.5+ | 0.3+ |
| 2002 04 11 | 704 | 0.2− | 0.7+ | 2005 01 13 | 704 | 0.9+ | 0.2+ | 2005 03 16 | 704 | 0.1+ | 1.4+ |
| 2002 04 11 | 704 | 0.1+ | 0.5+ | 2005 01 13 | 703 | 0.6− | 0.4+ | 2005 03 30 | 644 | 0.0 | 0.1+ |
| 2002 04 16 | 704 | 0.3+ | 0.2− | 2005 01 13 | 703 | 0.9− | 0.2− | 2005 03 30 | 644 | 0.2− | 0.0 |
| 2002 04 16 | 704 | 0.4+ | 0.1− | 2005 01 13 | 704 | 0.8+ | 0.1− | 2005 03 30 | 644 | 0.2− | 0.0 |
| 2002 04 16 | 704 | 0.1+ | 0.5+ | 2005 01 13 | 703 | 0.5− | 0.3− | 2005 03 30 | 644 | 0.1+ | 0.0 |
| 2002 04 16 | 704 | 0.3− | 0.5− | 2005 01 13 | 704 | 0.9+ | 0.3− | 2005 03 30 | 644 | 0.1− | 0.0 |
| 2002 05 03 | 333 | 0.8− | 0.8− | 2005 01 13 | 703 | 0.5− | 0.7− | 2005 03 30 | 644 | 0.2− | 0.1+ |
| 2002 05 03 | 333 | 0.2− | 0.3+ | 2005 01 13 | 704 | 0.2+ | 0.5+ | 2005 03 30 | 703 | 1.2− | 0.2− |
| 2002 05 03 | 644 | 0.0 | 0.3+ | 2005 01 18 | 246 | 0.2+ | 0.1+ | 2005 03 30 | 703 | 0.9− | 0.3+ |
| 2002 05 03 | 333 | 0.2+ | 0.1+ | 2005 01 18 | 246 | 0.3+ | 0.0 | 2005 03 30 | 703 | 0.8− | 0.2− |
| 2002 05 03 | 644 | 0.0 | 0.1+ | 2005 01 18 | 246 | 0.1+ | 0.2+ | 2005 03 30 | 703 | 0.8− | 0.1+ |
| 2002 05 03 | 644 | 0.0 | 0.3+ | 2005 01 18 | 246 | 0.2+ | 0.0 | 2005 04 02 | 703 | 0.7− | 0.3− |
| 2002 05 04 | 333 | 0.3+ | 0.0 | 2005 01 18 | 246 | 0.3+ | 0.2+ | 2005 04 02 | 703 | 0.3− | 0.1− |
| 2002 05 04 | 333 | 1.1+ | 0.2− | 2005 01 18 | 246 | 0.4+ | 0.3+ | 2005 04 02 | 703 | 0.8− | 0.0 |
| 2002 05 04 | 333 | 0.0 | 0.3+ | 2005 01 18 | 246 | 0.2+ | 0.1+ | 2005 04 02 | 703 | 0.3− | 0.4− |
| 2002 05 05 | 333 | 0.6+ | 0.5− | 2005 01 18 | 246 | 0.1+ | 0.2+ | 2005 04 04 | 704 | 0.1+ | 1.0+ |
| 2002 05 05 | 333 | 0.4+ | 0.5− | 2005 02 02 | 704 | 0.1+ | 0.1+ | 2005 04 04 | 704 | 0.8+ | 0.4− |
| 2002 05 05 | 333 | 0.0 | 0.7− | 2005 02 02 | 704 | 0.2− | 0.1+ | 2005 04 04 | 704 | 0.3− | 0.5+ |
| 2002 05 08 | 704 | 0.6+ | 0.5+ | 2005 02 02 | 703 | 0.1− | 0.1− | 2005 04 04 | 704 | 0.4− | 0.4+ |
| 2002 05 08 | 704 | 0.2+ | 0.2+ | 2005 02 02 | 704 | 0.1− | 0.0 | 2005 04 04 | 704 | 0.4+ | 0.2+ |
| 2002 05 08 | 704 | 0.2+ | 0.8+ | 2005 02 02 | 703 | 0.2− | 0.1+ | 2005 04 05 | 699 | 0.4+ | 0.3+ |
| 2002 05 08 | 704 | 0.6− | 0.6+ | 2005 02 02 | 703 | 0.4− | 0.1− | 2005 04 05 | 699 | 0.3+ | 0.4+ |
| 2002 05 08 | 704 | 0.6+ | 0.2− | 2005 02 02 | 703 | 0.3− | 0.2− | 2005 04 05 | G96 | 0.2− | 0.3− |
| 2002 05 09 | 333 | 1.1− | 0.4− | 2005 02 02 | 704 | 0.1− | 0.1− | 2005 04 05 | G96 | 0.3− | 0.0 |
| 2002 05 09 | 333 | 0.9− | 0.6− | 2005 02 03 | 704 | 0.3+ | 0.6+ | 2005 04 05 | 699 | 0.0 | 0.3+ |
| 2002 05 09 | 333 | 1.1− | 0.2− | 2005 02 03 | 704 | 0.7+ | 0.7+ | 2005 04 05 | G96 | 0.2− | 0.3− |
| 2002 05 09 | 333 | 0.7− | 0.2− | 2005 02 03 | 704 | 0.8+ | 0.1+ | 2005 04 05 | G96 | 0.2− | 0.1− |
| 2002 05 09 | 333 | 0.3+ | 0.2− | 2005 02 03 | 704 | 0.6+ | 0.1+ | 2005 04 05 | 699 | 0.0 | 0.4− |
| 2002 05 09 | 333 | 0.0 | 0.2+ | 2005 02 03 | 704 | 0.4+ | 0.0 | 2005 04 06 | G96 | 0.1− | 0.1− |
| 2002 05 10 | 704 | 1.0+ | 0.5+ | 2005 02 09 | 699 | 0.6+ | 0.1− | 2005 04 06 | G96 | 0.1− | 0.1− |
| 2002 05 10 | 333 | 0.4− | 0.4+ | 2005 02 09 | 699 | 0.4+ | 0.1− | 2005 04 06 | G96 | 0.4− | 0.0 |
| 2002 05 10 | 704 | 0.4+ | 0.3+ | 2005 02 09 | 699 | 0.4+ | 0.2+ | 2005 04 06 | G96 | 0.3− | 0.2− |
| 2002 05 10 | 333 | 0.7+ | 0.1− | 2005 02 09 | 699 | 0.4+ | 0.2− | 2005 04 16 | 703 | 0.2− | 0.3+ |
| 2002 05 10 | 704 | 0.4− | 0.4+ | 2005 03 01 | 106 | 0.2− | 0.1+ | 2005 04 16 | 703 | 0.1− | 0.4− |
| 2002 05 10 | 704 | 0.6+ | 0.3+ | 2005 03 01 | 106 | 0.1− | 0.6− | 2005 04 16 | 703 | 1.0− | 0.3+ |
| 2002 05 18 | 704 | 0.6− | 0.3+ | 2005 03 01 | 106 | 0.1− | 0.1− | 2005 04 16 | 703 | (1.6− | 0.9−) |
| 2002 05 18 | 704 | 0.2− | 0.3+ | 2005 03 02 | 699 | 0.5+ | 0.2+ | 2005 05 10 | 703 | 0.9− | 0.1+ |
| 2002 05 18 | 704 | 0.4− | 0.3+ | 2005 03 02 | 699 | 0.0 | 0.2− | 2005 05 10 | 703 | 0.2− | 0.1− |
| 2002 05 18 | 704 | 0.7− | 0.3+ | 2005 03 02 | 699 | 0.1− | 0.1− | 2005 05 10 | 703 | 0.1+ | 0.7+ |
| 2002 05 18 | 704 | 0.4− | 0.5+ | 2005 03 02 | 699 | 0.1− | 0.5+ | 2005 05 10 | 703 | 0.1− | 0.4− |
| 2002 06 04 | 704 | 0.4− | 0.0 | 2005 03 03 | 703 | 0.4− | 0.2− | 2005 05 20 | G96 | 0.6− | 0.2+ |
| 2002 06 04 | 704 | 0.0 | 0.5− | 2005 03 03 | 703 | 0.4− | 0.0 | 2005 05 20 | G96 | 0.3− | 0.0 |
| 2002 06 04 | 704 | 0.1− | 0.0 | 2005 03 03 | 703 | 0.4− | 0.1+ | 2005 05 20 | G96 | 0.0 | 0.2+ |
| 2002 06 06 | 608 | 0.6+ | 0.2− | 2005 03 03 | 703 | 0.3− | 0.4+ | 2005 05 20 | G96 | 0.2− | 0.3+ |
| 2002 06 06 | 608 | 0.2+ | 0.3− | 2005 03 09 | 704 | 0.2− | 0.0 | 2006 08 13 | 644 | 0.1− | 0.5+ |
| 2002 06 06 | 608 | 0.0 | 0.4− | 2005 03 09 | 704 | 0.5+ | 0.1− | 2006 08 13 | 644 | 0.1+ | 0.3+ |
| 2003 09 18 | 644 | 0.1− | 0.5+ | 2005 03 09 | 704 | 1.1− | 0.5+ | 2006 08 13 | 644 | 0.1− | 0.6+ |
| 2003 09 18 | 644 | 0.1− | 0.8+ | 2005 03 09 | 704 | 0.7+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.9− |
| 2003 09 18 | 644 | 0.2− | 0.6+ | 2005 03 09 | 704 | 0.8+ | 0.6+ | 2006 10 19 | G96 | 0.3− | 0.5− |
| 2003 09 19 | 691 | 0.2− | 0.6+ | 2005 03 10 | 699 | 0.9+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2003 09 19 | 691 | 0.4− | 0.7+ | 2005 03 10 | 699 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.1+ |

**(141601)∗ 2002 JS$_4$**

Discovered 2002 May 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.90719 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27902361 | $\omega$ | 145.88434 | | +0.18804333 | +0.93309099 | |
| $a$ | 2.3193987 | $\Omega$ | 132.76717 | | −0.96828288 | +0.22840985 | |
| $e$ | 0.2152235 | $i$ | 24.68272 | | −0.16452344 | −0.27779516 | |
| $P$ | 3.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.0 | 0.6+ | 2002 05 09 | 699 | (0.0 | 1.8−) | 2005 03 12 | 699 | 0.4+ | 1.0+ |
| 1999 09 11 | 704 | 0.1+ | 0.0 | 2002 05 12 | 636 | 0.4− | 0.1+ | 2005 03 12 | 699 | 0.1− | 0.2+ |
| 1999 09 11 | 704 | 0.4− | 0.2− | 2002 05 12 | 636 | 0.8+ | 0.1+ | 2005 03 12 | 699 | 0.5− | 1.5+ |
| 1999 09 11 | 704 | 0.2− | 0.9+ | 2002 05 12 | 636 | 0.1− | 0.5+ | 2005 03 12 | 699 | 0.5− | 1.3+ |
| 1999 09 11 | 704 | 0.4+ | 0.3+ | 2002 05 19 | 704 | 0.2+ | 0.2− | 2006 07 31 | E12 | 0.4+ | 0.2+ |
| 2002 04 14 | 699 | 0.3− | 0.3− | 2002 05 19 | 704 | 0.2+ | 0.3− | 2006 07 31 | E12 | 0.1+ | 0.5+ |
| 2002 04 14 | 699 | 0.2− | 0.2+ | 2002 05 19 | 704 | 0.2− | 0.1− | 2006 07 31 | E12 | 0.2− | 0.5+ |
| 2002 04 14 | 699 | 0.1− | 0.1+ | 2002 06 01 | 704 | 0.2− | 0.5+ | 2006 07 31 | E12 | 0.1+ | 0.4− |
| 2002 04 14 | 699 | 0.6− | 0.4− | 2002 06 01 | 704 | 0.1− | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.3− |
| 2002 04 22 | 704 | 0.4+ | 0.3+ | 2002 06 01 | 704 | 0.4− | 0.5+ | 2006 08 14 | 644 | 0.1+ | 0.0 |
| 2002 04 22 | 704 | 0.2+ | 0.4+ | 2002 06 01 | 704 | 0.2+ | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.3− |
| 2002 04 22 | 704 | 0.2+ | 0.6+ | 2002 06 01 | 704 | 0.1− | 0.4+ | 2006 08 20 | 644 | 0.3+ | 0.1+ |
| 2002 04 22 | 704 | 0.2− | 0.5+ | 2002 06 18 | 704 | 0.4+ | 0.2− | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2002 04 22 | 699 | 0.2− | 0.6+ | 2002 06 18 | 704 | 0.5+ | 0.2+ | 2006 08 20 | 644 | 0.3+ | 0.2+ |
| 2002 04 22 | 699 | 0.5+ | 0.2− | 2002 06 18 | 704 | 0.9+ | 0.1+ | 2006 09 16 | E12 | 0.1− | 0.0 |
| 2002 04 22 | 699 | 0.4+ | 0.4− | 2002 06 18 | 704 | 0.7+ | 0.1+ | 2006 09 16 | E12 | 0.2+ | 0.1+ |
| 2002 04 22 | 699 | 1.2+ | 0.1+ | 2002 06 18 | 704 | 0.4+ | 0.1+ | 2006 09 16 | E12 | 0.1− | 0.3+ |
| 2002 05 05 | 704 | 0.0 | 0.9− | 2002 08 12 | 704 | (0.9+ | 2.0−) | 2006 09 16 | E12 | 1.1+ | 0.4− |
| 2002 05 05 | 704 | 0.1− | 0.3− | 2002 08 12 | 704 | 0.6− | 0.7− | 2006 09 29 | E12 | 0.3− | 0.3− |
| 2002 05 05 | 704 | 0.1+ | 0.3− | 2002 08 12 | 704 | 0.2− | 0.5− | 2006 09 29 | E12 | 0.8− | 0.7− |
| 2002 05 05 | 704 | 0.0 | 0.5− | 2002 08 12 | 704 | 0.1− | 0.6+ | 2006 09 29 | E12 | 0.6+ | 0.1− |
| 2002 05 05 | 704 | 0.7− | 0.6− | 2002 08 12 | 704 | 0.9+ | 1.2+ | 2006 10 09 | E12 | 0.4− | 0.2− |
| 2002 05 06 | 704 | 0.2− | 0.2+ | 2004 12 20 | G96 | 0.5+ | 0.5+ | 2006 10 09 | E12 | 0.5− | 0.2− |
| 2002 05 06 | 704 | 0.4− | 0.1− | 2004 12 20 | G96 | 0.2+ | 0.1− | 2006 10 09 | E12 | 0.9− | 0.6+ |
| 2002 05 06 | 704 | 0.7− | 0.3+ | 2004 12 20 | G96 | 0.2+ | 0.0 | 2006 10 09 | E12 | 0.0 | 0.5+ |
| 2002 05 06 | 704 | 0.6− | 0.3− | 2004 12 20 | G96 | 0.2+ | 0.4+ | 2006 11 08 | E12 | 0.1+ | 1.2+ |
| 2002 05 06 | 704 | 0.2− | 0.0 | 2005 03 09 | 703 | 1.1+ | 1.0− | 2006 11 08 | E12 | 0.1− | 0.6+ |
| 2002 05 09 | 699 | 0.6− | 0.2+ | 2005 03 09 | 703 | 0.2− | 0.5+ | 2006 11 08 | E12 | 0.8− | 0.2+ |
| 2002 05 09 | 699 | 0.4− | 0.1+ | 2005 03 09 | 703 | 0.7− | 0.6− | 2006 11 08 | E12 | 0.4+ | 0.3− |
| 2002 05 09 | 699 | 0.2− | 0.1− | 2005 03 09 | 703 | (2.1− | 1.0+) | | | | |

**(141602)∗ 2002 JT$_4$ = 1999 CY$_6$**

Discovered 2002 May 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 31618)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.09988 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37529672 | $\omega$ | 104.91850 | | −0.60419891 | +0.71919303 | |
| $a$ | 1.9034999 | $\Omega$ | 122.64303 | | −0.79221750 | −0.58844597 | |
| $e$ | 0.0432066 | $i$ | 24.04396 | | +0.08564520 | −0.36944922 | |
| $P$ | 2.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.5+ | 0.2+ | 2002 05 09 | 699 | 0.3+ | 0.5+ | 2005 07 03 | 704 | 0.6− | 0.6+ |
| 1999 02 10 | 704 | 0.7+ | 1.4+ | 2002 05 09 | 699 | 0.5+ | 0.2− | 2005 07 26 | 644 | 0.1+ | 0.2+ |
| 1999 02 10 | 704 | 2.0− | 1.4− | 2002 05 09 | 699 | 0.6+ | 0.1− | 2005 07 26 | 644 | 0.2+ | 0.2+ |
| 1999 02 10 | 704 | 1.3+ | 0.2− | 2002 05 09 | 699 | 0.4+ | 0.5+ | 2005 07 26 | 644 | 0.2+ | 0.4+ |
| 1999 02 13 | 704 | 0.6− | 0.4+ | 2002 06 01 | 704 | 0.3+ | 0.5− | 2005 08 27 | 423 | 0.3+ | 0.5+ |
| 1999 02 13 | 704 | 0.3+ | 1.3+ | 2002 06 01 | 704 | 0.2+ | 0.6+ | 2005 08 27 | 423 | 0.0 | 0.2+ |
| 1999 02 13 | 704 | 0.6− | 0.6+ | 2002 06 01 | 704 | 0.8+ | 1.0− | 2005 09 06 | E12 | 0.4+ | 0.2− |
| 1999 02 13 | 704 | 0.5− | 0.6− | 2002 06 01 | 704 | 0.0 | 1.0− | 2005 09 06 | E12 | 0.4− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 704 | 0.9− | 1.2− | 2002 06 02 | 704 | 0.4− | 0.1+ | 2005 09 06 | E12 | 0.1+ | 0.1+ |
| 2002 05 05 | 704 | 0.7− | 0.1+ | 2002 06 02 | 704 | 0.2− | 0.5+ | 2005 09 06 | E12 | 0.2+ | 0.2+ |
| 2002 05 05 | 704 | 0.7+ | 0.1− | 2002 06 02 | 704 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2002 05 05 | 704 | 1.0− | 0.7+ | 2004 02 17 | 704 | 1.2+ | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 05 05 | 704 | 1.3+ | 0.5+ | 2004 02 17 | 704 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 05 06 | 704 | 0.1− | 0.4− | 2004 02 17 | 704 | 0.5+ | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2002 05 06 | 704 | 0.0 | 0.3+ | 2004 02 17 | 704 | 1.0+ | 0.9+ | 2006 11 24 | 691 | 1.2− | 0.1− |
| 2002 05 06 | 704 | 0.2+ | 0.1− | 2005 06 23 | 644 | 0.2+ | 0.5+ | 2006 11 24 | 691 | 0.7+ | 0.1− |
| 2002 05 06 | 704 | 0.2+ | 0.0 | 2005 06 23 | 644 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2002 05 06 | 704 | 0.2− | 0.3− | 2005 06 23 | 644 | 0.2+ | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.5+ |
| 2002 05 08 | 699 | 0.5− | 0.6+ | 2005 07 03 | 704 | 1.1− | 0.9+ | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 05 08 | 699 | 0.1+ | 0.7− | 2005 07 03 | 704 | 0.6− | 1.4+ | 2006 12 01 | 691 | 0.3+ | 0.7+ |
| 2002 05 08 | 699 | 0.2− | 0.5− | 2005 07 03 | 704 | 0.3+ | 0.6− | | | | |
| 2002 05 08 | 699 | (0.5− | 1.7−) | 2005 07 03 | 704 | 1.1− | 0.3+ | | | | |

**(141603)∗ 2002 JX$_4$**

Discovered 2002 May 5 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.61587 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28304765 | $\omega$ | 346.32632 | | −0.18337288 | | +0.98235996 |
| $a$ | 2.2973633 | $\Omega$ | 273.09813 | | −0.89843820 | | −0.18260619 |
| $e$ | 0.2121147 | $i$ | 2.10349 | | −0.39897768 | | −0.04029748 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.2+ | 1.1− | 2002 05 08 | 704 | 0.6− | 0.6+ | 2006 08 15 | 644 | 0.1− | 0.1+ |
| 1999 09 07 | 704 | 1.1+ | 1.3− | 2002 05 08 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.2+ | 1.2− |
| 1999 09 07 | 704 | 0.3− | 0.3− | 2002 05 09 | 644 | 0.1+ | 0.2− | 2006 08 28 | 703 | 1.2+ | 1.4− |
| 2002 04 04 | 644 | 0.4− | 0.4+ | 2002 05 09 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.1+ |
| 2002 04 04 | 644 | 0.2− | 0.3+ | 2002 05 09 | 644 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.2− |
| 2002 04 04 | 644 | 0.4− | 0.2+ | 2002 05 11 | 704 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.4− | 0.1+ |
| 2002 04 09 | 704 | 0.5− | 0.1− | 2002 05 11 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 699 | 1.1+ | 0.1+ |
| 2002 04 09 | 704 | 0.4+ | 0.2− | 2002 05 11 | 704 | 1.2+ | 0.0 | 2006 08 28 | 699 | 1.1− | 0.4+ |
| 2002 04 09 | 704 | 0.4+ | 0.0 | 2002 05 11 | 704 | 1.1+ | 0.1+ | 2006 08 28 | 699 | 0.6− | 0.8− |
| 2002 04 09 | 704 | 0.5+ | 0.4+ | 2002 05 11 | 704 | 0.7+ | 0.3+ | 2006 08 29 | 704 | 0.5+ | 0.8− |
| 2002 04 09 | 704 | 0.3+ | 0.1+ | 2002 05 13 | 704 | 1.1+ | 0.6+ | 2006 08 29 | 704 | 0.9+ | 1.0+ |
| 2002 04 12 | 704 | 1.2− | 0.4+ | 2002 05 13 | 704 | 0.6+ | 0.0 | 2006 08 29 | 704 | 0.6+ | 0.2+ |
| 2002 04 12 | 704 | 0.9− | 0.6+ | 2002 05 13 | 704 | 0.3+ | 0.2− | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2002 04 12 | 704 | 0.8− | 0.2+ | 2002 05 13 | 704 | 0.5+ | 0.1− | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2002 04 12 | 704 | 0.8− | 0.2+ | 2002 05 13 | 704 | 0.3+ | 1.0+ | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2002 04 14 | 704 | 0.3+ | 0.6+ | 2002 06 08 | 704 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.2− | 1.1+ |
| 2002 04 14 | 704 | 0.4+ | 0.4+ | 2002 06 08 | 704 | 0.4+ | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.2− |
| 2002 04 14 | 704 | 0.6+ | 0.6+ | 2002 06 08 | 704 | 0.3− | 0.5− | 2006 09 14 | 703 | 0.1+ | 0.2+ |
| 2002 04 14 | 704 | 0.0 | 0.4+ | 2002 06 08 | 704 | 0.8− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.4+ |
| 2002 04 14 | 704 | 0.5− | 0.9+ | 2004 12 18 | G96 | 0.7− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2002 04 15 | 644 | 0.1− | 0.2+ | 2004 12 18 | G96 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2002 04 15 | 644 | 0.3+ | 0.8+ | 2004 12 18 | G96 | 0.9− | 0.0 | 2006 09 28 | G96 | 0.4− | 0.3+ |
| 2002 04 15 | 644 | 0.1+ | 0.3+ | 2004 12 18 | G96 | 0.1+ | 0.5− | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2002 05 05 | 333 | 0.4+ | 0.4+ | 2005 01 16 | 691 | 0.1+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2002 05 05 | 333 | 0.5+ | 0.0 | 2005 01 16 | 691 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 05 05 | 333 | 0.0 | 0.6+ | 2005 01 16 | 691 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 2002 05 06 | 333 | 0.6− | 0.5− | 2006 07 25 | 644 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2002 05 06 | 333 | 0.4+ | 1.3− | 2006 07 25 | 644 | 0.4− | 0.1− | 2006 09 30 | 291 | 0.5− | 1.1+ |
| 2002 05 06 | 333 | 1.0+ | 1.3− | 2006 07 25 | 644 | 0.1− | 0.3+ | 2006 09 30 | 291 | 0.4− | 1.0+ |
| 2002 05 08 | 704 | 0.5− | 0.5+ | 2006 08 15 | 644 | 0.1− | 0.1− | 2006 09 30 | 291 | 0.5− | 0.9+ |
| 2002 05 08 | 704 | 1.0− | 0.4− | 2006 08 15 | 644 | 0.0 | 0.1+ | | | | |

**(141604)∗ 2002 JB$_5$ = 1999 LB$_{26}$**

Discovered 2002 May 5 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 30177)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.93847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30386685 | $\omega$ | 40.60365 | | +0.01889764 | | +0.99840449 |
| $a$ | 2.1911923 | $\Omega$ | 230.54763 | | −0.93423488 | | −0.00132509 |
| $e$ | 0.1496713 | $i$ | 3.95148 | | −0.35615736 | | +0.05645096 |
| $P$ | 3.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 29 | 809 | (2.7− | 0.3−) | 2002 06 09 | 608 | 0.7+ | 0.5− | 2005 04 04 | 703 | 0.8− | 0.3+ |
| 1999 06 09 | 704 | 0.8− | 0.4+ | 2002 06 09 | 608 | 0.4+ | 0.5− | 2005 04 04 | 703 | 0.4− | 1.5− |
| 1999 06 09 | 704 | 0.7− | 0.1+ | 2002 06 09 | 608 | 0.0 | 0.7− | 2005 04 04 | 703 | 0.8− | 0.2+ |
| 1999 06 09 | 704 | 0.5− | 0.0 | 2003 10 22 | 704 | 1.0+ | 0.4+ | 2005 04 04 | 703 | 0.6− | 0.3− |
| 1999 06 09 | 704 | 0.2+ | 0.4+ | 2003 10 22 | 704 | 0.4− | 0.8+ | 2005 04 06 | 699 | (1.5+ | 0.8−) |
| 1999 06 09 | 704 | 1.2− | 0.7+ | 2003 10 22 | 704 | 0.2− | 0.2+ | 2005 04 06 | 699 | 0.4+ | 0.3+ |
| 1999 06 15 | 704 | 0.4+ | 0.6+ | 2003 10 23 | 704 | 0.2+ | 0.2+ | 2005 04 06 | 699 | 0.4+ | 0.1+ |
| 1999 06 15 | 704 | 0.5− | 0.3+ | 2003 10 23 | 704 | 0.4+ | 0.5+ | 2005 04 06 | 699 | 0.0 | 1.1− |
| 1999 06 15 | 704 | 0.4+ | 0.3+ | 2003 10 23 | 704 | (0.3− | 1.8+) | 2006 09 16 | 703 | 0.3− | 0.7− |
| 1999 06 15 | 704 | 0.5+ | 0.2+ | 2003 10 23 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 703 | 0.3− | 0.4− |
| 1999 07 14 | 704 | 0.0 | 0.4+ | 2003 10 24 | 704 | 0.4− | 0.3− | 2006 09 16 | 683 | 0.8− | 0.1− |
| 1999 07 14 | 704 | 1.1− | 1.2+ | 2003 10 24 | 704 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.1+ | 0.2− |
| 1999 07 14 | 704 | 1.0+ | 0.2− | 2003 10 24 | 704 | (0.6− | 2.5+) | 2006 09 16 | 683 | 0.1− | 0.7+ |
| 1999 07 14 | 704 | 0.1+ | 0.2+ | 2003 10 24 | 704 | 0.0 | 0.8+ | 2006 09 16 | 683 | (1.6+ | 0.5+) |
| 2002 04 04 | 644 | 0.3+ | 0.6+ | 2003 10 24 | 704 | 0.6− | 1.1+ | 2006 09 16 | 644 | 0.3− | 0.4+ |
| 2002 04 04 | 644 | 0.1+ | 0.5+ | 2003 10 27 | 608 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.4− | 0.3+ |
| 2002 04 04 | 644 | 0.4+ | 0.4+ | 2003 10 27 | 608 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.4+ |
| 2002 04 09 | 704 | 1.2+ | 1.1+ | 2003 10 27 | 608 | 0.4− | 0.4− | 2006 09 16 | 644 | 0.0 | 0.7+ |
| 2002 04 09 | 704 | 1.3+ | 1.5+ | 2003 10 29 | 704 | (0.2+ | 1.5+) | 2006 09 16 | 644 | 0.4− | 0.4+ |
| 2002 04 09 | 704 | 1.3+ | 1.0+ | 2003 10 29 | 703 | 1.1− | 0.7+ | 2006 09 16 | 644 | 0.4+ | 0.0 |
| 2002 04 09 | 704 | (1.7+ | 1.4+) | 2003 10 29 | 703 | (2.0− | 0.4+) | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 2002 04 11 | 704 | 0.0 | 0.2+ | 2003 10 29 | 703 | 1.1− | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2002 04 11 | 704 | 0.5− | 0.2− | 2003 10 29 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 691 | 0.3+ | 0.3+ |
| 2002 04 11 | 704 | 0.0 | 0.5+ | 2003 10 29 | 703 | (1.7− | 0.9+) | 2006 09 18 | 704 | 0.6+ | 0.4− |
| 2002 04 12 | 704 | 0.4+ | 1.0+ | 2003 10 29 | 704 | 0.6− | 0.6+ | 2006 09 18 | 704 | 1.0− | 0.5+ |
| 2002 04 12 | 704 | 0.2+ | 0.8+ | 2003 10 29 | 704 | 0.1− | 0.3+ | 2006 09 18 | 704 | 1.1− | 0.0 |
| 2002 04 12 | 704 | 0.2+ | 1.0+ | 2003 11 12 | 608 | 0.0 | 0.6− | 2006 09 18 | 704 | 0.3+ | 0.2+ |
| 2002 04 12 | 704 | 0.4+ | 0.8+ | 2003 11 12 | 608 | 0.2− | 1.4− | 2006 09 18 | 699 | 1.0− | 0.6+ |
| 2002 04 14 | 704 | 0.1− | 0.4+ | 2003 11 12 | 608 | 0.2+ | 0.7− | 2006 09 18 | 699 | 1.0+ | 0.1− |
| 2002 04 14 | 704 | 0.1− | 0.9+ | 2003 11 15 | 644 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.1+ |
| 2002 04 14 | 704 | 0.0 | 0.9+ | 2003 11 15 | 644 | 0.3+ | 0.9+ | 2006 09 18 | 699 | 0.5− | 0.2− |
| 2002 04 14 | 704 | 0.2− | 0.9+ | 2003 11 15 | 644 | 0.4+ | 0.7+ | 2006 09 21 | 704 | 0.4+ | 1.5+ |
| 2002 04 14 | 704 | 0.0 | 1.2+ | 2003 11 18 | 644 | 0.2+ | 0.7+ | 2006 09 21 | 704 | 0.0 | 0.3− |
| 2002 04 18 | 644 | 0.0 | 0.7+ | 2003 11 18 | 644 | 0.2− | 0.6+ | 2006 09 21 | 704 | 0.1− | 0.4+ |
| 2002 04 18 | 644 | 0.1+ | 0.5+ | 2003 11 18 | 644 | 0.2+ | 0.6+ | 2006 09 21 | 704 | 0.4− | 0.2+ |
| 2002 04 18 | 644 | 0.2+ | 0.7+ | 2003 11 19 | 699 | 0.4+ | 0.2+ | 2006 09 25 | 704 | 1.1+ | 0.4+ |
| 2002 04 29 | 644 | 0.3+ | 0.4+ | 2003 11 19 | 699 | 0.2+ | 0.8+ | 2006 09 25 | 704 | 0.3− | 0.2+ |
| 2002 04 29 | 644 | 0.1+ | 0.3+ | 2003 11 19 | 699 | 0.4− | 0.6+ | 2006 09 25 | 704 | 0.8+ | 0.3+ |
| 2002 04 29 | 644 | 0.3+ | 0.4+ | 2003 11 19 | 699 | 0.4+ | 0.7+ | 2006 09 27 | 699 | 0.7− | 0.5+ |
| 2002 05 05 | 333 | 0.8+ | 0.3− | 2003 11 20 | 691 | 0.0 | 0.4+ | 2006 09 27 | 699 | 0.7+ | 0.5+ |
| 2002 05 05 | 333 | 1.4+ | 0.8− | 2003 11 20 | 291 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.1+ | 0.5+ |
| 2002 05 05 | 333 | 0.2+ | 0.3+ | 2003 11 20 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.5− | 0.2+ |
| 2002 05 06 | 333 | 0.7+ | 0.3+ | 2003 11 20 | 291 | 0.0 | 0.1+ | 2006 09 29 | 704 | 1.0− | 0.1+ |
| 2002 05 06 | 333 | (1.5+ | 0.1−) | 2003 11 20 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 1.0− | 0.4− |
| 2002 05 06 | 333 | 1.2+ | 0.8+ | 2003 11 20 | 291 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2002 05 08 | 704 | 0.2+ | 0.6+ | 2003 11 21 | 704 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.2+ |
| 2002 05 08 | 704 | 0.1+ | 0.2+ | 2003 11 21 | 704 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2002 05 08 | 704 | 0.4− | 0.3+ | 2003 11 21 | 704 | (0.4− | 1.9+) | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2002 05 08 | 704 | 0.4− | 0.5+ | 2003 11 21 | 704 | (0.1+ | 2.3+) | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2002 05 08 | 704 | 0.2− | 0.4+ | 2003 11 21 | 704 | 0.3− | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2002 05 08 | 608 | 0.0 | 0.1− | 2003 11 23 | 291 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 05 08 | 608 | 0.2+ | 0.1+ | 2003 11 23 | 291 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 05 08 | 608 | 0.3− | 0.5+ | 2003 11 23 | 291 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 05 09 | 644 | 0.1− | 0.5+ | 2003 12 01 | 704 | 0.4− | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 05 09 | 644 | 0.0 | 0.5+ | 2003 12 01 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 05 09 | 644 | 0.1− | 0.6+ | 2003 12 01 | 704 | (0.2− | 1.8+) | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2002 05 11 | 704 | 1.0+ | 0.3+ | 2003 12 01 | 704 | (2.0− | 1.2+) | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2002 05 11 | 704 | 0.8+ | 0.4+ | 2003 12 01 | 704 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2002 05 11 | 704 | 1.2+ | 0.3− | 2005 03 10 | 699 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.8+ | 0.3+ | 2005 03 10 | 699 | 0.7+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2002 05 11 | 704 | 0.9+ | 0.2+ | 2005 03 10 | 699 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.5+ | 0.1+ | | |
| 2002 05 13 | 704 | 0.3+ | 0.7+ | 2005 03 10 | 703 | 1.0− | 0.4− | 2006 11 08 | 644 | 0.5− | 0.1+ | | |
| 2002 05 13 | 704 | 0.4− | 0.6+ | 2005 03 10 | 703 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2002 05 13 | 704 | 0.6+ | 0.9+ | 2005 03 10 | 699 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.1− | | |
| 2002 05 13 | 704 | 0.2+ | 1.0+ | 2005 03 10 | 703 | 0.2− | 0.2− | 2006 11 11 | 703 | (0.3+ | 1.7+) | | |
| 2002 05 13 | 704 | 0.2+ | 0.9+ | 2005 03 10 | 703 | 0.0 | 0.3+ | 2006 11 11 | 703 | (0.8− | 1.5+) | | |
| 2002 05 15 | 608 | 0.1+ | 0.2+ | 2005 03 13 | 683 | 0.3+ | 0.8− | 2006 11 11 | 703 | 0.0 | 1.1+ | | |
| 2002 05 15 | 608 | 0.3− | 0.1− | 2005 03 13 | 683 | 0.0 | 1.4+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 05 15 | 608 | 0.1− | 0.9+ | 2005 03 13 | 683 | 0.1− | 1.1+ | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2002 05 18 | 704 | 0.1− | 0.4+ | 2005 03 17 | 703 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.0 | | |
| 2002 05 18 | 704 | 0.2+ | 0.5+ | 2005 03 17 | 703 | 0.4− | 1.0+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2002 05 18 | 704 | 0.2− | 1.1+ | 2005 03 17 | 703 | 0.8− | 0.6+ | | | | | | |
| 2002 05 18 | 704 | 0.4+ | 0.5+ | 2005 03 17 | 703 | 0.9− | 0.5+ | | | | | | |

**(141605)∗ 2002 JC$_{10}$ = 2000 YP$_{28}$**

Discovered 2002 May 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31623)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.21584 | | (2000.0) | | | |
| $n$ | 0.35616266 | $\omega$ | 232.05715 | | +0.93961777 | +0.00455369 |
| $a$ | 1.9710779 | $\Omega$ | 125.04058 | | +0.04663096 | +0.98888211 |
| $e$ | 0.0957554 | $i$ | 24.70529 | | −0.33903392 | +0.14863187 |
| $P$ | 2.77 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 05 | 704 | 0.9− | 0.8− | 2002 05 18 | 704 | 0.0 | 0.0 | 2004 01 30 | 704 | (1.6− | 0.2−) | | |
| 2000 10 05 | 704 | 0.3+ | 0.6+ | 2002 05 18 | 704 | 0.7+ | 0.4+ | 2004 02 22 | 704 | 0.7− | 1.2− | | |
| 2000 10 05 | 704 | 0.1+ | 1.5+ | 2002 06 02 | 704 | 0.1+ | 0.2− | 2004 02 22 | 704 | 0.0 | 0.1+ | | |
| 2000 12 22 | 704 | 0.6− | 0.3+ | 2002 06 02 | 704 | 0.2− | 0.1+ | 2004 02 22 | 704 | 0.3− | 0.5+ | | |
| 2000 12 22 | 704 | 0.2− | 0.2+ | 2002 06 02 | 704 | 0.2− | 0.1− | 2004 02 22 | 704 | 0.0 | 0.5+ | | |
| 2000 12 22 | 704 | 0.3− | 0.3+ | 2002 06 02 | 704 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.6+ | | |
| 2000 12 22 | 704 | 0.3− | 0.2− | 2002 06 14 | 644 | 0.0 | 0.9+ | 2004 02 26 | 704 | 0.6+ | 0.9+ | | |
| 2000 12 28 | 704 | 0.3+ | 0.8+ | 2002 06 14 | 644 | 0.1− | 1.0+ | 2004 02 26 | 704 | 0.3+ | 0.1+ | | |
| 2000 12 28 | 704 | 0.0 | 1.3+ | 2002 06 14 | 644 | 0.1− | 1.0+ | 2004 02 26 | 704 | 0.1+ | 0.6+ | | |
| 2000 12 28 | 704 | 1.1− | 1.5+ | 2002 06 17 | 704 | 1.1− | 0.5+ | 2004 02 26 | 704 | 0.7+ | 1.2+ | | |
| 2000 12 28 | 704 | 0.1+ | 0.1− | 2002 06 17 | 704 | 0.5+ | 0.9+ | 2004 03 19 | 704 | 0.5+ | 1.3+ | | |
| 2002 05 06 | 704 | 0.0 | 0.0 | 2002 06 17 | 704 | 1.5+ | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.0 | | |
| 2002 05 06 | 704 | 0.4− | 0.3− | 2002 06 17 | 704 | 0.5+ | 0.8+ | 2004 03 19 | 704 | 0.5− | 0.9+ | | |
| 2002 05 06 | 704 | 0.1+ | 0.2− | 2002 06 29 | 644 | 0.1− | 0.6− | 2004 03 19 | 704 | 0.4+ | 0.5+ | | |
| 2002 05 08 | 704 | (0.0 | 1.6+) | 2002 06 29 | 644 | 0.5− | 0.5− | 2004 03 19 | 704 | 0.9− | 0.1+ | | |
| 2002 05 08 | 704 | 0.6+ | 0.3− | 2002 06 29 | 644 | 0.5− | 0.5− | 2005 06 06 | 704 | 0.7+ | 0.6+ | | |
| 2002 05 08 | 704 | 0.7− | 0.1+ | 2002 08 12 | 704 | 0.2− | 0.6+ | 2005 06 06 | 704 | 0.5+ | 0.7+ | | |
| 2002 05 08 | 704 | 0.3− | 0.0 | 2002 08 12 | 704 | 0.3+ | 0.6+ | 2005 06 06 | 704 | 0.3+ | 0.4+ | | |
| 2002 05 09 | 704 | 0.2− | 0.3− | 2002 08 12 | 704 | 0.5+ | 1.4+ | 2005 06 06 | 704 | 0.9− | 0.4+ | | |
| 2002 05 09 | 704 | 0.0 | 0.3− | 2002 08 12 | 704 | 0.7+ | 0.6− | 2005 06 06 | 704 | 0.2+ | 1.0+ | | |
| 2002 05 09 | 704 | 1.0− | 0.8− | 2003 12 25 | 608 | 0.2+ | 0.8− | 2006 11 15 | G96 | 0.6− | 0.4− | | |
| 2002 05 09 | 704 | 0.1+ | 0.1− | 2003 12 25 | 608 | 0.5+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.0 | | |
| 2002 05 09 | 704 | 0.4− | 0.3− | 2003 12 25 | 608 | 0.2+ | 0.6− | 2006 11 15 | G96 | 0.5+ | 0.2− | | |
| 2002 05 09 | 704 | 0.3− | 0.6− | 2004 01 23 | 704 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.4− | | |
| 2002 05 09 | 704 | 0.3− | 1.0− | 2004 01 23 | 704 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1+ | | |
| 2002 05 09 | 704 | 0.7+ | 0.5− | 2004 01 23 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.0 | | |
| 2002 05 09 | 704 | 0.5− | 0.1+ | 2004 01 23 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2002 05 09 | 704 | 0.0 | 0.4+ | 2004 01 30 | 704 | (3.1− | 1.3−) | 2006 11 16 | G96 | 0.6− | 0.3− | | |
| 2002 05 18 | 704 | 0.7+ | 0.4+ | 2004 01 30 | 704 | 0.5− | 0.5− | | | | | | |
| 2002 05 18 | 704 | 0.7+ | 0.5+ | 2004 01 30 | 704 | 1.0− | 0.7− | | | | | | |

**(141606)∗ 2002 JD$_{10}$**

Discovered 2002 May 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.20683 | | (2000.0) | | | |
| $n$ | 0.27368977 | $\omega$ | 60.13460 | | −0.42210686 | +0.90588053 |
| $a$ | 2.3494363 | $\Omega$ | 185.27087 | | −0.90585513 | −0.42297100 |
| $e$ | 0.2349541 | $i$ | 22.21415 | | −0.03538765 | +0.02181716 |
| $P$ | 3.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 15 | 704 | 0.4− | 1.1− | 2002 06 03 | 704 | 0.8+ | 0.3+ | 2005 03 13 | 703 | (0.2+ | 1.7+) | | |
| 1998 04 15 | 704 | 0.0 | 0.3− | 2002 06 03 | 704 | 0.6+ | 0.1+ | 2005 03 13 | 703 | 0.0 | 0.9+ | | |
| 1998 04 15 | 704 | 0.7− | 0.5+ | 2002 06 03 | 704 | 1.3− | 0.1+ | 2005 03 13 | 703 | 0.4+ | 0.9+ | | |
| 1998 04 15 | 704 | (0.7+ | 2.2+) | 2002 06 03 | 704 | 0.2+ | 0.3+ | 2005 03 17 | 703 | 0.1− | 0.0 | | |
| 2002 05 06 | 704 | 0.9+ | 0.1− | 2002 06 03 | 704 | 0.0 | 0.3− | 2005 03 17 | 703 | 0.1+ | 0.0 | | |
| 2002 05 06 | 704 | 1.0+ | 0.3− | 2002 06 03 | 704 | 0.2+ | 0.1− | 2005 03 17 | 703 | (1.8− | 0.1+) | | |
| 2002 05 06 | 704 | 0.9+ | 1.2− | 2002 06 03 | 704 | (0.1+ | 1.8−) | 2005 03 17 | 703 | (2.7− | 0.6+) | | |
| 2002 05 06 | 704 | 1.1+ | 0.3− | 2002 06 06 | 704 | 0.1− | 0.4+ | 2006 08 31 | 704 | 0.4+ | 0.4+ | | |
| 2002 05 08 | 704 | 0.5− | 0.4− | 2002 06 06 | 704 | 0.3− | 0.5− | 2006 08 31 | 704 | 0.1− | 0.2− | | |
| 2002 05 08 | 704 | 0.4− | 0.2− | 2002 06 06 | 704 | 0.2+ | 1.2+ | 2006 08 31 | 704 | 0.2− | 0.4+ | | |
| 2002 05 08 | 704 | 0.2− | 0.3− | 2002 06 06 | 704 | 0.0 | 0.0 | 2006 08 31 | 704 | 0.2+ | 1.0+ | | |
| 2002 05 08 | 704 | 0.1− | 0.8− | 2002 06 06 | 704 | 0.3+ | 0.1− | 2006 09 06 | 644 | 0.2− | 0.3+ | | |
| 2002 05 12 | 704 | 0.8+ | 0.9− | 2002 06 19 | 704 | 0.3− | 1.0− | 2006 09 06 | 644 | 0.3− | 0.4+ | | |
| 2002 05 12 | 704 | 0.6+ | 0.0 | 2002 06 19 | 704 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.6− | 0.3+ | | |
| 2002 05 12 | 704 | 0.4+ | 0.8− | 2002 06 19 | 704 | 0.6− | 0.3− | 2006 09 06 | 644 | 0.2+ | 0.3+ | | |
| 2002 05 12 | 704 | (1.6+ | 1.0−) | 2002 06 19 | 704 | 0.1+ | 0.5− | 2006 09 06 | 644 | 0.3− | 0.2+ | | |
| 2002 05 15 | 704 | 0.3+ | 1.0+ | 2002 06 19 | 704 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.5− | 0.3+ | | |
| 2002 05 15 | 704 | 0.2− | 0.5+ | 2002 06 20 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 644 | 0.3− | 0.4+ | | |
| 2002 05 15 | 704 | 0.6− | 0.8+ | 2002 06 20 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 644 | 0.2− | 0.2− | | |
| 2002 05 15 | 704 | 0.2+ | 0.5+ | 2002 06 20 | 704 | 0.3− | 0.2+ | 2006 09 16 | 644 | 0.5− | 0.0 | | |
| 2002 05 16 | 704 | 0.0 | 0.6+ | 2002 06 20 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 1.2+ | 0.9+ | | |
| 2002 05 16 | 704 | 0.4− | 0.0 | 2002 07 02 | 704 | 1.2− | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.6+ | | |
| 2002 05 16 | 704 | 0.1+ | 0.4+ | 2002 07 02 | 704 | 0.0 | 0.4+ | 2006 09 18 | 704 | (1.9− | 0.5−) | | |
| 2002 05 16 | 704 | 1.0+ | 0.7− | 2002 07 02 | 704 | 0.6− | 0.5+ | 2006 09 19 | 699 | 0.3− | 0.1+ | | |
| 2002 05 17 | 704 | 0.1+ | 0.7+ | 2002 07 02 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 703 | 0.4− | 0.0 | | |
| 2002 05 17 | 704 | 0.6− | 0.8+ | 2002 07 02 | 704 | 1.0− | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.0 | | |
| 2002 05 17 | 704 | 0.3− | 0.3+ | 2002 08 06 | 704 | 0.1+ | 0.8− | 2006 09 19 | 703 | 1.0− | 0.5− | | |
| 2002 05 17 | 704 | 0.4− | 0.2+ | 2002 08 06 | 704 | 0.8− | 0.2− | 2006 09 19 | 699 | 0.7+ | 1.2+ | | |
| 2002 05 17 | 704 | 0.5− | 0.4+ | 2002 08 06 | 704 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.2− | 0.3+ | | |
| 2002 06 02 | 704 | 0.3+ | 0.2+ | 2002 08 06 | 704 | 1.0+ | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.4+ | | |
| 2002 06 02 | 704 | 0.4+ | 0.3+ | 2005 01 18 | 291 | 0.5+ | 0.9+ | 2006 09 25 | 704 | 0.3− | 0.3+ | | |
| 2002 06 02 | 704 | 0.1− | 0.5+ | 2005 01 18 | 291 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.8− | | |
| 2002 06 02 | 704 | 0.2+ | 0.1+ | 2005 01 18 | 291 | 0.2− | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.4+ | | |
| 2002 06 02 | 704 | 0.1− | 0.6+ | 2005 02 06 | 644 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 1.5− | | |
| 2002 06 03 | 704 | 0.6+ | 0.5+ | 2005 02 06 | 644 | 0.5+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.3− | | |
| 2002 06 03 | 704 | 0.4− | 0.3+ | 2005 02 06 | 644 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.5+ | 0.7+ | | |
| 2002 06 03 | 704 | 0.5+ | 0.4+ | 2005 03 13 | 703 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.3+ | | |

**(141607)∗ 2002 JG$_{11}$ = 1996 LX$_3$**

Discovered 2002 May 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 30181)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 215.15238 | | (2000.0) | | | |
| $n$ | 0.16937246 | $\omega$ | 224.82923 | | +0.32500902 | +0.93843944 |
| $a$ | 3.2352476 | $\Omega$ | 64.46286 | | −0.82722795 | +0.34208738 |
| $e$ | 0.0631304 | $i$ | 7.45355 | | −0.45832636 | +0.04803792 |
| $P$ | 5.82 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 08 | 809 | (2.0+ | 2.6+) | 2002 05 09 | 704 | 0.2+ | 0.1+ | 2005 12 02 | 691 | 0.0 | 0.1− | | |
| 1996 06 08 | 809 | 1.0+ | 1.9+ | 2002 05 09 | 704 | 0.3+ | 0.3+ | 2005 12 02 | 691 | 0.1+ | 0.7+ | | |
| 1996 06 08 | 809 | (1.3+ | 2.9+) | 2002 05 09 | 704 | 0.0 | 0.1− | 2005 12 06 | 691 | 0.1− | 0.1+ | | |
| 1996 06 10 | 809 | 0.2+ | 1.3+ | 2002 05 09 | 704 | 0.3− | 0.1+ | 2005 12 06 | 691 | 0.1− | 0.2− | | |
| 1996 06 10 | 809 | 0.5+ | 0.7+ | 2002 05 10 | 704 | 0.3+ | 0.4+ | 2005 12 06 | 691 | 0.1− | 0.3+ | | |
| 1996 06 10 | 809 | 0.8+ | 1.5+ | 2002 05 10 | 704 | 0.3+ | 0.2− | 2005 12 10 | 691 | 0.0 | 0.0 | | |
| 2002 04 04 | 291 | 0.2+ | 0.2− | 2002 05 10 | 704 | 0.2+ | 0.9− | 2005 12 10 | 691 | 0.0 | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 291 | 0.3+ | 0.2− | 2002 05 16 | 704 | 0.4+ | 0.0 | 2005 12 10 | 691 | 0.1+ | 0.0 | | |
| 2002 04 04 | 291 | 0.2+ | 0.5− | 2002 05 16 | 704 | 0.2+ | 0.6+ | 2005 12 24 | 691 | (2.7− | 0.1−) | | |
| 2002 04 05 | 699 | 0.0 | 0.1− | 2002 05 16 | 704 | 1.3+ | 0.9+ | 2005 12 24 | 691 | 0.2− | 0.0 | | |
| 2002 04 05 | 699 | 0.9+ | 0.7+ | 2002 05 16 | 608 | 0.0 | 0.8− | 2005 12 24 | 691 | 1.1+ | 0.1+ | | |
| 2002 04 05 | 699 | 0.2− | 0.7+ | 2002 05 16 | 608 | 0.1− | 1.0− | 2005 12 28 | 691 | 0.4− | 0.3− | | |
| 2002 04 05 | 699 | 0.2− | 0.0 | 2002 05 16 | 608 | 0.0 | 0.9− | 2005 12 28 | 691 | 0.2− | 0.1− | | |
| 2002 04 09 | 704 | 0.1− | 0.3− | 2002 05 19 | 644 | 0.0 | 0.1+ | 2005 12 28 | 691 | 0.3− | 0.1− | | |
| 2002 04 09 | 704 | 0.8− | 0.4− | 2002 05 19 | 644 | 0.2+ | 0.0 | 2006 01 10 | 691 | 0.3− | 0.0 | | |
| 2002 04 09 | 704 | 0.2+ | 0.3+ | 2002 05 19 | 644 | 0.1− | 0.1+ | 2006 01 10 | 691 | 0.0 | 0.2+ | | |
| 2002 04 09 | 704 | 0.1− | 0.4+ | 2002 06 03 | 644 | 0.0 | 0.1+ | 2006 01 10 | 691 | 0.2+ | 0.1+ | | |
| 2002 04 21 | 691 | 0.5− | 0.1− | 2002 06 03 | 644 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.6+ | 0.0 | | |
| 2002 04 21 | 691 | 0.7− | 0.2− | 2002 06 03 | 644 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.4+ | 0.2+ | | |
| 2002 04 21 | 691 | 0.4− | 0.0 | 2002 06 11 | 644 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.3+ | 0.2+ | | |
| 2002 05 02 | 699 | 0.3− | 0.7− | 2002 06 11 | 644 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.5− | 0.2− | | |
| 2002 05 02 | 699 | 0.5− | 0.4+ | 2002 06 11 | 644 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.2− | | |
| 2002 05 02 | 699 | 0.4− | 0.6+ | 2003 07 07 | 644 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.2− | | |
| 2002 05 02 | 699 | 0.3− | 0.3+ | 2003 07 07 | 644 | 0.3− | 0.6+ | 2006 11 20 | G96 | 0.8− | 0.3− | | |
| 2002 05 08 | 699 | 0.4+ | 1.1+ | 2003 07 07 | 644 | 0.3− | 0.5+ | 2006 11 28 | 691 | 0.0 | 0.0 | | |
| 2002 05 08 | 699 | 1.1+ | 0.4− | 2004 11 03 | 644 | 0.1− | 1.0+ | 2006 11 28 | 691 | 0.1− | 0.4− | | |
| 2002 05 08 | 699 | 0.9+ | 0.2+ | 2004 11 03 | 644 | 0.1− | 0.6+ | 2006 11 28 | 691 | 0.6− | 0.3+ | | |
| 2002 05 08 | 699 | 0.0 | 0.2− | 2004 11 03 | 644 | 0.0 | 0.9+ | | | | | | |
| 2002 05 09 | 704 | 0.2− | 0.3+ | 2005 12 02 | 691 | 0.1− | 0.0 | | | | | | |

**(141608)∗ 2002 JY$_{11}$**

Discovered 2002 May 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.81789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30456701 | $\omega$ | 264.38872 | | +0.49066563 | +0.86843464 | |
| $a$ | 2.1878328 | $\Omega$ | 35.28424 | | −0.74269423 | +0.45955029 | |
| $e$ | 0.1497248 | $i$ | 7.07973 | | −0.45568906 | +0.18610427 | |
| $P$ | 3.24 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 704 | 0.8+ | 0.1+ | 2005 03 10 | 703 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.0 | | |
| 2002 04 09 | 704 | 0.2+ | 0.2+ | 2005 03 18 | 703 | 0.8− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.2+ | | |
| 2002 04 09 | 704 | 0.8− | 0.2+ | 2005 03 18 | 703 | 0.0 | 0.0 | 2006 09 30 | 703 | (2.0+ | 2.0+) | | |
| 2002 04 09 | 704 | 1.3+ | 0.6+ | 2005 03 18 | 703 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1+ | | |
| 2002 05 06 | 699 | 0.0 | 0.4+ | 2005 03 18 | 703 | 0.7+ | 0.1− | 2006 09 30 | 703 | 0.4− | 1.1+ | | |
| 2002 05 06 | 699 | 0.1+ | 0.0 | 2005 04 04 | 703 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.6+ | | |
| 2002 05 06 | 699 | 0.4− | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.7− | 2006 09 30 | 703 | 0.4+ | 0.9+ | | |
| 2002 05 06 | 699 | 0.2+ | 0.6− | 2005 04 04 | 703 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.2− | 0.2+ | | |
| 2002 05 08 | 699 | 0.4− | 0.1+ | 2005 04 04 | 703 | 1.0− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.3+ | | |
| 2002 05 08 | 699 | 0.7+ | 0.4− | 2005 04 05 | 704 | (0.1− | 1.6+) | 2006 10 16 | 691 | 0.2− | 0.1+ | | |
| 2002 05 08 | 699 | 0.0 | 0.1+ | 2005 04 05 | 704 | 1.2+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.5+ | | |
| 2002 05 08 | 699 | 0.3+ | 0.2− | 2005 04 05 | 704 | 0.9+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.4+ | | |
| 2002 05 09 | 704 | 1.2+ | 0.9+ | 2005 04 05 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.4+ | | |
| 2002 05 09 | 704 | 0.6+ | 0.3+ | 2005 04 06 | 683 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 2002 05 09 | 704 | 0.8+ | 0.7+ | 2005 04 06 | 683 | 0.2+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 05 09 | 704 | 0.5+ | 0.1+ | 2005 04 06 | 683 | (0.9− | 1.9+) | 2006 10 21 | 644 | 0.1+ | 0.6+ | | |
| 2002 05 09 | 704 | 0.7+ | 1.1+ | 2005 04 09 | 699 | 0.2+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2002 05 09 | 644 | 0.2+ | 0.3+ | 2005 04 09 | 699 | 0.1− | 1.1+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2002 05 09 | 644 | 0.2+ | 0.1+ | 2005 04 09 | 699 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.2− | | |
| 2002 05 09 | 644 | 0.1+ | 0.1+ | 2005 04 09 | 699 | 0.9+ | 1.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 05 11 | 704 | 0.5− | 0.2+ | 2005 04 10 | 683 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.1− | 0.3+ | | |
| 2002 05 11 | 704 | 0.4− | 0.9+ | 2005 04 10 | 683 | 0.8− | 0.8+ | 2006 10 28 | 691 | 0.4− | 0.4+ | | |
| 2002 05 11 | 704 | 0.5− | 0.7+ | 2005 04 10 | 683 | 1.2− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.4+ | | |
| 2002 05 11 | 704 | 0.7− | 0.7+ | 2005 04 11 | 683 | (0.4− | 2.3−) | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 2002 05 11 | 704 | 0.7− | 1.2+ | 2005 04 11 | 683 | 1.2+ | 1.4− | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2002 05 13 | 704 | (0.5− | 1.7−) | 2005 04 11 | 683 | (1.3+ | 1.7−) | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2002 05 13 | 704 | (0.1− | 1.8−) | 2005 04 12 | 683 | (1.9+ | 1.0+) | 2006 11 08 | 644 | 0.4− | 0.1+ | | |
| 2002 05 13 | 704 | (0.4− | 2.1−) | 2005 04 12 | 683 | 1.1+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2002 05 13 | 704 | (0.2+ | 2.6−) | 2005 04 12 | 683 | 0.1+ | 1.2+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2002 05 13 | 704 | (0.6− | 2.2−) | 2005 04 13 | 699 | (0.7+ | 1.6+) | 2006 11 11 | 703 | 0.3− | 0.6+ | | |
| 2002 05 18 | 644 | 0.1+ | 0.4+ | 2005 04 13 | 699 | 1.4+ | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.5+ | | |
| 2002 05 18 | 644 | 0.2+ | 0.3+ | 2005 04 13 | 699 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.9− | | |
| 2002 05 18 | 644 | 0.4+ | 0.4+ | 2005 04 13 | 699 | 1.2+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.3+ | | |
| 2002 05 21 | 704 | 0.5+ | 0.1+ | 2005 04 13 | 704 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 05 21 | 704 | 0.5+ | 0.5+ | 2005 04 13 | 704 | (1.8+ | 1.4+) | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2002 05 21 | 704 | 0.6+ | 0.2+ | 2005 04 13 | 704 | (2.1+ | 1.0+) | 2006 11 15 | G96 | 0.7− | 0.2− | | |
| 2002 05 21 | 704 | 0.1− | 0.1− | 2005 04 13 | 704 | 0.6+ | 1.1+ | 2006 11 15 | G96 | 0.9+ | 0.6+ | | |
| 2002 05 31 | 699 | 0.4− | 0.8+ | 2005 04 14 | 683 | 0.3+ | 0.9− | 2006 11 17 | 703 | 0.5− | 0.1+ | | |
| 2002 05 31 | 699 | 0.7− | 0.5+ | 2005 04 14 | 683 | (2.0+ | 0.1−) | 2006 11 17 | 703 | 0.1− | 0.1− | | |
| 2002 05 31 | 699 | 0.7− | 1.1+ | 2005 04 14 | 683 | (1.0− | 1.6−) | 2006 11 17 | 703 | 0.5− | 0.1− | | |
| 2002 05 31 | 699 | 0.6− | 0.9− | 2005 05 04 | 644 | 0.0 | 0.4+ | 2006 11 17 | 703 | 1.0− | 0.6+ | | |
| 2002 06 08 | 704 | 0.6+ | 0.1− | 2005 05 04 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | (0.3+ | 2.4+) | | |
| 2002 06 08 | 704 | 0.5+ | 0.4+ | 2005 05 04 | 644 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.7+ | 0.1+ | | |
| 2002 06 08 | 704 | (1.9+ | 0.8+) | 2005 05 04 | 703 | 0.7− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2002 06 08 | 704 | (1.5+ | 1.6+) | 2005 05 04 | 703 | (0.2+ | 1.6+) | 2006 11 18 | 704 | 0.1+ | 1.0+ | | |
| 2002 06 08 | 704 | 1.4+ | 0.7+ | 2005 05 04 | 703 | (1.0+ | 4.4+) | 2006 11 18 | 704 | 0.2− | 0.7+ | | |
| 2003 11 20 | 704 | 0.4+ | 0.5− | 2005 05 04 | 703 | 1.0− | 0.6− | 2006 11 21 | 704 | 0.4+ | 0.4+ | | |
| 2003 11 20 | 704 | 0.5+ | 0.0 | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.2− | | |
| 2003 11 20 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 703 | 0.9− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.0 | | |
| 2003 11 20 | 704 | 0.8+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.3− | | |
| 2003 12 25 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.5− | 0.6− | 2006 11 21 | 704 | 0.3+ | 0.2+ | | |
| 2003 12 25 | 691 | 0.7− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 22 | 104 | 0.3− | 0.1+ | | |
| 2003 12 25 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 22 | 104 | 0.1+ | 0.6− | | |
| 2005 03 10 | 703 | 0.8− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 22 | 104 | (0.8+ | 2.0−) | | |
| 2005 03 10 | 703 | 0.9− | 0.9− | 2006 09 26 | G96 | 0.0 | 0.3− | | | | | | |
| 2005 03 10 | 703 | 0.6− | 0.9− | 2006 09 30 | G96 | 0.0 | 0.1+ | | | | | | |

**(141609)∗ 2002 JB$_{12}$ = 1999 RV$_{231}$**

Discovered 2002 May 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 30181)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.89575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28927732 | $\omega$ | 255.24878 | | +0.41864017 | +0.90439975 | |
| $a$ | 2.2642608 | $\Omega$ | 39.82573 | | −0.77580972 | +0.40336161 | |
| $e$ | 0.1898058 | $i$ | 7.39852 | | −0.47208018 | +0.13914204 | |
| $P$ | 3.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 699 | 0.4− | 0.3− | 2002 05 31 | 699 | 0.4− | 1.2+ | 2006 09 22 | 704 | 0.8+ | 0.3− | | |
| 1999 09 09 | 699 | 0.2− | 0.5+ | 2002 05 31 | 699 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.8+ | | |
| 1999 09 09 | 699 | 0.4+ | 0.4− | 2002 05 31 | 699 | 1.0− | 1.5+ | 2006 09 22 | 704 | 0.4+ | 0.4− | | |
| 1999 09 11 | 704 | 0.3+ | 0.4+ | 2002 05 31 | 699 | 1.1+ | 0.1− | 2006 09 22 | 704 | 1.2+ | 0.3+ | | |
| 1999 09 11 | 704 | 0.4− | 0.1+ | 2002 05 31 | 699 | 0.5− | 0.3+ | 2006 09 22 | 704 | 0.1+ | 1.0+ | | |
| 1999 09 11 | 704 | 0.1+ | 0.5− | 2002 05 31 | 699 | 1.0+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.6+ | | |
| 1999 09 11 | 704 | 0.4+ | 1.2− | 2002 05 31 | 699 | 0.6− | 1.2+ | 2006 09 25 | 699 | 0.4− | 0.2+ | | |
| 2002 04 04 | 691 | 0.1+ | 0.4+ | 2002 06 02 | 699 | 0.1+ | 0.9− | 2006 09 25 | 699 | 0.5+ | 1.0+ | | |
| 2002 04 04 | 691 | 0.2− | 0.2+ | 2002 06 02 | 699 | 0.2− | 0.9− | 2006 09 25 | 699 | 0.2+ | 0.4− | | |
| 2002 04 04 | 691 | 0.1− | 0.5+ | 2002 06 02 | 699 | 0.0 | 0.4− | 2006 09 28 | 691 | 0.3− | 0.3+ | | |
| 2002 04 09 | 704 | 0.4+ | 0.1− | 2002 06 02 | 699 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.3+ | | |
| 2002 04 09 | 704 | 0.3+ | 0.7− | 2002 06 08 | 704 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.3+ | | |
| 2002 04 09 | 704 | 0.3− | 0.9+ | 2002 06 08 | 704 | 0.3+ | 0.3− | 2006 09 29 | 699 | 0.4+ | 0.6+ | | |
| 2002 04 09 | 704 | 0.5− | 0.5− | 2002 06 08 | 704 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.4+ | 0.0 | | |
| 2002 04 13 | 691 | 0.5− | 0.2+ | 2002 06 08 | 704 | 0.8+ | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.5+ | | |
| 2002 04 13 | 691 | 0.1+ | 0.0 | 2002 06 08 | 704 | 0.6+ | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.2+ | | |
| 2002 04 13 | 691 | 0.2+ | 0.1+ | 2003 11 20 | 704 | 0.7+ | 0.0 | 2006 10 01 | 704 | 0.6− | 0.2+ | | |
| 2002 05 06 | 699 | 0.1+ | 0.0 | 2003 11 20 | 704 | 0.4+ | 0.4− | 2006 10 01 | 704 | 0.1− | 0.2− | | |
| 2002 05 06 | 699 | 0.3− | 0.2− | 2003 11 20 | 704 | 0.5+ | 0.1− | 2006 10 01 | 704 | 0.3− | 0.6+ | | |
| 2002 05 06 | 699 | 0.1+ | 0.5+ | 2003 11 20 | 704 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.4− | 0.1− | | |
| 2002 05 06 | 699 | 0.1− | 0.6− | 2005 03 16 | 703 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.6+ | 0.1+ | | |
| 2002 05 08 | 699 | 0.8− | 0.1+ | 2005 03 16 | 703 | 0.3+ | 0.5+ | 2006 10 02 | 691 | 0.1− | 0.1+ | | |
| 2002 05 08 | 699 | 0.1− | 0.1− | 2005 03 16 | 703 | 0.3− | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | | |
| 2002 05 08 | 699 | 0.1− | 0.1+ | 2005 03 16 | 703 | 0.8+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2+ | | |
| 2002 05 08 | 699 | 0.4− | 0.1− | 2005 04 02 | 703 | 0.6− | 1.0− | 2006 10 16 | 703 | 0.6− | 0.7− | | |
| 2002 05 09 | 704 | 0.2+ | 0.3− | 2005 04 02 | 703 | 0.2+ | 1.2− | 2006 10 16 | 703 | 0.7− | 0.3− | | |
| 2002 05 09 | 704 | 1.0− | 0.4− | 2005 04 02 | 703 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3− | | |
| 2002 05 09 | 704 | 0.4+ | 0.7− | 2005 04 02 | 703 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.8− | 0.2− | | |
| 2002 05 09 | 704 | 0.6+ | 0.3− | 2005 04 09 | 703 | 1.1− | 0.6− | 2006 10 19 | 644 | 0.0 | 0.2+ | | |
| 2002 05 09 | 704 | 0.0 | 0.9− | 2005 04 09 | 703 | 1.2− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.2− | 1.0− | 2005 04 09 | 703 | 0.9− | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2002 05 11 | 704 | (1.2+ | 2.0−) | 2005 04 09 | 703 | 0.1+ | 0.9− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 05 11 | 704 | 1.1− | 0.4− | 2005 04 11 | 691 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 05 11 | 704 | 0.6+ | 0.4− | 2005 04 11 | 691 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 05 11 | 704 | 0.6+ | 1.1− | 2005 04 11 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 05 13 | 704 | 0.3+ | 0.1+ | 2006 07 30 | D35 | 0.8− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 05 13 | 704 | 0.4+ | 0.0 | 2006 07 30 | D35 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 05 13 | 704 | 0.2+ | 0.3+ | 2006 07 30 | D35 | 0.4− | 0.3+ | 2006 10 22 | 703 | 1.0− | 1.0− | | |
| 2002 05 13 | 704 | 0.6+ | 0.2+ | 2006 09 16 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.0 | | |
| 2002 05 13 | 704 | 0.0 | 0.5+ | 2006 09 16 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.0 | 0.2+ | | |
| 2002 05 16 | 608 | 0.2+ | 0.5− | 2006 09 16 | 704 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.4+ | | |
| 2002 05 16 | 608 | 0.2− | 0.0 | 2006 09 16 | 704 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2002 05 16 | 608 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.7+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2002 05 21 | 704 | 0.5− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2002 05 21 | 704 | 0.3+ | 0.7− | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2002 05 21 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.0 | 1.3− | | | | | | |
| 2002 05 31 | 699 | 1.1+ | 0.2+ | 2006 09 18 | 703 | 0.9− | 0.8− | | | | | | |

**(141610)∗ 2002 JK$_{12}$**

Discovered 2002 May 4 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.53371 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30157470 | $\omega$ | 217.06102 | | +0.53356213 | +0.83867948 | |
| $a$ | 2.2022812 | $\Omega$ | 85.43077 | | −0.74733643 | +0.52798143 | |
| $e$ | 0.1995367 | $i$ | 6.29021 | | −0.39597943 | +0.13361265 | |
| $P$ | 3.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 0.7− | 0.3− | 2002 05 18 | 704 | 0.5− | 0.4+ | 2005 04 18 | 691 | 0.3− | 0.1− | | |
| 1999 06 15 | 704 | 0.8− | 1.7+ | 2002 05 18 | 704 | 0.9− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 1999 06 15 | 704 | 0.1+ | 1.7+ | 2002 05 18 | 704 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3+ | | |
| 1999 06 15 | 704 | 0.3+ | 1.8+ | 2002 05 18 | 704 | 1.1− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.7+ | | |
| 2002 04 10 | 704 | 0.1+ | 0.1− | 2002 05 18 | 704 | 0.1− | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.4+ | | |
| 2002 04 10 | 704 | (2.0+ | 1.1−) | 2003 11 26 | 691 | (1.6− | 0.2+) | 2006 10 12 | 644 | 0.0 | 0.6+ | | |
| 2002 04 10 | 704 | 0.1+ | 0.6+ | 2003 11 26 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.6+ | | |
| 2002 04 10 | 704 | 0.0 | 0.4+ | 2003 11 26 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.2− | | |
| 2002 04 11 | 704 | 0.5+ | 0.1+ | 2003 12 17 | 691 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.0 | 0.4+ | | |
| 2002 04 11 | 704 | 0.4+ | 0.4+ | 2003 12 17 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.3+ | | |
| 2002 04 11 | 704 | 0.9+ | 1.3+ | 2003 12 17 | 691 | 0.7− | 0.5− | 2006 10 16 | 703 | 0.4− | 1.5− | | |
| 2002 04 11 | 704 | (2.2+ | 0.4+) | 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.9+ | | |
| 2002 04 13 | 644 | 0.4+ | 0.3+ | 2003 12 19 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.2+ | | |
| 2002 04 13 | 644 | 0.1+ | 0.4+ | 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.1+ | | |
| 2002 04 13 | 644 | 0.6+ | 0.3+ | 2003 12 28 | 291 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.5− | 0.6+ | | |
| 2002 04 16 | 704 | 1.1+ | 0.6+ | 2003 12 28 | 291 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.1− | | |
| 2002 04 16 | 704 | 0.4− | 0.9+ | 2003 12 28 | 291 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.8− | 0.4+ | | |
| 2002 04 16 | 704 | 0.1− | 1.2+ | 2005 03 03 | 703 | (1.4+ | 2.0−) | 2006 11 13 | 703 | 0.3+ | 0.4+ | | |
| 2002 05 04 | 333 | 0.7+ | 0.2− | 2005 03 03 | 703 | 0.5+ | 0.6− | 2006 11 13 | 703 | 0.6− | 0.5− | | |
| 2002 05 04 | 333 | 1.4+ | 1.2− | 2005 03 03 | 703 | 0.8+ | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.5+ | | |
| 2002 05 04 | 333 | 0.2+ | 0.4− | 2005 03 03 | 703 | 0.5− | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.5+ | | |
| 2002 05 07 | 644 | 0.3+ | 0.5+ | 2005 03 09 | 704 | 1.0+ | 1.1+ | 2006 11 17 | 644 | 0.1− | 0.5+ | | |
| 2002 05 07 | 644 | 0.1+ | 0.5+ | 2005 03 09 | 704 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.2+ | 0.8+ | | |
| 2002 05 07 | 644 | 0.0 | 0.4+ | 2005 03 09 | 704 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.7+ | | |
| 2002 05 08 | 704 | 0.6+ | 0.7+ | 2005 03 16 | 703 | 0.2− | 0.7− | 2006 11 20 | 704 | 0.1− | 0.5+ | | |
| 2002 05 08 | 704 | 0.4− | 0.6+ | 2005 03 16 | 703 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.2− | 0.1+ | | |
| 2002 05 08 | 704 | 0.5+ | 0.4+ | 2005 03 16 | 703 | 1.0− | 0.5− | 2006 11 22 | G96 | 0.0 | 0.3+ | | |
| 2002 05 08 | 704 | 0.6+ | 0.0 | 2005 03 16 | 703 | 0.5− | 1.2− | 2006 11 22 | G96 | 0.1− | 0.1+ | | |
| 2002 05 09 | 333 | 0.0 | 0.8− | 2005 04 18 | 691 | 0.3− | 0.3+ | | | | | | |
| 2002 05 09 | 333 | 1.3+ | 0.3− | 2005 04 18 | 691 | 0.0 | 0.3+ | | | | | | |

**(141611)∗ 2002 JP$_{12}$ = 1996 XS$_2$ = 1999 TE$_{233}$**

Discovered 2002 May 6 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 30182)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.43675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28718593 | $\omega$ | 75.58243 | | +0.46108845 | +0.85247228 | |
| $a$ | 2.2752403 | $\Omega$ | 224.69831 | | −0.88722838 | +0.43822561 | |
| $e$ | 0.2649002 | $i$ | 20.50205 | | −0.01494139 | +0.28504267 | |
| $P$ | 3.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.2− | 0.2+ | 2002 05 11 | 704 | (1.6− | 0.4−) | 2006 10 19 | 703 | 0.3+ | 0.3+ | | |
| 1996 12 04 | 691 | 0.1− | 0.4− | 2002 05 11 | 704 | (2.2− | 1.6−) | 2006 10 19 | 703 | 0.9+ | 0.4+ | | |
| 1996 12 04 | 691 | 0.2− | 0.3− | 2002 05 11 | 704 | (1.9− | 0.4−) | 2006 10 19 | 703 | 0.5+ | 0.4+ | | |
| 1996 12 05 | 691 | 0.8+ | 0.1+ | 2002 05 11 | 704 | (1.3− | 1.5−) | 2006 10 21 | 704 | 0.8− | 0.1− | | |
| 1996 12 05 | 691 | 0.0 | 0.7+ | 2002 05 11 | 704 | (2.5− | 0.9−) | 2006 10 21 | 704 | 0.5− | 0.5+ | | |
| 1996 12 05 | 691 | 0.1+ | 0.2− | 2002 05 13 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 704 | 0.2− | 0.1− | | |
| 1999 07 27 | 704 | 0.4+ | 0.8− | 2002 05 13 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 704 | 0.8− | 0.2+ | | |
| 1999 07 27 | 704 | 0.1+ | 1.0− | 2002 05 13 | 704 | 0.8+ | 0.0 | 2006 10 21 | 704 | 0.1+ | 0.2− | | |
| 1999 07 27 | 704 | 0.2+ | 0.7− | 2002 05 13 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 1999 07 27 | 704 | 0.7− | 0.7− | 2002 05 13 | 704 | 1.3+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 1999 07 27 | 704 | 0.7+ | 0.4− | 2002 05 18 | 644 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 1999 10 03 | 704 | 0.5− | 0.0 | 2002 05 18 | 644 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 1999 10 03 | 704 | 0.0 | 0.0 | 2002 05 18 | 644 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 1999 10 03 | 704 | 0.1− | 0.0 | 2002 05 27 | 608 | 0.8− | 0.6− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 1999 10 03 | 704 | 0.3− | 0.2− | 2002 05 27 | 608 | 1.0− | 0.2− | 2006 10 24 | 644 | 0.2+ | 0.0 | | |
| 1999 10 03 | 704 | 0.3− | 0.1+ | 2002 05 27 | 608 | 0.5− | 0.7− | 2006 10 24 | 644 | 0.2+ | 0.1+ | | |
| 1999 10 09 | 699 | 0.1− | 0.6+ | 2002 06 04 | 704 | 0.1+ | 0.0 | 2006 10 24 | 644 | 0.3+ | 0.1− | | |
| 1999 10 09 | 699 | 0.4− | 1.7+ | 2002 06 04 | 704 | 0.3+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.1+ | | |
| 1999 10 09 | 699 | 0.4+ | 1.0+ | 2002 06 04 | 704 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.1+ | | |
| 1999 11 05 | 704 | 0.1+ | 0.4− | 2002 06 06 | 704 | 0.1− | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.1+ | | |
| 1999 11 05 | 704 | 0.1+ | 0.5− | 2002 06 06 | 704 | 0.4− | 0.8+ | 2006 10 31 | 703 | 0.2+ | 0.4− | | |
| 1999 11 05 | 704 | 0.6− | 1.2− | 2002 06 06 | 704 | 0.1− | 0.9+ | 2006 10 31 | 703 | 0.0 | 0.5− | | |
| 1999 11 05 | 704 | 0.7− | 1.1− | 2002 06 06 | 704 | 0.8− | 0.2+ | 2006 10 31 | 703 | 0.3− | 0.4− | | |
| 2002 04 14 | 608 | (2.5− | 2.6+) | 2002 06 06 | 704 | 0.3+ | 0.9+ | 2006 10 31 | 703 | 0.0 | 0.5− | | |
| 2002 04 14 | 608 | (2.4− | 3.0+) | 2002 06 08 | 704 | 0.2+ | 0.6+ | 2006 11 14 | 703 | 0.3+ | 0.0 | | |
| 2002 04 14 | 608 | (2.0− | 2.6+) | 2002 06 08 | 704 | 0.7+ | 1.1+ | 2006 11 14 | 703 | 0.3− | 0.4− | | |
| 2002 04 20 | 644 | 0.4− | 0.3+ | 2002 06 08 | 704 | (1.6+ | 0.8+) | 2006 11 14 | 703 | 0.4− | 0.2+ | | |
| 2002 04 20 | 644 | 0.5− | 0.3+ | 2002 06 08 | 704 | 1.2+ | 1.4+ | 2006 11 16 | 704 | 0.2+ | 0.9+ | | |
| 2002 04 20 | 644 | 0.3− | 0.2+ | 2002 06 14 | 608 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.2− | 1.4+ | | |
| 2002 05 01 | 644 | 0.5− | 0.7+ | 2002 06 14 | 608 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.3+ | 1.4+ | | |
| 2002 05 01 | 644 | 0.6− | 0.4+ | 2002 06 14 | 608 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.2− | 1.1+ | | |
| 2002 05 01 | 644 | 0.6− | 0.6+ | 2005 03 02 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.9+ | | |
| 2002 05 03 | 699 | 0.1+ | 0.4+ | 2005 03 02 | 704 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.3+ | | |
| 2002 05 03 | 699 | 0.4− | 0.7+ | 2005 03 02 | 704 | 0.2− | 0.3+ | 2006 11 19 | 704 | 1.3− | 0.6− | | |
| 2002 05 03 | 699 | 0.2− | 0.3+ | 2005 03 02 | 704 | 0.8+ | 1.4− | 2006 11 19 | 704 | 0.4+ | 0.6+ | | |
| 2002 05 03 | 699 | 0.6− | 0.6+ | 2006 06 04 | 703 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.2− | | |
| 2002 05 06 | 333 | 0.5− | 0.1+ | 2006 06 04 | 703 | 1.1+ | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.8+ | | |
| 2002 05 06 | 333 | 0.1− | 0.1− | 2006 06 04 | 703 | 0.1− | 0.9+ | 2006 11 19 | 704 | 0.5+ | 0.1− | | |
| 2002 05 06 | 333 | 0.1− | 0.3− | 2006 06 04 | 703 | 1.0+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.8+ | | |
| 2002 05 06 | 333 | 0.7+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 11 19 | 704 | 1.5+ | 1.0+ | | |
| 2002 05 06 | 333 | 0.6+ | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2002 05 06 | 333 | 0.6− | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 11 19 | 704 | (0.1− | 1.5+) | | |
| 2002 05 09 | 644 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.0 | 1.0+ | | |
| 2002 05 09 | 704 | 0.4− | 0.4+ | 2006 09 23 | 699 | 0.8− | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.8+ | | |
| 2002 05 09 | 644 | 0.1− | 0.4+ | 2006 09 23 | 699 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.6− | 1.4+ | | |
| 2002 05 09 | 333 | 0.4+ | 0.8+ | 2006 09 23 | 699 | 0.4− | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.8+ | | |
| 2002 05 09 | 704 | 0.2− | 0.3+ | 2006 09 23 | 699 | 0.8− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.8+ | | |
| 2002 05 09 | 704 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.7− | 0.3+ | | |
| 2002 05 09 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.7− | 1.5+ | | |
| 2002 05 09 | 333 | 0.3+ | 0.1− | 2006 09 28 | 703 | 0.0 | 0.3− | 2006 11 28 | 704 | 1.1− | 0.7+ | | |
| 2002 05 09 | 704 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.2− | 0.9+ | | |
| 2002 05 09 | 333 | 0.4+ | 0.3− | 2006 10 19 | 703 | 0.6+ | 0.1+ | 2006 11 28 | 704 | 0.8− | 1.3+ | | |

**(141612)∗ 2002 JA$_{13}$ = 1992 EC$_{17}$**

Discovered 2002 May 8 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 30183)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 107.25505 | | (2000.0) | | | |
| $n$ | 0.30460821 | $\omega$ | 104.94746 | | −0.21855524 | +0.97554511 |
| $a$ | 2.1876356 | $\Omega$ | 152.39495 | | −0.91355474 | −0.19613823 |
| $e$ | 0.1748836 | $i$ | 2.88876 | | −0.34300341 | −0.09920452 |
| $P$ | 3.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.5− | 0.3− | 2002 05 28 | 608 | 0.0 | 0.1− | 2005 03 16 | G96 | 0.2− | 0.6− |
| 1992 03 03 | 809 | (3.4− | 0.3+) | 2002 06 11 | 644 | 0.4+ | 0.9+ | 2005 03 16 | G96 | 0.0 | 0.5− |
| 1992 03 06 | 809 | 0.3+ | 0.7− | 2002 06 11 | 644 | 0.5+ | 0.9+ | 2005 03 16 | G96 | 0.1− | 0.1− |
| 1999 07 14 | 704 | 0.6− | 0.2+ | 2002 06 11 | 644 | 0.4+ | 0.8+ | 2005 03 17 | 704 | 0.1+ | 0.3− |
| 1999 07 14 | 704 | 0.2− | 0.3+ | 2002 06 12 | 644 | 0.7+ | 1.2+ | 2005 03 17 | 704 | 0.8+ | 0.5+ |
| 1999 07 14 | 704 | 0.7+ | 1.0+ | 2002 06 12 | 644 | 0.5+ | 1.1+ | 2005 03 17 | 704 | 0.4+ | 0.7− |
| 1999 07 14 | 704 | 0.5− | 0.1+ | 2002 06 12 | 644 | 0.5+ | 1.1+ | 2005 03 17 | 704 | 0.1− | 0.9− |
| 1999 07 14 | 704 | 0.3− | 1.2+ | 2005 03 03 | 691 | 0.0 | 0.3+ | 2005 03 18 | 704 | 0.0 | 0.6+ |
| 2002 04 09 | 704 | 0.6+ | 1.2− | 2005 03 03 | 691 | 0.0 | 0.2+ | 2005 03 18 | 704 | 0.4− | 0.6+ |
| 2002 04 09 | 704 | 0.1+ | 0.1− | 2005 03 03 | 691 | 0.1+ | 0.3+ | 2005 03 18 | 704 | 0.2− | 0.2+ |
| 2002 04 09 | 704 | 1.4+ | 1.1+ | 2005 03 03 | 704 | 0.4+ | 0.2− | 2005 03 18 | 704 | 0.1+ | 0.9+ |
| 2002 04 09 | 704 | 0.8+ | 0.8+ | 2005 03 03 | 704 | 0.2− | 0.7+ | 2005 03 18 | 704 | 0.4+ | 0.2− |
| 2002 04 17 | 704 | 0.2− | 0.3− | 2005 03 03 | 704 | 0.1+ | 0.4+ | 2005 04 01 | 699 | 0.2+ | 0.4− |
| 2002 04 17 | 704 | 0.3+ | 0.5− | 2005 03 07 | 683 | (0.6+ | 1.6−) | 2005 04 01 | 699 | 0.3+ | 0.6+ |
| 2002 04 17 | 704 | 0.4− | 0.3− | 2005 03 07 | 683 | 0.3+ | 0.4− | 2005 04 01 | 699 | 0.3− | 0.2+ |
| 2002 04 17 | 704 | 1.1+ | 0.9− | 2005 03 07 | 683 | (2.3+ | 3.1+) | 2005 04 01 | 699 | 0.5− | 0.1+ |
| 2002 04 17 | 704 | 0.3− | 0.4− | 2005 03 08 | 699 | 0.2+ | 0.0 | 2005 04 04 | 704 | 0.3+ | 0.1+ |
| 2002 05 08 | 333 | 0.6− | 0.1− | 2005 03 08 | 699 | 0.2− | 0.6+ | 2005 04 04 | 704 | 0.6− | 0.5− |
| 2002 05 08 | 333 | 0.5− | 0.8− | 2005 03 08 | 683 | (0.5− | 2.9+) | 2005 04 04 | 704 | 0.0 | 0.5+ |
| 2002 05 08 | 333 | 1.4− | 1.3− | 2005 03 08 | 699 | 0.2+ | 0.6+ | 2005 04 04 | 704 | 0.4+ | 0.1+ |
| 2002 05 09 | 333 | 0.8− | 0.7− | 2005 03 08 | 683 | 0.4+ | 0.7+ | 2005 04 18 | 691 | 0.1+ | 0.6+ |
| 2002 05 09 | 333 | 0.1− | 0.1+ | 2005 03 08 | 683 | 0.1− | 0.5− | 2005 04 18 | 691 | 0.3+ | 0.3+ |
| 2002 05 09 | 333 | 0.4− | 0.5− | 2005 03 08 | 704 | 0.7+ | 0.5+ | 2005 04 18 | 691 | 0.1+ | 0.4+ |
| 2002 05 09 | 333 | 0.1+ | 0.6− | 2005 03 08 | 704 | 0.4+ | 0.2+ | 2005 05 10 | G96 | 0.4− | 0.2− |
| 2002 05 09 | 644 | 0.4− | 0.0 | 2005 03 08 | 704 | 0.6+ | 1.0+ | 2005 05 10 | G96 | 0.3− | 0.1− |
| 2002 05 09 | 333 | 0.4− | 0.6− | 2005 03 08 | 704 | (1.1+ | 2.4+) | 2005 05 10 | G96 | 0.4− | 0.0 |
| 2002 05 09 | 333 | (1.7− | 0.1−) | 2005 03 08 | 704 | 0.0 | 0.0 | 2005 05 10 | G96 | 0.6− | 0.3− |
| 2002 05 09 | 644 | 0.2− | 0.1+ | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2002 05 09 | 644 | 0.3− | 0.1+ | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2002 05 11 | 333 | 0.6+ | 0.5− | 2005 03 10 | G96 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.3+ |
| 2002 05 11 | 333 | (1.0+ | 1.5−) | 2005 03 10 | G96 | 0.6− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.5+ |
| 2002 05 11 | 333 | 0.6− | 0.7− | 2005 03 11 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2002 05 12 | 704 | (1.6+ | 0.3−) | 2005 03 11 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2002 05 12 | 704 | (1.9+ | 0.8−) | 2005 03 11 | 691 | (1.3− | 2.7+) | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2002 05 12 | 704 | (2.6+ | 0.3−) | 2005 03 14 | 704 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.5+ |
| 2002 05 23 | 644 | 0.3− | 0.2+ | 2005 03 14 | 704 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.4+ |
| 2002 05 23 | 644 | 0.4− | 0.2+ | 2005 03 14 | 704 | 0.6− | 0.5− | 2006 10 31 | G96 | 0.5+ | 0.5+ |
| 2002 05 23 | 644 | 0.1− | 0.2+ | 2005 03 14 | 704 | 1.3+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.6+ |
| 2002 05 28 | 608 | 0.3+ | 0.1+ | 2005 03 14 | 704 | 0.8+ | 0.5− | | | | |
| 2002 05 28 | 608 | 0.5+ | 0.2− | 2005 03 16 | G96 | 0.0 | 0.4− | | | | |

**(141613)∗ 2002 JZ$_{14}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.96615 | | (2000.0) | | | |
| $n$ | 0.30257594 | $\omega$ | 127.23464 | | +0.60915865 | +0.79304828 |
| $a$ | 2.1974203 | $\Omega$ | 180.29493 | | −0.74979083 | +0.57576886 |
| $e$ | 0.2167795 | $i$ | 4.41058 | | −0.25833980 | +0.19890864 |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 15 | 691 | 0.2− | 0.3+ | 2005 03 04 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 1996 06 15 | 691 | 0.1− | 0.1+ | 2005 03 16 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 1996 06 15 | 691 | 0.4− | 0.5+ | 2005 03 16 | 691 | 0.1− | 0.2+ | 2006 10 23 | 683 | 0.7+ | 0.2+ |
| 1996 10 06 | 809 | (4.0+ | 3.4+) | 2005 03 16 | 691 | 0.0 | 0.2+ | 2006 10 23 | 683 | (0.9+ | 1.7+) |
| 1996 10 06 | 809 | (3.2+ | 2.9+) | 2005 04 02 | G96 | 0.4− | 0.4− | 2006 10 23 | 683 | (1.3− | 1.8+) |
| 1996 10 06 | 809 | (4.1+ | 4.1+) | 2005 04 02 | G96 | 0.4− | 0.0 | 2006 10 24 | 644 | 0.2− | 0.4+ |
| 2002 04 08 | 644 | 0.2+ | 0.4+ | 2005 04 02 | G96 | 0.3− | 0.3− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2002 04 08 | 644 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.4− | 0.4− | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2002 04 08 | 644 | 0.4+ | 0.5+ | 2005 04 04 | 703 | (0.6− | 1.8−) | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2002 04 14 | 644 | 0.3+ | 0.2+ | 2005 04 04 | 703 | 1.2− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2002 04 14 | 644 | 0.4+ | 0.1+ | 2005 04 04 | 703 | (1.8+ | 0.2+) | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2002 04 14 | 644 | 0.0 | 0.3+ | 2005 04 04 | 703 | 1.2+ | 1.0− | 2006 11 09 | 644 | 0.3+ | 0.7+ |
| 2002 05 08 | 704 | 0.4+ | 0.2− | 2005 04 17 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 05 08 | 704 | 1.4+ | 0.7− | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2002 05 08 | 704 | 0.4− | 1.2− | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.3+ | 0.2+ |
| 2002 05 08 | 704 | 0.6+ | 0.6+ | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2002 05 08 | 704 | 1.2+ | 0.7− | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2002 05 08 | 644 | 0.8+ | 1.3+ | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2002 05 08 | 644 | 0.6+ | 1.3+ | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 2002 05 08 | 644 | 0.0 | 1.4+ | 2006 09 30 | G96 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.1+ |
| 2002 05 09 | 704 | 1.2− | 0.9+ | 2006 09 30 | G96 | 1.0+ | 0.5+ | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2002 05 09 | 704 | (0.1− | 1.6−) | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.6+ |
| 2002 05 09 | 704 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2002 05 09 | 704 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 05 19 | 644 | 0.5+ | 1.2+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 14 | 704 | (0.5+ | 2.2+) |
| 2002 05 19 | 644 | (0.6+ | 1.8+) | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 14 | 704 | (0.3+ | 1.7+) |
| 2002 05 19 | 644 | 0.9+ | 1.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.9+ | 0.7+ |
| 2003 12 01 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.6+ |
| 2003 12 01 | 704 | 1.5+ | 0.7− | 2006 10 21 | 644 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2003 12 01 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2003 12 01 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 03 04 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 03 04 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.3+ | | | | |

**(141614)∗ 2002 JV$_{15}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.70760 | | (2000.0) | | | |
| $n$ | 0.47615585 | $\omega$ | 127.15387 | | +0.84563848 | +0.53190587 |
| $a$ | 1.6241893 | $\Omega$ | 200.82550 | | −0.52071646 | +0.80384374 |
| $e$ | 0.5362247 | $i$ | 7.17482 | | −0.11726006 | +0.26629191 |
| $P$ | 2.07 | $H$ | 19.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 26 | 608 | 0.2+ | 0.0 | 2002 05 15 | 118 | 0.0 | 0.1− | 2004 04 15 | 699 | 0.1+ | 0.1− |
| 2002 04 26 | 608 | 0.3+ | 0.6+ | 2002 05 15 | 704 | 0.9− | 0.2+ | 2004 04 15 | 699 | 0.4− | 0.1+ |
| 2002 05 08 | 704 | 0.7− | 0.1+ | 2002 05 15 | 704 | 0.9− | 0.3+ | 2004 04 15 | 699 | 0.6− | 0.0 |
| 2002 05 08 | 704 | 0.4− | 0.0 | 2002 05 15 | 704 | 0.9− | 0.1+ | 2004 04 16 | 644 | 0.3+ | 0.1+ |
| 2002 05 08 | 704 | 0.0 | 0.3− | 2002 05 15 | 704 | 1.0− | 0.0 | 2004 04 16 | 644 | 0.3+ | 0.3+ |
| 2002 05 08 | 704 | 0.3− | 0.2− | 2002 05 15 | 704 | 0.8− | 0.1− | 2004 04 16 | 644 | 0.0 | 0.2+ |
| 2002 05 08 | 704 | 0.4− | 0.3− | 2002 05 15 | 322 | (0.6− | 7.2−) | 2004 04 16 | 644 | 0.2+ | 0.1+ |
| 2002 05 08 | 046 | 0.4+ | 0.4+ | 2002 05 15 | 322 | 0.2+ | 1.1+ | 2004 04 16 | 644 | 0.4+ | 0.4+ |
| 2002 05 08 | 046 | 0.1− | 0.2+ | 2002 05 15 | 322 | 0.5+ | 0.8− | 2004 04 16 | 644 | 0.4+ | 0.2+ |
| 2002 05 08 | 046 | 0.1+ | 0.3+ | 2002 05 15 | 157 | 0.5− | 0.2+ | 2004 04 19 | 704 | 0.0 | 0.3+ |
| 2002 05 08 | 046 | 0.3+ | 0.1+ | 2002 05 15 | 157 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.4− | 0.4+ |
| 2002 05 08 | 046 | 0.4+ | 0.1− | 2002 05 15 | 157 | 0.4− | 0.0 | 2004 04 19 | 704 | 0.2+ | 0.7+ |
| 2002 05 08 | 046 | 0.3+ | 0.1− | 2002 05 15 | 215 | 0.2− | 0.2+ | 2004 04 19 | 704 | 0.3+ | 0.6+ |
| 2002 05 09 | 557 | 0.2− | 0.5+ | 2002 05 15 | 215 | 0.1+ | 0.0 | 2004 04 20 | 704 | 0.6+ | 0.1+ |
| 2002 05 09 | 557 | 0.0 | 0.6+ | 2002 05 15 | 215 | 0.3+ | 0.0 | 2004 04 20 | 704 | 1.0+ | 0.5+ |
| 2002 05 09 | 557 | 0.5+ | 0.5+ | 2002 05 16 | 469 | 0.0 | 0.3− | 2004 04 20 | 704 | 0.6+ | 0.2+ |
| 2002 05 09 | 557 | 0.4+ | 0.6− | 2002 05 16 | 469 | 0.1+ | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.3− |
| 2002 05 09 | 557 | 1.2+ | 0.5− | 2002 05 16 | 469 | 0.1+ | 0.3− | 2004 04 20 | 704 | 0.3+ | 0.4− |
| 2002 05 09 | 448 | (2.5− | 1.3−) | 2002 05 16 | 469 | 0.0 | 0.2+ | 2004 04 20 | 704 | 1.0+ | 0.1− |
| 2002 05 09 | 448 | 0.6− | 1.3− | 2002 05 17 | 941 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.8+ | 0.0 |
| 2002 05 09 | 854 | 0.6+ | 0.5+ | 2002 05 17 | 941 | 0.4+ | 0.4+ | 2004 04 20 | 704 | 0.9+ | 0.5+ |
| 2002 05 09 | 448 | (0.2− | 1.8−) | 2002 05 17 | 941 | 1.1− | 0.3+ | 2004 04 20 | 704 | 0.8+ | 0.6− |
| 2002 05 09 | 854 | 0.4+ | 0.0 | 2002 05 17 | 941 | 0.3− | 0.3+ | 2004 04 21 | 704 | 1.3+ | 0.1− |
| 2002 05 09 | 448 | (2.2− | 1.6−) | 2002 05 17 | 941 | 0.6+ | 0.5+ | 2004 04 21 | 704 | 1.2+ | 0.3− |
| 2002 05 09 | 854 | 0.2− | 0.3− | 2002 05 18 | 699 | 0.0 | 0.1+ | 2004 04 21 | 704 | 0.2+ | 1.3+ |
| 2002 05 09 | 704 | 0.5+ | 0.6+ | 2002 05 18 | 699 | 0.0 | 0.0 | 2004 04 22 | 704 | 0.3+ | 0.4+ |
| 2002 05 09 | 704 | 0.4+ | 0.8+ | 2002 05 18 | 699 | 0.1+ | 0.0 | 2004 04 22 | 704 | (2.6+ | 0.5+) |
| 2002 05 09 | 704 | 0.1+ | 0.1+ | 2002 05 18 | 699 | 0.1− | 0.2+ | 2004 04 22 | 704 | (2.3+ | 0.3+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.5+ | 0.0 | 2002 05 20 | 611 | 0.3− | 0.0 | 2004 04 22 | 704 | 1.3+ | 1.1+ |
| 2002 05 09 | 704 | 0.1+ | 1.1+ | 2002 05 20 | 611 | 0.0 | 0.2− | 2004 04 22 | 704 | 0.4+ | 0.8− |
| 2002 05 09 | 704 | 0.3+ | 0.1− | 2002 05 20 | 151 | 0.2− | 0.3+ | 2004 05 27 | 291 | 0.2+ | 0.1− |
| 2002 05 09 | 704 | 0.0 | 0.3+ | 2002 05 20 | 151 | 0.2+ | 0.2+ | 2004 05 27 | 291 | 0.1+ | 0.1− |
| 2002 05 09 | 704 | 0.9+ | 0.8+ | 2002 05 20 | 151 | 0.2+ | 0.3+ | 2004 05 27 | 291 | 0.3+ | 0.2− |
| 2002 05 09 | 704 | 1.0+ | 0.6− | 2002 05 20 | 151 | 0.0 | 0.3+ | 2004 11 12 | F65 | 0.7+ | 0.3+ |
| 2002 05 09 | 704 | 0.6+ | 0.6− | 2002 05 21 | 291 | 0.3+ | 0.3− | 2004 11 12 | F65 | 0.2+ | 0.2+ |
| 2002 05 09 | 704 | 0.5+ | 0.6+ | 2002 05 21 | 291 | 0.0 | 0.6+ | 2004 11 12 | F65 | 0.3+ | 0.1− |
| 2002 05 09 | 704 | 0.4+ | 0.1+ | 2002 05 21 | 291 | 0.5− | 0.5+ | 2004 12 11 | 246 | 0.2− | 0.1− |
| 2002 05 09 | 704 | 0.6+ | 0.0 | 2002 05 22 | 246 | 0.1− | 1.1− | 2004 12 11 | 246 | 0.3− | 0.8+ |
| 2002 05 09 | 704 | 0.3+ | 0.1+ | 2002 05 22 | 246 | 0.0 | 0.3− | 2004 12 11 | 246 | 0.3+ | 0.1+ |
| 2002 05 09 | 704 | 0.2+ | 0.3+ | 2002 05 22 | 246 | 0.3− | 1.3− | 2006 04 18 | 691 | 0.2+ | 0.3+ |
| 2002 05 09 | 670 | 0.4+ | 0.3+ | 2002 05 22 | 246 | 0.1− | 0.9− | 2006 04 18 | 691 | 0.2+ | 0.3− |
| 2002 05 09 | 333 | 0.1+ | 0.3− | 2002 05 24 | 201 | (2.9+ | 3.2+) | 2006 04 18 | 691 | 0.4− | 0.1+ |
| 2002 05 09 | 333 | 0.1+ | 1.0− | 2002 05 24 | 201 | 0.7+ | 0.3+ | 2006 04 20 | 691 | 0.0 | 0.2+ |
| 2002 05 09 | 333 | 0.4− | 0.3− | 2002 05 24 | 201 | (1.0+ | 3.3+) | 2006 04 20 | 691 | 0.1− | 0.4+ |
| 2002 05 09 | 670 | 0.8+ | 0.2− | 2002 05 26 | 649 | 0.2+ | 0.8− | 2006 04 20 | 691 | 0.0 | 0.1+ |
| 2002 05 10 | 704 | 0.1+ | 0.0 | 2002 05 26 | 649 | 0.7− | 0.8− | 2006 04 21 | 291 | 0.6+ | 0.1+ |
| 2002 05 10 | 704 | 0.4+ | 0.1− | 2002 05 26 | 649 | 0.2+ | 0.8− | 2006 04 21 | 291 | 0.2+ | 0.1+ |
| 2002 05 10 | 704 | 0.3+ | 0.3− | 2002 05 29 | 670 | 0.3+ | 0.1+ | 2006 04 21 | 291 | 0.4+ | 0.0 |
| 2002 05 10 | 704 | 0.3+ | 0.2− | 2002 05 29 | 670 | 0.2− | 0.5+ | 2006 11 03 | H51 | 0.4+ | 0.2+ |
| 2002 05 10 | 704 | 0.5+ | 0.7− | 2002 05 29 | 670 | 0.0 | 0.1+ | 2006 11 03 | H51 | 0.4+ | 0.0 |
| 2002 05 11 | 966 | 0.1+ | 0.1− | 2002 05 30 | 046 | 0.1+ | 0.8+ | 2006 11 03 | H51 | 0.5− | 0.2+ |
| 2002 05 11 | 966 | 0.5− | 0.6+ | 2002 05 30 | 046 | 0.3+ | 0.7+ | 2006 11 03 | H51 | 0.6− | 0.2+ |
| 2002 05 11 | 966 | 0.1− | 0.0 | 2002 05 30 | 046 | 0.0 | 0.8+ | 2006 11 03 | H51 | 0.6+ | 0.1+ |
| 2002 05 11 | 704 | 0.3− | 0.0 | 2002 05 30 | 704 | 0.1+ | 0.2+ | 2006 11 03 | H51 | 0.2− | 0.4+ |
| 2002 05 11 | 704 | 0.2− | 0.1− | 2002 05 30 | 704 | 0.0 | 0.6+ | 2006 11 03 | H51 | 0.2+ | 0.4+ |
| 2002 05 11 | 704 | 0.0 | 0.2− | 2002 05 30 | 704 | 0.1+ | 0.0 | 2006 11 03 | H51 | 0.6+ | 0.6+ |
| 2002 05 11 | 704 | 0.2− | 0.2− | 2002 05 30 | 704 | 0.6− | 0.0 | 2006 11 03 | H51 | 0.4− | 0.1+ |
| 2002 05 11 | 704 | 0.1− | 0.3+ | 2002 05 30 | 704 | 0.2− | 0.5− | 2006 11 04 | 130 | 0.5+ | 0.1− |
| 2002 05 13 | 560 | (2.1− | 3.7−) | 2002 05 30 | 587 | 0.2− | 0.0 | 2006 11 04 | 130 | 0.7+ | 0.1− |
| 2002 05 13 | 560 | (0.6− | 4.9−) | 2002 05 30 | 587 | 0.1+ | 0.2− | 2006 11 04 | 130 | 0.8+ | 0.1+ |
| 2002 05 13 | 560 | (0.1+ | 2.9−) | 2002 05 30 | 587 | 1.0− | 1.1+ | 2006 11 04 | 130 | 0.8+ | 0.1+ |
| 2002 05 13 | 176 | 0.2+ | 0.0 | 2002 05 30 | 587 | 0.4− | 0.1− | 2006 11 05 | 204 | 0.2+ | 0.1− |
| 2002 05 13 | 176 | 0.2+ | 0.0 | 2002 05 31 | 611 | 0.0 | 0.5+ | 2006 11 05 | 204 | 0.2+ | 0.0 |
| 2002 05 13 | 176 | 0.1+ | 0.2− | 2002 05 31 | 611 | 0.1− | 0.3+ | 2006 11 05 | 204 | 0.2+ | 0.2+ |
| 2002 05 14 | 118 | 0.1+ | 0.6+ | 2002 05 31 | 611 | 0.0 | 0.3+ | 2006 11 05 | 204 | 0.3+ | 0.1+ |
| 2002 05 14 | 118 | 0.2+ | 0.4+ | 2002 06 03 | 118 | 0.5+ | 0.5+ | 2006 11 05 | 204 | 0.3+ | 0.0 |
| 2002 05 14 | 118 | 0.1− | 0.5+ | 2002 06 03 | 118 | 0.4+ | 0.4+ | 2006 11 10 | 704 | 0.4− | 0.4+ |
| 2002 05 14 | 246 | 0.3− | 0.4− | 2002 06 03 | 118 | 0.1− | 0.2+ | 2006 11 10 | 704 | 0.1− | 0.2+ |
| 2002 05 14 | 246 | 0.0 | 0.1− | 2002 06 03 | 118 | 0.5+ | 0.1− | 2006 11 10 | 704 | 0.2− | 0.3+ |
| 2002 05 14 | 246 | 0.1− | 0.1− | 2002 06 04 | 118 | 0.4+ | 0.7+ | 2006 11 10 | 704 | 0.6− | 0.0 |
| 2002 05 14 | 246 | 0.1− | 0.2− | 2002 06 04 | 118 | 0.6− | 0.7+ | 2006 11 10 | 704 | 0.0 | 0.1− |
| 2002 05 14 | 246 | 0.1− | 0.4− | 2002 06 04 | 118 | 0.1+ | 0.9+ | 2006 11 10 | E19 | 0.2− | 0.5− |
| 2002 05 14 | 246 | 0.1− | 0.1− | 2002 06 04 | 118 | 0.5− | 1.1+ | 2006 11 10 | E19 | (1.9+ | 0.0 ) |
| 2002 05 14 | 246 | 0.1− | 0.1− | 2002 06 04 | 118 | 0.3+ | 0.5+ | 2006 11 10 | E19 | 0.3+ | 0.1− |
| 2002 05 14 | 670 | 0.0 | 0.1− | 2002 06 04 | 118 | 0.6+ | 0.7+ | 2006 11 12 | 844 | 0.2− | 0.4− |
| 2002 05 14 | 670 | 0.5− | 0.6+ | 2002 06 08 | 649 | 0.7− | 0.2− | 2006 11 12 | 844 | 0.7− | 0.6+ |
| 2002 05 14 | 670 | 0.4− | 0.1− | 2002 06 08 | 649 | 1.2− | 0.0 | 2006 11 12 | 844 | 0.7− | 1.2+ |
| 2002 05 14 | 670 | 0.1− | 0.1− | 2002 06 08 | 649 | 0.7− | 0.1− | 2006 11 12 | 844 | 0.8− | 0.3− |
| 2002 05 14 | 587 | (0.7+ | 2.3−) | 2002 11 28 | 696 | 0.5− | 1.2− | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2002 05 14 | 587 | 1.3+ | 0.9− | 2002 11 28 | 696 | 1.0+ | 0.2+ | 2006 11 16 | 703 | 0.7− | 0.8+ |
| 2002 05 14 | 587 | (1.2+ | 1.6+) | 2002 11 28 | 696 | (0.1+ | 2.2+) | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2002 05 14 | 587 | (3.0+ | 0.5−) | 2002 11 28 | 696 | 0.9− | 1.0− | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2002 05 14 | 151 | (0.2+ | 1.6+) | 2002 12 03 | 568 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.9− | 0.7+ |
| 2002 05 14 | 151 | 0.2+ | 0.4+ | 2002 12 03 | 568 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.8− | 0.0 |
| 2002 05 14 | 151 | 0.6− | 0.4+ | 2004 03 17 | 291 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2002 05 14 | 151 | 0.1+ | 0.1+ | 2004 03 17 | 291 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2002 05 15 | 246 | 0.2+ | 0.2− | 2004 03 17 | 291 | 0.1− | 0.1+ | 2006 11 22 | 703 | 1.0− | 0.2+ |
| 2002 05 15 | 246 | 0.2+ | 0.6− | 2004 04 12 | 691 | 0.1+ | 0.5− | 2006 11 22 | 703 | 0.3− | 0.1− |
| 2002 05 15 | 246 | 0.3+ | 0.3− | 2004 04 12 | 691 | 0.2+ | 0.3− | 2006 11 22 | 703 | 0.5− | 0.1− |
| 2002 05 15 | 118 | 0.2+ | 0.2+ | 2004 04 12 | 691 | 0.3+ | 0.4− | 2006 11 22 | 703 | 0.4− | 0.7+ |
| 2002 05 15 | 118 | 0.8− | 0.4− | 2004 04 15 | 699 | 0.8− | 0.3− | | | | |

**(141615)∗ 2002 JQ$_{17}$**

Discovered 2002 May 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.22046 | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23707066 | $\omega$ | 118.18255 | −0.80377717 | | −0.59445320 | |
| $a$ | 2.5855375 | $\Omega$ | 25.36609 | +0.52448208 | | −0.72693332 | |
| $e$ | 0.1604597 | $i$ | 3.18816 | +0.28082167 | | −0.34379259 | |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 704 | 0.1+ | 0.3− | 2002 05 11 | 704 | 0.3− | 0.0 | 2006 03 23 | 691 | 0.2− | 0.1− |
| 2000 11 29 | 704 | 0.5− | 0.1+ | 2002 05 11 | 704 | 0.3+ | 0.5+ | 2006 03 23 | 691 | 0.3− | 0.1− |
| 2000 11 29 | 704 | 1.0− | 0.7+ | 2002 05 11 | 704 | 0.5+ | 0.5+ | 2006 03 23 | 691 | 0.1− | 0.1− |
| 2000 11 29 | 704 | 0.6+ | 1.4+ | 2002 05 11 | 704 | 0.3+ | 0.2+ | 2006 04 07 | 704 | 0.3+ | 0.4+ |
| 2002 04 02 | 291 | 0.2− | 0.3− | 2002 05 13 | 704 | 0.3+ | 0.1− | 2006 04 07 | 704 | 0.2+ | 0.2+ |
| 2002 04 02 | 291 | 0.1+ | 0.2+ | 2002 05 13 | 704 | 0.3+ | 0.3+ | 2006 04 07 | 704 | 0.1− | 0.7− |
| 2002 04 02 | 291 | 0.0 | 0.1+ | 2002 05 13 | 704 | 1.7+ | 0.4+ | 2006 04 07 | 704 | 0.0 | 0.1+ |
| 2002 04 13 | 644 | 0.5+ | 0.5+ | 2002 05 13 | 704 | 0.5− | 0.5+ | 2006 04 09 | 691 | 0.1− | 0.2− |
| 2002 04 13 | 644 | 0.4+ | 0.7+ | 2002 05 18 | 644 | 0.5+ | 0.3+ | 2006 04 09 | 691 | 0.1+ | 0.0 |
| 2002 04 13 | 644 | 0.4+ | 0.4+ | 2002 05 18 | 644 | 0.7+ | 0.5+ | 2006 04 09 | 691 | 0.1− | 0.1+ |
| 2002 04 14 | 704 | 0.2+ | 0.3+ | 2002 05 18 | 644 | 0.4+ | 0.2+ | 2006 04 19 | 699 | 1.7+ | 1.1− |
| 2002 04 14 | 704 | 0.3+ | 0.5+ | 2004 10 06 | 691 | 0.2− | 0.4+ | 2006 04 19 | 699 | (2.1+ | 1.0−) |
| 2002 04 14 | 704 | 0.2− | 1.0+ | 2004 10 06 | 691 | 0.1+ | 0.4+ | 2006 04 19 | 699 | 0.0 | 0.2+ |
| 2002 04 14 | 704 | 0.1+ | 0.6+ | 2004 10 06 | 691 | 0.1+ | 0.5+ | 2006 04 19 | 699 | 0.1− | 0.5− |
| 2002 04 22 | 691 | 0.2− | 0.7+ | 2004 10 10 | 691 | 0.3− | 0.4+ | 2006 04 26 | G96 | 0.6− | 0.4− |
| 2002 04 22 | 691 | 0.1+ | 0.5+ | 2004 10 10 | 691 | 0.4− | 0.3+ | 2006 04 26 | G96 | 0.2− | 0.6− |
| 2002 04 22 | 691 | 0.1− | 0.4+ | 2004 10 10 | 691 | 0.3− | 0.2+ | 2006 04 26 | G96 | 0.4− | 0.2− |
| 2002 05 07 | 644 | 0.5+ | 0.2+ | 2004 10 14 | 691 | 0.3− | 0.3+ | 2006 04 26 | G96 | 0.6− | 0.4− |
| 2002 05 07 | 644 | 0.2+ | 0.1+ | 2004 10 14 | 691 | 0.3− | 0.6+ | 2006 04 30 | 691 | 0.1+ | 0.2+ |
| 2002 05 07 | 644 | 0.5+ | 0.3+ | 2004 10 14 | 691 | 0.2− | 0.4+ | 2006 04 30 | 691 | 0.0 | 0.1+ |
| 2002 05 09 | 644 | 0.4+ | 0.4+ | 2004 11 19 | 703 | 0.5+ | 0.2− | 2006 04 30 | 691 | 0.1+ | 0.0 |
| 2002 05 09 | 644 | 0.0 | 0.5+ | 2004 11 19 | 703 | 0.2+ | 0.3+ | 2006 05 01 | 691 | 0.2+ | 0.2+ |
| 2002 05 09 | 644 | 0.1− | 0.2− | 2004 11 19 | 703 | 0.2+ | 1.0+ | 2006 05 01 | 691 | 0.3+ | 0.3+ |
| 2002 05 11 | 704 | 0.1− | 0.2+ | 2004 11 19 | 703 | 0.4+ | 1.2+ | 2006 05 01 | 691 | 0.1+ | 0.5+ |

**(141616)∗ 2002 JU$_{20}$**

Discovered 2002 May 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.24565 | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29268378 | $\omega$ | 185.54425 | +0.08945263 | | +0.98688012 | |
| $a$ | 2.2466579 | $\Omega$ | 89.63830 | −0.90856068 | | +0.13614375 | |
| $e$ | 0.1945671 | $i$ | 7.72462 | −0.40806338 | | −0.08679003 | |
| $P$ | 3.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.2+ | 0.5+ | 2002 05 12 | 704 | (1.7+ | 0.3−) | 2006 09 18 | 703 | 0.2− | 0.0 |
| 1999 07 14 | 704 | 0.3− | 0.3− | 2002 05 18 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.8− | 0.5+ |
| 1999 07 14 | 704 | 0.8− | 0.7− | 2002 05 18 | 704 | 0.9+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.3+ |
| 1999 07 14 | 704 | 0.6− | 0.2− | 2002 05 18 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 703 | 0.5− | 0.3+ |
| 1999 07 14 | 704 | 0.3− | 0.1− | 2002 05 18 | 704 | 0.2+ | 0.0 | 2006 09 20 | 703 | 0.3+ | 0.4+ |
| 2002 04 10 | 704 | 0.6+ | 0.3+ | 2002 05 29 | 608 | 0.4+ | 0.7− | 2006 09 20 | 703 | (0.5+ | 2.2+) |
| 2002 04 10 | 704 | 0.4+ | 0.5+ | 2002 05 29 | 608 | 0.3− | 0.8− | 2006 09 20 | 703 | 0.4− | 0.4+ |
| 2002 04 10 | 704 | 0.1− | 0.2+ | 2002 05 29 | 608 | 0.6+ | 0.4− | 2006 09 21 | 699 | 0.0 | 0.5+ |
| 2002 04 10 | 704 | 0.9+ | 0.2+ | 2002 06 08 | 608 | 0.2+ | 0.3− | 2006 09 21 | 699 | 0.5− | 0.1+ |
| 2002 04 11 | 699 | 0.4− | 0.4+ | 2002 06 08 | 608 | 0.4+ | 0.3− | 2006 09 21 | 699 | 0.1+ | 0.5− |
| 2002 04 11 | 699 | 1.4− | 0.3+ | 2002 06 08 | 608 | 0.1− | 0.3− | 2006 09 21 | 699 | 0.5− | 0.2− |
| 2002 04 11 | 699 | 1.2− | 0.8+ | 2002 06 10 | 704 | 0.8− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.6+ |
| 2002 04 11 | 699 | 1.2− | 1.0+ | 2002 06 10 | 704 | 0.0 | 1.1− | 2006 09 25 | 699 | 1.2− | 1.3+ |
| 2002 04 16 | 704 | 0.0 | 1.2+ | 2002 06 10 | 704 | 0.6− | 0.2− | 2006 09 25 | 699 | (1.7+ | 0.7+) |
| 2002 04 16 | 704 | 0.5+ | 0.5+ | 2002 06 10 | 704 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.4− | 1.0+ |
| 2002 04 16 | 704 | (0.5+ | 1.9+) | 2003 12 22 | 691 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.1+ |
| 2002 04 16 | 704 | 0.6+ | 1.1+ | 2003 12 22 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2002 04 16 | 704 | 0.8+ | 1.1+ | 2003 12 22 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.1+ |
| 2002 05 07 | 644 | 0.3+ | 0.4− | 2005 03 09 | 703 | 0.5− | 0.4− | 2006 10 02 | 703 | 0.0 | 0.4− |
| 2002 05 07 | 644 | 0.3+ | 0.7− | 2005 03 09 | 703 | 0.1− | 0.9+ | 2006 10 02 | 703 | 0.2− | 0.2− |
| 2002 05 07 | 644 | 0.5+ | 0.6− | 2005 03 09 | 703 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.5− | 0.1− |
| 2002 05 08 | 704 | 0.4− | 0.9+ | 2005 03 09 | 703 | 0.3− | 0.1+ | 2006 10 02 | 703 | 1.1+ | 0.1+ |
| 2002 05 08 | 704 | 0.3+ | 0.4+ | 2005 03 16 | 703 | 0.3+ | 0.7+ | 2006 10 17 | 703 | 0.7− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 704 | 0.4+ | 0.9+ | 2005 03 16 | 703 | 0.1− | 1.2+ | 2006 10 17 | 703 | 0.4+ | 1.0+ |
| 2002 05 08 | 704 | 0.2+ | 0.9+ | 2005 03 16 | 703 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2002 05 08 | 704 | 0.0 | 0.9+ | 2005 03 16 | 703 | 1.2− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2002 05 08 | 608 | 0.2− | 0.4− | 2005 04 01 | 703 | (0.8− | 2.2−) | 2006 10 17 | D35 | 0.3+ | 0.6+ |
| 2002 05 08 | 608 | 0.0 | 0.7− | 2005 04 01 | 703 | 0.6+ | 0.1+ | 2006 10 17 | D35 | 0.2− | 0.6+ |
| 2002 05 08 | 608 | 0.2− | 0.3− | 2005 04 01 | 703 | 1.0− | 0.3− | 2006 10 17 | D35 | 0.2+ | 0.4+ |
| 2002 05 12 | 704 | 0.9+ | 0.2+ | 2005 04 01 | 703 | 0.8− | 0.0 | | | | |
| 2002 05 12 | 704 | 1.1+ | 0.5− | 2006 09 18 | 703 | 0.8+ | 0.1− | | | | |

**(141617)∗ 2002 JQ$_{24}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.93751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29950074 | $\omega$ | 144.15019 | | −0.47829531 | +0.87623849 | |
| $a$ | 2.2124363 | $\Omega$ | 97.20937 | | −0.81887742 | −0.42086260 | |
| $e$ | 0.1061011 | $i$ | 3.38909 | | −0.31729068 | −0.23469294 | |
| $P$ | 3.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 704 | 0.3+ | 0.6− | 2003 10 23 | 699 | (2.6+ | 2.4+) | 2005 04 06 | 703 | 0.6+ | 0.3− |
| 2002 04 09 | 704 | (0.0 | 1.8−) | 2003 10 23 | 699 | 0.6+ | 0.4− | 2005 04 06 | 703 | 0.3+ | 0.3− |
| 2002 04 09 | 704 | 0.5+ | 0.7− | 2003 11 01 | 704 | 0.2+ | 1.4+ | 2005 04 06 | 703 | 0.2+ | 0.3− |
| 2002 04 09 | 704 | (0.5+ | 2.0−) | 2003 11 01 | 704 | 0.6− | 1.0+ | 2005 04 06 | 703 | 0.2+ | 0.5+ |
| 2002 04 17 | 704 | 0.8− | 1.4+ | 2003 11 01 | 704 | 0.7− | 0.3+ | 2005 04 10 | 691 | 0.1+ | 0.0 |
| 2002 04 17 | 704 | 0.6− | 1.2+ | 2003 11 01 | 704 | (0.2+ | 1.6+) | 2005 04 10 | 691 | 0.1+ | 0.2+ |
| 2002 04 17 | 704 | 0.5− | 1.0+ | 2005 03 04 | 704 | 0.2− | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.4+ |
| 2002 04 17 | 704 | (0.3− | 2.1+) | 2005 03 04 | 704 | 0.2+ | 0.8+ | 2006 08 18 | 691 | 0.0 | 0.4+ |
| 2002 05 08 | 704 | 0.4+ | 0.1+ | 2005 03 04 | 704 | 0.1− | 0.1+ | 2006 08 18 | 691 | 0.2− | 0.4+ |
| 2002 05 08 | 704 | 0.1− | 0.6+ | 2005 03 04 | 704 | 0.9+ | 0.9+ | 2006 08 18 | 691 | 0.0 | 0.5+ |
| 2002 05 08 | 704 | 0.8+ | 0.4+ | 2005 03 04 | 704 | 0.9+ | 0.4+ | 2006 08 27 | 691 | 0.8− | 0.4+ |
| 2002 05 08 | 704 | 0.5+ | 0.4+ | 2005 03 09 | 704 | (0.4+ | 2.1+) | 2006 08 27 | 691 | 0.4− | 0.7+ |
| 2002 05 08 | 704 | 0.1+ | 0.6+ | 2005 03 09 | 704 | (0.1+ | 2.4+) | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2002 05 10 | 704 | 0.1− | 0.6− | 2005 03 09 | 704 | (0.5+ | 2.6+) | 2006 08 28 | 699 | (0.6+ | 2.2+) |
| 2002 05 10 | 704 | 0.4− | 0.2− | 2005 03 09 | 704 | (1.0+ | 2.5+) | 2006 08 28 | 699 | 0.4+ | 0.5+ |
| 2002 05 10 | 704 | 0.1− | 0.8− | 2005 03 09 | 704 | (0.8+ | 1.8+) | 2006 08 28 | 699 | 0.5− | 1.2+ |
| 2002 05 10 | 704 | 0.3+ | 1.0− | 2005 03 10 | 699 | 0.2+ | 0.4+ | 2006 08 28 | 699 | (0.3− | 2.9+) |
| 2002 05 16 | 704 | 0.5+ | 1.4+ | 2005 03 10 | 699 | 0.7+ | 0.4+ | 2006 09 18 | 703 | 0.5+ | 0.8− |
| 2002 05 16 | 704 | 0.2+ | 0.9+ | 2005 03 10 | 699 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.3+ | 0.9+ |
| 2002 05 16 | 704 | 1.0+ | 0.4+ | 2005 03 10 | 699 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.8− | 1.1+ |
| 2002 05 16 | 704 | 0.1+ | 0.1+ | 2005 03 12 | 704 | (1.6+ | 0.5+) | 2006 09 18 | 703 | 0.7+ | 0.9+ |
| 2002 05 19 | 644 | 0.3− | 0.0 | 2005 03 12 | 704 | 0.9+ | 0.7+ | 2006 09 25 | 699 | 0.5− | 0.7+ |
| 2002 05 19 | 644 | 0.4− | 0.0 | 2005 03 12 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.8− | 1.2+ |
| 2002 05 19 | 644 | 0.0 | 0.1− | 2005 03 12 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 699 | 0.9+ | 0.1+ |
| 2002 06 02 | 699 | 0.6+ | 0.4+ | 2005 03 12 | 704 | 1.0+ | 0.9+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2002 06 02 | 699 | 0.6+ | 1.0+ | 2005 03 16 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 703 | 0.5− | 0.3+ |
| 2002 06 02 | 699 | 0.0 | 0.9+ | 2005 03 16 | 703 | 1.0− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.6− |
| 2002 06 02 | 699 | 0.0 | 0.6+ | 2005 03 16 | 703 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2002 06 06 | 704 | 0.4− | 0.3+ | 2005 03 16 | 704 | 0.4+ | 1.3+ | 2006 09 30 | 703 | 1.3− | 0.5− |
| 2002 06 06 | 704 | 0.3+ | 1.0+ | 2005 03 16 | 703 | (2.5− | 2.3+) | 2006 10 03 | G96 | 0.2− | 0.1− |
| 2002 06 06 | 704 | 0.0 | 0.9+ | 2005 03 16 | 704 | 0.5+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.1+ |
| 2002 06 06 | 704 | 0.6− | 0.4+ | 2005 03 16 | 703 | 1.2+ | 1.1+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 2002 06 06 | 704 | 0.4+ | 0.3− | 2005 03 16 | 704 | 0.2+ | 1.1+ | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2003 10 22 | 691 | 0.4− | 1.0+ | 2005 03 16 | 704 | 0.8− | 1.2+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2003 10 22 | 691 | 0.3− | 0.7+ | 2005 03 30 | 703 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2003 10 22 | 691 | 0.2− | 0.8+ | 2005 03 30 | 703 | 1.2+ | 1.4+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2003 10 23 | 699 | 0.4− | 0.6+ | 2005 03 30 | 703 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2003 10 23 | 699 | 0.7+ | 0.1− | 2005 03 30 | 703 | 0.5− | 1.1+ | | | | |

**(141618)∗ 2002 JH$_{25}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.63925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29377694 | $\omega$ | 228.34520 | | +0.38898282 | +0.91412379 | |
| $a$ | 2.2410811 | $\Omega$ | 64.88318 | | −0.80325632 | +0.39730520 | |
| $e$ | 0.1705918 | $i$ | 7.25372 | | −0.45107832 | +0.08078537 | |
| $P$ | 3.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 23 | 704 | 0.2+ | 0.1+ | 2002 06 06 | 704 | 1.0+ | 0.4+ | 2006 08 28 | 699 | 0.1− | 0.9+ |
| 2002 03 23 | 704 | 0.2+ | 1.1+ | 2002 06 06 | 608 | 0.3+ | 0.1− | 2006 08 28 | 699 | 0.3− | 0.2+ |
| 2002 03 23 | 704 | 0.3+ | 0.2+ | 2002 06 06 | 608 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.3− | 0.2− |
| 2002 04 10 | 704 | 0.7+ | 0.3+ | 2002 06 06 | 608 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.3+ |
| 2002 04 10 | 704 | 0.3+ | 1.2+ | 2003 10 24 | 704 | 0.4+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2002 04 10 | 704 | 0.5+ | 0.2+ | 2003 10 24 | 704 | 0.3+ | 0.0 | 2006 09 13 | 644 | 0.3− | 0.3+ |
| 2002 04 10 | 704 | 0.5+ | 0.8+ | 2003 10 24 | 704 | 0.6+ | 0.3+ | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2002 04 11 | 704 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.5+ | 0.2− | 2006 09 17 | 699 | 0.1+ | 0.9+ |
| 2002 04 11 | 704 | 1.0+ | 0.0 | 2003 10 24 | 704 | 0.0 | 1.2+ | 2006 09 17 | 699 | 0.3+ | 0.0 |
| 2002 04 11 | 704 | 0.1+ | 1.1− | 2003 10 29 | 699 | 0.8− | 0.8+ | 2006 09 17 | 699 | 0.5+ | 1.2+ |
| 2002 04 11 | 704 | 0.1− | 0.1− | 2003 10 29 | 699 | 1.0− | 0.3− | 2006 09 17 | 699 | 0.6+ | 0.8+ |
| 2002 04 15 | 699 | 0.3− | 0.3+ | 2003 10 29 | 699 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2002 04 15 | 699 | 0.5− | 1.3+ | 2003 10 29 | 699 | 1.3− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.1− |
| 2002 04 15 | 699 | 0.3− | 0.3+ | 2003 10 29 | 699 | 0.8+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.1− |
| 2002 04 15 | 699 | 0.4− | 1.2+ | 2003 10 29 | 699 | 1.1+ | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.1− |
| 2002 04 16 | 704 | 0.2+ | 0.7+ | 2003 10 29 | 703 | 0.3− | 0.4+ | 2006 09 19 | 608 | 0.8+ | 0.5− |
| 2002 04 16 | 704 | 0.0 | 1.0+ | 2003 10 29 | 699 | 0.3+ | 1.3− | 2006 09 19 | 608 | 0.6+ | 0.3− |
| 2002 04 16 | 704 | 0.3+ | 0.4+ | 2003 10 29 | 699 | 0.6− | 0.3+ | 2006 09 19 | 608 | 0.3+ | 0.7− |
| 2002 04 16 | 704 | 0.1− | 0.0 | 2003 10 29 | 703 | 1.2− | 0.6+ | 2006 09 24 | 608 | 0.4+ | 1.3− |
| 2002 04 16 | 704 | 0.4+ | 0.9+ | 2003 10 29 | 703 | 0.3+ | 0.0 | 2006 09 24 | 608 | 0.4+ | 1.2− |
| 2002 05 03 | 699 | 0.0 | 0.5+ | 2003 10 29 | 703 | 0.4− | 1.2+ | 2006 09 24 | 608 | (0.3+ | 1.6−) |
| 2002 05 03 | 699 | 0.7+ | 0.5+ | 2003 11 02 | 704 | (0.0 | 1.5+) | 2006 09 26 | 703 | 1.0+ | 0.0 |
| 2002 05 03 | 699 | 0.2+ | 0.7+ | 2003 11 02 | 704 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.6− | 0.4+ |
| 2002 05 03 | 699 | 0.3+ | 0.6+ | 2003 11 02 | 704 | 0.8+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 2002 05 07 | 644 | 0.2+ | 0.6+ | 2003 11 02 | 704 | 0.1+ | 1.0+ | 2006 09 26 | 703 | 0.4− | 0.1− |
| 2002 05 07 | 644 | 0.2+ | 0.7+ | 2003 11 16 | 703 | 0.6− | 1.1+ | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2002 05 07 | 644 | 0.4+ | 0.5+ | 2003 11 16 | 703 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.9− | 0.3− |
| 2002 05 08 | 704 | 0.2− | 0.6+ | 2003 11 16 | 703 | 0.9+ | 1.4+ | 2006 09 26 | 703 | (2.3− | 1.9−) |
| 2002 05 08 | 704 | 0.3− | 1.1+ | 2003 11 16 | 703 | 0.5− | 0.9+ | 2006 09 26 | 703 | (2.3− | 1.1−) |
| 2002 05 08 | 704 | 0.5+ | 1.1+ | 2003 11 19 | 691 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.6− | 0.3− |
| 2002 05 08 | 704 | 0.4+ | 0.5+ | 2003 11 19 | 691 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.5− | 0.1+ |
| 2002 05 08 | 704 | 0.7+ | 1.4+ | 2003 11 19 | 699 | 0.5− | 0.2+ | 2006 10 02 | 703 | 0.9− | 0.4− |
| 2002 05 10 | 704 | 0.1+ | 1.3+ | 2003 11 19 | 699 | 0.4− | 0.2+ | 2006 10 02 | 703 | 0.2− | 0.3+ |
| 2002 05 10 | 704 | 1.0+ | 0.7+ | 2003 11 19 | 691 | 0.1+ | 0.2+ | 2006 10 04 | 703 | 0.4− | 0.0 |
| 2002 05 10 | 704 | 1.0+ | 1.0+ | 2003 11 19 | 699 | 0.3+ | 0.1+ | 2006 10 04 | 703 | 0.6− | 0.5+ |
| 2002 05 10 | 704 | 0.9− | 0.6− | 2003 11 19 | 699 | 0.7− | 0.1+ | 2006 10 04 | 703 | 0.3− | 0.5+ |
| 2002 05 10 | 704 | 0.1− | 0.6+ | 2003 11 21 | 704 | 1.2+ | 1.3+ | 2006 10 04 | 703 | 0.2+ | 0.6+ |
| 2002 05 10 | 704 | 0.4+ | 0.6+ | 2003 11 21 | 704 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.3+ |
| 2002 05 10 | 704 | 0.6+ | 1.2+ | 2003 11 21 | 704 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 2002 05 16 | 704 | 0.1− | 0.2− | 2003 11 21 | 704 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.9+ |
| 2002 05 16 | 704 | (2.4− | 2.4+) | 2003 11 21 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.5+ | 0.8+ |
| 2002 05 16 | 704 | (1.6+ | 0.7+) | 2003 11 30 | 691 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2002 05 16 | 704 | 0.3+ | 1.1+ | 2003 11 30 | 691 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 05 18 | 704 | 0.8+ | 0.3+ | 2003 11 30 | 691 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 05 18 | 704 | 0.6+ | 0.7− | 2005 03 02 | 703 | 0.2− | 0.7− | 2006 10 28 | 703 | 0.2+ | 0.5+ |
| 2002 05 18 | 704 | 0.4− | 0.7+ | 2005 03 02 | 703 | 0.7+ | 0.4− | 2006 10 28 | 703 | 0.2+ | 0.6+ |
| 2002 05 18 | 704 | 0.1− | 0.3+ | 2005 03 02 | 703 | 0.4− | 0.6− | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2002 05 18 | 704 | 0.2− | 0.2− | 2005 03 02 | 703 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.0 | 1.3+ |
| 2002 05 19 | 644 | 0.2+ | 0.3+ | 2005 03 03 | 703 | 0.4+ | 0.2− | 2006 11 05 | 644 | 0.1− | 0.1+ |
| 2002 05 19 | 644 | 0.4+ | 0.5+ | 2005 03 16 | 703 | 0.6+ | 0.2+ | 2006 11 05 | 644 | 0.1− | 0.3+ |
| 2002 05 19 | 644 | 0.3+ | 0.4+ | 2005 03 16 | 703 | 1.1− | 0.2+ | 2006 11 05 | 644 | 0.5+ | 0.3+ |
| 2002 05 27 | 608 | 0.4− | 0.7− | 2005 03 16 | 703 | 1.5+ | 0.1− | 2006 11 07 | 644 | 0.7− | 0.6+ |
| 2002 05 27 | 608 | 0.1+ | 0.5− | 2005 04 02 | 703 | 0.3− | 0.3− | 2006 11 07 | 644 | 0.0 | 0.4+ |
| 2002 05 27 | 608 | 0.2− | 0.5− | 2005 04 02 | 703 | 0.1− | 0.7+ | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2002 06 06 | 704 | 0.2− | 0.4+ | 2005 04 02 | 703 | 0.2− | 0.0 | 2006 11 23 | 703 | 2.8− | 1.6+ |
| 2002 06 06 | 704 | 0.1− | 0.6+ | 2006 08 10 | 644 | 0.3− | 0.6+ | 2006 11 23 | 703 | 2.5− | 0.2− |
| 2002 06 06 | 704 | 0.6+ | 0.8+ | 2006 08 10 | 644 | 0.4− | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.8+ |
| 2002 06 06 | 704 | 0.6+ | 0.7+ | 2006 08 10 | 644 | 0.1− | 0.4+ | 2006 11 23 | 703 | 0.8+ | 0.0 |

**(141619)∗ 2002 JH$_{26}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.05798 | | (2000.0) | | | |
| $n$ | 0.28836711 | $\omega$ | 160.56994 | | +0.29043009 | +0.95492999 |
| $a$ | 2.2690230 | $\Omega$ | 126.26728 | | −0.88769059 | +0.29279557 |
| $e$ | 0.1819521 | $i$ | 4.36119 | | −0.35728948 | +0.04877985 |
| $P$ | 3.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 699 | 0.1+ | 1.1+ | 2003 12 11 | 703 | (1.0+ | 3.1+) | 2006 09 18 | 703 | 0.6+ | 0.3− |
| 1999 08 07 | 699 | 0.3− | 0.8+ | 2003 12 11 | 703 | (1.1+ | 1.6+) | 2006 09 18 | 703 | 0.8+ | 0.0 |
| 1999 08 07 | 699 | 1.1+ | 0.1− | 2005 02 09 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.3+ |
| 1999 09 07 | 704 | 0.8− | 0.5− | 2005 02 09 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.0 |
| 1999 09 07 | 704 | 0.4+ | 0.0 | 2005 02 09 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.4+ |
| 1999 09 07 | 704 | 0.9− | 0.6+ | 2005 03 02 | 703 | 0.3− | 1.2+ | 2006 09 18 | 699 | 1.3+ | 0.7+ |
| 1999 09 07 | 704 | 0.0 | 0.0 | 2005 03 02 | 703 | 1.3− | 1.2+ | 2006 09 19 | 704 | 0.3− | 0.1+ |
| 2002 04 10 | 704 | 0.0 | 0.6+ | 2005 03 02 | 703 | 0.1− | 0.5− | 2006 09 19 | 704 | 0.5− | 0.2+ |
| 2002 04 10 | 704 | 0.7+ | 0.4+ | 2005 03 02 | 703 | 0.6+ | 0.3+ | 2006 09 19 | 704 | 0.9+ | 0.4+ |
| 2002 04 10 | 704 | 0.8− | 0.1+ | 2005 03 04 | 704 | (1.4+ | 1.9+) | 2006 09 19 | 704 | 0.4+ | 0.5− |
| 2002 04 10 | 704 | 0.8− | 0.4+ | 2005 03 04 | 704 | (2.6+ | 0.8−) | 2006 09 19 | 704 | 0.2+ | 0.3− |
| 2002 04 10 | 704 | 0.5− | 0.3+ | 2005 03 04 | 704 | 0.9+ | 1.0+ | 2006 09 22 | 704 | 0.9+ | 0.9+ |
| 2002 04 13 | 644 | 0.5− | 0.9+ | 2005 03 04 | 704 | (2.0+ | 0.0 ) | 2006 09 22 | 704 | 0.3+ | 0.2− |
| 2002 04 13 | 644 | 0.3+ | 0.6+ | 2005 03 04 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.2− | 1.1+ |
| 2002 04 13 | 644 | 0.1− | 0.7+ | 2005 03 12 | 704 | 0.6+ | 1.2+ | 2006 09 22 | 704 | 0.8+ | 0.8− |
| 2002 04 16 | 704 | 0.2+ | 0.7+ | 2005 03 12 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.8+ | 0.2+ |
| 2002 04 16 | 704 | 0.2+ | 0.8+ | 2005 03 12 | 704 | 0.8+ | 0.9+ | 2006 09 26 | 704 | 0.3− | 0.6+ |
| 2002 04 16 | 704 | 0.3+ | 0.1+ | 2005 03 12 | 704 | 1.0+ | 0.1+ | 2006 09 26 | 704 | 0.7− | 0.5+ |
| 2002 04 16 | 704 | 0.3− | 0.2+ | 2005 03 12 | 704 | 0.2+ | 0.3− | 2006 09 26 | 704 | 0.1− | 0.7+ |
| 2002 04 16 | 704 | 0.2− | 0.3+ | 2006 08 10 | 644 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.3+ |
| 2002 05 07 | 644 | 0.3− | 0.5+ | 2006 08 10 | 644 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.7+ |
| 2002 05 07 | 644 | 0.1− | 0.3+ | 2006 08 10 | 644 | 0.4− | 0.4+ | 2006 09 26 | 704 | 1.1+ | 0.2− |
| 2002 05 07 | 644 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.2− | 1.1+ |
| 2002 05 08 | 704 | 0.3+ | 0.4− | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 1.3− | 0.9+ |
| 2002 05 08 | 704 | 0.4+ | 0.5+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.5+ | 1.1+ |
| 2002 05 08 | 704 | 0.2− | 0.2− | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.3− | 0.1+ |
| 2002 05 08 | 704 | 0.6+ | 0.3− | 2006 08 16 | 644 | 0.4− | 0.1+ | 2006 09 28 | 704 | 0.4− | 0.5+ |
| 2002 05 08 | 704 | 0.2− | 0.8− | 2006 08 16 | 644 | 0.5− | 0.1+ | 2006 09 28 | 704 | 0.8− | 0.6+ |
| 2002 05 10 | 704 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.5+ |
| 2002 05 10 | 704 | 0.4+ | 0.2− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 2002 05 10 | 704 | 1.0− | 0.4+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.9− | 0.3− |
| 2002 05 12 | 704 | 0.4+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.6+ | 0.1− |
| 2002 05 12 | 704 | 0.1+ | 0.3− | 2006 08 28 | 699 | 0.7− | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2002 05 12 | 704 | 0.9+ | 0.1− | 2006 08 28 | 699 | 0.3− | 0.4− | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2002 05 12 | 704 | 0.8+ | 1.3− | 2006 08 28 | 699 | 0.4− | 0.5− | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2002 05 18 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 691 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2002 05 18 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 691 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.4+ |
| 2002 05 18 | 704 | 0.2− | 0.1− | 2006 08 29 | 691 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.6− | 1.4+ |
| 2002 05 18 | 704 | 0.2− | 0.4+ | 2006 09 12 | 703 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.7+ |
| 2002 05 18 | 704 | 0.0 | 0.7+ | 2006 09 12 | 703 | 0.7+ | 1.0+ | 2006 10 19 | 703 | 0.4+ | 0.4− |
| 2002 05 19 | 608 | 0.9+ | 0.6+ | 2006 09 12 | 703 | 0.1− | 1.4− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 05 19 | 608 | 0.3+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 05 19 | 608 | 0.3+ | 1.2+ | 2006 09 16 | 704 | 0.6− | 0.9− | 2006 10 22 | 644 | 0.2+ | 0.4− |
| 2003 12 01 | 704 | 1.0− | 1.1+ | 2006 09 16 | 704 | 0.8+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2003 12 01 | 704 | 0.5− | 1.1+ | 2006 09 16 | 704 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 12 01 | 704 | 0.1− | 0.9+ | 2006 09 16 | 704 | 0.6− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2003 12 11 | 703 | (1.6− | 2.4+) | 2006 09 18 | 703 | 0.6+ | 0.4+ | | | | |
| 2003 12 11 | 703 | 0.4+ | 1.1+ | 2006 09 18 | 703 | 0.5+ | 0.2+ | | | | |

**(141620)∗ 2002 JR$_{30}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.83948 | | (2000.0) | | | |
| $n$ | 0.29245060 | $\omega$ | 227.61969 | | +0.53190543 | +0.83733671 |
| $a$ | 2.2478520 | $\Omega$ | 74.92996 | | −0.73343262 | +0.53007491 |
| $e$ | 0.1661379 | $i$ | 7.51387 | | −0.42326494 | +0.13374534 |
| $P$ | 3.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.4+ | 0.2+ | 2002 06 03 | 644 | 0.4+ | 0.9+ | 2005 03 16 | 704 | 0.5− | 0.1+ |
| 1999 07 14 | 704 | 0.2+ | 0.6− | 2002 06 03 | 644 | 0.7+ | 0.9+ | 2005 03 16 | 704 | 0.0 | 1.3+ |
| 1999 07 14 | 704 | 0.3+ | 0.8− | 2002 06 03 | 644 | 0.8+ | 0.8+ | 2005 04 09 | 703 | 0.3+ | 1.1− |
| 1999 07 14 | 704 | 0.7+ | 0.4+ | 2002 06 06 | 704 | 0.2− | 0.0 | 2005 04 09 | 703 | 0.2+ | 0.0 |
| 1999 07 14 | 704 | 0.3− | 0.3+ | 2002 06 06 | 704 | 1.4+ | 0.8+ | 2005 04 09 | 703 | 0.5− | 0.2+ |
| 1999 09 11 | 704 | 0.9− | 0.1− | 2002 06 06 | 704 | 0.4+ | 0.8− | 2005 04 09 | 703 | 0.2− | 0.1+ |
| 1999 09 11 | 704 | 0.1+ | 0.3+ | 2002 06 06 | 704 | 1.4+ | 0.1− | 2006 09 18 | 703 | (0.5− | 3.4+) |
| 1999 09 11 | 704 | 0.0 | 0.4+ | 2002 06 08 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 703 | (1.3+ | 4.7+) |
| 1999 09 11 | 704 | 0.4+ | 0.4+ | 2002 06 08 | 704 | 1.4+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.0 |
| 1999 09 11 | 704 | 0.5− | 0.2− | 2002 06 08 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.1+ |
| 2002 04 16 | 704 | 0.7− | 0.2+ | 2002 06 08 | 704 | 0.6+ | 0.5+ | 2006 09 25 | 699 | 0.6+ | 0.4− |
| 2002 04 16 | 704 | 0.0 | 0.1− | 2002 06 08 | 704 | 0.9+ | 0.8+ | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2002 04 16 | 704 | 0.9− | 1.2+ | 2002 06 11 | 704 | 0.4+ | 1.0+ | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2002 05 02 | 699 | 0.2− | 1.2+ | 2002 06 11 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.7+ |
| 2002 05 02 | 699 | (0.3− | 1.6+) | 2002 06 11 | 704 | 0.2− | 1.0− | 2006 09 26 | 703 | 1.1+ | 0.3+ |
| 2002 05 02 | 699 | 0.5+ | 0.8+ | 2003 11 21 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 703 | 0.7− | 1.2+ |
| 2002 05 02 | 699 | 0.3− | 0.1− | 2003 11 21 | 704 | 0.2+ | 0.5− | 2006 09 26 | 703 | 0.9+ | 0.2+ |
| 2002 05 09 | 333 | 0.5− | 0.3− | 2003 11 21 | 704 | 0.7− | 0.4+ | 2006 09 29 | 699 | 0.1− | 0.3+ |
| 2002 05 09 | 333 | 1.2− | 0.3− | 2003 11 21 | 704 | 0.6+ | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.4+ |
| 2002 05 09 | 333 | 0.0 | 0.5− | 2003 11 24 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.5− | 1.0+ |
| 2002 05 09 | 333 | 0.7− | 0.0 | 2003 11 24 | 691 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.4+ | 0.9+ |
| 2002 05 09 | 333 | 0.4− | 0.1− | 2003 11 24 | 691 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.1+ | 1.2+ |
| 2002 05 09 | 333 | 1.0− | 0.1+ | 2003 12 14 | 691 | 0.1− | 0.3+ | 2006 09 30 | 704 | 1.3− | 1.0+ |
| 2002 05 09 | 704 | (0.9+ | 2.0−) | 2003 12 14 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 1.1− | 0.4− |
| 2002 05 09 | 704 | (1.1+ | 1.9−) | 2003 12 14 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2002 05 09 | 704 | (0.8+ | 1.7−) | 2003 12 21 | 704 | 0.0 | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 2002 05 09 | 704 | (1.1+ | 1.8−) | 2003 12 21 | 704 | 0.9− | 1.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 05 09 | 704 | (0.0 | 1.7−) | 2003 12 21 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 05 10 | 704 | (1.0+ | 1.7+) | 2003 12 21 | 704 | (1.4− | 1.9+) | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 05 10 | 704 | (0.9+ | 1.7+) | 2003 12 21 | 704 | (0.6− | 2.1+) | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 05 10 | 704 | (1.5+ | 2.1+) | 2005 03 10 | 699 | 1.3+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2002 05 10 | 704 | (1.4+ | 1.9+) | 2005 03 10 | 699 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 05 10 | 704 | (2.0+ | 3.9+) | 2005 03 10 | 699 | (2.0+ | 0.2+) | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2002 05 11 | 333 | 0.5− | 0.9+ | 2005 03 10 | 699 | 1.3+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2002 05 11 | 333 | 0.5− | 0.1+ | 2005 03 11 | H06 | 0.8+ | 0.4− | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2002 05 14 | 699 | 0.2+ | 1.1+ | 2005 03 11 | H06 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.8+ |
| 2002 05 14 | 699 | 0.4− | 0.8+ | 2005 03 11 | H06 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 05 14 | 699 | 0.9− | 0.4− | 2005 03 16 | 703 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.7+ |
| 2002 05 14 | 699 | (0.4+ | 1.6+) | 2005 03 16 | 703 | 0.7− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2002 05 16 | 704 | 0.0 | 0.0 | 2005 03 16 | 703 | 0.0 | 0.4+ | 2006 10 28 | 703 | 2.0− | 2.0− |
| 2002 05 16 | 704 | 0.6+ | 0.2− | 2005 03 16 | 703 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.6+ | 1.5− |
| 2002 05 16 | 704 | 0.5+ | 0.6− | 2005 03 16 | 704 | 0.4+ | 0.7+ | 2006 10 28 | 703 | 2.2+ | 2.5− |
| 2002 05 16 | 704 | 0.5+ | 0.7+ | 2005 03 16 | 704 | 0.2− | 0.3+ | 2006 10 28 | 703 | 1.1− | 0.1+ |

**(141621)∗ 2002 JY$_{32}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 112.94037 | | (2000.0) | | | |
| $n$ | 0.30324737 | $\omega$ | 28.05064 | | −0.30211561 | +0.95144394 |
| $a$ | 2.1941755 | $\Omega$ | 224.43501 | | −0.88961621 | −0.30363737 |
| $e$ | 0.2047758 | $i$ | 4.83397 | | −0.34250425 | −0.05058429 |
| $P$ | 3.25 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.6− | 0.2+ | 2002 06 08 | 704 | 0.5− | 0.4+ | 2005 04 09 | 699 | 0.4− | 0.5+ |
| 1999 07 13 | 704 | 0.2− | 0.6+ | 2002 06 08 | 704 | 0.0 | 0.2+ | 2005 04 09 | 704 | 0.0 | 1.2+ |
| 1999 07 13 | 704 | 0.4+ | 0.3− | 2002 06 08 | 704 | 0.2− | 0.1− | 2005 04 09 | 704 | (1.0+ | 1.6+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.5+ | 0.3+ | 2002 06 08 | 704 | 0.2− | 0.1+ | 2005 04 09 | 699 | 0.1+ | 0.1+ |
| 2002 04 18 | 704 | 0.7+ | 0.7− | 2002 06 11 | 704 | 0.3+ | 1.2− | 2005 04 09 | 704 | (0.7+ | 1.6+) |
| 2002 04 18 | 704 | 0.3− | 0.7+ | 2002 06 11 | 644 | 0.5+ | 1.0+ | 2005 04 09 | 704 | 0.2+ | 0.7+ |
| 2002 04 18 | 704 | 1.0+ | 0.0 | 2002 06 11 | 704 | (0.0 | 1.5−) | 2005 04 09 | 699 | 0.2+ | 1.3+ |
| 2002 04 18 | 704 | 0.7− | 0.3− | 2002 06 11 | 644 | 0.5+ | 1.0+ | 2005 04 09 | 704 | (0.2− | 2.3+) |
| 2002 05 09 | 704 | 0.7+ | 0.1+ | 2002 06 11 | 704 | (0.1− | 1.9−) | 2005 04 09 | 699 | 1.3− | 0.1− |
| 2002 05 09 | 704 | 0.2+ | 0.6+ | 2002 06 11 | 704 | (0.6+ | 2.1−) | 2005 04 15 | 703 | 0.9− | 1.4+ |
| 2002 05 09 | 704 | 0.4+ | 0.5+ | 2002 06 11 | 644 | 0.5+ | 0.9+ | 2005 04 15 | 703 | 0.5− | 0.3+ |
| 2002 05 09 | 704 | 0.1+ | 0.2+ | 2002 06 14 | 291 | 0.1− | 0.1+ | 2005 04 15 | 703 | 0.7− | 0.2− |
| 2002 05 10 | 704 | 0.6+ | 0.4+ | 2002 06 14 | 291 | 0.1+ | 0.2+ | 2005 04 15 | 703 | 0.7− | 0.2+ |
| 2002 05 10 | 704 | 0.3+ | 0.1+ | 2002 06 14 | 291 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.6+ |
| 2002 05 10 | 704 | 0.6+ | 0.3+ | 2002 07 22 | 644 | 0.3− | 0.7+ | 2006 10 16 | 691 | 0.3− | 0.4+ |
| 2002 05 12 | 704 | 0.8− | 0.4+ | 2002 07 22 | 644 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.6+ |
| 2002 05 12 | 704 | 0.7− | 0.0 | 2002 07 22 | 644 | 0.1− | 0.8+ | 2006 10 20 | A44 | 1.2− | 0.1+ |
| 2002 05 12 | 704 | 1.2− | 0.1− | 2003 11 21 | 695 | 0.8− | 0.1− | 2006 10 20 | A44 | 0.6− | 0.5+ |
| 2002 05 12 | 704 | 0.8− | 0.1+ | 2003 11 21 | 695 | 0.3− | 0.1+ | 2006 10 20 | A44 | 0.5− | 0.9+ |
| 2002 05 16 | 704 | 0.1+ | 0.3− | 2003 11 30 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2002 05 16 | 704 | 0.1+ | 0.4+ | 2003 11 30 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2002 05 16 | 704 | 0.4− | 1.4− | 2003 11 30 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.1+ |
| 2002 05 16 | 704 | 0.2+ | 0.5− | 2003 12 18 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2002 05 18 | 644 | 0.1− | 0.4− | 2003 12 18 | 691 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2002 05 18 | 644 | 0.2− | 0.4− | 2003 12 18 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2002 05 18 | 644 | 0.0 | 0.4− | 2005 03 07 | 704 | (1.8+ | 0.7+) | 2006 11 15 | 691 | 0.1+ | 0.5+ |
| 2002 05 21 | 704 | (0.8+ | 2.0+) | 2005 03 07 | 704 | 1.0+ | 0.4+ | 2006 11 17 | 691 | 0.5+ | 0.1− |
| 2002 05 21 | 704 | (0.3+ | 2.1+) | 2005 03 07 | 704 | 1.2+ | 0.3+ | 2006 11 17 | 691 | 0.4+ | 0.2− |
| 2002 05 21 | 704 | (0.4+ | 1.8+) | 2005 03 07 | 704 | (2.7+ | 0.2+) | 2006 11 17 | 691 | 0.1+ | 0.5+ |
| 2002 05 21 | 704 | (0.5+ | 1.9+) | 2005 03 10 | 699 | (2.0+ | 0.8+) | 2006 11 20 | 691 | 0.1+ | 0.4+ |
| 2002 05 21 | 704 | (0.8+ | 1.9+) | 2005 03 10 | 699 | 0.8+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.5+ |
| 2002 06 03 | 644 | 0.5+ | 1.2+ | 2005 03 10 | 699 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.4− | 0.2− |
| 2002 06 03 | 644 | 0.2+ | 0.2− | 2005 03 10 | 699 | 1.2− | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2002 06 03 | 644 | 0.2+ | 0.2− | 2005 03 13 | 703 | 0.3+ | 0.5+ | 2006 11 20 | G96 | 0.7− | 0.1− |
| 2002 06 05 | 704 | 0.1− | 0.0 | 2005 03 13 | 703 | 0.3+ | 0.6+ | 2006 11 20 | G96 | 0.5− | 0.7− |
| 2002 06 05 | 704 | 0.2+ | 0.0 | 2005 03 13 | 703 | 0.6+ | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2002 06 05 | 704 | 0.4+ | 0.2− | 2005 03 13 | 703 | 0.6− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.5+ |
| 2002 06 05 | 704 | 0.1+ | 0.0 | 2005 03 17 | 691 | 0.7+ | 0.3+ | 2006 11 21 | 691 | 0.8− | 0.2− |
| 2002 06 06 | 704 | 0.1− | 1.0+ | 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.6+ |
| 2002 06 06 | 704 | 0.3− | 0.4+ | 2005 03 17 | 691 | 0.5+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2002 06 06 | 704 | 0.0 | 1.0+ | 2005 04 04 | 703 | 0.6− | 0.2+ | 2006 11 23 | 691 | 0.5− | 0.2+ |
| 2002 06 06 | 704 | 0.3+ | 0.9+ | 2005 04 04 | 703 | 0.6+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 06 06 | 704 | 0.1+ | 0.5+ | 2005 04 04 | 703 | 0.6+ | 0.1− | | | | |
| 2002 06 08 | 704 | 0.2− | 0.6+ | 2005 04 04 | 703 | 0.4− | 0.2− | | | | |

**(141622)∗ 2002 JH$_{33}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.16612 | | (2000.0) | | | |
| $n$ | 0.28935337 | $\omega$ | 91.10353 | | −0.07013609 | +0.99749232 |
| $a$ | 2.2638641 | $\Omega$ | 174.84582 | | −0.95207854 | −0.06409877 |
| $e$ | 0.1303974 | $i$ | 6.06157 | | −0.29770353 | −0.03000683 |
| $P$ | 3.41 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.2+ | 0.5− | 2005 03 09 | 699 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.4− |
| 2002 05 09 | 704 | 0.4+ | 0.3+ | 2005 03 09 | 699 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.8− | 0.1− |
| 2002 05 09 | 704 | 0.2+ | 0.1− | 2005 03 09 | G96 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.6+ |
| 2002 05 09 | 704 | 0.0 | 0.0 | 2005 03 09 | 699 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.2+ |
| 2002 05 09 | 704 | 1.3+ | 0.4+ | 2005 03 09 | G96 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.5− | 1.0+ |
| 2002 05 10 | 704 | 0.3+ | 0.1+ | 2005 03 09 | G96 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.5− | 0.1+ |
| 2002 05 10 | 704 | 0.3− | 0.5+ | 2005 03 09 | G96 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.6+ |
| 2002 05 10 | 704 | 0.6− | 0.6+ | 2005 03 14 | 704 | 0.9− | 0.1− | 2006 09 20 | 704 | 0.0 | 0.1+ |
| 2002 05 29 | 608 | 0.4− | 1.0− | 2005 03 14 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 704 | 0.3+ | 0.7+ |
| 2002 05 29 | 608 | 1.4− | 1.0− | 2005 03 14 | 704 | 0.7+ | 0.6+ | 2006 09 20 | 644 | 0.4− | 0.0 |
| 2002 05 29 | 608 | (1.9− | 0.7−) | 2005 03 14 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2002 06 01 | 644 | 0.3+ | 0.5+ | 2005 04 02 | G96 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.0 | 0.0 |
| 2002 06 01 | 644 | 0.4+ | 0.5+ | 2005 04 02 | G96 | 0.1− | 0.2− | 2006 09 27 | 704 | 1.2+ | 0.6+ |
| 2002 06 01 | 644 | 0.4+ | 0.7+ | 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.2+ |
| 2002 06 03 | 644 | 0.4− | 0.6+ | 2005 04 02 | G96 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.4− | 1.1+ |
| 2002 06 03 | 644 | 0.0 | 0.6+ | 2005 04 09 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.6+ |
| 2002 06 03 | 644 | 0.1+ | 0.4+ | 2005 04 09 | 691 | 0.3+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.9+ |
| 2002 06 10 | 704 | 0.2+ | 0.9+ | 2005 04 09 | 691 | 0.1+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2002 06 10 | 704 | 0.4− | 0.8+ | 2005 05 11 | G96 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 06 10 | 704 | 0.1+ | 0.2+ | 2005 05 11 | G96 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2003 11 29 | 691 | 0.1+ | 0.3+ | 2005 05 11 | G96 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2003 11 29 | 691 | 0.0 | 0.1+ | 2005 05 11 | G96 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2003 11 29 | 691 | 0.1− | 0.3+ | 2006 08 19 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.5+ |
| 2005 03 03 | 703 | 0.4− | 1.0+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.3− |
| 2005 03 03 | 703 | 1.0− | 0.2− | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.2− |
| 2005 03 03 | 703 | 0.4− | 0.4− | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.6− |
| 2005 03 03 | 703 | 0.3− | 0.3− | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | (1.0+ | 2.1+) |
| 2005 03 04 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | (1.5− | 0.2−) |
| 2005 03 04 | 691 | 0.3+ | 0.4+ | 2006 09 12 | 703 | 1.4− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 2005 03 04 | 691 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | (0.8+ | 1.6+) |
| 2005 03 08 | 699 | 1.1− | 0.4− | 2006 09 12 | 703 | (0.5+ | 1.9+) | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2005 03 08 | 699 | 0.1− | 0.9+ | 2006 09 12 | 703 | (1.6− | 0.1−) | 2006 10 20 | G96 | 0.3− | 0.3+ |
| 2005 03 08 | 704 | 1.5+ | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.6− | 0.1+ |
| 2005 03 08 | 699 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2005 03 08 | 704 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.8− | 0.1+ |
| 2005 03 08 | 704 | 1.3+ | 0.0 | 2006 09 17 | 704 | (2.5+ | 3.7−) | 2006 11 17 | G96 | 1.2− | 0.0 |
| 2005 03 08 | 699 | 1.0+ | 0.5+ | 2006 09 17 | 704 | 0.8+ | 0.2− | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2005 03 08 | 704 | (2.0+ | 0.9−) | 2006 09 17 | 704 | 1.0− | 0.5+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2005 03 09 | 699 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.0 | 0.2+ | | | | |

**(141623)∗ 2002 JJ$_{34}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.92788 | | (2000.0) | | | |
| $n$ | 0.27843597 | $\omega$ | 34.89933 | | −0.30188740 | +0.94902868 |
| $a$ | 2.3226610 | $\Omega$ | 217.76126 | | −0.90489203 | −0.31515929 |
| $e$ | 0.2002953 | $i$ | 8.50820 | | −0.30005734 | −0.00438140 |
| $P$ | 3.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.4+ | 1.1− | 2002 06 02 | 644 | 0.4− | 0.5+ | 2003 10 19 | 691 | 0.2+ | 0.3+ |
| 1999 09 11 | 704 | 0.3+ | 0.6− | 2002 06 04 | 704 | 0.5− | 0.2− | 2003 10 19 | 691 | 0.0 | 0.3+ |
| 1999 09 11 | 704 | 0.2+ | 0.4+ | 2002 06 04 | 704 | 0.7+ | 0.2− | 2003 10 19 | 691 | 0.7− | 0.1+ |
| 1999 09 11 | 704 | 0.2− | 0.2+ | 2002 06 04 | 704 | 0.6+ | 1.3+ | 2003 10 20 | 291 | 0.1− | 0.1+ |
| 1999 09 11 | 704 | 0.5− | 0.0 | 2002 06 05 | 699 | 0.9− | 0.1− | 2003 10 20 | 291 | 0.0 | 0.7+ |
| 1999 10 09 | 704 | 0.0 | 1.1+ | 2002 06 05 | 699 | 0.5− | 0.8+ | 2003 10 20 | 291 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.6− | 0.2− | 2002 06 05 | 699 | 0.3+ | 0.1+ | 2003 10 22 | 695 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.0 | 0.1− | 2002 06 05 | 699 | 1.0− | 0.4+ | 2003 10 22 | 695 | 0.3− | 0.2+ |
| 1999 10 09 | 704 | 0.2+ | 0.3− | 2002 06 07 | 704 | 0.3+ | 0.1+ | 2003 10 23 | 699 | (2.4− | 0.4−) |
| 2002 05 09 | 704 | 0.0 | 0.6+ | 2002 06 07 | 704 | 0.3+ | 0.4− | 2003 10 23 | 699 | (1.4− | 2.0+) |
| 2002 05 09 | 704 | 0.2+ | 1.4+ | 2002 06 07 | 704 | 0.9+ | 0.4+ | 2003 10 23 | 699 | 1.4− | 0.6− |
| 2002 05 09 | 704 | 0.3+ | 0.6+ | 2002 06 07 | 608 | 0.6− | 0.5− | 2003 10 23 | 699 | 1.4+ | 0.2+ |
| 2002 05 09 | 704 | 0.4− | 0.4+ | 2002 06 07 | 608 | 0.4− | 0.6− | 2003 11 20 | 691 | 0.4+ | 0.8+ |
| 2002 05 09 | 704 | 0.0 | 0.7+ | 2002 06 07 | 608 | 0.3− | 0.6− | 2003 11 20 | 691 | 0.0 | 0.0 |
| 2002 05 10 | 704 | 0.1− | 0.3+ | 2002 06 09 | 704 | 0.4+ | 0.4− | 2003 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 05 10 | 704 | 0.2+ | 0.1+ | 2002 06 09 | 704 | 0.4+ | 0.2− | 2005 02 04 | 703 | 0.0 | 0.8+ |
| 2002 05 10 | 704 | 0.6− | 0.9− | 2002 06 09 | 704 | 0.4+ | 0.2− | 2005 02 04 | 703 | 0.5− | 0.2+ |
| 2002 05 10 | 704 | 0.4+ | 0.2+ | 2002 06 09 | 704 | 0.5+ | 0.1− | 2005 02 04 | 703 | 0.1+ | 0.3+ |
| 2002 05 12 | 704 | 0.3− | 0.3+ | 2002 06 09 | 704 | 0.8+ | 0.3− | 2005 02 04 | 703 | 0.6+ | 0.5+ |
| 2002 05 12 | 704 | 1.1+ | 1.0+ | 2002 06 10 | 644 | 0.1− | 0.2+ | 2006 08 27 | 699 | 1.2+ | 1.0− |
| 2002 05 12 | 704 | 0.2+ | 0.9+ | 2002 06 10 | 644 | 0.1− | 0.3+ | 2006 08 27 | 699 | 0.4+ | 0.9− |
| 2002 05 16 | 704 | 0.4+ | 0.2− | 2002 06 10 | 704 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 0.9− | 1.2+ |
| 2002 05 16 | 704 | 0.7− | 0.6+ | 2002 06 10 | 644 | 0.1− | 0.5+ | 2006 08 27 | 699 | 1.5+ | 0.7+ |
| 2002 05 16 | 704 | 0.0 | 0.3+ | 2002 06 10 | 704 | 0.5− | 0.4− | 2006 09 11 | 703 | 0.2− | 0.0 |
| 2002 05 16 | 704 | 0.1− | 0.6− | 2002 06 10 | 704 | 0.0 | 0.6− | 2006 09 11 | 703 | 0.0 | 0.5+ |
| 2002 05 16 | 704 | 0.7+ | 0.6− | 2002 06 10 | 704 | 0.8− | 1.2+ | 2006 09 11 | 703 | 0.4− | 0.0 |
| 2002 05 28 | 608 | 0.3+ | 0.0 | 2002 07 09 | 704 | 0.3+ | 0.3− | 2006 09 11 | 703 | 0.3− | 0.3− |
| 2002 05 28 | 608 | 0.2− | 0.5+ | 2002 07 09 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 2.0− | 1.6− |
| 2002 05 28 | 608 | 0.2+ | 0.3+ | 2002 07 09 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.8+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 02 | 644 | 0.1− | 0.5+ | 2002 07 09 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.8− | 0.7+ | | |
| 2002 06 02 | 644 | 0.2− | 0.3+ | 2002 07 09 | 704 | 0.6− | 0.5− | 2006 09 18 | 703 | 0.4+ | 0.1+ | | |

**(141624)∗ 2002 JP$_{34}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.15510 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28728432 | $\omega$ | 205.60117 | | +0.29765399 | +0.94970474 | |
| $a$ | 2.2747208 | $\Omega$ | 81.83988 | | −0.85813791 | +0.31081323 | |
| $e$ | 0.2027258 | $i$ | 5.63973 | | −0.41833171 | +0.03815820 | |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.2+ | 0.4− | 2002 06 05 | 699 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.6− | | |
| 1999 09 04 | 699 | 0.1+ | 0.2+ | 2002 06 05 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.7− | 0.5− | | |
| 1999 09 04 | 699 | 0.3− | 0.9+ | 2002 06 05 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 703 | 1.4+ | 0.5− | | |
| 1999 09 04 | 703 | (2.9+ | 0.0 ) | 2002 06 05 | 704 | 0.1− | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.8+ | | |
| 1999 09 04 | 703 | 0.3+ | 0.0 | 2002 06 05 | 704 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.1+ | 0.1− | | |
| 1999 09 04 | 703 | 0.6+ | 0.2+ | 2002 06 06 | 704 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.7− | 0.3+ | | |
| 1999 09 04 | 703 | 0.0 | 0.5+ | 2002 06 06 | 704 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.6− | 0.3+ | | |
| 1999 09 30 | 704 | 0.6− | 0.4− | 2002 06 06 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.8+ | | |
| 1999 09 30 | 704 | 0.7− | 0.1− | 2002 06 06 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.2+ | 0.9+ | | |
| 1999 09 30 | 704 | 0.4− | 0.9+ | 2002 06 06 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.2+ | | |
| 1999 09 30 | 704 | 0.8− | 0.1+ | 2002 06 07 | 608 | 0.7+ | 0.3− | 2006 09 26 | 704 | 0.0 | 0.6+ | | |
| 1999 10 16 | 704 | 0.2+ | 0.2+ | 2002 06 07 | 608 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.3− | 0.1+ | | |
| 1999 10 16 | 704 | 1.2+ | 1.1− | 2002 06 07 | 608 | 0.5+ | 0.1− | 2006 09 29 | 699 | (0.5− | 1.9+) | | |
| 1999 10 16 | 704 | 0.0 | 0.2+ | 2002 06 08 | 704 | 0.1− | 0.7− | 2006 09 29 | 699 | 0.3+ | 0.1+ | | |
| 2002 05 08 | 608 | 0.0 | 0.5− | 2002 06 08 | 704 | 0.6− | 0.2+ | 2006 09 29 | 699 | (0.7+ | 1.7+) | | |
| 2002 05 08 | 608 | 0.6+ | 0.9− | 2002 06 08 | 704 | 0.6− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.2− | | |
| 2002 05 08 | 608 | 0.1− | 0.6− | 2002 06 08 | 704 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.1− | | |
| 2002 05 09 | 704 | 1.0+ | 1.0+ | 2002 06 08 | 704 | 0.6+ | 0.2− | 2006 10 04 | G96 | 0.7+ | 0.2− | | |
| 2002 05 09 | 704 | 0.8+ | 1.1+ | 2002 06 11 | 644 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.1+ | | |
| 2002 05 09 | 704 | 0.3+ | 1.2+ | 2002 06 11 | 704 | 0.4− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2002 05 09 | 704 | 1.4+ | 0.6+ | 2002 06 11 | 704 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.5+ | | |
| 2002 05 10 | 704 | 0.8+ | 0.5+ | 2002 06 11 | 644 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2002 05 10 | 704 | 0.4− | 1.0+ | 2002 06 11 | 704 | 0.7− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.1− | | |
| 2002 05 10 | 704 | 0.1+ | 0.8+ | 2002 06 11 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2002 05 10 | 704 | 0.2− | 1.0+ | 2002 06 11 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | | |
| 2002 05 16 | 704 | 0.3− | 1.2+ | 2002 06 16 | 644 | 0.2+ | 1.0+ | 2006 10 16 | 703 | 0.4− | 1.0+ | | |
| 2002 05 16 | 704 | 0.4− | 0.9+ | 2002 06 16 | 644 | 0.2+ | 1.1+ | 2006 10 16 | 703 | 0.2− | 0.1+ | | |
| 2002 05 16 | 704 | 0.5− | 0.6+ | 2002 06 16 | 644 | 0.1+ | 1.1+ | 2006 10 16 | 703 | 0.6− | 0.3− | | |
| 2002 05 16 | 704 | 0.4− | 0.9+ | 2002 06 18 | 704 | 0.4− | 0.9+ | 2006 10 16 | 703 | 0.3− | 0.2+ | | |
| 2002 05 16 | 704 | 0.5− | 1.0+ | 2002 06 18 | 704 | 0.6− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2002 05 21 | 704 | 0.3+ | 0.4− | 2002 06 18 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 2002 05 21 | 704 | 0.1− | 1.0− | 2002 06 25 | 644 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2002 05 21 | 704 | 0.1+ | 0.8− | 2002 06 25 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 05 21 | 704 | 0.6+ | 0.8− | 2002 06 25 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 05 28 | 608 | 0.4+ | 0.4+ | 2003 12 01 | 291 | 0.4− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2002 05 28 | 608 | 0.5+ | 0.2+ | 2003 12 01 | 291 | 0.4− | 1.0+ | 2006 10 22 | 703 | 0.6− | 0.3− | | |
| 2002 05 28 | 608 | 0.5+ | 0.0 | 2003 12 01 | 291 | 0.4− | 1.0+ | 2006 10 22 | 703 | 0.1− | 0.4− | | |
| 2002 05 30 | 699 | 0.4− | 1.5− | 2003 12 19 | 691 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.8+ | | |
| 2002 05 30 | 699 | (0.1− | 2.3−) | 2003 12 19 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.3− | | |
| 2002 05 30 | 699 | 0.2− | 0.2+ | 2003 12 19 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.0 | | |
| 2002 05 30 | 699 | 0.3+ | 0.8+ | 2005 04 02 | 699 | 0.3+ | 1.0+ | 2006 10 22 | 703 | 0.5− | 0.4+ | | |
| 2002 06 05 | 699 | 0.2+ | 0.0 | 2005 04 02 | 699 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.4− | | |
| 2002 06 05 | 699 | 0.3− | 0.1− | 2005 04 02 | 699 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.4− | | |
| 2002 06 05 | 699 | 0.6+ | 0.1+ | 2005 04 02 | 699 | 0.4+ | 0.0 | | | | | | |
| 2002 06 05 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.1− | | | | | | |

**(141625)∗ 2002 JY$_{34}$ = 2000 YP$_{13}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31654)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.13736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28061196 | $\omega$ | 106.25238 | | −0.36921742 | +0.92904037 | |
| $a$ | 2.3106381 | $\Omega$ | 142.05318 | | −0.86670717 | −0.33501036 | |
| $e$ | 0.1347139 | $i$ | 2.21037 | | −0.33540599 | −0.15700974 | |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 21 | 691 | 0.2− | 0.5+ | 2002 05 18 | 644 | 0.1− | 0.4+ | 2005 03 04 | G96 | 0.3− | 0.1+ | | |
| 2000 12 21 | 691 | 0.0 | 0.2+ | 2002 05 18 | 644 | 0.1+ | 0.2+ | 2005 04 12 | 568 | 1.2− | 0.0 | | |
| 2000 12 21 | 691 | 0.0 | 0.5+ | 2002 05 21 | 704 | 0.2+ | 0.4+ | 2005 04 12 | 568 | 0.6− | 0.1− | | |
| 2000 12 25 | 691 | 0.3+ | 0.4+ | 2002 05 21 | 704 | 1.1+ | 0.8+ | 2005 04 12 | 568 | 0.7− | 0.1− | | |
| 2000 12 25 | 691 | 0.2− | 0.1− | 2002 05 21 | 704 | 0.2− | 1.0+ | 2006 08 16 | A50 | (3.6+ | 0.6+) | | |
| 2000 12 25 | 691 | 0.0 | 0.3+ | 2002 06 03 | 644 | 0.4+ | 0.2− | 2006 08 16 | A50 | (3.3+ | 1.8+) | | |
| 2002 05 04 | 644 | 0.5+ | 0.8+ | 2002 06 03 | 644 | 0.3+ | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.3+ | | |
| 2002 05 04 | 644 | 0.3− | 0.1+ | 2002 06 03 | 644 | 0.4+ | 0.1− | 2006 08 18 | 644 | 0.2+ | 0.2+ | | |
| 2002 05 04 | 644 | 0.7+ | 0.4+ | 2002 06 06 | 704 | 0.2− | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.1+ | | |
| 2002 05 08 | 608 | 0.1− | 1.0− | 2002 06 06 | 704 | 0.5− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.4+ | | |
| 2002 05 08 | 608 | 0.4− | 0.7− | 2002 06 06 | 704 | 1.0+ | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.4+ | | |
| 2002 05 08 | 608 | 0.1+ | 0.2− | 2002 06 06 | 704 | 0.5− | 1.2+ | 2006 08 28 | 691 | 0.0 | 0.3+ | | |
| 2002 05 09 | 704 | 0.5− | 0.4+ | 2002 06 11 | 644 | 0.3+ | 0.4+ | 2006 08 28 | 703 | (4.6− | 0.2−) | | |
| 2002 05 09 | 704 | (1.7− | 0.9+) | 2002 06 11 | 704 | (1.6+ | 0.8+) | 2006 08 28 | 703 | 1.3− | 0.3+ | | |
| 2002 05 09 | 704 | (2.2− | 0.8+) | 2002 06 11 | 644 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.6+ | 1.3+ | | |
| 2002 05 09 | 704 | 1.0− | 1.4+ | 2002 06 11 | 704 | 1.3+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.3− | | |
| 2002 05 10 | 704 | 0.7+ | 0.1+ | 2002 06 11 | 704 | 0.4+ | 0.1− | 2006 08 28 | 699 | 0.8− | 1.1+ | | |
| 2002 05 10 | 704 | 0.6+ | 0.4+ | 2002 06 11 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 699 | (1.4− | 1.8+) | | |
| 2002 05 10 | 704 | 0.4+ | 0.7− | 2005 01 19 | 691 | 0.3+ | 0.6+ | 2006 08 28 | 699 | 0.1− | 0.5+ | | |
| 2002 05 15 | 704 | 1.2− | 0.5+ | 2005 01 19 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.6− | 1.2+ | | |
| 2002 05 15 | 704 | 0.8− | 0.1− | 2005 01 19 | 691 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 0.3− | 1.2− | | |
| 2002 05 15 | 704 | 1.2− | 0.2− | 2005 02 09 | 699 | 0.9+ | 0.6− | 2006 09 14 | 703 | 0.6− | 0.9+ | | |
| 2002 05 15 | 704 | 1.5− | 0.4+ | 2005 02 09 | 699 | 0.9+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 1.0+ | | |
| 2002 05 15 | 704 | 0.7− | 0.6− | 2005 02 09 | 699 | 0.3+ | 0.3− | 2006 09 14 | 703 | (0.7+ | 1.6+) | | |
| 2002 05 16 | 704 | 1.3+ | 0.9− | 2005 02 09 | 699 | 0.3+ | 0.9+ | 2006 10 22 | G96 | 1.0− | 0.0 | | |
| 2002 05 16 | 704 | 0.6+ | 0.1− | 2005 03 04 | G96 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.9+ | 1.1− | | |
| 2002 05 16 | 704 | 0.4+ | 0.5− | 2005 03 04 | G96 | 0.4− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.9− | | |
| 2002 05 18 | 644 | 0.0 | 0.4+ | 2005 03 04 | G96 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.6+ | 0.0 | | |

**(141626)∗ 2002 JA$_{37}$**

Discovered 2002 May 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.45210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30138073 | $\omega$ | 52.80516 | | −0.55134353 | +0.83379090 | |
| $a$ | 2.2032261 | $\Omega$ | 184.06275 | | −0.83418858 | −0.55146343 | |
| $e$ | 0.1677973 | $i$ | 23.73215 | | −0.01223634 | +0.02609256 | |
| $P$ | 3.27 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 704 | 0.0 | 0.1− | 2002 05 17 | 704 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1− | | |
| 2002 03 20 | 704 | 0.7+ | 1.2− | 2002 05 17 | 704 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2+ | | |
| 2002 03 20 | 704 | (0.9+ | 2.0−) | 2002 05 28 | 644 | 0.5+ | 0.9+ | 2006 09 18 | 291 | 0.2− | 0.1− | | |
| 2002 03 20 | 704 | 0.4+ | 1.4+ | 2002 05 28 | 644 | 0.4+ | 1.0+ | 2006 09 18 | 291 | 0.1− | 0.3+ | | |
| 2002 04 11 | 699 | 0.4+ | 1.1+ | 2002 05 28 | 644 | 0.7+ | 1.1+ | 2006 09 18 | 291 | 0.4− | 0.3+ | | |
| 2002 04 11 | 699 | 0.5− | 0.2+ | 2003 09 27 | 645 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 | | |
| 2002 04 11 | 699 | 0.5− | 0.3+ | 2003 09 27 | 645 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1− | | |
| 2002 04 11 | 699 | 0.4+ | 0.7+ | 2003 09 30 | 645 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | | |
| 2002 04 18 | 704 | 0.8+ | 0.1+ | 2003 09 30 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2− | 0.2− | | |
| 2002 04 18 | 704 | 0.5+ | 0.4− | 2005 03 07 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.3+ | | |
| 2002 04 18 | 704 | 0.3+ | 1.0+ | 2005 03 07 | 704 | 0.6+ | 0.9+ | 2006 09 19 | 703 | 0.3− | 0.7+ | | |
| 2002 04 18 | 704 | 0.4+ | 0.1+ | 2005 03 07 | 704 | 0.0 | 0.6− | 2006 09 19 | 703 | 0.2− | 0.2+ | | |
| 2002 04 21 | 644 | 0.4+ | 0.2+ | 2005 03 07 | 704 | 1.2+ | 0.2+ | 2006 09 23 | 691 | 0.4+ | 1.0− | | |
| 2002 04 21 | 644 | 0.0 | 0.0 | 2005 03 07 | 704 | 0.0 | 0.8+ | 2006 09 23 | 691 | 0.2− | 0.6+ | | |
| 2002 04 21 | 644 | 0.3+ | 0.1+ | 2005 03 13 | 703 | 0.8− | 0.9+ | 2006 09 23 | 691 | 0.3− | 0.5+ | | |
| 2002 05 06 | 704 | 1.0− | 0.5− | 2005 03 13 | 703 | 0.5+ | 1.2+ | 2006 09 25 | G96 | 0.0 | 0.6− | | |
| 2002 05 06 | 704 | 0.7− | 0.5− | 2005 03 13 | 703 | 0.8+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.5− | | |
| 2002 05 06 | 704 | 1.4− | 1.2− | 2005 03 13 | 703 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 06 | 704 | 1.7− | 0.7− | 2005 05 08 | G96 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.5− | | |
| 2002 05 06 | 704 | 1.0− | 0.4− | 2005 05 08 | G96 | 0.6− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2002 05 09 | 699 | 0.3+ | 0.1− | 2005 05 08 | G96 | 0.6− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− | | |
| 2002 05 09 | 699 | 0.4+ | 0.2+ | 2005 05 08 | G96 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.1− | | |
| 2002 05 09 | 699 | 0.2+ | 0.8+ | 2005 05 13 | G96 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 2002 05 09 | 699 | 0.9− | 0.7+ | 2005 05 13 | G96 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.2+ | | |
| 2002 05 10 | 699 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.5− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.2+ | | |
| 2002 05 10 | 699 | 0.7+ | 0.1+ | 2005 05 13 | G96 | 0.9− | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.4+ | | |
| 2002 05 10 | 699 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.2− | 0.8− | 2006 09 28 | 704 | 0.8+ | 0.2+ | | |
| 2002 05 10 | 699 | 0.6+ | 0.5+ | 2006 08 29 | 703 | (2.1+ | 1.8+) | 2006 09 28 | 704 | 0.4+ | 1.2+ | | |
| 2002 05 17 | 704 | 0.5+ | 0.4− | 2006 08 29 | 703 | 0.9− | 0.5− | 2006 09 28 | 704 | 0.4+ | 0.1+ | | |
| 2002 05 17 | 704 | 0.1+ | 1.1+ | 2006 08 29 | 703 | (4.6− | 3.0−) | 2006 09 28 | 704 | 0.5+ | 0.0 | | |
| 2002 05 17 | 704 | 0.5− | 0.2+ | 2006 09 17 | 691 | 0.3+ | 0.0 | | | | | | |

**(141627)∗ 2002 JM$_{37}$ = 1999 RG$_{134}$**

Discovered 2002 May 8 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 30197)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.81135 | | (2000.0) | | | |
| $n$ | 0.28537644 | $\omega$ | 24.27649 | | +0.62591138 | +0.77596934 |
| $a$ | 2.2848480 | $\Omega$ | 284.56813 | | −0.72809488 | +0.54549102 |
| $e$ | 0.2027223 | $i$ | 4.63111 | | −0.27948664 | +0.31671934 |
| $P$ | 3.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.6+ | 0.1+ | 2005 03 10 | 703 | 0.4+ | 1.1+ | 2006 09 27 | 703 | 0.3+ | 0.4+ | | |
| 1999 09 05 | 699 | 1.8+ | 1.0+ | 2005 03 17 | 703 | 1.0+ | 1.1− | 2006 09 29 | 699 | 0.6− | 0.0 | | |
| 1999 09 05 | 699 | 0.3+ | 1.7+ | 2005 03 17 | 703 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.2− | | |
| 1999 09 09 | 704 | 0.7− | 0.3+ | 2005 03 17 | 703 | 0.5− | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.1− | | |
| 1999 09 09 | 704 | 0.2− | 0.1+ | 2005 03 17 | 703 | 0.8+ | 0.2+ | 2006 09 29 | 699 | 1.4− | 0.6+ | | |
| 1999 09 09 | 704 | 1.5− | 0.4− | 2006 08 18 | 699 | 0.1− | 0.1− | 2006 10 01 | 703 | 0.3− | 0.8− | | |
| 1999 09 09 | 704 | 0.1− | 1.0+ | 2006 08 18 | 699 | 0.5+ | 0.0 | 2006 10 01 | 703 | 0.1− | 0.8+ | | |
| 1999 09 09 | 704 | 0.3+ | 0.4− | 2006 08 18 | 699 | 0.1+ | 1.2− | 2006 10 01 | 703 | 0.1+ | 0.4− | | |
| 1999 09 14 | 704 | 0.2+ | 0.5+ | 2006 08 18 | 699 | (1.8+ | 0.6+) | 2006 10 01 | 703 | 0.9− | 0.6− | | |
| 1999 09 14 | 704 | 1.1− | 0.6− | 2006 08 24 | 704 | 0.3+ | 1.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− | | |
| 1999 09 14 | 704 | 0.6− | 0.5− | 2006 08 24 | 704 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.3+ | | |
| 1999 09 14 | 704 | 0.6− | 0.3+ | 2006 08 24 | 704 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.0 | | |
| 1999 09 14 | 704 | 0.0 | 0.6+ | 2006 08 24 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.0 | | |
| 2002 05 08 | 608 | 0.1− | 0.9+ | 2006 08 29 | 703 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.0 | | |
| 2002 05 08 | 608 | 0.1− | 1.0+ | 2006 08 29 | 703 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− | | |
| 2002 05 08 | 608 | 0.1+ | 0.7+ | 2006 08 29 | 703 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.2+ | | |
| 2002 05 09 | 704 | (0.2− | 2.5+) | 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2002 05 09 | 704 | (0.3− | 1.6+) | 2006 08 29 | 699 | 0.6+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.1+ | | |
| 2002 05 09 | 704 | 1.0− | 0.8+ | 2006 08 29 | 699 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 2002 05 09 | 704 | (0.0 | 2.3+) | 2006 08 29 | 699 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.6+ | 0.1− | | |
| 2002 05 09 | 704 | 1.0+ | 1.1+ | 2006 08 29 | 699 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2002 05 10 | 644 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.1− | | |
| 2002 05 10 | 644 | 0.1+ | 0.1− | 2006 08 31 | 704 | 0.5+ | 1.2− | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2002 05 10 | 644 | 0.3+ | 0.1− | 2006 08 31 | 704 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 05 11 | 704 | 0.1+ | 1.1− | 2006 08 31 | 704 | 0.4+ | 0.7− | 2006 10 23 | 691 | 0.1− | 0.2+ | | |
| 2002 05 11 | 704 | 0.5− | 0.8− | 2006 09 01 | 704 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.2− | | |
| 2002 05 11 | 704 | 0.7− | 0.4+ | 2006 09 01 | 704 | 0.2− | 1.0− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 05 17 | 644 | 0.2+ | 0.1− | 2006 09 01 | 704 | 0.6+ | 0.7− | 2006 10 23 | 691 | 0.1− | 0.1+ | | |
| 2002 05 17 | 644 | 0.3+ | 0.0 | 2006 09 01 | 704 | 0.3+ | 0.5− | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2002 05 17 | 644 | 0.2+ | 0.2− | 2006 09 01 | 704 | 0.3+ | 0.9− | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2003 11 24 | 704 | 0.5− | 0.3− | 2006 09 14 | A50 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.1− | | |
| 2003 11 24 | 704 | 1.3− | 0.6+ | 2006 09 14 | A50 | 0.3+ | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.2+ | | |
| 2003 11 24 | 704 | 0.9+ | 0.2+ | 2006 09 15 | 704 | 0.6+ | 0.7+ | 2006 10 24 | 644 | 0.2+ | 0.1+ | | |
| 2003 11 24 | 704 | 0.8− | 0.5− | 2006 09 15 | 704 | 0.5+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.1+ | | |
| 2003 12 22 | 704 | 1.0+ | 1.1+ | 2006 09 15 | 704 | 0.0 | 1.5+ | 2006 10 24 | 644 | 0.1+ | 0.1+ | | |
| 2003 12 22 | 704 | 0.6+ | 0.9+ | 2006 09 15 | 704 | 0.2− | 1.2+ | 2006 10 24 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 22 | 704 | 0.7− | 0.4− | 2006 09 15 | 704 | 1.1+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.6− | | |
| 2005 03 10 | 703 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.6− | 1.0− | 2006 11 22 | 704 | 0.0 | 0.0 | | |
| 2005 03 10 | 703 | (1.6− | 0.5−) | 2006 09 27 | 703 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.2− | | |
| 2005 03 10 | 703 | 0.5+ | 1.0+ | 2006 09 27 | 703 | 0.1+ | 0.3− | | | | | | |

**(141628)∗ 2002 JR$_{38}$**

Discovered 2002 May 9 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.44871 | | (2000.0) | | | |
| $n$ | 0.29275885 | $\omega$ | 267.14098 | | +0.01835619 | +0.99982280 |
| $a$ | 2.2462738 | $\Omega$ | 3.91811 | | −0.89134821 | +0.01825573 |
| $e$ | 0.1156779 | $i$ | 3.50234 | | −0.45294748 | +0.00459373 |
| $P$ | 3.37 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 21 | 291 | 0.0 | 0.6+ | 2003 11 24 | 704 | 0.0 | 1.3+ | 2006 09 12 | 703 | 0.7− | 0.0 | | |
| 2002 02 21 | 291 | 0.2+ | 0.1− | 2003 11 24 | 699 | 1.3− | 0.6+ | 2006 09 12 | 703 | 0.7− | 0.4+ | | |
| 2002 02 21 | 291 | 0.0 | 0.1− | 2003 11 24 | 699 | 0.0 | 1.5+ | 2006 09 12 | 703 | 1.2− | 0.2+ | | |
| 2002 04 14 | 704 | (0.1− | 1.6−) | 2005 03 03 | 703 | 0.2+ | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.2+ | | |
| 2002 04 14 | 704 | 1.0− | 1.0− | 2005 03 03 | 703 | 0.7− | 0.3− | 2006 09 13 | 644 | 0.3+ | 0.2+ | | |
| 2002 04 14 | 704 | (0.2+ | 2.0−) | 2005 03 03 | 703 | 0.3− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.2+ | | |
| 2002 05 09 | 704 | 0.0 | 0.4+ | 2005 03 03 | 703 | 0.0 | 0.6+ | 2006 09 16 | 699 | 1.1+ | 0.2− | | |
| 2002 05 09 | 704 | 0.1− | 0.7+ | 2005 03 08 | 704 | (1.0+ | 2.1+) | 2006 09 16 | 699 | 0.3− | 0.9+ | | |
| 2002 05 09 | 644 | 0.3+ | 0.1+ | 2005 03 08 | 704 | 0.8+ | 0.6+ | 2006 09 16 | 699 | 0.5− | 0.4+ | | |
| 2002 05 09 | 704 | 0.9+ | 0.3+ | 2005 03 08 | 704 | (2.4+ | 1.2+) | 2006 09 16 | 699 | 0.3− | 0.1+ | | |
| 2002 05 09 | 644 | 0.1+ | 0.3+ | 2005 03 08 | 704 | 0.1+ | 0.9+ | 2006 09 17 | 704 | 0.9− | 0.2− | | |
| 2002 05 09 | 704 | 0.2+ | 0.4+ | 2005 03 08 | 704 | 0.4+ | 1.2+ | 2006 09 17 | 704 | 0.1− | 0.5+ | | |
| 2002 05 09 | 644 | 0.3+ | 0.6+ | 2005 03 08 | 704 | 0.2+ | 0.8+ | 2006 09 17 | 704 | 0.4− | 0.5+ | | |
| 2002 05 10 | 644 | 0.0 | 0.9+ | 2005 03 08 | 704 | 0.7+ | 1.3+ | 2006 09 17 | 704 | 0.9+ | 0.3+ | | |
| 2002 05 10 | 644 | 0.1− | 0.9+ | 2005 03 08 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 704 | 0.6− | 1.2+ | | |
| 2002 05 10 | 644 | 0.3+ | 1.0+ | 2005 03 08 | 704 | 0.2+ | 1.3+ | 2006 09 19 | 703 | 0.5− | 0.1− | | |
| 2002 05 11 | 704 | 0.4+ | 0.4+ | 2005 03 10 | G96 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.6+ | | |
| 2002 05 11 | 704 | 0.3− | 0.7+ | 2005 03 10 | G96 | (1.6+ | 0.8−) | 2006 09 19 | 703 | 0.8− | 0.1+ | | |
| 2002 05 11 | 704 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.8+ | | |
| 2002 05 11 | 704 | 0.4+ | 0.4+ | 2005 03 10 | G96 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 05 17 | 644 | 0.1+ | 0.1− | 2005 03 17 | A13 | 0.3− | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.1− | | |
| 2002 05 17 | 644 | 0.1− | 0.2+ | 2005 03 17 | A13 | 1.0− | 0.2− | 2006 09 20 | 644 | 0.0 | 0.1+ | | |
| 2002 05 17 | 644 | 0.2+ | 0.0 | 2005 03 17 | A13 | 1.3− | 0.3+ | 2006 09 25 | 699 | 1.3+ | 0.3+ | | |
| 2002 05 18 | 644 | 0.4+ | 0.4+ | 2005 03 17 | A13 | 0.1+ | 0.7− | 2006 09 25 | 699 | 1.0+ | 0.4− | | |
| 2002 05 18 | 644 | 0.3+ | 0.3+ | 2005 03 17 | A13 | 0.6+ | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.4+ | | |
| 2002 05 18 | 644 | 0.2+ | 0.5+ | 2005 03 18 | A13 | 0.8− | 0.4− | 2006 09 25 | 699 | 0.2− | 0.7− | | |
| 2003 10 22 | 691 | 0.2+ | 0.2+ | 2005 03 30 | 703 | (3.3+ | 0.7+) | 2006 09 26 | 691 | 0.0 | 0.4+ | | |
| 2003 10 22 | 691 | 0.4+ | 0.1+ | 2005 03 30 | 703 | 1.2+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.3+ | | |
| 2003 10 22 | 691 | 0.1− | 0.6− | 2005 03 30 | 703 | 0.3+ | 0.9+ | 2006 09 26 | 691 | 0.3− | 0.4+ | | |
| 2003 10 24 | 704 | 0.6− | 0.6+ | 2005 03 30 | 703 | 0.8− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1− | | |
| 2003 10 24 | 704 | 0.3− | 0.9+ | 2005 04 02 | 691 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3− | | |
| 2003 10 24 | 704 | (0.7− | 2.1+) | 2005 04 02 | 691 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2003 10 24 | 704 | 0.9− | 0.4+ | 2005 04 02 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2003 10 24 | 704 | 0.1− | 0.4+ | 2005 04 03 | 185 | 0.1− | 1.2− | 2006 09 27 | 704 | 0.6− | 1.1+ | | |
| 2003 10 29 | 704 | (1.8− | 1.0+) | 2005 04 03 | 185 | 1.2+ | 1.4+ | 2006 09 27 | 704 | (1.6− | 1.5+) | | |
| 2003 10 29 | 704 | 0.1+ | 0.3+ | 2005 04 03 | 185 | (2.9− | 0.1−) | 2006 09 27 | 704 | 0.3+ | 1.3+ | | |
| 2003 10 29 | 704 | 0.2+ | 1.0+ | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 27 | 704 | 1.1+ | 0.0 | | |
| 2003 10 29 | 704 | 0.5− | 0.2− | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 10 16 | 703 | (1.7+ | 0.5+) | | |
| 2003 10 30 | 704 | 0.6− | 0.3+ | 2005 04 04 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.1+ | | |
| 2003 10 30 | 704 | 0.4− | 1.0+ | 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.0+ | 0.9− | | |
| 2003 10 30 | 704 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.5− | | |
| 2003 11 18 | 644 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 2003 11 18 | 644 | 0.0 | 0.3+ | 2006 08 27 | 699 | 1.1− | 0.0 | 2006 10 20 | G96 | 0.4− | 0.1− | | |
| 2003 11 18 | 644 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 1.3− | 0.7− | 2006 10 20 | G96 | 0.6− | 0.1+ | | |
| 2003 11 24 | 704 | 0.5− | 0.7+ | 2006 08 28 | 703 | 0.7+ | 1.5+ | 2006 10 20 | G96 | 0.1+ | 0.2− | | |
| 2003 11 24 | 699 | (2.4− | 0.2−) | 2006 08 28 | 703 | 0.5− | 1.1− | 2006 11 11 | G96 | 0.3− | 0.3− | | |
| 2003 11 24 | 704 | 0.0 | 1.2+ | 2006 08 28 | 703 | 0.9+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2003 11 24 | 704 | 0.7− | 0.5+ | 2006 08 28 | 703 | 0.3− | 0.8+ | 2006 11 11 | G96 | 0.3+ | 0.7− | | |
| 2003 11 24 | 699 | 0.3+ | 1.3− | 2006 09 12 | 703 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |

**(141629)∗ 2002 JM$_{43}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.57008 | | (2000.0) | | | |
| $n$ | 0.28223060 | $\omega$ | 302.63213 | | +0.08635394 | +0.99551442 |
| $a$ | 2.3017950 | $\Omega$ | 332.24394 | | −0.88399913 | +0.05867313 |
| $e$ | 0.1525580 | $i$ | 4.76091 | | −0.45944373 | +0.07421931 |
| $P$ | 3.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 699 | 0.4− | 0.6− | 2004 12 20 | G96 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.5− | 0.4+ |
| 1999 08 08 | 699 | 0.8+ | 0.3+ | 2004 12 20 | G96 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.2− |
| 1999 08 08 | 699 | 0.4− | 0.4+ | 2004 12 20 | G96 | 0.2+ | 0.2+ | 2006 08 29 | 704 | 1.0+ | 0.5+ |
| 1999 09 09 | 704 | 0.4+ | 1.2− | 2004 12 20 | G96 | 0.2+ | 0.5+ | 2006 08 29 | 704 | 1.0+ | 0.6+ |
| 1999 09 09 | 704 | 0.4+ | 0.2− | 2005 03 04 | G96 | 0.3− | 0.1− | 2006 08 29 | 704 | (0.6+ | 1.8+) |
| 1999 09 09 | 704 | 0.5− | 0.0 | 2005 03 04 | G96 | 0.2− | 0.2− | 2006 08 29 | 704 | 0.3+ | 1.0+ |
| 2002 04 18 | 608 | 0.2− | 1.5− | 2005 03 04 | G96 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 2002 04 18 | 608 | 0.4− | 0.5− | 2005 03 04 | G96 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.7− | 0.3− |
| 2002 04 18 | 608 | 0.5− | 1.3− | 2006 07 25 | 644 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.8+ |
| 2002 05 09 | 704 | 0.1+ | 0.7+ | 2006 07 25 | 644 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.3+ |
| 2002 05 09 | 704 | 0.4+ | 0.6+ | 2006 07 25 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.1+ |
| 2002 05 09 | 704 | 0.4+ | 0.7+ | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 2002 05 09 | 704 | 0.3+ | 0.5+ | 2006 08 13 | 644 | 0.3− | 0.1− | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2002 05 09 | 704 | 0.2− | 0.0 | 2006 08 13 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.1− |
| 2002 05 11 | 704 | 1.1+ | 0.5+ | 2006 08 19 | 699 | 0.4− | 0.5+ | 2006 09 20 | 704 | 0.6− | 0.7+ |
| 2002 05 11 | 704 | 0.1− | 0.6+ | 2006 08 19 | 699 | 0.4+ | 1.0+ | 2006 09 20 | 704 | 0.1− | 0.9− |
| 2002 05 11 | 704 | 0.0 | 0.1− | 2006 08 19 | 699 | (0.3− | 1.6+) | 2006 09 20 | 704 | 0.4− | 0.5− |
| 2002 05 11 | 704 | 0.4− | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.6− |
| 2002 05 11 | 704 | 0.7+ | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 1.0− |
| 2003 11 20 | 704 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.8− |
| 2003 11 20 | 704 | 0.1− | 1.2+ | 2006 08 28 | 699 | 0.8− | 1.0+ | 2006 09 26 | G96 | 0.4− | 0.5− |
| 2003 11 20 | 704 | 0.2− | 0.3− | 2006 08 28 | 699 | 0.5+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2003 11 20 | 704 | 0.5− | 0.7+ | 2006 08 28 | 703 | 0.6+ | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 2003 11 24 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.6+ | 0.5− |
| 2003 11 24 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 1.2− |
| 2003 11 24 | 691 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.1− | 0.4− | | | | |

**(141630)∗ 2002 JY$_{48}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.59847 | | (2000.0) | | | |
| $n$ | 0.28545001 | $\omega$ | 353.80667 | | −0.40619548 | +0.91137842 |
| $a$ | 2.2844554 | $\Omega$ | 252.21164 | | −0.83536647 | −0.39976135 |
| $e$ | 0.1181648 | $i$ | 3.99218 | | −0.37036211 | −0.09787872 |
| $P$ | 3.45 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.1− | 0.9− | 2002 06 08 | 704 | 0.7+ | 0.3+ | 2006 08 24 | 704 | 0.4+ | 0.8− |
| 1999 07 13 | 704 | 0.1+ | 0.2+ | 2002 06 08 | 704 | 0.5+ | 0.9+ | 2006 08 27 | 699 | 0.8− | 0.9+ |
| 1999 07 13 | 704 | 0.6− | 0.7− | 2002 06 08 | 704 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.6+ | 0.6− |
| 1999 07 13 | 704 | 0.8+ | 0.7+ | 2002 06 08 | 704 | 1.2+ | 1.1+ | 2006 08 27 | 699 | 0.3− | 1.1+ |
| 2002 05 08 | 699 | 0.8− | 0.1− | 2003 09 20 | 599 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.3− | 0.0 |
| 2002 05 08 | 699 | 0.2+ | 0.7+ | 2003 09 20 | 599 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.6− | 0.1− |
| 2002 05 08 | 699 | 0.0 | 0.3− | 2003 09 20 | 599 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.0 |
| 2002 05 08 | 699 | 0.6+ | 0.3+ | 2003 09 20 | 599 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.6− | 0.4− |
| 2002 05 09 | 704 | 0.4− | 0.4+ | 2003 10 19 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.6+ |
| 2002 05 09 | 704 | 0.1− | 0.6+ | 2003 10 19 | 691 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.3− | 0.2+ |
| 2002 05 09 | 704 | 0.7− | 0.4+ | 2003 10 19 | 691 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.3− | 0.3+ |
| 2002 05 09 | 704 | 0.5+ | 1.0+ | 2003 10 25 | 704 | 0.5− | 1.0+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2002 05 11 | 704 | 0.6− | 0.5− | 2003 10 25 | 704 | 0.1− | 1.3+ | 2006 08 30 | 704 | 0.6+ | 0.7+ |
| 2002 05 11 | 704 | 0.3+ | 0.7− | 2003 10 25 | 704 | 1.9− | 1.8+ | 2006 08 30 | 704 | 0.5+ | 1.0+ |
| 2002 05 11 | 704 | 0.4+ | 0.7− | 2005 03 10 | 703 | 0.6− | 0.1− | 2006 08 30 | 704 | 0.1− | 1.2+ |
| 2002 05 11 | 704 | 0.3+ | 1.2− | 2005 03 10 | 703 | 0.4− | 0.1− | 2006 08 30 | 704 | 1.4+ | 0.7− |
| 2002 05 11 | 704 | 0.1+ | 0.9− | 2005 03 10 | 703 | 0.4− | 0.2+ | 2006 08 30 | 704 | 1.4+ | 0.2+ |
| 2002 05 13 | 704 | 0.5− | 0.7− | 2005 03 10 | 703 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 1.3+ | 0.5− |
| 2002 05 13 | 704 | 0.7− | 0.5− | 2005 03 11 | 699 | 0.8+ | 0.2+ | 2006 08 30 | 704 | 0.9+ | 0.3+ |
| 2002 05 13 | 704 | 0.9− | 0.9− | 2005 03 11 | 699 | 0.4+ | 0.9+ | 2006 09 11 | 703 | 0.4+ | 0.4− |
| 2002 05 13 | 704 | 0.3− | 1.1− | 2005 03 11 | 699 | 0.1+ | 1.2+ | 2006 09 11 | 703 | 0.0 | 0.2− |
| 2002 05 13 | 704 | 0.8− | 1.0− | 2005 03 11 | 699 | 0.4+ | 0.1− | 2006 09 11 | 703 | 0.3− | 0.9− |
| 2002 05 15 | 608 | 1.3+ | 0.6− | 2005 03 17 | 703 | 0.3− | 0.6+ | 2006 09 11 | 703 | 1.1− | 0.2− |
| 2002 05 15 | 608 | 1.3+ | 0.2− | 2005 03 17 | 703 | 0.1+ | 1.6+ | 2006 09 18 | 703 | 0.5− | 0.0 |
| 2002 05 15 | 608 | 1.2+ | 1.1− | 2005 03 17 | 703 | 1.4+ | 1.2+ | 2006 09 18 | 703 | 0.8− | 0.2+ |
| 2002 05 18 | 644 | 0.3+ | 0.3+ | 2005 03 17 | 703 | 0.7+ | 1.0+ | 2006 09 18 | 703 | 0.6− | 0.3− |
| 2002 05 18 | 644 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 1.0− | 0.5+ |
| 2002 05 18 | 644 | 0.2+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.2− |
| 2002 05 21 | 704 | 0.2− | 1.4+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.6− |
| 2002 05 21 | 704 | 0.5− | 0.8+ | 2006 08 21 | 644 | 0.3− | 0.2− | 2006 09 18 | 704 | 0.3+ | 0.2+ |
| 2002 05 21 | 704 | 0.4− | 1.0+ | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2002 05 21 | 704 | 0.6− | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2002 06 02 | 699 | 0.5− | 0.8+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2002 06 02 | 699 | 0.8− | 0.3− | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2002 06 02 | 699 | 0.1− | 1.1+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2002 06 02 | 699 | 0.7+ | 1.3+ | 2006 08 24 | 704 | 0.4− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2002 06 04 | 644 | 0.3+ | 0.4+ | 2006 08 24 | 704 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.4+ | 0.2+ |
| 2002 06 04 | 644 | 0.0 | 0.5+ | 2006 08 24 | 704 | 0.3+ | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 06 04 | 644 | 0.4+ | 0.5+ | 2006 08 24 | 704 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.5+ | 0.4+ |

**(141631)∗ 2002 JL$_{49}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.45647 | | (2000.0) | | | |
| $n$ | 0.28614270 | $\omega$ | 250.49939 | | −0.20437019 | +0.97884992 |
| $a$ | 2.2807671 | $\Omega$ | 7.72558 | | −0.87032709 | −0.17736836 |
| $e$ | 0.1383594 | $i$ | 3.94770 | | −0.44806650 | −0.10194750 |
| $P$ | 3.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.6+ | 0.2+ | 2005 02 03 | 704 | (1.8+ | 0.8+) | 2005 03 16 | G96 | 0.3− | 0.1− |
| 2002 05 09 | 704 | 0.0 | 0.8+ | 2005 02 03 | 704 | 1.0+ | 0.7+ | 2005 03 16 | G96 | 0.5− | 0.0 |
| 2002 05 09 | 704 | 0.2+ | 0.5+ | 2005 02 03 | 704 | (1.7+ | 0.7−) | 2006 08 17 | 644 | 0.1− | 0.3+ |
| 2002 05 09 | 704 | 0.3+ | 1.1+ | 2005 02 09 | 691 | 0.3+ | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.3+ |
| 2002 05 09 | 704 | 0.6+ | 1.0+ | 2005 02 09 | 699 | 0.9− | 1.2+ | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 2002 05 10 | 644 | 0.3+ | 1.1+ | 2005 02 09 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.4− | 0.1+ |
| 2002 05 10 | 644 | 0.2− | 0.5+ | 2005 02 09 | 699 | 1.0+ | 0.5+ | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 2002 05 10 | 644 | 0.5+ | 1.2+ | 2005 02 09 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.7− | 0.5+ |
| 2002 05 10 | 644 | 0.1− | 0.7+ | 2005 02 09 | 699 | 0.3− | 0.1+ | 2006 08 18 | F84 | 1.5+ | 0.8− |
| 2002 05 10 | 644 | 0.5+ | 0.9+ | 2005 02 09 | 699 | 0.0 | 0.7+ | 2006 08 18 | F84 | 0.3− | 0.6− |
| 2002 05 10 | 644 | 0.0 | 0.6+ | 2005 02 09 | 704 | 0.5+ | 0.1+ | 2006 08 18 | F84 | 0.2− | 1.0− |
| 2002 05 11 | 704 | 0.2− | 0.5+ | 2005 02 09 | 704 | 0.6+ | 0.9+ | 2006 08 21 | 644 | 0.0 | 0.1+ |
| 2002 05 11 | 704 | 0.0 | 1.1+ | 2005 02 09 | 704 | 0.2+ | 0.5+ | 2006 08 21 | 644 | 0.2+ | 0.2+ |
| 2002 05 11 | 704 | 0.3− | 0.4+ | 2005 02 09 | 704 | 0.8+ | 0.3+ | 2006 08 21 | 644 | 0.3− | 0.1− |
| 2002 05 11 | 704 | 0.1− | 0.6+ | 2005 02 09 | 704 | 0.6+ | 0.9+ | 2006 08 23 | 704 | 0.8− | 0.1− |
| 2002 05 17 | 704 | 0.3+ | 0.3+ | 2005 03 02 | 703 | 0.9− | 0.9− | 2006 08 23 | 704 | (1.5− | 0.8−) |
| 2002 05 17 | 704 | 1.0+ | 0.2+ | 2005 03 02 | 703 | 0.7− | 0.8− | 2006 08 23 | 704 | 1.0− | 0.8+ |
| 2002 05 17 | 704 | 0.5+ | 0.4+ | 2005 03 02 | 703 | 1.3− | 0.6+ | 2006 08 23 | 704 | 0.0 | 0.3+ |
| 2002 05 17 | 704 | 0.0 | 0.6− | 2005 03 02 | 703 | 0.5− | 0.6− | 2006 08 23 | 704 | 0.2− | 0.2− |
| 2002 05 17 | 704 | 1.0− | 0.8+ | 2005 03 04 | 704 | (0.6− | 1.5+) | 2006 08 28 | 703 | 0.2− | 0.6+ |
| 2002 06 04 | 644 | 0.1+ | 0.1+ | 2005 03 04 | 704 | 1.1+ | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.0 |
| 2002 06 04 | 644 | 0.2+ | 0.4+ | 2005 03 04 | 704 | 1.3+ | 1.1+ | 2006 08 28 | 703 | 0.7− | 0.1− |
| 2002 06 04 | 644 | 0.2− | 0.9− | 2005 03 04 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 1.0− | 0.6+ |
| 2002 06 04 | 644 | 0.2+ | 0.3+ | 2005 03 07 | 704 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.6− | 1.5+ |
| 2002 06 04 | 644 | 0.3+ | 0.9− | 2005 03 07 | 704 | 1.1+ | 0.7− | 2006 08 30 | 699 | 0.1+ | 0.4+ |
| 2002 06 04 | 644 | 0.1− | 0.8− | 2005 03 07 | 704 | 0.8+ | 0.5− | 2006 08 30 | 699 | 0.0 | 0.6+ |
| 2002 06 13 | 644 | 0.4− | 0.6− | 2005 03 07 | 704 | 1.3+ | 0.5− | 2006 08 30 | 699 | 0.0 | 0.4− |
| 2002 06 13 | 644 | 0.2+ | 0.4− | 2005 03 07 | 704 | 0.0 | 1.0− | 2006 09 18 | 699 | 0.6+ | 0.6+ |
| 2002 06 13 | 644 | 0.2− | 0.5− | 2005 03 08 | 699 | (0.6+ | 2.0+) | 2006 09 18 | 699 | 0.4− | 0.7+ |
| 2003 10 22 | 691 | 0.0 | 0.2+ | 2005 03 08 | 699 | (1.2+ | 2.4+) | 2006 09 18 | 699 | 0.5+ | 0.1− |
| 2003 10 22 | 691 | 0.2+ | 0.0 | 2005 03 08 | 699 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.5+ | 1.0+ |
| 2003 10 22 | 691 | 0.2− | 0.2+ | 2005 03 08 | 699 | (0.3− | 1.6+) | 2006 09 20 | 704 | 0.9− | 0.8+ |
| 2003 10 23 | 699 | 0.5− | 0.8+ | 2005 03 08 | 704 | (0.5+ | 2.5+) | 2006 09 20 | 704 | 0.5+ | 0.4+ |
| 2003 10 23 | 699 | 0.3+ | 0.4− | 2005 03 08 | 704 | 0.2− | 1.1+ | 2006 09 25 | 699 | 0.5− | 0.8+ |
| 2003 10 23 | 699 | 0.3− | 0.7+ | 2005 03 08 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 2003 10 23 | 699 | 0.2+ | 0.5+ | 2005 03 08 | 704 | 1.1+ | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 704 | 0.3− | 1.1+ | 2005 03 08 | 704 | (1.5+ | 1.0+) | 2006 09 25 | 699 | 0.4+ | 0.2+ | | |
| 2003 10 24 | 704 | (1.6+ | 1.0+) | 2005 03 09 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.2+ | 0.4− | | |
| 2003 10 24 | 704 | 0.7+ | 0.2+ | 2005 03 09 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | | |
| 2003 10 24 | 704 | 0.4+ | 0.8+ | 2005 03 09 | 704 | 0.5− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.1+ | | |
| 2003 10 24 | 704 | 0.1− | 1.2+ | 2005 03 09 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.3+ | | |
| 2003 10 25 | 704 | 0.8− | 1.0+ | 2005 03 09 | 704 | 0.0 | 0.7− | 2006 09 30 | G96 | 0.0 | 0.3+ | | |
| 2003 10 25 | 704 | 0.8− | 0.0 | 2005 03 12 | 704 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.7+ | | |
| 2003 10 25 | 704 | 0.4+ | 0.4+ | 2005 03 12 | 704 | 0.5− | 0.8+ | 2006 09 30 | G96 | 0.3− | 0.2+ | | |
| 2003 10 25 | 704 | 0.3− | 0.2+ | 2005 03 12 | 704 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.2− | 0.0 | | |
| 2003 10 25 | 704 | 0.1− | 0.1+ | 2005 03 12 | 704 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.5+ | | |
| 2003 11 24 | 704 | 1.1− | 0.1− | 2005 03 12 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.8+ | | |
| 2003 11 24 | 704 | 1.2− | 0.2+ | 2005 03 16 | 703 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.6+ | | |
| 2003 11 24 | 704 | 0.5+ | 1.2+ | 2005 03 16 | 703 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2003 11 24 | 704 | 0.7− | 0.2− | 2005 03 16 | 703 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.7− | 0.3− | | |
| 2003 11 30 | 691 | 0.0 | 0.2− | 2005 03 16 | 703 | 0.9− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 2003 11 30 | 691 | 0.1+ | 0.1+ | 2005 03 16 | G96 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2003 11 30 | 691 | 0.1+ | 0.2− | 2005 03 16 | G96 | 0.5− | 0.2+ | | | | | | |

**(141632)∗ 2002 JT$_{49}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.39648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28947030 | $\omega$ | 11.67483 | | −0.06881811 | +0.99680575 | |
| $a$ | 2.2632544 | $\Omega$ | 254.38897 | | −0.91866058 | −0.07915835 | |
| $e$ | 0.1271622 | $i$ | 2.41162 | | −0.38900746 | +0.01059456 | |
| $P$ | 3.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.9+ | 1.1− | 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.7+ | 1.1− | | |
| 2002 05 09 | 704 | 0.6− | 0.3− | 2003 11 20 | 691 | 0.2− | 0.0 | 2006 09 12 | 703 | 1.0− | 0.8− | | |
| 2002 05 09 | 704 | 0.5+ | 0.4− | 2005 03 03 | 703 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.4− | 1.1− | | |
| 2002 05 09 | 644 | 0.1+ | 0.2+ | 2005 03 03 | 703 | 0.4− | 0.0 | 2006 09 12 | 703 | (2.1− | 0.5−) | | |
| 2002 05 09 | 644 | 0.2+ | 0.2+ | 2005 03 03 | 703 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.3+ | | |
| 2002 05 09 | 644 | 0.2+ | 0.2+ | 2005 03 03 | 703 | 0.1+ | 0.7+ | 2006 09 14 | 644 | 0.4− | 0.4+ | | |
| 2002 05 11 | 291 | 0.2+ | 0.2+ | 2005 03 08 | 699 | 1.4+ | 0.2− | 2006 09 14 | 644 | 0.3− | 0.1+ | | |
| 2002 05 11 | 291 | 0.1+ | 0.2+ | 2005 03 08 | 699 | 0.2+ | 0.8− | 2006 09 16 | 699 | 0.6− | 1.1− | | |
| 2002 05 11 | 291 | 0.0 | 0.2+ | 2005 03 08 | 699 | 1.1+ | 0.3+ | 2006 09 16 | 699 | 0.1− | 0.5+ | | |
| 2002 05 11 | 704 | 0.1− | 0.4− | 2005 03 08 | 699 | 1.2+ | 0.1− | 2006 09 16 | 699 | 0.9+ | 0.1+ | | |
| 2002 05 11 | 704 | 0.2+ | 0.3− | 2005 03 09 | 699 | 0.1+ | 1.3− | 2006 09 18 | 704 | 0.3+ | 0.3+ | | |
| 2002 05 11 | 704 | 0.1− | 0.2− | 2005 03 09 | 699 | 0.1+ | 1.2− | 2006 09 18 | 704 | 0.4− | 0.8+ | | |
| 2002 05 11 | 704 | 0.2− | 0.3− | 2005 03 09 | 699 | 0.6+ | 1.2+ | 2006 09 18 | 704 | 0.2+ | 0.2+ | | |
| 2002 05 11 | 704 | 0.2− | 0.0 | 2005 03 09 | 699 | 0.4+ | 0.8− | 2006 09 18 | 704 | 0.3+ | 0.7− | | |
| 2002 05 12 | 291 | 0.2− | 0.0 | 2005 03 10 | 703 | (2.1+ | 0.1−) | 2006 09 18 | 704 | 0.6+ | 0.4+ | | |
| 2002 05 12 | 291 | 0.3− | 0.1+ | 2005 03 10 | 703 | 0.7− | 0.4− | 2006 09 19 | 703 | 0.1− | 1.0− | | |
| 2002 05 12 | 291 | 0.3− | 0.1+ | 2005 03 10 | 703 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.2+ | 0.1− | | |
| 2002 05 13 | 704 | 0.2− | 0.4+ | 2005 03 10 | 703 | 0.4− | 1.0+ | 2006 09 19 | 703 | 0.1− | 0.4− | | |
| 2002 05 13 | 704 | 0.1+ | 0.7+ | 2005 03 17 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.6− | | |
| 2002 05 13 | 704 | 0.1+ | 0.8+ | 2005 03 17 | G96 | 0.0 | 0.0 | 2006 09 19 | 699 | 1.1− | 0.5− | | |
| 2002 05 13 | 704 | 0.2+ | 1.0+ | 2005 03 17 | G96 | 0.0 | 0.2+ | 2006 09 19 | 703 | 1.2− | 1.4− | | |
| 2002 05 13 | 704 | 0.2+ | 0.4+ | 2005 03 17 | G96 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.4+ | | |
| 2002 05 14 | 704 | (1.6+ | 1.0+) | 2005 03 17 | 703 | 1.1− | 0.0 | 2006 09 25 | 704 | (0.1− | 1.7+) | | |
| 2002 05 14 | 704 | (1.6+ | 1.2−) | 2005 03 17 | 703 | 0.6− | 0.2+ | 2006 09 25 | 704 | 0.5+ | 0.5+ | | |
| 2002 05 14 | 704 | (2.0+ | 0.7−) | 2005 03 17 | 703 | 0.2− | 0.6+ | 2006 09 25 | 704 | 1.4+ | 0.9− | | |
| 2002 05 16 | 608 | 0.3+ | 0.6− | 2005 03 17 | 703 | 1.5− | 1.4+ | 2006 09 29 | 704 | 0.2+ | 0.4− | | |
| 2002 05 16 | 608 | 0.0 | 1.0− | 2005 03 30 | 703 | 0.3+ | 0.9− | 2006 09 29 | 704 | 0.3− | 0.6− | | |
| 2002 05 16 | 608 | 0.1− | 0.3− | 2005 03 30 | 703 | 0.9− | 1.0− | 2006 09 29 | 704 | 0.9+ | 0.8+ | | |
| 2002 06 08 | 704 | (2.4+ | 0.3−) | 2005 03 30 | 703 | 0.0 | 0.5− | 2006 09 29 | 704 | 0.0 | 0.7− | | |
| 2002 06 08 | 704 | 1.0+ | 0.2− | 2005 03 30 | 703 | 0.2+ | 0.2− | 2006 09 30 | 704 | 0.2− | 0.5+ | | |
| 2002 06 08 | 704 | (1.8+ | 0.1−) | 2006 08 27 | 699 | 0.9− | 0.0 | 2006 09 30 | 704 | 0.6+ | 1.0+ | | |
| 2002 06 09 | 704 | 0.5+ | 1.1− | 2006 08 27 | 699 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.9+ | 0.3+ | | |
| 2002 06 09 | 704 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.4− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2002 06 09 | 704 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.5− | 2006 10 10 | 644 | 0.3+ | 0.2+ | | |
| 2003 10 19 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 1.1+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2003 10 19 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.3+ | | |
| 2003 10 19 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2003 10 29 | 704 | (1.8− | 1.4+) | 2006 08 28 | 703 | 0.6− | 0.5+ | 2006 10 21 | 644 | 0.5+ | 0.1− | | |
| 2003 10 29 | 704 | (1.9− | 3.0+) | 2006 08 30 | 704 | 0.3− | 1.2+ | 2006 11 14 | G96 | 0.2− | 0.2+ | | |
| 2003 10 29 | 704 | 0.8+ | 0.8+ | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1− | 0.1− | | |
| 2003 10 29 | 704 | 0.8+ | 0.0 | 2006 08 30 | 704 | (1.1− | 1.7+) | 2006 11 14 | G96 | 0.1− | 0.1− | | |
| 2003 11 20 | 691 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− | | |

**(141633)∗ 2002 JQ$_{50}$ = 2005 GV$_{83}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75343)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.31205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31252387 | $\omega$ | 56.95972 | | +0.53342373 | +0.84552597 | |
| $a$ | 2.1505387 | $\Omega$ | 245.29439 | | −0.78436729 | +0.48413347 | |
| $e$ | 0.1305362 | $i$ | 1.47245 | | −0.31658661 | +0.22516796 | |
| $P$ | 3.15 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | (0.4− | 2.5−) | 2005 04 03 | 644 | 0.2+ | 0.6+ | 2006 11 09 | 691 | 0.0 | 0.1+ | | |
| 2002 05 09 | 704 | (1.7− | 0.9−) | 2005 04 04 | 691 | 0.5+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.4+ | | |
| 2002 05 09 | 704 | 1.3− | 1.2− | 2005 04 04 | 691 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.3+ | 0.1+ | | |
| 2002 05 10 | 291 | 0.1− | 0.0 | 2005 04 04 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.1− | 0.3+ | | |
| 2002 05 10 | 291 | 0.0 | 0.1+ | 2005 04 11 | 699 | 1.3− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1+ | | |
| 2002 05 10 | 291 | 0.0 | 0.1+ | 2005 04 11 | 699 | 0.2+ | 0.6− | 2006 11 13 | 691 | 0.3+ | 0.7− | | |
| 2002 05 11 | 704 | 0.2+ | 0.4+ | 2005 04 11 | 699 | 0.6+ | 0.8− | 2006 11 17 | 703 | (1.4+ | 2.8−) | | |
| 2002 05 11 | 704 | 0.2+ | 0.2+ | 2005 04 11 | 699 | 0.9+ | 1.3− | 2006 11 17 | 703 | 1.0+ | 0.4+ | | |
| 2002 05 11 | 704 | 0.3+ | 0.4+ | 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.3+ | | |
| 2002 05 11 | 704 | 0.2+ | 0.8+ | 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.4− | | |
| 2002 05 11 | 704 | 0.2+ | 0.4+ | 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.2+ | | |
| 2002 05 13 | 704 | 0.3− | 1.1− | 2005 04 18 | 703 | 1.3− | 0.7− | 2006 11 18 | 691 | 0.3− | 0.0 | | |
| 2002 05 13 | 704 | 1.3+ | 1.3− | 2005 04 18 | 703 | 1.3− | 0.8− | 2006 11 18 | 691 | 0.1− | 0.1+ | | |
| 2002 05 13 | 704 | 0.8− | 0.7− | 2005 04 18 | 703 | (0.8− | 1.7−) | 2006 11 18 | 704 | 0.3− | 0.6+ | | |
| 2002 05 13 | 704 | 0.2− | 0.6− | 2005 04 18 | 703 | 0.9− | 1.0− | 2006 11 18 | 704 | 0.2− | 0.2+ | | |
| 2002 05 13 | 704 | 0.0 | 0.1+ | 2005 05 12 | G96 | 0.5− | 0.0 | 2006 11 18 | 704 | (1.4− | 2.3+) | | |
| 2002 06 03 | 644 | 1.1+ | 0.4+ | 2005 05 12 | G96 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.6+ | | |
| 2002 06 03 | 644 | 0.7+ | 0.5+ | 2005 05 12 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.2+ | | |
| 2002 06 03 | 644 | 0.7+ | 0.5+ | 2005 05 12 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.0 | | |
| 2002 06 08 | 704 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.5+ | | |
| 2002 06 08 | 704 | 0.4− | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.3+ | | |
| 2002 06 08 | 704 | 0.1− | 1.3+ | 2006 10 17 | G96 | 0.3− | 0.2+ | 2006 11 22 | 704 | 1.3+ | 0.6− | | |
| 2002 06 08 | 704 | 0.1+ | 1.1+ | 2006 10 17 | G96 | 0.4+ | 0.0 | 2006 11 22 | 704 | 1.0− | 0.9+ | | |
| 2002 06 08 | 704 | 0.9− | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 0.6+ | | |
| 2003 12 17 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.3+ | | |
| 2003 12 17 | 691 | 0.0 | 0.2+ | 2006 10 17 | 691 | 1.1− | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.1− | | |
| 2003 12 17 | 691 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2005 03 11 | G96 | 0.5− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.5− | 0.4+ | | |
| 2005 03 11 | G96 | 0.7− | 0.1− | 2006 10 21 | 691 | 0.4+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2005 03 11 | G96 | 0.3− | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 11 27 | 703 | 0.8− | 0.5− | | |
| 2005 03 11 | G96 | 0.5+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.6+ | 1.2+ | | |
| 2005 04 03 | 644 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.1− | 0.2+ | | |
| 2005 04 03 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.0 | | | | | | |

**(141634)∗ 2002 JC$_{51}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.86207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24144347 | $\omega$ | 290.20041 | | +0.17038482 | +0.98530684 | |
| $a$ | 2.5542245 | $\Omega$ | 349.58871 | | −0.87791988 | +0.14635110 | |
| $e$ | 0.2021082 | $i$ | 3.74665 | | −0.44746587 | +0.08804422 | |
| $P$ | 4.08 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.8− | 0.1− | 2002 06 06 | 704 | 0.4+ | 0.1− | 2006 05 05 | 699 | 0.0 | 0.3+ | | |
| 2002 05 09 | 704 | 0.3− | 0.3− | 2002 06 13 | 644 | 0.3+ | 1.1+ | 2006 05 05 | 699 | 0.1+ | 0.1+ | | |
| 2002 05 09 | 704 | 1.1+ | 0.1− | 2002 06 13 | 644 | 0.3− | 0.2− | 2006 05 16 | E12 | 0.4− | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.3− | 0.8+ | 2002 06 13 | 644 | 0.4+ | 0.8+ | 2006 05 16 | E12 | 0.2+ | 0.4+ |
| 2002 05 10 | 644 | 0.1+ | 0.1+ | 2003 10 23 | 691 | 0.5− | 0.5+ | 2006 05 16 | E12 | 0.4+ | 0.5+ |
| 2002 05 10 | 644 | 0.0 | 0.2+ | 2003 10 23 | 691 | 0.1− | 0.4+ | 2006 05 16 | E12 | 0.5− | 0.0 |
| 2002 05 10 | 644 | 0.1+ | 0.3+ | 2003 10 23 | 691 | 0.6− | 0.4+ | 2006 05 18 | 644 | 0.2+ | 0.3+ |
| 2002 05 11 | 704 | 0.5− | 0.5− | 2003 10 25 | 704 | 1.1+ | 0.1+ | 2006 05 18 | 644 | 0.1+ | 0.4+ |
| 2002 05 11 | 704 | 0.2+ | 0.0 | 2003 10 25 | 704 | 0.5+ | 1.0+ | 2006 05 18 | 644 | 0.2+ | 0.1+ |
| 2002 05 11 | 704 | 0.2− | 0.2− | 2003 10 25 | 704 | 1.1+ | 1.4+ | 2006 05 24 | 699 | (0.9+ | 2.4+) |
| 2002 05 17 | 704 | 0.5− | 0.6− | 2003 11 18 | 644 | 0.3− | 0.1+ | 2006 05 24 | 699 | (1.9+ | 2.2+) |
| 2002 05 17 | 704 | 0.2+ | 0.0 | 2003 11 18 | 644 | 0.2− | 0.4+ | 2006 05 24 | 699 | (2.8+ | 1.0+) |
| 2002 05 17 | 704 | 0.5+ | 0.3+ | 2003 11 18 | 644 | 0.2− | 0.7+ | 2006 05 24 | 699 | 0.1− | 1.1+ |
| 2002 05 17 | 704 | 0.0 | 0.6+ | 2005 01 17 | 691 | 0.1− | 0.4+ | 2006 05 26 | 644 | 0.3+ | 0.1− |
| 2002 05 17 | 704 | 0.2+ | 0.1+ | 2005 01 17 | 691 | 0.2+ | 0.4+ | 2006 05 26 | 644 | 0.3+ | 0.2+ |
| 2002 06 05 | 644 | 0.2+ | 0.9+ | 2005 01 17 | 691 | 0.0 | 0.2+ | 2006 05 26 | 644 | 0.4+ | 0.4+ |
| 2002 06 05 | 644 | 0.3+ | 1.1+ | 2006 04 24 | 428 | 0.1+ | 0.1− | 2006 05 26 | 644 | 0.2+ | 0.5− |
| 2002 06 05 | 644 | 0.5+ | 1.5+ | 2006 04 24 | 428 | 0.0 | 0.6− | 2006 05 26 | 644 | 0.1− | 0.2+ |
| 2002 06 06 | 704 | 0.0 | 0.3+ | 2006 05 05 | 699 | 0.5+ | 0.2− | 2006 05 26 | 644 | 0.1+ | 0.2+ |
| 2002 06 06 | 704 | 0.6+ | 0.4+ | 2006 05 05 | 699 | 0.9− | 0.5− | | | | |

**(141635)∗ 2002 JV$_{51}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.88728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31288295 | $\omega$ | 22.41651 | | +0.29346039 | +0.95583223 | |
| $a$ | 2.1488930 | $\Omega$ | 264.65178 | | −0.87955137 | +0.26328114 | |
| $e$ | 0.1005662 | $i$ | 0.93816 | | −0.37452687 | +0.13064378 | |
| $P$ | 3.15 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.5+ | 0.1+ | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2002 05 09 | 704 | 0.7+ | 0.1+ | 2005 03 11 | G96 | 0.6− | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2002 05 09 | 704 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.6− | 0.4− | 2006 10 16 | 691 | 0.2− | 0.4+ |
| 2002 05 09 | 704 | 0.1+ | 0.0 | 2005 03 11 | G96 | 0.2− | 0.5− | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2002 05 09 | 704 | 0.2− | 0.4− | 2005 04 04 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2002 05 09 | 644 | 0.1+ | 0.5+ | 2005 04 04 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2002 05 09 | 644 | 0.3+ | 0.5+ | 2005 04 04 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2002 05 09 | 644 | 0.7+ | 1.0− | 2005 04 04 | 704 | 1.3+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2002 05 11 | 704 | 0.3− | 0.5+ | 2005 04 04 | 704 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.3− | 0.0 |
| 2002 05 11 | 704 | 0.6− | 0.1+ | 2005 04 04 | 704 | 1.4+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 05 11 | 704 | 0.4− | 0.5+ | 2005 04 05 | 699 | 1.1+ | 0.4− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2002 05 11 | 704 | 0.5− | 0.7+ | 2005 04 05 | 699 | 1.1+ | 0.4+ | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2002 05 11 | 704 | 0.8− | 0.2+ | 2005 04 05 | 699 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 05 13 | 704 | 0.7+ | 0.6+ | 2005 04 05 | 699 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 05 13 | 704 | 1.0+ | 0.7+ | 2005 04 05 | G96 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2002 05 13 | 704 | 0.4+ | 0.5+ | 2005 04 05 | G96 | 0.3− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.3+ |
| 2002 05 13 | 704 | 1.4+ | 1.1+ | 2005 04 05 | G96 | 0.3− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.4+ |
| 2002 05 13 | 704 | 0.6+ | 0.6+ | 2005 04 05 | G96 | 0.5− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.5+ |
| 2002 05 28 | 608 | 0.3− | 0.8− | 2005 04 05 | 644 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.4− |
| 2002 05 28 | 608 | 0.5− | 1.4− | 2005 04 05 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2002 05 28 | 608 | 0.8− | 0.8− | 2005 04 05 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.9+ |
| 2002 06 12 | 644 | 0.2− | 1.1+ | 2005 04 12 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2002 06 12 | 644 | 0.3− | 1.1+ | 2005 04 12 | 704 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2002 06 12 | 644 | 0.3− | 1.1+ | 2005 04 12 | 704 | 0.0 | 0.8+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2003 11 19 | 691 | 0.5− | 0.1+ | 2005 04 12 | 704 | 1.1+ | 1.1+ | 2006 11 13 | G96 | 0.6+ | 0.4− |
| 2003 11 19 | 691 | 0.3− | 0.1− | 2005 04 17 | 691 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.2+ |
| 2003 11 19 | 691 | 0.0 | 0.2− | 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | (4.1+ | 1.5+) |
| 2003 11 21 | 704 | 0.1+ | 0.9+ | 2005 04 17 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2003 11 21 | 704 | 1.1− | 0.1+ | 2005 05 12 | 699 | 0.6+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 0.9− | 0.1+ | 2005 05 12 | 699 | 0.5− | 1.1+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2003 12 01 | 691 | 0.0 | 0.2+ | 2005 05 12 | 699 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2003 12 01 | 291 | 0.2− | 0.0 | 2005 05 12 | 699 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2003 12 01 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2003 12 01 | 291 | 0.8+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.4− | 0.7+ |
| 2003 12 01 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.1+ | 2006 11 27 | 703 | 1.1− | 0.5+ |
| 2003 12 01 | 291 | 0.5+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 27 | 703 | 1.4− | 0.6− |
| 2003 12 14 | 691 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 27 | 703 | 0.5− | 0.4+ |
| 2003 12 14 | 691 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.6+ | | | | |
| 2003 12 14 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.3+ | | | | |

**(141636)∗ 2002 JF$_{52}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.66176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29486501 | $\omega$ | 16.67152 | | −0.04269771 | +0.99284570 | |
| $a$ | 2.2355646 | $\Omega$ | 250.98990 | | −0.92957857 | −0.08038178 | |
| $e$ | 0.1612759 | $i$ | 6.77333 | | −0.36614284 | +0.08829599 | |
| $P$ | 3.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.3+ | 0.7− | 2002 06 12 | 704 | 0.0 | 0.2+ | 2005 04 01 | 699 | 1.3+ | 0.8+ |
| 1999 07 13 | 704 | 0.3− | 0.1− | 2002 06 12 | 644 | 0.4− | 0.7+ | 2005 04 01 | 699 | 0.8+ | 1.3+ |
| 1999 07 13 | 704 | 0.5+ | 0.6+ | 2002 06 12 | 704 | 0.0 | 0.5+ | 2005 04 05 | 703 | 0.2+ | 0.5+ |
| 1999 07 13 | 704 | 0.0 | 0.8− | 2002 06 12 | 644 | 0.8+ | 0.4− | 2005 04 05 | 703 | (1.8− | 0.4−) |
| 1999 07 13 | 704 | 0.7+ | 0.5+ | 2002 06 16 | 644 | 0.2+ | 0.2+ | 2005 04 05 | 703 | 1.3− | 0.5− |
| 1999 09 09 | 704 | 0.8+ | 0.9− | 2002 06 16 | 644 | 0.3+ | 0.1+ | 2005 04 05 | 703 | 1.0− | 0.1+ |
| 1999 09 09 | 704 | 0.6+ | 0.4+ | 2002 06 16 | 644 | 0.2+ | 0.3+ | 2005 04 11 | 699 | 0.4− | 0.9− |
| 1999 09 09 | 704 | 1.3+ | 1.5− | 2002 06 25 | 644 | 0.4− | 0.5+ | 2005 04 11 | 699 | 1.3+ | 0.4+ |
| 1999 09 09 | 704 | 0.8+ | 1.0+ | 2002 06 25 | 644 | 0.5− | 0.3+ | 2005 04 11 | 699 | 0.4+ | 0.5+ |
| 2002 05 09 | 704 | 0.6− | 0.4+ | 2002 06 25 | 644 | 0.1+ | 0.3+ | 2005 04 11 | 699 | 0.4+ | 0.8+ |
| 2002 05 09 | 704 | 0.4− | 0.9+ | 2002 07 05 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.1− | 0.4+ |
| 2002 05 09 | 704 | 0.0 | 0.4+ | 2002 07 05 | 704 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.3+ | 0.1+ |
| 2002 05 09 | 704 | 0.2− | 0.5+ | 2002 07 05 | 704 | 0.9− | 0.3− | 2006 09 16 | 703 | 0.2+ | 0.8+ |
| 2002 05 11 | 704 | 0.3− | 1.2+ | 2003 11 18 | 691 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.1+ |
| 2002 05 11 | 704 | 0.1− | 1.0+ | 2003 11 18 | 691 | 0.3− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.4− |
| 2002 05 11 | 704 | 0.5+ | 1.4+ | 2003 11 18 | 691 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.4+ |
| 2002 05 11 | 704 | 0.2+ | 1.1+ | 2003 11 20 | 704 | 0.5− | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.9+ |
| 2002 05 13 | 704 | 0.2+ | 0.2+ | 2003 11 20 | 704 | 0.6− | 0.1+ | 2006 09 20 | 699 | 0.6− | 1.2+ |
| 2002 05 13 | 704 | 0.1− | 0.2+ | 2003 11 20 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.6+ |
| 2002 05 13 | 704 | 0.3+ | 0.8+ | 2003 11 20 | 704 | 0.9− | 0.0 | 2006 09 28 | 703 | 0.4− | 0.1− |
| 2002 05 13 | 704 | 0.3+ | 0.8+ | 2003 11 30 | 691 | 0.3− | 0.3+ | 2006 09 28 | 703 | 1.0+ | 0.1+ |
| 2002 05 13 | 704 | 0.3+ | 0.7+ | 2003 11 30 | 691 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.7− | 0.2− |
| 2002 05 17 | 704 | 0.5+ | 0.1+ | 2003 11 30 | 691 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.0 |
| 2002 05 17 | 704 | 0.1+ | 1.0+ | 2005 03 07 | 704 | 0.4+ | 0.3− | 2006 09 28 | 703 | 0.3− | 0.3+ |
| 2002 05 17 | 704 | 0.2− | 0.1+ | 2005 03 07 | 704 | 0.5+ | 1.1− | 2006 09 28 | 703 | 0.2− | 0.2+ |
| 2002 05 17 | 704 | 0.1− | 0.6+ | 2005 03 07 | 704 | 0.5+ | 0.3− | 2006 09 28 | 703 | 0.4+ | 0.1+ |
| 2002 06 07 | 608 | 0.1+ | 0.4− | 2005 03 07 | 704 | 0.1+ | 0.9− | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 2002 06 07 | 608 | 0.5+ | 0.3− | 2005 03 07 | 704 | 0.9+ | 1.0− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 06 07 | 608 | 0.3+ | 0.1+ | 2005 03 08 | 703 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2002 06 08 | 704 | 0.5− | 0.7− | 2005 03 08 | 703 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 06 08 | 704 | 1.1− | 0.3− | 2005 03 08 | 703 | 0.5+ | 1.0− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 06 08 | 704 | 0.9− | 1.1− | 2005 03 08 | 703 | 0.6− | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 06 08 | 291 | 0.1+ | 0.1− | 2005 03 13 | 699 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.4+ |
| 2002 06 08 | 704 | 0.8− | 1.1− | 2005 03 13 | 703 | 1.1+ | 0.0 | 2006 10 17 | 703 | 0.5− | 1.1− |
| 2002 06 08 | 704 | 0.9− | 0.8− | 2005 03 13 | 699 | (1.1+ | 1.9+) | 2006 10 17 | 703 | 1.2− | 0.2− |
| 2002 06 08 | 291 | 0.1− | 0.0 | 2005 03 13 | 703 | 0.1+ | 0.4− | 2006 10 17 | 703 | (0.9− | 1.9+) |
| 2002 06 08 | 291 | 0.0 | 0.1− | 2005 03 13 | 703 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 06 09 | 704 | 0.5+ | 1.4− | 2005 03 13 | 699 | 0.2− | 1.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2002 06 09 | 704 | 0.8− | 0.1+ | 2005 03 13 | 703 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2002 06 09 | 704 | 0.7− | 0.4− | 2005 03 13 | 699 | (2.6+ | 0.5−) | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2002 06 09 | 704 | 0.3− | 0.5− | 2005 03 13 | 703 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 06 10 | 644 | 0.2+ | 0.8+ | 2005 03 13 | 703 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 06 10 | 644 | 0.2+ | 0.8+ | 2005 03 13 | 703 | 0.2+ | 1.0− | 2006 11 14 | 703 | 0.5+ | 0.1+ |
| 2002 06 10 | 644 | 0.3+ | 0.8+ | 2005 03 13 | 703 | 0.4− | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.1+ |
| 2002 06 12 | 644 | 0.0 | 1.1+ | 2005 04 01 | 699 | 0.6+ | 1.3+ | 2006 11 14 | 703 | 0.3+ | 0.4+ |
| 2002 06 12 | 704 | 0.2− | 0.2− | 2005 04 01 | 699 | (2.2+ | 1.2+) | 2006 11 14 | 703 | 0.4− | 1.5+ |

**(141637)∗ 2002 JJ$_{53}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 98.56273 | | (2000.0) | | | |
| $n$ | 0.30028373 | $\omega$ | 241.89250 | | −0.38308315 | +0.92368936 |
| $a$ | 2.2085887 | $\Omega$ | 5.59542 | | −0.82143800 | −0.33732685 |
| $e$ | 0.0926490 | $i$ | 3.95677 | | −0.42247713 | −0.18168260 |
| $P$ | 3.28 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 704 | 0.5− | 0.1− | 2005 03 08 | 699 | 0.1+ | 0.5− | 2005 05 13 | G96 | 0.6− | 0.2+ |
| 2002 04 09 | 704 | 0.5− | 0.4+ | 2005 03 08 | 699 | 0.4+ | 0.2− | 2005 05 13 | G96 | 0.6− | 0.3+ |
| 2002 04 09 | 704 | 1.0− | 0.6+ | 2005 03 08 | 699 | 0.5+ | 0.3+ | 2005 05 13 | G96 | 0.5− | 0.3− |
| 2002 04 09 | 704 | 0.1− | 0.1+ | 2005 03 08 | 699 | 0.2+ | 0.3+ | 2005 05 13 | G96 | 0.3− | 0.3+ |
| 2002 04 14 | 704 | 0.3+ | 0.3+ | 2005 03 09 | 699 | 0.7+ | 0.4+ | 2006 08 24 | 644 | 0.5− | 0.0 |
| 2002 04 14 | 704 | 0.5+ | 0.0 | 2005 03 09 | 699 | 1.0− | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2002 04 14 | 704 | 0.1− | 0.8+ | 2005 03 09 | 699 | 0.0 | 0.3− | 2006 08 24 | 644 | 0.2− | 0.3− |
| 2002 04 14 | 704 | 0.2− | 0.2− | 2005 03 09 | 704 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.4+ | 0.4+ |
| 2002 04 14 | 704 | 0.1− | 0.6− | 2005 03 09 | 704 | 0.3+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2002 05 09 | 644 | 0.1+ | 0.3+ | 2005 03 09 | 699 | 0.7+ | 0.3− | 2006 08 27 | 691 | 0.0 | 0.3+ |
| 2002 05 09 | 704 | 1.4+ | 1.0− | 2005 03 09 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 699 | 0.8− | 0.4+ |
| 2002 05 09 | 704 | (2.0+ | 0.9+) | 2005 03 09 | 704 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.5+ |
| 2002 05 09 | 644 | 0.2+ | 0.4+ | 2005 03 09 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 699 | 0.5− | 0.5− |
| 2002 05 09 | 704 | (1.9+ | 1.2+) | 2005 03 14 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.7− | 0.4− |
| 2002 05 09 | 644 | 0.0 | 0.4+ | 2005 03 14 | 704 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.3+ |
| 2002 05 10 | 644 | 0.0 | 0.4+ | 2005 03 14 | 704 | 1.4− | 0.2+ | 2006 09 19 | 703 | (0.6+ | 1.8+) |
| 2002 05 10 | 644 | 0.2+ | 0.2+ | 2005 03 14 | 704 | 0.2+ | 0.5− | 2006 09 19 | 699 | 0.3+ | 0.3+ |
| 2002 05 10 | 644 | 0.3− | 0.5+ | 2005 03 14 | 704 | 1.1− | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.8+ |
| 2002 05 11 | 704 | 0.5+ | 0.1− | 2005 03 17 | 704 | 1.1+ | 0.0 | 2006 09 19 | 703 | 1.1− | 1.3+ |
| 2002 05 11 | 704 | 0.7+ | 1.4+ | 2005 03 17 | 704 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.6+ | 0.8+ |
| 2002 05 11 | 704 | (0.2+ | 2.0+) | 2005 03 17 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.9+ |
| 2002 05 17 | 644 | 0.2+ | 0.0 | 2005 03 17 | 704 | 0.9+ | 0.2− | 2006 09 19 | 699 | 0.8− | 0.2− |
| 2002 05 17 | 644 | 0.4− | 0.4− | 2005 03 17 | 704 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2002 05 17 | 644 | 0.1− | 0.0 | 2005 03 30 | 703 | 0.4− | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2002 05 18 | 644 | 0.3+ | 0.5+ | 2005 03 30 | 703 | 0.3− | 1.1− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 05 18 | 644 | 0.4+ | 0.7+ | 2005 03 30 | 703 | (1.0+ | 2.4−) | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2002 05 18 | 644 | 0.6+ | 0.6+ | 2005 03 30 | 703 | (2.1− | 0.9+) | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2003 09 28 | 691 | 0.2− | 0.4+ | 2005 04 09 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2003 09 28 | 691 | 0.1− | 0.4+ | 2005 04 09 | 691 | 0.5+ | 1.0− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2003 09 28 | 691 | 0.2− | 0.4+ | 2005 04 09 | 691 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2003 10 25 | 704 | 0.4− | 0.6+ | 2005 05 04 | G96 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2003 10 25 | 704 | 0.4+ | 0.6+ | 2005 05 04 | G96 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2003 10 25 | 704 | 1.0+ | 0.4+ | 2005 05 04 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2003 10 25 | 704 | 1.2− | 1.2− | 2005 05 04 | G96 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.6− | 0.0 |
| 2003 10 25 | 704 | 0.0 | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.4− | 0.0 |
| 2005 03 03 | 691 | 0.0 | 0.6+ | 2005 05 10 | G96 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2005 03 03 | 691 | 0.1+ | 0.6+ | 2005 05 10 | G96 | 0.5− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2005 03 03 | 691 | 0.4+ | 0.5+ | 2005 05 10 | G96 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.3− |

**(141638)∗ 2002 JA$_{55}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.03532 | | (2000.0) | | | |
| $n$ | 0.28777861 | $\omega$ | 46.68202 | | +0.18258930 | +0.97859761 |
| $a$ | 2.2721154 | $\Omega$ | 234.07532 | | −0.93257869 | +0.14180916 |
| $e$ | 0.1163974 | $i$ | 6.73071 | | −0.31138102 | +0.14912036 |
| $P$ | 3.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.9+ | 0.9+ | 2003 10 19 | 691 | 0.0 | 0.2+ | 2003 11 24 | 699 | 1.0+ | 0.4+ |
| 2002 04 14 | 704 | 1.1+ | 1.0+ | 2003 10 19 | 691 | 0.1− | 0.2+ | 2003 11 24 | 699 | 0.2− | 0.3+ |
| 2002 04 14 | 704 | 1.3+ | 1.4+ | 2003 10 19 | 691 | 0.1− | 0.1+ | 2003 11 24 | 699 | 0.5− | 0.7+ |
| 2002 04 14 | 704 | 1.0+ | 1.3+ | 2003 10 22 | 704 | 0.9+ | 0.2− | 2003 12 01 | 704 | 1.3+ | 0.5− |
| 2002 04 14 | 704 | (0.9+ | 1.6+) | 2003 10 22 | 704 | 0.1− | 1.3+ | 2003 12 01 | 704 | 0.1+ | 0.5+ |
| 2002 05 09 | 704 | 0.5− | 0.2+ | 2003 10 22 | 704 | 0.4+ | 1.1+ | 2003 12 01 | 704 | (0.2+ | 2.2+) |
| 2002 05 09 | 704 | 0.0 | 0.9+ | 2003 10 22 | 704 | 0.7+ | 0.4+ | 2003 12 01 | 704 | 0.9+ | 0.7+ |
| 2002 05 09 | 704 | 0.0 | 0.7+ | 2003 10 23 | 699 | 1.2+ | 0.6− | 2005 03 17 | 703 | 0.6+ | 1.3+ |
| 2002 05 09 | 704 | (0.1+ | 1.5+) | 2003 10 23 | 699 | 0.6− | 0.3− | 2005 03 17 | 703 | 0.0 | 1.0+ |
| 2002 05 09 | 704 | (0.1+ | 1.7+) | 2003 10 23 | 699 | 0.8+ | 0.8+ | 2005 03 17 | 703 | (0.2− | 2.7+) |
| 2002 05 09 | 644 | 0.0 | 0.3+ | 2003 10 23 | 699 | 0.9+ | 0.1+ | 2005 03 17 | 703 | (0.4+ | 2.0+) |
| 2002 05 09 | 644 | 0.3− | 0.4+ | 2003 10 24 | 704 | 0.2+ | 0.0 | 2006 06 21 | 703 | 0.0 | 0.0 |
| 2002 05 09 | 644 | 0.1− | 0.4+ | 2003 10 24 | 704 | 0.4+ | 0.1+ | 2006 06 21 | 703 | 0.2+ | 0.3− |
| 2002 05 11 | 704 | 0.2+ | 0.5+ | 2003 10 24 | 704 | 0.1+ | 0.1+ | 2006 06 21 | 703 | 1.0+ | 0.5− |
| 2002 05 11 | 704 | 0.1− | 0.6+ | 2003 10 24 | 704 | 0.8+ | 0.4+ | 2006 06 21 | 703 | 0.3− | 0.9− |
| 2002 05 11 | 704 | 0.2− | 0.5+ | 2003 10 24 | 704 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.3− | 0.1+ |
| 2002 05 11 | 704 | 0.2+ | 1.0+ | 2003 10 29 | 704 | 0.2+ | 0.0 | 2006 08 18 | 644 | 0.2− | 0.1+ |
| 2002 05 11 | 704 | 0.1+ | 1.1+ | 2003 10 29 | 703 | (2.1− | 0.7+) | 2006 08 18 | 644 | 0.0 | 0.0 |
| 2002 05 13 | 704 | 0.2− | 0.2+ | 2003 10 29 | 704 | 0.0 | 0.8+ | 2006 08 30 | 699 | 1.2− | 0.4+ |
| 2002 05 13 | 704 | 0.0 | 0.9+ | 2003 10 29 | 703 | (2.6− | 2.0+) | 2006 08 30 | 699 | 0.6− | 0.2− |
| 2002 05 13 | 704 | 0.2− | 0.4+ | 2003 10 29 | 703 | 0.7− | 0.9+ | 2006 08 30 | 699 | 0.6+ | 0.0 |
| 2002 05 13 | 704 | 0.5− | 0.3− | 2003 10 29 | 704 | 0.6+ | 0.0 | 2006 08 30 | 699 | 0.3+ | 0.5− |
| 2002 05 13 | 704 | 0.2− | 0.3+ | 2003 10 29 | 703 | (3.3− | 4.4+) | 2006 09 11 | 703 | 0.6− | 0.2− |
| 2002 05 18 | 644 | 0.2+ | 0.5+ | 2003 10 29 | 704 | 0.2− | 0.2+ | 2006 09 11 | 703 | 0.2− | 1.2− |
| 2002 05 18 | 644 | 0.1+ | 0.6+ | 2003 10 29 | 704 | 0.0 | 0.7+ | 2006 09 11 | 703 | 0.7+ | 0.3− |
| 2002 05 18 | 644 | (1.0+ | 1.8−) | 2003 11 16 | 691 | 0.1− | 0.3+ | 2006 09 11 | 703 | 0.1+ | 0.7+ |
| 2002 05 21 | 704 | 0.1− | 1.2+ | 2003 11 16 | 691 | 0.2− | 0.6+ | 2006 09 20 | 699 | 0.5− | 0.2+ |
| 2002 05 21 | 704 | 0.4+ | 0.9+ | 2003 11 16 | 691 | 0.5− | 0.6+ | 2006 09 20 | 699 | 0.2− | 0.2+ |
| 2002 05 21 | 704 | 0.1+ | 0.8+ | 2003 11 19 | 699 | 0.1− | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.5+ |
| 2002 05 21 | 704 | 0.6− | 0.5+ | 2003 11 19 | 699 | 0.5− | 0.3+ | 2006 09 30 | 699 | 0.8− | 0.5+ |
| 2002 06 02 | 699 | 0.2+ | 0.3− | 2003 11 19 | 699 | 0.4− | 1.2+ | 2006 09 30 | 699 | 0.5+ | 0.2+ |
| 2002 06 02 | 699 | 0.4− | 0.3+ | 2003 11 19 | 699 | 0.8− | 0.9− | 2006 09 30 | 699 | 1.1+ | 0.2+ |
| 2002 06 02 | 699 | 0.9+ | 0.5+ | 2003 11 21 | 291 | 0.2− | 0.2+ | 2006 09 30 | 699 | 1.1+ | 0.3+ |
| 2002 06 02 | 699 | 0.6+ | 0.6+ | 2003 11 21 | 291 | 0.8− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2002 06 06 | 704 | 0.5− | 0.3+ | 2003 11 21 | 704 | 0.4− | 1.2+ | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2002 06 06 | 704 | 0.6+ | 1.4+ | 2003 11 21 | 704 | 1.1− | 1.2+ | 2006 10 10 | 644 | 0.3+ | 0.5+ |
| 2002 06 06 | 704 | 0.7+ | 1.4+ | 2003 11 21 | 291 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.8− | 1.8+ |
| 2002 06 09 | 608 | 0.1− | 0.1− | 2003 11 21 | 704 | 0.0 | 1.1+ | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2002 06 09 | 608 | 0.1+ | 0.4− | 2003 11 21 | 704 | (0.2− | 1.8+) | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2002 06 09 | 608 | 0.2− | 0.2− | 2003 11 24 | 699 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.8+ | 0.8+ |

**(141639)∗ 2002 JB$_{55}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.12251 | | (2000.0) | | | |
| $n$ | 0.30399782 | $\omega$ | 209.96864 | | −0.65934868 | +0.75179057 |
| $a$ | 2.1905630 | $\Omega$ | 18.78530 | | −0.68452243 | −0.59566677 |
| $e$ | 0.0895616 | $i$ | 1.49143 | | −0.31094752 | −0.28282862 |
| $P$ | 3.24 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 13 | 691 | 0.4− | 0.1− | 2003 11 28 | 691 | 0.1− | 0.2+ | 2005 04 03 | 246 | 1.1+ | 0.7+ |
| 2002 04 13 | 691 | 0.4− | 0.2− | 2005 03 03 | 704 | 1.1+ | 0.6+ | 2005 04 04 | 703 | 0.1+ | 0.1− |
| 2002 04 13 | 691 | 0.2− | 0.0 | 2005 03 03 | 703 | 1.1− | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.1− |
| 2002 04 14 | 704 | 0.5+ | 0.4+ | 2005 03 03 | 704 | 0.4+ | 0.0 | 2005 04 04 | 703 | 0.7− | 0.4+ |
| 2002 04 14 | 704 | 0.0 | 0.6+ | 2005 03 03 | 703 | 0.2+ | 1.0− | 2005 04 04 | G96 | 0.4− | 0.5+ |
| 2002 04 14 | 704 | 0.4+ | 0.1− | 2005 03 03 | 704 | 0.2− | 0.4− | 2005 04 04 | 703 | 0.6− | 0.8+ |
| 2002 04 14 | 704 | 0.0 | 0.3+ | 2005 03 03 | 703 | 0.1− | 0.4− | 2005 04 04 | G96 | 0.1− | 0.3+ |
| 2002 04 14 | 704 | 0.9+ | 0.1+ | 2005 03 03 | 703 | 0.2− | 0.8+ | 2005 04 04 | 704 | 0.2+ | 0.6− |
| 2002 04 22 | 644 | 0.2+ | 0.1+ | 2005 03 08 | 699 | 0.1+ | 1.4− | 2005 04 04 | G96 | 0.3− | 0.1− |
| 2002 04 22 | 644 | 0.2− | 0.1+ | 2005 03 08 | 699 | 0.1+ | 1.3+ | 2005 04 04 | 703 | 0.2+ | 0.1− |
| 2002 04 22 | 644 | 0.1+ | 0.3+ | 2005 03 08 | 699 | 0.1+ | 0.1− | 2005 04 04 | 704 | 0.1− | 0.4+ |
| 2002 05 09 | 704 | 0.2+ | 0.1+ | 2005 03 08 | 704 | 1.1+ | 0.2+ | 2005 04 04 | 704 | 0.2+ | 0.4+ |
| 2002 05 09 | 704 | 0.5− | 1.3+ | 2005 03 08 | 704 | 1.0+ | 0.4+ | 2005 04 04 | 704 | 0.9+ | 0.2− |
| 2002 05 09 | 704 | (1.7+ | 1.2+) | 2005 03 08 | 704 | 0.8+ | 1.2+ | 2005 04 09 | 699 | 0.9+ | 1.1+ |
| 2002 05 09 | 704 | 0.0 | 0.8+ | 2005 03 08 | 704 | (1.9+ | 0.0 ) | 2005 04 09 | 699 | 0.7− | 0.8+ |
| 2002 05 09 | 704 | 0.0 | 0.4+ | 2005 03 08 | 704 | 0.5+ | 1.3− | 2005 04 09 | 699 | 0.9+ | 0.1+ |
| 2002 05 09 | 644 | 0.3+ | 0.2+ | 2005 03 11 | 691 | 0.0 | 0.4+ | 2005 04 09 | 699 | (1.5+ | 0.1+) |
| 2002 05 09 | 644 | 0.3+ | 0.3+ | 2005 03 11 | 691 | 0.4+ | 0.2− | 2005 05 13 | G96 | 0.1− | 0.1+ |
| 2002 05 09 | 644 | 0.0 | 0.3+ | 2005 03 11 | 691 | 0.2+ | 0.4+ | 2005 05 13 | G96 | 0.4− | 0.2− |
| 2002 05 11 | 704 | 0.5+ | 0.3+ | 2005 03 13 | 683 | 0.4− | 0.1− | 2005 05 13 | G96 | 0.4− | 0.0 |
| 2002 05 11 | 704 | 0.1+ | 0.3+ | 2005 03 13 | 683 | 0.0 | 0.1− | 2005 05 13 | G96 | 0.7− | 0.3− |
| 2002 05 11 | 704 | 0.4+ | 0.4+ | 2005 03 13 | 683 | 0.6− | 0.0 | 2006 08 22 | 644 | 0.3− | 0.2+ |
| 2002 05 11 | 704 | 0.6+ | 0.7+ | 2005 03 14 | 704 | 0.2+ | 0.9+ | 2006 08 22 | 644 | 0.6− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 1.1+ | 0.1+ | 2005 03 14 | 704 | 0.1− | 0.9+ | 2006 08 22 | 644 | 0.8− | 0.2+ |
| 2002 05 13 | 704 | 0.2− | 0.3+ | 2005 03 14 | 704 | 0.2− | 0.9+ | 2006 09 12 | 703 | 0.7+ | 1.3+ |
| 2002 05 13 | 704 | 0.3+ | 0.9+ | 2005 03 14 | 704 | 0.1− | 0.4+ | 2006 09 12 | 703 | (0.2+ | 3.4+) |
| 2002 05 13 | 704 | 0.4− | 0.3− | 2005 03 14 | 704 | 0.0 | 0.7+ | 2006 09 12 | 703 | 0.9+ | 0.4− |
| 2002 05 13 | 704 | 0.3+ | 0.4+ | 2005 03 16 | 683 | 0.2+ | 0.4− | 2006 09 12 | 703 | (0.6− | 2.0+) |
| 2002 05 13 | 704 | 0.7+ | 0.2+ | 2005 03 16 | 683 | 0.8− | 0.8− | 2006 09 18 | 699 | 0.1+ | 1.1+ |
| 2002 05 18 | 644 | 0.3+ | 0.5+ | 2005 03 16 | 683 | 0.5+ | 0.6− | 2006 09 18 | 699 | 1.0− | 1.4+ |
| 2002 05 18 | 644 | 0.6+ | 0.6+ | 2005 03 17 | 683 | (0.4− | 2.1−) | 2006 09 18 | 699 | 0.8− | 1.2+ |
| 2002 05 18 | 644 | 0.6+ | 0.4+ | 2005 03 17 | 704 | 0.8− | 0.7+ | 2006 09 18 | 699 | 0.8− | 1.1+ |
| 2003 09 28 | 691 | 0.0 | 0.2+ | 2005 03 17 | 683 | (0.3+ | 1.7−) | 2006 09 20 | 644 | 0.3− | 0.6+ |
| 2003 09 28 | 691 | 0.1− | 0.6+ | 2005 03 17 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2003 09 28 | 691 | 0.1− | 0.2+ | 2005 03 17 | 683 | 0.8− | 0.7− | 2006 09 20 | 644 | 0.5− | 0.4+ |
| 2003 10 19 | 691 | 0.2+ | 0.0 | 2005 03 17 | 704 | 0.3+ | 1.0+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2003 10 19 | 691 | 0.0 | 0.3+ | 2005 03 17 | 704 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2003 10 19 | 691 | 0.1+ | 0.2+ | 2005 04 01 | 699 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2003 10 24 | 704 | 0.9− | 0.5+ | 2005 04 01 | 699 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2003 10 24 | 704 | 0.4+ | 0.3+ | 2005 04 01 | 699 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.8+ | 0.9+ |
| 2003 10 24 | 704 | 0.9− | 0.3− | 2005 04 01 | 699 | 0.5− | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2003 10 25 | 291 | 0.1+ | 0.3+ | 2005 04 01 | 213 | 0.7+ | 0.3− | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2003 10 25 | 291 | 0.0 | 0.4+ | 2005 04 01 | 213 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2003 10 25 | 291 | 0.0 | 0.4+ | 2005 04 01 | A13 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.6− | 1.2+ |
| 2003 10 26 | 703 | 0.7+ | 0.1− | 2005 04 01 | A13 | 0.2− | 0.2+ | 2006 10 16 | 703 | (0.3− | 1.9−) |
| 2003 10 26 | 703 | 0.5− | 0.9− | 2005 04 01 | 213 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.9− |
| 2003 10 26 | 703 | (0.6− | 2.0−) | 2005 04 01 | A13 | 0.6− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3+ |
| 2003 10 26 | 703 | 1.0− | 0.7+ | 2005 04 01 | A13 | 0.8− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2003 10 28 | 704 | 0.1− | 0.4− | 2005 04 02 | A13 | 1.0+ | 0.1− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2003 10 28 | 704 | 0.9− | 0.3+ | 2005 04 02 | A13 | 1.0− | 0.5− | 2006 10 16 | G96 | 0.5+ | 0.3+ |
| 2003 10 28 | 704 | 0.4+ | 0.0 | 2005 04 03 | 246 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2003 11 18 | 291 | 0.0 | 0.4+ | 2005 04 03 | 246 | 0.0 | 0.7+ | 2006 11 21 | G96 | 0.6− | 0.4− |
| 2003 11 18 | 291 | 0.6− | 0.2+ | 2005 04 03 | 246 | 0.4+ | 0.6+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2003 11 18 | 291 | 0.4− | 0.0 | 2005 04 03 | 246 | 1.4+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2003 11 28 | 691 | 0.1− | 0.1+ | 2005 04 03 | 246 | 0.3+ | 0.2+ | | | | |
| 2003 11 28 | 691 | 0.2+ | 0.1+ | 2005 04 03 | 246 | 0.8+ | 1.0+ | | | | |

**(141640)∗ 2002 JL$_{55}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.59520 | | (2000.0) | | | |
| $n$ | 0.28963931 | $\omega$ | 261.05058 | | +0.67935225 | +0.72902448 |
| $a$ | 2.2623739 | $\Omega$ | 52.08675 | | −0.62467862 | +0.63438658 |
| $e$ | 0.1696155 | $i$ | 6.08924 | | −0.38504174 | +0.25705443 |
| $P$ | 3.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.0 | 0.8+ | 2003 11 21 | 704 | 0.2− | 0.2− | 2006 09 12 | 246 | 0.2− | 0.3− |
| 1999 07 14 | 704 | 0.1+ | 0.1− | 2003 11 21 | 704 | (2.0− | 0.5+) | 2006 09 12 | 246 | 1.0− | 0.4− |
| 1999 07 14 | 704 | 0.2+ | 0.3+ | 2003 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.7+ | 0.2+ |
| 1999 07 14 | 704 | 0.7− | 0.4+ | 2003 11 21 | 704 | (0.5+ | 1.9+) | 2006 09 16 | 704 | 0.4+ | 0.8+ |
| 1999 07 14 | 704 | 0.6− | 0.9+ | 2003 11 21 | 704 | (1.6− | 0.4+) | 2006 09 16 | 704 | 0.6+ | 0.6+ |
| 2002 05 08 | 699 | 1.1+ | 0.1− | 2003 11 21 | 704 | 0.7− | 1.0+ | 2006 09 16 | 704 | 1.1+ | 0.2+ |
| 2002 05 08 | 699 | 0.0 | 0.5+ | 2003 11 21 | 704 | 0.1− | 1.0− | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 2002 05 08 | 699 | 1.0+ | 0.0 | 2003 11 24 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.0 |
| 2002 05 08 | 699 | 0.1+ | 0.3+ | 2003 11 24 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.7+ | 0.1+ |
| 2002 05 09 | 704 | 0.6− | 0.7+ | 2003 11 24 | 691 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.2+ |
| 2002 05 09 | 704 | 0.4− | 1.1+ | 2003 12 22 | 704 | (2.6+ | 0.1+) | 2006 09 18 | 699 | 0.1− | 0.8+ |
| 2002 05 09 | 704 | 0.2− | 0.8+ | 2003 12 22 | 704 | (1.1+ | 1.9+) | 2006 09 18 | 699 | 0.3+ | 0.7+ |
| 2002 05 09 | 704 | 0.1− | 0.3+ | 2003 12 22 | 704 | 1.2+ | 0.9+ | 2006 09 18 | 699 | 0.2+ | 0.6+ |
| 2002 05 09 | 704 | 0.3+ | 0.9+ | 2003 12 22 | 704 | 0.6+ | 1.1+ | 2006 09 18 | 699 | 0.4− | 0.5+ |
| 2002 05 09 | 644 | 0.1+ | 0.4+ | 2003 12 22 | 704 | 0.8+ | 1.2+ | 2006 09 26 | 704 | 0.2+ | 0.6+ |
| 2002 05 09 | 644 | 0.3+ | 0.4+ | 2003 12 25 | 691 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.3− | 0.9+ |
| 2002 05 09 | 644 | 0.2+ | 0.3+ | 2003 12 25 | 691 | 0.4− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.9+ |
| 2002 05 11 | 704 | 0.1+ | 0.4+ | 2003 12 25 | 691 | 0.5− | 0.5+ | 2006 09 26 | 704 | 0.2+ | 0.6− |
| 2002 05 11 | 704 | 0.3− | 0.0 | 2003 12 27 | 704 | (0.1− | 1.5+) | 2006 09 26 | 704 | 0.2+ | 0.7+ |
| 2002 05 11 | 704 | 0.4− | 0.5+ | 2003 12 27 | 704 | (0.6+ | 1.6+) | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2002 05 11 | 704 | 0.4− | 0.6− | 2003 12 27 | 704 | (1.7− | 0.2+) | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2002 05 11 | 704 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.5− | 1.2+ | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 2002 05 13 | 704 | (1.6+ | 0.1+) | 2005 03 09 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2002 05 13 | 704 | 1.3+ | 0.5+ | 2005 03 09 | 704 | 0.9+ | 0.7+ | 2006 09 30 | 704 | 0.3− | 0.2− |
| 2002 05 13 | 704 | 1.2+ | 0.1+ | 2005 03 09 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.9+ |
| 2002 05 13 | 704 | 0.5+ | 0.1+ | 2005 03 09 | 704 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.4+ |
| 2002 05 13 | 704 | 1.1+ | 0.5+ | 2006 08 28 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2002 05 18 | 644 | 0.5+ | 1.3+ | 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 09 30 | 704 | 0.5− | 0.4+ |
| 2002 05 18 | 644 | 0.3− | 1.4+ | 2006 08 28 | 699 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.9− | 0.6− |
| 2002 05 18 | 644 | 0.3+ | 1.0+ | 2006 08 28 | 699 | 0.8+ | 1.2+ | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2002 05 19 | 644 | 0.0 | 0.9+ | 2006 09 12 | 703 | 0.9+ | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2002 05 19 | 644 | 0.0 | 0.6+ | 2006 09 12 | 703 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 1.2− |
| 2002 05 19 | 644 | 0.0 | 0.8+ | 2006 09 12 | 703 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2002 06 08 | 704 | 0.6+ | 0.6+ | 2006 09 12 | 703 | (3.0− | 0.7+) | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2002 06 08 | 704 | 0.1+ | 0.6+ | 2006 09 12 | 246 | 1.3− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 06 08 | 704 | 0.4+ | 0.3+ | 2006 09 12 | 246 | 0.7− | 0.0 | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2002 06 08 | 704 | 0.1− | 0.7+ | 2006 09 12 | 246 | 0.8− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2003 10 29 | 704 | 0.1− | 0.3+ | 2006 09 12 | 246 | 0.9− | 0.5+ | 2006 10 22 | 703 | 0.4+ | 0.3− |
| 2003 10 29 | 704 | 0.2− | 0.4− | 2006 09 12 | 246 | 0.5− | 0.9− | 2006 10 22 | 703 | 0.2− | 0.9− |
| 2003 10 29 | 704 | 0.6− | 0.6+ | 2006 09 12 | 246 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 0.7− | 0.7+ | 2006 09 12 | 246 | 0.9− | 0.4− | 2006 11 17 | 704 | 0.2+ | 0.4− |
| 2003 11 21 | 704 | 0.4− | 0.4+ | 2006 09 12 | 246 | 0.8− | 0.8− | 2006 11 17 | 704 | 0.8+ | 0.1− |
| 2003 11 21 | 704 | (0.4+ | 1.8+) | 2006 09 12 | 246 | 0.2− | 0.3− | | | | |

**(141641)∗ 2002 JZ$_{55}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.60155 | | (2000.0) | | | |
| $n$ | 0.29655758 | $\omega$ | 240.18389 | | −0.03870526 | +0.99924476 |
| $a$ | 2.2270503 | $\Omega$ | 27.59854 | | −0.91421540 | −0.03402294 |
| $e$ | 0.1513439 | $i$ | 0.42503 | | −0.40337588 | −0.01877090 |
| $P$ | 3.32 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 20 | 291 | 0.5+ | 0.1− | 2002 06 04 | 644 | 0.5+ | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.3− |
| 2002 02 20 | 291 | 0.2− | 0.4− | 2002 06 04 | 644 | 0.4+ | 0.7+ | 2006 07 21 | G96 | 0.0 | 0.2+ |
| 2002 02 20 | 291 | 0.3+ | 0.1+ | 2003 10 18 | 691 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.1− | 0.2− |
| 2002 04 13 | 691 | 0.3+ | 0.1+ | 2003 10 18 | 691 | 0.2− | 0.4− | 2006 09 14 | 691 | 0.3− | 0.4+ |
| 2002 04 13 | 691 | 0.1− | 0.9− | 2003 10 18 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.2− | 0.5+ |
| 2002 04 13 | 691 | 0.0 | 0.1+ | 2003 11 15 | 691 | 0.4+ | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2002 05 06 | 699 | 0.3− | 0.5− | 2003 11 15 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2002 05 06 | 699 | 0.9+ | 0.7− | 2003 11 15 | 691 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2002 05 06 | 291 | 0.1− | 0.1+ | 2005 03 03 | 703 | 1.2+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.4+ |
| 2002 05 06 | 699 | 0.0 | 0.6+ | 2005 03 03 | 703 | 0.6− | 0.6− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2002 05 06 | 699 | 0.2+ | 0.3+ | 2005 03 03 | 703 | 0.1− | 0.8+ | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2002 05 06 | 291 | 0.1− | 0.1+ | 2005 03 03 | 703 | 0.7+ | 1.2+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2002 05 06 | 291 | 0.1− | 0.1+ | 2005 03 04 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2002 05 09 | 704 | 0.7− | 0.4− | 2005 03 04 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2002 05 09 | 704 | 0.1+ | 0.8+ | 2005 03 04 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 05 09 | 704 | 0.5+ | 0.7+ | 2005 03 04 | G96 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 05 09 | 704 | 0.0 | 0.7+ | 2005 03 04 | G96 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2002 05 09 | 704 | 0.0 | 0.6+ | 2005 03 04 | G96 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2002 05 09 | 644 | 0.3− | 0.5− | 2005 03 04 | G96 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.2+ |
| 2002 05 09 | 644 | 0.0 | 0.6− | 2005 03 08 | 699 | 1.3− | 0.7+ | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2002 05 09 | 644 | 0.1+ | 0.5− | 2005 03 08 | 699 | 0.2− | 1.4− | 2006 10 17 | G96 | 0.5− | 1.0+ |
| 2002 05 11 | 704 | 0.5− | 0.1+ | 2005 03 08 | 699 | 0.6+ | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2002 05 11 | 704 | 0.7− | 0.0 | 2005 03 09 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.5− | 1.2+ |
| 2002 05 11 | 704 | 0.0 | 0.4+ | 2005 03 09 | 699 | 0.7+ | 0.0 | 2006 10 17 | G96 | (1.7+ | 0.3−) |
| 2002 05 11 | 704 | 0.2− | 0.2+ | 2005 03 09 | 699 | 0.7− | 0.5− | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2002 05 11 | 704 | 0.3− | 0.6+ | 2005 03 09 | 699 | 0.1− | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.8− |
| 2002 05 13 | 704 | 0.4− | 0.7+ | 2005 04 04 | G96 | 0.4− | 0.1− | 2006 10 17 | 703 | (1.5− | 0.6−) |
| 2002 05 13 | 704 | 0.4+ | 0.5− | 2005 04 04 | G96 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.8+ | 1.4− |
| 2002 05 13 | 704 | 0.2+ | 0.3+ | 2005 04 04 | G96 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 05 13 | 704 | 0.6− | 0.9+ | 2005 04 04 | G96 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2002 05 16 | 608 | 0.1− | 0.8− | 2005 04 10 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2002 05 16 | 608 | 0.1− | 1.1− | 2005 04 10 | 691 | 0.4+ | 0.5+ | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2002 05 16 | 608 | 0.8+ | 0.6− | 2005 04 10 | 691 | 0.5+ | 0.2+ | | | | |
| 2002 06 04 | 644 | 0.0 | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.4− | | | | |

**(141642)∗ 2002 JK$_{56}$ = 2003 SO$_{278}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 53024)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** |
| $M$ | 131.59696 | | (2000.0) | | | |
| $n$ | 0.30458833 | $\omega$ | 334.78786 | | −0.78487496 | +0.61056631 |
| $a$ | 2.1877308 | $\Omega$ | 243.25492 | | −0.54657287 | −0.76254731 |
| $e$ | 0.0207006 | $i$ | 6.79994 | | −0.29194074 | −0.21384663 |
| $P$ | 3.24 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 704 | 1.4+ | 0.1+ | 2003 10 01 | 691 | 0.3− | 0.1+ | 2005 04 15 | 703 | 0.5+ | 0.5− |
| 2000 11 02 | 704 | 1.2+ | 0.2+ | 2003 10 01 | 691 | 0.4− | 0.2+ | 2005 04 15 | 703 | 0.3− | 0.5− |
| 2000 11 02 | 704 | 0.1− | 0.1− | 2003 10 01 | 691 | 0.2− | 0.2+ | 2005 04 15 | 703 | 0.4− | 0.9+ |
| 2002 05 09 | 704 | 0.0 | 0.4− | 2003 10 18 | 691 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.8+ |
| 2002 05 09 | 704 | 0.3+ | 0.4+ | 2003 10 18 | 691 | 0.2− | 0.0 | 2006 08 27 | 699 | 1.5+ | 0.5+ |
| 2002 05 09 | 704 | 0.4− | 0.6+ | 2003 10 18 | 691 | 0.1− | 0.0 | 2006 08 27 | 699 | 1.5+ | 0.7− |
| 2002 05 11 | 704 | 0.9+ | 0.1+ | 2003 10 20 | 644 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.6+ | 0.1+ |
| 2002 05 11 | 704 | 1.1+ | 0.5− | 2003 10 20 | 644 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.4− |
| 2002 05 11 | 704 | 0.7− | 0.1− | 2003 10 20 | 644 | 0.6− | 0.1− | 2006 09 14 | 703 | 0.9− | 0.8− |
| 2002 05 11 | 704 | 0.2− | 0.6+ | 2003 10 27 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 2002 05 11 | 704 | 0.5+ | 0.0 | 2003 10 27 | 691 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.2− |
| 2002 05 13 | 704 | 0.1− | 0.5+ | 2003 10 27 | 691 | 0.2− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.1+ |
| 2002 05 13 | 704 | 0.4− | 0.4+ | 2003 11 20 | 704 | 1.3+ | 1.3+ | 2006 09 16 | 644 | 0.6− | 0.1− |
| 2002 05 13 | 704 | 0.0 | 0.8+ | 2003 11 20 | 704 | 0.4+ | 0.0 | 2006 09 16 | 644 | 0.4− | 0.6− |
| 2002 05 13 | 704 | 0.1− | 0.6+ | 2003 11 20 | 704 | 0.8+ | 0.8− | 2006 09 18 | 703 | 0.0 | 0.7+ |
| 2002 05 13 | 704 | 0.1− | 0.4+ | 2003 11 20 | 704 | 1.4+ | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.0 |
| 2003 09 21 | 699 | 0.1+ | 0.6+ | 2005 03 11 | 699 | 0.8− | 0.4− | 2006 09 18 | 703 | 0.9+ | 1.1+ |
| 2003 09 21 | 699 | 0.5− | 0.6− | 2005 03 11 | 699 | 0.1− | 0.4− | 2006 09 18 | 703 | 0.3− | 0.8− |
| 2003 09 21 | 699 | 0.8− | 0.5+ | 2005 03 11 | 699 | 0.3− | 0.3+ | 2006 09 20 | 699 | 1.5+ | 0.9− |
| 2003 09 21 | 699 | 0.4+ | 0.3− | 2005 03 11 | 699 | 0.2+ | 0.7+ | 2006 09 20 | 699 | 0.4+ | 0.6+ |
| 2003 09 30 | 704 | 0.8+ | 0.2+ | 2005 04 03 | 644 | 0.5+ | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.1− |
| 2003 09 30 | 704 | 0.6− | 0.8+ | 2005 04 03 | 644 | 0.6+ | 0.8+ | 2006 09 20 | 699 | 0.6− | 1.0+ |
| 2003 09 30 | 704 | 0.9− | 0.4− | 2005 04 03 | 644 | 0.7+ | 1.0+ | | | | |
| 2003 09 30 | 704 | 0.5+ | 0.3+ | 2005 04 15 | 703 | 0.3+ | 1.7+ | | | | |

**(141643)∗ 2002 JU$_{56}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** |
| $M$ | 106.42884 | | (2000.0) | | | |
| $n$ | 0.30578612 | $\omega$ | 98.46379 | | −0.19685516 | +0.98040602 |
| $a$ | 2.1820140 | $\Omega$ | 160.17865 | | −0.90769520 | −0.17946356 |
| $e$ | 0.2044600 | $i$ | 1.21945 | | −0.37059069 | −0.08122106 |
| $P$ | 3.22 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 19 | 691 | 0.3− | 0.3− | 2002 05 11 | 704 | 0.9− | 0.8+ | 2005 05 10 | G96 | 0.2+ | 0.1− |
| 1993 09 19 | 691 | 0.0 | 0.4+ | 2002 05 11 | 704 | 0.6− | 1.2+ | 2005 05 10 | G96 | 0.6− | 0.1− |
| 1993 09 19 | 691 | 0.2+ | 0.3+ | 2002 05 11 | 704 | (0.5− | 1.8+) | 2005 05 10 | G96 | 0.3− | 0.1+ |
| 1999 07 16 | 704 | 0.3+ | 1.2+ | 2002 05 11 | 704 | (0.1− | 1.6+) | 2006 09 25 | G96 | 0.7+ | 0.2− |
| 1999 07 16 | 704 | 0.7− | 0.4+ | 2002 05 11 | 704 | 0.6+ | 1.3+ | 2006 09 25 | G96 | 0.6− | 0.2+ |
| 1999 07 16 | 704 | 0.2− | 0.5+ | 2002 05 15 | 608 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 1999 07 16 | 704 | 0.1+ | 0.4+ | 2002 05 15 | 608 | 0.3+ | 1.2− | 2006 09 25 | G96 | 0.0 | 1.1− |
| 1999 07 16 | 704 | 0.5− | 0.2+ | 2002 05 15 | 608 | 0.5+ | 1.0− | 2006 09 26 | G96 | 0.0 | 0.7+ |
| 2002 02 20 | 691 | 0.1− | 0.1− | 2003 11 21 | 695 | 0.7− | 0.0 | 2006 09 26 | G96 | 0.8+ | 0.3+ |
| 2002 02 20 | 691 | 0.1− | 0.1+ | 2003 11 21 | 695 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.4− | 0.7+ |
| 2002 02 20 | 691 | 0.3+ | 0.2− | 2005 03 04 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 04 08 | 291 | 0.2− | 0.2− | 2005 03 04 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2002 04 08 | 291 | 0.8− | 0.6+ | 2005 03 04 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2002 04 08 | 291 | 0.2− | 0.3+ | 2005 03 08 | 699 | 0.9+ | 0.5+ | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2002 04 17 | 704 | 0.6+ | 0.5+ | 2005 03 08 | 699 | 0.3+ | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2002 04 17 | 704 | 0.6+ | 0.1− | 2005 03 08 | 699 | 0.1+ | 1.3+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 04 17 | 704 | 1.0+ | 0.4+ | 2005 03 08 | 699 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.7+ | 0.9+ |
| 2002 05 08 | 699 | 0.8− | 0.0 | 2005 03 30 | 703 | 1.2− | 0.9− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2002 05 08 | 699 | 0.5− | 1.3+ | 2005 03 30 | 703 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2002 05 08 | 699 | 0.7+ | 0.2+ | 2005 03 30 | 703 | 1.0− | 0.8− | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2002 05 08 | 699 | 0.8+ | 0.5− | 2005 03 30 | 703 | 1.3+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.5+ |
| 2002 05 09 | 704 | 0.9+ | 0.3− | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2002 05 09 | 704 | 0.6+ | 0.2− | 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.3+ |
| 2002 05 09 | 704 | 0.7+ | 0.5− | 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.7− |
| 2002 05 09 | 704 | 0.7+ | 0.3− | 2005 05 10 | G96 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.0 |

**(141644)∗ 2002 JV$_{59}$ = 2005 GT$_{22}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75345)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** |
| $M$ | 77.41823 | | (2000.0) | | | |
| $n$ | 0.30111118 | $\omega$ | 257.63506 | | +0.34210102 | +0.93814565 |
| $a$ | 2.2045407 | $\Omega$ | 32.52816 | | −0.81894730 | +0.32552667 |
| $e$ | 0.1212295 | $i$ | 5.69747 | | −0.46075179 | +0.11796240 |
| $P$ | 3.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | (1.8− | 0.8+) | 2005 04 09 | 699 | 1.2+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 05 09 | 704 | 0.6− | 0.3+ | 2005 04 10 | G96 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 05 09 | 704 | 1.1− | 1.0− | 2005 04 10 | G96 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 05 11 | 704 | 0.0 | 0.3− | 2005 04 10 | G96 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2002 05 11 | 704 | 0.0 | 0.1− | 2005 04 10 | G96 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.5+ | 0.1+ |
| 2002 05 11 | 704 | 0.1+ | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2002 05 11 | 704 | 0.0 | 0.4− | 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.3+ |
| 2002 05 17 | 704 | 0.7+ | 1.3+ | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 2002 05 17 | 704 | 0.8+ | 0.1− | 2005 05 04 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.1+ |
| 2002 05 17 | 704 | 0.2+ | 0.2+ | 2005 05 04 | 644 | 0.0 | 0.3+ | 2006 10 16 | 683 | (1.6+ | 1.3+) |
| 2002 05 17 | 704 | 0.0 | 0.2− | 2005 05 04 | 644 | 0.3+ | 0.0 | 2006 10 16 | 683 | (0.3− | 1.6+) |
| 2002 05 17 | 704 | 0.0 | 1.1+ | 2005 05 06 | G96 | 0.0 | 0.1+ | 2006 10 16 | 683 | (2.1− | 1.1+) |
| 2002 06 08 | 704 | (0.5+ | 2.3+) | 2005 05 06 | G96 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 06 08 | 704 | 0.2+ | 0.2+ | 2005 05 06 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 06 08 | 704 | (0.4+ | 1.8+) | 2005 05 06 | G96 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2002 06 08 | 704 | (0.5− | 3.4+) | 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2003 12 18 | 691 | 0.2+ | 0.2− | 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | (2.3+ | 4.3−) |
| 2003 12 18 | 691 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.1− | 0.6− | 2006 10 21 | 703 | (1.9− | 0.5+) |
| 2005 03 18 | 703 | 0.1+ | 0.4− | 2006 08 30 | 699 | 0.7+ | 0.6+ | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2005 03 18 | 703 | 0.7− | 0.2− | 2006 08 30 | 699 | 0.1+ | 0.9+ | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2005 03 18 | 703 | 0.3+ | 0.4− | 2006 08 30 | 699 | (0.4− | 1.6+) | 2006 10 23 | 691 | 0.3− | 0.7+ |
| 2005 03 18 | 703 | 1.1− | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2005 04 05 | 699 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2005 04 05 | 699 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2005 04 05 | 699 | 1.3− | 0.5− | 2006 09 30 | 703 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2005 04 05 | 699 | 0.8− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.3− |
| 2005 04 09 | 699 | (1.9+ | 1.5−) | 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2005 04 09 | 699 | 0.8+ | 1.2+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.8− |
| 2005 04 09 | 699 | 0.5+ | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | | | | |

**(141645)∗ 2002 JW$_{59}$ = 1999 TN$_{295}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31686)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.90288 | | (2000.0) | | +0.55590812 | +0.82845603 |
| $n$ | 0.27903237 | $\omega$ | 264.61324 | | −0.71391704 | +0.51775758 |
| $a$ | 2.3193502 | $\Omega$ | 39.41119 | | −0.42578003 | +0.21351276 |
| $e$ | 0.1939248 | $i$ | 6.15041 | | | |
| $P$ | 3.53 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.6− | 0.9− | 2002 06 08 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.2− | 0.6+ |
| 1999 09 14 | 704 | 1.2− | 0.4+ | 2005 03 09 | 704 | 1.4+ | 0.9+ | 2006 09 22 | 704 | 1.4− | 0.5+ |
| 1999 09 14 | 704 | 0.2+ | 0.8− | 2005 03 09 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 704 | 0.5+ | 0.6+ |
| 1999 09 14 | 704 | 0.2+ | 0.1− | 2005 03 09 | 704 | (0.3+ | 2.2+) | 2006 09 26 | 704 | 0.3+ | 0.7− |
| 1999 10 01 | 703 | 0.6+ | 0.6+ | 2005 03 09 | 704 | 0.6+ | 1.4+ | 2006 09 26 | 704 | 0.3+ | 0.3+ |
| 1999 10 01 | 703 | 0.0 | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.5+ | 0.3− |
| 1999 10 01 | 703 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.3− | 2006 09 28 | 704 | 0.3+ | 0.0 |
| 1999 10 01 | 703 | 0.3− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.1− | 0.6+ |
| 1999 10 09 | 704 | 0.4− | 1.0+ | 2006 08 19 | 644 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.1− | 0.6+ |
| 1999 10 09 | 704 | 0.0 | 0.1+ | 2006 08 19 | 644 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.3− | 0.1+ |
| 1999 10 09 | 704 | 0.1+ | 0.1+ | 2006 08 19 | 644 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.1+ | 0.6− |
| 1999 10 09 | 704 | 0.3+ | 0.1− | 2006 08 22 | 644 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 1999 10 09 | 704 | 0.8+ | 0.0 | 2006 08 22 | 644 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2002 05 09 | 704 | 0.1+ | 1.4+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.7− |
| 2002 05 09 | 704 | 0.7+ | 0.7+ | 2006 08 28 | 699 | 0.4+ | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2002 05 09 | 704 | (2.3+ | 0.2+) | 2006 08 28 | 699 | 0.2− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2002 05 09 | 704 | (2.1+ | 0.3+) | 2006 08 28 | 699 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.4+ | 0.2− |
| 2002 05 11 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 699 | (2.1− | 1.1+) | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2002 05 11 | 704 | 0.2+ | 0.9+ | 2006 08 30 | 704 | 0.8+ | 0.8+ | 2006 10 16 | 703 | 0.5− | 1.1− |
| 2002 05 11 | 704 | (1.8+ | 1.6+) | 2006 08 30 | 704 | 0.4+ | 1.2+ | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2002 05 11 | 704 | (0.2− | 2.0+) | 2006 08 30 | 704 | 0.2− | 0.9+ | 2006 10 16 | 703 | 1.0− | 0.1− |
| 2002 05 17 | 704 | 0.9− | 0.2+ | 2006 08 30 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2002 05 17 | 704 | (1.0− | 1.9−) | 2006 08 30 | 704 | 0.3− | 1.1+ | 2006 10 19 | 644 | 0.4+ | 0.1− |
| 2002 05 17 | 704 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2002 05 17 | 704 | (1.6− | 1.8−) | 2006 09 18 | 699 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.6+ | 0.3− |
| 2002 06 06 | 704 | 0.0 | 0.9− | 2006 09 18 | 699 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.5+ | 0.1− |
| 2002 06 06 | 704 | 0.6+ | 0.4− | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 06 06 | 704 | 0.1+ | 1.2− | 2006 09 19 | 704 | 0.3− | 1.3− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 06 06 | 704 | 0.8+ | 1.3− | 2006 09 19 | 704 | 0.6+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 06 06 | 704 | 0.6− | 1.0− | 2006 09 19 | 704 | (1.9− | 1.6+) | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 06 08 | 704 | 0.0 | 0.1− | 2006 09 19 | 704 | (0.6− | 2.0−) | 2006 11 11 | 703 | 1.8− | 0.7− |
| 2002 06 08 | 704 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.4− | 0.0 | 2006 11 11 | 703 | 2.8− | 0.3+ |
| 2002 06 08 | 704 | 0.4− | 0.8+ | 2006 09 22 | 704 | 1.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2002 06 08 | 704 | 0.7− | 0.9+ | 2006 09 22 | 704 | 0.1+ | 0.9+ | 2006 11 11 | 703 | 0.4+ | 1.7− |

**(141646)∗ 2002 JS$_{62}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.62982 | | (2000.0) | | +0.98350740 | +0.18002510 |
| $n$ | 0.29575784 | $\omega$ | 180.65723 | | −0.16552603 | +0.93475277 |
| $a$ | 2.2310632 | $\Omega$ | 168.92534 | | −0.07289942 | +0.30631392 |
| $e$ | 0.1901358 | $i$ | 5.20916 | | | |
| $P$ | 3.33 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.0 | 0.1− | 2005 05 15 | 644 | 0.2− | 0.4+ | 2006 09 28 | 704 | 0.2− | 0.3+ |
| 1999 07 13 | 704 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 09 28 | 704 | 0.2+ | 0.5− |
| 1999 07 13 | 704 | 0.4+ | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 1999 07 13 | 704 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 09 30 | 703 | (0.2+ | 1.8−) |
| 1999 07 13 | 704 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 1.1− |
| 2002 05 08 | 704 | 0.4− | 0.3− | 2006 08 21 | 704 | 1.1− | 1.3+ | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2002 05 08 | 704 | 0.3+ | 0.4− | 2006 08 21 | 704 | 1.4− | 1.3+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2002 05 08 | 704 | 0.1− | 0.6− | 2006 08 21 | 704 | 0.8− | 1.4+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2002 05 12 | 704 | (1.0+ | 1.5+) | 2006 08 21 | 704 | (0.9− | 1.6+) | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2002 05 12 | 704 | 0.0 | 1.2+ | 2006 08 21 | 704 | 1.0− | 1.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2002 05 12 | 704 | (1.6+ | 0.4+) | 2006 08 25 | 704 | 1.0+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 06 04 | 704 | 0.3− | 0.5+ | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 06 04 | 704 | 0.3+ | 0.5− | 2006 08 25 | 704 | (1.6+ | 0.7+) | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2002 06 04 | 704 | 0.5− | 0.5+ | 2006 08 25 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2002 06 05 | 699 | (0.1+ | 1.5−) | 2006 08 28 | 703 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2002 06 05 | 699 | 0.8+ | 0.4+ | 2006 08 28 | 703 | 0.4+ | 0.9+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2002 06 05 | 699 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 06 05 | 699 | (0.2+ | 1.6+) | 2006 08 28 | 703 | 0.3+ | 1.4+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 06 09 | 704 | (1.6+ | 0.1−) | 2006 08 30 | 699 | 0.9+ | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 06 09 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 699 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 06 09 | 704 | 0.2− | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 06 09 | 704 | 0.2+ | 0.5+ | 2006 08 31 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 06 09 | 704 | 0.5− | 1.0+ | 2006 08 31 | 704 | 0.3− | 1.0+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 06 10 | 704 | 0.1+ | 0.2+ | 2006 08 31 | 704 | 1.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 06 10 | 704 | 0.2+ | 0.2+ | 2006 08 31 | 704 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 06 10 | 704 | 0.3− | 0.2− | 2006 08 31 | 704 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 06 10 | 704 | 0.4− | 1.0+ | 2006 08 31 | 704 | (2.1− | 0.3−) | 2006 10 22 | 704 | 1.0+ | 0.9+ |
| 2002 06 10 | 704 | 0.3+ | 0.4+ | 2006 08 31 | 704 | (2.5− | 0.6−) | 2006 10 22 | 704 | (2.0− | 0.2−) |
| 2002 06 10 | 704 | 1.0− | 0.2+ | 2006 08 31 | 704 | 0.1− | 1.2+ | 2006 10 22 | 704 | 0.4− | 0.1+ |
| 2002 06 10 | 704 | 0.1+ | 0.2+ | 2006 08 31 | 704 | 0.4− | 0.1− | 2006 10 22 | 704 | 0.4− | 0.3− |
| 2002 06 10 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 644 | 0.2− | 0.1+ | 2006 10 22 | 704 | 0.7− | 0.5+ |
| 2002 06 10 | 704 | 0.1− | 0.9+ | 2006 09 15 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2002 06 10 | 704 | 0.8+ | 0.2− | 2006 09 15 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2003 12 01 | 704 | 0.3+ | 1.2+ | 2006 09 15 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.8− | 0.0 |
| 2003 12 01 | 704 | 0.1− | 0.7+ | 2006 09 15 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2003 12 01 | 704 | 0.2− | 0.0 | 2006 09 15 | 644 | 0.1+ | 0.1− | 2006 10 27 | 704 | 1.2− | 0.4+ |
| 2003 12 01 | 704 | 0.8+ | 0.4+ | 2006 09 16 | 704 | 0.7+ | 0.0 | 2006 10 27 | 704 | 0.5− | 0.2+ |
| 2003 12 01 | 704 | 0.0 | 1.1+ | 2006 09 16 | 704 | 1.1+ | 0.5+ | 2006 10 27 | 704 | 0.9− | 0.5+ |
| 2005 03 09 | G96 | 0.4− | 0.3+ | 2006 09 16 | 704 | 1.0+ | 0.1− | 2006 10 27 | 704 | 0.9− | 0.4+ |
| 2005 03 09 | G96 | 0.4− | 0.3+ | 2006 09 16 | 704 | 1.0+ | 0.7− | 2006 10 27 | 704 | 0.8− | 0.4+ |
| 2005 03 09 | G96 | 0.3− | 0.1+ | 2006 09 16 | 704 | 1.0+ | 0.8− | 2006 10 31 | 704 | 0.3− | 0.6− |
| 2005 03 09 | G96 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 10 31 | 704 | 0.4− | 0.7+ |
| 2005 04 02 | 644 | 0.1+ | 0.7+ | 2006 09 16 | 699 | 0.4+ | 0.5+ | 2006 10 31 | 704 | 0.7− | 0.1+ |
| 2005 04 02 | 644 | 0.4+ | 0.6+ | 2006 09 16 | 699 | 0.0 | 0.1− | 2006 10 31 | 704 | 0.8− | 0.8+ |
| 2005 04 02 | 644 | 0.3+ | 0.7+ | 2006 09 16 | 699 | 0.3− | 0.1− | 2006 10 31 | 704 | 0.5+ | 0.4− |
| 2005 04 04 | 704 | 0.0 | 0.6+ | 2006 09 19 | 704 | 0.0 | 0.9+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2005 04 04 | 704 | 0.7+ | 1.2+ | 2006 09 19 | 704 | 1.1+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.5+ |
| 2005 04 04 | 704 | (0.3+ | 1.5+) | 2006 09 19 | 704 | 0.6+ | 0.8+ | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2005 04 04 | 704 | 0.2− | 0.2+ | 2006 09 19 | 704 | (1.7+ | 0.2+) | 2006 11 13 | 703 | 0.1+ | 0.5+ |
| 2005 04 04 | 704 | 1.0+ | 0.6+ | 2006 09 19 | 704 | 0.7+ | 0.4− | 2006 11 13 | 703 | 0.5− | 0.5+ |
| 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.9− | 0.4+ |
| 2005 04 12 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.4− | 0.8+ |
| 2005 04 12 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 699 | 0.3− | 0.2− | 2006 11 14 | 704 | 1.3+ | 0.6+ |
| 2005 04 13 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 699 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 1.2+ | 0.8+ |
| 2005 04 13 | 704 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.3+ |
| 2005 04 13 | 704 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.9+ | 0.3+ | 2006 11 14 | 704 | 0.8+ | 0.0 |
| 2005 04 13 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 704 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2005 04 19 | 691 | 0.5+ | 0.5+ | 2006 09 22 | 704 | 1.0+ | 0.1+ | 2006 11 17 | 704 | 0.6+ | 1.0+ |
| 2005 04 19 | 691 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.5− | 2006 11 17 | 704 | (0.0 | 1.9+) |
| 2005 04 19 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.5− | 2006 11 17 | 704 | 0.7+ | 0.4− |
| 2005 05 08 | 703 | 1.3− | 0.8− | 2006 09 26 | 704 | 0.7− | 0.8− | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2005 05 08 | 703 | (2.5− | 0.5+) | 2006 09 26 | 704 | 1.3− | 0.5− | 2006 11 17 | 704 | 0.3− | 0.6+ |
| 2005 05 08 | 703 | 0.1− | 0.8+ | 2006 09 26 | 704 | 0.7− | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2005 05 08 | 703 | (0.3− | 2.1+) | 2006 09 26 | 704 | 1.1− | 0.9− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 05 15 | 644 | 0.0 | 0.6+ | 2006 09 28 | 704 | 0.5+ | 1.3+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2005 05 15 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.1− |

**(141647)∗ 2002 JT$_{62}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.64580 | | (2000.0) | | −0.68583793 | +0.72643961 |
| $n$ | 0.29465316 | $\omega$ | 75.50635 | | −0.69764385 | −0.63917062 |
| $a$ | 2.2366360 | $\Omega$ | 151.04112 | | −0.20716996 | −0.25248052 |
| $e$ | 0.1150082 | $i$ | 5.18121 | | | |
| $P$ | 3.34 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 704 | 0.4+ | 1.1+ | 2005 03 03 | 691 | 0.1+ | 0.4+ | 2005 03 16 | G96 | 0.7− | 0.1− |
| 2002 05 08 | 704 | 0.3+ | 0.3− | 2005 03 03 | 691 | 0.1+ | 0.3+ | 2005 03 30 | 703 | 0.8− | 0.1+ |
| 2002 05 08 | 704 | 0.7+ | 0.4− | 2005 03 03 | 703 | 0.2− | 0.1− | 2005 03 30 | 703 | 0.8− | 0.6+ |
| 2002 05 08 | 704 | 0.9+ | 0.7+ | 2005 03 03 | 703 | 0.7− | 0.1− | 2005 03 30 | 703 | 0.4− | 0.6+ |
| 2002 05 08 | 608 | 0.8− | 0.8− | 2005 03 03 | 703 | 1.2− | 0.3− | 2005 03 30 | 703 | 0.8− | 0.2+ |
| 2002 05 08 | 608 | 0.3− | 0.7− | 2005 03 03 | 703 | 0.2− | 0.3− | 2005 04 10 | 691 | 0.2− | 0.0 |
| 2002 05 08 | 608 | 0.3− | 0.8− | 2005 03 04 | 704 | 0.9+ | 0.0 | 2005 04 10 | 691 | 0.0 | 0.1− |
| 2002 05 12 | 704 | (1.7+ | 0.3−) | 2005 03 04 | 704 | 0.5+ | 0.1+ | 2005 04 10 | 691 | 0.1− | 0.1− |
| 2002 05 12 | 704 | 0.4+ | 0.1− | 2005 03 04 | 704 | 0.6+ | 0.1+ | 2005 04 30 | 699 | 0.5+ | 0.3+ |
| 2002 05 12 | 704 | (0.0 | 1.6+) | 2005 03 04 | 704 | 0.0 | 0.6− | 2005 04 30 | 699 | 1.4− | 0.2− |
| 2002 06 02 | 644 | 0.2− | 0.2+ | 2005 03 04 | 704 | 0.7+ | 0.1− | 2005 04 30 | 699 | 0.4− | 0.0 |
| 2002 06 02 | 644 | 0.0 | 0.2+ | 2005 03 08 | 699 | 0.1+ | 0.2− | 2005 04 30 | 699 | 0.1+ | 0.4− |
| 2002 06 02 | 644 | 0.1+ | 0.2+ | 2005 03 08 | 699 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.1− | 0.4+ |
| 2002 06 03 | 644 | 0.3− | 0.2− | 2005 03 08 | 699 | 0.4− | 0.7− | 2006 08 17 | 644 | 0.2− | 0.9+ |
| 2002 06 03 | 644 | 0.2− | 0.1− | 2005 03 08 | 699 | 0.7+ | 0.5+ | 2006 08 17 | 644 | 0.1− | 0.4+ |
| 2002 06 03 | 644 | 0.3− | 0.2+ | 2005 03 09 | 699 | 1.5+ | 0.1+ | 2006 08 27 | 699 | (2.1+ | 1.7+) |
| 2002 06 07 | 704 | 0.2+ | 0.7+ | 2005 03 09 | 699 | 0.3− | 0.2+ | 2006 08 27 | 699 | 1.0+ | 0.4+ |
| 2002 06 07 | 704 | 0.4+ | 0.8+ | 2005 03 09 | 699 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 1.3+ | 1.2+ |
| 2002 06 07 | 704 | 0.1− | 0.6+ | 2005 03 09 | 704 | 0.3+ | 0.4+ | 2006 08 27 | 699 | (1.6− | 2.0+) |
| 2002 06 07 | 704 | 0.5− | 0.4+ | 2005 03 09 | 704 | 0.5+ | 0.7+ | 2006 09 12 | 703 | 0.1− | 0.6+ |
| 2002 06 07 | 704 | 0.4+ | 0.4+ | 2005 03 09 | 699 | 0.8+ | 0.6+ | 2006 09 12 | 703 | 0.4+ | 0.5− |
| 2002 06 09 | 704 | 0.0 | 0.7+ | 2005 03 09 | 704 | 0.3+ | 0.9+ | 2006 09 12 | 703 | 0.3− | 0.8− |
| 2002 06 09 | 704 | 0.0 | 0.3+ | 2005 03 09 | 704 | 0.3+ | 1.0+ | 2006 09 12 | 703 | 0.0 | 0.2− |
| 2002 06 09 | 704 | 0.1+ | 0.7+ | 2005 03 09 | 704 | 0.1− | 1.0+ | 2006 09 20 | 644 | 0.8− | 0.9+ |
| 2002 06 09 | 704 | 0.0 | 1.2+ | 2005 03 12 | 704 | 1.0+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.4+ |
| 2002 06 09 | 704 | 0.2+ | 1.0+ | 2005 03 12 | 704 | 1.0+ | 1.3+ | 2006 09 20 | 644 | 0.3− | 0.4+ |
| 2002 06 10 | 644 | 0.3− | 0.3− | 2005 03 12 | 704 | (1.7+ | 0.7+) | 2006 09 25 | 699 | 0.2− | 1.0+ |
| 2002 06 10 | 644 | 0.0 | 0.2− | 2005 03 12 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 699 | (0.2− | 2.4+) |
| 2002 06 10 | 644 | 0.0 | 0.4− | 2005 03 12 | 704 | 0.7+ | 0.9+ | 2006 09 25 | 699 | 0.7− | 0.8+ |
| 2003 10 22 | 691 | 0.1− | 0.6+ | 2005 03 16 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 1.3− | 0.9+ |
| 2003 10 22 | 691 | 0.0 | 0.4+ | 2005 03 16 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.9− |
| 2003 10 22 | 691 | 0.2− | 0.4+ | 2005 03 16 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.1− | 1.1+ |
| 2005 02 09 | 704 | 0.7+ | 0.2+ | 2005 03 16 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.3+ |
| 2005 02 09 | 704 | (1.6+ | 0.9+) | 2005 03 16 | G96 | 0.4− | 0.2− | 2006 09 30 | 703 | 1.4− | 0.6+ |
| 2005 02 09 | 704 | (2.7+ | 0.7+) | 2005 03 16 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2005 02 09 | 704 | (0.6+ | 4.0+) | 2005 03 16 | G96 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2005 03 03 | 691 | 0.1+ | 0.3+ | 2005 03 16 | G96 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.4+ |

**(141648)∗ 2002 JJ$_{64}$ = 1999 TY$_{133}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31692)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.74973 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26917596 | $\omega$ | 70.57657 | | +0.20602270 | +0.97838551 | |
| $a$ | 2.3756285 | $\Omega$ | 211.32961 | | −0.91014548 | +0.18491256 | |
| $e$ | 0.1913923 | $i$ | 1.96057 | | −0.35942991 | +0.09256963 | |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 06 03 | 691 | 0.0 | 0.9− | 2002 05 15 | 704 | 0.8− | 0.5− | 2002 06 11 | 644 | 0.2+ | 0.2− |
| 1991 06 03 | 691 | 0.2− | 0.5− | 2002 05 15 | 704 | 0.6+ | 0.2− | 2002 06 11 | 644 | 0.1+ | 0.0 |
| 1991 06 03 | 691 | 0.3+ | 0.1+ | 2002 05 16 | 704 | 0.2+ | 0.3+ | 2003 12 16 | 291 | 0.3+ | 0.4+ |
| 1994 02 10 | 691 | 0.2− | 0.3+ | 2002 05 16 | 704 | 0.7+ | 0.5+ | 2003 12 16 | 291 | 0.1+ | 0.7+ |
| 1994 02 10 | 691 | 0.5− | 0.1− | 2002 05 16 | 704 | 0.4+ | 0.4+ | 2003 12 16 | 291 | 0.8+ | 1.1+ |
| 1994 02 10 | 691 | 0.5− | 0.0 | 2002 05 16 | 704 | 0.7+ | 0.3+ | 2005 03 09 | G96 | 0.1− | 0.1− |
| 1999 10 06 | 704 | 0.1+ | 0.7− | 2002 05 16 | 704 | 0.1+ | 0.4− | 2005 03 09 | G96 | 0.2− | 0.4+ |
| 1999 10 06 | 704 | 0.1+ | 0.0 | 2002 05 16 | 704 | 0.5− | 0.3+ | 2005 03 09 | G96 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.1− | 0.2+ | 2002 05 16 | 704 | 0.3+ | 0.0 | 2005 03 09 | G96 | 0.4+ | 0.2− |
| 1999 10 06 | 704 | 0.4− | 0.2− | 2002 05 16 | 704 | 0.8− | 0.0 | 2006 07 20 | A50 | 0.2− | 0.4− |
| 1999 10 06 | 704 | 0.3+ | 0.2− | 2002 05 16 | 704 | 0.4+ | 0.2− | 2006 07 20 | A50 | 0.4− | 0.2− |
| 1999 10 09 | 704 | 0.7− | 0.7+ | 2002 05 17 | 644 | 0.0 | 0.3+ | 2006 07 21 | 644 | 0.3+ | 0.0 |
| 1999 10 09 | 704 | 0.6− | 0.8+ | 2002 05 17 | 644 | 0.3+ | 0.4+ | 2006 07 21 | 644 | 0.0 | 0.4+ |
| 1999 10 09 | 704 | 0.0 | 0.4− | 2002 05 17 | 644 | 0.1− | 0.3+ | 2006 07 21 | 644 | 0.4− | 0.1+ |
| 1999 10 09 | 704 | 0.7− | 0.1+ | 2002 06 03 | 644 | 0.0 | 0.2+ | 2006 07 21 | A50 | 0.3+ | 0.3+ |
| 2002 05 09 | 704 | 0.5− | 1.2− | 2002 06 03 | 644 | 0.1− | 0.1− | 2006 07 21 | A50 | 0.1+ | 0.4+ |
| 2002 05 09 | 704 | 0.3− | 0.1+ | 2002 06 03 | 644 | 0.1− | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.1− |
| 2002 05 09 | 704 | 0.1+ | 1.0+ | 2002 06 05 | 704 | 0.2− | 0.2+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2002 05 09 | 704 | 0.3− | 0.4+ | 2002 06 05 | 704 | 0.1+ | 0.4+ | 2006 08 14 | 644 | 0.2+ | 0.4− |
| 2002 05 09 | 644 | 0.6+ | 0.4+ | 2002 06 05 | 704 | 0.8− | 1.0+ | 2006 08 14 | E12 | 0.1− | 0.2+ |
| 2002 05 09 | 644 | 0.5+ | 0.3+ | 2002 06 08 | 704 | 0.6+ | 0.7+ | 2006 08 14 | E12 | 0.3− | 0.1− |
| 2002 05 09 | 644 | 0.8+ | 0.2+ | 2002 06 08 | 704 | 0.9+ | 1.3+ | 2006 08 14 | E12 | 0.6− | 0.3− |
| 2002 05 12 | 704 | 0.7+ | 0.2+ | 2002 06 08 | 704 | 0.9+ | 0.7+ | 2006 08 14 | E12 | 0.3− | 0.1− |
| 2002 05 12 | 704 | 0.5+ | 0.1− | 2002 06 08 | 704 | 0.5− | 0.7+ | 2006 08 14 | E12 | 0.2+ | 1.0− |
| 2002 05 12 | 704 | 0.2− | 0.9+ | 2002 06 09 | 704 | (2.1+ | 0.1−) | 2006 09 14 | 644 | 0.5− | 0.0 |
| 2002 05 13 | 704 | 0.1− | 0.8− | 2002 06 09 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 644 | 0.4− | 0.1+ |
| 2002 05 13 | 704 | 0.5− | 0.0 | 2002 06 09 | 704 | 1.0+ | 0.6+ | 2006 09 14 | 644 | 0.4− | 0.2+ |
| 2002 05 13 | 704 | 0.3− | 0.2+ | 2002 06 09 | 704 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.4− |
| 2002 05 13 | 704 | 0.9− | 0.2+ | 2002 06 09 | 704 | (1.7+ | 0.3−) | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2002 05 13 | 704 | 0.5− | 0.1− | 2002 06 09 | 704 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2002 05 15 | 704 | 0.6− | 0.5+ | 2002 06 09 | 704 | 0.9+ | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2002 05 15 | 704 | 0.0 | 0.7− | 2002 06 09 | 704 | 0.0 | 0.9+ | | | | |
| 2002 05 15 | 704 | 0.0 | 0.5− | 2002 06 11 | 644 | 0.1− | 0.4+ | | | | |

**(141649)∗ 2002 JW$_{65}$ = 1999 TJ$_{273}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31696)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.03401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28375814 | $\omega$ | 58.67767 | | +0.32558846 | +0.90086636 | |
| $a$ | 2.2935269 | $\Omega$ | 233.10769 | | −0.94257949 | +0.28535738 | |
| $e$ | 0.1817594 | $i$ | 21.03833 | | −0.07440476 | +0.32712531 | |
| $P$ | 3.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 23 | 691 | 0.4− | 0.5+ | 2002 06 07 | 704 | 0.2+ | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.2+ |
| 1995 07 23 | 691 | 0.3+ | 0.0 | 2002 06 07 | 704 | 0.1+ | 0.2+ | 2006 08 13 | 644 | 0.1+ | 0.1+ |
| 1995 07 23 | 691 | 0.0 | 0.4− | 2002 06 10 | 704 | 0.1+ | 0.3− | 2006 08 13 | 644 | 0.1+ | 0.2+ |
| 1999 10 05 | 704 | 0.2− | 0.4− | 2002 06 10 | 704 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.1− | 0.4− |
| 1999 10 05 | 704 | 0.1+ | 0.3− | 2002 06 10 | 704 | 0.1− | 0.4− | 2006 09 25 | 703 | 0.5− | 0.0 |
| 1999 10 05 | 704 | 0.2+ | 0.1− | 2002 06 10 | 704 | 0.3+ | 0.3− | 2006 09 25 | 703 | 0.3− | 0.5− |
| 1999 10 05 | 704 | 0.1+ | 0.6− | 2002 06 10 | 704 | 1.4+ | 0.8+ | 2006 09 25 | 703 | 0.1− | 0.4− |
| 1999 10 05 | 704 | 0.3+ | 0.8− | 2002 06 11 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.4+ |
| 1999 10 13 | 704 | 0.4+ | 0.1+ | 2002 06 11 | 704 | 1.0− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.1+ | 0.1+ | 2002 06 11 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.4− |
| 1999 10 13 | 704 | 0.4+ | 0.4+ | 2002 06 11 | 704 | 1.1− | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 1999 10 13 | 704 | 0.5+ | 0.6+ | 2002 06 15 | 704 | 0.6− | 0.6− | 2006 10 21 | 704 | 0.1− | 0.9+ |
| 1999 10 13 | 704 | 0.4+ | 0.1+ | 2002 06 15 | 704 | 0.4− | 0.8− | 2006 10 21 | 704 | 0.2− | 0.7+ |
| 1999 11 04 | 704 | 0.2− | 0.0 | 2002 06 15 | 704 | 0.1− | 0.1− | 2006 10 21 | 704 | 0.9+ | 1.3+ |
| 1999 11 04 | 704 | 1.0− | 0.7+ | 2002 08 12 | 704 | 0.5− | 0.6− | 2006 10 21 | 704 | 0.9+ | 1.0+ |
| 1999 11 04 | 704 | 0.0 | 0.5− | 2002 08 12 | 704 | 0.1− | 1.0− | 2006 10 21 | 704 | 0.0 | 0.5+ |
| 1999 11 04 | 704 | 0.7− | 0.0 | 2002 08 12 | 704 | 0.5+ | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2002 05 09 | 704 | 0.2− | 0.0 | 2002 08 12 | 704 | 0.7+ | 0.7− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 05 09 | 704 | 0.1+ | 0.4+ | 2002 08 12 | 704 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 05 09 | 704 | 0.5− | 0.4+ | 2003 12 16 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.2− |
| 2002 05 09 | 704 | 0.2− | 0.2+ | 2003 12 16 | 691 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.4− | 0.2− |
| 2002 05 09 | 704 | 0.1+ | 0.6+ | 2003 12 16 | 691 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.5− |
| 2002 05 12 | 704 | 0.1+ | 0.8+ | 2003 12 20 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2002 05 12 | 704 | 0.1− | 0.6+ | 2003 12 20 | 704 | 0.5+ | 0.8− | 2006 10 31 | 703 | 0.5− | 0.4+ |
| 2002 05 12 | 704 | 0.2+ | 0.7+ | 2003 12 20 | 704 | 0.2+ | 0.3− | 2006 10 31 | 703 | 0.8− | 0.1+ |
| 2002 05 12 | 704 | 0.5+ | 1.0+ | 2003 12 20 | 704 | 0.3− | 0.6+ | 2006 10 31 | 703 | 0.0 | 0.3+ |
| 2002 05 12 | 704 | 1.2+ | 1.1+ | 2003 12 20 | 704 | 0.3− | 0.4+ | 2006 10 31 | 703 | 0.1− | 0.0 |
| 2002 05 24 | 644 | 0.2− | 0.3+ | 2005 04 13 | E12 | 0.7− | 0.7+ | 2006 11 25 | 703 | 0.1− | 0.0 |
| 2002 05 24 | 644 | 0.4− | 0.0 | 2005 04 13 | E12 | 0.4+ | 0.1+ | 2006 11 25 | 703 | 0.6+ | 0.4+ |
| 2002 05 24 | 644 | 0.1− | 0.4+ | 2005 04 13 | E12 | 0.1− | 0.2+ | 2006 11 25 | 703 | 0.4− | 0.4+ |
| 2002 06 07 | 704 | 0.0 | 0.2+ | 2005 04 13 | E12 | 0.8+ | 0.1− | 2006 11 25 | 703 | 0.4− | 0.5− |

**(141650)∗ 2002 JD$_{66}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 112.63569 | | (2000.0) | | | |
| $n$ | 0.30710770 | $\omega$ | 165.00883 | | −0.08222033 | +0.99199841 |
| $a$ | 2.1757496 | $\Omega$ | 100.20545 | | −0.92410007 | −0.03988625 |
| $e$ | 0.1742545 | $i$ | 5.58643 | | −0.37320087 | −0.11978415 |
| $P$ | 3.21 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 22 | 703 | 0.6− | 0.8+ | 2002 06 10 | 704 | 0.6+ | 0.8− | 2005 04 05 | 699 | 0.7+ | 0.2+ |
| 1999 06 22 | 703 | 0.9+ | 1.0+ | 2002 06 10 | 704 | 0.5+ | 0.5− | 2005 04 05 | 699 | 0.2− | 0.1+ |
| 1999 06 22 | 703 | 0.2+ | 0.3− | 2002 06 10 | 704 | 0.0 | 0.9− | 2005 04 05 | 699 | 1.0+ | 0.4− |
| 1999 06 22 | 703 | 1.1− | 0.6+ | 2002 06 18 | 704 | 0.1− | 0.5+ | 2005 04 08 | 704 | 1.1+ | 0.0 |
| 1999 07 14 | 704 | 0.6+ | 0.3− | 2002 06 18 | 704 | 0.0 | 0.8+ | 2005 04 08 | 704 | 1.2+ | 0.2− |
| 1999 07 14 | 704 | 1.4+ | 0.8+ | 2002 06 18 | 704 | 0.4− | 0.4+ | 2005 04 08 | 704 | 1.2+ | 0.4− |
| 1999 07 14 | 704 | 0.9+ | 0.5+ | 2002 06 25 | 644 | 0.0 | 0.0 | 2005 04 08 | 704 | 1.0+ | 0.3+ |
| 1999 07 14 | 704 | 1.3+ | 0.4+ | 2002 06 25 | 644 | 0.2− | 0.3+ | 2005 04 08 | 704 | 1.2+ | 0.3− |
| 2000 12 16 | 691 | 0.7− | 0.1+ | 2002 06 25 | 644 | 0.1− | 0.1+ | 2005 04 09 | 699 | 0.1+ | 0.4+ |
| 2000 12 16 | 691 | 0.6− | 0.3+ | 2002 07 04 | 644 | 0.3− | 1.3+ | 2005 04 09 | 699 | 0.3+ | 0.0 |
| 2000 12 16 | 691 | 0.8− | 0.1− | 2002 07 04 | 644 | 0.0 | 1.2+ | 2005 04 09 | 699 | 0.1+ | 0.2+ |
| 2002 04 09 | 704 | 0.5+ | 1.3− | 2002 07 04 | 644 | 0.1+ | 1.3+ | 2005 04 18 | 703 | 0.4+ | 0.5+ |
| 2002 04 09 | 704 | 0.0 | 0.4− | 2003 11 24 | 691 | 0.7+ | 0.3+ | 2005 04 18 | 703 | 0.6+ | 0.6+ |
| 2002 04 09 | 704 | 0.1− | 0.9+ | 2003 11 24 | 691 | 0.5+ | 0.2+ | 2005 04 18 | 703 | 0.4+ | 0.6+ |
| 2002 05 09 | 704 | 0.5+ | 0.2+ | 2003 11 24 | 691 | 0.6+ | 0.2+ | 2005 04 18 | 703 | 0.7− | 0.3− |
| 2002 05 09 | 704 | 0.7− | 0.1− | 2003 12 14 | 691 | 0.3+ | 0.8+ | 2005 05 08 | 703 | 1.0− | 0.7+ |
| 2002 05 09 | 704 | 0.5+ | 0.7− | 2003 12 14 | 691 | 0.0 | 0.8+ | 2005 05 08 | 703 | 0.6− | 0.0 |
| 2002 05 09 | 704 | 0.4− | 0.5− | 2003 12 14 | 691 | 0.1+ | 0.5+ | 2005 05 08 | 703 | 0.6− | 0.1+ |
| 2002 05 12 | 704 | 1.4− | 0.7+ | 2005 03 10 | 703 | 0.3− | 0.4+ | 2005 05 08 | 703 | (1.9− | 2.0−) |
| 2002 05 12 | 704 | 1.5− | 0.8+ | 2005 03 10 | 703 | 0.2− | 0.6− | 2006 10 22 | 703 | 0.5− | 0.9+ |
| 2002 05 12 | 704 | (1.7− | 0.3+) | 2005 03 10 | 703 | 0.8+ | 0.7− | 2006 10 22 | 703 | (0.8− | 1.9−) |
| 2002 05 21 | 704 | (1.7+ | 1.4−) | 2005 03 10 | 703 | 1.0+ | 0.1+ | 2006 10 22 | 703 | 0.9− | 1.4− |
| 2002 05 21 | 704 | 0.0 | 0.8+ | 2005 03 18 | 703 | 0.0 | 0.5− | 2006 10 22 | 703 | (2.5− | 0.5−) |
| 2002 05 21 | 704 | 0.4− | 0.6− | 2005 03 18 | 703 | 0.1− | 0.9− | 2006 11 09 | 644 | 0.2− | 0.3− |
| 2002 05 21 | 704 | 0.5+ | 0.2− | 2005 03 18 | 703 | 0.7− | 1.0+ | 2006 11 09 | 644 | 0.8− | 0.2− |
| 2002 06 05 | 704 | 0.6− | 0.0 | 2005 03 18 | 703 | 1.5− | 1.1+ | 2006 11 09 | 644 | 0.7− | 0.0 |
| 2002 06 05 | 704 | 0.9− | 0.7+ | 2005 04 04 | 703 | 0.8+ | 0.5− | 2006 11 17 | G96 | 1.0− | 0.2− |
| 2002 06 05 | 704 | 1.0− | 0.4+ | 2005 04 04 | 703 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.7− | 0.1− |
| 2002 06 05 | 704 | 0.6− | 0.6+ | 2005 04 04 | 703 | 0.3− | 0.2− | 2006 11 17 | G96 | 1.1− | 0.3− |
| 2002 06 05 | 704 | 0.1− | 0.4+ | 2005 04 04 | 703 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.8− | 0.1− |
| 2002 06 10 | 704 | 0.2+ | 0.3+ | 2005 04 05 | 699 | 0.4+ | 0.2+ | | | | |

**(141651)∗ 2002 JO$_{67}$ = 1993 TZ$_{25}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 30210)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.88084 | | (2000.0) | | | |
| $n$ | 0.30642691 | $\omega$ | 282.18814 | | +0.68841526 | +0.72227194 |
| $a$ | 2.1789710 | $\Omega$ | 31.64320 | | −0.60651365 | +0.62343796 |
| $e$ | 0.1945658 | $i$ | 7.27012 | | −0.39777584 | +0.29941335 |
| $P$ | 3.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.8+ | 1.3+ | 2002 05 13 | 704 | 1.1+ | 0.3+ | 2006 10 27 | 703 | 0.6− | 0.2− |
| 1993 10 09 | 809 | 0.6+ | 1.1+ | 2002 05 13 | 704 | 0.6+ | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 1993 10 09 | 809 | 0.2− | 0.1− | 2002 05 13 | 704 | 0.8+ | 0.9+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 1993 10 11 | 809 | 1.1− | 1.1+ | 2002 05 13 | 704 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 1993 10 11 | 809 | 1.2− | 0.3− | 2002 05 13 | 704 | 1.0+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 1993 10 11 | 809 | 0.9− | 0.5+ | 2002 05 18 | 644 | 0.4+ | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2002 04 08 | 691 | 0.3− | 0.6+ | 2002 05 18 | 644 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2002 04 08 | 691 | 0.1− | 0.6+ | 2002 05 18 | 644 | 0.4+ | 0.7+ | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2002 04 08 | 691 | 0.2− | 0.6+ | 2003 12 17 | 704 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2002 04 09 | 704 | 0.4− | 1.0+ | 2003 12 17 | 704 | 1.0− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2002 04 09 | 704 | 1.1+ | 0.3− | 2003 12 17 | 704 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2002 04 09 | 704 | 0.0 | 0.4− | 2003 12 17 | 704 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2002 04 12 | 644 | 0.1+ | 0.5+ | 2005 03 11 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 04 12 | 644 | 0.1+ | 0.5+ | 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2002 04 12 | 644 | 0.4+ | 0.6+ | 2005 03 11 | 691 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 04 14 | 704 | 0.9+ | 0.7− | 2005 04 04 | 703 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.9− |
| 2002 04 14 | 704 | 1.0+ | 0.5− | 2005 04 04 | 703 | (2.5− | 1.1+) | 2006 11 11 | 703 | 0.1+ | 1.2− |
| 2002 04 14 | 704 | (1.8+ | 0.8−) | 2005 04 04 | 703 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2002 04 14 | 704 | (2.1+ | 1.2−) | 2005 04 04 | 703 | 1.0− | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.9+ |
| 2002 04 29 | 644 | 0.6+ | 0.0 | 2005 05 09 | G96 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.3− | 0.4+ |
| 2002 04 29 | 644 | 0.6+ | 0.0 | 2005 05 09 | G96 | 0.4− | 0.3− | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2002 04 29 | 644 | 0.6+ | 0.2− | 2005 05 09 | G96 | 0.7− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.2+ |
| 2002 05 09 | 644 | 0.1+ | 0.5+ | 2005 05 09 | G96 | 0.4− | 0.3− | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2002 05 09 | 704 | 1.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.5− | 0.1− |
| 2002 05 09 | 704 | (0.2− | 3.1+) | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.6+ |
| 2002 05 09 | 644 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2002 05 09 | 704 | 1.2+ | 1.4+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2002 05 09 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2002 05 09 | 704 | 1.1+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2002 05 09 | 704 | 0.5+ | 1.2+ | 2006 10 17 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 1.4+ | 0.7+ |
| 2002 05 11 | 704 | 0.7− | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.7+ | 2006 11 19 | 704 | 0.8+ | 1.2+ |
| 2002 05 11 | 704 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 05 11 | 704 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.9+ |
| 2002 05 11 | 704 | 0.0 | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 05 11 | 704 | 0.3− | 0.7+ | 2006 10 27 | 703 | 0.3− | 0.3+ | | | | |

**(141652)∗ 2002 JL$_{71}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 99.97685 | | (2000.0) | | | |
| $n$ | 0.29133199 | $\omega$ | 80.60543 | | −0.60694561 | +0.79305857 |
| $a$ | 2.2536023 | $\Omega$ | 151.82324 | | −0.76537655 | −0.56575128 |
| $e$ | 0.1752204 | $i$ | 6.28851 | | −0.21404616 | −0.22579545 |
| $P$ | 3.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 699 | 0.5+ | 0.2+ | 2002 05 13 | 704 | 0.2+ | 0.1+ | 2005 02 09 | 699 | 0.7+ | 0.6+ |
| 1999 08 08 | 699 | 0.8+ | 0.3− | 2002 05 13 | 704 | 0.1+ | 0.7− | 2005 02 09 | 704 | 0.7+ | 1.3+ |
| 1999 08 08 | 699 | 0.1+ | 1.0+ | 2002 05 13 | 704 | 0.1− | 0.1+ | 2005 02 09 | 704 | 0.7+ | 0.5+ |
| 2002 04 10 | 704 | 0.3+ | 0.2+ | 2002 05 13 | 704 | 0.3− | 0.1− | 2005 02 09 | 704 | 1.3+ | 0.2− |
| 2002 04 10 | 704 | 0.3− | 0.1+ | 2002 05 13 | 704 | 0.7+ | 0.5+ | 2005 02 09 | 704 | 0.1− | 1.1+ |
| 2002 04 10 | 704 | 0.1+ | 0.3− | 2002 05 27 | 644 | 0.6+ | 0.2+ | 2005 03 08 | G96 | (0.8− | 2.0+) |
| 2002 04 10 | 704 | 0.1− | 0.1+ | 2002 05 27 | 644 | 0.5+ | 0.3+ | 2005 03 08 | G96 | (0.9− | 2.4+) |
| 2002 04 10 | 704 | 0.1− | 0.4+ | 2002 05 27 | 644 | 0.6+ | 0.4+ | 2005 03 08 | G96 | (1.0− | 2.2+) |
| 2002 04 11 | 699 | 0.1+ | 0.5+ | 2002 06 14 | 704 | 1.8+ | 1.7+ | 2005 03 08 | G96 | (1.5− | 3.2+) |
| 2002 04 11 | 704 | 0.8− | 1.2− | 2002 06 14 | 704 | 0.3+ | 0.0 | 2005 04 04 | G96 | 0.4− | 0.1+ |
| 2002 04 11 | 699 | 0.2− | 0.0 | 2002 06 14 | 704 | 1.1+ | 0.1− | 2005 04 04 | G96 | 0.4− | 0.2+ |
| 2002 04 11 | 699 | 0.3− | 0.0 | 2002 06 14 | 704 | 0.5+ | 0.6− | 2005 04 04 | G96 | 0.2− | 0.1+ |
| 2002 04 11 | 704 | 1.6− | 0.6− | 2002 06 14 | 704 | 0.7+ | 1.1− | 2005 04 04 | G96 | 0.4− | 0.0 |
| 2002 04 11 | 704 | 1.7− | 0.8− | 2003 10 21 | 691 | 0.2− | 0.0 | 2006 08 18 | 691 | 0.3− | 0.4+ |
| 2002 04 11 | 699 | 0.1− | 1.1+ | 2003 10 21 | 691 | 0.3− | 0.1+ | 2006 08 18 | 691 | 0.4− | 0.2+ |
| 2002 04 16 | 704 | 0.3− | 0.1− | 2003 10 21 | 691 | 0.3− | 0.3+ | 2006 08 18 | 691 | 0.1− | 0.2+ |
| 2002 04 16 | 704 | 0.5− | 0.0 | 2005 01 18 | 703 | 0.9+ | 0.7− | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 2002 04 16 | 704 | 0.2− | 0.1+ | 2005 01 18 | 703 | 0.4+ | 0.9+ | 2006 08 27 | 699 | 0.9+ | 0.9+ |
| 2002 04 16 | 704 | 0.6− | 0.0 | 2005 01 18 | 703 | 0.3− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.5+ |
| 2002 04 16 | 704 | 0.3− | 0.1− | 2005 01 18 | 703 | 0.3− | 0.2− | 2006 08 27 | 699 | 0.1+ | 0.6+ |
| 2002 05 06 | 644 | 0.2+ | 0.3+ | 2005 02 02 | 704 | 0.5− | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.7+ |
| 2002 05 06 | 644 | 0.1+ | 0.3+ | 2005 02 02 | 704 | 0.6+ | 0.3+ | 2006 08 27 | 699 | 1.0+ | 1.9+ |
| 2002 05 06 | 644 | 0.1+ | 0.3+ | 2005 02 02 | 704 | 0.3+ | 0.1− | 2006 08 27 | 699 | 0.5+ | 0.2− |
| 2002 05 08 | 704 | 0.4− | 0.8+ | 2005 02 02 | 703 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.8− |
| 2002 05 08 | 704 | 0.4− | 0.2+ | 2005 02 02 | 703 | 0.3− | 0.2− | 2006 08 28 | 703 | 1.5− | 1.6− |
| 2002 05 08 | 704 | 0.3− | 0.2+ | 2005 02 02 | 704 | 1.9+ | 1.3+ | 2006 08 28 | 703 | 1.2+ | 0.2− |
| 2002 05 08 | 704 | 0.1− | 0.3+ | 2005 02 02 | 703 | 0.4− | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.0 |
| 2002 05 08 | 704 | 0.2+ | 0.4+ | 2005 02 02 | 703 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.4− |
| 2002 05 12 | 644 | 0.1+ | 0.3+ | 2005 02 09 | 699 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 1.0− |
| 2002 05 12 | 644 | 0.1+ | 0.2+ | 2005 02 09 | 699 | 0.1− | 0.7+ | 2006 09 14 | 703 | 0.2− | 0.6− |
| 2002 05 12 | 644 | 0.1+ | 0.4+ | 2005 02 09 | 699 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.5− | 0.2− |

**(141653)∗ 2002 JN$_{71}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 83.63782 | | (2000.0) | | | |
| $n$ | 0.29903967 | $\omega$ | 136.70381 | | −0.00405116 | +0.99634496 |
| $a$ | 2.2147099 | $\Omega$ | 132.86826 | | −0.94630273 | +0.02376254 |
| $e$ | 0.1486600 | $i$ | 6.68539 | | −0.32325644 | −0.08204913 |
| $P$ | 3.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.1− | 0.1− | 2002 05 27 | 644 | 0.6+ | 0.3+ | 2005 03 16 | 703 | 0.5− | 0.1+ |
| 1995 02 01 | 691 | 0.2+ | 0.5− | 2002 05 27 | 644 | 1.4+ | 0.4+ | 2005 03 16 | 704 | 1.1+ | 0.1+ |
| 1995 02 01 | 691 | 0.3− | 0.1+ | 2002 06 04 | 704 | 0.9+ | 0.2− | 2005 03 16 | 704 | 0.9+ | 0.8+ |
| 1999 07 14 | 704 | 0.7+ | 0.0 | 2002 06 04 | 704 | 0.7+ | 0.9− | 2005 04 06 | 699 | (1.7− | 0.1−) |
| 1999 07 14 | 704 | 0.4+ | 0.5+ | 2002 06 04 | 704 | 0.6+ | 0.1− | 2005 04 06 | 699 | 0.6− | 1.2− |
| 1999 07 14 | 704 | 0.3+ | 0.1− | 2002 06 04 | 704 | 1.3+ | 0.7− | 2005 04 06 | 699 | 0.5− | 0.4+ |
| 1999 07 14 | 704 | 0.6+ | 1.1+ | 2002 06 06 | 699 | 0.4+ | 1.0+ | 2005 04 06 | 699 | 1.2− | 0.8+ |
| 2002 03 09 | 291 | 0.0 | 0.2+ | 2002 06 06 | 699 | 0.0 | 0.8+ | 2005 04 09 | 703 | 1.1− | 0.2− |
| 2002 03 09 | 291 | 0.0 | 0.0 | 2002 06 06 | 699 | 0.3+ | 0.7+ | 2005 04 09 | 703 | 0.4+ | 1.2− |
| 2002 03 09 | 291 | 0.1+ | 0.1+ | 2002 06 06 | 699 | 0.7− | 0.3+ | 2005 04 09 | 703 | 0.1− | 0.1− |
| 2002 04 08 | 704 | 1.0− | 0.6+ | 2002 06 10 | 704 | 1.4− | 1.1+ | 2005 04 09 | 703 | 0.4− | 0.1− |
| 2002 04 08 | 704 | 0.2+ | 0.0 | 2002 06 10 | 704 | 0.8− | 1.3+ | 2005 04 16 | 703 | 0.4+ | 0.3− |
| 2002 04 08 | 704 | 0.0 | 1.0+ | 2002 06 10 | 704 | 0.7− | 1.2+ | 2005 04 16 | 703 | 0.1− | 0.5+ |
| 2002 04 08 | 704 | (0.7− | 2.1+) | 2003 11 21 | 699 | 0.0 | 0.5+ | 2005 04 16 | 703 | 0.4− | 0.0 |
| 2002 04 10 | 704 | 0.3+ | 0.1+ | 2003 11 21 | 699 | (0.5− | 1.7+) | 2005 04 16 | 703 | 1.1− | 0.3+ |
| 2002 04 10 | 704 | 0.1− | 0.2+ | 2003 11 21 | 699 | 1.3− | 1.0+ | 2006 09 20 | 644 | 0.4− | 0.3+ |
| 2002 04 10 | 704 | 0.8+ | 0.4+ | 2003 11 21 | 699 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.2+ |
| 2002 04 10 | 704 | 0.6+ | 0.6+ | 2005 03 03 | 703 | 0.4+ | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.6+ |
| 2002 04 10 | 704 | 0.5− | 0.4− | 2005 03 03 | 703 | 0.4+ | 0.4+ | 2006 09 21 | 699 | 0.2+ | 0.4+ |
| 2002 04 11 | 699 | 0.2+ | 0.3− | 2005 03 03 | 703 | 0.2+ | 0.2− | 2006 09 21 | 699 | 1.0− | 0.6− |
| 2002 04 11 | 699 | 0.3+ | 0.3+ | 2005 03 03 | 703 | 0.4+ | 0.2− | 2006 09 21 | 699 | 0.3− | 1.3+ |
| 2002 04 11 | 699 | 0.5− | 0.9+ | 2005 03 04 | 704 | (1.6+ | 0.2+) | 2006 09 21 | 699 | 0.5+ | 0.4− |
| 2002 04 11 | 699 | 0.4+ | 0.5+ | 2005 03 04 | 704 | 1.3+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 1.0+ |
| 2002 04 12 | 608 | (1.7− | 0.4+) | 2005 03 04 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.4+ |
| 2002 04 12 | 608 | 1.4− | 0.3+ | 2005 03 04 | 704 | (1.6+ | 0.4−) | 2006 09 25 | 699 | 0.7− | 0.6+ |
| 2002 04 12 | 608 | 0.9− | 0.2+ | 2005 03 04 | 704 | 0.8+ | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2002 04 16 | 704 | 0.1+ | 0.2+ | 2005 03 09 | 704 | 0.7+ | 0.7+ | 2006 09 26 | 704 | 0.4− | 1.2+ |
| 2002 04 16 | 704 | 0.4− | 0.4+ | 2005 03 09 | 704 | 0.7+ | 0.8+ | 2006 09 26 | 704 | 0.2+ | 1.1+ |
| 2002 04 16 | 704 | 0.5− | 0.8+ | 2005 03 09 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 704 | (0.6+ | 2.1+) |
| 2002 05 07 | 699 | 0.1− | 0.4+ | 2005 03 09 | 704 | (1.0+ | 1.6+) | 2006 09 26 | 704 | 0.5− | 1.2+ |
| 2002 05 07 | 699 | 0.6+ | 0.1− | 2005 03 09 | 704 | (0.9+ | 1.6+) | 2006 09 29 | 699 | 0.9+ | 0.3− |
| 2002 05 07 | 699 | 0.2+ | 0.8+ | 2005 03 10 | 699 | 0.4+ | 0.6+ | 2006 09 29 | 699 | 0.3− | 1.4+ |
| 2002 05 07 | 699 | 0.2− | 0.7+ | 2005 03 10 | 699 | 1.4+ | 0.9+ | 2006 09 29 | 699 | 0.1− | 0.1+ |
| 2002 05 08 | 704 | 0.2+ | 0.4+ | 2005 03 10 | 699 | 0.3+ | 1.1+ | 2006 09 29 | 699 | 0.7+ | 0.9+ |
| 2002 05 08 | 704 | 0.5− | 0.7− | 2005 03 10 | 699 | 0.9+ | 0.7+ | 2006 09 30 | 704 | 0.4− | 0.2− |
| 2002 05 08 | 704 | (0.5− | 1.7−) | 2005 03 12 | 704 | 0.6+ | 0.5+ | 2006 09 30 | 704 | 0.7− | 0.1− |
| 2002 05 08 | 704 | 0.9− | 0.5− | 2005 03 12 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 704 | 0.8− | 1.1+ |
| 2002 05 09 | 608 | 0.6− | 0.9− | 2005 03 12 | 704 | 0.7+ | 0.7+ | 2006 09 30 | 704 | 0.3− | 0.4+ |
| 2002 05 09 | 608 | 0.2− | 0.6− | 2005 03 12 | 704 | 0.3+ | 1.1+ | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2002 05 09 | 608 | 0.6− | 0.7− | 2005 03 12 | 704 | 0.2− | 0.8+ | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2002 05 13 | 704 | 0.0 | 0.8− | 2005 03 16 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.0 |
| 2002 05 13 | 704 | 0.1+ | 0.2− | 2005 03 16 | 703 | 0.7− | 0.3+ | 2006 10 22 | 703 | 1.3− | 0.0 |
| 2002 05 13 | 704 | 0.2+ | 0.4− | 2005 03 16 | 703 | 0.1− | 0.4− | 2006 10 28 | 703 | 0.4+ | 0.4− |
| 2002 05 13 | 704 | 1.2− | 1.5− | 2005 03 16 | 704 | 0.7+ | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.6+ |
| 2002 05 13 | 704 | 0.3− | 0.2+ | 2005 03 16 | 703 | 0.7− | 0.2+ | 2006 10 28 | 703 | 0.7+ | 0.6+ |
| 2002 05 27 | 644 | 0.5+ | 0.3+ | 2005 03 16 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.1− | 1.7+ |

**(141654)∗ 2002 JS$_{71}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 63.28029 | | (2000.0) | | | |
| $n$ | 0.29097725 | $\omega$ | 146.56468 | | +0.22183535 | +0.97187004 |
| $a$ | 2.2554335 | $\Omega$ | 136.10563 | | −0.91776754 | +0.23551186 |
| $e$ | 0.1701567 | $i$ | 6.55143 | | −0.32938096 | −0.00166983 |
| $P$ | 3.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 24 | 691 | 0.5+ | 0.7+ | 2002 06 06 | 699 | 0.6− | 0.6+ | 2006 08 19 | 699 | 0.1− | 1.4+ |
| 1995 03 24 | 691 | 0.4+ | 0.6+ | 2002 06 06 | 699 | 0.6− | 1.0+ | 2006 08 19 | 699 | 0.0 | 0.3+ |
| 1995 03 24 | 691 | 0.0 | 0.8+ | 2002 06 06 | 699 | 0.3− | 0.7+ | 2006 08 23 | 644 | 0.2+ | 0.5+ |
| 2002 04 04 | 608 | 0.9− | 0.4+ | 2002 06 10 | 704 | 0.1+ | 0.9+ | 2006 08 23 | 644 | 0.1+ | 0.6+ |
| 2002 04 04 | 608 | 0.5− | 0.3+ | 2002 06 10 | 704 | 0.4− | 0.4+ | 2006 08 23 | 644 | 0.1− | 0.4+ |
| 2002 04 04 | 608 | 0.8− | 0.4+ | 2002 06 10 | 704 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.9− | 0.6+ |
| 2002 04 10 | 704 | 0.0 | 1.1+ | 2002 06 10 | 704 | 0.8− | 0.2+ | 2006 09 12 | 703 | 0.4− | 1.0+ |
| 2002 04 10 | 704 | 0.2+ | 0.6+ | 2002 06 10 | 704 | (1.6− | 0.5+) | 2006 09 12 | 703 | 0.1+ | 0.7+ |
| 2002 04 10 | 704 | 0.1− | 0.5+ | 2002 07 09 | 704 | 1.0+ | 0.7− | 2006 09 12 | 703 | 1.0− | 0.5+ |
| 2002 04 10 | 704 | (0.4+ | 1.7+) | 2002 07 09 | 704 | 0.7+ | 0.3− | 2006 09 19 | 704 | 0.5− | 0.5+ |
| 2002 04 10 | 704 | 0.2− | 0.7+ | 2002 07 09 | 704 | 0.6+ | 0.1− | 2006 09 19 | 704 | 1.3− | 0.5+ |
| 2002 04 12 | 644 | 0.3+ | 0.6+ | 2003 10 29 | 699 | 0.6+ | 0.9− | 2006 09 19 | 704 | 0.4− | 0.4+ |
| 2002 04 12 | 644 | 0.1+ | 0.2+ | 2003 10 29 | 699 | (1.3− | 1.8+) | 2006 09 19 | 704 | (1.6− | 0.3+) |
| 2002 04 12 | 644 | 0.4+ | 0.5+ | 2003 10 29 | 699 | 0.6+ | 0.3− | 2006 09 19 | 704 | (1.7− | 0.1+) |
| 2002 04 16 | 704 | 0.7+ | 0.2+ | 2003 10 29 | 699 | 1.2+ | 0.3+ | 2006 09 22 | 704 | (1.1+ | 1.9+) |
| 2002 04 16 | 704 | 1.0+ | 0.4+ | 2003 11 26 | 691 | 0.4− | 0.4+ | 2006 09 22 | 704 | 0.3+ | 1.5+ |
| 2002 04 16 | 704 | 0.9+ | 0.5+ | 2003 11 26 | 691 | 0.2− | 0.5+ | 2006 09 22 | 704 | 0.5+ | 0.4+ |
| 2002 04 16 | 704 | 1.5+ | 0.5+ | 2003 11 26 | 691 | 0.2− | 0.5+ | 2006 09 22 | 704 | (0.6− | 1.8+) |
| 2002 04 16 | 704 | 1.0+ | 0.3+ | 2005 03 04 | 704 | 0.7+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.4+ |
| 2002 04 21 | 291 | 0.4− | 0.0 | 2005 03 04 | 704 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2002 04 21 | 291 | 0.1− | 0.1+ | 2005 03 04 | 704 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2002 04 21 | 291 | 0.1− | 0.1+ | 2005 03 04 | 704 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.5+ |
| 2002 05 06 | 644 | 0.2− | 0.4+ | 2005 03 04 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 704 | (0.8+ | 1.9+) |
| 2002 05 06 | 644 | 0.2− | 0.1+ | 2005 03 08 | 699 | 0.5+ | 0.7− | 2006 09 30 | 704 | 0.3+ | 1.2+ |
| 2002 05 06 | 644 | 0.1− | 0.4+ | 2005 03 08 | 699 | 0.3+ | 1.1− | 2006 09 30 | 704 | 0.4+ | 0.1− |
| 2002 05 08 | 704 | 0.6− | 0.2+ | 2005 03 08 | 699 | 0.5+ | 0.9+ | 2006 09 30 | 704 | 0.5− | 1.2+ |
| 2002 05 08 | 704 | 0.3− | 0.5+ | 2005 03 08 | 699 | 0.2− | 1.4+ | 2006 10 02 | 703 | 0.0 | 1.3+ |
| 2002 05 08 | 704 | 0.5− | 0.2+ | 2005 03 09 | 704 | 0.4+ | 0.6+ | 2006 10 02 | 703 | 0.7− | 0.9+ |
| 2002 05 08 | 704 | 0.3− | 0.5+ | 2005 03 09 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 703 | 0.3− | 1.0+ |
| 2002 05 08 | 704 | 0.4− | 0.5+ | 2005 03 09 | 704 | 0.7+ | 0.4− | 2006 10 02 | 703 | 0.6+ | 0.7+ |
| 2002 05 13 | 704 | 0.1+ | 0.3− | 2005 03 12 | 704 | 1.0+ | 0.2+ | 2006 10 02 | 703 | 0.8− | 1.2+ |
| 2002 05 13 | 704 | 0.2− | 0.3+ | 2005 03 12 | 704 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.7− | 0.4+ |
| 2002 05 13 | 704 | 0.1+ | 0.3− | 2005 03 12 | 704 | 0.3+ | 0.4+ | 2006 10 02 | 703 | 0.6− | 0.4+ |
| 2002 05 13 | 704 | 0.1+ | 1.0− | 2005 03 12 | 704 | 0.8+ | 0.6+ | 2006 10 02 | 703 | 0.1− | 0.2+ |
| 2002 05 13 | 704 | 0.5+ | 0.1− | 2005 03 16 | 703 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2002 05 16 | 608 | 0.4+ | 0.8− | 2005 03 16 | 703 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 0.9+ | 0.4+ |
| 2002 05 16 | 608 | 0.3+ | 0.9− | 2005 03 16 | 703 | 0.2+ | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 2002 05 16 | 608 | 0.3+ | 0.7− | 2005 03 16 | 703 | 1.4− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2002 05 18 | 704 | 0.2+ | 0.5+ | 2005 03 17 | 704 | 0.2− | 0.7+ | 2006 10 22 | 703 | 1.0− | 0.8+ |
| 2002 05 18 | 704 | 0.8+ | 0.5+ | 2005 03 17 | 704 | 0.9− | 0.7+ | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2002 05 18 | 704 | 0.2+ | 0.2− | 2005 03 17 | 704 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2002 05 18 | 704 | (2.0− | 1.4+) | 2005 03 17 | 704 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.9− | 0.2+ |
| 2002 05 18 | 704 | 0.2+ | 0.7− | 2006 08 19 | 699 | 0.4+ | 0.2+ | | | | |
| 2002 06 06 | 699 | 0.2− | 0.4+ | 2006 08 19 | 699 | 0.2− | 0.3+ | | | | |

**(141655)∗ 2002 JP$_{73}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 125.54121 | | (2000.0) | | | |
| $n$ | 0.30024743 | $\omega$ | 56.19615 | | −0.70999409 | +0.70376864 |
| $a$ | 2.2087667 | $\Omega$ | 168.46443 | | −0.68020057 | −0.67622261 |
| $e$ | 0.1775068 | $i$ | 7.14164 | | −0.18230629 | −0.21779046 |
| $P$ | 3.28 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.5− | 0.5+ | 2002 06 14 | 704 | 0.4− | 0.1+ | 2005 03 17 | 704 | 1.3+ | 1.4+ |
| 1996 09 06 | 691 | 0.2+ | 0.4+ | 2002 06 15 | 446 | 0.3+ | 0.1+ | 2005 03 17 | 704 | 0.3− | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.5− | 0.4+ | 2002 06 15 | 446 | 1.0− | 1.4+ | 2005 03 17 | 703 | 0.3+ | 0.9+ |
| 1996 09 08 | 691 | 0.4+ | 0.1+ | 2002 06 16 | 446 | 0.2− | 0.5+ | 2005 03 17 | 703 | 0.3− | 1.5+ |
| 1996 09 08 | 691 | 0.0 | 0.1− | 2002 06 16 | 446 | 0.9+ | 0.2+ | 2005 03 17 | 703 | 0.5− | 0.4+ |
| 1996 09 08 | 691 | 0.2+ | 0.1+ | 2002 06 16 | 446 | 0.2− | 0.3+ | 2005 03 17 | 703 | 0.2− | 0.3+ |
| 1996 09 11 | 691 | 1.0− | 0.5+ | 2005 02 02 | 704 | (2.4+ | 0.1+) | 2005 03 30 | 703 | 0.8− | 0.0 |
| 1996 09 11 | 691 | 1.1+ | 0.3− | 2005 02 02 | 704 | (1.5+ | 2.2+) | 2005 03 30 | 703 | 0.5− | 0.3− |
| 1996 09 11 | 691 | 0.4− | 0.3− | 2005 02 02 | 704 | (2.5+ | 1.7+) | 2005 03 30 | 703 | 0.8− | 0.4− |
| 2002 04 16 | 704 | 0.3− | 0.6+ | 2005 02 02 | 704 | 1.5+ | 1.1+ | 2005 03 30 | 703 | 1.3− | 0.1+ |
| 2002 04 16 | 704 | 0.8− | 1.1+ | 2005 02 09 | 704 | 0.3+ | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.1− |
| 2002 04 16 | 704 | 0.7− | 1.0+ | 2005 02 09 | 704 | 0.8− | 0.6− | 2005 04 04 | G96 | 0.3− | 0.2− |
| 2002 05 08 | 704 | 0.5+ | 0.5− | 2005 02 09 | 704 | 1.1+ | 0.3+ | 2005 04 04 | G96 | 0.2− | 0.2− |
| 2002 05 08 | 704 | 0.5− | 0.1+ | 2005 02 09 | 704 | 0.2+ | 0.7+ | 2005 04 04 | G96 | 0.0 | 0.2− |
| 2002 05 08 | 704 | 0.7+ | 0.8− | 2005 03 03 | 703 | 1.4− | 0.8− | 2005 04 04 | 704 | (2.3+ | 1.0−) |
| 2002 05 08 | 704 | 0.3− | 0.4− | 2005 03 03 | 703 | 0.1− | 0.3+ | 2005 04 04 | 704 | 0.1− | 0.8+ |
| 2002 05 13 | 704 | 0.5+ | 0.4− | 2005 03 03 | 703 | 0.8− | 0.1− | 2005 04 04 | 704 | 0.7+ | 0.4+ |
| 2002 05 13 | 704 | 0.1+ | 0.5+ | 2005 03 03 | 703 | 0.7− | 0.3+ | 2005 04 04 | 704 | 1.3+ | 1.8+ |
| 2002 05 13 | 704 | 0.6− | 0.1− | 2005 03 03 | 704 | 0.7+ | 0.3+ | 2005 04 11 | G96 | 0.3− | 0.1− |
| 2002 05 13 | 704 | 0.1− | 0.5+ | 2005 03 03 | 704 | 0.4+ | 1.1+ | 2005 04 11 | G96 | 0.5− | 0.2− |
| 2002 05 13 | 704 | 0.3− | 0.4+ | 2005 03 03 | 704 | 0.8+ | 1.1+ | 2005 04 11 | G96 | 0.5− | 0.3− |
| 2002 05 18 | 704 | 1.0+ | 0.7− | 2005 03 03 | 703 | 0.4− | 0.3+ | 2005 04 11 | G96 | 0.3− | 0.2− |
| 2002 05 18 | 704 | 1.1+ | 0.4− | 2005 03 03 | 704 | 0.9+ | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.1− |
| 2002 05 18 | 704 | 1.1+ | 0.7− | 2005 03 03 | 703 | 0.3− | 0.2+ | 2006 07 21 | G96 | 0.8+ | 0.8+ |
| 2002 05 18 | 704 | 0.6+ | 0.3− | 2005 03 03 | 703 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.2+ | 1.0+ |
| 2002 05 18 | 704 | 0.9+ | 0.1− | 2005 03 03 | 703 | 0.3− | 0.2+ | 2006 07 21 | G96 | 0.9− | 0.7+ |
| 2002 06 10 | 704 | 0.2− | 0.2− | 2005 03 08 | 699 | 0.5+ | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.1+ |
| 2002 06 10 | 704 | 0.2+ | 0.4− | 2005 03 08 | 699 | 0.8+ | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.9+ |
| 2002 06 10 | 704 | 0.2− | 0.8+ | 2005 03 08 | 699 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.5+ |
| 2002 06 10 | 704 | 0.8− | 0.1− | 2005 03 08 | 699 | 0.6+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.5+ |
| 2002 06 14 | 699 | 0.3+ | 0.3− | 2005 03 08 | 704 | 0.8+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.5+ |
| 2002 06 14 | 699 | 1.0− | 1.2+ | 2005 03 08 | 704 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.6+ |
| 2002 06 14 | 704 | 0.3+ | 0.2+ | 2005 03 08 | 704 | 0.5+ | 0.6+ | 2006 09 27 | G92 | 0.2+ | 0.6+ |
| 2002 06 14 | 699 | 0.1− | 0.8+ | 2005 03 08 | 704 | 0.8+ | 0.7+ | 2006 09 27 | G92 | 0.1− | 0.0 |
| 2002 06 14 | 699 | 0.5− | 0.2+ | 2005 03 08 | 704 | 0.7+ | 0.1+ | 2006 09 27 | G92 | 0.7+ | 0.7+ |
| 2002 06 14 | 704 | 0.1− | 0.3+ | 2005 03 17 | 704 | 0.8+ | 0.9+ | 2006 09 28 | G92 | 0.8− | 0.7+ |
| 2002 06 14 | 704 | 0.2− | 0.2+ | 2005 03 17 | 704 | 0.9+ | 0.5+ | 2006 09 28 | G92 | 1.1− | 0.3+ |
| 2002 06 14 | 704 | 0.2+ | 0.1+ | 2005 03 17 | 704 | 0.2+ | 0.9+ | 2006 09 28 | G92 | 0.1+ | 0.5+ |

**(141656)∗ 2002 JQ$_{73}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.72818 | | (2000.0) | | | |
| $n$ | 0.28947047 | $\omega$ | 165.88522 | | +0.25737861 | +0.95716930 |
| $a$ | 2.2632535 | $\Omega$ | 118.88338 | | −0.90061525 | +0.28734443 |
| $e$ | 0.1309617 | $i$ | 8.71039 | | −0.35021198 | −0.03549814 |
| $P$ | 3.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 704 | 0.6+ | 0.7+ | 2002 06 14 | 704 | 0.4+ | 1.4+ | 2005 04 02 | 699 | 0.6− | 0.8+ |
| 2002 05 08 | 704 | 0.4+ | 0.6+ | 2002 06 14 | 704 | 1.0+ | 1.4+ | 2005 04 02 | 699 | 0.2+ | 0.3+ |
| 2002 05 08 | 704 | 0.1− | 0.4+ | 2002 06 14 | 704 | 0.8+ | 0.6+ | 2005 04 02 | 699 | 0.2− | 0.6− |
| 2002 05 08 | 704 | 0.9+ | 0.4+ | 2003 11 26 | 691 | 0.1− | 0.5+ | 2005 04 12 | 704 | 0.8+ | 0.7+ |
| 2002 05 08 | 704 | 0.8− | 0.9+ | 2003 11 26 | 691 | 0.1− | 0.5+ | 2005 04 12 | 704 | 1.4+ | 0.2+ |
| 2002 05 08 | 704 | 0.1− | 0.8+ | 2003 11 26 | 691 | 0.4− | 0.3+ | 2005 04 12 | 704 | 0.4+ | 0.5+ |
| 2002 05 08 | 704 | 0.4− | 0.9+ | 2003 11 30 | 704 | 0.7− | 0.5+ | 2005 04 12 | 704 | (1.8+ | 0.1+) |
| 2002 05 08 | 704 | 0.1+ | 1.0+ | 2003 11 30 | 704 | 0.1− | 1.1+ | 2006 08 28 | D35 | 0.3− | 0.8+ |
| 2002 05 13 | 704 | 0.2− | 0.2− | 2003 11 30 | 704 | 0.6− | 0.5+ | 2006 08 28 | D35 | 0.2− | 0.5+ |
| 2002 05 13 | 704 | 0.8− | 0.4− | 2003 12 21 | 691 | 0.1− | 0.4+ | 2006 08 28 | D35 | 0.5− | 0.7+ |
| 2002 05 13 | 704 | (1.6− | 0.5−) | 2003 12 21 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 1.0− | 0.3+ |
| 2002 05 13 | 704 | 0.9− | 0.4+ | 2003 12 21 | 691 | 0.2+ | 1.1+ | 2006 09 19 | 703 | 0.5− | 0.7+ |
| 2002 05 13 | 704 | 0.3− | 0.9+ | 2005 03 10 | 699 | 0.6+ | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.3− |
| 2002 06 05 | 699 | 0.4− | 0.2− | 2005 03 10 | 699 | 0.8+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.3+ |
| 2002 06 05 | 699 | 0.0 | 0.6+ | 2005 03 10 | 699 | 0.7− | 0.9+ | 2006 09 25 | 703 | 0.7− | 0.8+ |
| 2002 06 05 | 699 | 0.5+ | 0.2+ | 2005 03 10 | 699 | 0.7+ | 0.4+ | 2006 09 25 | 703 | 0.1+ | 1.5+ |
| 2002 06 05 | 699 | 0.3+ | 0.1+ | 2005 03 16 | 703 | 0.4+ | 0.8− | 2006 09 25 | 703 | (0.2− | 1.5+) |
| 2002 06 08 | 608 | 0.1+ | 0.3+ | 2005 03 16 | 703 | 0.3− | 0.6+ | 2006 09 25 | 703 | (0.0 | 1.9+) |
| 2002 06 08 | 608 | 0.0 | 0.4+ | 2005 03 16 | 703 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2002 06 08 | 608 | 0.0 | 0.6+ | 2005 03 16 | 703 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2002 06 09 | 644 | 0.1+ | 0.4+ | 2005 03 17 | 703 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 06 09 | 644 | 0.1− | 0.5+ | 2005 03 17 | 703 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2002 06 09 | 644 | 0.1+ | 0.7+ | 2005 03 17 | 703 | 0.4− | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 2002 06 10 | 704 | 0.6+ | 0.6− | 2005 03 17 | 703 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.7+ | 0.1+ |
| 2002 06 10 | 704 | 0.3+ | 0.1+ | 2005 04 02 | 703 | 0.9− | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2002 06 10 | 704 | 1.2+ | 0.5+ | 2005 04 02 | 703 | 0.3+ | 1.3+ | 2006 10 28 | 703 | 0.2+ | 0.5+ |
| 2002 06 10 | 704 | 0.1− | 0.2+ | 2005 04 02 | 703 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.2− |
| 2002 06 10 | 704 | (1.6+ | 0.6−) | 2005 04 02 | 703 | 0.1− | 1.1+ | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2002 06 14 | 704 | (0.2+ | 1.9+) | 2005 04 02 | 699 | 0.0 | 1.2+ | 2006 10 28 | 703 | 0.1+ | 0.9+ |

**(141657)∗ 2002 JS$_{75}$**

Discovered 2002 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.34920 | | (2000.0) | | | |
| $n$ | 0.30036618 | $\omega$ | 221.79438 | | +0.12204216 | +0.98572682 |
| $a$ | 2.2081845 | $\Omega$ | 55.53106 | | −0.86926278 | +0.16254741 |
| $e$ | 0.1441584 | $i$ | 8.08620 | | −0.47904898 | −0.04382888 |
| $P$ | 3.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 704 | 0.2− | 0.4+ | 2002 06 08 | 704 | 0.6+ | 0.2− | 2005 04 06 | 703 | 0.8− | 0.9+ |
| 2002 05 10 | 704 | 0.0 | 0.3+ | 2002 06 08 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | (1.1− | 1.9−) |
| 2002 05 10 | 704 | 0.2− | 0.1+ | 2002 06 09 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 1.1− | 0.3− |
| 2002 05 13 | 704 | 0.1+ | 0.4+ | 2002 06 09 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.4− | 0.3− |
| 2002 05 13 | 704 | 0.2− | 1.0− | 2002 06 09 | 704 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.3+ |
| 2002 05 13 | 704 | 0.3+ | 0.5− | 2002 06 09 | 704 | 0.3− | 1.4− | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2002 05 13 | 704 | 0.4− | 0.4− | 2002 06 09 | 704 | 0.4− | 0.6− | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2002 05 18 | 644 | 0.2− | 0.4+ | 2002 06 12 | 644 | 0.1+ | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 05 18 | 644 | 0.0 | 0.4+ | 2002 06 12 | 644 | 0.1+ | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2002 05 18 | 644 | 0.0 | 0.4+ | 2002 06 12 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 05 21 | 704 | 0.0 | 0.0 | 2002 06 17 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 05 21 | 704 | 0.3− | 0.3+ | 2002 06 17 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 05 21 | 704 | 0.5+ | 0.0 | 2002 06 17 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 1.2+ | 0.4− |
| 2002 05 21 | 704 | 0.8− | 0.2+ | 2003 12 19 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.8+ |
| 2002 05 21 | 704 | 0.7− | 1.3+ | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2002 06 04 | 644 | 0.2+ | 0.5+ | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2002 06 04 | 644 | 0.1+ | 0.4+ | 2005 03 10 | 699 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2002 06 04 | 644 | 0.3+ | 0.6+ | 2005 03 10 | 699 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.4− | 0.3− |
| 2002 06 08 | 704 | 1.2+ | 0.8− | 2005 03 10 | 699 | 1.2+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.3+ |
| 2002 06 08 | 704 | 1.0+ | 0.5+ | 2005 03 10 | 699 | 0.7+ | 0.5+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 06 08 | 704 | 0.1+ | 0.0 | 2005 04 06 | 703 | 0.3− | 0.9+ | 2006 11 21 | 691 | 0.4− | 0.4+ |
| 2002 06 08 | 704 | 0.8+ | 0.7− | 2005 04 06 | 703 | (1.6− | 0.3+) | 2006 11 21 | 691 | 0.6− | 0.5+ |
| 2002 06 08 | 704 | 0.5− | 0.1− | 2005 04 06 | 703 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.5+ |

**(141658)∗ 2002 JC$_{76}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.71817 | | (2000.0) | | | |
| $n$ | 0.30008582 | $\omega$ | 280.18005 | | +0.50703288 | +0.86100857 |
| $a$ | 2.2095597 | $\Omega$ | 20.43516 | | −0.73948348 | +0.45824815 |
| $e$ | 0.1207837 | $i$ | 6.54106 | | −0.44281130 | +0.22061929 |
| $P$ | 3.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 15 | 691 | 0.1+ | 0.5+ | 2003 10 23 | 699 | 1.1+ | 0.3+ | 2006 08 30 | 699 | 1.1− | 0.2− |
| 2002 03 15 | 691 | 0.1+ | 0.7+ | 2003 10 23 | 699 | 1.0+ | 0.3+ | 2006 08 31 | 704 | (2.0− | 0.5+) |
| 2002 03 15 | 691 | 0.3− | 0.3+ | 2003 10 23 | 699 | 0.4+ | 0.4+ | 2006 08 31 | 704 | 0.7− | 1.2+ |
| 2002 04 08 | 691 | 0.1+ | 0.8+ | 2003 10 23 | 699 | 0.8− | 0.6+ | 2006 08 31 | 704 | 0.3+ | 1.0+ |
| 2002 04 08 | 691 | 0.1− | 0.8+ | 2003 10 24 | 704 | 0.8− | 0.7+ | 2006 08 31 | 704 | 0.1− | 0.2+ |
| 2002 04 08 | 691 | 0.2+ | 0.7+ | 2003 10 24 | 704 | (0.7− | 1.7+) | 2006 09 12 | 704 | 0.3− | 0.9+ |
| 2002 04 10 | 704 | 1.1+ | 0.3+ | 2003 10 24 | 704 | (1.3− | 2.5+) | 2006 09 12 | 704 | 1.2− | 0.3+ |
| 2002 04 10 | 704 | 1.3+ | 0.4+ | 2003 10 24 | 704 | 0.2− | 1.4+ | 2006 09 12 | 704 | 1.3+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 10 | 704 | 0.4+ | 0.8− | 2003 10 30 | 704 | 0.2− | 1.0+ | 2006 09 12 | 704 | 0.4− | 0.0 | | |
| 2002 04 10 | 704 | 0.6+ | 0.0 | 2003 10 30 | 704 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.1− | 0.1− | | |
| 2002 04 10 | 704 | 0.1+ | 0.5+ | 2003 10 30 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.2+ | | |
| 2002 04 12 | 704 | 0.7+ | 0.5+ | 2003 10 30 | 704 | 0.5+ | 1.1+ | 2006 09 14 | 703 | 0.2− | 0.1+ | | |
| 2002 04 12 | 704 | 1.5+ | 0.1− | 2003 11 01 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.1− | 0.3+ | | |
| 2002 04 12 | 704 | 1.0+ | 0.8+ | 2003 11 01 | 704 | 1.0− | 1.4+ | 2006 09 14 | 644 | 0.0 | 0.1+ | | |
| 2002 04 14 | 644 | 0.3+ | 0.8+ | 2003 11 01 | 704 | 0.4+ | 1.2+ | 2006 09 14 | 703 | 0.5− | 0.2− | | |
| 2002 04 14 | 644 | 0.1+ | 1.1+ | 2003 11 18 | 644 | 0.3− | 0.2+ | 2006 09 14 | 703 | 1.0− | 0.1+ | | |
| 2002 04 14 | 704 | 0.2− | 1.0+ | 2003 11 18 | 644 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.1+ | | |
| 2002 04 14 | 704 | 0.9+ | 0.7+ | 2003 11 18 | 644 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.1− | | |
| 2002 04 14 | 704 | 0.9+ | 0.1− | 2003 11 20 | 704 | 0.1− | 0.8+ | 2006 09 20 | 644 | 0.5− | 0.2+ | | |
| 2002 04 14 | 644 | 0.5+ | 0.7+ | 2003 11 20 | 704 | 1.5− | 1.2+ | 2006 09 21 | 699 | (0.7− | 1.6+) | | |
| 2002 04 14 | 704 | 0.8+ | 0.6+ | 2003 11 20 | 704 | (2.1− | 0.7+) | 2006 09 21 | 699 | 0.2+ | 0.9+ | | |
| 2002 04 14 | 704 | 0.9+ | 0.4+ | 2003 11 24 | 704 | 0.4+ | 0.4+ | 2006 09 21 | 699 | 0.2− | 1.3+ | | |
| 2002 04 15 | 644 | 0.2+ | 0.7+ | 2003 11 24 | 704 | 1.0− | 0.6+ | 2006 09 21 | 699 | 0.6− | 1.1+ | | |
| 2002 04 15 | 644 | 0.5+ | 1.2+ | 2003 11 24 | 704 | 0.1− | 0.9+ | 2006 09 26 | 704 | 0.1− | 0.6+ | | |
| 2002 04 15 | 644 | 0.6+ | 0.8+ | 2005 02 09 | 691 | 0.6+ | 0.3+ | 2006 09 26 | 704 | (1.7− | 1.8+) | | |
| 2002 05 11 | 704 | 1.0+ | 0.9+ | 2005 02 09 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 1.3+ | | |
| 2002 05 11 | 704 | 1.0+ | 0.3+ | 2005 02 09 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.0 | | |
| 2002 05 11 | 704 | (0.4− | 2.2+) | 2005 03 16 | 703 | 0.9− | 0.2+ | 2006 09 28 | 704 | 0.2− | 0.6+ | | |
| 2002 05 11 | 704 | 1.0+ | 0.7+ | 2005 03 16 | 703 | 0.5+ | 0.4+ | 2006 09 28 | 704 | 0.1− | 0.8+ | | |
| 2002 05 11 | 704 | 0.5+ | 0.9+ | 2005 03 16 | 703 | 0.0 | 1.4− | 2006 09 28 | 704 | 1.1− | 0.7+ | | |
| 2002 05 13 | 704 | 0.1+ | 0.9+ | 2005 03 16 | 703 | 1.5− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4− | | |
| 2002 05 13 | 704 | (0.5− | 1.6+) | 2006 08 21 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.1+ | | |
| 2002 05 13 | 704 | (0.0 | 2.0+) | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.1− | 1.0+ | | |
| 2002 05 13 | 704 | 0.5− | 1.2+ | 2006 08 21 | 644 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.9+ | | |
| 2003 09 28 | 291 | 0.2− | 0.5+ | 2006 08 22 | F84 | (2.0− | 0.1+) | 2006 11 17 | G96 | 0.4+ | 0.2− | | |
| 2003 09 28 | 291 | 0.3− | 0.3+ | 2006 08 22 | F84 | (2.3− | 0.7−) | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2003 09 28 | 291 | 0.6− | 0.1+ | 2006 08 22 | F84 | (2.3− | 0.5−) | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2003 10 21 | 691 | 0.3− | 0.3+ | 2006 08 30 | 699 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2+ | | |
| 2003 10 21 | 691 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.2− | 0.1+ | | | | | | |
| 2003 10 21 | 691 | 0.3− | 0.2+ | 2006 08 30 | 699 | 0.6− | 0.5+ | | | | | | |

**(141659)∗ 2002 JB$_{79}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.26880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29195077 | $\omega$ | 33.41392 | | +0.01306743 | +0.99600288 | |
| $a$ | 2.2504168 | $\Omega$ | 237.48130 | | −0.93882879 | −0.01819199 | |
| $e$ | 0.1060271 | $i$ | 6.01504 | | −0.34413624 | +0.08744897 | |
| $P$ | 3.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 691 | 0.1+ | 0.0 | 2002 05 11 | 704 | 0.1+ | 1.3+ | 2006 08 22 | 644 | 0.0 | 0.1− | | |
| 1996 10 12 | 691 | 0.1− | 0.2− | 2002 05 11 | 704 | 0.5− | 0.8+ | 2006 08 22 | 644 | 0.0 | 0.3− | | |
| 1996 10 12 | 691 | 0.2+ | 0.1− | 2002 05 11 | 704 | 0.6− | 1.0+ | 2006 08 22 | 644 | 0.2− | 0.1− | | |
| 2002 04 04 | 644 | 0.0 | 0.4+ | 2002 05 11 | 704 | 1.1− | 0.2+ | 2006 08 27 | 699 | 0.7+ | 0.9− | | |
| 2002 04 04 | 644 | 0.1+ | 0.4+ | 2002 05 11 | 704 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.7− | 0.0 | | |
| 2002 04 04 | 644 | 0.5+ | 0.6+ | 2002 05 13 | 704 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 1.0+ | 0.3− | | |
| 2002 04 09 | 704 | 1.1+ | 1.9− | 2002 05 13 | 704 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.0 | 0.8− | | |
| 2002 04 09 | 704 | (2.4+ | 0.5−) | 2002 05 13 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.1− | | |
| 2002 04 09 | 704 | 1.5+ | 0.5− | 2002 05 13 | 704 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | | |
| 2002 04 09 | 704 | 0.6+ | 0.9− | 2002 05 13 | 704 | 0.3+ | 1.0+ | 2006 09 14 | 691 | 0.1+ | 0.2− | | |
| 2002 04 12 | 704 | 0.4+ | 1.0+ | 2003 10 17 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | | |
| 2002 04 12 | 704 | 1.3+ | 0.3+ | 2003 10 17 | 691 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 2002 04 12 | 704 | 1.2+ | 0.5− | 2003 10 17 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.2+ | | |
| 2002 04 12 | 704 | 0.7+ | 0.7+ | 2003 10 25 | 704 | 0.3+ | 0.1+ | 2006 09 22 | 691 | 0.2− | 0.4+ | | |
| 2002 04 12 | 704 | 0.2− | 0.5+ | 2003 10 25 | 704 | 1.2− | 0.7+ | 2006 09 22 | 691 | 0.1− | 0.3+ | | |
| 2002 04 12 | 608 | 1.6− | 0.7+ | 2003 10 25 | 704 | 0.8− | 0.6+ | 2006 09 22 | 691 | 0.2− | 0.2+ | | |
| 2002 04 12 | 608 | 0.7− | 0.7+ | 2003 10 25 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 2002 04 12 | 608 | 1.4− | 1.4+ | 2003 10 25 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 2002 04 14 | 704 | 0.5− | 0.7+ | 2003 11 22 | 691 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.4+ | 0.0 | | |
| 2002 04 14 | 704 | 0.7− | 0.3+ | 2003 11 22 | 691 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 2002 04 14 | 704 | 0.9+ | 0.9+ | 2003 11 22 | 691 | 0.0 | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 2002 05 09 | 644 | 0.7+ | 1.5+ | 2003 11 24 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.2− | | |
| 2002 05 09 | 644 | 0.3+ | 1.0+ | 2003 11 24 | 691 | 0.9− | 0.4+ | | | | | | |
| 2002 05 09 | 644 | 0.8+ | 0.4+ | 2003 11 24 | 691 | 0.2− | 0.3+ | | | | | | |

**(141660)∗ 2002 JK$_{81}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.72179 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30966330 | $\omega$ | 95.39625 | | +0.49866343 | +0.86670430 | |
| $a$ | 2.1637623 | $\Omega$ | 204.52793 | | −0.80679463 | +0.45878726 | |
| $e$ | 0.1557590 | $i$ | 1.73753 | | −0.31688675 | +0.19580068 | |
| $P$ | 3.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 699 | 0.5− | 0.6+ | 2005 03 04 | 691 | 0.2− | 0.1+ | 2006 10 28 | 683 | 1.0+ | 0.1+ | | |
| 2002 04 05 | 699 | 0.4+ | 0.3+ | 2005 03 04 | 691 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.1− | | |
| 2002 04 05 | 699 | 0.9+ | 1.4+ | 2005 03 04 | 691 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2002 04 05 | 699 | 0.2− | 0.9+ | 2005 03 16 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2002 04 08 | 644 | 0.3+ | 0.7+ | 2005 03 16 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2002 04 08 | 644 | 0.2+ | 0.7+ | 2005 03 16 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.0 | | |
| 2002 04 08 | 644 | 0.1+ | 0.6+ | 2005 04 02 | G96 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2002 04 09 | 704 | 1.1− | 0.3− | 2005 04 02 | G96 | 0.1− | 0.5− | 2006 10 28 | G96 | 0.3− | 0.1− | | |
| 2002 04 09 | 704 | 0.6+ | 0.8− | 2005 04 02 | G96 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2002 04 09 | 704 | 0.9+ | 0.3+ | 2005 04 02 | G96 | 0.0 | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.1+ | | |
| 2002 04 09 | 704 | 1.1− | 0.4+ | 2005 04 06 | G96 | 0.3− | 0.4− | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2002 04 09 | 704 | (2.0+ | 0.7+) | 2005 04 06 | G96 | 0.4− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.0 | | |
| 2002 04 10 | 704 | 0.3+ | 1.0+ | 2005 04 06 | G96 | 0.3− | 0.5− | 2006 11 03 | G96 | 0.1− | 0.5− | | |
| 2002 04 10 | 704 | 0.4− | 0.1− | 2005 04 06 | G96 | 0.2− | 0.3− | 2006 11 03 | G96 | 0.0 | 0.4− | | |
| 2002 04 10 | 704 | 1.0− | 0.5+ | 2005 05 04 | G96 | 0.0 | 0.4− | 2006 11 03 | G96 | 0.2− | 0.1− | | |
| 2002 04 10 | 704 | 0.9+ | 0.1− | 2005 05 04 | G96 | 0.2+ | 0.0 | 2006 11 03 | G96 | 0.1− | 0.5− | | |
| 2002 04 10 | 704 | 0.1− | 0.2− | 2005 05 04 | G96 | 0.0 | 0.3+ | 2006 11 03 | G96 | 0.2− | 0.0 | | |
| 2002 04 10 | 704 | 1.1+ | 0.5+ | 2005 05 04 | G96 | 0.4− | 0.1− | 2006 11 03 | G96 | 0.0 | 0.0 | | |
| 2002 04 10 | 704 | 0.2+ | 0.1− | 2005 05 13 | G96 | 0.5+ | 0.0 | 2006 11 03 | G96 | 0.1+ | 0.1− | | |
| 2002 04 10 | 704 | 0.4− | 0.8− | 2005 05 13 | G96 | 0.3− | 0.6− | 2006 11 03 | G96 | 0.2+ | 0.1− | | |
| 2002 04 12 | 704 | 0.3− | 0.7+ | 2005 05 13 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1+ | | |
| 2002 04 12 | 704 | 0.2− | 0.1− | 2005 05 13 | G96 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.3− | 0.3+ | | |
| 2002 04 12 | 704 | 0.5− | 0.7+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.4+ | | |
| 2002 04 12 | 704 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.3+ | | |
| 2002 04 14 | 704 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.2+ | | |
| 2002 04 14 | 704 | 0.7+ | 0.9+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2+ | | |
| 2002 04 14 | 704 | 0.1+ | 0.5+ | 2006 10 04 | G96 | 0.5+ | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.1− | | |
| 2002 04 14 | 704 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2002 04 14 | 704 | 0.4+ | 0.9+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2002 05 11 | 704 | 0.5+ | 1.3+ | 2006 10 04 | G96 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.1− | | |
| 2002 05 11 | 704 | (0.3− | 1.7+) | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.5− | | |
| 2002 05 11 | 704 | 0.5+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.4− | | |
| 2002 05 11 | 704 | 0.2+ | 0.9+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2002 05 13 | 704 | 1.2+ | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2002 05 13 | 704 | (2.5+ | 1.2−) | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | (1.9+ | 0.3+) | | |
| 2002 05 13 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.7+ | 1.4+ | | |
| 2002 05 13 | 704 | (1.6+ | 0.1+) | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.2− | | |
| 2002 05 16 | 704 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.8+ | | |
| 2002 05 16 | 704 | 0.0 | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.1+ | | |
| 2002 05 16 | 704 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.1− | | |
| 2003 11 21 | 704 | (0.4+ | 1.7+) | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.3+ | | |
| 2003 11 21 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ | 2006 11 25 | 703 | 0.3− | 0.4− | | |
| 2003 11 21 | 704 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 25 | 703 | 0.4+ | 0.2+ | | |
| 2003 11 21 | 704 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 25 | 703 | 0.5− | 0.6+ | | |
| 2003 11 24 | 699 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 25 | 703 | 2.4− | 0.6− | | |
| 2003 11 24 | 699 | 1.0− | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1− | | |
| 2003 11 24 | 699 | 0.3− | 1.0− | 2006 10 28 | 683 | 0.6− | 0.9− | 2006 11 27 | 691 | 0.3+ | 0.0 | | |
| 2003 11 24 | 699 | 0.4+ | 0.6+ | 2006 10 28 | 683 | (2.2+ | 0.3−) | 2006 11 27 | 691 | 0.1+ | 0.0 | | |

**(141661)∗ 2002 JR$_{82}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.93697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27776481 | $\omega$ | 250.40442 | | +0.48562811 | +0.87343592 | |
| $a$ | 2.3264009 | $\Omega$ | 48.70166 | | −0.78316741 | +0.45285911 | |
| $e$ | 0.2382971 | $i$ | 2.72423 | | −0.38834796 | +0.17896460 | |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 14 | 691 | 0.3− | 0.6+ | 2003 12 14 | 691 | 0.1+ | 0.5+ | 2006 08 23 | 704 | 0.4+ | 1.1+ |
| 2001 01 14 | 691 | 0.2− | 0.0 | 2003 12 14 | 691 | 0.1+ | 0.1− | 2006 08 23 | 704 | 0.2− | 0.8+ |
| 2001 01 14 | 691 | 0.3+ | 0.8+ | 2003 12 14 | 691 | 0.0 | 0.4+ | 2006 08 23 | 704 | 0.1+ | 0.8+ |
| 2002 04 08 | 807 | 0.4− | 0.4+ | 2005 02 09 | 691 | 0.2+ | 1.0+ | 2006 08 23 | 704 | 0.6+ | 0.7+ |
| 2002 04 08 | 807 | 0.4− | 0.5+ | 2005 02 09 | 691 | 0.0 | 0.9+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2002 04 13 | 644 | 0.3+ | 0.4+ | 2005 02 09 | 691 | 1.0+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.0 |
| 2002 04 13 | 644 | 0.2+ | 0.3+ | 2005 03 14 | G96 | 0.4− | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.1+ |
| 2002 04 13 | 644 | 0.1− | 0.2+ | 2005 03 14 | G96 | 0.4− | 0.3− | 2006 08 28 | 699 | 0.6− | 0.7+ |
| 2002 04 14 | 644 | 0.2+ | 0.5+ | 2005 03 14 | G96 | 0.4− | 0.7− | 2006 08 28 | 699 | 0.3− | 0.3+ |
| 2002 04 14 | 644 | 0.9+ | 0.1− | 2005 03 14 | G96 | 0.7− | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.1+ |
| 2002 04 14 | 644 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.4− | 0.0 | 2006 08 28 | 699 | 0.3− | 0.0 |
| 2002 05 09 | 644 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.5− |
| 2002 05 09 | 644 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.2+ | 0.1+ |
| 2002 05 09 | 644 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.5+ | 1.8+ |
| 2002 05 11 | 704 | 0.5+ | 1.2+ | 2006 08 16 | 644 | 0.4− | 0.0 | 2006 08 31 | 704 | 0.6+ | 0.5− |
| 2002 05 11 | 704 | 0.6+ | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.6+ |
| 2002 05 11 | 704 | 0.1− | 0.3− | 2006 08 17 | 461 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.7− | 0.4+ |
| 2002 05 11 | 704 | 1.4+ | 1.2+ | 2006 08 17 | 461 | 0.8− | 0.1− | 2006 09 14 | 703 | 1.0+ | 0.4+ |
| 2002 05 13 | 704 | 0.4+ | 0.6+ | 2006 08 17 | 461 | 0.5− | 0.2+ | 2006 09 14 | 703 | 1.1+ | 0.6+ |
| 2002 05 13 | 704 | 0.3+ | 0.2− | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 09 14 | 703 | 1.3+ | 0.4+ |
| 2002 05 13 | 704 | 1.1+ | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.4− | 0.1+ |
| 2002 05 13 | 704 | 0.4+ | 0.3+ | 2006 08 18 | 644 | 0.4− | 0.1− | 2006 09 14 | 644 | 0.4− | 0.1+ |
| 2002 05 13 | 704 | 0.1− | 0.9+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 16 | 704 | 0.2+ | 0.5+ |
| 2002 05 18 | 644 | 0.3− | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.6− | 0.6+ |
| 2002 05 18 | 644 | 0.2+ | 0.7+ | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.6− | 0.2+ |
| 2002 05 18 | 644 | 0.1+ | 0.8+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.2+ |
| 2002 05 19 | 644 | 0.0 | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 16 | 704 | 0.1− | 1.5+ |
| 2002 05 19 | 644 | 0.3− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.2− | 1.3− |
| 2002 05 19 | 644 | 0.2− | 0.5+ | 2006 08 22 | 644 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.7− |
| 2003 11 30 | 691 | 0.1− | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.6− | 0.3− |
| 2003 11 30 | 691 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.0 | | | | |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.1− | 1.0+ | | | | |

**(141662)∗ 2002 JX$_{83}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.44445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29991761 | $\omega$ | 302.80744 | | −0.01869741 | +0.99980753 | |
| $a$ | 2.2103857 | $\Omega$ | 326.11969 | | −0.91372148 | −0.01949948 | |
| $e$ | 0.2051467 | $i$ | 0.61068 | | −0.40591065 | −0.00215986 | |
| $P$ | 3.29 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 20 | 691 | 0.2+ | 0.3− | 2002 05 13 | 704 | 0.5+ | 1.1− | 2005 04 02 | G96 | 0.1− | 0.1+ |
| 1996 09 20 | 691 | 0.1− | 0.2+ | 2002 05 18 | 644 | 0.1+ | 0.2+ | 2005 04 02 | G96 | 0.7+ | 0.3− |
| 1996 09 20 | 691 | 0.1− | 0.2+ | 2002 05 18 | 644 | 0.3+ | 0.3+ | 2005 04 02 | G96 | 0.2+ | 0.1+ |
| 2002 04 08 | 691 | 0.3+ | 0.2+ | 2002 05 18 | 644 | 0.3+ | 0.3+ | 2005 04 02 | G96 | 0.1+ | 0.2+ |
| 2002 04 08 | 691 | 0.4+ | 0.2+ | 2002 06 05 | 291 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.5+ |
| 2002 04 08 | 691 | 0.0 | 0.2+ | 2002 06 05 | 291 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.3+ | 0.3+ |
| 2002 04 14 | 704 | 0.3+ | 0.6+ | 2002 06 05 | 291 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.3+ | 0.3+ |
| 2002 04 14 | 704 | 0.2+ | 0.0 | 2005 03 08 | G96 | 0.6+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2002 04 14 | 704 | 0.1− | 0.6+ | 2005 03 08 | G96 | 0.4− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2002 04 14 | 704 | 0.3− | 0.2+ | 2005 03 08 | G96 | 0.7+ | 1.3+ | 2006 09 28 | 691 | 0.2− | 0.5+ |
| 2002 05 09 | 644 | 0.2+ | 0.3+ | 2005 03 08 | G96 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2002 05 09 | 644 | 0.1+ | 0.7+ | 2005 03 08 | G96 | 0.3− | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.6+ |
| 2002 05 09 | 644 | 0.0 | 0.3− | 2005 03 08 | G96 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.2+ |
| 2002 05 11 | 704 | 0.2− | 0.5+ | 2005 03 08 | G96 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 05 11 | 704 | 0.4− | 0.3+ | 2005 03 08 | G96 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.1+ |
| 2002 05 11 | 704 | 0.2− | 0.4+ | 2005 03 08 | G96 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 05 11 | 704 | 0.5+ | 0.2− | 2005 03 08 | G96 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 2002 05 11 | 704 | 0.2− | 0.0 | 2005 03 08 | G96 | 0.2+ | 0.1− | 2006 10 28 | G96 | 1.1− | 0.3− |
| 2002 05 13 | 704 | 0.1+ | 0.6+ | 2005 03 08 | G96 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2002 05 13 | 704 | 0.8− | 0.4− | 2005 03 12 | 695 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2002 05 13 | 704 | 0.4+ | 0.0 | 2005 03 12 | 695 | 0.3+ | 0.3+ | | | | |

**(141663)∗ 2002 JX$_{86}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.95851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28874615 | $\omega$ | 226.79980 | | −0.50411741 | +0.86358729 | |
| $a$ | 2.2670369 | $\Omega$ | 12.93635 | | −0.78012977 | −0.45083334 | |
| $e$ | 0.0620875 | $i$ | 2.32720 | | −0.37049045 | −0.22575718 | |
| $P$ | 3.41 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.4+ | 0.0 | 2003 10 24 | 704 | 0.6− | 0.4+ | 2005 03 16 | 703 | 0.8− | 0.4− |
| 2002 04 14 | 704 | 1.2+ | 0.0 | 2003 10 24 | 704 | 1.1− | 0.2+ | 2005 03 16 | 703 | 1.1− | 0.0 |
| 2002 04 14 | 704 | 0.6+ | 0.2+ | 2003 10 24 | 704 | 0.4− | 0.1+ | 2005 03 16 | 703 | 0.2+ | 0.5+ |
| 2002 04 14 | 704 | 0.3+ | 0.1+ | 2003 10 24 | 704 | 1.2− | 0.1− | 2005 03 17 | 704 | 0.1− | 0.3+ |
| 2002 04 14 | 704 | 1.0− | 0.7+ | 2005 02 01 | 691 | 0.1+ | 0.1+ | 2005 03 17 | 704 | 0.4+ | 1.2+ |
| 2002 04 18 | 644 | 0.1+ | 0.3+ | 2005 02 01 | 691 | 0.1+ | 0.1+ | 2005 03 17 | 704 | 0.6+ | 1.2+ |
| 2002 04 18 | 644 | 0.2− | 0.8+ | 2005 02 01 | 691 | 0.1− | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.5+ |
| 2002 04 18 | 644 | 0.6+ | 0.3+ | 2005 02 09 | 691 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.5− | 0.5+ |
| 2002 05 08 | 699 | 0.8− | 0.2+ | 2005 02 09 | 691 | 0.1+ | 0.1+ | 2005 04 04 | G96 | 0.2− | 0.6+ |
| 2002 05 08 | 699 | 0.6+ | 0.4+ | 2005 02 09 | 691 | 0.1+ | 0.1+ | 2005 04 04 | G96 | 0.5− | 0.8+ |
| 2002 05 08 | 699 | 1.2+ | 0.2− | 2005 02 14 | 704 | 0.3− | 0.1− | 2005 05 10 | G96 | 0.3− | 0.1− |
| 2002 05 08 | 699 | 0.6+ | 0.1+ | 2005 02 14 | 704 | 1.1+ | 0.7+ | 2005 05 10 | G96 | 0.1− | 0.1− |
| 2002 05 09 | 644 | 0.2+ | 0.2+ | 2005 02 14 | 704 | 0.5+ | 0.2+ | 2005 05 10 | G96 | 0.4− | 0.0 |
| 2002 05 09 | 644 | 0.0 | 0.2+ | 2005 02 14 | 704 | 0.4+ | 0.8+ | 2005 05 10 | G96 | 0.1− | 0.2− |
| 2002 05 09 | 644 | 0.1− | 0.1+ | 2005 02 14 | 704 | 0.5+ | 0.6+ | 2006 08 16 | 644 | 0.3− | 0.4+ |
| 2002 05 11 | 704 | 0.2+ | 0.1+ | 2005 03 04 | 704 | 0.4+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 2002 05 11 | 704 | 0.0 | 0.2− | 2005 03 04 | 704 | 0.2+ | 1.0− | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 2002 05 11 | 704 | 0.1+ | 0.4+ | 2005 03 04 | 704 | 0.3+ | 0.4− | 2006 08 17 | 644 | 0.1− | 0.1+ |
| 2002 05 11 | 704 | 0.1+ | 0.5+ | 2005 03 04 | 704 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.2− | 0.3+ |
| 2002 05 11 | 704 | 0.7− | 0.8+ | 2005 03 08 | 699 | 0.5− | 0.9− | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 05 13 | 704 | 0.1+ | 0.2+ | 2005 03 08 | 699 | 0.3+ | 0.6+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2002 05 13 | 704 | 0.4− | 0.5+ | 2005 03 08 | 699 | 0.5+ | 0.9+ | 2006 08 20 | 644 | 0.2− | 0.5+ |
| 2002 05 13 | 704 | 0.6− | 0.3+ | 2005 03 08 | 699 | 0.8+ | 0.3+ | 2006 08 20 | 644 | 0.1− | 0.5+ |
| 2002 05 18 | 644 | 0.1− | 0.4+ | 2005 03 08 | 704 | 1.4+ | 0.3− | 2006 08 23 | 704 | 0.4− | 0.3− |
| 2002 05 18 | 644 | 0.1− | 0.3+ | 2005 03 08 | 704 | 1.0+ | 0.8+ | 2006 08 23 | 704 | 0.5+ | 0.3+ |
| 2002 05 18 | 644 | 0.0 | 0.0 | 2005 03 08 | 704 | 0.0 | 0.1− | 2006 08 23 | 704 | 0.2+ | 0.1− |
| 2003 09 19 | 691 | 0.6− | 0.4+ | 2005 03 08 | 704 | 0.3+ | 0.2+ | 2006 08 24 | 644 | 0.5− | 0.4+ |
| 2003 09 19 | 691 | 0.3− | 0.5+ | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.4− | 0.6+ |
| 2003 09 19 | 691 | 0.3− | 0.5+ | 2005 03 10 | G96 | 0.2− | 0.1− | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2003 09 29 | 691 | 0.4+ | 0.3+ | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2003 09 29 | 691 | 0.2+ | 0.3+ | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2003 09 29 | 691 | 0.1+ | 0.2+ | 2005 03 12 | 704 | 1.0− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2003 10 21 | 699 | 0.5+ | 0.3+ | 2005 03 12 | 704 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4+ |
| 2003 10 21 | 699 | 0.1+ | 0.3− | 2005 03 12 | 704 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2003 10 21 | 699 | 0.4+ | 0.3+ | 2005 03 12 | 704 | 0.7+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.9− |
| 2003 10 21 | 699 | 0.5+ | 0.6+ | 2005 03 12 | 704 | 0.4− | 0.4− | 2006 11 16 | G96 | 1.0+ | 0.2+ |
| 2003 10 24 | 704 | 0.8− | 0.1+ | 2005 03 16 | 703 | 1.4− | 0.6− | | | | |

**(141664)∗ 2002 JQ$_{88}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.52687 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29750201 | $\omega$ | 220.61329 | | −0.15871165 | | +0.98475704 |
| $a$ | 2.2223346 | $\Omega$ | 40.40258 | | −0.87504737 | | −0.10691513 |
| $e$ | 0.0636204 | $i$ | 6.30341 | | −0.45727750 | | −0.13719593 |
| $P$ | 3.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 13 | 644 | 0.0 | 0.8+ | 2003 09 27 | 691 | 0.4− | 0.2+ | 2005 04 02 | 699 | 1.0+ | 0.5+ |
| 2002 04 13 | 644 | 0.3+ | 0.6+ | 2003 09 27 | 691 | 0.1− | 0.3+ | 2005 04 02 | 699 | 0.5− | 0.3+ |
| 2002 04 13 | 644 | 0.3+ | 0.5+ | 2003 09 28 | 291 | 0.1+ | 0.0 | 2005 04 02 | 699 | 0.4+ | 0.5+ |
| 2002 04 17 | 704 | 0.3− | 0.4+ | 2003 09 28 | 291 | 0.1− | 0.0 | 2005 04 02 | 703 | (0.4− | 1.7+) |
| 2002 04 17 | 704 | 0.2− | 0.2− | 2003 09 28 | 291 | 0.2+ | 0.1+ | 2005 04 02 | 703 | 0.6− | 0.5− |
| 2002 04 17 | 704 | 0.3− | 0.2− | 2003 10 16 | 691 | 0.2− | 0.2+ | 2005 04 02 | 703 | 0.3+ | 0.1+ |
| 2002 04 17 | 704 | (0.3+ | 1.9+) | 2003 10 16 | 691 | 0.0 | 0.2+ | 2005 04 02 | 699 | (0.4− | 1.6+) |
| 2002 04 19 | 291 | 0.5+ | 0.2+ | 2003 10 16 | 691 | 0.2− | 0.2+ | 2005 04 02 | 703 | 1.0+ | 0.6− |
| 2002 04 19 | 291 | 0.2+ | 0.2+ | 2003 10 21 | 699 | 1.3− | 0.7+ | 2006 08 30 | 699 | 1.0− | 1.1+ |
| 2002 04 19 | 291 | 0.1− | 0.3+ | 2003 10 21 | 699 | 0.1+ | 0.4− | 2006 08 30 | 699 | 0.0 | 1.3+ |
| 2002 05 09 | 644 | 0.5+ | 1.3+ | 2003 10 21 | 699 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.8− |
| 2002 05 09 | 644 | 0.5+ | 1.4+ | 2003 10 21 | 699 | 0.4+ | 0.1− | 2006 08 30 | 699 | 0.3+ | 0.4+ |
| 2002 05 09 | 644 | (0.4+ | 1.6+) | 2003 10 23 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.8+ | 0.1+ |
| 2002 05 11 | 704 | 0.3− | 0.2+ | 2003 10 23 | 704 | 0.4− | 0.3− | 2006 09 18 | 699 | 0.0 | 0.4− |
| 2002 05 11 | 704 | 0.3+ | 1.0− | 2003 10 23 | 704 | 0.5− | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.3− |
| 2002 05 11 | 704 | 0.8+ | 0.4− | 2003 10 23 | 704 | 0.4− | 0.5− | 2006 09 18 | 699 | 0.2− | 1.0− |
| 2002 05 11 | 704 | 0.5+ | 0.5− | 2003 10 25 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | (2.2+ | 1.3−) |
| 2002 05 13 | 704 | 0.0 | 0.0 | 2003 10 25 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | (0.1− | 2.7+) |
| 2002 05 13 | 704 | 0.0 | 0.6+ | 2003 10 25 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.7+ |
| 2002 05 13 | 704 | 0.7+ | 0.5+ | 2003 11 24 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2002 05 13 | 704 | 0.3+ | 0.6+ | 2003 11 24 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.4− |
| 2002 05 13 | 704 | 0.0 | 0.3+ | 2003 11 24 | 691 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2002 05 18 | 644 | 0.2− | 0.8+ | 2005 02 09 | 704 | 1.0− | 0.9+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2002 05 18 | 644 | 0.2− | 1.0+ | 2005 02 09 | 704 | 0.1+ | 0.8+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2002 05 18 | 644 | 0.4− | 0.7+ | 2005 02 09 | 704 | 0.4+ | 1.0+ | | | | |
| 2003 09 27 | 691 | 0.5− | 0.2+ | 2005 02 09 | 704 | 1.0+ | 0.5+ | | | | |

**(141665)∗ 2002 JG$_{89}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.26437 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28280112 | $\omega$ | 72.61297 | | +0.52447532 | | +0.84961402 |
| $a$ | 2.2986983 | $\Omega$ | 229.15104 | | −0.80637848 | | +0.47474293 |
| $e$ | 0.1945132 | $i$ | 4.20855 | | −0.27327529 | | +0.22972845 |
| $P$ | 3.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.4+ | 1.9− | 2003 12 14 | 691 | 0.1− | 0.8+ | 2006 09 18 | 704 | 0.2+ | 0.6− |
| 1999 09 14 | 704 | 0.5− | 0.4− | 2006 08 18 | 644 | 0.4+ | 0.2− | 2006 09 18 | 704 | 0.8− | 0.1+ |
| 1999 09 14 | 704 | 0.4+ | 1.2+ | 2006 08 18 | 644 | 0.4+ | 0.1− | 2006 09 18 | 704 | (0.4− | 1.7−) |
| 2002 04 14 | 691 | 0.5− | 0.1+ | 2006 08 18 | 644 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.4− | 0.6− |
| 2002 04 14 | 691 | 0.4− | 0.0 | 2006 08 21 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.1− |
| 2002 04 14 | 691 | 0.3− | 0.3+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.5+ |
| 2002 05 11 | 704 | 0.7+ | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | (1.9− | 2.6−) |
| 2002 05 11 | 704 | 0.7+ | 0.7+ | 2006 08 24 | 704 | 1.3+ | 1.2+ | 2006 09 20 | 699 | 1.4+ | 0.1− |
| 2002 05 11 | 704 | (0.3− | 1.6−) | 2006 08 24 | 704 | 0.3+ | 0.1− | 2006 09 20 | 699 | 0.6− | 1.0− |
| 2002 05 11 | 704 | 0.9+ | 1.1− | 2006 08 24 | 704 | 0.3− | 0.8+ | 2006 09 20 | 699 | 0.5+ | 0.6− |
| 2002 05 13 | 704 | 0.3− | 0.2− | 2006 08 24 | 704 | 0.0 | 0.6+ | 2006 09 20 | 699 | 0.1− | 0.2+ |
| 2002 05 13 | 704 | 0.1− | 0.2− | 2006 08 24 | 704 | 0.1− | 0.9+ | 2006 09 25 | 704 | 0.5+ | 1.3+ |
| 2002 05 13 | 704 | 0.8+ | 0.3− | 2006 08 29 | 703 | 0.4+ | 0.6+ | 2006 09 25 | 704 | 0.8− | 1.3+ |
| 2002 05 13 | 704 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.6− | 0.6+ | 2006 09 25 | 704 | 0.0 | 0.6+ |
| 2002 05 13 | 704 | 0.2+ | 0.1− | 2006 08 29 | 703 | (1.6− | 0.3−) | 2006 09 25 | 704 | (1.7− | 0.7+) |
| 2002 05 18 | 644 | 0.3+ | 0.3+ | 2006 08 29 | 703 | 0.5− | 1.0+ | 2006 09 25 | 704 | 0.4+ | 0.5+ |
| 2002 05 18 | 644 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.8− | 1.0+ | 2006 09 30 | 699 | (0.4− | 1.7+) |
| 2002 05 18 | 644 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.7− | 0.1+ | 2006 09 30 | 699 | 0.3+ | 0.4+ |
| 2002 06 04 | 291 | 0.4+ | 0.6+ | 2006 09 12 | 703 | 0.7− | 0.2+ | 2006 09 30 | 699 | 0.5− | 0.8− |
| 2002 06 04 | 291 | 0.3+ | 0.9+ | 2006 09 12 | 703 | 1.3− | 0.4+ | 2006 09 30 | 699 | 1.1+ | 1.1− |
| 2002 06 04 | 291 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 11 14 | G96 | 0.4+ | 0.8− |
| 2003 11 20 | 695 | 0.5+ | 0.8+ | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2003 11 20 | 695 | 0.8+ | 1.0+ | 2006 09 18 | 703 | 0.6− | 1.0− | 2006 11 14 | G96 | 0.1+ | 1.1− |
| 2003 12 14 | 691 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 11 14 | G96 | 0.5+ | 0.7− |
| 2003 12 14 | 691 | 0.3− | 1.0+ | 2006 09 18 | 704 | (0.7− | 2.1−) | | | | |

**(141666)∗ 2002 JV$_{92}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.38987 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31754664 | $\omega$ | 3.00466 | | +0.06903818 | | +0.99725659 |
| $a$ | 2.1278011 | $\Omega$ | 270.95516 | | −0.91584890 | | +0.05274441 |
| $e$ | 0.1180156 | $i$ | 1.53034 | | −0.39554332 | | +0.05193582 |
| $P$ | 3.10 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.2+ | 0.0 | 2003 12 27 | 691 | 0.0 | 0.5− | 2005 05 12 | 699 | 1.3+ | 0.2− |
| 2000 11 24 | 691 | 0.0 | 1.1+ | 2005 04 12 | 704 | 1.2+ | 0.3− | 2005 05 12 | 699 | 0.6− | 1.0+ |
| 2000 11 24 | 691 | 0.1+ | 0.6− | 2005 04 12 | 704 | 0.7+ | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 04 18 | 704 | 0.4+ | 0.1+ | 2005 04 12 | 704 | 1.3+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 04 18 | 704 | 0.6− | 0.4− | 2005 04 12 | 704 | 0.1− | 1.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 04 18 | 704 | 0.1+ | 0.4+ | 2005 04 12 | 704 | (1.7+ | 0.0 ) | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2002 05 11 | 704 | 0.2+ | 0.6+ | 2005 04 13 | 699 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.4+ | 0.1− |
| 2002 05 11 | 704 | 0.1− | 0.5+ | 2005 04 13 | 699 | 0.5+ | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.3− |
| 2002 05 11 | 704 | 0.0 | 0.4+ | 2005 04 13 | 699 | 0.0 | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2002 05 11 | 704 | 0.3+ | 0.5+ | 2005 04 13 | 699 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.2− | 0.3+ |
| 2002 05 11 | 704 | 0.3+ | 0.2+ | 2005 04 14 | 703 | 1.2− | 0.1− | 2006 11 13 | 691 | 0.4− | 0.1+ |
| 2002 05 13 | 704 | 0.5− | 0.1+ | 2005 04 14 | 703 | 0.6− | 1.1+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2002 05 13 | 704 | 1.0− | 0.2+ | 2005 04 14 | 703 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2002 05 13 | 704 | 1.2− | 1.2+ | 2005 04 14 | 703 | 0.5− | 0.5− | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2002 05 13 | 704 | 0.2− | 0.1+ | 2005 04 18 | 703 | 1.1− | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 05 13 | 704 | 0.0 | 0.2− | 2005 04 18 | 703 | (0.6+ | 2.4+) | 2006 11 18 | 704 | 0.0 | 1.1+ |
| 2002 06 05 | 699 | 1.3+ | 0.9+ | 2005 04 18 | 703 | 1.4− | 1.1+ | 2006 11 18 | 704 | 1.0+ | 0.2+ |
| 2002 06 05 | 699 | 0.8+ | 0.1+ | 2005 04 18 | 703 | 0.6+ | 1.3+ | 2006 11 18 | 704 | 0.4+ | 0.9+ |
| 2002 06 05 | 699 | 0.8+ | 0.7+ | 2005 04 18 | E12 | 0.3+ | 0.2− | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2002 06 05 | 699 | (1.7+ | 0.6−) | 2005 04 18 | E12 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.5− | 0.1− |
| 2002 06 08 | 704 | 0.6+ | 0.4+ | 2005 04 18 | E12 | 0.5− | 0.5− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 06 08 | 704 | 0.3− | 0.7+ | 2005 04 18 | E12 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 06 08 | 704 | 0.2− | 0.6+ | 2005 05 01 | 644 | 0.4+ | 0.1− | 2006 11 27 | 703 | 3.0− | 1.8+ |
| 2002 06 12 | 644 | 0.3+ | 0.4− | 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 703 | (3.3+ | 0.1−) |
| 2002 06 12 | 644 | 0.2+ | 0.5− | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 2.0− | 2.1+ |
| 2002 06 12 | 644 | 0.1+ | 0.6− | 2005 05 06 | 703 | 0.4− | 0.2− | 2006 11 27 | 703 | 0.2+ | 0.8+ |
| 2003 12 01 | 691 | 0.1− | 0.0 | 2005 05 06 | 703 | 0.6− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2003 12 01 | 691 | 0.2− | 0.0 | 2005 05 06 | 703 | 0.4+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2003 12 01 | 691 | 0.1− | 0.1+ | 2005 05 06 | 703 | 0.8− | 0.9− | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2003 12 27 | 691 | 0.1− | 0.3+ | 2005 05 12 | 699 | 1.0+ | 1.2− | 2006 12 01 | G96 | 0.5− | 0.4− |
| 2003 12 27 | 691 | 0.1+ | 0.5− | 2005 05 12 | 699 | (1.6+ | 1.4+) | | | | |

**(141667)∗ 2002 JN$_{93}$ = 2003 WP$_{56}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56352)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.59884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30291848 | $\omega$ | 98.45989 | | +0.95598342 | | +0.29133216 |
| $a$ | 2.1957634 | $\Omega$ | 244.60834 | | −0.28212956 | | +0.87993172 |
| $e$ | 0.0929445 | $i$ | 2.21697 | | −0.08061398 | | +0.37529421 |
| $P$ | 3.25 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 809 | 0.3− | 0.1+ | 2003 12 14 | 691 | 0.2+ | 0.1− | 2006 09 19 | 683 | 0.4− | 0.9− |
| 1993 10 12 | 809 | 0.1− | 0.3− | 2003 12 14 | 691 | 0.0 | 0.0 | 2006 09 19 | 683 | 0.8+ | 0.5− |
| 1993 10 12 | 809 | 1.6+ | 0.6+ | 2003 12 19 | 291 | 0.1− | 0.1+ | 2006 09 19 | 683 | 0.7− | 0.2+ |
| 2000 12 29 | 691 | 0.3− | 0.1− | 2003 12 19 | 291 | 0.3− | 0.2+ | 2006 09 22 | 683 | 1.0− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 691 | 0.2− | 0.1+ | 2003 12 19 | 291 | 0.2− | 0.1+ | 2006 09 22 | 683 | 0.3− | 0.4+ | | |
| 2000 12 29 | 691 | 0.2− | 0.0 | 2003 12 19 | 704 | 0.5+ | 0.3− | 2006 09 22 | 683 | 0.9− | 0.9+ | | |
| 2002 05 09 | 644 | 0.3− | 0.6+ | 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.6+ | 0.2− | | |
| 2002 05 09 | 644 | 0.0 | 0.4+ | 2003 12 19 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.0 | 0.4− | | |
| 2002 05 09 | 644 | 0.1− | 0.5+ | 2003 12 19 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.2− | 0.6− | | |
| 2002 05 11 | 704 | 0.8− | 0.0 | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | (2.5+ | 0.7−) | | |
| 2002 05 11 | 704 | 0.7− | 0.5+ | 2003 12 19 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 683 | 0.6− | 0.1+ | | |
| 2002 05 11 | 704 | 0.7− | 0.5+ | 2003 12 19 | 704 | 1.5− | 0.9− | 2006 09 26 | 683 | (1.7− | 0.2−) | | |
| 2002 05 11 | 704 | (0.8+ | 1.7+) | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 09 26 | 683 | (2.8− | 2.4+) | | |
| 2002 05 13 | 704 | 1.2+ | 1.3+ | 2005 03 13 | 691 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.5− | | |
| 2002 05 13 | 704 | 0.0 | 1.3+ | 2005 03 13 | 691 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.6− | 0.2− | | |
| 2002 05 13 | 704 | 0.5− | 1.4+ | 2005 03 13 | 691 | 0.6+ | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.6+ | | |
| 2003 11 21 | 704 | 0.5+ | 0.6+ | 2005 03 17 | G96 | 0.6− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.6− | | |
| 2003 11 21 | 704 | 0.9− | 0.8+ | 2005 03 17 | G96 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.9− | 0.1− | | |
| 2003 11 21 | 704 | 0.4+ | 1.0+ | 2005 03 17 | G96 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.2− | | |
| 2003 11 21 | 704 | 0.4− | 0.3+ | 2005 03 17 | G96 | 0.2− | 0.2+ | 2006 10 17 | 703 | (1.9− | 0.5+) | | |
| 2003 11 23 | 704 | 1.2+ | 0.3− | 2005 04 03 | 644 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.7+ | | |
| 2003 11 23 | 704 | 0.4+ | 0.3− | 2005 04 03 | 644 | 1.1+ | 0.5+ | 2006 10 17 | 703 | 0.8+ | 0.3+ | | |
| 2003 11 23 | 704 | 0.6− | 1.1+ | 2005 04 03 | 644 | 1.0+ | 0.4+ | 2006 10 17 | 703 | 0.6+ | 0.7+ | | |
| 2003 11 23 | 704 | 0.6+ | 1.0− | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 1.4+ | 1.3+ | | |
| 2003 11 23 | 704 | 0.7− | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2003 11 26 | 704 | (3.7− | 1.5+) | 2006 09 14 | 644 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2003 11 26 | 704 | (3.3− | 1.1+) | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 2003 11 26 | 678 | 0.2+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.0 | | |
| 2003 11 26 | 678 | 0.5− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2003 11 26 | 704 | (3.6− | 2.2+) | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2003 11 26 | 678 | 0.4− | 1.0+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2003 12 01 | 691 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 683 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2003 12 01 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 683 | (1.8+ | 0.5−) | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2003 12 04 | 703 | 0.6+ | 0.2− | 2006 09 18 | 683 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.1+ | | |
| 2003 12 04 | 703 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.1− | | |
| 2003 12 04 | 703 | 1.4− | 1.3− | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.4− | | |
| 2003 12 04 | 703 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.9+ | 2006 11 11 | 703 | 1.2− | 0.3− | | |
| 2003 12 14 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.6− | | | | | | |

**(141668)∗ 2002 JR$_{94}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.90820 | | (2000.0) | | −0.33906854 | +0.93542709 |
| $n$ | 0.28034337 | $\omega$ | 13.59099 | | −0.87393754 | −0.35256163 |
| $a$ | 2.3121137 | $\Omega$ | 236.67487 | | −0.34823225 | −0.02600868 |
| $e$ | 0.0949477 | $i$ | 6.87659 | | | |
| $P$ | 3.52 | $H$ | 16.4 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.2− | 0.2+ | 2002 06 06 | 704 | 0.9+ | 0.8+ | 2003 11 28 | 691 | 0.0 | 0.2+ | | |
| 2002 05 11 | 704 | 0.4− | 0.3+ | 2002 06 06 | 704 | 0.5+ | 0.4+ | 2003 11 28 | 691 | 0.3+ | 0.2+ | | |
| 2002 05 11 | 704 | 0.5+ | 0.1+ | 2002 06 08 | 704 | 1.1− | 0.1+ | 2005 02 14 | 703 | 0.9+ | 1.4+ | | |
| 2002 05 11 | 704 | 0.0 | 0.0 | 2002 06 08 | 704 | 0.6− | 0.8+ | 2005 02 14 | 703 | 0.4− | 0.1− | | |
| 2002 05 11 | 704 | 0.6− | 0.3− | 2002 06 08 | 704 | 1.8− | 0.5+ | 2005 02 14 | 703 | 0.0 | 1.2+ | | |
| 2002 05 13 | 704 | 0.4+ | 0.2− | 2002 06 08 | 704 | 0.8− | 0.7+ | 2005 02 14 | 703 | 0.6− | 1.7+ | | |
| 2002 05 13 | 704 | 0.2+ | 0.2− | 2002 06 09 | 704 | 1.2− | 0.3+ | 2005 03 03 | 703 | 0.9+ | 0.5− | | |
| 2002 05 13 | 704 | 0.4− | 0.1− | 2002 06 09 | 704 | 1.0− | 0.4− | 2005 03 03 | 703 | 0.5+ | 0.0 | | |
| 2002 05 13 | 704 | 0.0 | 0.3− | 2002 06 09 | 704 | 0.2− | 1.7− | 2005 03 03 | 703 | 0.9− | 0.2+ | | |
| 2002 05 13 | 704 | 0.3− | 0.4+ | 2002 06 09 | 704 | 1.7+ | 1.6− | 2005 03 03 | 703 | 0.1− | 0.4− | | |
| 2002 05 18 | 644 | 0.2+ | 0.1+ | 2002 06 10 | 704 | 0.4+ | 0.3− | 2005 03 10 | 703 | 0.7+ | 0.7+ | | |
| 2002 05 18 | 644 | 0.2+ | 0.3+ | 2002 06 10 | 704 | 0.1+ | 0.6+ | 2005 03 10 | 703 | 0.5+ | 0.0 | | |
| 2002 05 18 | 644 | 1.0− | 0.8+ | 2002 06 10 | 704 | 0.3+ | 1.1+ | 2005 03 10 | 703 | 0.4+ | 0.5+ | | |
| 2002 05 19 | 644 | 0.1− | 0.5+ | 2002 06 11 | 644 | 0.5+ | 0.4+ | 2005 03 10 | 703 | 0.3− | 0.0 | | |
| 2002 05 19 | 644 | 0.1+ | 0.5+ | 2002 06 11 | 644 | 0.2+ | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.0 | | |
| 2002 05 19 | 644 | 0.0 | 0.6+ | 2002 06 11 | 644 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.3+ | 0.2+ | | |
| 2002 05 21 | 704 | 0.6+ | 0.2− | 2002 06 16 | 644 | 0.2+ | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.1+ | | |
| 2002 05 21 | 704 | 0.5+ | 0.0 | 2002 06 16 | 644 | 0.3+ | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.2+ | | |
| 2002 05 21 | 704 | 0.0 | 0.4− | 2002 06 16 | 644 | 0.5+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.0 | | |
| 2002 05 21 | 704 | 0.3+ | 0.1− | 2003 10 25 | 704 | 1.4− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.0 | | |
| 2002 05 28 | 608 | 0.1− | 0.7− | 2003 10 25 | 704 | 0.5− | 0.5+ | 2006 08 24 | 644 | 0.1+ | 0.0 | | |
| 2002 05 28 | 608 | 0.2− | 0.9− | 2003 10 25 | 704 | 0.2− | 0.0 | 2006 08 24 | 644 | 0.2− | 0.2− | | |
| 2002 05 28 | 608 | 0.2+ | 0.2− | 2003 10 25 | 704 | 0.3− | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.2+ | | |
| 2002 06 03 | 644 | 0.4+ | 0.5+ | 2003 10 25 | 704 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.0 | | |
| 2002 06 03 | 644 | 0.8+ | 0.6+ | 2003 10 27 | 691 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2+ | | |
| 2002 06 03 | 644 | 0.5+ | 0.4+ | 2003 10 27 | 691 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.0 | | |
| 2002 06 06 | 704 | 0.7− | 0.7+ | 2003 10 27 | 691 | 0.1− | 0.3+ | | | | | | |
| 2002 06 06 | 704 | 0.3+ | 0.2− | 2003 11 28 | 691 | 0.3+ | 0.4+ | | | | | | |

**(141669)∗ 2002 JV$_{95}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.17992 | | (2000.0) | | −0.68429051 | +0.72920339 |
| $n$ | 0.28221431 | $\omega$ | 232.06770 | | −0.65838887 | −0.61958656 |
| $a$ | 2.3018836 | $\Omega$ | 354.74945 | | −0.31348139 | −0.29047360 |
| $e$ | 0.1679847 | $i$ | 1.86880 | | | |
| $P$ | 3.49 | $H$ | 17.4 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.0 | 0.9+ | 2005 01 16 | 691 | 0.5+ | 0.0 | 2005 03 11 | G96 | 0.3− | 0.0 | | |
| 2002 05 11 | 704 | 1.3− | 0.7+ | 2005 01 16 | 691 | 0.3+ | 0.1+ | 2005 03 11 | G96 | 0.3− | 0.2− | | |
| 2002 05 11 | 704 | 1.2− | 0.7+ | 2005 01 16 | 691 | 0.4+ | 0.2+ | 2005 03 11 | G96 | 0.3− | 0.1+ | | |
| 2002 05 13 | 704 | 0.3− | 1.3+ | 2005 02 01 | 703 | 1.1− | 0.6+ | 2005 03 16 | 691 | 0.3− | 0.3+ | | |
| 2002 05 13 | 704 | 1.3+ | 0.8+ | 2005 02 01 | 703 | 0.3− | 0.2+ | 2005 03 16 | 691 | 0.2+ | 0.6+ | | |
| 2002 05 13 | 704 | 0.5+ | 1.4+ | 2005 02 01 | 703 | 1.0− | 0.5+ | 2005 03 16 | 691 | 0.2+ | 0.4+ | | |
| 2002 06 06 | 704 | 0.4− | 1.1+ | 2005 02 01 | 703 | 1.8+ | 0.5+ | 2005 04 07 | 568 | 0.2+ | 0.3+ | | |
| 2002 06 06 | 704 | 0.1− | 1.7+ | 2005 02 02 | 691 | 0.2+ | 0.4+ | 2005 04 07 | 568 | 0.1+ | 0.3+ | | |
| 2002 06 06 | 704 | (0.3+ | 2.2+) | 2005 02 02 | 691 | 0.0 | 0.7+ | 2005 04 07 | 568 | 0.2+ | 0.2+ | | |
| 2002 06 08 | 704 | 1.4+ | 0.9− | 2005 02 02 | 691 | 0.2+ | 0.7+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | | |
| 2002 06 08 | 704 | 0.4+ | 0.3− | 2005 02 03 | 704 | 0.6+ | 1.6+ | 2006 08 19 | 691 | 0.4− | 0.2+ | | |
| 2002 06 08 | 704 | 0.6+ | 0.6− | 2005 02 03 | 704 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.3− | 0.4+ | | |
| 2002 06 17 | 644 | 0.6+ | 0.3+ | 2005 02 03 | 704 | 0.8+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.4+ | | |
| 2002 06 17 | 644 | 0.3+ | 0.3+ | 2005 02 04 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.5+ | | |
| 2002 06 17 | 644 | 0.1− | 0.1− | 2005 02 04 | 691 | 0.3+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.4+ | | |
| 2003 09 27 | 691 | 0.2− | 0.0 | 2005 02 04 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.5− | 0.5+ | | |
| 2003 09 27 | 691 | 0.4− | 0.1− | 2005 02 09 | 699 | 0.0 | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.5+ | | |
| 2003 09 27 | 691 | 0.2+ | 0.1− | 2005 02 09 | 699 | 0.9− | 0.5+ | 2006 08 28 | 691 | 0.2− | 0.5+ | | |
| 2003 10 16 | 691 | 0.3+ | 0.3+ | 2005 02 09 | 699 | 0.8− | 0.6− | 2006 09 26 | G96 | 0.2+ | 0.2− | | |
| 2003 10 16 | 691 | 0.0 | 0.1+ | 2005 02 09 | 699 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2003 10 16 | 691 | 0.1− | 0.2+ | 2005 03 04 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2003 10 26 | 291 | 0.2− | 0.5+ | 2005 03 04 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | | |
| 2003 10 26 | 291 | 0.1− | 0.4+ | 2005 03 04 | 691 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.4− | | |
| 2003 10 26 | 291 | 0.1− | 0.1+ | 2005 03 10 | G96 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.3+ | 0.3+ | | |
| 2004 12 20 | G96 | 0.0 | 0.0 | 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.5+ | 0.1− | | |
| 2004 12 20 | G96 | 0.5− | 0.3− | 2005 03 10 | G96 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.5+ | 0.0 | | |
| 2004 12 20 | G96 | 0.3− | 0.2− | 2005 03 10 | G96 | 0.3− | 0.3− | | | | | | |
| 2004 12 20 | G96 | 0.1− | 0.3− | 2005 03 11 | G96 | 0.4− | 0.1+ | | | | | | |

**(141670)∗ 2002 JS$_{100}$**

Discovered 2002 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.66934 | | (2000.0) | | +0.90914265 | +0.39419137 |
| $n$ | 0.26754354 | $\omega$ | 191.48704 | | −0.36152329 | +0.90718898 |
| $a$ | 2.3852820 | $\Omega$ | 144.33409 | | −0.20678624 | +0.14704189 |
| $e$ | 0.4844522 | $i$ | 13.33058 | | | |
| $P$ | 3.68 | $H$ | 16.5 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 644 | 0.3+ | 0.3+ | 2002 06 06 | 699 | 0.6− | 0.7+ | 2006 10 23 | 703 | 0.7− | 0.0 | | |
| 2002 05 11 | 644 | 0.4+ | 0.5+ | 2002 06 06 | 699 | 0.6− | 1.1+ | 2006 10 23 | 703 | 0.1+ | 0.5+ | | |
| 2002 05 11 | 644 | 0.5+ | 0.3+ | 2002 06 06 | 699 | 0.1− | 1.0+ | 2006 10 23 | 703 | 0.3− | 0.4+ | | |
| 2002 05 15 | 704 | 0.9+ | 0.1+ | 2002 06 14 | 704 | 0.3+ | 0.6+ | 2006 10 23 | 703 | 0.6− | 0.2− | | |
| 2002 05 15 | 704 | 0.7− | 0.5+ | 2002 06 14 | 704 | (1.6− | 0.3+) | 2006 10 30 | 703 | 0.5− | 1.0+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 15 | 704 | 0.2+ | 1.0− | 2002 06 14 | 704 | 0.8− | 0.4− | 2006 10 30 | 703 | 0.4− | 0.9+ | |
| 2002 05 15 | 704 | 0.9− | 0.1+ | 2002 07 08 | 649 | 0.2− | 0.1− | 2006 10 30 | 703 | 0.8− | 0.1− | |
| 2002 05 15 | 644 | 0.2+ | 0.0 | 2002 07 08 | 649 | 0.3− | 0.6− | 2006 10 30 | 703 | 0.2− | 0.0 | |
| 2002 05 15 | 704 | 0.0 | 0.1− | 2002 07 08 | 649 | 0.4+ | 0.7− | 2006 11 04 | 130 | 0.3− | 0.3− | |
| 2002 05 15 | 644 | 0.0 | 0.2+ | 2002 07 14 | 715 | 0.4− | 0.2− | 2006 11 04 | 130 | 0.4+ | 0.1− | |
| 2002 05 15 | 644 | 0.9+ | 0.1− | 2002 07 14 | 715 | 0.1− | 0.5+ | 2006 11 04 | 130 | 0.4+ | 0.3+ | |
| 2002 05 15 | 246 | 0.0 | 0.3+ | 2002 07 14 | 715 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.5− | 0.2+ | |
| 2002 05 15 | 246 | 0.1+ | 0.1+ | 2002 08 01 | 649 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1− | |
| 2002 05 15 | 246 | 0.0 | 0.4+ | 2002 08 01 | 649 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1+ | |
| 2002 05 15 | 246 | 0.0 | 0.3+ | 2002 08 01 | 649 | 0.6− | 0.4+ | 2006 11 10 | 704 | 0.2+ | 0.2− | |
| 2002 05 16 | 704 | 0.5+ | 0.2+ | 2002 09 06 | 715 | 1.0+ | 0.7+ | 2006 11 10 | 704 | 0.2− | 0.6− | |
| 2002 05 16 | 704 | 0.2+ | 0.3− | 2002 09 06 | 715 | 0.0 | 0.7+ | 2006 11 10 | 704 | 0.5+ | 0.4+ | |
| 2002 05 16 | 704 | 0.2+ | 0.3+ | 2002 11 28 | 711 | (1.6+ | 0.0 ) | 2006 11 10 | 704 | 0.1+ | 1.0+ | |
| 2002 05 16 | 704 | 0.1− | 0.3− | 2002 11 28 | 711 | (2.1− | 0.1+) | 2006 11 10 | 704 | 0.4+ | 0.4+ | |
| 2002 05 16 | 704 | 0.1− | 0.0 | 2002 11 28 | 711 | 0.6− | 0.8− | 2006 11 16 | 703 | 0.2− | 0.3+ | |
| 2002 05 20 | 611 | 0.3+ | 0.8+ | 2002 12 02 | 474 | 0.6− | 0.7+ | 2006 11 16 | 703 | 0.5− | 0.5− | |
| 2002 05 20 | 611 | 0.1+ | 0.1− | 2002 12 02 | 474 | 0.5− | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.2− | |
| 2002 05 20 | 611 | 0.4− | 0.1− | 2002 12 02 | 474 | 1.0− | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.1− | |
| 2002 05 29 | 644 | 0.7+ | 0.2+ | 2003 01 30 | 448 | 1.1+ | 1.4+ | 2006 11 16 | 113 | 0.5− | 0.0 | |
| 2002 05 29 | 644 | 0.4+ | 0.1+ | 2003 01 30 | 448 | (0.6− | 2.2+) | 2006 11 16 | 113 | 0.3+ | 0.3− | |
| 2002 05 29 | 644 | 0.6+ | 0.1+ | 2003 01 30 | 448 | (1.0− | 3.3+) | 2006 11 16 | 113 | 0.2+ | 0.0 | |
| 2002 05 29 | 046 | 0.4+ | 0.1+ | 2003 12 19 | 291 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.4− | |
| 2002 05 29 | 046 | 0.0 | 0.1− | 2003 12 19 | 291 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.1− | |
| 2002 05 29 | 046 | 0.0 | 0.0 | 2003 12 19 | 291 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.6− | |
| 2002 05 31 | 046 | 0.6+ | 0.3+ | 2003 12 29 | 291 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.8− | |
| 2002 05 31 | 046 | 0.2− | 0.1+ | 2003 12 29 | 291 | (1.6− | 1.7+) | 2006 11 22 | 703 | 0.7− | 0.7+ | |
| 2002 05 31 | 046 | 1.0+ | 0.5+ | 2003 12 29 | 291 | 1.1+ | 0.3− | 2006 11 22 | 703 | 0.5+ | 1.1+ | |
| 2002 05 31 | 046 | 0.1+ | 0.4− | 2006 03 29 | 474 | 0.5− | 0.8+ | 2006 11 22 | 703 | 0.9− | 0.3+ | |
| 2002 05 31 | 046 | 0.4+ | 0.1+ | 2006 03 29 | 474 | 0.5− | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.9+ | |
| 2002 06 03 | 704 | 0.5− | 0.4− | 2006 03 29 | 474 | 0.2− | 0.1+ | 2006 12 01 | 703 | 0.1− | 1.6+ | |
| 2002 06 03 | 704 | 0.6− | 0.2− | 2006 10 17 | 113 | 0.4+ | 0.3+ | 2006 12 01 | 703 | 0.2+ | 0.1− | |
| 2002 06 03 | 704 | 0.8− | 0.3− | 2006 10 17 | 113 | 0.7+ | 0.5+ | 2006 12 01 | 703 | 0.6+ | 0.1+ | |
| 2002 06 06 | 699 | 0.6− | 0.8+ | 2006 10 17 | 113 | 0.5+ | 0.6+ | 2006 12 01 | 703 | 0.2− | 0.4− | |

**(141671)∗ 2002 JV$_{101}$ = 1837 T-3**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.59324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27014949 | $\omega$ | 74.49397 | | +0.55579230 | +0.81478312 | |
| $a$ | 2.3699178 | $\Omega$ | 230.46559 | | −0.82090036 | +0.50658012 | |
| $e$ | 0.2327281 | $i$ | 12.35301 | | −0.13121555 | +0.28196641 | |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.1+ | 1.4+ | 2002 05 21 | 704 | 0.3− | 0.3− | 2006 08 25 | 704 | (1.9+ | 0.9+) | |
| 1977 10 11 | 675 | 0.4− | 1.1+ | 2002 05 21 | 704 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 0.2+ | 0.4− | |
| 1977 10 16 | 675 | (2.4− | 4.1−) | 2002 06 02 | 644 | 0.3− | 0.1− | 2006 08 25 | 704 | 0.5− | 1.3− | |
| 1977 10 16 | 675 | 1.3− | 0.7− | 2002 06 02 | 644 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.1+ | 0.9+ | |
| 1977 10 17 | 675 | 0.2+ | 0.7− | 2002 06 02 | 644 | 0.3− | 0.3− | 2006 08 29 | 699 | 0.2+ | 0.4+ | |
| 1977 10 17 | 675 | 0.1+ | 0.8− | 2002 06 05 | 704 | 0.4+ | 0.9− | 2006 08 29 | 699 | 0.4− | 0.9+ | |
| 1977 10 22 | 675 | 0.1+ | 1.1− | 2002 06 05 | 704 | 0.2+ | 0.2− | 2006 08 29 | 699 | 0.2+ | 0.4+ | |
| 1977 10 22 | 675 | 1.7+ | 1.2+ | 2002 06 05 | 704 | 0.0 | 0.3− | 2006 09 20 | 699 | 0.8− | 1.0+ | |
| 1999 10 31 | 703 | 0.9− | 0.7+ | 2002 06 05 | 704 | 0.4+ | 0.7− | 2006 09 20 | 699 | 0.1− | 0.2+ | |
| 1999 10 31 | 703 | (4.0− | 1.9−) | 2002 06 09 | 704 | 0.4− | 0.4+ | 2006 09 20 | 699 | 1.2+ | 0.5+ | |
| 1999 10 31 | 703 | (2.7+ | 4.4+) | 2002 06 09 | 704 | 0.1− | 0.6− | 2006 09 20 | 699 | 0.1+ | 0.9+ | |
| 1999 10 31 | 703 | 1.0− | 0.5− | 2002 06 09 | 704 | 0.1+ | 0.5− | 2006 09 27 | 703 | 0.3− | 0.5− | |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2002 06 09 | 704 | 0.4+ | 0.8+ | 2006 09 27 | 703 | 0.1+ | 0.2− | |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2002 06 10 | 704 | 0.8− | 1.3+ | 2006 09 27 | 703 | 0.0 | 0.6+ | |
| 2002 05 09 | 704 | 0.2+ | 0.3− | 2002 06 10 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.0 | |
| 2002 05 09 | 704 | 0.6− | 0.3+ | 2002 06 10 | 704 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− | |
| 2002 05 09 | 704 | 1.4− | 1.0+ | 2002 06 10 | 704 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1+ | |
| 2002 05 09 | 704 | 1.0+ | 0.2+ | 2002 06 25 | 644 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.4− | 0.0 | |
| 2002 05 16 | 704 | (0.5− | 1.7+) | 2002 06 25 | 644 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 1.0+ | 1.2− | |
| 2002 05 16 | 704 | 1.0− | 0.4+ | 2002 06 25 | 644 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.6+ | |
| 2002 05 16 | 704 | 0.1− | 1.0+ | 2006 05 06 | 691 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.6− | 1.1− | |
| 2002 05 16 | 704 | 0.5− | 0.9+ | 2006 05 06 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.2− | |
| 2002 05 18 | 644 | 0.1+ | 0.8+ | 2006 05 06 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.4− | 0.8+ | |
| 2002 05 18 | 644 | 0.1+ | 0.1− | 2006 07 24 | 704 | 0.7+ | 0.3+ | 2006 10 23 | 703 | 0.1− | 0.3+ | |
| 2002 05 18 | 644 | 0.6+ | 0.9+ | 2006 07 24 | 704 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.6− | 0.6+ | |
| 2002 05 21 | 704 | 0.5− | 1.3− | 2006 07 24 | 704 | 0.6− | 0.1− | 2006 10 23 | 703 | 0.9− | 0.1+ | |
| 2002 05 21 | 704 | 0.2− | 0.2− | 2006 08 25 | 704 | (1.5+ | 1.7+) | | | | | |

**(141672)∗ 2002 JP$_{103}$**

Discovered 2002 May 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.19279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28933747 | $\omega$ | 57.68289 | | −0.33558842 | +0.94185444 | |
| $a$ | 2.2639470 | $\Omega$ | 192.74269 | | −0.88817748 | −0.32238942 | |
| $e$ | 0.1621897 | $i$ | 4.43272 | | −0.31388084 | −0.09473794 | |
| $P$ | 3.41 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.1+ | 0.8+ | 2002 05 10 | 704 | 0.1− | 0.9+ | 2003 10 19 | 691 | 0.3− | 1.0+ | |
| 1993 12 14 | 691 | 0.6− | 0.2+ | 2002 05 10 | 704 | 0.1− | 0.3+ | 2003 10 19 | 691 | 0.0 | 0.9+ | |
| 1993 12 14 | 691 | 0.6− | 0.3+ | 2002 05 10 | 704 | 0.4+ | 1.3+ | 2003 11 21 | 691 | 0.4+ | 0.1− | |
| 1995 03 28 | 691 | 1.0+ | 0.1+ | 2002 05 10 | 704 | 0.5− | 0.8+ | 2003 11 21 | 691 | 0.3− | 0.2+ | |
| 1995 03 28 | 691 | 0.2+ | 0.6+ | 2002 05 14 | 699 | 1.0− | 0.6− | 2003 11 21 | 691 | 0.1− | 0.3− | |
| 1995 04 05 | 691 | 0.1+ | 0.2+ | 2002 05 14 | 699 | 0.3− | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.1+ | |
| 1995 04 05 | 691 | 0.2− | 0.1− | 2002 05 14 | 699 | 0.8+ | 0.6+ | 2006 09 15 | 691 | 0.2+ | 0.0 | |
| 1995 04 05 | 691 | 0.1+ | 0.2+ | 2002 05 14 | 699 | 0.5− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.2+ | |
| 1995 04 05 | 104 | 0.1+ | 0.4− | 2002 05 16 | 704 | 0.2− | 1.3+ | 2006 09 23 | 691 | 0.0 | 0.4+ | |
| 1995 04 05 | 104 | 1.3− | 0.8− | 2002 05 16 | 704 | 0.5+ | 1.4+ | 2006 09 23 | 691 | 0.1− | 0.1− | |
| 1995 04 05 | 104 | 0.6− | 0.7− | 2002 05 16 | 704 | 0.2− | 0.8+ | 2006 09 23 | 691 | 0.2− | 0.4+ | |
| 1995 04 05 | 104 | (0.6− | 2.1−) | 2002 05 16 | 704 | 0.6+ | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.3− | |
| 1995 04 05 | 104 | 0.7+ | 0.7− | 2002 06 04 | 704 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.2− | 0.1− | |
| 2002 04 21 | 691 | 0.2+ | 0.5+ | 2002 06 04 | 704 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.8− | |
| 2002 04 21 | 691 | 0.1+ | 0.1− | 2002 06 04 | 704 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.3− | |
| 2002 04 21 | 691 | (2.2− | 0.5−) | 2003 10 19 | 691 | 0.4+ | 0.5+ | | | | | |

**(141673)∗ 2002 JB$_{105}$**

Discovered 2002 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.03370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29643945 | $\omega$ | 166.14442 | | −0.38916456 | +0.91870538 | |
| $a$ | 2.2276419 | $\Omega$ | 80.91884 | | −0.85151633 | −0.33090176 | |
| $e$ | 0.1991069 | $i$ | 3.90888 | | −0.35138424 | −0.21560251 | |
| $P$ | 3.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 704 | 0.7+ | 0.3− | 2002 06 11 | 704 | 0.6− | 1.3+ | 2005 03 12 | 704 | 0.1+ | 1.3+ | |
| 2002 04 09 | 704 | 0.7− | 0.1+ | 2002 06 11 | 704 | 0.0 | 0.0 | 2005 03 12 | 704 | 0.3+ | 0.2+ | |
| 2002 04 09 | 704 | 0.5+ | 0.9+ | 2002 06 11 | 704 | 0.1+ | 0.0 | 2005 03 12 | G96 | 0.8− | 0.1− | |
| 2002 04 09 | 704 | 0.3+ | 0.2− | 2002 06 11 | 704 | 0.0 | 0.1− | 2005 03 12 | G96 | 0.4− | 0.3− | |
| 2002 05 09 | 704 | (0.0 | 2.8+) | 2003 11 15 | 691 | 0.2− | 0.7+ | 2005 03 12 | G96 | 0.8− | 0.1− | |
| 2002 05 09 | 704 | 0.9− | 1.2+ | 2003 11 15 | 691 | 0.1+ | 0.0 | 2005 03 12 | G96 | 0.6− | 0.1+ | |
| 2002 05 09 | 704 | 0.7− | 0.1+ | 2003 11 15 | 691 | 0.1− | 0.4+ | 2005 03 16 | 704 | 0.1− | 0.3− | |
| 2002 05 09 | 704 | 0.1− | 0.1− | 2005 01 16 | A44 | 0.7+ | 0.8+ | 2005 03 16 | 704 | 0.2+ | 0.1+ | |
| 2002 05 09 | 704 | 0.2− | 0.1+ | 2005 01 16 | A44 | 0.7+ | 0.5+ | 2005 03 16 | 704 | 0.2+ | 0.4+ | |
| 2002 05 12 | 704 | 0.4+ | 0.7− | 2005 01 16 | A44 | 0.5+ | 1.0+ | 2005 03 16 | 704 | 0.0 | 0.2+ | |
| 2002 05 12 | 644 | 0.5+ | 1.0+ | 2005 01 17 | A44 | (1.8+ | 0.6+) | 2005 03 16 | 704 | 0.3− | 0.3+ | |
| 2002 05 12 | 704 | 0.1− | 0.2− | 2005 01 17 | A44 | 1.3+ | 0.7+ | 2005 03 16 | 703 | 0.9− | 0.9− | |
| 2002 05 12 | 704 | 0.6− | 1.3− | 2005 01 17 | A44 | 0.9+ | 0.9+ | 2005 03 16 | 703 | 0.7− | 0.2− | |
| 2002 05 12 | 644 | 0.4+ | 1.0+ | 2005 03 04 | 704 | 0.7+ | 0.5+ | 2005 03 16 | 703 | 0.6− | 0.5− | |
| 2002 05 12 | 644 | 0.2+ | 1.1+ | 2005 03 04 | 704 | 1.1+ | 0.5+ | 2005 03 16 | 703 | 0.7− | 0.2− | |
| 2002 05 16 | 704 | 0.0 | 0.4− | 2005 03 04 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 691 | 0.5− | 0.3+ | |
| 2002 05 16 | 704 | 0.9+ | 0.3+ | 2005 03 04 | 704 | 0.7+ | 0.0 | 2006 09 17 | 691 | 0.2− | 0.8+ | |
| 2002 05 16 | 704 | 0.7+ | 0.1− | 2005 03 04 | 704 | 0.9+ | 0.9+ | 2006 09 17 | 691 | 0.2− | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 16 | 704 | 0.3+ | 0.1+ | 2005 03 08 | 699 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2002 05 21 | 704 | 0.4+ | 0.3− | 2005 03 08 | 699 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 2002 05 21 | 704 | 0.3− | 0.1− | 2005 03 08 | 699 | (1.7+ | 0.0 ) | 2006 10 04 | G96 | 0.1− | 0.1+ |
| 2002 05 21 | 704 | 0.5+ | 0.0 | 2005 03 08 | 699 | 1.2− | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.2+ |
| 2002 05 21 | 704 | 0.0 | 0.7− | 2005 03 09 | 699 | 0.7− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 05 21 | 704 | 0.5+ | 0.2− | 2005 03 09 | 699 | (1.6+ | 0.8−) | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 06 02 | 699 | 0.7− | 1.4+ | 2005 03 09 | 699 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.2+ | 0.7+ |
| 2002 06 02 | 699 | 0.3− | 1.2+ | 2005 03 09 | 699 | 0.4+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2002 06 02 | 699 | 0.2− | 1.0+ | 2005 03 09 | 704 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.8+ |
| 2002 06 02 | 699 | 0.0 | 0.8+ | 2005 03 09 | 704 | 0.4+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 06 06 | 704 | 0.3+ | 0.3+ | 2005 03 09 | 704 | 1.0− | 0.4− | 2006 11 23 | G96 | 0.3− | 0.3+ |
| 2002 06 06 | 704 | 0.1+ | 0.1− | 2005 03 12 | 704 | 0.7+ | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2002 06 06 | 704 | 0.3+ | 0.4− | 2005 03 12 | 704 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2002 06 06 | 704 | 0.3+ | 0.4+ | 2005 03 12 | 704 | 1.1+ | 0.9+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |

**(141674)∗ 2002 JC$_{105}$**

Discovered 2002 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.24209 | | (2000.0) | | | |
| $n$ | 0.29729513 | $\omega$ | 23.76473 | | −0.37738856 | +0.92316686 |
| $a$ | 2.2233655 | $\Omega$ | 224.15905 | | −0.86556875 | −0.37969209 |
| $e$ | 0.1515481 | $i$ | 6.02157 | | −0.32919389 | −0.05997379 |
| $P$ | 3.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.5− | 0.2− | 2002 06 02 | 699 | 0.6− | 0.0 | 2005 03 07 | 704 | (0.9+ | 1.6+) |
| 2002 05 09 | 704 | (0.1− | 1.8+) | 2002 06 03 | 644 | (0.9+ | 2.6−) | 2005 03 10 | 699 | 1.0+ | 0.4+ |
| 2002 05 09 | 704 | 0.9− | 0.6+ | 2002 06 03 | 644 | 0.5+ | 0.5+ | 2005 03 10 | 699 | 1.4+ | 0.0 |
| 2002 05 09 | 704 | 0.7− | 0.7+ | 2002 06 03 | 644 | 0.8+ | 0.4+ | 2005 03 10 | 699 | 0.6+ | 1.2+ |
| 2002 05 12 | 704 | (1.9+ | 1.0+) | 2002 06 05 | 704 | 0.3+ | 0.7+ | 2005 03 10 | 699 | 0.3− | 0.3+ |
| 2002 05 12 | 704 | 0.0 | 1.1+ | 2002 06 05 | 704 | 0.3+ | 0.1+ | 2005 03 13 | 703 | 0.1+ | 0.6+ |
| 2002 05 12 | 704 | 0.2+ | 0.6+ | 2002 06 05 | 704 | 0.3− | 0.1+ | 2005 03 13 | 703 | 0.5− | 0.9+ |
| 2002 05 12 | 704 | 0.1− | 0.0 | 2002 06 05 | 704 | 0.3+ | 0.6− | 2005 03 13 | 703 | 0.2− | 0.0 |
| 2002 05 16 | 704 | 0.6+ | 1.4+ | 2002 06 10 | 704 | (2.8+ | 1.9−) | 2005 03 13 | 703 | 0.1− | 1.4+ |
| 2002 05 16 | 704 | 0.1− | 0.0 | 2002 06 10 | 704 | 0.9+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2002 05 16 | 704 | 1.2+ | 0.6+ | 2002 06 10 | 704 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.3+ |
| 2002 05 16 | 704 | 0.3+ | 0.3+ | 2003 10 20 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.5+ |
| 2002 05 16 | 704 | 0.4+ | 0.4+ | 2003 10 20 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 05 17 | 704 | 0.9− | 0.8+ | 2003 10 20 | 691 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.4+ |
| 2002 05 17 | 704 | 0.0 | 1.2+ | 2003 10 23 | 695 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.4+ |
| 2002 05 17 | 704 | 1.0− | 0.1− | 2003 10 23 | 695 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2002 05 21 | 704 | 0.5+ | 0.2+ | 2003 11 29 | 691 | 0.6+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 05 21 | 704 | 0.6− | 0.4+ | 2003 11 29 | 691 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 05 21 | 704 | 1.3− | 0.6+ | 2003 11 29 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.1− | 0.3− |
| 2002 05 21 | 704 | 0.1+ | 0.5+ | 2003 11 30 | 691 | 0.2− | 0.7+ | 2006 10 17 | 703 | (3.8− | 0.2−) |
| 2002 06 02 | 644 | 0.3+ | 0.1+ | 2003 11 30 | 691 | 0.2− | 0.4+ | 2006 10 17 | 703 | 1.9+ | 0.7− |
| 2002 06 02 | 644 | 0.5+ | 0.3+ | 2003 11 30 | 691 | 0.4− | 0.6+ | 2006 10 17 | 703 | 1.7+ | 2.6− |
| 2002 06 02 | 699 | 0.1+ | 0.1+ | 2005 03 07 | 704 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.5+ | 1.5+ |
| 2002 06 02 | 644 | 0.4+ | 0.2+ | 2005 03 07 | 704 | (1.0+ | 1.6+) | 2006 10 17 | 703 | 0.4− | 0.6− |
| 2002 06 02 | 699 | 0.9+ | 0.1+ | 2005 03 07 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 2.0− |
| 2002 06 02 | 699 | 1.0− | 1.4+ | 2005 03 07 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 1.7+ | 0.3− |

**(141675)∗ 2002 JO$_{105}$**

Discovered 2002 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.08107 | | (2000.0) | | | |
| $n$ | 0.27962763 | $\omega$ | 25.93691 | | −0.29675324 | +0.94802128 |
| $a$ | 2.3160575 | $\Omega$ | 227.03826 | | −0.90119368 | −0.31780155 |
| $e$ | 0.2228715 | $i$ | 9.03023 | | −0.31589155 | +0.01605727 |
| $P$ | 3.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | (2.1− | 0.8+) | 2002 06 05 | 704 | 0.3+ | 0.4− | 2002 07 30 | 608 | (0.0 | 1.7−) |
| 2002 05 09 | 704 | (4.0− | 0.3−) | 2002 06 05 | 704 | 0.3+ | 0.6− | 2002 07 30 | 608 | 0.1+ | 0.6− |
| 2002 05 09 | 704 | (2.1− | 2.2+) | 2002 06 05 | 704 | 0.1+ | 0.7− | 2003 10 20 | 691 | 0.1+ | 0.3+ |
| 2002 05 09 | 704 | 0.8− | 1.4+ | 2002 06 05 | 704 | 0.3+ | 0.8− | 2003 10 20 | 691 | 0.1− | 0.5+ |
| 2002 05 09 | 704 | 1.1− | 1.2+ | 2002 06 08 | 704 | 0.2− | 0.1+ | 2003 10 20 | 691 | 0.3− | 0.6+ |
| 2002 05 12 | 704 | 0.6− | 0.4+ | 2002 06 08 | 704 | 0.4− | 0.2+ | 2003 11 30 | 691 | 0.0 | 0.7+ |
| 2002 05 12 | 704 | 0.4+ | 0.4+ | 2002 06 08 | 704 | 0.1− | 0.3+ | 2003 11 30 | 691 | 0.1− | 0.7+ |
| 2002 05 12 | 704 | 0.4+ | 0.3+ | 2002 06 08 | 704 | 0.3− | 0.3+ | 2003 11 30 | 691 | 0.0 | 0.7+ |
| 2002 05 12 | 704 | 0.5+ | 0.6+ | 2002 06 08 | 704 | 0.3− | 0.2+ | 2005 02 02 | 644 | 0.5+ | 0.8+ |
| 2002 05 12 | 704 | 0.4+ | 0.7+ | 2002 06 09 | 704 | 0.2+ | 0.1− | 2005 02 02 | 644 | 0.1− | 0.3+ |
| 2002 05 16 | 704 | 0.5+ | 1.1+ | 2002 06 09 | 704 | 0.1− | 0.2− | 2005 02 02 | 644 | 0.4+ | 0.9+ |
| 2002 05 16 | 704 | 0.6+ | 0.6+ | 2002 06 09 | 704 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.1− | 0.6+ |
| 2002 05 16 | 704 | 0.5+ | 0.4+ | 2002 06 09 | 704 | 0.2− | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.5+ |
| 2002 05 16 | 704 | 0.7+ | 0.9+ | 2002 06 09 | 704 | 0.5− | 0.4− | 2006 09 06 | 644 | 0.2− | 0.3+ |
| 2002 05 16 | 704 | 0.6+ | 0.8+ | 2002 06 09 | 608 | 0.1− | 0.0 | 2006 09 22 | 703 | 0.2− | 0.8− |
| 2002 05 21 | 704 | 0.1− | 0.1+ | 2002 06 09 | 608 | 0.4− | 0.1+ | 2006 09 22 | 703 | (1.6+ | 0.3−) |
| 2002 05 21 | 704 | 0.3− | 0.7+ | 2002 06 09 | 608 | 0.4− | 0.2+ | 2006 09 22 | 703 | 0.3− | 1.5− |
| 2002 05 21 | 704 | 0.3− | 0.4+ | 2002 06 10 | 644 | 0.0 | 0.1− | 2006 09 22 | 703 | 0.5+ | 0.4− |
| 2002 05 21 | 704 | 0.0 | 0.5+ | 2002 06 10 | 644 | 0.0 | 0.1+ | 2006 09 22 | 113 | 0.5− | 0.1+ |
| 2002 05 21 | 704 | 0.0 | 0.3+ | 2002 06 10 | 644 | 0.0 | 0.0 | 2006 09 22 | 113 | 0.3− | 0.6− |
| 2002 06 02 | 644 | 0.1− | 0.1+ | 2002 07 14 | 644 | 0.0 | 0.6+ | 2006 09 29 | 699 | 1.1+ | 0.4− |
| 2002 06 02 | 644 | 0.1− | 0.2+ | 2002 07 14 | 644 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.8− | 0.3+ |
| 2002 06 02 | 644 | 0.1− | 0.4+ | 2002 07 14 | 644 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.9+ |
| 2002 06 03 | 644 | 0.1+ | 0.1− | 2002 07 16 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.5− |
| 2002 06 03 | 644 | 0.2− | 0.0 | 2002 07 16 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.7+ | 0.4+ |
| 2002 06 03 | 644 | 0.2− | 0.0 | 2002 07 16 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 06 05 | 704 | (3.3− | 0.8+) | 2002 07 30 | 608 | 0.3+ | 1.3− | 2006 10 11 | 644 | 0.3+ | 0.7+ |

**(141676)∗ 2002 JV$_{105}$**

Discovered 2002 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 104.47272 | | (2000.0) | | | |
| $n$ | 0.28810315 | $\omega$ | 144.80544 | | −0.53190935 | +0.83714363 |
| $a$ | 2.2704087 | $\Omega$ | 92.74067 | | −0.80325640 | −0.45113154 |
| $e$ | 0.0625081 | $i$ | 7.33511 | | −0.26805149 | −0.30930710 |
| $P$ | 3.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 704 | (2.2+ | 0.7−) | 2003 10 19 | 644 | 0.4− | 0.8+ | 2005 03 16 | 704 | 0.1+ | 1.4+ |
| 2002 05 12 | 704 | 0.8+ | 0.9+ | 2003 10 19 | 644 | 0.3− | 0.9+ | 2005 03 16 | 704 | 0.2+ | 1.0+ |
| 2002 05 12 | 704 | 1.2+ | 0.1− | 2003 10 24 | 691 | 0.5− | 0.4+ | 2005 04 02 | 703 | 0.3− | 0.1+ |
| 2002 05 16 | 704 | 0.0 | 0.8− | 2003 10 24 | 691 | 0.1− | 0.6+ | 2005 04 02 | 703 | 0.1− | 0.4− |
| 2002 05 16 | 704 | 0.1+ | 0.2− | 2003 10 24 | 691 | 0.1+ | 0.7+ | 2005 04 02 | 703 | 0.2− | 0.4− |
| 2002 05 16 | 704 | 0.6− | 0.1− | 2003 11 19 | 644 | 0.2+ | 0.6+ | 2005 04 02 | 703 | 0.3− | 0.2− |
| 2002 05 16 | 704 | 0.1− | 1.1− | 2003 11 19 | 644 | 0.4− | 0.5+ | 2005 05 02 | 703 | 0.3− | 0.4+ |
| 2002 05 16 | 704 | 0.3+ | 0.7+ | 2003 11 19 | 644 | 0.2− | 0.5+ | 2005 05 02 | 703 | 0.2+ | 0.0 |
| 2002 05 21 | 704 | 0.3+ | 0.5+ | 2005 01 17 | 703 | 0.1− | 1.7+ | 2005 05 02 | 703 | 0.2− | 1.2− |
| 2002 05 21 | 704 | 0.3− | 0.2+ | 2005 01 17 | 703 | 1.0− | 1.8+ | 2005 05 02 | 703 | 1.2+ | 1.7− |
| 2002 05 21 | 704 | 0.4+ | 0.0 | 2005 01 17 | 703 | 0.3+ | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 2002 06 04 | 644 | 0.3+ | 1.0+ | 2005 01 17 | 703 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2002 06 04 | 644 | 0.3+ | 1.7+ | 2005 03 04 | 703 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 2002 06 04 | 644 | 0.1− | 1.9+ | 2005 03 04 | 703 | 0.7− | 0.3+ | 2006 08 30 | 699 | 0.2− | 0.3+ |
| 2002 06 05 | 704 | 0.1− | 0.3+ | 2005 03 04 | 703 | 0.7+ | 0.9− | 2006 08 30 | 699 | 0.5+ | 0.6− |
| 2002 06 05 | 704 | 0.5− | 0.7+ | 2005 03 04 | 703 | 1.0− | 0.4+ | 2006 08 30 | 699 | 0.5− | 0.9+ |
| 2002 06 05 | 704 | 0.1+ | 0.0 | 2005 03 09 | 704 | 0.7+ | 0.3+ | 2006 08 30 | 699 | 0.8− | 0.4− |
| 2002 06 05 | 704 | 0.1− | 0.7− | 2005 03 09 | 704 | 1.0+ | 0.0 | 2006 09 20 | 703 | 0.5− | 0.3+ |
| 2002 06 05 | 704 | 0.1+ | 0.4− | 2005 03 09 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 703 | 0.1+ | 1.0+ |
| 2002 06 06 | 704 | 1.3+ | 0.7+ | 2005 03 09 | 704 | 1.4+ | 0.7+ | 2006 09 20 | 703 | 1.9+ | 0.9− |
| 2002 06 06 | 704 | 0.3− | 1.2+ | 2005 03 16 | 703 | 0.4− | 1.1+ | 2006 09 20 | 703 | 1.0− | 0.6+ |
| 2002 06 06 | 704 | 0.1− | 1.8+ | 2005 03 16 | 703 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.6− |
| 2002 06 06 | 704 | (0.7+ | 2.1+) | 2005 03 16 | 703 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.6+ |
| 2002 06 18 | 704 | 0.8+ | 0.1+ | 2005 03 16 | 703 | 0.4+ | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 2002 06 18 | 704 | 1.0− | 0.4+ | 2005 03 16 | 704 | 0.5+ | 0.9+ | 2006 09 26 | 703 | 0.1+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 704 | 1.2− | 0.9− | 2005 03 16 | 704 | 1.4+ | 0.5+ | | | | | | |
| 2003 10 19 | 644 | 0.5− | 0.9+ | 2005 03 16 | 704 | 0.4+ | 0.7+ | | | | | | |

**(141677)∗ 2002 JC$_{110}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.58046 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30185503 | $\omega$ | 232.06646 | | −0.64441823 | | +0.76466589 |
| $a$ | 2.2009175 | $\Omega$ | 357.80281 | | −0.67130518 | | −0.56782590 |
| $e$ | 0.1061685 | $i$ | 5.01278 | | −0.36616185 | | −0.30472909 |
| $P$ | 3.27 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.1− | 0.3+ | 2005 03 09 | 699 | 0.3− | 0.7+ | 2005 04 09 | 699 | 0.2− | 0.6− | | |
| 2002 05 11 | 704 | 0.3− | 0.2+ | 2005 03 09 | 699 | 1.0+ | 0.2+ | 2005 04 09 | 699 | 0.6+ | 0.6+ | | |
| 2002 05 11 | 704 | 0.3+ | 0.1− | 2005 03 09 | 699 | 0.3+ | 0.2+ | 2005 04 11 | 683 | (0.7+ | 1.6+) | | |
| 2002 05 11 | 704 | 0.6− | 0.6− | 2005 03 09 | 699 | 0.3− | 0.1+ | 2005 04 11 | 683 | 0.0 | 0.9+ | | |
| 2002 05 11 | 704 | 0.8− | 1.2− | 2005 03 09 | G96 | 0.4+ | 0.2− | 2005 04 14 | 683 | (1.7+ | 1.2−) | | |
| 2002 05 17 | 704 | 0.2+ | 0.4+ | 2005 03 09 | G96 | 0.1− | 0.3− | 2005 04 14 | 683 | 0.1+ | 1.0− | | |
| 2002 05 17 | 704 | 0.1+ | 0.2+ | 2005 03 09 | G96 | 0.1+ | 0.3− | 2005 04 14 | 683 | 1.0− | 0.2− | | |
| 2002 05 17 | 704 | 0.2+ | 1.3+ | 2005 03 09 | G96 | 0.0 | 0.2− | 2005 04 15 | 703 | 0.9− | 0.9+ | | |
| 2002 05 17 | 704 | 0.1+ | 0.5+ | 2005 03 12 | 691 | 0.3+ | 0.2+ | 2005 04 15 | 703 | 1.0+ | 0.3− | | |
| 2002 06 05 | 644 | 0.1+ | 0.2+ | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2005 04 15 | 703 | 0.7+ | 0.5+ | | |
| 2002 06 05 | 644 | 0.3+ | 0.4+ | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2005 04 15 | 703 | 0.6+ | 1.2+ | | |
| 2002 06 05 | 644 | 0.1+ | 0.1+ | 2005 03 14 | 704 | 0.5+ | 0.3+ | 2005 04 16 | 683 | 1.2+ | 1.3+ | | |
| 2002 06 06 | 704 | 0.6− | 0.2+ | 2005 03 14 | 704 | 0.9+ | 0.9+ | 2005 04 16 | 683 | (0.8− | 1.5+) | | |
| 2002 06 06 | 704 | 0.5+ | 0.2+ | 2005 03 14 | 704 | 1.1+ | 0.3+ | 2005 04 16 | 683 | (1.0− | 2.3+) | | |
| 2002 06 06 | 704 | 0.1− | 0.1− | 2005 03 14 | 704 | 0.9+ | 0.7+ | 2005 05 12 | G96 | 0.2− | 0.1+ | | |
| 2002 06 06 | 704 | 0.6+ | 0.6− | 2005 03 14 | 704 | 1.3+ | 1.1+ | 2005 05 12 | G96 | 0.3− | 0.2− | | |
| 2002 06 13 | 644 | 0.3+ | 0.5+ | 2005 03 16 | 691 | 0.2− | 0.1+ | 2005 05 12 | G96 | 0.2− | 0.1+ | | |
| 2002 06 13 | 644 | 0.2+ | 0.3+ | 2005 03 16 | 691 | 0.1− | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.0 | | |
| 2002 06 13 | 644 | 0.3+ | 0.6+ | 2005 03 16 | 691 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 1.0+ | | |
| 2002 06 18 | 644 | 0.4+ | 0.7+ | 2005 03 17 | 704 | 1.1+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.3− | | |
| 2002 06 18 | 644 | 0.6+ | 0.7+ | 2005 03 17 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.7+ | | |
| 2002 06 18 | 644 | 0.5+ | 0.5+ | 2005 03 17 | 704 | 0.3+ | 0.8+ | 2006 08 28 | 703 | 0.1− | 0.5− | | |
| 2003 10 03 | 691 | 0.4− | 0.1+ | 2005 03 17 | 704 | 1.0+ | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.6+ | | |
| 2003 10 03 | 691 | 0.3− | 0.3+ | 2005 03 31 | 683 | (0.7− | 1.7+) | 2006 09 15 | 691 | 0.5− | 0.4+ | | |
| 2003 10 03 | 691 | 0.0 | 0.2+ | 2005 03 31 | 683 | (1.0+ | 2.0+) | 2006 09 15 | 691 | 0.4− | 0.4+ | | |
| 2003 10 22 | 691 | 0.3− | 0.3+ | 2005 03 31 | 683 | (1.5− | 0.3−) | 2006 09 18 | 699 | 0.8− | 0.3+ | | |
| 2003 10 22 | 691 | 0.1− | 0.3+ | 2005 04 01 | 699 | 0.9+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.4− | | |
| 2003 10 22 | 691 | 0.0 | 0.3+ | 2005 04 01 | 699 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.7− | 1.3+ | | |
| 2003 10 25 | 704 | 0.5+ | 0.8+ | 2005 04 01 | 699 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.4− | 0.5− | | |
| 2003 10 25 | 704 | 0.7+ | 0.0 | 2005 04 01 | 683 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.3+ | | |
| 2003 10 25 | 704 | (1.9− | 0.7+) | 2005 04 01 | 699 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.3+ | | |
| 2003 10 25 | 704 | 0.0 | 0.2+ | 2005 04 01 | 683 | 0.5− | 0.8+ | 2006 09 19 | 691 | 0.3− | 0.3+ | | |
| 2003 10 25 | 704 | 0.3+ | 0.1+ | 2005 04 01 | 683 | 0.5− | 0.6− | 2006 09 23 | 691 | 0.3+ | 0.3+ | | |
| 2005 03 03 | 691 | 0.2+ | 0.1+ | 2005 04 04 | 683 | 0.0 | 1.1+ | 2006 09 23 | 691 | 0.1+ | 0.4+ | | |
| 2005 03 03 | 691 | 0.0 | 0.3+ | 2005 04 04 | 683 | 1.1+ | 1.2+ | 2006 09 23 | 691 | 0.1+ | 0.5+ | | |
| 2005 03 03 | 691 | 0.3+ | 0.2+ | 2005 04 04 | 683 | 0.9− | 1.0− | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2005 03 03 | 703 | 0.5− | 0.4− | 2005 04 04 | 703 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2005 03 03 | 703 | 0.1− | 0.4− | 2005 04 04 | 703 | 1.4− | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2005 03 03 | 703 | 0.3− | 0.3− | 2005 04 04 | 703 | 0.5+ | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.1− | | |
| 2005 03 03 | 703 | 0.7− | 1.1− | 2005 04 04 | 703 | 0.2+ | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.5+ | | |
| 2005 03 04 | G96 | 0.3− | 0.2− | 2005 04 04 | 704 | 0.1+ | 1.0+ | 2006 09 27 | 691 | 0.3− | 0.4+ | | |
| 2005 03 04 | G96 | 0.0 | 0.3− | 2005 04 04 | 704 | 0.2+ | 0.9+ | 2006 09 27 | 704 | 0.2− | 1.3+ | | |
| 2005 03 04 | G96 | 0.3− | 0.2− | 2005 04 04 | 704 | 0.8+ | 0.6+ | 2006 09 27 | 704 | (0.5− | 1.6+) | | |
| 2005 03 04 | G96 | 0.3− | 0.0 | 2005 04 04 | 704 | 1.0+ | 0.2+ | 2006 09 27 | 691 | 0.4− | 0.3+ | | |
| 2005 03 04 | G96 | 0.0 | 0.2− | 2005 04 06 | 683 | (0.0 | 1.7−) | 2006 09 27 | 704 | 1.5− | 0.6− | | |
| 2005 03 04 | G96 | 0.3− | 0.3− | 2005 04 06 | 683 | (0.7+ | 2.0−) | 2006 09 27 | 704 | (1.7− | 0.9+) | | |
| 2005 03 04 | G96 | 0.4− | 0.4− | 2005 04 06 | 683 | (1.7+ | 0.3+) | 2006 10 25 | 850 | 1.1+ | 0.4− | | |
| 2005 03 04 | G96 | 0.4− | 0.5− | 2005 04 06 | G96 | 0.6− | 0.8− | 2006 10 25 | 850 | 0.2− | 1.4+ | | |
| 2005 03 08 | 699 | 0.1− | 0.6+ | 2005 04 06 | G96 | 0.2+ | 0.7− | 2006 10 25 | 850 | 0.4+ | 0.6+ | | |
| 2005 03 08 | 699 | 0.1+ | 0.7− | 2005 04 06 | G96 | 0.3− | 0.0 | 2006 10 25 | 850 | 0.7+ | 0.7− | | |
| 2005 03 08 | 699 | 0.1+ | 0.2− | 2005 04 06 | G96 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.6− | 0.3− | | |
| 2005 03 08 | 704 | 0.0 | 0.9+ | 2005 04 09 | 683 | 0.9− | 0.7− | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2005 03 08 | 704 | 0.6+ | 1.1+ | 2005 04 09 | 683 | 0.6− | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.4− | | |
| 2005 03 08 | 704 | 1.0+ | 0.3+ | 2005 04 09 | 699 | 1.0+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2005 03 08 | 704 | 0.1+ | 1.1+ | 2005 04 09 | 683 | 0.7− | 0.5+ | | | | | | |
| 2005 03 08 | 704 | 0.6+ | 1.2+ | 2005 04 09 | 699 | 0.9+ | 0.3+ | | | | | | |

**(141678)∗ 2002 JM$_{111}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.97191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28513499 | $\omega$ | 346.62039 | | +0.34514948 | | +0.93626066 |
| $a$ | 2.2861376 | $\Omega$ | 303.53415 | | −0.85370834 | | +0.28419786 |
| $e$ | 0.1910691 | $i$ | 4.50560 | | −0.38994091 | | +0.20651281 |
| $P$ | 3.46 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 23 | 704 | 0.7+ | 0.7− | 2005 03 08 | 699 | 0.6+ | 0.6+ | 2006 09 25 | 704 | 0.6+ | 0.6+ | | |
| 1999 07 23 | 704 | 0.8− | 0.4− | 2005 03 10 | 703 | 0.7− | 1.2+ | 2006 09 27 | 703 | 0.4− | 0.5+ | | |
| 1999 07 23 | 704 | 0.5− | 0.9− | 2005 03 10 | 703 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.2+ | 0.2+ | | |
| 1999 09 07 | 704 | 0.5− | 0.8− | 2005 03 10 | 703 | 0.1− | 0.8+ | 2006 09 27 | 703 | 0.1− | 0.3+ | | |
| 1999 09 07 | 704 | 0.4+ | 0.5− | 2005 03 10 | 703 | 0.9− | 1.2+ | 2006 09 27 | 703 | 0.5− | 0.1− | | |
| 1999 09 07 | 704 | 0.1− | 0.2− | 2005 03 17 | 703 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.5− | 0.7+ | | |
| 1999 10 04 | 704 | 1.0− | 1.1+ | 2005 03 17 | 703 | 0.1− | 0.6− | 2006 09 30 | 703 | 0.0 | 0.9+ | | |
| 1999 10 04 | 704 | 0.2+ | 0.4+ | 2005 03 17 | 703 | (0.5− | 1.9+) | 2006 09 30 | 703 | 0.6− | 0.5+ | | |
| 1999 10 04 | 704 | 0.1+ | 0.3− | 2005 03 17 | 703 | 1.0+ | 0.8− | 2006 09 30 | 703 | 0.3+ | 0.9+ | | |
| 1999 10 04 | 704 | 0.5− | 0.2+ | 2005 04 04 | 703 | (0.2− | 1.5−) | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 1999 10 04 | 704 | 0.4+ | 0.6+ | 2005 04 04 | 703 | 0.4− | 0.3− | 2006 10 10 | 644 | 0.3− | 0.2− | | |
| 2002 05 11 | 704 | 0.7+ | 0.1+ | 2005 04 04 | 703 | 1.2− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 05 11 | 704 | 1.1+ | 0.6− | 2005 04 04 | 703 | 0.2+ | 1.1+ | 2006 10 16 | 683 | 0.9− | 1.3− | | |
| 2002 05 11 | 704 | 1.4+ | 0.5− | 2005 04 06 | 699 | (1.9+ | 2.3−) | 2006 10 16 | 683 | 0.6− | 0.6− | | |
| 2002 05 11 | 704 | 0.1+ | 0.4− | 2005 04 06 | 699 | 0.7+ | 0.2+ | 2006 10 16 | 683 | 0.7− | 0.8− | | |
| 2002 05 11 | 704 | 0.5+ | 0.8− | 2005 04 06 | 699 | (2.7+ | 0.6−) | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2002 05 17 | 704 | 0.5+ | 0.9+ | 2005 04 06 | 699 | (2.1+ | 0.2+) | 2006 10 17 | 703 | 0.6− | 0.1− | | |
| 2002 05 17 | 704 | 0.1+ | 0.7+ | 2006 08 29 | 699 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.5− | | |
| 2002 05 17 | 704 | 0.6− | 0.5+ | 2006 08 29 | 699 | 0.0 | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.4− | | |
| 2002 06 06 | 704 | 0.2− | 0.8+ | 2006 08 29 | 699 | 0.2− | 0.2− | 2006 10 19 | 683 | 1.2+ | 0.2+ | | |
| 2002 06 06 | 704 | 0.1− | 0.6+ | 2006 08 29 | 699 | 0.5− | 0.5− | 2006 10 19 | 683 | 0.4+ | 0.1− | | |
| 2002 06 06 | 704 | (0.3+ | 1.8+) | 2006 09 14 | 644 | 0.3− | 0.4+ | 2006 10 19 | 683 | (1.9− | 1.0+) | | |
| 2002 06 17 | 704 | 0.7− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 10 20 | 683 | 2.0+ | 0.3− | | |
| 2002 06 17 | 704 | 0.2− | 0.8+ | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 20 | 683 | 1.0+ | 0.2+ | | |
| 2002 06 17 | 704 | 0.1+ | 1.2+ | 2006 09 16 | 703 | 0.1− | 0.6+ | 2006 10 20 | 683 | 1.1+ | 0.1− | | |
| 2002 06 17 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | (1.7+ | 0.1+) | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 07 23 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.5− | 0.0 | | |
| 2002 07 23 | 644 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 07 23 | 644 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.9+ | 2006 10 22 | 683 | 0.7+ | 0.8+ | | |
| 2003 12 25 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.9− | 0.0 | 2006 10 22 | 683 | 0.1− | 0.3+ | | |
| 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 683 | 1.1− | 0.8+ | | |
| 2003 12 25 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.2+ | 2006 10 23 | 644 | 0.3− | 0.1+ | | |
| 2005 03 08 | 699 | 0.5+ | 0.9+ | 2006 09 25 | 704 | 1.1+ | 1.4− | 2006 10 23 | 644 | 0.2− | 0.4+ | | |
| 2005 03 08 | 699 | (1.6+ | 1.7+) | 2006 09 25 | 704 | (1.6− | 2.1+) | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2005 03 08 | 699 | 0.6+ | 0.2+ | 2006 09 25 | 704 | 0.7+ | 1.1+ | | | | | | |

**(141679)∗ 2002 JW$_{111}$ = 1999 TR$_{86}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31738)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.76577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29769395 | $\omega$ | 325.46864 | | +0.41768772 | | +0.90822368 |
| $a$ | 2.2213793 | $\Omega$ | 329.19677 | | −0.82183366 | | +0.36553322 |
| $e$ | 0.1716515 | $i$ | 2.89022 | | −0.38746149 | | +0.20375282 |
| $P$ | 3.31 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 1.4− | 0.5+ | 2002 06 18 | 704 | (1.6+ | 0.8−) | 2005 04 09 | 699 | (0.7+ | 1.8+) | | |
| 1999 07 14 | 704 | 0.6− | 0.3− | 2002 06 18 | 704 | 0.2+ | 0.5+ | 2005 04 09 | 699 | 0.1+ | 1.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.3− | 0.7+ | 2002 06 18 | 704 | 1.0− | 1.0+ | 2005 04 09 | 699 | (2.1− | 1.2−) |
| 1999 07 14 | 704 | 1.3− | 0.5+ | 2003 12 14 | 691 | 0.3− | 0.3+ | 2005 04 09 | 699 | 0.7− | 0.9− |
| 1999 07 14 | 704 | 0.3− | 0.8+ | 2003 12 14 | 691 | 0.3− | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.5− |
| 1999 10 15 | 691 | 0.2+ | 0.4+ | 2003 12 14 | 691 | 0.7− | 0.2+ | 2005 05 14 | G96 | 0.1+ | 0.1− |
| 1999 10 15 | 691 | 0.0 | 0.3+ | 2003 12 19 | 691 | 0.2− | 0.2+ | 2005 05 14 | G96 | 0.2− | 0.1+ |
| 1999 10 15 | 691 | 0.2− | 0.2+ | 2003 12 19 | 691 | 0.2+ | 0.0 | 2005 05 14 | G96 | 0.1− | 0.1− |
| 1999 10 16 | 691 | 0.2+ | 0.2+ | 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.1− |
| 1999 10 16 | 691 | 0.9+ | 0.5+ | 2003 12 22 | 704 | 0.7− | 0.2− | 2006 10 17 | 691 | 0.3+ | 0.3− |
| 1999 10 16 | 691 | 0.8+ | 0.1+ | 2003 12 22 | 704 | 0.3+ | 0.9+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2002 05 11 | 704 | 0.5− | 0.7+ | 2003 12 22 | 704 | 0.6− | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.4− |
| 2002 05 11 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.7+ | 1.3+ | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2002 05 11 | 704 | 0.8− | 0.1+ | 2005 03 04 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 2002 05 11 | 704 | 0.1− | 0.7+ | 2005 03 04 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2002 05 17 | 704 | 0.2− | 0.7− | 2005 03 04 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2002 05 17 | 704 | 0.4− | 0.1+ | 2005 03 13 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.6− | 0.2+ |
| 2002 05 17 | 704 | 0.2− | 0.0 | 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2002 05 17 | 704 | 0.0 | 0.4+ | 2005 03 13 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.6+ | 1.0+ |
| 2002 05 17 | 704 | 0.3+ | 0.1− | 2005 03 17 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2002 06 04 | 644 | 0.1+ | 0.6+ | 2005 03 17 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2002 06 04 | 644 | 0.1− | 0.1− | 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2002 06 04 | 644 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.8+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 06 08 | 704 | 0.7− | 0.3+ | 2005 04 04 | 704 | 0.4+ | 0.2− | 2006 11 21 | 691 | 0.4+ | 0.3+ |
| 2002 06 08 | 704 | 0.4− | 0.5+ | 2005 04 04 | 703 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.3+ | 0.2− |
| 2002 06 08 | 704 | (0.0 | 1.5+) | 2005 04 04 | 703 | (1.5− | 1.6+) | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2002 06 08 | 704 | 0.4− | 0.0 | 2005 04 04 | 704 | 1.3+ | 0.4− | 2006 11 22 | 704 | 1.4+ | 1.5− |
| 2002 06 08 | 704 | 0.0 | 1.1+ | 2005 04 04 | 703 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2002 06 18 | 704 | 0.3+ | 0.4+ | 2005 04 04 | 704 | 0.0 | 0.6− | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2002 06 18 | 704 | 0.5− | 0.1+ | 2005 04 04 | 704 | 0.5+ | 0.8− | | | | |

**(141680)∗ 2002 JT$_{112}$**

Discovered 2002 May 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.37288 | | (2000.0) | | | |
| $n$ | 0.28414820 | $\omega$ | 257.27205 | | +0.70044765 | +0.70646177 |
| $a$ | 2.2914275 | $\Omega$ | 57.67114 | | −0.59937397 | +0.65941393 |
| $e$ | 0.1385816 | $i$ | 6.89314 | | −0.38745829 | +0.25707010 |
| $P$ | 3.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 704 | 0.4− | 0.4− | 2003 11 21 | 704 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.4− | 0.2+ |
| 1999 09 13 | 704 | 0.4+ | 1.4− | 2003 11 21 | 704 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.2− |
| 1999 09 13 | 704 | 1.2+ | 0.2+ | 2003 11 21 | 704 | 0.8− | 0.5+ | 2006 09 17 | 699 | 0.6+ | 0.1+ |
| 1999 09 30 | 704 | 0.4+ | 0.2− | 2003 11 21 | 704 | 0.6− | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.2+ |
| 1999 09 30 | 704 | 0.2+ | 0.5+ | 2003 12 14 | 691 | 0.1− | 0.3+ | 2006 09 17 | 699 | 0.8− | 0.5− |
| 1999 09 30 | 704 | 1.1− | 0.3− | 2003 12 14 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.6− |
| 2002 05 11 | 704 | 0.2− | 0.1− | 2003 12 14 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.3+ |
| 2002 05 11 | 704 | 0.4− | 0.5+ | 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.1− |
| 2002 05 11 | 704 | 0.6+ | 0.3+ | 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.3− |
| 2002 05 13 | 704 | (1.0+ | 1.8+) | 2003 12 19 | 691 | 0.1− | 0.2+ | 2006 09 25 | 703 | 0.5− | 0.8+ |
| 2002 05 13 | 704 | 0.2+ | 0.9+ | 2003 12 22 | 704 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.7+ | 1.3+ |
| 2002 05 13 | 704 | 0.9+ | 0.3+ | 2003 12 22 | 704 | 0.7− | 0.4+ | 2006 09 25 | 703 | 1.0+ | 0.1+ |
| 2002 05 13 | 704 | 0.4− | 0.3− | 2003 12 22 | 704 | 1.0+ | 0.1− | 2006 09 25 | 703 | 1.2+ | 0.2− |
| 2002 05 17 | 704 | 0.3− | 0.5+ | 2003 12 22 | 704 | 0.5+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2002 05 17 | 704 | 0.4+ | 1.0+ | 2003 12 27 | 704 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 05 17 | 704 | 1.3− | 0.6+ | 2003 12 27 | 704 | 0.5− | 1.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 05 17 | 704 | 0.6− | 0.6+ | 2003 12 27 | 704 | 0.4+ | 0.4− | 2006 10 19 | 703 | 0.8− | 0.3− |
| 2002 05 17 | 704 | 0.3− | 0.9+ | 2003 12 27 | 704 | 0.8+ | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.3− |
| 2002 06 07 | 644 | 0.3− | 0.1+ | 2005 03 10 | 703 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.8− |
| 2002 06 07 | 644 | 0.1− | 0.2+ | 2005 03 10 | 703 | 1.3+ | 0.0 | 2006 10 19 | 703 | 0.5− | 1.1− |
| 2002 06 07 | 644 | 0.3− | 0.2+ | 2005 03 10 | 703 | 1.3+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2002 06 08 | 704 | 1.2+ | 0.4− | 2005 03 10 | 703 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 06 08 | 704 | 0.9+ | 0.6− | 2005 03 16 | 703 | 0.7− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 06 08 | 704 | 1.0+ | 0.6+ | 2005 03 16 | 703 | 1.1− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 06 08 | 704 | 1.4+ | 0.7− | 2005 03 16 | 703 | 1.4− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 06 17 | 644 | 0.9− | 0.3+ | 2005 03 16 | 703 | 0.6+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 06 17 | 644 | 0.2− | 0.7+ | 2006 09 12 | 704 | 0.2+ | 1.2+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2002 06 17 | 644 | 0.1+ | 0.6+ | 2006 09 12 | 704 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2002 06 26 | 644 | 0.1+ | 0.0 | 2006 09 12 | 704 | 0.5− | 1.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 06 26 | 644 | 0.2+ | 0.2− | 2006 09 12 | 704 | 0.1+ | 0.7+ | | | | |
| 2002 06 26 | 644 | 0.1− | 0.5− | 2006 09 14 | 644 | 0.2− | 0.1+ | | | | |

**(141681)∗ 2002 JU$_{112}$**

Discovered 2002 May 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.61558 | | (2000.0) | | | |
| $n$ | 0.29452741 | $\omega$ | 273.51046 | | +0.61289801 | +0.78902074 |
| $a$ | 2.2372726 | $\Omega$ | 34.40457 | | −0.69185620 | +0.56182450 |
| $e$ | 0.1823195 | $i$ | 4.30896 | | −0.38169495 | +0.24859505 |
| $P$ | 3.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 704 | 0.7+ | 0.2+ | 2003 12 22 | 704 | (0.6+ | 1.8−) | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 1999 09 13 | 704 | 0.4+ | 0.4+ | 2003 12 22 | 704 | 0.2− | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 1999 09 13 | 704 | 0.4− | 0.4− | 2003 12 24 | 735 | (2.0+ | 0.0 ) | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 1999 09 13 | 704 | 0.1+ | 0.1+ | 2003 12 24 | 735 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2− |
| 1999 09 13 | 704 | 0.2+ | 0.6− | 2005 03 10 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2002 05 13 | 704 | 0.4+ | 0.8+ | 2005 03 10 | 691 | 0.5+ | 0.4+ | 2006 10 28 | 691 | 0.4− | 0.1+ |
| 2002 05 13 | 704 | 0.6+ | 1.4+ | 2005 03 10 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2002 05 13 | 704 | 0.4+ | 0.5− | 2005 03 11 | 691 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 05 13 | 704 | 0.7+ | 0.9+ | 2005 03 11 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 05 17 | 704 | 0.1− | 0.4− | 2005 03 11 | 691 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2002 05 17 | 704 | 0.1+ | 0.7+ | 2005 04 04 | 703 | 0.2− | 1.1− | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2002 05 17 | 704 | 0.2− | 0.4− | 2005 04 04 | 703 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2002 05 17 | 704 | 0.3− | 1.1− | 2005 04 04 | 703 | 0.9− | 0.9+ | 2006 11 08 | 644 | 0.4− | 0.3+ |
| 2002 05 17 | 704 | 0.5− | 0.2+ | 2005 04 04 | 703 | (0.6− | 1.7+) | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2002 06 08 | 704 | 0.2+ | 0.5− | 2005 04 13 | 704 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.6− | 0.3+ |
| 2002 06 08 | 704 | 0.0 | 0.3+ | 2005 04 13 | 704 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 06 08 | 704 | 0.6− | 0.3+ | 2005 04 13 | 704 | 0.2+ | 1.5+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 06 08 | 704 | 0.1− | 0.0 | 2005 04 13 | 704 | 1.0+ | 1.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 06 08 | 704 | 0.2+ | 0.7+ | 2005 05 09 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2002 06 10 | 704 | 0.5− | 0.3+ | 2005 05 09 | G96 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 06 10 | 704 | 0.0 | 0.4+ | 2005 05 09 | G96 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2002 06 10 | 704 | 0.1+ | 0.4− | 2005 05 09 | G96 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2002 06 10 | 704 | 0.3− | 1.0− | 2006 09 25 | G96 | 1.0− | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.7− |
| 2002 06 17 | 644 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.2+ | 2006 11 17 | 703 | 0.9+ | 0.0 |
| 2002 06 17 | 644 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.4− |
| 2002 06 17 | 704 | 0.3+ | 0.8+ | 2006 09 25 | G96 | 0.8+ | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.0 |
| 2002 06 17 | 644 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.0 | 1.0+ | 2006 11 21 | 704 | 0.5+ | 0.2− |
| 2002 06 17 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2002 06 17 | 704 | 0.3− | 0.9+ | 2006 09 30 | 703 | 0.2− | 1.0+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2002 06 17 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | (0.9+ | 2.1+) | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2002 06 17 | 704 | 0.4+ | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1+ | 1.7− |
| 2003 11 20 | 695 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2003 11 20 | 695 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.3+ | 1.1+ |
| 2003 12 22 | 704 | 1.0− | 1.4− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.8− | 0.4+ |
| 2003 12 22 | 704 | 0.3+ | 1.0− | 2006 10 16 | 691 | 0.5+ | 1.3+ | 2006 11 29 | 704 | 0.3− | 0.7− |

**(141682)∗ 2002 JZ$_{112}$ = 1999 TY$_{297}$**

Discovered 2002 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31739)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.49596 | | (2000.0) | | | |
| $n$ | 0.27960487 | $\omega$ | 45.80554 | | +0.42082990 | +0.90466447 |
| $a$ | 2.3161831 | $\Omega$ | 249.19026 | | −0.85138034 | +0.36840290 |
| $e$ | 0.2038540 | $i$ | 4.10813 | | −0.31313530 | +0.21415300 |
| $P$ | 3.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.9+ | 0.1+ | 2002 06 25 | 644 | 0.2− | 0.0 | 2006 09 24 | 106 | 0.2+ | 0.9+ |
| 1999 10 01 | 703 | 0.1+ | 0.2+ | 2002 07 04 | 644 | 0.2− | 0.1− | 2006 09 25 | 704 | 1.1+ | 0.9+ |
| 1999 10 01 | 703 | 0.4− | 0.6+ | 2002 07 04 | 644 | 0.4− | 0.3+ | 2006 09 25 | 704 | 0.6+ | 0.0 |
| 1999 10 01 | 703 | 0.8+ | 0.2− | 2002 07 04 | 644 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.1+ | 1.2+ |
| 1999 10 10 | 704 | (1.0− | 2.1+) | 2003 11 19 | 291 | 0.3− | 0.2+ | 2006 09 25 | 704 | 0.2+ | 1.0+ |
| 1999 10 10 | 704 | 0.4− | 0.2+ | 2003 11 19 | 291 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.4+ | 1.0+ |
| 1999 10 10 | 704 | 0.4+ | 0.4+ | 2003 11 19 | 291 | 0.3− | 0.5+ | 2006 09 27 | 699 | 0.1− | 0.3+ |
| 2002 05 13 | 704 | 1.0+ | 0.4− | 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.1− | 1.3+ |
| 2002 05 13 | 704 | (1.7+ | 1.3−) | 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.8+ |
| 2002 05 13 | 704 | 0.5+ | 0.0 | 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 09 27 | 699 | 0.9− | 1.4+ |
| 2002 05 13 | 704 | (1.5− | 0.4−) | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2002 05 13 | 704 | 0.5− | 0.3+ | 2005 04 15 | 691 | 0.5+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.6+ |
| 2002 05 15 | 704 | (0.4+ | 1.6+) | 2005 04 15 | 691 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.0 |
| 2002 05 15 | 704 | 0.4+ | 0.8+ | 2005 04 15 | 691 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.4− | 0.1− |
| 2002 05 15 | 704 | 1.3+ | 1.0+ | 2006 08 29 | 699 | 1.1− | 1.1+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2002 05 17 | 704 | 0.5− | 0.2− | 2006 08 29 | 699 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.5− | 0.3− |
| 2002 05 17 | 704 | 0.4+ | 1.2+ | 2006 08 29 | 699 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2002 05 17 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 699 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.4− |
| 2002 05 17 | 704 | 0.5− | 0.5+ | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.3− |
| 2002 05 17 | 704 | 0.6− | 0.5+ | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2002 06 08 | 704 | 0.4+ | 0.4− | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1− |
| 2002 06 08 | 704 | 0.7− | 0.5− | 2006 09 17 | 703 | 0.5− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 06 08 | 704 | 0.3− | 1.0− | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 06 08 | 704 | 0.1− | 0.8− | 2006 09 17 | 703 | (0.6+ | 2.9−) | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 06 08 | 704 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2002 06 12 | 704 | 0.7− | 0.2+ | 2006 09 18 | 704 | 0.8+ | 0.4− | 2006 10 17 | 703 | 0.7− | 0.6− |
| 2002 06 12 | 704 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.6+ | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 06 12 | 704 | 0.5− | 0.8+ | 2006 09 18 | 704 | 0.7+ | 0.8− | 2006 10 17 | 703 | 1.3+ | 0.8− |
| 2002 06 12 | 704 | 0.3− | 0.1+ | 2006 09 18 | 704 | 0.4− | 0.7− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2002 06 12 | 704 | 0.3+ | 0.5+ | 2006 09 24 | 106 | (0.1− | 1.7−) | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2002 06 25 | 644 | 0.1− | 0.5+ | 2006 09 24 | 106 | 0.1+ | 0.9− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2002 06 25 | 644 | 0.3− | 0.1− | 2006 09 24 | 106 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.1− |

**(141683)∗ 2002 JG$_{125}$ = 2003 VV$_1$**

Discovered 2002 May 7 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56357)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 34.12920 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.28845735 | $\omega$ | 291.58748 | +0.48732735 | +0.87310549 | |
| $a$ | 2.2685498 | $\Omega$ | 7.62346 | −0.75669670 | +0.43030282 | |
| $e$ | 0.1051147 | $i$ | 6.10199 | −0.43580060 | +0.22918616 | |
| $P$ | 3.42 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 01 | 644 | 1.2+ | 0.5+ | 2005 02 09 | 704 | 1.0+ | 0.7+ | 2005 04 02 | 185 | 0.4− | 0.7+ |
| 2002 05 01 | 644 | 0.4+ | 1.0+ | 2005 02 09 | 704 | 0.4− | 0.6− | 2005 04 11 | G96 | 0.2+ | 0.7+ |
| 2002 05 01 | 644 | 0.9+ | 1.2+ | 2005 02 09 | 704 | 0.6− | 0.8+ | 2005 04 11 | G96 | 0.3− | 0.2+ |
| 2002 05 07 | 644 | 0.2+ | 0.4+ | 2005 02 14 | 704 | 0.2− | 0.4+ | 2005 04 11 | G96 | 0.3− | 0.2+ |
| 2002 05 07 | 644 | 0.5+ | 0.5+ | 2005 02 14 | 704 | 0.7+ | 0.4+ | 2005 04 11 | G96 | 0.2+ | 0.0 |
| 2002 05 07 | 644 | 0.0 | 0.3+ | 2005 02 14 | 704 | 0.2+ | 0.4− | 2006 08 23 | 704 | 0.1− | 0.4− |
| 2002 05 11 | 704 | 0.0 | 0.1− | 2005 02 14 | 704 | 0.1+ | 0.1− | 2006 08 23 | 704 | 0.4+ | 0.6− |
| 2002 05 11 | 704 | 0.1+ | 0.3+ | 2005 03 02 | 703 | 0.3− | 0.7+ | 2006 08 23 | 704 | 0.3− | 0.4− |
| 2002 05 11 | 704 | 0.5− | 0.3+ | 2005 03 02 | 703 | 1.1− | 1.0+ | 2006 08 23 | 704 | 0.1− | 0.0 |
| 2002 05 17 | 644 | 0.4+ | 1.3+ | 2005 03 02 | 703 | 0.6− | 0.0 | 2006 08 23 | 704 | 0.2+ | 0.3+ |
| 2002 05 17 | 644 | 0.3+ | 1.5+ | 2005 03 02 | 703 | 0.9− | 0.3+ | 2006 08 28 | 704 | 0.3− | 0.6+ |
| 2002 05 17 | 644 | (0.3+ | 1.7+) | 2005 03 04 | 704 | (2.0+ | 1.0+) | 2006 08 28 | 704 | 0.1− | 0.5+ |
| 2003 10 25 | 704 | 0.4− | 0.3− | 2005 03 04 | 704 | 0.1− | 0.6− | 2006 08 28 | 704 | 0.1+ | 0.7+ |
| 2003 10 25 | 704 | 0.3− | 1.2− | 2005 03 04 | 704 | 0.9+ | 0.2− | 2006 08 28 | 704 | 0.1+ | 0.4+ |
| 2003 10 25 | 704 | 0.1− | 0.4− | 2005 03 04 | 704 | 0.9+ | 1.0− | 2006 08 28 | 699 | 0.0 | 0.2+ |
| 2003 10 25 | 704 | 0.4− | 1.1− | 2005 03 04 | 704 | 0.6+ | 1.1+ | 2006 08 28 | 699 | 0.3+ | 0.8+ |
| 2003 10 25 | 704 | 0.3− | 1.2− | 2005 03 08 | 699 | (1.7+ | 0.8−) | 2006 08 28 | 699 | 0.8− | 1.0+ |
| 2003 11 02 | 704 | 0.6− | 0.7+ | 2005 03 08 | 699 | 0.7+ | 0.1− | 2006 08 28 | 699 | 0.1− | 0.7+ |
| 2003 11 02 | 704 | 0.2+ | 0.7+ | 2005 03 08 | 699 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.2+ |
| 2003 11 02 | 704 | 0.2− | 0.2− | 2005 03 08 | 699 | 0.8+ | 0.1− | 2006 09 18 | 699 | 0.6+ | 0.1+ |
| 2003 11 02 | 704 | 0.1− | 0.0 | 2005 03 09 | 704 | 0.2− | 0.5+ | 2006 09 18 | 699 | (0.7+ | 2.0+) |
| 2003 11 02 | 704 | 0.1+ | 0.7+ | 2005 03 09 | 704 | 0.5+ | 0.0 | 2006 09 18 | 699 | (1.0− | 1.7+) |
| 2003 11 03 | 704 | 0.2− | 0.6+ | 2005 03 09 | 704 | 0.1− | 1.0+ | 2006 09 24 | 699 | (2.0− | 0.4+) |
| 2003 11 03 | 704 | 0.2− | 1.2+ | 2005 03 09 | 704 | 0.1− | 0.4+ | 2006 09 24 | 699 | 1.3+ | 0.5+ |
| 2003 11 03 | 704 | 0.1+ | 0.8+ | 2005 03 09 | 704 | 0.2− | 0.4+ | 2006 09 24 | 699 | 0.1− | 0.3− |
| 2003 11 03 | 704 | 0.5+ | 0.8+ | 2005 03 12 | 704 | 0.8+ | 0.7− | 2006 09 24 | 699 | 1.0− | 0.9+ |
| 2003 11 18 | 644 | 0.2+ | 0.4+ | 2005 03 12 | 704 | 0.8+ | 1.3− | 2006 09 25 | 699 | 1.1− | 0.3− |
| 2003 11 18 | 644 | 0.1+ | 0.1− | 2005 03 12 | 704 | 0.7+ | 0.1− | 2006 09 25 | 699 | 0.3− | 0.9+ |
| 2003 11 18 | 644 | 0.3+ | 0.3+ | 2005 03 16 | 704 | 1.0− | 0.1− | 2006 09 25 | 699 | 0.6+ | 0.4+ |
| 2003 11 20 | 704 | 0.5− | 0.1− | 2005 03 16 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.1+ |
| 2003 11 20 | 704 | 1.0− | 0.2+ | 2005 03 16 | 704 | 0.1+ | 0.3− | 2006 10 19 | 703 | 0.9− | 0.9+ |
| 2003 11 20 | 704 | 0.6− | 0.3+ | 2005 03 16 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.6− | 0.8+ |
| 2003 11 20 | 704 | 0.4− | 1.2+ | 2005 03 16 | 704 | 0.4+ | 0.9+ | 2006 10 19 | 703 | 0.2+ | 0.2+ |
| 2003 11 20 | 704 | 0.9− | 0.1+ | 2005 03 16 | 703 | 0.8− | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.8+ |
| 2003 11 24 | 691 | 0.1+ | 0.3+ | 2005 03 16 | 703 | 1.0− | 0.8+ | 2006 10 22 | G96 | 1.0− | 1.0− |
| 2003 11 24 | 691 | 0.2+ | 0.3+ | 2005 03 16 | 703 | 1.1− | 0.8+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2003 11 24 | 704 | 0.5− | 0.8− | 2005 03 16 | 703 | 0.5− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2003 11 24 | 704 | 0.9+ | 0.6+ | 2005 03 30 | 703 | (1.6+ | 0.5+) | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2003 11 24 | 691 | 0.1− | 0.2+ | 2005 03 30 | 703 | 1.3+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2003 11 24 | 704 | 0.1− | 1.3+ | 2005 03 30 | 703 | 0.1− | 1.5− | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2005 02 09 | 691 | 0.0 | 0.1+ | 2005 03 30 | 703 | (2.2+ | 0.5+) | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2005 02 09 | 691 | 0.0 | 0.2+ | 2005 04 02 | 185 | 0.4+ | 1.1+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2005 02 09 | 691 | 0.3+ | 0.1+ | 2005 04 02 | 185 | 0.6+ | 0.1+ | | | | |

**(141684)∗ 2002 JS$_{126}$**

Discovered 2002 May 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 0.04945 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.29389899 | $\omega$ | 279.66844 | +0.96246618 | +0.23591827 | |
| $a$ | 2.2404606 | $\Omega$ | 66.78328 | −0.15386616 | +0.88154735 | |
| $e$ | 0.1748506 | $i$ | 8.39471 | −0.22357113 | +0.40892155 | |
| $P$ | 3.35 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 645 | 0.1− | 0.1− | 2003 11 21 | 704 | 0.2− | 1.3+ | 2003 12 21 | 691 | 0.1− | 0.1+ |
| 2001 01 26 | 645 | 0.1− | 0.2− | 2003 11 21 | 704 | 0.4− | 0.7+ | 2003 12 21 | 704 | 0.6− | 0.1− |
| 2002 04 05 | 699 | 0.8+ | 0.1− | 2003 11 21 | 704 | 0.1− | 0.9+ | 2003 12 21 | 704 | 0.7− | 0.3− |
| 2002 04 05 | 699 | 0.0 | 1.4+ | 2003 11 21 | 704 | 0.1− | 0.9+ | 2003 12 21 | 704 | 1.1− | 0.1− |
| 2002 04 05 | 699 | 1.0− | 0.6+ | 2003 11 23 | 704 | 0.6− | 0.7− | 2003 12 21 | 704 | 0.3− | 0.0 |
| 2002 04 05 | 699 | 0.3− | 1.1+ | 2003 11 23 | 704 | 0.1+ | 0.6+ | 2003 12 21 | 704 | 0.6− | 0.3+ |
| 2002 04 16 | 704 | 0.2− | 1.3− | 2003 11 23 | 704 | 0.3+ | 0.7+ | 2003 12 23 | 704 | 0.2− | 0.1− |
| 2002 04 16 | 704 | 0.3+ | 0.0 | 2003 11 23 | 704 | 0.7+ | 0.4+ | 2003 12 23 | 704 | 0.6+ | 0.0 |
| 2002 04 16 | 704 | 1.1+ | 0.2− | 2003 11 23 | 704 | 0.1− | 0.5+ | 2003 12 23 | 704 | 0.0 | 0.4+ |
| 2002 05 07 | 644 | 0.7+ | 0.9+ | 2003 11 24 | 699 | 0.5− | 0.1− | 2003 12 23 | 704 | 0.9− | 0.0 |
| 2002 05 07 | 644 | 0.8+ | 0.6+ | 2003 11 24 | 699 | 0.2+ | 0.2− | 2003 12 23 | 704 | 0.3− | 0.0 |
| 2002 05 07 | 644 | (0.3− | 2.4+) | 2003 11 24 | 699 | (2.4+ | 0.2−) | 2003 12 23 | 704 | 0.1+ | 0.1− |
| 2002 05 08 | 704 | (1.2+ | 1.7+) | 2003 11 24 | 699 | 0.1− | 0.3− | 2003 12 23 | 704 | 0.1− | 0.8+ |
| 2002 05 08 | 704 | 0.3+ | 0.7+ | 2003 11 26 | 704 | 0.0 | 0.2+ | 2003 12 23 | 704 | 0.9+ | 0.2− |
| 2002 05 08 | 704 | (0.6− | 1.6+) | 2003 11 26 | 704 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 0.2+ | 0.2+ |
| 2002 05 18 | 704 | 0.8+ | 0.4+ | 2003 11 26 | 704 | 0.2+ | 0.1+ | 2003 12 23 | 704 | 0.1− | 0.7+ |
| 2002 05 18 | 704 | 0.5+ | 1.0+ | 2003 11 26 | 704 | 0.0 | 0.2+ | 2003 12 24 | 704 | 0.0 | 1.2+ |
| 2002 05 18 | 704 | 0.6+ | 0.4+ | 2003 11 26 | 704 | 0.0 | 0.1+ | 2003 12 24 | 704 | 0.5− | 0.9+ |
| 2003 10 21 | 704 | 0.3+ | 0.2− | 2003 12 01 | 704 | 0.2+ | 0.1+ | 2003 12 24 | 704 | 0.3− | 0.9+ |
| 2003 10 21 | 704 | 0.3− | 0.5− | 2003 12 01 | 704 | 0.3+ | 0.8+ | 2004 01 12 | 644 | 0.1− | 0.4+ |
| 2003 10 21 | 704 | 0.1+ | 0.8− | 2003 12 01 | 704 | 0.4+ | 0.3− | 2004 01 12 | 644 | 0.1− | 0.2+ |
| 2003 10 21 | 704 | 0.7− | 0.1+ | 2003 12 01 | 704 | 0.2+ | 0.6+ | 2004 01 12 | 644 | 0.1− | 0.3+ |
| 2003 10 24 | 704 | (1.6+ | 0.1−) | 2003 12 01 | 704 | 0.5+ | 0.1+ | 2005 03 16 | 703 | 0.5+ | 0.4− |
| 2003 10 24 | 704 | 0.6+ | 0.9− | 2003 12 04 | 703 | 0.5− | 0.8− | 2005 03 16 | 703 | 1.0+ | 1.2− |
| 2003 10 24 | 704 | 0.8+ | 0.4− | 2003 12 04 | 703 | 0.8− | 0.8+ | 2005 03 16 | 703 | 0.3− | 0.2− |
| 2003 10 24 | 704 | 1.5+ | 0.5+ | 2003 12 04 | 703 | 0.0 | 0.5+ | 2005 03 16 | 703 | 1.0− | 1.4+ |
| 2003 10 24 | 704 | 1.3+ | 0.2+ | 2003 12 04 | 703 | 0.9− | 0.0 | 2006 05 25 | E12 | (2.2+ | 0.6+) |
| 2003 10 25 | 704 | 0.4+ | 0.1+ | 2003 12 15 | 703 | 0.4− | 0.2− | 2006 05 25 | E12 | 0.8− | 0.8+ |
| 2003 10 25 | 704 | 0.1+ | 0.4+ | 2003 12 15 | 703 | 0.8+ | 0.5− | 2006 05 25 | E12 | 0.4− | 0.4+ |
| 2003 10 25 | 704 | 0.8+ | 0.4− | 2003 12 15 | 703 | 0.5− | 0.2− | 2006 05 25 | E12 | 0.5+ | 1.0− |
| 2003 10 25 | 704 | 0.4− | 0.7+ | 2003 12 15 | 703 | (1.6− | 0.6+) | 2006 07 30 | E12 | 0.2+ | 0.1− |
| 2003 10 26 | 106 | 1.0+ | 0.2+ | 2003 12 17 | 644 | 0.3− | 0.3+ | 2006 07 30 | E12 | 0.1+ | 0.2+ |
| 2003 10 26 | 106 | 0.1+ | 0.0 | 2003 12 17 | 699 | 0.3+ | 0.1− | 2006 07 30 | E12 | 0.0 | 0.4+ |
| 2003 10 26 | 106 | 0.1+ | 0.7− | 2003 12 17 | 644 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 699 | (0.6− | 2.1+) | 2003 12 17 | 699 | 0.1− | 0.5− | 2006 08 28 | E12 | 0.1+ | 0.4− | | |
| 2003 10 29 | 699 | 0.1+ | 0.4− | 2003 12 17 | 644 | 0.1− | 0.2+ | 2006 08 28 | E12 | 0.2− | 0.0 | | |
| 2003 10 29 | 699 | 0.1− | 0.1− | 2003 12 17 | 699 | 0.6+ | 0.2− | 2006 09 27 | E12 | 0.2− | 0.1− | | |
| 2003 10 29 | 699 | 0.1+ | 0.1+ | 2003 12 17 | 699 | 0.5+ | 0.2− | 2006 09 27 | E12 | 0.4+ | 0.2− | | |
| 2003 11 02 | 704 | 0.5− | 0.1− | 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 09 27 | E12 | 0.1− | 0.3− | | |
| 2003 11 02 | 704 | 0.1+ | 0.4+ | 2003 12 19 | 704 | 0.6+ | 0.1− | 2006 09 27 | E12 | 0.0 | 0.5− | | |
| 2003 11 02 | 704 | 0.4+ | 0.2− | 2003 12 19 | 704 | 1.5+ | 0.7− | 2006 10 11 | E12 | 0.4+ | 0.1+ | | |
| 2003 11 15 | 644 | 0.2− | 0.1+ | 2003 12 19 | 704 | 0.6+ | 0.4+ | 2006 10 11 | E12 | 0.4+ | 0.1− | | |
| 2003 11 15 | 644 | 0.2+ | 0.0 | 2003 12 19 | 691 | 0.1+ | 0.2+ | 2006 10 11 | E12 | 0.6− | 0.0 | | |
| 2003 11 15 | 644 | 0.1+ | 0.3+ | 2003 12 19 | 704 | (2.0+ | 0.2+) | 2006 10 28 | 703 | 0.8− | 0.7− | | |
| 2003 11 19 | 699 | 0.8− | 0.4− | 2003 12 19 | 704 | 1.3+ | 0.3− | 2006 10 28 | 703 | 0.6− | 0.2− | | |
| 2003 11 19 | 699 | 0.5+ | 0.5− | 2003 12 19 | 691 | 0.7− | 0.2− | 2006 10 28 | 703 | 0.3− | 0.1− | | |
| 2003 11 19 | 699 | 0.1+ | 0.3− | 2003 12 20 | 699 | (0.9− | 2.1+) | 2006 10 28 | 703 | 0.1− | 0.7+ | | |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2003 12 20 | 699 | 1.0− | 0.0 | 2006 10 28 | E12 | 0.3− | 0.3+ | | |
| 2003 11 19 | 699 | 0.4+ | 0.1− | 2003 12 20 | 699 | 0.3− | 1.3+ | 2006 10 28 | E12 | 0.3+ | 0.3+ | | |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2003 12 20 | 699 | 1.1+ | 1.3− | 2006 10 28 | E12 | 0.0 | 0.6− | | |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2003 12 21 | 691 | 0.2− | 0.1+ | 2006 10 28 | E12 | 0.2− | 0.4+ | | |
| 2003 11 21 | 704 | 0.1− | 0.5+ | 2003 12 21 | 691 | 0.0 | 0.0 | | | | | | |

**(141685)∗ 2002 JG$_{130}$ = 1995 FT$_{17}$**

Discovered 2002 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31748)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 49.32829 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28783201 | $\omega$ | 173.06125 | | +0.48479980 | | +0.87179630 | | |
| $a$ | 2.2718343 | $\Omega$ | 125.91393 | | −0.80656570 | | +0.47670934 | | |
| $e$ | 0.1865869 | $i$ | 4.97872 | | −0.33826162 | | +0.11278036 | | |
| $P$ | 3.42 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.1− | 0.6− | 2002 05 08 | 704 | 0.2− | 1.0+ | 2005 03 03 | 691 | 0.4+ | 0.8+ | | |
| 1995 03 28 | 691 | 0.6− | 0.1− | 2002 05 08 | 704 | 0.1− | 0.2+ | 2005 03 03 | 691 | 0.1+ | 0.7+ | | |
| 1995 03 28 | 691 | 0.1− | 0.5− | 2002 05 08 | 704 | 0.3+ | 0.2+ | 2005 03 03 | 691 | 0.5+ | 0.9+ | | |
| 1995 04 07 | 691 | 0.7− | 0.4− | 2002 05 08 | 704 | 0.4+ | 0.3− | 2006 09 30 | 704 | 0.0 | 1.1+ | | |
| 1995 04 07 | 691 | 0.5− | 0.3− | 2002 05 10 | 699 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.5− | 0.1− | | |
| 1995 04 07 | 691 | 0.1− | 0.3− | 2002 05 10 | 699 | 0.1− | 0.5+ | 2006 09 30 | 704 | 0.0 | 0.1+ | | |
| 1998 01 28 | 691 | 0.6+ | 0.1+ | 2002 05 10 | 699 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.4+ | | |
| 1998 01 28 | 691 | 0.1+ | 0.1+ | 2002 05 10 | 699 | 0.4− | 0.7+ | 2006 10 16 | 703 | 1.3− | 0.0 | | |
| 1998 01 28 | 691 | 0.4+ | 0.4− | 2002 05 18 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.7− | 1.0+ | | |
| 1999 08 07 | 699 | 0.2− | 1.1+ | 2002 05 18 | 704 | 0.1− | 0.1+ | 2006 10 16 | 703 | 1.3− | 0.9+ | | |
| 1999 08 07 | 699 | 0.6+ | 1.0+ | 2002 05 18 | 704 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.2+ | | |
| 1999 08 07 | 699 | 0.8+ | 0.3+ | 2002 05 18 | 704 | 0.0 | 1.3+ | 2006 10 17 | 703 | 0.5+ | 1.2+ | | |
| 1999 09 07 | 704 | 0.1− | 0.0 | 2002 05 18 | 704 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.8+ | | |
| 1999 09 07 | 704 | 0.3− | 0.8+ | 2002 05 23 | 644 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.1+ | | |
| 1999 09 07 | 704 | 1.1+ | 0.9− | 2002 05 23 | 644 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 1999 09 07 | 704 | 0.5− | 1.3+ | 2002 05 23 | 644 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.1+ | | |
| 1999 09 07 | 704 | 0.4+ | 1.1− | 2002 06 06 | 608 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.4− | 0.0 | | |
| 2002 03 23 | 691 | 0.1+ | 1.2+ | 2002 06 06 | 608 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.2− | | |
| 2002 03 23 | 691 | (0.2+ | 1.8+) | 2002 06 06 | 608 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.4− | 0.0 | | |
| 2002 03 23 | 691 | 0.3+ | 1.2+ | 2002 06 09 | 704 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.2− | 0.3− | | |
| 2002 05 03 | 644 | 0.1+ | 0.6− | 2002 06 09 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 1.2− | 0.2+ | | |
| 2002 05 03 | 644 | 0.3+ | 0.8− | 2002 06 09 | 704 | 0.4− | 0.9− | | | | | | |
| 2002 05 03 | 644 | 0.7+ | 0.7− | 2002 06 09 | 704 | (0.0 | 1.6−) | | | | | | |

**(141686)∗ 2002 JX$_{130}$ = 2005 EC$_{279}$**

Discovered 2002 May 8 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 75357)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 80.03254 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.30823987 | $\omega$ | 79.90254 | | +0.38578555 | | +0.92176920 | | |
| $a$ | 2.1704186 | $\Omega$ | 212.87521 | | −0.87202780 | | +0.35056280 | | |
| $e$ | 0.0970538 | $i$ | 4.10662 | | −0.30122586 | | +0.16567214 | | |
| $P$ | 3.20 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 291 | 0.0 | 0.4+ | 2005 03 09 | 691 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2002 05 08 | 291 | 0.2− | 0.2+ | 2005 03 17 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 05 08 | 291 | 0.1+ | 0.3+ | 2005 03 17 | G96 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | | |
| 2002 05 10 | 704 | 1.0− | 0.7+ | 2005 03 17 | G96 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2002 05 10 | 704 | 0.1+ | 0.5+ | 2005 03 17 | G96 | 0.7− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | | |
| 2002 05 10 | 704 | 0.2− | 1.3+ | 2005 04 04 | 691 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 05 10 | 704 | 0.1− | 0.9+ | 2005 04 04 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.4+ | 0.2+ | | |
| 2002 05 17 | 644 | 0.1+ | 1.0+ | 2005 04 04 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.3+ | | |
| 2002 05 17 | 644 | 0.0 | 0.7+ | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.4− | | |
| 2002 05 17 | 644 | 0.5+ | 1.1+ | 2005 05 08 | G96 | 0.4− | 0.5− | 2006 11 10 | 691 | 0.5− | 0.3+ | | |
| 2002 05 19 | 291 | 0.1+ | 0.0 | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.4+ | | |
| 2002 05 19 | 291 | 0.6+ | 0.3+ | 2005 05 08 | G96 | 0.8+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.6+ | | |
| 2002 05 19 | 291 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− | | |
| 2003 12 01 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.8− | | |
| 2003 12 01 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2003 12 01 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.3− | | |
| 2003 12 19 | 691 | 0.3+ | 0.6+ | 2006 10 12 | 691 | 0.4− | 0.6+ | 2006 11 14 | G96 | 0.6− | 0.5− | | |
| 2003 12 19 | 691 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.7+ | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.1+ | | |
| 2005 03 09 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2+ | | |
| 2005 03 09 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | | | | | | |

**(141687)∗ 2002 JB$_{132}$ = 2003 WW$_{28}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56357)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 60.51025 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29622287 | $\omega$ | 324.95241 | | +0.31137983 | | +0.94880364 | | |
| $a$ | 2.2287276 | $\Omega$ | 323.10870 | | −0.85043933 | | +0.25331929 | | |
| $e$ | 0.1631609 | $i$ | 5.06996 | | −0.42402305 | | +0.18868226 | | |
| $P$ | 3.33 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 10 | 691 | 0.2− | 0.3− | 2003 12 19 | 691 | 0.0 | 0.4+ | 2006 09 18 | 704 | 1.1− | 0.3− | | |
| 1993 11 10 | 691 | 0.2− | 0.5− | 2005 03 03 | 703 | 0.1− | 0.5+ | 2006 09 18 | 704 | 0.7− | 0.6− | | |
| 1993 11 10 | 691 | 0.2+ | 0.1+ | 2005 03 03 | 703 | 0.5− | 0.9+ | 2006 09 19 | 703 | 0.7+ | 0.3− | | |
| 1993 11 10 | 691 | 0.1+ | 0.2− | 2005 03 03 | 703 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.3− | | |
| 1993 11 10 | 691 | 0.0 | 0.1− | 2005 03 03 | 703 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.2− | | |
| 1993 11 10 | 691 | 0.2− | 0.0 | 2005 03 03 | 703 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.8− | 0.4+ | | |
| 1999 07 16 | 704 | 0.0 | 0.3− | 2005 03 03 | 703 | 1.1− | 1.1− | 2006 09 25 | 704 | 1.5− | 0.3− | | |
| 1999 07 16 | 704 | 0.3+ | 1.0+ | 2005 03 03 | 703 | 0.9+ | 0.4− | 2006 09 25 | 704 | 0.5− | 0.8+ | | |
| 1999 07 16 | 704 | 0.4− | 1.6+ | 2005 03 03 | 703 | 0.5− | 0.2+ | 2006 09 25 | 704 | 1.0− | 0.0 | | |
| 1999 07 16 | 704 | 0.1− | 0.6+ | 2005 03 12 | 704 | (1.6+ | 0.9+) | 2006 09 25 | 704 | 1.2+ | 0.9+ | | |
| 2002 05 09 | 704 | 0.6+ | 0.1+ | 2005 03 12 | 704 | 0.8− | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.3− | | |
| 2002 05 09 | 704 | 0.7+ | 0.1+ | 2005 03 12 | 704 | 0.7+ | 1.0+ | 2006 09 29 | 704 | 0.6+ | 0.2− | | |
| 2002 05 09 | 704 | 0.2− | 0.2− | 2005 03 12 | 704 | 0.9+ | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.2− | | |
| 2002 05 11 | 644 | 0.1+ | 0.3− | 2005 03 17 | G96 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2002 05 11 | 644 | 0.4− | 0.4− | 2005 03 17 | G96 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 2002 05 11 | 644 | 0.1+ | 0.3− | 2005 03 17 | G96 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.4+ | 0.5+ | | |
| 2002 05 17 | 644 | 0.2+ | 0.2+ | 2005 03 17 | G96 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2002 05 17 | 644 | 0.0 | 0.5+ | 2005 04 02 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2002 05 17 | 644 | 0.5+ | 0.3+ | 2005 04 02 | 691 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.4+ | | |
| 2003 11 18 | 691 | 0.0 | 0.4+ | 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.8− | 0.5− | | |
| 2003 11 18 | 691 | 0.5+ | 0.1− | 2006 08 30 | 704 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.2− | 0.8− | | |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2006 08 30 | 704 | (0.1+ | 1.6+) | 2006 10 17 | 703 | 0.2− | 1.2− | | |
| 2003 11 20 | 704 | 0.4+ | 1.0+ | 2006 08 30 | 704 | 0.7+ | 0.1− | 2006 10 17 | 703 | 0.8− | 0.8− | | |
| 2003 11 20 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.4+ | 1.2+ | 2006 10 20 | 644 | 0.3+ | 0.5+ | | |
| 2003 11 20 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | | |
| 2003 11 20 | 704 | 0.1− | 1.1+ | 2006 09 16 | 703 | 0.2− | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2003 11 26 | 704 | (2.4− | 1.0+) | 2006 09 16 | 703 | 0.3− | 1.2− | 2006 10 22 | 644 | 0.7+ | 0.1− | | |
| 2003 11 26 | 704 | 0.1+ | 1.1− | 2006 09 16 | 703 | 1.1+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2003 11 26 | 704 | 0.3− | 1.5+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2003 12 01 | 691 | 0.1− | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2003 12 01 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 644 | 0.4+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 691 | 0.1+ | 0.1− | 2006 09 18 | 704 | 1.2− | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.9− | 0.2− | 2006 10 23 | G96 | 0.6+ | 0.4− |
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2006 09 18 | 704 | 1.0− | 1.4+ | | | | |

**(141688)∗ 2002 JE$_{133}$**

Discovered 2002 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.71894 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27397451 | $\omega$ | 298.49094 | | +0.50717100 | +0.86184271 | |
| $a$ | 2.3478082 | $\Omega$ | 1.98861 | | −0.76722672 | +0.45263752 | |
| $e$ | 0.1750967 | $i$ | 3.58949 | | −0.39260762 | +0.22879340 | |
| $P$ | 3.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.1+ | 0.1+ | 2002 05 09 | 644 | 0.1− | 0.2+ | 2005 02 09 | 691 | 0.2+ | 0.2+ |
| 1999 09 09 | 704 | 1.1− | 0.2− | 2002 05 09 | 704 | 1.2+ | 0.3+ | 2005 02 09 | 691 | 0.0 | 0.4+ |
| 1999 09 09 | 704 | 0.2− | 0.9− | 2002 05 09 | 644 | 1.1+ | 0.4+ | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 1999 09 09 | 704 | 0.0 | 0.4+ | 2002 05 09 | 704 | 0.5+ | 0.4+ | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 1999 09 09 | 704 | 0.5− | 0.8+ | 2002 05 09 | 644 | 0.0 | 0.3+ | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 1999 10 08 | 704 | 0.8− | 0.5− | 2002 05 10 | 644 | 0.2+ | 0.2− | 2006 08 21 | 644 | 0.0 | 0.4+ |
| 1999 10 08 | 704 | 0.9+ | 1.3+ | 2002 05 10 | 644 | 0.2− | 0.1+ | 2006 08 21 | 644 | 0.1+ | 0.3+ |
| 1999 10 08 | 704 | 0.5+ | 1.0+ | 2002 05 10 | 644 | 0.2+ | 0.2+ | 2006 08 21 | 644 | 0.2− | 0.0 |
| 1999 11 11 | 691 | 0.2− | 0.1+ | 2002 05 18 | 644 | 0.3+ | 0.2− | 2006 10 23 | G96 | 0.5− | 0.1− |
| 1999 11 11 | 691 | 0.4− | 0.0 | 2002 05 18 | 644 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 1999 11 11 | 691 | 0.6+ | 0.3− | 2002 05 18 | 644 | 0.4+ | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.7− |
| 2002 04 14 | 704 | 0.6+ | 0.3− | 2003 10 18 | 691 | 0.1+ | 0.2− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2002 04 14 | 704 | 1.0− | 0.1+ | 2003 10 18 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2002 04 14 | 704 | 0.3− | 0.1+ | 2003 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2002 04 14 | 704 | 1.0− | 0.2+ | 2003 11 21 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2002 04 14 | 704 | 0.2− | 0.9− | 2003 11 21 | 644 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2002 05 09 | 704 | 1.1− | 0.5− | 2003 11 21 | 644 | 0.1+ | 0.3+ | | | | |
| 2002 05 09 | 704 | 0.5+ | 0.7+ | 2005 02 09 | 691 | 0.3− | 0.1+ | | | | |

**(141689)∗ 2002 JN$_{139}$**

Discovered 2002 May 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.64711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30356970 | $\omega$ | 319.44338 | | −0.62890400 | +0.77309697 | |
| $a$ | 2.1926220 | $\Omega$ | 271.42386 | | −0.69029175 | −0.60403042 | |
| $e$ | 0.1134001 | $i$ | 4.73186 | | −0.35773881 | −0.19356736 | |
| $P$ | 3.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 18 | 644 | 0.1+ | 0.4+ | 2003 10 17 | 691 | 0.1− | 0.1+ | 2005 03 10 | 699 | 1.0+ | 0.4+ |
| 2002 04 18 | 644 | 0.2+ | 0.4+ | 2003 10 25 | 049 | 0.1+ | 0.2+ | 2005 03 10 | 699 | 0.5+ | 0.4− |
| 2002 04 18 | 644 | 0.1+ | 0.3+ | 2003 10 25 | 049 | 0.0 | 0.2+ | 2005 03 10 | 699 | 0.2− | 0.8+ |
| 2002 05 01 | 644 | 0.2− | 0.1+ | 2003 10 25 | 049 | 0.3− | 0.3+ | 2005 03 13 | 703 | 0.5− | 0.9+ |
| 2002 05 01 | 644 | 0.2+ | 0.0 | 2003 10 27 | 691 | 0.1− | 0.4+ | 2005 03 13 | 703 | 0.0 | 1.2+ |
| 2002 05 01 | 644 | 0.0 | 0.1− | 2003 10 27 | 691 | 0.4− | 0.1− | 2005 03 13 | 703 | 0.1+ | 0.3+ |
| 2002 05 09 | 704 | 0.1+ | 0.6+ | 2003 10 27 | 691 | 0.0 | 0.1+ | 2005 03 13 | 703 | 0.0 | 0.7+ |
| 2002 05 09 | 704 | 1.0+ | 0.7+ | 2003 11 26 | 699 | 1.4− | 0.3− | 2006 08 29 | 703 | 1.2− | 0.8− |
| 2002 05 09 | 704 | 1.1+ | 1.2+ | 2003 11 26 | 699 | 1.5+ | 0.0 | 2006 08 29 | 703 | 0.5− | 1.0+ |
| 2002 05 09 | 704 | 0.7+ | 0.8+ | 2003 11 26 | 699 | 0.5+ | 1.0+ | 2006 08 29 | 703 | 0.1+ | 1.1+ |
| 2002 05 09 | 704 | (0.6− | 2.2+) | 2003 11 26 | 699 | (1.6− | 0.1−) | 2006 08 29 | 703 | 0.8+ | 0.3− |
| 2002 05 10 | 644 | 0.2− | 0.2− | 2005 03 04 | 703 | 0.5− | 0.2− | 2006 09 19 | 699 | 0.5− | 0.0 |
| 2002 05 10 | 644 | 0.2− | 0.0 | 2005 03 04 | 703 | 0.3− | 0.9+ | 2006 09 19 | 699 | (3.0− | 1.7+) |
| 2002 05 10 | 644 | 0.2− | 0.2− | 2005 03 04 | 703 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.4+ | 1.0+ |
| 2002 05 11 | 704 | 0.4− | 0.2− | 2005 03 04 | 703 | 0.4− | 0.1+ | 2006 09 19 | 699 | 1.1+ | 0.8+ |
| 2002 05 11 | 704 | 0.5+ | 0.2− | 2005 03 07 | 704 | 0.8+ | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2002 05 11 | 704 | 0.4− | 0.8+ | 2005 03 07 | 704 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 2002 06 08 | 704 | 0.4+ | 0.0 | 2005 03 07 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 2002 06 08 | 704 | 0.8− | 0.3+ | 2005 03 07 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.4+ |
| 2002 06 08 | 704 | 0.0 | 0.3+ | 2005 03 07 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2002 06 08 | 704 | 0.1+ | 0.8+ | 2005 03 08 | 691 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 2002 06 08 | 704 | 0.0 | 0.7+ | 2005 03 08 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.4+ |
| 2003 10 17 | 691 | 0.0 | 0.2+ | 2005 03 08 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2003 10 17 | 691 | 0.1− | 0.2+ | 2005 03 10 | 699 | 0.1+ | 0.5− | 2006 10 23 | 691 | 0.4+ | 0.1+ |

**(141690)∗ 2002 JM$_{143}$ = 1999 RV$_{60}$**

Discovered 2002 May 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31752)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.37343 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29416292 | $\omega$ | 68.59701 | | +0.54362340 | +0.83835377 | |
| $a$ | 2.2391203 | $\Omega$ | 234.39766 | | −0.78732222 | +0.49264399 | |
| $e$ | 0.2887202 | $i$ | 2.85191 | | −0.29085617 | +0.23337708 | |
| $P$ | 3.35 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.1+ | 0.2− | 2002 04 14 | 704 | (0.0 | 2.0+) | 2006 11 10 | 644 | 0.2+ | 0.5+ |
| 1996 11 08 | 691 | 0.1− | 0.2− | 2002 04 21 | 291 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.5+ |
| 1996 11 08 | 691 | 0.0 | 0.2− | 2002 04 21 | 291 | 0.3− | 0.5+ | 2006 11 10 | 644 | 0.5− | 1.0+ |
| 1999 09 06 | 699 | 1.1+ | 0.8+ | 2002 04 21 | 291 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.5+ |
| 1999 09 06 | 699 | 0.9+ | 1.2+ | 2002 05 09 | 644 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.5+ |
| 1999 09 06 | 699 | 0.1− | 1.0+ | 2002 05 09 | 644 | 0.2+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.5+ |
| 1999 09 07 | 704 | 0.6− | 0.3− | 2002 05 09 | 644 | 0.1+ | 0.7+ | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 0.9− | 0.3+ | 2002 05 13 | 704 | 1.1+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.2+ |
| 1999 09 07 | 704 | 0.6− | 0.9+ | 2002 05 13 | 704 | 1.0+ | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.2+ |
| 1999 09 07 | 704 | 0.6− | 0.4− | 2002 05 13 | 704 | 0.7+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.1+ |
| 1999 09 09 | 704 | 0.6− | 0.4− | 2002 05 13 | 704 | 0.6+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.0 |
| 1999 09 09 | 704 | 0.2− | 0.7− | 2002 05 13 | 704 | 0.4+ | 0.9+ | 2006 11 13 | G96 | 0.2− | 0.2+ |
| 1999 09 09 | 704 | 0.0 | 0.5− | 2002 05 16 | 608 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.2+ |
| 1999 10 13 | 704 | 0.4+ | 0.4− | 2002 05 16 | 608 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.1+ |
| 1999 10 13 | 704 | 0.8+ | 0.1− | 2002 05 16 | 608 | 0.4− | 0.8+ | 2006 11 21 | 704 | (1.0+ | 1.5+) |
| 1999 10 13 | 704 | 0.2+ | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2002 04 04 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 1.0− | 0.4+ |
| 2002 04 04 | 644 | 0.5+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.6− |
| 2002 04 04 | 644 | 0.2+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2002 04 09 | 704 | 0.6+ | 0.7− | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.1+ |
| 2002 04 09 | 704 | 0.7+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2002 04 09 | 704 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.8− | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.2+ |
| 2002 04 09 | 704 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.5+ | 2006 11 27 | 703 | 0.7− | 0.6− |
| 2002 04 14 | 704 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.6+ | 2006 11 27 | 703 | 0.0 | 1.1− |
| 2002 04 14 | 704 | 0.6− | 1.4+ | 2006 11 10 | 644 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.7+ | 2.0+ |
| 2002 04 14 | 704 | (0.5− | 1.7+) | 2006 11 10 | 644 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.8− | 0.2+ |
| 2002 04 14 | 704 | 0.1+ | 1.4+ | 2006 11 10 | 644 | 0.1+ | 0.3+ | | | | |

**(141691)∗ 2002 JB$_{146}$**

Discovered 2002 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.10677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23872745 | $\omega$ | 133.09393 | | +0.23790315 | +0.96241354 | |
| $a$ | 2.5735611 | $\Omega$ | 149.91953 | | −0.94968669 | +0.25877435 | |
| $e$ | 0.1045775 | $i$ | 15.15162 | | −0.20370882 | −0.08243799 | |
| $P$ | 4.13 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 15 | 704 | 0.5+ | 0.1+ | 2002 06 04 | 699 | 0.7+ | 0.3+ | 2005 01 13 | 703 | 0.1+ | 0.2− |
| 2002 05 15 | 704 | 0.4− | 0.2− | 2002 06 16 | 704 | 0.2+ | 0.6− | 2006 04 29 | 699 | 0.3− | 0.2+ |
| 2002 05 15 | 704 | 0.0 | 0.8+ | 2002 06 16 | 704 | 0.2+ | 1.0− | 2006 04 29 | 699 | 1.8− | 0.3+ |
| 2002 05 15 | 704 | 0.1+ | 0.3− | 2002 06 16 | 704 | 0.4− | 1.0− | 2006 04 29 | 699 | 0.2− | 0.8− |
| 2002 05 15 | 704 | 0.6+ | 0.0 | 2002 06 16 | 704 | 0.6− | 0.1+ | 2006 04 29 | 699 | 0.8− | 0.4+ |
| 2002 05 18 | 699 | 0.4− | 1.1+ | 2003 09 28 | 699 | 1.1+ | 0.5+ | 2006 04 30 | 941 | 0.8+ | 0.3+ |
| 2002 05 18 | 699 | 0.3+ | 0.4+ | 2003 09 28 | 699 | 0.1− | 0.1− | 2006 04 30 | 941 | 0.7+ | 0.2+ |
| 2002 05 18 | 699 | 0.0 | 0.2+ | 2003 09 28 | 699 | 0.1− | 0.2+ | 2006 04 30 | 941 | 0.4+ | 0.3+ |
| 2002 05 18 | 699 | 0.7− | 0.0 | 2003 09 28 | 699 | 0.2+ | 0.4+ | 2006 04 30 | 941 | 0.2+ | 0.2+ |
| 2002 05 29 | 644 | 1.1− | 1.4− | 2003 10 16 | 644 | 0.0 | 0.2+ | 2006 05 25 | 704 | 0.1− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 29 | 644 | 0.7+ | 0.4+ | 2003 10 16 | 644 | 0.1− | 0.2+ | 2006 05 25 | 703 | 0.2+ | 0.0 |
| 2002 05 29 | 644 | 0.9+ | 0.3+ | 2003 10 16 | 644 | 0.2− | 0.2+ | 2006 05 25 | 704 | 0.3+ | 0.2+ |
| 2002 06 03 | 704 | 0.3+ | 0.4+ | 2003 10 18 | 699 | 0.5− | 0.1− | 2006 05 25 | 703 | 0.4− | 0.3− |
| 2002 06 03 | 704 | 0.1− | 1.7+ | 2003 10 18 | 699 | 1.3− | 0.3− | 2006 05 25 | 704 | 0.5− | 0.3+ |
| 2002 06 03 | 704 | 0.0 | 1.6+ | 2003 10 18 | 699 | 0.2+ | 0.4+ | 2006 05 25 | 703 | 1.0− | 0.8− |
| 2002 06 03 | 704 | 0.0 | 1.6+ | 2003 10 18 | 699 | 0.3+ | 0.5+ | 2006 05 25 | 703 | 0.5− | 0.7− |
| 2002 06 04 | 699 | 0.1+ | 1.6− | 2005 01 13 | 703 | 0.9+ | 0.0 | 2006 05 30 | 704 | 1.0+ | 0.2− |
| 2002 06 04 | 699 | (0.1+ | 2.4−) | 2005 01 13 | 703 | 0.3− | 1.0+ | 2006 05 30 | 704 | 0.4+ | 0.3+ |
| 2002 06 04 | 699 | 0.2− | 0.1+ | 2005 01 13 | 703 | 0.4− | 0.8+ | 2006 05 30 | 704 | 1.6+ | 0.9− |

**(141692)∗ 2002 JN$_{146}$**

Discovered 2002 May 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.67437 | | (2000.0) | | | |
| $n$ | 0.26628141 | $\omega$ | 141.55616 | | +0.40984178 | +0.91009212 |
| $a$ | 2.3928133 | $\Omega$ | 152.47914 | | −0.86628367 | +0.40940539 |
| $e$ | 0.2336161 | $i$ | 7.62798 | | −0.28562619 | +0.06418378 |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.4+ | 0.2− | 2002 06 11 | 644 | 0.2− | 0.8+ | 2006 08 18 | 644 | 0.1+ | 0.3− |
| 1994 03 05 | 691 | 0.5− | 0.5+ | 2002 06 11 | 644 | 0.4− | 0.7+ | 2006 08 18 | 644 | 0.1+ | 0.4− |
| 1995 08 28 | 809 | 0.2+ | 0.0 | 2002 06 11 | 644 | 0.3+ | 1.5− | 2006 08 18 | 644 | 0.1− | 0.4− |
| 1995 08 29 | 809 | 0.2+ | 0.2− | 2002 06 14 | 704 | 0.4− | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 1995 09 01 | 809 | (2.0− | 2.9−) | 2002 06 14 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 699 | 0.1− | 0.4− |
| 2002 05 15 | 608 | 0.1− | 0.9− | 2002 06 14 | 704 | 0.1− | 0.9+ | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2002 05 15 | 608 | 0.8− | 0.8− | 2002 06 14 | 704 | 0.0 | 1.2+ | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2002 05 15 | 608 | 1.0− | 1.5− | 2002 06 14 | 704 | 1.0+ | 1.0+ | 2006 08 28 | 699 | 0.2− | 0.8+ |
| 2002 05 18 | 704 | 0.4+ | 0.1− | 2002 06 21 | 950 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.1− |
| 2002 05 18 | 704 | 0.5+ | 0.5− | 2002 06 21 | 950 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.1− |
| 2002 05 18 | 704 | 0.9+ | 0.9+ | 2002 06 21 | 950 | (2.3− | 2.0−) | 2006 08 28 | 699 | 0.1+ | 0.7− |
| 2002 05 18 | 704 | 0.0 | 0.1+ | 2005 03 04 | G96 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.2+ |
| 2002 06 01 | 644 | 0.2− | 0.2− | 2005 03 04 | G96 | 0.1− | 0.1− | 2006 08 29 | 704 | 0.1+ | 1.1+ |
| 2002 06 01 | 644 | 0.2− | 0.0 | 2005 03 04 | G96 | 0.2− | 0.0 | 2006 08 29 | 704 | 0.1+ | 0.1− |
| 2002 06 01 | 644 | 0.1− | 0.3− | 2005 03 04 | G96 | 0.7− | 0.2+ | 2006 08 29 | 704 | 0.3+ | 0.4+ |
| 2002 06 09 | 644 | 0.4+ | 0.5+ | 2005 03 08 | G96 | 0.5+ | 0.1+ | 2006 08 29 | 704 | 0.1+ | 0.6+ |
| 2002 06 09 | 644 | 0.4+ | 0.4+ | 2005 03 08 | G96 | 0.4+ | 0.6+ | 2006 09 13 | 644 | 0.3− | 0.1− |
| 2002 06 09 | 644 | 0.5+ | 0.0 | 2005 03 08 | G96 | 0.4+ | 0.6+ | 2006 09 13 | 644 | 0.2+ | 0.1− |
| 2002 06 10 | 704 | 0.2− | 0.5− | 2005 03 08 | G96 | 0.5+ | 0.7+ | 2006 09 13 | 644 | 0.1− | 0.5− |
| 2002 06 10 | 704 | 0.3− | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.5+ |
| 2002 06 10 | 704 | 0.4+ | 0.1− | 2005 04 04 | G96 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.3+ |
| 2002 06 10 | 704 | 0.2− | 0.3+ | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 1.2+ |
| 2002 06 10 | 704 | 0.7− | 1.6− | 2005 04 04 | G96 | 0.1− | 0.3− | 2006 09 14 | 703 | 1.0+ | 0.4− |

**(141693)∗ 2002 JZ$_{146}$**

Discovered 2002 May 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.28120 | | (2000.0) | | | |
| $n$ | 0.28491882 | $\omega$ | 219.63157 | | +0.58193155 | +0.80228009 |
| $a$ | 2.2872938 | $\Omega$ | 86.35631 | | −0.70821462 | +0.58036905 |
| $e$ | 0.1303319 | $i$ | 7.66146 | | −0.39973456 | +0.13970833 |
| $P$ | 3.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 10 | 704 | 0.0 | 0.5+ | 2003 10 27 | 704 | 0.4+ | 0.7+ | 2003 12 22 | 704 | 0.9+ | 0.5+ |
| 2002 04 10 | 704 | 1.2+ | 1.9+ | 2003 10 27 | 704 | 0.2+ | 0.6+ | 2003 12 22 | 704 | 1.1+ | 1.9+ |
| 2002 04 10 | 704 | 0.8− | 0.6+ | 2003 10 27 | 704 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.1+ | 1.8+ |
| 2002 04 10 | 704 | 1.0− | 1.1+ | 2003 10 27 | 704 | 0.5+ | 0.2− | 2004 02 20 | 291 | 0.5− | 0.3+ |
| 2002 04 10 | 704 | 0.1+ | 0.7+ | 2003 10 29 | 699 | 0.6− | 0.5+ | 2004 02 20 | 291 | 0.1+ | 0.3+ |
| 2002 04 16 | 704 | 0.0 | 0.2+ | 2003 10 29 | 699 | 0.9+ | 0.1+ | 2004 02 20 | 291 | 0.3− | 0.6+ |
| 2002 04 16 | 704 | 0.5+ | 0.1+ | 2003 10 29 | 699 | 0.5− | 0.2− | 2005 03 11 | 703 | 0.9− | 0.1− |
| 2002 04 16 | 704 | 0.7+ | 0.7− | 2003 10 29 | 699 | 0.4− | 0.4− | 2005 03 11 | 703 | 1.6+ | 0.1+ |
| 2002 04 30 | 644 | 0.0 | 0.2− | 2003 11 01 | 704 | 0.3+ | 0.1+ | 2005 03 11 | 703 | 0.1+ | 0.4+ |
| 2002 04 30 | 644 | 0.2+ | 0.2− | 2003 11 01 | 704 | 0.3− | 0.9+ | 2005 03 11 | 703 | 0.1− | 0.1− |
| 2002 04 30 | 644 | 0.6+ | 0.3− | 2003 11 01 | 704 | 0.6− | 0.2− | 2006 08 20 | 644 | 0.2+ | 0.5+ |
| 2002 05 07 | 644 | 0.2+ | 0.7+ | 2003 11 01 | 704 | 1.2− | 0.3− | 2006 08 20 | 644 | 0.2+ | 0.5+ |
| 2002 05 07 | 644 | 0.1− | 0.9+ | 2003 11 17 | 703 | (3.3− | 0.6+) | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2002 05 07 | 644 | 0.1+ | 0.9+ | 2003 11 17 | 703 | 1.8− | 0.2− | 2006 08 23 | 644 | 0.1+ | 0.4+ |
| 2002 05 08 | 704 | 0.9+ | 0.9+ | 2003 11 17 | 703 | 0.5+ | 1.4+ | 2006 08 23 | 644 | 0.1+ | 0.5+ |
| 2002 05 08 | 704 | 1.4+ | 1.6+ | 2003 11 17 | 703 | 0.1− | 0.7+ | 2006 08 23 | 644 | 0.1+ | 0.7+ |
| 2002 05 08 | 704 | 1.7− | 1.4+ | 2003 11 21 | 691 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.4+ |
| 2002 05 08 | 704 | 0.3− | 0.0 | 2003 11 21 | 691 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.2+ | 0.6+ |
| 2002 05 18 | 704 | 0.9+ | 0.9+ | 2003 11 21 | 691 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.1− | 0.6+ |
| 2002 05 18 | 704 | 0.3+ | 1.2+ | 2003 11 30 | 704 | 1.1− | 0.6+ | 2006 08 28 | E12 | 0.3+ | 0.2+ |
| 2002 05 18 | 704 | 0.3− | 0.6+ | 2003 11 30 | 704 | 0.4− | 1.4+ | 2006 08 28 | E12 | 0.3− | 0.0 |
| 2002 05 18 | 704 | 0.3+ | 0.8+ | 2003 11 30 | 704 | 1.0− | 0.7+ | 2006 08 28 | E12 | 0.2+ | 0.1+ |
| 2002 05 18 | 704 | 0.7+ | 1.3+ | 2003 11 30 | 704 | 1.2− | 1.1+ | 2006 09 17 | 699 | 0.7− | 0.9− |
| 2002 06 09 | 608 | 0.3+ | 0.3− | 2003 12 22 | 704 | 0.2− | 0.5− | 2006 09 17 | 699 | 0.0 | 0.4+ |
| 2002 06 09 | 608 | 0.5+ | 0.8− | 2003 12 22 | 704 | 0.5+ | 0.1− | 2006 09 17 | 699 | 1.7− | 0.4+ |
| 2002 06 09 | 608 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.1+ | 1.8+ | 2006 09 17 | 699 | 1.2− | 0.4− |

**(141694)∗ 2002 JW$_{147}$**

Discovered 2002 May 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.23150 | | (2000.0) | | | |
| $n$ | 0.28217646 | $\omega$ | 268.77109 | | −0.06306703 | +0.99800466 |
| $a$ | 2.3020895 | $\Omega$ | 357.60668 | | −0.88427043 | −0.05729134 |
| $e$ | 0.1896524 | $i$ | 4.17426 | | −0.46269683 | −0.02654037 |
| $P$ | 3.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 691 | 0.3− | 0.3+ | 2005 02 14 | 704 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.7+ | 0.4− |
| 1999 09 04 | 691 | 0.1− | 0.4+ | 2005 02 14 | 704 | 1.3− | 0.5+ | 2006 09 17 | 704 | 0.6− | 0.3+ |
| 1999 09 04 | 691 | 0.2− | 0.4+ | 2005 02 14 | 704 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.2+ |
| 2002 05 11 | 704 | 0.2− | 0.3+ | 2005 02 14 | 704 | 1.3+ | 1.4− | 2006 09 17 | 704 | 0.1− | 0.6+ |
| 2002 05 11 | 704 | 0.0 | 0.7+ | 2005 03 14 | G96 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.6− | 1.5+ |
| 2002 05 11 | 704 | 1.0− | 1.1+ | 2005 03 14 | G96 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.8− |
| 2002 05 17 | 704 | (1.9+ | 1.0+) | 2005 03 14 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 1.0− | 0.1+ |
| 2002 05 17 | 704 | 0.3+ | 0.2+ | 2005 03 14 | G96 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.6− | 0.6+ |
| 2002 05 17 | 704 | 0.1+ | 0.6− | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.0 |
| 2002 05 17 | 704 | 0.1+ | 0.2− | 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.2− |
| 2002 05 17 | 704 | 0.8+ | 0.2+ | 2005 04 04 | G96 | 0.4− | 0.3+ | 2006 09 20 | 704 | (2.0+ | 1.0−) |
| 2002 06 05 | 644 | 0.0 | 0.5+ | 2005 04 04 | G96 | 0.5− | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2002 06 05 | 644 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.9− | 0.5+ |
| 2002 06 05 | 644 | 0.2+ | 0.0 | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | (1.6+ | 0.3+) |
| 2002 06 13 | 644 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.3− | 0.1− |
| 2002 06 13 | 644 | 0.1+ | 0.6+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2002 06 13 | 644 | 0.3+ | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2002 06 18 | 644 | 0.4+ | 0.5− | 2006 08 27 | 691 | 0.2+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.0 |
| 2002 06 18 | 644 | 0.2− | 0.4− | 2006 09 12 | 703 | 0.2− | 1.0− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2002 06 18 | 644 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2005 02 01 | 691 | 0.1+ | 0.5+ | 2006 09 12 | 703 | 0.2+ | 1.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2005 02 01 | 691 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2005 02 01 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 699 | 0.2− | 1.2− | 2006 10 16 | G96 | 0.2− | 0.6− |
| 2005 02 09 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | (2.3+ | 1.3+) | 2006 10 16 | G96 | 0.2+ | 0.7− |
| 2005 02 09 | 691 | 0.3+ | 0.1+ | 2006 09 16 | 699 | 0.6− | 1.2+ | 2006 10 16 | G96 | 0.2+ | 0.8− |
| 2005 02 09 | 691 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 1.0+ | | | | |

**(141695)∗ 2002 KU$_2$**

Discovered 2002 May 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.52334 | | (2000.0) | | | |
| $n$ | 0.29850837 | $\omega$ | 37.16640 | | −0.26307170 | +0.96413139 |
| $a$ | 2.2173370 | $\Omega$ | 217.61778 | | −0.89847087 | −0.25814653 |
| $e$ | 0.1427876 | $i$ | 3.31250 | | −0.35148738 | −0.06173350 |
| $P$ | 3.30 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 24 | 691 | 0.1+ | 0.0 | 2002 06 03 | 644 | 0.2+ | 0.1− | 2005 05 08 | G96 | 0.7− | 0.3+ |
| 1992 04 24 | 691 | 0.2− | 0.3− | 2002 06 11 | 644 | 0.4+ | 0.3− | 2006 09 15 | 691 | 0.5+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 24 | 691 | 0.3− | 0.4− | 2002 06 11 | 644 | 0.2+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.1+ | | |
| 1995 02 25 | 691 | 0.4− | 0.3− | 2002 06 11 | 644 | 0.5+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.2+ | | |
| 1995 02 25 | 691 | 0.3− | 0.9− | 2005 03 08 | 691 | 0.5+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 1995 02 25 | 691 | 0.0 | 1.5− | 2005 03 08 | 691 | 0.2+ | 0.9+ | 2006 09 30 | 691 | 0.3− | 0.0 | | |
| 2002 05 12 | 704 | 0.1− | 1.0+ | 2005 03 08 | 691 | 0.1+ | 0.9+ | 2006 09 30 | 691 | 0.4− | 0.4+ | | |
| 2002 05 12 | 704 | 0.4− | 0.6+ | 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2002 05 12 | 704 | 0.1− | 0.9+ | 2005 03 13 | 691 | 0.5+ | 0.3+ | 2006 10 19 | G96 | 0.5− | 0.3+ | | |
| 2002 05 18 | 644 | 0.1+ | 0.3− | 2005 03 13 | 691 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.1+ | | |
| 2002 05 18 | 644 | 0.1− | 0.2− | 2005 04 12 | G96 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.2− | | |
| 2002 05 18 | 644 | 0.1+ | 0.2− | 2005 04 12 | G96 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.7+ | 0.3+ | | |
| 2002 05 19 | 644 | 0.3+ | 0.0 | 2005 04 12 | G96 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.4− | 0.5− | | |
| 2002 05 19 | 644 | 0.2+ | 0.1+ | 2005 04 12 | G96 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2002 05 19 | 644 | 0.2+ | 0.1+ | 2005 05 08 | G96 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2002 06 03 | 644 | 0.3− | 0.1− | 2005 05 08 | G96 | 1.1− | 0.2− | | | | | | |
| 2002 06 03 | 644 | 0.1+ | 0.2− | 2005 05 08 | G96 | 0.3+ | 0.1− | | | | | | |

**(141696)∗ 2002 KE$_4$**

Discovered 2002 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.64923 | | (2000.0) | | | |
| $n$ | 0.27488117 | $\omega$ | 142.65936 | | +0.63151733 | +0.76890493 |
| $a$ | 2.3426427 | $\Omega$ | 165.57278 | | −0.77221053 | +0.63531231 |
| $e$ | 0.2468295 | $i$ | 23.62719 | | −0.06983383 | −0.07185733 |
| $P$ | 3.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.5− | 1.1+ | 2002 06 20 | 704 | 0.1− | 0.3− | 2005 03 16 | G96 | 0.6− | 0.0 | | |
| 1999 10 16 | 704 | 0.1− | 0.3+ | 2002 06 20 | 704 | 0.3− | 0.1+ | 2005 03 16 | G96 | 0.5− | 0.1+ | | |
| 1999 10 16 | 704 | 0.0 | 0.3− | 2002 06 20 | 704 | 0.5− | 0.3+ | 2006 08 19 | 699 | 0.3− | 0.5+ | | |
| 1999 10 16 | 704 | 0.5+ | 0.1− | 2002 06 20 | 704 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.6− | 0.2+ | | |
| 2002 05 06 | 704 | 0.5+ | 0.5− | 2002 07 02 | 704 | 1.3+ | 1.3+ | 2006 08 19 | 699 | 0.1− | 0.3+ | | |
| 2002 05 06 | 704 | 0.7+ | 0.9+ | 2002 07 02 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 704 | (1.6− | 0.9+) | | |
| 2002 05 06 | 704 | 0.3− | 0.8+ | 2002 07 02 | 704 | 1.1+ | 0.3+ | 2006 08 23 | 704 | 0.1+ | 0.0 | | |
| 2002 05 06 | 704 | 0.5− | 0.3+ | 2002 07 02 | 704 | 0.2− | 0.3+ | 2006 08 23 | 704 | 0.2− | 0.3+ | | |
| 2002 05 06 | 704 | 0.4+ | 1.0+ | 2002 07 07 | 699 | 0.5− | 0.5+ | 2006 08 23 | 704 | 0.4− | 0.2+ | | |
| 2002 05 18 | 704 | 0.7− | 1.0− | 2002 07 07 | 699 | 0.4− | 0.5+ | 2006 08 28 | 704 | 0.2+ | 0.6+ | | |
| 2002 05 18 | 704 | 0.3+ | 0.5+ | 2002 07 07 | 699 | 0.1− | 0.2+ | 2006 08 28 | 704 | 0.0 | 0.4+ | | |
| 2002 05 18 | 704 | 0.0 | 0.6+ | 2002 07 07 | 699 | 0.1+ | 0.6− | 2006 08 28 | 704 | 0.5+ | 0.2+ | | |
| 2002 05 18 | 704 | 0.0 | 0.2+ | 2005 03 04 | 691 | 0.0 | 0.4+ | 2006 08 31 | 704 | 0.2− | 0.7+ | | |
| 2002 05 18 | 704 | 0.2− | 0.5+ | 2005 03 04 | 691 | 0.1+ | 0.6+ | 2006 08 31 | 704 | 0.6+ | 1.3+ | | |
| 2002 05 23 | 704 | 0.0 | 0.2− | 2005 03 04 | 691 | 0.0 | 0.4+ | 2006 08 31 | 704 | 0.0 | 1.4+ | | |
| 2002 05 23 | 704 | 0.7− | 0.0 | 2005 03 09 | 699 | 1.0− | 0.3− | 2006 08 31 | 704 | (1.6+ | 1.8+) | | |
| 2002 05 23 | 704 | 0.3+ | 0.2− | 2005 03 09 | 699 | 0.5+ | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.0 | | |
| 2002 06 01 | 704 | 0.3− | 0.1− | 2005 03 09 | 704 | 0.8+ | 0.0 | 2006 09 20 | 703 | 0.6− | 0.6+ | | |
| 2002 06 01 | 704 | (2.6− | 1.1+) | 2005 03 09 | 699 | 1.0+ | 0.0 | 2006 09 20 | 703 | 1.0− | 0.3+ | | |
| 2002 06 01 | 704 | 1.2− | 0.4+ | 2005 03 09 | 704 | 0.7+ | 0.1− | 2006 09 25 | 703 | 0.0 | 0.4+ | | |
| 2002 06 01 | 704 | (1.1− | 1.8+) | 2005 03 09 | 699 | 0.4+ | 1.2+ | 2006 09 25 | 703 | 0.3+ | 0.5+ | | |
| 2002 06 02 | 704 | 0.1− | 0.3+ | 2005 03 09 | 704 | 0.2+ | 1.4+ | 2006 09 25 | 703 | 0.1+ | 0.2− | | |
| 2002 06 02 | 704 | 0.3− | 0.1− | 2005 03 09 | 704 | (0.5+ | 1.8+) | 2006 09 25 | 703 | 0.4+ | 0.2+ | | |
| 2002 06 02 | 704 | 0.2− | 0.1− | 2005 03 09 | 704 | (1.0+ | 1.9+) | 2006 10 25 | E12 | 0.3+ | 0.1+ | | |
| 2002 06 02 | 704 | 0.7+ | 0.1− | 2005 03 16 | 704 | 0.4+ | 0.6+ | 2006 10 25 | E12 | 0.4+ | 1.0+ | | |
| 2002 06 02 | 704 | 0.5+ | 0.3+ | 2005 03 16 | 704 | 0.0 | 1.4+ | 2006 10 25 | E12 | 0.0 | 0.5+ | | |
| 2002 06 19 | 704 | 0.8+ | 0.8− | 2005 03 16 | G96 | 0.5− | 0.0 | 2006 10 25 | E12 | 0.1+ | 0.9+ | | |
| 2002 06 19 | 704 | 0.1+ | 0.9− | 2005 03 16 | 704 | 0.1− | 1.3+ | | | | | | |
| 2002 06 19 | 704 | 0.2− | 0.9− | 2005 03 16 | G96 | 0.8− | 0.2+ | | | | | | |

**(141697)∗ 2002 KQ$_5$**

Discovered 2002 May 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.70121 | | (2000.0) | | | |
| $n$ | 0.28583274 | $\omega$ | 131.14169 | | +0.02488293 | +0.99965598 |
| $a$ | 2.2824156 | $\Omega$ | 140.28182 | | −0.92104124 | +0.02614928 |
| $e$ | 0.1384433 | $i$ | 0.74349 | | −0.38866937 | +0.00203209 |
| $P$ | 3.45 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.9+ | 0.8+ | 2005 03 04 | G96 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.1+ | | |
| 1995 05 29 | 691 | 1.5+ | 0.3− | 2005 03 04 | G96 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.3+ | | |
| 1995 05 29 | 691 | 1.6+ | 0.6+ | 2005 03 04 | G96 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.3− | | |
| 1996 10 08 | 691 | 0.9− | 0.9+ | 2005 03 08 | 699 | 1.0+ | 1.3+ | 2006 09 14 | 644 | 0.3+ | 0.1− | | |
| 1996 10 08 | 691 | 1.2− | 0.7− | 2005 03 08 | 699 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.3+ | 0.3+ | | |
| 1996 10 08 | 691 | 1.1− | 0.1+ | 2005 03 08 | 699 | 1.1+ | 0.7+ | 2006 09 14 | 644 | 0.2+ | 0.0 | | |
| 1999 09 04 | 699 | 1.1− | 1.0+ | 2005 03 08 | 699 | 1.0+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.4+ | | |
| 1999 09 04 | 699 | 0.2− | 0.9+ | 2005 03 09 | 699 | 0.8+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.4+ | | |
| 1999 09 04 | 699 | 0.7− | 0.2+ | 2005 03 09 | 699 | 0.5+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.4+ | | |
| 2002 05 04 | 644 | 0.4− | 0.2− | 2005 03 09 | 699 | 0.9+ | 0.3+ | 2006 09 19 | 699 | 1.2+ | 0.3− | | |
| 2002 05 04 | 644 | 1.0− | 0.8+ | 2005 03 09 | 699 | 0.3+ | 1.0+ | 2006 09 19 | 699 | 0.6+ | 0.7+ | | |
| 2002 05 04 | 644 | 0.3− | 0.3− | 2005 03 17 | 703 | 0.4+ | 1.3+ | 2006 09 19 | 699 | 0.1+ | 0.1− | | |
| 2002 05 16 | 704 | 1.4− | 0.9+ | 2005 03 17 | 703 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.9+ | | |
| 2002 05 16 | 704 | 0.2− | 0.6+ | 2005 03 17 | 703 | (0.6− | 1.6+) | 2006 09 20 | 704 | 0.3+ | 0.5+ | | |
| 2002 05 16 | 704 | 1.3− | 0.4− | 2005 03 17 | 703 | 0.3− | 0.0 | 2006 09 20 | 704 | (0.2− | 1.6+) | | |
| 2002 05 18 | 644 | 0.6− | 0.0 | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.4− | 0.8+ | | |
| 2002 05 18 | 644 | 1.2− | 0.3− | 2005 04 12 | 691 | 0.5+ | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.4+ | | |
| 2002 05 18 | 644 | 0.4− | 0.0 | 2005 04 12 | 691 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.7+ | | |
| 2002 05 21 | 704 | (1.8− | 0.9−) | 2005 05 10 | G96 | 0.6− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.2+ | | |
| 2002 05 21 | 704 | 1.0− | 0.0 | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.0 | | |
| 2002 05 21 | 704 | 0.5− | 0.3− | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.5+ | 1.4+ | | |
| 2002 05 21 | 704 | 1.2− | 0.3+ | 2005 05 10 | G96 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.5+ | 0.8+ | | |
| 2002 06 07 | 291 | 0.7− | 0.1− | 2006 07 25 | G96 | 0.6+ | 0.3− | 2006 09 25 | 699 | 0.7− | 0.9+ | | |
| 2002 06 07 | 291 | 0.6− | 0.2− | 2006 07 25 | G96 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.2− | | |
| 2002 06 07 | 291 | 0.3− | 0.0 | 2006 07 25 | G96 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.2− | | |
| 2002 06 16 | 644 | 0.4− | 0.2− | 2006 07 25 | G96 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2+ | | |
| 2002 06 16 | 644 | 0.0 | 0.5− | 2006 08 18 | 691 | 0.5+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1− | | |
| 2002 06 16 | 644 | 0.1− | 0.5− | 2006 08 18 | 691 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.9+ | 0.3− | | |
| 2005 03 03 | 703 | 0.1− | 0.6+ | 2006 08 18 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2005 03 03 | 703 | 0.2− | 0.4− | 2006 09 12 | 703 | 1.3+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2005 03 03 | 703 | 0.2+ | 1.3− | 2006 09 12 | 703 | 0.9− | 0.7− | 2006 11 15 | G96 | 0.3+ | 0.2− | | |
| 2005 03 03 | 703 | 0.1− | 0.7+ | 2006 09 12 | 703 | 0.9− | 0.3+ | | | | | | |
| 2005 03 04 | G96 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.9− | 0.5+ | | | | | | |

**(141698)∗ 2002 KP$_8$ = 1995 OV$_{16}$**

Discovered 2002 May 29 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 31762)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.27765 | | (2000.0) | | | |
| $n$ | 0.27351489 | $\omega$ | 125.47788 | | +0.40751891 | +0.91291982 |
| $a$ | 2.3504376 | $\Omega$ | 168.50616 | | −0.87014562 | +0.39566144 |
| $e$ | 0.2773165 | $i$ | 6.48014 | | −0.27708290 | +0.10014700 |
| $P$ | 3.60 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 09 | 691 | 0.3+ | 0.4+ | 2002 06 15 | 291 | 0.2− | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.4+ | | |
| 1991 04 09 | 691 | 0.2+ | 0.6− | 2002 06 15 | 291 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.4+ | | |
| 1991 04 09 | 691 | 0.6+ | 0.1+ | 2002 06 15 | 291 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.6− | 0.2+ | | |
| 1995 07 27 | 691 | 0.2− | 0.3+ | 2005 03 11 | G96 | 0.8− | 0.4− | 2006 09 26 | 704 | 1.1− | 0.7+ | | |
| 1995 07 27 | 691 | 0.1+ | 0.2+ | 2005 03 11 | G96 | 0.6− | 0.7− | 2006 09 26 | 704 | 0.2− | 1.0+ | | |
| 1995 07 27 | 691 | 0.2− | 0.4+ | 2005 03 11 | G96 | 0.8− | 0.3+ | 2006 09 26 | 704 | 1.0− | 0.2+ | | |
| 1995 07 30 | 691 | 0.2+ | 1.7− | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 09 26 | 704 | 1.0− | 0.6+ | | |
| 1995 07 30 | 691 | 0.0 | 1.6− | 2005 04 06 | G96 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.6+ | | |
| 1995 07 30 | 691 | 0.2+ | 1.8− | 2005 04 06 | G96 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2002 05 08 | 608 | 0.1+ | 0.3+ | 2005 04 06 | G96 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.7+ | | |
| 2002 05 08 | 608 | 0.3− | 0.4+ | 2005 04 06 | G96 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.8+ | | |
| 2002 05 08 | 608 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 1.3+ | | |
| 2002 05 18 | 704 | 0.8+ | 1.4+ | 2006 08 28 | 703 | 0.5− | 0.4+ | 2006 10 16 | 703 | (0.6− | 1.7+) | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 704 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2002 05 18 | 704 | (0.4+ | 1.7+) | 2006 08 28 | 703 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2002 05 29 | 608 | (0.7− | 1.5+) | 2006 09 12 | 703 | (1.7+ | 1.4+) | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2002 05 29 | 608 | (0.5− | 1.8+) | 2006 09 12 | 703 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 05 29 | 608 | (0.2− | 1.6+) | 2006 09 12 | 703 | (2.5+ | 2.1+) | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2002 06 01 | 644 | 0.1− | 0.5+ | 2006 09 12 | 703 | (2.5+ | 2.1+) | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2002 06 01 | 644 | 0.2− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 06 01 | 644 | 0.3− | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 06 09 | 644 | 0.5+ | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2002 06 09 | 644 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 06 09 | 644 | 0.3+ | 1.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2002 06 14 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2002 06 14 | 704 | 1.2+ | 0.4− | 2006 09 20 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2002 06 14 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2002 06 14 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 691 | 0.3− | 0.3− | | | | |
| 2002 06 14 | 704 | 0.2+ | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.4+ | | | | |

**(141699)∗ 2002 KY$_{10}$**

Discovered 2002 May 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.55339 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18339797 | $\omega$ | 247.01778 | | −0.93533743 | | +0.34395068 |
| $a$ | 3.0681249 | $\Omega$ | 312.98824 | | −0.26878469 | | −0.84298949 |
| $e$ | 0.2807569 | $i$ | 6.49273 | | −0.22999713 | | −0.41360204 |
| $P$ | 5.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 566 | 0.9− | 1.2− | 2002 06 05 | 644 | 0.0 | 0.1− | 2003 10 01 | 691 | 0.1− | 0.1+ |
| 1996 02 15 | 566 | 0.5− | 1.0− | 2002 06 05 | 644 | 0.1− | 0.2+ | 2003 10 01 | 691 | 0.1− | 0.2− |
| 1996 02 15 | 566 | 0.1+ | 1.1− | 2002 06 06 | 704 | 0.1+ | 0.3− | 2003 10 01 | 691 | 0.2+ | 0.0 |
| 1998 09 19 | 645 | 0.0 | 0.2− | 2002 06 06 | 704 | 0.2+ | 0.4− | 2005 11 10 | 691 | 1.3+ | 1.3+ |
| 1998 09 19 | 645 | 0.0 | 0.2− | 2002 06 06 | 704 | 0.2− | 0.2− | 2005 11 10 | 691 | 0.3− | 0.4+ |
| 2002 04 21 | 704 | 0.9+ | 0.2+ | 2002 06 06 | 704 | 0.4+ | 0.8− | 2005 11 10 | 691 | 0.3− | 0.0 |
| 2002 04 21 | 704 | 0.1+ | 0.1+ | 2002 06 17 | 704 | 0.4+ | 1.4+ | 2006 10 27 | G96 | 0.4− | 0.5+ |
| 2002 04 21 | 704 | 0.8+ | 0.2+ | 2002 06 17 | 704 | (0.4− | 1.6+) | 2006 10 27 | G96 | 0.3− | 0.3+ |
| 2002 04 21 | 704 | (1.0+ | 1.5−) | 2002 06 17 | 704 | 0.1− | 1.0+ | 2006 10 27 | G96 | 0.2− | 0.6+ |
| 2002 04 21 | 704 | 0.1+ | 0.2− | 2002 06 17 | 704 | 0.1+ | 1.2+ | 2006 10 27 | G96 | 0.3+ | 0.5+ |
| 2002 05 16 | 644 | 0.2− | 0.0 | 2003 07 24 | 644 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.9− | 0.3+ |
| 2002 05 16 | 644 | 0.2+ | 0.0 | 2003 07 24 | 644 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.6− | 0.3+ |
| 2002 05 16 | 644 | 0.2+ | 0.1− | 2003 07 24 | 644 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.8− | 0.8+ |
| 2002 05 17 | 704 | 0.3+ | 0.3+ | 2003 08 04 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.6− | 0.5+ |
| 2002 05 17 | 704 | 0.1− | 0.4+ | 2003 08 04 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.5− |
| 2002 05 17 | 704 | 0.7− | 0.2− | 2003 08 04 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 05 17 | 704 | 0.7− | 0.2+ | 2003 08 25 | 807 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2002 06 05 | 644 | 0.0 | 0.1+ | 2003 08 25 | 807 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.4− | 0.2+ |

**(141700)∗ 2002 KJ$_{11}$ = 2002 GV$_{158}$**

Discovered 2002 May 17 by NEAT at Palomar.

Id. A. Doppler (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.32910 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29576291 | $\omega$ | 238.01418 | | +0.78864770 | | +0.59946165 |
| $a$ | 2.2310377 | $\Omega$ | 84.79630 | | −0.50760355 | | +0.76023832 |
| $e$ | 0.1749188 | $i$ | 7.88831 | | −0.34694876 | | +0.25036658 |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 13 | 644 | 0.2+ | 0.3+ | 2003 12 17 | 699 | 1.0+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2002 04 13 | 644 | 0.3+ | 0.3+ | 2003 12 17 | 699 | 0.2− | 0.8− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 04 13 | 644 | 0.0 | 0.4+ | 2003 12 27 | 691 | 0.1− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 04 29 | 644 | 0.3+ | 0.0 | 2003 12 27 | 691 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 04 29 | 644 | 0.2+ | 0.0 | 2003 12 27 | 691 | 0.3+ | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.4+ |
| 2002 04 29 | 644 | 0.4+ | 0.4+ | 2005 03 10 | 699 | 0.2+ | 0.7− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2002 05 07 | 699 | 0.1− | 0.4+ | 2005 03 10 | 699 | (0.3− | 1.9+) | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 05 07 | 644 | 0.3+ | 0.8+ | 2005 03 10 | 699 | 0.8− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 05 07 | 699 | 0.5+ | 1.0+ | 2005 03 10 | 699 | 1.1− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 05 07 | 699 | 1.0+ | 1.3+ | 2005 03 16 | 703 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.4− | 1.1− |
| 2002 05 07 | 644 | 0.2+ | 0.7+ | 2005 03 16 | 703 | (3.5+ | 1.8−) | 2006 10 21 | 703 | 0.7− | 0.7+ |
| 2002 05 07 | 699 | 0.3− | 0.4− | 2005 03 16 | 703 | 0.9+ | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 2002 05 07 | 644 | 0.2− | 0.4+ | 2005 03 16 | 703 | 1.1+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.3+ |
| 2002 05 17 | 644 | 0.2− | 0.8+ | 2006 09 17 | 699 | (0.4− | 1.7+) | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 05 17 | 644 | 0.3− | 0.9+ | 2006 09 17 | 699 | 0.4+ | 1.3+ | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2002 05 17 | 644 | 0.0 | 0.6+ | 2006 09 17 | 699 | 0.8+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2002 05 18 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 699 | 0.5− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 05 18 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.8− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 05 18 | 704 | 0.9+ | 1.2+ | 2006 09 19 | 703 | 0.9− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 05 18 | 704 | (1.1− | 1.9+) | 2006 09 19 | 703 | 0.4+ | 0.3− | 2006 10 28 | 703 | (1.9− | 0.2+) |
| 2003 12 14 | 691 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.7+ |
| 2003 12 14 | 691 | 0.3− | 0.2+ | 2006 09 25 | 703 | 0.8− | 0.8− | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2003 12 14 | 691 | 0.1− | 0.2+ | 2006 09 25 | 703 | 0.5− | 0.8− | 2006 10 28 | 703 | 0.3+ | 0.2− |
| 2003 12 16 | 703 | 0.8− | 0.7+ | 2006 09 25 | 703 | 0.1− | 0.2+ | 2006 11 23 | 703 | 1.3− | 0.6+ |
| 2003 12 16 | 703 | 0.0 | 1.3− | 2006 09 25 | 703 | 0.9+ | 0.1− | 2006 11 23 | 703 | 1.0+ | 0.7+ |
| 2003 12 16 | 703 | 0.6− | 0.7− | 2006 10 04 | 703 | 0.4+ | 1.4+ | 2006 11 23 | 703 | 1.6+ | 1.0− |
| 2003 12 16 | 703 | (0.2− | 2.1+) | 2006 10 04 | 703 | 1.1− | 0.8+ | 2006 11 23 | 703 | 0.7+ | 1.1− |
| 2003 12 17 | 699 | 0.2+ | 0.2+ | 2006 10 04 | 703 | 0.4− | 0.4+ | | | | |
| 2003 12 17 | 699 | 0.4+ | 0.5+ | 2006 10 04 | 703 | 0.7− | 1.2+ | | | | |

**(141701)∗ 2002 KM$_{15}$ = 2005 UG$_{389}$**

Discovered 2002 May 30 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 94792)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.00686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12376110 | $\omega$ | 53.00518 | | −0.66970620 | | +0.74261465 |
| $a$ | 3.9879215 | $\Omega$ | 174.94444 | | −0.69538228 | | −0.62513779 |
| $e$ | 0.1289677 | $i$ | 2.68882 | | −0.26064745 | | −0.24026281 |
| $P$ | 7.96 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.0 | 0.1− | 2002 06 11 | 644 | 0.1− | 0.2+ | 2005 10 29 | G96 | 0.2+ | 0.1− |
| 2000 12 23 | 645 | 0.1− | 0.1− | 2002 06 16 | 644 | 0.3+ | 0.2− | 2005 10 29 | G96 | 0.2+ | 0.0 |
| 2001 03 24 | 691 | 0.3+ | 0.5+ | 2002 06 16 | 644 | 0.1+ | 0.1+ | 2005 10 29 | G96 | 0.3− | 0.1− |
| 2001 03 24 | 691 | 0.2+ | 0.3+ | 2002 06 16 | 644 | 0.5+ | 0.3− | 2005 10 29 | G96 | 0.2− | 0.5− |
| 2001 03 24 | 691 | 0.3+ | 0.7+ | 2002 06 25 | 644 | 0.0 | 0.2+ | 2005 10 31 | G96 | 0.2− | 0.2+ |
| 2002 05 10 | 704 | 0.8+ | 0.7+ | 2002 06 25 | 644 | 0.5+ | 0.0 | 2005 10 31 | G96 | 0.1+ | 0.2+ |
| 2002 05 10 | 704 | 0.2+ | 1.1+ | 2002 06 25 | 644 | 0.4− | 0.5+ | 2005 10 31 | G96 | 0.3+ | 0.2+ |
| 2002 05 10 | 704 | 0.5+ | 0.3+ | 2002 07 05 | 644 | 0.0 | 0.1− | 2005 10 31 | G96 | 0.1+ | 0.1+ |
| 2002 05 18 | 644 | 0.3− | 0.3+ | 2002 07 05 | 644 | 0.1− | 0.0 | 2005 11 29 | G96 | 0.1+ | 0.4− |
| 2002 05 18 | 644 | 0.2− | 0.3+ | 2004 09 16 | 691 | 0.0 | 0.1+ | 2005 11 29 | G96 | 0.7− | 0.5+ |
| 2002 05 18 | 644 | 0.3− | 0.1+ | 2004 09 16 | 691 | 0.1+ | 0.1− | 2005 11 29 | G96 | 0.3− | 0.5+ |
| 2002 05 30 | 644 | 0.3− | 0.2+ | 2004 09 16 | 691 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.5+ | 0.8+ |
| 2002 05 30 | 644 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2002 05 30 | 644 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 06 03 | 644 | 0.5− | 0.1+ | 2005 10 01 | G96 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 06 03 | 644 | 0.0 | 0.2+ | 2005 10 01 | G96 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2002 06 03 | 644 | 0.1+ | 0.2+ | 2005 10 11 | 691 | 0.6− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2002 06 11 | 644 | 0.4− | 0.0 | 2005 10 11 | 691 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2002 06 11 | 644 | 0.0 | 0.1+ | 2005 10 11 | 691 | 0.1+ | 0.7+ | | | | |

**(141702)∗ 2002 LG$_{4}$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.88729 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28351042 | $\omega$ | 169.69167 | | +0.44441121 | | +0.89480183 |
| $a$ | 2.2948627 | $\Omega$ | 126.68095 | | −0.82564999 | | +0.42765123 |
| $e$ | 0.2317911 | $i$ | 3.05632 | | −0.34756405 | | +0.12823458 |
| $P$ | 3.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 1.6+ | 0.9− | 2002 06 18 | 704 | 0.6+ | 1.2+ | 2006 10 12 | 644 | 0.6+ | 0.6+ |
| 1999 10 09 | 704 | 0.4− | 0.0 | 2002 06 18 | 704 | 0.5+ | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 1999 10 09 | 704 | 0.2− | 0.1− | 2002 06 18 | 704 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.6+ |
| 1999 10 15 | 704 | 0.7− | 0.3− | 2002 06 18 | 704 | 0.7+ | 0.9+ | 2006 10 16 | 703 | 0.2− | 1.2+ |
| 1999 10 15 | 704 | 0.7− | 0.1− | 2005 03 01 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 1999 10 15 | 704 | 0.5+ | 0.4− | 2005 03 01 | 691 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 1.4+ | 1.2− | 2005 03 01 | 691 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.1+ | 1.2+ |
| 2002 05 16 | 704 | 0.9+ | 1.1+ | 2005 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2002 05 16 | 704 | 0.4− | 0.5+ | 2005 04 13 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 05 16 | 704 | 0.2− | 1.0+ | 2005 04 13 | 691 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2002 06 05 | 704 | 1.3− | 0.5+ | 2006 09 30 | 703 | 0.5− | 1.2+ | 2006 10 21 | 703 | 0.3− | 0.6+ |
| 2002 06 05 | 704 | 0.4− | 0.0 | 2006 09 30 | 703 | (1.8− | 0.5−) | 2006 10 21 | 703 | (0.1− | 1.7+) |
| 2002 06 05 | 704 | 0.2− | 0.1− | 2006 09 30 | 703 | 1.0− | 0.7− | 2006 10 21 | 703 | 0.8− | 0.5+ |
| 2002 06 06 | 704 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.1− | 2006 10 21 | 703 | (0.5+ | 1.9+) |
| 2002 06 06 | 704 | 0.1+ | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2002 06 06 | 704 | 0.1− | 1.2+ | 2006 10 02 | G96 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.5+ |
| 2002 06 06 | 704 | 0.3− | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.6− | 0.3+ |
| 2002 06 06 | 704 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2002 06 10 | 704 | 0.5+ | 0.8− | 2006 10 11 | 644 | 0.3− | 0.8+ | 2006 10 31 | G96 | (1.8+ | 3.2+) |
| 2002 06 10 | 704 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2002 06 10 | 704 | 0.0 | 1.2− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1+ |

**(141703)∗ 2002 LJ$_4$ = 1999 RE$_{234}$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31769)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.11090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28453532 | $\omega$ | 204.56418 | | +0.33572662 | +0.93475460 | |
| $a$ | 2.2893486 | $\Omega$ | 85.22477 | | −0.84378875 | +0.35330876 | |
| $e$ | 0.1956629 | $i$ | 6.70093 | | −0.41869819 | +0.03750685 | |
| $P$ | 3.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.5+ | 0.0 | 2002 06 11 | 704 | 0.1+ | 1.0+ | 2006 09 18 | 703 | 0.6+ | 0.2− |
| 1999 09 08 | 703 | 0.3− | 0.3+ | 2002 06 11 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.0 |
| 1999 09 08 | 703 | 0.4+ | 0.2+ | 2002 06 11 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.3− |
| 1999 09 08 | 703 | 0.4+ | 0.5− | 2002 06 11 | 704 | 0.2− | 0.3− | 2006 09 21 | 699 | 1.0− | 0.0 |
| 1999 09 13 | 704 | 0.9− | 1.0+ | 2002 06 11 | 704 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.9+ |
| 1999 09 13 | 704 | 0.4− | 0.9+ | 2002 06 13 | 291 | 0.5− | 0.0 | 2006 09 21 | 699 | 1.0+ | 0.7+ |
| 1999 09 13 | 704 | 0.2+ | 0.2− | 2002 06 13 | 291 | 0.3− | 0.0 | 2006 09 21 | 699 | 0.7− | 0.3+ |
| 2002 05 09 | 704 | 0.3+ | 0.5− | 2002 06 13 | 291 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.4+ | 0.5+ |
| 2002 05 09 | 704 | 0.0 | 0.4− | 2002 06 16 | 644 | 0.1+ | 0.8+ | 2006 09 25 | 699 | 0.2− | 0.6+ |
| 2002 05 09 | 704 | 0.1+ | 0.9− | 2002 06 16 | 644 | 0.1+ | 0.7+ | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2002 05 09 | 704 | 0.3+ | 0.3− | 2002 06 16 | 644 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 1.2− | 0.1− |
| 2002 05 09 | 704 | 0.9+ | 0.9− | 2002 06 25 | 644 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.5− | 0.7− |
| 2002 05 21 | 704 | 0.4− | 0.3− | 2002 06 25 | 644 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.0 | 0.3− |
| 2002 05 21 | 704 | 1.1− | 0.3− | 2002 06 25 | 644 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.6+ | 0.9− |
| 2002 05 21 | 704 | 1.0− | 0.3− | 2002 07 04 | 644 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.4− |
| 2002 05 21 | 704 | 0.9− | 0.7− | 2002 07 04 | 644 | 0.2− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.4+ |
| 2002 05 23 | 644 | 0.1+ | 0.5+ | 2002 07 04 | 644 | 0.4− | 0.0 | 2006 09 29 | 699 | 0.4− | 0.1− |
| 2002 05 23 | 644 | 0.1− | 0.5+ | 2002 07 05 | 704 | 1.0− | 0.6− | 2006 09 29 | 699 | 0.1− | 0.2+ |
| 2002 05 23 | 644 | 0.1− | 0.5+ | 2002 07 05 | 704 | 1.0− | 0.0 | 2006 09 29 | 699 | 0.0 | 0.4+ |
| 2002 06 03 | 644 | 0.4+ | 1.2+ | 2002 07 05 | 704 | 1.3− | 0.0 | 2006 09 30 | 704 | 0.0 | 0.4− |
| 2002 06 03 | 644 | 0.5+ | 1.2+ | 2003 11 21 | 704 | 0.7− | 0.2− | 2006 09 30 | 704 | 0.1+ | 0.4− |
| 2002 06 03 | 644 | 0.3+ | 0.9+ | 2003 11 21 | 704 | 0.1− | 0.4+ | 2006 09 30 | 704 | 1.0+ | 1.0+ |
| 2002 06 05 | 704 | 0.1+ | 0.2− | 2003 11 21 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.5− |
| 2002 06 05 | 704 | 0.3+ | 0.3− | 2003 12 21 | 704 | (1.3+ | 2.1+) | 2006 09 30 | 704 | 0.2+ | 0.5− |
| 2002 06 05 | 704 | 0.7+ | 0.2− | 2003 12 21 | 704 | (1.3+ | 1.6+) | 2006 10 17 | 703 | 0.3+ | 0.2+ |
| 2002 06 06 | 704 | 1.0+ | 0.9− | 2003 12 21 | 704 | 0.8− | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2002 06 06 | 704 | 1.0+ | 0.6− | 2005 04 02 | 703 | 0.5+ | 1.2+ | 2006 10 17 | 703 | 1.3+ | 0.6+ |
| 2002 06 06 | 704 | 1.3+ | 0.7− | 2005 04 02 | 703 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2002 06 06 | 704 | 1.0+ | 0.4− | 2005 04 02 | 703 | 0.2+ | 0.9− | 2006 10 20 | 644 | 0.2− | 0.4− |
| 2002 06 06 | 704 | 1.1+ | 0.1+ | 2005 04 02 | 703 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2002 06 08 | 704 | 0.4− | 0.1− | 2005 04 09 | 703 | 1.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2002 06 08 | 704 | 0.9+ | 0.1+ | 2005 04 09 | 703 | 0.8− | 0.3+ | 2006 10 28 | 703 | 0.5− | 1.0− |
| 2002 06 08 | 704 | (2.4− | 1.1−) | 2005 04 09 | 703 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.7+ | 0.5− |
| 2002 06 08 | 704 | 0.4+ | 0.6− | 2005 04 09 | 703 | 0.1− | 0.2+ | 2006 10 28 | 703 | 1.5− | 0.6+ |
| 2002 06 08 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.6+ | 0.4− | 2006 10 28 | 703 | 0.2+ | 0.3− |

**(141704)∗ 2002 LK$_4$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.67439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28074801 | $\omega$ | 237.82527 | | +0.92514252 | +0.36226425 | |
| $a$ | 2.3098916 | $\Omega$ | 100.72005 | | −0.29766594 | +0.87776140 | |
| $e$ | 0.1610673 | $i$ | 6.63175 | | −0.23559774 | +0.31352756 | |
| $P$ | 3.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.2+ | 0.5+ | 2002 06 10 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | (0.2+ | 1.6+) |
| 1999 09 04 | 699 | 0.5+ | 0.9+ | 2002 06 10 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.0 |
| 1999 09 04 | 699 | 0.5+ | 0.5+ | 2002 07 04 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.1+ |
| 1999 09 13 | 704 | 0.8+ | 0.3+ | 2002 07 04 | 644 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.7− |
| 1999 09 13 | 704 | 0.1− | 0.1+ | 2002 07 04 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.3− |
| 1999 09 13 | 704 | 1.2− | 0.5+ | 2004 01 13 | 691 | 0.1− | 0.3+ | 2006 09 20 | 703 | 0.5− | 0.6− |
| 1999 09 30 | 704 | 0.6− | 0.4− | 2004 01 13 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 703 | 0.2+ | 0.3− |
| 1999 09 30 | 704 | 0.4− | 0.1+ | 2004 01 13 | 691 | 0.0 | 0.2+ | 2006 09 20 | 703 | 0.5+ | 0.4− |
| 1999 09 30 | 704 | 1.0+ | 0.5− | 2006 07 31 | E12 | 0.2+ | 0.9− | 2006 09 21 | 699 | 0.4− | 0.7+ |
| 1999 09 30 | 704 | 0.6− | 1.0− | 2006 07 31 | E12 | 0.4+ | 0.5+ | 2006 09 21 | 699 | 0.2+ | 0.5+ |
| 1999 09 30 | 704 | 0.6+ | 0.7− | 2006 07 31 | E12 | 0.4+ | 0.5− | 2006 09 21 | 699 | 0.8− | 0.2+ |
| 1999 09 30 | 704 | 0.8− | 0.1− | 2006 07 31 | E12 | 0.7+ | 0.1+ | 2006 09 21 | 699 | 1.0− | 0.4+ |
| 1999 09 30 | 704 | 1.4− | 1.1− | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 1.0+ | 0.6− |
| 1999 09 30 | 704 | 0.6+ | 1.2+ | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.6+ | 0.4− |
| 1999 09 30 | 704 | 0.4+ | 0.4− | 2006 08 21 | 644 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.7+ | 0.3+ |
| 1999 10 16 | 704 | 0.5− | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.2+ | 1.0− |
| 1999 10 16 | 704 | 0.4+ | 0.9+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.0 | 0.0 |
| 1999 10 16 | 704 | (0.1− | 2.5+) | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2002 05 23 | 644 | 0.1− | 0.4+ | 2006 08 30 | 699 | 0.5− | 0.0 | 2006 10 24 | 644 | 0.5− | 0.1+ |
| 2002 05 23 | 644 | 0.4− | 0.8+ | 2006 08 30 | 699 | 1.0+ | 0.6+ | 2006 11 19 | 703 | 0.3− | 0.6− |
| 2002 05 23 | 644 | 0.1+ | 0.9+ | 2006 08 30 | 699 | 0.6+ | 0.0 | 2006 11 19 | 703 | (2.0− | 0.3−) |
| 2002 06 05 | 704 | (0.4− | 1.8+) | 2006 09 12 | 704 | 0.6+ | 0.4− | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2002 06 05 | 704 | 0.2+ | 0.2+ | 2006 09 12 | 704 | 0.5+ | 1.1+ | 2006 11 19 | 703 | 1.0− | 0.1− |
| 2002 06 05 | 704 | 0.3− | 0.2+ | 2006 09 12 | 704 | 1.0+ | 0.8+ | 2006 11 27 | 703 | 0.5− | 0.8− |
| 2002 06 06 | 704 | (0.1− | 1.5−) | 2006 09 14 | 703 | 0.1− | 0.6− | 2006 11 27 | 703 | 0.9− | 0.6+ |
| 2002 06 06 | 704 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.3+ |
| 2002 06 06 | 704 | (2.5+ | 0.1−) | 2006 09 14 | 703 | 0.1− | 0.5− | 2006 11 27 | 703 | 1.7− | 1.6+ |
| 2002 06 10 | 704 | (0.5+ | 1.8+) | 2006 09 14 | 703 | 0.3− | 0.4+ | | | | |

**(141705)∗ 2002 LA$_5$**

Discovered 2002 June 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.83916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26232360 | $\omega$ | 353.05717 | | +0.41685285 | +0.90537374 | |
| $a$ | 2.4168209 | $\Omega$ | 301.54962 | | −0.82934082 | +0.34243247 | |
| $e$ | 0.1897849 | $i$ | 5.44211 | | −0.37205848 | +0.25107449 | |
| $P$ | 3.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1+ | 0.7− | 2002 06 05 | 644 | 0.3− | 0.2− | 2003 11 20 | 704 | 0.6+ | 0.7+ |
| 1999 10 10 | 704 | 0.8+ | 0.1− | 2002 06 05 | 644 | 0.4+ | 0.5+ | 2003 11 24 | 704 | 0.1− | 1.0+ |
| 1999 10 10 | 704 | 1.0+ | 0.1+ | 2002 06 05 | 644 | 0.2+ | 0.2+ | 2003 11 24 | 704 | 0.2− | 0.7+ |
| 1999 10 10 | 704 | 0.8− | 0.7+ | 2002 06 06 | 704 | 1.1+ | 0.8− | 2003 11 24 | 704 | 0.7− | 0.2+ |
| 1999 10 10 | 704 | 0.9+ | 0.8+ | 2002 06 06 | 704 | 0.1− | 1.0+ | 2003 11 24 | 704 | 0.6− | 0.1+ |
| 2000 12 31 | 691 | 0.3− | 0.4+ | 2002 06 06 | 704 | 0.5− | 0.3− | 2003 11 24 | 704 | 0.2− | 0.3− |
| 2000 12 31 | 691 | 0.2− | 0.1+ | 2002 06 06 | 704 | 0.2+ | 0.1− | 2003 12 19 | 691 | 0.2− | 0.0 |
| 2000 12 31 | 691 | 0.7− | 0.6+ | 2002 06 13 | 644 | 0.2+ | 0.3+ | 2003 12 19 | 691 | 0.1− | 0.1+ |
| 2001 02 19 | 691 | 0.2− | 0.0 | 2002 06 13 | 644 | 0.1+ | 0.2+ | 2003 12 19 | 691 | 0.2− | 0.1+ |
| 2001 02 19 | 691 | 0.3+ | 0.1− | 2002 06 13 | 644 | 0.1− | 0.1+ | 2005 03 09 | 691 | 0.5+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 691 | 0.0 | 0.0 | 2003 11 19 | 704 | 0.1+ | 0.2− | 2005 03 09 | 691 | 0.2+ | 0.5− |
| 2002 05 10 | 644 | 0.5+ | 0.0 | 2003 11 19 | 704 | 1.0− | 0.0 | 2005 03 09 | 691 | 0.3+ | 0.0 |
| 2002 05 10 | 644 | 0.5+ | 0.1+ | 2003 11 19 | 704 | (2.1− | 1.0+) | 2006 06 30 | 704 | 0.9− | 1.0+ |
| 2002 05 10 | 644 | 0.6+ | 0.1+ | 2003 11 19 | 704 | 0.6− | 0.8+ | 2006 06 30 | 704 | 1.0− | 0.0 |
| 2002 05 17 | 704 | 0.8− | 0.5+ | 2003 11 19 | 704 | 0.9+ | 0.5− | 2006 06 30 | 704 | 0.1+ | 0.2+ |
| 2002 05 17 | 704 | 0.1+ | 0.1+ | 2003 11 20 | 704 | 1.0+ | 0.9+ | 2006 06 30 | 704 | 1.4+ | 0.1− |
| 2002 05 17 | 704 | 0.6− | 1.0+ | 2003 11 20 | 704 | 0.2+ | 0.6+ | 2006 06 30 | 704 | 0.3+ | 0.4+ |
| 2002 05 17 | 704 | 0.1− | 0.6+ | 2003 11 20 | 704 | 0.5− | 0.9+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2002 05 17 | 704 | 0.2+ | 0.9+ | 2003 11 20 | 704 | 1.2+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2002 06 04 | 644 | 0.2− | 0.0 | 2003 11 20 | 704 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.4+ |
| 2002 06 04 | 644 | 0.1+ | 0.4− | 2003 11 20 | 704 | 0.3+ | 1.0− | 2006 11 01 | G96 | 2.6− | 0.4+ |
| 2002 06 04 | 644 | 0.3− | 0.3+ | 2003 11 20 | 704 | 0.7− | 0.3+ | | | | |

**(141706)∗ 2002 LC$_6$**

Discovered 2002 June 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.91993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25418248 | $\omega$ | 359.24134 | | +0.78171346 | +0.62326648 | |
| $a$ | 2.4681543 | $\Omega$ | 322.17593 | | −0.57199151 | +0.70280182 | |
| $e$ | 0.1925262 | $i$ | 2.01073 | | −0.24849503 | +0.34294095 | |
| $P$ | 3.88 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.1− | 0.0 | 2002 08 17 | 608 | 0.0 | 1.0− | 2006 08 29 | 704 | (1.7− | 0.3+) |
| 2000 12 23 | 645 | 0.1− | 0.1+ | 2002 08 17 | 608 | 0.9+ | 1.3− | 2006 08 29 | 704 | 0.7− | 0.7+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2002 08 18 | 644 | 0.2+ | 0.4+ | 2006 08 29 | 704 | 0.3− | 0.7+ |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2002 08 18 | 644 | 0.7+ | 0.7+ | 2006 09 12 | 699 | 0.7+ | 0.2+ |
| 2002 06 07 | 291 | 0.3− | 0.0 | 2002 08 18 | 644 | 0.3+ | 0.5+ | 2006 09 12 | 699 | 0.4+ | 0.1− |
| 2002 06 07 | 291 | 0.2− | 0.0 | 2002 08 28 | 644 | 0.4+ | 0.2− | 2006 09 12 | 699 | 0.2− | 0.4+ |
| 2002 06 07 | 291 | 0.2− | 0.1+ | 2002 08 28 | 644 | 0.5+ | 0.0 | 2006 09 12 | 699 | 1.1+ | 1.0+ |
| 2002 06 08 | 291 | 0.2− | 0.0 | 2002 08 28 | 644 | 0.3+ | 0.0 | 2006 09 12 | 704 | 0.2− | 0.1− |
| 2002 06 08 | 291 | 0.1− | 0.1− | 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 09 12 | 704 | 0.3− | 0.6+ |
| 2002 06 08 | 291 | 0.1− | 0.1− | 2005 03 13 | 703 | 0.9− | 0.2+ | 2006 09 12 | 704 | 0.3− | 0.3+ |
| 2002 07 05 | 704 | 0.5+ | 0.4− | 2005 03 13 | 691 | 0.0 | 0.2+ | 2006 09 12 | 704 | 0.8− | 0.5+ |
| 2002 07 05 | 704 | 0.0 | 0.8− | 2005 03 13 | 703 | (1.6− | 0.7−) | 2006 09 14 | 703 | 0.5− | 0.8− |
| 2002 07 05 | 704 | 0.1− | 0.6− | 2005 03 13 | 703 | 1.2+ | 1.2+ | 2006 09 14 | 703 | 0.2− | 0.2− |
| 2002 07 05 | 704 | 0.7+ | 0.4+ | 2005 03 13 | 703 | 0.6− | 0.8− | 2006 09 14 | 703 | 0.6+ | 0.2+ |
| 2002 07 05 | 704 | (0.9+ | 1.6−) | 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.3− |
| 2002 07 05 | 644 | 0.1+ | 0.5+ | 2005 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.2− | 0.1− |
| 2002 07 05 | 644 | 0.1− | 0.5+ | 2005 03 17 | 691 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.3− |
| 2002 07 05 | 644 | 0.0 | 0.4+ | 2005 03 17 | 691 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.1− | 0.8+ |
| 2002 07 06 | 699 | 0.5− | 0.3− | 2005 04 12 | G96 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.1− | 0.3− |
| 2002 07 06 | 699 | 0.3− | 1.1+ | 2005 04 12 | G96 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.4+ |
| 2002 07 06 | 699 | 0.6+ | 0.4+ | 2005 04 12 | G96 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.2+ |
| 2002 07 06 | 699 | (1.6− | 0.1+) | 2005 04 12 | G96 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.4+ |
| 2002 07 14 | 644 | 0.1− | 0.1− | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 09 18 | 699 | 1.3− | 0.1− |
| 2002 07 14 | 644 | 0.4+ | 0.1− | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.9+ |
| 2002 07 14 | 644 | 0.0 | 0.1− | 2006 08 13 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.5+ | 0.0 |
| 2002 07 22 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.6+ | 2006 09 20 | 704 | 0.4− | 0.2− |
| 2002 07 22 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 1.0− | 1.3+ | 2006 09 20 | 704 | 0.2− | 0.3+ |
| 2002 07 22 | 644 | 0.4+ | 0.2+ | 2006 08 28 | 699 | (0.3+ | 1.5+) | 2006 09 20 | 704 | 0.1+ | 0.3+ |
| 2002 08 08 | 644 | 0.2− | 0.7− | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.7− | 0.5− |
| 2002 08 08 | 644 | 0.4− | 0.6− | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2002 08 08 | 644 | 0.4− | 0.8− | 2006 08 28 | 699 | 0.4+ | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2002 08 13 | 704 | (2.0+ | 1.3−) | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2002 08 13 | 704 | 1.3− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 08 13 | 704 | 0.9+ | 1.4− | 2006 08 28 | 703 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 08 13 | 704 | 0.8+ | 0.5− | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2002 08 13 | 704 | 0.8+ | 0.9− | 2006 08 28 | 703 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2002 08 17 | 608 | 0.3+ | 1.4− | 2006 08 28 | 703 | 0.4− | 0.3+ | | | | |

**(141707)∗ 2002 LD$_7$**

Discovered 2002 June 2 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.14585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27964692 | $\omega$ | 86.20157 | | +0.02475365 | +0.99964216 | |
| $a$ | 2.3159509 | $\Omega$ | 185.24909 | | −0.95556202 | +0.02067930 | |
| $e$ | 0.0874916 | $i$ | 6.36344 | | −0.29374900 | +0.01696837 | |
| $P$ | 3.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 910 | 0.6+ | 1.1− | 2003 10 25 | 704 | 0.6− | 0.8+ | 2006 08 29 | 703 | 0.0 | 0.4− |
| 1998 03 02 | 910 | 0.7+ | 1.4− | 2005 03 10 | 703 | 0.4− | 1.2+ | 2006 08 29 | 703 | 0.3+ | 1.7− |
| 1998 03 02 | 910 | 0.8+ | 0.9− | 2005 03 10 | 703 | 1.0+ | 0.8+ | 2006 08 30 | 704 | 0.5+ | 0.7− |
| 2002 05 10 | 644 | 0.4− | 0.4+ | 2005 03 10 | 703 | 1.1+ | 0.9+ | 2006 08 30 | 704 | 0.7+ | 0.7− |
| 2002 05 10 | 644 | 0.5− | 0.4+ | 2005 03 10 | 703 | 0.7− | 0.0 | 2006 08 30 | 704 | 0.9− | 0.7− |
| 2002 05 10 | 644 | 0.2− | 0.2+ | 2005 03 17 | G96 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.3+ |
| 2002 06 02 | 644 | 0.4− | 0.3+ | 2005 03 17 | G96 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.8− |
| 2002 06 02 | 644 | 0.8− | 0.2+ | 2005 03 17 | G96 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.4− |
| 2002 06 02 | 644 | 0.5− | 0.5+ | 2005 03 17 | G96 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2002 06 03 | 644 | 0.5− | 0.7+ | 2005 05 08 | G96 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.1− |
| 2002 06 03 | 644 | 0.9− | 0.7+ | 2005 05 08 | G96 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.3− |
| 2002 06 03 | 644 | 0.3− | 1.0+ | 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 09 24 | 699 | (0.9+ | 2.3+) |
| 2002 06 09 | 704 | 0.7+ | 0.5+ | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 09 24 | 699 | 1.4+ | 0.8+ |
| 2002 06 09 | 704 | 0.4+ | 0.8− | 2005 05 13 | G96 | 0.3− | 0.2+ | 2006 09 24 | 699 | 0.4+ | 0.3+ |
| 2002 06 09 | 704 | 0.2+ | 0.2− | 2005 05 13 | G96 | 0.0 | 0.2+ | 2006 09 24 | 699 | 0.8− | 0.2+ |
| 2002 06 09 | 704 | 0.2+ | 0.1+ | 2005 05 13 | G96 | 0.1+ | 0.4− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 06 09 | 704 | 0.3+ | 0.3− | 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2002 06 10 | 644 | 0.1+ | 0.5+ | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2002 06 10 | 644 | 0.2− | 0.4+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2002 06 10 | 644 | 0.1+ | 0.2+ | 2006 08 21 | 644 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2003 10 24 | 691 | 0.4− | 0.0 | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2003 10 24 | 691 | 0.3− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2003 10 24 | 691 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 2003 10 25 | 704 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.7+ | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2003 10 25 | 704 | 0.1+ | 1.1+ | 2006 08 29 | 703 | 0.0 | 0.5+ | | | | |

**(141708)∗ 2002 LU$_7$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.00659 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29006042 | $\omega$ | 246.29997 | | +0.90207252 | +0.42614318 | |
| $a$ | 2.2601837 | $\Omega$ | 88.41747 | | −0.36689396 | +0.84054969 | |
| $e$ | 0.2041124 | $i$ | 3.91880 | | −0.22727516 | +0.33448200 | |
| $P$ | 3.40 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 18 | 691 | 0.2− | 0.4+ | 2002 06 11 | 644 | 0.1− | 0.8+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 1993 12 18 | 691 | 0.2− | 0.3+ | 2002 06 11 | 644 | 0.3− | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1993 12 18 | 691 | 0.4− | 0.6+ | 2003 12 14 | 926 | 0.6+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 1995 03 26 | 691 | 0.2+ | 0.1+ | 2003 12 14 | 926 | 0.5+ | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1995 03 26 | 691 | 0.0 | 1.3+ | 2006 09 16 | 699 | 1.3+ | 0.6− | 2006 10 16 | 703 | 0.6− | 0.5− |
| 1995 03 26 | 691 | 0.5+ | 0.1− | 2006 09 16 | 699 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 1997 01 12 | 691 | 0.2+ | 0.9+ | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.3− |
| 1997 01 12 | 691 | 0.1+ | 1.0+ | 2006 09 16 | 699 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 1997 01 12 | 691 | 0.0 | 1.0+ | 2006 09 20 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 1999 08 13 | 699 | 1.2− | 0.1− | 2006 09 20 | 699 | 0.6+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 08 13 | 699 | 0.3− | 0.3− | 2006 09 20 | 699 | 0.8+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1999 08 13 | 699 | 0.6− | 0.6− | 2006 09 20 | 699 | 0.8+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 09 11 | 704 | 0.6+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 1999 09 11 | 704 | 0.6+ | 1.0+ | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 1999 09 11 | 704 | 0.4− | 0.7+ | 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.0 |
| 1999 09 11 | 704 | 0.6− | 1.4+ | 2006 09 22 | 704 | 0.3− | 0.9+ | 2006 10 21 | 703 | 0.0 | 0.1+ |
| 2002 05 09 | 704 | 1.0+ | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.6− |
| 2002 05 09 | 704 | 0.3+ | 1.0+ | 2006 09 22 | 704 | (0.1+ | 1.6+) | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 2002 05 09 | 704 | (0.5+ | 1.9+) | 2006 09 22 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 06 06 | 704 | 0.4+ | 1.1+ | 2006 09 26 | 704 | 1.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 06 06 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 704 | 0.3+ | 1.3+ | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 06 06 | 704 | (0.6+ | 1.5+) | 2006 09 26 | 704 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 06 06 | 704 | (0.4+ | 2.3+) | 2006 09 26 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 06 07 | 608 | 1.3+ | 0.7+ | 2006 09 28 | 704 | 0.3+ | 0.0 | 2006 10 27 | 704 | 0.8− | 0.8+ |
| 2002 06 07 | 608 | 1.4+ | 0.7+ | 2006 09 28 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 704 | 0.7+ | 0.7+ |
| 2002 06 07 | 608 | 0.9+ | 1.5+ | 2006 09 28 | 704 | 0.7+ | 0.6+ | 2006 10 27 | 704 | 0.6− | 0.1− |
| 2002 06 08 | 704 | 0.0 | 1.0+ | 2006 09 30 | 703 | 0.3− | 0.2+ | 2006 10 27 | 704 | 0.8− | 1.4+ |
| 2002 06 08 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2002 06 08 | 704 | 1.3− | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.8− | 2006 11 07 | 644 | 0.4+ | 0.3+ |
| 2002 06 10 | 704 | 0.3+ | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.4+ |
| 2002 06 10 | 704 | 0.0 | 0.8+ | 2006 10 01 | 704 | 0.7− | 0.4+ | 2006 11 13 | 703 | 1.5− | 0.8− |
| 2002 06 10 | 704 | 0.4− | 0.9+ | 2006 10 01 | 704 | 0.4− | 0.3+ | 2006 11 13 | 703 | 0.5− | 0.9− |
| 2002 06 10 | 704 | 0.6+ | 0.8+ | 2006 10 01 | 704 | 1.2− | 0.1+ | 2006 11 13 | 703 | 1.0− | 0.6− |
| 2002 06 11 | 644 | 0.0 | 0.8+ | 2006 10 01 | 704 | 0.7− | 0.4+ | 2006 11 13 | 703 | 1.6− | 0.8− |

**(141709)∗ 2002 LP$_8$ = 1999 NO$_{40}$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31772)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 101.47191 | | (2000.0) | | | | |
| $n$ | 0.30203752 | $\omega$ | 162.15059 | | −0.04357004 | | +0.99305228 |
| $a$ | 2.2000309 | $\Omega$ | 105.24304 | | −0.92987057 | | −0.00030266 |
| $e$ | 0.1537790 | $i$ | 6.50538 | | −0.36529764 | | −0.11767361 |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.2− | 0.9− | 2002 06 10 | 644 | 0.4− | 0.3− | 2005 04 05 | 699 | 0.3+ | 0.2− |
| 1999 07 14 | 704 | 0.9− | 0.4− | 2002 06 10 | 704 | 0.1− | 0.8− | 2005 04 05 | 699 | 0.4− | 0.2− |
| 1999 07 14 | 704 | 0.1+ | 0.1− | 2002 06 10 | 644 | 0.3− | 0.0 | 2005 04 05 | 699 | 0.5+ | 0.1+ |
| 1999 07 14 | 704 | 0.4− | 0.5− | 2002 06 10 | 704 | 0.4− | 0.2− | 2005 04 08 | 704 | 0.3− | 0.3− |
| 1999 07 14 | 704 | 0.7+ | 0.2− | 2002 06 10 | 704 | (1.6− | 0.9−) | 2005 04 08 | 704 | 0.3− | 0.4+ |
| 1999 07 16 | 704 | 0.0 | 0.7+ | 2002 06 10 | 704 | 0.7− | 0.6+ | 2005 04 08 | 704 | 0.7+ | 0.8+ |
| 1999 07 16 | 704 | 0.4+ | 0.9+ | 2002 06 10 | 704 | (1.7− | 0.1−) | 2005 04 08 | 704 | 0.3+ | 0.5+ |
| 1999 07 16 | 704 | 0.2− | 0.1+ | 2002 06 13 | 291 | 0.4− | 0.2− | 2005 04 08 | 704 | (1.7+ | 0.6+) |
| 2002 05 09 | 704 | 0.0 | 0.7+ | 2002 06 13 | 291 | 0.1− | 0.1− | 2005 04 09 | 699 | 0.6− | 0.8+ |
| 2002 05 09 | 704 | 0.0 | 0.0 | 2002 06 13 | 291 | 0.6+ | 0.3+ | 2005 04 09 | 699 | (1.9+ | 0.1+) |
| 2002 05 09 | 704 | 0.4− | 0.6+ | 2002 06 25 | 644 | 0.0 | 0.5+ | 2005 04 09 | 699 | 1.1+ | 0.5+ |
| 2002 05 12 | 704 | 0.1+ | 0.1+ | 2002 06 25 | 644 | 0.0 | 0.0 | 2005 04 09 | 699 | 0.1+ | 0.5+ |
| 2002 05 12 | 704 | 1.0− | 0.1+ | 2002 06 25 | 644 | 0.1+ | 0.3+ | 2005 04 16 | 703 | 0.2− | 0.2+ |
| 2002 05 12 | 704 | 0.2+ | 0.6− | 2002 07 05 | 704 | 0.2− | 0.5+ | 2005 04 16 | 703 | 0.3+ | 0.2− |
| 2002 05 12 | 704 | 0.4− | 0.5− | 2002 07 05 | 704 | 0.4− | 0.5− | 2005 04 16 | 703 | 0.9− | 0.2− |
| 2002 05 12 | 704 | 0.6− | 0.7− | 2002 07 05 | 704 | 1.2+ | 0.4− | 2005 04 16 | 703 | 0.2− | 0.0 |
| 2002 06 03 | 644 | 0.2− | 0.2+ | 2002 07 05 | 704 | 0.9− | 0.2+ | 2005 06 07 | 703 | 0.3− | 0.1− |
| 2002 06 03 | 644 | 0.3− | 0.3+ | 2003 12 16 | 691 | 0.1− | 0.5+ | 2005 06 07 | 703 | 0.2− | 1.2− |
| 2002 06 03 | 644 | 0.1− | 0.2+ | 2003 12 16 | 691 | (1.1− | 1.6+) | 2005 06 07 | 703 | 1.4+ | 0.1− |
| 2002 06 05 | 704 | 0.7+ | 0.7− | 2003 12 16 | 691 | 0.0 | 0.8+ | 2005 06 07 | 703 | (0.8+ | 2.1−) |
| 2002 06 05 | 704 | (1.8+ | 0.3+) | 2005 03 10 | 703 | 0.2+ | 0.4+ | 2006 10 16 | 703 | (2.6− | 1.0−) |
| 2002 06 05 | 704 | 0.5+ | 0.3+ | 2005 03 10 | 703 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 1.0+ |
| 2002 06 05 | 704 | 0.9+ | 0.4+ | 2005 03 10 | 703 | 1.0+ | 0.8− | 2006 10 16 | 703 | 0.3− | 1.2− |
| 2002 06 05 | 704 | 1.0+ | 0.1+ | 2005 03 10 | 703 | 0.8− | 0.1+ | 2006 10 16 | 703 | (1.0− | 1.5+) |
| 2002 06 09 | 704 | 0.0 | 0.1− | 2005 03 18 | 703 | 0.1− | 0.6− | 2006 10 22 | 703 | 1.0− | 0.2− |
| 2002 06 09 | 704 | 0.3− | 1.3− | 2005 03 18 | 703 | 0.0 | 1.4− | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2002 06 09 | 704 | 0.1− | 0.4+ | 2005 03 18 | 703 | 1.0− | 0.6+ | 2006 10 22 | 703 | 0.8+ | 0.4+ |
| 2002 06 09 | 704 | 0.1+ | 0.8+ | 2005 03 18 | 703 | (0.6+ | 1.6−) | 2006 10 22 | 703 | 0.3− | 0.8+ |
| 2002 06 09 | 704 | 0.5+ | 0.6+ | 2005 03 30 | 703 | 0.2− | 0.6+ | 2006 11 24 | G96 | 0.4− | 0.2+ |
| 2002 06 09 | 608 | 0.9+ | 1.4+ | 2005 03 30 | 703 | 0.7+ | 0.9+ | 2006 11 24 | G96 | 0.3− | 0.3+ |
| 2002 06 09 | 608 | 1.4+ | 1.3+ | 2005 03 30 | 703 | 1.0− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.1+ |
| 2002 06 09 | 608 | 1.2+ | 1.2+ | 2005 03 30 | 703 | (2.9+ | 2.5−) | 2006 11 24 | G96 | 0.0 | 0.4+ |
| 2002 06 10 | 644 | 1.0− | 0.3− | 2005 04 05 | 699 | 0.2− | 0.1− | | | | |

**(141710)∗ 2002 LQ$_8$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 43.37171 | | (2000.0) | | | | |
| $n$ | 0.28145325 | $\omega$ | 217.05709 | | +0.63995509 | | +0.75472128 |
| $a$ | 2.3060314 | $\Omega$ | 93.20473 | | −0.66578564 | | +0.63843348 |
| $e$ | 0.2355587 | $i$ | 8.31602 | | −0.38364953 | | +0.15099167 |
| $P$ | 3.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 703 | 0.1+ | 0.1+ | 2002 06 18 | 704 | (1.4+ | 2.3−) | 2005 04 09 | 703 | 0.4+ | 0.5+ |
| 1999 08 22 | 703 | 0.0 | 0.8+ | 2002 06 18 | 704 | (0.6+ | 2.7−) | 2005 04 09 | 703 | 0.2+ | 0.2− |
| 1999 08 22 | 703 | 0.0 | 0.6+ | 2002 06 18 | 704 | (1.1+ | 3.3−) | 2005 04 12 | 704 | 1.3+ | 0.0 |
| 1999 08 22 | 703 | 0.1− | 0.5+ | 2002 06 18 | 704 | (0.1+ | 2.3−) | 2005 04 12 | 704 | 0.8+ | 0.8+ |
| 1999 09 14 | 704 | 0.0 | 0.4+ | 2002 06 25 | 644 | 0.1− | 0.6+ | 2005 04 12 | 704 | 1.4+ | 0.1− |
| 1999 09 14 | 704 | 0.5+ | 0.2+ | 2002 06 25 | 644 | 0.2+ | 0.8+ | 2005 04 12 | 704 | 1.1+ | 0.1− |
| 1999 09 14 | 704 | 0.7− | 1.4− | 2002 06 25 | 644 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.9− | 0.8+ |
| 1999 10 02 | 704 | 1.0− | 0.4− | 2002 07 04 | 644 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.3+ | 0.4+ |
| 1999 10 02 | 704 | 0.5+ | 0.7− | 2002 07 04 | 644 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.1+ |
| 1999 10 02 | 704 | 0.6+ | 1.0+ | 2002 07 04 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.1+ |
| 1999 10 02 | 704 | 0.3− | 0.1+ | 2002 07 05 | 704 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.0 | 0.3− |
| 1999 10 02 | 704 | 0.2+ | 0.2+ | 2002 07 05 | 704 | (1.7+ | 0.8+) | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 2002 05 09 | 704 | 0.1− | 0.1+ | 2002 07 05 | 704 | 0.9+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.1− |
| 2002 05 09 | 704 | 0.2− | 0.2− | 2002 07 05 | 704 | 0.5+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.4− |
| 2002 05 09 | 704 | 0.4+ | 0.3+ | 2002 07 14 | 704 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.4− | 0.3+ |
| 2002 05 09 | 704 | 0.2+ | 0.3− | 2002 07 14 | 704 | 0.7− | 0.9− | 2006 09 30 | 704 | (2.5− | 1.7+) |
| 2002 05 09 | 704 | 0.2+ | 0.3+ | 2002 07 14 | 704 | 0.9− | 0.3− | 2006 09 30 | 704 | 1.4− | 1.3+ |
| 2002 05 12 | 704 | (2.9+ | 0.0 ) | 2002 07 14 | 704 | 0.6− | 1.0− | 2006 09 30 | 704 | (2.1− | 1.0+) |
| 2002 05 12 | 704 | 0.7+ | 0.8− | 2005 03 04 | 703 | 0.7+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 05 12 | 704 | 0.5− | 0.2+ | 2005 03 04 | 703 | 0.9− | 1.1+ | 2006 10 10 | 644 | 0.3− | 0.4− |
| 2002 05 12 | 704 | (1.8− | 0.1+) | 2005 03 04 | 703 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 06 02 | 699 | 0.2− | 0.7− | 2005 03 04 | 703 | (0.6− | 2.1+) | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 06 02 | 699 | 0.7− | 0.2+ | 2005 03 16 | 703 | (1.5− | 1.9−) | 2006 10 11 | 644 | 0.7− | 0.0 |
| 2002 06 02 | 699 | 1.0− | 0.9− | 2005 03 16 | 703 | 0.2− | 0.9+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 06 02 | 699 | 0.7− | 0.0 | 2005 03 16 | 703 | 0.2+ | 0.2− | 2006 10 12 | J95 | 0.3+ | 0.3− |
| 2002 06 05 | 704 | 0.2+ | 0.2− | 2005 03 16 | 703 | 0.7− | 0.0 | 2006 10 12 | J95 | 0.2+ | 0.2− |
| 2002 06 05 | 704 | 0.5+ | 0.2+ | 2005 03 16 | 703 | 0.2+ | 1.5+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2002 06 05 | 704 | 0.7+ | 0.7+ | 2005 03 16 | 703 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.7− | 0.1+ |
| 2002 06 05 | 704 | 0.1− | 0.4+ | 2005 03 16 | 704 | (0.1− | 2.2+) | 2006 10 12 | F84 | 0.1− | 0.1− |
| 2002 06 05 | 704 | 0.1+ | 0.7+ | 2005 03 16 | 703 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.5− | 0.0 |
| 2002 06 09 | 704 | 0.4+ | 0.2− | 2005 03 16 | 704 | (1.3+ | 2.2+) | 2006 10 12 | F84 | 0.0 | 0.3− |
| 2002 06 09 | 704 | 0.0 | 0.3− | 2005 03 16 | 703 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2002 06 09 | 704 | 0.3+ | 0.0 | 2005 03 16 | 704 | (2.2+ | 2.4+) | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2002 06 09 | 704 | 0.4+ | 0.2+ | 2005 03 16 | 704 | (1.5+ | 2.0+) | 2006 10 22 | 703 | 0.6− | 1.3+ |
| 2002 06 09 | 704 | 1.5+ | 0.4+ | 2005 04 02 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.7+ |
| 2002 06 09 | 608 | 1.4− | 1.2+ | 2005 04 02 | 703 | 1.1+ | 0.0 | 2006 10 28 | 703 | 0.4+ | 1.2+ |
| 2002 06 09 | 608 | 0.8− | 1.2+ | 2005 04 02 | 703 | (1.7+ | 1.2+) | 2006 10 28 | 703 | 0.6+ | 0.9+ |
| 2002 06 09 | 608 | 0.8− | 1.0+ | 2005 04 02 | 703 | 0.8− | 0.5+ | 2006 10 28 | 703 | 0.4+ | 0.6+ |
| 2002 06 10 | 704 | 0.5+ | 0.4− | 2005 04 02 | 703 | (1.6+ | 0.4+) | 2006 10 28 | 703 | 0.1+ | 0.7+ |
| 2002 06 10 | 704 | 0.3+ | 0.3− | 2005 04 02 | 703 | 0.0 | 0.9− | 2006 11 16 | 703 | 0.1+ | 1.5+ |
| 2002 06 10 | 704 | 0.7+ | 1.2+ | 2005 04 02 | 703 | 1.3− | 1.4+ | 2006 11 16 | 703 | 0.2− | 0.7+ |
| 2002 06 10 | 704 | 0.4+ | 0.1− | 2005 04 02 | 703 | (2.3− | 2.7+) | 2006 11 16 | 703 | 0.4− | 0.8+ |
| 2002 06 10 | 704 | 0.4− | 0.0 | 2005 04 09 | 703 | 0.4+ | 0.4+ | 2006 11 16 | 703 | 0.8− | 1.1+ |
| 2002 06 18 | 704 | 0.8+ | 1.2− | 2005 04 09 | 703 | 1.0− | 1.2+ | | | | |

**(141711)∗ 2002 LX$_9$ = 1999 TV$_{235}$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31774)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 58.41255 | | (2000.0) | | | | |
| $n$ | 0.28326972 | $\omega$ | 172.12829 | | +0.42953823 | | +0.90045704 |
| $a$ | 2.2961625 | $\Omega$ | 123.28564 | | −0.83292263 | | +0.42429609 |
| $e$ | 0.2296518 | $i$ | 4.69111 | | −0.34890802 | | +0.09565534 |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.1+ | 0.2+ | 2002 06 18 | 704 | (1.0− | 1.6+) | 2006 09 20 | 644 | 0.1+ | 0.3+ |
| 1999 10 03 | 703 | 0.9− | 0.8+ | 2002 06 18 | 704 | 0.8− | 1.3+ | 2006 09 20 | 644 | 0.4− | 0.4+ |
| 1999 10 03 | 703 | 0.2− | 0.6+ | 2002 06 18 | 704 | (1.3− | 1.9+) | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 1999 10 03 | 703 | 0.1+ | 1.0+ | 2002 06 18 | 704 | (0.8− | 2.2+) | 2006 09 27 | G96 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 1.1+ | 0.0 | 2002 06 18 | 704 | (0.6− | 2.1+) | 2006 09 27 | G96 | 0.2− | 0.2− |
| 1999 10 09 | 704 | 0.3− | 0.2+ | 2002 07 05 | 704 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.1− | 0.2+ | 2002 07 05 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.2− | 0.4+ | 2002 07 05 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.6− | 0.2− |
| 1999 10 09 | 704 | 0.5− | 0.2− | 2002 07 05 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.3− | 0.5+ |
| 2002 06 05 | 704 | 0.3+ | 0.4− | 2002 07 05 | 704 | 0.2− | 0.6− | 2006 09 30 | 703 | 0.6− | 0.6+ |
| 2002 06 05 | 704 | 0.3+ | 0.1+ | 2002 07 14 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 703 | (2.3− | 1.0+) |
| 2002 06 05 | 704 | 0.6+ | 0.2+ | 2002 07 14 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 1.5+ | 0.3− |
| 2002 06 05 | 704 | 0.6+ | 0.4− | 2002 07 14 | 704 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.2− | 1.1+ |
| 2002 06 05 | 704 | 0.1+ | 0.1− | 2002 07 14 | 704 | 0.8+ | 0.5+ | 2006 10 01 | 704 | (0.2− | 2.2+) |
| 2002 06 09 | 644 | 0.1+ | 0.0 | 2002 07 14 | 704 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.8+ |
| 2002 06 09 | 704 | 0.3− | 0.4+ | 2005 03 03 | 703 | 0.7+ | 1.4+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 06 09 | 704 | 0.5+ | 0.3+ | 2005 03 03 | 703 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2002 06 09 | 644 | 0.1− | 0.0 | 2005 03 03 | 703 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 06 09 | 704 | 0.8+ | 0.5+ | 2005 03 03 | 703 | 0.7+ | 0.5− | 2006 10 16 | 703 | 0.8− | 0.4+ |
| 2002 06 09 | 704 | 1.2+ | 0.9+ | 2005 03 04 | 704 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2002 06 09 | 704 | 0.6+ | 1.2+ | 2005 03 04 | 704 | 1.4− | 0.7+ | 2006 10 16 | 703 | 0.8+ | 1.2+ |
| 2002 06 09 | 644 | 0.2− | 0.1+ | 2005 03 04 | 704 | 0.4+ | 1.4+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2002 06 10 | 704 | 0.5− | 0.3+ | 2005 03 04 | 704 | 1.1− | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2002 06 10 | 704 | 0.6− | 0.0 | 2005 03 09 | 699 | 1.2+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2002 06 10 | 704 | 0.1− | 0.5+ | 2005 03 09 | 699 | 0.7+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 06 10 | 704 | 0.2− | 0.2+ | 2005 03 09 | 699 | 0.6+ | 1.2+ | 2006 10 20 | 644 | 0.5− | 0.5+ |
| 2002 06 10 | 704 | 0.6− | 0.3− | 2005 03 09 | 699 | 0.1+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 06 10 | 704 | 0.1+ | 0.5+ | 2005 03 16 | 704 | (0.7+ | 1.7+) | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2002 06 10 | 704 | 0.5− | 0.1+ | 2005 03 16 | 704 | 1.2+ | 1.2+ | 2006 10 28 | 703 | 0.2+ | 1.0+ |
| 2002 06 10 | 704 | 1.0− | 0.6− | 2005 03 16 | 704 | (1.3+ | 1.6+) | 2006 10 28 | 703 | 0.4− | 1.4+ |
| 2002 06 10 | 704 | 0.2− | 1.1+ | 2005 03 30 | 703 | 0.8+ | 0.4− | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2002 06 10 | 704 | 0.8+ | 0.0 | 2005 03 30 | 703 | 0.1+ | 1.0+ | 2006 10 28 | 703 | 0.6− | 0.6− |
| 2002 06 10 | 704 | (2.0− | 0.2+) | 2005 03 30 | 703 | 1.0+ | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 06 10 | 704 | 1.0+ | 0.6+ | 2005 03 30 | 703 | 0.5+ | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2002 06 10 | 704 | 1.3− | 0.5− | 2005 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2002 06 10 | 704 | 1.2− | 0.6− | 2005 04 13 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.1+ |
| 2002 06 10 | 704 | 0.6+ | 1.2+ | 2005 04 13 | 691 | 0.0 | 0.2+ | | | | |

**(141712)∗ 2002 LY$_9$ = 2005 EQ$_{85}$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75363)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 72.88809 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.28377582 | $\omega$ | 158.55205 | +0.03118129 | +0.99611422 | |
| $a$ | 2.2934316 | $\Omega$ | 113.15731 | −0.92957329 | +0.05918466 | |
| $e$ | 0.1704012 | $i$ | 5.13968 | −0.36731624 | −0.06521995 | |
| $P$ | 3.47 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 691 | 0.0 | 0.3+ | 2005 02 14 | 704 | 0.5+ | 1.5+ | 2006 08 17 | 644 | 0.3+ | 0.3+ |
| 2000 11 29 | 691 | 0.1− | 0.1− | 2005 02 14 | 704 | (2.1+ | 1.1+) | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2000 11 29 | 691 | 0.6+ | 0.2+ | 2005 03 04 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 704 | 0.2− | 0.3+ |
| 2002 05 21 | 704 | 0.1− | 0.0 | 2005 03 04 | 704 | 0.1− | 0.5+ | 2006 09 16 | 704 | 1.0− | 0.6+ |
| 2002 05 21 | 704 | 0.2− | 0.3+ | 2005 03 04 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 704 | 0.9+ | 0.3+ |
| 2002 05 21 | 704 | 0.7− | 0.5+ | 2005 03 04 | 704 | 0.3− | 1.1+ | 2006 09 16 | 704 | 0.2+ | 0.9+ |
| 2002 05 21 | 704 | 0.0 | 1.5+ | 2005 03 04 | 704 | 0.0 | 1.0+ | 2006 09 18 | 703 | 1.3− | 0.6+ |
| 2002 05 21 | 704 | 0.7− | 1.1+ | 2005 03 09 | 699 | 0.4− | 0.3− | 2006 09 18 | 703 | 0.2− | 0.0 |
| 2002 06 04 | 644 | 0.2− | 0.2+ | 2005 03 09 | 699 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.0 |
| 2002 06 04 | 644 | 0.1+ | 0.2+ | 2005 03 09 | 699 | 1.0+ | 1.4− | 2006 09 18 | 703 | 0.8+ | 0.3+ |
| 2002 06 04 | 644 | 0.2− | 0.2+ | 2005 03 09 | 699 | 0.5− | 1.3+ | 2006 09 20 | 644 | 0.1− | 0.0 |
| 2002 06 05 | 704 | 0.2+ | 0.5+ | 2005 03 09 | 704 | 0.8+ | 0.6+ | 2006 09 20 | 644 | 0.4− | 0.0 |
| 2002 06 05 | 704 | 0.5+ | 0.3+ | 2005 03 09 | 704 | 0.5+ | 0.9+ | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2002 06 05 | 704 | 0.5+ | 0.1+ | 2005 03 09 | 704 | 0.0 | 1.1+ | 2006 09 26 | 704 | 0.1− | 0.7+ |
| 2002 06 05 | 704 | 0.3+ | 0.6+ | 2005 03 09 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.9+ |
| 2002 06 05 | 704 | 0.4+ | 0.4− | 2005 03 09 | 704 | 0.7+ | 1.4+ | 2006 09 26 | 704 | 0.5− | 1.5+ |
| 2002 06 09 | 704 | 0.0 | 0.2+ | 2005 03 12 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 704 | 0.8− | 0.7+ |
| 2002 06 09 | 704 | 0.1− | 0.2+ | 2005 03 12 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 704 | (0.1− | 1.9+) |
| 2002 06 09 | 704 | 0.2+ | 0.4+ | 2005 03 12 | 704 | 0.5+ | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.2+ |
| 2002 06 09 | 704 | 0.0 | 0.8+ | 2005 03 12 | 704 | 0.5+ | 0.4+ | 2006 10 02 | 703 | 0.6+ | 0.1− |
| 2002 06 09 | 704 | 0.3+ | 0.3+ | 2005 03 12 | 704 | 0.5+ | 0.1+ | 2006 10 02 | 703 | 0.4− | 1.3+ |
| 2002 06 10 | 704 | 0.6+ | 0.5− | 2005 03 12 | G96 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.5+ |
| 2002 06 10 | 704 | 0.3+ | 0.4+ | 2005 03 12 | G96 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2002 06 10 | 704 | 0.7+ | 0.6+ | 2005 03 12 | G96 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.6− | 0.2+ |
| 2002 06 10 | 704 | (3.5+ | 0.3−) | 2005 03 12 | G96 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.7− | 0.2+ |
| 2002 06 18 | 704 | (2.7− | 1.0+) | 2005 03 16 | 703 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2002 06 18 | 704 | 0.2− | 0.4+ | 2005 03 16 | 703 | 0.2− | 1.1+ | 2006 10 16 | 703 | (1.7+ | 1.1+) |
| 2002 06 18 | 704 | 0.1− | 0.0 | 2005 03 16 | 703 | (2.8− | 1.7+) | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2002 06 18 | 704 | 0.1+ | 0.5+ | 2005 03 16 | 703 | 1.2− | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 2002 07 14 | 704 | 0.3− | 1.0− | 2005 04 02 | 703 | 0.7+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2002 07 14 | 704 | 0.1− | 0.2+ | 2005 04 02 | 703 | 0.2− | 0.7− | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 2002 07 14 | 704 | 0.2− | 0.3+ | 2005 04 02 | 703 | 0.9+ | 0.8− | 2006 10 16 | 703 | 0.7+ | 1.0+ |
| 2002 07 14 | 704 | 0.7− | 0.0 | 2005 04 02 | 703 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2002 07 14 | 704 | 0.0 | 0.2− | 2005 04 09 | 703 | 0.9+ | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.1− |
| 2003 12 22 | 691 | 0.3− | 0.0 | 2005 04 09 | 703 | 0.4− | 0.5− | 2006 10 22 | 703 | 0.1+ | 0.9− |
| 2003 12 22 | 691 | 0.2− | 0.6+ | 2005 04 09 | 703 | 0.6− | 0.5− | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2003 12 22 | 691 | 0.2− | 0.1+ | 2005 04 09 | 703 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2005 02 14 | 704 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.3+ | 0.2+ | | | | |

**(141713)∗ 2002 LB$_{10}$ = 2005 GD$_{39}$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75363)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 112.93051 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.29929595 | $\omega$ | 64.37355 | −0.37468156 | +0.92713988 | |
| $a$ | 2.2134455 | $\Omega$ | 183.63299 | −0.87660594 | −0.35601797 | |
| $e$ | 0.0994870 | $i$ | 4.55838 | −0.30195322 | −0.11688814 | |
| $P$ | 3.29 | $H$ | 17.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 704 | 1.1− | 0.8− | 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.3+ |
| 2002 06 05 | 704 | 0.2+ | 1.0− | 2005 04 04 | 703 | 0.1+ | 1.2+ | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2002 06 05 | 704 | 0.7+ | 1.3− | 2005 04 04 | 703 | 0.3+ | 0.9− | 2006 09 14 | 691 | 0.2− | 0.4+ |
| 2002 06 08 | 644 | 0.4+ | 0.8+ | 2005 04 04 | 703 | 0.3− | 0.4− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2002 06 08 | 644 | 0.4+ | 0.6+ | 2005 04 04 | 703 | 0.5+ | 0.5− | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2002 06 08 | 644 | 0.3+ | 0.6+ | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2002 06 09 | 704 | 0.5− | 0.5+ | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 06 09 | 704 | 0.1− | 0.9+ | 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2002 06 09 | 704 | 0.7+ | 0.6+ | 2005 04 04 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2002 06 09 | 704 | 0.2− | 0.3+ | 2005 04 06 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2002 06 09 | 704 | 0.5− | 1.2+ | 2005 04 06 | G96 | 0.2− | 0.3− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 07 03 | 644 | 0.1+ | 0.1+ | 2005 04 06 | G96 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2002 07 03 | 644 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2002 07 03 | 644 | 0.1− | 0.1− | 2005 05 04 | 644 | 0.5+ | 0.4+ | 2006 10 22 | G96 | 0.6+ | 0.3+ |
| 2003 11 21 | 691 | 0.2− | 0.2+ | 2005 05 04 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 11 21 | 691 | 0.0 | 0.4+ | 2005 05 04 | 644 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2003 11 21 | 691 | 0.0 | 0.5+ | 2005 05 15 | 644 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 1.0+ | 0.6− |
| 2005 03 17 | 691 | 0.1+ | 0.5+ | 2005 05 15 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2005 05 15 | 644 | 0.1+ | 0.1− | | | | |

**(141714)∗ 2002 LS$_{12}$ = 1999 RL$_{187}$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31776)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.17487 | | (2000.0) | | | |
| $n$ | 0.28717371 | $\omega$ | 169.50536 | | +0.26523667 | +0.95921960 |
| $a$ | 2.2753049 | $\Omega$ | 115.81810 | | −0.89229928 | +0.28259409 |
| $e$ | 0.1302587 | $i$ | 6.23144 | | −0.36531015 | +0.00619121 |
| $P$ | 3.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 1.3+ | 0.2− | 2002 07 05 | 704 | (1.7+ | 0.6+) | 2005 04 11 | 704 | 1.4+ | 0.9+ |
| 1999 09 09 | 704 | 1.3− | 0.4− | 2002 07 14 | 704 | 1.1+ | 0.8+ | 2005 04 11 | 704 | 1.1+ | 0.4+ |
| 1999 09 09 | 704 | 1.0− | 1.6− | 2002 07 14 | 704 | (1.9+ | 0.7+) | 2005 04 11 | 704 | 0.2+ | 0.6+ |
| 1999 09 09 | 704 | (3.4− | 2.3−) | 2002 07 14 | 704 | 0.9+ | 0.1− | 2005 04 16 | 703 | 0.6− | 0.0 |
| 1999 09 13 | 704 | 0.2− | 1.0+ | 2002 07 30 | 608 | 0.5− | 1.2− | 2005 04 16 | 703 | 0.2− | 0.6+ |
| 1999 09 13 | 704 | 0.0 | 0.9+ | 2002 07 30 | 608 | 0.8− | 1.3− | 2005 04 16 | 703 | 0.8− | 0.8+ |
| 1999 09 13 | 704 | 0.1+ | 0.5+ | 2002 07 30 | 608 | 0.5− | 1.1− | 2005 04 16 | 703 | 1.0− | 1.0+ |
| 1999 09 13 | 704 | 0.2− | 0.0 | 2003 12 01 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.7+ | 0.2+ |
| 2002 06 05 | 704 | 0.7− | 0.6+ | 2003 12 01 | 704 | 1.0− | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.6+ |
| 2002 06 05 | 704 | 0.1− | 0.7+ | 2003 12 01 | 704 | 1.2+ | 0.8+ | 2006 09 18 | 703 | 0.6− | 0.9+ |
| 2002 06 05 | 704 | 0.6− | 0.2+ | 2003 12 01 | 704 | 0.1− | 1.2+ | 2006 09 18 | 703 | 0.2+ | 0.1+ |
| 2002 06 09 | 704 | 0.7+ | 0.5+ | 2003 12 01 | 704 | 1.2+ | 0.9+ | 2006 09 21 | 699 | 0.9− | 0.5+ |
| 2002 06 09 | 704 | 1.4− | 0.2+ | 2005 02 04 | 644 | 0.3+ | 0.6+ | 2006 09 21 | 699 | 0.0 | 0.6+ |
| 2002 06 09 | 704 | 0.5+ | 0.7+ | 2005 02 04 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.1− | 1.1+ |
| 2002 06 09 | 704 | 0.4+ | 1.0+ | 2005 02 04 | 644 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 0.6− | 0.5+ |
| 2002 06 09 | 704 | 0.4+ | 0.7+ | 2005 03 10 | 703 | 0.0 | 0.6− | 2006 09 25 | 699 | 0.4+ | 0.1+ |
| 2002 06 10 | 704 | (1.6− | 0.6−) | 2005 03 10 | 703 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.4− |
| 2002 06 10 | 704 | 0.1+ | 1.2+ | 2005 03 10 | 703 | 0.6+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 1.2+ |
| 2002 06 10 | 704 | 0.0 | 0.3− | 2005 03 10 | 699 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.5+ |
| 2002 06 10 | 704 | 0.1+ | 0.1− | 2005 03 10 | 703 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2002 06 10 | 704 | 0.1− | 0.3− | 2005 03 10 | 699 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2002 06 16 | 704 | 0.2− | 0.6+ | 2005 03 10 | 699 | 0.8+ | 1.1+ | 2006 09 26 | 703 | 0.9− | 0.1+ |
| 2002 06 16 | 704 | 0.4− | 0.2+ | 2005 03 10 | 699 | 1.3+ | 0.5+ | 2006 09 30 | 704 | 0.9+ | 0.3− |
| 2002 06 16 | 704 | 0.2+ | 0.5+ | 2005 03 18 | 703 | 0.7− | 0.3+ | 2006 09 30 | 704 | 0.1+ | 0.5+ |
| 2002 06 16 | 704 | 0.4− | 0.1− | 2005 03 18 | 703 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.0 | 0.0 |
| 2002 06 18 | 704 | 0.4+ | 0.3− | 2005 03 18 | 703 | 0.9+ | 0.8+ | 2006 09 30 | 704 | 0.2− | 0.4− |
| 2002 06 18 | 704 | 0.7+ | 0.6+ | 2005 03 18 | 703 | 0.9+ | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2002 06 18 | 704 | 1.2+ | 1.0− | 2005 03 30 | 703 | 0.2− | 0.4− | 2006 10 17 | 703 | 2.0− | 0.2+ |
| 2002 06 18 | 704 | 1.0− | 0.0 | 2005 03 30 | 703 | 0.8− | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.8+ |
| 2002 07 05 | 704 | (4.7+ | 1.5−) | 2005 03 30 | 703 | 0.9− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 07 05 | 704 | 1.4+ | 0.2− | 2005 03 30 | 703 | 1.1− | 0.4+ | | | | |

**(141715)∗ 2002 LJ$_{13}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.96697 | | (2000.0) | | | |
| $n$ | 0.24387676 | $\omega$ | 57.72445 | | −0.48993865 | +0.87169508 |
| $a$ | 2.5372062 | $\Omega$ | 182.99685 | | −0.85163632 | −0.48114081 |
| $e$ | 0.2440588 | $i$ | 11.45504 | | −0.18621414 | −0.09301183 |
| $P$ | 4.04 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 26 | 704 | 1.1− | 1.1+ | 2002 05 13 | 644 | 1.0+ | 0.8+ | 2006 01 28 | G96 | 0.3− | 0.3− |
| 1998 05 26 | 704 | (1.1− | 3.0+) | 2002 06 05 | 699 | 0.3+ | 1.0+ | 2006 04 09 | 704 | 0.5− | 0.7+ |
| 1998 05 26 | 704 | 2.5− | 1.8+ | 2002 06 05 | 699 | 0.9+ | 0.3− | 2006 04 09 | 704 | 0.7+ | 0.7+ |
| 1998 05 26 | 704 | 1.2+ | 2.4− | 2002 06 05 | 699 | 0.7− | 0.2− | 2006 04 09 | 704 | 0.5− | 1.4+ |
| 1998 05 26 | 704 | 1.6+ | 0.5− | 2002 06 05 | 699 | 0.0 | 1.3− | 2006 04 19 | 703 | 0.7− | 0.1+ |
| 1998 06 21 | 691 | 0.5− | 0.1+ | 2002 06 06 | 704 | 0.5+ | 0.3+ | 2006 04 19 | 703 | 1.2− | 0.1+ |
| 1998 06 21 | 691 | 0.1− | 0.8− | 2002 06 06 | 704 | 0.7+ | 0.3− | 2006 04 19 | 703 | 0.8− | 0.1+ |
| 1998 06 21 | 691 | 0.0 | 0.6− | 2002 06 06 | 704 | 0.0 | 0.4+ | 2006 04 19 | 703 | 0.3− | 0.4+ |
| 1998 07 02 | 691 | 0.1+ | 0.0 | 2002 06 06 | 704 | 1.6+ | 0.1+ | 2006 04 24 | 699 | 0.1+ | 0.7+ |
| 1998 07 02 | 691 | 0.3+ | 0.1− | 2002 06 06 | 704 | 0.5+ | 0.0 | 2006 04 24 | 699 | 0.6− | 0.4+ |
| 1998 07 02 | 691 | 0.2+ | 0.2− | 2002 06 07 | 644 | 0.5+ | 0.3+ | 2006 04 24 | 699 | 0.6− | 0.3+ |
| 2002 03 20 | 691 | 0.4− | 0.4+ | 2002 06 07 | 644 | 0.2+ | 0.3+ | 2006 04 24 | 699 | 0.4− | 0.2− |
| 2002 03 20 | 691 | 0.3− | 0.1+ | 2002 06 07 | 644 | 0.5+ | 0.5+ | 2006 04 27 | 703 | 0.7− | 0.4− |
| 2002 03 20 | 691 | 0.3− | 0.2+ | 2002 06 08 | 704 | (5.2+ | 0.5+) | 2006 04 27 | 703 | 0.8− | 0.2+ |
| 2002 03 24 | 691 | 0.1+ | 0.1+ | 2002 06 08 | 704 | (6.3+ | 0.3+) | 2006 04 27 | 703 | 0.7− | 0.4− |
| 2002 03 24 | 691 | 0.1+ | 0.2+ | 2002 06 08 | 704 | (4.4+ | 0.4+) | 2006 04 27 | 703 | 0.6− | 0.4− |
| 2002 03 24 | 691 | 0.2+ | 0.0 | 2002 06 08 | 704 | (5.5+ | 0.3+) | 2006 05 19 | 699 | 1.0+ | 1.1− |
| 2002 04 10 | 704 | 0.2+ | 0.6− | 2002 06 12 | 704 | 0.2− | 1.2− | 2006 05 19 | 699 | (3.2+ | 1.6−) |
| 2002 04 10 | 704 | 0.4+ | 0.4+ | 2002 06 12 | 704 | (0.6− | 2.2−) | 2006 05 19 | 699 | (1.3− | 5.2+) |
| 2002 04 10 | 704 | 0.7+ | 0.3+ | 2002 06 12 | 704 | 1.4− | 0.8− | 2006 05 21 | 703 | 0.6+ | 0.2− |
| 2002 04 10 | 704 | 0.5+ | 0.7+ | 2002 06 12 | 704 | 1.6− | 1.4− | 2006 05 21 | 703 | 0.5− | 0.5+ |
| 2002 04 10 | 704 | 0.1+ | 0.2− | 2003 10 20 | 691 | 0.6+ | 0.1+ | 2006 05 21 | 703 | 0.8− | 0.0 |
| 2002 04 16 | 704 | 0.3+ | 0.3+ | 2003 10 20 | 691 | 0.1+ | 0.4+ | 2006 05 21 | 703 | 0.1− | 0.5+ |
| 2002 04 16 | 704 | 1.0+ | 0.3− | 2003 10 20 | 691 | 0.2+ | 0.6+ | 2006 05 27 | 703 | 0.7− | 0.2− |
| 2002 04 16 | 704 | 0.8+ | 1.6+ | 2003 11 20 | 645 | 0.2− | 0.2+ | 2006 05 27 | 703 | 0.8− | 0.0 |
| 2002 04 16 | 704 | 0.5− | 1.4+ | 2003 11 20 | 645 | 0.1− | 0.2+ | 2006 05 27 | 703 | 0.6− | 0.1− |
| 2002 05 08 | 704 | 0.1+ | 0.5+ | 2006 01 09 | 691 | 0.4+ | 0.2+ | 2006 05 27 | 703 | 0.4+ | 0.2− |
| 2002 05 08 | 704 | 0.1− | 1.0+ | 2006 01 09 | 691 | 0.4+ | 0.4− | 2006 05 29 | 704 | 0.6+ | 0.1+ |
| 2002 05 08 | 704 | 0.2− | 0.5+ | 2006 01 09 | 691 | 0.2+ | 0.1+ | 2006 05 29 | 704 | 1.9+ | 0.4+ |
| 2002 05 08 | 704 | 0.7− | 0.8+ | 2006 01 28 | G96 | 0.0 | 0.8− | 2006 05 29 | 704 | 1.1+ | 0.2− |
| 2002 05 13 | 644 | 0.6+ | 0.8+ | 2006 01 28 | G96 | 0.6− | 0.5− | 2006 05 29 | 704 | 1.3+ | 0.1− |
| 2002 05 13 | 644 | 0.9+ | 0.7+ | 2006 01 28 | G96 | 0.3− | 0.7− | 2006 05 29 | 704 | 1.4+ | 0.6− |

**(141716)∗ 2002 LU$_{13}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.03999 | | (2000.0) | | | |
| $n$ | 0.30054529 | $\omega$ | 12.73121 | | +0.25338939 | +0.96521864 |
| $a$ | 2.2073071 | $\Omega$ | 271.97407 | | −0.89309218 | +0.20783587 |
| $e$ | 0.1189330 | $i$ | 3.69435 | | −0.37172594 | +0.15861032 |
| $P$ | 3.28 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.8+ | 0.3+ | 2002 06 12 | 644 | 0.2− | 0.2+ | 2005 04 06 | 699 | (1.6+ | 0.1+) |
| 2002 05 11 | 704 | 0.5+ | 0.6− | 2003 11 24 | 704 | 0.4− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2002 05 11 | 704 | 0.3+ | 1.0− | 2003 11 24 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.5+ |
| 2002 06 06 | 704 | 0.1+ | 0.5− | 2003 11 24 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2002 06 06 | 704 | 0.0 | 0.0 | 2003 11 30 | 691 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 06 06 | 704 | 0.1− | 0.1+ | 2003 11 30 | 691 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2002 06 06 | 704 | 0.9− | 0.1− | 2003 11 30 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.2− |
| 2002 06 08 | 704 | 0.0 | 0.8+ | 2004 01 14 | 304 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.3+ |
| 2002 06 08 | 704 | 1.0− | 0.1+ | 2004 01 14 | 304 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 06 08 | 704 | 0.0 | 1.1+ | 2004 01 14 | 304 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.3+ | 0.5+ |
| 2002 06 08 | 704 | 0.5− | 1.3+ | 2005 03 09 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.6− |
| 2002 06 09 | 704 | 1.1+ | 0.5+ | 2005 03 09 | 691 | 0.1+ | 0.7+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2002 06 09 | 704 | 0.1− | 0.4+ | 2005 03 09 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2002 06 09 | 704 | 0.2− | 0.1+ | 2005 04 06 | 699 | (2.5+ | 0.5+) | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2002 06 12 | 644 | 1.1+ | 1.2+ | 2005 04 06 | 699 | (1.7+ | 1.8+) | | | | |
| 2002 06 12 | 644 | 0.0 | 0.2+ | 2005 04 06 | 699 | 0.7+ | 0.4+ | | | | |

**(141717)∗ 2002 LC$_{14}$ = 1999 TJ$_{276}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31777)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.04408 | | (2000.0) | | | |
| $n$ | 0.27484555 | $\omega$ | 346.09227 | | +0.19355661 | +0.98079272 |
| $a$ | 2.3428451 | $\Omega$ | 295.06365 | | −0.89756733 | +0.16710157 |
| $e$ | 0.2080713 | $i$ | 1.52543 | | −0.39611705 | +0.10061169 |
| $P$ | 3.59 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.6+ | 0.1+ | 2002 06 07 | 644 | 0.3+ | 0.6− | 2006 08 24 | 644 | 0.1+ | 0.5+ |
| 1999 10 06 | 704 | 0.3+ | 0.3− | 2002 06 08 | 704 | 0.2+ | 0.9+ | 2006 08 28 | 703 | 0.6− | 1.0− |
| 1999 10 06 | 704 | 0.3− | 0.7− | 2002 06 08 | 704 | 0.4+ | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.2+ |
| 1999 10 06 | 704 | 0.6+ | 0.6− | 2002 06 08 | 704 | 1.3− | 0.2− | 2006 08 28 | 703 | 0.5− | 1.2− |
| 1999 10 06 | 704 | 0.3+ | 0.1+ | 2002 06 08 | 704 | 1.5− | 0.2− | 2006 08 28 | 703 | 0.7− | 0.1+ |
| 1999 10 13 | 704 | 0.0 | 1.1− | 2002 06 09 | 704 | 0.3+ | 0.7+ | 2006 09 12 | 703 | 0.3+ | 0.8+ |
| 1999 10 13 | 704 | 0.2+ | 0.8− | 2002 06 09 | 704 | (0.9+ | 2.2+) | 2006 09 12 | 703 | 0.8+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 1.0− | 0.6+ | 2002 06 09 | 704 | 0.2+ | 0.0 | 2006 09 12 | 703 | (2.0− | 0.2+) |
| 1999 10 13 | 704 | 0.3− | 1.4+ | 2002 06 09 | 704 | 0.1− | 0.3+ | 2006 09 12 | 703 | (1.3+ | 1.9−) |
| 1999 10 13 | 704 | 0.1+ | 0.2+ | 2003 11 19 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 1.0− | 0.7+ |
| 2002 05 17 | 704 | 0.6+ | 0.2+ | 2003 11 19 | 691 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.2+ | 0.2+ |
| 2002 05 17 | 704 | 1.4+ | 0.7− | 2003 11 19 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.5− |
| 2002 05 17 | 704 | 0.1+ | 0.1+ | 2003 12 01 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2002 05 29 | 644 | 0.1+ | 0.8− | 2003 12 01 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.1+ |
| 2002 05 29 | 644 | 0.1+ | 0.9− | 2003 12 01 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.7− | 0.4+ |
| 2002 05 29 | 644 | 0.0 | 0.6− | 2003 12 14 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2002 06 06 | 704 | 0.1− | 0.8+ | 2003 12 14 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.3− |
| 2002 06 06 | 704 | 0.2+ | 0.4+ | 2003 12 14 | 691 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 06 06 | 704 | 0.1+ | 0.2− | 2006 08 23 | 644 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2002 06 06 | 704 | 0.3− | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 06 06 | 704 | 0.7− | 0.6− | 2006 08 23 | 644 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 06 07 | 644 | 0.3− | 0.4− | 2006 08 24 | 644 | 0.4+ | 0.1+ | | | | |
| 2002 06 07 | 644 | 0.2+ | 0.7− | 2006 08 24 | 644 | 0.0 | 0.0 | | | | |

**(141718)∗ 2002 LV$_{17}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.13163 | | (2000.0) | | | |
| $n$ | 0.27728967 | $\omega$ | 57.48355 | | +0.58436260 | +0.81046211 |
| $a$ | 2.3290577 | $\Omega$ | 248.32801 | | −0.75850811 | +0.52760775 |
| $e$ | 0.2446828 | $i$ | 2.52149 | | −0.28841949 | +0.25452159 |
| $P$ | 3.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 703 | 0.7− | 0.2+ | 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2− |
| 1999 11 03 | 703 | 0.5+ | 0.4+ | 2005 03 13 | 691 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 1999 11 03 | 703 | 0.4− | 1.2+ | 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1999 11 03 | 703 | (3.1− | 0.5+) | 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.3+ |
| 2002 06 06 | 704 | 0.9+ | 0.3+ | 2005 04 12 | G96 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.3+ | 0.2− |
| 2002 06 06 | 704 | 0.2+ | 0.2+ | 2005 04 12 | G96 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.7+ | 0.8+ |
| 2002 06 06 | 704 | 0.4+ | 1.0+ | 2005 05 14 | G96 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.7− | 1.4+ |
| 2002 06 06 | 704 | 0.2+ | 1.0+ | 2005 05 14 | G96 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2002 06 06 | 704 | 0.4+ | 1.0+ | 2005 05 14 | G96 | 0.4− | 0.1+ | 2006 09 30 | 683 | 1.2+ | 1.3− |
| 2002 06 08 | 704 | 0.6− | 0.2+ | 2005 05 14 | G96 | 0.7− | 0.0 | 2006 09 30 | 683 | 0.6− | 0.1+ |
| 2002 06 08 | 704 | 0.8− | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 09 30 | 683 | 0.9+ | 0.9+ |
| 2002 06 08 | 704 | 0.7− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.3− | 0.1− |
| 2002 06 08 | 704 | 1.0− | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 06 08 | 704 | 0.6− | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2002 06 16 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.6− | 2006 10 17 | 703 | 0.7− | 0.4+ |
| 2002 06 16 | 644 | 0.5+ | 0.0 | 2006 09 18 | 703 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 2002 06 16 | 644 | 0.2+ | 0.1− | 2006 09 18 | 703 | 1.0+ | 0.4− | 2006 10 17 | 703 | 1.0− | 0.9+ |
| 2002 06 18 | 704 | 0.3+ | 1.1− | 2006 09 18 | 704 | 1.5+ | 1.1+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2002 06 18 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 704 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 06 18 | 704 | 0.8+ | 1.2− | 2006 09 18 | 704 | 0.7+ | 1.1+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2002 06 18 | 704 | 0.9− | 0.1+ | 2006 09 18 | 704 | 1.0+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2002 06 25 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 06 25 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 06 25 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 1.4+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 07 04 | 644 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.8− | 0.7+ | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2002 07 04 | 644 | 0.2+ | 0.3− | 2006 09 22 | 224 | 0.3− | 0.0 | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2002 07 04 | 644 | 0.1− | 0.1+ | 2006 09 22 | 224 | 0.1+ | 0.3− | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2005 03 13 | 691 | 0.3+ | 0.4+ | 2006 09 22 | 224 | 0.0 | 0.4− | | | | |

**(141719)∗ 2002 LA$_{19}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.04604 | | (2000.0) | | | |
| $n$ | 0.27202874 | $\omega$ | 64.56337 | | +0.30445479 | +0.95210431 |
| $a$ | 2.3589905 | $\Omega$ | 223.19394 | | −0.88813850 | +0.27298528 |
| $e$ | 0.2575933 | $i$ | 2.37520 | | −0.34426339 | +0.13775493 |
| $P$ | 3.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.1− | 0.2+ | 2006 09 16 | H07 | 0.5+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.6+ |
| 1999 10 10 | 691 | 0.1− | 0.0 | 2006 09 16 | H07 | 0.2+ | 0.3− | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 1999 10 10 | 691 | 0.1− | 0.4− | 2006 09 16 | H07 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 1999 10 29 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 644 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 1999 10 29 | 691 | 0.2− | 0.5+ | 2006 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.6+ | 0.0 |
| 1999 10 29 | 691 | 0.0 | 0.5+ | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2002 06 06 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.4+ | 0.1+ |
| 2002 06 06 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 06 06 | 704 | 1.1+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 06 08 | 704 | 1.0− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.9+ | 1.1+ |
| 2002 06 08 | 704 | 0.5− | 0.3− | 2006 09 17 | 703 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2002 06 08 | 704 | 0.6− | 0.4− | 2006 09 17 | 703 | 0.5− | 0.8− | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2002 06 08 | 704 | 0.2− | 0.2− | 2006 09 17 | 703 | 0.6+ | 0.7− | 2006 10 17 | 703 | (1.1+ | 2.0−) |
| 2002 06 08 | 704 | 0.5− | 0.4− | 2006 09 21 | A50 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 06 18 | 704 | 0.4+ | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 06 18 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 06 18 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 691 | 0.7− | 1.1− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 06 18 | 704 | 0.2− | 1.3+ | 2006 09 27 | 699 | 0.5− | 0.8− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 07 05 | 704 | 0.1− | 0.2+ | 2006 09 27 | 699 | 0.4− | 0.6+ | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2002 07 05 | 704 | 0.2+ | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.9+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 07 05 | 704 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2005 04 09 | G96 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.6− | 0.5− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2005 04 09 | G96 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2005 04 09 | G96 | 0.5+ | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.0 | 0.5− |
| 2005 04 09 | G96 | 0.6+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2005 04 10 | G96 | 0.1− | 0.3+ | 2006 09 29 | A41 | 0.1+ | 0.7+ | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2005 04 10 | G96 | 0.2+ | 0.0 | 2006 09 29 | A41 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.6+ |
| 2005 04 10 | G96 | 0.0 | 0.0 | 2006 09 30 | A41 | 0.1− | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 04 10 | G96 | 1.0− | 0.2+ | 2006 10 01 | 704 | (0.4− | 3.2−) | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2006 09 06 | 644 | 0.3+ | 0.3+ | 2006 10 01 | 704 | (0.1+ | 1.6−) | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 01 | 704 | 1.2− | 1.4− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | | | | |

**(141720)∗ 2002 LS$_{19}$ = 2005 EZ$_{24}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75364)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.41178 | | (2000.0) | | | |
| $n$ | 0.28422112 | $\omega$ | 193.50385 | | +0.01196548 | +0.99747902 |
| $a$ | 2.2910355 | $\Omega$ | 77.21534 | | −0.91062558 | +0.03976607 |
| $e$ | 0.2071354 | $i$ | 4.11301 | | −0.41305917 | −0.05877291 |
| $P$ | 3.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 1.3+ | 0.7− | 2005 03 04 | 704 | 0.5+ | 0.3− | 2005 04 16 | 703 | 1.1− | 0.1+ |
| 1999 10 15 | 704 | 0.5+ | 0.0 | 2005 03 04 | 704 | 0.1+ | 0.5− | 2005 04 16 | 703 | 0.7− | 0.0 |
| 1999 10 15 | 704 | 1.1+ | 0.2+ | 2005 03 09 | 699 | 1.1+ | 0.7+ | 2005 04 16 | 703 | 1.2− | 1.3− |
| 1999 10 15 | 704 | 1.1+ | 0.3− | 2005 03 09 | 699 | (1.6+ | 0.6−) | 2005 04 16 | 703 | 1.1− | 0.7+ |
| 2002 06 06 | 704 | 0.4− | 0.4+ | 2005 03 09 | 699 | 0.8+ | 0.4− | 2006 09 30 | 703 | (2.6+ | 0.2−) |
| 2002 06 06 | 704 | 0.8− | 0.1+ | 2005 03 09 | 699 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2002 06 06 | 704 | 0.7− | 0.1+ | 2005 03 09 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.8+ |
| 2002 06 06 | 704 | 0.4− | 1.1− | 2005 03 09 | 704 | (1.6+ | 0.3+) | 2006 09 30 | 703 | 0.4+ | 0.8− |
| 2002 06 08 | 704 | 0.4+ | 0.2− | 2005 03 09 | 704 | (2.6+ | 0.3−) | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2002 06 08 | 704 | 1.1+ | 0.1+ | 2005 03 09 | 704 | 0.3+ | 1.3+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2002 06 08 | 704 | 0.7+ | 0.1− | 2005 03 09 | 704 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2002 06 08 | 704 | 0.4+ | 0.2− | 2005 03 12 | 704 | 0.9+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 1.3+ | 0.1+ | 2005 03 12 | 704 | 0.5+ | 0.3− | 2006 10 21 | 703 | 0.4− | 0.7+ |
| 2002 06 09 | 704 | 0.6− | 0.3+ | 2005 03 12 | 704 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2002 06 09 | 704 | 1.0− | 1.0+ | 2005 03 12 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 703 | 1.3+ | 1.4+ |
| 2002 06 09 | 704 | 0.9− | 1.2+ | 2005 03 12 | 704 | 0.9+ | 0.3− | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2002 06 09 | 704 | 1.2− | 0.5+ | 2005 03 16 | 704 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2003 11 26 | 691 | 0.7− | 0.0 | 2005 03 16 | 704 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2003 11 26 | 691 | 0.1− | 0.2+ | 2005 03 16 | 704 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2003 11 26 | 691 | 0.8− | 0.5+ | 2005 03 16 | 704 | (0.3+ | 1.6+) | 2006 10 21 | G96 | 0.5+ | 0.2+ |
| 2003 12 14 | 691 | 0.0 | 0.2− | 2005 03 16 | 704 | 0.9+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2003 12 14 | 691 | 0.1− | 0.3− | 2005 03 30 | 703 | (0.2+ | 1.6+) | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2003 12 14 | 691 | 0.3+ | 0.2− | 2005 03 30 | 703 | 0.1+ | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2005 03 03 | 703 | 0.2+ | 0.6− | 2005 03 30 | 703 | 1.0− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2005 03 03 | 703 | 0.3− | 0.8+ | 2005 03 30 | 703 | 1.1− | 1.2+ | 2006 11 18 | G96 | 0.9− | 1.2+ |
| 2005 03 03 | 703 | 0.1− | 0.1+ | 2005 04 11 | 699 | 0.2+ | 1.1+ | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2005 03 03 | 703 | 0.1− | 0.6− | 2005 04 11 | 699 | 0.5− | 0.8− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2005 03 04 | 704 | 0.8+ | 0.0 | 2005 04 11 | 699 | (2.2− | 0.7+) | | | | |
| 2005 03 04 | 704 | 0.1+ | 0.5− | 2005 04 11 | 699 | 1.3+ | 1.4− | | | | |

**(141721)∗ 2002 LY$_{19}$ = 2006 QT$_{18}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 103325)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 50.94132 | | (2000.0) | | +0.03739310 | +0.99862428 |
| *n* | 0.26230036 | *ω* | 210.03761 | | −0.90836145 | +0.04929958 |
| *a* | 2.4169637 | Ω | 62.12730 | | −0.41651079 | −0.01786312 |
| *e* | 0.1926112 | *i* | 2.38329 | | | |
| *P* | 3.76 | *H* | 16.7 | *G* 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.4− | 1.1+ | 2002 06 09 | 704 | 0.2+ | 0.4− | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 1998 05 01 | 704 | 1.5+ | 1.2− | 2003 11 19 | 691 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.2+ |
| 1998 05 01 | 704 | 0.3− | 0.8+ | 2003 11 19 | 691 | 0.1+ | 0.5+ | 2006 08 17 | 644 | 0.4− | 0.4+ |
| 1998 05 01 | 704 | 1.4+ | 1.6− | 2003 11 19 | 691 | 0.2+ | 0.8+ | 2006 08 18 | 644 | 0.4− | 0.4+ |
| 1998 05 01 | 704 | 0.2− | 0.3+ | 2003 12 14 | 691 | 0.0 | 0.7+ | 2006 08 18 | 644 | 0.2− | 0.3+ |
| 1998 05 24 | 704 | 1.3− | 1.5+ | 2003 12 14 | 691 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.6+ |
| 1998 05 24 | 704 | 0.2− | 2.0+ | 2003 12 14 | 691 | 0.3− | 0.0 | 2006 08 21 | 644 | 0.5− | 0.4+ |
| 1998 05 24 | 704 | 0.6− | 1.0+ | 2004 12 20 | G96 | 0.6+ | 0.1+ | 2006 08 21 | 644 | 0.5− | 0.6+ |
| 1998 05 24 | 704 | (5.9− | 2.7−) | 2004 12 20 | G96 | 0.3+ | 0.0 | 2006 08 21 | 644 | 0.1− | 0.4+ |
| 2000 12 30 | 691 | 0.0 | 0.2+ | 2004 12 20 | G96 | 0.8− | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.3− |
| 2000 12 30 | 691 | 0.5− | 0.0 | 2004 12 20 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.2− | 0.8+ |
| 2000 12 30 | 691 | 0.4− | 0.1+ | 2005 02 01 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.8+ |
| 2002 06 04 | 644 | 0.5+ | 1.6+ | 2005 02 01 | 691 | 0.9+ | 1.1+ | 2006 08 28 | 703 | 0.9+ | 0.7+ |
| 2002 06 04 | 644 | 0.3+ | 1.0+ | 2005 02 01 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | (0.5− | 2.4+) |
| 2002 06 04 | 644 | 0.6+ | 1.4+ | 2005 02 09 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 1.0− | 0.4+ |
| 2002 06 06 | 704 | 0.3+ | 0.3+ | 2005 02 09 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.7+ |
| 2002 06 06 | 704 | 0.5+ | 0.6+ | 2005 02 09 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2002 06 06 | 704 | 0.4+ | 0.1− | 2005 02 09 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.5− | 0.5+ |
| 2002 06 06 | 704 | 0.5+ | 0.5+ | 2005 02 09 | 691 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.8+ | 1.2+ |
| 2002 06 06 | 704 | 0.1− | 0.3− | 2005 02 09 | 691 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 1.4− |
| 2002 06 08 | 704 | 0.0 | 0.7+ | 2005 03 14 | G96 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.5− | 0.7− |
| 2002 06 08 | 704 | 0.1+ | 0.9+ | 2005 03 14 | G96 | 0.5− | 0.1− | 2006 11 23 | G96 | 0.5− | 0.1− |
| 2002 06 08 | 704 | 0.4− | 0.8+ | 2005 03 14 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2002 06 08 | 704 | 0.0 | 0.3+ | 2005 03 14 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2002 06 09 | 704 | 0.1− | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.5− | 0.3− |
| 2002 06 09 | 704 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3+ | | | | |
| 2002 06 09 | 704 | 0.3− | 0.6− | 2006 08 16 | 644 | 0.2− | 0.3+ | | | | |

**(141722)∗ 2002 LS$_{20}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 91.87530 | | (2000.0) | | +0.21718229 | +0.97253385 |
| *n* | 0.29070957 | *ω* | 208.49993 | | −0.87825238 | +0.23211997 |
| *a* | 2.2568178 | Ω | 74.14592 | | −0.42603358 | +0.01726910 |
| *e* | 0.1670705 | *i* | 4.99306 | | | |
| *P* | 3.39 | *H* | 16.4 | *G* 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 704 | 1.2− | 1.1+ | 2005 04 09 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 1.4+ | 0.7+ |
| 2002 06 06 | 704 | 0.7− | 0.4+ | 2005 04 09 | 704 | 0.3− | 0.4+ | 2006 09 30 | 703 | (0.1− | 2.0+) |
| 2002 06 06 | 704 | (0.3− | 2.0+) | 2005 04 13 | 704 | 1.3+ | 1.2+ | 2006 09 30 | 703 | 0.0 | 1.0+ |
| 2002 06 06 | 704 | 0.1− | 0.6+ | 2005 04 13 | 704 | (1.6+ | 1.5+) | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 2002 06 08 | 704 | 0.8+ | 0.9+ | 2005 04 13 | 704 | 0.7+ | 1.3+ | 2006 10 03 | G96 | 0.1− | 0.4+ |
| 2002 06 08 | 704 | 0.7+ | 0.1+ | 2005 04 13 | 704 | 1.2+ | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.4+ |
| 2002 06 08 | 704 | 0.8+ | 0.4+ | 2005 04 15 | 699 | 0.3+ | 0.6− | 2006 10 03 | G96 | 0.2+ | 0.3+ |
| 2002 06 08 | 704 | 1.2+ | 0.2+ | 2005 04 15 | 699 | 0.6+ | 0.7+ | 2006 10 03 | G96 | 0.4+ | 0.3+ |
| 2002 06 12 | 644 | 0.0 | 0.4+ | 2005 04 15 | 699 | 0.7+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.8+ |
| 2002 06 12 | 644 | 0.1+ | 0.4+ | 2005 04 15 | 699 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.9+ |
| 2002 06 12 | 644 | 0.1− | 0.5+ | 2005 04 18 | 703 | 0.9− | 1.0− | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2002 07 01 | 644 | 0.4− | 0.2− | 2005 04 18 | 703 | 0.9− | 0.7− | 2006 10 16 | 703 | (0.6+ | 1.6+) |
| 2002 07 01 | 644 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.3− | 0.7− | 2006 10 18 | 691 | 0.3+ | 0.4+ |
| 2002 07 01 | 644 | 0.2− | 0.1− | 2005 04 18 | 703 | 0.5− | 0.8− | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2002 07 05 | 704 | 0.5− | 0.0 | 2005 05 03 | 704 | 0.8+ | 0.2− | 2006 10 18 | 691 | 0.9− | 0.9+ |
| 2002 07 05 | 704 | 0.8− | 0.3− | 2005 05 03 | 704 | 1.0+ | 1.1+ | 2006 11 02 | 703 | 0.8− | 0.2+ |
| 2002 07 05 | 704 | 0.4− | 0.0 | 2005 05 03 | 704 | 1.2+ | 0.8+ | 2006 11 02 | 703 | 0.6− | 0.1− |
| 2002 07 05 | 704 | 0.1+ | 0.1− | 2005 05 03 | 704 | 0.1− | 1.4+ | 2006 11 02 | 703 | 0.4− | 0.7+ |
| 2002 07 05 | 704 | 0.2− | 0.5+ | 2005 05 04 | 691 | 0.1− | 0.3+ | 2006 11 02 | 703 | 1.0+ | 1.5+ |
| 2002 07 12 | 644 | 0.1− | 0.3+ | 2005 05 04 | 691 | 0.3− | 0.2+ | 2006 11 02 | 703 | (1.9− | 0.4−) |
| 2002 07 12 | 644 | 0.0 | 0.3+ | 2005 05 04 | 691 | 0.1− | 0.4+ | 2006 11 02 | 703 | 1.3− | 0.8− |
| 2002 07 12 | 644 | 0.2− | 0.0 | 2005 05 06 | 704 | 1.5+ | 1.3+ | 2006 11 02 | 703 | 0.5− | 0.4− |
| 2002 07 15 | 644 | 0.3+ | 0.5− | 2005 05 06 | 704 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.3− | 0.3− |
| 2002 07 15 | 644 | 0.0 | 0.6− | 2005 05 06 | 704 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.3− | 0.5+ |
| 2002 07 15 | 644 | 0.3+ | 0.7− | 2005 05 06 | 704 | 0.1− | 1.4+ | 2006 11 08 | 644 | 0.3− | 0.4+ |
| 2002 08 13 | 704 | 0.1− | 0.7+ | 2005 05 06 | 704 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2002 08 13 | 704 | 0.0 | 0.0 | 2005 05 07 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.7+ |
| 2002 08 13 | 704 | 0.2+ | 0.8+ | 2005 05 07 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.5− | 0.6+ |
| 2003 11 21 | 695 | 0.0 | 0.1+ | 2005 05 07 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2003 11 21 | 695 | 0.0 | 0.1+ | 2005 05 08 | 703 | 0.3− | 0.5− | 2006 11 10 | 644 | 0.4− | 0.2+ |
| 2004 01 13 | 691 | 0.0 | 0.0 | 2005 05 08 | 703 | 0.4+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.5+ |
| 2004 01 13 | 691 | 0.3+ | 0.0 | 2005 05 08 | 703 | 0.1− | 0.5− | 2006 11 10 | 644 | 0.3− | 0.6+ |
| 2004 01 13 | 691 | 0.1− | 0.1− | 2005 05 08 | 703 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.3+ |
| 2005 04 01 | 699 | 0.3− | 0.4+ | 2005 05 11 | 699 | 1.2+ | 0.0 | 2006 11 11 | 703 | 0.1− | 1.1+ |
| 2005 04 01 | 699 | 0.7+ | 0.7+ | 2005 05 11 | 699 | 0.2+ | 0.6− | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 2005 04 01 | 699 | 0.8+ | 0.7− | 2005 05 11 | 699 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.8+ |
| 2005 04 01 | 699 | 0.2− | 0.5+ | 2005 05 11 | 699 | (0.3− | 2.3+) | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2005 04 05 | 704 | (0.6− | 2.0+) | 2005 05 13 | 703 | 0.7− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 04 05 | 704 | 0.6− | 0.4+ | 2005 05 13 | 703 | 0.8− | 1.0+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2005 04 05 | 704 | 0.5− | 1.0+ | 2005 05 13 | 703 | 1.3− | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2005 04 05 | 704 | 0.7− | 0.0 | 2005 05 13 | 703 | 0.4− | 0.9− | 2006 11 17 | 703 | 0.7− | 0.5+ |
| 2005 04 09 | 704 | 0.5+ | 0.2− | 2005 05 15 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2005 04 09 | 704 | 0.9+ | 1.0+ | 2005 05 15 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.0 | 0.7− |
| 2005 04 09 | 704 | 1.3+ | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.3− |

**(141723)∗ 2002 LB$_{21}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 104.36339 | | (2000.0) | | +0.19350504 | +0.97468857 |
| *n* | 0.29900588 | *ω* | 13.09110 | | −0.90993353 | +0.13562114 |
| *a* | 2.2148768 | Ω | 268.14955 | | −0.36684707 | +0.17773324 |
| *e* | 0.1867329 | *i* | 6.43244 | | | |
| *P* | 3.30 | *H* | 16.7 | *G* 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 1.3+ | 0.7+ | 2002 06 11 | 704 | 0.0 | 0.7− | 2005 04 15 | 703 | (0.2+ | 2.1+) |
| 1999 09 08 | 704 | 0.0 | 0.3− | 2002 06 11 | 704 | 0.1+ | 0.4+ | 2005 05 08 | E12 | 0.1+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.4+ | 0.1− | 2002 06 11 | 704 | 0.3+ | 0.3+ | 2005 05 08 | E12 | 0.2+ | 0.1+ |
| 1999 10 10 | 704 | 0.4− | 0.1+ | 2002 07 05 | 704 | 0.7+ | 0.1+ | 2005 05 08 | E12 | 0.7+ | 0.1+ |
| 1999 10 10 | 704 | 0.7+ | 1.1+ | 2002 07 05 | 704 | 0.2+ | 0.3+ | 2005 05 08 | E12 | 0.4+ | 0.1+ |
| 1999 10 10 | 704 | 0.3− | 0.0 | 2002 07 05 | 704 | 0.1− | 0.7+ | 2005 05 09 | 703 | 1.2− | 0.1+ |
| 1999 10 10 | 704 | 0.0 | 0.6+ | 2002 07 05 | 704 | 0.1− | 0.1− | 2005 05 09 | 703 | 0.9+ | 0.3+ |
| 1999 10 10 | 704 | 0.0 | 0.3+ | 2003 11 21 | 695 | 0.1− | 0.2+ | 2005 05 09 | 703 | 0.9− | 1.1− |
| 2002 06 06 | 704 | 1.0− | 0.9− | 2003 11 21 | 695 | 0.1− | 0.2+ | 2005 05 09 | 703 | 0.2+ | 0.3− |
| 2002 06 06 | 704 | 1.1− | 0.5− | 2003 12 17 | 291 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2002 06 06 | 704 | 1.2− | 0.2+ | 2003 12 17 | 291 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 06 06 | 704 | 1.0− | 0.4− | 2003 12 17 | 291 | 0.3− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 06 08 | 704 | 0.3− | 0.7+ | 2005 04 15 | 703 | 0.4+ | 1.3+ | 2006 11 25 | 691 | 0.1+ | 0.4− |
| 2002 06 08 | 704 | (0.5+ | 1.6+) | 2005 04 15 | 703 | 1.5+ | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2002 06 08 | 704 | 0.1− | 1.4+ | 2005 04 15 | 703 | 0.4+ | 1.3+ | 2006 11 25 | 691 | 0.4+ | 0.1+ |

**(141724)∗ 2002 LG$_{21}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.51237 | | (2000.0) | | | |
| $n$ | 0.27716911 | $\omega$ | 184.54108 | | +0.28478418 | +0.94988564 |
| $a$ | 2.3297331 | $\Omega$ | 102.04525 | | −0.87528763 | +0.31250231 |
| $e$ | 0.2074830 | $i$ | 7.57374 | | −0.39085744 | −0.00771893 |
| $P$ | 3.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.3− | 1.4+ | 2002 06 18 | 704 | 0.3+ | 0.4− | 2005 04 11 | 699 | 0.7− | 0.4− |
| 1998 03 25 | 704 | 0.3+ | 0.3+ | 2002 06 18 | 704 | 0.4+ | 0.3− | 2005 04 11 | 699 | 1.4+ | 0.4+ |
| 1998 03 25 | 704 | (3.4− | 0.0 ) | 2002 06 18 | 704 | 0.1− | 0.3− | 2005 04 11 | 699 | 1.3+ | 0.5+ |
| 1998 03 25 | 704 | 0.1+ | 0.6− | 2002 07 05 | 704 | 0.2− | 1.1+ | 2005 04 11 | 699 | 0.8+ | 0.2+ |
| 1998 03 25 | 704 | 0.8+ | 0.2+ | 2002 07 05 | 704 | 0.2− | 0.6+ | 2006 09 26 | 703 | 1.1− | 0.2+ |
| 1998 04 24 | 704 | (2.1− | 2.2−) | 2002 07 05 | 704 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.1+ | 1.2− |
| 1998 04 24 | 704 | 0.9+ | 1.6+ | 2002 07 05 | 704 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.2+ | 0.1− |
| 1998 04 24 | 704 | (0.4− | 2.3+) | 2002 07 05 | 704 | 1.0− | 1.0+ | 2006 09 26 | 703 | 0.3− | 0.2− |
| 1998 04 24 | 704 | (2.8− | 0.3−) | 2002 07 14 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.7+ |
| 2002 06 06 | 704 | 0.6+ | 0.1+ | 2002 07 14 | 644 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2002 06 06 | 704 | 0.5+ | 0.4− | 2002 07 14 | 644 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2002 06 06 | 704 | 0.0 | 0.8− | 2005 03 10 | 699 | 0.4− | 0.0 | 2006 10 17 | 703 | 1.1+ | 0.4+ |
| 2002 06 06 | 704 | (1.5+ | 0.3+) | 2005 03 10 | 699 | 0.2+ | 0.5− | 2006 10 17 | 703 | 0.6+ | 1.0+ |
| 2002 06 08 | 704 | 0.9− | 0.4+ | 2005 03 10 | 699 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2002 06 08 | 704 | 0.4+ | 0.0 | 2005 03 10 | 699 | 0.6− | 0.7+ | 2006 10 17 | 703 | 1.3− | 1.1+ |
| 2002 06 08 | 704 | 0.2− | 0.1− | 2005 03 16 | 703 | 0.5+ | 0.1+ | 2006 10 22 | 703 | (0.7− | 1.6+) |
| 2002 06 08 | 704 | 0.8+ | 0.2− | 2005 03 16 | 703 | 0.5− | 0.2+ | 2006 10 22 | 703 | (0.6+ | 1.7+) |
| 2002 06 11 | 704 | 0.0 | 0.1+ | 2005 03 16 | 703 | 0.2− | 0.9+ | 2006 10 22 | 703 | (1.5+ | 2.3+) |
| 2002 06 11 | 704 | 0.0 | 0.1+ | 2005 03 16 | 703 | 0.6+ | 1.4+ | 2006 10 22 | 703 | 0.3+ | 1.1+ |
| 2002 06 11 | 704 | 0.1+ | 0.0 | 2005 03 30 | 703 | 0.1+ | 0.5− | 2006 10 28 | 703 | 0.9− | 0.1+ |
| 2002 06 11 | 704 | 0.5+ | 0.4− | 2005 03 30 | 703 | 0.1+ | 1.2+ | 2006 10 28 | 703 | 1.2− | 0.9+ |
| 2002 06 18 | 704 | 0.1− | 0.0 | 2005 03 30 | 703 | 0.6− | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.5+ |
| 2002 06 18 | 704 | 0.0 | 0.0 | 2005 03 30 | 703 | 0.1− | 0.6− | 2006 10 28 | 703 | 0.2+ | 0.8+ |

**(141725)∗ 2002 LU$_{21}$**

Discovered 2002 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.06202 | | (2000.0) | | | |
| $n$ | 0.29019789 | $\omega$ | 196.88108 | | −0.24326772 | +0.96014859 |
| $a$ | 2.2594698 | $\Omega$ | 59.22959 | | −0.87039769 | −0.15348177 |
| $e$ | 0.1515295 | $i$ | 9.21571 | | −0.42805219 | −0.23357661 |
| $P$ | 3.40 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.8+ | 0.4− | 2002 06 12 | 644 | 0.2+ | 0.2− | 2005 03 09 | 703 | 1.0+ | 0.3− |
| 2002 05 09 | 704 | 0.0 | 0.1− | 2002 06 12 | 644 | 0.3+ | 0.1+ | 2005 03 09 | 703 | 0.2+ | 0.2+ |
| 2002 05 09 | 704 | 0.4+ | 0.2+ | 2002 06 17 | 644 | 0.0 | 0.2− | 2005 03 16 | 703 | 1.0+ | 0.6+ |
| 2002 05 09 | 704 | 0.7+ | 0.4+ | 2002 06 17 | 704 | 0.5− | 0.7+ | 2005 03 16 | 703 | 0.4− | 0.6+ |
| 2002 05 09 | 704 | 0.2− | 0.8− | 2002 06 17 | 644 | 0.1+ | 0.1− | 2005 03 16 | 703 | 0.5− | 0.3− |
| 2002 05 21 | 704 | 0.2+ | 0.0 | 2002 06 17 | 704 | 0.2+ | 0.7+ | 2005 03 16 | 703 | 0.7+ | 1.0+ |
| 2002 05 21 | 704 | 0.1− | 0.0 | 2002 06 17 | 644 | 0.1+ | 0.0 | 2005 04 09 | 703 | 0.2− | 0.3+ |
| 2002 05 21 | 704 | 0.7+ | 0.4− | 2002 06 17 | 704 | 1.7+ | 0.4+ | 2005 04 09 | 703 | 0.5+ | 0.5+ |
| 2002 05 21 | 704 | 0.7+ | 0.8+ | 2003 10 20 | 691 | 0.1+ | 0.2+ | 2005 04 09 | 703 | 0.2− | 0.6+ |
| 2002 05 21 | 704 | 0.3+ | 0.0 | 2003 10 20 | 691 | 0.1− | 0.1+ | 2005 04 09 | 703 | 0.5+ | 2.0+ |
| 2002 06 08 | 704 | 0.2− | 0.3+ | 2003 10 20 | 691 | 0.2− | 0.2+ | 2006 08 29 | D35 | 0.1− | 0.3+ |
| 2002 06 08 | 704 | 0.5− | 0.4+ | 2003 11 16 | 691 | 0.0 | 0.1+ | 2006 08 29 | D35 | 0.3− | 0.4+ |
| 2002 06 08 | 704 | 0.0 | 0.6+ | 2003 11 16 | 691 | 0.2+ | 0.1− | 2006 08 29 | D35 | 0.4− | 0.4+ |
| 2002 06 08 | 704 | 0.2− | 1.2+ | 2003 11 16 | 691 | 0.1+ | 0.6− | 2006 09 19 | 703 | 0.7+ | 0.5− |
| 2002 06 08 | 704 | 0.2− | 0.8+ | 2003 11 23 | 291 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.7+ |
| 2002 06 09 | 704 | 1.0− | 0.3− | 2003 11 23 | 291 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 2002 06 09 | 704 | 1.1− | 0.2+ | 2003 11 23 | 291 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.7+ | 1.4+ |
| 2002 06 09 | 704 | 1.0− | 0.0 | 2003 11 30 | 691 | 0.1− | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.1+ |
| 2002 06 10 | 704 | 0.1− | 0.2− | 2003 11 30 | 691 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.6− | 0.0 |
| 2002 06 10 | 704 | 0.1− | 0.2− | 2003 11 30 | 691 | 0.2− | 0.4+ | 2006 09 25 | 703 | 1.6− | 1.7+ |
| 2002 06 10 | 704 | 0.4+ | 0.8+ | 2005 03 09 | 703 | 0.5+ | 0.5+ | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 2002 06 12 | 644 | 0.1+ | 0.3− | 2005 03 09 | 703 | 0.4− | 0.8+ | | | | |

**(141726)∗ 2002 LA$_{22}$ = 1994 CL$_7$**

Discovered 2002 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 31780)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.95760 | | (2000.0) | | | |
| $n$ | 0.27050279 | $\omega$ | 264.07823 | | +0.45231223 | +0.89173317 |
| $a$ | 2.3678538 | $\Omega$ | 32.82720 | | −0.80691250 | +0.41634583 |
| $e$ | 0.1867631 | $i$ | 1.58764 | | −0.37987612 | +0.17739248 |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 15 | 691 | 0.2− | 0.1+ | 2002 06 12 | 644 | 0.4− | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.4− |
| 1994 02 15 | 691 | 0.4− | 0.0 | 2003 12 14 | 691 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.8− |
| 1994 02 15 | 691 | 0.0 | 0.2− | 2003 12 14 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.5− |
| 1994 02 16 | 691 | 0.9+ | 0.7− | 2003 12 14 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.7− |
| 1994 02 16 | 691 | 0.2+ | 0.4− | 2005 03 10 | G96 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.6− |
| 1994 02 16 | 691 | 0.2− | 1.1− | 2005 03 10 | G96 | 0.5− | 0.3+ | 2006 08 28 | 699 | 0.6+ | 0.2+ |
| 1994 02 19 | 691 | 0.4− | 0.4− | 2005 03 10 | G96 | 0.2− | 0.8+ | 2006 08 28 | 699 | (1.9+ | 0.0 ) |
| 1994 02 19 | 691 | 0.2+ | 0.2+ | 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 08 28 | 699 | 0.1− | 1.0+ |
| 1994 02 19 | 691 | 0.4+ | 0.5− | 2005 04 04 | G96 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.4− | 1.0− |
| 1999 10 10 | 704 | 0.1+ | 0.7− | 2005 04 04 | G96 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.3+ |
| 1999 10 10 | 704 | 1.1− | 1.4− | 2005 04 04 | G96 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.2− | 1.0+ |
| 1999 10 10 | 704 | 0.8− | 0.8+ | 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.9+ | 0.7+ |
| 1999 10 10 | 704 | 0.2+ | 0.1− | 2006 08 18 | 699 | 0.0 | 1.5+ | 2006 09 16 | 704 | 0.8+ | 0.5+ |
| 1999 11 09 | 704 | 0.0 | 0.0 | 2006 08 18 | 699 | 0.2− | 0.5− | 2006 09 16 | 704 | 0.2+ | 0.3− |
| 1999 11 09 | 704 | 1.2− | 0.5+ | 2006 08 18 | 699 | 0.8+ | 0.6+ | 2006 09 16 | 704 | 0.3− | 0.9− |
| 1999 11 09 | 704 | 0.8− | 0.9+ | 2006 08 23 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.1+ | 0.6− |
| 1999 11 09 | 704 | 0.7− | 0.4+ | 2006 08 23 | 704 | 0.0 | 1.1− | 2006 09 16 | 704 | 0.4− | 0.3− |
| 2002 06 08 | 704 | 0.5− | 0.2+ | 2006 08 23 | 704 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2002 06 08 | 704 | 0.5+ | 0.2+ | 2006 08 23 | 704 | 0.9+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2002 06 08 | 704 | 0.7− | 0.7+ | 2006 08 24 | 644 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.4− | 0.5− |
| 2002 06 08 | 704 | 0.2− | 0.5+ | 2006 08 24 | 644 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2002 06 08 | 704 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.2+ | 0.4− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2002 06 09 | 704 | 0.0 | 0.5+ | 2006 08 28 | 704 | 0.4+ | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.9− |
| 2002 06 09 | 704 | 0.2− | 0.2− | 2006 08 28 | 704 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2002 06 09 | 704 | 0.4+ | 0.6− | 2006 08 28 | 704 | 0.4+ | 0.5− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 06 12 | 644 | 0.5− | 0.7+ | 2006 08 28 | 704 | 0.0 | 0.3+ | | | | |
| 2002 06 12 | 644 | 0.5− | 0.7+ | 2006 08 28 | 704 | 0.8+ | 0.2− | | | | |

**(141727)∗ 2002 LQ$_{22}$ = 2005 EE$_{123}$**

Discovered 2002 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 89296)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.17777 | | (2000.0) | | | |
| $n$ | 0.27809752 | $\omega$ | 58.29508 | | +0.75713661 | +0.64698308 |
| $a$ | 2.3245451 | $\Omega$ | 261.22689 | | −0.62601749 | +0.67909086 |
| $e$ | 0.2527917 | $i$ | 5.24332 | | −0.18667151 | +0.34676864 |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.2+ | 0.4− | 2005 03 10 | 691 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.0 |
| 1999 10 12 | 704 | 0.1− | 0.6− | 2005 03 10 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.5+ | 0.0 |
| 1999 10 12 | 704 | 0.4− | 0.4− | 2005 03 11 | 691 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.3+ |
| 1999 10 12 | 704 | 0.2− | 0.6− | 2005 03 11 | 691 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.8+ |
| 1999 10 12 | 704 | 0.1− | 0.6+ | 2005 03 11 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 1999 10 22 | 704 | 1.0+ | 0.2− | 2006 08 06 | 699 | 0.6− | 1.3− | 2006 09 30 | 703 | 0.3+ | 1.0+ |
| 1999 10 22 | 704 | 0.7+ | 1.8+ | 2006 08 06 | 699 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 10 22 | 704 | 0.5− | 0.9+ | 2006 08 06 | 699 | 1.2− | 0.8− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 1999 11 03 | 704 | 0.2− | 0.3− | 2006 08 06 | 699 | 0.3− | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1999 11 03 | 704 | 0.2+ | 1.2− | 2006 08 30 | 699 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 1999 11 03 | 704 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 1999 11 03 | 704 | 0.5− | 0.9− | 2006 08 30 | 699 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2002 06 08 | 704 | 0.2− | 1.0+ | 2006 08 30 | 699 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2002 06 08 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | 1.1+ | 0.1− | 2006 11 14 | 703 | 0.0 | 1.0+ |
| 2002 06 08 | 704 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 11 14 | 703 | 0.7− | 1.1+ |
| 2002 06 08 | 704 | 0.9− | 0.0 | 2006 09 16 | 703 | 0.2− | 0.2− | 2006 11 14 | 703 | 1.0− | 0.2+ |
| 2002 06 09 | 704 | 0.7+ | 0.9+ | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.1− | 1.0+ |
| 2002 06 09 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.6+ | 2006 11 19 | 704 | (0.9+ | 1.9+) |
| 2002 06 09 | 704 | 1.0+ | 0.4− | 2006 09 17 | 703 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 2002 06 09 | 704 | 0.8+ | 0.6+ | 2006 09 17 | 703 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2002 06 12 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.7− | 1.1+ |
| 2002 06 12 | 704 | 0.0 | 1.4+ | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.8+ | 1.5+ |
| 2002 06 12 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 11 22 | 704 | (1.8− | 0.1−) |
| 2005 03 08 | 691 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.8+ | 0.1− | 2006 11 22 | 704 | 0.5− | 0.4+ |
| 2005 03 08 | 691 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.7+ | 0.3− | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2005 03 08 | 691 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.0 | 0.9+ | 2006 11 25 | G96 | 0.0 | 0.6− |
| 2005 03 10 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.2− | 1.2+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2005 03 10 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2005 03 10 | 691 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.9+ | | | | |
| 2005 03 10 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.1− | | | | |

**(141728)∗ 2002 LK$_{23}$ = 1999 TQ$_{240}$**

Discovered 2002 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69377)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.87496 | | (2000.0) | | | |
| $n$ | 0.28141769 | $\omega$ | 220.48819 | | +0.57451731 | +0.80644941 |
| $a$ | 2.3062256 | $\Omega$ | 85.02752 | | −0.71001238 | +0.57606868 |
| $e$ | 0.1447816 | $i$ | 8.07206 | | −0.40720054 | +0.13335751 |
| $P$ | 3.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | (2.1− | 0.8−) | 2005 04 03 | H06 | (0.5+ | 1.6−) | 2006 09 29 | 699 | 0.7+ | 0.7+ |
| 1999 10 04 | 703 | 0.5− | 0.7+ | 2005 04 03 | H06 | 0.0 | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.6+ |
| 1999 10 04 | 703 | 0.0 | 1.1+ | 2005 04 05 | 699 | 1.0+ | 1.1+ | 2006 10 01 | 704 | 0.9− | 0.1+ |
| 1999 10 04 | 703 | 0.9− | 0.0 | 2005 04 05 | 699 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.8+ |
| 1999 10 09 | 704 | 0.6− | 0.2− | 2005 04 05 | 699 | 0.0 | 1.1+ | 2006 10 01 | 704 | 0.4+ | 0.4+ |
| 1999 10 09 | 704 | 0.4+ | 0.1− | 2005 04 05 | 699 | 0.9+ | 1.0− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 1999 10 09 | 704 | 0.2− | 0.5+ | 2005 04 08 | 704 | 0.6− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 1.6+ | 0.9− | 2005 04 08 | 704 | 0.7+ | 0.8+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2002 06 08 | 704 | 0.2+ | 0.5+ | 2005 04 08 | 704 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 06 08 | 704 | 0.2+ | 0.6+ | 2005 04 15 | 699 | 1.2− | 0.5− | 2006 10 17 | 703 | 0.6− | 0.6+ |
| 2002 06 08 | 704 | 0.0 | 1.1+ | 2005 04 15 | 699 | 1.2+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2002 06 08 | 704 | 0.3− | 0.4+ | 2005 04 15 | 699 | 0.6− | 0.2− | 2006 10 17 | 703 | 1.1− | 0.3− |
| 2002 06 09 | 704 | 0.8− | 0.5+ | 2005 04 15 | 699 | 1.1+ | 1.5+ | 2006 10 22 | 703 | (1.8+ | 0.7+) |
| 2002 06 09 | 704 | 0.9− | 0.5+ | 2005 05 08 | 703 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.8+ |
| 2002 06 09 | 704 | 0.0 | 0.2+ | 2005 05 08 | 703 | 0.4− | 0.6+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2002 06 09 | 704 | 1.0− | 0.4− | 2005 05 08 | 703 | 1.0− | 1.4+ | 2006 10 22 | 703 | 0.6+ | 0.4+ |
| 2002 06 09 | 704 | 1.0− | 1.1− | 2005 05 08 | 703 | 0.1− | 0.3− | 2006 10 28 | 703 | 0.6− | 0.1− |
| 2002 06 12 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | (2.0+ | 0.1−) | 2006 10 28 | 703 | 0.8− | 0.1+ |
| 2002 06 12 | 644 | 0.1− | 0.1− | 2006 09 16 | 699 | 0.6− | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.1− |
| 2002 06 12 | 644 | 0.3− | 0.1+ | 2006 09 16 | 699 | 1.3+ | 0.7− | 2006 10 28 | 703 | 0.8− | 0.4− |
| 2002 07 05 | 704 | 0.7− | 0.7− | 2006 09 16 | 699 | 0.0 | 1.1+ | 2006 11 10 | 704 | 0.6+ | 1.0+ |
| 2002 07 05 | 704 | 1.1+ | 0.6− | 2006 09 26 | 703 | 0.0 | 1.0− | 2006 11 10 | 704 | 0.4− | 0.4+ |
| 2002 07 05 | 704 | 1.3+ | 0.4+ | 2006 09 26 | 703 | 1.1− | 0.2+ | 2006 11 10 | 704 | 0.5+ | 0.1+ |
| 2002 07 05 | 704 | 1.2+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.1− | 2006 11 16 | 703 | 1.0+ | 0.4+ |
| 2002 07 05 | 704 | (1.7+ | 0.5−) | 2006 09 26 | 703 | 0.6− | 0.6− | 2006 11 16 | 703 | 1.2− | 1.2+ |
| 2005 03 18 | 704 | 1.3+ | 0.0 | 2006 09 29 | 699 | (0.0 | 1.9+) | 2006 11 16 | 703 | 0.8− | 0.6+ |
| 2005 03 18 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 1.3+ | 0.5+ | 2006 11 16 | 703 | 0.7+ | 0.2+ |
| 2005 03 18 | 704 | 1.2+ | 1.0+ | 2006 09 29 | 699 | 0.0 | 0.3− | | | | |

**(141729)∗ 2002 LN$_{23}$**

Discovered 2002 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.42844 | | (2000.0) | | | |
| $n$ | 0.27832911 | $\omega$ | 37.14488 | | +0.62753391 | +0.62424026 |
| $a$ | 2.3232554 | $\Omega$ | 277.08131 | | −0.77805905 | +0.48073613 |
| $e$ | 0.1892182 | $i$ | 27.96288 | | −0.02872795 | +0.61580587 |
| $P$ | 3.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 704 | 0.7+ | 0.3− | 2002 07 09 | 704 | 0.8+ | 0.6+ | 2003 12 21 | 704 | 0.6− | 0.1− |
| 1999 10 30 | 704 | 0.4+ | 0.4− | 2002 07 09 | 704 | 0.1− | 0.6+ | 2003 12 21 | 704 | 0.3− | 1.2− |
| 1999 10 30 | 704 | 0.7− | 0.6− | 2002 07 09 | 704 | 0.4+ | 0.3+ | 2003 12 21 | 704 | 0.9− | 0.2− |
| 1999 10 30 | 704 | 0.4− | 0.1− | 2002 07 18 | 704 | 0.6+ | 0.2+ | 2003 12 21 | 704 | 0.2+ | 0.6− |
| 1999 12 13 | 704 | 0.2+ | 0.3− | 2002 07 18 | 704 | 1.2+ | 0.4− | 2005 04 15 | E12 | 0.7+ | 0.5+ |
| 1999 12 13 | 704 | 0.5− | 0.2− | 2002 07 18 | 704 | 0.4+ | 0.5− | 2005 04 15 | E12 | 1.0− | 0.8+ |
| 1999 12 13 | 704 | 0.1+ | 0.1− | 2002 07 18 | 704 | 0.3+ | 0.8− | 2005 04 15 | E12 | 0.7+ | 1.0− |
| 1999 12 13 | 704 | 0.1− | 0.3− | 2002 07 18 | 704 | 0.5+ | 0.4+ | 2005 04 15 | E12 | 0.9+ | 0.0 |
| 1999 12 13 | 704 | 0.9− | 0.3+ | 2002 08 12 | 704 | 0.6+ | 0.0 | 2006 09 06 | A74 | 0.3− | 0.3− |
| 2000 01 02 | 704 | 0.4+ | 0.1+ | 2002 08 12 | 704 | 0.7+ | 0.1+ | 2006 09 06 | A74 | 0.2− | 0.1+ |
| 2000 01 02 | 704 | 0.5+ | 0.6− | 2002 08 12 | 704 | 0.4+ | 0.1+ | 2006 09 06 | A74 | 0.0 | 0.0 |
| 2000 01 02 | 704 | 0.5+ | 0.7− | 2002 09 30 | 704 | 0.0 | 0.4+ | 2006 09 06 | A74 | 0.1− | 0.1+ |
| 2000 01 02 | 704 | 0.3− | 0.7+ | 2002 09 30 | 704 | 0.0 | 0.3+ | 2006 09 06 | A74 | 0.0 | 0.4+ |
| 2000 01 02 | 704 | 0.1+ | 0.3+ | 2002 09 30 | 704 | 0.2− | 0.0 | 2006 09 06 | A74 | 0.0 | 0.1+ |
| 2002 06 08 | 704 | 0.3− | 0.7− | 2002 10 31 | 704 | 1.1− | 1.1+ | 2006 09 06 | A74 | 0.1− | 0.1+ |
| 2002 06 08 | 704 | 0.2− | 0.1− | 2002 10 31 | 704 | 0.5+ | 0.8+ | 2006 09 06 | A74 | 0.3− | 0.1+ |
| 2002 06 08 | 704 | 0.7− | 0.1− | 2002 10 31 | 704 | 0.5− | 1.1+ | 2006 09 07 | A74 | 0.7− | 0.2− |
| 2002 06 08 | 704 | 0.4− | 0.1+ | 2002 10 31 | 704 | 0.2+ | 0.9+ | 2006 09 07 | A74 | 0.1− | 0.1− |
| 2002 06 09 | 704 | 0.2+ | 0.1− | 2003 11 20 | 704 | 0.7− | 0.9+ | 2006 09 07 | A74 | 0.1+ | 0.2− |
| 2002 06 09 | 704 | 0.3− | 0.7− | 2003 11 20 | 704 | (0.4+ | 1.8+) | 2006 09 07 | A74 | 0.0 | 0.0 |
| 2002 06 09 | 704 | 0.5− | 0.6− | 2003 11 20 | 704 | 0.2+ | 0.5+ | 2006 09 07 | A74 | 0.5+ | 0.4+ |
| 2002 06 09 | 704 | 0.1+ | 0.5− | 2003 11 20 | 704 | 0.1+ | 0.4+ | 2006 09 07 | A74 | 0.0 | 0.8+ |
| 2002 06 09 | 704 | 1.1− | 0.4− | 2003 11 20 | 704 | 0.3+ | 0.1+ | 2006 09 07 | A74 | 0.2− | 0.9− |
| 2002 06 11 | 704 | 0.0 | 0.1+ | 2003 11 24 | 704 | (1.8+ | 0.9+) | 2006 09 09 | A74 | (3.9− | 2.1−) |
| 2002 06 11 | 704 | 0.1− | 0.0 | 2003 11 24 | 704 | 1.0+ | 1.1+ | 2006 09 09 | A74 | 0.5+ | 0.4+ |
| 2002 06 11 | 704 | 0.3− | 0.4+ | 2003 11 24 | 704 | 0.9+ | 0.1− | 2006 09 09 | A74 | 0.4− | 0.5− |
| 2002 06 11 | 644 | 0.4− | 0.0 | 2003 11 24 | 704 | (1.8+ | 0.2+) | 2006 09 09 | A74 | 0.1− | 0.7− |
| 2002 06 11 | 644 | 0.5− | 0.0 | 2003 11 24 | 704 | (1.5+ | 0.3−) | 2006 09 09 | A74 | 0.3+ | 0.4− |
| 2002 06 11 | 644 | 0.2− | 0.1− | 2003 12 19 | 704 | (1.9− | 0.6+) | 2006 11 11 | 704 | 0.9+ | 0.8+ |
| 2002 06 18 | 704 | 0.5− | 0.2− | 2003 12 19 | 704 | (2.0− | 0.6+) | 2006 11 11 | 704 | 0.2+ | 0.0 |
| 2002 06 18 | 704 | 0.2− | 0.6− | 2003 12 19 | 704 | 1.4− | 0.5− | 2006 11 11 | 704 | 0.2+ | 0.2+ |
| 2002 06 18 | 704 | 0.3− | 0.6− | 2003 12 19 | 704 | (1.7− | 0.3+) | 2006 11 11 | 704 | 0.4− | 0.3+ |
| 2002 06 18 | 704 | 0.3− | 0.3− | 2003 12 20 | 460 | 0.4+ | 0.1+ | 2006 11 11 | 704 | 0.7− | 0.3+ |
| 2002 07 09 | 704 | 0.3+ | 0.4+ | 2003 12 20 | 460 | 0.3+ | 0.6− | | | | |

**(141730)∗ 2002 LY$_{23}$ = 1999 TQ$_{197}$ = 2005 ER$_{185}$**

Discovered 2002 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75366)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.53552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27215838 | $\omega$ | 17.21534 | | +0.52989700 | +0.84376647 | |
| $a$ | 2.3582413 | $\Omega$ | 284.85850 | | −0.78809633 | +0.45280672 | |
| $e$ | 0.2060475 | $i$ | 5.05993 | | −0.31323050 | +0.28813925 | |
| $P$ | 3.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 0.7− | 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 699 | 0.3− | 1.4+ |
| 1999 10 12 | 704 | 0.2− | 0.8− | 2005 04 02 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 699 | 0.6+ | 0.4+ |
| 1999 10 12 | 704 | 0.5+ | 0.2+ | 2005 04 02 | 691 | 0.1− | 0.7+ | 2006 09 27 | 699 | 0.5− | 0.1− |
| 1999 10 12 | 704 | 0.1− | 1.1− | 2006 08 29 | 699 | 0.1+ | 1.0+ | 2006 09 27 | 699 | 0.2+ | 0.3+ |
| 1999 10 12 | 704 | 0.1+ | 0.6− | 2006 08 29 | 699 | 0.4+ | 1.1+ | 2006 09 27 | 703 | 0.1− | 0.1− |
| 1999 10 13 | 704 | 0.2+ | 0.3− | 2006 08 29 | 699 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.4− |
| 1999 10 13 | 704 | 0.3+ | 0.2− | 2006 08 29 | 699 | 0.5− | 0.2− | 2006 09 27 | 703 | 0.2− | 0.3− |
| 1999 10 13 | 704 | 0.9− | 1.1− | 2006 08 29 | 699 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.1− | 0.4− |
| 1999 10 13 | 704 | 1.1+ | 1.9− | 2006 08 29 | 699 | 0.0 | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.1− |
| 2002 06 08 | 704 | 0.2− | 0.4− | 2006 08 29 | 699 | 0.1− | 0.1− | 2006 10 03 | 704 | 1.0− | 0.8+ |
| 2002 06 08 | 704 | 0.2− | 0.4− | 2006 08 29 | 699 | 0.4+ | 1.1+ | 2006 10 03 | 704 | 0.2− | 1.2+ |
| 2002 06 08 | 704 | 0.0 | 1.0− | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 03 | 704 | (2.0− | 0.3+) |
| 2002 06 09 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.1− | 2006 10 17 | 683 | 0.9− | 0.8− |
| 2002 06 09 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 644 | 0.4− | 0.2+ | 2006 10 17 | 683 | 0.3− | 0.3+ |
| 2002 06 09 | 704 | 1.0+ | 0.6+ | 2006 09 16 | 703 | 0.1+ | 1.2− | 2006 10 17 | 683 | 0.3− | 0.4− |
| 2002 06 17 | 704 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2002 06 17 | 704 | 0.7− | 0.9+ | 2006 09 16 | 703 | 1.0− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2002 06 17 | 704 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2005 03 07 | 704 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2005 03 07 | 704 | 1.2+ | 1.0+ | 2006 09 19 | 699 | 0.3+ | 0.4+ | 2006 10 19 | 683 | 0.4− | 0.3+ |
| 2005 03 07 | 704 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 10 19 | 683 | 0.3− | 0.5+ |
| 2005 03 07 | 704 | (0.0 | 1.5+) | 2006 09 19 | 699 | 0.3+ | 0.5+ | 2006 10 19 | 683 | 0.3− | 0.6+ |
| 2005 03 10 | 699 | 0.5+ | 0.5− | 2006 09 22 | 704 | 0.7+ | 0.3+ | 2006 10 20 | 683 | 0.6+ | 1.4+ |
| 2005 03 10 | 699 | 0.6+ | 0.4+ | 2006 09 22 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 683 | (0.4− | 2.1+) |
| 2005 03 10 | 699 | 0.3+ | 1.0+ | 2006 09 22 | 704 | 1.0+ | 0.2− | 2006 10 20 | 683 | 0.4− | 0.8+ |
| 2005 03 10 | 699 | 0.5+ | 0.5− | 2006 09 22 | 104 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 03 13 | 703 | 0.3+ | 0.8− | 2006 09 22 | 104 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 03 13 | 703 | 0.3+ | 0.4+ | 2006 09 22 | 104 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 03 13 | 703 | 0.5+ | 0.8− | 2006 09 22 | 104 | 0.4− | 0.7+ | 2006 11 22 | 704 | 0.7− | 1.9+ |
| 2005 03 13 | 703 | 0.3− | 0.9+ | 2006 09 23 | 104 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 1.1− | 0.3+ |
| 2005 04 02 | 691 | 0.1+ | 0.5+ | 2006 09 24 | 104 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.8+ | 2.0+ |
| 2005 04 02 | 691 | 0.1+ | 0.3+ | 2006 09 24 | 104 | 0.9− | 0.6+ | 2006 11 22 | 704 | 0.4− | 1.6+ |
| 2005 04 02 | 691 | 0.1+ | 0.5+ | 2006 09 24 | 104 | 0.2− | 0.1− | | | | |

**(141731)∗ 2002 LF$_{24}$**

Discovered 2002 June 9 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.25559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26976625 | $\omega$ | 132.95488 | | +0.87668326 | +0.48051953 | |
| $a$ | 2.3721618 | $\Omega$ | 198.36310 | | −0.45987161 | +0.82308510 | |
| $e$ | 0.2544922 | $i$ | 4.18057 | | −0.14122525 | +0.30270762 | |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 333 | 1.0− | 0.2+ | 2002 08 14 | 704 | 1.0− | 1.0+ | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2002 06 09 | 333 | 0.6− | 0.9− | 2002 08 17 | 608 | 0.5− | 1.4− | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2002 06 09 | 333 | 0.5− | 1.1+ | 2002 08 17 | 608 | (0.3− | 1.7−) | 2006 11 08 | 644 | 0.4− | 0.2+ |
| 2002 06 10 | 333 | (1.6+ | 0.1+) | 2002 08 17 | 608 | (0.6− | 1.6−) | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2002 06 10 | 333 | (2.2+ | 1.2+) | 2002 09 06 | 704 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 06 10 | 704 | (1.4− | 1.5+) | 2002 09 06 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 06 10 | 704 | (0.3− | 1.7+) | 2002 09 06 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 06 10 | 704 | (0.6+ | 3.1+) | 2002 09 06 | 704 | 0.1− | 0.3− | 2006 11 10 | 683 | 0.2− | 0.4− |
| 2002 06 10 | 704 | (0.8− | 2.6+) | 2002 09 22 | 644 | 0.0 | 0.0 | 2006 11 10 | 683 | 0.0 | 1.0+ |
| 2002 06 13 | 704 | 0.0 | 0.5+ | 2002 09 22 | 644 | 1.0+ | 0.9+ | 2006 11 10 | 683 | 0.0 | 0.9+ |
| 2002 06 13 | 704 | 0.1− | 0.7− | 2002 09 22 | 644 | 0.2+ | 0.2− | 2006 11 11 | 683 | 0.8+ | 0.7− |
| 2002 06 13 | 704 | 0.2+ | 0.7+ | 2002 09 22 | 644 | 1.1+ | 0.4+ | 2006 11 11 | 683 | 0.5+ | 0.7− |
| 2002 06 13 | 704 | (2.0+ | 2.1+) | 2002 09 22 | 644 | 0.1+ | 0.4− | 2006 11 11 | 683 | 1.0− | 0.2− |
| 2002 07 03 | 644 | 0.0 | 0.6− | 2002 09 22 | 644 | 1.0+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.6+ |
| 2002 07 03 | 644 | 0.2+ | 0.5− | 2004 02 17 | 645 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2002 07 03 | 644 | 0.1+ | 0.5− | 2004 02 17 | 645 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2002 07 07 | 333 | 0.7− | 0.1+ | 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 07 07 | 333 | 0.8− | 0.4− | 2005 03 10 | G96 | 0.1− | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2002 07 07 | 333 | 0.4− | 0.4+ | 2005 03 10 | G96 | 0.4− | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 07 09 | 704 | 0.2+ | 0.7+ | 2005 03 10 | G96 | 0.3− | 0.7+ | 2006 11 14 | 704 | 0.4+ | 0.8+ |
| 2002 07 09 | 704 | 0.2+ | 0.5− | 2005 04 02 | 691 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.0 |
| 2002 07 09 | 704 | 0.5+ | 1.1+ | 2005 04 02 | 691 | 0.4+ | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.1− |
| 2002 07 09 | 704 | 0.4− | 0.5+ | 2005 04 02 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 07 09 | 704 | 0.1− | 0.1+ | 2006 08 25 | 704 | 0.3− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 07 14 | 704 | 0.1− | 0.3− | 2006 08 25 | 704 | 1.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 07 14 | 704 | 0.5+ | 0.1+ | 2006 08 25 | 704 | 0.4− | 1.0+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 07 14 | 704 | 0.3− | 0.7+ | 2006 09 20 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.3+ | 1.4− |
| 2002 07 14 | 704 | 1.1− | 0.0 | 2006 09 20 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 1.3+ | 0.3− |
| 2002 07 21 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.2− | 2006 11 17 | 704 | 0.7+ | 0.2− |
| 2002 07 21 | 644 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.6+ |
| 2002 07 21 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 20 | 704 | 1.5+ | 1.2+ |
| 2002 07 28 | 608 | 0.3+ | 0.8+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 20 | 704 | (1.2+ | 2.0+) |
| 2002 07 28 | 608 | 0.0 | 0.9+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.7+ | 0.8+ |
| 2002 07 28 | 608 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2002 08 05 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | (3.0+ | 1.5+) |
| 2002 08 05 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.1+ | 1.0− |
| 2002 08 05 | 644 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.5+ |
| 2002 08 14 | 704 | (0.5+ | 2.6+) | 2006 10 23 | 644 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.9− | 0.8− |
| 2002 08 14 | 704 | (0.1+ | 2.4+) | 2006 10 23 | 644 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2002 08 14 | 704 | (0.6+ | 2.2+) | 2006 10 31 | 691 | 0.2− | 0.3+ | | | | |
| 2002 08 14 | 704 | (0.2+ | 2.2+) | 2006 10 31 | 691 | 0.0 | 0.3+ | | | | |

**(141732)∗ 2002 LU$_{25}$ = 1999 VT$_{86}$**

Discovered 2002 June 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33608)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.09225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28063673 | $\omega$ | 230.61644 | | +0.77429007 | +0.60076164 | |
| $a$ | 2.3105021 | $\Omega$ | 91.54464 | | −0.50203278 | +0.77447580 | |
| $e$ | 0.2163386 | $i$ | 11.47674 | | −0.38527650 | +0.19817335 | |
| $P$ | 3.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.1+ | 0.6+ | 2002 06 18 | 704 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.4+ | 0.2− |
| 1999 09 14 | 704 | 0.2− | 0.3+ | 2002 06 18 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.5− |
| 1999 09 14 | 704 | 1.1− | 0.4− | 2002 06 18 | 704 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.3− |
| 1999 09 14 | 704 | 0.8− | 0.6+ | 2002 06 18 | 704 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.4− |
| 1999 10 08 | 704 | 0.0 | 0.5− | 2002 07 04 | 644 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.3+ | 0.1− |
| 1999 10 08 | 704 | 0.5+ | 0.2+ | 2002 07 04 | 644 | 0.3− | 0.2+ | 2006 10 02 | 703 | 0.0 | 0.1− |
| 1999 10 08 | 704 | 0.6+ | 0.0 | 2002 07 04 | 644 | 0.3− | 0.0 | 2006 10 02 | 703 | 0.3+ | 0.1+ |
| 1999 10 08 | 704 | 0.6+ | 0.8− | 2002 07 17 | 608 | (0.2− | 1.6−) | 2006 10 02 | 703 | 0.4+ | 0.2− |
| 1999 11 07 | 704 | 1.1− | 1.2− | 2002 07 17 | 608 | 0.4− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 1999 11 07 | 704 | 0.7+ | 0.4− | 2002 07 17 | 608 | 0.4− | 1.1− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 1999 11 07 | 704 | 0.0 | 0.3+ | 2005 03 10 | 703 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.4− |
| 1999 11 10 | 704 | 0.6+ | 1.4+ | 2005 03 10 | 703 | 0.6+ | 0.6− | 2006 10 21 | 703 | 0.7+ | 0.0 |
| 1999 11 10 | 704 | 0.2+ | 0.5+ | 2005 03 10 | 703 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.2− | 1.1+ |
| 1999 11 10 | 704 | 0.7− | 0.9+ | 2005 03 10 | 703 | 0.7+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 1999 11 10 | 704 | 0.1− | 0.3− | 2005 04 02 | 703 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.4+ |
| 2002 06 05 | 704 | 0.4− | 0.3− | 2005 04 02 | 703 | 0.3+ | 0.2+ | 2006 10 31 | 703 | 0.2+ | 0.0 |
| 2002 06 05 | 704 | 0.3− | 0.1− | 2005 04 02 | 703 | 0.5− | 1.0− | 2006 10 31 | 703 | (2.8− | 1.3−) |
| 2002 06 05 | 704 | 0.5− | 0.2+ | 2005 04 02 | 703 | 0.7− | 0.9+ | 2006 10 31 | 703 | (0.4− | 3.0−) |
| 2002 06 09 | 704 | 0.8+ | 0.6+ | 2006 08 23 | 568 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2002 06 09 | 704 | 1.4+ | 0.4− | 2006 08 23 | 568 | 1.3+ | 0.2− | 2006 11 17 | 703 | 1.1− | 0.2− |
| 2002 06 09 | 704 | 0.4+ | 0.1− | 2006 08 23 | 568 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2002 06 09 | 704 | (0.5+ | 2.1−) | 2006 08 24 | 568 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2002 06 10 | 704 | 0.6− | 0.6− | 2006 08 24 | 568 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.0 | 1.0+ |
| 2002 06 10 | 704 | 0.1+ | 0.1− | 2006 08 24 | 568 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.2+ |
| 2002 06 10 | 704 | 1.0+ | 0.1− | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 11 23 | 703 | 0.5− | 0.4+ |
| 2002 06 10 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.4− | 2006 11 23 | 703 | 0.7− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 10 | 704 | (1.6+ | 0.2+) | 2006 09 19 | 703 | 0.0 | 0.2+ | | | | | | |
| 2002 06 18 | 704 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.3− | | | | | | |

**(141733)∗ 2002 LN$_{27}$ = 1998 HZ$_{34}$**

Discovered 2002 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33609)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.11924 | | (2000.0) | | +0.14324724 | +0.98346026 |
| $n$ | 0.27490283 | $\omega$ | 194.80306 | | −0.89630597 | +0.17640608 |
| $a$ | 2.3425197 | $\Omega$ | 83.52448 | | −0.41966157 | −0.04107085 |
| $e$ | 0.2241730 | $i$ | 6.40494 | | | |
| $P$ | 3.59 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 704 | 0.8− | 1.1+ | 2002 07 14 | 644 | 0.0 | 0.2− | 2005 04 02 | 703 | 0.6− | 0.6− | | |
| 1998 04 20 | 704 | 0.3+ | 0.9− | 2002 07 14 | 644 | 0.0 | 0.1− | 2005 04 09 | 703 | 0.1+ | 0.4+ | | |
| 1998 04 20 | 704 | 0.9− | 0.1− | 2002 07 15 | 644 | 0.0 | 0.3− | 2005 04 09 | 703 | 0.1− | 0.3+ | | |
| 1998 04 20 | 704 | 0.0 | 0.7+ | 2002 07 15 | 644 | 0.1− | 0.3− | 2005 04 09 | 703 | 0.4− | 0.7− | | |
| 1998 04 21 | 704 | 1.2+ | 1.5+ | 2002 07 15 | 644 | 0.1+ | 0.2− | 2005 04 09 | 703 | 0.6− | 0.7− | | |
| 1998 04 21 | 704 | 0.4− | 1.3+ | 2002 08 06 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | (0.2+ | 1.6−) | | |
| 1998 04 21 | 704 | 1.7+ | 0.5+ | 2002 08 06 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.6+ | | |
| 1998 04 21 | 704 | 0.2− | 0.2+ | 2002 08 06 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.3− | 0.4− | | |
| 1998 04 21 | 704 | (4.1− | 1.4+) | 2002 08 13 | 704 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.4+ | | |
| 1998 04 24 | 704 | 0.3+ | 1.0− | 2002 08 13 | 704 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.8+ | | |
| 1998 04 24 | 704 | 1.0+ | 1.1+ | 2002 08 13 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.3+ | | |
| 1998 04 24 | 704 | 0.4− | 1.3− | 2002 08 13 | 704 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.8− | 0.7+ | | |
| 1998 04 24 | 704 | 0.0 | 0.5+ | 2002 08 13 | 704 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.8+ | | |
| 1998 04 24 | 704 | (5.0− | 0.7+) | 2005 03 09 | 704 | 0.6+ | 0.6− | 2006 10 04 | G96 | 0.2− | 0.1+ | | |
| 2002 05 19 | 644 | 0.2+ | 0.5− | 2005 03 09 | 704 | 0.6+ | 0.4− | 2006 10 04 | G96 | 0.1− | 0.1+ | | |
| 2002 05 19 | 644 | 0.1+ | 0.1− | 2005 03 09 | 704 | 0.8+ | 0.7− | 2006 10 04 | G96 | 0.1+ | 0.0 | | |
| 2002 05 19 | 644 | 0.1− | 0.2− | 2005 03 09 | 704 | 0.2+ | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.0 | | |
| 2002 06 08 | 704 | 0.5+ | 1.0+ | 2005 03 09 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.6+ | 1.1− | | |
| 2002 06 08 | 704 | 0.7− | 0.4+ | 2005 03 10 | 699 | 0.3− | 1.1+ | 2006 10 16 | 703 | 0.1+ | 0.8+ | | |
| 2002 06 08 | 704 | 0.9− | 0.6+ | 2005 03 10 | 699 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.2+ | | |
| 2002 06 10 | 704 | 0.0 | 1.0− | 2005 03 10 | 699 | 1.1+ | 0.9+ | 2006 10 16 | 703 | 0.4− | 1.2+ | | |
| 2002 06 10 | 704 | 1.1+ | 0.4− | 2005 03 10 | 699 | 0.0 | 0.9+ | 2006 10 22 | 703 | 0.6− | 0.6+ | | |
| 2002 06 10 | 704 | 0.3− | 0.0 | 2005 03 10 | 152 | 0.7+ | 0.1− | 2006 10 22 | 703 | 0.2+ | 1.3− | | |
| 2002 06 10 | 704 | 0.0 | 1.4− | 2005 03 10 | 152 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.6+ | 0.8− | | |
| 2002 07 05 | 704 | 0.1− | 0.3+ | 2005 03 10 | 152 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.6− | | |
| 2002 07 05 | 704 | 0.2− | 0.1+ | 2005 03 10 | 152 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2002 07 05 | 704 | 0.2− | 0.1+ | 2005 03 17 | 703 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 07 05 | 704 | 0.1− | 0.3+ | 2005 03 17 | 703 | 1.4− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.6+ | | |
| 2002 07 05 | 704 | 0.1+ | 0.0 | 2005 03 17 | 703 | 0.7− | 0.3− | 2006 11 24 | G96 | 0.2− | 0.1− | | |
| 2002 07 06 | 644 | 0.1+ | 0.4+ | 2005 03 17 | 703 | 0.8+ | 0.6− | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2002 07 06 | 644 | 0.4+ | 0.4+ | 2005 04 02 | 703 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.4+ | 0.2+ | | |
| 2002 07 06 | 644 | 0.2+ | 0.4+ | 2005 04 02 | 703 | 0.7− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.4+ | | |
| 2002 07 14 | 644 | 0.0 | 0.1− | 2005 04 02 | 703 | 0.6− | 0.8− | | | | | | |

**(141734)∗ 2002 LK$_{28}$ = 1999 RL$_{63}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 31783)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 94.06535 | | (2000.0) | | −0.07407171 | +0.99646905 |
| $n$ | 0.29349451 | $\omega$ | 54.67821 | | −0.93797808 | −0.08307737 |
| $a$ | 2.2425186 | $\Omega$ | 211.14483 | | −0.33868939 | +0.01214856 |
| $e$ | 0.1480894 | $i$ | 4.38369 | | | |
| $P$ | 3.36 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 1.1− | 0.5+ | 2005 03 09 | 699 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.2+ | | |
| 1999 09 05 | 699 | (2.5− | 0.9−) | 2005 03 09 | 699 | 0.9+ | 0.5+ | 2006 10 15 | 691 | 0.3− | 0.1+ | | |
| 1999 09 05 | 699 | 1.0+ | 1.0+ | 2005 03 09 | 699 | 0.1+ | 0.9+ | 2006 10 15 | 691 | 0.4− | 0.1+ | | |
| 1999 09 07 | 704 | 1.0− | 1.2+ | 2005 03 13 | 703 | 0.9− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.3+ | | |
| 1999 09 07 | 704 | 0.4− | 0.2+ | 2005 03 13 | 703 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 1999 09 07 | 704 | 0.0 | 0.9+ | 2005 03 13 | 703 | 0.7− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 1999 09 09 | 704 | 0.3+ | 0.1− | 2005 03 13 | 703 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.4− | | |
| 1999 09 09 | 704 | 1.7+ | 0.9− | 2005 04 09 | 704 | 0.9+ | 0.2− | 2006 10 20 | G96 | (1.0− | 2.0−) | | |
| 1999 09 09 | 704 | 0.5+ | 0.1− | 2005 04 09 | 704 | 0.8+ | 0.1− | 2006 10 20 | G96 | 0.9+ | 1.1− | | |
| 2002 06 09 | 704 | 0.3− | 0.5+ | 2005 04 09 | 704 | 1.3+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2002 06 09 | 704 | 0.3− | 0.6+ | 2005 04 09 | 704 | (1.8+ | 1.3+) | 2006 10 21 | 703 | 0.7+ | 1.1− | | |
| 2002 06 09 | 704 | 0.5− | 0.5+ | 2005 04 09 | E12 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.4− | 0.3+ | | |
| 2002 06 09 | 704 | (1.6+ | 0.8+) | 2005 04 09 | E12 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.0 | | |
| 2002 06 10 | 704 | 0.4+ | 0.1+ | 2005 04 09 | E12 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.6− | | |
| 2002 06 10 | 704 | 0.3+ | 0.3+ | 2005 04 09 | E12 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.2− | | |
| 2002 06 10 | 704 | 0.7+ | 0.1+ | 2005 04 13 | 699 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2002 06 18 | 704 | 0.9− | 0.9− | 2005 04 13 | 699 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.6+ | | |
| 2002 06 18 | 704 | 0.4− | 0.9− | 2005 04 13 | 699 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.6+ | | |
| 2002 06 18 | 704 | 0.5− | 0.1− | 2005 04 13 | 699 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2002 06 18 | 704 | 1.2− | 0.0 | 2005 04 15 | 703 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.2+ | | |
| 2002 07 03 | 644 | 0.1− | 0.8+ | 2005 04 15 | 703 | 0.3− | 0.3− | 2006 10 28 | G96 | 0.2− | 0.0 | | |
| 2002 07 03 | 644 | 0.2− | 0.6+ | 2005 04 15 | 703 | 0.6− | 0.7− | 2006 10 28 | G96 | 0.2− | 0.0 | | |
| 2002 07 03 | 644 | 0.1+ | 0.9+ | 2005 04 15 | 703 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2002 07 05 | 704 | 0.3+ | 0.5+ | 2005 05 12 | G96 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.0 | | |
| 2002 07 05 | 704 | 0.6+ | 0.5+ | 2005 05 12 | G96 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2002 07 05 | 704 | 0.4+ | 0.3− | 2005 05 12 | G96 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2+ | | |
| 2002 07 05 | 704 | (2.3− | 1.0+) | 2005 05 12 | G96 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.5− | 0.1+ | | |
| 2003 12 01 | 704 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.5− | | |
| 2003 12 01 | 704 | 0.1− | 0.3+ | 2005 05 14 | G96 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.6+ | | |
| 2003 12 01 | 704 | 0.4− | 0.3+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.4− | | |
| 2003 12 01 | 704 | 0.6− | 0.0 | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | (1.0+ | 1.9−) | | |
| 2003 12 01 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | | |
| 2003 12 01 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.6+ | 0.4− | | |
| 2003 12 01 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 13 | 691 | 1.1+ | 0.1− | | |
| 2003 12 19 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.5− | | |
| 2003 12 19 | 691 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.0 | | |
| 2003 12 19 | 691 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.7− | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.9− | | |
| 2005 03 08 | 699 | 0.8+ | 1.0− | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.5+ | 0.6− | | |
| 2005 03 08 | 699 | 1.4+ | 0.1− | 2006 10 10 | 644 | 0.5− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.2− | | |
| 2005 03 08 | 699 | 0.2+ | 1.1+ | 2006 10 10 | 644 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.5− | | |
| 2005 03 08 | 699 | 0.8+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.3− | | |
| 2005 03 09 | 699 | 0.9+ | 1.0+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.1+ | | |

**(141735)∗ 2002 LO$_{28}$ = 2003 UO$_{137}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56368)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 156.70244 | | (2000.0) | | −0.98202943 | +0.18424892 |
| $n$ | 0.29426385 | $\omega$ | 344.35769 | | −0.16178004 | −0.93335445 |
| $a$ | 2.2386083 | $\Omega$ | 206.36548 | | −0.09718758 | −0.30806138 |
| $e$ | 0.1258390 | $i$ | 5.28069 | | | |
| $P$ | 3.35 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.2+ | 0.6+ | 2005 03 17 | 691 | 0.0 | 0.3+ | 2005 04 13 | 699 | 0.7+ | 0.1− | | |
| 2002 06 09 | 704 | 1.1− | 0.3+ | 2005 03 31 | 699 | 0.8+ | 0.2+ | 2005 04 13 | 699 | 0.5+ | 0.2+ | | |
| 2002 06 09 | 704 | 0.5− | 0.1− | 2005 03 31 | 699 | 1.4+ | 0.8+ | 2005 04 13 | 699 | 0.3+ | 0.2+ | | |
| 2002 06 10 | 704 | (1.8+ | 0.1+) | 2005 03 31 | 699 | 0.1− | 0.2− | 2005 04 18 | 703 | 1.1− | 0.8− | | |
| 2002 06 10 | 704 | 0.2+ | 0.3+ | 2005 03 31 | 699 | 0.5+ | 1.1+ | 2005 04 18 | 703 | 1.2− | 0.9− | | |
| 2002 06 10 | 704 | 0.6+ | 0.5+ | 2005 04 02 | 644 | 0.2+ | 0.5+ | 2005 04 18 | 703 | 1.0− | 0.7− | | |
| 2002 06 13 | 704 | 0.9+ | 0.0 | 2005 04 02 | 644 | 0.1+ | 0.4+ | 2005 04 18 | 703 | 0.7− | 0.3− | | |
| 2002 06 13 | 704 | 0.3− | 0.8+ | 2005 04 02 | 644 | 0.0 | 0.4+ | 2006 08 23 | 644 | 0.0 | 0.0 | | |
| 2002 06 13 | 704 | 0.3− | 0.2− | 2005 04 04 | 704 | 1.1+ | 0.8+ | 2006 08 23 | 644 | 0.1+ | 0.3+ | | |
| 2002 06 13 | 704 | 0.6+ | 0.8+ | 2005 04 04 | 704 | 0.2+ | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.5+ | | |
| 2003 09 27 | 691 | 0.0 | 0.1+ | 2005 04 04 | 704 | 0.5+ | 0.0 | 2006 08 29 | 703 | 0.2+ | 1.2− | | |
| 2003 09 27 | 691 | 0.2+ | 0.4+ | 2005 04 04 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 703 | (1.6+ | 2.5−) | | |
| 2003 09 27 | 691 | 0.0 | 0.3+ | 2005 04 04 | 704 | 0.4+ | 0.6+ | 2006 08 29 | 703 | 1.4− | 0.2+ | | |
| 2003 10 16 | 691 | 0.2− | 0.4+ | 2005 04 05 | 703 | 1.3− | 0.2− | 2006 08 29 | 703 | (0.0 | 1.8+) | | |
| 2003 10 16 | 691 | 0.0 | 0.6+ | 2005 04 05 | 703 | 0.8− | 0.5− | 2006 08 29 | 691 | 0.2+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 16 | 691 | 0.2− | 0.5+ | 2005 04 05 | 703 | 0.0 | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.3+ |
| 2003 10 21 | 704 | 0.2+ | 0.1+ | 2005 04 05 | 703 | 0.7− | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.4+ |
| 2003 10 21 | 704 | 0.6− | 1.3+ | 2005 04 07 | 704 | 0.5+ | 1.3− | 2006 09 12 | 703 | 0.8− | 0.3− |
| 2003 10 21 | 704 | 0.0 | 0.6− | 2005 04 07 | 704 | 0.1+ | 0.6+ | 2006 09 12 | 703 | (1.0− | 1.6−) |
| 2003 10 22 | 704 | 0.5− | 1.3+ | 2005 04 07 | 704 | 0.5+ | 0.5+ | 2006 09 12 | 703 | (1.7− | 0.1−) |
| 2003 10 22 | 704 | 0.5− | 1.1+ | 2005 04 07 | 704 | 0.2− | 0.1+ | 2006 09 12 | 703 | 0.8− | 0.3+ |
| 2003 10 22 | 704 | 0.5− | 0.6− | 2005 04 07 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.3+ |
| 2003 10 22 | 704 | 0.6− | 1.1+ | 2005 04 09 | 704 | 0.2+ | 1.0+ | 2006 09 19 | 699 | 0.0 | 0.1+ |
| 2005 03 03 | 691 | 0.2+ | 0.1− | 2005 04 09 | 704 | 0.3− | 0.9+ | 2006 09 19 | 703 | 0.0 | 0.3− |
| 2005 03 03 | 691 | 0.1+ | 0.0 | 2005 04 09 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 703 | 0.8− | 0.2− |
| 2005 03 03 | 691 | 0.3+ | 0.0 | 2005 04 09 | 704 | (1.6+ | 0.6+) | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 2005 03 07 | 704 | 0.6+ | 0.2+ | 2005 04 09 | 704 | 0.4+ | 1.1+ | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2005 03 07 | 704 | 0.3+ | 0.1+ | 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.3− |
| 2005 03 07 | 704 | 0.3+ | 0.2− | 2005 04 12 | G96 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.2+ |
| 2005 03 07 | 704 | 1.1+ | 0.7+ | 2005 04 12 | G96 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2005 03 07 | 704 | 0.4+ | 0.8+ | 2005 04 12 | G96 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2005 03 13 | 703 | 0.2+ | 1.2− | 2005 04 12 | 704 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.2+ |
| 2005 03 13 | 703 | 1.2− | 0.0 | 2005 04 12 | 704 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3+ |
| 2005 03 13 | 703 | 1.2− | 0.1− | 2005 04 12 | 704 | 1.1+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2005 03 13 | 703 | 0.9− | 0.5− | 2005 04 12 | 704 | (0.2+ | 1.8+) | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2005 03 17 | 691 | 0.0 | 0.2+ | 2005 04 12 | 704 | 0.4+ | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2005 03 17 | 691 | 0.2− | 0.1+ | 2005 04 13 | 699 | (1.7+ | 0.7−) | 2006 10 21 | G96 | 0.2+ | 0.4− |

**(141736)∗ 2002 LC$_{29}$ = 2002 NA$_{19}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 33610)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.18010 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28572472 | $\omega$ | 104.19620 | | +0.01052041 | | +0.99974971 |
| $a$ | 2.2829909 | $\Omega$ | 166.36059 | | −0.94669181 | | +0.01631588 |
| $e$ | 0.2258595 | $i$ | 4.80292 | | −0.32196885 | | −0.01530689 |
| $P$ | 3.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.1− | 1.1− | 2002 08 07 | 644 | 0.7− | 0.7− | 2005 03 31 | 699 | 0.1− | 0.1− |
| 1998 03 20 | 704 | 0.5+ | 0.7− | 2002 08 07 | 644 | 0.2− | 0.8− | 2005 03 31 | 699 | 0.2− | 1.0+ |
| 1998 03 20 | 704 | 0.5− | 0.8+ | 2002 08 11 | 608 | 0.0 | 0.4+ | 2005 03 31 | 644 | 0.4+ | 0.6+ |
| 1998 03 22 | 704 | (3.0− | 0.1−) | 2002 08 11 | 608 | 0.3+ | 0.8− | 2005 03 31 | 644 | 0.7+ | 0.3+ |
| 1998 03 22 | 704 | (0.6+ | 2.0+) | 2002 08 11 | 608 | 0.1− | 1.4− | 2005 03 31 | 644 | 1.4+ | 1.3+ |
| 1998 03 22 | 704 | 0.4+ | 1.5+ | 2002 08 14 | 704 | 1.1+ | 0.4+ | 2005 04 04 | 703 | 0.2+ | 0.2− |
| 1998 03 22 | 704 | (0.4+ | 2.1+) | 2002 08 14 | 704 | 0.0 | 0.2− | 2005 04 04 | 703 | 0.5− | 0.4− |
| 2002 06 09 | 704 | (0.7+ | 1.8−) | 2002 08 14 | 704 | 0.8+ | 0.2+ | 2005 04 04 | 703 | 0.5− | 0.2− |
| 2002 06 09 | 333 | 0.0 | 0.3− | 2002 08 14 | 704 | 0.7− | 0.9− | 2005 04 04 | 703 | 0.4− | 0.4− |
| 2002 06 09 | 704 | (0.7+ | 1.7−) | 2002 08 16 | 644 | 0.0 | 0.0 | 2005 04 05 | 683 | 0.1+ | 0.8+ |
| 2002 06 09 | 333 | 0.7+ | 0.3+ | 2002 08 16 | 644 | 0.1+ | 0.1− | 2005 04 05 | 683 | (0.6− | 1.8+) |
| 2002 06 09 | 704 | (1.1+ | 2.4−) | 2002 08 16 | 644 | 0.1− | 0.0 | 2005 04 05 | 683 | 0.4− | 0.5− |
| 2002 06 09 | 333 | 0.9+ | 0.4+ | 2002 08 17 | 608 | (0.8+ | 1.8−) | 2005 04 06 | 683 | 0.2− | 0.7− |
| 2002 06 10 | 704 | 1.4− | 0.4+ | 2002 08 17 | 608 | (0.1+ | 2.4−) | 2005 04 06 | 683 | (1.4− | 2.0−) |
| 2002 06 10 | 704 | (1.7− | 0.7+) | 2002 08 17 | 608 | 0.1+ | 1.4− | 2005 04 06 | 683 | 1.1− | 0.3− |
| 2002 06 10 | 704 | 0.9− | 1.0+ | 2002 08 27 | 644 | 0.3− | 0.8+ | 2005 04 09 | 683 | 0.4+ | 0.4+ |
| 2002 06 12 | 608 | 0.3− | 0.4+ | 2002 08 27 | 644 | 0.2− | 0.7+ | 2005 04 09 | 683 | 0.1− | 0.4− |
| 2002 06 12 | 608 | 0.3− | 0.3+ | 2002 08 27 | 644 | 0.6− | 1.0+ | 2005 04 09 | 683 | (1.9− | 0.8−) |
| 2002 06 12 | 608 | 0.1− | 0.5+ | 2002 09 01 | 608 | (2.1+ | 0.6+) | 2005 04 13 | 699 | 0.4+ | 0.8+ |
| 2002 06 13 | 704 | 0.4+ | 0.0 | 2002 09 01 | 608 | (1.6+ | 0.7+) | 2005 04 13 | 699 | 0.4+ | 0.3+ |
| 2002 06 13 | 704 | 0.2+ | 0.0 | 2002 09 01 | 608 | 1.1+ | 0.1+ | 2005 04 13 | 704 | 1.4+ | 0.3− |
| 2002 06 13 | 704 | 0.4+ | 0.1+ | 2002 09 05 | 704 | 0.6+ | 0.9+ | 2005 04 13 | 704 | 1.1+ | 0.4− |
| 2002 06 13 | 704 | 0.5+ | 0.4− | 2002 09 05 | 704 | 0.5+ | 0.4+ | 2005 04 13 | 699 | 0.1+ | 0.5+ |
| 2002 06 13 | 704 | 0.1+ | 0.8+ | 2002 09 05 | 704 | 1.4− | 0.2+ | 2005 04 13 | 704 | 0.4+ | 0.0 |
| 2002 07 06 | 699 | 0.4+ | 0.0 | 2002 09 05 | 704 | 0.7− | 0.8− | 2005 04 13 | 704 | 1.1+ | 0.1+ |
| 2002 07 06 | 699 | 1.0+ | 0.3− | 2002 10 03 | 704 | 1.0− | 0.4− | 2005 04 13 | 699 | 0.1+ | 0.6+ |
| 2002 07 06 | 699 | 0.0 | 0.1− | 2002 10 03 | 704 | 0.9− | 0.4+ | 2005 04 13 | 704 | 0.6+ | 0.3− |
| 2002 07 06 | 699 | 0.4+ | 0.3− | 2002 10 03 | 704 | (2.2+ | 1.9−) | 2005 04 18 | 703 | 0.8− | 0.4− |
| 2002 07 09 | 704 | (1.6− | 0.1+) | 2002 10 03 | 704 | 0.1− | 0.9− | 2005 04 18 | 703 | 0.0 | 0.5+ |
| 2002 07 09 | 704 | 0.2− | 0.3+ | 2005 03 01 | 691 | 0.1+ | 0.0 | 2005 04 18 | 703 | 0.3− | 0.5− |
| 2002 07 09 | 704 | 0.7− | 0.4− | 2005 03 01 | 691 | 0.1− | 0.3+ | 2005 04 18 | 703 | 0.3− | 0.2− |
| 2002 07 09 | 704 | 0.0 | 0.0 | 2005 03 01 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2002 07 09 | 704 | 0.7− | 0.3+ | 2005 03 04 | G96 | 0.5− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2002 07 12 | 644 | 0.2+ | 0.1+ | 2005 03 04 | G96 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2002 07 12 | 644 | 0.2+ | 0.2+ | 2005 03 04 | G96 | 0.5− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2002 07 12 | 644 | 0.3+ | 0.2+ | 2005 03 04 | G96 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.0 | 1.1+ |
| 2002 07 14 | 704 | 0.4− | 0.4+ | 2005 03 08 | 699 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2002 07 14 | 644 | 0.1− | 0.9+ | 2005 03 08 | 699 | 1.2− | 0.2− | 2006 10 16 | 703 | (0.5− | 1.8+) |
| 2002 07 14 | 704 | 0.5+ | 0.1+ | 2005 03 08 | 699 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 1.2+ |
| 2002 07 14 | 704 | 0.3− | 0.9− | 2005 03 08 | 699 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.5+ |
| 2002 07 14 | 704 | 0.3+ | 0.5− | 2005 03 09 | 699 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2002 07 14 | 644 | 0.2− | 0.9+ | 2005 03 09 | 699 | 0.3+ | 0.9+ | 2006 10 18 | 691 | 0.1+ | 0.7+ |
| 2002 07 14 | 644 | 0.1+ | 0.9+ | 2005 03 09 | 699 | 0.6+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2002 07 21 | 644 | 0.3− | 0.4+ | 2005 03 09 | 699 | 0.6+ | 0.9+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2002 07 21 | 644 | 0.1− | 0.0 | 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 07 21 | 644 | 0.0 | 0.0 | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2002 08 06 | 644 | 0.3+ | 0.7+ | 2005 03 10 | G96 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2002 08 06 | 644 | 0.4− | 0.5+ | 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2002 08 06 | 644 | 0.4+ | 0.7+ | 2005 03 31 | 699 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.6+ | 0.4− |
| 2002 08 07 | 644 | 0.2− | 0.9− | 2005 03 31 | 699 | 0.2− | 0.4+ | | | | |

**(141737)∗ 2002 LD$_{29}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.33326 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27348737 | $\omega$ | 143.32834 | | +0.84067238 | | +0.54151458 |
| $a$ | 2.3505953 | $\Omega$ | 183.89770 | | −0.51450501 | | +0.79540035 |
| $e$ | 0.1935633 | $i$ | 4.76598 | | −0.16898088 | | +0.27221359 |
| $P$ | 3.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.5+ | 0.2− | 2003 12 22 | 691 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 2002 06 09 | 704 | 0.4+ | 0.2+ | 2005 03 09 | G96 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 2002 06 09 | 704 | 0.6+ | 1.1+ | 2005 03 09 | G96 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 2002 06 09 | 704 | 0.2− | 1.2+ | 2005 03 09 | G96 | 0.1− | 0.1+ | 2006 10 16 | 703 | 1.4− | 0.7− |
| 2002 06 10 | 704 | 0.2− | 0.1− | 2005 03 09 | G96 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.8− | 0.8− |
| 2002 06 10 | 704 | 0.4− | 0.5+ | 2005 04 05 | G96 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2002 06 10 | 704 | 1.3− | 1.4+ | 2005 04 05 | G96 | 0.7− | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2002 06 10 | 704 | 0.5− | 0.0 | 2005 04 05 | G96 | 0.4+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2002 06 13 | 704 | 0.1− | 0.6− | 2005 04 05 | G96 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 06 13 | 704 | 0.8+ | 0.8− | 2005 04 06 | G96 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.6+ | 0.3+ |
| 2002 06 13 | 704 | 0.2− | 0.8− | 2005 04 06 | G96 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.6+ | 0.0 |
| 2002 06 13 | 704 | 0.1− | 0.9− | 2005 04 06 | G96 | 0.8− | 0.1+ | 2006 10 22 | 704 | 0.2+ | 0.4+ |
| 2002 06 13 | 704 | 0.2+ | 0.5− | 2005 04 06 | G96 | 0.4− | 0.0 | 2006 10 22 | 704 | 0.1+ | 0.7+ |
| 2002 07 09 | 704 | 1.0+ | 0.5+ | 2005 04 07 | G96 | 0.4− | 0.0 | 2006 10 22 | 704 | 0.3+ | 0.2+ |
| 2002 07 09 | 704 | 0.2+ | 1.1+ | 2005 04 07 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 07 09 | 704 | 0.4+ | 0.5+ | 2005 04 07 | G96 | 0.5− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 07 09 | 704 | 0.2+ | 0.3− | 2005 04 07 | G96 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 07 12 | 644 | 0.4− | 0.4+ | 2005 04 11 | 691 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2002 07 12 | 644 | 0.5− | 0.5+ | 2005 04 11 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 07 12 | 644 | 0.3− | 0.4+ | 2005 04 11 | 691 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 07 14 | 704 | 0.0 | 0.3− | 2005 04 12 | 704 | 1.4+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 07 14 | 704 | 0.1− | 0.7− | 2005 04 12 | 704 | 0.8+ | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 07 14 | 704 | 0.5+ | 0.7− | 2005 04 12 | 704 | 1.1+ | 1.0+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 07 14 | 704 | 0.1+ | 0.1− | 2005 04 18 | 691 | 0.2+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2002 07 14 | 704 | 0.0 | 0.6− | 2005 04 18 | 691 | 0.0 | 0.5+ | 2006 11 13 | 703 | 1.1− | 1.2− |
| 2002 07 21 | 644 | 0.0 | 0.3+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 703 | (1.3− | 2.4+) |
| 2002 07 21 | 644 | 0.4+ | 0.3+ | 2005 05 04 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.5− |
| 2002 07 21 | 644 | 0.2+ | 0.2+ | 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.9− |
| 2002 08 05 | 644 | 0.1− | 0.3+ | 2005 05 04 | 691 | 0.4+ | 0.0 | 2006 11 14 | 704 | 0.6+ | 1.1+ |
| 2002 08 05 | 644 | 0.4− | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.7+ | 1.1+ |
| 2002 08 05 | 644 | 0.3+ | 0.1− | 2006 07 21 | G96 | 0.4+ | 0.0 | 2006 11 14 | 704 | 0.9+ | 1.1+ |
| 2002 08 11 | 608 | 1.3− | 1.0+ | 2006 07 21 | G96 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.6+ | 1.0+ |
| 2002 08 11 | 608 | 0.9− | 0.5+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 2002 08 11 | 608 | 0.9− | 1.0+ | 2006 07 22 | G96 | 0.9− | 0.3− | 2006 11 17 | 704 | 0.5− | 0.5+ |
| 2002 08 14 | 704 | 0.4− | 0.8+ | 2006 07 22 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2002 08 14 | 704 | 1.1+ | 0.4− | 2006 07 22 | G96 | 0.2+ | 0.7− | 2006 11 17 | 704 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.1− | 0.5+ | 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.6+ |
| 2002 08 14 | 704 | (1.6+ | 1.4−) | 2006 09 30 | 703 | 0.0 | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2002 08 14 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.4+ | 0.9+ |
| 2002 09 06 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 703 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 1.4+ |
| 2002 09 06 | 704 | 0.1+ | 1.4− | 2006 09 30 | 703 | 0.4− | 1.0+ | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2002 10 07 | 704 | 0.2+ | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2002 10 07 | 704 | 0.9− | 0.5− | 2006 09 30 | 703 | 0.8− | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2002 10 07 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2002 10 07 | 704 | 0.3− | 0.9+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2003 12 22 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.1− | | | | |
| 2003 12 22 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.1− | | | | |

**(141738)∗ 2002 LM$_{29}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.98819 | | (2000.0) | | | |
| $n$ | 0.28933238 | $\omega$ | 57.69295 | | +0.57295265 | +0.81195998 |
| $a$ | 2.2639736 | $\Omega$ | 247.66339 | | −0.78666835 | +0.50662897 |
| $e$ | 0.1608987 | $i$ | 6.92746 | | −0.22995253 | +0.28991046 |
| $P$ | 3.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.3+ | 0.9+ | 2002 07 18 | 704 | 0.3− | 0.5− | 2004 01 18 | 644 | 0.1+ | 0.6+ |
| 1999 10 12 | 704 | 0.3− | 1.4+ | 2002 07 18 | 704 | 0.0 | 0.6− | 2004 01 18 | 644 | 0.1+ | 0.6+ |
| 1999 10 12 | 704 | 0.1+ | 1.2+ | 2002 07 18 | 704 | 0.1+ | 0.5− | 2005 05 04 | 699 | 0.8+ | 0.1+ |
| 1999 10 12 | 704 | 0.6+ | 0.3+ | 2002 07 18 | 704 | 0.1− | 0.7− | 2005 05 04 | 699 | 0.1− | 0.4+ |
| 1999 11 11 | 703 | 0.6− | 0.3+ | 2002 07 18 | 704 | 0.2− | 0.6− | 2005 05 04 | 699 | 0.0 | 0.1+ |
| 1999 11 11 | 703 | 1.1+ | 1.0− | 2002 07 20 | 644 | 0.1− | 0.0 | 2005 05 04 | 699 | 1.2− | 0.5− |
| 1999 11 11 | 703 | 0.1+ | 0.5− | 2002 07 20 | 644 | 0.3+ | 0.1− | 2005 05 04 | 644 | 0.4+ | 0.1+ |
| 1999 11 11 | 703 | 0.6− | 0.5+ | 2002 07 20 | 644 | 0.1− | 0.2− | 2005 05 04 | 644 | 0.4+ | 0.0 |
| 2000 12 23 | 645 | 0.0 | 0.2+ | 2002 07 21 | 644 | 0.3+ | 0.6+ | 2005 05 04 | 644 | 0.5+ | 0.1− |
| 2000 12 23 | 645 | 0.1+ | 0.3+ | 2002 07 21 | 644 | 0.3+ | 0.5+ | 2005 05 08 | E12 | 0.2+ | 0.1+ |
| 2002 06 09 | 704 | 0.0 | 0.9− | 2002 07 21 | 644 | 0.3+ | 0.7+ | 2005 05 08 | E12 | 0.1+ | 0.5− |
| 2002 06 09 | 704 | 0.7− | 0.1+ | 2002 07 28 | 608 | 0.4+ | 1.1− | 2005 05 08 | E12 | 0.2+ | 0.1+ |
| 2002 06 09 | 704 | 0.3+ | 0.2+ | 2002 07 28 | 608 | 0.2+ | 1.0− | 2005 05 08 | E12 | 0.1+ | 0.4− |
| 2002 06 10 | 704 | 0.6+ | 1.1+ | 2002 07 28 | 608 | 0.3+ | 0.6− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2002 06 10 | 704 | 0.3− | 0.1− | 2002 08 04 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.5− |
| 2002 06 10 | 704 | (1.6− | 0.2+) | 2002 08 04 | 644 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.8− |
| 2002 06 10 | 704 | 0.5+ | 1.2+ | 2002 08 04 | 644 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2002 06 13 | 704 | 1.0− | 1.1+ | 2002 08 12 | 704 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2002 06 13 | 704 | 1.1− | 0.5+ | 2002 08 12 | 704 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2002 06 13 | 704 | 0.3− | 0.6+ | 2002 08 12 | 704 | 0.6+ | 0.5− | 2006 11 01 | G96 | 1.1− | 0.7− |
| 2002 06 13 | 704 | 0.4− | 1.4+ | 2002 08 12 | 704 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.7+ | 0.3− |
| 2002 07 06 | 699 | 0.2− | 0.1+ | 2002 08 12 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.5− | 0.5+ |
| 2002 07 06 | 699 | 0.2− | 0.3− | 2002 08 15 | 644 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 07 06 | 699 | 0.4− | 0.1− | 2002 08 15 | 644 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 07 06 | 699 | 0.4− | 0.1− | 2002 08 15 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2002 07 09 | 704 | 0.1+ | 0.0 | 2002 08 25 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2002 07 09 | 704 | 0.0 | 0.5+ | 2002 08 25 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.5− |
| 2002 07 09 | 704 | 0.5− | 0.3+ | 2002 08 25 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.9+ | 1.1+ |
| 2002 07 09 | 704 | 0.6− | 0.0 | 2002 09 03 | 644 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 07 09 | 704 | 0.1− | 0.3+ | 2002 09 03 | 644 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2002 07 12 | 644 | 0.0 | 1.0+ | 2002 09 03 | 644 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 07 12 | 644 | 0.3+ | 1.1+ | 2002 10 05 | 704 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.4− | 0.0 |
| 2002 07 12 | 644 | 0.1+ | 0.9+ | 2002 10 05 | 704 | 0.4+ | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2002 07 15 | 704 | 0.6− | 0.0 | 2002 10 05 | 704 | 0.3+ | 1.5+ | 2006 12 01 | G96 | 0.4− | 0.1− |
| 2002 07 15 | 704 | 0.0 | 0.1+ | 2002 10 05 | 704 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 2002 07 15 | 704 | 0.2+ | 0.3− | 2004 01 18 | 644 | 0.1− | 0.4+ | | | | |

**(141739)∗ 2002 LO$_{30}$**

Discovered 2002 June 2 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.15943 | | (2000.0) | | | |
| $n$ | 0.29299223 | $\omega$ | 31.86442 | | −0.84037568 | +0.54200272 |
| $a$ | 2.2450808 | $\Omega$ | 180.95870 | | −0.51243624 | −0.79532501 |
| $e$ | 0.1053030 | $i$ | 4.54507 | | −0.17657238 | −0.27146119 |
| $P$ | 3.36 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.3+ | 0.1− | 2005 03 08 | 699 | 0.6− | 0.4+ | 2005 04 02 | G96 | 0.0 | 0.1− |
| 1995 03 27 | 691 | 0.3− | 0.0 | 2005 03 08 | 699 | 0.4− | 0.2− | 2005 04 02 | G96 | 0.4+ | 0.0 |
| 1995 03 27 | 691 | 0.2− | 0.1− | 2005 03 08 | 699 | 0.4− | 0.5+ | 2005 04 02 | G96 | 0.3+ | 0.1+ |
| 2002 05 09 | 704 | 0.4+ | 0.9+ | 2005 03 08 | 704 | 0.7+ | 0.6+ | 2005 04 02 | G96 | 0.1− | 0.0 |
| 2002 05 09 | 704 | 1.0− | 0.3+ | 2005 03 08 | 704 | 1.1+ | 0.9+ | 2005 04 11 | 691 | 1.2− | 0.1− |
| 2002 05 09 | 704 | 0.5− | 0.8+ | 2005 03 08 | 704 | (0.2+ | 1.7+) | 2005 04 11 | 691 | 0.6+ | 0.4+ |
| 2002 06 02 | 644 | 0.4− | 0.1− | 2005 03 08 | 704 | 0.6+ | 0.9+ | 2005 04 11 | 691 | 0.3+ | 0.3+ |
| 2002 06 02 | 644 | 0.5− | 0.1+ | 2005 03 08 | 704 | 0.6+ | 0.8+ | 2005 05 06 | G96 | 0.1− | 0.2− |
| 2002 06 02 | 644 | 0.4− | 0.0 | 2005 03 09 | 699 | 1.0− | 0.9+ | 2005 05 06 | G96 | 0.1− | 0.2− |
| 2002 06 05 | 704 | 0.2− | 0.4− | 2005 03 09 | 699 | 0.1− | 0.4+ | 2005 05 06 | G96 | 0.1− | 0.4− |
| 2002 06 05 | 704 | 1.2+ | 0.3+ | 2005 03 09 | 683 | 0.2+ | 0.6+ | 2005 05 06 | G96 | 0.3− | 0.1+ |
| 2002 06 05 | 704 | 0.6+ | 0.3− | 2005 03 09 | 683 | 0.5− | 0.5+ | 2006 08 19 | 691 | 0.3+ | 0.2+ |
| 2002 06 10 | 644 | 0.6− | 0.1+ | 2005 03 09 | 699 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 2002 06 10 | 644 | 0.5− | 0.2+ | 2005 03 09 | 683 | 0.3− | 0.8− | 2006 08 19 | 691 | 0.1+ | 0.9+ |
| 2002 06 10 | 644 | 0.3− | 0.1+ | 2005 03 09 | 699 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 0.5− | 0.4− |
| 2002 06 14 | 291 | 0.4+ | 0.2− | 2005 03 09 | G96 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.1+ | 1.4+ |
| 2002 06 14 | 291 | 0.3+ | 0.3+ | 2005 03 09 | G96 | 0.1+ | 0.0 | 2006 08 28 | 703 | 1.4+ | 0.4+ |
| 2002 06 14 | 291 | 0.2+ | 0.1− | 2005 03 09 | G96 | 0.0 | 0.1− | 2006 08 28 | 703 | 1.2− | 0.9+ |
| 2002 07 03 | 644 | 0.3− | 0.2+ | 2005 03 09 | G96 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2002 07 03 | 644 | 0.3− | 0.2− | 2005 03 10 | 683 | (0.0 | 1.8−) | 2006 08 28 | 691 | 0.3− | 0.2− |
| 2002 07 03 | 644 | 0.0 | 0.2+ | 2005 03 10 | 683 | 0.7− | 1.1− | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2003 09 28 | 691 | 0.1+ | 0.5+ | 2005 03 10 | 683 | 0.4+ | 0.2− | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2003 09 28 | 691 | 0.1− | 0.5+ | 2005 03 14 | 704 | 0.4+ | 0.9+ | 2006 09 27 | G96 | 0.6− | 0.0 |
| 2003 09 28 | 691 | 0.1− | 0.4+ | 2005 03 14 | 704 | 0.4+ | 0.8+ | 2006 09 27 | G96 | 0.5− | 0.1− |
| 2005 03 02 | 691 | 0.3+ | 0.3+ | 2005 03 14 | 704 | 0.5+ | 0.0 | 2006 09 27 | G96 | 0.8− | 0.1+ |
| 2005 03 02 | 691 | 0.4+ | 0.3+ | 2005 03 14 | 704 | 0.5− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2005 03 02 | 691 | 0.2+ | 0.1+ | 2005 03 14 | 704 | 0.4+ | 0.6− | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2005 03 03 | 703 | 0.6− | 0.3+ | 2005 03 17 | 704 | 0.3− | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2005 03 03 | 703 | 0.1− | 0.1+ | 2005 03 17 | 704 | (2.4− | 0.2−) | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2005 03 03 | 703 | 0.4− | 0.2+ | 2005 03 17 | 704 | 0.3− | 0.5− | | | | |
| 2005 03 03 | 703 | 0.2+ | 0.3− | 2005 03 17 | 704 | 0.6+ | 0.0 | | | | |

**(141740)∗ 2002 LO$_{31}$**

Discovered 2002 June 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.60340 | | (2000.0) | | | |
| $n$ | 0.29363607 | $\omega$ | 247.96642 | | +0.71873638 | +0.68534220 |
| $a$ | 2.2417979 | $\Omega$ | 68.55218 | | −0.58245382 | +0.68550633 |
| $e$ | 0.1788073 | $i$ | 7.23077 | | −0.37969140 | +0.24573796 |
| $P$ | 3.36 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.3+ | 0.8+ | 2003 11 23 | 704 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.4+ |
| 1999 07 14 | 704 | 0.5− | 0.3− | 2003 11 23 | 704 | 0.6− | 0.7− | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 1999 07 14 | 704 | 0.2− | 0.8+ | 2003 11 23 | 704 | 0.6+ | 1.2+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 1999 07 14 | 704 | 0.2− | 0.2+ | 2003 11 23 | 704 | (2.3− | 0.2+) | 2006 09 26 | 703 | 0.2+ | 0.1− |
| 1999 07 14 | 704 | 0.4− | 0.0 | 2003 11 29 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.1+ |
| 2002 05 02 | 699 | (2.2+ | 1.8+) | 2003 11 29 | 691 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.8− | 1.0+ |
| 2002 05 02 | 699 | 0.3+ | 1.2+ | 2003 11 29 | 691 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.6+ | 0.3+ |
| 2002 05 02 | 699 | 0.5+ | 0.3+ | 2003 12 17 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.1+ |
| 2002 05 02 | 699 | 0.3− | 1.1+ | 2003 12 17 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.6+ | 0.3+ |
| 2002 05 08 | 704 | 0.1− | 1.0− | 2003 12 17 | 691 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.5+ | 0.5+ |
| 2002 05 08 | 704 | 0.6− | 1.1+ | 2003 12 22 | 704 | 0.6− | 1.4+ | 2006 09 30 | 704 | 0.6+ | 0.3− |
| 2002 05 08 | 704 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.0 |
| 2002 05 08 | 704 | 0.6− | 0.3+ | 2003 12 22 | 704 | 0.5+ | 1.0+ | 2006 09 30 | 704 | (1.7+ | 0.4+) |
| 2002 05 08 | 704 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.6+ | 0.0 |
| 2002 05 16 | 704 | (0.7− | 2.2+) | 2003 12 23 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 16 | 704 | 1.2− | 1.0+ | 2003 12 23 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.4− |
| 2002 05 16 | 704 | 0.2+ | 1.1+ | 2005 03 30 | 703 | 1.2+ | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.3− |
| 2002 05 16 | 704 | 0.6+ | 0.5− | 2005 03 30 | 703 | (0.5− | 1.8+) | 2006 10 21 | 644 | 0.6+ | 0.0 |
| 2002 05 16 | 608 | 1.2+ | 0.1+ | 2005 03 30 | 703 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 05 16 | 608 | 0.5+ | 0.1+ | 2005 03 30 | 703 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 05 16 | 608 | 0.8+ | 0.0 | 2005 04 11 | 699 | 1.0− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 06 06 | 704 | 0.8+ | 0.4− | 2005 04 11 | 699 | 0.1+ | 1.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 06 06 | 704 | 0.4+ | 0.1− | 2005 04 11 | 699 | 0.6− | 1.5+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 06 06 | 704 | (2.0+ | 0.0 ) | 2005 04 11 | 699 | 0.3+ | 1.1+ | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2002 06 08 | 704 | (5.2+ | 2.0+) | 2006 08 19 | 699 | 0.3+ | 0.5− | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2002 06 08 | 704 | (5.3+ | 1.2+) | 2006 08 19 | 699 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2002 06 08 | 704 | (5.1+ | 0.6+) | 2006 08 19 | 699 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 06 08 | 704 | (2.8+ | 1.0+) | 2006 08 19 | 699 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 1.0− | 0.6− |
| 2002 06 09 | 608 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.7+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 06 09 | 608 | 0.3− | 0.7+ | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2002 06 09 | 608 | 0.2− | 0.9+ | 2006 09 18 | 703 | (2.2− | 0.4−) | 2006 10 22 | 703 | 0.1+ | 0.6− |
| 2002 06 11 | 704 | 0.8+ | 0.1− | 2006 09 18 | 703 | 1.1− | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2002 06 11 | 704 | 0.8+ | 0.4− | 2006 09 21 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.5− |
| 2002 06 11 | 704 | 0.6+ | 0.9+ | 2006 09 21 | 699 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.2+ |
| 2002 06 11 | 704 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.4− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 06 11 | 704 | 0.8+ | 0.4+ | 2006 09 21 | 699 | 0.7− | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 11 21 | 704 | 0.4+ | 0.4− | 2006 09 25 | 699 | 0.1− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 11 21 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.1− | | | | |
| 2003 11 21 | 704 | 0.3− | 1.4+ | 2006 09 25 | 699 | 0.4− | 0.4− | | | | |

**(141741)∗ 2002 LP$_{36}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.13018 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26730416 | $\omega$ | 34.37828 | | +0.59373976 | | +0.76691631 |
| $a$ | 2.3867059 | $\Omega$ | 273.26690 | | −0.78215177 | | +0.47898275 |
| $e$ | 0.2130309 | $i$ | 14.11908 | | −0.18897539 | | +0.42710057 |
| $P$ | 3.69 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 704 | 0.5− | 0.2+ | 2002 08 03 | 644 | 0.3− | 0.4+ | 2003 12 23 | 704 | 0.7− | 0.9+ |
| 1999 12 16 | 704 | 1.3− | 0.8+ | 2002 08 11 | 704 | 0.2− | 0.0 | 2005 03 13 | 699 | (2.1+ | 1.5+) |
| 1999 12 16 | 704 | 0.3+ | 0.4+ | 2002 08 11 | 704 | 0.3− | 0.0 | 2005 03 13 | 699 | 0.9+ | 1.1+ |
| 1999 12 16 | 704 | 1.3+ | 0.6+ | 2002 08 11 | 704 | 0.5− | 0.0 | 2005 03 13 | 699 | (1.9+ | 0.6−) |
| 1999 12 16 | 704 | 0.6+ | 0.1− | 2002 08 11 | 704 | 0.2− | 0.0 | 2005 03 13 | 699 | 0.8+ | 0.4− |
| 1999 12 16 | 704 | (1.3+ | 2.1−) | 2002 08 11 | 704 | 0.5− | 0.4− | 2005 04 12 | E12 | 0.1+ | 0.3+ |
| 2001 03 02 | 608 | (3.2+ | 0.3+) | 2002 08 16 | 704 | (0.2+ | 1.7−) | 2005 04 12 | E12 | 0.6− | 0.2+ |
| 2001 03 02 | 608 | (3.9+ | 1.6+) | 2002 08 16 | 704 | 0.7− | 0.3− | 2005 04 12 | E12 | 0.6+ | 1.2+ |
| 2001 03 02 | 608 | (3.5+ | 1.0+) | 2002 08 16 | 704 | 0.3+ | 0.5− | 2005 04 12 | E12 | (2.6− | 0.6+) |
| 2002 06 07 | 608 | (0.1− | 3.0−) | 2002 08 16 | 704 | 0.4+ | 0.1+ | 2006 09 24 | 113 | 0.1− | 0.8− |
| 2002 06 07 | 608 | 0.2+ | 1.0− | 2002 08 24 | 644 | 0.0 | 0.2− | 2006 09 24 | 113 | 0.1− | 0.3− |
| 2002 06 07 | 608 | 0.1− | 0.9− | 2002 08 24 | 644 | 0.0 | 0.3− | 2006 09 25 | 703 | 0.8− | 0.5− |
| 2002 06 09 | 704 | 0.5− | 0.8+ | 2002 08 24 | 644 | 0.0 | 0.3− | 2006 09 25 | 703 | 0.3+ | 0.2+ |
| 2002 06 09 | 704 | 0.2+ | 0.1+ | 2002 09 01 | 644 | 0.4− | 1.0+ | 2006 09 25 | 703 | 0.0 | 0.2− |
| 2002 06 09 | 704 | 0.4+ | 0.1− | 2002 09 01 | 644 | 0.1− | 1.0+ | 2006 09 25 | 703 | 0.4− | 0.1− |
| 2002 06 09 | 704 | 1.1+ | 0.3− | 2002 09 01 | 644 | 0.0 | 1.0+ | 2006 10 02 | 704 | 0.2+ | 0.1+ |
| 2002 06 13 | 704 | 1.1− | 0.2+ | 2002 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 02 | 704 | 0.2− | 0.8+ |
| 2002 06 13 | 704 | 0.9− | 1.1+ | 2002 09 20 | 644 | 0.0 | 0.1− | 2006 10 02 | 704 | 1.3+ | 0.3− |
| 2002 06 13 | 704 | 0.9− | 0.4+ | 2002 09 20 | 644 | 0.3+ | 0.1+ | 2006 10 02 | 704 | 0.0 | 0.1− |
| 2002 06 13 | 704 | 0.5− | 0.9+ | 2002 10 01 | 704 | 0.3− | 0.1− | 2006 10 02 | 704 | 0.5+ | 0.0 |
| 2002 06 13 | 704 | 0.3− | 0.7+ | 2002 10 01 | 704 | 0.7− | 0.5+ | 2006 10 03 | 703 | 0.3+ | 0.3+ |
| 2002 06 24 | 608 | 0.2+ | 0.0 | 2002 10 01 | 704 | 0.5− | 0.2− | 2006 10 03 | 703 | 0.1+ | 0.4− |
| 2002 06 24 | 608 | 0.2+ | 0.3+ | 2002 10 01 | 704 | 0.6− | 0.4+ | 2006 10 03 | 703 | 0.6− | 0.2+ |
| 2002 06 24 | 608 | 0.5+ | 0.2− | 2002 10 06 | 704 | 0.7+ | 0.2+ | 2006 10 03 | 703 | 0.0 | 0.1− |
| 2002 07 10 | 644 | 0.3− | 0.1+ | 2002 10 06 | 704 | 0.1+ | 0.2− | 2006 10 23 | 703 | 0.1− | 0.3− |
| 2002 07 10 | 644 | 0.4− | 0.1− | 2002 10 06 | 704 | 0.3+ | 0.6− | 2006 10 23 | 703 | 0.5− | 0.1+ |
| 2002 07 10 | 644 | 0.2− | 0.0 | 2002 10 06 | 704 | 0.3+ | 1.5− | 2006 10 23 | 703 | 0.4− | 0.2− |
| 2002 07 28 | 049 | 0.2+ | 0.2− | 2002 10 31 | 704 | 0.2− | 0.1− | 2006 10 23 | 703 | 0.2− | 0.0 |
| 2002 07 28 | 049 | 0.4+ | 0.0 | 2002 10 31 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 704 | 0.1− | 1.1+ |
| 2002 07 28 | 049 | 0.3+ | 0.2− | 2002 10 31 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.9+ |
| 2002 07 29 | 049 | 0.2+ | 0.2− | 2002 10 31 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.9+ | 0.5+ |
| 2002 07 29 | 049 | 0.5+ | 0.0 | 2002 10 31 | 704 | 0.2+ | 0.9+ | 2006 11 22 | 703 | 0.1+ | 0.6− |
| 2002 07 29 | 049 | 0.4+ | 0.0 | 2003 12 23 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 0.3− | 0.1+ |
| 2002 08 03 | 644 | 0.4− | 0.4+ | 2003 12 23 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.3− | 0.1− |
| 2002 08 03 | 644 | 0.2+ | 0.1+ | 2003 12 23 | 704 | (1.7+ | 0.8+) | 2006 11 22 | 703 | 0.1− | 0.0 |

**(141742)∗ 2002 LT$_{36}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.28101 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28578850 | $\omega$ | 78.05871 | | +0.88941836 | | +0.44306671 |
| $a$ | 2.2826512 | $\Omega$ | 255.55504 | | −0.45139329 | | +0.81266689 |
| $e$ | 0.3135567 | $i$ | 6.66348 | | −0.07196586 | | +0.37850287 |
| $P$ | 3.45 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | (0.4+ | 1.9+) | 2002 08 30 | 699 | 0.3− | 0.0 | 2002 10 12 | 704 | 0.2− | 0.2− |
| 2002 06 09 | 704 | 0.7+ | 1.4+ | 2002 08 30 | 699 | 0.4− | 0.0 | 2002 10 31 | 704 | 0.6− | 0.6+ |
| 2002 06 09 | 704 | 0.5+ | 0.8+ | 2002 08 30 | 699 | 0.9− | 0.6+ | 2002 10 31 | 704 | 0.4− | 0.7+ |
| 2002 06 09 | 704 | 0.4+ | 1.2+ | 2002 09 02 | 113 | 0.1− | 0.1− | 2002 10 31 | 704 | 0.8− | 0.6+ |
| 2002 06 13 | 704 | (1.0− | 2.1+) | 2002 09 02 | 113 | 0.1− | 0.2− | 2002 10 31 | 704 | 0.5− | 0.6+ |
| 2002 06 13 | 704 | 0.4− | 0.5+ | 2002 09 02 | 113 | 0.2− | 0.2− | 2002 10 31 | 704 | 0.3− | 0.5+ |
| 2002 06 13 | 704 | 0.3− | 1.0+ | 2002 09 02 | 113 | 0.0 | 0.1− | 2002 11 06 | 704 | 0.2+ | 0.3− |
| 2002 06 13 | 704 | (0.3− | 1.9+) | 2002 09 02 | 628 | 0.1− | 0.1− | 2002 11 06 | 704 | 0.6− | 0.8− |
| 2002 07 17 | 704 | 0.8− | 0.4+ | 2002 09 02 | 628 | 0.2− | 0.2− | 2002 11 06 | 704 | 0.4+ | 0.8− |
| 2002 07 17 | 704 | 0.2− | 0.2+ | 2002 09 02 | 628 | 0.3− | 0.2− | 2002 11 06 | 704 | 0.4− | 1.4− |
| 2002 07 17 | 704 | 0.4− | 0.0 | 2002 09 02 | 628 | 0.3− | 0.2− | 2002 11 06 | 704 | 0.7+ | 0.7− |
| 2002 07 17 | 704 | 0.1+ | 0.1+ | 2002 09 04 | 699 | 0.5+ | 0.2+ | 2002 11 27 | 608 | 0.5− | 0.3+ |
| 2002 07 18 | 704 | 0.6− | 0.1− | 2002 09 04 | 699 | 0.3+ | 0.0 | 2002 11 27 | 608 | 0.6− | 0.3+ |
| 2002 07 18 | 704 | 0.9− | 0.1+ | 2002 09 04 | 699 | 0.1− | 0.0 | 2002 11 27 | 608 | 0.3− | 0.2+ |
| 2002 07 18 | 704 | 1.0− | 0.0 | 2002 09 04 | 699 | 0.7+ | 0.1+ | 2002 12 06 | 704 | 0.5− | 0.2+ |
| 2002 07 18 | 704 | 0.6− | 0.1− | 2002 09 06 | 196 | 0.4+ | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.1− |
| 2002 07 18 | 704 | 0.5− | 0.2− | 2002 09 06 | 196 | 0.1+ | 0.2− | 2002 12 06 | 704 | 0.6− | 0.0 |
| 2002 07 20 | 644 | 0.4+ | 0.2+ | 2002 09 06 | 196 | 0.2+ | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.5+ |
| 2002 07 20 | 644 | 0.3+ | 0.1+ | 2002 09 11 | 644 | 0.1+ | 0.5− | 2002 12 11 | 704 | 0.4− | 0.3− |
| 2002 07 20 | 644 | 0.0 | 0.2+ | 2002 09 11 | 644 | 0.2+ | 0.1− | 2002 12 11 | 704 | 0.3− | 0.0 |
| 2002 07 24 | 608 | 0.7+ | 0.0 | 2002 09 11 | 644 | 0.4− | 0.1− | 2002 12 11 | 704 | 0.7− | 0.1− |
| 2002 07 24 | 608 | 0.6+ | 0.1+ | 2002 09 13 | 196 | 0.2+ | 0.4+ | 2002 12 11 | 704 | 0.0 | 0.7+ |
| 2002 07 24 | 608 | 0.8+ | 0.1+ | 2002 09 13 | 196 | 0.2+ | 0.0 | 2002 12 11 | 704 | 0.4− | 0.0 |
| 2002 08 04 | 644 | 0.4− | 0.5+ | 2002 09 13 | 196 | 0.6+ | 0.1+ | 2004 03 15 | 291 | 0.3+ | 0.5+ |
| 2002 08 04 | 644 | 0.2− | 0.1− | 2002 09 28 | 196 | 0.2− | 0.3+ | 2004 03 15 | 291 | 0.5− | 0.5+ |
| 2002 08 04 | 644 | 0.0 | 0.2+ | 2002 09 28 | 196 | 0.1− | 0.3+ | 2004 03 15 | 291 | 1.4− | 0.5+ |
| 2002 08 11 | 704 | 0.1− | 0.2− | 2002 09 28 | 196 | 0.3+ | 0.1− | 2004 03 16 | 291 | 0.4+ | 0.6+ |
| 2002 08 11 | 704 | 0.0 | 0.4+ | 2002 09 29 | 196 | 0.1− | 0.6+ | 2004 03 16 | 291 | 0.8+ | 0.8+ |
| 2002 08 11 | 704 | 0.4+ | 0.1− | 2002 09 29 | 196 | 0.2+ | 0.7+ | 2004 03 16 | 291 | 0.8+ | 0.6+ |
| 2002 08 11 | 704 | 0.3− | 0.0 | 2002 09 29 | 196 | 0.0 | 0.5− | 2004 05 13 | 291 | 0.6+ | 0.7+ |
| 2002 08 11 | 704 | 0.4+ | 0.2− | 2002 10 04 | 699 | 1.2− | 0.1− | 2004 05 13 | 291 | 0.5+ | 0.5+ |
| 2002 08 11 | 704 | 0.6− | 0.1− | 2002 10 04 | 699 | 0.0 | 0.1+ | 2004 05 13 | 291 | 0.7+ | 0.3+ |
| 2002 08 11 | 704 | 0.2+ | 0.1+ | 2002 10 04 | 699 | 0.2− | 0.5+ | 2005 05 04 | 644 | 0.4− | 0.2+ |
| 2002 08 11 | 704 | 0.2− | 0.1+ | 2002 10 04 | 699 | 0.3− | 0.3+ | 2005 05 04 | 644 | 0.3− | 0.1+ |
| 2002 08 11 | 704 | 0.3+ | 0.2− | 2002 10 05 | 644 | 0.0 | 0.0 | 2005 05 04 | 644 | 0.3− | 0.2+ |
| 2002 08 11 | 704 | 0.0 | 0.0 | 2002 10 05 | 644 | 0.2+ | 0.1+ | 2005 05 10 | 699 | 0.2− | 0.4+ |
| 2002 08 13 | 704 | 0.9+ | 0.7+ | 2002 10 05 | 644 | 0.2+ | 0.0 | 2005 05 10 | 699 | 0.7− | 0.8+ |
| 2002 08 13 | 704 | 0.0 | 0.6+ | 2002 10 05 | 704 | 0.4− | 0.6+ | 2005 05 10 | 699 | 1.4+ | 0.3− |
| 2002 08 13 | 704 | 0.2+ | 0.1+ | 2002 10 05 | 704 | 0.0 | 0.5+ | 2005 05 10 | 699 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.1+ | 0.2+ | 2002 10 05 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2002 08 13 | 704 | 0.2+ | 0.0 | 2002 10 05 | 704 | 0.3+ | 0.7+ | 2006 09 28 | 691 | 0.1+ | 0.4+ |
| 2002 08 16 | 704 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2002 08 16 | 704 | 0.4− | 0.3+ | 2002 10 06 | 644 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2002 08 16 | 704 | 0.2+ | 0.8+ | 2002 10 06 | 644 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2002 08 16 | 704 | 0.2− | 0.6+ | 2002 10 06 | 644 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2002 08 16 | 704 | 0.2− | 0.6+ | 2002 10 06 | 704 | 0.1− | 1.3− | 2006 11 01 | G96 | 0.8+ | 0.0 |
| 2002 08 16 | 196 | 0.1− | 0.0 | 2002 10 06 | 704 | 0.8+ | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2002 08 16 | 196 | 0.3− | 0.1− | 2002 10 06 | 704 | 1.4+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 08 16 | 196 | 0.2+ | 0.2+ | 2002 10 12 | 704 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 08 30 | 699 | 0.2− | 0.3− | 2002 10 12 | 704 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2− |

**(141743)∗ 2002 LD$_{37}$ = 1998 KT$_{13}$**

Discovered 2002 June 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33618)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 76.47438 | | (2000.0) | | | |
| $n$ | 0.27931265 | $\omega$ | 120.51932 | | +0.41529630 | +0.90960134 |
| $a$ | 2.3177984 | $\Omega$ | 173.97859 | | −0.86994232 | +0.40110832 |
| $e$ | 0.1371505 | $i$ | 6.80260 | | −0.26594991 | +0.10833984 |
| $P$ | 3.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 704 | 0.6− | 1.4+ | 2002 07 21 | 644 | 0.2− | 0.2+ | 2005 05 03 | 704 | 1.0− | 0.6+ |
| 1998 05 22 | 704 | 0.2+ | 0.0 | 2002 07 21 | 644 | 0.1− | 0.1+ | 2005 05 03 | 704 | 0.2− | 0.7+ |
| 1998 05 22 | 704 | 1.7+ | 0.1− | 2002 08 05 | 644 | 0.1− | 0.4+ | 2005 05 13 | 703 | 0.5− | 0.3+ |
| 1998 05 22 | 704 | 1.1+ | 0.1− | 2002 08 05 | 644 | 0.2− | 0.4+ | 2005 05 13 | 703 | 0.8− | 0.0 |
| 1998 05 22 | 704 | (2.1− | 0.1−) | 2002 08 05 | 644 | 0.2− | 0.5+ | 2005 05 13 | 703 | 0.4− | 0.6− |
| 1998 05 24 | 704 | 1.0− | 0.5+ | 2002 08 11 | 644 | 0.4− | 0.6− | 2005 05 13 | 703 | 0.9− | 0.4+ |
| 1998 05 24 | 704 | 0.6+ | 0.9+ | 2002 08 11 | 644 | 0.1− | 0.5− | 2005 06 28 | 644 | 0.0 | 0.0 |
| 1998 05 24 | 704 | 0.4+ | 1.4+ | 2002 08 11 | 644 | 0.4− | 0.5− | 2005 06 28 | 644 | 0.1− | 0.1− |
| 1998 05 24 | 704 | 1.2− | 0.3− | 2002 08 12 | 608 | 1.2− | 0.3− | 2005 06 28 | 644 | 0.5+ | 0.2− |
| 1998 05 24 | 704 | (1.5+ | 2.1−) | 2002 08 12 | 608 | 1.0− | 0.6− | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2002 06 10 | 704 | 0.7− | 1.2− | 2002 08 12 | 608 | 1.0− | 0.2− | 2006 09 30 | 703 | 1.0− | 0.0 |
| 2002 06 10 | 704 | 0.2+ | 0.5− | 2002 08 14 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.5+ |
| 2002 06 10 | 704 | 0.2+ | 1.2− | 2002 08 14 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.9− | 1.3+ |
| 2002 06 11 | 699 | 0.4− | 0.8+ | 2002 08 14 | 704 | 0.6+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2002 06 11 | 699 | 0.5− | 0.6+ | 2002 08 14 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.6+ |
| 2002 06 11 | 699 | 0.3− | 0.1+ | 2002 08 14 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2002 06 11 | 699 | 0.1+ | 0.5− | 2002 08 18 | 608 | 1.3− | 0.9+ | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2002 06 13 | 704 | 1.2+ | 0.3+ | 2002 08 18 | 608 | 1.4− | 0.8+ | 2006 10 22 | 703 | 1.4+ | 0.1+ |
| 2002 06 13 | 704 | 0.7− | 0.9+ | 2002 08 18 | 608 | 1.3− | 0.6+ | 2006 10 22 | 703 | 0.8+ | 0.4+ |
| 2002 06 13 | 704 | 0.3− | 0.1− | 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2002 06 13 | 704 | 0.2+ | 0.6+ | 2002 08 26 | 644 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2002 07 09 | 704 | 0.3+ | 0.4+ | 2002 08 26 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2002 07 09 | 704 | 0.9+ | 0.3− | 2002 09 06 | 704 | 1.0+ | 1.2+ | 2006 11 08 | 644 | 0.4− | 0.5+ |
| 2002 07 09 | 704 | 0.3+ | 0.1− | 2002 09 06 | 704 | 0.3+ | 1.1− | 2006 11 09 | 644 | 0.2− | 0.6+ |
| 2002 07 09 | 704 | 0.2+ | 0.2+ | 2002 09 06 | 704 | 0.6+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.7+ |
| 2002 07 09 | 704 | 0.1− | 0.2+ | 2002 09 06 | 704 | 0.6+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.7+ |
| 2002 07 12 | 644 | 0.0 | 0.0 | 2005 04 01 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 1.2− | 0.5+ |
| 2002 07 12 | 644 | 0.0 | 0.1+ | 2005 04 01 | 691 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2002 07 12 | 644 | 0.2+ | 0.1+ | 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.4+ | 0.3+ |
| 2002 07 14 | 704 | 0.5+ | 0.2− | 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.9− | 0.0 |
| 2002 07 14 | 704 | 0.8+ | 0.7+ | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.4+ |
| 2002 07 14 | 704 | 0.3+ | 0.3− | 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.5+ |
| 2002 07 17 | 704 | 0.5+ | 0.0 | 2005 04 28 | 941 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.5+ |
| 2002 07 17 | 704 | 0.4− | 0.4− | 2005 04 28 | 941 | 0.1− | 0.0 | 2006 11 19 | 703 | (2.3+ | 1.2−) |
| 2002 07 17 | 704 | 0.1+ | 0.3− | 2005 04 28 | 941 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.9+ | 0.1+ |
| 2002 07 18 | 704 | 0.0 | 0.9− | 2005 04 28 | 941 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.6+ | 0.1− |
| 2002 07 18 | 704 | 0.1+ | 0.3− | 2005 04 28 | 941 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.3+ | 1.2+ |
| 2002 07 18 | 704 | 0.6+ | 0.3− | 2005 05 03 | 704 | (1.6+ | 1.2+) | | | | |
| 2002 07 21 | 644 | 0.2+ | 0.1+ | 2005 05 03 | 704 | 0.7− | 0.2− | | | | |

**(141744)∗ 2002 LZ$_{37}$**

Discovered 2002 June 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 113.35293 | | (2000.0) | | | |
| $n$ | 0.36473836 | $\omega$ | 260.11972 | | +0.88611967 | −0.26990964 |
| $a$ | 1.9400597 | $\Omega$ | 114.70560 | | +0.36325654 | +0.90932038 |
| $e$ | 0.0777104 | $i$ | 24.50103 | | −0.28781350 | +0.31667845 |
| $P$ | 2.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.5+ | 0.6+ | 2002 07 14 | 704 | 0.6− | 0.3+ | 2004 02 02 | 704 | 0.2+ | 1.3+ |
| 2001 01 19 | 704 | 0.0 | 0.1+ | 2002 07 14 | 704 | 0.5− | 0.8+ | 2004 02 02 | 704 | 1.8+ | 0.5− |
| 2001 01 19 | 704 | 0.2− | 0.8+ | 2002 07 18 | 704 | 1.2+ | 1.8− | 2005 08 08 | E12 | 0.3− | 0.7− |
| 2001 01 19 | 704 | 0.1− | 0.2− | 2002 07 18 | 704 | (0.3+ | 2.0−) | 2005 08 08 | E12 | 0.4+ | 0.1+ |
| 2001 01 19 | 704 | 0.6− | 0.2+ | 2002 07 18 | 704 | (0.2+ | 2.5−) | 2005 08 08 | E12 | 0.3− | 0.1− |
| 2002 06 12 | 704 | 0.2+ | 0.2− | 2003 12 29 | 704 | 0.7+ | 0.3+ | 2005 08 08 | E12 | 0.7− | 0.6+ |
| 2002 06 12 | 704 | 0.2− | 0.5− | 2003 12 29 | 704 | 0.6+ | 0.3+ | 2005 08 26 | E12 | 0.1− | 0.2+ |
| 2002 06 12 | 704 | 1.6− | 0.4− | 2003 12 29 | 704 | 1.2+ | 1.0+ | 2005 08 26 | E12 | 0.3− | 0.0 |
| 2002 06 13 | 704 | 0.9+ | 0.6+ | 2003 12 29 | 704 | 0.8+ | 0.6+ | 2005 08 26 | E12 | 0.3+ | 0.6+ |
| 2002 06 13 | 704 | 0.7+ | 0.4− | 2004 01 17 | 644 | 0.2− | 0.3+ | 2005 09 07 | E12 | 0.0 | 0.2+ |
| 2002 06 13 | 704 | 0.2+ | 1.3+ | 2004 01 17 | 644 | 0.3− | 0.2+ | 2005 09 07 | E12 | 0.5− | 1.0+ |
| 2002 06 13 | 704 | 0.3− | 0.5+ | 2004 01 17 | 644 | 0.4− | 0.2+ | 2005 09 07 | E12 | 0.0 | 0.5+ |
| 2002 07 09 | 704 | 1.4+ | 0.9+ | 2004 01 17 | 691 | 0.5− | 0.1+ | 2005 09 07 | E12 | 0.6+ | 0.0 |
| 2002 07 09 | 704 | 1.2+ | 0.7+ | 2004 01 17 | 691 | 0.4− | 0.3+ | 2005 10 01 | E12 | 0.3− | 0.7+ |
| 2002 07 09 | 704 | 0.5+ | 0.4+ | 2004 01 17 | 691 | 0.3− | 0.2+ | 2005 10 01 | E12 | 0.1+ | 0.6+ |
| 2002 07 09 | 704 | 0.1− | 0.8+ | 2004 02 02 | 704 | 0.1− | 0.7− | 2005 10 01 | E12 | 0.3+ | 0.2+ |
| 2002 07 14 | 704 | 1.4− | 0.9+ | 2004 02 02 | 704 | 1.2+ | 0.4+ | 2005 10 01 | E12 | 0.2− | 0.5+ |
| 2002 07 14 | 704 | 0.6− | 0.6+ | 2004 02 02 | 704 | 0.1− | 0.7+ | | | | |

**(141745)∗ 2002 LA$_{40}$**

Discovered 2002 June 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.45308 | | (2000.0) | | | |
| $n$ | 0.28628409 | $\omega$ | 205.91732 | | +0.41684449 | +0.79822918 |
| $a$ | 2.2800161 | $\Omega$ | 91.49190 | | −0.73990308 | +0.57583697 |
| $e$ | 0.1984901 | $i$ | 25.78340 | | −0.52800009 | −0.17675396 |
| $P$ | 3.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 645 | 0.0 | 0.2+ | 2002 06 14 | 704 | 0.5+ | 0.6+ | 2005 03 09 | 703 | 0.2− | 0.9− |
| 2001 01 26 | 645 | 0.0 | 0.1+ | 2002 06 14 | 704 | 0.8+ | 0.1+ | 2005 03 14 | 703 | 0.6+ | 1.4− |
| 2002 05 07 | 704 | 0.5+ | 0.3+ | 2002 06 14 | 704 | 0.2+ | 0.6+ | 2005 03 14 | 703 | 1.0+ | 0.1− |
| 2002 05 07 | 704 | 0.8+ | 0.6+ | 2002 07 03 | 644 | 0.3− | 0.4+ | 2005 03 14 | 703 | (1.8+ | 0.1−) |
| 2002 05 07 | 704 | (2.1+ | 0.3−) | 2002 07 03 | 644 | 0.1− | 0.4+ | 2005 03 14 | 703 | 0.1+ | 0.1− |
| 2002 05 15 | 704 | 0.4+ | 0.2− | 2002 07 03 | 644 | 0.3− | 0.4+ | 2005 03 31 | 703 | 1.1− | 0.3+ |
| 2002 05 15 | 704 | 0.4+ | 0.0 | 2002 07 05 | 704 | 0.1− | 0.2− | 2005 03 31 | 703 | 0.9− | 1.1− |
| 2002 05 15 | 704 | 0.6+ | 1.4− | 2002 07 05 | 704 | 0.5+ | 0.3+ | 2005 03 31 | 703 | (0.5− | 1.5−) |
| 2002 05 15 | 704 | 0.4+ | 0.8− | 2002 07 05 | 704 | 0.1− | 0.3+ | 2005 03 31 | 703 | 0.4− | 0.6+ |
| 2002 06 07 | 644 | 0.3+ | 0.7+ | 2002 07 05 | 704 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.3− | 1.0+ |
| 2002 06 07 | 644 | 0.3+ | 0.8+ | 2002 07 14 | 704 | 0.3− | 0.0 | 2006 09 27 | 703 | (2.0− | 0.3−) |
| 2002 06 07 | 644 | 0.5+ | 0.7+ | 2002 07 14 | 704 | 0.9− | 0.1+ | 2006 09 27 | 703 | 0.8+ | 0.6− |
| 2002 06 10 | 704 | 0.0 | 0.6+ | 2002 07 14 | 704 | (2.5− | 1.6+) | 2006 09 27 | 703 | 0.5− | 0.6− |
| 2002 06 10 | 704 | 0.4+ | 0.6− | 2002 07 14 | 704 | 0.3− | 0.8+ | 2006 10 11 | E12 | 0.5− | 1.2+ |
| 2002 06 10 | 704 | 0.4− | 0.2+ | 2003 12 23 | 704 | 0.3− | 0.3+ | 2006 10 11 | E12 | 0.9+ | 0.0 |
| 2002 06 10 | 704 | 0.7− | 0.6+ | 2003 12 23 | 704 | 0.5+ | 0.7− | 2006 10 11 | E12 | 0.3+ | 0.2− |
| 2002 06 10 | 704 | 0.5− | 0.4− | 2003 12 23 | 704 | 0.5− | 0.4+ | 2006 10 11 | E12 | 0.5− | 0.5− |
| 2002 06 11 | 291 | 0.2− | 0.3− | 2003 12 23 | 704 | 0.5− | 0.6+ | 2006 11 25 | 703 | 0.9− | 0.6+ |
| 2002 06 11 | 291 | 0.1− | 0.1+ | 2005 03 09 | 703 | 0.6− | 0.5+ | 2006 11 25 | 703 | 1.0− | 0.3+ |
| 2002 06 11 | 291 | 0.5+ | 0.1+ | 2005 03 09 | 703 | 0.2+ | 0.1− | 2006 11 25 | 703 | 0.1− | 1.5+ |
| 2002 06 14 | 704 | 0.1− | 1.0+ | 2005 03 09 | 703 | 0.1− | 0.1− | 2006 11 25 | 703 | 0.3+ | 0.5+ |

**(141746)∗ 2002 LO$_{44}$ = 1999 TN$_{160}$**

Discovered 2002 June 4 by NEAT at Palomar.

Id. A. Doppler (*MPO* 31786)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.22900 | | (2000.0) | | | |
| $n$ | 0.27880669 | $\omega$ | 5.75752 | | +0.52699899 | +0.84918808 |
| $a$ | 2.3206016 | $\Omega$ | 296.04973 | | −0.78123630 | +0.46833543 |
| $e$ | 0.1760001 | $i$ | 2.16477 | | −0.33457720 | +0.24401133 |
| $P$ | 3.54 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2+ | 0.4− | 2005 03 04 | 691 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.6+ | 1.1+ |
| 1999 10 09 | 704 | 0.3+ | 0.9− | 2005 03 04 | 691 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 0.9− | 0.2− |
| 1999 10 09 | 704 | 0.2− | 0.4− | 2005 03 04 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 1.4+ | 0.3− |
| 1999 10 13 | 704 | 0.0 | 0.5− | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.5− | 0.6− | 2005 03 11 | G96 | 0.4− | 0.2+ | 2006 08 28 | 703 | 1.1+ | 0.4+ |
| 1999 10 13 | 704 | 0.5− | 0.3− | 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.4+ |
| 1999 10 13 | 704 | 0.3+ | 0.1+ | 2005 03 11 | G96 | 0.5− | 0.1− | 2006 08 28 | 691 | 0.3− | 0.2+ |
| 1999 10 13 | 704 | 0.9+ | 0.2− | 2005 04 04 | 691 | 0.3− | 0.3+ | 2006 08 28 | 691 | 0.3− | 0.1+ |
| 2001 01 21 | 691 | 0.3+ | 0.3+ | 2005 04 04 | 691 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.3− |
| 2001 01 21 | 691 | 0.4+ | 0.3+ | 2005 04 04 | 691 | 0.6+ | 0.2+ | 2006 09 12 | 703 | 0.6− | 0.5+ |
| 2001 01 21 | 691 | 0.5+ | 0.1+ | 2005 04 12 | G96 | 0.7− | 0.2+ | 2006 09 12 | 703 | 0.4− | 1.4+ |
| 2002 05 11 | 704 | 0.5+ | 0.8+ | 2005 04 12 | G96 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.0 | 0.0 |
| 2002 05 11 | 704 | 0.5− | 0.1+ | 2005 04 12 | G96 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.6− | 0.6+ |
| 2002 05 11 | 704 | 0.4− | 0.1− | 2005 04 12 | G96 | 0.6− | 0.2− | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 2002 05 11 | 704 | 0.2− | 0.3− | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2002 05 30 | 644 | 0.2− | 0.8+ | 2006 08 19 | 691 | 0.3+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.1+ |
| 2002 05 30 | 644 | 0.2− | 0.8+ | 2006 08 19 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.2− |
| 2002 05 30 | 644 | 0.1− | 1.0+ | 2006 08 21 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.6− |
| 2002 06 04 | 644 | 0.4+ | 0.1− | 2006 08 21 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.1− |
| 2002 06 04 | 644 | 0.2− | 0.1+ | 2006 08 21 | 704 | 0.4+ | 1.1+ | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2002 06 04 | 644 | 0.3+ | 0.4− | 2006 08 21 | 704 | 1.3+ | 0.1+ | 2006 09 30 | 699 | 0.9− | 0.0 |
| 2002 06 08 | 704 | 0.6+ | 1.0+ | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 30 | 699 | (1.7− | 0.7+) |
| 2002 06 08 | 704 | 0.7+ | 0.3− | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 30 | 699 | (0.4− | 1.7+) |
| 2002 06 08 | 704 | 0.3+ | 0.0 | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 699 | 0.3+ | 0.8+ |
| 2002 06 08 | 704 | 0.3+ | 0.7+ | 2006 08 23 | 644 | 0.4− | 0.4+ | 2006 10 19 | 695 | 0.2− | 0.2+ |
| 2002 06 08 | 704 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 10 19 | 695 | 0.1− | 0.1+ |
| 2003 11 30 | 691 | 0.3− | 0.3+ | 2006 08 23 | 644 | 0.4− | 0.4+ | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 2003 11 30 | 691 | 0.1− | 0.4+ | 2006 08 27 | 699 | 1.0− | 0.3− | | | | |
| 2003 11 30 | 691 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.8− | 0.6+ | | | | |

**(141747)∗ 2002 LO$_{45}$ = 2003 YM$_{120}$**

Discovered 2002 June 6 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69378)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.99306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30118618 | $\omega$ | 121.03366 | | +0.99684691 | +0.04583915 | |
| $a$ | 2.2041748 | $\Omega$ | 236.41359 | | −0.06604741 | +0.93172355 | |
| $e$ | 0.1943763 | $i$ | 4.45918 | | +0.04397697 | +0.36026380 | |
| $P$ | 3.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 0.9+ | 0.4+ | 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 11 09 | 691 | 0.4+ | 0.0 |
| 1999 06 15 | 704 | (2.3+ | 0.6+) | 2005 05 14 | G96 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 1999 06 15 | 704 | (2.4+ | 0.7+) | 2005 05 14 | G96 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 1999 06 15 | 704 | 0.8+ | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1999 06 15 | 704 | 1.3+ | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 1999 07 13 | 704 | 0.9− | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.0 |
| 1999 07 13 | 704 | 0.2− | 1.0+ | 2006 08 28 | 703 | 0.6− | 0.6+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 1999 07 13 | 704 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.3− | 1.3− | 2006 11 11 | 703 | 0.6− | 0.9− |
| 1999 07 13 | 704 | 0.2+ | 1.7+ | 2006 08 30 | 704 | 0.8− | 0.6− | 2006 11 11 | 703 | 0.4− | 1.2− |
| 1999 07 13 | 704 | 0.4− | 0.9+ | 2006 08 30 | 704 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.8− | 1.1− |
| 2002 06 06 | 291 | 0.9− | 1.5− | 2006 09 19 | 704 | 0.5+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2002 06 06 | 291 | 0.4− | 0.2+ | 2006 09 19 | 704 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.3+ |
| 2002 06 06 | 291 | 0.2− | 0.0 | 2006 09 19 | 704 | 0.6− | 1.4+ | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2002 06 08 | 704 | 0.7− | 0.5+ | 2006 09 19 | 704 | 0.6+ | 0.7+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2002 06 08 | 704 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2002 06 08 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.4− | 0.6+ |
| 2002 06 16 | 644 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.6− | 0.8+ | 2006 11 16 | 703 | 0.4+ | 0.1− |
| 2002 06 16 | 644 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.1+ | 1.3+ | 2006 11 16 | 703 | 0.8+ | 0.3+ |
| 2002 06 16 | 644 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.5− | 0.0 | 2006 11 16 | 703 | 0.7+ | 0.5+ |
| 2003 12 19 | 704 | (0.5+ | 2.8+) | 2006 09 25 | 704 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.4− | 0.2− |
| 2003 12 19 | 704 | 0.5− | 0.7− | 2006 09 25 | 704 | 0.0 | 0.1+ | 2006 11 17 | 704 | 1.1− | 0.3+ |
| 2003 12 19 | 704 | 0.6− | 0.9− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.8− | 0.4+ |
| 2003 12 22 | 704 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.2− | 0.1+ |
| 2003 12 22 | 704 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 17 | 704 | 1.1− | 0.2− |
| 2003 12 22 | 704 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.6− | 0.2− |
| 2003 12 27 | 704 | 0.6+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2003 12 27 | 704 | 0.2− | 0.6− | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2003 12 27 | 704 | 0.4− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2003 12 27 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 704 | 0.7+ | 1.2+ | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2003 12 27 | 704 | 0.0 | 1.1+ | 2006 10 21 | 704 | 0.3− | 1.2+ | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2003 12 28 | 704 | 0.2− | 0.2− | 2006 10 21 | 704 | 0.2− | 1.1+ | 2006 11 21 | 704 | 0.8+ | 0.0 |
| 2003 12 28 | 704 | 1.0− | 0.7− | 2006 10 21 | 704 | 0.1+ | 0.9+ | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2003 12 28 | 704 | 0.3+ | 0.2− | 2006 10 21 | 704 | 0.5− | 1.0+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2003 12 28 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.6+ |
| 2003 12 28 | 704 | 0.8− | 1.0+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2003 12 28 | 704 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 26 | 704 | 0.0 | 0.3+ |
| 2003 12 28 | 704 | 0.2− | 0.1+ | 2006 10 23 | 704 | 1.5− | 1.2+ | 2006 11 26 | 704 | 0.6+ | 0.2− |
| 2003 12 28 | 704 | 1.0− | 0.4+ | 2006 10 23 | 704 | 0.8+ | 0.2− | 2006 11 26 | 704 | 0.3− | 0.4+ |
| 2003 12 28 | 704 | 1.2+ | 1.2+ | 2006 10 23 | 704 | 0.8+ | 0.7− | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2003 12 28 | 704 | 1.1+ | 1.0+ | 2006 10 23 | 704 | (2.0+ | 0.1+) | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2003 12 30 | 704 | 0.1− | 0.3+ | 2006 10 23 | 704 | 0.4+ | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.6− |
| 2003 12 30 | 704 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2003 12 30 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.6+ | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2003 12 30 | 704 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2003 12 30 | 704 | 0.5− | 0.2+ | 2006 10 28 | 704 | 0.5− | 0.5− | 2006 11 27 | 703 | 0.1− | 1.0− |
| 2005 04 11 | 691 | 0.7+ | 0.0 | 2006 10 28 | 704 | 0.7− | 0.9+ | 2006 11 27 | 703 | 0.3+ | 0.0 |
| 2005 04 11 | 691 | 0.5+ | 0.0 | 2006 10 28 | 704 | 1.3+ | 0.9+ | 2006 11 27 | 703 | 0.4+ | 0.6− |
| 2005 04 11 | 691 | 0.7+ | 0.5+ | 2006 10 28 | 704 | 0.1+ | 1.4+ | 2006 11 27 | 703 | 0.8+ | 0.9− |
| 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 704 | 0.4+ | 0.6− | 2006 11 27 | 703 | 0.3+ | 1.0− |
| 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.3− | 0.4− |
| 2005 04 17 | 691 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.5+ | 0.2− |
| 2005 05 01 | 644 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.6− | 2006 11 29 | 704 | 0.5+ | 0.1− |
| 2005 05 01 | 644 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.1− |
| 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.1− |

**(141748)∗ 2002 LK$_{47}$**

Discovered 2002 June 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.42790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30295515 | $\omega$ | 172.23235 | | +0.97616565 | +0.21699865 | |
| $a$ | 2.1955862 | $\Omega$ | 175.23057 | | −0.20130914 | +0.91136704 | |
| $e$ | 0.2102166 | $i$ | 2.40837 | | −0.08108791 | +0.34974521 | |
| $P$ | 3.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.0 | 0.0 | 2005 03 13 | G96 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 1998 03 02 | 691 | 0.2+ | 0.0 | 2005 03 13 | G96 | 0.2− | 0.7− | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 1998 03 02 | 691 | 0.3− | 0.4+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 1999 06 15 | 704 | 0.6+ | 0.6− | 2005 04 04 | G96 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.1− |
| 1999 06 15 | 704 | 0.4− | 0.1− | 2005 04 04 | G96 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.5− | 0.3+ |
| 1999 06 15 | 704 | 0.3+ | 1.0+ | 2005 04 04 | G96 | 0.5− | 0.3− | 2006 11 14 | 704 | 0.9+ | 0.7− |
| 1999 06 15 | 704 | 0.0 | 0.2+ | 2005 04 06 | 691 | 0.4+ | 0.3+ | 2006 11 14 | 704 | 1.0+ | 0.1− |
| 1999 06 15 | 704 | 0.4+ | 1.2+ | 2005 04 06 | 691 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 02 22 | 704 | 0.8− | 0.7− | 2005 04 06 | 691 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 02 22 | 704 | 0.4+ | 0.7+ | 2005 04 11 | 699 | 1.2+ | 1.2− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 02 22 | 704 | 0.9+ | 0.3+ | 2005 04 11 | 699 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2001 02 22 | 704 | 0.1+ | 0.5+ | 2005 04 11 | 699 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.7+ | 0.1+ |
| 2002 05 10 | 644 | 0.2− | 0.9+ | 2005 04 11 | 699 | 0.6− | 0.9− | 2006 11 17 | 704 | 0.3− | 0.3+ |
| 2002 05 10 | 644 | 0.2− | 0.8+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.3+ |
| 2002 05 10 | 644 | 0.8− | 0.1− | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.6+ |
| 2002 05 16 | 704 | 0.6− | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2002 05 16 | 704 | 0.6− | 0.2+ | 2005 05 08 | 703 | 0.2+ | 1.1− | 2006 11 20 | 704 | 0.2+ | 0.2− |
| 2002 05 16 | 704 | 0.3− | 0.0 | 2005 05 08 | 703 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2002 05 16 | 704 | 1.0− | 0.5+ | 2005 05 08 | 703 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2002 06 11 | 644 | 0.3+ | 0.0 | 2005 05 08 | 703 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2002 06 11 | 704 | 0.1− | 0.1− | 2005 05 10 | 807 | 0.2+ | 0.2− | 2006 11 24 | 703 | 1.2− | 0.2− |
| 2002 06 11 | 704 | 0.1− | 1.0+ | 2005 05 10 | G96 | 0.2− | 0.1− | 2006 11 24 | 703 | 0.5− | 0.1+ |
| 2002 06 11 | 644 | 0.2+ | 0.2+ | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 11 24 | 703 | 0.7− | 0.4+ |
| 2002 06 11 | 704 | 0.0 | 0.6+ | 2005 05 10 | G96 | 0.2− | 0.1− | 2006 11 24 | 703 | 0.9− | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 11 | 704 | 0.8− | 1.1+ | 2005 05 10 | 807 | 0.3− | 0.1− | 2006 11 25 | 704 | 1.1+ | 0.9+ |
| 2002 06 11 | 644 | 0.3+ | 0.6+ | 2005 05 10 | G96 | 0.3− | 0.1− | 2006 11 25 | 704 | 1.4+ | 1.1+ |
| 2002 06 16 | 704 | 0.2+ | 1.3+ | 2005 05 10 | 807 | 0.2− | 0.0 | 2006 11 25 | 704 | 0.9− | 1.0+ |
| 2002 06 16 | 704 | 1.1+ | 0.4+ | 2006 09 16 | 703 | 0.7− | 0.2+ | 2006 11 25 | 704 | 0.1+ | 1.1+ |
| 2002 06 16 | 704 | 0.1− | 1.1+ | 2006 09 16 | 703 | 0.4− | 0.3+ | 2006 11 25 | 704 | 0.6+ | 2.5+ |
| 2002 06 16 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 703 | 0.8− | 0.1− | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2002 06 16 | 644 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.6− | 0.4− | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2002 06 16 | 704 | 0.2+ | 0.6+ | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.5+ |
| 2002 06 16 | 644 | 0.7+ | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.2− | 0.1− |
| 2002 06 16 | 644 | 0.2− | 0.7+ | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.4− |
| 2005 03 13 | G96 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.0 | | | | |
| 2005 03 13 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.1+ | | | | |

**(141749)∗ 2002 LW$_{47}$**

Discovered 2002 June 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.73795 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27466166 | $\omega$ | 164.95388 | | +0.85551200 | +0.51405850 | |
| $a$ | 2.3438907 | $\Omega$ | 163.66434 | | −0.49490680 | +0.84702710 | |
| $e$ | 0.2465683 | $i$ | 12.73294 | | −0.15220539 | +0.13523663 | |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 12 02 | 260 | 1.3+ | 0.9+ | 2002 08 13 | 704 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.9+ | 0.7− |
| 1981 12 02 | 260 | 1.3+ | 0.1+ | 2002 08 13 | 704 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.8+ | 1.0− |
| 1984 08 01 | 260 | 1.5− | 0.8+ | 2002 08 13 | 704 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.2− |
| 1984 08 01 | 260 | 1.0− | 0.5+ | 2002 08 13 | 704 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.1− |
| 1995 08 24 | 809 | 0.2+ | 0.1− | 2002 08 13 | 704 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.8+ | 0.4− |
| 1995 08 25 | 809 | 0.1− | 1.7+ | 2002 09 22 | 644 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.4− |
| 1995 08 25 | 809 | 0.5− | 0.0 | 2002 09 22 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.3− |
| 1995 08 26 | 809 | 0.4+ | 0.3+ | 2002 09 22 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 1995 09 01 | 809 | 0.0 | 0.6+ | 2002 10 04 | 704 | 0.2+ | 1.2+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2002 10 04 | 704 | 0.0 | 0.4+ | 2006 10 20 | 703 | 0.7+ | 0.3− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 10 04 | 704 | 0.1+ | 1.1+ | 2006 10 20 | 703 | 0.5+ | 0.2+ |
| 2002 06 03 | 704 | 0.8− | 1.3− | 2002 10 04 | 704 | 0.1− | 1.4− | 2006 10 20 | 703 | 0.6− | 0.4+ |
| 2002 06 03 | 704 | 0.9− | 1.3− | 2002 10 11 | 704 | 0.5+ | 1.1− | 2006 10 20 | 703 | 0.3− | 0.1+ |
| 2002 06 03 | 704 | 1.1− | 1.1− | 2002 10 11 | 704 | 0.0 | 1.1− | 2006 10 28 | 703 | 0.5− | 0.5+ |
| 2002 06 13 | 704 | 0.9+ | 0.0 | 2002 10 11 | 704 | 0.3+ | 1.1− | 2006 10 28 | 703 | 0.7− | 0.1− |
| 2002 06 13 | 704 | 0.6+ | 0.1− | 2005 03 31 | H06 | 0.1− | 0.7+ | 2006 10 28 | 703 | 0.8− | 0.3− |
| 2002 06 13 | 704 | 0.3+ | 0.2− | 2005 03 31 | H06 | 1.0+ | 0.4− | 2006 10 28 | 703 | 0.6− | 0.7+ |
| 2002 06 13 | 704 | 1.2+ | 0.3+ | 2005 03 31 | H06 | 0.6+ | 0.5− | 2006 11 10 | 704 | 0.5− | 0.0 |
| 2002 06 16 | 704 | 0.5+ | 0.4− | 2005 04 09 | 699 | 0.5+ | 0.6+ | 2006 11 10 | 704 | 0.4+ | 0.2− |
| 2002 06 16 | 704 | 0.0 | 0.8+ | 2005 04 09 | 699 | 0.0 | 0.8+ | 2006 11 10 | 704 | 0.4− | 0.6− |
| 2002 06 16 | 704 | 0.0 | 0.2+ | 2005 04 09 | 699 | 0.9+ | 0.2− | 2006 11 10 | 704 | 0.4− | 0.1+ |
| 2002 06 16 | 704 | 0.1+ | 0.3+ | 2005 04 09 | 699 | (1.0− | 2.9+) | 2006 11 16 | 703 | 0.0 | 0.4+ |
| 2002 08 12 | 704 | 1.1+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.5+ | 2006 11 16 | 703 | 0.1+ | 0.2− |
| 2002 08 12 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.6+ | 2006 11 16 | 703 | 0.4− | 0.4+ |
| 2002 08 12 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 1.0− | 0.7− | 2006 11 16 | 703 | 0.1+ | 0.2+ |
| 2002 08 12 | 704 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2− | | | | |

**(141750)∗ 2002 LG$_{50}$**

Discovered 2002 June 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.75007 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30132385 | $\omega$ | 183.39929 | | +0.42283441 | +0.89881389 | |
| $a$ | 2.2035033 | $\Omega$ | 111.64140 | | −0.82846991 | +0.43506496 | |
| $e$ | 0.1446933 | $i$ | 7.13915 | | −0.36721746 | +0.05340491 | |
| $P$ | 3.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 21 | 691 | 0.5− | 0.3− | 2002 06 09 | 704 | 0.2− | 0.1+ | 2005 04 16 | 703 | 0.9− | 0.9+ |
| 1999 06 21 | 691 | 0.2− | 0.1+ | 2002 06 13 | 291 | 0.1− | 0.3+ | 2005 04 16 | 703 | 0.6− | 0.3+ |
| 1999 06 21 | 691 | 0.0 | 0.4− | 2002 06 13 | 291 | 0.1− | 0.3+ | 2005 04 16 | 703 | 0.1+ | 1.0+ |
| 1999 07 14 | 704 | 0.8+ | 0.6+ | 2002 06 13 | 291 | 0.8+ | 0.1+ | 2005 04 16 | 703 | (0.4+ | 1.7−) |
| 1999 07 14 | 704 | 0.9+ | 0.3+ | 2002 06 25 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 1999 07 14 | 704 | 0.4+ | 0.2− | 2002 06 25 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.5− |
| 1999 07 14 | 704 | 0.4+ | 0.6− | 2002 06 25 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.2− |
| 1999 07 14 | 704 | 0.6+ | 0.7− | 2002 07 03 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2002 05 08 | 704 | 0.6+ | 1.2+ | 2002 07 03 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.5+ | 0.8+ |
| 2002 05 08 | 704 | 1.0+ | 1.4+ | 2002 07 03 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.5+ | 0.2+ |
| 2002 05 08 | 704 | 1.1− | 0.4− | 2003 12 17 | 691 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.7+ |
| 2002 05 08 | 704 | 0.8− | 0.8+ | 2003 12 17 | 691 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2002 05 23 | 644 | 0.0 | 1.2+ | 2003 12 17 | 691 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.5− | 0.7+ |
| 2002 05 23 | 644 | 0.0 | 1.1+ | 2005 03 18 | 703 | 0.5− | 0.6− | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2002 05 23 | 644 | 0.4+ | 1.0+ | 2005 03 18 | 703 | (2.2− | 0.6+) | 2006 10 22 | 703 | 0.2+ | 0.8+ |
| 2002 06 03 | 644 | 0.1− | 0.4+ | 2005 03 18 | 703 | (2.8− | 0.6+) | 2006 11 13 | 703 | 0.8+ | 0.7− |
| 2002 06 03 | 644 | (0.9+ | 1.6+) | 2005 03 18 | 703 | 1.2− | 0.5− | 2006 11 13 | 703 | 1.1− | 0.4− |
| 2002 06 03 | 644 | 0.3− | 0.6+ | 2005 03 30 | 703 | 1.0− | 0.7− | 2006 11 13 | 703 | 0.9− | 0.4− |
| 2002 06 08 | 608 | (0.4− | 1.5−) | 2005 03 30 | 703 | 0.9+ | 0.4− | 2006 11 13 | 703 | 1.1− | 0.6− |
| 2002 06 08 | 608 | 0.4− | 1.0− | 2005 03 30 | 703 | 0.0 | 1.3− | 2006 11 19 | 703 | 0.3+ | 1.0− |
| 2002 06 08 | 608 | 0.4− | 1.1− | 2005 03 30 | 703 | 0.8+ | 0.1− | 2006 11 19 | 703 | 0.3− | 0.4+ |
| 2002 06 09 | 704 | 0.3+ | 0.8+ | 2005 04 09 | 699 | 0.0 | 0.5+ | 2006 11 19 | 703 | 0.6+ | 0.9+ |
| 2002 06 09 | 704 | 0.1+ | 0.3+ | 2005 04 09 | 699 | 0.7+ | 0.2− | 2006 11 19 | 703 | 0.2− | 0.7+ |
| 2002 06 09 | 704 | 0.4+ | 0.8− | 2005 04 09 | 699 | 0.1+ | 1.1− | | | | |
| 2002 06 09 | 704 | 0.2− | 0.1+ | 2005 04 09 | 699 | 0.8+ | 1.1− | | | | |

**(141751)∗ 2002 LM$_{51}$ = 2003 RV$_{7}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 50095)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.75315 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24120635 | $\omega$ | 317.02304 | | +0.66706895 | −0.70608806 | |
| $a$ | 2.5558982 | $\Omega$ | 89.61594 | | +0.73160140 | +0.56065587 | |
| $e$ | 0.1604138 | $i$ | 13.74586 | | +0.14063570 | +0.43255595 | |
| $P$ | 4.09 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 2.4+ | 0.3− | 2002 06 10 | 644 | 0.1− | 0.1− | 2005 03 08 | 703 | 0.7+ | 0.6+ |
| 1999 09 11 | 704 | 1.0+ | 0.6− | 2002 06 10 | 644 | 0.0 | 0.0 | 2005 03 14 | 703 | 0.2− | 0.2+ |
| 1999 09 11 | 704 | 0.2+ | 1.0− | 2002 06 10 | 644 | 0.3− | 0.1− | 2005 03 14 | 703 | 1.0− | 0.4+ |
| 1999 09 11 | 704 | 0.1+ | 0.6− | 2003 09 04 | 428 | 0.4− | 0.3− | 2005 03 14 | 703 | 0.9− | 0.8− |
| 1999 09 11 | 704 | 0.8+ | 0.3− | 2003 09 04 | 428 | 0.3− | 0.4− | 2005 03 14 | 703 | 0.3− | 1.3+ |
| 1999 09 30 | 704 | 1.0− | 0.3− | 2003 09 05 | 428 | 0.8− | 0.7+ | 2006 04 24 | 691 | 0.4+ | 1.1+ |
| 1999 09 30 | 704 | 1.1− | 0.3− | 2003 09 05 | 428 | 0.6+ | 0.1+ | 2006 04 24 | 691 | 0.0 | 0.1− |
| 1999 09 30 | 704 | 1.2− | 0.0 | 2003 09 15 | 428 | 0.2− | 1.5+ | 2006 04 24 | 691 | 0.1− | 0.1+ |
| 1999 09 30 | 704 | 1.9− | 1.1+ | 2003 09 15 | 428 | 0.4+ | 0.9+ | 2006 04 30 | 703 | 0.7+ | 0.6− |
| 2001 02 02 | 608 | 1.6+ | 0.3+ | 2003 09 26 | 644 | 0.1− | 0.2+ | 2006 04 30 | 703 | 1.2− | 1.0− |
| 2001 02 02 | 608 | 1.7+ | 0.0 | 2003 09 26 | 644 | 0.1+ | 0.3+ | 2006 04 30 | 703 | 1.3− | 0.4− |
| 2001 02 02 | 608 | 1.6+ | 0.1− | 2003 09 26 | 644 | 0.0 | 0.1+ | 2006 04 30 | 703 | 0.4− | 0.4− |
| 2002 05 23 | 644 | 0.2+ | 1.8+ | 2003 09 26 | 644 | 0.1+ | 0.3+ | 2006 05 02 | 691 | 0.1− | 0.0 |
| 2002 05 23 | 644 | 0.0 | 1.7+ | 2003 09 26 | 644 | 0.0 | 0.3− | 2006 05 02 | 691 | 0.0 | 0.0 |
| 2002 05 23 | 644 | 0.1− | 1.6+ | 2003 09 26 | 644 | 0.1+ | 0.4+ | 2006 05 02 | 691 | 0.1− | 0.1+ |
| 2002 06 02 | 644 | 0.2− | 0.2+ | 2003 10 24 | 699 | 0.6− | 0.5− | 2006 05 06 | 691 | 0.3+ | 0.4− |
| 2002 06 02 | 644 | 0.3− | 0.1− | 2003 10 24 | 699 | 0.5+ | 2.0+ | 2006 05 06 | 691 | 0.1+ | 0.3− |
| 2002 06 02 | 644 | 0.4− | 0.1+ | 2003 10 24 | 699 | 0.9+ | 0.6+ | 2006 05 06 | 691 | 0.1+ | 0.3− |
| 2002 06 09 | 704 | 0.1− | 0.1+ | 2003 10 24 | 699 | 0.3+ | 0.8+ | 2006 05 26 | 703 | 1.7− | 0.3− |
| 2002 06 09 | 704 | 0.3− | 0.8− | 2005 03 08 | 703 | 1.4− | 0.3+ | 2006 05 26 | 703 | (2.5− | 0.9−) |
| 2002 06 09 | 704 | 0.0 | 0.0 | 2005 03 08 | 703 | 0.5+ | 0.8+ | 2006 05 26 | 703 | 0.2+ | 1.2− |
| 2002 06 09 | 704 | 0.7+ | 1.2+ | 2005 03 08 | 703 | 0.6− | 0.1+ | 2006 05 26 | 703 | 0.9+ | 0.0 |

**(141752)∗ 2002 LK$_{52}$**

Discovered 2002 June 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 116.95999 | | (2000.0) | | | |
| $n$ | 0.30219066 | $\omega$ | 104.37091 | | +0.06023239 | +0.99804308 |
| $a$ | 2.1992876 | $\Omega$ | 169.04091 | | −0.94648562 | +0.06244931 |
| $e$ | 0.2257420 | $i$ | 5.06831 | | −0.31707575 | +0.00317636 |
| $P$ | 3.26 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 09 | 691 | 0.1+ | 0.5− | 2005 04 09 | 691 | 0.1+ | 0.2+ | 2005 05 08 | 704 | 0.3+ | 0.5− |
| 1992 04 09 | 691 | 0.3− | 1.1− | 2005 04 10 | 691 | 0.0 | 0.2+ | 2005 05 08 | 704 | 0.4+ | 0.1− |
| 1992 04 09 | 691 | 0.3− | 0.6− | 2005 04 10 | 691 | 0.1− | 0.2+ | 2005 05 08 | 704 | 0.4+ | 0.6− |
| 2002 05 23 | 644 | 0.5− | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.0 | 2005 05 11 | 699 | 0.3− | 0.6+ |
| 2002 05 23 | 644 | 0.4− | 0.7+ | 2005 04 11 | 691 | 0.0 | 0.2+ | 2005 05 11 | 699 | 0.7− | 0.6+ |
| 2002 05 23 | 644 | 0.5− | 0.3+ | 2005 04 11 | 691 | 0.0 | 0.1+ | 2005 05 11 | 699 | 0.1− | 1.3+ |
| 2002 06 09 | 704 | (0.1+ | 1.9−) | 2005 04 11 | 691 | 0.0 | 0.2+ | 2005 05 11 | 699 | 0.3− | 0.2+ |
| 2002 06 09 | 704 | 0.8+ | 0.5− | 2005 04 13 | 699 | 0.6+ | 0.3+ | 2005 05 12 | 704 | 0.1− | 0.2+ |
| 2002 06 09 | 704 | 1.1+ | 0.6− | 2005 04 13 | 699 | 0.0 | 0.4+ | 2005 05 12 | 704 | 0.3+ | 0.1+ |
| 2002 06 09 | 704 | 0.3+ | 0.1− | 2005 04 13 | 699 | 0.8+ | 0.7− | 2005 05 12 | 704 | 0.3+ | 1.1+ |
| 2002 06 09 | 704 | 0.3+ | 0.0 | 2005 04 13 | 699 | 1.3− | 0.1− | 2005 05 12 | 704 | 0.3+ | 0.2+ |
| 2002 06 10 | 644 | 0.2+ | 0.4+ | 2005 04 13 | 704 | (2.0+ | 0.8+) | 2005 05 12 | 704 | 0.5+ | 0.1− |
| 2002 06 10 | 644 | 0.2− | 0.3+ | 2005 04 13 | 704 | (1.9+ | 0.5+) | 2006 10 23 | G96 | 0.1+ | 0.2+ |
| 2002 06 10 | 644 | 0.0 | 0.2+ | 2005 04 13 | 704 | (2.6+ | 0.6+) | 2006 10 23 | G96 | 0.3− | 0.2+ |
| 2002 07 03 | 644 | 0.1+ | 1.0+ | 2005 04 13 | 704 | (2.1+ | 0.5+) | 2006 10 23 | G96 | 0.5+ | 0.2+ |
| 2002 07 03 | 644 | 0.1+ | 0.9+ | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2002 07 03 | 644 | 0.1− | 1.1+ | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.4− | 0.5+ |
| 2002 07 14 | 704 | 0.1− | 0.1− | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.4− | 0.1− |
| 2002 07 14 | 704 | 0.7− | 0.6− | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 2002 07 14 | 704 | 0.1+ | 0.3− | 2005 04 18 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.5+ |
| 2002 08 14 | 704 | 1.5− | 0.7+ | 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2002 08 14 | 704 | 0.8+ | 0.5− | 2005 05 03 | 704 | 0.1+ | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.5+ |
| 2002 08 14 | 704 | 0.5− | 0.6+ | 2005 05 03 | 704 | 0.8+ | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2002 08 14 | 704 | 0.4+ | 0.5+ | 2005 05 03 | 704 | 0.6+ | 0.3+ | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2002 08 24 | 644 | 0.1+ | 0.0 | 2005 05 03 | 704 | 0.8+ | 0.8+ | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2002 08 24 | 644 | 0.1+ | 0.2+ | 2005 05 07 | 703 | 1.2− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2002 08 24 | 644 | 0.9− | 0.1− | 2005 05 07 | 703 | 0.8− | 0.3+ | 2006 11 24 | G96 | 0.5− | 0.2+ |
| 2005 04 09 | 691 | 0.1+ | 0.0 | 2005 05 07 | 703 | 0.9− | 0.7− | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2005 04 09 | 691 | 0.2+ | 0.3+ | 2005 05 07 | 703 | 0.0 | 0.7− | 2006 11 24 | G96 | 0.5+ | 0.2+ |

**(141753)∗ 2002 LL$_{53}$**

Discovered 2002 June 9 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.34094 | | (2000.0) | | | |
| $n$ | 0.28466473 | $\omega$ | 221.32556 | | +0.94244941 | +0.29563062 |
| $a$ | 2.2886547 | $\Omega$ | 120.83284 | | −0.23850853 | +0.92179973 |
| $e$ | 0.2799214 | $i$ | 10.47956 | | −0.23431343 | +0.25077440 |
| $P$ | 3.46 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 704 | 0.3+ | 1.0+ | 2002 06 17 | 608 | 0.7+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1999 09 30 | 699 | 0.2+ | 0.6− | 2002 06 17 | 608 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1999 09 30 | 704 | 0.0 | 0.4+ | 2004 01 27 | 704 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 1999 09 30 | 704 | 0.9+ | 0.8− | 2004 01 27 | 704 | 0.1− | 1.1+ | 2006 10 17 | 703 | 0.8− | 0.2+ |
| 1999 09 30 | 699 | 0.1+ | 0.4+ | 2004 01 27 | 704 | 0.4+ | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.9+ |
| 1999 09 30 | 699 | 0.8− | 0.9+ | 2004 01 27 | 704 | 0.6− | 0.0 | 2006 10 17 | 703 | 1.1− | 0.6+ |
| 1999 10 16 | 704 | 0.1− | 0.1− | 2004 01 31 | 691 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.8− |
| 1999 10 16 | 704 | 0.1− | 0.7− | 2004 01 31 | 691 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.3+ |
| 1999 10 16 | 704 | 0.3− | 0.5− | 2004 01 31 | 691 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 1999 10 16 | 704 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.1− | 0.1− |
| 1999 10 16 | 704 | 0.5+ | 1.2− | 2006 09 18 | 703 | 0.7+ | 1.0− | 2006 10 28 | 703 | 0.5+ | 0.2− |
| 2002 06 01 | 644 | 0.1+ | 1.1+ | 2006 09 18 | 703 | (0.5+ | 2.2−) | 2006 11 10 | 704 | 0.0 | 0.8+ |
| 2002 06 01 | 644 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 0.5+ | 1.2− | 2006 11 10 | 704 | 0.2− | 0.4+ |
| 2002 06 01 | 644 | 0.2+ | 1.1+ | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 11 10 | 704 | 0.5− | 1.0+ |
| 2002 06 09 | 644 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 1.1+ | 0.1+ | 2006 11 10 | 704 | 0.6− | 0.3+ |
| 2002 06 09 | 644 | 0.4− | 0.8+ | 2006 09 19 | 703 | 0.8− | 0.0 | 2006 11 10 | 704 | 0.3+ | 1.2+ |
| 2002 06 09 | 644 | 0.4+ | 1.0+ | 2006 09 19 | 703 | (3.1+ | 0.8−) | 2006 11 16 | 703 | 0.2− | 0.1+ |
| 2002 06 11 | 644 | (0.4+ | 1.9+) | 2006 09 30 | 699 | 1.2+ | 0.7+ | 2006 11 16 | 703 | 0.0 | 0.1+ |
| 2002 06 11 | 644 | (0.3+ | 1.8+) | 2006 09 30 | 699 | 0.2+ | 0.5+ | 2006 11 16 | 703 | 0.8− | 0.5+ |
| 2002 06 11 | 644 | (0.3+ | 2.1+) | 2006 09 30 | 699 | 0.5+ | 0.5+ | | | | |
| 2002 06 17 | 608 | 0.2+ | 0.1− | 2006 09 30 | 699 | 0.3− | 0.5+ | | | | |

**(141754)∗ 2002 LU$_{53}$**

Discovered 2002 June 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 184.42973 | | (2000.0) | | | |
| $n$ | 0.28814639 | $\omega$ | 345.32630 | | −0.87362491 | −0.48531134 |
| $a$ | 2.2701816 | $\Omega$ | 165.48156 | | +0.45946395 | −0.84666904 |
| $e$ | 0.0453904 | $i$ | 8.11541 | | +0.16022608 | −0.21823026 |
| $P$ | 3.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 704 | 0.8− | 0.6− | 2003 10 23 | 691 | 0.2− | 0.2+ | 2005 03 16 | 704 | 0.7− | 0.5+ |
| 2002 05 18 | 704 | (2.5− | 0.3−) | 2003 10 23 | 645 | 0.0 | 0.1+ | 2005 03 16 | 704 | 0.9+ | 0.3− |
| 2002 05 18 | 704 | 0.7− | 0.0 | 2003 10 23 | 645 | 0.1− | 0.1+ | 2005 03 16 | 704 | 1.2+ | 1.2+ |
| 2002 05 18 | 704 | 0.5− | 0.8− | 2003 10 23 | 691 | 0.3− | 0.3+ | 2005 03 17 | 704 | 0.1− | 0.0 |
| 2002 05 18 | 704 | 1.1− | 0.8− | 2003 10 23 | 691 | 0.0 | 0.2+ | 2005 03 17 | 704 | 0.2− | 0.0 |
| 2002 06 01 | 644 | 0.4+ | 0.6+ | 2003 10 29 | 699 | 0.3+ | 0.1− | 2005 03 17 | 704 | 0.0 | 0.1+ |
| 2002 06 01 | 644 | 0.2+ | 0.4+ | 2003 10 29 | 699 | 0.4− | 0.9+ | 2005 03 17 | 704 | 0.4− | 0.1+ |
| 2002 06 01 | 644 | 0.7+ | 0.3+ | 2003 10 29 | 699 | 0.3+ | 1.1+ | 2005 03 30 | 703 | 1.0− | 0.8− |
| 2002 06 10 | 704 | 0.5− | 0.7+ | 2003 10 29 | 699 | 0.3− | 0.0 | 2005 03 30 | 703 | 0.3− | 0.7− |
| 2002 06 10 | 704 | 0.3− | 0.5+ | 2005 03 03 | 691 | 0.2+ | 0.3+ | 2005 03 30 | 703 | 0.5− | 0.4− |
| 2002 06 10 | 704 | 0.1+ | 0.5+ | 2005 03 03 | 691 | 0.2+ | 0.4+ | 2005 03 30 | 703 | 0.2− | 0.0 |
| 2002 06 10 | 704 | 1.0+ | 0.9+ | 2005 03 03 | 691 | 0.8+ | 0.9+ | 2005 04 01 | 185 | 0.2+ | 0.0 |
| 2002 06 11 | 644 | 0.3+ | 0.6+ | 2005 03 08 | 683 | 0.1+ | 1.2+ | 2005 04 01 | 185 | 0.0 | 0.6− |
| 2002 06 11 | 644 | 0.2+ | 0.6+ | 2005 03 08 | 699 | 0.4− | 0.4+ | 2005 04 01 | 185 | 0.4+ | 0.1+ |
| 2002 06 11 | 644 | 0.4+ | 0.5+ | 2005 03 08 | 683 | 0.7+ | 0.4− | 2006 08 15 | D35 | 0.6− | 0.7+ |
| 2002 06 21 | 950 | 0.0 | 0.3+ | 2005 03 08 | 683 | 1.5− | 1.0+ | 2006 08 15 | D35 | 0.3− | 0.7+ |
| 2002 06 21 | 950 | 0.1+ | 0.4+ | 2005 03 08 | 699 | 0.7− | 0.2− | 2006 08 15 | D35 | 0.4− | 0.8+ |
| 2002 06 21 | 950 | 0.8+ | 0.2+ | 2005 03 08 | 699 | 0.4− | 0.2+ | 2006 08 19 | 699 | 0.2+ | 1.2+ |
| 2003 09 17 | 644 | 0.1− | 0.7+ | 2005 03 09 | 683 | 0.1+ | 0.3− | 2006 08 19 | 699 | 0.0 | 0.1+ |
| 2003 09 17 | 644 | 0.1− | 1.0+ | 2005 03 09 | 683 | 0.0 | 0.4+ | 2006 08 19 | 699 | 0.5− | 0.6+ |
| 2003 09 17 | 644 | 0.2− | 0.6+ | 2005 03 09 | 699 | 0.1− | 0.9+ | 2006 08 19 | 699 | 0.0 | 0.0 |
| 2003 09 28 | 699 | 0.4+ | 1.0− | 2005 03 09 | 683 | 0.2− | 0.3− | 2006 08 28 | 699 | 1.1+ | 0.9+ |
| 2003 09 28 | 699 | 0.6+ | 0.8+ | 2005 03 09 | 699 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.1− | 0.8+ |
| 2003 09 28 | 699 | 1.4− | 1.2+ | 2005 03 09 | 699 | 0.4+ | 0.9+ | 2006 08 28 | 703 | 0.2− | 0.6− |
| 2003 09 28 | 699 | 0.2− | 0.5+ | 2005 03 09 | 699 | 0.5+ | 0.1+ | 2006 08 28 | 703 | (2.5+ | 0.6+) |
| 2003 10 20 | 704 | 0.1− | 0.0 | 2005 03 11 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 1.0+ | 0.3+ |
| 2003 10 20 | 704 | 0.4+ | 0.6+ | 2005 03 11 | 691 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.3+ |
| 2003 10 20 | 704 | 0.5+ | 0.8+ | 2005 03 11 | 691 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.6− | 1.1+ |
| 2003 10 20 | 704 | 0.5+ | 0.6+ | 2005 03 12 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.6+ |
| 2003 10 22 | 645 | 0.0 | 0.0 | 2005 03 12 | 704 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2003 10 22 | 645 | 0.1+ | 0.0 | 2005 03 12 | 704 | 0.8+ | 0.8+ | 2006 09 27 | G96 | 0.3− | 0.5− |
| 2003 10 22 | 608 | 0.7− | 0.7+ | 2005 03 12 | 704 | 0.7+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.3+ |
| 2003 10 22 | 608 | 0.6− | 1.0+ | 2005 03 12 | 704 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.7− | 0.0 |
| 2003 10 22 | 608 | 0.4− | 0.6+ | 2005 03 16 | 704 | 0.1+ | 1.3+ | | | | |

**(141755)∗ 2002 LN$_{55}$ = 2003 XH$_{31}$**

Discovered 2002 June 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69378)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 118.16354 | | (2000.0) | | | |
| $n$ | 0.29462401 | $\omega$ | 3.01183 | | −0.33462695 | +0.94120918 |
| $a$ | 2.2367835 | $\Omega$ | 247.44204 | | −0.86563586 | −0.32645978 |
| $e$ | 0.2088878 | $i$ | 2.87807 | | −0.37242363 | −0.08688672 |
| $P$ | 3.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 691 | 0.3+ | 0.7− | 2005 03 13 | 703 | 0.7− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 1999 11 03 | 691 | 0.0 | 0.1− | 2005 03 14 | G96 | 0.5− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 1999 11 03 | 691 | 0.2+ | 0.3− | 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 11 | 704 | 0.2+ | 0.7+ | 2005 03 14 | G96 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2002 06 11 | 704 | 0.4+ | 0.8+ | 2005 03 14 | G96 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.1− |
| 2002 06 11 | 704 | 0.2− | 0.9+ | 2005 03 17 | 704 | 0.3+ | 0.6+ | 2006 10 15 | 691 | 0.1+ | 0.3− |
| 2002 06 11 | 704 | 1.0− | 0.3+ | 2005 03 17 | 704 | 0.6+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2002 06 18 | 704 | (0.3+ | 2.5+) | 2005 03 17 | 704 | 0.9+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2002 06 18 | 704 | 0.2− | 0.7+ | 2005 03 17 | 704 | 0.5+ | 0.6+ | 2006 10 17 | 691 | 0.3− | 0.2+ |
| 2002 06 18 | 704 | 0.4− | 0.9+ | 2005 03 17 | 704 | 0.9+ | 0.2− | 2006 10 17 | 691 | 0.4− | 0.9+ |
| 2002 06 18 | 704 | 0.5− | 0.7+ | 2005 03 31 | 699 | 0.4− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2002 06 18 | 704 | 0.4− | 0.9+ | 2005 03 31 | 699 | 1.4+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2002 07 05 | 704 | 0.4− | 1.0+ | 2005 03 31 | 699 | 0.8+ | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2002 07 05 | 704 | 0.0 | 1.2+ | 2005 03 31 | 699 | 0.1− | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.2− |
| 2002 07 05 | 704 | (0.4+ | 2.5+) | 2005 04 05 | 703 | 0.3+ | 1.1+ | 2006 10 21 | 691 | 0.5− | 0.1+ |
| 2002 07 05 | 704 | (0.8− | 1.6+) | 2005 04 05 | 703 | 0.5− | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.4+ |
| 2002 07 14 | 704 | 0.2− | 0.2+ | 2005 04 05 | 703 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.7− | 0.1+ |
| 2002 07 14 | 704 | 0.2− | 0.3+ | 2005 04 05 | 703 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.5− | 0.4+ |
| 2002 07 14 | 704 | 0.1− | 0.1− | 2005 04 13 | 699 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2002 07 14 | 704 | 0.8+ | 0.2− | 2005 04 13 | 699 | 0.4+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.6+ |
| 2002 07 14 | 704 | 0.1+ | 0.1+ | 2005 04 13 | 699 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2005 04 13 | 699 | 0.4+ | 0.7+ | 2006 11 10 | 691 | 0.1+ | 0.4+ |
| 2003 12 01 | 691 | 0.8− | 0.8+ | 2005 04 14 | 703 | 0.6− | 0.2+ | 2006 11 15 | 691 | 0.4+ | 0.5+ |
| 2003 12 01 | 691 | 0.2+ | 0.1+ | 2005 04 14 | 703 | 0.7− | 0.5− | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2003 12 14 | 691 | 0.1+ | 0.0 | 2005 04 14 | 703 | 0.8− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.4− |
| 2003 12 14 | 691 | 0.2+ | 0.2+ | 2005 04 14 | 703 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.4+ | 0.1+ |
| 2003 12 14 | 691 | 0.1− | 0.1− | 2005 04 18 | 703 | 0.5+ | 0.7+ | 2006 11 17 | 691 | 0.1− | 0.6+ |
| 2005 03 03 | 691 | 0.4+ | 0.2+ | 2005 04 18 | 703 | (1.2− | 1.8+) | 2006 11 17 | 691 | 0.0 | 0.4+ |
| 2005 03 03 | 691 | 0.0 | 0.3+ | 2005 04 18 | 703 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.4+ |
| 2005 03 03 | 691 | 0.2+ | 0.7+ | 2005 04 18 | 703 | 0.5+ | 0.1− | 2006 11 27 | 691 | 0.5+ | 0.1− |
| 2005 03 13 | 703 | 0.4− | 0.7− | 2005 05 23 | 644 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.3− |
| 2005 03 13 | 703 | (3.4− | 3.2−) | 2005 05 23 | 644 | 0.2+ | 0.4+ | | | | |
| 2005 03 13 | 703 | 0.3+ | 0.6− | 2005 05 23 | 644 | 0.0 | 0.3+ | | | | |

**(141756)∗ 2002 LP$_{58}$**

Discovered 2002 June 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.95743 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28797929 | $\omega$ | 197.53178 | | +0.37777239 | +0.92077231 |
| $a$ | 2.2710597 | $\Omega$ | 94.75277 | | −0.83736805 | +0.38460038 |
| $e$ | 0.2815958 | $i$ | 5.60277 | | −0.39509843 | +0.06527560 |
| $P$ | 3.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.4+ | 0.4+ | 2002 09 16 | 644 | 0.4− | 0.4+ | 2005 04 13 | 704 | 0.8+ | 0.5− |
| 1999 10 10 | 704 | 0.4− | 0.0 | 2002 10 07 | 608 | 0.4− | 0.4− | 2005 04 13 | 704 | 0.5+ | 0.2− |
| 1999 10 10 | 704 | 0.2− | 1.4+ | 2002 10 07 | 608 | 0.1+ | 0.3− | 2005 04 13 | 704 | 0.7+ | 0.4− |
| 1999 10 10 | 704 | 0.0 | 0.3+ | 2002 10 07 | 608 | 0.3+ | 0.8− | 2005 04 13 | 704 | 0.4+ | 0.2− |
| 1999 10 10 | 704 | 0.1− | 1.0+ | 2005 03 10 | 703 | 0.5− | 0.1− | 2005 04 13 | 704 | 0.5+ | 0.0 |
| 2002 06 08 | 608 | 1.0+ | 0.7+ | 2005 03 10 | 703 | 1.1+ | 0.8− | 2005 04 13 | 704 | 0.1+ | 0.6− |
| 2002 06 08 | 608 | 0.7+ | 0.4+ | 2005 03 10 | 703 | 0.3+ | 1.1+ | 2005 04 13 | 704 | 0.1+ | 0.2+ |
| 2002 06 08 | 608 | 0.7+ | 0.1− | 2005 03 10 | 703 | (1.7− | 0.2+) | 2005 04 14 | 704 | 1.0+ | 0.1+ |
| 2002 06 27 | 644 | 0.1+ | 0.6+ | 2005 03 10 | 703 | 0.6+ | 1.0+ | 2005 04 14 | 704 | 0.4+ | 0.1− |
| 2002 06 27 | 644 | 0.2+ | 0.4+ | 2005 03 10 | 703 | 0.5− | 0.8+ | 2005 04 14 | 704 | 0.8+ | 0.5− |
| 2002 06 27 | 644 | 0.1+ | 0.3+ | 2005 03 10 | 703 | 0.5+ | 0.7+ | 2005 04 14 | 704 | 0.6+ | 0.0 |
| 2002 07 05 | 704 | 0.1− | 0.1+ | 2005 03 10 | 703 | 1.3− | 1.5+ | 2005 04 14 | 704 | 0.9+ | 0.0 |
| 2002 07 05 | 704 | 0.2− | 0.7+ | 2005 03 18 | 703 | 0.6− | 0.8− | 2005 04 15 | 699 | 0.6− | 1.0+ |
| 2002 07 05 | 704 | 0.1+ | 0.6+ | 2005 03 18 | 703 | 0.0 | 0.6− | 2005 04 15 | 699 | 0.0 | 0.7+ |
| 2002 07 05 | 704 | 0.2+ | 0.3+ | 2005 03 18 | 703 | 0.1− | 0.5+ | 2005 04 15 | 699 | 0.0 | 0.1+ |
| 2002 08 13 | 644 | 0.3− | 1.2− | 2005 03 18 | 703 | 0.6− | 0.1− | 2005 04 18 | 704 | 0.8+ | 0.2− |
| 2002 08 13 | 644 | 0.2− | 1.1− | 2005 04 01 | 699 | 0.1+ | 0.0 | 2005 04 18 | 704 | (0.6− | 1.5+) |
| 2002 08 13 | 644 | 0.1− | 1.2− | 2005 04 01 | 699 | 0.8− | 0.2+ | 2005 04 18 | 704 | 1.0+ | 0.8+ |
| 2002 08 14 | 704 | 0.7− | 1.2− | 2005 04 01 | 683 | (0.4+ | 2.6−) | 2005 04 18 | 704 | 0.6+ | 0.6+ |
| 2002 08 14 | 704 | 0.2− | 0.1− | 2005 04 01 | 699 | 0.0 | 0.0 | 2005 05 03 | 704 | 0.6+ | 1.1+ |
| 2002 08 14 | 704 | 0.3− | 0.5− | 2005 04 01 | 683 | 0.7+ | 0.8− | 2005 05 03 | 704 | 1.3− | 0.3+ |
| 2002 08 14 | 704 | 0.9− | 0.3− | 2005 04 01 | 683 | 0.6− | 0.7− | 2005 05 03 | 704 | 0.6− | 0.5+ |
| 2002 08 14 | 704 | 0.6− | 0.1− | 2005 04 01 | 699 | 0.1− | 0.1− | 2005 05 06 | 704 | 0.5+ | 0.2− |
| 2002 08 15 | 699 | 0.4− | 0.4− | 2005 04 04 | 683 | 1.3− | 0.4− | 2005 05 06 | 704 | 0.1− | 0.2+ |
| 2002 08 15 | 699 | 0.3+ | 0.6− | 2005 04 04 | 683 | 0.1+ | 1.2− | 2005 05 06 | 704 | 1.5+ | 1.1+ |
| 2002 08 15 | 699 | 0.2− | 0.3− | 2005 04 04 | 703 | 0.7− | 0.4− | 2005 05 08 | 703 | 0.5+ | 0.6+ |
| 2002 08 15 | 699 | 0.2− | 0.3+ | 2005 04 04 | 703 | 0.3− | 0.9− | 2005 05 08 | 703 | 0.8− | 0.6− |
| 2002 08 17 | 608 | 1.1+ | 0.4− | 2005 04 04 | 703 | 1.5− | 0.0 | 2005 05 08 | 703 | 0.9− | 0.8+ |
| 2002 08 17 | 608 | 1.4+ | 0.6− | 2005 04 05 | 699 | 0.1+ | 0.1− | 2005 05 08 | 703 | 0.7− | 0.3− |
| 2002 08 17 | 608 | 0.8+ | 0.7− | 2005 04 05 | 699 | 0.4− | 0.1+ | 2005 05 13 | 704 | 0.3+ | 0.0 |
| 2002 08 19 | 644 | 0.3− | 0.1− | 2005 04 05 | 699 | 0.1+ | 0.0 | 2005 05 13 | 704 | 1.1+ | 0.3− |
| 2002 08 19 | 644 | 0.3− | 0.1− | 2005 04 05 | 699 | 0.2− | 0.6+ | 2005 05 13 | 704 | 0.5+ | 0.7+ |
| 2002 08 19 | 644 | 0.4− | 0.1− | 2005 04 05 | 683 | 0.5− | 1.0+ | 2005 05 13 | 704 | 0.3+ | 0.2+ |
| 2002 08 30 | 644 | 0.1+ | 0.2+ | 2005 04 05 | 704 | (1.8+ | 0.3+) | 2005 05 13 | 704 | 0.3+ | 1.0− |
| 2002 08 30 | 644 | 0.3+ | 0.1+ | 2005 04 05 | 683 | 0.5− | 0.3+ | 2005 06 12 | 703 | 0.6− | 0.4+ |
| 2002 08 30 | 644 | 0.1+ | 0.1+ | 2005 04 05 | 704 | (1.7+ | 1.4−) | 2005 06 12 | 703 | (2.4− | 0.2−) |
| 2002 09 09 | 644 | 0.3− | 0.0 | 2005 04 05 | 683 | 1.2− | 1.2+ | 2005 06 12 | 703 | 1.2− | 0.8+ |
| 2002 09 09 | 644 | 0.5− | 1.3+ | 2005 04 05 | 704 | 0.1+ | 1.1+ | 2005 06 12 | 703 | (2.8− | 0.1+) |
| 2002 09 09 | 644 | 0.3− | 0.0 | 2005 04 05 | 704 | 1.3+ | 0.6+ | 2006 10 21 | D35 | 0.2+ | 0.7+ |
| 2002 09 09 | 644 | 0.3− | 1.3+ | 2005 04 05 | 704 | 0.8+ | 1.2+ | 2006 10 21 | D35 | 0.1+ | 0.6+ |
| 2002 09 09 | 644 | 0.3− | 0.2− | 2005 04 05 | 704 | 0.4+ | 0.2− | 2006 10 21 | D35 | 0.2+ | 0.7+ |
| 2002 09 09 | 644 | 0.4− | 1.1+ | 2005 04 05 | 704 | 0.3− | 0.5+ | 2006 11 02 | G96 | 0.2+ | 0.4+ |
| 2002 09 11 | 608 | 0.5+ | 0.8+ | 2005 04 06 | 683 | 0.0 | 0.8− | 2006 11 02 | G96 | 0.1+ | 0.1+ |
| 2002 09 11 | 608 | 0.7+ | 0.9+ | 2005 04 06 | 683 | 0.3− | 0.2+ | 2006 11 02 | G96 | 0.6− | 0.6+ |
| 2002 09 11 | 608 | 0.5+ | 0.6+ | 2005 04 09 | 699 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2002 09 16 | 644 | 0.2− | 1.3+ | 2005 04 09 | 699 | 0.6− | 0.6− | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2002 09 16 | 644 | 0.3− | 1.2+ | 2005 04 09 | 699 | 0.6− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 09 16 | 644 | 0.2− | 1.4+ | 2005 04 13 | 704 | 0.6+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 2002 09 16 | 644 | 0.3− | 0.4+ | 2005 04 13 | 704 | 0.8+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.4+ |
| 2002 09 16 | 644 | 0.3− | 0.2+ | 2005 04 13 | 704 | 0.8+ | 0.1− | | | | |

**(141757)∗ 2002 LY$_{58}$**

Discovered 2002 June 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.91786 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27987876 | $\omega$ | 339.13285 | | +0.10674369 | +0.98949226 |
| $a$ | 2.3146718 | $\Omega$ | 296.88503 | | −0.89604741 | +0.05322249 |
| $e$ | 0.1003116 | $i$ | 6.27737 | | −0.43093482 | +0.13443374 |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | 0.5− | 0.4− | 2002 07 05 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 0.0 | 0.8− |
| 1994 02 16 | 691 | 0.3− | 0.6− | 2002 07 05 | 704 | 1.0+ | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.0 |
| 1994 02 16 | 691 | 0.2+ | 0.5− | 2002 07 05 | 704 | 0.3+ | 1.2+ | 2006 09 16 | 703 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.9− | 1.3+ | 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 699 | 0.4+ | 0.1− |
| 1999 10 13 | 704 | 0.6+ | 0.7+ | 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 699 | 0.5+ | 0.9+ |
| 1999 10 13 | 704 | 0.3− | 0.2+ | 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 699 | 0.0 | 0.2+ |
| 1999 10 13 | 704 | 0.7− | 0.5+ | 2005 03 13 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.8+ | 0.6+ |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.7+ |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.1− |
| 2001 01 21 | 704 | 0.2− | 0.3+ | 2005 04 05 | 644 | 0.2+ | 0.8+ | 2006 09 27 | 703 | 0.7− | 0.9+ |
| 2001 01 21 | 704 | 0.2+ | 0.4+ | 2005 04 05 | 644 | 1.4+ | 0.3+ | 2006 09 27 | 703 | 0.6− | 1.0− |
| 2001 01 21 | 704 | (0.7− | 1.6+) | 2005 04 05 | 644 | (1.9+ | 0.5+) | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 01 21 | 704 | 0.0 | 0.9+ | 2005 04 06 | 699 | (1.5+ | 2.2+) | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 06 08 | 704 | 0.9+ | 0.2+ | 2005 04 06 | 699 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2002 06 08 | 704 | 0.5+ | 0.5− | 2005 04 06 | 699 | 0.3+ | 0.9+ | 2006 10 17 | 703 | 0.7+ | 0.1− |
| 2002 06 08 | 704 | (0.4+ | 1.9−) | 2005 04 06 | 699 | 1.1+ | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2002 06 08 | 704 | 0.4− | 0.2− | 2005 04 14 | 703 | 1.1− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2002 06 12 | 644 | 0.0 | 0.2− | 2005 04 14 | 703 | 1.0− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2002 06 12 | 644 | 0.3− | 0.5− | 2005 04 14 | 703 | (2.4− | 0.4+) | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 06 12 | 644 | 0.0 | 0.3− | 2005 04 14 | 703 | 0.9− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 06 17 | 644 | 0.1− | 0.8− | 2005 05 14 | 644 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2002 06 17 | 644 | 0.0 | 1.4− | 2005 05 14 | 644 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 2002 06 17 | 644 | 0.4− | 1.0− | 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 07 05 | 704 | 0.5− | 0.1+ | 2006 09 16 | 703 | 0.6− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.6+ |

**(141758)∗ 2002 LK$_{60}$**

Discovered 2002 June 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.63299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27815068 | $\omega$ | 96.56643 | | +0.02449742 | +0.99957456 | |
| $a$ | 2.3242489 | $\Omega$ | 174.75863 | | −0.97198095 | +0.02751801 | |
| $e$ | 0.2534710 | $i$ | 9.97858 | | −0.23377962 | −0.00966713 | |
| $P$ | 3.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | (3.1− | 0.2−) | 2002 08 14 | 704 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.8+ | 0.3+ | |
| 1998 03 22 | 704 | (2.6− | 3.3+) | 2002 08 14 | 704 | 0.3− | 0.0 | 2006 10 01 | 704 | 1.1+ | 0.0 | |
| 1998 03 22 | 704 | 1.0− | 0.5− | 2005 03 03 | 703 | (1.6+ | 1.2+) | 2006 10 01 | 704 | 0.4− | 0.1+ | |
| 1998 03 22 | 704 | 1.2− | 0.4− | 2005 03 03 | 703 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.6+ | |
| 1998 03 29 | 704 | 1.2+ | 1.0+ | 2005 03 03 | 703 | 1.1+ | 1.0+ | 2006 10 10 | 644 | 0.3+ | 0.5+ | |
| 1998 03 29 | 704 | 0.5− | 0.1− | 2005 03 03 | 703 | 1.3+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | |
| 1998 03 29 | 704 | 1.2+ | 1.1− | 2005 03 12 | 704 | (0.1− | 2.2+) | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 1998 03 29 | 704 | (3.5− | 0.4−) | 2005 03 12 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | |
| 2002 06 03 | 704 | 0.2− | 0.1+ | 2005 03 12 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.3+ | |
| 2002 06 03 | 704 | 0.2+ | 0.1+ | 2005 03 12 | 704 | 0.3+ | 1.0+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | |
| 2002 06 03 | 704 | 0.5− | 0.6+ | 2005 03 17 | 703 | (2.1− | 1.6+) | 2006 10 12 | 644 | 0.8+ | 0.5+ | |
| 2002 06 03 | 704 | 0.3− | 0.5+ | 2005 03 17 | 703 | 0.3+ | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | |
| 2002 06 03 | 704 | 0.3− | 0.7+ | 2005 03 17 | 703 | (1.5− | 1.1+) | 2006 10 16 | 703 | (1.2+ | 2.4+) | |
| 2002 06 12 | 704 | 0.4+ | 0.4+ | 2005 03 17 | 703 | (0.7+ | 2.2+) | 2006 10 16 | 703 | 0.1− | 0.4+ | |
| 2002 06 12 | 704 | 0.6+ | 0.6+ | 2005 04 09 | G96 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.9+ | 0.7− | |
| 2002 06 12 | 704 | (1.7+ | 0.1+) | 2005 04 09 | G96 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.0 | |
| 2002 06 16 | 704 | 0.1+ | 0.6+ | 2005 04 09 | G96 | 0.5− | 0.1+ | 2006 10 16 | 461 | 0.1+ | 0.3+ | |
| 2002 06 16 | 704 | 0.2+ | 0.8+ | 2005 04 09 | G96 | 0.6− | 0.1− | 2006 10 16 | 461 | 0.4+ | 0.4+ | |
| 2002 06 16 | 704 | 0.7− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 16 | 461 | 0.0 | 0.2+ | |
| 2002 06 16 | 704 | 0.4+ | 0.9+ | 2006 09 17 | 691 | 0.4− | 0.0 | 2006 10 16 | 461 | 0.0 | 0.1+ | |
| 2002 07 09 | 704 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 16 | 461 | 0.1− | 0.2+ | |
| 2002 07 09 | 704 | 0.1− | 0.2+ | 2006 09 21 | 699 | (2.9− | 1.5+) | 2006 10 16 | 461 | 0.0 | 0.1+ | |
| 2002 07 09 | 704 | 0.2+ | 0.7+ | 2006 09 21 | 699 | 0.7− | 0.4+ | 2006 10 17 | 461 | 0.0 | 0.4+ | |
| 2002 07 09 | 704 | 0.5− | 0.9+ | 2006 09 21 | 699 | 0.0 | 0.4+ | 2006 10 17 | 461 | 0.2− | 0.1+ | |
| 2002 07 09 | 704 | 0.2+ | 0.8+ | 2006 09 21 | 699 | 0.1+ | 0.7− | 2006 10 17 | 461 | 0.0 | 0.1+ | |
| 2002 08 12 | 704 | 0.5+ | 1.2− | 2006 09 25 | 699 | 1.3− | 0.4+ | 2006 10 17 | 461 | 0.0 | 0.1+ | |
| 2002 08 12 | 704 | (0.5− | 1.6−) | 2006 09 25 | 699 | (1.6+ | 0.8+) | 2006 10 17 | 461 | 0.0 | 0.1+ | |
| 2002 08 12 | 704 | 0.3+ | 1.4− | 2006 09 25 | 699 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2002 08 12 | 704 | 0.4− | 1.2− | 2006 09 25 | 699 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2002 08 12 | 704 | 0.2− | 1.0− | 2006 09 29 | 699 | 0.9+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2002 08 13 | 704 | (1.6+ | 0.3−) | 2006 09 29 | 699 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.9− | 1.0+ | |
| 2002 08 13 | 704 | 1.2+ | 0.3− | 2006 09 29 | 699 | 0.4− | 0.5+ | 2006 10 22 | 703 | 0.6− | 1.4− | |
| 2002 08 13 | 704 | 0.9+ | 1.0− | 2006 09 29 | 699 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.3+ | |
| 2002 08 14 | 704 | 1.1− | 0.7− | 2006 10 01 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.7+ | |

**(141759)∗ 2002 LC$_{61}$**

Discovered 2002 June 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.54092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29403273 | $\omega$ | 103.35616 | | −0.31908608 | +0.94616228 | |
| $a$ | 2.2397812 | $\Omega$ | 147.87191 | | −0.90431061 | −0.28678742 | |
| $e$ | 0.0805577 | $i$ | 5.87279 | | −0.28356021 | −0.15009972 | |
| $P$ | 3.35 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 02 | 644 | 0.1+ | 0.3+ | 2002 07 09 | 644 | 0.1+ | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.1− | |
| 2002 06 02 | 644 | 0.1− | 0.0 | 2002 07 09 | 644 | 0.5+ | 0.3+ | 2006 08 18 | 691 | 0.4− | 0.2+ | |
| 2002 06 02 | 644 | 0.1+ | 0.1+ | 2002 07 09 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.9+ | 0.3+ | |
| 2002 06 09 | 644 | 1.0− | 1.3+ | 2003 10 29 | 691 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.6− | 1.0− | |
| 2002 06 09 | 644 | 0.9− | 0.8+ | 2003 10 29 | 691 | 0.0 | 0.3+ | 2006 09 18 | 703 | 1.6+ | 0.7+ | |
| 2002 06 09 | 644 | 0.4+ | 0.1+ | 2003 10 29 | 691 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.4− | |
| 2002 06 10 | 644 | 0.1+ | 0.1− | 2003 11 29 | 691 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.7− | |
| 2002 06 10 | 644 | 0.2+ | 0.1− | 2003 11 29 | 691 | 0.2− | 0.2+ | 2006 09 18 | 703 | 1.4− | 0.2+ | |
| 2002 06 10 | 644 | 0.3− | 0.1+ | 2003 11 29 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.8− | |
| 2002 06 11 | 644 | 0.2+ | 0.3+ | 2005 03 18 | 703 | 0.3− | 1.1+ | 2006 09 18 | 703 | 0.8+ | 0.0 | |
| 2002 06 11 | 644 | 0.2+ | 0.5+ | 2005 03 18 | 703 | 0.9− | 0.1− | 2006 09 30 | 703 | 0.6− | 1.7+ | |
| 2002 06 11 | 644 | 0.3− | 0.4+ | 2005 03 18 | 703 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.4− | |
| 2002 06 25 | 644 | 0.5+ | 0.1+ | 2005 03 18 | 703 | 0.4+ | 1.1+ | 2006 09 30 | 703 | 0.1− | 1.2+ | |
| 2002 06 25 | 644 | 0.1− | 0.0 | 2005 03 30 | 703 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.9− | |
| 2002 06 25 | 644 | 0.3+ | 0.8+ | 2005 03 30 | 703 | 0.7+ | 0.6+ | 2006 10 03 | G96 | 0.3− | 0.1− | |
| 2002 07 03 | 644 | 0.3+ | 0.1+ | 2005 03 30 | 703 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.0 | |
| 2002 07 03 | 644 | 0.4+ | 0.1+ | 2005 03 30 | 703 | 1.7+ | 0.4+ | 2006 10 03 | G96 | 2.0− | 0.0 | |
| 2002 07 03 | 644 | 0.2+ | 0.2+ | 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.9+ | 1.4+ | |

**(141760)∗ 2002 LQ$_{61}$ = 2004 BT$_{8}$**

Discovered 2002 June 11 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 100284)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.40906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25727682 | $\omega$ | 210.16684 | | +0.98686829 | −0.15927038 | |
| $a$ | 2.4483243 | $\Omega$ | 158.94708 | | +0.15909024 | +0.92957769 | |
| $e$ | 0.2003224 | $i$ | 4.29537 | | +0.02795112 | +0.33244287 | |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 691 | 0.1+ | 0.0 | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.1− | |
| 2001 03 22 | 691 | 0.3− | 0.3− | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.5− | 0.2+ | |
| 2001 03 22 | 691 | 0.1− | 0.5+ | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.3− | |
| 2002 06 11 | 644 | 0.1− | 0.6+ | 2006 07 25 | 644 | 0.3− | 0.0 | 2006 08 28 | 699 | 1.8− | 1.4+ | |
| 2002 06 11 | 644 | 0.7− | 0.3− | 2006 07 25 | 644 | 0.3− | 0.3+ | 2006 08 29 | 704 | 0.6− | 0.5+ | |
| 2002 06 11 | 644 | 1.3− | 0.7+ | 2006 07 25 | 644 | 0.2+ | 0.1+ | 2006 08 29 | 704 | 0.2+ | 0.3+ | |
| 2002 07 01 | 644 | 0.2+ | 0.9+ | 2006 07 28 | A50 | 0.7+ | 0.1+ | 2006 08 29 | 704 | 0.3− | 0.5+ | |
| 2002 07 01 | 644 | 0.2+ | 0.3+ | 2006 07 28 | A50 | 0.8+ | 0.1− | 2006 08 29 | 704 | 0.4+ | 0.4+ | |
| 2002 07 01 | 644 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 08 29 | 704 | 0.7− | 0.0 | |
| 2002 07 07 | 644 | 0.6+ | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 09 18 | 699 | 1.5+ | 1.7− | |
| 2002 07 07 | 644 | 0.4+ | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.6+ | |
| 2002 07 07 | 644 | 0.5+ | 0.7+ | 2006 08 19 | 699 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 0.9+ | 0.0 | |
| 2004 01 17 | 691 | 0.1− | 0.3+ | 2006 08 19 | 699 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.7+ | |
| 2004 01 17 | 691 | 0.2− | 0.4+ | 2006 08 19 | 699 | 0.2− | 1.3+ | 2006 09 30 | G96 | 0.2− | 0.0 | |
| 2004 01 17 | 691 | 0.1+ | 0.4+ | 2006 08 19 | 699 | 0.5− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.0 | |
| 2004 01 18 | 691 | 0.0 | 0.4+ | 2006 08 19 | A50 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.1− | 0.0 | |
| 2004 01 18 | 691 | 0.0 | 0.2+ | 2006 08 19 | A50 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2− | |
| 2004 01 18 | 691 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.4+ | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2004 02 16 | 691 | 0.7+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.3− | |
| 2004 02 16 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 0.0 | 1.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− | |
| 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.0 | |

**(141761)∗ 2002 MC**

Discovered 2002 June 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.75022 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23809329 | $\omega$ | 159.88465 | | +0.67165239 | +0.72471498 | |
| $a$ | 2.5781288 | $\Omega$ | 151.63280 | | −0.71630719 | +0.68825704 | |
| $e$ | 0.5082124 | $i$ | 18.89425 | | −0.18917474 | −0.03302192 | |
| $P$ | 4.14 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 704 | 0.2− | 0.2− | 2002 07 05 | 118 | 0.1+ | 0.1+ | 2002 09 08 | 941 | 0.1− | 0.1+ | |
| 2002 06 16 | 704 | 0.1− | 0.0 | 2002 07 06 | 118 | 0.1− | 0.2− | 2002 09 08 | 941 | 0.4− | 0.2− | |
| 2002 06 16 | 704 | 0.6+ | 0.0 | 2002 07 06 | 118 | 0.3+ | 0.1+ | 2002 09 20 | 608 | (0.5− | 2.9−) | |
| 2002 06 16 | 704 | 0.3+ | 0.1− | 2002 07 07 | 151 | 0.0 | 0.7− | 2002 09 20 | 608 | (0.3− | 3.0−) | |
| 2002 06 16 | 611 | 0.2− | 0.2+ | 2002 07 07 | 151 | 0.2− | 0.7+ | 2002 09 20 | 608 | (0.3− | 2.9−) | |
| 2002 06 16 | 611 | 0.0 | 0.2+ | 2002 07 07 | 151 | 0.2+ | 0.3− | 2002 09 26 | 704 | 1.0− | 0.2+ | |
| 2002 06 16 | 611 | 0.2+ | 0.2+ | 2002 07 07 | 151 | (1.9+ | 0.1−) | 2002 09 26 | 704 | 1.5− | 0.1+ | |
| 2002 06 16 | 151 | 0.5− | 1.3+ | 2002 07 08 | 670 | 0.9+ | 0.6+ | 2002 09 26 | 704 | 1.3− | 0.2+ | |
| 2002 06 16 | 151 | 0.3+ | 0.8+ | 2002 07 08 | 670 | 1.2+ | 0.8+ | 2002 10 21 | 644 | 0.4− | 0.2− | |
| 2002 06 16 | 151 | (1.2− | 1.7+) | 2002 07 14 | J95 | 1.1− | 0.5+ | 2002 10 21 | 644 | 0.5− | 0.2− | |
| 2002 06 16 | 198 | 1.0− | 0.3+ | 2002 07 14 | J95 | 0.0 | 0.1− | 2002 10 21 | 644 | 0.2− | 0.5− | |
| 2002 06 16 | 198 | 1.1− | 0.4+ | 2002 07 14 | J95 | 0.3− | 0.5+ | 2002 11 02 | 644 | 0.0 | 0.3+ | |
| 2002 06 16 | 198 | 0.6+ | 0.4+ | 2002 07 15 | 649 | 0.0 | 0.3+ | 2002 11 02 | 644 | 0.3− | 0.2+ | |
| 2002 06 16 | 557 | 0.5+ | 0.6+ | 2002 07 15 | 649 | 0.1+ | 0.4+ | 2002 11 03 | 644 | 0.5− | 0.4+ | |
| 2002 06 16 | 557 | 0.4− | 0.0 | 2002 07 15 | 649 | 0.2+ | 0.3+ | 2002 11 03 | 644 | 1.0− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 557 | 0.3+ | 0.3+ | 2002 07 15 | 670 | (0.0 | 2.4+) | 2002 11 03 | 644 | 0.7− | 0.1+ | 2002 06 30 | 151 | 0.1+ | 0.7− | 2002 08 28 | 322 | 0.2− | 0.0 | 2006 07 24 | 703 | 1.0− | 1.1− |
| 2002 06 17 | 557 | 0.1+ | 0.1+ | 2002 07 15 | 670 | 0.2+ | 1.1+ | 2002 12 05 | 644 | 0.6− | 0.1+ | 2002 07 01 | 118 | 0.7+ | 0.4+ | 2002 08 30 | 118 | 0.4+ | 0.3− | 2006 07 24 | 703 | 0.8− | 0.8− |
| 2002 06 17 | 118 | 0.4+ | 0.0 | 2002 07 16 | 711 | 1.1− | 0.3+ | 2002 12 05 | 644 | 0.9− | 0.2+ | 2002 07 01 | 118 | 0.7− | 0.3− | 2002 08 30 | 118 | 0.0 | 0.3− | 2006 07 24 | 703 | (0.9− | 1.7−) |
| 2002 06 17 | 118 | 0.1+ | 0.8+ | 2002 07 16 | 711 | 0.0 | 0.4+ | 2002 12 05 | 644 | 0.9− | 0.1− | 2002 07 05 | 540 | 0.1+ | 0.1+ | 2002 09 08 | 941 | 0.1+ | 0.3+ | 2006 08 17 | 461 | 0.2− | 0.3+ |
| 2002 06 17 | 239 | 0.1+ | 0.1+ | 2002 07 16 | 848 | 0.4− | 0.2+ | 2005 03 05 | 568 | 0.1+ | 0.3+ | 2002 07 05 | 540 | 0.1+ | 0.0 | 2002 09 08 | 941 | 0.4− | 1.3+ | 2006 08 17 | 461 | 0.0 | 0.0 |
| 2002 06 17 | 118 | 0.6+ | 0.8+ | 2002 07 16 | 711 | (2.2− | 0.6+) | 2005 03 05 | 568 | 0.1+ | 0.2+ | 2002 07 05 | 540 | 0.2+ | 0.2− | 2002 09 08 | 941 | 0.0 | 0.8+ | | | | |
| 2002 06 17 | 239 | 0.1+ | 0.2+ | 2002 07 16 | 848 | 1.4+ | 0.2+ | 2005 03 06 | 568 | 0.1− | 0.0 | | | | | | | | | | | | |
| 2002 06 17 | 599 | 0.0 | 0.1+ | 2002 07 16 | 848 | 1.3− | 0.5− | 2005 03 06 | 568 | 0.1− | 0.0 | | | | | | | | | | | | |
| 2002 06 17 | 599 | 0.6− | 0.0 | 2002 07 18 | 704 | 0.9− | 0.7+ | 2006 03 02 | 291 | 0.2+ | 0.3+ | | | | | | | | | | | | |
| 2002 06 17 | 599 | 0.3− | 0.1+ | 2002 07 18 | 704 | 0.9− | 0.1+ | 2006 03 02 | 291 | 0.2− | 1.0− | | | | | | | | | | | | |
| 2002 06 17 | 599 | 0.3− | 0.0 | 2002 07 18 | 704 | 0.5− | 0.2+ | 2006 03 02 | 291 | 0.3+ | 1.2+ | | | | | | | | | | | | |
| 2002 06 17 | 599 | 0.3− | 0.2− | 2002 07 18 | 704 | 0.4+ | 0.7+ | 2006 04 19 | A13 | 0.1+ | 0.1+ | | | | | | | | | | | | |
| 2002 06 17 | 649 | 0.2+ | 0.2+ | 2002 07 20 | 151 | 1.2+ | 0.2− | 2006 04 19 | A13 | 1.1− | 0.4+ | | | | | | | | | | | | |
| 2002 06 17 | 649 | 0.1− | 0.1− | 2002 07 20 | 151 | 0.4− | 0.4+ | 2006 04 19 | A13 | 0.1− | 0.1− | | | | | | | | | | | | |
| 2002 06 17 | 649 | 1.1+ | 0.4+ | 2002 07 20 | 151 | 0.8− | 0.4+ | 2006 04 29 | A13 | 0.4− | 0.1− | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.2− | 0.8+ | 2002 07 20 | 118 | 0.5+ | 0.0 | 2006 04 29 | A13 | 0.3− | 0.2− | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.2+ | 0.3+ | 2002 07 20 | 118 | 0.5− | 0.6+ | 2006 04 29 | A13 | 0.4− | 0.2+ | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.4+ | 0.0 | 2002 07 20 | 118 | 0.0 | 0.4+ | 2006 05 03 | H55 | 0.6− | 0.2− | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.1+ | 0.3+ | 2002 07 23 | 118 | 0.1+ | 0.4− | 2006 05 03 | H55 | 1.2+ | 0.6− | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.7− | 0.1− | 2002 07 23 | 118 | 0.1− | 0.6− | 2006 05 03 | H55 | 0.0 | 0.3− | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.0 | 0.1+ | 2002 07 23 | 670 | 1.2+ | 0.4− | 2006 05 24 | 703 | 0.1− | 0.2− | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.6− | 0.4− | 2002 07 23 | 670 | 0.3+ | 0.3+ | 2006 05 24 | 703 | 0.4− | 0.5+ | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.5− | 0.0 | 2002 07 29 | 670 | 0.8− | 0.9− | 2006 05 24 | 703 | 0.4− | 0.3− | | | | | | | | | | | | |
| 2002 06 17 | 704 | 0.5− | 0.2− | 2002 07 29 | 670 | 0.3+ | 0.3+ | 2006 05 26 | 170 | 0.0 | 0.4− | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.3+ | 0.1+ | 2002 07 29 | 151 | 0.2− | 0.8+ | 2006 05 26 | 170 | 0.1− | 0.5− | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.2+ | 0.3+ | 2002 07 29 | 151 | 0.6− | 0.2− | 2006 05 26 | 170 | 0.1− | 0.7− | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.5+ | 0.4+ | 2002 07 29 | 151 | 0.3+ | 1.0− | 2006 05 27 | H55 | 0.4+ | 0.5− | | | | | | | | | | | | |
| 2002 06 18 | 704 | 1.3+ | 0.7+ | 2002 07 29 | 151 | 0.2+ | 0.4+ | 2006 05 27 | H55 | 0.0 | 0.0 | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.1− | 0.2− | 2002 08 04 | 157 | 0.0 | 0.3+ | 2006 05 27 | H55 | 0.2− | 0.2+ | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.0 | 0.2+ | 2002 08 04 | 157 | 0.1+ | 0.6+ | 2006 05 31 | 704 | 1.0+ | 0.4+ | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.6− | 0.1+ | 2002 08 05 | 113 | 0.1− | 0.1− | 2006 05 31 | 704 | 0.7+ | 0.2+ | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.0 | 0.1− | 2002 08 05 | 113 | 0.1− | 0.0 | 2006 05 31 | 704 | 1.1+ | 0.5− | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.1− | 0.2− | 2002 08 05 | 113 | 0.1+ | 0.1− | 2006 05 31 | 704 | 1.4+ | 1.0+ | | | | | | | | | | | | |
| 2002 06 18 | 704 | 0.1+ | 0.2+ | 2002 08 05 | 113 | 0.0 | 0.1− | 2006 05 31 | 704 | 0.2+ | 0.4− | | | | | | | | | | | | |
| 2002 06 19 | 239 | 0.3+ | 0.0 | 2002 08 05 | 113 | 0.1+ | 0.1+ | 2006 06 03 | H55 | 0.2− | 0.3− | | | | | | | | | | | | |
| 2002 06 19 | 239 | (1.8− | 2.2−) | 2002 08 06 | 859 | 0.5+ | 1.1+ | 2006 06 03 | H55 | 0.1− | 0.0 | | | | | | | | | | | | |
| 2002 06 19 | 649 | 0.2+ | 0.3+ | 2002 08 06 | 859 | 0.7+ | 0.6+ | 2006 06 03 | H55 | 0.1− | 0.2− | | | | | | | | | | | | |
| 2002 06 19 | 649 | 0.0 | 0.3+ | 2002 08 06 | 859 | 0.0 | 0.5+ | 2006 06 22 | 941 | 0.1+ | 0.7− | | | | | | | | | | | | |
| 2002 06 19 | 649 | 0.0 | 0.2+ | 2002 08 09 | 704 | 0.9+ | 0.2+ | 2006 06 22 | 941 | 0.2+ | 0.6− | | | | | | | | | | | | |
| 2002 06 20 | 704 | 0.1− | 0.6− | 2002 08 09 | 704 | 0.6+ | 0.5+ | 2006 06 22 | 941 | 0.3+ | 0.5− | | | | | | | | | | | | |
| 2002 06 20 | 704 | 0.1+ | 0.0 | 2002 08 09 | 704 | 0.5+ | 0.6− | 2006 06 22 | 941 | 0.3+ | 0.5− | | | | | | | | | | | | |
| 2002 06 20 | 704 | 0.9− | 0.3+ | 2002 08 09 | 704 | 1.0+ | 0.6− | 2006 06 22 | 941 | 0.4+ | 0.5− | | | | | | | | | | | | |
| 2002 06 20 | 704 | 0.1+ | 0.4− | 2002 08 10 | 670 | 0.2− | 0.6− | 2006 06 23 | 699 | 0.6+ | 1.0+ | | | | | | | | | | | | |
| 2002 06 20 | 704 | 0.2− | 0.4− | 2002 08 10 | 670 | 0.8+ | 0.1− | 2006 06 23 | 699 | 0.1+ | 0.5− | | | | | | | | | | | | |
| 2002 06 22 | 413 | 0.2+ | 0.1− | 2002 08 12 | 704 | 0.3+ | 0.8− | 2006 06 23 | 699 | 0.2+ | 0.5+ | | | | | | | | | | | | |
| 2002 06 22 | 413 | 0.2+ | 0.5− | 2002 08 12 | 704 | 0.6+ | 0.6− | 2006 06 23 | 699 | 0.0 | 0.8− | | | | | | | | | | | | |
| 2002 06 22 | 413 | 0.4+ | 0.2− | 2002 08 12 | 704 | 0.3+ | 0.6− | 2006 06 30 | 941 | 0.1− | 0.3− | | | | | | | | | | | | |
| 2002 06 22 | 118 | 0.1+ | 0.5+ | 2002 08 12 | 704 | 0.3+ | 0.7− | 2006 06 30 | 941 | 0.1− | 0.1− | | | | | | | | | | | | |
| 2002 06 22 | 118 | 0.0 | 0.1− | 2002 08 12 | 704 | 0.0 | 0.6− | 2006 06 30 | 941 | 0.2− | 0.2− | | | | | | | | | | | | |
| 2002 06 22 | 118 | 0.2+ | 0.3+ | 2002 08 12 | 608 | 0.1+ | 0.2− | 2006 06 30 | 941 | 0.2− | 0.2− | | | | | | | | | | | | |
| 2002 06 24 | 649 | 0.4− | 0.7− | 2002 08 12 | 608 | 0.2+ | 0.1− | 2006 07 02 | 240 | 0.2+ | 1.0− | | | | | | | | | | | | |
| 2002 06 24 | 649 | 0.3+ | 1.0− | 2002 08 15 | 151 | 0.1− | 0.2+ | 2006 07 02 | 240 | 0.3+ | 0.8− | | | | | | | | | | | | |
| 2002 06 24 | 649 | 0.0 | 0.9− | 2002 08 15 | 151 | 0.2+ | 0.1+ | 2006 07 02 | 240 | 0.7+ | 0.0 | | | | | | | | | | | | |
| 2002 06 28 | 540 | 0.1− | 0.1− | 2002 08 15 | 151 | 0.2+ | 0.2+ | 2006 07 02 | 198 | 0.2+ | 0.1− | | | | | | | | | | | | |
| 2002 06 28 | 540 | 0.3− | 0.0 | 2002 08 15 | 151 | 0.3+ | 0.2+ | 2006 07 02 | 240 | 1.0+ | 0.5+ | | | | | | | | | | | | |
| 2002 06 28 | 540 | 0.1− | 0.1+ | 2002 08 15 | 151 | 0.3− | 0.4+ | 2006 07 02 | 198 | 0.1+ | 0.1− | | | | | | | | | | | | |
| 2002 06 28 | 540 | 0.2− | 0.0 | 2002 08 15 | 151 | 0.1− | 0.4+ | 2006 07 02 | 198 | 0.1+ | 0.2− | | | | | | | | | | | | |
| 2002 06 28 | 540 | 0.1+ | 0.2− | 2002 08 15 | 151 | 0.4+ | 0.1− | 2006 07 16 | A16 | (0.3+ | 1.5+) | | | | | | | | | | | | |
| 2002 06 28 | 540 | 0.0 | 0.1− | 2002 08 15 | 151 | 0.6+ | 0.2+ | 2006 07 16 | A16 | 0.2− | 0.8+ | | | | | | | | | | | | |
| 2002 06 29 | J95 | (3.3− | 0.4−) | 2002 08 18 | 157 | 0.2+ | 0.2+ | 2006 07 16 | A16 | 0.2+ | 0.1+ | | | | | | | | | | | | |
| 2002 06 29 | J95 | 1.1+ | 0.2− | 2002 08 18 | 157 | 0.3+ | 0.9+ | 2006 07 18 | 185 | 0.3− | 0.0 | | | | | | | | | | | | |
| 2002 06 29 | J95 | (2.3− | 0.5−) | 2002 08 18 | 157 | 0.6+ | 0.7+ | 2006 07 18 | 185 | 0.5− | 0.3− | | | | | | | | | | | | |
| 2002 06 29 | J95 | (0.9+ | 1.7−) | 2002 08 18 | 157 | 0.1− | 0.7− | 2006 07 18 | 185 | 0.6− | 0.2− | | | | | | | | | | | | |
| 2002 06 29 | 611 | 0.3+ | 0.1− | 2002 08 18 | 322 | (2.1+ | 1.6+) | 2006 07 18 | 185 | 0.9− | 0.2+ | | | | | | | | | | | | |
| 2002 06 29 | 611 | 0.7+ | 0.4− | 2002 08 18 | 322 | 0.1+ | 0.0 | 2006 07 19 | 185 | 0.6− | 0.3+ | | | | | | | | | | | | |
| 2002 06 29 | 151 | (2.4+ | 0.2−) | 2002 08 18 | 322 | (0.6+ | 1.9+) | 2006 07 19 | 185 | 0.7− | 0.1+ | | | | | | | | | | | | |
| 2002 06 29 | 151 | 0.7+ | 0.1− | 2002 08 28 | 322 | 1.2− | 0.1− | 2006 07 19 | 185 | 0.2+ | 0.0 | | | | | | | | | | | | |
| 2002 06 30 | 151 | 0.8+ | 0.2+ | 2002 08 28 | 322 | 0.0 | 1.2− | 2006 07 24 | 703 | 1.1− | 0.3+ | | | | | | | | | | | | |

**(141762)∗ 2002 MR = 2006 PE$_{18}$**

Discovered 2002 June 18 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 103327)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.92868 | | (2000.0) | | | |
| $n$ | 0.26919641 | $\omega$ | 308.05892 | | +0.31672344 | +0.94846191 |
| $a$ | 2.3755083 | $\Omega$ | 340.39844 | | −0.86034112 | +0.28268706 |
| $e$ | 0.2070915 | $i$ | 1.76084 | | −0.39937378 | +0.14320624 |
| $P$ | 3.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.5+ | 0.1+ | 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.7+ | | |
| 1999 10 10 | 691 | 0.4+ | 0.2− | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.5− | 0.2− | | |
| 1999 10 10 | 691 | 0.3+ | 0.2− | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.0 | 0.6+ | | |
| 2001 02 03 | 691 | 0.9− | 0.7+ | 2006 08 25 | 704 | 0.2+ | 1.5+ | 2006 09 19 | 699 | 0.3− | 0.3+ | | |
| 2001 02 03 | 691 | 0.2− | 0.5+ | 2006 08 25 | 704 | 0.6− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.8− | | |
| 2001 02 03 | 691 | 0.3− | 0.1+ | 2006 08 25 | 704 | 0.8− | 0.6− | 2006 09 19 | 703 | 0.6+ | 0.2− | | |
| 2002 06 18 | 428 | 0.4− | 1.5− | 2006 08 27 | 699 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.4+ | | |
| 2002 06 19 | 428 | 1.0+ | 0.4− | 2006 08 27 | 699 | 0.4− | 0.5+ | 2006 09 19 | 703 | 0.7+ | 0.4− | | |
| 2002 06 19 | 428 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.5+ | | |
| 2002 06 19 | 428 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.3+ | 1.2+ | 2006 09 19 | 699 | 0.2− | 0.1− | | |
| 2002 06 21 | 428 | 0.0 | 0.4+ | 2006 08 28 | H07 | 1.8− | 1.8+ | 2006 09 19 | 699 | 0.1− | 0.2+ | | |
| 2002 06 21 | 428 | 0.7− | 0.2+ | 2006 08 28 | H07 | (2.5− | 0.3+) | 2006 09 20 | 704 | 0.3− | 0.9+ | | |
| 2002 06 29 | 428 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.8+ | | |
| 2002 07 06 | 428 | 0.7− | 0.6+ | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.2+ | | |
| 2003 12 14 | 691 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.7− | 0.3− | | |
| 2003 12 14 | 691 | 0.1− | 0.1+ | 2006 08 28 | H07 | (2.5− | 0.7+) | 2006 09 20 | 704 | 0.1− | 0.7+ | | |
| 2003 12 14 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.5+ | 0.3+ | | |
| 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2− | 0.3− | | |
| 2003 12 19 | 691 | 0.1+ | 0.2− | 2006 08 28 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.4− | | |
| 2003 12 19 | 691 | 0.1− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.3− | | |
| 2005 02 01 | 691 | 0.5+ | 0.1+ | 2006 08 29 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.8− | 0.3+ | | |
| 2005 02 01 | 691 | 0.7+ | 0.4+ | 2006 08 29 | 704 | 0.8− | 1.5+ | 2006 09 25 | G96 | 0.0 | 0.4− | | |
| 2005 02 01 | 691 | 0.6+ | 0.4+ | 2006 08 29 | 704 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.3+ | | |
| 2005 02 09 | G96 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.8+ | | |
| 2005 02 09 | G96 | 0.2+ | 0.1+ | 2006 09 01 | 704 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.3− | | |
| 2005 02 09 | G96 | 0.3+ | 0.0 | 2006 09 01 | 704 | 0.1+ | 0.3− | 2006 09 27 | 704 | 1.5+ | 0.3− | | |
| 2005 02 09 | G96 | 0.2+ | 0.1− | 2006 09 01 | 704 | 0.1+ | 1.0− | 2006 09 27 | 704 | 0.8+ | 0.0 | | |
| 2005 03 08 | G96 | 0.3+ | 0.2− | 2006 09 01 | 704 | 0.7− | 0.9− | 2006 09 27 | 704 | 0.2+ | 0.4+ | | |
| 2005 03 08 | G96 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.5− | 0.5− | 2006 09 27 | 704 | 0.6+ | 0.4− | | |
| 2005 03 08 | G96 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 1.2− | 0.2− | 2006 10 09 | 644 | 0.2− | 0.3− | | |
| 2005 03 08 | G96 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.0 | | |
| 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.7− | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.6− | | |
| 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.5− | | |
| 2006 08 21 | 704 | 1.0− | 0.5+ | 2006 09 13 | 644 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.5− | 0.4− | | |
| 2006 08 21 | 704 | 0.6+ | 0.5+ | 2006 09 16 | 699 | 0.1− | 1.2+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2006 08 21 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 699 | 1.0+ | 1.3+ | 2006 11 13 | G96 | 0.2− | 0.5− | | |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | 1.5+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.2− | | |
| 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.5+ | 0.0 | 2006 11 13 | G96 | 0.8+ | 0.4− | | |
| 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 11 13 | G96 | 0.6+ | 1.1− | | |

**(141763)∗ 2002 ML$_1$**

Discovered 2002 June 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.88642 | | (2000.0) | | | |
| $n$ | 0.28046556 | $\omega$ | 114.47784 | | +0.39843330 | +0.91717234 |
| $a$ | 2.3114421 | $\Omega$ | 178.93026 | | −0.91642129 | +0.39838882 |
| $e$ | 0.2378366 | $i$ | 21.25405 | | −0.03772157 | +0.00901343 |
| $P$ | 3.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 566 | 0.0 | 0.5− | 2005 03 04 | G92 | 0.3− | 0.3+ | 2005 04 16 | 703 | 0.2+ | 0.5− |
| 1998 03 25 | 566 | 0.0 | 0.4− | 2005 03 04 | G92 | 0.3− | 0.1+ | 2005 04 16 | 703 | 0.1+ | 0.1+ |
| 1998 03 25 | 566 | 0.0 | 0.7− | 2005 03 13 | 691 | 0.0 | 0.3+ | 2005 04 16 | 703 | (2.0− | 0.3+) |
| 2002 06 19 | 704 | 0.3+ | 0.3+ | 2005 03 13 | 691 | 0.0 | 0.3+ | 2005 04 16 | 703 | 1.3− | 0.1− |
| 2002 06 19 | 704 | 0.3+ | 0.1+ | 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 704 | 0.2+ | 0.3+ |
| 2002 06 19 | 704 | 0.2− | 0.7+ | 2005 03 14 | 704 | 0.5+ | 0.6+ | 2006 10 02 | 704 | 0.7+ | 0.4+ |
| 2002 06 19 | 704 | 0.1− | 0.4+ | 2005 03 14 | 704 | 0.7+ | 0.2− | 2006 10 02 | 704 | 0.9+ | 0.4+ |
| 2002 06 19 | 704 | 0.1− | 0.5+ | 2005 03 14 | 704 | 0.4+ | 0.5+ | 2006 10 02 | 704 | (2.2+ | 0.0 ) |
| 2002 06 20 | 704 | 0.3− | 0.2+ | 2005 03 14 | 704 | 0.7+ | 0.5+ | 2006 10 20 | 703 | 0.4− | 0.7+ |
| 2002 06 20 | 704 | 0.2+ | 0.2− | 2005 03 14 | 704 | 0.4+ | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.6+ |
| 2002 06 20 | 704 | 0.6− | 0.4+ | 2005 04 01 | 699 | 1.3+ | 0.4+ | 2006 10 20 | 703 | 1.0− | 0.7+ |
| 2002 06 20 | 704 | 1.3+ | 0.2− | 2005 04 01 | 699 | 0.8+ | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.6+ |
| 2002 07 02 | 704 | 0.3+ | 0.0 | 2005 04 01 | 699 | 0.7− | 0.2+ | 2006 10 20 | 703 | 0.4+ | 1.1+ |
| 2002 07 02 | 704 | 0.4− | 0.5− | 2005 04 01 | 699 | 0.2− | 1.3+ | 2006 10 20 | 703 | 0.2+ | 0.8+ |
| 2002 07 02 | 704 | 0.2− | 0.1+ | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 10 20 | 703 | 0.0 | 0.4− |
| 2002 07 02 | 704 | 0.2+ | 0.4− | 2005 04 02 | G96 | 0.4− | 0.3− | 2006 10 20 | 703 | 0.8− | 0.5+ |
| 2002 07 11 | 636 | 0.3− | 0.1+ | 2005 04 02 | G96 | 0.3− | 0.3− | 2006 10 31 | 703 | 1.6− | 0.1+ |
| 2002 07 11 | 636 | 0.1− | 0.4+ | 2005 04 02 | G96 | 0.3− | 0.3− | 2006 10 31 | 703 | 0.2+ | 0.1+ |
| 2002 07 11 | 636 | 0.3− | 0.4+ | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 10 31 | 703 | 0.2− | 0.0 |
| 2002 08 06 | 704 | 0.3+ | 0.1+ | 2005 04 04 | G96 | 0.3− | 0.2− | 2006 10 31 | 703 | 0.5− | 0.7+ |
| 2002 08 06 | 704 | 0.1− | 0.5+ | 2005 04 04 | G96 | 0.4− | 0.4− | 2006 11 17 | 703 | 0.5+ | 0.8− |
| 2002 08 06 | 704 | 0.5− | 0.6+ | 2005 04 04 | G96 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2005 03 03 | G92 | 0.3+ | 0.4+ | 2005 04 09 | 699 | 0.5+ | 0.6+ | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2005 03 03 | G92 | 0.4+ | 0.3+ | 2005 04 09 | 699 | 0.3− | 0.5+ | 2006 11 17 | 703 | 0.9+ | 0.1− |
| 2005 03 03 | G92 | 0.1− | 0.6+ | 2005 04 09 | 699 | 0.8+ | 0.2− | | | | |
| 2005 03 04 | G92 | 0.2− | 0.1+ | 2005 04 09 | 699 | 0.4− | 0.1− | | | | |

**(141764)∗ 2002 MG$_2$**

Discovered 2002 June 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.89614 | | (2000.0) | | | |
| $n$ | 0.28914136 | $\omega$ | 39.06105 | | +0.39774411 | +0.91486187 |
| $a$ | 2.2649706 | $\Omega$ | 254.47492 | | −0.85882853 | +0.34459740 |
| $e$ | 0.2017284 | $i$ | 4.13521 | | −0.32282066 | +0.21042904 |
| $P$ | 3.41 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 704 | 0.6− | 0.4+ | 2002 07 05 | 704 | 0.7+ | 0.0 | 2005 04 06 | 691 | 0.0 | 0.2+ |
| 1999 10 11 | 704 | 0.5+ | 0.2+ | 2002 07 05 | 704 | (1.5+ | 0.0 ) | 2005 04 06 | 691 | 0.1+ | 0.3+ |
| 1999 10 11 | 704 | 0.3− | 0.6− | 2002 07 05 | 704 | 1.1+ | 0.1− | 2005 04 06 | 691 | 0.1+ | 0.2+ |
| 1999 10 11 | 704 | 0.9+ | 0.2+ | 2002 07 05 | 704 | 0.3+ | 0.2+ | 2005 04 10 | 691 | 0.0 | 0.3+ |
| 1999 10 11 | 704 | 0.2+ | 0.3− | 2002 07 13 | 644 | 0.3− | 0.6+ | 2005 04 10 | 691 | 0.1+ | 0.2+ |
| 1999 10 11 | 704 | 0.2− | 0.2+ | 2002 07 13 | 644 | 0.0 | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.2+ |
| 1999 10 11 | 704 | 0.0 | 0.0 | 2002 07 13 | 644 | 0.2− | 0.7+ | 2005 05 01 | 644 | 0.1− | 0.3+ |
| 1999 10 11 | 704 | 1.0− | 0.6− | 2002 07 13 | 644 | 0.1+ | 0.5+ | 2005 05 01 | 644 | 0.1− | 0.2+ |
| 1999 10 11 | 704 | 0.4− | 0.1− | 2002 07 13 | 644 | 0.1− | 0.8+ | 2005 05 01 | 644 | 0.1− | 0.3+ |
| 1999 10 11 | 704 | 0.8− | 0.3+ | 2002 07 13 | 644 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 1999 10 11 | 704 | 0.0 | 0.0 | 2002 07 14 | 704 | 0.6− | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.2+ |
| 1999 10 11 | 704 | 0.1− | 1.1− | 2002 07 14 | 704 | 0.7− | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 1999 10 11 | 704 | 0.7− | 0.4− | 2002 07 14 | 704 | 0.1+ | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 1999 11 11 | 691 | 0.3− | 0.2+ | 2002 07 14 | 704 | 0.4− | 0.2− | 2006 10 19 | 695 | 0.2− | 0.2+ |
| 1999 11 11 | 691 | 0.1− | 0.3+ | 2002 07 14 | 704 | 0.1− | 0.3− | 2006 10 19 | 695 | 0.2− | 0.2+ |
| 1999 11 11 | 691 | 0.6− | 0.3+ | 2002 07 21 | 644 | 0.4− | 0.4+ | 2006 10 19 | 695 | 0.2− | 0.2+ |
| 1999 11 16 | 691 | 0.4+ | 0.0 | 2002 07 21 | 644 | 0.2− | 0.2+ | 2006 10 19 | 695 | 0.1+ | 0.3+ |
| 1999 11 16 | 691 | 0.1− | 0.8− | 2002 07 21 | 644 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 1999 11 16 | 691 | 1.4+ | 0.4+ | 2002 07 28 | 608 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.4+ | 0.6+ |
| 2002 06 16 | 644 | 0.4− | 0.4+ | 2002 07 28 | 608 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.5− | 0.1+ |
| 2002 06 16 | 644 | 0.3− | 0.4+ | 2002 07 28 | 608 | 0.2+ | 0.5− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2002 06 16 | 644 | 0.4− | 0.3+ | 2002 08 24 | 644 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2002 06 18 | 704 | 0.2+ | 1.3− | 2002 08 24 | 644 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2002 06 18 | 704 | 0.2+ | 0.3− | 2002 08 24 | 644 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2002 06 18 | 704 | 0.3+ | 0.8− | 2005 04 05 | 699 | 0.5+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2002 06 18 | 704 | 0.8− | 0.1− | 2005 04 05 | 699 | 1.1+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2002 06 18 | 704 | 0.2+ | 0.0 | 2005 04 05 | 699 | 0.6− | 0.1+ | | | | |
| 2002 07 05 | 704 | 0.6+ | 0.1+ | 2005 04 05 | 699 | (1.6− | 0.1−) | | | | |

**(141765)∗ 2002 MP$_3$**

Discovered 2002 June 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.75694 | | (2000.0) | | | |
| $n$ | 0.34861965 | $\omega$ | 270.10912 | | +0.82369989 | −0.18330370 |
| $a$ | 1.9994082 | $\Omega$ | 100.47081 | | +0.35849842 | +0.90152267 |
| $e$ | 0.4692262 | $i$ | 33.07024 | | −0.43931465 | +0.39199061 |
| $P$ | 2.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 05 22 | 261 | 0.7+ | 1.6+ | 2005 06 18 | 448 | 0.2+ | 0.2− | 2005 12 19 | E12 | 0.1− | 0.3+ |
| 1988 05 22 | 261 | 1.0+ | 0.9+ | 2005 06 18 | 448 | 0.1+ | 0.2− | 2005 12 24 | 808 | 0.4− | 0.3+ |
| 2002 06 20 | 644 | 0.1+ | 0.2+ | 2005 06 18 | 448 | 0.5− | 0.9− | 2005 12 24 | 808 | (0.2+ | 2.2+) |
| 2002 06 20 | 644 | 0.2+ | 0.3+ | 2005 06 26 | I77 | 0.8+ | 0.2+ | 2005 12 24 | 808 | 0.4− | 0.8+ |
| 2002 06 20 | 644 | 0.5+ | 0.6+ | 2005 06 26 | I77 | 0.2− | 0.0 | 2005 12 25 | 428 | 0.4+ | 1.1+ |
| 2002 06 30 | 644 | 0.1− | 1.1+ | 2005 06 26 | I77 | 0.1+ | 0.3− | 2005 12 27 | E12 | 0.1+ | 0.1+ |
| 2002 06 30 | 644 | 0.1+ | 1.1+ | 2005 07 04 | 704 | 0.1− | 0.2− | 2005 12 27 | E12 | 0.1− | 0.2+ |
| 2002 06 30 | 644 | 0.1− | 1.0+ | 2005 07 04 | 704 | 0.1+ | 0.0 | 2005 12 27 | E12 | 0.4− | 0.2+ |
| 2002 06 30 | 246 | 0.6+ | 0.6+ | 2005 07 04 | 704 | (2.3− | 0.1+) | 2005 12 27 | E12 | 0.1− | 0.2+ |
| 2002 06 30 | 246 | 0.1− | 0.4+ | 2005 07 04 | 704 | 1.5− | 0.5+ | 2006 01 03 | H45 | 0.4+ | 0.3− |
| 2002 06 30 | 246 | 0.6− | 0.5+ | 2005 08 03 | 844 | (1.7− | 1.1−) | 2006 01 03 | H45 | 0.2− | 0.2+ |
| 2002 06 30 | 246 | 0.2+ | 0.7+ | 2005 08 04 | 844 | (1.7− | 0.7−) | 2006 01 03 | H45 | 0.2− | 0.4− |
| 2002 06 30 | 246 | 0.5+ | 0.9+ | 2005 08 04 | 844 | (2.3− | 0.1+) | 2006 01 03 | H45 | 0.2+ | 0.1− |
| 2002 06 30 | 246 | 0.1+ | 1.1+ | 2005 08 04 | 844 | 0.9− | 0.2− | 2006 01 03 | H45 | 1.1− | 0.1− |
| 2002 06 30 | 246 | 0.1+ | 1.4+ | 2005 08 04 | 844 | (0.0 | 3.5+) | 2006 01 04 | H45 | 0.7+ | 0.1+ |
| 2002 06 30 | 201 | 0.5+ | 0.3+ | 2005 08 28 | E14 | 0.1+ | 0.1+ | 2006 01 04 | H45 | 0.7+ | 0.1− |
| 2002 06 30 | 201 | 0.2+ | 0.9+ | 2005 08 28 | E14 | 0.1− | 0.0 | 2006 01 04 | H45 | 0.1+ | 0.3− |
| 2002 06 30 | 201 | 0.6+ | 0.2− | 2005 08 28 | E14 | 0.1+ | 0.3− | 2006 01 04 | H45 | 1.1− | 0.2− |
| 2002 07 01 | 644 | 0.1+ | 0.4+ | 2005 11 01 | 844 | 0.8+ | 0.0 | 2006 01 04 | H45 | 0.9− | 0.1+ |
| 2002 07 01 | 644 | 0.1− | 0.4+ | 2005 11 01 | 844 | 1.2+ | 0.0 | 2006 01 05 | 844 | 1.1− | 0.4− |
| 2002 07 01 | 704 | 0.1+ | 0.4+ | 2005 11 01 | 844 | 0.8+ | 0.3+ | 2006 01 05 | 844 | 0.2− | 0.4+ |
| 2002 07 01 | 644 | 0.1+ | 0.6+ | 2005 11 01 | 844 | (3.8+ | 0.0 ) | 2006 01 05 | 844 | 0.5+ | 0.5+ |
| 2002 07 01 | 704 | 0.7+ | 1.0+ | 2005 11 02 | 844 | 0.4− | 0.4+ | 2006 01 05 | 844 | (1.5− | 1.0+) |
| 2002 07 01 | 704 | 1.0+ | 1.1+ | 2005 11 02 | 844 | 0.7+ | 0.2− | 2006 01 05 | 844 | 0.7− | 0.0 |
| 2002 07 01 | 704 | 0.9+ | 0.3+ | 2005 11 02 | 844 | 0.2− | 0.6+ | 2006 01 05 | 844 | 0.4− | 0.4+ |
| 2002 07 01 | 704 | 1.0+ | 1.4+ | 2005 11 03 | 844 | 0.3+ | 0.7+ | 2006 01 05 | 844 | 0.4− | 0.8+ |
| 2002 07 01 | 557 | 0.4+ | 0.6+ | 2005 11 03 | 844 | 0.6− | 0.4+ | 2006 01 05 | 844 | 0.1− | 0.3− |
| 2002 07 01 | 557 | 0.9+ | 0.6− | 2005 11 07 | 844 | 1.4+ | 0.0 | 2006 01 05 | 844 | 0.1+ | 0.9+ |
| 2002 07 02 | 704 | 1.3+ | 0.1+ | 2005 11 07 | 844 | 1.1+ | 0.0 | 2006 01 10 | 198 | 0.1+ | 0.4+ |
| 2002 07 02 | 704 | 0.8+ | 0.6+ | 2005 11 07 | 844 | 1.0+ | 0.3+ | 2006 01 10 | 198 | 0.0 | 0.5+ |
| 2002 07 02 | 704 | 1.1+ | 1.0+ | 2005 11 08 | 844 | 1.4+ | 0.0 | 2006 01 10 | 198 | 0.1− | 0.5+ |
| 2002 07 06 | 649 | 0.2+ | 0.2+ | 2005 11 08 | 844 | 0.9+ | 0.2+ | 2006 01 10 | 198 | 0.5− | 0.2+ |
| 2002 07 06 | 649 | 1.0+ | 0.6− | 2005 11 09 | 844 | 0.9+ | 0.2+ | 2006 01 14 | 699 | (0.2+ | 2.6+) |
| 2002 07 06 | 649 | 0.9+ | 0.2+ | 2005 11 10 | 844 | 1.0+ | 1.0+ | 2006 01 14 | 699 | 0.3− | 0.3+ |
| 2002 07 07 | 246 | 0.8+ | 0.4+ | 2005 11 10 | 844 | 0.8+ | 0.5+ | 2006 01 14 | 699 | 0.0 | 0.5+ |
| 2002 07 07 | 246 | 0.1− | 1.4+ | 2005 11 10 | 844 | 0.2+ | 0.9+ | 2006 01 14 | 699 | 0.5− | 0.8+ |
| 2002 07 07 | 246 | 0.9+ | 1.5+ | 2005 11 10 | 844 | 0.8+ | 0.5+ | 2006 01 22 | 670 | 0.1+ | 0.4+ |
| 2002 07 07 | 246 | 0.0 | 0.6+ | 2005 11 13 | 808 | (2.2+ | 1.7+) | 2006 01 22 | 670 | 1.2+ | 0.7+ |
| 2002 07 12 | 540 | 0.2− | 0.3+ | 2005 11 13 | 808 | (2.2− | 1.0−) | 2006 01 22 | 130 | 0.1+ | 0.3+ |
| 2002 07 12 | 540 | 0.1− | 0.1+ | 2005 11 13 | 808 | 0.7− | 1.1+ | 2006 01 22 | 130 | 0.1− | 0.3+ |
| 2002 07 31 | 413 | 0.5− | 0.2− | 2005 11 13 | 808 | (2.3+ | 2.7+) | 2006 01 22 | 130 | 0.1+ | 0.1− |
| 2002 07 31 | 413 | 0.2− | 0.0 | 2005 11 19 | 844 | 0.9− | 0.1+ | 2006 01 22 | 130 | 0.0 | 0.2+ |
| 2002 07 31 | 413 | 0.2− | 0.2− | 2005 11 19 | 844 | 0.2− | 0.6− | 2006 01 24 | 699 | 0.1− | 0.5+ |
| 2002 08 01 | 649 | 0.7− | 0.4+ | 2005 11 19 | 844 | 0.7+ | 0.1− | 2006 01 24 | 699 | 0.6− | 0.3+ |
| 2002 08 01 | 649 | 0.8− | 0.7− | 2005 11 19 | 844 | (1.6− | 0.1−) | 2006 01 24 | 699 | 0.7− | 0.2+ |
| 2002 08 01 | 649 | 0.5+ | 0.6+ | 2005 11 25 | 844 | 0.4− | 0.1+ | 2006 01 24 | 699 | 0.1− | 0.9+ |
| 2002 10 06 | 474 | 0.1− | 0.2− | 2005 11 25 | 844 | 0.9− | 0.2− | 2006 01 26 | 703 | 0.0 | 0.9+ |
| 2002 10 06 | 474 | 0.5+ | 0.3+ | 2005 11 25 | 844 | 0.7− | 0.2− | 2006 01 26 | 703 | 0.4+ | 1.0+ |
| 2002 12 12 | 413 | 0.4− | 0.0 | 2005 11 25 | 844 | 0.7− | 0.2+ | 2006 01 26 | 703 | 0.7− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 413 | 0.2− | 0.3+ | 2005 11 25 | 844 | 0.9− | 0.3− | 2006 01 26 | 703 | 0.2− | 0.8+ | | |
| 2002 12 12 | 413 | 0.3− | 0.1− | 2005 12 01 | 844 | (1.7− | 0.3−) | 2006 01 27 | 113 | 0.0 | 0.6+ | | |
| 2003 01 29 | 413 | 0.1− | 0.0 | 2005 12 01 | 844 | 0.3+ | 0.0 | 2006 01 27 | 113 | 0.1− | 0.0 | | |
| 2003 01 29 | 413 | 0.3− | 0.2− | 2005 12 01 | 844 | 0.7− | 0.0 | 2006 01 27 | 113 | 0.0 | 0.1− | | |
| 2003 01 29 | 413 | 0.1− | 0.0 | 2005 12 01 | 844 | 0.3− | 0.1− | 2006 01 27 | 113 | 0.2+ | 0.1− | | |
| 2005 05 21 | G96 | 0.6− | 0.7− | 2005 12 01 | 844 | 0.3+ | 0.1+ | 2006 01 27 | 113 | 0.2− | 0.2− | | |
| 2005 05 21 | G96 | 0.4− | 0.6− | 2005 12 03 | 423 | 0.1+ | 0.2+ | 2006 01 31 | 703 | 0.6− | 0.0 | | |
| 2005 05 21 | G96 | 0.1− | 0.5− | 2005 12 03 | 423 | 0.0 | 0.2+ | 2006 01 31 | 703 | 0.5− | 0.4+ | | |
| 2005 05 21 | G96 | 0.2− | 0.5− | 2005 12 03 | 423 | 0.2− | 0.1− | 2006 01 31 | 703 | 0.3− | 0.7+ | | |
| 2005 06 01 | A13 | 0.7+ | 0.2+ | 2005 12 14 | E12 | 0.0 | 0.1− | 2006 01 31 | 703 | 0.1− | 0.2+ | | |
| 2005 06 01 | A13 | 0.3− | 0.5− | 2005 12 14 | E12 | 0.2+ | 0.3− | 2006 02 03 | 704 | 0.6+ | 0.8+ | | |
| 2005 06 01 | A13 | 0.5+ | 1.4+ | 2005 12 14 | E12 | 0.3+ | 0.3− | 2006 02 03 | 704 | 0.1+ | 0.7+ | | |
| 2005 06 01 | A13 | 0.6+ | 0.3+ | 2005 12 14 | E12 | 0.1+ | 0.6− | 2006 02 03 | 704 | 0.4− | 0.7+ | | |
| 2005 06 11 | A50 | (3.3+ | 1.7+) | 2005 12 19 | E12 | 0.6− | 0.3+ | 2006 02 03 | 704 | 0.5− | 0.4+ | | |
| 2005 06 11 | A50 | (4.0+ | 2.3+) | 2005 12 19 | E12 | 0.3− | 0.2+ | | | | | | |
| 2005 06 18 | 448 | 0.2− | 0.3− | 2005 12 19 | E12 | 0.0 | 0.2+ | | | | | | |

**(141766)∗ 2002 $MB_4$ = 2002 $NW_{55}$**

Discovered 2002 June 17 by NEAT at Palomar.

Id. A. Doppler (d, *MPO* 35668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.81839 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27504514 | $\omega$ | 320.40618 | | +0.77338235 | +0.63393983 | |
| $a$ | 2.3417115 | $\Omega$ | 0.25265 | | −0.57024820 | +0.69581090 | |
| $e$ | 0.2079743 | $i$ | 2.45114 | | −0.27694174 | +0.33759071 | |
| $P$ | 3.58 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 691 | 0.1− | 0.4− | 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 1999 12 06 | 691 | 0.2+ | 0.7− | 2005 05 10 | 691 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.5+ | 0.4+ | | |
| 1999 12 06 | 691 | 0.3+ | 0.3− | 2005 05 10 | 691 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.4+ | | |
| 2001 02 22 | 691 | 0.2+ | 0.3+ | 2005 05 10 | 691 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2001 02 22 | 691 | 0.0 | 0.2+ | 2005 05 12 | G96 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2001 02 22 | 691 | 0.1− | 0.4+ | 2005 05 12 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 06 17 | 644 | 0.1− | 0.1+ | 2005 05 12 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 06 17 | 644 | 0.3− | 0.0 | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 06 17 | 644 | 0.4− | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.5− | 2006 10 29 | 691 | 0.2− | 0.2+ | | |
| 2002 06 18 | 644 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.3+ | | |
| 2002 06 18 | 644 | 0.4− | 0.1− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1− | 0.2+ | | |
| 2002 06 18 | 644 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 2002 07 05 | 704 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ | | |
| 2002 07 05 | 704 | 0.4+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 07 05 | 704 | 0.8+ | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.0 | | |
| 2002 07 05 | 704 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.3+ | | |
| 2002 07 05 | 704 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.2+ | | |
| 2002 07 12 | 644 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.2+ | | |
| 2002 07 12 | 644 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.8+ | | |
| 2002 07 12 | 644 | 0.1− | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.9+ | | |
| 2002 07 14 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2+ | | |
| 2002 07 14 | 644 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.9− | | |
| 2002 07 14 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.0 | | |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.4+ | | |
| 2005 03 10 | G96 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.7− | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.4+ | | |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ | | | | | | |

**(141767)∗ 2002 $NL_1$**

Discovered 2002 July 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.78816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25913543 | $\omega$ | 104.64713 | | −0.54822146 | +0.83590742 | |
| $a$ | 2.4366035 | $\Omega$ | 132.07598 | | −0.78049199 | −0.49989380 | |
| $e$ | 0.1454695 | $i$ | 2.06019 | | −0.30047543 | −0.22663842 | |
| $P$ | 3.80 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 0.5− | 0.0 | 2005 03 04 | 704 | 0.6− | 0.6+ | 2005 04 11 | G96 | 0.1− | 0.1+ | | |
| 2002 07 04 | 644 | 0.2− | 0.3+ | 2005 03 04 | 704 | 0.4+ | 0.1− | 2005 04 11 | G96 | 0.0 | 0.1− | | |
| 2002 07 04 | 644 | 0.1− | 0.2− | 2005 03 04 | 704 | 0.5+ | 0.8− | 2005 04 11 | G96 | 0.3− | 0.0 | | |
| 2002 07 05 | 644 | 0.0 | 0.4+ | 2005 03 08 | 704 | 0.1− | 0.3+ | 2005 05 11 | G96 | 0.0 | 0.2+ | | |
| 2002 07 05 | 644 | 0.1+ | 0.2+ | 2005 03 08 | 704 | 0.0 | 0.5+ | 2005 05 11 | G96 | 0.1+ | 0.1+ | | |
| 2002 07 05 | 644 | 0.2− | 0.1+ | 2005 03 08 | 704 | 0.2+ | 0.8+ | 2005 05 11 | G96 | 0.1− | 0.2+ | | |
| 2002 07 14 | 644 | 0.6+ | 1.3+ | 2005 03 08 | 704 | 0.2+ | 1.1+ | 2005 05 11 | G96 | 0.1− | 0.2− | | |
| 2002 07 14 | 644 | 0.1− | 1.2+ | 2005 03 09 | 699 | 0.5+ | 0.3+ | 2005 05 13 | G96 | 0.1− | 0.1− | | |
| 2002 07 14 | 644 | 0.0 | 1.4+ | 2005 03 09 | 699 | 0.9+ | 0.8+ | 2005 05 13 | G96 | 0.0 | 0.4+ | | |
| 2002 07 18 | 644 | 0.3− | 0.3+ | 2005 03 09 | 699 | 1.5+ | 0.3+ | 2005 05 13 | G96 | 0.2− | 0.0 | | |
| 2002 07 18 | 644 | 0.1+ | 0.3+ | 2005 03 09 | 699 | 0.7+ | 0.5+ | 2005 05 13 | G96 | 0.6− | 0.2− | | |
| 2002 07 18 | 644 | 0.2− | 0.3+ | 2005 03 09 | 704 | 0.3+ | 0.7+ | 2006 08 14 | 644 | 0.2− | 0.5+ | | |
| 2002 08 08 | 644 | 0.3− | 0.2− | 2005 03 09 | 704 | 0.5− | 0.8+ | 2006 08 14 | 644 | 0.3− | 0.0 | | |
| 2002 08 08 | 644 | 0.2− | 0.1− | 2005 03 09 | 704 | 0.7+ | 0.3+ | 2006 08 14 | 644 | 0.2+ | 0.2+ | | |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2005 03 09 | 704 | 0.3+ | 0.1− | 2006 08 16 | 644 | 0.4− | 0.4+ | | |
| 2002 08 27 | 644 | 0.2− | 0.2+ | 2005 03 09 | 704 | 0.0 | 0.5+ | 2006 08 16 | 644 | 0.4− | 0.3+ | | |
| 2002 08 27 | 644 | 0.1− | 0.1− | 2005 03 10 | G96 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.2− | 0.3+ | | |
| 2002 08 27 | 644 | 0.0 | 0.1+ | 2005 03 10 | G96 | 0.3− | 0.0 | 2006 08 19 | 691 | 0.1− | 0.2+ | | |
| 2003 11 19 | 599 | 0.7− | 0.4− | 2005 03 10 | G96 | 0.2− | 0.2− | 2006 08 19 | 691 | 0.2− | 0.6+ | | |
| 2003 11 19 | 599 | 0.4− | 0.9+ | 2005 03 10 | G96 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.2− | 0.1+ | | |
| 2003 11 19 | 599 | (0.4+ | 1.6+) | 2005 03 17 | 704 | (1.6+ | 0.1+) | 2006 08 28 | 703 | 0.7− | 0.0 | | |
| 2003 11 28 | 691 | 0.1− | 0.3+ | 2005 03 17 | 704 | 0.5+ | 0.5+ | 2006 08 28 | 703 | 0.0 | 1.0− | | |
| 2003 11 28 | 691 | 0.2− | 0.3+ | 2005 03 17 | 704 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.2+ | | |
| 2003 11 28 | 691 | 0.2+ | 0.7+ | 2005 03 17 | 703 | 0.6− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.2− | | |
| 2005 02 09 | 704 | 0.4+ | 0.2− | 2005 03 17 | 703 | 1.5+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.5− | | |
| 2005 02 09 | 704 | 0.5+ | 0.8+ | 2005 03 17 | 703 | 1.1− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.0 | | |
| 2005 02 09 | 704 | (1.2+ | 2.2+) | 2005 03 17 | 703 | 0.7− | 0.0 | 2006 10 22 | G96 | 1.1+ | 0.3+ | | |
| 2005 02 09 | 704 | 0.1+ | 1.2+ | 2005 04 11 | G96 | 0.2− | 0.1+ | 2006 10 22 | G96 | 2.6+ | 0.4+ | | |

**(141768)∗ 2002 $NG_2$ = 1999 $TF_{197}$**

Discovered 2002 July 4 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 33641)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.21779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28265028 | $\omega$ | 70.25251 | | +0.98180047 | +0.15387655 | |
| $a$ | 2.2995160 | $\Omega$ | 280.77187 | | −0.18659955 | +0.89064596 | |
| $e$ | 0.1491351 | $i$ | 6.50594 | | +0.03533341 | +0.42786887 | |
| $P$ | 3.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.3+ | 0.3− | 2002 07 28 | 608 | 0.6+ | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.7+ | | |
| 1999 10 12 | 704 | 0.3− | 0.1− | 2002 08 24 | 644 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.8+ | | |
| 1999 10 12 | 704 | 0.9+ | 0.3+ | 2002 08 24 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 1.2− | 0.2+ | | |
| 1999 10 12 | 704 | 0.3− | 0.4− | 2002 08 24 | 644 | 0.1− | 0.8+ | 2006 10 19 | 703 | 1.1+ | 1.2+ | | |
| 1999 10 12 | 704 | 0.0 | 0.3− | 2002 10 05 | 704 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.5− | | |
| 1999 10 13 | 704 | 0.1+ | 0.7− | 2002 10 05 | 704 | 0.3− | 0.8− | 2006 10 27 | 703 | 0.2+ | 0.3− | | |
| 1999 10 13 | 704 | 0.2+ | 0.4+ | 2002 10 05 | 704 | 0.5+ | 0.2− | 2006 10 27 | 703 | 0.4− | 0.1− | | |
| 1999 10 13 | 704 | 0.1− | 0.2+ | 2003 10 24 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.1− | | |
| 1999 10 13 | 704 | 0.3+ | 1.7+ | 2003 10 24 | 691 | 0.1+ | 0.2− | 2006 10 31 | A50 | 0.5+ | 0.2+ | | |
| 1999 12 08 | 704 | 0.3− | 0.1+ | 2003 10 24 | 691 | 0.4+ | 0.2+ | 2006 10 31 | A50 | 0.7− | 0.4+ | | |
| 1999 12 08 | 704 | 0.5− | 0.0 | 2003 10 25 | 691 | 0.2− | 0.2+ | 2006 11 02 | 703 | 0.3− | 0.1+ | | |
| 1999 12 08 | 704 | 0.9− | 0.8+ | 2003 10 25 | 691 | 0.2− | 0.0 | 2006 11 02 | 703 | 0.6+ | 0.2− | | |
| 1999 12 08 | 704 | 0.3− | 0.3+ | 2003 10 25 | 691 | 0.1− | 0.2− | 2006 11 02 | 703 | 0.0 | 0.0 | | |
| 1999 12 08 | 704 | (2.1+ | 0.1+) | 2003 12 22 | 691 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.6− | 0.3− | | |
| 2002 07 04 | 644 | 0.0 | 0.4− | 2003 12 22 | 691 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 2002 07 04 | 644 | 0.1− | 0.4− | 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | | |
| 2002 07 04 | 644 | 0.1− | 0.2− | 2004 01 13 | 699 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2002 07 05 | 704 | 0.6− | 0.0 | 2004 01 13 | 699 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.9− | 0.4− | | |
| 2002 07 05 | 704 | 0.2+ | 0.2+ | 2004 01 13 | 699 | 0.7− | 0.4− | 2006 11 11 | 703 | 0.0 | 0.4− | | |
| 2002 07 05 | 704 | 0.7− | 0.6+ | 2004 01 13 | 699 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.0 | | |
| 2002 07 08 | 644 | 0.2+ | 0.9+ | 2004 01 21 | 704 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.3− | | |
| 2002 07 08 | 644 | 0.2+ | 1.0+ | 2004 01 21 | 704 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.4− | | |
| 2002 07 08 | 644 | 0.0 | 0.9+ | 2004 01 21 | 704 | 0.1− | 0.7+ | 2006 11 14 | 703 | 0.1− | 0.3− | | |
| 2002 07 14 | 704 | 0.6− | 0.7+ | 2004 02 16 | 691 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.3− | | |
| 2002 07 14 | 704 | 1.0− | 1.2+ | 2004 02 16 | 691 | 0.7+ | 0.5+ | 2006 11 14 | 703 | 0.0 | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 704 | 0.5− | 1.1+ | 2004 02 16 | 691 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.8+ | 0.5+ | | |
| 2002 07 14 | 704 | 0.7− | 0.6+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.3+ | | |
| 2002 07 14 | 704 | 0.3− | 1.0+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.4+ | 0.3− | | |
| 2002 07 16 | 608 | 0.2+ | 0.1− | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 11 16 | 704 | 1.2+ | 0.4− | | |
| 2002 07 16 | 608 | 0.0 | 0.0 | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.5− | | |
| 2002 07 16 | 608 | 0.1+ | 0.4+ | 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.9+ | 1.2+ | | |
| 2002 07 21 | 644 | 0.2− | 0.4+ | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.2− | | |
| 2002 07 21 | 644 | 0.1− | 0.6+ | 2006 08 29 | 703 | 0.8+ | 0.8− | 2006 11 22 | 703 | 0.3− | 0.2− | | |
| 2002 07 21 | 644 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.3− | | |
| 2002 07 28 | 608 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.7− | | | | | | |
| 2002 07 28 | 608 | 0.8+ | 0.8− | 2006 08 29 | 703 | (1.9− | 0.6+) | | | | | | |

**(141769)∗ 2002 NN$_2$ = 2006 BY$_{207}$**

Discovered 2002 July 6 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 100285)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.63994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17908982 | $\omega$ | 324.25742 | | +0.19911305 | | +0.96527148 |
| $a$ | 3.1171338 | $\Omega$ | 316.50780 | | −0.83231355 | | +0.07546876 |
| $e$ | 0.1784645 | $i$ | 14.22540 | | −0.51730856 | | +0.25011083 |
| $P$ | 5.50 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 327 | 1.6− | 0.8+ | 2002 07 08 | 644 | 0.1+ | 0.1+ | 2006 02 02 | 691 | 0.1+ | 0.1− | | |
| 1997 09 30 | 327 | 0.5− | 0.9+ | 2002 07 08 | 644 | 0.0 | 0.1+ | 2006 02 06 | 691 | 0.3+ | 0.0 | | |
| 1997 09 30 | 327 | 0.5− | 0.4+ | 2002 08 29 | 644 | 0.5− | 0.0 | 2006 02 06 | 691 | 0.2+ | 0.1+ | | |
| 1997 09 30 | 327 | 0.2+ | 0.2+ | 2002 08 29 | 644 | 0.1− | 0.2+ | 2006 02 06 | 691 | 0.1+ | 0.0 | | |
| 1997 09 30 | 327 | 0.0 | 0.5+ | 2002 08 29 | 644 | 0.2− | 0.2− | 2006 02 07 | 703 | 0.1+ | 0.2− | | |
| 2001 03 24 | 699 | 1.1+ | 0.3+ | 2005 12 28 | G96 | 0.2− | 0.3− | 2006 02 07 | 703 | 1.3− | 1.0+ | | |
| 2001 03 24 | 699 | 0.7+ | 0.4+ | 2005 12 28 | G96 | 0.1+ | 0.3− | 2006 02 07 | 703 | 1.0− | 0.2+ | | |
| 2001 03 24 | 699 | 0.3− | 0.0 | 2005 12 28 | G96 | 0.3+ | 0.1− | 2006 02 07 | 703 | 0.9+ | 0.6+ | | |
| 2001 03 24 | 699 | 0.7+ | 0.6− | 2005 12 28 | G96 | 0.6+ | 0.4− | 2006 02 21 | 699 | (2.9+ | 0.3−) | | |
| 2001 06 13 | 691 | 0.1+ | 0.7+ | 2006 01 31 | 703 | 0.8+ | 0.0 | 2006 02 21 | 699 | 0.4− | 0.2− | | |
| 2001 06 13 | 691 | 0.3− | 0.7− | 2006 01 31 | 703 | 0.6− | 0.5− | 2006 02 21 | 699 | 0.3− | 1.2− | | |
| 2001 06 13 | 691 | 0.1+ | 0.7+ | 2006 01 31 | 703 | 0.4− | 0.3− | 2006 02 21 | 699 | 0.1+ | 1.3+ | | |
| 2002 06 20 | 644 | 0.3+ | 0.3− | 2006 01 31 | 703 | 0.1− | 1.2− | 2006 02 24 | 291 | 0.1+ | 0.4+ | | |
| 2002 06 20 | 644 | 0.0 | 0.2− | 2006 01 31 | G96 | 0.1+ | 0.2− | 2006 02 24 | 291 | 0.1+ | 0.3+ | | |
| 2002 06 20 | 644 | 0.0 | 0.1− | 2006 01 31 | G96 | 0.1+ | 0.3− | 2006 02 24 | 291 | 0.0 | 0.1+ | | |
| 2002 07 06 | 644 | 0.1+ | 0.1+ | 2006 01 31 | G96 | 0.2+ | 0.2− | 2006 03 23 | 703 | 0.9− | 0.1− | | |
| 2002 07 06 | 644 | 0.3+ | 0.1+ | 2006 01 31 | G96 | 0.2+ | 0.3− | 2006 03 23 | 703 | 1.2− | 0.4− | | |
| 2002 07 06 | 644 | 0.2+ | 0.3+ | 2006 02 02 | 691 | 0.1+ | 0.0 | 2006 03 23 | 703 | 0.3− | 1.3− | | |
| 2002 07 08 | 644 | 0.1− | 0.1− | 2006 02 02 | 691 | 0.1+ | 0.2+ | 2006 03 23 | 703 | 0.6− | 1.4+ | | |

**(141770)∗ 2002 NS$_2$ = 1998 HF$_{53}$**

Discovered 2002 July 8 by J. Broughton at Reedy Creek.

Id. T. B. Spahr (*MPO* 33641)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.15790 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27526017 | $\omega$ | 341.63325 | | +0.46328283 | | +0.88595342 |
| $a$ | 2.3404919 | $\Omega$ | 315.95922 | | −0.80918548 | | +0.41307300 |
| $e$ | 0.2182430 | $i$ | 1.75943 | | −0.36136945 | | +0.21084886 |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.2+ | 1.4+ | 2002 07 19 | 644 | 0.4− | 0.1− | 2006 10 03 | 691 | 0.2− | 0.4+ | | |
| 1998 04 21 | 704 | 1.1+ | 0.4− | 2002 07 19 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 1998 04 21 | 704 | 0.4+ | 0.1− | 2002 07 20 | 428 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 1998 04 22 | 704 | (1.5− | 2.2+) | 2002 07 20 | 428 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 1998 04 22 | 704 | (2.4− | 0.6+) | 2002 08 13 | 704 | 1.1+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 1998 04 22 | 704 | 1.2− | 1.2+ | 2002 08 13 | 704 | 0.8+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | | |
| 1998 04 22 | 704 | 1.9− | 1.8+ | 2002 08 13 | 704 | 0.3+ | 0.8− | 2006 10 16 | 691 | 0.2− | 0.2+ | | |
| 2001 02 27 | 691 | 1.0− | 0.5+ | 2002 08 13 | 704 | 0.4+ | 0.5− | 2006 10 27 | 704 | 1.2+ | 0.5+ | | |
| 2001 02 27 | 691 | 0.7+ | 0.2− | 2002 08 13 | 704 | 0.5− | 0.2− | 2006 10 27 | 704 | 0.1+ | 0.4− | | |
| 2001 02 27 | 691 | 1.4+ | 0.3+ | 2002 08 28 | 644 | 0.1− | 0.2+ | 2006 10 27 | 704 | (2.0+ | 1.9−) | | |
| 2002 07 05 | 704 | 0.0 | 0.1− | 2002 08 28 | 644 | 0.2− | 0.2− | 2006 10 27 | 704 | 0.5+ | 0.3+ | | |
| 2002 07 05 | 704 | 0.4+ | 0.4+ | 2002 08 28 | 644 | 0.2− | 0.1− | 2006 10 28 | 704 | 0.8+ | 0.0 | | |
| 2002 07 05 | 704 | 0.0 | 0.1+ | 2002 09 05 | 704 | 0.5+ | 0.4+ | 2006 10 28 | 704 | 0.3− | 0.3+ | | |
| 2002 07 05 | 704 | 0.1− | 0.2+ | 2002 09 05 | 704 | 1.0+ | 0.2+ | 2006 10 28 | 704 | 0.0 | 0.3+ | | |
| 2002 07 05 | 704 | 0.2− | 0.7+ | 2002 09 05 | 704 | 0.2− | 0.3− | 2006 10 28 | 704 | 0.0 | 1.1+ | | |
| 2002 07 08 | 428 | (1.6+ | 0.3+) | 2002 09 05 | 704 | 0.8+ | 0.6+ | 2006 10 29 | 691 | 0.1− | 0.1+ | | |
| 2002 07 08 | 428 | 0.6+ | 0.4+ | 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.0 | | |
| 2002 07 09 | 428 | 0.8− | 0.5+ | 2005 03 11 | G96 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.2− | 0.1+ | | |
| 2002 07 09 | 428 | 1.2− | 0.8+ | 2005 03 11 | G96 | 0.6− | 0.3+ | 2006 11 07 | 644 | 0.6− | 0.4− | | |
| 2002 07 11 | 428 | (2.2− | 0.6+) | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.4− | 0.5− | | |
| 2002 07 11 | 428 | 0.4− | 1.3+ | 2005 03 17 | 691 | 0.4+ | 0.6+ | 2006 11 07 | 644 | 0.1+ | 0.1− | | |
| 2002 07 12 | 428 | 0.0 | 0.6+ | 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.3− | | |
| 2002 07 12 | 428 | 0.1+ | 0.1+ | 2005 03 17 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1− | | |
| 2002 07 12 | 428 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.2+ | | |
| 2002 07 14 | 644 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2− | | |
| 2002 07 14 | 644 | 0.4+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.5+ | 0.1− | | |
| 2002 07 14 | 644 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.6− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 | | |
| 2002 07 19 | 644 | 0.4− | 0.1− | 2006 10 03 | 691 | 0.4− | 0.2+ | | | | | | |

**(141771)∗ 2002 NC$_4$ = 2005 EP$_{208}$**

Discovered 2002 July 1 by NEAT at Palomar.

Id. A. Doppler (*MPO* 75379)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.65875 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27322840 | $\omega$ | 337.04388 | | −0.17881801 | | +0.98351741 |
| $a$ | 2.3520804 | $\Omega$ | 282.64684 | | −0.89838140 | | −0.17431953 |
| $e$ | 0.1886642 | $i$ | 1.57322 | | −0.40116703 | | −0.04802290 |
| $P$ | 3.61 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 11 | 691 | 0.3+ | 0.2+ | 2003 12 14 | 691 | 0.1+ | 0.2− | 2005 05 08 | G96 | 0.2− | 0.3− | | |
| 1994 02 11 | 691 | 0.2− | 0.2− | 2003 12 14 | 691 | 0.2− | 0.3− | 2005 05 08 | G96 | 0.1− | 0.3− | | |
| 1994 02 11 | 691 | 0.4− | 0.9− | 2003 12 14 | 691 | 0.1− | 0.3− | 2005 05 14 | G96 | 0.1− | 0.1− | | |
| 2002 07 01 | 644 | 0.2+ | 0.1+ | 2005 03 04 | 691 | 0.3+ | 0.3+ | 2005 05 14 | G96 | 0.1+ | 0.6+ | | |
| 2002 07 01 | 644 | 0.2+ | 0.5+ | 2005 03 04 | 691 | 0.2+ | 0.3+ | 2005 05 14 | G96 | 0.4+ | 0.2− | | |
| 2002 07 01 | 644 | 0.7+ | 0.4+ | 2005 03 04 | 691 | 0.2+ | 0.4+ | 2005 05 14 | G96 | 0.2+ | 0.2− | | |
| 2002 07 04 | 291 | 0.1− | 0.1− | 2005 03 11 | G96 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.2− | 0.3+ | | |
| 2002 07 04 | 291 | 0.6− | 0.1+ | 2005 03 11 | G96 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.3+ | | |
| 2002 07 04 | 291 | 0.4− | 0.1− | 2005 03 11 | G96 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.3+ | | |
| 2002 07 13 | 644 | 0.8+ | 0.4+ | 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ | | |
| 2002 07 13 | 644 | 0.4+ | 0.6+ | 2005 03 17 | 703 | 1.1− | 0.4− | 2006 09 25 | 691 | 0.2− | 0.3+ | | |
| 2002 07 13 | 644 | 0.5+ | 0.4+ | 2005 03 17 | 703 | 0.5+ | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.1+ | | |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2005 03 17 | 703 | 1.5− | 1.9+ | 2006 09 25 | 691 | 0.4− | 0.4+ | | |
| 2002 07 14 | 704 | 0.1+ | 0.5− | 2005 03 17 | 703 | 0.7+ | 0.5− | 2006 09 25 | 691 | 0.3− | 0.1+ | | |
| 2002 07 14 | 644 | 0.2+ | 0.2+ | 2005 04 04 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | | |
| 2002 07 14 | 704 | 0.7− | 1.0− | 2005 04 04 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.4+ | | |
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2005 04 04 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2002 07 14 | 704 | 0.5+ | 0.8− | 2005 04 15 | 691 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | | |
| 2002 07 14 | 704 | 1.4+ | 0.9− | 2005 04 15 | 691 | 0.5+ | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.2− | | |
| 2003 12 01 | 691 | 0.1− | 0.1+ | 2005 04 15 | 691 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.3− | | |
| 2003 12 01 | 691 | 0.1+ | 0.0 | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.4+ | 0.1− | | |
| 2003 12 01 | 691 | 0.2+ | 0.3+ | 2005 05 08 | G96 | 0.4− | 0.2+ | | | | | | |

**(141772)∗ 2002 NM$_5$**

Discovered 2002 July 10 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.36281 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29902657 | $\omega$ | 320.21683 | | −0.42494950 | | +0.90170251 |
| $a$ | 2.2147746 | $\Omega$ | 284.50257 | | −0.80816215 | | −0.41757287 |
| $e$ | 0.0998019 | $i$ | 4.72152 | | −0.40778900 | | −0.11209582 |
| $P$ | 3.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 691 | 0.2+ | 0.4+ | 2002 07 08 | 644 | 0.0 | 0.8+ | 2005 05 30 | E12 | 0.3+ | 0.2+ | | |
| 1998 03 24 | 691 | 0.0 | 0.0 | 2002 07 10 | 599 | 0.1− | 0.5− | 2005 05 30 | E12 | 0.4+ | 0.2+ | | |
| 1998 03 24 | 691 | 0.8− | 0.6− | 2002 07 10 | 599 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.1+ | 2002 07 11 | 599 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2002 07 11 | 599 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.6+ | 0.2− |
| 1999 10 16 | 645 | 0.1− | 0.0 | 2002 07 11 | 599 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 1999 10 16 | 645 | 0.1+ | 0.1+ | 2002 07 12 | 599 | 0.2− | 0.1− | 2006 10 27 | 703 | 1.2− | 0.7+ |
| 2001 01 21 | 704 | 0.8+ | 0.4+ | 2002 07 14 | 704 | 0.5+ | 0.2− | 2006 10 27 | 703 | (1.3− | 1.8+) |
| 2001 01 21 | 704 | (0.3+ | 1.5+) | 2002 07 14 | 704 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.3− | 1.2− |
| 2001 01 21 | 704 | 0.8+ | 1.2+ | 2002 07 14 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 1.1+ | 0.3− |
| 2001 01 21 | 704 | 0.6+ | 0.4+ | 2002 07 14 | 704 | 0.2+ | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 01 21 | 704 | 0.4+ | 0.3+ | 2002 07 14 | 704 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 06 16 | 644 | 0.3− | 0.0 | 2002 08 01 | 599 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2002 06 16 | 644 | 0.4− | 0.0 | 2002 08 01 | 599 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 2002 06 16 | 644 | 0.1+ | 0.3+ | 2002 08 01 | 599 | 0.1− | 0.1+ | 2006 11 22 | 704 | 1.0− | 1.1+ |
| 2002 07 04 | 644 | 0.1− | 0.3− | 2005 05 12 | 703 | (3.2− | 2.0+) | 2006 11 22 | 704 | 0.7− | 0.1+ |
| 2002 07 04 | 644 | 0.2− | 0.1− | 2005 05 12 | 703 | (1.8− | 0.7+) | 2006 11 22 | 704 | 0.5− | 0.4+ |
| 2002 07 04 | 644 | 0.0 | 0.0 | 2005 05 12 | 703 | 0.5+ | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2002 07 05 | 704 | 0.3+ | 1.3− | 2005 05 12 | 703 | 0.7− | 0.7+ | 2006 11 25 | G96 | 0.9− | 1.0+ |
| 2002 07 05 | 704 | 0.6− | 0.5− | 2005 05 21 | 644 | 0.1+ | 0.6+ | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2002 07 05 | 704 | 0.6+ | 0.1− | 2005 05 21 | 644 | 0.2+ | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2002 07 08 | 644 | 0.2+ | 0.7+ | 2005 05 21 | 644 | 0.3+ | 0.5+ | | | | |
| 2002 07 08 | 644 | 0.1+ | 1.0+ | 2005 05 30 | E12 | 0.0 | 0.2+ | | | | |

**(141773)∗ 2002 NW$_6$**

Discovered 2002 July 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.63000 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28690110 | $\omega$ | 252.72353 | | +0.63436046 | −0.77168899 | |
| $a$ | 2.2767460 | $\Omega$ | 157.70860 | | +0.74707174 | +0.59681055 | |
| $e$ | 0.0859867 | $i$ | 6.91048 | | +0.19867214 | +0.21980280 | |
| $P$ | 3.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 27 | 691 | 0.4− | 0.9+ | 2005 06 03 | 691 | 0.8+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.5− |
| 2001 02 27 | 691 | 0.1+ | 0.9+ | 2005 06 03 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2001 02 27 | 691 | (0.3− | 2.3+) | 2005 06 03 | E12 | (1.8+ | 1.0+) | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 07 03 | 644 | 0.2− | 0.3+ | 2005 06 03 | E12 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 07 03 | 644 | 0.1− | 0.1+ | 2005 06 03 | E12 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 07 03 | 644 | 0.2− | 0.3+ | 2005 06 03 | E12 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 07 08 | 644 | 0.0 | 1.0− | 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 2002 07 08 | 644 | 0.0 | 0.9− | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2002 07 08 | 644 | 0.2+ | 0.8− | 2005 06 08 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2002 07 12 | 644 | 0.2− | 0.6+ | 2005 06 13 | 691 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2002 07 12 | 644 | 0.4+ | 0.4+ | 2005 06 13 | 691 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2002 07 12 | 644 | 0.7+ | 0.3+ | 2005 06 13 | 691 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2002 08 06 | 644 | 0.1− | 0.7+ | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2002 08 06 | 644 | 0.1− | 1.1+ | 2005 06 17 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.6+ | 1.3− |
| 2002 08 06 | 644 | 0.1+ | 0.8+ | 2005 06 17 | 691 | 0.3− | 0.0 | 2006 10 16 | 703 | 1.3+ | 0.1+ |
| 2002 08 07 | 644 | 0.1+ | 1.1+ | 2005 07 05 | 644 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2002 08 07 | 644 | 0.3− | 1.1+ | 2005 07 05 | 644 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2002 08 07 | 644 | 0.0 | 0.7+ | 2005 07 05 | 644 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2003 12 22 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.9+ | 2006 10 22 | 703 | 0.9− | 0.1− |
| 2003 12 22 | 704 | 0.7+ | 0.9+ | 2006 09 20 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2003 12 22 | 704 | 0.9+ | 1.1+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2003 12 22 | 704 | 0.3+ | 0.2− | 2006 09 29 | 699 | 0.2− | 1.4+ | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2004 01 23 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.8− | 0.0 |
| 2004 01 23 | 704 | 0.4+ | 0.2− | 2006 09 29 | 699 | 0.4− | 0.3+ | 2006 11 13 | 703 | 1.3+ | 0.4− |
| 2004 01 23 | 704 | 0.5+ | 0.8+ | 2006 09 29 | 699 | 1.2− | 0.3+ | 2006 11 13 | 703 | 0.6− | 0.4+ |
| 2004 01 23 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 703 | 0.8+ | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2005 06 02 | 703 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 0.8− | 0.5+ |
| 2005 06 02 | 703 | 0.8− | 0.9− | 2006 09 30 | 703 | 0.7+ | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2005 06 02 | 703 | 0.8− | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 1.6− | 0.5+ |
| 2005 06 02 | 703 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.6− | 0.4+ | 2006 11 19 | 703 | 1.2− | 0.2− |
| 2005 06 03 | 691 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.1− | 1.1− | | | | |

**(141774)∗ 2002 NG$_8$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.49618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25963134 | $\omega$ | 151.95485 | | +0.27583274 | +0.94183383 | |
| $a$ | 2.4334998 | $\Omega$ | 133.33502 | | −0.92387558 | +0.31490499 | |
| $e$ | 0.1435953 | $i$ | 15.30609 | | −0.26527384 | −0.11740481 | |
| $P$ | 3.80 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 03 | 691 | 0.3+ | 0.1− | 2002 07 09 | 704 | 0.4− | 1.1+ | 2005 03 16 | 703 | 0.3− | 0.1− |
| 1997 01 03 | 691 | 0.0 | 0.3+ | 2002 07 09 | 704 | 0.5− | 0.4+ | 2005 03 16 | 703 | 0.4− | 0.1+ |
| 1998 06 19 | 704 | 1.5− | 1.3− | 2002 07 09 | 704 | 0.0 | 0.5+ | 2005 04 02 | 699 | 0.5− | 0.8+ |
| 1998 06 19 | 704 | 0.0 | 0.4+ | 2002 07 12 | 644 | 0.5+ | 0.3− | 2005 04 02 | 699 | 0.8+ | 0.8+ |
| 1998 06 19 | 704 | (1.0− | 2.4−) | 2002 07 12 | 644 | 0.3+ | 0.1− | 2005 04 02 | 699 | 1.4+ | 0.4+ |
| 1998 06 19 | 704 | (4.5− | 1.4+) | 2002 07 12 | 644 | 0.2+ | 0.1+ | 2005 04 02 | 699 | 0.4+ | 0.3+ |
| 1998 06 25 | 704 | 0.1+ | 1.8− | 2002 07 13 | 704 | 0.0 | 0.0 | 2005 04 09 | 703 | 0.8+ | 0.6+ |
| 1998 06 25 | 704 | 0.8− | 0.1+ | 2002 07 13 | 704 | 0.1− | 0.2+ | 2005 04 09 | 703 | 0.3− | 1.4+ |
| 1998 06 25 | 704 | 1.2+ | 0.3+ | 2002 07 13 | 704 | 0.1+ | 0.3+ | 2005 04 09 | 703 | 0.2− | 0.9+ |
| 1998 06 25 | 704 | 1.2− | 0.9+ | 2002 07 14 | 704 | 0.2− | 0.2− | 2005 04 09 | 703 | 0.7− | 0.2− |
| 1998 06 25 | 704 | (6.0− | 1.2+) | 2002 07 14 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 1999 10 16 | 645 | 0.0 | 0.1+ | 2002 07 14 | 704 | 0.3+ | 0.1− | 2006 08 16 | 644 | 0.1− | 0.1+ |
| 1999 10 16 | 645 | 0.0 | 0.1+ | 2002 07 14 | 704 | 0.3− | 0.1− | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2002 06 24 | 644 | 0.3+ | 0.1− | 2002 07 22 | 644 | 0.1+ | 0.8+ | 2006 08 23 | 644 | 0.1+ | 0.1− |
| 2002 06 24 | 644 | 0.2− | 0.1+ | 2002 07 22 | 644 | 0.1− | 0.2+ | 2006 08 23 | 644 | 0.3+ | 0.0 |
| 2002 06 24 | 644 | 0.0 | 0.4+ | 2002 07 22 | 644 | 0.3− | 0.3+ | 2006 08 23 | 644 | 0.1+ | 0.2− |
| 2002 07 03 | 644 | 0.2+ | 0.0 | 2002 08 07 | 644 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.0 | 0.2− |
| 2002 07 03 | 644 | 0.0 | 0.1− | 2002 08 07 | 644 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.2+ | 0.2− |
| 2002 07 03 | 644 | 0.4+ | 0.1+ | 2002 08 07 | 644 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.0 |
| 2002 07 06 | 699 | 0.1+ | 0.8+ | 2002 08 17 | 644 | 0.4+ | 0.6− | 2006 09 17 | 699 | 0.7− | 0.3+ |
| 2002 07 06 | 699 | 1.6+ | 1.8+ | 2002 08 17 | 644 | 0.2+ | 0.3− | 2006 09 17 | 699 | 0.4− | 0.3− |
| 2002 07 06 | 699 | 0.1− | 0.2− | 2002 08 17 | 644 | 0.1+ | 0.5− | 2006 09 17 | 699 | 1.0− | 0.5+ |
| 2002 07 06 | 699 | 0.0 | 0.8+ | 2005 03 16 | 703 | 0.5− | 1.0+ | 2006 09 17 | 699 | 0.8− | 0.2− |
| 2002 07 09 | 704 | 0.4− | 0.9+ | 2005 03 16 | 703 | 0.9+ | 0.0 | | | | |

**(141775)∗ 2002 NR$_8$ = 1995 UC$_{65}$**

Discovered 2002 July 1 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 33645)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.98630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26769479 | $\omega$ | 130.10046 | | +0.96174469 | +0.27181408 | |
| $a$ | 2.3843835 | $\Omega$ | 214.16708 | | −0.26618484 | +0.89777533 | |
| $e$ | 0.1998999 | $i$ | 3.48324 | | −0.06475177 | +0.34657836 | |
| $P$ | 3.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.5+ | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.8− | 1.2− |
| 1995 10 22 | 691 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 1995 10 22 | 691 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 1995 10 27 | 691 | 0.3− | 0.2− | 2006 09 14 | A50 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 1995 10 27 | 691 | 0.0 | 0.0 | 2006 09 14 | A50 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1− | 0.4− |
| 1995 10 27 | 691 | 0.1− | 0.4− | 2006 09 15 | 704 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 0.0 | 0.4+ | 2006 09 15 | 704 | 1.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 0.3− | 1.4+ | 2006 09 15 | 704 | 0.3− | 1.2− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 1999 12 08 | 704 | 0.8+ | 0.0 | 2006 09 15 | 704 | (1.7− | 0.9−) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 0.1+ | 0.6− | 2006 09 18 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 12 08 | 704 | 0.4− | 0.3− | 2006 09 18 | 704 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 06 11 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 06 11 | 644 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 06 11 | 644 | 0.7+ | 0.2+ | 2006 09 18 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 07 01 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 10 23 | 291 | 0.0 | 0.0 |
| 2002 07 01 | 644 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.1− | 2006 10 23 | 291 | 0.0 | 0.1+ |
| 2002 07 01 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 10 23 | 291 | 0.1+ | 0.1+ |
| 2002 07 05 | 704 | 0.6− | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 10 23 | 704 | 0.2− | 0.3+ |
| 2002 07 05 | 704 | 0.8− | 0.3− | 2006 09 21 | 704 | 0.0 | 0.2+ | 2006 10 23 | 704 | 1.2− | 0.2− |
| 2002 07 05 | 704 | 0.2− | 0.1+ | 2006 09 21 | 704 | 0.3+ | 0.1− | 2006 10 23 | 704 | 0.2+ | 1.4+ |
| 2002 07 05 | 704 | 0.7− | 0.1+ | 2006 09 21 | 704 | (1.7− | 0.2−) | 2006 10 23 | 704 | (2.4− | 1.5+) |
| 2002 07 05 | 704 | 0.4− | 1.0− | 2006 09 21 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 704 | 0.7− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 13 | 644 | 0.4+ | 0.4− | 2006 09 21 | A50 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 07 13 | 644 | 0.1+ | 0.1+ | 2006 09 22 | A50 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 07 13 | 644 | 0.1+ | 0.4− | 2006 09 25 | 704 | 0.9− | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2002 07 14 | 704 | 1.3− | 1.3+ | 2006 09 25 | 704 | 0.0 | 0.8+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 07 14 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.1− | 0.6+ | 2006 11 01 | G96 | 0.5+ | 0.1− |
| 2002 07 14 | 704 | 0.2+ | 1.0+ | 2006 09 25 | 704 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2002 07 14 | 704 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2002 07 14 | 704 | 0.0 | 0.3+ | 2006 09 27 | 699 | 0.5+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 1.0− | 0.7+ | 2006 09 27 | 699 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2004 01 22 | 704 | 0.0 | 1.4+ | 2006 09 27 | 699 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.3− | 1.0+ | 2006 09 27 | 699 | 0.1+ | 0.6− | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | (0.3− | 1.9+) | 2006 09 29 | 704 | 0.3+ | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.7− | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2005 04 09 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2005 04 09 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.7+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2005 04 09 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2005 04 17 | 691 | 0.2+ | 0.1− | 2006 10 15 | 106 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2005 04 17 | 691 | 0.1+ | 0.2− | 2006 10 15 | 106 | 0.1+ | 0.6+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2005 04 17 | 691 | 0.2+ | 0.6− | 2006 10 15 | 106 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2005 05 12 | G96 | 0.2− | 0.0 | 2006 10 15 | 106 | 0.3− | 0.5− | 2006 11 28 | 701 | 0.2+ | 0.2+ |
| 2005 05 12 | G96 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.3− | 2006 11 28 | 701 | 0.5+ | 0.3+ |
| 2005 05 12 | G96 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.2− | 2006 11 28 | 701 | 0.5+ | 0.3− |
| 2005 05 12 | G96 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.7− | | | | |

**(141776)∗ 2002 NY$_8$**

Discovered 2002 July 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.40317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27677452 | $\omega$ | 242.28306 | | +0.99524244 | −0.00601028 | |
| $a$ | 2.3319468 | $\Omega$ | 117.91828 | | +0.03966723 | +0.93662328 | |
| $e$ | 0.2854259 | $i$ | 6.31832 | | −0.08898877 | +0.35028661 | |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.2− | 1.3+ | 2002 07 14 | 704 | 0.2− | 0.1− | 2006 10 22 | D35 | 0.1+ | 0.4+ |
| 2002 06 16 | 644 | 0.2− | 1.1+ | 2002 08 13 | 704 | 0.4+ | 1.0+ | 2006 10 22 | D35 | 0.1+ | 0.2+ |
| 2002 06 16 | 644 | 0.0 | 1.4+ | 2002 08 13 | 704 | 0.4− | 1.1+ | 2006 10 22 | D35 | 0.1+ | 0.2+ |
| 2002 06 18 | 704 | 0.6+ | 0.6+ | 2002 08 13 | 704 | 0.1+ | 1.3+ | 2006 10 27 | D35 | 0.1+ | 0.4+ |
| 2002 06 18 | 704 | (0.2+ | 2.6−) | 2002 08 13 | 704 | 0.4− | 1.4+ | 2006 10 27 | D35 | 0.5+ | 0.5+ |
| 2002 06 18 | 704 | 0.4− | 0.0 | 2002 08 13 | 704 | 0.6+ | 1.3+ | 2006 10 27 | D35 | 0.3+ | 0.8+ |
| 2002 06 18 | 704 | 0.7+ | 0.7− | 2004 02 13 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.7− | 0.1+ |
| 2002 06 18 | 704 | 0.7− | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.4+ |
| 2002 07 01 | 644 | 0.3− | 0.1− | 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.8+ |
| 2002 07 01 | 644 | 0.6− | 0.3+ | 2005 04 10 | 691 | 0.1− | 0.3+ | 2006 11 15 | 703 | 1.0− | 1.2+ |
| 2002 07 01 | 644 | 0.2− | 0.1− | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2002 07 05 | 704 | 0.6− | 0.7− | 2005 04 10 | 691 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.9+ |
| 2002 07 05 | 704 | 0.3+ | 0.8− | 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2002 07 05 | 704 | 0.5− | 0.2− | 2005 04 14 | 691 | 0.6− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.7+ |
| 2002 07 14 | 644 | 0.4− | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.4+ | 1.3+ |
| 2002 07 14 | 644 | 0.2− | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.5+ |
| 2002 07 14 | 644 | 0.1− | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.1+ |
| 2002 07 14 | 704 | 0.1+ | 0.1− | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2002 07 14 | 704 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.5− | 1.1− | 2006 11 28 | 704 | 0.9− | 0.3+ |
| 2002 07 14 | 704 | 0.3+ | 0.3− | 2006 10 03 | 704 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.9+ |
| 2002 07 14 | 704 | 1.4+ | 0.3+ | 2006 10 03 | 704 | 0.1− | 1.0− | | | | |

**(141777)∗ 2002 ND$_{10}$ = 1999 YS$_{28}$ = 1999 YU$_{23}$**

Discovered 2002 July 4 by NEAT at Palomar.

Id. A. Doppler (*MPO* 33646, d, *MPO* 35211)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.94271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27181131 | $\omega$ | 182.46185 | | +0.71326580 | +0.70003853 | |
| $a$ | 2.3602484 | $\Omega$ | 133.04229 | | −0.64224547 | +0.67255937 | |
| $e$ | 0.2164036 | $i$ | 2.71442 | | −0.28066466 | +0.24002071 | |
| $P$ | 3.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.3− | 0.1− | 2006 08 06 | 699 | 0.9+ | 0.2+ | 2006 10 01 | 691 | 0.3+ | 1.3− |
| 1999 12 09 | 691 | 0.4− | 0.3− | 2006 08 06 | 699 | 0.8+ | 1.0− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1999 12 09 | 691 | 0.9− | 0.3− | 2006 08 06 | 699 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 1999 12 16 | 691 | 0.5+ | 0.0 | 2006 08 06 | 699 | 0.3+ | 1.0+ | 2006 10 11 | 644 | 0.2+ | 0.4− |
| 1999 12 16 | 691 | 0.5+ | 0.0 | 2006 08 21 | 704 | 0.5− | 1.2+ | 2006 10 11 | 644 | 0.5+ | 0.1+ |
| 1999 12 16 | 691 | 0.3+ | 0.0 | 2006 08 21 | 704 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 1999 12 27 | 691 | 0.4+ | 0.2− | 2006 08 21 | 704 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.4− | 0.0 |
| 1999 12 27 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.5− | 1.0− | 2006 10 15 | 703 | 0.0 | 0.0 |
| 1999 12 27 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.1+ | 2006 10 15 | 703 | 0.6− | 0.4− |
| 2002 06 16 | 644 | 0.3− | 0.0 | 2006 09 16 | 699 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.4− |
| 2002 06 16 | 644 | 0.3− | 0.2+ | 2006 09 16 | 699 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 06 16 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 06 29 | 644 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 06 29 | 644 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2002 06 29 | 644 | 0.3− | 0.2+ | 2006 09 20 | 699 | 1.0− | 0.2− | 2006 10 21 | 703 | 0.6− | 0.4− |
| 2002 07 04 | 644 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.0 | 1.3− | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2002 07 04 | 644 | 0.1− | 0.2+ | 2006 09 20 | 699 | 0.7− | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.2− |
| 2002 07 04 | 644 | 0.3− | 0.2+ | 2006 09 20 | 699 | 0.7+ | 1.3+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 07 05 | 704 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 07 05 | 704 | 0.1− | 0.3− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 07 05 | 704 | 0.5+ | 0.2− | 2006 09 20 | 644 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 07 05 | 704 | 0.1+ | 0.1− | 2006 09 22 | 704 | 1.3− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 07 05 | 704 | 0.3− | 0.4− | 2006 09 22 | 704 | 1.3− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 07 14 | 704 | 0.7+ | 0.0 | 2006 09 22 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 07 14 | 704 | 0.3+ | 0.3− | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 0.4+ | 0.4− | 2006 09 23 | 691 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 2002 07 14 | 704 | 0.7+ | 1.5− | 2006 09 26 | 704 | 0.1− | 1.2+ | 2006 11 13 | 703 | 0.3+ | 0.4+ |
| 2005 03 11 | 695 | 0.5+ | 0.3+ | 2006 09 26 | 704 | 0.8+ | 0.9+ | 2006 11 13 | 703 | (1.6− | 1.2−) |
| 2005 03 12 | 695 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.3+ |
| 2005 03 12 | 695 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 1.1+ | 0.9+ | 2006 11 13 | 703 | 1.1− | 0.2+ |
| 2005 04 04 | 703 | 0.3+ | 1.1+ | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2005 04 04 | 703 | (2.0+ | 0.1−) | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2005 04 04 | 703 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2005 04 04 | 703 | 0.5− | 0.3− | 2006 09 30 | 703 | 1.2+ | 0.3− | 2006 11 18 | G96 | 0.0 | 0.3− |

**(141778)∗ 2002 NE$_{10}$ = 2005 EY$_{192}$**

Discovered 2002 July 4 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75381)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.48459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27083104 | $\omega$ | 6.12759 | | +0.40053649 | +0.91594469 | |
| $a$ | 2.3659402 | $\Omega$ | 287.48629 | | −0.84177210 | +0.35713335 | |
| $e$ | 0.2128263 | $i$ | 1.49093 | | −0.36192577 | +0.18303305 | |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 1.2+ | 0.2+ | 2002 07 14 | 644 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.4+ | 0.1− |
| 1998 04 22 | 704 | 1.7− | 1.4− | 2002 07 14 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.5+ | 0.2+ |
| 1998 04 22 | 704 | 0.0 | 0.8− | 2002 07 14 | 704 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.3+ | 0.1− |
| 1998 04 22 | 704 | 0.5− | 0.3− | 2002 07 14 | 704 | 0.0 | 0.5− | 2006 09 21 | A50 | 0.0 | 0.5− |
| 2002 06 18 | 704 | 0.9+ | 0.3− | 2005 03 10 | 695 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2002 06 18 | 704 | 0.4+ | 0.9− | 2005 03 10 | 695 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2002 06 18 | 704 | 0.1+ | 0.3− | 2005 03 11 | G96 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 1.1− | 0.7+ |
| 2002 06 18 | 704 | 0.0 | 0.3− | 2005 03 11 | G96 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.8− | 0.2+ |
| 2002 06 18 | 704 | 0.2+ | 0.3+ | 2005 03 11 | G96 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.9− | 0.3+ |
| 2002 06 29 | 644 | 0.3− | 0.1+ | 2005 03 11 | G96 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 1.0+ |
| 2002 06 29 | 644 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2002 06 29 | 644 | 1.2− | 0.9+ | 2005 03 13 | 691 | 0.3+ | 0.5+ | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2002 06 29 | 644 | 0.0 | 0.3+ | 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.6+ | 0.1+ |
| 2002 06 29 | 644 | 0.5− | 0.3+ | 2005 03 17 | G96 | 0.8− | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.2+ |
| 2002 06 29 | 644 | 0.3− | 0.2− | 2005 03 17 | G96 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.8+ |
| 2002 07 04 | 644 | 0.2+ | 0.0 | 2005 03 17 | G96 | 0.5− | 0.2+ | 2006 10 17 | 703 | 1.1− | 0.0 |
| 2002 07 04 | 644 | 0.1− | 0.0 | 2005 03 17 | G96 | 0.5− | 0.4− | 2006 10 17 | 703 | 0.8− | 0.2+ |
| 2002 07 04 | 644 | 0.1− | 0.3− | 2005 05 12 | G96 | 1.2− | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.6− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 704 | 1.1+ | 0.9− | 2005 05 12 | G96 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2002 07 05 | 704 | (2.4+ | 0.8−) | 2005 05 12 | G96 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.5− |
| 2002 07 05 | 704 | (2.0+ | 1.2−) | 2005 05 12 | G96 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2002 07 06 | 333 | 0.3− | 1.2+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 07 06 | 333 | 0.3− | 1.2+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 07 06 | 333 | 0.1− | 0.8+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2002 07 14 | 644 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2002 07 14 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 07 14 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 07 14 | 704 | 0.0 | 0.1− | 2006 09 14 | 703 | 1.0− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.4− |

**(141779)∗ 2002 NP$_{10}$ = 1999 XD$_{164}$**

Discovered 2002 July 4 by NEAT at Palomar.

Id. M. E. Sansaturio (*MPO* 61232)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.58003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27484563 | $\omega$ | 231.73193 | | +0.98422719 | −0.17338370 | |
| $a$ | 2.3428447 | $\Omega$ | 138.21927 | | +0.17427353 | +0.91608270 | |
| $e$ | 0.2289558 | $i$ | 3.02333 | | +0.03042311 | +0.36156683 | |
| $P$ | 3.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.3− | 0.4− | 2005 05 11 | 807 | 0.4+ | 0.3+ | 2006 10 22 | 704 | 0.1+ | 0.7+ |
| 1995 07 22 | 691 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 10 22 | 704 | 0.5+ | 0.5+ |
| 1995 07 22 | 691 | 0.4− | 0.3− | 2006 08 28 | 703 | 0.6+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.6+ |
| 1995 08 01 | 691 | 0.3+ | 0.0 | 2006 08 28 | 703 | (0.1− | 1.7+) | 2006 10 22 | 691 | 0.0 | 0.1− |
| 1995 08 01 | 691 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.2− |
| 1995 08 01 | 691 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.9− | 2006 10 27 | 704 | 0.7+ | 0.6+ |
| 1999 12 08 | 704 | (1.6+ | 2.1−) | 2006 09 14 | 703 | 0.3− | 0.4+ | 2006 10 27 | 704 | 0.1− | 0.5+ |
| 1999 12 08 | 704 | 0.3− | 0.9− | 2006 09 14 | 703 | 0.6− | 0.3+ | 2006 10 27 | 704 | (1.6− | 0.3−) |
| 1999 12 08 | 704 | 0.1− | 1.5− | 2006 09 14 | 703 | 0.3+ | 1.0− | 2006 10 27 | 704 | (2.1− | 1.3+) |
| 1999 12 08 | 704 | 0.3+ | 1.2− | 2006 10 03 | 704 | 0.3+ | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1999 12 15 | 704 | 0.2+ | 0.7− | 2006 10 03 | 704 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 1999 12 15 | 704 | 0.5+ | 0.8− | 2006 10 03 | 704 | 0.4+ | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1999 12 15 | 704 | 0.2− | 0.4− | 2006 10 03 | 704 | 0.7+ | 0.8− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1999 12 15 | 704 | 1.1+ | 0.7− | 2006 10 03 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 07 04 | 644 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 07 04 | 644 | 0.6− | 0.7+ | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.0 | 0.5− |
| 2002 07 04 | 644 | 0.6− | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.1+ |
| 2002 07 05 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.7− | 0.6+ |
| 2002 07 05 | 704 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.4+ |
| 2002 07 05 | 704 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 2002 07 13 | 644 | 0.2− | 0.7+ | 2006 10 14 | D35 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.4− | 0.9+ |
| 2002 07 13 | 644 | 0.5− | 0.4+ | 2006 10 14 | D35 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.3− | 0.3+ |
| 2002 07 13 | 644 | 0.3− | 0.6+ | 2006 10 14 | D35 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 2002 07 14 | 704 | 0.8− | 0.7− | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 2002 07 14 | 704 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.9+ |
| 2002 07 14 | 704 | 0.7− | 0.7− | 2006 10 16 | 703 | 0.9− | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.6+ |
| 2002 07 14 | 704 | 0.8+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 17 | 704 | 0.3− | 0.9+ |
| 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2004 01 31 | 691 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.0 | 1.3+ |
| 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 1.4− | 0.6+ |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2− | 2006 11 20 | 704 | (0.9− | 1.8+) |
| 2004 02 11 | 691 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | (1.1− | 1.6+) |
| 2004 02 11 | 691 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.2− | 2006 11 20 | 704 | (1.1− | 1.6+) |
| 2005 04 30 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2005 04 30 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2005 04 30 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2005 05 10 | 807 | 0.4− | 0.4+ | 2006 10 22 | 704 | 0.6+ | 0.5− | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2005 05 11 | 807 | 0.4+ | 0.4+ | 2006 10 22 | 704 | 0.2− | 0.5+ | | | | |

**(141780)∗ 2002 NY$_{11}$ = 2000 AC$_{208}$**

Discovered 2002 July 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 33648)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.99801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27173830 | $\omega$ | 213.22775 | | +0.84943647 | +0.52427603 | |
| $a$ | 2.3606711 | $\Omega$ | 115.04096 | | −0.46858363 | +0.80164104 | |
| $e$ | 0.1752851 | $i$ | 3.79312 | | −0.24266655 | +0.28723906 | |
| $P$ | 3.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 10 | 691 | 0.0 | 0.3− | 2002 08 13 | 704 | 0.6+ | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 1994 04 10 | 691 | 0.1+ | 0.5− | 2002 08 13 | 704 | 1.0+ | 1.1+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 1994 04 10 | 691 | 0.0 | 0.3− | 2002 08 18 | 644 | 0.1− | 0.5− | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2000 01 04 | 691 | 0.6− | 0.3− | 2002 08 18 | 644 | 0.1+ | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.5+ |
| 2000 01 04 | 691 | 0.2− | 0.4+ | 2002 08 18 | 644 | 0.3− | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.5+ |
| 2000 01 04 | 691 | 0.1− | 0.2− | 2002 08 29 | 644 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.5+ | 0.2+ |
| 2000 01 10 | 691 | 0.0 | 0.1+ | 2002 08 29 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2000 01 10 | 691 | 0.3− | 0.0 | 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2000 01 10 | 691 | 0.2− | 0.1+ | 2003 12 28 | 691 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.4− |
| 2002 07 04 | 291 | 0.6− | 0.4+ | 2003 12 28 | 691 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2002 07 04 | 291 | 0.3− | 0.3+ | 2003 12 28 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 07 04 | 291 | 0.1− | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 07 05 | 704 | 0.4+ | 0.2+ | 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 07 05 | 704 | 0.8+ | 0.1− | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 704 | (1.7− | 0.3−) |
| 2002 07 05 | 704 | 0.4+ | 0.9+ | 2005 05 07 | 691 | 0.2− | 0.2+ | 2006 10 22 | 704 | 0.1+ | 0.4+ |
| 2002 07 05 | 704 | 0.1+ | 0.0 | 2005 05 07 | 691 | 0.1− | 0.4+ | 2006 10 22 | 704 | (1.6+ | 0.4−) |
| 2002 07 14 | 644 | 0.5+ | 0.6− | 2005 05 07 | 691 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.4+ |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.8+ | 2006 11 07 | 644 | 0.1− | 0.4+ |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.4+ | 2006 11 07 | 644 | 0.3+ | 0.5+ |
| 2002 08 08 | 644 | 0.1+ | 0.2− | 2006 09 22 | 704 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.4− | 1.4− |
| 2002 08 08 | 644 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2006 09 30 | 703 | 1.1− | 0.4− | 2006 11 13 | 703 | 1.0+ | 1.6− |
| 2002 08 13 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.6+ |
| 2002 08 13 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 703 | 0.0 | 0.5+ | | | | |
| 2002 08 13 | 704 | 0.4+ | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.1− | | | | |

**(141781)∗ 2002 NG$_{12}$**

Discovered 2002 July 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.94423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27104348 | $\omega$ | 249.28174 | | +0.99149356 | −0.08137947 | |
| $a$ | 2.3647037 | $\Omega$ | 115.26974 | | +0.11227949 | +0.92951864 | |
| $e$ | 0.2305105 | $i$ | 6.44940 | | −0.06583187 | +0.35968385 | |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 21 | 691 | 0.1+ | 0.5− | 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.1− |
| 1993 01 21 | 691 | 0.2− | 0.5− | 2002 08 29 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.2− |
| 1993 01 21 | 691 | 0.3− | 0.7− | 2002 08 29 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | (2.8− | 0.7+) |
| 2002 06 16 | 644 | 0.1+ | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2002 06 16 | 644 | 0.1− | 0.2− | 2004 01 22 | 704 | 1.1− | 0.5+ | 2006 10 22 | 703 | 0.2+ | 0.5− |
| 2002 06 16 | 644 | 0.6+ | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2002 07 04 | 644 | 0.3+ | 0.1+ | 2004 02 11 | 691 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2002 07 04 | 644 | 0.1+ | 0.0 | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 07 04 | 644 | 0.4+ | 0.2+ | 2004 02 11 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2002 07 05 | 704 | 0.2+ | 0.6− | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2002 07 05 | 704 | (1.8+ | 0.6−) | 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 11 14 | 644 | 0.1+ | 0.5+ |
| 2002 07 05 | 704 | (0.3+ | 1.7−) | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 644 | 0.2− | 0.9+ |
| 2002 07 05 | 704 | 0.2− | 1.0− | 2005 04 15 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 644 | 0.4− | 0.0 |
| 2002 07 05 | 704 | 0.2− | 0.8− | 2005 04 15 | 691 | 0.3− | 0.1+ | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 2002 07 08 | 644 | 0.2− | 0.0 | 2005 04 15 | 691 | 0.5− | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.3+ |
| 2002 07 08 | 644 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.9+ | 0.1− | 2006 11 17 | 644 | 0.1− | 0.3+ |
| 2002 07 08 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.7+ | 2006 11 19 | 703 | 0.2+ | 0.1− |
| 2002 07 19 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.9+ | 2006 11 19 | 703 | 0.6+ | 0.2+ |
| 2002 07 19 | 644 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.4− |
| 2002 07 19 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.7− |

**(141782)∗ 2002 NN$_{12}$ = 2004 AB$_6$**

Discovered 2002 July 4 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61232)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 330.26008 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25471175 | | $\omega$ | 180.40815 | | +0.95012961 | | −0.31164667 | |
| $a$ | 2.4647341 | | $\Omega$ | 197.76320 | | +0.28622745 | | +0.88598432 | |
| $e$ | 0.2008813 | | $i$ | 2.14236 | | +0.12380454 | | +0.34337754 | |
| $P$ | 3.87 | | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 0.0 | 1.0+ | 2004 01 16 | 644 | 0.6+ | 0.5+ | 2005 03 10 | G96 | 0.9− | 0.1− |
| 2002 07 04 | 644 | 0.3− | 0.8+ | 2004 01 16 | 691 | 0.2+ | 0.1+ | 2005 03 10 | G96 | 0.5− | 0.1+ |
| 2002 07 04 | 644 | 0.1− | 1.1+ | 2004 01 16 | 691 | 0.1+ | 0.1+ | 2005 04 12 | 691 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | (0.2− | 2.8+) | 2004 01 16 | 691 | 0.1+ | 0.1+ | 2005 04 12 | 691 | 0.0 | 0.3+ |
| 2002 07 05 | 704 | (0.4+ | 3.3+) | 2004 01 17 | 644 | 0.3+ | 0.6+ | 2005 04 12 | 691 | 0.0 | 0.1− |
| 2002 07 05 | 704 | (0.2− | 3.2+) | 2004 01 17 | 644 | 0.6+ | 0.4− | 2005 04 17 | 691 | 0.0 | 0.1− |
| 2002 07 14 | 704 | 1.0+ | 0.2− | 2004 01 17 | 644 | 0.4+ | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.0 |
| 2002 07 14 | 704 | 0.8− | 0.7+ | 2004 01 22 | 644 | 0.1− | 0.2+ | 2005 04 17 | 691 | 0.6+ | 0.2+ |
| 2002 07 14 | 704 | 0.8− | 0.9+ | 2004 01 22 | 644 | 0.1+ | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.4+ |
| 2002 07 14 | 704 | (0.2− | 1.7+) | 2004 01 22 | 644 | 0.3+ | 0.1+ | 2006 08 17 | 644 | 0.4− | 0.4+ |
| 2002 07 14 | 704 | (0.3+ | 1.8+) | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.4− | 0.4+ |
| 2003 12 29 | 691 | 0.2− | 0.3+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 08 29 | 704 | (0.4+ | 2.8+) |
| 2003 12 29 | 691 | 0.1+ | 0.4+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 08 29 | 704 | 0.5+ | 1.4+ |
| 2003 12 29 | 691 | 0.2− | 0.3+ | 2004 04 14 | 645 | 0.1− | 0.0 | 2006 08 29 | 704 | (1.1− | 2.0+) |
| 2004 01 13 | 644 | 0.5+ | 0.3+ | 2004 04 14 | 645 | 0.1+ | 0.0 | 2006 08 29 | 704 | 0.9+ | 0.1+ |
| 2004 01 13 | 644 | 0.4+ | 0.3+ | 2004 04 15 | 645 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.6− | 0.1+ |
| 2004 01 13 | 644 | 0.8+ | 0.2+ | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2004 01 16 | 644 | 0.4+ | 0.4+ | 2005 03 10 | G96 | 0.6− | 0.5− | 2006 10 21 | G96 | 0.4− | 0.1+ |
| 2004 01 16 | 644 | 0.3+ | 0.3+ | 2005 03 10 | G96 | 0.7− | 0.1− | 2006 10 21 | G96 | 0.5− | 0.1+ |

**(141783)∗ 2002 NY$_{12}$**

Discovered 2002 July 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 57.33641 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27568128 | | $\omega$ | 128.99161 | | +0.57526547 | | +0.81796283 | |
| $a$ | 2.3381078 | | $\Omega$ | 176.12402 | | −0.76160305 | | +0.53675517 | |
| $e$ | 0.2312288 | | $i$ | 2.15233 | | −0.29837969 | | +0.20695576 | |
| $P$ | 3.58 | | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.6+ | 0.8− | 2002 08 06 | 644 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 1999 11 28 | 691 | 0.3+ | 0.1− | 2002 08 06 | 644 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.0 | 0.6+ |
| 1999 11 28 | 691 | 0.3− | 0.1+ | 2002 08 06 | 644 | 0.5− | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.4+ |
| 1999 11 28 | 691 | 0.1+ | 0.2− | 2002 08 06 | 644 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2− | 0.4+ |
| 1999 12 09 | 691 | (0.1− | 2.1−) | 2002 08 07 | 644 | 0.6− | 0.0 | 2006 10 19 | 691 | 0.6− | 0.5+ |
| 1999 12 09 | 691 | 0.4+ | 1.4− | 2002 08 07 | 644 | 0.5− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1999 12 09 | 691 | 0.1+ | 1.2− | 2002 08 07 | 644 | 0.4− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.5+ |
| 2002 06 08 | 704 | 0.3− | 0.1+ | 2002 08 17 | 644 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 06 08 | 704 | 0.1+ | 0.4− | 2002 08 17 | 644 | 0.5− | 0.4− | 2006 10 23 | 691 | (1.8− | 1.0−) |
| 2002 06 08 | 704 | 0.4− | 1.1− | 2002 08 17 | 644 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2002 07 04 | 644 | 0.1− | 0.8+ | 2002 09 05 | 704 | 0.0 | 0.6− | 2006 10 27 | 691 | 0.4− | 0.3− |
| 2002 07 04 | 644 | 0.0 | 0.7+ | 2002 09 05 | 704 | 0.6− | 1.1− | 2006 10 27 | 691 | 0.3− | 0.2− |
| 2002 07 04 | 644 | 0.2− | 0.8+ | 2002 09 05 | 704 | 0.8+ | 0.4− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2002 07 05 | 704 | 0.1− | 0.4− | 2002 09 05 | 704 | (0.1− | 1.9−) | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2002 07 05 | 704 | 0.2+ | 0.4− | 2005 04 04 | G96 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.5+ | 0.3+ |
| 2002 07 05 | 704 | (0.1− | 1.5−) | 2005 04 04 | G96 | 0.5+ | 0.9+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 07 05 | 704 | 0.2+ | 0.5+ | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.4+ | 1.0+ |
| 2002 07 05 | 704 | 0.3− | 0.5− | 2005 04 04 | G96 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2002 07 14 | 704 | 1.0+ | 0.3− | 2005 05 09 | G96 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.6+ |
| 2002 07 14 | 704 | 0.6+ | 0.0 | 2005 05 09 | G96 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2002 07 14 | 704 | 0.9+ | 0.3− | 2005 05 09 | G96 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 1.2+ | 0.6+ | 2005 05 09 | G96 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2002 07 14 | 704 | 0.7+ | 0.3− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2002 08 06 | 644 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | | | |
| 2002 08 06 | 644 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.3− | | | | |

**(141784)∗ 2002 NV$_{13}$**

Discovered 2002 July 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 345.46605 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25282391 | | $\omega$ | 218.52161 | | +0.99294821 | | −0.11736653 | |
| $a$ | 2.4769883 | | $\Omega$ | 148.20658 | | +0.11510111 | | +0.92072253 | |
| $e$ | 0.2581484 | | $i$ | 1.81664 | | +0.02838297 | | +0.37214932 | |
| $P$ | 3.90 | | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 08 | 691 | 0.2− | 1.9− | 2002 08 27 | 644 | 0.1+ | 0.3− | 2006 08 29 | 704 | 0.8− | 0.4+ |
| 1991 12 08 | 691 | 0.8− | 0.4− | 2002 08 31 | 704 | 0.3+ | 0.3− | 2006 08 29 | 704 | 0.4+ | 0.3+ |
| 1991 12 08 | 691 | 0.4+ | 0.1− | 2002 08 31 | 704 | 1.0− | 0.6− | 2006 08 29 | 704 | 0.1− | 0.6+ |
| 2000 02 03 | 691 | 0.1+ | 0.3+ | 2002 08 31 | 704 | (1.6− | 0.6−) | 2006 08 31 | 704 | 1.0+ | 0.3− |
| 2000 02 03 | 691 | 0.2+ | 0.2+ | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 08 31 | 704 | 1.2+ | 0.5− |
| 2000 02 03 | 691 | 0.2+ | 0.0 | 2004 01 30 | 691 | 0.4+ | 0.4+ | 2006 08 31 | 704 | 0.1− | 0.2− |
| 2002 07 04 | 644 | 0.4+ | 0.1+ | 2004 01 30 | 691 | 0.0 | 0.4+ | 2006 09 12 | 699 | 0.1+ | 0.8+ |
| 2002 07 04 | 644 | 0.0 | 0.1+ | 2004 02 11 | 691 | 0.0 | 0.6+ | 2006 09 12 | 699 | (1.5+ | 1.0+) |
| 2002 07 04 | 644 | 0.0 | 0.2− | 2004 02 11 | 691 | 0.3+ | 0.7+ | 2006 09 12 | 699 | 1.5+ | 1.3+ |
| 2002 07 05 | 704 | (1.3− | 2.2−) | 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 09 12 | 704 | 0.1− | 0.6+ |
| 2002 07 05 | 704 | 1.0− | 0.0 | 2005 04 06 | 691 | 0.3+ | 0.4+ | 2006 09 12 | 704 | 0.7− | 0.4+ |
| 2002 07 05 | 704 | (0.1− | 2.0−) | 2005 04 06 | 691 | 0.1+ | 0.6+ | 2006 09 12 | 704 | 0.9− | 1.3+ |
| 2002 07 05 | 704 | 0.1+ | 0.1+ | 2005 04 06 | 691 | 0.2− | 0.1− | 2006 09 12 | 704 | 0.9− | 0.0 |
| 2002 07 14 | 704 | 0.6+ | 1.4+ | 2005 04 06 | G96 | 0.6− | 0.3− | 2006 09 12 | 704 | 0.0 | 0.4+ |
| 2002 07 14 | 644 | 0.1+ | 0.8+ | 2005 04 06 | G96 | 1.0− | 0.4− | 2006 09 17 | 704 | 1.1+ | 0.2+ |
| 2002 07 14 | 704 | 0.3+ | 1.1+ | 2005 04 06 | G96 | 0.3− | 0.9− | 2006 09 17 | 704 | 0.9+ | 0.4− |
| 2002 07 14 | 704 | 0.7+ | 0.4+ | 2005 04 06 | G96 | 0.3− | 1.0− | 2006 09 17 | 704 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 0.6+ | 0.5− | 2006 06 20 | G96 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.3+ | 0.5− |
| 2002 07 14 | 644 | 0.1+ | 0.7+ | 2006 06 20 | G96 | 0.3− | 0.5− | 2006 09 17 | 704 | 0.9− | 0.4+ |
| 2002 07 14 | 644 | 0.3+ | 0.8+ | 2006 06 20 | G96 | 0.2− | 0.4− | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2002 08 06 | 644 | 0.5− | 0.3− | 2006 06 20 | G96 | 0.3+ | 0.6− | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 2002 08 06 | 644 | 0.2− | 0.2− | 2006 08 17 | A50 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.2− |
| 2002 08 06 | 644 | 0.1− | 0.3− | 2006 08 17 | A50 | 0.2− | 0.3− | 2006 09 20 | 644 | 0.3− | 0.0 |
| 2002 08 07 | 644 | 0.1− | 0.3− | 2006 08 19 | 699 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.6+ |
| 2002 08 07 | 644 | 0.8+ | 0.2− | 2006 08 19 | 699 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.3− |
| 2002 08 07 | 644 | 0.0 | 0.2− | 2006 08 19 | 699 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.3− |
| 2002 08 14 | 704 | 0.2− | 0.9− | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.5− | 0.9+ |
| 2002 08 14 | 704 | 0.7− | 0.4− | 2006 08 21 | 644 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 2002 08 14 | 704 | (1.6− | 0.0 ) | 2006 08 21 | 644 | 0.2− | 0.4− | 2006 10 19 | 703 | 1.0− | 1.0+ |
| 2002 08 14 | 704 | (0.8− | 1.8+) | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 10 19 | 703 | (1.9− | 0.3+) |
| 2002 08 15 | 291 | 0.2− | 0.4− | 2006 08 28 | 691 | 0.3− | 0.2+ | 2006 10 19 | 703 | (1.3+ | 2.0+) |
| 2002 08 15 | 291 | 1.0+ | 0.4− | 2006 08 28 | 691 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.3+ |
| 2002 08 15 | 291 | 0.1− | 0.6− | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2002 08 17 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.8− | 0.2− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.6− | 2006 08 28 | 703 | 0.6− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 08 29 | 704 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 1.5+ | 1.9+ |
| 2002 08 27 | 644 | 0.1− | 0.4− | 2006 08 29 | 704 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1+ |

**(141785)∗ 2002 ND$_{14}$**

Discovered 2002 July 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 30.92904 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26467238 | | $\omega$ | 183.69729 | | +0.80327026 | | +0.59491698 | |
| $a$ | 2.4025013 | | $\Omega$ | 139.75023 | | −0.54531524 | | +0.75403521 | |
| $e$ | 0.1896672 | | $i$ | 2.55664 | | −0.23955829 | | +0.27839664 | |
| $P$ | 3.72 | | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.0 | 0.3+ | 2002 08 15 | 699 | (1.7− | 0.4+) | 2006 09 21 | 699 | 0.0 | 1.0+ |
| 1993 01 23 | 691 | 0.8+ | 0.9+ | 2002 08 17 | 644 | (0.3− | 2.0+) | 2006 09 21 | 699 | 0.9− | 0.7+ |
| 1993 01 23 | 691 | 0.4− | 0.7+ | 2002 08 17 | 644 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.7− | 0.1− |
| 2002 06 16 | 644 | 0.0 | 0.4+ | 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.4− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.3− | 0.1+ | 2002 08 18 | 608 | 0.8− | 1.1− | 2006 09 26 | 704 | 0.3− | 0.2− | | |
| 2002 06 16 | 644 | 0.2+ | 0.4+ | 2002 08 18 | 608 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.9+ | 0.5− | | |
| 2002 07 04 | 644 | 0.3+ | 0.2+ | 2002 08 18 | 608 | 0.7− | 1.1− | 2006 09 26 | 704 | 0.2+ | 0.3− | | |
| 2002 07 04 | 644 | 0.1− | 0.3+ | 2002 08 27 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.1− | | |
| 2002 07 04 | 644 | 0.0 | 0.7+ | 2002 08 27 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.5− | | |
| 2002 07 05 | 704 | 0.1− | 0.1− | 2002 08 27 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.2+ | | |
| 2002 07 05 | 704 | 0.1+ | 0.6+ | 2004 01 27 | 691 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.5+ | | |
| 2002 07 05 | 704 | 0.3− | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.5+ | | |
| 2002 07 14 | 704 | 0.4+ | 0.1− | 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.5+ | | |
| 2002 07 14 | 704 | 0.1+ | 0.4+ | 2005 04 04 | 703 | (0.9+ | 1.7+) | 2006 10 01 | 704 | 0.2+ | 0.7+ | | |
| 2002 07 14 | 704 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.3− | 0.7+ | 2006 10 01 | 704 | 0.6− | 0.7+ | | |
| 2002 07 14 | 704 | 0.2+ | 0.8− | 2005 04 04 | 703 | (0.4− | 1.9−) | 2006 10 01 | 704 | 0.5− | 0.0 | | |
| 2002 07 14 | 704 | 0.6− | 0.2− | 2005 04 04 | 703 | 0.1+ | 1.0− | 2006 10 01 | 704 | 0.1+ | 0.5+ | | |
| 2002 07 18 | 644 | 0.1− | 0.7+ | 2005 05 03 | 691 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.2− | | |
| 2002 07 18 | 644 | 0.2− | 1.0+ | 2005 05 03 | 691 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.7− | | |
| 2002 07 18 | 644 | 0.2− | 1.1+ | 2005 05 03 | 691 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.9− | | |
| 2002 07 22 | 644 | 0.2+ | 0.4+ | 2005 05 11 | G96 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.6− | | |
| 2002 07 22 | 644 | 0.3+ | 0.3+ | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 10 19 | 291 | 0.1+ | 0.1+ | | |
| 2002 07 22 | 644 | 0.1− | 0.1+ | 2005 05 11 | G96 | 0.3− | 0.2− | 2006 10 19 | 291 | 0.2+ | 0.1+ | | |
| 2002 08 06 | 644 | 0.0 | 0.5+ | 2005 05 11 | G96 | 0.4− | 0.0 | 2006 10 19 | 291 | 0.0 | 0.2+ | | |
| 2002 08 06 | 644 | 0.0 | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2002 08 06 | 644 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2002 08 07 | 644 | 0.3+ | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 2002 08 07 | 644 | 0.7+ | 0.4+ | 2006 09 06 | 644 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.4+ | | |
| 2002 08 07 | 644 | 0.4+ | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2002 08 08 | 644 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 08 08 | 644 | 0.4− | 0.3+ | 2006 09 16 | 644 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 08 08 | 644 | 0.3− | 0.2+ | 2006 09 16 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 08 14 | 704 | (0.7− | 1.7+) | 2006 09 16 | 644 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2002 08 14 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 08 14 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.9− | 1.4+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2002 08 15 | 699 | 0.0 | 0.8+ | 2006 09 17 | 704 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2002 08 15 | 699 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.0 | 0.1+ | | | | | | |
| 2002 08 15 | 699 | 0.7− | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.0 | | | | | | |

**(141786)∗ 2002 NW$_{14}$**

Discovered 2002 July 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.31153 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28210573 | $\omega$ | 242.80779 | | +0.74346450 | +0.65891332 | |
| $a$ | 2.3024742 | $\Omega$ | 75.73878 | | −0.56420357 | +0.70983130 | |
| $e$ | 0.2287345 | $i$ | 6.78053 | | −0.35907502 | +0.24894329 | |
| $P$ | 3.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.2− | 0.3− | 2002 07 06 | 644 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.4− | | |
| 1999 11 28 | 691 | 0.4− | 0.5− | 2002 07 06 | 644 | 0.3− | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.2− | | |
| 1999 11 28 | 691 | 0.3− | 0.3− | 2002 07 06 | 644 | 0.3− | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.4− | | |
| 1999 12 17 | 691 | 0.4+ | 0.3+ | 2002 07 15 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.3+ | | |
| 1999 12 17 | 691 | 0.3+ | 0.3+ | 2002 07 15 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.1− | 0.4+ | | |
| 1999 12 17 | 691 | 0.4+ | 0.6+ | 2002 07 15 | 644 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.4+ | | |
| 2002 06 13 | 644 | 0.1+ | 0.0 | 2005 04 04 | 703 | (2.9− | 0.6−) | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2002 06 13 | 644 | 0.2+ | 0.3− | 2005 04 04 | 703 | 0.4+ | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2002 06 13 | 644 | 0.0 | 0.0 | 2005 04 04 | 703 | (1.6− | 0.7+) | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2002 07 05 | 704 | 0.5− | 0.4− | 2005 04 04 | 703 | 1.0− | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.1+ | | |
| 2002 07 05 | 704 | 0.2− | 0.2+ | 2005 05 07 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2002 07 05 | 704 | 0.4+ | 0.1+ | 2005 05 07 | 691 | 0.4+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2002 07 05 | 704 | 0.1− | 0.1− | 2005 05 07 | 691 | 0.1+ | 0.4+ | | | | | | |
| 2002 07 05 | 704 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1− | | | | | | |

**(141787)∗ 2002 NE$_{20}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.54020 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17920303 | $\omega$ | 62.34679 | | +0.98940620 | −0.01637172 | |
| $a$ | 3.1158209 | $\Omega$ | 298.27498 | | −0.05295256 | +0.88446567 | |
| $e$ | 0.0899632 | $i$ | 9.42696 | | +0.13517172 | +0.46631797 | |
| $P$ | 5.50 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 03 | 557 | 0.4+ | 0.5+ | 2003 10 19 | 644 | 0.2+ | 0.0 | 2003 12 12 | 644 | 0.2− | 0.0 | | |
| 1997 08 03 | 557 | 0.0 | 0.3− | 2003 10 19 | 644 | 0.1+ | 0.0 | 2003 12 12 | 644 | 0.3− | 0.0 | | |
| 1997 08 03 | 557 | 0.2− | 0.2− | 2003 10 23 | 704 | 0.8+ | 0.3− | 2003 12 12 | 644 | 0.0 | 0.1− | | |
| 2002 07 09 | 704 | 0.1− | 0.8− | 2003 10 23 | 704 | 0.2− | 0.8− | 2003 12 17 | 644 | 0.3− | 0.1− | | |
| 2002 07 09 | 704 | 0.8+ | 0.5+ | 2003 10 23 | 704 | 0.4+ | 0.5+ | 2003 12 17 | 644 | 0.1+ | 0.5− | | |
| 2002 07 09 | 704 | 0.9+ | 0.6+ | 2003 10 23 | 704 | 0.2+ | 0.3+ | 2003 12 17 | 644 | 0.3+ | 0.5+ | | |
| 2002 07 09 | 704 | 0.4+ | 1.0− | 2003 10 23 | 704 | 0.5+ | 0.1+ | 2003 12 18 | 704 | 0.3− | 1.2− | | |
| 2002 07 09 | 704 | 0.1− | 0.2+ | 2003 11 03 | 704 | 0.5+ | 0.1+ | 2003 12 18 | 704 | 0.3+ | 0.0 | | |
| 2002 07 14 | 704 | 0.0 | 0.1− | 2003 11 03 | 704 | 0.7− | 0.7+ | 2003 12 18 | 704 | 1.0+ | 0.2− | | |
| 2002 07 14 | 704 | 0.6− | 0.4+ | 2003 11 03 | 704 | 0.5+ | 0.3+ | 2003 12 18 | 704 | 0.9− | 0.0 | | |
| 2002 07 14 | 704 | 0.4− | 0.2+ | 2003 11 03 | 704 | 1.5+ | 0.2+ | 2003 12 28 | 699 | 0.3+ | 0.3+ | | |
| 2002 07 14 | 704 | 0.1+ | 0.6+ | 2003 11 05 | 699 | 0.3+ | 1.8+ | 2003 12 28 | 699 | 0.6+ | 1.6− | | |
| 2002 08 06 | 644 | 0.1+ | 0.6+ | 2003 11 05 | 699 | 0.3− | 1.0+ | 2003 12 28 | 699 | 0.8+ | 1.2− | | |
| 2002 08 06 | 644 | 0.2+ | 0.5+ | 2003 11 05 | 699 | 0.0 | 0.2+ | 2003 12 28 | 699 | 0.8− | 0.8+ | | |
| 2002 08 06 | 644 | 0.2+ | 0.6+ | 2003 11 05 | 699 | 0.2+ | 0.5− | 2003 12 29 | 704 | 0.4− | 0.5+ | | |
| 2002 08 07 | 644 | 0.1− | 0.5+ | 2003 11 14 | 644 | 0.4− | 0.1− | 2003 12 29 | 704 | 0.9− | 1.5+ | | |
| 2002 08 07 | 644 | 0.1− | 0.1+ | 2003 11 14 | 644 | 0.3− | 0.2− | 2003 12 29 | 704 | 0.9− | 0.6− | | |
| 2002 08 07 | 644 | 0.0 | 0.5+ | 2003 11 14 | 644 | 0.1− | 0.1− | 2004 01 11 | 644 | 0.2− | 0.1+ | | |
| 2002 08 08 | 699 | 0.2− | 0.4+ | 2003 11 19 | 644 | 0.2− | 0.6− | 2004 01 11 | 644 | 0.5− | 0.0 | | |
| 2002 08 08 | 699 | 0.6− | 0.0 | 2003 11 19 | 704 | 0.1+ | 0.3− | 2004 01 11 | 644 | 0.1− | 0.2+ | | |
| 2002 08 08 | 699 | 0.5− | 0.6+ | 2003 11 19 | 704 | 0.0 | 0.2− | 2005 01 06 | 704 | 0.6+ | 1.5+ | | |
| 2002 08 08 | 699 | 0.2− | 0.2+ | 2003 11 19 | 644 | 0.1− | 0.1− | 2005 01 06 | 704 | 1.4− | 0.0 | | |
| 2002 08 12 | 608 | 0.1+ | 0.2− | 2003 11 19 | 704 | 0.2+ | 0.0 | 2005 01 06 | 704 | 1.3+ | 0.3+ | | |
| 2002 08 12 | 608 | 0.3+ | 0.1+ | 2003 11 19 | 704 | 0.2+ | 0.1− | 2005 01 06 | 704 | 0.2+ | 0.0 | | |
| 2002 08 12 | 608 | 0.4+ | 0.2− | 2003 11 19 | 704 | 0.1− | 0.3− | 2005 02 02 | 704 | 0.4+ | 0.6+ | | |
| 2002 08 14 | 704 | 1.8− | 0.4− | 2003 11 19 | 644 | 0.1− | 0.1+ | 2005 02 02 | 704 | 0.1+ | 0.7+ | | |
| 2002 08 14 | 704 | 0.6− | 0.5− | 2003 11 24 | 703 | 0.7+ | 0.5+ | 2005 02 02 | 704 | 0.1+ | 0.6+ | | |
| 2002 08 14 | 704 | 1.4− | 0.5− | 2003 11 24 | 703 | 0.2− | 0.0 | 2005 02 02 | 704 | 0.8+ | 1.2+ | | |
| 2002 08 14 | 704 | 1.4− | 1.1− | 2003 11 24 | 703 | 0.7+ | 0.5+ | 2005 02 04 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 14 | 704 | 0.2− | 1.2− | 2003 11 24 | 703 | 1.2− | 0.3− | 2005 02 04 | 691 | 0.1+ | 0.4+ | | |
| 2002 08 17 | 644 | 0.3+ | 1.1+ | 2003 11 24 | 703 | 0.5+ | 0.3+ | 2005 02 04 | 691 | 0.1+ | 0.4+ | | |
| 2002 08 17 | 644 | 0.0 | 1.1+ | 2003 11 24 | 703 | 1.4− | 0.9+ | 2005 03 12 | 699 | 0.6+ | 1.1+ | | |
| 2002 08 17 | 644 | 0.0 | 1.1+ | 2003 11 24 | 703 | 0.6+ | 0.9− | 2005 03 12 | 699 | 0.5+ | 0.7+ | | |
| 2002 08 19 | 608 | 0.1− | 0.3+ | 2003 11 24 | 703 | 0.9− | 0.1− | 2005 03 12 | 699 | 0.8+ | 0.7+ | | |
| 2002 08 19 | 608 | 0.4− | 1.5+ | 2003 12 03 | 699 | 0.0 | 0.0 | 2005 03 12 | 699 | (1.5+ | 2.3+) | | |
| 2002 08 19 | 608 | 0.0 | 1.7+ | 2003 12 03 | 699 | 0.1+ | 0.0 | 2006 04 30 | 703 | 0.3+ | 0.9+ | | |
| 2002 08 26 | 644 | 0.3+ | 0.4+ | 2003 12 03 | 699 | 0.1+ | 0.1− | 2006 04 30 | 703 | 0.9+ | 0.3− | | |
| 2002 08 26 | 644 | 0.1+ | 0.4+ | 2003 12 03 | 699 | 0.5− | 0.3− | 2006 04 30 | 703 | 1.1− | 0.1+ | | |
| 2002 08 26 | 644 | 0.1+ | 0.5+ | 2003 12 03 | 699 | 0.4− | 0.3− | 2006 04 30 | 703 | 1.1− | 0.4− | | |
| 2002 08 27 | 644 | 0.9− | 0.3+ | 2003 12 03 | 699 | 1.1− | 0.4− | 2006 05 01 | E12 | 1.1+ | 0.1− | | |
| 2002 08 27 | 644 | 0.3− | 0.5+ | 2003 12 03 | 699 | 0.1+ | 0.2− | 2006 05 01 | E12 | 0.3+ | 0.0 | | |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2003 12 03 | 699 | 0.6− | 0.3+ | 2006 05 01 | E12 | 0.1+ | 1.5+ | | |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2003 12 04 | 704 | 0.0 | 0.2+ | 2006 05 01 | E12 | 0.5+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.5+ | 0.3+ | 2003 12 04 | 704 | 1.2+ | 0.4− | 2006 05 02 | E12 | 0.4+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.1− | 0.1+ | 2003 12 04 | 704 | 0.1− | 0.5− | 2006 05 02 | E12 | 0.5+ | 0.2− | | |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2003 12 04 | 704 | 0.6+ | 0.0 | 2006 05 02 | E12 | 0.3− | 0.6− | | |
| 2003 10 19 | 644 | 0.2+ | 0.8+ | 2003 12 04 | 704 | 0.7+ | 1.1+ | 2006 05 02 | E12 | 0.2− | 0.4+ | | |

**(141788)∗ 2002 NL$_{20}$ = 1998 HO$_{157}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33661)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.04964 | | (2000.0) | | | |
| $n$ | 0.28544602 | $\omega$ | 147.25524 | | +0.67690620 | +0.73542472 |
| $a$ | 2.2844766 | $\Omega$ | 165.26835 | | −0.69870835 | +0.65514627 |
| $e$ | 0.1430929 | $i$ | 6.95622 | | −0.23152675 | +0.17301402 |
| $P$ | 3.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.3+ | 0.1+ | 2002 07 28 | 608 | 0.8+ | 0.1+ | 2005 04 14 | 691 | 0.3+ | 0.5+ |
| 1992 10 01 | 691 | 0.3+ | 0.2− | 2002 07 28 | 608 | 0.6+ | 0.3− | 2005 04 18 | 691 | 0.6+ | 0.2+ |
| 1992 10 01 | 691 | 0.1+ | 0.0 | 2002 07 28 | 608 | 0.2+ | 0.1+ | 2005 04 18 | 691 | 0.2+ | 0.2+ |
| 1998 04 22 | 691 | 0.4− | 0.1− | 2002 08 14 | 704 | 0.9− | 0.8− | 2005 04 18 | 691 | 0.2+ | 0.6+ |
| 1998 04 22 | 691 | 0.3− | 0.2− | 2002 08 14 | 704 | 0.2+ | 1.2− | 2005 04 30 | 644 | 0.1+ | 0.1+ |
| 1998 04 22 | 691 | 0.4− | 0.3− | 2002 08 14 | 704 | 0.3− | 0.0 | 2005 04 30 | 644 | 0.1− | 0.1− |
| 1998 04 23 | 704 | 0.3+ | 0.6− | 2002 08 14 | 704 | 1.5− | 0.3− | 2005 04 30 | 644 | 0.3+ | 0.4− |
| 1998 04 23 | 704 | 1.4− | 0.3− | 2002 08 16 | 644 | 0.4− | 0.2+ | 2005 05 07 | 703 | 1.1− | 0.5− |
| 1998 04 23 | 704 | 0.1+ | 0.3+ | 2002 08 16 | 644 | 0.4− | 0.2+ | 2005 05 07 | 703 | 1.1− | 0.2+ |
| 1998 04 23 | 704 | (3.4− | 0.4+) | 2002 08 16 | 644 | 0.2− | 0.1+ | 2005 05 07 | 703 | (1.6− | 0.8−) |
| 2002 07 09 | 704 | 0.3+ | 0.6− | 2002 08 18 | 608 | (2.4− | 3.0−) | 2005 05 07 | 703 | (0.5− | 1.8+) |
| 2002 07 09 | 704 | 1.1− | 0.1− | 2002 08 18 | 608 | (2.3− | 2.7−) | 2006 10 16 | 703 | 0.2+ | 1.4+ |
| 2002 07 09 | 704 | 0.2− | 0.0 | 2002 08 18 | 608 | (2.1− | 3.5−) | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2002 07 09 | 704 | 0.2+ | 0.2+ | 2002 08 27 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.8+ | 0.5+ |
| 2002 07 14 | 704 | (1.7+ | 1.6+) | 2002 08 27 | 644 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.7+ | 0.3− |
| 2002 07 14 | 704 | 1.1+ | 1.1+ | 2002 08 27 | 644 | 0.4− | 0.2− | 2006 11 19 | 703 | 1.1− | 0.4− |
| 2002 07 14 | 704 | 0.3+ | 1.3+ | 2002 09 25 | 644 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.0 | 1.2+ |
| 2002 07 14 | 704 | 1.2+ | 0.8+ | 2002 09 25 | 644 | 0.0 | 0.2+ | 2006 11 19 | 703 | 2.1− | 0.4+ |
| 2002 07 21 | 644 | 0.1− | 0.2+ | 2002 09 25 | 644 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.5− | 0.5+ |
| 2002 07 21 | 644 | 0.4− | 0.2+ | 2005 04 14 | 691 | 0.8+ | 0.3− | | | | |
| 2002 07 21 | 644 | 0.4− | 0.1+ | 2005 04 14 | 691 | 0.2+ | 0.3+ | | | | |

**(141789)∗ 2002 NS$_{20}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.39966 | | (2000.0) | | | |
| $n$ | 0.17318585 | $\omega$ | 132.47435 | | +0.77872215 | +0.62719123 |
| $a$ | 3.1875801 | $\Omega$ | 188.71907 | | −0.60062721 | +0.73844276 |
| $e$ | 0.1642851 | $i$ | 5.65303 | | −0.18121469 | +0.24765590 |
| $P$ | 5.69 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 691 | 0.1+ | 0.3+ | 2002 07 28 | 608 | 0.7− | 0.2+ | 2003 11 16 | 703 | (2.2− | 2.8−) |
| 2001 05 21 | 691 | 0.1+ | 0.2+ | 2002 08 05 | 644 | 0.4+ | 0.5+ | 2003 11 16 | 703 | (2.2− | 0.6+) |
| 2001 05 21 | 691 | 0.1+ | 0.4+ | 2002 08 05 | 644 | 0.4+ | 0.5+ | 2003 11 19 | 699 | 0.1+ | 0.5+ |
| 2002 07 09 | 704 | 0.0 | 0.2− | 2002 08 05 | 644 | 0.4+ | 0.5+ | 2003 11 19 | 699 | 0.2− | 0.8+ |
| 2002 07 09 | 704 | 0.1− | 0.1+ | 2002 08 14 | 704 | 1.4− | 0.3− | 2003 11 19 | 699 | 0.1+ | 0.5+ |
| 2002 07 09 | 704 | 0.4+ | 0.1+ | 2002 08 14 | 704 | 0.5− | 1.6− | 2003 11 19 | 699 | 0.8+ | 0.2+ |
| 2002 07 09 | 704 | 0.3+ | 0.6+ | 2002 08 14 | 704 | 1.0− | 1.3− | 2003 11 19 | 599 | 0.1− | 1.2+ |
| 2002 07 09 | 704 | 0.3− | 0.5+ | 2002 08 14 | 704 | 0.0 | 0.3− | 2003 11 19 | 599 | 0.1− | 0.3+ |
| 2002 07 12 | 644 | 0.0 | 0.4+ | 2002 08 14 | 704 | 0.3+ | 0.8− | 2003 11 19 | 599 | 0.5+ | 0.9+ |
| 2002 07 12 | 644 | 0.3+ | 0.5+ | 2002 09 02 | 608 | 0.8− | 1.4+ | 2003 12 22 | 704 | 0.4+ | 0.2+ |
| 2002 07 12 | 644 | 0.1+ | 0.4+ | 2002 09 02 | 608 | 0.3− | 1.0+ | 2003 12 22 | 704 | 1.3− | 0.7+ |
| 2002 07 14 | 704 | 1.0+ | 0.4+ | 2002 09 02 | 608 | 0.9− | 1.6+ | 2003 12 22 | 704 | 2.0− | 1.8+ |
| 2002 07 14 | 704 | 0.3− | 0.6+ | 2002 09 06 | 704 | 0.4+ | 0.3+ | 2006 02 24 | 691 | 0.2+ | 0.2+ |
| 2002 07 14 | 704 | 0.1+ | 0.0 | 2002 09 06 | 704 | 1.1+ | 0.5+ | 2006 02 24 | 691 | 0.0 | 0.3+ |
| 2002 07 14 | 704 | 0.0 | 0.0 | 2002 09 06 | 704 | 0.1− | 0.5+ | 2006 02 24 | 691 | 0.3+ | 0.3+ |
| 2002 07 19 | 644 | 0.0 | 0.9+ | 2003 10 25 | 704 | 0.7+ | 0.8+ | 2006 04 24 | 291 | 0.2+ | 0.4+ |
| 2002 07 19 | 644 | 0.3− | 1.0+ | 2003 10 25 | 704 | 0.1− | 0.3+ | 2006 04 24 | 291 | 0.1+ | 0.5+ |
| 2002 07 19 | 644 | 0.2− | 1.0− | 2003 10 25 | 704 | 0.1+ | 0.5+ | 2006 04 24 | 291 | 0.1− | 0.3+ |
| 2002 07 21 | 644 | 0.1− | 0.3+ | 2003 10 25 | 704 | 0.5+ | 0.7+ | 2006 04 24 | 291 | 0.3+ | 0.2+ |
| 2002 07 21 | 644 | 0.1− | 0.4+ | 2003 10 25 | 704 | 0.2− | 0.6+ | 2006 04 24 | 291 | 0.0 | 0.2+ |
| 2002 07 21 | 644 | 0.2− | 0.2+ | 2003 10 29 | 699 | 0.4− | 1.8+ | 2006 04 24 | 291 | 0.0 | 0.2+ |
| 2002 07 22 | 644 | 0.2+ | 1.1+ | 2003 10 29 | 699 | 0.7+ | 0.6− | 2006 05 24 | G96 | 0.4− | 0.2+ |
| 2002 07 22 | 644 | 0.3+ | 1.1+ | 2003 10 29 | 699 | 0.4+ | 1.1− | 2006 05 24 | G96 | 0.1+ | 0.0 |
| 2002 07 22 | 644 | 0.2+ | 1.1+ | 2003 10 29 | 699 | 0.7− | 0.4− | 2006 05 24 | G96 | 0.0 | 0.1+ |
| 2002 07 28 | 608 | 0.5− | 0.8− | 2003 11 16 | 703 | (2.4− | 2.5+) | 2006 05 24 | G96 | 0.1− | 0.0 |
| 2002 07 28 | 608 | 0.1− | 1.1− | 2003 11 16 | 703 | 1.4− | 1.2+ | | | | |

**(141790)∗ 2002 NP$_{21}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.43614 | | (2000.0) | | | |
| $n$ | 0.29829218 | $\omega$ | 23.66401 | | −0.17438684 | +0.98261784 |
| $a$ | 2.2184082 | $\Omega$ | 236.34992 | | −0.91519261 | −0.18559390 |
| $e$ | 0.1939293 | $i$ | 4.38529 | | −0.36333416 | −0.00413243 |
| $P$ | 3.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 24 | 644 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.0 | 0.2+ | 2005 06 14 | 699 | 0.9− | 0.3+ |
| 2002 06 24 | 644 | 0.3− | 0.3+ | 2005 05 01 | 644 | 0.0 | 0.4+ | 2005 06 14 | 699 | 0.5+ | 0.2+ |
| 2002 06 24 | 644 | 0.3− | 0.2+ | 2005 05 04 | 699 | 0.4− | 0.3+ | 2005 06 22 | 644 | 0.1+ | 0.1− |
| 2002 07 06 | 699 | 0.0 | 0.2− | 2005 05 04 | 704 | 1.3+ | 1.0+ | 2005 06 22 | 644 | 0.1+ | 0.1− |
| 2002 07 06 | 699 | 0.3+ | 1.1+ | 2005 05 04 | 699 | 0.5+ | 0.4− | 2005 06 22 | 644 | 0.2− | 0.1− |
| 2002 07 06 | 699 | 0.1+ | 0.3− | 2005 05 04 | 704 | 0.9+ | 1.2+ | 2005 07 04 | 703 | 0.4− | 1.4− |
| 2002 07 06 | 699 | 1.3+ | 0.3+ | 2005 05 04 | 699 | 0.3− | 0.7+ | 2005 07 04 | 703 | 0.7+ | 0.9+ |
| 2002 07 09 | 704 | 0.7− | 0.2+ | 2005 05 04 | 704 | 0.6+ | 0.6+ | 2005 07 04 | 703 | 0.8− | 0.5+ |
| 2002 07 09 | 704 | 0.3+ | 0.2+ | 2005 05 04 | 699 | 0.1− | 0.2− | 2005 07 04 | 703 | 0.3− | 0.8+ |
| 2002 07 09 | 704 | 1.4+ | 0.2+ | 2005 05 04 | 704 | 0.0 | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.1+ |
| 2002 07 09 | 704 | 0.3− | 0.2− | 2005 05 13 | 704 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 2002 07 12 | 644 | 0.2− | 0.0 | 2005 05 13 | 704 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2002 07 12 | 644 | 0.1− | 0.1+ | 2005 05 13 | 704 | 0.7+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2002 07 12 | 644 | 0.1+ | 0.2+ | 2005 05 13 | 704 | 0.8+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 07 14 | 704 | 0.7− | 0.4− | 2005 05 13 | 704 | 0.6+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 07 14 | 644 | 0.7− | 0.3+ | 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 07 14 | 704 | 0.3+ | 0.6− | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2002 07 14 | 704 | 0.3+ | 0.7− | 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 11 12 | 703 | 0.5− | 0.7+ |
| 2002 07 14 | 704 | 1.4+ | 0.7− | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 11 12 | 703 | 0.6− | 0.3+ |
| 2002 07 14 | 704 | 1.1+ | 0.1− | 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 11 12 | 703 | 1.2− | 0.3− |
| 2002 07 14 | 644 | 0.5− | 0.5+ | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 11 12 | 703 | 0.8− | 0.7+ |
| 2002 07 14 | 644 | 0.4− | 0.4+ | 2005 05 14 | G96 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.0 |
| 2002 07 21 | 644 | 0.3− | 0.2+ | 2005 05 26 | E12 | 0.7− | 1.2− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2002 07 21 | 644 | 0.4− | 0.3+ | 2005 05 26 | E12 | 0.3− | 0.8− | 2006 11 12 | G96 | 0.2− | 0.1− |
| 2002 07 21 | 644 | 0.2− | 0.1+ | 2005 05 26 | E12 | 0.5− | 0.5− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2002 08 16 | 644 | 0.7− | 0.4+ | 2005 05 26 | E12 | 0.8− | 0.1− | 2006 11 14 | 691 | 0.1− | 0.6+ |
| 2002 08 16 | 644 | 0.8− | 0.4+ | 2005 06 12 | G96 | 0.4− | 0.5− | 2006 11 14 | 691 | 0.2+ | 0.3+ |
| 2002 08 16 | 644 | 0.7− | 0.4+ | 2005 06 12 | G96 | 0.3− | 0.8− | 2006 11 14 | 691 | 0.1+ | 0.4+ |
| 2003 12 25 | 691 | 0.1+ | 0.4+ | 2005 06 12 | G96 | 0.3− | 0.7− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2003 12 25 | 691 | 0.0 | 0.2+ | 2005 06 12 | G96 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.2+ |
| 2003 12 25 | 691 | 0.1− | 0.1+ | 2005 06 14 | 699 | 0.1+ | 1.3+ | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2005 05 01 | 644 | 0.0 | 0.2+ | 2005 06 14 | 699 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.2− |

**(141791)∗ 2002 NK$_{22}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.02571 | | (2000.0) | | | |
| $n$ | 0.27665454 | $\omega$ | 207.76583 | | +0.99225725 | +0.09410505 |
| $a$ | 2.3326210 | $\Omega$ | 146.52931 | | −0.06783880 | +0.95731348 |
| $e$ | 0.1923713 | $i$ | 8.45125 | | −0.10403584 | +0.27330410 |
| $P$ | 3.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.3− | 0.7− | 2002 08 14 | 704 | (1.1+ | 1.6+) | 2002 09 05 | 704 | 0.3− | 0.2− |
| 1995 08 30 | 809 | 0.5+ | 0.3+ | 2002 08 14 | 704 | 0.9+ | 0.2+ | 2005 05 11 | 703 | 0.7+ | 0.5+ |
| 2002 07 09 | 704 | 0.5+ | 0.6− | 2002 08 14 | 704 | 1.5+ | 1.1+ | 2005 05 11 | 703 | 0.9− | 0.6− |
| 2002 07 09 | 704 | 0.0 | 0.9− | 2002 08 14 | 704 | 0.5+ | 0.4+ | 2005 05 11 | 703 | (1.7− | 0.6+) |
| 2002 07 09 | 704 | 0.5− | 1.2− | 2002 08 14 | 704 | 0.2+ | 0.2+ | 2005 05 11 | 703 | 0.4+ | 0.3+ |
| 2002 07 09 | 704 | 0.9− | 1.0− | 2002 08 17 | 644 | 0.1− | 0.1− | 2005 05 12 | 599 | 0.3+ | 0.3+ |
| 2002 07 14 | 704 | 0.7− | 0.4+ | 2002 08 17 | 644 | 0.0 | 0.3+ | 2005 05 12 | 599 | 0.2− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 704 | 0.1− | 0.0 | 2002 08 17 | 644 | 0.0 | 0.1+ | 2005 05 12 | 599 | 0.2+ | 0.2+ |
| 2002 07 14 | 704 | 0.2− | 0.3− | 2002 08 17 | 644 | 0.4− | 0.4+ | 2006 10 01 | 703 | 0.4− | 0.5+ |
| 2002 07 14 | 704 | 0.6− | 0.7+ | 2002 08 17 | 644 | 0.1− | 0.0 | 2006 10 01 | 703 | 0.5− | 0.4− |
| 2002 07 14 | 704 | 0.1− | 0.5+ | 2002 08 17 | 644 | 0.3− | 0.4+ | 2006 10 01 | 703 | 1.7+ | 0.9− |
| 2002 08 06 | 644 | 0.5+ | 0.4+ | 2002 09 01 | 608 | 0.6− | 0.9− | 2006 10 01 | 703 | 0.6+ | 0.1− |
| 2002 08 06 | 644 | 0.3+ | 0.3+ | 2002 09 01 | 608 | 0.7− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 2002 08 06 | 644 | 0.5+ | 0.7+ | 2002 09 01 | 608 | 0.4− | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2002 09 05 | 699 | 0.8+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2002 09 05 | 699 | 0.8+ | 0.0 | 2006 11 13 | 703 | 0.0 | 0.5+ |
| 2002 08 07 | 644 | 0.0 | 0.5+ | 2002 09 05 | 699 | 0.5− | 0.0 | 2006 11 13 | 703 | 0.6+ | 0.7+ |
| 2002 08 08 | 734 | 0.3+ | 0.0 | 2002 09 05 | 699 | (0.7− | 1.6−) | 2006 11 13 | 703 | 0.1+ | 0.4+ |
| 2002 08 08 | 734 | 0.4+ | 0.1− | 2002 09 05 | 704 | 0.4− | 0.4− | 2006 11 13 | 703 | 0.7+ | 0.1+ |
| 2002 08 12 | 608 | 0.2− | 0.7− | 2002 09 05 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.1+ |
| 2002 08 12 | 608 | 0.3− | 0.7− | 2002 09 05 | 704 | 0.2− | 0.3+ | 2006 11 19 | 703 | 1.8− | 2.2− |
| 2002 08 12 | 608 | 0.1− | 0.1− | 2002 09 05 | 704 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.9− | 0.9+ |

**(141792)∗ 2002 NH$_{23}$ = 2005 JQ$_{60}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75384)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.91260 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30001601 | $\omega$ | 115.48076 | | −0.05308014 | +0.99801777 | |
| $a$ | 2.2099024 | $\Omega$ | 151.41459 | | −0.93969067 | −0.03846506 | |
| $e$ | 0.1735665 | $i$ | 4.05192 | | −0.33788155 | −0.04980934 | |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 09 | 691 | 0.7− | 0.4− | 2002 08 07 | 644 | 0.2+ | 0.0 | 2005 05 14 | 644 | 0.2+ | 0.5+ |
| 1995 04 09 | 691 | 0.4− | 0.0 | 2002 08 07 | 644 | 0.0 | 0.1− | 2005 05 31 | 699 | (2.1+ | 1.1−) |
| 1995 04 09 | 691 | 0.2− | 0.2+ | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2005 05 31 | 699 | 0.9+ | 0.6+ |
| 1995 04 22 | 691 | 0.0 | 0.9− | 2005 04 04 | G96 | 0.1+ | 0.4+ | 2005 05 31 | 699 | 0.7+ | 0.6+ |
| 1995 04 22 | 691 | 0.1− | 0.8− | 2005 04 04 | G96 | 0.2− | 0.4+ | 2005 05 31 | 699 | 0.5+ | 0.7+ |
| 1995 04 22 | 691 | 0.4+ | 0.7− | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2005 06 04 | 703 | 0.6− | 0.3− |
| 2001 01 26 | 691 | 0.4+ | 0.2+ | 2005 05 08 | 704 | 0.6− | 0.8+ | 2005 06 04 | 703 | 1.0− | 1.0− |
| 2001 01 26 | 691 | 0.2+ | 0.3+ | 2005 05 08 | 704 | 0.1− | 0.3− | 2005 06 04 | 703 | 0.1− | 1.2− |
| 2001 01 26 | 691 | 0.0 | 0.3+ | 2005 05 08 | 704 | 0.3− | 0.2+ | 2005 06 04 | 703 | 0.5− | 1.4+ |
| 2002 07 09 | 704 | 0.0 | 0.4− | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2005 06 28 | 644 | 0.2+ | 0.1− |
| 2002 07 09 | 704 | 0.3− | 1.1− | 2005 05 10 | 691 | 0.4− | 0.0 | 2005 06 28 | 644 | 0.3+ | 0.1+ |
| 2002 07 09 | 704 | 0.5− | 0.1+ | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2005 06 28 | 644 | 0.6+ | 0.2+ |
| 2002 07 14 | 704 | 0.3+ | 0.0 | 2005 05 11 | 699 | 0.6+ | 1.4+ | 2006 10 23 | G96 | 0.2+ | 0.3+ |
| 2002 07 14 | 644 | 0.2− | 0.2− | 2005 05 11 | 699 | (0.4+ | 2.1+) | 2006 10 23 | G96 | 0.5− | 0.4− |
| 2002 07 14 | 704 | 0.1− | 0.8+ | 2005 05 11 | 699 | 0.2+ | 1.0+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2002 07 14 | 704 | 0.9+ | 1.3− | 2005 05 11 | 699 | (0.7+ | 1.8+) | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2002 07 14 | 704 | 0.2+ | 0.9+ | 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2002 07 14 | 704 | 0.3+ | 0.5− | 2005 05 14 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2002 07 14 | 644 | 0.1+ | 0.1− | 2005 05 14 | 691 | 0.3+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 07 14 | 644 | 0.1− | 0.1− | 2005 05 14 | 644 | 0.1+ | 0.5+ | | | | |
| 2002 08 07 | 644 | 0.0 | 0.0 | 2005 05 14 | 644 | 0.1+ | 0.2+ | | | | |

**(141793)∗ 2002 NK$_{23}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.67476 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29252224 | $\omega$ | 351.13892 | | −0.20505858 | +0.97185068 | |
| $a$ | 2.2474849 | $\Omega$ | 266.96718 | | −0.89071720 | −0.23442582 | |
| $e$ | 0.1708241 | $i$ | 6.67100 | | −0.40567702 | +0.02346890 | |
| $P$ | 3.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.2+ | 0.3+ | 2002 08 05 | 644 | 0.7− | 0.0 | 2005 05 04 | 644 | 0.2+ | 0.2+ |
| 2002 07 09 | 704 | 0.0 | 0.2+ | 2002 08 06 | 644 | 0.2− | 0.1− | 2005 05 10 | 699 | 0.3+ | 0.6− |
| 2002 07 09 | 704 | 0.0 | 0.2− | 2002 08 06 | 644 | 0.4− | 0.1− | 2005 05 10 | 699 | 0.5− | 0.3+ |
| 2002 07 12 | 644 | 0.2+ | 0.0 | 2002 08 06 | 644 | 0.4− | 0.3+ | 2005 05 10 | 699 | 0.2− | 0.3+ |
| 2002 07 12 | 644 | 0.3+ | 0.1+ | 2002 08 07 | 644 | 0.4− | 0.1+ | 2005 05 10 | 699 | 0.1− | 0.2+ |
| 2002 07 12 | 644 | 0.2+ | 0.0 | 2002 08 07 | 644 | 0.2− | 0.0 | 2005 05 16 | 644 | 0.3+ | 0.2+ |
| 2002 07 14 | 704 | 0.1+ | 0.1− | 2002 08 07 | 644 | 0.3− | 0.0 | 2005 05 16 | 644 | 0.4+ | 0.2+ |
| 2002 07 14 | 704 | 0.2− | 0.7+ | 2002 08 17 | 608 | (0.8+ | 1.9+) | 2005 05 16 | 644 | 0.6+ | 0.0 |
| 2002 07 14 | 704 | 0.1− | 0.7− | 2002 08 17 | 608 | 0.6+ | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.7− |
| 2002 07 14 | 704 | 1.0+ | 0.8+ | 2002 08 17 | 608 | 0.6+ | 1.1+ | 2006 10 27 | 703 | 1.1+ | 0.5+ |
| 2002 07 14 | 704 | 0.3+ | 0.3+ | 2003 11 21 | 704 | 0.4− | 0.4+ | 2006 10 27 | 703 | 1.4− | 0.4− |
| 2002 07 15 | 644 | 0.1− | 0.2− | 2003 11 21 | 704 | 0.6+ | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.2− |
| 2002 07 15 | 644 | 0.2− | 0.1− | 2003 11 21 | 704 | 0.2+ | 0.9+ | 2006 11 01 | G96 | 0.4+ | 0.5− |
| 2002 07 15 | 644 | 0.2− | 0.4− | 2003 12 25 | 691 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2002 07 21 | 644 | 0.1− | 0.2+ | 2003 12 25 | 691 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2002 07 21 | 644 | 0.1+ | 0.1+ | 2003 12 25 | 691 | 0.2− | 0.5+ | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2002 07 21 | 644 | 0.2+ | 0.3− | 2005 04 19 | 703 | 0.5+ | 0.6+ | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2002 07 28 | 608 | 0.1− | 0.5+ | 2005 04 19 | 703 | 1.4− | 0.7− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2002 07 28 | 608 | 0.1+ | 0.2+ | 2005 04 19 | 703 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2002 07 28 | 608 | 0.7− | 0.3+ | 2005 04 19 | 703 | 0.2− | 0.6+ | 2006 11 23 | G96 | 0.5+ | 0.4− |
| 2002 08 05 | 644 | 0.4− | 0.1− | 2005 05 04 | 644 | 0.4+ | 0.1+ | | | | |
| 2002 08 05 | 644 | 0.4− | 0.1− | 2005 05 04 | 644 | 0.5+ | 0.1+ | | | | |

**(141794)∗ 2002 NP$_{23}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.60118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28107796 | $\omega$ | 92.93455 | | +0.50947077 | +0.86031336 | |
| $a$ | 2.3080835 | $\Omega$ | 207.71553 | | −0.80354921 | +0.46845647 | |
| $e$ | 0.1877694 | $i$ | 2.13593 | | −0.30781196 | +0.20102106 | |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 03 | 691 | 0.1− | 0.3− | 2002 08 07 | 644 | 0.4+ | 0.0 | 2005 04 09 | G96 | 0.1− | 0.3+ |
| 1995 06 03 | 691 | 0.3− | 0.1− | 2002 08 07 | 644 | 0.4+ | 0.2+ | 2005 04 11 | 699 | 0.8+ | 0.3− |
| 1995 06 03 | 691 | 0.3− | 0.2− | 2002 08 14 | 704 | 1.0− | 0.6+ | 2005 04 11 | 699 | (1.7+ | 0.5−) |
| 1999 11 12 | 704 | 0.9− | 0.0 | 2002 08 14 | 704 | 0.6+ | 0.1− | 2005 04 11 | 699 | 0.6− | 0.2+ |
| 1999 11 12 | 704 | 0.7− | 0.5+ | 2002 08 14 | 704 | 0.2+ | 0.7− | 2005 04 11 | 699 | 0.7+ | 1.0+ |
| 1999 11 12 | 704 | 0.1− | 0.1− | 2002 08 14 | 704 | 0.4− | 0.2− | 2005 04 17 | 691 | 0.1+ | 0.2− |
| 1999 11 12 | 704 | 0.8− | 0.2+ | 2002 08 15 | 699 | 0.8− | 0.3+ | 2005 04 17 | 691 | 0.3+ | 0.1+ |
| 1999 12 12 | 691 | 0.2+ | 0.0 | 2002 08 15 | 699 | 0.6− | 1.4+ | 2005 04 17 | 691 | 0.2+ | 0.2+ |
| 1999 12 12 | 691 | 0.5+ | 0.5− | 2002 08 15 | 699 | 0.1− | 0.8+ | 2006 10 12 | 691 | 0.2− | 0.1− |
| 1999 12 12 | 691 | 1.2+ | 0.7+ | 2002 08 15 | 699 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 2002 07 04 | 644 | 0.2+ | 0.3+ | 2002 08 27 | 644 | 0.3+ | 0.4+ | 2006 10 12 | 691 | (0.7− | 1.8+) |
| 2002 07 04 | 644 | 0.1+ | 0.3+ | 2002 08 27 | 644 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.4− | 0.4+ |
| 2002 07 04 | 644 | 0.1− | 0.0 | 2002 08 27 | 644 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.6− | 0.4+ |
| 2002 07 09 | 704 | 0.3+ | 0.1− | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.5+ |
| 2002 07 09 | 704 | 0.1+ | 0.3− | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 2002 07 09 | 704 | 0.5+ | 0.1+ | 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2002 07 14 | 704 | 0.8− | 0.0 | 2005 04 02 | G96 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2002 07 14 | 704 | 0.3− | 0.1− | 2005 04 05 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 2002 07 14 | 704 | 0.1− | 0.8+ | 2005 04 05 | G96 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2002 07 14 | 704 | 0.4− | 0.2+ | 2005 04 05 | G96 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2002 07 28 | 608 | 1.1+ | 0.3− | 2005 04 05 | G96 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2002 07 28 | 608 | 0.1− | 0.1− | 2005 04 09 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2002 07 28 | 608 | 0.5+ | 0.0 | 2005 04 09 | 691 | 0.2+ | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.8+ |
| 2002 08 06 | 644 | 0.2+ | 0.1+ | 2005 04 09 | 691 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.6+ |
| 2002 08 06 | 644 | 0.0 | 0.0 | 2005 04 09 | G96 | 0.8− | 0.1+ | 2006 11 08 | 644 | 0.4− | 0.5+ |
| 2002 08 06 | 644 | 0.0 | 0.3+ | 2005 04 09 | G96 | 0.0 | 0.8− | | | | |
| 2002 08 07 | 644 | 0.2+ | 0.0 | 2005 04 09 | G96 | 0.0 | 0.4+ | | | | |

**(141795)∗ 2002 NJ$_{26}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.40392 | | (2000.0) | | | |
| $n$ | 0.27451052 | $\omega$ | 155.37131 | | +0.78253273 | +0.62204418 |
| $a$ | 2.3447510 | $\Omega$ | 166.06559 | | −0.58793746 | +0.75230252 |
| $e$ | 0.2582179 | $i$ | 6.32386 | | −0.20487088 | +0.21702986 |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 704 | 1.1+ | 0.6− | 2002 09 14 | 644 | 0.1− | 0.4− | 2005 04 01 | 691 | 0.0 | 0.2+ |
| 1998 05 22 | 704 | 0.5+ | 0.5+ | 2002 09 14 | 644 | 0.1− | 0.4− | 2005 04 01 | 691 | 0.1− | 0.1+ |
| 1998 05 22 | 704 | 0.0 | 0.2− | 2002 09 16 | 644 | 0.0 | 0.3− | 2005 04 05 | 703 | 1.2+ | 0.7+ |
| 1998 05 22 | 704 | 1.4− | 0.1+ | 2002 09 16 | 644 | 0.3+ | 0.4− | 2005 04 05 | 703 | (1.6− | 0.1+) |
| 2002 07 09 | 704 | 0.1+ | 0.1− | 2002 09 16 | 644 | 0.1+ | 0.3− | 2005 04 05 | 703 | (0.1+ | 1.6+) |
| 2002 07 09 | 704 | 0.2+ | 0.4− | 2002 09 30 | 608 | 0.6+ | 0.8− | 2005 04 05 | 703 | (0.8+ | 2.1−) |
| 2002 07 09 | 704 | 0.3+ | 0.1+ | 2002 09 30 | 608 | 0.8+ | 1.1− | 2005 05 03 | 691 | 0.3+ | 0.3+ |
| 2002 07 09 | 704 | 0.1− | 0.4− | 2002 09 30 | 608 | 0.1+ | 0.9− | 2005 05 03 | 691 | 0.1− | 0.1+ |
| 2002 07 09 | 704 | 0.3+ | 0.3− | 2002 10 03 | 704 | 0.1− | 0.4+ | 2005 05 03 | 691 | 0.5+ | 0.4+ |
| 2002 07 14 | 704 | 0.5− | 1.5+ | 2002 10 03 | 704 | 0.4+ | 0.4+ | 2005 05 08 | 703 | 0.0 | 0.2− |
| 2002 07 14 | 704 | (0.1+ | 1.7+) | 2002 10 03 | 704 | 0.1+ | 0.6+ | 2005 05 08 | 703 | 0.6− | 0.5− |
| 2002 07 14 | 704 | 0.5+ | 1.4+ | 2002 10 03 | 704 | 0.7+ | 1.1+ | 2005 05 08 | 703 | 0.8− | 0.1− |
| 2002 07 14 | 704 | 0.1+ | 1.1+ | 2002 10 03 | 704 | 0.1− | 0.1+ | 2005 05 08 | 703 | 0.9− | 0.7− |
| 2002 07 14 | 704 | 0.2+ | 1.3+ | 2002 10 05 | 704 | 0.2− | 0.7+ | 2006 09 29 | 461 | 0.3− | 0.2+ |
| 2002 08 09 | 704 | 1.0− | 0.9+ | 2002 10 05 | 704 | 0.4− | 1.2+ | 2006 09 29 | 461 | 1.3+ | 0.4− |
| 2002 08 09 | 704 | 0.0 | 0.5− | 2002 10 05 | 704 | 0.5− | 0.5+ | 2006 09 29 | 461 | 0.1− | 0.7+ |
| 2002 08 09 | 704 | 0.3+ | 0.2+ | 2002 10 05 | 704 | 0.4− | 0.5+ | 2006 11 15 | 703 | (0.2+ | 1.6+) |
| 2002 08 09 | 704 | 0.5− | 0.3− | 2002 10 05 | 704 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.5− |
| 2002 08 09 | 704 | 0.5− | 0.3− | 2002 10 07 | 704 | 0.3− | 0.6+ | 2006 11 15 | 703 | 0.0 | 0.2+ |
| 2002 08 12 | 704 | 0.8− | 0.7+ | 2002 10 07 | 704 | 0.2− | 0.7+ | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2002 08 12 | 704 | 0.8− | 0.5+ | 2002 10 07 | 704 | 0.1+ | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 2002 08 12 | 704 | 0.5− | 1.0+ | 2002 10 07 | 704 | 0.4+ | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2002 08 12 | 704 | 0.9− | 0.1+ | 2002 10 07 | 704 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.5+ |
| 2002 08 12 | 704 | 0.7− | 0.2+ | 2002 10 09 | 699 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2002 09 01 | 608 | 0.4− | 0.7− | 2002 10 09 | 699 | 0.1+ | 0.3− | 2006 11 25 | 703 | 0.3+ | 0.2+ |
| 2002 09 01 | 608 | 0.5− | 0.7− | 2002 10 09 | 699 | 0.3− | 0.1− | 2006 11 25 | 703 | 0.5− | 0.2+ |
| 2002 09 01 | 608 | 0.3− | 0.9− | 2002 10 09 | 699 | 0.1− | 0.3− | 2006 11 25 | 703 | 1.4+ | 0.6+ |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 11 25 | 703 | 0.3− | 0.3+ |
| 2002 09 05 | 704 | 0.7+ | 0.6− | 2002 10 11 | 704 | 0.1+ | 0.8+ | 2006 11 28 | 704 | 0.7− | 0.9+ |
| 2002 09 05 | 704 | 0.5+ | 0.4− | 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.6− | 1.4+ |
| 2002 09 05 | 704 | 0.6+ | 0.4− | 2002 10 11 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 1.3− | 1.6+ |
| 2002 09 05 | 704 | 0.6+ | 0.2− | 2002 10 11 | 704 | 0.7+ | 0.5− | | | | |
| 2002 09 14 | 644 | 0.1+ | 0.3− | 2005 04 01 | 691 | 0.4+ | 1.2+ | | | | |

**(141796)∗ 2002 NO$_{26}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.79517 | | (2000.0) | | | |
| $n$ | 0.26789497 | $\omega$ | 67.41151 | | +0.91948885 | −0.38628180 |
| $a$ | 2.3831956 | $\Omega$ | 315.22139 | | +0.31177970 | +0.82964820 |
| $e$ | 0.1322400 | $i$ | 5.94743 | | +0.23944452 | +0.40307596 |
| $P$ | 3.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.1− | 0.8− | 2004 01 18 | 608 | 0.1+ | 0.8+ | 2004 03 01 | 691 | 0.1+ | 0.6+ |
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2004 01 23 | 699 | 0.4− | 0.3− | 2004 03 18 | 704 | 0.7+ | 1.0+ |
| 2000 01 04 | 704 | 0.5+ | 0.7− | 2004 01 23 | 699 | 0.3+ | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.1+ |
| 2000 01 31 | 704 | 0.1− | 1.1+ | 2004 01 23 | 699 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.9+ |
| 2000 01 31 | 704 | 0.7− | 0.7− | 2004 01 23 | 699 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.8+ |
| 2000 01 31 | 704 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.1+ | 0.7+ | 2004 03 18 | 704 | 0.4+ | 0.0 |
| 2002 07 09 | 704 | 0.6− | 1.1+ | 2004 01 24 | 704 | 0.4+ | 0.7+ | 2006 08 24 | 704 | 0.9+ | 0.2+ |
| 2002 07 09 | 704 | 0.7− | 1.0+ | 2004 01 24 | 704 | 0.4+ | 0.8+ | 2006 08 24 | 704 | 0.5+ | 0.9− |
| 2002 07 09 | 704 | 1.0− | 0.6+ | 2004 01 24 | 704 | 0.4− | 0.2+ | 2006 08 24 | 704 | 0.9+ | 0.7+ |
| 2002 07 09 | 704 | (1.1− | 1.5+) | 2004 01 24 | 704 | 0.3+ | 0.5+ | 2006 08 24 | 704 | 0.2+ | 0.8− |
| 2002 07 14 | 704 | 0.1+ | 0.9+ | 2004 01 26 | 699 | (1.4+ | 1.6+) | 2006 08 30 | 704 | 0.2− | 1.1+ |
| 2002 07 14 | 704 | 0.8− | 1.1+ | 2004 01 26 | 699 | 0.2− | 0.4+ | 2006 08 30 | 704 | 1.1+ | 0.8− |
| 2002 07 14 | 704 | 1.0+ | 1.3+ | 2004 01 26 | 699 | (1.7+ | 0.8+) | 2006 08 30 | 704 | 0.4− | 0.5+ |
| 2002 07 14 | 704 | (0.4+ | 1.5+) | 2004 01 26 | 699 | (1.9+ | 0.3+) | 2006 08 30 | 704 | 0.7− | 0.9+ |
| 2002 08 09 | 704 | 0.0 | 0.6− | 2004 01 29 | 704 | 0.4− | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.8− |
| 2002 08 09 | 704 | 0.1+ | 0.4− | 2004 01 29 | 704 | 0.3+ | 1.2+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 08 09 | 704 | 0.1+ | 0.2− | 2004 01 29 | 704 | (1.8+ | 0.6+) | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2002 08 09 | 704 | 0.8− | 0.2+ | 2004 02 02 | 333 | 0.0 | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 08 09 | 704 | 0.9− | 0.3+ | 2004 02 02 | 333 | 0.7+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.4+ | 1.0+ | 2004 02 02 | 333 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 08 12 | 704 | 0.2+ | 0.8+ | 2004 02 11 | 699 | 0.3− | 0.3− | 2006 10 19 | 703 | 0.3− | 0.3− |
| 2002 08 12 | 704 | 0.5+ | 0.5+ | 2004 02 11 | 644 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2002 08 12 | 704 | 0.1− | 0.9+ | 2004 02 11 | 699 | 1.0− | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.6− |
| 2002 08 12 | 704 | 0.1+ | 0.5+ | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.1− |
| 2002 08 17 | 644 | 0.5− | 0.0 | 2004 02 11 | 699 | 0.4+ | 0.1− | 2006 10 19 | A50 | 0.3+ | 0.3− |
| 2002 08 17 | 644 | 0.7− | 0.1+ | 2004 02 11 | 699 | 0.7+ | 1.2− | 2006 10 19 | A50 | 0.6+ | 0.2− |
| 2002 08 17 | 644 | 0.3− | 0.1+ | 2004 02 11 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 704 | 1.2+ | 0.3+ |
| 2002 08 27 | 644 | 0.7− | 0.2+ | 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 704 | 0.4+ | 0.9+ |
| 2002 08 27 | 644 | 0.3− | 0.5+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 704 | 0.3− | 0.7+ |
| 2002 08 27 | 644 | 0.7− | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 704 | (1.8+ | 0.8−) |
| 2002 09 05 | 699 | 0.5+ | 0.2+ | 2004 02 13 | 333 | 0.3− | 0.3+ | 2006 10 21 | 704 | 0.3− | 1.0− |
| 2002 09 05 | 699 | 0.4− | 0.3+ | 2004 02 13 | 333 | 0.3+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 09 05 | 699 | 0.3+ | 0.9+ | 2004 02 13 | 333 | 0.4− | 0.5− | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2002 09 05 | 699 | 0.2+ | 0.8+ | 2004 02 14 | 608 | 0.5+ | 0.1− | 2006 10 22 | 644 | 0.5− | 0.3− |
| 2002 09 05 | 608 | 0.6− | 0.3+ | 2004 02 14 | 608 | 0.2+ | 0.5− | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 2002 09 05 | 608 | 0.2− | 0.4+ | 2004 02 14 | 608 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.4− | 0.0 |
| 2002 09 05 | 608 | 0.6− | 0.3+ | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2004 02 17 | 704 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.9− |
| 2002 09 06 | 704 | 0.4+ | 0.8+ | 2004 02 17 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 1.4− | 0.7− |
| 2002 09 06 | 704 | 0.0 | 0.6+ | 2004 02 17 | 704 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.6− | 0.4− |
| 2002 09 06 | 704 | 0.5− | 0.4+ | 2004 02 17 | 704 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.3− | 1.0− |
| 2002 09 26 | 699 | 0.2− | 0.9+ | 2004 02 19 | 608 | 0.1− | 0.6− | 2006 11 15 | 703 | 0.5− | 0.8− |
| 2002 09 26 | 699 | 0.6− | 0.3− | 2004 02 19 | 608 | 0.7− | 0.0 | 2006 11 17 | 704 | 0.8+ | 0.0 |
| 2002 09 26 | 699 | 0.3+ | 0.1+ | 2004 02 19 | 608 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 2002 09 26 | 699 | 0.4− | 0.5+ | 2004 02 26 | 704 | 0.1+ | 1.0+ | 2006 11 17 | 704 | 0.7+ | 0.2+ |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2004 02 26 | 704 | 1.1+ | 1.2+ | 2006 11 17 | 704 | 0.2+ | 0.8+ |
| 2002 10 04 | 704 | 0.5+ | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.9+ | 2006 11 23 | 703 | 0.1− | 0.8+ |
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 02 26 | 704 | 0.5+ | 0.8+ | 2006 11 23 | 703 | 0.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.9− | 0.0 | 2004 02 26 | 704 | (0.6+ | 2.0+) | 2006 11 23 | 703 | 0.4− | 0.4+ |
| 2004 01 18 | 608 | 0.1− | 0.1+ | 2004 03 01 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.1− | 1.0+ |
| 2004 01 18 | 608 | 0.1− | 0.5+ | 2004 03 01 | 691 | 0.1+ | 0.4+ | | | | |

**(141797)∗ 2002 ND$_{29}$**

Discovered 2002 July 13 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.32455 | | (2000.0) | | | |
| $n$ | 0.27176171 | $\omega$ | 216.71497 | | +0.81010574 | +0.56731961 |
| $a$ | 2.3605355 | $\Omega$ | 108.07329 | | −0.49409307 | +0.79643985 |
| $e$ | 0.1776466 | $i$ | 8.95077 | | −0.31559583 | +0.20936101 |
| $P$ | 3.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 0.1+ | 0.4+ | 2005 03 17 | 703 | (1.7+ | 1.8+) | 2006 09 30 | 704 | 0.3− | 0.2− |
| 2002 06 08 | 704 | 0.5+ | 0.3− | 2005 03 17 | 703 | 0.7+ | 1.1+ | 2006 09 30 | 704 | 1.0− | 0.6+ |
| 2002 06 08 | 704 | 0.1+ | 0.6+ | 2005 04 04 | 703 | 0.1− | 0.3+ | 2006 09 30 | 704 | (0.4+ | 1.5−) |
| 2002 07 05 | 704 | 0.2+ | 0.4+ | 2005 04 04 | 703 | 1.2− | 0.3− | 2006 09 30 | 704 | 0.4+ | 0.9− |
| 2002 07 05 | 704 | 0.1− | 0.4+ | 2005 04 04 | 703 | 0.2− | 0.5+ | 2006 09 30 | 704 | 1.1− | 0.2− |
| 2002 07 05 | 704 | 0.1− | 0.2+ | 2005 04 04 | 703 | (1.8+ | 0.4+) | 2006 10 02 | 704 | 1.1− | 0.2+ |
| 2002 07 05 | 704 | 0.1− | 1.1+ | 2005 04 08 | 704 | 1.2+ | 0.6+ | 2006 10 02 | 704 | 0.4− | 0.2+ |
| 2002 07 05 | 704 | 0.1− | 0.7+ | 2005 04 08 | 704 | 1.3+ | 1.1+ | 2006 10 02 | 704 | 0.1+ | 0.0 |
| 2002 07 13 | 608 | 0.4+ | 0.4− | 2005 04 08 | 704 | 0.2+ | 1.1+ | 2006 10 02 | 704 | 0.6− | 0.5− |
| 2002 07 13 | 608 | 0.1+ | 0.9− | 2005 04 13 | 703 | 0.2− | 0.6+ | 2006 10 02 | 704 | 0.6+ | 0.1+ |
| 2002 07 13 | 608 | 0.5+ | 0.3− | 2005 04 13 | 703 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.1+ |
| 2002 07 14 | 644 | 0.1− | 0.2− | 2005 04 13 | 703 | 0.4+ | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.5− |
| 2002 07 14 | 644 | 0.4− | 0.1− | 2005 04 13 | 703 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.5+ | 0.5− |
| 2002 07 14 | 644 | 0.1− | 0.4− | 2005 05 08 | 703 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.7+ | 0.5− |
| 2002 08 13 | 704 | 0.2− | 0.5− | 2005 05 08 | 703 | 0.6− | 0.2− | 2006 10 28 | 703 | 0.3− | 0.5+ |
| 2002 08 13 | 704 | 0.1− | 0.4− | 2005 05 08 | 703 | 0.7+ | 0.3− | 2006 10 28 | 703 | 0.7− | 0.0 |
| 2002 08 13 | 704 | 0.3− | 0.3+ | 2005 05 08 | 703 | (1.7− | 1.7+) | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2002 08 13 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.6− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.3+ | 1.1+ | 2006 11 08 | 644 | 0.5+ | 0.2− |
| 2004 01 22 | 704 | (1.1+ | 1.7+) | 2006 09 26 | 703 | 0.3− | 0.6+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2004 01 22 | 704 | 0.3− | 1.2+ | 2006 09 26 | 703 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.8+ | 0.5− | 2006 09 29 | 699 | 0.6− | 0.7+ | 2006 11 16 | 703 | 0.8+ | 1.3+ |
| 2004 01 22 | 704 | 0.0 | 0.9− | 2006 09 29 | 699 | 0.0 | 0.4+ | 2006 11 16 | 703 | (2.0+ | 1.0+) |
| 2005 03 17 | 703 | (0.7− | 1.6−) | 2006 09 29 | 699 | 0.5− | 0.7+ | 2006 11 16 | 703 | 0.5− | 1.0+ |
| 2005 03 17 | 703 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.8+ | 2006 11 16 | 703 | 1.3+ | 0.5+ |

**(141798)∗ 2002 NQ$_{30}$**

Discovered 2002 July 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.47891 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24497040 | $\omega$ | 184.93512 | | +0.94865037 | −0.31593452 | |
| $a$ | 2.5296493 | $\Omega$ | 193.51407 | | +0.29248061 | +0.89500765 | |
| $e$ | 0.1904775 | $i$ | 3.86298 | | +0.12048887 | +0.31487568 | |
| $P$ | 4.02 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 1.0+ | 0.0 | 2002 08 14 | 704 | 0.2+ | 0.3− | 2005 04 04 | G96 | 0.1+ | 0.1− |
| 2000 02 02 | 704 | 0.3+ | 0.5− | 2002 08 14 | 704 | 0.2− | 0.4+ | 2005 04 04 | G96 | 0.1− | 0.2− |
| 2000 02 02 | 704 | 0.9− | 0.8+ | 2002 08 14 | 704 | 0.4− | 0.5+ | 2006 06 21 | 644 | 0.1− | 0.2− |
| 2002 07 06 | 699 | 0.6+ | 0.2+ | 2002 08 17 | 644 | 0.0 | 0.0 | 2006 06 21 | 644 | 0.1− | 0.2+ |
| 2002 07 06 | 699 | 1.0+ | 0.3− | 2002 08 17 | 644 | 0.1+ | 0.1+ | 2006 06 21 | 644 | 0.1+ | 0.0 |
| 2002 07 06 | 699 | 0.1+ | 0.5+ | 2002 08 17 | 644 | 0.0 | 0.4+ | 2006 06 22 | 691 | 0.2+ | 0.6+ |
| 2002 07 06 | 699 | 0.6+ | 0.6+ | 2002 08 17 | 704 | 0.7− | 0.0 | 2006 06 22 | 691 | 0.2− | 0.2+ |
| 2002 07 09 | 704 | 0.3− | 0.1− | 2002 08 17 | 704 | (2.0− | 1.2−) | 2006 06 22 | 691 | 0.3+ | 0.3+ |
| 2002 07 09 | 704 | 0.0 | 1.0− | 2002 08 17 | 704 | 1.5− | 0.9+ | 2006 08 13 | 644 | 0.4− | 0.0 |
| 2002 07 09 | 704 | 0.6− | 0.3− | 2002 08 17 | 704 | (2.4− | 0.1+) | 2006 08 13 | 644 | 0.3− | 0.3+ |
| 2002 07 14 | 704 | (0.9− | 2.2+) | 2002 08 26 | 644 | 0.0 | 0.2+ | 2006 08 13 | 644 | 0.0 | 0.2+ |
| 2002 07 14 | 704 | (0.7+ | 1.6+) | 2002 08 26 | 644 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2002 07 14 | 704 | (0.8+ | 1.9+) | 2002 08 26 | 644 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2002 07 14 | 704 | (0.6− | 1.9+) | 2003 12 18 | 644 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.1+ |
| 2002 07 14 | 704 | 1.0+ | 0.0 | 2003 12 18 | 644 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 08 06 | 644 | 0.0 | 0.8+ | 2003 12 18 | 644 | 0.3+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2002 08 06 | 644 | 0.1− | 0.8+ | 2004 01 18 | 644 | 0.1+ | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 08 06 | 644 | 0.1+ | 0.7+ | 2004 01 18 | 644 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2002 08 07 | 644 | 0.1− | 0.8− | 2004 01 18 | 644 | 0.3+ | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2002 08 07 | 644 | 0.4− | 0.7− | 2004 03 18 | 645 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2002 08 07 | 644 | 0.3− | 0.8− | 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.3+ |
| 2002 08 14 | 704 | 0.0 | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 08 14 | 704 | 0.0 | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.1− | | | | |

**(141799)∗ 2002 NS$_{31}$**

Discovered 2002 July 9 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.55507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27227032 | $\omega$ | 156.78456 | | +0.97622753 | +0.21444799 | |
| $a$ | 2.3575949 | $\Omega$ | 190.97369 | | −0.21558909 | +0.94569424 | |
| $e$ | 0.2335158 | $i$ | 9.52315 | | −0.02238658 | +0.24428358 | |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.2− | 0.2+ | 2002 07 20 | 644 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.5+ | 1.5+ |
| 1995 09 22 | 691 | 0.1+ | 0.1− | 2002 08 04 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | (1.7− | 1.0+) |
| 1995 09 22 | 691 | 0.2− | 0.2− | 2002 08 04 | 644 | 0.4− | 0.7+ | 2006 10 22 | 703 | 1.1− | 0.0 |
| 1995 09 25 | 327 | 1.1+ | 0.9− | 2002 08 04 | 644 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.0 | 0.9+ |
| 1995 09 25 | 327 | 0.2+ | 0.1+ | 2002 08 13 | 704 | 0.0 | 0.6− | 2006 10 22 | 703 | 0.2+ | 1.1− |
| 1995 09 25 | 327 | 0.8+ | 0.2+ | 2002 08 13 | 704 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.2− | 0.1− |
| 1995 09 25 | 327 | 0.3+ | 0.4− | 2002 08 13 | 704 | 0.7− | 0.2− | 2006 11 01 | 703 | 0.9+ | 0.0 |
| 1995 10 26 | 691 | 0.1− | 0.1+ | 2002 09 03 | 644 | 0.1− | 0.4+ | 2006 11 01 | 703 | (2.7+ | 0.5+) |
| 1995 10 26 | 691 | 0.1− | 0.0 | 2002 09 03 | 644 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.0 | 0.3− |
| 1995 10 26 | 691 | 0.2− | 0.2+ | 2002 09 03 | 644 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.6+ | 0.3+ |
| 2002 07 09 | 644 | 0.3− | 0.2+ | 2005 04 14 | 691 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2002 07 09 | 644 | 0.1+ | 0.3+ | 2005 04 14 | 691 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 07 09 | 644 | 0.1− | 0.4+ | 2005 04 14 | 691 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2002 07 11 | 704 | 0.2− | 0.3− | 2005 04 18 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 291 | 0.3− | 0.4+ |
| 2002 07 11 | 704 | 0.4+ | 0.6− | 2005 04 18 | 691 | 0.5+ | 0.3+ | 2006 11 11 | 291 | 0.1− | 0.5+ |
| 2002 07 11 | 704 | (0.4− | 1.5−) | 2005 04 18 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 291 | 0.1− | 0.5+ |
| 2002 07 20 | 644 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.3+ | | | | |
| 2002 07 20 | 644 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 1.3+ | | | | |

**(141800)∗ 2002 NO$_{33}$**

Discovered 2002 July 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.15939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22648200 | $\omega$ | 45.29182 | | +0.97985429 | +0.10180692 | |
| $a$ | 2.6655096 | $\Omega$ | 308.09518 | | −0.17708384 | +0.84067735 | |
| $e$ | 0.1902933 | $i$ | 12.61049 | | +0.09234109 | +0.53188057 | |
| $P$ | 4.35 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 704 | 0.3− | 0.3+ | 2002 10 03 | 644 | 0.3− | 0.1− | 2002 11 08 | 704 | 0.5+ | 0.4+ |
| 2002 07 14 | 704 | 0.2+ | 0.8+ | 2002 10 03 | 644 | 0.4− | 0.2− | 2002 11 08 | 704 | 0.9+ | 0.0 |
| 2002 07 14 | 704 | 0.5+ | 0.0 | 2002 10 03 | 644 | 0.5− | 0.1− | 2002 11 08 | 704 | 0.7+ | 0.2+ |
| 2002 07 14 | 704 | 0.2+ | 0.4+ | 2002 10 05 | 644 | 0.2− | 0.7− | 2002 11 08 | 704 | 0.9+ | 0.3− |
| 2002 07 14 | 704 | 0.1− | 1.2+ | 2002 10 05 | 644 | 0.4− | 0.7− | 2002 11 08 | 704 | 0.1− | 0.7− |
| 2002 07 17 | 704 | (1.7− | 0.4+) | 2002 10 05 | 644 | 0.6+ | 0.7− | 2002 12 01 | 704 | 0.6+ | 0.6+ |
| 2002 07 17 | 704 | (2.0− | 0.7−) | 2002 10 06 | 704 | 0.1− | 0.2− | 2002 12 01 | 704 | 0.0 | 0.4+ |
| 2002 07 17 | 704 | 0.3− | 1.2+ | 2002 10 06 | 704 | 0.0 | 0.2− | 2002 12 01 | 704 | 1.4+ | 0.9+ |
| 2002 07 17 | 704 | 0.5+ | 1.2− | 2002 10 06 | 704 | 0.0 | 0.1− | 2004 01 30 | 691 | 0.2+ | 0.2+ |
| 2002 08 04 | 704 | (0.6+ | 1.6−) | 2002 10 06 | 704 | 0.1+ | 0.2− | 2004 01 30 | 691 | 0.1+ | 0.2+ |
| 2002 08 04 | 704 | 0.6+ | 0.1+ | 2002 10 06 | 704 | 0.1− | 0.3− | 2004 01 30 | 691 | 0.3+ | 0.3+ |
| 2002 08 04 | 704 | 0.3− | 0.0 | 2002 10 09 | 704 | 0.3− | 0.1− | 2004 02 12 | 691 | 0.1+ | 0.4+ |
| 2002 08 04 | 704 | 0.3+ | 0.3+ | 2002 10 09 | 704 | 0.1− | 0.2− | 2004 02 12 | 691 | 0.0 | 0.5+ |
| 2002 08 10 | 704 | 0.4− | 0.7+ | 2002 10 09 | 704 | 0.0 | 0.9− | 2004 02 12 | 691 | 0.1+ | 0.4+ |
| 2002 08 10 | 704 | 0.2− | 0.4+ | 2002 10 09 | 704 | 0.0 | 0.2− | 2005 05 16 | 644 | 0.4+ | 0.5+ |
| 2002 08 10 | 704 | 0.6− | 0.0 | 2002 10 09 | 704 | 0.2− | 0.6− | 2005 05 16 | 644 | 0.4+ | 0.2+ |
| 2002 08 10 | 704 | 0.2− | 0.7+ | 2002 10 10 | 704 | 0.1+ | 0.0 | 2005 05 16 | 644 | 0.5+ | 0.7+ |
| 2002 08 10 | 704 | 0.1+ | 0.7+ | 2002 10 10 | 704 | 0.2− | 0.0 | 2006 07 21 | 644 | 0.4− | 0.5+ |
| 2002 09 11 | 644 | 0.1− | 0.3+ | 2002 10 10 | 704 | 0.0 | 0.1+ | 2006 07 21 | 644 | 0.4− | 0.7+ |
| 2002 09 11 | 644 | 0.4− | 0.1+ | 2002 10 10 | 704 | 0.2+ | 0.3− | 2006 07 21 | 644 | 0.1− | 0.6+ |
| 2002 09 11 | 644 | 0.5− | 0.2+ | 2002 10 10 | 704 | 0.0 | 0.0 | 2006 07 22 | 644 | 0.5− | 0.5+ |
| 2002 09 14 | 699 | 0.5− | 0.2+ | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 07 22 | 644 | 0.4− | 0.6+ |
| 2002 09 14 | 699 | 0.8− | 0.5− | 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 07 22 | 644 | 0.4− | 0.4+ |
| 2002 09 14 | 699 | 0.6− | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.4− | 0.1− |
| 2002 09 14 | 699 | 0.5− | 0.4+ | 2002 10 11 | 704 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.8+ | 0.0 |
| 2002 09 27 | 699 | 0.1+ | 0.5− | 2002 10 11 | 704 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.3+ | 0.2− |
| 2002 09 27 | 699 | 0.4− | 0.0 | 2002 10 15 | 644 | 0.2+ | 0.2+ | 2006 11 02 | G96 | 0.3+ | 0.3+ |
| 2002 09 27 | 699 | 0.8+ | 1.3+ | 2002 10 15 | 644 | 0.0 | 0.3+ | | | | |
| 2002 09 27 | 699 | 0.7− | 0.6+ | 2002 10 15 | 644 | 0.2+ | 0.4+ | | | | |

**(141801)∗ 2002 NH$_{35}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.65265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25439672 | $\omega$ | 165.41154 | | +0.99841591 | +0.05195930 | |
| $a$ | 2.4667684 | $\Omega$ | 191.67417 | | −0.05604278 | +0.95239773 | |
| $e$ | 0.1194514 | $i$ | 6.12349 | | +0.00498682 | +0.30039772 | |
| $P$ | 3.87 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 691 | 0.2− | 0.2+ | 2005 04 05 | G96 | 0.3− | 0.8− | 2006 08 29 | 703 | 0.5+ | 0.2− |
| 2001 04 26 | 691 | 0.1+ | 0.1− | 2005 04 05 | G96 | 0.3− | 0.2+ | 2006 08 29 | 703 | 0.4+ | 0.2+ |
| 2001 04 26 | 691 | 0.3+ | 0.7+ | 2005 04 11 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.5− |
| 2002 07 09 | 704 | 1.5− | 0.5+ | 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.0 |
| 2002 07 09 | 704 | 0.2− | 0.0 | 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.3− |
| 2002 07 09 | 704 | 0.0 | 0.3− | 2005 04 18 | 691 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.3− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 1.4− | 0.2− | 2005 04 18 | 691 | 0.3− | 0.4− | 2006 08 30 | 704 | (0.5+ | 1.6+) | | |
| 2002 07 09 | 704 | 0.7− | 0.4+ | 2005 04 18 | 691 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.0 | 0.8+ | | |
| 2002 07 12 | 644 | 0.2+ | 0.2+ | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.8− | 0.1− | | |
| 2002 07 12 | 644 | 0.3+ | 0.2− | 2005 05 04 | 691 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.6+ | 0.3− | | |
| 2002 07 12 | 644 | 0.5+ | 0.3+ | 2005 05 04 | 691 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.3− | 0.1− | | |
| 2002 07 18 | 704 | 0.5+ | 0.2− | 2005 05 10 | G96 | 0.5− | 0.5− | 2006 09 14 | 703 | 0.5+ | 0.4− | | |
| 2002 07 18 | 704 | 0.1− | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.1+ | | |
| 2002 07 18 | 704 | 0.3− | 0.1+ | 2005 05 10 | G96 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.7+ | 1.0− | | |
| 2002 07 18 | 704 | 0.1− | 0.1+ | 2005 05 10 | G96 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.8+ | 1.5+ | | |
| 2002 07 21 | 644 | 0.3+ | 0.1− | 2006 08 18 | 704 | 1.0+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.1− | | |
| 2002 07 21 | 644 | 0.1+ | 0.1+ | 2006 08 18 | 704 | 0.1− | 0.4− | 2006 09 19 | 699 | 0.7− | 0.0 | | |
| 2002 07 21 | 644 | 0.3+ | 0.3− | 2006 08 18 | 704 | 0.9+ | 0.6− | 2006 09 19 | 699 | 0.1+ | 0.4− | | |
| 2002 08 05 | 644 | 0.5+ | 0.4+ | 2006 08 27 | 699 | (0.7− | 1.8−) | 2006 09 19 | 699 | (1.5− | 1.8+) | | |
| 2002 08 05 | 644 | 0.3+ | 0.4+ | 2006 08 27 | 699 | 0.1− | 0.7− | 2006 09 19 | 699 | 0.2+ | 0.2− | | |
| 2002 08 05 | 644 | 0.5+ | 0.5+ | 2006 08 27 | 699 | (0.6+ | 1.8+) | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.0 | | |
| 2002 08 11 | 644 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.2− | 0.2− | | |
| 2002 08 11 | 644 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.6− | | |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.9− | 0.6− | | |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− | | |
| 2005 04 05 | G96 | 0.3− | 0.0 | 2006 08 29 | 691 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.2+ | | | | | | |

**(141802)∗ 2002 NV$_{35}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.57725 | | (2000.0) | | | |
| $n$ | 0.26795841 | $\omega$ | 139.33215 | | +0.81512368 | +0.57919712 |
| $a$ | 2.3828193 | $\Omega$ | 185.30386 | | −0.55598239 | +0.77726507 |
| $e$ | 0.1457754 | $i$ | 6.33647 | | −0.16265598 | +0.24574317 |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 1.3− | | |
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.4+ | | |
| 2002 07 09 | 704 | 0.8− | 0.7+ | 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.3+ | | |
| 2002 07 09 | 704 | 0.6− | 0.6+ | 2005 04 18 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.2− | 0.4+ | | |
| 2002 07 09 | 704 | 1.0− | 1.2− | 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.4+ | | |
| 2002 07 09 | 704 | 0.8− | 0.6+ | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.5+ | | |
| 2002 07 09 | 704 | (1.8− | 0.3+) | 2005 04 19 | 705 | 0.7− | 0.3− | 2006 10 03 | 691 | 0.1+ | 0.3+ | | |
| 2002 07 12 | 644 | 0.1+ | 0.2− | 2005 04 19 | 705 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 2002 07 12 | 644 | 0.1+ | 0.1− | 2005 04 19 | 705 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3+ | | |
| 2002 07 12 | 644 | 0.5+ | 0.0 | 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.4− | 0.4+ | | |
| 2002 07 21 | 644 | 0.2+ | 0.2− | 2005 05 04 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2002 07 21 | 644 | 0.3+ | 0.1− | 2005 05 04 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.4+ | | |
| 2002 07 21 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | (0.9− | 1.9−) | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2002 08 05 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | (0.9+ | 1.7−) | 2006 10 15 | 703 | 0.2+ | 0.2+ | | |
| 2002 08 05 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 10 15 | 703 | 0.1− | 0.7− | | |
| 2002 08 05 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.7+ | 2006 10 15 | 703 | 0.5+ | 0.5− | | |
| 2002 08 11 | 644 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.8+ | 0.6+ | | |
| 2002 08 11 | 644 | 0.4+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.1− | 0.4− | | |
| 2002 08 11 | 644 | 0.4+ | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.6− | | |
| 2002 08 26 | 644 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.2− | | |
| 2002 08 26 | 644 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.6+ | 1.2− | 2006 10 21 | 703 | 1.2− | 1.0+ | | |
| 2002 08 26 | 644 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.1− | | |
| 2005 04 10 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.1+ | | |
| 2005 04 10 | 691 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.6− | 2006 10 22 | G96 | 0.3− | 0.2+ | | |
| 2005 04 10 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.0 | | |

**(141803)∗ 2002 NY$_{35}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.23889 | | (2000.0) | | | |
| $n$ | 0.26769534 | $\omega$ | 70.82280 | | +0.59325185 | +0.80024264 |
| $a$ | 2.3843802 | $\Omega$ | 235.87799 | | −0.77261193 | +0.53545055 |
| $e$ | 0.1288088 | $i$ | 6.07034 | | −0.22610406 | +0.27000818 |
| $P$ | 3.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 691 | 0.1− | 0.5+ | 2002 08 12 | 704 | (2.1− | 1.1+) | 2006 09 27 | 699 | 0.7+ | 0.3+ | | |
| 1999 12 13 | 691 | 0.3− | 0.1+ | 2002 08 12 | 704 | (1.9− | 0.9+) | 2006 09 30 | 703 | 0.2− | 0.6+ | | |
| 1999 12 13 | 691 | 0.1− | 0.4+ | 2002 08 12 | 704 | (1.6− | 0.5+) | 2006 09 30 | 703 | 0.0 | 1.1+ | | |
| 2000 01 04 | 691 | 0.1+ | 0.1+ | 2002 08 15 | 644 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.9− | 0.3+ | | |
| 2000 01 04 | 691 | 0.1+ | 0.0 | 2002 08 15 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1− | | |
| 2000 01 04 | 691 | 0.5+ | 1.0− | 2002 08 15 | 644 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.9− | 0.6+ | | |
| 2002 06 13 | 704 | 0.4− | 0.4+ | 2002 08 25 | 644 | 0.1+ | 0.4− | 2006 10 03 | 704 | 0.6− | 0.3+ | | |
| 2002 06 13 | 704 | 1.1− | 0.1+ | 2002 08 25 | 644 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.9− | 1.3+ | | |
| 2002 06 13 | 704 | 0.5− | 1.3+ | 2002 08 25 | 644 | 0.1+ | 0.2− | 2006 10 03 | 704 | 0.8+ | 0.1+ | | |
| 2002 06 13 | 704 | (0.3− | 1.9+) | 2002 10 04 | 704 | 0.3− | 1.3− | 2006 10 04 | G96 | 0.1+ | 0.4− | | |
| 2002 06 26 | 644 | 0.3− | 0.4− | 2002 10 04 | 704 | 1.1− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.3− | | |
| 2002 06 26 | 644 | 0.2− | 0.3− | 2002 10 04 | 704 | 0.2− | 1.5+ | 2006 10 04 | G96 | 0.0 | 0.3− | | |
| 2002 06 26 | 644 | 0.3− | 0.0 | 2002 10 05 | 704 | 0.3− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.2− | | |
| 2002 07 09 | 704 | 1.4+ | 0.7− | 2002 10 05 | 704 | 0.5− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2002 07 09 | 704 | 1.2+ | 1.1− | 2002 10 05 | 704 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2002 07 09 | 704 | 0.7+ | 0.9− | 2002 10 05 | 704 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1+ | | |
| 2002 07 09 | 704 | 0.5+ | 0.8− | 2005 04 06 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.1+ | | |
| 2002 07 12 | 644 | 0.2− | 0.9+ | 2005 04 06 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.5− | | |
| 2002 07 12 | 644 | 0.1− | 0.1− | 2005 04 06 | 691 | 0.0 | 0.4+ | 2006 10 17 | 703 | 1.2− | 1.0+ | | |
| 2002 07 12 | 644 | 0.1− | 0.1− | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.2− | | |
| 2002 07 17 | 704 | 0.5+ | 0.3− | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2002 07 17 | 704 | 0.4+ | 0.5+ | 2005 04 10 | 691 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.5+ | | |
| 2002 07 17 | 704 | 0.7− | 0.1− | 2006 09 01 | 224 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.5+ | | |
| 2002 07 18 | 704 | 0.6− | 0.2− | 2006 09 01 | 224 | 0.9+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 07 18 | 704 | 0.0 | 0.7− | 2006 09 01 | 224 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 07 18 | 704 | 0.4− | 0.4− | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2002 07 18 | 704 | 0.3− | 0.5− | 2006 09 14 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2002 07 18 | 704 | 0.2− | 0.4− | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2002 07 21 | 644 | 0.0 | 0.9+ | 2006 09 19 | 699 | (2.2+ | 0.3+) | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 07 21 | 644 | 0.1− | 1.0+ | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.7− | | |
| 2002 07 21 | 644 | 0.0 | 1.0+ | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 2002 08 05 | 644 | 0.2+ | 0.4− | 2006 09 19 | 699 | 1.2+ | 0.2+ | 2006 11 11 | 703 | 1.5− | 0.0 | | |
| 2002 08 05 | 644 | 0.2− | 0.4− | 2006 09 25 | 704 | (1.6+ | 0.8+) | 2006 11 11 | 703 | 1.0− | 0.6− | | |
| 2002 08 05 | 644 | 0.4+ | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.2− | | |
| 2002 08 11 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.2− | | |
| 2002 08 11 | 644 | 0.0 | 0.1+ | 2006 09 27 | 699 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.4− | 0.0 | | |
| 2002 08 11 | 644 | 0.2+ | 0.1− | 2006 09 27 | 699 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.0 | | |
| 2002 08 12 | 704 | (2.2− | 0.8+) | 2006 09 27 | 699 | 0.6+ | 0.7+ | | | | | | |

**(141804)∗ 2002 NJ$_{36}$ = 2005 GG$_{130}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75390)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.59238 | | (2000.0) | | | |
| $n$ | 0.26389595 | $\omega$ | 163.05431 | | +0.96238695 | −0.26396287 |
| $a$ | 2.4072114 | $\Omega$ | 212.47076 | | +0.23331083 | +0.92425115 |
| $e$ | 0.1959983 | $i$ | 6.87914 | | +0.13920279 | +0.27583222 |
| $P$ | 3.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 327 | 0.3− | 0.2+ | 2006 09 01 | 704 | 0.3− | 1.0− | 2006 10 01 | 704 | 0.6+ | 0.7− | | |
| 1995 10 15 | 327 | 0.2− | 0.2+ | 2006 09 01 | 704 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.1− | 0.0 | | |
| 1995 10 15 | 327 | 0.0 | 0.6+ | 2006 09 01 | 704 | 0.6− | 0.9− | 2006 10 10 | 644 | 0.1− | 0.1− | | |
| 1995 10 15 | 327 | 0.0 | 0.8+ | 2006 09 01 | 704 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.2− | | |
| 2002 07 09 | 704 | 0.5− | 0.3+ | 2006 09 15 | 704 | 0.4− | 0.3+ | 2006 10 10 | 644 | 0.4− | 0.1+ | | |
| 2002 07 09 | 704 | 0.2+ | 0.5− | 2006 09 15 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.1− | 1.0− | 2006 09 15 | 704 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 07 09 | 704 | 0.2+ | 0.2− | 2006 09 15 | 704 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 07 12 | 644 | 0.2+ | 0.7+ | 2006 09 15 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2002 07 12 | 644 | 0.2+ | 1.0+ | 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2002 07 12 | 644 | 0.2+ | 1.0+ | 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.8− | 0.4− |
| 2002 07 18 | 704 | 1.2− | 0.1− | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2002 07 18 | 704 | 0.4− | 0.4− | 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2002 07 18 | 704 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 07 18 | 704 | 0.9− | 0.6+ | 2006 09 18 | 704 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2002 07 18 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 07 20 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 07 20 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.7− | 0.3+ | 2006 10 23 | G96 | 0.5− | 0.3− |
| 2002 07 20 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 07 21 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.0 | 0.4− | 2006 10 23 | G96 | 0.3+ | 1.0− |
| 2002 07 21 | 644 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.7− |
| 2002 07 21 | 644 | 0.0 | 0.5+ | 2006 09 18 | 704 | 0.3− | 0.2− | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2002 07 29 | 644 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.1− | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2002 07 29 | 644 | 0.4+ | 0.1− | 2006 09 20 | 699 | 0.7+ | 0.0 | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2002 07 29 | 644 | 0.6+ | 0.1− | 2006 09 20 | 699 | 0.6− | 0.6− | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2004 01 27 | 699 | 0.4− | 0.5+ | 2006 09 20 | 699 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2004 01 27 | 699 | (2.3− | 2.1+) | 2006 09 20 | 699 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2004 01 27 | 699 | 0.5+ | 1.2+ | 2006 09 23 | 106 | 0.6+ | 0.1− | 2006 10 31 | 691 | 0.4− | 0.4+ |
| 2004 01 27 | 699 | 0.6+ | 0.1− | 2006 09 24 | 106 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2005 04 07 | 691 | 0.0 | 0.2+ | 2006 09 24 | 106 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2005 04 07 | 691 | 0.0 | 0.3+ | 2006 09 24 | 106 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 2005 04 07 | 691 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2005 04 14 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.4+ |
| 2005 04 14 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2005 05 14 | G96 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2005 05 14 | G96 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2005 05 14 | G96 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.0 | 2006 11 18 | 703 | 1.7+ | 0.8+ |
| 2006 08 25 | D35 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.1+ | 2006 11 18 | 703 | 0.4− | 0.4+ |
| 2006 08 25 | D35 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.1− | 2006 11 18 | 703 | 0.2+ | 0.4+ |
| 2006 08 25 | D35 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.4− | 2006 11 18 | 703 | 0.4− | 2.2+ |
| 2006 08 31 | 704 | 0.3− | 0.6+ | 2006 09 29 | 699 | 0.7+ | 0.9− | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2006 08 31 | 704 | 1.3− | 0.9+ | 2006 09 29 | 699 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.2+ |
| 2006 08 31 | 704 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2006 08 31 | 704 | 0.3− | 0.3+ | 2006 10 01 | 704 | 1.2+ | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.7+ |
| 2006 08 31 | 704 | 1.3− | 0.4− | 2006 10 01 | 704 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2006 09 01 | 704 | 0.1− | 0.7− | 2006 10 01 | 704 | 1.3+ | 0.5− | | | | |

**(141805)∗ 2002 NO$_{36}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.28880 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27674907 | $\omega$ | 171.42737 | | +0.98566241 | +0.16871140 |
| $a$ | 2.3320898 | $\Omega$ | 178.85097 | | −0.16118323 | +0.94580257 |
| $e$ | 0.2102919 | $i$ | 7.06597 | | −0.04989577 | +0.27747785 |
| $P$ | 3.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1− | 0.1− | 2002 08 05 | 644 | 0.1+ | 0.6+ | 2006 09 16 | 703 | 0.1− | 1.0− |
| 1995 10 02 | 691 | 0.3+ | 0.1− | 2002 08 05 | 644 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 1.1− | 0.7− |
| 1995 10 02 | 691 | 0.0 | 0.3+ | 2002 08 14 | 704 | 0.9− | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.6− |
| 1999 12 05 | 704 | 0.0 | 0.4+ | 2002 08 14 | 704 | 0.5+ | 1.0− | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 1999 12 05 | 704 | 0.2+ | 0.9− | 2002 08 14 | 704 | 0.4− | 0.6− | 2006 09 19 | 699 | 0.5+ | 0.2− |
| 1999 12 05 | 704 | 1.4− | 0.9− | 2002 08 14 | 704 | 1.1− | 1.1− | 2006 09 19 | 699 | (1.8+ | 0.6+) |
| 1999 12 05 | 704 | 0.3− | 1.0+ | 2002 08 14 | 704 | 1.3− | 0.0 | 2006 10 19 | 683 | (2.3+ | 0.3+) |
| 1999 12 05 | 704 | 0.2+ | 1.4+ | 2002 09 06 | 704 | 0.0 | 0.4− | 2006 10 19 | 683 | (2.7+ | 1.6+) |
| 2001 04 16 | 645 | 0.1− | 0.1− | 2002 09 06 | 704 | 1.0+ | 0.4+ | 2006 10 19 | 683 | 0.9+ | 0.6− |
| 2001 04 16 | 645 | 0.1− | 0.1− | 2002 09 06 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2002 07 09 | 704 | (0.5− | 1.6+) | 2002 09 06 | 704 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2002 07 09 | 704 | 0.9− | 1.4+ | 2002 09 06 | 704 | 0.1− | 1.5+ | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2002 07 09 | 704 | 1.1− | 0.4+ | 2002 09 11 | 608 | 0.4+ | 0.5− | 2006 10 30 | 703 | 0.0 | 0.7+ |
| 2002 07 09 | 704 | 0.5− | 1.1+ | 2002 09 11 | 608 | 0.4+ | 0.5− | 2006 10 30 | 703 | 0.2+ | 0.7− |
| 2002 07 12 | 644 | 0.0 | 0.7+ | 2002 09 11 | 608 | 0.0 | 0.4− | 2006 10 30 | 703 | 0.2+ | 0.7+ |
| 2002 07 12 | 644 | 0.1− | 0.8+ | 2002 10 04 | 704 | 0.7+ | 0.5+ | 2006 10 30 | 703 | 0.3− | 0.2+ |
| 2002 07 12 | 644 | 0.2− | 0.7+ | 2002 10 04 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.5− | 0.3− |
| 2002 07 18 | 704 | 0.5+ | 0.3+ | 2002 10 04 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.4+ |
| 2002 07 18 | 704 | 0.0 | 0.6+ | 2002 10 04 | 704 | 0.5+ | 0.7− | 2006 11 19 | 703 | 0.4+ | 0.1+ |
| 2002 07 18 | 704 | 0.3+ | 0.7+ | 2004 01 28 | 645 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.3+ | 0.6+ |
| 2002 07 18 | 704 | 0.4+ | 0.5+ | 2004 01 28 | 645 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.3+ |
| 2002 07 18 | 704 | 0.2+ | 0.1+ | 2005 04 02 | 691 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.3+ |
| 2002 07 21 | 644 | 0.4− | 0.6− | 2005 04 02 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.3+ |
| 2002 07 21 | 644 | 0.2− | 0.5− | 2005 04 02 | 691 | 0.4+ | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.2+ |
| 2002 07 21 | 644 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.2+ | 0.3− | | | | |
| 2002 08 05 | 644 | 0.3+ | 0.5+ | 2006 09 16 | 703 | 0.7− | 0.1− | | | | |

**(141806)∗ 2002 NF$_{38}$ = 2000 AD$_{21}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33680)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.24691 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26386026 | $\omega$ | 85.34190 | | +0.97349752 | −0.14859113 |
| $a$ | 2.4074285 | $\Omega$ | 283.12979 | | +0.06105283 | +0.90143271 |
| $e$ | 0.1270511 | $i$ | 10.28328 | | +0.22039766 | +0.40661991 |
| $P$ | 3.74 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.8− | 0.3+ | 2003 10 25 | 691 | 0.4− | 0.4+ | 2005 05 13 | E12 | 0.0 | 0.3+ |
| 2000 01 03 | 704 | 1.0− | 0.2− | 2003 12 22 | 703 | 0.9+ | 1.5+ | 2005 05 13 | E12 | 1.3− | 0.0 |
| 2000 01 03 | 704 | 0.2− | 0.3− | 2003 12 22 | 703 | 0.6− | 0.4+ | 2005 05 13 | E12 | 0.1+ | 0.2+ |
| 2000 01 03 | 704 | 0.2+ | 0.3− | 2003 12 22 | 703 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 2000 01 04 | 704 | 0.2+ | 0.1− | 2003 12 22 | 703 | 0.9+ | 0.5− | 2006 09 17 | 703 | 0.5− | 0.5− |
| 2000 01 04 | 704 | 0.3− | 0.5− | 2003 12 23 | 704 | 1.2+ | 1.4+ | 2006 09 17 | 703 | 0.2+ | 0.0 |
| 2000 01 04 | 704 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.1− |
| 2000 01 08 | 704 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 704 | (2.9− | 0.6+) |
| 2000 01 08 | 704 | 1.5− | 0.7− | 2003 12 23 | 704 | 0.6+ | 1.4+ | 2006 09 21 | 704 | (1.6− | 0.7+) |
| 2000 01 08 | 704 | 0.4− | 0.2+ | 2003 12 23 | 704 | 0.7+ | 0.5+ | 2006 09 21 | 704 | (2.4− | 0.5−) |
| 2002 07 09 | 704 | 0.8− | 0.2− | 2003 12 27 | 608 | 0.4+ | 0.4− | 2006 09 21 | 704 | 1.5− | 1.4+ |
| 2002 07 09 | 704 | 0.0 | 0.7+ | 2003 12 27 | 608 | 0.5+ | 0.5− | 2006 09 22 | 699 | 0.7− | 0.3− |
| 2002 07 09 | 704 | 0.1− | 1.1+ | 2003 12 27 | 608 | 0.8+ | 0.2− | 2006 09 22 | 699 | 1.1+ | 0.0 |
| 2002 07 12 | 644 | 0.1− | 0.3+ | 2004 01 21 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 699 | 0.1− | 0.1− |
| 2002 07 12 | 644 | 0.2+ | 0.2+ | 2004 01 21 | 704 | 0.7+ | 0.5+ | 2006 09 22 | 699 | 0.3− | 0.0 |
| 2002 07 12 | 644 | 0.2− | 0.4+ | 2004 01 21 | 704 | 0.7+ | 1.3+ | 2006 09 28 | 703 | 0.5+ | 0.0 |
| 2002 07 21 | 644 | 0.5− | 0.4+ | 2004 01 21 | 704 | 0.8+ | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.2+ |
| 2002 07 21 | 644 | 0.4− | 0.2+ | 2004 01 29 | 704 | 1.4+ | 0.2− | 2006 09 28 | 703 | 0.3− | 0.7− |
| 2002 07 21 | 644 | 0.7− | 0.2+ | 2004 01 29 | 704 | 0.0 | 1.2+ | 2006 09 28 | 703 | 0.5+ | 0.3− |
| 2002 08 05 | 644 | 0.1− | 0.1− | 2004 01 29 | 704 | 1.2+ | 0.2+ | 2006 09 30 | 704 | 0.2+ | 1.4− |
| 2002 08 05 | 644 | 0.0 | 0.3− | 2004 01 29 | 704 | 0.7+ | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.2+ |
| 2002 08 05 | 644 | 0.1− | 0.1− | 2004 01 29 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 704 | 0.5+ | 0.1− |
| 2002 08 08 | 699 | 0.5+ | 0.0 | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.3− |
| 2002 08 08 | 699 | 0.9+ | 0.6+ | 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 08 08 | 699 | (1.7+ | 0.2+) | 2004 02 11 | 644 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 08 08 | 699 | 0.8+ | 0.1+ | 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 08 12 | 704 | 0.7− | 0.8+ | 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 704 | 0.2+ | 0.4+ |
| 2002 08 12 | 704 | 0.8− | 0.7+ | 2004 02 11 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 704 | 0.9− | 0.6− |
| 2002 08 12 | 704 | 0.2− | 0.9+ | 2004 02 17 | 704 | 0.5− | 0.8+ | 2006 10 21 | 704 | 0.7− | 0.3+ |
| 2002 08 13 | 699 | 0.2+ | 1.1+ | 2004 02 17 | 704 | 0.6− | 0.6+ | 2006 10 21 | 704 | 0.6+ | 0.1− |
| 2002 08 13 | 699 | (1.2− | 1.6+) | 2004 02 17 | 704 | 0.1− | 0.0 | 2006 10 21 | 704 | 1.2− | 0.4+ |
| 2002 08 13 | 699 | 1.1− | 1.5+ | 2004 02 17 | 704 | (0.4− | 1.5+) | 2006 10 30 | 185 | 0.2+ | 0.0 |
| 2002 08 13 | 699 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 10 30 | 185 | 0.9− | 0.2− |
| 2002 09 05 | 699 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.0 | 0.6− | 2006 10 30 | 185 | 0.3+ | 0.2− |
| 2002 09 05 | 699 | 0.2+ | 1.4+ | 2004 02 26 | 704 | 0.1− | 0.7− | 2006 10 30 | 185 | 0.2+ | 0.2+ |
| 2002 09 05 | 699 | 0.1− | 0.7+ | 2005 05 10 | 699 | 0.3− | 1.0+ | 2006 11 23 | 703 | 0.7+ | 0.6+ |
| 2002 09 05 | 699 | 0.2− | 0.7+ | 2005 05 10 | 699 | 0.5− | 1.0− | 2006 11 23 | 703 | 0.4− | 1.3− |
| 2002 10 05 | 704 | 0.9− | 1.2+ | 2005 05 10 | 699 | 0.4− | 1.0+ | 2006 11 23 | 703 | 0.6+ | 0.8− |
| 2002 10 05 | 704 | 0.2− | 1.0+ | 2005 05 10 | 699 | (1.0− | 3.4+) | 2006 11 23 | 703 | 0.4− | 0.1− |
| 2002 10 05 | 704 | 0.2− | 0.2+ | 2005 05 11 | 644 | 0.3+ | 0.8+ | 2006 11 29 | 704 | 0.3+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2005 05 11 | 644 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 1.1+ | 0.5+ |
| 2003 10 25 | 691 | 0.2+ | 0.2+ | 2005 05 11 | 644 | 0.4+ | 0.6+ | 2006 11 29 | 704 | 1.5+ | 0.3+ |
| 2003 10 25 | 691 | 0.4− | 0.2+ | 2005 05 13 | E12 | 0.2+ | 0.3+ | | | | |

**(141807)∗ 2002 NM$_{38}$ = 1991 KZ$_2$ = 1991 LZ$_1$ = 1998 HK$_{152}$**

Discovered 2002 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37754), S. Nakano (d, MPC 20607)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.35465 | | (2000.0) | | +0.46154157 | +0.88495744 |
| $n$ | 0.27492741 | $\omega$ | 58.86818 | | −0.83657632 | +0.41097548 |
| $a$ | 2.3423800 | $\Omega$ | 238.74252 | | −0.29516002 | +0.21897372 |
| $e$ | 0.2453203 | $i$ | 4.15144 | | | |
| $P$ | 3.58 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 05 18 | 809 | 0.9+ | 1.4− | 2002 08 16 | 608 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 1991 05 18 | 809 | (0.5+ | 2.3−) | 2002 08 16 | 608 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 1991 05 18 | 809 | (0.7+ | 2.3−) | 2002 09 06 | 704 | 0.0 | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 1991 06 06 | 809 | (0.7− | 2.6+) | 2002 09 06 | 704 | 0.1− | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.4+ |
| 1991 06 06 | 809 | (0.0 | 2.3+) | 2002 09 06 | 704 | 0.7+ | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1991 06 06 | 809 | (0.1− | 2.9+) | 2002 09 06 | 704 | 0.1− | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 1991 06 08 | 809 | 1.6− | 0.6+ | 2002 09 06 | 704 | 0.1+ | 1.1+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 1991 06 08 | 809 | 1.4− | 0.7+ | 2002 09 13 | 644 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.3− | 0.0 |
| 1991 06 08 | 809 | 0.7− | 0.3− | 2002 09 13 | 644 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 1.0+ | 0.2+ | 2002 09 13 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.3− | 0.1− |
| 1998 04 21 | 704 | 0.5+ | 1.0+ | 2002 09 14 | 608 | 0.1− | 0.7− | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 1998 04 21 | 704 | 0.8+ | 1.3+ | 2002 09 14 | 608 | 0.1+ | 0.9− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1998 04 21 | 704 | 0.4+ | 0.9+ | 2002 09 14 | 608 | 0.1+ | 0.8− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1998 04 21 | 704 | 0.6+ | 0.3+ | 2002 10 04 | 704 | 0.4+ | 0.4− | 2006 11 10 | 644 | 0.4− | 0.1− |
| 1998 04 25 | 699 | 0.3+ | 0.4+ | 2002 10 04 | 704 | 0.3+ | 0.4− | 2006 11 10 | 644 | 0.1+ | 0.6+ |
| 1998 04 25 | 699 | 0.8+ | 0.7+ | 2002 10 04 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 1998 04 25 | 699 | 0.9+ | 0.3+ | 2002 10 04 | 704 | 0.1− | 0.7− | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2000 01 11 | 691 | 0.8+ | 0.1+ | 2002 10 04 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2000 01 11 | 691 | 0.6+ | 0.4− | 2002 10 06 | 704 | (3.7+ | 1.2+) | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2000 01 11 | 691 | 0.1+ | 0.3+ | 2002 10 06 | 704 | (3.3+ | 1.8+) | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2002 06 07 | 608 | 0.2− | 0.3− | 2002 10 06 | 704 | (3.0+ | 1.4+) | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2002 06 07 | 608 | 0.1+ | 0.4− | 2002 10 06 | 704 | (3.5+ | 1.0+) | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2002 06 07 | 608 | 0.0 | 0.2− | 2002 10 06 | 704 | (5.1+ | 1.2+) | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2002 07 09 | 704 | 0.2− | 0.3+ | 2005 03 03 | 691 | 0.2+ | 0.9+ | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2002 07 09 | 704 | 0.1− | 0.7+ | 2005 03 03 | 691 | 0.1+ | 0.8+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2002 07 09 | 704 | 0.4− | 1.1+ | 2005 03 03 | 691 | 0.3+ | 0.6+ | 2006 11 13 | 644 | 0.5− | 0.0 |
| 2002 07 09 | 704 | 0.2− | 0.8+ | 2005 03 13 | 703 | (2.0− | 0.5+) | 2006 11 13 | 644 | 0.2− | 0.4+ |
| 2002 07 12 | 644 | 0.2− | 0.7+ | 2005 03 13 | 703 | 0.7− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2002 07 12 | 644 | 0.3− | 0.6+ | 2005 03 13 | 703 | 0.4− | 0.6+ | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2002 07 12 | 644 | 0.2− | 0.8+ | 2005 03 13 | 703 | (3.5− | 2.5+) | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2002 08 05 | 644 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2002 08 05 | 644 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 11 21 | 704 | 1.1− | 0.9+ |
| 2002 08 05 | 644 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2002 08 12 | 704 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | (1.7+ | 1.1−) |
| 2002 08 12 | 704 | 0.1− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | (0.1− | 1.7+) |
| 2002 08 12 | 704 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.7+ |
| 2002 08 12 | 704 | 0.1− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.5+ |
| 2002 08 12 | 704 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.9+ | 0.3+ |
| 2002 08 16 | 608 | 0.2+ | 0.0 | 2006 10 17 | 691 | 1.0− | 0.3+ | 2006 11 27 | 703 | 1.0+ | 1.2+ |

**(141808)∗ 2002 NV$_{38}$**

Discovered 2002 July 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.98527 | | (2000.0) | | +0.95893401 | +0.27438750 |
| $n$ | 0.28729122 | $\omega$ | 59.69098 | | −0.27896749 | +0.86672369 |
| $a$ | 2.2746844 | $\Omega$ | 284.30337 | | −0.05121241 | +0.41653517 |
| $e$ | 0.3107571 | $i$ | 4.25009 | | | |
| $P$ | 3.43 | $H$ | 15.9 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 691 | 0.0 | 0.0 | 2002 11 06 | 699 | 0.4+ | 0.2− | 2002 12 06 | 704 | 0.2+ | 0.8+ |
| 2000 01 07 | 691 | 0.5− | 0.8− | 2002 11 07 | 704 | 0.2+ | 0.1+ | 2002 12 06 | 704 | 0.5+ | 0.0 |
| 2000 01 07 | 691 | 0.1+ | 0.1− | 2002 11 07 | 704 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.2+ | 0.2− |
| 2002 07 14 | 704 | 0.6− | 0.7− | 2002 11 07 | 704 | 0.1+ | 0.4+ | 2002 12 06 | 704 | 0.0 | 0.4− |
| 2002 07 14 | 704 | 0.1− | 0.4− | 2002 11 07 | 704 | 0.3+ | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.9− |
| 2002 07 14 | 704 | 0.1− | 0.7− | 2002 11 07 | 704 | 0.4+ | 0.1− | 2002 12 11 | 644 | 0.5− | 0.5+ |
| 2002 07 18 | 704 | 0.3+ | 0.3− | 2002 11 08 | 704 | 0.0 | 0.0 | 2002 12 11 | 644 | 0.4− | 0.5+ |
| 2002 07 18 | 704 | 0.4− | 0.1+ | 2002 11 08 | 704 | 0.1− | 0.3− | 2002 12 11 | 644 | 0.5− | 0.4+ |
| 2002 07 18 | 704 | 0.3− | 0.1+ | 2002 11 08 | 704 | 0.1− | 0.2− | 2002 12 11 | 704 | 0.0 | 0.5+ |
| 2002 07 18 | 704 | 0.1− | 0.1+ | 2002 11 08 | 704 | 0.2+ | 0.3− | 2002 12 11 | 704 | 0.2+ | 0.1− |
| 2002 08 30 | 704 | 0.3+ | 0.3+ | 2002 11 08 | 704 | 0.1+ | 0.2− | 2002 12 11 | 704 | 0.2− | 0.2+ |
| 2002 08 30 | 704 | 0.3+ | 0.2− | 2002 11 08 | 704 | 0.1− | 0.4− | 2002 12 11 | 704 | 0.4+ | 0.6+ |
| 2002 08 30 | 704 | 0.3+ | 0.1− | 2002 11 08 | 704 | 0.0 | 0.4+ | 2002 12 11 | 704 | 0.1+ | 1.3+ |
| 2002 08 30 | 704 | 0.2+ | 0.6− | 2002 11 08 | 704 | 0.3− | 0.3− | 2002 12 27 | 644 | 0.3− | 0.3+ |
| 2002 09 06 | 704 | 0.0 | 0.5− | 2002 11 10 | 704 | 0.4− | 0.0 | 2002 12 27 | 644 | 0.4− | 0.4+ |
| 2002 09 06 | 704 | 0.1+ | 0.6− | 2002 11 10 | 704 | 0.2− | 0.4+ | 2002 12 27 | 644 | 0.4− | 0.3+ |
| 2002 09 06 | 704 | 0.5− | 0.7− | 2002 11 10 | 704 | 0.2+ | 0.3− | 2002 12 31 | 704 | 0.5− | 0.6+ |
| 2002 09 06 | 704 | 0.1− | 0.2− | 2002 11 10 | 704 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.3− | 0.0 | 2002 11 12 | 704 | 0.4+ | 0.4+ | 2002 12 31 | 704 | 0.1+ | 0.4− |
| 2002 10 04 | 704 | 0.3+ | 0.1+ | 2002 11 12 | 704 | 0.4+ | 0.1+ | 2002 12 31 | 704 | 0.9− | 1.0+ |
| 2002 10 04 | 704 | 0.9− | 1.1+ | 2002 11 12 | 704 | 0.5+ | 0.2− | 2002 12 31 | 704 | 0.1− | 1.2+ |
| 2002 10 04 | 704 | 0.9− | 0.5+ | 2002 11 12 | 704 | 1.0+ | 0.3− | 2003 01 05 | 704 | 0.4+ | 0.6+ |
| 2002 10 04 | 704 | (0.5− | 2.0+) | 2002 11 12 | 704 | 0.0 | 1.4− | 2003 01 05 | 704 | 0.2− | 0.9+ |
| 2002 10 10 | 704 | 1.4− | 1.5+ | 2002 11 13 | 644 | 0.1+ | 0.1− | 2003 01 05 | 704 | 0.1+ | 1.2+ |
| 2002 10 10 | 704 | (1.9− | 0.1+) | 2002 11 13 | 644 | 0.3+ | 0.0 | 2003 01 05 | 704 | 0.3− | 1.2+ |
| 2002 10 10 | 704 | (1.0− | 1.6+) | 2002 11 13 | 644 | 0.3+ | 0.2− | 2003 01 05 | 704 | 0.5− | 0.8+ |
| 2002 10 10 | 704 | 1.5− | 1.0+ | 2002 11 14 | 704 | 0.1+ | 0.0 | 2005 01 19 | 809 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.3− | 1.3+ | 2002 11 14 | 704 | 0.1− | 0.0 | 2005 01 19 | 809 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | (0.4− | 1.7+) | 2002 11 14 | 704 | 0.3− | 0.3− | 2005 01 19 | 809 | 0.1+ | 0.3+ |
| 2002 10 12 | 704 | 0.7− | 1.2+ | 2002 11 14 | 704 | 0.3+ | 0.1− | 2005 02 14 | 809 | 0.3+ | 0.5+ |
| 2002 10 12 | 704 | (1.0− | 2.4+) | 2002 11 14 | 704 | 0.2+ | 0.0 | 2005 02 14 | 809 | 0.1+ | 0.5+ |
| 2002 10 12 | 704 | (0.5− | 2.4+) | 2002 11 24 | 644 | 1.4− | 0.9− | 2005 02 14 | 809 | 0.4+ | 0.6+ |
| 2002 10 30 | 333 | 0.1+ | 0.9− | 2002 11 24 | 644 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2002 10 30 | 333 | 0.1− | 1.1− | 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.5+ |
| 2002 10 30 | 333 | 0.1− | 0.7− | 2002 11 27 | 699 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.3+ |
| 2002 10 30 | 333 | 0.5+ | 0.6− | 2002 11 27 | 699 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.2− | 0.3+ |
| 2002 11 01 | 644 | 0.2− | 0.5− | 2002 11 27 | 699 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2002 11 01 | 644 | 0.1− | 0.3− | 2002 11 27 | 699 | 0.1+ | 0.9+ | 2006 11 01 | G96 | 0.9+ | 0.5− |
| 2002 11 01 | 644 | 0.1+ | 0.3− | 2002 11 30 | 608 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2002 11 03 | 704 | 0.4+ | 0.2− | 2002 11 30 | 608 | 0.2+ | 0.4− | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2002 11 03 | 704 | 0.7+ | 0.5− | 2002 11 30 | 608 | 0.4+ | 0.0 | 2006 11 20 | G96 | 0.2− | 0.3+ |
| 2002 11 03 | 704 | 0.5+ | 0.2+ | 2002 12 02 | 704 | 0.1− | 0.5− | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2002 11 03 | 704 | 0.5+ | 0.1+ | 2002 12 02 | 704 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.6− | 0.2− |
| 2002 11 06 | 699 | 0.4+ | 0.4− | 2002 12 02 | 704 | 0.2+ | 0.5− | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2002 11 06 | 699 | 0.2+ | 0.1− | 2002 12 02 | 704 | 0.4+ | 0.2− | | | | |
| 2002 11 06 | 699 | 0.2+ | 0.1− | 2002 12 02 | 704 | 0.2+ | 0.1− | | | | |

**(141809)∗ 2002 NB$_{39}$**

Discovered 2002 July 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.24897 | | (2000.0) | | +0.93579268 | −0.34624969 |
| $n$ | 0.25665004 | $\omega$ | 172.36721 | | +0.31558011 | +0.90659578 |
| $a$ | 2.4523088 | $\Omega$ | 208.17481 | | +0.15716634 | +0.24123691 |
| $e$ | 0.2496888 | $i$ | 8.07897 | | | |
| $P$ | 3.84 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.9− | 0.1+ | 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.6+ |
| 2000 02 06 | 704 | (0.5+ | 2.0+) | 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 10 01 | 704 | 1.2+ | 0.6+ |
| 2000 02 06 | 704 | (0.8+ | 2.3+) | 2005 05 04 | 691 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 1.0+ | 0.3+ |
| 2000 02 06 | 704 | 0.3+ | 1.8+ | 2005 05 04 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2002 06 26 | 644 | 0.4+ | 0.9+ | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2002 06 26 | 644 | 0.3+ | 0.4+ | 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2002 06 26 | 644 | 0.1− | 0.6+ | 2005 05 10 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2002 07 11 | 704 | 0.7− | 0.6+ | 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 10 17 | 106 | 0.2+ | 0.0 |
| 2002 07 11 | 704 | 0.6+ | 0.2+ | 2005 05 17 | G96 | 0.3− | 0.2+ | 2006 10 17 | 106 | 0.2+ | 0.0 |
| 2002 07 11 | 704 | 0.4− | 0.5+ | 2005 05 17 | G96 | 0.6− | 0.3− | 2006 10 17 | 106 | 0.1+ | 0.7− |
| 2002 07 18 | 704 | (2.6+ | 1.8−) | 2005 05 17 | G96 | 0.8+ | 0.5− | 2006 10 17 | 106 | 0.1+ | 0.6− |
| 2002 07 18 | 704 | (4.0+ | 2.6−) | 2005 05 17 | G96 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.4− |
| 2002 07 18 | 704 | (3.5+ | 2.1−) | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2002 07 18 | 704 | (3.0+ | 1.9−) | 2005 05 19 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2002 07 18 | 704 | (2.9+ | 1.8−) | 2005 05 19 | G96 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2002 07 20 | 644 | 0.0 | 0.1− | 2005 05 19 | G96 | 0.4− | 0.1− | 2006 10 29 | 704 | 0.0 | 0.3+ |
| 2002 07 20 | 644 | 0.4− | 0.0 | 2006 07 24 | 704 | 1.2− | 0.7− | 2006 10 29 | 704 | 0.7− | 0.6− |
| 2002 07 20 | 644 | 0.2− | 0.1− | 2006 07 24 | 704 | 0.9− | 0.3− | 2006 10 29 | 704 | 0.3− | 1.1+ |
| 2002 08 08 | 699 | 0.2+ | 0.3− | 2006 07 24 | 704 | 0.1+ | 0.9− | 2006 10 29 | 704 | (2.2+ | 0.7−) |
| 2002 08 08 | 699 | 0.3+ | 0.2− | 2006 07 24 | 704 | 0.2+ | 0.5− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2002 08 08 | 699 | 0.2+ | 0.2− | 2006 07 24 | 704 | 0.4+ | 1.0− | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2002 08 08 | 699 | 0.3+ | 0.0 | 2006 08 31 | 704 | 0.5− | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2002 08 12 | 704 | 0.1− | 0.4+ | 2006 08 31 | 704 | 0.6− | 0.1− | 2006 11 10 | 704 | 0.2− | 0.5+ |
| 2002 08 12 | 704 | 0.3− | 0.2+ | 2006 08 31 | 704 | 0.7− | 0.7+ | 2006 11 10 | 704 | 0.6− | 1.0+ |
| 2002 08 12 | 704 | 0.2− | 0.3+ | 2006 08 31 | 704 | 0.4− | 0.3+ | 2006 11 10 | 704 | 0.1+ | 0.9+ |
| 2002 08 12 | 704 | 0.2− | 0.1− | 2006 08 31 | 704 | 0.4− | 0.4− | 2006 11 10 | 704 | 0.2− | 0.6+ |
| 2002 08 12 | 704 | 0.2+ | 1.2+ | 2006 09 06 | 699 | 0.2+ | 0.4+ | 2006 11 10 | 704 | 0.3− | 0.7+ |
| 2002 08 13 | 704 | 0.5− | 0.2+ | 2006 09 06 | 699 | 0.7+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 08 13 | 704 | 0.4− | 0.3− | 2006 09 06 | 699 | 0.7− | 0.9− | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 08 13 | 704 | 0.6− | 0.2− | 2006 09 06 | 699 | (1.1− | 1.5−) | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 08 13 | 704 | 0.1+ | 0.2− | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 2002 08 13 | 704 | 0.1− | 0.1− | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 11 14 | 644 | 0.1+ | 0.3+ |
| 2002 08 25 | 644 | 0.0 | 0.3− | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 11 14 | 644 | 0.2− | 0.2+ |
| 2002 08 25 | 644 | 0.0 | 0.3− | 2006 09 15 | 704 | 0.2+ | 0.0 | 2006 11 14 | 644 | 0.1− | 0.2+ |
| 2002 08 25 | 644 | 0.1+ | 0.3− | 2006 09 15 | 704 | 1.2+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 09 04 | 644 | 0.1− | 0.1− | 2006 09 15 | 704 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2002 09 04 | 644 | 0.2− | 0.2− | 2006 09 15 | 704 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 09 04 | 644 | 0.3− | 0.0 | 2006 09 15 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | (1.7− | 3.1+) |
| 2002 09 15 | 608 | 0.7+ | 0.7− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 11 18 | 703 | 0.3+ | 0.3+ |
| 2002 09 15 | 608 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 11 18 | 703 | 0.4+ | 0.9+ |
| 2002 09 15 | 608 | 0.3+ | 0.5− | 2006 09 17 | 703 | 0.7− | 0.3− | 2006 11 18 | 704 | 0.7− | 0.8+ |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.0 | 2006 11 18 | 703 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.8+ | 0.3+ | 2006 09 20 | 699 | 0.1+ | 0.0 | 2006 11 18 | 704 | (0.7+ | 2.3+) |
| 2002 10 04 | 704 | 1.1+ | 0.9+ | 2006 09 20 | 699 | 0.2− | 0.1− | 2006 11 18 | 703 | 0.3+ | 0.2− |
| 2002 10 04 | 704 | 0.4− | 0.5+ | 2006 09 20 | 699 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2002 10 04 | 704 | 0.7+ | 0.4− | 2006 09 20 | 699 | 0.1+ | 0.4− | 2006 11 21 | 704 | 1.0− | 1.4+ |
| 2002 10 06 | 704 | 1.0− | 0.5− | 2006 09 25 | 704 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2002 10 06 | 704 | 0.2− | 0.2− | 2006 09 25 | 704 | 0.8− | 0.5+ | 2006 11 21 | 704 | 0.8+ | 0.5+ |
| 2002 10 06 | 704 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 2002 10 12 | 704 | 0.7+ | 0.2+ | 2006 09 25 | 704 | 0.6+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.9+ | 0.9− | 2006 09 25 | 704 | 0.6− | 0.5+ | 2006 11 21 | 704 | 1.1+ | 0.7+ |
| 2002 10 12 | 704 | (0.2+ | 2.2−) | 2006 09 29 | 699 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2002 10 29 | 704 | 0.4+ | 0.3− | 2006 09 29 | 699 | 0.1− | 0.1− | 2006 11 21 | 704 | (1.6+ | 0.0 ) |
| 2002 10 29 | 704 | 0.5− | 0.5− | 2006 09 29 | 699 | 0.3− | 0.0 | 2006 11 21 | 704 | 1.0+ | 1.3+ |
| 2002 10 29 | 704 | 0.2− | 0.6− | 2006 09 29 | 699 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2004 02 19 | 704 | 0.2+ | 0.2+ | 2006 10 01 | 703 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2004 02 19 | 704 | 0.4+ | 0.3− | 2006 10 01 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2004 02 19 | 704 | 0.6+ | 0.5+ | 2006 10 01 | 703 | 0.3+ | 0.5− | 2006 11 21 | 704 | 1.3+ | 0.4+ |
| 2004 02 19 | 704 | 0.9+ | 0.6+ | 2006 10 01 | 703 | 0.7+ | 0.1− | 2006 11 27 | 703 | 0.7− | 0.4+ |
| 2004 02 19 | 704 | 0.5− | 0.3− | 2006 10 01 | 704 | 0.9+ | 0.4+ | 2006 11 27 | 703 | 1.6− | 0.5+ |
| 2005 04 16 | 691 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.7+ | 2006 11 27 | 703 | 0.2− | 0.1+ |

**(141810)∗ 2002 NB$_{40}$**

Discovered 2002 July 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.82870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25593456 | $\omega$ | 248.72051 | | +0.97715704 | +0.21118893 | |
| $a$ | 2.4568771 | $\Omega$ | 99.08139 | | −0.18498675 | +0.90022269 | |
| $e$ | 0.2461256 | $i$ | 1.37732 | | −0.10461368 | +0.38078648 | |
| $P$ | 3.85 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 691 | 0.3− | 0.2− | 2004 01 29 | 291 | 0.8− | 0.7+ | 2006 08 30 | 704 | 0.1+ | 0.1+ |
| 1999 12 03 | 691 | 0.8+ | 0.3− | 2004 01 29 | 291 | 0.8− | 0.6+ | 2006 08 31 | 704 | 0.8− | 1.3+ |
| 1999 12 03 | 691 | 0.3+ | 0.4− | 2004 01 29 | 291 | 1.0− | 0.4+ | 2006 08 31 | 704 | 0.9+ | 0.1− |
| 2001 03 18 | 691 | 0.7+ | 1.0+ | 2005 05 10 | G96 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.1− | 0.2+ |
| 2001 03 18 | 691 | 0.6+ | 0.8+ | 2005 05 10 | G96 | 0.2+ | 0.4− | 2006 09 14 | 703 | 0.1− | 0.0 |
| 2001 03 18 | 691 | 0.4+ | 0.8+ | 2005 05 10 | G96 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.3− | 0.2− |
| 2002 06 08 | 704 | 0.1+ | 0.4+ | 2005 05 10 | G96 | 0.3+ | 0.7− | 2006 09 14 | 703 | 0.6− | 0.1− |
| 2002 06 08 | 704 | (0.8− | 2.1+) | 2006 07 21 | 703 | (1.3− | 1.7−) | 2006 09 14 | 703 | 0.2+ | 0.1− |
| 2002 06 08 | 704 | (0.1− | 2.0+) | 2006 07 21 | 703 | 0.7− | 0.3+ | 2006 09 16 | 704 | (0.5− | 1.8+) |
| 2002 07 14 | 644 | 0.4− | 0.4+ | 2006 07 21 | 703 | 0.2− | 0.7+ | 2006 09 16 | 704 | 0.2− | 0.2+ |
| 2002 07 14 | 644 | 0.2− | 0.4+ | 2006 07 21 | 703 | 0.8− | 0.2+ | 2006 09 16 | 704 | 0.5+ | 0.3− |
| 2002 07 14 | 644 | 0.3− | 0.3+ | 2006 08 15 | 644 | 0.2− | 0.3+ | 2006 09 16 | 704 | 0.3+ | 0.3− |
| 2002 07 18 | 644 | 0.3− | 0.1+ | 2006 08 15 | 644 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.6+ |
| 2002 07 18 | 644 | 0.2− | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 16 | 704 | 0.1− | 0.0 |
| 2002 07 18 | 644 | 0.1− | 0.2+ | 2006 08 21 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.5+ |
| 2002 07 28 | 608 | 0.5+ | 1.5− | 2006 08 21 | 704 | 0.9+ | 0.7+ | 2006 09 16 | 699 | 0.4+ | 0.6+ |
| 2002 07 28 | 608 | 0.3+ | 1.3− | 2006 08 21 | 704 | 0.4− | 0.0 | 2006 09 16 | 699 | 0.2+ | 0.1+ |
| 2002 07 28 | 608 | 0.2+ | 1.2− | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.8+ |
| 2002 08 08 | 644 | 0.3− | 0.1− | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.8+ |
| 2002 08 08 | 644 | 0.3− | 0.0 | 2006 08 25 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.8+ |
| 2002 08 10 | 807 | 0.1− | 0.3− | 2006 08 25 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.8+ | 1.4+ |
| 2002 08 10 | 807 | 0.0 | 0.2− | 2006 08 25 | 704 | 0.8− | 0.7+ | 2006 09 28 | 704 | 0.4+ | 0.6+ |
| 2002 08 14 | 704 | 0.0 | 0.5+ | 2006 08 27 | 699 | 0.0 | 1.0+ | 2006 09 28 | 704 | 0.0 | 0.6+ |
| 2002 08 14 | 704 | 0.1− | 0.1− | 2006 08 27 | 699 | 0.4− | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 2002 08 14 | 704 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.2+ | 0.6+ | 2006 09 28 | 704 | (0.3− | 2.0+) |
| 2002 08 14 | 704 | 0.9+ | 0.2+ | 2006 08 27 | 699 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2002 08 14 | 704 | 0.0 | 0.3− | 2006 08 28 | 704 | 0.7− | 0.3− | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 704 | 1.3− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2002 08 18 | 644 | 0.1− | 1.0− | 2006 08 28 | 704 | 0.3− | 0.5− | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2002 08 18 | 644 | 0.3− | 0.1+ | 2006 08 28 | 704 | 1.3− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 704 | 1.2− | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.6+ | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.8− |
| 2002 08 29 | 644 | 0.0 | 0.8+ | 2006 08 28 | 703 | 0.4+ | 0.5− | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2002 08 31 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2002 08 31 | 704 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 08 31 | 704 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.1− | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2004 01 28 | 691 | 0.6+ | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2004 01 28 | 691 | 0.5+ | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.4+ | | | | |
| 2004 01 28 | 691 | 0.7+ | 0.1+ | 2006 08 30 | 704 | 0.6− | 0.2+ | | | | |

**(141811)∗ 2002 NL$_{42}$**

Discovered 2002 July 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.92344 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26558614 | $\omega$ | 234.97476 | | +0.75850182 | +0.64904739 | |
| $a$ | 2.3969876 | $\Omega$ | 84.48122 | | −0.57715108 | +0.71068665 | |
| $e$ | 0.2048402 | $i$ | 3.36453 | | −0.30260803 | +0.27140741 | |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 691 | 0.7+ | 0.2+ | 2002 08 15 | 644 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 1995 09 02 | 691 | 0.1+ | 0.2− | 2002 08 15 | 644 | 0.1+ | 0.5− | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 1995 09 02 | 691 | 0.3+ | 0.0 | 2002 08 15 | 644 | 0.1− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 1995 10 17 | 691 | 0.2− | 0.1+ | 2002 08 18 | 644 | 0.3− | 0.2− | 2006 10 15 | 703 | 0.4− | 0.1− |
| 1995 10 17 | 691 | 0.0 | 0.3− | 2002 08 18 | 644 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.5− | 0.2− |
| 1995 10 17 | 691 | 0.3− | 0.1− | 2002 08 18 | 644 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.5− | 0.5+ |
| 1998 06 02 | 809 | 0.1+ | 0.0 | 2002 08 30 | 644 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 02 | 809 | 0.4− | 0.5+ | 2002 08 30 | 644 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 1998 06 02 | 809 | 0.2− | 1.7+ | 2002 08 30 | 644 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.5+ | | |
| 2002 07 14 | 644 | 0.3− | 0.0 | 2005 03 10 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2002 07 14 | 644 | 0.3− | 0.2− | 2005 03 10 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.6− | 0.1− | | |
| 2002 07 14 | 644 | 0.2− | 0.2− | 2005 03 10 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.9+ | | |
| 2002 07 15 | 644 | 0.4− | 0.3− | 2005 04 01 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.7− | | |
| 2002 07 15 | 644 | 0.3− | 0.2− | 2005 04 01 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.2+ | | |
| 2002 07 15 | 644 | 0.1− | 0.5− | 2005 04 01 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2002 07 23 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.9+ | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2002 07 23 | 644 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.7− | 1.4+ | 2006 10 21 | 644 | 0.0 | 0.5+ | | |
| 2002 07 23 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2002 08 13 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 1.0+ | 2006 10 22 | G96 | 0.5− | 0.1− | | |
| 2002 08 13 | 704 | 0.1− | 1.0+ | 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2002 08 13 | 704 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2002 08 13 | 704 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.0 | | | | | | |
| 2002 08 13 | 704 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.2− | | | | | | |

**(141812)∗ 2002 NE$_{43}$**

Discovered 2002 July 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.87876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28385030 | $\omega$ | 202.26938 | | +0.48956339 | | +0.86495472 |
| $a$ | 2.2930304 | $\Omega$ | 97.19596 | | −0.78231003 | | +0.49159632 |
| $e$ | 0.1877410 | $i$ | 6.38703 | | −0.38512168 | | +0.10092765 |
| $P$ | 3.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.1+ | 0.7− | 2002 08 13 | 704 | 0.4+ | 0.8+ | 2005 05 06 | 704 | 0.6+ | 1.2+ |
| 1998 04 21 | 704 | (2.5+ | 0.7−) | 2002 08 13 | 704 | 0.3− | 0.0 | 2005 05 06 | 704 | 0.7+ | 0.7+ |
| 1998 04 21 | 704 | 0.2+ | 0.6− | 2002 08 13 | 704 | 0.4− | 0.1+ | 2005 05 06 | 704 | 1.0− | 1.4− |
| 1998 04 21 | 704 | 0.2− | 0.3− | 2002 08 19 | 644 | 0.2+ | 0.6+ | 2005 05 13 | 703 | 0.9− | 1.0− |
| 1998 04 24 | 704 | 0.8− | 0.8− | 2002 08 19 | 644 | 0.1+ | 0.2+ | 2005 05 13 | 703 | 0.0 | 0.2+ |
| 1998 04 24 | 704 | 0.6+ | 1.0+ | 2002 08 19 | 644 | 0.5− | 0.3+ | 2005 05 13 | 703 | 0.7+ | 0.4− |
| 1998 04 24 | 704 | 0.3− | 0.4+ | 2002 08 30 | 644 | 0.3− | 0.2+ | 2005 05 13 | 703 | 0.4− | 0.7+ |
| 1998 04 24 | 704 | (4.9− | 1.2+) | 2002 08 30 | 644 | 0.4− | 0.1+ | 2005 05 15 | 644 | 0.3+ | 0.0 |
| 2002 07 05 | 704 | 0.2+ | 0.6+ | 2002 08 30 | 644 | 0.2− | 0.1+ | 2005 05 15 | 644 | 0.4+ | 0.1+ |
| 2002 07 05 | 704 | 0.3− | 0.4+ | 2002 08 31 | 704 | 0.2+ | 1.3+ | 2005 05 15 | 644 | 0.3+ | 0.1+ |
| 2002 07 05 | 704 | 0.0 | 0.0 | 2002 08 31 | 704 | 1.0+ | 0.3− | 2005 05 18 | 644 | 0.4+ | 0.1+ |
| 2002 07 05 | 704 | 0.6+ | 0.3− | 2002 08 31 | 704 | 0.9+ | 0.5− | 2005 05 18 | 644 | 0.5+ | 0.0 |
| 2002 07 15 | 644 | 0.1+ | 1.0− | 2005 04 07 | 699 | 0.8+ | 0.7+ | 2005 05 18 | 644 | 0.5+ | 0.1− |
| 2002 07 15 | 644 | 0.1+ | 0.9− | 2005 04 07 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 1.0− | 0.8+ |
| 2002 07 15 | 644 | 0.1+ | 1.0− | 2005 04 07 | 699 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.1− | 0.6− |
| 2002 07 17 | 608 | 0.5− | 0.1− | 2005 04 07 | 699 | 0.8− | 1.2+ | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2002 07 17 | 608 | 0.1− | 0.0 | 2005 04 09 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 1.6− | 0.2+ |
| 2002 07 17 | 608 | 0.4− | 0.1+ | 2005 04 09 | 704 | 1.2+ | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.8+ |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2005 04 09 | 704 | 0.9− | 0.6+ | 2006 11 09 | 644 | 0.8+ | 0.6+ |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2005 04 09 | 704 | 0.2− | 1.2+ | 2006 11 09 | 644 | 0.7+ | 0.6+ |
| 2002 08 11 | 644 | 0.1− | 0.2+ | 2005 05 04 | 703 | (3.3− | 0.4−) | 2006 11 28 | 704 | 0.4− | 1.0+ |
| 2002 08 11 | 644 | 0.0 | 0.1+ | 2005 05 04 | 703 | 0.0 | 0.7+ | 2006 11 28 | 704 | 0.1− | 1.2+ |
| 2002 08 11 | 644 | 0.3− | 0.2+ | 2005 05 04 | 703 | 1.0− | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.1+ |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2005 05 04 | 703 | 0.4− | 0.4− | | | | |
| 2002 08 13 | 704 | 0.3− | 0.1+ | 2005 05 06 | 704 | 0.4+ | 0.1+ | | | | |

**(141813)∗ 2002 NN$_{44}$ = 2003 XN$_{11}$**

Discovered 2002 July 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56393)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.19409 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26775732 | $\omega$ | 355.19255 | | +0.13167598 | | −0.98294819 |
| $a$ | 2.3840122 | $\Omega$ | 87.20089 | | +0.91372365 | | +0.07014020 |
| $e$ | 0.1097202 | $i$ | 7.38324 | | +0.38440933 | | +0.16998001 |
| $P$ | 3.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 704 | 0.4+ | 0.5− | 2003 12 16 | 703 | 1.1− | 0.3− | 2004 01 24 | 704 | 0.1− | 1.0+ |
| 2001 03 16 | 704 | 1.0+ | 0.7− | 2003 12 16 | 703 | 1.2− | 0.2+ | 2004 01 24 | 704 | 0.4− | 0.8+ |
| 2001 03 16 | 704 | 0.8+ | 0.2− | 2003 12 19 | 704 | 1.9+ | 0.4− | 2004 02 15 | 704 | 0.3+ | 0.4+ |
| 2001 03 16 | 704 | 0.7− | 0.2+ | 2003 12 19 | 704 | 0.6+ | 1.7− | 2004 02 15 | 704 | 0.5− | 0.7− |
| 2002 07 05 | 644 | 0.2− | 0.3+ | 2003 12 19 | 704 | 0.1+ | 0.8+ | 2004 02 15 | 704 | 0.5− | 0.6− |
| 2002 07 05 | 644 | 0.4− | 0.4+ | 2003 12 19 | 691 | 0.1+ | 0.2− | 2004 02 15 | 704 | 0.4+ | 0.2− |
| 2002 07 05 | 644 | 0.2− | 0.3+ | 2003 12 19 | 704 | 0.2− | 0.3− | 2005 04 10 | 691 | 0.0 | 0.3+ |
| 2002 07 12 | 644 | 0.2− | 1.2− | 2003 12 19 | 691 | 0.1− | 0.1− | 2005 04 10 | 691 | 0.2+ | 0.3+ |
| 2002 07 12 | 644 | 0.1− | 0.8− | 2003 12 19 | 691 | 0.0 | 0.0 | 2005 04 10 | 691 | 0.1− | 0.2+ |
| 2002 07 12 | 644 | 0.1+ | 0.4− | 2003 12 20 | 704 | 0.9− | 1.2+ | 2005 04 14 | 691 | 0.2+ | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.7+ | 2003 12 20 | 704 | 0.0 | 0.4− | 2005 04 14 | 691 | 0.1+ | 0.6+ |
| 2002 07 14 | 644 | 0.3− | 0.2+ | 2003 12 20 | 704 | 0.5− | 0.2+ | 2005 04 14 | 691 | 0.1− | 0.5+ |
| 2002 07 14 | 644 | 0.3− | 0.4+ | 2003 12 20 | 704 | 0.7− | 0.5+ | 2005 04 18 | 691 | 0.1+ | 0.4+ |
| 2003 11 18 | 644 | 0.3− | 0.3− | 2003 12 20 | 704 | 0.0 | 1.3+ | 2005 04 18 | 691 | 0.1+ | 0.4+ |
| 2003 11 18 | 644 | 0.1− | 0.2+ | 2003 12 21 | 704 | 0.1+ | 0.3+ | 2005 04 18 | 691 | 0.2+ | 0.5+ |
| 2003 11 18 | 644 | 0.1+ | 1.2+ | 2003 12 21 | 704 | 0.3− | 0.5+ | 2005 04 30 | 599 | 0.2+ | 0.5+ |
| 2003 12 01 | 704 | 0.1− | 1.1+ | 2003 12 21 | 704 | 0.6+ | 0.6+ | 2005 04 30 | 599 | 0.2+ | 0.0 |
| 2003 12 01 | 704 | 0.5+ | 0.1+ | 2003 12 21 | 704 | 0.4− | 0.2− | 2005 04 30 | 599 | 0.1+ | 0.4+ |
| 2003 12 01 | 704 | 0.2− | 0.1− | 2003 12 21 | 704 | 0.2+ | 0.4+ | 2005 04 30 | 599 | 0.5+ | 0.3− |
| 2003 12 01 | 704 | 0.5− | 0.0 | 2003 12 21 | 704 | 0.2+ | 0.6− | 2006 08 16 | E12 | 0.1− | 1.1+ |
| 2003 12 12 | 644 | 0.2+ | 0.1− | 2003 12 21 | 704 | 0.3− | 0.1+ | 2006 08 16 | E12 | 0.4− | 0.5+ |
| 2003 12 12 | 644 | 0.1+ | 0.1− | 2003 12 21 | 704 | 0.3+ | 0.3− | 2006 08 16 | E12 | 0.4+ | 0.7+ |
| 2003 12 12 | 644 | 0.2− | 0.1− | 2003 12 21 | 704 | 0.3+ | 0.7+ | 2006 08 16 | E12 | 0.0 | 1.2+ |
| 2003 12 14 | 644 | 0.3− | 0.0 | 2003 12 21 | 704 | 0.5+ | 0.5− | 2006 08 20 | 644 | 0.1− | 0.7+ |
| 2003 12 14 | 644 | 0.2− | 0.1+ | 2003 12 24 | 704 | 0.6+ | 0.8+ | 2006 08 20 | 644 | 0.1− | 0.9+ |
| 2003 12 14 | 691 | 0.1− | 0.1− | 2003 12 24 | 704 | 0.5+ | 0.0 | 2006 08 20 | 644 | 0.4− | 0.5+ |
| 2003 12 14 | 644 | 0.3− | 0.0 | 2003 12 24 | 704 | 0.1− | 0.2− | 2006 09 14 | 644 | 0.1− | 1.0+ |
| 2003 12 14 | 691 | 0.1− | 0.0 | 2003 12 27 | 691 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.9+ |
| 2003 12 14 | 691 | 1.5+ | 1.1+ | 2003 12 27 | 691 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.9+ |
| 2003 12 16 | 703 | 0.8− | 0.3+ | 2003 12 27 | 691 | 0.4− | 0.3+ | | | | |
| 2003 12 16 | 703 | 0.9− | 0.6+ | 2004 01 24 | 704 | 0.6+ | 0.4− | | | | |

**(141814)∗ 2002 NP$_{44}$ = 2005 ES$_{144}$**

Discovered 2002 July 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 75400)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.27697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26573137 | $\omega$ | 269.75721 | | +0.66244670 | | +0.74861880 |
| $a$ | 2.3961141 | $\Omega$ | 41.77171 | | −0.67010007 | | +0.60835977 |
| $e$ | 0.2236326 | $i$ | 2.33124 | | −0.33485857 | | +0.26356837 |
| $P$ | 3.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.0 |
| 1995 11 30 | 691 | 0.1+ | 0.2− | 2006 08 24 | 644 | 0.7− | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 1995 11 30 | 691 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.9− | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.7− |
| 2002 06 17 | 644 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 1.0− | 1.4− | 2006 09 28 | G96 | 0.3+ | 0.0 |
| 2002 06 17 | 644 | 0.2+ | 0.1− | 2006 09 12 | 703 | (1.5− | 1.6−) | 2006 09 28 | 704 | 0.9− | 0.3− |
| 2002 06 17 | 644 | 0.1− | 0.1− | 2006 09 12 | 703 | (1.5− | 1.0−) | 2006 09 28 | G96 | 0.4+ | 0.1+ |
| 2002 07 12 | 644 | 0.2− | 0.2+ | 2006 09 12 | 703 | (1.0− | 2.5−) | 2006 09 28 | 704 | 0.7− | 0.6+ |
| 2002 07 12 | 644 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.8+ | 1.0+ | 2006 09 28 | G96 | 0.0 | 0.5+ |
| 2002 07 12 | 644 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.2+ | 1.3+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2002 07 14 | 644 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.7+ | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.2− |
| 2002 07 14 | 644 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 704 | 1.2+ | 0.7+ |
| 2002 07 14 | 644 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.2+ |
| 2005 03 10 | G96 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.1− | 0.8+ | 2006 10 01 | 704 | 0.5+ | 0.0 |
| 2005 03 10 | G96 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2005 03 10 | G96 | 0.3− | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2005 03 10 | G96 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.7− | 0.4− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2005 03 11 | 691 | 0.0 | 0.9+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 03 11 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2005 03 11 | 691 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2005 03 16 | G96 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2005 03 16 | G96 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 03 16 | G96 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.6− | 2006 10 21 | 644 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2005 04 11 | G96 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2005 04 11 | G96 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2005 04 11 | G96 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− | | |
| 2005 04 11 | G96 | 0.7+ | 1.2+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.4− | | |
| 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.8− | | |
| 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.1− | 0.4− | | |
| 2006 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.0 | | | | | | |

**(141815)∗ 2002 NX$_{44}$ = 1998 HQ$_{125}$**

Discovered 2002 July 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 33685)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.13778 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26945376 | $\omega$ | 114.28728 | | +0.27496392 | +0.96131668 | |
| $a$ | 2.3739955 | $\Omega$ | 171.62301 | | −0.91767220 | +0.26745706 | |
| $e$ | 0.2150366 | $i$ | 6.41661 | | −0.28683198 | +0.06585560 | |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.4+ | 0.1− | 2002 08 19 | 608 | 0.6− | 1.2− | 2006 09 14 | 703 | 1.2+ | 0.5− | | |
| 1998 04 23 | 704 | (2.3− | 0.5+) | 2002 08 19 | 608 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.2− | 1.0+ | | |
| 1998 04 23 | 704 | 0.6− | 0.6+ | 2002 08 19 | 608 | 0.4− | 1.1− | 2006 09 14 | 703 | 0.2+ | 0.7+ | | |
| 1998 04 23 | 704 | 1.0+ | 1.2+ | 2002 08 26 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 1.0− | 0.5+ | | |
| 1998 04 24 | 704 | 0.3+ | 0.7− | 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.6+ | | |
| 1998 04 24 | 704 | 0.3+ | 0.0 | 2002 08 26 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.6+ | 1.3+ | | |
| 1998 04 24 | 704 | 0.1+ | 0.5+ | 2002 09 02 | 608 | 0.6+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.3− | | |
| 1998 05 23 | 704 | 0.5− | 0.5− | 2002 09 02 | 608 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.4− | | |
| 1998 05 23 | 704 | (2.7− | 1.5−) | 2002 09 02 | 608 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.3+ | | |
| 1998 05 23 | 704 | 0.7− | 1.0− | 2002 09 05 | 699 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.0 | | |
| 1998 05 23 | 704 | 1.1− | 0.0 | 2002 09 05 | 699 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.1+ | | |
| 2002 06 13 | 704 | 0.5− | 0.3+ | 2002 09 05 | 699 | 0.3+ | 0.0 | 2006 09 30 | 703 | 1.1− | 0.0 | | |
| 2002 06 13 | 704 | 1.1− | 0.3− | 2002 09 05 | 699 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.0 | | |
| 2002 06 13 | 704 | 0.8− | 0.2+ | 2002 09 14 | 644 | 0.3− | 1.1+ | 2006 10 02 | G96 | 0.1+ | 0.0 | | |
| 2002 06 13 | 704 | 0.8− | 0.3− | 2002 09 14 | 644 | 0.4− | 0.9+ | 2006 10 02 | G96 | 0.1− | 0.1+ | | |
| 2002 06 13 | 704 | 0.3− | 0.0 | 2002 09 14 | 644 | 0.5− | 1.1+ | 2006 10 02 | G96 | 0.1+ | 0.1+ | | |
| 2002 07 12 | 644 | 0.3− | 0.1− | 2002 09 22 | 608 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.4+ | | |
| 2002 07 12 | 644 | 0.0 | 0.1− | 2002 09 22 | 608 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.4− | 0.6+ | | |
| 2002 07 12 | 644 | 0.0 | 0.2− | 2002 09 22 | 608 | 0.5+ | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.6+ | | |
| 2002 07 14 | 704 | 0.1+ | 0.7+ | 2002 10 03 | 704 | (0.5+ | 1.9+) | 2006 10 15 | 703 | 0.0 | 0.5+ | | |
| 2002 07 14 | 704 | 0.1− | 0.1+ | 2002 10 03 | 704 | 0.4+ | 0.1− | 2006 10 15 | 703 | 0.1+ | 0.0 | | |
| 2002 07 14 | 704 | 0.2+ | 0.5− | 2002 10 03 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.5+ | | |
| 2002 07 14 | 704 | 0.6− | 0.6+ | 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.1− | | |
| 2002 07 14 | 704 | 0.5+ | 0.1− | 2002 10 10 | 291 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.6+ | 0.8− | | |
| 2002 07 21 | 644 | 0.0 | 0.3− | 2002 10 10 | 291 | 0.9+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.6− | | |
| 2002 07 21 | 644 | 0.1− | 0.2− | 2002 10 10 | 291 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.4− | | |
| 2002 07 21 | 644 | 0.1+ | 0.2− | 2005 03 03 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 08 05 | 644 | 0.1− | 0.0 | 2005 03 03 | 691 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2002 08 05 | 644 | 0.0 | 0.1− | 2005 03 03 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.6+ | | |
| 2002 08 05 | 644 | 0.1− | 0.0 | 2005 03 12 | 691 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.4+ | | |
| 2002 08 08 | 699 | 0.0 | 0.0 | 2005 03 12 | 691 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2002 08 08 | 699 | 0.2− | 1.3− | 2005 03 12 | 691 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.7+ | | |
| 2002 08 08 | 699 | 0.2+ | 0.0 | 2005 03 16 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.2+ | | |
| 2002 08 08 | 699 | 0.3+ | 1.4+ | 2005 03 16 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.2+ | | |
| 2002 08 12 | 608 | 0.4− | 0.6− | 2005 03 16 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.2+ | | |
| 2002 08 12 | 608 | 0.4− | 0.8− | 2005 03 17 | 704 | 1.4+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 2002 08 12 | 608 | 0.2− | 0.7− | 2005 03 17 | 704 | 0.4+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.0 | | |
| 2002 08 14 | 704 | 0.0 | 0.8+ | 2005 03 17 | 704 | 1.1+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.5+ | | |
| 2002 08 14 | 704 | 0.2+ | 0.8+ | 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.4+ | | |
| 2002 08 14 | 704 | 0.3− | 1.4+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.0 | | |
| 2002 08 14 | 704 | 0.3− | 1.4+ | 2005 04 11 | G96 | 0.5− | 0.2+ | | | | | | |
| 2002 08 14 | 704 | 0.9− | 1.0+ | 2005 04 11 | G96 | 0.7− | 0.1+ | | | | | | |

**(141816)∗ 2002 NY$_{45}$ = 2005 GG$_{84}$ = 2005 GD$_{208}$**

Discovered 2002 July 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75400), A. Doppler (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.13643 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27334813 | $\omega$ | 105.60152 | | +0.14381221 | +0.98959482 | |
| $a$ | 2.3513935 | $\Omega$ | 172.66259 | | −0.92087909 | +0.13548424 | |
| $e$ | 0.2059019 | $i$ | 2.01420 | | −0.36235309 | +0.04843677 | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.0 | 0.2− | 2005 03 08 | G96 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.0 | 1.2+ | | |
| 2002 07 05 | 704 | 0.8+ | 0.2+ | 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | (1.3− | 3.2−) | | |
| 2002 07 05 | 704 | 0.6+ | 0.8+ | 2005 03 08 | G96 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.4+ | | |
| 2002 07 05 | 704 | 0.5− | 0.8+ | 2005 03 08 | G96 | 0.0 | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.2+ | | |
| 2002 07 05 | 704 | 0.1+ | 0.8+ | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.1+ | | |
| 2002 07 13 | 644 | 0.4− | 0.2+ | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 18 | 699 | 1.2+ | 0.2− | | |
| 2002 07 13 | 644 | 0.2+ | 0.9+ | 2005 04 04 | G96 | 0.4− | 0.1− | 2006 09 18 | 699 | (0.8− | 1.9−) | | |
| 2002 07 13 | 644 | 0.2+ | 0.6+ | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.8+ | | |
| 2002 07 13 | 644 | 0.0 | 0.4+ | 2005 04 04 | G96 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.6+ | | |
| 2002 07 13 | 644 | 0.2− | 0.2+ | 2005 04 04 | G96 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 2002 07 13 | 644 | 0.1− | 0.4+ | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 2002 07 14 | 704 | 0.2+ | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.0 | | |
| 2002 07 14 | 704 | 0.4+ | 0.1− | 2005 04 11 | 691 | 0.0 | 0.9+ | 2006 09 25 | G96 | 0.1− | 0.5− | | |
| 2002 07 14 | 704 | 0.3+ | 0.3+ | 2005 04 11 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− | | |
| 2002 07 14 | 704 | 0.5+ | 0.3+ | 2005 04 11 | 691 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.3− | | |
| 2002 07 14 | 704 | 0.6+ | 0.0 | 2005 04 11 | G96 | 0.8− | 0.5− | 2006 09 25 | G96 | 0.3− | 0.1− | | |
| 2002 07 20 | 644 | 0.3− | 0.3− | 2005 04 11 | G96 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2002 07 20 | 644 | 0.4− | 0.1+ | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− | | |
| 2002 07 20 | 644 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.2+ | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2002 07 20 | 644 | 0.4− | 1.2− | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2002 07 20 | 644 | 0.6− | 0.1− | 2005 05 10 | G96 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.4+ | | |
| 2002 07 20 | 644 | 0.3+ | 0.2− | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2002 07 20 | 644 | 0.6− | 0.6− | 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 07 20 | 644 | 0.8− | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.0 | | |
| 2002 07 20 | 644 | 0.4− | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2005 01 17 | 291 | 0.7+ | 0.8+ | 2006 09 14 | 703 | 0.0 | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.1+ | | |
| 2005 01 17 | 291 | 0.5+ | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.2− | | | | | | |
| 2005 01 17 | 291 | 0.5+ | 0.8+ | 2006 09 14 | 691 | 0.0 | 0.3+ | | | | | | |

**(141817)∗ 2002 ND$_{46}$**

Discovered 2002 July 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.64577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25824721 | $\omega$ | 97.59293 | | +0.99666942 | +0.05377907 | |
| $a$ | 2.4421872 | $\Omega$ | 259.33878 | | −0.07337679 | +0.91940173 | |
| $e$ | 0.2055438 | $i$ | 3.57634 | | +0.03557975 | +0.38962582 | |
| $P$ | 3.82 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.1− | 1.0+ | 2006 08 18 | 699 | 0.3+ | 0.9+ | 2006 09 11 | 703 | 0.5+ | 0.3+ | | |
| 2002 06 16 | 644 | 0.1− | 0.9+ | 2006 08 18 | 699 | 0.2+ | 0.4+ | 2006 09 11 | 703 | 0.0 | 0.0 | | |
| 2002 06 16 | 644 | 0.2+ | 0.8+ | 2006 08 18 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.6+ | 0.1− | | |
| 2002 07 05 | 704 | 0.0 | 0.3− | 2006 08 18 | 699 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.8+ | 0.5+ | | |
| 2002 07 05 | 704 | 0.1− | 0.2+ | 2006 08 18 | 704 | 0.3− | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.1+ | | |
| 2002 07 05 | 704 | 0.2+ | 0.9+ | 2006 08 18 | 699 | 0.3− | 0.3+ | 2006 09 18 | 704 | 0.4− | 1.3+ | | |
| 2002 07 05 | 704 | 0.5+ | 0.0 | 2006 08 24 | 704 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.1− | 0.3− | | |
| 2002 07 13 | 644 | 0.3− | 0.2+ | 2006 08 24 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.7− | 0.5+ | | |
| 2002 07 13 | 644 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.4+ | 0.6− | 2006 09 19 | 699 | 0.2+ | 0.2+ | | |
| 2002 07 13 | 644 | 0.0 | 0.2+ | 2006 08 24 | 704 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.7− | | |
| 2002 07 13 | 644 | 0.1− | 0.6+ | 2006 08 24 | 704 | 0.3− | 0.3− | 2006 09 19 | 699 | 0.3− | 0.3+ | | |
| 2002 07 13 | 644 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.5− | 0.2− | | |
| 2002 07 13 | 644 | 0.2+ | 0.4+ | 2006 08 28 | 699 | (0.6+ | 2.4−) | 2006 09 19 | 703 | 0.2+ | 0.2− | | |
| 2002 07 14 | 704 | 0.7− | 0.7+ | 2006 08 28 | 699 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.4+ | | |
| 2002 07 14 | 704 | 0.5+ | 0.5+ | 2006 08 28 | 699 | 0.6+ | 0.3− | 2006 09 25 | 704 | 0.8+ | 0.7+ | | |
| 2002 07 14 | 704 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.1− | 0.9+ | | |
| 2002 07 14 | 704 | 0.6− | 0.8− | 2006 08 29 | 704 | 0.7+ | 0.3− | 2006 09 25 | 704 | 0.7+ | 0.7+ | | |
| 2002 07 14 | 704 | 0.6+ | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 09 25 | 704 | 0.7− | 1.1+ | | |
| 2002 07 20 | 644 | 0.7− | 0.0 | 2006 08 29 | 704 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 20 | 644 | 0.4− | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2002 07 20 | 644 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.4− | 0.2+ | 2006 09 29 | 699 | 0.2− | 0.0 |
| 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 1.2+ | 0.1+ |
| 2003 12 22 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.1− | 0.5− | 2006 09 29 | 699 | (1.2− | 1.6+) |
| 2004 01 15 | 691 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 01 15 | 691 | 0.5− | 0.5+ | 2006 08 30 | 704 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2004 01 15 | 691 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2004 02 16 | 691 | 0.6+ | 0.6+ | 2006 09 01 | 704 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2004 02 16 | 691 | 0.3+ | 0.6+ | 2006 09 01 | 704 | 0.0 | 0.9+ | 2006 10 02 | G96 | 0.5− | 0.3− |
| 2004 02 16 | 691 | 0.0 | 0.4+ | 2006 09 01 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.4− | 0.2− |
| 2005 04 06 | 691 | 0.0 | 0.3+ | 2006 09 01 | 704 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2005 04 06 | 691 | 0.4+ | 0.5+ | 2006 09 11 | 703 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 04 06 | 691 | 0.1+ | 0.7+ | 2006 09 11 | 703 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.6− | 0.4+ |
| 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.6− | 0.3+ | 2006 11 10 | 704 | 0.1+ | 0.9− |
| 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.1+ | 0.7− | 2006 11 10 | 704 | 0.8− | 0.6− |
| 2006 08 18 | 704 | 0.7+ | 0.1+ | 2006 09 11 | 703 | 0.0 | 0.4− | 2006 11 10 | 704 | 2.2− | 0.5− |

**(141818)∗ 2002 NH$_{46}$**

Discovered 2002 July 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.77218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29698685 | $\omega$ | 84.13417 | | +0.02672570 | | +0.99962949 |
| $a$ | 2.2249038 | $\Omega$ | 187.40317 | | −0.93226930 | | +0.02306152 |
| $e$ | 0.1635252 | $i$ | 2.29468 | | −0.36077652 | | +0.01445839 |
| $P$ | 3.32 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 691 | 0.1− | 0.1− | 2005 03 10 | G96 | 0.2− | 0.0 | 2005 06 15 | G96 | 0.2− | 0.2− |
| 1999 09 07 | 691 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.1− | 0.1+ | 2005 06 15 | G96 | 0.8− | 0.6+ |
| 1999 09 07 | 691 | 0.1+ | 0.2+ | 2005 03 10 | G96 | 0.3+ | 0.0 | 2005 06 15 | G96 | 0.8− | 0.3+ |
| 2002 07 05 | 704 | 0.7+ | 0.7− | 2005 03 10 | G96 | 0.1− | 0.1+ | 2005 06 15 | G96 | 0.8− | 0.8+ |
| 2002 07 05 | 704 | 0.4+ | 0.4+ | 2005 03 10 | G96 | 0.4+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2002 07 05 | 704 | 0.3− | 0.0 | 2005 04 06 | G96 | 0.2− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2002 07 13 | 644 | 0.1− | 0.4+ | 2005 04 06 | G96 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.1+ |
| 2002 07 13 | 644 | 0.0 | 0.3+ | 2005 04 06 | G96 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2002 07 13 | 644 | 0.0 | 0.1+ | 2005 04 06 | G96 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2002 07 14 | 704 | (0.7− | 1.6−) | 2005 04 18 | 703 | 0.7+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2002 07 14 | 704 | 0.5− | 0.5− | 2005 04 18 | 703 | 1.0+ | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 07 14 | 704 | 0.4+ | 0.6− | 2005 04 18 | 703 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 08 03 | 644 | 0.2+ | 0.2− | 2005 04 18 | 703 | 0.7+ | 1.1− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 08 03 | 644 | 0.2− | 0.0 | 2005 05 13 | 704 | 0.7+ | 0.6+ | 2006 11 13 | G96 | 0.6+ | 0.6− |
| 2002 08 03 | 644 | 0.2− | 0.1+ | 2005 05 13 | 704 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.4+ |
| 2002 08 06 | 644 | 0.2+ | 0.1− | 2005 05 13 | 704 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.6− | 0.7− |
| 2002 08 06 | 644 | 0.0 | 0.3+ | 2005 05 13 | 704 | 0.7+ | 0.7+ | 2006 11 13 | G96 | 0.2+ | 0.8− |
| 2002 08 06 | 644 | 0.2− | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2005 03 10 | G96 | 0.2+ | 0.1− | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2005 03 10 | G96 | 0.4− | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.5− | 0.3− |

**(141819)∗ 2002 NA$_{49}$**

Discovered 2002 July 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.03717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27849138 | $\omega$ | 198.69680 | | +0.58035225 | | +0.80414529 |
| $a$ | 2.3223529 | $\Omega$ | 106.97468 | | −0.72897152 | | +0.58338059 |
| $e$ | 0.1327297 | $i$ | 7.72813 | | −0.36303138 | | +0.11409399 |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.2+ | 1.7+ | 2002 08 13 | 704 | 0.2+ | 0.0 | 2005 05 18 | 644 | 0.3− | 0.1+ |
| 1999 10 19 | 704 | 0.4+ | 0.5− | 2002 08 30 | 644 | 0.3+ | 0.4− | 2005 05 18 | 644 | 0.0 | 0.1− |
| 1999 10 19 | 704 | 0.4− | 0.5− | 2002 08 30 | 644 | 0.2+ | 0.3− | 2005 05 18 | 644 | 0.3− | 0.1+ |
| 1999 10 19 | 704 | 0.0 | 0.3− | 2002 08 30 | 644 | 0.3+ | 0.3− | 2005 06 03 | 699 | (1.8+ | 0.4+) |
| 1999 10 19 | 704 | 0.1+ | 0.4+ | 2002 08 31 | 644 | 0.3+ | 0.1− | 2005 06 03 | 699 | 1.4+ | 0.1+ |
| 2002 06 08 | 704 | 1.4− | 0.2+ | 2002 08 31 | 644 | 0.2+ | 0.2− | 2005 06 03 | 699 | 0.2+ | 0.3+ |
| 2002 06 08 | 704 | 0.9− | 0.3+ | 2002 08 31 | 644 | 0.1+ | 0.2− | 2005 06 03 | 699 | 0.6+ | 0.5+ |
| 2002 06 08 | 704 | (1.6− | 0.3+) | 2004 02 26 | 695 | 0.5− | 0.2+ | 2006 09 29 | 699 | 0.8− | 0.6+ |
| 2002 06 08 | 704 | 1.3− | 0.2− | 2004 02 26 | 695 | 0.4− | 0.5+ | 2006 09 29 | 699 | 0.2− | 1.1+ |
| 2002 07 05 | 704 | 0.1+ | 0.4+ | 2005 04 07 | 699 | 0.7+ | 0.8+ | 2006 09 29 | 699 | 0.5− | 0.4− |
| 2002 07 05 | 704 | 0.7− | 0.6− | 2005 04 07 | 699 | 0.7− | 0.4− | 2006 09 29 | 699 | 0.0 | 0.5+ |
| 2002 07 05 | 704 | 1.2− | 0.4+ | 2005 04 07 | 699 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2002 07 05 | 704 | 0.1+ | 0.1− | 2005 04 07 | 699 | 0.7− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 07 05 | 704 | 0.0 | 0.5+ | 2005 04 28 | 683 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 07 05 | 644 | 0.5+ | 0.9+ | 2005 04 28 | 683 | 0.5+ | 0.8− | 2006 10 16 | 703 | 0.5+ | 0.6− |
| 2002 07 05 | 644 | 0.2+ | 1.1+ | 2005 04 28 | 683 | 1.3+ | 1.2+ | 2006 10 16 | 703 | 0.4+ | 0.1− |
| 2002 07 05 | 644 | 0.0 | 0.9+ | 2005 05 06 | 704 | (1.6+ | 0.7+) | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 2002 07 14 | 644 | 0.1+ | 0.3− | 2005 05 06 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.5+ |
| 2002 07 14 | 644 | 0.0 | 0.1+ | 2005 05 06 | 704 | (0.1− | 1.7−) | 2006 10 22 | 703 | 0.7− | 0.1− |
| 2002 07 14 | 644 | 0.1− | 0.1− | 2005 05 06 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.2− |
| 2002 07 17 | 644 | 0.0 | 0.9− | 2005 05 11 | 703 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2002 07 17 | 644 | 0.2+ | 0.8− | 2005 05 11 | 703 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 07 17 | 644 | 0.1+ | 0.7− | 2005 05 11 | 703 | 0.9− | 0.0 | 2006 11 16 | 703 | 1.6+ | 0.4+ |
| 2002 08 13 | 704 | 0.1+ | 0.1+ | 2005 05 11 | 703 | (1.5− | 1.1+) | 2006 11 16 | 703 | 0.9− | 0.6+ |
| 2002 08 13 | 704 | 0.4+ | 0.1− | 2005 05 12 | 691 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.2− | 0.6+ |
| 2002 08 13 | 704 | 0.9+ | 0.2+ | 2005 05 12 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.4− | 0.1− |
| 2002 08 13 | 704 | 0.3− | 0.2+ | 2005 05 12 | 691 | 0.0 | 0.2+ | | | | |

**(141820)∗ 2002 ND$_{51}$**

Discovered 2002 July 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.51300 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27559652 | $\omega$ | 119.61712 | | −0.17876856 | | +0.98342655 |
| $a$ | 2.3385872 | $\Omega$ | 140.04879 | | −0.91820225 | | −0.15571494 |
| $e$ | 0.1961682 | $i$ | 2.69859 | | −0.35347762 | | −0.09287134 |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 0.3+ | 0.1+ | 2005 03 01 | 683 | (0.5− | 3.2−) | 2005 03 18 | 704 | 0.9+ | 0.5+ |
| 1998 04 22 | 704 | 0.3− | 0.6− | 2005 03 01 | 683 | (1.8− | 1.2−) | 2005 03 18 | 704 | 0.9− | 0.4+ |
| 1998 04 22 | 704 | 0.9− | 1.2− | 2005 03 01 | 683 | 0.8+ | 1.3+ | 2005 03 18 | 704 | 1.0+ | 0.4+ |
| 1998 04 22 | 704 | 0.0 | 1.3− | 2005 03 03 | 691 | 0.1− | 0.5+ | 2005 04 09 | 699 | 0.3− | 0.5+ |
| 1998 04 22 | 704 | (5.4− | 1.4−) | 2005 03 03 | 691 | 0.1− | 0.4+ | 2005 04 09 | 699 | 0.5− | 0.2+ |
| 1998 04 24 | 910 | 0.4+ | 0.9− | 2005 03 03 | 691 | 0.2− | 0.5+ | 2005 04 09 | 699 | (2.1− | 0.2+) |
| 1998 04 24 | 910 | 0.7+ | 0.9− | 2005 03 03 | 683 | (0.6− | 2.6+) | 2005 04 09 | 699 | 0.4− | 1.2+ |
| 1998 04 24 | 910 | 0.6+ | 0.5− | 2005 03 03 | 683 | 0.8+ | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.3+ |
| 2002 06 08 | 704 | 0.0 | 0.1+ | 2005 03 03 | 683 | 0.2+ | 0.9+ | 2005 04 18 | 691 | 0.2+ | 0.0 |
| 2002 06 08 | 704 | 0.2− | 0.1+ | 2005 03 08 | 699 | 0.2− | 0.5+ | 2005 04 18 | 691 | 0.1− | 0.3+ |
| 2002 06 08 | 704 | 0.9− | 0.5+ | 2005 03 08 | 699 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.4− | 0.1− |
| 2002 07 04 | 644 | 0.2+ | 0.5+ | 2005 03 08 | 699 | 0.6+ | 0.0 | 2005 05 10 | G96 | 0.3− | 0.1− |
| 2002 07 04 | 644 | 0.1+ | 0.7+ | 2005 03 08 | 699 | 0.4+ | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.0 |
| 2002 07 04 | 644 | 0.1− | 0.5+ | 2005 03 08 | 704 | (0.4+ | 2.7+) | 2005 05 10 | G96 | 0.3− | 0.1− |
| 2002 07 05 | 704 | 0.1+ | 1.2+ | 2005 03 08 | 704 | 0.8− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2002 07 05 | 704 | 0.6− | 0.0 | 2005 03 08 | 704 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | 0.2+ | 0.1+ | 2005 03 08 | 704 | 0.4− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 07 05 | 704 | 0.3+ | 1.4− | 2005 03 09 | 704 | 0.1+ | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.5+ |
| 2002 07 05 | 704 | 0.2+ | 1.5+ | 2005 03 09 | 704 | 0.8+ | 0.5+ | 2006 10 01 | 691 | 0.2+ | 0.5+ |
| 2002 07 14 | 704 | 1.0− | 0.2− | 2005 03 09 | 704 | 0.7+ | 0.2+ | 2006 10 01 | 691 | 0.3+ | 0.3+ |
| 2002 07 14 | 704 | 1.0− | 0.8+ | 2005 03 09 | 704 | 0.6+ | 0.0 | 2006 10 15 | 703 | 1.4+ | 0.4− |
| 2002 07 14 | 704 | (1.7− | 2.0+) | 2005 03 09 | 704 | 0.2+ | 0.5+ | 2006 10 15 | 703 | 0.6− | 0.5+ |
| 2002 07 14 | 704 | (2.1− | 1.6+) | 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.9− | 0.3− |
| 2002 07 14 | 704 | (1.7− | 1.2+) | 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.3+ | 1.0+ |
| 2002 08 06 | 644 | 0.2− | 0.4+ | 2005 03 11 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 08 06 | 644 | 0.2− | 0.4+ | 2005 03 14 | 704 | 0.9+ | 1.2− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2002 08 06 | 644 | 0.1− | 0.4+ | 2005 03 14 | 704 | 0.7− | 0.9− | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2002 08 14 | 704 | 0.0 | 0.3− | 2005 03 14 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2002 08 14 | 704 | 0.0 | 0.2+ | 2005 03 14 | 704 | (0.3− | 1.8−) | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 08 14 | 704 | 0.3+ | 0.8− | 2005 03 14 | 704 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 08 15 | 699 | 0.0 | 0.5+ | 2005 03 16 | 704 | 0.9+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2002 08 15 | 699 | 0.5− | 0.8+ | 2005 03 16 | 704 | 0.6+ | 0.5− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2002 08 15 | 699 | 0.4− | 0.3− | 2005 03 16 | 704 | 1.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 08 15 | 699 | 1.4− | 0.5− | 2005 03 16 | 704 | 0.6+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.1+ | 0.2+ | 2005 03 16 | 704 | 0.6+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.1+ | | |
| 2002 08 17 | 644 | 0.3− | 0.4+ | 2005 03 16 | G96 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2002 08 17 | 644 | 0.1− | 0.5+ | 2005 03 16 | G96 | 0.3− | 0.4− | 2006 11 16 | G96 | 0.3− | 0.1− | | |
| 2003 12 19 | 691 | 0.6− | 0.1− | 2005 03 16 | G96 | 1.1− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2003 12 19 | 691 | 0.3− | 0.0 | 2005 03 16 | G96 | 0.8− | 0.2− | | | | | | |
| 2003 12 19 | 691 | 0.3− | 0.1+ | 2005 03 18 | 704 | 1.5+ | 0.9+ | | | | | | |

**(141821)∗ 2002 NN$_{51}$ = 1998 HO$_{57}$**

Discovered 2002 July 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 33689)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.79029 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27040649 | $\omega$ | 261.69292 | | +0.35211294 | | +0.93550830 |
| $a$ | 2.3684159 | $\Omega$ | 28.97631 | | −0.83344584 | | +0.32749328 |
| $e$ | 0.2249509 | $i$ | 3.43126 | | −0.42589261 | | +0.13256079 |
| $P$ | 3.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.6+ | 0.9− | 2005 03 03 | 703 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.6− | 0.7+ | | |
| 1998 03 29 | 704 | 0.0 | 1.4+ | 2005 03 09 | 699 | 1.4+ | 0.1+ | 2006 09 17 | 704 | 0.3− | 0.6− | | |
| 1998 03 29 | 704 | 0.6− | 0.7− | 2005 03 09 | 699 | 1.1− | 0.7− | 2006 09 17 | 704 | 1.3− | 0.0 | | |
| 1998 03 29 | 704 | 1.0− | 1.6+ | 2005 03 09 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | | |
| 1998 03 29 | 704 | (4.5− | 0.9+) | 2005 03 09 | 704 | 0.9+ | 0.5− | 2006 09 18 | 691 | 0.2+ | 0.2+ | | |
| 1998 04 21 | 704 | (2.1− | 1.5+) | 2005 03 09 | 699 | 0.1+ | 1.0− | 2006 09 18 | 691 | 0.1+ | 0.2+ | | |
| 1998 04 21 | 704 | 0.7− | 1.8+ | 2005 03 09 | 704 | 0.1+ | 0.7− | 2006 09 18 | 699 | 0.7+ | 0.2+ | | |
| 1998 04 21 | 704 | (0.7+ | 2.4−) | 2005 03 09 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.4− | | |
| 1998 04 21 | 704 | 1.3− | 1.5− | 2005 03 12 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.3− | 0.2+ | | |
| 1998 04 21 | 704 | 1.0− | 1.6− | 2005 03 12 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.6+ | 1.0+ | | |
| 1998 04 22 | 704 | 0.8+ | 0.9− | 2005 03 12 | 704 | 1.0+ | 1.1+ | 2006 09 20 | 704 | 1.2+ | 0.5+ | | |
| 1998 04 22 | 704 | 0.9+ | 0.2+ | 2005 03 12 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.3+ | | |
| 1998 04 22 | 704 | 1.0+ | 0.6+ | 2005 03 12 | 704 | 0.8+ | 0.7+ | 2006 09 20 | 704 | 0.4− | 0.7+ | | |
| 1998 04 22 | 704 | 0.9+ | 0.8− | 2005 04 11 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.4+ | | |
| 1998 04 22 | 704 | 0.1+ | 0.3− | 2005 04 11 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.4+ | | |
| 2002 06 06 | 704 | 0.1− | 0.7+ | 2005 04 11 | 691 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.1− | 0.1+ | | |
| 2002 06 06 | 704 | 0.2+ | 1.1− | 2005 04 11 | G96 | 0.2− | 0.1+ | 2006 10 01 | 704 | (0.0 | 1.6+) | | |
| 2002 06 06 | 704 | 0.1− | 0.2− | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.0 | 1.1+ | | |
| 2002 06 06 | 704 | 0.1− | 0.7− | 2005 04 11 | G96 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2002 06 13 | 644 | 0.4− | 0.2+ | 2005 04 11 | G96 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2002 06 13 | 644 | 0.2− | 0.4+ | 2005 05 11 | G96 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2002 06 13 | 644 | 0.2− | 0.7+ | 2005 05 11 | G96 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.1+ | | |
| 2002 07 05 | 704 | (2.2+ | 0.2+) | 2005 05 11 | G96 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.2+ | | |
| 2002 07 05 | 704 | (2.6+ | 1.9+) | 2005 05 11 | G96 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.7− | | |
| 2002 07 05 | 704 | (1.9+ | 0.3+) | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.7− | | |
| 2002 07 05 | 704 | (2.0+ | 0.0 ) | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 07 06 | 644 | 0.0 | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2002 07 06 | 644 | 0.3+ | 0.2− | 2006 09 14 | 691 | 0.4+ | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 07 06 | 644 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 07 06 | 644 | 0.1+ | 0.3− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 07 06 | 644 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.2+ | | |
| 2002 07 06 | 644 | 0.1+ | 0.3− | 2006 09 14 | 703 | 1.1− | 0.5− | 2006 10 21 | G96 | 0.1− | 0.1+ | | |
| 2002 07 15 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.4− | 0.7− | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 2002 07 15 | 644 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2− | | |
| 2002 07 15 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.9− | 2006 10 21 | G96 | 0.3+ | 0.0 | | |
| 2002 08 11 | 644 | 0.1+ | 0.9+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.0 | | |
| 2002 08 11 | 644 | 0.2− | 1.1+ | 2006 09 14 | 703 | 0.6− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2002 08 11 | 644 | 0.0 | 1.1+ | 2006 09 14 | 703 | 0.6− | 0.6− | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2005 03 03 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2005 03 03 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | (1.5− | 0.1+) | 2006 11 11 | G96 | 0.4− | 0.5− | | |
| 2005 03 03 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− | | |
| 2005 03 03 | 703 | 0.5− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.2− | | |
| 2005 03 03 | 703 | 0.5− | 0.1− | 2006 09 16 | 644 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2005 03 03 | 703 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.3+ | | | | | | |

**(141822)∗ 2002 NO$_{53}$**

Discovered 2002 July 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.05020 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26237737 | $\omega$ | 289.02510 | | +0.60226864 | | +0.79823596 |
| $a$ | 2.4164907 | $\Omega$ | 18.01752 | | −0.72027636 | | +0.54854565 |
| $e$ | 0.2298626 | $i$ | 1.77538 | | −0.34420117 | | +0.24883131 |
| $P$ | 3.76 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.1+ | 0.0 | 2005 03 04 | G96 | 0.1− | 0.0 | 2006 09 27 | 699 | 1.0− | 0.3+ | | |
| 1991 10 08 | 691 | 0.0 | 0.3− | 2005 03 04 | G96 | 0.4− | 0.2− | 2006 09 27 | 699 | 0.3+ | 0.7− | | |
| 2002 06 08 | 704 | 0.6+ | 0.6− | 2005 03 04 | G96 | 0.8− | 0.4− | 2006 09 28 | 704 | 0.6+ | 0.3− | | |
| 2002 06 08 | 704 | 0.2− | 0.7− | 2005 03 04 | G96 | 0.8− | 0.0 | 2006 09 28 | 704 | (1.8− | 0.2+) | | |
| 2002 06 08 | 704 | 0.2+ | 0.4+ | 2005 03 16 | 691 | 0.3+ | 0.5+ | 2006 09 28 | 704 | 0.3+ | 0.0 | | |
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2005 03 16 | 691 | 0.3+ | 0.6+ | 2006 09 28 | 704 | 1.0+ | 0.5+ | | |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2005 03 16 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.1+ | | |
| 2002 07 14 | 644 | 0.7+ | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.0 | | |
| 2002 07 18 | 644 | 0.2− | 0.1+ | 2006 09 06 | 644 | 0.3− | 0.7+ | 2006 09 28 | 691 | 0.2− | 0.0 | | |
| 2002 07 18 | 644 | 0.2− | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 291 | 0.2− | 0.2+ | | |
| 2002 07 18 | 644 | 0.6− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 29 | 291 | 0.0 | 0.2+ | | |
| 2002 07 23 | 644 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 291 | 0.0 | 0.1+ | | |
| 2002 07 23 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.3+ | 0.3+ | | |
| 2002 07 23 | 644 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.1− | 0.6+ | | |
| 2002 08 06 | 735 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.2+ | | |
| 2002 08 06 | 735 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.0 | | |
| 2002 08 06 | 735 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1− | | |
| 2002 08 07 | 735 | 0.1+ | 0.5− | 2006 09 19 | 699 | 0.4+ | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.2+ | | |
| 2002 08 07 | 735 | 0.5+ | 0.6− | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.1− | 0.0 | | |
| 2002 08 11 | 735 | 0.8+ | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.3− | | |
| 2002 08 11 | 735 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.5+ | 1.0+ | 2006 10 16 | G96 | 0.1− | 0.1− | | |
| 2002 08 11 | 735 | (1.5− | 2.6+) | 2006 09 20 | 704 | 0.9− | 0.3+ | 2006 10 16 | G96 | 0.4− | 0.5− | | |
| 2002 08 13 | 704 | 0.2− | 0.0 | 2006 09 20 | 704 | (0.5+ | 1.6−) | 2006 10 16 | G96 | 0.0 | 0.3− | | |
| 2002 08 13 | 704 | 0.5− | 0.3− | 2006 09 20 | 704 | 1.2− | 1.0+ | 2006 10 17 | 703 | 0.0 | 0.0 | | |
| 2002 08 13 | 704 | 0.3− | 0.7+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.6− | | |
| 2002 08 13 | 704 | 0.7− | 0.4− | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.2− | | |
| 2002 08 13 | 704 | 0.6− | 0.4− | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2005 03 03 | 691 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2005 03 03 | 691 | 0.3+ | 0.6+ | 2006 09 27 | 699 | (1.0− | 2.1+) | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2005 03 03 | 691 | 0.6+ | 0.3+ | 2006 09 27 | 699 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.4+ | | |

**(141823)∗ 2002 NS$_{53}$**

Discovered 2002 July 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.10846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28309217 | $\omega$ | 269.54771 | | −0.70789495 | | +0.70590443 |
| $a$ | 2.2971224 | $\Omega$ | 315.35468 | | −0.63359067 | | −0.64975105 |
| $e$ | 0.1113672 | $i$ | 1.97021 | | −0.31216598 | | −0.28199735 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 0.6+ | 0.3− | 2002 08 08 | 644 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ | | |
| 1998 04 22 | 704 | (1.2+ | 2.2−) | 2002 08 08 | 644 | 0.3− | 0.4− | 2006 09 26 | 691 | 0.3+ | 0.2− | | |
| 1998 04 22 | 704 | (0.6+ | 2.4−) | 2003 11 24 | 691 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 1998 04 22 | 704 | (0.9− | 2.5−) | 2003 11 24 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.2+ | | |
| 1998 05 01 | 704 | 1.1− | 0.1+ | 2003 11 24 | 691 | 0.0 | 0.7+ | 2006 09 30 | 691 | 0.1+ | 0.2− | | |
| 1998 05 01 | 704 | 0.2− | 0.7− | 2005 05 04 | 644 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− | | |
| 1998 05 01 | 704 | 0.3− | 1.5− | 2005 05 04 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1− | | |
| 1998 05 01 | 704 | 0.6− | 0.1− | 2005 05 04 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.4+ | | |
| 1998 05 01 | 704 | (4.6− | 1.3+) | 2005 05 08 | E12 | 0.1+ | 0.3+ | 2006 10 17 | 703 | (1.8+ | 0.1+) | | |
| 1998 05 29 | 691 | 0.1− | 0.1+ | 2005 05 08 | E12 | 0.1− | 0.4+ | 2006 10 17 | 703 | (0.4− | 1.8+) | | |
| 1998 05 29 | 691 | 0.5+ | 0.8+ | 2005 05 08 | E12 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.2− | | |
| 1998 05 29 | 691 | 0.4+ | 0.8+ | 2005 05 19 | 644 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.2− | 0.3− | | |
| 2002 07 14 | 644 | 0.1+ | 0.5+ | 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.3− | | |
| 2002 07 14 | 644 | 0.2− | 0.3+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 07 18 | 644 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2002 07 18 | 644 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.9− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2002 07 18 | 644 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.1− |
| 2002 08 08 | 644 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.2− |

**(141824)∗ 2002 NU$_{53}$ = 1998 HU$_{58}$**

Discovered 2002 July 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 33691)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.40138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28125211 | $\omega$ | 306.19108 | | −0.46632349 | +0.88433544 | |
| $a$ | 2.3071307 | $\Omega$ | 295.99866 | | −0.80347907 | −0.43392289 | |
| $e$ | 0.1506975 | $i$ | 1.41589 | | −0.37008620 | −0.17222589 | |
| $P$ | 3.50 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.5− | 1.7+ | 2002 08 08 | 644 | (0.3+ | 1.6+) | 2005 04 17 | 691 | 0.3+ | 0.3+ |
| 1998 04 21 | 704 | 0.3− | 0.1− | 2003 11 24 | 691 | 0.1− | 0.2+ | 2005 04 17 | 691 | 0.2+ | 0.3+ |
| 1998 04 21 | 704 | 0.3− | 1.2+ | 2003 11 24 | 691 | 0.0 | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.3+ |
| 1998 04 21 | 704 | (4.1− | 1.3−) | 2003 11 24 | 691 | 0.5+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 1998 04 22 | 704 | 0.7+ | 1.3− | 2005 03 14 | G96 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 1998 04 22 | 704 | 1.2+ | 0.3+ | 2005 03 14 | G96 | 0.5− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 1998 04 22 | 704 | 0.7− | 1.1+ | 2005 03 14 | G96 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2002 07 14 | 644 | 0.4+ | 0.7− | 2005 03 14 | G96 | 0.9− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2002 07 14 | 644 | 0.8+ | 0.3− | 2005 04 04 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2002 07 14 | 644 | 0.4+ | 1.0− | 2005 04 04 | 691 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2002 07 18 | 644 | 0.2− | 0.2+ | 2005 04 04 | 691 | 0.3− | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2002 07 18 | 644 | 0.3− | 0.3+ | 2005 04 04 | 704 | 0.2− | 1.1+ | 2006 09 30 | 691 | 0.3− | 0.1− |
| 2002 07 18 | 644 | 0.0 | 0.3+ | 2005 04 04 | 704 | 1.0+ | 0.4− | 2006 10 15 | 691 | 0.3− | 0.3− |
| 2002 08 06 | 644 | 0.2− | 0.1+ | 2005 04 04 | 704 | 1.3+ | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.5+ |
| 2002 08 06 | 644 | 0.4− | 0.1+ | 2005 04 05 | 699 | (0.0 | 1.6+) | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2002 08 06 | 644 | 0.4− | 0.2+ | 2005 04 05 | 699 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.5+ | 0.3+ |
| 2002 08 07 | 644 | 0.5+ | 0.4+ | 2005 04 05 | 699 | 0.3+ | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.5+ |
| 2002 08 07 | 644 | 0.1+ | 0.5+ | 2005 04 05 | 699 | 0.6+ | 0.9+ | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2005 04 12 | 704 | 0.8+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2002 08 08 | 644 | 0.2+ | 0.9+ | 2005 04 12 | 704 | (1.8+ | 0.5+) | 2006 10 31 | 691 | 0.5− | 0.0 |
| 2002 08 08 | 644 | 0.1+ | 1.1+ | 2005 04 12 | 704 | 1.1+ | 0.7− | 2006 10 31 | 691 | 0.2− | 0.3+ |

**(141825)∗ 2002 NG$_{54}$**

Discovered 2002 July 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.38362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27857883 | $\omega$ | 263.44261 | | +0.98380860 | −0.12788626 | |
| $a$ | 2.3218669 | $\Omega$ | 103.85107 | | +0.16575164 | +0.91572211 | |
| $e$ | 0.1450228 | $i$ | 7.43043 | | −0.06816919 | +0.38091747 | |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 24 | 691 | 1.0− | 0.2+ | 2002 08 13 | 704 | 0.6+ | 0.3− | 2005 05 07 | 703 | (2.5− | 0.4+) |
| 1992 12 24 | 691 | 0.7+ | 0.1− | 2002 08 13 | 704 | (0.4+ | 2.4−) | 2005 05 14 | 691 | 0.3− | 0.5+ |
| 1992 12 24 | 691 | 0.0 | 0.1− | 2002 08 13 | 704 | 0.4+ | 0.4− | 2005 05 14 | 691 | 0.0 | 0.3+ |
| 1999 10 19 | 704 | 0.5− | 0.8− | 2002 08 29 | 644 | 0.0 | 0.2+ | 2005 05 14 | 691 | 0.5+ | 0.3+ |
| 1999 10 19 | 704 | 0.5− | 0.0 | 2002 08 29 | 644 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.6+ |
| 1999 10 19 | 704 | 0.8+ | 0.2+ | 2002 08 29 | 644 | 0.1+ | 0.6+ | 2006 09 29 | 699 | 0.0 | 0.4+ |
| 1999 10 19 | 704 | 0.5+ | 0.2+ | 2003 12 19 | 704 | (0.2+ | 1.6+) | 2006 09 29 | 699 | 0.5− | 0.3− |
| 1999 10 19 | 704 | 0.3+ | 0.2− | 2003 12 19 | 704 | 1.3+ | 1.5+ | 2006 09 29 | 699 | 0.5− | 0.3+ |
| 1999 11 05 | 704 | 0.5+ | 0.5+ | 2003 12 19 | 704 | (1.9+ | 0.5+) | 2006 10 01 | 704 | 1.3+ | 0.3+ |
| 1999 11 05 | 704 | 0.5− | 0.4− | 2003 12 27 | 704 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.5+ |
| 1999 11 05 | 704 | 0.2− | 1.2+ | 2003 12 27 | 704 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.5+ | 1.0+ |
| 1999 11 05 | 704 | 0.3− | 0.1+ | 2003 12 27 | 704 | 0.1− | 0.9+ | 2006 10 01 | 704 | (0.4− | 2.1+) |
| 1999 11 05 | 704 | 1.3+ | 0.3− | 2003 12 27 | 704 | 0.5− | 0.8+ | 2006 10 01 | 704 | 0.2− | 0.8+ |
| 2002 06 12 | 644 | 0.2− | 0.6− | 2004 01 16 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2002 06 12 | 644 | 0.2+ | 0.5− | 2004 01 16 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2002 06 12 | 644 | 0.1+ | 0.7− | 2004 01 16 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.8− | 0.1− |
| 2002 06 18 | 704 | 0.4− | 0.3− | 2004 01 16 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 2002 06 18 | 704 | 0.6− | 0.8− | 2004 01 16 | 691 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.1+ |
| 2002 06 18 | 704 | 0.0 | 0.3+ | 2004 01 16 | 691 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2002 07 05 | 704 | 0.4+ | 1.0+ | 2004 01 22 | 704 | 0.4− | 0.6+ | 2006 10 22 | 703 | 0.9+ | 0.5− |
| 2002 07 05 | 704 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2002 07 05 | 704 | 0.4+ | 0.6+ | 2004 01 22 | 704 | 0.3+ | 0.9+ | 2006 11 13 | 703 | 0.5− | 1.0− |
| 2002 07 05 | 704 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2002 07 05 | 704 | 0.1+ | 0.2− | 2004 01 22 | 704 | 0.1+ | 0.8+ | 2006 11 13 | 703 | 0.2+ | 0.3− |
| 2002 07 08 | 644 | 0.8− | 0.7+ | 2004 01 26 | 699 | 1.2+ | 0.2− | 2006 11 13 | 703 | 0.4+ | 1.3− |
| 2002 07 08 | 644 | 0.1− | 0.3+ | 2004 01 26 | 699 | 0.3+ | 1.2+ | 2006 11 19 | 703 | 0.4− | 0.0 |
| 2002 07 08 | 644 | 0.2− | 0.5+ | 2004 01 26 | 699 | 0.2− | 0.5− | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2002 07 08 | 644 | 0.0 | 0.4+ | 2004 01 26 | 699 | 0.7+ | 0.7− | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2002 07 08 | 644 | 0.6− | 0.2+ | 2005 05 07 | 703 | 0.4− | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.4+ |
| 2002 07 08 | 644 | 0.2− | 0.4+ | 2005 05 07 | 703 | (1.6+ | 1.0+) | | | | |
| 2002 08 13 | 704 | 1.0+ | 0.6− | 2005 05 07 | 703 | 0.2− | 0.9− | | | | |

**(141826)∗ 2002 NH$_{54}$**

Discovered 2002 July 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.73326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26444971 | $\omega$ | 276.34019 | | +0.99052058 | +0.10686111 | |
| $a$ | 2.4038497 | $\Omega$ | 77.54972 | | −0.06194189 | +0.90830183 | |
| $e$ | 0.2157278 | $i$ | 5.07100 | | −0.12260578 | +0.40443601 | |
| $P$ | 3.73 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.0 | 0.1+ | 2005 05 14 | 691 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.5+ |
| 2001 03 19 | 645 | 0.1+ | 0.1+ | 2005 05 14 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.5+ |
| 2002 06 12 | 644 | 0.3− | 0.3+ | 2006 08 10 | 644 | 0.3− | 0.0 | 2006 10 02 | 703 | 0.1− | 0.5+ |
| 2002 06 12 | 644 | 0.4− | 0.3+ | 2006 08 10 | 644 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.4+ | 0.4+ |
| 2002 06 12 | 644 | 0.1− | 0.4+ | 2006 08 10 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 06 17 | 644 | 0.8− | 0.0 | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2002 06 17 | 644 | 0.5− | 0.4+ | 2006 08 19 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2002 06 17 | 644 | 0.5− | 0.1+ | 2006 08 19 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 07 05 | 704 | 1.1+ | 0.6− | 2006 09 12 | 703 | 0.1+ | 0.2+ | 2006 10 22 | 704 | 0.0 | 1.4− |
| 2002 07 05 | 704 | (1.9+ | 0.7−) | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 10 22 | 704 | 0.4− | 0.7+ |
| 2002 07 05 | 704 | 0.7+ | 1.3− | 2006 09 12 | 703 | 0.2+ | 0.2+ | 2006 10 22 | 704 | 0.2− | 0.8+ |
| 2002 07 05 | 704 | 1.1+ | 1.1− | 2006 09 12 | 703 | 0.0 | 0.3+ | 2006 10 22 | 704 | 0.8+ | 0.4− |
| 2002 07 05 | 704 | (1.7+ | 1.4−) | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 704 | 1.2− | 0.6− |
| 2002 07 08 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2002 07 08 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2002 07 08 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2002 08 13 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 08 13 | 704 | 0.1− | 0.7+ | 2006 09 19 | 703 | 1.0− | 0.1− | 2006 11 10 | 704 | 0.5+ | 0.7+ |
| 2002 08 13 | 704 | 1.0− | 1.5+ | 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 11 10 | 704 | 0.3− | 1.1+ |
| 2002 08 13 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 11 10 | 704 | 1.1+ | 1.3+ |
| 2002 08 13 | 704 | 0.6+ | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.3− | 2006 11 10 | 704 | 0.3− | 1.3+ |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.5− | 0.1+ | 2006 11 10 | 704 | (0.5+ | 2.5+) |
| 2004 01 28 | 691 | 0.2+ | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.6− | 2006 11 14 | 704 | 0.6− | 1.9+ |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.2+ | 0.7+ |
| 2005 04 01 | 691 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.1+ | 2006 11 14 | 704 | 0.9− | 1.0+ |
| 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.4− | 2006 11 14 | 704 | 0.0 | 0.5+ |
| 2005 04 01 | 691 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.1+ | 1.3+ |
| 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.7+ |
| 2005 04 02 | 691 | 0.3+ | 0.3+ | 2006 10 02 | 703 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2005 04 02 | 691 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.0 | 1.2+ |
| 2005 05 14 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 703 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.4+ |

**(141827)∗ 2002 NO$_{54}$**

Discovered 2002 July 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.69156 | | (2000.0) | | | |
| $n$ | 0.26226825 | $\omega$ | 230.72080 | | +0.15375333 | +0.98769923 |
| $a$ | 2.4171610 | $\Omega$ | 48.14812 | | −0.89440046 | +0.15135839 |
| $e$ | 0.1453450 | $i$ | 2.18992 | | −0.42000920 | +0.03925400 |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 704 | 0.7+ | 0.3− | 2005 03 11 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.2− |
| 2002 07 05 | 704 | 0.2− | 0.4− | 2005 03 11 | 704 | 0.6− | 0.1− | 2006 08 28 | 703 | 0.8− | 0.4+ |
| 2002 07 05 | 704 | 0.7+ | 0.2+ | 2005 03 11 | 704 | 0.3− | 0.4− | 2006 08 30 | 699 | 0.0 | 0.1+ |
| 2002 07 05 | 704 | 0.9+ | 0.7+ | 2005 03 16 | 704 | 1.0+ | 0.9+ | 2006 08 30 | 699 | 1.1+ | 0.9+ |
| 2002 07 05 | 704 | 0.5+ | 0.2+ | 2005 03 16 | 704 | 0.4− | 1.0+ | 2006 08 30 | 699 | 0.4− | 0.0 |
| 2002 07 09 | 644 | 0.1− | 0.9− | 2005 03 16 | 704 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.2+ | 0.9+ |
| 2002 07 09 | 644 | 0.2− | 0.9− | 2005 04 13 | 691 | 0.1+ | 0.1+ | 2006 09 02 | A79 | 0.6+ | 0.7+ |
| 2002 07 09 | 644 | 0.1+ | 0.8− | 2005 04 13 | 691 | 0.2+ | 0.3+ | 2006 09 02 | A79 | 2.0+ | 0.4+ |
| 2002 07 22 | 644 | 0.1− | 0.1− | 2005 04 13 | 691 | 0.1+ | 0.2+ | 2006 09 02 | A79 | 0.7+ | 0.3+ |
| 2002 07 22 | 644 | 0.2− | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.9+ |
| 2002 07 22 | 644 | 0.2+ | 0.1− | 2005 05 10 | G96 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.6− |
| 2002 08 13 | 704 | 0.1− | 0.3− | 2005 05 10 | G96 | 0.4− | 0.3− | 2006 09 14 | 703 | 1.0− | 0.0 |
| 2002 08 13 | 704 | 0.2− | 0.6+ | 2005 05 10 | G96 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.2− |
| 2002 08 13 | 704 | 1.5− | 0.0 | 2006 08 17 | 644 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.3+ |
| 2002 08 13 | 704 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 2003 12 29 | 691 | 0.4+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.5− | 1.4+ |
| 2003 12 29 | 691 | 0.6− | 0.6− | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.7+ | 1.0− |
| 2003 12 29 | 691 | 0.4+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.8− | 0.2+ |
| 2005 03 01 | 691 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.8− | 0.8+ |
| 2005 03 01 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.6+ | 2006 09 30 | 703 | 1.5− | 0.6− |
| 2005 03 01 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.9+ |

**(141828)∗ 2002 NV$_{59}$ = 2004 AJ$_{16}$**

Discovered 2002 July 8 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 94805)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.20850 | | (2000.0) | | | |
| $n$ | 0.25522795 | $\omega$ | 250.96942 | | +0.99783755 | +0.03528049 |
| $a$ | 2.4614096 | $\Omega$ | 106.97866 | | −0.01147246 | +0.92426762 |
| $e$ | 0.1913052 | $i$ | 3.32413 | | −0.06471938 | +0.38011137 |
| $P$ | 3.86 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.3+ | 0.5+ | 2003 12 21 | 691 | 0.2− | 0.2+ | 2006 08 19 | 699 | 0.2+ | 0.1+ |
| 2002 06 16 | 644 | 0.5+ | 0.2+ | 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 08 19 | 699 | 0.2− | 0.2+ |
| 2002 07 04 | 291 | 0.5− | 0.3+ | 2004 01 15 | 691 | 0.3+ | 0.1+ | 2006 08 19 | 699 | 0.7+ | 0.3+ |
| 2002 07 04 | 291 | 0.3− | 0.2+ | 2004 01 15 | 691 | 0.0 | 0.2− | 2006 08 23 | 704 | 0.5+ | 0.3− |
| 2002 07 04 | 291 | 0.4− | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.3− | 2006 08 23 | 704 | 1.9+ | 1.6− |
| 2002 07 04 | 644 | 0.8+ | 0.5− | 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 1.8+ | 0.2− |
| 2002 07 04 | 644 | 0.6+ | 0.5+ | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 08 23 | 704 | 1.6+ | 0.5+ |
| 2002 07 08 | 644 | 0.5− | 0.3+ | 2005 04 12 | 691 | 0.1− | 0.4+ | 2006 08 24 | 644 | 0.5− | 0.1− |
| 2002 07 08 | 644 | 0.3+ | 0.1+ | 2005 04 12 | 691 | 0.3− | 0.2+ | 2006 08 24 | 644 | 0.4− | 0.0 |
| 2002 07 08 | 644 | 0.3+ | 0.2+ | 2005 04 12 | 691 | 0.2+ | 1.0− | 2006 08 24 | 644 | 0.3− | 0.1+ |
| 2002 07 14 | 644 | 0.2+ | 0.2− | 2006 08 15 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.7− | 0.5− |
| 2002 07 14 | 644 | 0.4+ | 0.3− | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 08 28 | 699 | 1.2− | 0.3+ |
| 2002 07 14 | 644 | 0.2+ | 0.1− | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.4− | 0.3− |
| 2002 08 08 | 644 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.2+ | 0.6+ |
| 2002 08 08 | 644 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.0 | 2006 08 31 | 704 | 0.8+ | 0.5− |
| 2002 08 29 | 644 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.7− | 0.0 | 2006 08 31 | 704 | 0.8+ | 1.8− |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.5− | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 2002 08 29 | 644 | 0.3+ | 0.2− | 2006 08 18 | 644 | 0.5− | 0.1+ | 2006 09 13 | 644 | 0.4− | 0.1+ |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.6− | 0.1+ | 2006 09 13 | 644 | 0.5− | 0.3+ |
| 2003 12 21 | 691 | 0.0 | 0.2+ | 2006 08 19 | 699 | 0.4+ | 0.1− | | | | |

**(141829)∗ 2002 OC = 1997 EM$_{19}$**

Discovered 2002 July 16 by J. Broughton at Reedy Creek.

Id. T. B. Spahr (*MPO* 33694)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.20712 | | (2000.0) | | | |
| $n$ | 0.27425879 | $\omega$ | 51.23837 | | +0.99442060 | −0.09966659 |
| $a$ | 2.3461855 | $\Omega$ | 314.45143 | | +0.07535859 | +0.90043396 |
| $e$ | 0.2494157 | $i$ | 2.77481 | | +0.07381560 | +0.42342090 |
| $P$ | 3.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.5+ | 0.3− | 2006 09 18 | 704 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 1997 03 03 | 691 | 0.4− | 0.5− | 2006 09 18 | 704 | 0.6+ | 1.1+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 1997 03 03 | 691 | 0.0 | 0.4− | 2006 09 18 | 704 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 1997 03 03 | 691 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 1997 03 11 | 691 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.6− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 1997 03 11 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.9− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 1997 03 11 | 691 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2002 06 17 | 644 | 0.2+ | 0.2− | 2006 10 19 | A50 | 0.5− | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2002 06 17 | 644 | 0.2+ | 0.4− | 2006 10 19 | A50 | 0.3− | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2002 06 17 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 1.2− | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2002 07 05 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.4− | 0.7− | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2002 07 05 | 704 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.8− | 0.7− | 2006 11 15 | 704 | 0.4+ | 0.2+ |
| 2002 07 05 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.8− | 0.6− | 2006 11 15 | 704 | 0.7+ | 0.3− |
| 2002 07 05 | 704 | 0.3− | 0.1+ | 2006 10 21 | 704 | 0.3− | 1.0+ | 2006 11 15 | 704 | 0.3+ | 0.2− |
| 2002 07 05 | 704 | 0.1− | 0.3+ | 2006 10 21 | 704 | 0.1− | 0.5+ | 2006 11 15 | 704 | 0.6+ | 0.1− |
| 2002 07 16 | 428 | 0.3− | 0.4− | 2006 10 21 | 704 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.7+ | 0.6+ |
| 2002 07 16 | 428 | 0.2− | 0.0 | 2006 10 21 | 704 | 0.9− | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 2002 07 17 | 428 | 0.8− | 0.3+ | 2006 10 21 | 704 | 0.5+ | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2002 07 17 | 428 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.1+ |
| 2002 07 20 | 428 | (2.0− | 0.1−) | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2002 07 20 | 428 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 2002 07 27 | 428 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.3+ |
| 2002 07 27 | 428 | 1.0− | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.4+ |
| 2002 07 28 | 608 | 0.4+ | 0.6− | 2006 10 22 | 644 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.3− | 0.4+ |
| 2002 07 28 | 608 | 0.6+ | 1.2− | 2006 10 23 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.2+ |
| 2002 07 28 | 608 | 0.6+ | 0.8− | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2002 07 28 | 428 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 2002 07 28 | 428 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.6− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2002 08 13 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.8+ | 0.5− | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2002 08 13 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 08 13 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.6− | 2006 11 22 | 704 | 0.9− | 0.3+ |
| 2002 08 13 | 704 | 0.3− | 0.6− | 2006 10 29 | 704 | 0.3− | 1.2+ | 2006 11 22 | 704 | 1.2− | 0.2+ |
| 2002 08 13 | 704 | 0.5− | 0.2− | 2006 10 29 | 704 | 0.1− | 0.6+ | 2006 11 22 | 704 | 0.7− | 0.2+ |
| 2004 02 12 | 691 | 0.3− | 0.0 | 2006 10 29 | 704 | 1.5− | 0.7+ | 2006 11 22 | 704 | 1.3− | 0.0 |
| 2004 02 12 | 691 | 0.4+ | 0.7+ | 2006 11 01 | H07 | 0.0 | 0.6− | 2006 11 22 | 704 | 1.3− | 0.2+ |
| 2004 02 12 | 691 | 0.5+ | 0.3+ | 2006 11 01 | H07 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.5− | 0.8− |
| 2004 03 01 | 691 | 0.2− | 0.1+ | 2006 11 01 | H07 | 0.1+ | 0.4− | 2006 11 28 | 704 | 1.4+ | 0.9− |
| 2004 03 01 | 691 | 0.6+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.8− |
| 2004 03 01 | 691 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.4− | 1.1− |
| 2006 08 28 | 703 | 0.4+ | 1.1+ | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2006 08 28 | 703 | 0.7− | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.3− |
| 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.0 |
| 2006 09 17 | 699 | 0.4− | 0.9+ | 2006 11 11 | 703 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.0 | 1.2+ |
| 2006 09 17 | 699 | 0.8+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.2− | 2006 12 01 | 704 | 0.1+ | 0.6+ |
| 2006 09 17 | 699 | 1.2+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.2+ | 2006 12 01 | 704 | 0.1+ | 0.6+ |
| 2006 09 17 | 699 | 1.2+ | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.5− | 2006 12 01 | 704 | 0.1− | 0.3+ |
| 2006 09 18 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.8− | 2006 12 01 | 704 | 0.6− | 1.0+ |

**(141830)∗ 2002 OH**

Discovered 2002 July 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.88078 | | (2000.0) | | | |
| $n$ | 0.26800050 | $\omega$ | 315.89948 | | +0.99017276 | −0.11397941 |
| $a$ | 2.3825699 | $\Omega$ | 50.82121 | | +0.13852032 | +0.87903593 |
| $e$ | 0.2160177 | $i$ | 6.00048 | | −0.01923622 | +0.46293038 |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 11 | 691 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 27 | 704 | 0.1+ | 0.1− |
| 1994 05 11 | 691 | 0.7− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.3− | 0.0 |
| 1994 05 11 | 691 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 1995 12 19 | 691 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 1995 12 19 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1− |
| 1995 12 19 | 691 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.2− |
| 2002 07 16 | 644 | 0.1− | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.2+ | 0.1− |
| 2002 07 16 | 644 | 0.1+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 07 16 | 644 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.8− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2002 07 17 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2002 07 17 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2002 07 17 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1− | 1.2+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2002 08 13 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2002 08 13 | 704 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2002 08 13 | 704 | 0.2+ | 0.7− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2002 08 13 | 704 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.8− | 0.4− |
| 2002 08 13 | 704 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.2− | 0.6− |
| 2002 08 30 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2002 08 30 | 644 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2002 08 30 | 644 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2004 01 30 | 704 | 0.8+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2004 01 30 | 704 | 0.6− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.3− |
| 2004 01 30 | 704 | 1.0+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2004 01 30 | 704 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.3− |
| 2004 02 15 | 704 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.6− |
| 2004 02 15 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.6− |
| 2004 02 15 | 704 | 1.2+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.3+ | 2006 11 21 | 704 | 1.0+ | 0.1− |
| 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.9+ | 0.0 |
| 2006 09 20 | 644 | 0.4+ | 0.1− | 2006 10 22 | 704 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.2− |
| 2006 09 20 | 644 | 0.0 | 0.5+ | 2006 10 22 | 704 | (1.6− | 1.3+) | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2006 09 30 | 703 | (1.0− | 1.7+) | 2006 10 22 | 704 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2006 09 30 | 703 | 0.3+ | 0.6+ | 2006 10 22 | 704 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 10 27 | 704 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.2+ | 1.2− |
| 2006 09 30 | 703 | 0.0 | 0.9+ | 2006 10 27 | 704 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.4+ | 0.3− |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 27 | 704 | 0.2− | 1.1+ | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 27 | 704 | 0.1− | 0.3+ | 2006 11 27 | 703 | 1.0+ | 1.1− |

**(141831)∗ 2002 OV$_4$ = 2005 EY$_{206}$**

Discovered 2002 July 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75405)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.42562 | | (2000.0) | | | |
| $n$ | 0.27717939 | $\omega$ | 83.58381 | | +0.34140860 | +0.93839744 |
| $a$ | 2.3296755 | $\Omega$ | 206.57272 | | −0.90263953 | +0.31150162 |
| $e$ | 0.1255112 | $i$ | 6.85459 | | −0.26207261 | +0.14958937 |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 04 11 | 699 | (1.1+ | 1.7−) | 2006 10 15 | 691 | 0.5− | 0.1+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.3− | 0.5− | 2006 10 15 | 691 | 0.6+ | 0.4− |
| 2002 07 17 | 644 | 0.3− | 0.3+ | 2005 04 11 | 699 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 07 17 | 644 | 0.1− | 0.0 | 2005 04 11 | 699 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.5− | 0.3+ |
| 2002 07 17 | 644 | 0.1− | 0.1+ | 2005 04 15 | 699 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.8− | 0.3+ |
| 2002 07 20 | 644 | 0.5+ | 0.3− | 2005 04 15 | 699 | 0.4+ | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2002 07 20 | 644 | 0.2− | 0.5+ | 2005 04 15 | 699 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2002 07 20 | 644 | 0.3− | 0.4+ | 2005 04 15 | 699 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2002 07 28 | 644 | 0.1− | 0.5+ | 2005 05 04 | G96 | 0.6− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2002 07 28 | 644 | 0.3+ | 0.2+ | 2005 05 04 | G96 | 0.6− | 0.2− | 2006 10 21 | 703 | 0.5+ | 0.3+ |
| 2002 07 28 | 644 | 0.2+ | 0.4+ | 2005 05 04 | G96 | 0.5− | 0.3− | 2006 10 21 | 703 | 0.9+ | 0.5− |
| 2002 08 04 | 644 | 0.2− | 0.6+ | 2005 05 04 | G96 | 0.4− | 0.0 | 2006 10 21 | 703 | 1.2+ | 0.8− |
| 2002 08 04 | 644 | 0.3− | 0.5+ | 2005 05 08 | 703 | 0.4− | 0.9+ | 2006 10 21 | 703 | 1.1− | 0.8− |
| 2002 08 04 | 644 | 0.0 | 0.5+ | 2005 05 08 | 703 | 0.7− | 0.7− | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2005 05 08 | 703 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 03 13 | 691 | 0.4+ | 0.4+ | 2005 05 08 | 703 | (2.2− | 0.0 ) | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2005 05 13 | G96 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.5+ |
| 2005 03 14 | G96 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2005 03 14 | G96 | 0.2− | 0.1+ | 2005 05 13 | G96 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.3− | 0.5+ |
| 2005 03 14 | G96 | 0.5− | 0.0 | 2005 05 13 | G96 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.8− | 0.2− |
| 2005 03 14 | G96 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.7+ | 0.9+ |
| 2005 03 17 | G96 | 1.0− | 0.2+ | 2006 09 15 | 691 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2005 03 17 | G96 | 0.5− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2005 03 17 | G96 | 0.1− | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.7− |
| 2005 03 17 | G96 | 0.6− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2005 04 04 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 2005 04 04 | 691 | 0.4+ | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2005 04 04 | 691 | 0.9+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 11 20 | G96 | 1.3− | 0.2− |
| 2005 04 04 | 704 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 0.3− | 0.0 |
| 2005 04 04 | 704 | 1.1− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 20 | G96 | 0.1+ | 0.7+ |
| 2005 04 04 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.6− | 0.7+ | 2006 11 20 | G96 | 1.1− | 0.1− |
| 2005 04 04 | 704 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.5+ | | | | |
| 2005 04 04 | 704 | 0.6− | 0.0 | 2006 10 15 | 691 | 0.4− | 0.3+ | | | | |

**(141832)∗ 2002 OY$_7$**

Discovered 2002 July 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.88803 | | (2000.0) | | | |
| $n$ | 0.31543023 | $\omega$ | 107.47924 | | +0.76368109 | −0.63798671 |
| $a$ | 2.1373083 | $\Omega$ | 292.28096 | | +0.54438618 | +0.71865003 |
| $e$ | 0.1517494 | $i$ | 6.13013 | | +0.34703728 | +0.27661361 |
| $P$ | 3.12 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 691 | 0.1− | 0.2+ | 2002 08 07 | 644 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.6+ | 1.5+ |
| 1996 10 08 | 691 | 0.1− | 0.2− | 2002 08 07 | 644 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.3+ | 0.2+ |
| 1996 10 08 | 691 | 0.2− | 0.2+ | 2002 08 28 | 644 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.3− | 0.5+ |
| 1996 10 08 | 691 | 0.1− | 0.2+ | 2002 08 28 | 644 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.6+ |
| 1996 10 08 | 691 | 0.1− | 0.2+ | 2002 08 28 | 644 | 0.6− | 0.0 | 2004 03 18 | 704 | 0.0 | 0.3− |
| 1996 10 08 | 691 | 0.1− | 0.3+ | 2004 02 15 | 644 | 0.2− | 0.7+ | 2006 10 22 | 691 | 0.3+ | 0.3− |
| 1996 10 10 | 608 | 0.2− | 0.6+ | 2004 02 15 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2001 03 19 | 699 | 0.6+ | 0.1− | 2004 02 15 | 644 | 0.3+ | 1.4+ | 2006 10 22 | 691 | 0.9+ | 0.1+ |
| 2001 03 19 | 699 | 0.7+ | 0.5− | 2004 02 19 | 704 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2001 03 19 | 699 | 0.5+ | 0.6+ | 2004 02 19 | 704 | 0.0 | 0.9− | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2001 03 19 | 699 | 0.4+ | 0.4− | 2004 02 19 | 704 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2002 07 04 | 644 | 0.7− | 0.5− | 2004 03 01 | 703 | 0.3+ | 1.5+ | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 2002 07 04 | 644 | 0.3− | 0.1− | 2004 03 01 | 703 | (0.3+ | 1.7+) | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2002 07 04 | 644 | 0.6− | 0.0 | 2004 03 01 | 703 | (0.2+ | 3.0+) | 2006 10 27 | 691 | 0.1− | 0.6− |
| 2002 07 18 | 644 | 0.1+ | 0.9+ | 2004 03 01 | 703 | 1.4+ | 1.4+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2002 07 18 | 644 | 0.4+ | 1.2+ | 2004 03 18 | 704 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 07 18 | 644 | 0.6+ | 1.2+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 11 16 | G96 | 1.0− | 0.0 |
| 2002 07 22 | 644 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.2+ |
| 2002 07 22 | 644 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2002 08 06 | 644 | 0.4− | 0.1+ | 2004 03 18 | 704 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.6− | 0.1+ |
| 2002 08 06 | 644 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.2+ |
| 2002 08 06 | 644 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.6− | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.4+ |
| 2002 08 07 | 644 | (1.9+ | 0.0 ) | 2004 03 18 | 704 | 0.2− | 0.1+ | | | | |

**(141833)∗ 2002 ON$_8$**

Discovered 2002 July 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.45246 | | (2000.0) | | | |
| $n$ | 0.26953210 | $\omega$ | 213.73645 | | +0.99439412 | −0.10254110 |
| $a$ | 2.3735354 | $\Omega$ | 152.11495 | | +0.10503705 | +0.92992262 |
| $e$ | 0.2481088 | $i$ | 3.16228 | | +0.01214696 | +0.35317028 |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 0.3− | 0.1+ | 2002 10 11 | 704 | 0.3− | 1.0+ | 2006 11 02 | 703 | 0.2+ | 0.2− |
| 2001 03 16 | 691 | 0.4− | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.9+ | 2006 11 02 | 703 | 0.0 | 0.1+ |
| 2001 03 16 | 691 | 0.4+ | 0.4+ | 2002 10 11 | 704 | 0.1+ | 0.8+ | 2006 11 02 | 703 | 0.8− | 1.1− |
| 2002 07 04 | 644 | 0.1− | 1.4+ | 2004 01 30 | 691 | 0.0 | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 0.4− | 1.0+ | 2004 01 30 | 691 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 07 04 | 644 | 0.2− | 1.0+ | 2004 01 30 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 2002 07 14 | 704 | 0.2− | 0.7+ | 2004 02 13 | 691 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 2002 07 14 | 704 | 0.1− | 1.0+ | 2004 02 13 | 691 | 0.6+ | 0.7+ | 2006 11 10 | 683 | 0.1− | 0.2− | | |
| 2002 07 14 | 704 | 0.5− | 0.0 | 2004 02 13 | 691 | 0.3+ | 0.6+ | 2006 11 10 | 683 | (0.3− | 2.7+) | | |
| 2002 07 14 | 704 | 1.4− | 0.2− | 2005 04 16 | 691 | 0.4+ | 0.6+ | 2006 11 10 | 683 | 0.0 | 0.5+ | | |
| 2002 07 19 | 644 | 0.2+ | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 683 | 0.1+ | 0.4+ | | |
| 2002 07 19 | 644 | 0.2+ | 0.3+ | 2005 04 16 | 691 | 0.0 | 0.5+ | 2006 11 11 | 683 | 0.7− | 1.2+ | | |
| 2002 07 19 | 644 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.8− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.9− | | |
| 2002 07 22 | 644 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.0 | | |
| 2002 07 22 | 644 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 2002 07 22 | 644 | 0.1+ | 0.4+ | 2006 08 28 | 703 | (1.7+ | 0.6−) | 2006 11 11 | 644 | 0.1+ | 0.0 | | |
| 2002 07 28 | 608 | (1.5+ | 1.6+) | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.6− | | |
| 2002 07 28 | 608 | 1.1+ | 1.1+ | 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 11 11 | 644 | 0.0 | 0.0 | | |
| 2002 07 28 | 608 | 1.2+ | 1.3+ | 2006 09 16 | 703 | 0.0 | 0.2+ | 2006 11 11 | 644 | 0.1+ | 0.0 | | |
| 2002 08 08 | 699 | 0.6+ | 0.5− | 2006 09 16 | 703 | 0.4+ | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.4+ | | |
| 2002 08 08 | 699 | (0.1+ | 1.6−) | 2006 09 19 | 704 | 0.7− | 0.2− | 2006 11 14 | 704 | 0.1− | 0.9+ | | |
| 2002 08 08 | 699 | (2.0+ | 0.7−) | 2006 09 19 | 704 | 0.3− | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.0 | | |
| 2002 08 08 | 699 | 0.6+ | 0.3+ | 2006 09 19 | 704 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.0 | 0.4+ | | |
| 2002 08 09 | 807 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.5− | 0.3+ | | |
| 2002 08 09 | 807 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.1− | 0.7+ | | |
| 2002 08 14 | 704 | 0.2+ | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.2+ | | |
| 2002 08 14 | 704 | 0.5− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.2− | 0.2+ | | |
| 2002 08 14 | 704 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.5− | 0.4+ | | |
| 2002 08 14 | 704 | 1.0− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.2− | 0.1+ | | |
| 2002 08 14 | 704 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 2002 08 15 | 699 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2002 08 15 | 699 | 0.0 | 0.0 | 2006 10 16 | 703 | (1.7− | 0.9−) | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2002 08 15 | 699 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2002 08 15 | 699 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.7+ | | |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.4+ | | |
| 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 10 22 | 704 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.6− | | |
| 2002 08 17 | 644 | 0.3− | 0.0 | 2006 10 22 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.7+ | | |
| 2002 08 18 | 608 | (1.9− | 0.5+) | 2006 10 22 | 704 | 1.0− | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.2+ | | |
| 2002 08 18 | 608 | (1.6− | 1.2+) | 2006 10 22 | 704 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.4+ | | |
| 2002 08 18 | 608 | (1.6− | 1.0+) | 2006 10 22 | 704 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.0 | | |
| 2002 08 27 | 644 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.1− | | |
| 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.3+ | | |
| 2002 08 27 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.1+ | | |
| 2002 09 02 | 608 | 0.5− | 0.7− | 2006 10 27 | 704 | 0.1− | 0.7+ | 2006 11 25 | 704 | 0.5+ | 0.8+ | | |
| 2002 09 02 | 608 | 0.0 | 0.9− | 2006 10 27 | 704 | 0.7− | 0.7+ | 2006 11 25 | 704 | 0.1+ | 0.9+ | | |
| 2002 09 02 | 608 | 0.3− | 0.8− | 2006 10 27 | 704 | 0.9− | 0.2− | 2006 11 25 | 704 | 0.4− | 0.8+ | | |
| 2002 10 03 | 704 | 1.5− | 0.1+ | 2006 10 27 | 704 | 0.2+ | 1.0+ | 2006 11 25 | 704 | 0.5− | 0.6+ | | |
| 2002 10 03 | 704 | (2.0− | 0.2+) | 2006 10 27 | 704 | (1.2− | 2.1+) | 2006 11 28 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 03 | 704 | (1.6− | 1.6+) | 2006 11 02 | 704 | 1.4+ | 0.8+ | 2006 11 28 | 704 | 0.1− | 0.4+ | | |
| 2002 10 03 | 704 | 1.2− | 0.0 | 2006 11 02 | 704 | 0.6+ | 0.1− | 2006 11 28 | 704 | 0.5− | 0.2+ | | |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 11 02 | 704 | 1.3+ | 0.9+ | 2006 11 28 | 704 | 0.2+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 02 | 704 | 0.2+ | 0.7− | 2006 11 28 | 704 | 0.5− | 0.3+ | | |

**(141834)∗ 2002 OT$_9$ = 1999 XN$_{73}$**

Discovered 2002 July 21 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 33702)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.86231 | | (2000.0) | | | |
| $n$ | 0.26936644 | $\omega$ | 163.75015 | | +0.72013620 | −0.69123545 |
| $a$ | 2.3745085 | $\Omega$ | 240.13612 | | +0.62863302 | +0.68660707 |
| $e$ | 0.1292892 | $i$ | 3.96588 | | +0.29363987 | +0.22530931 |
| $P$ | 3.66 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3+ | 0.0 | 2004 01 23 | 704 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.1− | 0.1+ | | |
| 1999 12 07 | 704 | 0.4− | 0.6− | 2004 01 23 | 704 | 0.3+ | 0.9+ | 2006 09 25 | 704 | 0.5+ | 0.5+ | | |
| 1999 12 07 | 704 | 0.2− | 0.6− | 2004 01 23 | 704 | 0.7+ | 0.7+ | 2006 09 25 | 704 | 0.3− | 0.1− | | |
| 1999 12 07 | 704 | 0.0 | 0.8− | 2004 01 29 | 704 | 0.5− | 1.0+ | 2006 09 25 | 704 | 0.1− | 0.4+ | | |
| 1999 12 08 | 704 | 0.2− | 1.0− | 2004 01 29 | 704 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.0 | | |
| 1999 12 08 | 704 | 0.0 | 1.0− | 2004 01 29 | 704 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.1+ | | |
| 1999 12 08 | 704 | 0.1+ | 1.1− | 2004 01 29 | 704 | (3.9− | 1.6+) | 2006 09 29 | 704 | 0.2+ | 0.1+ | | |
| 1999 12 08 | 704 | 0.2− | 1.2− | 2004 02 13 | 333 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.0 | | |
| 1999 12 08 | 704 | 0.6+ | 0.8− | 2004 02 13 | 333 | 0.2− | 1.1+ | 2006 09 29 | 704 | 0.2+ | 0.1− | | |
| 2000 01 06 | 704 | 0.0 | 0.4− | 2004 02 13 | 333 | 0.5− | 1.1+ | 2006 10 03 | 704 | 0.4− | 0.4+ | | |
| 2000 01 06 | 704 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.6+ | 1.2+ | 2006 10 03 | 704 | (0.1+ | 1.7−) | | |
| 2000 01 06 | 704 | 1.2+ | 0.8− | 2004 02 17 | 704 | 0.5+ | 0.9+ | 2006 10 03 | 704 | 0.4+ | 0.3+ | | |
| 2000 01 06 | 704 | 0.1− | 1.0− | 2004 02 17 | 704 | (1.0+ | 1.5+) | 2006 10 03 | 704 | 0.2+ | 0.4+ | | |
| 2000 01 06 | 704 | 0.8+ | 0.2− | 2004 02 17 | 704 | (0.7+ | 1.6+) | 2006 10 16 | 683 | 0.2+ | 0.4− | | |
| 2002 07 14 | 704 | 0.2+ | 0.6+ | 2004 02 17 | 704 | 0.9+ | 1.4+ | 2006 10 16 | 683 | 0.1+ | 0.9+ | | |
| 2002 07 14 | 704 | 0.2− | 0.1− | 2004 03 15 | 703 | (1.5− | 0.1−) | 2006 10 16 | 683 | 1.4− | 0.4+ | | |
| 2002 07 14 | 704 | 0.1+ | 0.9+ | 2004 03 15 | 703 | 1.2− | 0.9− | 2006 10 17 | 683 | 0.1− | 0.1+ | | |
| 2002 07 14 | 704 | 0.3− | 0.9+ | 2004 03 15 | 703 | (0.6− | 3.2+) | 2006 10 17 | 683 | (1.4− | 2.1+) | | |
| 2002 07 14 | 704 | (1.8− | 0.8−) | 2004 03 15 | 703 | 0.9− | 0.4+ | 2006 10 17 | 683 | 0.5− | 0.8+ | | |
| 2002 07 21 | 644 | 0.1+ | 0.1+ | 2005 06 06 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 2002 07 21 | 644 | 0.0 | 0.1+ | 2005 06 06 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2− | | |
| 2002 07 21 | 644 | 0.2− | 0.2+ | 2005 06 06 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2002 07 22 | 644 | 0.2+ | 0.6− | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.0 | | |
| 2002 07 22 | 644 | 0.0 | 0.5− | 2005 06 13 | G96 | 0.0 | 0.3− | 2006 10 19 | 704 | 1.3− | 0.9+ | | |
| 2002 07 22 | 644 | 0.3+ | 0.7− | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 10 19 | 704 | (1.4− | 2.0+) | | |
| 2002 08 05 | 644 | 0.1− | 0.5+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 10 19 | 704 | (1.8− | 0.4−) | | |
| 2002 08 05 | 644 | 0.2+ | 0.3+ | 2005 06 17 | 691 | 0.3+ | 0.0 | 2006 10 19 | 704 | 0.9− | 0.2+ | | |
| 2002 08 05 | 644 | 0.1+ | 0.1+ | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 0.9− | 0.8− | | |
| 2002 08 08 | 699 | 0.7− | 0.9+ | 2005 06 17 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 08 08 | 699 | 0.1+ | 0.0 | 2006 08 18 | 291 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.3− | 0.1+ | | |
| 2002 08 08 | 699 | 0.5− | 0.5+ | 2006 08 18 | 291 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 08 | 699 | 0.5− | 0.3+ | 2006 08 18 | 291 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 08 14 | 704 | 1.1− | 0.8− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 14 | 704 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 08 14 | 704 | 0.1− | 0.9+ | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 10 29 | 704 | 0.8+ | 1.4+ | | |
| 2002 08 14 | 704 | 0.4− | 0.4− | 2006 09 18 | 703 | 0.3+ | 0.1− | 2006 10 29 | 704 | 0.1+ | 0.3+ | | |
| 2002 08 16 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.1− | 2006 10 29 | 704 | 0.5− | 0.5− | | |
| 2002 08 16 | 644 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.9+ | 0.2+ | 2006 10 29 | 704 | 0.3+ | 0.5+ | | |
| 2002 08 16 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.2+ | 1.1+ | | |
| 2002 08 26 | 644 | 0.3− | 0.2+ | 2006 09 18 | 704 | (0.1− | 1.5+) | 2006 11 15 | 704 | (0.5− | 2.3+) | | |
| 2002 08 26 | 644 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.3+ | 0.8+ | 2006 11 15 | 704 | 0.7+ | 0.9+ | | |
| 2002 08 26 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.4− | 0.2+ | 2006 11 15 | 704 | 1.0− | 0.0 | | |
| 2002 09 02 | 608 | 0.8+ | 0.1− | 2006 09 18 | 704 | 0.4− | 0.0 | 2006 11 18 | 291 | 0.0 | 0.1+ | | |
| 2002 09 02 | 608 | 0.9+ | 0.2− | 2006 09 18 | 704 | 0.2+ | 0.1− | 2006 11 18 | 291 | 0.1− | 0.1+ | | |
| 2002 09 02 | 608 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.5− | 0.3+ | 2006 11 18 | 291 | 0.3− | 0.1+ | | |
| 2002 09 06 | 704 | 0.6− | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.3− | | |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.3− | | |
| 2002 09 06 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.3− | | |
| 2002 09 06 | 704 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 2002 09 08 | 608 | 0.8− | 1.0− | 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.9+ | 1.2+ | | |
| 2002 09 08 | 608 | 0.6− | 1.1− | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2− | 0.2+ | | |
| 2002 09 08 | 608 | 0.2− | 1.1− | 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.8+ | | |
| 2002 09 13 | 704 | 1.0+ | 0.6− | 2006 09 22 | 224 | 0.4+ | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.1+ | | |
| 2002 09 13 | 704 | 0.7+ | 0.1+ | 2006 09 22 | 224 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.1− | | |
| 2002 09 13 | 704 | 0.8+ | 0.7− | 2006 09 22 | 224 | 0.1+ | 0.4− | | | | | | |
| 2004 01 23 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.8+ | | | | | | |

**(141835)∗ 2002 OB$_{11}$**

Discovered 2002 July 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.10157 | | (2000.0) | | | |
| $n$ | 0.27210851 | $\omega$ | 110.09319 | | −0.29097923 | +0.95626172 |
| $a$ | 2.3585294 | $\Omega$ | 142.94844 | | −0.89528325 | −0.26113479 |
| $e$ | 0.1815722 | $i$ | 2.84534 | | −0.33734105 | −0.13180340 |
| $P$ | 3.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 06 | 691 | 0.3− | 1.5+ | 2002 08 16 | 291 | 0.2− | 0.1+ | 2005 03 17 | 703 | 0.3− | 0.1+ | | |
| 1994 03 06 | 691 | 0.2+ | 0.4− | 2002 08 17 | 644 | 0.3+ | 0.1+ | 2005 03 17 | 703 | 0.4− | 0.0 | | |
| 1994 03 06 | 691 | 0.5+ | 0.1− | 2002 08 17 | 644 | 0.2+ | 0.1+ | 2005 03 17 | 703 | 0.7− | 0.8+ | | |
| 2002 07 22 | 644 | 0.1+ | 0.1− | 2002 08 17 | 644 | 0.2+ | 0.0 | 2005 03 31 | 699 | 0.7+ | 1.2− | | |
| 2002 07 22 | 644 | 0.2+ | 0.1+ | 2002 08 18 | 644 | 0.4+ | 1.0+ | 2005 03 31 | 699 | 0.5+ | 0.7+ | | |
| 2002 07 22 | 644 | 0.0 | 0.1− | 2002 08 18 | 644 | 0.6+ | 0.9+ | 2005 03 31 | 699 | 0.5+ | 0.1− | | |
| 2002 07 23 | 644 | 0.5+ | 1.2+ | 2002 08 18 | 644 | 0.5+ | 0.5+ | 2005 03 31 | 699 | 0.3− | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.3+ | 0.3+ | 2002 09 04 | 644 | 0.1− | 0.3+ | 2005 04 04 | 703 | 0.4− | 0.1+ | | |
| 2002 07 23 | 644 | 0.4+ | 1.1+ | 2002 09 04 | 644 | 0.0 | 0.3+ | 2005 04 04 | 703 | 0.3− | 0.1− | | |
| 2002 08 06 | 644 | 0.1+ | 0.3+ | 2002 09 04 | 644 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.2− | 0.3− | | |
| 2002 08 06 | 644 | 0.5+ | 0.3+ | 2005 03 11 | 691 | 0.3+ | 0.4+ | 2005 04 04 | 703 | 0.3+ | 0.1+ | | |
| 2002 08 06 | 644 | 0.3+ | 0.2+ | 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 691 | 0.3− | 0.3+ | | |
| 2002 08 08 | 644 | 0.0 | 0.1− | 2005 03 11 | 691 | 0.2− | 0.0 | 2006 09 14 | 691 | 0.2− | 0.3+ | | |
| 2002 08 08 | 644 | 0.1+ | 0.3− | 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.3+ | | |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.1− | | |
| 2002 08 12 | 608 | 1.2− | 0.6− | 2005 03 12 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 691 | (2.1− | 0.6−) | | |
| 2002 08 12 | 608 | 0.5− | 1.0− | 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.2+ | | |
| 2002 08 12 | 608 | 0.9− | 0.7− | 2005 03 16 | G96 | 0.1− | 0.4− | 2006 10 19 | 291 | 0.0 | 0.6+ | | |
| 2002 08 14 | 704 | 0.3− | 1.0+ | 2005 03 16 | G96 | 0.4− | 0.3− | 2006 10 19 | 291 | 0.0 | 0.6+ | | |
| 2002 08 14 | 704 | 0.1+ | 0.8− | 2005 03 16 | G96 | 0.2− | 0.3− | 2006 10 19 | 291 | 0.1− | 0.7+ | | |
| 2002 08 14 | 704 | 0.0 | 0.9− | 2005 03 16 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.6− | 0.4− | 2005 03 16 | G96 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2+ | | |
| 2002 08 16 | 291 | 0.2− | 0.3+ | 2005 03 16 | 691 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.1+ | | |
| 2002 08 16 | 291 | 0.2− | 0.3+ | 2005 03 17 | 703 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.6+ | 0.0 | | |

**(141836)∗ 2002 ON$_{16}$ = 1999 TW$_{327}$**

Discovered 2002 July 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33708)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 49.84362 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.28388212 | $\omega$ | 128.82928 | | +0.86969638 | +0.49244706 | |
| *a* | 2.2928590 | $\Omega$ | 201.73193 | | −0.47626808 | +0.81940659 | |
| *e* | 0.1394780 | *i* | 5.19526 | | −0.12960293 | +0.29337474 | |
| *P* | 3.47 | *H* | 16.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.2+ | 0.0 | 2002 08 05 | 644 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 1999 09 30 | 691 | 0.1− | 0.2+ | 2002 08 09 | 608 | 0.3+ | 1.0− | 2006 11 09 | 644 | 0.1+ | 0.4+ | | |
| 1999 09 30 | 691 | 0.1+ | 0.1+ | 2002 08 09 | 608 | 0.4− | 1.0− | 2006 11 11 | 703 | 0.0 | 0.2+ | | |
| 1999 10 11 | 704 | 0.0 | 0.0 | 2002 08 09 | 608 | 0.2− | 1.0− | 2006 11 11 | 703 | 1.1− | 0.1+ | | |
| 1999 10 11 | 704 | 0.6− | 1.0− | 2002 09 06 | 704 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.1+ | | |
| 1999 10 11 | 704 | 1.0− | 0.4− | 2002 09 06 | 704 | 0.9+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 1.5+ | | |
| 1999 10 11 | 704 | 0.2− | 0.3− | 2002 09 06 | 704 | 0.7+ | 0.1− | 2006 11 14 | 704 | 0.9+ | 0.9+ | | |
| 1999 10 11 | 704 | 0.5+ | 0.8− | 2002 09 06 | 704 | 0.4− | 1.1− | 2006 11 14 | 704 | (0.9+ | 2.0+) | | |
| 1999 11 05 | 704 | 0.5+ | 0.7− | 2005 04 13 | 699 | 0.6+ | 1.1+ | 2006 11 14 | 704 | (1.8− | 0.9+) | | |
| 1999 11 05 | 704 | 0.2+ | 0.4+ | 2005 04 13 | 699 | 0.2+ | 1.1+ | 2006 11 14 | 704 | 0.4+ | 1.4+ | | |
| 1999 11 05 | 704 | 0.5+ | 0.0 | 2005 04 13 | 699 | (2.9+ | 0.3+) | 2006 11 17 | 704 | 1.2− | 0.9+ | | |
| 2002 07 03 | 644 | 0.4+ | 1.3+ | 2005 04 13 | 699 | 1.0+ | 0.3+ | 2006 11 17 | 704 | 0.7+ | 1.1+ | | |
| 2002 07 03 | 644 | 0.2+ | 1.0+ | 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 11 17 | 704 | (0.2+ | 1.7+) | | |
| 2002 07 03 | 644 | 0.4+ | 1.1+ | 2005 05 19 | G96 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.4− | 1.2+ | | |
| 2002 07 09 | 704 | 0.5+ | 0.9+ | 2005 05 19 | G96 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.1+ | 1.5+ | | |
| 2002 07 09 | 704 | 1.4− | 0.1− | 2005 05 19 | G96 | 0.4− | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.6− | | |
| 2002 07 09 | 704 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 11 20 | 704 | (1.4+ | 2.1−) | | |
| 2002 07 09 | 704 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 11 20 | 704 | (1.6+ | 0.0 ) | | |
| 2002 07 18 | 704 | 0.0 | 0.7− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.9+ | 0.1+ | | |
| 2002 07 18 | 704 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.6− | 2006 11 20 | 704 | 0.6− | 0.9+ | | |
| 2002 07 18 | 704 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.3− | 0.2− | 2006 11 22 | 683 | 1.2− | 1.2− | | |
| 2002 07 18 | 704 | 0.0 | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 22 | 683 | (0.1− | 2.1−) | | |
| 2002 07 18 | 704 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.3− | 2006 11 22 | 683 | (1.8+ | 0.8−) | | |
| 2002 07 21 | 644 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 23 | 683 | 0.1− | 1.0− | | |
| 2002 07 21 | 644 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.2− | 2006 11 23 | 683 | (1.4+ | 1.6−) | | |
| 2002 07 21 | 644 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 23 | 683 | 1.3+ | 0.0 | | |
| 2002 07 29 | 644 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 28 | 683 | 0.7+ | 0.6− | | |
| 2002 07 29 | 644 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 683 | 0.2+ | 0.3− | | |
| 2002 07 29 | 644 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.0 | 0.8+ | | |
| 2002 08 05 | 644 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 0.3+ | 0.9+ | | |
| 2002 08 05 | 644 | 0.0 | 0.2+ | 2006 11 02 | 703 | (2.4+ | 2.1−) | 2006 11 28 | 704 | 0.2− | 0.9+ | | |
| 2002 08 05 | 644 | 0.0 | 0.2+ | 2006 11 02 | 703 | 1.2− | 0.1+ | 2006 11 28 | 704 | 0.1− | 1.5+ | | |
| 2002 08 05 | 644 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 1.1− | 0.7− | 2006 11 28 | 704 | (0.2− | 1.5+) | | |
| 2002 08 05 | 644 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2− | | | | | | |

**(141837)∗ 2002 OT$_{16}$**

Discovered 2002 July 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 345.60978 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26413618 | $\omega$ | 168.03995 | | +0.96870628 | −0.24448293 | |
| *a* | 2.4057516 | $\Omega$ | 206.23171 | | +0.21898934 | +0.92310059 | |
| *e* | 0.1310871 | *i* | 5.56347 | | +0.11684101 | +0.29683900 | |
| *P* | 3.73 | *H* | 16.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 03 | 691 | 0.1− | 0.3+ | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.3+ | 0.7− | | |
| 1995 10 03 | 691 | 0.1+ | 0.4− | 2005 04 30 | 691 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.8− | | |
| 1995 10 03 | 691 | 0.3+ | 0.9− | 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.6− | 1.1− | | |
| 2002 07 09 | 704 | (2.4− | 0.3+) | 2005 05 11 | G96 | 0.5− | 0.2− | 2006 09 12 | 703 | 0.0 | 0.0 | | |
| 2002 07 09 | 704 | 0.1− | 0.6− | 2005 05 11 | G96 | 0.1+ | 0.2− | 2006 09 18 | 704 | 0.0 | 0.4+ | | |
| 2002 07 09 | 704 | 0.0 | 0.4+ | 2005 05 11 | G96 | 0.4− | 0.4− | 2006 09 18 | 704 | 0.1− | 0.4+ | | |
| 2002 07 09 | 704 | 0.6− | 0.1− | 2005 05 11 | G96 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.1− | 0.5+ | | |
| 2002 07 18 | 704 | 0.9− | 0.0 | 2005 05 14 | 644 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.4− | 0.7+ | | |
| 2002 07 18 | 704 | 0.0 | 0.4− | 2005 05 14 | 644 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.3− | 0.3+ | | |
| 2002 07 18 | 704 | 0.5+ | 0.7− | 2005 05 14 | 644 | 0.3+ | 0.3− | 2006 09 20 | 691 | 0.1− | 0.1+ | | |
| 2002 07 18 | 704 | 0.3+ | 1.0+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 09 20 | 691 | 0.1− | 0.2+ | | |
| 2002 07 18 | 704 | 1.0− | 0.4− | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 09 20 | 691 | 0.1− | 0.1+ | | |
| 2002 07 21 | 644 | 0.3+ | 0.2− | 2005 05 14 | G96 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.1− | | |
| 2002 07 21 | 644 | 0.2− | 0.2− | 2005 05 14 | G96 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.2+ | | |
| 2002 07 21 | 644 | 0.0 | 0.1− | 2006 08 24 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 0.7+ | 0.8− | | |
| 2002 08 05 | 644 | 0.3− | 0.3− | 2006 08 24 | 704 | 0.1− | 1.2+ | 2006 09 25 | 699 | 0.2+ | 0.4+ | | |
| 2002 08 05 | 644 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.2− | 1.3+ | 2006 10 16 | 703 | 0.1− | 1.0+ | | |
| 2002 08 05 | 644 | 0.1− | 0.2− | 2006 08 24 | 704 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.5+ | 1.4+ | | |
| 2002 08 06 | 644 | 0.3+ | 0.0 | 2006 08 26 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2− | | |
| 2002 08 06 | 644 | 0.1− | 0.2− | 2006 08 26 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.4− | | |
| 2002 08 06 | 644 | 0.3+ | 0.0 | 2006 08 26 | 704 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2+ | | |
| 2002 08 16 | 644 | 0.4+ | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1+ | | |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2− | | |
| 2002 08 16 | 644 | 0.4+ | 0.2− | 2006 08 27 | 699 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.4− | 0.3− | | |
| 2004 01 14 | 644 | 0.1− | 0.8+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.3− | | |
| 2004 01 14 | 644 | 0.2− | 1.0+ | 2006 08 29 | 703 | (1.0− | 1.5+) | 2006 10 20 | G96 | 0.1− | 0.1− | | |
| 2004 01 14 | 644 | 0.0 | 1.2+ | 2006 08 29 | 703 | 0.5− | 1.2− | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2005 01 17 | 809 | 0.1− | 0.3− | 2006 08 29 | 703 | (1.7+ | 1.2−) | 2006 10 22 | 691 | 0.0 | 0.3− | | |
| 2005 01 17 | 809 | 0.2− | 0.3− | 2006 08 29 | 703 | (2.2+ | 0.2−) | 2006 10 22 | 691 | 0.1− | 0.2+ | | |
| 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 08 30 | 704 | 1.2+ | 0.8+ | 2006 10 22 | 691 | 0.1+ | 0.1+ | | |
| 2005 04 16 | 691 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.8+ | 0.5+ | | | | | | |
| 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.7− | 0.7− | | | | | | |

**(141838)∗ 2002 OE$_{17}$**

Discovered 2002 July 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 54.01979 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26681397 | $\omega$ | 78.30528 | | +0.50313847 | +0.86142103 | |
| *a* | 2.3896283 | $\Omega$ | 222.13600 | | −0.82768813 | +0.45725388 | |
| *e* | 0.1778420 | *i* | 5.93081 | | −0.24856395 | +0.22107169 | |
| *P* | 3.69 | *H* | 16.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 02 | 691 | 0.1− | 0.1− | 2002 08 19 | 608 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.4− | 0.2+ | | |
| 2000 01 02 | 691 | 0.1+ | 0.3+ | 2002 08 19 | 608 | 0.4− | 0.4− | 2006 09 18 | 699 | 0.7+ | 0.5− | | |
| 2000 01 02 | 691 | 0.1− | 0.4+ | 2002 08 19 | 608 | 0.2+ | 0.7− | 2006 09 18 | 699 | 0.2− | 0.2+ | | |
| 2002 07 12 | 644 | 0.1+ | 0.2+ | 2002 08 25 | 644 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.1+ | 1.0− | | |
| 2002 07 12 | 644 | 0.2+ | 0.4+ | 2002 08 25 | 644 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.3− | | |
| 2002 07 12 | 644 | 0.4+ | 0.4+ | 2002 08 25 | 644 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.7− | | |
| 2002 07 18 | 704 | 0.7+ | 0.5− | 2002 09 02 | 608 | 0.7− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.5+ | | |
| 2002 07 18 | 704 | 1.2+ | 0.5− | 2002 09 02 | 608 | 0.5− | 0.2+ | 2006 09 22 | 224 | 1.0+ | 0.7+ | | |
| 2002 07 18 | 704 | 1.1+ | 0.3+ | 2002 09 02 | 608 | 1.0− | 0.6+ | 2006 09 22 | 224 | 1.3+ | 1.2+ | | |
| 2002 07 18 | 704 | 1.3+ | 0.2− | 2002 09 08 | 608 | 0.4− | 0.1− | 2006 09 22 | 224 | 1.3+ | 0.5+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 18 | 704 | 0.9+ | 0.2− | 2002 09 08 | 608 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 07 21 | 644 | 0.4+ | 0.4+ | 2002 09 08 | 608 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 07 21 | 644 | 0.4+ | 0.3+ | 2002 09 22 | 644 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2002 07 21 | 644 | 0.3+ | 0.4+ | 2002 09 22 | 644 | 0.1+ | 0.3− | 2006 09 29 | 704 | 1.0− | 0.1− |
| 2002 08 04 | 644 | 0.2− | 0.1− | 2002 09 22 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.4− | 0.3+ |
| 2002 08 04 | 644 | 0.0 | 0.0 | 2005 04 14 | 703 | 0.4+ | 1.0− | 2006 09 29 | 704 | 1.3− | 1.0+ |
| 2002 08 04 | 644 | 0.1− | 0.0 | 2005 04 14 | 703 | 0.8− | 1.2+ | 2006 09 29 | 704 | (2.3− | 0.6+) |
| 2002 08 05 | 644 | 0.2+ | 0.7+ | 2005 04 14 | 703 | 0.0 | 0.1+ | 2006 09 29 | 704 | (2.8− | 1.3+) |
| 2002 08 05 | 644 | 0.4+ | 0.7+ | 2005 04 14 | 703 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.3− | 0.2− |
| 2002 08 05 | 644 | 0.0 | 1.4+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.2− |
| 2002 08 08 | 699 | 1.2− | 0.5− | 2005 05 14 | G96 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2− |
| 2002 08 08 | 699 | 1.0− | 0.2− | 2005 05 14 | G96 | 0.5+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 08 08 | 699 | 1.0− | 0.5− | 2005 05 14 | G96 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 08 08 | 699 | 0.4− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 1.4− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.1− | 0.6− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2002 08 12 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2002 08 12 | 704 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.9+ | 0.6− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 08 12 | 704 | 0.2− | 0.0 | 2006 09 18 | 703 | (2.1− | 0.7−) | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 08 12 | 704 | 0.5− | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2002 08 15 | 644 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.7+ | 1.0+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 08 15 | 644 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2002 08 15 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | (1.7+ | 0.0 ) | | | | |

**(141839)∗ 2002 OT$_{20}$**

Discovered 2002 July 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.56263 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27195079 | $\omega$ | 205.94779 | | +0.69532718 | +0.71630272 | |
| $a$ | 2.3594412 | $\Omega$ | 108.16857 | | −0.64819468 | +0.66023513 | |
| $e$ | 0.1807979 | $i$ | 3.53418 | | −0.31042513 | +0.22583175 | |
| $P$ | 3.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.2+ | 0.6+ | 2004 01 31 | 291 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2− | 0.8− |
| 2002 07 14 | 644 | 0.1+ | 0.7+ | 2004 01 31 | 291 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.7− |
| 2002 07 14 | 644 | 0.4+ | 0.7+ | 2004 01 31 | 291 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.8− | 0.8− |
| 2002 07 22 | 644 | 0.0 | 0.1+ | 2005 03 09 | G96 | 0.3− | 0.3+ | 2006 09 30 | 703 | (1.4− | 3.4−) |
| 2002 07 22 | 644 | 0.0 | 0.4+ | 2005 03 09 | G96 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.1− |
| 2002 07 22 | 644 | 0.1− | 0.4+ | 2005 03 09 | G96 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2002 07 23 | 644 | 0.3− | 0.2+ | 2005 03 09 | G96 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2002 07 23 | 644 | 0.1− | 0.6+ | 2005 04 05 | 703 | 0.7+ | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2002 07 23 | 644 | 0.1− | 0.4+ | 2005 04 05 | 703 | 0.8+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2002 08 11 | 644 | 0.0 | 0.0 | 2005 04 05 | 703 | 1.0− | 1.0− | 2006 10 19 | 644 | 0.5− | 0.1− |
| 2002 08 11 | 644 | 0.0 | 0.1+ | 2005 04 05 | 703 | (2.0+ | 0.9+) | 2006 10 19 | 644 | 0.5− | 0.1− |
| 2002 08 11 | 644 | 0.0 | 0.0 | 2005 05 04 | 850 | (1.2− | 1.8+) | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 08 13 | 644 | 0.1− | 0.3+ | 2005 05 04 | 850 | 0.9− | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 08 13 | 644 | 0.3− | 0.4+ | 2005 05 04 | 850 | (1.7− | 0.3+) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 08 13 | 644 | 0.1− | 0.5+ | 2005 05 04 | 850 | (1.5− | 0.5+) | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2002 08 14 | 704 | 0.2− | 0.3+ | 2005 05 07 | 850 | (0.8− | 2.1+) | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 2002 08 14 | 704 | 0.0 | 0.0 | 2005 05 07 | 850 | 0.7− | 1.0− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2002 08 14 | 704 | 0.4− | 0.6− | 2005 05 08 | 850 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2002 08 14 | 704 | 0.6+ | 1.1− | 2005 05 08 | 850 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 08 15 | 699 | 0.4− | 0.3− | 2005 05 08 | 691 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 08 15 | 699 | 0.3+ | 0.3+ | 2005 05 08 | 850 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 08 15 | 699 | 0.1+ | 0.2− | 2005 05 08 | 691 | 0.6+ | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2002 08 15 | 699 | 0.7− | 0.2+ | 2005 05 08 | 691 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2005 05 08 | 703 | 0.9− | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2005 05 08 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2005 05 08 | 703 | 0.6+ | 0.3+ | 2006 11 13 | 291 | 0.1+ | 0.0 |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2005 05 08 | 703 | 0.9− | 1.0+ | 2006 11 13 | 291 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2005 05 09 | 850 | 0.0 | 0.0 | 2006 11 13 | 291 | 0.0 | 0.2+ |
| 2002 08 29 | 644 | 0.2− | 0.1− | 2005 05 09 | 850 | 0.6+ | 1.1+ | 2006 11 13 | 703 | 0.3+ | 0.3+ |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.2− | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 703 | 0.5+ | 0.7− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.5− | 2006 11 13 | 703 | 0.4+ | 0.1+ |
| 2002 08 31 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 1.3− | 0.7+ |
| 2002 08 31 | 704 | 0.4− | 0.7+ | 2006 09 29 | 699 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.7+ |
| 2002 08 31 | 704 | 1.1+ | 0.7− | 2006 09 29 | 699 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.3+ | 1.5+ |
| 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.3− | 0.9+ | 2006 11 17 | 704 | 2.2− | 1.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 09 29 | 699 | 1.0+ | 0.8− | 2006 11 20 | 704 | 0.2− | 0.9+ |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.9− | 1.3+ | 2006 11 20 | 704 | 0.6+ | 0.0 |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 09 29 | 699 | 1.3+ | 0.1− | 2006 11 20 | 704 | 0.3− | 1.1+ |
| 2004 01 27 | 691 | 0.3− | 0.6+ | 2006 09 29 | 699 | 0.8− | 1.0+ | 2006 11 20 | 704 | 0.3− | 2.5+ |
| 2004 01 27 | 691 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.4+ | 0.7− | | | | |

**(141840)∗ 2002 OU$_{20}$**

Discovered 2002 July 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.23016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27824606 | $\omega$ | 321.00618 | | +0.63375615 | +0.77348513 | |
| $a$ | 2.3237177 | $\Omega$ | 348.31311 | | −0.69865753 | +0.56760547 | |
| $e$ | 0.1745130 | $i$ | 2.43224 | | −0.33201024 | +0.28203686 | |
| $P$ | 3.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.2− | 0.0 | 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2002 07 22 | 644 | 0.3− | 0.2+ | 2003 12 22 | 704 | 0.2+ | 1.1+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2002 07 22 | 644 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2002 07 23 | 644 | 0.1+ | 0.6+ | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.4+ |
| 2002 07 23 | 644 | 0.2− | 0.4+ | 2004 01 27 | 691 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2002 07 23 | 644 | 0.1− | 0.3+ | 2005 03 15 | G96 | 0.6− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 2002 08 08 | 644 | 0.5− | 0.3+ | 2005 03 15 | G96 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 2002 08 08 | 644 | 0.5− | 0.3+ | 2005 03 15 | G96 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 2002 08 08 | 644 | 0.2− | 0.5+ | 2005 03 15 | G96 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 08 10 | 807 | 0.5− | 0.2− | 2005 04 03 | E12 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2002 08 10 | 807 | 0.4− | 0.2− | 2005 04 03 | E12 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 08 11 | 644 | 0.2+ | 0.6+ | 2005 04 03 | E12 | 0.6+ | 0.6− | 2006 10 27 | 703 | 0.5+ | 0.2+ |
| 2002 08 11 | 644 | 0.2+ | 0.4+ | 2005 04 03 | E12 | 0.7− | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.4− |
| 2002 08 11 | 644 | 0.2+ | 0.5+ | 2005 04 04 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.1+ |
| 2002 08 14 | 704 | 0.3− | 0.1− | 2005 04 04 | 691 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.2− | 0.5− |
| 2002 08 14 | 704 | 0.1− | 0.4− | 2005 04 04 | 691 | 0.4− | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2002 08 14 | 704 | 0.3+ | 0.4− | 2005 04 05 | 644 | 0.6+ | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2002 08 14 | 704 | 0.1+ | 0.1+ | 2005 04 05 | 644 | 0.5+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2002 08 14 | 704 | 0.5+ | 0.2− | 2005 04 05 | 644 | 0.6+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.4− | 0.1+ | 2005 04 11 | 691 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 08 18 | 644 | 0.4− | 0.1− | 2005 04 11 | 691 | 0.6+ | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2002 08 19 | 608 | 0.4+ | 0.1− | 2005 04 15 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.4+ |
| 2002 08 19 | 608 | 0.1− | 0.4− | 2005 04 15 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.3+ |
| 2002 08 19 | 608 | 0.4− | 0.5− | 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2005 04 18 | 703 | 1.4− | 0.7− | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2005 04 18 | 703 | 0.3− | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2002 08 29 | 644 | 0.3− | 0.5+ | 2005 04 18 | 703 | 1.2− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 08 31 | 704 | 0.1+ | 0.8+ | 2005 04 18 | 703 | 0.3− | 0.5+ | 2006 11 16 | 704 | 1.4− | 0.3+ |
| 2002 08 31 | 704 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.3− | 1.2+ |
| 2002 08 31 | 704 | 0.3+ | 0.0 | 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 704 | (0.8− | 1.5+) |
| 2002 09 05 | 699 | 0.5+ | 1.3+ | 2005 05 01 | 644 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 2002 09 05 | 699 | 0.3− | 0.1− | 2005 05 08 | 703 | 0.1− | 0.3− | 2006 11 16 | A89 | 0.5− | 0.3+ |
| 2002 09 05 | 699 | 0.6+ | 0.4− | 2005 05 08 | 703 | 0.2− | 0.5− | 2006 11 16 | A89 | (1.5+ | 1.4+) |
| 2002 09 05 | 699 | (1.8+ | 1.4+) | 2005 05 08 | 703 | 0.2− | 0.1− | 2006 11 16 | A89 | (1.5− | 0.4+) |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2005 05 08 | 703 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2002 09 05 | 704 | 0.8+ | 0.9+ | 2005 05 09 | 699 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.0 | 0.9+ |
| 2002 09 05 | 704 | 0.7− | 0.5+ | 2005 05 09 | 699 | 0.1− | 0.9+ | 2006 11 19 | 704 | 0.2− | 1.2+ |
| 2002 09 25 | 644 | 0.5− | 0.5+ | 2005 05 09 | 699 | (0.8+ | 2.3+) | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2002 09 25 | 644 | 0.1− | 0.7+ | 2005 05 09 | 699 | 0.9+ | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2002 09 25 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.4− | | | | |
| 2003 12 22 | 704 | 0.7− | 0.7+ | 2006 09 30 | G96 | 0.4+ | 0.1− | | | | |

**(141841)∗ 2002 OD$_{21}$**

Discovered 2002 July 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.49072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27738460 | $\omega$ | 33.69919 | | +0.99639575 | +0.06862923 | |
| $a$ | 2.3285263 | $\Omega$ | 322.26835 | | −0.08383691 | +0.88624353 | |
| $e$ | 0.0991321 | $i$ | 4.67293 | | +0.01291848 | +0.45810745 | |
| $P$ | 3.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.2− | 0.9+ | 2003 12 22 | 704 | 1.3+ | 1.1+ | 2004 02 16 | 691 | 0.0 | 0.4+ |
| 2002 07 14 | 644 | 0.0 | 0.7+ | 2003 12 23 | 704 | 0.5+ | 0.1− | 2004 02 16 | 691 | 0.0 | 0.3+ |
| 2002 07 14 | 644 | 0.1− | 0.7+ | 2003 12 23 | 704 | 0.4+ | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.4+ |
| 2002 07 22 | 644 | 0.1− | 0.9+ | 2003 12 23 | 704 | 1.4− | 0.5+ | 2005 05 11 | 644 | 0.2+ | 0.9+ |
| 2002 07 22 | 644 | 0.1+ | 0.9+ | 2003 12 23 | 704 | 0.2− | 0.3+ | 2005 05 11 | 644 | 0.7+ | 0.5+ |
| 2002 07 22 | 644 | 0.2+ | 0.8+ | 2003 12 23 | 704 | 0.5− | 0.8− | 2005 05 11 | 644 | 0.0 | 0.2+ |
| 2002 07 23 | 644 | 0.2− | 0.9+ | 2003 12 27 | 704 | 0.1+ | 0.1− | 2005 06 26 | 644 | 0.4+ | 1.0+ |
| 2002 07 23 | 644 | 0.5− | 0.8+ | 2003 12 27 | 704 | 0.3+ | 1.1+ | 2005 06 26 | 644 | 0.2+ | 0.5+ |
| 2002 07 23 | 644 | 0.3− | 0.7+ | 2003 12 27 | 704 | 0.4+ | 0.4+ | 2005 06 26 | 644 | 0.7− | 0.3+ |
| 2002 08 08 | 644 | 0.0 | 0.8+ | 2003 12 27 | 704 | 0.3+ | 1.1+ | 2006 10 19 | 703 | 0.3− | 0.7− |
| 2002 08 08 | 644 | 0.1− | 0.6+ | 2003 12 27 | 704 | 0.3+ | 0.1− | 2006 10 19 | 703 | (1.5+ | 0.7−) |
| 2002 08 08 | 644 | 0.1− | 0.7+ | 2003 12 27 | 608 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.3− | 1.1− |
| 2002 08 11 | 644 | 0.5− | 0.6+ | 2003 12 27 | 608 | 0.2+ | 0.8− | 2006 10 19 | 703 | 0.9+ | 0.2− |
| 2002 08 11 | 644 | 0.3− | 0.7+ | 2003 12 27 | 608 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.6+ | 0.1+ |
| 2002 08 11 | 644 | 0.2− | 0.6+ | 2003 12 29 | 699 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 08 14 | 704 | 0.3− | 0.2− | 2003 12 29 | 699 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2002 08 14 | 704 | 0.3− | 1.2+ | 2003 12 29 | 699 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 08 14 | 704 | 0.3− | 0.0 | 2003 12 29 | 699 | (0.2+ | 2.1+) | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 08 14 | 704 | (2.1− | 0.1+) | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 08 14 | 704 | 1.0− | 0.5− | 2004 01 15 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.8+ | 0.4+ |
| 2002 08 17 | 644 | 0.3− | 0.6+ | 2004 01 15 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.5+ | 0.5− |
| 2002 08 17 | 644 | 0.1− | 0.7+ | 2004 01 19 | 699 | 0.7+ | 1.1− | 2006 10 27 | 703 | 0.1+ | 0.5+ |
| 2002 08 17 | 644 | 0.2− | 0.5+ | 2004 01 19 | 699 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.7− | 0.5+ |
| 2002 08 18 | 644 | 0.3+ | 0.5+ | 2004 01 19 | 699 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2002 08 18 | 644 | 0.2+ | 0.6+ | 2004 01 19 | 699 | 0.7− | 1.0+ | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2002 08 18 | 644 | 0.1− | 0.5+ | 2004 01 19 | 699 | 0.5+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2002 09 01 | 608 | 0.3− | 0.4− | 2004 01 19 | 699 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.5+ | 0.3− |
| 2002 09 01 | 608 | 0.4− | 0.5− | 2004 01 19 | 699 | 0.9+ | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 09 01 | 608 | 0.5− | 0.2− | 2004 01 19 | 699 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2004 01 22 | 704 | (0.2+ | 1.8+) | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.9+ | 2006 11 14 | 703 | 0.3− | 0.3+ |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2004 01 22 | 704 | (0.0 | 2.0+) | 2006 11 14 | 703 | 0.6+ | 0.7+ |
| 2002 09 05 | 704 | 1.2− | 0.1− | 2004 01 22 | 704 | 0.4− | 1.3+ | 2006 11 14 | 703 | 0.5− | 0.9− |
| 2002 09 05 | 704 | (0.2+ | 2.2+) | 2004 01 22 | 704 | 0.1− | 1.4+ | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.6− | 2004 01 26 | 699 | 0.4+ | 1.0− | 2006 11 17 | 644 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2004 01 26 | 699 | 0.5+ | 0.2− | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.6+ | 0.6+ | 2004 01 26 | 699 | 0.0 | 0.2− | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2004 01 26 | 699 | 0.1− | 0.7+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.4+ | 1.3+ | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | (0.1+ | 1.6+) |
| 2003 12 19 | 704 | 0.8+ | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.2+ | 1.5− |
| 2003 12 19 | 704 | 0.1+ | 1.3+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 1.0− | 0.2+ |
| 2003 12 19 | 704 | 0.3− | 0.2+ | 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 1.0+ |
| 2003 12 19 | 704 | 0.2− | 0.1− | 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2003 12 21 | 691 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.6+ | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2004 01 30 | 704 | 1.0+ | 0.7+ | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | (3.0+ | 2.2+) | 2004 02 15 | 704 | 0.2− | 0.4+ | 2006 11 23 | 703 | 1.1− | 0.4− |
| 2003 12 22 | 704 | 1.0+ | 0.1− | 2004 02 15 | 704 | 0.6− | 0.3+ | 2006 11 23 | 703 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.1+ | 1.1− | 2004 02 15 | 704 | 0.1− | 0.3− | 2006 11 23 | 703 | (1.8− | 2.1−) |
| 2003 12 22 | 704 | 0.4− | 1.1+ | 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.3− | 1.1− |

**(141842)∗ 2002 OS$_{21}$**

Discovered 2002 July 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.45734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26955433 | $\omega$ | 163.57743 | | +0.57719742 | +0.81642366 | |
| $a$ | 2.3734049 | $\Omega$ | 141.67151 | | −0.75230307 | +0.53981800 | |
| $e$ | 0.1979531 | $i$ | 1.58849 | | −0.31762121 | +0.20505837 | |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 691 | 0.1+ | 0.0 | 2002 08 14 | 704 | (1.6− | 1.1−) | 2006 09 19 | 691 | 0.3+ | 0.2− |
| 2000 01 11 | 691 | 0.0 | 0.2+ | 2002 08 14 | 704 | 1.0− | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.2− |
| 2000 01 11 | 691 | 0.3− | 0.6+ | 2002 08 17 | 644 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.2− |
| 2002 07 04 | 644 | 0.2+ | 0.1+ | 2002 08 17 | 644 | 0.4+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2002 07 04 | 644 | 0.2+ | 0.5+ | 2002 08 17 | 644 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.4− | 0.2+ |
| 2002 07 04 | 644 | 0.1− | 0.2+ | 2002 08 17 | 644 | 0.3+ | 0.2− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2002 07 14 | 644 | 1.2− | 0.8+ | 2002 08 17 | 644 | 0.2− | 0.6− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2002 07 14 | 644 | 0.3+ | 1.0+ | 2002 08 17 | 644 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.4− | 0.2+ |
| 2002 07 14 | 644 | 0.7+ | 1.0+ | 2002 08 27 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2002 07 18 | 644 | 0.0 | 0.8+ | 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 07 18 | 644 | 0.1− | 0.8+ | 2002 08 27 | 644 | 0.0 | 0.0 | 2006 10 13 | D35 | 0.1+ | 0.0 |
| 2002 07 18 | 644 | 0.1− | 0.8+ | 2005 03 09 | 695 | 0.3+ | 0.4+ | 2006 10 13 | D35 | 0.1− | 0.3+ |
| 2002 07 22 | 644 | 0.0 | 0.1+ | 2005 03 09 | 695 | 0.4+ | 0.3+ | 2006 10 13 | D35 | 0.0 | 0.1+ |
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.2− |
| 2002 07 22 | 644 | 0.2+ | 0.1+ | 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2002 07 28 | 608 | 0.3+ | 0.7− | 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.1− |
| 2002 07 28 | 608 | 0.2+ | 0.6− | 2005 03 10 | G96 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2002 07 28 | 608 | 0.1+ | 0.4− | 2005 04 09 | G96 | 0.8+ | 1.5+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2005 04 09 | G96 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 08 06 | 644 | 0.3− | 0.2+ | 2005 04 09 | G96 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 08 06 | 644 | 0.1− | 0.3+ | 2005 04 09 | G96 | 0.5+ | 1.3+ | 2006 11 19 | 691 | 0.3− | 0.3+ |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2005 05 09 | G96 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2005 05 09 | G96 | 0.2− | 0.3− | 2006 11 20 | G96 | 0.2+ | 1.0+ |
| 2002 08 14 | 704 | 0.3+ | 0.3− | 2005 05 09 | G96 | 0.0 | 0.2− | 2006 11 20 | G96 | 1.0− | 0.8− |
| 2002 08 14 | 704 | 0.8− | 0.6− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 11 20 | G96 | 1.0+ | 0.3+ |
| 2002 08 14 | 704 | 0.0 | 0.7− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.2− |

**(141843)∗ 2002 OE$_{22}$**

Discovered 2002 July 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.07964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27353122 | $\omega$ | 147.20435 | | +0.93932048 | +0.34281886 | |
| $a$ | 2.3503441 | $\Omega$ | 192.76462 | | −0.32554072 | +0.87948173 | |
| $e$ | 0.1585080 | $i$ | 3.20161 | | −0.10816784 | +0.33013197 | |
| $P$ | 3.60 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 691 | 0.4+ | 0.6+ | 2002 08 16 | 644 | 0.0 | 0.4+ | 2005 05 19 | G96 | 0.3− | 0.4− |
| 2001 03 31 | 691 | 0.3+ | 0.2+ | 2002 08 16 | 644 | 0.1− | 0.4+ | 2005 05 19 | G96 | 0.4− | 0.0 |
| 2001 03 31 | 691 | 0.4+ | 0.7+ | 2002 08 16 | 644 | 0.1− | 0.2+ | 2006 07 21 | G96 | 0.5+ | 0.1− |
| 2002 07 22 | 644 | 0.1− | 0.7+ | 2002 08 17 | 644 | 0.1− | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.2− |
| 2002 07 22 | 644 | 0.4+ | 0.6+ | 2002 08 17 | 644 | 0.3+ | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.1− |
| 2002 07 22 | 644 | 0.5+ | 0.6+ | 2002 08 17 | 644 | 0.2+ | 0.7+ | 2006 07 21 | G96 | 0.4+ | 0.2+ |
| 2002 07 23 | 644 | 0.0 | 0.3+ | 2002 08 26 | 644 | 0.4− | 0.2+ | 2006 08 28 | 703 | (1.0+ | 1.7+) |
| 2002 07 23 | 644 | 0.0 | 0.6+ | 2002 08 26 | 644 | 0.3− | 0.7+ | 2006 08 28 | 703 | (2.5+ | 0.4−) |
| 2002 07 23 | 644 | 0.2+ | 0.4+ | 2002 08 26 | 644 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.8+ |
| 2002 08 06 | 644 | 0.1− | 0.6− | 2002 08 27 | 644 | 0.3− | 0.5+ | 2006 08 28 | 703 | 0.3− | 0.3+ |
| 2002 08 06 | 644 | 0.3− | 0.6− | 2002 08 27 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.8+ |
| 2002 08 06 | 644 | 0.1− | 0.8− | 2002 08 27 | 644 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2002 08 07 | 644 | 0.1− | 0.4− | 2002 09 06 | 704 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 08 07 | 644 | 0.0 | 0.4− | 2002 09 06 | 704 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2002 08 07 | 644 | 0.2− | 0.7− | 2002 09 06 | 704 | 1.2+ | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.2+ |
| 2002 08 08 | 699 | 0.6− | 0.2− | 2002 09 06 | 704 | 0.5+ | 0.5− | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2002 08 08 | 699 | 1.1− | 0.3+ | 2002 09 14 | 644 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 08 08 | 699 | 0.5− | 0.7+ | 2002 09 14 | 644 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2002 08 08 | 699 | 0.4− | 0.8+ | 2002 09 14 | 644 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2002 08 14 | 704 | 0.7− | 0.7− | 2004 02 17 | 645 | 0.0 | 0.2+ | 2006 11 11 | 683 | (0.4− | 2.2−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.2− | 0.1− | 2004 02 17 | 645 | 0.1− | 0.1+ | 2006 11 11 | 683 | (2.7− | 0.7−) |
| 2002 08 14 | 704 | 0.4+ | 0.2+ | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 683 | 0.4− | 0.7− |
| 2002 08 15 | 699 | 0.2− | 1.5+ | 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2002 08 15 | 699 | (0.1− | 1.8+) | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2002 08 15 | 699 | (0.8+ | 1.8+) | 2005 05 19 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.0 | 0.6+ |
| 2002 08 15 | 699 | 0.4− | 0.5+ | 2005 05 19 | G96 | 0.7− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2+ |

**(141844)∗ 2002 OL$_{22}$ = 1999 XT$_{102}$**

Discovered 2002 July 31 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 33713)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.33447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27628379 | $\omega$ | 31.65120 | | +0.99067415 | −0.13561826 | |
| $a$ | 2.3347073 | $\Omega$ | 336.13268 | | +0.11725514 | +0.89766348 | |
| $e$ | 0.2379230 | $i$ | 1.85970 | | +0.06939715 | +0.41929461 | |
| $P$ | 3.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 1.4+ | 0.3+ | 2002 09 01 | 699 | 1.0+ | 0.3+ | 2004 02 26 | 704 | 1.1+ | 0.2− |
| 1999 12 07 | 704 | 0.6− | 0.6+ | 2002 09 01 | 699 | 0.7+ | 0.3+ | 2004 02 26 | 704 | 1.4+ | 0.4+ |
| 1999 12 07 | 704 | 0.9+ | 0.2− | 2002 09 02 | 608 | 0.2− | 0.8− | 2004 02 26 | 704 | (1.2+ | 1.7+) |
| 1999 12 10 | 704 | 0.2− | 0.2− | 2002 09 02 | 608 | 0.3− | 0.7− | 2004 02 26 | 704 | 0.5+ | 1.2+ |
| 1999 12 10 | 704 | 0.9+ | 0.2+ | 2002 09 02 | 608 | 0.2− | 0.4− | 2004 02 29 | 691 | 0.3− | 0.6+ |
| 1999 12 10 | 704 | 0.4+ | 0.7+ | 2002 09 05 | 704 | 0.9− | 0.4− | 2004 02 29 | 691 | 0.1− | 0.5+ |
| 2000 01 03 | 704 | 1.0− | 0.7− | 2002 09 05 | 704 | 0.8− | 0.5+ | 2004 02 29 | 691 | 0.1+ | 0.6+ |
| 2000 01 03 | 704 | 0.2− | 0.8− | 2002 09 05 | 704 | 1.5− | 0.1+ | 2004 05 09 | 291 | 0.8+ | 0.3+ |
| 2000 01 03 | 704 | 0.2+ | 1.4− | 2002 09 05 | 704 | 1.0− | 0.3+ | 2004 05 09 | 291 | 1.0+ | 0.2+ |
| 2000 01 03 | 704 | 1.0− | 0.2− | 2002 09 05 | 704 | 0.7− | 0.2+ | 2004 05 09 | 291 | 0.6+ | 0.9+ |
| 2000 01 04 | 704 | 0.5− | 0.9− | 2002 09 14 | 644 | 0.4− | 0.3+ | 2005 05 12 | G96 | 0.4− | 0.2+ |
| 2000 01 04 | 704 | 0.1− | 0.4− | 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 05 12 | G96 | 0.4+ | 0.2+ |
| 2000 01 04 | 704 | 0.2− | 0.5− | 2002 09 14 | 644 | 0.5− | 0.3+ | 2005 05 12 | G96 | 0.2− | 0.3+ |
| 2000 01 04 | 704 | 0.2− | 0.5+ | 2002 09 15 | 644 | 0.1− | 1.0+ | 2005 05 12 | G96 | 0.7− | 0.8+ |
| 2000 01 04 | 704 | 0.2− | 0.2− | 2002 09 15 | 644 | 0.0 | 1.0+ | 2005 05 16 | 644 | 0.3+ | 0.3+ |
| 2002 07 23 | 644 | 0.3− | 0.1+ | 2002 09 15 | 644 | 0.1+ | 0.9+ | 2005 05 16 | 644 | 0.2+ | 0.5+ |
| 2002 07 23 | 644 | 0.2− | 0.3+ | 2002 10 01 | 699 | 0.5+ | 0.1− | 2005 05 16 | 644 | 0.1− | 0.1+ |
| 2002 07 23 | 644 | 0.4− | 0.1+ | 2002 10 01 | 699 | 0.2− | 0.8+ | 2005 05 19 | 644 | 0.3+ | 0.1+ |
| 2002 07 23 | 644 | 0.3− | 0.1+ | 2002 10 01 | 699 | 1.3+ | 0.8+ | 2005 05 19 | 644 | 0.3+ | 0.1+ |
| 2002 07 23 | 644 | 0.2− | 0.2+ | 2002 10 01 | 699 | 0.3− | 0.7+ | 2005 05 19 | 644 | 0.2+ | 0.1− |
| 2002 07 23 | 644 | 0.1− | 0.1+ | 2002 10 02 | 608 | 0.5− | 1.0− | 2006 08 29 | 703 | 0.7+ | 0.2+ |
| 2002 07 29 | 644 | 0.2− | 0.3+ | 2002 10 02 | 608 | 0.1− | 1.1− | 2006 08 29 | 703 | 0.1+ | 0.1+ |
| 2002 07 29 | 644 | 0.5− | 0.3+ | 2002 10 02 | 608 | 0.1− | 1.1− | 2006 08 29 | 703 | 0.6+ | 0.5− |
| 2002 07 29 | 644 | 0.4− | 0.4+ | 2002 10 03 | 704 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 0.1− | 0.4− |
| 2002 07 31 | 428 | 0.3+ | 0.4+ | 2002 10 03 | 704 | 0.7+ | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.3− |
| 2002 08 01 | 428 | 0.2− | 0.2− | 2002 10 03 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 704 | 0.4− | 0.4+ |
| 2002 08 01 | 428 | 0.7− | 0.2− | 2002 10 03 | 704 | 0.9+ | 1.1+ | 2006 09 20 | 704 | 0.2− | 0.6+ |
| 2002 08 02 | G78 | (1.9+ | 0.2+) | 2002 10 03 | 704 | 0.8+ | 1.3+ | 2006 11 10 | 691 | (2.6+ | 0.7+) |
| 2002 08 02 | G78 | 0.3+ | 0.8+ | 2002 10 04 | 704 | 0.1+ | 1.2+ | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2002 08 02 | G78 | 0.6+ | 0.5− | 2002 10 04 | 704 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.4− |
| 2002 08 08 | 699 | 0.7+ | 0.1+ | 2002 10 04 | 704 | 0.5+ | 1.2+ | 2006 11 15 | 704 | 1.1− | 0.6+ |
| 2002 08 08 | 699 | 0.2− | 1.2+ | 2002 10 04 | 704 | 0.5− | 1.1+ | 2006 11 15 | 704 | (2.6+ | 1.2+) |
| 2002 08 08 | 699 | 0.6+ | 0.6+ | 2002 10 04 | 704 | 0.1− | 0.6+ | 2006 11 15 | 704 | 0.6− | 0.4+ |
| 2002 08 08 | 699 | 0.1+ | 0.6+ | 2002 10 07 | 704 | 0.9+ | 0.4− | 2006 11 15 | 704 | 0.2+ | 0.6+ |
| 2002 08 08 | 644 | 0.3− | 0.1+ | 2002 10 07 | 704 | 0.5+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2002 10 07 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.9+ |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 704 | (0.5+ | 2.0+) |
| 2002 08 13 | G78 | 1.0+ | 1.3+ | 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2002 08 13 | G78 | 0.7− | 0.5+ | 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.7+ | 1.1− |
| 2002 08 13 | G78 | 0.5+ | 0.6− | 2002 10 11 | 704 | 0.2− | 0.4− | 2006 11 16 | 704 | 0.2− | 1.2+ |
| 2002 08 14 | 704 | 0.1− | 0.6+ | 2002 10 11 | 704 | 0.4− | 0.5− | 2006 11 16 | 704 | 0.2− | 0.2− |
| 2002 08 14 | 704 | 0.6− | 0.4− | 2003 11 30 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | (0.5− | 1.6+) |
| 2002 08 14 | 704 | 0.1+ | 0.5− | 2003 11 30 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.3− | 0.3+ |
| 2002 08 14 | 704 | 0.8− | 0.1+ | 2003 11 30 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.9+ | 0.3− |
| 2002 08 14 | 704 | 1.4− | 0.3+ | 2004 02 11 | 703 | 0.6+ | 1.4+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2002 08 15 | 699 | 0.7− | 0.3− | 2004 02 11 | 703 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2002 08 15 | 699 | 0.9− | 0.6+ | 2004 02 11 | 703 | 0.1− | 1.1+ | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2002 08 15 | 699 | 0.5− | 0.2+ | 2004 02 11 | 703 | 0.1− | 0.9+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2002 08 15 | 699 | 0.7− | 0.6+ | 2004 02 11 | 644 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2002 08 18 | 644 | 0.0 | 1.1+ | 2004 02 11 | 644 | 0.1− | 0.9+ | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.2+ | 1.0+ | 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2002 08 18 | 644 | 0.2+ | 1.0+ | 2004 02 11 | 644 | 0.1+ | 1.0+ | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2002 08 19 | 608 | 0.2+ | 0.1− | 2004 02 11 | 644 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 08 19 | 608 | 0.0 | 0.2+ | 2004 02 11 | 644 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2002 08 19 | 608 | 0.2+ | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 704 | 0.3− | 0.3+ |
| 2002 08 27 | 644 | 0.4− | 0.1+ | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 704 | 0.3+ | 0.2+ |
| 2002 08 27 | 644 | 0.4− | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 704 | 0.2+ | 0.6− |
| 2002 08 27 | 644 | 0.3− | 0.2+ | 2004 02 17 | 704 | (1.7+ | 0.2+) | 2006 11 28 | 704 | 0.6− | 1.5+ |
| 2002 08 29 | 644 | 0.1+ | 0.6+ | 2004 02 17 | 704 | 0.2− | 0.6+ | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 2002 08 29 | 644 | 0.1+ | 0.8+ | 2004 02 17 | 704 | 0.4+ | 0.2− | 2006 11 28 | 704 | 1.3− | 1.4+ |
| 2002 08 29 | 644 | 0.1+ | 0.7+ | 2004 02 22 | 691 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.8+ |
| 2002 09 01 | 699 | 0.1− | 0.9+ | 2004 02 22 | 691 | 0.2+ | 0.4+ | | | | |
| 2002 09 01 | 699 | 0.3+ | 0.7+ | 2004 02 22 | 691 | 0.2+ | 0.4+ | | | | |

**(141845)∗ 2002 OJ$_{23}$**

Discovered 2002 July 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.49128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30459111 | $\omega$ | 174.63718 | | −0.45515797 | +0.88820464 | |
| $a$ | 2.1877174 | $\Omega$ | 68.27501 | | −0.81942222 | −0.39030663 | |
| $e$ | 0.1084829 | $i$ | 3.86634 | | −0.34839411 | −0.24239070 | |
| $P$ | 3.24 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 12 | 644 | 0.1+ | 0.1− | 2003 12 17 | 691 | 0.2+ | 0.1+ | 2005 06 10 | 691 | 0.0 | 0.0 |
| 2002 06 12 | 644 | 0.1+ | 0.1+ | 2003 12 29 | 691 | 0.3− | 0.0 | 2005 06 10 | 691 | 0.8+ | 0.5+ |
| 2002 06 12 | 644 | 0.0 | 0.1− | 2003 12 29 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2002 07 05 | 644 | 0.1+ | 0.3− | 2003 12 29 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2002 07 05 | 644 | 0.2+ | 0.1+ | 2005 05 03 | 703 | (1.9− | 2.5−) | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2002 07 05 | 644 | 0.2− | 0.1− | 2005 05 03 | 703 | (1.0+ | 2.8−) | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2002 07 26 | 644 | 0.1− | 0.1+ | 2005 05 03 | 703 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.0 |
| 2002 07 26 | 644 | 0.3− | 0.5+ | 2005 05 03 | 703 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 2002 07 26 | 644 | 0.3− | 0.6− | 2005 05 07 | G96 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 2002 07 27 | 644 | 0.0 | 0.1+ | 2005 05 07 | G96 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 2002 07 27 | 644 | 0.1− | 0.4+ | 2005 05 07 | G96 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2002 07 27 | 644 | 0.0 | 0.3+ | 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2− |
| 2002 08 05 | 644 | 0.2+ | 0.4− | 2005 06 04 | 704 | 1.0− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2002 08 05 | 644 | 0.0 | 0.2− | 2005 06 04 | 704 | 0.1− | 1.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2002 08 05 | 644 | 0.3+ | 0.3− | 2005 06 04 | 704 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2003 12 17 | 691 | 0.0 | 0.3+ | 2005 06 04 | 704 | 0.3− | 0.3+ | | | | |
| 2003 12 17 | 691 | 0.0 | 0.1+ | 2005 06 10 | 691 | 0.1− | 0.1− | | | | |

**(141846)∗ 2002 OE$_{26}$ = 2000 CV$_{68}$ = 2004 CZ$_{12}$**

Discovered 2002 July 17 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 69381)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.81288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25303329 | $\omega$ | 76.83481 | | +0.93337782 | −0.35844638 | |
| $a$ | 2.4756217 | $\Omega$ | 304.16728 | | +0.32030892 | +0.85453874 | |
| $e$ | 0.2715762 | $i$ | 1.24277 | | +0.16188895 | +0.37587197 | |
| $P$ | 3.90 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.4+ | 0.0 | 2006 08 17 | A50 | 0.1+ | 0.8+ | 2006 09 12 | 699 | 0.2+ | 0.0 |
| 1999 12 09 | 691 | 0.2+ | 0.3+ | 2006 08 17 | A50 | 0.0 | 0.9+ | 2006 09 12 | 699 | 0.2+ | 0.2+ |
| 1999 12 09 | 691 | 0.7+ | 0.6+ | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 12 | 704 | 1.0+ | 1.4− |
| 2000 02 01 | 691 | 0.1− | 0.3− | 2006 08 17 | 644 | 0.2− | 0.2− | 2006 09 12 | 704 | 0.1− | 0.7− |
| 2000 02 01 | 691 | 0.2+ | 0.5− | 2006 08 17 | 644 | 0.3− | 0.1− | 2006 09 12 | 704 | 0.1+ | 1.2+ |
| 2000 02 01 | 691 | 0.1+ | 0.4− | 2006 08 17 | A50 | 0.3+ | 0.1− | 2006 09 12 | 704 | 0.3+ | 1.2+ |
| 2000 02 05 | 695 | 0.2+ | 0.3+ | 2006 08 18 | A50 | 0.7+ | 0.3+ | 2006 09 17 | 704 | 0.0 | 0.7+ |
| 2000 02 05 | 695 | 0.6− | 0.6+ | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.7− | 0.8+ |
| 2000 02 07 | 691 | 0.2− | 0.2+ | 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.7− | 0.8+ |
| 2000 02 07 | 691 | 0.3− | 0.0 | 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.5+ |
| 2000 02 07 | 691 | 0.3− | 0.1+ | 2006 08 19 | 699 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 1.1− | 0.2+ | 2006 08 19 | 699 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.1− | 1.0− |
| 2002 07 04 | 644 | 0.6− | 0.4+ | 2006 08 19 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.3+ |
| 2002 07 04 | 644 | 0.9− | 0.3+ | 2006 08 19 | 699 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.2− |
| 2002 07 17 | 644 | 0.1− | 0.8+ | 2006 08 19 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.3+ |
| 2002 07 17 | 644 | 0.0 | 0.8+ | 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.5+ |
| 2002 07 17 | 644 | 0.3+ | 0.8+ | 2006 08 19 | 699 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.9+ |
| 2002 08 08 | 644 | 0.7+ | 0.2− | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.4+ |
| 2002 08 08 | 644 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.5+ |
| 2002 08 08 | 644 | 0.5+ | 0.5− | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.7− | 0.1− |
| 2002 08 11 | 608 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 24 | 699 | 1.3+ | 0.0 |
| 2002 08 11 | 608 | 0.2− | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 09 24 | 699 | 0.1+ | 1.1+ |
| 2002 08 11 | 608 | 0.6− | 0.0 | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 24 | 699 | 0.2+ | 0.2− |
| 2002 08 17 | 644 | 0.1+ | 0.2− | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 24 | 699 | (2.0− | 0.7+) |
| 2002 08 17 | 644 | 0.3+ | 0.5− | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.3+ |
| 2002 08 17 | 644 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2002 08 27 | 644 | 0.4− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2002 08 27 | 644 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.7− | 0.5− | 2006 10 19 | 703 | 1.2+ | 0.8− |
| 2002 08 27 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2002 08 29 | 608 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 08 29 | 608 | 0.0 | 0.7− | 2006 08 28 | 699 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2002 08 29 | 608 | 0.7+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.7+ | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2004 02 11 | 644 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.9− |
| 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 08 28 | 699 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.7− |
| 2004 02 11 | 644 | 0.6+ | 0.1+ | 2006 08 29 | 704 | 0.1+ | 0.4− | 2006 11 11 | 703 | 1.3− | 0.6− |
| 2004 02 12 | 691 | 0.5+ | 1.4+ | 2006 08 29 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.2− | 1.0+ |
| 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 08 29 | 704 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2004 02 12 | 691 | 0.0 | 0.6+ | 2006 08 29 | 704 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2006 08 13 | D35 | 0.3+ | 0.5+ | 2006 08 29 | 704 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2006 08 13 | D35 | 0.2+ | 0.3+ | 2006 09 12 | 699 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2006 08 13 | D35 | 0.0 | 0.4+ | 2006 09 12 | 699 | 0.1− | 0.9− | | | | |

**(141847)∗ 2002 OG$_{26}$**

Discovered 2002 July 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.19336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28139398 | $\omega$ | 311.78508 | | +0.90548371 | | +0.42118366 |
| $a$ | 2.3063551 | $\Omega$ | 23.44910 | | −0.34020640 | | +0.79365728 |
| $e$ | 0.1362211 | $i$ | 7.50801 | | −0.25369048 | | +0.43899026 |
| $P$ | 3.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.4− | 0.9+ | 2002 09 16 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.8− |
| 1999 12 07 | 703 | 0.2− | 0.4− | 2002 09 16 | 644 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.7+ |
| 1999 12 07 | 703 | 0.4+ | 0.1+ | 2002 09 16 | 644 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.7+ | 0.2+ |
| 1999 12 07 | 703 | 0.2− | 0.2+ | 2002 09 28 | 608 | 0.8− | 1.5+ | 2006 10 19 | 703 | 1.5− | 0.4+ |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2002 09 28 | 608 | 0.8− | 1.2+ | 2006 11 15 | 704 | 0.5+ | 0.0 |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2002 09 28 | 608 | 1.0− | 1.1+ | 2006 11 15 | 704 | 0.2+ | 1.3− |
| 2002 07 24 | 608 | 0.0 | 1.6− | 2002 10 06 | 608 | 0.4− | 0.9+ | 2006 11 15 | 704 | 0.6+ | 1.4+ |
| 2002 07 24 | 608 | 0.3− | 1.1− | 2002 10 06 | 608 | 0.2+ | 0.6+ | 2006 11 15 | 704 | 0.8+ | 0.8− |
| 2002 07 24 | 608 | 0.6− | 1.6− | 2002 10 06 | 608 | 0.1− | 0.8+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2002 07 30 | 608 | 0.0 | 0.3− | 2003 12 29 | 704 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2002 07 30 | 608 | 0.2− | 0.3− | 2003 12 29 | 704 | 0.7+ | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2002 07 30 | 608 | 0.3− | 0.1+ | 2003 12 29 | 704 | 0.9+ | 0.5+ | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2002 08 09 | 608 | 0.2+ | 0.0 | 2003 12 29 | 704 | 0.4+ | 0.6+ | 2006 11 21 | G96 | 0.5− | 0.1+ |
| 2002 08 09 | 608 | 0.4+ | 0.5+ | 2003 12 29 | 704 | 0.1+ | 0.6+ | 2006 11 21 | G96 | 0.5− | 0.0 |
| 2002 08 13 | 704 | 0.5− | 1.1+ | 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2002 08 13 | 704 | 0.4+ | 1.6+ | 2005 05 19 | 644 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 1.2+ | 0.2+ |
| 2002 08 13 | 704 | 0.4− | 1.9+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2002 08 13 | 704 | 0.0 | 1.2+ | 2005 05 19 | 644 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 08 13 | 704 | 0.0 | 1.8+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.2− |
| 2002 08 20 | 644 | 0.2− | 0.2+ | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 2002 08 20 | 644 | 0.1− | 0.0 | 2005 05 30 | E12 | 0.3− | 0.6+ | 2006 11 29 | 704 | 0.9− | 2.4+ |
| 2002 08 20 | 644 | 0.2+ | 0.1+ | 2005 05 30 | E12 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2002 08 31 | 704 | 0.0 | 0.2+ | 2005 05 30 | E12 | 0.4− | 1.6+ | 2006 11 29 | 704 | 0.6+ | 0.3+ |
| 2002 08 31 | 644 | 0.1+ | 0.1− | 2005 05 30 | E12 | 0.5+ | 0.4− | 2006 11 29 | 704 | 0.4− | 1.1+ |
| 2002 08 31 | 704 | 0.3− | 0.2+ | 2005 06 05 | E12 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 1.0− | 1.2+ |
| 2002 08 31 | 704 | 0.7+ | 0.9− | 2005 06 05 | E12 | 0.3− | 0.5+ | 2006 11 29 | 704 | 1.5− | 0.3+ |
| 2002 08 31 | 644 | 0.2− | 0.0 | 2005 06 05 | E12 | 0.4− | 0.7+ | 2006 11 29 | 704 | 1.0− | 0.0 |
| 2002 08 31 | 704 | 0.8+ | 1.1− | 2005 06 05 | E12 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 0.8+ | 0.9+ |
| 2002 08 31 | 644 | 0.1+ | 0.1+ | 2005 06 26 | 644 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.4− | 1.8− |
| 2002 09 09 | 644 | 0.1− | 0.1− | 2005 06 26 | 644 | 0.6+ | 0.5+ | | | | |
| 2002 09 09 | 644 | 0.2− | 0.0 | 2005 06 26 | 644 | 0.2+ | 0.1+ | | | | |

**(141848)∗ 2002 OE$_{27}$ = 1999 TP$_{298}$**

Discovered 2002 July 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 94807)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.09074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30019808 | $\omega$ | 111.79137 | | +0.97372516 | | −0.22687960 |
| $a$ | 2.2090088 | $\Omega$ | 261.32632 | | +0.20091889 | | +0.89646193 |
| $e$ | 0.0457149 | $i$ | 1.13725 | | +0.10719567 | | +0.38063323 |
| $P$ | 3.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.1− | 0.2− | 2002 07 22 | 644 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.7− | 0.2− |
| 1999 10 02 | 691 | 0.2+ | 0.3− | 2002 07 22 | 644 | 0.8− | 0.1+ | 2004 01 24 | 704 | 0.8− | 0.7+ |
| 1999 10 02 | 691 | 0.1− | 0.1− | 2002 08 07 | 644 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.7− |
| 1999 10 10 | 691 | 0.0 | 0.1− | 2002 08 07 | 644 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 1999 10 10 | 691 | 0.1+ | 0.2+ | 2002 08 07 | 644 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.7+ | 0.5− |
| 1999 10 10 | 691 | 0.4− | 0.0 | 2002 08 07 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 1999 11 12 | 691 | 0.1− | 0.4− | 2002 08 07 | 644 | 0.8+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 1999 11 12 | 691 | 0.2+ | 0.2+ | 2002 08 07 | 644 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.6+ |
| 1999 11 12 | 691 | 0.5+ | 0.3+ | 2002 08 28 | 644 | 0.1+ | 1.0+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 07 04 | 644 | 0.4+ | 0.8+ | 2002 08 28 | 644 | (1.0− | 1.6+) | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2002 07 04 | 644 | 0.1− | 0.3+ | 2002 08 28 | 644 | 0.1+ | 1.4+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2002 07 04 | 644 | 0.2− | 0.2+ | 2003 12 28 | 691 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2002 07 14 | 644 | 0.2+ | 0.2+ | 2003 12 28 | 691 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 07 14 | 644 | 0.3− | 0.1+ | 2003 12 28 | 691 | 0.1− | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.7+ |
| 2002 07 14 | 644 | 0.4− | 0.6+ | 2004 01 15 | 691 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2002 07 18 | 644 | 0.3+ | 0.0 | 2004 01 15 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.3− | 0.2− |
| 2002 07 18 | 644 | 0.2+ | 0.2+ | 2004 01 15 | 691 | 0.3+ | 0.4+ | | | | |
| 2002 07 18 | 644 | 0.5− | 0.7− | 2004 01 24 | 704 | 0.6− | 0.5+ | | | | |

**(141849)∗ 2002 PC**

Discovered 2002 Aug. 1 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.41852 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27181889 | $\omega$ | 44.37816 | | +0.98329821 | | −0.17214664 |
| $a$ | 2.3602044 | $\Omega$ | 325.40639 | | +0.12410457 | | +0.87162212 |
| $e$ | 0.2537139 | $i$ | 5.97273 | | +0.13312655 | | +0.45895579 |
| $P$ | 3.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.0 | 0.2+ | 2002 08 24 | 644 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.3− | 1.0+ |
| 2002 07 23 | 644 | 0.1− | 0.3+ | 2002 08 24 | 644 | (0.7− | 1.8−) | 2004 02 26 | 704 | 1.4+ | 0.1− |
| 2002 07 23 | 644 | 0.0 | 0.4+ | 2002 08 27 | 644 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.9+ | 1.4+ |
| 2002 07 29 | 644 | 0.3+ | 0.4+ | 2002 08 27 | 644 | 0.4− | 0.3+ | 2004 02 29 | 691 | 0.0 | 0.2+ |
| 2002 07 29 | 644 | 0.2+ | 0.4+ | 2002 08 27 | 644 | 0.3− | 0.2+ | 2004 02 29 | 691 | 0.0 | 0.4+ |
| 2002 07 29 | 644 | 0.0 | 0.5+ | 2002 09 02 | 608 | 0.2− | 0.3− | 2004 02 29 | 691 | 0.2− | 0.5+ |
| 2002 08 01 | 428 | 0.8− | 0.6+ | 2002 09 02 | 608 | 0.1+ | 0.7− | 2005 05 11 | 644 | 0.1+ | 0.6+ |
| 2002 08 01 | 428 | 0.8− | 0.0 | 2002 09 02 | 608 | 0.2+ | 0.1− | 2005 05 11 | 644 | 0.4+ | 0.5+ |
| 2002 08 02 | 428 | 0.3− | 0.9− | 2002 09 05 | 699 | 0.4+ | 0.1− | 2005 05 11 | 644 | 0.3+ | 0.6+ |
| 2002 08 02 | 428 | 0.8+ | 0.8− | 2002 09 05 | 699 | 0.7+ | 0.4− | 2005 05 12 | 644 | 0.2+ | 0.6+ |
| 2002 08 08 | 699 | 0.0 | 0.1− | 2002 09 05 | 699 | 0.4+ | 0.1− | 2005 05 12 | 644 | 0.1+ | 0.7+ |
| 2002 08 08 | 699 | 0.4+ | 0.5+ | 2002 09 05 | 699 | 0.1− | 0.2− | 2005 05 12 | 644 | 0.2+ | 0.5+ |
| 2002 08 08 | 699 | 0.1+ | 0.7+ | 2002 09 05 | 704 | 0.3+ | 1.0+ | 2006 08 29 | 703 | 0.0 | 0.2+ |
| 2002 08 08 | 699 | 0.6+ | 0.4+ | 2002 09 05 | 704 | 0.1− | 1.4+ | 2006 08 29 | 703 | 0.5− | 0.1− |
| 2002 08 08 | 644 | 0.3− | 0.1− | 2002 09 05 | 704 | 0.1+ | 1.0+ | 2006 08 29 | 703 | 0.5− | 0.3+ |
| 2002 08 08 | 644 | 0.0 | 0.0 | 2002 09 05 | 704 | 0.0 | 1.2+ | 2006 08 29 | 703 | 0.2− | 0.5+ |
| 2002 08 08 | 644 | 0.1− | 0.2+ | 2002 09 05 | 704 | 0.3+ | 1.3+ | 2006 10 02 | 704 | 0.1− | 0.6+ |
| 2002 08 13 | G78 | 0.3− | 0.4− | 2002 09 13 | 704 | 0.1− | 0.3+ | 2006 10 02 | 704 | 0.2− | 0.4− |
| 2002 08 13 | G78 | 0.4+ | 0.5− | 2002 09 13 | 704 | 0.2+ | 0.0 | 2006 10 02 | 704 | 0.3− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | G78 | 0.9− | 0.3+ | 2002 09 13 | 704 | 0.6+ | 0.2− | 2006 10 02 | 704 | 0.9− | 0.8+ |
| 2002 08 14 | 704 | 0.6− | 0.1+ | 2002 09 13 | 704 | 0.7− | 0.1− | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 2002 08 14 | 704 | 0.2− | 0.8+ | 2002 10 03 | 704 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 2002 08 14 | 704 | 0.7− | 0.9+ | 2002 10 03 | 704 | 0.1+ | 0.6− | 2006 11 17 | 644 | 0.3+ | 0.3+ |
| 2002 08 14 | 704 | 0.2− | 0.8+ | 2002 10 03 | 704 | 0.1− | 0.0 | 2006 11 22 | 703 | (3.3− | 0.3−) |
| 2002 08 14 | 704 | 0.0 | 1.2+ | 2002 10 03 | 704 | 0.6+ | 0.1− | 2006 11 22 | 703 | 1.7− | 0.7+ |
| 2002 08 17 | 644 | 0.4− | 0.2+ | 2002 10 03 | 704 | 0.6+ | 0.8− | 2006 11 22 | 703 | 1.2+ | 1.3+ |
| 2002 08 17 | 644 | 0.3− | 0.2+ | 2002 10 05 | 704 | 1.2+ | 0.6− | 2006 11 22 | 703 | (4.0+ | 1.5+) |
| 2002 08 17 | 644 | 0.3− | 0.3+ | 2002 10 05 | 704 | 0.5+ | 0.2− | 2006 11 22 | 703 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.5− | 0.1+ | 2002 10 05 | 704 | 0.2− | 0.4− | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.6− | 0.2+ | 2002 10 05 | 704 | 0.1− | 0.4− | 2006 11 22 | 703 | 0.2− | 0.2− |
| 2002 08 18 | 644 | 0.5− | 0.1+ | 2002 10 11 | 704 | 0.5+ | 0.2− | 2006 11 22 | 703 | 0.1− | 0.4+ |
| 2002 08 19 | 608 | 0.6− | 1.1− | 2002 10 11 | 704 | 0.1− | 0.3− | 2006 11 23 | 644 | 0.0 | 0.0 |
| 2002 08 19 | 608 | 0.3+ | 0.9− | 2002 10 11 | 704 | 0.1− | 0.6− | 2006 11 23 | 644 | 0.1+ | 0.0 |
| 2002 08 19 | 608 | 0.3+ | 0.9− | 2004 02 26 | 704 | 1.2+ | 0.9+ | 2006 11 23 | 644 | 0.2+ | 0.1+ |
| 2002 08 24 | 644 | 0.1− | 0.5+ | 2004 02 26 | 704 | 1.0+ | 0.9+ | | | | |

**(141850)∗ 2002 PY$_4$ = 1998 QZ$_{79}$**

Discovered 2002 Aug. 4 by NEAT at Palomar.

Id. A. Doppler (*MPO* 33716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.57961 | | (2000.0) | | | |
| $n$ | 0.24647979 | $\omega$ | 49.31196 | | +0.69347343 | +0.69146489 |
| $a$ | 2.5193113 | $\Omega$ | 265.85883 | | −0.70698774 | +0.59895908 |
| $e$ | 0.1581871 | $i$ | 11.70909 | | −0.13879098 | +0.40388654 |
| $P$ | 4.00 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 704 | 0.7+ | 0.5− | 2002 08 13 | 644 | 0.0 | 0.4+ | 2002 10 29 | 645 | 0.0 | 0.0 |
| 1998 08 24 | 704 | 0.3− | 1.1− | 2002 08 13 | 683 | (0.6+ | 1.5+) | 2002 10 29 | 645 | 0.0 | 0.0 |
| 1998 08 24 | 704 | 0.9+ | 1.2− | 2002 08 13 | 683 | 0.9− | 0.5+ | 2002 10 30 | 645 | 0.0 | 0.0 |
| 1998 08 27 | 704 | 0.4+ | 0.7− | 2002 08 13 | 704 | 0.4− | 0.8+ | 2002 10 30 | 645 | 0.0 | 0.2− |
| 1998 08 27 | 704 | 0.1− | 1.7− | 2002 08 13 | 699 | 1.2+ | 0.8+ | 2003 12 19 | 704 | 0.5− | 1.2+ |
| 1998 08 27 | 704 | 1.7− | 0.9+ | 2002 08 13 | 704 | 0.3− | 0.6+ | 2003 12 19 | 704 | 0.1− | 0.4+ |
| 1998 08 27 | 704 | 1.6+ | 1.1− | 2002 08 13 | 699 | 1.1+ | 0.7+ | 2003 12 19 | 704 | 0.5+ | 1.3+ |
| 1998 08 27 | 704 | (0.0 | 2.1−) | 2002 08 13 | 704 | 0.5+ | 0.0 | 2003 12 19 | 704 | 0.3+ | 0.3+ |
| 2002 06 13 | 704 | 0.1+ | 0.4− | 2002 08 13 | 699 | 0.8+ | 0.7+ | 2003 12 23 | 704 | 0.9+ | 0.5− |
| 2002 06 13 | 704 | 0.3− | 0.4+ | 2002 08 13 | 704 | 0.0 | 0.5+ | 2003 12 23 | 704 | 0.1+ | 0.6+ |
| 2002 06 13 | 704 | 0.6− | 0.3+ | 2002 08 13 | 699 | 0.8+ | 0.2+ | 2003 12 23 | 704 | 0.4+ | 0.4+ |
| 2002 06 13 | 704 | (1.8+ | 0.2+) | 2002 08 14 | 683 | 1.5+ | 1.4+ | 2003 12 23 | 704 | 0.8+ | 1.2+ |
| 2002 07 13 | 608 | 0.4− | 0.9+ | 2002 08 14 | 683 | 0.0 | 0.1+ | 2003 12 23 | 704 | 0.7− | 1.1+ |
| 2002 07 13 | 608 | 0.0 | 1.0+ | 2002 08 15 | 683 | (1.5− | 1.9+) | 2006 07 24 | 703 | 0.8+ | 0.0 |
| 2002 07 13 | 608 | 0.2− | 1.0+ | 2002 08 15 | 683 | 0.4− | 0.3− | 2006 07 24 | 703 | 0.8− | 0.6+ |
| 2002 07 20 | 644 | 0.0 | 0.1+ | 2002 08 15 | 683 | 1.2− | 0.8+ | 2006 07 24 | 703 | 0.3+ | 0.6+ |
| 2002 07 20 | 644 | 0.3− | 0.0 | 2002 08 16 | 704 | 0.8− | 0.5+ | 2006 07 24 | 703 | 0.3− | 0.3+ |
| 2002 07 20 | 644 | 0.0 | 0.0 | 2002 08 16 | 704 | 0.7− | 0.1+ | 2006 08 28 | 704 | 0.9− | 0.2+ |
| 2002 08 04 | 644 | 0.3− | 0.4− | 2002 08 16 | 704 | 0.5− | 0.2+ | 2006 08 28 | 704 | 0.9− | 0.2− |
| 2002 08 04 | 644 | 0.2− | 0.5− | 2002 08 16 | 704 | (0.3− | 1.6−) | 2006 08 28 | 704 | 1.0− | 0.3+ |
| 2002 08 04 | 644 | 0.2− | 0.4− | 2002 08 25 | 644 | 0.6− | 0.0 | 2006 08 28 | 704 | 0.2− | 0.3+ |
| 2002 08 05 | 644 | 0.3+ | 0.0 | 2002 08 25 | 644 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.8+ |
| 2002 08 05 | 644 | 0.2+ | 0.1+ | 2002 08 25 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.6+ | 1.2+ |
| 2002 08 05 | 644 | 0.4+ | 0.2+ | 2002 09 01 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 1.2− | 0.9+ |
| 2002 08 12 | 704 | 0.2− | 1.0+ | 2002 09 01 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 1.0+ | 1.1+ |
| 2002 08 12 | 704 | 0.5+ | 0.8+ | 2002 09 01 | 644 | 0.1+ | 0.1+ | 2006 10 29 | 703 | 0.5+ | 0.8− |
| 2002 08 12 | 704 | 0.3− | 0.7+ | 2002 09 20 | 644 | 0.3+ | 0.4+ | 2006 10 29 | 703 | 0.5− | 0.6+ |
| 2002 08 12 | 704 | 0.6+ | 0.3+ | 2002 09 20 | 644 | 0.1− | 0.3+ | 2006 10 29 | 703 | 2.4+ | 2.5− |
| 2002 08 12 | 704 | 0.2+ | 0.1− | 2002 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 29 | 703 | 1.3− | 2.4− |
| 2002 08 13 | 644 | 0.1− | 0.3+ | 2002 10 11 | 645 | 0.0 | 0.1− | | | | |
| 2002 08 13 | 644 | 0.2− | 0.5− | 2002 10 11 | 645 | 0.0 | 0.1− | | | | |

**(141851)∗ 2002 PM$_6$**

Discovered 2002 Aug. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.09153 | | (2000.0) | | | |
| $n$ | 0.75171069 | $\omega$ | 224.23745 | | −0.94793313 | −0.16568964 |
| $a$ | 1.1979414 | $\Omega$ | 304.30239 | | +0.29376599 | −0.78470815 |
| $e$ | 0.8500009 | $i$ | 19.22243 | | −0.12298100 | −0.59731069 |
| $P$ | 1.31 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 608 | 1.4− | 0.6− | 2002 08 09 | 379 | 0.3+ | 0.5+ | 2002 08 14 | 940 | 0.7− | 0.6− |
| 2000 09 20 | 608 | (2.3− | 1.4−) | 2002 08 09 | 379 | 0.7+ | 0.2+ | 2002 08 14 | 940 | 0.1+ | 1.1+ |
| 2001 08 10 | 644 | 0.6+ | 0.5+ | 2002 08 09 | 046 | 0.2− | 0.1− | 2002 08 14 | 215 | (1.6+ | 0.5−) |
| 2001 08 10 | 644 | 0.8+ | 0.4+ | 2002 08 09 | 046 | 0.0 | 0.3+ | 2002 08 14 | 215 | (2.0+ | 0.5+) |
| 2001 08 10 | 644 | 0.7+ | 0.3+ | 2002 08 09 | 046 | 0.1− | 0.3− | 2002 08 14 | 215 | 0.2+ | 0.0 |
| 2001 08 11 | 644 | 1.0− | 0.1+ | 2002 08 09 | 046 | 0.2+ | 0.1+ | 2002 08 14 | 940 | 0.6+ | 0.3+ |
| 2001 08 11 | 644 | 1.0− | 0.2− | 2002 08 09 | 046 | 0.5− | 0.2− | 2002 08 14 | 940 | 1.2− | 0.2− |
| 2002 08 06 | 704 | 0.7− | 0.4− | 2002 08 09 | 049 | 1.1+ | 1.4+ | 2002 08 14 | 940 | 0.6− | 0.7− |
| 2002 08 06 | 704 | 0.2− | 0.2− | 2002 08 09 | 049 | 1.0+ | 1.3+ | 2002 08 14 | J95 | 0.8+ | 0.1− |
| 2002 08 06 | 704 | 0.7− | 0.2− | 2002 08 09 | 049 | 0.7+ | 1.1+ | 2002 08 14 | J95 | 0.2+ | 0.1− |
| 2002 08 06 | 704 | 0.3− | 0.3− | 2002 08 10 | 670 | 0.2− | 0.0 | 2002 08 14 | J95 | 0.1+ | 0.0 |
| 2002 08 06 | 704 | 0.8− | 0.0 | 2002 08 10 | 670 | 0.4+ | 0.1− | 2002 08 15 | 762 | 0.1+ | 0.3− |
| 2002 08 06 | 349 | 0.5− | 0.6− | 2002 08 10 | 670 | 0.0 | 0.2− | 2002 08 15 | 762 | 0.1+ | 0.3+ |
| 2002 08 06 | 349 | 0.2− | 0.5− | 2002 08 10 | 848 | (1.2+ | 2.6−) | 2002 08 15 | 762 | 0.1+ | 0.0 |
| 2002 08 06 | 349 | 0.4+ | 0.3− | 2002 08 10 | 848 | 1.0− | 0.7− | 2002 08 15 | 848 | 1.1− | 1.1− |
| 2002 08 06 | 349 | 0.2+ | 0.0 | 2002 08 10 | 379 | 0.8− | 0.4− | 2002 08 15 | 848 | 0.4+ | 0.3+ |
| 2002 08 06 | 349 | 1.0− | 0.5− | 2002 08 10 | 379 | 0.6+ | 0.9+ | 2002 08 15 | 151 | 0.0 | 0.1+ |
| 2002 08 06 | 620 | 0.3− | 1.0+ | 2002 08 10 | 379 | 0.4+ | 0.4− | 2002 08 15 | 151 | 0.1+ | 0.1+ |
| 2002 08 06 | 620 | 0.6− | 0.9+ | 2002 08 10 | 355 | 0.6+ | 0.4− | 2002 08 15 | 151 | 0.0 | 0.0 |
| 2002 08 06 | 620 | 0.2− | 0.5+ | 2002 08 10 | 355 | 0.5+ | 0.4− | 2002 08 15 | 151 | 0.1− | 0.1+ |
| 2002 08 06 | 620 | 0.3− | 0.2+ | 2002 08 10 | 355 | 0.2+ | 0.8− | 2002 08 15 | 611 | 0.2− | 0.2− |
| 2002 08 06 | 620 | 0.2− | 0.2− | 2002 08 10 | 355 | 0.4+ | 0.8− | 2002 08 15 | 611 | 0.1+ | 0.2− |
| 2002 08 06 | 620 | 0.5− | 0.8+ | 2002 08 10 | 246 | 0.0 | 0.2+ | 2002 08 15 | 611 | 0.0 | 0.2− |
| 2002 08 06 | 946 | 0.4− | 0.7+ | 2002 08 10 | 246 | 0.2− | 0.2+ | 2002 08 16 | 151 | 0.5+ | 0.1− |
| 2002 08 06 | 946 | 0.6− | 1.4+ | 2002 08 10 | 246 | 0.6− | 0.5+ | 2002 08 16 | 151 | 0.3− | 0.6− |
| 2002 08 06 | 946 | 0.1− | 0.4+ | 2002 08 10 | 246 | 0.1+ | 0.6+ | 2002 08 16 | 151 | 0.2+ | 0.2− |
| 2002 08 06 | 946 | 0.7+ | 0.1+ | 2002 08 10 | J95 | 0.4− | 0.1− | 2002 08 16 | 151 | 0.3− | 0.1+ |
| 2002 08 06 | 636 | 0.0 | 0.0 | 2002 08 10 | J95 | 0.0 | 0.5+ | 2002 08 16 | 940 | 0.0 | 0.7− |
| 2002 08 06 | 636 | 0.1− | 0.3− | 2002 08 10 | J95 | 0.1− | 0.1− | 2002 08 16 | 940 | 0.1+ | 0.1+ |
| 2002 08 06 | 636 | 0.2+ | 0.1− | 2002 08 10 | J95 | 0.2+ | 0.8+ | 2002 08 16 | 940 | 0.0 | 0.1+ |
| 2002 08 06 | 636 | 0.3+ | 0.1+ | 2002 08 11 | 232 | 0.9− | 0.5− | 2002 08 16 | 940 | 0.1+ | 0.6+ |
| 2002 08 06 | 636 | 0.3+ | 0.6− | 2002 08 11 | 232 | (1.7− | 0.7+) | 2002 08 16 | 940 | 0.0 | 0.2+ |
| 2002 08 06 | 176 | 0.3+ | 0.8+ | 2002 08 11 | 232 | 1.3− | 0.6− | 2002 08 16 | 940 | 0.1− | 0.4+ |
| 2002 08 06 | 176 | 0.2+ | 0.5+ | 2002 08 11 | 232 | 0.5− | 1.0+ | 2002 08 16 | 940 | 0.2+ | 0.1− |
| 2002 08 06 | 176 | 0.1− | 0.2+ | 2002 08 11 | 858 | 0.1+ | 0.2− | 2002 08 17 | 118 | 0.4− | 0.2− |
| 2002 08 06 | 176 | 0.2− | 0.0 | 2002 08 11 | 858 | 0.3+ | 0.1+ | 2002 08 17 | 118 | 0.5− | 0.4+ |
| 2002 08 06 | 176 | 0.2− | 0.2− | 2002 08 11 | 858 | 0.2+ | 0.0 | 2002 08 17 | 118 | 0.5− | 1.1+ |
| 2002 08 06 | 176 | 0.3− | 0.4− | 2002 08 11 | 858 | 0.1+ | 0.0 | 2002 08 18 | 118 | 0.1+ | 0.2+ |
| 2002 08 06 | 176 | 0.4− | 0.5− | 2002 08 11 | 704 | 0.1+ | 0.6− | 2002 08 18 | 118 | 0.5+ | 0.4+ |
| 2002 08 07 | 762 | 0.3− | 0.4− | 2002 08 11 | 704 | 0.1+ | 0.2+ | 2002 08 18 | 118 | 1.0+ | 0.1+ |
| 2002 08 07 | 762 | 0.2− | 0.4− | 2002 08 11 | 704 | 0.2+ | 0.2+ | 2002 08 19 | 848 | 0.1+ | 0.2− |
| 2002 08 07 | 762 | 0.1− | 0.3− | 2002 08 11 | 704 | 0.1− | 0.2+ | 2002 08 19 | 848 | 0.8− | 0.2− |
| 2002 08 07 | 762 | 0.0 | 0.0 | 2002 08 11 | 704 | 0.2+ | 0.6+ | 2002 08 22 | 670 | 1.0+ | 0.2+ |
| 2002 08 07 | 762 | 0.1+ | 0.0 | 2002 08 11 | 379 | 0.5+ | 0.1− | 2002 08 22 | 670 | 0.0 | 0.1+ |
| 2002 08 07 | 866 | (2.1− | 3.2−) | 2002 08 11 | 379 | 0.3+ | 0.2− | 2002 08 24 | 198 | 0.0 | 0.3+ |
| 2002 08 07 | 866 | 0.2− | 1.0+ | 2002 08 11 | 379 | 0.3+ | 0.2− | 2002 08 24 | 198 | 0.2+ | 0.7+ |
| 2002 08 07 | 866 | 0.3− | 1.4− | 2002 08 11 | 379 | 0.3− | 0.2− | 2002 08 26 | 670 | 0.6− | 0.3+ |
| 2002 08 07 | 866 | 1.2+ | 0.7− | 2002 08 11 | 355 | 0.3+ | 0.6− | 2002 08 26 | 670 | 1.4− | 1.0− |
| 2002 08 07 | 670 | 0.1− | 0.2− | 2002 08 11 | 355 | 0.2+ | 0.6− | 2002 08 26 | 670 | (2.2− | 0.3+) |
| 2002 08 07 | G78 | 0.1− | 0.6+ | 2002 08 11 | 355 | 0.1+ | 0.7− | 2002 09 02 | 848 | (1.9+ | 3.1+) |
| 2002 08 07 | G78 | 0.6+ | 0.1− | 2002 08 11 | 355 | 0.2− | 0.5− | 2002 09 02 | 848 | 0.4+ | 0.2+ |
| 2002 08 07 | G78 | 0.6− | 0.0 | 2002 08 11 | 941 | 0.3+ | 0.1− | 2002 09 02 | 848 | (1.8− | 0.3−) |
| 2002 08 07 | 670 | 0.3− | 0.4− | 2002 08 11 | 941 | 0.2+ | 0.3− | 2004 09 02 | 568 | 0.0 | 0.1− |
| 2002 08 07 | G78 | 1.0+ | 0.2− | 2002 08 11 | 941 | 0.8− | 0.5− | 2004 09 02 | 568 | 0.5− | 0.0 |
| 2002 08 07 | G78 | 0.5− | 0.6− | 2002 08 11 | 941 | 1.0− | 0.7− | 2004 09 20 | 568 | 0.1+ | 0.1− |
| 2002 08 07 | G78 | 0.9− | 0.7− | 2002 08 12 | 704 | 0.2+ | 0.0 | 2004 09 20 | 568 | 0.0 | 0.3− |
| 2002 08 07 | G78 | 0.0 | 1.1− | 2002 08 12 | 704 | 0.1+ | 0.1− | 2004 10 04 | G90 | 0.1+ | 0.1− |
| 2002 08 07 | G78 | 0.0 | 0.8− | 2002 08 12 | 704 | 0.1− | 0.4+ | 2004 10 04 | G90 | 0.5+ | 0.3− |
| 2002 08 07 | 670 | 0.0 | 0.3− | 2002 08 12 | 704 | 0.1− | 0.1+ | 2004 10 04 | G90 | 0.3− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 670 | 0.1+ | 0.2− | 2002 08 12 | 704 | 0.2+ | 0.1+ | 2004 10 05 | G90 | 0.1+ | 0.1+ |
| 2002 08 07 | 300 | 0.6− | 0.6− | 2002 08 12 | 848 | (0.9− | 2.0−) | 2004 10 05 | G90 | 0.1− | 0.0 |
| 2002 08 07 | 300 | 0.3− | 0.7− | 2002 08 12 | 848 | 1.5+ | 1.1+ | 2004 10 05 | G90 | 0.1− | 0.0 |
| 2002 08 07 | 300 | 0.1− | 0.7− | 2002 08 12 | 848 | (1.6+ | 1.9+) | 2004 10 07 | 644 | 0.5− | 0.0 |
| 2002 08 07 | 300 | 0.2− | 0.6− | 2002 08 12 | 848 | 0.9+ | 1.1+ | 2004 10 07 | 644 | 0.4− | 0.3− |
| 2002 08 07 | 300 | 0.0 | 0.7− | 2002 08 12 | 185 | 0.7+ | 1.0+ | 2004 10 07 | 644 | 0.3− | 0.3− |
| 2002 08 07 | 300 | 0.4− | 0.5− | 2002 08 12 | 185 | 0.7− | 0.0 | 2005 06 14 | 291 | 0.1+ | 0.2+ |
| 2002 08 07 | 379 | 0.0 | 0.3+ | 2002 08 12 | 185 | 0.2− | 0.2− | 2005 06 14 | 291 | 0.7− | 0.1+ |
| 2002 08 07 | 379 | 0.3− | 0.2+ | 2002 08 12 | 185 | 0.2− | 0.1− | 2005 09 08 | A50 | 0.3+ | 0.1+ |
| 2002 08 07 | 379 | 0.4− | 0.4+ | 2002 08 12 | 941 | 0.3− | 0.3− | 2005 09 08 | A50 | 0.0 | 0.2+ |
| 2002 08 07 | 379 | 0.5− | 0.2+ | 2002 08 12 | 941 | 0.2+ | 0.3− | 2006 07 11 | 198 | 0.1+ | 1.0+ |
| 2002 08 07 | 379 | 0.3− | 0.1− | 2002 08 12 | 941 | 0.1+ | 0.4− | 2006 07 11 | 198 | 0.1+ | 0.9+ |
| 2002 08 07 | 379 | 0.3− | 0.0 | 2002 08 12 | 941 | 0.6− | 0.7− | 2006 07 11 | 198 | 0.2+ | 0.7+ |
| 2002 08 07 | 185 | 0.7− | 0.6− | 2002 08 12 | 939 | 0.3+ | 0.1− | 2006 07 11 | 198 | 0.2+ | 1.0+ |
| 2002 08 07 | 185 | 0.5− | 0.5− | 2002 08 12 | 939 | 0.1+ | 0.0 | 2006 07 11 | 198 | 0.3+ | 0.7+ |
| 2002 08 07 | 185 | 0.6− | 0.4− | 2002 08 12 | 939 | 0.2− | 0.1+ | 2006 07 16 | H45 | 0.3− | 0.4+ |
| 2002 08 07 | 185 | 0.2− | 0.4− | 2002 08 12 | 940 | 0.2− | 0.4− | 2006 07 16 | H45 | 0.1− | 0.4+ |
| 2002 08 07 | 185 | 0.3− | 0.3− | 2002 08 12 | 940 | 1.0+ | 0.4− | 2006 07 16 | H45 | 0.2− | 0.4+ |
| 2002 08 07 | 185 | 0.5− | 0.3− | 2002 08 12 | 940 | 0.7+ | 0.6+ | 2006 07 16 | H45 | 0.0 | 0.5+ |
| 2002 08 07 | 157 | 0.4− | 0.1+ | 2002 08 12 | 940 | 0.4− | 0.1+ | 2006 07 16 | H45 | 0.3− | 0.5+ |
| 2002 08 07 | 157 | 0.0 | 0.3+ | 2002 08 12 | 940 | 0.6− | 0.3− | 2006 07 16 | H45 | 0.1− | 0.3+ |
| 2002 08 07 | 157 | 0.2− | 0.0 | 2002 08 12 | J95 | 0.0 | 0.1+ | 2006 07 19 | 151 | 0.1+ | 0.2+ |
| 2002 08 07 | 157 | 0.2+ | 0.4+ | 2002 08 13 | J95 | 0.6+ | 0.6+ | 2006 07 19 | 151 | 0.5+ | 0.5+ |
| 2002 08 07 | 143 | 0.4− | 0.0 | 2002 08 13 | J95 | 0.1+ | 0.1+ | 2006 07 19 | 151 | 0.3+ | 0.1+ |
| 2002 08 07 | 143 | 0.4− | 0.3− | 2002 08 13 | 071 | 1.0+ | 1.3+ | 2006 07 19 | 151 | 0.4+ | 0.3+ |
| 2002 08 07 | 143 | 0.2− | 0.2− | 2002 08 13 | 071 | 1.2+ | 0.6+ | 2006 07 19 | 151 | 0.5+ | 0.3+ |
| 2002 08 07 | 143 | 0.0 | 0.1− | 2002 08 13 | 071 | 0.4+ | 0.1+ | 2006 07 23 | 198 | 0.4+ | 0.1+ |
| 2002 08 07 | 143 | 0.2− | 0.2− | 2002 08 13 | 670 | 0.1− | 0.0 | 2006 07 23 | 198 | 0.4+ | 0.4+ |
| 2002 08 08 | 452 | 0.2− | 0.2− | 2002 08 13 | 670 | 0.3+ | 0.1+ | 2006 07 23 | 198 | 0.3+ | 0.6+ |
| 2002 08 08 | 452 | 0.0 | 0.3− | 2002 08 13 | 670 | 0.7+ | 0.1− | 2006 07 24 | 198 | 0.3+ | 0.6+ |
| 2002 08 08 | 452 | 0.1+ | 0.0 | 2002 08 13 | 848 | 0.2− | 0.2− | 2006 07 31 | H45 | 0.4+ | 0.3+ |
| 2002 08 08 | 452 | 0.4− | 0.1+ | 2002 08 13 | 848 | 1.1+ | 0.9− | 2006 07 31 | H45 | 0.6+ | 0.3+ |
| 2002 08 08 | 452 | 0.5− | 0.4+ | 2002 08 13 | 379 | 0.5− | 0.1+ | 2006 07 31 | H45 | 0.6+ | 0.3+ |
| 2002 08 08 | 452 | 0.0 | 0.6− | 2002 08 13 | 379 | 0.1− | 1.0− | 2006 07 31 | H45 | 0.5+ | 0.3+ |
| 2002 08 08 | 649 | 0.1+ | 0.1− | 2002 08 13 | 379 | 0.2− | 0.3− | 2006 07 31 | H45 | 0.4+ | 0.3+ |
| 2002 08 08 | 649 | 0.2+ | 0.1− | 2002 08 13 | 322 | (0.0 | 4.1−) | 2006 08 05 | 160 | 0.6+ | 0.8+ |
| 2002 08 08 | 649 | 0.0 | 0.2− | 2002 08 13 | 322 | 0.0 | 0.6− | 2006 08 05 | 160 | 0.6+ | 0.7+ |
| 2002 08 08 | 734 | 0.5+ | 0.2− | 2002 08 13 | 322 | 0.5+ | 0.8− | 2006 08 05 | 160 | 0.6+ | 0.7+ |
| 2002 08 08 | 734 | 0.1+ | 0.5− | 2002 08 13 | 185 | 0.0 | 0.0 | 2006 08 05 | 160 | 0.5+ | 0.7+ |
| 2002 08 08 | 734 | 0.2− | 0.3− | 2002 08 13 | 151 | 0.0 | 0.4− | 2006 08 05 | 160 | 0.4+ | 0.4+ |
| 2002 08 08 | 379 | 0.7+ | 0.1− | 2002 08 13 | 185 | 0.5− | 0.4− | 2006 08 07 | 204 | 0.9+ | 0.3+ |
| 2002 08 08 | 379 | 0.6+ | 0.2− | 2002 08 13 | 151 | 0.1− | 0.4+ | 2006 08 07 | 204 | 0.7+ | 0.2+ |
| 2002 08 08 | 379 | 0.0 | 0.4− | 2002 08 13 | 151 | 0.0 | 0.1+ | 2006 08 07 | 204 | 0.6+ | 0.1+ |
| 2002 08 08 | 379 | 0.4+ | 0.1− | 2002 08 13 | 185 | 0.1+ | 0.1− | 2006 08 15 | A13 | 0.3+ | 0.1+ |
| 2002 08 08 | 151 | 0.0 | 0.4+ | 2002 08 13 | 151 | 0.5− | 0.4− | 2006 08 15 | A13 | 0.3− | 0.1− |
| 2002 08 08 | 151 | 0.4+ | 0.5− | 2002 08 13 | 185 | 0.3+ | 0.8− | 2006 08 15 | A13 | 0.1− | 0.0 |
| 2002 08 08 | 151 | 0.1+ | 0.3+ | 2002 08 13 | 151 | 0.2− | 0.0 | 2006 08 15 | A13 | 0.2− | 0.1+ |
| 2002 08 08 | 151 | 0.0 | 0.4+ | 2002 08 13 | 151 | 0.2+ | 0.2− | 2006 08 15 | A13 | 0.1− | 0.1+ |
| 2002 08 08 | 185 | 0.6− | 0.1− | 2002 08 13 | 151 | 0.1+ | 0.2+ | 2006 08 17 | H45 | 0.6+ | 0.6+ |
| 2002 08 08 | 151 | 0.0 | 0.1− | 2002 08 13 | 151 | 0.0 | 0.2+ | 2006 08 17 | H45 | 0.5+ | 0.3+ |
| 2002 08 08 | 151 | 0.0 | 0.3+ | 2002 08 13 | 952 | 1.3+ | 0.2+ | 2006 08 17 | H45 | 0.4+ | 0.2+ |
| 2002 08 08 | 151 | 0.0 | 0.1− | 2002 08 13 | 952 | 0.3+ | 0.1− | 2006 08 17 | H45 | 0.2+ | 0.3+ |
| 2002 08 08 | 185 | 0.1− | 0.1− | 2002 08 13 | 952 | 0.6− | 0.4− | 2006 08 17 | H45 | 0.4+ | 0.3+ |
| 2002 08 08 | 151 | 0.0 | 0.2− | 2002 08 13 | 952 | 0.1+ | 0.3− | 2006 08 22 | 644 | 0.6+ | 0.5+ |
| 2002 08 08 | 185 | 0.2− | 0.3− | 2002 08 13 | 952 | 0.6+ | 0.0 | 2006 08 22 | 644 | 0.6+ | 0.5+ |
| 2002 08 08 | 185 | 0.2− | 0.1− | 2002 08 14 | 151 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.5+ | 0.4+ |
| 2002 08 08 | 185 | 0.2− | 0.3− | 2002 08 14 | 151 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.4+ | 0.3+ |
| 2002 08 08 | 185 | 0.1+ | 0.0 | 2002 08 14 | 151 | 0.3− | 0.1− | 2006 08 23 | 644 | 0.7+ | 0.4+ |
| 2002 08 08 | 198 | 0.4+ | 0.2+ | 2002 08 14 | 151 | 0.4− | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.5+ |
| 2002 08 08 | 198 | 0.2+ | 0.1+ | 2002 08 14 | 240 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.6+ | 0.5+ |
| 2002 08 08 | 198 | 0.2+ | 0.1− | 2002 08 14 | 240 | 0.3+ | 0.2+ | 2006 08 23 | 644 | 0.5+ | 0.5+ |
| 2002 08 08 | 198 | 0.3+ | 0.2+ | 2002 08 14 | 240 | 0.3+ | 0.2+ | 2006 08 23 | 644 | 0.6+ | 0.5+ |
| 2002 08 08 | 198 | 0.1+ | 0.1+ | 2002 08 14 | 108 | (2.2− | 1.0−) | 2006 08 24 | H55 | 1.1− | 0.2− |
| 2002 08 08 | 198 | 0.1+ | 0.2+ | 2002 08 14 | 108 | 1.1− | 1.1+ | 2006 08 24 | H55 | 1.0− | 0.5− |
| 2002 08 09 | 734 | 0.5+ | 0.4− | 2002 08 14 | 108 | 1.4− | 0.5− | 2006 08 24 | H55 | 1.3− | 0.6− |
| 2002 08 09 | 734 | 0.4+ | 0.4− | 2002 08 14 | 108 | 0.5+ | 0.4+ | 2006 08 24 | H55 | 1.3− | 0.1− |
| 2002 08 09 | 649 | 0.2+ | 0.1+ | 2002 08 14 | 636 | 1.4+ | 0.9+ | 2006 08 31 | 151 | 0.2− | 0.3+ |
| 2002 08 09 | 649 | 0.1+ | 0.0 | 2002 08 14 | 636 | 0.0 | 0.3− | 2006 08 31 | 151 | 0.6+ | 0.6+ |
| 2002 08 09 | 649 | 0.0 | 0.0 | 2002 08 14 | 108 | 1.0− | 0.5− | 2006 08 31 | 151 | (1.6+ | 1.1+) |
| 2002 08 09 | 379 | 0.2+ | 0.5− | 2002 08 14 | 636 | 0.4− | 0.3− | 2006 08 31 | 151 | 1.0+ | 0.6+ |
| 2002 08 09 | 379 | 0.4+ | 0.4+ | 2002 08 14 | 940 | 0.5− | 0.3+ | 2006 09 13 | 151 | 0.9+ | 0.3+ |
| 2002 08 09 | 379 | 0.5+ | 0.1+ | 2002 08 14 | 940 | 0.5+ | 0.7+ | 2006 09 13 | 151 | 0.9+ | 0.4+ |

**(141852)∗ 2002 PU$_8$**

Discovered 2002 Aug. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 186.70479 | | (2000.0) | | | |
| $n$ | 0.28822286 | $\omega$ | 326.47181 | | −0.96067750 | +0.26781679 |
| $a$ | 2.2697800 | $\Omega$ | 229.23890 | | −0.22872685 | −0.91295167 |
| $e$ | 0.0115349 | $i$ | 5.55342 | | −0.15742546 | −0.30788540 |
| $P$ | 3.42 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 645 | 0.1+ | 0.3+ | 2002 08 07 | 644 | 0.2+ | 0.6+ | 2005 06 13 | 691 | 0.1+ | 0.5+ |
| 2001 02 22 | 645 | 0.1+ | 0.2+ | 2002 08 16 | 644 | 0.1− | 0.4+ | 2005 06 13 | 691 | 0.2+ | 0.4+ |
| 2002 07 03 | 644 | 0.2+ | 0.2+ | 2002 08 16 | 644 | 0.3− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2002 07 03 | 644 | 0.1+ | 0.3+ | 2002 08 16 | 644 | 0.5− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 2002 07 03 | 644 | 0.4+ | 0.0 | 2002 08 26 | 644 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.2− | 0.5+ |
| 2002 07 04 | 644 | 0.5+ | 0.2− | 2002 08 26 | 644 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 07 04 | 644 | 0.0 | 0.0 | 2005 02 09 | 809 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.7+ | 0.2+ |
| 2002 07 12 | 644 | 0.3+ | 0.6− | 2005 02 09 | 809 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.3+ | 1.3+ |
| 2002 07 12 | 644 | 0.8− | 0.1+ | 2005 02 09 | 809 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.6− | 0.3− |
| 2002 07 12 | 644 | 0.2+ | 0.3− | 2005 02 09 | 809 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.5− | 0.0 |
| 2002 07 21 | 644 | 0.0 | 0.0 | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.4− | 0.9+ |
| 2002 07 21 | 644 | 0.1+ | 0.1− | 2005 05 19 | G96 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.3− | 0.8+ |
| 2002 07 21 | 644 | 0.1− | 0.2+ | 2005 05 19 | G96 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.3+ |
| 2002 08 05 | 644 | 0.2− | 0.3+ | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2002 08 05 | 644 | 0.0 | 0.4+ | 2005 05 21 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 1.1+ |
| 2002 08 05 | 644 | 0.1− | 0.1+ | 2005 05 21 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2002 08 06 | 644 | 0.4− | 0.2+ | 2005 05 21 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 2002 08 06 | 644 | 0.4− | 0.1+ | 2005 06 10 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.9+ | 0.7− |
| 2002 08 06 | 644 | 0.1− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2002 08 07 | 644 | 0.1+ | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2002 08 07 | 644 | 0.1+ | 0.4+ | 2005 06 13 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |

**(141853)∗ 2002 PD$_9$ = 2005 EU$_{49}$**

Discovered 2002 Aug. 5 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75415)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.94145 | | (2000.0) | | | |
| $n$ | 0.25988872 | $\omega$ | 4.72397 | | −0.48011501 | +0.87533202 |
| $a$ | 2.4318928 | $\Omega$ | 236.59370 | | −0.80705229 | −0.46637211 |
| $e$ | 0.1581129 | $i$ | 3.93598 | | −0.34373853 | −0.12763585 |
| $P$ | 3.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 29 | 691 | 0.1+ | 0.2− | 2005 03 03 | 703 | 0.3+ | 0.0 | 2006 08 18 | 644 | 0.2− | 0.1− |
| 1999 10 29 | 691 | 0.2+ | 0.3+ | 2005 03 03 | 703 | 0.6+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.2− |
| 1999 10 29 | 691 | 0.1− | 0.2+ | 2005 03 08 | 699 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.1+ |
| 2002 08 05 | 644 | 0.2+ | 0.1+ | 2005 03 08 | 699 | 0.5− | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.9+ |
| 2002 08 05 | 644 | 0.3− | 0.1− | 2005 03 08 | 699 | 0.1− | 0.5+ | 2006 08 29 | 703 | 0.1− | 1.0+ |
| 2002 08 05 | 644 | 0.1− | 0.0 | 2005 03 08 | 699 | 0.2− | 0.5+ | 2006 08 29 | 703 | (2.1− | 0.2−) |
| 2002 08 06 | 644 | 0.3+ | 0.9+ | 2005 03 10 | 703 | 1.1− | 0.4+ | 2006 08 29 | 703 | 0.9− | 0.7+ |
| 2002 08 06 | 644 | 0.2− | 0.8+ | 2005 03 10 | 703 | 0.6− | 1.4− | 2006 08 29 | 703 | 1.0+ | 0.4− |
| 2002 08 06 | 644 | 0.1+ | 1.0+ | 2005 03 10 | 703 | 0.1+ | 0.1+ | 2006 08 29 | 703 | (2.3+ | 0.3−) |
| 2002 08 26 | 644 | 0.3− | 0.0 | 2005 03 10 | 703 | 0.4− | 0.5− | 2006 08 29 | 703 | 0.7+ | 0.2− |
| 2002 08 26 | 644 | 0.9− | 0.2+ | 2005 03 11 | G96 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 1.0+ | 0.3+ |
| 2002 08 26 | 644 | 0.3− | 0.5+ | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 09 11 | 703 | 1.0− | 0.9− |
| 2003 10 23 | 691 | 0.4− | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 09 11 | 703 | 0.7− | 0.3− |
| 2003 10 23 | 691 | 0.1+ | 0.5+ | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 09 11 | 703 | 1.0− | 0.3+ |
| 2003 10 23 | 691 | 0.1− | 0.4− | 2005 04 15 | 691 | 0.3+ | 0.1+ | 2006 09 11 | 703 | 0.8+ | 0.7+ |
| 2003 12 21 | 691 | 0.1+ | 0.3+ | 2005 04 15 | 691 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.3− | 1.4− |
| 2003 12 21 | 691 | 0.2− | 0.0 | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.2+ | 0.0 | 2006 08 16 | D35 | 0.9+ | 0.3− | 2006 09 17 | 703 | 1.6− | 0.5− |
| 2005 03 03 | 703 | 1.4+ | 0.7+ | 2006 08 16 | D35 | 1.3+ | 0.1+ | 2006 09 17 | 703 | 0.6+ | 0.0 |
| 2005 03 03 | 703 | 0.5− | 0.2+ | 2006 08 16 | D35 | 0.1− | 0.1− | | | | |

**(141854)∗ 2002 PU$_9$**

Discovered 2002 Aug. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.04622 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26802446 | $\omega$ | 151.56711 | | +0.92613601 | −0.37389728 | |
| $a$ | 2.3824279 | $\Omega$ | 230.47626 | | +0.33270709 | +0.87189683 | |
| $e$ | 0.1567458 | $i$ | 3.69634 | | +0.17770225 | +0.31622262 | |
| $P$ | 3.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.4− | 0.2+ | 2005 05 09 | G96 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.0 |
| 1995 11 24 | 691 | 0.2− | 0.3+ | 2005 05 09 | G96 | 0.8− | 0.5+ | 2006 10 16 | 683 | 0.0 | 0.4− |
| 1995 11 24 | 691 | 0.2− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 10 16 | 683 | 0.4+ | 1.3+ |
| 2000 01 05 | 704 | 0.8+ | 0.2− | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 10 16 | 683 | 1.0− | 0.4+ |
| 2000 01 05 | 704 | 0.5+ | 0.2− | 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.6− |
| 2000 01 05 | 704 | 0.2+ | 0.6+ | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2002 07 14 | 704 | 0.1− | 0.9+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2002 07 14 | 704 | 0.0 | 1.1+ | 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2002 07 14 | 704 | 0.9+ | 1.3+ | 2005 05 10 | G96 | 0.4− | 0.5+ | 2006 10 19 | 704 | 0.4+ | 0.0 |
| 2002 07 14 | 704 | 0.9+ | 0.5− | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 10 19 | 704 | 0.4− | 0.3+ |
| 2002 07 21 | 644 | 0.0 | 0.1− | 2005 05 13 | G96 | 0.1− | 0.3− | 2006 10 19 | 704 | (1.3+ | 1.7−) |
| 2002 07 21 | 644 | 0.0 | 0.1+ | 2005 05 13 | G96 | 0.1+ | 0.1− | 2006 10 19 | 704 | 0.2− | 0.1− |
| 2002 07 21 | 644 | 0.3− | 0.1− | 2005 05 13 | G96 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2002 08 05 | 644 | 0.0 | 0.2− | 2005 05 13 | G96 | (1.6+ | 0.9+) | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 08 05 | 644 | 0.0 | 0.3− | 2005 05 16 | 691 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 08 05 | 644 | 0.1+ | 0.5− | 2005 05 16 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 08 06 | 644 | 0.3+ | 0.5+ | 2005 05 16 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 06 | 644 | 0.1+ | 0.5+ | 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 08 06 | 644 | 0.4+ | 0.4+ | 2005 06 10 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2002 08 07 | 644 | 0.1− | 0.2− | 2005 06 10 | 691 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2002 08 07 | 644 | 0.1− | 0.4− | 2006 08 06 | 699 | 0.3− | 0.6− | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2002 08 07 | 644 | 0.3− | 0.3− | 2006 08 06 | 699 | 0.4− | 0.3+ | 2006 10 29 | 704 | 0.3+ | 0.2− |
| 2002 09 05 | 699 | 0.3− | 0.3− | 2006 08 06 | 699 | (1.6− | 0.4−) | 2006 10 29 | 704 | 0.7+ | 0.3+ |
| 2002 09 05 | 699 | 1.0+ | 1.3+ | 2006 08 06 | 699 | 0.8+ | 0.0 | 2006 10 29 | 704 | 0.4− | 0.0 |
| 2002 09 05 | 699 | 0.2+ | 0.6− | 2006 09 25 | 704 | 0.1+ | 1.1+ | 2006 10 29 | 704 | 0.7+ | 0.2+ |
| 2002 09 05 | 699 | (1.6+ | 1.2+) | 2006 09 25 | 704 | 0.5+ | 0.5+ | 2006 10 29 | 704 | 0.6+ | 0.0 |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.9+ | 2006 10 31 | 691 | 0.1+ | 0.6+ |
| 2002 09 06 | 704 | 0.9+ | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.5+ | 0.4− | 2006 09 25 | 704 | 0.7+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.8− | 2006 09 29 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2004 02 17 | 704 | (2.1+ | 0.2−) | 2006 09 29 | 704 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2004 02 17 | 704 | 0.9+ | 0.9+ | 2006 09 29 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.9− |
| 2004 02 17 | 704 | (2.2+ | 0.9+) | 2006 09 29 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2004 02 17 | 704 | 1.4+ | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 10 03 | 704 | 1.2− | 0.2− | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2005 04 11 | G96 | 0.9− | 0.1+ | 2006 10 03 | 704 | 1.2− | 1.2− | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2006 10 03 | 704 | 0.6− | 0.6+ | 2006 11 18 | 704 | 0.1+ | 1.8+ |
| 2005 04 11 | G96 | 0.1+ | 0.3− | 2006 10 03 | 704 | 0.8− | 0.6− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2005 05 04 | G96 | 0.3+ | 0.0 | 2006 10 03 | 704 | 0.7− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2005 05 04 | G96 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2005 05 04 | G96 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.5− |
| 2005 05 04 | G96 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2005 05 09 | G96 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.1− | 0.5− |
| 2005 05 09 | G96 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.1− | 0.3− |

**(141855)∗ 2002 PP$_{10}$ = 1997 EE$_2$**

Discovered 2002 Aug. 5 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 33718)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.85063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26765834 | $\omega$ | 173.87327 | | +0.95178097 | +0.30573698 | |
| $a$ | 2.3846000 | $\Omega$ | 168.23028 | | −0.28645900 | +0.91518691 | |
| $e$ | 0.1206351 | $i$ | 7.11253 | | −0.10979173 | +0.26259819 | |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.2+ | 0.1+ | 2002 08 14 | 704 | 0.8+ | 0.6+ | 2005 04 15 | 691 | 0.1+ | 0.3+ |
| 1997 03 04 | 691 | 0.4+ | 0.1+ | 2002 08 14 | 704 | 0.1+ | 0.8+ | 2005 04 18 | 691 | 0.2+ | 0.1+ |
| 1997 03 04 | 691 | 0.8+ | 0.5− | 2002 08 14 | 704 | 1.4+ | 0.9− | 2005 04 18 | 691 | 0.1+ | 0.3+ |
| 1997 03 05 | 691 | 0.1− | 0.3+ | 2002 08 16 | 644 | 0.3− | 0.1+ | 2005 04 18 | 691 | 0.2+ | 0.1− |
| 1997 03 05 | 691 | 0.7− | 0.3+ | 2002 08 16 | 644 | 0.3− | 0.1+ | 2005 05 15 | 644 | 0.3− | 0.3+ |
| 1997 03 05 | 691 | 0.4− | 0.2+ | 2002 08 16 | 644 | 0.2− | 0.2+ | 2005 05 15 | 644 | 0.7− | 0.1− |
| 2002 07 21 | 644 | 0.1− | 0.1+ | 2002 08 26 | 644 | (2.2− | 1.1−) | 2005 05 15 | 644 | 0.3− | 0.1− |
| 2002 07 21 | 644 | 0.0 | 0.2+ | 2002 08 26 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 1.1− | 0.4+ |
| 2002 07 21 | 644 | 0.6− | 0.4− | 2002 08 26 | 644 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.0 | 0.7+ |
| 2002 08 05 | 644 | 0.4− | 0.1+ | 2002 09 06 | 704 | 0.4− | 0.4− | 2006 09 26 | 704 | 0.2− | 1.2+ |
| 2002 08 05 | 644 | 0.3− | 0.0 | 2002 09 06 | 704 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 2002 08 05 | 644 | 0.3− | 0.1+ | 2002 09 06 | 704 | (0.4− | 2.1−) | 2006 09 30 | 703 | 1.1− | 0.2+ |
| 2002 08 06 | 644 | 0.4− | 0.5− | 2002 09 14 | 644 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2002 08 06 | 644 | 0.2− | 0.5− | 2002 09 14 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.4− | 0.3− |
| 2002 08 06 | 644 | 0.2− | 0.7− | 2002 09 14 | 644 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.7− | 0.5− |
| 2002 08 07 | 644 | 0.0 | 0.3− | 2002 10 03 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.6+ |
| 2002 08 07 | 644 | 0.4− | 0.2− | 2002 10 03 | 704 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.1− |
| 2002 08 07 | 644 | 0.3− | 0.3− | 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 10 01 | 704 | 0.4+ | 0.8+ |
| 2002 08 08 | 699 | 0.4− | 0.0 | 2002 10 03 | 704 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.5+ | 0.1+ |
| 2002 08 08 | 699 | 1.1− | 0.2+ | 2002 10 07 | 291 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.6+ | 0.2+ |
| 2002 08 08 | 699 | 0.5− | 0.2− | 2002 10 07 | 291 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2002 08 08 | 699 | 0.0 | 0.2+ | 2002 10 07 | 291 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2002 08 09 | 704 | 0.4+ | 0.6+ | 2002 10 11 | 704 | 0.8− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2002 08 09 | 704 | 0.6+ | 0.4+ | 2002 10 11 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2002 08 09 | 704 | 0.9+ | 0.4− | 2002 10 11 | 704 | 0.4+ | 1.3+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2002 08 12 | 704 | 0.2− | 0.4− | 2005 04 02 | 691 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.9+ |
| 2002 08 12 | 704 | 0.6+ | 0.4− | 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.7+ | 0.1− |
| 2002 08 12 | 704 | 0.2− | 0.6+ | 2005 04 02 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1− | 2.2+ |
| 2002 08 12 | 704 | 0.7+ | 0.7− | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.3+ |
| 2002 08 14 | 704 | 0.6+ | 0.5+ | 2005 04 15 | 691 | 0.0 | 0.2+ | | | | |

**(141856)∗ 2002 PW$_{11}$**

Discovered 2002 Aug. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.48680 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28635225 | $\omega$ | 198.26410 | | +0.14651436 | −0.98822412 | |
| $a$ | 2.2796543 | $\Omega$ | 243.33070 | | +0.91362506 | +0.15228419 | |
| $e$ | 0.0637717 | $i$ | 2.83004 | | +0.37923976 | +0.01492031 | |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 20 | 691 | 0.3− | 0.2− | 2003 12 23 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 691 | 0.6− | 0.1+ |
| 1998 06 20 | 691 | 0.2− | 0.2+ | 2003 12 23 | 704 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.0 |
| 1998 06 20 | 691 | 0.1− | 0.1+ | 2003 12 23 | 704 | 0.2− | 1.2+ | 2006 10 16 | 691 | 0.6+ | 0.1− |
| 2001 03 19 | 704 | 0.8+ | 0.2+ | 2003 12 23 | 704 | 0.2− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2001 03 19 | 704 | 1.1+ | 0.6+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.2− |
| 2001 03 19 | 704 | 0.5+ | 0.0 | 2004 01 27 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2001 03 19 | 704 | 0.8+ | 0.2+ | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2002 07 17 | 644 | 0.3+ | 0.7+ | 2005 06 27 | G96 | 0.1− | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2002 07 17 | 644 | 0.3+ | 0.4+ | 2005 06 27 | G96 | 0.3− | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 2002 07 17 | 644 | 0.1+ | 0.9+ | 2005 06 27 | G96 | 0.1− | 0.5+ | 2006 11 07 | 644 | 0.3− | 0.2− |
| 2002 08 03 | 644 | 0.2+ | 0.1+ | 2005 06 27 | G96 | 0.2− | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2002 08 03 | 644 | 0.2+ | 0.5+ | 2005 06 28 | G96 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 2002 08 03 | 644 | 0.3− | 0.5+ | 2005 06 28 | G96 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.9+ |
| 2002 08 07 | 644 | 0.6− | 0.3+ | 2005 06 28 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.4− |
| 2002 08 07 | 644 | 0.2+ | 0.4+ | 2005 06 28 | G96 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 08 07 | 644 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2003 12 19 | 704 | 1.0+ | 0.8− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2003 12 19 | 704 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.2− | 0.1+ | | |
| 2003 12 19 | 704 | 0.6− | 0.5+ | 2006 10 03 | 691 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.2− | 0.1+ | | |
| 2003 12 19 | 704 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2003 12 23 | 704 | 0.1− | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1− | | | | | | |

**(141857)∗ 2002 PS$_{14}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.64270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26860365 | $\omega$ | 205.87038 | | +0.91633723 | +0.39086888 | |
| $a$ | 2.3790018 | $\Omega$ | 130.84043 | | −0.34454737 | +0.88025626 | |
| $e$ | 0.1301779 | $i$ | 6.59414 | | −0.20399311 | +0.26901753 | |
| $P$ | 3.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 1.9+ | 0.2− | 2002 08 17 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.7− | | |
| 1999 12 05 | 704 | 0.1− | 0.4− | 2002 08 17 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.8− | 0.0 | | |
| 1999 12 05 | 704 | 1.2− | 1.8− | 2002 08 17 | 644 | 0.3− | 0.1− | 2006 09 18 | 703 | 1.0− | 0.4− | | |
| 2002 06 06 | 291 | 0.1+ | 0.9− | 2003 12 27 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.1+ | | |
| 2002 06 06 | 291 | 0.0 | 0.1− | 2003 12 27 | 704 | 0.4+ | 0.9+ | 2006 09 26 | 703 | 0.7+ | 0.3+ | | |
| 2002 06 06 | 291 | 0.2− | 0.4+ | 2003 12 27 | 704 | 0.9− | 0.6+ | 2006 09 26 | 703 | 0.1+ | 0.3+ | | |
| 2002 06 25 | 644 | 0.2− | 0.2+ | 2003 12 27 | 704 | 0.9+ | 1.0+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | | |
| 2002 06 25 | 644 | 0.8− | 0.0 | 2003 12 28 | 704 | 0.6+ | 1.0− | 2006 10 02 | 703 | 0.4− | 0.9+ | | |
| 2002 06 25 | 644 | 0.9− | 0.2− | 2003 12 28 | 704 | 0.2+ | 0.6+ | 2006 10 02 | 703 | 0.3+ | 0.3− | | |
| 2002 07 05 | 704 | 0.6− | 0.5+ | 2003 12 28 | 704 | 1.2+ | 0.3− | 2006 10 02 | 703 | 0.6+ | 0.7+ | | |
| 2002 07 05 | 704 | 0.1+ | 0.6− | 2003 12 28 | 704 | 0.9+ | 0.0 | 2006 10 02 | 703 | 0.3+ | 0.0 | | |
| 2002 07 05 | 704 | 0.6− | 0.6+ | 2004 01 31 | 691 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.8+ | 0.6+ | | |
| 2002 07 05 | 704 | 0.3− | 0.2+ | 2004 01 31 | 691 | 0.5− | 0.3+ | 2006 10 02 | 703 | 0.2+ | 0.4+ | | |
| 2002 07 14 | 704 | 0.0 | 0.3+ | 2004 01 31 | 691 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.6− | 0.3+ | | |
| 2002 07 14 | 704 | 1.1+ | 0.7+ | 2006 08 19 | 644 | 0.4+ | 0.1+ | 2006 10 02 | 703 | 0.2− | 0.0 | | |
| 2002 07 14 | 704 | 0.7+ | 0.3− | 2006 08 19 | 644 | 0.1+ | 0.5− | 2006 10 22 | 644 | 0.5+ | 0.2− | | |
| 2002 07 14 | 704 | 0.9+ | 0.9+ | 2006 08 19 | 644 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2002 07 22 | 644 | 0.0 | 0.0 | 2006 08 28 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.0 | | |
| 2002 07 22 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 1.1+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− | | |
| 2002 07 22 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1− | | |
| 2002 08 06 | 644 | 0.0 | 0.1− | 2006 08 28 | 699 | 1.2− | 0.5− | 2006 10 23 | 644 | 0.3+ | 0.3+ | | |
| 2002 08 06 | 644 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.6+ | 1.3+ | 2006 10 28 | 703 | 0.6− | 0.3+ | | |
| 2002 08 06 | 644 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.4+ | 0.9− | 2006 10 28 | 703 | 0.1− | 0.9+ | | |
| 2002 08 07 | 644 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.5+ | 0.4− | 2006 10 28 | 703 | 0.1− | 0.2− | | |
| 2002 08 07 | 644 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.8− | 0.0 | 2006 10 28 | 703 | 0.2− | 0.4+ | | |
| 2002 08 07 | 644 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.5− | 0.5− | 2006 11 23 | 703 | 0.3+ | 1.7− | | |
| 2002 08 08 | 644 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 0.8− | 0.5+ | 2006 11 23 | 703 | 1.8− | 1.5− | | |
| 2002 08 08 | 644 | 0.1+ | 0.7+ | 2006 09 12 | 703 | 0.4+ | 0.8+ | 2006 11 23 | 703 | 0.7− | 0.7− | | |
| 2002 08 08 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.0 | 1.2− | 2006 11 23 | 703 | 0.5+ | 1.4+ | | |

**(141858)∗ 2002 PO$_{17}$ = 1995 SS$_{63}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Id. A. Doppler (*MPO* 33720)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.81953 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27032406 | $\omega$ | 182.51726 | | +0.94380836 | −0.33035811 | |
| $a$ | 2.3688974 | $\Omega$ | 196.78263 | | +0.30379049 | +0.87845627 | |
| $e$ | 0.2247732 | $i$ | 1.87543 | | +0.13014266 | +0.34522182 | |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.6− | 2005 06 13 | G96 | 0.6− | 0.1+ | 2006 10 28 | 704 | 0.6− | 1.1+ | | |
| 1995 09 20 | 691 | 0.0 | 0.5− | 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 10 28 | 704 | 0.2− | 0.9+ | | |
| 1995 09 20 | 691 | 0.0 | 0.4− | 2005 06 13 | G96 | 0.1+ | 1.0+ | 2006 10 28 | 704 | 0.2− | 0.5+ | | |
| 1995 09 25 | 691 | 0.2+ | 0.3− | 2006 07 22 | G96 | 0.3− | 0.2− | 2006 10 28 | 704 | 0.2− | 0.7+ | | |
| 1995 09 25 | 691 | 0.0 | 0.1− | 2006 07 22 | G96 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.5+ | 0.3− | | |
| 1995 09 25 | 691 | 0.5+ | 0.3− | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.5− | | |
| 2002 07 04 | 644 | 0.4− | 0.8+ | 2006 07 22 | G96 | 1.3− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.0 | | |
| 2002 07 04 | 644 | 0.1+ | 0.9+ | 2006 08 28 | 703 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.0 | | |
| 2002 07 04 | 644 | 0.5+ | 1.4+ | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2002 07 13 | 608 | 0.8+ | 1.2− | 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2002 07 13 | 608 | (0.2− | 1.6−) | 2006 08 28 | 703 | 0.6+ | 1.0− | 2006 11 15 | G96 | 0.0 | 0.2− | | |
| 2002 07 13 | 608 | 0.0 | 0.7− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.0 | | |
| 2002 07 22 | 644 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.5+ | 1.0+ | | |
| 2002 07 22 | 644 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.2− | 0.6+ | | |
| 2002 07 22 | 644 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.5− | 0.1− | | |
| 2002 08 06 | 644 | 0.5− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.5+ | | |
| 2002 08 06 | 644 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | (2.0+ | 0.2+) | | |
| 2002 08 06 | 644 | 0.0 | 0.5− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.4− | | |
| 2002 08 07 | 644 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 1.3+ | 1.1+ | | |
| 2002 08 07 | 644 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 1.4+ | | |
| 2002 08 07 | 644 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.9+ | | |
| 2002 08 27 | 644 | 0.0 | 0.0 | 2006 10 16 | 291 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.7+ | | |
| 2002 08 27 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 291 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 1.1+ | | |
| 2002 08 27 | 644 | 0.0 | 0.4+ | 2006 10 16 | 291 | 0.4− | 0.3+ | 2006 11 19 | 704 | (1.6+ | 1.0+) | | |
| 2005 04 07 | G96 | 0.2− | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.1+ | 0.3− | | |
| 2005 04 07 | G96 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.9+ | 0.2− | | |
| 2005 04 07 | G96 | 0.6− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.7+ | 0.4+ | | |
| 2005 04 07 | G96 | 0.5− | 0.4+ | 2006 10 21 | H07 | 0.2− | 0.8− | 2006 11 21 | 704 | 0.3− | 0.5+ | | |
| 2005 05 07 | G96 | 0.3− | 0.2+ | 2006 10 21 | H07 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.6+ | | |
| 2005 05 07 | G96 | 0.3− | 0.1+ | 2006 10 21 | H07 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.8+ | | |
| 2005 05 07 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5− | 0.6− | | |
| 2005 05 07 | G96 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 26 | 704 | 0.4− | 0.1+ | | |
| 2005 05 08 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.2+ | 0.3− | | |
| 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 704 | 0.0 | 0.8+ | 2006 11 26 | 704 | 0.4− | 0.1− | | |
| 2005 05 08 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 704 | (0.4− | 1.5+) | 2006 11 28 | 704 | 0.2+ | 0.2+ | | |
| 2005 05 12 | 691 | 0.6+ | 0.1+ | 2006 10 23 | 704 | 0.3− | 0.9+ | 2006 11 28 | 704 | 1.4− | 0.1− | | |
| 2005 05 12 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 704 | 0.5+ | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.8+ | | |
| 2005 05 12 | 691 | 0.3− | 1.0+ | 2006 10 23 | 704 | 0.5+ | 0.3+ | 2006 11 28 | 704 | 1.3− | 0.9− | | |
| 2005 06 13 | G96 | 0.2− | 0.5+ | 2006 10 28 | 704 | 0.2+ | 1.4+ | | | | | | |

**(141859)∗ 2002 PC$_{18}$ = 2004 AL$_{18}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69382)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.66788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26658574 | $\omega$ | 120.74664 | | +0.92525687 | +0.37888795 | |
| $a$ | 2.3909919 | $\Omega$ | 216.99759 | | −0.35772120 | +0.85521852 | |
| $e$ | 0.1863531 | $i$ | 1.76528 | | −0.12623499 | +0.35361731 | |
| $P$ | 3.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.4+ | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2002 07 22 | 644 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.2− | 0.4+ | | |
| 2002 07 22 | 644 | 0.0 | 0.5+ | 2006 09 14 | 703 | (1.6− | 0.1−) | 2006 09 26 | 691 | 0.3− | 0.3+ | | |
| 2002 08 06 | 644 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 08 06 | 644 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 08 06 | 644 | 0.2− | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 07 | 644 | 0.7− | 0.4+ | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 13 | A50 | 0.5+ | 0.2− | | |
| 2002 08 07 | 644 | 0.4− | 0.8+ | 2006 09 16 | 644 | 0.4+ | 0.5+ | 2006 10 13 | A50 | 0.4− | 0.8− | | |
| 2002 08 07 | 644 | 0.6− | 0.8+ | 2006 09 18 | 699 | (1.6− | 0.2−) | 2006 10 13 | A50 | 0.3+ | 0.5+ | | |
| 2003 12 22 | 691 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | | |
| 2003 12 22 | 691 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.0 | | |
| 2003 12 22 | 691 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.1+ | | |
| 2004 01 15 | 691 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2004 01 15 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2004 01 15 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 1.4− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.0 | | |
| 2004 01 27 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 1.4+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2005 04 09 | 691 | 0.2+ | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.8− | | |
| 2005 04 09 | 691 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.4− | 1.2− | | |
| 2005 04 09 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.8− | 1.7− | | |
| 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 1.5− | | |
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | | | | | |

**(141860)∗ 2002 PW$_{20}$ = 1999 TO$_{315}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Id. A. Doppler (*MPO* 33721)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 101.69155 | | (2000.0) | | | |
| $n$ | 0.28418261 | $\omega$ | 51.21181 | | −0.00103386 | +0.99981832 |
| $a$ | 2.2912425 | $\Omega$ | 218.74189 | | −0.92665354 | −0.00811270 |
| $e$ | 0.1435256 | $i$ | 1.74283 | | −0.37591509 | +0.01724855 |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.1+ | 0.4− | 2005 05 01 | 644 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.4− |
| 1999 10 09 | 691 | 0.2+ | 0.3− | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.1+ |
| 1999 10 09 | 691 | 0.1− | 0.4− | 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 1999 10 19 | 691 | 0.0 | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.1− |
| 1999 10 19 | 691 | 0.2+ | 0.1− | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 10 16 | 947 | 0.5+ | 0.8− |
| 1999 10 19 | 691 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.3+ | 0.2− | 2006 10 16 | 947 | 0.5+ | 0.4+ |
| 2002 07 19 | 644 | 0.3− | 0.6+ | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 10 16 | 947 | 0.6+ | 0.6+ |
| 2002 07 19 | 644 | 0.2+ | 0.3+ | 2005 05 12 | G96 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.3+ |
| 2002 07 19 | 644 | 0.3+ | 0.2+ | 2005 05 12 | G96 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 08 06 | 644 | 0.3+ | 0.0 | 2005 06 13 | G96 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2002 08 06 | 644 | 0.2+ | 0.2− | 2005 06 13 | G96 | 0.1+ | 0.5+ | 2006 10 29 | G96 | 0.0 | 0.0 |
| 2002 08 06 | 644 | 0.5+ | 0.0 | 2005 06 13 | G96 | 0.0 | 0.6+ | 2006 10 29 | G96 | 0.0 | 0.3− |
| 2002 08 07 | 644 | 1.0− | 0.6− | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 10 29 | G96 | 0.4+ | 0.4+ |
| 2002 08 07 | 644 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.5+ | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.3− |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.3− | 0.5+ |
| 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.5+ | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.7+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.4+ |

**(141861)∗ 2002 PD$_{22}$ = 2004 BA$_{73}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56417)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.23023 | | (2000.0) | | | |
| $n$ | 0.28478583 | $\omega$ | 136.64461 | | +0.57155922 | −0.81444972 |
| $a$ | 2.2880059 | $\Omega$ | 278.25339 | | +0.72257427 | +0.55728624 |
| $e$ | 0.0886590 | $i$ | 5.79703 | | +0.38885278 | +0.16156639 |
| $P$ | 3.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.2− | 0.0 | 2003 12 30 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.9+ |
| 1999 10 12 | 704 | 1.1− | 0.2− | 2004 01 24 | 704 | 0.0 | 1.3+ | 2006 10 19 | 703 | 0.7+ | 0.7+ |
| 1999 10 12 | 704 | 0.0 | 0.4+ | 2004 01 24 | 704 | 1.4+ | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.2+ |
| 1999 10 12 | 704 | 1.2− | 0.8+ | 2004 01 24 | 704 | 0.2− | 0.9+ | 2006 10 20 | A50 | 0.3+ | 0.2− |
| 1999 10 12 | 704 | 0.7− | 0.6+ | 2004 01 24 | 704 | 0.2+ | 0.5+ | 2006 10 20 | A50 | 0.3− | 0.3+ |
| 1999 11 03 | 704 | 0.7+ | 1.1− | 2004 01 26 | 699 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 1999 11 03 | 704 | 1.2+ | 1.0− | 2004 01 26 | 699 | 0.6− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 1999 11 03 | 704 | 0.4+ | 0.9− | 2004 01 26 | 699 | (1.1− | 1.9+) | 2006 11 08 | 644 | 0.3+ | 0.4+ |
| 1999 11 03 | 704 | 1.0+ | 0.0 | 2004 01 26 | 699 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2002 08 06 | 644 | 0.1− | 1.1+ | 2004 02 23 | 704 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2002 08 06 | 644 | 0.5− | 1.0+ | 2004 02 23 | 704 | 0.7+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2002 08 06 | 644 | 0.1+ | 1.0+ | 2004 02 23 | 704 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 08 07 | 644 | 0.2− | 0.9+ | 2004 02 23 | 704 | 1.0+ | 0.8+ | 2006 11 14 | 703 | 0.4+ | 0.5+ |
| 2002 08 07 | 644 | 0.1− | 1.0+ | 2004 02 23 | 704 | (2.3+ | 0.3+) | 2006 11 14 | 703 | 1.5− | 0.8− |
| 2002 08 07 | 644 | 0.1+ | 1.0+ | 2005 02 17 | 809 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.4+ |
| 2002 08 11 | 644 | 0.4− | 0.5+ | 2005 02 17 | 809 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.4− |
| 2002 08 11 | 644 | 0.4− | 0.3+ | 2005 02 17 | 809 | 0.2− | 0.4+ | 2006 11 22 | 703 | 0.1− | 0.5− |
| 2002 08 11 | 644 | 0.2− | 0.3+ | 2005 02 18 | 809 | 0.3− | 0.1− | 2006 11 22 | 703 | 0.0 | 0.4+ |
| 2003 12 30 | 691 | 0.2− | 0.3+ | 2005 02 18 | 809 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.4− | 0.0 |
| 2003 12 30 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.9− | 0.2− | | | | |

**(141862)∗ 2002 PA$_{23}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 71.44203 | | (2000.0) | | | |
| $n$ | 0.27774381 | $\omega$ | 45.88819 | | +0.45739812 | +0.88849699 |
| $a$ | 2.3265182 | $\Omega$ | 251.36436 | | −0.82659438 | +0.40950616 |
| $e$ | 0.1582196 | $i$ | 2.23049 | | −0.32791568 | +0.20706955 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.4+ | 0.1− | 2002 08 12 | 608 | 0.0 | 0.0 | 2005 05 06 | 947 | (0.1+ | 1.5−) |
| 1999 11 12 | 704 | 0.2− | 0.9− | 2002 08 12 | 608 | 0.2+ | 0.1− | 2005 05 06 | 947 | 0.1+ | 0.6− |
| 1999 11 12 | 704 | 0.9− | 0.0 | 2002 08 14 | 704 | 0.9+ | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 1999 11 12 | 704 | 0.3+ | 0.2− | 2002 08 14 | 704 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 1999 11 12 | 704 | 0.2+ | 0.2+ | 2002 08 14 | 704 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2002 07 04 | 644 | 0.2+ | 0.8− | 2002 08 14 | 704 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2002 07 04 | 644 | 0.4+ | 0.3− | 2002 08 14 | 704 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.5+ | 0.2− |
| 2002 07 04 | 644 | 0.1+ | 0.4− | 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.4+ |
| 2002 07 14 | 704 | 0.1+ | 0.5+ | 2002 08 17 | 644 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.0 |
| 2002 07 14 | 704 | 0.3+ | 0.6+ | 2002 08 17 | 644 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.0 |
| 2002 07 14 | 704 | 0.6+ | 0.6− | 2002 08 27 | 644 | 0.0 | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2002 07 14 | 704 | 0.7+ | 1.2− | 2002 08 27 | 644 | 0.0 | 1.1+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2002 07 14 | 704 | 0.7+ | 0.8− | 2002 08 27 | 644 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 08 06 | 644 | 0.2− | 0.2+ | 2002 09 05 | 704 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2002 08 06 | 644 | 0.2− | 0.3+ | 2002 09 05 | 704 | 0.0 | 1.0+ | 2006 10 20 | 644 | 0.5− | 0.4+ |
| 2002 08 06 | 644 | 0.2− | 0.0 | 2002 09 05 | 704 | 0.5− | 0.1− | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2002 08 07 | 644 | 0.4− | 0.2+ | 2002 09 05 | 704 | 0.4+ | 1.0+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2002 08 07 | 644 | 0.2− | 0.2+ | 2005 03 15 | G96 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 2002 08 07 | 644 | 0.5− | 0.4+ | 2005 03 15 | G96 | 0.7− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 08 07 | 599 | 0.0 | 0.0 | 2005 03 15 | G96 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.5+ |
| 2002 08 07 | 599 | 0.3− | 0.1− | 2005 03 15 | G96 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.7+ |
| 2002 08 07 | 599 | 0.1− | 0.2+ | 2005 04 04 | 691 | 0.1− | 0.6+ | 2006 11 01 | 691 | 0.4− | 0.5+ |
| 2002 08 08 | 699 | 0.7− | 0.3+ | 2005 04 04 | 691 | 0.7+ | 0.7+ | 2006 11 01 | 691 | 0.5− | 0.4+ |
| 2002 08 08 | 699 | 0.9− | 0.0 | 2005 04 04 | 691 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 2002 08 08 | 699 | 0.6− | 0.9+ | 2005 04 15 | 691 | 0.1− | 0.4+ | 2006 11 09 | 691 | 0.3+ | 0.6+ |
| 2002 08 08 | 699 | 0.2− | 0.4+ | 2005 04 15 | 691 | 0.3+ | 0.7+ | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2002 08 11 | 644 | 0.1− | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.5+ |
| 2002 08 11 | 644 | 0.1+ | 0.0 | 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.8+ | 0.1+ |
| 2002 08 11 | 644 | 0.1− | 0.0 | 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2002 08 12 | 608 | 0.1+ | 0.1+ | 2005 04 15 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2002 08 12 | 608 | 0.2− | 0.4− | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.3− | 0.4+ |
| 2002 08 12 | 608 | 0.3− | 0.5+ | 2005 04 17 | 691 | 0.4+ | 0.7+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2002 08 12 | 608 | 0.1− | 0.8− | 2005 04 17 | 691 | 0.2+ | 0.8+ | 2006 11 13 | 691 | 0.3− | 0.5+ |

**(141863)∗ 2002 PJ$_{24}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 77.32781 | | (2000.0) | | | |
| $n$ | 0.25669476 | $\omega$ | 62.14617 | | −0.33319321 | +0.94285252 |
| $a$ | 2.4520240 | $\Omega$ | 188.39322 | | −0.87299146 | −0.30985467 |
| $e$ | 0.1493403 | $i$ | 1.32614 | | −0.35618562 | −0.12255288 |
| $P$ | 3.84 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.4− | 0.3+ | 2005 03 03 | 703 | 0.2+ | 0.4+ | 2005 04 02 | G96 | 0.1− | 0.3+ |
| 2002 07 22 | 644 | 0.6+ | 0.0 | 2005 03 03 | 703 | 0.4− | 0.4+ | 2005 04 02 | G96 | 0.3− | 0.0 |
| 2002 08 06 | 644 | 0.1− | 0.3+ | 2005 03 03 | 703 | 0.5+ | 0.1+ | 2005 04 02 | G96 | 0.2− | 0.1− |
| 2002 08 06 | 644 | 0.4− | 0.7+ | 2005 03 03 | 703 | 0.9− | 0.4− | 2005 04 02 | G96 | 0.1− | 0.1+ |
| 2002 08 06 | 644 | 0.4− | 0.6+ | 2005 03 04 | 704 | 0.7+ | 0.1+ | 2005 04 09 | 691 | 0.4+ | 0.6+ |
| 2002 08 07 | 644 | 0.2+ | 0.3+ | 2005 03 04 | 704 | 0.5− | 0.3+ | 2005 04 09 | 691 | 0.1+ | 0.5− |
| 2002 08 07 | 644 | 0.4− | 0.2+ | 2005 03 04 | 704 | 1.2+ | 1.1+ | 2005 04 09 | 691 | 0.1− | 0.1+ |
| 2002 08 07 | 644 | 0.1+ | 0.6+ | 2005 03 04 | 704 | 0.3+ | 0.7+ | 2005 05 04 | G96 | 0.1− | 0.1− |
| 2002 08 11 | 644 | 0.2+ | 0.8+ | 2005 03 04 | G96 | 0.0 | 0.0 | 2005 05 04 | G96 | 0.0 | 0.0 |
| 2002 08 11 | 644 | 0.1+ | 0.6+ | 2005 03 04 | 704 | 0.5+ | 0.9+ | 2005 05 04 | G96 | 0.1+ | 0.3− |
| 2002 08 11 | 644 | 0.3+ | 0.7+ | 2005 03 04 | G96 | 0.2+ | 0.2+ | 2005 05 04 | G96 | 0.2− | 0.1+ |
| 2002 08 13 | 291 | 0.2− | 0.5+ | 2005 03 04 | G96 | 0.3− | 0.0 | 2006 08 19 | 691 | 0.3+ | 0.1+ |
| 2002 08 13 | 291 | 0.1+ | 0.1+ | 2005 03 04 | G96 | 0.2+ | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.2+ |
| 2002 08 13 | 291 | 0.1− | 0.1+ | 2005 03 08 | 704 | 0.1− | 0.7+ | 2006 08 19 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.3− | 0.3+ | 2005 03 08 | 704 | 0.1+ | 1.4+ | 2006 08 25 | 704 | 0.4+ | 0.4+ |
| 2002 08 17 | 644 | 0.2− | 0.0 | 2005 03 08 | 704 | 1.1+ | 1.5+ | 2006 08 25 | 704 | 0.6+ | 0.1+ |
| 2002 08 17 | 644 | 0.3− | 0.0 | 2005 03 08 | 704 | 1.0+ | 0.0 | 2006 08 25 | 704 | 0.1− | 1.3+ |
| 2002 08 27 | 644 | 0.2− | 0.0 | 2005 03 08 | G96 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2002 08 27 | 644 | 0.2− | 0.1+ | 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 2003 12 01 | 691 | 0.1+ | 0.0 | 2005 03 08 | G96 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2003 12 01 | 691 | 0.0 | 0.2+ | 2005 03 08 | G96 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2003 12 01 | 691 | 0.2+ | 0.0 | 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2003 12 14 | 691 | 0.2− | 0.6+ | 2005 04 02 | G96 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2003 12 14 | 691 | 0.1− | 0.3+ | 2005 04 02 | G96 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.6+ | 0.7+ |
| 2003 12 14 | 691 | 0.2− | 0.3+ | 2005 04 02 | G96 | 0.3− | 0.3+ | 2006 10 28 | G96 | 1.3− | 0.2+ |

**(141864)∗ 2002 PC$_{28}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.71980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25735400 | $\omega$ | 109.81590 | | −0.14218838 | +0.98956898 | |
| $a$ | 2.4478348 | $\Omega$ | 151.97853 | | −0.92560023 | −0.12463785 | |
| $e$ | 0.1729592 | $i$ | 2.82384 | | −0.35078011 | −0.07224009 | |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 13 | 691 | 0.2+ | 0.5+ | 2002 08 27 | 644 | 0.2− | 0.2− | 2005 04 11 | G96 | 0.3− | 0.1+ |
| 2001 02 13 | 691 | 0.3+ | 0.7+ | 2002 08 27 | 644 | 0.1− | 0.2− | 2005 05 11 | G96 | 0.1− | 0.2− |
| 2001 02 13 | 691 | 0.1+ | 0.5+ | 2002 08 30 | 291 | 0.1− | 0.2− | 2005 05 11 | G96 | 0.1− | 0.1− |
| 2002 07 22 | 644 | 0.2− | 0.3− | 2002 08 30 | 291 | 0.1− | 0.2− | 2005 05 11 | G96 | 0.3− | 0.2− |
| 2002 07 22 | 644 | 0.0 | 0.0 | 2002 08 30 | 291 | 0.0 | 0.2− | 2005 05 11 | G96 | 0.0 | 0.3+ |
| 2002 07 22 | 644 | 0.2+ | 0.1− | 2005 03 03 | 691 | 0.1+ | 0.4+ | 2006 08 18 | 691 | 0.2+ | 0.5+ |
| 2002 07 29 | 644 | 0.5− | 0.8+ | 2005 03 03 | 691 | 0.2+ | 0.5+ | 2006 08 18 | 691 | 0.3+ | 0.3+ |
| 2002 07 29 | 644 | 0.2+ | 0.6+ | 2005 03 03 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 691 | 0.2+ | 1.0− |
| 2002 07 29 | 644 | 0.2− | 0.9+ | 2005 03 03 | 703 | 0.5+ | 0.7− | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2002 08 06 | 644 | 0.1+ | 0.3+ | 2005 03 03 | 703 | 0.4+ | 0.6− | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 2002 08 06 | 644 | 0.3− | 0.3+ | 2005 03 03 | 703 | 1.5− | 1.1+ | 2006 08 27 | 691 | 0.3− | 0.6+ |
| 2002 08 06 | 644 | 0.0 | 0.3+ | 2005 03 03 | 703 | 0.7− | 0.1− | 2006 09 14 | 703 | 0.1+ | 2.0+ |
| 2002 08 07 | 644 | 0.0 | 0.1+ | 2005 03 04 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.5− |
| 2002 08 07 | 644 | 0.1− | 0.4+ | 2005 03 04 | G96 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2002 08 07 | 644 | 0.4− | 0.2+ | 2005 03 04 | G96 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.5− | 1.0+ |
| 2002 08 08 | 644 | 0.5+ | 0.1+ | 2005 03 04 | G96 | 0.3− | 0.3+ | 2006 09 14 | 703 | 1.5− | 0.7+ |
| 2002 08 08 | 644 | 0.2− | 1.0+ | 2005 03 08 | 704 | 0.0 | 1.8− | 2006 09 14 | 703 | (2.1+ | 0.3−) |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2005 03 08 | 704 | 1.2+ | 1.2− | 2006 09 14 | 703 | 0.2− | 0.4− |
| 2002 08 08 | 644 | 0.1+ | 1.0+ | 2005 03 08 | 704 | 0.1+ | 1.2+ | 2006 09 14 | 703 | 0.4− | 1.5− |
| 2002 08 08 | 644 | 0.2+ | 0.3+ | 2005 03 09 | 704 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.1+ | 1.2+ | 2005 03 09 | 704 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2005 03 09 | 704 | 1.0+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2002 08 17 | 644 | 0.4− | 0.3+ | 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.0 |
| 2002 08 17 | 644 | 0.8+ | 1.4− | 2005 04 11 | G96 | 0.4− | 0.2+ | | | | |
| 2002 08 27 | 644 | 0.2− | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.1− | | | | |

**(141865)∗ 2002 PN$_{28}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.55833 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27876515 | $\omega$ | 104.90984 | | +0.83529930 | −0.53966915 | |
| $a$ | 2.3208322 | $\Omega$ | 287.85313 | | +0.45243280 | +0.78326173 | |
| $e$ | 0.1048290 | $i$ | 6.33540 | | +0.31237741 | +0.30863939 | |
| $P$ | 3.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 703 | 0.3+ | 0.2− | 2002 09 05 | 699 | 0.2− | 0.0 | 2004 02 11 | 703 | 0.2− | 0.3+ |
| 1999 12 13 | 703 | 1.0− | 0.6− | 2002 09 05 | 699 | 0.5+ | 0.3+ | 2004 02 11 | 703 | 0.1− | 0.4+ |
| 1999 12 13 | 703 | (2.3− | 1.4+) | 2002 09 05 | 699 | 0.2+ | 0.2− | 2004 02 11 | 703 | 0.1− | 0.5+ |
| 1999 12 13 | 703 | 0.7− | 0.1+ | 2002 09 06 | 704 | (1.8− | 0.1+) | 2004 02 17 | 704 | 0.2+ | 0.2+ |
| 2000 01 03 | 704 | 0.1− | 0.3− | 2002 09 06 | 704 | 0.1+ | 0.8+ | 2004 02 17 | 704 | 0.1+ | 1.0+ |
| 2000 01 03 | 704 | 1.1+ | 1.1− | 2002 09 06 | 704 | 0.4+ | 1.0− | 2004 02 17 | 704 | 0.3+ | 0.2+ |
| 2000 01 03 | 704 | 1.0+ | 0.9− | 2002 09 08 | 608 | 0.7− | 0.4− | 2004 02 17 | 704 | 0.3+ | 0.2+ |
| 2002 07 14 | 704 | 1.2+ | 0.6− | 2002 09 08 | 608 | 0.2− | 0.6− | 2004 02 17 | 704 | 0.3+ | 0.9+ |
| 2002 07 14 | 704 | 1.4+ | 0.0 | 2002 09 08 | 608 | 0.2+ | 0.4− | 2004 02 22 | 704 | 0.8+ | 0.1+ |
| 2002 07 14 | 704 | 1.3+ | 0.4− | 2002 09 15 | 608 | 0.7− | 0.3− | 2004 02 22 | 704 | 0.1− | 0.1+ |
| 2002 07 14 | 704 | 0.3− | 0.3+ | 2002 09 15 | 608 | 0.8− | 0.8− | 2004 02 22 | 704 | 0.1− | 0.8+ |
| 2002 08 06 | 644 | 0.1− | 0.2+ | 2002 09 15 | 608 | (1.6− | 0.4+) | 2004 03 08 | 644 | 0.1− | 0.1− |
| 2002 08 06 | 644 | 0.0 | 0.1+ | 2004 01 13 | 699 | 1.2− | 0.1− | 2004 03 08 | 644 | 0.3+ | 0.6+ |
| 2002 08 06 | 644 | 0.2− | 0.0 | 2004 01 13 | 699 | 0.3− | 0.5− | 2004 03 08 | 644 | 0.0 | 0.6+ |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2004 01 13 | 699 | 0.0 | 0.1− | 2004 03 10 | 644 | 0.0 | 0.5+ |
| 2002 08 07 | 644 | 0.2+ | 0.5+ | 2004 01 13 | 699 | 0.8− | 0.1+ | 2004 03 10 | 644 | 0.1− | 0.4+ |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2004 01 24 | 704 | 1.0+ | 0.1+ | 2004 03 10 | 644 | 0.2+ | 0.5+ |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2004 01 24 | 704 | 1.3+ | 0.2− | 2006 10 26 | 240 | 0.2− | 1.2− |
| 2002 08 08 | 644 | 0.2− | 0.3+ | 2004 01 24 | 704 | 0.4+ | 0.2− | 2006 10 26 | 240 | 1.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2004 01 24 | 704 | 0.6+ | 0.2− | 2006 10 26 | 240 | 0.4+ | 0.2+ |
| 2002 08 12 | 608 | 1.0− | 0.2− | 2004 01 26 | 699 | 0.1+ | 0.2+ | 2006 10 26 | 240 | 1.0+ | 0.2+ |
| 2002 08 12 | 608 | 0.9− | 0.1+ | 2004 01 26 | 699 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.1− | 0.3+ |
| 2002 08 12 | 608 | 1.2− | 0.3+ | 2004 01 26 | 699 | 0.5− | 0.2− | 2006 10 27 | 703 | 0.6− | 0.0 |
| 2002 08 14 | 704 | 1.3− | 1.0+ | 2004 01 26 | 699 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.2− | 0.4+ |
| 2002 08 14 | 704 | 0.0 | 1.0+ | 2004 01 29 | 704 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 08 14 | 704 | 0.5+ | 0.5+ | 2004 01 29 | 704 | 0.5− | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 08 14 | 704 | 0.2− | 1.4+ | 2004 01 29 | 704 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 08 16 | 644 | 0.1+ | 0.6+ | 2004 01 29 | 704 | 0.7+ | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2002 08 16 | 644 | 0.0 | 0.7+ | 2004 01 29 | 704 | 0.1− | 0.6+ | 2006 11 16 | 704 | 0.5− | 0.3+ |
| 2002 08 16 | 644 | 0.0 | 0.4+ | 2004 01 29 | 704 | 0.5− | 0.7+ | 2006 11 16 | 704 | 0.6− | 0.0 |
| 2002 08 24 | 644 | 0.1+ | 0.7+ | 2004 01 29 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2002 08 24 | 644 | 0.1− | 0.7+ | 2004 01 29 | 704 | (1.6+ | 0.5+) | 2006 11 16 | 704 | 0.3− | 0.1− |
| 2002 08 24 | 644 | 0.0 | 0.7+ | 2004 01 29 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 703 | 0.3− | 0.6+ |
| 2002 08 26 | 644 | 0.8+ | 0.6+ | 2004 01 29 | 704 | 0.4+ | 0.3+ | 2006 11 22 | 703 | 0.5+ | 1.0+ |
| 2002 08 26 | 644 | (1.9+ | 0.1−) | 2004 01 30 | 704 | 0.7+ | 0.2+ | 2006 11 22 | 703 | 1.2− | 0.7+ |
| 2002 08 26 | 644 | 0.5+ | 0.4+ | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 11 22 | 703 | 0.4− | 0.3+ |
| 2002 09 02 | 608 | 0.5− | 0.1− | 2004 01 30 | 704 | 0.2+ | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2002 09 02 | 608 | 0.6− | 0.3− | 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2002 09 02 | 608 | 0.4− | 0.6− | 2004 01 30 | 704 | 0.2− | 0.9+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2002 09 05 | 699 | 0.8− | 0.6+ | 2004 02 11 | 703 | 0.0 | 0.6− | 2006 11 25 | G96 | 0.1− | 0.4− |

**(141866)∗ 2002 PL$_{30}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.41422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25991714 | $\omega$ | 106.64421 | | +0.38981319 | +0.92084914 | |
| $a$ | 2.4317155 | $\Omega$ | 186.32105 | | −0.87323271 | +0.36648752 | |
| $e$ | 0.1042621 | $i$ | 4.73331 | | −0.29242145 | +0.13313060 | |
| $P$ | 3.79 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 04 02 | 185 | 0.4+ | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.3+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2005 04 03 | 185 | 0.3+ | 0.1− | 2006 09 17 | 704 | (0.5+ | 1.6+) |
| 2002 07 12 | 644 | 0.2+ | 0.0 | 2005 04 03 | A13 | 0.3+ | 0.6− | 2006 09 17 | 704 | 0.6− | 0.7+ |
| 2002 07 12 | 644 | 0.0 | 0.2+ | 2005 04 03 | A13 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.0 |
| 2002 07 12 | 644 | 0.2+ | 0.0 | 2005 05 09 | G96 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.4+ | 0.5− |
| 2002 07 21 | 644 | 0.0 | 0.0 | 2005 05 09 | G96 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.1− | 0.4+ |
| 2002 07 21 | 644 | 0.1− | 0.1− | 2005 05 09 | G96 | 0.4− | 0.4− | 2006 09 19 | 699 | 0.3− | 1.0+ |
| 2002 07 21 | 644 | 0.0 | 0.1+ | 2005 05 09 | G96 | 0.3− | 0.3− | 2006 09 20 | 704 | 0.5+ | 0.6+ |
| 2002 08 06 | 644 | 0.1+ | 0.2+ | 2005 05 15 | 644 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.0 | 0.4+ |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2005 05 15 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 2002 08 06 | 644 | 0.3+ | 0.4+ | 2005 05 15 | 644 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.5+ |
| 2002 08 07 | 644 | 0.0 | 0.5+ | 2006 08 17 | 644 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.1− | 0.8+ |
| 2002 08 07 | 644 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2002 08 07 | 644 | 0.2− | 0.5+ | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.3+ |
| 2002 08 08 | 699 | 0.9+ | 1.0− | 2006 08 19 | 691 | 0.6− | 0.8− | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2002 08 08 | 699 | 0.3+ | 0.4− | 2006 08 19 | 691 | 0.1− | 1.0+ | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2002 08 08 | 699 | (1.6+ | 1.3+) | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.8+ |
| 2002 08 08 | 699 | 0.7+ | 0.7− | 2006 08 25 | 704 | 1.1− | 0.1+ | 2006 09 25 | 699 | 0.6− | 0.4+ |
| 2002 08 14 | 704 | 0.7+ | 0.3+ | 2006 08 25 | 704 | 0.9− | 0.5− | 2006 09 25 | 699 | 0.4− | 0.8+ |
| 2002 08 14 | 704 | 0.5+ | 0.1− | 2006 08 25 | 704 | 0.7− | 0.6+ | 2006 10 01 | 703 | 0.7− | 0.6− |
| 2002 08 14 | 704 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 1.0+ | 1.1− |
| 2002 08 14 | 704 | 1.2− | 0.0 | 2006 08 27 | 699 | 1.1+ | 0.3+ | 2006 10 01 | 703 | 0.0 | 0.0 |
| 2002 08 15 | 644 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.2+ | 0.0 | 2006 10 01 | 703 | 0.0 | 0.7− |
| 2002 08 15 | 644 | 0.1− | 0.2− | 2006 08 27 | 699 | 0.7− | 0.5+ | 2006 10 16 | 703 | (0.0 | 2.0+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.2− | 0.8+ |
| 2002 08 26 | 644 | 0.8− | 0.3− | 2006 09 12 | 703 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.6+ | 0.5+ |
| 2002 08 26 | 644 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.4+ | 0.6− | 2006 10 16 | 703 | 1.0+ | 0.4− |
| 2002 08 26 | 644 | 0.2− | 0.1− | 2006 09 12 | 703 | (1.6− | 1.6−) | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2003 12 22 | 704 | 0.2− | 0.9+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.7− |
| 2003 12 22 | 704 | 1.1+ | 1.1+ | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.4− | 0.5− |
| 2003 12 22 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2005 03 08 | G96 | 0.5− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.2+ |
| 2005 03 08 | G96 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2005 03 08 | G96 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2005 03 08 | G96 | 0.2− | 0.2− | 2006 09 16 | 699 | 0.2− | 0.8− | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2005 04 02 | 691 | 0.5+ | 0.5+ | 2006 09 16 | 699 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2005 04 02 | 691 | 0.3+ | 0.5+ | 2006 09 16 | 699 | (1.0− | 1.7+) | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2005 04 02 | 691 | 0.4+ | 0.3+ | 2006 09 16 | 699 | 0.8− | 0.8− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 04 02 | 185 | 0.0 | 0.7+ | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2− |

**(141867)∗ 2002 PY$_{30}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 82.25874 | | (2000.0) | | +0.05792036 | +0.99802729 |
| $n$ | 0.27159755 | $\omega$ | 46.23139 | | −0.92517742 | +0.04454456 |
| $a$ | 2.3614866 | $\Omega$ | 227.10566 | | −0.37508929 | +0.04424140 |
| $e$ | 0.1781147 | $i$ | 1.89477 | | | |
| $P$ | 3.63 | $H$ | 17.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1+ | 0.1+ | 2002 08 27 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 1995 10 15 | 691 | 0.4− | 0.2− | 2005 03 11 | G96 | 0.5+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1995 10 15 | 691 | 0.2+ | 0.1− | 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2002 07 23 | 644 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 07 23 | 644 | 0.3+ | 0.1− | 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2002 07 23 | 644 | 0.0 | 0.1− | 2005 03 17 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2002 08 06 | 644 | 0.2+ | 0.1− | 2005 03 17 | 691 | 0.5+ | 0.7+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 08 06 | 644 | 0.2+ | 0.0 | 2005 03 17 | 691 | 0.6+ | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.5+ |
| 2002 08 06 | 644 | 0.1+ | 0.2− | 2005 04 06 | G96 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.5− | 0.2+ |
| 2002 08 07 | 644 | 0.1+ | 0.1− | 2005 04 06 | G96 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.6− | 0.2+ |
| 2002 08 07 | 644 | 0.1− | 0.5+ | 2005 04 06 | G96 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 2002 08 07 | 644 | 0.4− | 0.2+ | 2005 04 06 | G96 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.5− | 0.7+ |
| 2002 08 14 | 704 | 0.2+ | 0.3− | 2005 04 07 | G96 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.4+ | 0.5− |
| 2002 08 14 | 704 | 0.5− | 0.9− | 2005 04 07 | G96 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.3+ | 0.5− |
| 2002 08 14 | 704 | 0.1+ | 0.1+ | 2005 04 07 | G96 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.5− |
| 2002 08 17 | 644 | 0.1− | 0.2+ | 2005 04 07 | G96 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 08 26 | 644 | 0.1+ | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2002 08 26 | 644 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2002 08 27 | 644 | 0.2− | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.4+ |
| 2002 08 27 | 644 | 0.1+ | 0.7+ | 2006 09 15 | 691 | 0.3+ | 0.0 | | | | |

**(141868)∗ 2002 PN$_{31}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.25786 | | (2000.0) | | +0.72268279 | −0.69110746 |
| $n$ | 0.27604184 | $\omega$ | 232.94056 | | +0.65228176 | +0.67715378 |
| $a$ | 2.3360714 | $\Omega$ | 170.76238 | | +0.22860029 | +0.25265240 |
| $e$ | 0.1275371 | $i$ | 3.57256 | | | |
| $P$ | 3.57 | $H$ | 16.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.7+ | 0.1+ | 2004 02 26 | 704 | (1.6− | 1.0−) | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 1995 08 20 | 809 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.5− | 0.7+ | 2006 10 22 | 683 | 0.2+ | 0.2+ |
| 2002 08 06 | 644 | 0.2− | 0.2+ | 2005 07 11 | G96 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2002 08 06 | 644 | 0.2− | 0.1− | 2005 07 11 | G96 | 0.3+ | 0.1− | 2006 10 22 | 683 | 0.4− | 1.0+ |
| 2002 08 06 | 644 | 0.5− | 0.2+ | 2005 07 11 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 08 07 | 644 | 0.2− | 0.4+ | 2005 07 11 | G96 | 0.6− | 0.4+ | 2006 10 22 | 683 | 0.7− | 0.1+ |
| 2002 08 07 | 644 | 0.1− | 0.6+ | 2005 07 12 | G96 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 08 07 | 644 | 0.3+ | 0.8+ | 2005 07 12 | G96 | 0.9+ | 0.0 | 2006 11 01 | 703 | 0.9− | 0.3− |
| 2002 08 15 | 704 | (1.8− | 1.6+) | 2005 07 12 | G96 | 0.8+ | 0.0 | 2006 11 01 | 703 | 0.1+ | 0.5+ |
| 2002 08 15 | 704 | 0.5− | 0.6+ | 2005 07 12 | G96 | 0.8+ | 0.1− | 2006 11 01 | 703 | 0.6− | 0.2− |
| 2002 08 15 | 704 | 0.1− | 0.6+ | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 11 01 | 703 | 0.7− | 0.2− |
| 2002 08 15 | 704 | 0.3− | 0.2− | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 08 15 | 704 | (1.7− | 0.6+) | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2002 08 15 | 704 | 0.8− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2002 08 15 | 704 | 0.2− | 0.7+ | 2006 09 30 | 703 | 0.6+ | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.1− |
| 2002 08 15 | 704 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2002 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2002 08 16 | 644 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2002 08 16 | 644 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2002 08 26 | 644 | 0.8− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2002 08 26 | 644 | 0.8− | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 08 26 | 644 | 0.5− | 0.1+ | 2006 10 16 | 185 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2002 08 27 | 644 | 0.2− | 0.2− | 2006 10 16 | 185 | 0.8+ | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 08 27 | 644 | 0.2− | 0.2+ | 2006 10 16 | 185 | 0.6+ | 0.4− | 2006 11 13 | 644 | 0.2− | 0.3− |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 10 16 | 683 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 2002 10 11 | 291 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.6− | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 2002 10 11 | 291 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 14 | 704 | 0.4− | 0.6+ |
| 2002 10 11 | 291 | 0.6+ | 0.0 | 2006 10 16 | 683 | 1.4+ | 1.0− | 2006 11 14 | 704 | 0.1+ | 0.1+ |
| 2004 01 31 | 333 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.6− | 0.1− |
| 2004 01 31 | 333 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2004 02 11 | 644 | 0.5+ | 0.9+ | 2006 10 16 | 683 | 0.5+ | 1.4+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 02 11 | 644 | 0.3+ | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 16 | G96 | 0.5+ | 0.5− |
| 2004 02 11 | 644 | 0.7+ | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 02 12 | 333 | 0.4− | 0.8+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.8− |
| 2004 02 12 | 333 | 0.7− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2004 02 12 | 333 | 0.7− | 0.4+ | 2006 10 20 | 683 | 0.2+ | 0.6− | 2006 11 17 | 704 | 0.3− | 0.6+ |
| 2004 02 17 | 704 | 0.2+ | 1.3+ | 2006 10 20 | 683 | 0.4− | 1.5+ | 2006 11 17 | 704 | 0.9+ | 0.1− |
| 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 683 | (2.2+ | 1.0+) | 2006 11 20 | 704 | (1.9+ | 2.2+) |
| 2004 02 17 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.6+ |
| 2004 02 17 | 704 | 1.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.9+ |
| 2004 02 17 | 704 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2004 02 26 | 704 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.0 | | | | |
| 2004 02 26 | 704 | (0.9+ | 1.6+) | 2006 10 21 | 644 | 0.2− | 0.1− | | | | |

**(141869)∗ 2002 PK$_{32}$ = 1995 UK$_{57}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35254)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.47758 | | (2000.0) | | +0.63249678 | −0.77435829 |
| $n$ | 0.27289081 | $\omega$ | 202.11877 | | +0.71609311 | +0.59335870 |
| $a$ | 2.3540198 | $\Omega$ | 208.65587 | | +0.29522614 | +0.21976051 |
| $e$ | 0.2167372 | $i$ | 2.12793 | | | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.1− | 0.0 | 2005 06 16 | G96 | 0.4− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 1995 10 16 | 691 | 0.6− | 0.3+ | 2005 06 16 | G96 | 0.3+ | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 1995 10 16 | 691 | 0.4− | 0.2− | 2006 09 16 | 703 | (1.9− | 0.3−) | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 1995 10 21 | 691 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.9− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 1995 10 21 | 691 | 0.3+ | 0.2− | 2006 09 16 | 703 | (0.6+ | 1.9−) | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 1995 10 21 | 691 | 0.4+ | 0.4+ | 2006 09 16 | 703 | (1.6− | 0.5+) | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2000 01 05 | 704 | 0.3− | 0.7− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2000 01 05 | 704 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 2000 01 05 | 704 | 1.3+ | 0.6− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 2000 01 05 | 704 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2002 08 06 | 644 | 0.1− | 0.6+ | 2006 10 23 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2002 08 06 | 644 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.8+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2002 08 06 | 644 | 0.2− | 0.5+ | 2006 10 23 | 704 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2002 08 07 | 644 | 0.2− | 0.3+ | 2006 10 23 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2002 08 07 | 644 | 0.2− | 0.4+ | 2006 10 28 | 704 | 0.7− | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 08 07 | 644 | 0.2+ | 0.8+ | 2006 10 28 | 704 | (0.3− | 2.3+) | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2006 10 28 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.7+ | 0.0 |
| 2002 08 27 | 644 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.7− | 0.7+ | 2006 11 18 | 704 | 0.5+ | 0.1− | | |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.9+ | | |
| 2004 03 15 | 599 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.1− | | |
| 2004 03 15 | 599 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.2+ | | |
| 2004 03 15 | 599 | 0.2− | 1.0− | 2006 10 28 | G96 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.2− | | |
| 2004 03 16 | 599 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1− | | |
| 2004 03 16 | 599 | 0.2+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.0 | | |
| 2004 03 16 | 599 | 0.3+ | 1.0+ | 2006 10 28 | 691 | 0.7− | 1.0− | 2006 11 21 | 704 | 0.9− | 1.4+ | | |
| 2004 03 16 | 599 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 26 | 704 | 0.4− | 0.4+ | | |
| 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 26 | 704 | 0.3− | 0.3+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 26 | 704 | 0.3+ | 0.0 | | |
| 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.2− | 0.5+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.9+ | 1.0+ | | |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.7+ | | |
| 2004 03 18 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.3− | 2006 11 29 | 704 | 1.0+ | 1.2+ | | |
| 2004 03 18 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.6+ | 1.1+ | | |
| 2005 06 16 | G96 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.0 | | | | | | |
| 2005 06 16 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.0 | 0.3− | | | | | | |

**(141870)∗ 2002 PB$_{33}$ = 1998 JF**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35254)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.10781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28664696 | $\omega$ | 83.78597 | | −0.36591610 | +0.93032685 | |
| $a$ | 2.2780914 | $\Omega$ | 164.68070 | | −0.88625565 | −0.34032725 | |
| $e$ | 0.1251335 | $i$ | 5.30804 | | −0.28400059 | −0.13663573 | |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 691 | 0.4+ | 0.2+ | 2005 05 03 | 691 | 0.1+ | 0.2+ | 2005 06 05 | 704 | 0.5+ | 0.4− | | |
| 1998 05 01 | 691 | 0.3+ | 0.0 | 2005 05 03 | 691 | 0.2+ | 0.0 | 2005 06 05 | 704 | 0.1− | 0.0 | | |
| 1998 05 01 | 691 | 0.0 | 0.6+ | 2005 05 08 | 704 | 0.5− | 1.4+ | 2005 06 05 | 704 | 0.1− | 0.4− | | |
| 1998 05 02 | 691 | 0.3− | 0.2+ | 2005 05 08 | 704 | 0.1− | 0.1+ | 2005 06 05 | 704 | 0.5+ | 1.0− | | |
| 1998 05 02 | 691 | 0.2− | 0.2− | 2005 05 08 | 704 | (1.6+ | 0.5−) | 2005 06 05 | 704 | 0.9+ | 1.2− | | |
| 1998 05 02 | 691 | 0.0 | 0.2− | 2005 05 08 | 704 | 0.2− | 0.4− | 2006 10 03 | G96 | 0.5+ | 0.3− | | |
| 2002 08 06 | 644 | 0.3+ | 0.4+ | 2005 05 16 | 704 | 0.9+ | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.2− | | |
| 2002 08 06 | 644 | 0.3+ | 0.1− | 2005 05 16 | 704 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.0 | | |
| 2002 08 06 | 644 | 0.1+ | 0.3+ | 2005 05 16 | 704 | 0.0 | 1.5+ | 2006 10 03 | G96 | 0.1− | 0.1+ | | |
| 2002 08 07 | 644 | 0.1− | 0.0 | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.6+ | | |
| 2002 08 07 | 644 | 0.1− | 0.0 | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.4− | 0.1+ | | |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2005 05 16 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.1− | | |
| 2002 08 27 | 644 | 0.2− | 0.1+ | 2005 05 20 | G96 | 0.9− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.3+ | | |
| 2002 08 27 | 644 | 0.3− | 0.1+ | 2005 05 20 | G96 | 1.2− | 0.4− | 2006 10 21 | G96 | 0.5− | 0.2+ | | |
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2005 05 20 | G96 | 0.8− | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2005 05 20 | G96 | 0.9− | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.0 | | |
| 2002 09 14 | 644 | 0.2+ | 0.1− | 2005 06 05 | 691 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.1− | | |
| 2002 09 14 | 644 | 0.3− | 0.2− | 2005 06 05 | 691 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2005 05 03 | 691 | 0.1+ | 0.2+ | 2005 06 05 | 691 | 0.1+ | 0.2− | | | | | | |

**(141871)∗ 2002 PZ$_{33}$**

Discovered 2002 Aug. 6 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.95245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25853528 | $\omega$ | 146.42526 | | +0.10828641 | +0.99370044 | |
| $a$ | 2.4403728 | $\Omega$ | 129.77399 | | −0.92015110 | +0.11117954 | |
| $e$ | 0.1705821 | $i$ | 2.15274 | | −0.37629244 | +0.01409083 | |
| $P$ | 3.81 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 08 | 910 | 0.2+ | 0.8+ | 2002 09 05 | 704 | 0.3+ | 0.6+ | 2005 04 04 | 703 | 0.2− | 1.1+ | | |
| 1997 02 08 | 910 | 0.6+ | 0.9+ | 2002 09 05 | 704 | 0.6− | 0.2+ | 2005 04 11 | G96 | 0.1− | 0.2− | | |
| 1997 02 08 | 910 | 0.1+ | 0.7+ | 2002 09 16 | 644 | 0.2− | 0.3− | 2005 04 11 | G96 | 0.1− | 0.2− | | |
| 2002 08 06 | 599 | 0.1+ | 0.3− | 2002 09 16 | 644 | 0.6− | 0.0 | 2005 04 11 | G96 | 0.1+ | 0.3− | | |
| 2002 08 06 | 599 | 0.3− | 0.1− | 2002 09 16 | 644 | 0.0 | 0.2+ | 2005 04 11 | G96 | 0.2+ | 0.1+ | | |
| 2002 08 06 | 599 | 0.3+ | 0.6− | 2005 03 11 | 691 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 0.3− | 1.3+ | | |
| 2002 08 08 | 599 | 0.4− | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 703 | (1.6− | 0.2+) | | |
| 2002 08 08 | 599 | 0.4− | 0.3+ | 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 0.1− | 1.0+ | | |
| 2002 08 08 | 599 | 0.1+ | 0.0 | 2005 03 12 | 691 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.8− | 1.5− | | |
| 2002 08 29 | 644 | 0.5+ | 0.9+ | 2005 03 12 | 691 | 0.0 | 0.2+ | 2006 09 20 | 691 | 0.3+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.4+ | 0.7+ | 2005 03 12 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.3+ | | |
| 2002 08 29 | 644 | 0.2+ | 1.0+ | 2005 03 17 | 703 | 0.7− | 1.0− | 2006 09 20 | 691 | 0.2− | 0.1− | | |
| 2002 09 04 | 644 | 0.3− | 0.1+ | 2005 03 17 | 703 | 0.1+ | 1.0+ | 2006 09 28 | 691 | 0.1− | 0.1+ | | |
| 2002 09 04 | 644 | 0.2− | 0.1+ | 2005 03 17 | 703 | 1.0+ | 1.2+ | 2006 09 28 | 691 | 0.1− | 0.2+ | | |
| 2002 09 04 | 644 | 0.1+ | 0.1− | 2005 03 17 | 703 | 1.2+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1− | | |
| 2002 09 05 | 704 | 1.0− | 0.9+ | 2005 04 04 | 703 | 1.2− | 1.1− | 2006 10 09 | 644 | 0.3+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.7+ | 2005 04 04 | 703 | 1.0− | 0.2− | 2006 10 09 | 644 | 0.2+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2005 04 04 | 703 | 0.9− | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.7+ | | |

**(141872)∗ 2002 PB$_{34}$**

Discovered 2002 Aug. 6 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.85897 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26399814 | $\omega$ | 151.43937 | | +0.26958096 | +0.96218713 | |
| $a$ | 2.4065902 | $\Omega$ | 134.16976 | | −0.89353625 | +0.26504142 | |
| $e$ | 0.2098393 | $i$ | 3.11790 | | −0.35905303 | +0.06284089 | |
| $P$ | 3.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 04 | 691 | 0.3− | 1.3+ | 2005 03 08 | 699 | (0.8− | 1.6+) | 2006 09 17 | 691 | 0.1+ | 0.1+ | | |
| 1991 10 04 | 691 | 0.1− | 0.5+ | 2005 03 08 | 699 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.8− | 1.3+ | | |
| 1991 10 04 | 691 | 0.4− | 0.5+ | 2005 03 09 | 699 | (0.3+ | 2.3+) | 2006 09 26 | 704 | 0.0 | 0.6+ | | |
| 2002 07 09 | 704 | 0.4+ | 0.3+ | 2005 03 09 | 699 | 0.7+ | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.9− | | |
| 2002 07 09 | 704 | 0.1+ | 0.1+ | 2005 03 09 | 699 | 0.5+ | 1.4+ | 2006 09 26 | 704 | 0.3+ | 0.3− | | |
| 2002 07 09 | 704 | 0.2+ | 0.2− | 2005 03 09 | 699 | 0.6+ | 1.2+ | 2006 09 26 | 704 | 0.1+ | 0.2+ | | |
| 2002 07 09 | 704 | 0.1+ | 0.4+ | 2005 03 11 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.0 | | |
| 2002 08 04 | G78 | 1.3− | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.1− | | |
| 2002 08 04 | G78 | (1.9− | 0.7+) | 2005 03 11 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2002 08 04 | G78 | 0.8− | 0.7+ | 2005 03 11 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1− | 1.1+ | | |
| 2002 08 06 | 599 | 0.2+ | 0.3+ | 2005 03 11 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.6+ | | |
| 2002 08 06 | 599 | 0.1+ | 0.2+ | 2005 03 11 | 691 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.8− | | |
| 2002 08 06 | 599 | 0.3+ | 0.2+ | 2005 03 16 | 683 | 0.8+ | 0.5− | 2006 09 30 | 703 | 1.5+ | 0.3+ | | |
| 2002 08 08 | 599 | 0.2− | 0.0 | 2005 03 16 | 683 | (0.7+ | 2.4+) | 2006 10 01 | 704 | 0.4− | 1.0+ | | |
| 2002 08 08 | 599 | 0.1+ | 0.2+ | 2005 03 16 | 683 | 0.6+ | 1.0+ | 2006 10 01 | 704 | 0.3+ | 0.6+ | | |
| 2002 08 08 | 599 | 0.0 | 0.0 | 2005 03 17 | 703 | 0.1+ | 0.8+ | 2006 10 01 | 704 | 0.1− | 0.5+ | | |
| 2002 08 10 | 704 | 1.3+ | 0.2− | 2005 03 17 | 703 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.6+ | | |
| 2002 08 10 | 704 | 0.0 | 0.5− | 2005 03 17 | 703 | 0.8+ | 1.2+ | 2006 10 01 | 691 | 0.1− | 0.3+ | | |
| 2002 08 10 | 704 | 0.7− | 0.6+ | 2005 03 17 | 703 | 0.7+ | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.3+ | | |
| 2002 08 10 | 704 | 1.3+ | 1.0− | 2005 04 04 | 703 | 0.2+ | 0.3− | 2006 10 01 | 691 | 0.2− | 0.2+ | | |
| 2002 08 14 | 704 | 0.6+ | 0.9+ | 2005 04 04 | 703 | 0.5− | 0.4+ | 2006 10 02 | 461 | 0.1+ | 0.3+ | | |
| 2002 08 14 | 704 | 0.7+ | 0.6+ | 2005 04 04 | 703 | 0.1− | 0.6+ | 2006 10 02 | 461 | 0.1− | 0.3+ | | |
| 2002 08 14 | 704 | 0.0 | 0.5+ | 2005 04 04 | 703 | 0.4− | 0.2+ | 2006 10 02 | 461 | 0.1− | 0.4+ | | |
| 2002 08 14 | 704 | 0.2− | 0.2+ | 2005 04 05 | 704 | 1.4+ | 0.7+ | 2006 10 03 | 461 | 0.2− | 1.2− | | |
| 2002 08 14 | 704 | 0.4+ | 0.2− | 2005 04 05 | 704 | 0.0 | 0.1+ | 2006 10 03 | 461 | 0.1+ | 0.0 | | |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2005 04 05 | 704 | 1.0− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2005 04 05 | 704 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2005 04 13 | 699 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.7+ | 2005 04 13 | 699 | 0.5+ | 0.5+ | 2006 10 15 | 703 | 0.8+ | 0.3− | | |
| 2002 08 29 | 644 | 0.3− | 0.9+ | 2005 04 13 | 699 | 0.6+ | 1.4+ | 2006 10 15 | 703 | 0.1+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.3− | 0.9+ | 2005 04 13 | 699 | 0.6+ | 0.0 | 2006 10 15 | 703 | 0.2− | 0.7− | | |
| 2002 09 04 | 644 | 0.2− | 0.2+ | 2005 05 22 | 644 | 0.3+ | 0.8+ | 2006 10 15 | 703 | 0.1+ | 0.0 | | |
| 2002 09 04 | 644 | 0.1− | 0.1+ | 2005 05 22 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.4− | | |
| 2002 09 04 | 644 | 0.0 | 0.1+ | 2005 05 22 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 1.0+ | 0.9+ | 2006 10 19 | 644 | 1.0+ | 0.8+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 10 21 | 703 | 0.1− | 0.6− | | |
| 2002 09 05 | 704 | 0.1− | 0.6− | 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.0 | | |
| 2002 09 05 | 704 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.1− | 0.7− | 2006 10 21 | 703 | 0.6+ | 0.3− | | |
| 2002 09 05 | 704 | 0.1− | 0.5− | 2006 09 16 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.1− | | |
| 2002 09 13 | 704 | 1.5− | 0.5+ | 2006 09 16 | 704 | 1.1+ | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 704 | 1.1− | 0.3− | 2006 09 16 | 704 | 0.1− | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.0 | |
| 2002 09 13 | 704 | 0.8− | 0.2− | 2006 09 16 | 704 | 0.5− | 1.5+ | 2006 10 22 | G96 | 0.7− | 0.9− | |
| 2002 09 15 | 644 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.9+ | 0.3− | |
| 2002 09 15 | 644 | 1.0− | 0.1+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.3− | |
| 2002 09 15 | 644 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.2− | |
| 2005 03 08 | 699 | 0.4− | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 1.8− | 1.1− | |
| 2005 03 08 | 699 | 1.4− | 1.0+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 1.8− | 1.0− | |

**(141873)∗ 2002 PM$_{34}$**

Discovered 2002 Aug. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.32440 | | (2000.0) | | | |
| $n$ | 0.23198483 | $\omega$ | 351.31010 | | +0.99520353 | +0.08755801 |
| $a$ | 2.6231895 | $\Omega$ | 4.43332 | | −0.01005814 | +0.53520992 |
| $e$ | 0.1985804 | $i$ | 34.36237 | | −0.09730759 | +0.84016899 |
| $P$ | 4.25 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.3− | 1.0− | 2002 10 31 | 704 | 0.3− | 0.7− | 2006 09 26 | 703 | 0.8− | 0.4− | |
| 2000 03 04 | 704 | 0.3+ | 0.9− | 2002 10 31 | 704 | 0.1− | 1.4− | 2006 09 26 | 703 | 0.4+ | 0.4+ | |
| 2000 03 04 | 704 | 0.4+ | 0.5− | 2002 10 31 | 704 | 0.1+ | 0.9− | 2006 09 26 | 703 | 0.5− | 0.1+ | |
| 2000 03 04 | 704 | 1.2− | 1.6+ | 2002 11 01 | 704 | 0.7− | 0.9− | 2006 09 26 | 703 | 0.6− | 0.4− | |
| 2002 08 04 | 704 | 0.1+ | 0.6+ | 2002 11 01 | 704 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.3− | |
| 2002 08 04 | 704 | 0.4− | 0.7+ | 2002 11 01 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.0 | |
| 2002 08 04 | 704 | 0.9− | 0.7+ | 2002 11 01 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.1+ | |
| 2002 08 05 | 704 | 0.0 | 0.4− | 2002 11 13 | 704 | 0.7− | 1.1− | 2006 09 26 | 703 | 0.0 | 0.0 | |
| 2002 08 05 | 704 | 0.1− | 0.1+ | 2002 11 13 | 704 | 1.0− | 0.8− | 2006 10 02 | 703 | 0.3− | 0.8− | |
| 2002 08 05 | 704 | 0.1− | 0.9+ | 2002 11 13 | 704 | 1.5− | 0.9− | 2006 10 02 | 703 | 0.4− | 0.0 | |
| 2002 08 05 | 704 | 0.3− | 0.1+ | 2002 11 13 | 704 | (1.6− | 0.8−) | 2006 10 02 | 703 | 0.0 | 0.1+ | |
| 2002 08 06 | 557 | 0.1+ | 0.5+ | 2002 11 13 | 704 | 1.5− | 0.9− | 2006 10 02 | 703 | (2.3− | 0.4−) | |
| 2002 08 06 | 557 | 0.1+ | 0.4+ | 2002 11 15 | 704 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.1+ | |
| 2002 08 06 | 557 | 0.5− | 0.4+ | 2002 11 15 | 704 | 1.0+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.1− | |
| 2002 08 08 | 734 | 1.0+ | 0.7− | 2002 11 15 | 704 | 1.0+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.0 | |
| 2002 08 08 | 734 | (2.4+ | 0.7+) | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.2+ | |
| 2002 08 08 | 658 | 0.3− | 0.4+ | 2004 02 17 | 645 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.3− | 0.2− | |
| 2002 08 08 | 658 | 0.3− | 0.6+ | 2004 02 26 | 703 | 0.8+ | 0.7+ | 2006 11 10 | 704 | 0.4− | 0.2+ | |
| 2002 08 08 | 658 | 0.0 | 0.4+ | 2004 02 26 | 703 | 0.4− | 0.3+ | 2006 11 10 | 704 | 0.3+ | 0.6+ | |
| 2002 09 01 | 848 | 1.0+ | 0.8− | 2004 02 26 | 703 | 0.6+ | 1.2+ | 2006 11 10 | 704 | 0.4− | 0.0 | |
| 2002 09 01 | 848 | (1.8+ | 1.8+) | 2004 02 26 | 703 | 0.2− | 1.1+ | 2006 11 15 | 704 | 0.4− | 0.2− | |
| 2002 09 01 | 848 | 1.1+ | 0.6+ | 2004 05 14 | 645 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.4− | 0.7+ | |
| 2002 09 07 | 704 | 0.4− | 0.3+ | 2004 05 14 | 645 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.2+ | 0.1− | |
| 2002 09 07 | 704 | 0.5+ | 0.1− | 2006 07 30 | E12 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.4+ | 1.4+ | |
| 2002 09 07 | 704 | 0.3+ | 0.3+ | 2006 07 30 | E12 | 0.2+ | 0.1+ | 2006 11 15 | 704 | (0.5+ | 1.8+) | |
| 2002 09 07 | 704 | 0.7+ | 0.2+ | 2006 07 30 | E12 | 0.4− | 0.0 | 2006 11 16 | 704 | 2.9− | 1.4+ | |
| 2002 10 06 | 699 | 0.5+ | 0.0 | 2006 07 30 | E12 | 0.1+ | 0.3− | 2006 11 16 | 704 | 1.2+ | 0.9+ | |
| 2002 10 06 | 699 | 0.9+ | 0.2+ | 2006 09 20 | 703 | 0.6− | 0.3− | 2006 11 16 | 704 | 2.1+ | 0.2+ | |
| 2002 10 06 | 699 | 0.3+ | 0.1+ | 2006 09 20 | 703 | 0.7− | 0.1− | 2006 11 16 | 704 | 0.5+ | 1.7+ | |
| 2002 10 06 | 699 | 0.8+ | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.4− | 2006 11 17 | 291 | 0.5+ | 0.1+ | |
| 2002 10 07 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.2− | 0.3− | 2006 11 17 | 291 | 0.6+ | 0.1+ | |
| 2002 10 07 | 704 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.4− | 0.3− | 2006 11 17 | 291 | 0.6+ | 0.1+ | |
| 2002 10 07 | 704 | 0.0 | 0.1− | 2006 09 21 | 699 | 0.3− | 0.9− | 2006 11 19 | 704 | 0.3− | 0.2− | |
| 2002 10 07 | 704 | 0.5+ | 0.4+ | 2006 09 21 | 699 | 0.9− | 1.0− | 2006 11 19 | 704 | 0.2+ | 0.0 | |
| 2002 10 11 | 644 | 0.2− | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.6+ | |
| 2002 10 11 | 644 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.4+ | |
| 2002 10 11 | 644 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.0 | | | | | |
| 2002 10 31 | 704 | 0.2− | 0.9− | 2006 09 26 | 703 | 0.4− | 0.2+ | | | | | |

**(141874)∗ 2002 PO$_{34}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.55559 | | (2000.0) | | | |
| $n$ | 0.39650210 | $\omega$ | 290.80443 | | +0.25553995 | −0.96022923 |
| $a$ | 1.8350126 | $\Omega$ | 143.79008 | | +0.94267037 | +0.22163210 |
| $e$ | 0.3484236 | $i$ | 10.97959 | | +0.21464367 | +0.16982063 |
| $P$ | 2.49 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 05 | 608 | 0.5− | 0.5− | 2002 08 07 | 644 | 0.0 | 0.1+ | 2002 08 27 | 644 | 0.0 | 0.1− | |
| 2001 03 05 | 608 | 0.3+ | 0.1+ | 2002 08 08 | 734 | 0.3+ | 0.6+ | 2002 08 27 | 644 | 0.4− | 0.1− | |
| 2001 05 20 | 608 | 0.2+ | 0.1+ | 2002 08 08 | 734 | 0.9+ | 0.2+ | 2002 09 04 | 649 | 0.2− | 0.9− | |
| 2001 05 20 | 608 | (0.9− | 1.7−) | 2002 08 11 | 858 | 0.5+ | 0.1+ | 2002 09 04 | 649 | 0.2− | 0.9− | |
| 2002 07 22 | 644 | 0.3− | 0.4− | 2002 08 11 | 858 | 0.3+ | 0.8+ | 2002 09 04 | 649 | 0.2− | 0.3− | |
| 2002 07 22 | 644 | 0.1− | 0.1+ | 2002 08 11 | 649 | 0.4+ | 0.8+ | 2002 09 28 | 696 | 0.3− | 0.1+ | |
| 2002 07 22 | 644 | 0.1− | 0.3− | 2002 08 11 | 649 | 0.2+ | 0.2+ | 2002 09 28 | 696 | 0.1− | 0.1− | |
| 2002 07 28 | 644 | 1.1− | 0.8− | 2002 08 11 | 649 | 0.0 | 0.5+ | 2004 06 25 | 696 | 0.5− | 0.4− | |
| 2002 07 28 | 644 | 0.4+ | 0.3+ | 2002 08 12 | 848 | 0.9− | 0.2− | 2004 06 25 | 696 | 0.0 | 0.7− | |
| 2002 08 06 | 644 | 0.1− | 0.5+ | 2002 08 12 | 848 | (2.0+ | 1.0+) | 2005 12 08 | 291 | (0.5− | 3.5+) | |
| 2002 08 06 | 644 | 0.3+ | 0.2+ | 2002 08 12 | 848 | (1.6+ | 2.6−) | 2005 12 08 | 291 | 0.2− | 0.6+ | |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2002 08 17 | 644 | 0.4+ | 0.3− | 2006 03 26 | 696 | 0.4+ | 0.4− | |
| 2002 08 07 | 673 | 0.0 | 0.2+ | 2002 08 17 | 644 | 0.2+ | 0.1+ | 2006 03 26 | 696 | 0.6+ | 0.8− | |
| 2002 08 07 | 673 | 0.3+ | 0.3+ | 2002 08 17 | 644 | 0.1− | 0.0 | 2006 04 21 | A13 | (2.2− | 0.8+) | |
| 2002 08 07 | 673 | 0.2− | 0.5+ | 2002 08 19 | 413 | 0.1− | 0.3− | 2006 04 21 | A13 | 0.4− | 0.1+ | |
| 2002 08 07 | 644 | 0.1+ | 0.4+ | 2002 08 19 | 413 | 0.1− | 1.0− | 2006 04 21 | A13 | 0.3+ | 1.1+ | |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2002 08 27 | 644 | 0.3− | 0.3+ | | | | | |

**(141875)∗ 2002 PQ$_{35}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.98301 | | (2000.0) | | | |
| $n$ | 0.26964788 | $\omega$ | 201.90499 | | +0.99845012 | −0.05523211 |
| $a$ | 2.3728559 | $\Omega$ | 161.25731 | | +0.05369783 | +0.92375808 |
| $e$ | 0.2055975 | $i$ | 1.21968 | | +0.01462558 | +0.37897287 |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.2+ | 0.7+ | 2006 11 02 | 703 | 0.5+ | 1.1+ | |
| 2002 08 06 | 644 | 0.4− | 0.0 | 2005 04 11 | G96 | 0.5− | 0.7− | 2006 11 02 | 703 | 0.5− | 0.1− | |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2005 05 03 | 691 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 1.0+ | 0.6− | |
| 2002 08 08 | 644 | 0.4+ | 0.2+ | 2005 05 03 | 691 | 0.1− | 1.2+ | 2006 11 09 | 644 | 0.3− | 0.3+ | |
| 2002 08 08 | 644 | 0.2+ | 0.4+ | 2005 05 03 | 691 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | |
| 2002 08 08 | 644 | 0.5+ | 0.4+ | 2005 05 07 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | |
| 2002 08 12 | 699 | 0.1+ | 0.4+ | 2005 05 07 | G96 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.7− | |
| 2002 08 12 | 699 | 0.5− | 1.2+ | 2005 05 07 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.6+ | |
| 2002 08 12 | 699 | 0.9− | 0.7+ | 2005 05 07 | G96 | 0.2+ | 1.0− | 2006 11 11 | 703 | 0.2+ | 0.5+ | |
| 2002 08 12 | 699 | 0.3+ | 0.1− | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | (1.6− | 0.5+) | |
| 2002 08 14 | 704 | 0.7− | 0.2+ | 2005 05 08 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.3− | |
| 2002 08 14 | 704 | 0.3− | 1.1+ | 2005 05 08 | 691 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.6+ | 0.4− | |
| 2002 08 14 | 704 | 0.9− | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.8− | 2006 11 13 | G96 | 0.2− | 0.3− | |
| 2002 08 16 | 608 | 0.5− | 1.2− | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.2− | 0.3− | |
| 2002 08 16 | 608 | (1.3− | 1.6−) | 2006 07 21 | G96 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.0 | 0.2− | |
| 2002 08 16 | 608 | 0.5− | 1.0− | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.5− | 0.3+ | |
| 2002 08 17 | 644 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.4− | 1.1+ | 2006 11 17 | 703 | 0.1+ | 0.1− | |
| 2002 08 17 | 644 | 0.2+ | 0.2− | 2006 09 16 | 703 | 0.7+ | 0.9− | 2006 11 17 | 703 | 0.0 | 0.3− | |
| 2002 08 17 | 644 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 11 18 | 704 | 0.5+ | 1.5+ | |
| 2002 08 27 | 644 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.9+ | 0.3− | 2006 11 18 | 704 | (1.4− | 2.3+) | |
| 2002 08 27 | 644 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.5+ | 1.1+ | |
| 2002 08 27 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.6− | 0.4− | 2006 11 18 | 704 | 0.3+ | 1.1+ | |
| 2002 09 05 | 704 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.8+ | |
| 2002 09 05 | 704 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 1.0+ | 0.1− | |
| 2002 09 05 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.4+ | 1.1+ | |
| 2002 09 05 | 704 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.5+ | |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.4+ | |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.4+ | |
| 2002 09 14 | 644 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.0 | |
| 2002 10 10 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | (0.1− | 1.5+) | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 291 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.9+ |
| 2002 10 10 | 291 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.4+ |
| 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.0 |
| 2004 02 12 | 691 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.4− |
| 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 1.1− | 0.7− |
| 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1+ | | | | |
| 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 11 02 | 703 | (1.1+ | 1.6+) | | | | |

**(141876)∗ 2002 PW$_{35}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.38651 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27796618 | $\omega$ | 51.75144 | | +0.25499495 | | +0.96610961 |
| $a$ | 2.3252773 | $\Omega$ | 233.06874 | | −0.90209456 | | +0.22274918 |
| $e$ | 0.1425988 | $i$ | 2.87707 | | −0.34814218 | | +0.13044167 |
| $P$ | 3.55 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 691 | 0.1− | 0.2− | 2002 08 26 | 644 | 0.3+ | 0.4− | 2005 05 01 | 644 | 0.2− | 0.3+ |
| 1999 11 15 | 691 | 0.0 | 0.0 | 2002 08 26 | 644 | 0.1+ | 0.4− | 2005 05 01 | 644 | 0.2+ | 0.3+ |
| 1999 11 15 | 691 | 0.1+ | 0.1+ | 2002 08 26 | 644 | 0.1+ | 0.4− | 2005 05 01 | 644 | 0.4+ | 0.7+ |
| 2002 07 22 | 644 | 0.5− | 0.2− | 2002 09 06 | 704 | 0.8− | 0.7+ | 2006 09 28 | G96 | 0.6+ | 0.6− |
| 2002 07 22 | 644 | 0.3− | 0.0 | 2002 09 06 | 704 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2002 07 22 | 644 | 0.1− | 0.0 | 2002 09 06 | 704 | 0.6+ | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 2002 08 06 | 644 | 0.1− | 0.9+ | 2002 10 31 | 950 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 2002 08 06 | 644 | 0.0 | 0.5+ | 2002 10 31 | 950 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2002 08 06 | 644 | 0.2− | 0.2+ | 2002 10 31 | 950 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2002 08 08 | 699 | 0.8+ | 0.7+ | 2002 11 01 | 950 | 0.7+ | 0.1− | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2002 08 08 | 699 | 0.3+ | 0.4− | 2002 11 01 | 950 | 1.0+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 08 08 | 699 | (1.9+ | 0.3−) | 2002 11 01 | 950 | 0.7+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2002 08 08 | 699 | 0.4− | 0.1+ | 2005 04 12 | G96 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2002 08 08 | 644 | 0.3+ | 0.2+ | 2005 04 12 | G96 | 0.3− | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 08 08 | 644 | 0.2− | 0.4+ | 2005 04 12 | G96 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.6+ |
| 2002 08 08 | 644 | 0.1+ | 0.4+ | 2005 04 12 | G96 | 0.6− | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.6+ |
| 2002 08 12 | 704 | 0.9− | 0.3− | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2002 08 12 | 704 | 0.4+ | 0.5− | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2002 08 12 | 704 | 0.9− | 0.7− | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |

**(141877)∗ 2002 PX$_{38}$ = 2000 AN$_{16}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Id. M. E. Sansaturio (*MPO* 35257)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.74829 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26870146 | $\omega$ | 107.00700 | | +0.66221664 | | −0.74871742 |
| $a$ | 2.3784245 | $\Omega$ | 301.48561 | | +0.67347705 | | +0.61218971 |
| $e$ | 0.1739153 | $i$ | 2.00633 | | +0.32847799 | | +0.25425575 |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.1+ | 0.4− | 2004 02 17 | 704 | 1.4+ | 1.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2000 01 03 | 704 | 0.8− | 0.0 | 2004 02 17 | 704 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2000 01 03 | 704 | 0.2− | 0.4− | 2004 02 17 | 704 | 0.1+ | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2000 01 04 | 704 | 0.3+ | 0.1+ | 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.4+ | 0.8− |
| 2000 01 04 | 704 | 0.0 | 1.3− | 2004 02 20 | 608 | 0.8+ | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.4+ |
| 2000 01 04 | 704 | 0.3+ | 0.1+ | 2004 02 20 | 608 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.2− | 0.9+ |
| 2000 01 04 | 704 | 0.2+ | 1.0− | 2004 02 20 | 608 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.7− | 0.9+ |
| 2002 07 22 | 644 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.6− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2002 07 22 | 644 | 0.2+ | 0.5+ | 2004 02 26 | 704 | (0.6+ | 1.5−) | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 07 22 | 644 | 0.1+ | 0.4+ | 2004 02 26 | 704 | (2.1+ | 0.2+) | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 08 06 | 644 | 0.1− | 0.5+ | 2004 02 26 | 704 | 0.6+ | 1.0+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 08 06 | 644 | 0.2− | 0.5+ | 2004 03 10 | 644 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 08 06 | 644 | 0.2− | 0.3+ | 2004 03 10 | 644 | 0.6+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 1.3+ | 2004 03 10 | 644 | 0.4+ | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 08 08 | 644 | 0.4+ | 1.3+ | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 1.3+ | 2006 09 14 | 703 | 0.3− | 0.7− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 08 16 | 291 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.7+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2002 08 16 | 291 | 0.2− | 0.4+ | 2006 09 14 | 703 | (1.5+ | 0.7−) | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2002 08 16 | 291 | 0.1− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2002 08 27 | 644 | 0.7− | 0.2− | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2002 08 27 | 644 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 1.0+ |
| 2002 08 27 | 644 | 0.5− | 0.0 | 2006 09 18 | 704 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.5+ | 0.9+ |
| 2002 09 05 | 704 | 1.4− | 0.5+ | 2006 09 18 | 704 | 1.2+ | 0.2− | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.5− | 1.4+ | 2006 09 18 | 704 | 0.5+ | 0.3− | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 0.9− | 0.7+ | 2006 09 18 | 704 | (1.5+ | 0.7+) | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2004 02 11 | 644 | 0.3+ | 0.8+ | 2006 09 18 | 704 | 0.1− | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.3+ | 1.0+ | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2004 02 11 | 644 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2004 02 12 | 333 | 0.3+ | 1.1+ | 2006 09 18 | 699 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 02 12 | 333 | 0.3− | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 2004 02 12 | 333 | 0.8− | 0.8+ | 2006 09 25 | 704 | 0.2− | 0.3+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.8− | 2006 11 06 | 644 | 0.7− | 0.4− |
| 2004 02 12 | 691 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.6− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2004 02 12 | 691 | 0.2+ | 0.9+ | 2006 09 25 | 704 | 0.2+ | 0.1− | | | | |
| 2004 02 17 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.7− | | | | |

**(141878)∗ 2002 PT$_{43}$**

Discovered 2002 Aug. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.42068 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26392010 | $\omega$ | 189.88880 | | +0.88728143 | | −0.46055192 |
| $a$ | 2.4070645 | $\Omega$ | 197.59963 | | +0.42861056 | | +0.84332262 |
| $e$ | 0.2141743 | $i$ | 4.73739 | | +0.17036623 | | +0.27694563 |
| $P$ | 3.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.8− | 0.1− | 2002 10 11 | 704 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 1998 08 17 | 704 | 0.3+ | 0.4− | 2002 10 11 | 704 | 0.3− | 0.2− | 2006 11 14 | 704 | 0.5− | 0.1− |
| 1998 08 17 | 704 | (2.3+ | 1.8+) | 2002 10 30 | 704 | 0.5+ | 1.2+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1998 08 17 | 704 | 0.3− | 0.2− | 2002 10 30 | 704 | 0.4+ | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 0.3+ | 0.0 | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 0.1− | 0.4+ | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.3− | 0.5+ |
| 2000 02 02 | 704 | 0.1+ | 0.3+ | 2002 10 30 | 704 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 2000 02 02 | 704 | 0.4+ | 1.4+ | 2002 10 30 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2001 05 17 | 691 | 0.3+ | 0.6+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 05 17 | 691 | 0.2+ | 0.8+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 05 17 | 691 | 0.6+ | 0.5+ | 2002 11 10 | 704 | (0.3− | 2.2+) | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 08 05 | 704 | 0.1− | 0.4+ | 2002 11 10 | 704 | (0.2− | 3.0+) | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 08 05 | 704 | 0.4− | 1.1+ | 2002 11 10 | 704 | 1.2+ | 0.7− | 2006 11 18 | 704 | 0.8− | 0.5− |
| 2002 08 05 | 704 | 0.3− | 0.8+ | 2002 11 10 | 704 | 0.3+ | 1.4+ | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2002 08 11 | 704 | 0.2− | 0.7+ | 2002 11 30 | 608 | 0.6− | 0.2− | 2006 11 18 | 704 | (1.6− | 0.9+) |
| 2002 08 11 | 704 | 0.4− | 0.4+ | 2002 11 30 | 608 | 0.6− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2002 08 11 | 704 | 0.7+ | 0.1+ | 2002 11 30 | 608 | 0.7− | 0.1+ | 2006 11 18 | 704 | (0.7+ | 1.8+) |
| 2002 09 05 | 699 | 0.0 | 0.3+ | 2002 12 05 | 704 | 1.0+ | 0.1+ | 2006 11 19 | 291 | 0.4− | 0.2− |
| 2002 09 05 | 699 | 1.0− | 0.6+ | 2002 12 05 | 704 | 0.8+ | 0.4+ | 2006 11 19 | 291 | 0.3− | 0.3− |
| 2002 09 05 | 699 | 0.1− | 0.4+ | 2002 12 05 | 704 | 0.3+ | 0.2− | 2006 11 19 | 291 | 0.3− | 0.1− |
| 2002 09 05 | 699 | 0.5− | 0.0 | 2003 01 02 | 704 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 09 06 | 704 | (1.4− | 3.0−) | 2003 01 02 | 704 | 0.1− | 1.1+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | (1.5− | 2.6−) | 2003 01 02 | 704 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 09 06 | 704 | (1.5− | 2.9−) | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2002 09 06 | 704 | (1.3− | 2.8−) | 2004 03 18 | 704 | 0.3+ | 1.1+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2002 09 06 | 704 | (1.3− | 2.7−) | 2004 03 18 | 704 | 0.1+ | 0.9+ | 2006 11 20 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.7− | 0.7+ | 2006 11 20 | 704 | 0.2+ | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.3− | 0.5+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2002 09 16 | 608 | 0.5− | 0.9− | 2005 05 20 | G96 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2002 09 16 | 608 | 0.6− | 0.7− | 2005 05 20 | G96 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2002 09 16 | 608 | 0.7− | 0.7− | 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.8+ |
| 2002 09 30 | 704 | 0.2+ | 0.7+ | 2005 07 05 | 644 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2002 09 30 | 704 | 0.1+ | 0.8+ | 2005 07 05 | 644 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2002 09 30 | 704 | 0.3+ | 1.0+ | 2005 07 05 | 644 | (0.2− | 1.8−) | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2002 09 30 | 704 | 0.3+ | 0.7+ | 2006 09 16 | 703 | 0.2− | 0.4+ | 2006 11 20 | G96 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 704 | 0.0 | 1.0+ | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.1− |
| 2002 10 02 | 704 | 0.0 | 0.5+ | 2006 09 16 | 703 | 0.4+ | 0.5+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.3− | 1.0+ | 2006 09 16 | 703 | 0.4− | 0.6+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | 0.3− | 0.8+ | 2006 09 26 | 704 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | 0.3− | 0.9+ | 2006 09 26 | 704 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2006 09 26 | 704 | 0.8+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.9− | 0.8− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2006 09 28 | G96 | (1.4− | 1.5+) | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.3− | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2002 10 07 | 699 | 0.5+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.3+ |
| 2002 10 07 | 699 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2002 10 07 | 699 | 0.4+ | 0.0 | 2006 10 27 | 704 | (2.2+ | 0.3+) | 2006 11 25 | G96 | 0.3+ | 0.0 |
| 2002 10 07 | 699 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.5+ | 0.9− | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2002 10 07 | 704 | 0.2− | 0.2+ | 2006 10 27 | 704 | 1.1+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.5+ |
| 2002 10 07 | 704 | 0.4− | 0.2− | 2006 10 27 | 704 | (2.3− | 0.1+) | 2006 11 29 | 704 | 0.2+ | 0.5+ |
| 2002 10 07 | 704 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2002 10 07 | 704 | 0.0 | 0.4− | 2006 11 02 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.7+ |
| 2002 10 07 | 704 | 0.1+ | 0.4− | 2006 11 02 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.2− |
| 2002 10 08 | 704 | 0.2− | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.3− | 2006 12 01 | 704 | 0.1− | 0.2+ |
| 2002 10 08 | 704 | 0.0 | 0.2+ | 2006 11 05 | 644 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.1− | 0.1+ |
| 2002 10 08 | 704 | 0.2− | 0.1+ | 2006 11 05 | 644 | 0.2− | 0.5+ | 2006 12 01 | 704 | 0.2+ | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 0.3− | 2006 11 05 | 644 | 0.0 | 0.3+ | 2006 12 01 | 704 | 0.1+ | 0.6+ |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2002 10 11 | 704 | 0.4− | 0.5− | 2006 11 14 | 704 | 0.4− | 0.5+ | | | | |

**(141879)∗ 2002 PG$_{48}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.09430 | | (2000.0) | | | |
| $n$ | 0.27874129 | $\omega$ | 63.37325 | | +0.80222673 | +0.58806769 |
| $a$ | 2.3209646 | $\Omega$ | 260.43531 | | −0.57815565 | +0.72220546 |
| $e$ | 0.1328332 | $i$ | 5.99550 | | −0.14889032 | +0.36413687 |
| $P$ | 3.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.0 | 0.7+ | 2002 09 07 | 704 | 0.5+ | 0.3+ | 2005 06 11 | 703 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.7+ | 0.6+ | 2002 09 12 | 644 | 0.3− | 0.4+ | 2005 06 11 | 703 | 1.1− | 0.4+ |
| 1999 12 07 | 704 | 0.8− | 0.7− | 2002 09 12 | 644 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.4− |
| 1999 12 07 | 704 | 0.3+ | 0.8+ | 2002 09 12 | 644 | 0.3− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2002 08 10 | 704 | 0.5+ | 0.2+ | 2002 09 27 | 644 | 0.5− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2002 08 10 | 704 | 0.1− | 0.7− | 2002 09 27 | 644 | 0.6− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2002 08 10 | 704 | 1.3− | 0.5+ | 2002 09 27 | 644 | 0.5− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 08 11 | 704 | 0.5+ | 0.5− | 2002 10 05 | 704 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2002 08 11 | 704 | 0.9+ | 0.2− | 2002 10 05 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2002 08 11 | 704 | 0.4+ | 0.2− | 2002 10 05 | 704 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 08 27 | 644 | 0.4+ | 0.2+ | 2002 10 05 | 644 | 0.0 | 0.3+ | 2006 10 27 | 703 | 1.0+ | 0.7− |
| 2002 08 27 | 644 | 0.5+ | 0.3+ | 2002 10 05 | 704 | 0.5− | 0.2− | 2006 10 27 | 703 | 0.4− | 0.6− |
| 2002 08 27 | 644 | 0.6+ | 0.2+ | 2002 10 05 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2002 10 05 | 644 | 0.2+ | 0.4− | 2006 10 27 | 703 | 1.4+ | 1.4− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2002 10 05 | 704 | 0.5− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2002 10 07 | 699 | 0.4+ | 0.8+ | 2006 11 10 | 691 | 0.6− | 0.2+ |
| 2002 09 04 | 699 | 0.5− | 0.3+ | 2002 10 07 | 699 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2002 09 04 | 699 | 0.9+ | 0.9+ | 2002 10 07 | 699 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.4+ |
| 2002 09 04 | 699 | 0.0 | 0.6+ | 2002 10 07 | 699 | (0.0 | 1.6−) | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2002 09 04 | 699 | 1.0− | 0.8+ | 2002 11 08 | 645 | 0.1− | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.9− |
| 2002 09 04 | 644 | 0.1− | 0.3+ | 2002 11 08 | 645 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 09 04 | 644 | 0.3+ | 0.2+ | 2005 05 21 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2002 09 04 | 644 | 0.9+ | 1.4+ | 2005 05 21 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2002 09 07 | 704 | 0.2− | 0.0 | 2005 05 21 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.9+ |
| 2002 09 07 | 704 | 0.7+ | 0.1− | 2005 06 11 | 703 | 0.1+ | 0.7− | | | | |
| 2002 09 07 | 704 | 0.2− | 0.1− | 2005 06 11 | 703 | 0.6+ | 1.0− | | | | |

**(141880)∗ 2002 PC$_{49}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.97449 | | (2000.0) | | | |
| $n$ | 0.23856032 | $\omega$ | 82.39691 | | +0.86461419 | −0.47165434 |
| $a$ | 2.5747629 | $\Omega$ | 305.58462 | | +0.33438489 | +0.79740153 |
| $e$ | 0.1823170 | $i$ | 12.29364 | | +0.37500539 | +0.37642129 |
| $P$ | 4.13 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.2+ | 0.2+ | 2002 12 01 | 704 | 0.5+ | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2000 02 12 | 645 | 0.2+ | 0.2+ | 2002 12 01 | 704 | 0.6+ | 0.4+ | 2006 09 16 | 691 | 0.1+ | 0.1+ |
| 2002 07 17 | 704 | 0.7− | 0.1− | 2004 02 13 | 644 | 0.6+ | 0.5+ | 2006 09 16 | 691 | 0.1− | 0.0 |
| 2002 07 17 | 704 | 1.1− | 0.2+ | 2004 02 13 | 644 | 0.1− | 0.9+ | 2006 09 16 | 691 | 0.0 | 0.2+ |
| 2002 07 17 | 704 | 0.6− | 0.0 | 2004 02 13 | 644 | 0.7− | 1.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2002 07 17 | 704 | 0.1+ | 0.1− | 2004 02 18 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2002 07 17 | 704 | 1.2− | 0.4+ | 2004 02 18 | 691 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2002 08 10 | 704 | 0.5− | 0.2− | 2004 02 18 | 691 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.5+ | 0.5− |
| 2002 08 10 | 704 | 0.8− | 0.3− | 2004 02 26 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 1.4+ |
| 2002 08 10 | 704 | 0.3+ | 0.5− | 2004 02 26 | 704 | 1.4+ | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.1− |
| 2002 08 10 | 704 | 0.0 | 0.4+ | 2004 02 26 | 704 | (1.7+ | 0.5−) | 2006 09 19 | 699 | 0.2− | 1.4+ |
| 2002 08 10 | 704 | 1.2− | 0.2+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 0.7+ | 0.8+ |
| 2002 08 11 | 704 | 0.5− | 0.3+ | 2004 02 26 | 704 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.3− | 0.4− |
| 2002 08 11 | 704 | 0.3− | 0.5+ | 2006 07 21 | 703 | 0.7− | 0.1+ | 2006 09 19 | 699 | 1.1− | 0.2+ |
| 2002 08 11 | 704 | 0.7− | 0.4+ | 2006 07 21 | 703 | 0.1− | 1.2+ | 2006 09 20 | 691 | 0.1+ | 0.3+ |
| 2002 08 11 | 704 | 0.6− | 0.2+ | 2006 07 21 | 703 | 0.4+ | 1.3+ | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 2002 08 16 | 704 | 0.7− | 0.1− | 2006 07 21 | 703 | 0.3+ | 0.9+ | 2006 09 20 | 691 | 0.2+ | 0.0 |
| 2002 08 16 | 704 | 0.4+ | 0.9− | 2006 07 21 | 703 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1+ |
| 2002 08 16 | 704 | 0.2+ | 0.2− | 2006 07 21 | 703 | 0.3− | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2002 08 16 | 704 | 0.1+ | 0.9− | 2006 07 21 | 703 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.4+ |
| 2002 09 05 | 049 | 0.6+ | 1.1− | 2006 07 21 | 703 | 0.5− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.3+ |
| 2002 09 05 | 049 | 0.5+ | 1.1− | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.4− | 0.6− |
| 2002 09 05 | 049 | 1.1+ | 1.3− | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.4− |
| 2002 09 15 | 636 | 0.6+ | 0.1− | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2002 09 15 | 636 | 0.5+ | 0.9+ | 2006 08 18 | 704 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.6+ | 1.5+ |
| 2002 09 15 | 636 | 1.0+ | 0.2− | 2006 08 18 | 704 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.2+ |
| 2002 09 17 | 049 | 0.2− | 0.4− | 2006 08 18 | 704 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.2− | 0.5+ |
| 2002 09 17 | 049 | 0.1− | 0.5− | 2006 08 18 | 704 | 0.2− | 0.0 | 2006 09 29 | 699 | 1.3+ | 0.6+ |
| 2002 09 17 | 049 | 0.0 | 0.4− | 2006 08 27 | 699 | 0.5+ | 0.8+ | 2006 09 30 | G92 | 0.1− | 0.5+ |
| 2002 10 03 | 644 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.3− | 1.2+ | 2006 09 30 | G92 | 0.2− | 0.4+ |
| 2002 10 03 | 644 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.1− | 0.8+ | 2006 09 30 | G92 | 0.1+ | 0.6+ |
| 2002 10 03 | 644 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.3− | 0.4+ | 2006 10 29 | 703 | 0.2− | 0.6− |
| 2002 10 04 | 699 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 10 29 | 703 | 0.1+ | 0.1− |
| 2002 10 04 | 699 | 0.5− | 0.3− | 2006 08 29 | 703 | 0.0 | 0.5+ | 2006 10 29 | 703 | 0.4+ | 0.1− |
| 2002 10 04 | 699 | 0.3− | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.5+ | 2006 10 29 | 703 | 1.5− | 0.1− |
| 2002 10 04 | 699 | 0.3− | 0.1− | 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 11 10 | 704 | 0.7− | 0.4− |
| 2002 10 06 | 704 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.1− | 0.3+ | 2006 11 10 | 704 | 1.0− | 1.2− |
| 2002 10 06 | 704 | 0.0 | 0.5+ | 2006 08 29 | 704 | 0.3− | 0.1+ | 2006 11 10 | 704 | (0.5− | 1.6−) |
| 2002 10 06 | 704 | 0.5+ | 0.7+ | 2006 08 29 | 704 | 0.3− | 0.1+ | 2006 11 10 | 704 | 0.3− | 0.7+ |
| 2002 10 06 | 704 | 0.1+ | 0.7+ | 2006 08 30 | 699 | 0.4− | 0.7+ | 2006 11 10 | 704 | 0.8− | 0.4+ |
| 2002 10 06 | 704 | 0.4− | 0.6+ | 2006 08 30 | 699 | 0.5− | 0.1+ | 2006 11 16 | 703 | (1.9+ | 0.1−) |
| 2002 10 09 | 704 | 0.5+ | 0.2+ | 2006 08 30 | 699 | 0.6− | 0.0 | 2006 11 16 | 703 | 1.5− | 1.1+ |
| 2002 10 09 | 704 | 0.6+ | 0.4+ | 2006 08 30 | 699 | 1.3− | 1.0− | 2006 11 16 | 703 | (0.7+ | 1.9+) |
| 2002 10 09 | 704 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.4+ | 0.6+ | 2006 11 16 | 703 | 0.1+ | 0.4+ |
| 2002 10 09 | 704 | 0.2+ | 0.2− | 2006 09 01 | 704 | 0.1− | 0.6− | 2006 11 19 | 703 | 1.0+ | 2.0− |
| 2002 10 09 | 704 | 0.5+ | 0.2− | 2006 09 01 | 704 | 0.7+ | 0.6+ | 2006 11 19 | 703 | 1.6− | 1.0− |
| 2002 12 01 | 704 | 0.2+ | 0.5− | 2006 09 01 | 704 | 0.1− | 0.5− | 2006 11 19 | 703 | 0.1+ | 0.3− |
| 2002 12 01 | 704 | 0.3− | 0.4+ | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.4− | 1.6− |
| 2002 12 01 | 704 | 0.5− | 0.3− | 2006 09 14 | 691 | 0.1− | 0.1+ | | | | |

**(141881)∗ 2002 PM$_{49}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.95081 | | (2000.0) | | | |
| $n$ | 0.27500173 | $\omega$ | 21.87352 | | +0.47457924 | +0.87239841 |
| $a$ | 2.3419580 | $\Omega$ | 276.62634 | | −0.82403437 | +0.39360804 |
| $e$ | 0.1260062 | $i$ | 6.76602 | | −0.30942187 | +0.28981669 |
| $P$ | 3.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.6+ | 0.3+ | 2002 09 16 | 608 | 0.5− | 0.5+ | 2005 05 19 | 644 | 0.0 | 0.7+ |
| 2001 03 19 | 699 | 0.8− | 0.4+ | 2002 09 16 | 608 | 0.6− | 0.1+ | 2005 06 03 | 703 | (0.2− | 1.7+) |
| 2001 03 19 | 699 | (0.2+ | 1.6+) | 2002 09 30 | 704 | 0.0 | 0.4− | 2005 06 03 | 703 | 1.1− | 1.1+ |
| 2001 03 19 | 699 | 0.5+ | 0.3+ | 2002 09 30 | 704 | 0.1− | 0.2+ | 2005 06 03 | 703 | 0.5+ | 0.2− |
| 2002 08 10 | 704 | 0.0 | 0.6− | 2002 09 30 | 704 | 0.7+ | 0.3+ | 2005 06 03 | 703 | 1.0+ | 0.1− |
| 2002 08 10 | 704 | 0.0 | 0.2− | 2002 10 05 | 644 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.2− | 1.2+ |
| 2002 08 10 | 704 | 0.4− | 0.5− | 2002 10 05 | 644 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.1− |
| 2002 08 11 | 704 | 1.2+ | 1.2+ | 2002 10 05 | 644 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.1+ |
| 2002 08 11 | 704 | 0.8+ | 0.0 | 2002 10 05 | 704 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.7− | 0.2− |
| 2002 08 11 | 704 | 0.1+ | 0.1− | 2002 10 05 | 704 | 0.3+ | 0.4+ | 2006 10 20 | A50 | 0.6− | 0.0 |
| 2002 08 11 | 704 | 0.5+ | 0.0 | 2002 10 05 | 704 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.5− | 0.2+ |
| 2002 08 12 | 608 | 0.6− | 0.2+ | 2002 10 05 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.6+ |
| 2002 08 12 | 608 | 0.7− | 0.2− | 2002 10 05 | 704 | 0.3− | 0.6− | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 2002 08 12 | 608 | 0.8− | 0.0 | 2002 10 06 | 644 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2002 08 27 | 644 | 0.2+ | 0.2+ | 2002 10 06 | 644 | 0.1− | 0.4+ | 2006 11 02 | 703 | 0.4− | 0.5+ |
| 2002 08 27 | 644 | 0.2− | 0.1+ | 2002 10 06 | 644 | 0.1+ | 0.3+ | 2006 11 02 | 703 | 1.1+ | 1.3− |
| 2002 08 27 | 644 | 0.3+ | 0.4+ | 2002 10 07 | 699 | 0.1+ | 0.9+ | 2006 11 02 | 703 | 0.5− | 0.3− |
| 2002 09 04 | 699 | 0.1+ | 0.0 | 2002 10 07 | 699 | 0.3+ | 0.1− | 2006 11 02 | 703 | (0.4− | 1.7−) |
| 2002 09 04 | 699 | 0.1− | 0.3− | 2002 10 07 | 699 | 0.7+ | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 09 04 | 699 | 0.2− | 0.3+ | 2002 10 07 | 699 | 0.1− | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 09 04 | 699 | 0.3+ | 0.6+ | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 09 04 | 644 | 0.2− | 0.1+ | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 11 16 | 704 | 1.0+ | 0.1+ |
| 2002 09 04 | 644 | 0.2− | 0.3+ | 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 1.2+ | 0.1+ |
| 2002 09 04 | 644 | 0.2− | 0.3+ | 2003 12 19 | 691 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.1− |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2003 12 19 | 691 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.9− | 0.5+ |
| 2002 09 07 | 704 | 0.3− | 0.8+ | 2003 12 21 | 645 | 0.1− | 0.1+ | 2006 11 22 | 704 | 1.3− | 0.7+ |
| 2002 09 07 | 704 | 0.7+ | 0.6+ | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.8+ |
| 2002 09 07 | 704 | 0.4− | 0.8+ | 2005 05 12 | 644 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.5− | 0.7+ |
| 2002 09 12 | 644 | 0.3− | 0.1+ | 2005 05 12 | 644 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2002 09 12 | 644 | 0.2− | 0.0 | 2005 05 12 | 644 | 0.4+ | 0.7+ | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2002 09 12 | 644 | 0.2− | 0.1− | 2005 05 19 | 644 | 0.1+ | 0.8+ | | | | |
| 2002 09 16 | 608 | 0.7− | 0.6+ | 2005 05 19 | 644 | 0.0 | 0.8+ | | | | |

**(141882)∗ 2002 PO$_{50}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.07600 | | (2000.0) | | | |
| $n$ | 0.22864507 | $\omega$ | 4.30005 | | +0.96763157 | −0.25212982 |
| $a$ | 2.6486719 | $\Omega$ | 10.32327 | | +0.22968322 | +0.86186461 |
| $e$ | 0.2625021 | $i$ | 3.50035 | | +0.10456945 | +0.44002266 |
| $P$ | 4.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 704 | 0.1− | 1.1+ | 2002 10 09 | 704 | 1.3− | 0.5+ | 2003 01 01 | 704 | 0.1− | 0.4− |
| 1998 12 16 | 704 | (2.1+ | 3.3−) | 2002 10 11 | 704 | 0.4− | 0.1− | 2003 01 01 | 704 | 0.7+ | 0.2+ |
| 1998 12 16 | 704 | 0.3+ | 1.8− | 2002 10 11 | 704 | 0.6− | 0.3− | 2003 01 01 | 704 | 1.4+ | 0.7− |
| 1998 12 16 | 704 | (0.9+ | 3.2−) | 2002 10 11 | 704 | 0.5− | 0.0 | 2003 01 01 | 704 | 1.1+ | 1.3+ |
| 2002 08 10 | 704 | 0.4+ | 0.2− | 2002 10 11 | 704 | 0.5− | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.7+ |
| 2002 08 10 | 704 | 0.1− | 0.4+ | 2002 10 11 | 704 | 0.4− | 0.3+ | 2003 01 05 | 704 | 0.5+ | 0.8+ |
| 2002 08 10 | 704 | 0.1− | 0.6+ | 2002 10 12 | 704 | 0.1− | 0.5+ | 2003 01 05 | 704 | 0.4− | 0.1− |
| 2002 08 10 | 704 | 0.1+ | 0.2− | 2002 10 12 | 704 | 0.6+ | 0.5+ | 2003 01 05 | 704 | 0.7− | 0.3− |
| 2002 08 11 | 704 | 0.9− | 0.3− | 2002 10 12 | 704 | 0.1− | 0.4+ | 2004 02 29 | 691 | 0.2+ | 0.6+ |
| 2002 08 11 | 704 | 0.4+ | 0.2+ | 2002 10 12 | 704 | 0.0 | 0.7+ | 2004 02 29 | 691 | 0.1+ | 0.5+ |
| 2002 08 11 | 704 | 0.5− | 0.4+ | 2002 10 12 | 704 | 0.1+ | 0.7+ | 2004 02 29 | 691 | 0.3+ | 0.4+ |
| 2002 08 11 | 704 | 0.3− | 0.1+ | 2002 11 01 | 704 | 1.4+ | 0.9− | 2005 01 17 | 809 | 0.2− | 0.8+ |
| 2002 08 11 | 704 | 0.3− | 0.0 | 2002 11 01 | 704 | 0.9+ | 0.5− | 2005 01 17 | 809 | 0.3+ | 0.5+ |
| 2002 08 11 | 704 | 0.1+ | 0.6+ | 2002 11 01 | 704 | 0.2+ | 0.2− | 2005 01 17 | 809 | 0.1+ | 0.6+ |
| 2002 08 11 | 704 | 0.2− | 0.3+ | 2002 11 01 | 704 | (0.9− | 2.1−) | 2005 04 11 | G96 | 0.2+ | 0.0 |
| 2002 08 11 | 704 | 0.0 | 1.0+ | 2002 11 01 | 704 | 0.1+ | 0.6− | 2005 04 11 | G96 | 0.1− | 0.4+ |
| 2002 08 11 | 704 | 0.8+ | 0.9+ | 2002 11 03 | 608 | 1.5+ | 0.8+ | 2005 04 11 | G96 | 0.0 | 1.1+ |
| 2002 09 21 | 608 | 0.8− | 0.3− | 2002 11 03 | 608 | 1.0+ | 0.7+ | 2005 04 11 | G96 | 0.5+ | 0.6+ |
| 2002 09 21 | 608 | 1.0− | 0.6− | 2002 11 03 | 608 | 1.3+ | 0.6+ | 2006 07 25 | 644 | 0.0 | 0.1+ |
| 2002 09 21 | 608 | 0.8− | 0.6− | 2002 11 06 | 704 | 0.1− | 0.2− | 2006 07 25 | 644 | 0.1− | 0.1+ |
| 2002 09 29 | 608 | 0.9+ | 0.4+ | 2002 11 06 | 704 | 0.3− | 0.1+ | 2006 07 25 | 644 | 0.1− | 0.0 |
| 2002 09 29 | 608 | 0.8+ | 0.2+ | 2002 11 06 | 704 | 0.0 | 0.0 | 2006 08 12 | 644 | 0.1− | 0.2+ |
| 2002 09 29 | 608 | 1.0+ | 0.2+ | 2002 11 06 | 704 | 0.0 | 0.1− | 2006 08 12 | 644 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.1− | 0.2+ | 2002 11 06 | 704 | 0.1+ | 0.2+ | 2006 08 12 | 644 | 0.3− | 0.2+ |
| 2002 10 01 | 699 | 0.4− | 0.2+ | 2002 11 10 | 704 | (2.7+ | 1.2−) | 2006 08 13 | 644 | 0.8+ | 0.7+ |
| 2002 10 01 | 699 | 0.4− | 0.1− | 2002 11 10 | 704 | 0.6+ | 1.5+ | 2006 08 13 | 644 | 0.1− | 0.1+ |
| 2002 10 01 | 699 | (1.6− | 0.7+) | 2002 11 10 | 704 | 0.4+ | 0.8+ | 2006 08 13 | 644 | 0.1− | 0.3+ |
| 2002 10 02 | 704 | 0.5+ | 0.3+ | 2002 11 10 | 704 | 0.4+ | 0.8+ | 2006 08 14 | 644 | 0.2− | 0.1+ |
| 2002 10 02 | 704 | 0.3+ | 0.1+ | 2002 11 10 | 704 | 0.5+ | 0.8+ | 2006 08 14 | 644 | 0.3− | 0.1+ |
| 2002 10 02 | 704 | 0.3+ | 0.0 | 2002 11 11 | 644 | 0.1+ | 0.8− | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2002 11 11 | 644 | 0.2+ | 0.7− | 2006 08 19 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.6+ | 0.1+ | 2002 11 11 | 644 | 0.3+ | 0.9− | 2006 08 19 | 644 | 0.2− | 0.1+ |
| 2002 10 02 | 608 | 0.3+ | 0.9− | 2002 12 01 | 704 | 0.2− | 0.1− | 2006 08 19 | 644 | 0.1+ | 0.0 |
| 2002 10 02 | 608 | 0.1− | 0.8− | 2002 12 01 | 704 | 0.8− | 0.4+ | 2006 08 19 | 644 | 0.6+ | 0.0 |
| 2002 10 02 | 608 | 0.0 | 1.1− | 2002 12 01 | 704 | 0.1+ | 0.8− | 2006 08 19 | 644 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.5− | 2002 12 01 | 704 | 0.2+ | 0.9− | 2006 08 19 | 644 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.4+ | 0.4− | 2002 12 06 | 704 | 0.4− | 0.6− | 2006 08 20 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.1− | 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2002 12 06 | 704 | 0.3+ | 0.2− | 2006 08 20 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2002 10 07 | 704 | 0.8− | 0.4+ | 2002 12 06 | 291 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2002 10 07 | 704 | 1.2− | 0.4+ | 2002 12 06 | 704 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2002 10 07 | 704 | 0.7− | 0.4− | 2002 12 06 | 291 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.4− | 0.0 |
| 2002 10 07 | 704 | 0.6− | 0.3+ | 2002 12 06 | 291 | 1.2− | 0.4− | 2006 11 11 | 703 | 1.3+ | 0.0 |
| 2002 10 07 | 704 | 0.5− | 0.4+ | 2002 12 11 | 704 | 1.2+ | 1.2+ | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2002 10 09 | 704 | 1.2− | 0.3+ | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2002 10 09 | 704 | 0.9− | 0.4+ | 2002 12 11 | 704 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1− | 0.7− |
| 2002 10 09 | 704 | 1.2− | 0.4+ | 2002 12 11 | 704 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.7− |
| 2002 10 09 | 704 | 1.2− | 0.4+ | 2002 12 11 | 704 | 0.0 | 0.4+ | | | | |

**(141883)∗ 2002 PZ$_{50}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.89421 | | (2000.0) | | | |
| $n$ | 0.23666617 | $\omega$ | 322.68990 | | +0.98320009 | +0.14794272 |
| $a$ | 2.5884827 | $\Omega$ | 29.34591 | | −0.06284727 | +0.82429235 |
| $e$ | 0.3201243 | $i$ | 12.60069 | | −0.17137036 | +0.54649343 |
| $P$ | 4.16 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 0.4− | 0.1+ | 2002 10 29 | 049 | 0.1− | 1.1+ | 2005 04 11 | 691 | 0.3+ | 0.6+ |
| 1998 11 16 | 704 | (2.7− | 5.0+) | 2002 10 29 | 049 | 1.1− | 1.0+ | 2005 04 18 | 691 | 0.5+ | 0.6+ |
| 1998 11 16 | 704 | (2.5− | 0.9−) | 2002 10 29 | 049 | 0.5− | 0.0 | 2005 04 18 | 691 | 1.0+ | 0.5+ |
| 1998 11 16 | 704 | 0.6+ | 0.2− | 2002 10 30 | 049 | 0.5− | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.6+ |
| 1998 12 17 | 704 | (2.4+ | 0.1−) | 2002 10 30 | 049 | 0.3− | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.6+ |
| 1998 12 17 | 704 | 0.0 | 1.3− | 2002 11 01 | 644 | 0.2+ | 0.2+ | 2005 05 08 | G96 | 0.5− | 0.5+ |
| 1998 12 17 | 704 | 0.6+ | 1.3− | 2002 11 01 | 644 | 0.1+ | 0.1+ | 2005 05 08 | G96 | 0.5− | 0.5+ |
| 1998 12 17 | 704 | 1.0+ | 1.3− | 2002 11 01 | 644 | 0.2+ | 0.2+ | 2005 05 08 | G96 | 0.4− | 0.4+ |
| 1998 12 17 | 704 | 0.2+ | 0.4− | 2002 11 05 | 704 | 0.8− | 0.3− | 2006 07 28 | E12 | 0.2− | 0.2+ |
| 2002 08 10 | 704 | 0.1+ | 0.3− | 2002 11 05 | 704 | 0.6− | 0.3− | 2006 07 28 | E12 | 0.2+ | 0.1− |
| 2002 08 10 | 704 | 0.6− | 0.2+ | 2002 11 05 | 704 | 0.7− | 0.1− | 2006 07 28 | E12 | 0.3− | 0.4+ |
| 2002 08 10 | 704 | 0.5− | 0.3+ | 2002 11 05 | 704 | 0.8− | 0.0 | 2006 07 28 | E12 | 0.4− | 0.5+ |
| 2002 08 10 | 704 | 0.9− | 0.5− | 2002 11 05 | 704 | 0.3− | 0.2− | 2006 09 20 | 703 | 1.1− | 0.5+ |
| 2002 08 11 | 704 | 0.3+ | 1.2− | 2002 11 08 | 704 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.3− | 0.3+ |
| 2002 08 11 | 704 | 0.5+ | 0.2− | 2002 11 08 | 704 | 0.3− | 0.1− | 2006 09 20 | 703 | 0.6− | 0.4+ |
| 2002 08 11 | 704 | 0.6− | 0.3− | 2002 11 08 | 704 | 0.3− | 0.1+ | 2006 09 22 | 608 | (0.1− | 2.3−) |
| 2002 08 11 | 704 | 0.3+ | 0.9+ | 2002 11 08 | 704 | 0.9− | 0.1+ | 2006 09 22 | 608 | 0.1+ | 1.3− |
| 2002 09 05 | 704 | 0.3− | 0.6− | 2002 11 08 | 704 | 0.8− | 1.1+ | 2006 09 22 | 608 | 0.1− | 1.2− |
| 2002 09 05 | 704 | 0.4− | 0.3+ | 2002 11 12 | 704 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.4− | 0.3+ | 2002 11 12 | 704 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 0.2+ | 0.5+ | 2002 11 12 | 704 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2002 11 12 | 704 | 0.8− | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2002 09 05 | 699 | 0.3− | 0.3+ | 2002 11 12 | 704 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 09 05 | 699 | 0.2− | 0.0 | 2002 11 13 | 644 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.8− | 0.3+ | 2002 11 13 | 644 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 09 05 | 699 | 0.6− | 0.1+ | 2002 11 13 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 09 06 | 599 | 0.1+ | 0.1− | 2002 11 14 | 704 | 0.7− | 1.2+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 09 06 | 599 | 0.1− | 0.1− | 2002 11 14 | 704 | 0.7− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 09 06 | 599 | 0.0 | 0.3+ | 2002 11 14 | 704 | 0.6− | 0.6+ | 2006 10 19 | 703 | 0.7− | 0.2− |
| 2002 09 06 | 599 | 0.0 | 0.7+ | 2002 11 14 | 704 | 1.1− | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.4− |
| 2002 09 06 | 704 | 0.7− | 0.3+ | 2002 11 14 | 704 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.3− | 0.0 | 2002 11 24 | 644 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.3+ |
| 2002 09 06 | 704 | 0.0 | 0.1− | 2002 11 24 | 644 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.3− | 0.4+ | 2002 11 24 | 644 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 09 16 | 608 | 0.3+ | 1.0+ | 2002 11 24 | 644 | 0.1− | 0.1− | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2002 09 16 | 608 | 0.0 | 1.3+ | 2002 11 24 | 644 | 0.1− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2002 09 16 | 608 | 0.2− | 1.5+ | 2002 12 02 | 704 | 0.4+ | 0.6− | 2006 10 24 | 644 | 0.0 | 0.2− |
| 2002 09 21 | 608 | 0.4+ | 1.1+ | 2002 12 02 | 704 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.4+ | 0.7+ |
| 2002 09 21 | 608 | 0.0 | 1.0+ | 2002 12 02 | 704 | 0.2+ | 0.6− | 2006 10 27 | 704 | 1.3+ | 0.1− |
| 2002 09 21 | 608 | 0.1+ | 1.0+ | 2002 12 02 | 704 | 0.2+ | 0.4+ | 2006 10 27 | 704 | 0.3+ | 0.1+ |
| 2002 10 02 | 704 | 0.2− | 1.1+ | 2002 12 02 | 704 | (0.8+ | 1.6−) | 2006 10 27 | 704 | 0.6+ | 0.1+ |
| 2002 10 02 | 704 | 0.4− | 0.8+ | 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 704 | 0.4+ | 0.7+ |
| 2002 10 02 | 704 | 0.5− | 0.8+ | 2002 12 05 | 704 | 0.4+ | 0.1− | 2006 11 05 | 644 | 0.5− | 0.2− |
| 2002 10 02 | 704 | 0.0 | 1.1+ | 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 11 05 | 644 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 11 05 | 644 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.7− |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2002 12 11 | 644 | 0.1+ | 0.9− | 2006 11 14 | 704 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2002 12 11 | 644 | 0.2+ | 0.8− | 2006 11 14 | 704 | 1.0+ | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2002 12 11 | 644 | 0.0 | 0.9− | 2006 11 14 | 704 | 0.2+ | 0.8− |
| 2002 10 07 | 704 | 0.2− | 0.3− | 2002 12 31 | 704 | 0.1+ | 1.0+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 10 07 | 704 | 0.1+ | 0.1+ | 2002 12 31 | 704 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 10 07 | 704 | 0.4+ | 0.6− | 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2002 10 07 | 704 | 0.6+ | 0.0 | 2002 12 31 | 704 | 0.6+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 10 07 | 704 | 0.2− | 0.5− | 2002 12 31 | 704 | 0.9+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.9+ |
| 2002 10 07 | 704 | 0.5+ | 0.5+ | 2003 01 20 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2002 10 07 | 704 | 0.0 | 0.7− | 2003 01 20 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 10 07 | 704 | 0.6+ | 0.4+ | 2003 01 20 | 644 | 0.1+ | 0.4+ | 2006 11 18 | 703 | 0.0 | 0.1− |
| 2002 10 07 | 704 | 1.1− | 0.4− | 2005 03 14 | G96 | 0.1− | 0.1− | 2006 11 18 | 703 | 0.1− | 0.2− |
| 2002 10 07 | 704 | 0.5+ | 1.1+ | 2005 03 14 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2002 10 09 | 704 | 0.3+ | 0.2+ | 2005 03 14 | G96 | 0.1− | 0.4+ | 2006 11 18 | 703 | 0.8− | 1.2+ |
| 2002 10 09 | 704 | 0.5+ | 0.5+ | 2005 03 14 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2002 10 09 | 704 | 0.2+ | 0.5+ | 2005 04 05 | G96 | 0.6− | 0.7+ | 2006 11 18 | 703 | (2.6− | 0.2−) |
| 2002 10 09 | 704 | 0.1+ | 0.3+ | 2005 04 05 | G96 | 1.2+ | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2002 10 09 | 704 | 0.1+ | 0.1− | 2005 04 05 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2002 10 11 | 704 | 0.2+ | 0.1+ | 2005 04 05 | G96 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2002 10 11 | 704 | 0.1+ | 0.3+ | 2005 04 06 | G96 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.2− | 0.0 | 2005 04 06 | G96 | 0.5− | 0.7+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2005 04 06 | G96 | 0.5− | 0.4+ | 2006 11 22 | 704 | 0.7+ | 0.7+ |
| 2002 10 11 | 704 | 0.1− | 0.3+ | 2005 04 06 | G96 | 0.6− | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.6+ |
| 2002 10 16 | 699 | 0.2+ | 0.2+ | 2005 04 09 | 691 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2002 10 16 | 699 | 0.3+ | 0.0 | 2005 04 09 | 691 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 0.4− | 1.2+ |
| 2002 10 16 | 699 | 0.1+ | 0.1− | 2005 04 09 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.9+ | 0.2+ |
| 2002 10 16 | 699 | 0.3+ | 0.2− | 2005 04 10 | 691 | 0.6+ | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.6− |
| 2002 10 28 | 608 | 0.3+ | 0.5− | 2005 04 10 | 691 | 0.5+ | 0.7+ | 2006 11 27 | 703 | 0.5− | 0.6− |
| 2002 10 28 | 608 | 0.1− | 0.5− | 2005 04 10 | 691 | 0.5+ | 0.3+ | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2002 10 28 | 608 | 0.2+ | 0.6− | 2005 04 11 | 691 | 0.4+ | 0.5+ | | | | |
| 2002 10 29 | 049 | 0.2− | 0.9+ | 2005 04 11 | 691 | 0.4+ | 0.2+ | | | | |

**(141884)∗ 2002 PT$_{52}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.20123 | | (2000.0) | | | |
| $n$ | 0.27720828 | $\omega$ | 104.36694 | | +0.05199845 | −0.99809190 |
| $a$ | 2.3295136 | $\Omega$ | 342.54936 | | +0.86812488 | +0.06165788 |
| $e$ | 0.0577824 | $i$ | 6.37497 | | +0.49361458 | −0.00329713 |
| $P$ | 3.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 566 | 0.2+ | 0.6− | 2003 12 28 | 704 | 0.5+ | 0.5− | 2006 09 25 | 704 | 0.8− | 0.3+ |
| 1997 02 03 | 566 | 0.1+ | 0.6− | 2004 01 16 | 699 | 1.2− | 0.4− | 2006 09 29 | 704 | 0.4+ | 0.8− |
| 1997 02 03 | 566 | 0.0 | 0.6− | 2004 01 16 | 699 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1+ | 1.0+ |
| 1999 11 11 | 703 | 0.5+ | 0.9+ | 2004 01 16 | 699 | 0.7− | 0.2+ | 2006 09 29 | 704 | (0.9+ | 1.5−) |
| 1999 11 11 | 703 | 0.8− | 0.2+ | 2004 01 16 | 699 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 1999 11 11 | 703 | 0.7− | 0.8+ | 2004 01 19 | 704 | (6.1+ | 0.2−) | 2006 09 30 | 703 | 0.8− | 0.1+ |
| 1999 11 11 | 703 | 0.2− | 0.1+ | 2004 01 19 | 704 | (5.8+ | 0.6+) | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 2001 03 18 | 704 | 1.3+ | 0.4+ | 2004 01 19 | 704 | (6.8+ | 0.1−) | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2001 03 18 | 704 | 1.1+ | 0.2+ | 2004 01 19 | 704 | (6.3+ | 0.7+) | 2006 10 03 | 704 | 1.0+ | 0.8+ |
| 2001 03 18 | 704 | 0.0 | 1.1+ | 2004 01 31 | 704 | 0.4+ | 0.5+ | 2006 10 03 | 704 | (1.5+ | 0.6+) |
| 2001 03 18 | 704 | 0.0 | 1.2+ | 2004 01 31 | 704 | 0.1− | 0.8+ | 2006 10 03 | 704 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.2− | 0.5+ | 2004 01 31 | 704 | 0.4− | 0.2+ | 2006 10 03 | 704 | 0.9+ | 0.7+ |
| 2002 08 08 | 644 | 0.2− | 0.2+ | 2004 01 31 | 704 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2002 08 08 | 644 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.4+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.5− |
| 2002 08 11 | 644 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.3+ | 1.0− | 2006 10 04 | G96 | 0.3+ | 0.3− |
| 2002 08 11 | 644 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.7+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2002 08 11 | 644 | 0.3+ | 0.4+ | 2006 08 30 | 699 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 08 15 | 644 | 0.4− | 0.8− | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 08 15 | 644 | 0.4− | 0.5− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 08 15 | 644 | 0.0 | 0.5− | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2006 09 16 | 703 | 1.1− | 0.7− | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2002 08 29 | 644 | 0.4− | 0.1− | 2006 09 16 | 703 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.4− | 0.6− |
| 2003 12 18 | 704 | 0.7+ | 1.3+ | 2006 09 16 | 703 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.3+ |
| 2003 12 18 | 704 | 0.0 | 0.5+ | 2006 09 18 | 704 | (2.1+ | 1.2+) | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2003 12 18 | 704 | 0.3− | 0.7+ | 2006 09 18 | 704 | 0.7+ | 0.7+ | 2006 10 19 | 644 | 0.3+ | 1.0+ |
| 2003 12 18 | 704 | 1.1− | 0.3− | 2006 09 18 | 704 | 0.9+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2003 12 18 | 704 | 0.5− | 0.8+ | 2006 09 18 | 704 | 1.0+ | 1.1+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2003 12 28 | 704 | 0.1+ | 0.7− | 2006 09 25 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.3− |
| 2003 12 28 | 704 | 0.3− | 0.4− | 2006 09 25 | 704 | 0.7− | 1.2+ | 2006 11 15 | 704 | 0.3− | 0.7− |
| 2003 12 28 | 704 | 0.3+ | 1.0− | 2006 09 25 | 704 | 0.3− | 0.4− | 2006 11 15 | 704 | 0.3− | 0.5− |
| 2003 12 28 | 704 | 0.6+ | 0.7− | 2006 09 25 | 704 | 0.1− | 0.5+ | 2006 11 15 | 704 | 0.5− | 0.0 |

**(141885)∗ 2002 PZ$_{52}$ = 2000 AS$_{26}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35267)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.13437 | | (2000.0) | | | |
| $n$ | 0.27326524 | $\omega$ | 314.71974 | | +0.72063204 | −0.69050654 |
| $a$ | 2.3518690 | $\Omega$ | 89.05911 | | +0.65243651 | +0.64495623 |
| $e$ | 0.2203525 | $i$ | 3.57641 | | +0.23455501 | +0.32746326 |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 1.5− | 0.1+ | 2004 02 17 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 704 | 1.0− | 0.6+ |
| 1999 12 08 | 704 | 0.7− | 0.0 | 2004 02 17 | 704 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.7− | 0.7+ |
| 1999 12 08 | 704 | 0.8− | 0.3+ | 2004 02 17 | 704 | 0.6+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 12 08 | 704 | 0.6− | 0.4− | 2004 02 17 | 704 | (1.6+ | 0.3+) | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 01 03 | 704 | 0.2− | 0.8− | 2004 02 25 | 704 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2000 01 03 | 704 | 0.1+ | 0.3+ | 2004 02 25 | 704 | 0.3− | 0.3− | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2000 01 03 | 704 | 0.0 | 0.1− | 2004 02 25 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.2+ |
| 2000 01 03 | 704 | 0.4+ | 0.1+ | 2005 06 27 | G96 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.3+ | 0.1− |
| 2000 01 03 | 704 | 0.2+ | 1.0− | 2005 06 27 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2000 01 04 | 704 | 0.1+ | 0.0 | 2005 06 27 | G96 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.5− |
| 2000 01 04 | 704 | 0.1+ | 0.1+ | 2005 06 27 | G96 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2000 01 04 | 704 | 0.7+ | 0.0 | 2005 06 28 | G96 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 0.3+ | 0.2− | 2005 06 28 | G96 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.5− | 0.0 |
| 2000 01 04 | 704 | 0.4+ | 0.3+ | 2005 06 28 | G96 | 0.1− | 0.2+ | 2006 11 14 | 704 | 1.0− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.7− | 0.3+ | 2005 06 28 | G96 | 0.5− | 0.3+ | 2006 11 14 | 704 | 0.6− | 0.0 |
| 2000 01 06 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 703 | (1.6− | 0.0 ) | 2006 11 14 | 704 | 0.6− | 0.1− |
| 2000 01 06 | 704 | 0.1− | 0.6+ | 2006 09 16 | 703 | 0.2− | 0.8− | 2006 11 14 | 704 | 0.2− | 0.3− |
| 2000 01 08 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2000 01 08 | 704 | 0.2− | 0.6− | 2006 09 16 | 703 | 0.9− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2000 01 08 | 704 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.8+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2000 01 08 | 704 | 0.5+ | 0.3+ | 2006 09 17 | 699 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2000 01 08 | 704 | 0.8+ | 0.2+ | 2006 09 17 | 699 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.1− |
| 2001 05 18 | 691 | 0.7+ | 0.7+ | 2006 09 17 | 699 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2001 05 18 | 691 | 0.4+ | 1.3+ | 2006 09 26 | 704 | (1.8+ | 0.5+) | 2006 11 17 | 704 | 0.4+ | 0.4+ |
| 2001 05 18 | 691 | 0.2+ | 1.3+ | 2006 09 26 | 704 | 0.9+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.1+ |
| 2002 07 23 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 704 | 0.8− | 0.7+ |
| 2002 07 23 | 644 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.4− | 1.1+ | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2002 07 23 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2002 08 08 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 1.4− | 0.9+ |
| 2002 08 11 | 644 | 0.2+ | 0.8− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2002 08 11 | 644 | 0.1+ | 1.1− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2002 08 11 | 644 | 0.1+ | 0.8− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2002 08 12 | 807 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.5− |
| 2002 08 12 | 807 | 0.4− | 0.0 | 2006 10 03 | 704 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.5+ | 0.8+ |
| 2002 08 14 | 704 | 0.7− | 0.3+ | 2006 10 03 | 704 | 0.5− | 0.6− | 2006 11 20 | 704 | 0.6+ | 0.3− |
| 2002 08 14 | 704 | 0.3+ | 0.5− | 2006 10 03 | 704 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.2+ |
| 2002 08 14 | 704 | 0.2− | 0.5− | 2006 10 03 | 704 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2002 08 16 | 644 | 0.0 | 1.2+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2002 08 16 | 644 | 0.1− | 1.0+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 08 16 | 644 | 0.1− | 1.4+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.7+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.8+ |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.1− | 0.9+ |
| 2002 09 15 | 644 | 0.0 | 0.4− | 2006 10 27 | 704 | 0.0 | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.7+ |
| 2002 09 15 | 644 | 0.1− | 0.1− | 2006 10 27 | 704 | 0.0 | 0.9+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2002 09 15 | 644 | 0.1− | 0.1− | 2006 10 27 | 704 | 0.2− | 0.6+ | 2006 11 28 | 704 | 0.4− | 0.5+ |

**(141886)∗ 2002 PK$_{53}$ = 2004 DD$_{50}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.88911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26936900 | $\omega$ | 246.60746 | | +0.86021950 | | −0.50951009 |
| $a$ | 2.3744935 | $\Omega$ | 144.01425 | | +0.47968093 | | +0.79487876 |
| $e$ | 0.1834142 | $i$ | 2.00323 | | +0.17299887 | | +0.32949540 |
| $P$ | 3.66 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.3+ | 0.3+ | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2002 08 08 | 644 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.3+ | 0.2+ | 2006 07 21 | G96 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 08 11 | 644 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 2002 08 11 | 644 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2002 08 11 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.0 |
| 2002 08 17 | 644 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2002 08 18 | 644 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.0 | 1.5+ |
| 2002 08 18 | 644 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.9− | 2006 11 14 | 704 | 0.4− | 0.5− |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.2+ | 2006 11 14 | 704 | 0.9− | 0.3+ |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 14 | 704 | 0.5− | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.2+ | 2006 11 14 | 704 | 0.7− | 0.5+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 08 26 | 644 | 0.4− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 08 26 | 644 | 0.3− | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 08 26 | 644 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 08 29 | 644 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4− | 2006 11 17 | 704 | 0.2+ | 0.1+ |
| 2004 02 14 | 691 | 0.1− | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2004 02 14 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2004 02 14 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2004 02 22 | 691 | 0.4+ | 0.6+ | 2006 10 31 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2004 02 22 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.7− | 1.3− |
| 2004 02 22 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.4− |
| 2004 02 26 | 704 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 1.1− |
| 2004 02 26 | 704 | 0.6+ | 1.3− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2004 02 26 | 704 | (2.4+ | 0.3−) | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 1.4+ | 0.6+ |
| 2005 05 19 | G96 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 1.4+ | 0.4+ |
| 2005 05 19 | G96 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2005 05 19 | G96 | 0.5− | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.5+ |
| 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 1.3+ | 0.2− |
| 2005 06 06 | 691 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.0 | | | | |
| 2005 06 06 | 691 | 0.3+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.1− | | | | |

**(141887)∗ 2002 PR$_{53}$ = 2004 CW$_{72}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.45045 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27591522 | $\omega$ | 252.77800 | | +0.98888845 | | −0.12596559 |
| $a$ | 2.3367860 | $\Omega$ | 114.39990 | | +0.14621337 | | +0.92007863 |
| $e$ | 0.1861467 | $i$ | 4.97307 | | −0.02685660 | | +0.37092855 |
| $P$ | 3.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.1− | 0.4− | 2006 11 20 | 691 | 0.0 | 0.5+ |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.4− | 2006 11 20 | G96 | 0.5− | 0.1+ |
| 2002 08 11 | 644 | 0.2− | 0.5− | 2005 05 16 | G96 | 0.3− | 0.2− | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2002 08 11 | 644 | 0.2+ | 0.2− | 2005 05 16 | G96 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.6− |
| 2002 08 11 | 644 | 0.2− | 0.5− | 2005 05 16 | G96 | 0.5− | 0.0 | 2006 11 20 | G96 | 0.2− | 0.1− |
| 2002 08 12 | 699 | 0.1+ | 0.1+ | 2005 05 16 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2002 08 12 | 699 | 0.1+ | 0.1− | 2005 05 19 | G96 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.1− |
| 2002 08 12 | 699 | 0.3− | 0.2+ | 2005 05 19 | G96 | 0.6− | 0.8+ | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2002 08 12 | 699 | 0.6− | 0.2− | 2005 05 19 | G96 | 1.5+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.5− |
| 2002 08 14 | 704 | 0.2− | 0.4− | 2005 05 19 | G96 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2002 08 14 | 704 | 0.2− | 0.3− | 2005 06 04 | 691 | 0.1− | 0.5+ | 2006 11 20 | G96 | 0.3+ | 0.2+ |
| 2002 08 14 | 704 | 0.2+ | 0.1+ | 2005 06 04 | 691 | 0.1− | 0.4+ | 2006 11 20 | G96 | 0.2− | 0.1+ |
| 2002 08 14 | 704 | 0.1+ | 0.4− | 2005 06 04 | 691 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.2+ |
| 2002 08 14 | 704 | 0.5+ | 0.7+ | 2005 06 12 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2005 06 12 | 691 | 0.2+ | 0.6+ | 2006 11 20 | G96 | 0.2+ | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2005 06 12 | 691 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.1+ |
| 2002 08 18 | 644 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.5− | 1.2+ | 2006 11 02 | G96 | 0.3− | 0.4− | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2002 08 19 | 644 | (0.6+ | 1.6+) | 2006 11 02 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2002 08 19 | 644 | 0.2− | 1.1+ | 2006 11 02 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 08 30 | 644 | 0.4− | 0.2− | 2006 11 14 | 704 | 0.0 | 1.2− | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2002 08 30 | 644 | 0.4− | 0.1− | 2006 11 14 | 704 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.6+ | 1.0− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.5− | 2006 11 14 | 704 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.6+ | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2006 11 17 | 704 | (1.8+ | 0.4+) | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2002 09 16 | 644 | 0.0 | 0.9+ | 2006 11 17 | 704 | 0.4− | 0.8+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 09 16 | 644 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.5+ |
| 2002 09 16 | 644 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2004 02 13 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.9− |
| 2004 02 13 | 691 | 0.4− | 0.2+ | 2006 11 20 | H55 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2004 02 13 | 691 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2004 02 16 | 704 | 0.3− | 0.1− | 2006 11 20 | H55 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2004 02 16 | 704 | 1.2+ | 0.3− | 2006 11 20 | H55 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.1− |
| 2004 02 16 | 704 | 0.6+ | 0.1− | 2006 11 20 | H55 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.2+ |
| 2004 02 23 | 704 | 0.4+ | 0.9+ | 2006 11 20 | H55 | 0.3− | 0.4+ | | | | |

**(141888)∗ 2002 PB$_{54}$ = 2004 CL$_{33}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.65765 | | | (2000.0) | | |
| $n$ | 0.26628314 | $\omega$ | 293.17461 | | +0.99698811 | +0.06736492 |
| $a$ | 2.3928029 | $\Omega$ | 62.98148 | | −0.04537632 | +0.90851304 |
| $e$ | 0.2009809 | $i$ | 2.47224 | | −0.06289436 | +0.41239062 |
| $P$ | 3.70 | $H$ | 16.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.2− | 0.1+ | 2004 02 12 | 291 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 01 08 | 704 | 0.0 | 0.4+ | 2004 02 12 | 291 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2000 01 08 | 704 | 0.5+ | 0.2+ | 2004 02 14 | 291 | 0.2− | 0.9+ | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2002 07 23 | 644 | 0.0 | 0.6+ | 2004 02 14 | 291 | 0.0 | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.3− |
| 2002 07 23 | 644 | 0.2− | 0.6+ | 2004 02 14 | 291 | 0.2− | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2002 07 23 | 644 | 0.2− | 0.5+ | 2004 02 29 | 691 | 0.1− | 0.9+ | 2006 10 28 | 704 | 0.5− | 0.5− |
| 2002 07 30 | 608 | 0.5+ | 0.9+ | 2004 02 29 | 691 | 0.4+ | 0.2+ | 2006 10 28 | 704 | 0.8− | 0.1+ |
| 2002 07 30 | 608 | 0.0 | 0.1+ | 2004 02 29 | 691 | 0.2− | 0.0 | 2006 10 28 | 704 | 1.4+ | 0.6− |
| 2002 07 30 | 608 | 0.6− | 0.4+ | 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 10 28 | 704 | 0.3− | 0.1− |
| 2002 08 08 | 644 | 0.1+ | 0.6+ | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.5+ | 2005 05 14 | G96 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2002 08 08 | 644 | 0.2− | 0.5+ | 2005 05 14 | G96 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2002 08 11 | 644 | 0.0 | 1.1+ | 2005 06 12 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.2− | 1.3− |
| 2002 08 11 | 644 | 0.1+ | 1.1+ | 2005 06 12 | G96 | 0.7+ | 0.6− | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2002 08 11 | 644 | 0.2+ | 1.3+ | 2005 06 12 | G96 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.4− | 1.2− |
| 2002 08 14 | 704 | 1.2− | 0.5− | 2005 06 12 | G96 | 1.0− | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2002 08 14 | 704 | 0.4+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2002 08 14 | 704 | 0.6+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2002 08 14 | 704 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2002 08 14 | 704 | 0.2+ | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2002 08 18 | 644 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2002 08 18 | 644 | 0.4− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.6+ | 1.1+ |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2002 08 19 | 644 | 0.1− | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.9+ |
| 2002 08 19 | 644 | 0.1+ | 1.2+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.7+ |
| 2002 08 19 | 644 | 0.3− | 1.2+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2002 09 06 | 704 | 0.6+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 21 | 704 | (1.6− | 0.1−) |
| 2002 09 06 | 704 | 1.4− | 0.2+ | 2006 10 15 | 691 | 0.6+ | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.1+ |
| 2002 09 06 | 704 | 1.2− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 1.4− | 0.3+ |
| 2002 09 06 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | (1.9+ | 1.4+) | 2006 11 21 | 704 | (1.0− | 1.6−) |
| 2002 09 15 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 25 | 683 | 0.3− | 0.1+ |
| 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 25 | 683 | 0.2+ | 0.9+ |
| 2002 09 15 | 644 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 28 | 683 | 0.2+ | 0.5− |
| 2004 02 11 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 28 | 683 | (0.2− | 3.6−) |
| 2004 02 11 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 683 | 1.1− | 1.8− |
| 2004 02 11 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2+ | | | | |
| 2004 02 12 | 291 | 0.5+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.4− | | | | |

**(141889)∗ 2002 PU$_{54}$**

Discovered 2002 Aug. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.83065 | | | (2000.0) | | |
| $n$ | 0.22385407 | $\omega$ | 237.53091 | | +0.93280681 | −0.32597866 |
| $a$ | 2.6863302 | $\Omega$ | 140.87710 | | +0.35336950 | +0.91103456 |
| $e$ | 0.1903096 | $i$ | 14.09398 | | −0.07072093 | +0.25249543 |
| $P$ | 4.40 | $H$ | 15.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 704 | 0.7− | 1.1+ | 2003 01 02 | 704 | 1.4+ | 0.7− | 2006 08 23 | 704 | 0.2− | 1.1+ |
| 2002 08 05 | 704 | 0.6+ | 0.4+ | 2003 01 16 | 644 | 0.0 | 0.1+ | 2006 08 23 | 704 | 0.9− | 0.4+ |
| 2002 08 05 | 704 | 0.1+ | 0.8+ | 2003 01 16 | 644 | 0.1− | 0.4+ | 2006 08 23 | 704 | 0.2− | 0.4+ |
| 2002 08 12 | 704 | (0.7− | 2.7+) | 2003 01 16 | 644 | 0.1− | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.1− |
| 2002 08 12 | 704 | (0.0 | 2.4+) | 2003 01 28 | 704 | 0.3− | 0.1− | 2006 08 23 | 644 | 0.1− | 0.3− |
| 2002 08 12 | 704 | (0.2− | 2.2+) | 2003 01 28 | 704 | 0.4+ | 0.9+ | 2006 08 23 | 644 | 0.1− | 0.2− |
| 2002 08 12 | 704 | (2.2− | 2.1+) | 2003 01 28 | 704 | 0.2+ | 0.4+ | 2006 08 28 | 704 | 0.1− | 0.2+ |
| 2002 08 12 | 704 | (2.2− | 2.5+) | 2004 01 22 | 704 | (1.6+ | 1.4+) | 2006 08 28 | 704 | 0.5− | 0.0 |
| 2002 09 15 | 699 | 0.1+ | 0.5− | 2004 01 22 | 704 | 0.6+ | 0.9+ | 2006 08 28 | 704 | 0.2− | 0.4+ |
| 2002 09 15 | 699 | 0.3+ | 0.8+ | 2004 01 22 | 704 | 0.8+ | 0.9+ | 2006 08 28 | 704 | 0.2+ | 1.2+ |
| 2002 09 15 | 699 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.8+ | 2006 08 28 | 699 | 0.7+ | 0.0 |
| 2002 09 15 | 699 | 0.4+ | 0.3+ | 2004 03 20 | 704 | (0.3+ | 2.0+) | 2006 08 28 | 699 | 0.0 | 0.2− |
| 2002 10 10 | 644 | 0.2− | 0.2+ | 2004 03 20 | 704 | (0.5+ | 2.7+) | 2006 08 28 | 699 | 0.3+ | 0.1+ |
| 2002 10 10 | 644 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.3+ | 0.8+ | 2006 08 28 | 699 | 0.3+ | 0.0 |
| 2002 10 10 | 644 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.0 | 0.7+ | 2006 08 31 | 704 | 0.2− | 0.1− |
| 2002 10 28 | 644 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.5+ | 0.9+ | 2006 08 31 | 704 | 0.3+ | 0.0 |
| 2002 10 28 | 644 | 0.3+ | 0.4+ | 2004 03 23 | 704 | 0.6− | 1.3+ | 2006 08 31 | 704 | 0.5+ | 1.0+ |
| 2002 10 28 | 644 | 0.1+ | 0.0 | 2005 05 11 | 703 | 1.3− | 0.6+ | 2006 09 16 | 704 | 0.9+ | 0.0 |
| 2002 10 30 | 704 | 0.1− | 0.1− | 2005 05 11 | 703 | 0.8+ | 1.4+ | 2006 09 16 | 704 | 0.8+ | 0.4− |
| 2002 10 30 | 704 | 0.4+ | 0.1+ | 2005 05 11 | 703 | 0.1− | 1.0+ | 2006 09 16 | 704 | 0.5+ | 0.0 |
| 2002 10 30 | 704 | 0.1+ | 0.7+ | 2005 05 11 | 703 | 0.3− | 0.0 | 2006 09 16 | 704 | (0.4+ | 1.7−) |
| 2002 10 30 | 704 | 0.2− | 0.4+ | 2005 05 20 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 699 | 0.9− | 0.5− |
| 2002 10 30 | 704 | 0.1+ | 0.6+ | 2005 05 20 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 699 | 0.7+ | 0.2+ |
| 2002 11 06 | 644 | 0.2− | 0.5+ | 2005 05 20 | 644 | 0.2+ | 0.8+ | 2006 09 17 | 699 | 0.5− | 0.4+ |
| 2002 11 06 | 644 | 0.4− | 0.3+ | 2005 06 25 | 644 | 0.3+ | 0.6+ | 2006 09 17 | 699 | 0.5+ | 0.9+ |
| 2002 11 06 | 644 | 0.2− | 0.2+ | 2005 06 25 | 644 | 0.2+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.4− |
| 2002 11 16 | 644 | 0.0 | 0.2+ | 2005 06 25 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.2− |
| 2002 11 16 | 644 | 0.0 | 0.2+ | 2005 07 01 | 644 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.4− | 0.2− |
| 2002 11 16 | 644 | 0.1+ | 0.2+ | 2005 07 01 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2002 11 30 | 704 | 1.1− | 0.6− | 2005 07 01 | 644 | 0.2− | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.1+ |
| 2002 11 30 | 704 | 0.0 | 0.0 | 2005 07 01 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.2− |
| 2002 11 30 | 704 | 0.8− | 0.4− | 2005 07 01 | 644 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.2− | 0.8+ |
| 2002 11 30 | 704 | 0.6− | 0.6− | 2005 07 01 | 644 | 0.5+ | 0.4+ | 2006 10 28 | E12 | 0.4− | 0.6− |
| 2002 12 13 | 644 | 0.3− | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.1+ | 2006 10 28 | E12 | 0.2+ | 0.3+ |
| 2002 12 13 | 644 | 0.4− | 0.4+ | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 10 28 | E12 | 0.4+ | 0.5− |
| 2002 12 13 | 644 | 0.4− | 0.5+ | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 10 28 | E12 | 0.6+ | 0.2− |
| 2002 12 30 | 608 | 1.0− | 0.5+ | 2006 08 21 | 644 | 0.4− | 0.3− | 2006 11 17 | 644 | 0.7+ | 0.3+ |
| 2002 12 30 | 608 | 0.7− | 0.4+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2002 12 30 | 608 | 0.0 | 0.1+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 11 17 | 644 | 0.6+ | 0.0 |
| 2003 01 02 | 704 | 0.1+ | 0.6− | 2006 08 23 | 704 | 0.9− | 0.0 | | | | |
| 2003 01 02 | 704 | 0.5+ | 0.2+ | 2006 08 23 | 704 | 0.6− | 0.5+ | | | | |

**(141890)∗ 2002 PD$_{55}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.14159 | | | (2000.0) | | |
| $n$ | 0.27166086 | $\omega$ | 173.05441 | | +0.99995901 | +0.00768350 |
| $a$ | 2.3611197 | $\Omega$ | 186.51111 | | −0.00889106 | +0.93332986 |
| $e$ | 0.2121497 | $i$ | 2.42137 | | +0.00171371 | +0.35893779 |
| $P$ | 3.63 | $H$ | 16.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 03 | 327 | 0.2+ | 0.1− | 2002 10 11 | 704 | 0.4− | 0.8− | 2006 11 02 | 703 | 0.9− | 0.2− |
| 1995 09 03 | 327 | 0.1− | 0.5+ | 2002 10 11 | 704 | 0.1− | 0.8+ | 2006 11 02 | 703 | 0.0 | 0.1− |
| 1995 09 03 | 327 | 0.1− | 0.1+ | 2002 10 11 | 704 | 1.2+ | 0.4+ | 2006 11 02 | 703 | 0.5− | 0.2− |
| 2002 07 30 | 608 | 0.1+ | 0.3− | 2005 04 11 | G96 | 0.4+ | 0.1− | 2006 11 02 | 703 | 0.4+ | 0.6− |
| 2002 07 30 | 608 | 0.2+ | 0.7− | 2005 04 11 | G96 | 0.4− | 0.4+ | 2006 11 12 | 703 | 0.3+ | 0.3− |
| 2002 07 30 | 608 | 0.0 | 0.4− | 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 11 12 | 703 | 0.1− | 0.0 |
| 2002 08 09 | 704 | 0.0 | 0.9+ | 2005 04 11 | G96 | 0.1+ | 0.2+ | 2006 11 12 | 703 | 0.4− | 0.3− |
| 2002 08 09 | 704 | 0.1+ | 0.5+ | 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 11 12 | 703 | 0.0 | 0.1− |
| 2002 08 09 | 704 | 0.2+ | 0.8+ | 2005 05 08 | 691 | 0.4+ | 0.4+ | 2006 11 14 | 704 | 0.6+ | 1.1+ |
| 2002 08 12 | 704 | 0.0 | 0.3+ | 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.9− | 0.1+ |
| 2002 08 12 | 704 | 0.3+ | 0.1− | 2005 05 08 | G96 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.5+ |
| 2002 08 12 | 704 | 0.4+ | 0.3+ | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.6− |
| 2002 08 12 | 704 | 0.0 | 0.4+ | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.3+ | 1.2+ |
| 2002 08 16 | 608 | 0.1− | 0.6+ | 2005 05 08 | G96 | 0.4− | 0.5+ | 2006 11 17 | 704 | 0.5− | 0.0 |
| 2002 08 16 | 608 | 0.1+ | 0.2+ | 2006 07 22 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.1− | 0.4+ |
| 2002 08 16 | 608 | 0.0 | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.6− | 2006 11 17 | 704 | 0.2− | 0.6+ |
| 2002 08 17 | 644 | 0.4− | 0.5+ | 2006 07 22 | G96 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.5− | 0.2+ |
| 2002 08 17 | 644 | 0.5− | 0.4+ | 2006 07 22 | G96 | 0.5− | 0.4− | 2006 11 17 | 704 | 0.8− | 0.4+ |
| 2002 08 17 | 644 | 0.5− | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 1.2− | 1.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.8+ |
| 2002 08 19 | 644 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2002 08 19 | 644 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.4+ |
| 2002 09 05 | 704 | 0.5+ | 0.7− | 2006 10 09 | 644 | 0.6+ | 0.3− | 2006 11 20 | 704 | 0.7+ | 0.8− |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 1.0+ | 1.0+ |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.8+ |
| 2002 09 05 | 704 | 0.5+ | 1.0− | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 1.3− | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.2− | 0.1− |
| 2002 09 13 | 704 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.7− |
| 2002 09 13 | 704 | 0.9− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.5− | 0.1− |
| 2002 09 13 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2002 09 14 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.6+ |
| 2002 09 14 | 644 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.8+ | 1.2+ |
| 2002 10 11 | 704 | 0.1+ | 0.8− | 2006 10 22 | G96 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.7+ | 0.2+ |
| 2002 10 11 | 704 | 0.7− | 0.7− | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.1− | 0.2+ |

**(141891)∗ 2002 PG$_{55}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.47994 | | (2000.0) | | +0.95738763 | −0.27424702 |
| $n$ | 0.26976634 | $\omega$ | 82.41564 | | +0.21038743 | +0.87704216 |
| $a$ | 2.3721613 | $\Omega$ | 293.46629 | | +0.19785361 | +0.39444343 |
| $e$ | 0.1393692 | $i$ | 5.66451 | | +0.39444343 | |
| $P$ | 3.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1+ | 0.7+ | 2002 09 06 | 704 | 0.1− | 0.2+ | 2006 10 20 | 704 | 0.4− | 0.3− |
| 1999 12 07 | 704 | 0.2+ | 0.3+ | 2002 09 06 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 704 | 0.5− | 1.0+ |
| 1999 12 07 | 704 | 0.5− | 0.4− | 2002 09 13 | 644 | 0.5− | 0.5+ | 2006 10 20 | 704 | 0.2− | 0.8+ |
| 2002 07 09 | 704 | 0.6− | 0.1+ | 2002 09 13 | 644 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.2+ |
| 2002 07 09 | 704 | 0.4+ | 0.5− | 2002 09 13 | 644 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.2+ | 0.2− |
| 2002 07 09 | 704 | 0.3− | 1.1+ | 2004 02 11 | 644 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2002 08 09 | 704 | 0.1+ | 1.0− | 2004 02 11 | 644 | 0.5+ | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2002 08 09 | 704 | 0.3+ | 0.7+ | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 08 09 | 704 | (0.1+ | 1.5+) | 2004 02 17 | 704 | 0.6+ | 1.2+ | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2002 08 09 | 704 | 0.3+ | 0.6+ | 2004 02 17 | 704 | 0.5+ | 0.7+ | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2002 08 09 | 608 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.3+ | 1.0+ | 2006 11 14 | 703 | 0.7− | 0.5− |
| 2002 08 09 | 608 | 0.3− | 1.1+ | 2004 02 17 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 2002 08 09 | 608 | 0.1− | 0.5+ | 2004 02 17 | 704 | 0.3+ | 0.9+ | 2006 11 14 | 703 | 0.6− | 0.2+ |
| 2002 08 12 | 704 | 0.4− | 0.2+ | 2004 02 17 | 704 | 0.9− | 0.9+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2002 08 12 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 1.0+ | 0.4− |
| 2002 08 12 | 704 | 1.0− | 0.2+ | 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.5− |
| 2002 08 12 | 704 | 0.4− | 0.3+ | 2006 09 24 | 113 | 0.3− | 1.3− | 2006 11 16 | 704 | 0.4+ | 0.8− |
| 2002 08 12 | 704 | 0.1+ | 0.7+ | 2006 09 24 | 113 | 0.2+ | 0.7− | 2006 11 16 | 704 | 0.1+ | 0.6− |
| 2002 08 13 | 699 | 0.0 | 0.5+ | 2006 09 24 | 113 | 0.5+ | 0.1− | 2006 11 17 | 644 | 0.1+ | 0.0 |
| 2002 08 13 | 699 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 17 | 644 | 0.2+ | 0.3+ |
| 2002 08 13 | 699 | 0.8− | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 17 | 644 | 0.1+ | 0.3+ |
| 2002 08 13 | 699 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 22 | 703 | (2.4+ | 0.8+) |
| 2002 08 26 | 644 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.2+ |
| 2002 08 26 | 644 | 0.1− | 0.2+ | 2006 10 03 | 291 | 0.2− | 0.0 | 2006 11 22 | 703 | 0.8+ | 0.3+ |
| 2002 08 26 | 644 | 0.0 | 0.5+ | 2006 10 03 | 291 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.5+ | 0.2− |
| 2002 08 28 | 644 | 0.2− | 0.2+ | 2006 10 03 | 291 | 0.5− | 0.0 | 2006 11 25 | G96 | 0.6+ | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.5+ | 0.1− |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.5+ | 0.1− |
| 2002 09 06 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.7− | 0.1− | | | | |
| 2002 09 06 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.0 | | | | |

**(141892)∗ 2002 PU$_{55}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.46022 | | (2000.0) | | +0.44662118 | +0.89465138 |
| $n$ | 0.27390582 | $\omega$ | 110.91839 | | −0.85772387 | +0.42451318 |
| $a$ | 2.3482007 | $\Omega$ | 185.64788 | | −0.25463560 | +0.13923886 |
| $e$ | 0.1232642 | $i$ | 6.61221 | | | |
| $P$ | 3.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 645 | 0.0 | 0.3+ | 2002 08 18 | 644 | 0.2+ | 0.0 | 2005 04 18 | 703 | 0.0 | 0.0 |
| 2001 02 22 | 645 | 0.0 | 0.3+ | 2002 08 26 | 644 | 0.1− | 0.3+ | 2005 04 18 | 703 | 0.1− | 1.2+ |
| 2001 03 02 | 699 | 0.4+ | 0.4+ | 2002 08 26 | 644 | 0.1− | 0.0 | 2005 04 18 | 703 | 0.7− | 0.2+ |
| 2001 03 02 | 699 | 1.1+ | 0.0 | 2002 08 26 | 644 | 0.0 | 0.2+ | 2005 05 07 | 703 | 0.9− | 0.4− |
| 2001 03 02 | 699 | 0.5+ | 0.6+ | 2002 08 27 | 644 | (2.4− | 0.4+) | 2005 05 07 | 703 | 0.9− | 0.8− |
| 2001 03 02 | 699 | 0.7+ | 1.1+ | 2002 08 27 | 644 | 0.7− | 0.3+ | 2005 05 07 | 703 | (1.4− | 2.8−) |
| 2001 03 18 | 704 | 1.0+ | 1.3+ | 2002 08 27 | 644 | 0.4− | 0.1+ | 2005 05 07 | 703 | 0.8− | 0.8− |
| 2001 03 18 | 704 | 0.0 | 0.9+ | 2002 08 29 | 644 | 0.1+ | 1.1+ | 2006 07 21 | G96 | 0.0 | 0.2+ |
| 2001 03 18 | 704 | 1.2+ | 0.8+ | 2002 08 29 | 644 | 0.3+ | 1.3+ | 2006 07 21 | G96 | 0.4+ | 0.2+ |
| 2002 07 21 | 644 | 0.2− | 0.2+ | 2002 08 29 | 644 | 0.3+ | 1.2+ | 2006 07 21 | G96 | 0.2+ | 0.2+ |
| 2002 07 21 | 644 | 0.4+ | 0.4+ | 2002 09 06 | 704 | 0.7+ | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.0 |
| 2002 07 21 | 644 | 0.2+ | 0.2+ | 2002 09 06 | 704 | 0.9+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.3+ |
| 2002 08 08 | 699 | 0.1− | 0.2− | 2002 09 06 | 704 | 1.0+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2002 08 08 | 699 | 0.6− | 0.3+ | 2002 09 06 | 704 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.5− |
| 2002 08 08 | 699 | 0.5− | 0.5+ | 2002 09 13 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2002 08 08 | 699 | 0.5− | 0.3+ | 2002 09 13 | 644 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2002 08 09 | 704 | 0.2+ | 0.3− | 2002 09 13 | 644 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2002 08 09 | 704 | 0.6− | 0.8+ | 2002 10 04 | 704 | 1.1+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2002 08 09 | 704 | 0.8− | 0.3− | 2002 10 04 | 704 | 0.9− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2002 08 09 | 704 | 0.1+ | 0.3+ | 2002 10 04 | 704 | 0.2− | 0.9+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2002 08 12 | 704 | 1.0− | 0.5+ | 2002 10 04 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2002 08 12 | 704 | 0.7− | 0.6+ | 2005 03 14 | G96 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2002 08 12 | 704 | 0.6− | 0.2− | 2005 03 14 | G96 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.4− |
| 2002 08 12 | 704 | 0.1+ | 0.0 | 2005 03 14 | G96 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.4+ | 0.8+ |
| 2002 08 13 | 699 | 0.7− | 0.1− | 2005 03 14 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2002 08 13 | 699 | (1.0− | 2.2−) | 2005 04 05 | 703 | (0.2− | 2.6−) | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2002 08 13 | 699 | (1.7+ | 0.5−) | 2005 04 05 | 703 | 0.8+ | 0.8− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2002 08 13 | 699 | 0.2+ | 0.7+ | 2005 04 05 | 703 | (1.6+ | 0.7−) | 2006 11 13 | 644 | 0.2+ | 0.4+ |
| 2002 08 16 | 644 | 0.2− | 0.3+ | 2005 04 05 | 703 | (0.2+ | 1.7−) | 2006 11 13 | 703 | 1.0− | 0.4− |
| 2002 08 16 | 644 | 0.1− | 0.3+ | 2005 04 12 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.0 |
| 2002 08 16 | 644 | 0.1+ | 0.5+ | 2005 04 12 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.4+ |
| 2002 08 18 | 644 | 0.2+ | 0.2+ | 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 1.1− | 0.1+ |
| 2002 08 18 | 644 | 0.2+ | 0.0 | 2005 04 18 | 703 | 0.1+ | 0.8+ | 2006 11 13 | 703 | 0.2+ | 0.9+ |

**(141893)∗ 2002 PA$_{56}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.52775 | | (2000.0) | | +0.69911801 | −0.71211962 |
| $n$ | 0.29716583 | $\omega$ | 126.26567 | | +0.63338315 | +0.65845931 |
| $a$ | 2.2240103 | $\Omega$ | 279.24291 | | +0.33175262 | +0.24355079 |
| $e$ | 0.1271544 | $i$ | 3.72852 | | | |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.1+ | 0.1− | 2002 08 17 | 644 | 0.3− | 0.9+ | 2004 03 16 | 704 | 0.5+ | 0.3+ |
| 1999 10 12 | 704 | 0.8+ | 0.7− | 2002 08 17 | 644 | 0.0 | 0.8+ | 2004 03 16 | 704 | 0.9+ | 0.3+ |
| 1999 10 12 | 704 | 0.2+ | 0.4− | 2002 08 17 | 644 | 0.2+ | 0.8+ | 2004 03 27 | 703 | (2.9+ | 0.6+) |
| 1999 10 12 | 704 | 0.8+ | 0.1− | 2002 08 26 | 644 | 0.3+ | 0.1+ | 2004 03 27 | 703 | (0.9− | 2.6+) |
| 1999 10 12 | 704 | 0.3+ | 0.2+ | 2002 08 26 | 644 | 0.1− | 0.1+ | 2004 03 27 | 703 | (2.2+ | 1.5+) |
| 1999 11 04 | 704 | 0.0 | 0.7− | 2002 08 26 | 644 | 0.2+ | 0.0 | 2004 03 27 | 703 | 0.5− | 0.4− |
| 1999 11 04 | 704 | 0.1− | 0.2− | 2002 09 06 | 704 | 0.4− | 0.8+ | 2006 09 25 | 691 | 0.4+ | 0.2+ |
| 1999 11 04 | 704 | 0.3− | 0.2+ | 2002 09 06 | 704 | 0.2− | 0.9+ | 2006 09 25 | 691 | 0.2+ | 0.4+ |
| 1999 11 04 | 703 | 0.1− | 0.7+ | 2002 09 06 | 704 | 0.9+ | 1.2+ | 2006 09 25 | 691 | 0.6+ | 0.2+ |
| 1999 11 04 | 704 | 0.4+ | 1.1− | 2002 09 13 | 644 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.2+ |
| 1999 11 04 | 703 | 1.2− | 1.1+ | 2002 09 13 | 644 | 0.6− | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 1999 11 04 | 704 | 0.1− | 1.4− | 2002 09 13 | 644 | 0.4− | 0.2− | 2006 10 23 | G96 | 0.4− | 0.1+ |
| 1999 11 04 | 703 | 0.5+ | 0.4+ | 2002 09 14 | 644 | 0.0 | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 703 | 1.0− | 0.7+ | 2002 09 14 | 644 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.7− | 0.3− |
| 2002 08 09 | 704 | 0.2− | 0.4+ | 2002 09 14 | 644 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.3− | 0.2+ |
| 2002 08 09 | 704 | 0.9− | 0.4− | 2004 03 12 | 644 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.5− | 0.2− |
| 2002 08 09 | 704 | 0.1+ | 0.1− | 2004 03 12 | 644 | 0.3+ | 0.7+ | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2002 08 09 | 704 | 0.6− | 0.2+ | 2004 03 12 | 644 | 0.3+ | 0.4+ | 2006 12 01 | G96 | 0.6− | 0.4+ |
| 2002 08 12 | 704 | 0.0 | 0.3− | 2004 03 16 | 704 | 0.2− | 0.7+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2002 08 12 | 704 | 0.1+ | 0.7+ | 2004 03 16 | 704 | 0.9+ | 0.7+ | 2006 12 01 | G96 | 0.1− | 0.2+ |
| 2002 08 12 | 704 | 0.8+ | 0.4− | 2004 03 16 | 704 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.1+ |

**(141894)∗ 2002 PC$_{56}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.53214 | | (2000.0) | | +0.91360095 | +0.40625868 |
| $n$ | 0.25550980 | $\omega$ | 165.22681 | | −0.38293537 | +0.87366960 |
| $a$ | 2.4595992 | $\Omega$ | 170.74884 | | −0.13672531 | +0.26768509 |
| $e$ | 0.1496840 | $i$ | 6.05103 | | | |
| $P$ | 3.86 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 691 | 0.0 | 0.6+ | 2005 03 11 | 691 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2001 04 15 | 691 | 0.1+ | 0.5+ | 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.6+ |
| 2001 04 15 | 691 | 0.2+ | 0.8+ | 2005 03 11 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.2− |
| 2002 07 22 | 644 | 0.3− | 0.4+ | 2005 04 01 | 691 | 0.6− | 0.4− | 2006 09 25 | 699 | 0.5− | 0.4+ |
| 2002 07 22 | 644 | 0.2− | 0.2+ | 2005 04 01 | 691 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.1+ | 0.5− |
| 2002 07 22 | 644 | 0.0 | 0.2+ | 2005 04 01 | 691 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.3+ | 0.1+ |
| 2002 07 30 | 608 | 0.2− | 1.4− | 2005 05 04 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2002 07 30 | 608 | 0.2− | 0.9− | 2005 05 04 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2002 07 30 | 608 | 0.5− | 0.4− | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.2− |
| 2002 08 08 | 699 | 0.4− | 0.4− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.1+ |
| 2002 08 08 | 699 | 0.4− | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.9+ |
| 2002 08 08 | 699 | 0.2+ | 1.1− | 2006 08 28 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2002 08 08 | 699 | 0.2− | 0.2− | 2006 09 01 | 704 | 0.6+ | 1.3− | 2006 09 26 | G96 | 0.5+ | 0.2− |
| 2002 08 09 | 704 | (1.9+ | 0.1+) | 2006 09 01 | 704 | (1.0− | 1.8+) | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2002 08 09 | 704 | 0.5+ | 0.1+ | 2006 09 01 | 704 | 0.9+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2002 08 09 | 704 | (1.8+ | 0.1−) | 2006 09 01 | 704 | 0.5+ | 1.2− | 2006 09 27 | 704 | 0.4− | 0.8+ |
| 2002 08 09 | 704 | 0.5+ | 0.9− | 2006 09 01 | 704 | 0.5− | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.1− | 0.4+ | 2006 09 01 | 704 | 0.2+ | 0.9− | 2006 09 27 | 704 | 1.0− | 0.3+ |
| 2002 08 12 | 704 | 0.3+ | 0.2+ | 2006 09 01 | 704 | (1.8− | 0.7+) | 2006 09 27 | 704 | 0.5− | 0.3+ |
| 2002 08 12 | 704 | 0.1+ | 0.3+ | 2006 09 01 | 704 | 0.3− | 0.6+ | 2006 09 27 | 704 | 0.5− | 0.2+ |
| 2002 08 12 | 704 | 0.1+ | 0.4+ | 2006 09 06 | 699 | (2.1+ | 1.7+) | 2006 09 28 | 704 | 0.9− | 0.9− |
| 2002 08 12 | 704 | 0.2+ | 0.6+ | 2006 09 06 | 699 | 0.7+ | 0.7+ | 2006 09 28 | 704 | 0.1− | 0.7− |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2006 09 06 | 699 | 0.3+ | 1.4+ | 2006 09 28 | 704 | 1.2− | 0.9+ |
| 2002 08 16 | 644 | 0.0 | 0.1+ | 2006 09 06 | 699 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.6− | 0.4+ |
| 2002 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.7− | 0.8− |
| 2002 08 17 | 644 | 0.4+ | 1.2+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.7− | 0.1+ |
| 2002 08 17 | 644 | 0.3+ | 1.2+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.6− | 0.2+ |
| 2002 08 17 | 644 | 0.3+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.2+ |
| 2002 08 27 | 644 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | 704 | 1.3− | 0.1− |
| 2002 08 27 | 644 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.5− | 0.1− |
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.5− | 0.6+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.3− | 0.0 | 2006 09 16 | 699 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.2+ | 0.4− | 2006 09 16 | 699 | 0.5− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | 0.2− | 0.7− | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.0 | 0.4− | 2006 09 17 | 704 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.6− |
| 2002 09 14 | 644 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.7+ |
| 2002 09 14 | 644 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.9+ | 0.4+ |
| 2002 09 16 | 608 | 1.3+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2002 09 16 | 608 | (1.6+ | 0.4−) | 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 09 16 | 608 | 1.0+ | 0.3+ | 2006 09 19 | 699 | 0.4+ | 0.7− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 10 08 | 699 | 1.0− | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 08 | 699 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.6+ | 0.1− |
| 2002 10 08 | 699 | 0.6− | 0.3− | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 10 08 | 699 | 0.5− | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2003 12 22 | 691 | 0.1+ | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.7+ | 0.3− |
| 2003 12 22 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.5− | 0.4+ | 2006 10 24 | 644 | 0.2− | 0.2− |
| 2003 12 22 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2005 03 09 | G96 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 10 24 | 644 | 0.6− | 0.1+ |
| 2005 03 09 | G96 | 0.1− | 0.8− | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2005 03 09 | G96 | 0.3+ | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2005 03 09 | G96 | 0.7− | 0.2− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1− |

**(141895)∗ 2002 PP$_{56}$ = 1995 UA$_{17}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35272)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.15123 | | (2000.0) | | +0.89356507 | +0.44888229 |
| $n$ | 0.26838592 | $\omega$ | 148.78183 | | −0.42749181 | +0.84616789 |
| $a$ | 2.3802883 | $\Omega$ | 184.56211 | | −0.13708473 | +0.28723612 |
| $e$ | 0.1945650 | $i$ | 4.90025 | | | |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.0 | 0.2− | 2002 09 06 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.4+ |
| 1995 10 17 | 691 | 0.1− | 0.0 | 2002 09 06 | 704 | 0.4+ | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 1995 10 17 | 691 | 0.1+ | 0.2− | 2002 09 06 | 704 | 0.8+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.3− |
| 1995 10 23 | 691 | 0.1− | 0.1− | 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 1995 10 23 | 691 | 0.0 | 0.1− | 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 1995 10 23 | 691 | 0.2− | 0.2− | 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 1.1+ | 1.3+ |
| 1997 03 03 | 691 | 0.3+ | 0.5+ | 2002 09 15 | 608 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.5− | 1.2+ |
| 1997 03 03 | 691 | 0.4+ | 0.3+ | 2002 09 15 | 608 | 0.1+ | 0.1− | 2006 10 16 | 703 | (1.0+ | 1.7+) |
| 1997 03 03 | 691 | 0.1+ | 0.5+ | 2002 09 15 | 608 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2001 03 21 | 691 | 0.2+ | 0.2+ | 2002 09 30 | 608 | 0.7− | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.8+ |
| 2001 03 21 | 691 | 0.2+ | 0.3+ | 2002 09 30 | 608 | 0.5− | 0.8+ | 2006 10 16 | 703 | 1.4− | 0.1+ |
| 2001 03 21 | 691 | 0.1+ | 0.3+ | 2002 09 30 | 608 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2001 03 26 | 695 | 0.2+ | 0.6+ | 2002 10 03 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.8+ |
| 2001 03 26 | 695 | 0.4+ | 0.6+ | 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2002 07 09 | 704 | 0.5− | 0.2− | 2002 10 03 | 704 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2002 07 09 | 704 | 0.5− | 0.3− | 2002 10 03 | 704 | 0.4− | 0.0 | 2006 10 18 | 691 | 0.2− | 0.0 |
| 2002 07 09 | 704 | 0.2− | 0.0 | 2002 10 05 | 704 | 0.1− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 07 09 | 704 | 0.2− | 0.2− | 2002 10 05 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2002 08 09 | 704 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2002 08 09 | 704 | 0.2− | 0.2+ | 2002 10 05 | 704 | 0.0 | 0.0 | 2006 10 27 | 683 | 1.3+ | 0.2− |
| 2002 08 09 | 704 | 0.1− | 0.3+ | 2002 10 05 | 704 | 0.8+ | 0.3− | 2006 10 27 | 683 | 0.6+ | 0.0 |
| 2002 08 09 | 704 | 0.3− | 0.3+ | 2002 10 07 | 704 | 1.5+ | 0.1+ | 2006 10 27 | 683 | 0.1+ | 0.1− |
| 2002 08 09 | 608 | 0.4− | 1.2+ | 2002 10 07 | 704 | (1.9+ | 0.2−) | 2006 10 28 | 683 | 0.2− | 0.2− |
| 2002 08 09 | 608 | 0.8− | 1.0+ | 2002 10 07 | 704 | 1.0+ | 0.5− | 2006 10 28 | 683 | 0.4+ | 0.6+ |
| 2002 08 09 | 608 | 0.6− | 0.9+ | 2002 10 07 | 704 | 0.7+ | 0.8− | 2006 10 28 | 683 | 0.1− | 0.2+ |
| 2002 08 12 | 704 | 0.5− | 0.2+ | 2002 10 09 | 699 | 1.1+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 1.2− | 0.3+ | 2002 10 09 | 699 | 0.6+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 08 12 | 704 | 0.1− | 0.2+ | 2002 10 09 | 699 | 0.0 | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 08 12 | 704 | 1.3− | 0.6+ | 2002 10 09 | 699 | 0.4− | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2002 08 12 | 704 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | (0.3− | 1.5+) |
| 2002 08 13 | 699 | 0.3+ | 0.1− | 2002 10 11 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7− | 1.0− |
| 2002 08 13 | 699 | 0.1+ | 0.0 | 2002 10 11 | 704 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 2002 08 13 | 699 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.5− | 0.1− | 2006 11 14 | 704 | 0.7+ | 0.1+ |
| 2002 08 13 | 699 | 0.1+ | 0.8+ | 2002 10 11 | 704 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.2+ | 0.3+ |
| 2002 08 16 | 644 | 0.1− | 0.3+ | 2005 03 13 | G96 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.4− | 1.3+ |
| 2002 08 16 | 644 | 0.0 | 0.4+ | 2005 03 13 | G96 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.0 | 1.1+ |
| 2002 08 16 | 644 | 0.0 | 0.5+ | 2005 03 13 | G96 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 2002 08 17 | 608 | 0.4− | 0.3− | 2005 03 13 | G96 | 0.7− | 0.4+ | 2006 11 17 | 704 | 0.4− | 1.0+ |
| 2002 08 17 | 608 | 0.3− | 0.4− | 2005 04 16 | 691 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 08 17 | 608 | 0.4− | 0.2− | 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 08 27 | 644 | 0.0 | 0.0 | 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 1.1− | 0.5+ |
| 2002 08 27 | 644 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 08 27 | 644 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 608 | 0.2+ | 0.3− | 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.5+ | 0.2− |
| 2002 09 05 | 608 | 0.1+ | 0.4− | 2006 07 21 | G96 | 0.2− | 0.6− | 2006 11 20 | 704 | 0.1− | 0.5− |
| 2002 09 05 | 608 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.1+ | 2006 11 20 | 704 | (1.7+ | 0.1+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.5− | 2006 11 20 | 704 | 0.3+ | 1.1+ |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.9− | 0.0 | 2006 11 20 | 704 | 0.8+ | 0.1− |

**(141896)∗ 2002 PG$_{57}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.29747 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25525506 | $\omega$ | 41.48205 | | +0.99332395 | +0.08929010 | |
| $a$ | 2.4612353 | $\Omega$ | 313.23697 | | −0.11295840 | +0.88133880 | |
| $e$ | 0.1445604 | $i$ | 5.75396 | | +0.02340797 | +0.46397112 | |
| $P$ | 3.86 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.3+ | 0.5− | 2002 09 13 | 644 | 0.1− | 0.4+ | 2004 01 30 | 704 | 0.8+ | 0.1− |
| 1998 08 17 | 704 | 1.3− | 0.0 | 2002 09 30 | 704 | 0.7− | 1.1+ | 2004 02 26 | 695 | 0.2− | 0.2+ |
| 1998 08 17 | 704 | 1.2+ | 0.8− | 2002 09 30 | 704 | (1.6− | 1.3+) | 2004 02 26 | 695 | 0.3− | 0.1+ |
| 1998 08 17 | 704 | 0.2+ | 1.2− | 2002 09 30 | 704 | 1.1− | 1.1+ | 2005 05 16 | 644 | 0.1− | 0.5+ |
| 1998 08 17 | 704 | (3.4− | 1.0+) | 2002 09 30 | 704 | 0.5− | 1.4+ | 2005 05 16 | 644 | 0.1− | 0.8+ |
| 2000 01 13 | 691 | 0.3+ | 0.0 | 2002 10 03 | 644 | 0.2+ | 0.4+ | 2005 05 16 | 644 | 0.0 | 1.1+ |
| 2000 01 13 | 691 | 0.4+ | 0.0 | 2002 10 03 | 644 | 0.0 | 0.1+ | 2006 08 29 | 699 | 0.1− | 0.9+ |
| 2000 01 13 | 691 | 0.3+ | 0.3− | 2002 10 03 | 644 | 0.2+ | 0.6+ | 2006 08 29 | 699 | 0.1+ | 0.2+ |
| 2000 01 13 | 691 | 0.3− | 0.2− | 2002 10 04 | 704 | 0.1− | 0.2+ | 2006 08 29 | 699 | 0.3+ | 0.3+ |
| 2000 01 13 | 691 | 0.3− | 0.2− | 2002 10 04 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 2000 01 13 | 691 | 0.7− | 0.2− | 2002 10 04 | 704 | 0.5− | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2002 07 09 | 704 | 0.7+ | 0.9+ | 2002 10 04 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 644 | 0.3− | 0.3+ |
| 2002 07 09 | 704 | 0.7+ | 1.2+ | 2002 10 04 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 703 | 0.5− | 0.0 |
| 2002 07 09 | 704 | 0.4− | 0.3− | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.3+ | 0.3− |
| 2002 08 09 | 704 | (2.2− | 3.0+) | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.1− | 0.3− |
| 2002 08 09 | 704 | (0.0 | 1.8+) | 2002 10 07 | 699 | 0.5− | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.3− |
| 2002 08 09 | 704 | 0.1+ | 1.2+ | 2002 10 07 | 699 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.5− |
| 2002 08 12 | 704 | 0.7+ | 0.9+ | 2002 10 07 | 699 | 0.3− | 0.6− | 2006 09 19 | 699 | 0.6+ | 0.2+ |
| 2002 08 12 | 704 | 0.7− | 0.3− | 2002 10 07 | 699 | 1.2+ | 1.5− | 2006 09 19 | 699 | 0.6− | 0.3− |
| 2002 08 12 | 704 | 0.5+ | 0.0 | 2002 10 09 | 704 | 0.3− | 0.7+ | 2006 09 19 | 699 | 0.4+ | 0.6− |
| 2002 08 12 | 704 | 0.2− | 0.1+ | 2002 10 09 | 704 | 0.6− | 0.9+ | 2006 09 27 | 699 | 0.2+ | 0.1+ |
| 2002 08 12 | 704 | 0.3− | 0.3+ | 2002 10 09 | 704 | 0.9− | 0.0 | 2006 09 27 | 699 | 0.7− | 0.0 |
| 2002 08 28 | 644 | 0.0 | 0.9+ | 2002 10 09 | 704 | 0.2− | 0.3+ | 2006 09 27 | 699 | 0.3+ | 0.3+ |
| 2002 08 28 | 644 | 0.1− | 0.8+ | 2002 10 09 | 704 | 0.2− | 0.4+ | 2006 09 27 | 699 | 0.8− | 0.4+ |
| 2002 08 28 | 644 | 0.1+ | 0.7+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.5− |
| 2002 08 30 | 699 | 0.6− | 0.1− | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.0 | 0.3− |
| 2002 08 30 | 699 | 0.7− | 0.6+ | 2002 10 12 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.2− |
| 2002 08 30 | 699 | 0.4+ | 1.1+ | 2002 10 12 | 704 | 0.7+ | 0.4− | 2006 09 27 | 703 | 0.5− | 0.3− |
| 2002 08 30 | 699 | 0.3+ | 0.5+ | 2002 10 12 | 704 | 0.5+ | 1.5− | 2006 10 03 | 704 | 0.7− | 0.9+ |
| 2002 09 04 | 699 | 0.6+ | 1.1+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.9− | 1.3+ |
| 2002 09 04 | 699 | 0.4+ | 0.7+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.9− | 1.2+ |
| 2002 09 04 | 699 | 0.2+ | 0.1+ | 2002 11 08 | 645 | 0.1− | 0.3− | 2006 10 03 | 704 | 0.8− | 1.0+ |
| 2002 09 04 | 699 | 0.4+ | 0.5+ | 2002 11 08 | 645 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2004 01 16 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2004 01 16 | 644 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | 0.0 | 0.6+ | 2004 01 16 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.1− | 2004 01 28 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2004 01 28 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.3− | 0.0 | 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.5+ |
| 2002 09 06 | 704 | 0.2− | 0.2− | 2004 01 30 | 704 | (0.5+ | 1.5+) | 2006 11 28 | 704 | 0.4+ | 1.1+ |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2004 01 30 | 704 | 1.0+ | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.3− |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.7+ | 1.1+ | 2006 11 28 | 704 | 1.8+ | 0.1− |

**(141897)∗ 2002 PC$_{60}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.16805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27279569 | $\omega$ | 309.72392 | | +0.90996995 | −0.41082944 | |
| $a$ | 2.3545670 | $\Omega$ | 74.59921 | | +0.39609278 | +0.82092241 | |
| $e$ | 0.2193834 | $i$ | 3.35001 | | +0.12274039 | +0.39661765 | |
| $P$ | 3.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.6− | 1.1− | 2002 09 17 | 608 | 1.2− | 0.7− | 2002 11 07 | 704 | 0.2+ | 0.0 |
| 2000 01 04 | 704 | 0.8+ | 1.2− | 2002 09 17 | 608 | 1.1− | 0.7− | 2002 11 07 | 704 | 0.6− | 0.8+ |
| 2000 01 04 | 704 | 0.4− | 0.2− | 2002 09 17 | 608 | 1.2− | 0.6− | 2002 11 07 | 704 | 0.5− | 0.4+ |
| 2000 02 11 | 704 | 0.7− | 0.7+ | 2002 09 27 | 699 | 0.6+ | 0.4+ | 2002 11 11 | 704 | 0.4− | 0.3− |
| 2000 02 11 | 704 | 0.3+ | 0.3− | 2002 09 27 | 699 | 0.0 | 0.3+ | 2002 11 11 | 704 | 0.4+ | 0.1+ |
| 2000 02 11 | 704 | 0.2− | 1.4− | 2002 09 27 | 699 | 0.0 | 0.5+ | 2002 11 11 | 704 | 0.6− | 0.6− |
| 2000 02 11 | 704 | 0.6− | 0.9− | 2002 09 27 | 699 | 0.2+ | 0.6+ | 2002 11 11 | 704 | 0.6− | 0.5− |
| 2000 02 11 | 704 | 0.6+ | 1.6− | 2002 09 29 | 608 | (1.2− | 2.2+) | 2002 11 11 | 704 | 0.2− | 0.0 |
| 2001 05 02 | 644 | 0.3− | 0.9+ | 2002 09 29 | 608 | (1.3− | 2.4+) | 2002 11 19 | 644 | 0.1− | 0.4+ |
| 2001 05 02 | 644 | 0.1+ | 1.2+ | 2002 09 29 | 608 | (1.0− | 2.3+) | 2002 11 19 | 644 | 0.0 | 0.4+ |
| 2001 05 02 | 644 | 0.1+ | 0.7+ | 2002 10 01 | 699 | 0.2− | 0.1+ | 2002 11 19 | 644 | 0.1+ | 0.0 |
| 2001 05 24 | 807 | 0.3+ | 0.4+ | 2002 10 01 | 699 | 0.5− | 0.3− | 2002 11 30 | 608 | 1.0− | 0.4− |
| 2001 05 24 | 807 | 0.4+ | 0.5+ | 2002 10 01 | 699 | 0.5− | 0.0 | 2002 11 30 | 608 | 0.1− | 1.1− |
| 2002 08 10 | 704 | 0.3+ | 0.8+ | 2002 10 01 | 699 | 0.0 | 0.2+ | 2002 11 30 | 608 | (1.5− | 1.8−) |
| 2002 08 10 | 704 | 0.3+ | 1.2− | 2002 10 02 | 360 | 0.5+ | 0.2− | 2002 12 07 | 704 | (1.9− | 0.5+) |
| 2002 08 10 | 704 | 0.5+ | 0.4+ | 2002 10 02 | 360 | 0.5+ | 0.2− | 2002 12 07 | 704 | 0.5+ | 0.0 |
| 2002 08 10 | 704 | 1.3+ | 0.7+ | 2002 10 03 | 704 | 0.4+ | 0.1+ | 2002 12 07 | 704 | 0.7− | 0.6+ |
| 2002 08 10 | 704 | 0.1+ | 0.9+ | 2002 10 03 | 704 | 0.6+ | 0.1+ | 2002 12 07 | 704 | 0.8− | 1.3+ |
| 2002 08 12 | 704 | 0.0 | 1.0− | 2002 10 03 | 704 | 0.3+ | 0.1− | 2002 12 07 | 704 | 0.6− | 1.1+ |
| 2002 08 12 | 704 | 1.0+ | 0.2+ | 2002 10 03 | 704 | 0.3+ | 0.0 | 2003 01 04 | 704 | 0.6− | 1.0− |
| 2002 08 12 | 704 | 1.2+ | 0.9+ | 2002 10 06 | 704 | 0.3− | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.3+ |
| 2002 08 31 | 699 | 0.1− | 0.2+ | 2002 10 06 | 704 | 0.1− | 0.3+ | 2003 01 04 | 704 | 0.1+ | 0.1+ |
| 2002 08 31 | 699 | 0.5− | 0.0 | 2002 10 06 | 704 | 0.2+ | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.5+ |
| 2002 08 31 | 699 | 0.1− | 0.5+ | 2002 10 06 | 704 | 0.0 | 0.1− | 2003 01 04 | 704 | 0.5− | 0.7+ |
| 2002 08 31 | 699 | 0.2− | 0.4− | 2002 10 06 | 704 | 0.1− | 0.5+ | 2004 03 17 | 691 | 0.0 | 0.4+ |
| 2002 09 04 | 699 | 0.0 | 0.8+ | 2002 10 08 | 699 | 0.7+ | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.5+ |
| 2002 09 04 | 699 | 0.3+ | 0.6+ | 2002 10 08 | 699 | 0.3− | 0.3+ | 2004 03 17 | 691 | 0.2+ | 0.4+ |
| 2002 09 04 | 699 | 0.6+ | 0.6+ | 2002 10 08 | 699 | 0.0 | 0.1+ | 2004 03 18 | 704 | (1.9+ | 1.0+) |
| 2002 09 04 | 699 | 0.6+ | 0.3+ | 2002 10 08 | 699 | 0.6+ | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.7+ |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2002 10 11 | 704 | 0.1− | 0.3− | 2004 03 18 | 704 | 1.4+ | 0.3+ |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.5+ | 1.1+ |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.1− | 2004 03 18 | 704 | 1.0+ | 1.1+ |
| 2002 09 05 | 704 | 0.2− | 0.4− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.1− | 1.1+ |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.0 | 0.1− | 2004 03 19 | 704 | 1.0− | 0.6+ |
| 2002 09 06 | 704 | 0.1− | 1.0+ | 2002 10 11 | 704 | 0.4− | 0.2+ | 2004 03 19 | 704 | 1.0+ | 1.4+ |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2002 10 11 | 704 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.3+ | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.7+ | 2002 10 11 | 704 | 0.3− | 0.5− | 2006 08 21 | 691 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2002 10 11 | 704 | 0.4− | 0.4− | 2006 08 21 | 691 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2002 10 29 | 704 | 0.2+ | 0.1+ | 2006 08 21 | 691 | 0.1+ | 0.1− |
| 2002 09 08 | 608 | 0.0 | 0.4− | 2002 10 29 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.6− |
| 2002 09 08 | 608 | 0.1− | 0.4− | 2002 10 29 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.0 |
| 2002 09 08 | 608 | 0.1+ | 0.1− | 2002 10 29 | 704 | 1.1+ | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2002 09 13 | 608 | 0.2− | 0.0 | 2002 10 29 | 704 | 0.7− | 0.0 | 2006 11 21 | 704 | 1.0− | 0.5− |
| 2002 09 13 | 608 | 0.2− | 0.4− | 2002 11 05 | 699 | 0.2− | 0.8+ | 2006 12 01 | 704 | 1.2+ | 0.2+ |
| 2002 09 13 | 608 | 0.2− | 0.1− | 2002 11 05 | 699 | 0.4− | 0.0 | 2006 12 01 | 704 | 0.9+ | 1.5+ |
| 2002 09 16 | 644 | 0.8− | 0.6− | 2002 11 05 | 699 | 0.1+ | 0.1− | 2006 12 01 | 704 | 1.1+ | 1.5+ |
| 2002 09 16 | 644 | 0.2− | 0.3− | 2002 11 05 | 699 | 0.7+ | 0.2− | 2006 12 01 | 704 | 0.1− | 0.4+ |
| 2002 09 16 | 644 | 0.3− | 0.5− | 2002 11 07 | 704 | 0.1− | 0.3+ | | | | |

**(141898)∗ 2002 PC$_{62}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.64889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25486909 | $\omega$ | 249.25406 | | +0.99856187 | −0.02034188 | |
| $a$ | 2.4637196 | $\Omega$ | 111.88460 | | +0.03765922 | +0.92465958 | |
| $e$ | 0.2264849 | $i$ | 3.06418 | | −0.03815723 | +0.38025107 | |
| $P$ | 3.87 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 691 | 0.3+ | 0.1− | 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2000 01 29 | 691 | 0.7− | 0.6+ | 2005 04 18 | 691 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.1− |
| 2000 01 29 | 691 | 0.1+ | 0.3+ | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2002 08 08 | 699 | 0.2+ | 0.3+ | 2005 04 18 | 691 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.0 |
| 2002 08 08 | 699 | 0.2+ | 0.7+ | 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.1− |
| 2002 08 08 | 699 | 0.2− | 1.0+ | 2005 05 13 | 691 | 0.2− | 0.0 | 2006 09 16 | 704 | 0.2− | 0.9− |
| 2002 08 08 | 699 | 0.1+ | 1.1− | 2005 05 13 | 691 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.2+ | 0.3− |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2006 08 18 | 704 | 0.7− | 0.7− | 2006 09 16 | 704 | 0.6− | 0.4+ |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2006 08 18 | 704 | 0.7− | 0.2+ | 2006 09 16 | 704 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.2− | 0.1− | 2006 08 18 | 704 | 0.3− | 0.3− | 2006 09 16 | 704 | 0.2− | 0.6− |
| 2002 08 12 | 608 | 0.5+ | 0.0 | 2006 08 23 | 704 | 0.3− | 0.5− | 2006 09 19 | 704 | 0.0 | 1.3+ |
| 2002 08 12 | 608 | 0.1+ | 0.3− | 2006 08 23 | 704 | 0.5− | 0.3− | 2006 09 19 | 704 | 0.1− | 0.6+ |
| 2002 08 12 | 608 | 0.1+ | 0.1− | 2006 08 23 | 704 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.2+ | 0.5+ |
| 2002 08 14 | 704 | 0.2+ | 0.5+ | 2006 08 23 | 704 | 0.1− | 0.6+ | 2006 09 19 | 704 | 0.9− | 1.2+ |
| 2002 08 14 | 704 | 0.1+ | 0.1+ | 2006 08 23 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 704 | 1.0− | 1.0+ |
| 2002 08 14 | 704 | 0.5+ | 1.0+ | 2006 08 23 | 644 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.2+ | 0.5+ |
| 2002 08 14 | 704 | 0.1+ | 1.0+ | 2006 08 23 | 644 | 0.3+ | 0.1+ | 2006 09 21 | 699 | 0.5+ | 1.1+ |
| 2002 08 14 | 704 | 0.1− | 1.6+ | 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.2− |
| 2002 08 18 | 644 | 0.4+ | 0.1− | 2006 08 28 | 704 | (1.7+ | 2.2+) | 2006 09 21 | 699 | 0.2− | 0.3+ |
| 2002 08 18 | 644 | 0.4+ | 0.0 | 2006 08 28 | 704 | 1.0+ | 1.7+ | 2006 09 22 | 704 | 0.4− | 0.1− |
| 2002 08 18 | 644 | 0.3+ | 0.1− | 2006 08 28 | 704 | (0.5+ | 3.3+) | 2006 09 22 | 704 | 0.3− | 0.9+ |
| 2002 08 29 | 644 | 0.1− | 0.3− | 2006 08 28 | 704 | 0.9+ | 1.1+ | 2006 09 22 | 704 | 0.2− | 0.4+ |
| 2002 08 29 | 644 | 0.0 | 0.4− | 2006 08 28 | 704 | (0.6+ | 2.4+) | 2006 09 22 | 704 | 0.1+ | 0.5+ |
| 2002 08 29 | 644 | 0.0 | 0.5− | 2006 08 30 | 699 | 0.4− | 0.1− | 2006 09 22 | 704 | 0.1+ | 0.1− |
| 2002 08 31 | 704 | 0.5− | 0.3− | 2006 08 30 | 704 | 0.4+ | 1.4+ | 2006 09 25 | 699 | 0.1− | 0.8+ |
| 2002 08 31 | 704 | 0.8− | 0.7− | 2006 08 30 | 699 | 0.3− | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.5+ |
| 2002 08 31 | 704 | 0.5− | 0.4− | 2006 08 30 | 704 | 0.8+ | 1.5+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2002 08 31 | 704 | 1.2− | 0.8− | 2006 08 30 | 704 | 0.1+ | 1.6+ | 2006 09 25 | 699 | 0.0 | 0.5+ |
| 2002 09 05 | 704 | 0.7+ | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 0.6− | 0.0 | 2006 08 30 | 699 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.7+ | 2006 08 31 | 704 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.2− | 0.1− |
| 2004 01 24 | 704 | 0.4+ | 1.5+ | 2006 08 31 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2004 01 24 | 704 | 1.6+ | 0.0 | 2006 08 31 | 704 | 0.7+ | 0.5− | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 2004 01 24 | 704 | 1.7+ | 0.6+ | 2006 08 31 | 704 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.4− |
| 2004 01 28 | 691 | 0.2+ | 0.8+ | 2006 08 31 | 704 | 0.1+ | 1.0− | 2006 09 28 | 704 | 0.4− | 0.3+ |
| 2004 01 28 | 691 | 0.1+ | 0.9+ | 2006 09 12 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.8− | 0.5+ |
| 2004 01 28 | 691 | 0.1+ | 0.6+ | 2006 09 12 | 704 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.7− | 0.0 |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.6− |
| 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.5− |
| 2005 04 10 | 691 | 0.1− | 0.3+ | 2006 09 12 | 704 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.5− |
| 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.2+ | | | | |

**(141899)∗ 2002 PY$_{62}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.48290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26374009 | $\omega$ | 225.85672 | | +0.95064653 | | +0.29512717 |
| $a$ | 2.4081597 | $\Omega$ | 116.76288 | | −0.24515968 | | +0.90364580 |
| $e$ | 0.1461759 | $i$ | 6.15713 | | −0.19017862 | | +0.31036145 |
| $P$ | 3.74 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.0 | 0.2+ | 2003 12 19 | 691 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.0 | 0.0 |
| 2001 03 19 | 645 | 0.1+ | 0.1+ | 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.6− |
| 2002 07 14 | 644 | 0.2+ | 0.5+ | 2003 12 19 | 691 | 0.6+ | 0.4− | 2006 09 18 | 699 | 0.3− | 1.3+ |
| 2002 07 14 | 644 | 0.1+ | 0.8+ | 2003 12 21 | 691 | 0.2− | 0.3+ | 2006 09 18 | F84 | 0.6+ | 0.0 |
| 2002 07 14 | 644 | 0.0 | 0.6+ | 2003 12 21 | 691 | 0.0 | 0.4+ | 2006 09 18 | F84 | 0.1− | 0.4− |
| 2002 08 08 | 644 | 0.2− | 0.3+ | 2003 12 21 | 691 | 0.2− | 0.2+ | 2006 09 18 | F84 | 0.1+ | 0.5− |
| 2002 08 08 | 644 | 0.2− | 0.0 | 2004 01 15 | 691 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.2+ |
| 2002 08 08 | 644 | 0.2− | 0.0 | 2004 01 15 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.5+ | 1.0− |
| 2002 08 12 | 608 | 0.8− | 0.7+ | 2004 01 15 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.2− |
| 2002 08 12 | 608 | 1.3− | 0.6+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.3− | 0.1+ |
| 2002 08 12 | 608 | 0.5− | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2002 08 15 | 644 | 0.3+ | 0.5+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.4− | 0.0 |
| 2002 08 15 | 699 | 0.4+ | 0.5− | 2004 01 31 | 691 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 08 15 | 699 | 0.2− | 0.1+ | 2004 01 31 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.8+ | 0.8+ |
| 2002 08 15 | 699 | 0.3+ | 0.3+ | 2004 01 31 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | (0.6+ | 1.7+) |
| 2002 08 15 | 699 | 0.2− | 0.6− | 2006 08 28 | 699 | 0.4− | 1.2+ | 2006 10 17 | 703 | (1.3+ | 1.6+) |
| 2002 08 15 | 644 | 0.6+ | 0.9+ | 2006 08 28 | 699 | 0.7− | 0.7+ | 2006 10 17 | 703 | 0.5− | 0.8+ |
| 2002 08 15 | 644 | 0.4+ | 0.8+ | 2006 08 28 | 699 | (1.6− | 2.1+) | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.3− | 0.1− | 2006 08 28 | 699 | 0.7+ | 0.9+ | 2006 10 22 | 644 | 0.7− | 0.2+ |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.3− | 1.1− | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.9+ | 0.6− | 2006 10 28 | 703 | 0.3− | 1.2+ |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 28 | 703 | 1.0− | 0.2+ |
| 2002 08 29 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 10 28 | 703 | 1.0+ | 0.2− |
| 2002 08 29 | 644 | 0.5+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 1.1+ | 2006 10 28 | 703 | 0.2− | 0.6− |

**(141900)∗ 2002 PN$_{64}$ = 1999 TL$_{271}$**

Discovered 2002 Aug. 3 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35281)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.89420 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29156084 | $\omega$ | 3.48415 | | +0.46466162 | | +0.87477842 |
| $a$ | 2.2524228 | $\Omega$ | 294.24507 | | −0.81601650 | | +0.36282138 |
| $e$ | 0.0468150 | $i$ | 8.66087 | | −0.34381193 | | +0.32112827 |
| $P$ | 3.38 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.3− | 0.1+ | 2002 08 03 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 703 | 0.2− | 0.3− |
| 1999 10 03 | 704 | 1.4− | 0.3+ | 2002 08 06 | 644 | 0.5− | 0.4+ | 2006 10 23 | 703 | 1.4− | 0.7− |
| 1999 10 03 | 704 | 0.1− | 0.7− | 2002 08 06 | 644 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.2− | 0.9+ |
| 1999 10 10 | 704 | 0.2+ | 0.1+ | 2002 08 06 | 644 | 0.4− | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.4− |
| 1999 10 10 | 704 | 0.3− | 0.8+ | 2002 08 16 | 644 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.4− |
| 1999 10 10 | 704 | 1.4+ | 0.4+ | 2002 08 16 | 644 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.1+ | 0.3− |
| 2002 07 14 | 704 | 0.7− | 0.0 | 2002 08 16 | 644 | 0.1+ | 0.3+ | 2006 11 02 | G96 | 0.2− | 0.3− |
| 2002 07 14 | 704 | 0.7+ | 0.2+ | 2002 08 26 | 644 | 0.2− | 0.2+ | 2006 11 15 | 703 | (1.4− | 2.0−) |
| 2002 07 14 | 704 | 0.1+ | 0.9+ | 2002 08 26 | 644 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2002 07 22 | 644 | 0.0 | 0.3+ | 2002 08 26 | 644 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.6+ | 0.7− |
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2003 12 23 | 704 | 0.6− | 1.1+ | 2006 11 15 | 703 | 0.1− | 1.4− |
| 2002 07 22 | 644 | 0.2− | 0.0 | 2003 12 23 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 703 | 0.3+ | 0.2+ |
| 2002 07 28 | 608 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.1+ | 0.2+ | 2006 11 21 | 703 | 0.6+ | 0.8+ |
| 2002 07 28 | 608 | 0.1− | 0.3+ | 2004 01 30 | 691 | 0.2+ | 0.6+ | 2006 11 21 | 703 | 0.3+ | 1.6− |
| 2002 07 28 | 608 | 0.8+ | 0.9− | 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 11 21 | 703 | 0.5+ | 1.7+ |
| 2002 08 03 | 644 | 0.1− | 0.0 | 2004 01 30 | 691 | 0.2+ | 0.1+ | | | | |
| 2002 08 03 | 644 | 0.1− | 0.1− | 2006 10 23 | 703 | 0.0 | 0.3− | | | | |

**(141901)∗ 2002 PO$_{65}$ = 1995 UF$_{16}$**

Discovered 2002 Aug. 5 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35281)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.34668 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26292212 | $\omega$ | 171.45897 | | +0.99422075 | | −0.10428989 |
| $a$ | 2.4131517 | $\Omega$ | 194.60079 | | +0.09156030 | | +0.94760750 |
| $e$ | 0.1640688 | $i$ | 5.79900 | | +0.05605195 | | +0.30193318 |
| $P$ | 3.75 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1− | 0.3− | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 09 29 | 704 | 0.5− | 0.3+ |
| 1995 10 17 | 691 | 0.3+ | 0.1− | 2006 09 16 | 699 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.3− | 0.6− |
| 1995 10 17 | 691 | 0.3− | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.2+ | 1.0− |
| 1995 10 23 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 704 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.4+ |
| 1995 10 23 | 691 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.2− | 1.0+ | 2006 09 30 | 704 | 0.7+ | 0.7+ |
| 1995 10 23 | 691 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.5− | 0.6+ | 2006 09 30 | 704 | 0.4− | 0.5+ |
| 2002 07 21 | 644 | 0.1− | 0.3− | 2006 09 18 | 704 | 0.1− | 0.8+ | 2006 10 01 | 703 | 0.8+ | 0.4− |
| 2002 07 21 | 644 | 0.8+ | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 703 | 0.3+ | 0.6+ |
| 2002 07 21 | 644 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.8− | 0.1+ | 2006 10 01 | 703 | 0.8− | 0.6− |
| 2002 08 05 | 644 | 0.3− | 0.4− | 2006 09 19 | 703 | 0.6+ | 0.5− | 2006 10 01 | 703 | 0.1− | 0.5+ |
| 2002 08 05 | 644 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2002 08 05 | 644 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 08 07 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2002 08 07 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.9− | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 2002 08 26 | 644 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.8+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2002 08 26 | 644 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.4+ | | |
| 2002 08 26 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.0 | | |
| 2005 04 16 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.2+ | | |
| 2005 04 16 | 691 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.1+ | | |
| 2005 04 16 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.4− | | |
| 2006 08 18 | 644 | 0.3− | 0.4− | 2006 09 20 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.7+ | 0.4− | | |
| 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.4− | | |
| 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.7+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.3− | | |
| 2006 08 29 | 703 | 1.1− | 0.9− | 2006 09 25 | 699 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2006 08 29 | 703 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 09 25 | 704 | 1.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2006 08 29 | 703 | 0.6− | 0.3− | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2006 09 12 | 703 | 0.3− | 0.5+ | 2006 09 25 | 704 | 0.9+ | 1.0+ | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2006 09 12 | 703 | 1.1− | 0.6− | 2006 09 25 | 699 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2006 09 12 | 703 | 0.8− | 0.3− | 2006 09 25 | 699 | 0.5− | 0.0 | 2006 11 11 | G96 | 1.0+ | 0.6− | | |
| 2006 09 12 | 703 | 0.1− | 0.5+ | 2006 09 29 | 704 | 1.2− | 0.3+ | | | | | | |
| 2006 09 16 | 699 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.3+ | | | | | | |

**(141902)∗ 2002 PB$_{67}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.63276 | | (2000.0) | | +0.78067446 | +0.61454268 |
| $n$ | 0.27714373 | $\omega$ | 26.24940 | | −0.59319908 | +0.67155123 |
| $a$ | 2.3298753 | $\Omega$ | 295.36415 | | −0.19662717 | +0.41395198 |
| $e$ | 0.1307038 | $i$ | 7.21656 | | | |
| $P$ | 3.56 | $H$ | 17.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 03 | 691 | 0.3− | 0.6− | 2002 07 22 | 644 | 0.0 | 0.2+ | 2003 12 29 | 691 | 0.2+ | 0.4+ | | |
| 1997 01 03 | 691 | 0.1− | 0.4− | 2002 08 01 | 599 | 0.1− | 0.2+ | 2003 12 29 | 691 | 0.2+ | 0.4+ | | |
| 1997 01 03 | 691 | 0.1− | 0.1− | 2002 08 01 | 599 | 0.2+ | 0.2+ | 2005 05 01 | 644 | 0.2− | 0.0 | | |
| 2001 02 22 | 645 | 0.2+ | 0.1+ | 2002 08 06 | 644 | 0.1− | 0.3+ | 2005 05 01 | 644 | 0.2+ | 0.2+ | | |
| 2001 02 22 | 645 | 0.1− | 0.2+ | 2002 08 06 | 644 | 0.1− | 0.2+ | 2005 05 01 | 644 | 0.6+ | 0.3+ | | |
| 2002 05 24 | 644 | 1.5− | 0.4− | 2002 08 06 | 644 | 0.3− | 0.4+ | 2005 05 16 | 644 | 0.0 | 0.1− | | |
| 2002 05 24 | 644 | 0.6− | 0.3− | 2002 08 07 | 644 | 0.2+ | 0.3+ | 2005 05 16 | 644 | 0.0 | 0.1+ | | |
| 2002 06 16 | 644 | 0.6− | 0.0 | 2002 08 07 | 644 | 0.2+ | 0.1+ | 2005 05 16 | 644 | 0.2+ | 0.1− | | |
| 2002 06 16 | 644 | 0.2+ | 0.5+ | 2002 08 07 | 644 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.2− | | |
| 2002 06 25 | 644 | 0.3+ | 0.2+ | 2002 08 17 | 644 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.2− | 0.2− | | |
| 2002 07 04 | 644 | 0.7− | 1.3− | 2002 08 17 | 644 | 0.6− | 0.3− | 2006 10 19 | 703 | 0.9− | 0.5− | | |
| 2002 07 04 | 644 | 0.2− | 0.1− | 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.7− | | |
| 2002 07 14 | 704 | 0.2+ | 0.3− | 2002 08 26 | 644 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.6+ | | |
| 2002 07 14 | 704 | 0.4+ | 0.4− | 2002 08 26 | 644 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.7+ | | |
| 2002 07 14 | 704 | 0.2+ | 0.0 | 2002 08 26 | 644 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2002 07 14 | 704 | 1.0+ | 0.5+ | 2002 08 27 | 644 | 0.0 | 0.8+ | 2006 11 07 | 644 | 0.3− | 0.1+ | | |
| 2002 07 14 | 704 | 0.8− | 0.2+ | 2002 08 27 | 644 | 0.3+ | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.7+ | | |
| 2002 07 22 | 644 | 0.3+ | 0.2+ | 2002 08 27 | 644 | 0.1+ | 0.5+ | 2006 11 07 | 644 | 0.0 | 0.6+ | | |
| 2002 07 22 | 644 | 0.5+ | 0.3+ | 2003 12 29 | 691 | 0.3+ | 0.3+ | | | | | | |

**(141903)∗ 2002 PE$_{68}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.89626 | | (2000.0) | | +0.10076021 | +0.99440192 |
| $n$ | 0.28020572 | $\omega$ | 112.44674 | | −0.94857190 | +0.10566368 |
| $a$ | 2.3128709 | $\Omega$ | 163.24250 | | −0.30009788 | −0.00011147 |
| $e$ | 0.1084663 | $i$ | 6.33527 | | | |
| $P$ | 3.52 | $H$ | 16.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 291 | 0.4− | 1.3+ | 2002 08 27 | 644 | 0.2+ | 0.4+ | 2005 05 06 | 608 | 0.0 | 1.4− | | |
| 2001 03 22 | 291 | 0.6+ | 0.8+ | 2002 08 27 | 644 | 0.0 | 0.3+ | 2005 06 08 | 699 | 0.3− | 1.4+ | | |
| 2001 03 22 | 291 | 0.4+ | 0.7+ | 2002 08 27 | 644 | 0.1− | 0.7− | 2005 06 08 | 699 | 1.0+ | 1.0− | | |
| 2002 07 22 | 644 | 0.1− | 0.1− | 2002 08 27 | 644 | 0.0 | 0.2+ | 2005 06 08 | 699 | 0.0 | 0.3− | | |
| 2002 07 22 | 644 | 0.2+ | 0.2− | 2002 08 27 | 644 | 0.1− | 0.8− | 2005 06 08 | 699 | 0.5− | 0.4− | | |
| 2002 07 22 | 644 | 0.1+ | 0.2− | 2002 08 27 | 644 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.0 | 0.7+ | | |
| 2002 08 06 | 644 | 0.0 | 0.8+ | 2005 04 02 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | (0.5+ | 1.7+) | | |
| 2002 08 06 | 644 | 0.0 | 0.6+ | 2005 04 02 | 691 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.1+ | | |
| 2002 08 06 | 644 | 0.3− | 0.6+ | 2005 04 02 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.0 | | |
| 2002 08 07 | 644 | 0.0 | 0.0 | 2005 04 10 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.4+ | | |
| 2002 08 07 | 644 | 0.0 | 0.2+ | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.6+ | | |
| 2002 08 07 | 644 | 0.2+ | 0.1+ | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.8+ | | |
| 2002 08 07 | 644 | 0.1+ | 1.3+ | 2005 04 14 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.1− | | |
| 2002 08 07 | 644 | 0.3+ | 1.3+ | 2005 04 14 | 691 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.7− | 0.6− | | |
| 2002 08 07 | 644 | 0.2+ | 1.3+ | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.8+ | | |
| 2002 08 08 | 699 | 0.3+ | 0.1+ | 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 1.1+ | | |
| 2002 08 08 | 699 | 0.2+ | 0.7+ | 2005 04 15 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.6− | 1.0− | | |
| 2002 08 08 | 699 | 0.0 | 0.2− | 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.9+ | 0.6− | | |
| 2002 08 08 | 699 | 0.4− | 0.3− | 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | (0.3− | 1.7+) | | |
| 2002 08 12 | 608 | (2.1− | 0.4−) | 2005 04 18 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | (0.5− | 2.4+) | | |
| 2002 08 12 | 608 | 1.2− | 0.2− | 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2002 08 12 | 608 | (2.4− | 0.3−) | 2005 04 30 | 644 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.2− | | |
| 2002 08 14 | 704 | 0.1− | 0.8+ | 2005 04 30 | 644 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2002 08 14 | 704 | 0.6− | 0.6+ | 2005 04 30 | 644 | 0.1− | 0.6− | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2002 08 14 | 704 | 0.3− | 1.4+ | 2005 05 06 | 608 | 0.2+ | 1.1− | | | | | | |
| 2002 08 14 | 704 | 0.1+ | 1.0+ | 2005 05 06 | 608 | 0.1+ | 1.0− | | | | | | |

**(141904)∗ 2002 PH$_{70}$ = 2001 FQ$_{189}$**

Discovered 2002 Aug. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35283)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.21420 | | (2000.0) | | −0.67042955 | +0.73938377 |
| $n$ | 0.24220997 | $\omega$ | 31.22464 | | −0.71702783 | −0.66709078 |
| $a$ | 2.5488329 | $\Omega$ | 196.94111 | | −0.19077555 | −0.09111268 |
| $e$ | 0.2012127 | $i$ | 12.27176 | | | |
| $P$ | 4.07 | $H$ | 15.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 704 | 0.0 | 0.1+ | 2002 08 11 | 704 | 0.0 | 0.1− | 2005 03 10 | 703 | 0.3− | 0.1− | | |
| 2001 02 22 | 704 | 1.9+ | 1.5− | 2002 08 11 | 704 | 0.4− | 0.2− | 2005 03 10 | 703 | 0.6− | 0.4− | | |
| 2001 02 22 | 704 | 1.2+ | 0.4+ | 2002 08 11 | 704 | 0.4+ | 0.6+ | 2005 03 11 | 704 | 0.5− | 0.4+ | | |
| 2001 02 22 | 704 | 0.4+ | 0.2+ | 2002 08 13 | 704 | 0.4− | 0.2+ | 2005 03 11 | 704 | 0.2+ | 0.6+ | | |
| 2001 03 18 | 608 | 1.2− | 0.8− | 2002 08 13 | 699 | 0.8+ | 0.6+ | 2005 03 11 | 704 | 0.4+ | 0.8+ | | |
| 2001 03 18 | 608 | 1.6− | 0.7− | 2002 08 13 | 704 | 0.3+ | 0.5+ | 2005 03 11 | 704 | 0.5+ | 0.3− | | |
| 2001 03 18 | 608 | 1.6− | 0.7− | 2002 08 13 | 699 | 1.7− | 0.8+ | 2005 03 17 | 703 | 0.9− | 0.2+ | | |
| 2001 03 26 | 704 | 0.4+ | 0.7+ | 2002 08 13 | 704 | 1.1− | 0.4+ | 2005 03 17 | 703 | 0.4+ | 0.1+ | | |
| 2001 03 26 | 704 | 0.5+ | 1.2+ | 2002 08 13 | 699 | 0.1+ | 1.4+ | 2005 03 17 | 703 | 0.3− | 0.4+ | | |
| 2001 03 26 | 704 | 0.3+ | 0.7+ | 2002 08 13 | 704 | 0.2− | 1.1− | 2005 03 17 | 703 | 0.7− | 0.2+ | | |
| 2001 03 26 | 704 | 1.1+ | 0.4+ | 2002 08 13 | 699 | 0.2+ | 1.2+ | 2006 08 20 | 941 | 0.5+ | 0.1− | | |
| 2001 03 26 | 608 | 0.2− | 0.2+ | 2002 08 15 | 644 | 0.0 | 0.6+ | 2006 08 20 | 941 | 0.5+ | 0.2− | | |
| 2001 03 26 | 608 | 0.2+ | 0.2− | 2002 08 15 | 644 | 0.4− | 0.6+ | 2006 08 20 | 941 | 0.6+ | 0.4− | | |
| 2001 03 26 | 608 | 0.0 | 0.0 | 2002 08 15 | 644 | 0.3− | 0.7+ | 2006 08 20 | 941 | 0.3+ | 0.4− | | |
| 2002 07 20 | 644 | 0.2− | 0.2+ | 2002 09 04 | 644 | 0.4− | 0.2+ | 2006 08 23 | 644 | 0.7+ | 0.0 | | |
| 2002 07 20 | 644 | 0.0 | 0.0 | 2002 09 04 | 644 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.4+ | 0.0 | | |
| 2002 07 20 | 644 | 0.3− | 0.1+ | 2002 09 04 | 644 | 0.3− | 0.3+ | 2006 08 23 | 644 | 0.5+ | 0.3− | | |
| 2002 08 04 | 644 | 0.0 | 0.1+ | 2005 02 04 | 644 | 0.2+ | 0.2+ | 2006 09 11 | 703 | 0.5+ | 0.1+ | | |
| 2002 08 04 | 644 | 0.2+ | 0.1+ | 2005 02 04 | 644 | 0.3+ | 0.7+ | 2006 09 11 | 703 | 1.0− | 0.5− | | |
| 2002 08 04 | 644 | 0.0 | 0.1+ | 2005 02 04 | 644 | 0.6+ | 0.7+ | 2006 09 11 | 703 | 0.0 | 0.7− | | |
| 2002 08 11 | 704 | 0.3+ | 0.3+ | 2005 03 10 | 703 | 0.1+ | 1.2+ | 2006 09 11 | 703 | 0.9− | 0.1+ | | |
| 2002 08 11 | 704 | 0.2+ | 0.3− | 2005 03 10 | 703 | 0.2− | 0.7+ | | | | | | |

**(141905)∗ 2002 PG$_{72}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.82985 | | (2000.0) | | | |
| $n$ | 0.18800923 | $\omega$ | 61.63137 | | +0.22276847 | +0.96696163 |
| $a$ | 3.0177501 | $\Omega$ | 221.84165 | | −0.94678849 | +0.18430216 |
| $e$ | 0.1234370 | $i$ | 10.70697 | | −0.23230532 | +0.17611906 |
| $P$ | 5.24 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 691 | 0.2+ | 0.0 | 2002 09 04 | 644 | 0.0 | 0.3+ | 2003 10 28 | 704 | 0.2+ | 0.1− |
| 1998 12 11 | 691 | 0.2− | 0.0 | 2002 09 04 | 644 | 0.3+ | 0.5+ | 2003 10 28 | 704 | 0.6− | 0.4− |
| 1998 12 11 | 691 | 0.0 | 0.4− | 2003 10 19 | 291 | 0.5− | 0.2+ | 2003 11 16 | 691 | 0.3+ | 0.4+ |
| 2002 07 20 | 644 | 0.1+ | 0.7+ | 2003 10 19 | 291 | 0.3− | 0.0 | 2003 11 16 | 691 | 0.3+ | 0.4+ |
| 2002 07 20 | 644 | 0.3− | 0.5+ | 2003 10 19 | 691 | 0.1+ | 0.2+ | 2003 11 16 | 691 | 0.3+ | 0.5+ |
| 2002 07 20 | 644 | 0.0 | 0.7+ | 2003 10 19 | 291 | 0.5− | 0.2+ | 2003 11 21 | 704 | 0.0 | 0.1+ |
| 2002 08 04 | 644 | 0.1+ | 0.4+ | 2003 10 19 | 691 | 0.1− | 0.1+ | 2003 11 21 | 704 | 0.1− | 0.2+ |
| 2002 08 04 | 644 | 0.2+ | 0.5+ | 2003 10 19 | 691 | 0.3+ | 0.2+ | 2003 11 21 | 704 | 0.7+ | 0.8− |
| 2002 08 04 | 644 | 0.1+ | 0.6+ | 2003 10 23 | 699 | 0.7− | 0.3+ | 2006 03 25 | 644 | 0.8+ | 0.4+ |
| 2002 08 12 | 704 | 0.8− | 1.0− | 2003 10 23 | 699 | 1.3− | 1.0+ | 2006 03 25 | 644 | 0.8+ | 0.5+ |
| 2002 08 12 | 704 | 0.7− | 0.2− | 2003 10 23 | 704 | 0.0 | 0.5− | 2006 03 25 | 644 | 0.7+ | 0.5+ |
| 2002 08 12 | 704 | 0.9− | 0.6− | 2003 10 23 | 699 | 0.8− | 0.5− | 2006 04 07 | E12 | 1.0− | 0.1− |
| 2002 08 12 | 704 | 0.6− | 0.6+ | 2003 10 23 | 704 | 0.2− | 0.7+ | 2006 04 07 | E12 | 0.9− | 0.9+ |
| 2002 08 13 | 704 | 0.5− | 0.4− | 2003 10 23 | 704 | 0.5+ | 0.5+ | 2006 04 07 | E12 | 0.2− | 0.3+ |
| 2002 08 13 | 704 | 0.5+ | 0.5+ | 2003 10 23 | 699 | 0.0 | 0.2− | 2006 04 07 | E12 | (2.1+ | 0.4+) |
| 2002 08 13 | 704 | 0.7+ | 0.2+ | 2003 10 23 | 704 | 0.1− | 0.4− | 2006 04 21 | 699 | 1.6+ | 0.8+ |
| 2002 08 13 | 704 | 0.2+ | 0.5− | 2003 10 23 | 049 | 0.6+ | 0.2− | 2006 04 21 | 703 | 0.5+ | 0.3+ |
| 2002 08 15 | 644 | 0.1− | 0.3− | 2003 10 23 | 049 | 1.2+ | 0.9− | 2006 04 21 | 703 | 0.3+ | 0.1+ |
| 2002 08 15 | 644 | 0.1− | 0.3− | 2003 10 23 | 049 | 1.2+ | 1.0− | 2006 04 21 | 699 | 0.1+ | 0.8− |
| 2002 08 15 | 644 | 0.3+ | 0.2− | 2003 10 26 | 049 | 0.2− | 0.6+ | 2006 04 21 | 703 | 0.6+ | 1.6+ |
| 2002 08 25 | 644 | 0.1+ | 0.8+ | 2003 10 26 | 049 | 0.2− | 0.7+ | 2006 04 21 | 703 | 1.0− | 1.8+ |
| 2002 08 25 | 644 | 0.2+ | 0.5+ | 2003 10 26 | 049 | 0.0 | 0.5+ | 2006 04 21 | 699 | 0.9+ | 0.9+ |
| 2002 08 25 | 644 | 0.1+ | 0.5+ | 2003 10 28 | 704 | 1.0− | 0.2− | 2006 04 21 | 699 | 1.0− | 0.8+ |
| 2002 09 04 | 644 | 0.3+ | 0.6+ | 2003 10 28 | 704 | 0.1− | 0.4+ | | | | |

**(141906)∗ 2002 PJ$_{73}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.70119 | | (2000.0) | | | |
| $n$ | 0.27424826 | $\omega$ | 139.49279 | | +0.68892557 | +0.72477829 |
| $a$ | 2.3462455 | $\Omega$ | 174.03304 | | −0.68504105 | +0.65503890 |
| $e$ | 0.1517825 | $i$ | 4.87356 | | −0.23685508 | +0.21358950 |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.7− | 0.3+ | 2002 10 03 | 291 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 1995 10 26 | 691 | 0.7− | 0.1+ | 2002 10 03 | 291 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.2− |
| 1997 03 12 | 691 | 0.1+ | 0.7+ | 2002 10 03 | 704 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.7+ |
| 1997 03 12 | 691 | 0.7+ | 0.5+ | 2002 10 03 | 704 | 0.0 | 1.5+ | 2006 10 16 | 703 | 0.9+ | 0.4− |
| 1997 03 12 | 691 | 0.6+ | 0.9+ | 2002 10 03 | 291 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.1+ |
| 2001 02 20 | 691 | 0.7+ | 0.3+ | 2002 10 03 | 704 | (0.0 | 1.9+) | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2001 02 20 | 691 | 0.2+ | 0.8+ | 2002 10 03 | 704 | (0.2+ | 2.1+) | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2001 02 20 | 691 | 0.3+ | 0.2+ | 2002 10 03 | 704 | (0.2− | 1.8+) | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 0.7− | 0.0 | 2002 10 05 | 704 | 0.8+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 07 14 | 704 | 0.3+ | 0.6+ | 2002 10 05 | 704 | 1.2+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 07 14 | 704 | 0.1+ | 0.4+ | 2002 10 05 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2002 07 14 | 704 | 0.2− | 0.8+ | 2002 10 05 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2002 07 14 | 704 | 0.5+ | 1.2+ | 2002 10 07 | 704 | 0.2+ | 1.1+ | 2006 11 02 | 703 | 0.8− | 0.7+ |
| 2002 08 12 | 704 | 0.0 | 0.5+ | 2002 10 07 | 704 | 0.1+ | 1.4+ | 2006 11 02 | 703 | 0.2− | 0.0 |
| 2002 08 12 | 704 | 0.5− | 0.8+ | 2002 10 07 | 704 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.3+ |
| 2002 08 12 | 704 | 0.7− | 0.4+ | 2002 10 09 | 699 | 1.3+ | 0.8− | 2006 11 02 | 703 | 0.2− | 0.6− |
| 2002 08 12 | 704 | 0.5− | 0.0 | 2002 10 09 | 291 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 08 12 | 704 | 0.2− | 0.2+ | 2002 10 09 | 699 | 0.7− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 08 12 | 608 | 0.1+ | 0.0 | 2002 10 09 | 291 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.7− | 0.9+ |
| 2002 08 12 | 608 | 0.2+ | 0.3+ | 2002 10 09 | 699 | 0.2− | 0.8− | 2006 11 11 | 703 | 1.5− | 0.8− |
| 2002 08 12 | 608 | 0.0 | 0.0 | 2002 10 09 | 291 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2002 08 13 | 704 | 0.1+ | 0.1+ | 2002 10 09 | 699 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2002 08 13 | 704 | 0.2− | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 0.6+ | 1.0− |
| 2002 08 13 | 704 | 0.3− | 0.0 | 2002 10 11 | 704 | 0.5− | 0.8+ | 2006 11 14 | 704 | 0.3+ | 0.3+ |
| 2002 08 13 | 704 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.5− | 0.1− | 2006 11 14 | 704 | (1.7− | 0.5−) |
| 2002 08 13 | 704 | 0.3− | 0.5− | 2005 03 13 | G96 | 0.4− | 0.1− | 2006 11 14 | 704 | (1.7− | 0.0 ) |
| 2002 08 18 | 608 | 0.5− | 0.7− | 2005 03 13 | G96 | 0.5− | 0.1+ | 2006 11 14 | 704 | 0.5− | 0.3+ |
| 2002 08 18 | 608 | 0.5− | 0.4− | 2005 03 13 | G96 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.2− | 1.2+ |
| 2002 08 18 | 608 | 0.3− | 0.5− | 2005 03 13 | G96 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2002 09 01 | 608 | 0.4− | 0.0 | 2005 04 13 | 704 | 0.4− | 0.9+ | 2006 11 17 | 704 | 1.1+ | 0.1− |
| 2002 09 01 | 608 | 0.1− | 0.2− | 2005 04 13 | 704 | 0.7− | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.3− |
| 2002 09 01 | 608 | 0.1+ | 0.4− | 2005 04 13 | 704 | 1.0− | 0.7+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.5+ | 0.4+ | 2005 04 13 | 704 | 0.2− | 0.9+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.7+ | 0.3+ | 2005 05 03 | 704 | 0.7− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2005 05 03 | 704 | 0.1− | 1.0+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2005 05 03 | 704 | 0.4− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.2+ | 0.7+ | 2005 05 03 | 704 | 0.7+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2005 05 08 | 699 | 0.3− | 0.4+ | 2006 11 18 | G96 | 0.5+ | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2005 05 08 | 699 | 0.6+ | 0.9+ | 2006 11 18 | G96 | 0.3− | 0.3+ |
| 2002 09 14 | 644 | 0.4+ | 0.4+ | 2005 05 08 | 699 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2002 09 16 | 644 | 0.2− | 0.3− | 2005 05 08 | 699 | 0.5+ | 1.4+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2002 09 16 | 644 | 0.2− | 0.4− | 2005 05 11 | 691 | 0.2+ | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2002 09 16 | 644 | 0.1− | 0.3− | 2005 05 11 | 691 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2002 09 30 | 608 | 0.1− | 0.7− | 2005 05 11 | 691 | 0.2− | 0.6+ | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2002 09 30 | 608 | 0.4− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2002 09 30 | 608 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.7+ | 1.0+ |

**(141907)∗ 2002 PG$_{75}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.23601 | | (2000.0) | | | |
| $n$ | 0.27107054 | $\omega$ | 255.47492 | | +0.71814119 | −0.69525519 |
| $a$ | 2.3645464 | $\Omega$ | 148.55550 | | +0.65850530 | +0.66503655 |
| $e$ | 0.1672501 | $i$ | 3.28471 | | +0.22504221 | +0.27266573 |
| $P$ | 3.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 691 | 0.0 | 0.1− | 2002 10 03 | 704 | (0.5− | 1.5+) | 2006 11 17 | 704 | 0.7+ | 1.4+ |
| 1995 09 02 | 691 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.1+ | 1.1+ | 2006 11 17 | 704 | 0.5+ | 0.4+ |
| 1995 09 02 | 691 | 0.0 | 0.2− | 2002 10 06 | 704 | 0.3+ | 1.5+ | 2006 11 17 | 704 | 0.8− | 0.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.7− | 2002 10 06 | 704 | 0.5− | 1.1+ | 2006 11 17 | 704 | 1.1+ | 0.9+ |
| 2000 02 02 | 704 | 0.9+ | 0.5+ | 2002 10 06 | 704 | 0.3+ | 1.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2000 02 02 | 704 | 0.6+ | 0.9+ | 2002 10 07 | 704 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2000 02 02 | 704 | 0.7− | 1.1+ | 2002 10 07 | 704 | 0.3+ | 1.0+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2001 05 17 | 691 | 0.9+ | 0.4+ | 2002 10 07 | 704 | 0.8+ | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2001 05 17 | 691 | 0.4+ | 0.5+ | 2002 10 11 | 704 | 0.4− | 0.5− | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2001 05 17 | 691 | 0.1+ | 0.8+ | 2002 10 11 | 704 | 0.6− | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 2002 08 12 | 704 | (1.7+ | 0.4−) | 2002 10 11 | 704 | 0.5+ | 0.3+ | 2006 11 18 | 704 | (1.8+ | 2.4+) |
| 2002 08 12 | 704 | 0.2− | 0.6− | 2002 10 11 | 704 | 0.9+ | 1.0+ | 2006 11 18 | 704 | 0.2+ | 0.5− |
| 2002 08 12 | 704 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2002 08 13 | 704 | 0.1− | 0.4− | 2004 02 26 | 704 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 0.4+ | 0.0 |
| 2002 08 13 | 704 | 0.2− | 0.5− | 2004 02 26 | 704 | (0.0 | 1.6+) | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2002 08 13 | 704 | 0.1− | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.8+ | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.5+ | 0.9+ | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.4− | 0.2+ | 2004 02 27 | 695 | 0.4− | 0.5+ | 2006 11 24 | 703 | 0.6+ | 0.0 |
| 2002 09 05 | 704 | (1.4+ | 2.6+) | 2004 02 27 | 695 | 0.1− | 0.3+ | 2006 11 24 | 703 | 0.4− | 0.4+ |
| 2002 09 07 | 704 | 0.8− | 1.1+ | 2004 03 14 | 691 | 0.2+ | 0.6+ | 2006 11 24 | 703 | 0.8− | 0.3− |
| 2002 09 07 | 704 | 0.4− | 0.5+ | 2004 03 14 | 691 | 0.3+ | 0.6+ | 2006 11 24 | 703 | 0.2− | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.4+ | 2004 03 14 | 691 | 0.1+ | 0.6+ | 2006 11 25 | 704 | 0.4+ | 0.1+ |
| 2002 09 07 | 704 | 0.8− | 0.1− | 2004 03 18 | 704 | 0.8− | 1.3− | 2006 11 25 | 703 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.2− | 1.4+ | 2006 11 25 | 704 | 0.6− | 0.3− |
| 2002 09 10 | 608 | (0.2− | 1.7−) | 2004 03 18 | 704 | (0.6+ | 2.2+) | 2006 11 25 | 703 | 0.2− | 0.3+ |
| 2002 09 10 | 608 | 0.2− | 0.5+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 11 25 | 703 | 0.9+ | 0.2− |
| 2002 09 10 | 608 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.8+ | 0.7+ | 2006 11 25 | 704 | 0.7− | 0.0 |
| 2002 09 12 | 644 | 0.7− | 0.3+ | 2004 03 19 | 704 | 0.6+ | 0.7+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2002 09 12 | 644 | 0.5− | 0.5+ | 2004 03 19 | 704 | 0.5+ | 0.4− | 2006 11 25 | 703 | 0.5− | 0.3− |
| 2002 09 12 | 644 | 0.2− | 0.6+ | 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2004 03 21 | 691 | 0.3+ | 0.4+ | 2006 11 25 | 704 | 0.7− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2004 03 21 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2002 09 15 | 644 | 0.6− | 0.5+ | 2004 03 28 | 691 | 0.6− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2002 09 17 | 608 | (1.7− | 0.7−) | 2004 03 28 | 691 | 0.5− | 0.1+ | 2006 11 25 | 704 | 0.2+ | 0.5− |
| 2002 09 17 | 608 | 1.1− | 0.7− | 2004 03 28 | 691 | 0.6− | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.2− |
| 2002 09 17 | 608 | 1.0− | 0.8− | 2006 11 02 | G96 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.7− | 0.2− |
| 2002 10 01 | 699 | 0.0 | 0.9+ | 2006 11 02 | G96 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2002 10 01 | 699 | 0.6− | 0.5+ | 2006 11 02 | G96 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.4− | 0.4+ |
| 2002 10 01 | 699 | 0.2+ | 1.1+ | 2006 11 02 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.8− | 0.2+ |
| 2002 10 01 | 699 | 0.4− | 1.5+ | 2006 11 14 | 704 | 0.2+ | 0.4+ | 2006 12 03 | 644 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | (1.3+ | 2.1+) | 2006 11 14 | 704 | 0.4+ | 0.5+ | 2006 12 03 | 644 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2006 11 14 | 704 | 0.3+ | 0.3− | 2006 12 03 | 644 | 0.3+ | 0.6+ |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 11 14 | 704 | 0.3− | 0.5+ | | | | |

**(141908)∗ 2002 PC$_{77}$ = 1995 SS$_{21}$**

Discovered 2002 Aug. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35289)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.35197 | | (2000.0) | | | |
| $n$ | 0.27535819 | $\omega$ | 290.08334 | | +0.34007166 | +0.94039944 |
| $a$ | 2.3399364 | $\Omega$ | 359.79665 | | −0.81619919 | +0.29495041 |
| $e$ | 0.1203956 | $i$ | 6.35012 | | −0.46708687 | +0.16927241 |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.3+ | 0.4+ | 2002 08 13 | 704 | 0.3− | 0.6+ | 2005 04 15 | 691 | 0.4+ | 0.1+ |
| 1994 03 10 | 691 | 0.0 | 0.2+ | 2002 08 13 | 644 | 0.3+ | 0.1− | 2005 04 15 | 691 | 0.1+ | 0.1+ |
| 1994 03 11 | 691 | 0.2+ | 0.2− | 2002 08 13 | 704 | 0.0 | 0.6+ | 2006 09 15 | 691 | 0.3− | 0.2+ |
| 1994 03 11 | 691 | 0.3+ | 0.0 | 2002 08 13 | 704 | (0.5− | 1.7+) | 2006 09 15 | 691 | 0.1− | 0.0 |
| 1994 03 11 | 691 | 0.2+ | 0.3− | 2002 08 13 | 644 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.3+ |
| 1995 09 19 | 691 | 0.0 | 0.1+ | 2002 08 30 | 644 | 0.6+ | 0.3− | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 1995 09 19 | 691 | 0.2− | 0.0 | 2002 08 30 | 644 | 0.6+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 1995 09 19 | 691 | 0.4− | 0.2− | 2002 08 30 | 644 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1995 10 01 | 691 | 0.0 | 0.3− | 2005 03 15 | G96 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.6+ | 0.7+ |
| 1995 10 01 | 691 | 0.1− | 0.2− | 2005 03 15 | G96 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.5− | 0.0 |
| 1995 10 01 | 691 | 0.1− | 0.1− | 2005 03 15 | G96 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.4+ |
| 2002 07 15 | 644 | 0.3+ | 0.2+ | 2005 03 15 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.6− | 0.2− |
| 2002 07 15 | 644 | 0.1+ | 0.0 | 2005 04 05 | 699 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.6− | 0.2− |
| 2002 07 15 | 644 | 0.0 | 0.2− | 2005 04 05 | 699 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2002 08 11 | 644 | 0.3+ | 0.4+ | 2005 04 05 | 699 | 0.9− | 0.0 | 2006 10 28 | 152 | 1.2− | 1.5+ |
| 2002 08 11 | 644 | 0.8+ | 0.2+ | 2005 04 05 | 699 | 0.4− | 1.0+ | 2006 10 28 | 152 | 1.4+ | 0.3+ |
| 2002 08 11 | 644 | 0.3+ | 0.4+ | 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 152 | 0.0 | 0.1+ |
| 2002 08 13 | 644 | 0.3+ | 0.0 | 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 152 | 0.0 | 0.2− |
| 2002 08 13 | 704 | 0.3+ | 0.9+ | 2005 04 10 | 691 | 0.4+ | 0.4+ | | | | |
| 2002 08 13 | 704 | 0.3− | 0.6+ | 2005 04 15 | 691 | 0.5− | 0.2+ | | | | |

**(141909)∗ 2002 PA$_{78}$**

Discovered 2002 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.69937 | | (2000.0) | | | |
| $n$ | 0.28358231 | $\omega$ | 191.11936 | | −0.16739219 | −0.98228186 |
| $a$ | 2.2944748 | $\Omega$ | 268.55676 | | +0.91088073 | −0.12138607 |
| $e$ | 0.1024235 | $i$ | 4.83585 | | +0.37719511 | −0.14278575 |
| $P$ | 3.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.9− | 1.2− | 2004 01 17 | 608 | 0.1+ | 0.6− | 2006 10 17 | 691 | 0.1− | 0.0 |
| 1999 10 10 | 704 | 0.7+ | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.8+ | 2006 10 17 | 703 | 0.8+ | 0.6+ |
| 1999 10 10 | 704 | 0.3− | 0.1− | 2004 01 21 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.6+ | 0.1+ |
| 1999 10 10 | 704 | 0.4− | 0.3+ | 2004 01 21 | 704 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 1999 10 10 | 704 | 0.1− | 0.6+ | 2004 01 21 | 704 | 0.6+ | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 1999 11 04 | 704 | 0.1+ | 0.1− | 2004 01 21 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 11 04 | 704 | 1.2+ | 0.2+ | 2004 01 22 | 704 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1999 11 04 | 704 | 0.2+ | 1.2− | 2004 01 22 | 704 | 1.0+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 11 04 | 704 | 1.0− | 0.6+ | 2004 01 22 | 704 | 0.7+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.3− |
| 2002 07 22 | 644 | 0.6− | 0.7+ | 2004 01 22 | 704 | 1.1+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.3− |
| 2002 07 22 | 644 | 0.8− | 0.8+ | 2004 01 22 | 704 | 0.7+ | 0.9+ | 2006 10 21 | 691 | 1.1− | 0.1− |
| 2002 07 22 | 644 | 0.0 | 0.6+ | 2004 01 24 | 704 | 1.3− | 1.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 07 | 644 | 0.2+ | 0.9+ | 2004 01 24 | 704 | (1.5− | 0.2−) | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2002 08 07 | 644 | 0.5+ | 0.2+ | 2004 01 24 | 704 | (1.6− | 1.4+) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 08 07 | 644 | 0.6+ | 1.2+ | 2004 01 24 | 704 | (1.8− | 1.1+) | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2002 08 11 | 644 | (0.3+ | 1.7+) | 2004 01 30 | 704 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2002 08 11 | 644 | (0.3+ | 1.9+) | 2004 01 30 | 704 | 0.5− | 1.1+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2002 08 11 | 644 | (0.3+ | 2.3+) | 2004 01 30 | 704 | 1.2− | 1.0+ | 2006 10 29 | 704 | 0.2− | 0.6+ |
| 2002 08 13 | 644 | 0.7− | 0.8+ | 2004 01 30 | 704 | 0.7− | 0.7+ | 2006 10 29 | 704 | 1.2+ | 0.1+ |
| 2002 08 13 | 644 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.1− | 1.1+ | 2006 10 29 | 704 | 0.1+ | 0.3− |
| 2002 08 13 | 644 | 0.3− | 0.7+ | 2004 02 16 | 704 | 0.3+ | 1.1− | 2006 10 29 | 704 | 0.6+ | 0.3+ |
| 2002 08 26 | 644 | 0.2− | 0.4+ | 2004 02 16 | 704 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.3+ |
| 2002 08 26 | 644 | 0.2− | 0.6+ | 2004 02 16 | 704 | 0.4− | 0.4− | 2006 10 31 | 703 | 0.1− | 1.1− |
| 2002 08 26 | 644 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.6− | 0.9+ | 2006 10 31 | 703 | 0.6+ | 0.5− |
| 2003 12 19 | 704 | 0.7− | 0.8+ | 2004 03 18 | 704 | 0.5− | 0.5− | 2006 10 31 | 703 | 0.9+ | 0.8− |
| 2003 12 19 | 704 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 10 31 | 703 | 0.2+ | 0.1− |
| 2003 12 19 | 704 | 0.2− | 0.4− | 2004 03 18 | 704 | 0.3− | 0.8+ | 2006 11 07 | 644 | 0.2− | 0.4+ |
| 2003 12 19 | 704 | 0.5− | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 0.9+ | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2003 12 21 | 704 | (0.0 | 1.8+) | 2004 04 13 | 645 | 0.1− | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.2+ |
| 2003 12 21 | 704 | 1.3+ | 0.1− | 2004 04 14 | 645 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.8+ |
| 2003 12 21 | 704 | 0.7+ | 0.3− | 2004 04 14 | 645 | 0.1− | 0.0 | 2006 11 16 | 704 | 1.4+ | 0.9+ |
| 2003 12 21 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2003 12 23 | 704 | 1.3+ | 0.0 | 2006 09 26 | 691 | 0.7− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.9+ |
| 2003 12 23 | 704 | 1.3+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2003 12 23 | 704 | 1.0+ | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.2− | 0.4− |
| 2003 12 23 | 704 | 0.7+ | 0.0 | 2006 09 28 | 703 | 0.8− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2003 12 23 | 704 | 0.7+ | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.7− | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2003 12 29 | 699 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.4+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.7− |
| 2003 12 29 | 699 | 0.3− | 0.4− | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2003 12 29 | 699 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2003 12 29 | 699 | 0.5− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2004 01 17 | 608 | 0.0 | 0.9− | 2006 10 17 | 691 | 0.0 | 0.0 | | | | |
| 2004 01 17 | 608 | 0.2+ | 0.8− | 2006 10 17 | 691 | 0.0 | 0.1+ | | | | |

**(141910)∗ 2002 PL$_{78}$**

Discovered 2002 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 67.31252 | | (2000.0) | | | |
| $n$ | 0.27859582 | $\omega$ | 268.89530 | | +0.59981605 | +0.79841500 |
| $a$ | 2.3217725 | $\Omega$ | 38.12158 | | −0.69614908 | +0.55307277 |
| $e$ | 0.1665923 | $i$ | 4.87670 | | −0.39445806 | +0.23800001 |
| $P$ | 3.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.2+ | 0.0 | 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.3+ |
| 2002 07 29 | 644 | 0.2+ | 0.1− | 2003 12 18 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2002 07 29 | 644 | 0.3− | 0.4− | 2003 12 18 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.5+ |
| 2002 08 11 | 644 | 0.2− | 0.1+ | 2005 04 04 | G96 | 0.8+ | 0.3− | 2006 10 20 | 691 | 0.5− | 0.0 |
| 2002 08 11 | 644 | 0.3+ | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 08 11 | 644 | 0.3+ | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2002 08 13 | 644 | 0.0 | 0.0 | 2005 04 04 | G96 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2002 08 13 | 644 | 0.0 | 0.2+ | 2005 04 17 | 691 | 0.5+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 08 13 | 644 | 0.2− | 0.2+ | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2002 08 13 | 644 | 0.0 | 0.1− | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.3− |
| 2002 08 13 | 644 | 0.1− | 0.2− | 2005 05 04 | 568 | 0.1− | 0.9+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2002 08 13 | 644 | 0.4− | 0.1− | 2005 05 04 | 568 | 0.0 | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 08 16 | 644 | 0.2− | 0.3+ | 2005 05 04 | 568 | 0.1+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 08 16 | 644 | 0.3− | 0.3+ | 2005 05 08 | G96 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2002 08 16 | 644 | 0.2− | 0.5+ | 2005 05 08 | G96 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2002 08 24 | 644 | 0.3− | 0.0 | 2005 05 08 | G96 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.8− |
| 2002 08 24 | 644 | 0.2+ | 0.1− | 2005 05 08 | G96 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.9− |
| 2002 08 24 | 644 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2002 08 30 | 644 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 13 | G96 | 0.6+ | 0.3− |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2002 09 02 | 644 | 0.3+ | 0.9+ | 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 02 | 644 | 0.2− | 0.7+ | 2006 10 12 | 691 | 0.4+ | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.1+ | | |
| 2002 09 02 | 644 | 0.1+ | 1.1+ | 2006 10 12 | 691 | 0.2+ | 0.0 | | | | | | |

**(141911)∗ 2002 PQ$_{79}$**

Discovered 2002 Aug. 13 by C. W. Juels and P. R. Holvorcem at Fountain Hills.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.38867 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28250138 | $\omega$ | 0.79551 | | +0.96442128 | +0.26397067 | |
| $a$ | 2.3003239 | $\Omega$ | 343.87610 | | −0.24284290 | +0.86282973 | |
| $e$ | 0.2621293 | $i$ | 2.99877 | | −0.10449363 | +0.43109668 | |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 704 | 0.3− | 0.2− | 2002 09 03 | 608 | 0.4− | 1.4+ | 2002 10 11 | 704 | 0.2− | 0.7+ | | |
| 2002 06 18 | 704 | 0.2− | 0.0 | 2002 09 04 | 644 | 1.1+ | 0.4− | 2002 10 11 | 704 | 0.4− | 0.5+ | | |
| 2002 06 18 | 704 | 0.1− | 0.2− | 2002 09 04 | 644 | 0.3− | 0.9− | 2002 11 06 | 704 | (0.1− | 1.6+) | | |
| 2002 07 23 | 644 | 0.5− | 0.2+ | 2002 09 04 | 644 | 0.1− | 0.9− | 2002 11 06 | 704 | 0.5− | 0.0 | | |
| 2002 07 23 | 644 | 0.5− | 0.1+ | 2002 09 05 | 704 | 0.0 | 0.1+ | 2002 11 06 | 704 | 0.5− | 0.1+ | | |
| 2002 07 23 | 644 | 0.5− | 0.1+ | 2002 09 05 | 704 | 0.1− | 0.2+ | 2003 12 25 | 645 | 0.0 | 0.1+ | | |
| 2002 07 29 | 644 | 0.6− | 0.1+ | 2002 09 05 | 704 | 0.1+ | 0.3− | 2003 12 25 | 645 | 0.1+ | 0.1+ | | |
| 2002 07 29 | 644 | 0.6− | 0.1+ | 2002 09 05 | 704 | 0.1− | 0.9− | 2004 01 22 | 704 | 1.1+ | 0.2− | | |
| 2002 07 29 | 644 | 0.4− | 0.1+ | 2002 09 05 | 704 | 0.3− | 0.3− | 2004 01 22 | 704 | 1.4+ | 0.7+ | | |
| 2002 07 30 | 608 | 0.2+ | 0.7− | 2002 09 15 | 644 | 0.4− | 0.4− | 2004 01 22 | 704 | 0.2+ | 0.3+ | | |
| 2002 07 30 | 608 | 0.6+ | 0.4+ | 2002 09 15 | 644 | 0.4− | 0.4− | 2004 01 22 | 704 | 0.3+ | 0.3+ | | |
| 2002 07 30 | 608 | 0.1− | 0.8+ | 2002 09 15 | 644 | 0.5− | 0.4− | 2004 01 22 | 704 | 0.3+ | 0.4− | | |
| 2002 08 12 | 699 | 0.9+ | 0.4+ | 2002 09 29 | 608 | 0.8− | 0.6− | 2004 02 12 | 691 | 0.3− | 0.3+ | | |
| 2002 08 12 | 699 | 0.6+ | 0.3− | 2002 09 29 | 608 | 0.8− | 0.8− | 2004 02 12 | 691 | 0.2+ | 0.4+ | | |
| 2002 08 12 | 699 | 0.3+ | 0.0 | 2002 09 29 | 608 | 0.8− | 0.5− | 2004 02 12 | 691 | 0.1+ | 0.5+ | | |
| 2002 08 12 | 699 | 0.3+ | 0.0 | 2002 10 03 | 704 | 0.2− | 0.1− | 2004 02 26 | 695 | 0.1− | 0.4+ | | |
| 2002 08 13 | 678 | 1.0− | 0.5− | 2002 10 03 | 704 | 0.1− | 0.3− | 2004 02 26 | 695 | 0.0 | 0.3+ | | |
| 2002 08 13 | 678 | 0.9− | 1.0− | 2002 10 03 | 704 | 0.0 | 0.1+ | 2005 05 04 | 644 | 0.2+ | 0.6+ | | |
| 2002 08 14 | 704 | 0.3+ | 0.2+ | 2002 10 03 | 704 | 0.5− | 0.5+ | 2005 05 04 | 644 | 0.3+ | 0.5+ | | |
| 2002 08 14 | 704 | 0.8+ | 0.6+ | 2002 10 03 | 704 | 0.4− | 0.1− | 2005 05 04 | 644 | 0.3+ | 0.6+ | | |
| 2002 08 14 | 704 | 0.6+ | 0.2+ | 2002 10 03 | 704 | 0.2+ | 0.2+ | 2005 05 08 | 699 | 0.4+ | 0.7− | | |
| 2002 08 14 | 704 | 0.4+ | 0.4+ | 2002 10 03 | 704 | (0.5− | 1.7−) | 2005 05 08 | 699 | 0.7− | 1.1− | | |
| 2002 08 14 | 704 | 0.8+ | 0.7+ | 2002 10 03 | 704 | 0.2+ | 0.4+ | 2005 05 08 | 699 | 1.5− | 0.4+ | | |
| 2002 08 14 | 848 | 0.3− | 0.9+ | 2002 10 03 | 704 | 0.1− | 1.0+ | 2005 05 08 | 699 | 0.7+ | 0.9+ | | |
| 2002 08 14 | 848 | 0.4− | 0.3+ | 2002 10 05 | 704 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.3− | | |
| 2002 08 14 | 848 | 0.6+ | 1.3− | 2002 10 05 | 704 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2002 08 15 | 644 | 0.1− | 0.1+ | 2002 10 05 | 704 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2002 08 15 | 644 | 0.3− | 0.1+ | 2002 10 05 | 704 | 0.2+ | 0.7− | 2006 10 28 | G96 | 0.0 | 0.4− | | |
| 2002 08 15 | 644 | 0.3− | 0.1+ | 2002 10 05 | 704 | 0.5− | 0.2− | 2006 10 29 | G96 | 0.3− | 0.6− | | |
| 2002 08 16 | 608 | 0.6+ | 1.0+ | 2002 10 07 | 291 | 0.1+ | 0.1+ | 2006 10 29 | G96 | 0.3− | 0.5− | | |
| 2002 08 16 | 608 | 0.5+ | 1.0+ | 2002 10 07 | 291 | 0.2+ | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.3− | | |
| 2002 08 16 | 608 | 0.6+ | 1.0+ | 2002 10 07 | 704 | 0.3+ | 0.0 | 2006 10 29 | G96 | 0.0 | 0.3− | | |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2002 10 07 | 704 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.1+ | 1.3+ | | |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2002 10 07 | 291 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.6+ | | |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2002 10 07 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.7+ | | |
| 2002 08 29 | 644 | 0.1− | 1.0+ | 2002 10 07 | 704 | 0.0 | 0.8− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2002 08 29 | 644 | 0.1− | 1.0+ | 2002 10 07 | 704 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.1+ | 1.1+ | 2002 10 11 | 704 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2002 09 03 | 608 | 0.3− | 1.5+ | 2002 10 11 | 704 | 0.2+ | 0.4+ | | | | | | |
| 2002 09 03 | 608 | (0.7− | 1.7+) | 2002 10 11 | 704 | 0.1− | 0.0 | | | | | | |

**(141912)∗ 2002 PN$_{80}$**

Discovered 2002 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.66960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26977001 | $\omega$ | 192.46776 | | +0.38713232 | +0.91326658 | |
| $a$ | 2.3721398 | $\Omega$ | 100.41855 | | −0.83448549 | +0.40552634 | |
| $e$ | 0.1007207 | $i$ | 7.40623 | | −0.39212566 | +0.03863342 | |
| $P$ | 3.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 704 | 1.0+ | 0.2− | 2005 04 02 | 683 | 0.7− | 0.8− | 2006 09 20 | 703 | 0.8− | 0.4− | | |
| 1998 05 22 | 704 | 0.0 | 0.5+ | 2005 04 02 | 683 | (1.7− | 1.0+) | 2006 09 20 | 703 | 0.1+ | 0.1+ | | |
| 1998 05 22 | 704 | 1.7− | 0.2+ | 2005 04 02 | 683 | (1.8+ | 1.3−) | 2006 09 20 | 703 | 0.6− | 0.0 | | |
| 1998 05 22 | 704 | 1.3+ | 0.7− | 2005 04 05 | 683 | 0.8+ | 0.8− | 2006 09 21 | 699 | 0.4+ | 0.2− | | |
| 1998 05 22 | 704 | 0.4− | 0.6+ | 2005 04 05 | 683 | 0.2− | 1.3− | 2006 09 21 | 699 | 0.2− | 0.3+ | | |
| 2002 07 15 | 644 | 0.1+ | 0.3+ | 2005 04 05 | 683 | 1.0− | 0.6+ | 2006 09 21 | 699 | 1.0− | 0.1+ | | |
| 2002 07 15 | 644 | 0.1+ | 0.1+ | 2005 04 05 | 599 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.4− | 0.0 | | |
| 2002 07 15 | 644 | 0.2+ | 0.6+ | 2005 04 05 | 599 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.0 | 1.0− | | |
| 2002 08 11 | 644 | 0.1− | 0.4− | 2005 04 06 | 599 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.6+ | | |
| 2002 08 11 | 644 | 0.1− | 0.4− | 2005 04 06 | 599 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.3− | 0.3− | | |
| 2002 08 11 | 644 | 0.1− | 0.0 | 2005 04 13 | 703 | 1.0− | 0.9− | 2006 09 25 | 699 | 1.4− | 0.3− | | |
| 2002 08 13 | 704 | 0.2+ | 0.4+ | 2005 04 13 | 703 | 1.2− | 0.9− | 2006 09 26 | 703 | 1.1− | 0.6+ | | |
| 2002 08 13 | 704 | 0.1− | 0.5− | 2005 04 13 | 703 | 1.0− | 0.7− | 2006 09 26 | 703 | 0.2− | 0.0 | | |
| 2002 08 13 | 704 | 0.2+ | 1.4+ | 2005 04 13 | 703 | 0.7− | 0.4− | 2006 09 26 | 703 | 0.8+ | 0.5− | | |
| 2002 08 13 | 704 | 0.2+ | 0.1− | 2005 04 18 | 704 | (2.4+ | 1.6+) | 2006 09 26 | 703 | 0.4− | 0.2+ | | |
| 2002 08 14 | 644 | 0.2+ | 0.3− | 2005 04 18 | 704 | 0.6+ | 0.7− | 2006 10 02 | 703 | 0.2− | 0.3− | | |
| 2002 08 14 | 644 | 0.1+ | 0.4− | 2005 04 18 | 704 | 0.1+ | 0.6− | 2006 10 02 | 703 | 0.4+ | 0.2+ | | |
| 2002 08 14 | 644 | 0.2+ | 0.5− | 2005 04 18 | 704 | 0.9+ | 0.2+ | 2006 10 02 | 703 | 0.5+ | 0.2− | | |
| 2002 08 30 | 644 | 0.4− | 0.3− | 2005 04 18 | 704 | 0.9+ | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.0 | | |
| 2002 08 30 | 644 | 0.0 | 0.5− | 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 08 30 | 644 | 0.2− | 0.6− | 2005 05 03 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− | | |
| 2002 08 30 | 644 | 0.2− | 0.3− | 2005 05 03 | 691 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 30 | 644 | 0.3− | 0.6− | 2005 05 04 | 703 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.2+ | | |
| 2002 08 30 | 644 | 0.1− | 0.0 | 2005 05 04 | 703 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.9− | | |
| 2005 03 10 | 703 | 0.2− | 0.3− | 2005 05 04 | 703 | 1.0− | 0.4+ | 2006 10 21 | 703 | 1.2+ | 1.1+ | | |
| 2005 03 10 | 703 | 0.3+ | 0.2+ | 2005 05 04 | 703 | 1.1+ | 0.5− | 2006 10 21 | 703 | 0.6− | 0.1− | | |
| 2005 03 10 | 703 | 0.3− | 0.2+ | 2005 05 06 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | | |
| 2005 03 10 | 703 | 1.2− | 0.6+ | 2005 05 06 | 704 | 1.0+ | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.0 | | |
| 2005 03 18 | 703 | 0.5+ | 0.1+ | 2005 05 06 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2005 03 18 | 703 | 1.2− | 0.1+ | 2005 05 06 | 704 | 0.8+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2005 03 18 | 703 | 1.0− | 0.4− | 2005 05 06 | 704 | 1.5+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2005 03 18 | 703 | 1.0− | 0.9+ | 2006 08 28 | 699 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.1+ | | |
| 2005 04 01 | 699 | 0.3+ | 0.1− | 2006 08 28 | 699 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.8+ | 0.1− | | |
| 2005 04 01 | 699 | 0.6+ | 0.0 | 2006 08 28 | 699 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.5+ | | |
| 2005 04 01 | 699 | 0.9− | 0.8+ | 2006 08 28 | 699 | 0.1+ | 0.0 | 2006 10 28 | 703 | 1.0+ | 0.3+ | | |
| 2005 04 01 | 699 | 0.3− | 0.3− | 2006 09 20 | 703 | 0.5− | 0.7+ | 2006 10 28 | 703 | 0.0 | 0.7+ | | |

**(141913)∗ 2002 PP$_{80}$**

Discovered 2002 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.38094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26004566 | $\omega$ | 267.45774 | | +0.80396969 | +0.59294909 | |
| $a$ | 2.4309143 | $\Omega$ | 56.17181 | | −0.52168606 | +0.73975017 | |
| $e$ | 0.1916261 | $i$ | 3.11989 | | −0.28544069 | +0.31808971 | |
| $P$ | 3.79 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 29 | 691 | 0.1− | 0.2+ | 2002 08 29 | 644 | 0.2+ | 0.2− | 2006 09 26 | 704 | 1.0− | 0.1+ | | |
| 1991 09 29 | 691 | 0.6− | 0.3+ | 2002 08 29 | 644 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.9+ | | |
| 1991 09 29 | 691 | 0.2+ | 0.1+ | 2002 08 30 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | (0.9+ | 1.8−) | | |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2002 08 30 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 1.1− | 0.6+ | | |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2002 08 30 | 644 | 0.2+ | 0.2− | 2006 09 30 | 703 | 1.0− | 0.5− | | |
| 2002 07 15 | 644 | 0.4+ | 1.0+ | 2003 12 29 | 691 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.5+ | | |
| 2002 07 15 | 644 | 0.8+ | 0.6+ | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− | | |
| 2002 07 15 | 644 | 0.5+ | 0.7+ | 2003 12 29 | 691 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.6− | | |
| 2002 08 11 | 644 | 0.3− | 0.4+ | 2005 04 10 | G96 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.1− | | |
| 2002 08 11 | 644 | 0.1− | 0.4+ | 2005 04 10 | G96 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.5− | | |
| 2002 08 11 | 644 | 0.1− | 0.4+ | 2005 04 10 | G96 | 0.3− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2002 08 13 | 704 | (3.4− | 2.7+) | 2005 04 10 | G96 | 0.3− | 0.4+ | 2006 09 30 | 703 | (1.7+ | 3.6+) | | |
| 2002 08 13 | 704 | (3.2− | 1.8+) | 2005 05 12 | G96 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.3− | | |
| 2002 08 13 | 704 | (4.1− | 2.6+) | 2005 05 12 | G96 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.4− | 0.7− | | |
| 2002 08 13 | 704 | (3.7− | 2.5+) | 2005 05 12 | G96 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.1− | 0.5− | | |
| 2002 08 14 | 644 | 0.2− | 0.0 | 2005 05 12 | G96 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2002 08 14 | 644 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2002 08 14 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.5+ | 0.4+ | | |
| 2002 08 18 | 644 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.4− | 1.0+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.5+ | 1.0+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.6+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.3− |

**(141914)∗ 2002 PW$_{80}$ = 2001 JS$_4$**

Discovered 2002 Aug. 11 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 50098)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.84141 | | (2000.0) | | | |
| $n$ | 0.19735318 | $\omega$ | 201.69535 | | +0.26302671 | +0.96316810 |
| $a$ | 2.9217292 | $\Omega$ | 83.58892 | | −0.87669982 | +0.26279502 |
| $e$ | 0.0806867 | $i$ | 3.22436 | | −0.40275846 | +0.05697359 |
| $P$ | 4.99 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 21 | 691 | 0.1+ | 0.1− | 2002 08 15 | 644 | 0.1+ | 0.1+ | 2005 03 14 | G96 | 0.2− | 0.2− |
| 1998 11 21 | 691 | 0.5− | 0.5+ | 2002 08 15 | 644 | 0.6+ | 0.4+ | 2005 03 14 | G96 | 0.3+ | 0.4− |
| 1998 11 21 | 691 | 0.8− | 0.3− | 2002 08 15 | 644 | 0.3+ | 0.4+ | 2006 03 25 | 691 | 0.0 | 0.1+ |
| 2001 05 15 | 691 | 0.2+ | 0.1+ | 2002 08 16 | 644 | 0.3− | 0.6− | 2006 03 25 | 691 | 0.1+ | 0.3+ |
| 2001 05 15 | 691 | 0.0 | 0.1+ | 2002 08 16 | 644 | 0.4+ | 0.1+ | 2006 03 25 | 691 | 0.0 | 0.2+ |
| 2001 05 15 | 691 | 0.0 | 0.8+ | 2002 08 18 | 644 | 0.0 | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.3+ |
| 2001 05 21 | 691 | 0.1+ | 0.2− | 2002 08 18 | 644 | 0.6+ | 0.0 | 2006 04 02 | 691 | 0.7− | 0.9− |
| 2001 05 21 | 691 | 0.6+ | 0.4− | 2002 08 18 | 644 | 0.4+ | 0.1+ | 2006 04 02 | 691 | 0.1+ | 0.3+ |
| 2001 05 21 | 691 | 0.3+ | 0.2− | 2002 08 29 | 644 | 0.8− | 0.8+ | 2006 04 07 | 691 | 0.1+ | 0.3+ |
| 2002 07 06 | 291 | 0.2− | 0.8+ | 2002 08 29 | 644 | 1.3− | 0.4+ | 2006 04 07 | 691 | 0.1− | 0.3+ |
| 2002 07 06 | 291 | 0.2− | 0.2+ | 2002 08 29 | 644 | 0.7− | 0.4+ | 2006 04 07 | 691 | 0.1− | 0.3+ |
| 2002 07 06 | 291 | 0.3− | 0.4+ | 2003 12 22 | 691 | 0.3+ | 0.7+ | 2006 04 26 | 691 | 0.2+ | 0.2+ |
| 2002 08 08 | 644 | 0.3+ | 0.3+ | 2003 12 22 | 691 | 0.1− | 0.8+ | 2006 04 26 | 691 | 0.0 | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2003 12 22 | 691 | 0.5+ | 0.3+ | 2006 04 26 | 691 | 0.0 | 0.1− |
| 2002 08 11 | 644 | 0.1− | 0.4+ | 2005 02 03 | 704 | 0.0 | 1.2+ | 2006 05 26 | G96 | 0.0 | 0.1+ |
| 2002 08 11 | 644 | 0.1− | 0.4+ | 2005 02 03 | 704 | 0.2+ | 1.0+ | 2006 05 26 | G96 | 0.7− | 0.3− |
| 2002 08 11 | 644 | 0.1− | 0.5+ | 2005 02 03 | 704 | 0.3− | 0.5+ | 2006 05 26 | G96 | 0.3− | 0.2− |
| 2002 08 14 | 644 | 0.6+ | 0.9− | 2005 02 03 | 704 | 0.7+ | 1.8+ | 2006 05 26 | G96 | 0.3− | 0.1+ |
| 2002 08 14 | 644 | 0.3+ | 1.4− | 2005 03 14 | G96 | 0.3− | 0.0 | | | | |
| 2002 08 14 | 644 | 0.2+ | 0.8− | 2005 03 14 | G96 | 0.2− | 0.4− | | | | |

**(141915)∗ 2002 PX$_{80}$**

Discovered 2002 Aug. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.28009 | | (2000.0) | | | |
| $n$ | 0.25577193 | $\omega$ | 310.36420 | | +0.53380478 | −0.84261322 |
| $a$ | 2.4579184 | $\Omega$ | 107.23598 | | +0.79664542 | +0.47291932 |
| $e$ | 0.0998800 | $i$ | 4.26931 | | +0.28356398 | +0.25758547 |
| $P$ | 3.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 691 | 0.3+ | 0.3+ | 2004 01 13 | 699 | 1.7− | 1.1+ | 2005 05 13 | 691 | 0.2+ | 0.2+ |
| 2000 01 06 | 691 | 0.1+ | 0.6+ | 2004 01 13 | 699 | 0.2− | 0.2+ | 2005 05 13 | 691 | 0.3+ | 0.3+ |
| 2000 01 06 | 691 | 0.2+ | 0.9+ | 2004 01 13 | 699 | 0.0 | 0.9+ | 2006 08 16 | 644 | 0.0 | 0.6+ |
| 2001 04 14 | 691 | 0.1− | 0.5+ | 2004 01 19 | 699 | 0.0 | 0.6− | 2006 08 16 | 644 | 0.1+ | 0.6+ |
| 2001 04 14 | 691 | 0.1− | 0.5+ | 2004 01 19 | 699 | 0.5+ | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.7+ |
| 2001 04 14 | 691 | 0.0 | 0.0 | 2004 01 19 | 699 | 0.7− | 0.5+ | 2006 08 18 | 644 | 0.3+ | 0.5+ |
| 2002 08 11 | 644 | 0.1− | 0.4+ | 2004 01 19 | 699 | 0.7− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2002 08 11 | 644 | 0.4− | 0.2+ | 2004 01 24 | 704 | 0.2− | 1.0+ | 2006 08 18 | 644 | 0.5+ | 0.2+ |
| 2002 08 11 | 644 | 0.1− | 0.4+ | 2004 01 24 | 704 | 0.4− | 1.2+ | 2006 08 22 | 644 | 0.0 | 0.4+ |
| 2002 08 14 | 644 | 0.1− | 1.2+ | 2004 01 24 | 704 | 0.6− | 1.7+ | 2006 08 22 | 644 | 0.2− | 0.3+ |
| 2002 08 14 | 644 | 0.5− | 0.9+ | 2004 01 24 | 704 | 0.3− | 1.4+ | 2006 08 22 | 644 | 0.0 | 0.4+ |
| 2002 08 14 | 644 | 0.4− | 1.1+ | 2004 01 24 | 704 | 0.7− | 1.3+ | 2006 08 22 | 644 | 0.3− | 0.3+ |
| 2002 08 15 | 644 | 0.7− | 0.7+ | 2004 01 27 | 691 | 0.5− | 0.5− | 2006 08 22 | 644 | 0.0 | 0.3+ |
| 2002 08 15 | 644 | 0.3− | 1.0+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.5+ |
| 2002 08 15 | 644 | 0.5− | 0.9+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.4+ |
| 2002 08 16 | 608 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.6+ |
| 2002 08 16 | 608 | 0.3+ | 0.0 | 2004 01 30 | 704 | 1.1+ | 0.5+ | 2006 08 24 | 644 | 0.1+ | 0.3+ |
| 2002 08 16 | 608 | 0.2+ | 0.1+ | 2004 01 30 | 704 | 0.8+ | 0.5+ | 2006 08 28 | 704 | 0.5− | 0.7− |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2004 01 30 | 704 | 1.5+ | 1.2− | 2006 08 28 | 704 | 0.2− | 1.1+ |
| 2002 08 18 | 644 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.2− | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.1− |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2004 01 30 | 704 | 0.3+ | 0.6+ | 2006 08 28 | 704 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.6− | 0.3+ | 2004 01 30 | 704 | 0.2− | 0.3− | 2006 09 18 | 699 | 1.0− | 0.9+ |
| 2002 08 29 | 644 | 0.3− | 0.5+ | 2004 01 30 | 704 | 0.6− | 0.2− | 2006 09 18 | 699 | 0.2+ | 1.5+ |
| 2002 08 29 | 644 | 0.4− | 0.1− | 2004 01 30 | 704 | 1.5+ | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.3+ |
| 2003 12 21 | 691 | 0.2− | 0.1+ | 2004 03 23 | 291 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.7+ | 1.0+ |
| 2003 12 21 | 691 | 0.2− | 0.2− | 2004 03 23 | 291 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 1.4− | 0.8− |
| 2003 12 21 | 691 | 0.0 | 0.2+ | 2004 03 23 | 291 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2003 12 21 | 704 | 0.7− | 0.6+ | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.5+ | 0.2+ |
| 2003 12 21 | 704 | 0.3− | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 1.6− | 1.4− |
| 2003 12 21 | 704 | 0.3+ | 0.9+ | 2005 05 08 | 691 | 0.1+ | 0.6+ | | | | |
| 2004 01 13 | 699 | 0.4− | 0.7+ | 2005 05 13 | 691 | 0.5+ | 0.2+ | | | | |

**(141916)∗ 2002 PF$_{82}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.47134 | | (2000.0) | | | |
| $n$ | 0.27523125 | $\omega$ | 162.35670 | | +0.76981148 | +0.63812096 |
| $a$ | 2.3406558 | $\Omega$ | 157.97330 | | −0.58996590 | +0.71966639 |
| $e$ | 0.2472987 | $i$ | 2.11696 | | −0.24357858 | +0.27364564 |
| $P$ | 3.58 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2002 09 05 | 704 | 0.1− | 0.2+ | 2005 04 10 | 691 | 0.0 | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2002 09 05 | 704 | 0.1− | 0.2+ | 2005 04 10 | 691 | 0.1+ | 0.1+ |
| 2002 07 09 | 704 | 0.4+ | 1.1+ | 2002 09 05 | 704 | 0.4− | 0.1+ | 2005 04 10 | 691 | 0.1+ | 0.1+ |
| 2002 07 09 | 704 | 0.7+ | 0.8+ | 2002 09 05 | 704 | 0.4− | 0.6+ | 2005 04 11 | 691 | 0.0 | 0.0 |
| 2002 07 09 | 704 | 1.1+ | 0.8+ | 2002 09 05 | 704 | 0.4− | 0.5+ | 2005 04 11 | 691 | 0.2− | 0.0 |
| 2002 08 09 | 704 | 0.5+ | 0.9+ | 2002 09 05 | 608 | 0.8− | 0.7+ | 2005 04 11 | 691 | 0.0 | 0.0 |
| 2002 08 09 | 704 | 0.5+ | 0.3− | 2002 09 05 | 608 | 0.4− | 0.8+ | 2005 04 11 | 691 | 0.2+ | 0.2+ |
| 2002 08 09 | 704 | 0.6+ | 0.7+ | 2002 09 05 | 608 | 0.7− | 0.8+ | 2005 04 11 | 691 | 0.0 | 0.2+ |
| 2002 08 09 | 704 | 0.9+ | 0.1− | 2002 09 10 | 608 | 0.3+ | 0.8+ | 2005 04 11 | 691 | 0.0 | 0.0 |
| 2002 08 09 | 608 | 0.2+ | 0.9+ | 2002 09 10 | 608 | 0.5+ | 0.9+ | 2005 05 04 | 691 | 0.0 | 0.1− |
| 2002 08 09 | 608 | 0.6+ | 0.1+ | 2002 09 10 | 608 | 0.2+ | 0.9+ | 2005 05 04 | 691 | 0.3+ | 0.0 |
| 2002 08 09 | 608 | 0.9+ | 0.1− | 2002 09 13 | 704 | 1.3− | 0.2+ | 2005 05 04 | 691 | 0.2− | 0.7+ |
| 2002 08 14 | 704 | 0.5− | 0.3− | 2002 09 13 | 704 | 1.2− | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.0 |
| 2002 08 14 | 704 | 0.3− | 0.6− | 2002 09 13 | 704 | (2.1− | 0.5+) | 2005 05 10 | G96 | 0.6− | 0.1− |
| 2002 08 14 | 704 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.5− | 0.3+ | 2005 05 10 | G96 | 0.4− | 0.0 |
| 2002 08 14 | 704 | 0.4− | 0.4− | 2002 09 14 | 644 | 0.7− | 0.2+ | 2005 05 10 | G96 | 0.4− | 0.1− |
| 2002 08 14 | 704 | 0.5− | 0.0 | 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.0 |
| 2002 08 15 | 704 | 0.4+ | 0.4+ | 2002 09 15 | 644 | 0.4− | 1.0− | 2006 09 28 | G96 | 0.3− | 0.1+ |
| 2002 08 15 | 704 | 0.5+ | 0.0 | 2002 09 15 | 644 | 0.4− | 0.7− | 2006 09 28 | G96 | 0.2− | 0.2+ |
| 2002 08 15 | 704 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.5− | 0.8− | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2002 08 15 | 704 | 0.3− | 0.9− | 2004 01 15 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.3+ |
| 2002 08 15 | 704 | 0.4− | 0.2− | 2004 01 15 | 691 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2002 08 17 | 704 | 1.4+ | 0.8+ | 2004 01 15 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 08 17 | 704 | 0.3− | 0.3+ | 2005 04 07 | G96 | 0.5− | 0.1− | 2006 10 22 | G96 | 0.7− | 0.1− |
| 2002 08 17 | 704 | 0.8− | 0.1+ | 2005 04 07 | G96 | 0.4− | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.5− |
| 2002 08 17 | 704 | (0.1+ | 2.6+) | 2005 04 07 | G96 | 0.4− | 0.2− | 2006 11 27 | 703 | 1.4− | 0.7+ |
| 2002 08 17 | 704 | 0.3− | 0.7− | 2005 04 07 | G96 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.9+ |
| 2002 08 17 | 644 | 0.2− | 0.1− | 2005 04 09 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.3+ | 0.1− | 2005 04 09 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1+ | 1.4+ |
| 2002 08 17 | 644 | 0.3+ | 0.0 | 2005 04 09 | 691 | 0.3+ | 0.0 | 2006 11 29 | 704 | 1.0+ | 1.1+ |
| 2002 08 28 | 644 | 0.5+ | 0.2+ | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.7+ | 0.5− |
| 2002 08 28 | 644 | 0.4− | 0.3+ | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2002 08 28 | 644 | 0.4− | 0.3+ | 2005 04 10 | 691 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.5+ |

**(141917)∗ 2002 PK$_{82}$ = 1988 VE$_6$ = 2000 AB$_{40}$**

Discovered 2002 Aug. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33733)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.09545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27447516 | $\omega$ | 78.55263 | | +0.86799702 | −0.49266032 | |
| $a$ | 2.3449523 | $\Omega$ | 310.92947 | | +0.41745236 | +0.79177423 | |
| $e$ | 0.2145786 | $i$ | 4.72124 | | +0.26891393 | +0.36108084 | |
| $P$ | 3.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 11 03 | 033 | 0.5− | 0.4+ | 2002 08 17 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 704 | 0.3+ | 0.5+ | |
| 1988 11 04 | 033 | 0.0 | 0.7+ | 2002 08 18 | 644 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.1+ | 0.3− | |
| 1988 11 04 | 033 | 0.3+ | 0.3− | 2002 08 18 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.2+ | |
| 2000 01 03 | 704 | 0.7− | 1.0− | 2002 08 18 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.2+ | 0.2+ | |
| 2000 01 03 | 704 | 0.5− | 0.1− | 2002 09 05 | 704 | 0.7+ | 0.4+ | 2006 11 15 | 704 | 0.4− | 0.5+ | |
| 2000 01 03 | 704 | 0.1− | 1.0− | 2002 09 05 | 704 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.1− | 1.4+ | |
| 2000 01 04 | 704 | 0.4− | 0.2+ | 2002 09 05 | 704 | 0.7+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.4+ | |
| 2000 01 04 | 704 | 0.5+ | 0.5− | 2002 09 05 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.4− | 1.4+ | |
| 2000 01 04 | 704 | 0.2− | 0.6− | 2002 09 05 | 704 | 0.0 | 0.3+ | 2006 11 16 | 704 | (0.3+ | 1.6+) | |
| 2000 01 04 | 704 | 1.0+ | 0.4− | 2002 09 13 | 704 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.0 | |
| 2002 08 08 | 699 | 0.0 | 0.0 | 2002 09 13 | 704 | (0.7− | 1.8+) | 2006 11 19 | 704 | 0.5− | 0.5+ | |
| 2002 08 08 | 699 | 0.2+ | 0.5+ | 2002 09 13 | 704 | 1.0− | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.1− | |
| 2002 08 08 | 699 | 1.4+ | 0.0 | 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.1+ | |
| 2002 08 08 | 699 | 0.4− | 0.8− | 2002 09 14 | 644 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.2+ | |
| 2002 08 09 | 704 | 0.4− | 0.4− | 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.2+ | |
| 2002 08 09 | 704 | 0.2− | 0.8+ | 2002 09 22 | 608 | 0.7− | 0.6− | 2006 11 22 | 704 | 0.1− | 0.0 | |
| 2002 08 09 | 704 | 0.2+ | 0.9+ | 2002 09 22 | 608 | 0.4− | 0.8− | 2006 11 22 | 704 | 0.0 | 0.3− | |
| 2002 08 12 | 807 | 0.3− | 0.4+ | 2002 09 22 | 608 | 0.9− | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.1+ | |
| 2002 08 12 | 807 | 0.2− | 0.3+ | 2004 02 16 | 691 | 0.3+ | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.6− | |
| 2002 08 13 | 699 | 0.2− | 0.1− | 2004 02 16 | 691 | 0.2+ | 0.8+ | 2006 11 23 | G96 | 0.4+ | 0.5− | |
| 2002 08 13 | 699 | 0.5− | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.9+ | 2006 11 23 | G96 | 0.0 | 0.4− | |
| 2002 08 13 | 699 | 0.6− | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.3− | |
| 2002 08 13 | 699 | (0.4+ | 2.5−) | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.4− | |
| 2002 08 14 | 704 | 0.2− | 0.1− | 2004 03 18 | 704 | 1.0+ | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.9− | |
| 2002 08 14 | 704 | 0.7− | 0.4+ | 2006 11 15 | 704 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.1+ | |
| 2002 08 14 | 704 | 0.6+ | 0.6− | 2006 11 15 | 704 | 0.7+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.1+ | |
| 2002 08 14 | 704 | 1.0+ | 0.6− | 2006 11 15 | 704 | 0.2− | 0.6+ | 2006 11 29 | 704 | 0.2− | 0.5+ | |
| 2002 08 17 | 644 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.2+ | 2006 11 29 | 704 | 1.1− | 0.3− | |
| 2002 08 17 | 644 | 0.5+ | 0.5+ | 2006 11 15 | 704 | 0.1− | 0.1− | | | | | |

## (141918)∗ 2002 PS$_{82}$

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.86383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26113087 | $\omega$ | 248.92746 | | +0.63637132 | +0.77006721 | |
| $a$ | 2.4241746 | $\Omega$ | 60.67501 | | −0.68717475 | +0.59245875 | |
| $e$ | 0.1734311 | $i$ | 2.96081 | | −0.35046028 | +0.23662022 | |
| $P$ | 3.77 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.5− | 0.2− | 2002 09 15 | 644 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.4+ | 0.4+ | |
| 1991 10 13 | 691 | 0.3− | 0.3+ | 2002 09 15 | 644 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.5+ | 0.0 | |
| 1991 10 13 | 691 | 1.0+ | 0.4+ | 2002 09 15 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.1+ | |
| 1993 01 22 | 691 | 0.4− | 0.2− | 2005 03 12 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.6+ | |
| 1993 01 22 | 691 | 0.0 | 0.7+ | 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.1+ | |
| 1993 01 22 | 691 | 0.5+ | 0.3+ | 2005 03 12 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.1+ | |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2005 03 15 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.1− | |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2005 03 15 | 691 | 0.4− | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.5+ | |
| 2002 07 30 | 608 | 0.5− | 0.9− | 2005 03 15 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.8+ | |
| 2002 07 30 | 608 | 0.4− | 0.6− | 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.5+ | |
| 2002 07 30 | 608 | 0.1+ | 0.8− | 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.3+ | |
| 2002 08 10 | 704 | (1.6+ | 1.1+) | 2005 04 01 | 691 | 0.6+ | 0.1+ | 2006 09 28 | 691 | 0.4− | 0.3+ | |
| 2002 08 10 | 704 | (1.7+ | 0.7+) | 2005 04 02 | 185 | (0.6+ | 1.6+) | 2006 09 28 | 691 | 0.0 | 0.2+ | |
| 2002 08 10 | 704 | 1.0+ | 0.2− | 2005 04 02 | 185 | 0.2+ | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.3+ | |
| 2002 08 10 | 704 | 0.2+ | 0.9+ | 2005 04 03 | 185 | 0.0 | 1.0+ | 2006 10 01 | 704 | 0.6+ | 0.1− | |
| 2002 08 14 | 704 | 0.4+ | 0.5+ | 2005 04 04 | 703 | 0.6− | 0.2− | 2006 10 01 | 704 | 0.7+ | 0.1− | |
| 2002 08 14 | 704 | (0.1+ | 1.5−) | 2005 04 04 | 703 | 0.1+ | 0.6− | 2006 10 01 | 704 | 0.6− | 0.5+ | |
| 2002 08 14 | 704 | 0.1+ | 0.2− | 2005 04 04 | 703 | (2.0− | 2.2+) | 2006 10 01 | 704 | 0.0 | 0.4− | |
| 2002 08 14 | 704 | 0.3+ | 0.2+ | 2005 04 04 | 703 | 0.2− | 1.4+ | 2006 10 01 | 704 | (1.8− | 1.8+) | |
| 2002 08 14 | 704 | 0.3+ | 0.6− | 2005 05 03 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.2+ | |
| 2002 08 15 | 699 | 0.7+ | 0.5− | 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.4− | 0.5+ | |
| 2002 08 15 | 699 | 0.4− | 0.6+ | 2005 05 03 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.6− | 0.2+ | |
| 2002 08 15 | 699 | 0.6− | 0.2− | 2005 05 09 | G96 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 2002 08 15 | 699 | 0.2− | 0.0 | 2005 05 09 | G96 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 2002 08 17 | 608 | 0.9− | 1.0+ | 2005 05 09 | G96 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | |
| 2002 08 17 | 608 | 1.0− | 0.7+ | 2005 05 09 | G96 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.5+ | |
| 2002 08 17 | 608 | 0.8− | 1.2+ | 2005 05 12 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.7+ | |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2005 05 12 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.4+ | |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2005 05 12 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.3− | |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | |
| 2002 08 30 | 644 | 0.4− | 0.1− | 2006 08 18 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.4+ | |
| 2002 08 30 | 644 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | |
| 2002 08 30 | 644 | 0.1− | 0.4− | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 2002 08 30 | 644 | 0.5+ | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2002 08 30 | 644 | 0.3+ | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.6+ | |
| 2002 08 30 | 644 | 0.9+ | 0.5+ | 2006 09 16 | 704 | 1.2− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.3− | |
| 2002 09 05 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.6+ | |
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 704 | 1.1+ | 1.0+ | 2006 10 22 | 703 | 0.4− | 0.3+ | |
| 2002 09 05 | 704 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.7+ | |
| 2002 09 05 | 704 | 0.4+ | 0.2− | 2006 09 16 | 644 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.1− | |
| 2002 09 05 | 704 | 0.0 | 0.1− | 2006 09 16 | 644 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.0 | |
| 2002 09 05 | 608 | 1.1− | 0.3− | 2006 09 21 | 699 | (0.3− | 1.5+) | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2002 09 05 | 608 | 1.2− | 0.4+ | 2006 09 21 | 699 | 0.3− | 1.4+ | 2006 10 22 | G96 | 0.2− | 0.3− | |
| 2002 09 05 | 608 | 0.9− | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.2− | |
| 2002 09 06 | 704 | 0.6− | 1.1+ | 2006 09 21 | 699 | (0.4− | 1.6+) | 2006 11 16 | G96 | 0.2− | 0.1− | |
| 2002 09 06 | 704 | 1.1− | 0.4+ | 2006 09 22 | 704 | (1.6+ | 0.9+) | 2006 11 16 | G96 | 0.1− | 0.0 | |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1− | |

## (141919)∗ 2002 PT$_{82}$

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.18834 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26745313 | $\omega$ | 227.47019 | | −0.13905852 | +0.98991046 | |
| $a$ | 2.3858195 | $\Omega$ | 34.56427 | | −0.89393382 | −0.11366202 | |
| $e$ | 0.1698804 | $i$ | 2.74836 | | −0.42608104 | −0.08460634 | |
| $P$ | 3.69 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.3+ | 0.3− | 2005 03 31 | 699 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.4+ | |
| 1995 09 18 | 691 | 0.4+ | 0.5− | 2005 03 31 | 699 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.4− | 1.0− | |
| 1995 09 18 | 691 | 0.7− | 0.5− | 2005 03 31 | 699 | 0.6+ | 1.5+ | 2006 09 14 | 703 | 1.1− | 0.8+ | |
| 1996 12 08 | 691 | 0.3+ | 0.2+ | 2005 03 31 | 699 | (0.2+ | 1.6+) | 2006 09 18 | 691 | 0.0 | 0.3+ | |
| 1996 12 08 | 691 | 0.3+ | 0.0 | 2005 04 04 | 703 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.3+ | |
| 1996 12 08 | 691 | 0.0 | 0.1− | 2005 04 04 | 703 | 0.4− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.3+ | |
| 2001 02 17 | 704 | 0.1+ | 0.8+ | 2005 04 04 | 704 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.1+ | |
| 2001 02 17 | 704 | 1.0+ | 0.2− | 2005 04 04 | 703 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1− | 0.3+ | |
| 2001 02 17 | 704 | 0.3− | 0.3+ | 2005 04 04 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.4+ | |
| 2001 02 17 | 704 | 1.2+ | 0.8+ | 2005 04 04 | 703 | 0.7− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2+ | |
| 2002 08 10 | 704 | 0.7− | 0.9+ | 2005 04 04 | 704 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.0 | |
| 2002 08 10 | 704 | 1.3− | 0.6+ | 2005 04 04 | 704 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.0 | |
| 2002 08 10 | 704 | (2.2− | 0.0 ) | 2005 04 04 | 704 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1+ | |
| 2002 08 10 | 704 | 0.8− | 1.5+ | 2005 04 05 | 704 | 0.9+ | 0.8+ | 2006 10 01 | 704 | 0.2− | 0.1+ | |
| 2002 08 10 | 704 | 1.0− | 0.3+ | 2005 04 05 | 704 | 0.5− | 0.1+ | 2006 10 01 | 704 | 0.6− | 1.1− | |
| 2002 08 14 | 704 | 0.4+ | 1.3− | 2005 04 05 | 704 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.2+ | |
| 2002 08 14 | 704 | 0.2+ | 0.4− | 2005 04 06 | G96 | 0.5− | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.2+ | |
| 2002 08 14 | 704 | 1.0+ | 0.8− | 2005 04 06 | G96 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.4+ | |
| 2002 08 14 | 704 | 1.1+ | 0.4− | 2005 04 06 | G96 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.4+ | |
| 2002 08 15 | 699 | 0.5+ | 0.1+ | 2005 04 06 | G96 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.5+ | |
| 2002 08 15 | 699 | 0.2− | 0.2+ | 2005 04 07 | 704 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.4+ | |
| 2002 08 15 | 699 | 0.2+ | 0.7+ | 2005 04 07 | 704 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.4+ | |
| 2002 08 15 | 699 | 0.3− | 0.7+ | 2005 04 07 | 704 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.9− | 0.6− | |
| 2002 08 30 | 644 | 0.1− | 0.4+ | 2005 04 09 | 704 | 0.9+ | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.8− | |
| 2002 08 30 | 644 | 0.0 | 0.5+ | 2005 04 09 | 704 | 0.8+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.6− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.0 | 0.5+ | 2005 04 09 | 704 | 1.1+ | 0.3+ | 2006 10 17 | 703 | (1.6+ | 1.0+) | | |
| 2002 09 05 | 704 | 0.3+ | 0.9− | 2005 04 09 | 704 | 1.1+ | 0.9− | 2006 10 19 | 644 | 0.1+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.1− | 0.2− | 2005 04 09 | 704 | 0.3− | 1.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.9− | 2005 04 12 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 09 05 | 704 | 0.3− | 0.6− | 2005 04 12 | 704 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2002 09 05 | 704 | 0.7+ | 1.1− | 2005 04 12 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 09 10 | 608 | 0.2+ | 0.4− | 2005 04 12 | 704 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2002 09 10 | 608 | 0.1− | 0.3+ | 2005 04 12 | 704 | 0.7+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.6− | | |
| 2002 09 10 | 608 | 0.1+ | 0.4+ | 2005 04 13 | 699 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1+ | | |
| 2002 09 15 | 644 | 0.2− | 0.6+ | 2005 04 13 | 699 | 0.5− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2002 09 15 | 644 | 0.3− | 0.5+ | 2005 04 13 | 699 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.5+ | | |
| 2002 09 15 | 644 | 0.1+ | 0.7+ | 2005 04 13 | 699 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2003 12 25 | 691 | 0.1− | 0.0 | 2005 05 04 | 644 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2+ | | |
| 2003 12 25 | 691 | 0.2− | 0.0 | 2005 05 04 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.5+ | | |
| 2003 12 25 | 691 | 0.2− | 0.0 | 2005 05 04 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.4+ | | |
| 2005 03 08 | 699 | 1.2+ | 0.8− | 2005 05 06 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2005 03 08 | 699 | 0.6+ | 0.0 | 2005 05 06 | G96 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.8+ | | |
| 2005 03 08 | 699 | (0.7+ | 1.7−) | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− | | |
| 2005 03 08 | 699 | (1.5+ | 0.8+) | 2005 05 06 | G96 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2005 03 11 | 691 | 0.0 | 0.0 | 2005 05 22 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2005 03 11 | 691 | 0.7− | 0.3− | 2005 05 22 | 644 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2005 03 11 | 691 | 0.1+ | 0.2− | 2005 05 22 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2005 03 13 | 703 | (0.2+ | 1.7+) | 2006 09 14 | 691 | 0.4+ | 1.1+ | 2006 11 21 | G96 | 0.3+ | 0.3− | | |
| 2005 03 13 | 703 | 0.5+ | 1.0+ | 2006 09 14 | 691 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2005 03 13 | 703 | 0.3− | 0.8+ | 2006 09 14 | 703 | 1.0− | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.0 | | |
| 2005 03 13 | 703 | (1.6− | 0.7+) | 2006 09 14 | 703 | 1.0− | 0.1− | | | | | | |

**(141920)∗ 2002 PU$_{82}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.84648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26228562 | $\omega$ | 295.52767 | | +0.88657388 | −0.45955462 | |
| $a$ | 2.4170542 | $\Omega$ | 91.86963 | | +0.44113994 | +0.80552310 | |
| $e$ | 0.2023503 | $i$ | 3.03284 | | +0.13922034 | +0.37408834 | |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 691 | 0.3+ | 1.0+ | 2002 09 15 | 644 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | | |
| 2001 05 17 | 691 | 0.3+ | 0.7+ | 2004 01 22 | 704 | 1.4+ | 0.5+ | 2006 10 01 | 704 | 0.1− | 0.4− | | |
| 2001 05 17 | 691 | 0.4+ | 0.8+ | 2004 01 22 | 704 | 0.9+ | 0.7+ | 2006 10 01 | 704 | (0.0 | 2.5+) | | |
| 2002 08 09 | 194 | 0.9− | 1.0+ | 2004 01 22 | 704 | 1.0− | 1.2+ | 2006 10 01 | 704 | 0.4+ | 0.7− | | |
| 2002 08 09 | 194 | 0.8− | 0.4+ | 2004 01 22 | 704 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.0 | | |
| 2002 08 10 | 704 | 1.2− | 1.2+ | 2004 02 14 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.7− | 0.7+ | | |
| 2002 08 10 | 704 | (1.6− | 0.1+) | 2004 02 14 | 691 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.1− | | |
| 2002 08 10 | 704 | 1.1− | 0.6+ | 2004 02 14 | 691 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.0 | | |
| 2002 08 10 | 704 | (1.7− | 2.1+) | 2004 02 23 | 704 | 0.4+ | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.0 | | |
| 2002 08 10 | 704 | (1.4− | 1.9+) | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.1− | | |
| 2002 08 12 | 194 | 0.3− | 0.1− | 2004 02 23 | 704 | 0.6+ | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 08 12 | 194 | 1.0+ | 1.4+ | 2004 02 23 | 704 | (0.9+ | 2.3+) | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 08 14 | 704 | 0.8+ | 0.3− | 2004 02 23 | 704 | 0.1− | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 08 14 | 704 | 0.4+ | 0.9− | 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 10 15 | 703 | 0.2− | 0.9+ | | |
| 2002 08 14 | 704 | 0.6+ | 0.9− | 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 10 15 | 703 | 0.1+ | 0.7+ | | |
| 2002 08 14 | 704 | 0.3+ | 0.3− | 2004 03 17 | 691 | 0.7− | 0.9+ | 2006 10 15 | 703 | 0.4− | 0.3+ | | |
| 2002 08 14 | 704 | 0.2− | 0.7− | 2004 03 21 | 671 | 0.5+ | 0.5− | 2006 10 19 | 644 | 0.0 | 0.2+ | | |
| 2002 08 15 | 699 | 0.1+ | 0.5+ | 2004 03 21 | 671 | 0.4− | 0.8+ | 2006 10 19 | 644 | 0.2− | 0.4+ | | |
| 2002 08 15 | 699 | 0.7− | 0.7+ | 2004 03 21 | 671 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 08 15 | 699 | (0.5− | 1.7+) | 2004 03 21 | 671 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.3+ | | |
| 2002 08 15 | 699 | 0.1+ | 0.2+ | 2004 03 21 | 671 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.5+ | | |
| 2002 08 17 | 608 | 0.8− | 0.9+ | 2005 05 20 | G96 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.2+ | | |
| 2002 08 17 | 608 | 0.1− | 0.4+ | 2005 05 20 | G96 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.2− | | |
| 2002 08 17 | 608 | 0.2+ | 1.1+ | 2005 05 20 | G96 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2002 08 18 | 644 | 0.3− | 0.7+ | 2005 05 20 | G96 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2002 08 18 | 644 | 0.0 | 0.8+ | 2006 08 19 | 699 | 0.1+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 08 18 | 644 | 0.4− | 0.5+ | 2006 08 19 | 699 | 1.5+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 08 18 | 644 | 0.1+ | 0.8+ | 2006 08 19 | 699 | 0.6+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 08 19 | 699 | (1.0+ | 1.6+) | 2006 10 22 | 704 | (1.8− | 0.8−) | | |
| 2002 08 18 | 644 | 0.1− | 0.7+ | 2006 08 23 | 704 | 0.3− | 0.8− | 2006 10 22 | 704 | 0.6− | 1.2+ | | |
| 2002 09 05 | 704 | 0.8+ | 0.8− | 2006 08 23 | 704 | 0.1− | 0.4+ | 2006 10 22 | 704 | (0.8− | 3.0+) | | |
| 2002 09 05 | 704 | 0.8+ | 0.2− | 2006 08 23 | 704 | 0.9− | 0.9+ | 2006 10 27 | 704 | 1.1− | 1.4+ | | |
| 2002 09 05 | 704 | 0.4+ | 1.1− | 2006 08 23 | 704 | 0.3− | 0.7− | 2006 10 27 | 704 | 0.5− | 0.3− | | |
| 2002 09 05 | 704 | 0.5+ | 0.8− | 2006 09 26 | 704 | 0.5− | 0.1+ | 2006 10 27 | 704 | 0.6+ | 0.3− | | |
| 2002 09 05 | 704 | 0.4+ | 0.8− | 2006 09 26 | 704 | 0.3+ | 0.4− | 2006 11 13 | 703 | 0.0 | 0.3− | | |
| 2002 09 05 | 608 | 0.8− | 0.8− | 2006 09 26 | 704 | (2.2− | 1.4+) | 2006 11 13 | 703 | 0.0 | 0.1− | | |
| 2002 09 05 | 608 | 0.5− | 0.4− | 2006 09 26 | 704 | (1.3− | 2.0−) | 2006 11 13 | 703 | 0.1+ | 0.7+ | | |
| 2002 09 05 | 608 | 0.5− | 0.5− | 2006 09 28 | 704 | 0.2− | 0.9+ | 2006 11 13 | 703 | 0.1+ | 0.3+ | | |
| 2002 09 06 | 704 | (0.5+ | 1.6+) | 2006 09 28 | 704 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.9+ | | |
| 2002 09 06 | 704 | 0.3+ | 1.4+ | 2006 09 28 | 704 | 0.5− | 0.9+ | 2006 11 20 | 704 | (0.6+ | 2.8+) | | |
| 2002 09 06 | 704 | 0.2− | 1.4+ | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 20 | 704 | (0.2+ | 2.3+) | | |
| 2002 09 15 | 644 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 20 | 704 | 1.0− | 1.5+ | | |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.6+ | | | | | | |

**(141921)∗ 2002 PY$_{82}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.87785 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24204127 | $\omega$ | 73.18619 | | −0.75742139 | +0.63758604 | |
| $a$ | 2.5500172 | $\Omega$ | 146.03948 | | −0.65261525 | −0.73262201 | |
| $e$ | 0.0158443 | $i$ | 14.58834 | | −0.02015365 | −0.23822053 | |
| $P$ | 4.07 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.1− | 0.1− | 2002 08 29 | 246 | 0.0 | 0.2+ | 2005 04 16 | 703 | 0.9− | 0.8+ | | |
| 2001 03 19 | 645 | 0.2− | 0.1− | 2002 08 29 | 246 | 0.9+ | 0.4+ | 2005 04 30 | 699 | 0.5+ | 0.6− | | |
| 2001 03 23 | 608 | 1.6+ | 1.4+ | 2002 08 29 | 246 | 0.5+ | 0.3− | 2005 04 30 | 699 | 0.6+ | 0.4− | | |
| 2001 03 23 | 608 | 1.7+ | 1.1+ | 2002 08 29 | 246 | 0.5− | 0.9+ | 2005 04 30 | 699 | 0.6+ | 0.7− | | |
| 2001 03 23 | 608 | 1.4+ | 1.8+ | 2002 08 29 | 246 | 0.0 | 0.1+ | 2005 04 30 | 699 | (2.3+ | 1.4−) | | |
| 2001 05 23 | 704 | 0.6− | 0.6− | 2002 08 29 | 246 | 0.2+ | 0.5+ | 2005 05 08 | 703 | 0.7− | 0.1− | | |
| 2001 05 23 | 704 | 0.1− | 0.0 | 2002 08 29 | 246 | 0.2− | 1.1+ | 2005 05 08 | 703 | 0.2− | 0.1+ | | |
| 2001 05 23 | 704 | 0.3+ | 0.1+ | 2002 09 05 | 704 | 0.0 | 0.0 | 2005 05 08 | 703 | 0.2− | 0.3+ | | |
| 2001 05 23 | 704 | 0.8+ | 0.3+ | 2002 09 05 | 704 | 0.1− | 0.1− | 2005 05 08 | 703 | 0.1− | 0.4+ | | |
| 2001 05 23 | 704 | 0.1+ | 0.5+ | 2002 09 05 | 704 | 0.7− | 0.4− | 2006 07 28 | A50 | (3.8− | 0.7+) | | |
| 2001 05 23 | 608 | 0.7+ | 0.2+ | 2002 09 05 | 704 | 0.2− | 0.9− | 2006 08 19 | 699 | 0.1+ | 0.4+ | | |
| 2001 05 23 | 608 | 0.4+ | 0.4+ | 2005 03 17 | 703 | 0.2− | 0.0 | 2006 08 19 | 699 | 1.1+ | 0.0 | | |
| 2001 05 23 | 608 | 0.3+ | 0.3+ | 2005 03 17 | 703 | 0.6− | 0.1− | 2006 08 19 | 699 | 1.2+ | 0.6+ | | |
| 2002 08 08 | 644 | 0.2+ | 0.3+ | 2005 03 17 | 703 | 0.0 | 0.4− | 2006 08 19 | A50 | 0.8− | 0.5+ | | |
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2005 03 17 | 703 | 0.9− | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.5− | | |
| 2002 08 08 | 644 | 0.1− | 0.2+ | 2005 04 05 | 644 | 0.6+ | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.7− | | |
| 2002 08 10 | 704 | 0.6− | 0.1+ | 2005 04 05 | 644 | 0.6+ | 0.1+ | 2006 08 28 | 699 | 0.9− | 0.1− | | |
| 2002 08 10 | 704 | 0.5+ | 0.1+ | 2005 04 05 | 644 | 0.6+ | 0.2+ | 2006 08 28 | 699 | 0.5+ | 0.5− | | |
| 2002 08 10 | 704 | 0.8+ | 0.0 | 2005 04 06 | 703 | 0.5− | 0.8− | 2006 08 29 | 704 | 0.8− | 0.4− | | |
| 2002 08 10 | 704 | 0.6− | 0.5+ | 2005 04 06 | 703 | 0.6− | 0.8− | 2006 08 29 | 704 | 0.0 | 1.0− | | |
| 2002 08 14 | 704 | 0.8− | 1.0+ | 2005 04 06 | 703 | 0.8− | 0.1− | 2006 08 29 | 704 | 0.0 | 0.6− | | |
| 2002 08 14 | 704 | 0.0 | 0.3+ | 2005 04 06 | 703 | 1.0− | 0.2+ | 2006 08 29 | 704 | 0.6− | 0.2+ | | |
| 2002 08 14 | 704 | 0.2− | 1.2+ | 2005 04 11 | 704 | 0.8+ | 0.5+ | 2006 08 31 | 704 | 0.3+ | 1.8− | | |
| 2002 08 17 | 608 | 0.2− | 0.2− | 2005 04 11 | 704 | 1.0+ | 0.0 | 2006 08 31 | 704 | 0.4+ | 0.2− | | |
| 2002 08 17 | 608 | 0.2− | 0.7+ | 2005 04 11 | 704 | 0.5+ | 0.4− | 2006 08 31 | 704 | 0.2+ | 1.7− | | |
| 2002 08 17 | 608 | 0.3− | 0.2+ | 2005 04 12 | 699 | 1.0+ | 0.5− | 2006 08 31 | 704 | 0.6+ | 0.5− | | |
| 2002 08 18 | 644 | 0.1+ | 0.7+ | 2005 04 12 | 699 | 1.4+ | 0.2+ | 2006 09 24 | 699 | 1.2− | 0.1− | | |
| 2002 08 18 | 644 | 0.2+ | 0.6+ | 2005 04 12 | 699 | 0.2− | 0.3+ | 2006 09 24 | 699 | 1.0− | 0.8− | | |
| 2002 08 18 | 644 | 0.0 | 0.7+ | 2005 04 12 | 699 | 0.7+ | 0.2− | 2006 09 24 | 699 | 0.7+ | 1.1− | | |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2005 04 16 | 703 | 1.1− | 0.0 | 2006 09 24 | 699 | 0.2+ | 1.5− | | |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2005 04 16 | 703 | 0.8− | 0.4+ | | | | | | |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2005 04 16 | 703 | 0.8− | 0.1+ | | | | | | |

**(141922)∗ 2002 PC$_{84}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.86858 | | (2000.0) | | | |
| $n$ | 0.26984353 | $\omega$ | 181.06941 | | +0.74876812 | +0.66174147 |
| $a$ | 2.3717089 | $\Omega$ | 137.41609 | | −0.60771875 | +0.70827173 |
| $e$ | 0.1981078 | $i$ | 3.21987 | | −0.26462090 | +0.24586459 |
| $P$ | 3.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.4+ | 0.5+ | 2004 01 24 | 704 | 0.8+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2002 07 09 | 704 | 0.2− | 0.6+ | 2004 01 24 | 704 | (1.7+ | 0.6+) | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2002 07 09 | 704 | 0.3− | 0.4+ | 2004 01 27 | 691 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2002 07 09 | 704 | 0.2− | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.8+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2002 08 10 | 704 | 0.5− | 0.4+ | 2004 01 27 | 691 | 0.4+ | 0.9+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2002 08 10 | 704 | 0.6− | 0.2+ | 2005 04 01 | 691 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 08 10 | 704 | 0.5− | 0.4+ | 2005 04 01 | 691 | 0.0 | 0.4+ | 2006 10 23 | 683 | 0.2− | 1.3− |
| 2002 08 10 | 704 | 1.0− | 0.4+ | 2005 04 01 | 691 | 0.1− | 0.5+ | 2006 10 23 | 683 | 1.1− | 0.7− |
| 2002 08 10 | 704 | 0.6− | 0.5+ | 2005 04 02 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 683 | (1.7− | 0.3+) |
| 2002 08 11 | 608 | 0.9− | 0.3+ | 2005 04 02 | 691 | 0.2+ | 0.6+ | 2006 10 27 | 683 | (0.0 | 1.8−) |
| 2002 08 11 | 608 | 0.9− | 0.6+ | 2005 04 02 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 683 | (0.6− | 1.7−) |
| 2002 08 11 | 608 | 1.0− | 0.4+ | 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 683 | (2.2− | 0.1−) |
| 2002 08 14 | 704 | 0.6− | 0.9+ | 2005 04 10 | 691 | 0.4+ | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.1+ |
| 2002 08 14 | 704 | 0.8+ | 0.6+ | 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 11 02 | 703 | 1.2+ | 0.2+ |
| 2002 08 14 | 704 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 1.0+ | 0.7+ | 2006 11 02 | 703 | 0.0 | 0.4− |
| 2002 08 14 | 704 | 0.5+ | 0.5+ | 2005 04 11 | 699 | 1.1− | 0.9+ | 2006 11 02 | 703 | 0.3+ | 0.1− |
| 2002 08 14 | 704 | 0.1− | 0.1− | 2005 04 11 | 699 | 0.7+ | 0.5− | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2002 08 18 | 644 | 0.0 | 0.9+ | 2005 04 11 | 699 | 0.4− | 0.9+ | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2002 08 18 | 644 | 0.0 | 1.0+ | 2005 04 14 | 691 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 2002 08 18 | 644 | 0.0 | 0.9+ | 2005 04 14 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 08 29 | 644 | 0.1− | 0.5− | 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.6+ |
| 2002 08 29 | 644 | 0.4+ | 0.1+ | 2005 04 18 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.7+ |
| 2002 09 05 | 704 | 0.2− | 1.0+ | 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.4+ | 0.5+ |
| 2002 09 05 | 704 | 0.3− | 1.2+ | 2005 05 08 | 703 | 0.3− | 0.8+ | 2006 11 10 | 644 | 0.1+ | 0.6+ |
| 2002 09 05 | 704 | 0.2− | 0.6+ | 2005 05 08 | 703 | 0.4− | 0.4+ | 2006 11 11 | 644 | 0.2− | 0.5+ |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2005 05 08 | 703 | (2.1− | 1.1+) | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2005 05 08 | 703 | 0.1− | 1.3+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2005 05 13 | 703 | 1.0+ | 1.3+ | 2006 11 11 | 644 | 0.2− | 0.4+ |
| 2002 09 06 | 704 | 0.2− | 0.8+ | 2005 05 13 | 703 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 1.4− | 0.4− |
| 2002 09 06 | 704 | 0.4+ | 0.9+ | 2005 05 13 | 703 | 0.2− | 0.8− | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2002 09 06 | 704 | 0.4+ | 1.2+ | 2005 05 13 | 703 | 0.4− | 0.2− | 2006 11 11 | 644 | 0.1− | 0.5+ |
| 2002 09 12 | 608 | 0.7− | 0.9+ | 2005 06 25 | 644 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.1+ |
| 2002 09 12 | 608 | 0.6− | 1.0+ | 2005 06 25 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.8− |
| 2002 09 12 | 608 | 0.6− | 0.7+ | 2005 06 25 | 644 | 0.2+ | 0.5+ | 2006 11 14 | 704 | (1.6+ | 0.9+) |
| 2002 09 13 | 704 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 2002 09 13 | 704 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2002 09 13 | 704 | 0.3+ | 0.8− | 2006 08 28 | 703 | 1.4+ | 0.7− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2002 09 13 | 704 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.1− | 1.0− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.7− | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2002 09 16 | 644 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.7− | 2006 11 19 | 704 | 1.2− | 0.5+ |
| 2002 09 16 | 644 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.6− |
| 2002 09 16 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2002 10 29 | 704 | (0.2+ | 1.7−) | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.6− | 0.6+ |
| 2002 10 29 | 704 | 0.6+ | 0.3− | 2006 09 30 | G96 | 0.3− | 0.5− | 2006 11 20 | 704 | (1.5+ | 1.0+) |
| 2002 10 29 | 704 | 0.2+ | 0.6− | 2006 10 03 | G96 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2002 10 29 | 704 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2004 01 21 | 704 | 0.2− | 1.0+ | 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.9+ | 0.7+ |
| 2004 01 21 | 704 | 0.1− | 1.4+ | 2006 10 03 | G96 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2004 01 21 | 704 | 1.1− | 1.0+ | 2006 10 18 | 691 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.3+ | 1.6+ |
| 2004 01 24 | 704 | 0.3+ | 0.6+ | 2006 10 18 | 691 | 0.4− | 0.5+ | 2006 11 28 | 704 | 0.6− | 1.3+ |
| 2004 01 24 | 704 | 0.2− | 1.1+ | 2006 10 18 | 691 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 0.2+ | 2.3+ |
| 2004 01 24 | 704 | 0.9+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.0 | | | | |

**(141923)∗ 2002 PS$_{84}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.43034 | | (2000.0) | | | |
| $n$ | 0.26028941 | $\omega$ | 206.97857 | | +0.82984252 | +0.55573061 |
| $a$ | 2.4293964 | $\Omega$ | 119.17146 | | −0.50100756 | +0.78170734 |
| $e$ | 0.2240927 | $i$ | 3.29904 | | −0.24566811 | +0.28301436 |
| $P$ | 3.79 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 09 | 691 | 0.3+ | 0.0 | 2002 09 13 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 1991 11 09 | 691 | 0.1+ | 0.1+ | 2002 09 13 | 704 | 0.5− | 0.1+ | 2006 09 26 | 704 | 1.3− | 0.0 |
| 1991 11 09 | 691 | 0.2− | 0.6− | 2002 09 13 | 704 | 0.3− | 0.4− | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 2002 06 27 | 644 | 0.3+ | 1.1+ | 2002 09 13 | 704 | 0.2− | 0.3+ | 2006 09 26 | 704 | 1.4− | 0.7− |
| 2002 06 27 | 644 | 0.3+ | 1.1+ | 2002 09 16 | 608 | 1.1− | 0.5− | 2006 09 26 | 704 | 0.1+ | 0.6+ |
| 2002 06 27 | 644 | 0.2+ | 0.9+ | 2002 09 16 | 608 | 1.0− | 0.5− | 2006 10 02 | G96 | 0.1+ | 0.6− |
| 2002 07 09 | 704 | 0.6− | 0.4+ | 2002 09 16 | 608 | 0.8− | 0.7− | 2006 10 02 | G96 | 0.0 | 0.5− |
| 2002 07 09 | 704 | 0.9− | 0.8+ | 2004 01 15 | 691 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 2002 07 09 | 704 | 0.0 | 0.3+ | 2004 01 15 | 691 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 2002 07 09 | 704 | 0.3+ | 0.3+ | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.4− |
| 2002 07 09 | 704 | 0.5− | 0.7+ | 2004 01 19 | 699 | 1.3− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2002 08 10 | 704 | 0.6+ | 0.9+ | 2004 01 19 | 699 | 1.1− | 0.2+ | 2006 10 16 | 703 | 1.1+ | 0.1+ |
| 2002 08 10 | 704 | 0.5+ | 0.5+ | 2004 01 19 | 699 | 0.6− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2002 08 10 | 704 | 0.0 | 0.6+ | 2004 01 19 | 699 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2002 08 10 | 704 | 0.2+ | 0.3− | 2004 01 21 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 08 10 | 704 | 0.0 | 0.2+ | 2004 01 21 | 704 | (1.6+ | 0.4−) | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 08 12 | 608 | 0.0 | 0.8− | 2004 01 21 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2002 08 12 | 608 | 0.3+ | 1.3− | 2004 01 21 | 704 | 0.3+ | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2002 08 12 | 608 | 0.3+ | 0.7− | 2004 01 24 | 704 | 1.4+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2002 08 14 | 704 | 0.7+ | 0.4+ | 2004 01 24 | 704 | 1.4+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 08 14 | 704 | 0.7+ | 0.0 | 2004 01 24 | 704 | 1.5+ | 0.4− | 2006 10 22 | 704 | 0.8− | 0.2− |
| 2002 08 14 | 704 | 1.4− | 0.5+ | 2004 01 24 | 704 | 0.3− | 1.1+ | 2006 10 22 | 704 | 0.2+ | 1.1+ |
| 2002 08 14 | 704 | 0.8− | 0.3+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.3− | 0.2− |
| 2002 08 15 | 699 | 0.4+ | 0.4+ | 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 10 22 | 704 | (0.5+ | 1.9+) |
| 2002 08 15 | 699 | 0.6+ | 0.7+ | 2004 01 27 | 691 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2002 08 15 | 699 | 0.6+ | 0.4+ | 2005 05 15 | 644 | 0.4+ | 0.7+ | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2002 08 15 | 699 | 0.4+ | 0.8+ | 2005 05 15 | 644 | 0.1+ | 0.9+ | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2002 08 20 | 644 | 0.2+ | 0.3+ | 2005 05 15 | 644 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.5− | 0.3− |
| 2002 08 20 | 644 | 0.2+ | 0.2+ | 2006 09 15 | 644 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.8− |
| 2002 08 20 | 644 | 0.3+ | 0.3+ | 2006 09 15 | 644 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.3− | 0.5− |
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2006 09 15 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.2− | 0.7− |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.6− | 1.4+ | 2006 11 14 | 704 | 0.1+ | 0.9+ |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.9+ | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.6+ |
| 2002 09 05 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.7+ | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2006 09 20 | 699 | 0.4+ | 0.7− | 2006 11 14 | 704 | 0.3+ | 0.9+ |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.6− | 0.3− |
| 2002 09 06 | 704 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.7+ | 0.0 |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.7+ | 1.0+ | 2006 11 20 | 704 | 1.4+ | 1.5+ |
| 2002 09 06 | 704 | 0.3+ | 0.2− | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 1.1+ | 0.6+ |
| 2002 09 12 | 608 | 0.9− | 0.2+ | 2006 09 22 | 704 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2002 09 12 | 608 | 1.1− | 0.0 | 2006 09 22 | 704 | 0.0 | 0.5+ | | | | |
| 2002 09 12 | 608 | 1.0− | 0.3− | 2006 09 22 | 704 | 0.1− | 0.2+ | | | | |

**(141924)∗ 2002 PU$_{84}$**

Discovered 2002 Aug. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.66444 | | (2000.0) | | | |
| $n$ | 0.26153765 | $\omega$ | 323.33957 | | +0.98389421 | +0.17750363 |
| $a$ | 2.4216604 | $\Omega$ | 26.45936 | | −0.15069961 | +0.88713934 |
| $e$ | 0.2284583 | $i$ | 2.71256 | | −0.09613430 | +0.42600029 |
| $P$ | 3.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.8− | 0.2− | 2002 10 09 | 699 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.1− | 0.0 |
| 2002 07 09 | 704 | 0.2+ | 0.5+ | 2002 10 11 | 704 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 07 09 | 704 | (1.6+ | 0.1+) | 2002 10 11 | 704 | 0.2− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.8− | 0.8− | 2002 10 11 | 704 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 08 10 | 704 | 0.4+ | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.2+ | 2006 10 21 | H07 | 0.6+ | 0.1+ | | |
| 2002 08 10 | 704 | 0.1+ | 0.3+ | 2002 10 11 | 704 | 0.6− | 0.4+ | 2006 10 21 | H07 | 0.0 | 0.4− | | |
| 2002 08 10 | 704 | 0.3+ | 0.3− | 2002 10 29 | 704 | 0.3− | 0.2+ | 2006 10 21 | H07 | 0.3+ | 0.3+ | | |
| 2002 08 10 | 704 | 0.0 | 0.6− | 2002 10 29 | 704 | 0.7+ | 0.2− | 2006 10 21 | H07 | 0.3+ | 0.9+ | | |
| 2002 08 10 | 704 | 0.3− | 0.2+ | 2002 10 29 | 704 | 0.2+ | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2002 08 12 | 608 | 0.5− | 0.8+ | 2002 10 29 | 704 | 1.4+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2002 08 12 | 608 | 0.4− | 1.0+ | 2002 10 29 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 12 | 608 | 0.3− | 0.8+ | 2002 11 06 | 704 | 0.5+ | 0.6− | 2006 10 23 | 704 | 0.5− | 0.3− | | |
| 2002 08 14 | 704 | 0.3+ | 0.5− | 2002 11 06 | 704 | 0.7+ | 1.1− | 2006 10 23 | 704 | 0.7− | 0.6+ | | |
| 2002 08 14 | 704 | 0.8+ | 0.5+ | 2002 11 06 | 704 | 0.3− | 0.2− | 2006 10 23 | 704 | 1.1− | 0.1+ | | |
| 2002 08 14 | 704 | 0.1+ | 1.2+ | 2002 11 06 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 704 | 0.9− | 0.1− | | |
| 2002 08 14 | 704 | 0.6+ | 0.1− | 2004 01 22 | 704 | 0.6+ | 1.3+ | 2006 10 23 | 704 | 0.4− | 0.4+ | | |
| 2002 08 14 | 704 | 0.6+ | 0.3+ | 2004 01 22 | 704 | 0.1+ | 1.2+ | 2006 10 28 | 704 | 0.2− | 0.7− | | |
| 2002 08 20 | 644 | 0.4− | 0.2+ | 2004 01 22 | 704 | (0.7− | 1.5+) | 2006 10 28 | 704 | 0.2− | 1.4+ | | |
| 2002 08 20 | 644 | 0.2− | 0.3+ | 2004 01 31 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 2002 08 20 | 644 | 0.0 | 0.9+ | 2004 01 31 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 704 | (1.7− | 0.8+) | | |
| 2002 08 29 | 644 | 0.1+ | 0.4+ | 2004 01 31 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.4+ | 0.3+ | | |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2004 02 12 | 291 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.2− | | |
| 2002 08 29 | 644 | 0.0 | 0.5+ | 2004 02 12 | 291 | 0.2+ | 0.4+ | 2006 10 28 | 704 | 0.0 | 1.1− | | |
| 2002 09 05 | 704 | 0.5− | 1.1+ | 2004 02 12 | 291 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.3− | 1.3+ | 2005 03 11 | G96 | 0.3− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2002 09 05 | 704 | 0.2− | 1.2+ | 2005 03 11 | G96 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.2− | | |
| 2002 09 05 | 704 | 0.3− | 1.1+ | 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2002 09 06 | 704 | 0.3− | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2002 09 06 | 704 | 0.4− | 0.2− | 2005 04 17 | 691 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2002 09 06 | 704 | 0.3− | 0.4− | 2005 04 17 | 691 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2002 09 06 | 704 | 0.8− | 0.4− | 2005 04 17 | 691 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.4− | | |
| 2002 09 06 | 704 | 0.3− | 0.6− | 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.5− | | |
| 2002 09 13 | 704 | 0.8+ | 0.0 | 2005 05 01 | 644 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.3− | | |
| 2002 09 13 | 704 | 0.6+ | 0.2+ | 2005 05 01 | 644 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.6− | 0.3− | | |
| 2002 09 13 | 704 | 0.3− | 0.3− | 2005 05 11 | G96 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.5− | | |
| 2002 09 13 | 704 | 0.1+ | 0.0 | 2005 05 11 | G96 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.6− | | |
| 2002 09 16 | 644 | 0.1− | 0.3+ | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.5− | | |
| 2002 09 16 | 644 | 0.1− | 0.2+ | 2005 05 11 | G96 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.6− | | |
| 2002 09 16 | 608 | 0.9− | 0.5− | 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 11 18 | 704 | (1.7− | 0.7+) | | |
| 2002 09 16 | 608 | 0.6− | 0.6− | 2006 08 28 | 703 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.8− | 0.2− | | |
| 2002 09 16 | 644 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.7− | 0.3+ | | |
| 2002 09 16 | 608 | 0.6− | 0.6− | 2006 08 28 | 703 | (1.3+ | 1.8−) | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2002 09 30 | 608 | 0.6− | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.5− | 0.8− | | |
| 2002 09 30 | 608 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.1− | | |
| 2002 09 30 | 608 | 0.6− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.4+ | 1.1+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.5− | 0.1− | | |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.6+ | 0.7− | 2006 11 18 | 704 | 0.6− | 0.4− | | |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.9+ | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 1.4+ | 2006 11 21 | 704 | 1.0− | 0.8+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2002 10 05 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.9+ | 2006 11 21 | 704 | 0.1+ | 0.1− | | |
| 2002 10 05 | 704 | 0.1− | 0.1+ | 2006 09 29 | 704 | 1.4+ | 0.7+ | 2006 11 21 | 704 | 0.4+ | 0.4+ | | |
| 2002 10 05 | 704 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.9− | 1.2+ | 2006 11 21 | 704 | 0.6+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.0 | 2006 11 26 | 704 | 0.5− | 1.2+ | | |
| 2002 10 05 | 704 | 0.9− | 0.5+ | 2006 09 29 | 704 | 0.5− | 0.1+ | 2006 11 26 | 704 | 0.9+ | 0.9+ | | |
| 2002 10 07 | 704 | 0.8− | 0.9− | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 26 | 704 | 0.0 | 0.4+ | | |
| 2002 10 07 | 704 | 0.3− | 1.1+ | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 28 | 704 | 1.9+ | 0.3− | | |
| 2002 10 07 | 704 | 0.7+ | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.4+ | 0.4+ | | |
| 2002 10 09 | 699 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.1+ | 1.2+ | | |
| 2002 10 09 | 699 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 09 | 699 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.0 | | | | | | |

**(141925)∗ 2002 PX$_{85}$**

Discovered 2002 Aug. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.57294 | | (2000.0) | | | |
| $n$ | 0.25818976 | $\omega$ | 210.25205 | | +0.73475182 | +0.67109357 |
| $a$ | 2.4425495 | $\Omega$ | 107.25298 | | −0.59977397 | +0.71079954 |
| $e$ | 0.1565121 | $i$ | 5.94174 | | −0.31687687 | +0.21070696 |
| $P$ | 3.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 29 | 691 | 0.1− | 0.3+ | 2002 08 18 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.3+ | 0.2+ | | |
| 1995 11 29 | 691 | 0.2+ | 0.1− | 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 08 30 | 699 | 1.3+ | 0.1+ | | |
| 1995 11 29 | 691 | 0.1− | 0.1− | 2002 08 30 | 644 | 0.2+ | 0.4− | 2006 08 30 | 699 | 0.5+ | 0.5+ | | |
| 2002 07 14 | 644 | 0.2+ | 0.1− | 2002 08 30 | 644 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.1+ | | |
| 2002 07 14 | 644 | 1.0− | 0.3− | 2002 08 30 | 644 | 0.3− | 0.5− | 2006 09 14 | 703 | 0.5− | 0.1+ | | |
| 2002 07 14 | 644 | 0.1+ | 0.1− | 2002 08 31 | 704 | 1.2+ | 0.7+ | 2006 09 14 | 703 | 0.3− | 0.5− | | |
| 2002 07 28 | 608 | (0.0 | 1.6−) | 2002 08 31 | 704 | 0.2− | 0.8− | 2006 09 14 | 703 | 0.5− | 1.2− | | |
| 2002 07 28 | 608 | (0.3− | 1.6−) | 2002 08 31 | 704 | 0.8− | 0.5− | 2006 09 15 | 703 | 0.4+ | 0.4− | | |
| 2002 07 28 | 608 | 0.1− | 1.1− | 2002 08 31 | 704 | 1.2− | 0.5+ | 2006 09 15 | 703 | 0.6− | 0.1− | | |
| 2002 08 11 | 644 | 0.1+ | 0.3− | 2005 03 18 | 703 | 0.6+ | 0.8+ | 2006 09 15 | 703 | 0.5− | 1.4− | | |
| 2002 08 11 | 644 | 0.1+ | 0.4− | 2005 03 18 | 703 | 1.4− | 1.3+ | 2006 09 15 | 703 | 0.5− | 0.6− | | |
| 2002 08 11 | 644 | 0.2+ | 0.5− | 2005 03 18 | 703 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.4+ | 0.9+ | | |
| 2002 08 13 | 704 | 0.0 | 0.4+ | 2005 03 18 | 703 | 0.3− | 0.4− | 2006 09 26 | 703 | 0.0 | 0.8+ | | |
| 2002 08 13 | 704 | 0.5+ | 0.1+ | 2005 04 04 | 703 | 1.0+ | 0.9+ | 2006 09 26 | 703 | 0.6+ | 0.5+ | | |
| 2002 08 13 | 704 | 0.8+ | 0.8+ | 2005 04 04 | 703 | 0.9+ | 0.6+ | 2006 09 26 | 703 | 0.2+ | 0.8+ | | |
| 2002 08 13 | 704 | 0.6+ | 0.4+ | 2005 04 04 | 703 | (1.4− | 1.8+) | 2006 10 02 | 703 | (0.2− | 2.1+) | | |
| 2002 08 13 | 704 | 0.4+ | 0.1+ | 2005 04 04 | 703 | (0.5+ | 1.6−) | 2006 10 02 | 703 | 0.5− | 0.0 | | |
| 2002 08 14 | 704 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.7− | 0.2+ | | |
| 2002 08 14 | 704 | 0.1− | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.3+ | | |
| 2002 08 14 | 704 | 0.2+ | 1.1+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.5+ | | |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.2+ | | |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 10 24 | 644 | 0.1+ | 0.5+ | | |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.3+ | 0.1− | | | | | | |
| 2002 08 18 | 644 | 0.4− | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.0 | | | | | | |

**(141926)∗ 2002 PV$_{86}$ = 2000 AD$_{235}$**

Discovered 2002 Aug. 14 by J. Broughton at Reedy Creek.

Id. A. Doppler (*MPO* 35301)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.42998 | | (2000.0) | | | |
| $n$ | 0.26802584 | $\omega$ | 246.11602 | | +0.95950572 | −0.27846628 |
| $a$ | 2.3824197 | $\Omega$ | 130.02418 | | +0.27439919 | +0.88988700 |
| $e$ | 0.2069636 | $i$ | 3.18069 | | +0.06366996 | +0.36132763 |
| $P$ | 3.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.1+ | 0.6− | 2002 09 13 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 704 | 0.5− | 0.5− | | |
| 1995 11 17 | 691 | 0.1− | 0.4− | 2002 09 13 | 704 | 0.6− | 0.9+ | 2006 10 27 | 704 | 0.9− | 0.0 | | |
| 1995 11 17 | 691 | 0.1− | 0.4− | 2002 09 13 | 704 | 0.0 | 1.0+ | 2006 10 27 | 704 | 0.1+ | 0.5− | | |
| 1995 11 30 | 691 | 0.5− | 0.3− | 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 10 27 | 704 | 0.1+ | 0.4+ | | |
| 1995 11 30 | 691 | 0.2+ | 0.4− | 2002 09 15 | 644 | 0.4− | 0.4+ | 2006 10 27 | 704 | 0.2+ | 1.4+ | | |
| 1995 11 30 | 691 | 0.3+ | 0.1+ | 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 10 27 | 683 | 0.7+ | 0.1+ | | |
| 1995 12 22 | 691 | 0.6+ | 0.1+ | 2004 02 12 | 291 | 0.2− | 0.4+ | 2006 10 27 | 683 | 0.4+ | 0.0 | | |
| 1995 12 22 | 691 | 0.5+ | 0.2+ | 2004 02 12 | 291 | 0.1− | 0.4+ | 2006 10 27 | 683 | 1.2+ | 0.4+ | | |
| 1995 12 22 | 691 | 0.2− | 0.4+ | 2004 02 12 | 291 | 0.3− | 0.4+ | 2006 10 28 | 683 | 0.1− | 0.4− | | |
| 2000 01 05 | 704 | 0.3− | 0.1+ | 2004 02 22 | 691 | 0.2+ | 0.5+ | 2006 10 28 | 683 | 0.4+ | 1.1− | | |
| 2000 01 05 | 704 | 0.8− | 0.1+ | 2004 02 22 | 691 | 0.0 | 0.5+ | 2006 10 28 | 683 | 0.5− | 0.1+ | | |
| 2000 01 05 | 704 | 0.5− | 0.2− | 2004 02 22 | 691 | 0.1+ | 0.4+ | 2006 11 02 | 704 | (0.4− | 2.3+) | | |
| 2000 01 05 | 704 | 0.1− | 0.5− | 2004 02 23 | 704 | 1.3+ | 0.7+ | 2006 11 02 | 704 | 0.0 | 0.2+ | | |
| 2000 01 05 | 704 | 0.1+ | 1.6+ | 2004 02 23 | 704 | 0.5+ | 0.2− | 2006 11 02 | 704 | 0.4+ | 1.2+ | | |
| 2000 01 07 | 691 | 0.0 | 0.4− | 2004 02 23 | 704 | 0.8+ | 0.7+ | 2006 11 02 | 704 | 0.5− | 0.2+ | | |
| 2000 01 07 | 691 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2006 11 02 | 704 | 0.3+ | 0.0 | | |
| 2000 01 07 | 691 | 0.2− | 0.2− | 2004 02 23 | 704 | 0.4− | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2002 07 23 | 644 | 0.2− | 0.8+ | 2004 02 29 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2002 07 23 | 644 | 0.2− | 0.5+ | 2004 02 29 | 691 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 2002 07 23 | 644 | 0.2− | 0.8+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.3− | | |
| 2002 07 30 | 608 | 0.8+ | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.1− | | |
| 2002 07 30 | 608 | 0.7+ | 0.3+ | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 30 | 608 | 0.2+ | 0.0 | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2002 08 08 | 644 | 0.2− | 0.7+ | 2004 03 27 | 691 | 0.1+ | 0.5− | 2006 11 14 | 704 | 0.2+ | 0.8+ |
| 2002 08 08 | 644 | 0.1− | 0.5+ | 2004 03 27 | 691 | 0.4+ | 0.6+ | 2006 11 14 | 704 | 0.8+ | 1.1+ |
| 2002 08 08 | 644 | 0.1− | 0.6+ | 2004 03 27 | 691 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.5− |
| 2002 08 14 | 704 | 0.2− | 0.4− | 2005 06 10 | 691 | 0.0 | 0.8+ | 2006 11 14 | 704 | (0.2− | 1.8+) |
| 2002 08 14 | 704 | 1.0+ | 1.3− | 2005 06 10 | 691 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.3− | 0.3+ |
| 2002 08 14 | 704 | 0.0 | 0.9− | 2005 06 10 | 691 | 0.1+ | 0.7+ | 2006 11 17 | 704 | 0.7− | 0.6+ |
| 2002 08 14 | 428 | (3.9+ | 0.6+) | 2006 08 21 | 704 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.9+ |
| 2002 08 14 | 428 | 0.5+ | 0.4+ | 2006 08 21 | 704 | 0.7+ | 1.3− | 2006 11 17 | 704 | 0.1+ | 0.9+ |
| 2002 08 15 | 428 | 1.0+ | 0.4+ | 2006 08 21 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2002 08 15 | 428 | 0.8− | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 08 16 | 608 | 0.4− | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 08 16 | 608 | 0.3− | 0.4+ | 2006 09 16 | 703 | 0.5− | 0.5+ | 2006 11 17 | 704 | 0.6+ | 1.1+ |
| 2002 08 16 | 608 | 0.4− | 0.5+ | 2006 09 16 | 703 | 0.5+ | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 08 18 | 644 | 0.1− | 0.3− | 2006 09 17 | 699 | 0.6− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.2− | 0.3− | 2006 09 17 | 699 | 0.8− | 1.4+ | 2006 11 19 | 704 | 0.7− | 0.4+ |
| 2002 08 18 | 644 | 0.4− | 0.1− | 2006 09 17 | 699 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2002 08 19 | 644 | 0.0 | 0.7+ | 2006 09 17 | 699 | 0.3− | 0.1+ | 2006 11 19 | 704 | 1.4− | 0.8+ |
| 2002 08 19 | 644 | 0.1+ | 0.7+ | 2006 09 22 | 704 | (0.1+ | 1.6−) | 2006 11 19 | 704 | 0.7− | 0.0 |
| 2002 08 19 | 644 | 0.0 | 0.6+ | 2006 09 22 | 704 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 0.1− | 1.0+ |
| 2002 08 28 | 644 | 0.0 | 1.2− | 2006 09 22 | 704 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2006 09 22 | 704 | 1.4+ | 0.6− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.2+ |
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2002 09 05 | 704 | 0.7− | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4− | 0.1+ |
| 2002 09 05 | 704 | 0.8− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.9+ |
| 2002 09 05 | 704 | 0.7− | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.6+ |
| 2002 09 06 | 704 | 0.0 | 0.9+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.0 | | | | |
| 2002 09 06 | 704 | 0.7− | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.1− | | | | |

**(141927)∗ 2002 PY$_{86}$**

Discovered 2002 Aug. 13 by W. K. Y. Yeung at Desert Wanderer Observatory, El Centro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.74064 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26684181 | $\omega$ | 15.56703 | | +0.87681628 | | +0.47982029 |
| $a$ | 2.3894620 | $\Omega$ | 315.71577 | | −0.44576383 | | +0.78695204 |
| $e$ | 0.2084112 | $i$ | 2.55092 | | −0.18024380 | | +0.38791619 |
| $P$ | 3.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.2+ | 0.1− | 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1991 09 30 | 691 | 0.5− | 0.1− | 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1991 09 30 | 691 | 0.2− | 1.3+ | 2002 10 03 | 704 | 0.4+ | 1.3+ | 2006 10 15 | 691 | 0.4+ | 0.1− |
| 2002 07 23 | 644 | 0.0 | 0.6+ | 2002 10 03 | 704 | 0.4+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.1+ |
| 2002 07 23 | 644 | 0.2− | 0.7+ | 2002 10 03 | 704 | 0.7+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2002 07 23 | 644 | 0.0 | 0.4+ | 2002 10 03 | 704 | 0.4− | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2002 07 29 | 644 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.8+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 07 29 | 644 | 0.1+ | 0.1+ | 2002 10 05 | 704 | (0.6+ | 1.6+) | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2002 07 29 | 644 | 0.1− | 0.1+ | 2002 10 05 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 08 08 | 644 | 0.2− | 0.3− | 2002 10 05 | 704 | 0.2− | 1.4+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.3− | 2002 10 06 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2002 08 08 | 644 | 0.3− | 0.2− | 2002 10 06 | 704 | 0.3+ | 1.3+ | 2006 10 29 | 704 | (2.7− | 0.7+) |
| 2002 08 13 | G78 | 1.2− | 0.7+ | 2002 10 06 | 704 | 1.0− | 0.4+ | 2006 10 29 | 704 | (2.1− | 0.4+) |
| 2002 08 13 | G78 | 0.1+ | 0.3+ | 2002 10 06 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | (1.4− | 2.0+) |
| 2002 08 13 | G78 | 1.4− | 1.0− | 2002 10 07 | 704 | 0.6+ | 0.0 | 2006 10 29 | 704 | 0.2− | 0.2− |
| 2002 08 14 | 704 | 0.1+ | 0.2− | 2002 10 07 | 704 | (0.3+ | 1.7−) | 2006 11 14 | 703 | 0.4− | 0.7+ |
| 2002 08 14 | 704 | 0.4+ | 0.1− | 2002 10 07 | 704 | 0.6− | 0.8− | 2006 11 14 | 703 | 0.1+ | 0.1− |
| 2002 08 14 | 704 | 0.5− | 0.1+ | 2002 10 07 | 704 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.5− |
| 2002 08 14 | 704 | 0.6+ | 0.4+ | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.1− |
| 2002 08 14 | 704 | 0.6+ | 0.6− | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 08 15 | G78 | 0.2− | 0.1+ | 2004 01 15 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.1− |
| 2002 08 15 | G78 | 0.3− | 0.1− | 2004 01 21 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 691 | (3.5− | 3.1−) |
| 2002 08 15 | G78 | 0.6− | 0.2+ | 2004 01 21 | 704 | 0.6+ | 0.9+ | 2006 11 16 | 704 | 0.0 | 0.8− |
| 2002 08 17 | 644 | 0.1− | 0.4+ | 2004 01 21 | 704 | 0.7− | 0.6+ | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2002 08 17 | 644 | 0.4+ | 0.3+ | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | 1.2− | 1.4+ |
| 2002 08 17 | 644 | 0.3+ | 0.3+ | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 09 03 | 608 | 0.2+ | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2002 09 03 | 608 | 0.3− | 0.3+ | 2005 04 10 | 691 | 0.1+ | 0.8+ | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2002 09 03 | 608 | 0.2− | 0.1+ | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2002 09 04 | 644 | 0.2− | 0.3+ | 2005 04 10 | 691 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2002 09 04 | 644 | 0.4+ | 0.2+ | 2005 04 15 | 691 | 0.6+ | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2002 09 04 | 644 | 0.0 | 0.2+ | 2005 04 15 | 691 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.8+ |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2002 09 05 | 704 | 0.4+ | 0.5− | 2006 08 29 | 703 | 0.8− | 0.4− | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.3+ | 0.3− | 2006 08 29 | 703 | 0.6− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.3+ | 0.3− | 2006 08 29 | 703 | 0.4− | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.2− | 2006 08 29 | 703 | 0.6− | 0.4+ | 2006 11 22 | 704 | 0.9− | 0.1+ |
| 2002 09 13 | 704 | 0.6− | 0.9− | 2006 09 25 | 704 | 0.0 | 1.1− | 2006 11 22 | 704 | 0.6− | 0.2+ |
| 2002 09 13 | 704 | 0.0 | 0.7− | 2006 09 25 | 704 | 0.3+ | 1.4+ | 2006 11 22 | 704 | 0.5− | 0.7− |
| 2002 09 13 | 704 | 0.4− | 0.3− | 2006 09 25 | 704 | 0.8+ | 0.4− | 2006 11 22 | 704 | 1.2− | 0.6− |
| 2002 09 13 | 704 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.6− | 0.8− | 2006 11 22 | 704 | 0.4− | 0.9− |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | | | |

**(141928)∗ 2002 PA$_{87}$**

Discovered 2002 Aug. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.85618 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26346396 | $\omega$ | 223.57751 | | +0.66294462 | | −0.74847957 |
| $a$ | 2.4098420 | $\Omega$ | 184.98426 | | +0.72896524 | | +0.65045363 |
| $e$ | 0.2330071 | $i$ | 11.15971 | | +0.17062855 | | +0.12918367 |
| $P$ | 3.74 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 04 | 691 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.0 | 0.4− | 2006 09 27 | 704 | 0.2− | 0.0 |
| 1991 10 04 | 691 | 0.3+ | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.1− | 2006 09 27 | 704 | 0.4− | 0.3+ |
| 1991 10 04 | 691 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.2− |
| 1991 10 05 | 260 | 0.2+ | 0.3− | 2004 03 20 | 704 | 0.6+ | 1.2+ | 2006 09 28 | 704 | 0.0 | 0.4− |
| 1991 10 05 | 260 | 0.1+ | 1.7+ | 2004 03 20 | 704 | 0.7+ | 0.7+ | 2006 09 28 | 704 | 0.3+ | 0.1− |
| 1991 10 14 | 261 | (1.8− | 2.4−) | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.2+ |
| 1991 10 14 | 261 | 1.3− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.4− | 0.4+ |
| 2000 02 06 | 704 | 0.3+ | 1.1+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.2− |
| 2000 02 06 | 704 | 0.0 | 1.2+ | 2006 09 14 | A50 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 2000 02 06 | 704 | 0.7− | 1.2+ | 2006 09 14 | A50 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.1+ |
| 2002 08 04 | 644 | 0.0 | 0.4+ | 2006 09 15 | 704 | 0.5− | 0.4− | 2006 10 01 | 704 | 0.2+ | 0.2+ |
| 2002 08 04 | 644 | 0.0 | 0.3+ | 2006 09 15 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.3+ | 0.2+ |
| 2002 08 04 | 644 | 0.3− | 0.2+ | 2006 09 15 | 704 | 0.7+ | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 08 08 | 699 | 0.6+ | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 08 08 | 699 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 08 08 | 699 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 08 08 | 699 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.7+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | 0.0 | 0.9+ | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | 0.4− | 1.2+ | 2006 09 17 | 704 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 08 12 | 704 | 0.5− | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | 0.5− | 0.7+ | 2006 09 17 | 704 | 0.9+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 08 13 | 699 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 10 16 | 703 | (1.2+ | 1.6+) |
| 2002 08 13 | 699 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2002 08 13 | 699 | 1.4− | 0.7− | 2006 09 18 | 699 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.4+ | 1.4+ |
| 2002 08 13 | 699 | 0.2− | 0.6+ | 2006 09 18 | 699 | 1.0− | 1.3+ | 2006 10 16 | 703 | 0.1+ | 1.3+ |
| 2002 08 15 | 644 | 0.2+ | 1.0+ | 2006 09 20 | 704 | 1.0− | 0.8+ | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2002 08 15 | 644 | 0.9+ | 0.2+ | 2006 09 20 | 704 | 0.5+ | 1.5+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 08 15 | 644 | 0.3+ | 0.8+ | 2006 09 20 | 704 | (0.8+ | 1.5+) | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 08 25 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2002 08 25 | 644 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.1− | 1.0+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2002 08 25 | 644 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.9− |
| 2002 09 02 | 608 | 0.3+ | 0.3− | 2006 09 25 | 691 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.3+ |
| 2002 09 02 | 608 | 0.5+ | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.3− | 2006 11 10 | 704 | 0.5+ | 0.5+ |
| 2002 09 02 | 608 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.3− | 0.3− | 2006 11 10 | 704 | 0.4− | 0.2+ |
| 2004 03 18 | 704 | 0.1− | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.3+ | 2006 11 10 | 704 | 0.4+ | 0.9+ |
| 2004 03 18 | 704 | 0.2− | 0.8+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | 2006 11 10 | 704 | 2.3+ | 1.2− |

**(141929)∗ 2002 PD$_{88}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.03265 | | | (2000.0) | | |
| $n$ | 0.25741175 | $\omega$ | 77.95136 | | +0.91730577 | +0.39802677 |
| $a$ | 2.4474687 | $\Omega$ | 258.59293 | | −0.36961669 | +0.84072485 |
| $e$ | 0.2007082 | $i$ | 0.65301 | | −0.14810005 | +0.36709184 |
| $P$ | 3.83 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 691 | 0.4− | 0.3+ | 2002 09 26 | 699 | 0.3+ | 0.6+ | 2006 09 27 | 704 | 0.4+ | 0.1+ |
| 2000 01 30 | 691 | 0.2+ | 0.4− | 2002 09 26 | 699 | 0.4+ | 0.5+ | 2006 09 27 | 704 | 0.7+ | 0.2+ |
| 2000 01 30 | 691 | 0.1− | 0.5− | 2004 01 27 | 691 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 08 12 | 704 | 0.4+ | 0.8+ | 2004 01 27 | 691 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 08 12 | 704 | 0.2+ | 1.0+ | 2004 01 27 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 08 12 | 704 | 0.4− | 1.0+ | 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.6+ | 1.1+ |
| 2002 08 12 | 704 | 0.4− | 0.9+ | 2005 03 10 | G96 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2002 08 15 | 291 | 0.1− | 0.0 | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.3− | 0.9+ |
| 2002 08 15 | 291 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.9− |
| 2002 08 15 | 291 | 0.0 | 0.1+ | 2005 04 05 | G96 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 09 04 | 644 | 0.1+ | 0.2+ | 2005 04 05 | G96 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 09 04 | 644 | 0.4− | 0.0 | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2002 09 04 | 644 | 0.1− | 0.0 | 2005 04 05 | G96 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | 0.6+ | 0.1+ | 2006 07 22 | G96 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.8+ | 0.2− | 2006 07 22 | G96 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.5+ | 0.6− | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 09 14 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 09 14 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.6− | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 09 15 | 608 | 0.9− | 0.7− | 2006 09 14 | 703 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2002 09 15 | 608 | 0.9− | 0.5− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2002 09 15 | 608 | 0.9− | 0.7− | 2006 09 19 | 691 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 09 26 | 699 | 0.7− | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.0 | | | | |
| 2002 09 26 | 699 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.6− | | | | |

**(141930)∗ 2002 PH$_{88}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.37546 | | | (2000.0) | | |
| $n$ | 0.26617044 | $\omega$ | 3.44797 | | +0.99877326 | +0.04937305 |
| $a$ | 2.3934783 | $\Omega$ | 353.71827 | | −0.04621756 | +0.90210488 |
| $e$ | 0.1364068 | $i$ | 1.97909 | | −0.01777397 | +0.42868296 |
| $P$ | 3.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 05 | 691 | 0.2− | 0.0 | 2002 10 03 | 704 | 0.7− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 1991 10 05 | 691 | 0.2+ | 0.3− | 2002 10 05 | 704 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 1991 10 05 | 691 | 0.2+ | 0.3− | 2002 10 05 | 704 | 0.7+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 1.0− | 0.9− | 2002 10 05 | 704 | 0.7+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1− |
| 2002 08 12 | 704 | (2.1− | 0.4+) | 2002 10 07 | 704 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2002 08 12 | 704 | 1.0− | 1.2+ | 2002 10 07 | 704 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2002 08 12 | 704 | 1.3− | 0.3− | 2002 10 07 | 704 | (1.7+ | 0.1+) | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | (2.4− | 0.1+) | 2002 10 07 | 704 | 0.7+ | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2002 08 12 | 608 | 0.2− | 0.7− | 2002 10 10 | 291 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2002 08 12 | 608 | 0.2+ | 0.3− | 2002 10 10 | 291 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2002 08 12 | 608 | 0.2+ | 0.7− | 2002 10 10 | 291 | 0.8+ | 0.1+ | 2006 10 19 | 644 | 0.6− | 0.0 |
| 2002 08 14 | 291 | 0.4− | 0.2+ | 2004 01 18 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.4− | 0.1+ |
| 2002 08 14 | 291 | 0.3− | 0.4+ | 2004 01 18 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2002 08 14 | 291 | 0.4− | 0.3+ | 2004 01 18 | 644 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 08 28 | 644 | 0.1− | 0.7+ | 2004 01 22 | 704 | 0.3+ | 1.3+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.2− | 0.5+ | 2004 01 22 | 704 | (0.2− | 2.0+) | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2004 01 22 | 704 | (0.0 | 1.7+) | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2002 08 29 | 644 | 0.4+ | 1.1+ | 2004 01 22 | 704 | (0.2+ | 1.5+) | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2002 08 29 | 644 | 0.5+ | 1.2+ | 2004 01 26 | 699 | 0.6+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 1.1+ | 2004 01 26 | 699 | 0.0 | 0.6− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 08 30 | 291 | 0.6− | 0.2− | 2004 01 26 | 699 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 08 30 | 291 | 0.1− | 0.3+ | 2004 01 26 | 699 | 0.3+ | 1.4+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 08 30 | 291 | 0.1− | 0.3+ | 2004 01 30 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 09 03 | 608 | 0.2+ | 0.5− | 2004 01 30 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 09 03 | 608 | 0.2+ | 0.4− | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 09 03 | 608 | 0.1+ | 0.3− | 2004 02 16 | 704 | 0.5+ | 1.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2004 02 16 | 704 | 0.6+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.6+ | 0.8+ | 2004 02 16 | 704 | 0.8+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.4+ | 0.8+ | 2004 02 23 | 704 | 0.5+ | 1.0+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.0 | 1.1+ | 2004 02 23 | 704 | 0.5+ | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 09 05 | 704 | 0.1− | 1.3+ | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 09 07 | 704 | 0.3− | 0.1− | 2004 02 23 | 704 | 0.4− | 0.5− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 09 07 | 704 | 0.3+ | 0.2− | 2004 02 29 | 691 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 09 07 | 704 | 0.2− | 0.4− | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 2002 09 07 | 704 | 0.4+ | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.2− | 2006 11 16 | 704 | 1.2− | 0.4+ |
| 2002 09 07 | 704 | 0.2+ | 0.0 | 2005 01 17 | 809 | 0.1+ | 0.0 | 2006 11 16 | 704 | (2.0− | 0.3−) |
| 2002 09 08 | 608 | 1.0+ | 0.4+ | 2005 01 17 | 809 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.9− | 0.5+ |
| 2002 09 08 | 608 | 0.6+ | 0.0 | 2005 05 04 | 644 | 0.0 | 0.6+ | 2006 11 17 | 703 | 1.4+ | 1.1+ |
| 2002 09 08 | 608 | 0.5+ | 0.2+ | 2005 05 04 | 644 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 1.1+ | 0.8+ |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2005 05 04 | 644 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.0 | 1.2+ |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2005 05 11 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | 2.3+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2005 05 11 | 644 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.3− | 0.5− |
| 2002 09 15 | 644 | 0.1+ | 0.5− | 2005 05 11 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.9− | 0.2+ |
| 2002 09 15 | 644 | 0.1+ | 0.4− | 2005 05 12 | G96 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.8+ |
| 2002 09 15 | 644 | 0.1− | 0.5− | 2005 05 12 | G96 | 0.0 | 0.5+ | 2006 11 19 | 704 | 1.2− | 0.1+ |
| 2002 09 17 | 608 | 0.7− | 0.2− | 2005 05 12 | G96 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2002 09 17 | 608 | 0.8− | 0.0 | 2005 05 12 | G96 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 09 17 | 608 | 1.1− | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.6+ |
| 2002 10 01 | 608 | 0.5− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.6− | 2006 11 22 | 704 | 1.0+ | 0.3− |
| 2002 10 01 | 608 | 0.8− | 0.8− | 2006 08 28 | 703 | 0.2− | 0.6+ | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 2002 10 01 | 608 | 0.8− | 0.3− | 2006 08 28 | 703 | 0.6+ | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.8+ | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.1− | | | | |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.5− | | | | |

**(141931)∗ 2002 PN$_{92}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.33675 | | | (2000.0) | | |
| $n$ | 0.25735537 | $\omega$ | 39.55757 | | +0.98367213 | −0.17281100 |
| $a$ | 2.4478261 | $\Omega$ | 330.27922 | | +0.12845253 | +0.86974268 |
| $e$ | 0.1255162 | $i$ | 5.81780 | | +0.12605191 | +0.46225969 |
| $P$ | 3.83 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | (0.6+ | 2.1−) | 2004 02 23 | 704 | 0.5− | 0.1+ | 2006 09 16 | 699 | 0.2+ | 0.4+ |
| 2000 01 04 | 704 | 0.4− | 1.0− | 2004 02 23 | 704 | 0.4+ | 1.0+ | 2006 09 16 | 699 | 0.5+ | 0.2− |
| 2000 01 04 | 704 | 0.4+ | 0.7+ | 2004 02 23 | 704 | 0.1+ | 1.0+ | 2006 09 16 | 699 | 0.2+ | 0.6+ |
| 2002 07 23 | 644 | 1.0− | 0.4+ | 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 09 18 | 704 | 0.1− | 0.6− |
| 2002 07 23 | 644 | 0.3+ | 0.7+ | 2006 07 25 | G96 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.0 | 0.1+ |
| 2002 07 23 | 644 | 0.3− | 0.8+ | 2006 07 25 | G96 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.1− | 0.2+ |
| 2002 08 14 | 704 | 0.1− | 0.3− | 2006 07 25 | G96 | 0.0 | 0.4− | 2006 09 18 | 704 | 0.0 | 0.1− |
| 2002 08 14 | 704 | 0.1+ | 0.3+ | 2006 07 25 | G96 | 0.3+ | 0.4− | 2006 09 18 | 704 | 0.0 | 0.0 |
| 2002 08 14 | 704 | 0.4+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.0 |
| 2002 08 15 | 704 | 0.5− | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2002 08 15 | 704 | 0.1+ | 1.3+ | 2006 08 17 | 644 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.1− |
| 2002 08 15 | 704 | 0.3− | 0.5+ | 2006 08 17 | 644 | 0.4− | 0.2− | 2006 09 19 | 703 | (1.0− | 3.5+) |
| 2002 08 15 | 704 | 0.1+ | 0.7+ | 2006 08 17 | 644 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2002 08 15 | 704 | 0.2− | 0.0 | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.4− |
| 2002 08 20 | 644 | 0.2− | 0.5+ | 2006 08 18 | 699 | 0.9+ | 1.0− | 2006 09 19 | 703 | 0.1− | 0.5− |
| 2002 08 20 | 644 | 0.2− | 0.5+ | 2006 08 18 | 699 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.4− |
| 2002 08 20 | 644 | 0.3− | 0.7+ | 2006 08 18 | 699 | 0.3+ | 0.2+ | 2006 09 20 | 691 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.5+ | 0.1+ | 2006 08 18 | 699 | 0.1+ | 0.1+ | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.3− | 0.3− | 2006 08 19 | 691 | 0.3− | 0.5+ | 2006 09 20 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.4− | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 24 | 106 | 0.5− | 0.3− |
| 2002 09 05 | 704 | 0.3− | 0.6+ | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 24 | 106 | 0.3− | 0.5− |
| 2002 09 05 | 704 | 0.4+ | 0.2− | 2006 08 21 | 704 | 0.8+ | 0.3− | 2006 09 24 | 106 | 0.9+ | 0.6− |
| 2002 09 13 | 704 | 0.8− | 0.0 | 2006 08 21 | 704 | 0.4− | 0.1− | 2006 09 24 | 106 | 0.0 | 1.0− |
| 2002 09 13 | 704 | 1.1− | 0.3+ | 2006 08 21 | 704 | 0.0 | 0.7+ | 2006 09 25 | 704 | 0.5+ | 0.3− |
| 2002 09 13 | 704 | 0.2− | 0.7+ | 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.5+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.2− | 0.4− |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.5+ | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.6+ | 2006 08 25 | 704 | 0.0 | 0.9− | 2006 09 25 | 704 | 0.5+ | 0.1− |
| 2004 01 16 | 644 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 0.6+ | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.3− |
| 2004 01 16 | 644 | 0.3+ | 0.4+ | 2006 08 25 | 704 | 0.1− | 0.5− | 2006 09 25 | 704 | 0.9+ | 0.3− |
| 2004 01 16 | 644 | 0.3+ | 0.3+ | 2006 08 25 | 704 | 0.1+ | 0.7− | 2006 09 25 | 699 | 0.5+ | 0.0 |
| 2004 01 22 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.4+ | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.5+ |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 08 29 | 703 | 0.1− | 0.2− | 2006 09 29 | 704 | (1.6+ | 0.3+) |
| 2004 01 22 | 704 | 0.6+ | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 29 | 704 | (1.2+ | 1.9+) |
| 2004 01 22 | 704 | 0.5+ | 0.1− | 2006 08 29 | 703 | 0.1− | 0.7− | 2006 09 29 | 704 | 1.4+ | 0.9+ |
| 2004 01 22 | 704 | 0.4+ | 0.0 | 2006 08 30 | 704 | 0.9− | 0.1+ | 2006 09 29 | 704 | (2.5+ | 0.5+) |
| 2004 01 26 | 699 | 0.5+ | 1.1− | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 09 29 | 704 | (2.2+ | 0.5−) |
| 2004 01 26 | 699 | (1.6− | 1.7+) | 2006 08 30 | 704 | 0.5− | 0.6+ | 2006 10 01 | 703 | 0.5− | 0.3− |
| 2004 01 26 | 699 | 0.6− | 0.6− | 2006 08 30 | 704 | 0.4− | 0.3+ | 2006 10 01 | 703 | 0.8− | 0.3− |
| 2004 01 26 | 699 | 0.7− | 0.6+ | 2006 08 30 | 704 | 1.1− | 0.8+ | 2006 10 01 | 703 | 0.4− | 0.2− |
| 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 10 01 | 703 | 1.3− | 0.4− |
| 2004 01 30 | 704 | 0.1− | 0.8+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.4− |
| 2004 01 30 | 704 | 0.4+ | 0.9+ | 2006 09 06 | 644 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.2+ |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.6− | 1.4+ |
| 2004 02 11 | 691 | 0.3− | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.2− | 0.7+ |
| 2004 02 11 | 691 | 0.2− | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.7− | 1.0+ |
| 2004 02 15 | 704 | 0.5+ | 1.2+ | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 10 18 | 291 | 0.3+ | 0.1− |
| 2004 02 15 | 704 | 0.3+ | 1.3+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 18 | 291 | 0.3+ | 0.1− |
| 2004 02 15 | 704 | 1.0+ | 0.7− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 18 | 291 | 0.4+ | 0.1− |
| 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 09 16 | 699 | 0.2− | 0.2+ | | | | |

**(141932)∗ 2002 PC$_{94}$**

Discovered 2002 Aug. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.26856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27057951 | $\omega$ | 179.62708 | | +0.48094567 | +0.87546834 | |
| $a$ | 2.3674062 | $\Omega$ | 119.11956 | | −0.80454316 | +0.46217430 | |
| $e$ | 0.2170412 | $i$ | 3.11005 | | −0.34842727 | +0.14124480 | |
| $P$ | 3.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.0 | 0.2− | 2002 09 05 | 704 | 0.3− | 0.4− | 2005 05 13 | 691 | 0.3+ | 0.4+ |
| 1995 10 27 | 691 | 0.0 | 0.1− | 2002 09 06 | 704 | 0.3+ | 0.5+ | 2005 05 13 | 691 | 0.4+ | 0.6+ |
| 1995 10 27 | 691 | 0.1+ | 0.0 | 2002 09 06 | 704 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.8+ | 1.1+ |
| 2002 08 11 | 608 | 0.6+ | 0.4+ | 2002 09 06 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 1.3+ | 0.4− |
| 2002 08 11 | 608 | 0.5+ | 0.0 | 2002 09 12 | 608 | 1.3− | 0.3− | 2006 09 30 | 703 | (2.5− | 0.6+) |
| 2002 08 11 | 608 | 1.0+ | 0.4+ | 2002 09 12 | 608 | 0.5− | 0.2+ | 2006 09 30 | 703 | (0.2+ | 2.6+) |
| 2002 08 15 | 699 | 1.0− | 0.4− | 2002 09 12 | 608 | 1.1− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.3+ |
| 2002 08 15 | 699 | 0.5− | 0.1+ | 2002 09 15 | 644 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.2+ |
| 2002 08 15 | 699 | 0.8− | 0.8+ | 2002 09 15 | 644 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2002 08 15 | 699 | 0.6− | 0.7+ | 2002 09 15 | 644 | 0.4+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2005 03 11 | 691 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.5+ |
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2005 03 11 | 691 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.6+ |
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2002 08 26 | 644 | 0.3+ | 0.1− | 2005 04 01 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2002 08 26 | 644 | 0.4+ | 0.1+ | 2005 04 01 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 2002 08 26 | 644 | 0.1+ | 0.2+ | 2005 04 01 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.6− | 0.4+ |
| 2002 08 29 | 644 | 0.3+ | 0.2+ | 2005 04 04 | 703 | 0.7− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.1− |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2005 04 04 | 703 | 0.5− | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2005 04 04 | 703 | 0.8− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.7− | 2005 04 04 | 703 | 0.9+ | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | 0.5+ | 1.0+ | 2005 05 13 | 691 | 0.2+ | 0.5+ | | | | |

**(141933)∗ 2002 PF$_{94}$ = 1999 XV$_{193}$**

Discovered 2002 Aug. 11 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 37776)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.47753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27367922 | $\omega$ | 23.50119 | | +0.24264212 | −0.96490240 | |
| $a$ | 2.3494967 | $\Omega$ | 52.60636 | | +0.86880818 | +0.17007156 | |
| $e$ | 0.1753656 | $i$ | 7.26287 | | +0.43162153 | +0.20009753 | |
| $P$ | 3.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.3+ | 1.1− | 2004 03 23 | 704 | 0.1− | 0.1− | 2006 10 28 | 704 | 1.3+ | 0.5+ |
| 1999 12 12 | 704 | (2.3− | 0.9−) | 2004 03 23 | 704 | 0.3− | 0.0 | 2006 10 28 | 704 | 0.3− | 0.4+ |
| 1999 12 12 | 704 | 0.5+ | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 11 02 | 704 | (0.7− | 2.6+) |
| 1999 12 12 | 704 | 0.2+ | 1.3− | 2004 03 23 | 704 | 0.1− | 0.2− | 2006 11 02 | 704 | 1.0− | 0.4+ |
| 1999 12 12 | 704 | 1.4+ | 1.0− | 2004 03 23 | 704 | 0.3− | 0.2+ | 2006 11 02 | 704 | (1.0− | 1.7+) |
| 1999 12 15 | 704 | 0.9− | 1.0− | 2004 03 25 | 704 | 0.6+ | 0.2+ | 2006 11 02 | 704 | 1.2+ | 0.1+ |
| 1999 12 15 | 704 | 0.3− | 0.7− | 2004 03 25 | 704 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 1999 12 15 | 704 | 0.4− | 0.5− | 2004 03 25 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 12 15 | 704 | 0.3− | 1.1− | 2004 03 25 | 704 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 08 11 | 608 | 0.8+ | 0.2+ | 2004 03 25 | 704 | 0.6+ | 0.2− | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2002 08 11 | 608 | 0.8+ | 1.0+ | 2004 03 26 | 704 | 0.8+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2002 08 11 | 608 | 0.7+ | 0.8+ | 2004 03 26 | 704 | 1.4+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 08 15 | 699 | 0.9+ | 0.7− | 2004 03 26 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2002 08 15 | 699 | 0.4− | 0.7+ | 2004 03 26 | 704 | 0.9+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 08 15 | 699 | 0.6− | 0.5+ | 2004 03 26 | 704 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2002 08 15 | 699 | 0.3− | 1.5+ | 2004 03 26 | 703 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2002 08 18 | 608 | 0.1+ | 0.6− | 2004 03 26 | 703 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 08 18 | 608 | 0.0 | 0.8− | 2004 03 26 | 703 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 08 18 | 608 | 0.2+ | 0.4− | 2004 03 26 | 703 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2002 08 20 | 644 | 0.2− | 0.5− | 2004 03 28 | 704 | 0.6+ | 1.0+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2002 08 20 | 644 | 0.1− | 0.6− | 2004 03 28 | 704 | 0.4+ | 0.7+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2002 08 20 | 644 | 0.3+ | 1.0− | 2004 03 28 | 704 | 0.4+ | 0.5+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2002 09 09 | 644 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2002 09 09 | 644 | 0.1− | 0.5+ | 2004 03 28 | 704 | 0.2− | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 09 09 | 644 | 0.2− | 0.6+ | 2004 04 13 | 703 | 0.7− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2002 09 16 | 644 | 0.5− | 0.2− | 2004 04 13 | 703 | 1.4− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 09 16 | 644 | 0.4− | 0.4− | 2004 04 13 | 703 | 0.3− | 0.6+ | 2006 11 17 | 703 | (0.3− | 2.4−) |
| 2002 09 16 | 644 | 0.7− | 0.3− | 2004 04 13 | 703 | 0.3− | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2002 09 16 | 644 | 0.2− | 0.6+ | 2004 04 13 | 703 | 1.0− | 0.9+ | 2006 11 17 | 703 | 0.4− | 0.6− |
| 2002 09 16 | 644 | 0.2− | 0.6+ | 2004 04 13 | 703 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.4− |
| 2002 09 16 | 644 | 0.6− | 0.8+ | 2004 04 13 | 703 | (1.3− | 1.8+) | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2002 09 30 | 608 | 0.3− | 0.3+ | 2004 04 13 | 703 | (0.3− | 2.1+) | 2006 11 18 | 704 | 0.4− | 0.2− |
| 2002 09 30 | 608 | 0.4− | 0.3+ | 2006 09 14 | 703 | 1.0− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2002 09 30 | 608 | 0.3− | 0.5+ | 2006 09 14 | 703 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2003 12 27 | 704 | 1.0+ | 0.4− | 2006 09 14 | 703 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2003 12 27 | 704 | 0.7+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.5− |
| 2003 12 27 | 704 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 0.5− |
| 2004 02 17 | 704 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2004 02 17 | 704 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.3− |
| 2004 02 17 | 704 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2004 02 17 | 704 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | (1.7+ | 0.2−) |
| 2004 02 17 | 704 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.7+ | 1.4+ |
| 2004 02 17 | 703 | 0.3+ | 0.4− | 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.9+ |
| 2004 02 17 | 703 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2004 02 17 | 703 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.5+ | 0.1+ | 2006 11 26 | 704 | 0.4+ | 0.3+ |
| 2004 02 17 | 703 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.2+ | 0.8+ | 2006 11 26 | 704 | 0.4− | 0.4+ |
| 2004 02 21 | 608 | 0.2+ | 0.7− | 2006 10 23 | 704 | 0.2+ | 0.1− | 2006 11 26 | 704 | 0.7− | 0.0 |
| 2004 02 21 | 608 | 0.8+ | 0.2+ | 2006 10 23 | 704 | 0.5− | 0.8+ | 2006 11 27 | 703 | 0.0 | 0.4− |
| 2004 02 21 | 608 | 0.7+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.2− | 0.4− |
| 2004 02 27 | 704 | 0.1+ | 1.4+ | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.3− | 0.4− |
| 2004 02 27 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.4+ | 2006 11 27 | 703 | 1.0− | 0.4− |
| 2004 02 27 | 704 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.4− |
| 2004 02 27 | 704 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2004 03 14 | 704 | 0.2− | 0.6+ | 2006 10 24 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.5− |
| 2004 03 14 | 704 | 0.8− | 0.5+ | 2006 10 28 | 704 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 0.6− | 0.6+ |
| 2004 03 14 | 704 | 0.4+ | 0.2− | 2006 10 28 | 704 | 0.5+ | 1.4+ | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2004 03 14 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 704 | (0.7+ | 1.6+) | | | | |

**(141934)∗ 2002 PL$_{94}$ = 1995 YS$_{13}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 33734)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.62096 | | (2000.0) | | | |
| $n$ | 0.26302053 | $\omega$ | 117.73094 | | +0.85769686 | +0.51230268 |
| $a$ | 2.4125498 | $\Omega$ | 211.50830 | | −0.49621706 | +0.80257834 |
| $e$ | 0.2139967 | $i$ | 4.78689 | | −0.13462811 | +0.30563700 |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.2+ | 0.3− | 2002 09 06 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 683 | 0.6− | 1.1+ | |
| 1995 12 16 | 691 | 0.4+ | 0.3− | 2002 09 06 | 704 | 0.5+ | 0.7− | 2006 09 30 | 683 | (1.6+ | 0.3−) | |
| 1995 12 16 | 691 | 0.1+ | 0.6− | 2002 09 06 | 704 | 0.8− | 0.3− | 2006 09 30 | 683 | (1.8+ | 1.5+) | |
| 1995 12 20 | 691 | 0.6− | 0.4+ | 2002 09 06 | 704 | 0.6− | 0.9+ | 2006 09 30 | 683 | (0.1− | 1.6+) | |
| 1995 12 20 | 691 | 0.6− | 0.0 | 2002 09 08 | 608 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ | |
| 1995 12 20 | 691 | 0.5− | 0.3− | 2002 09 08 | 608 | 0.4− | 0.6− | 2006 09 30 | 691 | 0.2− | 0.1+ | |
| 1995 12 27 | 691 | 0.2+ | 0.2+ | 2002 09 08 | 608 | 0.9− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1− | |
| 1995 12 27 | 691 | 0.1− | 0.3− | 2002 10 04 | 704 | 0.6+ | 1.4+ | 2006 10 03 | 704 | 0.5+ | 0.4− | |
| 1995 12 27 | 691 | 0.9+ | 0.0 | 2002 10 04 | 704 | 0.3+ | 0.6− | 2006 10 03 | 704 | 0.6+ | 0.7+ | |
| 2002 07 12 | 644 | 0.0 | 0.1+ | 2002 10 04 | 704 | 0.4+ | 0.3+ | 2006 10 03 | 704 | 0.0 | 0.1+ | |
| 2002 07 12 | 644 | 0.4+ | 0.0 | 2002 10 04 | 704 | 0.0 | 0.2− | 2006 10 03 | 704 | 1.0+ | 0.4− | |
| 2002 07 12 | 644 | 0.3+ | 0.1+ | 2002 10 05 | 704 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.2− | 0.3+ | |
| 2002 07 18 | 704 | 0.2+ | 0.4+ | 2002 10 05 | 644 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.3+ | |
| 2002 07 18 | 704 | 0.2+ | 1.1− | 2002 10 05 | 644 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | |
| 2002 07 18 | 704 | 0.8+ | 0.0 | 2002 10 05 | 644 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2002 07 18 | 704 | 0.1− | 0.5− | 2002 10 05 | 704 | (0.2+ | 1.6−) | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2002 08 05 | 644 | 0.7+ | 0.1+ | 2002 10 05 | 704 | (1.3+ | 1.8−) | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2002 08 05 | 644 | 0.6+ | 0.0 | 2002 10 05 | 704 | (1.8+ | 0.0 ) | 2006 10 15 | 691 | 0.1+ | 0.0 | |
| 2002 08 05 | 644 | 0.5+ | 0.2+ | 2002 10 06 | 644 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.3− | |
| 2002 08 08 | 699 | 0.4− | 0.6− | 2002 10 06 | 644 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.2− | |
| 2002 08 08 | 699 | 0.3− | 0.4+ | 2002 10 06 | 644 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2002 08 08 | 699 | 0.7− | 0.3− | 2003 12 22 | 691 | 0.5+ | 1.0+ | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 2002 08 08 | 699 | 0.3− | 0.8− | 2003 12 22 | 691 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.3+ | |
| 2002 08 12 | 704 | 0.4− | 1.2+ | 2003 12 22 | 691 | 0.5+ | 0.9+ | 2006 10 21 | 703 | 0.2− | 0.6− | |
| 2002 08 12 | 704 | 0.3− | 0.9+ | 2005 05 08 | G96 | 0.6− | 0.0 | 2006 10 21 | 703 | 0.0 | 1.3− | |
| 2002 08 12 | 704 | 0.2− | 1.0+ | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.5− | 0.3− | |
| 2002 08 12 | 704 | 0.6− | 1.0+ | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1− | |
| 2002 08 12 | 704 | 0.5− | 0.5+ | 2005 05 08 | G96 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.1− | |
| 2002 08 13 | 644 | 0.3− | 0.1− | 2006 09 18 | 699 | 1.3+ | 1.0+ | 2006 10 27 | 691 | 0.1+ | 0.1− | |
| 2002 08 13 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.9− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1− | |
| 2002 08 13 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.3− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.2− | |
| 2002 08 15 | 699 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.1+ | |
| 2002 08 15 | 699 | 0.1− | 0.6− | 2006 09 26 | 683 | (0.1− | 1.7−) | 2006 11 01 | 691 | 0.1− | 0.0 | |
| 2002 08 15 | 699 | 0.2+ | 0.2− | 2006 09 26 | 683 | (1.5+ | 1.7−) | 2006 11 01 | 691 | 0.1− | 0.2− | |
| 2002 08 15 | 699 | 0.3+ | 0.4− | 2006 09 26 | 683 | 0.5+ | 1.1+ | 2006 11 01 | 691 | 0.3+ | 0.4+ | |
| 2002 08 16 | 644 | 0.1+ | 0.9+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.4+ | |
| 2002 08 16 | 644 | 0.8+ | 1.0+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.1+ | |
| 2002 08 16 | 644 | 0.2+ | 0.8+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.1− | |
| 2002 09 05 | 699 | 0.4− | 0.6+ | 2006 09 27 | 683 | 0.5+ | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.3− | |
| 2002 09 05 | 699 | 0.2− | 0.8+ | 2006 09 27 | 683 | 0.3+ | 0.6− | 2006 11 22 | G96 | 0.0 | 0.3− | |
| 2002 09 05 | 699 | 0.2− | 0.4+ | 2006 09 28 | 683 | 0.6− | 0.3− | 2006 11 22 | G96 | 0.1− | 0.3− | |
| 2002 09 05 | 699 | 0.2− | 0.2− | 2006 09 28 | 683 | 0.2− | 0.7+ | | | | | |

**(141935)∗ 2002 PN$_{94}$**

Discovered 2002 Aug. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 163.31673 | | (2000.0) | | | |
| $n$ | 0.30460809 | $\omega$ | 104.88986 | | −0.65925614 | +0.74828031 |
| $a$ | 2.1876361 | $\Omega$ | 123.62470 | | −0.71947840 | −0.59921353 |
| $e$ | 0.1878160 | $i$ | 5.09012 | | −0.21847695 | −0.28463964 |
| $P$ | 3.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1− | 0.6+ | 2003 12 14 | 644 | 0.3+ | 0.1+ | 2005 06 28 | G96 | 0.4− | 0.1+ | |
| 2002 07 14 | 644 | 0.2+ | 0.2+ | 2003 12 14 | 644 | 0.5+ | 0.1+ | 2005 07 03 | A13 | 0.1− | 0.3− | |
| 2002 07 14 | 644 | 0.0 | 0.6+ | 2003 12 14 | 644 | 0.2+ | 0.4+ | 2005 07 03 | A13 | 0.3− | 0.2− | |
| 2002 07 23 | 644 | 0.0 | 0.3+ | 2003 12 17 | 691 | 0.3− | 0.0 | 2005 07 03 | A13 | 0.1+ | 0.3+ | |
| 2002 07 23 | 644 | 0.0 | 0.2− | 2003 12 17 | 691 | 0.2− | 0.2− | 2005 07 13 | A13 | 0.2+ | 0.1+ | |
| 2002 07 23 | 644 | 0.4+ | 0.3− | 2003 12 17 | 691 | 0.3+ | 0.4− | 2005 07 13 | A13 | 0.8− | 0.8− | |
| 2002 08 08 | 699 | 0.2+ | 0.3− | 2005 05 31 | 185 | 0.6+ | 0.1+ | 2005 07 13 | A13 | 0.4− | 0.4+ | |
| 2002 08 08 | 699 | 0.8− | 0.2− | 2005 06 01 | 185 | 0.5+ | 0.0 | 2005 07 13 | A13 | 0.3− | 0.3− | |
| 2002 08 08 | 699 | 0.3− | 0.4+ | 2005 06 01 | 185 | 0.7+ | 0.1+ | 2006 11 01 | 703 | (2.7− | 0.5+) | |
| 2002 08 08 | 699 | 0.7− | 0.4− | 2005 06 27 | G96 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.2− | 1.0+ | |
| 2002 08 12 | 608 | (0.1+ | 1.5−) | 2005 06 27 | G96 | 0.2+ | 0.2+ | 2006 11 01 | 703 | (0.9+ | 1.9+) | |
| 2002 08 12 | 608 | 0.2− | 1.4− | 2005 06 27 | G96 | 0.1+ | 0.0 | 2006 11 01 | 703 | 0.8− | 0.9+ | |
| 2002 08 12 | 608 | (0.2− | 2.0−) | 2005 06 27 | G96 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.2− | |
| 2002 08 15 | 699 | 0.6+ | 0.1+ | 2005 06 27 | G96 | 0.4− | 0.9− | 2006 11 17 | G96 | 0.5+ | 0.1− | |
| 2002 08 15 | 699 | 0.3− | 0.2− | 2005 06 27 | G96 | 0.6+ | 0.3− | 2006 11 17 | G96 | 0.6+ | 0.3− | |
| 2002 08 15 | 699 | 0.7+ | 0.1− | 2005 06 27 | G96 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− | |
| 2002 08 15 | 699 | 0.1+ | 0.4− | 2005 06 27 | G96 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.5− | 0.1− | |
| 2002 08 18 | 644 | 0.3+ | 0.9+ | 2005 06 28 | G96 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.2− | |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2005 06 28 | G96 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2− | |
| 2002 08 18 | 644 | 0.1− | 0.5+ | 2005 06 28 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− | |

**(141936)∗ 2002 PM$_{95}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.92444 | | (2000.0) | | | |
| $n$ | 0.26940361 | $\omega$ | 96.34408 | | +0.60459421 | +0.79637604 |
| $a$ | 2.3742901 | $\Omega$ | 210.87306 | | −0.74246978 | +0.55624314 |
| $e$ | 0.1927378 | $i$ | 1.76942 | | −0.28845184 | +0.23744215 |
| $P$ | 3.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.3+ | 0.3− | 2005 03 12 | 691 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.1+ | 0.1− | |
| 1995 10 21 | 691 | 0.2− | 0.3− | 2005 03 12 | 691 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.3+ | |
| 1995 10 21 | 691 | 0.1+ | 0.1− | 2005 03 12 | 691 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.4+ | 0.0 | |
| 2002 06 14 | 608 | 0.1+ | 0.4+ | 2005 04 05 | G96 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2+ | |
| 2002 06 14 | 608 | 0.9− | 0.3+ | 2005 04 05 | G96 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.0 | 0.4− | |
| 2002 06 14 | 608 | 0.2− | 0.2− | 2005 04 05 | G96 | 0.2− | 0.2− | 2006 10 20 | 703 | 0.0 | 0.9+ | |
| 2002 07 14 | 704 | 0.7+ | 0.2+ | 2005 04 05 | G96 | 0.3+ | 0.0 | 2006 10 20 | 703 | 1.0+ | 1.4+ | |
| 2002 07 14 | 704 | 0.5+ | 0.7+ | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 703 | 0.0 | 0.3+ | |
| 2002 07 14 | 704 | 0.5+ | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.2+ | |
| 2002 07 14 | 704 | 0.2+ | 0.5+ | 2005 04 30 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.4+ | |
| 2002 07 14 | 704 | 0.0 | 0.5− | 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.7+ | |
| 2002 07 22 | 644 | 0.4− | 0.2+ | 2005 05 13 | G96 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.4+ | |
| 2002 07 22 | 644 | 0.2− | 0.4+ | 2005 05 13 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | |
| 2002 07 22 | 644 | 0.1+ | 0.2+ | 2005 05 13 | G96 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2006 07 22 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2002 08 07 | 644 | 0.0 | 0.2+ | 2006 07 22 | G96 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− | |
| 2002 08 07 | 644 | 0.0 | 0.3+ | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2− | |
| 2002 08 12 | 608 | 0.8− | 0.7− | 2006 07 22 | G96 | 1.0− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.0 | |
| 2002 08 12 | 608 | 0.6− | 1.2− | 2006 08 12 | 644 | 0.2− | 0.2− | 2006 10 23 | 704 | 0.3− | 0.4+ | |
| 2002 08 12 | 608 | 0.9− | 0.7− | 2006 08 12 | 644 | 0.4+ | 0.1+ | 2006 10 23 | 704 | 0.9− | 0.6+ | |
| 2002 08 14 | 704 | 0.6+ | 0.1+ | 2006 08 12 | 644 | 0.3− | 0.3+ | 2006 10 23 | 704 | 0.3− | 0.2+ | |
| 2002 08 14 | 704 | 0.1− | 0.1− | 2006 09 18 | 691 | 1.1− | 0.9+ | 2006 10 23 | 704 | 0.0 | 0.3+ | |
| 2002 08 14 | 704 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.0 | 0.4+ | |
| 2002 08 14 | 704 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.0 | |
| 2002 08 14 | 704 | 0.6+ | 0.3− | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.2+ | |
| 2002 08 15 | 699 | 0.3+ | 0.8+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | |
| 2002 08 15 | 699 | 0.1+ | 0.7+ | 2006 09 24 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.4− | |
| 2002 08 15 | 699 | 0.9+ | 0.4+ | 2006 09 30 | 683 | (2.1+ | 1.7−) | 2006 10 31 | 691 | 0.2− | 0.5− | |
| 2002 08 15 | 699 | 0.1− | 0.1+ | 2006 09 30 | 683 | (1.9+ | 1.0−) | 2006 10 31 | 691 | 0.2− | 0.4− | |
| 2002 08 18 | 608 | 0.9− | 0.7− | 2006 10 02 | 691 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ | |
| 2002 08 18 | 608 | 0.4− | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 | |
| 2002 08 18 | 608 | 0.5− | 0.6− | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− | |
| 2002 09 01 | 699 | 0.3− | 0.2− | 2006 10 03 | 704 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 01 | 699 | 0.0 | 0.2+ | 2006 10 03 | 704 | 1.1+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 09 01 | 699 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2002 09 01 | 699 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 0.9− | 1.2− | 2006 11 11 | 703 | 0.9− | 0.6+ |
| 2002 09 05 | 699 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2002 09 05 | 699 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.9− |
| 2002 09 05 | 699 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2002 09 05 | 699 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | (1.5+ | 2.1+) |
| 2002 09 05 | 704 | 1.5+ | 1.1+ | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 1.2+ | 0.6+ |
| 2002 09 05 | 704 | (0.4+ | 1.7+) | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.3− |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2005 03 11 | G96 | 0.7− | 0.5− | 2006 10 15 | 691 | 0.0 | 0.5+ | 2006 11 20 | G96 | 0.2− | 0.4− |
| 2005 03 11 | G96 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2005 03 11 | G96 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 11 20 | G96 | 0.2+ | 0.1+ |

**(141937)∗ 2002 PS$_{95}$ = 2004 DW$_{14}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61252)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.92758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27561504 | $\omega$ | 120.84994 | | +0.86511082 | −0.50060928 | |
| $a$ | 2.3384824 | $\Omega$ | 269.20691 | | +0.44887781 | +0.80046929 | |
| $e$ | 0.2208943 | $i$ | 1.78824 | | +0.22381235 | +0.32960470 | |
| $P$ | 3.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | (5.6+ | 1.2+) | 2004 02 19 | 704 | (0.0 | 2.6+) | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 1999 12 07 | 704 | 0.5− | 0.5+ | 2004 02 19 | 704 | 0.5+ | 1.0+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 1999 12 07 | 704 | 0.0 | 0.3− | 2004 02 19 | 704 | 0.4− | 0.7+ | 2006 11 10 | 691 | (2.6+ | 1.6−) |
| 2002 07 22 | 644 | 0.4− | 0.1+ | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2002 07 22 | 644 | 0.4− | 0.4+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.4+ | 0.1− |
| 2002 07 22 | 644 | 0.2− | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2002 08 07 | 644 | 0.4+ | 0.6+ | 2004 03 26 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2002 08 07 | 644 | 0.1− | 0.6+ | 2004 03 26 | 691 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 08 07 | 644 | 0.0 | 0.7+ | 2004 03 26 | 691 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2002 08 12 | 608 | 0.2+ | 1.2− | 2005 06 14 | G96 | 0.3− | 0.8+ | 2006 11 14 | 691 | 0.3+ | 0.1− |
| 2002 08 12 | 608 | 0.5+ | 1.1− | 2005 06 14 | G96 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2002 08 12 | 608 | 0.5+ | 1.2− | 2005 06 14 | G96 | 0.6− | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.2− |
| 2002 08 13 | 291 | 0.3− | 0.2+ | 2005 06 14 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.5+ | 1.2− |
| 2002 08 13 | 291 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.4+ | 0.8− |
| 2002 08 13 | 291 | 0.1− | 0.9+ | 2006 08 28 | 703 | 0.9− | 0.7+ | 2006 11 17 | 704 | 0.5+ | 0.7− |
| 2002 08 14 | 704 | 0.2+ | 0.8+ | 2006 08 28 | 703 | 0.8− | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.4− |
| 2002 08 14 | 704 | 0.1− | 0.4− | 2006 08 28 | 703 | 0.6− | 0.5− | 2006 11 17 | 704 | 0.2+ | 0.6− |
| 2002 08 14 | 704 | 0.4+ | 0.9− | 2006 09 18 | 704 | 0.9− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 08 14 | 704 | 0.2+ | 0.4− | 2006 09 18 | 704 | 0.4+ | 0.4− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 08 15 | 699 | 0.7− | 0.7+ | 2006 09 18 | 704 | 0.6− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 08 15 | 699 | 0.4+ | 0.3+ | 2006 09 18 | 704 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2002 08 15 | 699 | 0.3+ | 0.5− | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2002 08 15 | 699 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.7− | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2002 08 17 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 1.1− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.8+ |
| 2002 08 17 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 1.1− | 0.5− | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2002 08 24 | 644 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.3− | 1.1+ | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2002 08 24 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2002 08 24 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 1.0− | 1.4+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2002 08 27 | 644 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 08 27 | 644 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2003 11 24 | 291 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.7− | 0.9+ |
| 2003 11 24 | 291 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.2+ | 0.7+ |
| 2003 11 24 | 291 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.5− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2004 02 17 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.7− | 0.6+ | 2006 11 27 | 703 | 0.3+ | 0.1− |
| 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.9− | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.7+ |
| 2004 02 17 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 704 | 0.6− | 0.2+ | 2006 12 01 | 704 | 0.4− | 0.5+ |
| 2004 02 18 | 704 | 0.5− | 0.8− | 2006 10 28 | 704 | (1.6− | 0.7+) | 2006 12 01 | 704 | 0.7+ | 0.7+ |
| 2004 02 18 | 704 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.6− | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2004 02 18 | 704 | 0.0 | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 12 01 | 704 | 0.1− | 0.4+ |

**(141938)∗ 2002 PV$_{95}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.20955 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26102716 | $\omega$ | 142.79872 | | −0.11113769 | +0.99255424 | |
| $a$ | 2.4248167 | $\Omega$ | 120.76993 | | −0.92518203 | −0.08501917 | |
| $e$ | 0.1794148 | $i$ | 3.32565 | | −0.36288652 | −0.08722281 | |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.5+ | 0.4+ | 2002 09 08 | 608 | 0.3− | 0.5− | 2005 03 16 | 704 | 0.3− | 0.3+ |
| 2001 02 02 | 691 | 0.5− | 0.6− | 2002 09 15 | 644 | 0.2− | 0.6− | 2005 04 06 | 703 | 0.5− | 1.1− |
| 2001 02 02 | 691 | 0.2+ | 0.4+ | 2002 09 15 | 644 | 0.2− | 0.4− | 2005 04 06 | 703 | 0.5+ | 0.4+ |
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2002 09 15 | 644 | 0.2+ | 0.2− | 2005 04 06 | 703 | (1.6− | 0.5−) |
| 2002 08 08 | 644 | 0.0 | 0.3− | 2005 03 03 | 691 | 0.3− | 0.0 | 2005 04 06 | 703 | (2.1− | 0.4−) |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2005 03 03 | 691 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | 0.4− | 1.2+ | 2005 03 03 | 691 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.0 |
| 2002 08 14 | 704 | 0.8− | 0.7− | 2005 03 04 | 704 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.1+ |
| 2002 08 14 | 704 | 0.2− | 1.1− | 2005 03 04 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.6+ | 0.7+ |
| 2002 08 14 | 704 | 0.5+ | 1.1− | 2005 03 04 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.9+ |
| 2002 08 15 | 699 | 0.1+ | 0.8− | 2005 03 04 | 704 | 1.2+ | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2002 08 15 | 699 | 0.2+ | 0.5+ | 2005 03 08 | 699 | 0.9+ | 1.3+ | 2006 09 14 | 703 | 1.0+ | 0.0 |
| 2002 08 15 | 699 | 1.1− | 0.0 | 2005 03 08 | 699 | 0.8+ | 0.4+ | 2006 09 16 | 699 | 0.0 | 0.9+ |
| 2002 08 15 | 699 | 0.2− | 0.0 | 2005 03 08 | 699 | 0.6+ | 1.3+ | 2006 09 16 | 699 | 0.6− | 1.5+ |
| 2002 08 18 | 644 | 0.0 | 0.7+ | 2005 03 08 | 699 | 0.7+ | 0.7− | 2006 09 16 | 699 | 0.3− | 0.5+ |
| 2002 08 18 | 644 | 0.2+ | 0.6+ | 2005 03 09 | 699 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.5+ | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.8+ | 2005 03 09 | 699 | 1.1− | 0.3+ | 2006 09 26 | 704 | 1.0− | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.4+ | 2005 03 09 | 699 | 1.2+ | 0.5− | 2006 09 26 | 704 | 0.7− | 1.5+ |
| 2002 08 18 | 644 | 0.0 | 0.8+ | 2005 03 09 | 699 | 0.7+ | 0.4+ | 2006 09 26 | 704 | 0.5− | 0.0 |
| 2002 08 18 | 644 | 0.5+ | 0.3+ | 2005 03 12 | 704 | (0.9+ | 2.4+) | 2006 09 26 | 704 | 0.9− | 0.8− |
| 2002 08 29 | 644 | 0.6+ | 1.4+ | 2005 03 12 | 704 | 0.7− | 1.0+ | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 1.1+ | 2005 03 12 | 704 | (0.9+ | 2.6+) | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2002 08 29 | 644 | 0.2+ | 1.0+ | 2005 03 12 | 704 | 0.2− | 1.2+ | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2002 09 08 | 608 | 0.6+ | 1.4− | 2005 03 16 | 704 | 0.4− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2002 09 08 | 608 | 0.3− | 0.5− | 2005 03 16 | 704 | 0.1− | 0.3+ | | | | |

**(141939)∗ 2002 PH$_{96}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.07392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26496619 | $\omega$ | 9.86430 | | +0.99834487 | +0.05744410 | |
| $a$ | 2.4007250 | $\Omega$ | 346.84163 | | −0.05356067 | +0.91112692 | |
| $e$ | 0.1993625 | $i$ | 0.69797 | | −0.02094680 | +0.40810281 | |
| $P$ | 3.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.2+ | 0.0 | 2002 10 11 | 704 | 0.5+ | 1.0− | 2006 10 23 | H07 | 0.9− | 0.5− |
| 1999 12 05 | 691 | 0.2− | 0.1− | 2002 10 11 | 704 | 0.7+ | 0.4− | 2006 10 23 | 691 | 0.6− | 0.2− |
| 1999 12 05 | 691 | 0.3+ | 0.1+ | 2002 10 29 | 704 | 0.1− | 1.0− | 2006 10 23 | 704 | 0.1− | 0.8− |
| 1999 12 17 | 691 | 0.2+ | 0.1+ | 2002 10 29 | 704 | 0.2+ | 0.3+ | 2006 10 23 | H07 | 1.1− | 0.2− |
| 1999 12 17 | 691 | 0.2− | 0.4+ | 2002 10 29 | 704 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 1999 12 17 | 691 | 0.3− | 0.4+ | 2004 01 31 | 691 | 0.1+ | 0.4+ | 2006 10 23 | H07 | (1.5− | 0.1−) |
| 2000 01 15 | 691 | 0.0 | 0.1− | 2004 01 31 | 691 | 0.0 | 0.3+ | 2006 10 23 | 704 | 1.0− | 0.2+ |
| 2000 01 15 | 691 | 0.1+ | 0.2− | 2004 01 31 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.4− |
| 2000 01 15 | 691 | 0.0 | 0.3− | 2004 02 11 | 291 | 0.3+ | 0.0 | 2006 10 23 | H07 | 0.1+ | 0.4− |
| 2002 07 30 | 608 | 0.8+ | 0.4− | 2004 02 11 | 291 | 0.5− | 0.4+ | 2006 10 23 | H07 | 0.5+ | 0.2− |
| 2002 07 30 | 608 | 0.0 | 0.3− | 2004 02 11 | 291 | 0.4+ | 0.4+ | 2006 10 23 | H07 | 0.2+ | 0.2+ |
| 2002 07 30 | 608 | 0.7− | 0.8− | 2005 05 07 | G96 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2002 08 14 | 704 | 0.2+ | 0.5+ | 2005 05 07 | G96 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 08 14 | 704 | 0.2− | 0.2− | 2005 05 07 | G96 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.2+ | 0.9− | 2005 05 07 | G96 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2002 08 14 | 704 | 1.1− | 0.3− | 2006 07 22 | G96 | 1.0− | 0.0 | 2006 10 28 | 704 | 0.8− | 0.5− |
| 2002 08 15 | 699 | 0.7− | 0.9+ | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.9− | 0.9+ |
| 2002 08 15 | 699 | (1.1− | 2.3+) | 2006 07 22 | G96 | 0.5+ | 0.5− | 2006 10 28 | 691 | 0.4+ | 0.1− |
| 2002 08 15 | 699 | 1.0− | 1.2+ | 2006 07 22 | G96 | 0.3+ | 0.2− | 2006 10 28 | 704 | 0.3− | 0.2− |
| 2002 08 15 | 699 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.5+ | 0.2− |
| 2002 08 17 | 644 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2002 08 17 | 644 | 0.2+ | 0.5+ | 2006 09 27 | G96 | 0.5+ | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.5+ | 0.5− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | (1.3− | 5.0+) |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.0 |
| 2002 09 05 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 1.1+ | 0.6− |
| 2002 09 05 | 704 | 0.5+ | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.2+ |
| 2002 09 05 | 704 | 0.3+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.3+ | 0.1− | 2006 10 19 | 291 | 0.5− | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 291 | 0.5− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2002 09 11 | 608 | 0.6− | 0.8+ | 2006 10 19 | 291 | 0.4− | 0.4+ | 2006 11 14 | G96 | 0.6+ | 0.3− |
| 2002 09 11 | 608 | 1.2− | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2002 09 11 | 608 | 0.4− | 0.6+ | 2006 10 19 | 691 | 0.8− | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2002 09 13 | 704 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 2.1− | 0.7+ |
| 2002 09 13 | 704 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2002 09 13 | 704 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.9+ |
| 2002 09 14 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.2− |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.7− |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.7− |
| 2002 09 15 | 644 | 0.1+ | 1.0+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.8− |
| 2002 09 15 | 644 | 0.3− | 0.9+ | 2006 10 23 | H07 | 0.8− | 0.4− | 2006 11 21 | 704 | 0.5− | 0.5− |
| 2002 09 15 | 644 | 0.0 | 1.0+ | 2006 10 23 | 704 | (1.9− | 0.9+) | 2006 11 21 | 704 | 0.3− | 0.7− |
| 2002 10 11 | 704 | 0.4− | 0.5− | 2006 10 23 | 704 | 0.6− | 0.2+ | | | | |

**(141940)∗ 2002 PJ$_{96}$ = 2004 CD$_4$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61252)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.16683 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27099440 | $\omega$ | 268.40508 | | +0.99465101 | | −0.07667038 |
| $a$ | 2.3649892 | $\Omega$ | 95.98827 | | +0.09772349 | | +0.91555026 |
| $e$ | 0.1485465 | $i$ | 3.99084 | | −0.03345885 | | +0.39482830 |
| $P$ | 3.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | (1.6− | 1.1+) | 2004 02 10 | 644 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 08 14 | 704 | 0.1+ | 0.5+ | 2004 02 10 | 644 | 0.7+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2002 08 14 | 704 | 0.0 | 0.5+ | 2004 02 11 | 699 | 0.3+ | 1.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 08 14 | 704 | 0.1− | 0.2− | 2004 02 11 | 699 | 0.1+ | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 08 14 | 704 | 0.2− | 0.0 | 2004 02 11 | 699 | 0.6+ | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2002 08 15 | 699 | 0.2− | 0.1− | 2004 02 11 | 699 | 0.6+ | 0.3− | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2002 08 15 | 699 | 0.5− | 0.2+ | 2004 02 23 | 704 | (0.4+ | 1.6+) | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2002 08 15 | 699 | 0.7− | 0.4+ | 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 08 15 | 699 | 0.2− | 0.7+ | 2004 02 23 | 704 | 0.8− | 1.2+ | 2006 11 11 | 703 | 0.3− | 0.6+ |
| 2002 08 17 | 608 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.2− | 1.2+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2002 08 17 | 608 | 0.1− | 0.6+ | 2004 02 23 | 704 | 0.2− | 1.4+ | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2002 08 17 | 608 | 0.0 | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.4− |
| 2002 08 18 | 644 | 0.3− | 0.5+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.1− | 0.5+ | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.3+ | 0.2− |
| 2002 08 18 | 644 | 0.2+ | 0.6+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.4− |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.2− | 0.5− |
| 2002 08 18 | 644 | 0.3+ | 0.7+ | 2005 06 10 | 691 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.9+ |
| 2002 08 18 | 644 | 0.2+ | 0.8+ | 2005 06 10 | 691 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.4− | 1.2+ |
| 2002 08 19 | 644 | 0.1− | 1.0+ | 2005 06 14 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2002 08 19 | 644 | 0.0 | 1.2+ | 2005 06 14 | 691 | 0.6+ | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.6+ |
| 2002 08 19 | 644 | 0.3− | 1.3+ | 2005 06 14 | 691 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 08 30 | 644 | 0.1− | 0.5+ | 2005 06 16 | G96 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2005 06 16 | G96 | 0.2− | 0.6+ | 2006 11 17 | 704 | 0.4− | 1.0+ |
| 2002 08 30 | 644 | 0.1+ | 0.2+ | 2005 06 16 | G96 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2002 08 30 | 644 | 0.0 | 1.1− | 2005 06 16 | G96 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 08 30 | 644 | 0.0 | 1.0− | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 19 | 704 | (1.7− | 1.2+) |
| 2002 08 30 | 644 | 0.1− | 0.9− | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2002 09 10 | 608 | 0.0 | 0.1+ | 2006 10 16 | 683 | (1.8+ | 0.6−) | 2006 11 19 | 704 | 0.6+ | 0.6+ |
| 2002 09 10 | 608 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.3+ | 2006 11 20 | 704 | (0.3+ | 1.9+) |
| 2002 09 10 | 608 | 0.1+ | 0.1+ | 2006 10 16 | 683 | 1.2+ | 0.2+ | 2006 11 20 | 704 | (0.0 | 1.6+) |
| 2002 09 16 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.0 | 1.4+ |
| 2002 09 16 | 644 | 0.4− | 0.4− | 2006 10 16 | 683 | 0.5− | 0.5− | 2006 11 20 | 704 | (0.1+ | 2.1+) |
| 2002 09 16 | 644 | 0.0 | 0.8− | 2006 10 27 | 704 | (2.3− | 0.6+) | 2006 11 20 | 704 | 0.1+ | 0.9+ |
| 2004 01 22 | 704 | (0.5+ | 1.8+) | 2006 10 27 | 704 | (0.0 | 1.7+) | 2006 11 28 | 704 | 0.2− | 1.1− |
| 2004 01 22 | 704 | (2.0+ | 1.7+) | 2006 10 27 | 704 | 0.6− | 0.5+ | 2006 11 28 | 704 | 0.2− | 0.3− |
| 2004 01 22 | 704 | 0.2+ | 0.5+ | 2006 10 27 | 704 | 0.8+ | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.9+ |
| 2004 01 22 | 704 | 0.1+ | 0.9+ | 2006 10 27 | 704 | 0.6− | 0.4+ | 2006 11 28 | 704 | 0.3+ | 1.0+ |
| 2004 01 22 | 704 | 1.0+ | 0.7+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.8− | 1.2+ |
| 2004 02 10 | 644 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.2+ | | | | |

**(141941)∗ 2002 PW$_{97}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.34955 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26913513 | $\omega$ | 317.50505 | | +0.87640610 | | +0.48044950 |
| $a$ | 2.3758688 | $\Omega$ | 13.88907 | | −0.39680671 | | +0.75913559 |
| $e$ | 0.2499204 | $i$ | 7.87117 | | −0.27286770 | | +0.43918269 |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.3+ | 0.0 | 2002 09 16 | 644 | 0.8− | 0.0 | 2005 03 11 | G96 | 0.3− | 0.1+ |
| 2001 03 24 | 691 | 0.3− | 0.1+ | 2002 09 16 | 644 | 0.6− | 0.1− | 2005 04 11 | 691 | 0.1+ | 0.0 |
| 2001 03 24 | 691 | 0.3+ | 0.6+ | 2002 09 16 | 644 | 0.7− | 0.0 | 2005 04 11 | 691 | 0.6+ | 0.2+ |
| 2002 08 12 | 608 | 0.2− | 0.4− | 2002 09 30 | 608 | 0.4+ | 1.3+ | 2005 04 11 | 691 | 0.3+ | 0.4+ |
| 2002 08 12 | 608 | 0.0 | 0.3− | 2002 09 30 | 608 | 0.8+ | 1.2+ | 2005 04 15 | 691 | 0.0 | 0.2+ |
| 2002 08 12 | 608 | 0.0 | 0.6− | 2002 09 30 | 608 | 0.4+ | 1.3+ | 2005 04 15 | 691 | 0.3+ | 0.4+ |
| 2002 08 14 | 704 | 0.1− | 0.2− | 2002 10 03 | 704 | 0.4+ | 0.2− | 2005 04 15 | 691 | 0.0 | 0.3+ |
| 2002 08 14 | 704 | 0.4− | 0.9− | 2002 10 03 | 704 | 0.4+ | 1.1+ | 2006 11 02 | 703 | 1.1− | 0.3− |
| 2002 08 14 | 704 | 0.5+ | 0.1+ | 2002 10 03 | 704 | 0.7− | 0.1+ | 2006 11 02 | 703 | 0.2− | 0.0 |
| 2002 08 14 | 704 | 1.3− | 0.1− | 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.5− | 0.3− |
| 2002 08 15 | 699 | 1.1+ | 0.1+ | 2002 10 07 | 608 | 0.4− | 0.0 | 2006 11 02 | 703 | 0.7− | 0.4+ |
| 2002 08 15 | 699 | 1.1+ | 0.1− | 2002 10 07 | 608 | 0.8− | 0.3+ | 2006 11 15 | 703 | (3.2+ | 0.9+) |
| 2002 08 15 | 699 | 0.4+ | 0.5− | 2002 10 07 | 608 | 0.8− | 0.3+ | 2006 11 15 | 703 | (1.3− | 2.2+) |
| 2002 08 15 | 699 | 1.3+ | 0.5− | 2002 10 11 | 704 | 0.4+ | 0.9+ | 2006 11 15 | 703 | 0.8+ | 1.5+ |
| 2002 08 19 | 644 | 0.2− | 0.0 | 2002 10 11 | 704 | 0.5+ | 0.7+ | 2006 11 15 | 703 | 0.6+ | 0.7+ |
| 2002 08 19 | 644 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 11 20 | G96 | 0.4+ | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.2− | 2002 10 29 | 704 | 0.9− | 0.7+ | 2006 11 20 | G96 | 0.1+ | 0.2+ |
| 2002 08 20 | 644 | 0.4− | 0.4+ | 2002 10 29 | 704 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.0 |
| 2002 08 20 | 644 | 0.3− | 0.5+ | 2002 10 29 | 704 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.1+ |
| 2002 08 20 | 644 | 0.2− | 0.5+ | 2002 10 29 | 704 | 0.3− | 0.1+ | 2006 11 21 | 703 | 0.0 | 0.0 |
| 2002 09 08 | 599 | 0.2− | 0.3− | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 11 21 | 703 | 0.4− | 0.4− |
| 2002 09 08 | 599 | 0.2− | 0.3− | 2005 03 11 | G96 | 0.6− | 0.2+ | 2006 11 21 | 703 | 0.3− | 0.1− |
| 2002 09 08 | 599 | 0.3− | 0.2− | 2005 03 11 | G96 | 0.0 | 0.0 | 2006 11 21 | 703 | 0.3+ | 0.5+ |

**(141942)∗ 2002 PU$_{99}$ = 1995 UC$_{83}$ = 2005 GG$_{97}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75450)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.82921 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27149557 | $\omega$ | 234.67655 | | +0.55578953 | | +0.82978798 |
| $a$ | 2.3620779 | $\Omega$ | 69.16536 | | −0.74411573 | | +0.52365079 |
| $e$ | 0.2263643 | $i$ | 3.09718 | | −0.37066127 | | +0.19298126 |
| $P$ | 3.63 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.2+ | 0.1− | 2002 09 05 | 704 | 1.1+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 1995 10 24 | 691 | 0.2+ | 0.3− | 2002 09 05 | 704 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.1+ |
| 1995 10 24 | 691 | 0.8+ | 0.4− | 2002 09 06 | 704 | 0.5− | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.6− |
| 1998 06 20 | 691 | 0.3− | 0.6− | 2002 09 06 | 704 | 0.4− | 0.8+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1998 06 20 | 691 | 0.9− | 0.1+ | 2002 09 06 | 704 | 0.6− | 0.7− | 2006 10 22 | 691 | 0.5− | 0.0 |
| 1998 06 20 | 691 | 0.8− | 0.2− | 2002 09 06 | 704 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.7− | 0.1− |
| 2002 08 12 | 608 | 0.3− | 0.8− | 2002 09 12 | 608 | 0.4+ | 0.9− | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2002 08 12 | 608 | 0.1− | 0.8− | 2002 09 12 | 608 | 0.7+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2002 08 12 | 608 | 0.3− | 0.7− | 2002 09 12 | 608 | 0.6+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2002 08 14 | 704 | 0.6− | 0.4+ | 2002 09 16 | 644 | 0.3− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 08 14 | 704 | 0.6− | 0.1+ | 2002 09 16 | 644 | 0.5− | 0.2− | 2006 11 02 | 703 | 0.4− | 0.5+ |
| 2002 08 14 | 704 | (0.9− | 1.7+) | 2005 03 18 | 703 | 0.8− | 1.0+ | 2006 11 02 | 703 | 0.1+ | 0.5+ |
| 2002 08 14 | 704 | 0.3+ | 1.0+ | 2005 03 18 | 703 | (1.6+ | 1.1+) | 2006 11 02 | 703 | (0.3+ | 1.5+) |
| 2002 08 15 | 699 | 0.8+ | 0.8+ | 2005 03 18 | 703 | 0.5+ | 1.0+ | 2006 11 02 | 703 | 0.4+ | 0.2+ |
| 2002 08 15 | 699 | 0.8+ | 0.1− | 2005 03 18 | 703 | 1.5− | 1.0− | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 08 15 | 699 | 0.4− | 0.7+ | 2005 04 07 | 704 | 0.8+ | 0.4− | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 2002 08 15 | 699 | 0.0 | 0.8+ | 2005 04 07 | 704 | 0.6+ | 1.1− | 2006 11 08 | 644 | 0.3+ | 0.4+ |
| 2002 08 18 | 608 | 1.0+ | 0.8− | 2005 04 07 | 704 | 1.3+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 08 18 | 608 | 0.5+ | 0.8− | 2005 04 11 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 08 18 | 608 | 0.7+ | 0.9− | 2005 04 11 | G96 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 08 19 | 644 | 0.2− | 0.8+ | 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2002 08 19 | 644 | 0.2− | 0.8+ | 2005 04 11 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.7+ |
| 2002 08 19 | 644 | 0.1− | 0.8+ | 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.8− |
| 2002 08 30 | 644 | 0.3− | 0.7− | 2005 05 04 | 691 | 0.5+ | 0.2+ | 2006 11 11 | 703 | (1.5− | 0.3−) |
| 2002 08 30 | 644 | 0.3+ | 1.2+ | 2005 05 04 | 691 | 0.6+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 08 30 | 644 | 0.2+ | 0.1− | 2005 05 11 | G96 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2002 08 30 | 644 | (0.9+ | 2.1+) | 2005 05 11 | G96 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.7+ | 0.3− |
| 2002 08 30 | 644 | 0.2+ | 0.5− | 2005 05 11 | G96 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2002 08 30 | 644 | 0.3+ | 1.3+ | 2005 05 11 | G96 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2002 08 31 | 644 | 0.2− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | (1.2− | 2.0−) |
| 2002 08 31 | 644 | 0.2− | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2002 08 31 | 644 | 0.3− | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.1+ |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.0 | | | | |
| 2002 09 05 | 704 | 0.5− | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.4− | | | | |

**(141943)∗ 2002 PF$_{100}$ = 2004 FO$_{103}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61253)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.60257 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25750916 | $\omega$ | 317.25116 | | +0.72366920 | −0.67721534 |
| $a$ | 2.4468514 | $\Omega$ | 85.88651 | | +0.66372713 | +0.63012457 |
| $e$ | 0.2419736 | $i$ | 7.66138 | | +0.18912743 | +0.37989789 |
| $P$ | 3.83 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.7+ | 0.5+ | 2004 03 23 | 704 | 1.2− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 08 14 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 08 14 | 704 | 0.9− | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 08 14 | 704 | 0.3− | 0.7+ | 2004 03 23 | 704 | 0.9− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 08 15 | 699 | 0.5+ | 1.1− | 2004 03 27 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 08 15 | 699 | 0.8+ | 0.1− | 2004 03 27 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 08 15 | 699 | 0.9+ | 0.3+ | 2004 03 27 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 08 15 | 699 | 0.1− | 0.8+ | 2005 06 27 | 691 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 20 | 644 | 0.1− | 0.4− | 2005 06 27 | 691 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2002 08 20 | 644 | 0.1− | 0.5− | 2005 06 27 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2002 08 20 | 644 | 0.0 | 0.4− | 2006 08 19 | 699 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2002 09 09 | 608 | 0.3+ | 0.0 | 2006 08 19 | 699 | 0.3− | 0.9+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2002 09 09 | 608 | 0.3− | 0.7+ | 2006 08 19 | 699 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2002 09 09 | 608 | 0.0 | 0.7+ | 2006 08 19 | 699 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2002 09 17 | 608 | 0.3− | 0.6− | 2006 09 21 | 699 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 1.0− | 0.5+ |
| 2002 09 17 | 608 | 0.5− | 0.7− | 2006 09 21 | 699 | 0.7+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.5+ |
| 2002 09 17 | 608 | 1.1− | 0.4− | 2006 09 21 | 699 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 01 | 608 | 1.0+ | 0.7− | 2006 09 21 | 699 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 10 01 | 608 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 10 01 | 608 | 0.2− | 0.9+ | 2006 09 26 | 703 | 0.0 | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 10 30 | 608 | (0.1+ | 1.8−) | 2006 09 26 | 703 | 0.5− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 10 30 | 608 | 1.0+ | 1.4− | 2006 09 26 | 703 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 10 30 | 608 | (0.5+ | 1.7−) | 2006 09 30 | 704 | 0.4+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2004 03 15 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2004 03 15 | 704 | 0.6+ | 0.5− | 2006 09 30 | 704 | 0.2− | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.2− |
| 2004 03 15 | 704 | 0.7+ | 0.7+ | 2006 09 30 | 704 | 0.8+ | 0.0 | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2004 03 15 | 704 | 1.2− | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.6+ | 2006 11 10 | 704 | (1.9+ | 0.4+) |
| 2004 03 15 | 704 | 0.3+ | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.2− | 2006 11 10 | 704 | 0.2+ | 0.9+ |
| 2004 03 17 | 691 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.3− | 1.2+ |
| 2004 03 17 | 691 | 0.4+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.3− | 1.4+ |
| 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 10 | 704 | (0.4− | 2.3+) |
| 2004 03 23 | 704 | 1.0− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.9+ | 0.3− |
| 2004 03 23 | 704 | 0.9+ | 1.2+ | 2006 10 10 | 644 | 0.0 | 0.4− | 2006 11 16 | 703 | 0.2− | 0.3+ |
| 2004 03 23 | 704 | 0.8− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.4+ |
| 2004 03 23 | 704 | 0.9− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.5− | 0.4+ |
| 2004 03 23 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1− | | | | |
| 2004 03 23 | 704 | 0.7+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.1− | | | | |

**(141944)∗ 2002 PZ$_{101}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.56060 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19381815 | $\omega$ | 109.31598 | | +0.65848513 | +0.75069407 |
| $a$ | 2.9571482 | $\Omega$ | 202.14259 | | −0.73271392 | +0.62326035 |
| $e$ | 0.0846978 | $i$ | 8.15094 | | −0.17183611 | +0.21910033 |
| $P$ | 5.09 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 05 14 | 691 | 0.2− | 0.1− | 2002 08 12 | 704 | 0.3− | 0.1− | 2003 11 30 | 704 | 0.0 | 0.4+ |
| 1991 05 14 | 691 | 0.1− | 0.1+ | 2002 08 12 | 704 | 0.3+ | 0.5+ | 2003 11 30 | 704 | 0.2+ | 0.8+ |
| 1991 05 14 | 691 | 0.2− | 0.0 | 2002 08 12 | 608 | 0.6+ | 0.1− | 2003 12 21 | 691 | 0.0 | 0.6+ |
| 1996 04 14 | 691 | 0.4− | 0.2− | 2002 08 12 | 608 | 0.4+ | 0.4− | 2003 12 21 | 691 | 0.1− | 0.6+ |
| 1996 04 14 | 691 | 0.3− | 0.2− | 2002 08 12 | 608 | 0.3+ | 0.1+ | 2003 12 21 | 691 | 0.2+ | 0.4+ |
| 1996 04 14 | 691 | 0.2− | 0.2− | 2002 08 13 | 644 | 0.2− | 0.2− | 2006 04 09 | 691 | 0.0 | 0.5+ |
| 1996 05 23 | 691 | 1.1+ | 0.9+ | 2002 08 13 | 644 | 0.3− | 0.1− | 2006 04 09 | 691 | 0.1+ | 0.4+ |
| 1996 05 23 | 691 | 0.1+ | 0.2+ | 2002 08 13 | 644 | 0.1− | 0.2− | 2006 04 09 | 691 | 0.2− | 0.4+ |
| 1996 05 23 | 691 | 0.5+ | 0.4− | 2002 08 15 | 644 | 0.0 | 0.0 | 2006 04 30 | 699 | 0.2+ | 0.6− |
| 2002 07 12 | 644 | 0.1+ | 0.5+ | 2002 08 15 | 644 | 0.3− | 0.2+ | 2006 04 30 | 699 | 0.8+ | 0.9+ |
| 2002 07 12 | 644 | 0.0 | 0.1+ | 2002 08 15 | 644 | 0.3− | 0.0 | 2006 04 30 | 699 | 0.3− | 1.0+ |
| 2002 07 12 | 644 | 0.0 | 0.3+ | 2002 08 25 | 644 | 0.2− | 0.1+ | 2006 04 30 | 699 | 1.1− | 0.5+ |
| 2002 07 18 | 704 | 0.7+ | 0.8+ | 2002 08 25 | 644 | 0.3− | 0.1− | 2006 05 06 | 691 | 0.0 | 0.4+ |
| 2002 07 18 | 704 | 0.3+ | 0.2+ | 2002 08 25 | 644 | 0.3− | 0.1− | 2006 05 06 | 691 | 0.2+ | 0.0 |
| 2002 07 18 | 704 | 0.7+ | 0.1− | 2002 08 26 | 644 | 0.1− | 1.0+ | 2006 05 06 | 691 | 0.5+ | 0.1+ |
| 2002 08 08 | 699 | 0.9− | 0.1− | 2002 08 26 | 644 | 0.2− | 0.7+ | 2006 05 16 | 644 | 0.3− | 0.0 |
| 2002 08 08 | 699 | 0.6− | 0.3− | 2002 08 26 | 644 | 0.1+ | 1.0+ | 2006 05 16 | 644 | 0.1+ | 0.3+ |
| 2002 08 08 | 699 | 0.1− | 0.2+ | 2003 10 25 | 704 | 0.3− | 0.5+ | 2006 05 16 | 644 | 0.2− | 0.1+ |
| 2002 08 08 | 699 | 0.0 | 0.1+ | 2003 10 25 | 704 | 0.6− | 0.9+ | 2006 05 16 | 644 | 0.1− | 0.2− |
| 2002 08 12 | 704 | 0.1+ | 0.5+ | 2003 10 25 | 704 | 0.6− | 0.3+ | 2006 05 16 | 644 | 0.4− | 0.3− |
| 2002 08 12 | 704 | 0.2− | 0.1+ | 2003 11 30 | 704 | 0.4+ | 1.0+ | 2006 05 16 | 644 | 0.5− | 0.0 |
| 2002 08 12 | 704 | 0.3− | 0.1− | 2003 11 30 | 704 | 0.4− | 0.4+ | | | | |

**(141945)∗ 2002 PR$_{106}$ = 2003 WG$_{164}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 72690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.67497 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26566623 | $\omega$ | 339.50373 | | −0.71319018 | +0.69288988 |
| $a$ | 2.3965058 | $\Omega$ | 244.82219 | | −0.62569007 | −0.69751709 |
| $e$ | 0.1667657 | $i$ | 6.73461 | | −0.31602484 | −0.18268420 |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.0 | 0.0 | 2005 04 18 | 703 | 1.1− | 0.6− | 2005 06 04 | 703 | 0.3− | 0.5− |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2005 04 18 | 703 | 0.4+ | 0.5− | 2005 06 04 | 703 | 0.7− | 0.4− |
| 2002 08 12 | 704 | 0.6− | 0.5+ | 2005 04 18 | E12 | 0.3+ | 0.1+ | 2005 06 04 | 703 | 0.5+ | 0.5− |
| 2002 08 12 | 704 | 0.3− | 1.6+ | 2005 04 18 | E12 | 0.1+ | 0.3+ | 2005 06 04 | 703 | 0.4− | 0.4− |
| 2002 08 12 | 704 | 0.2+ | 0.1+ | 2005 04 18 | E12 | 0.1+ | 0.3− | 2006 09 16 | 703 | 0.4+ | 1.0− |
| 2002 08 12 | 704 | 0.1− | 0.9+ | 2005 04 18 | E12 | 0.3+ | 0.2− | 2006 09 16 | 703 | (1.9+ | 1.0+) |
| 2002 08 15 | 644 | 0.1− | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.7− |
| 2002 08 15 | 644 | 0.4− | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.7+ | 0.1− |
| 2002 08 15 | 644 | 0.1+ | 0.2+ | 2005 05 01 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.4+ |
| 2002 09 04 | 644 | 0.5− | 0.5+ | 2005 05 04 | E12 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2− |
| 2002 09 04 | 644 | 0.1− | 0.4+ | 2005 05 04 | E12 | 0.2+ | 0.4+ | 2006 09 19 | 699 | (2.2+ | 1.3−) |
| 2002 09 04 | 644 | 0.2− | 0.4+ | 2005 05 04 | E12 | 0.8− | 0.2+ | 2006 09 19 | 699 | (1.1+ | 1.8+) |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2005 05 04 | E12 | 0.2+ | 0.2− | 2006 09 20 | 703 | 0.6− | 0.1− |
| 2003 11 19 | 691 | 0.2− | 0.0 | 2005 05 09 | 699 | 0.7+ | 0.6+ | 2006 09 20 | 703 | 0.3+ | 0.1+ |
| 2003 11 19 | 691 | 0.3− | 0.4+ | 2005 05 09 | 699 | 0.2+ | 0.1− | 2006 09 20 | 703 | (2.2− | 1.1−) |
| 2003 11 30 | 691 | 0.2+ | 0.1+ | 2005 05 09 | 699 | 0.1+ | 1.4+ | 2006 09 20 | 703 | (1.7− | 0.7+) |
| 2003 11 30 | 691 | 0.0 | 0.2+ | 2005 05 09 | 699 | 0.2+ | 0.5+ | 2006 10 03 | 703 | 0.1+ | 0.3− |
| 2003 11 30 | 691 | 0.1+ | 0.2+ | 2005 05 14 | 644 | 0.3+ | 0.2+ | 2006 10 03 | 703 | 0.2− | 0.2− |
| 2003 12 01 | 691 | 0.1− | 0.1+ | 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 10 03 | 703 | 0.1− | 1.1− |
| 2003 12 01 | 691 | 0.1+ | 0.2+ | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 10 03 | 703 | 0.4− | 0.9− |
| 2003 12 01 | 691 | 0.2+ | 0.0 | 2005 05 23 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.7− |
| 2005 04 18 | 703 | 0.4− | 0.4− | 2005 05 23 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.7+ | 0.4− |
| 2005 04 18 | 703 | 0.3− | 0.0 | 2005 05 23 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.6+ | 0.7+ |

**(141946)∗ 2002 PF$_{107}$**

Discovered 2002 Aug. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.97586 | | (2000.0) | | | |
| $n$ | 0.27153721 | $\omega$ | 264.60979 | | +0.46012524 | +0.88776531 |
| $a$ | 2.3618364 | $\Omega$ | 32.79474 | | −0.80513844 | +0.42317482 |
| $e$ | 0.2444688 | $i$ | 1.32780 | | −0.37421498 | +0.18109620 |
| $P$ | 3.63 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.3+ | 0.0 | 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1995 09 19 | 691 | 0.4+ | 0.1− | 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.5− | 0.1+ |
| 1995 09 19 | 691 | 0.2+ | 0.1− | 2002 08 18 | 644 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.5+ |
| 1995 09 30 | 691 | 0.1+ | 0.6− | 2002 08 29 | 291 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2− |
| 1995 09 30 | 691 | 0.0 | 0.7− | 2002 08 29 | 291 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1− |
| 1995 09 30 | 691 | 0.0 | 1.0− | 2002 08 29 | 291 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.6− | 0.1+ |
| 2002 07 23 | 644 | 0.0 | 0.1+ | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.6− | 0.1− |
| 2002 07 23 | 644 | 0.1− | 0.0 | 2002 08 29 | 644 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 07 23 | 644 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2002 07 29 | 644 | 0.7+ | 0.5− | 2002 09 06 | 704 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2002 07 29 | 644 | 0.2+ | 0.1− | 2002 09 06 | 704 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2002 07 29 | 644 | 0.6+ | 0.1+ | 2002 09 06 | 704 | 0.8− | 1.0− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2002 09 15 | 644 | 0.5− | 0.1− | 2006 10 29 | 691 | 0.3− | 0.1+ |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 0.0 | 2002 09 15 | 644 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2002 08 12 | 699 | 0.5− | 0.8− | 2005 04 02 | G96 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2002 08 12 | 699 | 0.1+ | 0.9+ | 2005 04 02 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2+ |
| 2002 08 12 | 699 | 0.5+ | 0.8+ | 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2002 08 12 | 699 | 1.0+ | 0.7+ | 2005 04 02 | G96 | 0.8− | 0.1− | 2006 11 11 | 291 | 0.8+ | 0.4+ |
| 2002 08 15 | 644 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.7+ | 0.2− | 2006 11 11 | 291 | 0.4− | 0.0 |
| 2002 08 15 | 644 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 11 | 291 | 0.6+ | 1.2+ |
| 2002 08 15 | 644 | 0.4− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2002 08 16 | 608 | 0.2+ | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2002 08 16 | 608 | 0.7+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.7+ | 2006 11 14 | G96 | 0.4− | 0.4− |
| 2002 08 16 | 608 | 1.1+ | 1.3+ | 2006 10 12 | 691 | 0.4+ | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.4− |

**(141947)∗ 2002 PN$_{108}$ = 1995 UH$_{60}$**

Discovered 2002 Aug. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35316)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.68759 | | (2000.0) | | | |
| $n$ | 0.27101780 | $\omega$ | 254.13521 | | +0.69813401 | +0.71433921 |
| $a$ | 2.3648531 | $\Omega$ | 60.24567 | | −0.63378618 | +0.64794611 |
| $e$ | 0.1738891 | $i$ | 3.18621 | | −0.33305252 | +0.26435835 |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1+ | 0.2+ | 2005 03 09 | G96 | 0.5− | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 1995 10 20 | 691 | 0.0 | 0.2+ | 2005 04 01 | 691 | 0.2+ | 0.7+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 1995 10 20 | 691 | 0.1+ | 0.4+ | 2005 04 01 | 691 | 0.3+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 1995 10 26 | 691 | 0.0 | 0.2− | 2005 04 01 | 691 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 1995 10 26 | 691 | 0.3− | 0.3− | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 1995 10 26 | 691 | 0.1+ | 0.0 | 2005 04 12 | 691 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2002 07 15 | 644 | 0.4− | 0.1− | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 07 15 | 644 | 0.2− | 0.2− | 2005 04 19 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 07 15 | 644 | 0.6+ | 0.9+ | 2005 04 19 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 08 13 | 704 | (0.6+ | 1.7+) | 2005 04 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 08 13 | 704 | 0.8+ | 1.4+ | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2002 08 13 | 704 | 0.7+ | 0.9+ | 2005 05 08 | 691 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 08 15 | 644 | 0.2− | 0.6− | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2002 08 15 | 644 | 0.2− | 0.4− | 2006 09 22 | 699 | 0.7− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 08 15 | 644 | 0.1− | 0.5− | 2006 09 22 | 699 | 0.4− | 0.9+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 09 22 | 699 | 0.2− | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 08 18 | 644 | 0.3− | 0.2− | 2006 09 22 | 699 | 0.8− | 0.8+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.7− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2002 08 19 | 644 | 0.4− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 08 19 | 644 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2002 08 29 | 644 | 0.6− | 0.0 | 2006 10 11 | 691 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.3− | 1.1− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.9+ | 2006 11 11 | 703 | 2.5− | 1.3− |
| 2002 08 30 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.9+ | 0.8− |
| 2002 08 30 | 644 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2005 03 09 | G96 | 0.6− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.6− | 0.5− |
| 2005 03 09 | G96 | 0.1− | 0.6+ | 2006 10 15 | 691 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2005 03 09 | G96 | 1.1− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.4+ | | | | |

**(141948)∗ 2002 PK$_{110}$**

Discovered 2002 Aug. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.66279 | | (2000.0) | | | |
| $n$ | 0.26256896 | $\omega$ | 293.37944 | | +0.56318084 | +0.82608638 |
| $a$ | 2.4153151 | $\Omega$ | 10.96521 | | −0.71404191 | +0.49881624 |
| $e$ | 0.1246553 | $i$ | 6.10065 | | −0.41589842 | +0.26222825 |
| $P$ | 3.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 0.6+ | 0.1+ | 2006 08 23 | 704 | (0.6− | 1.7+) | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2001 03 16 | 691 | 0.3+ | 1.0+ | 2006 08 23 | 704 | 0.6+ | 0.9− | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2001 03 16 | 691 | 0.4+ | 1.1+ | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2002 07 15 | 644 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2002 07 15 | 644 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2002 08 13 | 704 | 0.4− | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.9+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 08 13 | 704 | 0.9− | 0.3− | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 08 13 | 704 | 0.0 | 1.0+ | 2006 09 17 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.9− |
| 2002 08 13 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 1.1+ | 0.9+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 08 13 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.9+ |
| 2002 08 15 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.6− | 2006 10 16 | 703 | (1.9− | 2.4+) |
| 2002 08 15 | 644 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2002 08 15 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.2− | 1.3+ | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2002 08 19 | 644 | 0.2+ | 0.0 | 2006 09 20 | 704 | 1.0+ | 0.8+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2002 08 19 | 644 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2002 08 19 | 644 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 31 | 704 | 0.3− | 1.3− | 2006 09 20 | 704 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.6+ | | |
| 2002 08 31 | 704 | 0.0 | 1.4+ | 2006 09 20 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.3+ | | |
| 2002 08 31 | 704 | (2.6+ | 0.5+) | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.2+ | | |
| 2002 08 31 | 704 | 1.3+ | 1.1− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2005 03 08 | G96 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.8+ | | |
| 2005 03 08 | G96 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2006 09 26 | 704 | (0.6− | 2.5+) | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2005 03 08 | G96 | 0.2− | 0.7− | 2006 09 26 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2005 03 12 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.4− | 0.7− | | |
| 2005 03 12 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.4+ | 0.7+ | | |
| 2005 03 12 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.2− | | |
| 2005 04 09 | G96 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.8− | 0.4+ | 2006 10 22 | 703 | 1.0− | 0.1+ | | |
| 2005 04 09 | G96 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2005 04 09 | G96 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2005 04 09 | G96 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | | |
| 2005 05 02 | 691 | 0.2+ | 0.6+ | 2006 09 28 | 704 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.4+ | 0.3− | | |
| 2005 05 02 | 691 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 0.7− | 1.0+ | 2006 11 10 | 644 | 0.0 | 0.2+ | | |
| 2005 05 02 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 1.3− | 0.5− | 2006 11 10 | 644 | 0.1+ | 0.3+ | | |
| 2006 08 23 | 704 | 1.4+ | 0.9+ | 2006 09 30 | 704 | 0.2+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 2006 08 23 | 704 | 0.5− | 0.6+ | 2006 09 30 | 704 | 0.1+ | 1.3+ | | | | | | |

**(141949)∗ 2002 PN$_{110}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.12366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17681066 | $\omega$ | 213.81217 | | −0.43073869 | −0.88959808 | |
| $a$ | 3.1438640 | $\Omega$ | 262.11702 | | +0.85824380 | −0.35172697 | |
| $e$ | 0.0530673 | $i$ | 8.82218 | | +0.27907303 | −0.29138187 | |
| $P$ | 5.57 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.0 | 0.4+ | 2003 10 22 | 704 | 0.3+ | 0.8+ | 2003 12 13 | 644 | 0.4− | 0.7+ | | |
| 2000 03 09 | 704 | 0.9+ | 0.2− | 2003 10 22 | 704 | 1.2+ | 0.9+ | 2003 12 13 | 644 | 0.4− | 0.2+ | | |
| 2000 03 09 | 704 | 0.1− | 1.0+ | 2003 10 22 | 704 | 0.2− | 0.3+ | 2003 12 13 | 644 | 0.5+ | 0.5+ | | |
| 2000 03 09 | 704 | 0.1− | 0.6− | 2003 10 22 | 704 | 0.2+ | 0.2+ | 2005 01 13 | 704 | 1.1+ | 0.5+ | | |
| 2002 08 05 | 644 | 0.5− | 0.9+ | 2003 10 22 | 704 | 0.7+ | 0.4+ | 2005 01 13 | 704 | 0.2− | 0.1− | | |
| 2002 08 05 | 644 | 0.3− | 0.9+ | 2003 10 23 | 608 | 0.1− | 0.5+ | 2005 01 13 | 704 | 0.1− | 0.3+ | | |
| 2002 08 05 | 644 | 0.4− | 0.9+ | 2003 10 23 | 608 | 0.1− | 0.7+ | 2005 01 13 | 704 | 0.3+ | 0.6+ | | |
| 2002 08 08 | 699 | 0.4+ | 0.1− | 2003 10 23 | 608 | 0.1− | 0.4+ | 2005 01 13 | 703 | 1.4− | 0.5+ | | |
| 2002 08 08 | 699 | 0.5+ | 0.0 | 2003 10 24 | 608 | 0.3+ | 0.7+ | 2005 01 13 | 703 | 0.6+ | 1.1+ | | |
| 2002 08 08 | 699 | 0.6− | 0.2− | 2003 10 24 | 608 | 0.1+ | 0.2− | 2005 01 13 | 704 | 0.6− | 0.2− | | |
| 2002 08 08 | 699 | 0.3+ | 0.2+ | 2003 10 24 | 608 | 0.4− | 0.0 | 2005 01 13 | 703 | 0.1+ | 0.3+ | | |
| 2002 08 13 | 699 | 0.6− | 0.2+ | 2003 10 29 | 699 | 1.3− | 1.6− | 2005 01 13 | 703 | 0.3− | 0.6− | | |
| 2002 08 13 | 699 | 1.3− | 2.0+ | 2003 10 29 | 699 | 0.6+ | 0.2− | 2005 02 09 | 704 | 0.0 | 1.0+ | | |
| 2002 08 13 | 699 | 0.6− | 1.2− | 2003 10 29 | 699 | 0.1− | 0.3+ | 2005 02 09 | 704 | 0.2+ | 0.2− | | |
| 2002 08 13 | 699 | 0.4+ | 0.3+ | 2003 10 29 | 699 | 0.9− | 0.2+ | 2005 02 09 | 704 | 0.1+ | 0.9+ | | |
| 2002 08 15 | 644 | 0.3− | 0.4+ | 2003 10 30 | 704 | 0.6+ | 0.7+ | 2005 02 09 | 704 | 0.2+ | 1.1+ | | |
| 2002 08 15 | 644 | 0.2− | 0.1+ | 2003 10 30 | 704 | 0.0 | 0.8+ | 2006 04 09 | E12 | 0.2+ | 0.1− | | |
| 2002 08 15 | 644 | 0.6− | 0.2+ | 2003 10 30 | 704 | 0.1− | 1.0+ | 2006 04 09 | E12 | 0.8− | 0.7+ | | |
| 2002 08 15 | 644 | 0.0 | 0.1+ | 2003 10 30 | 704 | 0.3+ | 0.1− | 2006 04 09 | E12 | 0.4− | 0.2+ | | |
| 2002 08 15 | 644 | 0.2+ | 0.4+ | 2003 10 30 | 704 | 1.0+ | 0.4+ | 2006 04 09 | E12 | 0.5− | 0.6+ | | |
| 2002 08 15 | 644 | 0.0 | 0.1+ | 2003 11 19 | 704 | 0.2− | 0.8− | 2006 04 29 | E12 | 0.0 | 0.1− | | |
| 2002 08 25 | 644 | 0.0 | 0.0 | 2003 11 19 | 704 | 0.5+ | 0.9− | 2006 04 29 | E12 | 1.3+ | 1.6+ | | |
| 2002 08 25 | 644 | 0.2− | 0.1+ | 2003 11 19 | 704 | 0.3− | 1.0− | 2006 05 20 | 699 | 0.8+ | 0.8+ | | |
| 2002 08 25 | 644 | 0.0 | 0.3+ | 2003 11 19 | 704 | 0.9+ | 1.5− | 2006 05 20 | 699 | 0.7+ | 0.4+ | | |
| 2003 09 30 | 704 | 0.4+ | 0.4+ | 2003 11 19 | 704 | 0.1+ | 1.5− | 2006 05 20 | 699 | 0.9+ | 0.9+ | | |
| 2003 09 30 | 704 | 0.7− | 0.4+ | 2003 12 12 | 644 | 0.5− | 0.8+ | 2006 05 20 | 699 | 0.0 | 0.9+ | | |
| 2003 09 30 | 704 | 0.4− | 0.4+ | 2003 12 12 | 644 | 0.6+ | 0.1+ | 2006 05 24 | 699 | 0.3+ | 0.3− | | |
| 2003 09 30 | 704 | 0.5+ | 0.0 | 2003 12 12 | 644 | 0.2− | 0.6+ | 2006 05 24 | 699 | 1.8+ | 0.9+ | | |
| 2003 09 30 | 704 | 0.6+ | 1.1− | 2003 12 13 | 703 | 0.9− | 1.7+ | 2006 05 24 | 699 | 0.1+ | 0.1+ | | |
| 2003 10 21 | 691 | 0.1+ | 0.0 | 2003 12 13 | 703 | 1.3− | 0.5+ | 2006 05 24 | 699 | 0.6− | 0.7+ | | |
| 2003 10 21 | 691 | 0.0 | 0.1+ | 2003 12 13 | 703 | 1.0− | 0.6+ | | | | | | |
| 2003 10 21 | 691 | 0.0 | 0.1+ | 2003 12 13 | 703 | 0.4− | 0.5+ | | | | | | |

**(141950)∗ 2002 PC$_{111}$ = 2002 OP$_{24}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (d, *MPO* 38538)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.40054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28234947 | $\omega$ | 70.43691 | | +0.10060417 | +0.99284657 | |
| $a$ | 2.3011489 | $\Omega$ | 205.59820 | | −0.95949559 | +0.07972524 | |
| $e$ | 0.1321900 | $i$ | 8.55870 | | −0.26314826 | +0.08887951 | |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 1.0+ | 1.1− | 2002 09 13 | 644 | 0.5− | 0.1− | 2005 06 01 | 691 | 0.0 | 0.1+ | | |
| 1998 05 01 | 704 | 1.1− | 1.3+ | 2005 04 11 | G96 | 0.6− | 0.2− | 2005 06 04 | 703 | 0.7− | 0.1− | | |
| 1998 05 01 | 704 | 0.6− | 0.8− | 2005 04 11 | G96 | 1.0− | 0.7− | 2005 06 04 | 703 | 1.3− | 0.5− | | |
| 1998 05 01 | 704 | 0.8+ | 0.7− | 2005 04 11 | G96 | 0.3− | 0.2− | 2005 06 04 | 703 | 0.8− | 0.2− | | |
| 1998 05 01 | 704 | (4.6− | 0.5−) | 2005 04 11 | G96 | 0.0 | 0.0 | 2005 06 04 | 703 | (1.9− | 0.7−) | | |
| 2002 07 20 | 644 | 0.3+ | 0.1+ | 2005 04 17 | 703 | 0.0 | 0.7− | 2005 06 07 | 699 | 1.0+ | 0.3+ | | |
| 2002 07 20 | 644 | 0.2+ | 0.3− | 2005 04 17 | 703 | 0.6− | 0.0 | 2005 06 07 | 699 | 1.3+ | 0.3− | | |
| 2002 07 20 | 644 | 0.5+ | 0.1− | 2005 04 17 | 703 | 0.8− | 0.6+ | 2005 06 07 | 699 | 0.1− | 0.4− | | |
| 2002 08 11 | 704 | (0.7+ | 2.0−) | 2005 04 17 | 703 | 1.1− | 0.4− | 2005 06 07 | 699 | 1.2+ | 0.7+ | | |
| 2002 08 11 | 704 | 0.2− | 0.2+ | 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1+ | | |
| 2002 08 11 | 704 | 0.7− | 0.6− | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1− | | |
| 2002 08 11 | 704 | 0.1+ | 0.0 | 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.6+ | 0.2− | | |
| 2002 08 11 | 704 | 0.4+ | 0.4− | 2005 04 30 | 599 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.3+ | | |
| 2002 08 13 | 699 | 0.9− | 0.0 | 2005 05 01 | 599 | 0.0 | 0.0 | 2006 10 15 | D35 | 0.2+ | 0.1− | | |
| 2002 08 13 | 699 | 0.1− | 0.1− | 2005 05 01 | 599 | 0.2− | 0.4− | 2006 10 15 | D35 | 0.5− | 0.3+ | | |
| 2002 08 13 | 699 | 0.2+ | 0.5+ | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 15 | D35 | 0.2− | 0.2− | | |
| 2002 08 13 | 699 | 0.7+ | 0.1− | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.0 | | |
| 2002 08 15 | 644 | 0.1+ | 0.0 | 2005 05 13 | 691 | 0.1− | 0.9+ | 2006 10 16 | 703 | (0.4− | 2.8+) | | |
| 2002 08 15 | 644 | 0.1− | 0.1− | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | | |
| 2002 08 15 | 644 | 0.3+ | 0.2+ | 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.5− | | |
| 2002 08 26 | 644 | 0.0 | 0.1− | 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.4+ | | |
| 2002 08 26 | 644 | 0.2+ | 0.1− | 2005 05 16 | 704 | 0.9+ | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.3+ | | |
| 2002 08 26 | 644 | 0.2+ | 0.0 | 2005 05 16 | 704 | 0.5− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.4+ | | |
| 2002 09 04 | 644 | 0.5− | 0.1+ | 2005 05 16 | 704 | (2.4+ | 1.2−) | 2006 10 22 | 691 | 0.1+ | 0.3+ | | |
| 2002 09 04 | 644 | 0.0 | 0.1− | 2005 05 16 | 704 | 0.2− | 0.8+ | 2006 10 22 | 691 | 0.1+ | 0.4+ | | |
| 2002 09 04 | 644 | 0.1− | 0.1− | 2005 05 26 | 461 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.0 | 0.2+ | | |
| 2002 09 12 | 644 | 0.2− | 0.3− | 2005 05 26 | 461 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2002 09 12 | 644 | 0.2− | 0.0 | 2005 05 26 | 461 | 0.0 | 0.2+ | 2006 11 16 | G96 | 1.0− | 1.1+ | | |
| 2002 09 12 | 644 | 0.2+ | 0.1− | 2005 05 26 | 461 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2005 06 01 | 691 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1− | | |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2005 06 01 | 691 | 0.1+ | 0.2+ | | | | | | |

**(141951)∗ 2002 PH$_{111}$ = 2004 BR$_{33}$**

Discovered 2002 Aug. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56462)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.62276 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25724590 | $\omega$ | 261.55635 | | +0.97229178 | −0.20544491 | |
| $a$ | 2.4485205 | $\Omega$ | 110.24200 | | +0.23214482 | +0.90471179 | |
| $e$ | 0.1510729 | $i$ | 6.82757 | | −0.02752241 | +0.37321436 | |
| $P$ | 3.83 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.7+ | 0.1+ | 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.7+ | 1.2+ | | |
| 2000 02 03 | 691 | 0.3+ | 0.3− | 2004 02 14 | 691 | 0.2− | 0.5+ | 2006 09 20 | 703 | 0.2+ | 1.0+ | | |
| 2000 02 03 | 691 | 0.6+ | 0.5− | 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 703 | 0.6+ | 1.4+ | | |
| 2002 07 06 | 291 | 0.0 | 0.5+ | 2004 02 14 | 691 | 0.0 | 0.5+ | 2006 09 20 | 703 | 0.1− | 0.7+ | | |
| 2002 07 06 | 291 | 0.2− | 0.1+ | 2004 02 17 | 645 | 0.1− | 0.1+ | 2006 09 21 | 699 | 0.4+ | 1.0+ | | |
| 2002 07 06 | 291 | 0.6− | 0.2+ | 2004 02 17 | 645 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.1− | 0.7− | | |
| 2002 08 14 | 644 | 0.8− | 0.0 | 2005 04 15 | 691 | 0.5+ | 1.3+ | 2006 09 21 | 699 | 0.7+ | 0.3+ | | |
| 2002 08 14 | 644 | 0.5− | 0.0 | 2005 04 15 | 691 | 0.4+ | 0.2+ | 2006 09 21 | 699 | 0.1+ | 0.5+ | | |
| 2002 08 14 | 644 | 0.4− | 0.0 | 2005 04 15 | 691 | 0.0 | 1.0+ | 2006 09 26 | 703 | 0.2− | 1.5+ | | |
| 2002 08 15 | 644 | 0.1− | 0.2+ | 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 1.0− | 0.5+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 0.1+ | 0.4− | 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.3− | 1.5+ |
| 2002 08 15 | 644 | 0.0 | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | (1.6− | 1.2+) |
| 2002 08 30 | 644 | (0.9+ | 1.6+) | 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.7− | 0.5+ |
| 2002 08 30 | 644 | 0.2− | 1.1+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.6− | 0.8+ |
| 2002 08 30 | 644 | 0.7+ | 1.2+ | 2006 08 17 | 644 | 0.1+ | 0.6+ | 2006 10 02 | 703 | 0.5− | 0.2+ |
| 2002 08 31 | 699 | 0.3+ | 0.7− | 2006 08 22 | 644 | 0.1− | 0.4+ | 2006 10 02 | 703 | (2.5− | 1.6−) |
| 2002 08 31 | 699 | 0.4− | 0.2+ | 2006 08 22 | 644 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 08 31 | 699 | 0.2− | 0.2− | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 08 31 | 699 | 1.3− | 0.9− | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 2004 01 19 | 691 | 0.1− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.3+ |
| 2004 01 22 | 704 | 0.6+ | 1.3+ | 2006 08 30 | 699 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.6+ |
| 2004 01 22 | 704 | 0.8+ | 0.5+ | 2006 08 30 | 699 | 0.7+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2004 01 22 | 704 | 1.1+ | 1.1+ | 2006 08 30 | F84 | 0.6+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.7+ |
| 2004 01 22 | 704 | (0.8+ | 1.7+) | 2006 09 14 | 644 | 0.2− | 0.4+ | 2006 10 24 | 644 | 0.3− | 0.6+ |
| 2004 01 22 | 704 | 1.1+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.4+ | 2006 10 24 | 644 | 0.4− | 0.5+ |
| 2004 01 30 | 691 | 0.4− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.6+ |
| 2004 01 30 | 691 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.4− | 2006 11 19 | 703 | 0.5− | 0.7− |
| 2004 01 30 | 691 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.4+ | 0.3+ |
| 2004 02 12 | 691 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 11 19 | 703 | 1.5− | 0.3+ |
| 2004 02 12 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 11 19 | 703 | 0.4+ | 1.3− |

**(141952)∗ 2002 PR$_{111}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 93.98843 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26520235 | $\omega$ | 109.53626 | | −0.22946217 | | +0.97120669 | |
| $a$ | 2.3992995 | $\Omega$ | 146.98852 | | −0.93127803 | | −0.19993864 | |
| $e$ | 0.0985860 | $i$ | 6.75345 | | −0.28296349 | | −0.12954579 | |
| $P$ | 3.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 704 | 1.1+ | 1.3+ | 2002 09 01 | 699 | 1.5− | 0.6+ | 2005 04 15 | 699 | 1.2− | 0.6+ |
| 2001 02 20 | 704 | 0.8+ | 0.8− | 2002 09 01 | 699 | 0.2− | 0.6+ | 2005 04 15 | 699 | 0.6+ | 1.5− |
| 2001 02 20 | 704 | 0.1− | 0.8+ | 2002 09 01 | 699 | 0.1− | 0.5− | 2005 04 15 | 699 | 0.2+ | 0.3+ |
| 2001 03 19 | 704 | 0.6− | 0.1− | 2002 09 01 | 699 | 0.3− | 0.1− | 2005 05 04 | 703 | 0.2− | 0.7− |
| 2001 03 19 | 704 | 0.5+ | 1.4+ | 2002 09 04 | 644 | 0.3− | 0.4+ | 2005 05 04 | 703 | 0.9− | 0.1− |
| 2001 03 19 | 704 | 0.3− | 1.4+ | 2002 09 04 | 644 | 0.0 | 0.3+ | 2005 05 04 | 703 | 0.4+ | 0.1− |
| 2001 03 19 | 704 | 0.3+ | 1.2+ | 2002 09 04 | 644 | 0.1− | 0.4+ | 2005 05 04 | 703 | 0.2− | 0.6+ |
| 2001 03 19 | 704 | 0.3+ | 1.4+ | 2005 03 10 | 699 | 1.0− | 0.9+ | 2005 05 07 | 691 | 0.1+ | 0.0 |
| 2002 07 29 | 644 | 0.1+ | 0.3− | 2005 03 10 | 699 | 0.1− | 0.0 | 2005 05 07 | 691 | 0.1− | 0.1+ |
| 2002 07 29 | 644 | 0.2+ | 0.4− | 2005 03 10 | 699 | 0.4− | 0.9+ | 2005 05 07 | 691 | 0.1+ | 0.0 |
| 2002 07 29 | 644 | 0.2+ | 0.0 | 2005 03 10 | 699 | 0.3− | 0.8+ | 2006 09 12 | 703 | (3.5+ | 0.3+) |
| 2002 08 14 | 704 | (1.7− | 0.1+) | 2005 03 18 | 703 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.6− | 1.3+ |
| 2002 08 14 | 704 | (2.3+ | 0.7−) | 2005 03 18 | 703 | (1.5− | 0.1−) | 2006 09 12 | 703 | 0.9− | 0.1+ |
| 2002 08 14 | 704 | 0.5+ | 0.5− | 2005 03 18 | 703 | 0.5− | 1.1+ | 2006 09 12 | 703 | 0.4+ | 0.2+ |
| 2002 08 14 | 704 | 0.0 | 0.4− | 2005 03 18 | 703 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.0 |
| 2002 08 14 | 704 | 1.0− | 0.0 | 2005 04 01 | 699 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.5+ |
| 2002 08 15 | 644 | 0.1− | 0.3+ | 2005 04 01 | 699 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.6+ |
| 2002 08 15 | 644 | 1.1− | 0.4+ | 2005 04 01 | 699 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.3+ | 1.3+ |
| 2002 08 15 | 644 | 0.1+ | 0.5+ | 2005 04 01 | 699 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.1+ |
| 2002 08 16 | 608 | 0.1+ | 0.1+ | 2005 04 05 | 704 | 1.4+ | 0.3− | 2006 09 30 | 703 | 0.0 | 0.7+ |
| 2002 08 16 | 608 | 0.6+ | 0.1− | 2005 04 05 | 704 | 0.2− | 0.9− | 2006 09 30 | 703 | 0.2+ | 1.1+ |
| 2002 08 16 | 608 | 0.2+ | 0.6− | 2005 04 05 | 704 | 0.7+ | 0.6− | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2002 08 27 | 644 | 0.4− | 0.6+ | 2005 04 05 | 704 | 0.2+ | 1.3− | 2006 10 16 | 703 | 1.0− | 0.4− |
| 2002 08 27 | 644 | 0.1+ | 0.3+ | 2005 04 13 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 1.3+ | 0.4+ |
| 2002 08 27 | 644 | 1.0+ | 0.4+ | 2005 04 13 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2005 04 13 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 1.1− | 0.3− |
| 2002 08 27 | 644 | 0.9+ | 0.1+ | 2005 04 13 | 704 | 0.1− | 0.9+ | | | | |
| 2002 08 27 | 644 | 0.5+ | 0.3+ | 2005 04 15 | 699 | 0.7− | 0.3+ | | | | |

**(141953)∗ 2002 PU$_{113}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 61.68288 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26970132 | $\omega$ | 137.65587 | | +0.57625410 | | +0.81725428 | |
| $a$ | 2.3725425 | $\Omega$ | 167.52872 | | −0.75609003 | | +0.53550301 | |
| $e$ | 0.1853297 | $i$ | 1.36967 | | −0.31025646 | | +0.21291303 | |
| $P$ | 3.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.0 | 0.6+ | 2005 03 08 | G96 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2002 08 12 | 704 | 0.4+ | 0.4+ | 2005 03 08 | G96 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2002 08 12 | 704 | 0.3− | 0.7− | 2005 03 08 | G96 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2002 08 12 | 704 | 0.3+ | 0.3+ | 2005 03 08 | G96 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 2002 08 12 | 704 | 0.1− | 0.1− | 2005 04 05 | G96 | 0.4− | 0.1+ | 2006 09 30 | 703 | (1.1− | 2.8−) |
| 2002 08 16 | 291 | 0.2− | 0.3+ | 2005 04 05 | G96 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2002 08 16 | 291 | 0.3− | 0.2+ | 2005 04 05 | G96 | 0.5− | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.6+ |
| 2002 08 16 | 291 | 0.1− | 0.0 | 2005 04 05 | G96 | 0.5− | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2002 08 18 | 608 | 0.1+ | 0.3− | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.5+ |
| 2002 08 18 | 608 | 0.0 | 0.3− | 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.4+ |
| 2002 08 18 | 608 | 0.5− | 0.1+ | 2005 04 09 | 691 | 0.4+ | 0.5+ | 2006 10 29 | 691 | 0.1− | 0.5+ |
| 2002 09 04 | 644 | 0.3− | 0.4− | 2005 04 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.8− |
| 2002 09 04 | 644 | 0.1− | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.4− | 1.1+ |
| 2002 09 04 | 644 | 0.1− | 0.4− | 2005 04 18 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 1.4− | 0.2+ |
| 2002 09 05 | 699 | 0.4− | 0.7+ | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 11 11 | 703 | 1.2− | 0.6− |
| 2002 09 05 | 699 | 1.0+ | 0.4− | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2005 05 06 | G96 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.6+ |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.4− | 0.1− |
| 2002 09 05 | 699 | 0.6+ | 0.4+ | 2005 05 07 | 691 | 0.6+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2002 09 05 | 699 | 1.1+ | 0.3− | 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2002 09 05 | 699 | 1.4− | 0.1+ | 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2002 09 05 | 699 | 0.3+ | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2002 09 05 | 704 | 0.4+ | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 09 05 | 699 | 1.3− | 0.6+ | 2005 05 10 | G96 | 0.5− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 09 05 | 699 | 0.8+ | 0.7+ | 2005 05 10 | G96 | (0.2+ | 2.8+) | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.5+ | 0.5+ | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.7+ | 1.4+ |
| 2002 09 14 | 644 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.0 | 0.5+ | 2006 11 17 | 703 | 1.0− | 0.2+ |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 11 17 | 703 | 2.2+ | 0.5+ |
| 2003 12 29 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.5− | 2.8− |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1− | | | | |
| 2003 12 29 | 691 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.5− | 0.5− | | | | |

**(141954)∗ 2002 PZ$_{113}$**

Discovered 2002 Aug. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 23.06381 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27307697 | $\omega$ | 149.72943 | | +0.98511430 | | −0.17182017 | |
| $a$ | 2.3529498 | $\Omega$ | 220.16531 | | +0.15603619 | | +0.90661484 | |
| $e$ | 0.1999782 | $i$ | 0.46705 | | +0.07212852 | | +0.38539247 | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1+ | 0.6− | 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1995 10 02 | 691 | 0.0 | 0.5− | 2002 09 14 | 644 | 0.6− | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.5+ |
| 1995 10 02 | 691 | 0.3+ | 0.5− | 2002 09 15 | 608 | 1.0− | 1.1− | 2006 11 15 | 703 | 0.1− | 0.5+ |
| 2000 01 26 | 691 | 0.1+ | 0.1+ | 2002 09 15 | 608 | 1.2− | 1.0− | 2006 11 15 | 703 | 0.4− | 0.1− |
| 2000 01 26 | 691 | 0.1− | 0.4− | 2002 09 15 | 608 | (1.7− | 0.5−) | 2006 11 15 | 703 | 0.8− | 0.4− |
| 2000 01 26 | 691 | 0.0 | 0.7− | 2002 09 16 | 644 | 0.4− | 0.9− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2000 02 04 | 691 | 0.1+ | 0.0 | 2002 09 16 | 644 | 0.1− | 0.9− | 2006 11 15 | 691 | 0.1+ | 0.3− |
| 2000 02 04 | 691 | 0.3+ | 0.2+ | 2002 09 16 | 644 | 0.2− | 0.9− | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2000 02 04 | 691 | 0.1+ | 0.2− | 2002 10 03 | 704 | 1.3+ | 0.2+ | 2006 11 18 | 704 | (1.2− | 2.1+) |
| 2002 08 12 | 704 | 0.3− | 0.6+ | 2002 10 03 | 704 | 0.4− | 0.3+ | 2006 11 18 | 704 | (2.5− | 0.7+) |
| 2002 08 12 | 704 | 0.4− | 0.6+ | 2002 10 03 | 704 | 0.3+ | 1.3+ | 2006 11 18 | 704 | (2.3− | 1.9+) |
| 2002 08 12 | 704 | 0.5− | 1.0+ | 2002 10 03 | 704 | 0.2− | 1.3+ | 2006 11 18 | 704 | 0.5− | 1.0− |
| 2002 08 12 | 699 | 0.4+ | 1.3+ | 2004 02 22 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.9− |
| 2002 08 12 | 699 | (1.6+ | 1.0+) | 2004 02 22 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 699 | 0.2− | 0.9+ | 2004 02 22 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2002 08 12 | 699 | 0.1+ | 1.3+ | 2004 02 29 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | (0.7− | 3.5−) |
| 2002 08 16 | 291 | 0.1+ | 0.4+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.5+ |
| 2002 08 16 | 291 | 0.1+ | 0.5+ | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.1− |
| 2002 08 16 | 291 | 0.0 | 0.3+ | 2005 05 13 | G96 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2002 08 18 | 608 | 0.9+ | 0.3− | 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2002 08 18 | 608 | 0.8+ | 1.0− | 2005 05 13 | G96 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2002 08 18 | 608 | 0.6+ | 0.4− | 2005 05 13 | G96 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2002 09 01 | 608 | 0.1− | 0.7− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2002 09 01 | 608 | 0.3+ | 0.4− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.3− | 0.4+ |
| 2002 09 01 | 608 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.7− | 2006 12 01 | 704 | 0.3− | 1.2+ |
| 2002 09 04 | 644 | 0.5− | 1.2+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 12 01 | 704 | 1.1+ | 1.2+ |
| 2002 09 04 | 644 | 0.3− | 1.3+ | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2002 09 04 | 644 | (2.0+ | 0.4−) | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 12 01 | 704 | 0.9+ | 1.4+ |
| 2002 09 05 | 704 | 0.4+ | 1.0− | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.0 |
| 2002 09 05 | 704 | (0.1− | 1.7+) | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 12 01 | 691 | 0.4− | 0.3+ |
| 2002 09 05 | 704 | 0.7− | 1.2+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.2+ |

**(141955)∗ 2002 PP$_{115}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.25729 | | (2000.0) | | +0.73892615 | −0.66832906 |
| $n$ | 0.26609654 | $\omega$ | 233.62755 | | +0.67144173 | +0.74097788 |
| $a$ | 2.3939214 | $\Omega$ | 167.50934 | | +0.67144173 | +0.74097788 |
| $e$ | 0.2679841 | $i$ | 23.30982 | | −0.05616182 | +0.06548321 |
| $P$ | 3.70 | $H$ | 16.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.5− | 0.7+ | 2002 08 16 | 848 | (0.3− | 2.0−) | 2004 03 15 | 704 | 0.0 | 0.2− |
| 2000 02 08 | 704 | 0.6+ | 0.8− | 2002 08 16 | 848 | 0.7− | 1.1− | 2004 03 15 | 704 | 0.2− | 0.3− |
| 2000 02 08 | 704 | 0.4− | 1.2+ | 2002 08 25 | 644 | 0.1+ | 0.7+ | 2004 03 15 | 704 | 0.0 | 0.7+ |
| 2000 02 08 | 704 | 0.1− | 0.8+ | 2002 08 25 | 644 | 0.2− | 0.6+ | 2004 03 15 | 704 | 0.2+ | 0.3− |
| 2002 07 09 | 644 | 0.2+ | 0.6− | 2002 08 25 | 644 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.1+ |
| 2002 07 09 | 644 | 0.2+ | 0.6− | 2002 09 04 | 644 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.3+ | 0.1+ |
| 2002 07 09 | 644 | 0.1+ | 0.5− | 2002 09 04 | 644 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.1− | 0.1+ |
| 2002 07 18 | 704 | (2.2+ | 0.7+) | 2002 09 04 | 644 | 0.5− | 0.5+ | 2004 03 19 | 704 | 0.2− | 0.7+ |
| 2002 07 18 | 704 | 1.2+ | 0.2+ | 2002 09 13 | 608 | (1.1− | 1.7−) | 2004 03 22 | 704 | 0.2− | 0.8− |
| 2002 07 18 | 704 | (1.7+ | 0.1+) | 2002 09 13 | 608 | 0.8− | 0.9− | 2004 03 22 | 704 | 0.3+ | 0.2− |
| 2002 07 18 | 704 | 1.4+ | 0.2+ | 2002 09 13 | 608 | 1.0− | 0.9− | 2004 03 22 | 704 | (2.2+ | 1.7−) |
| 2002 08 03 | 644 | 0.1+ | 0.5+ | 2002 10 04 | 704 | 0.5+ | 0.9+ | 2004 03 22 | 704 | 0.6+ | 0.1+ |
| 2002 08 03 | 644 | 0.1− | 0.6+ | 2002 10 04 | 704 | 0.6+ | 0.7− | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2002 08 03 | 644 | 0.3+ | 0.6+ | 2002 10 04 | 704 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.2− | 0.4+ |
| 2002 08 11 | 704 | 0.3+ | 0.5+ | 2002 10 04 | 704 | 0.6− | 1.2− | 2006 09 19 | 703 | 0.4− | 0.4− |
| 2002 08 11 | 704 | 0.0 | 0.6+ | 2002 10 04 | 704 | 0.1− | 0.4− | 2006 09 25 | 703 | 0.1− | 0.2+ |
| 2002 08 11 | 704 | 0.4− | 0.3+ | 2002 10 05 | 704 | 0.7+ | 0.2+ | 2006 09 25 | 703 | 0.0 | 0.4+ |
| 2002 08 11 | 704 | 0.3+ | 0.5+ | 2002 10 05 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 703 | 0.4− | 0.3+ |
| 2002 08 11 | 704 | 0.3+ | 0.5+ | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 09 25 | 703 | (2.8+ | 2.1−) |
| 2002 08 13 | 699 | 0.5− | 0.4+ | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 10 25 | E12 | 0.1+ | 0.0 |
| 2002 08 13 | 699 | 0.5− | 0.1+ | 2002 10 11 | 704 | 0.8+ | 0.1+ | 2006 10 25 | E12 | 0.5− | 0.0 |
| 2002 08 13 | 699 | 0.9− | 0.6+ | 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 10 25 | E12 | 0.4+ | 0.4+ |
| 2002 08 13 | 699 | 0.4− | 0.5+ | 2002 10 11 | 704 | 0.3+ | 0.5+ | 2006 10 25 | E12 | 0.8+ | 0.2+ |
| 2002 08 16 | 704 | 0.4+ | 0.2+ | 2004 03 14 | 691 | 0.1− | 0.5+ | 2006 11 18 | E12 | 0.1− | 0.4+ |
| 2002 08 16 | 704 | 0.3+ | 0.5+ | 2004 03 14 | 691 | 0.1− | 0.5+ | 2006 11 18 | E12 | 0.4+ | 0.1+ |
| 2002 08 16 | 704 | 0.5+ | 0.3+ | 2004 03 14 | 691 | 0.0 | 0.4+ | 2006 11 18 | E12 | 0.2− | 0.1+ |
| 2002 08 16 | 848 | 0.6− | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2006 11 18 | E12 | 0.3− | 0.4+ |

**(141956)∗ 2002 PS$_{115}$**

Discovered 2002 Aug. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.76630 | | (2000.0) | | +0.33560095 | −0.92216524 |
| $n$ | 0.23909378 | $\omega$ | 142.54387 | | +0.80826841 | +0.38674266 |
| $a$ | 2.5709316 | $\Omega$ | 287.12227 | | +0.48381214 | −0.00643296 |
| $e$ | 0.2384396 | $i$ | 11.60884 | | | |
| $P$ | 4.12 | $H$ | 15.0 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 699 | 1.0+ | 0.5− | 2002 10 06 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 704 | 0.3+ | 0.1+ |
| 1998 09 19 | 699 | 0.8− | 0.5− | 2002 10 06 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.5− |
| 1998 09 19 | 699 | 0.3+ | 0.9+ | 2002 10 09 | 704 | 0.1− | 0.2− | 2006 08 28 | 704 | (1.7− | 1.0+) |
| 1998 11 26 | 699 | 0.0 | 0.2+ | 2002 10 09 | 704 | 0.1− | 0.3+ | 2006 08 28 | 703 | 1.0− | 0.0 |
| 1998 11 26 | 699 | 1.0− | 0.0 | 2002 10 09 | 704 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.0 | 0.8+ |
| 1998 11 26 | 699 | 0.3− | 0.4+ | 2002 10 09 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 704 | 0.5+ | 0.0 |
| 2002 08 13 | 704 | 0.2+ | 0.0 | 2002 12 01 | 704 | 0.2− | 0.1− | 2006 08 28 | 704 | 0.5+ | 1.0− |
| 2002 08 13 | 704 | 0.2− | 0.5− | 2002 12 01 | 704 | 0.4− | 0.1− | 2006 08 28 | 704 | 0.5− | 0.3+ |
| 2002 08 13 | 704 | 0.2+ | 0.2− | 2002 12 01 | 704 | 1.0− | 0.0 | 2006 08 28 | 704 | 1.3+ | 0.8+ |
| 2002 08 13 | 704 | 0.2− | 0.6− | 2002 12 01 | 704 | 0.8− | 0.7+ | 2006 08 28 | 704 | 0.5+ | 1.4+ |
| 2002 08 13 | 704 | 0.6− | 0.4− | 2002 12 01 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | (1.9− | 0.2−) |
| 2002 08 16 | 704 | 0.1+ | 0.4+ | 2004 03 04 | E12 | 1.0− | 1.3+ | 2006 08 30 | 699 | 0.6+ | 0.3+ |
| 2002 08 16 | 704 | 0.3+ | 0.7+ | 2004 03 04 | E12 | 0.0 | 0.4− | 2006 08 30 | 699 | 0.1− | 0.0 |
| 2002 08 16 | 704 | 0.1− | 1.0+ | 2004 03 04 | E12 | 0.2− | 0.0 | 2006 08 30 | 699 | 1.0+ | 0.4+ |
| 2002 08 16 | 704 | 0.3− | 1.2+ | 2004 03 04 | E12 | 0.8− | 0.0 | 2006 09 11 | 703 | 0.7+ | 0.1+ |
| 2002 08 16 | 704 | 0.1+ | 1.3+ | 2004 03 14 | 644 | 0.3+ | 0.2+ | 2006 09 11 | 703 | 0.2− | 0.1− |
| 2002 09 03 | 644 | 0.1− | 0.3+ | 2004 03 14 | 644 | 0.4+ | 0.3+ | 2006 09 11 | 703 | 0.0 | 0.1+ |
| 2002 09 03 | 644 | 0.1− | 0.4− | 2004 03 14 | 644 | 0.4+ | 0.1− | 2006 09 11 | 703 | 0.1+ | 0.3+ |
| 2002 09 03 | 644 | 0.1− | 0.2+ | 2004 03 17 | 704 | 0.9+ | 0.9− | 2006 09 26 | 703 | 0.8− | 0.2+ |
| 2002 09 15 | 699 | 0.1+ | 0.0 | 2004 03 17 | 704 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 1.1− | 0.4+ |
| 2002 09 15 | 699 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.5+ | 1.3+ | 2006 09 26 | 703 | 0.7− | 0.5− |
| 2002 09 15 | 699 | 0.4− | 0.2+ | 2004 03 17 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2002 09 15 | 699 | 0.1− | 0.1+ | 2004 03 17 | 704 | (1.8+ | 0.7−) | 2006 09 26 | 704 | 0.9+ | 0.6− |
| 2002 10 03 | 644 | 0.4− | 0.1+ | 2004 03 31 | 704 | 1.1+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.1+ |
| 2002 10 03 | 644 | 0.9+ | 0.5− | 2004 03 31 | 704 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.2+ |
| 2002 10 03 | 644 | 0.1+ | 0.1− | 2004 03 31 | 704 | 0.7− | 0.3− | 2006 09 26 | 704 | 0.5− | 0.6− |
| 2002 10 04 | 699 | 0.3+ | 1.1− | 2006 08 27 | 699 | 0.7− | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.0 |
| 2002 10 04 | 699 | 0.7− | 0.1+ | 2006 08 27 | 699 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.1− | 0.8− |
| 2002 10 04 | 699 | 0.0 | 0.4− | 2006 08 27 | 699 | (1.9− | 0.7+) | 2006 11 19 | 703 | 0.3+ | 1.5− |
| 2002 10 04 | 699 | 0.0 | 0.3+ | 2006 08 27 | 699 | 0.5− | 0.0 | 2006 11 19 | 703 | 0.6+ | 0.0 |
| 2002 10 06 | 704 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.4− | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.5− |
| 2002 10 06 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.3− | | | | |
| 2002 10 06 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 1.2+ | 1.1− | | | | |

**(141957)∗ 2002 PU$_{116}$**

Discovered 2002 Aug. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.89332 | | (2000.0) | | +0.82303906 | +0.55915730 |
| $n$ | 0.26755613 | $\omega$ | 35.34221 | | −0.54252889 | +0.72194754 |
| $a$ | 2.3852072 | $\Omega$ | 290.35973 | | −0.16813420 | +0.40759644 |
| $e$ | 0.1078193 | $i$ | 6.10758 | | | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 699 | (0.5+ | 2.3+) | 2002 10 05 | 704 | 0.3+ | 0.2+ | 2004 02 11 | 691 | 0.2+ | 0.2+ |
| 2002 08 14 | 699 | 1.5− | 0.6+ | 2002 10 05 | 704 | 0.5+ | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.2+ |
| 2002 08 14 | 699 | 0.1+ | 0.2+ | 2002 10 05 | 644 | 0.1+ | 0.3+ | 2004 04 13 | 645 | 0.0 | 0.1− |
| 2002 08 14 | 699 | 0.7− | 0.7+ | 2002 10 05 | 704 | 0.0 | 0.1+ | 2004 04 13 | 645 | 0.2− | 0.0 |
| 2002 08 16 | 704 | 1.1− | 0.1+ | 2002 10 05 | 644 | 0.0 | 0.3+ | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2002 08 16 | 704 | 0.4− | 0.3− | 2002 10 05 | 704 | 0.6+ | 0.6− | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2002 08 16 | 704 | 0.8− | 0.6+ | 2002 10 05 | 704 | 0.0 | 0.6− | 2005 05 12 | 644 | 0.4+ | 1.0+ |
| 2002 08 16 | 704 | 0.6− | 0.6+ | 2002 10 05 | 644 | 0.1+ | 0.3+ | 2005 05 12 | 644 | 0.1+ | 0.3+ |
| 2002 08 28 | 644 | 1.0+ | 1.3+ | 2002 10 06 | 644 | 0.3− | 0.3+ | 2005 05 12 | 644 | 0.1+ | 0.7+ |
| 2002 08 28 | 644 | 0.5− | 0.4+ | 2002 10 06 | 644 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2002 08 28 | 644 | 0.4− | 0.2+ | 2002 10 06 | 644 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.9− |
| 2002 08 28 | 644 | 0.7+ | 1.1+ | 2002 10 09 | 704 | 0.0 | 0.9+ | 2006 10 19 | 703 | 0.0 | 1.1− |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2002 10 09 | 704 | (0.2+ | 1.9+) | 2006 10 19 | 703 | 0.3+ | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.4+ | 1.2+ | 2002 10 09 | 704 | 0.4+ | 1.0− | 2006 10 27 | 703 | 0.1+ | 0.4− |
| 2002 09 05 | 699 | 0.2− | 1.3+ | 2002 10 09 | 704 | 0.3+ | 1.1− | 2006 10 27 | 703 | 0.4+ | 0.3+ |
| 2002 09 05 | 699 | 0.4− | 0.2− | 2003 12 17 | 291 | 0.0 | 0.6+ | 2006 10 27 | 703 | 1.1+ | 0.9− |
| 2002 09 05 | 699 | 0.9+ | 1.1+ | 2003 12 17 | 291 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 1.1− | 0.5− |
| 2002 09 05 | 699 | 0.0 | 0.7− | 2003 12 17 | 291 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2002 09 07 | 704 | 0.4− | 0.6− | 2004 01 16 | 644 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.8+ | 0.6− |
| 2002 09 07 | 704 | 0.6− | 0.4+ | 2004 01 16 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.3− |
| 2002 09 07 | 704 | 0.6− | 0.2− | 2004 01 16 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 2002 09 07 | 704 | 0.1− | 0.1− | 2004 01 17 | 644 | 0.6+ | 0.2+ | 2006 11 22 | 703 | 1.5− | 1.4+ |
| 2002 09 25 | 608 | (2.1− | 0.2−) | 2004 01 17 | 644 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.2+ | 0.7− |
| 2002 09 25 | 608 | (2.2− | 0.4−) | 2004 01 17 | 644 | 0.4+ | 0.3− | 2006 11 22 | 703 | 0.5+ | 0.8− |
| 2002 09 25 | 608 | (1.7− | 1.2−) | 2004 02 11 | 691 | 0.6+ | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.0 |

**(141958)∗ 2002 PV$_{116}$**

Discovered 2002 Aug. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.17915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26692239 | $\omega$ | 32.83434 | | +0.40406717 | +0.91151627 | |
| $a$ | 2.3889811 | $\Omega$ | 261.09940 | | −0.85508367 | +0.34664846 | |
| $e$ | 0.2252617 | $i$ | 4.44691 | | −0.32490250 | +0.22129827 | |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 691 | 0.5+ | 0.0 | 2002 10 05 | 704 | 1.2+ | 0.7+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 1999 12 31 | 691 | 0.1+ | 0.7− | 2002 10 05 | 704 | 0.1− | 0.4− | 2006 10 13 | 691 | 0.4− | 0.1+ |
| 1999 12 31 | 691 | 0.2+ | 0.0 | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 10 13 | 691 | 0.2− | 0.6+ |
| 2001 02 22 | 645 | 0.1− | 0.1+ | 2002 10 05 | 704 | 0.4− | 0.5+ | 2006 10 13 | 691 | 0.0 | 0.9+ |
| 2001 02 22 | 645 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.2− | 0.8+ | 2006 10 21 | 691 | 0.4− | 0.0 |
| 2002 08 14 | 699 | (1.6− | 0.3+) | 2002 10 05 | 704 | 0.4+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 2002 08 14 | 699 | (0.0 | 1.8+) | 2002 10 06 | 644 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2002 08 14 | 699 | 0.5− | 1.1+ | 2002 10 06 | 644 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.4− |
| 2002 08 14 | 699 | 0.6− | 1.1+ | 2002 10 06 | 644 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2002 08 16 | 704 | 0.9− | 0.5+ | 2002 10 07 | 699 | 0.7− | 0.5− | 2006 10 27 | 703 | 0.2+ | 1.0− |
| 2002 08 16 | 704 | 1.5− | 0.7+ | 2002 10 07 | 699 | 1.2− | 1.0− | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2002 08 16 | 704 | 0.3− | 0.8+ | 2002 10 07 | 699 | 0.9− | 0.3− | 2006 10 27 | 408 | (1.9+ | 2.2+) |
| 2002 08 16 | 704 | 0.1− | 0.5+ | 2002 10 07 | 699 | 0.6− | 0.1− | 2006 10 27 | 408 | (1.2+ | 2.1+) |
| 2002 08 28 | 644 | 0.3+ | 0.6− | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 30 | 408 | 1.3− | 0.2− |
| 2002 08 28 | 644 | 0.1+ | 0.4− | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 30 | 408 | 1.2− | 0.4− |
| 2002 08 28 | 644 | 0.1− | 0.8− | 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 10 31 | 408 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.1− | 0.8− | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 10 31 | 408 | 1.1− | 1.1+ |
| 2002 09 06 | 704 | 0.4+ | 0.3+ | 2005 03 09 | 691 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.5+ | 0.1− |
| 2002 09 06 | 704 | 0.9+ | 0.8− | 2005 03 09 | 691 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.8+ | 0.3− | 2005 03 09 | 691 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2002 09 30 | 704 | 0.1+ | 0.1+ | 2005 04 14 | 703 | 0.9− | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2002 09 30 | 704 | 0.5+ | 0.2+ | 2005 04 14 | 703 | (0.0 | 1.8+) | 2006 11 01 | G96 | 0.5+ | 0.1+ |
| 2002 09 30 | 704 | 0.4− | 0.5+ | 2005 04 14 | 703 | 1.3− | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2002 09 30 | 704 | 0.8− | 0.7+ | 2005 04 14 | 703 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.9+ | 0.4− |
| 2002 09 30 | 704 | 0.3− | 0.4+ | 2005 05 05 | J50 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.5+ | 0.1+ |
| 2002 10 04 | 704 | 1.4+ | 0.4+ | 2005 05 05 | J50 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2002 10 04 | 704 | 0.5+ | 0.6+ | 2005 05 05 | J50 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2005 05 05 | J50 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | 0.8+ | 0.6+ | 2005 05 05 | J50 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | (1.3+ | 1.9+) | 2005 05 05 | J50 | 0.4+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 1.2+ | 0.7+ | 2006 10 02 | G96 | 0.6+ | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2002 10 05 | 704 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.1− |

**(141959)∗ 2002 PV$_{117}$**

Discovered 2002 Aug. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.68546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28562063 | $\omega$ | 79.80050 | | +0.27073069 | +0.96245137 | |
| $a$ | 2.2835455 | $\Omega$ | 205.93353 | | −0.90000101 | +0.24575575 | |
| $e$ | 0.1676060 | $i$ | 2.59563 | | −0.34161833 | +0.11528861 | |
| $P$ | 3.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.7− | 0.2+ | 2002 09 02 | 608 | 0.1+ | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.0 |
| 1999 10 07 | 691 | 0.4− | 0.3+ | 2002 09 02 | 608 | 0.3− | 0.3− | 2006 10 12 | 691 | 0.3− | 0.2+ |
| 1999 10 07 | 691 | 0.8+ | 0.6+ | 2002 09 02 | 608 | 0.5+ | 0.5− | 2006 10 12 | 691 | 0.1+ | 0.1+ |
| 2002 07 22 | 644 | 0.3+ | 0.4+ | 2002 09 05 | 699 | 0.2+ | 0.6− | 2006 10 12 | 691 | 0.2− | 0.6+ |
| 2002 07 22 | 644 | 0.2+ | 0.5+ | 2002 09 05 | 699 | 0.8+ | 0.9− | 2006 10 29 | G96 | 1.2+ | 0.3+ |
| 2002 07 22 | 644 | 0.0 | 0.3+ | 2002 09 05 | 699 | (0.9+ | 1.8+) | 2006 10 29 | G96 | 0.0 | 0.5+ |
| 2002 08 07 | 644 | 0.2+ | 0.2− | 2002 09 05 | 699 | (1.8+ | 0.7−) | 2006 10 29 | G96 | 0.2− | 0.3+ |
| 2002 08 07 | 644 | 0.3+ | 0.3− | 2005 04 02 | G96 | 0.2− | 0.0 | 2006 10 30 | G96 | 0.2+ | 0.1+ |
| 2002 08 07 | 644 | 0.4+ | 0.4− | 2005 04 02 | G96 | 0.1− | 0.2− | 2006 10 30 | G96 | 0.3+ | 0.2+ |
| 2002 08 12 | 608 | (1.6− | 1.6−) | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 10 30 | G96 | 0.3+ | 0.1+ |
| 2002 08 12 | 608 | 1.1− | 0.4− | 2005 04 02 | G96 | 0.0 | 0.0 | 2006 10 30 | G96 | 0.3+ | 0.2+ |
| 2002 08 12 | 608 | 1.3− | 0.9− | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 11 12 | 703 | 0.5− | 1.2− |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 11 12 | 703 | 0.2+ | 0.4+ |
| 2002 08 16 | 644 | 0.2− | 0.3+ | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 11 12 | 703 | 0.0 | 1.2− |
| 2002 08 16 | 644 | 0.1+ | 0.4+ | 2005 05 01 | 644 | 0.4+ | 0.2+ | 2006 11 12 | 703 | 0.4+ | 0.5− |
| 2002 08 27 | 843 | 0.2+ | 1.2− | 2005 05 01 | 644 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.5− | 0.4+ |
| 2002 08 27 | 843 | 0.1− | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.4− | 0.1+ |
| 2002 08 27 | 644 | 0.1+ | 0.8+ | 2005 05 14 | G96 | 0.0 | 0.8+ | 2006 11 12 | G96 | 0.7− | 1.2− |
| 2002 08 27 | 644 | 0.2+ | 1.0+ | 2005 05 14 | G96 | 1.1− | 0.5+ | 2006 11 12 | G96 | 1.0+ | 0.6− |
| 2002 08 27 | 644 | 0.0 | 0.9+ | 2005 05 14 | G96 | 1.0+ | 0.9− | | | | |

**(141960)∗ 2002 PF$_{118}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.51467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27008041 | $\omega$ | 20.11134 | | −0.53549239 | +0.84186461 | |
| $a$ | 2.3703219 | $\Omega$ | 217.59782 | | −0.78912964 | −0.52710806 | |
| $e$ | 0.0657682 | $i$ | 6.32078 | | −0.30086925 | −0.11584933 | |
| $P$ | 3.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 02 | 691 | 0.0 | 0.2− | 2002 09 06 | 704 | 0.7− | 0.3− | 2006 09 14 | 703 | 0.1− | 0.4− |
| 1994 05 02 | 691 | 0.0 | 0.2− | 2002 09 13 | 644 | 0.2− | 0.4− | 2006 09 25 | 704 | (0.8+ | 2.1+) |
| 1994 05 02 | 691 | 0.1+ | 0.4− | 2002 09 13 | 644 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.4− | 0.5+ |
| 2001 03 18 | 608 | 1.0− | 1.4− | 2002 09 13 | 644 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.8+ | 0.9+ |
| 2001 03 18 | 608 | 0.7− | 1.4− | 2005 01 20 | 809 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.3+ |
| 2001 03 18 | 608 | 0.5− | 1.4− | 2005 01 20 | 809 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2002 07 21 | 644 | 0.2− | 0.1+ | 2005 01 20 | 809 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2002 07 21 | 644 | 0.1− | 0.1+ | 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.3+ | 0.2+ |
| 2002 07 21 | 644 | 0.1+ | 0.1− | 2005 04 11 | G96 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2002 08 12 | 704 | 0.0 | 0.1− | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2002 08 12 | 704 | 0.8+ | 0.3− | 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 2002 08 12 | 704 | 0.2− | 0.3− | 2005 04 17 | 703 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 1.2− | 0.2+ |
| 2002 08 12 | 704 | 0.2+ | 0.9+ | 2005 04 17 | 703 | 0.7− | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2002 08 12 | 704 | 0.2− | 0.2+ | 2005 04 17 | 703 | 0.6− | 0.3− | 2006 10 17 | 703 | 1.2− | 0.9− |
| 2002 08 13 | 699 | 0.3− | 0.6− | 2005 04 17 | 703 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.1− | 0.4− |
| 2002 08 13 | 699 | 0.8+ | 0.1+ | 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2002 08 13 | 699 | 0.6+ | 0.1− | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.4− |
| 2002 08 13 | 699 | 0.1+ | 0.3− | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2002 08 16 | 644 | 0.0 | 1.0− | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2002 08 16 | 644 | 0.3+ | 1.0− | 2005 05 08 | G96 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 08 16 | 644 | 0.0 | 1.0− | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 08 26 | 644 | 0.2− | 0.0 | 2005 05 08 | G96 | 0.4− | 0.3− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 08 26 | 644 | 0.0 | 0.0 | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 08 26 | 644 | 0.2+ | 0.3− | 2005 05 14 | 644 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 09 06 | 704 | 0.5− | 0.0 | 2005 05 14 | 644 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 09 06 | 704 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.9− | 2006 11 15 | G96 | 0.3+ | 0.2− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.6− | 1.0+ | 2006 09 14 | 703 | 0.7+ | 0.5− | |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.5− | |

**(141961)∗ 2002 PL$_{119}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.41033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26746142 | $\omega$ | 94.20391 | | −0.08753908 | +0.99599097 | |
| $a$ | 2.3857702 | $\Omega$ | 170.71361 | | −0.95323569 | −0.07838631 | |
| $e$ | 0.0995312 | $i$ | 6.55056 | | −0.28927257 | −0.04309953 | |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 03 | 691 | 0.4+ | 0.6+ | 2005 04 05 | 703 | 0.5− | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.1− | |
| 2001 02 03 | 691 | 0.2+ | 0.3+ | 2005 04 05 | 703 | 0.1− | 1.0+ | 2006 07 21 | G96 | 0.1+ | 0.0 | |
| 2001 02 03 | 691 | 0.1− | 1.1+ | 2005 04 05 | 703 | (1.6− | 0.9+) | 2006 07 21 | G96 | 0.2+ | 0.2− | |
| 2002 08 13 | 699 | 0.1− | 0.0 | 2005 04 05 | 703 | 0.6− | 0.1− | 2006 09 06 | 644 | 0.1− | 0.2+ | |
| 2002 08 13 | 699 | 0.3− | 0.4+ | 2005 04 09 | 704 | (3.7+ | 0.5+) | 2006 09 06 | 644 | 0.6− | 0.2+ | |
| 2002 08 13 | 699 | 0.7+ | 0.8− | 2005 04 09 | 704 | 0.1− | 0.4− | 2006 09 06 | 644 | 0.6− | 0.5+ | |
| 2002 08 13 | 699 | 0.1− | 0.3+ | 2005 04 09 | 704 | (2.2+ | 0.8−) | 2006 09 14 | 691 | 0.1− | 0.2+ | |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2005 04 09 | 704 | 1.4+ | 0.6+ | 2006 09 14 | 691 | 0.5+ | 0.0 | |
| 2002 08 16 | 644 | 0.1+ | 0.0 | 2005 04 09 | 704 | 1.1+ | 0.6+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | |
| 2002 08 16 | 644 | 0.3− | 0.1+ | 2005 04 13 | 704 | 0.0 | 0.6− | 2006 09 30 | 703 | (0.8− | 1.6+) | |
| 2002 08 17 | 644 | 0.1+ | 1.1+ | 2005 04 13 | 704 | 0.6− | 0.6− | 2006 09 30 | 703 | 0.3− | 0.7+ | |
| 2002 08 17 | 644 | 0.2+ | 0.9+ | 2005 04 13 | 704 | (1.6+ | 1.2+) | 2006 09 30 | 703 | 0.4− | 0.3+ | |
| 2002 08 17 | 644 | 0.2− | 0.9+ | 2005 04 13 | 704 | (1.7+ | 0.3+) | 2006 09 30 | 703 | 0.3− | 1.0+ | |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2005 04 13 | 704 | 0.6− | 0.4+ | 2006 10 01 | 704 | 0.4+ | 0.2+ | |
| 2002 08 18 | 644 | 0.1− | 0.4+ | 2005 05 03 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.8− | 0.8+ | |
| 2002 08 18 | 644 | 0.1− | 0.5+ | 2005 05 03 | 704 | 0.2+ | 1.0+ | 2006 10 01 | 704 | 1.1− | 0.2− | |
| 2002 08 27 | 644 | 0.0 | 0.3− | 2005 05 03 | 704 | 0.5− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.5+ | |
| 2002 08 27 | 644 | 0.0 | 0.5− | 2005 05 03 | 704 | 0.6+ | 0.5+ | 2006 10 02 | 691 | 0.1− | 0.4+ | |
| 2002 08 27 | 644 | 0.0 | 0.3− | 2005 05 03 | 704 | 0.7− | 0.5− | 2006 10 02 | 691 | 0.1− | 0.2+ | |
| 2002 09 14 | 644 | 0.4+ | 0.2− | 2005 05 08 | 703 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.4+ | |
| 2002 09 14 | 644 | 0.0 | 0.4− | 2005 05 08 | 703 | 0.4− | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | |
| 2002 09 14 | 644 | 0.5− | 0.5− | 2005 05 08 | 703 | 0.5− | 1.0+ | 2006 10 10 | 644 | 0.4+ | 0.3+ | |
| 2005 04 02 | 691 | 0.3+ | 0.2+ | 2005 05 08 | 703 | 1.1+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | |
| 2005 04 02 | 691 | 0.3+ | 0.0 | 2005 05 13 | 703 | 0.1− | 0.8− | 2006 10 20 | 644 | 0.4− | 0.5+ | |
| 2005 04 02 | 691 | 0.1+ | 0.4+ | 2005 05 13 | 703 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 2005 04 02 | 644 | 0.3+ | 0.4+ | 2005 05 13 | 703 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2005 04 02 | 644 | 0.5+ | 0.4+ | 2005 05 13 | 703 | 0.9− | 0.6− | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 2005 04 02 | 644 | 0.2+ | 0.9+ | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ | |

**(141962)∗ 2002 PC$_{120}$ = 1995 VH$_{13}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35325)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.47579 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26526343 | $\omega$ | 106.61282 | | +0.40713574 | +0.91326308 | |
| $a$ | 2.3989312 | $\Omega$ | 187.45660 | | −0.87334786 | +0.38482184 | |
| $e$ | 0.1088655 | $i$ | 6.11398 | | −0.26740233 | +0.13365142 | |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 14 | 691 | 0.1− | 0.7− | 2002 08 19 | 644 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.3+ | |
| 1991 09 14 | 691 | 0.1− | 0.9− | 2002 08 26 | 644 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.0 | |
| 1991 09 14 | 691 | 0.3+ | 0.7− | 2002 08 26 | 644 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.3+ | |
| 1995 11 15 | 691 | 0.1+ | 0.2+ | 2002 08 26 | 644 | 0.3− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.0 | |
| 1995 11 15 | 691 | 0.3− | 0.4+ | 2005 03 13 | G96 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.2+ | |
| 1995 11 15 | 691 | 0.2+ | 0.0 | 2005 03 13 | G96 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− | |
| 1995 11 20 | 691 | 0.1+ | 0.2+ | 2005 03 13 | G96 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 | |
| 1995 11 20 | 691 | 0.1+ | 0.1+ | 2005 03 13 | G96 | 0.7+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.1− | |
| 1995 11 20 | 691 | 0.2+ | 0.2+ | 2005 04 12 | 695 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.3+ | |
| 2002 07 21 | 644 | 0.4+ | 0.7+ | 2005 04 12 | 695 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1+ | |
| 2002 07 21 | 644 | 0.5+ | 0.2+ | 2005 04 14 | 691 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.0 | |
| 2002 07 21 | 644 | 0.7+ | 0.4+ | 2005 04 14 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.2+ | |
| 2002 08 08 | 699 | 0.4+ | 0.2− | 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 | |
| 2002 08 08 | 699 | 1.3+ | 0.3− | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.3− | |
| 2002 08 08 | 699 | 0.3+ | 0.5+ | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.2− | |
| 2002 08 08 | 699 | 0.3+ | 0.6− | 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.0 | |
| 2002 08 13 | 699 | 0.3− | 0.5− | 2005 04 21 | 705 | 0.4− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.0 | |
| 2002 08 13 | 699 | 1.0− | 0.3− | 2005 04 21 | 705 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− | |
| 2002 08 13 | 699 | (2.1− | 0.9+) | 2005 04 21 | 705 | 0.5− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.0 | |
| 2002 08 13 | 699 | 0.9− | 0.8+ | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1+ | |
| 2002 08 16 | 644 | 0.2+ | 0.1+ | 2005 05 13 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.0 | |
| 2002 08 16 | 644 | 0.1+ | 0.2+ | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.0 | |
| 2002 08 16 | 644 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.8− | |
| 2002 08 19 | 644 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.0 | |
| 2002 08 19 | 644 | 0.1+ | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.1− | |

**(141963)∗ 2002 PL$_{120}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.48348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27027689 | $\omega$ | 142.46276 | | +0.19247152 | −0.97712258 | |
| $a$ | 2.3691730 | $\Omega$ | 296.27733 | | +0.87410391 | +0.21261876 | |
| $e$ | 0.0878701 | $i$ | 5.79128 | | +0.44597878 | +0.00497194 | |
| $P$ | 3.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.0 | 0.7− | 2004 01 22 | 704 | 0.7+ | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.6+ | |
| 1999 12 15 | 704 | 0.4− | 0.8− | 2004 01 24 | 704 | 0.2+ | 0.8+ | 2006 08 30 | 699 | 0.5− | 0.9+ | |
| 1999 12 15 | 704 | 0.4+ | 0.3+ | 2004 01 24 | 704 | 0.0 | 0.6+ | 2006 08 30 | 699 | 1.4+ | 1.1+ | |
| 1999 12 15 | 704 | 0.2− | 0.1+ | 2004 01 24 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.1− | 1.3− | |
| 2002 08 12 | 704 | 0.3− | 0.8+ | 2004 01 24 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.6+ | 0.6− | |
| 2002 08 12 | 704 | 0.7+ | 0.3+ | 2004 01 24 | 704 | 0.2− | 0.9+ | 2006 09 16 | 703 | 0.8− | 0.1− | |
| 2002 08 12 | 704 | (1.0+ | 1.9+) | 2004 01 27 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 703 | 0.3− | 1.1− | |
| 2002 08 12 | 704 | 0.6+ | 0.8+ | 2004 01 27 | 704 | 0.2− | 0.4− | 2006 09 17 | 703 | (0.8+ | 2.1−) | |
| 2002 08 12 | 704 | 0.4+ | 0.8+ | 2004 01 27 | 704 | 0.6− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.4+ | |
| 2002 08 13 | 699 | 1.1− | 0.5+ | 2004 01 27 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.0 | 1.1− | |
| 2002 08 13 | 699 | 1.2− | 0.1+ | 2004 01 27 | 704 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.5− | |
| 2002 08 13 | 699 | 1.0− | 0.6+ | 2004 01 28 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.4− | 0.6− | |
| 2002 08 13 | 699 | 0.1− | 0.4− | 2004 01 28 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.0 | 0.9+ | |
| 2002 08 16 | 644 | 0.0 | 0.6+ | 2004 01 28 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 1.0+ | 0.8+ | |
| 2002 08 16 | 644 | 0.1+ | 0.7+ | 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.3+ | |
| 2002 08 16 | 644 | 0.2+ | 0.7+ | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.2+ | |
| 2002 08 17 | 608 | 0.7− | 0.2− | 2004 01 30 | 704 | 1.1+ | 0.4+ | 2006 09 20 | 699 | 0.1+ | 0.2− | |
| 2002 08 17 | 608 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.8− | 0.1+ | 2006 09 20 | 699 | 1.5− | 0.1+ | |
| 2002 08 17 | 608 | 0.3− | 0.2+ | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 09 20 | 699 | 0.4− | 0.1+ | |
| 2002 08 26 | 644 | 0.3− | 0.7+ | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2006 09 28 | 703 | 0.4− | 0.2− | |
| 2002 08 26 | 644 | 0.1− | 0.9+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.3− | |
| 2002 08 26 | 644 | 0.8− | 0.7+ | 2004 02 11 | 703 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.4− | 0.1+ | |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.3− | |
| 2002 08 28 | 644 | 0.2− | 0.5+ | 2004 02 11 | 703 | (1.7+ | 1.7+) | 2006 10 10 | 644 | 0.3− | 0.1+ | |
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2004 02 11 | 703 | 0.6− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.3+ | |
| 2002 09 06 | 704 | 0.5+ | 0.4+ | 2004 02 11 | 703 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.1+ | |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.6+ | |
| 2002 09 06 | 704 | 0.4− | 0.9+ | 2004 02 17 | 704 | 0.8+ | 1.1+ | 2006 10 17 | 703 | 0.8− | 0.1− | |
| 2002 09 06 | 704 | 0.3− | 0.7+ | 2004 02 17 | 704 | 0.7+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.0 | |
| 2002 09 06 | 704 | 0.7− | 0.5+ | 2004 02 17 | 704 | (0.1+ | 2.4−) | 2006 10 17 | 703 | 0.6− | 0.0 | |
| 2002 09 13 | 644 | 0.5− | 0.5+ | 2004 02 17 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 291 | 0.3+ | 0.2− | |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2004 02 22 | 704 | 0.6+ | 1.2+ | 2006 10 21 | 291 | 0.4+ | 0.1− | |
| 2002 09 13 | 644 | 0.7− | 0.6+ | 2004 02 22 | 704 | 0.1− | 1.0+ | 2006 10 21 | 291 | 0.4+ | 0.1− | |
| 2002 10 04 | 704 | 0.4+ | 0.7− | 2004 02 22 | 704 | 0.4+ | 1.2+ | 2006 10 31 | 703 | 0.1+ | 0.1+ | |
| 2002 10 04 | 704 | 0.3+ | 0.9+ | 2004 02 22 | 704 | 0.4+ | 0.4+ | 2006 10 31 | 703 | 0.3− | 1.2− | |
| 2002 10 04 | 704 | (0.4+ | 1.5+) | 2004 02 23 | 704 | 0.6+ | 0.9+ | 2006 10 31 | 703 | (1.9+ | 0.1+) | |
| 2003 12 19 | 291 | 0.7− | 0.0 | 2004 02 23 | 704 | 1.3+ | 0.2+ | 2006 10 31 | 703 | 0.5+ | 0.1− | |
| 2003 12 19 | 291 | 0.6− | 0.1− | 2004 02 23 | 704 | 0.8− | 1.1+ | 2006 11 14 | 703 | 0.1− | 0.2− | |
| 2003 12 19 | 291 | 0.8− | 0.0 | 2004 03 08 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.1− | 1.0+ | |
| 2004 01 21 | 704 | 0.4+ | 0.3+ | 2004 03 08 | 644 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.7+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 704 | 0.4+ | 0.4+ | 2004 03 08 | 644 | 0.4+ | 0.4+ | 2006 11 14 | 703 | 0.6− | 1.1− |
| 2004 01 21 | 704 | 0.2+ | 0.4+ | 2004 03 10 | 644 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 1.8+ | 0.3+ |
| 2004 01 21 | 704 | 1.0+ | 0.0 | 2004 03 10 | 644 | 0.6+ | 0.4+ | 2006 11 29 | 704 | 1.1+ | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 0.5+ | 2004 03 10 | 644 | 0.5+ | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.0 |
| 2004 01 22 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 1.2− | 0.4+ | | | | |

**(141964)∗ 2002 PV$_{120}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.78881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29263620 | $\omega$ | 84.71095 | | +0.00746658 | +0.99992143 | |
| $a$ | 2.2469014 | $\Omega$ | 185.74581 | | −0.95267833 | +0.00405320 | |
| $e$ | 0.1917938 | $i$ | 5.77197 | | −0.30388854 | +0.01186159 | |
| $P$ | 3.37 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | 0.9+ | 0.7+ | 2002 09 05 | 699 | 0.1+ | 0.1− | 2005 05 16 | 704 | 1.5+ | 0.7+ |
| 1998 03 22 | 704 | 0.6− | 0.5+ | 2002 09 05 | 699 | (0.5+ | 2.1+) | 2005 05 20 | G96 | 0.3− | 0.0 |
| 1998 03 22 | 704 | 0.0 | 0.1+ | 2002 09 05 | 699 | 1.0+ | 0.7+ | 2005 05 20 | G96 | 0.2− | 0.0 |
| 1998 03 22 | 704 | 0.2+ | 0.6− | 2002 09 05 | 699 | 0.4− | 0.2+ | 2005 05 20 | G96 | 0.2− | 0.4+ |
| 1998 03 22 | 704 | (6.8− | 0.8−) | 2002 09 06 | 704 | 0.2− | 0.2+ | 2005 05 20 | G96 | 0.6− | 0.2+ |
| 2002 08 08 | 699 | 0.4+ | 0.5+ | 2002 09 06 | 704 | 0.5− | 0.3+ | 2005 05 31 | 699 | 0.1− | 0.2− |
| 2002 08 08 | 699 | 0.2+ | 0.1+ | 2002 09 06 | 704 | 0.2+ | 0.1+ | 2005 05 31 | 699 | 0.3− | 0.6+ |
| 2002 08 08 | 699 | 0.3− | 0.5+ | 2002 09 06 | 704 | 0.3− | 0.1− | 2005 05 31 | 699 | 0.2+ | 0.5+ |
| 2002 08 08 | 699 | 0.2+ | 0.9− | 2002 09 26 | 644 | 0.3− | 0.2+ | 2005 05 31 | 699 | 0.7+ | 0.4− |
| 2002 08 09 | 608 | 0.0 | 0.4− | 2002 09 26 | 644 | 0.3− | 0.0 | 2005 06 04 | 703 | 0.4− | 0.5− |
| 2002 08 09 | 608 | 0.4+ | 0.5− | 2002 09 26 | 644 | 0.2− | 0.3− | 2005 06 04 | 703 | 0.2− | 0.5− |
| 2002 08 09 | 608 | 0.0 | 0.8− | 2005 03 13 | G96 | 0.2− | 0.2+ | 2005 06 04 | 703 | 0.2+ | 0.1+ |
| 2002 08 12 | 704 | 0.2− | 0.4− | 2005 03 13 | G96 | 0.3− | 0.2+ | 2005 06 04 | 703 | 1.2− | 0.5− |
| 2002 08 12 | 704 | 0.4+ | 0.0 | 2005 03 13 | G96 | 0.4− | 0.2+ | 2005 06 05 | 691 | 0.2− | 0.0 |
| 2002 08 12 | 704 | 0.4+ | 0.1− | 2005 03 13 | G96 | 0.8− | 0.8+ | 2005 06 05 | 691 | 0.0 | 0.2+ |
| 2002 08 12 | 704 | 0.8− | 0.5− | 2005 05 03 | 691 | 0.1+ | 0.1+ | 2005 06 05 | 691 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.0 | 0.3− | 2005 05 03 | 691 | 0.1+ | 0.3+ | 2005 06 07 | 699 | 0.8+ | 0.1+ |
| 2002 08 13 | 699 | 0.7− | 0.6+ | 2005 05 03 | 691 | 0.1+ | 0.1+ | 2005 06 07 | 699 | (1.1+ | 1.7+) |
| 2002 08 13 | 699 | 0.7+ | 0.2+ | 2005 05 03 | 704 | 0.3+ | 0.1− | 2005 06 07 | 699 | 0.5− | 0.3+ |
| 2002 08 13 | 699 | 0.7− | 0.8+ | 2005 05 03 | 704 | 0.2+ | 1.1− | 2005 06 07 | 699 | 0.6+ | 0.1+ |
| 2002 08 13 | 699 | 0.2+ | 1.2+ | 2005 05 03 | 704 | 0.2− | 0.2+ | 2005 06 17 | 691 | 0.2− | 0.1+ |
| 2002 08 16 | 644 | 0.0 | 0.5+ | 2005 05 03 | 704 | 0.3+ | 0.0 | 2005 06 17 | 691 | 0.1− | 0.1+ |
| 2002 08 16 | 644 | 0.2+ | 0.6+ | 2005 05 03 | 704 | 0.4+ | 0.6− | 2005 06 17 | 691 | 0.1+ | 0.0 |
| 2002 08 16 | 644 | 0.1+ | 0.5+ | 2005 05 08 | 704 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 1.1− | 0.1− |
| 2002 08 17 | 608 | 0.2+ | 0.6− | 2005 05 08 | 704 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2002 08 17 | 608 | 0.0 | 0.1− | 2005 05 08 | 704 | 0.4+ | 0.0 | 2006 10 23 | G96 | 0.6+ | 0.1− |
| 2002 08 17 | 608 | 0.3+ | 0.3− | 2005 05 08 | 704 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2002 08 26 | 644 | 0.2− | 0.1− | 2005 05 12 | 704 | (1.8+ | 0.9+) | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2002 08 26 | 644 | 0.2− | 0.1− | 2005 05 12 | 704 | 0.1+ | 0.9+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2002 08 26 | 644 | 0.4− | 0.3− | 2005 05 12 | 704 | 0.0 | 0.7+ | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2002 08 28 | 644 | 0.1− | 0.1− | 2005 05 16 | 704 | 0.6+ | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2005 05 16 | 704 | 0.8+ | 0.2+ | 2006 11 24 | 691 | 0.3− | 0.5+ |
| 2002 08 28 | 644 | 0.1+ | 0.1+ | 2005 05 16 | 704 | 0.0 | 0.5+ | 2006 11 24 | 691 | 0.1− | 0.6+ |

**(141965)∗ 2002 PA$_{121}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.14413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26688056 | $\omega$ | 132.47181 | | +0.85107244 | +0.52432423 | |
| $a$ | 2.3892307 | $\Omega$ | 195.96830 | | −0.50632416 | +0.80569495 | |
| $e$ | 0.1346663 | $i$ | 5.75045 | | −0.13896597 | +0.27557169 | |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 10 | 691 | 0.9+ | 0.0 | 2002 09 06 | 704 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 1994 06 10 | 691 | 1.6− | 0.8+ | 2002 09 06 | 704 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.3+ |
| 2001 03 27 | 691 | 0.3+ | 0.2+ | 2002 09 06 | 704 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2001 03 27 | 691 | 0.0 | 0.8+ | 2002 09 06 | 704 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2001 03 27 | 691 | 0.0 | 0.4+ | 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.2− | 0.2− |
| 2002 08 08 | 699 | 0.5+ | 0.7+ | 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2002 08 08 | 699 | 0.1− | 0.5+ | 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.7+ |
| 2002 08 08 | 699 | 0.2+ | 0.5− | 2002 10 03 | 704 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 08 08 | 699 | 0.8+ | 0.3− | 2002 10 03 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.5+ | 0.8− |
| 2002 08 12 | 704 | 0.7+ | 1.4+ | 2002 10 03 | 704 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 08 12 | 704 | 0.3+ | 0.9+ | 2002 10 03 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 08 12 | 704 | 0.4+ | 0.7+ | 2004 01 18 | 691 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 08 12 | 704 | 0.1− | 0.4+ | 2004 01 18 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 08 12 | 704 | 0.2+ | 0.4+ | 2004 01 18 | 691 | 0.5+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2002 08 13 | 699 | 0.9− | 0.1+ | 2005 04 05 | 691 | 0.3− | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2002 08 13 | 699 | 0.1− | 0.8+ | 2005 04 05 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.0 |
| 2002 08 13 | 699 | 0.7− | 0.4+ | 2005 04 05 | 691 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 08 13 | 699 | 0.8− | 0.1− | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 08 16 | 644 | 0.3+ | 0.4+ | 2005 04 30 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2002 08 16 | 644 | 0.1+ | 0.4+ | 2005 04 30 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2002 08 16 | 644 | 0.3+ | 0.5+ | 2005 05 14 | 644 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 08 16 | 644 | 0.2+ | 0.2+ | 2005 05 14 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.8− |
| 2002 08 16 | 644 | 0.4+ | 0.4+ | 2005 05 14 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 1.1+ |
| 2002 08 16 | 644 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2002 08 17 | 608 | 0.3− | 0.8− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 1.0− | 0.9+ |
| 2002 08 17 | 608 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 08 17 | 608 | 0.5− | 1.3− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 08 26 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 1.3− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2002 08 26 | 644 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 1.0+ |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.9− | 2006 11 17 | 703 | (2.5− | 3.7+) |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.3− |
| 2002 08 28 | 644 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.3− | 2006 11 17 | 703 | 1.3− | 0.4+ |
| 2002 09 05 | 699 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2002 09 05 | 699 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.7− |
| 2002 09 05 | 699 | 0.4− | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.0+ | 0.4+ |
| 2002 09 05 | 699 | 0.3+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.4+ |

**(141966)∗ 2002 PV$_{122}$**

Discovered 2002 Aug. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.01268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25946234 | $\omega$ | 153.97253 | | +0.97399560 | −0.21783495 | |
| $a$ | 2.4345563 | $\Omega$ | 218.77327 | | +0.18661457 | +0.92724112 | |
| $e$ | 0.1248156 | $i$ | 5.70879 | | +0.12848179 | +0.30458468 | |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 07 | 691 | 0.3− | 0.1− | 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.1− |
| 1991 11 07 | 691 | 0.1− | 0.6+ | 2005 06 16 | G96 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.2− | 0.4− |
| 1991 11 07 | 691 | 0.1− | 0.3+ | 2005 06 16 | G96 | 0.2− | 0.4− | 2006 09 29 | 704 | 0.3− | 1.0− |
| 1998 08 25 | 910 | 1.7+ | 0.5+ | 2005 06 16 | G96 | 0.7− | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 1998 08 25 | 910 | 1.6+ | 0.4+ | 2005 06 16 | G96 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 1998 08 25 | 910 | 1.6+ | 0.4+ | 2006 07 20 | 204 | 0.2− | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2000 01 07 | 704 | 0.6− | 1.3− | 2006 07 20 | 204 | (0.3+ | 1.7−) | 2006 10 03 | 704 | 0.4+ | 0.8− |
| 2000 01 07 | 704 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 10 03 | 704 | 0.1− | 0.2− |
| 2000 01 07 | 704 | 1.2+ | 0.3− | 2006 09 14 | 703 | 0.6− | 0.2− | 2006 10 03 | 704 | 0.2− | 0.6+ |
| 2000 01 07 | 704 | 0.0 | 0.5− | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.6+ | 0.7+ |
| 2002 08 03 | 599 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 10 03 | 704 | 0.5+ | 0.7+ |
| 2002 08 03 | 599 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.3− |
| 2002 08 03 | 599 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 08 03 | 599 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2002 08 12 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 08 12 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.8− |
| 2002 08 12 | 704 | 0.8− | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2002 08 12 | 704 | 0.3+ | 0.1− | 2006 09 18 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.9+ | 0.9− |
| 2002 08 12 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 1.5+ | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2002 08 14 | 699 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.8+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 08 14 | 699 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.1− | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 699 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2002 08 14 | 699 | 0.7+ | 0.7+ | 2006 09 18 | 699 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2002 08 16 | 644 | 0.0 | 1.1+ | 2006 09 18 | 699 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 08 16 | 644 | 0.1− | 0.7+ | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 08 16 | 644 | 0.2− | 0.9+ | 2006 09 18 | 699 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 08 18 | 608 | 0.9− | 0.4− | 2006 09 21 | 704 | 0.4+ | 1.0− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 08 18 | 608 | 1.0− | 0.7− | 2006 09 21 | 683 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 18 | 608 | 1.1− | 0.7− | 2006 09 21 | 704 | 0.2+ | 0.3+ | 2006 10 29 | 704 | 0.1− | 0.4+ |
| 2002 09 07 | 704 | 0.6− | 0.2− | 2006 09 21 | 704 | 1.4− | 0.2− | 2006 10 29 | 704 | (0.3− | 1.6+) |
| 2002 09 07 | 704 | 0.1− | 0.2− | 2006 09 21 | 683 | (2.5+ | 0.1+) | 2006 10 29 | 704 | 1.5− | 1.1+ |
| 2002 09 07 | 704 | 0.1+ | 0.5+ | 2006 09 21 | 683 | 0.3− | 0.3− | 2006 10 29 | 704 | 0.9− | 1.0+ |
| 2002 09 13 | 644 | 0.4− | 0.0 | 2006 09 22 | 683 | 0.7− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.1+ | 2006 09 22 | 683 | (0.1− | 1.6−) | 2006 11 11 | 703 | 0.6− | 0.7− |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 09 22 | 683 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.2− |
| 2002 09 15 | 608 | 0.2− | 0.7− | 2006 09 25 | 704 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.5− | 1.2− |
| 2002 09 15 | 608 | 0.4− | 0.5− | 2006 09 25 | 704 | (0.3− | 1.6+) | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2002 09 15 | 608 | 0.3− | 1.2− | 2006 09 25 | 704 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 09 22 | 644 | 1.2− | 0.1− | 2006 09 25 | 704 | 0.8+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 09 22 | 644 | (1.6− | 0.0 ) | 2006 09 25 | 704 | 0.0 | 0.3+ | 2006 11 23 | 291 | 0.2+ | 0.2+ |
| 2002 09 22 | 644 | 0.4− | 0.0 | 2006 09 25 | 683 | 0.1+ | 0.1− | 2006 11 23 | 291 | 0.3+ | 0.3+ |
| 2002 10 04 | 704 | 0.1+ | 0.6− | 2006 09 25 | 683 | 0.5− | 0.2+ | 2006 11 23 | 291 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 1.2+ | 1.0− | 2006 09 25 | 683 | 0.5− | 0.8+ | 2006 11 25 | G92 | 0.1+ | 0.9+ |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 683 | 0.3+ | 0.3+ | 2006 11 25 | G92 | 0.6− | 0.1− |
| 2002 10 04 | 704 | 0.2− | 0.4− | 2006 09 26 | 683 | (1.9+ | 1.7+) | 2006 11 25 | G92 | 0.6+ | 0.9+ |
| 2005 01 17 | 809 | 0.5− | 0.1+ | 2006 09 26 | 683 | 0.5− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2005 01 17 | 809 | 0.0 | 0.2+ | 2006 09 27 | 683 | 1.3+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2005 01 17 | 809 | 0.2− | 0.1+ | 2006 09 27 | 683 | (1.4+ | 2.3+) | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2006 09 27 | 683 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2005 03 10 | G96 | 0.5− | 0.2− | 2006 09 29 | 704 | 0.4− | 0.4− | | | | |
| 2005 03 10 | G96 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.6− | 0.2− | | | | |

**(141967)∗ 2002 PD$_{124}$**

Discovered 2002 Aug. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.10664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26420459 | $\omega$ | 260.82385 | | +0.55011797 | +0.83259431 | |
| $a$ | 2.4053363 | $\Omega$ | 42.75934 | | −0.72404196 | +0.51401204 | |
| $e$ | 0.1980115 | $i$ | 5.44936 | | −0.41609309 | +0.20634518 | |
| $P$ | 3.73 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 02 | 691 | 1.1− | 0.7+ | 2005 03 13 | 703 | 0.7+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 1991 10 02 | 691 | 0.1− | 0.6+ | 2005 03 13 | 703 | (2.1+ | 1.4+) | 2006 10 01 | 691 | 0.0 | 0.1− |
| 1991 10 02 | 691 | 0.1+ | 0.4+ | 2005 03 13 | 703 | 0.6− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2002 07 24 | 644 | 0.0 | 0.3+ | 2005 04 04 | 703 | 0.1− | 1.0+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2002 07 24 | 644 | 0.1− | 0.4+ | 2005 04 04 | 703 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 07 24 | 644 | 0.0 | 0.5+ | 2005 04 04 | 703 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 07 30 | 608 | (0.3+ | 2.4−) | 2005 04 04 | 703 | 0.8− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 07 30 | 608 | 0.6+ | 1.1− | 2005 04 05 | H06 | 1.1+ | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 07 30 | 608 | (0.5+ | 1.5+) | 2005 04 05 | H06 | (0.2− | 2.6+) | 2006 10 15 | 703 | (1.8− | 2.2+) |
| 2002 08 13 | 704 | 0.7− | 0.0 | 2005 04 05 | H06 | (1.6+ | 0.2−) | 2006 10 15 | 703 | (0.5+ | 2.1+) |
| 2002 08 13 | 704 | 0.3− | 0.2− | 2005 04 13 | 699 | 0.5+ | 0.8+ | 2006 10 15 | 703 | 0.3− | 0.6− |
| 2002 08 13 | 704 | 0.7− | 0.6− | 2005 04 13 | 699 | 1.3+ | 0.7+ | 2006 10 15 | 703 | (1.7− | 0.0 ) |
| 2002 08 13 | 704 | (2.0− | 0.5−) | 2005 04 13 | 699 | 0.1+ | 0.2+ | 2006 10 18 | 106 | 0.2− | 0.5− |
| 2002 08 13 | 704 | 0.8− | 0.5+ | 2005 04 13 | 699 | (2.0+ | 1.9+) | 2006 10 18 | 106 | 0.4− | 0.5− |
| 2002 08 13 | 644 | 0.4+ | 0.5− | 2005 05 04 | 644 | 0.4+ | 0.4+ | 2006 10 18 | 106 | 0.8+ | 0.2− |
| 2002 08 13 | 644 | 0.2+ | 0.6− | 2005 05 04 | 644 | 0.6+ | 0.1− | 2006 10 18 | 106 | 0.4− | 0.3+ |
| 2002 08 13 | 644 | 0.3+ | 0.5− | 2005 05 04 | 644 | 0.8+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 08 16 | 608 | 0.4+ | 0.4− | 2005 05 12 | G96 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 08 16 | 608 | 0.3+ | 0.3− | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 08 16 | 608 | 0.4+ | 0.4− | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2002 08 31 | 704 | 0.2+ | 0.2+ | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.3+ |
| 2002 08 31 | 704 | 0.2+ | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.5+ |
| 2002 08 31 | 704 | 0.2− | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2002 08 31 | 704 | 0.2− | 1.3+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2002 09 05 | 608 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 09 05 | 608 | 0.6+ | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.7− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 09 05 | 608 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.5− | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2002 09 16 | 644 | 0.2+ | 0.4− | 2006 09 14 | 703 | 0.2− | 1.3+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 09 16 | 644 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2002 09 16 | 644 | 0.0 | 0.1− | 2006 09 16 | 644 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2003 12 28 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 644 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | 0.6+ | 0.4+ | 2006 09 24 | 958 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2003 12 28 | 704 | 0.2+ | 0.1+ | 2006 09 24 | 958 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.9− |
| 2003 12 28 | 704 | 1.0+ | 0.1+ | 2006 09 24 | 958 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 2005 03 10 | 703 | 1.3− | 1.0− | 2006 10 01 | 704 | 0.7+ | 0.8+ | 2006 11 11 | 703 | 1.3− | 1.0+ |
| 2005 03 10 | 703 | (4.1+ | 1.8−) | 2006 10 01 | 704 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2005 03 10 | 703 | (1.0− | 1.8+) | 2006 10 01 | 704 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2005 03 10 | 703 | 1.2− | 1.1+ | 2006 10 01 | 704 | 0.6+ | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2005 03 13 | 703 | 0.5+ | 1.1+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.3− |

**(141968)∗ 2002 PL$_{124}$ = 2001 DB$_{94}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 35328)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.64486 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26169311 | $\omega$ | 18.56390 | | +0.03812154 | +0.99918665 | |
| $a$ | 2.4207012 | $\Omega$ | 253.62247 | | −0.91854147 | +0.02985878 | |
| $e$ | 0.1686104 | $i$ | 0.78503 | | −0.39348229 | +0.02710160 | |
| $P$ | 3.77 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.7+ | 1.2+ | 2005 03 01 | 691 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.1− | 0.7+ |
| 2001 02 19 | 704 | 0.6+ | 0.1− | 2005 03 01 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.6− | 0.3− |
| 2001 02 19 | 704 | 0.4− | 1.4+ | 2005 03 01 | 691 | 0.2+ | 0.4+ | 2006 09 12 | 703 | (2.8− | 1.0+) |
| 2001 02 19 | 704 | 1.4+ | 1.1+ | 2005 03 13 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.4− | 0.2+ |
| 2001 02 21 | 691 | 0.1− | 0.4+ | 2005 03 13 | 691 | 0.1− | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2001 02 21 | 691 | 0.0 | 0.4+ | 2005 03 13 | 691 | 0.0 | 0.4+ | 2006 09 17 | 691 | 0.4− | 0.1+ |
| 2001 02 21 | 691 | 0.0 | 0.4+ | 2005 03 17 | 691 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2002 07 23 | 644 | 0.3+ | 0.3+ | 2005 03 17 | 691 | 0.6+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2002 07 23 | 644 | 0.3− | 0.0 | 2005 03 17 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.1− |
| 2002 07 23 | 644 | 0.1− | 0.2+ | 2005 03 31 | 699 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2002 07 30 | 608 | 0.2+ | 0.9+ | 2005 03 31 | 699 | 1.0− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2002 07 30 | 608 | 0.3+ | 1.1+ | 2005 03 31 | 699 | 0.5+ | 1.0− | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2002 07 30 | 608 | 1.1+ | 1.1+ | 2005 03 31 | 699 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2002 08 08 | 699 | 0.3− | 0.3+ | 2005 04 04 | 704 | (1.7+ | 0.2+) | 2006 09 27 | 704 | 0.8+ | 0.2− |
| 2002 08 08 | 699 | 0.8− | 0.1− | 2005 04 04 | 703 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 1.3+ | 1.0+ |
| 2002 08 08 | 699 | 0.2− | 0.4+ | 2005 04 04 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.3− | 0.2− |
| 2002 08 08 | 699 | 1.0− | 0.7− | 2005 04 04 | 703 | 0.9− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 2002 08 13 | 291 | 0.4− | 0.1+ | 2005 04 04 | 703 | (0.2− | 2.7+) | 2006 09 27 | 704 | 0.2+ | 0.5+ |
| 2002 08 13 | 291 | 0.3− | 0.2+ | 2005 04 04 | 704 | 0.3+ | 0.5+ | 2006 09 29 | 704 | (0.1+ | 2.1+) |
| 2002 08 13 | 699 | 0.3− | 0.4+ | 2005 04 04 | 703 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.8+ |
| 2002 08 13 | 291 | 0.0 | 0.2+ | 2005 04 04 | 704 | 0.1+ | 0.6− | 2006 09 29 | 704 | 0.3+ | 1.5+ |
| 2002 08 13 | 699 | 0.2− | 0.0 | 2005 04 05 | G96 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.9+ | 0.9+ |
| 2002 08 13 | 699 | 0.9− | 0.4+ | 2005 04 05 | G96 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.5− | 0.1+ |
| 2002 08 13 | 699 | 0.3− | 0.3+ | 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.1+ |
| 2002 08 14 | 704 | 0.1+ | 0.1+ | 2005 04 05 | G96 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.5− | 0.2+ |
| 2002 08 14 | 704 | 0.4+ | 0.5+ | 2005 04 09 | 704 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2002 08 14 | 704 | 0.6− | 1.4+ | 2005 04 09 | 704 | 0.6+ | 0.6+ | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2002 08 16 | 608 | 0.7+ | 1.0+ | 2005 04 09 | 704 | (1.7+ | 1.5+) | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2002 08 16 | 608 | 1.3+ | 0.6+ | 2005 04 09 | 704 | 1.2+ | 1.4+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2002 08 16 | 608 | 1.2+ | 0.9+ | 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2002 08 17 | 644 | 0.3− | 0.5+ | 2005 04 12 | G96 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2002 08 17 | 644 | 0.3− | 0.4+ | 2005 04 12 | G96 | 0.6− | 0.6− | 2006 10 17 | G96 | 0.3− | 0.3+ |
| 2002 08 17 | 644 | 0.4− | 0.4+ | 2005 04 12 | G96 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.7+ |
| 2002 09 05 | 704 | 0.3− | 0.6+ | 2005 05 22 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.6+ |
| 2002 09 05 | 704 | 0.3− | 0.1− | 2005 05 22 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2005 05 22 | 644 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | 1.2− | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.7− | 0.8+ | 2006 08 28 | 703 | 0.9+ | 1.4− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2003 12 19 | 291 | 0.0 | 0.2+ | 2006 08 28 | 703 | (3.1− | 1.6−) | 2006 10 22 | G96 | 0.3+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 291 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.5− | 0.3− | |
| 2003 12 19 | 291 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.5− | 0.1− | |

**(141969)∗ 2002 $PO_{124}$ = 2000 $CP_{18}$**

Discovered 2002 Aug. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35329)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.89744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25742495 | $\omega$ | 248.35509 | | +0.75837448 | −0.64391905 | |
| $a$ | 2.4473850 | $\Omega$ | 151.43122 | | +0.64838986 | +0.72934041 | |
| $e$ | 0.1866977 | $i$ | 12.21432 | | +0.06677384 | +0.23115110 | |
| $P$ | 3.83 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.5+ | 0.4+ | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 17 | 699 | 0.1+ | 0.0 |
| 2000 02 02 | 704 | 0.2+ | 1.2+ | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.1+ | 0.1+ |
| 2000 02 02 | 704 | 0.3− | 0.5+ | 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 09 17 | 699 | 0.0 | 0.5+ |
| 2000 02 02 | 704 | 0.7+ | 0.6+ | 2004 02 13 | 291 | (2.1+ | 0.1−) | 2006 09 17 | 699 | 0.2− | 0.4+ |
| 2000 02 04 | 704 | 0.4+ | 0.0 | 2004 02 13 | 291 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.0 |
| 2000 02 04 | 704 | 0.3− | 0.1+ | 2004 02 13 | 291 | 0.4+ | 0.6+ | 2006 09 19 | 703 | 0.5− | 0.4+ |
| 2000 02 04 | 704 | 0.6− | 0.3+ | 2004 02 17 | 704 | 0.3− | 0.8+ | 2006 09 19 | 703 | 0.3+ | 0.1+ |
| 2000 02 04 | 704 | 0.7− | 1.6+ | 2004 02 17 | 704 | (0.3+ | 1.7+) | 2006 09 19 | 703 | 0.7− | 0.3− |
| 2002 08 08 | 699 | (1.9− | 0.1−) | 2004 02 17 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.2− | 0.5− |
| 2002 08 08 | 699 | 1.0− | 0.8+ | 2004 02 17 | 704 | 0.0 | 1.2+ | 2006 09 25 | 703 | 0.2− | 0.7− |
| 2002 08 08 | 699 | 0.4− | 1.2+ | 2004 02 17 | 704 | 0.8− | 0.7+ | 2006 09 25 | 703 | 0.6− | 0.5− |
| 2002 08 08 | 699 | 0.3− | 1.3+ | 2004 02 26 | 704 | 0.3− | 1.1+ | 2006 09 25 | 703 | 0.0 | 0.1+ |
| 2002 08 13 | 699 | 0.2− | 0.3+ | 2004 02 26 | 704 | 1.5+ | 0.6+ | 2006 10 04 | 703 | 0.9+ | 0.3+ |
| 2002 08 13 | 699 | 0.7− | 0.2+ | 2004 02 26 | 704 | 0.4+ | 1.2+ | 2006 10 04 | 703 | 0.7+ | 1.1+ |
| 2002 08 13 | 699 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.9+ | 0.3+ | 2006 10 04 | 703 | 0.1− | 0.5− |
| 2002 08 13 | 699 | 1.1− | 0.3+ | 2004 02 26 | 704 | 0.5+ | 0.9− | 2006 10 04 | 703 | 0.3− | 1.5+ |
| 2002 08 16 | 608 | 0.5− | 0.3+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2002 08 16 | 608 | 0.4− | 0.7+ | 2004 02 29 | 691 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 08 16 | 608 | 0.4− | 0.6+ | 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2002 08 17 | 644 | 0.4+ | 0.4+ | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2002 08 17 | 644 | 0.2+ | 0.4+ | 2004 03 18 | 691 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2005 05 06 | 691 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2005 05 06 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2002 08 27 | 644 | 0.3− | 0.2+ | 2005 05 06 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 09 02 | 291 | 0.4+ | 0.6+ | 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.4+ | 0.1+ |
| 2002 09 02 | 291 | 0.3+ | 0.5+ | 2006 08 19 | 644 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.4− |
| 2002 09 02 | 291 | 0.0 | 0.5+ | 2006 08 19 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.2− | 1.2+ |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2006 08 20 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.4+ | 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.5− |
| 2002 09 05 | 704 | 0.9+ | 0.0 | 2006 08 20 | 691 | 0.1− | 0.7+ | 2006 11 27 | 703 | (0.7− | 4.4−) |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.9+ | 2006 11 27 | 703 | 0.7− | 0.8− |
| 2002 09 15 | 644 | 0.6− | 0.3+ | 2006 08 28 | 699 | (0.4+ | 1.8+) | 2006 11 27 | 703 | 1.4− | 1.5+ |
| 2002 09 15 | 644 | 0.3− | 0.0 | 2006 08 28 | 699 | 1.1+ | 0.9+ | | | | |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2006 08 28 | 699 | (1.8+ | 0.9+) | | | | |

**(141970)∗ 2002 $PL_{125}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.99457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26497901 | $\omega$ | 21.58844 | | +0.97145404 | +0.23718217 | |
| $a$ | 2.4006475 | $\Omega$ | 324.69024 | | −0.21881420 | +0.88829614 | |
| $e$ | 0.2015797 | $i$ | 0.46151 | | −0.09163736 | +0.39328690 | |
| $P$ | 3.72 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 15 | 691 | 0.1− | 0.5− | 2002 09 05 | 704 | (0.1+ | 1.6+) | 2006 10 20 | 691 | 0.1− | 0.2− |
| 1991 09 15 | 691 | 0.2+ | 0.3− | 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 10 20 | 683 | 0.1− | 0.4− |
| 1991 09 15 | 691 | 0.3+ | 0.6− | 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 10 20 | 683 | 0.5+ | 0.7− |
| 2001 03 27 | 691 | 0.0 | 0.6+ | 2002 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 683 | 0.1− | 0.2+ |
| 2001 03 27 | 691 | 0.3+ | 0.7+ | 2002 09 15 | 644 | 0.4− | 0.6+ | 2006 10 21 | 703 | 0.7+ | 0.5− |
| 2001 03 27 | 691 | 0.4− | 0.2+ | 2002 09 15 | 644 | 0.5− | 0.3+ | 2006 10 21 | 703 | 1.4+ | 0.7+ |
| 2002 08 08 | 644 | 0.4− | 0.1+ | 2002 09 15 | 644 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.4− |
| 2002 08 08 | 644 | 0.1− | 0.2+ | 2002 10 11 | 291 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.6− |
| 2002 08 08 | 644 | 0.0 | 0.1+ | 2002 10 11 | 291 | 0.2+ | 0.3+ | 2006 10 22 | 683 | 0.8+ | 0.7− |
| 2002 08 14 | 704 | 0.5− | 0.4+ | 2002 10 11 | 291 | 0.5+ | 0.7+ | 2006 10 22 | 683 | 0.9+ | 0.3− |
| 2002 08 14 | 704 | 0.3− | 0.3+ | 2004 01 19 | 691 | 0.0 | 0.4+ | 2006 10 22 | 683 | 1.1+ | 0.2− |
| 2002 08 14 | 704 | 0.0 | 0.2+ | 2004 01 19 | 691 | 0.2− | 0.4+ | 2006 10 23 | 683 | 0.6+ | 0.6+ |
| 2002 08 14 | 704 | 0.2− | 0.1− | 2004 01 19 | 691 | 0.1− | 0.5+ | 2006 10 23 | 704 | 0.2+ | 1.5+ |
| 2002 08 14 | 704 | 0.3− | 0.2− | 2004 02 12 | 691 | 1.0+ | 0.2+ | 2006 10 23 | 683 | 0.1+ | 1.3+ |
| 2002 08 16 | 608 | 0.2+ | 0.1+ | 2004 02 12 | 691 | 0.5+ | 0.3+ | 2006 10 23 | 704 | 0.4+ | 1.0+ |
| 2002 08 16 | 608 | 0.2− | 0.1+ | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 683 | (2.8− | 0.6+) |
| 2002 08 16 | 608 | 0.4− | 0.1+ | 2006 08 30 | 699 | 0.2− | 0.2− | 2006 10 23 | 704 | (0.6+ | 1.7+) |
| 2002 08 17 | 644 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.1− | 1.2+ | 2006 10 23 | 704 | 0.2+ | 1.4+ |
| 2002 08 17 | 644 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.5− | 0.5+ | 2006 10 27 | 683 | (1.9+ | 1.5+) |
| 2002 08 17 | 644 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 1.3− | 0.2− | 2006 10 27 | 683 | (1.6+ | 0.7+) |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 27 | 683 | 0.7− | 0.9+ |
| 2002 08 27 | 644 | 0.4− | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2002 08 27 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2002 08 27 | 644 | 0.3− | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2002 08 27 | 644 | 0.1+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2002 08 27 | 644 | 0.1− | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2002 09 01 | 699 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.7− | 0.7− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 09 01 | 699 | 0.3− | 0.8+ | 2006 09 27 | 704 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2002 09 01 | 699 | 0.2− | 0.9+ | 2006 09 27 | 704 | 0.7− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 09 01 | 699 | 0.7− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.5− | 0.1+ |
| 2002 09 03 | 608 | 0.7+ | 0.7+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 09 03 | 608 | 0.4+ | 0.9+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2002 09 03 | 608 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2002 09 04 | 644 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1+ | 1.7+ |
| 2002 09 04 | 644 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2002 09 04 | 644 | 0.0 | 0.1+ | 2006 10 19 | 683 | 1.0+ | 1.4− | 2006 11 18 | 704 | 0.3+ | 1.6+ |
| 2002 09 05 | 704 | 1.4− | 1.3− | 2006 10 19 | 683 | 0.3− | 1.0− | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2006 10 19 | 683 | (1.5+ | 2.2+) | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.0 | | | | |

**(141971)∗ 2002 $PM_{125}$ = 2005 $GV_{207}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75462)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.98782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24317250 | $\omega$ | 104.55141 | | +0.34120249 | +0.93997787 | |
| $a$ | 2.5421026 | $\Omega$ | 185.40578 | | −0.88063792 | +0.31789105 | |
| $e$ | 0.1967123 | $i$ | 2.88410 | | −0.32872134 | +0.12404389 | |
| $P$ | 4.05 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.8− | 0.5+ | 2002 08 27 | 644 | 0.1+ | 0.1+ | 2006 08 14 | E12 | 0.2+ | 0.2− |
| 1998 08 17 | 704 | 0.0 | 1.4+ | 2002 09 05 | 704 | 0.8+ | 0.9+ | 2006 08 14 | E12 | 0.2+ | 0.8− |
| 1998 08 17 | 704 | (0.7+ | 2.3+) | 2002 09 05 | 704 | 0.6+ | 1.0+ | 2006 08 14 | E12 | 0.2+ | 0.6− |
| 1998 08 17 | 704 | (4.5− | 0.0 ) | 2002 09 05 | 704 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.2+ | 0.1− |
| 1998 08 23 | 691 | 0.6− | 0.1+ | 2002 09 05 | 704 | 0.9+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3− |
| 1998 08 23 | 691 | 0.7− | 0.1− | 2002 09 05 | 704 | 1.2+ | 1.2+ | 2006 08 16 | 644 | 0.0 | 0.3− |
| 1998 08 23 | 691 | 0.4− | 0.1+ | 2002 09 14 | 644 | 0.2+ | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.4− |
| 1998 08 24 | 910 | 0.5+ | 0.2+ | 2002 09 14 | 644 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.0 | 0.3− |
| 1998 08 24 | 910 | 0.4+ | 0.4+ | 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.2− |
| 1998 08 24 | 910 | 0.4+ | 0.3+ | 2005 02 02 | 691 | 0.1+ | 0.5+ | 2006 08 18 | 644 | 0.2+ | 0.2− |
| 2001 03 18 | 691 | 0.3+ | 0.1+ | 2005 02 02 | 691 | 0.2+ | 0.2+ | 2006 08 18 | 644 | 0.3+ | 0.0 |
| 2001 03 18 | 691 | 0.1+ | 0.2− | 2005 02 02 | 691 | 0.1+ | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.2− |
| 2001 03 18 | 691 | 0.1+ | 0.2+ | 2005 04 09 | G96 | 0.4− | 1.4+ | 2006 08 24 | 644 | 0.5+ | 0.3− |
| 2002 08 08 | 699 | 0.2+ | 0.9+ | 2005 04 09 | G96 | 0.3− | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2002 08 08 | 699 | 0.9+ | 1.0+ | 2005 04 09 | G96 | 0.4+ | 0.0 | 2006 08 24 | 644 | 0.2+ | 0.3− |
| 2002 08 08 | 699 | 0.8+ | 1.2+ | 2005 04 09 | G96 | 0.5− | 0.1− | 2006 08 26 | 699 | 1.3− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 699 | 1.2− | 0.7− | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 08 26 | 699 | 1.5− | 0.0 | | |
| 2002 08 13 | 699 | 0.2+ | 0.3+ | 2005 05 13 | G96 | 0.6+ | 0.1+ | 2006 08 26 | 699 | 0.1+ | 0.7+ | | |
| 2002 08 13 | 699 | 0.1− | 0.3+ | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 08 26 | 699 | 1.2− | 1.4+ | | |
| 2002 08 13 | 699 | 0.8− | 0.4+ | 2005 05 13 | G96 | 0.3− | 0.2− | 2006 08 30 | 704 | 0.6− | 0.0 | | |
| 2002 08 13 | 699 | 0.2+ | 0.6+ | 2006 06 23 | 644 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.0 | 0.7− | | |
| 2002 08 14 | 704 | 1.3+ | 0.7+ | 2006 06 23 | 644 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.7− | 0.8− | | |
| 2002 08 14 | 704 | 0.0 | 0.1+ | 2006 06 23 | 644 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.8− | 0.5− | | |
| 2002 08 14 | 704 | 0.7+ | 0.3+ | 2006 07 20 | A50 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.0 | | |
| 2002 08 14 | 704 | 0.6+ | 0.0 | 2006 07 20 | A50 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.3− | | |
| 2002 08 14 | 704 | 0.5− | 0.0 | 2006 07 21 | 644 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− | | |
| 2002 08 16 | 608 | 0.2+ | 0.5− | 2006 07 21 | 644 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.5− | | |
| 2002 08 16 | 608 | 0.4+ | 0.2+ | 2006 07 21 | 644 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.3− | | |
| 2002 08 16 | 608 | 0.3+ | 0.4− | 2006 07 21 | A50 | 0.3+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.2− | | |
| 2002 08 17 | 644 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.2− | 0.2− | | |
| 2002 08 17 | 644 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2002 08 27 | 644 | 0.2+ | 0.1+ | 2006 08 14 | E12 | 0.2− | 0.4− | | | | | | |
| 2002 08 27 | 644 | 0.1+ | 0.0 | 2006 08 14 | E12 | 0.4+ | 0.1− | | | | | | |

**(141972)∗ 2002 PO$_{125}$ = 1999 XR$_{222}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35330)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.76297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26819190 | $\omega$ | 42.98652 | | +0.98147776 | +0.17445364 | |
| $a$ | 2.3814362 | $\Omega$ | 306.79959 | | −0.19134122 | +0.87220436 | |
| $e$ | 0.1529807 | $i$ | 5.67394 | | −0.00948350 | +0.45697427 | |
| $P$ | 3.68 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.5+ | 0.9+ | 2003 12 27 | 704 | 0.3+ | 1.3+ | 2006 08 30 | 704 | 0.3+ | 0.1+ | | |
| 1999 12 15 | 704 | 0.3− | 0.0 | 2004 01 12 | 644 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.2+ | 0.9− | | |
| 1999 12 15 | 704 | 0.7− | 1.2− | 2004 01 12 | 644 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.2+ | 0.5− | | |
| 1999 12 16 | 704 | 0.1− | 0.4− | 2004 01 12 | 644 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.1− | 0.7+ | | |
| 1999 12 16 | 704 | 0.4+ | 0.5− | 2004 01 17 | 644 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 1999 12 16 | 704 | 0.2− | 0.7− | 2004 01 17 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 1999 12 16 | 704 | 0.0 | 0.1+ | 2004 01 17 | 644 | 0.6+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 07 30 | 608 | 0.0 | 1.1+ | 2004 01 21 | 704 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2002 07 30 | 608 | 0.2− | 1.1+ | 2004 01 21 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2002 07 30 | 608 | 0.7− | 1.5+ | 2004 01 21 | 704 | 1.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 08 08 | 699 | 0.2− | 0.4+ | 2004 01 24 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 08 08 | 699 | 0.1− | 1.2+ | 2004 01 24 | 704 | 1.1+ | 0.9+ | 2006 10 11 | 644 | 0.3+ | 0.1− | | |
| 2002 08 08 | 699 | 0.4+ | 1.0+ | 2004 01 24 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2002 08 08 | 699 | 0.1− | 0.9+ | 2004 01 24 | 704 | 0.1+ | 1.4+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 14 | 704 | 0.4− | 0.8+ | 2004 01 24 | 704 | 0.5− | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.3− | | |
| 2002 08 14 | 704 | 0.1+ | 0.9+ | 2004 01 26 | 699 | 1.2+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2002 08 14 | 704 | 0.1− | 0.6+ | 2004 01 26 | 699 | 0.6+ | 0.5+ | 2006 10 19 | 703 | (0.6+ | 1.9−) | | |
| 2002 08 14 | 704 | 0.2− | 0.6+ | 2004 01 26 | 699 | 0.0 | 0.9− | 2006 10 19 | 703 | 0.4+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.2− | 0.8+ | 2004 01 26 | 699 | (1.7− | 0.2−) | 2006 10 19 | 703 | 0.4+ | 0.2+ | | |
| 2002 08 16 | 608 | 0.8− | 0.6− | 2004 01 28 | 704 | 0.1− | 0.8+ | 2006 10 19 | 703 | 0.6+ | 0.1+ | | |
| 2002 08 16 | 608 | 0.8− | 0.4− | 2004 01 28 | 704 | 0.1+ | 0.6+ | 2006 10 19 | A50 | 0.5+ | 0.2+ | | |
| 2002 08 16 | 608 | 0.9− | 0.7− | 2004 01 28 | 704 | 0.9− | 0.3+ | 2006 10 19 | A50 | 0.0 | 0.2− | | |
| 2002 08 17 | 644 | 0.0 | 1.5+ | 2004 01 28 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.2− | | |
| 2002 08 17 | 644 | 0.1− | 1.4+ | 2004 01 29 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2002 08 17 | 644 | 0.1− | 1.5+ | 2004 01 29 | 704 | (2.1+ | 0.4+) | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2002 08 18 | 644 | 0.6− | 0.6+ | 2004 01 29 | 704 | 0.6+ | 0.4− | 2006 10 21 | 704 | 0.1− | 0.0 | | |
| 2002 08 18 | 644 | 0.4− | 0.5+ | 2004 01 29 | 704 | 0.9+ | 0.0 | 2006 10 21 | 704 | 0.3− | 0.1− | | |
| 2002 08 18 | 644 | 0.5− | 0.6+ | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 10 21 | 704 | 0.5− | 0.2− | | |
| 2002 08 29 | 644 | 0.4− | 0.7+ | 2004 01 30 | 691 | 0.0 | 0.3+ | 2006 10 21 | 704 | 0.3+ | 0.6+ | | |
| 2002 08 29 | 644 | 0.4− | 0.7+ | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.5− | 0.8+ | 2004 01 30 | 704 | (2.0+ | 0.1−) | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2002 09 03 | 608 | 0.5+ | 0.6+ | 2004 01 30 | 704 | 1.2+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2002 09 03 | 608 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.8+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2002 09 03 | 608 | (0.0 | 3.1+) | 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2002 09 06 | 704 | 0.4− | 0.2− | 2004 01 30 | 704 | (2.2+ | 0.3+) | 2006 10 23 | 644 | 0.1− | 0.3− | | |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.2− | | |
| 2002 09 06 | 704 | 0.2− | 0.1− | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.4− | | |
| 2002 09 06 | 704 | 0.1− | 0.1− | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.4− | | |
| 2002 09 06 | 704 | 0.0 | 0.5− | 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.5− | 0.2− | | |
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2004 02 14 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.3− | | |
| 2002 09 13 | 644 | 0.5− | 0.5+ | 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.0 | | |
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2004 04 14 | 645 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.5− | 0.5− | | |
| 2002 09 16 | 608 | 0.4− | 0.1− | 2004 04 14 | 645 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.7+ | 0.2− | | |
| 2002 09 16 | 608 | 0.2− | 0.0 | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.8− | 1.2− | | |
| 2002 09 16 | 608 | 0.5− | 0.0 | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.8+ | 0.5− | | |
| 2002 10 29 | 704 | 0.2+ | 0.0 | 2005 05 12 | 703 | (0.2+ | 2.4+) | 2006 11 17 | 704 | 0.1+ | 0.1− | | |
| 2002 10 29 | 704 | 0.4− | 1.3+ | 2005 05 12 | 703 | (0.2+ | 2.4+) | 2006 11 17 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 29 | 704 | 0.3+ | 0.0 | 2005 05 12 | 703 | 0.5+ | 0.1+ | 2006 11 23 | 703 | 0.5+ | 0.4− | | |
| 2002 10 29 | 704 | 0.2− | 0.3− | 2005 05 12 | 703 | 0.9− | 0.2− | 2006 11 23 | 703 | 0.3− | 0.4− | | |
| 2003 12 27 | 704 | 0.2− | 0.5+ | 2005 05 16 | 644 | 0.5+ | 0.8+ | 2006 11 23 | 703 | 0.1− | 0.1− | | |
| 2003 12 27 | 704 | 0.3− | 1.2+ | 2005 05 16 | 644 | 0.3+ | 0.8+ | 2006 11 23 | 703 | 0.4− | 0.1+ | | |
| 2003 12 27 | 704 | 0.0 | 0.8+ | 2005 05 16 | 644 | 0.4+ | 0.7+ | | | | | | |

**(141973)∗ 2002 PR$_{125}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.50556 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26371526 | $\omega$ | 213.39681 | | +0.99025897 | −0.12485598 | |
| $a$ | 2.4083109 | $\Omega$ | 153.56899 | | +0.13722855 | +0.95008396 | |
| $e$ | 0.1253480 | $i$ | 7.95847 | | −0.02356897 | +0.28592212 | |
| $P$ | 3.74 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.9− | 0.8− | 2004 02 11 | 644 | 0.1+ | 0.7+ | 2006 09 26 | 704 | 0.2− | 0.1+ | | |
| 2000 01 07 | 704 | 0.7+ | 1.0− | 2004 02 11 | 699 | 1.3+ | 1.1+ | 2006 09 26 | 703 | 0.2− | 0.3− | | |
| 2000 01 07 | 704 | 0.4+ | 0.1+ | 2004 02 11 | 644 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.3+ | | |
| 2002 07 30 | 608 | 0.1+ | 0.9+ | 2004 02 11 | 699 | 0.7− | 0.3− | 2006 09 26 | 703 | 1.0− | 0.3− | | |
| 2002 07 30 | 608 | 0.0 | 0.3+ | 2004 02 11 | 644 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.0 | | |
| 2002 07 30 | 608 | 1.0+ | 0.3− | 2004 02 11 | 699 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.6+ | | |
| 2002 08 13 | 291 | 0.6+ | 0.2− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.7+ | 0.2+ | | |
| 2002 08 13 | 291 | 0.8+ | 0.3− | 2006 08 18 | 644 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.4+ | 1.4+ | | |
| 2002 08 13 | 699 | 0.1− | 0.5− | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.5+ | 0.0 | | |
| 2002 08 13 | 291 | 0.7+ | 0.2− | 2006 08 19 | 699 | 0.0 | 0.4− | 2006 09 30 | 704 | 0.7+ | 0.5+ | | |
| 2002 08 13 | 699 | 0.6+ | 0.3+ | 2006 08 19 | 699 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.7+ | | |
| 2002 08 13 | 699 | 0.1+ | 0.3+ | 2006 08 19 | 699 | 0.5+ | 0.9− | 2006 09 30 | 704 | 0.2+ | 0.7+ | | |
| 2002 08 13 | 699 | 0.4+ | 0.5+ | 2006 08 19 | 699 | 1.1+ | 0.3− | 2006 09 30 | 704 | 0.1− | 0.4+ | | |
| 2002 08 14 | 704 | (2.2− | 0.8+) | 2006 09 19 | 704 | 1.0+ | 0.5+ | 2006 09 30 | 704 | 0.4− | 0.3+ | | |
| 2002 08 14 | 704 | 1.0− | 0.4+ | 2006 09 19 | 704 | 1.5− | 0.5+ | 2006 10 01 | 461 | 0.2+ | 0.2+ | | |
| 2002 08 14 | 704 | 1.2− | 0.0 | 2006 09 19 | 704 | 0.4− | 0.6+ | 2006 10 01 | 461 | 0.1+ | 0.4+ | | |
| 2002 08 14 | 704 | 1.2− | 0.2+ | 2006 09 19 | 704 | 0.7+ | 0.1− | 2006 10 01 | 461 | 0.1− | 0.3+ | | |
| 2002 08 14 | 704 | 1.0− | 0.7+ | 2006 09 19 | 704 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.5+ | 0.0 | | |
| 2002 08 16 | 608 | 0.7− | 0.6+ | 2006 09 21 | 699 | 0.3− | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.1+ | | |
| 2002 08 16 | 608 | 0.5− | 0.8+ | 2006 09 21 | 699 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.1− | 0.3+ | | |
| 2002 08 16 | 608 | 0.6− | 0.6+ | 2006 09 21 | 699 | (1.8+ | 0.4−) | 2006 10 16 | 703 | 0.7+ | 0.3+ | | |
| 2002 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3− | | |
| 2002 08 17 | 644 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.2− | 1.4− | 2006 10 21 | 644 | 0.3+ | 0.3− | | |
| 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.9+ | 2006 10 21 | 644 | 0.3+ | 0.2− | | |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.6− | | |
| 2002 09 05 | 704 | 0.4− | 1.0+ | 2006 09 22 | 704 | 0.0 | 0.7+ | 2006 10 22 | 703 | 0.1+ | 1.2− | | |
| 2002 09 05 | 704 | 1.4− | 0.9+ | 2006 09 23 | 461 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.2− | 0.2− | | |
| 2002 09 05 | 704 | 1.1− | 0.1+ | 2006 09 23 | 461 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.4− | | |
| 2002 09 05 | 704 | 1.2− | 0.7+ | 2006 09 23 | 461 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2002 09 15 | 644 | 0.2− | 0.4− | 2006 09 24 | 461 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.5+ | 0.0 | | |
| 2002 09 15 | 644 | 0.4− | 0.6− | 2006 09 24 | 461 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2002 09 15 | 644 | 0.1+ | 0.3− | 2006 09 24 | 461 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2004 01 23 | 704 | 0.7+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2004 01 23 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2004 01 23 | 704 | 0.6− | 0.5− | 2006 09 25 | 699 | 0.9− | 0.7− | 2006 10 23 | 644 | 0.2+ | 0.2− | | |
| 2004 01 29 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2004 01 29 | 704 | (1.6− | 0.9+) | 2006 09 26 | 704 | 0.1+ | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2004 01 29 | 704 | 1.1+ | 1.2+ | 2006 09 26 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 1.0− | 0.9+ | 2006 09 26 | 704 | 0.7− | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.1− | | |
| 2004 02 11 | 699 | 0.4− | 0.3+ | 2006 09 26 | 704 | 1.3− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.3− | | |

**(141974)∗ 2002 PO$_{126}$ = 2000 AH$_{38}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35332)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.68554 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26560316 | $\omega$ | 355.77794 | | +0.92774595 | −0.37188001 | |
| $a$ | 2.3968851 | $\Omega$ | 26.12316 | | +0.34447710 | +0.82077359 | |
| $e$ | 0.1952894 | $i$ | 4.10348 | | +0.14360702 | +0.43363115 | |
| $P$ | 3.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.3− | 0.1− | | |
| 1993 02 26 | 691 | 0.4+ | 0.0 | 2006 08 28 | 683 | 0.4+ | 0.6− | 2006 10 23 | 704 | 0.2+ | 0.1− | | |
| 1993 02 26 | 691 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 10 23 | 704 | 0.1+ | 0.4+ | | |
| 1997 04 16 | 691 | 0.7− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 10 23 | 704 | 0.2+ | 0.2− | | |
| 1997 04 16 | 691 | (0.7− | 2.0−) | 2006 08 28 | 683 | 1.2+ | 0.5+ | 2006 10 23 | 704 | 0.6+ | 0.0 | | |
| 1997 04 16 | 691 | 0.7− | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2000 01 03 | 704 | 0.0 | 0.7− | 2006 08 29 | 683 | (3.3+ | 0.5−) | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 2000 01 03 | 704 | 1.0− | 0.3− | 2006 08 29 | 683 | 0.7+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 2000 01 03 | 704 | 0.5− | 0.4+ | 2006 08 29 | 683 | (1.6+ | 0.5−) | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2000 01 03 | 704 | 0.6+ | 0.5+ | 2006 08 30 | 699 | 0.9+ | 0.8+ | 2006 10 28 | 704 | 0.1+ | 0.3+ | | |
| 2000 01 04 | 704 | 0.6− | 0.1+ | 2006 08 30 | 699 | 0.8− | 0.9+ | 2006 10 28 | 704 | 1.2− | 1.2+ | | |
| 2000 01 04 | 704 | 0.4− | 0.1− | 2006 08 30 | 699 | (1.7− | 0.5+) | 2006 10 28 | 704 | 0.6− | 0.3+ | | |
| 2000 01 04 | 704 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.3+ | 0.4+ | 2006 10 28 | 704 | 0.7+ | 0.3+ | | |
| 2000 01 04 | 704 | 0.5− | 0.2+ | 2006 08 31 | 704 | 0.2− | 0.7− | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2000 01 04 | 704 | 0.7+ | 0.3− | 2006 08 31 | 704 | 0.3− | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.1+ | | |
| 2001 04 13 | 691 | 0.4+ | 0.6+ | 2006 08 31 | 704 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.1+ | | |
| 2001 04 13 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.2− | 0.2− | | |
| 2001 04 13 | 691 | 0.6+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.3− | 0.1− | | |
| 2002 07 24 | 644 | 0.1+ | 0.7+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.2− | 0.0 | | |
| 2002 07 24 | 644 | 0.0 | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.3− | | |
| 2002 07 24 | 644 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2− | | |
| 2002 08 11 | 644 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2− | | |
| 2002 08 11 | 644 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 1.0+ | 0.4+ | | |
| 2002 08 11 | 644 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.8+ | 0.5− | 2006 11 11 | 703 | 0.0 | 0.3+ | | |
| 2002 08 14 | 704 | 1.2− | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.3+ | 0.3+ | | |
| 2002 08 14 | 704 | 0.7− | 1.5+ | 2006 09 29 | 704 | 0.6+ | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.3− | | |
| 2002 08 14 | 704 | 0.5− | 0.9+ | 2006 09 29 | 704 | (1.0+ | 1.6−) | 2006 11 15 | 691 | (0.3+ | 1.8−) | | |
| 2002 08 14 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 1.2+ | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 14 | 704 | (0.0 | 1.6+) | 2006 10 03 | 704 | 0.6+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | | |
| 2002 08 16 | 608 | 0.5+ | 0.2+ | 2006 10 03 | 704 | 0.5+ | 0.3− | 2006 11 16 | 704 | 0.2− | 0.5+ | | |
| 2002 08 16 | 608 | 0.4+ | 0.0 | 2006 10 03 | 704 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.5+ | | |
| 2002 08 16 | 608 | 0.6+ | 0.2− | 2006 10 03 | 704 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.8+ | | |
| 2002 08 19 | 644 | 0.3+ | 0.3− | 2006 10 03 | 704 | 0.1− | 0.4+ | 2006 11 16 | 704 | (1.6+ | 3.6+) | | |
| 2002 08 19 | 644 | 0.2+ | 0.4− | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 16 | 704 | 1.4− | 1.2+ | | |
| 2002 08 19 | 644 | 0.0 | 0.5− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 17 | 691 | 0.4+ | 0.1+ | | |
| 2002 08 30 | 644 | 0.5− | 1.1− | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 17 | 691 | 0.2+ | 0.0 | | |
| 2002 08 30 | 644 | 0.3− | 0.2− | 2006 10 04 | G96 | 0.4− | 0.5− | 2006 11 17 | 691 | 0.1+ | 0.1− | | |
| 2002 08 30 | 644 | 0.2− | 0.3− | 2006 10 04 | 703 | 0.5− | 0.5− | 2006 11 17 | 703 | 0.0 | 0.6+ | | |
| 2002 09 05 | 704 | 0.8− | 0.8− | 2006 10 04 | 703 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.9+ | 1.1+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2006 10 04 | 703 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.2+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.7− | 2006 10 04 | 703 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.1+ | | |
| 2002 09 05 | 704 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 1.1+ | | |
| 2002 09 05 | 704 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4− | 1.2+ | | |
| 2002 09 06 | 704 | (1.6+ | 0.4+) | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.7+ | | |
| 2002 09 06 | 704 | 0.6+ | 0.5− | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.7− | 0.4+ | | |
| 2002 09 06 | 704 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.4− | 0.3+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 1.1+ | | |
| 2002 09 15 | 644 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.3− | 0.9+ | | |
| 2002 09 15 | 644 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.5− | 0.7+ | | |
| 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.7+ | | |
| 2002 09 16 | 644 | 0.1+ | 0.8+ | 2006 10 18 | 704 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.1− | 1.0+ | | |
| 2002 09 16 | 644 | 0.1− | 0.6+ | 2006 10 18 | 704 | 0.4− | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.3+ | | |
| 2002 09 16 | 644 | 0.0 | 0.8+ | 2006 10 18 | 704 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.3− | | |
| 2006 08 21 | 704 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | (0.5+ | 2.0+) | | |
| 2006 08 21 | 704 | 1.3− | 1.4− | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 1.0+ | | |
| 2006 08 21 | 704 | 0.7+ | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 1.2− | 0.5+ | | |
| 2006 08 21 | 704 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.8+ | 0.2+ | | |
| 2006 08 27 | 683 | 0.3− | 0.2− | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.8+ | 0.9+ | | |
| 2006 08 27 | 683 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.5− | 2006 11 28 | 704 | 1.0+ | 0.9− | | |
| 2006 08 27 | 683 | 1.0− | 0.6+ | 2006 10 20 | 691 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.0 | | |
| 2006 08 28 | 683 | 1.3+ | 0.2+ | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.9+ | 0.8− | | |

**(141975)∗ 2002 PS$_{126}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.07807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25955491 | $\omega$ | 222.48781 | | +0.89151751 | +0.44935636 | |
| $a$ | 2.4339774 | $\Omega$ | 110.72688 | | −0.39743280 | +0.83653795 | |
| $e$ | 0.2010063 | $i$ | 3.50820 | | −0.21735614 | +0.31350138 | |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.2− | 0.7+ | 2002 09 05 | 704 | 0.2− | 0.6− | 2006 09 26 | 704 | 1.0− | 0.4+ | | |
| 2002 07 23 | 644 | 0.0 | 0.7+ | 2002 09 05 | 704 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.9+ | 0.2− | | |
| 2002 07 23 | 644 | 0.3− | 0.7+ | 2002 09 05 | 704 | 0.3− | 0.2− | 2006 09 29 | 699 | 0.6− | 0.1+ | | |
| 2002 07 30 | 608 | 0.1− | 0.7− | 2002 09 06 | 704 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.9− | 0.1− | | |
| 2002 07 30 | 608 | 0.4+ | 0.1− | 2002 09 06 | 704 | 0.4+ | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.2− | | |
| 2002 07 30 | 608 | 0.5+ | 0.3− | 2002 09 06 | 704 | 0.7+ | 0.9− | 2006 09 29 | 699 | 0.1+ | 0.1− | | |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.5− | | |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.3− | | |
| 2002 08 08 | 644 | 0.2− | 0.4+ | 2002 09 15 | 644 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.5− | | |
| 2002 08 12 | 699 | 0.6− | 0.9+ | 2003 12 21 | 691 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.4− | | |
| 2002 08 12 | 699 | 0.3+ | 0.2+ | 2003 12 21 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.7+ | | |
| 2002 08 12 | 699 | 0.3+ | 0.7+ | 2003 12 21 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.7+ | | |
| 2002 08 12 | 699 | 0.3+ | 0.3− | 2005 03 09 | G96 | 1.5− | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.2+ | | |
| 2002 08 14 | 704 | 0.0 | 0.8− | 2005 03 09 | G96 | 0.3− | 0.2+ | 2006 10 16 | 703 | (0.6+ | 2.0−) | | |
| 2002 08 14 | 704 | 0.8− | 0.3+ | 2005 03 09 | G96 | 0.1+ | 0.2− | 2006 10 16 | 291 | 0.0 | 0.1+ | | |
| 2002 08 14 | 704 | 0.2− | 0.4+ | 2005 03 09 | G96 | 1.1− | 0.9− | 2006 10 16 | 291 | 0.2+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.1+ | 0.5+ | 2005 04 12 | 691 | 0.6+ | 0.4+ | 2006 10 16 | 291 | 0.0 | 0.1+ | | |
| 2002 08 14 | 704 | (0.9+ | 1.7+) | 2005 04 12 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.4− | | |
| 2002 08 16 | 608 | 0.4− | 0.3+ | 2005 04 12 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2+ | | |
| 2002 08 16 | 608 | 0.4− | 0.8+ | 2006 09 18 | 703 | 0.8− | 0.3+ | 2006 10 19 | 644 | 0.4+ | 0.3− | | |
| 2002 08 16 | 608 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.1+ | | |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.3− | 0.6+ | | |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.8− | 0.3− | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 1.0+ | 0.5− | 2006 10 22 | 703 | 0.2− | 0.4+ | | |
| 2002 08 19 | 644 | 0.1− | 0.5− | 2006 09 25 | 699 | (0.2− | 1.5+) | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2002 08 19 | 644 | 0.0 | 0.6− | 2006 09 25 | 699 | 1.3+ | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.3− | | |
| 2002 08 19 | 644 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.9− | 0.8+ | 2006 11 23 | G96 | 0.2+ | 0.1− | | |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.5− | 2006 09 26 | 704 | 0.7+ | 0.2+ | | | | | | |

**(141976)∗ 2002 PE$_{127}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.86758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24202518 | $\omega$ | 109.29690 | | +0.57849223 | −0.81158746 | |
| $a$ | 2.5501302 | $\Omega$ | 305.08711 | | +0.70589222 | +0.54828842 | |
| $e$ | 0.2795321 | $i$ | 5.72915 | | +0.40873331 | +0.20175629 | |
| $P$ | 4.07 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.9+ | 1.0− | 2002 08 26 | 644 | 0.8− | 0.1+ | 2004 03 16 | 704 | 0.3+ | 0.2+ | | |
| 1998 08 17 | 704 | 1.2+ | 0.1− | 2002 08 26 | 644 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.0 | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.0+ | 0.1− | 2002 08 26 | 644 | 0.4− | 0.3+ | 2004 03 16 | 704 | 0.2− | 0.6− | | |
| 1998 08 17 | 704 | (4.4− | 0.6−) | 2002 09 05 | 699 | (2.6+ | 0.1−) | 2004 03 16 | 704 | 0.0 | 0.6− | | |
| 1998 08 23 | 691 | 0.1+ | 0.0 | 2002 09 05 | 699 | 0.3+ | 1.0+ | 2004 03 16 | 704 | 0.0 | 0.0 | | |
| 1998 08 23 | 691 | 0.1+ | 0.0 | 2002 09 05 | 699 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.2− | | |
| 1998 08 23 | 691 | 0.1+ | 0.1+ | 2002 09 05 | 699 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.5− | | |
| 1998 08 23 | 704 | 0.6− | 1.6− | 2002 09 06 | 704 | 1.0− | 0.0 | 2004 03 18 | 704 | 0.0 | 0.0 | | |
| 1998 08 23 | 704 | (2.7− | 1.8+) | 2002 09 06 | 704 | 0.7− | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.7− | | |
| 1998 08 23 | 704 | 1.3+ | 1.3− | 2002 09 06 | 704 | 1.0− | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.4+ | | |
| 1998 08 23 | 704 | (5.7− | 2.1+) | 2002 09 06 | 704 | 0.7− | 0.3− | 2004 03 19 | 704 | 0.4− | 0.4+ | | |
| 1998 08 26 | 699 | (0.7− | 2.3+) | 2002 09 14 | 644 | 0.6− | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.0 | | |
| 1998 08 26 | 699 | 1.6− | 0.4− | 2002 09 14 | 644 | 0.3− | 0.1− | 2004 03 19 | 704 | (2.4− | 1.0−) | | |
| 1998 08 26 | 699 | 0.6+ | 0.1− | 2002 09 14 | 644 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.1− | | |
| 1998 09 15 | 699 | 0.8− | 0.5+ | 2002 12 06 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.1− | | |
| 1998 09 15 | 699 | 0.2− | 0.5− | 2002 12 06 | 704 | 0.3− | 0.5+ | 2004 03 20 | 704 | 0.3− | 0.4− | | |
| 1998 09 15 | 699 | 0.4− | 0.2+ | 2002 12 06 | 704 | 0.8− | 1.2+ | 2004 03 20 | 704 | 1.0+ | 0.6+ | | |
| 2002 07 14 | 704 | 0.7+ | 0.4− | 2004 01 30 | 699 | 0.2− | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.2− | | |
| 2002 07 14 | 704 | 0.5− | 0.5+ | 2004 01 30 | 699 | 0.3− | 0.4+ | 2004 03 23 | 704 | 0.4− | 0.2− | | |
| 2002 07 14 | 704 | 0.4− | 1.0+ | 2004 01 30 | 699 | 0.0 | 0.4+ | 2004 03 23 | 704 | 0.2− | 0.4− | | |
| 2002 07 14 | 704 | 0.1− | 0.8− | 2004 01 30 | 699 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.3− | 0.4− | | |
| 2002 07 14 | 704 | 0.6+ | 0.3− | 2004 02 12 | 644 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.1+ | 0.3+ | | |
| 2002 07 29 | 644 | 0.1− | 0.8+ | 2004 02 12 | 644 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.5− | 0.4− | | |
| 2002 07 29 | 644 | 0.0 | 0.7+ | 2004 02 12 | 644 | 0.1− | 0.2+ | 2006 07 21 | G96 | 0.3+ | 0.1− | | |
| 2002 07 29 | 644 | 0.1+ | 0.7+ | 2004 02 14 | 608 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.3+ | 0.2− | | |
| 2002 08 14 | 704 | 0.1+ | 0.3− | 2004 02 14 | 608 | 0.2− | 1.3+ | 2006 07 21 | G96 | 0.2+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.5− | 0.4+ | 2004 02 14 | 608 | 0.9+ | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.0 | | |
| 2002 08 14 | 704 | 0.2+ | 0.5+ | 2004 02 18 | 608 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.8+ | 0.6− | | |
| 2002 08 14 | 704 | 0.0 | 0.1− | 2004 02 18 | 608 | 0.1− | 0.1− | 2006 08 28 | 703 | (2.6+ | 0.9−) | | |
| 2002 08 16 | 608 | 0.3+ | 0.5+ | 2004 02 18 | 608 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.7− | 0.6− | | |
| 2002 08 16 | 608 | 0.4+ | 0.7+ | 2004 02 19 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.7− | | |
| 2002 08 16 | 608 | 0.2+ | 1.1+ | 2004 02 19 | 704 | 0.6+ | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 17 | 644 | 0.4− | 0.4+ | 2004 02 19 | 704 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.3+ | | |
| 2002 08 17 | 644 | 0.4− | 0.5+ | 2004 02 19 | 704 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.0 | 0.1+ | | |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2004 02 19 | 704 | 0.1+ | 1.1+ | | | | | | |

**(141977)∗ 2002 PZ$_{127}$ = 1997 EZ$_{29}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35334)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.97856 | | (2000.0) | | +0.87751260 | −0.47939925 |
| $n$ | 0.26425794 | $\omega$ | 22.14671 | | +0.42240776 | +0.76068523 |
| $a$ | 2.4050126 | $\Omega$ | 6.53888 | | +0.22703156 | +0.43764636 |
| $e$ | 0.1173275 | $i$ | 6.13269 | | | |
| $P$ | 3.73 | $H$ | 16.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 07 | 691 | 0.5+ | 0.2− | 2004 01 20 | 704 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1− | | |
| 1997 03 07 | 691 | 0.5+ | 0.1+ | 2004 01 20 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1− | | |
| 1997 03 07 | 691 | 0.5+ | 0.4− | 2004 01 20 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 291 | 0.2+ | 0.1− | | |
| 1997 03 14 | 691 | 0.0 | 0.5− | 2004 01 30 | 704 | 0.9+ | 0.3+ | 2006 09 30 | 291 | 0.3+ | 0.1− | | |
| 1997 03 14 | 691 | 0.0 | 0.5− | 2004 01 30 | 704 | 0.9+ | 0.6+ | 2006 09 30 | 291 | 0.3+ | 0.2− | | |
| 1997 03 14 | 691 | 0.1+ | 0.6− | 2004 01 30 | 704 | 0.7+ | 0.8− | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 1997 04 07 | 691 | 0.6− | 0.5− | 2004 01 30 | 704 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3− | | |
| 1997 04 07 | 691 | 0.6− | 0.9− | 2004 02 15 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 1997 04 07 | 691 | 0.9− | 0.3− | 2004 02 15 | 704 | 0.2− | 0.8+ | 2006 10 15 | 106 | 0.5− | 0.6− | | |
| 1997 04 12 | 691 | 0.2− | 0.2− | 2004 02 15 | 704 | 0.1− | 0.5+ | 2006 10 15 | 106 | 0.7+ | 0.3+ | | |
| 1997 04 12 | 691 | 0.3− | 0.2− | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 15 | 106 | 0.1− | 0.1− | | |
| 1997 04 16 | 691 | 0.3− | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 16 | 106 | 0.1+ | 0.6− | | |
| 1997 04 16 | 691 | 0.7− | 0.7− | 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.2− | | |
| 1997 04 16 | 691 | 0.3− | 0.6− | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.3− | 0.3− | | |
| 2002 08 14 | 704 | 1.2− | 0.5+ | 2004 04 15 | 645 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.5− | | |
| 2002 08 14 | 704 | 0.0 | 0.9+ | 2004 04 15 | 645 | 0.1− | 0.1+ | 2006 10 17 | 703 | 1.5+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.2− | 0.1− | 2006 08 24 | 644 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.4− | | |
| 2002 08 14 | 704 | 0.6+ | 1.1+ | 2006 08 24 | 644 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 2002 08 16 | 608 | 0.8− | 1.1− | 2006 08 24 | 644 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.6+ | 0.6− | | |
| 2002 08 16 | 608 | 0.6− | 1.1− | 2006 09 06 | 644 | 0.3+ | 0.3− | 2006 10 19 | G96 | 0.5+ | 0.6− | | |
| 2002 08 16 | 608 | 0.2− | 0.9− | 2006 09 06 | 644 | 0.2+ | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.6− | | |
| 2002 08 19 | 644 | 0.4+ | 1.0+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1− | 0.5− | | |
| 2002 08 19 | 644 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.7− | | |
| 2002 08 19 | 644 | 0.3+ | 1.1+ | 2006 09 14 | 703 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.2− | | |
| 2002 08 28 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2− | | |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2002 08 28 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 08 30 | 644 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.1− | | |
| 2002 08 30 | 644 | 0.6− | 0.1− | 2006 09 14 | 703 | (1.2+ | 1.9−) | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 2002 08 30 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2002 08 30 | 644 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.6− | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.3− | | |
| 2002 08 30 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.6− | 0.7− | 2006 10 21 | 644 | 0.2+ | 0.2− | | |
| 2002 08 30 | 644 | 0.2+ | 0.7+ | 2006 09 17 | 704 | 0.1− | 0.7− | 2006 10 27 | G98 | 0.4+ | 0.3− | | |
| 2002 09 05 | 704 | 0.7− | 0.0 | 2006 09 17 | 704 | 0.4− | 0.8− | 2006 10 27 | G98 | 0.5+ | 0.1− | | |
| 2002 09 05 | 704 | 0.6− | 0.6− | 2006 09 18 | 699 | 0.4+ | 0.6+ | 2006 10 27 | G98 | 0.4+ | 0.0 | | |
| 2002 09 05 | 704 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.2− | 0.4− | 2006 10 27 | G98 | 0.3+ | 0.0 | | |
| 2002 09 05 | 704 | (0.4− | 1.6−) | 2006 09 18 | 699 | 0.6− | 0.6− | 2006 11 08 | 644 | 0.3+ | 0.1− | | |
| 2002 09 15 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.4+ | 0.0 | | |
| 2002 09 15 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 1.2+ | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.2+ | | |
| 2002 09 15 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.2+ | 2006 11 11 | 703 | (0.6+ | 1.7−) | | |
| 2004 01 18 | 644 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.3− | | |
| 2004 01 18 | 644 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.1+ | | |
| 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 691 | (1.9− | 2.1+) | 2006 11 11 | 703 | 0.6− | 0.7− | | |

**(141978)∗ 2002 PZ$_{128}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.61238 | | (2000.0) | | +0.98926713 | −0.09530895 |
| $n$ | 0.26697343 | $\omega$ | 314.89047 | | +0.13700220 | +0.86855365 |
| $a$ | 2.3886766 | $\Omega$ | 50.90142 | | −0.05080300 | +0.48634428 |
| $e$ | 0.2008416 | $i$ | 8.20496 | | | |
| $P$ | 3.69 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 07 | 691 | 0.2− | 0.4+ | 2005 05 18 | E12 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2− | | |
| 1991 09 07 | 691 | 0.3− | 0.4+ | 2005 05 18 | E12 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.4− | | |
| 1991 09 07 | 691 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.4− | | |
| 2002 08 14 | 704 | 0.2− | 0.3+ | 2005 05 19 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.3− | | |
| 2002 08 14 | 704 | (1.6+ | 0.9+) | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.0 | | |
| 2002 08 14 | 704 | 0.6− | 1.1− | 2006 08 29 | 703 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.0 | | |
| 2002 08 14 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.1+ | | |
| 2002 08 14 | 704 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.6− | 1.4+ | 2006 11 11 | 703 | 0.4− | 0.3− | | |
| 2002 08 16 | 608 | (4.5+ | 0.2+) | 2006 08 29 | 703 | (1.7− | 0.4+) | 2006 11 14 | 691 | 0.1+ | 0.3− | | |
| 2002 08 16 | 608 | (4.6+ | 0.1+) | 2006 09 16 | 703 | 0.5+ | 0.6− | 2006 11 14 | 691 | 0.5+ | 0.3− | | |
| 2002 08 16 | 608 | (4.2+ | 0.3−) | 2006 09 16 | 703 | 1.2+ | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.3− | | |
| 2002 09 09 | 644 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.0 | 2006 11 17 | 704 | 0.1− | 0.3+ | | |
| 2002 09 09 | 644 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 1.0+ | | |
| 2002 09 09 | 644 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.6+ | 2006 11 17 | 704 | 0.2− | 1.0+ | | |
| 2002 09 17 | 644 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.6+ | | |
| 2002 09 17 | 644 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.2+ | 1.1+ | | |
| 2002 09 17 | 644 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.6+ | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2002 09 27 | 704 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.3+ | 0.1− | | |
| 2002 09 27 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.0 | | |
| 2002 09 27 | 704 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.1− | 0.9+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | | |
| 2002 09 27 | 704 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.4+ | 0.3+ | | |
| 2002 10 24 | 608 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.4+ | | |
| 2002 10 24 | 608 | 0.5+ | 0.3− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 24 | 608 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.4+ | | |
| 2002 10 28 | 704 | 0.0 | 0.4− | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 20 | 703 | 0.3+ | 0.2+ | | |
| 2002 10 28 | 704 | 0.7− | 0.5− | 2006 10 16 | 703 | 0.3+ | 0.4− | 2006 11 20 | 703 | 0.4+ | 0.1+ | | |
| 2002 10 28 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 20 | 703 | (1.6− | 1.0−) | | |
| 2002 10 30 | 608 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 20 | 703 | 0.0 | 1.3− | | |
| 2002 10 30 | 608 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2002 10 30 | 608 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 1.3+ | 1.5− | 2006 11 21 | 704 | 0.0 | 0.4+ | | |
| 2002 11 18 | 644 | 0.4+ | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.0 | 0.1− | | |
| 2002 11 18 | 644 | 0.1+ | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 18 | 644 | 0.0 | 0.7+ | 2006 10 23 | 704 | (1.5− | 0.5+) | 2006 11 21 | 704 | 0.1− | 0.5+ | | |
| 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 10 23 | 704 | 0.2+ | 0.4− | 2006 11 22 | 691 | 0.2− | 0.0 | | |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.0 | | |
| 2004 02 11 | 644 | 0.3− | 0.8+ | 2006 10 23 | 704 | (1.5− | 0.4+) | 2006 11 22 | 691 | 0.2− | 0.0 | | |
| 2004 02 15 | 704 | 0.6− | 1.0+ | 2006 10 23 | 704 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.6− | 0.2+ | | |
| 2004 02 15 | 704 | 0.7+ | 1.1+ | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.1+ | | |
| 2004 02 15 | 704 | 0.3+ | 1.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.4− | | |
| 2004 02 15 | 704 | 1.3+ | 1.5+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.2− | | |
| 2004 03 23 | 704 | 1.3+ | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.6− | 0.1+ | | |
| 2004 03 23 | 704 | 0.7+ | 0.7+ | 2006 10 28 | 704 | 0.0 | 0.3+ | 2006 11 27 | 704 | 0.6− | 1.3− | | |
| 2004 03 23 | 704 | 0.5+ | 0.4+ | 2006 10 28 | 704 | 1.0− | 0.8+ | 2006 11 27 | 704 | 0.8− | 0.6− | | |
| 2004 03 23 | 704 | 0.2− | 1.4+ | 2006 10 28 | 704 | (1.6− | 1.0+) | 2006 11 27 | 704 | 0.1− | 0.9+ | | |
| 2004 03 23 | 704 | 0.1− | 1.1+ | 2006 10 28 | 704 | 1.2− | 0.1+ | 2006 12 01 | 704 | 0.2− | 0.4+ | | |
| 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 11 03 | 704 | (3.1+ | 0.0 ) | 2006 12 01 | 704 | 0.3− | 0.1+ | | |
| 2005 05 16 | 644 | 0.1+ | 0.3+ | 2006 11 03 | 704 | 0.2− | 1.3+ | 2006 12 01 | 704 | 0.3− | 0.3+ | | |
| 2005 05 16 | 644 | 0.2+ | 0.4+ | 2006 11 03 | 704 | 0.0 | 0.8+ | 2006 12 01 | 704 | 0.2− | 0.3− | | |
| 2005 05 18 | E12 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.5− | 0.0 | | |
| 2005 05 18 | E12 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.2− | | | | | | |

**(141979)∗ 2002 PU$_{129}$**

Discovered 2002 Aug. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.06466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24134962 | $\omega$ | 283.12839 | | +0.99583867 | +0.00673391 | |
| $a$ | 2.5548866 | $\Omega$ | 76.54117 | | +0.03181979 | +0.90881139 | |
| $e$ | 0.2155260 | $i$ | 5.36217 | | −0.08539812 | +0.41715287 | |
| $P$ | 4.08 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 24 | 691 | 0.1+ | 0.0 | 2002 09 10 | 608 | 0.7− | 0.1+ | 2005 04 02 | 691 | 0.2+ | 0.6+ | | |
| 1996 01 24 | 691 | 0.3+ | 0.0 | 2002 09 13 | 704 | 0.1− | 0.3+ | 2005 04 02 | 691 | 0.4+ | 0.4+ | | |
| 1996 01 24 | 691 | 0.3+ | 0.2− | 2002 09 13 | 704 | 0.2− | 1.1+ | 2005 04 02 | 691 | 0.2+ | 0.6+ | | |
| 1998 10 17 | 699 | 0.8+ | 0.2+ | 2002 09 13 | 699 | 0.7− | 0.4+ | 2005 04 14 | 691 | 0.4− | 0.8+ | | |
| 1998 10 17 | 699 | 0.4− | 1.6+ | 2002 09 13 | 704 | 0.4− | 0.7+ | 2005 04 14 | 691 | 0.1− | 0.2+ | | |
| 1998 10 17 | 699 | 0.3+ | 1.1+ | 2002 09 13 | 699 | 0.4− | 0.2+ | 2005 04 14 | 691 | 0.1+ | 0.1− | | |
| 2002 08 14 | 704 | 0.8+ | 0.5+ | 2002 09 13 | 704 | 0.2− | 0.2+ | 2006 08 16 | E12 | 0.5+ | 0.1− | | |
| 2002 08 14 | 704 | 0.7− | 1.3+ | 2002 09 13 | 699 | 0.4− | 0.3+ | 2006 08 16 | E12 | 0.0 | 0.4− | | |
| 2002 08 14 | 704 | (1.6+ | 0.2+) | 2002 09 13 | 699 | 0.6− | 0.1− | 2006 08 16 | E12 | 0.2+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.7− | 1.1+ | 2002 09 14 | 608 | 1.0− | 0.1− | 2006 08 16 | E12 | 0.3+ | 0.1− | | |
| 2002 08 14 | 704 | (1.6− | 1.3+) | 2002 09 14 | 608 | 1.2− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.1− | | |
| 2002 08 15 | 699 | 1.1− | 0.5+ | 2002 09 14 | 608 | 1.2− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.0 | | |
| 2002 08 15 | 699 | 0.9+ | 0.3+ | 2002 09 16 | 644 | 0.6− | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.0 | | |
| 2002 08 15 | 699 | 0.2− | 0.7+ | 2002 09 16 | 644 | 0.5− | 0.1+ | 2006 09 13 | 644 | 0.3+ | 0.3+ | | |
| 2002 08 15 | 699 | 0.0 | 0.1− | 2002 09 16 | 644 | 0.5− | 0.4+ | 2006 09 13 | 644 | 0.4+ | 0.2+ | | |
| 2002 08 16 | 608 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.4+ | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.0 | | |
| 2002 08 16 | 608 | 0.5+ | 0.1− | 2002 10 04 | 704 | 1.1− | 1.3− | 2006 09 14 | 644 | 0.4+ | 0.0 | | |
| 2002 08 16 | 608 | 0.0 | 0.0 | 2002 10 04 | 704 | (2.1− | 1.3−) | 2006 09 14 | 644 | 0.6+ | 0.4+ | | |
| 2002 08 30 | 644 | 0.1+ | 0.3+ | 2004 02 18 | 691 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.4+ | 0.3+ | | |
| 2002 08 30 | 644 | 0.4+ | 0.5+ | 2004 02 18 | 691 | 0.2+ | 0.3+ | 2006 10 11 | E12 | 0.0 | 0.1− | | |
| 2002 08 30 | 644 | 0.1+ | 0.4+ | 2004 02 18 | 691 | 0.1− | 0.4+ | 2006 10 11 | E12 | 0.4+ | 0.4+ | | |
| 2002 09 10 | 608 | (0.7− | 2.4+) | 2004 03 18 | 645 | 0.1+ | 0.2+ | 2006 10 11 | E12 | 0.2+ | 0.5− | | |
| 2002 09 10 | 608 | 0.6− | 0.5+ | 2004 03 18 | 645 | 0.0 | 0.2+ | 2006 10 11 | E12 | 0.5+ | 0.3+ | | |

**(141980)∗ 2002 PZ$_{130}$**

Discovered 2002 Aug. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.94428 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27029528 | $\omega$ | 306.82511 | | +0.96724845 | −0.24883909 | |
| $a$ | 2.3690655 | $\Omega$ | 67.63186 | | +0.24671107 | +0.87520767 | |
| $e$ | 0.2185440 | $i$ | 3.10531 | | +0.05969993 | +0.41483808 | |
| $P$ | 3.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.0 | 0.6+ | 2006 08 28 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 704 | 0.2− | 0.3+ | | |
| 2001 05 22 | 807 | 0.0 | 0.6+ | 2006 08 28 | 704 | 0.4+ | 0.8− | 2006 10 23 | 704 | 0.1− | 0.2+ | | |
| 2002 07 05 | 704 | 0.2− | 1.1− | 2006 08 28 | 704 | 0.0 | 0.7− | 2006 10 23 | 704 | 0.0 | 0.2+ | | |
| 2002 07 05 | 704 | 0.2− | 0.2+ | 2006 08 28 | 704 | 0.5− | 0.3+ | 2006 10 27 | 704 | 0.2− | 0.7− | | |
| 2002 07 05 | 704 | 1.0− | 0.6− | 2006 09 26 | 704 | 0.5+ | 1.0+ | 2006 10 27 | 704 | 1.3− | 0.2+ | | |
| 2002 07 05 | 704 | 1.3− | 0.1− | 2006 09 26 | 704 | (0.2+ | 2.2+) | 2006 10 27 | 704 | 0.1+ | 1.2− | | |
| 2002 07 05 | 644 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 704 | 1.2− | 0.4− | | |
| 2002 07 05 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.4+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2002 07 05 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.7+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.2− | | |
| 2002 07 14 | 644 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2002 07 14 | 644 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 11 07 | 644 | 0.1+ | 0.0 | | |
| 2002 07 22 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 11 07 | 644 | 0.1− | 0.2+ | | |
| 2002 07 22 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.5+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 2002 07 22 | 644 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2+ | | |
| 2002 08 06 | 644 | 0.1+ | 1.0+ | 2006 10 15 | 703 | 0.2+ | 0.5+ | 2006 11 11 | 703 | (0.2− | 1.7+) | | |
| 2002 08 06 | 644 | 0.3+ | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.3− | | |
| 2002 08 06 | 644 | 0.2+ | 1.3+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 2002 08 08 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2002 08 08 | 644 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.1− | | |
| 2002 08 08 | 644 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2002 08 13 | 704 | 1.0+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2002 08 13 | 704 | (0.9+ | 1.5−) | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.4− | 0.2− | | |
| 2002 08 13 | 704 | 0.5+ | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.3− | | |
| 2002 08 13 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.1+ | | |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.4− | | |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.8− | | |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.9+ | | |
| 2004 01 22 | 704 | 0.6+ | 1.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.7+ | | |
| 2004 01 22 | 704 | 0.5+ | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.0 | | |
| 2004 01 22 | 704 | 0.6+ | 1.0+ | 2006 10 21 | 703 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.7− | 0.2+ | | |
| 2004 01 22 | 704 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.5− | 0.3+ | | |
| 2005 04 16 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.2− | | |
| 2005 04 16 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.2+ | 1.6+ | | |
| 2005 04 16 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.3− | | |
| 2005 05 03 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.7+ | | |
| 2005 05 03 | 691 | 0.4+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.3+ | | |
| 2005 05 03 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.8+ | 2.5+ | | |
| 2006 08 23 | 704 | 0.8− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 1.7− | 0.1+ | | |
| 2006 08 23 | 704 | 0.1− | 0.1+ | 2006 10 23 | 704 | 0.2+ | 0.3+ | | | | | | |
| 2006 08 23 | 704 | 0.1− | 0.3− | 2006 10 23 | 704 | 0.3+ | 0.3+ | | | | | | |

**(141981)∗ 2002 PT$_{131}$**

Discovered 2002 Aug. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.47890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22918726 | $\omega$ | 170.23150 | | +0.48536238 | −0.83542913 | |
| $a$ | 2.6444929 | $\Omega$ | 250.33136 | | +0.78255349 | +0.54662120 | |
| $e$ | 0.2460454 | $i$ | 15.89146 | | +0.38991460 | −0.05712650 | |
| $P$ | 4.30 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.1+ | 0.7− | 2002 11 08 | 704 | 0.5− | 1.4− | 2003 01 28 | 704 | 1.1+ | 0.8+ | | |
| 1998 12 15 | 704 | 0.1+ | 0.0 | 2002 11 08 | 704 | 0.7− | 1.2− | 2003 01 28 | 704 | 1.4+ | 0.6+ | | |
| 1998 12 15 | 704 | 0.8+ | 0.8+ | 2002 11 14 | 644 | 0.4− | 0.1− | 2003 01 31 | 699 | 0.0 | 1.3+ | | |
| 1998 12 15 | 704 | 0.9+ | 1.6+ | 2002 11 14 | 704 | 1.3− | 0.2+ | 2003 01 31 | 699 | 0.4+ | 0.8+ | | |
| 1998 12 15 | 704 | 1.7+ | 1.3+ | 2002 11 14 | 644 | 0.6− | 0.0 | 2003 01 31 | 699 | 0.7+ | 0.9+ | | |
| 1998 12 22 | 704 | 0.5− | 0.2− | 2002 11 14 | 704 | 0.9− | 0.1− | 2003 01 31 | 699 | 0.9− | 0.3− | | |
| 1998 12 22 | 704 | 1.6− | 1.6− | 2002 11 14 | 644 | 0.4− | 0.0 | 2004 03 26 | 704 | 0.2+ | 0.1+ | | |
| 1998 12 22 | 704 | 0.1+ | 0.0 | 2002 11 14 | 704 | 0.9− | 0.2+ | 2004 03 26 | 704 | 1.3− | 0.2+ | | |
| 1998 12 22 | 704 | 0.7− | 0.8+ | 2002 11 14 | 704 | 0.7− | 0.3+ | 2004 03 26 | 704 | 0.5+ | 0.1+ | | |
| 1998 12 22 | 704 | (1.7− | 2.5+) | 2002 11 14 | 704 | 0.8− | 0.2+ | 2004 03 26 | 704 | 0.5+ | 0.5+ | | |
| 2002 08 15 | 704 | 0.2− | 0.1− | 2002 12 02 | 704 | 0.6+ | 0.1− | 2004 03 26 | 704 | 0.4+ | 0.6− | | |
| 2002 08 15 | 704 | 0.3− | 0.1+ | 2002 12 02 | 704 | 0.1+ | 0.2− | 2006 08 10 | 644 | 0.0 | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 704 | 0.9− | 0.7+ | 2002 12 02 | 704 | 0.3+ | 0.2− | 2006 08 10 | 644 | 0.2− | 0.5+ | | |
| 2002 08 15 | 704 | 0.8− | 1.2+ | 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 08 10 | 644 | 0.0 | 0.1+ | | |
| 2002 08 17 | 699 | 1.0− | 0.1+ | 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 08 25 | 704 | 0.8− | 1.1+ | | |
| 2002 08 17 | 699 | 0.3+ | 0.7+ | 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 08 25 | 704 | 0.3+ | 1.0+ | | |
| 2002 08 17 | 699 | 0.5+ | 0.4+ | 2002 12 05 | 704 | 0.3+ | 0.6+ | 2006 08 25 | 704 | 0.2− | 0.2+ | | |
| 2002 08 17 | 699 | 0.4+ | 0.7+ | 2002 12 05 | 704 | 0.8+ | 0.9+ | 2006 08 25 | 704 | 0.0 | 0.3− | | |
| 2002 10 06 | 704 | 0.2+ | 0.3− | 2002 12 19 | 644 | 0.4− | 0.2− | 2006 09 01 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 06 | 704 | 0.9+ | 0.8− | 2002 12 19 | 644 | 0.2− | 0.5− | 2006 09 01 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 06 | 704 | 0.3− | 0.6− | 2002 12 19 | 644 | 0.2+ | 0.5− | 2006 09 01 | 704 | 0.5− | 0.1− | | |
| 2002 10 06 | 704 | 0.1− | 1.0− | 2002 12 31 | 704 | (1.6+ | 0.3+) | 2006 09 01 | 704 | 0.5+ | 0.1+ | | |
| 2002 10 06 | 704 | 0.2− | 0.7− | 2002 12 31 | 704 | 0.0 | 0.8+ | 2006 09 01 | 704 | 0.5+ | 0.3− | | |
| 2002 10 06 | 699 | 0.3− | 0.5− | 2002 12 31 | 704 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 0.3− | 0.5− | | |
| 2002 10 06 | 699 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.4− | 0.5+ | 2006 09 11 | 703 | 0.1− | 0.3+ | | |
| 2002 10 06 | 699 | 1.5+ | 0.8+ | 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.6+ | 0.3− | | |
| 2002 10 06 | 699 | 0.2+ | 0.5− | 2003 01 05 | 704 | 0.2− | 0.5+ | 2006 09 11 | 703 | 0.4− | 0.1+ | | |
| 2002 10 15 | 704 | (0.3+ | 1.6−) | 2003 01 05 | 704 | 0.4− | 0.4+ | 2006 09 20 | 703 | 0.2− | 0.2− | | |
| 2002 10 15 | 704 | 0.3+ | 0.1− | 2003 01 05 | 704 | 0.6− | 0.0 | 2006 09 20 | 703 | 0.6− | 0.0 | | |
| 2002 10 15 | 704 | 0.2+ | 0.2+ | 2003 01 05 | 704 | 0.9− | 0.4+ | 2006 09 20 | 703 | 0.5− | 0.4− | | |
| 2002 10 15 | 704 | 0.1+ | 0.2+ | 2003 01 05 | 704 | 0.5− | 0.8+ | 2006 09 20 | 703 | 0.3− | 0.4− | | |
| 2002 10 15 | 704 | 0.0 | 0.0 | 2003 01 08 | 608 | 0.9− | 0.5− | 2006 09 28 | 704 | 0.5+ | 0.9+ | | |
| 2002 11 01 | 704 | 1.3+ | 0.2− | 2003 01 08 | 608 | 0.9− | 0.8− | 2006 09 28 | 704 | 0.4− | 0.3− | | |
| 2002 11 01 | 704 | 1.2+ | 0.2− | 2003 01 08 | 608 | (0.5− | 1.8−) | 2006 09 28 | 704 | 0.1− | 0.9+ | | |
| 2002 11 01 | 704 | 1.3+ | 0.4− | 2003 01 27 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.9+ | | |
| 2002 11 01 | 704 | 0.2+ | 1.0− | 2003 01 27 | 704 | 0.5+ | 0.6− | 2006 09 28 | 704 | 0.0 | 1.4+ | | |
| 2002 11 01 | 704 | 1.2+ | 0.3− | 2003 01 27 | 704 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.1− | | |
| 2002 11 08 | 704 | 0.2− | 1.5− | 2003 01 28 | 704 | 0.7+ | 0.6+ | 2006 11 14 | 703 | 0.7+ | 0.3− | | |
| 2002 11 08 | 704 | 0.1− | 1.2− | 2003 01 28 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 1.0− | | |
| 2002 11 08 | 704 | 0.6− | 0.9− | 2003 01 28 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 703 | 0.3− | 0.3+ | | |

**(141982)∗ 2002 PC$_{132}$ = 2005 EN$_{145}$**

Discovered 2002 Aug. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75464)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.28744 | | (2000.0) | | | |
| $n$ | 0.26040605 | $\omega$ | 271.20555 | | +0.20302826 | +0.97895121 |
| $a$ | 2.4286709 | $\Omega$ | 10.57795 | | −0.84718654 | +0.18629035 |
| $e$ | 0.1507379 | $i$ | 6.51669 | | −0.49097300 | +0.08336931 |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 10 | 691 | 0.2− | 0.1+ | 2005 03 17 | 703 | (0.4+ | 1.6−) | 2006 09 25 | 699 | 0.2− | 0.2− | | |
| 1991 10 10 | 691 | 0.3+ | 0.3− | 2005 03 17 | 703 | 0.6− | 0.9− | 2006 09 25 | 699 | (0.8− | 1.6−) | | |
| 1991 10 10 | 691 | 0.2− | 0.3+ | 2005 03 17 | 703 | 1.2− | 0.6+ | 2006 09 25 | 699 | 0.9− | 0.0 | | |
| 2002 08 13 | 704 | 0.1+ | 0.4− | 2005 04 04 | 703 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.1− | | |
| 2002 08 13 | 704 | 0.1− | 0.3− | 2005 04 04 | 703 | 0.4+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.2− | | |
| 2002 08 13 | 704 | 0.2+ | 0.6+ | 2005 04 04 | 703 | 1.4− | 1.3+ | 2006 09 26 | G96 | 0.1+ | 0.0 | | |
| 2002 08 13 | 704 | 0.8+ | 0.3− | 2005 04 04 | 703 | 1.0+ | 1.4+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | | |
| 2002 08 17 | 644 | 0.3− | 0.2− | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.2+ | | |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.2− | 1.0+ | | |
| 2002 08 17 | 644 | 0.2− | 0.2− | 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 09 27 | 704 | (0.2− | 1.9+) | | |
| 2002 08 19 | 644 | 0.3− | 0.1− | 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.5+ | 1.5+ | | |
| 2002 08 19 | 644 | 0.5+ | 0.3+ | 2005 04 05 | G96 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.7− | | |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.3− | 0.3+ | | |
| 2002 08 19 | 644 | 0.1− | 0.4+ | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.1− | 0.8+ | | |
| 2002 08 19 | 644 | 0.2− | 0.2− | 2005 04 05 | G96 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.2− | 1.1+ | | |
| 2002 08 19 | 644 | 0.1+ | 0.6+ | 2005 05 08 | G96 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.3− | 0.3+ | | |
| 2002 08 30 | 644 | 0.0 | 0.1− | 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.5− | 0.1+ | | |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2005 05 08 | G96 | 0.7− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2005 05 08 | G96 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.4− | | |
| 2005 03 10 | G96 | 0.4− | 0.0 | 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.1+ | | |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.2+ | | |
| 2005 03 10 | G96 | 0.0 | 0.2+ | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5− | 1.5+ | | |
| 2005 03 10 | G96 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.2− | | |
| 2005 03 11 | 691 | 0.3+ | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.0 | | |
| 2005 03 11 | 691 | 0.4+ | 0.4+ | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.0 | | |
| 2005 03 11 | 691 | 0.2+ | 0.6+ | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.2+ | | |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 24 | 644 | 0.3+ | 0.2+ | | |
| 2005 03 12 | 691 | 1.1+ | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.4+ | 2006 10 24 | 644 | 0.2− | 0.2+ | | |
| 2005 03 15 | 504 | (3.3+ | 1.1−) | 2006 09 20 | 704 | 0.0 | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2005 03 15 | 504 | 1.4+ | 0.5+ | 2006 09 20 | 704 | 1.3− | 1.4− | 2006 11 21 | G96 | 0.4+ | 0.0 | | |
| 2005 03 16 | 504 | 0.1− | 1.0− | 2006 09 20 | 704 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.3+ | 0.1+ | | |
| 2005 03 16 | 504 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.4− | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2005 03 17 | 703 | 0.2− | 0.9− | 2006 09 25 | 699 | 0.0 | 0.1+ | | | | | | |

**(141983)∗ 2002 PJ$_{132}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.14918 | | (2000.0) | | | |
| $n$ | 0.26810139 | $\omega$ | 173.14601 | | +0.46217155 | +0.88539306 |
| $a$ | 2.3819721 | $\Omega$ | 124.36973 | | −0.81644970 | +0.44674538 |
| $e$ | 0.1558930 | $i$ | 3.45655 | | −0.34613197 | +0.12844335 |
| $P$ | 3.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 10 | 691 | 0.0 | 0.2+ | 2005 03 18 | 703 | 0.1− | 0.4+ | 2006 09 28 | 704 | 1.3+ | 0.3+ | | |
| 1994 04 10 | 691 | 0.4+ | 0.0 | 2005 03 18 | 703 | 0.8− | 0.4+ | 2006 09 28 | 704 | 0.5+ | 0.2+ | | |
| 1994 04 10 | 691 | (1.6+ | 3.0−) | 2005 03 18 | 703 | 1.2− | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.7+ | | |
| 2002 06 25 | 644 | 0.2− | 0.5+ | 2005 03 18 | 703 | 0.3− | 0.4+ | 2006 09 28 | 704 | 0.2+ | 1.4+ | | |
| 2002 06 25 | 644 | 0.1− | 0.5+ | 2005 04 04 | 703 | 1.1− | 0.7− | 2006 09 30 | 703 | 0.2+ | 0.1− | | |
| 2002 06 25 | 644 | 0.0 | 0.6+ | 2005 04 04 | 703 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.0 | 0.5+ | | |
| 2002 07 04 | 644 | 0.5+ | 0.1+ | 2005 04 04 | 703 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.0 | | |
| 2002 07 04 | 644 | 0.1− | 0.1− | 2005 04 04 | 703 | 0.7− | 0.6− | 2006 09 30 | 704 | 0.1+ | 0.0 | | |
| 2002 07 04 | 644 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.5− | 0.1+ | | |
| 2002 07 14 | 644 | 0.2− | 0.1− | 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 09 30 | 704 | 0.3− | 0.7+ | | |
| 2002 07 14 | 644 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 1.1− | 0.9+ | | |
| 2002 07 14 | 644 | 0.6+ | 0.5− | 2006 09 18 | 703 | (2.2+ | 0.3−) | 2006 10 16 | 703 | 0.6− | 1.3+ | | |
| 2002 07 18 | 644 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.2+ | | |
| 2002 07 18 | 644 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 10 16 | 703 | (1.7− | 1.4−) | | |
| 2002 07 18 | 644 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.3+ | | |
| 2002 08 14 | 704 | 0.4− | 1.2− | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2002 08 14 | 704 | 0.3+ | 1.1− | 2006 09 18 | 699 | 0.8+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 08 14 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 699 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 08 17 | 644 | 0.5− | 0.3− | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 08 17 | 644 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2002 08 17 | 644 | 0.3− | 0.4− | 2006 09 20 | 644 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.5− | | |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.5− | 0.4+ | 2006 10 22 | 703 | 1.3− | 1.4− | | |
| 2002 08 29 | 644 | 0.4− | 0.2+ | 2006 09 22 | 704 | 1.2− | 0.5− | 2006 10 22 | 703 | 0.6− | 0.0 | | |
| 2003 12 19 | 704 | 0.3− | 0.5− | 2006 09 22 | 704 | (2.0− | 1.0−) | 2006 10 22 | 703 | 0.1+ | 0.8− | | |
| 2003 12 19 | 704 | 0.2+ | 1.0− | 2006 09 22 | 704 | 0.7− | 0.3− | 2006 11 23 | G96 | 0.2− | 0.2− | | |
| 2003 12 19 | 704 | 1.1− | 0.2+ | 2006 09 26 | 704 | 0.4+ | 1.4+ | 2006 11 23 | G96 | 0.1+ | 0.4− | | |
| 2005 03 11 | 691 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.6+ | 0.8+ | 2006 11 23 | G96 | 0.4+ | 0.3− | | |
| 2005 03 11 | 691 | 0.5+ | 0.5+ | 2006 09 26 | 704 | 0.8+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.4− | | |
| 2005 03 11 | 691 | 0.7+ | 0.6+ | 2006 09 26 | 704 | 0.4+ | 0.2+ | | | | | | |

**(141984)∗ 2002 PK$_{133}$ = 1994 GJ$_{8}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 35340)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.13426 | | (2000.0) | | | |
| $n$ | 0.27559669 | $\omega$ | 85.19085 | | +0.99712658 | +0.07021640 |
| $a$ | 2.3385862 | $\Omega$ | 270.78079 | | −0.07572832 | +0.91426673 |
| $e$ | 0.1318748 | $i$ | 1.62927 | | −0.00195186 | +0.39898120 |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 13 | 691 | 0.0 | 0.6+ | 2004 01 30 | 691 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 1994 04 13 | 691 | 0.1+ | 0.1− | 2004 02 12 | 691 | 0.4+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 1994 04 13 | 691 | 0.3− | 0.1+ | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1− |
| 1994 04 19 | 691 | 0.3− | 0.1− | 2004 02 12 | 691 | 0.4+ | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 1994 04 19 | 691 | 0.5− | 0.3+ | 2004 02 14 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.0 |
| 1994 04 19 | 691 | 0.2− | 0.3+ | 2004 02 14 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2002 07 22 | 644 | 0.1+ | 0.8+ | 2004 02 14 | 691 | 0.5+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2002 07 22 | 644 | 0.0 | 0.7+ | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 11 11 | 703 | (1.5+ | 1.7−) |
| 2002 07 22 | 644 | 0.1− | 0.7+ | 2005 05 10 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2002 08 07 | 644 | 0.4+ | 0.6+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2002 08 07 | 644 | 0.6+ | 0.9+ | 2005 05 10 | G96 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2002 08 07 | 644 | 0.0 | 0.7+ | 2005 05 11 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2002 08 14 | 704 | (1.5+ | 1.7+) | 2005 05 11 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2002 08 14 | 704 | 0.3− | 0.0 | 2005 05 11 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2002 08 14 | 704 | 0.4+ | 0.0 | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2002 08 14 | 704 | 0.5+ | 0.1+ | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 08 14 | 704 | 0.6+ | 0.4+ | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.8+ | 2005 05 12 | G96 | 0.5− | 0.2− | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2002 08 17 | 644 | 0.5+ | 0.7+ | 2005 05 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 2002 08 17 | 644 | 0.2+ | 0.8+ | 2005 05 16 | 691 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2002 08 24 | 644 | 0.1+ | 0.8+ | 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2002 08 24 | 644 | 0.0 | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | (1.9+ | 0.9+) |
| 2002 08 24 | 644 | 0.5+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2002 08 27 | 644 | 0.1− | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2002 08 27 | 644 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.2− | 2006 11 21 | 704 | (0.2− | 2.1+) |
| 2002 08 27 | 644 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2004 01 24 | 704 | 0.8+ | 0.8+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2− | 1.2+ |
| 2004 01 24 | 704 | (0.9+ | 1.8+) | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.3+ | 1.4+ |
| 2004 01 24 | 704 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2004 01 24 | 704 | (1.8+ | 0.5+) | 2006 11 08 | 644 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.8− | 0.1+ |
| 2004 01 30 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2004 01 30 | 691 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.1+ |

**(141985)∗ 2002 PH$_{134}$ = 2000 AT$_{235}$**

Discovered 2002 Aug. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35341)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.87147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27454094 | $\omega$ | 105.09959 | | +0.96764531 | −0.25136686 | |
| $a$ | 2.3445778 | $\Omega$ | 269.46251 | | +0.22229335 | +0.89027189 | |
| $e$ | 0.2493259 | $i$ | 1.25185 | | +0.11936591 | +0.37977712 | |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.1− | 0.5− | 2002 08 17 | 644 | 0.0 | 0.4+ | 2002 10 29 | 704 | 1.0− | 1.1+ |
| 2000 01 05 | 704 | 0.1− | 0.6+ | 2002 08 17 | 644 | 0.2+ | 0.4+ | 2002 10 29 | 704 | 0.0 | 0.6+ |
| 2000 01 05 | 704 | 0.2+ | 1.1+ | 2002 08 28 | 644 | 0.4− | 0.2+ | 2002 10 29 | 704 | 0.1− | 0.7− |
| 2000 01 07 | 691 | 0.3+ | 1.2− | 2002 08 28 | 644 | 0.1− | 0.7+ | 2002 12 05 | 704 | 0.3− | 0.9+ |
| 2000 01 07 | 691 | 0.3− | 0.1+ | 2002 08 28 | 644 | 0.3− | 0.2+ | 2002 12 05 | 704 | 0.7− | 0.1+ |
| 2000 01 07 | 691 | 0.3− | 0.0 | 2002 08 28 | 644 | 0.2− | 0.6+ | 2002 12 05 | 704 | 0.7− | 0.8+ |
| 2001 03 28 | 691 | 0.2+ | 0.6+ | 2002 08 28 | 644 | 0.5− | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.7+ |
| 2001 03 28 | 691 | 0.3+ | 0.0 | 2002 08 28 | 644 | 0.1− | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.6+ |
| 2001 03 28 | 691 | 0.3+ | 0.6+ | 2002 09 05 | 704 | 0.3− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.8+ |
| 2001 04 30 | 691 | 0.3+ | 0.7+ | 2002 09 05 | 704 | 0.6+ | 0.1+ | 2005 06 14 | G96 | 0.3+ | 0.5+ |
| 2001 04 30 | 691 | 0.6+ | 0.7+ | 2002 09 05 | 704 | 0.2− | 0.3+ | 2005 06 14 | G96 | 0.3− | 0.6+ |
| 2001 04 30 | 691 | 0.4+ | 0.8+ | 2002 09 05 | 704 | 0.1− | 0.1+ | 2005 06 14 | G96 | 0.3− | 0.4+ |
| 2002 07 09 | 704 | 0.4+ | 0.1− | 2002 09 05 | 704 | 0.3+ | 0.3+ | 2005 06 14 | G96 | 0.4− | 0.4+ |
| 2002 07 09 | 704 | 0.1+ | 0.2− | 2002 09 10 | 608 | 0.9− | 0.6− | 2006 09 28 | 291 | 0.2− | 0.3+ |
| 2002 07 09 | 704 | 0.2+ | 0.9+ | 2002 09 10 | 608 | 0.6− | 0.9− | 2006 09 28 | 291 | 0.2− | 0.2+ |
| 2002 07 09 | 704 | 0.3− | 0.8+ | 2002 09 10 | 608 | 1.0− | 0.6− | 2006 09 28 | 291 | 0.3− | 0.1+ |
| 2002 08 08 | 699 | 0.7− | 0.6+ | 2002 09 14 | 644 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2002 08 08 | 699 | 0.4− | 1.0+ | 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2002 08 08 | 699 | 0.5− | 0.5+ | 2002 09 14 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.6+ |
| 2002 08 08 | 699 | 0.0 | 0.7+ | 2002 09 25 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.3+ |
| 2002 08 09 | 704 | 0.1− | 0.3− | 2002 09 25 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.4+ | 1.2+ |
| 2002 08 09 | 704 | 0.2− | 0.4+ | 2002 09 25 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2002 08 09 | 704 | 0.0 | 0.4+ | 2002 10 09 | 699 | 1.0− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 1.3+ |
| 2002 08 09 | 704 | 0.6+ | 0.5− | 2002 10 09 | 699 | 0.7+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2002 08 09 | 704 | 0.1+ | 0.4+ | 2002 10 09 | 699 | 0.0 | 1.3+ | 2006 11 21 | 704 | (2.0+ | 0.2−) |
| 2002 08 14 | 704 | 0.0 | 0.6+ | 2002 10 09 | 699 | 0.5+ | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | 0.5+ | 0.0 | 2002 10 11 | 704 | 0.2− | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.3+ |
| 2002 08 14 | 704 | 0.6+ | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 08 14 | 704 | 0.6+ | 0.0 | 2002 10 11 | 704 | 0.3− | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.2+ |
| 2002 08 14 | 704 | 0.6− | 0.2− | 2002 10 11 | 704 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.4+ | 0.3+ |
| 2002 08 17 | 644 | 0.1+ | 0.4+ | 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 11 25 | 691 | 0.1− | 0.3+ |

**(141986)∗ 2002 PX$_{136}$ = 2005 KT**

Discovered 2002 Aug. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 85568)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.44683 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27521335 | $\omega$ | 177.74551 | | +0.97969625 | −0.20014660 | |
| $a$ | 2.3407573 | $\Omega$ | 193.81674 | | +0.18316946 | +0.91724921 | |
| $e$ | 0.1867631 | $i$ | 2.80514 | | +0.08151201 | +0.34437656 | |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 1.9+ | 0.9− | 2006 08 28 | 703 | (2.0+ | 0.3−) | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2000 01 05 | 704 | 0.9− | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.5− | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2000 01 05 | 704 | 0.6− | 0.1− | 2006 08 28 | 703 | 1.0+ | 1.0− | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2000 01 05 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.3− | 0.7− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 06 16 | 644 | 1.0− | 0.2+ | 2006 09 16 | 703 | 0.4+ | 1.1+ | 2006 11 14 | 704 | 0.6+ | 0.6+ |
| 2002 06 16 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 1.0− | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.8+ |
| 2002 06 25 | 644 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.0 | 1.3+ | 2006 11 14 | 704 | 0.1− | 0.0 |
| 2002 07 22 | 644 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.9+ | 2006 11 14 | 704 | 0.3+ | 0.3− |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.4− | 0.2− |
| 2002 08 07 | 644 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | (0.5+ | 2.1+) |
| 2002 08 07 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.3− | 0.9+ |
| 2002 08 11 | 608 | 0.2− | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.1− |
| 2002 08 11 | 608 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.5+ | 1.0+ |
| 2002 08 15 | 699 | 0.5+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6− | 0.2− |
| 2002 08 15 | 699 | 0.7− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.9+ | 0.2− |
| 2002 08 15 | 699 | 0.4− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2002 08 15 | 699 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.7− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2002 08 17 | 644 | 0.0 | 0.8− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.2+ |
| 2002 08 17 | 644 | 0.1− | 1.0− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2002 09 02 | 608 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2005 04 07 | G96 | 0.2− | 0.2− | 2006 10 31 | 621 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2005 04 07 | G96 | 0.2+ | 0.2+ | 2006 10 31 | 621 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2005 04 07 | G96 | 0.4+ | 0.1− | 2006 10 31 | 621 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2005 04 07 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.2− |
| 2005 05 08 | G96 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.9− |
| 2005 05 08 | G96 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.3+ |
| 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2005 05 19 | 807 | 0.1+ | 0.3+ | 2006 11 02 | 703 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2005 05 19 | 807 | 0.1+ | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2005 05 19 | 807 | 0.1+ | 0.4+ | 2006 11 11 | 703 | (0.4− | 2.1−) | 2006 11 21 | 704 | 0.7+ | 0.8+ |
| 2005 05 19 | 807 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2005 05 20 | 807 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1+ | 1.0− |
| 2005 05 20 | 807 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.5− | 2006 11 28 | 704 | 0.6+ | 0.6+ |
| 2005 05 20 | 807 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.1− |
| 2005 05 21 | 807 | 0.6+ | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.2− |
| 2005 05 21 | 807 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.3− | | | | |
| 2005 05 21 | 807 | 0.6+ | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.3− | | | | |

**(141987)∗ 2002 PQ$_{138}$**

Discovered 2002 Aug. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 88.28490 | | (2000.0) | | | |
| $n$ | 0.27663725 | $\omega$ | 70.52323 | | +0.45436301 | +0.88914429 |
| $a$ | 2.3327182 | $\Omega$ | 226.62513 | | −0.84287389 | +0.40928115 |
| $e$ | 0.1409837 | $i$ | 4.30464 | | −0.28830168 | +0.20472267 |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.3+ | 0.2+ | 2002 10 04 | 704 | 0.3+ | 1.1+ | 2006 10 17 | G96 | 0.1+ | 0.8− |
| 2002 08 11 | 704 | 0.0 | 0.7+ | 2002 10 04 | 704 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2002 08 11 | 704 | 0.1− | 0.3+ | 2002 10 04 | 704 | 0.0 | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.2− |
| 2002 08 11 | 704 | 0.5+ | 0.4+ | 2002 10 04 | 704 | 0.8+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.6− |
| 2002 08 16 | 704 | 0.1− | 0.5− | 2002 10 04 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 691 | 0.3+ | 0.3+ |
| 2002 08 16 | 704 | 1.1− | 0.4+ | 2002 10 04 | 704 | 0.0 | 0.6+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2002 08 16 | 704 | 0.7+ | 0.0 | 2002 10 04 | 704 | 0.6+ | 0.9+ | 2006 10 17 | 691 | 0.2− | 0.5+ |
| 2002 08 16 | 704 | 0.8+ | 0.0 | 2002 10 04 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2002 08 18 | 941 | 0.2− | 0.7− | 2002 10 04 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2002 08 18 | 941 | 0.5+ | 0.5− | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2002 08 18 | 941 | (1.6+ | 0.1+) | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.4− |
| 2002 08 18 | 941 | 0.2+ | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2002 08 18 | 941 | 0.3− | 0.4+ | 2002 10 11 | 645 | 0.1− | 0.2− | 2006 10 27 | G96 | (2.7− | 1.5−) |
| 2002 08 18 | 941 | 0.3+ | 1.3+ | 2003 12 22 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | (2.6+ | 0.6+) |
| 2002 08 18 | 941 | (2.3− | 1.8−) | 2003 12 22 | 691 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 08 18 | 941 | (1.6− | 1.7−) | 2003 12 22 | 691 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 08 18 | 941 | 0.5− | 1.4− | 2005 05 04 | G96 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 08 19 | 941 | 0.4+ | 1.1− | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.5+ |
| 2002 08 19 | 941 | 0.4− | 0.6− | 2005 05 04 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 08 19 | 941 | 0.4+ | 0.8− | 2005 05 04 | G96 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2002 08 20 | 049 | 0.3+ | 0.3− | 2005 05 06 | 701 | 0.3− | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2002 08 20 | 049 | 0.4+ | 0.5− | 2005 05 06 | 701 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2002 08 20 | 049 | 0.3+ | 0.2− | 2005 05 06 | 701 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2002 09 04 | 699 | 0.9+ | 0.9+ | 2005 05 09 | 704 | 0.2+ | 1.4+ | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 2002 09 04 | 699 | 0.2− | 0.2− | 2005 05 09 | 704 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.6+ | 0.9+ |
| 2002 09 04 | 699 | 1.2− | 0.9+ | 2005 05 09 | 704 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2002 09 04 | 699 | 0.8− | 0.3+ | 2005 05 09 | 704 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.1− | 1.2− |
| 2002 09 06 | 704 | 0.8+ | 0.3− | 2005 05 09 | 704 | 0.1− | 0.5− | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.2+ | 2005 05 29 | E12 | 0.5+ | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2002 09 06 | 704 | 0.7+ | 0.6+ | 2005 05 29 | E12 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 1.1− | 0.6+ | 2005 05 29 | E12 | 0.3− | 0.5+ | 2006 11 17 | 703 | 0.1+ | 1.0+ |
| 2002 09 11 | 644 | 0.3− | 0.1+ | 2005 05 29 | E12 | 0.3+ | 0.9+ | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2002 09 11 | 644 | 0.4− | 0.1− | 2005 06 04 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.5− | 1.0+ |
| 2002 09 11 | 644 | 0.2− | 0.0 | 2005 06 04 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.4− |
| 2002 09 12 | 683 | 0.1+ | 0.9− | 2005 06 04 | 691 | 0.3+ | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 09 12 | 683 | (1.7− | 0.2−) | 2005 06 04 | 703 | 1.2− | 0.8− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 09 13 | 683 | 0.6− | 1.0+ | 2005 06 04 | 703 | 0.3− | 0.8− | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2002 09 13 | 683 | 0.5+ | 0.0 | 2005 06 04 | 703 | 0.5− | 1.4− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 09 13 | 683 | 0.1+ | 0.1− | 2005 06 04 | 703 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2002 09 14 | 683 | 1.5+ | 0.9+ | 2005 06 13 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3+ | 1.1+ |
| 2002 09 14 | 683 | 1.3+ | 0.6+ | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2002 09 14 | 683 | 0.3+ | 0.7+ | 2005 06 13 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 1.5− | 1.4+ |
| 2002 09 14 | 608 | 0.6− | 0.8− | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.3− | 0.1+ |
| 2002 09 14 | 608 | 0.6− | 1.2− | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.4− | 0.0 |
| 2002 09 14 | 608 | 1.1− | 1.0− | 2005 06 14 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 09 17 | 644 | 0.1− | 0.8+ | 2005 06 16 | G96 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.7+ | 0.5− |
| 2002 09 17 | 644 | 0.3− | 1.0+ | 2005 06 16 | G96 | 0.2− | 0.7+ | 2006 11 27 | G96 | 0.4+ | 0.6− |
| 2002 09 17 | 644 | 0.1+ | 1.2+ | 2005 06 16 | G96 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.1+ | 1.3+ |
| 2002 09 18 | 644 | 0.2− | 0.9+ | 2005 06 16 | G96 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.6− |
| 2002 09 18 | 644 | 0.2− | 1.1+ | 2005 06 23 | 644 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2002 09 18 | 644 | 0.3− | 1.2+ | 2005 06 23 | 644 | 0.4+ | 0.5+ | 2006 11 27 | 703 | 0.4− | 0.4− |
| 2002 09 30 | 704 | (1.8+ | 0.8+) | 2005 06 23 | 644 | 0.4+ | 0.4+ | 2006 11 27 | 703 | 0.8+ | 0.9− |
| 2002 09 30 | 704 | 1.4− | 0.7+ | 2005 06 27 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.6− | 2.6− |
| 2002 09 30 | 704 | 0.6− | 0.3+ | 2005 06 27 | 644 | 0.3+ | 0.3+ | | | | |
| 2002 09 30 | 704 | 1.4− | 0.4+ | 2005 06 27 | 644 | 0.3+ | 0.5+ | | | | |

**(141988)∗ 2002 PB$_{139}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.24271 | | (2000.0) | | | |
| $n$ | 0.26612772 | $\omega$ | 185.77979 | | +0.78036678 | −0.62388068 |
| $a$ | 2.3937345 | $\Omega$ | 212.94134 | | +0.57680237 | +0.74436564 |
| $e$ | 0.3234582 | $i$ | 4.47556 | | +0.24150924 | +0.23810227 |
| $P$ | 3.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 691 | 1.2− | 1.4− | 2002 09 07 | 704 | 0.1− | 0.7+ | 2002 11 10 | 704 | 0.6+ | 0.3− |
| 2001 05 22 | 691 | 0.4+ | 0.1+ | 2002 09 07 | 704 | 0.1− | 0.4+ | 2002 11 10 | 704 | 1.1+ | 0.2+ |
| 2001 05 22 | 691 | 0.0 | 0.6+ | 2002 09 07 | 704 | 0.1− | 0.6+ | 2002 11 10 | 704 | 0.2+ | 0.0 |
| 2002 08 12 | 704 | 0.6+ | 0.1− | 2002 09 07 | 704 | 0.1− | 0.5+ | 2003 01 04 | 704 | 0.6− | 0.0 |
| 2002 08 12 | 704 | 0.3+ | 0.1− | 2002 09 07 | 704 | 0.1+ | 0.5+ | 2003 01 04 | 704 | 0.3+ | 1.1+ |
| 2002 08 12 | 704 | 0.8+ | 0.7− | 2002 09 07 | 704 | 0.1− | 0.5+ | 2003 01 04 | 704 | 0.6− | 0.9+ |
| 2002 08 12 | 704 | 0.1+ | 0.2− | 2002 09 13 | 644 | 0.1− | 0.2− | 2004 03 26 | 691 | 0.3+ | 0.2+ |
| 2002 08 12 | 704 | 0.2+ | 0.3− | 2002 09 13 | 644 | 0.2− | 0.1− | 2004 03 26 | 691 | 0.7+ | 0.5+ |
| 2002 08 14 | 699 | 0.7+ | 0.5+ | 2002 09 13 | 644 | 0.3− | 0.0 | 2004 03 26 | 691 | 0.3+ | 0.5+ |
| 2002 08 14 | 699 | 1.4+ | 0.2+ | 2002 09 17 | 608 | 1.3− | 1.1− | 2004 04 22 | 691 | 0.0 | 0.7+ |
| 2002 08 14 | 699 | 1.2+ | 0.4+ | 2002 09 17 | 608 | 1.1− | 1.2− | 2004 04 22 | 691 | 0.1+ | 0.6+ |
| 2002 08 14 | 699 | 0.6+ | 0.2+ | 2002 09 17 | 608 | (1.2− | 1.7−) | 2004 04 22 | 691 | 0.2+ | 0.4+ |
| 2002 08 18 | 848 | 0.4+ | 1.3+ | 2002 10 04 | 704 | 0.1+ | 0.1+ | 2006 09 01 | 704 | 0.4+ | 0.5+ |
| 2002 08 18 | 848 | 0.4− | 0.6+ | 2002 10 04 | 704 | 0.2− | 0.2− | 2006 09 01 | 704 | 0.1+ | 1.0+ |
| 2002 08 18 | 848 | 0.1− | 0.7+ | 2002 10 04 | 704 | 0.4− | 0.3− | 2006 09 01 | 704 | 0.1− | 0.3− |
| 2002 08 19 | 848 | 0.6+ | 0.0 | 2002 10 04 | 704 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.0 |
| 2002 08 19 | 848 | 0.1+ | 0.3− | 2002 10 04 | 704 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.4− | 0.1− |
| 2002 08 19 | 848 | 1.4− | 0.1+ | 2002 10 12 | 704 | 0.1− | 0.7− | 2006 11 17 | 704 | 0.4− | 0.3− |
| 2002 08 28 | 644 | 0.2+ | 0.1+ | 2002 10 12 | 704 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2002 10 12 | 704 | 0.4− | 0.5− | 2006 11 18 | 704 | 0.6+ | 0.1+ |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2002 10 12 | 704 | 0.6− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 09 05 | 699 | 0.0 | 0.9+ | 2002 10 30 | 704 | 0.0 | 0.8− | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2002 09 05 | 699 | 0.5+ | 1.1+ | 2002 10 30 | 704 | 0.8− | 1.3− | 2006 11 18 | 704 | 0.8− | 0.3− |
| 2002 09 05 | 699 | 0.1− | 1.2+ | 2002 10 30 | 704 | 1.0− | 0.6− | 2006 11 20 | 704 | 0.8− | 0.2+ |
| 2002 09 05 | 699 | 0.1+ | 0.3+ | 2002 10 30 | 704 | 1.0− | 0.2− | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2002 09 06 | 704 | 0.2+ | 1.3− | 2002 11 03 | 608 | 0.1− | 0.9− | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.6+ | 2002 11 03 | 608 | (0.7− | 1.6−) | 2006 11 20 | 704 | 0.8− | 0.5− |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2002 11 03 | 608 | 0.2− | 1.4− | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 1.5+ | 0.0 |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2002 11 06 | 704 | 0.5− | 0.3+ | 2006 11 29 | 704 | 0.9− | 0.2− |
| 2002 09 07 | 704 | 0.4− | 0.5+ | 2002 11 06 | 704 | 0.3− | 0.9+ | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.1− | 0.5+ | 2002 11 06 | 704 | 0.2− | 1.0+ | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.0 | 0.6+ | 2002 11 06 | 704 | 0.6− | 0.4+ | | | | |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2002 11 10 | 704 | 0.3+ | 0.5+ | | | | |

**(141989)∗ 2002 PC$_{139}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 85.59656 | | (2000.0) | | | |
| $n$ | 0.26856230 | $\omega$ | 330.36325 | | +0.09511065 | +0.98925206 |
| $a$ | 2.3792460 | $\Omega$ | 304.87952 | | −0.88462583 | +0.03283126 |
| $e$ | 0.1969926 | $i$ | 7.78061 | | −0.45649874 | +0.14248675 |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 09 04 | 699 | 0.4+ | 0.6+ | 2005 03 13 | 699 | 0.5+ | 0.2+ |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 09 06 | 704 | 0.1+ | 0.2+ | 2005 03 13 | 699 | 1.0+ | 0.1+ |
| 2002 07 14 | 704 | 0.2− | 0.0 | 2002 09 06 | 704 | 0.3+ | 0.2+ | 2005 04 03 | 644 | 0.3+ | 0.1− |
| 2002 07 14 | 704 | 0.1+ | 0.8+ | 2002 09 06 | 704 | 0.4+ | 0.8+ | 2005 04 03 | 644 | 0.3+ | 0.2+ |
| 2002 07 14 | 704 | 0.7− | 0.1+ | 2002 09 06 | 704 | 0.1+ | 0.7+ | 2005 04 03 | 644 | 1.2+ | 0.9+ |
| 2002 07 14 | 704 | 0.1+ | 0.5+ | 2002 09 06 | 704 | 0.1− | 0.5+ | 2005 04 14 | 703 | 0.1− | 0.3+ |
| 2002 08 12 | 704 | 0.1− | 0.5+ | 2002 09 13 | 644 | 0.3− | 0.4− | 2005 04 14 | 703 | 0.6− | 0.4− |
| 2002 08 12 | 704 | 1.1+ | 0.2− | 2002 09 13 | 644 | 0.5− | 0.6− | 2005 04 14 | 703 | 0.1− | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.7+ | 1.2− | 2002 09 13 | 644 | 0.5− | 0.4− | 2005 04 14 | 703 | 0.5− | 0.2+ |
| 2002 08 12 | 704 | (1.8+ | 0.0 ) | 2002 09 16 | 608 | 0.6− | 0.5− | 2005 05 08 | 699 | 0.4+ | 0.1+ |
| 2002 08 12 | 704 | 0.7+ | 1.0− | 2002 09 16 | 608 | 0.6− | 0.5− | 2005 05 08 | 699 | 0.6+ | 0.2− |
| 2002 08 12 | 608 | 0.8− | 0.4+ | 2002 09 16 | 608 | 0.4− | 0.2+ | 2005 05 08 | 699 | 0.1+ | 0.9+ |
| 2002 08 12 | 608 | 0.3− | 0.4+ | 2002 09 30 | 704 | 0.7+ | 0.2+ | 2005 05 08 | 699 | 0.8− | 0.7+ |
| 2002 08 12 | 608 | 1.1− | 0.0 | 2002 09 30 | 704 | 1.2+ | 0.4− | 2006 09 17 | 703 | 0.2+ | 0.8+ |
| 2002 08 14 | 699 | 0.5+ | 0.2+ | 2002 09 30 | 704 | 1.4+ | 0.6+ | 2006 09 17 | 703 | 1.1+ | 0.3− |
| 2002 08 14 | 699 | 0.2− | 0.0 | 2002 09 30 | 704 | 0.6+ | 1.1− | 2006 09 17 | 703 | 0.1− | 1.2+ |
| 2002 08 14 | 699 | 0.1− | 0.0 | 2002 10 04 | 704 | 0.6− | 0.7+ | 2006 09 17 | 703 | 0.2+ | 0.6+ |
| 2002 08 14 | 699 | 0.0 | 0.1+ | 2002 10 04 | 704 | 0.5− | 0.4+ | 2006 09 28 | 703 | 1.5+ | 1.2− |
| 2002 08 18 | 848 | 1.2+ | 0.1+ | 2002 10 04 | 704 | 0.2− | 1.2+ | 2006 09 28 | 703 | (1.0+ | 2.0−) |
| 2002 08 18 | 848 | 0.9− | 0.8+ | 2002 10 04 | 704 | 0.7− | 0.7+ | 2006 09 28 | 703 | 0.2+ | 0.8+ |
| 2002 08 18 | 848 | (1.6+ | 0.5+) | 2002 10 04 | 704 | 0.2+ | 0.1− | 2006 09 28 | 703 | (2.2+ | 1.7+) |
| 2002 08 19 | 848 | 1.0+ | 1.1− | 2002 10 11 | 645 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 08 19 | 848 | 0.4− | 1.0− | 2002 10 11 | 645 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2002 08 28 | 644 | 0.2+ | 1.3+ | 2002 10 30 | 645 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.6− | 0.1+ |
| 2002 08 28 | 644 | 0.2+ | 1.3+ | 2002 10 30 | 645 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2002 08 28 | 644 | 0.0 | 1.1+ | 2002 10 31 | 645 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.7− | 0.3+ |
| 2002 09 01 | 608 | 0.0 | 0.2+ | 2002 10 31 | 645 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 09 01 | 608 | 0.1+ | 0.1− | 2003 12 28 | 704 | 0.8+ | 1.0+ | 2006 10 19 | 703 | 1.2+ | 0.5− |
| 2002 09 01 | 608 | 0.5+ | 0.0 | 2003 12 28 | 704 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.7+ |
| 2002 09 04 | 699 | 0.5− | 1.3+ | 2003 12 28 | 704 | 0.7+ | 0.7− | 2006 10 19 | 703 | 1.3− | 0.3− |
| 2002 09 04 | 699 | 0.8+ | 0.6+ | 2005 03 13 | 699 | 0.1− | 0.6+ | 2006 10 19 | 703 | 1.8− | 1.0− |
| 2002 09 04 | 699 | 0.8+ | 0.5+ | 2005 03 13 | 699 | 0.6+ | 0.5+ | | | | |

**(141990)∗ 2002 PG$_{139}$**

Discovered 2002 Aug. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.89577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23667228 | $\omega$ | 24.12489 | | +0.99621062 | +0.04666671 | |
| $a$ | 2.5884381 | $\Omega$ | 332.88888 | | −0.07833838 | +0.84803986 | |
| $e$ | 0.2171861 | $i$ | 9.26787 | | +0.03778213 | +0.52787367 | |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 699 | 0.1+ | 0.1− | 2002 09 18 | 644 | 0.4− | 0.2+ | 2006 07 19 | 644 | 0.0 | 0.3+ |
| 1998 10 29 | 699 | 1.3+ | 0.6− | 2002 09 30 | 704 | 0.8− | 0.2− | 2006 07 19 | 644 | 0.0 | 0.2− |
| 1998 10 29 | 699 | 0.5+ | 1.0− | 2002 09 30 | 704 | 0.2+ | 0.1− | 2006 07 19 | 644 | 0.2− | 0.4+ |
| 2002 08 12 | 704 | 0.2+ | 0.1+ | 2002 09 30 | 704 | 0.1− | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.0 |
| 2002 08 12 | 704 | 0.7− | 0.4− | 2002 09 30 | 704 | 0.2− | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 08 12 | 704 | 0.5− | 0.3+ | 2002 10 04 | 704 | 0.5+ | 0.7+ | 2006 08 17 | 644 | 0.2− | 0.1− |
| 2002 08 12 | 704 | 0.0 | 0.3+ | 2002 10 04 | 704 | 0.1+ | 0.1− | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 2002 08 21 | 644 | 0.3+ | 1.1+ | 2002 10 04 | 704 | 0.6+ | 0.2+ | 2006 08 20 | 644 | 0.2+ | 0.1+ |
| 2002 08 21 | 644 | 0.0 | 0.9+ | 2002 10 04 | 704 | (1.0+ | 2.0−) | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2002 08 21 | 644 | 0.3+ | 0.9+ | 2002 10 04 | 704 | 0.7+ | 1.1+ | 2006 08 23 | 704 | 1.1+ | 0.2− |
| 2002 09 04 | 699 | 0.1+ | 0.2− | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 08 23 | 704 | 0.3+ | 0.3+ |
| 2002 09 04 | 699 | 0.1− | 0.0 | 2002 10 05 | 704 | 0.3+ | 0.2− | 2006 08 23 | 704 | 0.2+ | 0.8− |
| 2002 09 04 | 699 | 1.0+ | 0.3− | 2002 10 05 | 704 | 0.2+ | 0.3− | 2006 08 23 | 704 | 0.8+ | 0.4− |
| 2002 09 04 | 699 | 0.5+ | 0.0 | 2002 10 05 | 704 | 0.1+ | 0.2+ | 2006 08 26 | 699 | 0.5− | 0.2+ |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 08 26 | 699 | 0.5− | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.5+ | 2002 10 05 | 704 | 0.3+ | 0.0 | 2006 08 26 | 699 | 0.9+ | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 0.6+ | 2002 10 05 | 704 | 0.4+ | 0.1− | 2006 08 26 | 699 | 0.3− | 0.4+ |
| 2002 09 06 | 704 | 0.3+ | 0.6+ | 2002 10 05 | 704 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.3+ |
| 2002 09 06 | 704 | 0.2− | 0.7+ | 2002 10 05 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.2− |
| 2002 09 10 | 608 | 0.3− | 1.3− | 2002 10 05 | 704 | 0.2− | 0.3− | 2006 08 28 | 699 | 0.7− | 0.1− |
| 2002 09 10 | 608 | 0.4+ | 0.6− | 2002 10 05 | 644 | 0.1+ | 0.1− | 2006 08 28 | 704 | 0.1− | 0.6− |
| 2002 09 10 | 608 | 0.2− | 0.8− | 2002 10 05 | 644 | 0.0 | 0.2− | 2006 08 28 | 699 | 0.5− | 0.1+ |
| 2002 09 12 | 636 | (0.6+ | 1.6−) | 2002 10 05 | 644 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.2− | 0.2− |
| 2002 09 12 | 636 | 0.4− | 0.3+ | 2002 10 06 | 644 | 0.1− | 0.3− | 2006 08 28 | 704 | 0.5− | 0.1− |
| 2002 09 12 | 636 | 0.9− | 0.0 | 2002 10 06 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.3+ |
| 2002 09 13 | 644 | 0.3− | 0.2+ | 2002 10 06 | 644 | 0.2+ | 0.2− | 2006 08 28 | 704 | 0.4− | 0.3+ |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2002 10 07 | 699 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.1− | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2002 10 07 | 699 | 0.1− | 0.7− | 2006 08 28 | 703 | 0.1− | 0.2− |
| 2002 09 14 | 608 | 1.1− | 0.5− | 2002 10 07 | 699 | 0.1− | 0.4+ | 2006 08 28 | 704 | 0.1+ | 0.6− |
| 2002 09 14 | 608 | 1.5− | 0.0 | 2002 10 07 | 699 | 0.1+ | 0.7− | 2006 09 13 | 644 | 0.1+ | 0.1− |
| 2002 09 14 | 608 | 1.1− | 0.3− | 2003 12 29 | 291 | 0.2− | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2002 09 17 | 644 | 0.5− | 0.1+ | 2003 12 29 | 291 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 2002 09 17 | 644 | 0.5− | 0.1− | 2003 12 29 | 291 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2002 09 17 | 644 | 0.4− | 0.1+ | 2004 01 16 | 644 | 0.6+ | 0.2+ | 2006 11 18 | G96 | 0.5+ | 0.0 |
| 2002 09 18 | 644 | 0.5− | 0.1+ | 2004 01 16 | 644 | 1.0+ | 0.2+ | 2006 11 18 | G96 | 0.7+ | 0.1+ |
| 2002 09 18 | 644 | 0.4− | 0.2+ | 2004 01 16 | 644 | 0.9+ | 0.8+ | 2006 11 18 | G96 | 0.7+ | 0.1− |

**(141991)∗ 2002 PO$_{139}$**

Discovered 2002 Aug. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.09567 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26486676 | $\omega$ | 90.26849 | | +0.43118776 | +0.90112607 | |
| $a$ | 2.4013257 | $\Omega$ | 205.42651 | | −0.86407469 | +0.39797717 | |
| $e$ | 0.1697247 | $i$ | 6.05172 | | −0.25971531 | +0.17200576 | |
| $P$ | 3.72 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 15 | 691 | 0.2+ | 0.2− | 2002 10 04 | 704 | 0.0 | 0.8+ | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 1994 05 15 | 691 | 0.2− | 0.2− | 2002 10 04 | 704 | 0.6+ | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.1+ |
| 1994 05 15 | 691 | 0.1− | 0.2− | 2002 10 04 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 1.0+ | 0.8+ |
| 2002 08 11 | 704 | 0.1+ | 0.2+ | 2002 10 04 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.5− |
| 2002 08 11 | 704 | 0.1− | 0.2− | 2005 03 11 | G96 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.4− | 0.4+ |
| 2002 08 11 | 704 | 0.1+ | 0.8− | 2005 03 11 | G96 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.4+ |
| 2002 08 11 | 704 | 0.1− | 0.1− | 2005 03 11 | G96 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2002 08 11 | 704 | 0.3+ | 0.4− | 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.4+ |
| 2002 08 12 | 608 | 1.3+ | 1.0+ | 2005 04 03 | 644 | 1.4+ | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.3+ |
| 2002 08 12 | 608 | 0.5+ | 1.0+ | 2005 04 03 | 644 | 1.1+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.5+ |
| 2002 08 12 | 608 | 1.1+ | 1.1+ | 2005 04 03 | 644 | (1.5+ | 0.1−) | 2006 10 19 | 691 | 0.2− | 0.4+ |
| 2002 08 14 | 699 | 0.2+ | 0.9+ | 2005 04 04 | 704 | 0.4+ | 1.4+ | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2002 08 14 | 699 | 0.7+ | 0.5+ | 2005 04 04 | 704 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 2002 08 14 | 699 | 0.3+ | 0.2+ | 2005 04 04 | 704 | 0.3+ | 1.3+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 08 14 | 699 | 0.1+ | 0.4+ | 2005 04 04 | 704 | 0.9+ | 1.0+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 08 16 | 683 | (0.7+ | 1.8−) | 2005 04 04 | 704 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2002 08 16 | 683 | (1.7+ | 1.1−) | 2005 04 07 | 704 | 0.5+ | 1.3+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2002 08 18 | 848 | 0.2+ | 0.5+ | 2005 04 07 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.6+ |
| 2002 08 18 | 848 | 0.5+ | 0.6+ | 2005 04 07 | 704 | 0.0 | 1.1+ | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2002 08 18 | 848 | (0.6− | 1.7+) | 2005 04 09 | 691 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 08 19 | 608 | 0.6− | 0.2+ | 2005 04 09 | 691 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 08 19 | 608 | 0.6− | 0.2− | 2005 04 09 | 691 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 08 19 | 608 | 0.3− | 0.3+ | 2005 04 09 | 691 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.3+ | 0.6+ |
| 2002 08 19 | 848 | 0.2+ | 1.2− | 2005 04 09 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.7+ | 0.7+ |
| 2002 08 19 | 848 | 0.1− | 1.4− | 2005 04 09 | 691 | 0.1− | 0.6+ | 2006 10 21 | 703 | 0.7+ | 0.9+ |
| 2002 08 19 | 848 | 1.3+ | 1.1− | 2005 04 09 | G96 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.8+ |
| 2002 08 28 | 644 | 0.3− | 0.1− | 2005 04 09 | G96 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 08 28 | 644 | 0.1− | 0.1− | 2005 04 09 | G96 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 08 28 | 644 | 0.2− | 0.2− | 2005 04 09 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 09 05 | 699 | 0.6− | 0.3+ | 2005 04 11 | 699 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2002 09 05 | 699 | 0.2− | 0.4+ | 2005 04 11 | 699 | 0.4+ | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 09 05 | 699 | 0.1+ | 0.0 | 2005 04 11 | 699 | 0.6+ | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 09 05 | 699 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.3− | 2005 04 12 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.0 | 0.9+ |
| 2002 09 06 | 704 | 0.2− | 0.4− | 2005 04 12 | 704 | 1.3+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2002 09 06 | 704 | 0.2+ | 0.2+ | 2005 04 12 | 704 | 1.0+ | 0.0 | 2006 10 28 | 704 | 0.6+ | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2005 04 12 | 704 | (1.9+ | 1.9+) | 2006 10 28 | 704 | 0.1− | 0.8+ |
| 2002 09 06 | 704 | 0.2+ | 0.2− | 2005 04 12 | 704 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2002 09 06 | 246 | 0.3− | 0.0 | 2005 04 15 | 699 | 1.4+ | 0.7− | 2006 10 28 | 704 | 0.0 | 0.7− |
| 2002 09 06 | 246 | 0.0 | 0.0 | 2005 04 15 | 699 | 0.6− | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 09 06 | 246 | 0.2− | 0.1+ | 2005 04 15 | 699 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2002 09 06 | 246 | 0.2− | 0.1+ | 2005 04 15 | 699 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.7+ |
| 2002 09 06 | 246 | 0.5+ | 0.4+ | 2005 04 18 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.6+ |
| 2002 09 06 | 557 | 0.4− | 0.2+ | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2002 09 06 | 246 | 0.2− | 0.1+ | 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.5+ |
| 2002 09 06 | 246 | 0.0 | 0.1+ | 2005 05 06 | G96 | 0.7− | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.1− |
| 2002 09 06 | 557 | 0.5− | 0.1+ | 2005 05 06 | G96 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.2+ |
| 2002 09 06 | 246 | 0.2− | 0.1+ | 2005 05 06 | G96 | 0.0 | 0.9+ | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 2002 09 06 | 557 | 0.5− | 0.2+ | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2002 09 06 | 557 | 0.5− | 0.0 | 2005 05 08 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2002 09 06 | 599 | 0.1+ | 0.1+ | 2005 05 08 | 691 | 0.2+ | 0.6+ | 2006 11 13 | 704 | 0.6− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 599 | 0.1+ | 0.1+ | 2005 05 08 | 691 | 0.9+ | 0.6+ | 2006 11 13 | 704 | 0.7+ | 0.9+ |
| 2002 09 06 | 599 | 0.2− | 0.1− | 2005 05 11 | 699 | 0.9+ | 1.0+ | 2006 11 13 | 704 | (1.1+ | 2.0+) |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2005 05 11 | 699 | 1.4+ | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2002 09 07 | 704 | 0.5− | 0.1− | 2005 05 11 | 699 | 0.5+ | 1.2+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2002 09 07 | 704 | 0.3− | 0.7+ | 2005 05 11 | 699 | (0.3− | 1.6+) | 2006 11 17 | 703 | 0.7− | 0.4− |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2005 05 13 | 703 | 0.5− | 1.0+ | 2006 11 17 | 703 | (1.6− | 0.0 ) |
| 2002 09 07 | 704 | 0.3+ | 0.0 | 2005 05 13 | 703 | 0.6− | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2002 09 07 | 704 | 0.3− | 0.3+ | 2005 05 13 | 703 | 0.9− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.5− | 0.1+ | 2005 05 13 | 703 | 0.4− | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 09 07 | 704 | 0.4− | 0.1+ | 2006 09 15 | 703 | 0.5+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.5− |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 703 | 0.6+ | 0.0 | 2006 11 21 | 704 | 1.4− | 0.5− |
| 2002 09 07 | 704 | 0.0 | 0.2− | 2006 09 15 | 703 | 0.3− | 0.3− | 2006 11 21 | 704 | (1.6− | 0.3−) |
| 2002 09 08 | 608 | 0.0 | 0.1− | 2006 09 15 | 703 | 0.6− | 0.3− | 2006 11 21 | 704 | 0.7− | 0.1− |
| 2002 09 08 | 608 | 0.3− | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.3+ |
| 2002 09 08 | 608 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.6+ | 0.3− |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.4− | 0.2− | 2006 11 27 | 703 | 0.3+ | 1.0+ |
| 2002 09 13 | 644 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 11 27 | 703 | 0.4+ | 2.3− |
| 2002 09 13 | 644 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.7+ | 0.3− | | | | |
| 2002 10 04 | 704 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.0 | | | | |

**(141992)∗ 2002 PA$_{140}$ = 2000 AL$_{158}$**

Discovered 2002 Aug. 13 by W. Bickel at Bergisch Gladbach.

Id. M. Kretlow (*MPO* 37785), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 249.21708 | | (2000.0) | | | |
| $n$ | 0.26439101 | $\omega$ | 135.15065 | | −0.92885041 | −0.37000020 |
| $a$ | 2.4042055 | $\Omega$ | 23.15245 | | +0.32544811 | −0.83866667 |
| $e$ | 0.1483819 | $i$ | 2.67517 | | +0.17697582 | −0.39967245 |
| $P$ | 3.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.7+ | 0.1− | 2003 12 22 | 704 | (0.5+ | 1.6+) | 2004 03 29 | 691 | 0.2− | 0.0 |
| 2000 01 03 | 704 | 0.1− | 0.1+ | 2003 12 27 | 704 | 0.5+ | 0.2− | 2004 03 29 | 691 | 0.1− | 0.1+ |
| 2000 01 03 | 704 | 1.0− | 0.6− | 2003 12 27 | 704 | 0.9+ | 0.2− | 2005 07 30 | E12 | 0.0 | 1.0+ |
| 2000 01 03 | 704 | 0.3− | 0.2+ | 2003 12 27 | 704 | 0.6+ | 0.4− | 2005 07 30 | E12 | (2.0− | 0.4+) |
| 2000 01 04 | 704 | 0.6+ | 1.1+ | 2003 12 27 | 704 | 0.8+ | 0.4+ | 2005 07 30 | E12 | 0.4− | 1.4+ |
| 2000 01 04 | 704 | 0.3+ | 0.7− | 2003 12 27 | 704 | 0.4+ | 0.6+ | 2006 09 24 | 701 | 0.2+ | 0.2− |
| 2000 01 04 | 704 | 0.3− | 0.9− | 2004 02 18 | 704 | 0.5+ | 0.3+ | 2006 09 24 | 701 | 0.0 | 0.4− |
| 2002 08 12 | 807 | 0.2− | 0.4+ | 2004 02 18 | 704 | 0.4+ | 0.7+ | 2006 09 24 | 701 | 0.4+ | 0.2− |
| 2002 08 12 | 807 | 0.0 | 0.3+ | 2004 02 18 | 704 | 0.1+ | 0.2+ | 2006 09 24 | 701 | 0.3− | 0.5− |
| 2002 08 13 | 621 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.5− |
| 2002 08 14 | 621 | 0.1+ | 0.2+ | 2004 02 18 | 704 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2002 08 14 | 621 | 0.2− | 0.5+ | 2004 02 19 | 608 | 0.7− | 0.4− | 2006 09 27 | G96 | 0.5+ | 0.3− |
| 2002 08 15 | 621 | 0.5+ | 0.1− | 2004 02 19 | 608 | 0.6− | 0.9− | 2006 09 27 | G96 | 0.3+ | 0.5− |
| 2002 08 15 | 621 | 0.5+ | 0.6− | 2004 02 19 | 608 | 0.3− | 0.9− | 2006 10 12 | 691 | 0.1− | 0.0 |
| 2002 09 27 | 644 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.3− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1+ |
| 2002 09 27 | 644 | 0.4− | 0.4+ | 2004 02 23 | 704 | 0.5− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2002 09 27 | 644 | 0.7− | 0.3+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2002 09 28 | 644 | 0.5− | 0.5− | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2002 09 28 | 644 | 0.8− | 0.1− | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2002 09 28 | 644 | 0.6− | 0.0 | 2004 03 11 | 644 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.3− |
| 2002 09 30 | 557 | 0.6− | 1.0+ | 2004 03 11 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 09 30 | 557 | 1.0+ | 1.1+ | 2004 03 11 | 644 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 09 30 | 557 | 0.9+ | 0.4+ | 2004 03 15 | 704 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2002 10 01 | 557 | 0.6− | 0.6− | 2004 03 15 | 704 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 10 01 | 557 | 0.1− | 0.4− | 2004 03 15 | 703 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 10 02 | 704 | 1.1− | 0.5+ | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 2002 10 02 | 704 | 0.5− | 0.9+ | 2004 03 15 | 703 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2002 10 02 | 704 | 1.3− | 1.4+ | 2004 03 15 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.4+ |
| 2002 10 02 | 704 | 0.2− | 1.3+ | 2004 03 15 | 703 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.8− | 0.5+) |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2004 03 15 | 703 | 0.4+ | 0.5− | 2006 11 11 | 703 | (1.5+ | 1.7+) |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2004 03 19 | 704 | 1.1+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2002 10 07 | 699 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 11 11 | 703 | (1.0+ | 1.6+) |
| 2002 10 07 | 699 | 0.9− | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 10 07 | 699 | 0.7+ | 0.4− | 2004 03 19 | 704 | 0.7+ | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 10 07 | 699 | 0.4− | 0.7+ | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2002 10 11 | 704 | (1.3+ | 2.3−) | 2004 03 22 | 704 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2002 10 11 | 704 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.7+ | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 0.4− | 2004 03 22 | 704 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.6+ | 1.2+ |
| 2002 11 06 | 291 | 0.3− | 0.8− | 2004 03 22 | 704 | 0.1− | 0.2+ | 2006 11 17 | 703 | (2.0+ | 2.0+) |
| 2002 11 06 | 291 | 0.2+ | 0.6+ | 2004 03 22 | 704 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2002 11 06 | 291 | 0.2+ | 0.4+ | 2004 03 26 | 703 | 0.4+ | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.4− |
| 2003 12 22 | 704 | 0.6+ | 0.0 | 2004 03 26 | 703 | 0.5+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.7− |
| 2003 12 22 | 704 | 0.1− | 0.5+ | 2004 03 26 | 703 | 0.4+ | 0.6+ | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2003 12 22 | 704 | 0.1+ | 0.3+ | 2004 03 26 | 703 | 0.8− | 0.9+ | 2006 11 27 | G96 | 0.2+ | 0.6− |
| 2003 12 22 | 704 | 0.1+ | 0.4+ | 2004 03 29 | 691 | 0.1− | 0.4+ | | | | |

**(141993)∗ 2002 PQ$_{140}$ = 2000 EW$_{53}$**

Discovered 2002 Aug. 15 by W. Bickel at Bergisch Gladbach.

Id. M. Kretlow (*MPO* 37785), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.84164 | | (2000.0) | | | |
| $n$ | 0.26260037 | $\omega$ | 237.78653 | | +0.85024212 | −0.52625101 |
| $a$ | 2.4151225 | $\Omega$ | 153.95991 | | +0.49180822 | +0.78592443 |
| $e$ | 0.1868763 | $i$ | 1.58914 | | +0.18765132 | +0.32462696 |
| $P$ | 3.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.3+ | 1.6+ | 2002 10 07 | 704 | 0.7+ | 0.5+ | 2004 03 23 | 691 | 0.4+ | 0.3+ |
| 1998 08 17 | 704 | 0.7+ | 0.3+ | 2002 10 07 | 704 | 0.1− | 0.1+ | 2004 03 23 | 691 | 0.3+ | 0.5+ |
| 1998 08 17 | 704 | 0.1− | 1.3− | 2002 10 07 | 704 | 0.1− | 0.7+ | 2004 03 23 | 691 | 0.3+ | 0.5+ |
| 1998 08 17 | 704 | 1.4− | 1.4+ | 2002 10 09 | 704 | 0.1− | 0.7− | 2004 03 30 | 291 | 0.3+ | 0.7+ |
| 2000 01 10 | 691 | 0.1+ | 0.0 | 2002 10 09 | 704 | 0.0 | 1.1+ | 2004 03 30 | 291 | 0.4+ | 0.5+ |
| 2000 01 10 | 691 | 0.5− | 0.1− | 2002 10 09 | 704 | 0.8+ | 0.2+ | 2004 03 30 | 291 | 0.5+ | 0.8+ |
| 2000 01 10 | 691 | 0.3− | 0.0 | 2002 10 09 | 704 | 0.3+ | 1.2+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2000 03 09 | 691 | 0.6− | 0.0 | 2002 10 09 | 704 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.5− |
| 2000 03 09 | 691 | 0.3− | 0.1− | 2002 10 10 | 704 | 1.2− | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 2000 03 09 | 691 | 0.2+ | 0.0 | 2002 10 10 | 704 | 1.3− | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2000 03 10 | 691 | 0.4+ | 0.3+ | 2002 10 10 | 704 | 1.2− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2000 03 10 | 691 | 0.6+ | 0.1− | 2002 10 10 | 704 | 0.8− | 1.1+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2000 03 10 | 691 | 0.4+ | 0.2+ | 2002 10 10 | 704 | 1.3− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2002 08 15 | 621 | 1.3− | 0.1− | 2002 10 11 | 704 | 0.4− | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 08 15 | 621 | 1.4− | 0.9+ | 2002 10 11 | 704 | (0.4+ | 1.8+) | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 08 16 | 621 | 0.9+ | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.4− | 0.4− |
| 2002 08 17 | 621 | 0.5− | 0.2+ | 2002 10 11 | 704 | (0.0 | 1.7+) | 2006 11 18 | 704 | 0.5+ | 0.1− |
| 2002 08 17 | 621 | 0.5− | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.0− |
| 2002 08 17 | 621 | 0.2− | 0.4+ | 2002 10 11 | 704 | 0.3− | 1.3+ | 2006 11 18 | 704 | 0.6+ | 0.5− |
| 2002 09 15 | 608 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 11 18 | 704 | 1.0− | 0.0 |
| 2002 09 15 | 608 | 0.5− | 0.6− | 2002 10 11 | 704 | 0.1+ | 1.3+ | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2002 09 15 | 608 | 0.2− | 0.5− | 2002 10 11 | 704 | 0.5− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.2− | 0.5+ | 2002 10 11 | 704 | 0.5+ | 1.3+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.0 | 1.2+ | 2002 10 31 | 704 | 0.2− | 0.7+ | 2006 11 21 | 704 | 0.8+ | 0.4− |
| 2002 10 02 | 704 | 0.4− | 0.2+ | 2002 10 31 | 704 | 0.3+ | 0.6+ | 2006 11 21 | 704 | 1.2+ | 1.1− |
| 2002 10 02 | 704 | 0.3− | 0.9+ | 2002 10 31 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 0.6− | 0.8+ | 2002 10 31 | 704 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.8− | 0.2+ |
| 2002 10 02 | 608 | 0.4− | 0.1+ | 2002 11 02 | 608 | 0.6+ | 0.8− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2002 10 02 | 608 | 0.0 | 0.2− | 2002 11 02 | 608 | 0.2+ | 1.3− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 10 02 | 608 | 0.2− | 0.3− | 2002 11 02 | 608 | 0.7+ | 0.9− | 2006 11 22 | 691 | 0.4+ | 0.4+ |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2002 11 21 | 644 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2002 11 21 | 644 | 0.5+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2002 11 21 | 644 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2004 03 17 | 291 | 0.1+ | 0.7+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 10 07 | 704 | 0.1+ | 0.1+ | 2004 03 17 | 291 | 0.2− | 0.5+ | | | | |
| 2002 10 07 | 704 | 0.7+ | 0.2− | 2004 03 17 | 291 | 0.3− | 0.3+ | | | | |

**(141994)∗ 2002 PP$_{151}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.06403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27416499 | $\omega$ | 51.91429 | | +0.97870860 | −0.19461211 | |
| $a$ | 2.3467206 | $\Omega$ | 319.19019 | | +0.14272515 | +0.87367392 | |
| $e$ | 0.1232383 | $i$ | 5.72860 | | +0.14750938 | +0.44589236 | |
| $P$ | 3.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.8− | 1.7+ | 2003 12 29 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 1999 12 07 | 703 | 0.5− | 0.5− | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | |
| 1999 12 07 | 703 | 0.6+ | 1.1+ | 2004 01 16 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.0 | 0.6− | |
| 1999 12 07 | 703 | 0.1− | 0.2+ | 2004 01 16 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.7− | |
| 2002 07 14 | 644 | 0.1− | 0.5+ | 2004 01 16 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.5− | |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2004 01 22 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.5+ | |
| 2002 07 14 | 644 | 0.2− | 0.5+ | 2004 01 22 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.0 | |
| 2002 08 08 | 699 | 0.4− | 0.2+ | 2004 01 22 | 704 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.2− | |
| 2002 08 08 | 699 | 1.0+ | 0.7+ | 2004 01 22 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.3− | |
| 2002 08 08 | 699 | 0.7− | 0.2− | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.3− | |
| 2002 08 08 | 699 | 0.9− | 0.1− | 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.5+ | 0.1− | |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.4+ | 1.3− | |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2004 02 13 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.6− | 0.1+ | |
| 2002 08 08 | 644 | 0.0 | 0.6+ | 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.7− | |
| 2002 08 10 | 807 | 0.3+ | 0.2+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 31 | 703 | 0.8+ | 1.2+ | |
| 2002 08 10 | 807 | 0.2+ | 0.1+ | 2005 05 11 | 644 | 0.3+ | 0.8+ | 2006 10 31 | 703 | 0.8+ | 0.2+ | |
| 2002 08 27 | 644 | 0.1− | 0.4+ | 2005 05 11 | 644 | 0.2− | 0.9+ | 2006 10 31 | 703 | 0.3+ | 0.2+ | |
| 2002 08 27 | 644 | 0.0 | 0.3+ | 2005 05 11 | 644 | 0.0 | 0.9+ | 2006 10 31 | 703 | 0.4+ | 0.3+ | |
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2006 08 30 | 699 | (5.0+ | 0.3+) | 2006 11 14 | 703 | 0.3+ | 0.1− | |
| 2003 12 28 | 704 | 0.4− | 0.3+ | 2006 08 30 | 699 | 0.3+ | 0.8+ | 2006 11 14 | 703 | 0.9− | 0.0 | |
| 2003 12 28 | 704 | 0.9− | 0.1+ | 2006 08 30 | 699 | 0.7− | 0.9+ | 2006 11 14 | 703 | 0.6− | 0.7− | |
| 2003 12 28 | 704 | 1.1+ | 0.4− | 2006 08 30 | 699 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.2+ | |
| 2003 12 29 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | | | | |

**(141995)∗ 2002 PU$_{154}$ = 2005 JW$_{59}$**

Discovered 2002 Aug. 12 by M. W. Buie at Cerro Tololo.

Id. A. Doppler (*MPO* 85570)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.54326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27463751 | $\omega$ | 263.08030 | | +0.98592687 | −0.12848863 | |
| $a$ | 2.3440281 | $\Omega$ | 104.26076 | | +0.15943767 | +0.91508378 | |
| $e$ | 0.1840086 | $i$ | 6.33568 | | −0.05027758 | +0.38224645 | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1+ | 0.3+ | 2002 08 31 | 704 | 0.2+ | 0.1− | 2006 10 22 | 703 | 1.4− | 0.0 | |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2002 08 31 | 704 | (2.6+ | 1.1+) | 2006 10 22 | 703 | 0.1− | 0.8− | |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.8+ | |
| 2002 08 11 | 644 | 0.2− | 0.6+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 10 31 | A50 | 1.0+ | 0.6− | |
| 2002 08 11 | 644 | 0.2− | 0.6+ | 2004 02 11 | 691 | 0.2+ | 0.4+ | 2006 10 31 | A50 | 1.1+ | 1.1+ | |
| 2002 08 11 | 644 | 0.1− | 0.6+ | 2004 04 14 | 291 | 0.0 | 0.5+ | 2006 11 01 | 703 | (0.1+ | 1.8+) | |
| 2002 08 12 | 807 | 0.4− | 0.3− | 2004 04 14 | 291 | 0.1− | 0.2+ | 2006 11 01 | 703 | (2.1+ | 2.7+) | |
| 2002 08 12 | 807 | 0.1− | 0.3− | 2004 04 14 | 291 | 0.1+ | 0.9+ | 2006 11 01 | 703 | (0.4+ | 2.0+) | |
| 2002 08 13 | 644 | 0.1+ | 0.1− | 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 703 | (0.4+ | 2.1+) | |
| 2002 08 13 | 704 | 0.4+ | 0.6+ | 2005 05 08 | 691 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.5+ | |
| 2002 08 13 | 704 | 0.3+ | 1.1+ | 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.4+ | |
| 2002 08 13 | 704 | 0.2− | 0.7+ | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | |
| 2002 08 13 | 644 | 0.1− | 0.1− | 2005 05 10 | 691 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.2− | 0.2+ | |
| 2002 08 13 | 704 | 0.1− | 1.2+ | 2005 05 10 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.2+ | 1.1+ | |
| 2002 08 13 | 704 | 0.6− | 0.4+ | 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.2− | 0.2+ | |
| 2002 08 13 | 644 | 0.2− | 0.1− | 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 1.1+ | |
| 2002 08 18 | 644 | 0.1− | 0.4+ | 2005 05 10 | 691 | 1.0− | 0.6− | 2006 11 23 | G96 | 0.1− | 0.1+ | |
| 2002 08 18 | 644 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.4− | 2006 11 23 | G96 | 0.2− | 0.1+ | |
| 2002 08 18 | 644 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.0 | |
| 2002 08 31 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | (1.7− | 0.2−) | 2006 11 23 | G96 | 0.4− | 0.1+ | |
| 2002 08 31 | 704 | (1.6+ | 0.6−) | 2006 10 22 | 703 | 0.1− | 0.1+ | | | | | |

**(141996)∗ 2002 PG$_{156}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.69964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26640926 | $\omega$ | 267.05826 | | +0.41808292 | +0.90833991 | |
| $a$ | 2.3920477 | $\Omega$ | 27.66386 | | −0.82357904 | +0.38421149 | |
| $e$ | 0.1903376 | $i$ | 1.38143 | | −0.38330698 | +0.16522755 | |
| $P$ | 3.70 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.2+ | 0.4− | 2005 03 12 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ | |
| 1995 09 27 | 691 | 1.1+ | 0.5− | 2005 03 12 | 691 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.3+ | |
| 1995 09 27 | 691 | 0.4+ | 0.7− | 2005 03 12 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ | |
| 1995 11 23 | 691 | 0.5− | 0.3+ | 2005 03 16 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.3+ | |
| 1995 11 23 | 691 | 0.3− | 0.0 | 2005 03 16 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.5+ | 0.1+ | |
| 1995 11 23 | 691 | 0.4− | 0.2− | 2005 03 16 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | (0.3+ | 2.3+) | |
| 2002 06 08 | 644 | 0.7+ | 0.3+ | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.0 | 0.6+ | |
| 2002 06 08 | 644 | 0.8+ | 0.5+ | 2005 04 02 | G96 | 0.5− | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.4− | |
| 2002 06 08 | 644 | 0.3+ | 0.5+ | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 | |
| 2002 07 14 | 644 | 0.3+ | 0.3+ | 2005 04 02 | G96 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.3+ | |
| 2002 07 14 | 644 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2005 04 02 | G96 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.4+ | |
| 2002 07 23 | 644 | 0.3− | 0.4− | 2005 04 02 | G96 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.3+ | |
| 2002 07 23 | 644 | 0.2− | 0.3− | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.8− | 0.1+ | |
| 2002 07 23 | 644 | 0.9− | 0.0 | 2005 04 05 | G96 | 0.9− | 0.3− | 2006 10 16 | G96 | 1.4+ | 0.3− | |
| 2002 08 08 | 644 | 0.5− | 0.1− | 2005 04 05 | G96 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.9− | 0.2+ | |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2005 04 05 | G96 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.1− | |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2005 04 05 | G96 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.4− | |
| 2002 08 12 | 608 | 0.3− | 0.1+ | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− | |
| 2002 08 12 | 608 | 0.5+ | 0.9+ | 2005 05 06 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.4− | |
| 2002 08 12 | 608 | 0.1− | 0.2+ | 2005 05 06 | G96 | 0.9− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1+ | |
| 2002 08 18 | 644 | 0.2+ | 0.4− | 2005 05 06 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3+ | |
| 2002 08 18 | 644 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.5− | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.3+ | |
| 2002 08 18 | 644 | 0.0 | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 02 | G96 | 0.1− | 1.1+ | |
| 2002 08 29 | 644 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 11 02 | G96 | 0.5− | 0.3+ | |
| 2002 08 29 | 644 | 0.0 | 0.6− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 11 02 | G96 | 0.2− | 0.3+ | |
| 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.6− | |
| 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.4+ | 0.5− | |
| 2002 09 15 | 644 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.6− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.6− | |
| 2002 09 15 | 644 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.6− | 0.2− | |

**(141997)∗ 2002 PK$_{156}$ = 1999 VG$_{170}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Id. A. Doppler (*MPO* 47207), M. Kretlow (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.70789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27500463 | $\omega$ | 90.95355 | | +0.50484995 | −0.86299610 | |
| $a$ | 2.3419415 | $\Omega$ | 328.70178 | | +0.77664766 | +0.46376452 | |
| $e$ | 0.1718360 | $i$ | 2.10547 | | +0.37675580 | +0.20040013 | |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.5+ | 0.1+ | 2004 02 29 | 691 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.1+ | |
| 1999 11 14 | 704 | 0.5− | 1.4− | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.5− | 0.0 | |
| 1999 11 14 | 704 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 11 07 | 644 | 0.2− | 0.1− | |
| 1999 11 16 | 704 | 0.1+ | 0.5+ | 2004 03 18 | 704 | (0.8+ | 1.7+) | 2006 11 07 | 644 | 0.3− | 0.1− | |
| 1999 11 16 | 704 | 0.2− | 1.0− | 2004 03 18 | 704 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.2− | 0.6+ | |
| 1999 11 16 | 704 | 0.7+ | 0.8− | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.6+ | 0.0 | |
| 1999 11 16 | 704 | 0.5− | 0.9− | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.7+ | |
| 2002 08 08 | 644 | 0.0 | 1.1+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.0 | |
| 2002 08 08 | 644 | 0.1+ | 0.9+ | 2006 10 03 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.7− | |
| 2002 08 17 | 644 | 0.1+ | 0.7+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.7− | |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.6+ | |
| 2002 08 17 | 644 | 0.0 | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.5+ | |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 10 16 | 691 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.7− | 0.1+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.6− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2002 08 18 | 644 | 0.5− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2002 08 27 | 644 | 0.4− | 0.8+ | 2006 10 19 | 644 | 0.6− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2002 08 27 | 644 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2004 02 11 | 644 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.3− |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2004 02 11 | 644 | 1.2+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.7− |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.5− |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2004 02 17 | 704 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 02 17 | 704 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2004 02 26 | 704 | 0.3+ | 0.4+ | 2006 10 29 | 704 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2004 02 26 | 704 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 0.9− | 0.6+ | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2004 02 26 | 704 | 0.7+ | 0.4− | 2006 10 29 | 704 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2004 02 26 | 704 | (1.5+ | 1.7+) | 2006 10 29 | 704 | 0.4− | 0.7+ | 2006 11 27 | 113 | 0.6− | 0.8− |
| 2004 02 26 | 704 | 0.5− | 0.0 | 2006 10 29 | 704 | 0.4+ | 0.1+ | 2006 11 27 | 113 | 0.1+ | 1.4− |
| 2004 02 29 | 691 | 0.3− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.0 | | | | |
| 2004 02 29 | 691 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | | | |

**(141998)∗ 2002 PE$_{157}$ = 1999 XK$_{260}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar. Id. A. Doppler (*MPO* 47207), K. E. Smalley (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.18324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26875215 | $\omega$ | 301.99272 | | +0.44109607 | −0.89624831 | |
| $a$ | 2.3781254 | $\Omega$ | 121.76417 | | +0.84079480 | +0.39452261 | |
| $e$ | 0.2044655 | $i$ | 3.14311 | | +0.31384449 | +0.20270883 | |
| $P$ | 3.67 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.3+ | 0.6− | 2004 02 23 | 704 | 0.4+ | 1.0+ | 2006 09 18 | 699 | 0.1− | 0.0 |
| 1999 12 08 | 704 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.1+ | 0.2− |
| 1999 12 08 | 704 | 0.4+ | 0.5− | 2004 02 23 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 0.3+ | 0.4+ |
| 1999 12 08 | 704 | 0.2+ | 0.8− | 2004 02 23 | 704 | (0.1+ | 2.2+) | 2006 09 18 | 699 | 0.2+ | 0.0 |
| 1999 12 17 | 704 | 0.7+ | 1.9− | 2004 02 25 | 704 | (0.3+ | 1.8+) | 2006 09 19 | 704 | 0.1+ | 0.1+ |
| 1999 12 17 | 704 | (1.1+ | 2.1−) | 2004 02 25 | 704 | 1.2+ | 1.5+ | 2006 09 19 | 704 | 0.6+ | 0.2+ |
| 1999 12 17 | 704 | 0.0 | 0.8− | 2004 02 25 | 704 | (0.1+ | 2.0+) | 2006 09 19 | 704 | 0.4− | 0.2+ |
| 2000 01 05 | 704 | 0.1− | 0.8− | 2004 02 25 | 704 | (0.6− | 2.0+) | 2006 09 19 | 704 | (1.6− | 1.7+) |
| 2000 01 05 | 704 | 0.4+ | 1.4− | 2004 02 25 | 704 | (0.2− | 1.8+) | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 2000 01 05 | 704 | 0.2− | 1.4− | 2004 02 26 | 704 | 0.7− | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.2+ |
| 2000 01 05 | 704 | 0.6− | 1.8− | 2004 02 26 | 704 | 0.2− | 0.8+ | 2006 09 20 | 644 | 0.2+ | 0.3+ |
| 2000 01 05 | 704 | 0.2− | 2.0− | 2004 02 26 | 704 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.1− | 0.7+ |
| 2002 07 14 | 644 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.2+ |
| 2002 07 14 | 644 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.3− | 0.9+ | 2006 09 22 | 704 | 0.2− | 0.9+ |
| 2002 07 14 | 644 | 0.0 | 0.6+ | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.6− | 0.1+ |
| 2002 07 22 | 644 | 0.0 | 0.5− | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.8− | 0.8+ |
| 2002 07 22 | 644 | 0.0 | 0.3− | 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 1.0+ |
| 2002 08 08 | 644 | 0.2− | 0.3+ | 2004 03 10 | 644 | 0.1+ | 1.1+ | 2006 09 26 | 704 | 0.6− | 0.9+ |
| 2002 08 08 | 644 | 0.2− | 0.4+ | 2004 03 10 | 644 | 0.2− | 0.7+ | 2006 09 26 | 704 | 0.4− | 0.8+ |
| 2002 08 08 | 644 | 0.3− | 0.6+ | 2004 03 10 | 644 | 0.3+ | 1.0+ | 2006 09 26 | 704 | 0.6− | 0.1+ |
| 2002 08 11 | 644 | 0.3+ | 0.3+ | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.8+ |
| 2002 08 11 | 644 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.5− | 0.8+ | 2006 09 26 | 704 | 0.9− | 0.7+ |
| 2002 08 18 | 644 | 0.3− | 0.2+ | 2004 03 15 | 704 | (0.4+ | 1.6+) | 2006 09 28 | 704 | 0.3− | 0.1+ |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.6+ |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.2− | 0.2+ |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2004 03 17 | 691 | 0.4+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.7+ |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2004 03 19 | 704 | (1.3+ | 2.1+) | 2006 09 30 | 704 | 0.8− | 0.5+ |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2004 03 19 | 704 | 1.0+ | 0.7+ | 2006 09 30 | 704 | 0.0 | 0.1+ |
| 2003 11 30 | 691 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 09 30 | 704 | 0.1+ | 0.1− |
| 2003 11 30 | 691 | 0.1− | 0.3+ | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2004 03 26 | 691 | 0.7− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.7+ | 0.5− | 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.6+ | 0.7+ | 2004 03 31 | 691 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.1− | 0.5+ | 2004 03 31 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.4+ | 0.6+ | 2004 03 31 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.2+ | 0.5+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 1.0− | 0.4+ |
| 2004 01 29 | 704 | 1.1+ | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2004 01 29 | 704 | 1.1+ | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.5− | 1.0+ |
| 2004 01 29 | 704 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.5− | 1.4− | 2006 10 22 | 703 | 1.0− | 1.4+ |
| 2004 01 29 | 704 | 1.0+ | 1.2+ | 2006 09 12 | 703 | 0.5− | 0.6− | 2006 10 27 | 704 | 0.3+ | 1.5+ |
| 2004 02 17 | 704 | 0.2+ | 1.1+ | 2006 09 12 | 703 | 1.0+ | 0.2+ | 2006 10 27 | 704 | 0.8+ | 1.0+ |
| 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 0.2− | 0.2− | 2006 10 27 | 704 | 0.2+ | 1.3+ |
| 2004 02 17 | 704 | 0.5+ | 1.3+ | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 10 27 | 704 | 0.4+ | 1.0+ |
| 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.6+ | 0.6+ | 2006 10 27 | 704 | 0.5+ | 1.6+ |
| 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.2+ | | | | |
| 2004 02 23 | 704 | (0.6+ | 1.7+) | 2006 09 18 | 703 | 0.7− | 0.2− | | | | |

**(141999)∗ 2002 PJ$_{157}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.55027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27087446 | $\omega$ | 218.67707 | | +0.97914041 | +0.17697110 | |
| $a$ | 2.3656873 | $\Omega$ | 130.82883 | | −0.13758640 | +0.93901150 | |
| $e$ | 0.1294476 | $i$ | 7.58108 | | −0.14951264 | +0.29485359 | |
| $P$ | 3.64 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1+ | 0.7+ | 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2002 07 14 | 644 | 0.2− | 0.0 | 2003 12 22 | 691 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 07 14 | 644 | 0.4+ | 0.3+ | 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 07 23 | 644 | 0.1+ | 0.7+ | 2004 01 15 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2002 07 23 | 644 | 0.6− | 0.2+ | 2004 01 15 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2002 08 08 | 644 | 0.2+ | 0.5+ | 2004 02 16 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2002 08 08 | 644 | 0.1+ | 0.4+ | 2004 02 16 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 2002 08 08 | 644 | 0.2+ | 0.6+ | 2004 02 16 | 691 | 0.1− | 0.9+ | 2006 10 17 | 703 | 0.1+ | 1.2+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2005 04 14 | 691 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 08 18 | 644 | 0.6− | 0.2− | 2005 04 14 | 691 | 0.2+ | 0.9+ | 2006 10 22 | 644 | 0.4+ | 0.4+ |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2005 04 14 | 691 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 08 29 | 644 | 0.3− | 0.4− | 2006 09 29 | 699 | 1.0− | 0.0 | 2006 11 16 | 703 | 0.3− | 0.3+ |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.6− | 0.4+ | 2006 11 16 | 703 | 1.0+ | 0.4+ |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 1.2− | 0.0 | 2006 11 16 | 703 | 0.1+ | 0.3+ |
| 2002 09 15 | 644 | 0.1− | 0.6+ | 2006 09 29 | 699 | (2.0− | 0.3−) | 2006 11 16 | 703 | 0.3− | 0.7+ |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1− | | | | |
| 2003 12 22 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1− | | | | |

**(142000)∗ 2002 PZ$_{158}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.55771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28280268 | $\omega$ | 90.06514 | | +0.69798714 | −0.71155449 | |
| $a$ | 2.2986898 | $\Omega$ | 315.29683 | | +0.60293840 | +0.64470310 | |
| $e$ | 0.1123970 | $i$ | 6.58341 | | +0.38636672 | +0.27937094 | |
| $P$ | 3.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 703 | 0.1+ | 1.0+ | 2004 01 24 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.3+ |
| 1999 11 10 | 703 | 0.2− | 0.5+ | 2004 01 24 | 704 | 0.3− | 1.3+ | 2006 10 19 | 703 | 1.0− | 0.3− |
| 1999 11 10 | 703 | 1.1− | 0.2+ | 2004 01 30 | 704 | 1.0+ | 0.9+ | 2006 10 19 | 703 | 0.5− | 0.4+ |
| 1999 11 10 | 703 | 0.0 | 1.6+ | 2004 01 30 | 704 | (1.8− | 0.1+) | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 2002 07 14 | 644 | 0.7− | 0.8+ | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2002 07 14 | 644 | 0.5− | 0.4+ | 2004 01 30 | 704 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.4− |
| 2002 07 14 | 644 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.5− | 1.0+ | 2006 10 27 | 703 | 0.2+ | 0.1+ |
| 2002 07 22 | 644 | 0.3− | 0.7+ | 2004 01 30 | 691 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.0 | 1.0− |
| 2002 07 22 | 644 | 0.7− | 0.7+ | 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2002 08 08 | 644 | 0.3− | 0.5+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.1− |
| 2002 08 08 | 644 | 0.3− | 0.1− | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.5− | 0.3− |
| 2002 08 08 | 644 | 0.8+ | 0.6+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 11 15 | 704 | (1.6+ | 0.6+) |
| 2002 08 17 | 644 | 0.9− | 0.9+ | 2004 02 11 | 291 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.7− |
| 2002 08 17 | 644 | 0.1+ | 0.7+ | 2004 02 11 | 291 | 0.1− | 0.1+ | 2006 11 15 | 704 | (1.3+ | 2.0−) |
| 2002 08 17 | 644 | 0.2− | 0.5+ | 2004 02 11 | 291 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 1.5+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.3+ | 0.0 | 2004 02 17 | 644 | 0.1+ | 0.6+ | 2006 11 17 | 644 | 0.1+ | 0.2− |
| 2002 08 27 | 644 | 0.3− | 0.5+ | 2004 02 17 | 644 | 0.4− | 0.5+ | 2006 11 17 | 644 | 0.2+ | 0.2− |
| 2002 08 27 | 644 | 0.1+ | 0.3+ | 2004 02 17 | 644 | 0.1− | 0.4+ | 2006 11 17 | 644 | 0.2+ | 0.2− |
| 2004 01 22 | 704 | 0.8+ | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.7− | 2006 11 21 | 703 | 0.7+ | 0.4− |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.4− | 2006 11 21 | 703 | 0.0 | 0.3− |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.9+ | 0.6− | 2006 11 21 | 703 | 0.0 | 0.6− |
| 2004 01 22 | 704 | 0.1+ | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.5− | 2006 11 21 | 703 | 0.5+ | 0.8− |
| 2004 01 24 | 704 | 0.9+ | 0.2+ | 2004 02 26 | 704 | 0.4− | 0.3− | | | | |
| 2004 01 24 | 704 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.3+ | | | | |

**(142001)∗ 2002 PW$_{159}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.26155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26665927 | $\omega$ | 316.80061 | | +0.99113061 | −0.12909391 | |
| $a$ | 2.3905524 | $\Omega$ | 50.64374 | | +0.13031089 | +0.89756712 | |
| $e$ | 0.2005980 | $i$ | 2.33789 | | +0.02606107 | +0.42155430 | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.2− | 0.2− | 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 10 23 | 704 | 1.1+ | 0.1+ |
| 2002 07 14 | 644 | 0.3− | 0.3+ | 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.5− | 1.4− |
| 2002 07 14 | 644 | 0.2− | 0.1+ | 2005 05 13 | G96 | 0.5+ | 0.2+ | 2006 10 23 | 704 | 1.3− | 0.9+ |
| 2002 07 23 | 644 | 0.2+ | 0.8+ | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 10 28 | 704 | 1.5− | 0.1− |
| 2002 07 23 | 644 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 10 28 | 704 | 0.3+ | 0.1+ |
| 2002 07 23 | 644 | 0.0 | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 08 08 | 699 | 0.3− | 0.9+ | 2006 08 28 | 703 | 0.0 | 0.8+ | 2006 10 28 | 704 | 0.0 | 0.5− |
| 2002 08 08 | 699 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 28 | 704 | 0.7+ | 0.1− |
| 2002 08 08 | 699 | 0.3− | 0.7− | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 08 08 | 699 | 0.8+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.9− | 0.2− |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.5− | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 08 08 | 644 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 08 | 644 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 15 | 699 | 0.9− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 08 15 | 699 | 0.3− | 0.5− | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2002 08 15 | 699 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2002 08 15 | 699 | 0.8+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 2002 08 18 | 644 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2002 08 29 | 644 | 0.2− | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2002 08 29 | 644 | 0.6+ | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.5− | 1.4− |
| 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2004 02 12 | 691 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.1+ |
| 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.7− |
| 2004 03 01 | 291 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | (0.1− | 1.8+) |
| 2004 03 01 | 291 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.2− | 1.4+ |
| 2004 03 01 | 291 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.7+ |
| 2005 04 17 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.1− | 0.5− | 2006 11 18 | 704 | 0.8− | 1.0+ |
| 2005 04 17 | 691 | 0.4+ | 0.6+ | 2006 10 21 | 703 | 0.6− | 0.4− | 2006 11 21 | 691 | 0.4+ | 0.1− |
| 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | (2.6− | 0.4+) | 2006 11 21 | 691 | 0.4+ | 0.0 |
| 2005 05 04 | G96 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.4+ | 0.3− |
| 2005 05 04 | G96 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.9− | 1.1+ |
| 2005 05 04 | G96 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.4− | 1.0+ |
| 2005 05 04 | G96 | 0.2− | 0.4+ | 2006 10 23 | 704 | (1.7− | 0.2+) | 2006 11 21 | 704 | (1.7− | 1.2+) |
| 2005 05 13 | G96 | 0.2+ | 0.5+ | 2006 10 23 | 704 | (2.4− | 1.1+) | | | | |

**(142002)∗ 2002 PM$_{160}$ = 1999 TN$_{327}$ = 2005 JO$_{82}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar. Id. G. V. Williams (*MPO* 75472)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.12191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28068218 | $\omega$ | 240.25903 | | +0.79963983 | +0.59879050 | |
| $a$ | 2.3102527 | $\Omega$ | 82.92139 | | −0.53407767 | +0.74347697 | |
| $e$ | 0.0989029 | $i$ | 2.59970 | | −0.27447622 | +0.29781191 | |
| $P$ | 3.51 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.3+ | 0.3− | 2002 08 18 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.6+ | 0.0 |
| 1999 10 10 | 691 | 0.1+ | 0.3− | 2002 08 29 | 644 | 0.4+ | 0.6− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 1999 10 10 | 691 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.3+ | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 1999 10 20 | 120 | (3.8+ | 2.8+) | 2002 08 29 | 644 | 0.2− | 0.9− | 2006 10 18 | 691 | 0.2+ | 0.6+ |
| 1999 10 20 | 120 | (5.5+ | 7.1−) | 2002 08 29 | 644 | 0.0 | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 1999 11 28 | 691 | 0.1+ | 0.1− | 2002 08 29 | 644 | 0.5− | 0.7− | 2006 10 18 | 691 | 0.2− | 0.5+ |
| 1999 11 28 | 691 | 0.1− | 0.2− | 2005 05 07 | G96 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 1999 11 28 | 691 | 0.1− | 0.0 | 2005 05 07 | G96 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2005 05 07 | G96 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.3+ |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2005 05 07 | G96 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 08 08 | 644 | 0.4+ | 0.3− | 2005 05 12 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2002 08 15 | 644 | 0.2− | 0.3− | 2005 05 12 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2002 08 15 | 644 | 0.2− | 0.1− | 2005 05 12 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2002 08 15 | 644 | 0.2+ | 0.3− | 2005 06 13 | G96 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2002 08 15 | 644 | 0.1− | 0.2− | 2005 06 13 | G96 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.8− | 0.1− |
| 2002 08 15 | 644 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.2− | 0.6− | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2002 08 18 | 644 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.4− | | | | |

**(142003)∗ 2002 PP$_{160}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.67115 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28987047 | $\omega$ | 303.48118 | | +0.00255727 | +0.99927550 | |
| $a$ | 2.2611710 | $\Omega$ | 326.60267 | | −0.89307127 | −0.01480223 | |
| $e$ | 0.1015032 | $i$ | 3.95576 | | −0.44990795 | +0.03506244 | |
| $P$ | 3.40 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 13 | 691 | 0.1+ | 0.4+ | 2002 08 17 | 644 | 0.1− | 0.1+ | 2005 06 26 | 644 | 0.1− | 0.1+ |
| 2001 02 13 | 691 | 0.2+ | 0.5+ | 2002 08 17 | 644 | 0.1− | 0.3+ | 2005 06 26 | 644 | 0.0 | 0.0 |
| 2001 02 13 | 691 | 0.2+ | 0.6+ | 2002 08 17 | 644 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.4− |
| 2001 02 21 | 691 | 0.1+ | 0.1− | 2002 08 18 | 644 | 0.0 | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2001 02 21 | 691 | 0.1+ | 0.2+ | 2002 08 18 | 644 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2001 02 21 | 691 | 0.2− | 0.2− | 2002 08 18 | 644 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2002 07 14 | 644 | 0.2− | 0.2− | 2002 08 27 | 644 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.7− | 0.4+ |
| 2002 07 14 | 644 | 0.4+ | 0.2+ | 2002 08 27 | 644 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.7+ |
| 2002 07 14 | 644 | 0.3+ | 0.2− | 2002 08 27 | 644 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.6+ |
| 2002 07 22 | 644 | 0.9− | 0.4+ | 2002 08 29 | 644 | 0.5− | 0.7+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2002 07 22 | 644 | 0.1+ | 0.1+ | 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2002 07 22 | 644 | 0.1+ | 0.1+ | 2005 05 11 | 644 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.3+ | 2005 05 11 | 644 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.1+ | 0.4+ | 2005 05 11 | 644 | 0.1− | 0.2+ | | | | |
| 2002 08 08 | 644 | 0.1+ | 0.6+ | 2005 06 26 | 644 | 0.2− | 0.2+ | | | | |

**(142004)∗ 2002 PE$_{161}$ = 2001 FQ$_{144}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar. Id. K. E. Smalley (*MPO* 47212), T. B. Spahr (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.49365 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28467719 | $\omega$ | 3.52773 | | −0.46518127 | −0.88231624 | |
| $a$ | 2.2885879 | $\Omega$ | 114.20543 | | +0.81023620 | −0.45695669 | |
| $e$ | 0.1434747 | $i$ | 4.50152 | | +0.35654407 | −0.11273260 | |
| $P$ | 3.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 23 | 699 | 0.6+ | 0.6+ | 2003 12 19 | 704 | 0.6+ | 0.1− | 2004 04 19 | 704 | 0.6+ | 0.1− |
| 2001 03 23 | 699 | 0.6+ | 0.6+ | 2003 12 19 | 704 | 0.4+ | 0.6− | 2004 04 19 | 704 | 0.2+ | 0.6+ |
| 2001 03 23 | 699 | 1.1− | 0.4− | 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2+ | 1.4− |
| 2001 03 23 | 699 | 0.2+ | 0.2− | 2003 12 19 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.8− | 0.1+ |
| 2001 03 26 | 704 | 0.8+ | 0.1+ | 2003 12 21 | 704 | 0.6− | 0.3+ | 2006 09 18 | 703 | 0.7− | 1.1+ |
| 2001 03 26 | 704 | 0.5+ | 0.8+ | 2003 12 21 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.6− | 1.0+ |
| 2001 03 26 | 704 | 0.7+ | 1.2− | 2003 12 21 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.9− | 0.8− |
| 2001 03 26 | 704 | 0.0 | 0.8+ | 2003 12 21 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.8− |
| 2001 04 04 | 608 | (1.0− | 1.7+) | 2003 12 21 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.7− | 1.2− |
| 2001 04 04 | 608 | 1.0− | 1.0+ | 2003 12 27 | 703 | 0.1+ | 0.1+ | 2006 09 30 | 703 | (2.7− | 2.9−) |
| 2001 04 17 | 699 | 0.2+ | 1.2+ | 2003 12 27 | 703 | 0.2+ | 0.5− | 2006 10 01 | 704 | 0.5+ | 0.2+ |
| 2001 04 17 | 699 | 0.7+ | 1.0+ | 2003 12 27 | 703 | 1.1+ | 0.3− | 2006 10 01 | 704 | 0.1− | 0.4+ |
| 2001 04 17 | 699 | 0.3+ | 0.2− | 2003 12 27 | 703 | 1.0+ | 0.8− | 2006 10 01 | 704 | 0.2+ | 0.4− |
| 2001 04 17 | 699 | 0.2+ | 0.7+ | 2004 01 13 | 699 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.7+ | 0.8+ |
| 2001 04 26 | 608 | (2.2− | 1.1+) | 2004 01 13 | 699 | 0.5− | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2001 04 26 | 608 | (2.0− | 0.4+) | 2004 01 13 | 699 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.1− |
| 2001 05 11 | 608 | 0.7− | 1.2+ | 2004 01 13 | 691 | 0.1− | 0.2− | 2006 10 03 | G96 | 0.7+ | 0.3+ |
| 2001 05 11 | 608 | (0.6− | 1.7+) | 2004 01 13 | 699 | 0.5− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2001 05 11 | 608 | (0.1− | 2.1+) | 2004 01 13 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2002 07 23 | 644 | 0.4− | 0.1− | 2004 01 13 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.3+ |
| 2002 07 23 | 644 | 0.7+ | 0.2+ | 2004 01 21 | 704 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 07 23 | 644 | 0.3+ | 0.2+ | 2004 01 21 | 704 | 0.9− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 07 29 | 644 | 0.6− | 0.3+ | 2004 01 21 | 704 | (2.0− | 0.4+) | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 07 29 | 644 | 0.3− | 0.6+ | 2004 01 21 | 704 | (1.5+ | 1.4+) | 2006 10 16 | 703 | 0.6− | 0.7+ |
| 2002 07 29 | 644 | 0.1− | 0.2+ | 2004 01 21 | 704 | 1.4+ | 1.4+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2002 08 08 | 644 | 0.1− | 0.3+ | 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 1.0+ |
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2004 01 24 | 704 | 0.3− | 0.2− | 2006 10 16 | 703 | (3.0− | 0.7+) |
| 2002 08 08 | 644 | 0.5− | 0.5+ | 2004 01 24 | 704 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 08 18 | 644 | 0.5+ | 0.3+ | 2004 01 24 | 704 | (0.5− | 1.5−) | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.4+ |
| 2002 08 29 | 644 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.4+ |
| 2002 08 29 | 644 | 0.2− | 0.4+ | 2004 01 30 | 704 | 1.1+ | 0.6− | 2006 10 22 | 703 | 0.8− | 1.2+ |
| 2003 11 21 | 704 | 0.8− | 0.1− | 2004 02 15 | 704 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 0.6− | 1.2+ | 2004 02 15 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2003 11 21 | 704 | 0.1+ | 1.4+ | 2004 02 15 | 704 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2003 12 16 | 699 | 1.0− | 0.3+ | 2004 02 15 | 704 | 0.6+ | 0.5+ | 2006 11 16 | 703 | 1.0− | 0.4− |
| 2003 12 16 | 699 | 0.7− | 0.3+ | 2004 02 15 | 704 | 0.9+ | 0.2− | 2006 11 16 | 703 | 0.1− | 0.0 |
| 2003 12 16 | 699 | (1.5− | 0.5−) | 2004 03 19 | 704 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.9+ | 0.3− |
| 2003 12 16 | 699 | 1.3− | 0.2+ | 2004 03 19 | 704 | 0.4− | 0.6+ | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2003 12 19 | 691 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.8− | 0.5+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2003 12 19 | 704 | 0.4+ | 0.4− | 2004 03 19 | 704 | (1.6− | 0.6+) | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2003 12 19 | 704 | 0.7+ | 0.2− | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2004 04 19 | 704 | 1.2− | 0.2+ | 2006 11 24 | G96 | 0.4+ | 0.1+ |

**(142005)∗ 2002 PS$_{161}$**

Discovered 2002 Aug. 8 by S. F. Hoenig at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.90146 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25612297 | $\omega$ | 58.47384 | | +0.70541599 | −0.70873234 |
| $a$ | 2.4556720 | $\Omega$ | 346.65005 | | +0.63586268 | +0.63858368 |
| $e$ | 0.1767647 | $i$ | 2.31179 | | +0.31315640 | +0.29984889 |
| $P$ | 3.85 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.6+ | 0.5+ | 2003 12 17 | 291 | 0.7− | 0.7+ | 2006 08 28 | 703 | 0.7− | 0.2− |
| 2000 01 29 | 704 | 0.0 | 0.5+ | 2004 01 22 | 704 | 1.4+ | 0.6− | 2006 08 28 | 703 | 0.0 | 0.9− |
| 2000 01 29 | 704 | 0.1− | 0.2+ | 2004 01 22 | 704 | 0.6+ | 1.9− | 2006 08 28 | 703 | 1.3+ | 0.4− |
| 2001 04 23 | 691 | 0.2+ | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.1− | 2006 08 29 | 704 | 0.2+ | 1.0+ |
| 2001 04 23 | 691 | 0.0 | 1.1+ | 2004 01 22 | 704 | 1.5+ | 0.7− | 2006 08 29 | 704 | 1.1+ | 0.8+ |
| 2001 04 23 | 691 | 0.4+ | 0.2+ | 2004 01 23 | 699 | 0.5− | 0.5+ | 2006 08 29 | 704 | 0.1+ | 0.9+ |
| 2002 07 23 | 644 | 0.3− | 0.0 | 2004 01 23 | 699 | 0.5+ | 0.4+ | 2006 08 31 | 704 | 1.5+ | 0.8+ |
| 2002 07 23 | 644 | 0.1− | 0.2+ | 2004 01 23 | 699 | 0.1+ | 1.1− | 2006 08 31 | 704 | 0.4− | 0.5+ |
| 2002 07 23 | 644 | 0.0 | 0.8+ | 2004 01 23 | 699 | 0.9+ | 0.7+ | 2006 08 31 | 704 | 0.4− | 0.3+ |
| 2002 07 29 | 644 | 0.2+ | 0.5+ | 2004 02 10 | 703 | 0.7+ | 0.3+ | 2006 08 31 | 704 | 0.5− | 0.4− |
| 2002 07 29 | 644 | 0.1+ | 0.4+ | 2004 02 10 | 703 | 0.8+ | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.8+ |
| 2002 07 29 | 644 | 0.2+ | 0.5+ | 2004 02 10 | 703 | 0.7− | 1.0+ | 2006 09 14 | 703 | 0.3− | 1.0+ |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2004 02 10 | 703 | 0.9+ | 0.9+ | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.3+ | 2004 02 11 | 049 | 1.7− | 0.2− | 2006 09 14 | 703 | 1.2− | 0.7− |
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2004 02 11 | 049 | 1.4− | 0.5− | 2006 09 17 | 704 | 0.4− | 0.1+ |
| 2002 08 12 | 699 | 0.2− | 0.6− | 2004 02 11 | 049 | (2.3− | 0.6+) | 2006 09 17 | 704 | 0.8− | 0.3+ |
| 2002 08 12 | 699 | (1.3− | 2.3+) | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.1− | 1.2+ |
| 2002 08 12 | 699 | 0.0 | 0.2− | 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.7− | 0.5− |
| 2002 08 12 | 699 | (0.1− | 2.3+) | 2004 02 12 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.4+ |
| 2002 08 16 | 608 | 0.7− | 0.1+ | 2004 02 16 | 704 | 0.8+ | 1.0+ | 2006 09 20 | 704 | 1.7− | 0.5− |
| 2002 08 16 | 608 | 0.8− | 0.6− | 2004 02 16 | 704 | 1.1+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.4+ |
| 2002 08 16 | 608 | 0.1− | 0.1+ | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2004 02 16 | 704 | 1.2+ | 1.8+ | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2004 03 01 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.2− |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2004 03 01 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.7+ | 0.2+ |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2004 03 01 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.3+ | 0.2+ | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2002 09 04 | 644 | 0.7+ | 0.6+ | 2006 08 19 | 691 | 0.2− | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2002 09 04 | 644 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2002 09 04 | 644 | 0.0 | 0.2− | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2002 09 15 | 644 | 0.7+ | 0.4− | 2006 08 19 | 644 | 0.3− | 0.0 | 2006 09 27 | 704 | 1.1− | 0.5+ |
| 2002 09 15 | 644 | 0.2− | 0.3− | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.8+ |
| 2002 09 15 | 644 | 0.4− | 0.7− | 2006 08 27 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.6+ |
| 2003 12 17 | 291 | 0.6− | 0.7+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | | | | |
| 2003 12 17 | 291 | 0.6− | 0.8+ | 2006 08 28 | 703 | 1.0+ | 0.2− | | | | |

**(142006)∗ 2002 PG$_{162}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.86752 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27184132 | $\omega$ | 106.62897 | | −0.20761600 | +0.97812265 |
| $a$ | 2.3600746 | $\Omega$ | 151.37829 | | −0.90759368 | −0.18761408 |
| $e$ | 0.1592604 | $i$ | 1.56741 | | −0.36492370 | −0.08987238 |
| $P$ | 3.63 | $H$ | 17.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.3+ | 0.4+ | 2002 08 27 | 644 | 0.0 | 0.5+ | 2006 09 14 | 691 | (0.9− | 4.2+) |
| 2001 01 26 | 691 | 0.0 | 0.5+ | 2002 09 01 | 644 | 0.7+ | 0.8+ | 2006 09 14 | 691 | 0.0 | 0.4+ |
| 2001 01 26 | 691 | 0.4+ | 0.5+ | 2002 09 04 | 644 | 1.0− | 0.7+ | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 2001 02 16 | 691 | 0.5+ | 0.3+ | 2002 09 04 | 644 | 0.4− | 0.8+ | 2006 09 18 | 691 | 0.3− | 0.3+ |
| 2001 02 16 | 691 | 0.2− | 0.3+ | 2002 09 04 | 644 | 0.4− | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2001 02 16 | 691 | 0.1− | 0.3+ | 2005 04 06 | G96 | 0.7− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2002 07 29 | 644 | 0.6+ | 0.4− | 2005 04 06 | G96 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.5+ | 0.8+ |
| 2002 07 29 | 644 | 0.1+ | 0.2+ | 2005 04 06 | G96 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2002 07 29 | 644 | 0.3− | 0.2+ | 2005 04 06 | G96 | 0.6− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2002 08 07 | 644 | 0.4− | 0.1+ | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2002 08 07 | 644 | 0.6− | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 08 07 | 644 | 0.2− | 0.4+ | 2005 04 30 | 691 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2005 05 09 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2002 08 08 | 644 | 0.2− | 0.2+ | 2005 05 09 | G96 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.4− | 0.4− |
| 2002 08 08 | 644 | 0.2− | 0.4+ | 2005 05 09 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 08 17 | 644 | 0.3+ | 0.3+ | 2005 05 09 | G96 | 0.5− | 0.4− | 2006 10 22 | G96 | 0.5− | 0.6− |
| 2002 08 17 | 644 | 0.3+ | 0.7+ | 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2002 08 17 | 644 | 0.3− | 0.2+ | 2005 05 10 | 691 | 0.4+ | 0.4+ | | | | |
| 2002 08 27 | 644 | 0.1+ | 0.4+ | 2005 05 10 | 691 | 0.0 | 0.3+ | | | | |

**(142007)∗ 2002 PJ$_{162}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.16605 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26532283 | $\omega$ | 19.93027 | | +0.43354500 | +0.90111486 |
| $a$ | 2.3985731 | $\Omega$ | 275.76281 | | −0.82752615 | +0.39568931 |
| $e$ | 0.1320336 | $i$ | 0.31930 | | −0.35670604 | +0.17726247 |
| $P$ | 3.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 10 | 691 | 0.3− | 0.1− | 2002 08 17 | 644 | 0.7+ | 0.9− | 2005 05 13 | 691 | 0.1+ | 0.4+ |
| 1991 09 10 | 691 | 0.3+ | 1.7+ | 2002 08 27 | 644 | 0.3− | 0.1− | 2006 07 22 | G96 | 0.2+ | 0.3+ |
| 1991 09 10 | 691 | 0.9− | 0.8+ | 2002 08 27 | 644 | 0.0 | 0.2− | 2006 07 22 | G96 | 0.2− | 0.2− |
| 1995 10 02 | 691 | 0.2− | 0.1− | 2002 08 27 | 644 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.7− |
| 1995 10 02 | 691 | 0.1− | 0.1− | 2002 09 14 | 644 | 0.4+ | 0.1− | 2006 07 22 | G96 | 0.8− | 0.1− |
| 1995 10 02 | 691 | 0.3− | 0.3− | 2002 09 14 | 644 | 0.7+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 1995 11 30 | 691 | (3.5+ | 3.7−) | 2002 10 11 | 291 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.3− | 0.2+ |
| 1995 11 30 | 691 | 0.1+ | 0.0 | 2002 10 11 | 291 | 1.2− | 1.2− | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 1995 11 30 | 691 | 0.4+ | 0.4+ | 2002 10 11 | 291 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.4− | 1.0− |
| 2002 07 23 | 644 | 0.8+ | 0.2− | 2005 03 10 | G96 | 0.8− | 0.3+ | 2006 09 19 | 699 | 1.4+ | 1.0− |
| 2002 07 23 | 644 | 0.4− | 0.0 | 2005 03 10 | G96 | 0.3− | 0.7+ | 2006 09 19 | 699 | (0.0 | 2.1+) |
| 2002 07 23 | 644 | 0.6+ | 0.3− | 2005 03 10 | G96 | 0.6− | 0.1+ | 2006 09 19 | 699 | (2.0+ | 1.5+) |
| 2002 07 29 | 644 | 0.0 | 0.0 | 2005 03 10 | G96 | 0.6− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2002 07 29 | 644 | 0.1− | 0.5− | 2005 03 13 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2002 07 29 | 644 | 0.1+ | 0.1− | 2005 03 13 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.7+ | 0.3+ |
| 2002 08 08 | 644 | 0.2+ | 0.3− | 2005 03 13 | 691 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.4− | 0.5+ |
| 2002 08 08 | 644 | 0.2+ | 0.5− | 2005 03 17 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2002 08 08 | 644 | 0.3− | 0.9− | 2005 03 17 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.6+ |
| 2002 08 14 | 704 | 1.3+ | 1.3+ | 2005 03 17 | 691 | 0.3+ | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2002 08 14 | 704 | (1.6+ | 0.7+) | 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2002 08 14 | 704 | 1.4+ | 0.5+ | 2005 05 04 | 691 | 0.5+ | 0.3+ | 2006 10 16 | G96 | 0.4+ | 0.0 |
| 2002 08 14 | 704 | (3.2+ | 2.0+) | 2005 05 04 | 691 | 0.4+ | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2002 08 14 | 704 | (1.4+ | 1.6+) | 2005 05 08 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2002 08 16 | 608 | 0.8− | 0.8− | 2005 05 08 | G96 | 0.9− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 08 16 | 608 | 0.5− | 0.0 | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 08 16 | 608 | 0.2+ | 0.6− | 2005 05 08 | G96 | 1.0− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 08 17 | 644 | 0.6+ | 0.9− | 2005 05 13 | 691 | 0.5+ | 0.7+ | | | | |
| 2002 08 17 | 644 | 0.6+ | 0.5− | 2005 05 13 | 691 | 0.1+ | 0.6+ | | | | |

**(142008)∗ 2002 PT$_{162}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.44295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24042594 | $\omega$ | 71.24856 | | +0.67262123 | −0.73971970 | |
| $a$ | 2.5614262 | $\Omega$ | 336.44544 | | +0.65880373 | +0.61085010 | |
| $e$ | 0.1233038 | $i$ | 2.85228 | | +0.33698416 | +0.28227099 | |
| $P$ | 4.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.4− | 0.9+ | 2002 09 15 | 644 | 0.0 | 0.4+ | 2004 01 21 | 704 | 0.5− | 0.3− |
| 2000 02 03 | 704 | 0.2+ | 0.0 | 2002 09 15 | 644 | 0.3− | 0.2+ | 2004 01 21 | 704 | 1.1− | 0.2− |
| 2000 02 03 | 704 | 0.6+ | 0.7+ | 2003 10 24 | 704 | 1.1− | 0.7− | 2004 01 21 | 704 | (2.6+ | 2.4+) |
| 2000 02 03 | 704 | 0.2+ | 0.0 | 2003 10 24 | 704 | (2.0− | 0.1+) | 2004 01 22 | 704 | 0.0 | 0.4+ |
| 2000 02 03 | 704 | 0.6− | 0.3− | 2003 10 24 | 704 | 0.6− | 1.1+ | 2004 01 22 | 704 | 1.1+ | 0.3+ |
| 2002 07 29 | 644 | 0.3− | 0.1− | 2003 10 24 | 704 | 0.0 | 1.2+ | 2004 01 22 | 704 | 0.4+ | 0.6+ |
| 2002 07 29 | 644 | 0.4− | 0.0 | 2003 12 18 | 704 | 0.1+ | 0.2+ | 2004 01 22 | 704 | 0.3+ | 0.9+ |
| 2002 08 08 | 644 | 0.3− | 0.2+ | 2003 12 18 | 704 | 0.5− | 0.4+ | 2004 01 22 | 704 | 0.4+ | 0.6+ |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2003 12 18 | 704 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.1− | 0.2+ |
| 2002 08 16 | 608 | 0.4− | 0.1+ | 2003 12 18 | 704 | 0.9+ | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.1+ |
| 2002 08 16 | 608 | 0.7− | 0.5+ | 2003 12 22 | 704 | 0.4+ | 0.8− | 2004 01 22 | 704 | 0.1+ | 0.1+ |
| 2002 08 16 | 608 | 1.1− | 0.8+ | 2003 12 22 | 704 | 0.3+ | 0.9− | 2004 01 22 | 704 | 0.0 | 0.4+ |
| 2002 08 18 | 644 | 0.4− | 0.6− | 2003 12 22 | 704 | 0.4+ | 1.4− | 2004 01 22 | 704 | 0.2+ | 1.3+ |
| 2002 08 18 | 644 | 0.3+ | 0.3+ | 2003 12 22 | 704 | (2.5+ | 2.5−) | 2004 01 31 | 691 | 0.0 | 0.1− |
| 2002 08 18 | 644 | 0.3+ | 0.5+ | 2003 12 22 | 704 | (3.0+ | 2.9−) | 2004 01 31 | 691 | 0.0 | 0.1− |
| 2002 08 18 | 644 | 0.5− | 0.6− | 2003 12 27 | 691 | 0.1− | 0.1+ | 2004 01 31 | 691 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.3+ | 0.2+ | 2003 12 27 | 691 | 0.3− | 0.0 | 2004 02 15 | 704 | 0.7+ | 0.8− |
| 2002 08 18 | 644 | 0.1+ | 0.4+ | 2003 12 27 | 704 | 0.3+ | 0.3− | 2004 02 15 | 704 | 1.5+ | 0.4− |
| 2002 08 18 | 644 | 0.0 | 0.4− | 2003 12 27 | 704 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.7+ | 1.4− |
| 2002 08 18 | 644 | 0.7+ | 0.1+ | 2003 12 27 | 691 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.1− | 0.2− |
| 2002 08 18 | 644 | 0.2− | 0.8+ | 2003 12 27 | 691 | 0.2− | 0.5+ | 2005 04 14 | 691 | 0.2+ | 0.6+ |
| 2002 08 26 | 644 | 0.0 | 0.4+ | 2003 12 27 | 704 | 0.3− | 0.5+ | 2005 04 14 | 691 | 0.2+ | 0.5+ |
| 2002 08 26 | 644 | 0.1+ | 0.2+ | 2003 12 27 | 704 | 0.1− | 0.0 | 2005 04 14 | 691 | 0.0 | 0.2+ |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2003 12 27 | 691 | 0.2+ | 0.2+ | 2006 08 14 | 644 | 0.4− | 0.2+ |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2003 12 27 | 691 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.4+ |
| 2002 08 29 | 644 | 0.0 | 0.3+ | 2003 12 27 | 704 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.2− | 0.3+ |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2004 01 13 | 699 | 0.3+ | 0.3− | 2006 08 14 | 644 | 0.4− | 0.3+ |
| 2002 09 04 | 644 | 0.1+ | 0.6+ | 2004 01 13 | 699 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2002 09 04 | 644 | 0.3+ | 0.8+ | 2004 01 13 | 691 | 0.1+ | 0.3+ | 2006 08 14 | 644 | 0.1+ | 0.2+ |
| 2002 09 04 | 644 | 0.5+ | 1.1+ | 2004 01 13 | 699 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.4− |
| 2002 09 05 | 704 | 0.0 | 1.0− | 2004 01 13 | 699 | 0.3− | 0.6− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.0 | 2004 01 13 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | 0.3+ | 0.6− | 2004 01 13 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.7− |
| 2002 09 14 | 644 | 0.1+ | 0.3+ | 2004 01 20 | 704 | 0.3+ | 1.3+ | 2006 10 20 | G96 | 0.5+ | 0.4+ |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2004 01 20 | 704 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.5+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.1− | 2004 01 20 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 09 15 | 644 | 0.2− | 0.6+ | 2004 01 21 | 704 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.2− |

**(142009)∗ 2002 PS$_{163}$ = 2004 CK$_{79}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar. Id. G. V. Williams (*MPO* 61259)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.06629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26680405 | $\omega$ | 274.51994 | | +0.72788868 | −0.68113423 | |
| $a$ | 2.3896875 | $\Omega$ | 128.43701 | | +0.66229278 | +0.66854295 | |
| $e$ | 0.2241485 | $i$ | 5.78534 | | +0.17761294 | +0.29850709 | |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.3− | 0.8− | 2004 02 17 | 691 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2000 01 07 | 704 | 0.3+ | 1.0− | 2004 02 17 | 704 | 1.1+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2000 01 07 | 704 | 0.3+ | 0.9− | 2004 02 17 | 704 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2000 01 07 | 704 | 0.2− | 0.3+ | 2004 02 17 | 704 | 0.6+ | 0.9+ | 2006 09 26 | 703 | (2.3+ | 2.6−) |
| 2002 07 14 | 644 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.3+ |
| 2002 07 14 | 644 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.6+ | 0.7+ | 2006 09 29 | 699 | 0.5+ | 0.3+ |
| 2002 07 14 | 644 | 0.0 | 0.9+ | 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 699 | 0.3− | 0.7+ |
| 2002 07 19 | 644 | 0.2+ | 1.4+ | 2004 02 23 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 0.0 | 0.5+ |
| 2002 07 19 | 644 | 0.1+ | 1.1+ | 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 09 29 | 608 | (0.3+ | 1.8−) |
| 2002 08 08 | 644 | 0.1− | 0.5+ | 2004 02 29 | 691 | 0.4+ | 0.3+ | 2006 09 29 | 608 | (0.2+ | 1.7−) |
| 2002 08 08 | 644 | 0.2− | 1.1+ | 2004 02 29 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 608 | 0.2+ | 1.5− |
| 2002 08 12 | 608 | 0.8− | 0.9+ | 2004 02 29 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 1.0− | 0.5− |
| 2002 08 12 | 608 | 0.2− | 0.5− | 2004 03 01 | 291 | 0.5− | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 2002 08 12 | 608 | 0.2− | 0.1+ | 2004 03 01 | 291 | 0.3− | 0.5+ | 2006 09 30 | 704 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.3− | 0.0 | 2004 03 01 | 291 | 0.2− | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.4− |
| 2002 08 18 | 644 | 0.4− | 0.4+ | 2006 09 21 | 699 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.5− | 0.3+ |
| 2002 08 24 | 644 | 0.4− | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2002 08 24 | 644 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2002 08 24 | 644 | 0.3− | 0.3+ | 2006 09 21 | 699 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2002 08 29 | 644 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 29 | 644 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.4− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 1.3+ | 0.9+ | 2006 09 25 | 699 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2004 01 22 | 704 | 0.4+ | 1.3+ | 2006 09 25 | 699 | 0.7+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2004 02 11 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.3+ | 0.5+ | 2006 10 28 | 703 | 0.0 | 0.6+ |
| 2004 02 11 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 1.0+ | 0.3− | 2006 10 28 | 703 | 0.1− | 0.2+ |
| 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.1− | 0.2+ |

**(142010)∗ 2002 PX$_{163}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.71345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27901695 | $\omega$ | 163.88015 | | +0.02741847 | +0.99568598 | |
| $a$ | 2.3194356 | $\Omega$ | 107.62527 | | −0.92710319 | +0.05848914 | |
| $e$ | 0.1271525 | $i$ | 5.33677 | | −0.37380197 | −0.07203088 | |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 1.0+ | 0.3+ | 2002 08 29 | 644 | 0.4+ | 0.1+ | 2005 05 06 | 704 | (0.7+ | 1.6+) |
| 1998 04 23 | 704 | 0.5− | 0.0 | 2002 08 29 | 644 | 0.3+ | 0.1+ | 2005 05 11 | 699 | 1.1+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.3− | 0.3− | 2004 01 13 | 691 | 0.1− | 0.0 | 2005 05 11 | 699 | 0.5+ | 0.2+ |
| 1998 04 23 | 704 | 1.4− | 0.5− | 2004 01 13 | 691 | 0.3+ | 0.1− | 2005 05 11 | 699 | 0.1− | 0.2− |
| 2002 07 14 | 644 | 0.0 | 0.1+ | 2004 01 13 | 691 | 0.3+ | 0.1+ | 2005 05 11 | 699 | 0.3+ | 0.7− |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2005 04 01 | 699 | 0.2+ | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.5+ |
| 2002 07 14 | 644 | 0.0 | 0.0 | 2005 04 01 | 699 | 0.8+ | 0.1+ | 2005 05 13 | 691 | 0.1+ | 0.4+ |
| 2002 07 28 | 608 | 0.0 | 1.1− | 2005 04 01 | 699 | 0.1− | 0.2+ | 2005 05 13 | 691 | 0.1− | 0.4+ |
| 2002 07 28 | 608 | 0.8+ | 1.2− | 2005 04 01 | 699 | 0.2− | 0.8+ | 2005 05 13 | 703 | 0.2− | 1.0− |
| 2002 07 28 | 608 | 0.0 | 1.0− | 2005 04 04 | 400 | 0.2+ | 0.4− | 2005 05 13 | 703 | 0.4− | 0.4− |
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2005 04 04 | 400 | 0.2+ | 0.3− | 2005 05 13 | 703 | 0.6+ | 0.3− |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2005 04 04 | 400 | 1.2− | 0.7+ | 2005 05 13 | 703 | 0.5− | 0.0 |
| 2002 08 11 | 644 | 0.0 | 0.2+ | 2005 04 05 | 400 | 0.5+ | 0.3− | 2006 09 18 | 703 | 1.2− | 0.2+ |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2005 04 05 | 400 | 0.7+ | 0.3− | 2006 09 18 | 703 | 0.6− | 0.1− |
| 2002 08 11 | 644 | 0.3+ | 0.1+ | 2005 04 09 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.6+ |
| 2002 08 13 | 644 | 0.5− | 0.1+ | 2005 04 09 | 704 | 0.4+ | 1.1+ | 2006 09 18 | 703 | (2.0− | 0.3−) |
| 2002 08 13 | 704 | 0.5+ | 0.4− | 2005 04 09 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.1+ | 0.4+ |
| 2002 08 13 | 704 | 0.6− | 0.4+ | 2005 04 13 | 704 | 0.8− | 1.2+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2002 08 13 | 704 | 0.7− | 0.2− | 2005 04 13 | 704 | (3.2+ | 0.6−) | 2006 09 30 | 703 | 1.0+ | 0.2− |
| 2002 08 13 | 644 | 0.0 | 0.1+ | 2005 04 13 | 704 | (2.5+ | 0.2+) | 2006 09 30 | 703 | 1.1− | 0.7+ |
| 2002 08 13 | 704 | 0.3− | 0.5+ | 2005 04 13 | 704 | 1.4+ | 1.1+ | 2006 10 16 | 703 | 1.1+ | 1.3+ |
| 2002 08 13 | 704 | 0.4− | 0.8+ | 2005 05 04 | 703 | 0.3− | 1.0− | 2006 10 16 | 703 | 1.0− | 0.1+ |
| 2002 08 13 | 644 | 0.1+ | 0.3+ | 2005 05 04 | 703 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.4− | 1.0+ |
| 2002 08 18 | 644 | 0.3+ | 0.2+ | 2005 05 04 | 703 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.8+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2005 05 04 | 703 | 0.8− | 1.3− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2005 05 06 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2002 08 29 | 644 | 0.4+ | 0.2+ | 2005 05 06 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.4+ |

**(142011)∗ 2002 PW$_{164}$ = 2004 DF$_{13}$**

Discovered 2002 Aug. 9 by A. Lowe on NEAT images taken at Haleakala.

Id. G. V. Williams (*MPO* 61259)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.84751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27600645 | $\omega$ | 155.63524 | | +0.12380620 | −0.98832893 | |
| $a$ | 2.3362710 | $\Omega$ | 287.15452 | | +0.89450085 | +0.14987827 | |
| $e$ | 0.2015977 | $i$ | 5.32990 | | +0.42958150 | −0.02724741 | |
| $P$ | 3.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 31 | 261 | 1.0− | 0.3+ | 2004 02 17 | 608 | 0.5+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 1992 12 31 | 261 | 1.0− | 0.2+ | 2004 02 17 | 608 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.0 |
| 1999 12 10 | 704 | 0.3+ | 0.3− | 2004 02 17 | 608 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.0 |
| 1999 12 10 | 704 | 0.5− | 0.4+ | 2004 02 18 | I03 | 0.6+ | 0.2− | 2006 10 27 | 703 | 0.4− | 0.4− |
| 1999 12 10 | 704 | 0.1− | 0.5+ | 2004 02 18 | I03 | 0.4− | 0.4− | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2000 01 04 | 704 | 0.5+ | 0.1− | 2004 02 18 | I03 | 0.2− | 0.5− | 2006 11 02 | 703 | 1.1+ | 0.7+ |
| 2000 01 04 | 704 | 0.2+ | 0.5− | 2004 03 16 | 703 | 1.0+ | 1.1+ | 2006 11 02 | 703 | 0.1+ | 0.3+ |
| 2000 01 04 | 704 | 1.3+ | 0.5− | 2004 03 16 | 703 | 0.6+ | 0.6+ | 2006 11 02 | 703 | 0.7− | 0.1− |
| 2000 01 04 | 704 | 0.4+ | 0.4− | 2004 03 16 | 703 | 0.9− | 0.4+ | 2006 11 02 | 703 | 0.3+ | 0.4+ |
| 2000 01 04 | 704 | 0.9+ | 0.9− | 2004 03 16 | 703 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2002 08 09 | 608 | 0.1− | 0.7− | 2004 03 16 | 704 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 08 09 | 608 | 0.9− | 0.4− | 2004 03 16 | 704 | (2.2− | 0.9+) | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2002 08 16 | 644 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2002 08 16 | 644 | 0.1+ | 0.2+ | 2004 03 16 | 704 | 0.4+ | 1.3+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2002 08 16 | 644 | 0.3+ | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.4+ |
| 2002 08 17 | 608 | 0.3− | 0.6+ | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.4− |
| 2002 08 17 | 608 | 0.3− | 0.7+ | 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.1− | 0.2+ |
| 2002 08 17 | 608 | (0.2+ | 1.5+) | 2004 03 17 | 704 | (0.1− | 1.8+) | 2006 11 14 | 703 | 0.4− | 0.6+ |
| 2002 08 26 | 644 | 0.8+ | 0.6+ | 2004 03 17 | 704 | 0.7+ | 0.4− | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 2002 08 26 | 644 | 0.5+ | 0.2+ | 2004 03 17 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2002 08 26 | 644 | 0.2− | 0.4+ | 2004 03 17 | 704 | 1.0+ | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.0 |
| 2002 09 01 | 608 | 0.6− | 0.7+ | 2004 04 19 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2002 09 01 | 608 | 0.3+ | 0.4− | 2004 04 19 | 704 | 0.5− | 1.4+ | 2006 11 16 | 704 | 0.5− | 0.5+ |
| 2002 09 01 | 608 | 0.6+ | 1.0+ | 2004 04 19 | 704 | (0.1− | 1.9+) | 2006 11 16 | 704 | 1.0− | 0.2+ |
| 2002 09 06 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 703 | 0.0 | 0.8+ | 2006 11 22 | 703 | 0.6− | 0.3+ |
| 2002 09 06 | 704 | 0.3− | 1.3+ | 2006 08 29 | 703 | (0.9+ | 2.4+) | 2006 11 22 | 703 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.2− | 0.8− | 2006 08 29 | 703 | 0.4+ | 1.4+ | 2006 11 22 | 703 | 0.3+ | 1.4− |
| 2002 09 06 | 704 | 1.2+ | 0.2− | 2006 08 29 | 703 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.3+ | 0.2− |
| 2002 09 06 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 11 23 | 703 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.6− | 0.4+ | 2006 09 18 | 703 | 1.1− | 1.0+ | 2006 11 23 | 703 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.2+ | 0.3− |
| 2002 09 13 | 644 | 0.6− | 0.5+ | 2006 09 18 | 703 | (1.9− | 0.2+) | 2006 11 23 | 703 | 0.1+ | 0.1− |
| 2002 09 15 | 608 | 1.4− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.5− | 0.1+ |
| 2002 09 15 | 608 | (1.9− | 0.8−) | 2006 10 19 | 703 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2004 02 16 | 703 | 0.2− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.3− | 0.3− |
| 2004 02 16 | 703 | 0.9− | 0.8+ | 2006 10 19 | 703 | 1.1− | 0.2− | 2006 11 28 | 704 | 0.1− | 0.6− |
| 2004 02 16 | 703 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.5+ | 0.1− | 2006 11 28 | 704 | 1.4+ | 1.1− |
| 2004 02 16 | 703 | 0.3+ | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.2+ | | | | |

**(142012)∗ 2002 PF$_{165}$**

Discovered 2002 Aug. 8 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.93827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26415722 | $\omega$ | 257.26510 | | +0.90719341 | −0.41130674 | |
| $a$ | 2.4056239 | $\Omega$ | 126.95380 | | +0.41602005 | +0.84568996 | |
| $e$ | 0.1248714 | $i$ | 6.35618 | | +0.06266922 | +0.34005184 | |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.5− | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.7− | 0.4− |
| 2002 07 14 | 644 | 0.3+ | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.9− |
| 2002 07 14 | 644 | 0.3− | 0.9+ | 2006 08 20 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 1.4− | 0.8+ |
| 2002 07 18 | 644 | 0.2+ | 0.4+ | 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 10 02 | 703 | 1.4− | 0.7− |
| 2002 07 18 | 644 | 0.2+ | 0.4+ | 2006 08 20 | 691 | 0.2+ | 0.5− | 2006 10 02 | 703 | 0.3− | 0.6+ |
| 2002 07 18 | 644 | 0.2+ | 0.7+ | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 10 02 | 703 | (0.9+ | 1.8−) |
| 2002 08 08 | 644 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.7+ | 0.5+ | 2006 10 02 | 703 | 0.1+ | 0.0 |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.4− | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.2+ |
| 2002 08 08 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.9− | 2006 10 02 | 703 | 0.5− | 0.6+ |
| 2002 08 18 | 644 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.8− | 0.8− | 2006 10 02 | 703 | 0.4− | 0.5− |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | (0.1+ | 1.7−) | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2004 01 24 | 704 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 1.2− | 1.3− | 2006 10 09 | 644 | 0.4− | 0.2+ |
| 2004 01 24 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 703 | (0.7+ | 2.0−) | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2004 01 24 | 704 | 0.1− | 0.1− | 2006 09 18 | 703 | (2.0+ | 0.2−) | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2004 01 24 | 704 | (1.2+ | 1.8−) | 2006 09 18 | 703 | 0.8+ | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | 1.2+ | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2004 02 13 | 691 | 0.4− | 1.2+ | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2005 04 30 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.7+ | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 2005 04 30 | 691 | 0.4+ | 0.6+ | 2006 09 19 | 699 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.4+ |
| 2005 04 30 | 691 | 0.0 | 0.4+ | 2006 09 25 | 703 | 1.0+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.3+ | 0.0 |

**(142013)∗ 2002 PC$_{167}$ = 1995 UL$_{61}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 65351)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.98225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26080683 | $\omega$ | 302.82542 | | −0.21565000 | +0.97618134 | |
| $a$ | 2.4261822 | $\Omega$ | 314.70131 | | −0.88434425 | −0.20556866 | |
| $e$ | 0.1413304 | $i$ | 1.91654 | | −0.41404145 | −0.06936516 | |
| $P$ | 3.78 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.5+ | 0.4− | 2002 08 17 | 644 | 0.1− | 0.2+ | 2005 03 17 | 691 | 0.2+ | 0.5+ |
| 1995 10 19 | 691 | 0.5+ | 0.3− | 2002 08 17 | 644 | 0.1− | 0.2+ | 2005 03 17 | 691 | 0.3+ | 0.3+ |
| 1995 10 19 | 691 | 0.6+ | 0.2− | 2002 08 17 | 644 | 0.2+ | 0.6+ | 2006 08 21 | 691 | 0.1− | 0.0 |
| 1995 10 24 | 691 | 0.0 | 0.2− | 2002 08 28 | 644 | 0.1+ | 0.6+ | 2006 08 21 | 691 | 0.2− | 0.0 |
| 1995 10 24 | 691 | 0.1+ | 0.1− | 2002 08 28 | 644 | 0.1+ | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.3+ |
| 1995 10 24 | 691 | 0.8− | 0.5− | 2002 08 28 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.2+ |
| 1995 11 17 | 691 | 0.1+ | 0.7+ | 2002 09 14 | 644 | 0.8− | 0.0 | 2006 09 17 | 703 | (1.7+ | 0.3+) |
| 1995 11 17 | 691 | 0.5− | 0.3+ | 2002 09 14 | 644 | 0.9− | 0.6+ | 2006 09 17 | 703 | 0.1− | 0.4− |
| 1995 11 17 | 691 | 0.7− | 0.5+ | 2002 09 14 | 644 | 0.3− | 0.1− | 2006 09 17 | 703 | 1.0− | 0.2+ |
| 2002 08 08 | 644 | 0.1+ | 0.6+ | 2003 11 29 | 691 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2003 11 29 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.4+ | 0.0 |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2003 11 29 | 691 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.1+ | 0.9+ | 2005 03 11 | G96 | 0.4− | 0.5− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 08 13 | 291 | 0.3− | 0.4− | 2005 03 11 | G96 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 08 13 | 291 | 0.1+ | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.5− | 0.0 |
| 2002 08 13 | 291 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2002 08 16 | 608 | 0.1− | 0.0 | 2005 03 17 | 691 | 0.2+ | 0.3+ | | | | |

**(142014)∗ 2002 PA$_{168}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.96750 | | (2000.0) | | | |
| $n$ | 0.26131111 | $\omega$ | 319.68903 | | +0.66836346 | +0.74378268 |
| $a$ | 2.4230598 | $\Omega$ | 352.23752 | | −0.66457163 | +0.59178070 |
| $e$ | 0.0361433 | $i$ | 3.73973 | | −0.33411800 | +0.31077794 |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.3− | 0.3+ | 2003 12 22 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2002 08 08 | 644 | 0.6− | 0.2+ | 2003 12 22 | 704 | (0.7+ | 2.3+) | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2002 08 08 | 644 | 0.5− | 0.4+ | 2004 02 26 | 695 | 0.0 | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.4− | 2004 02 26 | 695 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.5− |
| 2002 08 18 | 644 | 0.1− | 0.4− | 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 2002 08 18 | 644 | 0.1− | 0.4− | 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.5+ | 0.6− |
| 2002 08 26 | 644 | 0.0 | 0.4− | 2005 05 01 | 644 | 0.2+ | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2002 08 26 | 644 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.3− | 0.9+ |
| 2002 08 26 | 644 | 0.0 | 0.4− | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 2.7− | 0.9− |
| 2002 08 29 | 644 | 0.3− | 0.2− | 2006 08 28 | 691 | 0.1− | 0.2− | 2006 10 16 | 703 | 1.2− | 0.9+ |
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.3− |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2006 09 16 | 691 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2002 10 11 | 291 | 0.1− | 0.5+ | 2006 09 16 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.6− |
| 2002 10 11 | 291 | 0.0 | 0.4+ | 2006 09 25 | 699 | (0.6+ | 2.2+) | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 10 11 | 291 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 1.3+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2003 12 22 | 704 | 0.5− | 0.2− | 2006 09 25 | 699 | (2.0+ | 1.1+) | | | | |
| 2003 12 22 | 704 | 0.6+ | 0.9+ | 2006 09 25 | 699 | 0.7+ | 1.2+ | | | | |

**(142015)∗ 2002 PW$_{169}$ = 1997 EO$_{24}$**

Discovered 2002 Aug. 11 by NEAT at Haleakala.

Id. K. E. Smalley (*MPO* 85572)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.50252 | | (2000.0) | | | |
| $n$ | 0.27487572 | $\omega$ | 354.39110 | | +0.74079361 | −0.66750521 |
| $a$ | 2.3426736 | $\Omega$ | 47.77788 | | +0.62018557 | +0.63660993 |
| $e$ | 0.0760684 | $i$ | 5.83166 | | +0.25805947 | +0.38621833 |
| $P$ | 3.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.2+ | 0.1+ | 2004 04 15 | 645 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 1997 03 05 | 691 | 0.1− | 0.3− | 2004 04 16 | 645 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 1997 03 05 | 691 | 0.0 | 0.3− | 2004 04 16 | 645 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 1997 03 12 | 691 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 1997 03 12 | 691 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.4+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 1997 03 12 | 691 | 0.4+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.7+ | 0.2− |
| 1999 12 15 | 704 | 0.7− | 1.2− | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.6− | 0.3− |
| 1999 12 15 | 704 | 0.9− | 0.5− | 2006 10 02 | 461 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 1999 12 15 | 704 | 0.1+ | 0.2− | 2006 10 02 | 461 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.6+ |
| 2002 08 11 | 608 | 0.7− | 1.2+ | 2006 10 02 | 461 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2002 08 11 | 608 | 0.2− | 1.2+ | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 18 | 704 | (0.4+ | 2.0+) |
| 2002 08 11 | 608 | 0.1+ | 1.3+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | (0.6− | 2.1+) |
| 2002 08 19 | 644 | 0.1− | 0.5− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | (0.2− | 2.2+) |
| 2002 08 19 | 644 | 0.2− | 0.5− | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2002 08 19 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 1.1+ | 1.2+ |
| 2002 08 26 | 644 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.6− |
| 2002 08 26 | 644 | 0.1+ | 0.5− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2002 09 08 | 599 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 09 08 | 599 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2002 09 08 | 599 | 0.1− | 0.5− | 2006 11 01 | 691 | 0.4+ | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2002 09 12 | 608 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2002 09 12 | 608 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2002 09 15 | 608 | 0.7− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2002 09 15 | 608 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.1+ |
| 2002 09 15 | 608 | 0.6− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.7− |
| 2002 09 16 | 644 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 1.4− | 0.3+ |
| 2002 09 16 | 644 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.8+ | 1.1− |
| 2002 09 16 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 1.2− | 0.8+ |
| 2004 01 18 | 644 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.8− | 0.7+ |
| 2004 01 18 | 644 | 0.5+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.0 | 0.1− |
| 2004 01 18 | 644 | 0.7+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.2+ | | | | |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.4+ | | | | |

**(142016)∗ 2002 PD$_{172}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.54709 | | (2000.0) | | | |
| $n$ | 0.24389947 | $\omega$ | 212.54386 | | +0.97151583 | +0.23444639 |
| $a$ | 2.5370488 | $\Omega$ | 133.85606 | | −0.20588715 | +0.90719613 |
| $e$ | 0.0256159 | $i$ | 2.74422 | | −0.11733486 | +0.34932802 |
| $P$ | 4.04 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 608 | 0.7− | 0.2− | 2002 08 18 | 644 | 0.5+ | 0.2+ | 2005 05 03 | 691 | 0.0 | 0.1+ |
| 2001 03 29 | 608 | 0.3− | 0.5− | 2002 08 18 | 644 | 0.0 | 0.7+ | 2005 05 03 | 691 | 0.0 | 0.0 |
| 2001 03 29 | 608 | 0.6− | 0.2− | 2002 08 18 | 644 | 0.3+ | 0.2+ | 2006 05 24 | G96 | 0.0 | 0.3− |
| 2001 04 15 | 608 | 0.8− | 0.7+ | 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 05 24 | G96 | 0.1+ | 0.1− |
| 2001 04 15 | 608 | 0.6− | 1.0+ | 2002 08 27 | 644 | 0.3+ | 0.3+ | 2006 05 24 | G96 | 0.7+ | 0.3− |
| 2001 04 15 | 608 | 0.2+ | 1.2+ | 2002 08 27 | 644 | 0.6+ | 0.6− | 2006 05 24 | G96 | 0.8− | 0.2− |
| 2001 04 16 | 691 | 0.1+ | 0.0 | 2002 08 29 | 644 | 0.5+ | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.1− |
| 2001 04 16 | 691 | 0.6+ | 0.2+ | 2002 08 29 | 644 | 0.2+ | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.1− |
| 2001 04 16 | 691 | 0.3+ | 0.1+ | 2002 08 29 | 644 | 0.3+ | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.2− |
| 2002 07 23 | 644 | 0.3− | 0.1− | 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.0 |
| 2002 07 23 | 644 | 0.4+ | 0.3+ | 2002 09 15 | 644 | 1.0− | 0.3− | 2006 08 14 | 644 | 0.2− | 0.0 |
| 2002 07 23 | 644 | 0.2− | 0.4− | 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.2+ |
| 2002 08 08 | 644 | 0.4− | 0.3− | 2005 03 11 | 691 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.2− | 0.1− |
| 2002 08 08 | 644 | 0.2− | 0.4− | 2005 03 11 | 691 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2002 08 08 | 644 | 0.0 | 0.3− | 2005 03 11 | 691 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.3+ |
| 2002 08 12 | 608 | 0.1− | 0.1+ | 2005 04 01 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2005 04 01 | 691 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2002 08 17 | 644 | 0.1+ | 0.4+ | 2005 04 01 | 691 | 0.1− | 0.0 | | | | |
| 2002 08 17 | 644 | 0.2− | 0.2− | 2005 05 03 | 691 | 0.4+ | 0.2− | | | | |

**(142017)∗ 2002 PB$_{173}$**

Discovered 2002 Aug. 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.48075 | | (2000.0) | | | |
| $n$ | 0.18686546 | $\omega$ | 293.11595 | | −0.88309307 | −0.46827778 |
| $a$ | 3.0300516 | $\Omega$ | 218.97895 | | +0.44575481 | −0.81778674 |
| $e$ | 0.0752271 | $i$ | 2.67607 | | +0.14645571 | −0.33457551 |
| $P$ | 5.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 23 | 691 | 0.1− | 0.3− | 2002 08 27 | 644 | 0.2− | 0.3+ | 2005 01 13 | 704 | 0.1+ | 0.8+ |
| 1998 12 23 | 691 | 0.1− | 0.2+ | 2002 08 27 | 644 | 0.0 | 0.1− | 2005 01 13 | 704 | 0.2+ | 0.2+ |
| 1998 12 23 | 691 | 0.4− | 0.8+ | 2002 09 14 | 644 | 0.5+ | 0.0 | 2005 01 13 | 704 | 0.7+ | 0.2− |
| 2000 03 03 | 704 | 0.1+ | 0.3− | 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 03 25 | G96 | 0.6− | 0.4+ |
| 2000 03 03 | 704 | 0.3+ | 0.3+ | 2003 10 02 | 691 | 0.2− | 0.3+ | 2006 03 25 | G96 | 0.2+ | 0.4+ |
| 2000 03 03 | 704 | 0.4+ | 0.1+ | 2003 10 02 | 691 | 0.2− | 0.0 | 2006 03 25 | G96 | 0.2− | 0.2+ |
| 2001 05 24 | 807 | 0.3− | 0.0 | 2003 10 02 | 691 | 0.1+ | 0.0 | 2006 04 02 | 691 | 0.5+ | 0.3+ |
| 2001 05 24 | 807 | 0.1− | 0.0 | 2003 10 23 | 699 | 0.3+ | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.1+ |
| 2002 08 07 | 644 | 0.0 | 0.5+ | 2003 10 23 | 699 | 0.1− | 1.7− | 2006 04 02 | 691 | 0.3+ | 0.2+ |
| 2002 08 07 | 644 | 0.6+ | 0.8+ | 2003 10 23 | 699 | 0.4+ | 1.6+ | 2006 04 06 | 691 | 0.3− | 0.8+ |
| 2002 08 16 | 644 | 0.1+ | 0.1+ | 2003 10 23 | 699 | 0.8− | 0.8+ | 2006 04 06 | 691 | 0.2− | 0.4+ |
| 2002 08 16 | 644 | 0.2+ | 0.3− | 2003 10 28 | 704 | 0.2− | 0.6+ | 2006 04 06 | 691 | 0.3− | 0.3− |
| 2002 08 17 | 644 | 0.2+ | 0.4+ | 2003 10 28 | 704 | 0.6− | 0.9+ | 2006 05 06 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.0 | 0.7+ | 2003 10 28 | 704 | 0.7− | 0.7+ | 2006 05 06 | 691 | 0.1+ | 0.3+ |
| 2002 08 17 | 644 | 0.2+ | 0.6+ | 2005 01 13 | 704 | 0.4+ | 0.7− | 2006 05 06 | 691 | 0.0 | 0.0 |
| 2002 08 27 | 644 | 0.3+ | 0.1+ | 2005 01 13 | 704 | 0.5+ | 0.3+ | | | | |

**(142018)∗ 2002 PK$_{173}$ = 2004 DJ$_{50}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 94819)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.40150 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26907805 | $\omega$ | 253.32366 | | +0.06581888 | | −0.99761999 |
| $a$ | 2.3762048 | $\Omega$ | 192.95437 | | +0.94686827 | | +0.06894098 |
| $e$ | 0.1335701 | $i$ | 5.25916 | | +0.31481479 | | +0.00122042 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 14 | 691 | 0.4− | 0.3− | 2004 01 23 | 704 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 1997 04 14 | 691 | 0.0 | 0.3− | 2004 01 29 | 704 | 1.0+ | 0.9− | 2006 09 25 | G96 | 0.1− | 0.0 |
| 1997 04 14 | 691 | 0.2− | 0.6− | 2004 01 29 | 704 | 0.9+ | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.1+ |
| 2002 07 21 | 644 | 0.5− | 0.6+ | 2004 01 29 | 704 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2002 07 21 | 644 | 0.1− | 0.0 | 2004 01 29 | 704 | 1.0+ | 0.3+ | 2006 09 28 | 691 | 0.5− | 0.0 |
| 2002 07 21 | 644 | 0.1+ | 1.4+ | 2004 02 23 | 704 | 0.7− | 0.5− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2002 08 07 | 644 | 0.5+ | 0.0 | 2004 02 23 | 704 | 0.6− | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2002 08 07 | 644 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.4+ | 1.1+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2002 08 08 | 644 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.3− | 0.9+ | 2006 10 16 | G96 | 0.4+ | 0.3− |
| 2002 08 08 | 644 | 0.1+ | 0.3− | 2004 02 26 | 704 | 0.7− | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.3− |
| 2002 08 08 | 644 | 0.5+ | 0.4+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.9+ | 0.1− |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2002 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 1.4− | 0.6− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2002 08 26 | 644 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 1.3+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 08 26 | 644 | 0.4+ | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2002 08 26 | 644 | 0.5+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 09 14 | 644 | 0.2− | 0.2− | 2006 09 24 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2004 01 23 | 704 | 0.3− | 0.6+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2004 01 23 | 704 | 1.4+ | 0.0 | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2004 01 23 | 704 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.1− | | | | |

**(142019)∗ 2002 PG$_{174}$ = 2003 YG$_{69}$**

Discovered 2002 Aug. 8 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 94820)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.51527 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28055170 | $\omega$ | 299.26517 | | −0.32643990 | | −0.94502157 |
| $a$ | 2.3109690 | $\Omega$ | 169.73244 | | +0.90040344 | | −0.31710020 |
| $e$ | 0.0506364 | $i$ | 6.20542 | | +0.28759456 | | −0.07988550 |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.0 | 0.4+ | 2002 08 27 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 1.2− |
| 2001 03 15 | 691 | 0.1− | 0.3+ | 2002 08 27 | 644 | 0.5+ | 1.2+ | 2006 09 30 | 703 | 0.4+ | 0.2+ |
| 2001 03 15 | 691 | 0.1+ | 0.2+ | 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.4+ | 0.6+ |
| 2001 03 27 | 608 | 1.3+ | 0.6+ | 2002 09 14 | 644 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.7+ |
| 2001 03 27 | 608 | 0.1− | 0.4− | 2002 09 14 | 644 | 0.3+ | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2001 03 27 | 608 | 0.2− | 0.1− | 2003 12 18 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.2− |
| 2001 04 14 | 608 | 0.1+ | 0.5+ | 2003 12 18 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.7+ |
| 2001 04 14 | 608 | 0.5+ | 0.4− | 2003 12 18 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2002 07 23 | 644 | 0.3+ | 0.5− | 2003 12 20 | 704 | 1.4+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.5+ |
| 2002 07 23 | 644 | 0.4− | 0.4+ | 2003 12 20 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2002 07 23 | 644 | 0.6− | 0.6− | 2003 12 20 | 704 | 0.7− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2002 08 08 | 644 | 0.3+ | 0.3+ | 2003 12 22 | 691 | 0.2− | 0.1− | 2006 11 13 | 703 | (1.2+ | 2.2−) |
| 2002 08 08 | 644 | 0.0 | 0.1+ | 2003 12 22 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.6− | 0.7+ |
| 2002 08 08 | 644 | 0.7+ | 0.6+ | 2003 12 22 | 691 | 0.1+ | 0.3− | 2006 11 13 | 703 | 0.9− | 1.3− |
| 2002 08 17 | 644 | 0.1+ | 0.4+ | 2004 01 23 | 704 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.0 | 0.7+ |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2004 01 23 | 704 | 0.7− | 1.1+ | 2006 11 24 | G96 | 0.3− | 0.5− |
| 2002 08 17 | 644 | 0.7− | 0.2+ | 2004 01 23 | 704 | 0.4+ | 0.2− | 2006 11 24 | G96 | 1.1+ | 1.5+ |
| 2002 08 17 | 644 | 0.3− | 0.2+ | 2004 01 23 | 704 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 1.2+ | 0.2+ | | | | |

**(142020)∗ 2002 PH$_{178}$**

Discovered 2002 Aug. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.98928 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19417595 | $\omega$ | 143.31857 | | +0.85226362 | | +0.52310766 |
| $a$ | 2.9535144 | $\Omega$ | 185.14202 | | −0.48573200 | | +0.78975353 |
| $e$ | 0.0687114 | $i$ | 1.44308 | | −0.19419356 | | +0.32038686 |
| $P$ | 5.08 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 1.0− | 0.8+ | 2002 09 04 | 644 | 0.3+ | 0.9+ | 2005 03 08 | G96 | 0.0 | 0.2+ |
| 2002 08 15 | 644 | 0.1+ | 0.5+ | 2003 11 19 | 691 | 0.1− | 0.1− | 2006 04 02 | 691 | 0.2+ | 0.1− |
| 2002 08 15 | 644 | 0.0 | 0.2+ | 2003 11 19 | 691 | 0.0 | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.2+ |
| 2002 08 17 | 644 | 0.1+ | 0.3− | 2003 11 19 | 691 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.0 | 0.1+ |
| 2002 08 17 | 644 | 0.1+ | 1.0− | 2003 12 19 | 691 | 0.1− | 0.0 | 2006 04 19 | G96 | 0.1− | 0.5+ |
| 2002 08 17 | 644 | 0.1− | 0.9− | 2003 12 19 | 691 | 0.2− | 0.3+ | 2006 04 19 | G96 | 0.0 | 0.3+ |
| 2002 08 27 | 644 | 0.2− | 0.7+ | 2003 12 19 | 691 | 0.2+ | 0.1+ | 2006 04 19 | G96 | 0.5− | 0.3+ |
| 2002 08 27 | 644 | 0.3− | 0.8+ | 2005 01 19 | 691 | 0.2− | 0.2+ | 2006 04 19 | G96 | 0.2+ | 0.5+ |
| 2002 08 27 | 644 | 0.1+ | 0.6+ | 2005 01 19 | 691 | 0.0 | 0.3+ | 2006 05 22 | G96 | 0.4− | 0.4+ |
| 2002 09 01 | 644 | 0.2− | 0.6+ | 2005 01 19 | 691 | 0.8+ | 0.5+ | 2006 05 22 | G96 | 0.1− | 0.0 |
| 2002 09 01 | 644 | 0.5− | 0.5+ | 2005 03 08 | G96 | 0.6− | 0.0 | 2006 05 22 | G96 | 0.0 | 0.3+ |
| 2002 09 04 | 644 | 0.0 | 0.7+ | 2005 03 08 | G96 | 0.2− | 0.0 | 2006 05 22 | G96 | 0.1+ | 0.3+ |
| 2002 09 04 | 644 | 0.0 | 1.1+ | 2005 03 08 | G96 | 0.3− | 0.2− | | | | |

**(142021)∗ 2002 QB$_{1}$**

Discovered 2002 Aug. 16 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.66349 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26530370 | $\omega$ | 55.69236 | | +0.98592126 | | +0.15324218 |
| $a$ | 2.3986885 | $\Omega$ | 295.41169 | | −0.16711083 | | +0.88922926 |
| $e$ | 0.2404787 | $i$ | 4.24779 | | −0.00576497 | | +0.43103151 |
| $P$ | 3.72 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.3− | 0.6− | 2002 09 01 | 699 | 0.7+ | 0.8+ | 2006 10 19 | 703 | 0.5+ | 0.2+ |
| 1999 12 07 | 691 | 0.2+ | 0.1+ | 2002 09 01 | 699 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.4− |
| 1999 12 07 | 691 | 0.1− | 0.0 | 2002 09 01 | 699 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2002 07 22 | 644 | 0.2− | 0.4+ | 2002 09 02 | 608 | 0.4+ | 0.9− | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 2002 07 22 | 644 | 0.5− | 0.4+ | 2002 09 02 | 608 | 0.1+ | 1.4− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 07 22 | 644 | 0.3− | 0.3+ | 2002 09 02 | 608 | 0.1− | 1.3− | 2006 10 19 | 644 | 0.4+ | 0.1− |
| 2002 08 08 | 699 | 0.3+ | 0.5− | 2002 09 06 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.0 | 1.0− |
| 2002 08 08 | 699 | 0.3+ | 0.2− | 2002 09 06 | 704 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.7− | 0.2− |
| 2002 08 08 | 699 | 0.4+ | 1.4+ | 2002 09 06 | 704 | 0.6− | 0.0 | 2006 10 27 | 703 | 1.3− | 0.1+ |
| 2002 08 08 | 699 | 0.5+ | 0.3+ | 2002 09 06 | 704 | 0.5− | 0.6− | 2006 10 27 | 703 | 0.4+ | 0.5+ |
| 2002 08 16 | 608 | 0.5− | 0.3− | 2003 12 25 | 645 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2002 08 16 | 608 | 0.6− | 0.1− | 2003 12 25 | 645 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.6+ | 0.2− |
| 2002 08 16 | 608 | 0.5− | 0.3− | 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2002 08 17 | 644 | 0.2+ | 0.9+ | 2004 01 30 | 691 | 0.3− | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2002 08 17 | 644 | 0.0 | 0.6+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | (1.1− | 2.6+) |
| 2002 08 17 | 644 | 0.0 | 0.9+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.7+ |
| 2002 08 26 | 644 | 0.9− | 0.3+ | 2004 02 11 | 691 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.6− | 0.1+ |
| 2002 08 26 | 644 | 0.3− | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.9− | 1.2+ |
| 2002 08 26 | 644 | 0.6− | 0.3+ | 2006 08 29 | 703 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2002 08 27 | 644 | 0.0 | 1.0+ | 2006 08 29 | 703 | 0.2− | 0.7+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2002 08 27 | 644 | 0.3− | 1.0+ | 2006 08 29 | 703 | 0.0 | 0.8+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2002 08 27 | 644 | 0.1− | 1.0+ | 2006 08 29 | 703 | 1.3− | 0.2− | 2006 11 23 | G96 | 0.7+ | 0.1− |
| 2002 09 01 | 699 | (1.9+ | 0.3+) | 2006 10 19 | 703 | 0.0 | 0.1+ | | | | |

**(142022)∗ 2002 QE$_{1}$ = 2001 CJ$_{31}$**

Discovered 2002 Aug. 16 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 35347)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.17131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29274522 | $\omega$ | 134.91043 | | +0.08199769 | +0.99654110 | |
| $a$ | 2.2463435 | $\Omega$ | 139.78723 | | −0.92018155 | +0.08090320 | |
| $e$ | 0.1284833 | $i$ | 1.19803 | | −0.38280844 | +0.01898713 | |
| $P$ | 3.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.3+ | 0.3+ | 2002 08 27 | 644 | 0.1+ | 0.2+ | 2005 06 04 | 704 | 0.1+ | 0.6− |
| 2001 01 26 | 691 | 0.4+ | 0.6+ | 2002 08 29 | 644 | 0.0 | 0.0 | 2005 06 04 | 704 | 0.5+ | 0.3− |
| 2001 01 26 | 691 | 0.2+ | 0.4+ | 2002 08 29 | 644 | 0.3− | 0.2+ | 2005 06 06 | 691 | 0.2+ | 0.2+ |
| 2001 02 02 | 699 | 1.0+ | 0.2+ | 2002 08 29 | 644 | 0.5− | 0.0 | 2005 06 06 | 691 | 0.2+ | 0.6+ |
| 2001 02 02 | 699 | (2.0+ | 1.4+) | 2002 09 04 | 644 | 0.0 | 0.2+ | 2005 06 06 | 691 | 0.0 | 0.2+ |
| 2001 02 02 | 699 | 1.3+ | 0.0 | 2002 09 04 | 644 | 0.0 | 0.3+ | 2005 06 23 | 644 | 0.3− | 0.0 |
| 2001 02 02 | 699 | (0.6+ | 1.6+) | 2002 09 04 | 644 | 0.1− | 0.2+ | 2005 06 23 | 644 | 0.1− | 0.1− |
| 2001 02 21 | 691 | 0.2− | 0.3+ | 2002 09 14 | 644 | 0.4− | 0.7+ | 2005 06 23 | 644 | 0.2− | 0.0 |
| 2001 02 21 | 691 | 0.4− | 0.2+ | 2002 09 14 | 644 | 0.2− | 1.4+ | 2005 07 05 | 644 | 0.1+ | 0.0 |
| 2001 02 21 | 691 | 0.2− | 0.1+ | 2002 09 14 | 644 | 0.3− | 0.5+ | 2005 07 05 | 644 | 0.2− | 0.2+ |
| 2002 07 29 | 644 | 0.2+ | 0.2− | 2005 05 04 | 644 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.4+ | 0.0 |
| 2002 07 29 | 644 | 0.1− | 0.0 | 2005 05 04 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2002 07 29 | 644 | 0.1− | 0.3+ | 2005 05 04 | 644 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2002 08 08 | 644 | 0.1− | 1.0+ | 2005 05 14 | 704 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2002 08 08 | 644 | 0.2+ | 0.9+ | 2005 05 14 | 704 | 0.9+ | 0.9+ | 2006 10 19 | G96 | 0.5+ | 0.4− |
| 2002 08 08 | 644 | 0.3+ | 1.1+ | 2005 05 14 | 704 | 0.6− | 0.8− | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2002 08 14 | 704 | (0.6− | 2.2+) | 2005 05 14 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | (1.2− | 2.8−) | 2005 05 14 | 704 | 0.9+ | 1.1+ | 2006 11 10 | 691 | 0.2− | 0.3− |
| 2002 08 14 | 704 | 0.2− | 0.4− | 2005 05 20 | G96 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.4− | 0.6+ |
| 2002 08 14 | 704 | 0.4− | 0.1− | 2005 05 20 | G96 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.5+ |
| 2002 08 16 | 608 | 0.2+ | 0.5− | 2005 05 20 | G96 | 0.5− | 0.1− | 2006 11 14 | 691 | 0.1− | 0.6+ |
| 2002 08 16 | 608 | 0.5+ | 0.4+ | 2005 05 20 | G96 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.2− | 0.3+ |
| 2002 08 16 | 608 | 0.1+ | 0.4− | 2005 06 01 | 691 | 0.0 | 0.6+ | 2006 11 21 | 691 | 0.2+ | 0.4+ |
| 2002 08 17 | 644 | 0.2+ | 0.1+ | 2005 06 01 | 691 | 0.1+ | 0.7+ | 2006 11 21 | 691 | 0.2+ | 0.4+ |
| 2002 08 17 | 644 | 0.1+ | 0.1− | 2005 06 01 | 691 | 0.3+ | 0.6+ | 2006 11 27 | 703 | 0.7+ | 1.1+ |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2005 06 04 | 704 | 0.4+ | 0.6+ | 2006 11 27 | 703 | 0.0 | 0.8+ |
| 2002 08 27 | 644 | 1.0− | 0.0 | 2005 06 04 | 704 | 0.2− | 0.4− | 2006 11 27 | 703 | 1.3− | 0.5+ |
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2005 06 04 | 704 | 0.8− | 0.5− | 2006 11 27 | 703 | 0.2+ | 1.1− |

**(142023)∗ 2002 QY$_2$**

Discovered 2002 Aug. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.36371 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24356330 | $\omega$ | 96.23817 | | +0.99811052 | −0.03785008 | |
| $a$ | 2.5393827 | $\Omega$ | 265.93832 | | +0.01573262 | +0.91890921 | |
| $e$ | 0.1828330 | $i$ | 2.78131 | | +0.05939585 | +0.39264900 | |
| $P$ | 4.05 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 18 | 691 | 0.0 | 0.5− | 2002 08 28 | 644 | 0.1− | 0.2+ | 2006 05 26 | G96 | 0.2− | 0.2− |
| 1999 12 18 | 691 | 0.1− | 0.3− | 2002 08 28 | 644 | 0.0 | 0.2+ | 2006 05 26 | G96 | 0.5+ | 0.1+ |
| 1999 12 18 | 691 | 0.1− | 0.3− | 2002 09 06 | 704 | 0.1− | 0.1+ | 2006 07 25 | 644 | 0.5− | 0.0 |
| 2002 08 12 | 704 | 0.3+ | 0.2+ | 2002 09 06 | 704 | 0.1+ | 0.6+ | 2006 07 25 | 644 | 0.3− | 0.2− |
| 2002 08 12 | 704 | 0.0 | 0.2+ | 2002 09 06 | 704 | 0.6− | 0.8− | 2006 07 25 | 644 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.8+ | 0.7+ | 2002 09 06 | 704 | 0.2− | 0.1+ | 2006 07 25 | 644 | 0.2− | 0.1+ |
| 2002 08 16 | 644 | 0.4− | 0.7+ | 2002 09 06 | 704 | 0.1− | 0.3− | 2006 07 25 | 644 | 0.5+ | 0.2+ |
| 2002 08 16 | 644 | 0.2− | 0.4+ | 2004 01 28 | 691 | 0.4+ | 0.7+ | 2006 07 25 | 644 | 0.2− | 0.4+ |
| 2002 08 16 | 644 | 0.5− | 0.2+ | 2004 01 28 | 691 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.4− | 0.1+ |
| 2002 08 17 | 644 | 0.2− | 0.8− | 2004 01 28 | 691 | 0.1+ | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.8− | 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.3− | 0.6− | 2004 02 11 | 691 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2002 08 17 | 608 | 0.6+ | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2002 08 17 | 608 | 0.3+ | 0.3+ | 2005 03 17 | G96 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2002 08 17 | 608 | 0.1+ | 0.5+ | 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.0 |
| 2002 08 19 | 644 | 0.1− | 0.3+ | 2005 03 17 | G96 | 0.3+ | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.0 |
| 2002 08 19 | 644 | 0.3− | 0.2+ | 2005 03 17 | G96 | 0.0 | 0.4− | 2006 08 17 | 644 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.1− | 0.3+ | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.5+ |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2005 04 11 | 691 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.2+ |
| 2002 08 26 | 644 | 0.2− | 0.1+ | 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.6+ | 0.3+ |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 05 26 | G96 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.2+ | 1.2+ |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2006 05 26 | G96 | 0.2+ | 0.2− | | | | |

**(142024)∗ 2002 QO$_3$**

Discovered 2002 Aug. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.11573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25246449 | $\omega$ | 149.66689 | | +0.91651183 | +0.39979067 | |
| $a$ | 2.4793386 | $\Omega$ | 186.80762 | | −0.38569241 | +0.87450304 | |
| $e$ | 0.1123584 | $i$ | 6.37971 | | −0.10605390 | +0.27461219 | |
| $P$ | 3.90 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.2− | 0.6− | 2005 04 06 | 691 | 0.0 | 0.5+ | 2006 09 01 | 704 | 0.6+ | 0.2− |
| 1993 03 25 | 691 | (6.4+ | 2.4+) | 2005 04 06 | 691 | 0.4+ | 0.1+ | 2006 09 01 | 704 | (0.2+ | 2.0−) |
| 1993 03 25 | 691 | 0.1− | 0.5− | 2005 04 06 | 691 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.4+ | 0.9+ |
| 1998 08 17 | 704 | 0.5+ | 0.2+ | 2005 04 06 | G96 | 0.5− | 0.0 | 2006 09 12 | 703 | 0.4− | 0.1+ |
| 1998 08 17 | 704 | 1.1− | 0.3+ | 2005 04 06 | G96 | 0.3− | 0.1− | 2006 09 12 | 703 | 1.2− | 0.4+ |
| 1998 08 17 | 704 | 0.3− | 0.2+ | 2005 04 06 | G96 | 0.2− | 0.1− | 2006 09 12 | 703 | 1.0− | 0.6+ |
| 1998 08 17 | 704 | (4.2− | 1.0−) | 2005 04 06 | G96 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.3− |
| 2001 04 18 | 691 | 0.4+ | 0.1+ | 2005 04 07 | G96 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.6− |
| 2001 04 18 | 691 | 0.0 | 0.2+ | 2005 04 07 | G96 | 0.5− | 0.4− | 2006 09 19 | 699 | 0.8− | 0.4− |
| 2001 04 18 | 691 | 0.3− | 0.0 | 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.9− |
| 2002 08 12 | 704 | 0.2+ | 0.7+ | 2005 04 07 | G96 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.9+ | 1.2− |
| 2002 08 12 | 704 | 1.2+ | 0.2+ | 2005 04 09 | 691 | 0.3− | 0.0 | 2006 09 19 | 699 | (1.5+ | 0.6+) |
| 2002 08 12 | 704 | 0.5+ | 0.2+ | 2005 04 09 | 691 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.1+ |
| 2002 08 16 | 644 | 0.1− | 0.2− | 2005 04 09 | 691 | 0.3+ | 0.3− | 2006 09 19 | 699 | 1.2+ | 0.4+ |
| 2002 08 16 | 644 | 0.2− | 0.2− | 2005 04 10 | 691 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.0 | 0.1+ |
| 2002 08 16 | 644 | 0.3− | 0.1+ | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.3+ |
| 2002 08 17 | 608 | 0.2+ | 1.1− | 2005 04 10 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 1.3+ | 0.7− |
| 2002 08 17 | 608 | 0.1− | 1.5− | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.1− |
| 2002 08 17 | 608 | (0.1− | 1.8−) | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.1− |
| 2002 08 26 | 644 | 0.3+ | 0.3− | 2005 04 14 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 1.3+ | 0.5+ |
| 2002 08 26 | 644 | 0.6+ | 0.1+ | 2005 04 18 | 691 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 2002 08 26 | 644 | 0.2+ | 0.3− | 2005 04 18 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.2− |
| 2002 08 28 | 644 | 0.2− | 0.2− | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 08 28 | 644 | 0.0 | 0.0 | 2005 05 14 | 691 | 0.0 | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.0 | 0.1− | 2005 05 14 | 691 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2002 09 05 | 699 | 0.6− | 0.3− | 2005 05 14 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 09 05 | 699 | 0.3− | 1.0+ | 2006 08 23 | 644 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2002 09 05 | 699 | 0.9− | 0.9− | 2006 08 23 | 644 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.5− | 0.0 |
| 2002 09 05 | 699 | 0.7− | 0.8+ | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3− | 0.3+ |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 1.1+ | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 09 06 | 704 | 1.3+ | 0.2− | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2002 09 06 | 704 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 09 06 | 704 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2002 09 13 | 644 | 0.2− | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2002 09 13 | 644 | 0.3− | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 09 13 | 644 | 0.4− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 1.5+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2005 03 14 | G96 | 0.4− | 0.3− | 2006 08 30 | 704 | 0.9+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2005 03 14 | G96 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.7− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2005 03 14 | G96 | 0.4− | 0.2− | 2006 09 01 | 704 | 0.1+ | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2005 03 14 | G96 | 0.1+ | 0.3− | 2006 09 01 | 704 | 0.1− | 1.3− | | | | |

**(142025)∗ 2002 QR$_4$**

Discovered 2002 Aug. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.40746 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24433768 | $\omega$ | 102.14718 | | +0.89087494 | −0.44984665 | |
| $a$ | 2.5340144 | $\Omega$ | 284.61446 | | +0.38728965 | +0.82476884 | |
| $e$ | 0.0851989 | $i$ | 3.73806 | | +0.23737852 | +0.34262859 | |
| $P$ | 4.03 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.8+ | 1.4+ | 2002 09 14 | 644 | 0.2− | 0.9+ | 2006 08 24 | 704 | (0.1+ | 1.6−) |
| 2000 02 02 | 704 | 0.5+ | 0.1+ | 2002 09 14 | 644 | 0.1− | 0.7+ | 2006 08 28 | 699 | 0.8− | 0.2− |
| 2000 02 02 | 704 | 0.6+ | 0.6− | 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.5− |
| 2000 02 02 | 704 | 0.8+ | 1.3− | 2003 12 19 | 691 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.5− |
| 2002 08 12 | 704 | 1.3+ | 0.3+ | 2003 12 19 | 691 | 0.2− | 0.2− | 2006 08 28 | 703 | (0.7− | 2.0−) |
| 2002 08 12 | 704 | 0.6+ | 0.8− | 2003 12 21 | 704 | (0.4− | 2.8+) | 2006 08 28 | 699 | 0.9− | 0.6− |
| 2002 08 12 | 704 | 0.6+ | 0.1+ | 2003 12 21 | 704 | (0.0 | 2.3+) | 2006 08 28 | 703 | 0.7+ | 0.8− |
| 2002 08 12 | 704 | (1.8+ | 0.6+) | 2003 12 21 | 704 | 0.6− | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.5− |
| 2002 08 12 | 704 | 0.7+ | 0.0 | 2003 12 21 | 704 | 1.1+ | 0.4+ | 2006 08 28 | 699 | 0.5− | 0.3+ |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2003 12 21 | 704 | (1.5+ | 1.7+) | 2006 09 14 | 703 | (0.6− | 1.8−) |
| 2002 08 16 | 644 | 0.2+ | 0.1+ | 2004 01 13 | 699 | 0.6− | 0.6+ | 2006 09 14 | 703 | 0.9− | 1.1− |
| 2002 08 16 | 644 | 0.4+ | 0.8+ | 2004 01 13 | 699 | 0.4− | 0.6− | 2006 09 14 | 703 | 0.3+ | 0.8+ |
| 2002 08 17 | 644 | 0.1+ | 1.3+ | 2004 01 13 | 699 | (2.0− | 0.9+) | 2006 09 14 | 703 | (1.8− | 0.8−) |
| 2002 08 17 | 644 | 0.2+ | 1.0+ | 2004 01 13 | 699 | 0.4− | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.1− |
| 2002 08 17 | 644 | 0.1− | 0.8+ | 2004 01 21 | 704 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2002 08 17 | 608 | 0.8− | 0.8+ | 2004 01 21 | 704 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2− |
| 2002 08 17 | 608 | 0.8− | 1.1+ | 2004 01 21 | 704 | 0.0 | 0.5− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2002 08 17 | 608 | 0.5− | 0.6+ | 2004 01 21 | 704 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.1− | 0.7− | 2004 01 21 | 704 | 0.5− | 0.7+ | 2006 09 17 | 691 | (0.4+ | 1.7+) |
| 2002 08 18 | 644 | 0.0 | 0.8− | 2004 01 24 | 704 | (0.2+ | 3.2+) | 2006 09 18 | 699 | (2.7+ | 1.4−) |
| 2002 08 18 | 644 | 0.1− | 0.8− | 2004 01 24 | 704 | 0.3+ | 1.1+ | 2006 09 18 | 699 | 0.2+ | 0.1− |
| 2002 08 26 | 644 | 0.1− | 0.1− | 2004 01 24 | 704 | 1.0+ | 0.6+ | 2006 09 18 | 699 | 0.8+ | 0.7+ |
| 2002 08 26 | 644 | 0.1+ | 0.2− | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.6− | 0.1+ |
| 2002 08 26 | 644 | 0.4− | 0.2− | 2006 08 13 | 644 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.0 |
| 2002 09 01 | 608 | 1.1− | 0.6− | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.1− |
| 2002 09 01 | 608 | 0.6− | 0.9− | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.8− | 0.5+ |
| 2002 09 01 | 608 | 0.2− | 0.9− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.7− |
| 2002 09 06 | 704 | 0.7− | 0.5− | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.1− | 2006 08 19 | 699 | 0.8− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.1+ | 2006 08 19 | 699 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2− |
| 2002 09 06 | 704 | 0.6− | 0.2+ | 2006 08 19 | 699 | 0.2+ | 0.5− | 2006 10 23 | 291 | 0.5+ | 0.2− |
| 2002 09 13 | 644 | 0.3− | 0.0 | 2006 08 19 | 699 | (1.9− | 0.3−) | 2006 10 23 | 291 | 0.5+ | 0.1+ |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 0.0 | 0.4+ | 2006 10 23 | 291 | 0.8+ | 0.1+ |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2006 08 24 | 704 | 0.7− | 0.8+ | | | | |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 08 24 | 704 | 0.1+ | 0.6+ | | | | |

**(142026)∗ 2002 QY$_4$**

Discovered 2002 Aug. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 58.74592 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24421688 | $\omega$ | 337.61603 | | +0.01265907 | | +0.99566926 | | |
| $a$ | 2.5348500 | $\Omega$ | 293.00850 | | −0.90158521 | | −0.02846645 | | |
| $e$ | 0.0846603 | $i$ | 5.74265 | | −0.43241630 | | +0.08850078 | | |
| $P$ | 4.04 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 05 | 608 | (0.3+ | 2.9+) | 2003 12 22 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | (0.9+ | 2.4+) |
| 2001 03 05 | 608 | (0.4+ | 3.4+) | 2003 12 27 | 704 | 0.9+ | 0.6+ | 2006 08 30 | 704 | 0.8+ | 0.7− |
| 2001 03 05 | 608 | (0.7+ | 3.1+) | 2003 12 27 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 1.2+ | 0.6− |
| 2002 08 09 | 608 | 0.6− | 0.1+ | 2003 12 27 | 704 | 0.4− | 0.3− | 2006 08 30 | 704 | 0.5+ | 0.5− |
| 2002 08 09 | 608 | 0.2− | 0.0 | 2005 04 06 | 699 | 0.3+ | 1.3+ | 2006 08 30 | 704 | 0.0 | 0.8+ |
| 2002 08 09 | 608 | 0.5− | 0.2+ | 2005 04 06 | 699 | 0.2+ | 1.3+ | 2006 08 30 | 704 | 0.1+ | 0.7− |
| 2002 08 16 | 644 | 0.0 | 0.3+ | 2005 04 06 | 699 | 0.5+ | 0.3− | 2006 08 30 | 704 | 0.6− | 0.4+ |
| 2002 08 16 | 644 | 0.3+ | 0.3+ | 2005 04 06 | 699 | 0.4+ | 1.0+ | 2006 08 30 | 704 | 0.6+ | 0.5− |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2005 04 13 | 699 | (1.7+ | 0.1+) | 2006 09 12 | 699 | 0.1− | 1.5+ |
| 2002 08 17 | 608 | 0.4− | 0.4+ | 2005 04 13 | 699 | 0.1+ | 0.6− | 2006 09 12 | 699 | 0.3− | 0.2+ |
| 2002 08 17 | 608 | 0.4− | 1.0+ | 2005 04 13 | 699 | 0.1− | 0.3+ | 2006 09 12 | 699 | 0.6− | 0.4− |
| 2002 08 17 | 608 | 0.4− | 0.7+ | 2005 04 13 | 699 | (2.6+ | 0.1−) | 2006 09 12 | 699 | (1.7− | 2.0−) |
| 2002 08 26 | 644 | 0.3+ | 0.1− | 2006 08 15 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.6− |
| 2002 08 26 | 644 | 0.5+ | 0.0 | 2006 08 15 | 644 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.5+ |
| 2002 08 26 | 644 | 0.9+ | 0.2+ | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.3+ |
| 2002 08 28 | 644 | 0.3− | 0.4− | 2006 08 19 | 699 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.5+ | 0.2− |
| 2002 08 28 | 644 | 0.2− | 0.4− | 2006 08 19 | 699 | 0.5+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.3− | 0.3− | 2006 08 19 | 699 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.1− |
| 2002 09 05 | 699 | 0.3+ | 0.4+ | 2006 08 19 | 699 | (1.9+ | 0.6+) | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 699 | 0.2+ | 0.0 | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2002 09 05 | 699 | 0.1+ | 1.0− | 2006 08 21 | 644 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 2002 09 05 | 699 | 1.1− | 0.2− | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.0 |
| 2002 09 06 | 704 | 0.5+ | 0.2+ | 2006 08 24 | 704 | 0.4+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.3− | 0.1+ | 2006 08 24 | 704 | 0.6+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2002 09 06 | 704 | 0.3+ | 0.8+ | 2006 08 24 | 704 | 0.7+ | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.2− |
| 2003 12 18 | 704 | 0.7− | 0.6− | 2006 08 24 | 704 | 0.8− | 0.5− | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2003 12 18 | 704 | 0.9+ | 0.3+ | 2006 08 24 | 704 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 0.5− | 0.7+ | 2006 08 28 | 703 | 1.2− | 0.2+ | 2006 10 21 | 703 | 2.0− | 0.4+ |
| 2003 12 22 | 704 | (0.7− | 2.1+) | 2006 08 28 | 703 | 0.2− | 1.3+ | 2006 10 21 | 703 | 0.8− | 0.3− |
| 2003 12 22 | 704 | 0.3− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.2+ | 2006 10 21 | 703 | 0.2− | 1.7− |
| 2003 12 22 | 704 | 0.3− | 1.1+ | 2006 08 30 | 704 | 1.1+ | 0.7− | 2006 10 21 | 703 | 0.1− | 0.3+ |

**(142027)∗ 2002 QM$_5$**

Discovered 2002 Aug. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 52.02492 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26493596 | $\omega$ | 81.68567 | | +0.60501467 | | +0.79423983 | | |
| $a$ | 2.4009076 | $\Omega$ | 225.70085 | | −0.75786390 | | +0.55286558 | | |
| $e$ | 0.2284928 | $i$ | 4.49079 | | −0.24413019 | | +0.25203719 | | |
| $P$ | 3.72 | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.1− | 0.2− | 2002 09 06 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 1995 11 14 | 691 | 0.0 | 0.1+ | 2002 09 06 | 704 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 1995 11 14 | 691 | 0.2− | 0.3− | 2002 09 13 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 1.1− | 0.3+ |
| 1995 12 22 | 691 | 0.5+ | 0.5− | 2002 09 13 | 644 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 1995 12 22 | 691 | 0.3− | 0.0 | 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1995 12 22 | 691 | 0.4+ | 0.5− | 2002 10 04 | 704 | 1.1+ | 0.8− | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2002 07 14 | 704 | 0.4+ | 0.6− | 2002 10 04 | 704 | 0.1+ | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 07 14 | 704 | 0.4− | 0.0 | 2002 10 04 | 704 | 0.4+ | 0.5− | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2002 07 14 | 704 | 0.7+ | 0.4− | 2002 10 04 | 704 | (0.1+ | 2.2−) | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2002 07 14 | 704 | 0.8− | 0.0 | 2005 03 13 | G96 | 0.2+ | 0.4+ | 2006 10 29 | 691 | 0.3− | 0.3+ |
| 2002 07 14 | 704 | 0.3− | 0.7− | 2005 03 13 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.3− |
| 2002 08 12 | 704 | 0.5− | 0.5+ | 2005 03 13 | G96 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.5− |
| 2002 08 12 | 704 | 0.0 | 0.2+ | 2005 03 13 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 703 | (2.8+ | 0.5−) |
| 2002 08 12 | 704 | 0.5− | 0.4+ | 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2002 08 12 | 704 | 0.2− | 0.5+ | 2005 03 14 | G96 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 2002 08 12 | 704 | 0.7− | 0.0 | 2005 03 14 | G96 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.2− |
| 2002 08 16 | 644 | 0.1+ | 0.8− | 2005 03 14 | G96 | 0.4− | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.7− |
| 2002 08 16 | 644 | 0.1+ | 0.7− | 2005 05 14 | G96 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2002 08 16 | 644 | 0.4+ | 0.8− | 2005 05 14 | G96 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2002 08 17 | 608 | 0.4− | 0.1− | 2005 05 14 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.3+ |
| 2002 08 17 | 608 | 0.7− | 0.1− | 2005 05 14 | G96 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2002 08 17 | 608 | 0.8− | 0.1− | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 11 21 | 704 | (0.2− | 1.6+) |
| 2002 08 28 | 644 | 0.4+ | 0.4− | 2006 08 28 | 703 | 0.4+ | 1.5− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 08 28 | 644 | 0.3+ | 0.4− | 2006 08 28 | 703 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 08 28 | 644 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.4+ | 1.1+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2002 09 05 | 699 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 25 | 703 | 0.1+ | 1.1+ |
| 2002 09 05 | 699 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 25 | 703 | 0.2− | 0.9+ |
| 2002 09 05 | 699 | 0.5+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 25 | 703 | 0.6+ | 1.0+ |
| 2002 09 05 | 699 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 25 | 703 | 0.8− | 0.9+ |
| 2002 09 06 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.6+ | 2006 11 27 | 691 | 0.2− | 0.2− |

**(142028)∗ 2002 QU$_5$**

Discovered 2002 Aug. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 9.99674 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27614199 | $\omega$ | 182.41136 | | +0.80269323 | | −0.55001425 | | |
| $a$ | 2.3355065 | $\Omega$ | 214.39897 | | +0.55378292 | | +0.83089793 | | |
| $e$ | 0.2119991 | $i$ | 24.08828 | | +0.22137765 | | −0.08421972 | | |
| $P$ | 3.57 | $H$ | 15.3 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.2− | 0.2+ | 2002 10 31 | 699 | 0.4− | 0.0 | 2005 07 03 | 703 | 0.8− | 0.0 |
| 2002 07 29 | 644 | 0.2+ | 0.4+ | 2002 10 31 | 699 | (3.6+ | 0.0 ) | 2005 07 03 | 703 | 0.8− | 0.3+ |
| 2002 07 29 | 644 | 1.0− | 0.2+ | 2002 12 06 | 704 | 0.4+ | 0.0 | 2005 07 03 | 703 | (1.9− | 1.3+) |
| 2002 07 29 | 644 | 0.3− | 0.1+ | 2002 12 06 | 704 | 0.8+ | 0.2+ | 2005 07 06 | 691 | 0.1+ | 0.1+ |
| 2002 07 29 | 644 | 0.5− | 0.2− | 2002 12 06 | 704 | 0.7+ | 0.2+ | 2005 07 06 | 691 | 0.0 | 0.0 |
| 2002 07 29 | 644 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.8− | 1.2+ | 2005 07 06 | 691 | 0.2+ | 0.2+ |
| 2002 08 17 | 699 | 0.2+ | 0.1+ | 2002 12 11 | 704 | 0.0 | 0.3+ | 2005 07 09 | 703 | 0.6− | 0.3+ |
| 2002 08 17 | 699 | 1.1+ | 0.6− | 2002 12 11 | 704 | 0.2− | 0.4+ | 2005 07 09 | 703 | 0.8− | 0.5+ |
| 2002 08 17 | 699 | 1.2+ | 0.2+ | 2002 12 11 | 704 | 0.3+ | 0.1+ | 2005 07 09 | 703 | 0.1+ | 0.7+ |
| 2002 08 17 | 699 | 1.0+ | 0.3− | 2002 12 11 | 704 | 0.0 | 0.2− | 2005 07 09 | 703 | 0.5+ | 0.0 |
| 2002 08 18 | 848 | 0.5− | 1.0− | 2002 12 11 | 704 | 0.7+ | 0.0 | 2006 09 01 | 704 | (2.1− | 0.4−) |
| 2002 08 18 | 848 | 1.1− | 0.9+ | 2003 01 02 | 704 | (1.7+ | 3.5+) | 2006 09 01 | 704 | 0.7− | 0.2+ |
| 2002 08 18 | 848 | 0.3+ | 0.7+ | 2003 01 02 | 704 | (0.4− | 2.7+) | 2006 09 01 | 704 | 0.1− | 0.2+ |
| 2002 08 19 | 848 | 0.5− | 0.1+ | 2003 01 02 | 704 | (0.0 | 1.6+) | 2006 09 01 | 704 | 0.4+ | 0.1+ |
| 2002 08 19 | 848 | 0.0 | 0.0 | 2003 01 02 | 704 | (1.7+ | 0.4+) | 2006 09 19 | 704 | 1.4+ | 0.2+ |
| 2002 08 19 | 848 | 0.6− | 1.3− | 2003 01 04 | 704 | 0.6− | 0.3+ | 2006 09 19 | 704 | 0.5+ | 1.3− |
| 2002 08 30 | 704 | 0.0 | 0.0 | 2003 01 04 | 704 | 0.9− | 0.6− | 2006 09 19 | 704 | 0.8+ | 0.2+ |
| 2002 08 30 | 704 | 0.3− | 0.1− | 2003 01 04 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 704 | 0.6+ | 0.1+ |
| 2002 08 30 | 704 | 0.2− | 0.1− | 2003 01 04 | 704 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.7+ | 0.2− |
| 2002 08 30 | 704 | 0.3+ | 0.3+ | 2003 01 04 | 704 | 1.0− | 0.0 | 2006 09 22 | 704 | 0.1− | 0.3− |
| 2002 08 30 | 704 | 0.3− | 0.0 | 2004 03 17 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.2− |
| 2002 09 29 | 636 | 0.2− | 0.0 | 2004 03 17 | 704 | 0.6+ | 0.2+ | 2006 10 03 | 704 | (0.1+ | 1.8+) |
| 2002 09 29 | 636 | 1.0+ | 0.8− | 2004 03 17 | 704 | 0.4+ | 0.1− | 2006 10 03 | 704 | 0.9+ | 0.9+ |
| 2002 09 29 | 636 | 0.4+ | 0.0 | 2005 05 19 | 644 | 0.2− | 0.4+ | 2006 10 03 | 704 | 0.8+ | 1.0+ |
| 2002 10 04 | 699 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.1− | 0.4+ | 2006 10 03 | 704 | 0.1− | 0.3+ |
| 2002 10 04 | 699 | 0.4+ | 0.3− | 2005 05 19 | 644 | 0.2− | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.8− |
| 2002 10 04 | 699 | 1.0+ | 0.8+ | 2005 06 06 | 704 | 0.4+ | 0.5− | 2006 10 31 | 704 | 0.6− | 0.3+ |
| 2002 10 04 | 699 | 0.8+ | 0.7+ | 2005 06 06 | 704 | 0.2+ | 0.3− | 2006 10 31 | 704 | 0.6− | 0.7− |
| 2002 10 09 | 704 | 0.5− | 0.3− | 2005 06 06 | 704 | 0.8+ | 0.0 | 2006 10 31 | 704 | 0.8− | 0.5− |
| 2002 10 09 | 704 | 0.8− | 0.2− | 2005 06 06 | 704 | 0.8− | 0.1− | 2006 11 10 | 704 | 0.4− | 0.2+ |
| 2002 10 09 | 704 | 0.2− | 0.0 | 2005 06 06 | 704 | 0.6+ | 0.3− | 2006 11 10 | 704 | 1.1− | 1.0+ |
| 2002 10 09 | 704 | 0.4− | 0.2− | 2005 06 24 | 644 | 0.0 | 0.1+ | 2006 11 10 | 704 | 0.3− | 0.4+ |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2005 06 24 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 704 | 0.1+ | 0.7+ |
| 2002 10 31 | 699 | 0.1− | 0.3− | 2005 06 24 | 644 | 0.5+ | 0.2+ | | | | |
| 2002 10 31 | 699 | 0.5− | 0.2− | 2005 07 03 | 703 | 0.9− | 0.6− | | | | |

**(142029)∗ 2002 QE$_6$**

Discovered 2002 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.07934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25597984 | $\omega$ | 35.05345 | | −0.03193501 | +0.93866993 | |
| $a$ | 2.4565873 | $\Omega$ | 235.57975 | | −0.98548750 | −0.08686977 | |
| $e$ | 0.1353754 | $i$ | 24.59536 | | −0.16671698 | +0.33369509 | |
| $P$ | 3.85 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.0 | 0.8− | 2002 09 27 | 644 | 0.3− | 1.1− | 2005 07 04 | 703 | 0.2− | 0.3+ |
| 2000 01 08 | 704 | 0.2− | 0.5+ | 2002 09 27 | 644 | 0.3− | 1.0− | 2005 07 04 | 703 | 1.5− | 1.3+ |
| 2000 01 08 | 704 | 0.9+ | 1.0+ | 2002 09 27 | 644 | 0.3− | 1.0− | 2005 07 04 | 703 | (1.7− | 0.7+) |
| 2000 01 08 | 704 | 0.5− | 0.3+ | 2002 10 10 | 704 | 0.5+ | 0.3+ | 2005 07 05 | 644 | 0.1− | 0.0 |
| 2000 01 08 | 704 | 0.2+ | 1.4+ | 2002 10 10 | 704 | 0.6+ | 0.9+ | 2005 07 05 | 644 | 0.2− | 0.0 |
| 2001 04 21 | 704 | 0.0 | 0.2− | 2002 10 10 | 704 | 0.2− | 1.1+ | 2005 07 05 | 644 | 0.0 | 0.1+ |
| 2001 04 21 | 704 | 0.0 | 0.5+ | 2002 10 10 | 704 | 0.5+ | 0.9+ | 2005 07 28 | E12 | 0.6− | 0.2+ |
| 2001 04 21 | 704 | 0.9+ | 1.2+ | 2002 10 10 | 704 | 0.3+ | 0.6+ | 2005 07 28 | E12 | 0.0 | 0.6+ |
| 2002 08 17 | 704 | 1.0+ | 0.9+ | 2002 10 10 | 644 | 0.2+ | 0.1− | 2005 07 28 | E12 | 0.7+ | 0.7+ |
| 2002 08 17 | 704 | 0.5+ | 0.2− | 2002 10 10 | 644 | 0.1+ | 0.1− | 2005 07 28 | E12 | 0.7+ | 0.7+ |
| 2002 08 17 | 704 | 1.4+ | 0.2+ | 2002 10 10 | 644 | 0.0 | 0.0 | 2006 09 19 | 704 | 0.3− | 0.0 |
| 2002 08 18 | 704 | 0.4− | 0.1+ | 2002 10 14 | 644 | 0.6+ | 0.3− | 2006 09 19 | 704 | (1.8− | 2.4+) |
| 2002 08 18 | 704 | 0.1− | 0.3− | 2002 10 14 | 644 | 0.1− | 0.0 | 2006 09 19 | 704 | (1.9− | 1.5+) |
| 2002 08 18 | 704 | 0.4− | 0.4+ | 2002 10 14 | 644 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.2− | 0.8+ |
| 2002 08 18 | 704 | 1.4+ | 0.8− | 2002 12 01 | 704 | 0.9+ | 0.0 | 2006 09 24 | 699 | 0.2− | 0.4− |
| 2002 08 19 | 704 | 0.5− | 0.1+ | 2002 12 01 | 704 | 0.6− | 1.3+ | 2006 09 24 | 699 | 0.1− | 0.1+ |
| 2002 08 19 | 704 | 0.9− | 0.4− | 2002 12 01 | 704 | 0.6+ | 0.6+ | 2006 09 24 | 699 | 0.7− | 0.4− |
| 2002 08 19 | 704 | 0.5− | 0.0 | 2002 12 01 | 704 | 0.4+ | 0.6+ | 2006 09 24 | 699 | 0.1+ | 0.3+ |
| 2002 08 19 | 704 | 0.3− | 0.2− | 2002 12 01 | 704 | 0.5− | 0.2+ | 2006 09 25 | 703 | 0.8− | 0.3− |
| 2002 08 19 | 704 | 0.9− | 0.1− | 2005 03 31 | E12 | 0.0 | 0.4− | 2006 09 25 | 703 | 0.7− | 0.5+ |
| 2002 08 19 | 704 | 0.8− | 0.0 | 2005 03 31 | E12 | 0.0 | 0.2− | 2006 09 25 | 703 | 0.6− | 0.2+ |
| 2002 08 19 | 704 | 0.3+ | 0.0 | 2005 03 31 | E12 | 0.7− | 0.6+ | 2006 09 25 | 703 | 0.9− | 0.9− |
| 2002 08 19 | 704 | 1.0− | 0.7− | 2005 03 31 | E12 | 0.1− | 0.1− | 2006 10 02 | 704 | 0.1− | 0.6+ |
| 2002 08 19 | 704 | 1.1− | 0.1− | 2005 04 12 | E12 | 0.0 | 0.0 | 2006 10 02 | 704 | 0.8+ | 0.2+ |
| 2002 08 19 | 704 | 0.4− | 0.3+ | 2005 04 12 | E12 | 0.3+ | 0.1+ | 2006 10 02 | 704 | 0.0 | 0.1− |
| 2002 08 19 | 704 | 0.7− | 0.8− | 2005 04 12 | E12 | 0.2− | 0.0 | 2006 10 02 | 704 | 0.7+ | 0.8+ |
| 2002 08 19 | 704 | 0.9− | 0.0 | 2005 04 12 | E12 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.1+ | 0.5− |
| 2002 08 19 | 704 | 0.4+ | 1.4+ | 2005 04 27 | E12 | 0.2+ | 0.5− | 2006 10 02 | 703 | 0.1+ | 0.1− |
| 2002 08 19 | 704 | 0.6− | 0.4− | 2005 04 27 | E12 | 0.0 | 0.3− | 2006 10 02 | 703 | 0.6+ | 0.0 |
| 2002 08 19 | 704 | (1.9− | 0.3+) | 2005 04 27 | E12 | 0.2− | 0.1+ | 2006 10 02 | 703 | 0.3− | 0.2− |
| 2002 08 20 | 704 | 0.7+ | 0.1− | 2005 04 27 | E12 | (2.1− | 0.6−) | 2006 10 19 | 703 | 0.5− | 0.5− |
| 2002 08 20 | 704 | 0.4+ | 0.9+ | 2005 05 09 | E12 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 2002 08 20 | 704 | 0.2− | 0.8+ | 2005 05 09 | E12 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2002 08 20 | 704 | 0.5+ | 1.4+ | 2005 05 09 | E12 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.6− |
| 2002 08 20 | 704 | 0.3− | 1.4+ | 2005 05 09 | E12 | 0.0 | 0.1+ | 2006 10 20 | 704 | 0.7+ | 0.9+ |
| 2002 08 28 | 704 | 0.4− | 0.5− | 2005 05 10 | 699 | 0.6+ | 0.1− | 2006 10 20 | 704 | 0.6+ | 0.9+ |
| 2002 08 28 | 704 | 0.2+ | 0.9− | 2005 05 10 | 699 | 0.8+ | 0.1+ | 2006 10 20 | 704 | 1.1+ | 0.2+ |
| 2002 08 28 | 704 | 0.3+ | 0.8− | 2005 05 10 | 699 | 0.1+ | 0.6− | 2006 10 20 | 704 | 1.3+ | 0.3− |
| 2002 08 28 | 704 | 0.6+ | 1.0− | 2005 07 04 | 703 | 1.0− | 0.3+ | | | | |

**(142030)∗ 2002 QG$_6$ = 1998 QV$_{26}$**

Discovered 2002 Aug. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 37789)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.40029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26580602 | $\omega$ | 90.48028 | | +0.82753349 | −0.44179155 | |
| $a$ | 2.3956655 | $\Omega$ | 295.77507 | | +0.22214915 | +0.82436682 | |
| $e$ | 0.3155616 | $i$ | 22.62491 | | +0.51559488 | +0.35389203 | |
| $P$ | 3.71 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 09 27 | 261 | 0.3− | 0.1+ | 2002 11 17 | 704 | 0.1− | 0.4+ | 2004 03 24 | E12 | 0.0 | 1.0+ |
| 1987 09 27 | 261 | 0.1+ | 0.0 | 2002 11 17 | 704 | 0.5− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.5− |
| 1998 08 24 | 704 | 0.4+ | 0.9+ | 2002 11 17 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.7+ |
| 1998 08 24 | 704 | 0.3− | 0.7+ | 2002 11 23 | 704 | 0.4− | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 1998 08 24 | 704 | (2.7+ | 1.5+) | 2002 11 23 | 704 | 0.4− | 0.6+ | 2006 10 21 | 703 | 1.2− | 0.1+ |
| 1998 08 24 | 704 | 0.0 | 1.1+ | 2002 11 23 | 704 | 0.3− | 1.0+ | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 1998 08 27 | 704 | 0.4+ | 0.5− | 2002 11 23 | 704 | 0.4− | 1.2+ | 2006 10 28 | 703 | 0.2+ | 0.8+ |
| 1998 08 27 | 704 | 0.2− | 0.3+ | 2002 11 23 | 704 | 0.3− | 1.0+ | 2006 10 28 | 703 | 0.1+ | 0.4− |
| 1998 08 27 | 704 | 1.1+ | 0.3− | 2002 12 12 | 704 | 0.0 | 0.7− | 2006 10 28 | 703 | 0.6− | 0.8+ |
| 1998 08 27 | 704 | 1.2− | 1.6− | 2002 12 12 | 704 | 0.0 | 0.8− | 2006 10 29 | 704 | 0.6− | 0.2− |
| 1998 08 27 | 704 | 1.0+ | 1.2+ | 2002 12 12 | 704 | 1.2+ | 0.6− | 2006 10 29 | 704 | 0.3+ | 0.1− |
| 1998 12 02 | 699 | 1.3− | 0.2− | 2002 12 12 | 704 | 0.3+ | 0.9− | 2006 10 29 | 704 | 0.8− | 0.4− |
| 1998 12 02 | 699 | 1.2− | 0.4+ | 2002 12 12 | 704 | 0.1+ | 0.7− | 2006 10 29 | 704 | 0.1− | 0.4+ |
| 1998 12 02 | 699 | 1.8− | 1.2+ | 2002 12 28 | 704 | 0.4− | 0.1+ | 2006 11 15 | 704 | 1.1+ | 0.6+ |
| 2000 03 06 | 608 | 0.9− | 0.4+ | 2002 12 28 | 704 | 0.2− | 0.8+ | 2006 11 15 | 704 | 0.7+ | 0.6+ |
| 2000 03 06 | 608 | 0.8− | 0.3+ | 2002 12 28 | 704 | 0.5− | 0.2− | 2006 11 15 | 703 | 0.7− | 0.4− |
| 2000 03 06 | 608 | 0.2+ | 0.2− | 2002 12 28 | 704 | (10.7+ | 20.4−) | 2006 11 15 | 704 | 1.1− | 0.5− |
| 2002 08 17 | 704 | 0.0 | 0.2+ | 2002 12 28 | 704 | 0.4− | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.6− |
| 2002 08 17 | 704 | 0.4− | 0.0 | 2003 01 10 | 704 | 0.3− | 0.2+ | 2006 11 15 | 703 | 1.0− | 1.3− |
| 2002 08 17 | 704 | 0.4− | 0.4− | 2003 01 10 | 704 | 0.1− | 0.1− | 2006 11 15 | 703 | (1.8− | 1.1−) |
| 2002 08 17 | 704 | 1.1− | 1.2− | 2003 01 10 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.3+ |
| 2002 08 17 | 704 | 0.7− | 1.0− | 2003 01 13 | 704 | 0.4+ | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.4+ |
| 2002 08 19 | 704 | 0.1− | 0.1− | 2003 01 13 | 704 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.6− |
| 2002 08 19 | 704 | 0.4− | 0.4+ | 2003 01 13 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.6− |
| 2002 08 19 | 704 | 0.1+ | 0.2+ | 2003 01 13 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2002 08 19 | 704 | 0.2− | 0.2+ | 2003 01 13 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2002 08 19 | 704 | 0.0 | 0.3− | 2003 01 31 | 704 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.1− | 0.7− |
| 2002 08 27 | 704 | 0.4+ | 0.2− | 2003 01 31 | 704 | 0.6+ | 0.4− | 2006 11 19 | 704 | 0.1− | 1.0+ |
| 2002 08 27 | 704 | 0.3+ | 0.6+ | 2003 01 31 | 704 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2002 08 27 | 704 | 0.2+ | 0.3− | 2003 01 31 | 704 | 0.6− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.2+ |
| 2002 08 27 | 704 | 1.3− | 0.9+ | 2003 01 31 | 704 | 0.6+ | 0.4− | 2006 11 22 | 704 | 1.1+ | 0.1+ |
| 2002 08 27 | 704 | 0.3+ | 1.1− | 2003 03 06 | 704 | 0.7+ | 0.6+ | 2006 11 22 | 704 | 0.5+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 704 | 0.1− | 0.8− | 2003 03 06 | 704 | 0.8+ | 0.3+ | 2006 11 22 | 704 | 1.0+ | 0.6− |
| 2002 11 13 | 704 | 0.1+ | 0.8− | 2003 03 06 | 704 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2002 11 13 | 704 | 0.0 | 0.4− | 2003 03 06 | 704 | 0.2− | 0.5+ | 2006 11 29 | 704 | 0.5− | 0.8+ |
| 2002 11 13 | 704 | 0.1+ | 0.9− | 2004 03 24 | E12 | (0.7− | 1.7+) | 2006 11 29 | 704 | 0.5+ | 0.2− |
| 2002 11 17 | 704 | 0.1+ | 0.5− | 2004 03 24 | E12 | 0.1+ | 1.3+ | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2002 11 17 | 704 | 1.0+ | 1.0+ | 2004 03 24 | E12 | (3.4− | 0.6+) | | | | |

**(142031)∗ 2002 QR$_6$**

Discovered 2002 Aug. 20 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.23011 | | (2000.0) | | | |
| $n$ | 0.23712476 | $\omega$ | 162.59346 | | +0.98641138 | +0.16253427 |
| $a$ | 2.5851442 | $\Omega$ | 188.16551 | | −0.16352863 | +0.95722215 |
| $e$ | 0.1727222 | $i$ | 9.72132 | | −0.01584192 | +0.23939165 |
| $P$ | 4.16 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.5+ | 0.2+ | 2002 09 13 | 644 | 0.0 | 0.2+ | 2004 01 28 | 645 | 0.0 | 0.1+ |
| 2002 08 16 | 704 | 0.1− | 0.6+ | 2002 09 13 | 644 | 0.2− | 0.3+ | 2005 04 01 | 691 | 0.3+ | 0.7+ |
| 2002 08 16 | 704 | 0.1+ | 0.2+ | 2002 09 14 | 644 | 0.2− | 0.3+ | 2005 04 01 | 691 | 0.5+ | 0.6+ |
| 2002 08 20 | 049 | 0.5− | 0.3− | 2002 09 14 | 644 | 0.0 | 0.3+ | 2005 04 01 | 691 | 0.0 | 0.6+ |
| 2002 08 20 | 049 | 0.7− | 0.2− | 2002 09 14 | 644 | 0.3− | 0.3+ | 2005 04 12 | 691 | 0.1+ | 0.2+ |
| 2002 08 20 | 049 | 0.8− | 0.6− | 2002 09 14 | 608 | 0.0 | 0.1+ | 2005 04 12 | 691 | 0.2+ | 0.2+ |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2002 09 14 | 608 | 0.1− | 0.3− | 2005 04 12 | 691 | 0.3+ | 0.0 |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2002 09 14 | 608 | 0.1− | 0.1+ | 2005 05 08 | 691 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.4− | 0.5+ | 2002 10 01 | 699 | (0.1+ | 2.1+) | 2005 05 08 | 691 | 0.3− | 0.0 |
| 2002 09 04 | 699 | 1.1− | 0.2+ | 2002 10 01 | 699 | (0.0 | 1.9+) | 2005 05 08 | 691 | 0.3− | 0.4+ |
| 2002 09 04 | 683 | 1.5+ | 0.1+ | 2002 10 01 | 699 | 0.8+ | 0.9+ | 2006 08 16 | 644 | 0.3− | 0.1− |
| 2002 09 04 | 683 | 0.9− | 1.1+ | 2002 10 01 | 699 | (0.2− | 1.7+) | 2006 08 16 | 644 | 0.3+ | 0.1− |
| 2002 09 04 | 683 | (2.9+ | 1.3−) | 2002 10 03 | 704 | 0.4− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2002 09 04 | 699 | 0.5− | 0.1− | 2002 10 03 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.3+ | 0.8− |
| 2002 09 04 | 699 | 0.2− | 0.3+ | 2002 10 03 | 704 | 0.4− | 0.7+ | 2006 09 14 | 703 | 1.0+ | 0.5+ |
| 2002 09 04 | 699 | 0.5− | 0.3+ | 2002 10 03 | 704 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.5− |
| 2002 09 06 | 704 | 0.3+ | 0.6+ | 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.7− | 0.7+ |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2002 10 07 | 704 | (1.8+ | 0.7−) | 2006 09 26 | 703 | 0.8− | 0.1− |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2002 10 07 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 0.2+ | 0.5− |
| 2002 09 06 | 704 | 0.6+ | 0.4+ | 2002 10 07 | 704 | 1.3− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.7− |
| 2002 09 06 | 704 | 0.7+ | 0.2+ | 2002 10 11 | 704 | 1.0+ | 0.6+ | 2006 09 26 | 703 | 0.8− | 0.2− |
| 2002 09 10 | 608 | 0.4− | 0.8− | 2002 10 11 | 704 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2002 09 10 | 608 | 0.1− | 0.8+ | 2002 10 11 | 704 | 0.3− | 1.2− | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2002 09 10 | 608 | 0.6− | 1.0+ | 2002 10 11 | 704 | 0.8+ | 1.3+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2004 01 28 | 645 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.7− | 0.9+ |

**(142032)∗ 2002 QN$_7$ = 1998 LO$_3$**

Discovered 2002 Aug. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35351)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.41117 | | (2000.0) | | | |
| $n$ | 0.27471804 | $\omega$ | 204.63895 | | +0.01821264 | +0.99847722 |
| $a$ | 2.3435700 | $\Omega$ | 66.43998 | | −0.90765189 | +0.03835376 |
| $e$ | 0.1419793 | $i$ | 3.25660 | | −0.41932844 | −0.03965139 |
| $P$ | 3.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 24 | 691 | 0.3+ | 0.2− | 2005 04 05 | 703 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 1992 11 24 | 691 | 0.3− | 0.3− | 2005 04 05 | 703 | (1.6+ | 0.9−) | 2006 09 30 | 703 | 0.1+ | 0.7+ |
| 1992 11 24 | 691 | 0.1+ | 0.3− | 2005 04 09 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.6+ |
| 1995 08 29 | 809 | 0.8+ | 0.7− | 2005 04 09 | 704 | 0.4− | 1.0+ | 2006 09 30 | 703 | (0.2+ | 1.6−) |
| 1995 08 30 | 809 | 1.0+ | 0.5− | 2005 04 09 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.3+ |
| 1995 08 31 | 809 | (2.2+ | 0.2−) | 2005 04 09 | 704 | 0.9+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 1995 08 31 | 809 | 0.8− | 0.8− | 2005 04 09 | 704 | 0.5+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1998 06 01 | 809 | (2.5− | 2.1−) | 2005 04 12 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 1998 06 01 | 809 | (2.9− | 2.1−) | 2005 04 12 | 691 | 0.2+ | 0.2+ | 2006 10 02 | J95 | 0.2− | 0.2− |
| 1998 06 01 | 809 | (3.0− | 3.7−) | 2005 04 12 | 691 | 0.2+ | 0.1+ | 2006 10 02 | J95 | 0.5− | 0.3+ |
| 1998 06 02 | 809 | (2.8− | 2.9−) | 2005 04 18 | 705 | 0.6− | 0.8− | 2006 10 02 | J95 | 0.1+ | 0.2− |
| 1998 06 02 | 809 | (2.6− | 1.8−) | 2005 04 18 | 703 | 0.7− | 1.0− | 2006 10 02 | 291 | 0.1− | 0.4+ |
| 1998 06 02 | 809 | (1.7− | 2.2−) | 2005 04 18 | 703 | 1.1− | 0.9− | 2006 10 02 | 291 | 0.3+ | 0.3+ |
| 2001 02 17 | 704 | 0.8+ | 0.4− | 2005 04 18 | 703 | (2.2− | 0.4+) | 2006 10 02 | 291 | 0.0 | 0.4+ |
| 2001 02 17 | 704 | (0.5+ | 1.8+) | 2005 04 18 | 704 | (0.8+ | 1.6+) | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2001 02 17 | 704 | (0.2+ | 1.8+) | 2005 04 18 | 703 | 0.5− | 1.1+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2001 02 17 | 704 | (0.9+ | 1.8+) | 2005 04 18 | 704 | 0.0 | 0.6− | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2001 02 17 | 704 | (0.5+ | 1.6+) | 2005 04 18 | 705 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.4− | 0.6+ |
| 2002 08 11 | 644 | 0.1− | 0.4+ | 2005 04 18 | 704 | 0.7+ | 1.1+ | 2006 10 15 | 703 | 0.5− | 0.9− |
| 2002 08 11 | 644 | 0.4+ | 0.8+ | 2005 04 18 | 704 | 0.8+ | 0.7+ | 2006 10 15 | 703 | (0.7+ | 1.6−) |
| 2002 08 11 | 644 | 0.1− | 0.3+ | 2005 04 18 | 704 | 0.9+ | 0.6+ | 2006 10 15 | 703 | 0.2+ | 0.6− |
| 2002 08 11 | 644 | 0.4+ | 0.9+ | 2005 04 18 | 705 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.2+ | 0.5+ |
| 2002 08 11 | 644 | 0.4− | 0.3+ | 2005 04 19 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2002 08 11 | 644 | 0.2+ | 0.8+ | 2005 04 19 | 691 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2002 08 12 | 699 | 1.1+ | 0.8− | 2005 04 19 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2002 08 12 | 699 | 0.9+ | 0.7− | 2005 05 08 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2002 08 12 | 699 | 0.9+ | 1.2− | 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2002 08 12 | 699 | (0.6− | 1.7−) | 2005 05 08 | 703 | 0.8− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | 0.7− | 0.7+ | 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.4− | 0.2− |
| 2002 08 14 | 704 | 0.1− | 0.5− | 2005 05 08 | 703 | (0.2− | 1.6+) | 2006 10 21 | 703 | (0.1− | 1.7−) |
| 2002 08 14 | 704 | 0.4+ | 0.4− | 2005 05 08 | 703 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.0 |
| 2002 08 14 | 704 | (0.5+ | 1.8−) | 2005 05 08 | 703 | (1.8− | 0.2+) | 2006 10 21 | 703 | (2.7− | 0.6−) |
| 2002 08 16 | 644 | 0.2− | 0.4− | 2005 05 11 | 699 | 0.8− | 0.3− | 2006 10 21 | 703 | (1.1− | 2.0−) |
| 2002 08 16 | 644 | 0.6− | 0.3− | 2005 05 11 | 699 | 0.1+ | 0.5+ | 2006 10 21 | 644 | (1.7+ | 0.8−) |
| 2002 08 16 | 644 | 0.3− | 0.4− | 2005 05 11 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2002 08 19 | 644 | 0.2− | 0.5+ | 2005 05 11 | G96 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2002 08 19 | 644 | 0.1− | 0.4+ | 2005 05 11 | G96 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.5− |
| 2002 08 19 | 644 | 0.1− | 0.4+ | 2005 05 11 | 699 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.5− | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 08 29 | 644 | 0.1− | 0.2− | 2005 05 11 | 699 | 1.3+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.5+ |
| 2002 08 29 | 644 | 1.1− | 1.3− | 2005 05 13 | 703 | 1.0− | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 08 30 | 644 | 0.3− | 0.2+ | 2005 05 13 | 703 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 08 30 | 644 | 0.1+ | 0.3+ | 2005 05 13 | 703 | (1.5− | 1.3+) | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2005 05 13 | 703 | 0.7− | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.3+ |
| 2005 04 01 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 691 | (1.9− | 1.1−) | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2005 04 02 | 644 | 0.2+ | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2005 04 02 | 644 | 0.1+ | 0.6+ | 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2005 04 02 | 644 | 0.4+ | 0.6+ | 2006 09 23 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.3− | 0.3+ |
| 2005 04 05 | 703 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2005 04 05 | 703 | (2.4− | 0.7−) | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.4− | 0.1+ |

**(142033)∗ 2002 QY$_7$**

Discovered 2002 Aug. 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 113.07825 | | (2000.0) | | | |
| $n$ | 0.29169948 | $\omega$ | 176.16201 | | +0.29254438 | +0.95335009 |
| $a$ | 2.2517091 | $\Omega$ | 110.83642 | | −0.87945108 | +0.29879912 |
| $e$ | 0.1437574 | $i$ | 4.56843 | | −0.37547782 | +0.04292664 |
| $P$ | 3.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.2− | 0.4+ | 2002 09 06 | 704 | 0.1+ | 0.1− | 2005 06 17 | G96 | 0.4− | 0.5+ |
| 1999 10 10 | 704 | 0.7+ | 0.3− | 2002 09 06 | 704 | 0.2+ | 0.1− | 2005 06 17 | G96 | 0.1− | 0.3+ |
| 1999 10 10 | 704 | 0.8− | 1.3+ | 2002 09 06 | 704 | 0.2+ | 0.5− | 2005 06 17 | G96 | 0.5− | 0.7+ |
| 2002 08 10 | 704 | 0.6+ | 0.2− | 2002 09 06 | 704 | 0.9+ | 0.1+ | 2005 06 23 | 644 | 0.5− | 0.2+ |
| 2002 08 10 | 704 | 0.9+ | 0.3+ | 2002 09 08 | 608 | 0.7− | 0.2− | 2005 06 23 | 644 | 0.2− | 0.3+ |
| 2002 08 10 | 704 | 0.7+ | 0.4+ | 2002 09 08 | 608 | 0.6− | 0.2− | 2005 06 23 | 644 | 0.2− | 0.1+ |
| 2002 08 10 | 704 | 0.3− | 0.2+ | 2002 09 08 | 608 | 0.2− | 0.3− | 2005 07 26 | 644 | 0.1− | 0.0 |
| 2002 08 12 | 608 | 0.5− | 0.2− | 2002 09 13 | 704 | 0.6− | 0.9+ | 2005 07 26 | 644 | 0.2− | 0.0 |
| 2002 08 12 | 608 | 0.9− | 0.3− | 2002 09 13 | 704 | 0.3− | 0.3+ | 2005 07 26 | 644 | 0.4− | 0.0 |
| 2002 08 12 | 608 | 0.5− | 0.3− | 2002 09 13 | 704 | 0.1− | 0.3+ | 2005 08 04 | 644 | 0.0 | 0.2+ |
| 2002 08 19 | 644 | 0.3+ | 0.6+ | 2002 09 13 | 608 | 0.1− | 0.7+ | 2005 08 04 | 644 | 0.1+ | 0.1+ |
| 2002 08 19 | 644 | 0.3+ | 0.7+ | 2002 09 13 | 608 | 0.3− | 1.0+ | 2005 08 04 | 644 | 0.1+ | 0.0 |
| 2002 08 19 | 644 | 0.2+ | 0.4+ | 2002 09 13 | 608 | 0.6− | 1.1+ | 2006 10 21 | D35 | 0.2+ | 0.1+ |
| 2002 08 20 | 644 | 0.1+ | 0.0 | 2002 09 16 | 644 | 0.0 | 1.0− | 2006 10 21 | D35 | 0.2− | 0.1− |
| 2002 08 20 | 644 | 0.1− | 0.1+ | 2002 09 16 | 644 | 0.1+ | 1.1− | 2006 10 21 | D35 | 0.0 | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.0 | 0.1− | 2002 09 16 | 644 | 0.2+ | 1.1− | 2006 11 13 | 448 | 0.2− | 0.2− |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2003 12 19 | 704 | 0.3+ | 0.0 | 2006 11 13 | 291 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.5− | 0.1+ | 2003 12 19 | 704 | 0.4+ | 0.9+ | 2006 11 13 | 448 | 0.5+ | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2003 12 19 | 704 | 0.2+ | 1.2+ | 2006 11 13 | 291 | 0.4− | 0.1− |
| 2002 08 30 | 644 | 0.5− | 0.4− | 2003 12 19 | 704 | 0.7+ | 0.2+ | 2006 11 13 | 291 | 0.5− | 0.1+ |
| 2002 08 30 | 644 | 0.2− | 0.4− | 2003 12 21 | 645 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2002 08 30 | 644 | 0.2− | 0.3− | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2002 09 03 | 608 | 0.6+ | 0.6+ | 2005 06 05 | 704 | 0.6+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2002 09 03 | 608 | 0.6+ | 0.7+ | 2005 06 05 | 704 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 09 03 | 608 | 0.5+ | 0.7+ | 2005 06 05 | 704 | 1.0+ | 0.6+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2005 06 05 | 704 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.3+ | 0.1− | 2005 06 13 | 599 | 0.4+ | 0.6+ | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.3− | 0.3− | 2005 06 13 | 599 | 0.3+ | 0.8+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2005 06 13 | 599 | 0.1+ | 0.7+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.1+ | 0.4− | 2005 06 13 | 599 | 0.6+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.1+ | 0.3− | 2005 06 17 | G96 | 0.1− | 0.4+ | | | | |

**(142034)∗ 2002 QJ$_8$**

Discovered 2002 Aug. 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 49.02179 | | (2000.0) | | | | |
| $n$ | 0.25545587 | $\omega$ | 245.92549 | | +0.47603782 | | +0.87816434 |
| $a$ | 2.4599453 | $\Omega$ | 52.58452 | | −0.78380585 | | +0.44794091 |
| $e$ | 0.1670996 | $i$ | 3.39738 | | −0.39879366 | | +0.16785807 |
| $P$ | 3.86 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.2+ | 0.2+ | 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.7+ |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2002 09 16 | 644 | 0.3− | 0.8+ | 2006 09 18 | 699 | 0.5− | 0.6+ |
| 2002 08 19 | 644 | 0.3+ | 0.4− | 2002 09 16 | 644 | 0.1− | 0.9+ | 2006 09 20 | 691 | 0.3− | 0.4+ |
| 2002 08 19 | 644 | 0.3+ | 0.5− | 2002 09 16 | 644 | 0.1− | 0.7+ | 2006 09 20 | 691 | 0.3+ | 0.4+ |
| 2002 08 19 | 644 | 0.2+ | 0.2− | 2002 10 01 | 608 | 0.4− | 0.4+ | 2006 09 20 | 691 | 0.3− | 0.2+ |
| 2002 08 20 | 644 | 0.2− | 0.1− | 2002 10 01 | 608 | 1.1− | 0.8+ | 2006 09 26 | 704 | 0.1− | 0.5− |
| 2002 08 20 | 644 | 0.3− | 0.3+ | 2002 10 01 | 608 | 0.4− | 0.7+ | 2006 09 26 | 704 | 1.1− | 0.3+ |
| 2002 08 20 | 644 | 0.1− | 0.1+ | 2005 03 10 | 691 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.9− | 0.6+ |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2005 03 10 | 691 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.9− | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.1− | 2005 03 10 | 691 | 0.6+ | 0.5+ | 2006 09 26 | 704 | (2.3− | 0.4−) |
| 2002 08 29 | 644 | 0.3− | 0.3− | 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.7− | 1.3+ |
| 2002 08 30 | 644 | 0.0 | 0.5− | 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.8− | 1.2+ |
| 2002 08 30 | 644 | 0.2− | 0.8− | 2005 03 11 | 691 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.3+ | 0.3− |
| 2002 08 30 | 644 | 0.3− | 0.5− | 2005 04 04 | 703 | 0.1− | 0.3− | 2006 09 28 | 704 | 0.8− | 0.3+ |
| 2002 09 05 | 704 | 0.6+ | 0.3+ | 2005 04 04 | 703 | 0.6− | 0.3− | 2006 09 28 | 704 | 0.3− | 0.4+ |
| 2002 09 05 | 704 | 0.6− | 0.4+ | 2005 04 04 | 703 | 0.3− | 0.5+ | 2006 09 30 | 704 | 0.4− | 1.3+ |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2005 04 04 | 703 | 0.8− | 0.8+ | 2006 09 30 | 704 | 0.1− | 0.8+ |
| 2002 09 05 | 704 | 1.2− | 0.3+ | 2005 04 30 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.2− | 0.7+ |
| 2002 09 06 | 704 | 0.4+ | 0.2− | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2002 09 06 | 704 | 0.6+ | 0.7+ | 2005 04 30 | 691 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2002 09 06 | 704 | 0.0 | 0.1+ | 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.4+ | 0.8− | 2005 05 10 | 691 | 0.4+ | 0.4+ | 2006 10 17 | 703 | (0.8− | 2.6+) |
| 2002 09 06 | 704 | 0.7+ | 0.1+ | 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.7− | 0.3+ |
| 2002 09 13 | 704 | 0.2+ | 0.4+ | 2005 05 12 | G96 | 0.2− | 0.3− | 2006 10 17 | 703 | (1.4+ | 2.0+) |
| 2002 09 13 | 704 | 0.2+ | 0.7− | 2005 05 12 | G96 | 0.2− | 0.2− | 2006 10 17 | 703 | (0.8+ | 4.8+) |
| 2002 09 13 | 704 | 0.1+ | 0.1− | 2005 05 12 | G96 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.1+ |
| 2002 09 13 | 704 | 0.7+ | 0.0 | 2005 05 12 | G96 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 09 13 | 608 | (0.9− | 1.7+) | 2006 08 23 | 644 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 09 13 | 608 | 0.6− | 1.1+ | 2006 08 23 | 644 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2002 09 13 | 608 | (0.0 | 1.8+) | 2006 08 23 | 644 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.4+ |
| 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.1− | 1.0+ | 2006 11 17 | G96 | 0.8+ | 0.0 |
| 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.0 |

**(142035)∗ 2002 QT$_9$**

Discovered 2002 Aug. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 81.48218 | | (2000.0) | | | | |
| $n$ | 0.27581701 | $\omega$ | 350.86725 | | +0.50797013 | | +0.85885700 |
| $a$ | 2.3373407 | $\Omega$ | 309.63173 | | −0.78480285 | | +0.42997071 |
| $e$ | 0.1571437 | $i$ | 4.90191 | | −0.35503638 | | +0.27836998 |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.1− | 0.5+ | 2002 09 17 | 644 | 0.2− | 0.3− | 2005 04 28 | E12 | (0.2− | 1.6+) |
| 2002 08 12 | 704 | 0.2+ | 0.9+ | 2002 09 18 | 644 | 0.2− | 0.8+ | 2005 04 28 | E12 | 0.5− | 0.6− |
| 2002 08 12 | 704 | 0.2− | 0.1+ | 2002 09 18 | 644 | 0.3− | 0.7+ | 2005 04 28 | E12 | (1.9− | 0.8+) |
| 2002 08 12 | 704 | 0.8− | 1.1+ | 2002 09 18 | 644 | 0.0 | 1.1+ | 2005 04 28 | E12 | 0.4− | 0.1+ |
| 2002 08 12 | 704 | 0.4− | 0.2+ | 2002 09 30 | 704 | (1.6+ | 0.2−) | 2005 05 11 | 644 | 0.3+ | 0.7+ |
| 2002 08 20 | 644 | 0.2+ | 0.7+ | 2002 09 30 | 704 | (2.1+ | 0.7−) | 2005 05 11 | 644 | 0.3+ | 0.6+ |
| 2002 08 20 | 644 | 0.0 | 1.2+ | 2002 09 30 | 704 | (2.2+ | 1.2−) | 2005 05 11 | 644 | 0.4+ | 0.9+ |
| 2002 08 20 | 644 | 0.1+ | 0.9+ | 2002 09 30 | 704 | (1.8+ | 0.2−) | 2006 10 17 | A50 | (6.6− | 1.1−) |
| 2002 08 21 | 644 | 0.3+ | 1.0+ | 2002 10 04 | 704 | (2.2− | 0.3+) | 2006 10 17 | A50 | (6.9− | 0.8−) |
| 2002 08 21 | 644 | 0.5+ | 1.3+ | 2002 10 04 | 704 | 1.0− | 0.2+ | 2006 10 18 | A50 | 0.3+ | 0.1− |
| 2002 08 21 | 644 | 0.3+ | 1.4+ | 2002 10 04 | 704 | (1.7− | 1.6+) | 2006 10 18 | A50 | 0.6− | 0.1− |
| 2002 08 28 | 644 | 0.3− | 0.5+ | 2002 10 04 | 704 | 1.4− | 0.7+ | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2002 08 28 | 644 | 0.2− | 0.5+ | 2002 10 07 | 699 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2002 10 07 | 699 | 0.2− | 0.5− | 2006 11 09 | 644 | 0.0 | 1.0+ |
| 2002 08 28 | 644 | 0.4+ | 0.1+ | 2002 10 07 | 699 | 0.3− | 0.3+ | 2006 11 19 | 704 | 1.3+ | 1.2+ |
| 2002 08 28 | 644 | 0.3+ | 0.0 | 2002 10 07 | 699 | 0.0 | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2002 08 28 | 644 | 0.2+ | 0.2+ | 2002 10 11 | 645 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2002 09 04 | 699 | 0.2− | 1.0+ | 2002 10 11 | 645 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.5− | 0.6+ |
| 2002 09 04 | 699 | 0.3− | 0.9+ | 2002 10 31 | 645 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2002 09 04 | 699 | 0.4+ | 0.3+ | 2002 10 31 | 645 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.8+ | 0.3+ |
| 2002 09 04 | 699 | 0.4− | 0.1− | 2002 11 08 | 645 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.7− | 1.3+ |
| 2002 09 06 | 704 | 0.8+ | 0.9+ | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.7− | 0.0 |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2003 12 29 | 699 | 0.9+ | 1.0− | 2006 11 22 | 704 | 0.1+ | 1.2+ |
| 2002 09 06 | 704 | 0.0 | 0.6+ | 2003 12 29 | 699 | (2.3− | 0.3−) | 2006 11 22 | 703 | 0.4− | 0.4− |
| 2002 09 06 | 704 | 0.7+ | 0.8+ | 2003 12 29 | 699 | 1.3− | 0.8− | 2006 11 22 | 704 | 0.4+ | 1.0+ |
| 2002 09 06 | 704 | 0.4+ | 0.9+ | 2003 12 29 | 699 | 1.1+ | 1.1− | 2006 11 22 | 703 | 0.5+ | 0.2− |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2004 01 13 | 691 | 0.2+ | 0.5+ | 2006 11 22 | 704 | (0.8− | 1.5+) |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2004 01 13 | 691 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.7− |
| 2002 09 13 | 644 | 0.1+ | 0.5+ | 2004 01 13 | 691 | 0.0 | 0.4+ | 2006 11 22 | 703 | 0.6− | 0.3+ |
| 2002 09 15 | 699 | 0.5− | 0.0 | 2004 01 22 | 704 | 1.3− | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2002 09 15 | 699 | 0.5+ | 0.7− | 2004 01 22 | 704 | 0.7+ | 0.7+ | 2006 11 22 | 703 | 0.7+ | 0.1− |
| 2002 09 15 | 699 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.7+ | 0.0 | 2006 11 23 | 703 | 0.5+ | 0.3− |
| 2002 09 15 | 699 | 0.3− | 0.3− | 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.0 |
| 2002 09 17 | 644 | 0.1− | 0.2− | 2004 01 31 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.6− | 0.3+ |
| 2002 09 17 | 644 | 0.1− | 0.3− | 2004 01 31 | 691 | 0.0 | 0.4+ | 2006 11 23 | 703 | 0.5− | 0.9− |

**(142036)∗ 2002 QH$_{11}$**

Discovered 2002 Aug. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 112.37185 | | (2000.0) | | | | |
| $n$ | 0.27537713 | $\omega$ | 76.00192 | | −0.35696407 | | +0.93406747 |
| $a$ | 2.3398291 | $\Omega$ | 173.06087 | | −0.88510873 | | −0.33488873 |
| $e$ | 0.1258341 | $i$ | 4.61794 | | −0.29859537 | | −0.12396573 |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 17 | 691 | 0.3− | 0.5+ | 2005 04 06 | 691 | 0.0 | 0.3+ | 2005 05 12 | 691 | 0.2− | 0.1+ |
| 1992 11 17 | 691 | 0.3− | 0.8+ | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 703 | 0.3− | 0.1+ |
| 1992 11 17 | 691 | 0.4+ | 0.6+ | 2005 04 10 | 691 | 0.6+ | 0.1+ | 2005 05 13 | 703 | 0.3− | 0.6+ |
| 1998 06 19 | 691 | 0.0 | 0.1+ | 2005 04 10 | 691 | 0.3+ | 0.1+ | 2005 05 13 | 703 | 0.9− | 0.3+ |
| 1998 06 19 | 691 | 0.2+ | 0.0 | 2005 04 13 | 704 | (0.5− | 2.8+) | 2005 05 13 | 703 | 0.9− | 0.6− |
| 1998 06 19 | 691 | 0.4− | 0.2+ | 2005 04 13 | 704 | 0.1+ | 0.6+ | 2006 07 21 | G96 | 0.5+ | 0.3+ |
| 2002 07 22 | 644 | 0.7− | 0.5− | 2005 04 13 | 704 | 0.9+ | 0.4− | 2006 07 21 | G96 | 0.1− | 0.1− |
| 2002 07 22 | 644 | 0.2− | 0.1− | 2005 04 15 | 699 | 0.2− | 0.3− | 2006 07 21 | G96 | 0.1− | 0.1− |
| 2002 07 22 | 644 | 0.3− | 0.0 | 2005 04 15 | 699 | 0.3+ | 0.8+ | 2006 07 21 | G96 | 0.2− | 0.3+ |
| 2002 08 06 | 644 | 0.3+ | 0.0 | 2005 04 15 | 699 | 0.3+ | 0.9+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2002 08 06 | 644 | 0.4+ | 0.3− | 2005 04 15 | 699 | 0.5+ | 0.3+ | 2006 09 17 | 691 | 0.3+ | 0.1+ |
| 2002 08 06 | 644 | 0.5+ | 0.3− | 2005 04 18 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.0 | 0.0 | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ | | |
| 2002 08 17 | 644 | 0.2− | 0.0 | 2005 04 18 | 703 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.4+ | | |
| 2002 08 17 | 644 | 0.1+ | 0.3− | 2005 04 18 | 703 | 0.3− | 0.6− | 2006 09 27 | 691 | 0.7− | 0.3+ | | |
| 2002 08 26 | 644 | 0.2+ | 0.3+ | 2005 04 18 | 691 | 0.4+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.2+ | | |
| 2002 08 26 | 644 | 0.3+ | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.4− | 0.1+ | | |
| 2002 08 26 | 644 | 0.2+ | 0.0 | 2005 04 18 | 703 | 0.6− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 27 | 644 | 0.2+ | 0.4+ | 2005 04 18 | 703 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 08 27 | 644 | 0.2− | 0.6+ | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.8+ | | |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2005 03 14 | G96 | 0.3− | 0.1− | 2005 05 08 | 703 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2005 03 14 | G96 | 0.5− | 0.1+ | 2005 05 08 | 703 | 0.8− | 1.0+ | 2006 10 22 | G96 | 0.2− | 0.1+ | | |
| 2005 03 14 | G96 | 0.6− | 0.0 | 2005 05 08 | 703 | 1.1− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 2005 03 14 | G96 | 0.4− | 0.1− | 2005 05 08 | 703 | (1.9− | 0.4−) | 2006 10 22 | G96 | 0.0 | 0.0 | | |
| 2005 04 05 | 703 | (1.6+ | 2.2−) | 2005 05 11 | 699 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.1+ | | |
| 2005 04 05 | 703 | 0.3− | 0.7+ | 2005 05 11 | 699 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.1+ | | |
| 2005 04 05 | 703 | 0.2− | 0.7− | 2005 05 11 | 699 | 1.1− | 1.1+ | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2005 04 05 | 703 | (1.6+ | 0.3−) | 2005 05 11 | 699 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.4− | 0.3− | | |
| 2005 04 06 | 691 | 0.0 | 0.2+ | 2005 05 12 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2005 04 06 | 691 | 0.3+ | 0.4+ | 2005 05 12 | 691 | 0.1+ | 0.0 | | | | | | |

**(142037)∗ 2002 QJ$_{13}$ = 2001 FD$_{126}$**

Discovered 2002 Aug. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35353)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.21299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25488500 | $\omega$ | 136.38836 | | +0.84064721 | +0.54133137 | |
| $a$ | 2.4636170 | $\Omega$ | 190.87304 | | −0.51781162 | +0.79444220 | |
| $e$ | 0.1034606 | $i$ | 5.02157 | | −0.15869279 | +0.27535782 | |
| $P$ | 3.87 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 691 | 0.3− | 0.3+ | 2005 04 06 | G96 | 0.9− | 0.1− | 2006 08 28 | 703 | 0.9− | 0.7− | | |
| 2001 03 29 | 691 | 0.0 | 0.3+ | 2005 04 07 | G96 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 03 29 | 691 | 0.2− | 0.4+ | 2005 04 07 | G96 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | | |
| 2001 03 30 | 691 | 0.7+ | 0.5+ | 2005 04 07 | G96 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 03 30 | 691 | 0.3+ | 0.5+ | 2005 04 07 | G96 | 0.3− | 0.0 | 2006 09 16 | 699 | 0.2− | 0.2+ | | |
| 2001 03 30 | 691 | 0.2+ | 0.2+ | 2005 04 09 | 691 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.7+ | 0.6+ | | |
| 2001 03 31 | 691 | (0.04+ | 0.02−) | 2005 04 09 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 699 | 0.0 | 0.3+ | | |
| 2001 03 31 | 691 | (0.04+ | 0.02−) | 2005 04 09 | 691 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.7− | 0.4+ | | |
| 2001 03 31 | 691 | (0.04+ | 0.02−) | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.7− | 0.6+ | | |
| 2002 07 21 | 644 | 0.1− | 0.1− | 2005 04 10 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.2− | | |
| 2002 07 21 | 644 | 0.1− | 0.1− | 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.5− | | |
| 2002 07 21 | 644 | 0.1+ | 0.3− | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.8+ | 0.6+ | | |
| 2002 08 08 | 699 | 0.8+ | 0.7+ | 2005 04 10 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.7+ | 0.6+ | | |
| 2002 08 08 | 699 | 0.3− | 1.2− | 2005 04 10 | 691 | 0.9+ | 0.3− | 2006 09 19 | 699 | 0.1− | 1.0+ | | |
| 2002 08 08 | 699 | 0.3+ | 0.7− | 2005 04 11 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.7+ | | |
| 2002 08 08 | 699 | 1.1+ | 0.3− | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | | |
| 2002 08 16 | 644 | 0.1+ | 0.0 | 2005 04 11 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.5+ | | |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.6+ | | |
| 2002 08 16 | 644 | 0.1− | 0.0 | 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.4+ | | |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2005 04 14 | 691 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.0 | | |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2005 04 29 | 185 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.1− | | |
| 2002 08 18 | 644 | 0.3− | 0.1− | 2005 04 29 | 185 | (1.9− | 0.7+) | 2006 09 23 | 691 | 0.3− | 0.3− | | |
| 2002 08 26 | 644 | 0.0 | 0.2+ | 2005 04 29 | 185 | 0.4+ | 1.1− | 2006 09 23 | 691 | 0.1− | 0.0 | | |
| 2002 08 26 | 644 | 0.4+ | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.3− | 2006 09 25 | 699 | 1.0− | 0.5+ | | |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2005 05 04 | 691 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.5− | 1.3− | | |
| 2002 08 27 | 644 | 0.5+ | 0.5− | 2005 05 04 | 691 | 0.0 | 0.2− | 2006 09 25 | 699 | (2.0+ | 1.0+) | | |
| 2002 08 27 | 644 | 0.3− | 0.1− | 2005 05 10 | G96 | 1.4− | 0.2− | 2006 09 25 | 699 | 0.5− | 0.5+ | | |
| 2002 08 27 | 644 | 0.3− | 0.0 | 2005 05 10 | G96 | 0.4− | 0.2− | 2006 09 29 | 291 | 0.6+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.2+ | 1.0+ | 2005 05 10 | G96 | 0.7− | 0.3− | 2006 09 29 | 291 | 0.1+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.7+ | 2005 05 10 | G96 | 0.7− | 0.0 | 2006 09 29 | 291 | 0.5+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.0 | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.9− | 2006 10 01 | 703 | (1.6− | 0.1−) | | |
| 2002 09 06 | 704 | 0.7− | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 10 01 | 703 | 0.9− | 0.2− | | |
| 2002 09 14 | 644 | 0.5− | 0.2− | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 10 01 | 703 | 0.7− | 0.0 | | |
| 2002 09 14 | 644 | 0.6− | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.8− | 0.9− | | |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 08 23 | 644 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1− | | |
| 2005 03 08 | G96 | 0.8− | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.1− | | |
| 2005 03 08 | G96 | 0.8− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.1− | | |
| 2005 03 08 | G96 | 0.6− | 0.6− | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2005 03 08 | G96 | 0.6− | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.5+ | | |
| 2005 04 05 | G96 | 0.2− | 0.4− | 2006 08 27 | 699 | 0.5− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2005 04 05 | G96 | 0.3− | 0.5− | 2006 08 27 | 699 | 0.7+ | 0.6+ | 2006 11 11 | 703 | 1.5− | 0.2− | | |
| 2005 04 05 | G96 | 0.5− | 0.5− | 2006 08 27 | 699 | 1.1+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.2− | | |
| 2005 04 05 | G96 | 0.4− | 0.3− | 2006 08 27 | 699 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.4− | 0.1− | | |
| 2005 04 06 | G96 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.6− | 0.7− | 2006 11 11 | 703 | 1.2+ | 1.1− | | |
| 2005 04 06 | G96 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.3− | | |
| 2005 04 06 | G96 | 0.3− | 0.1− | 2006 08 28 | 703 | 1.0− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.4− | | |

**(142038)∗ 2002 QS$_{13}$ = 2000 BP$_{31}$ = 2000 CW$_{147}$ = 2004 DM$_{50}$**

Discovered 2002 Aug. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61261)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.02674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25986749 | $\omega$ | 204.19938 | | +0.55174977 | −0.83317324 | |
| $a$ | 2.4320253 | $\Omega$ | 212.35022 | | +0.77611808 | +0.52932715 | |
| $e$ | 0.1724903 | $i$ | 4.00188 | | +0.30530792 | +0.16010973 | |
| $P$ | 3.79 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 01 | 461 | 0.3− | 0.9+ | 2004 02 26 | 704 | (0.2− | 2.3+) | 2006 09 25 | 704 | 0.2+ | 0.1+ | | |
| 2000 01 01 | 461 | 0.6− | 1.1+ | 2004 02 26 | 704 | (1.8− | 0.5+) | 2006 09 25 | 704 | 0.0 | 0.7− | | |
| 2000 01 02 | 461 | 0.3− | 1.0+ | 2004 02 26 | 704 | 0.7+ | 0.7+ | 2006 09 25 | 704 | 0.6− | 0.3− | | |
| 2000 01 28 | 461 | 0.5+ | 1.6− | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | | |
| 2000 01 28 | 461 | 0.2− | 0.7− | 2004 03 01 | 703 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1− | | |
| 2000 01 28 | 461 | 0.9+ | 0.2+ | 2004 03 01 | 703 | 1.1+ | 0.8+ | 2006 09 27 | 699 | 1.2− | 0.3+ | | |
| 2000 02 01 | 461 | 0.2+ | 0.2− | 2004 03 01 | 703 | (1.9+ | 0.3−) | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2000 02 01 | 461 | 0.4+ | 0.1− | 2004 03 01 | 703 | 0.8+ | 1.1+ | 2006 09 27 | 699 | 0.6− | 1.1− | | |
| 2000 02 01 | 461 | 0.3− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.9+ | 2006 09 27 | 699 | 0.7− | 0.9+ | | |
| 2000 02 02 | 461 | 0.7− | 1.1− | 2004 03 15 | 704 | 0.6− | 0.9+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2000 02 02 | 461 | 0.1− | 0.6− | 2004 03 15 | 704 | 0.5+ | 1.2+ | 2006 10 01 | 691 | 0.4− | 0.1+ | | |
| 2000 02 02 | 704 | (0.4+ | 2.4+) | 2004 03 18 | 704 | (0.8+ | 2.0+) | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2000 02 02 | 704 | 1.4+ | 1.7+ | 2004 03 18 | 704 | 0.0 | 0.9+ | 2006 10 01 | 704 | 0.7+ | 0.3− | | |
| 2000 02 02 | 704 | 1.3− | 0.6+ | 2004 03 18 | 704 | 1.2+ | 0.7+ | 2006 10 01 | 704 | 0.2+ | 0.7− | | |
| 2000 02 02 | 704 | 0.0 | 0.0 | 2004 03 21 | 691 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.7− | | |
| 2002 08 12 | 704 | 0.8− | 0.5− | 2004 03 21 | 691 | 0.2− | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.1− | | |
| 2002 08 12 | 704 | 0.1− | 1.0+ | 2004 03 21 | 691 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.3− | | |
| 2002 08 12 | 704 | 0.3+ | 0.4+ | 2005 06 27 | 691 | 0.2− | 0.5+ | 2006 10 02 | 691 | 0.0 | 0.2+ | | |
| 2002 08 12 | 704 | 0.2− | 0.5+ | 2005 06 27 | 691 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2002 08 12 | 704 | 0.3− | 0.8+ | 2005 06 27 | 691 | (3.2+ | 0.1+) | 2006 10 02 | 691 | 0.3− | 0.1+ | | |
| 2002 08 16 | 644 | 0.1− | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.0 | 0.1− | | |
| 2002 08 16 | 644 | 0.2+ | 0.7+ | 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2002 08 16 | 644 | 0.2+ | 0.4+ | 2006 08 24 | 644 | 0.3+ | 0.4− | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 2002 08 19 | 644 | 0.3− | 0.6+ | 2006 09 17 | 703 | 0.1− | 0.1− | 2006 10 17 | 703 | 1.2− | 0.5+ | | |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.6+ | | |
| 2002 08 19 | 644 | 0.2− | 0.6+ | 2006 09 17 | 703 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 1.0+ | 1.1+ | | |
| 2002 08 26 | 644 | 0.2− | 0.4+ | 2006 09 17 | 703 | 1.1+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.7+ | | |
| 2002 08 26 | 644 | 0.1− | 0.8+ | 2006 09 18 | 704 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2002 08 26 | 644 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 08 27 | 644 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 08 27 | 644 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2002 08 27 | 644 | 0.4− | 0.5+ | 2006 09 18 | 704 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2004 02 23 | 704 | 1.3+ | 1.0+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2004 02 23 | 704 | (0.4− | 1.8+) | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2004 02 23 | 704 | 0.5+ | 0.3− | 2006 09 25 | 704 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.3− | | |
| 2004 02 26 | 704 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.5− | | |

**(142039)∗ 2002 QX$_{13}$**

Discovered 2002 Aug. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 195.71442 | | (2000.0) | | | |
| $n$ | 0.26126735 | $\omega$ | 310.11720 | | −0.96103301 | −0.27076869 |
| $a$ | 2.4233303 | $\Omega$ | 214.27856 | | +0.27402546 | −0.90661066 |
| $e$ | 0.0430257 | $i$ | 5.67320 | | +0.03640876 | −0.32363781 |
| $P$ | 3.77 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 28 | 691 | 0.1+ | 0.4+ | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.0 |
| 2001 03 28 | 691 | 0.4+ | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2001 03 28 | 691 | 0.1− | 0.4+ | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 08 19 | 644 | 0.1− | 0.1+ | 2005 05 18 | 644 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.4− | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.2+ | 2005 05 18 | 644 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 08 19 | 644 | 0.0 | 0.3+ | 2005 05 18 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2− |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2005 06 05 | 704 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 08 26 | 644 | 0.1− | 0.1− | 2005 06 05 | 704 | 0.9+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 1.3+ |
| 2002 08 26 | 644 | 0.2− | 0.1+ | 2005 06 05 | 704 | 0.2− | 0.8− | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2002 08 27 | 644 | 0.0 | 1.0+ | 2005 06 10 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2002 08 27 | 644 | 0.2+ | 1.1+ | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | (1.6− | 2.2+) |
| 2002 08 27 | 644 | 0.0 | 1.0+ | 2005 06 10 | 691 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.7− |
| 2002 09 06 | 704 | 0.1− | 1.4+ | 2005 06 23 | 644 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2002 09 06 | 704 | 0.7− | 0.4+ | 2005 06 23 | 644 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3− |
| 2002 09 06 | 704 | 0.9− | 0.1− | 2005 06 23 | 644 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.4− | 0.5− |
| 2003 12 22 | 704 | 0.1− | 1.0+ | 2005 06 27 | 644 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2003 12 22 | 704 | 0.1+ | 1.0+ | 2005 06 27 | 644 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2003 12 22 | 704 | (0.4+ | 1.8+) | 2005 06 27 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.1− |
| 2003 12 22 | 704 | 0.6+ | 0.7+ | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.6− | 0.6+ | 2006 08 18 | 644 | 0.2+ | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2005 01 21 | 809 | 1.0+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.4− | 2006 10 24 | 644 | 0.3− | 0.4+ |
| 2005 01 21 | 809 | 0.6+ | 0.2+ | 2006 08 29 | 703 | 1.0− | 0.8− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2005 01 21 | 809 | 0.9− | 0.6− | 2006 08 29 | 703 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 2005 03 10 | G96 | 0.6− | 0.2+ | 2006 08 29 | 703 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.4+ | 0.4+ |
| 2005 03 10 | G96 | 0.3− | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2005 03 10 | G96 | 0.4− | 0.3− | 2006 09 19 | 703 | 1.0− | 0.5− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2005 03 10 | G96 | 0.5− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2005 05 08 | G96 | 0.3− | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.1+ | | | | |

**(142040)∗ 2002 QE$_{15}$**

Discovered 2002 Aug. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.02734 | | (2000.0) | | | |
| $n$ | 0.45792737 | $\omega$ | 160.41992 | | +0.86304969 | −0.37076835 |
| $a$ | 1.6670104 | $\Omega$ | 226.45772 | | +0.37691607 | +0.92482557 |
| $e$ | 0.3446364 | $i$ | 28.24515 | | +0.33627295 | −0.08502054 |
| $P$ | 2.15 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 20 | 260 | 0.4+ | 0.7− | 2002 10 10 | 355 | 0.7− | 0.3+ | 2002 11 12 | 379 | 0.1+ | 0.5− |
| 1993 04 20 | 260 | 0.9+ | 0.3− | 2002 10 10 | 379 | 0.3− | 0.7− | 2002 11 12 | 379 | 0.3− | 0.4− |
| 1993 04 30 | 413 | 0.4− | 0.3− | 2002 10 10 | 355 | 0.5− | 0.1+ | 2002 11 12 | 379 | 0.2− | 0.4− |
| 1993 04 30 | 413 | 0.9+ | 0.1− | 2002 10 10 | 379 | 0.3− | 0.2− | 2002 11 12 | 379 | 0.3− | 0.0 |
| 2002 08 26 | 704 | 0.1+ | 0.8− | 2002 10 10 | 355 | 0.5− | 0.0 | 2002 11 13 | 151 | 0.2− | 0.3+ |
| 2002 08 26 | 704 | 0.2− | 0.5− | 2002 10 12 | J93 | 0.2− | 0.5− | 2002 11 13 | 151 | 0.1+ | 0.0 |
| 2002 08 26 | 704 | 0.2+ | 0.6− | 2002 10 12 | J93 | 0.2− | 0.2− | 2002 11 13 | 151 | 0.1+ | 0.3+ |
| 2002 08 26 | 704 | 0.3+ | 0.8− | 2002 10 12 | J93 | 0.1− | 0.4− | 2002 11 13 | 151 | 0.1− | 0.1+ |
| 2002 08 26 | 704 | 0.3− | 1.1− | 2002 10 12 | J93 | 0.5+ | 0.5+ | 2002 11 13 | 151 | 0.1− | 0.2+ |
| 2002 08 26 | 118 | 0.4− | 1.0+ | 2002 10 12 | 941 | 0.4− | 0.2− | 2002 11 13 | 151 | 0.1− | 0.2− |
| 2002 08 26 | 118 | 0.7− | 0.6+ | 2002 10 12 | 941 | 0.2− | 0.1− | 2002 11 13 | 151 | 0.1+ | 0.2+ |
| 2002 08 26 | 118 | 0.9− | 1.2+ | 2002 10 12 | 941 | 0.3− | 0.0 | 2002 11 13 | 151 | 0.0 | 0.4+ |
| 2002 08 26 | 557 | 0.1− | 0.4+ | 2002 10 12 | 941 | 0.1− | 0.1− | 2002 11 13 | 084 | 0.1+ | 0.6+ |
| 2002 08 26 | 941 | 0.4− | 0.8+ | 2002 10 12 | 941 | 0.2+ | 0.2− | 2002 11 13 | 084 | 0.2+ | 0.2− |
| 2002 08 26 | 118 | 1.0− | 0.6+ | 2002 10 12 | 941 | 0.1− | 0.1− | 2002 11 13 | 084 | 0.5− | 0.3+ |
| 2002 08 26 | 941 | 1.0− | 0.9+ | 2002 10 12 | 941 | 0.4− | 0.1− | 2002 11 13 | 084 | 0.3+ | 0.7− |
| 2002 08 26 | 557 | 0.1− | 0.2+ | 2002 10 12 | 941 | 0.2− | 0.2− | 2002 11 14 | J94 | (0.9+ | 2.0−) |
| 2002 08 26 | 941 | (1.8− | 1.5+) | 2002 10 12 | 941 | 0.5− | 0.1− | 2002 11 14 | J94 | 0.2+ | 0.3− |
| 2002 08 26 | 557 | 0.1− | 0.3+ | 2002 10 12 | 212 | 0.1+ | 0.5− | 2002 11 14 | J94 | (1.0+ | 2.5−) |
| 2002 08 26 | 941 | (2.0− | 1.8+) | 2002 10 12 | 212 | 0.6+ | 1.0− | 2002 11 14 | J93 | 0.1+ | 0.1− |
| 2002 08 26 | 557 | 0.5− | 0.6+ | 2002 10 12 | 939 | 0.3+ | 0.2− | 2002 11 14 | J93 | 0.2+ | 0.4+ |
| 2002 08 27 | 704 | 0.1+ | 0.2+ | 2002 10 12 | 939 | 0.3+ | 0.2− | 2002 11 14 | J93 | 0.4− | 0.3+ |
| 2002 08 27 | 704 | 0.3− | 0.5+ | 2002 10 12 | 939 | 0.2+ | 0.2− | 2002 11 17 | 185 | 0.2+ | 0.3+ |
| 2002 08 27 | 704 | 0.4+ | 0.2+ | 2002 10 13 | 379 | 0.3+ | 0.1− | 2002 11 17 | 185 | 0.0 | 0.3+ |
| 2002 08 27 | 704 | 0.2− | 0.5+ | 2002 10 13 | 379 | 0.4− | 0.4− | 2002 11 17 | 185 | 0.7− | 1.0+ |
| 2002 08 27 | 704 | 0.2+ | 0.3+ | 2002 10 13 | 379 | 0.0 | 0.1− | 2002 11 17 | 185 | 1.0− | 0.5+ |
| 2002 08 27 | 704 | 0.3− | 0.5+ | 2002 10 13 | 379 | 0.6− | 0.1− | 2002 11 17 | 185 | 0.8− | 0.5+ |
| 2002 08 27 | 670 | 0.3− | 0.2+ | 2002 10 13 | 213 | 0.0 | 0.7− | 2002 11 17 | 185 | 0.3+ | 0.2+ |
| 2002 08 27 | 704 | 0.2+ | 0.1+ | 2002 10 13 | 213 | 0.5+ | 0.5− | 2002 11 17 | 185 | 0.4− | 0.2+ |
| 2002 08 27 | 704 | 0.4− | 0.6+ | 2002 10 13 | 213 | 0.0 | 0.6− | 2002 11 17 | 185 | 0.7− | 0.3+ |
| 2002 08 27 | 704 | 0.1− | 0.1− | 2002 10 14 | 367 | 0.1− | 0.1− | 2002 11 17 | 939 | 0.5− | 0.7+ |
| 2002 08 27 | 670 | 0.0 | 0.6+ | 2002 10 14 | 367 | 0.1+ | 0.7− | 2002 11 17 | 939 | 0.6− | 0.8+ |
| 2002 08 27 | 704 | 0.3− | 0.7+ | 2002 10 14 | 367 | 0.4− | 1.2− | 2002 11 17 | 939 | 0.7− | 0.9+ |
| 2002 08 27 | 670 | 0.5− | 0.8+ | 2002 10 14 | 379 | 0.0 | 0.2− | 2002 11 19 | 644 | 0.1− | 0.0 |
| 2002 08 27 | 670 | 0.2− | 0.2− | 2002 10 14 | 379 | 0.2− | 0.0 | 2002 11 19 | 644 | 0.1− | 0.0 |
| 2002 08 27 | 848 | 0.2+ | 0.3+ | 2002 10 14 | 379 | 0.0 | 0.2− | 2002 11 19 | 644 | 0.3− | 0.0 |
| 2002 08 27 | 848 | 0.1− | 0.2− | 2002 10 14 | 379 | 0.6− | 0.4+ | 2002 11 20 | 639 | 0.0 | 0.2+ |
| 2002 08 27 | 848 | 0.4− | 0.2+ | 2002 10 15 | 939 | 0.2− | 0.0 | 2002 11 20 | 639 | 0.1+ | 0.2+ |
| 2002 08 27 | 946 | 0.6+ | 0.6− | 2002 10 15 | 939 | 0.0 | 0.1+ | 2002 11 20 | 639 | 0.6− | 1.2+ |
| 2002 08 27 | 946 | 0.6+ | 1.2− | 2002 10 15 | 939 | 0.3− | 0.5+ | 2002 11 20 | 639 | 0.4− | 0.4+ |
| 2002 08 27 | 946 | 0.7− | 0.4− | 2002 10 16 | 379 | 0.1− | 0.1− | 2002 11 20 | 113 | (2.3− | 0.7+) |
| 2002 08 27 | 946 | 0.2− | 0.3+ | 2002 10 16 | 379 | 0.1− | 0.1− | 2002 11 20 | 113 | 0.1− | 0.2+ |
| 2002 08 27 | 941 | (1.5− | 0.8+) | 2002 10 16 | 379 | 0.0 | 0.0 | 2002 11 20 | 113 | 1.4+ | 1.4− |
| 2002 08 27 | 941 | 0.9− | 1.0+ | 2002 10 16 | 379 | 0.1− | 0.0 | 2002 11 20 | 113 | 0.0 | 0.3+ |
| 2002 08 27 | 941 | 1.1− | 1.0+ | 2002 10 16 | 379 | 0.3− | 0.0 | 2002 11 20 | 113 | 0.2− | 0.1+ |
| 2002 08 27 | 941 | 0.7− | 1.0+ | 2002 10 16 | 379 | 0.3− | 0.1+ | 2002 11 25 | 428 | 0.5+ | 0.5− |
| 2002 08 27 | 966 | 0.1+ | 0.2− | 2002 10 17 | 355 | 0.3− | 0.5− | 2002 11 25 | 428 | 0.0 | 0.4− |
| 2002 08 27 | 966 | 0.1− | 0.7− | 2002 10 17 | 355 | 0.1− | 0.1− | 2002 11 25 | 428 | 0.4+ | 0.3− |
| 2002 08 27 | 966 | 0.0 | 0.0 | 2002 10 17 | 355 | 0.6− | 0.0 | 2002 11 25 | 428 | 0.3+ | 0.1− |
| 2002 08 27 | J95 | 0.2+ | 0.2+ | 2002 10 17 | 379 | 0.0 | 0.1− | 2002 11 27 | 355 | 0.1− | 0.2+ |
| 2002 08 27 | J95 | 0.0 | 0.2+ | 2002 10 17 | 379 | 0.4− | 0.8− | 2002 11 27 | 355 | 0.0 | 0.0 |
| 2002 08 27 | J95 | 0.2+ | 0.0 | 2002 10 17 | 170 | 0.1+ | 0.4− | 2002 11 27 | 355 | 0.1+ | 0.1+ |
| 2002 08 27 | 170 | 1.0− | 0.4+ | 2002 10 17 | 170 | 0.2− | 0.1+ | 2002 11 27 | 355 | 0.2− | 0.1+ |
| 2002 08 27 | 170 | (1.6− | 0.6+) | 2002 10 17 | 170 | 0.6+ | 0.3− | 2002 11 28 | 699 | 0.7− | 0.1− |
| 2002 08 27 | 170 | 1.3− | 1.0+ | 2002 10 17 | 170 | 0.4− | 0.0 | 2002 11 28 | 699 | 0.4− | 0.0 |
| 2002 08 27 | 170 | 1.3− | 0.8+ | 2002 10 17 | 170 | 0.1− | 0.5− | 2002 11 28 | 699 | 0.1− | 0.0 |
| 2002 08 27 | J95 | 0.1− | 0.2+ | 2002 10 18 | 118 | 0.1+ | 0.0 | 2002 11 28 | 699 | 0.1− | 0.1− |
| 2002 08 27 | J95 | 0.2− | 0.2+ | 2002 10 18 | 118 | 0.2+ | 0.1− | 2002 12 08 | 428 | 0.3+ | 0.6− |
| 2002 08 28 | 704 | 0.7+ | 0.5+ | 2002 10 18 | 118 | 0.0 | 0.0 | 2002 12 08 | 428 | 0.1− | 0.6− |
| 2002 08 28 | 704 | 0.4+ | 0.8+ | 2002 10 18 | 118 | 0.6− | 0.0 | 2002 12 08 | 428 | 0.2− | 0.3− |
| 2002 08 28 | 704 | 0.4+ | 0.5+ | 2002 10 18 | J93 | 0.4− | 0.0 | 2002 12 11 | 428 | 0.7+ | 0.4− |
| 2002 08 28 | 704 | 0.0 | 0.3+ | 2002 10 18 | J93 | 1.1+ | 0.3+ | 2002 12 11 | 428 | 0.7+ | 0.6− |
| 2002 08 28 | 704 | 0.1+ | 0.6+ | 2002 10 18 | J93 | 0.3+ | 0.1− | 2002 12 11 | 428 | 0.3+ | 1.0− |
| 2002 08 28 | 649 | 0.2− | 0.2+ | 2002 10 18 | 941 | 0.2+ | 0.3− | 2003 01 01 | 322 | 0.1− | 0.4− |
| 2002 08 28 | 704 | 0.1+ | 0.3+ | 2002 10 18 | 941 | 0.2− | 0.1− | 2003 01 01 | 322 | 0.1+ | 0.4− |
| 2002 08 28 | 704 | 0.1− | 0.5+ | 2002 10 18 | 941 | 0.2− | 0.1+ | 2003 01 01 | 322 | 0.6+ | 0.3+ |
| 2002 08 28 | 649 | 0.3+ | 0.2+ | 2002 10 18 | 941 | 0.2− | 0.0 | 2003 01 04 | 428 | 0.4− | 0.6+ |
| 2002 08 28 | 704 | 0.1+ | 0.1+ | 2002 10 18 | 941 | 0.5+ | 0.1− | 2003 01 04 | 428 | 0.4− | 0.5+ |
| 2002 08 28 | 848 | 0.3+ | 0.2− | 2002 10 18 | 213 | 0.5− | 0.3− | 2003 01 04 | 428 | 0.2+ | 0.2+ |
| 2002 08 28 | 848 | 0.7+ | 0.6+ | 2002 10 18 | 213 | 0.7− | 0.1− | 2003 01 06 | 428 | 0.4+ | 0.1+ |
| 2002 08 28 | 649 | 0.3− | 0.4+ | 2002 10 18 | 213 | 0.6− | 0.5− | 2003 01 06 | 428 | 0.6+ | 0.7− |
| 2002 08 28 | 848 | 0.0 | 0.3− | 2002 10 18 | 232 | (1.9− | 1.2+) | 2003 01 12 | 644 | 0.2+ | 0.1− |
| 2002 08 28 | 848 | 0.7+ | 0.2+ | 2002 10 18 | 232 | 1.3− | 1.1+ | 2003 01 12 | 644 | 0.1+ | 0.0 |
| 2002 08 28 | 118 | 0.6− | 0.1+ | 2002 10 18 | A30 | 0.2− | 0.2− | 2003 01 12 | 644 | 0.2+ | 0.1+ |
| 2002 08 28 | 118 | 0.5− | 0.5+ | 2002 10 18 | 232 | 0.1+ | 1.2+ | 2003 01 30 | 704 | 0.0 | 0.1+ |
| 2002 08 28 | 118 | 0.4− | 0.6+ | 2002 10 18 | 232 | 0.8+ | 0.8+ | 2003 01 30 | 704 | 0.2+ | 0.4− |
| 2002 08 28 | 941 | 1.1− | 0.7+ | 2002 10 18 | A30 | 0.4− | 0.2− | 2003 01 30 | 704 | 0.2+ | 0.3+ |
| 2002 08 28 | 941 | 0.2+ | 0.5+ | 2002 10 19 | 941 | 0.4+ | 0.2− | 2003 01 30 | 704 | 0.3+ | 0.6+ |
| 2002 08 28 | 941 | 1.2− | 0.6+ | 2002 10 19 | 941 | 0.1− | 0.2− | 2003 01 30 | 704 | 0.0 | 0.9+ |
| 2002 08 28 | 941 | 0.8− | 0.7+ | 2002 10 19 | 941 | 0.5+ | 0.1− | 2003 02 07 | 644 | 0.2− | 0.4+ |
| 2002 08 28 | J95 | 0.3− | 0.4+ | 2002 10 19 | 941 | 0.2+ | 0.0 | 2003 02 07 | 644 | 0.1− | 0.5+ |
| 2002 08 28 | J95 | 0.1+ | 0.0 | 2002 10 19 | 941 | 0.8+ | 0.2− | 2003 02 07 | 644 | 0.2− | 0.3+ |
| 2002 08 28 | J95 | 0.0 | 0.4+ | 2002 10 19 | 130 | 0.5− | 0.3− | 2004 05 09 | E14 | 0.3+ | 0.8− |
| 2002 08 28 | J95 | 0.1− | 0.3+ | 2002 10 19 | 130 | 0.4+ | 0.1− | 2004 05 09 | E14 | 0.1− | 0.4+ |
| 2002 08 29 | 941 | 0.7− | 0.9+ | 2002 10 19 | 130 | 1.0− | 0.1+ | 2004 05 09 | E14 | 0.2+ | 0.2+ |
| 2002 08 29 | 941 | 0.5− | 0.8+ | 2002 10 19 | 118 | 0.1+ | 0.1+ | 2004 05 14 | 704 | (1.8+ | 1.6+) |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 941 | 0.9− | 0.8+ | 2002 10 19 | 118 | 0.3+ | 0.1− | 2004 05 14 | 704 | (1.6+ | 1.7+) | 2002 09 05 | 176 | 0.1− | 0.2− | 2002 10 26 | 170 | 0.1+ | 0.1+ | 2004 07 03 | 185 | 0.3+ | 1.0− |
| 2002 08 29 | 941 | 0.4− | 0.8+ | 2002 10 19 | 118 | 0.1+ | 0.0 | 2004 05 14 | 704 | (1.2+ | 2.1+) | 2002 09 05 | 176 | 0.1− | 0.2+ | 2002 10 26 | 170 | 0.6− | 0.1+ | 2004 07 03 | 185 | 0.0 | 0.2− |
| 2002 08 29 | 941 | 0.4− | 0.4+ | 2002 10 19 | 118 | 0.2+ | 0.0 | 2004 05 14 | 704 | 1.0+ | 0.9+ | 2002 09 05 | 176 | 0.1− | 0.1− | 2002 10 26 | 170 | 0.9− | 0.3+ | 2004 07 04 | 644 | 0.1+ | 0.2+ |
| 2002 08 30 | 649 | 0.2− | 0.2+ | 2002 10 19 | 232 | 0.3− | 0.4+ | 2004 05 14 | 704 | (1.3+ | 1.9+) | 2002 09 08 | 848 | 0.2+ | 0.3− | 2002 10 26 | 939 | 0.1+ | 0.2+ | 2004 07 04 | 644 | 0.3+ | 0.1+ |
| 2002 08 30 | 649 | 0.1− | 0.2+ | 2002 10 19 | 232 | 0.2− | 0.2+ | 2004 05 20 | 071 | 0.0 | 1.3− | 2002 09 08 | 848 | 0.5+ | 0.6− | 2002 10 26 | 939 | 0.4+ | 0.1+ | 2004 07 04 | 644 | 0.3+ | 0.2+ |
| 2002 08 30 | 649 | 0.1+ | 0.2− | 2002 10 19 | 232 | 0.1− | 0.2− | 2004 05 20 | 071 | (2.2+ | 1.8−) | 2002 09 08 | 848 | 0.5+ | 0.7− | 2002 10 26 | 939 | 0.4+ | 0.1− | 2004 07 05 | H41 | 0.2− | 0.1− |
| 2002 08 30 | 848 | 1.1− | 0.5− | 2002 10 19 | 939 | 0.4+ | 0.3+ | 2004 05 21 | 071 | 0.1− | 1.0− | 2002 09 08 | J95 | 0.0 | 0.1− | 2002 10 27 | 379 | 0.4+ | 0.4− | 2004 07 05 | H41 | 0.3+ | 0.2− |
| 2002 08 30 | 848 | 0.1− | 0.4+ | 2002 10 19 | 939 | 0.0 | 0.1+ | 2004 05 23 | 198 | 0.1− | 0.3− | 2002 09 08 | J95 | 0.2− | 0.0 | 2002 10 27 | 379 | 0.2− | 0.1− | 2004 07 05 | H41 | 0.8− | 0.5− |
| 2002 08 30 | 848 | 0.1− | 0.9− | 2002 10 19 | 939 | 0.4− | 0.1− | 2004 05 23 | 198 | 0.0 | 0.1− | 2002 09 08 | J95 | 0.0 | 0.1+ | 2002 10 27 | 379 | 0.2+ | 0.3+ | 2004 07 06 | H41 | 0.6+ | 0.6− |
| 2002 08 30 | 157 | 0.1+ | 0.3− | 2002 10 20 | A30 | 0.0 | 0.3+ | 2004 05 23 | 198 | 0.1− | 0.1+ | 2002 09 09 | 670 | 0.2+ | 0.0 | 2002 10 27 | 379 | 0.1− | 0.2− | 2004 07 06 | H41 | 0.2+ | 0.5− |
| 2002 08 30 | 557 | 0.2− | 0.3+ | 2002 10 20 | 639 | 0.9+ | 0.2+ | 2004 05 24 | 198 | 0.0 | 0.1+ | 2002 09 09 | 670 | 0.4− | 0.3− | 2002 10 27 | 170 | 0.7− | 1.2+ | 2004 07 06 | H41 | 0.2− | 0.0 |
| 2002 08 30 | 557 | 0.3− | 0.4+ | 2002 10 20 | 639 | 0.5+ | 0.6+ | 2004 05 24 | 198 | 0.1− | 0.0 | 2002 09 10 | 848 | 0.2+ | 0.1+ | 2002 10 27 | 170 | 0.7− | 0.3+ | 2004 07 06 | H41 | 0.4+ | 0.0 |
| 2002 08 30 | 557 | 0.4− | 0.3+ | 2002 10 20 | A30 | 0.2+ | 0.5− | 2004 05 28 | 198 | 0.3− | 0.3+ | 2002 09 10 | 848 | 0.7− | 0.8− | 2002 10 27 | 170 | 1.3− | 0.2+ | 2004 07 06 | H41 | 0.9− | 0.5− |
| 2002 08 30 | 557 | 0.3− | 0.3+ | 2002 10 20 | 639 | 0.3+ | 0.3+ | 2004 05 28 | 198 | 0.3− | 0.3+ | 2002 09 10 | 170 | 0.7+ | 0.6+ | 2002 10 27 | 170 | 0.3− | 0.1− | 2004 07 08 | H41 | 0.2+ | 0.8− |
| 2002 08 30 | 157 | 1.0+ | 0.3+ | 2002 10 20 | A30 | 0.2+ | 0.2+ | 2004 05 28 | 198 | 0.0 | 0.0 | 2002 09 10 | 170 | (5.3− | 3.1−) | 2002 10 27 | J93 | 0.1+ | 0.0 | 2004 07 08 | H41 | 0.2+ | 0.3− |
| 2002 08 31 | 670 | 0.4+ | 0.1+ | 2002 10 21 | 379 | 0.2+ | 0.3− | 2004 05 28 | 198 | 0.0 | 0.0 | 2002 09 11 | 848 | 0.6− | 0.4− | 2002 10 27 | J93 | 0.0 | 0.6+ | 2004 07 08 | H41 | 0.4+ | 0.7− |
| 2002 08 31 | 670 | 0.1− | 0.4+ | 2002 10 21 | 379 | 0.1+ | 0.1− | 2004 05 31 | 704 | 0.2− | 0.1− | 2002 09 11 | 848 | 0.4+ | 0.7+ | 2002 10 28 | 379 | 0.2+ | 0.5− | 2004 07 08 | H41 | 0.2− | 0.5− |
| 2002 08 31 | 848 | 0.7− | 0.8+ | 2002 10 21 | 379 | 0.0 | 0.5− | 2004 05 31 | 704 | 0.4+ | 0.2+ | 2002 09 11 | 848 | 0.4+ | 0.4+ | 2002 10 28 | 379 | 0.4− | 0.1+ | 2004 07 08 | H41 | 0.1− | 0.0 |
| 2002 08 31 | 670 | 0.0 | 0.7+ | 2002 10 21 | 379 | 0.0 | 0.2+ | 2004 05 31 | 704 | 0.0 | 1.2+ | 2002 09 12 | 118 | 0.8− | 0.1+ | 2002 10 28 | 379 | 0.2− | 0.2− | 2004 07 12 | H41 | 0.1− | 0.4− |
| 2002 08 31 | 848 | 0.9+ | 1.1+ | 2002 10 21 | 379 | 0.1+ | 0.1+ | 2004 05 31 | 704 | 0.2+ | 0.5+ | 2002 09 12 | 118 | 0.0 | 0.4− | 2002 10 28 | 379 | 0.4− | 0.2− | 2004 07 12 | H41 | 0.7+ | 0.8− |
| 2002 08 31 | 670 | 0.2+ | 0.1+ | 2002 10 21 | 379 | 0.2− | 0.2− | 2004 06 07 | A41 | 0.1+ | 0.9+ | 2002 09 12 | 118 | 0.0 | 0.3− | 2002 10 28 | A30 | 0.3− | 1.3− | 2004 07 12 | H41 | 0.0 | 0.4− |
| 2002 08 31 | 848 | 0.2+ | 0.3− | 2002 10 22 | 379 | 0.1+ | 0.2− | 2004 06 07 | A41 | 0.2+ | 0.5− | 2002 09 12 | 628 | 0.1+ | 0.0 | 2002 10 28 | A30 | (2.7+ | 0.4−) | 2004 07 13 | 644 | 0.1− | 0.0 |
| 2002 08 31 | 941 | 0.8− | 0.2+ | 2002 10 22 | 379 | 0.1− | 0.5− | 2004 06 08 | A16 | 0.5+ | 0.9− | 2002 09 12 | 628 | 0.1+ | 0.0 | 2002 10 28 | A30 | 1.4+ | 0.6− | 2004 07 13 | 644 | 0.1+ | 0.1− |
| 2002 08 31 | 941 | 0.7− | 0.4+ | 2002 10 22 | 379 | 0.2− | 0.4− | 2004 06 08 | A16 | (1.9− | 2.3−) | 2002 09 12 | 628 | 0.0 | 0.2− | 2002 10 28 | 240 | 0.3− | 0.1− | 2004 07 13 | 644 | 1.3+ | 0.6− |
| 2002 08 31 | 941 | 0.1− | 0.4+ | 2002 10 24 | 379 | 0.2− | 0.4− | 2004 06 08 | A16 | 0.1− | 1.0− | 2002 09 12 | 628 | 0.2− | 0.1+ | 2002 10 28 | 240 | 0.3− | 0.1+ | 2004 07 14 | H41 | 0.5− | 0.9+ |
| 2002 08 31 | 941 | 0.0 | 0.5+ | 2002 10 24 | 379 | 0.4− | 0.4− | 2004 06 08 | A16 | 0.4− | 0.8− | 2002 09 12 | 941 | 0.5− | 0.1− | 2002 10 28 | 240 | 0.3− | 0.2− | 2004 07 14 | H41 | 0.6+ | 0.4+ |
| 2002 08 31 | 941 | 0.1− | 0.6+ | 2002 10 24 | 379 | 0.4− | 0.1− | 2004 06 08 | A16 | 0.1+ | 0.5+ | 2002 09 12 | 941 | 0.6− | 0.2− | 2002 10 28 | 240 | 0.4− | 0.1− | 2004 07 14 | H41 | 0.8+ | 0.2− |
| 2002 08 31 | J95 | 0.3+ | 0.3+ | 2002 10 24 | 379 | 0.1− | 0.3− | 2004 06 10 | 704 | 0.1− | 0.7+ | 2002 09 12 | 941 | 0.5− | 0.1− | 2002 10 29 | 379 | 0.4+ | 0.3+ | 2004 07 14 | H41 | 0.4− | 0.9− |
| 2002 08 31 | J95 | 0.4− | 0.2+ | 2002 10 24 | 379 | 0.1+ | 0.3− | 2004 06 10 | 704 | 0.5+ | 0.4+ | 2002 09 12 | 941 | 0.3− | 0.1− | 2002 10 29 | 379 | 0.3− | 0.6+ | 2004 07 14 | H41 | 0.7+ | 1.3− |
| 2002 08 31 | J95 | 0.1+ | 0.1+ | 2002 10 24 | 379 | 0.2− | 0.5− | 2004 06 10 | 704 | 0.4+ | 0.3+ | 2002 09 12 | 941 | 0.4− | 0.4− | 2002 10 29 | 057 | 0.1+ | 0.0 | 2004 07 15 | H41 | 0.1− | 0.7+ |
| 2002 09 02 | 848 | 0.1− | 0.1− | 2002 10 24 | 170 | 0.0 | 0.5− | 2004 06 10 | 704 | 0.6+ | 0.1− | 2002 09 13 | 215 | 0.0 | 0.0 | 2002 10 29 | 057 | 0.4− | 0.5− | 2004 07 15 | H41 | 0.2+ | 0.4− |
| 2002 09 02 | 848 | 0.3+ | 0.5− | 2002 10 24 | 170 | 0.2+ | 0.2− | 2004 06 10 | 704 | 0.2+ | 0.3+ | 2002 09 13 | 215 | 0.2− | 0.2− | 2002 10 29 | 057 | 0.5− | 0.6− | 2004 07 15 | H41 | 0.1+ | 0.1+ |
| 2002 09 02 | 848 | 1.1− | 0.7− | 2002 10 24 | 170 | 0.3+ | 0.1− | 2004 06 11 | H41 | 0.6+ | 0.8− | 2002 09 13 | 215 | 0.1+ | 0.3− | 2002 10 29 | 057 | 0.4− | 0.1− | 2004 07 15 | 104 | 0.1+ | 0.4− |
| 2002 09 02 | 118 | 0.6+ | 0.3− | 2002 10 24 | 170 | 0.1− | 0.2− | 2004 06 11 | H41 | 0.5− | 1.1− | 2002 09 14 | 469 | 0.1− | 0.3− | 2002 10 29 | 176 | 0.1− | 0.1− | 2004 07 15 | 104 | 0.1− | 0.1+ |
| 2002 09 02 | 557 | 0.2+ | 0.1− | 2002 10 24 | 170 | 0.0 | 0.2+ | 2004 06 11 | H41 | 0.2− | 0.6− | 2002 09 14 | 469 | 0.0 | 0.2− | 2002 10 29 | 176 | 0.1− | 0.0 | 2004 07 15 | 104 | 0.0 | 0.0 |
| 2002 09 02 | 628 | 0.1− | 0.0 | 2002 10 24 | 170 | 0.6+ | 0.3− | 2004 06 17 | A41 | 0.5− | 0.1+ | 2002 09 14 | 469 | 0.1− | 0.1− | 2002 10 29 | 176 | 0.1+ | 0.0 | 2004 07 19 | A41 | 0.4+ | 0.3− |
| 2002 09 02 | 628 | 0.0 | 0.2+ | 2002 10 24 | 639 | 0.0 | 0.8+ | 2004 06 17 | A41 | 0.5− | 0.0 | 2002 09 14 | 469 | 0.1− | 0.1− | 2002 10 29 | 176 | 0.2+ | 0.0 | 2004 07 19 | A41 | 0.7+ | 0.1− |
| 2002 09 02 | 628 | 0.2+ | 0.3+ | 2002 10 24 | 639 | 0.2− | 0.5+ | 2004 06 17 | A41 | 0.4+ | 0.3+ | 2002 09 14 | 469 | 0.1+ | 0.1+ | 2002 10 29 | 176 | 0.2+ | 0.0 | 2004 07 19 | A41 | 1.1+ | 0.5− |
| 2002 09 02 | 628 | 0.1− | 0.2+ | 2002 10 24 | 639 | 0.1+ | 0.3+ | 2004 06 18 | 703 | 0.8− | 0.4+ | 2002 09 14 | 170 | 0.3− | 0.4− | 2002 10 29 | 176 | 0.3+ | 0.0 | 2004 07 27 | A13 | 0.3− | 0.5− |
| 2002 09 02 | 557 | 0.0 | 0.1+ | 2002 10 25 | 941 | 0.5+ | 0.1+ | 2004 06 18 | 703 | 0.3− | 0.2+ | 2002 09 14 | 170 | 0.1− | 1.0− | 2002 10 31 | 704 | 0.4+ | 0.5+ | 2004 07 27 | A13 | 0.3+ | 1.3− |
| 2002 09 02 | 557 | 0.0 | 0.1+ | 2002 10 25 | 941 | 0.1− | 0.1+ | 2004 06 18 | 703 | 0.2− | 0.0 | 2002 09 14 | 170 | 0.0 | 0.9− | 2002 10 31 | 704 | 0.2+ | 0.6+ | 2004 07 27 | A13 | 1.1− | 1.4− |
| 2002 09 02 | 118 | 0.0 | 0.0 | 2002 10 25 | 941 | 0.3+ | 0.1+ | 2004 06 18 | 703 | 0.4− | 0.6− | 2002 09 14 | 170 | 0.3− | 0.9− | 2002 10 31 | 704 | 0.1− | 0.8+ | 2004 07 27 | A13 | 0.1− | 0.5− |
| 2002 09 02 | 118 | 0.1+ | 0.1− | 2002 10 25 | 941 | 0.3+ | 0.2+ | 2004 06 22 | 704 | 0.5+ | 0.7− | 2002 09 16 | J95 | 0.3− | 0.1− | 2002 10 31 | 704 | 0.6+ | 0.7+ | 2004 07 27 | A13 | 1.3− | 0.3− |
| 2002 09 03 | 557 | 0.0 | 0.2+ | 2002 10 25 | 941 | 0.3+ | 0.2+ | 2004 06 22 | 704 | 0.7+ | 0.1− | 2002 09 16 | J95 | 0.1− | 0.1− | 2002 10 31 | 704 | 0.5+ | 0.9+ | 2004 08 06 | 113 | 0.5+ | 0.1− |
| 2002 09 03 | 557 | 0.1− | 0.3+ | 2002 10 26 | 941 | 0.3+ | 0.1+ | 2004 06 22 | 704 | 0.2− | 0.2− | 2002 09 16 | J95 | 0.2− | 0.3− | 2002 10 31 | J87 | 0.9+ | 1.0− | 2004 08 06 | 113 | 0.6+ | 0.0 |
| 2002 09 03 | 557 | 0.1− | 0.3+ | 2002 10 26 | 941 | 0.2+ | 0.2+ | 2004 06 22 | A13 | 0.0 | 0.3− | 2002 09 17 | 711 | 0.5− | 0.1− | 2002 10 31 | J87 | 1.1+ | 1.1− | 2004 08 06 | 113 | 0.4+ | 0.1− |
| 2002 09 03 | 658 | 0.1+ | 0.6+ | 2002 10 26 | J87 | (1.8+ | 2.0−) | 2004 06 22 | A13 | 0.4− | 0.2− | 2002 09 17 | 711 | 0.4− | 0.2− | 2002 10 31 | J87 | 1.0+ | 1.2− | 2004 08 06 | 941 | 0.4− | 0.3− |
| 2002 09 03 | 658 | 0.1+ | 0.7+ | 2002 10 26 | 941 | 0.3− | 0.1+ | 2004 06 22 | A13 | 0.3+ | 0.0 | 2002 09 17 | 711 | 0.5− | 0.1− | 2002 10 31 | J87 | 1.0+ | 0.9− | 2004 08 06 | 941 | 0.5− | 0.3− |
| 2002 09 03 | 658 | 0.1− | 0.6+ | 2002 10 26 | J87 | 1.5+ | 1.5− | 2004 06 22 | A13 | 0.2+ | 0.0 | 2002 09 17 | 240 | 0.2− | 0.4− | 2002 10 31 | J87 | 1.0+ | 1.0− | 2004 08 06 | 941 | 0.4− | 0.2− |
| 2002 09 03 | 113 | 0.2+ | 0.1+ | 2002 10 26 | 941 | 0.5+ | 0.1+ | 2004 06 22 | A13 | 0.5+ | 0.1+ | 2002 09 17 | 240 | 0.1− | 0.1− | 2002 10 31 | 939 | 0.1− | 0.1+ | 2004 08 06 | 941 | 0.3− | 0.2− |
| 2002 09 03 | 113 | 0.0 | 0.0 | 2002 10 26 | J87 | (1.8+ | 1.5−) | 2004 06 28 | 240 | 0.1− | 0.0 | 2002 09 17 | 240 | 0.1+ | 0.1+ | 2002 10 31 | 939 | 0.2− | 0.1+ | 2004 08 06 | 941 | 0.1− | 0.2− |
| 2002 09 03 | 113 | 0.0 | 0.2+ | 2002 10 26 | 941 | 0.2− | 0.2+ | 2004 06 28 | 240 | 0.2+ | 0.1− | 2002 09 18 | 118 | 0.1− | 0.4− | 2002 10 31 | 939 | 0.2− | 0.2− | 2004 08 11 | E12 | 0.1− | 0.5+ |
| 2002 09 03 | 118 | 0.1− | 0.1− | 2002 10 26 | A30 | 0.2− | 0.1+ | 2004 06 28 | 240 | 0.3+ | 0.3− | 2002 09 18 | 118 | 0.1+ | 0.0 | 2002 11 01 | 379 | 0.2− | 0.1+ | 2004 08 11 | E12 | 0.5+ | 0.7− |
| 2002 09 03 | 113 | 0.0 | 0.1+ | 2002 10 26 | A30 | 0.1+ | 0.0 | 2004 06 28 | 240 | 0.3+ | 0.3− | 2002 09 18 | 118 | 0.1− | 0.3− | 2002 11 01 | 379 | 0.0 | 0.1− | 2004 08 11 | E12 | 0.3− | 0.1− |
| 2002 09 03 | 118 | 0.0 | 0.1− | 2002 10 26 | 557 | 0.2+ | 0.0 | 2004 06 28 | 240 | 0.6+ | 0.4− | 2002 09 19 | 941 | 0.4− | 0.4− | 2002 11 01 | 379 | 0.3− | 0.0 | 2004 08 11 | E12 | 0.5− | 0.1− |
| 2002 09 03 | 557 | 0.1− | 0.4+ | 2002 10 26 | 557 | 0.1+ | 0.0 | 2004 06 28 | 240 | 1.0+ | 0.6− | 2002 09 19 | 941 | 0.4− | 0.5− | 2002 11 01 | 941 | 0.2− | 0.2+ | 2004 08 12 | 941 | 0.1+ | 0.3− |
| 2002 09 03 | 557 | 0.0 | 0.3+ | 2002 10 26 | 557 | 0.2+ | 0.1+ | 2004 06 29 | A16 | 1.0− | 0.1− | 2002 09 19 | 941 | 0.6− | 0.2− | 2002 11 01 | 941 | 0.2+ | 0.3− | 2004 08 12 | 941 | 0.1+ | 0.3− |
| 2002 09 03 | 118 | 0.2− | 0.1+ | 2002 10 26 | J87 | (1.8+ | 1.7−) | 2004 06 29 | A16 | (1.8+ | 0.0 ) | 2002 09 19 | 941 | 0.1− | 0.3− | 2002 11 01 | 941 | 0.3+ | 0.2+ | 2004 08 12 | 941 | 0.0 | 0.1− |
| 2002 09 03 | 118 | 0.2− | 0.0 | 2002 10 26 | J87 | (1.8+ | 1.8−) | 2004 06 29 | A16 | 1.1+ | 1.1+ | 2002 09 19 | 941 | 0.6− | 0.3− | 2002 11 01 | 941 | 0.3+ | 0.0 | 2004 08 12 | 941 | 0.0 | 0.2− |
| 2002 09 03 | 557 | 0.2− | 0.3+ | 2002 10 26 | J87 | (2.2+ | 1.8−) | 2004 06 29 | A16 | 0.9− | 0.3− | 2002 09 21 | 649 | 0.2− | 0.2− | 2002 11 01 | 941 | 0.1− | 0.1+ | 2004 08 12 | 941 | 0.0 | 0.2− |
| 2002 09 03 | 557 | 0.1− | 0.3+ | 2002 10 26 | 557 | 0.1+ | 0.0 | 2004 07 03 | 699 | 0.7+ | 0.5+ | 2002 09 21 | 649 | 0.1+ | 0.1− | 2002 11 01 | 941 | 0.5+ | 0.2+ | 2004 08 19 | A41 | 0.3− | 0.5+ |
| 2002 09 03 | 557 | 0.2− | 0.4+ | 2002 10 26 | 557 | 0.2+ | 0.0 | 2004 07 03 | 699 | 0.3− | 0.3− | 2002 09 21 | 649 | 0.0 | 0.1+ | 2002 11 01 | 170 | 0.9+ | 0.5+ | 2004 08 19 | A41 | (0.1− | 2.4−) |
| 2002 09 04 | 557 | 0.1− | 0.2+ | 2002 10 26 | J87 | (1.7+ | 1.4−) | 2004 07 03 | 699 | 1.1+ | 1.0− | 2002 09 21 | 941 | 0.2+ | 0.2− | 2002 11 01 | 170 | 0.3+ | 0.6+ | 2004 08 31 | 240 | 0.5+ | 0.1+ |
| 2002 09 04 | 557 | 0.0 | 0.3+ | 2002 10 26 | J87 | 1.5+ | 1.5− | 2004 07 03 | 699 | (0.5− | 1.6+) | 2002 09 21 | 941 | 0.1− | 0.4− | 2002 11 01 | 170 | 0.7+ | 0.5+ | 2004 08 31 | 240 | 0.1+ | 0.7− |
| 2002 09 04 | 557 | 0.0 | 0.2+ | 2002 10 26 | J87 | (1.8+ | 1.5−) | 2004 07 03 | 185 | 0.5− | 0.1− | 2002 09 21 | 941 | 0.2− | 0.4− | 2002 11 01 | 170 | 0.5− | 0.1− | 2004 08 31 | 240 | 0.1− | 0.8− |
| 2002 09 04 | 670 | 0.3+ | 0.0 | 2002 10 26 | 170 | 0.1− | 0.3+ | 2004 07 03 | 185 | 0.2+ | 0.1+ | 2002 09 21 | 941 | 0.3− | 0.2− | 2002 11 01 | A30 | 0.3+ | 0.6+ | 2004 09 15 | 704 | 0.2− | 0.3− |
| 2002 09 04 | 670 | 0.2+ | 0.0 | 2002 10 26 | 170 | 0.2+ | 0.2+ | 2004 07 03 | 185 | 0.3− | 0.1− | 2002 09 21 | 941 | 0.2− | 0.2− | 2002 11 01 | A30 | 0.8+ | 0.4+ | 2004 09 15 | 704 | 0.0 | 0.4+ |
| 2002 09 04 | 670 | 0.4+ | 0.3+ | 2002 10 26 | 170 | 0.3− | 0.2+ | 2004 07 03 | 185 | 0.2− | 0.0 | 2002 09 22 | 170 | (1.8− | 0.8−) | 2002 11 01 | A30 | 0.4+ | 0.2+ | 2004 09 15 | 704 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 22 | 170 | 1.0− | 1.5− | 2002 11 01 | 939 | 0.6− | 0.0 | 2004 09 15 | 704 | 0.2− | 0.5+ | | |
| 2002 09 23 | 649 | 0.0 | 0.3− | 2002 11 01 | 939 | 0.4− | 0.0 | 2004 09 15 | 704 | 0.2− | 0.6− | | |
| 2002 09 23 | 649 | 0.0 | 0.3− | 2002 11 01 | 939 | 0.2− | 0.1− | 2004 09 22 | 704 | 0.1+ | 0.7+ | | |
| 2002 09 23 | 649 | 0.0 | 0.3− | 2002 11 02 | 941 | 0.1− | 0.5+ | 2004 09 22 | 704 | 0.5+ | 0.4+ | | |
| 2002 09 24 | 704 | 0.4− | 0.4+ | 2002 11 02 | 941 | 0.3− | 0.0 | 2004 09 22 | 704 | 0.0 | 0.7− | | |
| 2002 09 24 | 704 | 0.1+ | 0.1+ | 2002 11 02 | 941 | 0.2+ | 0.2+ | 2004 09 22 | 704 | 0.2− | 0.3− | | |
| 2002 09 24 | 704 | 0.1− | 0.0 | 2002 11 02 | 941 | 0.7− | 0.5− | 2004 09 24 | 704 | 0.4+ | 0.3− | | |
| 2002 09 24 | 704 | 0.2+ | 0.2− | 2002 11 02 | 941 | 0.1+ | 0.6− | 2004 09 24 | 704 | 0.2+ | 0.0 | | |
| 2002 09 26 | 941 | 0.0 | 0.0 | 2002 11 02 | 941 | 0.4+ | 0.2− | 2004 09 24 | 704 | 0.8+ | 0.8+ | | |
| 2002 09 26 | 941 | 0.1+ | 0.0 | 2002 11 02 | 941 | 0.1− | 0.6− | 2004 09 24 | 704 | 0.2+ | 0.8− | | |
| 2002 09 26 | 941 | 0.2+ | 0.1− | 2002 11 04 | 379 | 0.1− | 0.0 | 2004 09 24 | 704 | 0.7+ | 0.6− | | |
| 2002 09 26 | 941 | 0.1+ | 0.1+ | 2002 11 04 | 379 | 0.0 | 0.1+ | 2004 10 04 | G90 | 0.3+ | 0.1− | | |
| 2002 09 26 | 941 | 0.0 | 0.0 | 2002 11 04 | 379 | 0.3− | 0.3− | 2004 10 04 | G90 | 0.0 | 0.1− | | |
| 2002 09 27 | 704 | (2.9+ | 0.6−) | 2002 11 04 | 379 | 0.2− | 0.0 | 2004 10 04 | G90 | 0.1+ | 0.1− | | |
| 2002 09 27 | 704 | 0.4+ | 0.1+ | 2002 11 05 | 379 | 0.3− | 0.0 | 2004 10 05 | G90 | 0.9+ | 0.2− | | |
| 2002 09 27 | 704 | 0.3+ | 0.2+ | 2002 11 05 | 379 | 0.5− | 0.2+ | 2004 10 05 | G90 | 0.4+ | 0.1+ | | |
| 2002 09 27 | 704 | 0.5+ | 0.9+ | 2002 11 05 | 379 | 0.3− | 0.1+ | 2004 10 05 | G90 | 1.2+ | 0.2+ | | |
| 2002 09 27 | 704 | 0.6+ | 0.6+ | 2002 11 05 | 379 | 0.3− | 0.1+ | 2004 12 15 | 071 | 0.6+ | 0.2+ | | |
| 2002 09 28 | A28 | 0.1+ | 0.0 | 2002 11 05 | 379 | 0.5− | 0.1+ | 2004 12 15 | 071 | (1.9+ | 0.1−) | | |
| 2002 09 28 | A28 | 0.3+ | 0.1− | 2002 11 05 | 379 | 0.3− | 0.0 | 2004 12 20 | 703 | 0.1− | 1.2+ | | |
| 2002 09 28 | A28 | 0.1− | 0.2− | 2002 11 05 | 379 | 0.1− | 0.1− | 2004 12 20 | 703 | 0.1− | 1.2+ | | |
| 2002 09 28 | 941 | 0.3− | 0.4− | 2002 11 06 | 379 | 0.1− | 0.2+ | 2004 12 20 | 703 | 0.1− | 0.0 | | |
| 2002 09 28 | 941 | 0.1− | 0.2− | 2002 11 06 | 379 | 0.3− | 0.2+ | 2004 12 20 | 703 | 0.5− | 0.2+ | | |
| 2002 09 28 | A28 | 0.3+ | 0.0 | 2002 11 06 | 379 | 0.3− | 0.2+ | 2006 05 04 | 691 | 0.2+ | 0.0 | | |
| 2002 09 28 | 941 | 0.0 | 0.1− | 2002 11 06 | 379 | 0.3− | 0.1+ | 2006 05 04 | 691 | 0.0 | 0.4− | | |
| 2002 09 28 | 941 | 0.1+ | 0.0 | 2002 11 06 | 379 | 0.1− | 0.2+ | 2006 05 18 | 644 | 0.1− | 0.3+ | | |
| 2002 09 28 | A28 | 0.1+ | 0.1+ | 2002 11 06 | 379 | 0.1− | 0.1+ | 2006 05 18 | 644 | 0.2− | 0.2+ | | |
| 2002 09 28 | 941 | 0.1+ | 0.0 | 2002 11 06 | J93 | 0.1+ | 0.1+ | 2006 05 18 | 644 | 0.0 | 0.2+ | | |
| 2002 09 28 | A28 | 0.1+ | 0.5+ | 2002 11 06 | J93 | 0.8+ | 0.5− | 2006 05 19 | 699 | 0.8+ | 0.7− | | |
| 2002 09 29 | 240 | 0.0 | 0.1− | 2002 11 06 | J93 | 0.2− | 0.4+ | 2006 05 19 | 699 | 0.6+ | 0.0 | | |
| 2002 09 29 | 240 | 0.0 | 0.2− | 2002 11 06 | 639 | (2.9− | 1.5−) | 2006 05 19 | 699 | 1.3+ | 0.1− | | |
| 2002 09 29 | 240 | 0.3+ | 0.1− | 2002 11 06 | 639 | 1.2− | 0.1− | 2006 05 20 | 644 | 0.0 | 0.0 | | |
| 2002 09 30 | 118 | 0.1+ | 0.1+ | 2002 11 07 | 170 | 0.4+ | 0.3− | 2006 05 20 | 703 | 0.3− | 0.5+ | | |
| 2002 09 30 | 118 | 0.5+ | 0.2− | 2002 11 07 | 170 | 0.3− | 0.8+ | 2006 05 20 | 644 | 0.1− | 0.1+ | | |
| 2002 09 30 | 469 | 0.3− | 0.2+ | 2002 11 07 | 170 | 0.1− | 0.4− | 2006 05 20 | 703 | 0.0 | 0.0 | | |
| 2002 09 30 | 628 | 0.3− | 0.2+ | 2002 11 07 | 170 | 0.1− | 0.0 | 2006 05 20 | 703 | 0.4+ | 0.6+ | | |
| 2002 09 30 | 469 | 0.2− | 0.1− | 2002 11 07 | 170 | 0.2− | 0.5− | 2006 05 20 | 703 | 0.3+ | 0.5− | | |
| 2002 09 30 | 628 | 0.1+ | 0.1+ | 2002 11 07 | 170 | 0.5− | 0.9− | 2006 05 20 | 644 | 0.1− | 0.1+ | | |
| 2002 09 30 | 469 | 0.0 | 0.3− | 2002 11 08 | J87 | 1.4+ | 0.0 | 2006 05 23 | 291 | 0.3+ | 0.2+ | | |
| 2002 09 30 | 215 | 0.1+ | 0.1+ | 2002 11 08 | J87 | 1.5+ | 0.8− | 2006 05 23 | 291 | 0.2+ | 0.1+ | | |
| 2002 09 30 | 215 | 0.1+ | 0.1+ | 2002 11 08 | J87 | 1.1+ | 1.2− | 2006 05 23 | 291 | 0.2+ | 0.1+ | | |
| 2002 09 30 | 215 | 0.2+ | 0.0 | 2002 11 08 | J87 | 1.3+ | 0.9− | 2006 05 23 | 291 | 0.1+ | 0.6+ | | |
| 2002 09 30 | 469 | 0.1− | 0.0 | 2002 11 08 | J87 | 1.2+ | 0.5− | 2006 05 23 | 291 | 0.7+ | 0.2+ | | |
| 2002 09 30 | 628 | 0.3+ | 0.2− | 2002 11 08 | J87 | 1.3+ | 1.4− | 2006 05 23 | 291 | 0.4− | 0.4+ | | |
| 2002 09 30 | 628 | 0.2− | 0.4+ | 2002 11 08 | J87 | 1.2+ | 1.4− | 2006 05 24 | 699 | 0.3+ | 0.1+ | | |
| 2002 09 30 | 557 | 0.1− | 0.1− | 2002 11 08 | J87 | 1.0+ | 1.5− | 2006 05 24 | 699 | 0.1− | 0.1− | | |
| 2002 09 30 | 557 | 0.1+ | 0.1− | 2002 11 08 | J87 | (1.3+ | 1.6−) | 2006 05 24 | 699 | 0.2− | 0.3− | | |
| 2002 09 30 | 557 | 0.1− | 0.1− | 2002 11 08 | J87 | 1.0+ | 1.5− | 2006 05 24 | G96 | 0.2− | 0.1+ | | |
| 2002 09 30 | 557 | 0.1+ | 0.0 | 2002 11 08 | A30 | 0.2− | 0.1+ | 2006 05 24 | G96 | 0.2− | 0.1+ | | |
| 2002 10 01 | 557 | 0.0 | 0.1− | 2002 11 08 | A30 | 0.1+ | 0.1+ | 2006 05 24 | G96 | 0.2+ | 0.0 | | |
| 2002 10 01 | 118 | 0.2+ | 0.1− | 2002 11 09 | 379 | 0.4− | 0.1+ | 2006 05 26 | 704 | (0.7+ | 1.8+) | | |
| 2002 10 01 | 118 | 0.1+ | 0.0 | 2002 11 09 | 379 | 0.3− | 0.1− | 2006 05 26 | 704 | (1.0+ | 2.3+) | | |
| 2002 10 01 | 557 | 0.0 | 0.1− | 2002 11 09 | 379 | 0.6− | 0.1+ | 2006 05 26 | 704 | (0.2+ | 1.8+) | | |
| 2002 10 01 | 557 | 0.1+ | 0.1− | 2002 11 09 | 379 | 0.5− | 0.3+ | 2006 05 26 | 703 | 0.3− | 0.2− | | |
| 2002 10 01 | 557 | 0.1+ | 0.0 | 2002 11 09 | 057 | 0.1+ | 0.2+ | 2006 05 26 | 703 | 0.7− | 0.2+ | | |
| 2002 10 02 | 118 | 0.2− | 0.1− | 2002 11 09 | 057 | (2.5− | 0.8+) | 2006 05 28 | H55 | 0.1+ | 0.3− | | |
| 2002 10 02 | 118 | 0.2+ | 0.1− | 2002 11 09 | 057 | 0.0 | 0.3− | 2006 05 28 | H55 | 0.2− | 0.2+ | | |
| 2002 10 02 | 118 | 0.1+ | 0.1− | 2002 11 09 | 057 | 0.9− | 0.0 | 2006 05 28 | H55 | 0.8+ | 0.0 | | |
| 2002 10 03 | 300 | 0.3+ | 0.9− | 2002 11 09 | 057 | 0.4+ | 0.3+ | 2006 05 30 | 699 | 0.0 | 0.5+ | | |
| 2002 10 03 | 300 | 0.3+ | 0.6− | 2002 11 09 | 057 | 0.9+ | 0.8− | 2006 05 30 | 699 | 0.6− | 1.0− | | |
| 2002 10 03 | 300 | 0.7+ | 0.1+ | 2002 11 10 | 379 | 0.1− | 0.0 | 2006 05 30 | 699 | 0.4− | 0.7+ | | |
| 2002 10 03 | 300 | 0.5+ | 0.2− | 2002 11 10 | 379 | 0.4− | 0.0 | 2006 06 02 | A13 | 0.4− | 0.2+ | | |
| 2002 10 05 | 941 | 0.2− | 0.3+ | 2002 11 10 | 379 | 0.3− | 0.1+ | 2006 06 03 | A13 | 0.0 | 0.0 | | |
| 2002 10 05 | 941 | 0.1− | 0.2+ | 2002 11 10 | 379 | 0.3− | 0.2+ | 2006 06 03 | 699 | 0.8+ | 0.3− | | |
| 2002 10 05 | 941 | 0.2− | 0.2+ | 2002 11 10 | 379 | 0.3− | 0.1+ | 2006 06 03 | 699 | 0.4− | 0.4+ | | |
| 2002 10 05 | 941 | 0.6+ | 0.4+ | 2002 11 10 | 379 | 0.2− | 0.0 | 2006 06 03 | 699 | 0.4+ | 0.2− | | |
| 2002 10 05 | 941 | 0.0 | 0.5+ | 2002 11 10 | 170 | 0.1+ | 0.7+ | 2006 06 03 | H55 | 0.3− | 0.5− | | |
| 2002 10 06 | 170 | 0.6+ | 0.3− | 2002 11 10 | 170 | 0.6+ | 0.5+ | 2006 06 03 | 699 | 1.5+ | 0.7+ | | |
| 2002 10 06 | 170 | 0.4+ | 0.1− | 2002 11 10 | 170 | 0.5+ | 0.3+ | 2006 06 03 | H55 | 0.1− | 0.2− | | |
| 2002 10 06 | 170 | 0.1+ | 0.0 | 2002 11 10 | 170 | 0.3+ | 0.3+ | 2006 06 03 | H55 | 0.1− | 0.1+ | | |
| 2002 10 06 | 170 | 0.6− | 0.1+ | 2002 11 10 | 170 | 0.4− | 0.3+ | 2006 06 03 | H55 | 0.1− | 0.1− | | |
| 2002 10 06 | 170 | 0.0 | 0.1− | 2002 11 10 | J87 | (2.3+ | 2.7−) | 2006 06 04 | 703 | 0.1− | 0.1+ | | |
| 2002 10 06 | J93 | 0.8− | 0.4+ | 2002 11 10 | J87 | (2.7+ | 3.2−) | 2006 06 04 | 703 | 0.2+ | 0.8− | | |
| 2002 10 06 | J93 | 0.7− | 0.1+ | 2002 11 10 | J87 | (2.6+ | 2.8−) | 2006 06 04 | 703 | 0.2+ | 0.4− | | |
| 2002 10 07 | 670 | 0.6+ | 0.0 | 2002 11 10 | J87 | (3.0+ | 3.1−) | 2006 06 04 | 703 | 0.4+ | 0.3− | | |
| 2002 10 07 | 670 | 0.1+ | 0.1− | 2002 11 10 | J87 | (3.1+ | 3.1−) | 2006 06 21 | 699 | 1.0+ | 0.3+ | | |
| 2002 10 07 | 587 | 0.0 | 0.1+ | 2002 11 10 | J87 | (2.4+ | 2.7−) | 2006 06 21 | 699 | 0.4− | 0.7+ | | |
| 2002 10 07 | 587 | 0.1+ | 0.3+ | 2002 11 10 | J87 | (2.4+ | 2.7−) | 2006 06 21 | 699 | 0.9− | 0.1+ | | |
| 2002 10 07 | 587 | 0.2+ | 0.2+ | 2002 11 10 | J87 | (2.5+ | 2.7−) | 2006 06 21 | 699 | 0.6+ | 0.8− | | |
| 2002 10 07 | 587 | 0.0 | 0.0 | 2002 11 10 | J87 | (2.6+ | 2.8−) | 2006 06 24 | 941 | 0.2− | 0.0 | | |
| 2002 10 09 | 379 | 0.7− | 0.0 | 2002 11 10 | 939 | 0.2+ | 0.2+ | 2006 06 24 | 941 | 0.2− | 0.0 | | |
| 2002 10 09 | 379 | 0.3− | 0.8− | 2002 11 10 | 939 | 0.4+ | 0.3+ | 2006 06 24 | 941 | 0.5− | 0.1+ | | |
| 2002 10 09 | 628 | 0.6+ | 0.4+ | 2002 11 10 | 939 | 0.7+ | 0.5+ | 2006 06 24 | 941 | 0.8− | 0.1+ | | |
| 2002 10 09 | 628 | 0.4+ | 0.2+ | 2002 11 10 | J93 | 0.0 | 0.3+ | 2006 06 30 | 941 | 0.5− | 0.0 | | |
| 2002 10 09 | 628 | 0.4+ | 0.2+ | 2002 11 10 | J93 | 0.5+ | 0.2+ | 2006 06 30 | 941 | 0.4− | 0.1− | | |
| 2002 10 09 | 628 | 0.5+ | 0.1+ | 2002 11 10 | J93 | 0.3+ | 0.4+ | 2006 06 30 | 941 | 0.3− | 0.3− | | |
| 2002 10 10 | 379 | 0.8− | 0.5− | 2002 11 10 | J93 | 0.2+ | 0.3+ | 2006 06 30 | 941 | 0.2− | 0.2− | | |
| 2002 10 10 | 379 | 0.4+ | 0.8− | 2002 11 10 | J93 | 0.4+ | 0.6+ | 2006 06 30 | 941 | 0.2− | 0.3− | | |

**(142041)∗ 2002 QR$_{15}$ = 1998 SS$_{168}$**

Discovered 2002 Aug. 21 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35355)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.28302 | | (2000.0) | | | |
| $n$ | 0.24237274 | $\omega$ | 118.72326 | | +0.25548674 | +0.96539338 |
| $a$ | 2.5476917 | $\Omega$ | 165.78580 | | −0.94467103 | +0.26079449 |
| $e$ | 0.2930076 | $i$ | 12.31347 | | −0.20572597 | +0.00136207 |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 09 | 691 | 0.0 | 0.2− | 2002 10 03 | 704 | 0.4+ | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.4+ | | |
| 1997 03 09 | 691 | 0.3+ | 0.1− | 2002 10 03 | 704 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.5+ | 0.1+ | | |
| 1997 03 09 | 691 | 0.0 | 0.1+ | 2002 10 05 | 704 | 0.9+ | 0.7− | 2006 08 30 | 704 | 0.2+ | 0.6− | | |
| 1998 09 17 | 699 | 0.6+ | 1.7− | 2002 10 05 | 704 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.2− | | |
| 1998 09 17 | 699 | 0.1+ | 1.1− | 2002 10 05 | 704 | 1.2+ | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.4− | | |
| 1998 09 17 | 699 | 0.2+ | 0.8− | 2002 10 05 | 704 | 0.9− | 0.1+ | 2006 08 30 | 704 | 0.7− | 0.3+ | | |
| 1998 09 24 | 699 | 0.4− | 1.4+ | 2002 10 05 | 704 | 0.7− | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.1− | | |
| 1998 09 24 | 699 | 0.1+ | 1.6+ | 2002 10 09 | 699 | 0.9− | 0.0 | 2006 09 01 | 704 | 0.0 | 0.9+ | | |
| 1998 09 24 | 699 | (1.1+ | 2.1+) | 2002 10 09 | 699 | 0.8− | 0.7+ | 2006 09 01 | 704 | 0.2− | 0.8+ | | |
| 2002 08 12 | 704 | 0.2− | 1.0+ | 2002 10 09 | 699 | 0.2− | 0.8+ | 2006 09 01 | 704 | 0.0 | 0.4+ | | |
| 2002 08 12 | 704 | 0.5+ | 0.3+ | 2002 10 09 | 699 | 0.3+ | 1.4+ | 2006 09 01 | 704 | 0.1− | 0.4+ | | |
| 2002 08 12 | 704 | 0.0 | 0.4− | 2005 04 05 | G96 | 0.3− | 0.4+ | 2006 09 12 | 699 | 0.1+ | 0.1+ | | |
| 2002 08 12 | 704 | 0.0 | 0.4− | 2005 04 05 | G96 | 0.5− | 0.1+ | 2006 09 12 | 699 | 0.6+ | 0.2− | | |
| 2002 08 12 | 704 | 0.0 | 0.1+ | 2005 04 05 | G96 | 0.2− | 0.1− | 2006 09 12 | 699 | 0.3− | 0.2− | | |
| 2002 08 21 | 644 | 0.5+ | 0.6+ | 2005 04 05 | G96 | 0.2− | 0.4+ | 2006 09 12 | 699 | 0.1− | 0.3− | | |
| 2002 08 21 | 644 | 0.2− | 0.2+ | 2005 04 06 | G96 | 0.3+ | 0.1+ | 2006 09 12 | 704 | 0.2− | 0.4− | | |
| 2002 08 21 | 644 | 0.2− | 0.6+ | 2005 04 06 | G96 | 0.2− | 0.3− | 2006 09 12 | 704 | 0.5− | 0.2− | | |
| 2002 08 28 | 644 | 0.4− | 0.3+ | 2005 04 06 | G96 | 0.2+ | 0.2− | 2006 09 12 | 704 | 0.2+ | 1.1+ | | |
| 2002 08 28 | 644 | 0.2− | 0.3+ | 2005 04 06 | G96 | 0.5− | 0.0 | 2006 09 12 | 704 | 0.1− | 0.1− | | |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2006 06 21 | 703 | 0.8+ | 0.7+ | 2006 09 12 | 704 | 0.4− | 0.1− | | |
| 2002 08 29 | 644 | 0.3− | 0.6− | 2006 06 21 | 703 | 0.3− | 1.1+ | 2006 09 14 | 703 | 0.3+ | 0.9− | | |
| 2002 08 29 | 644 | 0.1− | 0.7− | 2006 06 21 | 703 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.1− | | |
| 2002 08 29 | 644 | 0.1− | 0.6− | 2006 06 21 | 703 | 0.8+ | 0.7+ | 2006 09 14 | 703 | 0.1+ | 0.1+ | | |
| 2002 08 30 | 699 | 0.1+ | 0.3− | 2006 07 01 | 703 | 1.2− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.4+ | | |
| 2002 08 30 | 699 | 0.7− | 0.4− | 2006 07 01 | 703 | 1.2− | 0.5− | 2006 09 17 | 704 | 0.4− | 1.3+ | | |
| 2002 08 30 | 699 | 0.1− | 0.3− | 2006 07 01 | 703 | 0.6− | 0.9− | 2006 09 17 | 704 | 0.3− | 0.1+ | | |
| 2002 08 30 | 699 | 0.3+ | 0.1− | 2006 07 01 | 703 | 0.9− | 1.1+ | 2006 09 17 | 704 | 0.3− | 0.3+ | | |
| 2002 09 04 | 699 | 0.6+ | 0.1+ | 2006 08 08 | E12 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.8− | 0.5+ | | |
| 2002 09 04 | 699 | 0.0 | 0.1− | 2006 08 08 | E12 | 0.6− | 0.0 | 2006 09 17 | 704 | 0.5+ | 0.2+ | | |
| 2002 09 04 | 699 | 0.2+ | 0.2+ | 2006 08 08 | E12 | 0.6− | 0.4− | 2006 09 18 | 699 | 0.5− | 0.3− | | |
| 2002 09 04 | 699 | 0.6+ | 0.1− | 2006 08 08 | E12 | 0.4− | 0.4− | 2006 09 18 | 699 | 1.0+ | 1.5− | | |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.5+ | 1.0− | | |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2006 08 16 | 644 | 0.1− | 0.4− | 2006 09 20 | 704 | 0.2− | 0.9− | | |
| 2002 09 05 | 704 | 0.4+ | 0.2− | 2006 08 18 | 704 | 0.3+ | 0.5− | 2006 09 20 | 704 | 0.0 | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.3+ | 0.9+ | 2006 08 18 | 699 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 1.2+ | 0.3− |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2006 08 18 | 704 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.2+ | 1.3− |
| 2002 09 07 | 704 | 0.4− | 0.1− | 2006 08 18 | 699 | 0.2+ | 0.1− | 2006 09 24 | 699 | 1.4+ | 0.4− |
| 2002 09 07 | 704 | 0.4− | 0.6− | 2006 08 18 | 704 | 0.1+ | 0.0 | 2006 09 24 | 699 | 0.7− | 0.6+ |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2006 08 18 | 704 | 0.2+ | 0.3− | 2006 09 24 | 699 | 0.1+ | 0.9+ |
| 2002 09 07 | 704 | 0.0 | 0.2− | 2006 08 18 | 699 | 0.0 | 0.1− | 2006 09 24 | 699 | 0.7+ | 0.5− |
| 2002 09 09 | 608 | 0.7+ | 0.3− | 2006 08 18 | 704 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2002 09 09 | 608 | 0.8+ | 0.3+ | 2006 08 18 | 699 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.1+ |
| 2002 09 09 | 608 | 0.7+ | 0.0 | 2006 08 24 | 704 | 0.1− | 0.5− | 2006 09 25 | 699 | 1.1+ | 0.0 |
| 2002 09 12 | 644 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.8− |
| 2002 09 12 | 644 | 0.4− | 0.1+ | 2006 08 24 | 704 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 2002 09 12 | 644 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.8− |
| 2002 09 14 | 608 | 1.0− | 0.5+ | 2006 08 24 | 704 | 0.7− | 0.1− | 2006 09 25 | 699 | 0.2− | 0.4− |
| 2002 09 14 | 608 | 0.6− | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.0 |
| 2002 09 14 | 608 | 0.9− | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.1− |
| 2002 09 15 | 644 | 0.3− | 0.7+ | 2006 08 28 | 699 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.4− | 0.4− |
| 2002 09 15 | 644 | 0.2− | 0.6+ | 2006 08 28 | 699 | 0.7+ | 0.1+ | 2006 09 27 | 704 | 0.2− | 1.1− |
| 2002 09 15 | 644 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.2+ | 0.8− | 2006 09 27 | 704 | 0.8+ | 0.7+ |
| 2002 10 01 | 699 | 0.9− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2002 10 01 | 699 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.1− | 0.9− | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2002 10 01 | 699 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.2− | 0.6− |
| 2002 10 01 | 699 | 0.1− | 0.5− | 2006 08 30 | 704 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 0.7− | 0.4+ | 2006 08 30 | 704 | 0.1+ | 0.3− | | | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 08 30 | 704 | 0.4+ | 0.5+ | | | | |

**(142042)∗ 2002 QS$_{15}$**

Discovered 2002 Aug. 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.41218 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26341835 | $\omega$ | 194.34503 | | +0.78018771 | −0.62536929 |
| $a$ | 2.4101202 | $\Omega$ | 204.38326 | | +0.57741240 | +0.72908158 |
| $e$ | 0.1999145 | $i$ | 2.06073 | | +0.24062845 | +0.27812460 |
| $P$ | 3.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 291 | 0.1+ | 0.1+ | 2002 10 07 | 704 | 0.5− | 0.2+ | 2006 10 29 | 704 | 0.6+ | 0.7− |
| 2002 08 16 | 291 | 0.2+ | 0.1+ | 2002 10 07 | 704 | 0.3+ | 0.7+ | 2006 10 31 | 704 | (2.1+ | 0.4+) |
| 2002 08 16 | 291 | 0.2+ | 0.4− | 2002 10 07 | 704 | 0.3− | 1.3+ | 2006 10 31 | 704 | 1.2+ | 0.1+ |
| 2002 08 21 | 644 | 0.2− | 0.6+ | 2002 10 07 | 704 | 0.5+ | 0.2− | 2006 10 31 | 704 | 0.3+ | 0.2− |
| 2002 08 21 | 644 | 0.1+ | 0.4+ | 2002 10 07 | 704 | (1.2− | 1.6+) | 2006 10 31 | 704 | 0.1− | 0.6+ |
| 2002 08 21 | 644 | 0.4− | 0.6+ | 2002 10 11 | 704 | 0.4− | 0.9− | 2006 10 31 | 704 | 0.6+ | 0.2− |
| 2002 08 28 | 644 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.5− | 0.7+ | 2002 10 11 | 704 | 0.4− | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 29 | 291 | (1.7− | 0.1+) | 2002 10 11 | 704 | 0.9+ | 0.1− | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2002 08 29 | 291 | 0.0 | 0.0 | 2004 03 12 | 644 | 0.2+ | 0.9+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2002 08 29 | 291 | 0.2− | 0.3− | 2004 03 12 | 644 | 0.2+ | 0.9+ | 2006 11 08 | 644 | 0.3− | 0.1− |
| 2002 09 04 | 699 | 0.0 | 0.5+ | 2004 03 12 | 644 | 0.5+ | 0.9+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 09 04 | 699 | 0.2− | 0.2+ | 2004 03 16 | 599 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2002 09 04 | 699 | 0.8− | 0.3+ | 2004 03 16 | 599 | 0.5+ | 0.7+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 09 04 | 699 | 1.3− | 0.5+ | 2004 03 16 | 599 | 0.7+ | 1.2+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.5− | 0.0 | 2004 03 16 | 599 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2002 09 05 | 704 | 0.5− | 0.9− | 2005 06 16 | G96 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2002 09 05 | 704 | 0.8− | 0.3+ | 2005 06 16 | G96 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.9+ | 0.7− | 2005 06 16 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2002 09 05 | 704 | 0.3+ | 0.3− | 2005 06 16 | G96 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2002 09 07 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.6− |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2006 08 29 | 703 | (1.3+ | 2.1−) | 2006 11 18 | 704 | 0.5− | 0.1− |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2006 08 29 | 703 | (1.7+ | 0.4−) | 2006 11 18 | 704 | 0.7− | 0.2− |
| 2002 09 07 | 704 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2002 09 09 | 608 | 0.3− | 1.2− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.2− |
| 2002 09 09 | 608 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2002 09 09 | 608 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2002 09 18 | 644 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 1.0− | 0.2+ |
| 2002 09 18 | 644 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.3+ |
| 2002 09 18 | 644 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.8+ |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.7− | 1.2+ |
| 2002 10 06 | 704 | 0.7− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.3− |
| 2002 10 06 | 704 | 0.6− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.5− | 2006 11 27 | 703 | 0.6− | 0.7− |
| 2002 10 06 | 704 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 27 | 703 | 0.3− | 0.6− |
| 2002 10 06 | 704 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2002 10 06 | 704 | 0.5− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.8+ |
| 2002 10 06 | 704 | 0.6+ | 0.9− | 2006 10 29 | 704 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.3− | 0.5+ |
| 2002 10 06 | 704 | 0.3+ | 0.2− | 2006 10 29 | 704 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 2002 10 06 | 704 | 0.8+ | 0.3+ | 2006 10 29 | 704 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2002 10 06 | 704 | 0.5+ | 0.3+ | 2006 10 29 | 704 | 1.1+ | 0.1− | 2006 11 28 | 704 | 0.2− | 1.0+ |

**(142043)∗ 2002 QX$_{15}$**

Discovered 2002 Aug. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.51820 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27414116 | $\omega$ | 106.41149 | | +0.69758964 | −0.60502678 |
| $a$ | 2.3468566 | $\Omega$ | 292.53723 | | +0.38768749 | +0.76921981 |
| $e$ | 0.2309114 | $i$ | 24.55374 | | +0.60255050 | +0.20553218 |
| $P$ | 3.60 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 08 15 | 261 | 0.3+ | 0.4+ | 2002 09 25 | 704 | 0.4− | 1.0− | 2004 03 29 | E12 | 0.4+ | 1.4+ |
| 1991 08 15 | 261 | 1.0− | 0.9+ | 2002 09 25 | 704 | 0.5− | 1.2− | 2004 03 29 | E12 | 0.3+ | 0.1+ |
| 1995 10 25 | 261 | 0.9− | 0.2+ | 2002 09 25 | 704 | 0.2− | 1.1− | 2004 03 29 | E12 | (0.3− | 1.7+) |
| 1995 10 25 | 261 | 0.4− | 0.1+ | 2002 09 25 | 704 | 0.4− | 1.0− | 2004 03 29 | E12 | (2.9+ | 0.6−) |
| 1999 12 14 | 704 | 0.7− | 0.4+ | 2002 09 25 | 704 | 0.5− | 0.9− | 2004 04 21 | E12 | 0.6− | 0.6+ |
| 1999 12 14 | 704 | 0.7− | 1.2− | 2002 09 27 | 704 | 0.7+ | 0.5− | 2004 04 21 | E12 | 0.6− | 0.9+ |
| 1999 12 14 | 704 | 1.7+ | 0.3− | 2002 09 27 | 704 | 1.4+ | 0.4+ | 2004 04 21 | E12 | 0.6+ | 0.2+ |
| 2000 01 11 | 704 | 1.4+ | 1.0− | 2002 09 27 | 704 | 0.4− | 0.2+ | 2004 04 21 | E12 | 1.0+ | 0.5− |
| 2000 01 11 | 704 | 0.7− | 0.1− | 2002 09 27 | 704 | 0.2+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.2− |
| 2000 01 11 | 704 | 0.2− | 1.1+ | 2002 09 27 | 704 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2000 01 11 | 704 | 0.4+ | 0.8− | 2002 11 16 | 704 | 1.1− | 0.9+ | 2006 11 06 | 644 | 0.3− | 0.5− |
| 2000 01 11 | 704 | 1.4− | 0.9− | 2002 11 16 | 704 | 0.0 | 0.8− | 2006 11 15 | 703 | 0.2+ | 0.5+ |
| 2000 03 09 | 704 | 0.6− | 0.2− | 2002 11 16 | 704 | (2.4− | 1.4−) | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2000 03 09 | 704 | 1.0+ | 0.1+ | 2002 11 16 | 704 | 0.4− | 0.4− | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2000 03 09 | 704 | 0.8− | 0.1− | 2002 11 16 | 704 | 0.6− | 0.2− | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2000 03 09 | 704 | 0.2− | 0.1+ | 2002 11 25 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 1.3+ |
| 2000 03 09 | 704 | 0.1− | 0.5− | 2002 11 25 | 704 | 1.3+ | 0.8+ | 2006 11 16 | 704 | 0.2− | 0.4− |
| 2002 08 27 | 704 | 0.7− | 1.0− | 2002 11 25 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.4− |
| 2002 08 27 | 704 | 1.2− | 0.7− | 2002 11 25 | 704 | 1.5+ | 0.2+ | 2006 11 16 | 704 | 0.4− | 1.0+ |
| 2002 08 27 | 704 | 0.7− | 0.6− | 2002 11 25 | 704 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.0 |
| 2002 08 27 | 704 | 0.9− | 0.2− | 2002 11 25 | 704 | 1.3+ | 1.1+ | 2006 11 19 | 704 | 0.3+ | 1.1+ |
| 2002 08 27 | 704 | 0.7− | 0.0 | 2002 11 25 | 704 | 0.8− | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2002 08 28 | 704 | 0.6+ | 0.2+ | 2002 11 25 | 704 | 1.4+ | 1.0+ | 2006 11 22 | 704 | 0.4+ | 0.3+ |
| 2002 08 28 | 704 | 0.4+ | 1.2+ | 2002 12 29 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2002 08 28 | 704 | 0.2+ | 0.6+ | 2002 12 29 | 704 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2002 08 28 | 704 | 0.3− | 0.9+ | 2002 12 29 | 704 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.4− |
| 2002 08 28 | 704 | 0.1− | 0.7+ | 2002 12 29 | 704 | 0.7− | 0.9− | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2002 08 28 | 704 | 1.1− | 0.1− | 2004 03 20 | E12 | (2.7+ | 1.3−) | 2006 12 01 | 704 | 1.2+ | 0.3+ |
| 2002 08 28 | 704 | (1.6− | 0.7+) | 2004 03 20 | E12 | (3.6+ | 2.8−) | 2006 12 01 | 704 | 0.3+ | 0.3+ |
| 2002 08 28 | 704 | 1.0+ | 0.9+ | 2004 03 20 | E12 | (2.3+ | 1.8−) | 2006 12 01 | 704 | 0.0 | 0.6+ |
| 2002 08 28 | 704 | 0.0 | 0.3+ | 2004 03 20 | E12 | (3.6+ | 2.3−) | | | | |

**(142044)∗ 2002 QZ$_{15}$**

Discovered 2002 Aug. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.18203 | | (2000.0) | | | |
| $n$ | 0.27497191 | $\omega$ | 157.37206 | | +0.92280662 | +0.38526346 |
| $a$ | 2.3421273 | $\Omega$ | 179.96765 | | −0.36785369 | +0.88115238 |
| $e$ | 0.1350444 | $i$ | 6.15723 | | −0.11450588 | +0.27412143 |
| $P$ | 3.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 691 | 0.2− | 0.4+ | 2002 09 06 | 704 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2001 03 21 | 691 | 0.3+ | 0.1+ | 2002 09 14 | 644 | 0.7− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 03 21 | 691 | 0.0 | 0.3+ | 2002 09 14 | 644 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2002 07 21 | 644 | 0.2− | 0.5+ | 2002 09 14 | 644 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 07 21 | 644 | 0.1− | 0.4+ | 2004 03 18 | 645 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2002 07 21 | 644 | 0.0 | 0.7+ | 2004 03 18 | 645 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 08 08 | 699 | 0.4+ | 0.6+ | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2002 08 08 | 699 | 0.1− | 0.8+ | 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 08 08 | 699 | 0.3+ | 0.6− | 2005 04 04 | G96 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2002 08 08 | 699 | 0.5− | 0.3− | 2005 04 04 | G96 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2002 08 12 | 704 | 0.2− | 0.6+ | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 1.1+ |
| 2002 08 12 | 704 | (0.6− | 1.8+) | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (0.5− | 1.9+) |
| 2002 08 12 | 704 | (1.3− | 1.7+) | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.4− |
| 2002 08 12 | 704 | 0.8+ | 1.3+ | 2005 05 14 | 691 | 0.4+ | 0.2− | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2002 08 18 | 644 | 0.5− | 0.2+ | 2005 05 14 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.5− | 0.3+ | 2005 05 14 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2006 08 28 | 703 | (0.4+ | 1.8+) | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 08 27 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.6− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2002 08 27 | 644 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.6+ | 1.1− | 2006 11 20 | 704 | (0.5− | 1.7+) |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.5+ | 2006 11 20 | 704 | (1.8+ | 2.9+) |
| 2002 08 28 | 704 | 0.8+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.8+ | 1.0+ |
| 2002 08 28 | 704 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2002 08 28 | 704 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.7+ | 0.4+ | 2006 10 03 | G96 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 09 06 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.7+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2002 09 06 | 704 | (1.8+ | 0.2+) | 2006 10 16 | 703 | (0.2+ | 1.7−) | | | | |

**(142045)∗ 2002 QD$_{16}$ = 1999 VQ$_{151}$**

Discovered 2002 Aug. 26 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69385)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.94151 | | (2000.0) | | | |
| $n$ | 0.27495822 | $\omega$ | 91.20233 | | +0.98064855 | +0.18748511 |
| $a$ | 2.3422050 | $\Omega$ | 257.99361 | | −0.19458555 | +0.90169311 |
| $e$ | 0.1259487 | $i$ | 3.30392 | | −0.02156124 | +0.38961374 |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.4− | 0.8− | 2002 08 09 | 608 | 0.8+ | 0.6− | 2006 10 21 | 703 | 0.4− | 0.3+ |
| 1995 07 25 | 691 | 0.3− | 0.8− | 2002 08 09 | 608 | 0.5+ | 0.4− | 2006 10 21 | 703 | 0.4− | 0.4+ |
| 1995 07 25 | 691 | 0.2− | 0.5− | 2002 08 16 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.5− | 0.0 |
| 1999 11 14 | 704 | 0.8+ | 1.6+ | 2002 08 16 | 644 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1999 11 14 | 704 | 1.0+ | 0.3− | 2002 08 16 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 1999 11 14 | 704 | 0.6+ | 0.7− | 2002 08 17 | 608 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 1999 11 14 | 704 | 0.5+ | 0.2− | 2002 08 17 | 608 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 1999 11 15 | 704 | 1.0+ | 0.8+ | 2002 08 17 | 608 | 0.5+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 1999 11 15 | 704 | 1.3+ | 0.6+ | 2002 08 26 | 644 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.3− |
| 1999 11 15 | 704 | 0.0 | 1.2+ | 2002 08 26 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1999 11 15 | 704 | 0.9+ | 0.6+ | 2002 08 26 | 644 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 1999 11 15 | 704 | 1.1+ | 1.3+ | 2002 08 28 | 644 | 0.1− | 1.4+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 1999 12 14 | 691 | 0.0 | 1.3− | 2002 08 28 | 644 | 0.4+ | 1.4+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 12 14 | 691 | 0.3+ | 0.9− | 2002 08 28 | 644 | 0.2+ | 1.2+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1999 12 14 | 691 | 0.6+ | 0.5− | 2003 12 21 | 691 | 0.3− | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2002 07 04 | 644 | 0.0 | 0.7+ | 2003 12 21 | 691 | 0.0 | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2002 07 04 | 644 | 0.0 | 0.5+ | 2003 12 21 | 691 | 0.6− | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.4+ |
| 2002 07 04 | 644 | 0.2− | 0.9+ | 2006 09 29 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.0+ | 0.0 |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2006 09 29 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.4+ |
| 2002 07 14 | 644 | 0.3+ | 0.5+ | 2006 09 29 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 07 14 | 644 | 0.1+ | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2002 07 22 | 644 | 0.0 | 0.1+ | 2006 10 03 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.9− | 0.0 |
| 2002 07 22 | 644 | 0.2+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2002 07 22 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2002 08 09 | 608 | 0.9+ | 0.5− | 2006 10 21 | 703 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.7+ |

**(142046)∗ 2002 QK$_{16}$ = 1999 TH$_{311}$ = 1999 TZ$_{327}$**

Discovered 2002 Aug. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35355)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.74471 | | (2000.0) | | | |
| $n$ | 0.27896705 | $\omega$ | 88.88438 | | +0.18024985 | +0.98348760 |
| $a$ | 2.3197122 | $\Omega$ | 191.53816 | | −0.93158663 | +0.16540862 |
| $e$ | 0.1744642 | $i$ | 4.64288 | | −0.31568392 | +0.07343115 |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 06 10 | 691 | 0.1− | 0.0 | 2002 08 28 | 644 | 0.4− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.0 |
| 1991 06 10 | 691 | 0.2− | 0.3− | 2002 08 28 | 644 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 1991 06 10 | 691 | 0.1+ | 0.2− | 2002 08 28 | 644 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 1999 10 06 | 691 | 0.5+ | 0.0 | 2002 09 06 | 704 | 0.9+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 1999 10 06 | 691 | 0.1+ | 0.2+ | 2002 09 06 | 704 | 0.6+ | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 1999 10 06 | 691 | 0.2+ | 0.2+ | 2002 09 06 | 704 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 1999 10 10 | 691 | 0.8− | 0.0 | 2002 09 06 | 704 | 1.4+ | 1.0+ | 2006 10 02 | G96 | 0.7+ | 0.4+ |
| 1999 10 10 | 691 | 0.6− | 0.5− | 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 1999 10 10 | 691 | 0.3+ | 0.1− | 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 1999 10 15 | 691 | 0.2+ | 0.1− | 2005 03 13 | G96 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 1999 10 15 | 691 | 0.2+ | 0.3+ | 2005 03 13 | G96 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.1− |
| 1999 10 15 | 691 | 0.2+ | 0.3+ | 2005 03 13 | G96 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.5+ | 0.0 |
| 2002 07 21 | 644 | 0.2+ | 0.3+ | 2005 03 13 | G96 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2002 07 21 | 644 | 0.6+ | 0.1− | 2005 04 04 | G96 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 2002 07 21 | 644 | 0.3− | 0.1+ | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.5+ | 0.1+ |
| 2002 08 13 | 699 | 0.2+ | 0.6− | 2005 04 04 | G96 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.4− | 0.4+ |
| 2002 08 13 | 699 | 0.3− | 0.7− | 2005 04 04 | G96 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.5+ |
| 2002 08 13 | 699 | 0.7+ | 0.1+ | 2005 04 06 | 691 | 0.2+ | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.6+ |
| 2002 08 13 | 699 | 0.2− | 0.5+ | 2005 04 06 | 691 | 0.6+ | 0.9+ | 2006 10 19 | 691 | 0.3+ | 0.5+ |
| 2002 08 16 | 644 | 0.0 | 0.2+ | 2005 04 06 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.5+ |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2005 04 18 | 703 | (0.4+ | 1.6+) | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2002 08 16 | 644 | 0.1− | 0.2− | 2005 04 18 | 703 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.3+ |
| 2002 08 17 | 608 | 1.1− | 0.3− | 2005 04 18 | 703 | 0.5− | 0.8+ | 2006 10 23 | 691 | 0.5− | 0.4− |
| 2002 08 17 | 608 | 0.9− | 0.1+ | 2005 04 18 | 703 | 0.5− | 1.0+ | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2002 08 17 | 608 | 0.9− | 0.1− | 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.2+ |
| 2002 08 26 | 644 | 0.3− | 0.3+ | 2005 05 12 | 691 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2002 08 26 | 644 | 0.3− | 0.4+ | 2005 05 12 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.3− |

**(142047)∗ 2002 QK$_{18}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.47534 | | (2000.0) | | | |
| $n$ | 0.25686204 | $\omega$ | 144.89301 | | +0.67382767 | −0.73849077 |
| $a$ | 2.4509593 | $\Omega$ | 262.73060 | | +0.67220384 | +0.62630516 |
| $e$ | 0.2198891 | $i$ | 1.40033 | | +0.30675442 | +0.24974631 |
| $P$ | 3.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 26 | 691 | 0.2+ | 0.0 | 2002 10 07 | 704 | 0.7+ | 1.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 1995 12 26 | 691 | 0.1− | 0.1− | 2002 10 07 | 704 | 1.5− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.0 |
| 2000 02 14 | 691 | 0.4− | 0.2− | 2002 10 11 | 704 | 1.1+ | 0.0 | 2006 10 15 | 691 | 0.4− | 0.2− |
| 2000 02 14 | 691 | 0.3− | 0.4− | 2002 10 11 | 704 | (1.6+ | 0.7−) | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 2000 02 14 | 691 | 0.3− | 0.4− | 2002 10 11 | 704 | 0.8+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.2− | 0.0 | 2002 10 11 | 704 | 0.5+ | 1.0− | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2000 03 03 | 704 | 0.1− | 1.4+ | 2002 10 11 | 704 | (0.9+ | 1.7−) | 2006 10 17 | 703 | 0.4− | 0.3− |
| 2000 03 03 | 704 | (0.0 | 2.9+) | 2002 11 06 | 704 | 1.1+ | 0.8+ | 2006 10 17 | 703 | 1.2− | 1.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.6− | 0.2+ | 2002 11 06 | 704 | 1.3+ | 0.6+ | 2006 10 17 | 703 | (0.3− | 5.2−) | | |
| 2001 05 23 | 807 | 0.2− | 0.1+ | 2002 11 06 | 704 | (1.8+ | 0.7+) | 2006 10 19 | 704 | 1.1− | 1.1− | | |
| 2002 08 12 | 704 | 0.1+ | 0.6− | 2004 03 14 | 691 | 0.5+ | 0.3+ | 2006 10 19 | 704 | 0.6− | 0.7+ | | |
| 2002 08 12 | 704 | 0.4+ | 0.1+ | 2004 03 14 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 704 | 1.0− | 0.5+ | | |
| 2002 08 12 | 704 | 0.8− | 1.0− | 2004 03 14 | 691 | 0.5+ | 0.7+ | 2006 10 19 | 704 | 0.8− | 0.9+ | | |
| 2002 08 12 | 704 | 0.0 | 1.1+ | 2004 03 30 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2002 08 12 | 704 | 0.5− | 0.6+ | 2004 03 30 | 691 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.4+ | | |
| 2002 08 16 | 291 | 0.3− | 0.2− | 2004 03 30 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2002 08 16 | 291 | 0.3− | 0.2− | 2006 08 30 | 699 | 0.8+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.6+ | | |
| 2002 08 16 | 291 | 0.6− | 0.1− | 2006 08 30 | 699 | (1.5+ | 0.3+) | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2002 08 28 | 644 | 0.4− | 0.6+ | 2006 08 30 | 699 | 0.6+ | 0.6− | 2006 10 19 | 644 | 0.1+ | 0.3+ | | |
| 2002 08 28 | 644 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.8− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 08 29 | 291 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 08 29 | 291 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 29 | 291 | 0.1− | 0.6− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.0 | | |
| 2002 09 05 | 704 | 0.2− | 0.6+ | 2006 09 15 | 691 | 1.0+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 1.0+ | | |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.1+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.3+ | 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.2− | 1.2− | | |
| 2002 09 07 | 704 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.7+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 09 07 | 704 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.7+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 09 07 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 09 14 | 644 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.0 | | |
| 2002 09 14 | 644 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1− | | |
| 2002 09 17 | 644 | 0.5− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.1− | | |
| 2002 09 17 | 644 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.6+ | 0.2+ | | |
| 2002 09 17 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 0.3− | 0.1+ | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.2− | 2006 10 29 | 704 | 0.7− | 0.2+ | | |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.1− | 2006 10 29 | 704 | 0.9− | 0.1+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 1.3− | 2006 10 29 | 704 | 0.9− | 0.0 | | |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.6− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.6− | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2002 10 06 | 704 | 0.7+ | 0.8+ | 2006 09 29 | 704 | 0.5− | 0.5− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2002 10 06 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.5− | 0.1− | 2006 11 13 | 691 | 0.4+ | 0.1− | | |
| 2002 10 06 | 704 | 0.5+ | 0.9+ | 2006 10 03 | 704 | 0.7− | 0.3− | 2006 11 13 | 691 | 0.5+ | 0.2− | | |
| 2002 10 06 | 704 | (1.5+ | 1.4+) | 2006 10 03 | 704 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.1− | | |
| 2002 10 06 | 704 | 1.1+ | 0.5+ | 2006 10 03 | 704 | 0.7− | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.3− | | |
| 2002 10 07 | 704 | 0.1− | 0.2− | 2006 10 03 | 704 | 0.6− | 0.9+ | 2006 11 20 | G96 | 0.3+ | 0.0 | | |
| 2002 10 07 | 704 | 0.6− | 0.7+ | 2006 10 03 | 704 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.1− | | |
| 2002 10 07 | 704 | 0.2+ | 1.0+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.1− | | |

**(142048)∗ 2002 QU$_{18}$ = 2000 AW$_{15}$**

Discovered 2002 Aug. 26 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35357)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.87958 | | (2000.0) | | +0.36755756 | −0.92756149 |
| $n$ | 0.27462919 | $\omega$ | 340.66830 | | +0.86188447 | +0.31255251 |
| $a$ | 2.3440754 | $\Omega$ | 87.72033 | | +0.34936600 | +0.20479408 |
| $e$ | 0.1460415 | $i$ | 3.86277 | | | |
| $P$ | 3.59 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.3− | 0.9− | 2004 02 19 | 608 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.2+ | | |
| 2000 01 03 | 704 | 0.3− | 0.5− | 2004 02 19 | 608 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.8− | 0.5+ | | |
| 2000 01 03 | 704 | 0.3+ | 0.6− | 2004 03 10 | 644 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 1.1+ | 0.0 | | |
| 2000 01 03 | 704 | 0.1− | 0.0 | 2004 03 10 | 644 | 0.2− | 0.6+ | 2006 11 14 | 704 | 0.5− | 0.3+ | | |
| 2000 01 03 | 704 | 0.5+ | 0.4+ | 2004 03 10 | 644 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.3+ | 0.8+ | | |
| 2000 01 04 | 704 | 0.1+ | 0.9+ | 2004 03 20 | 704 | 0.6− | 0.8+ | 2006 11 14 | 704 | 0.6+ | 0.5+ | | |
| 2000 01 04 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.3− | | |
| 2000 01 04 | 704 | 0.2− | 0.4− | 2004 03 20 | 704 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2000 01 04 | 704 | 0.4+ | 0.0 | 2004 03 20 | 704 | 0.1− | 0.9+ | 2006 11 16 | G96 | 0.3− | 0.2− | | |
| 2001 05 18 | 691 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.7+ | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2001 05 18 | 691 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2001 05 18 | 691 | 0.4+ | 0.3+ | 2004 03 22 | 704 | (0.1+ | 2.1+) | 2006 11 17 | 704 | 0.6+ | 0.9+ | | |
| 2002 08 19 | 644 | 0.1+ | 1.4+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | 704 | (1.7+ | 2.1+) | | |
| 2002 08 19 | 644 | 0.2− | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.8+ | | |
| 2002 08 19 | 644 | 0.1− | 1.2+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 17 | 704 | 1.3+ | 0.3+ | | |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 11 17 | 704 | 1.0+ | 0.2+ | | |
| 2002 08 26 | 644 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.7+ | 0.3+ | | |
| 2002 08 26 | 644 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 1.2+ | 0.0 | | |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2002 08 29 | 644 | 0.3− | 0.5+ | 2006 11 02 | 703 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.1− | | |
| 2002 08 29 | 644 | 0.5− | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.7+ | 0.0 | | |
| 2002 08 30 | 644 | 0.2+ | 0.5− | 2006 11 02 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.4+ | | |
| 2002 08 30 | 644 | 0.2+ | 0.6− | 2006 11 02 | 703 | 1.4− | 1.0− | 2006 11 20 | 704 | 0.4+ | 0.6+ | | |
| 2002 08 30 | 644 | 0.1− | 0.6− | 2006 11 02 | 703 | 0.9− | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.4+ | | |
| 2002 09 16 | 644 | 0.4− | 0.5+ | 2006 11 02 | 703 | 0.6− | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.4+ | | |
| 2002 09 16 | 644 | 0.7− | 0.5+ | 2006 11 02 | 703 | 0.0 | 1.1+ | 2006 11 20 | 704 | 0.7− | 0.2− | | |
| 2002 09 16 | 644 | 0.7− | 0.2+ | 2006 11 02 | 703 | 1.3− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.7− | | |
| 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.6− | | |
| 2004 02 17 | 704 | 0.2− | 1.0+ | 2006 11 09 | 644 | 0.9− | 0.1+ | 2006 11 28 | 704 | 0.0 | 1.1− | | |
| 2004 02 17 | 704 | (0.8+ | 1.6+) | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.5− | | |
| 2004 02 17 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.9− | 0.6+ | 2006 11 28 | 704 | 0.0 | 0.9− | | |
| 2004 02 19 | 608 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.4+ | | | | | | |

**(142049)∗ 2002 QK$_{20}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.82933 | | (2000.0) | | +0.55225486 | +0.83141922 |
| $n$ | 0.26489617 | $\omega$ | 80.88541 | | −0.79592175 | +0.50394488 |
| $a$ | 2.4011480 | $\Omega$ | 222.82453 | | −0.24803856 | +0.23405480 |
| $e$ | 0.1376159 | $i$ | 5.17322 | | | |
| $P$ | 3.72 | $H$ | 16.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.4+ | 0.3+ | 2005 04 11 | G96 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.0 | | |
| 2002 08 16 | 704 | 0.0 | 0.6− | 2005 04 14 | 703 | 1.4− | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.4+ | | |
| 2002 08 16 | 704 | 0.7+ | 0.3+ | 2005 04 14 | 703 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3+ | | |
| 2002 08 28 | 644 | 0.2+ | 0.7+ | 2005 04 14 | 703 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.4+ | | |
| 2002 08 28 | 644 | 0.2+ | 0.8+ | 2005 04 14 | 703 | (1.9− | 3.5+) | 2006 10 20 | 691 | 0.0 | 0.3+ | | |
| 2002 08 28 | 644 | 0.0 | 0.7+ | 2005 05 01 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ | | |
| 2002 08 29 | 644 | 0.1+ | 0.5+ | 2005 05 01 | 644 | 0.5+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.2+ | | |
| 2002 08 29 | 644 | 0.1+ | 0.6+ | 2005 05 01 | 644 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2002 08 29 | 644 | 0.0 | 0.5+ | 2005 05 07 | G96 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | | |
| 2002 09 05 | 699 | 0.1− | 0.9+ | 2005 05 07 | G96 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 09 05 | 699 | 0.3− | 0.7+ | 2005 05 07 | G96 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 09 05 | 699 | 0.4− | 0.7+ | 2005 05 07 | G96 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3− | | |
| 2002 09 05 | 699 | 0.0 | 0.5+ | 2005 05 08 | 699 | 0.4+ | 1.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.4− | 1.3+ | 2005 05 08 | 699 | 0.5− | 1.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.9+ | 2005 05 08 | 699 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.0 | | |
| 2002 09 06 | 704 | 0.6+ | 0.2+ | 2005 05 08 | 699 | 0.7− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.0 | 0.1+ | 2005 05 09 | 699 | 0.2+ | 1.1+ | 2006 10 28 | 704 | 0.9+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.5+ | 0.4+ | 2005 05 09 | 699 | 0.2+ | 0.2+ | 2006 10 28 | 704 | (1.5− | 0.2+) | | |
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2005 05 09 | 699 | 1.2− | 0.2+ | 2006 10 28 | 704 | 0.3+ | 0.1− | | |
| 2002 09 13 | 644 | 0.7− | 0.3+ | 2005 05 09 | 699 | 0.8+ | 1.0+ | 2006 10 28 | 704 | 0.4− | 1.0+ | | |
| 2002 09 13 | 644 | 0.5− | 0.5+ | 2005 05 10 | G96 | 1.3− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.2− | | |
| 2002 09 30 | 704 | 0.3− | 0.6+ | 2005 05 10 | G96 | 0.8+ | 1.2− | 2006 10 29 | 691 | 0.2− | 0.2− | | |
| 2002 09 30 | 704 | 0.3+ | 1.1+ | 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.2− | | |
| 2002 09 30 | 704 | 0.6+ | 1.2− | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3− | | |
| 2002 09 30 | 704 | 0.6+ | 0.4− | 2005 05 13 | 704 | (0.1− | 2.8+) | 2006 11 09 | 691 | 1.0− | 0.2− | | |
| 2002 10 04 | 704 | 0.5+ | 0.0 | 2005 05 13 | 704 | 1.3+ | 0.9+ | 2006 11 09 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.2+ | 0.2− | 2005 05 13 | 704 | 0.9+ | 1.0− | 2006 11 09 | 644 | 0.3+ | 0.0 | | |
| 2002 10 04 | 704 | 0.6+ | 0.3+ | 2005 05 13 | 704 | 0.3+ | 0.3− | 2006 11 09 | 691 | 0.1− | 0.3+ | | |
| 2002 10 04 | 704 | 1.4+ | 0.2− | 2005 05 14 | 644 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | |
| 2002 10 04 | 704 | 0.8+ | 0.2− | 2005 05 14 | 644 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.4− | 0.3+ | | |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2005 05 14 | 644 | 0.2+ | 0.7+ | 2006 11 11 | 691 | 0.4− | 0.6+ | | |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 11 | 691 | 0.6− | 0.4+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.3+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.7− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | (1.9+ | 0.4+) |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2006 09 28 | 198 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.4+ |
| 2003 12 22 | 691 | 0.1+ | 0.1− | 2006 09 28 | 198 | 0.0 | 0.2+ | 2006 11 15 | 683 | 0.9+ | 0.3+ |
| 2003 12 22 | 691 | 0.0 | 0.3+ | 2006 09 28 | 198 | 0.1− | 0.2+ | 2006 11 15 | 683 | 0.1− | 1.4+ |
| 2003 12 22 | 691 | 0.0 | 0.0 | 2006 09 28 | 198 | 0.2− | 0.2+ | 2006 11 17 | 703 | (1.9− | 0.0 ) |
| 2005 04 07 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 198 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.9− |
| 2005 04 07 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | (1.8+ | 0.2+) |
| 2005 04 07 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.9− |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.5+ | 0.3+ |
| 2005 04 11 | G96 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2005 04 11 | G96 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.3+ | 0.4+ |

**(142050)∗ 2002 QP$_{20}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.38337 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25943973 | $\omega$ | 260.98315 | | −0.22949296 | | +0.97330672 |
| $a$ | 2.4346978 | $\Omega$ | 355.74688 | | −0.87838984 | | −0.20828249 |
| $e$ | 0.1675730 | $i$ | 2.04504 | | −0.41924250 | | −0.09639725 |
| $P$ | 3.80 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 291 | 0.4− | 0.1− | 2005 03 13 | 703 | 1.2− | 0.2− | 2005 05 22 | 644 | 0.1− | 0.3+ |
| 2002 08 14 | 291 | 0.2− | 0.0 | 2005 03 13 | 703 | 0.1− | 0.9+ | 2006 07 21 | G96 | 0.4+ | 0.2− |
| 2002 08 14 | 291 | 0.4− | 0.0 | 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.1+ | 0.8+ | 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 07 21 | G96 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.3− | 0.3+ | 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.5− |
| 2002 08 28 | 644 | 0.1+ | 0.5+ | 2005 03 31 | 699 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.5− |
| 2002 08 29 | 644 | 0.4− | 0.1+ | 2005 03 31 | 699 | 0.7+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.6+ |
| 2002 08 29 | 644 | 0.3− | 0.1+ | 2005 03 31 | 699 | (1.4+ | 1.9+) | 2006 08 28 | 703 | 0.3+ | 0.6− |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2005 03 31 | 699 | 0.4+ | 0.5+ | 2006 08 28 | 703 | (0.7+ | 1.7−) |
| 2002 09 05 | 699 | 0.2+ | 0.2+ | 2005 04 02 | 644 | 0.4+ | 0.6+ | 2006 09 12 | 703 | 0.1− | 0.3− |
| 2002 09 05 | 699 | 0.4− | 0.6+ | 2005 04 02 | 644 | 0.6+ | 0.8+ | 2006 09 12 | 703 | 0.8− | 0.3+ |
| 2002 09 05 | 699 | 0.1− | 0.5+ | 2005 04 02 | 644 | 0.8+ | 1.0+ | 2006 09 12 | 703 | (2.0− | 2.3+) |
| 2002 09 05 | 699 | 0.2− | 1.2+ | 2005 04 04 | 704 | 0.5− | 0.0 | 2006 09 12 | 703 | 1.0− | 0.6+ |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2005 04 04 | 704 | 0.6+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.3− | 0.2+ | 2005 04 04 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 0.7− | 1.1+ | 2005 04 04 | 704 | 0.7+ | 1.1+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.3− | 1.1+ | 2005 04 05 | G96 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.3− |
| 2002 09 05 | 704 | 0.6− | 0.9+ | 2005 04 05 | G96 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.9+ | 0.4+ |
| 2002 09 08 | 608 | 0.1− | 0.7− | 2005 04 05 | G96 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.9− | 0.6+ |
| 2002 09 08 | 608 | 0.2+ | 0.9− | 2005 04 05 | G96 | 0.1− | 0.4+ | 2006 09 19 | 699 | 1.0− | 0.0 |
| 2002 09 08 | 608 | 0.3− | 0.0 | 2005 04 07 | 704 | 1.0+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2005 04 07 | 704 | 0.6+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 04 07 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2005 04 07 | G96 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 1.2− | 1.1+ | 2005 04 07 | G96 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 1.4+ | 2005 04 07 | G96 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | (0.3− | 2.6+) | 2005 04 07 | G96 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2002 10 09 | 291 | 0.3+ | 0.3+ | 2005 04 09 | 704 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.4+ |
| 2002 10 09 | 291 | 0.2+ | 0.2+ | 2005 04 09 | 704 | 0.3− | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2002 10 09 | 291 | 0.5+ | 0.3+ | 2005 04 09 | 704 | 0.6+ | 0.6+ | 2006 10 17 | G96 | 0.4+ | 0.1− |
| 2003 12 22 | 704 | 0.8− | 0.4− | 2005 04 09 | 704 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2003 12 22 | 704 | 0.7+ | 0.0 | 2005 04 09 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2003 12 22 | 704 | (0.1+ | 1.8+) | 2005 04 12 | 704 | 1.0+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 1.3− | 1.0+ | 2005 04 12 | 704 | 0.8+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2003 12 25 | 691 | 0.1− | 0.7+ | 2005 04 12 | 704 | 0.9+ | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2003 12 25 | 691 | 0.1+ | 0.7+ | 2005 04 12 | 704 | 1.2+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2003 12 25 | 691 | 0.2+ | 0.6+ | 2005 04 12 | 704 | 0.6+ | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2005 04 13 | 699 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.3− | 0.2+ |
| 2005 03 08 | G96 | 0.3− | 0.1+ | 2005 04 13 | 699 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.5− | 0.0 |
| 2005 03 08 | G96 | 0.3− | 0.0 | 2005 04 13 | 699 | 0.6+ | 0.3− | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2005 04 13 | 699 | 0.5− | 1.1+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2005 03 13 | 703 | 0.0 | 0.1− | 2005 05 22 | 644 | 0.1− | 0.3+ | | | | |
| 2005 03 13 | 703 | 0.4− | 0.8+ | 2005 05 22 | 644 | 0.3− | 0.1− | | | | |

**(142051)∗ 2002 QQ$_{20}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.61054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26844036 | $\omega$ | 197.59804 | | +0.98683028 | | +0.15727555 |
| $a$ | 2.3799665 | $\Omega$ | 153.26508 | | −0.13645672 | | +0.93495234 |
| $e$ | 0.1538401 | $i$ | 4.82262 | | −0.08686519 | | +0.31800712 |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 10 | 691 | 0.0 | 0.1+ | 2002 09 05 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.1− | 1.1+ |
| 1994 06 10 | 691 | 0.1− | 0.6+ | 2002 09 05 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6− | 1.0− |
| 1994 06 10 | 691 | 0.8− | 0.8+ | 2002 09 07 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2001 03 15 | 691 | 0.2+ | 0.1+ | 2002 09 07 | 704 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.9+ | 1.2+ |
| 2001 03 15 | 691 | 0.4+ | 0.5+ | 2002 09 07 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 1.1+ |
| 2001 03 15 | 691 | 0.2+ | 0.0 | 2002 09 07 | 704 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.7+ | 1.0+ |
| 2002 08 12 | 704 | 0.4− | 1.0+ | 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 11 01 | 703 | 1.1− | 0.0 |
| 2002 08 12 | 704 | 0.5− | 1.5+ | 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 11 01 | 703 | 0.8− | 0.1− |
| 2002 08 12 | 704 | 0.5+ | 0.9+ | 2002 09 15 | 644 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.1+ | 0.5− |
| 2002 08 12 | 704 | 0.1+ | 1.4+ | 2002 10 01 | 608 | 0.2+ | 0.3+ | 2006 11 01 | 703 | 0.1− | 0.2− |
| 2002 08 12 | 608 | 0.0 | 1.2+ | 2002 10 01 | 608 | 0.5+ | 0.4− | 2006 11 08 | 644 | 0.3− | 0.4+ |
| 2002 08 12 | 608 | 0.1− | 0.7+ | 2002 10 01 | 608 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2002 08 12 | 608 | 0.3+ | 1.2+ | 2003 12 25 | 645 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2002 08 20 | 644 | 0.3+ | 0.1+ | 2003 12 25 | 645 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 08 20 | 644 | 0.1+ | 0.1+ | 2004 01 30 | 691 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.3+ |
| 2002 08 20 | 644 | 0.2− | 0.2− | 2004 01 30 | 691 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2002 08 28 | 644 | 0.4− | 0.5+ | 2004 01 30 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2005 05 08 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.6+ |
| 2002 08 28 | 644 | 0.4− | 0.5+ | 2005 05 08 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.5− | 2005 05 08 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.7− | 2005 05 13 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.6− | 0.7+ |
| 2002 08 29 | 644 | 0.1− | 0.6− | 2005 05 13 | 691 | 0.0 | 0.5+ | 2006 11 17 | 704 | (1.3+ | 1.8+) |
| 2002 09 03 | 608 | 0.3− | 1.2+ | 2005 05 13 | 691 | 0.2+ | 0.7− | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2002 09 03 | 608 | 1.5+ | 0.8+ | 2005 06 05 | 691 | 0.4+ | 0.4+ | 2006 11 17 | 704 | 0.6− | 0.4+ |
| 2002 09 03 | 608 | 0.1+ | 0.9+ | 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.4− | 0.1+ |
| 2002 09 05 | 699 | 0.0 | 0.5+ | 2005 06 05 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2002 09 05 | 699 | 0.5− | 0.4+ | 2006 09 18 | 703 | 1.4+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2002 09 05 | 699 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2002 09 05 | 699 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.8− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2006 09 18 | 703 | 0.4− | 0.6− | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | (0.6− | 2.3−) | 2006 11 23 | G96 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 1.0− | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.0 |

**(142052)∗ 2002 QS$_{20}$ = 1994 LT$_1$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35359)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.91317 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26737623 | $\omega$ | 171.43665 | | +0.85774296 | | +0.51200672 |
| $a$ | 2.3862770 | $\Omega$ | 157.58106 | | −0.47852995 | | +0.82798595 |
| $e$ | 0.1256931 | $i$ | 6.94430 | | −0.18784594 | | +0.22866654 |
| $P$ | 3.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 06 | 691 | 0.3+ | 0.2+ | 2002 09 05 | 699 | 0.1+ | 1.4+ | 2005 05 07 | 703 | (0.9− | 1.8+) |
| 1994 06 06 | 691 | 0.1− | 0.0 | 2002 09 05 | 704 | 0.0 | 0.2− | 2005 05 11 | 703 | 0.8− | 0.8− |
| 1994 06 06 | 691 | 0.8+ | 1.3− | 2002 09 05 | 699 | 0.1+ | 0.3+ | 2005 05 11 | 703 | (0.8− | 2.0−) |
| 1994 06 11 | 691 | 0.3− | 0.3− | 2002 09 05 | 704 | 0.4+ | 0.5− | 2005 05 11 | 703 | 0.1+ | 0.7− |
| 1994 06 11 | 691 | 0.8− | 0.3+ | 2002 09 05 | 704 | 0.4+ | 0.2+ | 2005 05 11 | 703 | 0.9− | 0.6+ |
| 1994 06 11 | 691 | 0.3− | 0.3+ | 2002 09 07 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 699 | 1.1− | 1.1+ |
| 2001 03 19 | 704 | 0.9+ | 0.2+ | 2002 09 07 | 704 | 0.4− | 0.3+ | 2006 09 29 | 699 | 0.6− | 1.2+ |
| 2001 03 19 | 704 | 0.6+ | 0.7+ | 2002 09 07 | 704 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.0 |
| 2001 03 19 | 704 | 0.8+ | 0.5− | 2002 09 07 | 704 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.4+ |
| 2001 03 19 | 704 | 0.9+ | 0.7+ | 2002 09 08 | 608 | 0.3− | 1.2+ | 2006 09 30 | 703 | 0.1− | 0.7− |
| 2001 04 16 | 645 | 0.0 | 0.3+ | 2002 09 08 | 608 | 0.1− | 1.2+ | 2006 09 30 | 703 | 0.6− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.3+ | 2002 09 08 | 608 | 0.1− | 1.0+ | 2006 09 30 | 703 | 1.0− | 0.6+ | | |
| 2002 08 12 | 704 | 0.2+ | 0.4+ | 2002 09 15 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.7+ | | |
| 2002 08 12 | 704 | 0.5+ | 0.4+ | 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2002 08 12 | 704 | 0.4+ | 0.2+ | 2002 09 15 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 2002 08 12 | 704 | 0.1− | 0.5+ | 2002 09 17 | 608 | 0.1+ | 0.9− | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2002 08 28 | 644 | 0.5− | 0.3+ | 2002 09 17 | 608 | 0.2− | 1.3− | 2006 10 16 | 703 | 0.5+ | 0.5+ | | |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2002 09 17 | 608 | (0.0 | 1.9−) | 2006 10 16 | 703 | 0.3− | 0.2− | | |
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2002 10 01 | 608 | 0.9− | 0.3− | 2006 10 16 | 703 | (1.1+ | 1.6−) | | |
| 2002 08 29 | 291 | 0.1− | 0.1− | 2002 10 01 | 608 | 0.3− | 0.6− | 2006 10 16 | 703 | 1.2+ | 1.4− | | |
| 2002 08 29 | 291 | 1.0− | 0.5− | 2002 10 01 | 608 | 0.4− | 0.2− | 2006 10 22 | 703 | (0.4− | 1.7+) | | |
| 2002 08 29 | 291 | 0.0 | 0.0 | 2002 10 03 | 704 | (1.0+ | 1.5+) | 2006 10 22 | 703 | 0.1+ | 1.2+ | | |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2002 10 03 | 704 | 0.1+ | 1.1+ | 2006 10 22 | 703 | (0.8+ | 1.7+) | | |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2002 10 03 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.3− | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2002 08 30 | 291 | 0.3+ | 0.2+ | 2002 10 03 | 704 | 0.6− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2002 08 30 | 291 | 0.4+ | 0.0 | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 08 30 | 291 | 0.4+ | 0.1+ | 2002 10 05 | 704 | 0.7+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2002 09 03 | 608 | 0.7− | 0.3− | 2002 10 05 | 704 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2002 09 03 | 608 | 0.2− | 0.2− | 2003 12 22 | 704 | (0.8+ | 1.6+) | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2002 09 03 | 608 | 0.4− | 0.3− | 2003 12 22 | 704 | 0.6+ | 1.1+ | 2006 11 13 | 703 | 0.9+ | 0.6− | | |
| 2002 09 05 | 699 | 0.4+ | 0.1+ | 2003 12 22 | 704 | (0.9+ | 2.3+) | 2006 11 13 | 703 | 0.2+ | 0.7− | | |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2005 05 07 | 703 | 0.0 | 0.7+ | 2006 11 13 | 703 | 0.1− | 0.0 | | |
| 2002 09 05 | 699 | 0.3+ | 0.2+ | 2005 05 07 | 703 | 0.5+ | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.2− | | |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2005 05 07 | 703 | 0.9+ | 0.8+ | | | | | | |

**(142053)∗ 2002 QL$_{21}$ = 2002 QX$_{69}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Id. A. Doppler (d, *MPO* 75489)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 55.42307 | | (2000.0) | | | |
| *n* | 0.26858254 | ω | 138.99137 | | +0.71747559 | +0.69658125 |
| *a* | 2.3791265 | Ω | 176.85343 | | −0.64748158 | +0.66786646 |
| *e* | 0.2259797 | *i* | 1.90864 | | −0.25689760 | +0.26216208 |
| *P* | 3.67 | *H* | 16.6 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 10 | 691 | 0.1+ | 0.2− | 2002 09 05 | 704 | 0.3− | 0.1− | 2005 03 08 | G96 | 0.2− | 0.3+ | | |
| 1991 09 10 | 691 | 0.1+ | 0.4+ | 2002 09 05 | 704 | 0.1− | 0.6+ | 2005 03 08 | G96 | 0.5− | 0.0 | | |
| 1991 09 10 | 691 | 0.3− | 0.1+ | 2002 09 07 | 704 | 0.6− | 0.3+ | 2005 03 08 | G96 | 0.6− | 0.0 | | |
| 1994 05 03 | 691 | 0.1− | 0.3− | 2002 09 07 | 704 | 0.3− | 0.0 | 2005 04 05 | G96 | 0.5− | 0.4+ | | |
| 1994 05 03 | 691 | 0.0 | 0.2+ | 2002 09 07 | 704 | 0.3− | 0.3+ | 2005 04 05 | G96 | 0.4− | 0.5+ | | |
| 1994 05 03 | 691 | 0.2− | 0.3+ | 2002 09 07 | 704 | 0.4− | 0.2+ | 2005 04 05 | G96 | 0.0 | 0.3− | | |
| 2002 07 14 | 704 | 0.7+ | 0.1− | 2002 09 07 | 704 | 0.6− | 0.1− | 2005 04 05 | G96 | 0.3− | 0.4+ | | |
| 2002 07 14 | 704 | 0.5+ | 1.1+ | 2002 09 09 | 608 | 0.1− | 0.1− | 2005 04 06 | G96 | (1.8+ | 0.2+) | | |
| 2002 07 14 | 704 | 0.8− | 0.2+ | 2002 09 09 | 608 | 0.0 | 0.2+ | 2005 04 06 | G96 | 0.2− | 0.3+ | | |
| 2002 07 14 | 704 | 0.1− | 0.2+ | 2002 09 09 | 608 | 0.2+ | 0.2− | 2005 04 06 | G96 | 0.3− | 0.3+ | | |
| 2002 08 06 | 950 | 0.3− | 0.2+ | 2002 09 12 | 644 | 0.2− | 0.2+ | 2005 04 06 | G96 | 0.4− | 0.1+ | | |
| 2002 08 06 | 950 | 0.6+ | 0.5+ | 2002 09 12 | 644 | 0.4− | 0.4+ | 2005 04 07 | G96 | 0.2− | 0.1+ | | |
| 2002 08 12 | 704 | 0.2+ | 1.2+ | 2002 09 12 | 644 | 0.1− | 0.3+ | 2005 04 07 | G96 | 0.2− | 0.5+ | | |
| 2002 08 12 | 704 | 0.1+ | 1.1+ | 2002 09 14 | 644 | 0.2− | 0.3+ | 2005 04 07 | G96 | 0.5− | 0.5− | | |
| 2002 08 12 | 704 | 0.2+ | 0.5− | 2002 09 14 | 644 | 0.3− | 0.3+ | 2005 04 07 | G96 | 0.2− | 0.5+ | | |
| 2002 08 12 | 704 | 0.4+ | 0.7− | 2002 09 14 | 644 | 0.4− | 0.3+ | 2005 04 09 | 691 | 0.4+ | 0.4+ | | |
| 2002 08 12 | 704 | 0.1− | 0.3+ | 2002 09 15 | 699 | 0.8− | 1.1+ | 2005 04 09 | 691 | 0.3+ | 0.3+ | | |
| 2002 08 21 | 644 | 0.5+ | 0.8+ | 2002 09 15 | 699 | 0.7+ | 0.7+ | 2005 04 09 | 691 | 0.4+ | 0.4+ | | |
| 2002 08 21 | 644 | 0.3+ | 0.2+ | 2002 09 15 | 699 | 0.7− | 0.9+ | 2005 04 11 | 691 | 0.4+ | 0.4+ | | |
| 2002 08 21 | 644 | 0.5+ | 0.4+ | 2002 09 15 | 699 | 0.2− | 0.2− | 2005 04 11 | 691 | 0.5+ | 0.5+ | | |
| 2002 08 28 | 644 | 0.0 | 0.1− | 2002 09 25 | 608 | 1.2− | 0.8− | 2005 04 11 | 691 | 0.3+ | 0.3+ | | |
| 2002 08 28 | 644 | 0.1+ | 0.3+ | 2002 09 25 | 608 | 1.2− | 0.3− | 2005 05 07 | 691 | 0.2+ | 0.4+ | | |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2002 09 25 | 608 | 0.9− | 0.8− | 2005 05 07 | 691 | 0.2+ | 0.5+ | | |
| 2002 08 29 | 644 | 0.3− | 0.5− | 2002 10 03 | 704 | 0.1− | 0.6+ | 2005 05 07 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 29 | 644 | 0.3− | 0.4− | 2002 10 03 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.5+ | | |
| 2002 08 29 | 644 | 0.2− | 0.4− | 2002 10 03 | 704 | 0.2− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2002 08 30 | 699 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.5+ | | |
| 2002 08 30 | 699 | 0.3− | 1.1− | 2002 10 03 | 704 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.1+ | | |
| 2002 08 30 | 699 | 0.6+ | 0.2+ | 2002 10 07 | 704 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.5+ | | |
| 2002 08 30 | 699 | 0.7+ | 0.3+ | 2002 10 07 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.4+ | | |
| 2002 08 30 | 644 | 0.4− | 0.4+ | 2002 10 07 | 704 | 0.1− | 1.0+ | 2006 11 11 | 703 | 0.7+ | 1.1− | | |
| 2002 08 30 | 644 | 0.4− | 0.4+ | 2002 10 07 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8− | 0.3+ | | |
| 2002 08 30 | 644 | 0.5− | 0.5+ | 2002 10 09 | 699 | 1.3+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.0 | | |
| 2002 09 04 | 699 | 0.2+ | 0.0 | 2002 10 09 | 699 | (2.4+ | 0.5+) | 2006 11 11 | 703 | 0.8− | 0.3− | | |
| 2002 09 04 | 699 | 0.5+ | 0.1− | 2002 10 09 | 699 | 1.1+ | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.8+ | | |
| 2002 09 04 | 699 | 0.4+ | 0.1+ | 2002 10 09 | 699 | 0.2− | 0.6− | 2006 11 28 | 704 | 0.8− | 0.6+ | | |
| 2002 09 04 | 699 | 0.4+ | 0.2− | 2004 01 27 | 691 | 0.3+ | 0.9+ | 2006 11 28 | 704 | 1.0+ | 1.6+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2004 01 27 | 691 | 0.2+ | 0.9+ | 2006 11 28 | 704 | 0.3− | 0.4+ | | |
| 2002 09 05 | 704 | 0.2− | 0.3+ | 2004 01 27 | 691 | 0.3+ | 0.6+ | | | | | | |
| 2002 09 05 | 704 | 0.0 | 0.2+ | 2005 03 08 | G96 | 0.3− | 0.0 | | | | | | |

**(142054)∗ 2002 QB$_{22}$ = 1995 VW$_3$**

Discovered 2002 Aug. 27 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75489)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 34.75893 | | (2000.0) | | | |
| *n* | 0.26383540 | ω | 186.11765 | | +0.72114738 | +0.69064831 |
| *a* | 2.4075797 | Ω | 130.04865 | | −0.63256843 | +0.68841743 |
| *e* | 0.1355750 | *i* | 4.06963 | | −0.28249537 | +0.22155440 |
| *P* | 3.74 | *H* | 17.0 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.5− | 0.0 | 2002 08 17 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.3+ | | |
| 1995 11 14 | 691 | 0.5− | 0.0 | 2002 08 17 | 644 | 1.4+ | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.7− | | |
| 1995 11 14 | 691 | 0.6− | 0.2+ | 2002 08 27 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.2+ | | |
| 1995 11 19 | 691 | 1.0+ | 0.6+ | 2002 08 27 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.8− | 0.9+ | | |
| 1995 11 19 | 691 | 0.1− | 0.5+ | 2002 08 27 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.1− | | |
| 1995 11 19 | 691 | 0.1+ | 0.1+ | 2002 08 29 | 644 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.4+ | | |
| 1997 02 08 | 910 | (10.0− | 4.2+) | 2002 08 29 | 644 | 0.2− | 0.5+ | 2006 09 18 | 699 | (2.1− | 2.1+) | | |
| 1997 02 08 | 910 | (9.9− | 4.0+) | 2002 08 29 | 644 | 0.4− | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.7− | | |
| 1997 02 08 | 910 | (9.6− | 3.8+) | 2005 03 11 | 691 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.4+ | 0.4+ | | |
| 2001 03 16 | 691 | 0.4+ | 0.8+ | 2005 03 11 | 691 | 0.5+ | 0.2− | 2006 09 20 | 644 | 0.5+ | 0.2+ | | |
| 2001 03 16 | 691 | 0.4+ | 0.3+ | 2005 03 11 | 691 | 0.2+ | 0.3− | 2006 09 20 | 644 | 0.5+ | 0.4+ | | |
| 2001 03 16 | 691 | 0.2+ | 0.4+ | 2005 04 01 | 691 | 0.1− | 0.4+ | 2006 09 26 | 704 | (0.8− | 1.6+) | | |
| 2002 07 04 | 644 | 0.2− | 0.3+ | 2005 04 01 | 691 | 0.9− | 0.5+ | 2006 09 26 | 704 | 0.4− | 0.7+ | | |
| 2002 07 04 | 644 | 0.0 | 0.5+ | 2005 04 01 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.2+ | 0.4+ | | |
| 2002 07 04 | 644 | 0.2+ | 0.3+ | 2005 04 04 | 703 | 0.5− | 0.5+ | 2006 09 30 | 703 | 0.7− | 1.3− | | |
| 2002 07 22 | 644 | 0.0 | 0.5+ | 2005 04 04 | 703 | (1.6+ | 0.3+) | 2006 09 30 | 703 | 0.5− | 0.0 | | |
| 2002 07 22 | 644 | 0.1− | 0.5+ | 2005 04 04 | 703 | (0.8+ | 2.2+) | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2002 07 22 | 644 | 0.1− | 0.4+ | 2005 04 04 | 703 | 0.6+ | 0.9+ | 2006 09 30 | 703 | 0.0 | 0.3− | | |
| 2002 08 08 | 644 | 0.4− | 0.2+ | 2006 09 12 | 703 | 0.0 | 0.4+ | 2006 11 25 | G96 | 0.4− | 0.5− | | |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2006 09 12 | 703 | 0.5− | 0.5+ | 2006 11 25 | G96 | 0.4+ | 0.3+ | | |
| 2002 08 08 | 644 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.9+ | 1.1+ | 2006 11 25 | G96 | 0.4+ | 0.1− | | |
| 2002 08 17 | 644 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 1.3− | 0.4+ | 2006 11 25 | G96 | 0.4− | 0.1− | | |

**(142055)∗ 2002 QP$_{23}$ = 1994 GB$_8$ = 2002 PY$_{168}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37795, d, *MPO* 75490)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 56.73857 | | (2000.0) | | | |
| *n* | 0.26782573 | ω | 302.29232 | | +0.58381815 | +0.81188386 |
| *a* | 2.3836063 | Ω | 3.42771 | | −0.73923730 | +0.53207977 |
| *e* | 0.1898093 | *i* | 0.94444 | | −0.33568526 | +0.24028257 |
| *P* | 3.68 | *H* | 16.8 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 12 | 691 | 0.1− | 0.2+ | 2005 03 08 | G96 | 0.5− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ | | |
| 1994 04 12 | 691 | 0.1− | 0.2+ | 2005 03 08 | G96 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | | |
| 1994 04 12 | 691 | 0.0 | 0.1+ | 2005 03 08 | G96 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.2+ | | |
| 1994 04 15 | 691 | 0.2− | 0.1+ | 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.3+ | | |
| 1994 04 15 | 691 | 0.0 | 0.4+ | 2005 03 13 | 691 | 0.5+ | 0.7− | 2006 10 20 | 691 | 0.5− | 0.3+ | | |
| 1994 04 15 | 691 | 0.3+ | 0.2+ | 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2005 03 13 | 691 | (2.1− | 2.1−) | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2005 03 17 | 691 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2002 08 10 | 704 | (2.4+ | 0.4+) | 2005 03 17 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2002 08 10 | 704 | (0.0 | 1.8+) | 2005 03 17 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 704 | (0.7− | 1.8+) | 2005 04 04 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.6− | 0.2+ | | |
| 2002 08 14 | 704 | 0.9+ | 1.3+ | 2005 04 04 | 691 | 1.0+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2002 08 14 | 704 | 0.5+ | 1.2+ | 2005 04 04 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.0 | | |
| 2002 08 14 | 704 | 0.0 | 1.3+ | 2005 04 11 | 699 | 0.4+ | 0.5− | 2006 10 27 | G96 | 0.2− | 0.0 | | |
| 2002 08 28 | 644 | 0.2− | 0.4+ | 2005 04 11 | 699 | 0.6− | 1.4+ | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2002 08 28 | 644 | 0.2− | 0.4+ | 2005 04 11 | 699 | 0.1− | 1.2+ | 2006 11 09 | 644 | 0.4− | 0.6+ | | |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2005 04 11 | 699 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2002 08 29 | 644 | 0.3+ | 1.0+ | 2005 05 08 | G96 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.8+ | 2005 05 08 | G96 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.4+ | | |
| 2002 08 29 | 644 | 0.0 | 0.9+ | 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 11 13 | G96 | 1.1+ | 0.9+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.5− | 2005 05 08 | G96 | 0.6− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.6+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.4− | 1.0− | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 15 | 291 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.7− | 0.7− | | |
| 2002 09 15 | 291 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.3+ | | |
| 2002 09 15 | 291 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.4− | | |
| 2002 09 15 | 644 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.1− | | |
| 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 10 04 | 703 | 0.3− | 1.0− | 2006 11 23 | 691 | 0.4+ | 0.1− | | |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 10 04 | 703 | 0.9+ | 1.3− | 2006 11 23 | 691 | 0.6− | 0.3+ | | |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 10 04 | 703 | (0.6+ | 1.7−) | 2006 11 23 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.8− | 1.2+ | 2006 10 04 | 703 | (1.3+ | 1.7−) | | | | | | |
| 2002 10 11 | 704 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | | | | | | |

**(142056)∗ 2002 QA$_{24}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.95370 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25836755 | $\omega$ | 30.49108 | | +0.96101194 | | −0.27642456 |
| $a$ | 2.4414288 | $\Omega$ | 345.55116 | | +0.24792058 | | +0.87220622 |
| $e$ | 0.0643726 | $i$ | 1.54932 | | +0.12243952 | | +0.40354153 |
| $P$ | 3.81 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.0 | 0.4+ | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.2+ | 1.1− | | |
| 2002 08 17 | 644 | 0.1− | 0.6+ | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 09 17 | 704 | (0.2− | 1.6−) | | |
| 2002 08 17 | 644 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.1+ | | |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2004 01 30 | 704 | 0.6− | 0.4− | 2006 09 17 | 704 | 0.4− | 0.4+ | | |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.4− | 0.3+ | | |
| 2002 08 18 | 644 | 0.3− | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.7+ | | |
| 2002 08 28 | 644 | 0.1+ | 0.5+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.2+ | | |
| 2002 08 28 | 644 | 0.3− | 0.5+ | 2005 05 10 | G96 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.4+ | 1.0+ | | |
| 2002 08 28 | 644 | 0.2− | 0.4+ | 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 1.2− | 0.4+ | | |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | (0.1+ | 1.7−) | | |
| 2002 08 29 | 644 | 0.2+ | 0.3+ | 2005 05 11 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.3− | | |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2005 05 11 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.8+ | | |
| 2002 09 05 | 704 | 0.0 | 0.3− | 2005 05 11 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 699 | (2.2+ | 0.2−) | | |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2005 05 11 | 644 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 0.7+ | 0.4− | | |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.2− | | |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2005 05 16 | 691 | 0.1− | 0.3+ | 2006 09 26 | J75 | (2.0+ | 0.4+) | | |
| 2002 09 15 | 644 | 0.0 | 0.3− | 2005 05 16 | 691 | 0.0 | 0.3+ | 2006 09 26 | J75 | 0.4− | 0.4− | | |
| 2002 09 15 | 644 | 0.3− | 0.6− | 2005 05 16 | 691 | 0.1+ | 0.5+ | 2006 09 26 | J75 | 1.4+ | 1.2+ | | |
| 2002 09 15 | 644 | 0.2− | 0.8− | 2005 05 19 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.4+ | | |
| 2003 12 21 | 645 | 0.2− | 0.0 | 2005 05 19 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.4+ | | |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2005 05 19 | 644 | 0.7+ | 0.6+ | 2006 09 27 | 704 | 0.7+ | 0.1− | | |
| 2003 12 22 | 704 | 0.2− | 0.7+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.2+ | | |
| 2003 12 22 | 704 | 0.0 | 0.5+ | 2006 08 19 | 691 | 0.5− | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.3− | | |
| 2003 12 22 | 704 | 0.4+ | 0.7+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.5− | | |
| 2003 12 22 | 704 | 0.0 | 0.5+ | 2006 08 25 | 704 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.4− | 0.5− | | |
| 2003 12 27 | 704 | 0.6+ | 0.4− | 2006 08 25 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 704 | 0.1− | 0.1− | | |
| 2003 12 27 | 704 | 0.8+ | 0.7+ | 2006 08 25 | 704 | 0.6+ | 0.0 | 2006 09 29 | 704 | 0.3− | 1.0+ | | |
| 2003 12 27 | 704 | 0.3− | 1.0+ | 2006 08 25 | 704 | 0.5+ | 0.6− | 2006 09 29 | 704 | 0.1+ | 0.1− | | |
| 2003 12 27 | 704 | 1.1+ | 1.5+ | 2006 08 28 | 703 | (2.6+ | 0.0 ) | 2006 10 09 | 644 | 0.3− | 0.1+ | | |
| 2004 01 15 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 1.3+ | 0.4+ | 2006 10 09 | 644 | 0.4− | 0.2+ | | |
| 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 1.0+ | 0.9+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2004 01 15 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 1.3+ | 1.2+ | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2004 01 16 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.3− | 0.7− | | |
| 2004 01 16 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2004 01 21 | 704 | 0.5− | 0.9+ | 2006 09 12 | 703 | (1.8− | 0.5−) | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2004 01 21 | 704 | 0.4− | 0.5+ | 2006 09 12 | 703 | (2.7− | 2.1+) | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2004 01 21 | 704 | 0.9− | 1.0− | 2006 09 12 | 703 | (4.7− | 0.9+) | 2006 10 20 | 644 | 0.4− | 0.0 | | |
| 2004 01 21 | 704 | 0.0 | 0.5− | 2006 09 12 | 703 | (3.1− | 0.5−) | 2006 10 20 | 644 | 0.5− | 0.1+ | | |
| 2004 01 21 | 704 | 0.8− | 0.6+ | 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 2004 01 24 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.3− | | |
| 2004 01 24 | 704 | 0.3+ | 1.1+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2004 01 24 | 704 | 0.6+ | 0.4+ | 2006 09 16 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.4− | | |
| 2004 01 24 | 704 | 1.2+ | 0.3+ | 2006 09 16 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.3− | | |
| 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 691 | 0.1− | 0.1+ | | | | | | |
| 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.6− | 0.4+ | | | | | | |

**(142057)∗ 2002 QZ$_{25}$**

Discovered 2002 Aug. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.78390 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27471595 | $\omega$ | 275.13255 | | −0.25730365 | | +0.96585244 |
| $a$ | 2.3435819 | $\Omega$ | 339.87785 | | −0.84790307 | | −0.24074640 |
| $e$ | 0.1886138 | $i$ | 5.06889 | | −0.46352477 | | −0.09576132 |
| $P$ | 3.59 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.6− | 0.5+ | 2002 08 30 | 291 | 0.1+ | 0.5+ | 2005 04 18 | E12 | 0.3+ | 0.2+ | | |
| 2001 02 02 | 691 | 0.1− | 0.3+ | 2002 08 30 | 291 | 0.1+ | 0.6+ | 2005 05 01 | 644 | 0.4+ | 0.2+ | | |
| 2001 02 02 | 691 | 0.3− | 0.4+ | 2002 09 05 | 704 | 0.9− | 0.3+ | 2005 05 01 | 644 | 0.5+ | 0.2+ | | |
| 2001 02 21 | 691 | 0.2+ | 0.8+ | 2002 09 05 | 704 | 0.2+ | 1.0+ | 2005 05 01 | 644 | 0.7+ | 0.2+ | | |
| 2001 02 21 | 691 | 0.4+ | 0.9+ | 2002 09 05 | 704 | 1.0− | 0.3+ | 2005 05 09 | 703 | 0.1− | 0.6+ | | |
| 2001 02 21 | 691 | 0.4+ | 0.8+ | 2002 09 05 | 704 | 0.4− | 0.6+ | 2005 05 09 | 703 | 1.0− | 0.1− | | |
| 2001 03 02 | 691 | 0.2+ | 0.1+ | 2002 09 07 | 704 | 0.5− | 0.4+ | 2005 05 09 | 703 | 0.7+ | 1.0+ | | |
| 2001 03 02 | 691 | 0.3+ | 0.2+ | 2002 09 07 | 704 | 0.2− | 0.6+ | 2005 05 09 | 703 | (0.6− | 1.7+) | | |
| 2001 03 02 | 691 | 0.2+ | 0.0 | 2002 09 07 | 704 | 0.6− | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.5+ | | |
| 2001 03 15 | 691 | 0.6+ | 0.3+ | 2002 09 07 | 704 | 1.4− | 0.8− | 2006 10 17 | 691 | 0.4+ | 0.2+ | | |
| 2001 03 15 | 691 | 0.6+ | 0.4+ | 2002 09 08 | 608 | 0.4− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2001 03 15 | 691 | 0.2+ | 0.1− | 2002 09 08 | 608 | 0.7− | 0.3− | 2006 10 21 | 691 | 0.4− | 0.3− | | |
| 2002 08 14 | 291 | 0.1− | 0.0 | 2002 09 08 | 608 | 0.3− | 0.5− | 2006 10 21 | 691 | 0.4− | 0.2+ | | |
| 2002 08 14 | 291 | 0.3+ | 0.5+ | 2002 09 14 | 644 | 0.3− | 0.8+ | 2006 10 21 | 691 | 0.1+ | 0.2− | | |
| 2002 08 14 | 291 | 0.3− | 0.5+ | 2002 09 14 | 644 | 0.4− | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.2− | | |
| 2002 08 29 | 291 | 0.4− | 0.4+ | 2002 09 14 | 644 | 0.4− | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.3− | | |
| 2002 08 29 | 291 | 0.5− | 0.3+ | 2005 04 18 | E12 | 0.5+ | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.5− | | |
| 2002 08 29 | 291 | 0.1+ | 0.4+ | 2005 04 18 | E12 | 0.4+ | 1.5+ | 2006 11 25 | G96 | 0.2+ | 0.4− | | |
| 2002 08 30 | 291 | 0.1+ | 0.7+ | 2005 04 18 | E12 | 0.3− | 0.6+ | | | | | | |

**(142058)∗ 2002 QM$_{27}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.86240 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26646527 | $\omega$ | 210.13793 | | +0.64549631 | | +0.76274604 |
| $a$ | 2.3917125 | $\Omega$ | 100.09470 | | −0.69250235 | | +0.60625303 |
| $e$ | 0.1797185 | $i$ | 2.29403 | | −0.32214129 | | +0.22511272 |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 1.4− | 0.9+ | 2003 12 18 | 291 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.0 | | |
| 2001 03 16 | 691 | 0.0 | 0.3+ | 2003 12 18 | 291 | 1.2+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.1+ | | |
| 2001 03 16 | 691 | 0.4+ | 0.1+ | 2005 03 09 | G96 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ | | |
| 2002 08 08 | 644 | 0.4+ | 0.7+ | 2005 03 09 | G96 | 0.6− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.0 | | |
| 2002 08 08 | 644 | 0.4+ | 0.5+ | 2005 03 09 | G96 | 0.5− | 0.0 | 2006 10 01 | 691 | 0.3+ | 0.2+ | | |
| 2002 08 08 | 644 | 0.8+ | 0.8+ | 2005 03 09 | G96 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.2+ | | |
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2005 04 01 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 1.1− | 0.0 | | |
| 2002 08 18 | 644 | 0.0 | 0.6+ | 2005 04 01 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 1.4+ | 0.1− | | |
| 2002 08 18 | 644 | 0.2− | 0.6+ | 2005 04 01 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.6− | | |
| 2002 08 28 | 644 | 0.2− | 0.1− | 2005 04 12 | 691 | 0.3+ | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2002 08 28 | 644 | 0.3− | 0.1− | 2005 04 12 | 691 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2− | 0.1− | 2005 04 12 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | (0.5− | 1.5−) |
| 2002 08 30 | 644 | 0.5+ | 0.2+ | 2005 05 11 | G96 | 0.6− | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2002 08 30 | 644 | 0.4− | 0.1+ | 2005 05 11 | G96 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2002 08 30 | 644 | 0.4− | 0.2+ | 2005 05 11 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.5− | 0.3− |
| 2002 09 05 | 704 | 0.9+ | 0.7− | 2005 05 11 | G96 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.0 | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2002 09 05 | 704 | 0.1− | 0.8− | 2006 09 19 | 691 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2002 09 15 | 644 | 0.3− | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2003 12 18 | 291 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.4+ | | | | |

**(142059)∗ 2002 QH$_{29}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.92469 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27355260 | $\omega$ | 280.09408 | | +0.29420174 | | +0.95569452 |
| $a$ | 2.3502216 | $\Omega$ | 7.03811 | | −0.84310590 | | +0.26427619 |
| $e$ | 0.2355269 | $i$ | 4.52184 | | −0.45013084 | | +0.12963824 |
| $P$ | 3.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 16 | 691 | 0.1+ | 0.0 | 2002 08 31 | 699 | 0.6+ | 0.3+ | 2005 04 02 | G96 | 0.3− | 0.2− |
| 1998 05 16 | 691 | 0.0 | 0.1− | 2002 08 31 | 704 | 0.0 | 0.9− | 2005 05 04 | G96 | 0.5− | 0.1+ |
| 1998 05 16 | 691 | 0.2− | 0.1− | 2002 08 31 | 699 | 0.0 | 1.1+ | 2005 05 04 | G96 | 0.3− | 0.2+ |
| 2002 08 11 | 644 | 0.1− | 0.3+ | 2002 08 31 | 699 | 1.2− | 0.6+ | 2005 05 04 | G96 | 0.2− | 0.2+ |
| 2002 08 11 | 644 | 0.1− | 0.2+ | 2002 08 31 | 704 | 0.6+ | 0.3− | 2005 05 04 | G96 | 0.2− | 0.0 |
| 2002 08 11 | 644 | 0.1+ | 0.2+ | 2002 09 05 | 704 | 0.8− | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 2002 08 13 | 704 | 1.2+ | 0.6+ | 2002 09 05 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2002 08 13 | 704 | 0.2− | 0.4− | 2002 09 05 | 704 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2002 08 13 | 704 | 0.2− | 0.1+ | 2002 09 06 | 704 | 0.6+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.3+ |
| 2002 08 16 | 644 | 0.3− | 0.3+ | 2002 09 06 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2002 08 16 | 644 | 0.4− | 0.1+ | 2002 09 06 | 704 | 0.5− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.1− |
| 2002 08 16 | 644 | 0.4− | 0.2+ | 2002 09 06 | 704 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2005 03 12 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2− |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2005 03 12 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.3+ | 2005 03 12 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 08 30 | 644 | 0.1− | 0.1− | 2005 03 15 | 947 | 1.0+ | 0.7− | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2002 08 30 | 644 | 0.2− | 0.3− | 2005 03 15 | 947 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 08 30 | 644 | 0.2− | 0.2− | 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2002 08 31 | 699 | 0.2+ | 0.4− | 2005 04 02 | G96 | 0.2− | 0.1+ | | | | |
| 2002 08 31 | 704 | 0.6+ | 0.8− | 2005 04 02 | G96 | 0.2− | 0.0 | | | | |

**(142060)∗ 2002 QH$_{30}$ = 1997 EV$_{30}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35364)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.15295 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26567424 | $\omega$ | 48.25145 | | +0.74465425 | | −0.66734410 |
| $a$ | 2.3964576 | $\Omega$ | 353.57838 | | +0.57640868 | | +0.65197792 |
| $e$ | 0.1076912 | $i$ | 6.11424 | | +0.33651611 | | +0.35996757 |
| $P$ | 3.71 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.2+ | 0.2+ | 2002 08 30 | 644 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.3− | 0.7− |
| 1997 03 05 | 691 | 0.1− | 0.0 | 2002 08 30 | 644 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.5+ | 0.5− |
| 1997 03 05 | 691 | 0.0 | 0.0 | 2004 01 16 | 644 | 0.6+ | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.3− |
| 1997 03 10 | 691 | 0.2− | 0.1+ | 2004 01 16 | 644 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.9− | 0.4+ |
| 1997 03 10 | 691 | (1.8+ | 4.3−) | 2004 01 16 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.0 |
| 1997 03 10 | 691 | (3.5+ | 0.4−) | 2004 02 13 | 699 | 0.9− | 0.6+ | 2006 09 17 | 703 | 0.5+ | 0.1+ |
| 1997 03 15 | 691 | 0.3− | 0.4− | 2004 02 13 | 699 | 0.9− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.3− |
| 1997 03 15 | 691 | 0.5+ | 0.3− | 2004 02 13 | 699 | 0.3− | 0.1+ | 2006 09 21 | A50 | 0.1− | 0.4− |
| 1997 03 15 | 691 | 0.1+ | 0.2− | 2004 02 13 | 699 | 0.7+ | 0.2+ | 2006 09 22 | A50 | 0.1− | 0.2+ |
| 1997 04 08 | 691 | 0.1− | 0.1− | 2004 02 17 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.6− |
| 1997 04 08 | 691 | 0.0 | 0.0 | 2004 02 17 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 704 | (0.4+ | 1.6+) |
| 1997 04 08 | 691 | 0.3− | 0.2− | 2004 02 17 | 644 | 0.3+ | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.4− |
| 2002 08 18 | 644 | 0.2+ | 0.4+ | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2− |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.1− | 0.4− |
| 2002 08 19 | 644 | 0.3− | 0.8+ | 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2002 08 19 | 644 | 0.2− | 0.7+ | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.1+ | 0.5+ |
| 2002 08 19 | 644 | 0.3− | 0.9+ | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.2+ | 1.2+ |
| 2002 08 29 | 644 | 0.7− | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.6− | 2006 10 17 | 703 | 1.9+ | 0.3− |
| 2002 08 29 | 644 | 0.4− | 0.1+ | 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.1− | 0.9+ |
| 2002 08 29 | 644 | 0.4− | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.3− | | | | |
| 2002 08 30 | 644 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.2+ | 0.1+ | | | | |

**(142061)∗ 2002 QP$_{31}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.41265 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27822761 | $\omega$ | 95.20613 | | −0.16701870 | | −0.98590974 |
| $a$ | 2.3238204 | $\Omega$ | 4.44093 | | +0.85024803 | | −0.14880641 |
| $e$ | 0.0788919 | $i$ | 6.90814 | | +0.49918238 | | −0.07641096 |
| $P$ | 3.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 699 | 0.7+ | 0.3+ | 2004 01 31 | 704 | 0.5+ | 1.3+ | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2001 04 26 | 699 | 0.0 | 0.8+ | 2004 01 31 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2001 04 26 | 699 | 0.1+ | 0.8+ | 2004 01 31 | 704 | 0.1+ | 0.9+ | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2001 04 26 | 699 | 0.2+ | 0.9+ | 2004 01 31 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 703 | (0.5+ | 1.7−) |
| 2002 08 19 | 644 | 0.4− | 0.6+ | 2004 02 13 | 699 | 0.1− | 0.6− | 2006 10 27 | 703 | 1.0− | 0.2− |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2004 02 13 | 699 | 0.6+ | 0.3+ | 2006 10 27 | 703 | 0.9− | 0.6− |
| 2002 08 19 | 644 | 0.1− | 0.7+ | 2004 02 13 | 699 | 0.4+ | 0.7+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.1+ | 2004 02 13 | 699 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2002 08 29 | 644 | 0.6− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 08 29 | 644 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2002 08 30 | 644 | 0.1+ | 1.4+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 08 30 | 644 | 0.3+ | 1.2+ | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 08 30 | 644 | 0.4+ | 1.0+ | 2006 10 13 | 691 | 0.4+ | 0.6+ | 2006 11 14 | 703 | 0.9− | 0.2− |
| 2002 09 15 | 644 | 0.7− | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 1.0− | 0.7− |
| 2002 09 15 | 644 | 0.6− | 0.5+ | 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.8+ | 0.4− |
| 2002 09 15 | 644 | 0.9− | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 1.4+ |
| 2003 12 27 | 704 | (1.9+ | 1.3−) | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.2− |
| 2003 12 27 | 704 | 1.2+ | 1.1+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.8+ |
| 2003 12 27 | 704 | (0.2− | 1.9−) | 2006 10 19 | 703 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 1.0+ |
| 2003 12 27 | 704 | 0.8+ | 0.9− | 2006 10 19 | 703 | 0.6+ | 1.0− | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2003 12 27 | 704 | (1.6+ | 0.8+) | 2006 10 19 | 703 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2004 01 26 | 699 | 1.3− | 1.5− | 2006 10 19 | 703 | 0.8− | 1.0− | 2006 11 22 | 704 | (1.9+ | 1.4+) |
| 2004 01 26 | 699 | 1.1− | 1.3+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2004 01 26 | 699 | (2.4− | 1.2+) | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.6− | 1.3− |
| 2004 01 26 | 699 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2004 01 31 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.1+ |

**(142062)∗ 2002 QR$_{32}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.73145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25293101 | $\omega$ | 122.23634 | | +0.00271843 | | +0.99810911 |
| $a$ | 2.4762890 | $\Omega$ | 147.74761 | | −0.95183897 | | +0.02140930 |
| $e$ | 0.1316369 | $i$ | 6.60765 | | −0.30658635 | | −0.05761809 |
| $P$ | 3.90 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.1+ | 0.2+ | 2005 03 10 | 691 | 0.3+ | 0.1− | 2006 08 18 | 699 | 0.3− | 0.1+ |
| 2001 03 19 | 699 | 0.3− | 0.2+ | 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.2− |
| 2001 03 19 | 704 | 1.5+ | 0.0 | 2005 03 11 | 691 | 0.3+ | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.0 |
| 2001 03 19 | 699 | 0.8+ | 0.3+ | 2005 03 11 | 691 | 0.4+ | 0.2− | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2001 03 19 | 704 | 1.2+ | 1.1+ | 2005 03 18 | 703 | 1.0− | 0.3− | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 2001 03 19 | 704 | 0.5− | 0.1− | 2005 03 18 | 703 | 0.9− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2001 03 19 | 699 | 0.3+ | 0.2− | 2005 03 18 | 703 | 0.8− | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.8− | 0.5+ | 2005 03 18 | 703 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.2− | 0.0 | | |
| 2001 04 13 | 691 | 0.2− | 0.0 | 2005 04 01 | 699 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.2+ | 1.0+ | | |
| 2001 04 13 | 691 | 0.1− | 0.1+ | 2005 04 01 | 699 | 0.8+ | 0.5− | 2006 08 28 | 699 | 0.8− | 0.3+ | | |
| 2001 04 13 | 691 | 0.0 | 0.2+ | 2005 04 01 | 699 | 1.4+ | 0.8− | 2006 08 28 | 699 | (1.2+ | 1.7+) | | |
| 2002 08 20 | 644 | 0.1+ | 0.1+ | 2005 04 01 | 699 | 0.8− | 0.0 | 2006 08 28 | 699 | 1.1− | 0.4+ | | |
| 2002 08 20 | 644 | 0.0 | 0.2− | 2005 04 04 | 683 | 1.1− | 0.7− | 2006 09 12 | 703 | 0.5+ | 0.4+ | | |
| 2002 08 20 | 644 | 0.0 | 0.1+ | 2005 04 04 | 683 | 0.3+ | 1.4+ | 2006 09 12 | 703 | 0.3− | 1.4− | | |
| 2002 08 29 | 644 | 0.4+ | 0.6+ | 2005 04 04 | 683 | 0.5− | 1.2+ | 2006 09 12 | 703 | 0.7+ | 0.8+ | | |
| 2002 08 29 | 644 | 0.3+ | 0.3+ | 2005 04 04 | 703 | 0.2− | 0.9− | 2006 09 12 | 703 | 0.1− | 1.1− | | |
| 2002 08 29 | 644 | 0.2+ | 0.3+ | 2005 04 04 | 703 | 0.4− | 0.5− | 2006 09 18 | 703 | 0.2− | 0.4− | | |
| 2002 08 30 | 699 | (2.1+ | 2.0+) | 2005 04 04 | 703 | 0.9− | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.2+ | | |
| 2002 08 30 | 699 | 0.0 | 0.4+ | 2005 04 04 | 703 | 0.6− | 0.8− | 2006 09 18 | 703 | 1.4− | 1.2+ | | |
| 2002 08 30 | 699 | 1.1+ | 0.2+ | 2005 04 05 | 699 | 0.5− | 1.0+ | 2006 09 18 | 703 | 0.1− | 0.4+ | | |
| 2002 08 30 | 699 | (0.5+ | 2.5+) | 2005 04 05 | 699 | 0.3− | 0.2+ | 2006 09 18 | 699 | (0.8+ | 2.0+) | | |
| 2002 08 30 | 644 | 0.1+ | 0.1+ | 2005 04 05 | 699 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.8+ | 0.4+ | | |
| 2002 08 30 | 644 | 0.1+ | 0.5+ | 2005 04 06 | 683 | (2.1+ | 0.2−) | 2006 09 18 | 699 | 0.7− | 0.1− | | |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2005 04 06 | 683 | 0.1+ | 1.1+ | 2006 09 18 | 699 | 0.1+ | 1.3+ | | |
| 2002 09 06 | 704 | 0.8+ | 0.0 | 2005 04 06 | 683 | 1.1+ | 1.2+ | 2006 09 30 | 703 | 0.4− | 0.2+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.4− | 2005 04 09 | 699 | 0.7− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.7+ | | |
| 2002 09 06 | 704 | 1.0− | 0.4− | 2005 04 09 | 699 | 1.3− | 0.0 | 2006 09 30 | 703 | 0.6− | 0.8+ | | |
| 2002 09 09 | 608 | 0.7− | 1.2− | 2005 04 09 | 699 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.8+ | | |
| 2002 09 09 | 608 | 0.6− | 0.5− | 2005 04 09 | 699 | 0.4− | 1.2+ | 2006 10 16 | 703 | (1.5− | 1.7+) | | |
| 2002 09 09 | 608 | 0.3+ | 0.3− | 2005 04 13 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.5+ | 0.7− | | |
| 2002 09 14 | 608 | 0.4− | 0.9− | 2005 04 13 | 704 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.3− | | |
| 2002 09 14 | 608 | 0.0 | 1.0− | 2005 04 13 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.7+ | 1.2+ | | |
| 2002 09 14 | 608 | 0.5− | 0.6− | 2005 04 13 | 704 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.4+ | | |
| 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 08 18 | 699 | (2.1+ | 0.0 ) | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2002 09 15 | 644 | 0.0 | 0.2− | 2006 08 18 | 699 | 1.3− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2002 09 15 | 644 | 0.1− | 0.1+ | 2006 08 18 | 699 | 1.1+ | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.6+ | | |
| 2005 03 10 | 691 | 0.5+ | 0.2− | 2006 08 18 | 691 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.5+ | | |
| 2005 03 10 | 691 | 0.5+ | 0.1− | 2006 08 18 | 691 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |

**(142063)∗ 2002 QS$_{32}$ = 2005 ED$_{161}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75494)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.11540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26244371 | $\omega$ | 115.80111 | | +0.05657666 | +0.99833097 | |
| $a$ | 2.4160835 | $\Omega$ | 157.43318 | | −0.92648974 | +0.05682462 | |
| $e$ | 0.1729623 | $i$ | 1.73088 | | −0.37204279 | +0.01030741 | |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2005 03 09 | G96 | 0.5− | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.4− | | |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2005 03 09 | G96 | 0.6− | 0.2− | 2006 07 21 | G96 | 0.1− | 0.3− | | |
| 2002 08 29 | 644 | 0.7− | 0.4+ | 2005 03 09 | G96 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.4− | 0.8+ | 2005 03 12 | 691 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.8− | | |
| 2002 08 29 | 644 | 0.5− | 0.7+ | 2005 03 12 | 691 | 0.4+ | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.2+ | | |
| 2002 08 30 | 644 | 0.4− | 0.4+ | 2005 03 12 | 691 | 0.5+ | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.0 | | |
| 2002 08 30 | 644 | 0.4− | 0.2+ | 2005 04 02 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 691 | 0.3+ | 0.2+ | | |
| 2002 08 30 | 644 | 0.5− | 0.4+ | 2005 04 02 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.3+ | | |
| 2002 09 05 | 704 | 0.2− | 0.9+ | 2005 04 02 | 691 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | | |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2005 04 09 | 704 | (1.4+ | 1.6+) | 2006 09 18 | 691 | 0.1− | 0.3+ | | |
| 2002 09 05 | 704 | 0.9+ | 0.8+ | 2005 04 09 | 704 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2002 09 05 | 704 | 0.3+ | 1.0+ | 2005 04 09 | 704 | 0.3+ | 1.0+ | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 2002 09 07 | 704 | 0.0 | 1.3+ | 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.5− | 0.3+ | | |
| 2002 09 07 | 704 | 0.1− | 0.7+ | 2005 04 11 | G96 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.6− | 0.5+ | | |
| 2002 09 07 | 704 | 0.0 | 0.8+ | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.5− | 0.3+ | | |
| 2002 09 16 | 644 | 0.8− | 0.3+ | 2005 04 14 | 704 | 0.3− | 0.8− | 2006 10 31 | G96 | 0.4− | 0.1− | | |
| 2002 09 16 | 644 | 0.6− | 0.3+ | 2005 04 14 | 704 | 1.2+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.6− | | |
| 2002 09 16 | 644 | 0.4− | 0.8+ | 2005 04 14 | 704 | 0.2− | 0.7+ | 2006 10 31 | G96 | 0.4− | 0.0 | | |
| 2005 03 09 | G96 | 0.5− | 0.0 | 2005 04 14 | 704 | (0.2+ | 1.7+) | 2006 10 31 | G96 | 0.0 | 0.3+ | | |

**(142064)∗ 2002 QY$_{32}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.84772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26928952 | $\omega$ | 81.22045 | | +0.38283512 | −0.92339710 | |
| $a$ | 2.3749606 | $\Omega$ | 346.17040 | | +0.79519514 | +0.34472276 | |
| $e$ | 0.1032105 | $i$ | 6.68830 | | +0.47021480 | +0.16883131 | |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 08 | 691 | 0.2− | 0.4+ | 2002 10 06 | 704 | 0.3− | 1.3+ | 2004 02 23 | 704 | 0.0 | 0.3+ | | |
| 1991 09 08 | 691 | 0.4− | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.3+ | | |
| 1991 09 08 | 691 | 0.1− | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.1+ | | |
| 2002 08 20 | 644 | (0.6− | 1.8+) | 2004 01 22 | 704 | 1.1+ | 0.4− | 2004 02 23 | 704 | 0.2− | 0.5+ | | |
| 2002 08 20 | 644 | (0.3+ | 1.5+) | 2004 01 22 | 704 | 1.1+ | 0.4+ | 2004 03 10 | 644 | 0.6+ | 0.7+ | | |
| 2002 08 20 | 644 | (0.0 | 1.6+) | 2004 02 11 | 703 | 0.5+ | 0.3− | 2004 03 10 | 644 | 0.3+ | 0.9+ | | |
| 2002 08 29 | 644 | 0.1− | 0.8+ | 2004 02 11 | 703 | 0.2+ | 1.1− | 2004 03 10 | 644 | 0.8+ | 0.7+ | | |
| 2002 08 29 | 644 | 0.2− | 0.9+ | 2004 02 11 | 703 | 0.6+ | 0.0 | 2004 03 17 | 691 | 0.1− | 0.4+ | | |
| 2002 08 29 | 644 | 0.2− | 0.9+ | 2004 02 11 | 703 | 0.3− | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 30 | 644 | 0.7− | 0.6+ | 2004 02 11 | 699 | 0.8− | 0.4− | 2004 03 17 | 691 | 0.0 | 0.5+ | | |
| 2002 08 30 | 644 | 0.3− | 0.8+ | 2004 02 11 | 699 | 0.0 | 0.4− | 2004 03 19 | 704 | 1.0+ | 0.1− | | |
| 2002 08 30 | 644 | 0.7− | 0.9+ | 2004 02 11 | 699 | 0.3− | 1.2+ | 2004 03 19 | 704 | 0.3+ | 0.0 | | |
| 2002 09 04 | 699 | 0.6− | 0.6+ | 2004 02 11 | 644 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.5+ | | |
| 2002 09 04 | 699 | 0.2− | 0.3+ | 2004 02 11 | 699 | 0.4− | 1.0+ | 2004 03 19 | 704 | 0.5+ | 1.1+ | | |
| 2002 09 04 | 699 | (1.8− | 0.5+) | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.0 | 0.5+ | | |
| 2002 09 04 | 699 | (1.7− | 0.2+) | 2004 02 11 | 644 | 0.3+ | 0.6+ | 2004 03 27 | 691 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.7+ | 1.3+ | 2004 02 17 | 704 | 0.3+ | 0.4+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2004 02 17 | 704 | 0.2− | 0.2+ | 2004 03 27 | 691 | 0.0 | 0.1+ | | |
| 2002 09 05 | 704 | 0.7− | 0.5+ | 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.5− | 1.0− | | |
| 2002 09 05 | 704 | 0.2+ | 0.5− | 2004 02 17 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.5− | | |
| 2002 09 05 | 704 | 0.6+ | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.2+ | | |
| 2002 09 07 | 704 | 0.2+ | 1.0+ | 2004 02 19 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 703 | (4.3− | 1.8−) | | |
| 2002 09 07 | 704 | 0.7− | 0.9+ | 2004 02 19 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.4+ | 1.4− | | |
| 2002 09 07 | 704 | 0.6− | 0.7+ | 2004 02 19 | 704 | 0.7+ | 0.9+ | 2006 10 27 | 703 | 0.1− | 0.4− | | |
| 2002 09 07 | 704 | 0.3− | 1.3+ | 2004 02 19 | 704 | 0.5+ | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.9− | | |
| 2002 09 14 | 644 | 0.7− | 0.7+ | 2004 02 19 | 704 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.5+ | 0.5− | | |
| 2002 09 14 | 644 | 0.8− | 0.6+ | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2002 09 14 | 644 | 1.1− | 0.7+ | 2004 02 19 | 704 | 1.0+ | 0.8+ | 2006 11 08 | 644 | 0.3+ | 0.1− | | |
| 2002 09 28 | 291 | 0.1− | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.4+ | 0.0 | | |
| 2002 09 28 | 291 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.7+ | 0.9+ | 2006 11 15 | 703 | (1.8− | 0.1−) | | |
| 2002 09 28 | 291 | 0.1− | 0.2+ | 2004 02 19 | 704 | 0.5+ | 1.2+ | 2006 11 15 | 703 | (3.4− | 1.1−) | | |
| 2002 10 01 | 608 | 1.2− | 0.8− | 2004 02 19 | 621 | 0.6+ | 0.2− | 2006 11 15 | 703 | 0.2− | 0.1+ | | |
| 2002 10 01 | 608 | 0.7− | 0.6− | 2004 02 19 | 621 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.7− | 0.1+ | | |
| 2002 10 01 | 608 | 0.7− | 1.1− | 2004 02 20 | 621 | 0.2− | 0.1+ | 2006 11 15 | 703 | 1.3+ | 1.2+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.5+ | 2004 02 20 | 621 | 0.6− | 0.0 | 2006 11 15 | 703 | (2.8+ | 0.8+) | | |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2004 02 20 | 621 | 0.4+ | 0.1+ | 2006 11 15 | 703 | (2.9+ | 0.3+) | | |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 02 20 | 621 | 0.7− | 0.1− | 2006 11 22 | 703 | 0.1+ | 1.1− | | |
| 2002 10 03 | 704 | (0.2− | 2.4+) | 2004 02 20 | 621 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.8+ | 0.0 | | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2004 02 20 | 621 | 0.5+ | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.8− | | |
| 2002 10 06 | 704 | 0.2− | 0.6+ | 2004 02 21 | 621 | 0.2− | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.1− | | |
| 2002 10 06 | 704 | 0.5− | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.4+ | | | | | | |

**(142065)∗ 2002 QL$_{33}$ = 1995 UA$_{27}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35364)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.43224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27472649 | $\omega$ | 265.10900 | | +0.96794054 | +0.24584503 | |
| $a$ | 2.3435219 | $\Omega$ | 80.65245 | | −0.20477928 | +0.89108419 | |
| $e$ | 0.1471050 | $i$ | 2.99128 | | −0.14545292 | +0.38148289 | |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.5+ | 0.2+ | 2004 02 11 | 691 | 0.4+ | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | | |
| 1995 10 20 | 691 | 0.3+ | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.6+ | 2006 11 15 | 691 | 0.2− | 0.1+ | | |
| 1995 10 20 | 691 | 0.2+ | 0.3+ | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.2+ | | |
| 1995 10 24 | 691 | 0.5− | 0.3− | 2005 05 08 | G96 | 0.6− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.2+ | | |
| 1995 10 24 | 691 | 0.5− | 0.3+ | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.4− | 0.0 | 2005 05 08 | G96 | 0.5− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2002 08 15 | 699 | 0.3− | 0.5− | 2005 06 13 | G96 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.5+ | | |
| 2002 08 15 | 699 | (1.5+ | 0.6+) | 2005 06 13 | G96 | 0.3+ | 0.5+ | 2006 11 21 | 704 | (2.2+ | 1.8−) | | |
| 2002 08 15 | 699 | 0.0 | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.3+ | 2006 11 21 | 704 | (2.8+ | 0.3+) | | |
| 2002 08 15 | 699 | (0.1− | 1.9−) | 2005 06 13 | G96 | 0.5+ | 0.8+ | 2006 11 21 | 704 | (2.6+ | 1.9−) | | |
| 2002 08 29 | 644 | 0.1− | 0.4+ | 2005 06 14 | 691 | 0.2+ | 0.7+ | 2006 11 21 | 704 | (2.7+ | 0.4−) | | |
| 2002 08 29 | 644 | 0.1+ | 0.5+ | 2005 06 14 | 691 | 0.5+ | 0.8+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2005 06 14 | 691 | 0.3+ | 0.5+ | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 2002 08 30 | 644 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.4− | | |
| 2002 08 30 | 644 | 0.2+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.6− | 2006 11 24 | G96 | 0.3− | 0.4− | | |
| 2002 09 05 | 704 | 0.5− | 0.5− | 2006 09 28 | G96 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.0 | 0.5− | | |
| 2002 09 05 | 704 | 0.3− | 0.5− | 2006 10 19 | 695 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.4− | 0.7− | | |
| 2002 09 05 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 695 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 10 20 | 695 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2002 09 15 | 644 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.2− | | |
| 2002 09 16 | 644 | 0.5− | 1.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.9− | 0.1+ | | |
| 2002 09 16 | 644 | 0.4− | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.5− | 0.3− | | |
| 2002 09 16 | 644 | 0.2+ | 1.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.1− | | |
| 2004 02 11 | 691 | 0.0 | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.0 | | | | | | |

**(142066)∗ 2002 QC$_{35}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.43117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26600730 | $\omega$ | 270.12483 | | +0.68468665 | +0.72794624 | |
| $a$ | 2.3944568 | $\Omega$ | 43.16085 | | −0.64599257 | +0.62901143 | |
| $e$ | 0.1854159 | $i$ | 3.01961 | | −0.33748745 | +0.27283492 | |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 04 06 | G96 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2005 04 06 | G96 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.2+ | | |
| 2002 08 29 | 644 | 0.1− | 0.7+ | 2005 04 07 | G96 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.1− | | |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2005 04 07 | G96 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 | | |
| 2002 08 30 | 644 | 0.1− | 0.3− | 2005 04 07 | G96 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2002 08 30 | 644 | 0.1− | 0.5− | 2005 04 07 | G96 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1+ | | |
| 2002 08 30 | 644 | 0.0 | 0.4− | 2005 04 11 | 691 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.2− | | |
| 2002 09 05 | 704 | 0.1− | 1.1+ | 2005 04 11 | 691 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.2− | | |
| 2002 09 05 | 704 | 0.6− | 0.9+ | 2005 04 11 | 691 | 0.4+ | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.2+ | | |
| 2002 09 05 | 704 | 0.7− | 0.7− | 2005 04 18 | 691 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 2002 09 05 | 704 | 0.2+ | 0.4+ | 2005 04 18 | 691 | 0.2+ | 0.4+ | 2006 10 29 | G96 | 0.0 | 0.1− | | |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2005 04 18 | 691 | 0.2+ | 0.7+ | 2006 10 29 | G96 | 0.1− | 0.2− | | |
| 2002 09 06 | 704 | 0.5+ | 0.7+ | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.0 | 0.2− | | |
| 2002 09 06 | 704 | 0.2+ | 0.4− | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1− | | |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.1− | | |
| 2002 09 06 | 704 | 0.0 | 0.7− | 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.2− | | |
| 2002 09 08 | 608 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.1− | 0.1− | | |
| 2002 09 08 | 608 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 09 | 691 | 0.0 | 0.2+ | | |
| 2002 09 08 | 608 | 0.5− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.1+ | | |
| 2002 09 13 | 704 | 0.6− | 1.0+ | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 11 09 | 691 | 0.0 | 0.1− | | |
| 2002 09 13 | 704 | (0.3− | 1.7+) | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.5+ | | |
| 2002 09 13 | 704 | 0.5+ | 1.1+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 2002 09 15 | 644 | 0.1+ | 0.8+ | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 15 | 644 | 0.2− | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.9− | 0.5− | | |
| 2002 09 15 | 644 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.7+ | 2.9− | | |
| 2005 04 05 | G96 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.9+ | 0.3+ | | |
| 2005 04 05 | G96 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 2.2+ | 0.6− | | |
| 2005 04 05 | G96 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.3− | 0.2+ | | |
| 2005 04 05 | G96 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.5− | 0.5+ | | |
| 2005 04 06 | G96 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.2+ | | |

**(142067)∗ 2002 QV$_{35}$ = 2000 AA$_{154}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35366)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.85141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27555342 | $\omega$ | 42.32157 | | +0.05230390 | −0.99735156 | |
| $a$ | 2.3388310 | $\Omega$ | 44.75043 | | +0.89592681 | +0.02451021 | |
| $e$ | 0.1640456 | $i$ | 4.11657 | | +0.44111160 | +0.06847705 | |
| $P$ | 3.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.6+ | 0.7− | 2004 02 25 | 704 | (0.9− | 1.8+) | 2006 10 23 | 704 | (2.1+ | 2.1+) | | |
| 1997 04 03 | 704 | 1.1+ | 0.0 | 2004 02 25 | 704 | 0.7− | 0.7+ | 2006 10 23 | 704 | (1.9+ | 3.3+) | | |
| 2000 01 02 | 704 | 0.5− | 0.8+ | 2004 02 25 | 704 | 1.1+ | 0.8+ | 2006 10 23 | 704 | 1.4+ | 0.4− | | |
| 2000 01 02 | 704 | 0.0 | 0.3− | 2004 02 25 | 704 | 0.8− | 1.1+ | 2006 10 23 | 704 | (0.2− | 3.4+) | | |
| 2000 01 02 | 704 | 0.3− | 0.8− | 2004 03 15 | 703 | (2.5− | 3.4−) | 2006 10 23 | 704 | (1.2+ | 3.1+) | | |
| 2000 01 02 | 704 | 0.8+ | 0.7− | 2004 03 15 | 704 | 0.1+ | 0.7+ | 2006 10 28 | 704 | (1.8− | 0.5+) | | |
| 2000 01 02 | 704 | 0.0 | 1.2− | 2004 03 15 | 703 | 0.3+ | 0.6− | 2006 10 28 | 704 | (1.6− | 1.5+) | | |
| 2000 01 04 | 704 | 0.4+ | 1.1− | 2004 03 15 | 704 | 0.1+ | 1.0+ | 2006 10 28 | 704 | (1.7− | 0.4+) | | |
| 2000 01 04 | 704 | 0.2− | 1.1− | 2004 03 15 | 703 | (2.0+ | 0.2+) | 2006 10 28 | 704 | 0.9− | 0.4− | | |
| 2000 01 04 | 704 | 0.4− | 0.3+ | 2004 03 15 | 704 | 0.6+ | 1.0+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2000 01 04 | 704 | 0.3+ | 0.1− | 2004 03 15 | 703 | 0.9+ | 0.6− | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2000 01 04 | 704 | 0.3− | 1.1− | 2004 03 15 | 704 | 0.1+ | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2001 06 17 | 691 | 0.0 | 0.2− | 2004 03 19 | 704 | (0.2+ | 1.7+) | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 2001 06 17 | 691 | 0.1− | 0.4− | 2004 03 19 | 704 | 0.2+ | 1.1+ | 2006 11 09 | 691 | 0.2− | 0.1+ | | |
| 2001 06 17 | 691 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.8+ | 2006 11 09 | 691 | 0.1− | 0.1+ | | |
| 2002 08 29 | 644 | 0.0 | 0.5+ | 2004 03 19 | 704 | (4.1+ | 2.0+) | 2006 11 09 | 691 | 0.0 | 0.0 | | |
| 2002 08 29 | 644 | 0.1− | 0.7+ | 2004 03 20 | 699 | 0.1− | 1.1+ | 2006 11 11 | 703 | 1.3+ | 0.1− | | |
| 2002 08 29 | 644 | 0.2− | 0.7+ | 2004 03 20 | 699 | 0.8− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.1− | | |
| 2002 08 30 | 644 | 0.2+ | 1.4+ | 2004 03 20 | 699 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.0 | | |
| 2002 08 30 | 644 | 0.1− | 1.2+ | 2004 03 20 | 699 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.7− | 0.3− | | |
| 2002 08 30 | 644 | 0.2+ | 1.5+ | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2006 11 17 | 704 | 1.3− | 0.6+ | | |
| 2002 09 05 | 704 | 0.4− | 0.6+ | 2004 03 22 | 704 | 0.4+ | 1.1+ | 2006 11 17 | 704 | 0.5− | 0.0 | | |
| 2002 09 05 | 704 | (1.8− | 1.3+) | 2004 03 22 | 704 | 0.0 | 1.1+ | 2006 11 17 | 704 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.4− | 1.5+ | 2004 03 22 | 704 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.3− | | |
| 2002 09 06 | 704 | 0.7− | 0.6+ | 2004 03 25 | 704 | 1.3+ | 1.4+ | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2002 09 06 | 704 | 0.6− | 0.1− | 2004 03 25 | 704 | 0.8+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2002 09 06 | 704 | 0.4− | 0.9+ | 2004 03 25 | 704 | 1.5+ | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.0 | | |
| 2002 09 06 | 704 | 0.1+ | 0.9+ | 2004 03 25 | 704 | 1.0+ | 0.8+ | 2006 11 18 | 704 | 0.4− | 1.0+ | | |
| 2002 09 06 | 704 | 0.9− | 0.1+ | 2004 03 25 | 704 | 1.0+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.8+ | | |
| 2002 09 08 | 608 | 0.7− | 0.3− | 2004 03 26 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.5+ | | |
| 2002 09 08 | 608 | 0.6− | 0.3− | 2004 03 26 | 704 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.3+ | | |
| 2002 09 08 | 608 | 0.6− | 0.0 | 2004 03 26 | 704 | 0.0 | 0.6+ | 2006 11 18 | 704 | (0.1+ | 1.8+) | | |
| 2002 09 13 | 704 | 1.1− | 0.5+ | 2004 03 26 | 704 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.9+ | 0.1+ | | |
| 2002 09 13 | 704 | 0.6+ | 1.4+ | 2004 03 26 | 704 | 0.1+ | 1.1− | 2006 11 21 | 704 | 0.8+ | 0.1+ | | |
| 2002 09 13 | 704 | 0.7− | 0.1+ | 2004 03 27 | 691 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.1+ | | |
| 2002 09 13 | 704 | 0.4− | 0.6+ | 2004 03 27 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.8+ | 0.3+ | | |
| 2002 09 16 | 644 | (0.4− | 1.6+) | 2004 03 27 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 1.3+ | 0.4+ | | |
| 2002 09 16 | 644 | (0.5− | 1.7+) | 2004 03 28 | 704 | (2.4+ | 1.5+) | 2006 11 27 | 704 | 0.5+ | 1.0+ | | |
| 2002 09 16 | 644 | 0.5− | 1.4+ | 2004 03 28 | 704 | (1.8+ | 1.2+) | 2006 11 27 | 704 | 1.0+ | 1.4+ | | |
| 2004 01 18 | 691 | 0.1− | 0.2+ | 2004 03 28 | 704 | (2.8+ | 0.7+) | 2006 11 27 | 704 | 0.2− | 0.4+ | | |
| 2004 01 18 | 691 | 0.3+ | 0.1+ | 2004 03 28 | 704 | (1.3+ | 1.7+) | 2006 11 27 | 704 | 0.3+ | 1.1+ | | |
| 2004 01 18 | 691 | 0.2+ | 0.1+ | 2004 03 28 | 704 | (1.8+ | 0.7+) | 2006 11 27 | 704 | 1.8+ | 0.9+ | | |
| 2004 02 17 | 703 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.4− | 0.3− | 2006 11 27 | 113 | 0.3− | 0.0 | | |
| 2004 02 17 | 703 | (1.1+ | 1.6−) | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 27 | 113 | 0.2− | 0.0 | | |
| 2004 02 17 | 703 | 1.1− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2004 02 17 | 703 | (2.9+ | 0.6−) | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.2− | | |
| 2004 02 18 | 704 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.4− | 0.2− | | |
| 2004 02 18 | 704 | 0.4+ | 1.0+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.1− | | |
| 2004 02 18 | 704 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.3− | 0.8+ | | |
| 2004 02 18 | 704 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2− | 2006 12 01 | 704 | 0.2+ | 2.8+ | | |
| 2004 02 18 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.7− | 2006 12 01 | 704 | 0.6− | 0.6+ | | |
| 2004 02 25 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.4− | 1.0+ | | |

**(142068)∗ 2002 QA$_{36}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.98245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26198380 | $\omega$ | 327.94444 | | +0.73995584 | −0.67045245 | |
| $a$ | 2.4189103 | $\Omega$ | 74.25831 | | +0.62846671 | +0.66025521 | |
| $e$ | 0.2063832 | $i$ | 3.23980 | | +0.23978104 | +0.33846208 | |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.2+ | 0.0 | 2002 09 13 | 704 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 1991 11 06 | 691 | 0.8+ | 0.1− | 2002 09 13 | 704 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 1991 11 06 | 691 | 0.7+ | 0.0 | 2002 09 13 | 704 | 0.7− | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 1991 11 29 | 691 | 0.5− | 0.3+ | 2002 09 15 | 644 | 0.5− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 1991 11 29 | 691 | 0.3− | 0.8− | 2002 09 15 | 644 | 0.5− | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 1991 11 29 | 691 | 0.7− | 0.3− | 2002 09 15 | 644 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.6− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 08 29 | 644 | 0.2+ | 0.3+ | 2002 10 03 | 704 | 0.1− | 1.0+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 08 29 | 644 | 0.1+ | 0.5+ | 2002 10 03 | 704 | 0.6− | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2002 08 30 | 644 | 0.4+ | 0.1+ | 2002 10 05 | 704 | 0.5+ | 0.2− | 2006 11 17 | 703 | 0.7− | 0.1+ |
| 2002 08 30 | 644 | 0.3+ | 0.1+ | 2002 10 05 | 704 | 1.0+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2002 08 30 | 644 | 0.1+ | 0.1+ | 2002 10 05 | 704 | 1.0+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 0.6− |
| 2002 09 05 | 704 | 0.6− | 0.3+ | 2004 03 18 | 691 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.6+ | 0.0 |
| 2002 09 05 | 704 | 0.8− | 0.4+ | 2004 03 18 | 691 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.8+ |
| 2002 09 05 | 704 | 0.6− | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.3− | 0.8+ |
| 2002 09 05 | 704 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.3+ | 1.3+ |
| 2002 09 06 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.1− | 1.1+ |
| 2002 09 06 | 704 | 0.8+ | 1.4+ | 2006 10 16 | 703 | 0.2− | 0.2+ | 2006 11 26 | 704 | 0.5+ | 0.4− |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2006 10 16 | 703 | (2.4− | 3.1−) | 2006 11 26 | 704 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 26 | 704 | 0.3− | 1.2+ |
| 2002 09 06 | 704 | 0.9− | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.8− | 0.3+ |
| 2002 09 09 | 608 | 0.4+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.5+ |
| 2002 09 09 | 608 | 0.2+ | 1.2− | 2006 11 11 | 703 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.8− | 0.4+ |
| 2002 09 09 | 608 | 0.7− | 0.7− | 2006 11 11 | 703 | 0.0 | 0.5− | 2006 11 28 | 704 | 0.5− | 0.0 |

**(142069)∗ 2002 QH$_{36}$**

Discovered 2002 Aug. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.86124 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26309294 | $\omega$ | 19.15840 | | +0.99805027 | −0.00437867 | |
| $a$ | 2.4121071 | $\Omega$ | 340.77106 | | −0.03093476 | +0.83169189 | |
| $e$ | 0.2552058 | $i$ | 10.89717 | | +0.05420972 | +0.55522017 | |
| $P$ | 3.75 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 11 | 691 | 0.0 | 0.3− | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.5+ |
| 1991 10 11 | 691 | 0.3+ | 0.1+ | 2004 02 11 | 691 | 0.2+ | 0.6+ | 2006 09 20 | 699 | 0.5+ | 0.2− |
| 1991 10 11 | 691 | 0.1− | 0.1− | 2004 02 11 | 691 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.1− | 0.1− |
| 2002 07 16 | 644 | 0.2− | 0.2+ | 2004 02 15 | 704 | 0.9+ | 0.3− | 2006 09 28 | 703 | 1.0− | 0.3− |
| 2002 07 16 | 644 | 0.1+ | 0.2+ | 2004 02 15 | 704 | 0.9+ | 0.5− | 2006 09 28 | 703 | 0.1+ | 0.5− |
| 2002 07 16 | 644 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.7+ | 0.1+ | 2006 09 28 | 703 | 0.6+ | 0.8− |
| 2002 08 13 | 704 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 704 | 0.5− | 0.3+ |
| 2002 08 13 | 704 | 0.5− | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.5− | 0.8+ |
| 2002 08 13 | 704 | 0.0 | 0.7− | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.3− | 0.9+ |
| 2002 08 13 | 704 | 0.2− | 0.5− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 10 15 | A89 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.6− | 0.5− | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 10 15 | A89 | 0.1+ | 0.5− |
| 2002 08 13 | 644 | 0.4+ | 1.0+ | 2006 08 24 | 704 | 0.6− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.8− |
| 2002 08 13 | 644 | 0.5+ | 0.8+ | 2006 08 24 | 704 | 0.7+ | 0.6− | 2006 10 19 | 703 | 0.2− | 0.2+ |
| 2002 08 13 | 644 | 0.3+ | 0.8+ | 2006 08 24 | 704 | 1.0+ | 0.6+ | 2006 10 19 | 703 | (0.1+ | 2.4−) |
| 2002 08 30 | 644 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2002 08 30 | 644 | 0.3+ | 1.1+ | 2006 08 29 | 699 | 0.1− | 0.6+ | 2006 10 21 | 704 | 0.0 | 0.2− |
| 2002 08 30 | 644 | 0.4+ | 0.9+ | 2006 08 29 | 703 | 0.3− | 0.1− | 2006 10 21 | 704 | 0.6+ | 0.7+ |
| 2002 08 31 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.2− | 2006 10 21 | 704 | 1.1− | 1.0+ |
| 2002 08 31 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.2+ | 0.3− | 2006 10 21 | 704 | 0.6− | 0.8+ |
| 2002 08 31 | 644 | 0.0 | 0.1+ | 2006 08 29 | 699 | 0.5+ | 1.2+ | 2006 10 21 | 704 | 0.9− | 0.7+ |
| 2002 08 31 | 704 | 0.2+ | 0.9+ | 2006 08 29 | 699 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 08 31 | 704 | 0.1− | 0.7+ | 2006 08 29 | 699 | (1.8+ | 0.9+) | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 08 31 | 704 | 1.4− | 0.4+ | 2006 08 30 | 704 | (0.4− | 1.9+) | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 08 31 | 704 | 0.1− | 0.6+ | 2006 08 30 | 704 | (0.6− | 1.8+) | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.2− | 2006 08 30 | 704 | (0.3− | 1.7+) | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.1− | 0.2− | 2006 08 30 | 704 | (0.2+ | 1.6+) | 2006 10 23 | 644 | 0.1− | 1.6− |
| 2002 10 03 | 704 | 0.6− | 1.2− | 2006 09 16 | 703 | 0.2− | 0.4− | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.7− | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.9− | 0.7− | 2006 09 16 | 703 | 0.4− | 0.2− | 2006 10 27 | 703 | 0.4+ | 0.2− |
| 2004 01 18 | 644 | 0.0 | 1.0+ | 2006 09 16 | 703 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.8− |
| 2004 01 18 | 644 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.5+ | 0.4+ | | | | |
| 2004 01 18 | 644 | 0.1+ | 0.8+ | 2006 09 20 | 699 | 0.6+ | 0.8+ | | | | |

**(142070)∗ 2002 QO$_{36}$ = 2000 BO$_{38}$**

Discovered 2002 Aug. 28 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 35367)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.54770 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26016823 | $\omega$ | 205.43315 | | +0.99562529 | −0.09298769 | |
| $a$ | 2.4301507 | $\Omega$ | 159.89605 | | +0.08962649 | +0.92279552 | |
| $e$ | 0.1966469 | $i$ | 1.52410 | | +0.02640802 | +0.37390067 | |
| $P$ | 3.79 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 691 | 0.2+ | 0.1− | 2002 10 07 | 704 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.3+ |
| 2000 01 27 | 691 | 0.4+ | 0.0 | 2002 10 07 | 704 | 0.1− | 0.0 | 2006 10 04 | 683 | 1.2+ | 0.5− |
| 2000 01 27 | 691 | 0.2+ | 0.4+ | 2002 10 07 | 704 | 0.2+ | 1.1+ | 2006 10 04 | 683 | 1.0+ | 0.6+ |
| 2000 02 03 | 691 | 0.5− | 0.1− | 2002 10 07 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2000 02 03 | 691 | 0.2− | 0.1− | 2002 10 29 | 704 | 0.8+ | 1.0+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2000 02 03 | 691 | 0.6− | 0.0 | 2002 10 29 | 704 | (0.1+ | 2.2−) | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.6− | 0.0 | 2002 10 29 | 704 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 08 12 | 704 | 0.5− | 0.4+ | 2002 10 29 | 704 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2002 08 12 | 704 | 0.4− | 0.0 | 2004 01 30 | 691 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 08 12 | 704 | 0.2− | 0.1+ | 2004 01 30 | 691 | 0.1+ | 0.6+ | 2006 10 23 | 704 | (0.4+ | 2.2+) |
| 2002 08 12 | 608 | 0.1− | 0.5− | 2004 01 30 | 691 | 0.8+ | 0.3+ | 2006 10 23 | 704 | (1.8− | 0.5+) |
| 2002 08 12 | 608 | 0.2− | 0.7− | 2004 02 13 | 691 | 0.6+ | 0.5+ | 2006 10 23 | 704 | 0.2+ | 0.0 |
| 2002 08 12 | 608 | 0.0 | 0.6− | 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.4− | 0.6− |
| 2002 08 28 | 644 | 0.2− | 0.4+ | 2004 02 13 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2005 05 03 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2005 05 03 | 691 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2002 08 31 | 291 | 0.8+ | 0.1+ | 2005 05 03 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.5− | 0.3− |
| 2002 08 31 | 291 | 0.2− | 0.2+ | 2005 05 08 | 691 | 0.0 | 0.5+ | 2006 10 28 | 704 | 0.1− | 0.7+ |
| 2002 08 31 | 291 | 0.0 | 0.3+ | 2005 05 08 | 691 | 0.0 | 0.5+ | 2006 10 28 | 704 | 0.1+ | 1.0+ |
| 2002 09 04 | 699 | 0.6− | 0.2+ | 2005 05 08 | 691 | 0.0 | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.7+ |
| 2002 09 04 | 699 | 0.4− | 0.2+ | 2006 08 25 | 704 | 0.6− | 0.5+ | 2006 10 28 | 704 | 0.3− | 0.8+ |
| 2002 09 04 | 699 | 0.4− | 0.1+ | 2006 08 25 | 704 | 0.7− | 0.8+ | 2006 10 28 | 704 | 0.3+ | 1.0+ |
| 2002 09 04 | 699 | 0.5− | 0.6+ | 2006 08 25 | 704 | 1.2− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2006 08 25 | 704 | (1.9− | 0.3−) | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.5− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.2− | 1.3− |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2006 08 28 | 703 | 1.0− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2002 09 07 | 704 | 0.0 | 0.7+ | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.5− | 1.2− |
| 2002 09 07 | 704 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.4− |
| 2002 09 07 | 704 | 0.2− | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.6− |
| 2002 09 08 | 608 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.5− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 09 08 | 608 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.5+ | 1.0− | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2002 09 08 | 608 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 09 28 | 683 | (1.1+ | 2.1−) | 2006 11 17 | 703 | 0.2− | 1.2− |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 09 28 | 683 | (1.9+ | 1.0−) | 2006 11 17 | 703 | 0.9− | 0.2− |
| 2002 09 14 | 644 | 0.1+ | 1.3+ | 2006 09 28 | 683 | 0.9+ | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2002 09 15 | 644 | 0.1− | 0.9− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 18 | 704 | (0.1− | 1.8+) |
| 2002 09 15 | 644 | 0.1− | 0.8− | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.4+ | 1.4+ |
| 2002 09 15 | 644 | 0.2− | 0.8− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | (1.7− | 1.0+) |
| 2002 09 17 | 608 | 0.9− | 1.2− | 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 11 18 | 704 | 0.4− | 0.6+ |
| 2002 09 17 | 608 | 0.9− | 1.1− | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | 1.4+ | 0.0 |
| 2002 09 17 | 608 | (1.0− | 1.5−) | 2006 09 30 | 683 | 0.5+ | 0.2− | 2006 11 21 | 704 | 1.0+ | 0.4+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.5− | 2006 11 21 | 704 | 0.8+ | 0.3− |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 683 | 0.4− | 0.6− | 2006 11 21 | 704 | 1.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.4− |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 09 30 | 683 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 11 22 | 691 | 0.4+ | 0.1+ |
| 2002 10 05 | 704 | 0.1+ | 0.5+ | 2006 10 03 | 704 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.5− | 2006 10 03 | 704 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.4− | 0.4+ | 2006 10 03 | 704 | 0.0 | 0.5− | 2006 11 27 | 691 | 1.1− | 1.0+ |
| 2002 10 05 | 704 | 0.2− | 0.5+ | 2006 10 03 | 704 | 0.5− | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.9+ |

**(142071)∗ 2002 QX$_{36}$**

Discovered 2002 Aug. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.16328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23398219 | $\omega$ | 269.14606 | | +0.47939520 | −0.87660737 | |
| $a$ | 2.6082398 | $\Omega$ | 152.08642 | | +0.83645938 | +0.44202468 | |
| $e$ | 0.2485651 | $i$ | 5.11174 | | +0.26554839 | +0.19019384 | |
| $P$ | 4.21 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.5+ | 1.0+ | 2002 09 05 | 704 | 0.7+ | 1.2+ | 2004 03 15 | 691 | 0.1+ | 0.2+ |
| 1998 10 12 | 699 | 1.1+ | 0.3+ | 2002 09 05 | 704 | 0.5+ | 0.0 | 2004 03 15 | 691 | 0.1− | 0.6+ |
| 1998 10 12 | 699 | 0.6+ | 0.2− | 2002 09 07 | 704 | 0.2− | 0.6+ | 2004 03 22 | 704 | 1.0+ | 0.4+ |
| 1998 11 11 | 704 | 0.8− | 0.0 | 2002 09 07 | 704 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.8+ | 0.7+ |
| 1998 11 11 | 704 | 0.4− | 0.8+ | 2002 09 07 | 704 | 0.4− | 0.4+ | 2004 03 22 | 704 | (1.5+ | 1.4+) |
| 1998 11 11 | 704 | 0.7− | 0.9− | 2002 09 13 | 644 | 0.6− | 0.5+ | 2004 03 23 | 691 | 0.3+ | 0.7+ |
| 1998 11 11 | 704 | (5.0− | 0.2+) | 2002 09 13 | 644 | 0.3− | 0.6+ | 2004 03 23 | 691 | 0.1+ | 0.4+ |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2002 09 13 | 644 | 0.3− | 0.5+ | 2004 03 23 | 691 | 0.2+ | 0.6+ |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 08 13 | 644 | 0.8+ | 0.0 |
| 2000 05 05 | 645 | 0.1− | 0.0 | 2002 09 15 | 644 | 0.3− | 0.6+ | 2006 08 13 | 644 | 0.3+ | 0.1+ |
| 2000 05 05 | 645 | 0.2− | 0.0 | 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 08 13 | 644 | 0.0 | 0.4+ |
| 2002 08 30 | 291 | 0.2− | 0.3+ | 2002 10 01 | 699 | 0.6+ | 0.1− | 2006 09 30 | G96 | 0.6− | 0.4− |
| 2002 08 30 | 291 | 0.2− | 0.2+ | 2002 10 01 | 699 | 1.0+ | 1.0+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 08 30 | 291 | 0.4− | 0.2+ | 2002 10 01 | 699 | (0.8+ | 2.1+) | 2006 09 30 | G96 | 0.6− | 0.3− |
| 2002 08 31 | 291 | 0.1+ | 0.0 | 2002 10 01 | 699 | (0.1− | 1.8+) | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2002 08 31 | 291 | 0.5− | 0.1− | 2002 10 03 | 704 | 0.4+ | 1.0+ | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2002 08 31 | 291 | 0.5− | 0.1+ | 2002 10 03 | 704 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2002 10 03 | 704 | (0.4− | 1.9+) | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.7+ | 0.7+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.3+ |

**(142072)∗ 2002 QF$_{39}$ = 2002 RN$_{239}$**

Discovered 2002 Aug. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (d, *MPO* 50106)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.13626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26353241 | $\omega$ | 262.34352 | | +0.12305294 | +0.99235523 | |
| $a$ | 2.4094247 | $\Omega$ | 14.73483 | | −0.89525614 | +0.11510599 | |
| $e$ | 0.1684739 | $i$ | 2.12643 | | −0.42822238 | +0.04451634 | |
| $P$ | 3.74 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 27 | 691 | 0.5+ | 0.5+ | 2002 09 28 | 608 | (2.2− | 1.1−) | 2005 04 17 | 691 | 0.4− | 0.6− |
| 2001 02 27 | 691 | 0.2+ | 0.3+ | 2002 09 28 | 608 | (2.3− | 1.1−) | 2005 05 01 | 644 | 0.3− | 0.3+ |
| 2001 02 27 | 691 | 1.0+ | 0.0 | 2002 09 28 | 608 | (2.2− | 0.5−) | 2005 05 01 | 644 | 0.2+ | 0.4+ |
| 2001 04 16 | 645 | 0.1− | 0.0 | 2002 10 08 | 291 | 0.2− | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.5+ |
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2002 10 08 | 291 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.7+ |
| 2001 04 27 | 691 | 0.3+ | 0.5+ | 2002 10 08 | 291 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2001 04 27 | 691 | 0.0 | 0.5+ | 2005 04 10 | G96 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.6+ |
| 2001 04 27 | 691 | 0.2+ | 0.5+ | 2005 04 10 | G96 | 0.5− | 0.1+ | 2006 10 20 | 691 | 0.5− | 0.2+ |
| 2002 08 30 | 291 | 0.4− | 0.4+ | 2005 04 10 | G96 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2002 08 30 | 291 | 0.3− | 0.5+ | 2005 04 10 | G96 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2002 08 30 | 291 | 0.5+ | 0.9+ | 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 30 | A44 | 0.9− | 0.7+ |
| 2002 08 31 | 291 | 0.3− | 0.4+ | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 10 30 | A44 | 0.5− | 0.2+ |
| 2002 08 31 | 291 | 0.3− | 0.4+ | 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.3+ |
| 2002 08 31 | 291 | 0.3− | 0.3+ | 2005 04 13 | 699 | (2.5+ | 0.0 ) | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2005 04 13 | 699 | 0.9+ | 0.7+ | 2006 11 17 | 691 | 0.0 | 0.4+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2005 04 13 | 699 | 0.9+ | 1.4+ | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2002 09 15 | 644 | 0.5+ | 0.2− | 2005 04 13 | 699 | (1.6+ | 0.4+) | 2006 11 21 | 691 | 0.3− | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.6+ | 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 11 21 | 691 | 0.4+ | 0.0 |
| 2002 09 15 | 644 | 0.1+ | 0.3+ | 2005 04 17 | 691 | 0.5+ | 1.3+ | | | | |

**(142073)∗ 2002 QQ$_{41}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.15733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24470100 | $\omega$ | 34.31566 | | +0.92453983 | −0.38064703 | |
| $a$ | 2.5315056 | $\Omega$ | 348.01687 | | +0.32692532 | +0.81687183 | |
| $e$ | 0.1523122 | $i$ | 5.04946 | | +0.19582119 | +0.43339157 | |
| $P$ | 4.03 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 30 | 691 | 0.3+ | 0.5+ | 2002 08 18 | 644 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.6− | 0.1− |
| 1992 01 30 | 691 | 0.1+ | 0.1+ | 2002 08 18 | 644 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.6− | 0.7− |
| 1992 01 30 | 691 | 0.1− | 0.1− | 2002 08 29 | 644 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.4− |
| 1996 01 18 | 691 | 0.1− | 0.2− | 2002 08 29 | 644 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.6− |
| 1996 01 18 | 691 | 0.1− | 0.2− | 2002 08 29 | 644 | 0.1− | 0.0 | 2006 08 12 | 644 | 0.2+ | 0.3+ |
| 1996 01 18 | 691 | 0.2− | 0.2+ | 2002 08 31 | 704 | 0.1+ | 1.2− | 2006 08 12 | 644 | 0.2+ | 0.1+ |
| 1998 08 17 | 704 | 0.7− | 0.6+ | 2002 08 31 | 704 | 0.4− | 0.6− | 2006 08 12 | 644 | 0.2+ | 0.2+ |
| 1998 08 17 | 704 | 0.1− | 0.7− | 2002 08 31 | 704 | 0.1− | 1.6− | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 1998 08 17 | 704 | 0.6+ | 0.5+ | 2003 12 23 | 704 | 0.3− | 0.7+ | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 1998 08 17 | 704 | 1.0+ | 0.5− | 2003 12 23 | 704 | 0.1− | 0.5+ | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 1998 08 17 | 704 | 0.4+ | 0.3− | 2003 12 23 | 704 | 1.4+ | 0.2+ | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 2002 08 08 | 699 | 0.8+ | 0.7+ | 2003 12 23 | 704 | 0.6− | 0.3+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2002 08 08 | 699 | 0.4− | 0.7+ | 2003 12 23 | 704 | 1.1+ | 0.7+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2002 08 08 | 699 | 0.6− | 0.0 | 2003 12 28 | 704 | 0.4+ | 0.5− | 2006 08 24 | 644 | 0.4+ | 0.1+ |
| 2002 08 08 | 699 | 0.3+ | 0.2+ | 2003 12 28 | 704 | 0.3+ | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.3+ |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2003 12 28 | 704 | 0.3+ | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2003 12 28 | 704 | 1.7+ | 0.0 | 2006 08 28 | 704 | 0.4+ | 1.2− |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2003 12 28 | 704 | 0.5+ | 0.5− | 2006 08 28 | 704 | 0.4− | 0.3+ |
| 2002 08 12 | 608 | 0.4− | 0.7− | 2004 01 16 | 703 | 1.2− | 0.4− | 2006 08 28 | 704 | (2.6+ | 0.4−) |
| 2002 08 12 | 608 | 1.0− | 0.3− | 2004 01 16 | 703 | 0.8− | 0.2+ | 2006 08 28 | 704 | 0.1+ | 0.4+ |
| 2002 08 12 | 608 | 0.3− | 0.7− | 2004 01 16 | 703 | 1.2− | 0.4+ | 2006 08 28 | 703 | 0.9− | 0.2+ |
| 2002 08 14 | 704 | 0.8+ | 0.5+ | 2004 01 16 | 703 | 1.1− | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.4+ |
| 2002 08 14 | 704 | 0.7+ | 1.4+ | 2004 01 19 | 699 | 0.2− | 0.5− | 2006 08 28 | 703 | 0.4− | 0.4− |
| 2002 08 14 | 704 | 0.1− | 0.4− | 2004 01 19 | 699 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.8− | 0.2+ |
| 2002 08 14 | 704 | 0.6+ | 1.6+ | 2004 01 19 | 699 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.6+ |
| 2002 08 14 | 704 | 0.2− | 1.0− | 2004 01 19 | 699 | 0.1− | 0.6− | 2006 09 14 | 644 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2004 02 23 | 704 | 1.3+ | 0.5+ | 2006 09 14 | 644 | 0.2+ | 0.0 |

**(142074)∗ 2002 QW$_{41}$ = 2005 EV$_{294}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Id. A. Doppler (*MPO* 75498)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.88315 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27585296 | $\omega$ | 246.99084 | | +0.33717319 | +0.94065778 | |
| $a$ | 2.3371376 | $\Omega$ | 42.77488 | | −0.84171261 | +0.31949083 | |
| $e$ | 0.1542539 | $i$ | 3.24434 | | −0.42170382 | +0.11440522 | |
| $P$ | 3.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 26 | 809 | 0.4− | 1.7+ | 2005 04 11 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1995 08 29 | 809 | 0.5+ | 0.9− | 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1995 08 30 | 809 | 0.5+ | 0.5− | 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 1995 08 31 | 809 | 0.0 | 1.1− | 2005 04 12 | 704 | 0.8− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2002 07 22 | 608 | (0.9+ | 3.1+) | 2005 04 12 | 704 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2002 07 22 | 608 | 0.3+ | 1.4+ | 2005 04 12 | 704 | 0.6+ | 1.5+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2002 07 22 | 608 | (0.5+ | 1.7+) | 2005 04 12 | 704 | 0.7+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2002 08 13 | 704 | 0.6+ | 0.4− | 2005 04 12 | 704 | 1.0+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2002 08 13 | 704 | 0.2+ | 0.1+ | 2005 04 18 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2002 08 13 | 704 | 0.4− | 0.5− | 2005 04 18 | 691 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 08 13 | 704 | 0.2− | 0.8+ | 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2005 04 18 | 703 | 0.0 | 0.8+ | 2006 10 28 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.1+ | 0.1+ | 2005 04 18 | 703 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2005 04 18 | 703 | 0.9− | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2002 08 29 | 644 | 0.5− | 0.1− | 2005 04 18 | 703 | 0.6− | 0.4+ | 2006 11 01 | 691 | 0.9+ | 1.0+ |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2005 05 06 | G96 | 0.5+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 2002 08 29 | 644 | 0.0 | 0.2− | 2005 05 06 | G96 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.4− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2005 05 06 | G96 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.3− | 2005 05 06 | G96 | 0.1− | 0.4+ | 2006 11 11 | 703 | 1.3− | 0.0 |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2005 05 08 | 691 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.5− | 0.5− |
| 2002 08 31 | 704 | 0.0 | 0.7+ | 2005 05 08 | 691 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2002 08 31 | 704 | 0.5− | 0.3− | 2005 05 08 | 703 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.6− | 1.0− |
| 2002 08 31 | 704 | 0.9+ | 0.2+ | 2005 05 08 | 691 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2002 09 02 | 608 | (0.7− | 1.8+) | 2005 05 08 | 703 | 1.4− | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2002 09 02 | 608 | 0.6− | 1.3+ | 2005 05 08 | 703 | 0.0 | 1.0− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2002 09 02 | 608 | (0.3− | 2.1+) | 2005 05 08 | 703 | 0.2− | 0.8− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.5− | 1.4+ | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 0.6+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.8− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 09 06 | 704 | (0.4− | 1.8−) | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2− | 1.1+ |
| 2002 09 06 | 704 | (0.9− | 1.9−) | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.9− | 0.9+ |
| 2002 09 06 | 704 | 0.8− | 1.4− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.4− |
| 2005 03 11 | 691 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.9− |
| 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2005 03 11 | 691 | 0.4+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2005 04 04 | 704 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2005 04 04 | 704 | (1.6+ | 0.7+) | 2006 10 16 | 683 | 0.5+ | 0.1+ | 2006 11 27 | 703 | 1.1− | 0.8+ |
| 2005 04 04 | 704 | 1.1+ | 0.4+ | 2006 10 16 | 683 | 0.9+ | 0.5+ | 2006 11 27 | 703 | 0.3− | 0.2− |
| 2005 04 04 | 704 | 0.6− | 1.0− | 2006 10 16 | 683 | (2.1− | 0.9+) | 2006 11 27 | 703 | 1.6+ | 0.7− |
| 2005 04 07 | 704 | 0.0 | 1.2− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.7− | 1.0+ |
| 2005 04 07 | 704 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.3− | 0.3+ | | | | |
| 2005 04 07 | 704 | 0.9− | 0.3− | 2006 10 19 | 691 | 0.3− | 0.3+ | | | | |

**(142075)∗ 2002 QK$_{42}$**

Discovered 2002 Aug. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.82866 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25358459 | $\omega$ | 338.86208 | | +0.97881011 | +0.20382840 | |
| $a$ | 2.4720323 | $\Omega$ | 9.44124 | | −0.16650724 | +0.84800843 | |
| $e$ | 0.1947805 | $i$ | 6.86772 | | −0.11918938 | +0.48921947 | |
| $P$ | 3.89 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.0 | 0.6+ | 2005 04 05 | 699 | (1.6+ | 1.5+) | 2006 09 22 | 704 | 0.9+ | 0.4+ |
| 2001 03 24 | 691 | 0.4+ | 0.7+ | 2005 04 05 | 699 | 1.5+ | 1.0+ | 2006 09 22 | 704 | 0.4+ | 0.6− |
| 2001 03 24 | 691 | 0.5+ | 0.4+ | 2005 04 05 | 699 | 1.1− | 0.2+ | 2006 09 22 | 704 | 0.0 | 0.1+ |
| 2002 06 20 | 644 | 0.3− | 0.0 | 2005 04 05 | 699 | 0.8− | 0.2+ | 2006 09 22 | 704 | 0.4+ | 0.2+ |
| 2002 06 20 | 644 | 0.3− | 0.2− | 2006 08 23 | 704 | 0.3− | 0.1+ | 2006 09 25 | 699 | 1.0+ | 0.7− |
| 2002 06 20 | 644 | 0.3− | 0.2− | 2006 08 23 | 704 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.6+ | 1.0+ |
| 2002 07 16 | 644 | 0.1+ | 1.3− | 2006 08 23 | 704 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.4+ | 0.9+ |
| 2002 07 16 | 644 | 0.5+ | 1.1− | 2006 08 23 | 704 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2002 07 16 | 644 | 0.0 | 1.0− | 2006 08 23 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 704 | 0.8− | 1.3+ |
| 2002 08 13 | 704 | 0.3+ | 0.6+ | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.7− | 0.6+ |
| 2002 08 13 | 704 | 0.4+ | 0.1− | 2006 08 23 | 644 | 0.5− | 0.1− | 2006 09 26 | 704 | 0.3− | 1.0+ |
| 2002 08 13 | 704 | 0.1− | 0.2− | 2006 08 23 | 644 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.7− | 0.9+ |
| 2002 08 13 | 704 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.2− |
| 2002 08 13 | 704 | 0.6+ | 0.4+ | 2006 08 24 | 644 | 0.6− | 0.3− | 2006 09 28 | 704 | 0.5+ | 0.2+ |
| 2002 08 30 | 644 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.7− | 0.2− | 2006 09 28 | 704 | 0.6+ | 0.4− |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 704 | 0.5− | 0.6+ | 2006 09 28 | 704 | 0.1− | 0.5+ |
| 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.9+ | 0.3− | 2006 09 28 | 704 | 1.3+ | 1.3+ |
| 2002 08 31 | 704 | 0.3+ | 0.1− | 2006 08 28 | 704 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.1− |
| 2002 08 31 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 704 | 0.8− | 0.7+ | 2006 09 30 | 703 | 0.5+ | 0.2+ |
| 2002 08 31 | 704 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.2+ |
| 2002 08 31 | 704 | 0.4− | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2002 09 26 | 704 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.5− | 0.5+ | 2006 10 19 | 703 | 1.5− | 0.4− |
| 2002 09 26 | 704 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 1.2+ |
| 2002 09 26 | 704 | 1.1− | 0.2+ | 2006 08 31 | 704 | 0.5− | 0.5− | 2006 10 19 | 703 | 0.5− | 0.9+ |
| 2002 09 26 | 704 | 0.5− | 0.2− | 2006 08 31 | 704 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.7− | 0.4− |
| 2004 01 18 | 691 | 0.2+ | 0.6+ | 2006 08 31 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 1.8+ | 0.0 |
| 2004 01 18 | 691 | 0.1+ | 0.5+ | 2006 08 31 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2004 01 18 | 691 | 0.2+ | 0.5+ | 2006 08 31 | 704 | 0.9− | 0.9+ | 2006 11 11 | 703 | 0.8− | 0.5− |
| 2005 03 08 | G96 | 0.1− | 0.3− | 2006 09 16 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2005 03 08 | G96 | 0.4− | 0.4− | 2006 09 16 | 704 | 0.0 | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 03 08 | G96 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2005 03 08 | G96 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.6− | 0.8+ | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2005 03 13 | 691 | 0.4+ | 0.0 | 2006 09 16 | 704 | 0.1− | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2005 03 13 | 691 | 0.2+ | 0.1− | 2006 09 19 | 704 | 0.0 | 0.0 | 2006 11 18 | 703 | 0.8− | 0.3− |
| 2005 03 13 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 704 | 0.4+ | 0.2+ | 2006 11 18 | 703 | 0.2− | 0.4− |
| 2005 04 04 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 704 | 0.1− | 0.1− | 2006 11 18 | 703 | 0.5− | 0.1− |
| 2005 04 04 | 691 | 0.2− | 0.4+ | 2006 09 19 | 704 | 0.3+ | 0.7− | 2006 11 18 | 703 | 0.4− | 0.6+ |
| 2005 04 04 | 691 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.6+ | 0.1− | | | | |

**(142076)∗ 2002 QQ$_{42}$**

Discovered 2002 Aug. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.83221 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26995993 | $\omega$ | 305.13776 | | +0.47898095 | +0.87768414 | |
| $a$ | 2.3710271 | $\Omega$ | 353.42310 | | −0.75405246 | +0.40219765 | |
| $e$ | 0.1617628 | $i$ | 7.89970 | | −0.44942422 | +0.26059088 | |
| $P$ | 3.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.0 | 1.2− | 2005 03 13 | 703 | (0.8− | 1.7+) | 2006 09 19 | 703 | 0.4+ | 0.4+ |
| 1999 10 14 | 704 | 0.4+ | 0.8+ | 2005 03 13 | 703 | 0.9− | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.8− |
| 1999 10 14 | 704 | 0.4+ | 0.3− | 2005 03 13 | 703 | 0.4− | 1.0+ | 2006 09 22 | 224 | 0.2− | 0.0 |
| 2002 07 16 | 644 | 0.2+ | 0.9+ | 2005 04 05 | 699 | 0.5+ | 0.4− | 2006 09 22 | 224 | 0.3+ | 0.3+ |
| 2002 07 16 | 644 | 0.1+ | 1.0+ | 2005 04 05 | 699 | (0.4+ | 1.6+) | 2006 09 22 | 224 | 0.2+ | 0.0 |
| 2002 07 16 | 644 | 0.1+ | 1.3+ | 2005 04 05 | 699 | 0.6+ | 0.3− | 2006 09 25 | 704 | (0.3− | 1.5+) |
| 2002 07 28 | 644 | 0.2− | 0.1− | 2005 04 05 | 699 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.4+ |
| 2002 07 28 | 644 | 0.3− | 0.3− | 2005 04 13 | 699 | (1.9− | 0.4+) | 2006 09 25 | 704 | 0.3+ | 0.7+ |
| 2002 07 28 | 644 | 0.1− | 0.2− | 2005 04 13 | 699 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 1.4+ | 0.0 |
| 2002 08 13 | 704 | 0.1− | 0.3+ | 2005 04 13 | 699 | 0.2− | 1.5+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2002 08 13 | 704 | 0.0 | 0.5− | 2005 04 13 | 699 | 0.4+ | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2002 08 13 | 704 | 0.2− | 0.1− | 2005 04 14 | 703 | 0.9− | 0.5− | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2002 08 13 | 704 | 0.1+ | 0.6− | 2005 04 14 | 703 | 0.9− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 08 13 | 704 | 0.3− | 1.2− | 2005 04 14 | 703 | 0.7− | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2002 08 19 | 644 | 0.6− | 0.2− | 2005 04 14 | 703 | 0.9− | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2002 08 19 | 644 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.1− | 1.1− |
| 2002 08 19 | 644 | 0.6− | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.2− | 2006 10 03 | 704 | 0.2+ | 0.8+ |
| 2002 08 30 | 644 | 0.1+ | 0.7− | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.2+ | 0.7+ |
| 2002 08 30 | 644 | 0.1− | 0.7− | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 10 03 | 704 | 0.1− | 1.3+ |
| 2002 08 30 | 644 | 0.2+ | 0.7− | 2006 08 27 | 683 | 0.2− | 1.1− | 2006 10 03 | 704 | 0.3− | 0.3+ |
| 2002 08 31 | 704 | 0.6+ | 0.5+ | 2006 08 27 | 683 | 0.3− | 0.7− | 2006 10 16 | 683 | 0.7− | 0.4− |
| 2002 08 31 | 704 | 0.7+ | 0.6+ | 2006 08 27 | 683 | (2.1− | 2.1+) | 2006 10 16 | 683 | 1.2− | 1.2+ |
| 2002 08 31 | 704 | 0.1− | 0.4+ | 2006 08 30 | 699 | (0.2− | 1.5+) | 2006 10 16 | 683 | 0.3+ | 0.6+ |
| 2002 08 31 | 704 | 0.1− | 0.4+ | 2006 08 30 | 699 | (1.6+ | 0.1−) | 2006 10 17 | 703 | 0.3+ | 0.7+ |
| 2003 11 24 | 691 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.5− | 1.0+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2003 11 24 | 691 | 0.5− | 0.4+ | 2006 08 30 | 699 | (1.6+ | 0.4−) | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2003 11 24 | 691 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.9− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2005 03 03 | 691 | 0.7+ | 0.1− | 2006 09 14 | 703 | 0.8− | 0.2− | 2006 10 20 | 683 | 0.1− | 0.9− |
| 2005 03 03 | 691 | 0.6+ | 0.1+ | 2006 09 14 | 703 | (1.1− | 3.0−) | 2006 10 20 | 683 | 0.4+ | 0.7− |
| 2005 03 03 | 691 | 1.0+ | 0.2− | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 10 20 | 683 | 1.0+ | 1.4+ |
| 2005 03 11 | G96 | 0.2− | 0.4+ | 2006 09 17 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 03 11 | G96 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 03 11 | G96 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 10 27 | 683 | (1.6+ | 2.9−) |
| 2005 03 12 | G96 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.5+ | 0.4− | 2006 10 27 | 683 | 1.2+ | 0.4− |
| 2005 03 12 | G96 | 0.2− | 0.1+ | 2006 09 18 | 703 | 1.2− | 0.1− | 2006 10 27 | 683 | (1.4+ | 3.5+) |
| 2005 03 12 | G96 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2005 03 12 | G96 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2005 03 13 | 703 | 0.4− | 1.1+ | 2006 09 19 | 703 | 0.4− | 0.4− | 2006 11 06 | 644 | 0.2− | 0.1− |

**(142077)∗ 2002 QB$_{43}$**

Discovered 2002 Aug. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.70960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27136116 | $\omega$ | 212.97067 | | +0.51264903 | | +0.84969517 |
| $a$ | 2.3628578 | $\Omega$ | 88.14755 | | −0.75862497 | | +0.51552691 |
| $e$ | 0.1115569 | $i$ | 7.08777 | | −0.40209344 | | +0.11068029 |
| $P$ | 3.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.0 | 0.6− | 2005 04 01 | 699 | (2.1+ | 2.6+) | 2006 09 21 | 699 | (0.5− | 2.5+) |
| 2002 07 15 | 644 | 0.3− | 0.3− | 2005 04 01 | 699 | (1.7+ | 1.8+) | 2006 09 21 | 699 | 0.4− | 0.7+ |
| 2002 07 15 | 644 | 0.3− | 0.5− | 2005 04 01 | 699 | 1.1+ | 1.1+ | 2006 09 21 | 699 | (1.6− | 1.9+) |
| 2002 08 13 | 704 | 0.1− | 1.1− | 2005 04 04 | 703 | 0.0 | 0.5+ | 2006 09 25 | 699 | 1.3− | 0.3+ |
| 2002 08 13 | 704 | 0.4− | 1.2− | 2005 04 04 | 703 | 0.9− | 0.0 | 2006 09 25 | 699 | 0.7+ | 0.2+ |
| 2002 08 13 | 704 | 0.5+ | 0.2+ | 2005 04 04 | 703 | 0.2− | 0.8+ | 2006 09 25 | 699 | 0.6− | 0.0 |
| 2002 08 13 | 704 | 0.5− | 0.7+ | 2005 04 04 | 703 | 0.0 | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.8+ |
| 2002 08 13 | 644 | 0.1− | 0.8+ | 2005 05 04 | 703 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2002 08 13 | 644 | 0.1+ | 0.5+ | 2005 05 04 | 703 | 1.3+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.4− |
| 2002 08 13 | 644 | 0.3+ | 0.8+ | 2005 05 04 | 703 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.6+ | 0.1+ |
| 2002 08 19 | 644 | 0.5− | 0.2+ | 2005 05 04 | 703 | (1.6+ | 1.3−) | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2002 08 19 | 644 | 0.2+ | 0.3− | 2005 05 15 | 644 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.5− | 0.5− |
| 2002 08 19 | 644 | 0.5− | 0.2+ | 2005 05 15 | 644 | 0.0 | 0.3+ | 2006 09 30 | 704 | 1.1− | 0.8+ |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2005 05 15 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 704 | (2.1− | 0.3+) |
| 2002 08 19 | 644 | 0.3− | 0.1+ | 2005 05 16 | 644 | 0.0 | 0.3+ | 2006 10 13 | F84 | 0.5+ | 0.2− |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2005 05 16 | 644 | 0.0 | 0.4+ | 2006 10 13 | F84 | 0.5+ | 0.1− |
| 2002 08 30 | 644 | 0.0 | 0.1− | 2005 05 16 | 644 | 0.0 | 0.3+ | 2006 10 13 | F84 | 0.3+ | 0.2− |
| 2002 08 30 | 644 | 0.1+ | 0.0 | 2005 05 18 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.8+ |
| 2002 08 30 | 644 | 0.4+ | 0.3+ | 2005 05 18 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2002 08 31 | 704 | 0.7+ | 0.0 | 2005 05 18 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.9+ |
| 2002 08 31 | 704 | 0.7+ | 0.7− | 2005 05 18 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 1.2+ |
| 2002 08 31 | 704 | 0.3+ | 0.4− | 2005 05 18 | 644 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.7− | 0.3+ |
| 2003 12 18 | 704 | 1.0+ | 0.4+ | 2005 05 18 | 644 | 0.0 | 0.6+ | 2006 10 28 | 703 | 0.4+ | 1.0+ |
| 2003 12 18 | 704 | 0.0 | 0.1− | 2005 06 28 | 644 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.9+ |
| 2003 12 18 | 704 | 0.4− | 0.2+ | 2005 06 28 | 644 | 0.6+ | 0.4− | 2006 10 28 | 703 | 0.2+ | 1.4+ |
| 2003 12 18 | 704 | 0.0 | 0.1+ | 2005 06 28 | 644 | 0.6+ | 0.5+ | | | | |
| 2005 04 01 | 699 | 0.4− | 1.4+ | 2006 09 21 | 699 | 0.9− | 0.3+ | | | | |

**(142078)∗ 2002 QZ$_{43}$ = 1998 HV$_{34}$**

Discovered 2002 Aug. 30 by NEAT at Palomar.

Id. A. Doppler (*MPO* 35371)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.93823 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28333622 | $\omega$ | 186.33442 | | +0.22265410 | | +0.96956016 |
| $a$ | 2.2958032 | $\Omega$ | 96.56451 | | −0.88989027 | | +0.24480316 |
| $e$ | 0.1965972 | $i$ | 5.88580 | | −0.39814628 | | −0.00495146 |
| $P$ | 3.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | (2.1− | 3.5−) | 2002 08 19 | 704 | 0.2+ | 0.3− | 2005 05 03 | 691 | 0.1+ | 0.0 |
| 1998 03 24 | 704 | (2.7+ | 2.2−) | 2002 08 19 | 644 | 0.1+ | 0.4+ | 2005 05 06 | 704 | 0.8+ | 0.1− |
| 1998 03 24 | 704 | (1.3+ | 3.3−) | 2002 08 19 | 704 | 0.5+ | 0.2− | 2005 05 06 | 704 | 0.7+ | 0.6− |
| 1998 03 24 | 704 | (0.2− | 3.1−) | 2002 08 19 | 704 | 0.4+ | 0.3+ | 2005 05 06 | 704 | 1.0+ | 0.3+ |
| 1998 04 20 | 704 | 0.6− | 0.4+ | 2002 08 30 | 644 | 0.2+ | 0.6+ | 2005 05 06 | 704 | 0.1− | 0.0 |
| 1998 04 20 | 704 | 0.5− | 0.5+ | 2002 08 30 | 644 | 0.0 | 0.7+ | 2005 05 06 | 704 | 0.2+ | 0.2− |
| 1998 04 20 | 704 | 0.6− | 0.5+ | 2002 08 30 | 644 | 0.2− | 0.6+ | 2005 05 08 | 703 | 0.5− | 0.1− |
| 1998 04 20 | 704 | 0.5− | 0.6+ | 2002 08 31 | 704 | 0.2+ | 0.2+ | 2005 05 08 | 703 | 0.2− | 0.3+ |
| 1998 04 21 | 704 | 0.3+ | 1.0+ | 2002 08 31 | 704 | 0.0 | 0.6+ | 2005 05 08 | 703 | 1.0− | 0.6− |
| 1998 04 21 | 704 | (2.5+ | 1.4+) | 2002 08 31 | 704 | 0.4− | 0.7+ | 2005 05 08 | 703 | 1.2− | 0.9− |
| 1998 04 21 | 704 | 0.5+ | 1.4+ | 2003 12 14 | 291 | 0.0 | 0.4+ | 2005 05 13 | 703 | 1.4− | 0.1− |
| 1998 04 21 | 704 | (0.1− | 2.5−) | 2003 12 14 | 291 | 0.1+ | 0.3+ | 2005 05 13 | 703 | 0.8− | 0.7+ |
| 1998 04 21 | 704 | (0.4− | 2.4−) | 2003 12 14 | 291 | 0.3+ | 0.3− | 2005 05 13 | 703 | 0.4− | 0.2− |
| 1998 04 24 | 704 | (2.4+ | 0.7−) | 2005 04 01 | 699 | 0.9+ | 0.0 | 2005 05 13 | 703 | 0.8− | 0.2+ |
| 1998 04 24 | 704 | 0.6+ | 0.5+ | 2005 04 01 | 699 | 0.4− | 0.3+ | 2005 05 14 | 691 | 0.1+ | 0.0 |
| 1998 04 24 | 704 | (3.4+ | 1.4+) | 2005 04 01 | 699 | 0.3+ | 0.3+ | 2005 05 14 | 691 | 0.1− | 0.1+ |
| 1998 04 24 | 704 | 1.3+ | 1.3− | 2005 04 01 | 691 | 0.1− | 0.1− | 2005 05 14 | 691 | 0.0 | 0.2+ |
| 1998 04 24 | 704 | 0.0 | 0.3− | 2005 04 01 | 699 | 0.7+ | 1.0+ | 2005 05 15 | 644 | 0.1+ | 0.2− |
| 2002 07 07 | 333 | 1.1+ | 0.2− | 2005 04 01 | 691 | 0.2+ | 0.1+ | 2005 05 15 | 644 | 0.1+ | 0.1− |
| 2002 07 07 | 333 | 0.8− | 0.2− | 2005 04 01 | 691 | 0.1− | 0.0 | 2005 05 15 | 644 | 0.2+ | 0.1− |
| 2002 07 07 | 333 | 0.5− | 0.2+ | 2005 04 02 | 691 | 0.1+ | 0.1− | 2005 05 18 | 644 | 0.1+ | 0.2− |
| 2002 07 30 | 608 | 0.1+ | 0.9− | 2005 04 02 | 691 | 0.0 | 0.1+ | 2005 05 18 | 644 | 0.3− | 0.1− |
| 2002 07 30 | 608 | 0.1+ | 0.6− | 2005 04 02 | 691 | 0.0 | 0.1− | 2005 05 18 | 644 | 0.1+ | 0.2− |
| 2002 07 30 | 608 | 0.2+ | 0.8− | 2005 04 04 | 703 | 0.0 | 0.2− | 2005 06 03 | 699 | 1.2− | 0.2− |
| 2002 08 11 | 644 | 0.2+ | 0.3+ | 2005 04 04 | 703 | 0.7− | 0.7− | 2005 06 03 | 699 | (1.5− | 1.5−) |
| 2002 08 11 | 644 | 0.3+ | 0.4+ | 2005 04 04 | 703 | 0.9− | 0.9− | 2005 06 03 | 699 | 0.9− | 1.1+ |
| 2002 08 11 | 644 | 0.4+ | 0.4+ | 2005 04 04 | 703 | 0.6− | 0.0 | 2005 06 03 | 699 | (2.0− | 0.5+) |
| 2002 08 13 | 704 | 0.1+ | 0.4− | 2005 04 05 | 704 | (2.0+ | 0.9−) | 2006 10 16 | 703 | 1.1− | 0.3+ |
| 2002 08 13 | 704 | 0.2+ | 0.4− | 2005 04 05 | 704 | 0.1+ | 0.8− | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2002 08 13 | 704 | 0.1− | 0.1− | 2005 04 05 | 704 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 2002 08 13 | 704 | 0.2− | 0.0 | 2005 04 05 | 704 | 0.1+ | 0.9+ | 2006 10 16 | 703 | 0.9− | 1.0− |
| 2002 08 13 | 704 | 0.1+ | 0.3+ | 2005 04 09 | 704 | 1.2+ | 0.4− | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2005 04 09 | 704 | (1.7+ | 0.1+) | 2006 11 11 | 703 | 1.3+ | 1.0+ |
| 2002 08 18 | 644 | 0.1− | 0.4+ | 2005 04 09 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 2002 08 18 | 704 | 1.2− | 0.1− | 2005 04 09 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2002 08 18 | 704 | 0.5− | 0.3+ | 2005 04 09 | 704 | 0.5+ | 0.6+ | 2006 11 18 | G96 | 0.5− | 0.3+ |
| 2002 08 18 | 704 | 0.5− | 0.9− | 2005 04 15 | 699 | 0.9+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2+ |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2005 04 15 | 699 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2002 08 19 | 644 | 0.0 | 0.5+ | 2005 04 15 | 699 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.4+ |
| 2002 08 19 | 704 | 0.3+ | 0.1+ | 2005 05 03 | 691 | 0.3+ | 0.2+ | | | | |
| 2002 08 19 | 644 | 0.0 | 0.3+ | 2005 05 03 | 691 | 0.0 | 0.1+ | | | | |

**(142079)∗ 2002 QB$_{44}$**

Discovered 2002 Aug. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.91070 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25752255 | $\omega$ | 292.61147 | | +0.88733572 | | +0.45488665 |
| $a$ | 2.4467666 | $\Omega$ | 40.44015 | | −0.36861001 | | +0.79820660 |
| $e$ | 0.1330362 | $i$ | 6.69187 | | −0.27705953 | | +0.39489790 |
| $P$ | 3.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.2− | 0.8− | 2003 12 28 | 704 | 0.5− | 0.8+ | 2006 09 20 | 608 | 0.1+ | 1.2− |
| 2002 08 13 | 704 | 0.6+ | 0.2+ | 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 608 | 0.3+ | 1.4− |
| 2002 08 13 | 704 | 0.9+ | 0.2+ | 2005 04 01 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 608 | (0.1+ | 1.6−) |
| 2002 08 13 | 704 | 0.7+ | 0.3− | 2005 04 01 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.5+ | 0.6+ |
| 2002 08 13 | 704 | 0.4+ | 0.4+ | 2005 04 11 | 691 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.4+ | 0.8+ |
| 2002 08 13 | 644 | 0.3− | 0.1+ | 2005 04 11 | 691 | 0.1+ | 0.5+ | 2006 09 22 | 704 | (0.2+ | 1.7+) |
| 2002 08 13 | 644 | 0.3− | 0.2+ | 2005 04 11 | 691 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.5+ | 0.5+ |
| 2002 08 13 | 644 | 0.2− | 0.4+ | 2005 04 18 | 691 | 0.0 | 0.4+ | 2006 09 22 | 704 | 0.2+ | 1.1+ |
| 2002 08 30 | 644 | 0.2− | 0.3+ | 2005 04 18 | 691 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.8+ |
| 2002 08 30 | 644 | 0.3− | 0.1+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 704 | (0.8− | 1.5+) |
| 2002 08 30 | 644 | 0.3− | 0.3+ | 2005 05 08 | 691 | 0.1+ | 0.7+ | 2006 09 26 | 704 | 0.7+ | 0.5+ |
| 2002 08 31 | 704 | 0.2+ | 0.9+ | 2005 05 08 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 2002 08 31 | 704 | 0.3+ | 0.4− | 2005 05 08 | 703 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.5+ |
| 2002 08 31 | 704 | 0.2+ | 0.1+ | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.2+ |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2005 05 08 | 703 | 0.9+ | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2002 09 15 | 644 | 0.5− | 0.5+ | 2005 05 08 | 703 | 0.2− | 1.0− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 09 15 | 644 | 0.3− | 0.4+ | 2005 05 08 | 703 | (2.4− | 0.1+) | 2006 10 09 | 644 | 0.3+ | 0.2+ |
| 2002 09 15 | 644 | 0.1− | 0.6+ | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.5+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.5+ |
| 2002 09 15 | 644 | 0.5− | 0.3+ | 2005 05 10 | G96 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.6− | 0.5+ |
| 2002 09 26 | 704 | 1.2− | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.5− | 0.4− |
| 2002 09 26 | 704 | 0.1+ | 0.2− | 2006 07 31 | E12 | 0.6− | 0.4− | 2006 10 19 | 703 | 0.2+ | 0.7+ |
| 2002 09 26 | 704 | 0.0 | 0.7− | 2006 07 31 | E12 | 0.4− | 0.6+ | 2006 10 22 | 644 | 0.6− | 0.4+ |
| 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 07 31 | E12 | 0.7− | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2003 12 18 | 691 | 0.3− | 0.4+ | 2006 07 31 | E12 | (1.8+ | 0.3−) | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2003 12 18 | 691 | 0.2− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2003 12 27 | 691 | 0.4+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.4+ |
| 2003 12 27 | 691 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 0.3− | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.4+ |
| 2003 12 27 | 691 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.5− | 2006 10 24 | 644 | 0.3− | 0.4+ |
| 2003 12 28 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.9− | 0.7+ | 2006 10 24 | 644 | 0.4− | 0.3+ |
| 2003 12 28 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.6− | 2006 10 24 | 644 | 0.1− | 0.7+ |
| 2003 12 28 | 704 | 0.7− | 0.6+ | 2006 09 14 | 703 | 0.5− | 0.5+ | | | | |

**(142080)∗ 2002 QT$_{44}$**

Discovered 2002 Aug. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.55794 | | | (2000.0) | | |
| $n$ | 0.23911936 | $\omega$ | 74.09076 | | +0.50913458 | −0.86040424 |
| $a$ | 2.5707483 | $\Omega$ | 345.24177 | | +0.75283718 | +0.45761147 |
| $e$ | 0.2148398 | $i$ | 4.96730 | | +0.41715484 | +0.22426834 |
| $P$ | 4.12 | $H$ | 16.4 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 11 | 699 | 0.6+ | 0.2+ | 2002 09 27 | 699 | 1.2− | 1.0+ | 2004 03 27 | 704 | 0.2− | 0.7+ |
| 1998 10 11 | 699 | 1.2+ | 0.8+ | 2002 09 27 | 699 | 0.1+ | 0.7+ | 2004 03 27 | 704 | 0.7+ | 1.4+ |
| 1998 10 11 | 699 | 0.4− | 0.4+ | 2002 09 27 | 699 | 0.7+ | 0.5+ | 2004 03 27 | 704 | 1.1+ | 0.8− |
| 2000 02 06 | 695 | 0.2+ | 0.7+ | 2002 09 30 | 704 | 0.4+ | 0.8+ | 2004 03 27 | 704 | 0.9+ | 0.1+ |
| 2000 02 06 | 695 | 0.5+ | 1.1+ | 2002 09 30 | 704 | 0.2+ | 0.1+ | 2004 03 28 | 691 | 0.0 | 0.6+ |
| 2000 02 06 | 695 | 0.5+ | 1.0+ | 2002 09 30 | 704 | 0.5+ | 0.1− | 2004 03 28 | 691 | 0.1+ | 0.5+ |
| 2000 02 06 | 695 | 0.5+ | 1.0+ | 2002 09 30 | 704 | 0.7+ | 0.1− | 2004 03 28 | 691 | 0.2+ | 0.7+ |
| 2002 08 30 | 291 | 0.2− | 0.2+ | 2002 10 01 | 699 | 0.1− | 0.7+ | 2004 03 31 | 291 | 0.1+ | 0.6+ |
| 2002 08 30 | 291 | 0.3− | 0.2+ | 2002 10 01 | 699 | 0.2+ | 0.7+ | 2004 03 31 | 291 | 0.4+ | 0.4+ |
| 2002 08 30 | 291 | 0.2+ | 0.5+ | 2002 10 01 | 699 | 0.2− | 0.4+ | 2004 03 31 | 291 | 0.8+ | 0.3+ |
| 2002 08 31 | 699 | 0.3+ | 0.7+ | 2002 10 01 | 699 | 0.1− | 0.4+ | 2006 07 29 | A13 | 0.2− | 0.0 |
| 2002 08 31 | 699 | 0.5+ | 0.9+ | 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 07 30 | A13 | 0.0 | 0.7− |
| 2002 08 31 | 699 | 0.5+ | 0.7+ | 2002 10 03 | 704 | 0.8− | 0.1+ | 2006 07 30 | A13 | 0.2− | 0.1+ |
| 2002 08 31 | 699 | 0.8− | 0.2− | 2002 10 03 | 704 | 0.1+ | 0.4− | 2006 07 30 | A13 | 0.0 | 0.6− |
| 2002 09 04 | 699 | 1.1− | 1.1+ | 2002 10 03 | 704 | 0.3− | 0.1− | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2002 09 04 | 699 | 1.2+ | 1.2+ | 2002 10 03 | 704 | 0.4− | 0.0 | 2006 08 16 | 644 | 0.4+ | 0.3− |
| 2002 09 04 | 699 | 1.4+ | 0.5− | 2002 10 04 | 291 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1− |
| 2002 09 04 | 699 | (1.6+ | 0.1−) | 2002 10 04 | 291 | 0.2− | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.8− | 0.2+ | 2002 10 04 | 291 | 0.0 | 0.4+ | 2006 08 17 | 644 | 0.5− | 0.4+ |
| 2002 09 05 | 704 | 1.5− | 0.4− | 2002 10 05 | 645 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 1.0− | 0.5− | 2002 10 05 | 645 | 0.1− | 0.2− | 2006 08 25 | 704 | 1.0− | 1.1− |
| 2002 09 07 | 704 | 0.2− | 0.6− | 2002 10 07 | 704 | 0.1+ | 0.5+ | 2006 08 25 | 704 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2002 10 07 | 704 | 0.8+ | 0.1+ | 2006 08 25 | 704 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | 0.4+ | 0.2+ | 2002 10 07 | 704 | 0.3+ | 0.6+ | 2006 08 25 | 704 | 0.6− | 0.6+ |
| 2002 09 07 | 704 | 0.7− | 0.1+ | 2002 10 07 | 704 | 0.2+ | 0.9+ | 2006 08 25 | 704 | 1.3− | 0.6+ |
| 2002 09 11 | 644 | 0.5− | 0.6+ | 2002 10 07 | 704 | 0.3+ | 0.8+ | 2006 08 28 | 691 | 0.2+ | 0.4+ |
| 2002 09 11 | 644 | 0.8− | 0.6+ | 2002 10 11 | 704 | 0.0 | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2002 09 11 | 644 | 0.7− | 0.7+ | 2002 10 11 | 704 | 0.7+ | 1.0− | 2006 08 28 | 691 | 0.3+ | 0.3+ |
| 2002 09 13 | 644 | 0.1− | 1.3+ | 2002 10 11 | 704 | (1.5− | 0.4−) | 2006 08 31 | 704 | 0.1− | 0.4+ |
| 2002 09 13 | 644 | 0.0 | 1.2+ | 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 08 31 | 704 | 0.8+ | 0.0 |
| 2002 09 13 | 644 | 0.2+ | 1.3+ | 2002 10 11 | 704 | 0.2− | 1.2− | 2006 08 31 | 704 | 0.2+ | 0.2+ |
| 2002 09 15 | 699 | 0.1− | 0.3+ | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.1+ |
| 2002 09 15 | 699 | 0.1+ | 0.1− | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.1− |
| 2002 09 15 | 699 | 0.0 | 0.3− | 2004 02 26 | 704 | 1.3+ | 1.1− | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2002 09 15 | 699 | 0.7+ | 0.1+ | 2004 02 26 | 704 | 1.3+ | 0.7+ | 2006 09 20 | 644 | 0.0 | 0.6− |
| 2002 09 15 | 608 | 1.3− | 0.6+ | 2004 02 26 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2002 09 15 | 608 | 1.3− | 0.8+ | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1− |
| 2002 09 15 | 608 | 1.1− | 0.8+ | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2002 09 17 | 644 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 09 17 | 644 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.1+ | 1.4+ | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 2002 09 17 | 644 | 0.9− | 0.7+ | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2002 09 18 | 644 | 0.6− | 0.4+ | 2004 03 18 | 704 | (0.8+ | 1.6+) | 2006 11 16 | G96 | 0.8+ | 0.4− |
| 2002 09 18 | 644 | 0.4− | 0.4+ | 2004 03 18 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 09 18 | 644 | 0.1− | 0.3+ | 2004 03 18 | 691 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2002 09 27 | 699 | 0.9− | 0.7+ | 2004 03 18 | 691 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.2− |

**(142081)∗ 2002 QD$_{46}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.97556 | | | (2000.0) | | |
| $n$ | 0.26472938 | $\omega$ | 289.38552 | | −0.04281483 | +0.99900357 |
| $a$ | 2.4021564 | $\Omega$ | 338.14908 | | −0.90346964 | −0.04409823 |
| $e$ | 0.1943287 | $i$ | 1.94004 | | −0.42650849 | −0.00687152 |
| $P$ | 3.72 | $H$ | 16.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 608 | 0.4− | 0.1+ | 2003 12 25 | 691 | 0.1+ | 0.2+ | 2005 04 15 | 703 | 1.1+ | 1.5+ |
| 2002 06 09 | 608 | 0.8− | 0.5+ | 2003 12 25 | 691 | 0.1+ | 0.4+ | 2005 04 15 | 703 | (1.9− | 1.4+) |
| 2002 06 09 | 608 | 0.5− | 0.1+ | 2005 03 03 | 691 | 0.2+ | 0.6+ | 2006 07 22 | G96 | 0.0 | 0.3− |
| 2002 07 23 | 644 | 0.0 | 0.4+ | 2005 03 03 | 691 | 0.4+ | 0.5+ | 2006 07 22 | G96 | 0.1+ | 0.1− |
| 2002 07 23 | 644 | 0.1− | 0.4+ | 2005 03 03 | 691 | 0.2+ | 0.6+ | 2006 07 22 | G96 | 0.8− | 0.0 |
| 2002 07 23 | 644 | 0.4− | 0.4+ | 2005 03 08 | 704 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.2− | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2005 03 08 | 704 | 0.9+ | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.6− |
| 2002 08 08 | 644 | 0.0 | 0.3+ | 2005 03 08 | 704 | 0.6− | 0.4− | 2006 09 19 | 699 | (1.3− | 2.2−) |
| 2002 08 08 | 644 | 0.2+ | 0.5+ | 2005 03 08 | 704 | (1.6+ | 1.5+) | 2006 09 19 | 699 | 0.5− | 0.2+ |
| 2002 08 12 | 699 | 0.1− | 0.6+ | 2005 03 09 | 699 | (0.9+ | 1.8+) | 2006 09 19 | 699 | (2.2− | 0.1+) |
| 2002 08 12 | 699 | 0.5− | 0.4+ | 2005 03 09 | 699 | 0.7+ | 0.5+ | 2006 09 28 | 691 | 0.6− | 0.1+ |
| 2002 08 12 | 699 | 0.9− | 0.1+ | 2005 03 09 | 699 | 1.4+ | 0.0 | 2006 09 28 | 691 | 0.4− | 0.1+ |
| 2002 08 12 | 699 | 0.8+ | 0.0 | 2005 03 09 | 699 | 1.0+ | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.4+ | 0.3+ |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.2+ | 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.3+ |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2005 03 11 | G96 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2002 08 18 | 644 | 0.4− | 0.5+ | 2005 03 14 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.7− | 0.6+ |
| 2002 08 18 | 644 | 0.4− | 0.5+ | 2005 03 14 | 704 | 0.9+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.6+ |
| 2002 08 18 | 644 | 0.1+ | 0.6− | 2005 03 14 | 704 | (1.6+ | 0.8+) | 2006 10 17 | 703 | (1.5+ | 1.6+) |
| 2002 08 18 | 644 | 0.1+ | 0.5− | 2005 03 17 | G96 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 08 18 | 644 | 0.0 | 0.6− | 2005 03 17 | G96 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2005 03 17 | G96 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2002 08 29 | 644 | 0.2+ | 0.5+ | 2005 03 17 | G96 | 0.9− | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2005 04 04 | 703 | 0.7− | 0.9− | 2006 10 28 | G96 | 0.5− | 0.4− |
| 2002 09 02 | 291 | 0.2+ | 0.5+ | 2005 04 04 | 703 | 1.4− | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 2002 09 02 | 291 | 0.0 | 0.3+ | 2005 04 04 | 703 | 1.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3+ |
| 2002 09 02 | 291 | 0.3+ | 0.6+ | 2005 04 04 | 703 | 1.1− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 09 05 | 704 | 0.8− | 0.8− | 2005 04 06 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.6+ | 0.2− |
| 2002 09 05 | 704 | 0.7− | 0.1+ | 2005 04 06 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.6− | 1.3− | 2005 04 06 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.3− | 0.3− | 2005 04 06 | G96 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.0 | 0.6− | 2005 04 15 | 703 | 0.3− | 0.9+ | | | | |
| 2003 12 25 | 691 | 0.4− | 0.5+ | 2005 04 15 | 703 | 0.3− | 0.5− | | | | |

**(142082)∗ 2002 QQ$_{46}$**

Discovered 2002 Aug. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.65885 | | | (2000.0) | | |
| $n$ | 0.26252553 | $\omega$ | 340.59660 | | +0.98964154 | +0.14351613 |
| $a$ | 2.4155815 | $\Omega$ | 11.15384 | | −0.12915453 | +0.90091782 |
| $e$ | 0.2011915 | $i$ | 1.05774 | | −0.06267964 | +0.40957319 |
| $P$ | 3.75 | $H$ | 16.9 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.0 | 0.4− | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 1991 09 30 | 691 | 0.0 | 0.9− | 2005 03 11 | G96 | 0.2+ | 0.5− | 2006 09 27 | 704 | 0.4− | 0.4+ |
| 1991 09 30 | 691 | 0.7+ | 0.6− | 2005 03 11 | G96 | 0.4− | 0.6− | 2006 09 27 | 704 | 0.4− | 0.2+ |
| 2002 07 14 | 644 | 0.0 | 0.9+ | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 2002 07 14 | 644 | 0.2− | 0.7+ | 2005 03 11 | G96 | 0.4− | 0.2− | 2006 09 27 | 704 | 0.6− | 0.1− |
| 2002 07 14 | 644 | 0.1− | 0.4+ | 2005 05 08 | G96 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.9− |
| 2002 07 23 | 644 | 0.1+ | 0.4+ | 2005 05 08 | G96 | 0.8− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2002 07 23 | 644 | 0.0 | 0.8+ | 2005 05 08 | G96 | 0.5− | 0.7− | 2006 09 29 | 704 | 0.1− | 0.0 |
| 2002 07 23 | 644 | 0.0 | 0.1+ | 2005 05 08 | G96 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2002 08 08 | 644 | 0.2+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2002 08 08 | 644 | 0.3+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.1+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.4+ | 0.0 |
| 2002 08 14 | 704 | 0.0 | 0.1− | 2006 08 19 | 699 | 0.3− | 1.0− | 2006 10 15 | 703 | 0.1+ | 0.2− |
| 2002 08 14 | 704 | 1.3− | 0.7− | 2006 08 19 | 699 | 0.3+ | 0.6+ | 2006 10 15 | 703 | 0.8− | 1.2− |
| 2002 08 14 | 704 | 1.3− | 0.9− | 2006 08 19 | 699 | 0.7+ | 0.5− | 2006 10 15 | 703 | 0.0 | 0.1+ |
| 2002 08 14 | 704 | 0.8− | 0.3+ | 2006 08 19 | 699 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2002 08 18 | 644 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.3+ |
| 2002 08 29 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.8+ | 0.5+ | 2006 10 17 | 703 | 0.4+ | 0.3− |
| 2002 08 29 | 644 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.6+ | 0.1− |
| 2002 08 31 | 704 | (1.7− | 1.3+) | 2006 09 18 | 699 | 0.9− | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2002 08 31 | 704 | (2.8− | 1.8+) | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 08 31 | 704 | (1.6− | 1.0+) | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 09 02 | 608 | 0.2+ | 1.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 09 02 | 608 | 0.1+ | 1.4+ | 2006 09 20 | 704 | 0.1+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 09 02 | 608 | (0.3+ | 1.7+) | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 15 | 644 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.7− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2004 01 19 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2004 01 19 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 01 19 | 691 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 23 | 291 | 0.5− | 0.1+ |
| 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 23 | 291 | 0.3− | 0.2+ |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 23 | 291 | 0.1− | 0.2+ |

**(142083)∗ 2002 QK$_{47}$**

Discovered 2002 Aug. 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.07144 | | (2000.0) | | | |
| $n$ | 0.27280426 | $\omega$ | 270.97758 | | +0.77807304 | +0.62296246 |
| $a$ | 2.3545177 | $\Omega$ | 50.49492 | | −0.52666341 | +0.71698983 |
| $e$ | 0.2560136 | $i$ | 6.00719 | | −0.34238573 | +0.31279923 |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 10 | 691 | 0.0 | 0.5− | 2002 10 02 | 608 | 0.3+ | 0.8+ | 2005 04 14 | 691 | 0.2+ | 0.3+ |
| 1994 04 10 | 691 | 0.4− | 0.1− | 2002 10 02 | 608 | 0.4+ | 0.4+ | 2005 04 14 | 691 | 0.4+ | 0.4+ |
| 1994 04 10 | 691 | 0.0 | 0.4− | 2002 10 02 | 608 | 0.5+ | 0.5+ | 2005 04 18 | 691 | 0.2+ | 0.4+ |
| 2002 08 30 | 699 | 0.4− | 0.4− | 2002 10 04 | 704 | 0.4+ | 0.1+ | 2005 04 18 | 691 | 0.3+ | 0.6+ |
| 2002 08 30 | 699 | 0.5+ | 0.0 | 2002 10 04 | 704 | 1.2+ | 0.3− | 2005 04 18 | 691 | 0.1+ | 0.6+ |
| 2002 08 30 | 699 | 0.3− | 0.0 | 2002 10 04 | 704 | 1.3+ | 0.8− | 2005 06 13 | G96 | 0.7− | 0.3+ |
| 2002 08 30 | 699 | 0.6+ | 0.4− | 2002 10 04 | 704 | 1.4+ | 0.0 | 2005 06 13 | G96 | 0.6− | 0.2+ |
| 2002 09 01 | 644 | 0.2− | 0.3− | 2002 10 04 | 704 | (1.6+ | 0.4−) | 2005 06 13 | G96 | 0.3− | 0.1+ |
| 2002 09 01 | 644 | 0.1− | 0.5− | 2002 10 05 | 704 | 0.3+ | 0.1− | 2005 06 13 | G96 | 0.2− | 0.1+ |
| 2002 09 01 | 644 | 0.1− | 0.5− | 2002 10 05 | 704 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2002 09 05 | 608 | 0.3− | 0.4+ | 2002 10 05 | 704 | (0.6+ | 1.8+) | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 09 05 | 608 | 0.1− | 0.4+ | 2002 10 05 | 704 | 0.7− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2002 09 05 | 608 | 0.3− | 0.2+ | 2002 10 05 | 704 | 0.4+ | 0.8+ | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2002 09 11 | 608 | 1.0− | 0.1+ | 2002 10 29 | 704 | 0.8− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2002 09 11 | 608 | 1.0− | 0.2+ | 2002 10 29 | 704 | 1.1− | 0.9+ | 2006 11 01 | G96 | 0.4− | 0.3− |
| 2002 09 11 | 608 | 0.7− | 0.3− | 2002 10 29 | 704 | 0.2− | 0.9+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2002 09 13 | 704 | 0.1− | 0.4− | 2002 10 31 | 608 | 1.0− | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.0 |
| 2002 09 13 | 699 | 0.2− | 0.7+ | 2002 10 31 | 608 | 0.4− | 0.2− | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2002 09 13 | 704 | 0.2− | 0.3+ | 2002 10 31 | 608 | 0.8− | 0.7− | 2006 11 14 | 691 | 0.2+ | 0.4+ |
| 2002 09 13 | 704 | 0.9− | 0.5+ | 2005 04 06 | 691 | 0.4+ | 0.6+ | 2006 11 14 | 691 | 0.3− | 0.5+ |
| 2002 09 13 | 699 | 0.3− | 0.2+ | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.4+ |
| 2002 09 13 | 704 | 0.4− | 0.0 | 2005 04 06 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2002 09 13 | 699 | 0.3− | 0.1+ | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2002 09 13 | 699 | 0.1− | 0.5+ | 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 09 16 | 644 | 0.1+ | 0.7+ | 2005 04 10 | 691 | 0.4+ | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.4+ |
| 2002 09 16 | 644 | 0.2+ | 0.4+ | 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2002 09 16 | 644 | 0.0 | 0.7+ | 2005 04 11 | G96 | 0.1+ | 0.3+ | 2006 11 25 | H07 | 0.6+ | 1.2+ |
| 2002 09 17 | 644 | 0.2− | 1.0+ | 2005 04 11 | G96 | 0.3− | 0.3+ | 2006 11 25 | H07 | 0.8+ | 0.3+ |
| 2002 09 17 | 644 | 0.3− | 0.8+ | 2005 04 11 | G96 | 0.2− | 0.1+ | 2006 11 25 | H07 | 0.2+ | 1.0+ |
| 2002 09 17 | 644 | 0.3− | 0.8+ | 2005 04 14 | 691 | 0.3+ | 0.6+ | | | | |

**(142084)∗ 2002 QU$_{47}$**

Discovered 2002 Aug. 29 by J. W. Young at Table Mountain Observatory, Wrightwood.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.68150 | | (2000.0) | | | |
| $n$ | 0.26951940 | $\omega$ | 332.47704 | | +0.56048143 | +0.82813852 |
| $a$ | 2.3736100 | $\Omega$ | 331.61047 | | −0.75714859 | +0.50904055 |
| $e$ | 0.1859259 | $i$ | 0.82763 | | −0.33553924 | +0.23465787 |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.3+ | 2002 09 14 | 644 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2002 09 15 | 644 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.3− | 0.1+ |
| 2002 08 08 | 699 | 0.2+ | 0.3+ | 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.5− | 0.1− |
| 2002 08 08 | 699 | 0.4+ | 0.0 | 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1− |
| 2002 08 08 | 699 | 0.6− | 0.7+ | 2003 12 29 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2002 08 08 | 699 | 0.0 | 0.4− | 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2002 08 09 | 608 | 0.3− | 0.1+ | 2003 12 29 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 2002 08 09 | 608 | 0.4− | 0.7+ | 2004 01 12 | 673 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.3− | 0.1− |
| 2002 08 09 | 608 | 0.3− | 0.9+ | 2004 01 12 | 673 | 0.7+ | 0.3+ | 2006 10 29 | 691 | 0.2− | 0.1− |
| 2002 08 17 | 644 | 0.1+ | 0.5+ | 2004 01 12 | 673 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.0 |
| 2002 08 17 | 644 | 0.0 | 0.4+ | 2005 03 10 | G96 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2002 08 17 | 644 | 0.1− | 0.7+ | 2005 03 10 | G96 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 08 28 | 644 | 0.2+ | 0.4+ | 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.4− |
| 2002 08 28 | 644 | 0.1− | 0.3+ | 2005 03 10 | G96 | 0.4− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2005 03 13 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2002 08 29 | 673 | (0.7+ | 1.9+) | 2005 03 13 | 691 | 0.6+ | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 08 29 | 673 | 0.3− | 1.1+ | 2005 03 13 | 691 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.5+ |
| 2002 08 29 | 673 | (1.7+ | 0.9−) | 2005 04 09 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2002 08 30 | 673 | 0.4− | 0.5+ | 2005 04 09 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.4− | 0.9+ |
| 2002 08 30 | 673 | 0.3− | 0.3+ | 2005 04 09 | 691 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2002 08 30 | 673 | 0.6− | 0.3+ | 2005 04 11 | 699 | 1.1+ | 1.4+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2002 08 31 | 673 | 0.9− | 0.6+ | 2005 04 11 | 699 | 1.0+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2002 08 31 | 673 | 0.8− | 0.6+ | 2005 04 11 | 699 | 0.4+ | 0.9+ | 2006 11 22 | 691 | 0.2+ | 0.4+ |
| 2002 08 31 | 673 | 0.4− | 0.6+ | 2005 04 11 | 699 | 1.3+ | 0.8+ | 2006 11 22 | 691 | 0.2+ | 0.3+ |
| 2002 09 05 | 704 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.6+ | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 1.1+ | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.5− | 2006 11 27 | 691 | 0.5+ | 0.2− |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.4+ | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1− |

**(142085)∗ 2002 QB$_{48}$**

Discovered 2002 Aug. 29 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.42277 | | (2000.0) | | | |
| $n$ | 0.26895409 | $\omega$ | 249.04561 | | +0.98275060 | −0.18193773 |
| $a$ | 2.3769349 | $\Omega$ | 121.42360 | | +0.18081287 | +0.90760799 |
| $e$ | 0.1937923 | $i$ | 2.22738 | | +0.03883262 | +0.37834693 |
| $P$ | 3.66 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 07 | 291 | 0.2− | 0.2+ | 2005 05 08 | G96 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 07 07 | 291 | 0.4− | 0.1+ | 2005 05 08 | G96 | 0.2− | 0.5− | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2002 07 07 | 291 | 0.5− | 0.2+ | 2005 05 11 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 07 23 | 644 | 0.5+ | 0.4− | 2005 05 11 | G96 | 0.6+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 07 23 | 644 | 0.8+ | 0.1+ | 2005 05 11 | G96 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 07 23 | 644 | 0.0 | 0.1+ | 2005 05 11 | G96 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.5+ |
| 2002 07 29 | 644 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2002 07 29 | 644 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 07 29 | 644 | 0.9+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2002 08 08 | 644 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2002 08 18 | 644 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.5+ |
| 2002 08 18 | 644 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.9+ |
| 2002 08 18 | 644 | 0.9+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.4+ | 1.3+ |
| 2002 08 29 | 644 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 17 | 704 | 1.0+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 17 | 703 | (0.5− | 2.0−) | | |
| 2002 08 29 | 644 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.1+ | 0.2− | | |
| 2004 02 27 | 695 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.2+ | | |
| 2004 02 27 | 695 | 0.2+ | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1− | 0.0 | | |
| 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.0 | | | | | | |
| 2005 05 08 | G96 | 0.4+ | 1.4+ | 2006 10 22 | 691 | 0.4− | 0.1+ | | | | | | |

**(142086)∗ 2002 QK$_{50}$ = 1995 SE$_{79}$**

Discovered 2002 Aug. 16 by A. Lowe on NEAT images taken at Palomar.

Id. T. B. Spahr (*MPO* 61267)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.23288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27975818 | $\omega$ | 296.72187 | | −0.27634749 | −0.96045721 | |
| $a$ | 2.3153369 | $\Omega$ | 169.15586 | | +0.93340201 | −0.27664615 | |
| $e$ | 0.1688812 | $i$ | 10.40258 | | +0.22889463 | −0.03144622 | |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 12 | 691 | 0.1− | 0.2− | 2002 09 14 | 644 | 1.0− | 0.1− | 2004 04 19 | 704 | 1.3+ | 0.5+ | | |
| 1994 06 12 | 691 | 0.1− | 0.2− | 2002 09 14 | 644 | 0.8− | 0.7+ | 2004 04 19 | 704 | 1.2+ | 0.5+ | | |
| 1994 06 12 | 691 | 0.1− | 0.0 | 2002 10 06 | 608 | 0.4− | 0.9+ | 2004 04 19 | 704 | 0.6+ | 0.3+ | | |
| 1995 09 21 | 691 | 0.0 | 0.3+ | 2003 11 29 | 704 | 1.1− | 0.2+ | 2004 04 19 | 704 | 1.2+ | 0.7+ | | |
| 1995 09 21 | 691 | 0.0 | 0.0 | 2003 11 29 | 704 | 0.2+ | 0.3− | 2004 04 19 | 704 | 0.7+ | 0.4+ | | |
| 1995 09 21 | 691 | 0.0 | 0.2+ | 2003 11 29 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.2− | 1.0− | | |
| 1995 09 26 | 691 | 1.0+ | 1.2− | 2003 11 29 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | (2.1− | 1.5−) | | |
| 1995 09 26 | 691 | 1.0+ | 1.1− | 2004 01 29 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | (1.5− | 0.2−) | | |
| 1995 09 26 | 691 | 0.8+ | 1.4− | 2004 01 29 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.4+ | | |
| 1997 02 08 | 566 | 0.5− | 0.2− | 2004 01 29 | 704 | 0.6− | 0.6− | 2006 10 01 | 704 | 0.4+ | 0.2− | | |
| 1997 02 08 | 566 | 0.5− | 0.2− | 2004 01 29 | 704 | 0.5− | 0.1+ | 2006 10 01 | 704 | 0.7− | 0.0 | | |
| 1997 02 08 | 566 | 0.2− | 0.2+ | 2004 02 11 | 620 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.7+ | 1.2+ | | |
| 1997 04 07 | 566 | 0.7− | 0.4+ | 2004 02 11 | 620 | 0.3+ | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.3+ | | |
| 1997 04 07 | 566 | 0.4− | 0.2− | 2004 02 11 | 620 | 0.2− | 0.7− | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 1999 12 03 | 704 | 1.0− | 1.1− | 2004 02 12 | 333 | 0.1− | 0.9− | 2006 10 12 | 644 | 0.0 | 0.4+ | | |
| 1999 12 03 | 704 | 0.6− | 0.5− | 2004 02 12 | 333 | 0.1− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.5+ | | |
| 1999 12 03 | 704 | 0.2− | 1.4− | 2004 02 12 | 333 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.1− | 1.0− | | |
| 1999 12 03 | 704 | 0.7− | 0.2+ | 2004 02 13 | 683 | 0.1+ | 0.9− | 2006 10 16 | 703 | 0.2+ | 0.3+ | | |
| 1999 12 03 | 704 | 0.1+ | 0.5− | 2004 02 13 | 683 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.2+ | | |
| 2001 05 20 | 608 | 1.0− | 0.4− | 2004 02 13 | 683 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.1+ | | |
| 2001 05 20 | 608 | 0.1− | 0.1+ | 2004 02 14 | 683 | 0.8+ | 0.9− | 2006 10 22 | 703 | 0.4− | 0.3− | | |
| 2002 08 09 | 608 | 1.2− | 0.1+ | 2004 02 14 | 683 | 0.7− | 0.0 | 2006 10 22 | 703 | 0.5+ | 1.2+ | | |
| 2002 08 09 | 608 | 0.1+ | 0.3+ | 2004 02 14 | 683 | 0.9+ | 0.6− | 2006 10 22 | 703 | 0.2− | 0.1− | | |
| 2002 08 16 | 644 | 0.0 | 0.9+ | 2004 02 17 | 608 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.2+ | | |
| 2002 08 16 | 644 | 0.3− | 1.1+ | 2004 02 17 | 608 | 0.0 | 0.2+ | 2006 11 10 | 704 | 0.8+ | 0.1− | | |
| 2002 08 16 | 644 | 0.1+ | 1.0+ | 2004 02 17 | 608 | 0.2− | 0.1+ | 2006 11 10 | 704 | 0.9+ | 0.7− | | |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2004 02 19 | 704 | 0.2− | 0.3+ | 2006 11 10 | 704 | 0.7− | 0.3+ | | |
| 2002 08 17 | 644 | 0.7− | 0.7+ | 2004 02 19 | 704 | 0.3− | 0.3− | 2006 11 10 | 704 | 0.1+ | 0.7− | | |
| 2002 08 17 | 644 | 0.5− | 0.9+ | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.7+ | | |
| 2002 08 17 | 608 | 0.2− | 0.3+ | 2004 02 19 | 704 | 0.2− | 0.4− | 2006 11 16 | 703 | 0.4− | 0.3+ | | |
| 2002 08 17 | 608 | 0.1− | 0.9+ | 2004 02 19 | 704 | 0.1− | 0.8− | 2006 11 16 | 703 | 0.8+ | 0.5+ | | |
| 2002 08 18 | 644 | 0.6− | 1.0− | 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 703 | 0.1− | 1.4+ | | |
| 2002 08 18 | 644 | 0.6− | 0.6− | 2004 03 15 | 704 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.0 | 0.3+ | | |
| 2002 08 18 | 644 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.8+ | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.2+ | | |
| 2002 09 05 | 608 | 1.0− | 1.2+ | 2004 03 15 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.3+ | | |
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.2+ | | |

**(142087)∗ 2002 QM$_{50}$**

Discovered 2002 Aug. 16 by A. Lowe on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.97075 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24372861 | $\omega$ | 230.69867 | | +0.39954019 | −0.91647870 | |
| $a$ | 2.5382343 | $\Omega$ | 195.79055 | | +0.86288672 | +0.38365861 | |
| $e$ | 0.1573486 | $i$ | 4.39280 | | +0.30950629 | +0.11345864 | |
| $P$ | 4.04 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 691 | 0.1+ | 0.2+ | 2002 09 14 | 644 | 0.4− | 0.1+ | 2004 02 22 | 704 | 0.3+ | 1.6+ | | |
| 2001 06 16 | 691 | 0.4− | 0.3+ | 2002 09 26 | 644 | 0.0 | 0.2+ | 2004 02 22 | 704 | 0.5− | 1.5+ | | |
| 2001 06 16 | 691 | 0.6+ | 0.4+ | 2002 09 26 | 644 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.1+ | | |
| 2002 08 16 | 644 | 0.5− | 0.1− | 2002 09 26 | 644 | 0.2− | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.1− | | |
| 2002 08 16 | 644 | 0.1+ | 0.2+ | 2004 01 23 | 704 | 0.7− | 0.9− | 2006 08 22 | 644 | 0.1+ | 0.5+ | | |
| 2002 08 16 | 644 | 0.0 | 0.1− | 2004 01 23 | 704 | 0.2− | 0.8+ | 2006 08 22 | 644 | 0.3− | 0.0 | | |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2004 01 23 | 704 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.0 | | |
| 2002 08 17 | 644 | 0.2− | 0.7+ | 2004 01 23 | 704 | 0.4+ | 0.2− | 2006 08 22 | 644 | 0.7− | 0.6+ | | |
| 2002 08 17 | 644 | 0.5− | 0.0 | 2004 01 29 | 704 | 0.1− | 1.6+ | 2006 09 17 | 691 | 0.2− | 0.1+ | | |
| 2002 08 17 | 608 | 0.0 | 0.0 | 2004 01 29 | 704 | 0.9+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.3+ | | |
| 2002 08 17 | 608 | 0.0 | 0.1− | 2004 01 29 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.1+ | | |
| 2002 08 17 | 608 | 0.2− | 0.3+ | 2004 01 29 | 704 | 0.9+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | | |
| 2002 08 18 | 644 | 0.9− | 0.7+ | 2004 02 17 | 704 | 0.0 | 1.7+ | 2006 09 19 | 691 | 0.0 | 0.1− | | |
| 2002 08 18 | 644 | 0.6− | 0.6+ | 2004 02 17 | 704 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.3+ | | |
| 2002 08 26 | 644 | 0.2+ | 0.2+ | 2004 02 17 | 704 | 0.6+ | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2002 08 26 | 644 | 0.6+ | 0.9+ | 2004 02 19 | 704 | 0.4− | 1.0+ | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2002 08 26 | 644 | 0.1+ | 1.0+ | 2004 02 19 | 704 | (0.6− | 2.3+) | 2006 09 28 | 691 | 0.0 | 0.2+ | | |
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2004 02 19 | 704 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.4− | | |
| 2002 08 28 | 644 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.1+ | 1.4+ | 2006 09 28 | G96 | 0.4+ | 0.6− | | |
| 2002 08 28 | 644 | 0.2+ | 0.3+ | 2004 02 19 | 704 | 1.1+ | 0.4− | 2006 09 28 | G96 | 0.2− | 0.2− | | |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 02 22 | 704 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.3− | | |

**(142088)∗ 2002 QN$_{50}$**

Discovered 2002 Aug. 30 by R. Matson on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.28603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27144785 | $\omega$ | 147.07783 | | −0.87750921 | −0.47954943 | |
| $a$ | 2.3623547 | $\Omega$ | 4.26985 | | +0.43033074 | −0.79031183 | |
| $e$ | 0.1065105 | $i$ | 2.42576 | | +0.21164368 | −0.38136538 | |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 04 | 566 | 0.1+ | 0.6− | 2003 12 23 | 704 | 0.6− | 0.2− | 2004 02 15 | 704 | 0.8+ | 0.5+ | | |
| 1997 02 04 | 566 | 0.4+ | 0.2− | 2003 12 23 | 704 | 0.8− | 0.1+ | 2004 02 15 | 704 | 0.1− | 1.2+ | | |
| 1997 02 04 | 566 | 0.1− | 0.4− | 2003 12 28 | 691 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.9+ | 1.3+ | | |
| 1997 04 03 | 566 | 0.4− | 0.6− | 2003 12 28 | 691 | 0.1+ | 0.3− | 2004 02 16 | 691 | 0.1+ | 0.2+ | | |
| 1997 04 03 | 566 | 0.0 | 0.9− | 2003 12 28 | 691 | 0.1+ | 0.1− | 2004 02 16 | 691 | 0.0 | 0.2+ | | |
| 1997 04 03 | 566 | 0.3− | 0.6− | 2004 01 15 | 691 | 0.2− | 0.2+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | | |
| 1998 06 29 | 691 | 0.2+ | 0.3+ | 2004 01 15 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | | |
| 1998 06 29 | 691 | 0.5− | 0.1+ | 2004 01 15 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.1+ | | |
| 1998 06 29 | 691 | 0.0 | 0.7+ | 2004 01 19 | 699 | 0.5+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.2+ | | |
| 2002 08 20 | 644 | 0.3− | 0.3+ | 2004 01 19 | 699 | 0.5− | 0.7− | 2006 09 24 | 691 | 0.0 | 0.1+ | | |
| 2002 08 20 | 644 | 0.6+ | 1.1+ | 2004 01 19 | 699 | (0.0 | 1.8−) | 2006 09 24 | 691 | 0.1+ | 0.0 | | |
| 2002 08 20 | 644 | 0.3+ | 0.7+ | 2004 01 19 | 699 | 0.9− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.1− | | |
| 2002 08 29 | 644 | 0.4− | 0.2+ | 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.5+ | | |
| 2002 08 29 | 644 | 1.0− | 0.1+ | 2004 01 22 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 703 | 0.2− | 0.5+ | | |
| 2002 08 29 | 644 | 1.1− | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.8+ | 0.4− | | |
| 2002 08 30 | 644 | 0.8− | 0.9+ | 2004 01 22 | 704 | (0.1− | 1.6+) | 2006 10 21 | 703 | 0.8+ | 1.2− | | |
| 2002 08 30 | 644 | 1.2− | 0.8+ | 2004 01 22 | 704 | 0.7− | 1.4+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2002 08 30 | 644 | 0.6− | 0.4+ | 2004 01 26 | 699 | 0.3+ | 0.7− | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2002 09 12 | 644 | 0.5− | 0.2− | 2004 01 26 | 699 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.5− | | |
| 2002 09 12 | 644 | 0.2− | 0.1+ | 2004 01 26 | 699 | 0.6− | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2002 09 12 | 644 | 0.4− | 0.4+ | 2004 01 26 | 699 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2004 01 27 | 691 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 15 | 644 | 0.1− | 0.3− | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2− | | |
| 2003 12 21 | 691 | 0.1+ | 0.2− | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.6− | | |
| 2003 12 21 | 691 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.1+ | 1.4+ | 2006 11 16 | 691 | 0.5+ | 0.2+ | | |
| 2003 12 21 | 691 | 0.0 | 0.2− | 2004 01 30 | 704 | 0.4+ | 0.7+ | 2006 11 16 | 691 | 0.3+ | 0.3− | | |
| 2003 12 22 | 704 | 1.0− | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.0 | | |
| 2003 12 22 | 704 | 0.5− | 0.3− | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.3− | | |
| 2003 12 22 | 704 | 1.0− | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.2− | | |
| 2003 12 22 | 704 | 1.4− | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.1− | | | | | | |
| 2003 12 23 | 704 | 0.3− | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.5+ | | | | | | |

**(142089)∗ 2002 QE$_{52}$**

Discovered 2002 Aug. 29 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.00138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27459720 | $\omega$ | 243.21099 | | −0.06108174 | +0.99786208 | |
| $a$ | 2.3442575 | $\Omega$ | 23.32210 | | −0.89365757 | −0.04430094 | |
| $e$ | 0.1632815 | $i$ | 3.36593 | | −0.44457302 | −0.04804899 | |
| $P$ | 3.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 0.5− | 0.0 | 2005 04 11 | 699 | 0.6+ | 0.5+ | 2005 05 09 | 699 | 0.3+ | 0.9+ |
| 1998 05 24 | 704 | 0.8+ | 0.3+ | 2005 04 11 | 699 | 0.6+ | 0.2+ | 2005 05 09 | 699 | 0.1− | 0.3− |
| 1998 05 24 | 704 | 0.6− | 1.1− | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.1+ |
| 1998 05 24 | 704 | (3.1− | 1.7−) | 2005 04 12 | 691 | 0.1+ | 0.6+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2002 08 11 | 608 | 0.6− | 0.7− | 2005 04 12 | 704 | 0.6+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2002 08 11 | 608 | 0.9− | 0.2+ | 2005 04 12 | 704 | (1.5+ | 1.6+) | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2002 08 11 | 608 | 0.1+ | 0.1− | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 14 | 958 | 0.2− | 0.6+ |
| 2002 08 18 | 644 | 0.2− | 0.6+ | 2005 04 12 | 704 | 0.2+ | 0.3+ | 2006 10 15 | 958 | 0.3+ | 0.4+ |
| 2002 08 18 | 644 | 0.6− | 0.5+ | 2005 04 12 | 704 | 0.8+ | 0.0 | 2006 10 15 | 958 | (2.8+ | 0.0 ) |
| 2002 08 18 | 644 | 0.4− | 0.9+ | 2005 04 12 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.7+ |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2002 08 29 | 644 | 0.6− | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.5+ |
| 2002 09 05 | 704 | 1.3+ | 0.5+ | 2005 04 18 | 703 | 1.0− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.5+ |
| 2002 09 05 | 704 | 0.5+ | 0.6− | 2005 04 18 | 703 | 0.4− | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2005 04 18 | 703 | 0.8− | 0.6+ | 2006 10 21 | 703 | (1.2+ | 1.5+) |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2005 04 18 | 703 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.9− |
| 2002 09 15 | 644 | 0.4+ | 0.3+ | 2005 04 18 | 704 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.0 | 0.6− |
| 2002 09 15 | 644 | 0.2+ | 0.1+ | 2005 04 18 | 704 | 0.5+ | 0.2− | 2006 10 21 | 703 | (0.3+ | 1.6+) |
| 2005 03 17 | 704 | 1.0+ | 0.8+ | 2005 04 18 | 704 | 0.3+ | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 03 17 | 704 | 1.2+ | 0.3− | 2005 04 18 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2005 03 17 | 704 | (0.6− | 2.1+) | 2005 04 18 | 704 | 1.0+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.7+ |
| 2005 03 17 | 704 | 0.2− | 0.1+ | 2005 04 19 | 699 | 1.2+ | 0.3− | 2006 10 28 | G96 | 0.3− | 0.0 |
| 2005 04 05 | G96 | 0.5− | 0.4− | 2005 04 19 | 699 | 0.7+ | 0.5− | 2006 10 28 | G96 | 0.4− | 0.1+ |
| 2005 04 05 | G96 | 0.2+ | 0.2− | 2005 04 19 | 699 | 0.6− | 1.2+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2005 04 05 | G96 | 0.2− | 0.1− | 2005 04 19 | 699 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2005 04 05 | G96 | 0.2− | 0.2− | 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.3− | 0.6+ |
| 2005 04 07 | 704 | 1.3+ | 1.2+ | 2005 05 01 | 644 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.2− | 0.8+ |
| 2005 04 07 | 704 | 0.8+ | 0.5− | 2005 05 01 | 644 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.6+ |
| 2005 04 07 | 704 | 0.5+ | 0.6+ | 2005 05 08 | 703 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2005 04 10 | 691 | 0.1+ | 0.4+ | 2005 05 08 | 703 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.4− | 0.2+ |
| 2005 04 10 | 691 | 0.0 | 0.4+ | 2005 05 08 | 703 | 1.0− | 0.7+ | 2006 11 15 | 691 | 0.5− | 0.1+ |
| 2005 04 10 | 691 | 0.1− | 0.3+ | 2005 05 08 | 703 | 0.7− | 0.5− | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2005 04 11 | 699 | 0.1− | 0.5− | 2005 05 09 | 699 | 0.7+ | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2005 04 11 | 699 | 0.5− | 0.3− | 2005 05 09 | 699 | 0.9+ | 0.8+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |

**(142090)∗ 2002 QL$_{52}$**

Discovered 2002 Aug. 29 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.63901 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19221034 | $\omega$ | 199.99712 | | +0.29990374 | +0.95306934 | |
| $a$ | 2.9736160 | $\Omega$ | 87.47235 | | −0.86951176 | +0.29096070 | |
| $e$ | 0.0956869 | $i$ | 2.37685 | | −0.39243733 | +0.08367019 | |
| $P$ | 5.13 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.5− | 1.0+ | 2002 09 15 | 644 | 0.5− | 0.7+ | 2006 03 25 | 691 | 0.3− | 0.5+ |
| 2002 08 18 | 644 | 0.4− | 0.8+ | 2003 11 19 | 691 | 0.1− | 0.2+ | 2006 03 25 | 691 | 0.1− | 0.4+ |
| 2002 08 18 | 644 | 0.4− | 0.9+ | 2003 11 19 | 691 | 0.1− | 0.2+ | 2006 03 25 | 691 | 0.1+ | 0.4+ |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2003 11 19 | 691 | 0.2− | 0.1+ | 2006 04 02 | 691 | 0.3+ | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2003 11 19 | 691 | 0.1+ | 0.1+ | 2006 04 02 | 691 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.2− | 0.7+ | 2003 11 19 | 691 | 0.3− | 0.3+ | 2006 04 02 | 691 | 0.0 | 0.1+ |
| 2002 09 01 | 644 | 0.5− | 0.5+ | 2003 11 19 | 691 | 0.1+ | 0.3− | 2006 04 07 | 691 | 0.9+ | 0.6+ |
| 2002 09 01 | 644 | 0.5− | 0.5+ | 2003 12 19 | 691 | 0.0 | 0.1− | 2006 04 07 | 691 | 0.1− | 0.1− |
| 2002 09 04 | 644 | 0.1+ | 0.5+ | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 04 07 | 691 | 0.0 | 0.2+ |
| 2002 09 04 | 644 | 0.3− | 0.4+ | 2003 12 19 | 691 | 0.2− | 0.3+ | 2006 04 26 | 691 | 0.2+ | 0.3+ |
| 2002 09 04 | 644 | 0.0 | 0.4+ | 2003 12 22 | 291 | 0.5+ | 0.5+ | 2006 04 26 | 691 | 0.1+ | 0.4+ |
| 2002 09 11 | 608 | 0.2− | 1.2+ | 2003 12 22 | 291 | 0.3+ | 0.7+ | 2006 04 26 | 691 | 0.3+ | 0.3+ |
| 2002 09 11 | 608 | 0.1+ | 1.0+ | 2003 12 22 | 291 | 0.5− | 0.3+ | 2006 05 26 | G96 | 0.2+ | 0.0 |
| 2002 09 11 | 608 | 0.8− | 0.5+ | 2005 01 19 | 291 | 0.4+ | 0.6+ | 2006 05 26 | G96 | 0.0 | 0.0 |
| 2002 09 15 | 644 | 0.3+ | 0.8+ | 2005 01 19 | 291 | 0.1− | 0.4+ | 2006 05 26 | G96 | 0.3− | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.8+ | 2005 01 19 | 291 | 0.1+ | 0.3+ | 2006 05 26 | G96 | 0.1− | 0.1+ |

**(142091)∗ 2002 QW$_{52}$ = 2004 CE$_{11}$**

Discovered 2002 Aug. 29 by S. F. Hoenig on NEAT images taken at Palomar. Id. G. V. Williams (*MPO* 61268)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.72121 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26241421 | $\omega$ | 273.92087 | | +0.48740493 | −0.87108743 | |
| $a$ | 2.4162646 | $\Omega$ | 146.69093 | | +0.83839905 | +0.44755881 | |
| $e$ | 0.1230737 | $i$ | 6.31020 | | +0.24397432 | +0.20223203 | |
| $P$ | 3.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 599 | 0.1− | 0.2+ | 2004 01 24 | 704 | (0.2+ | 1.7+) | 2006 09 18 | 699 | 0.1− | 0.7− |
| 2002 08 08 | 599 | 0.1+ | 0.1+ | 2004 01 24 | 704 | 1.1+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.4+ |
| 2002 08 12 | 807 | 0.5− | 0.3+ | 2004 01 29 | 704 | (0.3− | 1.8+) | 2006 09 18 | 703 | (1.7− | 1.6+) |
| 2002 08 12 | 807 | 0.7− | 0.0 | 2004 01 29 | 704 | 0.8− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.9+ |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2004 01 29 | 704 | 0.8+ | 0.7− | 2006 09 18 | 699 | 0.4− | 0.0 |
| 2002 08 17 | 644 | 1.0+ | 0.2+ | 2004 02 11 | 644 | 0.5+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.1− |
| 2002 08 17 | 644 | 0.4− | 0.3+ | 2004 02 11 | 644 | 0.5+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2004 02 11 | 644 | 0.7+ | 0.5+ | 2006 09 18 | 699 | 0.5− | 0.1+ |
| 2002 08 18 | 644 | 0.2+ | 0.5+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2002 08 18 | 644 | 0.4+ | 0.5+ | 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.5+ |
| 2002 08 29 | 644 | 0.4− | 0.2+ | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.5+ |
| 2002 08 29 | 644 | 0.4− | 0.3+ | 2004 02 17 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.2− |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2004 02 17 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.6− |
| 2002 09 01 | 644 | 0.3− | 0.1+ | 2004 02 17 | 704 | 0.1+ | 1.0+ | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2002 09 01 | 644 | 0.2− | 0.2+ | 2004 02 17 | 704 | 0.7+ | 0.8+ | 2006 09 30 | 703 | 0.2+ | 0.6+ |
| 2002 09 04 | 644 | 0.5− | 0.2+ | 2004 03 01 | 691 | 0.2− | 0.6+ | 2006 09 30 | 704 | 0.6− | 0.2+ |
| 2002 09 04 | 644 | 0.2− | 0.5+ | 2004 03 01 | 691 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.5+ |
| 2002 09 04 | 644 | 0.2+ | 0.6+ | 2004 03 01 | 691 | 0.5− | 0.4+ | 2006 09 30 | 704 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2005 06 10 | 691 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.8+ |
| 2002 09 15 | 644 | 0.3+ | 0.4+ | 2005 06 10 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | (0.4− | 1.7+) |
| 2002 09 15 | 644 | 0.2− | 0.4+ | 2005 06 10 | 691 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2004 01 18 | 644 | 0.3+ | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.9+ | 0.3+ |
| 2004 01 18 | 644 | 0.0 | 0.6+ | 2005 06 14 | 691 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.6+ | 1.3+ |
| 2004 01 18 | 644 | 0.1+ | 0.3+ | 2005 06 14 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2004 01 24 | 704 | 1.0+ | 0.9+ | 2005 06 29 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 2004 01 24 | 704 | 1.0+ | 1.1+ | 2005 06 29 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2004 01 24 | 704 | 0.6+ | 1.2+ | 2005 06 29 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.3− |

**(142092)∗ 2002 QT$_{53}$**

Discovered 2002 Aug. 29 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.37586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18482487 | $\omega$ | 329.67317 | | +0.45323009 | −0.89058829 | |
| $a$ | 3.0523134 | $\Omega$ | 93.35238 | | +0.82527015 | +0.40316829 | |
| $e$ | 0.0365269 | $i$ | 2.17468 | | +0.33691493 | +0.21049424 | |
| $P$ | 5.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.1− | 0.7+ | 2003 12 01 | 691 | 0.1− | 0.1+ | 2006 04 24 | G96 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.5− | 0.5+ | 2003 12 01 | 691 | 0.1− | 0.1− | 2006 04 24 | G96 | 0.2+ | 0.7− |
| 2002 08 18 | 644 | 0.1− | 0.8+ | 2003 12 01 | 691 | 0.2+ | 0.1+ | 2006 04 24 | G96 | 0.5+ | 0.2− |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2003 12 14 | 691 | 0.0 | 0.0 | 2006 04 24 | G96 | 0.1+ | 0.6− |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2003 12 14 | 691 | 0.0 | 0.1+ | 2006 04 26 | 691 | 0.3− | 0.4− |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2003 12 14 | 691 | 0.1+ | 0.3+ | 2006 04 26 | 691 | 0.3− | 0.6+ |
| 2002 09 01 | 644 | 0.2+ | 0.3+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 04 26 | 691 | 0.0 | 0.1+ |
| 2002 09 01 | 644 | 0.1− | 0.4+ | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 05 04 | 691 | 0.3+ | 0.6+ |
| 2002 09 04 | 644 | 0.1− | 0.5+ | 2003 12 19 | 691 | 0.1+ | 0.2+ | 2006 05 04 | 691 | 0.2+ | 0.4+ |
| 2002 09 04 | 644 | 0.0 | 0.3+ | 2005 02 02 | 691 | 0.1+ | 0.3+ | 2006 05 04 | 691 | 0.2+ | 0.3+ |
| 2002 09 04 | 644 | 0.0 | 0.2− | 2005 02 02 | 691 | 0.1+ | 0.2+ | 2006 05 25 | G96 | 1.2+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 1.3− | 0.3− | 2005 02 02 | 691 | 0.3+ | 0.3+ | 2006 05 25 | G96 | 0.0 | 0.0 |
| 2002 09 16 | 644 | 0.0 | 0.7+ | 2005 03 16 | G96 | 0.1+ | 0.1− | 2006 05 25 | G96 | 0.4− | 0.2+ |
| 2003 11 19 | 691 | 0.2− | 0.3+ | 2005 03 16 | G96 | 0.1− | 0.3+ | 2006 05 25 | G96 | 0.1− | 0.3+ |
| 2003 11 19 | 691 | 0.2− | 0.1+ | 2005 03 16 | G96 | 0.4− | 0.0 | | | | |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2005 03 16 | G96 | 0.3− | 0.0 | | | | |

**(142093)∗ 2002 QM$_{54}$ = 1995 UL$_{34}$**

Discovered 2002 Aug. 29 by S. F. Hoenig on NEAT images taken at Palomar.
Id. M. E. Sansaturio (*MPO* 56507)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.49766 | | (2000.0) | | | |
| $n$ | 0.27150082 | $\omega$ | 294.54629 | | +0.60834495 | −0.79229181 |
| $a$ | 2.3620475 | $\Omega$ | 117.90231 | | +0.74599874 | +0.55068000 |
| $e$ | 0.1945777 | $i$ | 3.03551 | | +0.27092860 | +0.26272653 |
| $P$ | 3.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.5+ | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 1995 10 21 | 691 | 0.1+ | 0.5− | 2006 08 28 | 703 | (2.4− | 0.3−) | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1995 10 21 | 691 | 0.1− | 0.4− | 2006 08 28 | 703 | 0.8+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 1995 10 26 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.7+ | 1.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 1995 10 26 | 691 | 0.0 | 0.3− | 2006 09 30 | 703 | (0.2− | 2.0−) | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 1995 10 26 | 691 | 0.2− | 0.4− | 2006 09 30 | 703 | (1.5− | 0.5−) | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2000 01 07 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 1.1+ | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 2000 01 07 | 691 | 0.4+ | 0.1+ | 2006 10 18 | 461 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.5− | 0.7+ |
| 2000 01 07 | 691 | 0.1+ | 0.5− | 2006 10 18 | 461 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2002 08 18 | 644 | 0.5+ | 1.1+ | 2006 10 18 | 691 | 0.5+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.9+ |
| 2002 08 18 | 644 | 0.3+ | 0.8+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2002 08 29 | 644 | 0.4+ | 0.6+ | 2006 11 02 | 703 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2002 09 01 | 644 | 0.4+ | 0.6+ | 2006 11 02 | 703 | (0.9+ | 2.0−) | 2006 11 20 | 704 | 0.6+ | 0.1+ |
| 2002 09 01 | 644 | 0.5− | 0.6+ | 2006 11 02 | 703 | 0.9− | 0.8− | 2006 11 20 | 704 | 0.2+ | 0.3− |
| 2002 09 04 | 644 | 0.6− | 0.9+ | 2006 11 02 | 703 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.5− | 0.2− |
| 2002 09 04 | 644 | 0.4+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 09 04 | 644 | 0.4− | 0.1− | 2006 11 10 | 644 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 09 15 | 644 | 0.9− | 0.6− | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 09 15 | 644 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 0.3− | 1.1− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 09 16 | 644 | 0.3− | 0.0 | 2006 11 13 | 703 | (0.3+ | 2.1+) | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2004 02 23 | 704 | (1.6− | 0.0 ) | 2006 11 13 | 703 | 0.4− | 0.4− | 2006 11 28 | 704 | 0.2− | 0.1+ |
| 2004 02 23 | 704 | 0.7+ | 0.2+ | 2006 11 14 | 704 | (0.2− | 1.8+) | 2006 11 28 | 704 | 0.2+ | 0.3+ |
| 2004 02 23 | 704 | 1.2+ | 0.9+ | 2006 11 14 | 704 | 1.3− | 0.8+ | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2006 11 14 | 704 | (1.1+ | 1.6+) | 2006 11 28 | 704 | 0.5− | 0.7− |
| 2004 03 21 | 691 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.8− | 0.1− | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2004 03 21 | 691 | 0.5− | 0.0 | 2006 11 14 | 704 | 1.0− | 1.3+ | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2006 08 28 | 703 | 0.4− | 0.4− | 2006 11 16 | 691 | 0.4− | 0.9+ | 2006 12 01 | 691 | 0.1− | 0.2+ |

**(142094)∗ 2002 QR$_{55}$ = 1997 CF$_{23}$**

Discovered 2002 Aug. 29 by S. F. Hoenig on NEAT images taken at Palomar.
Id. T. B. Spahr (*MPO* 53098)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 269.17462 | | (2000.0) | | | |
| $n$ | 0.28162061 | $\omega$ | 7.08354 | | −0.66351839 | −0.74783906 |
| $a$ | 2.3051177 | $\Omega$ | 124.48797 | | +0.68511282 | −0.61911031 |
| $e$ | 0.1045089 | $i$ | 1.52326 | | +0.30060568 | −0.23966467 |
| $P$ | 3.50 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 566 | 0.8− | 0.2+ | 2004 01 19 | 703 | 0.6+ | 0.1+ | 2004 02 22 | 704 | 0.2− | 0.2+ |
| 1997 01 10 | 566 | 1.6− | 0.1− | 2004 01 24 | 704 | 1.0+ | 0.3+ | 2004 02 22 | 704 | 0.3− | 0.6+ |
| 1997 01 10 | 566 | 1.2− | 0.3+ | 2004 01 24 | 704 | 0.7+ | 1.2+ | 2004 02 26 | 704 | 0.0 | 1.2+ |
| 1997 01 15 | 566 | 1.3− | 0.3+ | 2004 01 24 | 704 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.8+ | 0.6+ |
| 1997 01 15 | 566 | 0.6− | 0.1− | 2004 01 24 | 704 | 0.3+ | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.2+ |
| 1997 01 15 | 566 | 1.5− | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.6+ | 2004 02 26 | 704 | 0.6+ | 0.6+ |
| 1997 02 04 | 691 | 0.5− | 0.6− | 2004 01 27 | 704 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 1997 02 04 | 691 | 0.1+ | 0.5− | 2004 01 27 | 704 | 0.4+ | 0.6− | 2006 09 30 | G96 | 0.0 | 0.3− |
| 1997 02 04 | 691 | 0.1− | 0.6− | 2004 01 27 | 704 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 1997 02 14 | 691 | 0.6+ | 0.4− | 2004 01 27 | 704 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 1997 02 14 | 691 | 0.9+ | 0.7− | 2004 01 27 | 704 | 0.4+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.1+ |
| 1997 02 14 | 691 | 0.2+ | 0.1− | 2004 01 28 | 704 | 0.8− | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.6+ |
| 2001 04 30 | 691 | 0.0 | 0.9+ | 2004 01 28 | 704 | 0.3− | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.4+ |
| 2001 04 30 | 691 | 0.7+ | 0.7+ | 2004 01 28 | 704 | 0.7− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 04 30 | 691 | 0.0 | 0.7+ | 2004 01 28 | 704 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 08 18 | 644 | 0.2− | 0.7+ | 2004 01 28 | 704 | 0.9− | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.5+ |
| 2002 08 18 | 644 | 0.4+ | 1.0+ | 2004 01 29 | 704 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.1+ |
| 2002 08 18 | 644 | 0.3+ | 0.9+ | 2004 01 29 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 1.2− | 0.0 |
| 2002 08 29 | 644 | 0.2+ | 0.7+ | 2004 01 29 | 704 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.2+ |
| 2002 08 29 | 644 | 0.2− | 1.2+ | 2004 01 29 | 704 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 0.9− | 0.5− |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2004 01 29 | 704 | 0.4− | 0.9+ | 2006 10 16 | 703 | (2.2− | 0.1+) |
| 2002 09 01 | 644 | 0.6− | 0.9+ | 2004 01 30 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 1.1− |
| 2002 09 01 | 644 | 0.9− | 1.0+ | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2002 09 04 | 644 | 0.4− | 0.5+ | 2004 01 30 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 09 04 | 644 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2002 09 04 | 644 | 0.3− | 0.3+ | 2004 01 30 | 704 | 0.1+ | 1.2+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2002 09 15 | 644 | 0.3+ | 0.5+ | 2004 01 30 | 704 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.5+ | 2004 01 30 | 704 | 0.6− | 0.8+ | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2002 09 15 | 644 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2002 09 16 | 644 | 0.9− | 0.4+ | 2004 02 11 | 699 | 0.9+ | 0.8+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 09 16 | 644 | 0.2− | 0.2+ | 2004 02 11 | 699 | (1.7− | 0.5+) | 2006 10 31 | 691 | 0.5+ | 0.1+ |
| 2004 01 16 | 644 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 1.1+ | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.3+ |
| 2004 01 16 | 644 | 0.1+ | 0.2+ | 2004 02 11 | 699 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.2+ |
| 2004 01 16 | 644 | 0.0 | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2004 01 17 | 644 | 0.1− | 0.2+ | 2004 02 12 | 691 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.4+ |
| 2004 01 17 | 644 | 0.1+ | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2004 01 17 | 644 | 0.2− | 0.1− | 2004 02 16 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2004 01 19 | 703 | 0.1− | 1.2+ | 2004 02 16 | 704 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 01 19 | 703 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 01 19 | 703 | 0.5− | 0.2− | 2004 02 16 | 704 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2004 01 19 | 703 | (2.0+ | 0.2−) | 2004 02 17 | 608 | 0.3− | 0.5− | 2006 11 17 | 703 | (1.1− | 2.0+) |
| 2004 01 19 | 703 | 1.0− | 1.5+ | 2004 02 17 | 608 | 0.0 | 0.9− | 2006 11 17 | 703 | 0.4− | 1.4− |
| 2004 01 19 | 703 | 0.8+ | 1.1− | 2004 02 17 | 608 | 0.8− | 0.5− | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2004 01 19 | 703 | 0.7− | 0.2+ | 2004 02 22 | 704 | 1.3− | 0.9− | | | | |

**(142095)∗ 2002 QR$_{58}$**

Discovered 2002 Aug. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.28923 | | (2000.0) | | | |
| $n$ | 0.27391048 | $\omega$ | 343.38030 | | −0.20388298 | −0.97204673 |
| $a$ | 2.3481741 | $\Omega$ | 118.25447 | | +0.91257923 | −0.23176173 |
| $e$ | 0.0651394 | $i$ | 7.59577 | | +0.35444446 | +0.03757193 |
| $P$ | 3.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.1− | 0.0 | 2003 12 17 | 691 | 0.5+ | 0.3+ | 2005 06 08 | 691 | 0.2+ | 0.2+ |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2003 12 23 | 704 | 0.0 | 0.9+ | 2005 06 10 | 691 | 0.3+ | 0.3+ |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.7− | 0.6+ | 2005 06 10 | 691 | 0.3+ | 0.3+ |
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2003 12 23 | 704 | 0.4− | 0.5+ | 2005 06 10 | 691 | 0.1+ | 0.3+ |
| 2002 08 15 | 644 | 0.0 | 0.0 | 2003 12 23 | 704 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.4− | 0.3+ |
| 2002 08 15 | 644 | 0.7− | 0.8+ | 2004 01 21 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 2002 08 15 | 644 | 0.2− | 0.8+ | 2004 01 21 | 704 | 0.2+ | 0.3− | 2006 09 20 | 644 | 0.5− | 0.3+ |
| 2002 08 16 | 644 | 0.1− | 0.0 | 2004 01 21 | 704 | (2.4+ | 0.3−) | 2006 09 26 | 703 | 0.0 | 0.1− |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.5− | 0.8+ | 2006 09 26 | 703 | 1.0− | 1.3− |
| 2002 08 16 | 644 | 0.4+ | 0.0 | 2004 01 24 | 704 | (1.4− | 2.0+) | 2006 09 26 | 703 | 0.8+ | 0.1− |
| 2002 08 18 | 644 | 0.2+ | 0.4+ | 2004 01 24 | 704 | 1.3− | 0.4+ | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2004 01 24 | 704 | 0.8− | 0.8− | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2004 01 24 | 704 | (1.9− | 0.5+) | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2005 06 01 | 691 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2002 08 29 | 644 | 0.4− | 0.1+ | 2005 06 01 | 691 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.6+ |
| 2002 08 29 | 644 | 1.0+ | 0.6− | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 10 17 | D35 | 1.1− | 1.5+ |
| 2003 12 17 | 691 | 0.5+ | 0.5+ | 2005 06 08 | 691 | 0.2+ | 0.1+ | 2006 10 17 | D35 | 0.4− | 0.5+ |
| 2003 12 17 | 691 | 0.6+ | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.4+ | 2006 10 17 | D35 | 0.7− | 0.5+ |

**(142096)∗ 2002 QR$_{59}$**

Discovered 2002 Aug. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 107.23394 | | | (2000.0) | | |
| $n$ | 0.27103718 | $\omega$ | 31.52433 | | −0.23982419 | +0.96861324 |
| $a$ | 2.3647404 | $\Omega$ | 224.69342 | | −0.90891997 | −0.24768124 |
| $e$ | 0.1183285 | $i$ | 5.33280 | | −0.34109946 | −0.02103333 |
| $P$ | 3.64 | $H$ | 16.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 691 | 0.2− | 0.3+ | 2002 08 17 | 608 | 0.1+ | 0.3+ | 2005 05 13 | 704 | 1.1+ | 0.1+ |
| 1999 12 13 | 691 | 0.0 | 0.7+ | 2002 08 17 | 608 | 0.3− | 0.6+ | 2005 05 13 | 704 | 0.6+ | 0.5+ |
| 1999 12 13 | 691 | 0.0 | 0.0 | 2002 08 17 | 608 | 0.1+ | 0.3− | 2005 05 13 | 704 | (1.7+ | 0.6+) |
| 2002 07 21 | 644 | 0.5+ | 0.2+ | 2002 08 26 | 644 | 0.2+ | 0.1+ | 2005 05 13 | 704 | 0.3+ | 1.3+ |
| 2002 07 21 | 644 | 0.2+ | 0.2+ | 2002 08 26 | 644 | 0.1+ | 0.2+ | 2006 08 31 | 235 | 1.2− | 0.5− |
| 2002 07 21 | 644 | 0.3+ | 0.1− | 2002 08 26 | 644 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 07 30 | 608 | 0.3+ | 0.5− | 2002 09 13 | 644 | 0.3− | 0.9− | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2002 07 30 | 608 | 0.1+ | 0.0 | 2002 09 13 | 644 | 0.1+ | 0.7− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 07 30 | 608 | 0.1− | 0.3− | 2002 09 13 | 644 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2002 08 12 | 704 | 0.4+ | 0.5− | 2005 04 12 | 704 | 0.6+ | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2002 08 12 | 704 | 0.0 | 0.5+ | 2005 04 12 | 704 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2002 08 12 | 704 | 1.1− | 0.9+ | 2005 04 12 | 704 | (1.6+ | 1.5+) | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2002 08 12 | 704 | 0.3+ | 0.4+ | 2005 04 12 | 704 | (0.5+ | 1.7+) | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2002 08 16 | 644 | 0.5− | 0.0 | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2002 08 16 | 644 | 0.3− | 0.3+ | 2005 04 14 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2002 08 16 | 644 | 0.4− | 0.5+ | 2005 04 14 | 691 | 0.0 | 0.5+ | | | | |

**(142097)∗ 2002 QG$_{62}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 209.89894 | | | (2000.0) | | |
| $n$ | 0.26294518 | $\omega$ | 178.74005 | | −0.89862102 | −0.43563415 |
| $a$ | 2.4130106 | $\Omega$ | 335.22805 | | +0.40142991 | −0.76862124 |
| $e$ | 0.1110313 | $i$ | 7.12783 | | +0.17701496 | −0.46844880 |
| $P$ | 3.75 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 566 | 0.1− | 0.1− | 2002 09 15 | 644 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.9− |
| 1997 02 06 | 566 | 0.3+ | 0.7− | 2002 09 15 | 644 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.8+ | 0.8− |
| 1997 02 06 | 566 | 0.1+ | 0.5− | 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 18 | 704 | 0.1− | 0.4− |
| 1999 11 13 | 703 | (4.5+ | 0.1+) | 2002 10 03 | 704 | 0.0 | 0.8− | 2006 09 18 | 704 | 0.9− | 0.3+ |
| 1999 11 13 | 703 | 0.7− | 0.6− | 2002 10 03 | 704 | 0.1− | 0.0 | 2006 09 18 | 704 | (1.8− | 0.4−) |
| 1999 11 13 | 703 | 0.1− | 0.0 | 2002 10 03 | 704 | (1.6+ | 0.8−) | 2006 09 18 | 704 | 0.4− | 0.3+ |
| 1999 11 13 | 703 | 0.1− | 0.3− | 2002 10 03 | 704 | 0.6+ | 0.1− | 2006 09 20 | 691 | 0.3− | 0.2+ |
| 2001 04 27 | 608 | 0.6− | 0.2+ | 2003 12 03 | 704 | 0.9+ | 0.5+ | 2006 09 20 | 691 | 0.3+ | 0.1− |
| 2001 04 27 | 608 | 0.5− | 0.6+ | 2003 12 03 | 704 | 1.0+ | 0.1+ | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2001 04 27 | 608 | 0.3− | 0.4+ | 2003 12 03 | 704 | 0.7+ | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.8+ |
| 2002 08 09 | 608 | 0.4+ | 0.7+ | 2003 12 03 | 704 | 0.2+ | 0.3− | 2006 09 25 | 699 | 0.3− | 0.8− |
| 2002 08 09 | 608 | 0.6+ | 0.1− | 2003 12 17 | 704 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.0 |
| 2002 08 09 | 608 | 0.9+ | 0.1+ | 2003 12 17 | 704 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.8+ | 0.8+ |
| 2002 08 17 | 644 | 0.1− | 0.1+ | 2003 12 17 | 704 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 08 17 | 644 | 0.3+ | 0.1− | 2003 12 17 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.2− |
| 2002 08 17 | 644 | 0.3− | 0.1− | 2003 12 17 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2002 08 18 | 644 | 0.3− | 0.1+ | 2003 12 24 | 106 | 0.7− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.4− | 0.2+ | 2003 12 24 | 106 | 0.8− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2002 08 18 | 644 | 0.2− | 0.1− | 2003 12 24 | 106 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2005 01 20 | 809 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2002 08 28 | 644 | 0.2+ | 0.1− | 2005 01 20 | 809 | 0.9+ | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2005 01 20 | 809 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 1.1− |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.6− | 1.0+ |
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.0 |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.1+ | | | | |

**(142098)∗ 2002 QU$_{63}$ = 1997 CV$_{20}$**

Discovered 2002 Aug. 17 by NEAT at Palomar.

Id. A. Doppler (*MPO* 75506)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.66650 | | | (2000.0) | | |
| $n$ | 0.25304478 | $\omega$ | 298.35962 | | +0.14058341 | +0.98992231 |
| $a$ | 2.4755468 | $\Omega$ | 339.70068 | | −0.89031937 | +0.11887540 |
| $e$ | 0.1702722 | $i$ | 2.81417 | | −0.43309089 | +0.07695750 |
| $P$ | 3.89 | $H$ | 17.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.4− | 0.1− | 2005 03 03 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 0.9− | 0.2+ |
| 1997 02 03 | 691 | 0.1+ | 0.4+ | 2005 03 03 | 691 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.4− | 0.3+ |
| 1997 02 03 | 691 | 0.2+ | 0.3− | 2005 03 03 | 691 | 0.2+ | 0.5− | 2006 08 27 | 699 | 0.2− | 0.7− |
| 2001 02 19 | 691 | 0.5+ | 0.7+ | 2005 03 08 | G96 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.6− | 0.8+ |
| 2001 02 19 | 691 | 0.9+ | 0.7+ | 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.1− |
| 2001 02 19 | 691 | 0.0 | 1.1+ | 2005 03 08 | G96 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.3+ |
| 2002 08 08 | 644 | 0.5− | 0.1− | 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.6+ | 0.3− |
| 2002 08 08 | 644 | 0.2− | 0.0 | 2005 03 09 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.4+ | 0.0 |
| 2002 08 08 | 644 | 0.2− | 0.0 | 2005 03 09 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2002 08 09 | 608 | 0.2− | 0.7+ | 2005 03 09 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 2002 08 09 | 608 | 0.1− | 0.9+ | 2005 03 12 | 695 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 2002 08 17 | 644 | 0.6− | 0.3+ | 2005 03 12 | 695 | 1.2+ | 0.0 | 2006 09 13 | 644 | 0.2− | 0.4− |
| 2002 08 17 | 644 | 0.0 | 0.3+ | 2005 03 13 | 691 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.5+ |
| 2002 08 17 | 644 | 0.1− | 0.5+ | 2005 03 13 | 691 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.3− | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.0 | 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2005 04 06 | G96 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.4− | 0.9+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2005 04 06 | G96 | 0.1− | 0.2− | 2006 09 19 | 703 | 1.2− | 0.5− |
| 2002 08 28 | 644 | 0.0 | 0.5+ | 2005 04 06 | G96 | 0.0 | 0.4− | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 2002 08 28 | 644 | 0.3− | 0.2+ | 2005 04 06 | G96 | 0.1+ | 0.6− | 2006 09 25 | G96 | 0.0 | 0.3+ |
| 2002 08 28 | 644 | 0.3+ | 0.4+ | 2005 05 08 | G96 | 1.1− | 0.2− | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.5− | 2005 05 08 | G96 | 1.1− | 0.6− | 2006 09 25 | G96 | 0.5− | 0.2− |
| 2002 09 14 | 644 | 0.1+ | 0.4− | 2005 05 08 | G96 | 0.7− | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2002 09 14 | 644 | 0.1− | 0.5− | 2005 05 08 | G96 | 0.9+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2002 09 15 | 644 | 0.5+ | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2002 09 15 | 644 | 0.4+ | 0.2+ | 2006 08 19 | 691 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.1− |

**(142099)∗ 2002 QO$_{64}$**

Discovered 2002 Aug. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 44.04399 | | | (2000.0) | | |
| $n$ | 0.20328316 | $\omega$ | 160.12453 | | −0.67491315 | +0.73629037 |
| $a$ | 2.8646294 | $\Omega$ | 67.39416 | | −0.68393726 | −0.59943827 |
| $e$ | 0.0189004 | $i$ | 3.02203 | | −0.27698747 | −0.31392714 |
| $P$ | 4.85 | $H$ | 16.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 19 | 734 | 1.1− | 1.0+ | 2002 09 15 | 644 | 0.4− | 0.5− | 2005 02 09 | 691 | 0.2+ | 0.3+ |
| 2001 05 19 | 734 | (3.8− | 0.0 ) | 2002 09 15 | 644 | 0.0 | 0.5− | 2005 02 09 | 691 | 0.2+ | 0.3+ |
| 2001 05 19 | 734 | 0.1+ | 1.0− | 2002 09 15 | 644 | 0.0 | 0.3− | 2005 03 04 | 704 | 0.7+ | 1.3+ |
| 2002 08 08 | 644 | 0.4− | 0.8− | 2003 11 30 | 291 | 0.2− | 0.3+ | 2005 03 04 | 704 | 0.6+ | 0.8− |
| 2002 08 08 | 644 | 0.4+ | 0.1− | 2003 11 30 | 291 | 0.1− | 0.2+ | 2005 03 04 | 704 | 0.3+ | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.3− | 2003 11 30 | 291 | 0.1+ | 0.4+ | 2005 03 04 | 704 | (2.1+ | 0.1+) |
| 2002 08 09 | 608 | 0.7− | 0.1+ | 2003 12 21 | 691 | 0.3− | 0.0 | 2005 03 12 | 704 | 1.4− | 0.0 |
| 2002 08 17 | 608 | 0.4+ | 0.2− | 2003 12 21 | 691 | 0.2− | 0.2+ | 2005 03 12 | 704 | 0.6− | 0.9− |
| 2002 08 17 | 608 | 0.3− | 0.8+ | 2003 12 21 | 691 | 0.2− | 0.2+ | 2005 03 12 | 704 | 0.3− | 1.6− |
| 2002 08 17 | 608 | 0.0 | 0.2− | 2005 02 01 | 691 | 0.1+ | 0.1+ | 2006 05 25 | 568 | 0.9− | 1.7+ |
| 2002 08 18 | 644 | 0.5+ | 0.9+ | 2005 02 01 | 691 | 0.1− | 0.0 | 2006 05 25 | 568 | 1.0− | 1.8+ |
| 2002 08 18 | 644 | 0.2+ | 0.5+ | 2005 02 01 | 691 | 0.1+ | 0.1+ | 2006 05 25 | 568 | 1.2− | 2.0+ |
| 2002 08 18 | 644 | 0.0 | 0.9+ | 2005 02 03 | 704 | 0.1− | 0.7− | 2006 06 04 | G96 | 1.6+ | 0.4+ |
| 2002 08 30 | 644 | 0.1+ | 0.5+ | 2005 02 03 | 704 | 0.2+ | 0.8− | 2006 06 04 | G96 | 0.9+ | 0.0 |
| 2002 08 30 | 644 | 0.4+ | 0.8+ | 2005 02 03 | 704 | 0.2+ | 0.0 | 2006 06 04 | G96 | 0.1+ | 0.2+ |
| 2002 08 30 | 644 | 0.9+ | 0.8+ | 2005 02 09 | 691 | 0.3+ | 0.3+ | 2006 06 04 | G96 | 0.8+ | 0.1+ |

**(142100)∗ 2002 QE$_{66}$**

Discovered 2002 Aug. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.90278 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27165148 | $\omega$ | 218.04958 | | +0.89236789 | +0.44994789 | |
| $a$ | 2.3611740 | $\Omega$ | 115.17583 | | −0.40400189 | +0.83100600 | |
| $e$ | 0.1958548 | $i$ | 2.21771 | | −0.20115175 | +0.32707176 | |
| $P$ | 3.63 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.4− | 0.2+ | 2002 08 29 | 644 | 0.2− | 0.1+ | 2006 10 17 | 621 | 0.1+ | 0.2+ | |
| 2002 07 23 | 644 | 0.1− | 0.6+ | 2002 09 05 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 621 | 0.2+ | 0.1− | |
| 2002 07 23 | 644 | 0.2− | 0.0 | 2002 09 05 | 704 | 0.3− | 0.6− | 2006 10 17 | 621 | 0.4+ | 0.0 | |
| 2002 07 30 | 608 | 0.2− | 0.4+ | 2002 09 05 | 704 | (2.1− | 0.5−) | 2006 10 17 | G96 | 0.2+ | 0.6− | |
| 2002 07 30 | 608 | 0.6− | 0.4+ | 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.6− | |
| 2002 07 30 | 608 | 0.0 | 0.1− | 2002 09 15 | 644 | 0.2− | 0.6+ | 2006 10 17 | G96 | (1.9+ | 0.1+) | |
| 2002 08 08 | 644 | 0.1− | 0.2+ | 2002 09 15 | 644 | 0.2− | 0.6+ | 2006 10 17 | G96 | 0.3− | 0.4− | |
| 2002 08 08 | 644 | 0.3− | 0.3+ | 2004 01 16 | 691 | 0.6+ | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.4+ | |
| 2002 08 14 | 704 | 0.8+ | 1.3+ | 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.1+ | |
| 2002 08 14 | 704 | 0.4− | 0.1− | 2004 01 16 | 691 | 0.1− | 0.6+ | 2006 10 18 | 691 | 0.2− | 0.4− | |
| 2002 08 14 | 704 | 0.9+ | 0.2+ | 2004 01 16 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1+ | |
| 2002 08 14 | 704 | 0.4+ | 0.5− | 2004 01 16 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1+ | |
| 2002 08 16 | 608 | 0.1+ | 0.3− | 2004 01 16 | 691 | 0.5− | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.3+ | |
| 2002 08 16 | 608 | 0.1− | 0.5− | 2005 04 10 | G96 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.3− | |
| 2002 08 16 | 608 | 0.4− | 0.0 | 2005 04 10 | G96 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.5+ | 0.2− | |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2005 04 10 | G96 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.1− | |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2005 04 10 | G96 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.1− | |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2005 05 10 | 807 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.5− | |
| 2002 08 18 | 644 | 0.4+ | 0.3+ | 2005 05 10 | 807 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.4− | |
| 2002 08 18 | 644 | 0.4+ | 0.3+ | 2006 10 16 | 621 | 0.1+ | 1.1− | 2006 11 14 | G96 | 0.1− | 0.2− | |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 621 | 0.5+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.1− | |
| 2002 08 26 | 644 | 0.4− | 0.2+ | 2006 10 16 | 621 | 0.3+ | 0.1− | 2006 11 22 | 850 | 0.8− | 1.4+ | |
| 2002 08 26 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | (1.6− | 0.4+) | 2006 11 22 | 850 | 0.1+ | 0.3+ | |
| 2002 08 26 | 644 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 22 | 850 | 0.5+ | 0.3− | |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | (0.9+ | 1.9+) | | | | | |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | (0.3+ | 1.6+) | | | | | |

**(142101)∗ 2002 QJ$_{68}$ = 2001 DJ$_{87}$**

Discovered 2002 Aug. 18 by NEAT at Palomar.

Id. A. Doppler (*MPO* 89313)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.86868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28957037 | $\omega$ | 229.48336 | | −0.89903202 | +0.43648165 | |
| $a$ | 2.2627329 | $\Omega$ | 336.33301 | | −0.37075129 | −0.80129899 | |
| $e$ | 0.1025644 | $i$ | 5.00239 | | −0.23299120 | −0.40914998 | |
| $P$ | 3.40 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.1+ | 0.1− | 2002 08 18 | 644 | 0.0 | 0.6+ | 2003 12 28 | 704 | 0.2+ | 0.8+ | |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2002 08 27 | 644 | 0.1+ | 0.5+ | 2003 12 28 | 704 | 0.1+ | 0.8+ | |
| 2001 02 27 | 859 | 0.5+ | 0.0 | 2002 08 27 | 644 | 0.0 | 0.2+ | 2003 12 28 | 704 | 0.4+ | 0.5+ | |
| 2001 02 27 | 859 | 0.6+ | 0.9− | 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.4− | |
| 2001 02 28 | 859 | 0.7− | 0.5+ | 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.1− | |
| 2001 02 28 | 859 | 0.6− | 0.0 | 2002 09 14 | 644 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.3− | 0.0 | |
| 2001 02 28 | 859 | 1.3− | 0.7− | 2002 09 14 | 644 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.5+ | 0.0 | |
| 2001 03 18 | 704 | 0.7+ | 0.0 | 2002 09 15 | 644 | 0.3− | 0.5+ | 2006 10 27 | 703 | 1.0− | 0.7− | |
| 2001 03 18 | 704 | 0.6+ | 0.1+ | 2002 09 15 | 644 | 0.7− | 0.3+ | 2006 10 27 | 703 | (2.1+ | 1.9−) | |
| 2001 03 18 | 704 | 0.5− | 0.5+ | 2002 09 15 | 644 | 0.4− | 0.5+ | 2006 10 27 | 703 | (0.5− | 2.1+) | |
| 2002 08 17 | 644 | 0.1+ | 0.1− | 2003 12 17 | 704 | 0.7+ | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.5− | |
| 2002 08 17 | 644 | 0.7+ | 0.3− | 2003 12 17 | 704 | (0.7− | 1.6+) | 2006 11 25 | G96 | 0.2+ | 0.1− | |
| 2002 08 17 | 644 | 0.2+ | 0.4− | 2003 12 17 | 704 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.3+ | |
| 2002 08 18 | 644 | 0.2+ | 0.2+ | 2003 12 17 | 704 | (1.8+ | 0.5+) | 2006 11 25 | G96 | 0.1+ | 0.1+ | |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2003 12 28 | 704 | 0.3+ | 0.7+ | 2006 11 25 | G96 | 0.0 | 0.2+ | |

**(142102)∗ 2002 QP$_{69}$ = 2004 CG$_{119}$**

Discovered 2002 Aug. 18 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 75511)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.15737 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26867738 | $\omega$ | 54.53954 | | +0.74007896 | −0.67223239 | |
| $a$ | 2.3785666 | $\Omega$ | 347.65936 | | +0.58336926 | +0.65624701 | |
| $e$ | 0.1218401 | $i$ | 5.27950 | | +0.33460937 | +0.34270026 | |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.2+ | 0.3+ | 2002 09 15 | 644 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.2+ | |
| 1997 03 04 | 691 | 0.1− | 0.4− | 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.3+ | 0.2+ | |
| 1997 03 04 | 691 | 0.2+ | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.2+ | 1.0− | |
| 2002 07 23 | 644 | 0.4− | 0.8+ | 2004 02 12 | 691 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.5− | |
| 2002 07 23 | 644 | 0.5− | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.2+ | |
| 2002 07 23 | 644 | 0.9− | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.1+ | |
| 2002 07 23 | 644 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | |
| 2002 07 23 | 644 | 0.2− | 0.6+ | 2006 09 20 | 699 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.0 | |
| 2002 08 08 | 644 | 0.4+ | 1.4+ | 2006 09 20 | 699 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− | |
| 2002 08 08 | 644 | 0.1+ | 1.0+ | 2006 09 20 | 699 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2002 08 08 | 644 | 0.1+ | 0.8+ | 2006 09 20 | 699 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2002 08 18 | 644 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 29 | 704 | (1.4− | 2.0+) | |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 29 | 704 | (0.1+ | 1.7+) | |
| 2002 08 19 | 644 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.9− | 2006 10 29 | 704 | 0.4+ | 0.9+ | |
| 2002 08 19 | 644 | 0.4− | 0.3+ | 2006 09 29 | 704 | 0.8− | 1.1+ | 2006 10 29 | 704 | 0.3− | 0.7+ | |
| 2002 08 19 | 644 | 0.6− | 0.1+ | 2006 09 29 | 704 | 0.8− | 1.0+ | 2006 11 14 | 703 | 0.1− | 0.5− | |
| 2002 08 27 | 644 | 0.2+ | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.1− | 0.5− | |
| 2002 08 27 | 644 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.6− | 0.1+ | |
| 2002 09 15 | 644 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.4+ | 0.1− | |
| 2002 09 15 | 644 | 0.7− | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | | | | | |

**(142103)∗ 2002 QV$_{74}$ = 2005 JL$_{66}$**

Discovered 2002 Aug. 18 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 85581)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.74695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28362843 | $\omega$ | 279.51665 | | −0.08419609 | +0.99639143 | |
| $a$ | 2.2942261 | $\Omega$ | 345.64038 | | −0.89641214 | −0.08044162 | |
| $e$ | 0.1530545 | $i$ | 2.47975 | | −0.43515089 | −0.02707893 | |
| $P$ | 3.47 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.3− | 0.0 | 2002 09 15 | 644 | 0.2− | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.0 | |
| 2001 02 02 | 691 | 0.1− | 0.4+ | 2002 09 15 | 644 | 0.1− | 0.6+ | 2006 11 01 | G96 | 0.2+ | 0.6− | |
| 2001 02 02 | 691 | 0.2+ | 0.2+ | 2002 09 15 | 644 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.6− | |
| 2001 03 02 | 691 | 0.5+ | 0.2+ | 2005 05 04 | 644 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.6− | |
| 2001 03 02 | 691 | 0.0 | 0.6+ | 2005 05 04 | 644 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.5− | |
| 2001 03 02 | 691 | 0.3+ | 0.1+ | 2005 05 04 | 644 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.3− | |
| 2002 08 18 | 644 | 0.2− | 1.1+ | 2005 05 11 | 644 | 0.2+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.3− | |
| 2002 08 18 | 644 | 0.0 | 0.7+ | 2005 05 11 | 644 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.1− | |
| 2002 08 18 | 644 | 0.5− | 0.4+ | 2005 05 11 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.3− | |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 19 | 291 | 0.2+ | 0.3+ | |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2006 10 13 | 691 | 0.4+ | 0.2− | 2006 11 19 | 291 | 0.2− | 0.2+ | |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2006 10 13 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 291 | 0.2− | 0.6+ | |
| 2002 09 14 | 644 | 1.0− | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.1− | | | | | |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.1− | | | | | |

**(142104)∗ 2002 QM$_{78}$ = 2004 CH$_{44}$**

Discovered 2002 Aug. 30 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 94825)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.77336 | | (2000.0) | | | |
| $n$ | 0.26106490 | $\omega$ | 298.00111 | | +0.70115185 | −0.71063663 |
| $a$ | 2.4245830 | $\Omega$ | 107.35346 | | +0.67370901 | +0.63359136 |
| $e$ | 0.1787232 | $i$ | 3.49293 | | +0.23345718 | +0.30587182 |
| $P$ | 3.78 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.0 | 0.2− | 2004 02 16 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.3+ | 0.0 |
| 1991 10 08 | 691 | 0.1− | 0.3− | 2004 02 16 | 691 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 1991 10 08 | 691 | 0.2+ | 0.1− | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2002 07 23 | 644 | 0.4+ | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2002 07 23 | 644 | 0.1+ | 0.2+ | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2002 07 23 | 644 | 0.0 | 0.2+ | 2005 05 15 | G96 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2002 08 08 | 644 | 0.2+ | 0.9+ | 2005 05 15 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 1.1+ | 1.1− |
| 2002 08 08 | 644 | 0.7+ | 1.0+ | 2005 05 15 | G96 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2005 05 15 | G96 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | (2.4+ | 0.4+) | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 08 18 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.8+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 08 19 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.9+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 2002 08 29 | 644 | 0.6− | 0.3− | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2002 08 29 | 644 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.7+ | 0.6+ | 2006 10 22 | 703 | 0.8+ | 0.1+ |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | (0.1− | 2.6−) | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2002 08 30 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 691 | 1.2− | 0.5+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 691 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2004 02 12 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.3+ | | | | |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.2− | | | | |

**(142105)∗ 2002 QX$_{83}$**

Discovered 2002 Aug. 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.27580 | | (2000.0) | | | |
| $n$ | 0.26710962 | $\omega$ | 1.08766 | | +0.96825452 | −0.24906322 |
| $a$ | 2.3878646 | $\Omega$ | 13.39211 | | +0.22864202 | +0.84812864 |
| $e$ | 0.1143836 | $i$ | 5.25915 | | +0.10102484 | +0.46759526 |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.0 | 0.3+ | 2004 01 26 | 699 | 0.9− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 1995 10 15 | 691 | 0.0 | 0.0 | 2004 02 02 | 704 | 0.7+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 1995 10 15 | 691 | 0.1− | 0.0 | 2004 02 02 | 704 | 0.8+ | 0.5− | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2002 08 11 | 644 | 0.0 | 0.4+ | 2004 02 02 | 704 | (2.8+ | 0.9−) | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2002 08 11 | 644 | 0.2− | 0.3+ | 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2002 08 11 | 644 | 0.3+ | 0.4+ | 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 08 11 | 644 | 0.2+ | 0.4− | 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.1− | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.3− |
| 2002 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2002 08 19 | 644 | 0.6+ | 0.7+ | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 08 19 | 644 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 08 19 | 644 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 08 30 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 691 | 0.7+ | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2002 08 30 | 644 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.2+ | 2006 10 27 | 691 | 0.4− | 0.1− |
| 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 1.0+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.4− | 0.4− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2004 01 26 | 699 | 0.3− | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2004 01 26 | 699 | 1.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2004 01 26 | 699 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.6− |

**(142106)∗ 2002 QZ$_{83}$ = 2005 GD$_{176}$**

Discovered 2002 Aug. 30 by Q.-z. Ye at Nanchuan Observatory, Guangzhou.

Id. G. V. Williams (*MPO* 94829)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.87469 | | (2000.0) | | | |
| $n$ | 0.26782325 | $\omega$ | 244.85440 | | +0.96174544 | +0.24936762 |
| $a$ | 2.3836210 | $\Omega$ | 100.54045 | | −0.19082612 | +0.90685663 |
| $e$ | 0.1443552 | $i$ | 6.62410 | | −0.19654796 | +0.33974526 |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 12 | 691 | 0.1+ | 0.2− | 2002 08 31 | D14 | 0.4+ | 0.5+ | 2005 04 14 | 691 | 0.2+ | 0.2+ |
| 1997 03 12 | 691 | 0.0 | 0.6− | 2002 08 31 | D14 | 1.3− | 1.2− | 2005 04 14 | 691 | 0.3+ | 0.1+ |
| 1997 03 12 | 691 | 0.1+ | 0.6− | 2002 08 31 | D14 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.0 | 0.2+ |
| 2001 03 19 | 645 | 0.2− | 0.1+ | 2002 09 07 | D14 | 0.3+ | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.2+ |
| 2001 03 19 | 645 | 0.2− | 0.0 | 2002 09 07 | D14 | 0.5+ | 0.1+ | 2005 04 18 | 691 | 0.3+ | 0.2+ |
| 2001 03 26 | 566 | 0.0 | 0.3+ | 2002 09 07 | D14 | 0.5+ | 0.6− | 2005 04 18 | 691 | 0.4+ | 0.1+ |
| 2001 03 26 | 566 | 0.1− | 0.6− | 2002 09 08 | D14 | 0.9− | 0.7+ | 2005 04 30 | 691 | 0.0 | 0.2+ |
| 2001 03 26 | 566 | 0.9+ | 0.2+ | 2002 09 08 | D14 | 0.1− | 0.6+ | 2005 04 30 | 691 | 0.3+ | 0.3+ |
| 2002 07 24 | 644 | 0.4+ | 0.4+ | 2002 09 10 | 608 | 0.3+ | 0.3+ | 2005 04 30 | 691 | 0.0 | 0.3+ |
| 2002 07 24 | 644 | 0.2− | 0.3+ | 2002 09 10 | 608 | 0.6+ | 0.5− | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2002 07 24 | 644 | 0.4+ | 0.6+ | 2002 09 10 | 608 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2002 07 30 | 608 | 0.9+ | 1.3− | 2002 09 16 | 644 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2002 07 30 | 608 | 0.1+ | 0.2− | 2002 09 16 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.3+ |
| 2002 07 30 | 608 | 0.2+ | 0.7− | 2002 09 16 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 08 14 | 704 | (1.7+ | 0.6+) | 2002 09 28 | 608 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 08 14 | 704 | 0.3− | 0.1+ | 2002 09 28 | 608 | 0.5− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 08 14 | 704 | 0.9− | 0.4+ | 2002 09 28 | 608 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.7− | 1.5− |
| 2002 08 14 | 704 | 0.9+ | 0.5+ | 2002 10 09 | 644 | 0.1+ | 0.6+ | 2006 10 16 | 703 | (1.8+ | 1.4−) |
| 2002 08 14 | 704 | 0.4− | 0.4− | 2002 10 09 | 644 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 08 16 | 608 | 0.4− | 0.3− | 2002 10 09 | 644 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 08 16 | 608 | 0.4− | 0.2+ | 2002 12 02 | 608 | 0.4+ | 1.5− | 2006 10 22 | 703 | 0.2+ | 0.3+ |
| 2002 08 16 | 608 | 0.2− | 0.1+ | 2003 12 29 | 691 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2002 08 19 | 644 | 0.1− | 0.1+ | 2003 12 29 | 691 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2003 12 29 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2002 08 19 | 644 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.2+ | 0.9+ | 2006 11 19 | 703 | 0.1+ | 0.5+ |
| 2002 08 30 | D14 | 0.8+ | 0.3− | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.2− | 0.3+ |
| 2002 08 30 | D14 | 0.2+ | 0.1− | 2004 01 22 | 704 | 0.9+ | 0.9+ | 2006 11 19 | 703 | 0.1+ | 0.9+ |
| 2002 08 30 | D14 | (1.6+ | 0.4−) | 2004 01 22 | 704 | 0.2+ | 0.8+ | 2006 11 19 | 703 | 0.2− | 0.0 |
| 2002 08 31 | D14 | 0.9− | 0.0 | 2004 01 22 | 704 | 0.9+ | 1.0+ | | | | |

**(142107)∗ 2002 QG$_{86}$ = 2005 KQ$_{8}$**

Discovered 2002 Aug. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 94832)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 112.43293 | | (2000.0) | | | |
| $n$ | 0.27774144 | $\omega$ | 328.35256 | | −0.10081451 | +0.99385748 |
| $a$ | 2.3265315 | $\Omega$ | 295.82637 | | −0.90189680 | −0.11066369 |
| $e$ | 0.0643242 | $i$ | 2.90691 | | −0.42002213 | −0.00092383 |
| $P$ | 3.55 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 699 | (1.3− | 1.7+) | 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2002 08 13 | 699 | 0.6− | 0.1− | 2002 09 14 | 644 | 0.1− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 08 13 | 699 | 0.4+ | 0.9+ | 2002 09 14 | 644 | 0.6− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2002 08 13 | 699 | 0.1− | 0.1+ | 2004 02 27 | 695 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2002 08 17 | 644 | 0.2+ | 0.2− | 2004 02 27 | 695 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2005 05 18 | E12 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2005 05 18 | E12 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2005 05 18 | E12 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2005 05 18 | E12 | 0.7− | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.6+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2005 05 19 | 644 | 0.5+ | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 08 27 | 644 | 0.2+ | 0.6− | 2005 05 19 | 644 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 08 27 | 644 | 0.1− | 0.5− | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.6− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.5+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | | | |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.0 | | | | |

**(142108)∗ 2002 QJ$_{86}$**

Discovered 2002 Aug. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.99565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18599793 | $\omega$ | 222.94675 | | +0.49484978 | −0.86890004 | |
| $a$ | 3.0394661 | $\Omega$ | 197.40365 | | +0.80748166 | +0.46475465 | |
| $e$ | 0.0587412 | $i$ | 2.23801 | | +0.32108731 | +0.17034036 | |
| $P$ | 5.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2002 08 27 | 644 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.6− | 0.3+ |
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2002 08 27 | 644 | 0.1− | 0.1− | 2005 03 11 | G96 | 0.6− | 0.3+ |
| 2000 03 12 | 691 | 0.0 | 0.3− | 2002 08 27 | 644 | 0.3− | 0.3− | 2005 03 11 | G96 | 0.4− | 0.1+ |
| 2000 03 12 | 691 | 0.1+ | 0.3− | 2002 08 31 | 644 | 0.0 | 0.1+ | 2006 04 24 | G96 | 0.1+ | 0.2+ |
| 2000 03 12 | 691 | 0.2− | 0.0 | 2002 08 31 | 644 | 0.1+ | 0.1− | 2006 04 24 | G96 | 0.1− | 0.2− |
| 2000 04 02 | 691 | 0.2+ | 0.4− | 2002 08 31 | 644 | 0.1− | 0.4− | 2006 04 24 | G96 | 0.1+ | 0.7− |
| 2000 04 02 | 691 | 0.1+ | 0.1− | 2002 09 14 | 644 | 0.4− | 0.4− | 2006 04 24 | G96 | 0.2+ | 0.6− |
| 2000 04 02 | 691 | 0.3+ | 0.8− | 2002 09 14 | 644 | 0.5+ | 0.9+ | 2006 04 28 | 807 | 0.2− | 0.3+ |
| 2002 08 17 | 644 | 0.2+ | 0.4+ | 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 04 28 | 807 | 0.2− | 0.3+ |
| 2002 08 17 | 644 | 0.9− | 0.2+ | 2003 11 19 | 691 | 0.2− | 0.2+ | 2006 05 08 | 691 | 0.2+ | 0.6+ |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2003 11 19 | 691 | 0.2− | 0.3+ | 2006 05 08 | 691 | 0.3+ | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2003 11 19 | 691 | 1.1+ | 0.6+ | 2006 05 08 | 691 | 0.1+ | 0.5+ |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2003 12 21 | 691 | 0.1− | 0.2− | 2006 05 21 | 691 | 0.2+ | 0.0 |
| 2002 08 26 | 644 | 0.3− | 0.5− | 2003 12 21 | 691 | 0.3− | 0.0 | 2006 05 21 | 691 | 0.1+ | 0.1+ |
| 2002 08 26 | 644 | 0.1+ | 0.6+ | 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 05 21 | 691 | 0.2− | 0.0 |
| 2002 08 26 | 644 | 0.0 | 0.1− | 2005 03 11 | G96 | 0.7− | 0.0 | | | | |

**(142109)∗ 2002 QD$_{92}$ = 1999 VQ$_{224}$**

Discovered 2002 Aug. 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 100332)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.44530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25606351 | $\omega$ | 157.00254 | | −0.01024693 | +0.99898451 | |
| $a$ | 2.4560522 | $\Omega$ | 112.38702 | | −0.92465040 | +0.00723760 | |
| $e$ | 0.1691329 | $i$ | 2.71974 | | −0.38067918 | −0.04446994 | |
| $P$ | 3.85 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.3+ | 0.2+ | 2002 08 29 | 644 | 0.1+ | 0.0 | 2005 04 04 | 691 | 0.1+ | 0.4+ |
| 1999 11 05 | 691 | 0.2+ | 0.1+ | 2002 08 29 | 644 | 0.4+ | 0.5− | 2005 04 04 | 691 | 0.4+ | 0.1+ |
| 1999 11 05 | 691 | 0.1− | 0.1− | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 1999 11 16 | 691 | 0.2− | 0.2− | 2002 08 29 | 644 | 0.7+ | 0.5− | 2006 08 17 | 644 | 0.2+ | 0.3+ |
| 1999 11 16 | 691 | 0.3− | 0.1+ | 2002 08 29 | 644 | 0.4− | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.3+ |
| 1999 11 16 | 691 | 0.1+ | 0.1+ | 2002 09 01 | 644 | 0.1+ | 0.1− | 2006 08 28 | 699 | (0.1− | 2.1−) |
| 2002 07 14 | 644 | 0.0 | 0.5+ | 2002 09 04 | 644 | 0.7+ | 0.0 | 2006 08 28 | 703 | 0.7− | 0.1+ |
| 2002 07 14 | 644 | 0.4− | 0.3+ | 2002 09 04 | 644 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.1− |
| 2002 07 14 | 644 | 0.4− | 0.4+ | 2002 09 04 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 699 | (2.7+ | 0.3−) |
| 2002 08 08 | 644 | 0.4− | 0.2+ | 2005 03 10 | 695 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.4+ |
| 2002 08 08 | 644 | 0.6− | 0.2+ | 2005 03 10 | 695 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.0 |
| 2002 08 08 | 644 | 0.5− | 0.3+ | 2005 03 17 | 703 | 0.4− | 1.1+ | 2006 08 28 | 699 | 0.2+ | 0.2+ |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2005 03 17 | 703 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.5+ |
| 2002 08 18 | 644 | 0.5− | 0.0 | 2005 03 17 | 703 | 0.7− | 0.6+ | 2006 09 14 | 644 | 0.4− | 0.4+ |
| 2002 08 18 | 644 | 0.2+ | 0.0 | 2005 03 17 | 703 | 0.3+ | 1.3− | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2002 08 29 | 644 | 0.4+ | 1.1− | 2005 04 04 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.2+ |

**(142110)∗ 2002 RO = 2000 AY$_{28}$**

Discovered 2002 Sept. 2 by P. Kušnirák and P. Pravec at Ondřejov.

Id. A. Doppler (*MPO* 35374)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.75504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27076149 | $\omega$ | 107.99105 | | −0.55131816 | −0.83412750 | |
| $a$ | 2.3663453 | $\Omega$ | 15.50065 | | +0.73983040 | −0.49805940 | |
| $e$ | 0.0981997 | $i$ | 3.58716 | | +0.38561544 | −0.23699818 | |
| $P$ | 3.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.1+ | 0.8− | 2002 10 11 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 704 | 0.8+ | 0.1+ |
| 2000 01 03 | 704 | 0.2− | 0.0 | 2002 10 11 | 704 | 0.4− | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.0 |
| 2000 01 03 | 704 | 0.5+ | 0.2− | 2002 10 11 | 704 | 0.2− | 0.6+ | 2004 03 28 | 704 | 0.9+ | 1.2− |
| 2000 01 03 | 704 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.2− | 0.8+ | 2004 03 30 | 691 | 0.2+ | 0.3+ |
| 2000 01 03 | 704 | 0.1− | 0.9− | 2002 10 11 | 704 | 0.3− | 0.0 | 2004 03 30 | 691 | 0.0 | 0.4+ |
| 2000 01 04 | 704 | 0.0 | 0.0 | 2004 02 16 | 703 | 0.8+ | 0.6+ | 2004 03 30 | 691 | 0.2+ | 0.4+ |
| 2000 01 04 | 704 | 0.4− | 0.4+ | 2004 02 16 | 703 | 0.4− | 0.2+ | 2004 03 31 | 691 | 0.4+ | 0.7+ |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2004 02 16 | 703 | 0.1− | 0.1+ | 2004 03 31 | 691 | 0.0 | 0.5+ |
| 2000 01 04 | 704 | 0.3− | 0.7− | 2004 02 16 | 703 | 1.2+ | 0.8− | 2004 03 31 | 691 | 0.0 | 0.5+ |
| 2002 09 02 | 557 | (0.7+ | 2.3−) | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2004 04 12 | 691 | 0.1+ | 0.3+ |
| 2002 09 02 | 557 | (1.7+ | 0.1+) | 2004 02 23 | 704 | 0.2− | 0.0 | 2004 04 12 | 691 | 0.0 | 0.3+ |
| 2002 09 03 | 557 | 0.8− | 0.4+ | 2004 02 23 | 704 | 0.4+ | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.1+ |
| 2002 09 03 | 557 | 0.5− | 0.6+ | 2004 02 23 | 704 | 1.1+ | 1.4+ | 2004 04 24 | 691 | 0.1+ | 0.1+ |
| 2002 09 04 | 557 | 0.5− | 1.1+ | 2004 02 23 | 704 | 0.5+ | 0.7+ | 2004 04 24 | 691 | 0.1+ | 0.1+ |
| 2002 09 04 | 557 | 0.3− | 0.6+ | 2004 02 26 | 704 | 0.3+ | 0.7− | 2004 04 24 | 691 | 0.1− | 0.1+ |
| 2002 09 04 | 557 | 0.0 | 1.1+ | 2004 02 26 | 704 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.7− | 0.9+ | 2004 02 26 | 704 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.5− | 0.1− |
| 2002 09 05 | 704 | 0.7− | 0.2+ | 2004 02 26 | 704 | 0.7+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 0.1− | 0.1− | 2004 03 15 | 691 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2002 09 06 | 557 | 0.6− | 0.6+ | 2004 03 15 | 691 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2002 09 06 | 557 | 0.1− | 0.1− | 2004 03 15 | 691 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.3− | 0.1+ |
| 2002 09 09 | 557 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2002 09 09 | 557 | 0.6− | 1.2+ | 2004 03 15 | 704 | 0.2+ | 0.1− | 2006 11 15 | 704 | (1.6+ | 0.2+) |
| 2002 09 09 | 557 | 0.9− | 0.3− | 2004 03 15 | 704 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.0 |
| 2002 09 09 | 557 | (1.9− | 0.4+) | 2004 03 15 | 704 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.8+ | 0.5− |
| 2002 09 09 | 557 | 0.3+ | 0.8+ | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2002 09 27 | 644 | 0.5− | 0.8+ | 2004 03 16 | 704 | 0.7+ | 0.6+ | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2002 09 27 | 644 | 0.8− | 0.6+ | 2004 03 16 | 704 | 1.3+ | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.3− |
| 2002 09 27 | 644 | 0.5− | 0.5+ | 2004 03 16 | 704 | 0.4+ | 1.1− | 2006 11 16 | 704 | 0.5− | 0.7− |
| 2002 09 29 | 291 | 0.0 | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2002 09 29 | 291 | 0.0 | 0.4+ | 2004 03 16 | 704 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.8+ |
| 2002 09 29 | 291 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 10 02 | 704 | (1.8− | 1.0+) | 2004 03 19 | 704 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.5+ | 0.6+ |
| 2002 10 02 | 704 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2006 11 21 | 691 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 0.3− | 0.2+ | 2004 03 19 | 704 | 0.8− | 1.0+ | 2006 11 21 | 691 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.0 | 0.8+ | 2006 11 21 | 691 | 0.4− | 0.6− |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2004 03 22 | 704 | 0.0 | 0.6− | 2006 11 22 | 704 | 1.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.8− | 1.0+ | 2004 03 22 | 704 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.5− | 0.5− |
| 2002 10 03 | 704 | 0.5− | 0.2+ | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 0.9+ | 0.6+ |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2002 10 06 | 291 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.4− | 0.4+ | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2002 10 06 | 291 | 0.1− | 0.2+ | 2004 03 28 | 704 | 1.0+ | 0.4+ | | | | |
| 2002 10 06 | 291 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.1− | 0.2+ | | | | |

**(142111)∗ 2002 RU$_{1}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.49259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23711932 | $\omega$ | 312.02991 | | +0.49860695 | +0.86566060 | |
| $a$ | 2.5851838 | $\Omega$ | 347.64357 | | −0.72019476 | +0.38482915 | |
| $e$ | 0.1734763 | $i$ | 12.13262 | | −0.48240089 | +0.32021593 | |
| $P$ | 4.16 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.3+ | 0.5+ | 2002 09 30 | 704 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.0 |
| 1998 10 12 | 699 | 0.9+ | 1.0+ | 2002 09 30 | 704 | 0.2+ | 0.5+ | 2006 08 16 | 644 | 0.3− | 0.0 |
| 1998 10 12 | 699 | 0.0 | 0.3− | 2002 09 30 | 704 | 0.1+ | 0.4+ | 2006 08 16 | E12 | 0.1− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.4− | 0.2− | 2002 09 30 | 704 | 0.1− | 0.5+ | 2006 08 16 | E12 | 0.3+ | 0.3+ |
| 2002 08 09 | 608 | 0.1− | 0.5− | 2002 09 30 | 704 | 0.2− | 0.2+ | 2006 08 16 | E12 | 0.2+ | 0.1+ |
| 2002 08 09 | 608 | 0.1− | 0.0 | 2002 10 04 | 704 | (0.7− | 1.7+) | 2006 08 16 | E12 | 0.5− | 0.0 |
| 2002 08 12 | 704 | 0.2+ | 0.6+ | 2002 10 04 | 704 | 0.8+ | 0.2+ | 2006 08 23 | 704 | 0.3+ | 0.7− |
| 2002 08 12 | 704 | 0.5− | 0.6+ | 2002 10 04 | 704 | 0.2+ | 0.7+ | 2006 08 23 | 704 | (0.1+ | 1.8−) |
| 2002 08 12 | 704 | 0.2− | 0.6+ | 2002 10 04 | 704 | 0.8− | 0.3+ | 2006 08 23 | 704 | 0.2− | 0.9− |
| 2002 08 12 | 704 | 0.5− | 0.2+ | 2002 10 04 | 704 | 0.1− | 0.1− | 2006 08 23 | 704 | 0.3+ | 1.3− |
| 2002 08 12 | 704 | 0.3+ | 0.6+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 08 23 | 704 | 0.0 | 0.8− |
| 2002 08 30 | 291 | 0.1− | 0.2+ | 2002 10 05 | 645 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.0 | 0.0 |
| 2002 08 30 | 291 | 0.0 | 0.2+ | 2002 10 10 | 645 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.1+ | 0.0 |
| 2002 08 30 | 291 | 0.0 | 0.2+ | 2002 10 10 | 645 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.1− | 0.5− | 2002 10 12 | 704 | 0.3+ | 0.3− | 2006 08 28 | 704 | 0.8+ | 0.4− |
| 2002 09 04 | 699 | 0.2− | 0.7+ | 2002 10 12 | 704 | 0.6− | 0.6+ | 2006 08 28 | 704 | 0.2+ | 1.1− |
| 2002 09 04 | 699 | 0.7− | 0.3+ | 2002 10 12 | 704 | (1.6+ | 0.9+) | 2006 08 28 | 704 | 0.1+ | 0.7− |
| 2002 09 04 | 699 | 0.3− | 1.3+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 08 28 | 704 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 08 28 | 704 | 0.2+ | 0.5− |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2005 03 04 | 691 | 0.3+ | 0.1− | 2006 08 31 | 704 | 0.3− | 0.3+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2005 03 04 | 691 | 0.3+ | 0.1+ | 2006 08 31 | 704 | 0.5+ | 1.1+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2005 03 04 | 691 | 0.5+ | 0.1+ | 2006 08 31 | 704 | 0.5+ | 1.0− |
| 2002 09 05 | 704 | 0.3− | 0.2+ | 2005 03 08 | 699 | 1.2+ | 0.4+ | 2006 08 31 | 704 | 0.5+ | 1.3− |
| 2002 09 05 | 608 | 0.3− | 1.1+ | 2005 03 08 | 699 | (0.2+ | 2.6+) | 2006 09 16 | 704 | 0.5+ | 0.1+ |
| 2002 09 05 | 608 | 0.4− | 1.1+ | 2005 03 08 | 699 | (1.7− | 0.8+) | 2006 09 16 | 704 | 0.6+ | 0.6+ |
| 2002 09 05 | 608 | 0.2− | 0.7+ | 2005 03 08 | 699 | 0.3+ | 0.6+ | 2006 09 16 | 704 | 0.1+ | 0.8+ |
| 2002 09 07 | 704 | 0.0 | 0.2+ | 2005 03 13 | 703 | 0.1+ | 0.7− | 2006 09 16 | 704 | 0.4+ | 0.7+ |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2005 03 13 | 703 | 0.4− | 0.3− | 2006 09 18 | 699 | 1.2− | 0.3− |
| 2002 09 07 | 704 | 0.5− | 0.7+ | 2005 03 13 | 703 | (2.8+ | 0.4−) | 2006 09 18 | 699 | 0.1+ | 0.2− |
| 2002 09 07 | 704 | 0.4− | 0.8+ | 2005 03 13 | 703 | 0.9− | 0.4− | 2006 09 18 | 699 | 0.4− | 0.1+ |
| 2002 09 11 | 644 | 0.0 | 0.6+ | 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 699 | (1.7− | 0.0 ) |
| 2002 09 11 | 644 | 0.0 | 0.5+ | 2005 03 17 | 691 | 0.5+ | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2002 09 11 | 644 | 0.0 | 0.6+ | 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.3+ | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2005 03 17 | 703 | 0.0 | 0.3− | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2005 03 17 | 703 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.4+ | 1.2− |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2005 03 17 | 703 | 0.3− | 0.9− | 2006 09 30 | 703 | 0.7+ | 1.4+ |
| 2002 09 15 | 699 | 0.6− | 0.8+ | 2005 03 17 | 703 | 0.6− | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.7− |
| 2002 09 15 | 699 | 0.3+ | 0.1+ | 2005 04 01 | 699 | (0.0 | 2.7+) | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2002 09 15 | 699 | 1.0− | 0.3+ | 2005 04 01 | 699 | (1.2+ | 2.1+) | 2006 10 17 | G96 | 0.0 | 0.1− |
| 2002 09 15 | 699 | 0.1+ | 0.8+ | 2005 04 01 | 699 | 0.6− | 0.9+ | 2006 10 17 | G96 | 0.0 | 0.2− |
| 2002 09 16 | 644 | 0.3− | 0.0 | 2005 04 01 | 699 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2002 09 16 | 644 | 0.4− | 0.1− | 2005 04 04 | 703 | 0.9− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.2− |
| 2002 09 16 | 644 | 0.4− | 0.2+ | 2005 04 04 | 703 | 0.1− | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 09 17 | 608 | (2.1− | 0.7+) | 2005 04 04 | 703 | (1.5− | 1.1−) | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 09 17 | 608 | 1.4− | 0.4+ | 2005 04 04 | 703 | 0.9− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 09 17 | 608 | (1.7− | 0.3+) | 2006 08 15 | 644 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2002 09 19 | 644 | 0.5− | 0.5+ | 2006 08 15 | 644 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.6+ | 0.4− |
| 2002 09 19 | 644 | 0.5− | 0.8+ | 2006 08 15 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2002 09 19 | 644 | 0.7− | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− |

**(142112)∗ 2002 RS$_2$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.75629 | | (2000.0) | | | |
| $n$ | 0.25647274 | $\omega$ | 222.66250 | | +0.99757584 | −0.06613958 |
| $a$ | 2.4534388 | $\Omega$ | 141.11404 | | +0.06943213 | +0.92525775 |
| $e$ | 0.1887876 | $i$ | 1.97481 | | +0.00464925 | +0.37352864 |
| $P$ | 3.84 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | (2.7+ | 0.0 ) | 2002 09 16 | 644 | 0.1− | 0.3+ | 2006 09 20 | 699 | 1.1+ | 0.7+ |
| 1998 08 17 | 704 | (0.3− | 3.4+) | 2002 09 17 | 608 | 1.2− | 0.9− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1998 08 17 | 704 | (0.2+ | 2.5+) | 2002 09 17 | 608 | 0.9− | 0.8− | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 1998 08 17 | 704 | (5.6− | 1.6+) | 2002 09 17 | 608 | 1.0− | 0.8− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 1999 12 31 | 691 | 0.3+ | 0.0 | 2002 10 01 | 699 | 0.8− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 12 31 | 691 | 0.1+ | 0.1+ | 2002 10 01 | 699 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 12 31 | 691 | 0.2+ | 0.0 | 2002 10 01 | 699 | 0.9+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 02 05 | 695 | 0.2+ | 0.5+ | 2002 10 01 | 699 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.2− |
| 2000 02 05 | 695 | 0.8+ | 0.5+ | 2002 10 03 | 704 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.2− |
| 2001 05 15 | 691 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2001 05 15 | 691 | 0.6− | 0.3+ | 2002 10 03 | 704 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 05 15 | 691 | 0.0 | 0.5+ | 2002 10 03 | 704 | 0.7+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 08 21 | 644 | 0.1− | 0.5+ | 2002 10 03 | 704 | (1.5+ | 0.2+) | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2002 08 21 | 644 | 0.1− | 0.4+ | 2002 10 06 | 704 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 08 21 | 644 | 0.4− | 0.6+ | 2002 10 06 | 704 | 1.5+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 1.2− | 0.7+ | 2002 10 06 | 704 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 09 04 | 699 | 0.2− | 0.5− | 2002 10 06 | 704 | 1.0+ | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 09 04 | 699 | 0.9− | 0.2+ | 2002 10 06 | 704 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 09 04 | 699 | 1.3− | 0.0 | 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 1.0+ | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.2+ | 0.9− |
| 2002 09 05 | 704 | 0.1− | 0.3− | 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 10 27 | 704 | 0.1− | 0.9+ |
| 2002 09 05 | 608 | 1.0+ | 0.8+ | 2004 01 30 | 691 | 0.0 | 0.6+ | 2006 10 27 | 704 | 0.6− | 0.3+ |
| 2002 09 05 | 608 | 0.5+ | 0.5+ | 2004 01 30 | 691 | 0.2+ | 0.5+ | 2006 10 27 | 704 | 0.0 | 0.5+ |
| 2002 09 05 | 608 | 0.6+ | 0.2+ | 2004 01 30 | 691 | 0.3− | 0.3+ | 2006 10 27 | 704 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.5+ | 0.2+ | 2005 05 08 | 691 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 09 07 | 704 | 0.0 | 0.2− | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 09 07 | 704 | 0.0 | 0.6− | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.5+ | 0.7− | 2005 05 11 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 09 07 | 704 | 0.6− | 0.9− | 2005 05 11 | G96 | 0.3− | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2002 09 11 | 608 | 0.3+ | 0.1− | 2005 05 11 | G96 | 0.4− | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.1− |
| 2002 09 11 | 608 | 0.3+ | 0.2− | 2005 05 11 | G96 | 0.3− | 0.2+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2002 09 11 | 608 | 0.1− | 0.7− | 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 09 15 | 699 | 0.1− | 0.8+ | 2005 05 13 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2002 09 15 | 699 | 0.6− | 0.5+ | 2005 05 13 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2002 09 15 | 699 | 0.3+ | 0.8+ | 2006 08 28 | 703 | 1.0− | 0.4− | 2006 11 11 | 703 | 0.3+ | 1.2− |
| 2002 09 15 | 699 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.6+ | 1.2+ |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.1+ | 2006 11 17 | 703 | (2.1− | 0.6+) |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 11 17 | 703 | 1.0− | 0.5− |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.3+ |
| 2002 09 15 | 644 | 0.7− | 0.4+ | 2006 09 20 | 699 | 0.4+ | 1.5+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 09 16 | 644 | 0.4− | 0.3+ | 2006 09 20 | 699 | (1.8− | 0.9+) | | | | |
| 2002 09 16 | 644 | 0.4− | 0.5+ | 2006 09 20 | 699 | 0.1− | 1.1+ | | | | |

**(142113)∗ 2002 RS$_3$**

Discovered 2002 Sept. 1 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.15999 | | (2000.0) | | | |
| $n$ | 0.27314789 | $\omega$ | 132.16580 | | +0.61019937 | +0.79224078 |
| $a$ | 2.3525425 | $\Omega$ | 175.43432 | | −0.73874559 | +0.57051746 |
| $e$ | 0.2132453 | $i$ | 2.41797 | | −0.28620216 | +0.21648183 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 09 15 | 608 | 0.0 | 0.7− | 2005 05 10 | G96 | 0.3− | 0.2+ |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2002 09 16 | 644 | 0.1+ | 0.3− | 2005 05 10 | G96 | 0.3− | 0.1− |
| 2002 08 11 | 608 | 0.1+ | 0.2+ | 2002 09 16 | 644 | 0.2− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.2+ |
| 2002 08 11 | 608 | 0.5− | 0.3+ | 2002 09 16 | 644 | 0.0 | 0.0 | 2006 07 22 | G96 | 0.2− | 0.0 |
| 2002 08 11 | 608 | 0.3+ | 0.3+ | 2003 12 21 | 645 | 0.1+ | 0.0 | 2006 07 22 | G96 | 0.1− | 0.7+ |
| 2002 08 12 | 704 | 0.2+ | 0.6+ | 2003 12 21 | 645 | 0.1+ | 0.0 | 2006 07 22 | G96 | 0.3− | 0.7+ |
| 2002 08 12 | 704 | 0.1− | 0.9+ | 2005 03 08 | G96 | 0.4− | 0.1+ | 2006 07 22 | G96 | (1.8− | 0.4+) |
| 2002 08 12 | 704 | 0.2+ | 0.8+ | 2005 03 08 | G96 | 0.5− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.1+ |
| 2002 08 12 | 704 | 0.1+ | 0.1+ | 2005 03 08 | G96 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.4+ | 0.3+ | 2005 03 08 | G96 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2002 08 18 | 608 | 0.1+ | 0.2− | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2002 08 18 | 608 | 0.0 | 0.4− | 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.0 |
| 2002 08 18 | 608 | 0.3− | 0.0 | 2005 04 05 | G96 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 2002 09 01 | 608 | 0.4− | 1.1+ | 2005 04 05 | G96 | 0.7− | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 2002 09 01 | 608 | (0.7− | 2.3+) | 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2002 09 01 | 608 | 0.7− | 1.3+ | 2005 04 09 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2002 09 04 | 644 | 0.1− | 0.0 | 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2002 09 04 | 644 | 0.1− | 0.0 | 2005 04 10 | 695 | 0.4+ | 1.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 09 04 | 644 | 0.1− | 0.2− | 2005 04 10 | 695 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.5− | 0.7+ | 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.4+ |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2002 09 05 | 704 | 0.7− | 0.3+ | 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.5+ | 0.1+ | 2005 04 18 | 691 | 0.9+ | 0.5− | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2005 04 18 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2002 09 14 | 644 | 0.1+ | 0.2+ | 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.2+ | 2005 05 07 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.9+ |
| 2002 09 14 | 644 | 0.4+ | 0.2+ | 2005 05 07 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.1+ | 0.9− |
| 2002 09 15 | 608 | 0.1− | 0.9− | 2005 05 07 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.7− | 0.1− |
| 2002 09 15 | 608 | 0.2− | 0.8− | 2005 05 10 | G96 | 0.6− | 0.2− | | | | |

**(142114)∗ 2002 RA$_4$**

Discovered 2002 Sept. 2 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.02420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27656114 | $\omega$ | 255.96809 | | +0.44932692 | −0.88957548 | |
| $a$ | 2.3331461 | $\Omega$ | 166.40368 | | +0.89319804 | +0.44554281 | |
| $e$ | 0.2597559 | $i$ | 20.47331 | | +0.01739497 | +0.10073270 | |
| $P$ | 3.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 327 | 0.3+ | 0.0 | 2004 02 23 | 704 | 1.0+ | 0.7+ | 2006 09 28 | 703 | 0.1− | 0.1− |
| 1995 09 17 | 327 | 0.5+ | 0.8− | 2004 02 23 | 704 | (0.9+ | 1.7+) | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 1995 09 17 | 327 | 0.1− | 1.4− | 2004 02 23 | 704 | (0.0 | 2.0+) | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2000 01 10 | 704 | 0.7− | 1.0+ | 2004 02 23 | 704 | 0.7+ | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2000 01 10 | 704 | 0.0 | 1.0+ | 2004 02 23 | 704 | 0.2+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2000 01 10 | 704 | 0.2− | 1.0+ | 2004 03 15 | 704 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 07 09 | 644 | 0.1+ | 0.5+ | 2004 03 15 | 704 | 0.3+ | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 07 09 | 644 | 0.1+ | 0.7+ | 2004 03 15 | 704 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2002 07 09 | 644 | 0.1+ | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 10 23 | E12 | 0.1− | 0.4+ |
| 2002 07 20 | 644 | 0.3+ | 0.2+ | 2004 03 15 | 704 | 0.2− | 0.2+ | 2006 10 23 | E12 | 0.2+ | 0.2− |
| 2002 07 20 | 644 | 0.1− | 0.4− | 2004 03 15 | 333 | 0.1− | 0.4+ | 2006 10 23 | E12 | 0.2+ | 0.0 |
| 2002 07 20 | 644 | 0.3+ | 0.2− | 2004 03 15 | 333 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 0.1− | 0.3+ |
| 2002 08 04 | 644 | 0.4− | 1.1+ | 2004 03 15 | 333 | 0.3+ | 0.1− | 2006 11 01 | 703 | 0.0 | 0.5− |
| 2002 08 04 | 644 | 0.3− | 1.2+ | 2004 03 20 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 703 | 0.4+ | 0.6− |
| 2002 08 04 | 644 | 0.3− | 1.2+ | 2004 03 20 | 691 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.5− | 0.3+ |
| 2002 08 12 | 704 | (0.1+ | 1.7+) | 2004 03 20 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 703 | 0.2− | 0.2+ |
| 2002 08 12 | 704 | (0.0 | 1.6+) | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.6− | 0.5+ |
| 2002 08 12 | 704 | 1.2+ | 0.1+ | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 11 01 | 703 | 1.0− | 0.2+ |
| 2002 08 12 | 704 | 0.3− | 0.8+ | 2004 03 20 | 704 | 0.2− | 0.5− | 2006 11 01 | A13 | 0.1− | 0.3+ |
| 2002 08 12 | 704 | 0.2− | 0.6+ | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 11 02 | A13 | 0.5− | 0.3− |
| 2002 08 25 | 644 | 0.3+ | 0.8+ | 2004 03 20 | 704 | 0.1+ | 1.2+ | 2006 11 02 | A13 | 0.3+ | 0.3− |
| 2002 08 25 | 644 | 0.1− | 0.9+ | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 11 20 | E12 | 0.2− | 0.5+ |
| 2002 08 25 | 644 | 0.2+ | 0.9+ | 2004 03 30 | 691 | 0.1− | 0.1+ | 2006 11 20 | E12 | 0.3+ | 0.7+ |
| 2002 09 02 | 608 | 0.5− | 0.2+ | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 11 20 | E12 | 0.2+ | 0.2+ |
| 2002 09 02 | 608 | 0.7− | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 11 20 | E12 | 0.6+ | 0.4+ |
| 2002 09 02 | 608 | 0.1− | 0.3+ | 2006 09 19 | 703 | 1.1+ | 0.3+ | 2006 11 25 | 703 | 0.4− | 0.3+ |
| 2002 09 04 | 644 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.4+ | 0.5− | 2006 11 25 | 703 | 0.1+ | 0.3+ |
| 2002 09 04 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 703 | (2.5− | 0.6+) | 2006 11 25 | 703 | 0.4− | 0.1− |
| 2002 09 04 | 644 | 1.3− | 0.5+ | 2006 09 28 | 703 | 0.3+ | 0.0 | 2006 11 25 | 703 | 0.1+ | 0.1+ |

**(142115)∗ 2002 RC$_5$**

Discovered 2002 Sept. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.40813 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26282252 | $\omega$ | 178.30837 | | +0.75695746 | −0.64247221 | |
| $a$ | 2.4137614 | $\Omega$ | 222.46740 | | +0.59744677 | +0.75441477 | |
| $e$ | 0.2269969 | $i$ | 10.18185 | | +0.26471260 | +0.13449099 | |
| $P$ | 3.75 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 14 | 691 | 0.3+ | 1.4− | 2003 01 04 | 704 | (1.6− | 0.1−) | 2006 11 09 | 644 | 0.3− | 0.1− |
| 1997 05 14 | 691 | 0.0 | 0.9− | 2005 05 27 | 461 | 1.2− | 0.7+ | 2006 11 10 | 644 | 0.3− | 0.3− |
| 1997 05 14 | 691 | 0.1+ | 0.6− | 2005 05 27 | 461 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 2000 03 04 | 645 | 0.0 | 0.2+ | 2005 05 28 | 461 | 0.6− | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.4− |
| 2000 03 04 | 645 | 0.0 | 0.2+ | 2005 05 29 | 461 | 0.3− | 1.0+ | 2006 11 11 | 703 | 0.2+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.3− | 0.1− | 2006 09 17 | 699 | 0.2+ | 0.9− | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2002 08 13 | 704 | 0.2− | 1.5+ | 2006 09 17 | 699 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2002 08 13 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 699 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2002 08 13 | 704 | 0.2− | 0.0 | 2006 09 17 | 699 | 0.2+ | 0.7− | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2002 09 03 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 2002 09 03 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2002 09 03 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.6− | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2002 09 04 | 644 | 0.1− | 1.0+ | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.2− | 0.4+ |
| 2002 09 04 | 644 | 0.3− | 1.1+ | 2006 09 25 | 704 | 1.1+ | 1.1+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2002 09 04 | 644 | 0.2− | 1.1+ | 2006 09 25 | 704 | (0.5+ | 1.9+) | 2006 11 14 | 704 | 0.1− | 0.2+ |
| 2002 09 11 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | 1.0+ | 0.9+ | 2006 11 14 | 704 | 0.2− | 0.4+ |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2002 09 11 | 644 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.2+ | 0.9+ |
| 2002 09 12 | 644 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2002 09 12 | 644 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2002 09 12 | 644 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.8− | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 2002 09 12 | 644 | 0.2− | 0.7+ | 2006 10 17 | G96 | 0.4− | 0.6− | 2006 11 17 | 704 | 0.4+ | 0.9+ |
| 2002 09 12 | 644 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.3+ | 0.3− |
| 2002 09 12 | 644 | 0.3− | 0.8+ | 2006 10 17 | G96 | 0.3− | 0.5− | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2002 09 14 | 595 | 0.6+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.7− |
| 2002 10 02 | 599 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2002 10 02 | 599 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2002 10 02 | 599 | (1.6+ | 0.4+) | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2002 10 03 | 599 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 10 03 | 599 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2002 10 03 | 599 | 0.1+ | 0.2− | 2006 10 23 | 704 | 0.8+ | 0.7+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2002 10 05 | 704 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.3+ | 0.7+ | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2002 10 05 | 704 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2002 10 05 | 704 | 0.8− | 0.1+ | 2006 10 23 | 704 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2006 10 23 | 704 | 0.9− | 0.5− | 2006 11 20 | 704 | 0.5+ | 0.4+ |
| 2002 10 05 | 704 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 25 | 704 | 0.0 | 0.6+ |
| 2002 10 06 | 644 | 0.0 | 0.7− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 25 | 704 | 0.2+ | 0.3+ |
| 2002 10 06 | 644 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 25 | 704 | 0.3− | 0.7+ |
| 2002 10 06 | 644 | 0.3+ | 0.8− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 25 | 704 | 1.9+ | 0.5+ |
| 2002 10 31 | 704 | 0.5+ | 0.8− | 2006 10 28 | 704 | 0.3− | 0.1+ | 2006 11 28 | 683 | 0.1+ | 0.1− |
| 2002 10 31 | 704 | 0.3+ | 0.3− | 2006 10 28 | 704 | 0.1+ | 0.0 | 2006 11 28 | 683 | 0.4− | 0.2+ |
| 2002 10 31 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.3− | 0.1− | 2006 11 28 | 683 | 0.1+ | 0.4− |
| 2002 10 31 | 704 | 0.5+ | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2002 10 31 | 704 | 0.2− | 0.3− | 2006 10 28 | 704 | 0.6− | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2002 11 08 | 704 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.5− | 0.1+ |
| 2002 11 08 | 704 | 0.6+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2002 11 08 | 704 | 1.2− | 0.6− | 2006 10 28 | 691 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 2002 11 08 | 704 | 0.1− | 0.7− | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 30 | 683 | 1.8+ | 0.3+ |
| 2003 01 04 | 704 | 1.0− | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 30 | 683 | 1.2+ | 1.0− |
| 2003 01 04 | 704 | 0.5− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 30 | 683 | 1.2+ | 0.8+ |
| 2003 01 04 | 704 | 1.5− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.1− | | | | |
| 2003 01 04 | 704 | 1.1− | 1.2− | 2006 11 09 | 644 | 0.4− | 0.2− | | | | |

**(142116)∗ 2002 RE$_5$**

Discovered 2002 Sept. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.95767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23038884 | $\omega$ | 150.79162 | | −0.01724325 | −0.97954208 | |
| $a$ | 2.6352900 | $\Omega$ | 299.54157 | | +0.86678982 | +0.08530881 | |
| $e$ | 0.1157617 | $i$ | 13.32413 | | +0.49837544 | −0.18226280 | |
| $P$ | 4.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 1.7+ | 1.4+ | 2004 01 24 | 704 | 0.5+ | 0.0 | 2004 02 23 | 704 | 0.5− | 0.3− |
| 2000 03 09 | 704 | 1.0− | 0.0 | 2004 01 24 | 704 | 0.5+ | 0.0 | 2004 02 23 | 704 | 0.2+ | 1.0− |
| 2000 03 09 | 704 | 0.8+ | 0.1− | 2004 01 30 | 704 | 0.5+ | 0.9− | 2004 02 23 | 704 | 1.3− | 0.1− |
| 2000 03 09 | 704 | 1.1− | 0.8− | 2004 01 30 | 704 | 0.2+ | 0.5− | 2004 02 23 | 704 | 0.4− | 0.8− |
| 2002 09 03 | 644 | 0.2− | 0.1− | 2004 01 30 | 704 | 0.6+ | 0.5− | 2004 02 26 | 704 | 0.2− | 1.3+ |
| 2002 09 03 | 644 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.4+ | 0.6− | 2004 02 26 | 704 | 0.3− | 0.0 |
| 2002 09 03 | 644 | 0.1+ | 0.1+ | 2004 01 30 | 704 | 0.9+ | 0.2+ | 2004 02 26 | 704 | 1.0− | 0.2+ |
| 2002 09 04 | 644 | 0.4+ | 0.8+ | 2004 02 11 | 699 | 0.3− | 0.2− | 2004 02 26 | 704 | 1.8− | 0.2− |
| 2002 09 04 | 644 | 0.1− | 1.1+ | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2004 02 26 | 704 | (1.1− | 2.4−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 644 | 0.3+ | 1.1+ | 2004 02 11 | 699 | 0.4+ | 0.5− | 2006 05 26 | G96 | 0.8− | 0.1− |
| 2002 10 03 | 644 | 0.0 | 0.4− | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 05 26 | G96 | 0.5− | 0.0 |
| 2002 10 03 | 644 | 0.7+ | 0.6− | 2004 02 11 | 699 | 0.5− | 0.4+ | 2006 05 26 | G96 | 0.4+ | 0.1+ |
| 2002 10 03 | 644 | 0.4+ | 0.3− | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 05 26 | G96 | 0.4− | 0.9− |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2004 02 11 | 699 | 0.4− | 0.2− | 2006 08 19 | 699 | 0.4− | 0.6− |
| 2002 10 06 | 704 | 0.7− | 0.6+ | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 08 19 | 699 | 0.5− | 1.1− |
| 2002 10 06 | 704 | 1.3− | 1.3− | 2004 02 17 | 704 | 0.2− | 0.3− | 2006 08 19 | 699 | 0.6− | 0.5+ |
| 2002 10 06 | 704 | 0.2− | 0.6− | 2004 02 17 | 704 | 0.7+ | 0.7+ | 2006 08 19 | 699 | 1.1+ | 0.1+ |
| 2003 12 30 | 691 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.7+ | 2006 09 16 | 691 | 0.1+ | 0.3+ |
| 2003 12 30 | 691 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 09 16 | 691 | 0.3+ | 0.1− |
| 2003 12 30 | 691 | 0.4− | 0.3+ | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 691 | 0.2+ | 0.1− |
| 2004 01 24 | 704 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.2− | | | | |
| 2004 01 24 | 704 | 0.5+ | 0.5+ | 2004 02 23 | 704 | 0.5− | 0.8− | | | | |

**(142117)∗ 2002 RY$_5$**

Discovered 2002 Sept. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.48869 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26265893 | $\omega$ | 328.71713 | | +0.40303694 | +0.91515603 | |
| $a$ | 2.4147635 | $\Omega$ | 325.04960 | | −0.83707709 | +0.36548419 | |
| $e$ | 0.1817890 | $i$ | 0.71199 | | −0.36995022 | +0.17003164 | |
| $P$ | 3.75 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.1− | 0.2+ | 2005 03 09 | G96 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.1− | 0.4− |
| 1991 10 07 | 691 | 0.4− | 0.1+ | 2005 03 09 | G96 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.5− | 0.3+ |
| 1991 10 07 | 691 | 0.2− | 0.5+ | 2005 03 13 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.4− | 0.4+ |
| 1994 05 02 | 691 | 0.0 | 0.6+ | 2005 03 13 | 703 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.6− | 0.4+ |
| 1994 05 02 | 691 | 0.3+ | 0.4+ | 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.7− | 0.7+ |
| 1994 05 02 | 691 | 0.4− | 0.1+ | 2005 03 13 | 703 | 0.1− | 0.5+ | 2006 09 19 | 699 | 0.8− | 0.4+ |
| 1997 02 06 | 910 | 1.7+ | 0.2− | 2005 03 13 | 703 | 0.7− | 1.1+ | 2006 09 19 | 699 | 0.6− | 0.1+ |
| 1997 02 06 | 910 | (2.4+ | 0.1−) | 2005 03 13 | 703 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.0 |
| 1997 02 07 | 910 | 1.9+ | 0.3− | 2005 03 13 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.4+ |
| 2002 07 29 | 644 | 0.3− | 0.3+ | 2005 03 17 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.3+ | 0.1+ |
| 2002 07 29 | 644 | 0.1− | 0.3+ | 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.6− | 0.2+ |
| 2002 07 29 | 644 | 0.2− | 0.3+ | 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.1− |
| 2002 08 08 | 644 | 0.3+ | 0.0 | 2005 04 04 | 703 | 1.0− | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.2+ | 0.0 | 2005 04 04 | 703 | 0.7− | 0.1− | 2006 09 27 | 704 | 1.1+ | 1.2+ |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2005 04 04 | 703 | 0.5− | 0.8+ | 2006 09 27 | 704 | 0.0 | 0.0 |
| 2002 08 14 | 704 | 0.1+ | 0.1+ | 2005 04 13 | 699 | 0.1+ | 1.3+ | 2006 09 27 | 704 | 0.8+ | 0.0 |
| 2002 08 14 | 704 | 0.1+ | 0.2− | 2005 04 13 | 699 | 0.4− | 0.7+ | 2006 09 27 | 704 | 0.4+ | 0.9− |
| 2002 08 14 | 704 | 0.3+ | 0.1− | 2005 04 13 | 699 | 1.5+ | 0.1− | 2006 09 29 | 704 | 0.4+ | 0.3+ |
| 2002 08 14 | 704 | 0.3+ | 0.1− | 2005 04 13 | 699 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.0 | 0.5+ |
| 2002 08 14 | 704 | 1.2+ | 0.8+ | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 09 29 | 704 | 1.1− | 0.5+ |
| 2002 08 16 | 608 | 1.1+ | 0.1+ | 2005 05 04 | G96 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.4− |
| 2002 08 16 | 608 | 0.9+ | 0.1+ | 2005 05 04 | G96 | 0.5− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 2002 08 16 | 608 | 0.9+ | 0.5+ | 2005 05 04 | G96 | 0.1− | 0.4− | 2006 10 01 | 704 | 0.5+ | 0.6+ |
| 2002 08 27 | 644 | 0.1− | 0.0 | 2006 07 22 | G96 | 0.0 | 0.7− | 2006 10 01 | 704 | 0.5+ | 0.2+ |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.6+ | 0.3+ |
| 2002 08 27 | 644 | 0.1− | 0.2+ | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.8+ | 0.7+ |
| 2002 09 01 | 699 | 0.8− | 0.0 | 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2002 09 01 | 699 | (2.0− | 1.0+) | 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 10 02 | 691 | (2.2− | 0.5+) |
| 2002 09 01 | 699 | 0.2− | 1.1− | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2002 09 01 | 699 | 1.3− | 1.0− | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2002 09 05 | 704 | 0.9− | 0.4+ | 2006 09 14 | A50 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2006 09 15 | A50 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2002 09 05 | 704 | 0.7− | 0.2− | 2006 09 15 | H07 | 1.2− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2002 09 05 | 704 | 0.0 | 0.3− | 2006 09 15 | H07 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 11 | 291 | 0.0 | 0.7+ | 2006 09 15 | H07 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2002 10 11 | 291 | 0.3+ | 0.1− | 2006 09 15 | H07 | 1.0+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2002 10 11 | 291 | 0.4+ | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2005 03 01 | 691 | 0.4+ | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2005 03 01 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 644 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2005 03 01 | 691 | 0.5+ | 0.7+ | 2006 09 17 | 704 | 0.6− | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2005 03 09 | G96 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.3− | 1.1− | | | | |
| 2005 03 09 | G96 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.0 | 0.3+ | | | | |

**(142118)∗ 2002 RE$_6$ = 1977 RP$_{16}$**

Discovered 2002 Sept. 1 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37802)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.30248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27502876 | $\omega$ | 186.07027 | | +0.99826361 | +0.05586870 | |
| $a$ | 2.3418045 | $\Omega$ | 170.66552 | | −0.04803687 | +0.95553429 | |
| $e$ | 0.1368176 | $i$ | 6.60870 | | −0.03409148 | +0.28953912 | |
| $P$ | 3.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 09 09 | 675 | 0.8+ | 0.5+ | 2002 09 16 | 644 | 0.6− | 0.7− | 2005 06 15 | 691 | 0.2+ | 0.2− |
| 1977 09 10 | 675 | (2.9− | 3.1−) | 2002 09 16 | 644 | 0.5− | 0.9− | 2006 10 01 | 703 | 0.5− | 0.4+ |
| 1997 03 04 | 691 | 0.1− | 0.2− | 2002 09 16 | 644 | 0.4− | 0.7− | 2006 10 01 | 703 | 1.0+ | 0.3+ |
| 1997 03 04 | 691 | 0.4− | 0.2+ | 2002 09 30 | 608 | 0.3− | 0.7− | 2006 10 01 | 703 | 0.2− | 0.9+ |
| 1997 03 04 | 691 | 0.1− | 0.7− | 2002 09 30 | 608 | 0.1+ | 1.0− | 2006 10 01 | 703 | 0.5+ | 0.7+ |
| 2001 03 15 | 691 | 0.1− | 0.4+ | 2002 09 30 | 608 | 0.1+ | 0.8− | 2006 10 09 | 644 | 0.4+ | 0.5+ |
| 2001 03 15 | 691 | 0.2− | 1.0+ | 2002 10 03 | 704 | 0.3− | 0.4− | 2006 10 09 | 644 | 0.6+ | 0.3+ |
| 2001 03 15 | 691 | 0.1− | 1.0+ | 2002 10 03 | 704 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 07 09 | 704 | (1.5− | 0.4+) | 2002 10 03 | 704 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2002 07 09 | 704 | 1.5− | 0.3− | 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.5+ |
| 2002 07 09 | 704 | 0.8− | 0.9+ | 2002 10 03 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.7+ |
| 2002 08 12 | 704 | 0.9− | 1.3+ | 2002 10 05 | 704 | 0.8+ | 0.2+ | 2006 10 22 | 703 | (0.9+ | 1.6−) |
| 2002 08 12 | 704 | (0.7− | 1.6+) | 2002 10 05 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.2− | 0.8+ | 2002 10 05 | 704 | 1.1+ | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2002 08 12 | 704 | 0.7− | 1.1+ | 2002 10 05 | 704 | 0.1+ | 0.4− | 2006 10 22 | 703 | 1.3− | 0.3− |
| 2002 08 12 | 704 | 0.8− | 1.4+ | 2002 10 05 | 704 | 0.4+ | 0.4− | 2006 10 30 | 703 | 0.3− | 1.0− |
| 2002 08 12 | 699 | 1.1+ | 0.3− | 2002 10 11 | 704 | 0.7− | 0.2+ | 2006 10 30 | 703 | 0.1+ | 0.3+ |
| 2002 08 12 | 699 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 10 30 | 703 | 0.3+ | 0.5− |
| 2002 08 12 | 699 | 0.4+ | 0.4− | 2002 10 11 | 704 | 0.1− | 0.3− | 2006 10 30 | 703 | 0.1− | 0.9− |
| 2002 08 12 | 699 | 0.1+ | 0.0 | 2002 10 11 | 704 | 0.6+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.5+ |
| 2002 08 18 | 608 | 0.2− | 1.4− | 2002 10 11 | 704 | 0.5+ | 0.3− | 2006 11 15 | 703 | 1.1+ | 0.1+ |
| 2002 08 18 | 608 | 0.3− | 1.5− | 2005 04 30 | 691 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.3+ |
| 2002 08 18 | 608 | 0.3− | 0.8− | 2005 04 30 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2002 09 01 | 608 | 0.1− | 0.5+ | 2005 04 30 | 691 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.5− | 0.0 |
| 2002 09 01 | 608 | 0.3− | 0.4+ | 2005 05 17 | G96 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2002 09 01 | 608 | 0.1+ | 0.2+ | 2005 05 17 | G96 | 0.4− | 0.2+ | 2006 11 15 | 703 | 0.7+ | 0.6− |
| 2002 09 05 | 704 | 0.7− | 0.7+ | 2005 05 17 | G96 | 0.0 | 0.1+ | 2006 11 15 | 703 | (0.8− | 1.6−) |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2005 05 17 | G96 | 0.3− | 0.3− | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2005 06 03 | E12 | 0.0 | 0.4− | 2006 11 19 | 703 | 0.9+ | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.3− | 2005 06 03 | E12 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.6+ |
| 2002 09 05 | 704 | 0.4− | 0.1− | 2005 06 03 | E12 | 0.0 | 0.8− | 2006 11 19 | 703 | 0.1− | 0.0 |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2005 06 03 | E12 | 0.4− | 0.4− | 2006 12 01 | G96 | 0.3+ | 0.1+ |
| 2002 09 14 | 644 | 0.2+ | 0.0 | 2005 06 05 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.5+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.4+ | 0.2+ |
| 2002 09 14 | 644 | 0.2+ | 0.1+ | 2005 06 05 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.1− |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2005 06 15 | 691 | 0.5+ | 0.1− | | | | |
| 2002 09 14 | 644 | 0.1+ | 0.0 | 2005 06 15 | 691 | 0.5+ | 0.2− | | | | |

**(142119)∗ 2002 RD$_7$**

Discovered 2002 Sept. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.66866 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24362740 | $\omega$ | 223.56926 | | +0.94232718 | −0.33401943 | |
| $a$ | 2.5389372 | $\Omega$ | 155.91933 | | +0.31956951 | +0.87908812 | |
| $e$ | 0.2139425 | $i$ | 2.98181 | | +0.09947263 | +0.34005160 | |
| $P$ | 4.05 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.1− | 0.2− | 2002 09 14 | 644 | 0.4− | 0.0 | 2006 07 25 | 644 | 0.5− | 0.3+ |
| 2000 02 03 | 691 | 0.5− | 0.1+ | 2002 09 14 | 644 | 0.1− | 0.1− | 2006 07 25 | 644 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.2− | 0.6− | 2002 09 14 | 644 | 0.2− | 0.1− | 2006 08 14 | 644 | 0.2− | 0.2− |
| 2000 02 11 | 691 | 0.3+ | 0.5− | 2002 09 15 | 644 | 0.1− | 0.2− | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2000 02 11 | 691 | 0.0 | 0.4− | 2002 09 15 | 644 | 0.1− | 0.2− | 2006 08 14 | 644 | 0.2+ | 0.1+ |
| 2000 02 11 | 691 | 0.1+ | 0.5− | 2002 09 15 | 644 | 0.3− | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 2002 08 12 | 807 | 0.2− | 0.2− | 2002 10 11 | 291 | 0.4+ | 0.2+ | 2006 08 16 | 644 | 0.3+ | 0.1− |
| 2002 08 12 | 807 | 0.3− | 0.1− | 2002 10 11 | 291 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.3+ | 0.3+ |
| 2002 08 16 | 608 | 0.6+ | 0.7− | 2002 10 11 | 291 | 0.5+ | 0.3+ | 2006 08 28 | 699 | (1.6− | 0.5+) |
| 2002 08 16 | 608 | 0.3+ | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.6+ | 2006 08 28 | 699 | (2.1− | 0.4+) |
| 2002 08 16 | 608 | 0.3+ | 0.3− | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.8− | 0.3− |
| 2002 08 20 | 644 | 0.3− | 0.6− | 2004 02 11 | 691 | 0.0 | 0.7+ | 2006 08 28 | 699 | (2.1− | 0.9−) |
| 2002 08 20 | 644 | 0.2+ | 1.0− | 2006 05 26 | G96 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.3− | 1.0− |
| 2002 08 20 | 644 | 0.2− | 0.9− | 2006 05 26 | G96 | 0.1+ | 0.3+ | 2006 08 29 | 704 | 0.2+ | 0.3+ |
| 2002 09 02 | 291 | 0.2+ | 0.2+ | 2006 05 26 | G96 | 0.2+ | 0.0 | 2006 08 29 | 704 | 0.7+ | 0.3− |
| 2002 09 02 | 291 | 0.0 | 0.1+ | 2006 05 26 | G96 | 0.3+ | 0.3− | 2006 08 29 | 704 | 1.1+ | 0.9+ |
| 2002 09 02 | 291 | 0.1− | 0.0 | 2006 07 20 | A50 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2002 09 05 | 704 | 1.3− | 0.1+ | 2006 07 20 | A50 | 0.7− | 0.0 | 2006 10 20 | G96 | 0.4− | 0.3− |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2006 07 21 | A50 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.2− | 0.5− |
| 2002 09 05 | 704 | 0.4− | 0.3+ | 2006 07 21 | A50 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2002 09 05 | 704 | 0.9− | 0.7− | 2006 07 25 | 644 | 0.2+ | 0.1+ | | | | |

**(142120)∗ 2002 RM$_7$**

Discovered 2002 Sept. 3 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.17000 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27756040 | $\omega$ | 324.70727 | | +0.94243888 | +0.33396455 | |
| $a$ | 2.3275430 | $\Omega$ | 15.80836 | | −0.29104301 | +0.84377337 | |
| $e$ | 0.1834023 | $i$ | 3.50034 | | −0.16462967 | +0.42013590 | |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 809 | 0.8− | 0.4− | 2002 09 03 | 608 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.4− | 0.3+ |
| 1995 08 28 | 809 | 0.9− | 0.6− | 2002 09 03 | 608 | 0.3− | 1.4+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 1995 08 29 | 809 | 0.1− | 0.1− | 2002 09 03 | 608 | 0.2− | 1.0+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 1995 08 30 | 809 | 0.2+ | 0.3+ | 2002 09 05 | 704 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 1995 08 30 | 809 | 0.0 | 0.2+ | 2002 09 05 | 704 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 1995 08 31 | 809 | 0.9+ | 0.6− | 2002 09 05 | 704 | 0.4− | 0.7− | 2006 10 20 | G96 | 0.3− | 0.0 |
| 1995 09 20 | 809 | 0.0 | 0.1+ | 2002 09 05 | 704 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 1995 09 22 | 809 | 0.8− | 0.6− | 2002 09 05 | 704 | 0.1+ | 1.3− | 2006 10 20 | G96 | 0.4− | 0.3− |
| 1995 09 22 | 809 | 1.2+ | 0.2+ | 2002 09 06 | 704 | 0.2+ | 1.0− | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 1995 09 23 | 809 | 1.5+ | 0.4+ | 2002 09 06 | 704 | 0.1+ | 0.6− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2001 02 20 | 691 | 0.8+ | 0.6+ | 2002 09 06 | 704 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2001 02 20 | 691 | 0.6+ | 0.6+ | 2002 09 06 | 704 | 1.0+ | 0.1− | 2006 11 16 | 704 | (0.3− | 3.3+) |
| 2001 02 20 | 691 | 0.3+ | 0.3+ | 2002 09 09 | 608 | (0.3+ | 2.0+) | 2006 11 16 | 704 | (0.3+ | 2.3+) |
| 2002 07 30 | 608 | 0.4+ | 0.5− | 2002 09 09 | 608 | (0.2+ | 1.9+) | 2006 11 16 | 704 | (0.2+ | 1.6−) |
| 2002 07 30 | 608 | 0.2+ | 0.1− | 2002 09 09 | 608 | (0.2+ | 1.8+) | 2006 11 16 | 704 | (2.5+ | 4.0+) |
| 2002 07 30 | 608 | 0.3+ | 0.2+ | 2002 09 15 | 644 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2002 08 12 | 699 | 0.6− | 0.3− | 2002 09 15 | 644 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.2− |
| 2002 08 12 | 699 | 1.2+ | 0.1+ | 2002 09 15 | 644 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.1+ | 1.0+ |
| 2002 08 12 | 699 | 0.0 | 0.5+ | 2002 10 08 | 699 | (1.6− | 1.2−) | 2006 11 19 | 704 | 0.6+ | 1.4+ |
| 2002 08 12 | 699 | (1.2− | 1.6+) | 2002 10 08 | 699 | (1.5+ | 1.6−) | 2006 11 19 | 704 | 0.9− | 0.9+ |
| 2002 08 14 | 704 | 0.6− | 0.4+ | 2002 10 08 | 699 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2002 08 14 | 704 | 0.8− | 0.3− | 2002 10 08 | 699 | 1.0+ | 0.4+ | 2006 11 19 | 704 | 1.5+ | 0.5+ |
| 2002 08 14 | 704 | 0.7− | 0.7+ | 2004 01 30 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2002 08 14 | 704 | 1.4− | 0.2+ | 2004 01 30 | 691 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.7− | 1.1+ |
| 2002 08 14 | 704 | (1.8− | 0.7−) | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.6− |
| 2002 08 18 | 644 | 0.3− | 0.6+ | 2004 02 17 | 645 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.7+ | 0.4− |
| 2002 08 18 | 644 | 0.4− | 0.6+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.6+ | 2005 05 16 | G96 | 0.0 | 0.3− | 2006 11 25 | 691 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2005 05 16 | G96 | 0.0 | 0.3− | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2005 05 16 | G96 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.5+ | 2005 05 16 | G96 | 0.0 | 0.1− | | | | |

**(142121)∗ 2002 RD$_8$**

Discovered 2002 Sept. 3 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.75041 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23146201 | $\omega$ | 85.73329 | | −0.29757517 | +0.95330929 | |
| $a$ | 2.6271381 | $\Omega$ | 166.60760 | | −0.94015309 | −0.28323788 | |
| $e$ | 0.0729388 | $i$ | 12.84246 | | −0.16601559 | −0.10477451 | |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 2.0− | 0.7+ | 2002 09 14 | 644 | 0.1+ | 0.7+ | 2005 03 11 | G96 | 0.4− | 0.2− |
| 1997 07 02 | 691 | 0.0 | 0.7− | 2002 09 14 | 644 | 0.1+ | 0.7+ | 2005 03 11 | G96 | 0.5− | 0.0 |
| 1997 07 02 | 691 | 0.2− | 0.6− | 2002 09 14 | 644 | 0.0 | 0.5+ | 2005 03 11 | G96 | 0.8− | 1.0+ |
| 1997 07 02 | 691 | 0.1+ | 0.8− | 2002 09 15 | 644 | 0.4+ | 0.4+ | 2005 03 18 | 704 | 1.4+ | 0.1+ |
| 2001 04 15 | 704 | 1.0+ | 0.0 | 2002 09 15 | 644 | 0.2+ | 0.4+ | 2005 03 18 | 704 | 0.7+ | 0.5+ |
| 2001 04 15 | 704 | 1.0+ | 0.5− | 2002 09 15 | 644 | 0.3+ | 0.3+ | 2005 03 18 | 704 | 1.1+ | 0.1− |
| 2001 04 15 | 704 | 0.1+ | 0.6+ | 2005 03 03 | 703 | 0.1− | 0.1− | 2005 03 18 | 703 | 0.5+ | 0.5− |
| 2001 05 23 | 699 | 0.8+ | 0.2+ | 2005 03 03 | 703 | 1.3− | 0.7+ | 2005 03 18 | 703 | 1.0− | 0.4+ |
| 2001 05 23 | 699 | 0.3− | 2.0+ | 2005 03 03 | 703 | 0.3− | 1.1− | 2005 03 18 | 703 | 0.2+ | 0.3+ |
| 2001 05 23 | 699 | 0.1− | 0.2+ | 2005 03 03 | 703 | 0.8− | 0.1− | 2005 03 18 | 703 | 0.6− | 0.2+ |
| 2001 05 23 | 699 | 0.3− | 0.9+ | 2005 03 04 | 704 | 1.0− | 0.4+ | 2005 03 30 | 703 | 0.1+ | 0.2− |
| 2002 08 12 | 704 | 0.0 | 0.1+ | 2005 03 04 | 704 | 0.2− | 0.4+ | 2005 03 30 | 703 | 1.4+ | 0.3− |
| 2002 08 12 | 704 | 0.3+ | 0.0 | 2005 03 04 | 704 | 0.8+ | 1.3− | 2005 03 30 | 703 | 1.1− | 1.1− |
| 2002 08 12 | 704 | 0.1+ | 0.9+ | 2005 03 08 | 699 | 0.6+ | 1.5+ | 2005 03 30 | 703 | 0.3+ | 0.6− |
| 2002 08 12 | 704 | 0.2− | 1.6+ | 2005 03 08 | 683 | 0.4+ | 0.3− | 2005 03 31 | 699 | 0.1+ | 1.2+ |
| 2002 08 28 | 644 | 0.2− | 0.8+ | 2005 03 08 | 683 | 0.9+ | 0.7+ | 2005 03 31 | 699 | 1.6− | 0.3− |
| 2002 08 28 | 644 | 0.2+ | 0.5+ | 2005 03 08 | 699 | 1.5+ | 0.6+ | 2005 03 31 | 699 | 0.6− | 0.4+ |
| 2002 08 28 | 644 | 0.3− | 0.6+ | 2005 03 08 | 683 | 0.4+ | 0.4− | 2005 03 31 | 699 | 0.2+ | 0.6+ |
| 2002 09 03 | 608 | 0.1+ | 0.6+ | 2005 03 08 | 699 | 1.7+ | 0.5+ | 2006 08 18 | 644 | 0.8− | 0.3+ |
| 2002 09 03 | 608 | 0.3− | 0.5+ | 2005 03 08 | 699 | 1.2+ | 0.5+ | 2006 08 18 | 644 | 0.5− | 0.3+ |
| 2002 09 03 | 608 | 0.2+ | 0.4+ | 2005 03 10 | 683 | (1.9− | 2.9−) | 2006 08 18 | 644 | 0.6− | 0.2+ |
| 2002 09 05 | 704 | 1.1+ | 1.2+ | 2005 03 10 | 683 | 0.6+ | 0.8− | 2006 08 19 | 644 | 0.6− | 0.5+ |
| 2002 09 05 | 704 | 0.3− | 0.9+ | 2005 03 10 | 683 | 0.1− | 0.0 | 2006 08 19 | 644 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 0.6+ | 2005 03 11 | 691 | 0.0 | 0.4+ | 2006 08 19 | 644 | 0.4− | 0.5+ |
| 2002 09 05 | 704 | 0.1+ | 1.2+ | 2005 03 11 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.4− | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2005 03 11 | 691 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.6− | 0.4− |
| 2002 09 07 | 704 | 0.4+ | 0.8+ | 2005 03 11 | 691 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.4− | 0.4− |
| 2002 09 07 | 704 | 0.0 | 0.6+ | 2005 03 11 | 691 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2002 09 07 | 704 | 0.5− | 0.5+ | 2005 03 11 | 691 | 0.1− | 0.3+ | | | | |
| 2002 09 07 | 704 | 0.9− | 0.3+ | 2005 03 11 | G96 | 0.4− | 0.1− | | | | |

**(142122)∗ 2002 RG$_8$ = 2005 EJ$_{101}$**

Discovered 2002 Sept. 3 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 75519)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.49594 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24385747 | $\omega$ | 60.50018 | | +0.07090430 | +0.99733703 | |
| $a$ | 2.5373401 | $\Omega$ | 213.57892 | | −0.92552668 | +0.05939751 | |
| $e$ | 0.0882418 | $i$ | 1.76872 | | −0.37198515 | +0.04231755 | |
| $P$ | 4.04 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 28 | 691 | 0.2+ | 0.3− | 2005 03 10 | G96 | 0.6− | 0.0 | 2006 08 21 | 291 | 0.4− | 0.2+ |
| 2001 04 28 | 691 | 0.1− | 0.4− | 2005 03 10 | G96 | 0.3− | 0.0 | 2006 08 21 | 291 | 0.4− | 0.1+ |
| 2001 04 28 | 691 | 0.3+ | 0.2− | 2005 04 04 | 704 | 1.1+ | 0.1+ | 2006 08 21 | 291 | 0.3− | 0.2+ |
| 2002 09 03 | 608 | 0.3− | 0.8− | 2005 04 04 | 704 | (1.7+ | 0.8−) | 2006 08 28 | 703 | 0.3− | 0.5+ |
| 2002 09 03 | 608 | 0.3+ | 0.4− | 2005 04 04 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.1+ | 0.0 |
| 2002 09 03 | 608 | 0.3+ | 0.1+ | 2005 04 04 | 704 | 0.1− | 1.3− | 2006 08 28 | 699 | 1.4+ | 0.9+ |
| 2002 09 05 | 699 | (1.7+ | 0.7+) | 2005 04 09 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.9+ | 0.7+ |
| 2002 09 05 | 699 | 0.1+ | 0.2+ | 2005 04 09 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.7+ | 0.4+ |
| 2002 09 05 | 699 | 1.1+ | 0.6+ | 2005 04 09 | 704 | 0.1+ | 0.9− | 2006 08 28 | 699 | 0.8+ | 0.2+ |
| 2002 09 05 | 699 | 0.5+ | 0.5+ | 2005 04 12 | 704 | 0.7+ | 0.2+ | 2006 08 28 | 699 | 0.8+ | 0.6+ |
| 2002 09 05 | 704 | 0.7− | 0.6+ | 2005 04 12 | 704 | 0.3− | 1.0+ | 2006 08 28 | 699 | 1.5+ | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.4− | 2005 04 12 | 704 | 0.0 | 1.4+ | 2006 08 31 | 958 | 0.5− | 0.1+ |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2005 04 12 | 704 | 0.6− | 0.5+ | 2006 08 31 | 958 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.3− | 2005 05 02 | 691 | 0.1+ | 0.2+ | 2006 08 31 | 958 | 0.2− | 0.7− |
| 2002 09 05 | 704 | 0.3− | 0.2− | 2005 05 02 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.4− | 1.1+ |
| 2002 09 08 | 608 | 0.5− | 0.2− | 2005 05 02 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.3− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 08 | 608 | 0.5− | 0.3− | 2005 05 08 | G96 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.5− |
| 2002 09 08 | 608 | 0.5− | 0.6− | 2005 05 08 | G96 | 0.6− | 0.3+ | 2006 09 14 | 703 | 0.1+ | 1.1− |
| 2002 09 14 | 644 | 0.5− | 0.4+ | 2005 05 08 | G96 | 0.0 | 0.4+ | 2006 09 25 | 699 | 1.0+ | 0.1+ |
| 2002 09 14 | 644 | 0.5− | 0.3+ | 2005 05 08 | G96 | 0.6− | 0.2+ | 2006 09 25 | 699 | (2.0+ | 1.3+) |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2005 05 12 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.8− | 0.5+ |
| 2003 12 23 | 704 | 0.3− | 0.8+ | 2005 05 12 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | (0.2− | 1.9+) |
| 2003 12 23 | 704 | (0.0 | 1.7+) | 2005 05 12 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2003 12 23 | 704 | 0.8+ | 0.2+ | 2006 08 19 | 941 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2003 12 23 | 704 | 0.0 | 0.7+ | 2006 08 19 | 941 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2− | 0.2+ |
| 2005 03 03 | 691 | 0.2− | 0.0 | 2006 08 19 | 941 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2005 03 03 | 691 | 0.1+ | 0.1+ | 2006 08 19 | 941 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.5+ | 2.1− |
| 2005 03 03 | 691 | 0.1− | 0.3+ | 2006 08 20 | 941 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2006 08 20 | 941 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 08 20 | 941 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2+ |

**(142123)∗ 2002 RA$_9$ = 1992 SO$_5$ = 2005 LF$_{41}$**

Discovered 2002 Sept. 4 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 85584)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 138.17414 | | (2000.0) | | | |
| $n$ | 0.29350539 | $\omega$ | 137.86667 | | −0.27620773 | +0.96078758 |
| $a$ | 2.2424632 | $\Omega$ | 116.08604 | | −0.88888798 | −0.24570894 |
| $e$ | 0.1714961 | $i$ | 1.55828 | | −0.36549617 | −0.12850814 |
| $P$ | 3.36 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 25 | 691 | 0.3− | 0.3− | 2002 09 15 | 644 | 0.2− | 0.3+ | 2005 07 04 | 644 | 0.0 | 0.3+ |
| 1992 09 25 | 691 | 1.5+ | 0.4− | 2002 09 15 | 644 | 0.2+ | 0.2+ | 2005 07 04 | 644 | 0.1+ | 0.1+ |
| 1992 09 25 | 691 | 0.1− | 0.6− | 2002 09 15 | 644 | 0.6− | 0.4+ | 2005 07 04 | 644 | 0.0 | 0.1+ |
| 1992 09 26 | 691 | 0.5− | 0.7− | 2005 06 04 | 704 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.5− |
| 1992 09 26 | 691 | 0.3− | 0.3− | 2005 06 04 | 704 | 0.9+ | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.4+ |
| 1992 09 26 | 691 | 0.1− | 0.1− | 2005 06 04 | 704 | 0.2− | 0.3+ | 2006 10 17 | G96 | 1.0+ | 0.7+ |
| 1998 03 18 | 691 | 1.2+ | 0.1− | 2005 06 04 | 704 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 1998 03 18 | 691 | 0.3− | 0.7− | 2005 06 04 | 704 | 0.3− | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 1998 03 18 | 691 | 0.1+ | 0.5− | 2005 06 11 | 703 | 0.6− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 1998 03 28 | 704 | 0.7− | 0.3− | 2005 06 11 | 703 | 0.3− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3+ |
| 1998 03 28 | 704 | 1.9− | 1.8− | 2005 06 11 | 703 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 1998 03 28 | 704 | (2.9+ | 2.5−) | 2005 06 11 | 703 | 0.2− | 0.4+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 1998 03 28 | 704 | (2.8− | 0.1+) | 2005 06 16 | G96 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2000 12 27 | 691 | 0.3− | 0.5+ | 2005 06 16 | G96 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2000 12 27 | 691 | 0.5− | 0.4+ | 2005 06 16 | G96 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2000 12 27 | 691 | 0.0 | 0.1+ | 2005 06 16 | G96 | 0.0 | 0.2+ | 2006 11 17 | 703 | 1.1− | 1.2+ |
| 2002 08 29 | 644 | 0.3+ | 1.2+ | 2005 06 23 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.1+ | 0.2− |
| 2002 08 29 | 644 | 0.0 | 1.4+ | 2005 06 23 | 644 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2002 08 29 | 644 | 0.2+ | 1.2+ | 2005 06 23 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.6+ | 1.0+ |
| 2002 09 04 | 644 | 0.0 | 0.1+ | 2005 06 27 | G96 | 0.0 | 0.3+ | 2006 11 19 | 704 | 1.0− | 0.5+ |
| 2002 09 04 | 644 | 0.2+ | 0.1+ | 2005 06 27 | G96 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.6+ |
| 2002 09 04 | 644 | 0.0 | 0.4+ | 2005 06 27 | G96 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.9+ | 0.8+ |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2005 06 27 | G96 | 0.1− | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.9− | 2005 06 28 | G96 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.4− | 0.4+ |
| 2002 09 05 | 704 | 1.0+ | 1.3− | 2005 06 28 | G96 | 0.1− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.3+ | 0.1− | 2005 06 28 | G96 | 0.0 | 0.2+ | | | | |
| 2002 09 05 | 704 | 1.0+ | 0.1− | 2005 06 28 | G96 | 0.4− | 0.8+ | | | | |

**(142124)∗ 2002 RP$_9$**

Discovered 2002 Sept. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.64090 | | (2000.0) | | | |
| $n$ | 0.26333910 | $\omega$ | 119.49700 | | −0.07081916 | +0.99716494 |
| $a$ | 2.4106037 | $\Omega$ | 146.41272 | | −0.93035739 | −0.05683670 |
| $e$ | 0.2023942 | $i$ | 2.63479 | | −0.35974960 | −0.04931189 |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 04 | 691 | 0.5− | 0.3− | 2005 03 03 | 703 | 0.5− | 0.1− | 2005 03 17 | 704 | (1.0+ | 1.7+) |
| 1991 10 04 | 691 | 0.2− | 0.4− | 2005 03 03 | 703 | 0.8+ | 0.0 | 2005 03 30 | 333 | 0.1− | 0.7+ |
| 1991 10 04 | 691 | 0.2+ | 1.4− | 2005 03 03 | 703 | 1.1− | 0.1+ | 2005 03 30 | 333 | 0.1− | 0.1− |
| 1996 12 11 | 691 | 0.9+ | 1.3− | 2005 03 03 | 703 | 0.1− | 0.0 | 2005 03 30 | 333 | 0.2+ | 0.2+ |
| 1996 12 11 | 691 | 0.6+ | 0.4+ | 2005 03 08 | 699 | (0.5− | 2.1−) | 2005 03 31 | 699 | 0.7+ | 0.4+ |
| 1996 12 11 | 691 | 0.6+ | 0.1− | 2005 03 08 | 699 | 0.4+ | 1.2− | 2005 03 31 | 699 | 0.2+ | 0.3+ |
| 1999 11 28 | 691 | 0.2− | 0.4+ | 2005 03 08 | 699 | 0.8+ | 0.0 | 2005 03 31 | 699 | 0.1+ | 0.6+ |
| 1999 11 28 | 691 | 0.1− | 0.2+ | 2005 03 08 | 699 | 0.2+ | 0.3+ | 2005 03 31 | 699 | 0.7+ | 0.7+ |
| 1999 11 28 | 691 | 0.1+ | 0.4+ | 2005 03 09 | 699 | (1.7+ | 0.2−) | 2005 04 02 | 185 | 0.4− | 0.2− |
| 2001 02 13 | 691 | 0.2+ | 0.5+ | 2005 03 09 | 699 | 0.0 | 0.6+ | 2005 04 02 | 185 | 0.3− | 0.3− |
| 2001 02 13 | 691 | 0.1+ | 0.6+ | 2005 03 09 | 699 | (0.4− | 1.6+) | 2005 04 02 | 185 | 0.4− | 1.5+ |
| 2001 02 13 | 691 | 0.0 | 0.6+ | 2005 03 09 | 699 | (0.0 | 2.0+) | 2005 04 02 | 185 | 0.2− | 0.3+ |
| 2002 08 15 | 704 | 0.3+ | 0.3+ | 2005 03 10 | 683 | 0.2− | 0.5+ | 2005 04 04 | 703 | 0.6− | 1.1+ |
| 2002 08 15 | 704 | 0.0 | 0.9+ | 2005 03 10 | 683 | 0.1− | 1.0+ | 2005 04 04 | 703 | 0.2+ | 0.0 |
| 2002 08 15 | 704 | 0.2+ | 0.6+ | 2005 03 10 | 683 | 0.2− | 0.1− | 2005 04 04 | 703 | 0.6− | 0.1− |
| 2002 08 18 | 644 | 0.5+ | 0.8+ | 2005 03 10 | G96 | 0.3− | 0.0 | 2005 04 04 | 703 | 0.2− | 0.9+ |
| 2002 08 18 | 644 | 0.3+ | 0.7+ | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.9+ | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.3+ | 1.2+ | 2005 03 10 | G96 | 0.3− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.3+ |
| 2002 08 29 | 644 | 0.1+ | 1.3+ | 2005 03 11 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.3− | 0.2− |
| 2002 08 29 | 644 | 0.1+ | 1.1+ | 2005 03 11 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.5− | 0.1− |
| 2002 09 04 | 644 | 0.4− | 0.2+ | 2005 03 11 | 691 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.4− | 0.1− |
| 2002 09 04 | 644 | 0.2− | 0.3+ | 2005 03 13 | 683 | 0.9− | 1.3+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2002 09 04 | 644 | 0.0 | 0.2+ | 2005 03 13 | 683 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 1.1+ | 2005 03 13 | 683 | (1.7+ | 0.7+) | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2005 03 16 | G96 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 1.3+ | 0.3+ | 2005 03 16 | G96 | (1.6− | 0.6−) | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2005 03 16 | G96 | 0.8− | 1.2− | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.6− | 1.4+ | 2005 03 16 | G96 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.5− | 0.1+ |
| 2002 09 15 | 644 | 0.2− | 1.1+ | 2005 03 17 | 704 | 0.9+ | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 09 15 | 644 | 0.1− | 1.3+ | 2005 03 17 | 704 | 0.9+ | 0.8+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.1− | 1.3+ | 2005 03 17 | 704 | 0.3+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.0 |

**(142125)∗ 2002 RR$_9$**

Discovered 2002 Sept. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.31391 | | (2000.0) | | | |
| $n$ | 0.26936137 | $\omega$ | 68.95323 | | +0.56704376 | −0.82324467 |
| $a$ | 2.3745383 | $\Omega$ | 346.40131 | | +0.70664018 | +0.50305376 |
| $e$ | 0.1041148 | $i$ | 6.59681 | | +0.42322693 | +0.26306868 |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.4+ | 1.1− | 2004 02 10 | 703 | 0.5+ | 1.1+ | 2006 10 19 | 703 | 0.4+ | 0.9− |
| 1999 12 15 | 704 | 0.0 | 0.7− | 2004 02 10 | 703 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.3+ |
| 1999 12 15 | 704 | 0.2− | 1.2− | 2004 02 10 | 703 | 0.2+ | 1.4+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2002 08 15 | 699 | (2.8+ | 0.0 ) | 2004 02 10 | 703 | 1.0+ | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2002 08 15 | 699 | 0.1+ | 0.8+ | 2004 02 16 | 704 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2002 08 15 | 699 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2002 08 15 | 699 | 0.1+ | 0.2+ | 2004 02 16 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.5− | 0.7+ | 2004 02 16 | 704 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 08 18 | 644 | 0.5− | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 08 18 | 644 | 0.2+ | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 08 29 | 644 | (0.1− | 1.5+) | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 08 29 | 644 | (0.3− | 1.6+) | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 08 29 | 644 | 0.3− | 1.1+ | 2004 02 23 | 704 | 1.1+ | 0.7+ | 2006 10 25 | 106 | 0.2− | 0.8− |
| 2002 09 04 | 644 | 0.4− | 0.5+ | 2004 03 10 | 644 | 0.1− | 0.6+ | 2006 10 25 | 106 | 0.2+ | 0.4+ |
| 2002 09 04 | 644 | 0.4− | 0.5+ | 2004 03 10 | 644 | 0.1+ | 0.7+ | 2006 10 25 | 106 | 0.4− | 0.3+ |
| 2002 09 04 | 644 | 0.5− | 0.4+ | 2004 03 10 | 644 | 0.1+ | 0.7+ | 2006 10 26 | 106 | 0.2+ | 0.5+ |
| 2002 09 05 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 699 | 0.4− | 0.3+ | 2006 10 31 | 703 | (0.8+ | 2.1−) |
| 2002 09 05 | 704 | 0.6− | 0.6+ | 2006 09 20 | 699 | 0.8− | 0.2− | 2006 10 31 | 703 | 0.1+ | 0.7+ |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2006 09 20 | 699 | 0.5+ | 0.3− | 2006 10 31 | 703 | (2.5+ | 0.9−) |
| 2002 09 05 | 704 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.2− | 0.7− | 2006 10 31 | 703 | 0.8− | 0.8+ |
| 2002 09 15 | 644 | 0.6− | 0.7+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.7+ | 0.5− |
| 2002 09 15 | 644 | 0.1+ | 0.7+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 1.0+ | 0.6+ |
| 2002 09 15 | 644 | 0.6− | 0.6+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.1− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.0− | 0.7+ | 2006 09 28 | 703 | 0.2− | 0.6− | 2006 11 07 | 644 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.3− | 2006 11 07 | 644 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 0.5− | 0.9− | 2006 09 28 | 703 | 0.1− | 0.4− | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2004 01 23 | 704 | 0.5+ | 1.4+ | 2006 09 28 | 703 | 0.8+ | 0.2− | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2004 01 23 | 704 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.2− |
| 2004 01 23 | 704 | (0.8+ | 2.1+) | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.0 | 1.1− |
| 2004 01 23 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.4+ | 1.2− |
| 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.8− |
| 2004 01 30 | 704 | 0.0 | 1.1+ | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2004 01 30 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 2.2− | 0.1+ |
| 2004 01 30 | 704 | 0.5− | 0.9− | 2006 10 19 | 703 | 0.1− | 0.4− | | | | |
| 2004 01 30 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.6− | 0.7− | | | | |

**(142126)∗ 2002 RT$_9$ = 2005 GN$_{43}$**

Discovered 2002 Sept. 4 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75520)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.15247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26816066 | $\omega$ | 128.46312 | | +0.23796048 | +0.97109152 | |
| $a$ | 2.3816211 | $\Omega$ | 155.28340 | | −0.90459315 | +0.22865605 | |
| $e$ | 0.1950473 | $i$ | 2.58655 | | −0.35367505 | +0.06853950 | |
| $P$ | 3.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.0 | 0.1+ | 2005 04 06 | G96 | 0.7− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.4+ |
| 1995 10 24 | 691 | 0.1− | 0.1+ | 2005 04 06 | G96 | 1.0+ | 1.0− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1995 10 24 | 691 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 09 04 | 644 | 0.1− | 0.7+ | 2005 04 06 | G96 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2002 09 04 | 644 | 0.1− | 0.6+ | 2005 04 10 | G96 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2002 09 04 | 644 | 0.1− | 0.5+ | 2005 04 10 | G96 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.0 | 2005 04 10 | G96 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2005 04 10 | G96 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.4− | 2005 04 30 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.4− | 2005 05 10 | 691 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2002 09 15 | 644 | 0.2+ | 0.5− | 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2005 03 11 | 691 | 0.1+ | 0.4+ | 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2005 03 11 | 691 | 0.0 | 0.3+ | 2005 05 12 | G96 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2005 03 11 | 691 | 0.4+ | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2005 04 05 | 699 | 1.1− | 1.4+ | 2005 05 12 | G96 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2005 04 05 | 699 | (2.1− | 0.8+) | 2005 05 12 | G96 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2005 04 05 | 699 | 0.6+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2005 04 05 | 699 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.3+ | 0.5+ | | | | |

**(142127)∗ 2002 RY$_9$ = 2000 EW$_{192}$**

Discovered 2002 Sept. 4 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37802)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.11146 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24019199 | $\omega$ | 269.10507 | | +0.44743608 | −0.89304625 | |
| $a$ | 2.5630891 | $\Omega$ | 154.14830 | | +0.85782679 | +0.41351048 | |
| $e$ | 0.2230499 | $i$ | 6.27208 | | +0.25285206 | +0.17741892 | |
| $P$ | 4.10 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 26 | 691 | 0.3− | 0.6+ | 2002 10 03 | 704 | 0.6− | 0.2− | 2004 03 18 | 704 | (1.2− | 1.5+) |
| 1992 03 26 | 691 | 0.6− | 1.1− | 2002 10 03 | 704 | 0.7+ | 0.7+ | 2004 03 18 | 704 | 0.5− | 0.8+ |
| 1992 03 26 | 691 | 0.4+ | 0.1− | 2002 10 03 | 704 | 0.8− | 0.6+ | 2004 03 18 | 704 | (0.2+ | 1.6+) |
| 2000 03 03 | 704 | 0.6+ | 0.1+ | 2002 10 03 | 704 | (1.3+ | 2.4+) | 2004 03 18 | 704 | 0.2− | 1.3+ |
| 2000 03 03 | 704 | 0.4+ | 0.1+ | 2004 02 17 | 691 | 0.1+ | 0.4+ | 2004 03 18 | 704 | 0.8− | 1.2+ |
| 2000 03 03 | 704 | 0.2+ | 0.3+ | 2004 02 17 | 691 | 0.1− | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.2+ |
| 2000 03 03 | 704 | 0.4+ | 1.2+ | 2004 02 17 | 691 | 0.2+ | 0.4+ | 2004 03 30 | 691 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.5+ | 0.4+ | 2004 02 18 | 704 | 0.1+ | 0.4+ | 2004 03 30 | 691 | 0.2+ | 0.1− |
| 2000 03 11 | 704 | 0.0 | 1.5+ | 2004 02 18 | 704 | 0.7+ | 0.5− | 2006 08 14 | 644 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.5− | 0.1− | 2004 02 18 | 704 | 0.3+ | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.7+ | 0.2− | 2004 02 18 | 608 | 0.3+ | 0.5− | 2006 08 14 | 644 | 0.1− | 0.3+ |
| 2000 03 11 | 704 | 0.7+ | 0.4− | 2004 02 18 | 608 | 0.5+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2000 03 11 | 704 | 0.3+ | 0.3+ | 2004 02 18 | 608 | 0.4+ | 0.3− | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 2002 09 04 | 644 | 0.2− | 0.9+ | 2004 02 26 | 704 | 0.9+ | 0.9+ | 2006 08 17 | 644 | 0.4− | 0.4+ |
| 2002 09 04 | 644 | 0.0 | 0.7+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2002 09 04 | 644 | 0.1+ | 0.8+ | 2004 02 26 | 704 | 0.2− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 1.5+ | 2004 02 26 | 704 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.9− | 1.2+ | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2004 03 01 | 333 | 0.5− | 0.2− | 2006 10 20 | G96 | 0.5+ | 0.2+ |
| 2002 09 15 | 644 | 0.1− | 0.5+ | 2004 03 01 | 333 | 0.6− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2002 09 15 | 644 | 0.0 | 0.6+ | 2004 03 01 | 333 | 1.0− | 0.1+ | 2006 10 20 | G96 | 0.5− | 0.3+ |
| 2002 09 15 | 644 | 0.1− | 0.5+ | 2004 03 01 | 333 | 1.1− | 0.4+ | | | | |

**(142128)∗ 2002 RE$_{10}$**

Discovered 2002 Sept. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.79278 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26144531 | $\omega$ | 96.11722 | | +0.01425214 | −0.99980673 | |
| $a$ | 2.4222305 | $\Omega$ | 353.02302 | | +0.86764121 | +0.01909739 | |
| $e$ | 0.0581502 | $i$ | 6.40082 | | +0.49698653 | −0.00466873 | |
| $P$ | 3.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.1+ | 0.3− | 2004 01 26 | 699 | 0.9− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2− |
| 1999 12 12 | 704 | 0.3+ | 0.6− | 2004 01 26 | 699 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2− |
| 1999 12 12 | 704 | 0.2− | 0.9− | 2004 01 26 | 699 | 0.9+ | 0.3− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2002 08 18 | 644 | 0.0 | 0.5+ | 2004 01 31 | 704 | (1.7+ | 0.8−) | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2004 01 31 | 704 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2002 08 18 | 644 | 0.5− | 0.3+ | 2004 01 31 | 704 | 0.7+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.5− |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2004 02 11 | 699 | 0.8− | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.2+ |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2004 02 11 | 699 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.6− | 0.9+ |
| 2002 08 29 | 644 | 0.2− | 0.5+ | 2004 02 11 | 699 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.6+ |
| 2002 09 04 | 644 | 0.4− | 0.3+ | 2004 02 11 | 699 | 0.8− | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.2− |
| 2002 09 04 | 644 | 0.2− | 0.5+ | 2004 02 14 | 704 | 1.0+ | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.3+ |
| 2002 09 04 | 644 | 0.2− | 0.3+ | 2004 02 14 | 704 | (1.7+ | 0.1−) | 2006 09 29 | 704 | 0.5− | 0.0 |
| 2002 09 04 | 644 | 0.2− | 0.4+ | 2004 02 14 | 704 | 0.8+ | 0.8+ | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 2002 09 04 | 644 | 0.4− | 0.6+ | 2004 02 14 | 704 | (0.5+ | 1.7+) | 2006 09 29 | 704 | 0.1+ | 0.2+ |
| 2002 09 04 | 644 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.1+ | 1.1+ | 2006 10 01 | 691 | 0.1− | 0.2− |
| 2002 09 05 | 704 | (1.7+ | 0.6+) | 2004 02 18 | 704 | 0.3+ | 1.0− | 2006 10 01 | 691 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 0.8+ | 0.5+ | 2004 02 18 | 704 | 0.7+ | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2004 02 18 | 704 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2002 09 15 | 644 | 0.7− | 0.3+ | 2004 02 18 | 704 | 0.6+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2006 07 21 | G96 | 0.8− | 0.3− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 09 15 | 644 | 0.5− | 0.7+ | 2006 07 21 | G96 | 0.5− | 0.5− | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2003 12 27 | 704 | 1.2+ | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2003 12 27 | 704 | 0.4+ | 0.6+ | 2006 07 21 | G96 | (1.6− | 0.3−) | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 2003 12 27 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 12 27 | 704 | (1.7+ | 1.2+) | 2006 09 17 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 01 13 | 699 | 0.3+ | 0.1+ | 2006 09 17 | 704 | (2.6+ | 0.2−) | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2004 01 13 | 699 | (0.2+ | 2.4−) | 2006 09 17 | 691 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2004 01 13 | 699 | 0.6− | 0.9+ | 2006 09 17 | 691 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2004 01 13 | 699 | 0.3− | 0.6− | 2006 09 17 | 691 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2004 01 16 | 703 | (3.3+ | 1.4−) | 2006 09 20 | 704 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2004 01 16 | 703 | 0.4− | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2004 01 16 | 703 | 0.6− | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.5− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2004 01 16 | 703 | 0.8− | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2004 01 26 | 699 | 0.7− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1− | | | | |

**(142129)∗ 2002 RD$_{11}$**

Discovered 2002 Sept. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.07065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24252797 | $\omega$ | 170.52148 | | +0.22123379 | +0.97492540 | |
| $a$ | 2.5466045 | $\Omega$ | 112.25702 | | −0.89643781 | +0.21299075 | |
| $e$ | 0.0680424 | $i$ | 1.48606 | | −0.38399853 | +0.06446244 | |
| $P$ | 4.06 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 599 | 0.2+ | 0.0 | 2002 09 15 | 644 | 0.2− | 0.1+ | 2005 05 12 | 691 | 0.2+ | 0.2+ | |
| 2002 08 08 | 599 | 0.3− | 0.3+ | 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 07 25 | 644 | 0.2+ | 0.5− | |
| 2002 08 08 | 599 | 0.1+ | 0.1+ | 2002 09 16 | 644 | 0.8− | 0.2+ | 2006 07 25 | 644 | 0.8+ | 0.3− | |
| 2002 08 11 | 608 | 0.1− | 0.9+ | 2002 09 16 | 644 | 0.6− | 0.1+ | 2006 07 25 | 644 | 0.2+ | 0.6− | |
| 2002 08 11 | 608 | 0.3− | 0.7+ | 2002 09 16 | 644 | 0.5− | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.2− | |
| 2002 08 11 | 608 | 0.3− | 0.9+ | 2003 12 21 | 704 | 0.3+ | 1.1+ | 2006 08 15 | 644 | 0.0 | 0.2− | |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2003 12 21 | 704 | 0.5− | 0.8+ | 2006 08 15 | 644 | 0.1− | 0.2− | |
| 2002 08 18 | 644 | 0.3− | 0.1− | 2003 12 21 | 704 | 0.2− | 0.7+ | 2006 08 21 | 644 | 0.2− | 0.0 | |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2003 12 21 | 704 | 0.3+ | 1.0+ | 2006 08 21 | 644 | 0.2+ | 0.2− | |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.1− | |
| 2002 08 29 | 644 | 0.4− | 0.5+ | 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.2− | |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2005 04 06 | G96 | 0.1− | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.0 | |
| 2002 09 04 | 644 | 0.2− | 0.4+ | 2005 04 06 | G96 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.2− | |
| 2002 09 04 | 644 | 0.1− | 0.4+ | 2005 05 02 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 1.8+ | |
| 2002 09 04 | 644 | 0.1− | 0.3+ | 2005 05 02 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.9− | |
| 2002 09 05 | 704 | 0.7+ | 0.5+ | 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.5− | |
| 2002 09 05 | 704 | 0.6+ | 0.4− | 2005 05 09 | G96 | 0.3− | 0.3− | 2006 08 28 | 703 | 0.2− | 0.8− | |
| 2002 09 05 | 704 | 0.4+ | 1.0+ | 2005 05 09 | G96 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.2− | 0.4− | |
| 2002 09 06 | 704 | 0.7− | 0.8+ | 2005 05 09 | G96 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.7+ | |
| 2002 09 06 | 704 | 0.8+ | 0.2+ | 2005 05 09 | G96 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.0 | 0.9− | |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2005 05 12 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.0 | |
| 2002 09 15 | 644 | 0.3− | 0.1+ | 2005 05 12 | 691 | 0.1+ | 0.3+ | | | | | |

**(142130)∗ 2002 RU$_{11}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.64328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26311381 | $\omega$ | 229.86010 | | −0.45768960 | −0.88886865 | |
| $a$ | 2.4119796 | $\Omega$ | 247.38957 | | +0.82244382 | −0.41436558 | |
| $e$ | 0.0453318 | $i$ | 1.29126 | | +0.33779638 | −0.19548324 | |
| $P$ | 3.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 15 | 691 | 0.3− | 0.1+ | 2004 01 13 | 699 | 0.3− | 0.4− | 2006 10 19 | 644 | 0.3− | 0.1− | |
| 1998 07 15 | 691 | 0.1− | 0.0 | 2004 01 13 | 699 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.3− | |
| 1998 07 15 | 691 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.4− | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.3+ | |
| 2000 01 05 | 704 | 0.7+ | 1.1− | 2004 01 24 | 704 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.2− | |
| 2000 01 05 | 704 | 0.1− | 1.3− | 2004 01 24 | 704 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.2− | |
| 2000 01 05 | 704 | 1.0− | 1.0− | 2004 01 24 | 704 | 0.2− | 0.7+ | 2006 10 20 | 691 | 0.1+ | 0.1− | |
| 2000 01 05 | 704 | (0.3+ | 2.3−) | 2004 01 24 | 704 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.3+ | 0.1− | |
| 2001 05 21 | 704 | 0.3− | 1.0+ | 2004 01 26 | 699 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | |
| 2001 05 21 | 704 | 0.9+ | 0.6+ | 2004 01 26 | 699 | 0.6+ | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.1− | |
| 2001 05 21 | 704 | 0.1− | 0.9+ | 2004 01 26 | 699 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.3+ | 0.1− | |
| 2001 05 21 | 704 | 0.3+ | 0.6+ | 2004 01 26 | 699 | 1.2− | 0.5− | 2006 10 21 | 703 | 0.5+ | 0.7− | |
| 2002 09 04 | 699 | (1.7+ | 0.9+) | 2004 01 30 | 704 | 0.5− | 1.4+ | 2006 10 21 | 703 | 0.6+ | 0.7− | |
| 2002 09 04 | 699 | 0.2− | 0.8+ | 2004 01 30 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.4− | |
| 2002 09 04 | 699 | 0.4− | 0.1− | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.7+ | 0.5+ | |
| 2002 09 04 | 699 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.6+ | 0.3+ | 2006 10 23 | 704 | 0.1+ | 0.2− | |
| 2002 09 05 | 704 | (1.4− | 1.9+) | 2004 01 30 | 704 | 0.6+ | 0.8+ | 2006 10 23 | 704 | 0.9+ | 0.7− | |
| 2002 09 05 | 704 | (0.7− | 1.5+) | 2004 01 30 | 704 | 0.3+ | 0.2− | 2006 10 23 | 704 | 0.3+ | 0.3− | |
| 2002 09 05 | 704 | 1.2− | 1.5+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 683 | (0.1+ | 1.7−) | |
| 2002 09 05 | 704 | 0.4− | 1.1+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 683 | (1.6+ | 0.9−) | |
| 2002 09 07 | 704 | (0.3− | 3.7+) | 2004 02 10 | 703 | (2.2− | 4.1+) | 2006 10 28 | G96 | 0.0 | 0.2− | |
| 2002 09 07 | 704 | 1.4+ | 0.2− | 2004 02 10 | 703 | (2.5− | 4.4+) | 2006 10 28 | 683 | (0.6− | 1.6−) | |
| 2002 09 07 | 704 | 1.4+ | 0.2− | 2004 02 10 | 703 | (2.9− | 5.7+) | 2006 10 28 | G96 | 0.2+ | 0.4− | |
| 2002 09 07 | 704 | 0.4+ | 0.1− | 2004 02 10 | 703 | (0.5− | 4.0+) | 2006 10 28 | G96 | 0.2+ | 0.4− | |
| 2002 09 11 | 644 | 0.5− | 0.3+ | 2004 02 11 | 644 | 0.6+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.5− | |
| 2002 09 11 | 644 | 0.0 | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 10 31 | 683 | 1.4+ | 0.2+ | |
| 2002 09 11 | 644 | 0.2− | 0.2+ | 2004 02 11 | 644 | 0.6− | 0.1− | 2006 10 31 | 683 | (2.0+ | 0.9+) | |
| 2002 09 14 | 644 | 0.6− | 0.1+ | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 10 31 | 683 | (1.6− | 0.2+) | |
| 2002 09 14 | 644 | 0.6− | 0.3+ | 2004 02 11 | 644 | 0.6+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.3− | |
| 2002 09 14 | 644 | 0.5− | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1− | |
| 2002 09 30 | 704 | (5.4− | 0.5+) | 2004 02 14 | 333 | 0.7+ | 1.3− | 2006 11 01 | 691 | 0.2− | 0.1− | |
| 2002 09 30 | 704 | 0.7+ | 0.9+ | 2004 02 14 | 333 | 0.9+ | 0.1− | 2006 11 07 | 644 | 0.0 | 0.3+ | |
| 2002 09 30 | 704 | 0.4− | 0.3− | 2004 02 17 | 644 | 0.5− | 0.5+ | 2006 11 07 | 644 | 0.2+ | 0.1− | |
| 2002 09 30 | 704 | 0.2+ | 0.7+ | 2004 02 17 | 644 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.3+ | 0.1+ | |
| 2002 09 30 | 704 | 0.1− | 0.6− | 2004 02 17 | 644 | 0.2+ | 0.5+ | 2006 11 07 | 644 | 0.3+ | 0.1+ | |
| 2002 09 30 | 704 | 0.2+ | 0.6+ | 2004 02 17 | 704 | 0.2+ | 0.2− | 2006 11 07 | 644 | 0.3+ | 0.3+ | |
| 2002 09 30 | 704 | 1.1− | 0.4− | 2004 02 17 | 704 | 1.1+ | 0.6+ | 2006 11 07 | 644 | 0.1− | 0.1− | |
| 2002 10 01 | 699 | 0.6+ | 0.0 | 2004 02 17 | 704 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.3− | |
| 2002 10 01 | 699 | 0.5+ | 0.5+ | 2004 02 17 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.3− | |
| 2002 10 01 | 699 | 1.1− | 1.1+ | 2004 02 17 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3+ | |
| 2002 10 01 | 699 | 0.3− | 0.6− | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2− | |
| 2002 10 03 | 704 | 0.4+ | 0.7+ | 2004 02 26 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 1.2+ | 0.0 | |
| 2002 10 03 | 704 | 1.4− | 0.4+ | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 11 17 | 703 | 0.2− | 0.2+ | |
| 2002 10 03 | 704 | 0.3+ | 0.7+ | 2004 02 26 | 704 | 0.4− | 0.1+ | 2006 11 17 | 703 | 1.1+ | 2.0+ | |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.6− | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.0 | |
| 2002 10 07 | 704 | (0.8− | 2.3+) | 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1+ | |
| 2002 10 07 | 704 | 0.8− | 0.8+ | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1− | |
| 2002 10 07 | 704 | 0.4− | 0.2− | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.1+ | |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4− | 1.8+ | |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 1.0− | 0.7+ | |
| 2002 10 11 | 704 | 1.2+ | 1.0+ | 2006 10 03 | 691 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.3+ | |
| 2002 10 11 | 704 | (2.2+ | 0.9+) | 2006 10 16 | 104 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.3+ | |
| 2002 10 11 | 704 | 1.1+ | 0.3+ | 2006 10 16 | 104 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.1+ | |
| 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 104 | 1.3− | 0.4− | 2006 11 21 | 704 | 0.8− | 0.8− | |
| 2004 01 13 | 699 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4+ | |
| 2004 01 13 | 699 | 0.4− | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | | | | | |

**(142131)∗ 2002 RV$_{11}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.86238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26830758 | $\omega$ | 77.11641 | | +0.43807091 | +0.89880238 | |
| $a$ | 2.3807516 | $\Omega$ | 218.87674 | | −0.83418857 | +0.39992313 | |
| $e$ | 0.2160668 | $i$ | 1.43821 | | −0.33499748 | +0.17948754 | |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.2+ | 0.1− | 2002 10 07 | 704 | 0.7+ | 0.7+ | 2005 05 12 | 699 | (0.2− | 1.6+) | |
| 1997 01 31 | 691 | 0.6+ | 0.1− | 2002 10 07 | 704 | 0.2+ | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | |
| 1997 01 31 | 691 | 0.4+ | 0.2+ | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | |
| 2000 01 02 | 691 | 1.0− | 0.2− | 2002 10 11 | 704 | 0.7+ | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | |
| 2000 01 02 | 691 | 0.4− | 0.0 | 2002 10 11 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 2000 01 02 | 691 | 0.1− | 0.3− | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 10 20 | 691 | 0.4− | 0.3+ | |
| 2002 07 14 | 704 | (1.8− | 0.6+) | 2002 10 11 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2+ | |
| 2002 07 14 | 704 | 1.1− | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2− | 0.4− | |
| 2002 07 14 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1− | |
| 2002 07 14 | 704 | 0.7− | 0.4+ | 2005 03 10 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− | |
| 2002 07 14 | 704 | 0.6− | 0.1+ | 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.2− | |
| 2002 08 16 | 704 | (1.3+ | 1.6+) | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | |
| 2002 08 16 | 704 | (1.6+ | 0.4+) | 2005 03 10 | G96 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | |
| 2002 08 16 | 704 | 1.1+ | 0.5− | 2005 04 05 | G96 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ | |
| 2002 08 18 | 608 | 0.7− | 0.3+ | 2005 04 05 | G96 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | |
| 2002 08 18 | 608 | 0.4− | 0.2+ | 2005 04 05 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ | |
| 2002 08 18 | 608 | 0.8− | 0.1+ | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | |
| 2002 08 31 | 683 | (0.6− | 3.0+) | 2005 04 07 | 704 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 2002 08 31 | 683 | 0.1+ | 0.3+ | 2005 04 07 | 704 | 1.3+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.2+ | |
| 2002 08 31 | 683 | (2.6− | 2.4+) | 2005 04 07 | 704 | (1.6+ | 2.0+) | 2006 11 08 | 644 | 0.0 | 0.4+ | |
| 2002 09 04 | 699 | 0.1+ | 0.1− | 2005 04 09 | 691 | 1.0− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ | |
| 2002 09 04 | 699 | 0.1+ | 1.0+ | 2005 04 09 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | |
| 2002 09 04 | 699 | 0.0 | 1.0+ | 2005 04 09 | 691 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2+ | |
| 2002 09 04 | 699 | 0.3− | 0.8+ | 2005 04 09 | G96 | 1.1− | 1.4+ | 2006 11 10 | 644 | 0.1− | 0.4+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 1.0− | 0.5+ | 2005 04 09 | G96 | 0.0 | 1.0+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 1.0− | 0.3+ | 2005 04 09 | G96 | 1.4+ | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | (1.6− | 0.9+) | 2005 04 09 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2002 09 05 | 704 | 1.2− | 0.7+ | 2005 04 11 | 699 | (1.6+ | 1.5+) | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2002 09 07 | 704 | (0.6− | 1.8+) | 2005 04 11 | 699 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.0 | 1.3+ |
| 2002 09 07 | 704 | 0.6+ | 0.2+ | 2005 04 11 | 699 | 0.5+ | 1.4+ | 2006 11 11 | G96 | 0.4− | 0.2+ |
| 2002 09 07 | 704 | (0.7− | 1.7+) | 2005 04 11 | 699 | 0.6+ | 1.0+ | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2002 09 07 | 704 | 0.9+ | 0.1+ | 2005 04 11 | 947 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.7+ | 0.4+ |
| 2002 09 07 | 704 | (0.8− | 1.6+) | 2005 04 12 | 947 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2002 09 07 | 704 | 0.9+ | 0.2+ | 2005 04 12 | 947 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2002 09 07 | 704 | (0.9− | 2.1+) | 2005 04 12 | 704 | 0.7+ | 1.2+ | 2006 11 13 | 644 | 0.2+ | 0.8+ |
| 2002 09 11 | 644 | 0.2− | 0.2+ | 2005 04 12 | 704 | 0.5+ | 0.4− | 2006 11 13 | 644 | 0.2− | 0.3+ |
| 2002 09 11 | 644 | 0.2− | 0.2+ | 2005 04 12 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 09 11 | 644 | 0.1+ | 0.4+ | 2005 04 12 | 704 | (1.7+ | 1.2+) | 2006 11 17 | 703 | 1.3+ | 0.6− |
| 2002 09 17 | 644 | 0.4− | 0.2+ | 2005 04 12 | 704 | 0.9+ | 1.0+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2002 09 17 | 644 | 0.4− | 0.1+ | 2005 04 15 | 699 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.7− | 0.5+ |
| 2002 09 17 | 644 | 0.4− | 0.2+ | 2005 04 15 | 699 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2002 09 30 | 704 | 0.0 | 0.0 | 2005 04 15 | 699 | 0.7+ | 0.7+ | 2006 11 18 | 704 | 0.3− | 1.1+ |
| 2002 09 30 | 704 | 0.0 | 0.6+ | 2005 04 15 | 699 | 0.1+ | 0.8− | 2006 11 18 | 704 | 1.3− | 0.5+ |
| 2002 09 30 | 704 | 0.2− | 0.5− | 2005 04 15 | 699 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2002 09 30 | 704 | 0.6− | 0.4+ | 2005 04 15 | 699 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.1+ |
| 2002 09 30 | 704 | 0.3− | 0.4− | 2005 04 15 | 699 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2002 10 01 | 699 | 0.3− | 0.5+ | 2005 04 15 | 699 | 0.5+ | 1.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 10 01 | 699 | 0.7− | 0.2+ | 2005 04 18 | 703 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 10 01 | 699 | 0.6+ | 0.7+ | 2005 04 18 | 703 | 0.6+ | 1.4+ | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2002 10 01 | 699 | 0.7− | 0.4+ | 2005 04 18 | 703 | 1.2− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2005 04 18 | 703 | 0.6+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2005 05 09 | 699 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2005 05 09 | 699 | (1.6+ | 0.0 ) | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2005 05 09 | 699 | 1.3+ | 0.9+ | 2006 11 21 | 704 | 1.5+ | 0.5+ |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2005 05 09 | 699 | 0.5+ | 0.1+ | 2006 11 27 | 703 | 1.8− | 0.3+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 05 12 | 699 | 0.0 | 1.4+ | 2006 11 27 | 703 | 0.4+ | 0.5− |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2005 05 12 | 699 | 1.2− | 1.0+ | 2006 11 27 | 703 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | (1.8+ | 1.8+) | 2005 05 12 | 699 | (1.5+ | 1.0+) | 2006 11 27 | 703 | 0.6− | 0.4− |

**(142132)∗ 2002 RW$_{13}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.07201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26559949 | $\omega$ | 182.62821 | | +0.96325716 | +0.26649218 | |
| $a$ | 2.3969072 | $\Omega$ | 161.80953 | | −0.24442362 | +0.92139168 | |
| $e$ | 0.1454348 | $i$ | 6.14741 | | −0.11132270 | +0.28287680 | |
| $P$ | 3.71 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 1.0+ | 0.6− | 2002 10 06 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.3− |
| 2002 08 12 | 704 | (0.9+ | 1.6+) | 2002 10 06 | 704 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.6+ |
| 2002 08 12 | 704 | 0.6+ | 1.0+ | 2002 10 11 | 704 | 0.7− | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | 0.5+ | 0.7+ | 2002 10 11 | 704 | 1.3− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.1+ | 0.8+ | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.7− | 0.6+ | 2002 10 11 | 704 | 0.5+ | 1.2+ | 2006 10 16 | 012 | 0.1+ | 0.0 |
| 2002 09 04 | 699 | 1.0+ | 0.2+ | 2003 10 23 | 291 | 0.4+ | 0.4+ | 2006 10 16 | 012 | 0.5− | 0.3− |
| 2002 09 04 | 699 | 0.5+ | 0.6+ | 2003 10 23 | 291 | 0.5− | 0.7+ | 2006 10 16 | 012 | (1.8− | 0.9−) |
| 2002 09 05 | 704 | 0.3− | 0.4+ | 2003 10 23 | 291 | 0.2+ | 0.6+ | 2006 10 16 | 012 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.4− | 0.8+ | 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 012 | 1.0− | 0.6+ |
| 2002 09 05 | 704 | 0.5+ | 1.2− | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 1.2+ |
| 2002 09 05 | 704 | 0.5+ | 0.5− | 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2002 09 05 | 704 | 0.3− | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.1− | 1.3+ |
| 2002 09 07 | 704 | 0.1− | 0.0 | 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.8+ |
| 2002 09 07 | 704 | 0.4+ | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.6+ | 2006 10 17 | 012 | 0.1+ | 0.5− |
| 2002 09 07 | 704 | 0.0 | 0.2− | 2005 05 16 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 012 | 0.9+ | 1.3− |
| 2002 09 07 | 704 | 0.3+ | 0.2− | 2005 05 16 | 691 | 0.2+ | 0.6+ | 2006 10 17 | 012 | 0.1− | 0.4− |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2005 05 16 | 691 | 0.2+ | 0.6+ | 2006 10 17 | 012 | 0.2+ | 1.1− |
| 2002 09 15 | 644 | 0.8− | 0.2+ | 2005 05 20 | G96 | 0.4− | 0.4+ | 2006 10 17 | 012 | 0.8− | 0.3+ |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2005 05 20 | G96 | 0.3− | 0.3+ | 2006 10 22 | 703 | (0.4− | 3.4+) |
| 2002 09 16 | 608 | 0.6− | 0.3+ | 2005 05 20 | G96 | 0.3− | 0.7+ | 2006 10 22 | 703 | 0.5− | 0.6+ |
| 2002 09 16 | 608 | 0.6− | 0.6+ | 2005 05 20 | G96 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.1+ |
| 2002 09 16 | 608 | 0.6− | 0.5+ | 2005 06 03 | E12 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2002 09 29 | 608 | 0.2− | 0.3+ | 2005 06 03 | E12 | 0.6− | 0.6+ | 2006 11 01 | 703 | 0.2− | 0.6− |
| 2002 09 29 | 608 | 0.6− | 0.1+ | 2005 06 03 | E12 | 0.3− | 0.3+ | 2006 11 01 | 703 | 0.9+ | 0.1+ |
| 2002 09 29 | 608 | 0.4− | 0.4+ | 2005 06 03 | E12 | 0.1− | 0.5+ | 2006 11 01 | 703 | 0.3+ | 0.1+ |
| 2002 10 01 | 699 | 0.2− | 0.6+ | 2005 06 09 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 0.8− | 0.1− |
| 2002 10 01 | 699 | 0.2− | 0.8+ | 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2002 10 01 | 699 | 0.4− | 0.0 | 2005 06 09 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 10 01 | 699 | 1.1+ | 0.1+ | 2005 06 13 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2002 10 02 | 608 | 1.0+ | 0.4− | 2005 06 13 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.3+ | 0.3+ |
| 2002 10 02 | 608 | 0.3+ | 0.3+ | 2005 06 13 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.4+ |
| 2002 10 02 | 608 | 0.6+ | 0.9− | 2005 06 23 | 644 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2005 06 23 | 644 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.4+ | 0.5+ |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2005 06 23 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.1− |
| 2002 10 03 | 704 | 0.8− | 0.5+ | 2006 09 17 | 699 | 1.1+ | 0.3− | 2006 11 19 | 703 | 0.5− | 0.3+ |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2006 09 17 | 699 | 0.4+ | 0.7+ | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2006 09 17 | 699 | (2.0+ | 1.0+) | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2002 10 06 | 704 | 0.8− | 0.4+ | 2006 09 17 | 699 | (1.6+ | 0.3+) | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2002 10 06 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.1+ | 1.4+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2002 10 06 | 704 | 0.6− | 0.1+ | 2006 09 18 | 703 | (1.8− | 0.5−) | 2006 11 23 | G96 | 0.1+ | 0.1− |

**(142133)∗ 2002 RY$_{13}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.42884 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23823389 | $\omega$ | 328.32296 | | +0.95553104 | +0.29454682 | |
| $a$ | 2.5771143 | $\Omega$ | 14.56724 | | −0.25735829 | +0.85650855 | |
| $e$ | 0.2093213 | $i$ | 3.24419 | | −0.14396921 | +0.42383401 | |
| $P$ | 4.14 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.4+ | 0.0 | 2002 10 03 | 704 | 0.0 | 0.6+ | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2002 09 04 | 699 | 0.3− | 0.7+ | 2002 10 03 | 704 | 0.2− | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.3+ |
| 2002 09 04 | 699 | 0.2+ | 0.1+ | 2002 10 03 | 704 | 0.3+ | 0.5+ | 2006 08 23 | 704 | 1.3− | 1.0+ |
| 2002 09 04 | 699 | 0.5− | 0.1+ | 2002 10 06 | 704 | 1.2+ | 0.2− | 2006 08 23 | 704 | 1.0− | 0.7+ |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2002 10 06 | 704 | 0.6− | 0.1+ | 2006 08 23 | 704 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 0.5+ | 0.8+ | 2002 10 06 | 704 | 0.5+ | 0.0 | 2006 08 23 | 704 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.1− | 1.2+ | 2002 10 06 | 704 | 0.2+ | 0.7+ | 2006 08 23 | 704 | 0.2− | 0.7− |
| 2002 09 05 | 704 | 0.4+ | 0.5− | 2002 10 06 | 704 | 0.5+ | 0.5+ | 2006 08 24 | 644 | 0.3− | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.2− | 2002 10 07 | 704 | 0.2+ | 0.7+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 09 05 | 645 | 0.1+ | 0.3− | 2002 10 07 | 704 | 0.5− | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.3− | 1.4+ | 2002 10 07 | 704 | 0.1− | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.5− | 0.2− | 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.6− | 0.5− | 2002 10 11 | 704 | 0.6+ | 0.0 | 2006 08 24 | 644 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 0.8− | 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 699 | 0.7+ | 0.8− |
| 2002 09 15 | 644 | 0.3− | 0.8− | 2002 10 11 | 704 | 0.8+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.1+ |
| 2002 09 15 | 644 | 0.2− | 0.7− | 2002 10 11 | 704 | 0.8+ | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.6− |
| 2002 09 15 | 644 | 0.3− | 0.7− | 2004 01 19 | 691 | 0.1+ | 0.0 | 2006 08 28 | 699 | (0.7+ | 1.9+) |
| 2002 09 16 | 608 | 1.2− | 0.0 | 2004 01 19 | 691 | 0.0 | 0.0 | 2006 08 31 | 704 | 1.4+ | 0.5− |
| 2002 09 16 | 608 | 1.2− | 0.5+ | 2004 01 19 | 691 | 0.1− | 0.1− | 2006 08 31 | 704 | 1.2+ | 0.9+ |
| 2002 09 16 | 608 | (2.0− | 0.6−) | 2004 02 17 | 691 | 0.2+ | 0.3+ | 2006 08 31 | 704 | 0.6+ | 0.4+ |
| 2002 09 27 | 699 | 0.6− | 0.7− | 2004 02 17 | 691 | 0.1+ | 0.2− | 2006 08 31 | 704 | 0.4+ | 0.9− |
| 2002 09 27 | 699 | 0.6− | 0.7− | 2004 02 17 | 691 | 0.3− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2002 09 27 | 699 | 0.9+ | 0.2+ | 2005 05 08 | G96 | 0.4+ | 0.7− | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2002 09 27 | 699 | 0.3+ | 0.6+ | 2005 05 08 | G96 | 0.4− | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 0.5− | 1.3+ | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.9− |
| 2002 10 01 | 699 | (0.5− | 1.9+) | 2005 05 08 | G96 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.7+ | 1.3+ |
| 2002 10 01 | 699 | 0.1+ | 0.3+ | 2006 07 25 | 644 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 1.1− | 0.4− |
| 2002 10 01 | 699 | (2.0+ | 1.8+) | 2006 07 25 | 644 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.9− |
| 2002 10 02 | 704 | 0.2− | 0.0 | 2006 07 25 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.0 | 2006 08 15 | 644 | 0.6− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | 0.0 | 0.7+ | 2006 08 15 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 10 02 | 608 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 10 02 | 608 | 0.1− | 0.7+ | 2006 08 17 | 644 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.2+ |
| 2002 10 02 | 608 | 0.2− | 0.2− | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.8− | 0.5+ | 2006 08 17 | 644 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.6− |
| 2002 10 03 | 704 | 0.9+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.1− |

**(142134)∗ 2002 RH$_{14}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.23646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25899455 | $\omega$ | 356.78685 | | +0.99997405 | +0.00718225 | |
| $a$ | 2.4374870 | $\Omega$ | 2.80181 | | −0.00633130 | +0.91290843 | |
| $e$ | 0.1833388 | $i$ | 0.64798 | | −0.00343585 | +0.40810124 | |
| $P$ | 3.81 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 20 | 691 | 0.2− | 0.3+ | 2002 10 01 | 699 | 0.0 | 1.0+ | 2006 10 19 | 291 | 0.4− | 0.5+ |
| 1998 08 20 | 691 | 0.6− | 0.2+ | 2002 10 03 | 704 | 0.2− | 0.4− | 2006 10 19 | 291 | 0.4− | 0.6+ |
| 1998 08 20 | 691 | 0.2− | 0.4+ | 2002 10 03 | 704 | 0.1+ | 0.5− | 2006 10 19 | 291 | 0.4− | 0.5+ |
| 1998 08 23 | 691 | 0.5+ | 0.1+ | 2002 10 03 | 704 | 0.2+ | 1.0− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1998 08 23 | 691 | 0.5+ | 0.2+ | 2002 10 03 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 1998 08 23 | 691 | 0.4+ | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 1998 09 28 | 691 | 0.8− | 0.4+ | 2002 10 07 | 704 | 1.0+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 1998 09 28 | 691 | 1.1− | 0.5+ | 2002 10 07 | 704 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 1998 09 28 | 691 | 0.9− | 0.5+ | 2002 10 07 | 704 | 0.5+ | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2000 01 28 | 691 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2000 01 28 | 691 | 0.1+ | 0.3+ | 2002 10 11 | 704 | 0.1− | 0.8+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2000 01 28 | 691 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.3+ | 0.2− |
| 2000 02 05 | 691 | 0.1− | 0.5− | 2002 10 11 | 704 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2000 02 05 | 691 | 0.1− | 0.6− | 2002 10 11 | 704 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2000 02 05 | 691 | 0.4− | 0.8− | 2004 02 13 | 691 | 0.3+ | 1.0+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2002 09 04 | 699 | (0.5− | 1.6+) | 2004 02 13 | 691 | 0.1− | 0.8+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2002 09 04 | 699 | 0.2+ | 0.6+ | 2004 02 13 | 691 | 0.8+ | 0.8+ | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2002 09 04 | 699 | 0.3+ | 0.3+ | 2005 05 07 | 691 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.9− |
| 2002 09 04 | 699 | 1.2+ | 0.6+ | 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.2+ |
| 2002 09 05 | 704 | 0.8− | 0.1+ | 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2002 09 05 | 704 | (0.7+ | 1.6+) | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2002 09 05 | 645 | 0.2+ | 0.2− | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2002 09 05 | 704 | (0.4+ | 1.7+) | 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.7+ |
| 2002 09 05 | 645 | 0.2+ | 0.3− | 2005 05 10 | G96 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.9− | 0.4+ |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2005 05 16 | 691 | 0.1+ | 0.6+ | 2006 11 21 | 704 | (1.7− | 1.0−) |
| 2002 09 13 | 644 | 0.1− | 0.5− | 2005 05 16 | 691 | 0.8+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2002 09 13 | 644 | 0.3− | 0.4− | 2005 05 16 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.4− | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.5− | 1.1+ |
| 2002 09 14 | 644 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2002 09 14 | 644 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2002 10 01 | 699 | (0.2+ | 2.4−) | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 11 27 | G96 | 1.5− | 0.7− |
| 2002 10 01 | 699 | 0.3− | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2002 10 01 | 699 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.4+ | | | | |

**(142135)∗ 2002 RY$_{14}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.64920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25404597 | $\omega$ | 32.43125 | | +0.87712775 | −0.48024657 | |
| $a$ | 2.4690384 | $\Omega$ | 356.26596 | | +0.42953704 | +0.78744314 | |
| $e$ | 0.0623085 | $i$ | 2.80321 | | +0.21481350 | +0.38638909 | |
| $P$ | 3.88 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | (2.3− | 0.7−) | 2002 12 05 | 291 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.4− | 0.1+ |
| 1998 08 17 | 704 | 1.1+ | 0.1+ | 2002 12 05 | 291 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 1998 08 17 | 704 | 0.6+ | 0.4+ | 2002 12 05 | 291 | 0.5+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 1998 08 17 | 704 | 0.4− | 0.6+ | 2003 12 27 | 704 | 1.0+ | 1.3− | 2006 09 20 | 704 | 0.4+ | 0.1+ |
| 2000 01 08 | 704 | 0.6− | 0.1− | 2003 12 27 | 704 | (0.9+ | 1.7−) | 2006 09 20 | 704 | 0.3+ | 0.7+ |
| 2000 01 08 | 704 | 0.1+ | 0.6− | 2003 12 27 | 704 | 0.2+ | 1.3− | 2006 09 20 | 704 | 0.3+ | 0.3− |
| 2000 01 08 | 704 | 0.5+ | 0.1− | 2003 12 27 | 704 | (1.0+ | 1.8−) | 2006 09 20 | 704 | 0.1+ | 0.5− |
| 2000 01 08 | 704 | 0.8− | 0.3+ | 2004 01 22 | 704 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.2− |
| 2002 08 31 | 699 | 0.0 | 0.9+ | 2004 01 22 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.0 |
| 2002 08 31 | 699 | 0.5− | 0.4+ | 2004 01 22 | 704 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2002 08 31 | 699 | 0.5− | 1.1+ | 2004 01 22 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2002 08 31 | 699 | (0.7+ | 2.2+) | 2004 01 22 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 699 | 0.2− | 0.7− |
| 2002 09 04 | 699 | 0.4+ | 0.2+ | 2004 01 30 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 699 | 1.1+ | 0.1+ |
| 2002 09 04 | 699 | 0.7+ | 0.3+ | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.5+ |
| 2002 09 04 | 699 | 0.4− | 0.4− | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.1+ |
| 2002 09 04 | 699 | 1.1+ | 0.7+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.5+ | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.2− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.1+ | 1.1+ |
| 2002 09 05 | 704 | 0.9+ | 0.7+ | 2004 02 11 | 691 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.3− | 0.5+ |
| 2002 09 05 | 645 | 0.1− | 0.2− | 2004 02 11 | 699 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.4− | 0.7+ |
| 2002 09 05 | 645 | 0.1− | 0.3− | 2004 02 11 | 699 | 0.2− | 0.6+ | 2006 09 29 | 704 | 0.4− | 0.4+ |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2004 02 11 | 699 | 0.4− | 0.7+ | 2006 09 29 | 704 | 0.4+ | 0.7+ |
| 2002 09 05 | 704 | 1.0+ | 0.4− | 2004 02 11 | 699 | 0.0 | 0.8− | 2006 09 29 | 704 | 0.6− | 0.9+ |
| 2002 09 07 | 704 | 1.1+ | 0.3− | 2004 02 12 | 291 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2002 09 07 | 704 | 0.4+ | 0.6+ | 2004 02 12 | 291 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.6− | 1.2+ | 2004 02 12 | 291 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2002 09 07 | 704 | 0.0 | 0.1+ | 2004 02 16 | 704 | 1.3+ | 1.5+ | 2006 10 17 | 703 | (0.3− | 1.5−) |
| 2002 09 13 | 644 | 0.8− | 0.9+ | 2004 02 16 | 704 | 0.1+ | 1.1− | 2006 10 17 | 703 | 0.1− | 1.0− |
| 2002 09 13 | 644 | 0.7− | 1.1+ | 2004 02 16 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.8− |
| 2002 09 13 | 644 | 0.6− | 1.0+ | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 1.4− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2004 02 17 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2004 02 17 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.6+ | 0.5− |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2004 02 17 | 644 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 09 15 | 608 | 0.3− | 1.1+ | 2004 02 23 | 704 | 0.5− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 09 15 | 608 | 1.3− | 1.5+ | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.6− |
| 2002 09 15 | 608 | (1.7− | 1.3+) | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 10 01 | 699 | 0.1− | 1.3+ | 2004 02 23 | 704 | 0.6+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 2002 10 01 | 699 | 0.9− | 0.2+ | 2004 02 23 | 704 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 10 01 | 699 | 0.3+ | 0.9+ | 2005 05 12 | 644 | 0.0 | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2002 10 01 | 699 | 0.8− | 0.5+ | 2005 05 12 | 644 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2002 10 03 | 704 | 0.8− | 0.4+ | 2005 05 12 | 644 | 0.5+ | 1.0+ | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.7+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.8− |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2006 07 21 | G96 | 0.3+ | 0.8− | 2006 10 31 | G96 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.2− |
| 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.0+ | 0.3+ |
| 2002 10 11 | 704 | 0.3− | 0.6− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 2.1+ | 0.7− |
| 2002 10 11 | 704 | 1.2− | 0.4− | 2006 09 16 | 644 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.8+ | 0.8− |
| 2002 10 11 | 704 | 0.5− | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | | | | |
| 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 09 16 | 644 | 0.1+ | 0.1− | | | | |

**(142136)∗ 2002 RZ$_{14}$ = 1998 SH$_{153}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 35380)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.51995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24035530 | $\omega$ | 56.14914 | | +0.53117391 | −0.84726230 | |
| $a$ | 2.5619279 | $\Omega$ | 1.76684 | | +0.76704033 | +0.48041341 | |
| $e$ | 0.1778671 | $i$ | 1.72911 | | +0.35986582 | +0.22660439 | |
| $P$ | 4.10 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 11 | 691 | 0.0 | 0.3+ | 2002 09 05 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.7+ |
| 1994 10 11 | 691 | 0.2− | 0.0 | 2002 09 07 | 704 | 0.1+ | 0.4+ | 2004 03 19 | 704 | 1.1+ | 0.1+ |
| 1994 10 11 | 691 | 0.1− | 0.0 | 2002 09 07 | 704 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.8+ | 0.7+ |
| 1998 09 26 | 704 | 0.3− | 0.8+ | 2002 09 07 | 704 | 0.4+ | 0.4+ | 2004 03 30 | 691 | 0.5− | 0.0 |
| 1998 09 26 | 704 | 0.8− | 0.7+ | 2002 09 13 | 644 | 0.7− | 0.5+ | 2004 03 30 | 691 | 0.1+ | 0.4+ |
| 1998 09 26 | 704 | 1.7+ | 0.6− | 2002 09 13 | 644 | 0.7− | 0.6+ | 2004 03 30 | 691 | 0.7+ | 0.4+ |
| 1998 09 26 | 704 | 1.4+ | 0.8− | 2002 09 13 | 644 | 0.6− | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.1+ |
| 1998 09 26 | 704 | 0.4+ | 1.3− | 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 1998 09 27 | 704 | 0.1+ | 1.0− | 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 08 16 | 644 | 0.6− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 704 | 0.1− | 1.2− | 2002 10 03 | 704 | 0.3+ | 1.2+ | 2006 08 17 | 644 | 0.0 | 0.1+ | | |
| 1998 09 27 | 704 | (2.2+ | 1.4−) | 2002 10 03 | 704 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.3− | 0.3+ | | |
| 1998 09 27 | 704 | (2.0− | 1.4+) | 2002 10 03 | 704 | 0.8+ | 1.0+ | 2006 08 17 | 644 | 0.4− | 0.4+ | | |
| 2000 03 11 | 704 | 0.4+ | 0.5+ | 2002 10 11 | 704 | 1.5− | 0.7− | 2006 08 18 | 644 | 0.0 | 0.2+ | | |
| 2000 03 11 | 704 | 0.6− | 0.2− | 2002 10 11 | 704 | 0.4− | 0.5− | 2006 08 18 | 644 | 0.2+ | 0.2+ | | |
| 2000 03 11 | 704 | 0.6− | 0.5+ | 2002 10 11 | 704 | 0.6− | 0.2− | 2006 08 18 | 644 | 0.3− | 0.2+ | | |
| 2000 03 11 | 704 | 0.8+ | 0.4− | 2002 10 11 | 704 | 0.4− | 0.0 | 2006 08 21 | 691 | 0.1− | 0.4+ | | |
| 2000 03 11 | 704 | 0.3+ | 0.4+ | 2004 02 16 | 691 | 0.1+ | 0.5+ | 2006 08 21 | 691 | 0.1− | 0.5+ | | |
| 2002 09 04 | 699 | 0.5+ | 0.8+ | 2004 02 16 | 691 | 0.3+ | 0.3+ | 2006 08 21 | 691 | 0.3− | 0.4+ | | |
| 2002 09 04 | 699 | 0.3+ | 1.0+ | 2004 02 16 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.3+ | | |
| 2002 09 04 | 699 | 0.4+ | 0.2+ | 2004 03 11 | 644 | 0.0 | 0.5+ | 2006 08 28 | 691 | 0.2− | 0.3+ | | |
| 2002 09 04 | 699 | 1.0+ | 1.3+ | 2004 03 11 | 644 | 0.1− | 0.6+ | 2006 08 28 | 691 | 0.2− | 0.3+ | | |
| 2002 09 05 | 704 | 0.4− | 1.0+ | 2004 03 11 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2004 03 14 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 03 14 | 691 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.0 | | |

**(142137)∗ 2002 RN$_{15}$ = 1993 FE$_{66}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37805)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.78902 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26292814 | $\omega$ | 82.31409 | | +0.55170609 | −0.83291881 | |
| $a$ | 2.4131149 | $\Omega$ | 334.05605 | | +0.72099908 | +0.50233178 | |
| $e$ | 0.1155380 | $i$ | 5.66752 | | +0.41926212 | +0.23218322 | |
| $P$ | 3.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (2.7− | 0.7+) | 2002 10 11 | 645 | 0.0 | 0.0 | 2004 03 25 | 704 | 1.0+ | 0.1− | | |
| 1993 03 22 | 809 | 0.8+ | 0.6− | 2002 10 11 | 645 | 0.1+ | 0.0 | 2004 03 25 | 704 | 1.3− | 0.2− | | |
| 1998 09 28 | 691 | 0.3− | 0.8+ | 2003 11 20 | 691 | 0.2− | 0.4+ | 2004 03 26 | 691 | 0.2+ | 0.2+ | | |
| 1998 09 28 | 691 | 0.5− | 0.7+ | 2003 11 20 | 691 | 0.1− | 0.7+ | 2004 03 26 | 691 | 0.0 | 0.0 | | |
| 1998 09 28 | 691 | 0.4− | 0.6+ | 2003 11 20 | 691 | 0.3+ | 0.2+ | 2004 03 26 | 691 | 0.3+ | 0.1− | | |
| 2000 02 27 | 691 | 0.2− | 0.7− | 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.4− | | |
| 2000 02 27 | 691 | 0.3− | 0.7− | 2004 02 11 | 644 | 0.4+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.3− | | |
| 2000 02 27 | 691 | 0.4− | 0.6− | 2004 02 11 | 644 | 0.5+ | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.4− | | |
| 2002 09 04 | 699 | 0.3+ | 1.4+ | 2004 02 18 | 704 | (0.6− | 1.7+) | 2006 10 04 | G96 | 0.0 | 0.5− | | |
| 2002 09 04 | 699 | 0.1+ | 1.2+ | 2004 02 18 | 704 | 0.2− | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 09 04 | 699 | 0.2+ | 0.6+ | 2004 02 18 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2002 09 04 | 699 | 0.1+ | 1.1+ | 2004 02 18 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 09 05 | 704 | 0.2+ | 0.8− | 2004 02 18 | 704 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 09 05 | 704 | 0.4+ | 1.1− | 2004 02 26 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.4+ | 1.0+ | | |
| 2002 09 05 | 645 | 0.1− | 0.2− | 2004 02 26 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.7+ | 0.0 | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 10 19 | 703 | 0.5+ | 0.6+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.4− | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.5+ | | |
| 2002 09 07 | 704 | 0.5− | 0.3+ | 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 10 19 | A50 | 0.0 | 0.1− | | |
| 2002 09 07 | 704 | 0.6− | 0.8+ | 2004 02 29 | 691 | 0.1− | 0.4+ | 2006 10 19 | A50 | 0.1+ | 0.2− | | |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2004 03 11 | 644 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 09 07 | 704 | 0.2+ | 0.3+ | 2004 03 11 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2002 09 14 | 644 | 0.6− | 0.6+ | 2004 03 11 | 644 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 09 14 | 644 | 0.7− | 0.5+ | 2004 03 14 | 151 | 0.1− | 0.7+ | 2006 10 21 | 704 | 0.4+ | 0.2+ | | |
| 2002 09 14 | 644 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 10 21 | 704 | 0.1− | 0.4− | | |
| 2002 09 19 | 644 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.8+ | 0.1+ | 2006 10 21 | 704 | 0.4− | 0.6− | | |
| 2002 09 19 | 644 | 0.6− | 0.4+ | 2004 03 18 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 704 | 0.6+ | 0.4+ | | |
| 2002 09 19 | 644 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 704 | 1.1− | 0.9+ | | |
| 2002 09 30 | 704 | 0.2+ | 1.3+ | 2004 03 18 | 704 | 1.0+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2002 09 30 | 704 | 0.2− | 0.9+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 09 30 | 704 | 0.6− | 0.4+ | 2004 03 19 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 09 30 | 704 | 0.2+ | 0.5+ | 2004 03 19 | 704 | 0.3− | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2002 09 30 | 704 | 0.5+ | 0.5+ | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.1+ | | |
| 2002 10 01 | 699 | 0.1+ | 0.2− | 2004 03 20 | 704 | 0.8+ | 1.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2002 10 01 | 699 | 0.4− | 0.4+ | 2004 03 20 | 704 | (0.9+ | 1.8+) | 2006 10 27 | 703 | 0.3− | 0.1+ | | |
| 2002 10 01 | 699 | 0.9− | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.0 | | |
| 2002 10 01 | 699 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 1.0+ | 0.9+ | 2006 10 27 | 703 | 0.1− | 0.0 | | |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2004 03 25 | 704 | 0.8+ | 0.0 | 2006 10 27 | 703 | 0.1− | 0.0 | | |
| 2002 10 04 | 704 | 0.4+ | 0.9+ | 2004 03 25 | 704 | 0.6+ | 0.3− | 2006 11 14 | 703 | 0.4− | 0.3− | | |
| 2002 10 04 | 704 | 0.4− | 0.0 | 2004 03 25 | 704 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.0 | 0.0 | | |
| 2002 10 04 | 704 | 0.1− | 0.5+ | 2004 03 25 | 704 | 0.7+ | 0.7− | 2006 11 14 | 703 | 0.0 | 0.1+ | | |
| 2002 10 04 | 704 | 0.7− | 0.2+ | 2004 03 25 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.9+ | 0.5− | | |

**(142138)∗ 2002 RQ$_{16}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.47434 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27525685 | $\omega$ | 107.63531 | | +0.65156092 | +0.75856834 | |
| $a$ | 2.3405107 | $\Omega$ | 203.02799 | | −0.70215990 | +0.59981454 | |
| $e$ | 0.1167224 | $i$ | 0.95433 | | −0.28712339 | +0.25455175 | |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 11 | 691 | 0.0 | 0.4+ | 2002 09 12 | 644 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 1.0− | | |
| 1994 04 11 | 691 | 0.1+ | 0.3− | 2002 09 12 | 644 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.5+ | 0.2− | | |
| 1994 04 11 | 691 | 0.0 | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.3− | 0.4− | | |
| 1995 09 22 | 691 | 0.5+ | 0.2+ | 2002 09 14 | 644 | 1.1− | 0.5+ | 2006 10 28 | G96 | 0.5− | 0.1− | | |
| 1995 09 22 | 691 | 0.6− | 0.1− | 2002 09 14 | 644 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.4− | | |
| 1995 09 22 | 691 | 0.4− | 0.0 | 2004 01 27 | 691 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 1997 01 31 | 691 | 0.2+ | 0.2+ | 2004 01 27 | 691 | 0.2− | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 1997 01 31 | 691 | 0.2+ | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.2− | | |
| 1997 01 31 | 691 | 0.5+ | 0.3− | 2005 05 10 | 807 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.3− | | |
| 2001 03 26 | 695 | 0.3− | 0.7+ | 2005 05 10 | 807 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.6+ | 0.2+ | | |
| 2001 03 26 | 695 | 0.0 | 0.8+ | 2005 06 13 | G96 | 0.5− | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2002 09 04 | 699 | (1.3− | 1.7+) | 2005 06 13 | G96 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 1.1− | | |
| 2002 09 04 | 699 | 0.8− | 1.0+ | 2005 06 13 | G96 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.7+ | 0.2+ | | |
| 2002 09 04 | 699 | 0.6− | 1.5+ | 2005 06 13 | G96 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.7+ | | |
| 2002 09 04 | 699 | (1.6− | 0.3+) | 2005 06 14 | 291 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 1.2+ | | |
| 2002 09 05 | 704 | 0.6+ | 0.4+ | 2005 06 14 | 291 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.4− | 0.1− | | |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2005 06 14 | 291 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.2− | | |
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2005 06 15 | 691 | 0.3+ | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.0 | | |
| 2002 09 05 | 704 | 0.6+ | 0.3+ | 2005 06 15 | 691 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1− | | |
| 2002 09 05 | 704 | 0.7− | 1.3+ | 2005 06 15 | 691 | 0.2− | 0.2− | | | | | | |
| 2002 09 12 | 644 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.1− | | | | | | |

**(142139)∗ 2002 RR$_{16}$ = 1995 UG$_{63}$ = 2001 FZ$_{187}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37806)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.00982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26596446 | $\omega$ | 140.97782 | | +0.61323585 | +0.78980151 | |
| $a$ | 2.3947140 | $\Omega$ | 166.83044 | | −0.73773165 | +0.57830362 | |
| $e$ | 0.1316124 | $i$ | 3.13624 | | −0.28230091 | +0.20439788 | |
| $P$ | 3.71 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.1+ | 0.3− | 2002 09 09 | 557 | 0.1− | 1.1+ | 2006 09 30 | 703 | (1.6+ | 0.2+) | | |
| 1995 10 19 | 691 | 0.1− | 0.5− | 2002 09 12 | 644 | 0.2− | 0.5+ | 2006 09 30 | 703 | (1.5− | 0.1+) | | |
| 1995 10 19 | 691 | 0.3− | 0.3− | 2002 09 12 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.5− | | |
| 1995 10 25 | 691 | 0.1+ | 0.2+ | 2002 09 12 | 644 | 0.2− | 0.5+ | 2006 10 13 | D35 | 0.3− | 0.5+ | | |
| 1995 10 25 | 691 | 0.1− | 0.2− | 2002 09 15 | 644 | 0.4− | 0.5+ | 2006 10 13 | D35 | 0.2− | 0.5+ | | |
| 1995 10 25 | 691 | 0.2+ | 0.1− | 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 10 13 | D35 | 0.4+ | 0.6+ | | |
| 2001 03 21 | 691 | 0.1+ | 0.5+ | 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.1+ | | |
| 2001 03 21 | 691 | 0.6+ | 0.3+ | 2002 10 01 | 699 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | | |
| 2001 03 21 | 691 | 0.5+ | 0.8+ | 2002 10 01 | 699 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | | |
| 2001 03 22 | 209 | 0.4+ | 1.5+ | 2002 10 01 | 699 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2001 03 22 | 209 | 0.5− | 0.5+ | 2002 10 01 | 699 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2001 03 22 | 209 | 0.2− | 1.1+ | 2003 12 22 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | | |
| 2002 09 04 | 699 | 0.4− | 0.9+ | 2003 12 22 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 1.3− | 1.1+ | 2003 12 22 | 691 | 0.5+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 09 04 | 699 | (0.2− | 1.7+) | 2005 04 30 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 09 04 | 699 | 0.5+ | 0.6+ | 2005 04 30 | 691 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.3− | 1.1+ | 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.7+ | 0.3+ | 2005 04 30 | 599 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2005 04 30 | 599 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.1− | 0.6+ | 2005 04 30 | 599 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.3− | 1.3− | 2005 04 30 | 599 | 0.7+ | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.0 | 0.2+ | 2005 05 08 | 947 | 0.1+ | 1.0− | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2005 05 08 | 947 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.5− | 0.0 | 2005 05 08 | 947 | 0.6− | 0.2− | 2006 11 13 | 703 | 0.1+ | 1.0+ |
| 2002 09 07 | 704 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 13 | 703 | (2.1− | 1.3+) |
| 2002 09 07 | 704 | 0.3− | 0.8− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 13 | 703 | 1.2− | 0.6+ |
| 2002 09 07 | 557 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 13 | 703 | (0.8− | 2.5+) |
| 2002 09 07 | 557 | 1.0+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.3− | | | | |
| 2002 09 08 | 557 | 0.1+ | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.2+ | | | | |

**(142140)∗ 2002 RA$_{17}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 93.23770 | | (2000.0) | | +0.05239125 | +0.99858483 |
| $n$ | 0.27027499 | $\omega$ | 289.25441 | | −0.90352951 | +0.04350295 |
| $a$ | 2.3691841 | $\Omega$ | 343.74069 | | −0.42531116 | +0.03059150 |
| $e$ | 0.1953559 | $i$ | 1.87033 | | | |
| $P$ | 3.65 | $H$ | 17.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 13 | 691 | 0.0 | 0.7+ | 2002 10 04 | 291 | 0.2− | 0.6+ | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 2001 02 13 | 691 | 0.1+ | 0.9+ | 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 2001 02 13 | 691 | 0.8− | 0.9+ | 2005 03 14 | G96 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.5− | 0.1+ |
| 2001 03 31 | 691 | 0.5+ | 0.0 | 2005 03 14 | G96 | 0.5− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 03 31 | 691 | 0.8+ | 0.5− | 2005 03 14 | G96 | 0.9− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2001 03 31 | 691 | 0.3+ | 0.1+ | 2005 04 04 | 691 | 0.5+ | 0.7+ | 2006 10 23 | 691 | 0.5− | 0.5+ |
| 2002 09 04 | 699 | 0.1− | 1.1− | 2005 04 04 | 691 | 0.5+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2002 09 04 | 699 | 0.0 | 0.2+ | 2005 04 04 | 691 | 0.5+ | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2002 09 04 | 699 | 0.3− | 0.3+ | 2005 04 11 | 699 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2002 09 04 | 699 | 1.0− | 0.5+ | 2005 04 11 | 699 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.4− | 0.3+ | 2005 04 11 | 699 | 0.3+ | 0.8+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.3+ | 0.5− | 2005 04 11 | 699 | 0.1− | 1.4+ | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 1.0− | 0.1− | 2005 04 12 | 704 | 0.4− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 1.5− | 0.2− | 2005 04 12 | 704 | 0.5+ | 0.4− | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2002 09 07 | 704 | 0.1− | 1.1+ | 2005 04 12 | 704 | (1.3+ | 1.6+) | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2005 04 12 | 704 | 0.5+ | 0.8+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 09 07 | 704 | 0.1− | 0.7+ | 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2005 04 17 | 691 | 0.4+ | 0.8+ | 2006 11 09 | 691 | 0.0 | 0.4+ |
| 2002 09 12 | 644 | 0.4− | 0.9+ | 2005 04 17 | 691 | 0.4+ | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.4+ |
| 2002 09 12 | 644 | 0.2− | 0.8+ | 2005 05 06 | 947 | 0.6− | 0.2+ | 2006 11 09 | 691 | 0.4+ | 0.2− |
| 2002 09 12 | 644 | 0.4− | 0.7+ | 2005 05 06 | 947 | 0.6− | 0.2+ | 2006 11 13 | 691 | 0.5− | 0.5− |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2005 05 06 | 947 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.5+ | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.8+ | 1.3+ | 2006 10 15 | 691 | 0.5− | 0.3+ | 2006 11 27 | 691 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 0.8+ | 1.0+ | 2006 10 15 | 691 | 0.4− | 0.0 | 2006 11 27 | 691 | 0.7+ | 0.4− |
| 2002 10 04 | 291 | 0.2− | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2002 10 04 | 291 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | | | | |

**(142141)∗ 2002 RT$_{17}$ = 2000 FP$_{42}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 35381)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.14515 | | (2000.0) | | +0.88973718 | −0.45566428 |
| $n$ | 0.26597620 | $\omega$ | 232.99417 | | +0.43606350 | +0.83085510 |
| $a$ | 2.3946435 | $\Omega$ | 154.08079 | | +0.13496804 | +0.31945244 |
| $e$ | 0.2292437 | $i$ | 3.56279 | | | |
| $P$ | 3.71 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 28 | 691 | 0.3− | 0.3− | 2002 10 01 | 699 | 0.6+ | 0.7+ | 2006 11 17 | 704 | 0.0 | 0.3− |
| 2000 02 28 | 691 | 0.1+ | 0.0 | 2002 10 01 | 699 | 0.1+ | 0.9+ | 2006 11 17 | 704 | (1.9+ | 0.5−) |
| 2000 02 28 | 691 | 0.3− | 0.2− | 2002 10 03 | 704 | 0.8+ | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2000 03 29 | 695 | 0.2+ | 0.7+ | 2002 10 03 | 704 | 0.3− | 1.3+ | 2006 11 17 | G96 | (1.6− | 0.2+) |
| 2000 03 29 | 695 | 0.2+ | 0.4+ | 2002 10 03 | 704 | 0.7+ | 0.6+ | 2006 11 17 | G96 | 0.9+ | 0.7+ |
| 2000 03 30 | 695 | 0.3+ | 0.7+ | 2002 10 03 | 704 | (0.9+ | 2.0+) | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2000 03 30 | 695 | 0.5+ | 0.6+ | 2002 10 06 | 704 | (1.9− | 0.1−) | 2006 11 18 | 704 | 0.3− | 1.4− |
| 2002 08 12 | 704 | 0.7+ | 1.5+ | 2002 10 06 | 704 | 1.4− | 0.2− | 2006 11 18 | 704 | 0.8− | 0.2+ |
| 2002 08 12 | 704 | 0.7+ | 0.7+ | 2002 10 06 | 704 | (1.6− | 0.5+) | 2006 11 18 | 704 | 0.9− | 1.0+ |
| 2002 08 12 | 704 | 0.6+ | 0.2+ | 2002 10 06 | 704 | 0.9− | 0.5− | 2006 11 18 | 704 | (0.2+ | 1.7+) |
| 2002 08 30 | 699 | (0.0 | 1.5+) | 2002 10 11 | 704 | (2.1+ | 0.2−) | 2006 11 20 | 704 | 0.5+ | 0.1− |
| 2002 08 30 | 699 | 0.6+ | 0.9+ | 2002 10 11 | 704 | 0.4− | 0.8+ | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2002 08 30 | 699 | 0.2− | 0.8+ | 2002 10 11 | 704 | 0.7+ | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.0 |
| 2002 08 30 | 699 | 0.2+ | 0.1+ | 2002 10 11 | 704 | (1.8+ | 0.5+) | 2006 11 20 | 704 | 0.8+ | 0.1− |
| 2002 09 04 | 699 | 1.1− | 0.8+ | 2004 03 14 | 691 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.1+ | 1.1− |
| 2002 09 04 | 699 | 0.2− | 0.6+ | 2004 03 14 | 691 | 0.4+ | 0.6+ | 2006 11 25 | 703 | 0.6− | 0.5− |
| 2002 09 04 | 699 | 1.1− | 1.0+ | 2004 03 14 | 691 | 0.3+ | 0.6+ | 2006 11 25 | 704 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | (0.2− | 1.6+) | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 11 25 | 703 | 0.4− | 0.1− |
| 2002 09 05 | 704 | 0.6− | 0.5+ | 2004 03 18 | 691 | 0.4+ | 0.5+ | 2006 11 25 | 703 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 0.9− | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.8+ | 2006 11 25 | 704 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.8− | 0.3+ | 2005 06 27 | 691 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.2− | 0.7+ |
| 2002 09 07 | 704 | 0.0 | 0.6+ | 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 11 25 | 704 | 0.3− | 0.2− |
| 2002 09 07 | 704 | 0.0 | 0.3− | 2005 06 27 | 691 | 0.1− | 0.3+ | 2006 11 25 | 704 | 0.4+ | 0.0 |
| 2002 09 07 | 704 | 0.5+ | 0.1+ | 2006 11 02 | G96 | 0.5+ | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2006 11 02 | G96 | 0.8+ | 0.6− | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2002 09 07 | 704 | 0.4+ | 0.0 | 2006 11 02 | G96 | 0.0 | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2002 09 15 | 644 | 0.4+ | 0.3+ | 2006 11 02 | G96 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2002 09 15 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.8− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2002 09 15 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.7− | 0.3+ | 2006 12 01 | 704 | 0.0 | 0.3+ |
| 2002 09 17 | 608 | 0.5− | 1.4− | 2006 11 14 | 704 | 0.7− | 0.3− | 2006 12 01 | 704 | 0.8− | 0.1+ |
| 2002 09 17 | 608 | 0.7− | 1.2− | 2006 11 14 | 704 | 1.3− | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.7+ |
| 2002 09 17 | 608 | 0.6− | 1.0− | 2006 11 17 | 704 | 0.3+ | 0.3+ | 2006 12 01 | 704 | 0.1+ | 0.8+ |
| 2002 10 01 | 699 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.7+ |
| 2002 10 01 | 699 | 0.1− | 0.9+ | 2006 11 17 | 704 | 1.4+ | 0.6+ | | | | |

**(142142)∗ 2002 RW$_{17}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.56555 | | (2000.0) | | +0.60532252 | +0.79575123 |
| $n$ | 0.27350528 | $\omega$ | 138.60749 | | −0.75335256 | +0.58048565 |
| $a$ | 2.3504927 | $\Omega$ | 168.60057 | | −0.25699138 | +0.17267426 |
| $e$ | 0.1482650 | $i$ | 5.54413 | | | |
| $P$ | 3.60 | $H$ | 15.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1− | 0.0 | 2002 09 17 | 608 | (1.4− | 1.5−) | 2005 05 16 | 704 | (0.2+ | 2.1+) |
| 1995 10 20 | 691 | 0.1− | 0.0 | 2002 09 17 | 608 | (1.4− | 1.6−) | 2005 05 16 | 704 | 0.7+ | 1.3+ |
| 1995 10 20 | 691 | 0.0 | 0.3− | 2002 09 17 | 608 | (1.8− | 1.4−) | 2005 05 16 | 704 | (0.2− | 2.1+) |
| 2001 03 18 | 699 | (2.7+ | 0.4+) | 2002 10 03 | 704 | 0.3+ | 0.8− | 2005 05 31 | 699 | 0.6+ | 0.5+ |
| 2001 03 18 | 699 | 1.3+ | 1.2+ | 2002 10 03 | 704 | 0.2− | 0.2+ | 2005 05 31 | 699 | 0.4− | 1.0+ |
| 2001 03 18 | 699 | 0.9+ | 1.2+ | 2002 10 03 | 704 | 0.3+ | 0.1+ | 2005 05 31 | 699 | 1.1+ | 0.2+ |
| 2001 03 18 | 699 | (1.7+ | 0.1−) | 2002 10 03 | 704 | 0.8− | 0.8+ | 2005 05 31 | 699 | 0.5− | 0.1+ |
| 2001 06 14 | 691 | 0.2− | 0.4+ | 2002 10 03 | 704 | 0.6− | 1.1+ | 2005 06 05 | 704 | 0.8+ | 0.5+ |
| 2001 06 14 | 691 | 0.5+ | 0.2+ | 2002 10 06 | 704 | 0.3− | 1.4+ | 2005 06 05 | 704 | 0.3+ | 0.3+ |
| 2001 06 14 | 691 | 0.4+ | 0.2+ | 2002 10 06 | 704 | 0.5− | 1.3+ | 2005 06 05 | 704 | 0.4− | 1.1+ |
| 2002 07 14 | 704 | 0.5+ | 0.3− | 2002 10 06 | 704 | (0.5− | 1.9+) | 2005 06 07 | 699 | (0.6+ | 2.0+) |
| 2002 07 14 | 704 | 0.4+ | 0.7+ | 2002 10 06 | 704 | 0.0 | 1.0+ | 2005 06 07 | 699 | 0.1− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 704 | (1.3+ | 1.7−) | 2002 10 06 | 704 | 0.6− | 0.9+ | 2005 06 07 | 699 | 0.5− | 0.2− |
| 2002 07 14 | 704 | 0.5+ | 0.0 | 2002 10 07 | 704 | 0.2+ | 0.3+ | 2005 06 07 | 699 | (0.7+ | 1.7+) |
| 2002 07 14 | 704 | (0.2+ | 2.2−) | 2002 10 07 | 704 | 0.4− | 0.6+ | 2005 06 29 | 644 | 0.0 | 0.1+ |
| 2002 08 12 | 704 | 0.6+ | 0.0 | 2002 10 07 | 704 | 0.1− | 0.2+ | 2005 06 29 | 644 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.5− | 0.2+ | 2002 10 07 | 704 | (0.4− | 1.7+) | 2005 06 29 | 644 | 0.1− | 0.0 |
| 2002 08 12 | 704 | 0.5− | 0.2− | 2002 10 07 | 704 | 0.5− | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2002 08 12 | 704 | 0.3− | 0.0 | 2002 10 11 | 704 | 0.4− | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.9+ | 0.6− | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2002 08 21 | 644 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.1+ |
| 2002 08 21 | 644 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.5− | 2006 10 30 | 703 | 0.4+ | 0.6− |
| 2002 08 21 | 644 | 0.0 | 0.3+ | 2005 04 30 | 599 | 0.0 | 0.1− | 2006 10 30 | 703 | 0.2− | 0.6+ |
| 2002 09 04 | 699 | 0.7+ | 0.2− | 2005 04 30 | 599 | 0.4+ | 0.3+ | 2006 10 30 | 703 | 0.2− | 0.0 |
| 2002 09 04 | 699 | (1.5+ | 0.8−) | 2005 05 01 | 599 | 0.2+ | 0.5+ | 2006 10 30 | 703 | 0.5+ | 0.8− |
| 2002 09 04 | 699 | 0.6+ | 0.2+ | 2005 05 01 | 599 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.6+ |
| 2002 09 04 | 699 | 0.4− | 0.2+ | 2005 05 02 | A50 | 0.8− | 0.7− | 2006 11 09 | 644 | 0.4+ | 0.6+ |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2005 05 02 | A50 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2− | 0.6+ |
| 2002 09 05 | 704 | 0.2+ | 0.3+ | 2005 05 02 | A50 | 1.4+ | 0.9+ | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2005 05 02 | A50 | 0.6− | 1.2+ | 2006 11 13 | 644 | 0.0 | 0.5+ |
| 2002 09 05 | 704 | 0.4+ | 0.2− | 2005 05 03 | 704 | 0.8+ | 1.1+ | 2006 11 13 | 703 | 0.1− | 1.0+ |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2005 05 03 | 704 | 0.6− | 0.9− | 2006 11 13 | 644 | 0.4− | 0.5+ |
| 2002 09 05 | 608 | 0.3+ | 0.0 | 2005 05 03 | 704 | 0.1+ | 0.3− | 2006 11 13 | 703 | 0.4− | 0.8+ |
| 2002 09 05 | 608 | 0.3− | 0.6− | 2005 05 03 | 704 | 0.9+ | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.3− |
| 2002 09 05 | 608 | 0.0 | 0.5− | 2005 05 03 | 704 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2002 09 07 | 704 | 0.2+ | 1.0+ | 2005 05 08 | 704 | 0.0 | 0.4− | 2006 11 14 | 704 | (0.5+ | 2.7+) |
| 2002 09 07 | 704 | 0.2+ | 0.1− | 2005 05 08 | 704 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.3− | 1.3+ |
| 2002 09 07 | 704 | 0.6− | 0.7+ | 2005 05 08 | 704 | 0.4+ | 0.3− | 2006 11 14 | 704 | (0.0 | 1.8+) |
| 2002 09 07 | 704 | 0.2+ | 0.6+ | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.5+ | 0.4− |
| 2002 09 07 | 704 | 0.5+ | 0.6+ | 2005 05 10 | 691 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.2− | 0.1+ |
| 2002 09 13 | 644 | 0.3− | 0.2− | 2005 05 10 | 691 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.2− | 0.7+ |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2005 05 11 | 699 | 0.1− | 1.3+ | 2006 11 17 | 704 | 0.0 | 1.1+ |
| 2002 09 13 | 644 | 0.3− | 0.1− | 2005 05 11 | 699 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.3− | 1.1+ |
| 2002 09 14 | 644 | 0.2− | 0.1− | 2005 05 11 | 699 | 0.5− | 0.5+ | 2006 11 19 | 703 | 0.3− | 1.1+ |
| 2002 09 14 | 644 | 0.0 | 0.0 | 2005 05 11 | 699 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.4− | 1.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.1− | 2005 05 12 | 704 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.6− | 1.1+ |
| 2002 09 15 | 699 | 0.1+ | 0.2− | 2005 05 12 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.6− | 1.1+ |
| 2002 09 15 | 699 | 0.2+ | 0.4− | 2005 05 12 | 704 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.9+ |
| 2002 09 15 | 699 | 0.4+ | 0.0 | 2005 05 12 | 704 | 0.5+ | 0.9+ | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2002 09 15 | 699 | (1.6− | 0.0 ) | 2005 05 14 | 691 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.0 |
| 2002 09 15 | 644 | 0.1− | 0.9− | 2005 05 14 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.2− |
| 2002 09 15 | 644 | 0.6− | 1.1− | 2005 05 14 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2002 09 15 | 644 | 0.1− | 0.9− | 2005 05 16 | 704 | 0.5− | 0.8+ | | | | |

**(142143)∗ 2002 RM$_{18}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.84280 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25885944 | $\omega$ | 168.65102 | | +0.40805826 | +0.91252092 |
| $a$ | 2.4383351 | $\Omega$ | 125.42587 | | −0.84030422 | +0.38747264 |
| $e$ | 0.1807897 | $i$ | 1.98171 | | −0.35689954 | +0.13103632 |
| $P$ | 3.81 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.6+ | 0.7− | 2002 10 03 | 704 | 0.6− | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.7+ |
| 1998 08 17 | 704 | 1.6− | 0.1− | 2002 10 03 | 704 | 1.4+ | 1.3− | 2006 09 18 | 699 | 1.3+ | 0.4− |
| 1998 08 17 | 704 | 0.5+ | 1.7− | 2002 10 03 | 704 | 0.7+ | 0.1− | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 1998 08 17 | 704 | 1.1+ | 0.7+ | 2002 10 11 | 704 | 0.2− | 0.7− | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 1998 08 17 | 704 | (4.2− | 1.2−) | 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2002 08 18 | 608 | 0.7− | 0.2− | 2002 10 11 | 704 | 0.5+ | 0.6− | 2006 09 23 | 691 | 0.1− | 0.2− |
| 2002 08 18 | 608 | 1.0− | 0.3+ | 2005 03 09 | G96 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2002 08 18 | 608 | 0.7− | 1.1+ | 2005 03 09 | G96 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.4− | 0.4+ |
| 2002 09 04 | 699 | 0.8+ | 0.3− | 2005 03 09 | G96 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2002 09 04 | 699 | 0.8− | 1.4+ | 2005 03 09 | G96 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.2− |
| 2002 09 04 | 699 | 0.8− | 0.6+ | 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.1+ | 0.6+ | 2005 04 01 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.3+ | 2005 04 01 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2005 04 09 | 704 | (0.5+ | 1.8+) | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.3+ | 2005 04 09 | 704 | (0.3+ | 1.7+) | 2006 10 15 | 703 | 0.5− | 0.9+ |
| 2002 09 05 | 704 | 0.7+ | 0.1− | 2005 04 09 | 704 | (0.3− | 1.8+) | 2006 10 15 | 703 | 0.2− | 0.3− |
| 2002 09 06 | 704 | 0.3+ | 1.3+ | 2005 04 09 | 704 | 1.2− | 1.2+ | 2006 10 15 | 703 | 1.0− | 0.2− |
| 2002 09 06 | 704 | 0.5+ | 0.8+ | 2005 04 11 | 699 | 0.2− | 0.3+ | 2006 10 15 | 703 | 1.1− | 0.1+ |
| 2002 09 06 | 704 | 0.1− | 0.6+ | 2005 04 11 | 699 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.6− |
| 2002 09 06 | 704 | 0.3− | 0.4− | 2005 04 11 | 699 | 0.6+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2002 09 06 | 704 | 0.1+ | 0.6+ | 2005 04 11 | 699 | 0.6− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2002 09 07 | 704 | 0.1− | 0.4− | 2005 04 12 | 704 | 1.5+ | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2002 09 07 | 704 | (1.0+ | 1.6−) | 2005 04 12 | 704 | 0.7+ | 0.5− | 2006 10 19 | 644 | 0.6+ | 0.4+ |
| 2002 09 07 | 704 | (0.0 | 1.8−) | 2005 04 12 | 704 | 1.1+ | 0.6− | 2006 10 19 | 644 | 0.2− | 0.4− |
| 2002 09 11 | 644 | 0.5− | 0.5− | 2005 04 15 | 699 | 0.5+ | 0.9− | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2002 09 11 | 644 | 0.5− | 0.2− | 2005 04 15 | 699 | (0.1− | 2.2+) | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 09 11 | 644 | 0.2− | 0.4− | 2005 04 15 | 699 | (2.4+ | 0.4+) | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2002 09 13 | 644 | 0.1− | 0.2− | 2005 04 15 | 699 | (3.1+ | 0.5−) | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 09 13 | 644 | 0.3− | 0.0 | 2005 05 08 | 703 | 0.5+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.9+ |
| 2002 09 13 | 644 | 0.6− | 0.2− | 2005 05 08 | 703 | 0.3− | 1.4− | 2006 10 21 | 703 | 0.8+ | 0.1− |
| 2002 09 27 | 699 | 0.9− | 0.2+ | 2005 05 08 | 703 | 1.1− | 0.3− | 2006 10 21 | 703 | 0.8+ | 0.1− |
| 2002 09 27 | 699 | 0.7+ | 0.1− | 2005 05 08 | 703 | 1.3− | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.6− |
| 2002 09 27 | 699 | 0.5+ | 0.2+ | 2005 05 10 | G96 | 0.5− | 0.6+ | 2006 11 20 | G96 | 0.7− | 0.1+ |
| 2002 09 27 | 699 | (1.7− | 0.9+) | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 11 20 | G96 | 1.0+ | 0.0 |
| 2002 10 03 | 704 | (0.4− | 1.6+) | 2005 05 10 | G96 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.9− | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 0.2− | 2006 09 18 | 699 | 1.0+ | 0.7+ | | | | |
| 2002 10 03 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 699 | 1.0+ | 0.8+ | | | | |

**(142144)∗ 2002 RX$_{18}$ = 1998 TY$_{31}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37807)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.71137 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24035064 | $\omega$ | 260.85438 | | +0.86314184 | −0.50301805 |
| $a$ | 2.5619611 | $\Omega$ | 129.33214 | | +0.48285695 | +0.79653159 |
| $e$ | 0.2304386 | $i$ | 3.28040 | | +0.14776785 | +0.33542550 |
| $P$ | 4.10 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 699 | 0.9+ | 0.4+ | 2002 10 03 | 704 | 0.9− | 0.5− | 2006 08 18 | 699 | 1.8+ | 0.0 |
| 1998 09 18 | 699 | 0.2− | 0.1− | 2002 10 03 | 704 | 0.1+ | 0.6− | 2006 08 18 | 644 | 0.1+ | 0.3− |
| 1998 09 18 | 699 | 0.9+ | 1.6+ | 2002 10 03 | 704 | 0.3+ | 0.1− | 2006 08 18 | 699 | 0.5− | 0.1− |
| 1998 10 11 | 699 | 1.2+ | 0.4− | 2002 10 05 | 704 | 0.0 | 0.0 | 2006 08 18 | 699 | 2.0+ | 0.4− |
| 1998 10 11 | 699 | 0.5− | 0.8+ | 2002 10 05 | 704 | 0.1+ | 0.5− | 2006 08 23 | 704 | 0.3− | 0.1+ |
| 1998 10 11 | 699 | 0.4− | 0.1+ | 2002 10 05 | 704 | 0.4+ | 0.3− | 2006 08 23 | 704 | 0.2+ | 0.2+ |
| 1998 10 20 | 699 | 0.8+ | 0.2− | 2002 10 05 | 704 | 0.2− | 0.5− | 2006 08 23 | 704 | 0.2+ | 0.4+ |
| 1998 10 20 | 699 | 0.1− | 0.8− | 2002 10 05 | 704 | 0.1− | 0.1+ | 2006 08 23 | 704 | 0.5− | 1.9+ |
| 1998 10 20 | 699 | 0.1− | 1.9− | 2002 10 06 | 704 | 1.4+ | 0.3− | 2006 08 28 | 704 | 1.1− | 0.2+ |
| 2002 09 04 | 699 | 0.7+ | 1.3− | 2002 10 06 | 704 | 0.1− | 0.1− | 2006 08 28 | 704 | 1.7+ | 0.4− |
| 2002 09 04 | 699 | 1.3+ | 0.6+ | 2002 10 06 | 704 | 1.0+ | 1.5− | 2006 08 28 | 704 | 0.4− | 0.3− |
| 2002 09 04 | 699 | 0.2− | 0.4+ | 2002 10 06 | 704 | 0.3+ | 0.3+ | 2006 08 28 | 704 | 0.4− | 0.9+ |
| 2002 09 04 | 699 | 0.4+ | 0.0 | 2002 10 11 | 704 | 0.6+ | 0.5+ | 2006 08 28 | 704 | 0.4+ | 0.8+ |
| 2002 09 05 | 704 | 0.3− | 0.8+ | 2002 10 11 | 704 | 0.3− | 1.5+ | 2006 08 28 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.0 | 1.2+ | 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.1− | 0.2− | 2004 03 14 | 691 | 0.4+ | 0.8+ | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 1.3+ | 2004 03 14 | 691 | 0.2+ | 0.9+ | 2006 08 28 | 703 | 0.7− | 0.2− |
| 2002 09 06 | 704 | 0.6− | 0.3+ | 2004 03 14 | 691 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 1.2− | 0.4− |
| 2002 09 06 | 704 | 0.9− | 1.7+ | 2005 05 11 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.8− | 0.1+ |
| 2002 09 06 | 704 | 1.6− | 0.6− | 2005 05 11 | G96 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.1+ |
| 2002 09 06 | 704 | (0.8− | 2.2+) | 2005 05 11 | G96 | 0.5− | 1.6+ | 2006 08 28 | 699 | 1.0− | 0.2− |
| 2002 09 06 | 704 | 0.3− | 2.0+ | 2005 05 11 | G96 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.7− | 0.4+ |
| 2002 09 15 | 644 | 0.1− | 0.1+ | 2005 06 11 | 291 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.7+ | 0.5+ |
| 2002 09 15 | 644 | 0.1− | 0.1+ | 2005 06 11 | 291 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.3+ | 1.1− |
| 2002 09 15 | 644 | 0.1− | 0.0 | 2005 06 11 | 291 | 0.1+ | 0.1− | 2006 09 14 | 703 | 1.1− | 0.1+ |
| 2002 09 16 | 608 | 1.0− | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.3− |
| 2002 09 16 | 608 | 1.5− | 0.7+ | 2006 08 14 | 644 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.4− | 1.3− |
| 2002 09 16 | 608 | 1.2− | 0.5+ | 2006 08 14 | 644 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.4− | 0.4− |
| 2002 09 19 | 644 | 0.2− | 1.1+ | 2006 08 14 | 644 | 0.2− | 0.4− | 2006 09 14 | 644 | 0.5+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 19 | 644 | 0.2− | 1.0+ | 2006 08 14 | 644 | 0.4+ | 0.5− | 2006 09 14 | 644 | 0.1+ | 0.2− |
| 2002 09 19 | 644 | 0.2− | 1.0+ | 2006 08 14 | 644 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.2+ | 1.2+ |
| 2002 09 27 | 699 | 1.4− | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.2− | 2006 09 18 | 699 | 1.5+ | 0.8− |
| 2002 09 27 | 699 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.2+ | 0.3− |
| 2002 09 27 | 699 | 0.2− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.0 | 0.4− |
| 2002 09 27 | 699 | 0.5+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2002 09 28 | 608 | 1.0− | 0.1+ | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 1.1+ |
| 2002 09 28 | 608 | 1.1− | 0.2− | 2006 08 17 | 644 | 0.1− | 0.2− | 2006 09 30 | 703 | 1.4+ | 0.6+ |
| 2002 09 28 | 608 | 0.9− | 0.4− | 2006 08 18 | 644 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.8+ | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2006 08 18 | 699 | 0.7+ | 0.3+ | | | | |
| 2002 10 03 | 704 | 0.2− | 0.6− | 2006 08 18 | 644 | 0.1− | 0.3− | | | | |

**(142145)∗ 2002 RD$_{19}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.25748 | | (2000.0) | | | |
| $n$ | 0.25786561 | $\omega$ | 153.39011 | | +0.63985432 | +0.76707289 |
| $a$ | 2.4445960 | $\Omega$ | 156.29981 | | −0.72418233 | +0.62220061 |
| $e$ | 0.1308751 | $i$ | 6.67915 | | −0.25718943 | +0.15641476 |
| $P$ | 3.82 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | (2.3+ | 1.4−) | 2002 10 03 | 704 | 0.7− | 0.1− | 2006 09 20 | 699 | 0.6+ | 0.4− |
| 1998 08 17 | 704 | 0.5+ | 1.0+ | 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.5− |
| 1998 08 17 | 704 | 1.5+ | 1.0− | 2002 10 03 | 704 | 1.1− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.3− |
| 1998 08 17 | 704 | (3.3+ | 0.1−) | 2002 10 03 | 704 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 1998 08 17 | 704 | 0.5+ | 0.1− | 2004 01 28 | 291 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 1.1− |
| 1998 08 23 | 699 | (2.5− | 0.3+) | 2004 01 28 | 291 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 1998 08 23 | 699 | 0.7− | 0.5+ | 2004 01 28 | 291 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 1998 08 23 | 699 | 0.2− | 0.5− | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2001 03 27 | 699 | 0.8− | 0.5+ | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1− |
| 2001 03 27 | 699 | 0.6+ | 0.6+ | 2005 04 15 | 691 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.9− | 0.5+ |
| 2001 03 27 | 699 | 0.2− | 0.2+ | 2005 05 03 | 704 | (1.3+ | 1.6+) | 2006 10 01 | 704 | 0.1+ | 0.3+ |
| 2001 03 27 | 699 | 0.5− | 0.6+ | 2005 05 03 | 704 | 0.4− | 0.8+ | 2006 10 01 | 704 | 0.6− | 0.4− |
| 2002 09 04 | 699 | 0.1− | 1.1+ | 2005 05 03 | 704 | 0.7+ | 0.5+ | 2006 10 03 | G96 | 0.4+ | 0.0 |
| 2002 09 04 | 699 | (0.7− | 1.7+) | 2005 05 03 | 704 | 1.0+ | 1.2+ | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2002 09 04 | 699 | (0.6+ | 2.1+) | 2005 05 03 | 704 | 0.2+ | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.4− |
| 2002 09 04 | 699 | 0.1+ | 0.6+ | 2005 05 07 | 703 | 0.3− | 0.8+ | 2006 10 16 | 703 | 0.7+ | 1.0+ |
| 2002 09 05 | 704 | 0.4− | 1.2+ | 2005 05 07 | 703 | 0.4+ | 1.1+ | 2006 10 16 | 703 | 0.7+ | 0.4+ |
| 2002 09 05 | 704 | 0.4+ | 1.1+ | 2005 05 07 | 703 | 0.5+ | 0.7+ | 2006 10 16 | 703 | 1.5− | 0.2+ |
| 2002 09 05 | 704 | 0.7− | 0.6+ | 2005 05 07 | 703 | 0.4− | 0.4+ | 2006 10 16 | 703 | (2.1− | 1.1+) |
| 2002 09 05 | 704 | 0.4− | 0.2− | 2005 05 11 | 699 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.6+ | 0.3− |
| 2002 09 05 | 704 | 0.7− | 0.8− | 2005 05 11 | 699 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.7+ |
| 2002 09 06 | 704 | 1.1− | 0.8− | 2005 05 11 | 699 | 1.1+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | (0.4+ | 1.6−) | 2005 05 11 | 699 | 0.6+ | 0.6− | 2006 10 22 | 703 | 0.6+ | 0.7− |
| 2002 09 06 | 704 | 0.2− | 1.1+ | 2006 09 14 | 703 | 0.3− | 0.6− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2002 09 06 | 704 | 1.4− | 0.1− | 2006 09 14 | 703 | 0.7+ | 1.2− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.6+ |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 09 15 | 644 | 0.1+ | 0.3+ | 2006 11 07 | 644 | 0.6+ | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 09 15 | 644 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.5− | 0.2− |
| 2002 10 01 | 699 | 1.2+ | 0.1− | 2006 09 15 | 644 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2002 10 01 | 699 | 0.1− | 0.1− | 2006 09 16 | 699 | 0.4+ | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.2− |
| 2002 10 01 | 699 | 0.4+ | 0.8+ | 2006 09 16 | 699 | 0.5+ | 0.5− | 2006 11 07 | 644 | 0.4− | 0.1− |
| 2002 10 01 | 699 | 1.0+ | 1.0+ | 2006 09 16 | 699 | 0.8− | 1.0+ | 2006 11 16 | 703 | 1.2+ | 1.1+ |
| 2002 10 02 | 608 | 0.4− | 0.8+ | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 11 16 | 703 | 1.4+ | 0.9+ |
| 2002 10 02 | 608 | 0.9− | 0.7+ | 2006 09 20 | 699 | (0.7− | 2.2−) | 2006 11 16 | 703 | 0.6+ | 1.1− |
| 2002 10 02 | 608 | 0.8− | 0.8+ | 2006 09 20 | 699 | 0.7+ | 0.4+ | 2006 11 16 | 703 | 0.3− | 0.7+ |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.4+ | | | | |

**(142146)∗ 2002 RZ$_{19}$ = 1998 SS$_{98}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37808)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.51814 | | (2000.0) | | | |
| $n$ | 0.24176745 | $\omega$ | 297.69699 | | +0.60960632 | +0.79147802 |
| $a$ | 2.5519422 | $\Omega$ | 10.22081 | | −0.61125464 | +0.50474292 |
| $e$ | 0.1283840 | $i$ | 14.38256 | | −0.50472556 | +0.34466959 |
| $P$ | 4.08 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 27 | 691 | 0.1− | 0.1− | 2002 09 13 | 608 | 0.3− | 0.2+ | 2006 08 21 | 644 | 0.3+ | 0.4− |
| 1994 10 27 | 691 | 0.4+ | 0.2− | 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 08 21 | 644 | 0.5+ | 0.4− |
| 1994 10 27 | 691 | 0.4− | 0.5− | 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 08 21 | 644 | 0.2+ | 0.3− |
| 1998 09 25 | 699 | 1.1− | 0.0 | 2002 09 15 | 644 | 0.2− | 0.5+ | 2006 08 23 | 644 | 0.5+ | 0.4− |
| 1998 09 25 | 699 | 0.2− | 0.8+ | 2002 10 02 | 608 | 0.1− | 0.3+ | 2006 08 23 | 644 | 0.6+ | 0.3− |
| 1998 09 25 | 699 | 0.2− | 1.1+ | 2002 10 02 | 608 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.5+ | 0.5− |
| 1998 09 26 | 704 | 0.0 | 1.6+ | 2002 10 02 | 608 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.4− |
| 1998 09 26 | 704 | 0.9− | 0.9+ | 2002 10 03 | 704 | 0.8− | 0.8+ | 2006 08 30 | 699 | 0.2+ | 0.1− |
| 1998 09 26 | 704 | 1.7− | 0.4+ | 2002 10 03 | 704 | 0.1− | 0.4− | 2006 08 30 | 699 | 0.3+ | 0.6− |
| 1998 09 26 | 704 | 0.5+ | 0.4− | 2002 10 03 | 704 | 0.3− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.1+ |
| 1998 09 26 | 704 | 0.5+ | 0.0 | 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3− |
| 1998 09 27 | 704 | 0.4+ | 0.8+ | 2002 10 03 | 704 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.3− |
| 1998 09 27 | 704 | 0.0 | 1.1+ | 2002 10 06 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 1998 09 27 | 704 | 0.3+ | 0.1− | 2002 10 06 | 704 | 0.6− | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.2− |
| 1998 09 27 | 704 | 0.8+ | 0.2+ | 2002 10 06 | 704 | 0.4− | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.1− |
| 2001 03 25 | 695 | 0.1+ | 0.3+ | 2002 10 06 | 704 | 0.4+ | 0.1+ | 2006 09 21 | 699 | 1.0+ | 0.6+ |
| 2001 03 25 | 695 | 0.2+ | 0.0 | 2002 10 06 | 704 | 0.9− | 0.6+ | 2006 09 21 | 699 | 0.1− | 0.2− |
| 2002 08 31 | 699 | 0.3+ | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.7+ | 2006 09 21 | 699 | 0.3+ | 0.0 |
| 2002 08 31 | 699 | 1.4+ | 1.1+ | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 09 21 | 699 | 0.1− | 0.2− |
| 2002 08 31 | 699 | (0.1+ | 2.1+) | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 09 22 | 704 | 0.2− | 0.1+ |
| 2002 08 31 | 699 | 0.7− | 1.0+ | 2002 10 11 | 704 | 0.4+ | 0.9+ | 2006 09 22 | 704 | 0.7+ | 1.2+ |
| 2002 09 04 | 699 | 0.2+ | 0.9− | 2002 10 11 | 704 | 0.3− | 0.5+ | 2006 09 22 | 704 | 0.8− | 0.5+ |
| 2002 09 04 | 699 | 0.5− | 1.2− | 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.5+ | 0.6+ |
| 2002 09 04 | 699 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.5− | 0.0 | 2006 09 22 | 704 | 0.0 | 1.0+ |
| 2002 09 04 | 699 | 0.1+ | 0.4− | 2005 03 10 | G96 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.7+ | 2005 03 10 | G96 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.3− |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2005 03 13 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.4− |
| 2002 09 05 | 704 | 0.1− | 0.2− | 2005 03 13 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.4− |
| 2002 09 05 | 704 | 0.6+ | 0.4− | 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.4− |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2005 04 04 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.8− |
| 2002 09 06 | 704 | 0.3+ | 0.2+ | 2005 04 04 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.9− |
| 2002 09 06 | 704 | 0.1− | 0.4+ | 2005 04 04 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.2− | 2005 05 06 | G96 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.3+ | 1.5− |
| 2002 09 06 | 704 | 0.8− | 0.4− | 2005 05 06 | G96 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.8− |
| 2002 09 08 | 608 | 0.7− | 0.4+ | 2005 05 06 | G96 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.9− |
| 2002 09 08 | 608 | 0.9− | 0.9+ | 2005 05 06 | G96 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 2002 09 08 | 608 | 1.1− | 0.6+ | 2006 08 16 | 644 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 09 13 | 608 | 0.6− | 0.4+ | 2006 08 16 | 644 | 0.5+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2002 09 13 | 608 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.5− | | | | |

**(142147)∗ 2002 RR$_{20}$ = 1995 UV$_{56}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 35383)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.89102 | | (2000.0) | | | |
| $n$ | 0.26802977 | $\omega$ | 211.58276 | | +0.45073695 | +0.89061939 |
| $a$ | 2.3823964 | $\Omega$ | 85.26957 | | −0.80588055 | +0.43503302 |
| $e$ | 0.1800838 | $i$ | 3.46753 | | −0.38391763 | +0.13245139 |
| $P$ | 3.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.1+ | 0.2− | 2002 09 28 | 608 | (2.1− | 0.7−) | 2006 09 30 | G96 | 0.2− | 0.0 |
| 1995 10 18 | 691 | 0.3+ | 0.0 | 2002 10 03 | 704 | 0.5+ | 0.5− | 2006 09 30 | G96 | 0.4− | 0.0 |
| 1995 10 18 | 691 | 0.2+ | 0.2− | 2002 10 03 | 704 | 1.2+ | 0.9− | 2006 09 30 | G96 | 0.1− | 0.0 |
| 1995 10 25 | 691 | 0.2− | 0.5− | 2002 10 03 | 704 | 0.7+ | 1.2− | 2006 09 30 | G96 | 0.3− | 0.0 |
| 1995 10 25 | 691 | 0.0 | 0.3− | 2002 10 03 | 704 | 0.3− | 0.4− | 2006 10 11 | 691 | 0.3+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 25 | 691 | 0.1− | 0.3− | 2002 10 05 | 704 | 0.7− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2002 10 05 | 704 | 0.1− | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 10 05 | 704 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2002 08 31 | 699 | 1.5+ | 1.1+ | 2002 10 05 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.3+ |
| 2002 08 31 | 699 | (0.5+ | 2.0+) | 2002 10 05 | 704 | 0.9− | 0.6− | 2006 10 16 | 703 | 0.7+ | 0.9− |
| 2002 08 31 | 699 | (0.6+ | 2.2+) | 2002 10 11 | 704 | 0.7− | 1.3+ | 2006 10 16 | 703 | 1.4− | 1.2− |
| 2002 08 31 | 699 | (0.7+ | 1.9+) | 2002 10 11 | 704 | 0.5− | 0.8+ | 2006 10 24 | 644 | 0.2− | 0.3+ |
| 2002 09 04 | 699 | 0.0 | 1.2+ | 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 10 24 | 644 | 0.2− | 0.5+ |
| 2002 09 04 | 699 | 0.5+ | 0.0 | 2005 04 12 | G96 | 0.1− | 1.2− | 2006 10 24 | 644 | 0.2+ | 0.9+ |
| 2002 09 04 | 699 | 1.2+ | 0.1− | 2005 04 12 | G96 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2002 09 04 | 699 | (0.0 | 1.7+) | 2005 04 12 | G96 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.8+ | 0.7+ | 2005 04 12 | G96 | 0.5− | 0.1− | 2006 10 31 | 691 | 0.3− | 0.5+ |
| 2002 09 05 | 704 | 0.2+ | 0.2− | 2005 04 13 | 699 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2005 04 13 | 699 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.5− | 0.4+ |
| 2002 09 06 | 704 | 0.2− | 0.5+ | 2005 04 13 | 699 | 0.7+ | 0.9+ | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2005 04 13 | 699 | (0.6+ | 1.7+) | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 09 06 | 704 | 0.5+ | 0.1− | 2005 04 13 | 704 | 0.0 | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.8+ |
| 2002 09 06 | 704 | 0.2− | 0.6+ | 2005 04 13 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2005 04 13 | 704 | (1.8+ | 0.4−) | 2006 11 11 | 703 | 0.6− | 1.2− |
| 2002 09 15 | 608 | 1.2− | 1.0− | 2005 04 30 | 599 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 2002 09 15 | 608 | 0.6− | 0.8− | 2005 04 30 | 599 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 09 15 | 608 | 0.9− | 0.8− | 2005 04 30 | 599 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2002 09 16 | 644 | 0.1− | 0.5+ | 2005 04 30 | 599 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2002 09 16 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 1.5− | 1.0− | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2002 09 16 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.8− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2002 09 28 | 608 | (2.1− | 0.7−) | 2006 09 30 | 703 | 0.5+ | 0.4− | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2002 09 28 | 608 | (2.6− | 0.8−) | 2006 09 30 | 703 | 1.3+ | 1.1− | | | | |

**(142148)∗ 2002 RD$_{21}$ = 2005 GF$_{111}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 75527)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 247.32044 | | (2000.0) | | | |
| $n$ | 0.23308861 | $\omega$ | 286.01662 | | +0.01868349 | −0.99691812 |
| $a$ | 2.6149016 | $\Omega$ | 162.37608 | | +0.98628815 | +0.00587930 |
| $e$ | 0.0183900 | $i$ | 14.57522 | | +0.16397137 | +0.07822844 |
| $P$ | 4.23 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.3− | 0.2+ | 2002 09 15 | 644 | 0.1− | 1.0+ | 2005 04 18 | 704 | 1.2+ | 0.0 |
| 2000 02 11 | 704 | 0.2− | 0.0 | 2002 09 17 | 608 | (0.3− | 1.9−) | 2005 05 04 | 703 | 0.1+ | 0.1− |
| 2000 02 11 | 704 | 0.1+ | 0.9+ | 2002 09 17 | 608 | 0.6− | 1.6− | 2005 05 04 | 703 | 0.9− | 0.2+ |
| 2000 02 11 | 704 | 0.5− | 0.5+ | 2002 09 17 | 608 | (0.1− | 1.9−) | 2005 05 04 | 703 | 0.3+ | 1.3− |
| 2000 02 11 | 704 | 0.0 | 0.7+ | 2004 01 29 | 704 | 0.5+ | 0.1− | 2005 05 04 | 703 | 0.8+ | 0.7+ |
| 2001 05 23 | 704 | 0.0 | 0.5+ | 2004 01 29 | 704 | 0.8+ | 0.4− | 2005 06 07 | 703 | 0.6− | 0.3+ |
| 2001 05 23 | 704 | (1.9+ | 0.6−) | 2004 01 29 | 704 | 0.1− | 0.3+ | 2005 06 07 | 703 | 0.8− | 0.3+ |
| 2001 05 23 | 704 | 0.0 | 0.1+ | 2005 04 04 | 703 | 1.2− | 0.1− | 2005 06 07 | 703 | 0.5− | 0.5− |
| 2001 05 23 | 704 | 0.0 | 0.7+ | 2005 04 04 | 703 | 0.8− | 0.1+ | 2005 06 07 | 703 | (1.7− | 0.3+) |
| 2001 05 23 | 704 | 0.6+ | 1.3+ | 2005 04 04 | 703 | 0.3− | 0.2− | 2005 06 08 | 699 | 0.9+ | 0.2− |
| 2001 06 13 | 699 | 0.2+ | 0.9− | 2005 04 04 | 703 | 0.5− | 0.6+ | 2005 06 08 | 699 | 0.5− | 0.1− |
| 2001 06 13 | 699 | 0.1+ | 0.5− | 2005 04 10 | 683 | 0.6+ | 0.6− | 2005 06 08 | 699 | 0.5+ | 0.7+ |
| 2001 06 13 | 699 | 0.4+ | 0.2− | 2005 04 10 | 683 | 0.4+ | 0.6+ | 2005 06 08 | 699 | 0.6− | 0.3− |
| 2001 06 13 | 699 | (1.9+ | 0.0 ) | 2005 04 10 | 683 | 1.3− | 0.5+ | 2006 08 16 | D35 | 0.3+ | 0.3+ |
| 2002 09 04 | 699 | 0.6− | 0.7+ | 2005 04 11 | 683 | 0.9+ | 1.2− | 2006 08 16 | D35 | 0.1+ | 0.4+ |
| 2002 09 04 | 699 | 0.8+ | 1.2+ | 2005 04 11 | 683 | 0.6+ | 0.5− | 2006 08 16 | D35 | 0.0 | 0.3+ |
| 2002 09 04 | 699 | 0.7− | 1.1+ | 2005 04 11 | 683 | 1.1+ | 1.1− | 2006 09 14 | 703 | 0.0 | 0.2+ |
| 2002 09 04 | 699 | (0.8− | 1.9+) | 2005 04 13 | 703 | 0.3+ | 0.6− | 2006 09 14 | 703 | 0.2+ | 1.0− |
| 2002 09 05 | 704 | 0.2+ | 1.4− | 2005 04 13 | 703 | 1.0− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.7+ |
| 2002 09 05 | 704 | 0.4+ | 1.4− | 2005 04 13 | 703 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.3+ |
| 2002 09 05 | 704 | (1.8+ | 2.3−) | 2005 04 13 | 703 | 0.8− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.7+ | 1.2− | 2005 04 18 | 704 | 0.0 | 1.4+ | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2002 09 15 | 644 | 0.2− | 1.0+ | 2005 04 18 | 704 | 0.9+ | 0.2+ | 2006 11 23 | G96 | 0.7− | 0.1+ |
| 2002 09 15 | 644 | 0.2− | 0.8+ | 2005 04 18 | 704 | 0.8+ | 0.2− | 2006 11 23 | G96 | 0.0 | 0.5+ |

**(142149)∗ 2002 RR$_{21}$ = 2001 FW$_{184}$ = 2005 ED$_{269}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37810), A. Doppler (*MPO* 75527)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.05372 | | (2000.0) | | | |
| $n$ | 0.25567554 | $\omega$ | 312.74127 | | +0.62882138 | +0.77752204 |
| $a$ | 2.4585361 | $\Omega$ | 356.20427 | | −0.68125830 | +0.54685639 |
| $e$ | 0.1568445 | $i$ | 5.69491 | | −0.37479435 | +0.31049568 |
| $P$ | 3.85 | $H$ | 16.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 695 | 0.9+ | 0.5+ | 2005 03 14 | G96 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.1+ |
| 2001 03 26 | 695 | 0.4+ | 0.6+ | 2005 03 14 | G96 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2001 03 27 | 691 | 0.2+ | 0.7+ | 2005 03 14 | G96 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2001 03 27 | 691 | 0.5+ | 0.0 | 2005 03 14 | G96 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2001 03 27 | 691 | 0.4− | 0.6+ | 2005 03 17 | G96 | 0.3− | 0.2− | 2006 09 20 | 704 | (2.4+ | 1.1+) |
| 2002 09 04 | 699 | 1.3− | 0.7− | 2005 03 17 | G96 | 0.2− | 0.1− | 2006 09 20 | 704 | (1.9+ | 1.9+) |
| 2002 09 04 | 699 | 0.8+ | 0.3+ | 2005 03 17 | G96 | 0.1− | 0.2+ | 2006 09 20 | 704 | (0.3+ | 1.6+) |
| 2002 09 04 | 699 | (1.6− | 0.1+) | 2005 03 17 | G96 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2002 09 04 | 699 | 0.6− | 1.0+ | 2005 04 06 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2005 04 06 | 691 | 0.4+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.9− | 2005 04 06 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.9+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.4− | 0.6− | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | (1.1+ | 1.7+) | 2006 07 21 | G96 | 0.3− | 0.7− | 2006 09 27 | 699 | 0.1+ | 0.1+ |
| 2002 09 07 | 704 | 0.1− | 0.5+ | 2006 07 21 | G96 | 0.3+ | 0.7− | 2006 09 27 | 699 | 1.1− | 0.2− |
| 2002 09 07 | 704 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.4+ | 0.4+ |
| 2002 09 07 | 704 | 0.7+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.1+ | 1.4+ |
| 2002 09 07 | 704 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.0 | 1.0+ |
| 2002 09 12 | 644 | 0.5− | 0.1− | 2006 09 17 | 703 | (1.0+ | 1.9+) | 2006 09 27 | 699 | 0.0 | 0.3+ |
| 2002 09 12 | 644 | 0.7− | 0.1− | 2006 09 17 | 703 | (2.9− | 0.2−) | 2006 09 27 | 704 | 0.1− | 1.2+ |
| 2002 09 12 | 644 | 0.6− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.7− | 0.0 |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.6+ |
| 2002 09 15 | 644 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | (1.5+ | 0.5+) |
| 2002 09 15 | 644 | 0.0 | 0.4− | 2006 09 17 | 703 | 0.6− | 0.7− | 2006 10 17 | 703 | 0.4− | 1.2+ |
| 2002 10 03 | 704 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 1.4+ | 1.5+ | 2006 09 18 | 699 | 0.6+ | 0.1− | | | | |

**(142150)∗ 2002 RT$_{21}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.93914 | | (2000.0) | | | |
| $n$ | 0.26689537 | $\omega$ | 348.14040 | | +0.93102624 | −0.36456189 |
| $a$ | 2.3891423 | $\Omega$ | 33.25586 | | +0.33730244 | +0.84191410 |
| $e$ | 0.1886748 | $i$ | 1.76339 | | +0.13934561 | +0.39783826 |
| $P$ | 3.69 | $H$ | 16.0 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 01 | 691 | 0.3+ | 0.7+ | 2002 10 07 | 704 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.3− |
| 2001 05 01 | 691 | 0.2+ | 0.8+ | 2002 10 07 | 704 | 0.3− | 0.2− | 2006 11 09 | D35 | 0.0 | 0.0 |
| 2001 05 01 | 691 | 0.4+ | 0.8+ | 2002 10 07 | 704 | 0.5− | 0.1+ | 2006 11 09 | D35 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | 0.7+ | 1.1+ | 2002 10 09 | 699 | 0.6− | 0.7+ | 2006 11 09 | D35 | 0.1− | 0.2− |
| 2002 08 12 | 704 | 0.3− | 0.4+ | 2002 10 09 | 699 | 1.0+ | 0.9+ | 2006 11 10 | 691 | 0.1+ | 0.4− |
| 2002 08 12 | 704 | 0.1+ | 0.4+ | 2002 10 09 | 699 | (0.0 | 1.6+) | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2002 08 12 | 704 | 0.2+ | 0.4+ | 2002 10 09 | 699 | (0.2+ | 1.5+) | 2006 11 10 | 691 | 1.3+ | 0.3+ |
| 2002 08 12 | 704 | 0.1− | 0.5− | 2002 10 11 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2002 08 20 | 644 | 0.5− | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2002 08 20 | 644 | 0.6− | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2002 08 20 | 644 | 0.3− | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 11 11 | 703 | 1.3− | 1.2− |
| 2002 09 04 | 699 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 691 | 0.3+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.5− | 0.6+ | 2002 10 29 | 704 | 0.1− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.1− | |
| 2002 09 04 | 699 | 0.3− | 0.7+ | 2002 10 29 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.1− | |
| 2002 09 04 | 699 | 0.4− | 0.5+ | 2002 10 29 | 704 | 0.3+ | 0.7+ | 2006 11 17 | 704 | 1.1+ | 0.3+ | |
| 2002 09 05 | 704 | 0.6− | 0.4+ | 2002 10 29 | 704 | 0.7+ | 0.8+ | 2006 11 17 | 704 | 0.5− | 0.0 | |
| 2002 09 05 | 704 | 0.3− | 0.4+ | 2002 11 06 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.0 | |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2002 11 06 | 704 | 0.1− | 0.7+ | 2006 11 17 | 704 | (0.6+ | 1.6+) | |
| 2002 09 05 | 704 | 0.8− | 0.4+ | 2002 11 06 | 704 | 0.1− | 0.7− | 2006 11 17 | 704 | 0.2+ | 0.4+ | |
| 2002 09 05 | 704 | 0.3− | 0.2+ | 2004 02 11 | 291 | 0.1− | 0.7+ | 2006 11 18 | 691 | 0.1+ | 0.1− | |
| 2002 09 06 | 704 | 0.0 | 0.1+ | 2004 02 11 | 291 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.0 | |
| 2002 09 06 | 704 | 0.4− | 0.3− | 2004 02 11 | 291 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.0 | |
| 2002 09 06 | 704 | 0.1− | 0.6+ | 2004 02 23 | 704 | 1.5+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.7+ | |
| 2002 09 06 | 704 | 0.1+ | 0.8+ | 2004 02 23 | 704 | 0.6+ | 0.8+ | 2006 11 18 | 704 | 0.3+ | 0.7+ | |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.6+ | |
| 2002 09 09 | 608 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 0.8+ | 0.9+ | 2006 11 18 | 704 | 0.3+ | 0.7+ | |
| 2002 09 09 | 608 | 0.6− | 0.6+ | 2004 02 23 | 704 | 1.0+ | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.6+ | |
| 2002 09 09 | 608 | 1.0+ | 0.1− | 2004 03 19 | 644 | 0.5− | 1.0+ | 2006 11 21 | 704 | 0.0 | 0.4+ | |
| 2002 09 12 | 644 | 0.4− | 0.4+ | 2004 03 19 | 644 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.3+ | |
| 2002 09 12 | 644 | 0.2− | 0.2+ | 2004 03 19 | 644 | 0.1− | 1.4+ | 2006 11 21 | 704 | 0.4+ | 0.7+ | |
| 2002 09 12 | 644 | 0.0 | 0.3+ | 2004 03 30 | 691 | 0.3+ | 1.0+ | 2006 11 21 | 704 | (2.5+ | 3.8−) | |
| 2002 09 14 | 608 | 0.7− | 0.0 | 2004 03 30 | 691 | 0.5+ | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.2+ | |
| 2002 09 14 | 608 | 0.5− | 0.3− | 2004 03 30 | 691 | 0.5+ | 0.8+ | 2006 11 22 | 691 | 0.1− | 0.1− | |
| 2002 09 14 | 608 | 0.5− | 0.3− | 2006 09 02 | 152 | 0.0 | 0.6− | 2006 11 22 | 691 | 0.1− | 0.0 | |
| 2002 09 15 | 644 | 0.3− | 0.4+ | 2006 09 02 | 152 | 0.6− | 0.3+ | 2006 11 22 | 691 | 0.4− | 0.2+ | |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 03 | 152 | 1.0− | 0.2− | 2006 11 27 | 704 | 0.0 | 0.3− | |
| 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.3− | 0.0 | |
| 2002 10 01 | 608 | (1.0− | 1.7+) | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 27 | 704 | 0.8+ | 0.4+ | |
| 2002 10 01 | 608 | (0.9− | 1.6+) | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 27 | 704 | 0.1+ | 0.5− | |
| 2002 10 01 | 608 | 1.2− | 1.4+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 27 | 185 | 0.2− | 0.5+ | |
| 2002 10 03 | 704 | 0.6− | 0.1+ | 2006 10 23 | 704 | 0.5− | 0.2+ | 2006 11 27 | 185 | 0.0 | 0.5+ | |
| 2002 10 03 | 704 | 1.0− | 0.1+ | 2006 10 23 | 704 | (0.6− | 1.5+) | 2006 11 27 | 185 | 0.3− | 0.7+ | |
| 2002 10 03 | 704 | 0.8− | 0.7+ | 2006 10 23 | 704 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2− | |
| 2002 10 06 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 704 | 0.3− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.4− | |
| 2002 10 06 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.9− | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.4− | |
| 2002 10 06 | 704 | 1.1+ | 0.4+ | 2006 10 29 | G96 | 1.1− | 0.4− | 2006 12 01 | G96 | 0.0 | 0.3− | |
| 2002 10 06 | 704 | 0.3− | 0.5+ | 2006 10 29 | G96 | 0.6− | 0.3− | 2006 12 01 | 704 | 0.3− | 1.5+ | |
| 2002 10 06 | 704 | 0.7+ | 0.7+ | 2006 10 29 | G96 | 0.1− | 0.3− | 2006 12 01 | 704 | 1.9− | 0.4+ | |
| 2002 10 07 | 704 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.3− | 1.0+ | |
| 2002 10 07 | 704 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.5− | 0.3+ | |

**(142151)∗ 2002 RN$_{24}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.68584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26716778 | $\omega$ | 187.61449 | | +0.99872364 | −0.04992211 | |
| $a$ | 2.3875181 | $\Omega$ | 175.22687 | | +0.04982447 | +0.94885004 | |
| $e$ | 0.2053350 | $i$ | 5.29100 | | +0.00828356 | +0.31175532 | |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 15 | 691 | 0.5− | 0.2− | 2002 09 07 | 704 | 0.6+ | 0.4+ | 2005 05 17 | G96 | 0.6− | 0.3− | |
| 1991 09 15 | 691 | 0.3− | 0.2− | 2002 09 07 | 704 | 0.5+ | 0.0 | 2005 05 17 | G96 | 0.3− | 0.1+ | |
| 1991 09 15 | 691 | 0.1− | 0.4− | 2002 09 07 | 704 | 0.6+ | 0.1− | 2006 10 30 | 703 | 1.0− | 1.0+ | |
| 1991 10 03 | 691 | 0.6+ | 0.4− | 2002 09 12 | 644 | 0.4− | 0.6+ | 2006 10 30 | 703 | (0.2− | 2.0−) | |
| 1991 10 03 | 691 | 0.4+ | 0.4− | 2002 09 12 | 644 | 0.2− | 0.6+ | 2006 10 30 | 703 | 0.4+ | 0.5+ | |
| 1991 10 03 | 691 | 0.4+ | 0.4− | 2002 09 12 | 644 | 0.2− | 0.6+ | 2006 10 30 | 703 | 0.6+ | 0.5+ | |
| 2001 04 14 | 691 | 0.1+ | 0.6+ | 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.4+ | 0.3+ | |
| 2001 04 14 | 691 | 0.6+ | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 1.0− | 0.3− | |
| 2001 04 14 | 691 | 0.1+ | 0.6+ | 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.3+ | |
| 2002 08 12 | 704 | 0.0 | 0.5+ | 2002 09 15 | 699 | 1.1− | 1.1+ | 2006 11 15 | 703 | 1.0− | 0.0 | |
| 2002 08 12 | 704 | 0.2− | 0.1− | 2002 09 15 | 699 | 0.4− | 0.6+ | 2006 11 17 | 704 | 0.6− | 0.2+ | |
| 2002 08 12 | 704 | 0.0 | 0.1+ | 2002 09 15 | 699 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.3+ | 1.0+ | |
| 2002 08 12 | 704 | 0.2− | 0.1− | 2002 09 15 | 699 | 0.7− | 0.7+ | 2006 11 17 | 704 | 0.2− | 0.9+ | |
| 2002 08 12 | 704 | 0.0 | 1.3+ | 2002 10 01 | 608 | 0.0 | 0.3− | 2006 11 17 | 704 | (0.2+ | 1.6+) | |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2002 10 01 | 608 | 0.8− | 0.5− | 2006 11 17 | 704 | 0.2+ | 0.3+ | |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2002 10 01 | 608 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.0 | |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.8− | 0.8− | 2006 11 22 | G96 | 0.0 | 0.1+ | |
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2002 10 03 | 704 | (1.9+ | 0.3+) | 2006 11 22 | G96 | 0.2− | 0.1+ | |
| 2002 08 28 | 644 | 0.2− | 0.1− | 2002 10 03 | 704 | 1.3+ | 0.9+ | 2006 11 22 | G96 | 0.3+ | 0.0 | |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2002 10 03 | 704 | (0.2− | 1.5+) | 2006 11 22 | G96 | 0.2+ | 0.0 | |
| 2002 09 04 | 699 | 0.6− | 0.3+ | 2002 10 03 | 704 | 1.1+ | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.1− | |
| 2002 09 04 | 699 | 0.4+ | 0.4− | 2002 10 11 | 704 | 0.3− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.0 | |
| 2002 09 04 | 699 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.0 | |
| 2002 09 04 | 699 | 0.6+ | 0.4+ | 2002 10 11 | 704 | 0.5− | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.4− | |
| 2002 09 05 | 704 | 0.4− | 0.0 | 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.7+ | 0.5+ | |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.3− | 0.5+ | |
| 2002 09 05 | 704 | 1.0− | 0.3+ | 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.6− | 1.4+ | |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2005 05 08 | 691 | (1.9+ | 0.3+) | 2006 11 28 | 704 | 0.3− | 0.7+ | |
| 2002 09 05 | 704 | 0.4− | 0.3− | 2005 05 17 | G96 | 0.0 | 0.3+ | | | | | |
| 2002 09 07 | 704 | 0.6+ | 0.2+ | 2005 05 17 | G96 | 0.3− | 0.7− | | | | | |

**(142152)∗ 2002 RO$_{24}$ = 1998 SP$_{89}$ = 2000 EA$_{206}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37811, *MPO* 40953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.03071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24042516 | $\omega$ | 228.25168 | | +0.29059948 | −0.95661468 | |
| $a$ | 2.5614317 | $\Omega$ | 204.87786 | | +0.89202631 | +0.27878254 | |
| $e$ | 0.2001326 | $i$ | 2.85901 | | +0.34618059 | +0.08466785 | |
| $P$ | 4.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.5+ | 0.4+ | 2002 09 04 | 699 | 0.8− | 1.5+ | 2004 03 18 | 704 | 0.2− | 0.1− | |
| 1994 11 01 | 691 | 0.5− | 0.3− | 2002 09 05 | 704 | 0.1− | 0.6+ | 2004 03 18 | 704 | 0.8− | 0.0 | |
| 1994 11 01 | 691 | 0.3+ | 0.0 | 2002 09 05 | 704 | 0.5− | 0.7+ | 2004 03 18 | 704 | 0.3− | 0.1− | |
| 1998 09 26 | 704 | (0.8+ | 3.4−) | 2002 09 05 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.2− | 0.1+ | |
| 1998 09 26 | 704 | (1.0+ | 2.4−) | 2002 09 06 | 704 | 1.1+ | 0.8+ | 2004 03 18 | 704 | 0.2+ | 0.8+ | |
| 1998 09 26 | 704 | (0.0 | 2.5−) | 2002 09 06 | 704 | 0.6+ | 0.1+ | 2004 03 29 | 691 | 0.2+ | 0.3+ | |
| 1998 09 27 | 704 | 0.7− | 0.3+ | 2002 09 06 | 704 | 0.1+ | 0.2+ | 2004 03 29 | 691 | 0.5+ | 0.1+ | |
| 1998 09 27 | 704 | 0.6− | 1.4− | 2002 09 06 | 704 | 0.3− | 0.0 | 2004 03 29 | 691 | 0.1− | 0.2+ | |
| 1998 09 27 | 704 | 0.6− | 0.0 | 2002 09 06 | 704 | 0.5− | 1.1+ | 2004 03 30 | 691 | 0.1− | 0.1+ | |
| 1998 09 27 | 704 | 0.3− | 1.1− | 2002 09 14 | 644 | 0.0 | 0.2+ | 2004 03 30 | 691 | 0.2− | 0.2+ | |
| 1998 09 27 | 704 | 0.6− | 1.2− | 2002 09 14 | 644 | 0.6− | 0.1+ | 2004 03 30 | 691 | 0.0 | 0.1+ | |
| 2000 03 03 | 704 | 0.2+ | 0.9− | 2002 09 14 | 644 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.3− | 1.7+ | |
| 2000 03 03 | 704 | 0.8+ | 0.1− | 2002 10 03 | 704 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.4+ | |
| 2000 03 03 | 704 | 1.1+ | 0.7+ | 2002 10 03 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.1+ | |
| 2000 03 03 | 704 | 1.8+ | 1.2+ | 2002 10 03 | 704 | 0.6+ | 0.0 | 2006 08 28 | 703 | 0.6− | 0.2+ | |
| 2000 03 03 | 704 | 0.1− | 0.1+ | 2002 10 03 | 704 | 0.6+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.6+ | |
| 2000 03 11 | 704 | 1.3− | 0.5− | 2002 10 11 | 704 | 0.6− | 0.9+ | 2006 08 30 | 704 | 0.7+ | 0.8+ | |
| 2000 03 11 | 704 | 0.5− | 0.3− | 2002 10 11 | 704 | 0.9+ | 0.3+ | 2006 08 30 | 704 | 0.5− | 0.3− | |
| 2000 03 11 | 704 | 1.0− | 1.0− | 2002 10 11 | 704 | 1.9+ | 1.5− | 2006 08 30 | 704 | 0.3− | 0.4+ | |
| 2000 03 11 | 704 | 0.8− | 1.5− | 2004 02 14 | 608 | 1.0+ | 1.7+ | 2006 09 14 | 703 | 0.5− | 0.3− | |
| 2002 08 28 | 644 | 0.0 | 0.7+ | 2004 02 14 | 608 | 0.7+ | 1.6+ | 2006 09 14 | 703 | 1.4− | 0.6− | |
| 2002 08 28 | 644 | 0.1+ | 1.0+ | 2004 02 14 | 608 | 0.7+ | 1.7+ | 2006 09 14 | 703 | (0.4+ | 2.1+) | |
| 2002 08 28 | 644 | 0.2− | 0.8+ | 2004 02 19 | 704 | 0.7+ | 0.7+ | 2006 09 14 | 703 | (2.1+ | 1.0−) | |
| 2002 09 04 | 699 | 0.1− | 1.1+ | 2004 02 19 | 704 | 0.0 | 1.1+ | 2006 09 27 | G96 | 0.1+ | 0.0 | |
| 2002 09 04 | 699 | (0.6− | 2.6+) | 2004 02 19 | 704 | 0.6+ | 0.7+ | 2006 09 27 | G96 | 0.2− | 0.0 | |
| 2002 09 04 | 699 | 0.2− | 0.2− | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 09 27 | G96 | (2.1− | 1.4−) | |

**(142153)∗ 2002 RS$_{24}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.53370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27323185 | $\omega$ | 198.69443 | | −0.98560137 | −0.16090178 | |
| $a$ | 2.3520606 | $\Omega$ | 331.88823 | | +0.16576611 | −0.85888527 | |
| $e$ | 0.0618517 | $i$ | 6.33190 | | +0.03333958 | −0.48623730 | |
| $P$ | 3.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 691 | 0.3− | 0.4− | 2003 12 17 | 699 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.1− |
| 1995 09 02 | 691 | 0.1− | 0.6− | 2003 12 17 | 699 | (2.8− | 0.9+) | 2006 09 28 | 703 | 1.0+ | 1.0+ |
| 1995 09 02 | 691 | 0.0 | 0.3− | 2003 12 18 | 704 | 0.1+ | 0.5+ | 2006 09 28 | 703 | (1.8− | 0.7+) |
| 1997 02 06 | 691 | 0.2+ | 0.2+ | 2003 12 18 | 704 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.5− |
| 1997 02 06 | 691 | 0.4+ | 0.2− | 2003 12 18 | 704 | 0.2− | 0.6− | 2006 10 19 | 703 | 0.5− | 0.4− |
| 1997 02 06 | 691 | 0.4+ | 0.3− | 2003 12 18 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.8+ | 0.2+ |
| 2001 04 26 | 699 | 0.2+ | 0.5+ | 2003 12 18 | 704 | 0.5− | 0.2+ | 2006 10 19 | 703 | 0.9− | 0.4+ |
| 2001 04 26 | 699 | 0.3+ | 0.3+ | 2003 12 28 | 704 | 0.1− | 0.0 | 2006 10 19 | A50 | 0.6+ | 0.1− |
| 2001 04 26 | 699 | 0.3− | 0.0 | 2003 12 28 | 704 | 0.0 | 0.6− | 2006 10 19 | A50 | 0.1− | 0.4− |
| 2001 04 26 | 699 | 1.2− | 0.3+ | 2003 12 28 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.5+ | 0.0 |
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2003 12 28 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 08 28 | 644 | 0.3+ | 0.6+ | 2003 12 28 | 704 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 08 28 | 644 | 0.4+ | 0.7+ | 2004 01 18 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 04 | 699 | 0.7+ | 0.4+ | 2004 01 18 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 09 04 | 699 | (1.6+ | 1.0+) | 2004 01 18 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 09 04 | 699 | (1.9+ | 0.9+) | 2004 01 26 | 699 | 0.7− | 1.2− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 09 04 | 699 | (0.8+ | 2.3+) | 2004 01 26 | 699 | 0.8− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 09 05 | 704 | 1.2− | 0.3− | 2004 01 26 | 699 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2004 01 26 | 699 | 0.4− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2002 09 05 | 704 | 0.7− | 0.7+ | 2004 01 31 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 0.5− | 2004 01 31 | 704 | 0.3− | 1.2+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.6− | 0.1− | 2004 01 31 | 704 | 0.5− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2004 01 31 | 704 | 0.9− | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2004 01 31 | 704 | 0.5− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2004 02 15 | 704 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 1.3+ | 0.0 | 2004 02 15 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | (1.9+ | 0.4+) | 2004 02 15 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.1+ | 1.3− | 2004 02 15 | 704 | 0.4− | 0.5− | 2006 10 27 | 703 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | 1.1+ | 0.1+ | 2004 02 15 | 704 | 0.1− | 0.4− | 2006 10 27 | 703 | 0.4− | 0.4+ |
| 2003 12 16 | 703 | 0.5+ | 1.3+ | 2004 02 23 | 704 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.5− |
| 2003 12 16 | 703 | 0.7− | 0.8+ | 2004 02 23 | 704 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.3+ | 0.9+ |
| 2003 12 16 | 703 | (0.6+ | 1.8+) | 2004 02 23 | 704 | 0.3+ | 0.2− | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2003 12 16 | 703 | (2.0− | 1.2+) | 2004 02 23 | 704 | 0.3+ | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.3− |
| 2003 12 17 | 699 | 0.4+ | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 11 15 | 703 | (1.1+ | 1.6−) |
| 2003 12 17 | 699 | 0.6− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.6− |

## (142154)∗ 2002 RM$_{28}$

Discovered 2002 Sept. 5 by P. Kušnirák and P. Pravec at Ondřejov.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.81949 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25969660 | $\omega$ | 268.92879 | | −0.11375871 | +0.99350145 | |
| $a$ | 2.4330921 | $\Omega$ | 354.53498 | | −0.89529760 | −0.10413486 | |
| $e$ | 0.1746655 | $i$ | 2.23717 | | −0.43069846 | −0.04594340 | |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.3− | 0.0 | 2005 03 04 | G96 | 0.3− | 0.3− | 2005 05 04 | G96 | 0.1− | 0.0 |
| 1995 10 15 | 691 | 0.1− | 0.1+ | 2005 03 08 | 699 | 0.1+ | 0.6+ | 2005 05 04 | G96 | 0.3− | 0.0 |
| 1995 10 15 | 691 | 0.4+ | 0.4+ | 2005 03 08 | 699 | 1.0+ | 0.3+ | 2005 05 13 | G96 | 0.0 | 0.0 |
| 2001 03 02 | 691 | 0.0 | 0.2+ | 2005 03 08 | 704 | 1.5+ | 1.2+ | 2005 05 13 | G96 | 0.4− | 0.1+ |
| 2001 03 02 | 691 | 0.3− | 0.3+ | 2005 03 08 | 699 | 0.0 | 0.3+ | 2005 05 13 | G96 | 0.5− | 0.4− |
| 2001 03 02 | 691 | 0.2+ | 0.2+ | 2005 03 08 | 704 | (1.3− | 1.6−) | 2005 05 13 | G96 | 0.5− | 0.2− |
| 2002 07 23 | 644 | 0.2− | 0.7+ | 2005 03 08 | 704 | 0.2− | 1.0+ | 2006 08 22 | 644 | 0.2− | 0.3+ |
| 2002 07 23 | 644 | 0.4− | 0.4+ | 2005 03 08 | 699 | 0.5+ | 0.4+ | 2006 08 22 | 644 | 0.5− | 0.5+ |
| 2002 07 29 | 644 | 0.6− | 0.1+ | 2005 03 08 | 704 | 1.0+ | 0.1+ | 2006 08 22 | 644 | 0.4− | 0.3+ |
| 2002 07 29 | 644 | 0.2− | 0.4+ | 2005 03 09 | 699 | 0.0 | 0.5− | 2006 09 14 | 644 | 0.3− | 0.3+ |
| 2002 07 29 | 644 | 0.3− | 0.3+ | 2005 03 09 | 699 | 0.6− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2005 03 09 | 699 | 0.3− | 1.1+ | 2006 09 14 | 644 | 0.4− | 0.4+ |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2005 03 09 | 699 | 0.8− | 0.1+ | 2006 09 16 | 699 | 0.7+ | 0.1+ |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2005 03 14 | 704 | 0.5+ | 0.9+ | 2006 09 16 | 699 | 0.4− | 0.3+ |
| 2002 08 18 | 644 | 0.7− | 0.0 | 2005 03 14 | 704 | 0.9+ | 0.0 | 2006 09 16 | 699 | 0.3+ | 1.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.4− | 2005 03 14 | 704 | 0.4− | 0.1+ | 2006 09 16 | 699 | 0.8− | 0.7+ |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2005 03 14 | 704 | (1.8+ | 0.1+) | 2006 09 20 | 704 | (1.1− | 2.5+) |
| 2002 08 29 | 644 | 0.5− | 0.3+ | 2005 03 31 | 701 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 0.2+ | 0.9+ |
| 2002 08 29 | 644 | 0.2+ | 0.4− | 2005 03 31 | 701 | 0.6+ | 0.6+ | 2006 09 20 | 704 | 0.7+ | 0.6+ |
| 2002 09 01 | 644 | 0.3− | 0.2+ | 2005 03 31 | 701 | 0.3+ | 0.6+ | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2002 09 01 | 644 | 0.1+ | 0.7+ | 2005 04 02 | G96 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.4− | 0.1+ |
| 2002 09 05 | 557 | (0.2− | 2.0+) | 2005 04 02 | G96 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2002 09 05 | 557 | 1.2+ | 1.4+ | 2005 04 02 | G96 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2002 09 05 | 557 | (1.9− | 0.6−) | 2005 04 02 | G96 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.4− | 0.2+ |
| 2002 09 05 | 557 | 0.4− | 0.7+ | 2005 04 04 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2002 09 06 | 557 | 1.1+ | 0.5+ | 2005 04 04 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2002 09 06 | 557 | 0.0 | 1.0− | 2005 04 04 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.2+ |
| 2005 03 04 | 691 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2005 03 04 | 691 | 0.2+ | 0.3+ | 2005 04 09 | 691 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.5− | 0.3− |
| 2005 03 04 | 691 | 0.1+ | 0.2+ | 2005 04 09 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2005 03 04 | G96 | 0.6− | 0.1− | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2005 03 04 | G96 | 0.3− | 0.0 | 2005 05 04 | G96 | 0.2− | 0.2− | | | | |
| 2005 03 04 | G96 | 0.4− | 0.3− | 2005 05 04 | G96 | 0.4− | 0.3− | | | | |

## (142155)∗ 2002 RT$_{28}$

Discovered 2002 Sept. 6 by L. Ball at Emerald Lane Observatory, Decatur.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.90032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23608322 | $\omega$ | 27.96927 | | +0.49119610 | +0.86858721 | |
| $a$ | 2.5927420 | $\Omega$ | 271.51613 | | −0.81088815 | +0.42854145 | |
| $e$ | 0.0955290 | $i$ | 3.75354 | | −0.31809874 | +0.24881415 | |
| $P$ | 4.17 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 699 | 0.6− | 0.8+ | 2002 10 09 | 704 | 0.4− | 0.3+ | 2006 08 27 | 699 | 0.3+ | 0.1+ |
| 2001 05 24 | 699 | 1.1− | 0.6+ | 2002 10 09 | 704 | 0.7+ | 0.3+ | 2006 08 27 | 699 | 0.1− | 0.2+ |
| 2001 05 24 | 699 | 0.1− | 0.3− | 2002 10 09 | 704 | (2.3− | 0.0 ) | 2006 08 27 | 699 | 0.5− | 1.1+ |
| 2001 05 24 | 699 | 0.5+ | 0.4+ | 2002 10 09 | 704 | 0.2− | 0.8− | 2006 08 28 | 704 | 0.4− | 0.2+ |
| 2002 09 05 | 843 | 0.1− | 0.4− | 2002 10 09 | 704 | 0.1+ | 0.7− | 2006 08 28 | 704 | 1.6+ | 0.1+ |
| 2002 09 05 | 843 | 0.5− | 0.2+ | 2002 10 12 | 704 | 0.3+ | 0.6− | 2006 08 28 | 704 | 0.4+ | 0.2+ |
| 2002 09 05 | 843 | 0.6− | 0.2+ | 2002 10 12 | 704 | 0.6+ | 0.2− | 2006 08 28 | 704 | 0.7+ | 0.4+ |
| 2002 09 06 | 704 | 0.2− | 0.5+ | 2002 10 12 | 704 | 0.6− | 0.1− | 2006 08 29 | 691 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.0 | 0.3− | 2002 10 31 | 699 | 0.9+ | 1.2+ | 2006 08 29 | 691 | 0.8− | 0.7+ |
| 2002 09 06 | 704 | 0.3+ | 1.0− | 2002 10 31 | 699 | 0.2− | 1.0+ | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2002 09 06 | 843 | 0.7− | 0.5− | 2002 10 31 | 699 | 0.8+ | 0.6+ | 2006 08 30 | 704 | 1.5− | 0.4− |
| 2002 09 06 | 704 | 1.0+ | 0.5+ | 2002 10 31 | 699 | 0.4− | 0.2− | 2006 08 30 | 704 | 1.5− | 0.3− |
| 2002 09 06 | 843 | 0.8+ | 0.2+ | 2002 11 08 | 446 | 0.5+ | 0.2+ | 2006 08 30 | 704 | 0.6− | 0.2+ |
| 2002 09 06 | 843 | 0.3− | 1.9− | 2002 11 08 | 446 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.7+ | 0.3+ |
| 2002 09 07 | 843 | 1.1+ | 0.3+ | 2003 12 21 | 645 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.5+ |
| 2002 09 07 | 843 | 0.9− | 0.3+ | 2003 12 21 | 645 | 0.1− | 0.0 | 2006 09 12 | 703 | (0.5+ | 2.2+) |
| 2002 09 07 | 843 | (2.1+ | 0.4−) | 2003 12 21 | 691 | 0.2− | 0.1− | 2006 09 12 | 703 | 1.1− | 0.4− |
| 2002 09 14 | 608 | 0.6− | 0.5− | 2003 12 21 | 691 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.7− |
| 2002 09 14 | 608 | 0.6− | 1.0− | 2003 12 21 | 691 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.1+ | 0.9+ |
| 2002 09 14 | 608 | 0.2− | 0.8− | 2003 12 27 | 691 | 0.3+ | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2002 09 29 | 843 | 0.2− | 0.1+ | 2003 12 27 | 691 | 0.3− | 0.6+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2002 09 29 | 843 | 0.1− | 0.5− | 2003 12 27 | 691 | 1.3+ | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2002 09 29 | 843 | 0.3+ | 0.7+ | 2004 01 24 | 704 | 1.2− | 1.9+ | 2006 09 16 | 699 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2004 01 24 | 704 | 1.1+ | 1.0+ | 2006 09 16 | 699 | 1.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2004 01 24 | 704 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.5− | 0.2+ |
| 2002 10 04 | 704 | 0.2+ | 0.3+ | 2005 04 12 | 691 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 1.0+ | 0.5+ |
| 2002 10 04 | 644 | 0.4− | 0.5+ | 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.3+ | 0.4+ |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 09 18 | 704 | 0.5− | 0.7+ |
| 2002 10 04 | 644 | 0.5− | 0.3+ | 2005 04 16 | 691 | 0.3+ | 0.8+ | 2006 09 18 | 704 | 0.6+ | 0.2− |
| 2002 10 04 | 644 | 0.3− | 0.7+ | 2005 04 16 | 691 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.3+ |
| 2002 10 04 | 704 | 0.6+ | 0.7+ | 2005 04 16 | 691 | 0.4+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.5+ |
| 2002 10 05 | 644 | 0.1− | 1.0+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 1.5− | 1.0− |
| 2002 10 05 | 644 | 0.1− | 1.2+ | 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.1+ |
| 2002 10 05 | 644 | 0.3+ | 1.3+ | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.1+ | 0.1+ |
| 2002 10 06 | 644 | 0.6− | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.6+ | 0.5+ |
| 2002 10 06 | 843 | 0.6− | 0.0 | 2006 08 23 | 644 | 0.4− | 0.0 | 2006 09 25 | 704 | 1.2− | 0.8− |
| 2002 10 06 | 843 | 0.8− | 0.3− | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 2002 10 06 | 843 | 0.3+ | 0.0 | 2006 08 24 | 704 | 0.3+ | 1.0+ | 2006 09 30 | 699 | 0.4− | 0.2− |
| 2002 10 06 | 644 | 0.3− | 0.1− | 2006 08 24 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 699 | 0.4+ | 0.8− |
| 2002 10 06 | 644 | 0.4− | 0.0 | 2006 08 24 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 699 | 0.9− | 0.5− |
| 2002 10 08 | 843 | 0.7+ | 0.3− | 2006 08 24 | 704 | 0.8+ | 0.7+ | 2006 09 30 | 699 | 0.9− | 0.6+ |
| 2002 10 08 | 843 | 1.2+ | 0.5+ | 2006 08 24 | 704 | 0.5+ | 0.5+ | | | | |
| 2002 10 08 | 843 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.6+ | | | | |

**(142156)∗ 2002 RX$_{29}$ = 1998 MF$_{14}$ = 2000 AB$_{122}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37816)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 349.71912 | | (2000.0) | | | |
| $n$ | 0.26859760 | $\omega$ | 175.03592 | | +0.72929227 | −0.68039142 |
| $a$ | 2.3790376 | $\Omega$ | 228.11160 | | +0.62436202 | +0.70490784 |
| $e$ | 0.1355684 | $i$ | 5.55885 | | +0.27983004 | +0.20043068 |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 21 | 910 | 0.1+ | 0.9+ | 2004 02 19 | 704 | 0.8+ | 0.9+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 1998 06 21 | 910 | 0.4+ | 0.7+ | 2004 02 19 | 704 | 1.3+ | 1.0+ | 2006 11 12 | G96 | 0.1− | 0.4− |
| 1998 06 21 | 910 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 1998 06 26 | 910 | 0.8+ | 0.7+ | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 1998 06 26 | 910 | 1.3+ | 0.3+ | 2004 02 23 | 704 | 0.5− | 1.2+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 1998 06 26 | 910 | 1.0+ | 0.4+ | 2004 02 23 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2000 01 05 | 704 | 0.3− | 1.2− | 2004 02 23 | 704 | 0.0 | 1.4+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2000 01 05 | 704 | 0.5− | 0.3− | 2004 02 23 | 704 | 0.6− | 0.8+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2000 01 05 | 704 | 0.3− | 0.6− | 2004 02 23 | 704 | 1.0− | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.4+ |
| 2000 01 05 | 704 | 0.7− | 0.9− | 2004 02 26 | 704 | (2.6− | 1.9+) | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2000 01 07 | 704 | 0.6+ | 0.1+ | 2004 02 26 | 704 | (0.6− | 1.7+) | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2000 01 07 | 704 | 0.5+ | 0.7+ | 2004 02 26 | 704 | 0.2− | 0.6+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2000 01 07 | 704 | 0.3+ | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 1.0− | 0.3+ |
| 2002 08 11 | 704 | 0.2− | 1.1+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (0.3+ | 1.9+) |
| 2002 08 11 | 704 | 0.1+ | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 1.1+ | 1.3+ |
| 2002 08 11 | 704 | 0.1− | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.0 | 1.4+ |
| 2002 08 11 | 704 | (0.6+ | 1.9+) | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2002 08 11 | 704 | 0.1− | 1.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2002 08 28 | 644 | 0.4+ | 1.3+ | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.6+ |
| 2002 08 28 | 644 | 0.5+ | 1.4+ | 2006 10 23 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 1.2− | 0.5+ |
| 2002 08 28 | 644 | (0.1− | 1.6+) | 2006 10 23 | 644 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 2002 08 31 | 683 | (1.4− | 3.7+) | 2006 10 28 | 704 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2002 08 31 | 683 | (0.4− | 2.1+) | 2006 10 28 | 704 | 1.0− | 0.4− | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2002 08 31 | 683 | (3.7− | 0.2−) | 2006 10 28 | 704 | (0.7+ | 1.8+) | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 09 04 | 699 | 1.0+ | 0.8+ | 2006 10 28 | 704 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.3− |
| 2002 09 04 | 699 | 0.3+ | 0.6+ | 2006 10 28 | 704 | (1.5− | 0.1−) | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2002 09 04 | 699 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2002 09 04 | 699 | 0.3− | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2002 09 06 | 704 | 0.2+ | 0.2− | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 09 16 | 608 | 0.4− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2002 09 16 | 608 | 1.0− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 09 16 | 608 | 1.0− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2002 10 04 | 704 | 0.8+ | 0.7+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 10 04 | 704 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.4− | 0.7− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.7+ | 0.5− |
| 2002 10 05 | 645 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.6+ | 0.6− |
| 2002 10 05 | 645 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.0− | 0.0 | 2006 11 27 | 703 | 0.7− | 0.8− |
| 2004 02 19 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 1.4+ | 2006 11 27 | 703 | 0.8+ | 1.1− |
| 2004 02 19 | 704 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | | | | |

**(142157)∗ 2002 RB$_{30}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 306.79014 | | (2000.0) | | | |
| $n$ | 0.25246129 | $\omega$ | 136.49166 | | +0.43909904 | −0.89351798 |
| $a$ | 2.4793596 | $\Omega$ | 287.25856 | | +0.79503016 | +0.43511328 |
| $e$ | 0.1048205 | $i$ | 5.64299 | | +0.41847232 | +0.11091464 |
| $P$ | 3.90 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.0 | 0.6+ | 2004 01 29 | 704 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2000 02 03 | 704 | 0.4+ | 0.4+ | 2004 01 29 | 704 | 0.9+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2000 02 03 | 704 | 0.6− | 0.5− | 2004 01 29 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 08 28 | 644 | 0.0 | 0.8+ | 2004 01 29 | 704 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 08 28 | 644 | 0.2+ | 0.9+ | 2004 02 14 | 608 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 08 28 | 644 | 0.2+ | 0.7+ | 2004 02 14 | 608 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2002 09 04 | 699 | 0.7− | 1.1+ | 2004 02 14 | 608 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2002 09 04 | 699 | 1.0+ | 0.8+ | 2004 02 17 | 704 | 1.1+ | 1.0− | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2002 09 04 | 699 | 0.5+ | 0.0 | 2004 02 17 | 704 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2002 09 04 | 699 | 0.2+ | 1.2+ | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | (2.3− | 0.1−) |
| 2002 09 06 | 704 | 0.4− | 0.0 | 2004 02 17 | 704 | 1.2+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.8− |
| 2002 09 06 | 704 | 1.3− | 1.0+ | 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2006 08 25 | D35 | 0.4+ | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.3+ | 2006 08 25 | D35 | 0.5+ | 0.6− | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2006 08 25 | D35 | 0.1+ | 0.3− | 2006 10 21 | 691 | 1.2− | 0.0 |
| 2002 09 13 | 644 | 0.0 | 0.6+ | 2006 08 29 | 699 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2002 09 13 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 699 | 0.6− | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2002 09 17 | 608 | 1.0− | 0.6− | 2006 08 29 | 699 | 1.0− | 0.5− | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2002 09 17 | 608 | 0.6− | 0.2− | 2006 08 29 | 699 | 1.3− | 0.8− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2002 09 17 | 608 | 0.9− | 0.6− | 2006 09 17 | 703 | 0.4+ | 0.5− | 2006 10 23 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | (0.1+ | 1.7+) | 2006 09 17 | 703 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 0.2− | 2006 09 17 | 703 | 0.4+ | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.7− | 0.4− | 2006 10 24 | 644 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2006 09 27 | 703 | 0.1+ | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.5− | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.4− | 1.1+ | 2006 10 29 | 703 | 1.1+ | 0.0 |
| 2004 01 26 | 699 | 0.6− | 0.2+ | 2006 10 01 | 703 | 0.4+ | 1.5+ | 2006 10 29 | 703 | 0.3+ | 0.6− |
| 2004 01 26 | 699 | 1.2− | 0.2− | 2006 10 01 | 703 | 0.2− | 0.4− | 2006 10 29 | 703 | 0.3+ | 1.2− |
| 2004 01 26 | 699 | 0.4− | 1.0+ | 2006 10 01 | 703 | 0.6+ | 1.0+ | 2006 10 29 | 703 | 0.1+ | 0.8− |
| 2004 01 26 | 699 | 0.3+ | 1.4+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | | | | |

**(142158)∗ 2002 RS$_{30}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.06945 | | (2000.0) | | | |
| $n$ | 0.27337149 | $\omega$ | 109.16480 | | +0.67246993 | +0.73933310 |
| $a$ | 2.3512595 | $\Omega$ | 203.20213 | | −0.70749866 | +0.62856433 |
| $e$ | 0.2475429 | $i$ | 4.98236 | | −0.21732429 | +0.24144036 |
| $P$ | 3.61 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 645 | 0.0 | 0.1+ | 2002 09 14 | 608 | 1.5− | 0.7+ | 2005 04 09 | 691 | 0.2+ | 0.3+ |
| 2001 02 22 | 645 | 0.0 | 0.2+ | 2002 10 04 | 704 | 0.6+ | 0.2+ | 2005 05 06 | G96 | 0.0 | 0.5+ |
| 2002 08 11 | 704 | 0.5+ | 0.2+ | 2002 10 04 | 704 | 0.7+ | 0.3+ | 2005 05 06 | G96 | 0.5− | 0.1+ |
| 2002 08 11 | 704 | 0.3+ | 0.5− | 2002 10 04 | 704 | 0.3− | 1.1+ | 2005 05 06 | G96 | 0.2− | 0.2+ |
| 2002 08 11 | 704 | 0.3+ | 0.5+ | 2002 10 04 | 704 | 0.5+ | 1.0+ | 2005 05 06 | G96 | 0.0 | 0.2+ |
| 2002 08 11 | 704 | 0.1− | 0.8+ | 2002 10 04 | 704 | 0.5+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 08 31 | 683 | (2.7+ | 1.4+) | 2002 10 11 | 704 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.3− | 0.5− |
| 2002 08 31 | 683 | 0.1+ | 0.3+ | 2002 10 11 | 704 | 0.9− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2002 08 31 | 683 | 0.2− | 1.3− | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 09 04 | 699 | 0.5− | 0.7+ | 2002 10 11 | 704 | 0.1− | 0.9+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 09 04 | 699 | 0.1− | 0.9+ | 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.6− | 0.4− |
| 2002 09 04 | 699 | 0.3− | 0.4+ | 2004 01 18 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.5− |
| 2002 09 04 | 699 | 0.7− | 0.5+ | 2004 01 18 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2004 01 18 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2002 09 06 | 704 | 0.8+ | 0.1+ | 2005 03 10 | G96 | 0.6− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.3− | | |
| 2002 09 06 | 704 | 0.1+ | 0.3− | 2005 03 10 | G96 | 0.4− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1− | | |
| 2002 09 06 | 704 | 0.8+ | 0.1+ | 2005 03 10 | G96 | 0.4− | 0.0 | 2006 11 20 | 691 | 0.3− | 0.1− | | |
| 2002 09 13 | 644 | 0.3− | 0.5+ | 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.4+ | 0.2+ | | |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2005 04 09 | 691 | 0.0 | 0.4+ | 2006 11 24 | 691 | 0.2− | 0.6+ | | |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2005 04 09 | 691 | 0.4+ | 0.6+ | 2006 11 24 | 691 | 0.1− | 0.4+ | | |
| 2002 09 14 | 608 | 1.2− | 0.6+ | 2005 04 09 | 691 | 0.3+ | 0.0 | 2006 11 24 | 691 | 0.1− | 0.3+ | | |
| 2002 09 14 | 608 | 1.5− | 0.4+ | 2005 04 09 | 691 | 0.3+ | 0.7+ | | | | | | |

**(142159)∗ 2002 RT$_{30}$ = 1998 RZ$_{53}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35386)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 48.34477 | | | (2000.0) | | | | **P** | | | **Q** | | |
| $n$ | 0.24121632 | | $\omega$ | 51.21779 | | | | +0.23782826 | | | +0.96867739 | | |
| $a$ | 2.5558278 | | $\Omega$ | 232.68844 | | | | −0.91668626 | | | +0.19953389 | | |
| $e$ | 0.1183760 | | $i$ | 5.15243 | | | | −0.32112929 | | | +0.14781860 | | |
| $P$ | 4.09 | | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 1.1+ | 1.2+ | 2002 09 14 | 683 | (2.3− | 0.7−) | 2006 08 29 | 703 | 0.5− | 0.1− | | |
| 1998 09 14 | 704 | (2.4− | 0.5+) | 2002 09 14 | 683 | 0.7− | 1.5− | 2006 08 29 | 703 | 0.4+ | 0.2+ | | |
| 1998 09 14 | 704 | 0.7+ | 0.1− | 2002 09 14 | 608 | 0.7− | 0.8− | 2006 08 30 | 704 | (1.5− | 3.0+) | | |
| 1998 09 14 | 704 | 0.6− | 0.7− | 2002 09 14 | 608 | 1.0− | 0.9− | 2006 08 30 | 704 | 0.8+ | 0.2+ | | |
| 1998 09 14 | 704 | (2.2+ | 3.1+) | 2002 09 14 | 608 | 1.0− | 0.5− | 2006 08 30 | 704 | 0.7+ | 0.8+ | | |
| 1998 09 18 | 704 | 1.5− | 1.9+ | 2002 09 30 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 1.0+ | 0.6+ | | |
| 1998 09 18 | 704 | (2.1− | 0.4−) | 2002 09 30 | 704 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.3− | 0.1+ | | |
| 1998 09 18 | 704 | (2.1− | 0.7+) | 2002 09 30 | 704 | 0.6+ | 0.3+ | 2006 09 01 | 704 | 0.8+ | 0.1+ | | |
| 1998 09 18 | 704 | (4.4− | 1.6+) | 2002 09 30 | 704 | 0.6− | 1.4+ | 2006 09 01 | 704 | 0.7+ | 0.1+ | | |
| 2001 04 24 | 699 | 0.0 | 0.5+ | 2002 10 05 | 645 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.1+ | 0.6− | | |
| 2001 04 24 | 699 | 1.1+ | 0.0 | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 01 | 704 | 0.2− | 0.4+ | | |
| 2001 04 24 | 699 | 0.0 | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.6− | 0.6− | | |
| 2001 04 24 | 699 | 0.3− | 0.3− | 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 09 11 | 703 | 0.0 | 1.0− | | |
| 2002 08 16 | 704 | 0.1− | 0.5− | 2005 03 03 | 691 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.5− | 0.6− | | |
| 2002 08 16 | 704 | 0.4+ | 0.1+ | 2005 03 03 | 691 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.4− | 0.5− | | |
| 2002 08 16 | 704 | 0.2+ | 0.3+ | 2005 03 03 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.8+ | 0.3+ | | |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2005 03 13 | 703 | 0.9− | 0.1+ | 2006 09 18 | 704 | 0.3+ | 0.2− | | |
| 2002 08 28 | 644 | 0.2+ | 0.2+ | 2005 03 13 | 703 | 0.7− | 0.1− | 2006 09 18 | 704 | 0.2+ | 0.0 | | |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2005 03 13 | 703 | 0.4− | 0.3− | 2006 09 18 | 704 | 0.3+ | 0.0 | | |
| 2002 09 04 | 699 | 0.1+ | 0.1+ | 2005 03 13 | 703 | 0.8− | 0.3− | 2006 09 19 | 703 | 0.1+ | 1.0− | | |
| 2002 09 04 | 699 | 0.7+ | 0.8+ | 2005 03 31 | 699 | 1.1+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.3− | | |
| 2002 09 04 | 699 | 0.4+ | 0.3+ | 2005 03 31 | 699 | (1.7+ | 1.2+) | 2006 09 19 | 703 | 0.0 | 0.6− | | |
| 2002 09 04 | 699 | 1.2+ | 0.8+ | 2005 03 31 | 699 | 0.6+ | 0.9+ | 2006 09 19 | 703 | (1.0− | 1.6−) | | |
| 2002 09 06 | 704 | 0.4− | 0.6+ | 2005 03 31 | 699 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.4− | 0.6− | | |
| 2002 09 06 | 704 | 0.3− | 0.5+ | 2005 03 31 | 699 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.2+ | 0.3− | | |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2005 03 31 | 699 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.0 | 0.2− | | |
| 2002 09 06 | 704 | 0.0 | 0.1+ | 2005 03 31 | 699 | 1.4− | 0.7− | 2006 09 25 | 704 | 1.3+ | 0.8+ | | |
| 2002 09 06 | 704 | 0.7− | 0.7+ | 2005 03 31 | 699 | 1.0+ | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.5− | | |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2006 08 25 | A50 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.5− | | |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 08 25 | A50 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− | | |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.7− | 0.4− | 2006 10 02 | G96 | 0.2− | 0.5− | | |
| 2002 09 14 | 683 | 0.7− | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.5− | | | | | | |

**(142160)∗ 2002 RN$_{31}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 269.53655 | | | (2000.0) | | | | **P** | | | **Q** | | |
| $n$ | 0.27170530 | | $\omega$ | 166.21584 | | | | −0.58794962 | | | −0.80527262 | | |
| $a$ | 2.3608622 | | $\Omega$ | 319.71920 | | | | +0.73048490 | | | −0.48795913 | | |
| $e$ | 0.0593874 | | $i$ | 6.79476 | | | | +0.34742922 | | | −0.33679652 | | |
| $P$ | 3.63 | | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.6− | 1.7− | 2004 01 16 | 644 | 0.2+ | 0.1+ | 2004 02 18 | 608 | 0.3− | 1.3+ | | |
| 2000 01 04 | 704 | 0.3+ | 1.3− | 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 18 | 608 | 0.3− | 0.4+ | | |
| 2000 01 04 | 704 | 0.6+ | 1.4− | 2004 01 16 | 644 | 0.2+ | 0.3+ | 2004 02 18 | 608 | 0.4+ | 0.4+ | | |
| 2002 08 28 | 644 | 0.3− | 0.5+ | 2004 01 18 | 644 | 0.1+ | 0.0 | 2004 02 24 | 830 | 0.9+ | 0.0 | | |
| 2002 08 28 | 644 | 0.2+ | 0.6+ | 2004 01 18 | 644 | 0.0 | 0.0 | 2004 02 24 | 830 | 1.2+ | 0.8+ | | |
| 2002 08 28 | 644 | 0.2− | 0.4+ | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 02 24 | 830 | 0.1− | 0.3+ | | |
| 2002 09 04 | 699 | 0.3− | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2004 02 26 | 704 | (1.6+ | 0.3+) | | |
| 2002 09 04 | 699 | (2.2− | 1.8+) | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2004 02 26 | 704 | 0.9+ | 0.2+ | | |
| 2002 09 04 | 699 | 0.3− | 0.0 | 2004 01 22 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.4− | | |
| 2002 09 04 | 699 | 1.0− | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2004 02 26 | 704 | 0.1− | 1.5+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.1− | 2004 02 26 | 704 | 0.0 | 0.7+ | | |
| 2002 09 06 | 704 | 0.7+ | 1.3+ | 2004 01 26 | 699 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.8+ | 0.4− | | |
| 2002 09 06 | 704 | 1.2+ | 0.9+ | 2004 01 26 | 699 | 0.7+ | 0.5− | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2004 01 26 | 699 | 1.1− | 0.5− | 2006 10 19 | 703 | 0.9+ | 0.5− | | |
| 2002 09 13 | 644 | 0.8− | 0.7+ | 2004 01 26 | 699 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.2− | 0.2+ | | |
| 2002 09 13 | 644 | 0.6− | 0.7+ | 2004 01 30 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 703 | 0.3− | 0.5− | | |
| 2002 09 13 | 644 | 0.5− | 0.7+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | (0.1+ | 2.3+) | | |
| 2002 09 17 | 644 | 0.3− | 0.2− | 2004 01 30 | 704 | 0.0 | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2002 09 17 | 644 | 0.4− | 0.2− | 2004 01 30 | 704 | 0.3− | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.3− | | |
| 2002 09 17 | 644 | 0.4− | 0.0 | 2004 01 30 | 704 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.3− | | |
| 2002 09 18 | 644 | 0.4− | 0.8+ | 2004 01 31 | 691 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.4− | 0.1− | | |
| 2002 09 18 | 644 | 0.5− | 0.9+ | 2004 01 31 | 691 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.7− | 0.5− | | |
| 2002 09 18 | 644 | 0.3− | 1.2+ | 2004 01 31 | 691 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 1.1− | | |
| 2002 10 01 | 699 | 0.9− | 0.6+ | 2004 02 10 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.6− | | |
| 2002 10 01 | 699 | 0.9+ | 0.3+ | 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.2+ | | |
| 2002 10 01 | 699 | (1.4− | 2.3+) | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 11 15 | 703 | 1.0+ | 1.2+ | | |
| 2002 10 01 | 699 | 0.9− | 0.5+ | 2004 02 11 | 333 | 0.0 | 0.2+ | 2006 11 15 | 703 | (1.7+ | 0.1−) | | |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2004 02 11 | 333 | 0.0 | 0.3+ | 2006 11 15 | 703 | 1.0+ | 0.1− | | |
| 2002 10 04 | 704 | 0.0 | 0.3+ | 2004 02 11 | 333 | 0.7− | 0.5+ | 2006 11 17 | 644 | 0.2− | 0.0 | | |
| 2002 10 04 | 704 | 0.1− | 0.4+ | 2004 02 11 | 333 | 0.1− | 0.6+ | 2006 11 17 | 644 | 0.0 | 0.1− | | |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2004 02 11 | 333 | 0.3+ | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.0 | | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 11 | 333 | 0.4− | 0.1+ | 2006 11 22 | 703 | 0.6− | 0.4+ | | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 16 | 704 | (1.5− | 4.8+) | 2006 11 22 | 703 | 0.3+ | 0.1− | | |
| 2004 01 16 | 644 | 0.2− | 0.1+ | 2004 02 16 | 704 | 0.7+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.9− | | |
| 2004 01 16 | 644 | 0.2+ | 0.2+ | 2004 02 16 | 704 | (1.6+ | 6.9−) | 2006 11 22 | 703 | 0.3− | 0.5− | | |
| 2004 01 16 | 644 | 0.1+ | 0.1+ | 2004 02 16 | 704 | (2.7− | 7.6+) | | | | | | |

**(142161)∗ 2002 RR$_{31}$ = 1998 SB$_{109}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 35387)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 296.68889 | | | (2000.0) | | | | **P** | | | **Q** | | |
| $n$ | 0.23694377 | | $\omega$ | 165.75738 | | | | +0.46564044 | | | −0.88271230 | | |
| $a$ | 2.5864605 | | $\Omega$ | 256.45815 | | | | +0.80545016 | | | +0.45231581 | | |
| $e$ | 0.1896917 | | $i$ | 3.72901 | | | | +0.36664563 | | | +0.12739469 | | |
| $P$ | 4.16 | | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.9+ | 0.4+ | 2002 09 17 | 644 | 0.4− | 0.4+ | 2004 02 19 | 704 | 0.4− | 0.3+ | | |
| 1998 09 26 | 704 | 0.1− | 0.5− | 2002 09 17 | 644 | 0.6− | 0.5+ | 2004 02 19 | 704 | 0.3+ | 0.6− | | |
| 1998 09 26 | 704 | 0.7− | 0.7− | 2002 09 18 | 644 | 0.5− | 0.5+ | 2004 02 19 | 704 | 0.1− | 0.0 | | |
| 1998 09 26 | 704 | 0.1+ | 0.0 | 2002 09 18 | 644 | 0.1− | 0.6+ | 2004 02 19 | 704 | 0.2+ | 0.5+ | | |
| 1998 09 27 | 704 | 1.1+ | 0.8+ | 2002 09 18 | 644 | 0.3− | 0.5+ | 2004 02 19 | 704 | 0.5− | 0.9+ | | |
| 1998 09 27 | 704 | 1.0+ | 1.1+ | 2002 09 30 | 704 | 1.0− | 0.2+ | 2004 02 23 | 704 | 0.2+ | 0.2− | | |
| 1998 09 27 | 704 | 0.4+ | 1.0+ | 2002 09 30 | 704 | 1.2− | 1.2+ | 2004 02 23 | 704 | 0.2− | 0.7+ | | |
| 1998 09 27 | 704 | 1.0− | 1.3+ | 2002 09 30 | 704 | 0.9− | 0.7+ | 2004 02 23 | 704 | 0.3− | 0.7− | | |
| 1998 09 27 | 704 | 0.1− | 0.3+ | 2002 09 30 | 704 | 0.9− | 0.4+ | 2004 02 23 | 704 | 0.0 | 0.3+ | | |
| 1999 01 18 | 691 | 0.5+ | 0.0 | 2002 09 30 | 704 | 0.7− | 1.5+ | 2004 03 15 | 704 | 0.3+ | 1.4+ | | |
| 1999 01 18 | 691 | 0.1− | 0.5− | 2002 10 04 | 704 | 0.5+ | 0.1− | 2004 03 15 | 704 | 1.2+ | 1.5+ | | |
| 1999 01 18 | 691 | 0.4− | 0.3− | 2002 10 04 | 704 | 0.2+ | 0.5+ | 2004 03 15 | 704 | 0.9+ | 1.6+ | | |
| 2002 08 28 | 644 | 0.2− | 0.0 | 2002 10 04 | 704 | 0.1− | 0.3+ | 2004 03 27 | 703 | 1.2+ | 0.7+ | | |
| 2002 08 28 | 644 | 0.0 | 0.7+ | 2002 10 04 | 704 | 0.5+ | 0.4+ | 2004 03 27 | 703 | 0.7− | 0.2+ | | |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2002 10 04 | 704 | 0.6+ | 0.3+ | 2004 03 27 | 703 | 0.2+ | 0.9− | | |
| 2002 09 04 | 699 | 0.5− | 0.5+ | 2002 10 05 | 645 | 0.1+ | 0.1− | 2004 03 27 | 703 | 1.9− | 0.6+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.7− | 1.0+ | 2002 10 05 | 645 | 0.1+ | 0.2− | 2006 08 24 | 704 | 1.2+ | 0.2+ |
| 2002 09 04 | 699 | 0.5− | 0.4+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 08 24 | 704 | 1.2+ | 0.3+ |
| 2002 09 04 | 699 | 0.0 | 0.4+ | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.3+ | 1.3+ |
| 2002 09 06 | 704 | 0.5+ | 0.2+ | 2004 02 14 | 608 | 0.8+ | 0.2− | 2006 08 24 | 704 | 0.3+ | 0.7+ |
| 2002 09 06 | 704 | 0.4+ | 0.2− | 2004 02 14 | 608 | 0.4+ | 0.9− | 2006 08 28 | 699 | 0.4− | 1.2+ |
| 2002 09 06 | 704 | 0.4+ | 0.1+ | 2004 02 14 | 608 | 0.4+ | 0.6− | 2006 08 28 | 699 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 0.3− | 0.5+ | 2004 02 15 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.1− | 0.6+ |
| 2002 09 06 | 704 | 1.2+ | 0.1+ | 2004 02 15 | 644 | 0.1− | 0.1+ | 2006 08 28 | 699 | (3.9− | 0.0 ) |
| 2002 09 11 | 644 | 0.0 | 1.2+ | 2004 02 15 | 644 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.9+ | 0.6− |
| 2002 09 11 | 644 | 0.1− | 1.2+ | 2004 02 17 | 608 | 0.1+ | 0.5− | 2006 09 14 | 703 | 0.2+ | 0.4− |
| 2002 09 11 | 644 | 1.1− | 0.4+ | 2004 02 17 | 608 | 0.2− | 1.0+ | 2006 09 14 | 703 | 1.1− | 1.8− |
| 2002 09 14 | 608 | 1.4− | 0.6− | 2004 02 17 | 608 | 0.0 | 0.4− | 2006 09 14 | 703 | 1.0− | 0.9− |
| 2002 09 14 | 608 | 1.3− | 1.2− | 2004 02 18 | 683 | 0.0 | 1.1+ | 2006 09 28 | 691 | 0.3+ | 0.1+ |
| 2002 09 14 | 608 | 1.3− | 0.5− | 2004 02 18 | 683 | 1.6+ | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.2− |
| 2002 09 17 | 644 | (0.4− | 2.5+) | 2004 02 18 | 683 | 0.1+ | 1.3+ | 2006 09 28 | 691 | 0.1− | 0.4+ |

**(142162)∗ 2002 RY$_{31}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.05000 | | (2000.0) | | +0.85366255 | +0.51837597 |
| $n$ | 0.23840988 | $\omega$ | 101.10064 | | −0.50051684 | +0.78972024 |
| $a$ | 2.5758459 | $\Omega$ | 227.69822 | | −0.14402484 | +0.32806751 |
| $e$ | 0.1560840 | $i$ | 3.91236 | | | |
| $P$ | 4.13 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 691 | 0.1+ | 0.0 | 2002 09 17 | 644 | 0.1− | 0.5+ | 2006 08 29 | 703 | 0.4+ | 0.6− |
| 2001 03 31 | 691 | 0.0 | 0.4+ | 2002 09 17 | 644 | 0.2− | 0.2+ | 2006 08 29 | 703 | 1.2+ | 0.7+ |
| 2001 03 31 | 691 | 0.1+ | 0.0 | 2002 09 17 | 644 | 0.4− | 0.3+ | 2006 08 29 | 703 | 0.7− | 0.1+ |
| 2002 08 16 | 704 | 0.1− | 1.4− | 2002 09 30 | 704 | 0.2− | 0.8+ | 2006 08 29 | 703 | 0.4− | 0.0 |
| 2002 08 16 | 704 | 1.0+ | 0.9− | 2002 09 30 | 704 | 0.6− | 1.3+ | 2006 08 30 | 704 | 0.1− | 0.4− |
| 2002 08 16 | 704 | 0.0 | 0.2− | 2002 09 30 | 704 | 1.2− | 0.2+ | 2006 08 30 | 704 | 0.4− | 0.6− |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2002 10 04 | 704 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.3+ | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2002 10 04 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.7− | 0.5− |
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2002 10 04 | 704 | 0.5+ | 0.9+ | 2006 08 30 | 704 | 0.0 | 0.9− |
| 2002 09 04 | 699 | 0.4+ | 0.3+ | 2002 10 04 | 704 | 0.4+ | 0.9+ | 2006 09 14 | 703 | 0.0 | 0.7− |
| 2002 09 04 | 699 | 0.3− | 1.5+ | 2002 10 04 | 704 | 0.0 | 1.4+ | 2006 09 14 | 703 | 0.6− | 0.2− |
| 2002 09 04 | 699 | 0.2+ | 0.3− | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.3− |
| 2002 09 04 | 699 | 0.3+ | 0.8+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.9− | 0.9− |
| 2002 09 06 | 704 | 0.5− | 0.6− | 2005 03 14 | G96 | 0.5− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.4− | 2005 03 14 | G96 | 0.5− | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.1+ |
| 2002 09 06 | 704 | 0.0 | 0.8+ | 2005 03 14 | G96 | 0.8− | 0.4− | 2006 09 15 | 691 | 0.8+ | 0.6− |
| 2002 09 06 | 704 | 0.9− | 0.3+ | 2005 03 14 | G96 | 0.5− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.2− | 1.1+ | 2005 03 17 | 691 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 09 11 | 644 | 0.4− | 0.7− | 2005 03 17 | 691 | 0.0 | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.1− |
| 2002 09 11 | 644 | 0.4− | 0.7− | 2005 03 17 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2002 09 11 | 644 | 0.3− | 0.4− | 2005 05 02 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2002 09 13 | 683 | (3.1− | 2.4+) | 2005 05 02 | 691 | 0.3+ | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2002 09 13 | 683 | 1.3+ | 1.6+ | 2005 05 02 | 691 | 0.0 | 0.1+ | 2006 09 24 | 699 | 0.2+ | 0.4+ |
| 2002 09 13 | 683 | 1.4− | 0.8− | 2006 08 28 | 699 | 0.3− | 0.1+ | 2006 09 24 | 699 | 0.3+ | 0.8− |
| 2002 09 13 | 644 | 0.2− | 0.3+ | 2006 08 28 | 699 | 0.6− | 0.2− | 2006 09 24 | 699 | 0.7− | 0.7+ |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 1.5− | 0.9+ | 2006 09 24 | 699 | 0.0 | 0.8+ |
| 2002 09 13 | 644 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.1+ | 0.2+ | | | | |

**(142163)∗ 2002 RF$_{32}$ = 1997 CW$_{20}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 35387)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.57407 | | (2000.0) | | +0.48593373 | +0.87138425 |
| $n$ | 0.26012869 | $\omega$ | 325.98297 | | −0.76527101 | +0.38690015 |
| $a$ | 2.4303970 | $\Omega$ | 332.90633 | | −0.42217140 | +0.30165835 |
| $e$ | 0.2080734 | $i$ | 8.52454 | | | |
| $P$ | 3.79 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.8− | 0.0 | 2002 09 12 | 683 | 0.6+ | 0.5+ | 2006 09 17 | 703 | 0.3+ | 0.6− |
| 1997 02 03 | 691 | 0.8+ | 0.0 | 2002 09 12 | 683 | (1.7+ | 0.6−) | 2006 09 28 | 703 | 0.0 | 0.5− |
| 1997 02 03 | 691 | 0.0 | 0.4− | 2002 09 13 | 644 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.4− | 0.5− |
| 1997 02 13 | 691 | 0.2+ | 0.6− | 2002 09 13 | 644 | 0.1− | 0.1+ | 2006 09 28 | 703 | 1.4− | 0.6+ |
| 1997 02 13 | 691 | 0.1− | 0.2+ | 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.3− |
| 1997 02 13 | 691 | 0.1− | 0.4+ | 2002 09 14 | 683 | 0.2− | 1.2+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 1998 07 24 | 566 | 0.4+ | 1.0− | 2002 09 14 | 683 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 1998 07 24 | 566 | 0.1− | 1.2− | 2002 09 14 | 683 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1998 07 24 | 566 | 0.1+ | 0.6− | 2002 09 16 | 683 | 1.2− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | 0.3+ | 0.2− | 2002 09 16 | 683 | (3.8− | 1.5+) | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 08 12 | 704 | 0.1− | 0.0 | 2002 09 18 | 644 | 0.8− | 0.9− | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 08 12 | 704 | 0.0 | 0.2− | 2002 09 18 | 644 | 0.7− | 0.9− | 2006 10 17 | A50 | 0.4+ | 0.2− |
| 2002 08 12 | 704 | 0.1+ | 0.2− | 2002 09 18 | 644 | 0.2− | 0.7− | 2006 10 17 | A50 | 0.2− | 0.2+ |
| 2002 08 14 | 699 | 0.1− | 0.2+ | 2002 09 30 | 704 | 0.2+ | 0.4+ | 2006 10 18 | A50 | 0.3+ | 0.6+ |
| 2002 08 14 | 699 | 0.2+ | 0.9+ | 2002 09 30 | 704 | 0.2+ | 0.1+ | 2006 10 18 | A50 | 0.4+ | 0.9+ |
| 2002 08 14 | 699 | 1.4+ | 0.2+ | 2002 09 30 | 704 | 0.9− | 0.3+ | 2006 10 19 | 703 | 0.9− | 0.9− |
| 2002 08 14 | 699 | 0.4+ | 0.2+ | 2002 09 30 | 704 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.1+ |
| 2002 08 21 | 644 | 0.1− | 0.3+ | 2002 09 30 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 1.1− |
| 2002 08 21 | 644 | 0.8− | 0.2+ | 2002 10 04 | 704 | 1.3+ | 0.3− | 2006 10 19 | 703 | 0.7+ | 0.5+ |
| 2002 08 21 | 644 | 0.6− | 0.3+ | 2002 10 04 | 704 | 0.2+ | 0.7− | 2006 10 22 | 644 | 0.4+ | 0.3− |
| 2002 09 04 | 699 | 0.2+ | 0.4+ | 2002 10 04 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 09 04 | 683 | 1.0+ | 0.2− | 2002 10 04 | 704 | 0.6− | 0.3− | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2002 09 04 | 699 | 0.6− | 0.3+ | 2002 10 05 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 09 04 | 683 | (1.9− | 0.3+) | 2002 10 05 | 644 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2002 09 04 | 699 | 0.1− | 0.3+ | 2002 10 05 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.3− | 0.3− |
| 2002 09 04 | 699 | 0.7+ | 1.2+ | 2002 10 06 | 644 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.3− | 0.2− |
| 2002 09 06 | 704 | 0.0 | 0.2− | 2002 10 06 | 644 | 0.1+ | 0.2− | 2006 10 27 | 703 | 1.1+ | 0.6+ |
| 2002 09 06 | 704 | 0.0 | 0.7− | 2002 10 06 | 644 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.1+ |
| 2002 09 06 | 704 | 0.4− | 0.5− | 2005 04 14 | 703 | (1.1− | 1.7−) | 2006 10 27 | 703 | 0.7− | 1.4+ |
| 2002 09 06 | 704 | 0.1− | 0.6− | 2005 04 14 | 703 | 0.5− | 1.0− | 2006 11 15 | 703 | 0.5+ | 1.0− |
| 2002 09 06 | 704 | 0.1+ | 0.7− | 2005 04 14 | 703 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.8+ | 1.0− |
| 2002 09 10 | 608 | 0.2− | 0.9+ | 2005 04 14 | 703 | 0.5+ | 0.9+ | 2006 11 15 | 703 | 0.7− | 0.4+ |
| 2002 09 10 | 608 | 0.1+ | 0.5+ | 2006 09 17 | 703 | (1.6+ | 1.1−) | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2002 09 10 | 608 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.6− | 1.1− | | | | |
| 2002 09 12 | 683 | (0.4+ | 1.8+) | 2006 09 17 | 703 | 0.7− | 0.3− | | | | |

**(142164)∗ 2002 RG$_{32}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 93.34860 | | (2000.0) | | +0.04102092 | +0.99743349 |
| $n$ | 0.26117058 | $\omega$ | 307.90968 | | −0.88224728 | +0.00858998 |
| $a$ | 2.4239289 | $\Omega$ | 324.30745 | | −0.46899575 | +0.07108200 |
| $e$ | 0.0997030 | $i$ | 5.77270 | | | |
| $P$ | 3.77 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.3+ | 0.4+ | 2002 09 30 | 704 | (0.2− | 2.3+) | 2005 05 10 | 699 | 0.0 | 0.5+ |
| 1993 01 29 | 691 | 0.0 | 0.9+ | 2002 10 04 | 704 | 0.7+ | 0.4+ | 2005 05 11 | 644 | 0.1+ | 0.5+ |
| 1993 01 29 | 691 | 1.1− | 0.4+ | 2002 10 04 | 704 | 0.9− | 0.3+ | 2005 05 11 | 644 | 0.3+ | 0.7+ |
| 1993 01 29 | 691 | 0.1− | 0.2− | 2002 10 04 | 704 | 0.3− | 0.2+ | 2005 05 11 | 644 | 0.4+ | 0.6+ |
| 1993 01 29 | 691 | 0.2+ | 0.4+ | 2002 10 04 | 704 | 0.5+ | 0.1+ | 2005 05 12 | 644 | 0.2+ | 0.4+ |
| 1993 01 29 | 691 | 0.5+ | 0.3− | 2002 10 04 | 704 | 0.2− | 0.9− | 2005 05 12 | 703 | 0.5− | 0.5+ |
| 2001 04 23 | 704 | (1.8+ | 0.9+) | 2002 10 05 | 645 | 0.1+ | 0.0 | 2005 05 12 | 644 | 0.4+ | 0.5+ |
| 2001 04 23 | 704 | 1.2+ | 0.3− | 2002 10 05 | 645 | 0.1+ | 0.1− | 2005 05 12 | 703 | 0.2+ | 0.4− |
| 2001 04 23 | 704 | 0.8+ | 1.5− | 2002 10 10 | 645 | 0.0 | 0.1+ | 2005 05 12 | 703 | 0.6− | 0.4− |
| 2002 09 04 | 699 | 0.0 | 1.5+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2005 05 12 | 703 | 0.2− | 0.5+ |
| 2002 09 04 | 699 | 0.3+ | 0.1+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 12 | 644 | 0.3+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.8+ | 0.5+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2005 05 16 | 644 | 0.7+ | 0.7+ | | |
| 2002 09 04 | 699 | 0.0 | 0.4+ | 2003 12 23 | 704 | 0.5+ | 0.2+ | 2005 05 16 | 644 | 0.0 | 0.5+ | | |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2003 12 23 | 704 | 0.0 | 0.7− | 2005 05 16 | 644 | 0.2+ | 0.7+ | | |
| 2002 09 06 | 704 | 0.3− | 0.4+ | 2003 12 23 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.3− | | |
| 2002 09 06 | 704 | 0.0 | 0.3+ | 2003 12 23 | 704 | 0.6+ | 0.5+ | 2006 09 16 | 703 | 0.7− | 0.2+ | | |
| 2002 09 06 | 704 | 0.9− | 0.2− | 2003 12 28 | 704 | 0.7+ | 0.8+ | 2006 09 16 | 703 | 1.3− | 0.5− | | |
| 2002 09 06 | 704 | 0.4− | 0.2+ | 2003 12 28 | 704 | 1.2+ | 0.7− | 2006 09 16 | 703 | 0.1+ | 1.0+ | | |
| 2002 09 10 | 608 | 0.2+ | 0.9− | 2003 12 28 | 704 | 1.0+ | 0.4+ | 2006 09 20 | 699 | (1.5− | 0.9+) | | |
| 2002 09 10 | 608 | 0.3− | 0.2− | 2003 12 28 | 704 | 1.4+ | 0.7+ | 2006 09 20 | 699 | (1.0+ | 1.7+) | | |
| 2002 09 10 | 608 | 0.3+ | 0.2− | 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.3− | 0.8− | | |
| 2002 09 13 | 644 | 0.6− | 0.5+ | 2003 12 28 | 691 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.3− | 0.7+ | | |
| 2002 09 13 | 644 | 0.4− | 0.6+ | 2003 12 28 | 691 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 2002 09 13 | 644 | 0.5− | 0.5+ | 2005 04 28 | E12 | 0.5+ | 0.3+ | 2006 09 28 | 691 | 0.4− | 0.2+ | | |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2005 04 28 | E12 | 0.7− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2+ | | |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2005 04 28 | E12 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2002 09 14 | 644 | 0.3− | 0.8+ | 2005 04 28 | E12 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2002 09 19 | 644 | 0.0 | 0.8+ | 2005 05 04 | 644 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2002 09 19 | 644 | 0.5− | 0.7+ | 2005 05 04 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.2− | | |
| 2002 09 19 | 644 | 0.9− | 0.6+ | 2005 05 04 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 1.8− | | |
| 2002 09 30 | 704 | 1.3− | 1.3+ | 2005 05 10 | 699 | 0.3− | 0.5+ | 2006 10 17 | 703 | 1.1− | 0.5− | | |
| 2002 09 30 | 704 | (0.5+ | 3.3+) | 2005 05 10 | 699 | 0.1− | 0.9+ | 2006 10 17 | 703 | 0.3− | 0.0 | | |
| 2002 09 30 | 704 | (0.2+ | 1.8+) | 2005 05 10 | 699 | 0.1− | 0.6+ | | | | | | |

**(142165)∗ 2002 RF$_{33}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.32506 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26779150 | $\omega$ | 9.65698 | | +0.89861820 | +0.43431702 | |
| $a$ | 2.3838094 | $\Omega$ | 324.39286 | | −0.40930851 | +0.77897173 | |
| $e$ | 0.1209489 | $i$ | 6.12093 | | −0.15796159 | +0.45229611 | |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.4+ | 0.1− | 2002 10 04 | 704 | 0.2− | 0.8+ | 2004 02 23 | 704 | 0.4+ | 0.9− | | |
| 2002 08 12 | 704 | 0.2− | 1.1+ | 2002 10 04 | 704 | 0.1+ | 1.1+ | 2004 02 23 | 704 | 1.3+ | 0.2+ | | |
| 2002 08 12 | 704 | 0.4+ | 0.8+ | 2002 10 04 | 704 | 0.3+ | 0.1− | 2004 02 23 | 704 | (1.7+ | 1.2+) | | |
| 2002 08 12 | 704 | 0.0 | 1.2+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.2+ | 0.9+ | | |
| 2002 08 12 | 704 | (0.1+ | 1.7+) | 2002 10 05 | 645 | 0.0 | 0.1− | 2004 04 14 | 645 | 0.1+ | 0.1− | | |
| 2002 09 04 | 699 | 0.1+ | 0.0 | 2002 10 10 | 645 | 0.0 | 0.1− | 2004 04 14 | 645 | 0.2− | 0.1− | | |
| 2002 09 04 | 699 | 0.5+ | 0.1− | 2002 10 10 | 645 | 0.1+ | 0.1− | 2005 05 13 | E12 | 0.1+ | 0.4+ | | |
| 2002 09 04 | 699 | 0.0 | 0.9+ | 2002 11 08 | 645 | 0.1− | 0.0 | 2005 05 13 | E12 | 0.1+ | 0.5+ | | |
| 2002 09 04 | 699 | 0.5− | 0.1− | 2002 11 08 | 645 | 0.1− | 0.0 | 2005 05 13 | E12 | 0.4+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2004 01 19 | 691 | 0.1− | 0.4+ | 2005 05 13 | E12 | 0.3− | 0.6+ | | |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.9− | | |
| 2002 09 06 | 704 | 0.2− | 0.3+ | 2004 01 19 | 691 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.9− | 1.0− | | |
| 2002 09 06 | 704 | 1.2− | 1.0+ | 2004 01 22 | 704 | (0.4− | 2.1+) | 2006 10 19 | 703 | 0.2− | 1.0+ | | |
| 2002 09 06 | 704 | 1.0+ | 1.1+ | 2004 01 22 | 704 | 0.6− | 1.4+ | 2006 10 19 | 703 | 0.2+ | 1.2− | | |
| 2002 09 25 | 608 | (1.9− | 0.4+) | 2004 01 22 | 704 | (0.2+ | 1.8+) | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 25 | 608 | (2.2− | 0.4+) | 2004 01 22 | 704 | (0.3+ | 1.9+) | 2006 11 08 | 644 | 0.2+ | 0.1− | | |
| 2002 09 25 | 608 | (1.6− | 0.5+) | 2004 01 22 | 704 | (0.6− | 2.4+) | 2006 11 08 | 644 | 0.2− | 0.3− | | |
| 2002 09 30 | 704 | 0.0 | 0.3+ | 2004 02 14 | 691 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.1− | 0.1+ | | |
| 2002 09 30 | 704 | 1.5− | 0.0 | 2004 02 14 | 691 | 0.3+ | 0.1− | 2006 11 22 | 703 | 1.0+ | 0.1+ | | |
| 2002 09 30 | 704 | 0.0 | 0.7+ | 2004 02 14 | 691 | 0.3+ | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.4+ | | |
| 2002 09 30 | 704 | 0.0 | 0.2+ | 2004 02 22 | 291 | 0.1− | 0.2+ | 2006 11 22 | 703 | (1.6− | 1.8+) | | |
| 2002 10 04 | 704 | 0.3+ | 0.3+ | 2004 02 22 | 291 | 0.1− | 0.4+ | | | | | | |
| 2002 10 04 | 704 | 0.1+ | 0.7+ | 2004 02 22 | 291 | 0.3+ | 0.1− | | | | | | |

**(142166)∗ 2002 RK$_{34}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.19816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25898500 | $\omega$ | 301.46532 | | +0.81759595 | −0.57274855 | |
| $a$ | 2.4375469 | $\Omega$ | 93.54077 | | +0.54634038 | +0.73925318 | |
| $e$ | 0.1976837 | $i$ | 3.39618 | | +0.18179400 | +0.35420875 | |
| $P$ | 3.81 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 26 | 691 | 0.0 | 0.2− | 2002 11 30 | 608 | 0.8− | 0.4− | 2006 11 11 | 703 | 0.0 | 0.3− | | |
| 1996 01 26 | 691 | 0.2+ | 0.1− | 2002 11 30 | 608 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 1996 01 26 | 691 | 0.3− | 0.1− | 2002 11 30 | 608 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.8− | | |
| 2002 09 04 | 699 | 0.1− | 0.1+ | 2002 12 07 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 644 | 0.0 | 0.2− | | |
| 2002 09 04 | 699 | 0.3+ | 0.2− | 2002 12 07 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 644 | 0.2+ | 0.1− | | |
| 2002 09 04 | 699 | 0.2+ | 0.4+ | 2002 12 07 | 704 | (2.1+ | 2.2−) | 2006 11 11 | 644 | 0.1+ | 0.0 | | |
| 2002 09 04 | 699 | 0.2− | 0.4+ | 2004 02 29 | 691 | 0.0 | 0.6+ | 2006 11 14 | 683 | (1.9+ | 0.5−) | | |
| 2002 09 06 | 704 | 0.5+ | 0.0 | 2004 02 29 | 691 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.4+ | 1.3+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.2− | 2004 02 29 | 691 | 0.0 | 0.6+ | 2006 11 14 | 683 | 0.2+ | 1.1+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.4+ | 0.5+ | | |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.8+ | 1.4+ | 2006 11 14 | 683 | 0.8+ | 1.3+ | | |
| 2002 09 06 | 704 | 0.5+ | 0.6− | 2004 03 20 | 704 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.8+ | 0.0 | | |
| 2002 09 16 | 644 | 0.2− | 0.5− | 2004 03 20 | 704 | 1.1+ | 1.3+ | 2006 11 14 | 704 | 0.5+ | 0.9+ | | |
| 2002 09 16 | 644 | 0.1− | 0.5− | 2005 06 28 | G96 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.7+ | | |
| 2002 09 16 | 644 | 0.1− | 0.6− | 2005 06 28 | G96 | 0.1− | 0.2+ | 2006 11 15 | 683 | (2.5+ | 1.5−) | | |
| 2002 09 17 | 608 | 1.3− | 0.3− | 2005 06 28 | G96 | 0.1+ | 0.3+ | 2006 11 15 | 683 | (3.8+ | 0.9+) | | |
| 2002 09 17 | 608 | 1.1− | 0.5− | 2005 06 28 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 683 | 1.4+ | 0.7− | | |
| 2002 09 17 | 608 | 1.4− | 0.1− | 2006 09 14 | 703 | 1.5− | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.8− | | |
| 2002 09 29 | 608 | 0.2− | 1.1+ | 2006 09 14 | 703 | (0.1− | 1.5+) | 2006 11 15 | G96 | 0.4+ | 0.6− | | |
| 2002 09 29 | 608 | 0.4− | 1.2+ | 2006 09 14 | 703 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.6− | | |
| 2002 09 29 | 608 | 0.0 | 1.1+ | 2006 09 14 | 703 | 1.0− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.6− | | |
| 2002 10 01 | 699 | 0.7+ | 0.4+ | 2006 10 22 | 691 | 0.6− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.3+ | | |
| 2002 10 01 | 699 | 0.7− | 0.4+ | 2006 10 22 | 691 | 0.7− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2002 10 01 | 699 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.9− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.4− | | |
| 2002 10 01 | 699 | 0.4− | 0.2+ | 2006 10 27 | 704 | 0.2− | 0.8+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2006 10 27 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.2− | 0.2− | 2006 10 27 | 704 | 0.4− | 0.0 | 2006 11 17 | 704 | 0.7+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.9− | 0.3+ | 2006 10 27 | 683 | (0.8+ | 2.0−) | 2006 11 17 | 704 | 0.6+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2006 10 27 | 683 | 0.6+ | 1.2− | 2006 11 17 | 704 | 0.7+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 10 27 | 683 | (1.6− | 2.2−) | 2006 11 17 | 704 | 0.5+ | 0.4+ | | |
| 2002 10 06 | 704 | 0.1− | 0.3+ | 2006 10 28 | 683 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.5− | | |
| 2002 10 06 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 683 | (0.2+ | 1.8−) | 2006 11 17 | 703 | 0.5+ | 0.5− | | |
| 2002 10 06 | 704 | 0.7− | 0.2+ | 2006 10 28 | 683 | 0.2− | 0.6− | 2006 11 17 | 703 | 0.1+ | 0.3− | | |
| 2002 10 06 | 704 | 0.3− | 0.3− | 2006 10 31 | 683 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.5− | 0.5− | | |
| 2002 10 06 | 704 | 0.2− | 0.0 | 2006 10 31 | 683 | 1.4+ | 1.0− | 2006 11 19 | 704 | 0.3− | 0.6− | | |
| 2002 10 06 | 608 | 0.0 | 0.3+ | 2006 10 31 | 683 | (1.7+ | 0.7−) | 2006 11 19 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 06 | 608 | 0.3− | 0.3+ | 2006 11 02 | 703 | 0.6− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.3+ | | |
| 2002 10 06 | 608 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.0 | | |
| 2002 10 11 | 704 | 0.8+ | 0.0 | 2006 11 02 | 703 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.1+ | | |
| 2002 10 11 | 704 | 1.0+ | 0.1+ | 2006 11 02 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.0 | 0.3− | | |
| 2002 10 11 | 704 | 1.0+ | 0.3− | 2006 11 10 | 683 | 0.6+ | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.3+ | | |
| 2002 10 11 | 704 | (1.7+ | 0.2−) | 2006 11 10 | 683 | 0.9+ | 1.1+ | 2006 11 20 | 704 | 0.1+ | 0.7+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 11 10 | 683 | 0.7− | 1.0+ | 2006 11 20 | 704 | 0.0 | 0.5+ | | |
| 2002 10 16 | 644 | 0.0 | 0.9+ | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 16 | 644 | 0.2+ | 1.1+ | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 16 | 644 | 0.2+ | 1.0+ | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.2− | 0.4− | | |
| 2002 10 29 | 704 | 0.6+ | 0.2+ | 2006 11 11 | 683 | 0.9+ | 0.1− | 2006 11 28 | 704 | 0.2− | 0.2+ | | |
| 2002 10 29 | 704 | 0.2− | 1.4+ | 2006 11 11 | 683 | (1.6+ | 0.8+) | 2006 11 28 | 704 | 0.1− | 0.1+ | | |
| 2002 10 29 | 704 | 0.2+ | 0.0 | 2006 11 11 | 683 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.4− | 0.7+ | | |
| 2002 10 29 | 704 | 0.5− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.7− | | | | | | |

**(142167)∗ 2002 RM$_{34}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.24073 | | (2000.0) | | | |
| $n$ | 0.27283702 | $\omega$ | 58.15449 | | −0.01166050 | −0.99800294 |
| $a$ | 2.3543292 | $\Omega$ | 32.68788 | | +0.87419176 | −0.04031572 |
| $e$ | 0.0511668 | $i$ | 6.60093 | | +0.48544083 | +0.04862892 |
| $P$ | 3.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 1.3− | 0.9− | 2003 12 19 | 704 | (1.3+ | 2.1+) | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 1999 12 15 | 704 | 0.3+ | 0.4− | 2003 12 23 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 1999 12 15 | 704 | 0.5− | 1.1− | 2003 12 23 | 704 | 0.2+ | 0.7− | 2006 10 19 | 691 | 0.4+ | 0.2+ |
| 2000 01 02 | 704 | 1.3+ | 0.0 | 2003 12 23 | 704 | 0.3+ | 0.7− | 2006 10 19 | 691 | 0.3+ | 0.1− |
| 2000 01 02 | 704 | 0.5+ | 0.5− | 2003 12 23 | 704 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2000 01 02 | 704 | 0.9+ | 1.0− | 2003 12 28 | 699 | 0.1− | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2000 01 02 | 704 | 0.3− | 0.9− | 2003 12 28 | 699 | 1.3− | 0.8+ | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2002 09 04 | 699 | 0.5− | 0.1+ | 2003 12 28 | 699 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2002 09 04 | 699 | 0.0 | 1.2+ | 2003 12 28 | 699 | 0.6+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.4− |
| 2002 09 04 | 699 | 0.3+ | 0.4+ | 2004 01 29 | 703 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2002 09 04 | 699 | 0.3+ | 0.1+ | 2004 01 29 | 703 | 0.4+ | 0.3− | 2006 10 29 | 704 | 0.4− | 0.9+ |
| 2002 09 05 | 704 | (1.3+ | 2.0−) | 2004 01 29 | 703 | 0.2+ | 0.1+ | 2006 10 29 | 704 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | (2.5+ | 1.6−) | 2004 01 29 | 703 | (0.5+ | 1.6+) | 2006 10 29 | 704 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | (1.6+ | 2.2−) | 2004 01 30 | 699 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.6+ | 0.2+ |
| 2002 09 05 | 704 | 1.5− | 1.3− | 2004 01 30 | 699 | 0.7− | 0.8+ | 2006 11 14 | 703 | 0.3− | 0.3+ |
| 2002 09 06 | 704 | 0.3+ | 0.1− | 2004 01 30 | 699 | 1.3− | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.3+ | 0.5− | 2004 01 30 | 699 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.8− | 2004 01 30 | 704 | 0.5+ | 0.0 | 2006 11 16 | 704 | 1.1+ | 0.3− |
| 2002 09 08 | 608 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.6− | 0.4+ |
| 2002 09 08 | 608 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.2− | 0.6+ | 2006 11 16 | 704 | 1.2+ | 0.5+ |
| 2002 09 08 | 608 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.7+ | 1.3+ | 2006 11 16 | 704 | 0.2+ | 1.3− |
| 2002 09 13 | 608 | (1.7− | 1.8+) | 2004 01 30 | 704 | 0.1− | 0.9+ | 2006 11 16 | 704 | 0.2+ | 0.1− |
| 2002 09 13 | 608 | (1.6− | 1.9+) | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 1.2− | 0.7− |
| 2002 09 13 | 608 | 1.3− | 1.1+ | 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2002 09 16 | 644 | 0.4− | 0.5+ | 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.7− |
| 2002 09 16 | 644 | 0.5− | 1.4+ | 2004 02 14 | 608 | 1.0+ | 0.5− | 2006 11 16 | 704 | 1.0+ | 0.5− |
| 2002 09 16 | 644 | 0.8− | 0.6+ | 2004 02 14 | 608 | 0.5+ | 0.3− | 2006 11 16 | 704 | 0.5+ | 0.5+ |
| 2002 09 17 | 608 | (2.0− | 1.0+) | 2004 02 14 | 608 | 0.4+ | 0.1− | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2002 09 17 | 608 | (2.1− | 0.7+) | 2004 02 16 | 704 | 0.5+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2002 09 17 | 608 | (2.2− | 0.8+) | 2004 02 16 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 691 | 0.4− | 0.2+ |
| 2002 09 29 | 608 | 0.2− | 0.6− | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2002 09 29 | 608 | 0.2− | 0.4− | 2004 02 16 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2002 09 29 | 608 | 0.3− | 0.4− | 2004 02 16 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | 1.0− | 0.8+ | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.8− | 0.3+ | 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2002 10 03 | 704 | 0.9− | 0.1− | 2004 02 27 | 704 | 0.1− | 0.7+ | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2004 02 27 | 704 | 0.3− | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2002 10 06 | 704 | 0.6− | 0.8+ | 2004 02 27 | 704 | (2.2+ | 0.0 ) | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2002 10 06 | 704 | 0.4− | 1.0+ | 2004 03 14 | 704 | 0.3+ | 1.4+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 10 06 | 704 | 0.7− | 1.0+ | 2004 03 14 | 704 | 0.5+ | 0.7+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.7+ | 1.5+ | 2004 03 14 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 10 06 | 704 | (0.5− | 1.6+) | 2004 03 14 | 704 | 1.3+ | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.2− |
| 2002 10 06 | 608 | 0.6+ | 0.5+ | 2004 03 14 | 704 | 0.0 | 0.8+ | 2006 11 22 | 704 | 0.5+ | 0.7− |
| 2002 10 06 | 608 | 0.3+ | 0.8+ | 2004 03 19 | 644 | 0.5+ | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.6− |
| 2002 10 06 | 608 | 1.0+ | 1.3+ | 2004 03 19 | 644 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.5− |
| 2002 10 07 | 704 | 0.0 | 0.3+ | 2004 03 19 | 644 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.7− |
| 2002 10 07 | 704 | 0.9− | 0.5+ | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.2− |
| 2002 10 07 | 704 | 0.6− | 0.5+ | 2004 03 20 | 704 | 0.7+ | 0.9+ | 2006 11 23 | 703 | 0.2− | 0.3− |
| 2002 10 07 | 704 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 11 23 | 703 | 0.0 | 0.5− |
| 2002 10 11 | 704 | (0.4+ | 1.6+) | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 11 23 | 703 | 0.3+ | 0.0 |
| 2002 10 11 | 704 | (1.8+ | 1.3+) | 2004 03 20 | 704 | 1.0+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2002 10 11 | 704 | (0.1− | 1.7+) | 2006 09 16 | 703 | 0.0 | 0.9+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 10 11 | 704 | 0.7+ | 0.1+ | 2006 09 16 | 703 | (0.3+ | 2.3+) | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 10 11 | 704 | 0.3− | 1.2+ | 2006 09 16 | 703 | 0.1+ | 0.9+ | 2006 11 24 | 703 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 1.1+ | 1.0+ | 2006 09 16 | 703 | 0.1+ | 1.2+ | 2006 11 24 | 703 | 1.4− | 0.9− |
| 2002 10 11 | 704 | (0.9− | 1.9+) | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 24 | 703 | 0.7− | 0.7− |
| 2002 10 16 | 644 | 0.8− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 24 | 703 | 0.6+ | 1.1− |
| 2002 10 16 | 644 | 0.7− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2002 10 16 | 644 | 0.8− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2003 12 19 | 704 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2003 12 19 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 28 | 704 | 0.3− | 0.2+ |
| 2003 12 19 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 0.5− | 0.2− |

**(142168)∗ 2002 RC$_{35}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.42206 | | (2000.0) | | | |
| $n$ | 0.26781817 | $\omega$ | 113.83422 | | +0.13767399 | −0.98684533 |
| $a$ | 2.3836511 | $\Omega$ | 327.89254 | | +0.84082368 | +0.16166719 |
| $e$ | 0.0785993 | $i$ | 9.17482 | | +0.52350875 | −0.00013498 |
| $P$ | 3.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.3− | 0.7− | 2004 01 18 | 644 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.0 | 0.5+ |
| 1999 12 12 | 704 | 0.5− | 0.4− | 2004 01 19 | 703 | 0.1− | 0.2+ | 2004 02 26 | 704 | 1.3+ | 1.0+ |
| 1999 12 12 | 704 | 0.5+ | 0.1− | 2004 01 19 | 703 | 1.3− | 0.1+ | 2004 02 26 | 704 | 1.0+ | 0.2− |
| 1999 12 12 | 704 | 0.1+ | 0.1+ | 2004 01 19 | 703 | 0.8− | 0.1+ | 2004 02 26 | 704 | 0.7+ | 0.5+ |
| 2002 08 12 | 704 | 1.4+ | 0.7− | 2004 01 19 | 703 | 0.6− | 0.9+ | 2004 02 26 | 704 | 0.6+ | 0.3+ |
| 2002 08 12 | 704 | 0.8+ | 0.4− | 2004 01 22 | 704 | 0.8+ | 0.1+ | 2004 02 26 | 704 | 1.1+ | 0.1+ |
| 2002 08 12 | 704 | 0.1+ | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.6− | 2004 03 18 | 704 | 0.2+ | 0.9+ |
| 2002 08 28 | 644 | 0.1− | 0.2− | 2004 01 22 | 704 | 0.6+ | 0.6+ | 2004 03 18 | 704 | 0.1+ | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.6+ | 0.1− | 2004 03 18 | 704 | 0.3+ | 0.2+ |
| 2002 08 28 | 644 | 0.2− | 0.3+ | 2004 01 22 | 704 | 0.7+ | 0.6− | 2004 03 18 | 704 | 0.0 | 0.1+ |
| 2002 09 04 | 699 | (0.3− | 1.5+) | 2004 01 23 | 699 | 1.1− | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.4+ |
| 2002 09 04 | 699 | 0.3− | 0.6+ | 2004 01 23 | 699 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.3− | 0.3+ |
| 2002 09 04 | 699 | 0.3+ | 0.4+ | 2004 01 23 | 699 | 0.8− | 0.2− | 2006 09 17 | 703 | 0.8+ | 0.6+ |
| 2002 09 04 | 699 | 1.3− | 0.9+ | 2004 01 23 | 699 | 0.9− | 1.0+ | 2006 09 17 | 703 | 0.7+ | 0.9− |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2004 01 30 | 704 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.3− | 0.3− |
| 2002 09 06 | 704 | 0.3− | 0.9+ | 2004 01 30 | 704 | 0.3+ | 1.2+ | 2006 09 28 | 703 | 0.2+ | 0.6− |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2004 01 30 | 704 | 0.3+ | 0.2− | 2006 09 28 | 703 | 0.5+ | 1.1− |
| 2002 09 06 | 704 | 0.4− | 1.5+ | 2004 01 30 | 704 | 0.5+ | 0.8+ | 2006 09 28 | 703 | 0.5− | 0.5− |
| 2002 09 06 | 704 | 0.2+ | 0.4+ | 2004 02 10 | 644 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.4− | 0.8− |
| 2002 09 13 | 644 | 0.3− | 0.5+ | 2004 02 10 | 644 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2004 02 10 | 644 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.4− | 0.6+ | 2004 02 10 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2004 02 10 | 644 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2004 02 12 | 333 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 09 17 | 608 | 1.2− | 0.3+ | 2004 02 12 | 333 | 0.6− | 0.1− | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2002 09 17 | 608 | 1.2− | 0.8− | 2004 02 12 | 333 | 0.8− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2002 09 17 | 608 | 0.9− | 0.2− | 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.0 | 0.5− |
| 2002 10 04 | 704 | 0.4− | 0.5+ | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.6− | 0.5+ | 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.7− | 1.0+ | 2004 02 17 | 704 | (0.1− | 1.5+) | 2006 11 22 | 703 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.7+ | 0.7+ | 2004 02 17 | 704 | 0.2+ | 0.9+ | 2006 11 22 | 703 | 0.6− | 0.1− |
| 2004 01 18 | 644 | 0.3+ | 0.1+ | 2004 02 17 | 704 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.1− | 0.5− |
| 2004 01 18 | 644 | 0.1+ | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.4+ | | | | |

**(142169)∗ 2002 RS$_{35}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.76563 | | (2000.0) | | | |
| $n$ | 0.23775429 | $\omega$ | 79.02240 | | +0.70079139 | −0.69513860 |
| $a$ | 2.5805789 | $\Omega$ | 324.67319 | | +0.49683806 | +0.63678695 |
| $e$ | 0.2194358 | $i$ | 16.08722 | | +0.51190172 | +0.33359363 |
| $P$ | 4.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 699 | 0.5+ | 0.2− | 2002 09 30 | 704 | 0.1− | 1.9+ | 2004 02 18 | 704 | 0.4− | 0.4+ |
| 1998 09 19 | 699 | 0.6+ | 0.7− | 2002 09 30 | 704 | (0.4+ | 2.1+) | 2004 02 18 | 704 | 0.0 | 0.3− |
| 1998 09 19 | 699 | 0.1+ | 1.7− | 2002 09 30 | 704 | 0.4+ | 1.9+ | 2004 02 18 | 704 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.2+ | 0.1+ | 2002 09 30 | 704 | (1.5+ | 2.1+) | 2004 02 18 | 704 | 0.4− | 0.2+ | | |
| 2000 03 04 | 645 | 0.2+ | 0.2+ | 2002 10 05 | 704 | 0.8− | 0.4+ | 2004 02 22 | 691 | 0.0 | 0.4+ | | |
| 2002 08 12 | 704 | 0.2− | 0.5+ | 2002 10 05 | 704 | 0.4+ | 0.8+ | 2004 02 22 | 691 | 0.2+ | 0.4+ | | |
| 2002 08 12 | 704 | 0.1− | 0.4+ | 2002 10 05 | 704 | 0.2+ | 1.3+ | 2004 02 22 | 691 | 0.1+ | 0.4+ | | |
| 2002 08 12 | 704 | 0.0 | 0.2+ | 2002 10 05 | 704 | 0.5− | 1.1+ | 2004 02 25 | 333 | 0.2− | 0.4+ | | |
| 2002 08 12 | 704 | 0.1+ | 0.4+ | 2002 10 05 | 704 | 0.3− | 1.8+ | 2004 02 25 | 333 | 0.2− | 0.5+ | | |
| 2002 08 12 | 704 | 0.1− | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2004 02 25 | 333 | 0.1+ | 0.3+ | | |
| 2002 08 18 | 608 | 0.3− | 0.4− | 2002 10 10 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.7− | 1.0+ | | |
| 2002 08 18 | 608 | 0.2− | 0.3− | 2002 10 11 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.0 | 0.5+ | | |
| 2002 08 18 | 608 | 0.1− | 0.4− | 2002 10 11 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.4− | 0.5− | | |
| 2002 08 28 | 644 | 0.1− | 0.7+ | 2002 10 13 | 644 | 0.6− | 0.6− | 2004 03 15 | 704 | 0.2+ | 0.4+ | | |
| 2002 08 28 | 644 | 0.0 | 0.9+ | 2002 10 13 | 644 | 0.5+ | 0.7+ | 2004 03 15 | 704 | 0.3+ | 0.6+ | | |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2002 10 13 | 644 | 0.2+ | 0.4+ | 2004 03 21 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 05 | 699 | (1.6− | 2.4+) | 2004 01 18 | 608 | 0.7+ | 0.2− | 2004 03 21 | 691 | 0.2+ | 0.4+ | | |
| 2002 09 05 | 699 | 0.1− | 0.8+ | 2004 01 18 | 608 | 0.1+ | 1.0− | 2004 03 21 | 691 | 0.1+ | 0.3+ | | |
| 2002 09 05 | 699 | 0.3− | 0.0 | 2004 01 18 | 608 | 0.2+ | 0.7− | 2006 08 28 | 703 | 0.4+ | 0.2+ | | |
| 2002 09 05 | 699 | 0.6− | 0.8+ | 2004 01 24 | 704 | 1.8− | 0.3− | 2006 08 28 | 703 | 0.3− | 0.7+ | | |
| 2002 09 06 | 704 | 0.5− | 0.5+ | 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.5− | 1.1+ | | |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.9− | 0.5+ | | |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2004 01 24 | 704 | 0.6+ | 1.0+ | 2006 09 14 | 703 | 1.4− | 0.2+ | | |
| 2002 09 06 | 704 | 0.1− | 0.7+ | 2004 01 24 | 704 | 1.3+ | 1.5+ | 2006 09 14 | 703 | 0.5+ | 0.6+ | | |
| 2002 09 06 | 704 | 0.3− | 0.5+ | 2004 02 11 | 703 | (1.2− | 2.3+) | 2006 09 14 | 703 | 1.4+ | 0.2− | | |
| 2002 09 13 | 644 | 0.5− | 0.5+ | 2004 02 11 | 703 | 0.1− | 0.8− | 2006 09 14 | 703 | 0.8+ | 0.2− | | |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2004 02 11 | 703 | 0.3+ | 0.6− | 2006 09 27 | G96 | 0.2− | 0.3− | | |
| 2002 09 13 | 644 | 0.6− | 0.4+ | 2004 02 11 | 703 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.8− | | |
| 2002 09 15 | 608 | 1.1− | 0.3− | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.4+ | | |
| 2002 09 15 | 608 | 1.2− | 0.2− | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.5+ | | |
| 2002 09 15 | 608 | 1.3− | 0.1− | 2004 02 14 | 691 | 0.2+ | 0.1+ | | | | | | |

**(142170)∗ 2002 RP$_{36}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.77392 | | (2000.0) | | | |
| $n$ | 0.27369632 | $\omega$ | 343.15370 | | +0.86403127 | +0.50210666 |
| $a$ | 2.3493988 | $\Omega$ | 346.52337 | | −0.44190543 | +0.72159955 |
| $e$ | 0.1150382 | $i$ | 9.03328 | | −0.24118364 | +0.47663717 |
| $P$ | 3.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.2− | 0.1− | 2002 09 14 | 608 | (0.3− | 1.9+) | 2006 10 11 | 644 | 0.3− | 0.0 | | |
| 1995 07 26 | 691 | 0.3− | 0.1− | 2002 09 14 | 608 | (0.6− | 1.9+) | 2006 10 19 | 703 | 0.4− | 0.3− | | |
| 1995 07 26 | 691 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.6− | 0.1+ | 2006 10 19 | 703 | (1.6− | 0.6−) | | |
| 2002 07 30 | 608 | 1.0+ | 1.2+ | 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.7− | | |
| 2002 07 30 | 608 | (1.8+ | 0.4+) | 2002 09 15 | 644 | 0.6− | 0.5+ | 2006 10 19 | 703 | 0.7+ | 0.5− | | |
| 2002 07 30 | 608 | 1.1+ | 0.9+ | 2002 10 03 | 704 | (0.4− | 1.5+) | 2006 10 22 | 644 | 0.3− | 0.3+ | | |
| 2002 08 11 | 644 | 0.2− | 0.0 | 2002 10 03 | 704 | 0.8+ | 0.9+ | 2006 10 22 | 644 | 0.4− | 0.1+ | | |
| 2002 08 11 | 644 | 0.4− | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.2+ | | |
| 2002 08 11 | 644 | 0.3− | 0.0 | 2002 10 03 | 704 | 0.2+ | 1.4+ | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2002 08 12 | 699 | 1.2+ | 0.6+ | 2003 12 29 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 644 | 0.2+ | 0.8+ | | |
| 2002 08 12 | 699 | 0.1+ | 0.8− | 2003 12 29 | 704 | 1.1+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1− | | |
| 2002 08 12 | 699 | 0.6+ | 0.1+ | 2003 12 29 | 704 | 0.6+ | 0.3− | 2006 10 27 | 703 | 0.6− | 0.1− | | |
| 2002 08 12 | 699 | (1.5+ | 0.0 ) | 2003 12 29 | 704 | 0.4+ | 0.9− | 2006 10 27 | 703 | 0.5− | 0.2− | | |
| 2002 08 14 | 704 | (1.8+ | 2.0−) | 2004 01 16 | 699 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.8− | 0.4− | | |
| 2002 08 14 | 704 | 0.2− | 0.5− | 2004 01 16 | 699 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.5− | | |
| 2002 08 14 | 704 | 0.7+ | 0.9− | 2004 01 16 | 699 | 1.1+ | 1.4+ | 2006 11 15 | 703 | 0.6+ | 0.3− | | |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2004 01 16 | 699 | 0.4− | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.5+ | | |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2005 05 11 | 644 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.2+ | 0.6+ | | |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2005 05 11 | 644 | 0.2+ | 0.9+ | 2006 11 15 | 703 | 0.4− | 0.8+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.1− | 2005 05 11 | 644 | 0.2− | 0.9+ | 2006 11 15 | 703 | 1.0+ | 0.8+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2005 05 16 | 644 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.0 | 0.8+ | | |
| 2002 09 05 | 704 | 0.5− | 0.1− | 2005 05 16 | 644 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.6+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.2− | 0.8+ | 2005 05 16 | 644 | 0.1− | 0.7+ | 2006 11 15 | 703 | 0.1+ | 0.8− | | |
| 2002 09 05 | 704 | 0.2− | 1.0− | 2006 09 28 | 703 | 0.2+ | 1.0− | 2006 11 22 | 703 | 0.5− | 0.1− | | |
| 2002 09 06 | 704 | 0.5− | 0.4+ | 2006 09 28 | 703 | 0.5+ | 0.3− | 2006 11 22 | 703 | 0.8− | 0.1− | | |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2006 09 28 | 703 | 0.0 | 0.3− | 2006 11 22 | 703 | 0.6− | 0.1− | | |
| 2002 09 06 | 704 | 0.1+ | 0.7− | 2006 09 28 | 703 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.4+ | | |
| 2002 09 06 | 704 | 1.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 | | | | | | |
| 2002 09 14 | 608 | (0.2+ | 1.6+) | 2006 10 11 | 644 | 0.0 | 0.2+ | | | | | | |

**(142171)∗ 2002 RE$_{38}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.25183 | | (2000.0) | | | |
| $n$ | 0.26991110 | $\omega$ | 310.09108 | | +0.81171325 | +0.58384670 |
| $a$ | 2.3713130 | $\Omega$ | 14.21003 | | −0.51460256 | +0.72759665 |
| $e$ | 0.1888152 | $i$ | 3.65309 | | −0.27623505 | +0.36017517 |
| $P$ | 3.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.6+ | 0.9− | 2002 09 05 | 704 | 0.9+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1− | | |
| 1995 11 16 | 691 | 0.1− | 0.7− | 2002 09 05 | 704 | 0.0 | 1.3+ | 2006 09 30 | G96 | 0.2− | 0.2+ | | |
| 1995 11 16 | 691 | 0.2− | 0.3− | 2002 09 05 | 608 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.1− | | |
| 2001 03 24 | 691 | 0.0 | 0.3− | 2002 09 05 | 608 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.4− | 0.4+ | | |
| 2001 03 24 | 691 | 0.3+ | 0.5+ | 2002 09 05 | 608 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.5+ | | |
| 2001 03 24 | 691 | 0.3+ | 0.7+ | 2002 09 06 | 704 | 0.2− | 1.0− | 2006 10 21 | 691 | 0.8− | 0.4+ | | |
| 2002 07 24 | 644 | 0.3− | 1.4+ | 2002 09 06 | 704 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 07 24 | 644 | 0.2+ | 1.3+ | 2002 09 06 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 07 24 | 644 | 0.0 | 1.2+ | 2002 09 10 | 608 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 2002 08 10 | 704 | 0.0 | 0.2+ | 2002 09 10 | 608 | 0.4− | 1.3+ | 2006 11 11 | 703 | 0.8− | 0.8+ | | |
| 2002 08 10 | 704 | 0.2+ | 0.1+ | 2002 09 10 | 608 | 0.5− | 1.2+ | 2006 11 11 | 703 | 0.4+ | 0.1− | | |
| 2002 08 10 | 704 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.7+ | | |
| 2002 08 10 | 704 | 1.2+ | 0.1− | 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.0 | | |
| 2002 08 10 | 704 | 0.2+ | 0.5+ | 2002 09 15 | 644 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2002 08 14 | 704 | 0.1+ | 0.7− | 2003 12 21 | 645 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2002 08 14 | 704 | 1.2+ | 1.2+ | 2003 12 21 | 645 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2002 08 14 | 704 | (2.9− | 2.7+) | 2004 01 22 | 704 | 0.2− | 0.6+ | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2002 08 14 | 704 | 0.3− | 0.2+ | 2004 01 22 | 704 | 0.2− | 0.9+ | 2006 11 18 | 704 | 0.9− | 0.2− | | |
| 2002 08 17 | 608 | 1.0− | 0.1− | 2004 01 22 | 704 | 1.2− | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.9+ | | |
| 2002 08 17 | 608 | 0.9− | 0.3− | 2005 04 11 | 691 | 0.2− | 0.6+ | 2006 11 18 | 704 | 0.5− | 0.5− | | |
| 2002 08 17 | 608 | 1.0− | 0.6− | 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.4+ | | |
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.7+ | | |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.6+ | | |
| 2002 08 18 | 644 | 0.2− | 0.6+ | 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.4+ | | |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2005 04 12 | 691 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.3− | 0.4+ | | |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.8− | 1.9+ | | |
| 2002 08 30 | 644 | 0.2− | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.7+ | | |
| 2002 09 05 | 704 | 0.7+ | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.1+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.4+ | | |
| 2002 09 05 | 704 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.1− | | | | | | |

**(142172)∗ 2002 RK$_{39}$ = 2004 DR$_{77}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75536)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.70068 | | (2000.0) | | | |
| $n$ | 0.26045075 | $\omega$ | 285.98125 | | +0.85864800 | +0.51164025 |
| $a$ | 2.4283930 | $\Omega$ | 43.25830 | | −0.45141743 | +0.78329850 |
| $e$ | 0.2118492 | $i$ | 2.57495 | | −0.24278779 | +0.35308315 |
| $P$ | 3.78 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2004 01 22 | 704 | 0.0 | 1.1+ | 2006 09 27 | 691 | 0.3− | 0.2+ | | |
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1− | | |
| 2002 07 09 | 704 | 0.3+ | 0.8+ | 2004 02 16 | 691 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1− | | |
| 2002 07 09 | 704 | 0.0 | 0.8+ | 2004 02 16 | 691 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.2− | | |
| 2002 07 09 | 704 | 0.6+ | 0.4+ | 2005 03 09 | G96 | (1.7− | 0.5−) | 2006 10 13 | D35 | 0.0 | 0.1+ | | |
| 2002 07 09 | 704 | 0.2− | 0.6+ | 2005 03 09 | G96 | 0.0 | 1.1− | 2006 10 13 | D35 | 0.0 | 0.2+ | | |
| 2002 07 09 | 704 | 0.7+ | 0.9+ | 2005 03 09 | G96 | 0.3+ | 0.2− | 2006 10 13 | D35 | 0.1+ | 0.1+ | | |
| 2002 08 10 | 704 | 0.3− | 0.1− | 2005 03 09 | G96 | 0.5− | 0.4+ | 2006 10 18 | H07 | 0.5+ | 0.4− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 704 | 0.1+ | 0.1− | 2005 03 11 | 691 | 0.4+ | 0.5+ | 2006 10 18 | H07 | 0.3+ | 0.1− |
| 2002 08 10 | 704 | 0.1+ | 0.2+ | 2005 03 11 | 691 | 0.5+ | 0.5+ | 2006 10 18 | H07 | 0.1+ | 0.0 |
| 2002 08 10 | 704 | 0.3+ | 0.1+ | 2005 03 11 | 691 | 0.6+ | 0.4+ | 2006 10 18 | H07 | 0.1− | 0.0 |
| 2002 08 10 | 704 | 0.5− | 0.4+ | 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 08 11 | 608 | 0.6+ | 1.1+ | 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 08 11 | 608 | 1.0+ | 0.6+ | 2005 03 17 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 08 11 | 608 | 0.8+ | 0.7+ | 2005 04 02 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2002 08 14 | 704 | 0.5− | 0.2+ | 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.0 |
| 2002 08 14 | 704 | 1.0− | 0.2+ | 2005 04 02 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.0− | 0.0 |
| 2002 08 14 | 704 | 1.2− | 0.2+ | 2005 04 04 | 704 | 0.9+ | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.0 |
| 2002 08 14 | 704 | 0.1− | 0.0 | 2005 04 04 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 14 | 704 | 1.0− | 0.3− | 2005 04 04 | 704 | (0.8+ | 1.5+) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 08 18 | 644 | 0.3− | 0.3+ | 2005 04 05 | 699 | (2.7+ | 0.6+) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2005 04 05 | 699 | (0.6+ | 2.1+) | 2006 10 23 | 704 | (2.0+ | 0.1−) |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2005 04 05 | 699 | (0.9− | 2.2+) | 2006 10 23 | 704 | 0.5− | 0.2+ |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2005 04 05 | 699 | 0.4− | 0.5+ | 2006 10 23 | 704 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2005 04 11 | 691 | 0.1− | 0.4+ | 2006 10 23 | 704 | 0.4− | 0.7− |
| 2002 08 29 | 644 | 0.5− | 0.4+ | 2005 04 11 | 691 | 0.2− | 0.3+ | 2006 10 23 | 704 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.2− | 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.0 |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2005 05 06 | G96 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2005 05 06 | G96 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.1− | 0.4− | 2005 05 06 | G96 | 0.2− | 0.4+ | 2006 10 28 | 704 | 0.4− | 0.3+ |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2005 05 06 | G96 | 0.2− | 0.2+ | 2006 10 28 | 704 | (1.9− | 2.3+) |
| 2002 09 06 | 704 | 0.0 | 0.2− | 2006 09 16 | 699 | 0.4+ | 0.6+ | 2006 10 28 | 704 | 1.2− | 0.5− |
| 2002 09 06 | 704 | 0.7− | 0.3− | 2006 09 16 | 699 | 0.4+ | 0.2+ | 2006 10 28 | 704 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.8+ | 0.4+ | 2006 09 16 | 699 | 0.1− | 0.7+ | 2006 10 28 | 704 | 0.7− | 1.1+ |
| 2002 09 06 | 704 | 0.1+ | 0.3− | 2006 09 16 | 699 | 0.7− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 09 07 | 608 | 0.9+ | 0.3− | 2006 09 17 | 704 | 0.5− | 0.5+ | 2006 11 01 | 691 | 1.2+ | 1.0+ |
| 2002 09 07 | 608 | 0.9+ | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.3+ | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2002 09 07 | 608 | 0.4+ | 0.9− | 2006 09 17 | 704 | 0.2+ | 1.1− | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2002 09 13 | 704 | 0.3− | 0.6+ | 2006 09 17 | 704 | 0.6− | 0.5+ | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2002 09 13 | 704 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.5− | 0.2− |
| 2002 09 13 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2002 09 15 | 644 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 09 15 | 644 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.9+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 2002 09 15 | 644 | 0.5− | 0.0 | 2006 09 20 | 704 | 0.0 | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2002 10 29 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.9− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2002 10 29 | 704 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.8− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 10 29 | 704 | 0.3− | 0.9+ | 2006 09 20 | 704 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2002 10 29 | 704 | 0.2− | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.8− | 0.2− |
| 2002 11 03 | 608 | 0.9− | 0.1− | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2002 11 03 | 608 | 0.7− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2002 11 03 | 608 | 0.4− | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 2003 12 21 | 691 | 0.0 | 0.8− | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2003 12 21 | 691 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2003 12 21 | 691 | 0.6+ | 0.2− | 2006 09 24 | 608 | (1.2+ | 2.1−) | 2006 11 13 | 704 | 0.6+ | 1.0− |
| 2003 12 28 | 691 | 0.1+ | 0.1− | 2006 09 24 | 608 | (1.2+ | 2.4−) | 2006 11 13 | 704 | 0.5+ | 0.1+ |
| 2003 12 28 | 691 | 0.2− | 0.1+ | 2006 09 24 | 608 | (0.9+ | 2.0−) | 2006 11 13 | 704 | 0.1− | 0.9+ |
| 2003 12 28 | 691 | 0.1− | 0.3+ | 2006 09 27 | 704 | 1.3+ | 0.0 | 2006 11 21 | 704 | 1.1+ | 0.2+ |
| 2004 01 22 | 704 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2004 01 22 | 704 | 0.9+ | 0.8+ | 2006 09 27 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.9− | 0.7+ |
| 2004 01 22 | 704 | 0.5+ | 0.9+ | 2006 09 27 | 691 | 0.4− | 0.1+ | | | | |
| 2004 01 22 | 704 | 0.0 | 0.6+ | 2006 09 27 | 691 | 0.2− | 0.3+ | | | | |

**(142173)∗ 2002 RN$_{39}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 319.34780 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.25432977 | $\omega$ | 63.13391 | | | +0.61043357 | | −0.79180010 | |
| $a$ | 2.4672013 | $\Omega$ | 349.17224 | | | +0.68228590 | | +0.53884541 | |
| $e$ | 0.1623336 | $i$ | 6.28890 | | | +0.40231431 | | +0.28757300 | |
| $P$ | 3.88 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.5− | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.3+ |
| 2000 01 04 | 704 | 0.4+ | 0.5− | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.9+ | 0.2+ |
| 2000 01 04 | 704 | 0.6− | 1.8− | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2000 01 04 | 704 | 0.3− | 0.4− | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.4− | 0.5+ | 2004 03 18 | 691 | 0.1− | 0.6+ | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2004 03 18 | 691 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2004 03 27 | 691 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2004 03 27 | 691 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2004 03 27 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 1.2+ | 2006 08 17 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 1.0− | 0.7+ |
| 2002 09 05 | 704 | 0.4+ | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2006 08 17 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.4− | 0.1− |
| 2002 09 05 | 704 | 0.4− | 1.0+ | 2006 08 21 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.5+ |
| 2002 09 05 | 704 | 0.4+ | 0.3− | 2006 08 21 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.5− | 0.3+ |
| 2002 09 06 | 704 | 0.5+ | 0.1− | 2006 08 21 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.4− | 0.4+ |
| 2002 09 06 | 704 | 0.3+ | 0.5− | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.6+ |
| 2002 09 06 | 704 | 1.1− | 1.3+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.2− |
| 2002 09 06 | 704 | 0.3− | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.2− |
| 2002 09 15 | 644 | 0.9− | 1.0+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.7+ |
| 2002 09 15 | 644 | 0.7− | 0.9+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2002 09 15 | 644 | 0.7− | 1.1+ | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.4+ | 0.4+ |
| 2002 09 16 | 644 | 0.8− | 0.1+ | 2006 08 25 | 704 | 0.2− | 0.4− | 2006 09 29 | 704 | 0.2+ | 0.1− |
| 2002 09 16 | 644 | 0.5− | 0.1+ | 2006 08 25 | 704 | 1.3− | 0.5+ | 2006 09 30 | 704 | 1.0− | 0.8+ |
| 2002 09 16 | 644 | 0.4− | 0.1+ | 2006 08 25 | 704 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.7+ | 0.2+ |
| 2002 09 26 | 699 | 0.8− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.1− |
| 2002 09 26 | 699 | 0.6− | 0.1− | 2006 08 28 | 691 | 0.5− | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.6+ |
| 2002 09 26 | 699 | 0.9+ | 0.6+ | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 10 01 | 703 | 0.2+ | 0.3+ |
| 2002 09 26 | 699 | 1.0− | 0.4− | 2006 09 01 | 704 | 0.4− | 0.6+ | 2006 10 01 | 703 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.8+ | 2006 09 01 | 704 | 0.4− | 0.2+ | 2006 10 01 | 703 | 0.6− | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 09 01 | 704 | 0.3− | 0.5− | 2006 10 01 | 703 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | (0.1+ | 1.8+) | 2006 09 01 | 704 | 0.5+ | 0.7− | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2006 09 01 | 704 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2004 01 23 | 704 | 0.6+ | 0.1− | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2004 01 23 | 704 | (2.1+ | 0.4−) | 2006 09 15 | 691 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.3− |
| 2004 01 23 | 704 | 0.5− | 1.4+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2004 01 23 | 704 | 0.6+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 1.5+ | 0.0 | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.6+ |
| 2004 01 30 | 704 | 1.5+ | 1.1+ | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2004 01 30 | 704 | 1.2+ | 0.8+ | 2006 09 16 | 699 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2004 02 11 | 699 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2004 02 11 | 644 | 0.4− | 0.9+ | 2006 09 17 | 704 | 0.5+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2004 02 11 | 699 | (2.5+ | 2.3+) | 2006 09 17 | 704 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2004 02 11 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2004 02 11 | 699 | 0.4− | 0.5− | 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 1.1− | 0.1− |
| 2004 02 11 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 2004 02 11 | 699 | 0.1− | 0.7+ | 2006 09 19 | 703 | 1.0+ | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2004 02 17 | 704 | (2.4− | 1.0+) | 2006 09 19 | 699 | 0.5+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2004 02 17 | 704 | 0.0 | 0.9+ | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 11 14 | G96 | 0.4− | 0.2− |
| 2004 02 17 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 703 | 0.4+ | 0.7− | 2006 11 14 | 644 | 0.2+ | 0.2+ |
| 2004 02 17 | 704 | 1.1− | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2004 02 23 | 704 | 0.0 | 0.7+ | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 11 14 | 644 | 0.0 | 0.2− |
| 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.6− | 2006 11 14 | 644 | 0.1− | 0.2+ |
| 2004 02 23 | 704 | 0.3− | 0.3− | 2006 09 20 | 704 | 0.0 | 0.3+ | | | | |
| 2004 02 23 | 704 | 1.2− | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.5+ | | | | |

**(142174)∗ 2002 RO$_{39}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.92412 | | (2000.0) | | | |
| $n$ | 0.26394040 | $\omega$ | 232.18460 | | +0.92209520 | +0.38484236 |
| $a$ | 2.4069411 | $\Omega$ | 105.14916 | | −0.34055850 | +0.85671363 |
| $e$ | 0.1919185 | $i$ | 2.40220 | | −0.18373992 | +0.34342120 |
| $P$ | 3.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 27 | 644 | 0.2+ | 0.2− | 2004 01 19 | 691 | 0.3− | 0.1− | 2006 09 30 | 703 | 1.2− | 0.2− |
| 2002 06 27 | 644 | 0.4+ | 0.1+ | 2004 01 22 | 704 | 0.5+ | 1.3+ | 2006 09 30 | 703 | 1.0− | 0.6− |
| 2002 06 27 | 644 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2002 08 18 | 644 | 0.5− | 0.1+ | 2004 01 22 | 704 | 0.9+ | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2002 08 18 | 644 | 0.4− | 0.1+ | 2004 01 22 | 704 | (1.6+ | 1.0+) | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2002 08 18 | 644 | 0.5− | 0.0 | 2004 01 22 | 704 | (1.9+ | 0.2−) | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2004 01 28 | 691 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2002 08 29 | 644 | 0.5− | 0.5+ | 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2005 04 11 | G96 | 0.4− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2005 04 11 | G96 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 09 01 | 644 | 0.9− | 0.3+ | 2005 04 11 | G96 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 09 01 | 644 | 0.4− | 0.0 | 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 0.9+ | 2005 04 12 | G96 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2005 04 12 | G96 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 0.2− | 1.3+ | 2005 04 12 | G96 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.7+ | 0.5+ |
| 2002 09 05 | 704 | 0.4− | 0.7− | 2005 04 12 | G96 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 09 05 | 704 | (1.9+ | 0.5−) | 2005 04 12 | G96 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 09 06 | 704 | 0.2+ | 1.1+ | 2005 04 12 | G96 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2002 09 06 | 704 | 1.3+ | 0.0 | 2005 04 12 | G96 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.3+ | 0.5+ | 2005 04 12 | G96 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2002 09 06 | 704 | 0.6+ | 0.2+ | 2005 04 12 | G96 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.2− | 0.1+ | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 09 15 | 644 | 0.4− | 0.1+ | 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.2+ | 2005 04 16 | 691 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.3+ |
| 2002 09 30 | 608 | 0.3+ | 0.3− | 2005 04 16 | 691 | 0.5+ | 0.2+ | 2006 11 13 | 703 | (0.1− | 2.2+) |
| 2002 09 30 | 608 | 0.8− | 0.6− | 2005 04 16 | 691 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 1.2+ | 1.4+ |
| 2002 09 30 | 608 | 0.1− | 0.1+ | 2005 04 27 | 621 | 0.1− | 0.5+ | 2006 11 13 | 703 | (1.4+ | 2.3+) |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2005 04 27 | 621 | 0.1− | 0.1+ | 2006 11 13 | 703 | 1.1+ | 0.1+ |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2005 04 27 | 621 | 1.1− | 0.3+ | | | | |

**(142175)∗ 2002 RB$_{40}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.68310 | | (2000.0) | | | |
| $n$ | 0.25960427 | $\omega$ | 247.46422 | | +0.94132240 | −0.33555215 |
| $a$ | 2.4336689 | $\Omega$ | 132.12119 | | +0.32484532 | +0.87157545 |
| $e$ | 0.2195091 | $i$ | 2.80432 | | +0.09158418 | +0.35743669 |
| $P$ | 3.80 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 04 | 691 | 0.3− | 0.7− | 2004 02 14 | 691 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 1991 12 04 | 691 | 0.0 | 1.5− | 2004 03 17 | 691 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 1991 12 04 | 691 | 0.3+ | 1.5− | 2004 03 17 | 691 | 0.5+ | 1.0+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2000 01 13 | 691 | 0.2+ | 0.5+ | 2004 03 17 | 691 | 0.3+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2000 01 13 | 691 | 0.4+ | 0.8+ | 2005 05 10 | G96 | 0.8− | 0.3− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2000 01 13 | 691 | 0.7+ | 0.3+ | 2005 05 10 | G96 | 0.6− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 05 21 | 691 | 1.1− | 0.1− | 2005 05 10 | G96 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2001 05 21 | 691 | 0.2+ | 0.0 | 2005 05 10 | G96 | 0.8− | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.1− |
| 2001 05 21 | 691 | 0.1+ | 0.4+ | 2006 08 21 | 704 | 0.2− | 0.3− | 2006 10 15 | 703 | 0.3− | 0.1+ |
| 2002 08 08 | 599 | 0.0 | 0.1− | 2006 08 21 | 704 | 0.4+ | 0.1− | 2006 10 15 | 703 | 0.5− | 0.4− |
| 2002 08 08 | 599 | 0.0 | 0.1− | 2006 08 21 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 08 08 | 599 | 0.1+ | 0.0 | 2006 08 21 | 704 | 0.6+ | 1.0+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 08 10 | 704 | 0.2− | 0.0 | 2006 08 25 | 704 | 0.7− | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 08 10 | 704 | 1.3+ | 0.4+ | 2006 08 25 | 704 | 0.6− | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2002 08 10 | 704 | 0.9− | 1.4+ | 2006 08 25 | 704 | 0.8− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 08 10 | 704 | (2.0− | 0.6+) | 2006 08 25 | 704 | (1.2− | 1.5+) | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 08 10 | 704 | 0.5− | 0.1− | 2006 08 25 | 704 | 0.5− | 0.8− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 08 12 | 699 | 1.2+ | 0.1− | 2006 08 28 | 703 | 1.1− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 08 12 | 699 | 1.2+ | 0.3+ | 2006 08 28 | 703 | 0.8− | 0.8− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 08 12 | 699 | 0.4+ | 0.4+ | 2006 08 28 | 703 | (1.7− | 0.3−) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 12 | 699 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.2− | 2006 10 22 | 704 | 0.7− | 0.2+ |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 22 | 704 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 22 | 704 | 0.8− | 0.5+ |
| 2002 08 29 | 644 | 0.3− | 1.0+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 22 | 704 | 0.9− | 0.5+ |
| 2002 09 05 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 699 | 0.5− | 0.1+ | 2006 10 22 | 704 | 1.1− | 0.7+ |
| 2002 09 05 | 704 | 0.5+ | 0.7+ | 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 10 27 | 704 | (1.4− | 1.7+) |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.3− | 0.0 | 2006 10 27 | 704 | 0.1+ | 1.0+ |
| 2002 09 05 | 704 | 0.2+ | 1.1+ | 2006 09 20 | 699 | 0.1+ | 0.4− | 2006 10 27 | 704 | 0.6− | 0.7+ |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 704 | 0.4+ | 0.8+ |
| 2002 09 06 | 704 | 0.3− | 0.9+ | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 704 | (0.7− | 1.6+) |
| 2002 09 06 | 704 | 0.2− | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2002 09 06 | 704 | 0.2− | 0.5+ | 2006 09 26 | 704 | 0.6+ | 0.5− | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2002 09 06 | 704 | 0.4− | 1.0+ | 2006 09 26 | 704 | 0.8+ | 0.2− | 2006 11 07 | 644 | 0.5− | 0.4+ |
| 2002 09 13 | 704 | 1.0− | 0.6− | 2006 09 26 | 704 | 0.4+ | 0.7− | 2006 11 13 | 703 | 0.5+ | 0.1+ |
| 2002 09 13 | 704 | 0.5+ | 1.2− | 2006 09 26 | 704 | 0.1− | 0.4+ | 2006 11 13 | 703 | 1.1+ | 0.2+ |
| 2002 09 13 | 704 | 1.3+ | 0.9− | 2006 09 26 | 704 | 0.4− | 0.7− | 2006 11 13 | 703 | 0.1+ | 0.7+ |
| 2002 09 13 | 704 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2002 09 13 | 704 | (0.3+ | 1.7−) | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.2− | 1.1+ |
| 2002 09 13 | 704 | 0.5− | 1.1− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 11 14 | 704 | (0.1− | 2.4+) |
| 2002 09 13 | 704 | (0.5+ | 1.8+) | 2006 09 28 | 704 | (0.7+ | 1.7−) | 2006 11 14 | 704 | (1.7+ | 3.2−) |
| 2002 09 13 | 704 | 0.1+ | 0.5− | 2006 09 28 | 704 | 1.0+ | 0.4− | 2006 11 14 | 704 | (1.3+ | 2.1−) |
| 2002 09 16 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.4− | 0.8− | 2006 11 14 | 704 | (2.0− | 2.4−) |
| 2002 09 16 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.6+ | 1.0+ |
| 2002 09 16 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.8− | 2006 11 20 | 704 | 2.5+ | 0.3− |
| 2002 10 29 | 704 | 0.3− | 1.4+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2002 10 29 | 704 | 0.4+ | 1.4+ | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 20 | 704 | 1.3+ | 1.1+ |
| 2002 10 29 | 704 | 0.4− | 1.2+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 1.2− | 1.2+ |
| 2004 02 14 | 691 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.3− | | | | |
| 2004 02 14 | 691 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.3− | | | | |

**(142176)∗ 2002 RE$_{40}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 269.48617 | | (2000.0) | | | |
| $n$ | 0.17344226 | $\omega$ | 239.95648 | | +0.76568738 | +0.64243601 |
| $a$ | 3.1844377 | $\Omega$ | 80.05083 | | −0.57853738 | +0.70933811 |
| $e$ | 0.2149435 | $i$ | 1.83873 | | −0.28110020 | +0.29002659 |
| $P$ | 5.68 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.3− | 0.6− | 2002 09 06 | 704 | 0.5− | 0.2+ | 2003 12 17 | 691 | 0.2+ | 0.3+ |
| 2000 03 03 | 704 | 0.1+ | 0.4+ | 2002 09 06 | 704 | 0.3− | 0.1+ | 2003 12 17 | 691 | 0.1+ | 0.4+ |
| 2000 03 03 | 704 | 0.1+ | 0.8+ | 2002 09 06 | 704 | 0.2+ | 0.7+ | 2005 03 10 | G96 | 0.3− | 0.3+ |
| 2000 03 03 | 704 | 0.2+ | 1.4+ | 2002 09 06 | 704 | 0.4− | 0.3+ | 2005 03 10 | G96 | 0.1+ | 0.3+ |
| 2001 04 28 | 691 | 0.4+ | 0.0 | 2002 09 15 | 644 | 0.0 | 0.5+ | 2005 03 10 | G96 | 0.0 | 0.3+ |
| 2001 04 28 | 691 | 0.5+ | 0.0 | 2002 09 15 | 644 | 0.1+ | 0.7+ | 2005 03 10 | G96 | 0.5− | 0.2+ |
| 2001 04 28 | 691 | 0.6+ | 0.2+ | 2002 09 15 | 644 | 0.1+ | 0.6+ | 2006 03 26 | G96 | 0.4+ | 0.4+ |
| 2001 05 14 | 691 | 0.5− | 0.2+ | 2002 09 16 | 644 | 1.0− | 0.1+ | 2006 03 26 | G96 | 0.0 | 0.3+ |
| 2001 05 14 | 691 | 0.2− | 0.5+ | 2002 09 16 | 644 | 0.0 | 0.4+ | 2006 03 26 | G96 | 0.1+ | 0.0 |
| 2001 05 14 | 691 | 0.2− | 0.4+ | 2002 09 16 | 644 | 0.8− | 0.4+ | 2006 03 26 | G96 | 0.2+ | 0.3+ |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2002 10 03 | 704 | 0.2+ | 0.4+ | 2006 03 26 | G96 | 0.2+ | 0.5+ |
| 2002 08 29 | 644 | 0.3+ | 0.1+ | 2002 10 03 | 704 | 0.6+ | 0.6− | 2006 03 26 | G96 | 0.2+ | 0.5+ |
| 2002 08 29 | 644 | 0.1+ | 0.2+ | 2002 10 03 | 704 | 0.6+ | 1.7+ | 2006 03 26 | G96 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2002 10 03 | 704 | 0.2+ | 0.2+ | 2006 05 05 | G96 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2003 11 21 | 704 | 0.7− | 1.2+ | 2006 05 05 | G96 | 0.4+ | 0.2+ |
| 2002 09 05 | 704 | 0.4− | 0.1− | 2003 11 21 | 704 | 0.5− | 0.3+ | 2006 05 05 | G96 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 1.0− | 0.0 | 2003 11 21 | 704 | 0.4− | 0.0 | 2006 05 05 | G96 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 1.0− | 0.6+ | 2003 12 17 | 691 | 0.2+ | 0.5+ | | | | |

**(142177)∗ 2002 $RT_{40}$ = 2003 $YO_{164}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65359)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 296.02386 | | (2000.0) | | | |
| $n$ | 0.18572945 | $\omega$ | 237.17949 | | +0.67833860 | +0.73385015 |
| $a$ | 3.0423945 | $\Omega$ | 75.57918 | | −0.66095489 | +0.63106664 |
| $e$ | 0.1393059 | $i$ | 2.15045 | | −0.32092891 | +0.25143357 |
| $P$ | 5.31 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.3+ | 0.4+ | 2003 11 21 | 704 | 0.0 | 0.2− | 2005 03 10 | G96 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.2+ | 0.4+ | 2003 11 21 | 704 | 1.2+ | 1.5− | 2006 03 26 | G96 | 0.2− | 0.2+ |
| 2002 08 29 | 644 | 0.5+ | 0.5+ | 2003 12 17 | 691 | 0.0 | 0.2+ | 2006 03 26 | G96 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2003 12 17 | 691 | 0.3− | 0.2− | 2006 03 26 | G96 | 0.6+ | 0.3+ |
| 2002 09 05 | 704 | 1.6− | 0.2+ | 2003 12 17 | 691 | 0.2− | 0.2+ | 2006 03 26 | G96 | 0.4+ | 0.5+ |
| 2002 09 05 | 704 | 0.9− | 0.6+ | 2003 12 29 | 691 | 0.0 | 0.2+ | 2006 04 08 | G96 | 0.3+ | 0.1+ |
| 2002 09 06 | 704 | 0.7− | 1.6+ | 2003 12 29 | 691 | 0.0 | 0.3+ | 2006 04 08 | G96 | 0.4+ | 0.2+ |
| 2002 09 06 | 704 | 0.5+ | 0.2− | 2003 12 29 | 691 | 0.1+ | 0.3+ | 2006 04 08 | G96 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.6+ | 2004 12 20 | G96 | 0.0 | 0.2+ | 2006 05 19 | G96 | 0.2+ | 0.3+ |
| 2002 09 06 | 704 | 0.7+ | 1.6+ | 2004 12 20 | G96 | 0.0 | 0.1+ | 2006 05 19 | G96 | 0.3− | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2004 12 20 | G96 | 0.4+ | 0.0 | 2006 05 19 | G96 | 0.1− | 0.5+ |
| 2002 09 16 | 644 | 0.0 | 0.4+ | 2004 12 20 | G96 | 0.1+ | 0.2− | 2006 05 19 | G96 | 0.2+ | 0.5+ |
| 2002 09 16 | 644 | 0.1+ | 0.2+ | 2005 01 16 | 691 | 0.5+ | 0.3+ | 2006 05 20 | G96 | 0.1+ | 0.1− |
| 2002 09 16 | 608 | 0.7− | 0.1− | 2005 01 16 | 691 | 0.3+ | 0.6+ | 2006 05 20 | G96 | 0.3− | 0.8+ |
| 2002 09 16 | 608 | 0.5− | 0.6− | 2005 01 16 | 691 | 0.5− | 0.2+ | 2006 05 20 | G96 | 0.2+ | 0.2+ |
| 2002 09 16 | 644 | 0.4+ | 0.2+ | 2005 03 10 | G96 | 0.4− | 0.2− | 2006 05 20 | G96 | 0.2+ | 0.3+ |
| 2002 09 16 | 608 | 0.8− | 0.4− | 2005 03 10 | G96 | 0.2+ | 0.7− | | | | |
| 2003 11 21 | 704 | 0.2+ | 0.7− | 2005 03 10 | G96 | 0.1+ | 0.2+ | | | | |

**(142178)∗ 2002 $RW_{41}$ = 2004 $CH_{23}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61282)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.12397 | | (2000.0) | | | |
| $n$ | 0.24438457 | $\omega$ | 355.67447 | | +0.95944259 | −0.28110059 |
| $a$ | 2.5336903 | $\Omega$ | 20.68959 | | +0.26041450 | +0.85488535 |
| $e$ | 0.1368814 | $i$ | 3.45131 | | +0.10795464 | +0.43606592 |
| $P$ | 4.03 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.4− | 0.1+ | 2004 01 30 | 704 | 0.8− | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.1− |
| 2002 08 20 | 644 | 0.2− | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.1− | 2005 05 14 | G96 | 0.5− | 0.2+ |
| 2002 08 20 | 644 | 0.2− | 0.6+ | 2004 01 30 | 704 | 1.1+ | 0.2− | 2005 05 14 | G96 | 0.5− | 0.2+ |
| 2002 08 29 | 644 | 0.3+ | 0.2+ | 2004 01 30 | 704 | (0.0 | 1.6+) | 2006 08 18 | 699 | 0.8− | 0.8+ |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 699 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.4+ | 2004 02 12 | 691 | 0.5+ | 0.4+ | 2006 08 18 | 699 | 1.0− | 0.9− |
| 2002 09 03 | 608 | 0.6+ | 0.2+ | 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 08 18 | 699 | 1.4− | 0.2− |
| 2002 09 03 | 608 | 0.7+ | 1.1− | 2004 02 13 | 691 | 0.4+ | 0.4+ | 2006 08 23 | 704 | 0.9+ | 0.5+ |
| 2002 09 03 | 608 | 0.1+ | 0.3− | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2006 08 23 | 704 | 0.2+ | 1.3+ |
| 2002 09 05 | 704 | 1.1+ | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 08 23 | 704 | 0.6− | 0.7+ |
| 2002 09 05 | 704 | 0.3+ | 0.9+ | 2004 02 13 | 691 | 0.0 | 0.4+ | 2006 08 23 | 704 | 0.4+ | 0.8+ |
| 2002 09 05 | 704 | 0.2+ | 0.9+ | 2004 02 13 | 691 | 0.4+ | 0.3+ | 2006 08 28 | 704 | 0.4+ | 0.4+ |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 0.1+ | 1.0+ |
| 2002 09 05 | 704 | 0.9+ | 0.5+ | 2004 02 23 | 704 | 0.1+ | 1.2+ | 2006 08 28 | 691 | 0.1− | 0.5+ |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2004 02 23 | 704 | 0.3− | 1.1+ | 2006 08 28 | 704 | 0.2+ | 1.5+ |
| 2002 09 06 | 704 | 0.4− | 1.4+ | 2004 02 23 | 704 | 0.4− | 1.1+ | 2006 08 28 | 691 | 0.2− | 0.5+ |
| 2002 09 06 | 704 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.7− | 1.1+ | 2006 08 28 | 691 | 0.2− | 0.7+ |
| 2002 09 06 | 704 | 1.0− | 0.5+ | 2004 02 23 | 704 | 0.5− | 1.3+ | 2006 08 28 | 699 | 1.1− | 0.6+ |
| 2002 09 08 | 608 | 0.9− | 0.5− | 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.4− | 0.6+ |
| 2002 09 08 | 608 | 0.7− | 0.5− | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 08 28 | 699 | (0.5− | 1.5+) |
| 2002 09 08 | 608 | 1.0− | 0.4− | 2005 01 17 | 809 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.3+ |
| 2002 09 13 | 608 | 0.5− | 0.3− | 2005 01 17 | 809 | 0.6− | 0.3+ | 2006 09 18 | 699 | (0.9+ | 1.6+) |
| 2002 09 13 | 608 | 0.4− | 0.3+ | 2005 01 17 | 809 | 0.2− | 0.4+ | 2006 09 18 | 699 | 1.1− | 0.8+ |
| 2002 09 13 | 608 | 0.7− | 0.1− | 2005 04 07 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.9+ | 1.0+ |
| 2002 09 15 | 644 | 0.8− | 0.5+ | 2005 04 07 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 1.1+ |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2005 04 07 | 691 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 0.9+ | 1.4− |
| 2002 09 15 | 644 | 0.3− | 0.5+ | 2005 04 09 | 691 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.5+ | 1.5− |
| 2003 12 29 | 291 | 0.5− | 0.5+ | 2005 04 09 | 691 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.6− | 0.5− |
| 2003 12 29 | 291 | 0.0 | 0.5+ | 2005 04 09 | 691 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.5+ |
| 2003 12 29 | 291 | 0.6− | 0.6+ | 2005 04 14 | 691 | 0.4+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 01 16 | 644 | 0.2+ | 0.0 | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2004 01 16 | 644 | 0.3+ | 0.2+ | 2005 04 14 | 691 | 0.6+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2004 01 16 | 644 | 0.7+ | 0.2− | 2005 05 14 | G96 | 0.6− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.3− |

**(142179)∗ 2002 $RL_{43}$ = 2000 $AX_{26}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37821)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.66103 | | (2000.0) | | | |
| $n$ | 0.27236821 | $\omega$ | 2.80467 | | +0.11501275 | −0.99172659 |
| $a$ | 2.3570300 | $\Omega$ | 80.59562 | | +0.91026518 | +0.08223816 |
| $e$ | 0.1727920 | $i$ | 3.31293 | | +0.39773028 | +0.09856597 |
| $P$ | 3.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 699 | 0.6− | 0.2− | 2004 03 15 | 703 | 1.3− | 0.1− | 2006 10 26 | 185 | 1.1+ | 0.2− |
| 1999 12 03 | 699 | 0.3− | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 10 26 | 185 | 0.4+ | 0.1− |
| 1999 12 03 | 699 | 0.3− | 0.2+ | 2004 03 15 | 703 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.1− | 0.0 |
| 2000 01 03 | 704 | 0.3− | 0.9− | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 704 | 0.1− | 0.7+ |
| 2000 01 03 | 704 | 0.1+ | 0.2− | 2004 03 15 | 703 | 0.1− | 0.2+ | 2006 10 28 | 704 | 0.9− | 0.7+ |
| 2000 01 03 | 704 | 0.1− | 1.2− | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2006 10 28 | 704 | 0.7− | 0.7+ |
| 2000 01 03 | 704 | 0.0 | 1.2− | 2004 03 15 | 703 | 0.1− | 0.3+ | 2006 10 28 | 704 | 0.1− | 1.3+ |
| 2000 01 03 | 704 | 0.6− | 0.8− | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.2− |
| 2000 01 04 | 704 | 0.2− | 0.7− | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2000 01 04 | 704 | 0.0 | 0.3− | 2004 03 15 | 185 | 0.8− | 0.9+ | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2000 01 04 | 704 | 0.0 | 1.2− | 2004 03 15 | 185 | 0.1− | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2000 01 04 | 704 | 0.4+ | 0.8− | 2004 03 15 | 185 | 0.4+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2000 01 07 | 704 | 0.1+ | 0.0 | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2000 01 07 | 704 | 1.3+ | 0.7+ | 2004 03 18 | 691 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2000 01 07 | 704 | 0.1− | 0.3− | 2004 03 18 | 691 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2000 01 07 | 704 | 0.1− | 0.8− | 2004 03 20 | 704 | (0.9+ | 1.6+) | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2000 01 07 | 704 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.1− | 1.2+ | 2006 11 10 | 644 | 0.2− | 0.3− |
| 2002 08 20 | 644 | 0.2+ | 0.7+ | 2004 03 20 | 704 | 0.2+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 08 20 | 644 | 0.2+ | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2002 08 20 | 644 | 0.1− | 0.4+ | 2004 03 20 | 704 | 1.1+ | 1.3+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2002 09 05 | 704 | 0.7+ | 0.4+ | 2004 03 22 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.9− | 0.3− | 2004 03 22 | 704 | 0.7+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 1.1− | 0.7+ | 2004 03 22 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2004 03 22 | 704 | 1.1+ | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 09 05 | 704 | 0.5+ | 0.8+ | 2004 03 22 | 704 | 0.5+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 09 06 | 704 | 0.5− | 0.8+ | 2004 03 28 | 703 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 09 06 | 704 | 0.7+ | 1.1+ | 2004 03 28 | 703 | 0.2− | 1.0+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2002 09 06 | 704 | 1.2− | 1.2+ | 2004 03 28 | 703 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.4+ | 1.2+ |
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2004 03 28 | 703 | 1.0+ | 0.4− | 2006 11 14 | 704 | 0.2+ | 0.7+ |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2004 04 12 | 703 | 1.4+ | 0.1− | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 2002 09 13 | 704 | 0.2+ | 0.4− | 2004 04 12 | 703 | 1.3+ | 0.9− | 2006 11 14 | 704 | 0.4+ | 0.8+ |
| 2002 09 13 | 704 | 0.1+ | 0.4+ | 2004 04 12 | 703 | 0.2+ | 0.5− | 2006 11 14 | 704 | 0.4+ | 0.5+ |
| 2002 09 13 | 704 | 0.3− | 0.4+ | 2004 04 12 | 703 | (0.7+ | 1.6+) | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2002 09 13 | 704 | 1.3− | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2002 09 16 | 644 | 0.4− | 0.7+ | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2002 09 16 | 644 | 0.6− | 0.5+ | 2006 09 16 | 703 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2002 09 16 | 644 | 0.5− | 0.5+ | 2006 09 16 | 703 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.2− | 1.0+ | 2006 09 30 | G96 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.0 |
| 2002 10 03 | 704 | (0.6− | 2.1+) | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | (0.7+ | 1.9+) | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.2− | 0.2− |
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2003 12 19 | 691 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2004 02 16 | 703 | 0.5− | 0.7+ | 2006 10 18 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.2− |
| 2004 02 16 | 703 | 0.3+ | 1.1+ | 2006 10 18 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2004 02 16 | 703 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2004 02 16 | 703 | 0.5+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2004 02 18 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2004 02 18 | 704 | 0.6+ | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 26 | 704 | 0.1+ | 0.8+ |
| 2004 02 18 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 691 | 0.6− | 0.1− | 2006 11 26 | 704 | 0.4− | 1.2+ |
| 2004 02 18 | 704 | 0.4+ | 1.1+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 26 | 704 | 0.4− | 1.3+ |
| 2004 02 18 | 704 | 0.8+ | 0.3+ | 2006 10 23 | 704 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.5− | 0.6+ |
| 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 704 | 0.8− | 0.0 | 2006 11 29 | 704 | 0.8+ | 1.2+ |
| 2004 02 26 | 704 | 0.3+ | 0.1− | 2006 10 23 | 704 | 0.6− | 0.3+ | 2006 11 29 | 704 | 0.9+ | 0.3+ |
| 2004 02 26 | 704 | 0.2+ | 0.9+ | 2006 10 23 | 704 | 0.4− | 0.5+ | 2006 11 29 | 704 | 0.4+ | 0.7+ |
| 2004 02 26 | 704 | 0.3+ | 1.0+ | 2006 10 23 | 704 | 0.5− | 0.7+ | 2006 11 29 | 704 | 0.7+ | 0.1+ |

**(142180)∗ 2002 RN$_{43}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.92374 | | (2000.0) | | | |
| $n$ | 0.27775478 | $\omega$ | 302.56360 | | +0.46580449 | +0.88482902 |
| $a$ | 2.3264570 | $\Omega$ | 355.16498 | | −0.76594943 | +0.39740346 |
| $e$ | 0.1168979 | $i$ | 6.94238 | | −0.44311133 | +0.24320383 |
| $P$ | 3.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 1.0+ | 0.7− | 2002 09 06 | 704 | 0.0 | 0.9− | 2005 05 18 | E12 | 0.1+ | 1.4+ |
| 1999 12 12 | 704 | 0.2+ | 1.2− | 2002 09 06 | 704 | 0.1− | 0.1− | 2005 05 18 | E12 | 0.3− | 0.4+ |
| 1999 12 12 | 704 | 0.7+ | 0.3− | 2002 09 15 | 644 | 0.6− | 0.9+ | 2005 05 18 | E12 | 0.3+ | 0.3− |
| 2001 04 16 | 645 | 0.1− | 0.2+ | 2002 09 15 | 644 | 0.6− | 0.8+ | 2005 05 18 | E12 | 0.1+ | 0.2+ |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2002 09 15 | 644 | 0.5− | 0.7+ | 2005 05 30 | E12 | 0.5+ | 0.1− |
| 2002 08 20 | 644 | 1.0− | 0.8+ | 2002 10 03 | 704 | 0.6− | 0.2− | 2005 05 30 | E12 | 0.1− | 0.3− |
| 2002 08 20 | 644 | 0.6− | 0.6+ | 2002 10 03 | 704 | 0.1− | 0.5+ | 2005 05 30 | E12 | 0.5+ | 0.1− |
| 2002 08 20 | 644 | 0.2− | 0.7+ | 2002 10 03 | 704 | 0.6− | 1.0+ | 2005 05 30 | E12 | 0.4+ | 0.8+ |
| 2002 09 05 | 699 | 0.1+ | 1.0+ | 2002 10 11 | 704 | 1.4− | 0.2− | 2005 06 26 | 644 | 0.2+ | 0.3+ |
| 2002 09 05 | 699 | 0.6− | 0.8+ | 2002 10 11 | 704 | 1.1+ | 0.9+ | 2005 06 26 | 644 | 0.4+ | 0.4+ |
| 2002 09 05 | 704 | 0.7+ | 0.2− | 2002 10 11 | 704 | 0.7+ | 1.0+ | 2005 06 26 | 644 | 0.3+ | 0.3+ |
| 2002 09 05 | 699 | (0.7− | 1.7+) | 2003 12 30 | 704 | 0.9+ | 0.4+ | 2006 10 17 | A50 | 0.1− | 0.4+ |
| 2002 09 05 | 699 | (0.7− | 1.8+) | 2003 12 30 | 704 | 0.1− | 0.5+ | 2006 10 17 | A50 | 0.7− | 0.3− |
| 2002 09 05 | 699 | (0.9+ | 1.6+) | 2003 12 30 | 704 | 0.1+ | 0.9− | 2006 10 19 | 703 | (1.9− | 1.2+) |
| 2002 09 05 | 699 | 0.6− | 0.4+ | 2003 12 30 | 704 | 0.2− | 0.7+ | 2006 10 19 | 703 | 0.3− | 1.0− |
| 2002 09 05 | 704 | 0.5+ | 0.7− | 2003 12 30 | 704 | 0.9+ | 0.6− | 2006 10 19 | 703 | 0.7+ | 0.2− |
| 2002 09 05 | 699 | 1.0+ | 0.7+ | 2004 01 14 | 644 | 0.7+ | 0.6+ | 2006 10 19 | 703 | 1.0− | 0.1+ |
| 2002 09 05 | 699 | 0.1+ | 1.3+ | 2004 01 14 | 644 | 0.1− | 0.6+ | 2006 10 27 | 703 | (0.3+ | 1.9−) |
| 2002 09 05 | 704 | 0.2− | 0.6− | 2004 01 14 | 644 | 0.2− | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.2− | 1.0− | 2004 01 16 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 1.4− | 0.1+ |
| 2002 09 06 | 704 | 0.3− | 0.0 | 2004 01 16 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.6+ | 1.1+ |
| 2002 09 06 | 704 | 0.2− | 0.8− | 2004 01 16 | 691 | 0.2+ | 0.4+ | | | | |

**(142181)∗ 2002 RP$_{45}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.16727 | | (2000.0) | | | |
| $n$ | 0.26284336 | $\omega$ | 256.96965 | | +0.42968609 | +0.90250905 |
| $a$ | 2.4136338 | $\Omega$ | 38.52007 | | −0.80929964 | +0.39920628 |
| $e$ | 0.2044176 | $i$ | 2.67889 | | −0.40050463 | +0.16159135 |
| $P$ | 3.75 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.4+ | 0.6+ | 2002 10 03 | 704 | 0.7− | 0.3− | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2001 03 15 | 691 | 0.1− | 0.7− | 2002 10 03 | 704 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2001 03 15 | 691 | 0.0 | 0.6+ | 2002 10 03 | 704 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 07 09 | 704 | 1.0+ | 0.3+ | 2002 10 05 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.7− | 0.1+ |
| 2002 07 09 | 704 | (0.5+ | 1.5−) | 2002 10 05 | 704 | 1.0+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 07 09 | 704 | 0.7+ | 1.4− | 2002 10 05 | 704 | 0.9+ | 0.7+ | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2002 07 09 | 704 | 0.5− | 0.4− | 2002 10 05 | 704 | 1.2+ | 0.2− | 2006 10 21 | 703 | 0.0 | 0.6− |
| 2002 08 12 | 704 | 0.4− | 0.3− | 2002 10 05 | 704 | 1.3+ | 0.2+ | 2006 10 21 | 703 | 0.9− | 1.1− |
| 2002 08 12 | 704 | 1.0− | 0.3− | 2002 10 11 | 704 | 0.9− | 0.7+ | 2006 10 21 | 703 | 0.4+ | 0.7− |
| 2002 08 12 | 704 | 0.9− | 0.6− | 2002 10 11 | 704 | 1.0− | 0.1− | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2002 08 12 | 704 | 1.0− | 0.2+ | 2002 10 11 | 704 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 08 12 | 704 | 0.4− | 0.2− | 2005 03 12 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 08 21 | 644 | 0.0 | 0.0 | 2005 03 12 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 08 21 | 644 | 0.2− | 0.2− | 2005 03 12 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 08 21 | 644 | 0.1− | 0.0 | 2005 03 18 | 703 | (1.9+ | 4.6+) | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2002 09 05 | 699 | 0.1+ | 0.7+ | 2005 03 18 | 703 | 1.0+ | 0.5+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 09 05 | 704 | 0.3+ | 0.4+ | 2005 03 18 | 703 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 699 | 0.0 | 0.4+ | 2005 03 18 | 703 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2005 05 04 | 703 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.1− | 1.2+ |
| 2002 09 05 | 699 | 0.2− | 0.3+ | 2005 05 04 | 703 | 0.5+ | 0.8+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.4+ | 0.2− | 2005 05 04 | 703 | (1.6− | 0.9+) | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2002 09 05 | 699 | 0.7+ | 0.7+ | 2005 05 04 | 703 | 1.3− | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2005 05 06 | G96 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2005 05 06 | G96 | 0.3+ | 0.5+ | 2006 11 07 | 644 | 0.7+ | 0.2+ |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2005 05 06 | G96 | 0.6+ | 1.1+ | 2006 11 07 | 644 | 0.2+ | 0.4+ |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2005 05 06 | G96 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2002 09 06 | 704 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2002 09 06 | 704 | 0.5− | 0.6− | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.9+ |
| 2002 09 10 | 608 | 0.6− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2002 09 10 | 608 | 0.3− | 0.2+ | 2006 09 29 | 683 | 0.5− | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.6− |
| 2002 09 10 | 608 | (1.7− | 2.1−) | 2006 09 29 | 683 | 0.5+ | 1.3+ | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2002 09 12 | 644 | 0.5− | 0.3+ | 2006 09 29 | 683 | (0.7− | 3.3−) | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 09 12 | 644 | 0.6− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2002 09 12 | 644 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.6− | 0.1+ |
| 2002 09 15 | 644 | 0.4− | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.5− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2002 09 15 | 644 | 0.7− | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2002 10 01 | 699 | 1.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.7+ | 0.3+ |
| 2002 10 01 | 699 | 0.2− | 0.4+ | 2006 10 15 | 691 | 0.5+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.2− |
| 2002 10 01 | 699 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.9− | 0.2+ |
| 2002 10 01 | 699 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.8− | 0.5+ |
| 2002 10 03 | 704 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.2+ |

**(142182)∗ 2002 RW$_{45}$ = 1999 XQ$_{255}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35396)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.66747 | | (2000.0) | | | |
| $n$ | 0.28019195 | $\omega$ | 300.49092 | | +0.98925537 | −0.14281024 |
| $a$ | 2.3129467 | $\Omega$ | 67.73512 | | +0.14303261 | +0.90111745 |
| $e$ | 0.2513190 | $i$ | 1.93757 | | +0.03025695 | +0.40938073 |
| $P$ | 3.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 691 | 0.3+ | 0.2+ | 2002 09 06 | 704 | 0.2− | 0.1+ | 2002 10 29 | 704 | 0.3− | 0.2+ |
| 1999 12 12 | 691 | 0.0 | 0.0 | 2002 09 06 | 704 | 0.0 | 0.2+ | 2002 10 29 | 704 | 0.7+ | 0.4− |
| 1999 12 12 | 691 | 0.5− | 0.1+ | 2002 09 10 | 608 | 0.9− | 1.1+ | 2002 12 05 | 704 | 0.9+ | 0.2+ |
| 1999 12 16 | 691 | 0.0 | 0.0 | 2002 09 10 | 608 | (1.1− | 1.5+) | 2002 12 05 | 704 | 0.1+ | 0.9+ |
| 1999 12 16 | 691 | 0.1+ | 0.2− | 2002 09 10 | 608 | 1.0− | 1.3+ | 2002 12 05 | 704 | 0.2− | 0.7+ |
| 1999 12 16 | 691 | 0.0 | 0.1+ | 2002 09 17 | 608 | (1.6− | 0.6−) | 2005 02 16 | 809 | 0.1− | 0.1+ |
| 2002 08 21 | 644 | 0.1+ | 0.1− | 2002 09 17 | 608 | (1.7− | 0.6−) | 2005 02 16 | 809 | 0.4+ | 0.2+ |
| 2002 08 21 | 644 | 0.1+ | 0.2− | 2002 09 17 | 608 | 1.2− | 0.6− | 2005 02 16 | 809 | 0.2+ | 0.2+ |
| 2002 08 21 | 644 | 0.2+ | 0.2− | 2002 10 01 | 699 | 0.2− | 0.1+ | 2005 06 14 | G96 | 0.3− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 0.0 | 0.2+ | 2002 10 01 | 699 | 0.2− | 0.0 | 2005 06 14 | G96 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2002 10 01 | 699 | 0.2− | 0.0 | 2005 06 14 | G96 | 0.0 | 0.1− | | |
| 2002 09 05 | 699 | 0.1+ | 0.3− | 2002 10 01 | 699 | 0.3+ | 0.3− | 2005 06 14 | G96 | 0.3+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2002 10 03 | 704 | 0.4+ | 0.3+ | 2006 09 24 | 691 | 0.4− | 0.1+ | | |
| 2002 09 05 | 699 | 0.8+ | 0.5+ | 2002 10 03 | 704 | 0.4+ | 0.4− | 2006 09 24 | 691 | 0.3− | 0.4+ | | |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2002 10 03 | 704 | 0.4+ | 0.2− | 2006 09 24 | 691 | 0.3+ | 0.4+ | | |
| 2002 09 05 | 699 | 1.0+ | 0.7+ | 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 10 29 | G96 | 0.1+ | 0.1− | | |
| 2002 09 05 | 704 | 0.1− | 0.4+ | 2002 10 03 | 704 | 0.0 | 0.3− | 2006 10 29 | G96 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2002 10 05 | 704 | 0.5+ | 1.1− | 2006 10 29 | G96 | 0.1− | 0.5− | | |
| 2002 09 06 | 704 | 0.9− | 0.0 | 2002 10 05 | 704 | 0.4+ | 0.9− | 2006 10 29 | G96 | 0.4+ | 0.1− | | |
| 2002 09 06 | 704 | 0.9− | 0.3− | 2002 10 05 | 704 | 0.3+ | 1.4− | 2006 12 01 | G96 | 0.5+ | 0.0 | | |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2002 10 05 | 704 | 0.9+ | 0.9− | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| 2002 09 06 | 704 | 0.1+ | 0.8− | 2002 10 05 | 704 | (2.0+ | 1.3−) | 2006 12 01 | G96 | 0.0 | 0.1+ | | |
| 2002 09 06 | 704 | (1.8− | 1.2−) | 2002 10 29 | 704 | 0.8− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2002 10 29 | 704 | 0.3+ | 0.2+ | | | | | | |
| 2002 09 06 | 704 | 1.3− | 0.2− | 2002 10 29 | 704 | 0.7+ | 0.1− | | | | | | |

**(142183)∗ 2002 RP$_{46}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.19506 | | (2000.0) | | | |
| $n$ | 0.26096473 | $\omega$ | 300.42213 | | +0.84328337 | −0.53579107 |
| $a$ | 2.4252034 | $\Omega$ | 92.00643 | | +0.50653857 | +0.76587186 |
| $e$ | 0.1903008 | $i$ | 2.43381 | | +0.17969928 | +0.35548309 |
| $P$ | 3.78 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.0 | 1.0+ | 2004 03 29 | 691 | 0.2+ | 1.0+ | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2002 08 12 | 704 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.5+ | 1.4+ | 2006 10 22 | 691 | 0.7− | 0.4− | | |
| 2002 08 12 | 704 | 0.1+ | 0.8+ | 2005 06 27 | G96 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 2002 08 12 | 704 | 0.4− | 0.7+ | 2005 06 27 | G96 | 0.1− | 0.6+ | 2006 10 27 | 704 | 0.1− | 0.0 | | |
| 2002 09 05 | 699 | 0.6− | 0.7+ | 2005 06 27 | G96 | 0.2− | 0.5+ | 2006 10 27 | 704 | 0.3− | 0.1+ | | |
| 2002 09 05 | 704 | 0.7− | 0.3+ | 2005 06 27 | G96 | 0.3+ | 0.4+ | 2006 10 27 | 704 | 0.2− | 0.4+ | | |
| 2002 09 05 | 699 | 0.1+ | 0.8+ | 2005 06 28 | G96 | 0.2+ | 0.4+ | 2006 10 27 | 704 | 0.3− | 0.8− | | |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2005 06 28 | G96 | 0.2+ | 0.5+ | 2006 10 27 | 704 | 0.6+ | 0.3+ | | |
| 2002 09 05 | 699 | 0.6+ | 0.1+ | 2005 06 28 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.5− | | |
| 2002 09 05 | 699 | 0.5+ | 0.4+ | 2005 06 28 | G96 | 0.2+ | 0.8+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2002 09 05 | 704 | 1.2− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2002 09 05 | 704 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.7+ | 0.9+ | 2006 10 31 | G96 | 0.3+ | 0.5− | | |
| 2002 09 06 | 704 | 0.6− | 0.8+ | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 11 14 | 704 | 0.5− | 0.2+ | | |
| 2002 09 06 | 704 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.7− | 0.6− | 2006 11 14 | 704 | 0.2− | 0.1+ | | |
| 2002 09 06 | 704 | 0.1− | 0.6+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 14 | 704 | 0.1+ | 0.0 | | |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2006 10 02 | G96 | 0.5+ | 0.6− | 2006 11 14 | 704 | 0.1− | 0.8+ | | |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.6− | | |
| 2002 09 15 | 644 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.7− | 2006 11 16 | G96 | 0.1− | 0.5− | | |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.5+ | 1.0+ | 2006 11 16 | G96 | 0.1+ | 0.6− | | |
| 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 10 03 | 704 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2002 09 17 | 608 | 1.0− | 0.1+ | 2006 10 03 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.2+ | | |
| 2002 09 17 | 608 | 1.0− | 0.0 | 2006 10 03 | 704 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.1− | | |
| 2002 09 17 | 608 | 1.1− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.0 | 0.4+ | | |
| 2002 10 03 | 704 | (1.9+ | 1.3−) | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.4+ | | |
| 2002 10 03 | 704 | (2.4+ | 1.2−) | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.5+ | | |
| 2002 10 03 | 704 | (1.6+ | 1.3−) | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.4− | | |
| 2002 10 03 | 704 | 1.4+ | 0.8− | 2006 10 17 | 683 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | (1.3+ | 1.6−) | 2006 10 17 | 683 | 1.3− | 1.1+ | 2006 11 18 | 704 | 0.1+ | 0.3+ | | |
| 2002 10 05 | 704 | 1.0+ | 0.2+ | 2006 10 17 | 683 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 05 | 704 | 0.6+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.2− | 0.7+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.4+ | | |
| 2002 10 05 | 704 | 0.8+ | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.5+ | | |
| 2002 10 05 | 704 | 0.6+ | 0.2− | 2006 10 19 | 683 | (2.3+ | 0.1+) | 2006 11 19 | 704 | 0.3− | 0.1+ | | |
| 2002 10 09 | 699 | (1.3+ | 1.6+) | 2006 10 19 | 683 | (1.8+ | 0.9+) | 2006 11 21 | 704 | 0.4+ | 0.7+ | | |
| 2002 10 09 | 699 | 1.2− | 1.3+ | 2006 10 19 | 683 | 1.2+ | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.3− | | |
| 2002 10 09 | 699 | 0.5− | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 09 | 699 | (0.4+ | 2.0+) | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.6+ | | |
| 2002 10 11 | 704 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 26 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 26 | 704 | 0.6− | 0.5+ | | |
| 2002 10 11 | 704 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 26 | 704 | 0.1− | 0.5+ | | |
| 2004 02 23 | 704 | 1.3+ | 1.1+ | 2006 10 22 | 704 | (1.6+ | 0.7+) | 2006 11 28 | 704 | 0.0 | 0.3+ | | |
| 2004 02 23 | 704 | 0.1+ | 1.2+ | 2006 10 22 | 704 | (1.8− | 0.9−) | 2006 11 28 | 704 | 0.3− | 0.5+ | | |
| 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 704 | 0.8− | 0.3− | 2006 11 28 | 704 | 0.8+ | 0.6+ | | |
| 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 704 | 0.1− | 0.7+ | 2006 11 28 | 704 | 0.2− | 1.0− | | |
| 2004 03 29 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 704 | 0.4− | 0.1− | | | | | | |

**(142184)∗ 2002 RC$_{47}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.42935 | | (2000.0) | | | |
| $n$ | 0.27328142 | $\omega$ | 356.99891 | | +0.98288907 | −0.18229930 |
| $a$ | 2.3517761 | $\Omega$ | 13.59127 | | +0.17125083 | +0.85162699 |
| $e$ | 0.1400513 | $i$ | 6.44617 | | +0.06783979 | +0.49142490 |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1+ | 0.4− | 2002 09 15 | 644 | 0.0 | 0.3+ | 2002 11 05 | 699 | 0.7− | 0.9+ | | |
| 1995 10 17 | 691 | 0.3+ | 0.0 | 2002 09 15 | 644 | 0.2− | 0.3+ | 2002 11 05 | 699 | 0.3− | 0.4+ | | |
| 1995 10 17 | 691 | 0.2− | 0.7− | 2002 09 17 | 608 | (1.8− | 0.9+) | 2002 11 06 | 704 | 0.8− | 0.2+ | | |
| 1997 02 07 | 691 | 0.4+ | 0.7+ | 2002 09 17 | 608 | 1.5− | 0.6+ | 2002 11 06 | 704 | 0.4− | 1.0+ | | |
| 1997 02 07 | 691 | 0.0 | 0.5+ | 2002 09 17 | 608 | (1.8− | 0.8+) | 2002 11 06 | 704 | (1.8− | 1.0+) | | |
| 1997 02 07 | 691 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.5+ | 0.7+ | 2002 11 06 | 704 | 0.7− | 0.0 | | |
| 1999 12 12 | 704 | 1.0+ | 0.1− | 2002 10 03 | 704 | 0.5+ | 0.5+ | 2003 12 25 | 645 | 0.1+ | 0.0 | | |
| 1999 12 12 | 704 | 0.8+ | 0.8+ | 2002 10 03 | 704 | 0.7+ | 0.6+ | 2003 12 25 | 645 | 0.1+ | 0.0 | | |
| 1999 12 12 | 704 | (2.1+ | 0.3−) | 2002 10 03 | 704 | 0.4+ | 0.4+ | 2004 02 16 | 704 | 0.3+ | 0.1+ | | |
| 2000 01 08 | 704 | 0.6+ | 1.8− | 2002 10 03 | 704 | 0.6+ | 0.5+ | 2004 02 16 | 704 | 0.1+ | 0.8+ | | |
| 2000 01 08 | 704 | 0.1− | 0.4− | 2002 10 06 | 704 | 0.0 | 0.4+ | 2004 02 16 | 704 | 1.0+ | 0.7+ | | |
| 2000 01 08 | 704 | 0.1+ | 0.8− | 2002 10 06 | 704 | 0.8+ | 0.8+ | 2004 02 16 | 691 | 0.2− | 0.4+ | | |
| 2000 01 08 | 704 | 0.7+ | 0.8− | 2002 10 06 | 704 | 0.8+ | 0.0 | 2004 02 16 | 691 | 0.0 | 0.3+ | | |
| 2002 08 12 | 704 | 0.0 | 0.3− | 2002 10 06 | 704 | 0.5+ | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 12 | 704 | 0.8− | 0.4− | 2002 10 06 | 704 | 0.5+ | 0.0 | 2004 03 16 | 691 | 0.0 | 0.1+ | | |
| 2002 08 12 | 704 | 0.6− | 0.6− | 2002 10 07 | 704 | 0.4+ | 1.4+ | 2004 03 16 | 691 | 0.0 | 0.3+ | | |
| 2002 08 12 | 704 | 0.9− | 0.4− | 2002 10 07 | 704 | 0.2− | 0.7+ | 2004 03 16 | 691 | 0.2+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2002 10 07 | 704 | 0.5+ | 1.0+ | 2006 09 18 | 703 | 0.3+ | 0.4− | | |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2002 10 07 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.3− | | |
| 2002 09 05 | 704 | 0.6− | 0.0 | 2002 10 07 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.3− | | |
| 2002 09 05 | 704 | 0.3− | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 1.1− | 0.5− | | |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2002 10 11 | 704 | 1.3− | 0.1− | 2006 11 15 | 704 | 1.0− | 0.1− | | |
| 2002 09 06 | 704 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.5+ | | |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2002 10 11 | 704 | 0.1− | 1.2+ | 2006 11 15 | 704 | 0.8+ | 0.4+ | | |
| 2002 09 06 | 704 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.9− | 0.5+ | 2006 11 15 | 704 | 0.4− | 0.5− | | |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2002 10 11 | 704 | (2.6− | 0.1+) | 2006 11 15 | 704 | 0.3+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2002 10 11 | 704 | 0.8− | 0.5+ | 2006 11 22 | 703 | 0.2− | 0.2− | | |
| 2002 09 10 | 608 | 0.6− | 0.7− | 2002 10 11 | 704 | 0.1− | 0.6+ | 2006 11 22 | 703 | 0.0 | 0.4− | | |
| 2002 09 10 | 608 | 0.3− | 0.7− | 2002 10 11 | 704 | 0.2− | 0.5+ | 2006 11 22 | 703 | 0.8− | 0.4+ | | |
| 2002 09 10 | 608 | 0.2− | 0.4− | 2002 11 05 | 699 | 0.7− | 1.0+ | | | | | | |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2002 11 05 | 699 | 0.2+ | 0.1− | | | | | | |

**(142185)∗ 2002 RV$_{47}$ = 2004 CU$_{99}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61283)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.32656 | | (2000.0) | | | |
| $n$ | 0.26785713 | $\omega$ | 347.21090 | | +0.68164382 | −0.72966572 |
| $a$ | 2.3834200 | $\Omega$ | 59.78725 | | +0.67671965 | +0.60047376 |
| $e$ | 0.1651436 | $i$ | 3.60328 | | +0.27823050 | +0.32713790 |
| $P$ | 3.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.1− | 0.2+ | 2004 02 15 | 703 | 1.0− | 0.9+ | 2006 10 28 | 704 | 0.3− | 0.2+ | | |
| 2000 02 11 | 704 | 1.7+ | 0.4− | 2004 02 15 | 703 | 1.1+ | 1.4+ | 2006 10 28 | 704 | 0.6− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 1.1− | 0.7+ | 2004 02 15 | 703 | 0.4+ | 0.8+ | 2006 10 28 | 704 | 0.4− | 0.2+ | 1999 11 17 | 703 | 1.3− | 0.7− |
| 2000 02 11 | 704 | 0.3+ | 0.5− | 2004 02 18 | 704 | 0.6+ | 0.6+ | 2006 10 28 | 704 | 0.3− | 0.4+ | 1999 11 17 | 703 | 1.1+ | 0.4− |
| 2002 08 31 | 699 | 0.5− | 0.8+ | 2004 02 18 | 704 | 0.4+ | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.4− | 1999 11 17 | 703 | 0.3− | 1.3+ |
| 2002 08 31 | 699 | 0.7− | 1.4+ | 2004 02 18 | 704 | (1.5+ | 0.6+) | 2006 10 31 | G96 | 0.4+ | 0.4− | 1999 11 17 | 703 | 0.2+ | 1.6+ |
| 2002 08 31 | 699 | 0.6− | 0.3+ | 2004 02 18 | 704 | 1.1+ | 0.5+ | 2006 10 31 | G96 | 0.5+ | 0.4− | 1999 12 05 | 704 | 1.7− | 0.3− |
| 2002 08 31 | 699 | 0.9− | 1.2+ | 2004 02 23 | 704 | 0.5− | 1.2+ | 2006 10 31 | G96 | 0.4+ | 0.6− | 1999 12 05 | 704 | 0.0 | 0.8− |
| 2002 09 05 | 704 | 0.6− | 0.7+ | 2004 02 23 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 691 | 0.1+ | 0.0 | 1999 12 05 | 704 | 0.6− | 0.4− |
| 2002 09 05 | 704 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.1+ | 1.4+ | 2006 11 10 | 691 | 0.2− | 0.0 | 1999 12 05 | 704 | 0.5+ | 0.9− |
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2004 02 29 | 691 | 0.3+ | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2001 04 25 | 699 | 0.5− | 0.6+ |
| 2002 09 05 | 704 | 0.4− | 0.3+ | 2004 02 29 | 691 | 0.4+ | 0.6+ | 2006 11 14 | 691 | 0.3− | 0.2− | 2001 04 25 | 699 | 1.0− | 0.8+ |
| 2002 09 05 | 704 | 0.1− | 0.6+ | 2004 02 29 | 691 | 0.3+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.1− | 2001 04 25 | 699 | 0.2+ | 1.0+ |
| 2002 09 05 | 608 | 0.5+ | 0.2+ | 2004 03 25 | 704 | 0.1− | 1.0+ | 2006 11 14 | 691 | 0.0 | 0.2− | 2001 04 25 | 699 | 0.5+ | 1.3+ |
| 2002 09 05 | 608 | 0.6+ | 0.4+ | 2004 03 25 | 704 | 0.8+ | 1.4+ | 2006 11 17 | 704 | 0.2+ | 0.3+ | 2001 05 18 | 704 | 0.8− | 1.1+ |
| 2002 09 05 | 608 | 0.6+ | 0.2+ | 2004 03 25 | 704 | (0.4+ | 2.3+) | 2006 11 17 | 704 | 0.6+ | 0.1+ | 2001 05 18 | 704 | 0.6+ | 0.9+ |
| 2002 09 06 | 704 | 0.8− | 0.5+ | 2004 03 25 | 704 | 0.8+ | 0.6− | 2006 11 17 | 704 | 0.6− | 0.0 | 2001 05 18 | 704 | 0.3+ | 0.5+ |
| 2002 09 06 | 704 | 0.3− | 0.7+ | 2004 03 26 | 704 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.2+ | 2002 09 05 | 699 | 0.9− | 1.1+ |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2004 03 26 | 704 | 0.9+ | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.0 | 2002 09 05 | 699 | 0.3+ | 0.1+ |
| 2002 09 06 | 704 | 0.4− | 0.1− | 2004 03 26 | 704 | 0.3− | 0.6+ | 2006 11 18 | 691 | 0.0 | 0.0 | 2002 09 05 | 699 | 0.3− | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.3− | 2004 03 26 | 704 | 0.3+ | 1.4+ | 2006 11 18 | 691 | 0.9− | 0.7− | 2002 09 05 | 699 | (0.6− | 1.6+) |
| 2002 09 15 | 644 | 0.1− | 0.8+ | 2006 08 28 | 703 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.1− | 2002 09 05 | 704 | 0.0 | 0.3+ |
| 2002 09 15 | 644 | 0.2− | 0.8+ | 2006 08 28 | 703 | 0.4+ | 1.1− | 2006 11 18 | 704 | 0.2− | 0.3− | 2002 09 05 | 704 | 0.0 | 0.2− |
| 2002 09 15 | 644 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.2− | 1.5+ | 2006 11 18 | 704 | 0.0 | 0.8+ | 2002 09 05 | 704 | 0.3+ | 0.6− |
| 2002 09 16 | 644 | 0.4− | 1.1+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.6+ | 2002 09 05 | 704 | 0.1− | 0.1+ |
| 2002 09 16 | 644 | 0.5− | 1.2+ | 2006 09 16 | 703 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.3− | 2002 09 05 | 704 | 0.1− | 0.3+ |
| 2002 09 16 | 644 | 0.4− | 1.2+ | 2006 09 16 | 703 | 0.4+ | 1.1+ | 2006 11 20 | 704 | 0.4+ | 0.2− | 2002 09 06 | 704 | 0.9+ | 1.4+ |
| 2002 09 17 | 608 | 1.2− | 0.3− | 2006 09 16 | 703 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.0 | 2002 09 06 | 704 | (1.8+ | 0.9+) |
| 2002 09 17 | 608 | (1.7− | 0.6−) | 2006 09 16 | 703 | 0.7− | 0.8+ | 2006 11 20 | 704 | 0.7+ | 0.1+ | 2002 09 06 | 704 | 0.8+ | 1.4+ |
| 2002 09 17 | 608 | 1.1− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.8+ | 2006 11 20 | 704 | 0.5+ | 0.3+ | 2002 09 06 | 704 | 0.5+ | 0.9+ |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | (1.4+ | 1.8−) | 2006 11 20 | 704 | 0.2+ | 0.1− | 2002 09 13 | 704 | 0.6+ | 0.8− |
| 2002 10 03 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.7− | 2006 11 21 | 704 | 0.0 | 0.5+ | 2002 09 13 | 704 | 0.7− | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.3+ | 2002 09 13 | 704 | 0.5+ | 0.5− |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.3+ | 2002 09 13 | 704 | 0.3+ | 0.7+ |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.0 | 0.6+ | 2002 09 15 | 644 | 0.7− | 0.7+ |
| 2002 10 05 | 704 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.1− | 0.1+ | 2002 09 15 | 644 | 0.1+ | 0.8+ |
| 2002 10 05 | 704 | 0.5− | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.0 | 2002 09 15 | 644 | 0.1− | 0.9+ |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 22 | 691 | 0.0 | 0.2+ | 2003 11 30 | 704 | 0.8+ | 0.6+ |
| 2002 10 05 | 704 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.3+ | 0.1+ | 2003 11 30 | 704 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.3− | 0.9+ | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.4− | 2003 11 30 | 704 | 1.5+ | 1.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 24 | G96 | 0.4+ | 0.4− | 2003 11 30 | 704 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.0 | 0.3− | 2004 01 13 | 699 | 0.2− | 0.5− |
| 2002 10 29 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.4− | 2004 01 13 | 699 | 0.1+ | 0.6− |
| 2002 10 29 | 704 | 0.3+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 27 | 704 | 0.1− | 0.2− | 2004 01 13 | 699 | 0.0 | 0.8− |
| 2002 10 29 | 704 | 1.1− | 0.9+ | 2006 10 23 | 704 | (0.0 | 2.0−) | 2006 11 27 | 704 | 0.2− | 0.2+ | 2004 01 13 | 699 | 0.7− | 0.1+ |
| 2003 12 22 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 704 | 0.3+ | 0.1− | 2006 11 27 | 704 | 0.0 | 0.1+ | 2004 01 18 | 608 | 0.4+ | 0.3− |
| 2003 12 22 | 691 | 0.0 | 0.5− | 2006 10 23 | 704 | 0.9− | 0.5− | 2006 12 01 | 704 | 0.1− | 1.1+ | 2004 01 18 | 608 | 0.0 | 0.1+ |
| 2003 12 22 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 704 | 0.5− | 0.6+ | 2006 12 01 | 704 | 0.7+ | 0.4− | 2004 01 18 | 608 | 0.0 | 0.1− |
| 2004 02 15 | 703 | 0.5− | 0.2+ | 2006 10 28 | 704 | 0.6+ | 0.0 | 2006 12 01 | 704 | 0.7+ | 0.7+ | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 106 | 0.3− | 0.5+ | 2004 02 26 | 704 | 0.3+ | 0.2− | 2004 10 04 | G96 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.3+ |
| 2004 01 22 | 106 | 0.7− | 0.5− | 2004 02 26 | 704 | 0.7+ | 0.2− | 2005 03 13 | G96 | 0.6− | 0.2− | 2006 10 15 | 691 | 0.5+ | 1.2+ |
| 2004 01 24 | 704 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.2+ | 0.2− | 2005 03 13 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.5+ |
| 2004 01 24 | 704 | 0.5− | 0.2− | 2004 02 26 | 704 | 0.1− | 0.0 | 2005 04 04 | G96 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.6− | 0.5+ |
| 2004 01 24 | 704 | 0.2− | 0.7+ | 2004 02 26 | 704 | 0.7+ | 0.1− | 2005 04 04 | G96 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2004 01 24 | 704 | 0.4− | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.1− | 2005 04 04 | G96 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2004 01 24 | 704 | 0.1− | 0.1+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2005 04 04 | G96 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.9+ |
| 2004 01 26 | 699 | 0.0 | 0.5− | 2004 02 29 | 691 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2004 01 26 | 699 | 0.9− | 0.1+ | 2004 04 19 | 704 | 0.9− | 0.9+ | 2005 04 04 | G96 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.6+ |
| 2004 01 26 | 699 | 1.1− | 0.8− | 2004 04 19 | 704 | 0.0 | 0.3− | 2005 04 04 | G96 | 0.5− | 0.0 | 2006 11 01 | 703 | 0.1− | 0.0 |
| 2004 01 26 | 699 | 0.1− | 0.8+ | 2004 04 19 | 704 | 0.1− | 0.1+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 01 | 703 | 0.6− | 0.0 |
| 2004 01 29 | 704 | 0.3+ | 0.3− | 2004 04 19 | 704 | 0.7+ | 1.0+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 01 | 703 | 0.6+ | 0.3− |
| 2004 01 29 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 01 | 703 | 0.3− | 0.6+ |
| 2004 01 29 | 704 | 0.4+ | 0.2− | 2006 09 30 | 703 | (1.5− | 0.6+) | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.6+ |
| 2004 01 29 | 704 | 1.4+ | 0.4− | 2006 09 30 | 703 | (2.8− | 0.7+) | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2004 01 29 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 703 | (1.9− | 1.5+) | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2004 01 30 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.6+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 13 | 703 | 0.6− | 1.2+ |
| 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 1.4− | 0.5+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2004 01 30 | 704 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.4+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 13 | 703 | 0.8− | 0.3+ |
| 2004 01 30 | 704 | 0.4+ | 0.7+ | 2006 10 16 | 703 | (0.5− | 1.7+) | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 13 | 703 | 0.3+ | 1.0+ |
| 2004 01 31 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.5+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2004 01 31 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.6− | 0.5+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 13 | 644 | 0.2− | 0.3+ |
| 2004 01 31 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.6+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 19 | 703 | 0.1+ | 0.8+ |
| 2004 02 03 | 608 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.6+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 19 | 703 | 0.2− | 0.5− |
| 2004 02 03 | 608 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.9+ | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 19 | 703 | 0.5− | 1.1+ |
| 2004 02 03 | 608 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3− | 0.1− | 2005 04 04 | G96 | 0.6− | 0.2− | 2006 11 19 | 703 | 0.8− | 0.5+ |
| 2004 02 10 | 703 | (1.7− | 0.5+) | 2006 10 22 | 703 | 0.3− | 0.6+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 10 | 703 | 1.1+ | 0.3− | 2006 11 01 | 703 | 0.1− | 0.0 | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 10 | 703 | 0.5+ | 0.8+ | 2006 11 01 | 703 | 0.6− | 0.0 | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 10 | 703 | 1.2+ | 0.5+ | 2006 11 01 | 703 | 0.6+ | 0.3− | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 11 | 699 | 0.7− | 0.5+ | 2006 11 01 | 703 | 0.3− | 0.6+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.6+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 11 | 699 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 11 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 11 | 699 | 0.8− | 0.5+ | 2006 11 13 | 703 | 0.6− | 1.2+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 11 | 699 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.1+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 11 | 691 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.8− | 0.3+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 14 | 608 | 1.1+ | 0.9+ | 2006 11 13 | 703 | 0.3+ | 1.0+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 14 | 608 | (0.9+ | 1.8+) | 2006 11 13 | 644 | 0.0 | 0.3+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 14 | 608 | 0.9+ | 1.2+ | 2006 11 13 | 644 | 0.2− | 0.3+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 19 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.6+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 19 | 704 | 0.2− | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.8+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 19 | 704 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.2− | 0.5− | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 19 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.5− | 1.1+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 19 | 704 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.8− | 0.5+ | 2005 04 04 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 19 | 608 | 0.5+ | 0.1− | | | | | | | | | | | | |

**(142186)∗ 2002 RW$_{47}$ = 1992 WX$_6$ = 2004 BS$_{23}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 56532)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.16081 | | (2000.0) | | | |
| $n$ | 0.27773005 | $\omega$ | 337.01061 | | −0.50901134 | −0.85880027 |
| $a$ | 2.3265951 | $\Omega$ | 143.51358 | | +0.80412242 | −0.49849453 |
| $e$ | 0.0948328 | $i$ | 5.60212 | | +0.30707425 | −0.11817483 |
| $P$ | 3.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 19 | 691 | 0.4+ | 0.4− | 2004 01 21 | 704 | 0.5+ | 0.1+ | 2004 02 19 | 608 | 0.3+ | 0.4− | 2004 02 22 | 704 | 0.5− | 0.1+ |
| 1992 11 19 | 691 | 0.0 | 1.1− | 2004 01 21 | 704 | 0.5+ | 0.1− | 2004 02 19 | 608 | 1.0+ | 0.1− | 2004 02 22 | 704 | 0.2+ | 0.0 |
| 1992 11 19 | 691 | 0.5− | 0.7− | 2004 01 21 | 704 | 0.0 | 0.9+ | 2004 02 22 | 704 | 0.5− | 0.1+ | 2004 02 22 | 704 | 0.1+ | 0.3+ |
| 1992 11 20 | 691 | 0.1+ | 0.2− | 2004 01 21 | 704 | 0.4+ | 0.3− | 2004 02 22 | 704 | 0.2+ | 0.0 | 2004 02 22 | 704 | 0.2− | 0.3+ |
| 1992 11 20 | 691 | 0.3+ | 0.0 | 2004 01 21 | 704 | 0.7+ | 1.0+ | 2004 02 22 | 704 | 0.1− | 0.3+ | | | | |
| 1992 11 20 | 691 | 0.2+ | 0.0 | 2004 01 22 | 106 | 0.0 | 0.2− | 2004 02 22 | 704 | 0.2− | 0.3+ | | | | |

**(142187)∗ 2002 RZ$_{47}$ = 2005 GA$_{207}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75542)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.43092 | | (2000.0) | | | |
| $n$ | 0.26752988 | $\omega$ | 238.11945 | | +0.38480894 | +0.92251210 |
| $a$ | 2.3853632 | $\Omega$ | 54.54136 | | −0.83395425 | +0.36138177 |
| $e$ | 0.1783270 | $i$ | 2.10310 | | −0.39552799 | +0.13555308 |
| $P$ | 3.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.4+ | 1.0− | 2005 03 13 | G96 | 0.5− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.3+ |
| 1991 10 01 | 691 | 0.2+ | 0.1− | 2005 03 13 | G96 | 0.6− | 0.2− | 2006 10 11 | 691 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.5+ | 1.2+ |
| 1991 10 01 | 691 | 0.4+ | 0.9− | 2005 03 13 | G96 | 0.5− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.3+ | | | | |
| 2002 09 05 | 704 | 1.3+ | 0.2+ | 2005 04 04 | G96 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | | | | |
| 2002 09 05 | 704 | (0.6+ | 1.7+) | 2005 04 04 | G96 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | | | | |
| 2002 09 05 | 704 | 1.1+ | 0.1+ | 2005 04 04 | G96 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.3+ | | | | |
| 2002 09 05 | 704 | 0.4+ | 0.1+ | 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.5+ | 1.2+ | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 1.1+ | 0.6+ | 2005 04 06 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.6+ | 2005 04 06 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.1− |
| 2002 09 06 | 704 | 0.8− | 1.2+ | 2005 04 06 | 691 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | 0.3− | 0.4− | 2005 04 12 | 704 | (1.0+ | 2.8+) | 2006 10 27 | 691 | 0.1− | 0.6+ |
| 2002 09 06 | 704 | 0.2− | 1.1+ | 2005 04 12 | 704 | 1.2+ | 0.5+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2002 09 06 | 704 | 0.1− | 0.7+ | 2005 04 12 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.5+ |
| 2002 09 10 | 608 | 0.3− | 0.5− | 2005 04 12 | 704 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 09 10 | 608 | 0.5− | 0.3− | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 09 10 | 608 | 0.6− | 0.2− | 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 09 13 | 644 | 0.4− | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2002 09 13 | 644 | 0.3− | 0.5+ | 2005 05 06 | G96 | 0.2+ | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2002 09 13 | 644 | 0.3− | 0.5+ | 2005 05 06 | G96 | (1.9− | 1.7−) | 2006 10 29 | 691 | 0.3− | 0.3+ |
| 2002 09 15 | 644 | 0.4− | 0.4+ | 2005 05 06 | G96 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.4+ |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2005 05 06 | G96 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2002 09 17 | 608 | 1.0− | 0.3− | 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 09 17 | 608 | (1.6− | 0.3−) | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2002 09 17 | 608 | 1.0− | 0.5− | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.6− | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.7− | 2005 05 09 | 699 | 0.8− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2002 10 03 | 704 | 1.4− | 0.6+ | 2005 05 09 | 699 | 0.2+ | 0.8+ | 2006 11 13 | G96 | 0.8− | 0.3− |
| 2002 10 03 | 704 | (1.6− | 0.3−) | 2005 05 09 | 699 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.7− | 0.1− | 2005 05 09 | 699 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2002 10 03 | 704 | 0.6− | 0.9+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.8+ | 1.4− |
| 2002 10 11 | 704 | 0.3+ | 0.3+ | 2005 06 13 | G96 | 0.2− | 0.0 | 2006 11 17 | 703 | 2.2− | 0.4− |
| 2002 10 11 | 704 | 0.7+ | 0.4+ | 2005 06 13 | G96 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.5− |
| 2002 10 11 | 704 | 1.4+ | 0.7+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2002 10 11 | 704 | 0.9+ | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2005 03 13 | G96 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.4− | 0.4− |

**(142188)∗ 2002 RC$_{49}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.26245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26802408 | $\omega$ | 225.72523 | | +0.97047850 | +0.23903303 | |
| $a$ | 2.3824301 | $\Omega$ | 120.42057 | | −0.20930046 | +0.90092350 | |
| $e$ | 0.2070899 | $i$ | 2.13775 | | −0.11985327 | +0.36221549 | |
| $P$ | 3.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 24 | 691 | 0.6− | 0.2− | 2002 10 03 | 704 | 0.3− | 1.3+ | 2006 10 23 | G96 | 0.3− | 0.5− |
| 1993 01 24 | 691 | 0.4+ | 0.5− | 2002 10 03 | 704 | 0.1− | 1.2+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 1993 01 24 | 691 | 0.3+ | 0.4− | 2002 10 03 | 704 | 0.6− | 0.9+ | 2006 10 23 | G96 | 0.4− | 0.5− |
| 1999 12 02 | 691 | 0.4+ | 0.2− | 2002 10 06 | 704 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 1999 12 02 | 691 | 0.1+ | 0.2− | 2002 10 06 | 704 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.3− |
| 1999 12 02 | 691 | 0.1+ | 0.1− | 2002 10 06 | 704 | 0.5− | 0.5− | 2006 11 12 | G96 | 0.2− | 0.3− |
| 1999 12 15 | 691 | 0.2− | 0.1− | 2002 10 06 | 704 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 1999 12 15 | 691 | 0.1+ | 0.3+ | 2002 10 06 | 704 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.2− |
| 1999 12 15 | 691 | 0.5− | 0.2− | 2002 10 11 | 704 | 0.0 | 0.9+ | 2006 11 16 | H07 | 0.1− | 0.5− |
| 2000 01 30 | 691 | 0.2− | 0.2+ | 2002 10 11 | 704 | 0.5+ | 0.8+ | 2006 11 16 | H07 | 0.0 | 0.9+ |
| 2000 01 30 | 691 | 0.3− | 0.3+ | 2002 10 11 | 704 | 0.5+ | 1.1+ | 2006 11 16 | H07 | 0.1+ | 0.1− |
| 2000 01 30 | 691 | 0.5− | 0.2+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 16 | H07 | 0.1− | 0.5+ |
| 2002 09 04 | 699 | (1.5+ | 2.5−) | 2002 11 19 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.5+ |
| 2002 09 04 | 699 | 0.9− | 0.0 | 2002 11 19 | 644 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.9+ |
| 2002 09 04 | 699 | 0.8− | 0.1+ | 2002 11 19 | 644 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.9+ | 0.5+ |
| 2002 09 04 | 699 | 0.4− | 0.2− | 2004 01 22 | 704 | 0.7+ | 1.0+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2006 11 18 | 704 | (0.6+ | 1.6+) |
| 2002 09 05 | 704 | 0.1− | 0.3− | 2004 01 22 | 704 | 0.6+ | 0.3+ | 2006 11 19 | H07 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.8+ | 0.4+ | 2006 11 19 | H07 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 11 19 | H07 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.5− | 2005 05 08 | 691 | 0.4− | 0.3+ | 2006 11 19 | H07 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.5− | 2005 05 08 | 691 | 0.4+ | 0.6+ | 2006 11 20 | H07 | 1.1+ | 0.4− |
| 2002 09 06 | 704 | 0.3+ | 0.5− | 2005 05 08 | 691 | 0.4+ | 0.7+ | 2006 11 20 | H07 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | 0.1− | 0.7− | 2005 05 08 | G96 | 0.2+ | 0.4+ | 2006 11 20 | H07 | 0.2+ | 0.3+ |
| 2002 09 06 | 704 | 0.1+ | 0.6− | 2005 05 08 | G96 | 0.2− | 0.6+ | 2006 11 20 | H07 | 0.0 | 0.2+ |
| 2002 09 15 | 644 | 0.2− | 0.0 | 2005 05 08 | G96 | 0.3− | 0.6+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2002 09 15 | 644 | 0.3− | 0.1− | 2005 05 08 | G96 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.8+ | 0.2+ |
| 2002 09 15 | 644 | 0.4− | 0.0 | 2005 05 11 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2002 09 16 | 608 | 0.6− | 1.2− | 2005 05 11 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2002 09 16 | 608 | 0.6− | 1.1− | 2005 05 11 | G96 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2002 09 16 | 608 | 0.6− | 1.2− | 2005 05 11 | G96 | 0.4+ | 0.0 | 2006 11 27 | 704 | 1.0− | 0.1+ |
| 2002 09 27 | 699 | 0.5+ | 0.7+ | 2005 05 19 | G96 | 0.2− | 0.7+ | 2006 11 27 | 704 | 0.0 | 0.3− |
| 2002 09 27 | 699 | 0.7+ | 0.8+ | 2005 05 19 | G96 | 0.5+ | 0.3+ | 2006 11 27 | 704 | 0.0 | 0.1− |
| 2002 09 27 | 699 | 1.0+ | 0.6+ | 2005 05 19 | G96 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.9+ | 0.5− |
| 2002 09 27 | 699 | 0.8+ | 0.5− | 2005 05 19 | G96 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.9− | 1.5+ |
| 2002 10 01 | 699 | 0.3− | 0.3− | 2005 05 19 | G96 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.7− | 1.6+ |
| 2002 10 01 | 699 | 0.1− | 0.0 | 2005 05 19 | G96 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.4− | 1.1+ |
| 2002 10 01 | 699 | 0.7+ | 0.2− | 2005 05 19 | G96 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.5− | 1.4+ |
| 2002 10 01 | 699 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.1+ | 0.6+ | 2006 11 29 | 704 | 0.5− | 1.6+ |
| 2002 10 02 | 608 | 0.5+ | 0.3+ | 2005 05 19 | G96 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2002 10 02 | 608 | 0.4+ | 0.1− | 2005 05 19 | G96 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2002 10 02 | 608 | 0.1− | 0.3+ | 2005 05 19 | G96 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2002 10 03 | 704 | 0.6− | 1.2+ | 2005 05 19 | G96 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.5− |

**(142189)∗ 2002 RO$_{49}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.72915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26460996 | $\omega$ | 295.98850 | | +0.76146850 | −0.64529149 | |
| $a$ | 2.4028791 | $\Omega$ | 104.26295 | | +0.61505345 | +0.68940099 | |
| $e$ | 0.1852272 | $i$ | 3.62971 | | +0.20463379 | +0.32912788 | |
| $P$ | 3.72 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.8− | 0.5+ | 2004 03 11 | 644 | 0.3− | 0.7+ | 2006 11 02 | 703 | 0.3+ | 0.7− |
| 2000 02 03 | 704 | 0.5+ | 0.5+ | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 11 02 | 703 | 0.2+ | 0.7− |
| 2000 02 03 | 704 | 0.9+ | 0.6− | 2004 03 20 | 704 | 0.9− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.4− |
| 2000 02 03 | 704 | 0.4− | 1.0+ | 2004 03 20 | 704 | 1.2+ | 1.3+ | 2006 11 10 | 644 | 0.1− | 0.3− |
| 2000 03 04 | 704 | 0.9− | 1.5+ | 2004 03 20 | 704 | 0.8+ | 1.3+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2000 03 04 | 704 | 0.4− | 0.4+ | 2004 03 23 | 704 | 0.5− | 0.5+ | 2006 11 13 | 703 | 0.2+ | 0.6− |
| 2000 03 04 | 704 | 0.6+ | 1.8+ | 2004 03 23 | 704 | 0.9+ | 1.5+ | 2006 11 13 | 703 | 0.1+ | 0.5− |
| 2000 03 04 | 704 | 0.0 | 0.3− | 2004 03 23 | 704 | 1.3+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.7− |
| 2000 03 04 | 704 | 0.7+ | 0.1− | 2004 03 23 | 704 | 0.3− | 0.8+ | 2006 11 14 | 704 | 0.7+ | 0.2+ |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2005 07 05 | G96 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.9+ |
| 2002 09 05 | 704 | 0.3+ | 1.0+ | 2005 07 05 | G96 | 0.1− | 0.8+ | 2006 11 14 | 704 | 0.5+ | 0.2− |
| 2002 09 05 | 704 | 0.4− | 0.0 | 2005 07 05 | G96 | 0.5− | 1.0+ | 2006 11 14 | 704 | 0.6+ | 0.3+ |
| 2002 09 05 | 704 | 0.0 | 1.1+ | 2005 07 05 | G96 | (1.0− | 2.6+) | 2006 11 14 | 704 | 0.3+ | 0.6+ |
| 2002 09 06 | 704 | 0.8− | 0.1+ | 2006 08 29 | 703 | 1.6− | 0.6+ | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2002 09 06 | 704 | 0.1− | 1.1+ | 2006 08 29 | 703 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.3+ | 1.1+ | 2006 08 29 | 703 | 0.8− | 0.9− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.5− | 0.7+ | 2006 08 29 | 703 | 0.7− | 1.0− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2002 09 16 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2002 09 16 | 644 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.0 | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2002 09 16 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.1− | 1.2− | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2002 09 19 | 644 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.6− | 0.9− | 2006 11 17 | 704 | 0.1+ | 0.6− |
| 2002 09 19 | 644 | 0.5− | 1.1+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.2− | 0.6− |
| 2002 09 19 | 644 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2002 09 28 | 608 | (2.6− | 1.0−) | 2006 10 02 | G96 | 0.3− | 0.5− | 2006 11 17 | 704 | 0.4+ | 0.1+ |
| 2002 09 28 | 608 | (2.7− | 1.3−) | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 09 28 | 608 | (2.6− | 1.0−) | 2006 10 03 | 704 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2002 10 02 | 608 | 0.7− | 0.3+ | 2006 10 03 | 704 | 0.4+ | 0.8+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 10 02 | 608 | 0.7− | 0.2+ | 2006 10 03 | 704 | 0.6+ | 0.6+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2002 10 02 | 608 | 0.5− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2002 10 03 | 704 | 0.1+ | 1.1+ | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.7+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 20 | 691 | 0.3+ | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | (3.7+ | 0.1−) | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.7+ | 0.6− | 2006 11 20 | 704 | 0.3− | 0.0 |
| 2002 10 05 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2002 10 05 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2002 10 05 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.4− | 0.1+ |
| 2002 10 05 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.7− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | (2.4+ | 0.5+) | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | (2.8+ | 0.1−) | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | (2.1+ | 1.1+) | 2006 10 23 | G96 | 0.0 | 0.4− | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | (2.0+ | 0.0 ) | 2006 10 23 | G96 | 0.1− | 0.5− | 2006 11 25 | 704 | 0.1+ | 2.4+ |
| 2004 02 23 | 704 | 0.3+ | 1.5+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 25 | 704 | 0.1+ | 0.9+ |
| 2004 02 23 | 704 | 0.5− | 0.8+ | 2006 11 02 | 704 | 0.2− | 0.1+ | 2006 11 25 | 704 | 0.4+ | 0.2− |
| 2004 02 23 | 704 | 1.0+ | 0.1− | 2006 11 02 | 704 | 1.4− | 1.4+ | 2006 11 29 | 704 | 0.3− | 0.4+ |
| 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 11 02 | 704 | 0.9− | 0.7+ | 2006 11 29 | 704 | 0.0 | 0.5+ |
| 2004 02 23 | 704 | 1.5+ | 1.0− | 2006 11 02 | 704 | 0.3+ | 0.8+ | 2006 11 29 | 704 | 0.4− | 1.3+ |
| 2004 03 11 | 644 | 0.3− | 0.6+ | 2006 11 02 | 703 | 0.0 | 0.8− | 2006 11 29 | 704 | 0.5+ | 1.4+ |
| 2004 03 11 | 644 | 0.5− | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.7− | 2006 11 29 | 704 | 1.4− | 2.4+ |

**(142190)∗ 2002 RN$_{50}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.61342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25570196 | $\omega$ | 183.91730 | | +0.86214311 | +0.50221469 | |
| $a$ | 2.4583668 | $\Omega$ | 145.67164 | | −0.46156742 | +0.83304876 | |
| $e$ | 0.1151171 | $i$ | 6.82382 | | −0.20896118 | +0.23197021 | |
| $P$ | 3.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.6+ | 0.7− | 2002 10 08 | 699 | 0.5− | 1.3+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 1998 08 17 | 704 | 0.7+ | 0.0 | 2002 10 08 | 699 | 0.9+ | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 1998 08 17 | 704 | (1.1+ | 2.2+) | 2004 01 28 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 1998 08 17 | 704 | (0.5+ | 2.2−) | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.9+ | 0.9+ |
| 1998 08 23 | 704 | 0.3+ | 1.9− | 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.2+ |
| 1998 08 23 | 704 | 0.1− | 0.4+ | 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.0 | 0.9+ |
| 1998 08 23 | 704 | 0.5+ | 0.6− | 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 10 01 | 704 | 1.0+ | 1.1− |
| 1998 08 23 | 704 | (6.3− | 0.8+) | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.4+ | 0.4+ |
| 2001 03 02 | 691 | 0.1+ | 0.4+ | 2004 04 14 | 645 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.5− | 0.4+ |
| 2001 03 02 | 691 | 0.5+ | 0.7+ | 2004 04 14 | 645 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.2+ | 0.3+ |
| 2001 03 02 | 691 | 0.2− | 0.5+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.4+ | 0.3+ |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2006 09 15 | A50 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.7+ | 1.1− | 2006 09 15 | A50 | 0.6+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.5− | 0.4+ | 2006 09 16 | 699 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2006 09 16 | 699 | (0.7+ | 1.7+) | 2006 10 04 | G96 | 0.3− | 0.2− |
| 2002 09 06 | 704 | 0.7− | 0.7+ | 2006 09 16 | 699 | 0.1+ | 0.7+ | 2006 10 04 | G96 | 0.5− | 0.2− |
| 2002 09 06 | 704 | (1.9− | 1.0+) | 2006 09 16 | 699 | 0.9+ | 1.0− | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 10 04 | G96 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.7− | 0.7+ | 2006 09 18 | 703 | 0.5+ | 0.3− | 2006 10 16 | 703 | 1.1− | 0.3− |
| 2002 09 13 | 608 | 0.3− | 0.7− | 2006 09 18 | 703 | 0.8+ | 0.1− | 2006 10 16 | 703 | 0.7− | 1.1− |
| 2002 09 13 | 608 | 0.4− | 0.7− | 2006 09 18 | 703 | 0.9− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2002 09 13 | 608 | 0.5− | 0.4− | 2006 09 21 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2002 09 16 | 644 | 0.3− | 0.0 | 2006 09 21 | 699 | 0.6− | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.8+ |
| 2002 09 16 | 644 | 0.1− | 0.2− | 2006 09 21 | 699 | 0.6+ | 0.4− | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2002 09 16 | 644 | 0.4− | 0.1− | 2006 09 21 | 699 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.7− | 0.2+ |
| 2002 09 17 | 608 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 2002 09 17 | 608 | 0.5− | 0.3− | 2006 09 22 | 704 | 0.8+ | 0.8+ | 2006 10 28 | 703 | 0.5+ | 0.0 |
| 2002 09 17 | 608 | 0.8− | 0.7− | 2006 09 22 | 704 | 0.9+ | 0.5+ | 2006 10 28 | 703 | 0.4− | 0.6+ |
| 2002 10 06 | 704 | 0.3− | 0.6+ | 2006 09 22 | 704 | 0.0 | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.7+ |
| 2002 10 06 | 704 | 0.7− | 0.6+ | 2006 09 25 | 699 | 1.3+ | 0.3− | 2006 10 28 | 703 | 0.1+ | 1.1− |
| 2002 10 06 | 704 | 1.2+ | 0.3− | 2006 09 25 | 699 | 0.3− | 0.3− | 2006 11 10 | 704 | 0.5+ | 1.0+ |
| 2002 10 06 | 704 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.1+ | 2006 11 10 | 704 | 1.3− | 0.8+ |
| 2002 10 06 | 608 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.5− | 2006 11 10 | 704 | 0.7− | 0.8+ |
| 2002 10 06 | 608 | 0.8− | 0.1− | 2006 09 29 | 699 | 0.7− | 0.4+ | 2006 11 16 | 703 | 0.1+ | 0.5− |
| 2002 10 06 | 608 | 0.6− | 0.2+ | 2006 09 29 | 699 | 1.0+ | 0.2+ | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.4− | 0.7+ | 2006 09 29 | 699 | 0.4+ | 0.3− | 2006 11 16 | 703 | 0.4− | 0.1− |
| 2002 10 08 | 699 | 0.9+ | 1.5+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.4− | 0.1− |

**(142191)∗ 2002 RV$_{50}$ = 1976 UW$_{16}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 40958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.95724 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26466487 | $\omega$ | 261.91166 | | +0.90288540 | −0.42702411 | |
| $a$ | 2.4025467 | $\Omega$ | 123.35411 | | +0.41404977 | +0.83290435 | |
| $e$ | 0.2269662 | $i$ | 3.39609 | | +0.11558869 | +0.35202379 | |
| $P$ | 3.72 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 10 22 | 381 | 0.3− | 0.1+ | 2002 10 01 | 699 | 0.3− | 0.2− | 2004 03 21 | 691 | 0.1− | 0.2+ |
| 1976 10 22 | 381 | 1.0+ | 0.1− | 2002 10 01 | 699 | 0.4− | 0.2+ | 2004 03 21 | 691 | 0.3− | 0.5+ |
| 1991 11 03 | 691 | 0.1+ | 1.6− | 2002 10 02 | 704 | 0.8− | 0.0 | 2004 03 21 | 691 | 0.0 | 0.0 |
| 1991 11 03 | 691 | 0.2+ | 0.4− | 2002 10 02 | 704 | 0.4+ | 0.2+ | 2006 10 21 | D35 | 0.2+ | 0.1− |
| 1991 11 03 | 691 | 0.2− | 0.3+ | 2002 10 02 | 704 | 0.6+ | 0.2+ | 2006 10 21 | D35 | 0.0 | 0.1− |
| 1998 06 19 | 691 | 0.4− | 0.1− | 2002 10 03 | 704 | 0.5− | 0.3+ | 2006 10 21 | D35 | 0.2+ | 0.1− |
| 1998 06 19 | 691 | 0.4− | 0.2− | 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.5− |
| 1998 06 19 | 691 | 0.3− | 0.4− | 2002 10 03 | 704 | 0.8− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 1998 06 24 | 691 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.7− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 1998 06 24 | 691 | 0.1− | 0.7− | 2002 10 03 | 704 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 1998 06 24 | 691 | 0.0 | 0.1− | 2002 10 06 | 704 | 1.1− | 0.4+ | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 2000 02 07 | 691 | 0.1+ | 0.4+ | 2002 10 06 | 704 | 0.3− | 0.9+ | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 2000 02 07 | 691 | 0.2+ | 0.2+ | 2002 10 06 | 704 | 0.8− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.0 |
| 2000 02 07 | 691 | 0.1+ | 0.3+ | 2002 10 06 | 704 | 1.2− | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.1+ |
| 2001 05 16 | 691 | 0.5+ | 0.3+ | 2002 10 06 | 608 | 0.1+ | 0.9− | 2006 11 17 | 704 | 0.5+ | 0.0 |
| 2001 05 16 | 691 | 0.3+ | 0.0 | 2002 10 06 | 608 | 0.0 | 1.0− | 2006 11 18 | 691 | 0.1− | 0.3− |
| 2001 05 16 | 691 | 0.5+ | 0.0 | 2002 10 06 | 608 | 0.1+ | 0.8− | 2006 11 18 | 691 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2002 10 08 | 699 | 1.0+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.7+ |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2002 10 08 | 699 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.5− | 1.3− |
| 2002 09 05 | 704 | 0.3+ | 0.1+ | 2002 10 08 | 699 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.4− | 0.9+ | 2002 10 08 | 699 | 0.8+ | 0.3+ | 2006 11 18 | 704 | 0.9− | 0.1− |
| 2002 09 05 | 704 | 0.1− | 0.8+ | 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.9− | 0.3+ |
| 2002 09 06 | 704 | 0.6+ | 0.0 | 2002 10 11 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 1.1+ | 0.5+ |
| 2002 09 06 | 704 | 0.6+ | 0.3+ | 2002 10 11 | 704 | 0.7+ | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.7+ | 2006 11 20 | 704 | 0.7+ | 0.6+ |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.5+ | 0.6+ |
| 2002 09 06 | 704 | 0.4+ | 0.4− | 2002 10 16 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2002 09 16 | 644 | 0.2+ | 1.0+ | 2002 10 16 | 644 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.1− |
| 2002 09 16 | 644 | 0.4+ | 1.1+ | 2002 10 16 | 644 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.4− | 0.0 |
| 2002 09 16 | 644 | 0.3+ | 0.7+ | 2002 11 11 | 704 | 0.6− | 0.3− | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2002 10 01 | 699 | 0.3− | 0.1− | 2002 11 11 | 704 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 0.5− | 0.2− |
| 2002 10 01 | 699 | 0.1+ | 0.1− | 2002 11 11 | 704 | 0.2− | 0.8+ | 2006 11 29 | 704 | 0.2+ | 0.5+ |

**(142192)∗ 2002 RU$_{51}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.40124 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23058881 | $\omega$ | 225.69252 | | +0.99631961 | −0.06117930 | |
| $a$ | 2.6337663 | $\Omega$ | 137.70739 | | +0.07787018 | +0.93876591 | |
| $e$ | 0.2072735 | $i$ | 5.11860 | | −0.03582551 | +0.33908061 | |
| $P$ | 4.27 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.2− | 1.3+ | 2002 10 06 | 704 | 0.0 | 0.2− | 2004 02 29 | 691 | 0.2+ | 0.2+ |
| 2002 08 12 | 704 | 0.4− | 0.6+ | 2002 10 08 | 699 | 1.4+ | 0.8+ | 2004 02 29 | 691 | 0.2+ | 0.2+ |
| 2002 08 12 | 704 | 0.8+ | 0.5+ | 2002 10 08 | 699 | 0.4+ | 0.2+ | 2004 02 29 | 691 | 0.5+ | 0.5+ |
| 2002 09 05 | 704 | (1.6− | 0.2−) | 2002 10 08 | 699 | 0.0 | 1.0+ | 2005 04 02 | 691 | 0.2+ | 0.8+ |
| 2002 09 05 | 704 | 0.9− | 0.9+ | 2002 10 08 | 699 | 0.4+ | 0.6+ | 2005 04 02 | 691 | 0.1+ | 0.5+ |
| 2002 09 05 | 704 | 0.2− | 1.1+ | 2002 10 11 | 704 | 0.6+ | 0.0 | 2005 04 02 | 691 | 0.4+ | 0.2+ |
| 2002 09 05 | 704 | 0.7− | 0.8− | 2002 10 11 | 704 | 0.5+ | 0.2+ | 2005 05 13 | 691 | 0.0 | 0.6+ |
| 2002 09 05 | 704 | (1.6− | 0.3−) | 2002 10 11 | 704 | 0.5+ | 0.4+ | 2005 05 13 | 691 | 0.0 | 0.5+ |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.3+ | 2005 05 13 | 691 | 0.1+ | 0.7+ |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2002 10 11 | 704 | 0.8+ | 0.1+ | 2006 08 12 | 644 | 0.3− | 0.0 |
| 2002 09 06 | 704 | 0.6− | 0.2+ | 2002 10 16 | 644 | 0.2− | 1.1+ | 2006 08 12 | 644 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.8− | 0.0 | 2002 10 16 | 644 | 0.1− | 1.5+ | 2006 08 12 | 644 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.3+ | 2002 10 16 | 644 | 0.1+ | 1.2+ | 2006 08 13 | 644 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | 0.5− | 0.3+ | 2002 10 28 | 644 | 0.5− | 0.6+ | 2006 08 13 | 644 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.7− | 0.1− | 2002 10 28 | 644 | 0.5− | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.1+ | | |
| 2002 09 14 | 608 | 0.5+ | 0.6+ | 2002 10 28 | 644 | 0.2− | 0.3+ | 2006 08 20 | 644 | 0.3− | 0.1+ | | |
| 2002 09 14 | 608 | 0.5+ | 0.4+ | 2002 10 29 | 704 | 0.1+ | 0.5+ | 2006 08 20 | 644 | 0.1− | 0.0 | | |
| 2002 09 14 | 608 | 0.4+ | 0.4+ | 2002 10 29 | 704 | 0.5+ | 0.5+ | 2006 08 20 | 644 | 0.1− | 0.0 | | |
| 2002 10 01 | 699 | 0.7− | 0.5+ | 2002 10 29 | 704 | 0.3+ | 0.4− | 2006 08 29 | 704 | 0.0 | 0.9− | | |
| 2002 10 01 | 699 | 0.5− | 0.5+ | 2002 10 29 | 704 | 0.4− | 0.5− | 2006 08 29 | 704 | 0.7+ | 0.0 | | |
| 2002 10 01 | 699 | 1.0− | 0.8+ | 2002 10 29 | 704 | 0.3− | 0.0 | 2006 08 29 | 704 | 0.2− | 1.0+ | | |
| 2002 10 01 | 699 | 0.0 | 0.4+ | 2002 11 06 | 644 | 0.2− | 0.4+ | 2006 08 29 | 704 | 1.0+ | 0.8+ | | |
| 2002 10 02 | 704 | 0.6− | 1.1− | 2002 11 06 | 644 | 0.2− | 0.6+ | 2006 09 14 | 644 | 0.5− | 0.2− | | |
| 2002 10 02 | 704 | 0.7− | 1.1− | 2002 11 06 | 644 | 0.4− | 0.5+ | 2006 09 14 | 644 | 0.3+ | 0.0 | | |
| 2002 10 02 | 704 | 0.3− | 0.9− | 2002 11 19 | 644 | 0.4− | 0.6+ | 2006 09 14 | 644 | 0.2+ | 0.0 | | |
| 2002 10 02 | 704 | 0.6− | 1.3− | 2002 11 19 | 644 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.2− | | |
| 2002 10 03 | 704 | 1.4− | 0.4+ | 2002 11 19 | 644 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 1.2− | 0.6+ | 2004 02 11 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 1.3− | 0.4+ | 2004 02 11 | 691 | 0.4− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | 0.7− | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.3− | | |
| 2002 10 03 | 704 | 0.7− | 0.6+ | 2004 02 26 | 695 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.1− | | |
| 2002 10 06 | 704 | 0.6+ | 0.3− | 2004 02 26 | 695 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.4+ | 0.3− | | |
| 2002 10 06 | 704 | 1.0+ | 0.7+ | 2004 02 27 | 695 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.2− | | |
| 2002 10 06 | 704 | 0.7+ | 0.4− | 2004 02 27 | 695 | 0.7− | 0.4+ | | | | | | |

**(142193)∗ 2002 RU$_{52}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.23429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26464973 | $\omega$ | 272.56784 | | +0.97056720 | +0.23670901 | |
| $a$ | 2.4026384 | $\Omega$ | 73.74248 | | −0.19849646 | +0.89058219 | |
| $e$ | 0.1878697 | $i$ | 2.64868 | | −0.13637619 | +0.38837123 | |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 699 | (0.1+ | 2.2−) | 2002 09 13 | 704 | 0.2− | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 2002 08 15 | 699 | 0.2− | 0.3+ | 2002 09 13 | 608 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.3− | 0.4+ | | |
| 2002 08 15 | 699 | 0.6+ | 1.4+ | 2002 09 13 | 608 | 0.6− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 15 | 699 | 0.4− | 0.3− | 2002 09 13 | 608 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2002 08 20 | 644 | 0.2+ | 0.5+ | 2002 10 01 | 608 | 0.5− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2002 08 20 | 644 | 0.3+ | 0.6+ | 2002 10 01 | 608 | 0.3+ | 1.4+ | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2002 08 20 | 644 | 0.5+ | 0.3+ | 2002 10 01 | 608 | 0.4− | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.3− | | |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2004 02 11 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.3− | | |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2004 02 11 | 691 | 0.1+ | 0.8+ | 2006 11 08 | 644 | 0.3+ | 0.0 | | |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2004 02 11 | 691 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.2− | | |
| 2002 09 05 | 704 | 0.4− | 0.1− | 2005 04 11 | 695 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.3− | | |
| 2002 09 05 | 699 | 0.1− | 0.6+ | 2005 04 11 | 695 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.5− | 0.4+ | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2+ | 1.0− | | |
| 2002 09 05 | 699 | 0.4+ | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.0 | 0.2+ | 2005 05 14 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.6+ | | |
| 2002 09 05 | 699 | 0.4− | 0.5+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.0 | | |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2005 05 17 | G96 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2002 09 05 | 699 | 0.4+ | 0.0 | 2005 05 17 | G96 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.3− | | |
| 2002 09 05 | 704 | 1.2− | 0.4− | 2005 05 17 | G96 | 0.9+ | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2002 09 06 | 704 | 0.3+ | 0.7− | 2005 05 17 | G96 | 0.7− | 1.0+ | 2006 11 18 | 704 | 0.7− | 1.1+ | | |
| 2002 09 06 | 704 | 0.6+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.9− | 0.0 | | |
| 2002 09 06 | 704 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 1.4− | 0.3− | | |
| 2002 09 06 | 704 | 0.1− | 0.8− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.2− | 0.8− | | |
| 2002 09 06 | 704 | 0.5+ | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.5− | | |
| 2002 09 08 | 608 | 1.1− | 0.6− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 1.1+ | 0.8− | | |
| 2002 09 08 | 608 | 0.6− | 0.9− | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.9− | | |
| 2002 09 08 | 608 | 0.6− | 0.5− | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 1.7− | 0.4− | | |
| 2002 09 13 | 704 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.6+ | 0.3− | | |
| 2002 09 13 | 704 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1− | | | | | | |
| 2002 09 13 | 704 | 0.6+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.0 | | | | | | |

**(142194)∗ 2002 RF$_{53}$ = 2000 AL$_{136}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35398)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.36722 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27080182 | $\omega$ | 31.06388 | | +0.86221988 | −0.50653331 | |
| $a$ | 2.3661104 | $\Omega$ | 359.36700 | | +0.44542460 | +0.75908591 | |
| $e$ | 0.1913073 | $i$ | 4.90395 | | +0.24119248 | +0.40891635 | |
| $P$ | 3.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.2+ | 0.2− | 2002 09 15 | 644 | 0.4− | 0.8− | 2005 02 18 | 809 | 0.1+ | 0.0 | | |
| 2000 01 04 | 704 | 1.0− | 0.2− | 2002 09 15 | 644 | 0.5− | 1.0− | 2005 02 18 | 809 | 0.1− | 0.1+ | | |
| 2000 01 04 | 704 | 0.0 | 0.0 | 2002 10 01 | 608 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.2− | 1.0− | | |
| 2000 01 04 | 704 | 1.4− | 1.1− | 2002 10 01 | 608 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.4− | 0.3− | | |
| 2000 01 08 | 704 | 0.3+ | 0.2+ | 2002 10 01 | 608 | 0.6− | 0.2+ | 2006 09 18 | 703 | (2.3+ | 2.7−) | | |
| 2000 01 08 | 704 | 0.2+ | 0.8− | 2002 10 03 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | (0.4− | 4.0−) | | |
| 2000 01 08 | 704 | 0.7+ | 0.0 | 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 10 29 | 704 | (1.8+ | 0.3−) | | |
| 2000 01 08 | 704 | 1.6+ | 1.4− | 2002 10 03 | 704 | 0.1+ | 0.6+ | 2006 10 29 | 704 | 0.4− | 0.4− | | |
| 2000 01 31 | 704 | 0.3− | 0.4+ | 2002 10 03 | 704 | 0.2− | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.7+ | | |
| 2000 01 31 | 704 | 0.4− | 0.2+ | 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 11 15 | 704 | 0.9+ | 0.9+ | | |
| 2000 01 31 | 704 | 0.7− | 0.7+ | 2002 10 06 | 704 | 0.3+ | 0.9− | 2006 11 15 | 704 | 0.0 | 0.4+ | | |
| 2002 07 09 | 704 | 0.9− | 0.3+ | 2002 10 06 | 704 | 0.2− | 0.5− | 2006 11 15 | 704 | 0.0 | 0.2− | | |
| 2002 07 09 | 704 | 0.4− | 0.4+ | 2002 10 06 | 704 | 0.4− | 1.3− | 2006 11 15 | 704 | 0.0 | 0.4+ | | |
| 2002 07 09 | 704 | (1.8+ | 2.2+) | 2002 10 06 | 704 | 0.1+ | 0.7− | 2006 11 15 | 704 | 0.3+ | 0.3+ | | |
| 2002 08 10 | 704 | 1.2+ | 0.9+ | 2002 10 06 | 704 | 0.2− | 1.1− | 2006 11 15 | 704 | 0.1− | 0.0 | | |
| 2002 08 10 | 704 | 0.2− | 0.9− | 2002 10 07 | 704 | 0.4+ | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.3− | | |
| 2002 08 10 | 704 | 0.3− | 0.5+ | 2002 10 07 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.2+ | | |
| 2002 08 10 | 704 | 0.5− | 0.4− | 2002 10 07 | 704 | 0.1+ | 0.3− | 2006 11 15 | 704 | 0.0 | 0.2− | | |
| 2002 08 20 | 644 | 0.0 | 0.4+ | 2002 10 07 | 704 | 0.5+ | 0.6− | 2006 11 15 | 704 | 0.7− | 0.0 | | |
| 2002 08 20 | 644 | 0.0 | 0.4+ | 2002 10 07 | 704 | 0.1− | 0.6− | 2006 11 16 | 704 | 0.2+ | 0.2+ | | |
| 2002 08 20 | 644 | 0.1+ | 0.5+ | 2002 10 11 | 704 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.8+ | | |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.1+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 11 16 | 704 | 0.3− | 0.5+ | | |
| 2002 08 29 | 644 | 0.0 | 0.3+ | 2002 10 11 | 704 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.5+ | | |
| 2002 08 30 | 699 | 0.1+ | 0.4+ | 2002 10 29 | 704 | 0.4− | 1.2+ | 2006 11 19 | 704 | 0.9+ | 0.2− | | |
| 2002 08 30 | 699 | 0.2+ | 0.7+ | 2002 10 29 | 704 | (1.3+ | 2.3+) | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2002 08 30 | 699 | 0.5− | 0.9+ | 2002 10 29 | 704 | 1.4+ | 1.5+ | 2006 11 19 | 704 | 0.7+ | 0.1+ | | |
| 2002 08 30 | 699 | 0.1+ | 0.3+ | 2002 10 29 | 704 | (1.8+ | 1.9+) | 2006 11 19 | 704 | (2.0+ | 1.2+) | | |
| 2002 09 05 | 704 | 0.3+ | 0.5+ | 2004 03 01 | 926 | 0.4+ | 0.7+ | 2006 11 22 | 704 | 0.6+ | 0.5+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.5+ | 2004 03 01 | 926 | 0.4+ | 0.7+ | 2006 11 22 | 704 | 0.3+ | 0.1− | | |
| 2002 09 05 | 704 | 0.7+ | 1.1+ | 2004 03 01 | 926 | 0.3+ | 1.0+ | 2006 11 22 | 704 | 0.1+ | 0.4+ | | |
| 2002 09 05 | 704 | 0.7+ | 0.6+ | 2004 03 01 | 926 | 0.2+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.4+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2004 03 01 | 926 | 0.2+ | 0.7+ | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2004 03 01 | 926 | 0.3+ | 0.6+ | 2006 11 22 | 703 | 0.5− | 0.1− | | |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2005 02 14 | 809 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.2+ | 0.5− | | |
| 2002 09 12 | 644 | 0.2− | 0.1+ | 2005 02 14 | 809 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.1− | 0.5− | | |
| 2002 09 12 | 644 | 0.4− | 0.3+ | 2005 02 14 | 809 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.1+ | 0.3− | | |
| 2002 09 12 | 644 | 0.1− | 0.2− | 2005 02 14 | 809 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.8− | 0.6+ | | |
| 2002 09 14 | 608 | 0.7− | 0.8− | 2005 02 17 | 809 | 0.1+ | 0.6+ | 2006 11 29 | 704 | 0.6− | 0.8+ | | |
| 2002 09 14 | 608 | (1.9− | 1.7−) | 2005 02 17 | 809 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.2− | 0.9− | | |
| 2002 09 14 | 608 | 0.7− | 0.8− | 2005 02 17 | 809 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 0.4− | 0.3− | | |
| 2002 09 15 | 644 | 0.2− | 0.8− | 2005 02 18 | 809 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.8− | 0.7+ | | |

**(142195)∗ 2002 RK$_{54}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.35885 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25488265 | $\omega$ | 179.16749 | | +0.86718152 | +0.49462476 | |
| $a$ | 2.4636322 | $\Omega$ | 150.95948 | | −0.45758447 | +0.83723912 | |
| $e$ | 0.1391367 | $i$ | 6.84020 | | −0.19650104 | +0.23318875 | |
| $P$ | 3.87 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | (2.5+ | 1.2−) | 2002 09 17 | 608 | (2.3− | 0.2+) | 2006 09 18 | 703 | 0.7− | 0.5+ | | |
| 1998 08 17 | 704 | 0.4+ | 0.8+ | 2002 09 17 | 608 | 1.2− | 0.5− | 2006 09 18 | 703 | 0.8− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.6+ | 0.3+ | 2002 09 30 | 608 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.3− | 0.1− |
| 1998 08 17 | 704 | (1.7− | 2.1−) | 2002 09 30 | 608 | 0.1+ | 0.4− | 2006 09 18 | 703 | 0.3+ | 0.4+ |
| 1998 08 30 | 699 | 0.2+ | 0.9+ | 2002 09 30 | 608 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.4− | 0.3− |
| 1998 08 30 | 699 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.1+ | 1.3+ | 2006 09 30 | 703 | 0.6+ | 0.7− |
| 1998 08 30 | 699 | 0.0 | 1.4+ | 2002 10 03 | 704 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 0.5− | 0.4− |
| 2001 03 02 | 691 | 0.3− | 0.4+ | 2002 10 03 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 1.1+ | 0.3− |
| 2001 03 02 | 691 | 0.6− | 0.2+ | 2002 10 03 | 704 | 0.1− | 1.0+ | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2001 03 02 | 691 | 0.2+ | 0.3+ | 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2002 09 05 | 704 | (0.0 | 2.2−) | 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.4+ | 0.0 |
| 2002 09 05 | 704 | (1.1+ | 3.3−) | 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2002 09 05 | 704 | (0.1+ | 2.9−) | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2002 09 05 | 704 | (0.1+ | 3.1−) | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2002 09 06 | 704 | (0.4+ | 4.7−) | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2002 09 06 | 704 | (0.1− | 4.7−) | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 09 06 | 704 | (0.2− | 5.6−) | 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | (0.7+ | 5.5−) | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 09 14 | 608 | 1.0− | 0.2+ | 2006 09 16 | 699 | 0.2− | 0.6+ | 2006 11 16 | 703 | 0.5+ | 0.0 |
| 2002 09 14 | 608 | 0.7− | 0.5+ | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.9+ |
| 2002 09 14 | 608 | 0.9− | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.8+ | 2006 11 16 | 703 | 1.3+ | 0.3+ |
| 2002 09 17 | 608 | 1.2− | 0.5− | 2006 09 16 | 699 | 0.8+ | 0.9− | 2006 11 16 | 703 | 1.0− | 0.7+ |

**(142196)∗ 2002 RP$_{54}$ = 1991 SK$_3$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 61286)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 15.17091 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.26600247 | $\omega$ | 230.36807 | | | +0.99279226 | | −0.09666482 | |
| $a$ | 2.3944858 | $\Omega$ | 135.04833 | | | +0.11480404 | | +0.93674098 | |
| $e$ | 0.1780554 | $i$ | 5.75523 | | | −0.03440305 | | +0.33641084 | |
| $P$ | 3.71 | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.3+ | 0.5− | 2002 09 13 | 704 | 1.1+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 1991 09 30 | 691 | 0.1+ | 0.2− | 2002 09 13 | 704 | 1.4+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 1991 09 30 | 691 | 0.2+ | 0.2− | 2002 09 16 | 644 | 0.2+ | 1.2+ | 2006 09 30 | 699 | 0.9− | 0.1+ |
| 1991 10 02 | 691 | 0.4− | 0.4− | 2002 09 16 | 644 | 0.2− | 1.4+ | 2006 09 30 | 703 | 1.3− | 1.1− |
| 1991 10 02 | 691 | 0.2+ | 0.3− | 2002 09 16 | 644 | 0.2+ | 1.3+ | 2006 09 30 | 703 | 0.4− | 0.9− |
| 2002 08 12 | 608 | 0.3− | 0.9+ | 2004 01 30 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2002 08 12 | 608 | 0.2− | 0.5+ | 2004 01 30 | 691 | 0.3+ | 0.0 | 2006 10 22 | 703 | 1.2− | 0.3− |
| 2002 08 12 | 608 | 0.8− | 0.7+ | 2004 01 30 | 691 | 0.4+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2002 09 05 | 704 | 1.1− | 0.4+ | 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.2− |
| 2002 09 05 | 704 | 0.6− | 1.4+ | 2005 05 08 | 691 | 0.1+ | 0.1− | 2006 11 01 | 703 | 0.5+ | 0.3− |
| 2002 09 05 | 704 | 0.7− | 0.4+ | 2005 05 08 | 691 | 0.1− | 0.1− | 2006 11 01 | 703 | 0.6− | 1.0− |
| 2002 09 06 | 704 | 0.4+ | 0.5+ | 2005 05 16 | 691 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.7− | 0.4− |
| 2002 09 06 | 704 | 0.9+ | 0.8− | 2005 05 16 | 691 | 0.1− | 0.2+ | 2006 11 01 | 703 | 1.3+ | 0.3+ |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2005 05 16 | 691 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.6− | 0.7+ |
| 2002 09 06 | 704 | 0.3+ | 0.4+ | 2005 06 09 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 0.7+ | 0.2− | 2005 06 09 | 691 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2002 09 12 | 608 | 0.1− | 0.1− | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.3+ | 0.5+ |
| 2002 09 12 | 608 | 0.2− | 0.2− | 2006 09 30 | 699 | 0.7− | 0.7+ | 2006 11 13 | 703 | 0.5+ | 0.2+ |
| 2002 09 12 | 608 | 0.1+ | 0.8− | 2006 09 30 | 699 | 0.2− | 0.9+ | 2006 11 13 | 703 | 0.3− | 1.0+ |
| 2002 09 13 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 699 | 0.6+ | 0.3+ | 2006 11 13 | 703 | 1.0+ | 1.4+ |

**(142197)∗ 2002 RT$_{55}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 42.30386 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.26430917 | $\omega$ | 124.72991 | | | +0.91028824 | | +0.41139269 | |
| $a$ | 2.4047018 | $\Omega$ | 211.05185 | | | −0.40303028 | | +0.85521978 | |
| $e$ | 0.1943990 | $i$ | 5.13501 | | | −0.09456167 | | +0.31520656 | |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 0.2− | 0.5+ | 2004 01 28 | 645 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2002 09 05 | 699 | 0.0 | 0.6− | 2005 04 02 | G96 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.3+ | 0.5+ |
| 2002 09 05 | 699 | 0.1+ | 0.9+ | 2005 04 02 | G96 | 0.7− | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.4+ |
| 2002 09 05 | 699 | 0.8− | 0.1− | 2005 04 02 | G96 | 0.6− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 2002 09 05 | 699 | 1.2+ | 0.4+ | 2005 04 02 | G96 | 1.2− | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.2+ |
| 2002 09 05 | 699 | 0.6− | 1.1− | 2005 04 07 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2002 09 05 | 699 | 0.3− | 1.2+ | 2005 04 07 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 09 05 | 699 | 0.3− | 0.9+ | 2005 04 07 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2005 05 10 | 691 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2002 09 06 | 704 | 1.0+ | 0.5+ | 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2002 09 06 | 704 | 0.7+ | 1.2+ | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.3− | 0.2− | 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.4+ | 0.8+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2002 09 13 | 644 | 0.2− | 0.1+ | 2005 05 10 | G96 | (2.0− | 2.0+) | 2006 11 11 | 703 | 0.9− | 0.2− |
| 2002 09 13 | 644 | 0.5+ | 0.6+ | 2005 05 12 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.1− | 1.1+ |
| 2002 09 13 | 644 | 0.2− | 0.3+ | 2005 05 12 | G96 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.9− | 1.0+ |
| 2002 09 13 | 644 | 0.4+ | 0.6+ | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.7+ | 0.2− |
| 2002 09 28 | 608 | 1.0− | 0.8− | 2005 05 12 | G96 | 0.7− | 0.2+ | 2006 11 13 | G96 | 0.8+ | 0.1+ |
| 2002 09 28 | 608 | 0.9− | 0.8− | 2005 05 12 | G96 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2002 09 28 | 608 | 1.3− | 1.4− | 2005 05 12 | G96 | 0.5+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 1.0+ | 0.6+ | 2005 05 12 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 1.1+ | 1.0− | 2005 05 12 | G96 | 0.3− | 0.6+ | 2006 11 17 | 703 | 2.0− | 0.2− |
| 2002 10 04 | 704 | 0.7+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.2+ | 1.2− |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.9+ | 0.9− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.7− |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.5− | 0.4+ | 2006 11 23 | G96 | 1.3+ | 0.4− |
| 2004 01 28 | 645 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.3+ | | | | |

**(142198)∗ 2002 RN$_{56}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 152.46385 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.26840013 | $\omega$ | 263.08209 | | | −0.57083365 | | +0.81939873 | |
| $a$ | 2.3802043 | $\Omega$ | 331.90751 | | | −0.70263930 | | −0.52045887 | |
| $e$ | 0.0831382 | $i$ | 6.37598 | | | −0.42479050 | | −0.24022550 | |
| $P$ | 3.67 | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.1+ | 0.9− | 2002 10 04 | 704 | 0.3− | 0.5+ | 2004 02 23 | 704 | 1.1+ | 0.7+ |
| 1999 12 12 | 704 | 0.1+ | 0.8− | 2002 10 04 | 704 | 1.0+ | 0.3+ | 2006 10 19 | 703 | 0.7+ | 0.2+ |
| 1999 12 12 | 704 | 0.2− | 1.8− | 2003 12 23 | 704 | 0.2− | 0.9+ | 2006 10 19 | 703 | 1.2+ | 1.4+ |
| 1999 12 12 | 704 | 0.3+ | 0.3− | 2003 12 23 | 704 | 0.0 | 0.6+ | 2006 10 19 | 703 | 1.4+ | 0.3− |
| 2002 09 05 | 699 | 0.5− | 1.0+ | 2003 12 23 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.3+ |
| 2002 09 05 | 699 | (1.9− | 0.9−) | 2003 12 23 | 704 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 09 05 | 699 | 0.1− | 0.7− | 2003 12 23 | 704 | 0.3+ | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 09 05 | 699 | 0.9− | 0.1− | 2003 12 28 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 1.2− | 0.9+ | 2003 12 28 | 704 | 0.4+ | 0.4− | 2006 11 13 | 644 | 0.4+ | 0.1− |
| 2002 09 06 | 704 | 0.5− | 1.2+ | 2003 12 28 | 704 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.4+ | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.5+ | 2003 12 28 | 704 | 0.9− | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.1− | 0.2+ | 2003 12 28 | 704 | 0.6− | 0.7+ | 2006 11 15 | 703 | 0.5+ | 0.3− |
| 2002 09 14 | 644 | 0.5− | 0.4− | 2004 01 13 | 699 | 0.1+ | 0.4− | 2006 11 15 | 703 | 0.2− | 0.5− |
| 2002 09 14 | 644 | 0.3− | 0.2− | 2004 01 13 | 699 | 0.4− | 0.6+ | 2006 11 15 | 703 | 0.4− | 0.5− |
| 2002 09 14 | 644 | 0.5− | 0.0 | 2004 01 13 | 699 | 0.5− | 0.4− | 2006 11 15 | 703 | 0.0 | 0.4− |
| 2002 10 04 | 704 | 0.7+ | 0.5+ | 2004 01 13 | 699 | 0.2+ | 0.8+ | 2006 11 17 | 644 | 0.3− | 0.2− |
| 2002 10 04 | 704 | 0.3− | 0.9− | 2004 02 15 | 704 | 0.7+ | 0.6+ | 2006 11 17 | 644 | 0.4− | 0.1− |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2004 02 15 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 644 | 0.2− | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2004 02 15 | 704 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.8− | 1.2− |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2004 02 15 | 704 | 0.3+ | 0.1− | 2006 11 22 | 703 | (1.8− | 1.8−) |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.8− | 1.0− |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.7+ | 0.1− | 2006 11 22 | 703 | (1.2− | 1.9−) |
| 2002 10 04 | 704 | 0.4+ | 1.1+ | 2004 02 23 | 704 | 1.0+ | 0.3− | | | | |

**(142199)∗ 2002 RC$_{57}$ = 2004 BB$_{56}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 56536)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.10544 | | (2000.0) | | | |
| $n$ | 0.22862199 | $\omega$ | 104.92379 | | +0.50856903 | −0.85992956 |
| $a$ | 2.6488501 | $\Omega$ | 314.42296 | | +0.76481060 | +0.47429202 |
| $e$ | 0.1284199 | $i$ | 3.47939 | | +0.39550257 | +0.18859544 |
| $P$ | 4.31 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 0.8− | 1.0− | 2004 01 23 | 699 | 0.4+ | 0.8− | 2004 02 26 | 704 | 1.5+ | 0.7+ |
| 1998 11 11 | 704 | 0.6− | 0.3− | 2004 01 23 | 699 | 0.7+ | 0.3− | 2004 02 26 | 704 | 1.4+ | 0.0 |
| 1998 11 11 | 704 | 0.1− | 0.6+ | 2004 01 23 | 699 | 0.5− | 0.1+ | 2004 03 15 | 703 | 0.3− | 1.3+ |
| 1998 11 11 | 704 | 0.1+ | 0.4+ | 2004 01 23 | 699 | 1.0− | 0.3+ | 2004 03 15 | 703 | (0.6− | 2.0+) |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2004 01 24 | 704 | 0.1− | 0.2− | 2004 03 15 | 703 | (1.8+ | 1.5+) |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2004 01 24 | 704 | 0.1− | 0.1− | 2004 03 15 | 703 | (1.7− | 0.7+) |
| 2002 09 05 | 699 | 0.9+ | 0.7+ | 2004 01 24 | 704 | 0.2+ | 0.4− | 2006 07 18 | G96 | 0.5− | 0.1− |
| 2002 09 05 | 699 | 0.5+ | 0.1− | 2004 01 24 | 704 | 0.1− | 0.1− | 2006 07 18 | G96 | 0.8− | 0.2+ |
| 2002 09 05 | 699 | 0.5+ | 0.7− | 2004 01 24 | 704 | 0.6− | 0.4− | 2006 07 18 | G96 | 0.3− | 0.1+ |
| 2002 09 05 | 699 | 0.7+ | 0.7+ | 2004 02 11 | 644 | 0.6+ | 0.3+ | 2006 07 18 | G96 | 0.5− | 0.2+ |
| 2002 09 06 | 704 | 0.2− | 0.5− | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.6+ |
| 2002 09 06 | 704 | 0.3+ | 1.2+ | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2006 08 13 | 644 | 0.5− | 0.7+ |
| 2002 09 06 | 704 | 1.2− | 0.1− | 2004 02 12 | 333 | 1.2− | 0.2− | 2006 08 13 | 644 | 0.0 | 0.6+ |
| 2002 09 06 | 704 | 0.8− | 0.6+ | 2004 02 12 | 333 | 0.9− | 0.3− | 2006 08 13 | D35 | 0.0 | 0.8+ |
| 2002 09 06 | 704 | 1.1− | 0.3+ | 2004 02 12 | 333 | 0.3− | 0.2+ | 2006 08 13 | D35 | 0.2− | 1.2+ |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2004 02 13 | 691 | 0.2+ | 0.4+ | 2006 08 13 | D35 | 0.1− | 0.7+ |
| 2002 09 14 | 644 | 0.5− | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.1− | 1.0+ |
| 2002 10 04 | 704 | (2.9− | 2.3+) | 2004 02 13 | 333 | 0.7− | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.4+ |
| 2002 10 04 | 704 | (2.8− | 2.0+) | 2004 02 13 | 333 | 1.1− | 0.7+ | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | (3.1− | 2.0+) | 2004 02 13 | 333 | 0.0 | 0.8+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | (2.6− | 1.9+) | 2004 02 17 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 0.4− | 1.2− |
| 2002 10 04 | 704 | (2.7− | 2.4+) | 2004 02 17 | 704 | 0.4+ | 0.1− | 2006 09 14 | 703 | 1.2− | 0.1− |
| 2002 10 31 | 704 | 0.2− | 0.8− | 2004 02 17 | 704 | 0.1+ | 0.9+ | 2006 09 14 | 703 | 0.7+ | 0.2+ |
| 2002 10 31 | 704 | 0.4+ | 0.3+ | 2004 02 17 | 704 | 0.5+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.7+ |
| 2002 10 31 | 704 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2004 02 19 | 704 | 0.4+ | 0.3− | 2006 09 27 | G96 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 0.5− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.3+ |
| 2002 11 05 | 291 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2002 11 05 | 291 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2002 11 05 | 291 | 0.5+ | 0.4+ | 2004 02 20 | 608 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 01 18 | 644 | 0.7+ | 0.1− | 2004 02 20 | 608 | 1.4− | 0.5− | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2004 01 18 | 644 | 0.5+ | 0.1+ | 2004 02 20 | 608 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2004 01 18 | 644 | 0.4+ | 0.0 | 2004 02 26 | 704 | 0.6+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.3+ |

**(142200)∗ 2002 RF$_{57}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.34339 | | (2000.0) | | | |
| $n$ | 0.26592582 | $\omega$ | 183.79494 | | +0.89983920 | −0.43382934 |
| $a$ | 2.3949459 | $\Omega$ | 202.09226 | | +0.40335152 | +0.86730086 |
| $e$ | 0.1050410 | $i$ | 6.96758 | | +0.16612334 | +0.24409287 |
| $P$ | 3.71 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 704 | 0.4+ | 1.9+ | 2002 10 04 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 683 | 0.7+ | 0.3− |
| 1997 04 07 | 704 | 1.5+ | 0.3− | 2002 10 04 | 704 | 0.3− | 0.9+ | 2006 11 11 | 683 | (1.0+ | 1.7+) |
| 1997 05 08 | 691 | 0.1− | 0.8+ | 2002 10 04 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 683 | 0.6− | 0.3+ |
| 1997 05 08 | 691 | 0.4− | 0.2+ | 2004 02 19 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 1.1− | 1.0+ |
| 1997 05 08 | 691 | 0.4− | 0.7+ | 2004 02 19 | 704 | 0.7+ | 1.1+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2000 01 11 | 704 | 0.8+ | 0.5− | 2004 02 19 | 704 | 1.4+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.2− |
| 2000 01 11 | 704 | 0.0 | 0.3+ | 2004 02 19 | 704 | 0.7+ | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2000 01 11 | 704 | 0.0 | 0.1+ | 2004 03 12 | 644 | 0.7+ | 0.4+ | 2006 11 13 | 683 | 0.8+ | 0.7+ |
| 2001 05 25 | 691 | 0.4+ | 0.6+ | 2004 03 12 | 644 | 0.9+ | 0.3+ | 2006 11 13 | 683 | 0.8+ | 1.4+ |
| 2001 05 25 | 691 | 0.3+ | 0.6+ | 2004 03 12 | 644 | 0.9+ | 0.6+ | 2006 11 13 | 683 | 0.4− | 0.7+ |
| 2001 05 25 | 691 | 0.4− | 0.5+ | 2005 07 02 | 599 | 0.5+ | 1.0+ | 2006 11 14 | 704 | 0.5+ | 0.6+ |
| 2002 09 05 | 699 | 0.4− | 1.4+ | 2005 07 02 | 599 | 0.1+ | 1.0+ | 2006 11 14 | 704 | 0.5− | 0.5+ |
| 2002 09 05 | 699 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 11 14 | 704 | 0.6+ | 0.2+ |
| 2002 09 05 | 699 | 1.0− | 1.0+ | 2006 08 28 | 703 | (1.8− | 0.3−) | 2006 11 14 | 704 | 0.9+ | 0.5+ |
| 2002 09 05 | 699 | 0.5+ | 0.4+ | 2006 08 28 | 703 | 0.6+ | 0.2− | 2006 11 14 | 704 | 0.5− | 0.0 |
| 2002 09 06 | 704 | 1.1+ | 0.6+ | 2006 08 28 | 703 | 1.0− | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 2002 09 06 | 704 | 0.4+ | 0.7− | 2006 09 16 | 703 | (1.0− | 2.0+) | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 2002 09 06 | 704 | 1.1+ | 0.2+ | 2006 09 16 | 703 | 1.3− | 0.9− | 2006 11 17 | 704 | 0.8+ | 1.2− |
| 2002 09 06 | 704 | 1.1+ | 0.2+ | 2006 09 16 | 703 | 1.2− | 0.5− | 2006 11 17 | 704 | 0.2+ | 1.3− |
| 2002 09 06 | 704 | 0.7+ | 0.1+ | 2006 09 16 | 703 | 0.6+ | 1.0− | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 09 06 | 704 | 0.4+ | 0.2− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 09 06 | 704 | 0.5+ | 0.3− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2002 09 06 | 704 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2002 09 11 | 644 | 0.4− | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 2002 09 11 | 644 | 0.4− | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2002 09 11 | 644 | 0.5− | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.9− | 1.0+ |
| 2002 09 13 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 1.2− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.9+ |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.5+ | 1.1+ |
| 2002 09 13 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.2+ | 1.1+ |
| 2002 09 28 | 683 | 1.0− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2002 09 28 | 683 | 0.6− | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2002 09 28 | 683 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2002 09 30 | 704 | 0.5− | 0.5+ | 2006 11 02 | 703 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 2.1− | 0.1− |
| 2002 09 30 | 704 | 0.1− | 0.3+ | 2006 11 02 | 703 | 1.2− | 0.8+ | 2006 11 28 | 704 | 0.5− | 0.2− |
| 2002 09 30 | 704 | 0.4− | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.7+ | 2006 11 28 | 704 | 0.3− | 0.4− |
| 2002 09 30 | 704 | 0.0 | 0.7+ | 2006 11 02 | 703 | 0.0 | 0.6− | 2006 11 28 | 704 | 0.5− | 0.7+ |
| 2002 09 30 | 704 | 0.6− | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 0.4− | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.2− | | | | |
| 2002 10 04 | 704 | 0.1− | 0.9+ | 2006 11 09 | 644 | 0.1+ | 0.1− | | | | |

**(142201)∗ 2002 RN$_{57}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 277.38864 | | (2000.0) | | | |
| $n$ | 0.24119004 | $\omega$ | 177.93761 | | −0.00124570 | −0.99838152 |
| $a$ | 2.5560134 | $\Omega$ | 272.13043 | | +0.91666494 | +0.02158336 |
| $e$ | 0.1357002 | $i$ | 3.26171 | | +0.39965464 | −0.05261643 |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.4+ | 0.1− | 2004 02 12 | 644 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.5− | 0.8+ |
| 2000 02 08 | 704 | 0.7+ | 0.1− | 2004 02 12 | 644 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.3+ |
| 2000 02 08 | 704 | 0.1− | 0.5+ | 2004 02 12 | 644 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2000 02 08 | 704 | 0.2− | 0.8− | 2004 02 22 | 333 | 0.2+ | 0.0 | 2006 08 29 | 691 | 0.4− | 0.3+ |
| 2002 09 05 | 699 | 0.7+ | 0.7− | 2004 02 22 | 333 | 0.4− | 0.1+ | 2006 08 29 | 691 | 0.3− | 0.3+ |
| 2002 09 05 | 699 | 0.1+ | 0.7+ | 2004 02 22 | 333 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.6− |
| 2002 09 05 | 699 | 1.1+ | 0.7+ | 2004 02 25 | 333 | 0.9+ | 0.4− | 2006 08 30 | 704 | 0.3− | 0.2+ |
| 2002 09 05 | 699 | 0.8− | 0.3+ | 2004 02 25 | 333 | 0.5− | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2004 02 25 | 333 | 0.3− | 0.3+ | 2006 09 12 | 703 | 0.2+ | 0.7− |
| 2002 09 06 | 704 | 0.2− | 0.1+ | 2004 02 25 | 333 | 0.5− | 0.1+ | 2006 09 12 | 703 | 0.7− | 0.5− |
| 2002 09 06 | 704 | 0.3+ | 0.3− | 2004 03 12 | 644 | 0.4+ | 0.4+ | 2006 09 12 | 703 | 0.0 | 0.6− |
| 2002 09 06 | 704 | 0.2− | 0.7− | 2004 03 12 | 644 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 0.9− | 0.6− |
| 2002 09 06 | 704 | 0.9+ | 0.2− | 2004 03 12 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 699 | 0.8+ | 0.6− |
| 2002 09 13 | 644 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.7+ | 1.0+ | 2006 09 30 | 699 | 0.2+ | 0.1+ |
| 2002 09 13 | 644 | 0.2− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 1.3+ | 2006 09 30 | 699 | 0.2− | 0.7+ |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.9+ | 2006 09 30 | 699 | 0.4+ | 0.9+ |
| 2002 09 15 | 608 | 0.8− | 0.7− | 2004 03 15 | 704 | 0.2+ | 1.0+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2002 09 15 | 608 | 0.6− | 0.3− | 2004 03 15 | 704 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 09 15 | 608 | 0.8− | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 09 19 | 644 | 0.4− | 0.2+ | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 291 | 0.1+ | 0.0 |
| 2002 09 19 | 644 | 0.5− | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 291 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 19 | 644 | 0.4− | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.1− | 2006 10 16 | 291 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 291 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.0 | 0.2− | 2004 03 21 | 691 | 0.0 | 0.1− | 2006 10 19 | 291 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.1+ | 0.8+ | 2004 03 21 | 691 | 0.2− | 0.1+ | 2006 10 19 | 291 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.7+ | 2004 03 21 | 691 | 0.2− | 0.0 | 2006 10 20 | 291 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.4+ | 2004 03 27 | 704 | 0.1− | 1.2+ | 2006 10 20 | 291 | 0.0 | 0.2− |
| 2004 01 23 | 699 | 0.8− | 0.5− | 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 291 | 0.2+ | 0.0 |
| 2004 01 23 | 699 | 0.8− | 0.6− | 2004 03 27 | 704 | 0.6− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2004 01 23 | 699 | 0.0 | 0.4− | 2006 08 27 | 699 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 01 23 | 699 | 0.3− | 0.4− | 2006 08 27 | 699 | 0.7− | 1.0+ | 2006 10 21 | 291 | 0.0 | 0.1− |
| 2004 01 29 | 704 | 0.4+ | 0.1− | 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 10 21 | 291 | 0.0 | 0.0 |
| 2004 01 29 | 704 | 0.6− | 0.4− | 2006 08 27 | 699 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2004 01 29 | 704 | 0.2− | 0.4− | 2006 08 29 | 703 | 0.6+ | 0.3+ | 2006 10 21 | 291 | 0.1+ | 0.1− |
| 2004 01 29 | 704 | 0.4+ | 0.5− | 2006 08 29 | 703 | 0.0 | 0.1+ | | | | |

**(142202)∗ 2002 RY$_{57}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.29424 | | (2000.0) | | | |
| $n$ | 0.25429306 | $\omega$ | 137.80118 | | +0.99053054 | +0.13082710 |
| $a$ | 2.4674388 | $\Omega$ | 214.74662 | | −0.13716204 | +0.92976711 |
| $e$ | 0.2130388 | $i$ | 4.18926 | | −0.00598482 | +0.34411828 |
| $P$ | 3.88 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.9− | 0.4+ | 2002 11 06 | 704 | 0.2− | 0.8+ | 2006 10 11 | 691 | 0.2− | 0.0 |
| 1998 08 17 | 704 | 0.2+ | 0.2+ | 2002 11 06 | 704 | (0.2− | 1.9+) | 2006 10 11 | 691 | 0.3− | 0.2− |
| 1998 08 17 | 704 | 0.1+ | 0.1− | 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1998 08 17 | 704 | 0.0 | 1.8− | 2005 04 11 | G96 | 0.7− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 08 28 | 644 | 0.2+ | 0.5+ | 2005 04 11 | G96 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.2− |
| 2002 08 28 | 644 | 0.2+ | 0.4+ | 2005 04 12 | G96 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 699 | 0.6+ | 0.2− | 2005 04 12 | G96 | 0.4− | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.2− |
| 2002 09 05 | 699 | 0.3− | 0.7+ | 2005 04 12 | G96 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 699 | 0.8− | 0.0 | 2005 04 12 | G96 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 699 | 0.0 | 0.6+ | 2005 04 12 | G96 | 1.0− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | 0.0 | 0.5+ | 2005 04 12 | G96 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.4− | 0.1+ | 2005 04 14 | 691 | 0.4+ | 0.4+ | 2006 10 20 | 703 | 0.3− | 0.2− |
| 2002 09 06 | 704 | 0.0 | 0.1− | 2005 04 14 | 691 | 0.7+ | 0.3+ | 2006 10 20 | 703 | 0.8+ | 0.2− |
| 2002 09 13 | 644 | 0.3+ | 0.0 | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.6− | 0.6− |
| 2002 09 13 | 644 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 0.7− | 0.6+ | 2006 10 21 | 703 | 1.0+ | 0.0 |
| 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.2− | 0.7+ | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.6+ |
| 2002 09 14 | 644 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.0 | 1.0+ |
| 2002 09 14 | 644 | 0.5+ | 0.1− | 2006 09 15 | 291 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.3− | 0.1− |
| 2002 09 15 | 608 | 0.4− | 0.5− | 2006 09 15 | 291 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.4− | 0.4− |
| 2002 09 15 | 608 | 0.7− | 0.6− | 2006 09 15 | 291 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2002 09 15 | 608 | 0.5− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2002 09 19 | 644 | 0.6− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.9− |
| 2002 09 19 | 644 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.7− |
| 2002 09 19 | 644 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.7− | 0.5− |
| 2002 09 27 | 699 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.2− |
| 2002 09 27 | 699 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2002 09 27 | 699 | 1.1+ | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2002 09 27 | 699 | 0.5+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.6− | 0.3− |
| 2002 09 30 | 704 | 0.5− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2002 09 30 | 704 | 0.1− | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2002 09 30 | 704 | 0.0 | 0.9+ | 2006 09 25 | 704 | 0.2+ | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2002 09 30 | 704 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.4+ | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 09 30 | 704 | 0.6− | 0.2+ | 2006 09 25 | 704 | (1.5+ | 1.3+) | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 704 | (0.5− | 1.7+) | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.8+ | 2006 11 10 | 691 | 1.3+ | 0.4+ |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.9+ | 0.8+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 645 | 0.2+ | 0.2− | 2006 10 03 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 1.5+ | 0.7+ |
| 2002 10 11 | 645 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.7+ | 1.1+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.8− | 1.2+ | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2002 10 12 | 704 | 0.7+ | 0.0 | 2006 10 03 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | (1.4+ | 1.7+) |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 2002 10 12 | 704 | 1.3+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.5− | 0.3+ |
| 2002 11 06 | 704 | 0.8− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.0 | | | | |

**(142203)∗ 2002 RJ$_{58}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.82603 | | (2000.0) | | | |
| $n$ | 0.26194402 | $\omega$ | 209.43118 | | +0.06304310 | −0.99667958 |
| $a$ | 2.4191552 | $\Omega$ | 236.99902 | | +0.92724761 | +0.07759088 |
| $e$ | 0.1906287 | $i$ | 3.52268 | | +0.36910357 | −0.02468736 |
| $P$ | 3.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.3+ | 0.3− | 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1− |
| 2000 02 02 | 704 | 0.3+ | 0.3+ | 2004 03 16 | 703 | (0.5+ | 2.1+) | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2000 02 02 | 704 | 0.2+ | 0.3+ | 2004 03 16 | 703 | (1.8+ | 0.0 ) | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2000 02 02 | 704 | 1.0− | 0.4+ | 2004 03 16 | 703 | (1.5+ | 0.5+) | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 09 05 | 699 | (1.6+ | 1.2+) | 2004 03 16 | 703 | (0.3+ | 1.5+) | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 699 | 1.0+ | 1.3+ | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 09 05 | 699 | (2.4+ | 2.2+) | 2004 03 19 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 09 05 | 699 | (1.5+ | 2.0+) | 2004 03 19 | 704 | 0.5+ | 0.4− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2002 09 06 | 704 | (1.7+ | 0.0 ) | 2004 03 19 | 704 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.3− |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.3− |
| 2002 09 06 | 704 | 0.1+ | 0.9+ | 2004 03 19 | 704 | 0.8− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.5− | 0.8+ | 2004 03 19 | 704 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 09 13 | 644 | 0.3− | 0.7+ | 2004 03 19 | 704 | (3.0+ | 0.4+) | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.4+ | 2006 11 09 | 691 | 0.1− | 0.0 |
| 2002 09 13 | 644 | 0.2− | 0.9+ | 2004 03 20 | 704 | 0.6+ | 0.4+ | 2006 11 09 | 691 | 0.3− | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2004 03 20 | 704 | 1.2+ | 1.1+ | 2006 11 09 | 691 | 0.0 | 0.1− |
| 2002 09 14 | 644 | 0.1+ | 0.6+ | 2004 03 20 | 704 | 0.1− | 1.0− | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.8+ | 2004 03 20 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2002 09 15 | 608 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.5+ | 0.0 |
| 2002 09 15 | 608 | 0.3− | 0.1+ | 2004 03 24 | 699 | 0.3− | 0.7+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2002 09 15 | 608 | 0.3− | 0.2+ | 2004 03 24 | 699 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.3− | 0.0 |
| 2002 09 19 | 644 | 0.2− | 0.3+ | 2004 03 24 | 699 | (0.3+ | 2.1+) | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2002 09 19 | 644 | 0.5− | 0.6+ | 2004 03 24 | 699 | 1.2− | 0.4− | 2006 11 18 | 704 | 1.2+ | 0.6+ |
| 2002 09 19 | 644 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.5+ | 2006 11 18 | 704 | 1.4+ | 0.4+ |
| 2002 09 26 | 608 | 1.1− | 0.9− | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2002 09 26 | 608 | 1.0− | 1.4− | 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 11 18 | 704 | 1.0+ | 1.1+ |
| 2002 09 26 | 608 | 1.5− | 1.0− | 2004 03 27 | 704 | 1.3+ | 0.8+ | 2006 11 18 | 704 | 1.1+ | 0.4+ |
| 2002 10 01 | 291 | 0.3− | 0.4+ | 2004 04 15 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.3+ |
| 2002 10 01 | 291 | 0.2− | 0.6+ | 2004 04 15 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2002 10 01 | 291 | 0.1+ | 0.4+ | 2004 04 15 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2002 10 04 | 704 | (0.4+ | 1.5+) | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.4+ |
| 2002 10 04 | 704 | 0.2− | 1.0+ | 2004 04 22 | 691 | 0.2+ | 0.7+ | 2006 11 21 | 704 | 1.0− | 0.1+ |
| 2002 10 04 | 704 | 0.3+ | 1.0+ | 2004 04 22 | 691 | 0.0 | 0.6+ | 2006 11 26 | 704 | 0.2− | 1.5+ |
| 2002 10 04 | 704 | (0.8+ | 1.8+) | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 26 | 704 | 0.5− | 2.1+ |
| 2002 10 07 | 699 | 0.2− | 0.7− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 26 | 704 | 0.4− | 1.4+ |
| 2002 10 07 | 699 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.2− |
| 2002 10 07 | 699 | 0.7− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 1.7+ | 0.4+ |
| 2002 10 07 | 699 | 1.3− | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 1.1+ | 0.5+ |
| 2002 10 31 | 645 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.4− | 0.1+ | | | | |

**(142204)∗ 2002 RH$_{59}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.92027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26002716 | $\omega$ | 125.15027 | | +0.19653826 | −0.97740603 | |
| $a$ | 2.4310295 | $\Omega$ | 313.31583 | | +0.86123562 | +0.21000739 | |
| $e$ | 0.0780188 | $i$ | 6.13698 | | +0.46866397 | +0.02396565 | |
| $P$ | 3.79 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2002 10 04 | 704 | 0.6+ | 1.1+ | 2004 03 18 | 704 | 0.3− | 0.2− | |
| 2000 01 04 | 704 | 0.3+ | 0.5+ | 2002 10 04 | 704 | 0.6− | 0.5+ | 2006 08 24 | 704 | 0.0 | 0.4+ | |
| 2000 01 04 | 704 | 0.7+ | 1.1+ | 2002 10 05 | 644 | 0.3− | 0.0 | 2006 08 24 | 704 | 0.5+ | 0.3+ | |
| 2000 01 30 | 704 | 0.8− | 0.0 | 2002 10 05 | 644 | 0.1− | 0.2− | 2006 08 24 | 704 | 0.0 | 1.1+ | |
| 2000 01 30 | 704 | 0.5− | 1.2− | 2002 10 05 | 644 | 0.0 | 0.4− | 2006 09 16 | 703 | 0.3+ | 0.2+ | |
| 2000 01 30 | 704 | 0.0 | 0.5− | 2002 10 06 | 644 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.8− | |
| 2002 08 28 | 644 | 0.8− | 0.5+ | 2002 10 06 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.5− | 0.4+ | |
| 2002 08 28 | 644 | 0.0 | 0.8+ | 2002 10 06 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.4− | |
| 2002 08 28 | 644 | 0.3+ | 0.6+ | 2004 01 24 | 704 | 0.8+ | 0.3+ | 2006 09 17 | 703 | 0.2− | 1.1− | |
| 2002 09 05 | 699 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.3+ | 1.0− | 2006 09 17 | 703 | 0.0 | 0.2− | |
| 2002 09 05 | 699 | 0.0 | 0.7+ | 2004 01 24 | 704 | 0.9+ | 0.7− | 2006 09 17 | 703 | 0.4+ | 0.0 | |
| 2002 09 05 | 699 | 0.1+ | 0.6+ | 2004 01 24 | 704 | 0.6+ | 0.0 | 2006 09 17 | 703 | 1.1+ | 0.3− | |
| 2002 09 05 | 699 | 0.0 | 1.2+ | 2004 02 11 | 644 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.6− | 0.1− | |
| 2002 09 06 | 704 | 0.4− | 0.0 | 2004 02 11 | 644 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.9+ | 0.5+ | |
| 2002 09 06 | 704 | 0.0 | 0.3− | 2004 02 11 | 644 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.2+ | 1.1+ | |
| 2002 09 06 | 704 | 0.5+ | 0.3+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 1.4− | 0.3+ | |
| 2002 09 06 | 704 | 1.0− | 0.4− | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.0 | 0.2− | |
| 2002 09 06 | 704 | 0.2+ | 0.2+ | 2004 02 11 | 644 | 0.5+ | 0.3+ | 2006 09 28 | 703 | 0.6− | 0.4− | |
| 2002 09 10 | 608 | 0.1− | 0.5+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.2+ | |
| 2002 09 10 | 608 | 0.3+ | 0.7+ | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 28 | 703 | 1.1− | 0.4− | |
| 2002 09 10 | 608 | 0.1− | 0.9+ | 2004 02 12 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.5+ | |
| 2002 09 11 | 644 | 0.4− | 0.1− | 2004 02 17 | 704 | 0.4+ | 0.9+ | 2006 10 17 | 703 | 0.0 | 0.1− | |
| 2002 09 11 | 644 | 0.8− | 0.2− | 2004 02 17 | 704 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.3+ | |
| 2002 09 11 | 644 | 0.4− | 0.2+ | 2004 02 17 | 704 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.9+ | 0.0 | |
| 2002 09 13 | 644 | 0.5− | 0.2+ | 2004 02 17 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1+ | |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2004 02 20 | 608 | 0.1+ | 0.6− | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2002 09 19 | 644 | 0.0 | 0.2− | 2004 02 20 | 608 | 0.8+ | 0.4− | 2006 10 31 | 703 | 1.1+ | 2.2− | |
| 2002 09 19 | 644 | 0.6− | 0.4− | 2004 02 20 | 608 | 0.0 | 0.3− | 2006 10 31 | 703 | 0.1− | 0.3− | |
| 2002 09 19 | 644 | 0.1− | 0.5− | 2004 03 18 | 704 | 0.3+ | 0.8+ | 2006 10 31 | 703 | 0.2+ | 0.8− | |
| 2002 10 04 | 704 | 0.8+ | 0.2+ | 2004 03 18 | 704 | 0.7− | 0.4+ | 2006 10 31 | 703 | 1.2+ | 1.1− | |
| 2002 10 04 | 704 | 0.7+ | 0.3− | 2004 03 18 | 704 | 0.5− | 0.5+ | | | | | |

**(142205)∗ 2002 RP$_{60}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.30043 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24027985 | $\omega$ | 31.13511 | | +0.29176585 | +0.95314341 | |
| $a$ | 2.5624643 | $\Omega$ | 255.93082 | | −0.89364084 | +0.24184533 | |
| $e$ | 0.1799642 | $i$ | 4.72720 | | −0.34099669 | +0.18173737 | |
| $P$ | 4.10 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.0 | 0.2+ | 2002 10 30 | 645 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.6− | 1.0− | |
| 2002 08 16 | 704 | 0.6+ | 0.2− | 2004 02 26 | 695 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.5+ | 1.1− | |
| 2002 08 16 | 704 | 0.3− | 0.9+ | 2004 02 26 | 695 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.4− | |
| 2002 08 16 | 704 | 0.9+ | 1.4+ | 2005 03 09 | 704 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.0 | 0.4+ | |
| 2002 08 22 | 644 | 0.8+ | 0.6+ | 2005 03 09 | 704 | 0.3+ | 1.3+ | 2006 08 30 | 704 | 0.1− | 0.2− | |
| 2002 08 22 | 644 | 0.5+ | 0.6+ | 2005 03 09 | 704 | 0.9+ | 1.0+ | 2006 08 30 | 704 | 0.1− | 0.3− | |
| 2002 08 22 | 644 | 0.3+ | 0.5+ | 2005 03 09 | 704 | 0.1− | 1.1+ | 2006 08 30 | 704 | 0.4+ | 0.4+ | |
| 2002 08 28 | 644 | 0.3+ | 0.3+ | 2005 04 04 | 703 | 0.6+ | 1.8− | 2006 09 11 | 703 | 0.6− | 0.7+ | |
| 2002 08 28 | 644 | 0.1+ | 0.5+ | 2005 04 04 | 703 | 1.4− | 1.1+ | 2006 09 11 | 703 | 1.0− | 0.3− | |
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2005 04 04 | 703 | 0.4+ | 0.1− | 2006 09 11 | 703 | 0.3− | 0.6+ | |
| 2002 09 05 | 699 | 0.6+ | 0.6+ | 2005 04 04 | 703 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.5+ | 0.5− | |
| 2002 09 05 | 699 | 0.5+ | 1.5+ | 2006 07 21 | 644 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1+ | |
| 2002 09 05 | 699 | 0.4+ | 0.0 | 2006 07 21 | 644 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1+ | |
| 2002 09 05 | 699 | 0.6− | 0.4− | 2006 07 21 | 644 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2− | |
| 2002 09 06 | 704 | 0.4− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | |
| 2002 09 06 | 704 | 0.4+ | 1.2+ | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | |
| 2002 09 06 | 704 | 0.5− | 0.6+ | 2006 08 24 | 704 | 0.5+ | 0.2+ | 2006 09 22 | 691 | 0.1− | 0.1− | |
| 2002 09 06 | 704 | 0.0 | 0.3+ | 2006 08 24 | 704 | 0.0 | 0.0 | 2006 09 22 | 691 | 0.1− | 0.1− | |
| 2002 09 14 | 608 | 0.6− | 1.1− | 2006 08 24 | 704 | 0.0 | 0.6+ | 2006 09 22 | 691 | 0.0 | 0.3− | |
| 2002 09 14 | 608 | 0.7− | 1.0− | 2006 08 24 | 704 | 0.4+ | 0.7+ | 2006 09 25 | 704 | 0.8+ | 0.8+ | |
| 2002 09 14 | 608 | 0.1− | 1.1− | 2006 08 24 | 704 | 0.9+ | 0.8+ | 2006 09 25 | 704 | 0.1− | 0.5− | |
| 2002 09 30 | 704 | 0.7− | 0.7+ | 2006 08 27 | 699 | 0.1− | 0.2− | 2006 09 25 | 704 | 1.0− | 1.2− | |
| 2002 09 30 | 704 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 1.3+ | 0.9+ | |
| 2002 09 30 | 704 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 0.0 | 1.0− | 2006 09 29 | 699 | 0.1− | 1.1+ | |
| 2002 09 30 | 704 | 0.2− | 0.0 | 2006 08 27 | 699 | 0.8− | 0.6+ | 2006 09 29 | 699 | 0.7− | 0.2+ | |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.5− | 0.5− | 2006 09 29 | 699 | 1.1+ | 0.1− | |

**(142206)∗ 2002 RD$_{61}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.51811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22340769 | $\omega$ | 255.62076 | | +0.40483284 | −0.91358575 | |
| $a$ | 2.6899073 | $\Omega$ | 170.23165 | | +0.90163453 | +0.39185101 | |
| $e$ | 0.2575286 | $i$ | 13.06695 | | +0.15220229 | +0.10869160 | |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.5+ | 0.1− | 2002 10 29 | 704 | 0.8− | 0.9+ | 2004 03 22 | 704 | 0.7+ | 0.3+ | |
| 2000 04 05 | 704 | 0.6− | 0.6− | 2002 10 29 | 704 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.8+ | 0.5+ | |
| 2000 04 05 | 704 | 0.2− | 0.0 | 2002 10 29 | 704 | 0.7− | 0.1− | 2004 03 22 | 704 | 0.7+ | 0.1+ | |
| 2000 05 05 | 645 | 0.1− | 0.0 | 2002 10 29 | 704 | 0.2− | 0.1− | 2004 03 24 | 699 | 0.7+ | 0.1− | |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2002 10 29 | 704 | 0.5− | 0.0 | 2004 03 24 | 699 | 0.5+ | 0.2+ | |
| 2002 08 10 | 704 | 0.4− | 0.2− | 2002 11 02 | 608 | 0.1− | 0.1− | 2004 03 24 | 699 | 0.1− | 0.6+ | |
| 2002 08 10 | 704 | 0.8− | 1.2+ | 2002 11 02 | 608 | 0.3− | 0.2− | 2004 03 24 | 699 | 0.9− | 1.2+ | |
| 2002 08 10 | 704 | 0.8− | 0.3− | 2002 11 02 | 608 | 0.1− | 0.2+ | 2004 03 28 | 704 | 0.7− | 0.0 | |
| 2002 08 10 | 704 | 0.6+ | 1.1+ | 2002 11 05 | 644 | 0.8+ | 0.1+ | 2004 03 28 | 704 | 0.3− | 0.3+ | |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2002 11 05 | 644 | 0.0 | 0.5+ | 2004 03 28 | 704 | 0.5+ | 1.3+ | |
| 2002 09 05 | 704 | 0.1+ | 0.7+ | 2002 11 05 | 644 | 0.1+ | 0.5+ | 2004 03 28 | 704 | 0.3− | 0.7+ | |
| 2002 09 05 | 704 | 0.3+ | 0.2+ | 2002 12 18 | 608 | 1.3− | 0.5+ | 2004 03 30 | 691 | 0.3− | 0.1+ | |
| 2002 09 05 | 704 | 0.6+ | 1.1+ | 2002 12 18 | 608 | 1.4− | 0.4+ | 2004 03 30 | 691 | 0.2− | 0.3+ | |
| 2002 09 06 | 704 | 1.1+ | 0.1+ | 2002 12 18 | 608 | 0.7− | 0.2+ | 2004 03 30 | 691 | 0.3− | 0.2+ | |
| 2002 09 06 | 704 | 0.1− | 0.6+ | 2003 01 28 | 704 | 0.6− | 1.0+ | 2005 06 04 | 691 | 0.4+ | 0.2+ | |
| 2002 09 06 | 704 | 0.7+ | 0.0 | 2003 01 28 | 704 | 1.1+ | 1.3+ | 2005 06 04 | 691 | 0.1− | 0.1+ | |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2003 01 28 | 704 | 0.2+ | 0.5− | 2005 06 04 | 691 | 0.4+ | 0.3+ | |
| 2002 09 06 | 704 | 0.2− | 0.9− | 2004 03 12 | 644 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.5+ | |
| 2002 09 08 | 608 | 0.5+ | 1.1+ | 2004 03 12 | 644 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.5+ | 0.4+ | |
| 2002 09 08 | 608 | 1.1+ | 0.7+ | 2004 03 12 | 644 | 0.3− | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.3+ | |
| 2002 09 08 | 608 | 0.2+ | 0.3+ | 2004 03 15 | 703 | 0.5− | 0.7+ | 2006 08 29 | 703 | 0.6+ | 0.3− | |
| 2002 09 11 | 608 | 0.3− | 0.4− | 2004 03 15 | 703 | 0.7− | 1.0+ | 2006 08 29 | 703 | 1.1− | 1.0+ | |
| 2002 09 11 | 608 | 0.2− | 0.6− | 2004 03 15 | 703 | 1.1+ | 1.4+ | 2006 08 29 | 703 | 1.0− | 0.5+ | |
| 2002 09 11 | 608 | 0.4− | 0.3− | 2004 03 15 | 703 | 0.1+ | 1.2− | 2006 08 29 | 703 | 1.1− | 1.1+ | |
| 2002 10 04 | 704 | 0.4− | 1.0+ | 2004 03 17 | 683 | 0.6+ | 0.2− | 2006 09 14 | 703 | 1.0+ | 0.2− | |
| 2002 10 04 | 704 | 0.4+ | 1.0+ | 2004 03 17 | 683 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.4− | |
| 2002 10 04 | 704 | 0.1− | 0.5+ | 2004 03 17 | 683 | 2.0+ | 1.7+ | 2006 09 14 | 703 | 0.1− | 0.2− | |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2004 03 19 | 704 | 0.8+ | 0.9+ | 2006 09 14 | 703 | 1.9− | 0.0 | |
| 2002 10 04 | 704 | 0.0 | 1.1+ | 2004 03 19 | 704 | 0.6+ | 1.5+ | 2006 09 28 | G96 | 0.2− | 0.0 | |
| 2002 10 08 | 699 | 0.2+ | 0.5+ | 2004 03 19 | 704 | 0.4+ | 1.6+ | 2006 09 28 | G96 | 0.5+ | 0.4− | |
| 2002 10 08 | 699 | 0.1+ | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.3− | |
| 2002 10 08 | 699 | 0.2+ | 0.4+ | 2004 03 22 | 704 | 0.7+ | 0.1− | 2006 09 28 | G96 | 0.0 | 0.1− | |
| 2002 10 08 | 699 | 0.4− | 0.1+ | 2004 03 22 | 704 | 0.8+ | 0.6− | | | | | |

**(142207)∗ 2002 RY$_{61}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.68671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26707638 | $\omega$ | 280.44307 | | +0.58528236 | +0.80904058 | |
| $a$ | 2.3880627 | $\Omega$ | 25.61405 | | −0.68667618 | +0.52987672 | |
| $e$ | 0.1320842 | $i$ | 7.15321 | | −0.43118485 | +0.25433051 | |
| $P$ | 3.69 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 691 | 0.0 | 0.3+ | 2002 10 03 | 704 | 0.5− | 0.3+ | 2004 01 26 | 699 | 0.4− | 0.0 |
| 2001 03 20 | 691 | 0.4+ | 0.5+ | 2002 10 07 | 644 | 0.1+ | 0.4+ | 2004 01 26 | 699 | 1.1+ | 0.3− |
| 2001 03 20 | 691 | 0.1+ | 0.5+ | 2002 10 07 | 644 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.4− |
| 2001 04 16 | 699 | 1.0+ | 0.8+ | 2002 10 07 | 704 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.4− |
| 2001 04 16 | 699 | (1.7+ | 1.1+) | 2002 10 07 | 704 | 0.4− | 0.2− | 2006 10 04 | G96 | 0.4− | 0.4− |
| 2001 04 16 | 699 | 0.5+ | 1.0+ | 2002 10 07 | 644 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.5− |
| 2001 04 16 | 699 | (1.7+ | 0.1+) | 2002 10 07 | 704 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.4− | 0.4− |
| 2002 09 05 | 704 | 0.2+ | 0.1+ | 2002 10 07 | 704 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.5− | 0.4− |
| 2002 09 05 | 704 | 0.3+ | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2002 09 05 | 704 | 0.1+ | 0.7+ | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2002 10 11 | 704 | 0.4− | 0.1− | 2006 11 15 | 704 | 0.7− | 0.4+ |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2002 10 11 | 704 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.1+ | 0.5+ |
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2002 10 11 | 704 | 0.2− | 0.3− | 2006 11 16 | 704 | (1.6+ | 0.9−) |
| 2002 09 06 | 704 | 0.1+ | 0.4− | 2002 10 30 | 644 | 0.3− | 0.6+ | 2006 11 16 | 704 | 0.6+ | 0.3− |
| 2002 09 06 | 704 | 0.3+ | 0.2+ | 2002 10 30 | 644 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 1.4− | 0.6+ |
| 2002 10 02 | 704 | 0.1− | 0.6+ | 2002 10 30 | 644 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.4− | 0.5− |
| 2002 10 02 | 704 | 0.4+ | 0.2+ | 2002 10 31 | 704 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.9+ |
| 2002 10 02 | 704 | 0.3+ | 0.9+ | 2002 10 31 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.8+ |
| 2002 10 02 | 704 | 0.1− | 0.6+ | 2002 10 31 | 704 | 0.4− | 0.1+ | 2006 11 19 | 704 | (1.2+ | 3.0−) |
| 2002 10 02 | 704 | 0.4− | 0.0 | 2002 10 31 | 704 | 0.2− | 0.6+ | 2006 11 19 | 704 | 1.5+ | 0.7+ |
| 2002 10 02 | 608 | 0.1− | 1.0− | 2002 10 31 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2002 10 02 | 608 | (0.6− | 1.6−) | 2002 11 06 | 704 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2002 10 02 | 608 | 0.2− | 0.8− | 2002 11 06 | 704 | 0.4− | 0.6+ | 2006 11 22 | 704 | 1.7+ | 0.3− |
| 2002 10 03 | 704 | 0.7− | 0.4− | 2002 11 06 | 704 | 0.2+ | 1.2+ | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2002 11 06 | 704 | 1.2− | 0.9+ | 2006 11 22 | 704 | 0.8+ | 0.6+ |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2004 01 26 | 699 | 1.0− | 1.3+ | | | | |
| 2002 10 03 | 704 | 1.1− | 0.0 | 2004 01 26 | 699 | 1.0+ | 0.1− | | | | |

**(142208)∗ 2002 RT$_{62}$ = 1996 HJ$_6$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37836)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.06157 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24016730 | $\omega$ | 272.84426 | | +0.30864452 | −0.95075667 | |
| $a$ | 2.5632648 | $\Omega$ | 159.11054 | | +0.90117508 | +0.28277387 | |
| $e$ | 0.2165515 | $i$ | 4.55059 | | +0.30433869 | +0.12688849 | |
| $P$ | 4.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 12 19 | 691 | 0.7− | 0.1+ | 2002 11 06 | 699 | 0.9+ | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.4+ |
| 1990 12 19 | 691 | 0.7− | 0.1+ | 2002 11 06 | 699 | 0.3+ | 0.2+ | 2006 09 22 | 704 | 0.2− | 0.2+ |
| 1990 12 19 | 691 | 0.5− | 0.2+ | 2002 11 06 | 699 | 0.4− | 0.0 | 2006 09 22 | 704 | 0.4+ | 0.9+ |
| 1996 04 17 | 691 | 0.3+ | 0.6+ | 2002 11 07 | 704 | 0.3− | 0.6− | 2006 09 22 | 704 | 0.4− | 0.0 |
| 1996 04 17 | 691 | 0.4+ | 0.4+ | 2002 11 07 | 704 | 0.0 | 0.6− | 2006 09 22 | 704 | 0.1− | 0.1+ |
| 1996 04 17 | 691 | 0.1+ | 0.6+ | 2002 11 07 | 704 | 0.5− | 1.0− | 2006 09 26 | 704 | 0.0 | 0.3− |
| 1996 04 21 | 691 | 0.4+ | 0.1+ | 2002 11 07 | 704 | 0.3− | 0.4− | 2006 09 26 | 704 | 0.5+ | 0.1+ |
| 1996 04 21 | 691 | 0.4+ | 0.3+ | 2002 11 07 | 704 | 0.4− | 0.5− | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 1996 04 21 | 691 | 0.2+ | 0.0 | 2002 11 11 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.6− |
| 1998 10 20 | 699 | 0.3+ | 1.1− | 2002 11 11 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.2− | 0.4− |
| 1998 10 20 | 699 | 0.0 | 0.8− | 2002 11 11 | 704 | 0.4+ | 0.3− | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 1998 10 20 | 699 | 0.5− | 0.2− | 2002 11 11 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 1998 11 11 | 699 | 1.3+ | 0.3+ | 2002 11 11 | 704 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 1998 11 11 | 699 | (2.1+ | 0.2+) | 2002 11 21 | 644 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.2+ |
| 1998 11 11 | 699 | 0.5+ | 0.5+ | 2002 11 21 | 644 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.3− | 0.5+ |
| 1998 11 23 | 699 | 0.6+ | 0.1− | 2002 11 21 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.6− | 0.9+ |
| 1998 11 23 | 699 | 0.7+ | 0.3− | 2002 11 30 | 704 | 0.6+ | 0.1+ | 2006 09 29 | 699 | 0.7− | 0.2+ |
| 1998 11 23 | 699 | 0.7+ | 0.6− | 2002 11 30 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 608 | 0.9+ | 0.3− |
| 1998 12 16 | 699 | 0.6+ | 0.1+ | 2002 11 30 | 704 | 1.0+ | 0.7+ | 2006 09 30 | 608 | 0.5+ | 0.5− |
| 1998 12 16 | 699 | 0.8+ | 0.0 | 2002 11 30 | 704 | 0.2− | 0.0 | 2006 09 30 | 608 | 0.9+ | 0.6− |
| 1998 12 16 | 699 | 0.6+ | 0.5− | 2003 01 05 | 699 | 1.4+ | 1.3+ | 2006 10 01 | 704 | 0.3+ | 0.1− |
| 1999 01 10 | 699 | 0.7− | 0.7+ | 2003 01 05 | 699 | 1.0+ | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 1999 01 10 | 699 | 1.3− | 0.1+ | 2003 01 05 | 699 | 0.2− | 0.9+ | 2006 10 01 | 704 | 0.3− | 0.0 |
| 1999 01 10 | 699 | 0.2+ | 1.0+ | 2003 01 05 | 699 | 0.3+ | 0.2− | 2006 10 01 | 704 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.7− | 0.4+ | 2003 01 07 | 704 | 0.8+ | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.5+ |
| 2002 09 05 | 704 | 1.0− | 0.0 | 2003 01 07 | 704 | 0.5+ | 0.2+ | 2006 10 01 | 691 | (0.7+ | 2.2+) |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2003 01 07 | 704 | 0.8− | 0.5+ | 2006 10 01 | 691 | 0.5− | 0.4+ |
| 2002 09 06 | 704 | 0.5+ | 0.6+ | 2003 01 07 | 704 | 0.0 | 0.7+ | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2002 09 06 | 704 | 0.4+ | 0.6+ | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 1.4+ | 1.0+ | 2004 03 16 | 691 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 1.1+ | 1.1+ | 2004 03 19 | 704 | 0.5+ | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 2002 10 02 | 704 | 0.0 | 0.8+ | 2004 03 19 | 704 | 0.6− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.6− |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 0.5− | 0.9+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.5+ | 0.1+ | 2004 03 20 | 699 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.9− |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2004 03 20 | 699 | 1.0− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2004 03 20 | 699 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.6+ | 0.5+ | 2004 03 20 | 699 | (0.1+ | 2.0+) | 2006 10 19 | 644 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.1+ | 0.3− | 2004 03 22 | 704 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 10 06 | 608 | 0.4− | 0.7− | 2004 03 22 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 10 06 | 608 | 0.4− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2002 10 06 | 608 | 0.5− | 0.7− | 2006 08 19 | 699 | 0.2− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 10 09 | 699 | 1.1+ | 0.2+ | 2006 08 19 | 699 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 10 09 | 699 | 0.4+ | 0.8+ | 2006 08 19 | 699 | 0.1+ | 1.1+ | 2006 10 22 | 704 | 1.1− | 0.4+ |
| 2002 10 09 | 699 | 0.6+ | 0.2+ | 2006 08 19 | 699 | 0.2− | 0.1+ | 2006 10 22 | 704 | 0.0 | 0.7+ |
| 2002 10 09 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 1.1− | 2006 10 22 | 704 | 0.7− | 0.7+ |
| 2002 10 09 | 699 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.6− | 2006 10 22 | 704 | 0.0 | 0.6+ |
| 2002 10 09 | 704 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.8− | 2006 10 22 | 704 | 0.5− | 0.2− |
| 2002 10 09 | 704 | 0.7+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2002 10 09 | 704 | 0.8+ | 0.1− | 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.4− |
| 2002 10 09 | 704 | 0.6+ | 0.1− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2002 10 11 | 704 | 1.1+ | 0.3+ | 2006 09 17 | 691 | 0.5− | 0.0 | 2006 10 22 | 703 | 0.6+ | 0.7− |
| 2002 10 11 | 704 | 0.7+ | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.0 | 2006 10 27 | 704 | 1.5− | 0.8− |
| 2002 10 11 | 704 | 0.7+ | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 27 | 704 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 1.2+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 27 | 704 | (2.4− | 0.1−) |
| 2002 10 11 | 704 | 1.3+ | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 27 | 704 | 1.0− | 1.2+ |
| 2002 10 26 | 608 | 0.5− | 0.7− | 2006 09 19 | 704 | 1.0+ | 0.1+ | 2006 11 10 | 704 | 0.2− | 1.1+ |
| 2002 10 26 | 608 | 0.5− | 1.0− | 2006 09 19 | 704 | 0.1− | 0.1+ | 2006 11 10 | 704 | 0.0 | 1.3+ |
| 2002 10 26 | 608 | 0.3− | 0.8− | 2006 09 19 | 704 | 0.5+ | 0.7− | 2006 11 10 | 704 | 0.6− | 0.5+ |
| 2002 11 01 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 704 | 0.0 | 0.2− | 2006 11 10 | 704 | 0.4+ | 0.0 |
| 2002 11 01 | 704 | 0.4+ | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 11 10 | 704 | 1.5− | 0.6+ |
| 2002 11 01 | 704 | 0.5+ | 1.0+ | 2006 09 20 | 644 | 0.1− | 0.2+ | | | | |
| 2002 11 06 | 699 | 0.4− | 0.7− | 2006 09 20 | 644 | 0.1− | 0.1+ | | | | |

**(142209)∗ 2002 RX$_{62}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.59448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24297315 | $\omega$ | 231.72917 | | +0.96224843 | +0.26613422 | |
| $a$ | 2.5434929 | $\Omega$ | 112.77151 | | −0.22639957 | +0.89892976 | |
| $e$ | 0.2405958 | $i$ | 3.54503 | | −0.15106683 | +0.34799119 | |
| $P$ | 4.06 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 0.1+ | 1.3− | 2002 11 06 | 608 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.0 |
| 1998 11 11 | 699 | 1.0− | 0.5+ | 2002 11 07 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 1998 11 11 | 704 | 0.8+ | 2.0− | 2002 11 07 | 704 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 1998 11 11 | 699 | 0.7+ | 0.0 | 2002 11 07 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 1998 11 11 | 704 | 0.9− | 1.8− | 2002 11 07 | 704 | 0.7− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.1− |
| 1998 11 11 | 699 | 0.4+ | 0.6+ | 2002 11 07 | 704 | 0.8− | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.8+ |
| 1998 11 18 | 704 | 0.8+ | 1.7− | 2002 11 08 | 704 | 1.3− | 0.0 | 2006 10 01 | 704 | 0.7+ | 0.7+ |
| 1998 11 18 | 704 | 1.1− | 0.3− | 2002 11 08 | 704 | 1.1− | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 704 | 0.1+ | 1.1+ | 2002 11 08 | 704 | 0.5− | 1.3+ | 2006 10 01 | 704 | 0.5+ | 0.5+ | | |
| 1998 11 18 | 704 | 1.0− | 1.8+ | 2002 11 08 | 704 | 1.2− | 1.1+ | 2006 10 01 | 704 | 0.4+ | 0.8+ | | |
| 1998 11 24 | 699 | 0.7+ | 0.8+ | 2002 11 11 | 704 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.2− | | |
| 1998 11 24 | 699 | 0.8+ | 0.0 | 2002 11 11 | 704 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.3− | | |
| 1998 11 24 | 699 | 0.7+ | 0.6− | 2002 11 11 | 704 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.1+ | | |
| 2001 05 21 | 691 | 0.4+ | 0.8+ | 2002 11 11 | 704 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− | | |
| 2001 05 21 | 691 | 0.3+ | 0.7+ | 2002 11 11 | 704 | 0.4+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2001 05 21 | 691 | 0.4+ | 0.7+ | 2002 11 22 | 644 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 08 10 | 704 | 0.8+ | 0.5− | 2002 11 22 | 644 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 08 10 | 704 | 0.4+ | 0.9− | 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.2+ | 0.0 | | |
| 2002 08 10 | 704 | 1.1+ | 0.3− | 2002 12 01 | 704 | 0.2+ | 0.5+ | 2006 10 15 | 703 | 0.1+ | 0.4− | | |
| 2002 08 10 | 704 | 1.3+ | 0.3− | 2002 12 01 | 704 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.1+ | 0.2− | | |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2002 12 01 | 704 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.6− | 0.7+ | 2002 12 01 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 09 05 | 704 | 1.2− | 0.2− | 2002 12 01 | 704 | 0.8− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.0 | | |
| 2002 09 05 | 704 | 1.4+ | 1.0− | 2004 01 30 | 691 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.1− | | |
| 2002 09 06 | 704 | 1.2− | 0.5+ | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1− | 0.8− | | |
| 2002 09 06 | 704 | 0.2− | 0.4+ | 2004 01 30 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.4− | | |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2005 04 12 | G96 | 0.3− | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.4− | | |
| 2002 09 06 | 704 | 0.3− | 0.1− | 2005 04 12 | G96 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 09 06 | 704 | 0.3+ | 0.3− | 2005 04 12 | G96 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2005 04 12 | G96 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 10 02 | 704 | 0.1+ | 0.0 | 2006 07 21 | 704 | 0.1+ | 1.2+ | 2006 10 22 | 704 | 0.3− | 0.6+ | | |
| 2002 10 02 | 704 | 0.2− | 0.6+ | 2006 07 21 | 704 | 0.7− | 0.4+ | 2006 10 22 | 704 | 0.7− | 0.7+ | | |
| 2002 10 02 | 704 | 0.1− | 0.1+ | 2006 07 21 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 07 21 | 704 | 0.6− | 1.1+ | 2006 10 22 | 704 | 0.6− | 0.1− | | |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 1.4− | 0.4+ | 2006 10 22 | 704 | 0.6− | 0.5+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 08 28 | 704 | 0.1− | 0.7+ | 2006 10 22 | G96 | 0.2+ | 0.5− | | |
| 2002 10 03 | 704 | 0.1+ | 0.6− | 2006 08 28 | 704 | (0.3+ | 3.0+) | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 2002 10 06 | 608 | 0.0 | 0.4− | 2006 08 28 | 704 | 0.3+ | 1.0+ | 2006 10 22 | G96 | 0.4+ | 0.5− | | |
| 2002 10 06 | 608 | 0.1− | 0.4− | 2006 08 28 | 704 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.4− | | |
| 2002 10 06 | 608 | 0.0 | 0.7− | 2006 09 16 | 699 | 0.6+ | 0.4+ | 2006 10 27 | 704 | 0.4− | 1.0− | | |
| 2002 10 09 | 699 | 0.5+ | 0.5− | 2006 09 16 | 699 | 0.3− | 0.0 | 2006 10 27 | 704 | 0.8+ | 0.5+ | | |
| 2002 10 09 | 699 | 0.1+ | 0.5− | 2006 09 16 | 699 | 0.6+ | 0.5− | 2006 10 27 | 704 | 0.4+ | 0.6+ | | |
| 2002 10 09 | 699 | 0.6+ | 0.6+ | 2006 09 16 | 699 | 0.1+ | 0.5+ | 2006 10 27 | 704 | 0.4+ | 0.5+ | | |
| 2002 10 09 | 699 | 0.5+ | 1.2− | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 10 27 | 704 | 1.0− | 0.3+ | | |
| 2002 10 11 | 704 | 1.1− | 1.2− | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 10 31 | 704 | 0.4− | 0.3+ | | |
| 2002 10 11 | 704 | 1.0+ | 0.5+ | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 31 | 704 | 0.0 | 0.1− | | |
| 2002 10 11 | 704 | 0.9+ | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 10 31 | 704 | 0.8− | 1.0+ | | |
| 2002 10 11 | 704 | 0.7+ | 0.0 | 2006 09 19 | 704 | 0.1− | 0.2+ | 2006 10 31 | 704 | 1.1+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 704 | 0.0 | 1.2− | 2006 10 31 | 704 | 0.1− | 0.5+ | | |
| 2002 10 26 | 608 | 0.3− | 0.2− | 2006 09 19 | 704 | 0.0 | 0.7− | 2006 11 09 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 26 | 608 | 0.4− | 0.3− | 2006 09 19 | 704 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 26 | 608 | 0.2− | 0.1− | 2006 09 19 | 704 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 11 01 | 704 | 0.3+ | 0.6+ | 2006 09 22 | 704 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.6+ | 1.1+ | | |
| 2002 11 01 | 704 | 0.8+ | 0.5+ | 2006 09 22 | 704 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.0 | 0.5+ | | |
| 2002 11 01 | 704 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.4− | 2006 11 14 | 704 | 0.2+ | 0.7+ | | |
| 2002 11 01 | 704 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.9+ | | |
| 2002 11 01 | 608 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.7− | 0.3− | 2006 11 14 | 704 | 0.9− | 0.0 | | |
| 2002 11 01 | 608 | 0.7− | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.6− | 2006 11 16 | 703 | 0.6− | 0.1+ | | |
| 2002 11 01 | 608 | 1.5− | 0.9− | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.1− | 0.1+ | | |
| 2002 11 06 | 608 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.0 | | |
| 2002 11 06 | 608 | 0.7+ | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.3− | 0.4− | | |

**(142210)∗ 2002 RG$_{63}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.77235 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23911178 | $\omega$ | 336.63011 | | +0.72115429 | −0.68602651 | |
| $a$ | 2.5708026 | $\Omega$ | 67.05359 | | +0.65099136 | +0.62343580 | |
| $e$ | 0.2453536 | $i$ | 6.01256 | | +0.23695305 | +0.37509390 | |
| $P$ | 4.12 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 09 | 327 | 0.3+ | 0.9− | 2002 11 22 | 644 | 0.6− | 0.5− | 2006 09 25 | 699 | 0.1+ | 0.0 | | |
| 1998 11 09 | 327 | 0.0 | 0.1− | 2002 11 22 | 644 | 0.6− | 0.5− | 2006 09 26 | 704 | 0.5+ | 0.9+ | | |
| 1998 11 09 | 327 | 0.2+ | 0.2− | 2002 11 30 | 608 | 0.7+ | 0.6+ | 2006 09 26 | 704 | 0.3− | 1.1+ | | |
| 1998 12 17 | 704 | 0.3+ | 0.1+ | 2002 11 30 | 608 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.4− | 1.0+ | | |
| 1998 12 17 | 704 | 0.3− | 1.6− | 2002 11 30 | 608 | 0.6+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.9+ | | |
| 1998 12 17 | 704 | 0.8− | 0.2− | 2002 12 01 | 704 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.4− | 0.9+ | | |
| 1998 12 17 | 704 | 0.5+ | 1.2− | 2002 12 01 | 704 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.0 | 0.9+ | | |
| 2000 02 12 | 645 | 0.1+ | 0.0 | 2002 12 01 | 704 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.4+ | | |
| 2000 02 12 | 645 | 0.1− | 0.2+ | 2002 12 01 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 1.5+ | 0.9− | | |
| 2000 05 04 | 645 | 0.1+ | 0.1+ | 2002 12 01 | 704 | 0.3+ | 0.5− | 2006 09 26 | 703 | 0.4+ | 0.4− | | |
| 2000 05 04 | 645 | 0.1+ | 0.2+ | 2002 12 05 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.6− | | |
| 2002 09 05 | 704 | 0.9− | 1.0− | 2002 12 05 | 704 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.2− | 0.6− | | |
| 2002 09 05 | 704 | 0.3− | 0.4− | 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.2− | 0.5− | | |
| 2002 09 05 | 704 | 0.7− | 0.1+ | 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.2− | | |
| 2002 09 05 | 704 | 0.1− | 0.7− | 2002 12 05 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.0 | | |
| 2002 09 06 | 704 | 1.4− | 0.3− | 2002 12 08 | 608 | 0.5+ | 0.9+ | 2006 09 30 | 704 | 0.4− | 1.0+ | | |
| 2002 09 06 | 704 | 0.3+ | 1.0− | 2002 12 08 | 608 | 0.7+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.6+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.2+ | 2002 12 08 | 608 | 1.3+ | 1.2+ | 2006 09 30 | 704 | 0.6− | 0.3+ | | |
| 2002 09 06 | 704 | 0.5− | 1.0− | 2002 12 10 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.2− | | |
| 2002 10 09 | 704 | 0.2+ | 0.5+ | 2002 12 10 | 644 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.4− | 1.3+ | | |
| 2002 10 09 | 704 | 0.6− | 0.3− | 2002 12 10 | 644 | 0.2− | 0.0 | 2006 09 30 | 704 | (3.2− | 0.0 ) | | |
| 2002 10 09 | 704 | 0.3− | 0.1+ | 2002 12 10 | 704 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.3+ | 0.1− | | |
| 2002 10 09 | 704 | 0.1− | 0.8+ | 2002 12 10 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.2+ | | |
| 2002 10 09 | 704 | 0.5− | 1.0+ | 2002 12 10 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3+ | | |
| 2002 10 11 | 704 | 0.7− | 0.6− | 2002 12 10 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.6+ | | |
| 2002 10 11 | 704 | 1.0− | 0.8− | 2002 12 10 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2002 10 11 | 704 | 0.6− | 0.6− | 2002 12 31 | 704 | 0.3− | 0.8− | 2006 10 21 | 644 | 0.4− | 0.1− | | |
| 2002 10 11 | 704 | 1.0− | 1.1− | 2002 12 31 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 10 11 | 704 | (1.5− | 0.6−) | 2002 12 31 | 704 | 0.2+ | 1.1− | 2006 10 22 | 704 | 0.0 | 0.8+ | | |
| 2002 10 28 | 608 | 0.3− | 0.5− | 2002 12 31 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 28 | 608 | 0.2− | 0.7− | 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.3− | 0.7+ | | |
| 2002 10 28 | 608 | 0.1− | 0.5− | 2003 01 04 | 704 | 0.8− | 0.3+ | 2006 10 22 | 704 | 0.0 | 0.4+ | | |
| 2002 10 30 | 644 | 0.2− | 1.0+ | 2003 01 04 | 704 | 1.1− | 0.7+ | 2006 10 22 | 704 | 0.5− | 0.4+ | | |
| 2002 10 30 | 644 | 0.0 | 1.1+ | 2003 01 04 | 704 | 0.4− | 1.4+ | 2006 10 22 | 703 | 0.5− | 0.1+ | | |
| 2002 10 30 | 644 | 0.1+ | 1.3+ | 2004 04 21 | 691 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.9− | 0.6+ | | |
| 2002 11 01 | 704 | 0.1+ | 0.7+ | 2004 04 21 | 691 | 0.6+ | 0.6+ | 2006 10 22 | 703 | 0.2− | 1.5+ | | |
| 2002 11 01 | 704 | 0.0 | 0.5+ | 2004 04 21 | 691 | 0.0 | 0.5+ | 2006 10 22 | 703 | 1.1− | 0.1+ | | |
| 2002 11 01 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 11 10 | 644 | 0.2− | 0.2− | | |
| 2002 11 01 | 704 | 0.7+ | 1.0+ | 2006 09 18 | 703 | (1.6− | 1.0−) | 2006 11 10 | 704 | 0.3+ | 1.2− | | |
| 2002 11 07 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.7− | 1.2− | 2006 11 10 | 644 | 0.1+ | 0.2− | | |
| 2002 11 07 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.6− | 2006 11 10 | 704 | 0.3− | 0.4− | | |
| 2002 11 07 | 704 | 0.5+ | 0.5+ | 2006 09 21 | 699 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.3− | | |
| 2002 11 07 | 704 | 0.6+ | 0.8+ | 2006 09 21 | 699 | 0.4− | 0.5+ | 2006 11 10 | 704 | (1.6− | 1.1+) | | |
| 2002 11 07 | 704 | 0.9+ | 0.5+ | 2006 09 21 | 699 | 0.5+ | 0.3− | 2006 11 20 | 704 | 0.1− | 0.7+ | | |
| 2002 11 11 | 704 | 0.1− | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.4+ | 2006 11 20 | 704 | (2.6+ | 3.6+) | | |
| 2002 11 11 | 704 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.6+ | 0.2+ | 2006 11 20 | 704 | (3.1+ | 0.8+) | | |
| 2002 11 11 | 704 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.1+ | 0.3− | 2006 11 20 | 704 | (0.6+ | 2.1+) | | |
| 2002 11 11 | 704 | 0.0 | 0.0 | 2006 09 22 | 704 | 1.0− | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.4− | | |
| 2002 11 11 | 704 | 0.1+ | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.7− | | |
| 2002 11 12 | 644 | 0.3+ | 0.2+ | 2006 09 22 | 704 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2002 11 12 | 644 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.2− | | |
| 2002 11 12 | 644 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.3− | 0.8+ | | | | | | |
| 2002 11 22 | 644 | 0.5− | 0.6− | 2006 09 25 | 699 | 0.4+ | 0.3+ | | | | | | |

**(142211)∗ 2002 RH$_{63}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.29198 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27065135 | $\omega$ | 304.05094 | | +0.92781245 | −0.35471377 | |
| $a$ | 2.3669873 | $\Omega$ | 76.96094 | | +0.36925968 | +0.82924977 | |
| $e$ | 0.1349101 | $i$ | 6.80932 | | +0.05302210 | +0.43188304 | |
| $P$ | 3.64 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 291 | 0.1+ | 1.3+ | 2002 11 07 | 704 | 0.7− | 0.4+ | 2002 12 11 | 704 | 0.5− | 0.1− | | |
| 2001 05 24 | 291 | 0.0 | 0.7+ | 2002 11 11 | 704 | 0.3− | 0.9+ | 2002 12 11 | 704 | 0.8+ | 0.3+ | | |
| 2001 05 24 | 291 | 0.7+ | 1.1+ | 2002 11 11 | 704 | 1.1− | 0.1+ | 2002 12 11 | 704 | 0.3+ | 0.2+ | | |
| 2002 08 12 | 704 | 0.2− | 0.1− | 2002 11 11 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.6− | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.2− | 0.8+ | 2002 11 11 | 704 | 0.1− | 0.8+ | 2002 12 11 | 704 | 0.1+ | 0.6+ | | |
| 2002 08 12 | 704 | 1.3− | 0.3− | 2002 11 11 | 704 | 0.3− | 0.7+ | 2003 01 04 | 704 | 0.4+ | 0.5+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.3+ | 2002 11 11 | 644 | 0.1− | 0.0 | 2003 01 04 | 704 | 0.0 | 0.2+ | | |
| 2002 09 05 | 704 | 0.3+ | 1.2+ | 2002 11 11 | 644 | 0.1− | 0.0 | 2003 01 04 | 704 | 0.4− | 0.1+ | | |
| 2002 09 05 | 704 | 0.6− | 0.9+ | 2002 11 11 | 644 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.0 | 0.4+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.4+ | 2002 11 13 | 644 | 0.1− | 0.7− | 2003 01 04 | 704 | 0.1+ | 0.6+ | | |
| 2002 09 06 | 704 | 0.4− | 0.3+ | 2002 11 13 | 644 | 0.1− | 0.3− | 2003 01 27 | 704 | (1.6− | 0.0 ) | | |
| 2002 09 06 | 704 | 0.0 | 0.4− | 2002 11 13 | 644 | 0.1− | 0.2− | 2003 01 27 | 704 | 0.4+ | 0.4+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.8+ | 2002 11 22 | 644 | 0.1− | 0.6+ | 2003 01 27 | 704 | 0.1− | 0.3− | | |
| 2002 10 04 | 704 | 0.4+ | 1.1+ | 2002 11 22 | 644 | 0.1− | 0.3+ | 2003 01 27 | 704 | (0.1− | 2.7−) | | |
| 2002 10 04 | 704 | 0.6+ | 0.5+ | 2002 11 22 | 644 | 0.0 | 0.3+ | 2004 03 11 | 644 | 0.3+ | 0.5+ | | |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2002 11 30 | 608 | 0.2− | 0.6− | 2004 03 11 | 644 | 0.5+ | 0.5+ | | |
| 2002 10 04 | 704 | (2.0− | 0.5−) | 2002 11 30 | 608 | 0.0 | 0.5− | 2004 03 11 | 644 | 0.6+ | 0.2+ | | |
| 2002 10 06 | 608 | 0.3+ | 0.3− | 2002 11 30 | 608 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.7+ | 0.4+ | | |
| 2002 10 06 | 608 | 0.2− | 0.8− | 2002 12 01 | 704 | 0.4− | 0.0 | 2004 03 23 | 704 | 0.8+ | 1.5+ | | |
| 2002 10 06 | 608 | (0.3− | 1.6−) | 2002 12 01 | 704 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.8+ | 0.8+ | | |
| 2002 10 11 | 704 | 0.9− | 0.4− | 2002 12 01 | 704 | 0.6− | 0.3+ | 2004 03 23 | 704 | 0.9+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.6− | 0.8− | 2002 12 01 | 704 | 0.7− | 0.0 | 2004 03 23 | 704 | 1.1+ | 0.8+ | | |
| 2002 10 11 | 704 | 0.5− | 0.1− | 2002 12 01 | 704 | 0.5− | 0.3+ | 2004 03 30 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2002 12 07 | 704 | 1.1+ | 1.0+ | 2004 03 30 | 691 | 0.0 | 0.3+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2002 12 07 | 704 | 1.1+ | 0.2− | 2004 03 30 | 691 | 0.2− | 0.3+ | | |
| 2002 10 30 | 644 | 0.4− | 0.2+ | 2002 12 07 | 704 | 0.8− | 0.7+ | 2004 04 09 | 644 | 0.3+ | 0.6+ | | |
| 2002 10 30 | 644 | 0.3− | 0.4+ | 2002 12 07 | 704 | (1.8+ | 0.9−) | 2004 04 09 | 644 | 0.2+ | 0.7+ | | |
| 2002 10 30 | 644 | 0.2− | 0.1+ | 2002 12 08 | 608 | 1.2− | 0.2+ | 2004 04 09 | 644 | 0.1− | 0.2+ | | |
| 2002 11 01 | 704 | 0.4− | 0.5+ | 2002 12 08 | 608 | 0.2− | 1.3+ | 2006 10 21 | G96 | 0.3− | 0.5− | | |
| 2002 11 01 | 704 | 0.2+ | 0.2− | 2002 12 08 | 608 | 0.6− | 0.8+ | 2006 10 21 | G96 | 0.4− | 0.5− | | |
| 2002 11 01 | 704 | 0.1+ | 0.1− | 2002 12 09 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.8− | | |
| 2002 11 01 | 704 | 0.2+ | 0.8+ | 2002 12 09 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.9− | 0.8− | | |
| 2002 11 06 | 699 | 0.2− | 0.2+ | 2002 12 09 | 644 | 0.3− | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.1− | | |
| 2002 11 06 | 699 | 0.4+ | 0.0 | 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 11 06 | 644 | 0.2+ | 0.0 | | |
| 2002 11 06 | 699 | 0.1− | 0.2− | 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 11 06 | 644 | 0.1− | 0.0 | | |
| 2002 11 06 | 699 | 0.3− | 0.5+ | 2002 12 11 | 704 | 1.3+ | 1.1− | 2006 11 15 | G96 | 0.1− | 0.6− | | |
| 2002 11 06 | 608 | 0.5+ | 1.2+ | 2002 12 11 | 704 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.7− | | |
| 2002 11 06 | 608 | 0.8+ | 1.2+ | 2002 12 11 | 704 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.5− | | |
| 2002 11 06 | 608 | 0.5+ | 1.1+ | 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.7− | | |
| 2002 11 07 | 704 | 0.6− | 0.2+ | 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.1− | | |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2002 12 11 | 704 | 0.4− | 1.0+ | 2006 11 17 | 644 | 0.0 | 0.4− | | |
| 2002 11 07 | 704 | 1.0− | 0.1+ | 2002 12 11 | 704 | 0.5+ | 0.8+ | 2006 11 17 | 644 | 0.2− | 0.3− | | |
| 2002 11 07 | 704 | 0.5− | 0.3+ | 2002 12 11 | 704 | 0.1+ | 0.1− | | | | | | |

**(142212)∗ 2002 RG$_{64}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.07713 | | (2000.0) | | | |
| $n$ | 0.22238092 | $\omega$ | 271.31526 | | −0.00693791 | −0.99996973 |
| $a$ | 2.6981807 | $\Omega$ | 179.06034 | | +0.98146552 | −0.00748395 |
| $e$ | 0.1279135 | $i$ | 12.40093 | | +0.19151320 | +0.00212797 |
| $P$ | 4.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 09 | 910 | 0.0 | 0.7+ | 2004 03 16 | 683 | 0.0 | 0.4− | 2004 05 13 | 704 | 0.2+ | 0.2+ | | |
| 1997 09 09 | 910 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.1+ | 0.6+ | 2006 08 16 | D35 | 0.3+ | 0.4+ | | |
| 1997 09 09 | 910 | 0.1− | 0.4+ | 2004 03 16 | 704 | 0.7+ | 0.3+ | 2006 08 16 | D35 | 0.2+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.1− | 1.2+ | 2004 03 16 | 704 | 0.4+ | 0.9+ | 2006 08 16 | D35 | 0.0 | 0.4+ | | |
| 2002 09 05 | 704 | 0.4− | 1.0+ | 2004 03 16 | 704 | 0.4+ | 0.6+ | 2006 08 18 | 644 | 0.5− | 0.3+ | | |
| 2002 09 05 | 704 | 0.4+ | 1.8+ | 2004 03 16 | 704 | 1.1+ | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.1+ | | |
| 2002 09 06 | 704 | 0.8− | 0.5+ | 2004 03 18 | 704 | 0.1− | 0.9+ | 2006 08 18 | 644 | 0.3− | 0.4+ | | |
| 2002 09 06 | 704 | 0.3− | 0.3− | 2004 03 18 | 704 | 0.3− | 0.5+ | 2006 08 22 | 644 | 0.3− | 0.2+ | | |
| 2002 09 06 | 704 | 0.6− | 0.7+ | 2004 03 18 | 704 | 0.3− | 1.5+ | 2006 08 22 | 644 | 0.3− | 0.3+ | | |
| 2002 10 04 | 704 | 0.7− | 0.8+ | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 08 22 | 644 | 0.4− | 0.2+ | | |
| 2002 10 04 | 704 | 0.9+ | 0.6+ | 2004 03 18 | 704 | 0.8+ | 1.2+ | 2006 08 24 | 704 | 0.3− | 0.1− | | |
| 2002 10 04 | 704 | 0.5+ | 0.7+ | 2004 03 18 | 691 | 0.1− | 0.5+ | 2006 08 24 | 704 | 0.8− | 0.2+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2004 03 18 | 691 | 0.1− | 0.6+ | 2006 08 24 | 704 | 0.6+ | 0.5+ | | |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2004 03 18 | 691 | 0.0 | 0.7+ | 2006 08 24 | 704 | 0.9− | 0.2+ | | |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2004 03 20 | 704 | 0.5− | 0.7+ | 2006 08 24 | 704 | 0.2− | 1.0+ | | |
| 2002 10 31 | 704 | (0.7+ | 2.1+) | 2004 03 20 | 704 | 0.6+ | 0.0 | 2006 08 27 | 699 | 0.6− | 1.4+ | | |
| 2002 10 31 | 704 | 0.6− | 0.5− | 2004 03 20 | 704 | 0.2− | 0.6+ | 2006 08 27 | 699 | 1.2+ | 0.9+ | | |
| 2002 10 31 | 704 | 1.2+ | 1.1+ | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 08 27 | 699 | 0.3+ | 0.8− | | |
| 2002 10 31 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.2− | 1.2+ | 2006 08 27 | 699 | 0.6− | 0.3+ | | |
| 2002 10 31 | 704 | 0.0 | 1.5+ | 2004 03 27 | 704 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.5+ | 0.2+ | | |
| 2002 11 06 | 699 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 0.3− | 0.5− | 2006 08 29 | 703 | 0.9− | 0.6+ | | |
| 2002 11 06 | 699 | 0.2− | 0.2− | 2004 03 27 | 704 | 1.3+ | 0.7− | 2006 08 29 | 703 | 0.1− | 1.2+ | | |
| 2002 11 06 | 699 | 0.7+ | 0.8+ | 2004 03 27 | 704 | 0.2− | 0.7− | 2006 08 29 | 703 | 1.0− | 1.5+ | | |
| 2002 11 06 | 699 | 0.8+ | 0.2+ | 2004 03 27 | 704 | 0.6− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.3+ | | |
| 2002 11 12 | 704 | 0.2− | 0.9+ | 2004 03 28 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.2+ | | |
| 2002 11 12 | 704 | 0.9− | 0.9+ | 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.4+ | | |
| 2002 11 12 | 704 | 1.6− | 0.6+ | 2004 03 28 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 699 | 0.3+ | 0.0 | | |
| 2002 11 12 | 704 | (2.2− | 0.5+) | 2004 03 30 | 291 | 0.6− | 0.3+ | 2006 08 30 | 704 | 0.2− | 1.2+ | | |
| 2002 11 12 | 704 | 1.0− | 0.7− | 2004 03 30 | 291 | 0.6− | 0.2+ | 2006 08 30 | 699 | 0.3− | 0.5+ | | |
| 2002 11 21 | 644 | 0.3− | 0.5+ | 2004 03 30 | 291 | 0.6− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.2− | | |
| 2002 11 21 | 644 | 0.1− | 0.8+ | 2004 03 30 | 291 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.5+ | 0.9+ | | |
| 2002 11 21 | 644 | 0.1− | 0.0 | 2004 03 30 | 291 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.4+ | | |
| 2004 02 13 | 644 | 0.3+ | 0.3− | 2004 03 30 | 291 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.8+ | 0.7+ | | |
| 2004 02 13 | 644 | 0.3− | 0.2+ | 2004 03 30 | 291 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.5+ | | |
| 2004 02 13 | 644 | 0.2− | 0.4+ | 2004 03 30 | 291 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.0 | 0.2− | | |
| 2004 02 19 | 704 | 0.7+ | 0.1+ | 2004 03 30 | 291 | 0.1− | 0.1+ | 2006 09 01 | 704 | 0.2− | 0.5− | | |
| 2004 02 19 | 704 | 0.6+ | 0.7− | 2004 04 14 | 699 | 1.6+ | 0.5+ | 2006 09 01 | 704 | 0.2+ | 1.0+ | | |
| 2004 02 19 | 704 | 0.9+ | 0.8+ | 2004 04 14 | 699 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 0.2+ | 0.2− | | |
| 2004 02 19 | 704 | 0.5+ | 0.2+ | 2004 04 14 | 699 | 0.5+ | 0.2− | 2006 09 01 | 704 | 0.0 | 0.9+ | | |
| 2004 02 19 | 704 | 0.6+ | 0.7+ | 2004 04 14 | 699 | 0.2+ | 0.0 | 2006 09 01 | 704 | 0.3+ | 1.1− | | |
| 2004 02 20 | 608 | 0.3+ | 0.1+ | 2004 04 15 | 704 | 0.2+ | 0.1− | 2006 09 13 | 644 | 0.0 | 0.1+ | | |
| 2004 02 20 | 608 | 0.7+ | 0.2− | 2004 04 15 | 704 | 0.8− | 0.4− | 2006 09 13 | 644 | 0.2− | 0.2+ | | |
| 2004 02 20 | 608 | 0.6+ | 0.2− | 2004 04 15 | 704 | 0.2+ | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.0 | | |
| 2004 03 13 | 644 | 0.1− | 0.6+ | 2004 04 15 | 704 | 1.1+ | 0.7+ | 2006 09 17 | 703 | 1.5+ | 0.5+ | | |
| 2004 03 13 | 644 | 0.0 | 0.6+ | 2004 04 15 | 704 | 0.5+ | 1.8+ | 2006 09 17 | 703 | 0.3− | 0.5− | | |
| 2004 03 13 | 644 | 0.1+ | 0.5+ | 2004 05 13 | 704 | 0.5− | 0.1− | 2006 09 17 | 703 | 0.5− | 0.9+ | | |
| 2004 03 16 | 683 | 0.3+ | 1.2− | 2004 05 13 | 704 | 1.5+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 1.0+ | | |
| 2004 03 16 | 683 | 0.0 | 0.6− | 2004 05 13 | 704 | 0.5+ | 0.4+ | | | | | | |

**(142213)∗ 2002 RN$_{65}$ = 1998 XY$_{98}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37839)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.72436 | | (2000.0) | | | |
| $n$ | 0.24399964 | $\omega$ | 315.03337 | | +0.96691357 | −0.12562167 |
| $a$ | 2.5363543 | $\Omega$ | 53.46362 | | +0.22827529 | +0.81459293 |
| $e$ | 0.2331391 | $i$ | 16.04164 | | −0.11387952 | +0.56626632 |
| $P$ | 4.04 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.1− | 0.6+ | 2004 02 18 | 201 | 0.8+ | 0.3− | 2006 10 21 | 704 | 0.0 | 0.4− | | |
| 1998 12 14 | 704 | 0.7+ | 0.5− | 2004 03 11 | 644 | 0.1+ | 0.1− | 2006 10 21 | 704 | 0.2+ | 0.3+ | | |
| 1998 12 14 | 704 | 0.5+ | 0.1+ | 2004 03 11 | 644 | 0.2− | 0.2− | 2006 10 23 | 704 | 0.9+ | 0.1+ | | |
| 1998 12 14 | 704 | 0.5+ | 0.8+ | 2004 03 11 | 644 | 0.0 | 0.2− | 2006 10 23 | 704 | 0.1+ | 0.2+ | | |
| 1998 12 14 | 704 | (2.1− | 1.0+) | 2004 03 14 | 704 | 0.7+ | 0.1+ | 2006 10 23 | 704 | 0.2+ | 0.4+ | | |
| 1998 12 17 | 704 | 0.6+ | 0.8− | 2004 03 14 | 704 | 0.6+ | 0.3+ | 2006 10 23 | 704 | 0.6+ | 0.8+ | | |
| 1998 12 17 | 704 | 0.3− | 1.7− | 2004 03 14 | 704 | 0.6+ | 1.5+ | 2006 10 28 | 704 | 0.3− | 0.6− | | |
| 1998 12 17 | 704 | (1.3+ | 3.1−) | 2004 03 18 | 703 | 0.3− | 1.0− | 2006 10 28 | 704 | 1.5− | 0.1− | | |
| 1998 12 17 | 704 | (1.2+ | 4.5−) | 2004 03 18 | 703 | 0.5+ | 1.0+ | 2006 10 28 | 704 | (1.6− | 0.3+) | | |
| 1998 12 17 | 704 | (0.8+ | 2.5−) | 2004 03 18 | 703 | 0.1+ | 0.1+ | 2006 10 28 | 704 | (2.1− | 0.7−) | | |
| 2002 09 05 | 704 | 0.3− | 0.1− | 2004 03 18 | 703 | 1.0− | 0.6− | 2006 10 28 | 704 | (2.0− | 0.3+) | | |
| 2002 09 05 | 704 | 0.0 | 0.9− | 2004 03 19 | 644 | 0.2− | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.3− | | |
| 2002 09 05 | 704 | 0.1− | 0.4− | 2004 03 19 | 644 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 2002 09 05 | 704 | 0.4− | 0.5− | 2004 03 19 | 644 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.3− | | |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.3− | | |
| 2002 09 06 | 704 | 0.2− | 0.8+ | 2004 03 19 | 644 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.9− | 1.2− | | |
| 2002 09 06 | 704 | 0.3+ | 0.9+ | 2004 03 19 | 644 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 07 | 704 | 0.8− | 0.0 | 2004 03 28 | 704 | 0.7+ | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.5+ | 2004 03 28 | 704 | 0.7+ | 0.7+ | 2006 11 14 | 703 | 0.1− | 0.0 | | |
| 2002 09 07 | 704 | 0.2+ | 0.6+ | 2004 03 28 | 704 | 0.4− | 0.7+ | 2006 11 14 | 703 | 0.3+ | 0.0 | | |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2004 03 28 | 704 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.1− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2004 03 28 | 704 | (1.5+ | 0.3+) | 2006 11 14 | 703 | 0.4− | 0.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.8− | 2004 04 14 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 491 | (2.1+ | 7.8+) | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 04 14 | 644 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.4− | | |
| 2002 10 03 | 704 | 0.3− | 0.5− | 2004 04 14 | 644 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.8+ | 0.6− | | |
| 2002 10 07 | 704 | 0.6− | 0.5+ | 2004 04 14 | 703 | 0.0 | 1.1+ | 2006 11 15 | 704 | 0.0 | 0.1+ | | |
| 2002 10 07 | 704 | 0.1− | 0.3+ | 2004 04 14 | 703 | (0.3− | 2.0+) | 2006 11 15 | 704 | 0.5+ | 0.5− | | |
| 2002 10 07 | 704 | 0.2− | 0.3+ | 2004 04 14 | 703 | 0.1− | 0.8+ | 2006 11 16 | 704 | 0.2+ | 0.5− | | |
| 2002 10 10 | 704 | 0.2+ | 0.7− | 2004 04 14 | 703 | 0.1+ | 0.6+ | 2006 11 16 | 704 | 0.1− | 0.0 | | |
| 2002 10 10 | 704 | 0.4+ | 0.2+ | 2005 05 30 | E12 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.0 | | |
| 2002 10 10 | 704 | 0.2− | 0.5+ | 2005 05 30 | E12 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.5− | | |
| 2002 10 10 | 704 | 0.1− | 0.1− | 2005 05 30 | E12 | 0.4+ | 0.1− | 2006 11 16 | 704 | 1.1+ | 0.9− | | |
| 2002 10 10 | 704 | 0.2− | 0.2− | 2005 05 30 | E12 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.2− | 0.4− | | |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2005 07 03 | E12 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.7− | | |
| 2002 10 11 | 704 | 0.2− | 0.1+ | 2005 07 03 | E12 | 0.2− | 0.6+ | 2006 11 16 | 704 | 0.2+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2005 07 03 | E12 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.5− | | |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2005 07 03 | E12 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.8+ | 0.3− | | |
| 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 08 25 | 704 | 0.5+ | 1.3− | 2006 11 17 | 691 | 0.1− | 0.1+ | | |
| 2002 11 12 | 704 | 0.5− | 0.3− | 2006 08 25 | 704 | 0.0 | 0.5− | 2006 11 17 | 691 | 0.1+ | 0.0 | | |
| 2002 11 12 | 704 | 0.6− | 0.4− | 2006 08 25 | 704 | 0.1− | 0.7− | 2006 11 17 | 691 | 0.1− | 0.0 | | |
| 2002 11 12 | 704 | 0.8− | 0.1− | 2006 09 01 | 704 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.5+ | | |
| 2002 11 12 | 704 | 0.9− | 0.2− | 2006 09 01 | 704 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.9+ | | |
| 2002 11 12 | 704 | 1.0− | 0.1+ | 2006 09 01 | 704 | 0.8− | 0.5+ | 2006 11 19 | 704 | 0.8− | 0.1+ | | |
| 2002 11 15 | 704 | 0.0 | 0.2− | 2006 09 01 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.3+ | | |
| 2002 11 15 | 704 | 0.1− | 0.7+ | 2006 09 01 | 704 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.5− | 0.2+ | | |
| 2002 11 15 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 1.0− | 0.7− | 2006 11 20 | 951 | 0.2− | 0.1− | | |
| 2002 12 05 | 704 | 0.3− | 0.4− | 2006 09 16 | 703 | 0.0 | 0.2− | 2006 11 20 | 951 | 0.3+ | 0.1− | | |
| 2002 12 05 | 704 | 0.2− | 0.3− | 2006 09 16 | 703 | 0.0 | 0.5+ | 2006 11 21 | 951 | 0.1+ | 0.1− | | |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 09 19 | 704 | 0.4− | 0.3− | 2006 11 21 | 951 | 0.1+ | 0.1− | | |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 09 19 | 704 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.5− | 0.1+ | | |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 09 19 | 704 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 1.0− | 0.2+ | | |
| 2002 12 15 | 704 | 0.3+ | 0.3− | 2006 09 19 | 704 | 0.3− | 1.5+ | 2006 11 22 | 704 | 0.1− | 0.5+ | | |
| 2002 12 15 | 704 | 0.0 | 0.4− | 2006 09 22 | 704 | 0.9+ | 0.0 | 2006 11 22 | 704 | 0.0 | 0.5+ | | |
| 2002 12 15 | 704 | 0.2+ | 0.4− | 2006 09 22 | 704 | 0.1+ | 0.7− | 2006 11 22 | 704 | 1.0+ | 0.5+ | | |
| 2002 12 15 | 704 | 0.1− | 0.4− | 2006 09 22 | 704 | 0.2+ | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.2+ | | |
| 2002 12 15 | 704 | 0.1− | 0.5− | 2006 09 22 | 704 | 0.2+ | 0.5− | 2006 11 25 | 691 | 0.0 | 0.2+ | | |
| 2002 12 29 | 704 | 0.7+ | 0.4+ | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 11 25 | 691 | 0.0 | 0.1+ | | |
| 2002 12 29 | 704 | 0.2+ | 0.8+ | 2006 09 22 | 704 | 0.3+ | 0.7− | 2006 11 27 | 704 | 0.1− | 0.8+ | | |
| 2002 12 29 | 704 | 1.5+ | 1.1+ | 2006 09 26 | 704 | (1.8− | 0.6+) | 2006 11 27 | 704 | 0.2− | 0.8+ | | |
| 2003 01 04 | 704 | 0.2+ | 0.1− | 2006 09 26 | 704 | 1.3− | 0.0 | 2006 11 27 | 704 | 0.1− | 0.7+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.5− | 0.6+ | 2006 11 27 | 704 | 0.1− | 0.9+ | | |
| 2003 01 04 | 704 | 0.2+ | 0.0 | 2006 09 26 | 704 | (1.8− | 0.1+) | 2006 11 28 | 704 | 0.1+ | 0.7+ | | |
| 2004 01 28 | 645 | 0.1− | 0.1− | 2006 09 28 | G96 | (1.1+ | 3.3+) | 2006 11 28 | 704 | 0.2− | 0.5+ | | |
| 2004 01 28 | 645 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.7+ | | |
| 2004 02 16 | 704 | (0.0 | 2.1+) | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.3+ | | |
| 2004 02 16 | 704 | (0.4− | 2.9+) | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.3+ | | |
| 2004 02 16 | 704 | (1.8− | 0.9+) | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.5+ | | |
| 2004 02 16 | 704 | 0.8− | 1.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.3+ | | |
| 2004 02 16 | 704 | (0.6− | 1.6+) | 2006 10 21 | 704 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.4+ | | |
| 2004 02 18 | 201 | 0.1+ | 0.1− | 2006 10 21 | 704 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.0 | | |
| 2004 02 18 | 201 | 0.2+ | 0.1+ | 2006 10 21 | 704 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.4+ | | |

**(142214)∗ 2002 RW$_{65}$ = 1999 CD$_{122}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37840)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.97711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22199071 | $\omega$ | 353.25791 | | +0.46105040 | −0.85599391 | |
| $a$ | 2.7013416 | $\Omega$ | 69.06134 | | +0.82539769 | +0.31690763 | |
| $e$ | 0.1515761 | $i$ | 14.50313 | | +0.32580851 | +0.40846540 | |
| $P$ | 4.44 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 704 | 1.4+ | 1.3+ | 2002 11 11 | 704 | 0.3+ | 0.2− | 2003 02 01 | 644 | 0.1+ | 0.2+ | | |
| 1999 01 14 | 704 | 1.0+ | 1.5+ | 2002 11 11 | 704 | 0.0 | 0.1− | 2003 02 19 | 644 | 0.2+ | 0.2− | | |
| 1999 01 14 | 704 | 0.7+ | 1.5+ | 2002 11 14 | 704 | 0.4+ | 0.3− | 2003 02 19 | 644 | 0.4+ | 0.1− | | |
| 1999 01 14 | 704 | 0.5− | 1.5− | 2002 11 14 | 704 | 0.2+ | 0.4− | 2003 02 19 | 644 | 0.1+ | 0.2− | | |
| 1999 01 14 | 704 | (4.9− | 0.4−) | 2002 11 14 | 704 | 0.2− | 0.3− | 2004 02 17 | 704 | 0.8+ | 0.6− | | |
| 1999 01 23 | 699 | 0.1− | 0.6− | 2002 11 14 | 704 | 0.0 | 0.4− | 2004 02 17 | 704 | 1.4+ | 0.3+ | | |
| 1999 01 23 | 699 | 0.6− | 1.0− | 2002 11 14 | 704 | 0.1− | 0.3− | 2004 02 17 | 704 | 1.0+ | 1.3+ | | |
| 1999 01 23 | 699 | 0.3− | 1.2+ | 2002 11 18 | 644 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.7+ | 0.2+ | | |
| 1999 02 11 | 704 | 1.4− | 0.1− | 2002 11 18 | 644 | 0.0 | 0.2− | 2004 03 15 | 704 | 0.7+ | 0.6+ | | |
| 1999 02 11 | 704 | 1.4− | 0.4− | 2002 11 18 | 644 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.3− | 0.3+ | | |
| 1999 02 11 | 704 | 0.5− | 1.2− | 2002 11 24 | 644 | 0.2+ | 1.1+ | 2004 03 15 | 704 | 0.4+ | 1.0+ | | |
| 1999 02 11 | 704 | (4.0− | 0.9+) | 2002 11 24 | 644 | 0.1− | 0.3+ | 2004 03 15 | 704 | 0.4− | 0.6− | | |
| 1999 02 18 | 704 | 0.7+ | 1.4+ | 2002 11 24 | 644 | 0.4+ | 0.6+ | 2004 03 15 | 704 | 0.1− | 0.4+ | | |
| 1999 02 18 | 704 | 1.3+ | 1.5+ | 2002 11 24 | 644 | 0.0 | 0.2+ | 2004 03 22 | 699 | 0.9− | 0.1− | | |
| 1999 02 18 | 704 | 0.8+ | 0.4− | 2002 11 24 | 644 | 0.3+ | 0.9+ | 2004 03 22 | 699 | 1.4− | 0.0 | | |
| 1999 02 18 | 704 | (1.4+ | 2.1+) | 2002 11 24 | 644 | 0.1− | 0.4+ | 2004 03 22 | 699 | 0.8− | 1.0+ | | |
| 1999 02 18 | 704 | 1.2− | 0.7+ | 2002 12 04 | 333 | 0.8+ | 0.5+ | 2004 03 22 | 699 | (1.6− | 0.8−) | | |
| 2002 09 05 | 704 | 0.3− | 0.0 | 2002 12 04 | 333 | 0.4+ | 0.4+ | 2004 04 24 | 704 | 0.9+ | 0.4− | | |
| 2002 09 05 | 704 | 0.4+ | 0.2+ | 2002 12 04 | 333 | 0.4+ | 0.5+ | 2004 04 24 | 704 | 0.3+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.9+ | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2004 04 24 | 704 | 0.9+ | 0.1− | | |
| 2002 09 06 | 704 | 0.5− | 0.1+ | 2002 12 05 | 704 | 0.1+ | 0.1+ | 2004 04 24 | 704 | 0.2+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2002 12 05 | 704 | 0.2+ | 0.1+ | 2004 04 24 | 704 | 0.9+ | 0.4− | | |
| 2002 09 06 | 704 | 0.8− | 1.2− | 2002 12 05 | 704 | 0.3+ | 0.2− | 2004 04 25 | 699 | 0.3+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.0 | 2002 12 05 | 704 | 0.1− | 0.4− | 2004 04 25 | 699 | 0.4+ | 0.2− | | |
| 2002 10 02 | 704 | 0.2− | 0.1+ | 2002 12 07 | 333 | 0.2+ | 0.6+ | 2004 04 25 | 699 | 0.4− | 0.7− | | |
| 2002 10 02 | 704 | 0.2− | 0.4+ | 2002 12 07 | 333 | 0.4− | 0.3+ | 2004 04 25 | 699 | 1.5− | 0.2+ | | |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2002 12 07 | 333 | 0.2+ | 0.3+ | 2004 05 12 | 644 | 0.2+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.7+ | 2002 12 08 | 333 | 0.6− | 0.1− | 2004 05 12 | 644 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2002 12 08 | 333 | 0.5− | 0.5+ | 2004 05 12 | 644 | 0.4+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2002 12 08 | 333 | 1.0− | 0.0 | 2006 07 31 | E12 | (1.5+ | 0.1+) | | |
| 2002 10 03 | 704 | 0.6− | 1.2+ | 2002 12 10 | 704 | 0.2+ | 0.2+ | 2006 07 31 | E12 | 0.1+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.2− | 1.4+ | 2002 12 10 | 704 | 0.2+ | 0.0 | 2006 07 31 | E12 | 0.3− | 0.6+ | | |
| 2002 10 09 | 704 | 1.2− | 0.3− | 2002 12 10 | 704 | 0.6+ | 0.6− | 2006 07 31 | E12 | (0.2− | 1.8+) | | |
| 2002 10 09 | 704 | 0.4− | 0.7− | 2002 12 10 | 704 | 0.2+ | 0.0 | 2006 08 19 | 644 | 0.5− | 0.5+ | | |
| 2002 10 09 | 704 | 0.5− | 0.9− | 2002 12 10 | 704 | 0.5− | 0.5− | 2006 08 19 | 644 | 0.5− | 0.6+ | | |
| 2002 10 09 | 704 | 0.3− | 0.6− | 2002 12 27 | 644 | 0.0 | 0.9− | 2006 08 19 | 644 | 0.5− | 0.4+ | | |
| 2002 10 09 | 704 | 0.6− | 0.3+ | 2002 12 27 | 644 | 0.1− | 1.0− | 2006 09 22 | 703 | 0.6− | 0.0 | | |
| 2002 10 11 | 704 | 0.1− | 0.8+ | 2002 12 27 | 644 | 0.2− | 0.8− | 2006 09 22 | 703 | 0.5− | 0.2− | | |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2002 12 28 | 699 | 0.1− | 0.0 | 2006 09 22 | 703 | 0.6− | 0.2+ | | |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2002 12 28 | 699 | 0.0 | 0.2+ | 2006 09 22 | 703 | 0.5− | 0.1− | | |
| 2002 10 11 | 704 | 0.8+ | 0.5− | 2002 12 28 | 699 | 0.4+ | 0.3− | 2006 09 27 | 703 | 0.4− | 0.1+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.1+ | 2002 12 28 | 699 | 0.4− | 0.2− | 2006 09 27 | 703 | 0.2− | 0.1− | | |
| 2002 10 31 | 608 | 0.7− | 0.1+ | 2002 12 31 | 704 | 1.0− | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.5+ | | |
| 2002 10 31 | 608 | 0.4− | 0.4+ | 2002 12 31 | 704 | 1.1+ | 1.0+ | 2006 09 27 | 703 | 0.2− | 0.1− | | |
| 2002 10 31 | 608 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.6+ | 0.8+ | 2006 11 09 | E12 | 0.3+ | 0.5+ | | |
| 2002 11 05 | 704 | 0.3− | 0.2+ | 2003 01 05 | 704 | 0.8+ | 0.2− | 2006 11 09 | E12 | 0.1+ | 0.3+ | | |
| 2002 11 05 | 704 | 0.1− | 0.2− | 2003 01 05 | 704 | 0.5+ | 0.3− | 2006 11 09 | E12 | 0.4+ | 0.6+ | | |
| 2002 11 05 | 704 | 0.2− | 0.6− | 2003 01 05 | 704 | 0.6+ | 0.1− | 2006 11 09 | E12 | 0.4− | 0.1− | | |
| 2002 11 05 | 704 | 0.3+ | 0.6− | 2003 01 05 | 704 | 0.7+ | 0.0 | 2006 11 19 | 703 | 0.3+ | 0.3+ | | |
| 2002 11 05 | 704 | 0.1+ | 0.1+ | 2003 01 05 | 704 | 0.9+ | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.2− | 2003 02 01 | 704 | 0.1− | 0.7− | 2006 11 19 | 703 | 0.3− | 0.7− | | |
| 2002 11 07 | 704 | 0.2+ | 0.1− | 2003 02 01 | 704 | 0.5− | 0.3− | 2006 11 19 | 703 | 0.1− | 0.3− | | |
| 2002 11 07 | 704 | 0.2+ | 0.8− | 2003 02 01 | 704 | 0.1+ | 1.1− | 2006 11 27 | 703 | 1.0+ | 0.3+ | | |
| 2002 11 07 | 704 | 0.0 | 0.7− | 2003 02 01 | 704 | 0.0 | 0.8− | 2006 11 27 | 703 | 0.0 | 0.6+ | | |
| 2002 11 07 | 704 | 0.0 | 0.5− | 2003 02 01 | 704 | 0.0 | 0.5+ | 2006 11 27 | 703 | 0.6− | 0.1− | | |
| 2002 11 11 | 704 | 0.2− | 0.6− | 2003 02 01 | 644 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.3+ | 1.1+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.6− | 2003 02 01 | 644 | 0.1+ | 0.0 | | | | | | |

**(142215)∗ 2002 RD$_{68}$ = 2000 AF$_{122}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 35403)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.14870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27243797 | $\omega$ | 137.75085 | | +0.90403676 | −0.41453347 | |
| $a$ | 2.3566276 | $\Omega$ | 247.01567 | | +0.35560225 | +0.86474733 | |
| $e$ | 0.1680474 | $i$ | 6.50557 | | +0.23720157 | +0.28350319 | |
| $P$ | 3.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.2− | 0.1+ | 2002 10 05 | 704 | 0.1+ | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 1995 11 30 | 691 | 0.0 | 0.2+ | 2002 10 05 | 644 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.1− | 0.4− |
| 1995 11 30 | 691 | 0.3− | 0.2+ | 2002 10 05 | 704 | 1.0− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2000 01 05 | 704 | 0.4− | 0.1− | 2002 10 05 | 644 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2000 01 05 | 704 | 0.1+ | 0.2+ | 2002 10 05 | 704 | 0.7+ | 0.4+ | 2006 11 15 | 703 | (2.5− | 2.4+) |
| 2000 01 05 | 704 | 0.7+ | 0.9+ | 2002 10 05 | 704 | 0.7+ | 0.2+ | 2006 11 15 | 703 | (0.2+ | 4.1+) |
| 2000 01 07 | 704 | 0.4+ | 0.0 | 2002 10 06 | 644 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.1− | 1.1− |
| 2000 01 07 | 704 | 0.2+ | 1.4− | 2002 10 06 | 644 | 0.3− | 0.2− | 2006 11 17 | 704 | 1.3− | 0.5− |
| 2000 01 07 | 704 | 0.5+ | 0.8− | 2002 10 06 | 644 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.4− | 0.6− |
| 2002 08 11 | 704 | 0.2− | 0.3− | 2002 10 07 | 699 | (2.5+ | 0.6−) | 2006 11 17 | 704 | 0.5− | 0.8− |
| 2002 08 11 | 704 | 0.5+ | 0.4+ | 2002 10 07 | 699 | 0.2+ | 0.9− | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2002 08 11 | 704 | 0.1+ | 0.9+ | 2002 10 07 | 699 | 0.3+ | 0.6− | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2002 08 11 | 704 | 0.2− | 0.8+ | 2002 10 07 | 699 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.2+ |
| 2002 08 11 | 704 | 1.0+ | 0.9+ | 2002 10 10 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2002 08 16 | 704 | (0.0 | 2.4−) | 2002 10 10 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4− | 0.4− |
| 2002 08 16 | 704 | 1.0− | 0.6− | 2002 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.3− |
| 2002 08 16 | 704 | 0.1− | 1.3+ | 2005 02 15 | 809 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2002 09 04 | 699 | 0.2− | 0.9+ | 2005 02 15 | 809 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2002 09 04 | 699 | 0.2+ | 0.6+ | 2005 02 15 | 809 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2002 09 04 | 699 | 1.1+ | 0.3− | 2005 06 16 | G96 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.4+ | 1.2+ |
| 2002 09 04 | 699 | 0.1− | 0.0 | 2005 06 16 | G96 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.3− | 1.0+ |
| 2002 09 04 | 644 | 0.2− | 0.3− | 2005 06 16 | G96 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2002 09 04 | 644 | 0.1− | 0.4− | 2005 06 16 | G96 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2002 09 04 | 644 | 0.1− | 0.2− | 2005 06 27 | G96 | 0.0 | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.4+ | 0.4− | 2005 06 27 | G96 | 0.5− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 0.8− | 2005 06 27 | G96 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2002 09 07 | 704 | 0.2+ | 0.6− | 2005 06 27 | G96 | 0.3− | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.2− | 0.6− | 2006 08 29 | 703 | (1.9− | 0.3−) | 2006 11 27 | 691 | 0.5+ | 0.2+ |
| 2002 09 30 | 683 | (1.6+ | 1.7+) | 2006 08 29 | 703 | 0.2+ | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 09 30 | 683 | 0.7+ | 0.5+ | 2006 08 29 | 703 | 0.6+ | 0.5+ | 2006 12 01 | 704 | 0.2+ | 0.2+ |
| 2002 09 30 | 683 | 0.6+ | 0.7+ | 2006 08 29 | 703 | 1.0+ | 0.3− | 2006 12 01 | 704 | 0.0 | 1.0+ |
| 2002 09 30 | 704 | 0.1+ | 0.9− | 2006 09 18 | 703 | (1.8− | 0.9−) | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2002 09 30 | 704 | 0.2− | 0.2− | 2006 09 18 | 703 | 1.3− | 0.1+ | 2006 12 01 | 704 | 1.0− | 0.7− |
| 2002 09 30 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.7− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2002 09 30 | 704 | 0.1− | 0.1− | 2006 09 18 | 703 | 1.1− | 0.3− | 2006 12 01 | 704 | 0.2− | 1.2+ |
| 2002 10 05 | 644 | 0.5− | 0.4− | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 12 01 | 704 | 0.6+ | 1.5+ |
| 2002 10 05 | 704 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 12 01 | 691 | 0.1− | 0.2+ |

**(142216)∗ 2002 RW$_{69}$ = 2004 BD$_{78}$**

Discovered 2002 Sept. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 56541)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.33076 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25809508 | $\omega$ | 59.18846 | | +0.55965517 | −0.82872401 |
| $a$ | 2.4431468 | $\Omega$ | 356.77821 | | +0.75018444 | +0.50744203 |
| $e$ | 0.0668209 | $i$ | 1.64699 | | +0.35214969 | +0.23604895 |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 691 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.1− |
| 2001 04 27 | 691 | 0.4+ | 0.2+ | 2004 01 22 | 704 | 0.0 | 0.5+ | 2006 09 24 | 691 | 0.2− | 0.0 |
| 2001 04 27 | 691 | 0.1− | 0.4+ | 2004 01 22 | 704 | 0.2+ | 0.4+ | 2006 09 24 | 691 | 0.2− | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.2+ |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.4+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2002 09 04 | 699 | 0.4− | 1.0+ | 2004 01 30 | 704 | 1.5+ | 1.2− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2002 09 04 | 699 | 0.9− | 0.2+ | 2004 01 30 | 704 | (0.6+ | 1.7+) | 2006 10 01 | 704 | (0.2− | 1.7+) |
| 2002 09 04 | 699 | 0.6+ | 1.1+ | 2004 01 30 | 704 | 0.6− | 0.5+ | 2006 10 01 | 704 | 0.2+ | 1.2+ |
| 2002 09 04 | 699 | 0.4+ | 0.6+ | 2004 01 30 | 704 | 0.5− | 0.9+ | 2006 10 01 | 704 | 0.0 | 0.9+ |
| 2002 09 07 | 704 | 0.1+ | 0.9+ | 2004 02 12 | 291 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.5+ | 0.3− |
| 2002 09 07 | 704 | 0.4+ | 0.9+ | 2004 02 12 | 291 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.3+ | 0.1− |
| 2002 09 07 | 704 | 0.2− | 1.1+ | 2004 02 12 | 291 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.2− |
| 2002 09 07 | 704 | 0.1+ | 0.8+ | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.9− | 0.5+ |
| 2002 09 14 | 644 | 0.6− | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 07 21 | G96 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.2− | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 1.1− |
| 2002 09 15 | 644 | 0.1− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 2002 09 15 | 644 | 0.3− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8− | 1.2− |
| 2002 10 10 | 291 | 0.8− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.0− | 1.1− |
| 2002 10 10 | 291 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.5− |
| 2002 10 10 | 291 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2004 01 22 | 704 | 0.3− | 0.3+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.6+ | 0.3− |
| 2004 01 22 | 704 | 0.7+ | 0.6+ | 2006 09 24 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.3− |

**(142217)∗ 2002 RG$_{70}$**

Discovered 2002 Sept. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.47200 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25797067 | $\omega$ | 112.91094 | | +0.91250564 | +0.40239604 |
| $a$ | 2.4439323 | $\Omega$ | 223.45709 | | −0.40344866 | +0.85561539 |
| $e$ | 0.1737035 | $i$ | 6.13930 | | −0.06754727 | +0.32557602 |
| $P$ | 3.82 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 03 | 599 | 0.2− | 1.2+ | 2002 10 09 | 699 | 0.4+ | 0.5− | 2006 09 27 | 699 | 0.1− | 0.3− |
| 2002 08 03 | 599 | 0.1+ | 1.2+ | 2004 04 13 | 645 | 0.2+ | 0.2+ | 2006 09 27 | 699 | 0.3− | 0.7+ |
| 2002 08 03 | 599 | 0.3− | 0.6+ | 2004 04 13 | 645 | 0.0 | 0.3+ | 2006 09 27 | 699 | 0.1+ | 0.5+ |
| 2002 08 03 | 599 | 0.4+ | 0.4+ | 2004 04 15 | 645 | 0.0 | 0.3+ | 2006 09 27 | 699 | 0.1+ | 0.8− |
| 2002 08 12 | 704 | 0.1− | 0.8+ | 2004 04 15 | 645 | 0.0 | 0.2+ | 2006 09 27 | 683 | 0.0 | 0.6− |
| 2002 08 12 | 704 | 0.5+ | 0.6+ | 2005 03 17 | G96 | 0.0 | 0.2+ | 2006 09 27 | 683 | 0.2− | 0.1+ |
| 2002 08 12 | 704 | 0.1+ | 0.5+ | 2005 03 17 | G96 | 0.5− | 0.2+ | 2006 09 27 | 683 | 0.3− | 0.2− |
| 2002 08 12 | 704 | 0.4+ | 0.4+ | 2005 03 17 | G96 | 0.2− | 0.5+ | 2006 09 28 | 683 | 0.6+ | 0.2+ |
| 2002 08 12 | 704 | 0.0 | 0.1+ | 2005 03 17 | G96 | 0.0 | 0.3+ | 2006 09 28 | 683 | 0.0 | 0.8+ |
| 2002 08 13 | 699 | 1.1+ | 1.5+ | 2005 04 04 | 691 | 0.6+ | 0.3+ | 2006 09 28 | 683 | 0.7− | 0.9+ |
| 2002 08 13 | 699 | 0.8+ | 0.2+ | 2005 04 04 | 691 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.1− |
| 2002 08 13 | 699 | 0.6− | 0.4+ | 2005 04 04 | 691 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.6+ |
| 2002 08 13 | 699 | 0.6− | 0.9+ | 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2002 08 17 | 608 | 0.1+ | 0.6− | 2005 04 11 | 691 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 2002 08 17 | 608 | 0.1+ | 0.1− | 2005 04 11 | 691 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.9− | 1.2+ |
| 2002 08 17 | 608 | 0.3− | 0.3− | 2005 04 15 | 691 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2002 08 27 | 644 | 0.6− | 0.1+ | 2005 04 15 | 691 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.5− |
| 2002 08 27 | 644 | 0.5− | 0.0 | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 1.3− | 0.2+ |
| 2002 08 27 | 644 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.1− |
| 2002 09 04 | 644 | 0.0 | 0.5+ | 2006 09 14 | 644 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 09 04 | 644 | 0.2− | 0.5+ | 2006 09 14 | 644 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2002 09 04 | 644 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2002 09 07 | 704 | 0.6− | 0.4− | 2006 09 18 | 704 | 0.9+ | 1.1+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2002 09 07 | 704 | 0.2+ | 0.3− | 2006 09 18 | 704 | (1.5+ | 1.2+) | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2002 09 07 | 704 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.8− | 0.5+ |
| 2002 09 07 | 704 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.9+ | 0.9+ | 2006 10 17 | 703 | 0.6− | 0.3− |
| 2002 09 13 | 644 | 0.3− | 0.6− | 2006 09 19 | 699 | 0.8+ | 0.0 | 2006 10 17 | 703 | 0.9− | 0.1− |
| 2002 09 13 | 644 | 0.6− | 0.6− | 2006 09 19 | 699 | 0.8+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2002 09 13 | 644 | 0.1− | 0.6− | 2006 09 19 | 699 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 09 15 | 608 | 1.0− | 0.3− | 2006 09 25 | 704 | 1.2− | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 09 15 | 608 | 0.7− | 0.5− | 2006 09 25 | 704 | (1.2+ | 1.7+) | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 09 15 | 608 | 0.9− | 0.3− | 2006 09 25 | 704 | (2.1+ | 1.1+) | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.9+ | 2006 09 25 | 704 | 1.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.8+ | 2006 09 25 | 683 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 683 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.6− | 0.2− | 2006 09 25 | 683 | 0.5− | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.5+ |
| 2002 10 09 | 699 | 0.2+ | 0.4− | 2006 09 26 | 683 | 0.5− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2002 10 09 | 699 | 0.1+ | 0.2+ | 2006 09 26 | 683 | 0.4− | 0.5− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 10 09 | 699 | 1.2+ | 1.4+ | 2006 09 26 | 683 | 0.3+ | 0.3− | | | | |

**(142218)∗ 2002 RG$_{72}$ = 1995 WN$_{23}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35404)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 81.65456 | | (2000.0) | | +0.18257446 | +0.98315267 |
| $n$ | 0.26856217 | $\omega$ | 259.26034 | | −0.89231656 | +0.16944982 |
| $a$ | 2.3792468 | $\Omega$ | 21.26552 | | −0.41284103 | +0.06853894 |
| $e$ | 0.1714625 | $i$ | 1.38990 | | | |
| $P$ | 3.67 | $H$ | 16.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.1− | 0.2− | 2005 03 08 | G96 | 0.1− | 0.0 | 2005 04 18 | 703 | 0.8− | 0.3− |
| 1995 09 29 | 691 | 0.0 | 0.1+ | 2005 03 13 | 691 | 0.3+ | 0.5+ | 2005 04 18 | 703 | 0.2− | 0.8− |
| 1995 09 29 | 691 | 0.1+ | 0.7− | 2005 03 13 | 691 | 0.3+ | 0.4+ | 2005 05 11 | 699 | 1.3− | 0.8− |
| 1995 10 03 | 691 | 0.6− | 0.7+ | 2005 03 13 | 691 | 0.2+ | 0.3+ | 2005 05 11 | 699 | 0.9+ | 0.8+ |
| 1995 10 03 | 691 | (4.3+ | 1.4−) | 2005 04 01 | 699 | 0.8+ | 0.6+ | 2005 05 11 | 699 | 0.2+ | 0.6− |
| 1995 10 03 | 691 | 0.9− | 1.0− | 2005 04 01 | 699 | 0.5− | 0.1+ | 2005 05 11 | 699 | 1.3− | 0.9+ |
| 1995 11 18 | 691 | 0.2− | 0.1− | 2005 04 01 | 699 | 0.3+ | 1.0+ | 2006 07 21 | G96 | 0.0 | 0.0 |
| 1995 11 18 | 691 | 0.0 | 0.5+ | 2005 04 01 | 699 | 0.2− | 1.2+ | 2006 07 21 | G96 | 0.0 | 0.0 |
| 1995 11 18 | 691 | 0.0 | 0.1+ | 2005 04 03 | 644 | 0.2+ | 0.7+ | 2006 07 21 | G96 | 0.1+ | 0.3− |
| 1995 11 24 | 691 | 0.6+ | 0.9+ | 2005 04 03 | 644 | 0.4+ | 0.5+ | 2006 07 21 | G96 | 0.3+ | 0.1− |
| 1995 11 24 | 691 | 0.3+ | 0.8+ | 2005 04 03 | 644 | 0.3+ | 0.7+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 1995 11 24 | 691 | 0.4+ | 0.3+ | 2005 04 04 | 691 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2002 08 12 | 699 | 1.0+ | 0.6+ | 2005 04 04 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.2+ |
| 2002 08 12 | 699 | (1.6+ | 0.0 ) | 2005 04 04 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2002 08 12 | 699 | 0.9+ | 0.3+ | 2005 04 05 | 699 | 1.0+ | 0.8+ | 2006 10 15 | 185 | 0.2+ | 0.1+ |
| 2002 08 12 | 699 | 1.3+ | 0.6− | 2005 04 05 | 699 | 0.3+ | 0.1+ | 2006 10 15 | 185 | 0.4+ | 0.2− |
| 2002 08 14 | 704 | 0.3+ | 0.9+ | 2005 04 05 | 699 | 0.2+ | 0.1+ | 2006 10 16 | 185 | 0.3− | 0.0 |
| 2002 08 14 | 704 | 0.4− | 0.3− | 2005 04 05 | 699 | 0.6− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2002 08 14 | 704 | 0.9+ | 0.8− | 2005 04 09 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.5+ |
| 2002 08 14 | 704 | 0.1− | 0.0 | 2005 04 09 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.5+ |
| 2002 08 29 | 644 | 0.1− | 1.1+ | 2005 04 09 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2002 08 29 | 644 | 0.3− | 1.0+ | 2005 04 09 | G96 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2002 08 29 | 644 | 0.2+ | 1.1+ | 2005 04 09 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2005 04 09 | G96 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.7− |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2005 04 09 | G96 | 0.4− | 0.9+ | 2006 10 21 | 703 | 0.5+ | 0.4− |
| 2002 09 05 | 704 | 0.3+ | 0.3+ | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 1.1+ | 0.3− |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.6− |
| 2002 09 07 | 704 | 0.0 | 0.9+ | 2005 04 11 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.1+ | 0.8+ | 2005 04 11 | 699 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.8+ | 0.8+ | 2005 04 11 | 699 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.5− | 0.8− | 2005 04 11 | 699 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2002 09 08 | 608 | 0.6− | 0.1+ | 2005 04 11 | G96 | 0.6− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2002 09 08 | 608 | 0.2− | 0.4+ | 2005 04 11 | G96 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2002 09 08 | 608 | 0.4− | 0.3+ | 2005 04 11 | G96 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2002 09 13 | 704 | 1.0− | 0.5+ | 2005 04 11 | 699 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2002 09 13 | 704 | 0.3− | 0.8+ | 2005 04 11 | G96 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2002 09 13 | 704 | (0.8− | 1.8+) | 2005 04 12 | 704 | 0.5+ | 1.3− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 09 13 | 704 | 0.9− | 0.3+ | 2005 04 12 | 704 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2002 09 16 | 644 | 0.6− | 0.3+ | 2005 04 12 | 704 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.4+ | 0.2+ |
| 2002 09 16 | 644 | 0.5− | 0.0 | 2005 04 12 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 09 16 | 644 | 0.7− | 0.1+ | 2005 04 12 | 704 | 0.3+ | 0.6+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2002 09 29 | 291 | 0.2− | 0.3+ | 2005 04 15 | 699 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.8− |
| 2002 09 29 | 291 | 0.4− | 0.2+ | 2005 04 15 | 699 | 0.1− | 0.9+ | 2006 11 13 | G96 | 0.3− | 0.6− |
| 2002 09 29 | 291 | 0.2− | 0.1+ | 2005 04 15 | 699 | 0.5− | 1.1+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2002 09 30 | 608 | 0.6− | 1.2− | 2005 04 15 | 699 | 0.7+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2002 09 30 | 608 | 0.1− | 0.6− | 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2002 09 30 | 608 | 0.1+ | 0.4− | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.4+ |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2005 04 18 | 691 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.3− | 0.4+ |
| 2005 03 08 | G96 | 0.3− | 0.1+ | 2005 04 18 | 703 | 0.7− | 0.3− | 2006 11 20 | 691 | 0.3− | 0.4+ |
| 2005 03 08 | G96 | 0.1− | 0.1+ | 2005 04 18 | 703 | 0.5+ | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.2+ |

**(142219)∗ 2002 RS$_{72}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.60589 | | (2000.0) | | +0.40957890 | +0.91207811 |
| $n$ | 0.26253882 | $\omega$ | 122.94507 | | −0.87277600 | +0.39780316 |
| $a$ | 2.4155000 | $\Omega$ | 171.17152 | | −0.26553189 | +0.09932856 |
| $e$ | 0.1050902 | $i$ | 7.08790 | | | |
| $P$ | 3.75 | $H$ | 16.9 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 691 | 0.5− | 0.3− | 2005 04 05 | 703 | 0.6− | 0.2+ | 2006 09 29 | 699 | (1.9− | 2.2+) |
| 1997 03 03 | 691 | 0.3− | 0.1− | 2005 04 05 | 703 | 0.1+ | 1.0− | 2006 09 29 | 699 | 0.7+ | 1.1+ |
| 1997 03 03 | 691 | 0.1− | 0.2− | 2005 04 05 | 703 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.5+ | 1.0+ |
| 2001 03 19 | 691 | 0.6+ | 0.6+ | 2005 04 05 | 703 | (2.1− | 0.7−) | 2006 10 01 | 691 | 0.7− | 0.1+ |
| 2001 03 19 | 691 | 0.5+ | 0.7+ | 2005 04 07 | 691 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2001 03 19 | 691 | 0.2+ | 0.7+ | 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.4− | 0.2+ |
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2005 04 07 | 691 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2005 04 09 | 691 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2005 04 09 | 691 | 0.1+ | 0.3− | 2006 10 10 | 644 | 0.4− | 0.1+ |
| 2002 08 28 | 644 | 0.2+ | 0.2+ | 2005 04 09 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 699 | 1.0− | 1.0+ | 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2002 09 05 | 699 | (1.8− | 2.2+) | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 09 05 | 699 | 1.1− | 1.5− | 2005 05 07 | 703 | 1.0− | 0.4+ | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2002 09 05 | 699 | 0.3+ | 0.5− | 2005 05 07 | 703 | 0.9+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2005 05 07 | 703 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 0.3+ | 2005 05 07 | 703 | 1.2− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.2+ | 0.8+ | 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 0.1− | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.1+ |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2002 09 07 | 704 | 0.3+ | 0.4− | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.8+ |
| 2002 09 07 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2002 09 07 | 704 | 0.7+ | 0.2− | 2006 09 17 | 691 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2002 09 08 | 608 | 0.8− | 0.2− | 2006 09 17 | 691 | 0.9+ | 0.7− | 2006 10 20 | 644 | 0.4+ | 0.5+ |
| 2002 09 08 | 608 | 0.3− | 0.4− | 2006 09 18 | 699 | (0.6+ | 1.8−) | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2002 09 08 | 608 | 0.5− | 0.7− | 2006 09 18 | 699 | 1.0+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 10 09 | 291 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 10 09 | 291 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.7+ |
| 2002 10 09 | 291 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.6− | 0.4− | | | | |

**(142220)∗ 2002 RD$_{73}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.14108 | | (2000.0) | | +0.49252671 | +0.87020581 |
| $n$ | 0.23522714 | $\omega$ | 127.63620 | | −0.82387788 | +0.47088054 |
| $a$ | 2.5990288 | $\Omega$ | 171.84128 | | −0.28043302 | +0.14495989 |
| $e$ | 0.1040651 | $i$ | 5.10231 | | | |
| $P$ | 4.19 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.1− | 0.1− | 2005 03 01 | 691 | 0.2+ | 0.2+ | 2006 08 14 | E12 | 1.2− | 0.2+ |
| 2001 03 15 | 691 | 0.1+ | 0.1+ | 2005 03 01 | 691 | 0.4+ | 0.0 | 2006 08 14 | E12 | 0.0 | 0.2+ |
| 2001 03 15 | 691 | 0.1+ | 0.1+ | 2005 03 04 | G96 | 0.4− | 0.2− | 2006 08 14 | E12 | 0.1− | 0.5− |
| 2002 08 28 | 644 | 0.3− | 0.2+ | 2005 03 04 | G96 | 0.1− | 0.1− | 2006 08 15 | 644 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.2+ | 0.4+ | 2005 03 04 | G96 | 0.5− | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.1− | 0.7+ | 2005 03 04 | G96 | 0.2− | 0.1− | 2006 08 15 | 644 | 0.0 | 0.1− |
| 2002 09 05 | 699 | 0.7+ | 0.8− | 2005 03 13 | 703 | 0.0 | 0.3− | 2006 08 18 | 644 | 0.3+ | 0.3− |
| 2002 09 05 | 699 | 0.1+ | 0.3+ | 2005 03 13 | 703 | 0.3− | 1.0− | 2006 08 18 | 644 | 0.3+ | 0.0 |
| 2002 09 05 | 699 | 0.5+ | 0.7+ | 2005 03 13 | 703 | 1.1+ | 0.7+ | 2006 08 18 | 644 | 0.0 | 0.1− |
| 2002 09 05 | 699 | 0.6− | 1.0+ | 2005 03 13 | 703 | (2.0− | 0.1−) | 2006 10 19 | G96 | 0.3+ | 0.7− |
| 2002 09 05 | 704 | 0.6− | 0.5− | 2005 03 16 | 691 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.2+ |
| 2002 09 05 | 704 | 0.6+ | 0.4+ | 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 09 05 | 704 | 0.3+ | 0.4+ | 2005 03 16 | 691 | 1.1− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 09 05 | 704 | 0.5+ | 0.5+ | 2005 04 04 | G96 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.1+ | 1.0+ | 2005 04 04 | G96 | (1.3− | 1.6+) | 2006 10 20 | G96 | 0.2− | 0.4− | | | |
| 2002 09 07 | 704 | 0.1+ | 0.1− | 2005 04 04 | G96 | 1.0+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.6− | | | |
| 2002 09 07 | 704 | 0.1− | 1.4+ | 2005 04 04 | G96 | 0.3− | 0.3− | 2006 10 20 | G96 | 0.2− | 0.3− | | | |
| 2002 09 07 | 704 | 0.2+ | 0.3+ | 2005 04 09 | G96 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | | |
| 2002 09 07 | 704 | 0.4− | 0.2+ | 2005 04 09 | G96 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | | |
| 2002 09 08 | 608 | 0.5− | 0.3− | 2005 04 09 | G96 | 0.1− | 0.8− | 2006 10 28 | G96 | 1.2+ | 0.7− | | | |
| 2002 09 08 | 608 | 0.5− | 0.0 | 2005 04 09 | G96 | 0.2+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.4− | | | |
| 2002 09 08 | 608 | 0.1− | 0.3− | 2006 07 25 | 644 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.4− | 0.2+ | | | |
| 2002 09 14 | 644 | 0.7− | 0.4+ | 2006 07 25 | 644 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1+ | | | |
| 2002 09 14 | 644 | 1.4− | 0.4+ | 2006 07 25 | 644 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.3− | | | |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 08 14 | E12 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.6− | | | |
| 2005 03 01 | 691 | 0.4+ | 0.2− | 2006 08 14 | E12 | 0.8+ | 0.1− | | | | | | | |

**(142221)∗ 2002 RL$_{73}$ = 1995 VD$_5$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35405)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 94.24574 | | (2000.0) | | −0.01080043 | +0.99989657 |
| $n$ | 0.26612871 | $\omega$ | 95.20981 | | −0.95036151 | −0.00731086 |
| $a$ | 2.3937286 | $\Omega$ | 174.14607 | | −0.31096036 | −0.01238535 |
| $e$ | 0.1209373 | $i$ | 5.34291 | | | |
| $P$ | 3.70 | $H$ | 16.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.0 | 0.1+ | 2002 09 07 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.6− | 0.6− | | | |
| 1995 11 14 | 691 | 0.0 | 0.1+ | 2002 09 07 | 704 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.2+ | | | |
| 1995 11 14 | 691 | 0.0 | 0.2− | 2002 09 07 | 704 | 1.2− | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.6+ | | | |
| 1995 11 19 | 691 | 0.0 | 0.1− | 2002 09 07 | 704 | 0.5+ | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.2− | | | |
| 1995 11 19 | 691 | 0.1+ | 0.1+ | 2002 09 08 | 608 | 0.3+ | 0.5+ | 2006 10 15 | 703 | 0.4− | 0.8+ | | | |
| 1995 11 19 | 691 | 0.0 | 0.1− | 2002 09 08 | 608 | 0.1+ | 0.7+ | 2006 10 15 | 703 | 1.0− | 0.9+ | | | |
| 1995 11 25 | 691 | 0.0 | 0.1− | 2002 09 08 | 608 | 0.1+ | 0.1+ | 2006 10 15 | 703 | (2.1− | 0.2+) | | | |
| 1995 11 25 | 691 | 0.2− | 0.1− | 2005 03 16 | G96 | 0.2+ | 0.2− | 2006 10 15 | 703 | 1.0− | 0.3+ | | | |
| 1995 11 25 | 691 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2+ | | | |
| 2001 03 18 | 608 | 1.0+ | 0.2+ | 2005 03 16 | G96 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.3− | | | |
| 2001 03 18 | 608 | 0.6+ | 0.0 | 2005 03 16 | G96 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1+ | | | |
| 2001 03 18 | 608 | 0.1+ | 0.7+ | 2005 04 14 | 691 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 | | | |
| 2002 08 12 | 704 | 0.7− | 0.3+ | 2005 04 14 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.6+ | | | |
| 2002 08 12 | 704 | 0.1+ | 0.3− | 2005 04 14 | 691 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2+ | | | |
| 2002 08 12 | 704 | 0.2+ | 0.5− | 2005 05 07 | 703 | 0.0 | 0.9+ | 2006 10 21 | 703 | 1.3− | 0.4+ | | | |
| 2002 08 12 | 704 | 0.3− | 0.1− | 2005 05 07 | 703 | 0.7− | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.0 | | | |
| 2002 08 28 | 644 | 0.4+ | 0.2− | 2005 05 07 | 703 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.3− | 0.3+ | | | |
| 2002 08 28 | 644 | 0.6+ | 0.5+ | 2005 05 07 | 703 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1+ | | | |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1+ | | | |
| 2002 09 05 | 704 | 0.4− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− | | | |
| 2002 09 05 | 704 | 0.3− | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.2− | | | |
| 2002 09 05 | 704 | 0.3+ | 0.4− | 2006 09 23 | 691 | 0.2+ | 0.5+ | 2006 11 23 | G96 | 0.4+ | 0.2− | | | |
| 2002 09 05 | 704 | 0.1− | 0.6− | 2006 09 23 | 691 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.1− | 0.1− | | | |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.3− | | | | | | | |

**(142222)∗ 2002 RP$_{74}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.69467 | | (2000.0) | | +0.19923718 | +0.97992426 |
| $n$ | 0.27693770 | $\omega$ | 111.59963 | | −0.91372261 | +0.18845165 |
| $a$ | 2.3310307 | $\Omega$ | 169.88452 | | −0.35414056 | +0.06507248 |
| $e$ | 0.2143899 | $i$ | 2.37565 | | | |
| $P$ | 3.56 | $H$ | 17.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 691 | 0.1− | 0.3+ | 2005 04 06 | G96 | 0.3− | 0.0 | 2005 05 04 | 691 | 0.0 | 0.1+ | | | |
| 1999 11 16 | 691 | 0.1− | 0.1+ | 2005 04 07 | G96 | 0.2− | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.2+ | | | |
| 1999 11 16 | 691 | 0.0 | 0.4+ | 2005 04 07 | G96 | 0.2− | 0.0 | 2005 05 08 | 703 | (1.8− | 1.2−) | | | |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2005 04 07 | G96 | 0.2− | 0.2− | 2005 05 08 | 703 | 1.4− | 0.5+ | | | |
| 2002 08 28 | 644 | 0.1+ | 0.1+ | 2005 04 07 | G96 | 0.2− | 0.0 | 2005 05 08 | 703 | 0.0 | 0.5− | | | |
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2005 04 07 | G96 | 0.4− | 0.1+ | 2005 05 08 | 703 | 0.9− | 0.8− | | | |
| 2002 09 05 | 704 | 0.6− | 0.7+ | 2005 04 07 | G96 | 1.2− | 0.4+ | 2005 05 10 | G96 | 0.4− | 0.0 | | | |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2005 04 07 | G96 | 0.2− | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.3− | | | |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2005 04 07 | G96 | 0.2− | 0.0 | 2005 05 10 | G96 | 0.5− | 0.2+ | | | |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2005 04 09 | 691 | 0.2+ | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.1− | | | |
| 2002 09 07 | 704 | 0.1+ | 0.3− | 2005 04 09 | 691 | 0.3+ | 0.1+ | 2005 05 13 | 703 | 1.4− | 0.4− | | | |
| 2002 09 07 | 704 | 0.5− | 0.5− | 2005 04 09 | 691 | 0.5− | 0.6+ | 2005 05 13 | 703 | 0.2− | 0.3− | | | |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2005 04 10 | 691 | 0.3+ | 0.2+ | 2005 05 13 | 703 | 0.9− | 0.0 | | | |
| 2002 09 08 | 608 | 0.2− | 0.8− | 2005 04 10 | 691 | 0.0 | 0.2+ | 2005 05 13 | 703 | 1.3− | 0.6+ | | | |
| 2002 09 08 | 608 | 0.3− | 0.4− | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 | | | |
| 2002 09 08 | 608 | 0.0 | 0.2− | 2005 04 11 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.2+ | | | |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.3+ | | | |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2005 04 11 | 691 | 1.2+ | 0.3+ | 2006 09 30 | G96 | 1.1− | 0.4+ | | | |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2005 04 11 | 699 | 1.2+ | 0.7− | 2006 10 17 | G96 | 0.1+ | 0.4+ | | | |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2005 04 11 | 699 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.5− | 0.9+ | | | |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2005 04 11 | 699 | 0.8+ | 0.4+ | 2006 10 17 | G96 | 0.6+ | 0.8− | | | |
| 2002 10 03 | 704 | 1.0− | 0.6+ | 2005 04 11 | 699 | 0.8− | 0.6+ | 2006 10 17 | G96 | 0.7+ | 0.4− | | | |
| 2002 10 10 | 291 | 0.4+ | 0.3+ | 2005 04 11 | 691 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | | | |
| 2002 10 10 | 291 | 0.2+ | 0.3+ | 2005 04 11 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | | | |
| 2002 10 10 | 291 | 0.1− | 0.4+ | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.7+ | 0.1+ | | | |
| 2005 04 05 | G96 | 0.3− | 0.1+ | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 1.0− | 0.2+ | | | |
| 2005 04 05 | G96 | 0.3− | 0.1+ | 2005 04 14 | 691 | 0.5+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ | | | |
| 2005 04 05 | G96 | 0.3− | 0.3− | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.8− | 0.7+ | | | |
| 2005 04 05 | G96 | 0.0 | 0.2− | 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.1− | | | |
| 2005 04 06 | G96 | 0.2− | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.2− | | | |
| 2005 04 06 | G96 | 0.3− | 0.0 | 2005 04 18 | 691 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.5+ | 0.1+ | | | |
| 2005 04 06 | G96 | 0.5− | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.6+ | 0.1− | | | |

**(142223)∗ 2002 RE$_{75}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.06441 | | (2000.0) | | +0.27691126 | +0.96087507 |
| $n$ | 0.26657056 | $\omega$ | 64.10362 | | −0.88492279 | +0.25247087 |
| $a$ | 2.3910827 | $\Omega$ | 221.97390 | | −0.37447538 | +0.11391910 |
| $e$ | 0.2565945 | $i$ | 0.53677 | | | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 209 | 0.9+ | 0.1− | 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.2− | | | |
| 2002 08 17 | 185 | 0.4− | 0.4+ | 2005 03 12 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.2− | | | |
| 2002 08 17 | 185 | 0.4− | 0.1+ | 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.3− | | | |
| 2002 08 17 | 185 | 1.0− | 0.6+ | 2005 03 15 | H55 | (2.1+ | 0.1−) | 2006 10 27 | G96 | 0.2+ | 0.3− | | | |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2005 03 15 | H55 | (2.5+ | 1.7+) | 2006 10 27 | G96 | 0.1− | 0.2− | | | |
| 2002 09 05 | 704 | 0.3+ | 0.4+ | 2005 03 15 | H55 | 0.1− | 1.0+ | 2006 10 27 | G96 | 0.2− | 0.0 | | | |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2005 03 16 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 | | | |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | | |
| 2002 09 05 | 704 | 1.1− | 0.0 | 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.4− | | | |
| 2002 09 07 | 704 | (0.3+ | 2.0+) | 2005 04 04 | 703 | 0.7+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2− | | | |
| 2002 09 07 | 704 | (0.7+ | 1.8+) | 2005 04 04 | 703 | 1.0− | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.2− | | | |
| 2002 09 07 | 704 | (0.2+ | 2.0+) | 2005 04 04 | 703 | 1.2− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.4− | | | |
| 2002 09 07 | 704 | (0.0 | 1.8+) | 2005 04 04 | 703 | (2.1− | 1.0+) | 2006 11 22 | G96 | 0.1+ | 0.2− | | | |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2006 09 25 | G96 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− | | | |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.4+ | 0.4− | | | |
| 2002 09 14 | 644 | 0.4− | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.3− | 0.1− | | | |
| 2002 10 07 | 704 | 0.1+ | 1.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 24 | 703 | 0.1− | 0.8+ | | | |
| 2002 10 07 | 704 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 24 | 703 | 1.3− | 0.4− | | | |
| 2002 10 07 | 704 | 1.0− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 24 | 703 | 0.0 | 1.1− | | | |
| 2002 10 07 | 704 | 0.6− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 24 | 703 | 0.6− | 1.1− | | | |
| 2002 10 09 | 699 | 0.6+ | 1.2+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.3− | | | |
| 2002 10 09 | 699 | 0.1− | 1.4+ | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.4− | | | |
| 2002 10 09 | 699 | 0.5+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.2− | | | |
| 2002 10 09 | 699 | 0.2+ | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.4− | | | |
| 2003 12 14 | 291 | 0.3− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.1+ | | | |
| 2003 12 14 | 291 | 0.3− | 0.7+ | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.0 | | | |
| 2003 12 14 | 291 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2005 03 04 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.3+ | 2006 11 27 | 691 | 1.4− | 0.5+ |
| 2005 03 04 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 27 | 691 | 1.2+ | 1.0+ |

**(142224)∗ 2002 RF$_{75}$ = 1995 SN$_{85}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35406)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.50345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27165019 | $\omega$ | 339.54582 | | −0.32156272 | +0.94680574 | |
| $a$ | 2.3611815 | $\Omega$ | 271.69507 | | −0.86700512 | −0.29971665 | |
| $e$ | 0.1929036 | $i$ | 0.71665 | | −0.38065673 | −0.11717003 | |
| $P$ | 3.63 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.9− | 0.3+ | 2005 04 02 | 699 | 0.8+ | 0.2+ | 2005 04 19 | 699 | 0.9+ | 1.3+ |
| 1995 09 25 | 691 | 0.2− | 0.0 | 2005 04 02 | 699 | 0.0 | 0.8− | 2005 04 19 | 699 | 0.8+ | 1.3− |
| 1995 09 25 | 691 | 0.1+ | 0.1− | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2005 05 09 | 699 | 0.9+ | 0.5+ |
| 1995 09 30 | 691 | 0.2+ | 0.0 | 2005 04 12 | 704 | (2.2− | 0.8+) | 2005 05 09 | 699 | 0.5+ | 0.4+ |
| 1995 09 30 | 691 | 0.2+ | 0.1+ | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2005 05 09 | 699 | 0.0 | 1.0+ |
| 1995 09 30 | 691 | 0.1+ | 0.1− | 2005 04 12 | 704 | (2.3− | 0.1−) | 2005 05 09 | 699 | 0.4+ | 0.7+ |
| 2001 03 18 | 691 | 0.0 | 0.5+ | 2005 04 12 | 704 | (3.1− | 1.0+) | 2005 05 14 | G96 | 0.3− | 0.1− |
| 2001 03 18 | 691 | 0.1+ | 0.4+ | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2005 05 14 | G96 | 0.3− | 0.1− |
| 2001 03 18 | 691 | 0.3+ | 0.4+ | 2005 04 12 | 704 | (1.9− | 1.5+) | 2005 05 14 | G96 | 0.3− | 0.1+ |
| 2002 08 28 | 644 | 0.3+ | 0.7+ | 2005 04 12 | 704 | 0.2+ | 0.8+ | 2005 05 14 | G96 | 0.3− | 0.2+ |
| 2002 08 28 | 644 | 0.1+ | 1.5+ | 2005 04 13 | I10 | 0.1− | 0.0 | 2005 06 14 | G96 | 0.5− | 0.4+ |
| 2002 08 28 | 644 | 0.4− | 0.5+ | 2005 04 13 | I10 | 0.8+ | 0.2− | 2005 06 14 | G96 | 0.5− | 0.4+ |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2005 04 13 | 699 | 0.4+ | 0.5− | 2005 06 14 | G96 | 0.0 | 0.5+ |
| 2002 09 05 | 704 | (0.0 | 1.9+) | 2005 04 13 | 699 | 0.1+ | 0.1+ | 2005 06 14 | G96 | 0.5− | 0.6+ |
| 2002 09 05 | 704 | 1.0+ | 0.6− | 2005 04 13 | I10 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.7+ |
| 2002 09 05 | 704 | 0.1− | 0.4+ | 2005 04 13 | 699 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.5+ |
| 2002 09 07 | 704 | 0.1− | 0.4+ | 2005 04 13 | 699 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2002 09 07 | 704 | 0.2− | 0.1+ | 2005 04 18 | 703 | 1.4− | 1.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2002 09 07 | 704 | 0.0 | 0.2+ | 2005 04 18 | 703 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.2+ | 0.8+ | 2005 04 18 | 703 | 1.1− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2002 09 12 | 644 | 0.5− | 1.4+ | 2005 04 18 | 703 | 1.3− | 0.3− | 2006 10 28 | G96 | 0.5− | 0.0 |
| 2002 09 12 | 644 | 0.4− | 1.5+ | 2005 04 18 | 704 | 0.6+ | 1.3+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2002 09 12 | 644 | (0.2− | 1.7+) | 2005 04 18 | 704 | 1.1+ | 1.2+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2005 04 18 | 704 | 0.2− | 1.1+ | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2005 04 18 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2005 04 18 | 704 | (0.1− | 1.8+) | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2003 11 30 | 291 | 0.3+ | 0.5+ | 2005 04 18 | 608 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.3− |
| 2003 11 30 | 291 | 0.3+ | 0.2+ | 2005 04 18 | 608 | 0.4+ | 0.0 | 2006 11 18 | 691 | 0.6− | 0.3− |
| 2003 11 30 | 291 | 0.1+ | 0.1+ | 2005 04 18 | 608 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.5− | 0.4+ |
| 2005 04 02 | 699 | 0.6+ | 0.9+ | 2005 04 19 | 699 | 0.9− | 0.2+ | 2006 11 18 | 691 | 0.6− | 0.5+ |
| 2005 04 02 | 699 | 0.0 | 0.1− | 2005 04 19 | 699 | (0.1+ | 1.8+) | | | | |

**(142225)∗ 2002 RP$_{76}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.79184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27331629 | $\omega$ | 359.39858 | | +0.99434356 | −0.10582327 | |
| $a$ | 2.3515761 | $\Omega$ | 6.69638 | | +0.09776908 | +0.87858706 | |
| $e$ | 0.1209732 | $i$ | 4.46232 | | +0.04149797 | +0.46571044 | |
| $P$ | 3.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.6+ | 0.7− | 2002 10 03 | 704 | 0.5− | 1.1+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 1.1− | 0.5− | 2002 10 03 | 704 | 0.1+ | 0.9+ | 2006 11 15 | 704 | 0.1+ | 0.3+ |
| 2000 01 04 | 704 | 0.7+ | 0.4+ | 2002 10 11 | 704 | 0.2+ | 0.5− | 2006 11 15 | 704 | 0.5+ | 0.4+ |
| 2000 01 04 | 704 | 0.1− | 0.8+ | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 11 15 | 704 | (0.5+ | 1.8+) |
| 2002 08 20 | 644 | 0.2− | 0.2+ | 2002 10 11 | 704 | 0.7+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.5− |
| 2002 08 20 | 644 | 0.0 | 0.2+ | 2002 10 11 | 704 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.7+ | 0.1− |
| 2002 08 20 | 644 | 0.1− | 0.3+ | 2004 01 23 | 704 | 0.6+ | 1.0+ | 2006 11 17 | 704 | 0.4+ | 1.1+ |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2004 01 23 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 704 | 0.7− | 0.3+ |
| 2002 09 05 | 704 | 0.5− | 0.1− | 2004 01 23 | 704 | (1.5+ | 2.0+) | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.4− | 0.3+ | 2004 02 23 | 704 | 1.3+ | 0.9+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2004 02 23 | 704 | 0.1+ | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 09 07 | 704 | 0.8+ | 0.6− | 2004 02 23 | 704 | 0.4− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2002 09 07 | 704 | 0.2+ | 0.3− | 2004 02 23 | 704 | 0.3+ | 1.4+ | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | 1.3+ | 1.0− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.3+ | 0.5− | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 09 07 | 704 | 0.7+ | 0.2− | 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 11 19 | 704 | 0.3+ | 0.7− |
| 2002 09 12 | 644 | 0.2− | 0.3+ | 2006 09 18 | 703 | (1.5− | 0.5−) | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2002 09 12 | 644 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2002 09 12 | 644 | 0.6− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.4− | 0.2− |
| 2002 09 14 | 608 | 1.1− | 0.2− | 2006 10 04 | G96 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2002 09 14 | 608 | 1.5− | 0.6+ | 2006 10 04 | G96 | 0.5+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2002 09 14 | 608 | 1.1− | 0.5+ | 2006 10 19 | 703 | 0.8− | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.8− | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.4− |
| 2002 09 15 | 644 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.2+ | 0.8− | 2006 11 28 | 704 | 0.7+ | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.6− | 0.4− |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2006 10 20 | G96 | 0.2− | 0.5− | 2006 11 28 | 704 | 0.6− | 0.5+ |
| 2002 10 03 | 704 | 0.1+ | 1.0+ | 2006 10 20 | G96 | 0.1+ | 0.4− | | | | |

**(142226)∗ 2002 RE$_{77}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.80130 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26450745 | $\omega$ | 249.67389 | | +0.37878243 | −0.92547975 | |
| $a$ | 2.4034999 | $\Omega$ | 178.05828 | | +0.88158333 | +0.35971558 | |
| $e$ | 0.0792264 | $i$ | 5.64576 | | +0.28166416 | +0.11870950 | |
| $P$ | 3.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.3− | 0.7− | 2004 02 04 | 608 | 0.7+ | 0.1− | 2006 09 20 | 699 | 0.8− | 0.1+ |
| 2000 01 07 | 704 | 0.5− | 0.5− | 2004 02 04 | 608 | 0.4+ | 0.1+ | 2006 09 20 | 699 | 0.5+ | 0.6+ |
| 2000 01 07 | 704 | 0.4+ | 0.9− | 2004 02 13 | 699 | 0.4+ | 0.6+ | 2006 09 26 | 704 | 0.2+ | 0.5− |
| 2002 08 12 | 704 | 0.3+ | 1.2+ | 2004 02 13 | 699 | 0.7+ | 1.1+ | 2006 09 26 | 704 | 0.2+ | 0.2− |
| 2002 08 12 | 704 | 1.1− | 0.9+ | 2004 02 13 | 699 | 0.2+ | 0.6+ | 2006 09 26 | 704 | (2.0+ | 1.3−) |
| 2002 08 12 | 704 | 0.2− | 0.3+ | 2004 02 13 | 699 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2004 02 14 | 608 | 0.0 | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2004 02 14 | 608 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2004 02 14 | 608 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.5+ | 0.1+ |
| 2002 08 29 | 291 | 0.8− | 0.3+ | 2004 02 17 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2002 08 29 | 291 | 0.1+ | 0.5+ | 2004 02 17 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.2− |
| 2002 08 29 | 291 | 0.1+ | 0.4+ | 2004 02 17 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.6− | 0.6+ | 2004 02 18 | 704 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2004 02 18 | 704 | 0.8+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.3+ | 0.8+ | 2006 10 15 | 703 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2004 02 18 | 704 | 0.9− | 0.8− | 2006 10 15 | 703 | 0.4+ | 0.2+ |
| 2002 09 05 | 704 | 0.7+ | 0.2+ | 2004 02 18 | 704 | 0.3+ | 0.0 | 2006 10 15 | 703 | (0.6− | 2.2−) |
| 2002 09 07 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.4− | 0.0 |
| 2002 09 07 | 704 | 0.9+ | 0.4+ | 2004 03 18 | 704 | 0.2− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2002 09 07 | 704 | 0.3+ | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.3− | 0.6− | 2006 10 21 | G96 | 0.6+ | 0.1− |
| 2002 09 12 | 644 | 0.1− | 1.2+ | 2004 03 20 | 704 | 0.8− | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2002 09 12 | 644 | 0.1− | 1.3+ | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 09 12 | 644 | 0.3− | 1.3+ | 2004 03 20 | 704 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 09 15 | 699 | 0.5− | 0.1+ | 2004 03 20 | 704 | 0.8− | 0.9+ | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2002 09 15 | 699 | 0.6− | 0.5+ | 2006 07 21 | G96 | 0.5+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2002 09 15 | 699 | 0.3− | 1.4− | 2006 07 21 | G96 | 0.7+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 09 15 | 699 | 1.2+ | 0.5− | 2006 07 21 | G96 | 0.1− | 0.4− | 2006 10 27 | 704 | 1.4− | 1.0+ |
| 2002 10 06 | 704 | 0.3+ | 1.1− | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 27 | 704 | 0.4− | 0.4+ |
| 2002 10 06 | 704 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | 704 | 0.4+ | 0.2− |
| 2002 10 06 | 704 | 0.6− | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.5+ | 0.3− |
| 2004 01 14 | 644 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 14 | 644 | 0.2+ | 0.7+ | 2006 09 20 | 704 | 0.5− | 0.2− | 2006 11 13 | 703 | 0.2+ | 1.4+ |
| 2004 01 14 | 644 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.0 | 1.2− |
| 2004 01 29 | 704 | 0.6+ | 0.7+ | 2006 09 20 | 704 | 0.6+ | 0.3+ | 2006 11 20 | 704 | 1.1+ | 1.7− |
| 2004 01 29 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 699 | 0.7+ | 0.4+ | 2006 11 20 | 704 | 0.6− | 1.1− |
| 2004 01 29 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.4− |
| 2004 01 29 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.7− | 2006 11 20 | 704 | 0.9+ | 0.2− |
| 2004 02 04 | 608 | 0.4+ | 0.2− | 2006 09 20 | 699 | 0.1+ | 0.2− | | | | |

**(142227)∗ 2002 RA$_{81}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.76774 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25723082 | $\omega$ | 119.99369 | | +0.12418562 | +0.99202236 | |
| $a$ | 2.4486162 | $\Omega$ | 157.10983 | | −0.92849547 | +0.12387988 | |
| $e$ | 0.1806571 | $i$ | 3.19361 | | −0.34996299 | +0.02335391 | |
| $P$ | 3.83 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.8+ | 0.6− | 2002 10 03 | 704 | 0.2+ | 0.6+ | 2005 05 13 | 691 | 0.0 | 0.0 |
| 1998 08 17 | 704 | 0.6− | 0.7+ | 2005 03 09 | G96 | 0.2− | 0.1− | 2005 05 15 | 644 | 0.2− | 0.2+ |
| 1998 08 17 | 704 | 0.6− | 0.7+ | 2005 03 09 | G96 | 0.1− | 0.3+ | 2005 05 15 | 644 | 0.0 | 0.1+ |
| 1998 08 17 | 704 | (1.0+ | 2.8−) | 2005 03 09 | G96 | 0.1− | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.2− |
| 1998 08 17 | 704 | 0.5− | 1.6− | 2005 03 09 | G96 | 0.3− | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.3− |
| 2001 03 23 | 209 | 0.5+ | 1.2+ | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.5− |
| 2001 03 23 | 209 | 0.6+ | 0.8+ | 2005 03 12 | 691 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.2− | 0.3− |
| 2001 03 23 | 209 | 0.6+ | 0.7+ | 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.6− |
| 2002 09 05 | 704 | 1.0+ | 0.8+ | 2005 03 18 | 703 | 0.7− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.8+ |
| 2002 09 05 | 704 | 0.5+ | 0.5+ | 2005 03 18 | 703 | 0.1+ | 0.7− | 2006 09 17 | 691 | 0.2+ | 0.3+ |
| 2002 09 05 | 704 | 0.5+ | 1.0+ | 2005 03 18 | 703 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.4+ | 0.5+ | 2005 03 18 | 703 | 0.5− | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2002 09 07 | 704 | 0.9+ | 1.4+ | 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2002 09 07 | 704 | 0.4+ | 0.4+ | 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2002 09 11 | 644 | 0.2− | 0.1− | 2005 04 01 | 699 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2005 04 01 | 699 | (1.7− | 1.3+) | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2005 04 01 | 699 | 0.1+ | 0.6+ | 2006 10 15 | 703 | 0.5− | 0.4− |
| 2002 09 11 | 608 | 0.0 | 0.7− | 2005 04 01 | 699 | 0.4+ | 1.5+ | 2006 10 15 | 703 | 1.1− | 0.5+ |
| 2002 09 11 | 608 | 0.1− | 0.3− | 2005 04 04 | 704 | 0.3+ | 0.8+ | 2006 10 15 | 703 | 1.2− | 0.6+ |
| 2002 09 11 | 608 | 0.1− | 0.2− | 2005 04 04 | 704 | 0.6− | 0.0 | 2006 10 15 | 703 | 0.6− | 0.9+ |
| 2002 10 01 | 699 | (1.5− | 0.4+) | 2005 04 04 | 704 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2002 10 01 | 699 | (3.6− | 0.2−) | 2005 04 04 | 704 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2002 10 01 | 699 | 0.6− | 0.5+ | 2005 04 04 | 704 | 0.3+ | 0.6− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2002 10 01 | 699 | 0.6− | 0.8+ | 2005 04 12 | 704 | 0.3+ | 0.9+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2005 04 12 | 704 | 0.7+ | 1.1+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.7− | 0.7− | 2005 04 12 | 704 | (1.3+ | 2.0+) | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 1.0− | 0.7+ | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2005 05 13 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1− |

**(142228)∗ 2002 RB$_{81}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.47559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26871524 | $\omega$ | 158.03735 | | +0.49013911 | +0.87145581 | |
| $a$ | 2.3783432 | $\Omega$ | 141.30592 | | −0.80396863 | +0.46001861 | |
| $e$ | 0.1889115 | $i$ | 1.66113 | | −0.33674633 | +0.17014008 | |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 691 | 0.5+ | 0.6+ | 2003 12 21 | 645 | 0.4− | 0.2+ | 2006 10 16 | 703 | 1.1+ | 0.4+ |
| 2001 02 20 | 691 | 0.6+ | 0.6+ | 2005 04 04 | 704 | 1.0+ | 1.4+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2001 02 20 | 691 | 0.7+ | 0.5+ | 2005 04 04 | 704 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2002 08 18 | 608 | 0.8− | 0.1+ | 2005 04 04 | 704 | 0.0 | 0.8+ | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2002 08 18 | 608 | 0.2− | 0.3− | 2005 04 04 | 704 | 1.2− | 0.6− | 2006 10 17 | G96 | 0.2− | 0.1− |
| 2002 08 18 | 608 | 0.0 | 0.1+ | 2005 04 10 | G96 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2002 09 05 | 704 | 0.5− | 0.8+ | 2005 04 10 | G96 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2005 04 10 | G96 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2002 09 05 | 704 | 0.1− | 0.0 | 2005 04 10 | G96 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.5+ |
| 2002 09 05 | 704 | 0.3+ | 0.5+ | 2005 04 13 | 699 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.4− | 1.0+ | 2005 04 13 | 699 | (1.9+ | 0.0 ) | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2002 09 07 | 704 | (1.1− | 1.6+) | 2005 04 13 | 699 | 0.5+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2005 04 13 | 699 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 09 07 | 704 | 0.3+ | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2002 09 07 | 704 | 0.1+ | 0.8+ | 2005 04 16 | 691 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.6− | 0.1+ |
| 2002 09 07 | 704 | 0.2+ | 0.1− | 2005 04 16 | 691 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.4− | 0.9+ | 2005 04 18 | 703 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.1+ | 0.0 | 2005 04 18 | 703 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2005 04 18 | 703 | 0.2+ | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 09 11 | 644 | 0.5− | 0.0 | 2005 04 18 | 703 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2002 09 11 | 644 | 0.4− | 0.1+ | 2005 04 18 | 704 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 09 11 | 644 | 0.5− | 0.1+ | 2005 04 18 | 704 | 0.2− | 1.1+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2002 09 13 | 644 | 0.4− | 0.1+ | 2005 04 18 | 704 | 0.6+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.1+ | 2005 04 18 | 704 | 0.6+ | 1.3+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.2+ | 2005 04 18 | 704 | (0.1+ | 1.8+) | 2006 11 11 | 703 | 0.6+ | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.7+ | 2005 05 10 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2002 10 03 | 704 | (1.6− | 0.3+) | 2005 05 10 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 1.0− | 0.8+ | 2005 05 10 | 704 | 1.0− | 0.7+ | 2006 11 11 | 644 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2005 05 12 | 699 | 0.9+ | 0.6+ | 2006 11 11 | 644 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 1.1+ | 0.4+ | 2005 05 12 | 699 | 0.2+ | 0.1− | 2006 11 11 | 644 | 0.5+ | 0.4+ |
| 2002 10 04 | 704 | (1.8− | 0.5−) | 2005 05 12 | 699 | 1.2+ | 0.6+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 10 04 | 704 | (1.2− | 1.5+) | 2005 05 12 | 699 | (2.0+ | 1.0−) | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 1.1− | 1.1+ | 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2002 10 06 | 704 | 0.3− | 0.4+ | 2005 05 14 | 644 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.5− | 0.5+ | 2005 05 14 | 644 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.5− | 1.1+ | 2005 07 05 | 644 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.8− | 0.2+ | 2005 07 05 | 644 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2002 10 07 | 704 | 0.7− | 0.5− | 2005 07 05 | 644 | 0.1+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 10 07 | 704 | 0.3− | 0.8+ | 2006 09 30 | 703 | 0.8− | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.9+ |
| 2002 10 07 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | (0.9− | 1.6+) | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2002 10 07 | 704 | 0.4+ | 0.8+ | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 17 | 703 | 1.5− | 0.5+ |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.5+ |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 1.0+ | 2006 11 18 | 704 | 0.7− | 0.7+ |
| 2002 10 11 | 704 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.5+ |
| 2002 10 11 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | (2.9− | 1.8−) | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 2003 12 21 | 645 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.6− | 2006 11 18 | 704 | 0.2− | 1.1+ |

**(142229)∗ 2002 RE$_{81}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.12737 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26956302 | $\omega$ | 268.69172 | | +0.39909605 | +0.91674828 | |
| $a$ | 2.3733539 | $\Omega$ | 24.85189 | | −0.82416239 | +0.36687243 | |
| $e$ | 0.1863307 | $i$ | 2.34190 | | −0.40184412 | +0.15804179 | |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2002 10 01 | 699 | 0.5+ | 1.2+ | 2005 05 11 | G96 | 0.1− | 0.3− |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2002 10 01 | 699 | (2.4+ | 1.0+) | 2005 05 11 | G96 | 0.3− | 0.1− |
| 2001 03 21 | 691 | 0.6+ | 0.7+ | 2002 10 01 | 699 | 0.6− | 0.7+ | 2005 05 11 | G96 | 0.3− | 0.2− |
| 2001 03 21 | 691 | 0.4− | 0.8+ | 2002 10 01 | 699 | 0.3+ | 1.0+ | 2005 05 11 | G96 | 0.4− | 0.1− |
| 2001 03 21 | 691 | 0.1+ | 1.2+ | 2002 10 03 | 704 | 0.5− | 0.9+ | 2005 05 14 | 644 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.1− | 0.5− | 2002 10 03 | 704 | 0.3+ | 1.4+ | 2005 05 14 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.8− | 1.0+ | 2002 10 03 | 704 | 0.6− | 0.9+ | 2005 05 14 | 644 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.4− | 0.1− | 2002 10 03 | 704 | 0.5− | 0.8+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2002 10 04 | 704 | 0.7+ | 1.4+ | 2006 09 27 | G96 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | 1.4+ | 0.2+ | 2002 10 04 | 704 | (0.8− | 1.6+) | 2006 09 27 | G96 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.0 | 0.9+ | 2002 10 04 | 704 | 0.7− | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.1− | 0.9+ | 2002 10 04 | 704 | 0.0 | 1.0+ | 2006 11 08 | 644 | 0.2+ | 0.5+ |
| 2002 09 07 | 704 | 0.4− | 0.9+ | 2005 04 10 | G96 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2− | 0.3+ | 2005 04 10 | G96 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.3+ | | |
| 2002 09 13 | 644 | 0.7− | 0.3+ | 2005 04 10 | G96 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.6+ | | |
| 2002 09 13 | 644 | 0.4− | 0.5+ | 2005 04 10 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.2+ | | |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2005 04 12 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.1+ | 0.1+ | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.6− | 0.5− | | |
| 2002 09 15 | 644 | 0.1− | 0.1+ | 2005 04 12 | 691 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.1+ | 1.2− | | |
| 2002 09 15 | 608 | (1.7− | 0.5−) | 2005 04 17 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.2− | | |
| 2002 09 15 | 608 | 1.2− | 0.4− | 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.2− | | |
| 2002 09 15 | 608 | 1.4− | 0.5− | 2005 04 17 | 691 | 0.3+ | 0.2+ | | | | | | |

**(142230)∗ 2002 RR$_{81}$ = 1991 VV$_{7}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 37845)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.09171 | | (2000.0) | | | |
| $n$ | 0.26309704 | $\omega$ | 140.82255 | | +0.79606967 | +0.60520174 |
| $a$ | 2.4120820 | $\Omega$ | 181.93735 | | −0.56897592 | +0.74729312 |
| $e$ | 0.1918071 | $i$ | 3.36627 | | −0.20625104 | +0.27437903 |
| $P$ | 3.75 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 03 | 691 | 0.0 | 0.3+ | 2002 10 02 | 704 | 0.1− | 0.9+ | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 1991 11 03 | 691 | 0.5− | 0.3+ | 2002 10 02 | 704 | 0.7+ | 0.7+ | 2006 11 09 | 644 | 0.2+ | 0.5+ | | |
| 1991 11 03 | 691 | 0.3− | 0.1+ | 2002 10 02 | 608 | 0.6− | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.1− | | |
| 1991 11 08 | 691 | 0.1− | 0.4+ | 2002 10 02 | 608 | 0.5− | 0.5− | 2006 11 10 | 683 | 0.2− | 0.4+ | | |
| 1991 11 08 | 691 | 0.3+ | 0.1+ | 2002 10 02 | 608 | 0.9− | 0.1− | 2006 11 10 | 683 | 0.7− | 0.4− | | |
| 1991 11 08 | 691 | 0.1+ | 0.1− | 2002 10 03 | 704 | (1.5+ | 1.5+) | 2006 11 10 | 683 | (0.9+ | 1.5−) | | |
| 1997 04 09 | 691 | 0.5+ | 0.0 | 2002 10 03 | 704 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 1997 04 09 | 691 | 0.6− | 0.8+ | 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.2+ | | |
| 1997 04 09 | 691 | 0.8+ | 0.3+ | 2002 10 03 | 704 | 0.5+ | 1.3+ | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 1998 06 24 | 704 | 1.5+ | 0.3− | 2002 10 03 | 704 | 0.3+ | 1.2+ | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 1998 06 24 | 704 | 0.6− | 0.3− | 2002 10 07 | 704 | 0.7− | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.1− | | |
| 1998 06 24 | 704 | 1.1− | 1.2+ | 2002 10 07 | 704 | 0.6− | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.1+ | | |
| 1998 06 24 | 704 | 0.2− | 0.4− | 2002 10 07 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 683 | 0.5+ | 1.2− | | |
| 2001 04 18 | 691 | 0.1+ | 0.7+ | 2002 10 11 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 683 | 0.7− | 1.4+ | | |
| 2001 04 18 | 691 | 0.8+ | 0.5+ | 2002 10 11 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 683 | 0.7− | 1.0+ | | |
| 2001 04 18 | 691 | 0.2− | 0.7+ | 2002 10 11 | 704 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.2− | | |
| 2002 07 14 | 704 | 0.5− | 0.4+ | 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.6+ | 0.1+ | | |
| 2002 07 14 | 704 | 1.5− | 0.8+ | 2002 10 11 | 704 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.2− | | |
| 2002 07 14 | 704 | 0.4− | 0.6+ | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.6− | | |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.3− | 1.3+ | | |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.5− | 1.1+ | | |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2005 05 14 | 644 | 0.0 | 0.7+ | 2006 11 14 | 704 | 1.3+ | 0.8+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.3− | 2005 05 14 | 644 | 0.2− | 0.8+ | 2006 11 14 | 704 | 0.4+ | 0.8+ | | |
| 2002 09 07 | 704 | 0.4+ | 0.6+ | 2005 05 14 | 644 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 09 07 | 704 | 0.1+ | 0.7+ | 2006 07 22 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1− | | |
| 2002 09 07 | 704 | 0.4+ | 1.0+ | 2006 07 22 | G96 | 0.8− | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2002 09 14 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2002 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.6− | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2002 09 16 | 608 | 0.5− | 1.0− | 2006 10 16 | 703 | (0.4+ | 2.2−) | 2006 11 17 | 704 | 0.7+ | 0.0 | | |
| 2002 09 16 | 608 | 0.4− | 0.9− | 2006 10 16 | 703 | 0.8+ | 1.4− | 2006 11 17 | 704 | 0.1+ | 0.1− | | |
| 2002 09 16 | 608 | 0.7− | 1.2− | 2006 11 02 | 703 | 0.3+ | 0.9+ | 2006 11 17 | 704 | 0.3− | 0.3− | | |
| 2002 09 30 | 704 | (0.6− | 1.7+) | 2006 11 02 | 703 | 1.1− | 0.6− | 2006 11 17 | 704 | 0.3+ | 0.1+ | | |
| 2002 09 30 | 704 | 0.6− | 1.0+ | 2006 11 02 | 703 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 1.1+ | | |
| 2002 09 30 | 704 | 0.5− | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.8− | 1.5− | | |
| 2002 09 30 | 704 | 0.6− | 0.9+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.2+ | 1.4− | | |
| 2002 10 01 | 699 | 0.1− | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.8− | 0.2− | | |
| 2002 10 01 | 699 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.5− | | |
| 2002 10 01 | 699 | 0.6+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.1− | 1.1+ | | |
| 2002 10 01 | 699 | (2.7− | 1.8+) | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.9+ | 1.3− | | |
| 2002 10 02 | 704 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 28 | 704 | 1.5+ | 0.7− | | |

**(142231)∗ 2002 RZ$_{82}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.65630 | | (2000.0) | | | |
| $n$ | 0.24077256 | $\omega$ | 129.93217 | | +0.85229991 | +0.52280249 |
| $a$ | 2.5589672 | $\Omega$ | 198.56519 | | −0.49407462 | +0.79452795 |
| $e$ | 0.2117603 | $i$ | 2.91649 | | −0.17168325 | +0.30887359 |
| $P$ | 4.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 11 | 699 | 0.4+ | 0.6+ | 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 09 11 | 703 | 0.0 | 0.6+ | | |
| 1998 10 11 | 699 | 0.7− | 0.9+ | 2005 04 04 | G96 | 0.3+ | 0.5+ | 2006 09 11 | 703 | 1.1− | 0.8− | | |
| 1998 10 11 | 699 | 0.1+ | 1.5+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.1− | 0.4− | | |
| 1998 10 20 | 691 | 0.1− | 0.1− | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 11 | 703 | 0.1− | 0.4− | | |
| 1998 10 20 | 691 | 0.0 | 0.2+ | 2006 08 19 | 644 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.1− | | |
| 1998 10 20 | 691 | 0.1+ | 0.0 | 2006 08 19 | 644 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.2− | | |
| 2002 09 05 | 704 | 0.5+ | 0.4+ | 2006 08 19 | 644 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.1− | | |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2006 08 19 | 644 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.0 | 0.2+ | | |
| 2002 09 05 | 704 | 0.8+ | 0.8+ | 2006 08 19 | 644 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.5+ | 1.0+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.7+ | 2006 08 19 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 699 | 0.4+ | 0.2− | 2006 08 19 | A50 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.2+ | 0.6− | | |
| 2002 09 05 | 699 | 0.0 | 0.4+ | 2006 08 19 | A50 | 0.5− | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.2+ | | |
| 2002 09 05 | 699 | 0.0 | 0.7+ | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.3− | 0.7− | | |
| 2002 09 05 | 699 | 0.5+ | 0.4+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.2+ | | |
| 2002 09 07 | 704 | 0.1+ | 0.8+ | 2006 08 22 | 644 | 1.3+ | 1.3+ | 2006 09 17 | 703 | 0.4+ | 0.2− | | |
| 2002 09 07 | 704 | 0.2+ | 0.4+ | 2006 08 24 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 0.5+ | 0.6+ | | |
| 2002 09 07 | 704 | 0.0 | 0.7+ | 2006 08 24 | 704 | 0.2− | 1.0+ | 2006 09 20 | 704 | 0.2+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.3+ | 0.4+ | 2006 08 24 | 704 | 0.6+ | 0.2− | 2006 09 20 | 704 | 0.9+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.4+ | 0.2− | 2006 08 24 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 704 | 0.3− | 0.5+ | | |
| 2002 09 14 | 644 | 0.7− | 0.2+ | 2006 08 24 | 704 | 0.3− | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.6+ | | |
| 2002 09 14 | 644 | 0.5− | 0.3+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 20 | 699 | 1.3+ | 0.0 | | |
| 2002 09 30 | 704 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.9+ | 0.5+ | | |
| 2002 09 30 | 704 | 0.3+ | 0.4+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.1− | 0.3− | | |
| 2002 09 30 | 704 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.4− | 0.3− | 2006 09 20 | 699 | 0.5+ | 0.1+ | | |
| 2002 09 30 | 704 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.4− | 0.6− | 2006 09 27 | 704 | 0.4+ | 0.4− | | |
| 2002 10 02 | 704 | 0.7− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.1− | 0.3− | | |
| 2002 10 02 | 704 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.3− | | |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.4− | | |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.3− | 2006 09 28 | G96 | 0.3− | 0.4− | | |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.3− | 0.1− | | |
| 2002 10 03 | 704 | 0.6+ | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.3− | | |
| 2002 10 03 | 704 | 0.0 | 1.3+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.4− | | |
| 2002 10 10 | 645 | 0.1− | 0.1− | 2006 08 29 | D35 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.5− | | |
| 2002 10 10 | 645 | 0.1− | 0.1− | 2006 08 29 | D35 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.4− | | |
| 2002 10 11 | 704 | 0.1− | 0.1− | 2006 08 29 | D35 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.5− | | |
| 2002 10 11 | 704 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.2− | 2006 11 11 | G96 | 1.2+ | 1.5− | | |
| 2002 10 11 | 704 | 0.6− | 0.0 | 2006 08 30 | 704 | 0.6+ | 0.2+ | 2006 11 11 | G96 | (1.7− | 1.6−) | | |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.1+ | 1.0− | 2006 11 11 | G96 | 0.3− | 0.8− | | |
| 2004 01 17 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.6− | 0.3− | | |
| 2004 01 17 | 691 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.9− | 0.4− | | |
| 2004 01 17 | 691 | 0.1− | 0.3+ | 2006 09 01 | 704 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.3− | 0.1+ | | |
| 2005 03 12 | 691 | 0.1+ | 0.7+ | 2006 09 01 | 704 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.5− | 0.1− | | |
| 2005 03 12 | 691 | 0.3+ | 0.5+ | 2006 09 01 | 704 | (0.2− | 1.7−) | 2006 11 21 | G96 | 0.3− | 0.1− | | |
| 2005 03 12 | 691 | 0.3+ | 0.6+ | 2006 09 01 | 704 | 0.0 | 0.2− | | | | | | |

**(142232)∗ 2002 RN$_{83}$ = 2000 EC$_{187}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.65419 | | (2000.0) | | | |
| $n$ | 0.27223825 | $\omega$ | 36.71093 | | +0.70566758 | −0.70852415 |
| $a$ | 2.3577801 | $\Omega$ | 8.40999 | | +0.64137010 | +0.63564537 |
| $e$ | 0.2764478 | $i$ | 2.02823 | | +0.30112733 | +0.30651018 |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.3+ | 0.7+ | 2002 09 27 | 644 | 0.5− | 0.3+ | 2002 10 08 | 704 | 0.5+ | 0.7+ |
| 2000 03 03 | 704 | 0.4− | 0.1+ | 2002 09 27 | 644 | 0.6− | 0.4+ | 2002 10 08 | 704 | 0.5+ | 0.3+ |
| 2000 03 03 | 704 | 0.4+ | 0.9+ | 2002 09 29 | 608 | 0.1+ | 0.3− | 2002 10 08 | 704 | 0.8+ | 0.7+ |
| 2000 03 03 | 704 | 1.8+ | 1.1+ | 2002 09 29 | 608 | 0.2+ | 0.3− | 2002 10 10 | 645 | 0.1+ | 0.1− |
| 2000 03 11 | 704 | 0.7+ | 0.7+ | 2002 09 29 | 608 | 0.1− | 0.0 | 2002 10 10 | 645 | 0.0 | 0.1− |
| 2000 03 11 | 704 | 0.3− | 0.6+ | 2002 09 30 | 704 | 0.4− | 0.3+ | 2002 10 11 | 704 | 0.1+ | 0.8+ |
| 2000 03 11 | 704 | 0.6+ | 0.9− | 2002 09 30 | 704 | 0.1+ | 0.4+ | 2002 10 11 | 704 | 0.4+ | 0.1+ |
| 2000 03 11 | 704 | 0.8− | 0.2+ | 2002 09 30 | 704 | 0.0 | 0.7+ | 2002 10 11 | 704 | 0.5− | 0.8+ |
| 2000 04 05 | 691 | 0.0 | 0.2− | 2002 09 30 | 704 | 0.3− | 0.5+ | 2002 10 11 | 704 | 0.7+ | 1.1+ |
| 2000 04 05 | 691 | 0.1+ | 0.2+ | 2002 09 30 | 704 | 0.1− | 0.7+ | 2002 10 11 | 704 | 0.4+ | 0.2+ |
| 2000 04 05 | 691 | 0.1− | 0.5+ | 2002 10 02 | 704 | 0.0 | 0.3+ | 2002 12 05 | 704 | 1.3− | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 0.9+ | 2002 10 02 | 704 | 0.2− | 0.3+ | 2002 12 05 | 704 | 0.1+ | 0.9+ |
| 2002 09 05 | 704 | 0.7− | 1.0+ | 2002 10 02 | 704 | 0.1+ | 0.3+ | 2002 12 05 | 704 | (1.6− | 0.7+) |
| 2002 09 05 | 704 | 0.2− | 0.9+ | 2002 10 02 | 704 | 0.3+ | 0.6+ | 2002 12 05 | 704 | 0.2+ | 0.5+ |
| 2002 09 05 | 704 | 0.0 | 1.2+ | 2002 10 02 | 704 | 0.1+ | 1.0+ | 2002 12 05 | 704 | (1.4− | 1.6+) |
| 2002 09 05 | 704 | 0.4− | 0.6+ | 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.4+ |
| 2002 09 07 | 704 | 0.2+ | 0.5+ | 2002 10 03 | 704 | 0.3+ | 0.4+ | 2004 03 29 | 691 | 0.1+ | 0.6+ |
| 2002 09 07 | 704 | 0.2− | 1.1+ | 2002 10 03 | 704 | 0.4+ | 0.7+ | 2004 03 29 | 691 | 0.2+ | 0.7+ |
| 2002 09 07 | 704 | 0.1− | 1.0+ | 2002 10 03 | 704 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.2− | 0.6+ | 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.2+ |
| 2002 09 13 | 608 | 0.8− | 0.4− | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2002 09 13 | 608 | 0.9− | 0.4− | 2002 10 05 | 645 | 0.0 | 0.2− | 2006 10 23 | G96 | (0.0 | 1.7−) |
| 2002 09 13 | 608 | 0.8− | 0.3− | 2002 10 06 | 608 | 0.4− | 1.1− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2002 10 06 | 608 | 0.4− | 1.0− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2002 10 06 | 608 | 0.4− | 1.0− | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2002 10 07 | 704 | (0.1+ | 2.0+) | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2002 09 16 | 291 | 0.1+ | 0.2+ | 2002 10 07 | 704 | (0.3− | 1.5+) | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2002 09 16 | 291 | 0.1− | 0.1+ | 2002 10 07 | 704 | (0.2− | 1.6+) | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2002 09 16 | 291 | 0.0 | 0.2+ | 2002 10 07 | 704 | (0.1+ | 1.8+) | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2002 09 27 | 644 | 0.6− | 0.3+ | 2002 10 07 | 704 | (0.8+ | 1.7+) | 2006 11 25 | G96 | 0.1+ | 0.1− |

**(142233)∗ 2002 RZ$_{84}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.72077 | | (2000.0) | | | |
| $n$ | 0.26042169 | $\omega$ | 162.46716 | | +0.62529555 | −0.78003107 |
| $a$ | 2.4285736 | $\Omega$ | 248.82235 | | +0.71292485 | +0.58327901 |
| $e$ | 0.1690711 | $i$ | 1.45034 | | +0.31740139 | +0.22657699 |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.2− | 0.6− | 2002 10 31 | 704 | 0.5− | 0.6+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2000 01 12 | 691 | 0.5− | 0.4− | 2002 10 31 | 704 | 0.1− | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2000 01 12 | 691 | 0.2− | 0.5− | 2002 10 31 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2000 03 03 | 704 | 0.1+ | 0.0 | 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2000 03 03 | 704 | 1.0+ | 0.2+ | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 1.1− | 0.5+ |
| 2000 03 03 | 704 | 0.5+ | 0.7+ | 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.8− |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.6− |
| 2002 09 05 | 704 | 0.6− | 0.6+ | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 11 17 | 704 | (2.6− | 0.3−) |
| 2002 09 05 | 704 | 0.7− | 0.3− | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.6− |
| 2002 09 05 | 704 | 0.3+ | 0.1− | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.7− | 0.2− |
| 2002 09 07 | 704 | 0.0 | 0.1+ | 2004 04 24 | 691 | 0.1+ | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2002 09 07 | 704 | 0.4+ | 0.2+ | 2004 04 24 | 691 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2002 09 07 | 704 | 0.6− | 0.1− | 2004 04 24 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2002 09 07 | 704 | 0.5+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.7− | 0.2− |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2002 09 17 | 608 | 0.5− | 0.9− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2002 09 17 | 608 | (1.8− | 0.4−) | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.1− |
| 2002 09 17 | 608 | 0.9− | 0.4− | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.3+ |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.3+ |
| 2002 10 02 | 704 | 0.8+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.5+ |
| 2002 10 02 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2002 10 02 | 704 | 0.3− | 0.2− | 2006 10 28 | 704 | (0.5− | 3.1+) | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2006 10 28 | 704 | (0.0 | 2.6+) | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 10 28 | 704 | 1.2+ | 0.8+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.6− | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.3+ | 0.4− |
| 2002 10 07 | 699 | (0.3− | 1.5+) | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 27 | 703 | 0.4− | 0.4− |
| 2002 10 07 | 699 | (0.8− | 2.1+) | 2006 11 08 | 644 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.3− | 0.3+ |
| 2002 10 07 | 699 | 0.2− | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.2− | 0.8+ |
| 2002 10 07 | 699 | 0.9− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2002 10 07 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.7− | 2006 11 29 | 704 | 0.6+ | 0.5+ |
| 2002 10 07 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.6− | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 2002 10 07 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.3− | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 11 12 | 703 | 0.7+ | 0.4+ | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2002 10 11 | 704 | 0.5− | 0.3+ | 2006 11 12 | 703 | (2.6+ | 1.6+) | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2002 10 11 | 704 | 0.2+ | 0.9+ | 2006 11 12 | 703 | 0.8+ | 1.0+ | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.5+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.2− | | | | |
| 2002 10 31 | 704 | 0.7− | 1.3+ | 2006 11 12 | G96 | 0.2+ | 0.2− | | | | |

**(142234)∗ 2002 RH$_{85}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.55596 | | (2000.0) | | | |
| $n$ | 0.23331276 | $\omega$ | 76.98551 | | +0.68880461 | −0.72459463 |
| $a$ | 2.6132265 | $\Omega$ | 329.44022 | | +0.64670965 | +0.62825725 |
| $e$ | 0.2377009 | $i$ | 2.54781 | | +0.32758943 | +0.28329391 |
| $P$ | 4.22 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 699 | 0.0 | 0.6+ | 2002 10 07 | 699 | (1.7+ | 0.9+) | 2006 08 13 | 644 | 0.0 | 0.1+ |
| 1998 12 11 | 699 | 0.2+ | 0.1+ | 2002 10 07 | 704 | 0.6− | 0.7− | 2006 08 13 | 644 | 0.1+ | 0.0 |
| 1998 12 11 | 699 | 0.7+ | 0.9− | 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 08 17 | A50 | 0.3+ | 0.4+ |
| 2002 09 05 | 704 | 0.9− | 0.2+ | 2002 10 07 | 704 | 0.4− | 0.5− | 2006 08 17 | A50 | 0.5− | 0.0 |
| 2002 09 05 | 704 | 0.0 | 0.1− | 2002 10 07 | 704 | 0.5− | 0.9− | 2006 08 19 | 699 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 1.0− | 0.8− | 2002 10 07 | 704 | 0.1− | 0.1− | 2006 08 19 | 699 | 0.4+ | 0.3− |
| 2002 09 05 | 704 | 0.0 | 0.1− | 2002 10 12 | 704 | 0.1− | 0.1+ | 2006 08 19 | 699 | 1.1− | 0.3− |
| 2002 09 05 | 704 | 0.5+ | 0.3+ | 2002 10 12 | 704 | 0.3+ | 0.4+ | 2006 08 19 | 699 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.4+ | 1.2+ | 2002 10 12 | 704 | 0.0 | 0.8+ | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2002 10 12 | 704 | 0.3− | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.3+ |
| 2002 09 07 | 704 | 0.3− | 0.6+ | 2002 10 12 | 704 | 0.3− | 0.7+ | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2002 10 02 | 595 | (0.3− | 1.6+) | 2002 10 31 | 704 | 0.5− | 0.5+ | 2006 08 29 | 704 | 1.1− | 0.3+ |
| 2002 10 02 | 595 | 0.2− | 1.1+ | 2002 10 31 | 704 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.9− | 0.7+ |
| 2002 10 02 | 595 | 0.3+ | 0.5+ | 2002 10 31 | 704 | 0.2+ | 0.5+ | 2006 08 29 | 704 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | 0.5− | 0.4− | 2002 10 31 | 704 | 1.0− | 0.6+ | 2006 08 31 | 947 | 1.0+ | 0.1− |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 0.7− | 0.4+ | 2006 08 31 | 947 | 0.2+ | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.2+ | 2004 02 26 | 704 | 0.3+ | 0.5− | 2006 08 31 | 947 | 0.7+ | 0.6− |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2004 02 26 | 704 | 1.3+ | 1.3+ | 2006 09 14 | 703 | 0.4+ | 1.0− |
| 2002 10 02 | 595 | 0.6+ | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.8+ | 1.4− |
| 2002 10 02 | 595 | 1.2− | 0.3− | 2004 03 14 | 691 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.2− |
| 2002 10 02 | 595 | 1.0+ | 0.1− | 2004 03 14 | 691 | 0.2+ | 0.8+ | 2006 09 14 | 703 | 0.5+ | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 03 14 | 691 | 0.1+ | 0.6+ | 2006 09 25 | G96 | 0.5+ | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2004 03 21 | 691 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.5− | 0.4+ | 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2006 06 21 | 291 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 1.2+ | 0.2− |
| 2002 10 07 | 699 | 0.8+ | 1.1+ | 2006 06 21 | 291 | 0.0 | 0.8+ | 2006 11 16 | G96 | 0.7+ | 1.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 699 | 0.1− | 0.6+ | 2006 06 21 | 291 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2002 10 07 | 699 | 0.9+ | 0.6+ | 2006 08 13 | 644 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− |

**(142235)∗ 2002 RA$_{89}$ = 2002 PQ$_{123}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 48394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 65.87524 | | $\omega$ | 117.09415 | +0.51249339 | +0.85869023 | |
| $n$ | 0.26751288 | | $\Omega$ | 183.73664 | −0.79457905 | +0.47366758 | |
| $a$ | 2.3854643 | | $i$ | 1.11749 | −0.32556822 | +0.19567859 | |
| $P$ | 3.68 | | $H$ | 17.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 691 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.2+ |
| 2001 02 20 | 691 | 0.3+ | 0.2+ | 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ |
| 2001 02 20 | 691 | 0.2− | 0.2+ | 2005 04 06 | G96 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2002 08 15 | 185 | 0.2− | 0.3− | 2005 04 06 | G96 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.5+ | 0.2− |
| 2002 08 15 | 185 | 0.1+ | 0.1+ | 2005 04 06 | G96 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1− |
| 2002 08 15 | 185 | 0.1− | 0.3+ | 2005 04 06 | G96 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.8+ | 0.5+ | 2005 04 07 | G96 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.4− | 0.4− |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2005 04 07 | G96 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.3− | 0.6− | 2005 04 07 | G96 | 0.1− | 0.9− | 2006 10 19 | 691 | 0.0 | 0.5− |
| 2002 09 05 | 704 | 0.0 | 0.4− | 2005 04 07 | G96 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.0 |
| 2002 09 07 | 704 | (0.6− | 2.5+) | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2002 09 07 | 704 | (0.3− | 1.6+) | 2005 05 08 | G96 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | (0.7− | 1.8+) | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.2− |
| 2002 09 07 | 704 | (0.9− | 2.0+) | 2005 05 08 | G96 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.1− |
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 29 | 691 | 0.4+ | 0.7+ |
| 2002 09 14 | 644 | 0.6− | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.5+ |
| 2005 03 08 | G96 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.2+ |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.3+ | 0.7− | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2005 04 02 | G96 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.6− | 0.4− | | | | |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.0 | | | | |

**(142236)∗ 2002 RE$_{89}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 259.66467 | | $\omega$ | 168.64992 | −0.73929524 | −0.67182342 | |
| $n$ | 0.27030233 | | $\Omega$ | 328.98738 | +0.61065113 | −0.64021951 | |
| $a$ | 2.3690244 | | $i$ | 5.09773 | +0.28380934 | −0.37252151 | |
| $P$ | 3.65 | | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.1− | 1.3− | 2003 12 22 | 704 | 0.3+ | 0.2+ | 2004 03 10 | 644 | 0.6+ | 0.3+ |
| 1999 12 15 | 704 | 0.0 | 1.3− | 2003 12 22 | 704 | 0.0 | 0.3+ | 2004 03 10 | 644 | 0.6+ | 0.2+ |
| 1999 12 15 | 704 | 0.3+ | 1.3− | 2003 12 22 | 704 | 1.3+ | 0.2− | 2004 04 12 | 699 | 1.1+ | 0.7+ |
| 1999 12 15 | 704 | 0.0 | 0.5− | 2004 01 13 | 699 | 0.4− | 0.3+ | 2004 04 12 | 699 | 0.2+ | 0.1+ |
| 2002 08 12 | 704 | 0.5+ | 0.4+ | 2004 01 13 | 699 | 0.0 | 0.0 | 2004 04 12 | 699 | 0.2+ | 0.7+ |
| 2002 08 12 | 704 | 0.2− | 0.2+ | 2004 01 13 | 699 | 0.2+ | 0.0 | 2004 04 12 | 699 | 0.2− | 0.2− |
| 2002 08 12 | 704 | 0.0 | 1.0+ | 2004 01 13 | 699 | 0.2− | 0.0 | 2004 04 15 | 704 | 0.4+ | 0.1+ |
| 2002 08 28 | 644 | 0.0 | 0.5+ | 2004 01 18 | 644 | 0.1+ | 0.0 | 2004 04 15 | 704 | 0.4+ | 0.5+ |
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2004 01 18 | 644 | 0.0 | 0.1+ | 2004 04 15 | 704 | 0.3+ | 0.0 |
| 2002 08 28 | 644 | 0.2+ | 0.5+ | 2004 01 18 | 644 | 0.0 | 0.1+ | 2004 04 15 | 704 | 0.9+ | 0.1− |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.4+ | 2004 04 20 | 704 | 0.5+ | 0.5− |
| 2002 09 05 | 704 | 0.1+ | 1.1+ | 2004 01 22 | 704 | 0.2− | 0.5+ | 2004 04 20 | 704 | 0.3+ | 0.4+ |
| 2002 09 05 | 704 | (0.6+ | 2.2+) | 2004 01 22 | 704 | 0.3+ | 0.4+ | 2004 04 20 | 704 | 0.5− | 0.5− |
| 2002 09 07 | 704 | (1.8− | 1.1+) | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.1− | 0.7+ | 2004 01 22 | 704 | 0.3+ | 0.2+ | 2005 07 06 | E12 | 0.5− | 0.8+ |
| 2002 09 07 | 704 | 0.5− | 0.9+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2005 07 06 | E12 | 0.4− | 1.0+ |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 01 30 | 704 | 0.4+ | 0.3+ | 2005 07 06 | E12 | 0.1+ | 0.6+ |
| 2002 09 14 | 644 | 0.2− | 0.8+ | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2005 07 06 | E12 | 0.2− | 0.9+ |
| 2002 09 14 | 644 | 0.4− | 0.8+ | 2004 01 30 | 704 | 0.4+ | 0.0 | 2005 07 10 | E12 | 0.8− | 0.8+ |
| 2002 09 14 | 644 | 0.5− | 0.5+ | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2005 07 10 | E12 | 0.6− | 0.9+ |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2004 02 10 | 644 | 0.1+ | 0.2− | 2005 07 10 | E12 | (1.8− | 1.2+) |
| 2002 09 14 | 644 | 0.4− | 0.7+ | 2004 02 10 | 644 | 0.2+ | 0.1− | 2005 07 10 | E12 | 0.7− | 1.1+ |
| 2002 09 17 | 644 | 0.6+ | 0.5+ | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.4+ |
| 2002 09 17 | 644 | 0.3− | 0.4+ | 2004 02 11 | 333 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2002 09 17 | 644 | 0.4− | 0.8+ | 2004 02 11 | 333 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 2002 10 07 | 704 | 0.6+ | 0.1− | 2004 02 11 | 333 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 2002 10 07 | 704 | 1.0− | 0.4− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.0 |
| 2002 10 07 | 704 | 0.1− | 0.2− | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2003 11 24 | 704 | 0.2+ | 0.6+ | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2003 11 24 | 704 | 0.9+ | 0.1− | 2004 02 14 | 608 | 0.7− | 0.2− | 2006 10 17 | 703 | 0.8− | 0.4− |
| 2003 11 24 | 704 | 0.2+ | 0.2+ | 2004 02 14 | 608 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2003 11 24 | 704 | 1.0+ | 0.7+ | 2004 02 14 | 608 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.4− |
| 2003 11 24 | 704 | 0.9+ | 0.6− | 2004 02 16 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2003 12 05 | 703 | 0.4− | 0.3+ | 2004 02 16 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.6− | 0.3− |
| 2003 12 05 | 703 | 0.7+ | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2003 12 05 | 703 | 0.1− | 0.3− | 2004 02 16 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2003 12 05 | 703 | 1.1− | 0.6+ | 2004 02 19 | 608 | 0.9+ | 0.7+ | 2006 11 14 | 703 | 1.1− | 0.1+ |
| 2003 12 17 | 703 | 0.7− | 0.3+ | 2004 02 19 | 608 | 1.2+ | 1.1+ | 2006 11 14 | 703 | (1.9− | 0.4−) |
| 2003 12 17 | 703 | 0.9− | 0.8+ | 2004 02 19 | 608 | 1.1+ | 1.2+ | 2006 11 14 | 703 | 0.6− | 0.1+ |
| 2003 12 17 | 703 | 0.9− | 0.4+ | 2004 02 26 | 704 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 1.4− | 1.1+ |
| 2003 12 17 | 703 | 0.7− | 1.2− | 2004 02 26 | 704 | 0.1− | 0.6+ | 2006 11 19 | 704 | 0.9+ | 0.3− |
| 2003 12 19 | 704 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.5+ | 2006 11 19 | 704 | 1.3− | 1.5+ |
| 2003 12 19 | 704 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.8+ | 2006 11 19 | 704 | 0.4− | 1.1− |
| 2003 12 19 | 704 | 0.2− | 0.3− | 2004 02 26 | 704 | 0.2− | 0.9+ | 2006 11 19 | 704 | 1.4− | 1.7+ |
| 2003 12 19 | 704 | 0.9− | 0.2+ | 2004 03 01 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.6− |
| 2003 12 19 | 704 | 0.0 | 0.2− | 2004 03 01 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.6− |
| 2003 12 22 | 704 | 0.3− | 0.2+ | 2004 03 01 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2003 12 22 | 704 | 0.6+ | 0.2− | 2004 03 10 | 644 | 0.9+ | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.3+ |

**(142237)∗ 2002 RA$_{90}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 113.57769 | | $\omega$ | 91.55111 | −0.20727142 | +0.97814665 | |
| $n$ | 0.27475471 | | $\Omega$ | 166.45289 | −0.92304203 | −0.18999941 | |
| $a$ | 2.3433615 | | $i$ | 4.00521 | −0.32408635 | −0.08443554 | |
| $P$ | 3.59 | | $H$ | 16.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.1− | 0.3+ | 2002 10 01 | 699 | 0.8− | 0.1− | 2005 05 03 | 704 | 0.5+ | 0.1+ |
| 1995 10 26 | 691 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.2+ | 1.2+ | 2005 05 03 | 704 | 0.1+ | 0.1+ |
| 1995 10 26 | 691 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.9+ | 0.4− | 2005 05 03 | 704 | 0.4+ | 0.2− |
| 2001 03 28 | 691 | 0.0 | 0.4+ | 2002 10 03 | 704 | 1.3+ | 0.0 | 2005 05 03 | 704 | 0.1+ | 1.1+ |
| 2001 03 28 | 691 | 0.1− | 0.2+ | 2002 10 03 | 704 | 1.2+ | 1.2+ | 2005 05 05 | 608 | 0.5+ | 0.2− |
| 2001 03 28 | 691 | 0.1+ | 0.3− | 2005 03 14 | G96 | 0.4− | 0.1− | 2005 05 05 | 608 | 0.4+ | 0.3− |
| 2002 09 05 | 704 | 0.4+ | 1.3+ | 2005 03 14 | G96 | 0.7− | 0.0 | 2005 05 05 | 608 | 0.5+ | 0.1+ |
| 2002 09 05 | 704 | (2.0+ | 1.3+) | 2005 03 14 | G96 | 0.5− | 0.1− | 2005 05 08 | 704 | 0.9+ | 0.4+ |
| 2002 09 05 | 704 | (2.6+ | 0.5−) | 2005 03 14 | G96 | 0.3− | 0.1− | 2005 05 08 | 704 | 1.0+ | 0.7− |
| 2002 09 07 | 704 | (0.0 | 1.8+) | 2005 04 02 | 699 | 0.9+ | 0.6+ | 2005 05 08 | 704 | 0.1+ | 0.8− |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2005 04 02 | 699 | 0.4+ | 0.3+ | 2005 05 12 | 704 | 0.2+ | 0.2− |
| 2002 09 07 | 704 | 0.7+ | 0.4+ | 2005 04 02 | 699 | 0.4− | 0.5+ | 2005 05 12 | 704 | 0.6+ | 0.5+ |
| 2002 09 11 | 608 | 0.4+ | 1.0− | 2005 04 02 | 699 | 0.7− | 0.5+ | 2005 05 12 | 704 | 0.8+ | 0.2− |
| 2002 09 11 | 608 | 0.5− | 1.3− | 2005 04 05 | 703 | 0.6− | 0.9− | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2002 09 11 | 608 | 0.6+ | 0.8− | 2005 04 05 | 703 | 0.3− | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.2+ |
| 2002 09 13 | 644 | 0.3− | 0.7+ | 2005 04 05 | 703 | (0.0 | 2.0+) | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2002 09 13 | 644 | 0.2− | 0.2+ | 2005 04 05 | 703 | 0.8− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.3− | 0.1+ | 2005 04 05 | 704 | (0.1− | 2.1+) | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2005 04 05 | 704 | (0.1+ | 1.8+) | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.6+ | 2005 04 05 | 704 | (0.1+ | 1.7+) | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.5− | 0.5+ | 2005 04 07 | 704 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2002 09 15 | 699 | 0.1− | 1.0+ | 2005 04 07 | 704 | 0.7− | 0.4− | 2006 10 18 | 691 | 0.0 | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 0.2− | 0.2+ | 2005 04 07 | 704 | 0.4− | 0.8− | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2002 09 15 | 699 | 0.1+ | 0.1+ | 2005 04 07 | 704 | 1.1− | 0.8− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2002 09 15 | 699 | 0.1+ | 1.0+ | 2005 04 13 | 699 | 0.2− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 09 15 | 644 | 0.5− | 0.4− | 2005 04 13 | 699 | 0.3+ | 1.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 09 15 | 644 | 0.0 | 0.0 | 2005 04 13 | 699 | 0.4− | 0.2− | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2002 09 15 | 644 | 0.3− | 0.4− | 2005 04 13 | 704 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 09 15 | 644 | 0.1+ | 0.1− | 2005 04 13 | 699 | 0.2− | 0.8+ | 2006 11 16 | G96 | 0.5+ | 0.1+ |
| 2002 09 15 | 644 | 0.6− | 0.7− | 2005 04 13 | 704 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 09 15 | 644 | 0.0 | 0.2− | 2005 04 13 | 704 | 0.6+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2002 09 17 | 608 | (1.0− | 2.2−) | 2005 04 13 | 704 | 0.7+ | 1.2+ | 2006 11 23 | G96 | 0.6+ | 0.3+ |
| 2002 09 17 | 608 | 1.5− | 1.3− | 2005 04 13 | 704 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.0 |
| 2002 09 17 | 608 | 1.0− | 1.4− | 2005 04 14 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2002 10 01 | 699 | (1.5− | 1.1+) | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2002 10 01 | 699 | 0.1− | 0.7− | 2005 04 14 | 691 | 0.2− | 0.2+ | | | | |
| 2002 10 01 | 699 | (1.0− | 1.9+) | 2005 05 03 | 704 | 1.0+ | 0.2+ | | | | |

**(142238)∗ 2002 RE$_{90}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.03890 | | (2000.0) | | | |
| $n$ | 0.26556771 | $\omega$ | 321.30564 | | +0.61835462 | +0.78587504 |
| $a$ | 2.3970984 | $\Omega$ | 346.88662 | | −0.71412451 | +0.55858987 |
| $e$ | 0.2269172 | $i$ | 1.55668 | | −0.32812154 | +0.26528810 |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 608 | 0.6− | 0.8− | 2002 10 05 | 704 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.4− |
| 2002 08 18 | 608 | 1.1− | 0.6− | 2002 10 05 | 704 | 0.2+ | 0.4+ | 2006 10 13 | 691 | 0.3+ | 0.3+ |
| 2002 08 18 | 608 | (1.6− | 1.0−) | 2002 10 05 | 704 | 0.2+ | 0.4+ | 2006 10 13 | 691 | 0.2+ | 0.5+ |
| 2002 08 31 | 699 | 0.2− | 0.0 | 2002 10 05 | 704 | 0.3+ | 0.2+ | 2006 10 13 | 691 | 0.4+ | 0.1+ |
| 2002 08 31 | 699 | 0.9+ | 0.5+ | 2002 10 05 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 461 | 0.6− | 0.4+ |
| 2002 08 31 | 699 | 0.0 | 0.5+ | 2002 10 07 | 704 | 0.7− | 0.3+ | 2006 10 17 | 461 | 0.1− | 0.0 |
| 2002 08 31 | 699 | (0.1− | 2.3+) | 2002 10 07 | 704 | 0.9− | 0.1+ | 2006 10 17 | 461 | 0.3− | 0.2+ |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2002 10 07 | 704 | 0.8− | 0.1− | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | 0.4− | 0.9− | 2002 10 07 | 704 | 1.1+ | 0.3− | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.6− | 0.9− | 2002 10 07 | 704 | 0.7− | 0.6+ | 2006 10 17 | 691 | 0.2− | 0.2− |
| 2002 09 07 | 704 | 0.2− | 1.0+ | 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 10 18 | 461 | 0.1− | 0.1− |
| 2002 09 07 | 704 | 0.6− | 0.1+ | 2002 10 11 | 704 | 0.3+ | 0.7+ | 2006 10 18 | 461 | 0.1+ | 0.1− |
| 2002 09 07 | 704 | 0.6− | 0.7+ | 2002 10 11 | 704 | 0.7− | 0.3+ | 2006 10 18 | 461 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2002 09 13 | 644 | 0.5− | 0.2− | 2002 10 11 | 704 | 0.2− | 1.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2002 09 13 | 644 | 0.6− | 0.0 | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.4+ |
| 2002 09 13 | 644 | 0.4− | 0.2− | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.5− |
| 2002 09 28 | 608 | (1.6− | 1.0−) | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 1.4− | 0.9− |
| 2002 09 28 | 608 | (1.8− | 0.8−) | 2005 03 10 | G96 | 0.3− | 0.2− | 2006 10 27 | 703 | (2.1− | 0.6+) |
| 2002 09 28 | 608 | (1.9− | 1.3−) | 2005 03 10 | G96 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.9+ |
| 2002 09 30 | 704 | 0.4− | 0.3+ | 2005 03 10 | G96 | 0.5− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2002 09 30 | 704 | 0.1− | 1.0+ | 2005 04 09 | 691 | 0.2+ | 0.8+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2002 09 30 | 704 | (1.7+ | 1.2+) | 2005 04 09 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2002 09 30 | 704 | 0.1− | 1.1+ | 2005 04 09 | 691 | 0.4+ | 0.8+ | 2006 11 01 | G96 | 0.5+ | 0.4− |
| 2002 09 30 | 704 | 0.5+ | 1.3+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.8− | 0.3+ | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2002 10 01 | 699 | 0.1− | 0.7− | 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.4+ | 0.2− |
| 2002 10 01 | 699 | 0.2+ | 0.1− | 2005 05 12 | G96 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.3+ | 0.2− |
| 2002 10 01 | 699 | 0.0 | 0.1− | 2005 05 12 | G96 | 0.4− | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.7+ | 0.4+ | 2005 05 12 | G96 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.6+ | 0.4+ | 2005 05 12 | G96 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.5+ |
| 2002 10 03 | 704 | 0.8+ | 0.5− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.7+ |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.9− | 0.9+ |
| 2002 10 03 | 704 | 0.7+ | 0.4− | 2006 09 30 | G96 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.6− | 1.1− |

**(142239)∗ 2002 RJ$_{93}$**

Discovered 2002 Sept. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.55875 | | (2000.0) | | | |
| $n$ | 0.27038841 | $\omega$ | 30.72056 | | +0.56402763 | +0.82113350 |
| $a$ | 2.3685215 | $\Omega$ | 273.74981 | | −0.77427474 | +0.48917912 |
| $e$ | 0.1344282 | $i$ | 5.01620 | | −0.28700426 | +0.29401287 |
| $P$ | 3.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 608 | 0.0 | 0.1+ | 2002 10 05 | 704 | 0.0 | 0.6− | 2006 10 20 | A50 | 0.3+ | 0.4− |
| 2001 03 29 | 608 | 0.7+ | 0.3+ | 2002 10 05 | 704 | 1.0+ | 0.9− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 03 29 | 608 | 0.5+ | 0.3+ | 2002 10 05 | 704 | 0.1− | 0.6− | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2002 08 11 | 704 | 0.0 | 0.1+ | 2002 10 05 | 644 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 08 11 | 704 | 0.0 | 0.2+ | 2002 10 05 | 704 | 0.0 | 0.6− | 2006 10 25 | D35 | 0.3+ | 0.2+ |
| 2002 08 11 | 704 | 0.2− | 1.1+ | 2002 10 05 | 704 | 0.5+ | 1.0− | 2006 10 25 | D35 | 0.2+ | 0.2+ |
| 2002 08 16 | 704 | 1.0+ | 0.5+ | 2002 10 05 | 644 | 0.0 | 0.3+ | 2006 10 25 | D35 | 0.3+ | 0.2+ |
| 2002 08 16 | 704 | 0.9+ | 0.4− | 2002 10 05 | 644 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 2002 08 16 | 704 | 0.9+ | 0.6− | 2002 10 12 | 704 | 0.2− | 0.0 | 2006 10 27 | 703 | 1.2+ | 0.0 |
| 2002 08 16 | 704 | 0.9+ | 0.5− | 2002 10 12 | 704 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.7+ | 0.2− |
| 2002 08 16 | 704 | (0.8+ | 2.1+) | 2002 10 12 | 704 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.0 |
| 2002 08 16 | 704 | 0.0 | 0.4+ | 2003 12 22 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2002 08 16 | 704 | 0.3− | 0.6+ | 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 08 16 | 704 | 0.8+ | 0.1− | 2003 12 22 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2002 08 16 | 704 | 0.3+ | 0.6+ | 2005 05 12 | 703 | 0.3− | 0.3+ | 2006 10 29 | 704 | 1.1− | 0.1+ |
| 2002 08 28 | 644 | 0.2+ | 1.3+ | 2005 05 12 | 703 | 0.5− | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.3+ |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2005 05 12 | 703 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.6+ | 0.3− |
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2005 05 12 | 703 | 0.0 | 0.4+ | 2006 10 29 | 704 | (2.2+ | 0.3+) |
| 2002 09 05 | 699 | 0.7+ | 0.4+ | 2005 05 19 | 644 | 0.7+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 699 | 0.2− | 0.2+ | 2005 05 19 | 644 | 0.8+ | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2002 09 05 | 699 | 0.0 | 0.6+ | 2005 05 19 | 644 | 0.8+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2002 09 05 | 699 | 0.1− | 0.2+ | 2005 06 03 | 703 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.9− | 0.4− |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2005 06 03 | 703 | 0.5+ | 0.9+ | 2006 11 11 | 703 | 0.1− | 1.5− |
| 2002 09 07 | 704 | 0.5− | 0.0 | 2005 06 03 | 703 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2002 09 07 | 704 | 0.5− | 0.4+ | 2005 06 03 | 703 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2002 09 07 | 704 | 0.7− | 0.3− | 2005 06 11 | 703 | 0.5− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2005 06 11 | 703 | 0.2− | 0.8− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 09 10 | 608 | 0.1+ | 0.2− | 2005 06 11 | 703 | 0.8− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 09 10 | 608 | 0.1+ | 0.2− | 2005 06 11 | 703 | 1.0− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.9+ |
| 2002 09 10 | 608 | 0.2+ | 0.4− | 2005 06 14 | 699 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.0 | 1.4+ |
| 2002 09 13 | 644 | 0.3− | 0.3+ | 2005 06 14 | 699 | 0.9− | 0.6+ | 2006 11 16 | 704 | 0.8− | 1.3+ |
| 2002 09 13 | 644 | 0.2− | 0.3+ | 2005 06 14 | 699 | (1.7+ | 1.0+) | 2006 11 16 | 704 | 1.0− | 0.6+ |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2005 06 14 | 699 | 0.6− | 0.6− | 2006 11 19 | 704 | 1.2− | 0.5+ |
| 2002 09 17 | 608 | 0.9− | 0.8− | 2006 10 19 | 703 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2002 09 17 | 608 | 0.8− | 0.7− | 2006 10 19 | 703 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2002 09 17 | 608 | 0.7− | 0.9− | 2006 10 19 | 703 | 0.7+ | 0.7+ | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2002 10 04 | 699 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.3− |
| 2002 10 04 | 699 | 0.8− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.8+ |
| 2002 10 04 | 699 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.7+ | 0.9+ |
| 2002 10 04 | 699 | 0.2+ | 1.1+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.8− | 0.2+ |

**(142240)∗ 2002 RE$_{96}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.33517 | | (2000.0) | | | |
| $n$ | 0.26545443 | $\omega$ | 95.58682 | | +0.97470346 | +0.22253178 |
| $a$ | 2.3977803 | $\Omega$ | 251.55670 | | −0.21276065 | +0.89532368 |
| $e$ | 0.1625857 | $i$ | 1.25656 | | −0.06845485 | +0.38584339 |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 28 | 691 | 0.5+ | 0.6− | 2002 10 07 | 704 | 0.5+ | 0.2+ | 2006 11 15 | 703 | 1.2+ | 0.9+ |
| 1998 08 28 | 691 | 0.1+ | 0.2+ | 2002 10 07 | 704 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.7+ | 1.0+ |
| 1998 08 28 | 691 | 0.1− | 0.3+ | 2002 10 11 | 704 | 1.1+ | 0.3− | 2006 11 15 | 703 | 0.4− | 0.8+ |
| 1998 09 27 | 691 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.2− |
| 1998 09 27 | 691 | 0.8− | 0.3+ | 2002 10 11 | 704 | 1.1+ | 0.5− | 2006 11 15 | 703 | 0.5− | 0.8− |
| 1998 09 27 | 691 | 0.3− | 0.3+ | 2002 10 11 | 704 | 1.1+ | 0.8− | 2006 11 15 | 691 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 1.0− | 0.2− | 2002 10 11 | 704 | 0.4+ | 0.7− | 2006 11 15 | 691 | 0.2− | 0.3− | | |
| 2002 09 05 | 704 | 0.4− | 0.5− | 2002 10 30 | 644 | 0.1− | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2002 09 05 | 704 | 0.6− | 0.5− | 2002 10 30 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.8− | 0.4+ | 2002 10 30 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | (1.6− | 1.2−) | 2002 10 31 | 704 | 0.7+ | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.2+ | | |
| 2002 09 07 | 704 | 1.1− | 0.8− | 2002 10 31 | 704 | 0.2+ | 0.8− | 2006 11 19 | 704 | 0.5+ | 0.9− | | |
| 2002 09 07 | 704 | 0.6− | 0.4+ | 2002 10 31 | 704 | 1.0+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.1− | | |
| 2002 09 07 | 704 | 1.1− | 0.3+ | 2002 10 31 | 704 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.9+ | | |
| 2002 09 07 | 704 | 0.7− | 0.0 | 2002 10 31 | 704 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.5− | 0.7+ | | |
| 2002 09 07 | 704 | 1.2− | 0.1+ | 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.7+ | | |
| 2002 09 28 | 608 | (2.2− | 1.6−) | 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 1.0− | 1.1+ | | |
| 2002 09 28 | 608 | (2.1− | 1.3−) | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.0 | 1.2+ | | |
| 2002 09 28 | 608 | (2.4− | 1.4−) | 2005 06 14 | G96 | 0.3− | 0.3+ | 2006 11 21 | 704 | (1.2− | 2.0+) | | |
| 2002 10 02 | 704 | 0.1+ | 0.0 | 2005 06 14 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.3− | | |
| 2002 10 02 | 704 | 0.7− | 0.6+ | 2005 06 14 | G96 | 1.1− | 0.5+ | 2006 11 21 | 704 | 0.3− | 1.1+ | | |
| 2002 10 02 | 704 | 0.8+ | 0.3− | 2005 06 14 | G96 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.2− | | |
| 2002 10 02 | 704 | 0.4+ | 0.7+ | 2006 09 27 | G96 | 0.4− | 0.6− | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | 0.9+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2002 10 03 | 704 | 1.4+ | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.4+ | 0.0 | | |
| 2002 10 03 | 704 | 1.0+ | 1.1+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 23 | 701 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.8+ | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 23 | 701 | 0.3+ | 0.2+ | | |
| 2002 10 03 | 704 | 1.5+ | 1.3+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 24 | 701 | 0.4− | 0.3− | | |
| 2002 10 05 | 704 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 24 | 701 | 0.0 | 0.1− | | |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.3− | 0.5− | 2006 11 24 | 701 | 1.4− | 0.0 | | |
| 2002 10 05 | 704 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 24 | 701 | 0.1+ | 0.2− | | |
| 2002 10 05 | 704 | 0.4− | 0.5− | 2006 10 19 | G96 | 0.0 | 0.6− | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2002 10 05 | 704 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.6− | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2002 10 06 | 644 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.1− | 0.5+ | | |
| 2002 10 06 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.2− | 1.0+ | 2006 11 27 | 701 | 0.4− | 0.3− | | |
| 2002 10 06 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | (2.4+ | 0.5+) | 2006 11 27 | 701 | 0.2+ | 0.3+ | | |
| 2002 10 07 | 699 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.5− | 0.9+ | 2006 11 27 | 701 | 0.6− | 2.2− | | |
| 2002 10 07 | 699 | 0.8− | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.2+ | 2006 11 27 | 701 | 0.5− | 0.1− | | |
| 2002 10 07 | 699 | 0.5− | 0.7− | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.3+ | 0.0 | | |
| 2002 10 07 | 699 | 0.8− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.5− | 2006 12 01 | 691 | 0.2− | 0.0 | | |
| 2002 10 07 | 704 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 12 01 | 691 | 0.4+ | 0.0 | | |
| 2002 10 07 | 704 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− | | | | | | |

**(142241)∗ 2002 RT$_{96}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.79997 | | (2000.0) | | | |
| $n$ | 0.26007362 | $\omega$ | 304.31272 | | +0.80991234 | +0.58648639 |
| $a$ | 2.4307401 | $\Omega$ | 19.78367 | | −0.52935099 | +0.73723960 |
| $e$ | 0.1940477 | $i$ | 1.47308 | | −0.25264506 | +0.33542731 |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.1− | 1.7+ | 2002 10 01 | 699 | 0.4− | 0.3+ | 2005 04 11 | G96 | 0.0 | 0.4+ | | |
| 1998 08 17 | 704 | (2.1+ | 1.3−) | 2002 10 01 | 699 | 0.5+ | 0.9+ | 2005 04 11 | G96 | 0.4− | 0.4+ | | |
| 1998 08 17 | 704 | 0.5+ | 1.1− | 2002 10 01 | 699 | 0.2+ | 0.9+ | 2005 04 11 | G96 | 0.1− | 0.4+ | | |
| 1998 08 17 | 704 | 0.9− | 1.0− | 2002 10 02 | 704 | 0.4− | 0.4+ | 2006 07 22 | G96 | 0.2− | 0.1− | | |
| 1998 08 17 | 704 | (2.8− | 0.0 ) | 2002 10 02 | 704 | 0.5− | 0.2− | 2006 07 22 | G96 | 0.2− | 0.4− | | |
| 1998 08 27 | 699 | 1.5+ | 0.2− | 2002 10 02 | 704 | 0.1+ | 0.4+ | 2006 07 22 | G96 | 0.3− | 0.1− | | |
| 1998 08 27 | 699 | 0.4+ | 0.1+ | 2002 10 02 | 704 | 0.2− | 0.2− | 2006 07 22 | G96 | 0.3− | 0.8− | | |
| 1998 08 27 | 699 | 0.8+ | 1.0− | 2002 10 03 | 704 | 0.1+ | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | | |
| 1998 10 20 | 910 | 0.4− | 1.1− | 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 10 13 | 691 | 0.1+ | 0.2+ | | |
| 1998 10 20 | 910 | 1.1− | 1.2− | 2002 10 03 | 704 | 0.0 | 0.2− | 2006 10 13 | 691 | 0.1− | 0.2− | | |
| 1998 10 20 | 910 | 1.5− | 0.4− | 2002 10 03 | 704 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.3− | 0.4+ | | |
| 2002 09 05 | 704 | 0.6+ | 0.2+ | 2002 10 03 | 704 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.2+ | | |
| 2002 09 05 | 704 | 0.0 | 0.1− | 2002 10 07 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.2− | 2002 10 07 | 704 | 0.2+ | 0.9+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2002 10 07 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.0 | 0.6− | 2002 10 07 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.1− | | |
| 2002 09 07 | 911 | 1.2− | 1.1+ | 2002 10 07 | 704 | 0.6+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 2002 09 07 | 704 | 0.4+ | 0.0 | 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.4− | | |
| 2002 09 07 | 911 | 0.3+ | 0.9+ | 2002 10 11 | 704 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2002 09 07 | 704 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2002 09 07 | 704 | 0.2− | 0.5+ | 2002 10 11 | 704 | 0.5− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2002 09 07 | 704 | 0.3+ | 0.3− | 2002 10 11 | 704 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2002 09 07 | 911 | 0.6− | 0.7+ | 2002 10 31 | 704 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 1.0+ | | |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2002 10 31 | 704 | (1.6− | 1.6+) | 2006 11 12 | 703 | (2.5+ | 0.9−) | | |
| 2002 09 08 | 911 | 0.2− | 0.4+ | 2002 10 31 | 704 | 0.3− | 0.7+ | 2006 11 12 | 703 | 1.1+ | 0.8+ | | |
| 2002 09 08 | 911 | 0.1+ | 0.5− | 2002 10 31 | 704 | 0.0 | 1.1+ | 2006 11 12 | 703 | (0.2− | 1.6+) | | |
| 2002 09 08 | 911 | 0.4+ | 0.2− | 2002 10 31 | 704 | 0.2+ | 1.1+ | 2006 11 12 | 703 | 0.7+ | 1.4+ | | |
| 2002 09 15 | 608 | 0.3− | 0.4− | 2005 04 07 | 691 | 0.2+ | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.2− | | |
| 2002 09 15 | 608 | 0.4− | 0.4− | 2005 04 07 | 691 | 0.0 | 0.6+ | 2006 11 12 | G96 | 0.2− | 0.3− | | |
| 2002 09 15 | 608 | 0.8− | 0.1+ | 2005 04 07 | 691 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.1− | 0.4− | | |
| 2002 09 27 | 644 | 0.0 | 0.6+ | 2005 04 07 | 691 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.2− | | |
| 2002 09 27 | 644 | 0.5− | 0.8+ | 2005 04 07 | 691 | 0.5+ | 0.5+ | 2006 11 18 | 704 | 0.4− | 0.0 | | |
| 2002 09 27 | 644 | 0.1− | 0.7+ | 2005 04 07 | 691 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.5− | 0.1+ | | |
| 2002 10 01 | 699 | 0.4+ | 0.0 | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 11 18 | 704 | 1.4+ | 0.4+ | | |

**(142242)∗ 2002 RP$_{97}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.43761 | | (2000.0) | | | |
| $n$ | 0.26336581 | $\omega$ | 73.30959 | | +0.61141013 | +0.79120884 |
| $a$ | 2.4104407 | $\Omega$ | 234.38904 | | −0.73192477 | +0.55925530 |
| $e$ | 0.2489381 | $i$ | 0.90864 | | −0.30077199 | +0.24743094 |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 12 | 691 | 0.3− | 0.5− | 2002 10 05 | 644 | (0.8+ | 1.7+) | 2005 04 09 | 691 | 0.3+ | 0.6+ | | |
| 1991 11 12 | 691 | 0.4+ | 0.2− | 2002 10 07 | 704 | 0.7− | 0.2+ | 2005 04 09 | 691 | 0.2+ | 0.3+ | | |
| 1991 11 12 | 691 | 0.2+ | 0.2− | 2002 10 07 | 704 | 0.4− | 0.4+ | 2005 04 09 | 691 | 0.2+ | 0.4+ | | |
| 2002 09 05 | 704 | (1.3− | 1.8+) | 2002 10 07 | 704 | 0.3− | 0.8+ | 2005 04 17 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.9− | 0.4+ | 2002 10 08 | 291 | 0.5+ | 0.3+ | 2005 04 17 | 691 | 0.3+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.8− | 0.8+ | 2002 10 08 | 291 | 0.6+ | 0.4+ | 2005 04 17 | 691 | 0.2+ | 0.5+ | | |
| 2002 09 05 | 704 | (0.2− | 1.6+) | 2002 10 08 | 291 | 0.4+ | 0.5+ | 2005 05 12 | G96 | 0.2+ | 0.1− | | |
| 2002 09 05 | 704 | 0.5− | 0.8+ | 2002 10 11 | 704 | 0.5+ | 0.6+ | 2005 05 12 | G96 | 0.6− | 0.3− | | |
| 2002 09 07 | 704 | 0.7− | 0.8+ | 2002 10 11 | 704 | 0.1− | 0.8+ | 2005 05 12 | G96 | 0.4− | 0.1+ | | |
| 2002 09 07 | 704 | (0.4− | 1.8+) | 2002 10 11 | 704 | 0.3+ | 0.0 | 2005 05 12 | G96 | 0.4− | 0.1− | | |
| 2002 09 07 | 704 | (0.6− | 1.7+) | 2002 10 11 | 704 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.0 | | |
| 2002 09 07 | 704 | 0.2− | 1.1+ | 2002 10 11 | 704 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.2− | 0.1− | | |
| 2002 09 07 | 704 | 1.4− | 1.3+ | 2002 10 12 | 704 | 0.6+ | 0.6+ | 2006 10 17 | G96 | 0.8− | 0.3− | | |
| 2002 09 15 | 608 | (1.9− | 0.1+) | 2002 10 12 | 704 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3+ | | |
| 2002 09 15 | 608 | 1.3− | 0.3+ | 2002 10 12 | 704 | 0.3+ | 0.7− | 2006 10 17 | 691 | 0.3+ | 0.1− | | |
| 2002 09 15 | 608 | 0.8− | 1.1− | 2002 10 12 | 704 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.4+ | 0.1− | | |
| 2002 09 27 | 644 | 0.7− | 1.0+ | 2002 10 12 | 704 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.2− | | |
| 2002 09 27 | 644 | 0.3− | 1.0+ | 2002 10 31 | 704 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2002 09 27 | 644 | 0.2− | 0.8+ | 2002 10 31 | 704 | 0.7− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2+ | | |
| 2002 09 28 | 644 | 0.6− | 0.0 | 2002 10 31 | 704 | 0.1− | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.2− | | |
| 2002 09 28 | 644 | 0.5− | 0.2− | 2002 10 31 | 704 | 0.9− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.0 | | |
| 2002 09 28 | 644 | 0.5− | 0.1+ | 2004 01 27 | 691 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.4− | | |
| 2002 10 02 | 704 | 0.3+ | 1.2− | 2004 01 27 | 691 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2002 10 02 | 704 | 0.9− | 0.3− | 2004 01 27 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.4− | 0.4− | | |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.0 | | |
| 2002 10 02 | 704 | 0.5+ | 0.9− | 2005 03 10 | G96 | 0.8− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.2+ | | |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2005 03 10 | G96 | 0.6− | 0.2+ | 2006 11 14 | 691 | 0.5− | 0.4+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2005 03 10 | G96 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.3+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.8− | 0.7+ | 2005 04 04 | 691 | 0.6+ | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2005 04 04 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.4+ | | |
| 2002 10 05 | 644 | 0.2− | 0.2+ | 2005 04 04 | 691 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.1− | | |
| 2002 10 05 | 291 | 0.9+ | 0.0 | 2005 04 05 | G96 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2002 10 05 | 644 | 0.5− | 0.1+ | 2005 04 05 | G96 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.2− | | |
| 2002 10 05 | 291 | 0.2− | 0.2− | 2005 04 05 | G96 | 0.4− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1+ | | |
| 2002 10 05 | 291 | 0.4− | 0.2− | 2005 04 05 | G96 | 0.4− | 0.2+ | | | | | | |

**(142243)∗ 2002 RQ$_{99}$ = 2000 GU$_{22}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37865)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 288.15824 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.17319758 | $\omega$ | 299.07595 | | +0.86478946 | | +0.49976152 | | |
| $a$ | 3.1874363 | $\Omega$ | 31.01413 | | −0.42150726 | | +0.77527443 | | |
| $e$ | 0.1525826 | $i$ | 5.43032 | | −0.27289341 | | +0.38624860 | | |
| $P$ | 5.69 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.1− | 0.3+ | 2002 10 03 | 704 | 0.7− | 0.2+ | 2006 03 26 | 691 | 0.2+ | 0.1+ | | | | | |
| 1994 03 10 | 691 | 0.0 | 0.0 | 2002 10 03 | 704 | 0.5− | 0.1+ | 2006 03 26 | 691 | 0.2+ | 0.0 | | | | | |
| 2000 04 05 | 699 | 0.1− | 0.4+ | 2002 10 07 | 704 | 0.3− | 0.2− | 2006 03 26 | 691 | 0.2+ | 0.0 | | | | | |
| 2000 04 05 | 704 | 0.2+ | 0.2− | 2002 10 07 | 704 | 0.5− | 0.1+ | 2006 04 09 | 691 | 0.0 | 0.2+ | | | | | |
| 2000 04 05 | 704 | 1.0+ | 1.6+ | 2002 10 07 | 704 | 0.1− | 0.5+ | 2006 04 09 | 691 | 0.2+ | 0.2+ | | | | | |
| 2000 04 05 | 699 | 0.8+ | 0.0 | 2002 10 07 | 704 | 0.5− | 0.1+ | 2006 04 09 | 691 | 0.1+ | 0.5+ | | | | | |
| 2000 04 05 | 704 | 0.5+ | 0.0 | 2002 10 07 | 704 | 0.0 | 0.5− | 2006 04 19 | 699 | 0.4+ | 0.3+ | | | | | |
| 2000 04 05 | 699 | 0.1+ | 0.4− | 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 04 19 | 699 | 0.1− | 0.3+ | | | | | |
| 2000 04 05 | 704 | 0.4+ | 0.2− | 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 04 19 | 699 | 0.2+ | 0.1+ | | | | | |
| 2000 04 05 | 704 | 0.1+ | 0.7+ | 2002 10 11 | 704 | 0.1+ | 0.8+ | 2006 04 19 | 699 | 0.3+ | 0.2+ | | | | | |
| 2000 04 05 | 699 | 0.2− | 0.6+ | 2002 10 11 | 704 | 0.4− | 0.6+ | 2006 04 19 | 644 | 0.1+ | 0.3+ | | | | | |
| 2000 04 05 | 704 | 0.2+ | 0.1− | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 04 19 | 644 | 0.6+ | 0.3+ | | | | | |
| 2000 04 05 | 704 | 0.0 | 0.5+ | 2002 10 30 | 644 | 0.1− | 0.8+ | 2006 04 19 | 644 | 0.6+ | 0.3+ | | | | | |
| 2000 04 05 | 704 | 0.2+ | 0.4− | 2002 10 30 | 644 | 0.1− | 0.6+ | 2006 04 21 | 703 | 0.7+ | 0.1+ | | | | | |
| 2000 04 05 | 704 | 1.5+ | 0.1+ | 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 04 21 | 703 | 1.9− | 0.4+ | | | | | |
| 2000 04 06 | 704 | 0.2− | 0.1+ | 2002 10 31 | 699 | 1.5− | 0.4+ | 2006 04 21 | 703 | 0.4+ | 0.6− | | | | | |
| 2000 04 06 | 704 | 0.8− | 0.6− | 2002 10 31 | 699 | 0.2− | 0.6+ | 2006 04 21 | 703 | 0.5− | 0.7+ | | | | | |
| 2000 04 06 | 704 | 0.6+ | 0.1− | 2002 10 31 | 699 | 0.5− | 1.3+ | 2006 04 21 | 461 | 0.3+ | 0.1+ | | | | | |
| 2000 04 06 | 704 | 0.8+ | 0.2+ | 2002 10 31 | 699 | 0.8− | 0.4+ | 2006 04 21 | 461 | 0.7+ | 0.1+ | | | | | |
| 2000 04 06 | 704 | 0.5− | 0.1− | 2002 11 01 | 704 | 0.4− | 0.7+ | 2006 04 21 | 461 | 0.2+ | 0.1− | | | | | |
| 2000 04 29 | 704 | 0.5− | 1.0+ | 2002 11 01 | 704 | 0.2+ | 1.4+ | 2006 04 21 | 461 | 0.1+ | 0.1+ | | | | | |
| 2000 04 29 | 704 | 0.2+ | 0.2+ | 2002 11 01 | 704 | 0.5− | 0.1+ | 2006 04 21 | 461 | 0.0 | 0.1+ | | | | | |
| 2000 04 29 | 704 | 0.4+ | 1.5+ | 2002 11 01 | 704 | 0.6− | 0.5− | 2006 04 21 | 461 | 0.0 | 0.2+ | | | | | |
| 2000 04 29 | 704 | (2.1+ | 0.3+) | 2002 11 03 | 608 | 0.2+ | 0.5+ | 2006 04 24 | 461 | 0.2+ | 0.3+ | | | | | |
| 2002 09 05 | 704 | 0.1− | 0.8+ | 2002 11 03 | 608 | 0.3+ | 0.4+ | 2006 04 24 | 461 | 0.2+ | 0.3+ | | | | | |
| 2002 09 05 | 704 | 0.5+ | 1.0+ | 2002 11 03 | 608 | 0.2+ | 0.6+ | 2006 04 24 | 461 | 0.3+ | 0.3+ | | | | | |
| 2002 09 05 | 704 | 0.9− | 0.7+ | 2002 11 06 | 704 | 0.0 | 0.0 | 2006 04 25 | 461 | 0.2+ | 0.3+ | | | | | |
| 2002 09 05 | 704 | 0.4+ | 0.3− | 2002 11 06 | 704 | 0.7+ | 0.5− | 2006 04 25 | 461 | 0.1− | 0.3+ | | | | | |
| 2002 09 05 | 704 | 0.8− | 0.3+ | 2002 11 06 | 704 | 0.2− | 0.1+ | 2006 04 25 | 461 | 0.0 | 0.3+ | | | | | |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2002 11 06 | 704 | 0.4+ | 0.0 | 2006 04 25 | 461 | 0.1+ | 0.1+ | | | | | |
| 2002 09 07 | 704 | 0.2− | 0.1+ | 2002 11 10 | 704 | 0.3− | 0.1− | 2006 05 01 | 704 | 0.0 | 0.6− | | | | | |
| 2002 09 07 | 704 | 0.3+ | 1.3+ | 2002 11 10 | 704 | 1.3− | 1.2+ | 2006 05 01 | 704 | 0.2+ | 0.1− | | | | | |
| 2002 09 07 | 704 | 0.1− | 0.0 | 2002 11 10 | 704 | 0.2+ | 0.0 | 2006 05 01 | 704 | 0.5+ | 0.7+ | | | | | |
| 2002 09 07 | 704 | 0.1− | 0.7+ | 2002 11 10 | 704 | 0.5+ | 1.2+ | 2006 05 01 | 704 | 0.4+ | 0.0 | | | | | |
| 2002 09 21 | 608 | 1.0− | 0.3− | 2003 12 23 | 704 | 0.1+ | 0.6+ | 2006 05 01 | 704 | 0.4+ | 0.2+ | | | | | |
| 2002 09 21 | 608 | 0.5− | 0.6− | 2003 12 23 | 704 | 0.8− | 0.0 | 2006 05 02 | G96 | 0.6− | 0.0 | | | | | |
| 2002 09 21 | 608 | 1.0− | 0.2− | 2003 12 23 | 704 | 0.2− | 0.3− | 2006 05 02 | G96 | 0.4− | 0.1+ | | | | | |
| 2002 09 29 | 608 | 0.5− | 0.6− | 2003 12 28 | 704 | 0.5+ | 0.4+ | 2006 05 02 | G96 | 0.4− | 0.2+ | | | | | |
| 2002 09 29 | 608 | 0.4− | 0.3− | 2003 12 28 | 704 | 0.2+ | 0.0 | 2006 05 02 | G96 | 0.4− | 0.3+ | | | | | |
| 2002 09 29 | 608 | 0.1− | 0.3− | 2003 12 28 | 704 | 0.2+ | 0.4+ | 2006 05 16 | 644 | 0.3+ | 0.2+ | | | | | |
| 2002 10 01 | 699 | 0.3+ | 0.8+ | 2003 12 28 | 704 | 0.2+ | 0.8+ | 2006 05 16 | 644 | 0.0 | 0.6+ | | | | | |
| 2002 10 01 | 699 | 0.4− | 0.8+ | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2006 05 16 | 644 | 0.3+ | 0.2+ | | | | | |
| 2002 10 01 | 699 | 0.3+ | 0.3+ | 2004 01 17 | 644 | 0.0 | 0.0 | 2006 05 19 | 703 | 0.1+ | 0.1+ | | | | | |
| 2002 10 01 | 699 | 0.8− | 0.2+ | 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 05 19 | 703 | 0.8− | 0.2− | | | | | |
| 2002 10 02 | 704 | 0.1− | 0.3+ | 2004 01 17 | 644 | 0.6+ | 0.7− | 2006 05 19 | 703 | 1.5− | 0.3+ | | | | | |
| 2002 10 02 | 704 | 0.1+ | 0.4+ | 2005 03 09 | 704 | 0.2+ | 0.0 | 2006 05 19 | 703 | 0.2+ | 0.6− | | | | | |
| 2002 10 02 | 704 | 0.5+ | 0.4+ | 2005 03 09 | 704 | 0.7+ | 0.7+ | 2006 05 23 | 699 | 0.4+ | 0.4+ | | | | | |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2005 03 09 | 704 | 0.7− | 0.2+ | 2006 05 23 | G96 | 0.2− | 0.2+ | | | | | |
| 2002 10 02 | 608 | 1.3+ | 0.8− | 2005 03 09 | 704 | 0.0 | 0.4+ | 2006 05 23 | 699 | (1.0− | 2.1+) | | | | | |
| 2002 10 02 | 608 | 0.9+ | 0.2− | 2005 03 09 | 704 | 0.6+ | 0.1− | 2006 05 23 | G96 | 0.2− | 0.3+ | | | | | |
| 2002 10 02 | 608 | 1.1+ | 0.8− | 2005 03 16 | 703 | 0.7− | 1.0− | 2006 05 23 | G96 | 0.2+ | 0.4+ | | | | | |
| 2002 10 03 | 704 | 0.6− | 0.3+ | 2005 03 16 | 703 | 0.9+ | 0.7+ | 2006 05 23 | 699 | 0.0 | 0.5+ | | | | | |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2005 03 16 | 703 | 1.1− | 0.7+ | 2006 05 23 | 699 | 0.3+ | 0.6+ | | | | | |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2005 03 16 | 703 | 0.8− | 0.4+ | | | | | | | | | |

**(142244)**∗ **2002 RD$_{100}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 339.32345 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.23104951 | $\omega$ | 5.33994 | | +0.96327670 | | −0.26580656 | | |
| $a$ | 2.6302641 | $\Omega$ | 10.31655 | | +0.23782887 | | +0.77890020 | | |
| $e$ | 0.1112215 | $i$ | 12.25438 | | +0.12464123 | | +0.56803288 | | |
| $P$ | 4.27 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.9− | 1.0− | 2002 11 08 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 704 | (0.4+ | 1.8+) | | | | | |
| 1998 12 14 | 704 | (0.1− | 3.0−) | 2002 11 08 | 704 | 0.0 | 0.4− | 2006 09 19 | 704 | 0.6− | 0.4+ | | | | | |
| 1998 12 14 | 704 | 1.3− | 1.3− | 2002 11 08 | 704 | 0.3+ | 0.1− | 2006 09 19 | 704 | 0.0 | 0.2− | | | | | |
| 1998 12 14 | 704 | 1.8+ | 1.4− | 2002 11 08 | 704 | 0.0 | 0.7− | 2006 09 19 | 704 | 0.1− | 0.1− | | | | | |
| 1998 12 14 | 704 | (2.2− | 0.7+) | 2002 11 12 | 704 | 0.2+ | 0.2− | 2006 09 19 | 704 | 0.1+ | 0.4+ | | | | | |
| 2002 09 05 | 704 | 0.8+ | 0.2− | 2002 11 12 | 644 | 0.1− | 0.5− | 2006 09 19 | 704 | 0.2+ | 0.2+ | | | | | |
| 2002 09 05 | 704 | 0.3− | 0.1− | 2002 11 12 | 704 | 0.0 | 0.3− | 2006 09 20 | 644 | 0.3− | 0.0 | | | | | |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2002 11 12 | 644 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.2− | 0.0 | | | | | |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2002 11 12 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.1+ | | | | | |
| 2002 09 05 | 704 | 0.4− | 0.5+ | 2002 11 12 | 644 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.3− | | | | | |
| 2002 09 07 | 704 | 0.0 | 0.2+ | 2002 11 12 | 704 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.7− | 0.2+ | | | | | |
| 2002 09 07 | 704 | 0.2+ | 0.3+ | 2002 11 12 | 704 | 0.6+ | 0.8+ | 2006 09 21 | 699 | 0.9+ | 0.0 | | | | | |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2002 12 31 | 704 | 0.5− | 0.6+ | 2006 09 21 | 699 | 0.3+ | 0.3+ | | | | | |
| 2002 09 07 | 704 | 0.4+ | 0.5+ | 2002 12 31 | 704 | 0.5+ | 1.1+ | 2006 09 22 | 704 | 0.3− | 0.9+ | | | | | |
| 2002 09 07 | 704 | 0.7− | 0.4+ | 2002 12 31 | 704 | 0.7− | 0.1− | 2006 09 22 | 704 | 0.1− | 0.8− | | | | | |
| 2002 09 17 | 608 | 1.1− | 1.4+ | 2004 01 28 | 703 | 0.6+ | 0.2− | 2006 09 22 | 704 | 0.4+ | 0.3+ | | | | | |
| 2002 09 17 | 608 | (1.3− | 2.1+) | 2004 01 28 | 703 | 0.9+ | 0.3+ | 2006 09 22 | 704 | 0.4− | 0.0 | | | | | |
| 2002 09 17 | 608 | (1.9− | 2.2+) | 2004 01 28 | 703 | 0.2+ | 0.7+ | 2006 09 22 | 704 | 0.1+ | 0.1+ | | | | | |
| 2002 10 01 | 699 | 0.1− | 0.1+ | 2004 01 28 | 703 | 0.5+ | 0.5+ | 2006 09 24 | 608 | (0.4+ | 1.6−) | | | | | |
| 2002 10 01 | 699 | 0.6− | 0.1− | 2004 01 30 | 704 | 0.0 | 0.1− | 2006 09 24 | 608 | (0.4+ | 2.0−) | | | | | |
| 2002 10 01 | 699 | 1.0− | 0.3− | 2004 01 30 | 704 | (1.6+ | 1.1+) | 2006 09 24 | 608 | (0.4+ | 1.8−) | | | | | |
| 2002 10 01 | 699 | 0.3− | 0.7+ | 2004 01 30 | 704 | 0.3− | 1.0+ | 2006 09 26 | 704 | 0.1− | 0.7− | | | | | |
| 2002 10 04 | 704 | 0.4− | 0.0 | 2004 01 30 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.1+ | | | | | |
| 2002 10 04 | 704 | 0.2− | 0.2− | 2004 02 10 | 644 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.2− | | | | | |
| 2002 10 04 | 704 | 0.6− | 0.4− | 2004 02 10 | 644 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.0 | | | | | |
| 2002 10 04 | 704 | 0.0 | 0.3− | 2004 02 10 | 644 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.1+ | | | | | |
| 2002 10 04 | 704 | 0.2− | 0.5− | 2004 02 15 | 704 | 0.3+ | 0.9+ | 2006 09 28 | 704 | 0.4+ | 1.3− | | | | | |
| 2002 10 09 | 704 | 0.3+ | 0.1− | 2004 02 15 | 704 | 0.4+ | 1.0+ | 2006 09 28 | 704 | 0.8− | 0.1+ | | | | | |
| 2002 10 09 | 704 | 0.8+ | 0.1− | 2004 02 15 | 704 | 0.5+ | 0.8+ | 2006 09 28 | 704 | 0.6− | 0.4+ | | | | | |
| 2002 10 09 | 704 | 0.6+ | 0.3+ | 2004 02 15 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.1+ | | | | | |
| 2002 10 09 | 704 | 0.5+ | 0.3+ | 2005 05 13 | E12 | 0.5+ | 0.0 | 2006 09 28 | 704 | 0.7− | 0.1+ | | | | | |
| 2002 10 09 | 704 | 1.0+ | 0.1+ | 2005 05 13 | E12 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.6− | | | | | |
| 2002 10 12 | 704 | 0.3+ | 0.5− | 2005 05 13 | E12 | 0.8+ | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.9− | | | | | |
| 2002 10 12 | 704 | 0.4+ | 0.5− | 2005 05 13 | E12 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.4− | | | | | |
| 2002 10 12 | 704 | 0.3+ | 0.5− | 2005 05 14 | E12 | 0.6− | 1.1− | 2006 09 30 | 703 | 1.0+ | 0.8+ | | | | | |
| 2002 10 12 | 704 | 0.4+ | 0.8− | 2005 05 14 | E12 | (2.0+ | 1.6+) | 2006 10 19 | 703 | 0.1− | 0.7+ | | | | | |
| 2002 10 12 | 704 | 0.6+ | 0.5− | 2005 05 14 | E12 | 0.0 | 1.1+ | 2006 10 19 | 703 | 0.6− | 0.1+ | | | | | |
| 2002 10 25 | 644 | 0.1− | 0.7+ | 2005 05 14 | E12 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.4− | | | | | |
| 2002 10 25 | 644 | 0.0 | 0.8+ | 2006 08 21 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.5− | | | | | |
| 2002 10 25 | 644 | 0.0 | 0.9+ | 2006 08 21 | 644 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | | | | |
| 2002 10 31 | 699 | 0.6− | 0.4+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 | | | | | |
| 2002 10 31 | 699 | 0.6− | 0.5+ | 2006 08 30 | 699 | 1.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 | | | | | |
| 2002 10 31 | 699 | 0.5− | 0.1− | 2006 08 30 | 699 | 0.4+ | 0.1+ | 2006 11 11 | 703 | (1.6− | 0.1−) | | | | | |
| 2002 10 31 | 699 | 0.2+ | 1.0+ | 2006 08 30 | 699 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.1− | 1.2− | | | | | |
| 2002 11 03 | 704 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.4+ | 1.4+ | 2006 11 11 | 703 | 0.1− | 0.0 | | | | | |
| 2002 11 03 | 704 | 0.3− | 0.1+ | 2006 09 12 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 703 | (1.8− | 0.2−) | | | | | |
| 2002 11 03 | 704 | 0.3− | 0.2+ | 2006 09 12 | 704 | 0.6− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.4− | | | | | |
| 2002 11 03 | 704 | 0.3+ | 0.1+ | 2006 09 12 | 704 | 0.2− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | | | | |
| 2002 11 03 | 704 | 0.1+ | 0.5− | 2006 09 12 | 704 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.3− | | | | | |
| 2002 11 03 | 608 | (1.6+ | 0.1+) | 2006 09 12 | 704 | 0.2+ | 1.0+ | 2006 11 17 | G96 | 0.1− | 0.4− | | | | | |
| 2002 11 03 | 608 | (1.6+ | 0.2+) | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 11 18 | 703 | 0.4− | 0.5− | | | | | |
| 2002 11 03 | 608 | 1.3+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 11 18 | 703 | 0.6− | 0.7+ | | | | | |
| 2002 11 05 | 699 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 11 18 | 703 | 0.3− | 0.1+ | | | | | |
| 2002 11 05 | 699 | 0.2− | 0.6− | 2006 09 14 | 703 | 0.2− | 0.0 | 2006 11 18 | 703 | (1.6− | 1.0−) | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 699 | 0.3+ | 0.3− | 2006 09 16 | 704 | 0.3− | 0.2+ | |
| 2002 11 05 | 699 | 0.3− | 0.3+ | 2006 09 16 | 704 | 0.4− | 0.3+ | |

**(142245)∗ 2002 RL$_{100}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.33919 | | (2000.0) | | +0.95513902 | −0.29611218 |
| $n$ | 0.24263761 | $\omega$ | 195.96348 | | +0.29060825 | +0.94047957 |
| $a$ | 2.5458372 | $\Omega$ | 181.29571 | | +0.05706405 | +0.16678055 |
| $e$ | 0.2776504 | $i$ | 13.29417 | | | |
| $P$ | 4.06 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.8+ | 0.4+ | 2006 08 24 | 704 | 0.6+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1998 10 12 | 699 | 1.4+ | 0.0 | 2006 08 24 | 704 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 1998 10 12 | 699 | 0.4− | 1.0+ | 2006 08 24 | 704 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 1998 11 13 | 704 | 0.9− | 0.2+ | 2006 08 24 | 608 | (0.4+ | 2.0−) | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 1998 11 13 | 704 | 0.8− | 1.0− | 2006 08 24 | 608 | (0.8+ | 2.0−) | 2006 09 26 | G96 | 0.4− | 0.5− |
| 1998 11 13 | 704 | 1.3− | 0.4− | 2006 08 24 | 608 | (0.7+ | 1.5−) | 2006 09 27 | 704 | 0.5+ | 0.3+ |
| 1998 11 13 | 704 | 1.9− | 0.0 | 2006 08 26 | 704 | 0.6+ | 0.9+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2006 08 26 | 704 | 0.2+ | 1.4+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2006 08 26 | 704 | 0.6+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2001 05 24 | 645 | 0.0 | 0.2+ | 2006 08 26 | 704 | 0.6− | 0.9+ | 2006 09 27 | 704 | 0.3+ | 0.3+ |
| 2001 05 24 | 645 | 0.0 | 0.2+ | 2006 08 28 | 704 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.4+ |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2006 08 28 | 704 | 1.1− | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2006 08 28 | 704 | 0.9− | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2006 08 28 | 704 | 0.8− | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.5+ |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.6− | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.3+ |
| 2002 09 07 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.5+ |
| 2002 09 07 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.1− | 0.9+ |
| 2002 09 07 | 704 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.1− | 0.0 | 2006 09 29 | G92 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.8− | 0.1− | 2006 09 29 | G92 | 0.2+ | 0.5− |
| 2002 09 07 | 704 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.0 | 0.5+ | 2006 09 29 | G92 | 0.1− | 0.1− |
| 2002 09 30 | 608 | 1.0− | 1.0− | 2006 08 30 | 704 | 0.4− | 0.7+ | 2006 09 29 | G92 | 0.3− | 0.6− |
| 2002 09 30 | 608 | 0.3− | 0.8− | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 09 29 | G92 | 0.1− | 0.2+ |
| 2002 09 30 | 608 | 0.6− | 0.8− | 2006 09 01 | 704 | 0.7+ | 0.2− | 2006 09 29 | G92 | 0.4+ | 0.6− |
| 2002 10 01 | 704 | 0.3− | 0.7+ | 2006 09 01 | 704 | 0.6+ | 1.0− | 2006 09 30 | G92 | 0.3− | 0.1− |
| 2002 10 01 | 704 | 0.0 | 0.5+ | 2006 09 01 | 704 | 0.3+ | 0.6− | 2006 09 30 | G92 | 0.4− | 0.2− |
| 2002 10 01 | 704 | 0.1− | 0.7+ | 2006 09 12 | 703 | 0.6+ | 0.1− | 2006 09 30 | G92 | 0.3− | 0.1− |
| 2002 10 01 | 704 | 0.4− | 0.6+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 10 01 | G92 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2006 09 12 | 703 | 0.4− | 0.9− | 2006 10 01 | G92 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.0 | 2006 10 01 | G92 | 0.3− | 0.6+ |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.5− | 0.2+ | 2006 10 01 | G92 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.4+ | 0.1− | 2006 10 01 | G92 | 0.3− | 0.2+ |
| 2002 10 04 | 683 | (2.3− | 0.4−) | 2006 09 17 | 704 | 0.5− | 0.4+ | 2006 10 01 | G92 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.5+ | 0.3− | 2006 09 17 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2002 10 04 | 683 | 1.1− | 0.5+ | 2006 09 17 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2002 10 04 | 683 | (1.7+ | 1.3−) | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.6− |
| 2002 10 07 | 608 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2002 10 07 | 608 | 0.2+ | 0.4− | 2006 09 18 | 699 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 07 | 608 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 11 | 645 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 10 11 | 645 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 704 | (0.7+ | 1.9+) |
| 2002 10 15 | 644 | 0.3+ | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 704 | 1.4− | 0.7+ |
| 2002 10 15 | 644 | 0.3+ | 1.0+ | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 10 22 | 704 | 0.6− | 0.9+ |
| 2002 10 15 | 644 | 0.4+ | 1.0+ | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.3− | 1.4+ |
| 2002 10 30 | 704 | (0.2− | 2.4+) | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.4+ |
| 2002 10 30 | 704 | 0.1− | 0.8+ | 2006 09 19 | 703 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.3+ |
| 2002 10 30 | 704 | 0.6− | 0.7+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 10 30 | 704 | 0.9− | 1.2+ | 2006 09 20 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.6− |
| 2002 10 30 | 704 | 0.1− | 1.3+ | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2002 11 21 | 644 | 0.1− | 0.7+ | 2006 09 20 | 704 | 0.0 | 0.6+ | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2002 11 21 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2002 11 21 | 644 | 0.6− | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.4+ |
| 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.6− | 0.4− |
| 2004 03 16 | 691 | 0.1+ | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.1− |
| 2004 03 16 | 691 | 0.5+ | 0.9+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2006 08 18 | 699 | 0.6− | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 0.6− | 0.4+ |
| 2006 08 18 | 699 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.5+ |
| 2006 08 18 | 699 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.5− | 2006 11 23 | 703 | 0.7− | 0.1+ |
| 2006 08 18 | 699 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.6− | 2006 11 23 | 703 | 0.0 | 0.3− |
| 2006 08 24 | 704 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | | | |

**(142246)∗ 2002 RR$_{100}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.10530 | | (2000.0) | | +0.35448655 | −0.93488375 |
| $n$ | 0.24133680 | $\omega$ | 244.24183 | | +0.91442637 | +0.35066708 |
| $a$ | 2.5549771 | $\Omega$ | 185.10021 | | +0.19535534 | +0.05499974 |
| $e$ | 0.2785490 | $i$ | 11.82121 | | | |
| $P$ | 4.08 | $H$ | 16.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 699 | 0.0 | 1.0+ | 2002 10 11 | 704 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.2+ |
| 1998 10 29 | 699 | 0.4− | 0.5+ | 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 09 20 | 704 | 0.2− | 0.5+ |
| 1998 10 29 | 699 | 0.2+ | 1.6+ | 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.1− | 0.4+ |
| 1998 11 13 | 704 | (2.6− | 3.1−) | 2002 10 11 | 704 | 0.6+ | 0.6+ | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 1998 11 13 | 704 | 0.7− | 1.1− | 2002 10 12 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 0.2+ | 0.4+ |
| 1998 11 13 | 704 | 1.3+ | 1.0+ | 2002 10 12 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.3+ |
| 1998 11 13 | 704 | 0.5+ | 1.3− | 2002 10 12 | 704 | 0.4− | 0.6+ | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 1998 11 13 | 704 | 0.5+ | 0.7+ | 2002 10 12 | 704 | 0.2+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.2− |
| 1998 11 19 | 699 | 0.0 | 0.8+ | 2002 10 12 | 704 | 0.3+ | 0.2− | 2006 09 20 | 644 | 1.2+ | 0.0 |
| 1998 11 19 | 699 | 0.2− | 0.9+ | 2002 10 26 | 608 | 0.5− | 1.1+ | 2006 09 24 | 691 | 0.0 | 0.1− |
| 1998 11 19 | 699 | 0.7+ | 0.8+ | 2002 10 26 | 608 | 0.5− | 1.2+ | 2006 09 24 | 691 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 1.1− | 0.6− | 2002 10 26 | 608 | 0.0 | 0.5+ | 2006 09 24 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.1− | 0.3− | 2002 10 29 | 645 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2002 09 05 | 704 | 0.0 | 0.5− | 2002 10 29 | 645 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2002 09 07 | 704 | 0.3+ | 1.0+ | 2002 10 31 | 704 | 0.2− | 0.7+ | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 2002 09 07 | 704 | 0.3− | 0.4− | 2002 10 31 | 704 | 0.4− | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.5− |
| 2002 09 07 | 704 | 0.1− | 0.1− | 2002 10 31 | 704 | 0.5− | 0.6+ | 2006 09 28 | 704 | 0.3+ | 0.3+ |
| 2002 09 07 | 704 | 0.3− | 0.2− | 2002 10 31 | 704 | 0.7+ | 0.8+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2002 10 01 | 704 | 0.2− | 0.5+ | 2002 10 31 | 704 | 0.1− | 1.2+ | 2006 09 28 | 704 | 0.1+ | 0.4− |
| 2002 10 01 | 704 | 0.2− | 0.0 | 2002 10 31 | 608 | 0.5− | 0.9− | 2006 09 28 | 704 | 0.6− | 0.1− |
| 2002 10 01 | 704 | 0.1+ | 0.3− | 2002 10 31 | 608 | 0.2− | 0.8− | 2006 09 28 | 704 | 0.9+ | 0.8− |
| 2002 10 01 | 704 | 0.2− | 0.3+ | 2002 10 31 | 608 | 0.7− | 0.9− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2002 10 01 | 608 | 0.4− | 1.1− | 2002 11 06 | 699 | 0.2− | 0.6+ | 2006 09 28 | 691 | 0.2+ | 0.1− |
| 2002 10 01 | 608 | 0.5+ | 0.5− | 2002 11 06 | 699 | 0.3− | 0.5+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2002 10 01 | 608 | 0.4+ | 0.2+ | 2002 11 06 | 699 | 0.1− | 0.7+ | 2006 10 01 | 704 | 0.4+ | 0.2+ |
| 2002 10 02 | 704 | 0.5− | 0.3+ | 2002 11 06 | 699 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.3+ | 1.0+ |
| 2002 10 02 | 704 | 0.7− | 0.1− | 2002 11 07 | 645 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.8+ | 0.3− |
| 2002 10 02 | 704 | 0.3− | 1.1+ | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.0 | 2002 11 12 | 704 | 1.0− | 1.2− | 2006 10 01 | 704 | 0.4+ | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2002 11 12 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 2002 10 03 | 704 | (1.6− | 0.5+) | 2002 11 12 | 704 | 1.4− | 1.4− | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 1.1− | 1.2+ | 2002 11 12 | 704 | 0.2− | 0.7− | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2002 11 12 | 704 | 1.3− | 0.7− | 2006 10 16 | 703 | 0.0 | 1.2+ |
| 2002 10 03 | 704 | (1.9− | 0.6+) | 2002 11 21 | 644 | 0.5− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | (1.8− | 0.9+) | 2002 11 21 | 644 | 0.6− | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2002 10 08 | 608 | 0.3− | 0.1− | 2002 11 21 | 644 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 10 08 | 608 | 0.7− | 0.1+ | 2004 04 14 | 691 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 10 08 | 608 | 0.4− | 0.2− | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2002 10 09 | 699 | 0.4+ | 0.3− | 2004 04 14 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 10 09 | 699 | 0.0 | 0.4− | 2006 08 24 | 644 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2002 10 09 | 699 | 0.2+ | 0.1− | 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 10 09 | 699 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.7+ | 0.9+ | 2006 09 14 | A50 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.3+ | 0.8+ | 2006 09 15 | A50 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2002 10 11 | 704 | 0.6+ | 1.3+ | 2006 09 17 | 704 | 0.9+ | 0.0 | 2006 10 22 | 703 | 1.1− | 0.1− |
| 2002 10 11 | 704 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.9− | 1.4+ | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.6− | 0.1− | 2006 09 17 | 704 | 1.2− | 1.1+ | 2006 11 06 | 644 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.6+ | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.4+ |
| 2002 10 11 | 704 | 0.2+ | 1.2+ | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.2+ | | | | |

**(142247)∗ 2002 RS$_{100}$ = 1995 YQ$_{19}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37866)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.95736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25945747 | $\omega$ | 335.70921 | | +0.95141044 | −0.30706589 | |
| $a$ | 2.4345868 | $\Omega$ | 42.19489 | | +0.28782252 | +0.86027524 | |
| $e$ | 0.1982760 | $i$ | 1.96189 | | +0.10943665 | +0.40698532 | |
| $P$ | 3.80 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 22 | 691 | 0.4− | 0.2− | 2002 10 09 | 704 | 0.5− | 0.2+ | 2002 11 10 | 704 | 1.0+ | 1.0− |
| 1995 12 22 | 691 | 0.1− | 0.0 | 2002 10 09 | 704 | 0.1− | 0.2+ | 2002 11 10 | 704 | 0.7+ | 1.1+ |
| 1995 12 22 | 691 | 0.3− | 0.0 | 2002 10 09 | 704 | 0.1− | 0.5+ | 2002 11 10 | 704 | 0.0 | 0.3− |
| 1995 12 27 | 691 | 0.3+ | 0.1− | 2002 10 09 | 704 | 0.4+ | 0.5+ | 2002 11 22 | 644 | 0.1+ | 0.1+ |
| 1995 12 27 | 691 | 0.3+ | 0.1− | 2002 10 09 | 704 | 0.0 | 0.3+ | 2002 11 22 | 644 | 0.2+ | 0.0 |
| 1995 12 27 | 691 | 0.2− | 0.3− | 2002 10 10 | 704 | (2.4+ | 0.2−) | 2002 11 22 | 644 | 0.0 | 0.0 |
| 1998 08 17 | 704 | 0.2+ | 0.7− | 2002 10 10 | 704 | 0.4+ | 0.2− | 2004 03 14 | 691 | 0.2+ | 0.7+ |
| 1998 08 17 | 704 | 1.5+ | 0.4− | 2002 10 10 | 704 | 0.4+ | 0.2+ | 2004 03 14 | 691 | 0.3+ | 0.8+ |
| 1998 08 17 | 704 | 0.6− | 0.3− | 2002 10 10 | 704 | 0.3+ | 0.1− | 2004 03 14 | 691 | 0.2+ | 0.7+ |
| 1998 08 17 | 704 | (2.1− | 1.5−) | 2002 10 11 | 644 | 0.5− | 0.0 | 2004 03 21 | 691 | 0.5+ | 0.5+ |
| 1998 08 17 | 704 | 1.7+ | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.3+ | 2004 03 21 | 691 | 0.4+ | 0.3+ |
| 1998 08 30 | 699 | 0.1− | 0.1− | 2002 10 11 | 704 | 0.5− | 0.2− | 2004 03 21 | 691 | 0.1+ | 0.6+ |
| 1998 08 30 | 699 | 0.1+ | 0.3+ | 2002 10 11 | 704 | 0.2− | 0.1+ | 2005 06 14 | G96 | 0.6− | 0.5+ |
| 1998 08 30 | 699 | 0.8− | 1.3+ | 2002 10 11 | 644 | 0.4− | 0.1− | 2005 06 14 | G96 | 0.5− | 0.3+ |
| 1998 09 18 | 699 | 1.2+ | 0.7+ | 2002 10 11 | 704 | 0.2− | 0.2− | 2005 06 14 | G96 | 0.2+ | 1.2+ |
| 1998 09 18 | 699 | 1.2+ | 0.7− | 2002 10 11 | 704 | 0.4+ | 0.2+ | 2005 06 14 | G96 | 0.2− | 0.2+ |
| 1998 09 18 | 699 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.6− | 0.5− | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2002 10 11 | 704 | 0.9− | 0.7+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.4− | 2002 10 11 | 704 | 0.9− | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2002 10 11 | 644 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.0 | 0.6+ |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2002 10 11 | 704 | 0.5− | 0.7+ | 2006 11 15 | 703 | 0.6− | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.5− | 1.2+ | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2002 09 07 | 704 | 0.5− | 0.9− | 2002 10 30 | 644 | 0.2− | 0.9− | 2006 11 16 | 704 | 0.7+ | 0.3+ |
| 2002 09 07 | 704 | 0.0 | 0.9+ | 2002 10 30 | 644 | 0.2− | 0.7− | 2006 11 16 | 704 | 0.5+ | 0.5+ |
| 2002 09 07 | 704 | 0.4− | 0.2− | 2002 10 30 | 644 | 0.0 | 0.8− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2002 10 31 | 699 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.6− |
| 2002 10 01 | 608 | 0.5− | 0.9+ | 2002 10 31 | 699 | 0.6− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2002 10 01 | 608 | 0.2− | 1.3+ | 2002 10 31 | 699 | 0.8+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.6− |
| 2002 10 01 | 608 | 0.3+ | 0.2+ | 2002 10 31 | 699 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.8− |
| 2002 10 02 | 704 | 0.8− | 1.0+ | 2002 10 31 | 608 | 0.5− | 0.6− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.9− | 1.1+ | 2002 10 31 | 608 | 0.4− | 0.8− | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.3− | 0.4+ | 2002 10 31 | 608 | 0.5− | 0.6− | 2006 11 18 | 704 | 0.8+ | 0.4+ |
| 2002 10 02 | 704 | 0.8− | 0.7+ | 2002 11 01 | 704 | 0.6+ | 0.5− | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2002 11 01 | 704 | 0.6+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2002 11 01 | 704 | 0.5+ | 0.5− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2002 11 01 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.0 | 1.2+ | 2002 11 01 | 704 | (3.2+ | 1.6−) | 2006 11 20 | 691 | 0.4+ | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2002 11 05 | 699 | 0.7− | 0.5+ | 2006 11 20 | 691 | 0.4− | 0.6− |
| 2002 10 07 | 704 | 0.4− | 0.0 | 2002 11 05 | 699 | 0.0 | 0.5− | 2006 11 24 | 703 | 0.4− | 0.6+ |
| 2002 10 07 | 704 | 0.6− | 0.4+ | 2002 11 05 | 699 | 0.4− | 0.9+ | 2006 11 24 | 703 | 0.2− | 0.2− |
| 2002 10 07 | 704 | 0.5− | 0.2+ | 2002 11 05 | 699 | 0.4− | 0.0 | 2006 11 24 | 703 | 0.1+ | 0.4+ |
| 2002 10 07 | 704 | 0.4− | 0.8+ | 2002 11 06 | 704 | 0.0 | 0.2− | 2006 11 24 | 703 | 0.5+ | 0.0 |
| 2002 10 07 | 704 | 0.2+ | 0.9+ | 2002 11 06 | 704 | 0.2− | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 10 08 | 699 | 0.3− | 0.2+ | 2002 11 06 | 704 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.3+ | 0.0 |
| 2002 10 08 | 699 | 0.3− | 0.1+ | 2002 11 06 | 704 | 0.2− | 0.1− | 2006 11 24 | 691 | 0.7+ | 1.2− |
| 2002 10 08 | 699 | 0.4− | 0.2+ | 2002 11 06 | 704 | 0.1− | 0.1− | | | | |
| 2002 10 08 | 699 | 0.1+ | 0.2+ | 2002 11 10 | 704 | 0.4− | 0.4+ | | | | |

**(142248)∗ 2002 RX$_{100}$ = 1998 XZ$_{71}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37866)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.42196 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23294203 | $\omega$ | 45.27472 | | +0.78757089 | −0.61619902 | |
| $a$ | 2.6159985 | $\Omega$ | 352.75811 | | +0.55218981 | +0.70970418 | |
| $e$ | 0.2645718 | $i$ | 2.52575 | | +0.27352972 | +0.34149486 | |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.3− | 0.4− | 2002 12 11 | 704 | 0.6+ | 0.3− | 2006 08 28 | 699 | 0.1− | 0.5+ |
| 1998 12 14 | 704 | 1.1+ | 0.4− | 2002 12 11 | 704 | 0.9+ | 1.3+ | 2006 08 29 | 704 | 0.4+ | 0.4− |
| 1998 12 14 | 704 | 0.1+ | 0.3− | 2002 12 11 | 704 | 1.1+ | 0.4+ | 2006 08 29 | 704 | 0.1+ | 0.1− |
| 1998 12 14 | 704 | (5.2− | 0.0 ) | 2002 12 11 | 704 | (1.4+ | 1.9+) | 2006 08 29 | 704 | 0.1+ | 0.2− |
| 1998 12 17 | 704 | 0.9+ | 0.6− | 2002 12 31 | 704 | (4.4− | 3.2+) | 2006 08 30 | 704 | 0.6− | 0.5+ |
| 1998 12 17 | 704 | 0.4+ | 0.9− | 2002 12 31 | 704 | (2.7− | 3.7+) | 2006 08 30 | 704 | 0.8− | 0.1+ |
| 1998 12 17 | 704 | 1.5− | 0.2+ | 2002 12 31 | 704 | (2.1− | 2.2+) | 2006 08 30 | 704 | 0.4− | 0.5− |
| 1998 12 17 | 704 | 1.4− | 0.2+ | 2002 12 31 | 704 | (3.0− | 3.0+) | 2006 08 30 | 704 | 0.1− | 0.4− |
| 2002 09 05 | 704 | 0.6− | 0.0 | 2003 01 05 | 704 | 0.5− | 0.3+ | 2006 08 31 | 704 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.3− | 0.4− | 2003 01 05 | 704 | 1.2− | 0.1− | 2006 08 31 | 704 | 0.7− | 0.4− |
| 2002 09 05 | 704 | 0.0 | 0.2+ | 2003 01 05 | 704 | 0.9− | 0.2+ | 2006 08 31 | 704 | 0.5+ | 0.1− |
| 2002 09 05 | 704 | 0.6− | 0.6+ | 2003 01 05 | 704 | 0.9− | 0.3+ | 2006 08 31 | 704 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.6− | 0.5+ | 2004 03 15 | 691 | 0.2+ | 0.7+ | 2006 08 31 | 704 | 0.0 | 0.1− |
| 2002 09 07 | 704 | 0.2− | 0.2+ | 2004 03 15 | 691 | 0.3+ | 0.6+ | 2006 09 12 | 246 | 0.8+ | 0.5+ |
| 2002 09 07 | 704 | 0.1− | 0.2− | 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 09 12 | 246 | 0.8+ | 0.0 |
| 2002 09 07 | 704 | 0.1− | 0.1+ | 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 246 | 0.3+ | 0.3+ |
| 2002 09 07 | 704 | 0.2− | 0.6+ | 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 09 12 | 246 | 0.1− | 0.4+ |
| 2002 10 02 | 704 | 0.2+ | 0.0 | 2004 03 23 | 691 | 0.5+ | 0.6+ | 2006 09 12 | 246 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2004 04 13 | 691 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 691 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.2− | 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.5− |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 08 14 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 1.0+ | 1.5− |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 704 | (0.5+ | 2.4+) |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 17 | 704 | 1.4+ | 1.1− |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.1+ | 0.7+ |
| 2002 10 09 | 704 | 0.1− | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.3− |
| 2002 10 09 | 704 | 0.1− | 0.8+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.6+ |
| 2002 10 09 | 704 | 0.3− | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 1.2+ | 0.2+ |
| 2002 10 09 | 704 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 2002 10 09 | 704 | 0.5− | 0.9+ | 2006 08 21 | 704 | 0.2− | 0.2− | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2002 10 12 | 704 | 0.5− | 0.1− | 2006 08 21 | 704 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.9+ | 0.1− |
| 2002 10 12 | 704 | 0.2− | 0.3+ | 2006 08 21 | 704 | 1.1− | 1.2− | 2006 09 20 | 704 | 0.2+ | 1.0+ |
| 2002 10 12 | 704 | 1.2− | 0.3− | 2006 08 21 | 691 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.0 | 0.2− | 2006 08 21 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.1− |
| 2002 10 12 | 704 | 0.3− | 0.8+ | 2006 08 21 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | (0.8− | 1.8+) |
| 2002 10 26 | 608 | 0.0 | 0.7− | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.7+ | 0.8− |
| 2002 10 26 | 608 | 0.2− | 0.6+ | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2002 10 26 | 608 | 0.3+ | 0.4− | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.2− |
| 2002 11 03 | 704 | 0.4− | 0.2− | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.5+ | 1.1+ |
| 2002 11 03 | 704 | 0.4− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.9− | 0.0 |
| 2002 11 03 | 704 | 0.5− | 0.2+ | 2006 08 24 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 1.2− | 0.6+ |
| 2002 11 03 | 704 | 0.6− | 0.5− | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.7− |
| 2002 11 05 | 699 | 0.5+ | 0.4+ | 2006 08 25 | 704 | 0.8+ | 0.0 | 2006 09 27 | 704 | 1.4+ | 0.6+ |
| 2002 11 05 | 699 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.8+ | 0.2+ | 2006 10 10 | G92 | 0.2− | 0.3+ |
| 2002 11 05 | 699 | 0.1− | 0.1+ | 2006 08 25 | 704 | 0.1+ | 0.6+ | 2006 10 10 | G92 | 0.5− | 0.0 |
| 2002 11 05 | 699 | 0.7+ | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.4+ | 2006 10 10 | G92 | 0.2− | 0.0 |
| 2002 11 08 | 704 | 0.5+ | 0.3+ | 2006 08 25 | 704 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.3− |
| 2002 11 08 | 704 | 0.7+ | 0.7+ | 2006 08 27 | 291 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2002 11 08 | 704 | 0.9+ | 0.5+ | 2006 08 27 | 291 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2002 11 08 | 704 | 0.8+ | 0.6+ | 2006 08 27 | 291 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 11 08 | 704 | 0.4+ | 0.9+ | 2006 08 28 | 699 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 11 12 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.5− | 0.8− | 2006 08 28 | 703 | 0.2+ | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.6− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2002 11 12 | 704 | 0.2− | 0.5− | 2006 08 28 | 703 | 0.7+ | 0.9+ | 2006 10 27 | G96 | 0.5− | 0.3+ |
| 2002 11 20 | 644 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2002 11 20 | 644 | 0.5− | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2002 11 20 | 644 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2002 12 11 | 704 | 0.8+ | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.8− | 0.8− |

**(142249)∗ 2002 RE$_{102}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.32990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23582498 | $\omega$ | 338.66547 | | +0.99614446 | −0.01575531 | |
| $a$ | 2.5946344 | $\Omega$ | 22.75772 | | +0.06283097 | +0.81467513 | |
| $e$ | 0.1823023 | $i$ | 12.89099 | | −0.06122486 | +0.57970354 | |
| $P$ | 4.18 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 704 | (2.9+ | 0.0 ) | 2002 12 02 | 704 | 0.1+ | 0.9− | 2006 09 26 | 704 | 0.3− | 0.1− |
| 1998 12 16 | 704 | 0.3+ | 0.9+ | 2002 12 02 | 704 | 0.7− | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.3+ |
| 1998 12 16 | 704 | (1.6+ | 2.3−) | 2002 12 02 | 704 | (2.0+ | 0.3+) | 2006 09 26 | 704 | 0.6− | 0.4+ |
| 1998 12 16 | 704 | 0.6− | 1.6− | 2002 12 05 | 704 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.7+ |
| 1998 12 16 | 704 | 0.2− | 0.7− | 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.3− | 2002 12 05 | 704 | 0.3+ | 0.3− | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.5+ | 0.4+ | 2002 12 11 | 644 | 0.1− | 0.6+ | 2006 09 26 | 704 | 1.2+ | 0.2− |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2002 12 11 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 704 | 0.3− | 0.2+ |
| 2002 09 07 | 704 | 0.9+ | 0.7+ | 2002 12 11 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 704 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.6+ | 0.1− | 2002 12 31 | 704 | 0.5− | 0.1− | 2006 09 28 | 704 | 0.4− | 0.2+ |
| 2002 09 07 | 704 | 0.1+ | 0.8− | 2002 12 31 | 704 | 0.3+ | 0.3− | 2006 09 28 | 704 | 0.4− | 0.4+ |
| 2002 09 07 | 704 | 0.5+ | 0.9− | 2002 12 31 | 704 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.1− | 0.4+ |
| 2002 09 16 | 699 | 1.1+ | 0.6− | 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2002 09 16 | 699 | 0.7+ | 0.2− | 2004 03 18 | 644 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.8+ | 0.4− |
| 2002 09 16 | 699 | (2.1+ | 1.0−) | 2004 03 18 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 1.0+ | 0.8+ |
| 2002 09 16 | 699 | 0.0 | 0.5− | 2004 03 18 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.6− |
| 2002 10 04 | 704 | 0.1+ | 0.9+ | 2005 05 11 | 644 | 0.8+ | 0.5+ | 2006 09 30 | 704 | 0.1− | 0.4+ |
| 2002 10 04 | 704 | 0.5+ | 0.8+ | 2005 05 11 | 644 | 0.4+ | 1.0+ | 2006 09 30 | 704 | 0.0 | 0.4− |
| 2002 10 04 | 704 | 0.1+ | 0.9+ | 2005 05 11 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.2− | 0.2− |
| 2002 10 04 | 704 | 0.5+ | 1.4+ | 2005 05 12 | 644 | 0.3+ | 0.6+ | 2006 09 30 | 704 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 1.0+ | 2005 05 12 | 644 | 1.1+ | 0.8+ | 2006 09 30 | 704 | 0.3− | 0.8− |
| 2002 10 10 | 704 | 0.6− | 0.3+ | 2005 05 12 | 644 | 0.7+ | 0.8+ | 2006 10 10 | 203 | 0.5+ | 0.1− |
| 2002 10 10 | 704 | 0.6− | 0.5− | 2006 08 28 | 699 | 0.3+ | 0.4+ | 2006 10 10 | 203 | 0.6+ | 0.2− |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2002 10 10 | 704 | 0.8− | 0.2+ | 2006 08 28 | 699 | 0.1− | 1.4− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2002 10 10 | 704 | 0.8− | 0.2+ | 2006 08 28 | 699 | 0.9− | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 10 12 | 704 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 10 12 | 704 | 0.7+ | 0.1+ | 2006 09 12 | 703 | 0.9+ | 1.2− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 10 12 | 704 | 1.1+ | 0.5− | 2006 09 12 | 703 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 10 12 | 704 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.8− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.8+ | 0.5+ | 2006 09 16 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 10 15 | 704 | 1.0− | 0.1− | 2006 09 16 | 704 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 10 15 | 704 | 0.7− | 0.0 | 2006 09 16 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 0.5− | 0.5− |
| 2002 10 15 | 704 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.7− | 0.9+ | 2006 10 28 | 704 | 0.1+ | 0.6+ |
| 2002 10 15 | 704 | 0.4+ | 0.5− | 2006 09 16 | 704 | 0.5− | 1.0+ | 2006 10 28 | 704 | (0.5+ | 1.6+) |
| 2002 10 26 | 608 | 0.1+ | 0.0 | 2006 09 16 | F84 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.1− | 0.2− |
| 2002 10 26 | 608 | 0.1− | 0.4− | 2006 09 16 | F84 | 0.4− | 0.2− | 2006 10 28 | 704 | 0.0 | 1.1+ |
| 2002 10 26 | 608 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.8− | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2002 11 05 | 704 | 0.5− | 0.3+ | 2006 09 18 | 703 | 0.3− | 1.0− | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2002 11 05 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2002 11 05 | 704 | 0.4− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.8− | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2002 11 05 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2002 11 05 | 704 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2002 11 12 | 704 | 0.1− | 0.4+ | 2006 09 19 | 704 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2002 11 12 | 704 | 0.5− | 0.2− | 2006 09 19 | 704 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 1.1+ |
| 2002 11 12 | 704 | 0.0 | 0.6+ | 2006 09 19 | 704 | 0.4− | 0.6− | 2006 11 18 | 704 | 0.2− | 1.6+ |
| 2002 11 12 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.8− | 1.0+ |
| 2002 11 13 | 644 | 0.9− | 0.3− | 2006 09 19 | 608 | 0.2+ | 0.9− | 2006 11 18 | 704 | 0.4− | 1.6+ |
| 2002 11 13 | 644 | 0.0 | 0.2− | 2006 09 19 | 608 | (0.6+ | 1.8−) | 2006 11 18 | 704 | 0.2− | 0.8+ |
| 2002 11 13 | 644 | 0.1− | 0.3− | 2006 09 19 | 608 | (0.2+ | 1.8−) | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2006 09 22 | 704 | 1.0+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.6+ |
| 2002 11 14 | 704 | 0.6− | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.2− | 1.4+ |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2002 11 14 | 704 | 0.9+ | 0.3− | 2006 09 22 | 704 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.3+ |
| 2002 11 14 | 704 | 0.4+ | 0.7− | 2006 09 22 | 704 | 0.1+ | 0.3+ | | | | |
| 2002 12 02 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.2+ | | | | |

**(142250)∗ 2002 RO$_{102}$ = 4748 T-2**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37869)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.54809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23993304 | $\omega$ | 339.10533 | | +0.97702362 | −0.19098159 | |
| $a$ | 2.5649329 | $\Omega$ | 32.36464 | | +0.21186966 | +0.82208262 | |
| $e$ | 0.1127866 | $i$ | 10.17984 | | +0.02315356 | +0.53638251 | |
| $P$ | 4.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 30 | 675 | 0.8− | 1.0+ | 2002 12 06 | 704 | 0.1− | 0.6− | 2006 10 19 | 691 | 0.2− | 0.1− |
| 1973 09 30 | 675 | 1.9− | 1.5+ | 2002 12 06 | 704 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.9− | 1.0+ |
| 1973 10 04 | 675 | 0.4− | 0.5− | 2002 12 06 | 704 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 1973 10 04 | 675 | 0.2− | 2.3+ | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1973 10 05 | 675 | (3.7+ | 1.3−) | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1973 10 05 | 675 | (2.6+ | 0.4−) | 2002 12 11 | 704 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1998 12 24 | 699 | 0.5− | 0.8− | 2002 12 11 | 704 | 0.7− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1998 12 24 | 699 | 0.5+ | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1998 12 24 | 699 | 1.1+ | 0.9+ | 2002 12 11 | 704 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2000 03 05 | 704 | 0.0 | 0.6+ | 2002 12 11 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2000 03 05 | 704 | 0.0 | 0.8+ | 2002 12 27 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.4− |
| 2000 03 05 | 704 | 0.7+ | 0.7+ | 2002 12 27 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2000 03 05 | 704 | 0.6+ | 0.4+ | 2002 12 27 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | (4.2− | 4.5+) |
| 2002 09 05 | 704 | 1.4+ | 0.3− | 2002 12 31 | 704 | 0.1− | 1.0− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.5+ | 1.2+ | 2002 12 31 | 704 | 0.5− | 1.3− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 09 05 | 704 | 1.0+ | 0.6− | 2002 12 31 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 1.2− | 2002 12 31 | 704 | 0.4− | 0.4− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2002 09 07 | 704 | 0.0 | 0.6+ | 2002 12 31 | 704 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.2− |
| 2002 09 07 | 704 | 0.8+ | 0.8+ | 2003 01 05 | 704 | 0.5+ | 0.6− | 2006 10 23 | 704 | 0.4− | 0.5+ |
| 2002 09 07 | 704 | 0.5+ | 0.2+ | 2003 01 05 | 704 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2002 09 07 | 704 | 0.7+ | 0.1− | 2003 01 05 | 704 | 0.5+ | 0.4− | 2006 10 23 | 704 | 0.7− | 0.5+ |
| 2002 09 07 | 704 | 0.4− | 0.5− | 2003 01 05 | 704 | 0.6− | 0.2− | 2006 10 23 | 704 | 0.6− | 0.5+ |
| 2002 09 07 | 704 | 0.2+ | 0.6− | 2003 01 05 | 704 | 0.5− | 0.7− | 2006 10 23 | 704 | 0.1− | 0.6+ |
| 2002 10 02 | 704 | 0.6− | 1.5− | 2003 01 20 | 644 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.5− | 0.7+ |
| 2002 10 02 | 704 | (0.6− | 2.0−) | 2003 01 20 | 644 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 10 02 | 704 | (0.5− | 1.9−) | 2003 01 20 | 644 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2002 10 02 | 704 | (0.2+ | 2.1−) | 2003 02 01 | 704 | 0.6− | 0.9+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.3+ | 0.9− | 2003 02 01 | 704 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.4− | 2003 02 01 | 704 | 1.1+ | 1.0+ | 2006 10 28 | 704 | 0.0 | 0.5+ |
| 2002 10 03 | 704 | 0.0 | 0.5− | 2004 02 16 | 704 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.5+ | 1.0− | 2004 02 16 | 704 | 0.5+ | 0.2+ | 2006 10 28 | 704 | 1.3+ | 0.3− |
| 2002 10 03 | 704 | 0.1+ | 0.3− | 2004 02 16 | 704 | 1.2+ | 1.1− | 2006 10 28 | 704 | 0.7+ | 0.7+ |
| 2002 10 07 | 699 | 0.3+ | 0.5− | 2004 02 16 | 704 | 0.1+ | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 10 07 | 704 | 0.1+ | 1.0− | 2004 02 16 | 704 | 0.2+ | 0.8+ | 2006 10 28 | 704 | 0.0 | 0.3+ |
| 2002 10 07 | 699 | 0.2+ | 0.3− | 2004 03 10 | 703 | 0.0 | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2002 10 07 | 704 | 0.5+ | 0.5+ | 2004 03 10 | 703 | 0.7+ | 0.3+ | 2006 10 28 | 704 | 0.7− | 0.6+ |
| 2002 10 07 | 704 | 0.6− | 0.7+ | 2004 03 10 | 703 | 0.5− | 1.2+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 10 07 | 699 | 0.1+ | 0.7+ | 2004 03 10 | 703 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2002 10 07 | 704 | 0.5+ | 0.0 | 2004 03 23 | 704 | 0.6+ | 1.1+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2002 10 07 | 699 | 0.2+ | 0.4− | 2004 03 23 | 704 | 0.5+ | 1.3+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.3− | 1.4− | 2004 03 23 | 704 | 0.8+ | 0.8+ | 2006 11 07 | 644 | 0.1+ | 0.3− |
| 2002 10 09 | 704 | 0.1− | 0.6− | 2004 03 23 | 704 | 0.5+ | 1.4+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.6− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2002 10 09 | 704 | 0.5− | 0.8− | 2006 09 15 | 644 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 09 15 | 644 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.7+ | 0.1+ | 2006 09 15 | 644 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.2+ | 0.3− | 2006 09 16 | 699 | 0.3− | 0.8+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 0.5− | 2006 09 16 | 699 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.4− | 2006 09 16 | 699 | 0.1+ | 1.1+ | 2006 11 11 | 703 | 0.5+ | 0.6− |
| 2002 10 31 | 678 | 0.7− | 0.9− | 2006 09 16 | 699 | 0.8− | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2002 10 31 | 678 | (1.9− | 1.0−) | 2006 09 16 | 699 | (0.4+ | 1.7+) | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2002 10 31 | 678 | 1.5− | 0.0 | 2006 09 16 | 699 | 0.1− | 0.2− | 2006 11 11 | 703 | 1.0+ | 0.2− |
| 2002 11 04 | 699 | 0.3− | 0.0 | 2006 09 16 | 699 | 0.6+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 11 04 | 699 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2002 11 04 | 699 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2002 11 04 | 699 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2002 11 05 | 704 | 0.6+ | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 11 05 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 699 | 0.3− | 0.8+ | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2002 11 05 | 704 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.2− | 1.2+ | 2006 11 17 | 703 | 0.5− | 0.1− |
| 2002 11 05 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.7− |
| 2002 11 05 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 11 08 | 704 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.6+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2002 11 08 | 704 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 11 08 | 704 | 0.3− | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.9− |
| 2002 11 08 | 704 | 0.4+ | 0.4− | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2002 11 11 | 049 | 0.1− | 0.5− | 2006 09 23 | 691 | (2.2− | 0.6−) | 2006 11 18 | 704 | 1.0− | 0.2− |
| 2002 11 11 | 049 | 0.1+ | 0.6− | 2006 09 27 | 704 | 0.3− | 1.5+ | 2006 11 18 | 704 | 1.0− | 0.3+ |
| 2002 11 11 | 049 | 0.2+ | 0.7− | 2006 09 27 | 704 | 1.1+ | 1.1+ | 2006 11 18 | 704 | 1.3− | 0.0 |
| 2002 11 12 | 704 | 0.3+ | 0.0 | 2006 09 27 | 704 | (0.1+ | 1.5+) | 2006 11 19 | 704 | 1.5− | 0.6− |
| 2002 11 12 | 704 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.0 | 1.5+ | 2006 11 19 | 704 | (2.0− | 0.2+) |
| 2002 11 12 | 704 | 0.3− | 0.2+ | 2006 09 27 | 704 | (0.2− | 2.0+) | 2006 11 19 | 704 | (1.6− | 0.0 ) |
| 2002 11 12 | 704 | 0.5+ | 0.4− | 2006 09 27 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.6− |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.3+ | 0.5− | 2006 09 27 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2002 11 14 | 704 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.5+ | 1.0+ | 2006 11 20 | G96 | 0.6+ | 0.5− |
| 2002 11 14 | 704 | 0.0 | 0.6− | 2006 09 28 | 704 | 0.1+ | 0.9+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2002 11 14 | 704 | 0.5+ | 0.3− | 2006 09 28 | 704 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.6− |
| 2002 11 14 | 704 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2002 11 23 | 644 | 0.2− | 1.0+ | 2006 10 01 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2002 11 23 | 644 | 0.1+ | 1.0+ | 2006 10 01 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2002 11 23 | 644 | 0.2+ | 1.2+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 26 | 704 | 0.4+ | 0.1− |
| 2002 11 30 | 608 | 0.3+ | 0.8− | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.4− | 1.7− |
| 2002 11 30 | 608 | 0.5+ | 0.8− | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 11 26 | 704 | 0.1− | 0.5− |
| 2002 11 30 | 608 | 0.5+ | 0.6− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 26 | 704 | 0.2− | 0.5+ |
| 2002 12 02 | 704 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.8+ | 0.2+ |
| 2002 12 02 | 704 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.4− | 0.5+ |
| 2002 12 02 | 704 | 0.4+ | 0.2− | 2006 10 17 | H06 | 0.9+ | 0.6− | 2006 11 28 | 704 | 0.8− | 0.2− |
| 2002 12 02 | 704 | 0.1− | 0.3− | 2006 10 17 | H06 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2002 12 02 | 704 | 0.0 | 0.6+ | 2006 10 17 | H06 | 0.3+ | 0.1+ | | | | |

**(142251)∗ 2002 RX$_{102}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.85645 | | (2000.0) | | | |
| $n$ | 0.22011128 | $\omega$ | 237.75698 | | +0.20956434 | −0.96467837 |
| $a$ | 2.7166969 | $\Omega$ | 201.91739 | | +0.97734914 | +0.21158737 |
| $e$ | 0.3282636 | $i$ | 25.31699 | | +0.02952018 | −0.15692811 |
| $P$ | 4.48 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 704 | 0.8+ | 0.3− | 2003 01 03 | 704 | (4.4+ | 4.5+) | 2006 08 13 | 644 | 0.3− | 0.2− |
| 1999 03 22 | 704 | 0.9− | 0.1− | 2003 01 03 | 704 | (5.4+ | 4.0+) | 2006 08 25 | 704 | 0.3− | 0.6+ |
| 1999 03 22 | 704 | 0.4+ | 1.0+ | 2003 01 04 | 699 | 0.4− | 0.2+ | 2006 08 25 | 704 | 0.6+ | 0.4+ |
| 1999 03 22 | 704 | 0.5− | 1.2+ | 2003 01 04 | 699 | 0.1+ | 0.3+ | 2006 08 25 | 704 | 0.3+ | 0.1+ |
| 1999 03 22 | 704 | 0.2− | 0.1+ | 2003 01 04 | 699 | 0.6+ | 0.5+ | 2006 08 25 | 704 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.8− | 0.2− | 2003 01 04 | 699 | 0.9− | 0.9− | 2006 08 29 | 699 | 1.1+ | 1.3+ |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2003 01 14 | 644 | 0.0 | 0.3+ | 2006 08 29 | 699 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | 0.7+ | 0.7+ | 2003 01 14 | 644 | 0.3− | 0.4+ | 2006 08 29 | 699 | 0.0 | 1.4+ |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2003 01 14 | 644 | 0.1− | 0.4+ | 2006 08 29 | 699 | 0.3− | 0.0 |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2003 01 29 | 704 | 0.1− | 0.3− | 2006 09 11 | 703 | 0.3− | 0.3− |
| 2002 09 07 | 704 | 0.4− | 0.3− | 2003 01 29 | 704 | 0.4+ | 0.3− | 2006 09 11 | 703 | 0.5− | 0.8− |
| 2002 09 07 | 704 | 0.1− | 0.2− | 2003 01 29 | 704 | 0.4+ | 0.7− | 2006 09 11 | 703 | 0.3− | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.0 | 2003 01 29 | 704 | 0.4+ | 0.6+ | 2006 09 11 | 703 | 0.5− | 0.8+ |
| 2002 09 07 | 704 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.5− | 0.7+ |
| 2002 09 07 | 704 | 0.8− | 0.3− | 2004 03 22 | 704 | 0.4+ | 0.7− | 2006 09 20 | 703 | 0.2− | 0.5+ |
| 2002 10 04 | 704 | 0.1− | 1.0− | 2004 03 22 | 704 | 0.4+ | 0.5− | 2006 09 20 | 703 | 0.1+ | 0.7+ |
| 2002 10 04 | 704 | 0.5− | 0.7− | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 09 21 | 224 | (1.2+ | 2.1+) |
| 2002 10 04 | 704 | 0.4− | 0.8− | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 09 21 | 224 | 0.1− | 1.4+ |
| 2002 10 04 | 704 | 0.7− | 1.1− | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 21 | 224 | (0.2− | 1.8+) |
| 2002 10 04 | 704 | 0.3− | 1.3− | 2004 04 17 | 699 | 0.4− | 0.3+ | 2006 09 26 | 683 | 0.0 | 0.0 |
| 2002 10 16 | 699 | 0.8+ | 0.5+ | 2004 04 17 | 699 | 0.5− | 0.3− | 2006 09 26 | 683 | 0.3+ | 0.4+ |
| 2002 10 16 | 699 | 0.9+ | 0.8+ | 2004 04 17 | 699 | (1.0+ | 1.8+) | 2006 09 27 | 703 | 0.5+ | 0.4+ |
| 2002 10 16 | 699 | 0.7+ | 0.5+ | 2004 04 17 | 699 | 0.5− | 1.0− | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 2002 10 16 | 699 | 0.9+ | 0.5+ | 2004 04 20 | 704 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.4− |
| 2002 10 30 | 704 | 0.0 | 0.6+ | 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2002 10 30 | 704 | 0.1− | 0.6+ | 2004 04 20 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.4+ |
| 2002 10 30 | 704 | 0.1+ | 0.9+ | 2004 04 20 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.8− | 0.5− |
| 2002 10 30 | 704 | 0.4− | 1.2+ | 2004 04 20 | 691 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2002 10 30 | 704 | 0.2− | 1.1+ | 2004 04 20 | 704 | 1.4− | 1.4+ | 2006 10 23 | 703 | 0.1− | 0.7− |
| 2002 11 06 | 644 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.7+ | 2006 10 23 | 703 | 0.1− | 0.1− |
| 2002 11 06 | 644 | 0.2+ | 0.1+ | 2004 04 20 | 691 | 0.1− | 0.4+ | 2006 10 23 | 703 | 0.6− | 0.4− |
| 2002 11 06 | 644 | 0.4+ | 0.2+ | 2004 05 14 | 599 | 0.3+ | 1.1+ | 2006 10 23 | 703 | 0.4+ | 0.8− |
| 2002 11 15 | 644 | 0.1+ | 1.1+ | 2004 05 14 | 599 | 0.6+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.3+ |
| 2002 11 15 | 644 | 0.0 | 1.0+ | 2004 05 14 | 599 | 0.1+ | 0.9+ | 2006 11 13 | 703 | 0.2− | 0.6− |
| 2002 11 15 | 644 | 0.2+ | 1.1+ | 2004 05 14 | 599 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.1+ |
| 2002 11 16 | 699 | 0.0 | 0.3+ | 2004 05 22 | 704 | (1.7+ | 1.2+) | 2006 11 13 | 703 | 0.1+ | 0.2− |
| 2002 11 16 | 699 | 0.1+ | 0.1− | 2004 05 22 | 704 | 1.4+ | 0.1− | 2006 11 19 | 703 | 0.8+ | 0.3+ |
| 2002 11 16 | 699 | 0.2+ | 0.1+ | 2004 05 22 | 704 | 0.3− | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2002 11 16 | 699 | 0.3+ | 0.2+ | 2004 05 22 | 704 | 0.7+ | 0.0 | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2003 01 03 | 704 | (4.4+ | 3.5+) | 2006 08 13 | 644 | 0.2− | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.7− |
| 2003 01 03 | 704 | (4.4+ | 3.5+) | 2006 08 13 | 644 | 0.2− | 0.3+ | | | | |

**(142252)∗ 2002 RA$_{104}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.01137 | | (2000.0) | | | |
| $n$ | 0.23956579 | $\omega$ | 279.56992 | | +0.52705903 | +0.84588438 |
| $a$ | 2.5675536 | $\Omega$ | 22.81869 | | −0.67328476 | +0.47435006 |
| $e$ | 0.2466257 | $i$ | 12.17391 | | −0.51855222 | +0.24386808 |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 704 | 1.1− | 0.9− | 2002 11 01 | 704 | 0.5+ | 0.6− | 2006 09 19 | 704 | 1.4− | 0.0 |
| 1998 10 29 | 704 | 1.1+ | 0.2+ | 2002 11 06 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 704 | (1.8− | 0.3+) |
| 1998 10 29 | 704 | 0.2− | 1.8− | 2002 11 06 | 704 | 0.3+ | 1.0− | 2006 09 22 | 704 | 0.6+ | 0.2− |
| 1998 10 29 | 704 | (3.8− | 0.2+) | 2002 11 06 | 704 | 0.2− | 0.4+ | 2006 09 22 | 704 | 0.2+ | 0.5− |
| 2001 04 16 | 691 | 0.2+ | 0.4+ | 2002 11 06 | 704 | 0.7+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.1− |
| 2001 04 16 | 691 | 0.3+ | 0.3+ | 2002 11 06 | 704 | 1.0+ | 1.2+ | 2006 09 22 | 704 | 0.0 | 0.8− |
| 2001 04 16 | 691 | 0.5+ | 0.4+ | 2002 11 22 | 644 | 0.2− | 0.4+ | 2006 09 22 | 704 | 0.3+ | 1.0− |
| 2002 09 05 | 704 | 0.5− | 0.4− | 2002 11 22 | 644 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.3− | 0.0 | 2002 11 22 | 644 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.5+ | 0.7− |
| 2002 09 05 | 704 | 0.3− | 0.0 | 2005 03 03 | 703 | (2.1+ | 2.9−) | 2006 09 26 | 704 | 0.1− | 0.3− |
| 2002 09 07 | 704 | 0.3− | 0.2− | 2005 03 03 | 703 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.3− | 0.6− |
| 2002 09 07 | 704 | 1.5− | 1.0− | 2005 03 03 | 703 | (1.8+ | 1.1−) | 2006 09 26 | 704 | 0.3− | 0.4− |
| 2002 09 07 | 704 | 0.8− | 0.7+ | 2005 03 03 | 703 | 1.0− | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.6− | 0.9− | 2005 03 18 | 703 | 0.4− | 0.6− | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.1− | 0.3− | 2005 03 18 | 703 | (2.3+ | 1.5+) | 2006 09 28 | 704 | 0.2+ | 0.5+ |
| 2002 10 02 | 704 | 0.7− | 0.4− | 2005 03 18 | 703 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 2002 10 02 | 704 | 1.0− | 0.6− | 2005 03 18 | 703 | (0.6− | 2.7−) | 2006 09 28 | 704 | 0.1− | 0.4+ |
| 2002 10 02 | 704 | 0.9− | 0.3+ | 2005 04 04 | 703 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.4− |
| 2002 10 02 | 704 | 0.6− | 0.2− | 2005 04 04 | 703 | 1.0+ | 1.0− | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2005 04 04 | 703 | 1.1− | 0.9+ | 2006 09 30 | 703 | (1.4− | 1.9+) |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2005 04 04 | 703 | 1.2− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.7− |
| 2002 10 03 | 704 | 0.1− | 0.2− | 2005 05 09 | G96 | 0.2+ | 0.4− | 2006 09 30 | 704 | (1.7− | 1.3+) |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2005 05 09 | G96 | 0.4+ | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.2− |
| 2002 10 07 | 704 | 0.4− | 0.4+ | 2005 05 09 | G96 | 0.6+ | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.5− | 0.0 | 2005 05 09 | G96 | 0.4+ | 0.3− | 2006 09 30 | 704 | 0.2− | 0.6− |
| 2002 10 07 | 704 | 0.7− | 0.3+ | 2006 08 31 | 704 | 0.4+ | 0.1− | 2006 09 30 | 704 | 0.7− | 0.6− |
| 2002 10 07 | 704 | 0.2+ | 0.4+ | 2006 08 31 | 704 | 0.6+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | 0.5+ | 0.2+ | 2006 08 31 | 704 | 0.3− | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | 0.6+ | 0.3+ | 2006 08 31 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | 0.0 | 1.2− | 2006 09 12 | 703 | 0.8+ | 0.8+ | 2006 10 13 | G92 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 1.0+ | 0.7− | 2006 09 12 | 703 | 1.0+ | 1.2+ | 2006 10 13 | G92 | 1.4− | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.8− | 2006 09 12 | 703 | 1.2+ | 0.7+ | 2006 10 13 | G92 | 0.4− | 0.0 |
| 2002 10 09 | 704 | 0.5+ | 0.4− | 2006 09 12 | 703 | (1.4+ | 2.2+) | 2006 10 17 | 703 | 1.5+ | 1.3+ |
| 2002 10 10 | 644 | 0.0 | 0.8+ | 2006 09 16 | 704 | (1.8− | 0.6−) | 2006 10 17 | 703 | (1.3+ | 2.3+) |
| 2002 10 10 | 644 | 0.0 | 0.8+ | 2006 09 16 | 704 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.4− | 1.2+ |
| 2002 10 10 | 644 | 0.2+ | 1.0+ | 2006 09 16 | 704 | 1.1− | 0.2+ | 2006 10 17 | 703 | (1.7+ | 1.5+) |
| 2002 10 10 | 291 | 0.0 | 0.3+ | 2006 09 16 | 704 | (1.5+ | 1.5−) | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2002 10 10 | 291 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.6+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2002 10 10 | 291 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.6+ | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 10 11 | 704 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2002 10 11 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 10 30 | 644 | 0.1+ | 1.1+ | 2006 09 18 | 699 | 0.5+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 10 30 | 644 | 0.1+ | 1.2+ | 2006 09 18 | 699 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 10 30 | 644 | 0.1+ | 1.1+ | 2006 09 19 | 704 | 1.4− | 1.0+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 11 01 | 704 | 0.5− | 1.1+ | 2006 09 19 | 704 | 1.1− | 0.5+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2002 11 01 | 704 | 0.3− | 0.2− | 2006 09 19 | 704 | 0.6− | 1.4+ | 2006 11 21 | G96 | 1.4+ | 0.1+ |

**(142253)∗ 2002 RN$_{104}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.32054 | | (2000.0) | | +0.97830903 | −0.20569286 |
| $n$ | 0.24211269 | $\omega$ | 353.42419 | | +0.19340527 | +0.86454234 |
| $a$ | 2.5495157 | $\Omega$ | 18.50112 | | +0.07420135 | +0.45853789 |
| $e$ | 0.2174420 | $i$ | 4.43418 | | | |
| $P$ | 4.07 | $H$ | 15.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 699 | 0.0 | 0.5− | 2002 11 04 | 699 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.2− |
| 1998 10 19 | 699 | 0.4+ | 0.7+ | 2002 11 04 | 699 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.1+ |
| 1998 10 19 | 699 | 0.7+ | 0.6+ | 2002 11 04 | 699 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.5+ |
| 1998 11 11 | 704 | 0.6+ | 1.0− | 2002 11 04 | 699 | 0.4− | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.0 |
| 1998 11 11 | 704 | 0.9+ | 0.6+ | 2002 11 08 | 704 | 0.3+ | 0.2− | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 1998 11 11 | 704 | (5.2− | 0.1+) | 2002 11 08 | 704 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 0.0 | 2002 11 08 | 704 | 0.6+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.3− | 0.7− | 2002 11 08 | 704 | 0.8+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2002 09 05 | 704 | 0.1+ | 0.9− | 2002 11 12 | 704 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2002 09 05 | 704 | 0.3− | 0.7− | 2002 11 12 | 704 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.0 | 0.8− | 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2002 11 12 | 704 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.3− | 0.3− |
| 2002 09 07 | 704 | 0.2− | 0.1− | 2002 11 12 | 704 | 1.0+ | 0.4− | 2006 09 25 | 691 | 0.4− | 0.1− |
| 2002 09 07 | 704 | 0.0 | 0.3+ | 2002 11 23 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.1− | 0.1+ | 2002 11 23 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 704 | (1.7− | 0.2+) |
| 2002 10 02 | 704 | 0.1− | 1.0+ | 2002 11 23 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.5− | 0.6+ |
| 2002 10 02 | 704 | 0.4− | 0.9+ | 2002 12 31 | 704 | 0.1− | 1.0− | 2006 09 27 | 704 | (2.1− | 0.1+) |
| 2002 10 02 | 704 | 0.7− | 1.1+ | 2002 12 31 | 704 | 0.2+ | 0.8− | 2006 09 29 | 704 | 0.4+ | 0.2− |
| 2002 10 02 | 704 | 0.2− | 0.9+ | 2002 12 31 | 704 | (0.8+ | 2.5−) | 2006 09 29 | 704 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.3+ | 0.2− | 2002 12 31 | 704 | 0.3+ | 0.3− | 2006 09 29 | 704 | 1.0+ | 0.5− |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2002 12 31 | 704 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.5− | 2003 01 05 | 704 | 0.7+ | 0.7− | 2006 09 29 | 704 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2003 01 05 | 704 | 0.4+ | 0.1− | 2006 09 29 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.4− | 2003 01 05 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.1+ |
| 2002 10 07 | 704 | 0.1+ | 0.4+ | 2003 01 05 | 704 | 0.7+ | 0.0 | 2006 09 29 | 691 | 0.1+ | 0.2− |
| 2002 10 07 | 704 | 0.1+ | 0.4+ | 2005 05 11 | 644 | 0.0 | 0.6+ | 2006 09 30 | 608 | 0.2+ | 1.3− |
| 2002 10 07 | 704 | 0.6+ | 0.0 | 2005 05 11 | 644 | 0.1− | 0.8+ | 2006 09 30 | 608 | 0.3− | 1.3− |
| 2002 10 07 | 704 | (0.8− | 2.0+) | 2005 05 11 | 644 | 0.4+ | 0.7+ | 2006 09 30 | 608 | 0.2− | 1.2− |
| 2002 10 09 | 704 | 0.4− | 0.8+ | 2006 08 19 | 699 | (1.8− | 1.1−) | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.3− | 0.4+ | 2006 08 19 | 699 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.3+ | 0.5− | 2006 08 19 | 699 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.5− | 1.2+ | 2006 08 19 | 699 | 0.6− | 0.1− | 2006 10 13 | A50 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 08 21 | 704 | 0.6− | 0.5− | 2006 10 13 | A50 | 0.3+ | 0.5+ |
| 2002 10 11 | 704 | 0.5− | 0.3+ | 2006 08 21 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.2− | 0.1+ | 2006 08 21 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.4− | 2006 08 21 | 704 | 0.6+ | 1.0+ | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 08 21 | 704 | 1.1+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.6− | 0.1+ | 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.4− |
| 2002 10 13 | 291 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2002 10 13 | 291 | 0.5− | 0.2− | 2006 08 24 | 644 | 0.6− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2002 10 13 | 291 | 0.6− | 0.1− | 2006 08 25 | 704 | 0.6+ | 0.3+ | 2006 10 23 | 704 | 0.0 | 0.2− |
| 2002 10 16 | 644 | 0.3− | 0.1+ | 2006 08 25 | 704 | 1.3+ | 0.0 | 2006 10 23 | 704 | 0.2− | 0.3− |
| 2002 10 16 | 644 | 0.4− | 0.0 | 2006 08 25 | 704 | 1.2+ | 0.3+ | 2006 10 23 | 704 | 0.1+ | 0.3− |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 704 | 0.0 | 0.5− |
| 2002 10 26 | 608 | 0.4− | 0.6− | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 23 | 704 | 0.1+ | 0.9− |
| 2002 10 26 | 608 | 0.2− | 0.4− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2002 10 26 | 608 | 0.3− | 0.6− | 2006 09 15 | 704 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 699 | 0.3+ | 0.7+ | 2006 09 15 | 704 | 0.9+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2002 10 31 | 699 | 0.2+ | 0.3+ | 2006 09 15 | 704 | 0.1− | 0.1+ | 2006 10 28 | 704 | 1.1− | 0.2− |
| 2002 10 31 | 644 | 0.5− | 0.1+ | 2006 09 17 | 704 | 1.0+ | 0.6− | 2006 10 28 | 704 | 0.0 | 0.2+ |
| 2002 10 31 | 699 | 0.3+ | 0.5+ | 2006 09 17 | 704 | 1.2+ | 0.2− | 2006 10 28 | 704 | 0.4− | 0.8− |
| 2002 10 31 | 644 | 0.5− | 0.2+ | 2006 09 17 | 704 | 1.1+ | 0.0 | 2006 10 28 | 704 | 0.6+ | 0.3+ |
| 2002 10 31 | 699 | 0.5+ | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.4− | 0.1+ |
| 2002 10 31 | 644 | 0.5− | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 11 01 | 608 | 0.1+ | 1.4+ | 2006 09 18 | 699 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2002 11 01 | 608 | 0.1+ | 1.2+ | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 11 01 | 608 | 0.0 | 1.3+ | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 11 18 | 291 | 0.0 | 0.1+ |
| 2002 11 03 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 11 18 | 291 | 0.2+ | 0.2+ |
| 2002 11 03 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 291 | 0.1+ | 0.2+ |
| 2002 11 03 | 704 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.6− | | | | |

**(142254)∗ 2002 RQ$_{105}$ = 2000 GQ$_{156}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37873)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.68909 | | (2000.0) | | +0.70205160 | −0.71212394 |
| $n$ | 0.23417033 | $\omega$ | 227.05611 | | +0.66974209 | +0.65943185 |
| $a$ | 2.6068426 | $\Omega$ | 178.34893 | | +0.24201050 | +0.24089237 |
| $e$ | 0.2070745 | $i$ | 3.47483 | | | |
| $P$ | 4.21 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.2+ | 0.9− | 2002 11 30 | 608 | 0.3− | 1.1− | 2006 09 26 | 704 | 0.6− | 0.6− |
| 1998 12 15 | 704 | 0.1+ | 0.1− | 2002 11 30 | 608 | 0.4− | 0.9− | 2006 09 26 | 704 | 0.8− | 0.4+ |
| 1998 12 15 | 704 | 0.1− | 0.5+ | 2002 11 30 | 608 | 0.2− | 1.0− | 2006 09 27 | 704 | 0.2+ | 0.2+ |
| 1998 12 15 | 704 | 1.2+ | 0.8+ | 2002 12 01 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.0 | 0.4− |
| 1998 12 15 | 704 | (3.4− | 0.5−) | 2002 12 01 | 704 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.9+ | 0.8+ |
| 1998 12 22 | 704 | 0.4+ | 0.5− | 2002 12 01 | 704 | 0.6− | 0.5− | 2006 09 27 | 704 | 0.2− | 0.2− |
| 1998 12 22 | 704 | 0.4+ | 0.6− | 2002 12 01 | 704 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.3− | 0.1+ |
| 1998 12 22 | 704 | (0.1+ | 2.8−) | 2002 12 01 | 704 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 1998 12 22 | 704 | 0.3− | 0.5− | 2002 12 07 | 704 | 0.2− | 0.9+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2000 04 06 | 704 | (2.2+ | 0.6−) | 2002 12 07 | 704 | 0.3− | 0.9+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2000 04 06 | 704 | 0.6+ | 0.1+ | 2002 12 07 | 704 | 0.5− | 0.8+ | 2006 09 28 | 704 | 0.2− | 0.5+ |
| 2000 04 06 | 704 | 0.7− | 1.9+ | 2002 12 07 | 704 | 0.5− | 0.9+ | 2006 09 28 | 704 | 1.0− | 1.2− |
| 2000 04 11 | 691 | 0.3+ | 0.1+ | 2002 12 07 | 704 | 0.7− | 1.3+ | 2006 09 28 | 704 | 0.5+ | 0.4+ |
| 2000 04 11 | 691 | 0.1− | 0.2+ | 2003 01 07 | 704 | (0.9− | 2.9+) | 2006 09 28 | 704 | 0.4− | 0.5+ |
| 2000 04 11 | 691 | 0.1+ | 0.3+ | 2003 01 07 | 704 | (0.1− | 2.6+) | 2006 09 28 | 704 | 0.1+ | 0.3+ |
| 2002 09 05 | 704 | 0.9− | 0.2+ | 2003 01 07 | 704 | (0.2− | 2.9+) | 2006 09 28 | 704 | 0.9+ | 0.1− |
| 2002 09 05 | 704 | 0.3− | 0.8+ | 2003 01 07 | 704 | (0.6+ | 2.1+) | 2006 09 28 | 704 | 0.3+ | 1.1+ |
| 2002 09 05 | 704 | 1.0− | 1.3+ | 2003 01 27 | 644 | 0.6+ | 0.5+ | 2006 09 28 | 704 | 1.3+ | 0.5+ |
| 2002 09 07 | 704 | (0.8− | 1.6−) | 2003 01 27 | 644 | 0.6+ | 0.1− | 2006 09 28 | 704 | 0.1− | 0.7+ |
| 2002 09 07 | 704 | 0.5− | 0.1− | 2003 01 27 | 644 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.2− | 0.8+ | 2004 03 18 | 704 | 0.3+ | 1.2+ | 2006 09 28 | 704 | 1.0+ | 0.1− |
| 2002 09 07 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.8+ | 1.0+ | 2006 09 28 | 704 | 0.0 | 0.3− |
| 2002 09 07 | 704 | 0.4− | 0.6+ | 2004 03 18 | 704 | 0.7+ | 0.3− | 2006 09 28 | 704 | 0.1+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 608 | 0.4+ | 0.2− | 2004 03 18 | 704 | 1.0+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.9− | | |
| 2002 09 16 | 608 | 0.8+ | 0.6+ | 2004 03 25 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 0.9+ | 0.0 | | |
| 2002 09 16 | 608 | 0.4+ | 0.5+ | 2004 03 25 | 704 | 0.6+ | 0.8+ | 2006 10 17 | 703 | 0.5− | 0.1+ | | |
| 2002 10 02 | 704 | 0.5+ | 1.0+ | 2004 03 25 | 704 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.1− | | |
| 2002 10 02 | 704 | 0.4− | 0.7+ | 2004 03 26 | 699 | (0.3− | 2.3−) | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 02 | 704 | (0.9+ | 2.0−) | 2004 03 26 | 699 | (1.6+ | 1.7−) | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 2002 10 02 | 704 | 0.4+ | 0.9− | 2004 03 27 | 704 | 0.8+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.1− | | |
| 2002 10 07 | 704 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 10 07 | 704 | 0.5+ | 0.3− | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 10 07 | 704 | 0.3+ | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 10 07 | 704 | 0.2+ | 0.1− | 2004 03 31 | 691 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2002 10 07 | 704 | 0.1+ | 0.7− | 2004 03 31 | 691 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2002 10 09 | 704 | 0.3− | 0.3+ | 2004 03 31 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2002 10 09 | 704 | 0.6− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.1+ | | |
| 2002 10 09 | 704 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1− | | |
| 2002 10 09 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.1− | | |
| 2002 10 09 | 704 | 0.3− | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.2− | | |
| 2002 10 11 | 704 | 0.2− | 1.3+ | 2006 09 01 | 704 | 1.0− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2002 10 11 | 704 | 0.4+ | 0.8+ | 2006 09 01 | 704 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.1− | | |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 09 12 | 703 | (0.1+ | 2.0+) | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 10 11 | 704 | 0.1+ | 0.2+ | 2006 09 12 | 703 | (0.7+ | 1.8+) | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 09 12 | 703 | (1.5+ | 1.6+) | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2002 10 11 | 704 | 0.3− | 0.5+ | 2006 09 12 | 703 | (0.4+ | 2.3+) | 2006 10 22 | 644 | 0.3− | 0.2− | | |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 09 16 | 691 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.0 | | |
| 2002 10 11 | 704 | 0.1− | 0.1− | 2006 09 16 | 691 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 10 11 | 704 | 0.3− | 0.7+ | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2002 10 28 | 608 | 0.5− | 0.0 | 2006 09 17 | 704 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1− | | |
| 2002 10 28 | 608 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.0 | 1.0+ | 2006 10 23 | 644 | 0.3− | 0.1− | | |
| 2002 10 28 | 608 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.3− | | |
| 2002 11 07 | 704 | 0.0 | 0.3+ | 2006 09 17 | 704 | 1.0+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2002 11 07 | 704 | 0.2− | 0.3− | 2006 09 17 | 704 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.1− | | |
| 2002 11 07 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2002 11 07 | 704 | 0.2+ | 0.9− | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2002 11 07 | 704 | 0.1− | 0.8− | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 1.1− | 0.8+ | | |
| 2002 11 11 | 704 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.7− | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.4− | | |
| 2002 11 11 | 704 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.3− | | |
| 2002 11 11 | 704 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.2+ | 0.0 | | |
| 2002 11 11 | 704 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.7+ | 0.5− | | |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 11 27 | 703 | 0.7+ | 0.0 | | |
| 2002 11 22 | 644 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.9+ | 0.1+ | 2006 11 27 | 703 | 0.7+ | 1.4− | | |
| 2002 11 22 | 644 | 0.0 | 0.3− | 2006 09 26 | 704 | 0.8+ | 0.4+ | | | | | | |
| 2002 11 22 | 644 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.9− | 0.2− | | | | | | |

**(142255)∗ 2002 RQ$_{106}$ = 2000 EB$_{75}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37876)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.68697 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23179837 | $\omega$ | 355.87393 | | +0.93707484 | −0.34799982 |
| $a$ | 2.6245960 | $\Omega$ | 24.54890 | | +0.32222054 | +0.83112553 |
| $e$ | 0.2270108 | $i$ | 3.87137 | | +0.13440486 | +0.43373550 |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 691 | 0.4+ | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 704 | 0.2− | 0.1+ | | |
| 2000 03 11 | 691 | 0.4+ | 0.2− | 2002 12 11 | 644 | 0.2− | 0.5− | 2006 09 28 | 704 | 0.1− | 0.4+ | | |
| 2000 03 11 | 691 | 0.3+ | 0.0 | 2003 01 20 | 644 | 0.2− | 0.3+ | 2006 09 28 | 704 | 0.5+ | 0.1+ | | |
| 2000 03 12 | 691 | 0.8− | 0.1− | 2003 01 20 | 644 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.4+ | | |
| 2000 03 12 | 691 | 0.4− | 0.1− | 2003 01 20 | 644 | 0.1+ | 0.3+ | 2006 09 29 | G92 | 0.5− | 0.9+ | | |
| 2000 03 12 | 691 | 0.3− | 0.2− | 2004 03 15 | 691 | 0.1+ | 0.7+ | 2006 09 29 | G92 | 0.3− | 0.6+ | | |
| 2002 09 05 | 704 | 1.0− | 0.4+ | 2004 03 15 | 691 | 0.3+ | 0.5+ | 2006 09 29 | G92 | 0.2+ | 0.2+ | | |
| 2002 09 05 | 704 | (0.7− | 1.8−) | 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 291 | 0.4− | 0.0 | | |
| 2002 09 05 | 704 | 0.0 | 1.0− | 2004 03 30 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 291 | 0.3− | 0.1− | | |
| 2002 09 07 | 704 | 0.2+ | 0.3− | 2004 03 30 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 291 | 0.4− | 0.0 | | |
| 2002 09 07 | 704 | 0.2+ | 0.5− | 2004 03 30 | 691 | 0.4+ | 0.4+ | 2006 10 01 | G92 | 0.4− | 0.6+ | | |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2004 03 31 | 691 | 0.1− | 0.9+ | 2006 10 01 | G92 | 0.6− | 0.3− | | |
| 2002 09 07 | 704 | 0.2+ | 0.3− | 2004 03 31 | 691 | 0.7+ | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.2− | | |
| 2002 10 02 | 704 | 0.6+ | 0.3− | 2004 03 31 | 691 | 0.5+ | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.2+ | | |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 10 01 | G92 | (2.0− | 0.7+) | | |
| 2002 10 02 | 704 | 0.6+ | 0.4+ | 2006 08 24 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 691 | (1.8− | 2.6+) | | |
| 2002 10 03 | 704 | 0.4+ | 0.6− | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.5− | 0.2+ | | |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2006 09 12 | 703 | (0.9+ | 1.5+) | 2006 10 01 | 704 | 1.2− | 0.0 | | |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.9+ | 1.0+ | 2006 10 01 | 704 | 0.7− | 0.9+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.4− | 2006 09 12 | 703 | 0.1− | 1.2+ | 2006 10 01 | 704 | 0.5− | 0.0 | | |
| 2002 10 03 | 704 | 0.2+ | 0.5− | 2006 09 12 | 703 | (0.1− | 2.3+) | 2006 10 01 | 704 | 0.6− | 0.6+ | | |
| 2002 10 10 | 704 | 0.6− | 0.4− | 2006 09 13 | 644 | 0.0 | 0.2+ | 2006 10 03 | G92 | 0.7− | 0.2+ | | |
| 2002 10 10 | 704 | 1.1− | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 03 | G92 | 0.6− | 0.1+ | | |
| 2002 10 10 | 704 | 0.5− | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.2+ | 2006 10 03 | G92 | 1.1− | 0.3+ | | |
| 2002 10 10 | 704 | 0.4+ | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.3− | 0.7− | | |
| 2002 10 11 | 704 | 0.9− | 0.5− | 2006 09 16 | 704 | 1.0+ | 1.4− | 2006 10 11 | 644 | 0.2− | 0.1− | | |
| 2002 10 11 | 704 | 0.4+ | 0.9+ | 2006 09 16 | 704 | 0.1+ | 1.1− | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 09 16 | 704 | 0.2+ | 1.5− | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 11 08 | 704 | 0.1− | 0.7− | 2006 09 16 | 704 | 0.1− | 1.2− | 2006 10 16 | 703 | 0.6− | 0.6+ | | |
| 2002 11 08 | 704 | 0.5+ | 0.7− | 2006 09 16 | 704 | 0.6+ | 1.4− | 2006 10 16 | 703 | 0.0 | 0.3+ | | |
| 2002 11 08 | 704 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.5+ | | |
| 2002 11 08 | 704 | 0.6+ | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.2+ | | |
| 2002 11 12 | 704 | 1.4+ | 0.9− | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.6− | | |
| 2002 11 12 | 704 | 1.4+ | 0.2− | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.8− | | |
| 2002 11 12 | 704 | 0.8+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.4− | | |
| 2002 11 12 | 704 | 1.0+ | 0.7− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.3− | 0.6− | | |
| 2002 11 12 | 704 | 1.2+ | 1.4− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.8− | 0.3− | | |
| 2002 11 14 | 704 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.0 | 1.0+ | 2006 10 17 | 703 | 0.7− | 0.7+ | | |
| 2002 11 14 | 704 | 0.5− | 0.6+ | 2006 09 20 | 704 | 0.0 | 0.9+ | 2006 10 17 | 703 | 0.3− | 0.4+ | | |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.4+ | 0.2− | | |
| 2002 11 14 | 704 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2002 11 14 | 704 | 0.5− | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2002 11 24 | 644 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.2− | | |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2002 11 24 | 644 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 23 | 704 | 0.9+ | 0.4+ | | |
| 2002 11 27 | 699 | 0.6− | 0.0 | 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 10 23 | 704 | 0.7+ | 0.0 | | |
| 2002 11 27 | 699 | 1.5− | 0.4− | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 23 | 704 | 0.3− | 1.1+ | | |
| 2002 11 27 | 699 | (2.1− | 0.3+) | 2006 09 23 | 691 | 0.4+ | 0.1− | 2006 10 23 | 704 | 0.2− | 1.1+ | | |
| 2002 11 27 | 699 | (1.1− | 2.1+) | 2006 09 24 | 608 | (2.4− | 2.6+) | 2006 10 23 | 704 | (0.5+ | 2.3+) | | |
| 2002 12 02 | 704 | 0.2− | 0.4+ | 2006 09 24 | 608 | (2.4− | 2.3+) | 2006 10 27 | G96 | 0.1− | 0.4− | | |
| 2002 12 02 | 704 | 0.5− | 0.3+ | 2006 09 24 | 608 | 1.4− | 0.8+ | 2006 10 27 | G96 | 0.2− | 0.6− | | |
| 2002 12 02 | 704 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.8+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.5− | | |
| 2002 12 06 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.6+ | 1.3+ | 2006 11 18 | 704 | 0.4+ | 0.2− | | |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.7+ | 1.1+ | 2006 11 18 | 704 | 0.9+ | 0.5− | | |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.3+ | | |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2002 12 06 | 704 | 0.6− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.5+ | | |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.7+ | | |
| 2002 12 11 | 704 | 0.1− | 0.4− | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.2− | | |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2006 09 27 | 704 | 0.0 | 0.6+ | 2006 11 21 | 704 | 0.3− | 0.2+ | | |
| 2002 12 11 | 644 | 0.1− | 0.7− | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 1.2+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.6+ | | | | | | |
| 2002 12 11 | 644 | 0.1+ | 0.5− | 2006 09 28 | 704 | 0.0 | 0.4+ | | | | | | |

**(142256)∗ 2002 RS$_{106}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.91572 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21773558 | $\omega$ | 183.34527 | | +0.83063737 | −0.53394733 |
| $a$ | 2.7364223 | $\Omega$ | 210.64080 | | +0.51778984 | +0.84501381 |
| $e$ | 0.2966359 | $i$ | 18.05177 | | +0.20478094 | +0.02918745 |
| $P$ | 4.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 20 | 691 | 0.1− | 0.6+ | 2002 10 11 | 704 | 0.9+ | 0.1+ | 2003 01 27 | 699 | 0.2+ | 0.2− |
| 1996 05 20 | 691 | 0.3+ | 0.2+ | 2002 10 11 | 704 | 0.5+ | 0.2+ | 2003 01 27 | 699 | 0.1− | 0.6− |
| 1996 05 20 | 691 | 0.2+ | 0.0 | 2002 10 11 | 704 | 0.7+ | 0.2+ | 2003 01 27 | 699 | 0.6− | 0.4− |
| 1996 06 08 | 691 | 0.5− | 0.1− | 2002 10 11 | 704 | 0.6+ | 0.0 | 2003 01 27 | 699 | 0.7− | 0.2− |
| 1996 06 08 | 691 | 0.1− | 0.2+ | 2002 10 22 | 608 | 0.3+ | 0.9+ | 2003 01 28 | 704 | 0.2+ | 0.8+ |
| 1996 06 08 | 691 | (1.9+ | 2.4+) | 2002 10 22 | 608 | 0.4+ | 1.1+ | 2003 01 28 | 704 | 0.3+ | 0.3+ |
| 2002 09 05 | 704 | 0.0 | 0.4− | 2002 10 22 | 608 | 0.5+ | 0.7+ | 2003 01 28 | 704 | 0.3+ | 0.7+ |
| 2002 09 05 | 704 | 0.4+ | 0.4− | 2002 11 01 | 704 | 0.2+ | 0.1− | 2003 01 28 | 704 | 0.7+ | 1.2+ |
| 2002 09 05 | 704 | 1.1− | 1.1− | 2002 11 01 | 704 | 0.1+ | 0.5+ | 2003 01 28 | 704 | 0.5+ | 1.2+ |
| 2002 09 05 | 704 | 0.1+ | 0.2− | 2002 11 01 | 704 | 0.4+ | 0.2+ | 2003 01 30 | 704 | 0.0 | 1.2+ |
| 2002 09 05 | 704 | 0.2+ | 0.3− | 2002 11 01 | 704 | 0.2+ | 0.4+ | 2003 01 30 | 704 | 0.6− | 0.5+ |
| 2002 09 07 | 704 | 0.3− | 0.6+ | 2002 11 05 | 704 | (0.4+ | 2.1−) | 2003 01 30 | 704 | 0.0 | 0.2+ |
| 2002 09 07 | 704 | 0.5− | 0.0 | 2002 11 05 | 704 | (0.6+ | 1.9−) | 2003 01 30 | 704 | 0.6− | 0.2+ |
| 2002 09 07 | 704 | 0.2− | 0.6+ | 2002 11 05 | 704 | (0.5+ | 2.2−) | 2004 03 14 | 644 | 0.2+ | 0.1+ |
| 2002 09 07 | 704 | 0.6− | 0.3− | 2002 11 05 | 704 | (0.2+ | 2.2−) | 2004 03 14 | 644 | 0.2+ | 0.2+ |
| 2002 09 17 | 699 | 0.2+ | 0.2− | 2002 11 07 | 699 | 0.8+ | 0.3− | 2004 03 14 | 644 | 0.2+ | 0.1+ |
| 2002 09 17 | 699 | 0.8− | 0.6+ | 2002 11 07 | 699 | 0.8+ | 0.3− | 2004 03 14 | 644 | 0.1+ | 0.1+ |
| 2002 09 17 | 699 | 0.2+ | 0.6+ | 2002 11 07 | 699 | 0.9+ | 0.3+ | 2004 03 14 | 644 | 0.1+ | 0.4+ |
| 2002 09 17 | 699 | 1.4+ | 0.7+ | 2002 11 07 | 699 | 0.6+ | 0.2+ | 2004 03 14 | 644 | 0.1+ | 0.1− |
| 2002 09 23 | 608 | (2.8+ | 0.7−) | 2002 11 12 | 644 | 0.1− | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.6+ |
| 2002 09 23 | 608 | (2.6+ | 0.8−) | 2002 11 12 | 644 | 0.1− | 0.1+ | 2005 05 08 | 691 | 0.1− | 0.5+ |
| 2002 09 23 | 608 | (2.7+ | 1.1−) | 2002 11 12 | 644 | 0.0 | 0.3+ | 2005 05 08 | 691 | 0.1+ | 0.5+ |
| 2002 10 02 | 704 | 0.0 | 0.4− | 2002 11 16 | 644 | 0.2− | 0.1+ | 2005 05 10 | 691 | 0.3+ | 0.5+ |
| 2002 10 02 | 704 | 0.3+ | 0.5− | 2002 11 16 | 644 | 0.2− | 0.1+ | 2005 05 10 | 691 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | 0.1+ | 0.2− | 2002 11 16 | 644 | 0.3− | 0.2+ | 2005 05 10 | 691 | 0.0 | 0.4+ |
| 2002 10 02 | 704 | 0.1− | 0.3− | 2002 11 30 | 704 | 0.1− | 0.1+ | 2005 05 14 | 691 | 0.4− | 0.7+ |
| 2002 10 02 | 704 | 0.0 | 0.4− | 2002 11 30 | 704 | 0.1− | 0.3+ | 2005 05 14 | 691 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2002 11 30 | 704 | 0.1+ | 0.3+ | 2005 05 14 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.6− | 0.6+ | 2002 11 30 | 704 | 0.1+ | 0.5+ | 2006 07 19 | 012 | 0.4− | 0.4− |
| 2002 10 03 | 704 | 0.6− | 0.8+ | 2002 12 08 | 644 | 0.2− | 0.4+ | 2006 07 19 | 012 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 1.0− | 1.0+ | 2002 12 08 | 644 | 0.3− | 0.5+ | 2006 07 19 | 012 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2002 12 08 | 644 | 0.2− | 0.4+ | 2006 07 19 | 012 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.6+ | 2002 12 15 | 608 | 0.1− | 0.6− | 2006 07 19 | 012 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 0.0 | 0.5+ | 2002 12 15 | 608 | 0.1− | 0.9− | 2006 11 10 | 704 | 0.3+ | 1.0+ |
| 2002 10 09 | 704 | 0.2− | 0.5+ | 2002 12 15 | 608 | 0.1+ | 0.5− | 2006 11 10 | 704 | 0.3+ | 1.0+ |
| 2002 10 09 | 704 | 0.5− | 0.6+ | 2003 01 17 | 644 | 0.6− | 0.2+ | 2006 11 10 | 704 | 0.5+ | 0.7+ |
| 2002 10 09 | 704 | 0.2− | 0.6+ | 2003 01 17 | 644 | 0.1+ | 0.8+ | 2006 11 10 | 704 | 0.5− | 1.4+ |
| 2002 10 11 | 704 | 0.4+ | 0.2+ | 2003 01 17 | 644 | 0.4− | 0.5+ | | | | |

**(142257)∗ 2002 RT$_{106}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.22963 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21327674 | $\omega$ | 14.28514 | | +0.52197587 | −0.84330342 | |
| $a$ | 2.7744297 | $\Omega$ | 44.44528 | | +0.76354122 | +0.39508311 | |
| $e$ | 0.2342324 | $i$ | 10.53163 | | +0.38019205 | +0.36434692 | |
| $P$ | 4.62 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 11 | 691 | 0.1− | 0.2+ | 2002 11 08 | 704 | 0.1+ | 0.3+ | 2003 01 25 | 699 | 0.3− | 0.2− |
| 2000 05 11 | 691 | 0.4+ | 0.4+ | 2002 11 08 | 704 | 1.3+ | 0.2− | 2003 01 25 | 699 | 0.6− | 0.4− |
| 2000 05 11 | 691 | 0.1+ | 0.4+ | 2002 11 08 | 704 | 0.1+ | 0.4− | 2003 01 25 | 699 | 0.6− | 0.4+ |
| 2002 09 05 | 704 | 1.1− | 0.4− | 2002 11 08 | 704 | 0.2+ | 0.7+ | 2003 01 25 | 699 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.6− | 0.7+ | 2002 11 12 | 704 | 0.2+ | 0.9− | 2003 01 28 | 644 | 0.5− | 0.6− |
| 2002 09 05 | 704 | 0.5− | 0.8+ | 2002 11 12 | 704 | 0.1+ | 0.4− | 2003 01 28 | 644 | 0.0 | 0.5− |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2002 11 12 | 704 | 0.2+ | 0.8− | 2003 01 28 | 644 | 0.0 | 0.7− |
| 2002 09 05 | 704 | 0.7− | 0.6+ | 2002 11 12 | 704 | 0.1− | 1.0− | 2003 01 31 | 704 | 0.5− | 0.1+ |
| 2002 09 07 | 704 | 0.3− | 0.3+ | 2002 11 12 | 704 | 0.2− | 0.7− | 2003 01 31 | 704 | 0.5+ | 0.2+ |
| 2002 09 07 | 704 | 0.5− | 0.5+ | 2002 11 13 | 704 | 0.3+ | 0.1− | 2003 01 31 | 704 | 0.8− | 0.9+ |
| 2002 09 07 | 704 | 0.6− | 0.5+ | 2002 11 13 | 704 | 0.7− | 1.2− | 2003 02 01 | 644 | 0.2− | 0.4+ |
| 2002 09 07 | 704 | 0.7− | 0.3+ | 2002 11 13 | 704 | 0.9+ | 0.4− | 2003 02 01 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.1+ | 0.1− | 2002 11 13 | 704 | 0.0 | 0.7− | 2003 02 01 | 644 | 0.2− | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.1− | 2002 11 13 | 704 | 0.1+ | 0.2− | 2003 02 04 | 704 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.4+ | 0.4+ | 2002 11 13 | 704 | 0.3+ | 0.1− | 2003 02 04 | 704 | 0.4+ | 0.1− |
| 2002 10 02 | 704 | 0.2+ | 0.1+ | 2002 11 13 | 704 | 0.0 | 0.2+ | 2003 02 04 | 704 | 0.5+ | 0.9+ |
| 2002 10 03 | 704 | (2.5− | 2.8+) | 2002 11 13 | 704 | 0.6+ | 0.3− | 2003 02 04 | 704 | 0.3+ | 0.5+ |
| 2002 10 03 | 704 | (2.3− | 1.6+) | 2002 11 13 | 704 | 0.0 | 0.0 | 2003 02 19 | 644 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 1.0− | 1.3+ | 2002 11 14 | 704 | 0.5+ | 0.7− | 2003 02 19 | 644 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | (2.7− | 2.2+) | 2002 11 14 | 704 | 0.7+ | 0.6− | 2003 02 19 | 644 | 0.0 | 0.0 |
| 2002 10 07 | 699 | 0.2− | 0.3− | 2002 11 14 | 704 | 0.6+ | 0.9− | 2003 02 19 | 644 | 0.1− | 0.0 |
| 2002 10 07 | 699 | 1.0− | 0.8+ | 2002 11 14 | 704 | 0.6+ | 1.1− | 2003 02 19 | 644 | 0.1− | 0.1− |
| 2002 10 07 | 699 | 1.0− | 0.7+ | 2002 11 14 | 704 | 0.2+ | 0.6− | 2003 02 19 | 644 | 0.0 | 0.2+ |
| 2002 10 07 | 699 | 0.5− | 1.6+ | 2002 11 24 | 644 | 0.3− | 0.0 | 2004 03 12 | 644 | 0.5+ | 0.8+ |
| 2002 10 07 | 704 | 0.0 | 0.5+ | 2002 11 24 | 644 | 0.3− | 0.2+ | 2004 03 12 | 644 | 0.4+ | 0.7+ |
| 2002 10 07 | 704 | 0.8− | 0.3+ | 2002 11 24 | 644 | 0.0 | 0.2+ | 2004 03 12 | 644 | 0.7+ | 0.4+ |
| 2002 10 07 | 704 | 0.2+ | 0.7+ | 2002 11 27 | 699 | 0.3− | 0.2+ | 2004 03 14 | 691 | 0.3+ | 0.4+ |
| 2002 10 10 | 704 | 0.4− | 0.5+ | 2002 11 27 | 699 | 0.2− | 0.1+ | 2004 03 14 | 691 | 0.2+ | 0.4+ |
| 2002 10 10 | 704 | 0.0 | 0.3+ | 2002 11 27 | 699 | 0.8− | 0.1− | 2004 03 14 | 691 | 0.2+ | 0.4+ |
| 2002 10 10 | 704 | 0.0 | 0.5+ | 2002 11 27 | 699 | 0.3− | 0.6+ | 2004 03 23 | 704 | 0.1− | 0.6+ |
| 2002 10 10 | 704 | 0.1+ | 0.8+ | 2002 12 02 | 704 | 0.2− | 1.6+ | 2004 03 23 | 704 | 0.6− | 0.9+ |
| 2002 10 10 | 704 | 0.1+ | 1.0+ | 2002 12 02 | 704 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2002 12 02 | 704 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.6+ | 1.0+ |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2002 12 02 | 704 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.6+ | 1.2− |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2002 12 05 | 699 | 0.1− | 0.0 | 2004 04 25 | 699 | 0.1+ | 1.0+ |
| 2002 10 11 | 704 | 0.2+ | 0.3+ | 2002 12 05 | 699 | 0.2− | 0.4+ | 2004 04 25 | 699 | 0.7− | 0.8− |
| 2002 10 11 | 704 | 0.5+ | 0.4+ | 2002 12 05 | 699 | 0.1+ | 0.4+ | 2004 04 25 | 699 | 0.4+ | 0.0 |
| 2002 10 16 | 699 | 0.1+ | 0.0 | 2002 12 05 | 699 | 0.2+ | 0.3+ | 2004 04 25 | 699 | 0.2+ | 0.0 |
| 2002 10 16 | 699 | 0.1+ | 0.6+ | 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 08 14 | E12 | 0.0 | 0.1− |
| 2002 10 16 | 699 | 0.1+ | 0.6+ | 2002 12 06 | 704 | 0.1+ | 0.4− | 2006 08 14 | E12 | 0.2+ | 0.0 |
| 2002 10 16 | 699 | 0.2+ | 0.7+ | 2002 12 06 | 704 | 0.0 | 0.0 | 2006 08 14 | E12 | 0.4− | 0.1− |
| 2002 10 30 | 608 | 0.1− | 0.5− | 2002 12 06 | 704 | 0.2− | 0.6− | 2006 08 14 | E12 | 0.3+ | 0.4+ |
| 2002 10 30 | 608 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.2− | 0.3− | 2006 08 21 | 644 | 0.2+ | 0.9+ |
| 2002 10 30 | 608 | 0.2− | 0.2− | 2002 12 11 | 704 | 0.3− | 0.2− | 2006 08 21 | 644 | 0.0 | 0.3+ |
| 2002 10 31 | 699 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.1− | 0.2− | 2006 08 21 | 644 | 0.2+ | 0.6+ |
| 2002 10 31 | 699 | 0.1− | 0.2− | 2002 12 11 | 704 | 0.0 | 0.2+ | 2006 08 25 | E12 | 0.2+ | 0.2− |
| 2002 10 31 | 699 | 0.1+ | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.1− | 2006 08 25 | E12 | 0.4− | 0.6+ |
| 2002 10 31 | 699 | 0.4+ | 0.0 | 2002 12 11 | 644 | 0.1+ | 0.2+ | 2006 08 25 | E12 | 0.5− | 0.0 |
| 2002 11 01 | 644 | 0.3+ | 0.6− | 2002 12 11 | 704 | 0.2− | 0.0 | 2006 08 25 | E12 | 0.0 | 0.3− |
| 2002 11 01 | 644 | 0.3+ | 0.5− | 2002 12 11 | 644 | 0.3+ | 0.3+ | 2006 09 09 | 644 | 0.4+ | 0.3+ |
| 2002 11 01 | 644 | 0.2+ | 0.5− | 2002 12 11 | 644 | 0.1+ | 0.1− | 2006 09 09 | 644 | 0.0 | 0.4+ |
| 2002 11 05 | 704 | 0.1+ | 0.3− | 2002 12 14 | 704 | 0.2− | 0.2+ | 2006 09 09 | 644 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | (3.3+ | 0.7+) | 2002 12 14 | 704 | 0.0 | 0.1− | 2006 09 15 | 644 | 0.7+ | 0.2+ |
| 2002 11 05 | 704 | 0.3+ | 0.1− | 2002 12 14 | 704 | 0.6− | 0.0 | 2006 09 15 | 644 | 0.7+ | 0.1+ |
| 2002 11 05 | 699 | 0.3+ | 0.4+ | 2002 12 14 | 704 | 0.4− | 0.0 | 2006 09 15 | 644 | 0.2− | 0.1− |
| 2002 11 05 | 704 | 0.4+ | 0.3+ | 2002 12 14 | 704 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.8+ | 0.3− |
| 2002 11 05 | 699 | 0.3+ | 0.4− | 2003 01 20 | 644 | 0.3− | 1.1+ | 2006 09 26 | 703 | 0.8− | 0.7+ |
| 2002 11 05 | 699 | 0.2+ | 0.1+ | 2003 01 20 | 644 | 0.3− | 0.8+ | 2006 09 26 | 703 | 1.5− | 0.5+ |
| 2002 11 05 | 699 | 0.1+ | 0.8+ | 2003 01 20 | 644 | 0.2− | 1.0+ | 2006 09 26 | 703 | (3.1− | 1.5+) |

**(142258)∗ 2002 RZ$_{106}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.71628 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21991614 | $\omega$ | 12.57844 | | +0.80562823 | −0.58820128 | |
| $a$ | 2.7183037 | $\Omega$ | 23.88100 | | +0.52731460 | +0.65767813 | |
| $e$ | 0.2404856 | $i$ | 10.04121 | | +0.27000457 | +0.47061528 | |
| $P$ | 4.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 11 | 691 | 0.0 | 0.1− | 2002 11 06 | 704 | 0.1+ | 0.4− | 2004 03 30 | 691 | 0.3+ | 0.5+ |
| 2000 04 11 | 691 | 0.2− | 0.5+ | 2002 11 06 | 704 | 0.2− | 0.5− | 2006 08 16 | E12 | 0.1− | 0.5+ |
| 2000 04 11 | 691 | 0.5+ | 0.6+ | 2002 11 06 | 704 | 0.3− | 0.5− | 2006 08 16 | E12 | 0.4+ | 0.0 |
| 2002 09 05 | 704 | 0.4+ | 0.3− | 2002 11 15 | 704 | 0.8+ | 0.0 | 2006 08 16 | E12 | 0.5− | 0.6− |
| 2002 09 05 | 704 | 0.2− | 0.7− | 2002 11 15 | 704 | 0.9+ | 0.0 | 2006 08 16 | E12 | 1.0− | 1.1+ |
| 2002 09 05 | 704 | 1.0+ | 0.7+ | 2002 11 15 | 704 | 0.8+ | 0.3+ | 2006 08 16 | E12 | 0.6+ | 0.4+ |
| 2002 09 05 | 704 | 0.1+ | 1.0+ | 2002 11 15 | 704 | 0.9+ | 0.7+ | 2006 08 16 | E12 | 0.1+ | 1.0+ |
| 2002 09 05 | 704 | 0.5+ | 0.8+ | 2002 12 05 | 704 | 0.6− | 0.2− | 2006 08 16 | E12 | 0.9− | 0.6+ |
| 2002 09 07 | 704 | 1.3− | 1.1+ | 2002 12 05 | 704 | 1.0− | 0.3+ | 2006 08 16 | E12 | 0.7+ | 0.8+ |
| 2002 09 07 | 704 | 0.3+ | 0.7+ | 2002 12 05 | 704 | (1.6− | 0.4+) | 2006 08 20 | 644 | 0.3− | 0.4+ |
| 2002 09 07 | 704 | 0.0 | 0.3+ | 2002 12 05 | 704 | 0.2− | 0.7+ | 2006 08 20 | 644 | 0.2− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.0 | 0.1+ | 2002 12 05 | 704 | (2.1− | 0.0 ) | 2006 08 20 | 644 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.2− | 0.6+ | 2002 12 06 | 704 | 0.5− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | (0.8+ | 1.6+) | 2002 12 06 | 704 | 1.2− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.6+ | 0.7+ | 2002 12 06 | 704 | 0.9− | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.6− | 0.3+ | 2006 08 28 | E12 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.4− | 0.5+ | 2002 12 06 | 704 | 1.0− | 0.2+ | 2006 08 28 | E12 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | (2.2+ | 0.5+) | 2002 12 15 | 704 | 1.3+ | 0.6+ | 2006 08 28 | E12 | 0.2− | 0.4+ |
| 2002 10 10 | 704 | (2.4+ | 0.9+) | 2002 12 15 | 704 | 0.7+ | 0.3+ | 2006 08 28 | E12 | 0.1− | 0.1− |
| 2002 10 10 | 704 | (2.1+ | 1.1+) | 2002 12 15 | 704 | 0.6+ | 0.1− | 2006 09 17 | 699 | 0.1+ | 0.5+ |
| 2002 10 10 | 704 | (1.9+ | 1.3+) | 2003 01 29 | 644 | 0.5− | 0.0 | 2006 09 17 | 699 | 0.9− | 1.0− |
| 2002 10 12 | 704 | 0.0 | 0.3+ | 2003 01 29 | 644 | 0.5+ | 0.1− | 2006 09 17 | 699 | 0.5+ | 0.3+ |
| 2002 10 12 | 704 | 0.4− | 0.1− | 2003 01 29 | 644 | 0.3+ | 0.0 | 2006 09 17 | 699 | 0.5− | 0.1+ |
| 2002 10 12 | 704 | 0.4− | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.7− | 0.5+ |
| 2002 10 12 | 704 | (1.6− | 0.1+) | 2004 03 20 | 704 | 0.8+ | 0.6+ | 2006 09 26 | 703 | 0.7+ | 0.7− |
| 2002 10 12 | 704 | 1.0− | 1.1+ | 2004 03 20 | 704 | 0.7+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.6+ |
| 2002 11 01 | 704 | 0.5+ | 0.6+ | 2004 03 23 | 704 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.8+ |
| 2002 11 01 | 704 | 0.9− | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 10 11 | E12 | 0.4− | 1.0+ |
| 2002 11 01 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.7+ | 2006 10 11 | E12 | 1.0− | 0.3+ |
| 2002 11 06 | 704 | 0.1+ | 1.1− | 2004 03 30 | 691 | 0.5+ | 0.4+ | 2006 10 11 | E12 | 0.4+ | 0.5− |
| 2002 11 06 | 704 | 0.5− | 0.5− | 2004 03 30 | 691 | 0.3+ | 0.5+ | 2006 10 11 | E12 | 0.1− | 0.2+ |

**(142259)∗ 2002 RD$_{107}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.86837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23976055 | $\omega$ | 338.70411 | | +0.94985410 | −0.27249048 | |
| $a$ | 2.5661630 | $\Omega$ | 38.18384 | | +0.31056415 | +0.76494845 | |
| $e$ | 0.2291554 | $i$ | 14.36608 | | +0.03642940 | +0.58361186 | |
| $P$ | 4.11 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 704 | 0.3− | 0.2+ | 2004 03 15 | 704 | (0.9− | 1.7−) | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2000 04 03 | 704 | 0.1+ | 0.1+ | 2004 03 15 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2000 04 03 | 704 | 0.3− | 1.0− | 2004 03 15 | 704 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 08 13 | 699 | (1.4+ | 1.7+) | 2004 03 19 | 644 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 08 13 | 699 | 0.6− | 1.5+ | 2004 03 19 | 644 | 0.4+ | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.6+ |
| 2002 08 13 | 699 | 0.9− | 0.4+ | 2004 03 19 | 644 | 0.3+ | 0.1− | 2006 10 29 | 704 | 0.3+ | 0.4+ |
| 2002 08 13 | 699 | 0.5+ | 1.3+ | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 10 29 | 704 | 0.1+ | 0.6+ |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2004 03 19 | 644 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.5− | 0.3+ | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2006 10 29 | 704 | 0.3+ | 0.8+ |
| 2002 09 05 | 704 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.5− | 0.3+ | 2006 11 01 | H07 | 0.4− | 0.3− |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.1− | 2006 11 01 | H07 | 0.3− | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.4− | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 11 01 | H07 | 0.5− | 0.3− |
| 2002 09 07 | 704 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 11 03 | 704 | (1.6+ | 1.5−) |
| 2002 09 07 | 704 | 0.5+ | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 11 03 | 704 | 0.3+ | 0.7+ |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2004 03 25 | 704 | 0.1− | 0.2+ | 2006 11 03 | 704 | 0.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.5− | 0.3− | 2004 03 25 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.4− | 0.1− | 2004 03 25 | 704 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.7− | 2004 03 26 | 703 | 0.6+ | 0.8+ | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.4− | 0.1+ | 2004 03 26 | 703 | (1.5− | 1.7+) | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2004 03 26 | 703 | 0.2+ | 1.4+ | 2006 11 09 | 644 | 0.7+ | 0.0 |
| 2002 10 10 | 704 | (1.5− | 0.4−) | 2004 03 26 | 703 | 1.2− | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.6− | 0.8+ | 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2002 10 10 | 704 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.6− | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2002 10 10 | 704 | (1.9− | 0.2+) | 2006 08 28 | 703 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 0.6− | 1.1− | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2002 10 12 | 704 | 1.0+ | 1.1+ | 2006 08 31 | 704 | 0.0 | 0.6− | 2006 11 14 | 703 | 0.0 | 0.3− |
| 2002 10 12 | 704 | 0.0 | 1.0− | 2006 08 31 | 704 | 0.5− | 0.0 | 2006 11 14 | 703 | 0.3− | 0.1+ |
| 2002 10 12 | 704 | (1.9− | 0.6−) | 2006 08 31 | 704 | 0.3− | 1.4− | 2006 11 14 | 703 | 0.2− | 0.1− |
| 2002 10 12 | 704 | 0.3− | 0.5+ | 2006 08 31 | 704 | 0.5− | 0.6− | 2006 11 14 | 703 | 0.5+ | 0.2− |
| 2002 10 31 | 704 | 0.7+ | 0.4− | 2006 09 01 | 704 | 1.0− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2002 10 31 | 704 | (0.6− | 1.6−) | 2006 09 01 | 704 | 1.0− | 0.6+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2002 10 31 | 704 | 0.2− | 0.6− | 2006 09 01 | 704 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 10 31 | 704 | 0.4+ | 0.3− | 2006 09 01 | 704 | 0.7− | 1.0+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 704 | 0.5− | 0.7− | 2006 09 16 | 703 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 11 06 | 704 | 0.5+ | 0.3− | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.4− | 0.6− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.7+ | 0.2− | 2006 09 16 | 703 | 0.6− | 0.3− | 2006 11 15 | 704 | 0.2+ | 0.3− |
| 2002 11 06 | 704 | 0.9+ | 0.2− | 2006 09 17 | 704 | 1.4+ | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.8+ |
| 2002 11 06 | 704 | 0.7+ | 0.2− | 2006 09 17 | 704 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.5+ | 0.7+ |
| 2002 11 15 | 704 | 0.2− | 0.4− | 2006 09 17 | 704 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.3− | 0.7+ |
| 2002 11 15 | 704 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.6− | 0.1− | 2006 11 16 | 704 | 0.3+ | 1.1+ |
| 2002 11 15 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2002 11 15 | 704 | 0.4− | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 2002 11 15 | 704 | 0.1− | 0.3− | 2006 09 20 | 704 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 2002 12 06 | 704 | 0.5− | 0.9− | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.9+ |
| 2002 12 06 | 704 | 0.1− | 0.7− | 2006 09 27 | 704 | 0.5+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2002 12 06 | 704 | 0.4− | 0.7− | 2006 09 27 | 704 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.5+ |
| 2002 12 06 | 704 | 0.5− | 0.6− | 2006 09 27 | 704 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 1.0+ |
| 2002 12 06 | 704 | 0.3− | 0.7− | 2006 09 27 | 704 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 2002 12 12 | 704 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2002 12 12 | 704 | 0.0 | 0.4− | 2006 09 28 | 704 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2002 12 12 | 704 | 0.4+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | (0.1+ | 1.9+) |
| 2002 12 12 | 704 | (2.2+ | 0.1+) | 2006 09 28 | 704 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2002 12 12 | 704 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.5− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2002 12 13 | 704 | 0.3+ | 0.4− | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2002 12 13 | 704 | 0.5+ | 0.6− | 2006 09 28 | 704 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 1.3− | 0.0 |
| 2002 12 13 | 704 | 0.5+ | 0.8− | 2006 10 02 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2002 12 13 | 704 | 0.6+ | 0.8− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2002 12 13 | 704 | 0.7+ | 0.6− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2002 12 15 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.0 | 0.2− |
| 2002 12 15 | 704 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2002 12 15 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 22 | 703 | 0.3− | 0.6− |
| 2002 12 15 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 1.5− | 0.6− | 2006 11 22 | 703 | 0.1− | 0.4− |
| 2002 12 15 | 704 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.1− | 0.4− |
| 2002 12 29 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2002 12 29 | 704 | 0.6+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.3+ | 0.2− |
| 2002 12 29 | 704 | 0.6− | 0.8+ | 2006 10 19 | 704 | 0.4− | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2002 12 29 | 704 | 1.0+ | 0.4+ | 2006 10 19 | 704 | 0.2− | 0.3+ | 2006 11 23 | 703 | 0.4+ | 0.3− |
| 2002 12 29 | 704 | 0.6− | 0.2+ | 2006 10 19 | 704 | 0.4− | 0.0 | 2006 11 23 | 703 | 0.8+ | 0.3− |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2006 10 19 | 704 | 0.5− | 0.4+ | 2006 11 23 | 703 | 0.3+ | 0.0 |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2006 10 19 | 704 | 0.4− | 0.1+ | 2006 11 23 | 703 | 0.3− | 0.1− |
| 2003 01 07 | 704 | 0.5− | 0.4− | 2006 10 21 | 704 | 0.6− | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.2+ |
| 2003 02 02 | 704 | 0.1− | 1.1+ | 2006 10 21 | 704 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.4− |
| 2003 02 02 | 704 | 1.4+ | 0.4− | 2006 10 21 | 704 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.4− | 0.6− |
| 2003 02 02 | 704 | 0.5− | 0.2− | 2006 10 21 | 704 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2− | 0.2− |
| 2003 02 02 | 704 | 0.2− | 0.4− | 2006 10 21 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2004 03 15 | 704 | 0.3+ | 0.6− | 2006 10 21 | 691 | (3.3− | 1.1−) | | | | |
| 2004 03 15 | 704 | 0.4+ | 1.1+ | 2006 10 21 | 691 | 0.2− | 0.3+ | | | | |

**(142260)∗ 2002 RL$_{107}$ = 2000 JA$_{67}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 103385)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.42715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23762868 | $\omega$ | 1.20742 | | +0.77221988 | −0.63283322 | |
| $a$ | 2.5814882 | $\Omega$ | 38.24385 | | +0.58215868 | +0.66909974 | |
| $e$ | 0.2858706 | $i$ | 5.24215 | | +0.25449506 | +0.38965069 | |
| $P$ | 4.15 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 18 | 699 | 0.3− | 0.2+ | 2003 01 13 | 704 | (5.9+ | 1.1−) | 2006 10 28 | 704 | 0.1+ | 0.1+ |
| 1998 12 18 | 699 | 0.7+ | 0.1+ | 2003 01 13 | 704 | (5.9+ | 0.9−) | 2006 10 28 | 704 | 0.2+ | 0.0 |
| 1998 12 18 | 699 | 0.7+ | 0.1− | 2006 08 21 | 704 | 0.2− | 0.0 | 2006 10 28 | 704 | 0.1− | 0.1− |
| 1998 12 21 | 704 | 0.3− | 1.0− | 2006 08 21 | 704 | 1.5+ | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 1998 12 21 | 704 | 0.2+ | 1.8− | 2006 08 21 | 704 | 0.9+ | 1.0+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 1998 12 21 | 704 | 0.7+ | 0.7− | 2006 08 25 | 704 | 0.6− | 0.8+ | 2006 10 31 | H07 | 0.3+ | 0.2− |
| 1998 12 21 | 704 | 1.4+ | 0.4+ | 2006 08 25 | 704 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 1998 12 21 | 704 | 0.5− | 1.4+ | 2006 08 25 | 704 | 0.8− | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 1999 01 10 | 699 | 0.5+ | 0.2+ | 2006 08 25 | 704 | 0.2+ | 0.2+ | 2006 10 31 | H07 | 0.3+ | 0.3+ |
| 1999 01 10 | 699 | 1.3+ | 0.7+ | 2006 08 25 | 704 | 0.0 | 0.2+ | 2006 10 31 | H07 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 699 | 0.5+ | 0.7+ | 2006 08 25 | 704 | 0.1+ | 0.6+ | 2006 10 31 | H07 | 0.3+ | 0.1+ | | |
| 2000 05 02 | 691 | 0.5+ | 0.3+ | 2006 08 25 | 704 | 0.3− | 0.1− | 2006 10 31 | H07 | (2.3+ | 1.4−) | | |
| 2000 05 02 | 691 | 0.7+ | 0.6+ | 2006 08 25 | 704 | 0.5+ | 0.7− | 2006 10 31 | H07 | (2.4+ | 0.9−) | | |
| 2000 05 02 | 691 | 0.5+ | 0.3+ | 2006 08 25 | 704 | 0.5− | 0.5+ | 2006 10 31 | H07 | 1.7+ | 1.0− | | |
| 2000 05 28 | 691 | 0.9− | 0.0 | 2006 08 25 | 704 | 0.4− | 0.0 | 2006 10 31 | H07 | (2.1+ | 1.1−) | | |
| 2000 05 28 | 691 | 0.4− | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 11 03 | 704 | 2.0− | 0.3− | | |
| 2000 05 28 | 691 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 11 03 | 704 | 1.4− | 0.7− | | |
| 2002 09 05 | 704 | 0.3+ | 0.6− | 2006 08 28 | 703 | 0.4+ | 0.3− | 2006 11 03 | 704 | 1.0− | 0.0 | | |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.1− | 2006 11 03 | 704 | 0.2+ | 0.8− | | |
| 2002 09 05 | 704 | 0.5− | 0.1+ | 2006 08 31 | 704 | 0.1+ | 1.0+ | 2006 11 09 | 691 | 0.2+ | 0.1− | | |
| 2002 09 07 | 704 | 0.9− | 0.2+ | 2006 08 31 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.5− | 0.0 | 2006 08 31 | 704 | 0.9+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.0 | | |
| 2002 09 07 | 704 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.9− | 1.7+ | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 2002 09 07 | 704 | 0.4− | 0.5+ | 2006 09 16 | 703 | 1.0+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 2002 09 07 | 704 | 0.4− | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.6− | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2002 10 10 | 704 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.9− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.4− | | |
| 2002 10 10 | 704 | 0.3− | 0.4+ | 2006 09 16 | 703 | (0.3+ | 2.4−) | 2006 11 11 | 703 | 0.1+ | 0.5− | | |
| 2002 10 10 | 704 | (1.2− | 2.3+) | 2006 09 17 | 704 | 0.5− | 0.7− | 2006 11 11 | 703 | 0.1+ | 0.2− | | |
| 2002 10 10 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.3− | | |
| 2002 10 11 | 704 | 0.1+ | 0.1− | 2006 09 17 | 704 | 1.6− | 0.8− | 2006 11 13 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.4− | 0.2+ | 2006 09 17 | 704 | 0.8+ | 0.5− | 2006 11 13 | 691 | 0.2+ | 0.0 | | |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.1− | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.3+ | 1.1− | 2006 09 17 | 699 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.3+ | 0.0 | | |
| 2002 10 11 | 704 | 0.6− | 0.2− | 2006 09 17 | 699 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.1− | | |
| 2002 10 11 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 699 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.3− | 0.0 | | |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.5+ | 0.4+ | 2006 11 13 | 644 | 0.4− | 0.1− | | |
| 2002 10 11 | 704 | 0.3− | 0.9+ | 2006 09 17 | 699 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.0 | 0.2+ | | |
| 2002 10 11 | 704 | 0.1− | 0.3− | 2006 09 17 | 699 | 0.3− | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.4− | 2006 11 15 | 704 | 0.1− | 0.2+ | | |
| 2002 10 11 | 704 | 0.7− | 0.7+ | 2006 09 20 | 704 | 0.6− | 0.5+ | 2006 11 15 | 704 | 0.7− | 0.6+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 1.0− | 0.1− | 2006 11 16 | 138 | (0.9− | 3.4−) | | |
| 2002 11 08 | 704 | 0.4− | 0.5− | 2006 09 20 | 704 | 0.3− | 0.3+ | 2006 11 16 | 138 | 0.2− | 1.4− | | |
| 2002 11 08 | 704 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.2− | 2006 11 16 | 138 | 0.7− | 0.3− | | |
| 2002 11 08 | 704 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.2+ | | |
| 2002 11 12 | 704 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.4+ | | |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.2+ | | |
| 2002 11 12 | 704 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 16 | 704 | (2.3+ | 2.9−) | | |
| 2002 11 12 | 704 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.3− | 0.1+ | 2006 11 16 | 704 | 1.0− | 0.2− | | |
| 2002 11 12 | 704 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.1− | | |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2006 09 27 | 704 | 0.3− | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.1+ | | |
| 2002 12 06 | 704 | 0.0 | 0.5− | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.4− | 0.2− | | |
| 2002 12 06 | 704 | 0.0 | 0.6− | 2006 09 27 | 704 | 0.2+ | 0.8+ | 2006 11 17 | 704 | 0.4− | 0.1+ | | |
| 2002 12 06 | 704 | 1.3− | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.6+ | 2006 11 17 | 704 | 0.1− | 0.7+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.8− | 1.3+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.2− | | |
| 2002 12 11 | 704 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.4− | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.3+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 1.0− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 1.4− | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.3− | | |
| 2002 12 15 | 704 | 0.4− | 0.1− | 2006 09 29 | 704 | 1.1− | 0.8+ | 2006 11 19 | 704 | 0.7− | 0.2− | | |
| 2002 12 15 | 704 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.6− | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.1− | | |
| 2002 12 15 | 704 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.1+ | | |
| 2002 12 15 | 704 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.0 | | |
| 2002 12 15 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.4− | | |
| 2003 01 05 | 704 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.6+ | | |
| 2003 01 05 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 27 | 704 | 0.3+ | 0.2− | | |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.2+ | 0.3− | | |
| 2003 01 05 | 704 | 0.8− | 0.6− | 2006 10 23 | 704 | 0.6+ | 0.4− | 2006 11 27 | 704 | 0.6+ | 0.5− | | |
| 2003 01 05 | 704 | 0.6− | 0.2+ | 2006 10 23 | 704 | 0.1+ | 0.1+ | 2006 11 27 | 704 | 0.1− | 0.4+ | | |
| 2003 01 09 | 704 | (1.7− | 2.7+) | 2006 10 23 | 704 | 0.3− | 0.2− | 2006 12 01 | 704 | 0.0 | 0.0 | | |
| 2003 01 09 | 704 | (1.8− | 2.9+) | 2006 10 23 | 704 | 0.5− | 0.6− | 2006 12 01 | 704 | 0.2− | 0.1− | | |
| 2003 01 09 | 704 | (1.2− | 2.4+) | 2006 10 23 | 704 | 1.2− | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.3− | | |
| 2003 01 13 | 704 | (6.4+ | 1.1−) | 2006 10 28 | 704 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.0 | 0.2− | | |
| 2003 01 13 | 704 | (6.9+ | 1.2−) | 2006 10 28 | 704 | 0.0 | 0.4− | 2006 12 01 | 704 | 0.3− | 0.1− | | |

**(142261)∗ 2002 RS$_{107}$ = 2000 HH$_{18}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37878)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.07442 | | (2000.0) | | | |
| $n$ | 0.23532729 | $\omega$ | 212.46736 | | +0.32642312 | −0.94377154 |
| $a$ | 2.5982914 | $\Omega$ | 218.55255 | | +0.88418275 | +0.32446383 |
| $e$ | 0.2403313 | $i$ | 4.82077 | | +0.33416885 | +0.06339169 |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 691 | 0.1+ | 0.1+ | 2002 12 02 | 704 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.4+ | 1.3+ | | |
| 2000 04 24 | 691 | 0.0 | 0.4+ | 2002 12 02 | 704 | 0.1− | 0.2+ | 2006 09 29 | 704 | 1.2− | 0.5+ | | |
| 2000 04 24 | 691 | 0.3+ | 0.2+ | 2002 12 02 | 704 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.5− | 0.8+ | | |
| 2000 04 30 | 691 | 0.1+ | 0.2+ | 2002 12 02 | 704 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.9− | 0.0 | | |
| 2000 04 30 | 691 | 0.3+ | 0.5+ | 2002 12 02 | 704 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.4− | 0.2+ | | |
| 2000 04 30 | 691 | 0.1+ | 0.3+ | 2002 12 03 | 608 | 0.4+ | 1.1+ | 2006 09 29 | 704 | (1.9− | 0.1−) | | |
| 2002 09 05 | 704 | 0.7− | 0.5+ | 2002 12 03 | 608 | 0.1− | 1.3+ | 2006 10 03 | 704 | 0.1− | 0.6+ | | |
| 2002 09 05 | 704 | 0.5− | 0.2− | 2002 12 03 | 608 | (0.1− | 1.8+) | 2006 10 03 | 704 | 0.3+ | 1.1+ | | |
| 2002 09 05 | 704 | 0.4− | 0.9+ | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.4− | 0.8+ | | |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2002 12 05 | 704 | 0.3+ | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.0 | | |
| 2002 09 07 | 704 | 0.6+ | 0.3+ | 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 10 03 | 704 | 0.2− | 0.2+ | | |
| 2002 09 07 | 704 | 0.4+ | 1.0− | 2002 12 05 | 704 | 0.8+ | 0.5+ | 2006 10 04 | 683 | (2.3+ | 0.8−) | | |
| 2002 10 02 | 704 | 0.3− | 1.5+ | 2002 12 05 | 704 | 0.8− | 0.9+ | 2006 10 04 | 683 | (1.5+ | 1.4−) | | |
| 2002 10 02 | 704 | 0.3− | 0.4− | 2002 12 06 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.7− | 0.3+ | | |
| 2002 10 02 | 704 | 0.6+ | 0.1− | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.1− | | |
| 2002 10 02 | 704 | 0.3+ | 1.3+ | 2002 12 06 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.6+ | 0.4+ | 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2002 12 10 | 644 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 10 19 | 704 | 0.3+ | 1.0− | | |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2002 12 10 | 644 | 0.0 | 0.3+ | 2006 10 19 | 704 | 0.3+ | 1.0− | | |
| 2002 10 10 | 704 | 0.0 | 0.2− | 2002 12 11 | 704 | 0.0 | 0.7− | 2006 10 19 | 704 | 0.4+ | 0.8− | | |
| 2002 10 10 | 704 | 0.3+ | 0.3− | 2002 12 11 | 704 | 0.0 | 1.1− | 2006 10 19 | 704 | 0.5+ | 0.1− | | |
| 2002 10 10 | 704 | 0.4+ | 0.5− | 2002 12 11 | 704 | 0.1+ | 0.6− | 2006 10 19 | 704 | 0.4+ | 0.4− | | |
| 2002 10 10 | 704 | 0.1− | 0.3− | 2002 12 11 | 704 | 0.0 | 1.0− | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 10 10 | 704 | 0.4− | 0.2+ | 2002 12 11 | 704 | 0.2+ | 1.3− | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2002 10 11 | 704 | 0.1− | 0.5− | 2002 12 27 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2002 10 11 | 704 | 0.4+ | 0.7− | 2002 12 27 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.6+ | 0.8− | 2002 12 27 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 10 11 | 704 | 0.1− | 0.6− | 2003 01 18 | 644 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 10 11 | 704 | 0.1− | 1.2− | 2003 01 18 | 644 | 0.7− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.0 | | |
| 2002 10 30 | 608 | (1.2+ | 1.6+) | 2003 01 18 | 644 | 0.5− | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.3− | | |
| 2002 10 30 | 608 | 0.1− | 0.5− | 2003 01 27 | 704 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.1− | 0.0 | | |
| 2002 10 30 | 608 | 0.1+ | 0.9− | 2003 01 27 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.1+ | | |
| 2002 10 31 | 699 | 0.7+ | 0.2− | 2003 01 27 | 704 | 1.1+ | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 2002 10 31 | 699 | 0.3+ | 0.1− | 2003 01 27 | 704 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.3− | | |
| 2002 10 31 | 699 | 0.1+ | 0.4+ | 2003 02 02 | 704 | 0.7− | 1.1+ | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 2002 10 31 | 699 | 0.3+ | 0.1+ | 2003 02 02 | 704 | 0.6+ | 1.0+ | 2006 10 28 | 704 | 0.3− | 0.1+ | | |
| 2002 11 05 | 699 | 0.1− | 0.8+ | 2003 02 02 | 704 | 0.3+ | 1.5+ | 2006 10 28 | 704 | 0.7− | 0.2+ | | |
| 2002 11 05 | 704 | 0.7− | 0.3− | 2003 02 02 | 704 | (0.1− | 2.2+) | 2006 10 28 | 704 | 0.4− | 0.1+ | | |
| 2002 11 05 | 699 | 0.1− | 0.2+ | 2004 05 19 | 691 | 0.0 | 0.5+ | 2006 10 28 | 704 | 0.7− | 0.2+ | | |
| 2002 11 05 | 704 | 0.7− | 0.1− | 2004 05 19 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 704 | 0.0 | 0.2− | | |
| 2002 11 05 | 699 | 0.1− | 0.4+ | 2004 05 19 | 691 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.3− | | |
| 2002 11 05 | 704 | 0.9− | 0.1− | 2004 05 28 | 691 | 0.3− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.2− | | |
| 2002 11 05 | 699 | 0.1+ | 0.3+ | 2004 05 28 | 691 | 0.4+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.4− | | |
| 2002 11 05 | 704 | 0.5− | 0.1− | 2004 05 28 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.3− | | |
| 2002 11 05 | 704 | 0.5− | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.7+ | | |
| 2002 11 06 | 704 | 0.1− | 0.3− | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.0 | | |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.0 | | |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 2002 11 06 | 704 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1− | | |
| 2002 11 06 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.0 | | |
| 2002 11 14 | 704 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.4− | 0.2− | | |
| 2002 11 14 | 704 | 0.0 | 0.6+ | 2006 09 18 | 704 | 0.3+ | 1.0+ | 2006 11 13 | G96 | 0.1+ | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2002 11 14 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 1.2− | 0.8+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.9+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 1.1+ |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.7− | 0.5+ | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2002 11 27 | 699 | 1.2− | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.7− |
| 2002 11 27 | 699 | 0.6+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 1.6+ |
| 2002 11 27 | 699 | 0.6+ | 0.1+ | 2006 09 19 | 691 | 0.7− | 0.6+ | 2006 11 21 | 704 | 2.2+ | 0.0 |
| 2002 11 27 | 699 | 0.0 | 0.3+ | 2006 09 19 | 691 | (0.6+ | 1.6+) | 2006 11 21 | 704 | 0.9+ | 0.0 |
| 2002 12 01 | 704 | 0.4− | 0.1− | 2006 09 25 | 704 | 0.2+ | 1.4+ | 2006 11 21 | 704 | 2.0+ | 0.5− |
| 2002 12 01 | 704 | 0.6− | 0.2+ | 2006 09 25 | 704 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.8− |
| 2002 12 01 | 704 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.6+ | 1.3+ | | | | |
| 2002 12 01 | 704 | 0.4− | 0.4− | 2006 09 25 | 704 | (0.1− | 1.8+) | | | | |

**(142262)∗ 2002 RW$_{107}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.22016 | | (2000.0) | | | |
| $n$ | 0.23984391 | $\omega$ | 355.14233 | | +0.95887075 | +0.28372643 |
| $a$ | 2.5655683 | $\Omega$ | 348.36516 | | −0.25904313 | +0.86301494 |
| $e$ | 0.2384743 | $i$ | 2.31213 | | −0.11603251 | +0.41797670 |
| $P$ | 4.11 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 14 | 691 | 0.1+ | 0.1− | 2002 12 11 | 704 | 0.2− | 0.3− | 2006 09 29 | 704 | (0.8+ | 1.8+) |
| 1996 02 14 | 691 | 0.0 | 0.3− | 2002 12 11 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | (0.1+ | 2.7+) |
| 1996 02 14 | 691 | 0.1− | 0.1+ | 2002 12 11 | 704 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.8+ |
| 1998 12 17 | 704 | 1.3− | 0.1− | 2002 12 11 | 644 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1− |
| 1998 12 17 | 704 | 0.5+ | 1.9− | 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.1− |
| 1998 12 17 | 704 | 0.4+ | 0.6− | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1− |
| 1998 12 17 | 704 | (5.0− | 1.4−) | 2002 12 27 | 644 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 1.0+ | 0.5− | 2002 12 27 | 644 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.6+ | 0.3− | 2002 12 27 | 644 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.8+ | 2002 12 28 | 699 | 0.0 | 0.6− | 2006 10 20 | 691 | 0.1− | 0.7− |
| 2002 09 07 | 704 | 0.5− | 0.2+ | 2002 12 28 | 699 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.5+ | 0.6+ | 2002 12 28 | 699 | 0.5− | 0.7− | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2002 12 28 | 699 | 0.3− | 0.6+ | 2006 10 23 | H07 | 0.0 | 0.2− |
| 2002 11 01 | 644 | 0.1+ | 0.5− | 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 10 23 | H07 | 0.5+ | 0.4− |
| 2002 11 01 | 644 | 0.1− | 0.5− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 23 | H07 | 0.4+ | 0.3+ |
| 2002 11 01 | 644 | 0.1− | 0.3− | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.1+ | 0.4+ |
| 2002 11 08 | 704 | 0.5− | 0.9− | 2004 02 22 | 691 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.5+ |
| 2002 11 08 | 704 | 0.1− | 0.4− | 2004 02 22 | 691 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.2+ | 0.7+ |
| 2002 11 08 | 704 | 1.2− | 0.3+ | 2004 02 22 | 691 | 0.2− | 0.1+ | 2006 11 01 | H07 | 0.0 | 0.5− |
| 2002 11 08 | 704 | 0.4− | 0.2+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 11 01 | H07 | 0.3− | 0.0 |
| 2002 11 12 | 704 | 0.2+ | 0.3− | 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.3+ | 0.2− | 2004 02 29 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2002 11 12 | 704 | 0.1− | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2002 11 12 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 691 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.1− | 0.6− | 2004 03 18 | 691 | 0.1+ | 0.4− | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.4+ | 0.3+ | 2005 05 16 | G96 | 0.8− | 0.7+ | 2006 11 13 | 644 | 0.3− | 0.2− |
| 2002 11 12 | 704 | 0.4− | 0.9− | 2005 05 16 | G96 | 1.0+ | 0.0 | 2006 11 14 | 703 | 0.8+ | 0.7+ |
| 2002 11 12 | 704 | 0.7+ | 0.2+ | 2005 05 16 | G96 | 0.1− | 0.4+ | 2006 11 14 | 703 | (2.0+ | 1.2+) |
| 2002 11 14 | 704 | 0.3+ | 0.4− | 2005 05 16 | G96 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.3+ |
| 2002 11 14 | 704 | 0.1+ | 0.1+ | 2006 08 21 | 704 | 0.4− | 1.1+ | 2006 11 14 | 703 | 0.3+ | 0.2+ |
| 2002 11 14 | 704 | 0.0 | 0.1− | 2006 08 21 | 704 | 0.5− | 0.2+ | 2006 11 18 | 704 | 1.3+ | 1.5+ |
| 2002 11 14 | 704 | 0.2+ | 0.3+ | 2006 08 21 | 704 | (1.7− | 1.7+) | 2006 11 18 | 704 | 0.4+ | 1.3+ |
| 2002 11 14 | 704 | 0.5+ | 0.4− | 2006 08 21 | 704 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2002 11 28 | 699 | 0.5+ | 0.5+ | 2006 08 21 | 704 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2002 11 28 | 699 | 0.2− | 0.2+ | 2006 08 25 | 704 | 1.2+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2002 11 28 | 699 | 0.7+ | 0.1− | 2006 08 25 | 704 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 1.5+ | 0.9+ |
| 2002 11 28 | 699 | 0.4+ | 0.8+ | 2006 08 25 | 704 | 1.1+ | 0.1− | 2006 11 19 | 704 | (1.6+ | 1.0+) |
| 2002 12 02 | 704 | (1.9+ | 0.2−) | 2006 08 25 | 704 | 0.4− | 0.0 | 2006 11 19 | 704 | (0.0 | 1.7+) |
| 2002 12 02 | 704 | 0.2+ | 0.6+ | 2006 08 25 | 704 | 0.5+ | 0.1− | 2006 11 19 | 704 | (0.8+ | 2.0+) |
| 2002 12 02 | 704 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 11 19 | 704 | (2.6− | 1.2+) |
| 2002 12 02 | 704 | 0.3− | 0.8+ | 2006 08 28 | 703 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2002 12 02 | 704 | 1.1− | 0.6+ | 2006 08 28 | 703 | 0.9+ | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.2+ |
| 2002 12 02 | 608 | 0.3− | 0.8− | 2006 08 28 | 703 | 0.5+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2002 12 02 | 608 | (0.7− | 1.5−) | 2006 09 27 | 704 | 0.8+ | 1.3+ | 2006 11 22 | 704 | 0.5− | 0.1+ |
| 2002 12 02 | 608 | 0.6− | 1.1− | 2006 09 27 | 704 | (0.4+ | 1.6+) | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 1.2+ | 0.2− | 2006 09 27 | 704 | 0.1+ | 1.5+ | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2002 12 06 | 704 | 0.6+ | 0.3− | 2006 09 27 | 704 | (0.5+ | 1.6+) | 2006 11 29 | 704 | 0.3− | 0.3− |
| 2002 12 06 | 704 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 29 | 704 | 0.8− | 0.4− |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 09 28 | G96 | (3.9+ | 2.3+) | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 1.1− | 0.3− |
| 2002 12 11 | 704 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.3− | | | | |

**(142263)∗ 2002 RP$_{108}$ = 1994 NN$_3$**

Discovered 2002 Sept. 5 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37879)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.88461 | | (2000.0) | | | |
| $n$ | 0.25570802 | $\omega$ | 168.21978 | | +0.81622208 | +0.57765636 |
| $a$ | 2.4583280 | $\Omega$ | 156.48620 | | −0.53202512 | +0.75809746 |
| $e$ | 0.1848024 | $i$ | 1.39729 | | −0.22523499 | +0.30265719 |
| $P$ | 3.85 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 11 | 809 | 0.4+ | 1.3+ | 2002 09 13 | 644 | 0.7− | 0.5− | 2005 04 10 | 691 | 0.2+ | 0.1− |
| 1994 07 11 | 809 | 1.3+ | 0.8+ | 2002 09 14 | 644 | 0.6− | 0.2− | 2005 04 11 | 691 | 0.3− | 0.4+ |
| 1994 07 11 | 809 | 0.0 | 1.9+ | 2002 09 14 | 644 | 0.8− | 0.5− | 2005 04 11 | 691 | 0.3+ | 0.0 |
| 1994 07 12 | 809 | 0.1+ | 0.9+ | 2002 09 14 | 644 | 0.5− | 0.5− | 2005 04 11 | 691 | 0.1− | 0.2+ |
| 1994 07 12 | 809 | 1.5+ | 0.3+ | 2002 09 15 | 644 | 1.0− | 0.4− | 2006 07 21 | G96 | 0.1− | 0.5− |
| 1994 07 12 | 809 | 0.8+ | 0.8− | 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.3− |
| 1998 08 17 | 704 | 1.1+ | 0.4− | 2002 09 15 | 644 | 0.5− | 0.3− | 2006 07 21 | G96 | 0.3− | 0.3− |
| 1998 08 17 | 704 | (3.3− | 0.5−) | 2002 09 15 | 644 | 0.6− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.5− |
| 1998 08 17 | 704 | (0.9+ | 2.9−) | 2002 09 15 | 644 | 0.5− | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.1− |
| 1998 08 17 | 704 | (4.4− | 1.7−) | 2002 09 15 | 644 | 0.5− | 0.4+ | 2006 10 03 | 691 | 0.2+ | 0.2+ |
| 2001 04 23 | 691 | 0.0 | 0.6+ | 2002 09 17 | 608 | (1.6− | 1.4−) | 2006 10 03 | 691 | 0.0 | 0.4+ |
| 2001 04 23 | 691 | 0.5− | 0.7+ | 2002 09 17 | 608 | (1.6− | 1.3−) | 2006 10 15 | 703 | 0.6− | 0.5+ |
| 2001 04 23 | 691 | 0.2+ | 0.6+ | 2002 09 17 | 608 | 1.3− | 1.3− | 2006 10 15 | 703 | 0.1− | 0.6+ |
| 2002 09 04 | 699 | 0.9+ | 0.6+ | 2002 10 03 | 704 | 0.4− | 0.0 | 2006 10 15 | 703 | 0.6− | 0.4− |
| 2002 09 04 | 699 | 1.1− | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.5+ | 0.7+ |
| 2002 09 04 | 699 | 1.1− | 0.2− | 2002 10 03 | 704 | 0.3− | 0.6− | 2006 10 16 | 691 | 0.3+ | 0.2+ |
| 2002 09 04 | 699 | (2.1− | 0.4+) | 2002 10 03 | 704 | (2.0− | 0.0 ) | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2002 09 05 | 704 | 0.4+ | 0.5− | 2002 10 03 | 704 | 0.8− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 0.2+ | 0.4− | 2005 03 13 | G96 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 0.6+ | 0.4+ | 2005 03 13 | G96 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.8+ |
| 2002 09 05 | 704 | 1.3+ | 0.6− | 2005 03 13 | G96 | 0.8− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 608 | 1.0− | 1.1− | 2005 04 05 | G96 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.2+ | 1.0− |
| 2002 09 05 | 608 | 0.3− | 1.3− | 2005 04 05 | G96 | 0.6− | 0.5− | 2006 10 21 | 703 | 0.8+ | 0.2− |
| 2002 09 05 | 608 | 0.9− | 1.0− | 2005 04 05 | G96 | 0.6− | 0.9− | 2006 10 21 | 703 | (1.8− | 1.0−) |
| 2002 09 07 | 704 | 0.6− | 0.1+ | 2005 04 05 | G96 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.8+ |
| 2002 09 07 | 704 | 0.8+ | 0.5+ | 2005 04 09 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2005 04 09 | 691 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.5+ |
| 2002 09 07 | 704 | 0.2− | 0.1+ | 2005 04 09 | 691 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2002 09 11 | 608 | (0.5− | 1.9−) | 2005 04 10 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2002 09 11 | 608 | 0.6− | 1.4− | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2002 09 11 | 608 | (0.7− | 1.7−) | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2002 09 13 | 644 | 0.7− | 0.4− | 2005 04 10 | 691 | 0.1+ | 0.1+ | | | | |
| 2002 09 13 | 644 | 0.5− | 0.3− | 2005 04 10 | 691 | 0.1+ | 0.2+ | | | | |

**(142264)∗ 2002 RW$_{108}$**

Discovered 2002 Sept. 5 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.32372 | | (2000.0) | | | |
| $n$ | 0.26807910 | $\omega$ | 346.68385 | | +0.65808650 | +0.75275658 |
| $a$ | 2.3821041 | $\Omega$ | 324.46604 | | −0.68814792 | +0.59229208 |
| $e$ | 0.1882956 | $i$ | 1.64898 | | −0.30557258 | +0.28731103 |
| $P$ | 3.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2002 09 30 | 704 | (1.2+ | 1.7+) | 2005 05 12 | 699 | 0.5− | 1.4+ |
| 2002 09 05 | 704 | 0.8− | 0.2+ | 2002 10 03 | 704 | 1.0+ | 1.1+ | 2005 05 12 | 699 | 0.1− | 0.2− |
| 2002 09 05 | 645 | 0.0 | 0.2− | 2002 10 03 | 704 | 0.7+ | 1.1+ | 2005 05 12 | 699 | (1.5+ | 0.0 ) |
| 2002 09 05 | 645 | 0.0 | 0.2− | 2002 10 03 | 704 | 0.1+ | 0.0 | 2005 05 12 | 699 | (0.6− | 2.0+) |
| 2002 09 05 | 704 | 0.8− | 0.5+ | 2002 10 03 | 704 | (0.4+ | 2.4+) | 2005 05 13 | 704 | (0.6+ | 1.6+) |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2002 10 03 | 704 | (0.5+ | 1.7+) | 2005 05 13 | 704 | 0.8+ | 1.4+ |
| 2002 09 05 | 608 | 1.0− | 0.3− | 2002 10 04 | 291 | 0.1− | 0.2+ | 2005 05 13 | 704 | 0.3+ | 1.2+ |
| 2002 09 05 | 608 | 0.7− | 0.3− | 2002 10 04 | 291 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 608 | 0.6− | 0.1− | 2002 10 04 | 291 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.2− |
| 2002 09 07 | 704 | 0.1+ | 0.1− | 2002 10 07 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.1+ | 0.5+ | 2002 10 07 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 1.0− | 0.7− | 2002 10 07 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.6− | 1.1− | 2002 10 07 | 704 | 0.7− | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.9+ | 2002 10 11 | 704 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2002 09 13 | 644 | 0.0 | 1.0+ | 2002 10 11 | 704 | 0.1− | 1.0+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2002 09 13 | 644 | 0.1− | 1.1+ | 2002 10 11 | 704 | 0.1− | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.1− | 0.8+ | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2003 12 19 | 691 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.6− | 0.2+ |
| 2002 09 15 | 608 | 0.5+ | 0.5+ | 2003 12 19 | 691 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.3+ |
| 2002 09 15 | 608 | 0.1− | 0.4+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.1− | 0.3− |
| 2002 09 15 | 608 | 0.3+ | 0.2− | 2003 12 21 | 291 | 0.8− | 0.5+ | 2006 11 11 | 703 | 1.2− | 1.0− |
| 2002 09 17 | 644 | 0.5− | 0.5+ | 2003 12 21 | 291 | 0.5− | 0.6+ | 2006 11 11 | 703 | (0.2+ | 2.0−) |
| 2002 09 17 | 644 | 0.4− | 0.2+ | 2003 12 21 | 291 | 0.4− | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2002 09 17 | 644 | 0.3− | 0.2+ | 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2002 09 18 | 644 | (0.8+ | 3.0+) | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2002 09 18 | 644 | 0.1+ | 0.2+ | 2004 01 27 | 691 | 0.4+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2002 09 18 | 644 | 0.2− | 0.3+ | 2004 02 16 | 691 | 0.4+ | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2002 09 27 | 699 | 0.2+ | 0.9+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2002 09 27 | 699 | 0.3+ | 0.7− | 2004 02 16 | 691 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 09 27 | 699 | 0.5− | 0.8+ | 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2002 09 27 | 699 | 0.1− | 1.0+ | 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2002 09 30 | 704 | 0.8+ | 1.5+ | 2005 04 14 | 691 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2002 09 30 | 704 | (0.3+ | 2.5+) | 2005 05 01 | 644 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2002 09 30 | 704 | (1.5+ | 2.2+) | 2005 05 01 | 644 | 0.1+ | 0.8+ | | | | |
| 2002 09 30 | 704 | 0.4+ | 1.4+ | 2005 05 01 | 644 | 0.1+ | 0.4+ | | | | |

**(142265)∗ 2002 RO$_{111}$ = 2000 FM$_{65}$**

Discovered 2002 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37881)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.59542 | | (2000.0) | | | |
| $n$ | 0.22511529 | $\omega$ | 11.62499 | | +0.78464250 | −0.61725850 |
| $a$ | 2.6762872 | $\Omega$ | 26.75645 | | +0.55802690 | +0.66266711 |
| $e$ | 0.1705478 | $i$ | 7.36227 | | +0.27007802 | +0.42410405 |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.3+ | 1.1− | 2002 11 05 | 704 | 0.3− | 0.8+ | 2003 01 05 | 704 | 0.5+ | 0.1− |
| 1998 12 17 | 704 | (0.5+ | 2.5−) | 2002 11 05 | 704 | 0.3+ | 0.9+ | 2004 02 13 | 691 | 0.1+ | 0.1+ |
| 1998 12 17 | 704 | 0.6− | 1.9− | 2002 11 05 | 704 | 0.0 | 0.3+ | 2004 02 13 | 691 | 0.2+ | 0.2+ |
| 1998 12 17 | 704 | (4.8− | 0.8−) | 2002 11 05 | 704 | 0.4+ | 0.6+ | 2004 02 13 | 691 | 0.3+ | 0.1+ |
| 2000 03 27 | 691 | 0.5+ | 0.1− | 2002 11 08 | 704 | 0.4− | 0.1+ | 2004 02 29 | 691 | 0.1+ | 0.5+ |
| 2000 03 27 | 691 | 0.0 | 0.2+ | 2002 11 08 | 704 | 0.3− | 0.1+ | 2004 02 29 | 691 | 0.2+ | 0.5+ |
| 2000 03 27 | 691 | 0.2+ | 0.4+ | 2002 11 08 | 704 | 0.5− | 0.5+ | 2004 02 29 | 691 | 0.2+ | 0.3+ |
| 2000 04 06 | 691 | 0.0 | 0.2+ | 2002 11 08 | 704 | 0.2+ | 0.5+ | 2004 03 23 | 704 | 0.3− | 0.4+ |
| 2000 04 06 | 691 | 0.1− | 0.2+ | 2002 11 12 | 704 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.8+ | 0.3+ |
| 2000 04 06 | 691 | 0.2− | 0.3+ | 2002 11 12 | 704 | 0.4− | 0.3− | 2004 03 23 | 704 | (1.0+ | 1.8+) |
| 2002 09 06 | 704 | 0.4− | 0.8− | 2002 11 12 | 704 | 0.5− | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.4− | 0.1− | 2002 11 12 | 704 | 0.8− | 0.6− | 2006 08 16 | 644 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 1.1+ | 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 0.3− | 0.4+ | 2002 11 14 | 704 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.2− | 0.7+ | 2002 11 14 | 704 | 0.2+ | 0.7− | 2006 08 16 | 644 | 0.2+ | 0.4+ |
| 2002 09 07 | 704 | 0.2+ | 0.7+ | 2002 11 14 | 704 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.3+ |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.2+ | 0.4− | 2006 08 29 | 703 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2002 11 24 | 644 | 0.6− | 0.1+ | 2006 08 29 | 703 | 0.5+ | 0.4− |
| 2002 09 07 | 704 | 0.6− | 0.2+ | 2002 11 24 | 644 | (1.9− | 0.3+) | 2006 08 29 | 703 | 0.8− | 0.1+ |
| 2002 09 07 | 704 | 0.3+ | 0.2+ | 2002 11 24 | 644 | 0.6− | 0.1+ | 2006 08 29 | 703 | 0.4− | 1.1− |
| 2002 10 02 | 704 | 0.6− | 0.0 | 2002 11 24 | 644 | 0.3− | 0.1− | 2006 08 29 | 703 | 0.5− | 0.4− |
| 2002 10 02 | 704 | 0.9− | 0.0 | 2002 11 24 | 644 | 0.5− | 0.1+ | 2006 08 29 | 703 | 0.6+ | 0.5− |
| 2002 10 02 | 704 | 0.9− | 0.1+ | 2002 11 24 | 644 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.6− | 0.2− |
| 2002 10 02 | 704 | 1.2− | 0.1+ | 2002 11 30 | 608 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.6− | 0.4+ |
| 2002 10 03 | 704 | 0.1+ | 0.4− | 2002 11 30 | 608 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2002 11 30 | 608 | 0.0 | 0.8− | 2006 09 14 | 703 | 0.1+ | 0.9+ |
| 2002 10 03 | 704 | 0.8+ | 0.4+ | 2002 12 02 | 704 | 0.3+ | 0.3− | 2006 09 14 | 703 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2002 12 02 | 704 | 0.1+ | 0.7− | 2006 09 14 | 703 | 0.4− | 0.4+ |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2002 12 02 | 704 | 0.6+ | 0.7− | 2006 09 22 | 704 | 0.0 | 0.8+ |
| 2002 10 07 | 699 | 0.5− | 0.4− | 2002 12 02 | 704 | 0.3+ | 0.3− | 2006 09 22 | 704 | 0.7− | 0.3− |
| 2002 10 07 | 704 | 0.0 | 0.3+ | 2002 12 02 | 704 | 0.8+ | 0.2− | 2006 09 22 | 704 | 0.6+ | 0.1+ |
| 2002 10 07 | 699 | 0.1− | 0.1+ | 2002 12 06 | 704 | 0.6− | 0.6+ | 2006 09 22 | 704 | 0.0 | 0.3− |
| 2002 10 07 | 704 | 0.7+ | 0.4+ | 2002 12 06 | 704 | 0.3+ | 0.6− | 2006 09 26 | 704 | 0.3+ | 0.7+ |
| 2002 10 07 | 704 | 0.2− | 0.2+ | 2002 12 06 | 704 | 0.4+ | 0.7− | 2006 09 26 | 704 | (1.7+ | 0.8+) |
| 2002 10 07 | 699 | 0.9− | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.7− | 2006 09 26 | 704 | 1.5− | 0.2+ |
| 2002 10 07 | 704 | 0.4+ | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.7− | 2006 09 26 | 704 | 0.3+ | 0.8− |
| 2002 10 07 | 699 | 0.3− | 0.5+ | 2002 12 11 | 644 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.3+ |
| 2002 10 11 | 704 | 0.2− | 0.6+ | 2002 12 11 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 2002 10 11 | 704 | 0.5+ | 0.3+ | 2002 12 11 | 644 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 1.1+ | 1.0+ | 2002 12 11 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 1.1+ | 0.8+ |
| 2002 10 11 | 704 | 0.5− | 1.1+ | 2002 12 11 | 704 | 0.1− | 0.8+ | 2006 10 02 | 703 | 0.1+ | 0.5+ |
| 2002 10 28 | 608 | 1.0+ | 0.1− | 2002 12 11 | 704 | 0.5+ | 0.3− | 2006 10 02 | 703 | 0.2− | 0.3+ |
| 2002 10 28 | 608 | 0.3+ | 1.1− | 2002 12 11 | 704 | 0.3− | 0.4+ | 2006 10 02 | 703 | 0.4− | 0.2− |
| 2002 10 28 | 608 | (0.6+ | 1.9−) | 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.7− | 0.9+ |
| 2002 10 31 | 699 | 0.6+ | 0.2− | 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 10 31 | 699 | 0.6+ | 0.4+ | 2002 12 27 | 644 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 10 31 | 699 | 0.9− | 0.2+ | 2002 12 27 | 644 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 699 | 0.5+ | 0.7+ | 2002 12 31 | 704 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2002 10 31 | 699 | 0.5+ | 0.4+ | 2002 12 31 | 704 | 0.4+ | 1.0− | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2002 10 31 | 699 | 1.3+ | 0.6+ | 2002 12 31 | 704 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2002 10 31 | 699 | 0.0 | 0.5− | 2002 12 31 | 704 | 0.5− | 0.5− | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2002 10 31 | 699 | 0.5+ | 0.5+ | 2003 01 05 | 704 | 0.6− | 0.8− | | | | |
| 2002 11 05 | 704 | 0.3+ | 1.1+ | 2003 01 05 | 704 | 0.2+ | 0.5+ | | | | |

**(142266)∗ 2002 RQ$_{111}$ = 2000 EX$_{185}$**

Discovered 2002 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. Kretlow (*MPO* 37881)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.16792 | | (2000.0) | | | |
| $n$ | 0.24423313 | $\omega$ | 357.58814 | | +0.82493628 | +0.56121973 |
| $a$ | 2.5347376 | $\Omega$ | 327.97568 | | −0.51644086 | +0.70009253 |
| $e$ | 0.2553745 | $i$ | 7.27776 | | −0.22971498 | +0.44147805 |
| $P$ | 4.04 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 691 | 0.3+ | 0.1− | 2002 11 06 | 704 | 1.1− | 1.0+ | 2005 05 08 | E12 | 0.3− | 0.4+ |
| 2000 01 30 | 691 | 0.1+ | 0.2− | 2002 11 06 | 704 | 0.6− | 1.2+ | 2005 05 08 | E12 | 0.1+ | 0.0 |
| 2000 01 30 | 691 | 0.4+ | 0.4− | 2002 11 14 | 644 | 0.6+ | 0.0 | 2005 05 08 | E12 | 0.8+ | 0.6+ |
| 2000 03 01 | 691 | 0.2+ | 0.1− | 2002 11 14 | 644 | 0.2+ | 0.9+ | 2005 05 08 | E12 | 0.7+ | 0.4+ |
| 2000 03 01 | 691 | 0.2− | 0.4− | 2002 11 14 | 644 | 0.0 | 0.9+ | 2005 05 10 | 699 | 0.2− | 0.3+ |
| 2000 03 01 | 691 | 0.1− | 0.1+ | 2002 11 15 | 704 | 0.7− | 0.5− | 2005 05 10 | 699 | 0.6− | 0.5− |
| 2000 03 11 | 691 | 0.6− | 1.4+ | 2002 11 15 | 704 | 0.1+ | 0.5− | 2005 05 10 | 699 | 0.8+ | 0.0 |
| 2000 03 11 | 691 | 0.7− | 0.6− | 2002 11 15 | 704 | 0.2− | 0.3− | 2005 05 10 | 699 | 0.6− | 0.1− |
| 2000 03 11 | 691 | 0.3− | 0.2− | 2002 11 15 | 704 | 0.3− | 0.6− | 2006 08 30 | 704 | 0.0 | 1.2+ |
| 2002 09 06 | 704 | 1.2− | 0.4− | 2002 12 05 | 699 | 0.8+ | 0.9+ | 2006 08 30 | 704 | 0.1+ | 1.4+ |
| 2002 09 06 | 704 | 0.3+ | 0.4+ | 2002 12 05 | 699 | 0.3+ | 0.0 | 2006 08 30 | 704 | (2.5+ | 1.2+) |
| 2002 09 06 | 704 | 0.1+ | 0.7+ | 2002 12 05 | 699 | 0.4+ | 1.4+ | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.5+ | 0.1− | 2002 12 05 | 699 | (1.7+ | 1.8+) | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.7− | 0.1+ | 2002 12 05 | 704 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.5− | 0.4− |
| 2002 09 07 | 704 | 0.4− | 0.6+ | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.3− |
| 2002 09 07 | 704 | 0.6− | 0.2− | 2002 12 05 | 704 | 0.4+ | 0.7− | 2006 10 20 | 704 | 1.4+ | 1.0− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.3+ | 0.3− | 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 10 20 | 704 | 0.4+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.7− | 2002 12 12 | 644 | 0.4− | 0.1− | 2006 10 20 | 704 | 0.2− | 0.9+ | | |
| 2002 10 05 | 704 | 0.0 | 0.9− | 2002 12 12 | 644 | 0.4− | 0.1− | 2006 10 20 | 704 | 1.1+ | 1.2− | | |
| 2002 10 05 | 704 | 0.7+ | 0.5− | 2002 12 12 | 644 | 0.1− | 0.0 | 2006 10 20 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.5+ | 0.8− | 2002 12 14 | 704 | 0.6− | 0.7− | 2006 10 27 | 703 | 0.1+ | 0.1− | | |
| 2002 10 05 | 704 | 0.7+ | 1.2− | 2002 12 14 | 704 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.1+ | | |
| 2002 10 10 | 704 | 0.4− | 0.0 | 2002 12 14 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 1.3− | 0.7+ | | |
| 2002 10 10 | 704 | 0.7+ | 0.7− | 2002 12 14 | 704 | 1.2+ | 0.6− | 2006 10 27 | 703 | 0.4− | 0.2+ | | |
| 2002 10 10 | 704 | 0.6+ | 0.2− | 2003 01 20 | 644 | 0.6− | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.1− | | |
| 2002 10 10 | 704 | (1.7+ | 0.7−) | 2003 01 20 | 644 | 0.3− | 0.5− | 2006 11 13 | 644 | 0.1+ | 0.2− | | |
| 2002 10 10 | 704 | 0.7+ | 0.6+ | 2003 01 20 | 644 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | |
| 2002 10 12 | 704 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.4+ | 1.0+ | 2006 11 15 | 703 | 0.2− | 0.6− | | |
| 2002 10 12 | 704 | 0.1− | 0.2− | 2004 01 22 | 704 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.2− | 1.2− | | |
| 2002 10 12 | 704 | 0.3− | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.1− | | |
| 2002 10 12 | 704 | 0.9+ | 0.6+ | 2004 02 12 | 691 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.2− | 0.4− | | |
| 2002 11 06 | 704 | 0.6− | 1.0+ | 2004 02 12 | 691 | 0.0 | 0.2+ | | | | | | |
| 2002 11 06 | 704 | 1.0− | 1.2+ | 2004 02 12 | 691 | 0.1+ | 0.0 | | | | | | |

**(142267)∗ 2002 RN$_{113}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.35670 | | (2000.0) | | | |
| $n$ | 0.26574379 | $\omega$ | 254.27140 | | −0.02935325 | +0.99937653 |
| $a$ | 2.3960394 | $\Omega$ | 14.09023 | | −0.88346433 | −0.01675712 |
| $e$ | 0.2100191 | $i$ | 4.62248 | | −0.46757798 | −0.03107638 |
| $P$ | 3.71 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.1− | 0.3− | 2005 03 04 | G96 | 0.3− | 0.6+ | 2005 05 08 | G96 | 0.0 | 0.5+ | | |
| 1995 10 23 | 691 | 0.3+ | 0.0 | 2005 03 04 | G96 | 0.9+ | 0.2+ | 2005 05 08 | G96 | 0.0 | 0.2− | | |
| 1995 10 23 | 691 | 0.3+ | 0.1+ | 2005 03 04 | G96 | 0.5− | 0.2− | 2005 05 08 | G96 | 0.3− | 0.0 | | |
| 1995 11 16 | 691 | 0.1− | 0.0 | 2005 03 10 | 695 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.0 | | |
| 1995 11 16 | 691 | 0.2− | 0.1+ | 2005 03 10 | G96 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.2+ | | |
| 1995 11 16 | 691 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | | |
| 2002 08 20 | 644 | 0.2+ | 0.6+ | 2005 03 10 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 20 | 644 | 0.4+ | 0.6+ | 2005 03 10 | G96 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2002 08 20 | 644 | 0.3+ | 0.5+ | 2005 03 10 | 695 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2005 03 13 | 703 | 0.3− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2005 03 13 | 703 | 0.2+ | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.2− | | |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2005 03 13 | 703 | 0.2− | 0.5− | 2006 09 26 | 691 | 0.3+ | 0.2− | | |
| 2002 09 05 | 704 | 0.7− | 0.5− | 2005 03 13 | 703 | 0.5− | 0.3− | 2006 10 15 | 691 | 0.4− | 0.2+ | | |
| 2002 09 05 | 699 | 1.2− | 0.1− | 2005 04 01 | 947 | 0.4− | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.5− | | |
| 2002 09 05 | 704 | 0.7+ | 0.2− | 2005 04 01 | 947 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.5− | 0.1+ | | |
| 2002 09 05 | 699 | 0.9− | 0.3− | 2005 04 01 | 947 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.9+ | 1.4+ | | |
| 2002 09 05 | 704 | 0.5− | 0.0 | 2005 04 04 | 703 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.2− | 1.4+ | | |
| 2002 09 05 | 699 | 0.5− | 0.0 | 2005 04 04 | 703 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 1.2− | 0.0 | | |
| 2002 09 05 | 699 | 0.3+ | 0.5− | 2005 04 04 | 703 | 0.4+ | 0.1− | 2006 10 21 | 703 | 1.8+ | 0.4+ | | |
| 2002 09 05 | 704 | 0.7− | 0.6− | 2005 04 04 | 703 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.5+ | | |
| 2002 09 08 | 608 | 0.2− | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2002 09 08 | 608 | 0.3− | 0.5+ | 2005 04 04 | G96 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 09 08 | 608 | 0.3+ | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ | | |
| 2002 09 13 | 704 | 1.1+ | 0.1− | 2005 04 04 | G96 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.1− | | |
| 2002 09 13 | 704 | 0.8+ | 0.2+ | 2005 05 04 | G96 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.3− | 0.3+ | | |
| 2002 09 13 | 704 | 0.1− | 0.0 | 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2005 05 04 | G96 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1+ | | |
| 2002 09 15 | 644 | 0.1− | 0.5+ | 2005 05 04 | G96 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.4+ | 1.1− | | |
| 2002 09 15 | 644 | 0.0 | 0.3+ | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.3+ | 1.2− | | |
| 2005 03 01 | 691 | 0.3+ | 0.2+ | 2005 05 06 | G96 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.4+ | | |
| 2005 03 01 | 691 | 0.3+ | 0.3+ | 2005 05 06 | G96 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | | |
| 2005 03 01 | 691 | 0.2+ | 0.0 | 2005 05 06 | G96 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.5− | | |
| 2005 03 04 | G96 | 0.4− | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.2+ | | | | | | |

**(142268)∗ 2002 RW$_{113}$ = 2003 YR$_{137}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56556)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.71750 | | (2000.0) | | | |
| $n$ | 0.25732441 | $\omega$ | 94.96222 | | +0.42782911 | −0.90273647 |
| $a$ | 2.4480224 | $\Omega$ | 329.58105 | | +0.79002187 | +0.39769321 |
| $e$ | 0.0433251 | $i$ | 5.10418 | | +0.43912151 | +0.16403344 |
| $P$ | 3.83 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.2− | 0.1− | 2003 12 21 | 691 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.0 | 0.4− | | |
| 2000 01 04 | 704 | 0.2− | 0.2+ | 2003 12 21 | 691 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.5+ | | |
| 2000 01 04 | 704 | 0.2− | 0.5− | 2003 12 21 | 691 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.2− | 0.1− | | |
| 2001 04 26 | 699 | 0.4+ | 0.2+ | 2003 12 27 | 704 | 0.0 | 1.0+ | 2006 09 06 | 644 | 0.1− | 0.0 | | |
| 2001 04 26 | 699 | 0.0 | 0.5+ | 2003 12 27 | 704 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.4+ | | |
| 2001 04 26 | 699 | 0.4− | 0.3+ | 2003 12 27 | 704 | 0.5+ | 1.0+ | 2006 09 17 | 703 | 0.9+ | 0.3− | | |
| 2001 04 26 | 699 | (4.7− | 4.9+) | 2003 12 27 | 704 | (0.7+ | 2.0+) | 2006 09 17 | 703 | 0.2− | 0.3+ | | |
| 2002 08 27 | 644 | (0.3− | 2.4+) | 2003 12 27 | 704 | 0.4+ | 1.0+ | 2006 09 17 | 703 | 0.7− | 0.1+ | | |
| 2002 08 27 | 644 | 0.0 | 1.0+ | 2003 12 29 | 699 | 1.0− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1− | | |
| 2002 08 28 | 644 | 0.1− | 0.3+ | 2003 12 29 | 699 | 0.8+ | 0.6− | 2006 09 25 | 691 | 0.0 | 0.7− | | |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2003 12 29 | 699 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | | |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2003 12 29 | 699 | 0.7− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | 0.8+ | 0.7+ | 2004 01 22 | 704 | 1.4+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2002 09 05 | 704 | 0.2+ | 0.4+ | 2004 01 22 | 704 | (1.1+ | 2.3−) | 2006 10 01 | 691 | 0.1− | 0.2+ | | |
| 2002 09 05 | 704 | 0.1− | 0.2− | 2004 01 22 | 704 | 1.4+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 09 05 | 704 | 0.1+ | 1.3+ | 2004 01 22 | 704 | (1.0+ | 1.7−) | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 08 | 608 | 0.5+ | 0.4− | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2002 09 08 | 608 | 0.0 | 1.1− | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 09 08 | 608 | 0.1+ | 0.5− | 2004 01 30 | 704 | 1.0+ | 0.7− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 09 14 | 644 | 0.5− | 0.3+ | 2004 02 13 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.2− | | |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.4− | | |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2004 02 23 | 704 | 0.1+ | 0.7+ | 2006 10 23 | G96 | 0.4+ | 0.3− | | |
| 2002 09 14 | 644 | 0.7− | 0.5+ | 2004 02 23 | 704 | (1.2− | 2.7+) | 2006 10 23 | G96 | 0.0 | 0.2− | | |
| 2002 09 14 | 644 | 0.4− | 0.8+ | 2004 02 23 | 704 | 0.6+ | 0.3− | | | | | | |

**(142269)∗ 2002 RE$_{114}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.40806 | | (2000.0) | | | |
| $n$ | 0.25338787 | $\omega$ | 257.50800 | | +0.92875792 | −0.36754643 |
| $a$ | 2.4733116 | $\Omega$ | 124.03773 | | +0.35865770 | +0.85818446 |
| $e$ | 0.1904998 | $i$ | 3.33100 | | +0.09366631 | +0.35836999 |
| $P$ | 3.89 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 16 | 691 | 0.3+ | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | (3.3− | 1.6−) | | |
| 2001 05 16 | 691 | 0.2− | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 09 30 | 703 | 1.3− | 0.4− | | |
| 2001 05 16 | 691 | 0.2− | 0.7+ | 2002 10 11 | 704 | 0.6− | 0.9+ | 2006 09 30 | 703 | 1.3+ | 1.3+ | | |
| 2002 08 31 | 699 | 1.0− | 0.5+ | 2002 10 11 | 704 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.8+ | | |
| 2002 08 31 | 699 | 0.9+ | 0.1+ | 2002 10 16 | 644 | 0.2+ | 0.6+ | 2006 10 01 | 704 | 0.1− | 0.4+ | | |
| 2002 08 31 | 699 | 0.4+ | 0.3+ | 2002 10 16 | 644 | (0.3+ | 1.5+) | 2006 10 01 | 704 | 0.5+ | 0.7+ | | |
| 2002 08 31 | 699 | 0.1+ | 0.5− | 2002 10 16 | 644 | (0.6+ | 2.1+) | 2006 10 01 | 704 | 0.3+ | 0.4+ | | |
| 2002 09 05 | 704 | 0.3+ | 1.1+ | 2004 02 17 | 691 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 0.1− | 0.2+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.9+ | 2004 02 17 | 691 | 0.5+ | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.2− | | |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 691 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.3− | | |
| 2002 09 05 | 704 | 0.5+ | 1.1+ | 2004 02 29 | 691 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.2− | | |
| 2002 09 05 | 704 | 1.0+ | 0.5+ | 2004 02 29 | 691 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.1− | | |
| 2002 09 08 | 608 | 0.2+ | 0.6+ | 2004 02 29 | 691 | 0.1− | 0.7+ | 2006 10 15 | 703 | 0.7− | 0.7− | | |
| 2002 09 08 | 608 | 0.2− | 0.1− | 2005 05 14 | G96 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.0 | 0.2+ | | |
| 2002 09 08 | 608 | 0.2+ | 0.7+ | 2005 05 14 | G96 | 0.2− | 0.6+ | 2006 10 15 | 703 | 0.3− | 0.3− | | |
| 2002 09 13 | 608 | 0.7+ | 0.3− | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.5+ | | |
| 2002 09 13 | 608 | 0.1+ | 0.5+ | 2005 05 14 | G96 | 0.7− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2002 09 13 | 608 | 0.5+ | 0.5+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 09 16 | 608 | 1.3− | 0.9− | 2005 06 10 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.9− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 608 | 1.1− | 1.1− | 2005 06 10 | 691 | 0.4+ | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.2+ |
| 2002 09 16 | 608 | 1.3− | 0.8− | 2005 06 14 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.2− |
| 2002 09 29 | 608 | 0.5+ | 0.5+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.1− |
| 2002 09 29 | 608 | 0.1+ | 0.2+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 09 29 | 608 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.5− | 0.8− | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.7− | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 10 06 | 704 | (2.3− | 1.9+) | 2006 09 20 | 644 | 0.3+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2002 10 06 | 704 | 0.2− | 1.2+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2002 10 06 | 704 | 1.0− | 0.9+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 704 | 0.3− | 0.5+ |
| 2002 10 06 | 704 | 0.5+ | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.7− | 2006 10 27 | 704 | 0.2− | 0.1− |
| 2002 10 06 | 608 | 0.5+ | 0.6− | 2006 09 22 | 704 | (2.0− | 0.4+) | 2006 10 27 | 704 | 0.2+ | 1.3+ |
| 2002 10 06 | 608 | 0.0 | 0.8− | 2006 09 22 | 704 | 0.5− | 0.3− | 2006 10 27 | 704 | 0.1− | 0.0 |
| 2002 10 06 | 608 | 0.4+ | 0.5− | 2006 09 22 | 704 | 0.1− | 0.2− | 2006 10 27 | 704 | 0.4− | 0.2+ |
| 2002 10 07 | 704 | 0.8− | 1.0+ | 2006 09 22 | 704 | 0.8− | 0.1− | 2006 11 16 | 703 | 0.2− | 0.1+ |
| 2002 10 07 | 704 | 0.7− | 1.3+ | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.1− | 1.6+ |
| 2002 10 07 | 704 | (0.2− | 3.2+) | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 11 16 | 703 | 1.4− | 0.3− |
| 2002 10 07 | 704 | 1.2− | 1.1+ | 2006 09 26 | 704 | 0.8+ | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.2− |
| 2002 10 07 | 704 | 0.6− | 1.4+ | 2006 09 26 | 704 | 0.0 | 0.2− | | | | |

**(142270)∗ 2002 RJ$_{114}$ = 2001 FG$_{140}$**

Discovered 2002 Sept. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37883)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.80383 | | (2000.0) | | | |
| $n$ | 0.23811591 | $\omega$ | 252.99493 | | +0.31521143 | +0.94820181 |
| $a$ | 2.5779655 | $\Omega$ | 35.45614 | | −0.84280581 | +0.29879227 |
| $e$ | 0.2026342 | $i$ | 3.89804 | | −0.43625695 | +0.10787263 |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 608 | 0.1− | 1.3− | 2002 10 01 | 699 | 0.3− | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.1− |
| 2001 03 21 | 608 | 1.0− | 1.2− | 2002 10 02 | 704 | 0.4+ | 1.0+ | 2006 08 24 | 644 | 0.0 | 0.2− |
| 2001 03 21 | 608 | 0.3+ | 0.8− | 2002 10 02 | 704 | 0.8+ | 0.5+ | 2006 08 28 | 704 | 0.8+ | 0.0 |
| 2001 03 22 | 209 | 0.3+ | 0.7+ | 2002 10 02 | 704 | (0.1− | 1.7+) | 2006 08 28 | 704 | 0.4− | 0.7+ |
| 2001 03 23 | 209 | 0.1+ | 0.5+ | 2002 10 03 | 704 | 0.4+ | 0.9+ | 2006 08 28 | 704 | (0.7− | 1.5−) |
| 2001 03 23 | 209 | 0.1− | 0.8+ | 2002 10 03 | 704 | (0.6− | 1.9+) | 2006 08 28 | 704 | 0.0 | 0.4− |
| 2001 03 23 | 209 | 0.5− | 0.5+ | 2002 10 03 | 704 | 0.4− | 0.4− | 2006 08 28 | 704 | 0.6+ | 0.1− |
| 2001 03 23 | 209 | 0.2− | 0.4+ | 2002 10 03 | 704 | 0.2− | 1.0+ | 2006 08 28 | 699 | 0.4+ | 0.3− |
| 2001 03 24 | 209 | 0.3− | 0.6+ | 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.6+ | 0.2+ |
| 2001 03 26 | 704 | (1.2+ | 1.5+) | 2005 03 03 | 703 | 0.9− | 1.4+ | 2006 08 28 | 699 | 0.5+ | 0.2− |
| 2001 03 26 | 704 | 1.0+ | 1.2+ | 2005 03 03 | 703 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2001 03 26 | 704 | 0.9+ | 1.4+ | 2005 03 03 | 703 | (1.7− | 0.7+) | 2006 09 14 | 644 | 0.4− | 0.0 |
| 2001 03 26 | 704 | (0.4+ | 1.5+) | 2005 03 03 | 703 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.3− | 0.7+ | 2005 04 16 | 691 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.6+ |
| 2002 09 05 | 704 | 0.4− | 0.2+ | 2005 04 16 | 691 | 0.8+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.5− |
| 2002 09 05 | 704 | 0.6+ | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.4+ | 1.1+ |
| 2002 09 06 | 704 | 1.4+ | 0.4− | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 18 | 699 | 1.0− | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 1.1+ | 0.4− |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.2− |
| 2002 09 06 | 704 | 0.5+ | 0.3− | 2006 08 18 | 644 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.7− | 0.8− |
| 2002 09 06 | 704 | 0.5− | 0.4− | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 1.1− | 1.1+ |
| 2002 09 08 | 608 | 0.7− | 0.4− | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2002 09 08 | 608 | 0.8− | 0.6− | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2− | 0.5+ |
| 2002 09 08 | 608 | 0.6− | 0.6− | 2006 08 22 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.6− | 0.2− |
| 2002 09 13 | 608 | 0.4− | 0.5− | 2006 08 22 | 644 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.6+ | 0.1+ |
| 2002 09 13 | 608 | 0.1− | 0.3− | 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 09 13 | 608 | 0.7− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 09 17 | 644 | 0.0 | 0.9+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 09 17 | 644 | 0.2− | 0.7+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2002 09 17 | 644 | 0.0 | 0.7+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.7− | 0.3− |
| 2002 09 19 | 644 | 0.8− | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 1.2− | 0.3− |
| 2002 09 19 | 644 | 0.8− | 0.7+ | 2006 08 23 | 704 | 0.6+ | 0.7− | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2002 09 19 | 644 | 0.6− | 0.8+ | 2006 08 23 | 704 | 0.2− | 0.8+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 10 01 | 699 | 0.3+ | 1.1+ | 2006 08 23 | 704 | 0.9− | 0.7+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.5+ | 0.5+ | 2006 08 23 | 704 | 0.3− | 1.1+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2002 10 01 | 699 | 0.8− | 0.9+ | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.3− | 0.1+ |

**(142271)∗ 2002 RY$_{114}$ = 1998 HW$_{68}$**

Discovered 2002 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35413)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 123.73019 | | (2000.0) | | | |
| $n$ | 0.28724425 | $\omega$ | 14.80542 | | −0.08076782 | +0.99550870 |
| $a$ | 2.2749323 | $\Omega$ | 250.58089 | | −0.91972492 | −0.09353310 |
| $e$ | 0.1709903 | $i$ | 3.00167 | | −0.38416484 | +0.01462825 |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 04 | 691 | 0.2+ | 0.5− | 2002 09 08 | 608 | 0.3− | 0.2+ | 2005 06 10 | 691 | 0.1+ | 0.1− |
| 1995 06 04 | 691 | 0.2− | 0.1− | 2002 09 13 | 644 | 0.0 | 0.1+ | 2005 06 10 | 691 | 0.3+ | 0.2− |
| 1998 04 21 | 704 | 0.8− | 0.3− | 2002 09 13 | 644 | 0.2− | 0.4+ | 2005 06 10 | 691 | 0.1+ | 0.1+ |
| 1998 04 21 | 704 | 0.9− | 0.9+ | 2002 09 13 | 644 | 0.3− | 0.0 | 2005 06 11 | 703 | 0.0 | 0.8+ |
| 1998 04 21 | 704 | 1.9+ | 0.0 | 2002 09 14 | 644 | 0.2− | 0.1+ | 2005 06 11 | 703 | 0.2− | 0.0 |
| 1998 04 21 | 704 | 1.2+ | 0.6+ | 2002 09 14 | 644 | 0.3− | 0.1+ | 2005 06 11 | 703 | 1.4− | 1.1+ |
| 1998 04 21 | 704 | 0.4+ | 0.2+ | 2002 09 14 | 644 | 0.4− | 0.1− | 2005 06 11 | 703 | 0.0 | 1.3+ |
| 1998 04 22 | 704 | 0.4+ | 0.6+ | 2002 09 16 | 608 | 0.8− | 0.7− | 2005 06 13 | G96 | 0.2− | 0.1− |
| 1998 04 22 | 704 | 0.2− | 0.8+ | 2002 09 16 | 608 | 0.6− | 0.9− | 2005 06 13 | G96 | 0.5− | 0.0 |
| 1998 04 22 | 704 | 0.5+ | 0.2− | 2002 09 16 | 608 | 0.6− | 0.9− | 2005 06 13 | G96 | 0.3− | 0.2− |
| 1998 04 22 | 704 | 1.1+ | 0.7+ | 2002 10 04 | 704 | 0.3− | 1.4+ | 2005 06 13 | G96 | 1.0− | 0.4+ |
| 1998 04 22 | 704 | 0.9− | 2.0+ | 2002 10 04 | 704 | 0.5− | 0.0 | 2005 06 17 | 691 | 0.5− | 0.4+ |
| 1999 10 13 | 704 | 0.4− | 0.2− | 2002 10 04 | 704 | 0.1− | 0.6+ | 2005 06 17 | 691 | 0.4+ | 0.2− |
| 1999 10 13 | 704 | 1.0− | 0.2+ | 2002 10 04 | 704 | 1.1+ | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.1− | 0.5+ | 2005 05 04 | 704 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4+ |
| 1999 10 13 | 704 | 0.5− | 0.2+ | 2005 05 04 | 704 | 0.5+ | 0.5− | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.3+ | 0.6+ | 2005 05 04 | 704 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 08 12 | 704 | 0.5+ | 0.3+ | 2005 05 04 | 704 | (1.6+ | 0.0 ) | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 08 12 | 704 | 0.0 | 0.9+ | 2005 05 04 | 704 | (1.6+ | 0.2+) | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2002 08 12 | 704 | 0.0 | 0.2− | 2005 05 09 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2002 08 12 | 704 | 0.0 | 0.2+ | 2005 05 09 | 704 | 0.6− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.4+ |
| 2002 08 28 | 644 | 0.3+ | 0.2+ | 2005 05 09 | 704 | 0.0 | 1.2+ | 2006 11 18 | 691 | 0.2+ | 0.4+ |
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2005 05 09 | 704 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2002 08 28 | 644 | 0.3+ | 0.1+ | 2005 05 29 | E12 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2002 09 06 | 704 | 0.1+ | 0.3− | 2005 05 29 | E12 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.7− | 0.4− |
| 2002 09 06 | 704 | 0.5+ | 0.1+ | 2005 05 29 | E12 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2002 09 06 | 704 | 0.8+ | 0.2− | 2005 06 04 | 704 | 0.8+ | 0.1− | 2006 11 21 | 704 | 0.8− | 0.8+ |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2005 06 04 | 704 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 09 06 | 704 | 1.2+ | 0.1− | 2005 06 04 | 704 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2002 09 08 | 608 | 0.1− | 0.3+ | 2005 06 04 | 704 | 0.3+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 09 08 | 608 | 0.2− | 0.3+ | 2005 06 04 | 704 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.1− | 0.1− |

**(142272)∗ 2002 RB$_{115}$ = 2003 WV$_{111}$**

Discovered 2002 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56556)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.48123 | | (2000.0) | | | |
| $n$ | 0.18501794 | $\omega$ | 342.99014 | | −0.11133338 | +0.99008228 |
| $a$ | 3.0501895 | $\Omega$ | 280.55458 | | −0.90133573 | −0.13691565 |
| $e$ | 0.0774982 | $i$ | 5.00024 | | −0.41856753 | +0.03148302 |
| $P$ | 5.33 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.0 | 0.4+ | 2003 11 20 | 691 | 0.1+ | 0.1− | 2005 02 02 | 703 | 0.9− | 0.3+ |
| 2002 08 28 | 644 | 0.2− | 0.5+ | 2003 11 20 | 691 | 0.0 | 0.0 | 2005 02 02 | 704 | 0.2+ | 0.1− |
| 2002 08 28 | 644 | 0.5− | 0.4+ | 2003 11 24 | 704 | 0.5+ | 0.0 | 2005 02 02 | 703 | 0.7− | 1.6+ |
| 2002 09 06 | 704 | 0.7− | 0.2+ | 2003 11 24 | 704 | 0.0 | 0.4+ | 2005 02 02 | 704 | 0.8+ | 0.0 |
| 2002 09 06 | 704 | 0.0 | 1.1− | 2003 11 24 | 704 | 0.2− | 0.4− | 2005 02 02 | 704 | 0.2− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.2− | 0.7+ | 2003 11 24 | 704 | 1.1+ | 0.3− | 2005 03 13 | G96 | 0.2+ | 0.3− |
| 2002 09 06 | 704 | 0.3− | 0.6+ | 2003 11 24 | 704 | 0.5+ | 0.4− | 2005 03 13 | G96 | 0.2+ | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 0.2− | 2003 12 21 | 691 | 0.0 | 0.2− | 2005 03 13 | G96 | 0.1+ | 0.3− |
| 2002 09 08 | 608 | 0.4+ | 0.1+ | 2003 12 21 | 691 | 0.1− | 0.0 | 2005 03 13 | G96 | 0.3+ | 0.2− |
| 2002 09 08 | 608 | 0.2+ | 0.2− | 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 05 02 | 704 | 0.0 | 0.7+ |
| 2002 09 08 | 608 | 0.2+ | 0.4+ | 2003 12 22 | 704 | 0.3− | 0.0 | 2006 05 02 | 704 | 0.3+ | 0.5+ |
| 2002 09 13 | 644 | 0.4− | 0.7+ | 2003 12 22 | 704 | 0.9+ | 0.0 | 2006 05 02 | 704 | 0.3− | 1.7+ |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2003 12 22 | 704 | 0.4+ | 0.3− | 2006 05 05 | 699 | 0.8+ | 0.7+ |
| 2002 09 13 | 644 | 0.1+ | 0.6+ | 2005 01 17 | 691 | 0.3+ | 0.0 | 2006 05 05 | 699 | 0.7+ | 1.1+ |
| 2002 10 04 | 704 | 0.7− | 1.1+ | 2005 01 17 | 691 | 0.2+ | 0.1+ | 2006 05 05 | 699 | 0.1− | 0.9+ |
| 2002 10 04 | 704 | 0.7− | 0.8+ | 2005 01 17 | 691 | 0.3+ | 0.0 | 2006 05 05 | 699 | 0.4+ | 0.6+ |
| 2002 10 04 | 704 | 0.3− | 1.7+ | 2005 01 17 | 704 | 0.2− | 1.2+ | 2006 05 18 | 644 | 0.0 | 0.0 |
| 2003 11 20 | 704 | 0.7− | 0.8+ | 2005 01 17 | 704 | 0.8− | 0.8+ | 2006 05 18 | 644 | 0.2− | 0.0 |
| 2003 11 20 | 704 | 0.8− | 0.9+ | 2005 01 17 | 704 | 0.5+ | 1.2+ | 2006 05 18 | 644 | 0.6+ | 0.2+ |
| 2003 11 20 | 704 | 0.6− | 1.4+ | 2005 01 17 | 704 | 0.2+ | 0.1− | 2006 05 24 | 699 | 1.0+ | 0.0 |
| 2003 11 20 | 704 | 0.4− | 1.1+ | 2005 02 02 | 703 | 1.1− | 0.2+ | 2006 05 24 | 699 | 0.1− | 0.4+ |
| 2003 11 20 | 704 | 0.1+ | 0.6+ | 2005 02 02 | 703 | 0.4− | 0.8+ | 2006 05 24 | 699 | 0.4− | 0.8− |
| 2003 11 20 | 691 | 0.0 | 0.2− | 2005 02 02 | 704 | 0.5+ | 0.8− | 2006 05 24 | 699 | 0.3− | 0.4+ |

**(142273)∗ 2002 RD$_{115}$**

Discovered 2002 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.61631 | | (2000.0) | | −0.74869197 | +0.65132505 |
| $n$ | 0.22766946 | $\omega$ | 256.07432 | | −0.49654785 | −0.67435070 |
| $a$ | 2.6562332 | $\Omega$ | 324.32758 | | −0.43920447 | −0.34788909 |
| $e$ | 0.1176839 | $i$ | 12.22012 | | | |
| $P$ | 4.33 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2+ | 0.5+ | 2004 12 12 | 703 | 0.9− | 0.5+ | 2005 04 09 | 699 | 0.0 | 0.9+ |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2004 12 12 | 703 | 0.3− | 1.2− | 2005 04 09 | 699 | 0.4− | 1.4+ |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2005 01 06 | 704 | 0.8+ | 0.1− | 2005 04 15 | 703 | 0.8− | 0.7+ |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2005 01 06 | 704 | 0.3+ | 0.5+ | 2005 04 15 | 703 | 0.2− | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2005 01 06 | 704 | 0.4+ | 1.1− | 2005 04 15 | 703 | 0.7− | 0.6− |
| 2002 09 06 | 704 | 0.6+ | 0.2+ | 2005 01 06 | 704 | 0.5+ | 0.2+ | 2005 04 15 | 703 | 0.1+ | 0.4− |
| 2002 09 06 | 704 | 0.0 | 0.7+ | 2005 03 07 | 704 | 0.1+ | 0.3− | 2005 05 13 | 703 | 0.2− | 0.6− |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2005 03 07 | 704 | 0.2+ | 0.1+ | 2005 05 13 | 703 | 1.4− | 0.8+ |
| 2002 09 08 | 608 | 1.2+ | 0.2+ | 2005 03 07 | 704 | 0.5+ | 0.3+ | 2005 05 13 | 703 | 0.1− | 0.6− |
| 2002 09 08 | 608 | 0.5+ | 0.6+ | 2005 03 07 | 704 | 0.8+ | 0.1+ | 2005 05 13 | 703 | 0.5− | 0.1− |
| 2002 09 08 | 608 | 0.7+ | 0.0 | 2005 03 07 | 704 | 1.0+ | 0.3+ | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2005 03 13 | 703 | 0.1+ | 0.1+ | 2006 08 12 | 644 | 0.2− | 0.2+ |
| 2002 09 13 | 644 | 0.7− | 0.6+ | 2005 03 13 | 703 | 0.1+ | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.4+ |
| 2002 09 13 | 644 | 0.7− | 0.6+ | 2005 03 13 | 703 | 0.4− | 0.1+ | 2006 08 12 | 644 | 0.4− | 0.2+ |
| 2002 09 16 | 608 | 0.1+ | 0.8+ | 2005 03 13 | 703 | 0.0 | 0.2+ | 2006 08 12 | 644 | 0.0 | 0.5+ |
| 2002 09 16 | 608 | (0.2+ | 2.3+) | 2005 04 01 | 699 | 0.5+ | 0.0 | 2006 08 12 | 644 | 0.2− | 0.3+ |
| 2002 09 16 | 608 | 0.5+ | 1.3+ | 2005 04 01 | 699 | 0.8+ | 0.1− | 2006 08 13 | 644 | 0.2− | 0.2+ |
| 2002 10 11 | 645 | 0.1− | 0.1− | 2005 04 01 | 699 | 0.6+ | 0.4+ | 2006 08 13 | 644 | 0.0 | 0.0 |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2005 04 02 | 644 | 0.3+ | 0.4+ | 2006 08 13 | 644 | 0.3− | 0.2+ |
| 2002 11 08 | 645 | 0.1− | 0.1− | 2005 04 02 | 644 | 0.6+ | 0.4+ | 2006 08 15 | 644 | 0.4− | 0.4+ |
| 2002 11 08 | 645 | 0.1− | 0.1− | 2005 04 02 | 644 | 0.6+ | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2003 12 17 | 704 | 0.2+ | 0.3+ | 2005 04 05 | 703 | 0.2− | 0.0 | 2006 08 15 | 644 | 0.1− | 0.3+ |
| 2003 12 17 | 704 | 0.1− | 0.3+ | 2005 04 05 | 703 | 1.2− | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2003 12 17 | 704 | 0.2+ | 0.6+ | 2005 04 05 | 703 | 0.3+ | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2003 12 17 | 704 | 0.5− | 1.1+ | 2005 04 05 | 703 | (1.5− | 0.3−) | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2003 12 29 | 704 | 1.1− | 0.3+ | 2005 04 09 | 704 | (1.5+ | 0.4−) | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2003 12 29 | 704 | 0.3+ | 1.1+ | 2005 04 09 | 699 | 0.1+ | 1.0+ | 2006 11 23 | G96 | 0.3+ | 0.3+ |
| 2003 12 29 | 704 | 0.9− | 0.2+ | 2005 04 09 | 704 | 1.4+ | 0.7+ | 2006 11 23 | G96 | 0.3− | 0.7− |
| 2003 12 29 | 704 | 0.6+ | 0.1+ | 2005 04 09 | 704 | 1.0+ | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2003 12 29 | 704 | 0.2− | 0.1+ | 2005 04 09 | 699 | 0.4+ | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.4+ |
| 2004 12 12 | 703 | 0.1+ | 0.3− | 2005 04 09 | 704 | 0.3+ | 0.6− | | | | |
| 2004 12 12 | 703 | 0.6− | 0.2+ | 2005 04 09 | 704 | 0.3+ | 1.3+ | | | | |

**(142274)∗ 2002 RO$_{115}$ = 1997 GD$_{33}$ = 1999 XP$_{198}$**

Discovered 2002 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 35414)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 216.76307 | | (2000.0) | | −0.83041981 | −0.55713456 |
| $n$ | 0.25735877 | $\omega$ | 144.76646 | | +0.49012471 | −0.73224489 |
| $a$ | 2.4478045 | $\Omega$ | 1.38040 | | +0.26491643 | −0.39168675 |
| $e$ | 0.0514969 | $i$ | 4.78216 | | | |
| $P$ | 3.83 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.1+ | 0.4− | 2003 12 23 | 704 | 0.5− | 0.4− | 2006 09 27 | 704 | (1.2+ | 1.9+) |
| 1997 04 03 | 704 | 0.6+ | 0.3+ | 2003 12 28 | 704 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.6+ |
| 1997 04 11 | 704 | 0.1+ | 0.6+ | 2003 12 28 | 704 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.1+ |
| 1997 04 11 | 704 | 0.9+ | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 27 | 704 | (1.8+ | 0.9+) |
| 1999 12 12 | 704 | 1.0− | 0.7− | 2003 12 28 | 704 | (1.7+ | 0.4−) | 2006 09 30 | 703 | 0.6− | 0.1− |
| 1999 12 12 | 704 | 0.2− | 1.6− | 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.4+ | 1.0+ |
| 1999 12 12 | 704 | 0.9+ | 0.2+ | 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.1− |
| 1999 12 15 | 704 | 0.1+ | 0.9− | 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.9+ |
| 1999 12 15 | 704 | 0.1+ | 0.3− | 2005 05 13 | E12 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 1999 12 15 | 704 | 0.5+ | 0.1− | 2005 05 13 | E12 | 0.6− | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2005 05 13 | E12 | 0.5− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2005 05 13 | E12 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.8+ | 2005 05 21 | 644 | 0.4+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2002 09 06 | 704 | 0.1− | 0.6− | 2005 05 21 | 644 | 0.1+ | 0.6+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.6+ | 0.1+ | 2005 05 21 | 644 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.4− | 1.1+ |
| 2002 09 06 | 704 | 0.7− | 0.1− | 2006 08 28 | 703 | (0.2− | 1.6−) | 2006 10 16 | 703 | (2.2− | 0.8−) |
| 2002 09 06 | 704 | 0.5+ | 0.1− | 2006 08 28 | 703 | (1.8+ | 0.8−) | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2002 09 06 | 704 | 0.4− | 1.0− | 2006 08 28 | 703 | (3.2+ | 0.4−) | 2006 10 16 | 703 | 0.6+ | 0.4− |
| 2002 09 08 | 608 | 0.7− | 0.4+ | 2006 08 28 | 703 | (1.5+ | 1.9+) | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 09 08 | 608 | 0.9− | 0.6− | 2006 09 18 | 699 | 0.6− | 0.2− | 2006 10 16 | G96 | 0.5+ | 0.1− |
| 2002 09 08 | 608 | 0.6− | 1.0− | 2006 09 18 | 699 | 0.6− | 0.4+ | 2006 10 16 | G96 | 0.4+ | 0.3− |
| 2003 12 14 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2003 12 14 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.4+ | 1.1+ |
| 2003 12 14 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 1.3+ | 1.1− |
| 2003 12 18 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.1− | 1.2− |
| 2003 12 18 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.2+ | 0.1− |
| 2003 12 18 | 704 | 0.4+ | 0.0 | 2006 09 22 | A50 | 0.1+ | 0.5− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2003 12 18 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.3+ | 1.0+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2003 12 18 | 704 | 0.1+ | 0.8+ | 2006 09 25 | 699 | 0.1− | 1.1+ | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2003 12 23 | 704 | 0.1− | 0.6− | 2006 09 25 | 699 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2003 12 23 | 704 | (1.6+ | 1.3+) | 2006 09 25 | 699 | 0.6+ | 0.9+ | | | | |
| 2003 12 23 | 704 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.6− | 0.2+ | | | | |

**(142275)∗ 2002 RQ$_{117}$**

Discovered 2002 Sept. 8 at University of Szeged, Piszkéstető Stn. (Konkoly).

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.85651 | | (2000.0) | | +0.89453846 | −0.43112710 |
| $n$ | 0.24011304 | $\omega$ | 188.41062 | | +0.42864821 | +0.90225035 |
| $a$ | 2.5636509 | $\Omega$ | 198.56244 | | +0.12673461 | −0.00858667 |
| $e$ | 0.0637377 | $i$ | 21.76250 | | | |
| $P$ | 4.10 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 08 | 461 | 0.4− | 0.1− | 2002 11 21 | 644 | 0.7+ | 1.1+ | 2006 09 21 | 683 | (0.1− | 1.5−) |
| 2002 09 08 | 461 | 0.1− | 0.0 | 2002 12 02 | 608 | 0.0 | 1.1+ | 2006 09 21 | 683 | (2.6+ | 0.7−) |
| 2002 09 08 | 461 | 0.5− | 0.1− | 2002 12 02 | 608 | 0.3+ | 1.0+ | 2006 09 21 | 683 | 1.0− | 0.7+ |
| 2002 09 09 | 461 | 0.6+ | 0.4+ | 2002 12 07 | 644 | 0.3+ | 0.2+ | 2006 09 22 | 104 | 0.5+ | 0.4− |
| 2002 09 09 | 461 | 0.2− | 0.2+ | 2002 12 07 | 644 | 0.4+ | 0.0 | 2006 09 22 | 104 | 0.2− | 0.2− |
| 2002 09 09 | 461 | 0.2− | 0.5+ | 2002 12 07 | 644 | 1.1+ | 0.1− | 2006 09 22 | 104 | 0.1+ | 0.1+ |
| 2002 09 10 | 461 | 0.2− | 0.3+ | 2003 12 26 | 461 | 0.1− | 0.1+ | 2006 09 24 | 104 | 0.7− | 0.8− |
| 2002 09 10 | 461 | 0.5− | 0.1+ | 2003 12 26 | 461 | 0.3+ | 0.1− | 2006 09 24 | 104 | (1.5+ | 0.2−) |
| 2002 09 10 | 461 | 0.2− | 0.0 | 2005 04 04 | 461 | 0.1− | 0.3+ | 2006 09 24 | 104 | 0.4+ | 0.1+ |
| 2002 09 12 | 461 | 1.0− | 0.7+ | 2005 04 04 | 461 | 0.3− | 0.2− | 2006 09 25 | 704 | 1.5− | 0.6− |
| 2002 09 12 | 461 | 0.3− | 0.7+ | 2005 04 04 | 461 | 0.3− | 0.3+ | 2006 09 25 | 704 | 1.1− | 0.2+ |
| 2002 09 17 | 608 | 0.6− | 0.1+ | 2005 04 04 | 461 | 0.5− | 0.0 | 2006 09 25 | 704 | 1.2− | 0.5− |
| 2002 09 17 | 608 | 0.5− | 0.6− | 2005 04 04 | 461 | 0.5+ | 0.4+ | 2006 09 26 | 461 | 0.0 | 0.2− |
| 2002 09 17 | 608 | 0.0 | 1.1− | 2005 04 05 | 461 | 0.4− | 0.1+ | 2006 09 26 | 461 | 0.4+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.1+ | 0.0 | 2005 04 05 | 461 | (1.6− | 0.6+) | 2006 09 26 | 461 | 0.2+ | 0.1− |
| 2002 09 29 | 608 | 0.5− | 0.7− | 2005 04 05 | 461 | 0.2− | 0.1− | 2006 09 26 | 461 | 0.2+ | 0.1− |
| 2002 09 29 | 608 | 0.7+ | 0.8+ | 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 461 | 0.2+ | 0.4− |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2005 05 04 | 691 | 0.1− | 0.4+ | 2006 09 26 | 461 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2005 05 04 | 691 | 0.1− | 0.4+ | 2006 09 27 | 699 | (1.9+ | 1.4+) |
| 2002 10 03 | 704 | 0.4+ | 0.2− | 2005 05 08 | 691 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.4+ | 0.6− |
| 2002 10 03 | 704 | 1.0+ | 0.1+ | 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.2− | 0.5− |
| 2002 10 07 | 704 | 1.4+ | 0.4+ | 2005 05 09 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.6+ |
| 2002 10 07 | 704 | 0.1− | 0.3+ | 2005 05 09 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 2002 10 07 | 704 | 0.8+ | 0.1− | 2005 05 09 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 2002 10 07 | 704 | 0.5+ | 0.6− | 2005 05 10 | 691 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.6+ |
| 2002 10 07 | 704 | 0.6+ | 0.0 | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 461 | 0.1+ | 0.2− |
| 2002 10 07 | 704 | 0.9+ | 0.2− | 2005 05 10 | 691 | 0.3− | 0.2+ | 2006 10 12 | 461 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.4+ | 0.8− | 2005 05 11 | 691 | 0.1− | 0.3− | 2006 10 12 | 461 | 0.2+ | 0.2− |
| 2002 10 10 | 644 | 0.4− | 0.2+ | 2005 05 11 | 691 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2002 10 10 | 644 | 0.3− | 0.1+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2002 10 10 | 644 | 0.4− | 0.1+ | 2005 05 16 | 691 | 0.2− | 0.2− | 2006 10 17 | 703 | (0.8− | 1.6−) |
| 2002 10 11 | 704 | 0.5− | 0.4+ | 2005 05 16 | 691 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.6+ | 0.5− |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2005 05 16 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2002 10 11 | 704 | 0.9− | 0.7− | 2006 08 29 | 699 | 0.6− | 1.4+ | 2006 10 19 | G96 | 0.1− | 0.7− |
| 2002 10 11 | 704 | 1.3− | 0.7+ | 2006 08 29 | 699 | 1.3+ | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.6− |
| 2002 10 29 | 644 | 0.3− | 0.1+ | 2006 08 29 | 699 | 0.6+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2002 10 29 | 644 | 0.2+ | 0.4+ | 2006 08 29 | 699 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.7+ | 0.4− |
| 2002 10 29 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.6+ | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.4− |
| 2002 11 04 | 608 | 0.4+ | 0.9+ | 2006 09 14 | 644 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.6− |
| 2002 11 11 | 704 | 0.6− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1− | 0.8− |
| 2002 11 11 | 704 | 1.1− | 0.9+ | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 11 11 | 704 | 0.3− | 1.4+ | 2006 09 16 | 703 | 0.4− | 0.8+ | 2006 11 16 | G96 | 0.6+ | 0.4− |
| 2002 11 21 | 644 | 0.1+ | 1.1+ | 2006 09 16 | 703 | 0.2− | 0.8− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2002 11 21 | 644 | 0.2− | 0.9+ | 2006 09 16 | 703 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.2− |

**(142276)∗ 2002 RX$_{118}$**

Discovered 2002 Sept. 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.97089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27395671 | $\omega$ | 276.02927 | | +0.81529921 | | +0.56205140 |
| $a$ | 2.3479099 | $\Omega$ | 49.86592 | | −0.43256614 | | +0.75103972 |
| $e$ | 0.2547453 | $i$ | 10.49280 | | −0.38493341 | | +0.34646437 |
| $P$ | 3.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 704 | 0.1+ | 0.0 | 2002 09 26 | 704 | 0.4− | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.5− |
| 1998 05 22 | 704 | 1.5+ | 1.1− | 2002 09 26 | 704 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.4− | 0.4− |
| 1998 05 22 | 704 | 0.1− | 0.7+ | 2002 09 26 | 704 | 0.4+ | 0.7+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 1998 05 22 | 704 | 1.6− | 0.2+ | 2002 10 26 | 704 | 0.7+ | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.7− |
| 2002 08 13 | 704 | 0.7− | 0.3− | 2002 10 26 | 704 | 0.7+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2002 08 13 | 704 | 0.3+ | 0.1+ | 2002 10 26 | 704 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2002 08 13 | 704 | 0.6− | 0.6− | 2002 10 26 | 704 | 0.7+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2002 08 13 | 704 | 0.1− | 0.0 | 2005 04 01 | 691 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2002 08 13 | 704 | 0.6+ | 0.6− | 2005 04 01 | 691 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2002 09 01 | 644 | 0.3− | 0.0 | 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2002 09 01 | 644 | 0.2− | 0.3+ | 2005 04 02 | 644 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.8+ | 0.2− |
| 2002 09 01 | 644 | 0.3− | 0.2+ | 2005 04 02 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2002 09 10 | 644 | 0.3− | 0.1+ | 2005 04 02 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2002 09 10 | 644 | 0.3− | 0.0 | 2005 05 14 | 691 | 0.1+ | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.9+ |
| 2002 09 10 | 644 | 0.2− | 0.0 | 2005 05 14 | 691 | 0.2+ | 0.1− | 2006 11 27 | 704 | 0.5+ | 0.4+ |
| 2002 09 17 | 644 | 0.1− | 0.6+ | 2005 05 14 | 691 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.0 | 1.1+ |
| 2002 09 17 | 644 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 11 27 | 704 | 0.7+ | 0.2+ |
| 2002 09 17 | 644 | 0.3− | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.4− | | | | |
| 2002 09 26 | 704 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.5− | | | | |

**(142277)∗ 2002 RJ$_{119}$**

Discovered 2002 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.93688 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23722500 | $\omega$ | 97.40638 | | +0.79895000 | | −0.59035846 |
| $a$ | 2.5844160 | $\Omega$ | 298.84512 | | +0.48710329 | | +0.74708994 |
| $e$ | 0.2010051 | $i$ | 7.52423 | | +0.35271701 | | +0.30550533 |
| $P$ | 4.15 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 704 | 1.0+ | 0.8− | 2002 09 09 | 608 | 0.4+ | 1.4+ | 2004 02 11 | 703 | 0.2+ | 0.5− |
| 1998 08 24 | 704 | (2.4− | 0.4−) | 2002 09 09 | 608 | 0.1+ | 0.9+ | 2004 02 11 | 699 | (1.5+ | 0.6+) |
| 1998 08 24 | 704 | (3.1− | 1.5+) | 2002 09 09 | 608 | 0.2+ | 0.7+ | 2004 02 11 | 703 | 0.3+ | 0.1− |
| 1998 08 24 | 704 | 0.8− | 0.8− | 2002 09 13 | 644 | 0.1− | 0.6+ | 2004 02 11 | 644 | 0.1+ | 0.3+ |
| 1998 08 24 | 704 | (5.0− | 0.6−) | 2002 09 13 | 644 | 0.3− | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.2+ |
| 1998 08 27 | 704 | 0.0 | 0.9− | 2002 09 13 | 644 | 0.4− | 0.2+ | 2004 02 11 | 699 | 0.8+ | 0.2+ |
| 1998 08 27 | 704 | 1.1+ | 1.8+ | 2002 09 26 | 699 | 0.2+ | 0.9− | 2004 02 11 | 644 | 0.2+ | 0.3+ |
| 1998 08 27 | 704 | 1.7− | 0.4− | 2002 09 26 | 699 | 0.2+ | 0.5+ | 2004 02 11 | 699 | 1.3− | 0.6+ |
| 1998 08 27 | 704 | (0.3+ | 3.0+) | 2002 09 26 | 699 | 0.1+ | 0.0 | 2004 02 11 | 691 | 0.2+ | 0.3+ |
| 1998 09 18 | 699 | 0.2+ | 0.1+ | 2002 09 26 | 699 | 0.5− | 0.0 | 2004 02 17 | 704 | 0.5+ | 0.5+ |
| 1998 09 18 | 699 | 0.8+ | 0.5− | 2002 10 29 | 704 | 0.9+ | 0.8+ | 2004 02 17 | 704 | (2.2+ | 0.4−) |
| 1998 09 18 | 699 | 0.1+ | 0.0 | 2002 10 29 | 704 | 0.2− | 0.0 | 2004 02 17 | 704 | 1.1+ | 0.2+ |
| 2002 08 12 | 704 | 0.1+ | 1.0+ | 2002 10 29 | 704 | 0.3− | 1.2− | 2004 02 17 | 704 | 0.7+ | 0.4+ |
| 2002 08 12 | 704 | 0.8− | 1.2+ | 2003 12 21 | 645 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.9+ | 0.3+ |
| 2002 08 12 | 704 | 0.6− | 0.9+ | 2003 12 21 | 645 | 0.1− | 0.1+ | 2006 07 20 | 644 | 0.2+ | 0.3+ |
| 2002 08 12 | 704 | 0.3− | 1.1+ | 2003 12 25 | 645 | 0.0 | 0.0 | 2006 07 20 | 644 | 0.1− | 0.4+ |
| 2002 08 12 | 704 | (0.0 | 1.5+) | 2003 12 25 | 645 | 0.1− | 0.1+ | 2006 07 20 | 644 | 0.5+ | 0.1+ |
| 2002 08 16 | 644 | 0.6− | 0.4+ | 2004 01 29 | 704 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.1+ |
| 2002 08 16 | 644 | 0.4− | 0.3+ | 2004 01 29 | 704 | (0.1+ | 1.9+) | 2006 08 24 | 644 | 0.2+ | 0.4+ |
| 2002 08 16 | 644 | 0.3− | 0.4+ | 2004 01 29 | 704 | 0.6+ | 0.3+ | 2006 08 24 | 644 | 0.3− | 0.2+ |
| 2002 08 27 | 644 | 0.4− | 0.5− | 2004 01 29 | 704 | 0.9+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2002 08 27 | 644 | 0.3− | 0.8− | 2004 01 29 | 704 | 0.9+ | 0.5− | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2002 08 27 | 644 | 0.4− | 0.5− | 2004 02 11 | 703 | 1.0− | 0.5− | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 2002 09 06 | 704 | 0.4+ | 0.9− | 2004 02 11 | 703 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.2− | 0.2+ |
| 2002 09 06 | 704 | 0.2+ | 0.2− | 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | 0.2− | 0.6− | 2004 02 11 | 699 | 0.2+ | 0.6− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1− |

**(142278)∗ 2002 RY$_{120}$ = 2000 DN$_{25}$**

Discovered 2002 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37887)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.85650 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25456902 | $\omega$ | 236.28865 | | +0.24405989 | | −0.96966658 |
| $a$ | 2.4656552 | $\Omega$ | 199.59837 | | +0.90249905 | | +0.23219385 |
| $e$ | 0.1576576 | $i$ | 2.30182 | | +0.35486651 | | +0.07637234 |
| $P$ | 3.87 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.4+ | 0.6− | 2002 09 18 | 644 | 0.0 | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2000 02 02 | 704 | 0.2− | 0.6+ | 2002 09 18 | 644 | 0.1− | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2000 02 02 | 704 | 0.8− | 0.6+ | 2002 10 07 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | (2.1+ | 0.9+) |
| 2000 02 02 | 704 | 0.5− | 0.1+ | 2002 10 07 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 704 | 1.0+ | 0.3− |
| 2000 02 29 | 704 | 1.0+ | 0.1− | 2002 10 07 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 0.8+ | 0.4+ |
| 2000 02 29 | 704 | 0.4− | 0.1− | 2002 10 11 | 704 | 0.3− | 1.4+ | 2006 09 20 | 704 | 0.6+ | 1.1+ |
| 2000 02 29 | 704 | 0.0 | 0.8− | 2002 10 11 | 704 | 0.1+ | 1.5+ | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2000 02 29 | 704 | 0.5+ | 1.1+ | 2002 10 11 | 704 | 0.8− | 0.3− | 2006 09 26 | 691 | 0.1− | 0.7+ |
| 2000 02 29 | 704 | 1.0+ | 1.0+ | 2002 10 11 | 704 | 0.3− | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2000 03 03 | 704 | 0.4− | 0.7− | 2002 10 11 | 704 | 0.8+ | 1.4+ | 2006 09 27 | 699 | (1.8+ | 0.4+) |
| 2000 03 03 | 704 | 0.1+ | 0.1+ | 2004 02 19 | 704 | 0.3− | 0.7+ | 2006 09 27 | 699 | 0.9+ | 0.0 |
| 2000 03 03 | 704 | 0.8− | 0.1− | 2004 02 19 | 704 | 0.5− | 0.5+ | 2006 09 27 | 699 | 0.1− | 0.5+ |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2004 02 19 | 704 | 0.6+ | 0.4+ | 2006 09 27 | 704 | 1.4− | 0.6− |
| 2002 08 31 | 699 | 0.9− | 0.3+ | 2004 02 19 | 704 | 0.5+ | 0.1− | 2006 09 27 | 699 | 0.9+ | 0.6+ |
| 2002 08 31 | 699 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.0 |
| 2002 08 31 | 699 | (1.7− | 0.2+) | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.7− | 0.5+ |
| 2002 08 31 | 699 | 0.3− | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 09 29 | 704 | 0.5− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | (2.0− | 1.4+) | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.6+ | | |
| 2002 09 05 | 704 | 0.7+ | 1.1+ | 2004 02 26 | 704 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.3+ | 0.9+ | | |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 1.0+ | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | (1.7+ | 0.1+) | 2006 10 12 | 644 | 0.0 | 0.4− | | |
| 2002 09 05 | 704 | 0.1+ | 0.2− | 2004 03 15 | 704 | (1.6+ | 0.2+) | 2006 10 12 | 644 | 0.0 | 0.3− | | |
| 2002 09 05 | 704 | 0.7+ | 0.0 | 2004 03 15 | 704 | 0.9+ | 1.2+ | 2006 10 15 | 106 | 0.0 | 0.3− | | |
| 2002 09 07 | 704 | 0.2+ | 0.6+ | 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 10 15 | 106 | 0.0 | 0.4− | | |
| 2002 09 07 | 704 | 0.8+ | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 10 15 | 106 | 0.5− | 0.2− | | |
| 2002 09 07 | 704 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.3− | 1.0+ | 2006 10 15 | 106 | 0.8+ | 0.3− | | |
| 2002 09 07 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.8− | | |
| 2002 09 10 | 608 | 0.7+ | 0.2− | 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.5+ | 0.3+ | | |
| 2002 09 10 | 608 | 0.2− | 0.2− | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.3+ | | |
| 2002 09 10 | 608 | 1.1+ | 0.3− | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.9+ | 0.6− | | |
| 2002 09 13 | 644 | 0.1+ | 0.1+ | 2004 03 18 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2− | | |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.6− | | |
| 2002 09 13 | 644 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.3− | 1.0+ | 2006 10 17 | 703 | 0.1− | 0.1− | | |
| 2002 09 14 | 644 | 0.3+ | 1.3+ | 2004 03 27 | 704 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.5− | | |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2006 07 22 | G96 | 0.7− | 0.1− | 2006 10 19 | 644 | 0.5− | 0.1− | | |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 07 22 | G96 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2002 09 15 | 699 | 0.6− | 1.0+ | 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2− | | |
| 2002 09 15 | 699 | 1.0− | 0.2− | 2006 07 22 | G96 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2− | | |
| 2002 09 15 | 699 | 0.9− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4− | | |
| 2002 09 15 | 699 | 1.0− | 1.2+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.5− | | |
| 2002 09 17 | 644 | 0.4− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.5− | | |
| 2002 09 17 | 644 | 0.3− | 0.6+ | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.8− | | |
| 2002 09 17 | 644 | 0.4− | 0.6+ | 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.6− | | |
| 2002 09 18 | 644 | 0.3+ | 0.9+ | 2006 09 16 | 644 | 0.3+ | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.8− | | |

**(142279)∗ 2002 RH$_{121}$**

Discovered 2002 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.44254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22303282 | $\omega$ | 108.55474 | | +0.09881534 | −0.99191604 | |
| $a$ | 2.6929205 | $\Omega$ | 335.35546 | | +0.82576535 | +0.12638055 | |
| $e$ | 0.1552003 | $i$ | 11.00661 | | +0.55529012 | −0.01142495 | |
| $P$ | 4.42 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | (0.8− | 2.2+) | 2002 11 06 | 704 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.6+ | 0.5+ | | |
| 1998 11 16 | 704 | 1.2+ | 1.4− | 2002 11 06 | 704 | 0.9− | 0.8+ | 2004 03 15 | 704 | 1.2+ | 0.2+ | | |
| 1998 11 16 | 704 | 1.1+ | 1.1− | 2002 12 05 | 704 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.3+ | | |
| 1998 11 16 | 704 | 0.1+ | 0.8− | 2002 12 05 | 704 | 0.0 | 0.5+ | 2004 03 15 | 704 | 0.3+ | 0.2+ | | |
| 1998 11 16 | 704 | (1.3+ | 4.5−) | 2002 12 05 | 704 | 0.0 | 0.9+ | 2004 03 18 | 704 | 0.3+ | 0.2− | | |
| 1998 12 17 | 704 | 0.3+ | 0.9− | 2002 12 19 | 644 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 1.3+ | 0.5+ | | |
| 1998 12 17 | 704 | 0.2+ | 0.4− | 2002 12 19 | 644 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | | |
| 1998 12 17 | 704 | 0.5+ | 1.6+ | 2002 12 19 | 644 | 0.7+ | 0.1− | 2004 03 18 | 704 | 0.1− | 0.4+ | | |
| 1998 12 17 | 704 | 1.3− | 1.4− | 2003 12 22 | 704 | (1.9+ | 2.2+) | 2004 03 18 | 704 | 0.1+ | 0.0 | | |
| 1998 12 17 | 704 | 1.4− | 0.2− | 2003 12 22 | 704 | (1.7+ | 2.3+) | 2004 03 20 | 704 | 0.4+ | 1.0+ | | |
| 2002 08 16 | 608 | 0.0 | 0.6+ | 2003 12 22 | 704 | 0.1− | 1.3+ | 2004 03 20 | 704 | 1.0+ | 0.2− | | |
| 2002 08 16 | 608 | 0.2− | 1.1+ | 2003 12 22 | 704 | (2.4+ | 1.9+) | 2004 03 20 | 704 | 0.7+ | 0.1+ | | |
| 2002 08 16 | 608 | 0.1− | 0.7+ | 2003 12 27 | 704 | 0.2+ | 1.1+ | 2004 03 20 | 704 | 0.1+ | 0.2+ | | |
| 2002 09 07 | 704 | 1.5− | 0.4+ | 2003 12 27 | 704 | 0.4+ | 0.7+ | 2004 03 20 | 704 | 0.1+ | 0.6+ | | |
| 2002 09 07 | 704 | 1.0− | 0.5+ | 2003 12 27 | 704 | 0.1− | 0.9+ | 2004 03 29 | 691 | 0.3+ | 0.2+ | | |
| 2002 09 07 | 704 | 0.6− | 0.2+ | 2004 01 23 | 699 | 0.5− | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.3+ | | |
| 2002 09 07 | 704 | 0.5− | 0.3+ | 2004 01 23 | 699 | 1.4− | 0.8+ | 2004 03 29 | 691 | 0.3+ | 0.4+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.8+ | 2004 01 23 | 699 | 0.3− | 0.1− | 2006 08 13 | 644 | 0.3− | 0.4+ | | |
| 2002 09 10 | 608 | 0.4− | 0.4− | 2004 01 23 | 699 | 0.8− | 0.0 | 2006 08 13 | 644 | 0.0 | 0.3+ | | |
| 2002 09 10 | 608 | 0.0 | 0.6− | 2004 02 13 | 333 | 0.6− | 0.5+ | 2006 08 13 | 644 | 0.0 | 0.2+ | | |
| 2002 09 10 | 608 | 0.1− | 0.6− | 2004 02 13 | 333 | 0.8− | 0.4− | 2006 08 19 | 699 | 1.3+ | 1.1+ | | |
| 2002 09 28 | 608 | 1.4− | 0.2− | 2004 02 13 | 333 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.0 | 0.9+ | | |
| 2002 09 28 | 608 | (1.9− | 0.2−) | 2004 02 14 | 703 | 0.2− | 0.5− | 2006 08 19 | 699 | 1.5− | 1.4+ | | |
| 2002 09 28 | 608 | (1.6− | 0.1−) | 2004 02 14 | 703 | 0.2− | 0.7+ | 2006 08 19 | 699 | (0.3− | 1.9+) | | |
| 2002 10 03 | 644 | 0.0 | 0.3+ | 2004 02 14 | 703 | 0.7− | 0.0 | 2006 08 28 | 699 | 0.5− | 0.2+ | | |
| 2002 10 03 | 644 | 0.2− | 0.1+ | 2004 02 14 | 703 | 0.7− | 0.7+ | 2006 08 28 | 703 | (1.7+ | 1.2−) | | |
| 2002 10 03 | 644 | 0.3+ | 0.5+ | 2004 02 18 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.4+ | 1.4+ | | |
| 2002 10 05 | 704 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.4− | 0.1+ | | |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2004 02 18 | 704 | 0.8+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.2− | | |
| 2002 10 05 | 704 | 0.2+ | 0.4+ | 2004 02 18 | 704 | 0.1+ | 0.7+ | 2006 08 28 | 699 | 0.7− | 1.2+ | | |
| 2002 10 05 | 704 | 0.1+ | 0.8+ | 2004 02 18 | 704 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.2+ | | |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2004 02 20 | 608 | 0.9+ | 0.6− | 2006 08 28 | 699 | (1.2− | 2.4+) | | |
| 2002 10 07 | 699 | 0.3− | 0.3− | 2004 02 20 | 608 | 0.5+ | 0.6− | 2006 08 29 | 704 | 0.6+ | 0.7+ | | |
| 2002 10 07 | 699 | 0.4+ | 0.0 | 2004 02 20 | 608 | 0.4+ | 0.7− | 2006 08 29 | 704 | 1.2+ | 0.4+ | | |
| 2002 10 07 | 699 | 0.3− | 0.2+ | 2004 02 26 | 333 | 0.5− | 0.1+ | 2006 08 29 | 704 | 1.2+ | 0.1+ | | |
| 2002 10 07 | 699 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 08 31 | 704 | 0.4− | 0.7+ | | |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 08 31 | 704 | 1.1− | 1.1+ | | |
| 2002 10 09 | 704 | 0.7− | 0.1− | 2004 02 26 | 333 | 0.7− | 0.2+ | 2006 08 31 | 704 | 0.7− | 0.4+ | | |
| 2002 10 09 | 704 | 0.5− | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.9− | | |
| 2002 10 09 | 704 | 0.6− | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 1.2− | 0.6− | | |
| 2002 10 09 | 704 | 0.5− | 0.6− | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 1.4− | 0.3+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.3− | 2004 02 26 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 703 | (2.7− | 0.7+) | | |
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.3+ | | |
| 2002 10 12 | 704 | 0.5+ | 0.0 | 2004 02 26 | 333 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.1+ | | |
| 2002 10 12 | 704 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2+ | | |
| 2002 10 12 | 704 | 0.9+ | 0.1+ | 2004 02 26 | 704 | 0.8+ | 0.3+ | 2006 09 25 | G96 | 0.6− | 0.2+ | | |
| 2002 10 24 | 608 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.2− | | |
| 2002 10 24 | 608 | 0.3− | 0.4+ | 2004 02 26 | 333 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.2− | | |
| 2002 10 24 | 608 | 0.4− | 0.7+ | 2004 03 12 | 644 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.4+ | 0.1− | | |
| 2002 11 06 | 704 | 0.1− | 0.0 | 2004 03 12 | 644 | 0.3+ | 0.4+ | 2006 11 17 | G96 | 0.4+ | 0.0 | | |
| 2002 11 06 | 704 | 0.4− | 0.0 | 2004 03 12 | 644 | 0.5+ | 0.3+ | | | | | | |
| 2002 11 06 | 704 | 0.5− | 0.3+ | 2004 03 15 | 704 | 0.8+ | 0.2− | | | | | | |

**(142280)∗ 2002 RR$_{121}$**

Discovered 2002 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.07548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23792855 | $\omega$ | 3.27980 | | +0.89401521 | +0.44049998 | |
| $a$ | 2.5793187 | $\Omega$ | 330.15202 | | −0.41471678 | +0.74448992 | |
| $e$ | 0.2367730 | $i$ | 9.46362 | | −0.16954880 | +0.50169166 | |
| $P$ | 4.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 27 | 691 | 0.2+ | 0.1− | 2002 11 13 | 644 | 0.6+ | 1.1+ | 2006 08 28 | 704 | 0.7− | 0.2+ | | |
| 1998 07 27 | 691 | 0.2− | 0.0 | 2002 11 14 | 704 | 1.2+ | 0.6− | 2006 08 29 | 703 | 0.1− | 0.3− | | |
| 1998 07 27 | 691 | 0.1− | 0.0 | 2002 11 14 | 704 | 0.4+ | 0.5− | 2006 08 29 | 703 | 0.3+ | 0.5− | | |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2002 11 14 | 704 | 0.4+ | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.2− | | |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2002 11 14 | 704 | 1.2+ | 0.6− | 2006 08 29 | 703 | 0.1− | 0.9− | | |
| 2002 09 07 | 704 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 0.3− | 1.1+ | 2006 08 30 | 704 | 0.6+ | 0.2− | | |
| 2002 09 07 | 704 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.1− | 0.1− | | |
| 2002 09 07 | 704 | 1.3+ | 0.9− | 2004 01 22 | 704 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.3− | 0.1− | | |
| 2002 09 10 | 608 | 0.3− | 1.2− | 2004 01 29 | 291 | 0.4+ | 0.5+ | 2006 08 30 | 704 | 0.6+ | 0.5+ | | |
| 2002 09 10 | 608 | 0.4− | 0.9− | 2004 01 29 | 291 | 0.5+ | 0.5+ | 2006 09 01 | 704 | 0.2+ | 0.4− | | |
| 2002 09 10 | 608 | 0.7− | 0.9− | 2004 01 29 | 291 | 0.4+ | 0.4+ | 2006 09 01 | 704 | 0.2+ | 0.1+ | | |
| 2002 09 14 | 608 | 0.5− | 1.1+ | 2004 02 11 | 691 | 0.1+ | 0.3− | 2006 09 01 | 704 | 0.2− | 0.3− | | |
| 2002 09 14 | 608 | 0.2− | 0.9+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.2+ | 0.3+ | | |
| 2002 09 14 | 608 | 0.4− | 0.9+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.1+ | 0.1− | | |
| 2002 09 21 | 644 | 0.4− | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.0 | 1.6+ | | |
| 2002 09 21 | 644 | 0.1− | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 704 | 0.1− | 0.9+ | | |
| 2002 09 21 | 644 | 0.1− | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.4− | 0.7+ | | |
| 2002 09 21 | 644 | 0.1− | 1.1+ | 2004 02 13 | 691 | 0.3+ | 0.0 | 2006 09 15 | 704 | 0.1− | 0.8+ | | |
| 2002 09 21 | 644 | 0.1− | 0.4+ | 2004 02 13 | 691 | 0.0 | 0.2− | 2006 09 15 | 704 | (2.3+ | 0.6+) | | |
| 2002 09 21 | 644 | 0.2+ | 0.3+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.5− | | |
| 2002 10 05 | 704 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 09 17 | 703 | 0.5− | 0.1− | | |
| 2002 10 05 | 704 | 0.7− | 0.7+ | 2004 02 23 | 704 | 1.4+ | 0.8+ | 2006 09 17 | 703 | 0.2+ | 0.4− | | |
| 2002 10 05 | 704 | 0.3− | 0.5− | 2004 02 23 | 704 | 0.7+ | 0.6− | 2006 09 17 | 703 | 0.4+ | 0.2− | | |
| 2002 10 05 | 704 | 0.0 | 1.3− | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.0 | | |
| 2002 10 05 | 704 | 0.7+ | 1.0− | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.2− | 0.1− | | |
| 2002 10 10 | 704 | 0.1+ | 0.5− | 2004 04 14 | 645 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.5− | 0.9+ | | |
| 2002 10 10 | 704 | 0.2+ | 0.6− | 2004 04 14 | 645 | 0.5− | 0.2− | 2006 09 18 | 704 | 0.5− | 0.0 | | |
| 2002 10 10 | 704 | 0.2+ | 0.5− | 2006 08 18 | 699 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 0.3− | 0.3+ | | |
| 2002 10 10 | 704 | 0.1+ | 0.3− | 2006 08 18 | 699 | 1.0+ | 0.7+ | 2006 09 18 | 704 | 0.1+ | 0.1− | | |
| 2002 10 10 | 704 | 0.2+ | 0.4− | 2006 08 18 | 699 | 0.5− | 0.0 | 2006 09 18 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 15 | 704 | 0.6− | 1.0− | 2006 08 18 | 699 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.3− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 704 | 0.2+ | 0.6− | 2006 08 24 | 704 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 15 | 704 | 0.4− | 0.3− | 2006 08 24 | 704 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.2− | 0.1+ | | |
| 2002 10 30 | 608 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.2− | 0.3− | 2006 09 20 | 699 | 0.3− | 0.1− | | |
| 2002 10 30 | 608 | 0.3− | 0.1− | 2006 08 24 | 704 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.4+ | | |
| 2002 10 30 | 608 | 0.1− | 0.0 | 2006 08 26 | 704 | 0.1− | 0.5+ | 2006 09 20 | 699 | 0.6− | 0.1− | | |
| 2002 11 01 | 644 | 0.2+ | 0.0 | 2006 08 26 | 704 | 0.3− | 1.0+ | 2006 09 20 | 699 | 1.3− | 0.3+ | | |
| 2002 11 01 | 644 | 0.0 | 0.1− | 2006 08 26 | 704 | 0.6+ | 0.2+ | 2006 09 29 | 699 | 0.3+ | 0.3+ | | |
| 2002 11 01 | 644 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.1− | 0.6+ | 2006 09 29 | 699 | 0.0 | 0.1− | | |
| 2002 11 07 | 704 | 0.4− | 0.7+ | 2006 08 27 | 699 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.1+ | | |
| 2002 11 07 | 704 | (2.3+ | 1.3−) | 2006 08 27 | 699 | 1.1+ | 0.1− | 2006 09 29 | 699 | 0.0 | 0.3+ | | |
| 2002 11 07 | 704 | 0.7+ | 0.0 | 2006 08 27 | 699 | 0.8+ | 0.5+ | 2006 10 01 | 703 | 0.1− | 0.6− | | |
| 2002 11 07 | 704 | 0.3− | 0.5− | 2006 08 28 | 704 | 0.9− | 0.3− | 2006 10 01 | 703 | 0.2+ | 0.7− | | |
| 2002 11 07 | 704 | 0.2+ | 0.5− | 2006 08 28 | 704 | 0.1− | 0.4− | 2006 10 01 | 703 | 0.1− | 0.4− | | |
| 2002 11 13 | 644 | 0.2+ | 0.9+ | 2006 08 28 | 704 | 0.3− | 0.5− | 2006 10 01 | 703 | 1.0− | 0.8− | | |
| 2002 11 13 | 644 | 0.4+ | 0.6+ | 2006 08 28 | 704 | 0.6− | 0.2+ | | | | | | |

**(142281)∗ 2002 RJ$_{122}$**

Discovered 2002 Sept. 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.05931 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24165480 | $\omega$ | 195.80776 | | +0.54171764 | | +0.82901575 |
| $a$ | 2.5527352 | $\Omega$ | 107.18139 | | −0.75459690 | | +0.55240121 |
| $e$ | 0.1943810 | $i$ | 8.35575 | | −0.37030462 | | +0.08709644 |
| $P$ | 4.08 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 699 | 1.0− | 1.1+ | 2002 09 17 | 644 | 0.6− | 0.5+ | 2006 08 07 | E12 | 0.7+ | 0.4+ | | |
| 1998 09 27 | 699 | 0.1− | 0.4+ | 2002 09 27 | 704 | 0.8− | 0.4+ | 2006 08 19 | 644 | 0.1+ | 0.1− | | |
| 1998 09 27 | 699 | 0.1+ | 0.1+ | 2002 09 27 | 704 | 0.2− | 0.1− | 2006 08 19 | 644 | 0.0 | 0.1− | | |
| 2000 01 29 | 691 | 0.8+ | 0.2− | 2002 09 27 | 704 | 0.1− | 0.1+ | 2006 08 19 | 644 | 0.3− | 0.1− | | |
| 2000 01 29 | 691 | 0.4+ | 0.3− | 2002 09 27 | 704 | 0.2+ | 0.1+ | 2006 08 19 | 644 | 0.2− | 0.0 | | |
| 2000 01 29 | 691 | 0.2+ | 0.4− | 2002 09 29 | 608 | 0.2+ | 0.0 | 2006 08 19 | 644 | 0.0 | 0.1+ | | |
| 2002 09 03 | 644 | 0.2+ | 1.2+ | 2002 09 29 | 608 | 0.1− | 0.4+ | 2006 08 19 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 03 | 644 | 0.2+ | 1.1+ | 2002 09 29 | 608 | 0.2+ | 0.2− | 2006 08 21 | 644 | 0.1− | 0.1− | | |
| 2002 09 03 | 644 | 0.2+ | 1.2+ | 2004 01 31 | 291 | 0.9− | 0.3+ | 2006 08 21 | 644 | 0.1+ | 0.0 | | |
| 2002 09 08 | 608 | 0.2− | 0.3− | 2004 01 31 | 291 | 0.1− | 0.4+ | 2006 08 21 | 644 | 0.1− | 0.1− | | |
| 2002 09 08 | 608 | 0.3− | 0.0 | 2004 01 31 | 291 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.3− | | |
| 2002 09 08 | 608 | 0.6− | 0.0 | 2005 03 09 | 704 | 1.5+ | 0.9+ | 2006 08 30 | 699 | 0.5+ | 0.3− | | |
| 2002 09 10 | 644 | 0.2− | 0.1+ | 2005 03 09 | 704 | 0.1− | 0.8+ | 2006 08 30 | 699 | 0.0 | 0.4− | | |
| 2002 09 10 | 644 | 0.2− | 0.2+ | 2005 03 09 | 704 | 0.5+ | 0.2+ | 2006 08 30 | 699 | 0.3+ | 0.5− | | |
| 2002 09 10 | 644 | 0.2− | 0.2+ | 2005 03 16 | 703 | 0.3+ | 0.7+ | 2006 09 17 | 699 | 0.3− | 0.4− | | |
| 2002 09 13 | 704 | (1.8− | 4.4+) | 2005 03 16 | 703 | 0.4+ | 1.8+ | 2006 09 17 | 699 | 0.2+ | 0.1+ | | |
| 2002 09 13 | 704 | (1.2− | 4.4+) | 2005 03 16 | 703 | 0.0 | 0.7+ | 2006 09 17 | 699 | 0.0 | 1.0− | | |
| 2002 09 13 | 704 | (1.7− | 4.0+) | 2005 03 16 | 703 | 0.2− | 0.0 | 2006 09 17 | 699 | 0.5+ | 0.3− | | |
| 2002 09 13 | 704 | (1.5− | 3.4+) | 2005 04 06 | 703 | 0.5− | 1.3+ | 2006 09 20 | 703 | 0.4− | 0.1− | | |
| 2002 09 13 | 699 | 0.1+ | 0.5+ | 2005 04 06 | 703 | 0.5− | 0.0 | 2006 09 20 | 703 | 0.3− | 0.2− | | |
| 2002 09 13 | 699 | 0.0 | 1.1+ | 2005 04 06 | 703 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.4− | | |
| 2002 09 13 | 699 | 0.3− | 0.9+ | 2005 04 06 | 703 | 0.1− | 0.4− | 2006 09 20 | 703 | 0.3− | 0.6+ | | |
| 2002 09 13 | 699 | 0.0 | 0.4+ | 2005 05 22 | 644 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.5+ | | |
| 2002 09 16 | 608 | 0.4− | 0.9− | 2005 05 22 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.4+ | | |
| 2002 09 16 | 608 | 0.6− | 1.0− | 2005 05 22 | 644 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.2− | | |
| 2002 09 16 | 608 | 0.1− | 0.6− | 2006 08 07 | E12 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.1− | | |
| 2002 09 17 | 644 | 0.5− | 0.5+ | 2006 08 07 | E12 | 1.3+ | 0.1+ | | | | | | |
| 2002 09 17 | 644 | 0.6− | 0.4+ | 2006 08 07 | E12 | 1.2+ | 0.4− | | | | | | |

**(142282)∗ 2002 RT$_{128}$ = 2000 AA$_{11}$**

Discovered 2002 Sept. 10 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37890)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.47569 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25253533 | $\omega$ | 264.89712 | | −0.97152453 | | −0.02108272 |
| $a$ | 2.4788750 | $\Omega$ | 273.75053 | | +0.11705273 | | −0.90870750 |
| $e$ | 0.1122335 | $i$ | 13.68039 | | −0.20600664 | | −0.41690071 |
| $P$ | 3.90 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 704 | (2.6+ | 1.8+) | 2003 11 24 | 704 | 0.1− | 1.1− | 2003 12 29 | 704 | 0.5+ | 0.6+ | | |
| 1998 08 27 | 704 | 0.2− | 1.1− | 2003 11 24 | 704 | 1.1+ | 0.1− | 2003 12 29 | 704 | 0.2+ | 0.7+ | | |
| 1998 08 27 | 704 | 1.2+ | 0.2+ | 2003 12 04 | 704 | 0.5− | 0.0 | 2003 12 29 | 704 | 0.3+ | 0.8+ | | |
| 1998 08 27 | 704 | 1.4+ | 1.0+ | 2003 12 04 | 704 | 0.5+ | 0.6+ | 2003 12 29 | 704 | 0.8+ | 0.7+ | | |
| 2000 01 03 | 704 | 1.2− | 0.4+ | 2003 12 04 | 704 | 0.7− | 0.7+ | 2003 12 30 | 704 | 0.1+ | 1.3+ | | |
| 2000 01 03 | 704 | 0.5+ | 0.4− | 2003 12 04 | 704 | 0.2+ | 0.3+ | 2003 12 30 | 704 | 0.2− | 0.8+ | | |
| 2000 01 03 | 704 | 0.3+ | 1.4+ | 2003 12 04 | 704 | 0.2+ | 1.1+ | 2003 12 30 | 704 | 0.0 | 1.0+ | | |
| 2000 01 04 | 704 | 1.3− | 0.6− | 2003 12 18 | 704 | 0.4+ | 0.3− | 2003 12 30 | 704 | 0.5− | 1.1+ | | |
| 2000 01 04 | 704 | 0.1− | 0.5+ | 2003 12 18 | 704 | 0.3+ | 0.5− | 2004 01 21 | 704 | 0.3+ | 0.6− | | |
| 2000 01 04 | 704 | 0.6− | 0.2− | 2003 12 18 | 704 | 0.3+ | 0.8− | 2004 01 21 | 704 | 0.1− | 0.3− | | |
| 2000 01 04 | 704 | 0.3+ | 0.2− | 2003 12 21 | 704 | (4.1+ | 2.9+) | 2004 01 21 | 704 | 0.3+ | 0.4− | | |
| 2000 01 04 | 704 | 0.9− | 0.8+ | 2003 12 21 | 704 | (4.3+ | 3.3+) | 2004 01 21 | 704 | 0.4+ | 0.9− | | |
| 2001 06 26 | 644 | 0.2− | 0.0 | 2003 12 21 | 704 | (3.5+ | 6.7+) | 2004 01 21 | 704 | 0.1+ | 0.8− | | |
| 2001 06 26 | 644 | 0.0 | 0.2+ | 2003 12 21 | 704 | (4.7+ | 1.2+) | 2004 01 24 | 704 | 0.0 | 1.0− | | |
| 2001 06 26 | 644 | 0.5− | 0.0 | 2003 12 21 | 704 | (4.4+ | 2.6+) | 2004 01 24 | 704 | 0.8+ | 0.4− | | |
| 2002 08 11 | 704 | 0.5+ | 0.8+ | 2003 12 22 | 704 | 0.1+ | 1.6− | 2004 01 24 | 704 | 0.1+ | 2.0+ | | |
| 2002 08 11 | 704 | 0.8+ | 0.1− | 2003 12 22 | 704 | 0.5+ | 1.5− | 2004 01 24 | 704 | 0.1− | 0.8− | | |
| 2002 08 11 | 704 | 0.4+ | 0.0 | 2003 12 22 | 704 | 0.1− | 1.7− | 2005 07 11 | E12 | 0.1+ | 0.8+ | | |
| 2002 09 10 | 644 | 0.5− | 0.1+ | 2003 12 22 | 704 | 0.4+ | 1.4− | 2005 07 11 | E12 | 0.1+ | 0.3+ | | |
| 2002 09 10 | 644 | 0.5− | 0.0 | 2003 12 22 | 704 | 0.2− | 1.6− | 2006 08 29 | 699 | 0.7− | 0.3− | | |
| 2002 09 10 | 644 | 0.3− | 0.1+ | 2003 12 25 | 691 | 0.3− | 0.1+ | 2006 08 29 | 699 | 0.2− | 0.5+ | | |
| 2002 09 11 | 644 | 0.4− | 0.0 | 2003 12 25 | 691 | 0.1− | 0.2− | 2006 08 29 | 699 | 0.5− | 0.7+ | | |
| 2002 09 11 | 644 | 0.4− | 0.1+ | 2003 12 25 | 691 | 0.0 | 0.1+ | 2006 08 29 | 699 | 0.6− | 0.2− | | |
| 2002 09 11 | 644 | 0.3− | 0.2+ | 2003 12 27 | 704 | 0.1− | 0.5+ | 2006 09 16 | 703 | 0.0 | 0.5− | | |
| 2003 11 20 | 704 | 1.0− | 0.4− | 2003 12 27 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 703 | 0.7+ | 0.7− | | |
| 2003 11 20 | 704 | 0.0 | 0.1− | 2003 12 27 | 704 | 0.7− | 0.3+ | 2006 09 16 | 703 | 0.4+ | 0.1− | | |
| 2003 11 20 | 704 | 0.0 | 0.5+ | 2003 12 27 | 704 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.5− | 0.5− | | |
| 2003 11 20 | 704 | 0.2+ | 0.5+ | 2003 12 27 | 704 | 0.3+ | 0.3+ | | | | | | |
| 2003 11 24 | 704 | 0.2− | 0.8− | 2003 12 29 | 704 | 0.6+ | 0.6+ | | | | | | |

**(142283)∗ 2002 RJ$_{130}$ = 2004 CD$_{66}$**

Discovered 2002 Sept. 9 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61320)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.16121 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26307597 | $\omega$ | 338.30045 | | +0.95673122 | | −0.27979527 |
| $a$ | 2.4122109 | $\Omega$ | 38.23476 | | +0.28232977 | | +0.82623945 |
| $e$ | 0.1312495 | $i$ | 7.41541 | | +0.07039364 | | +0.48892022 |
| $P$ | 3.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.8+ | 0.6− | 2006 09 26 | 704 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 1999 12 13 | 704 | 0.5+ | 0.8− | 2006 09 26 | 704 | 0.6− | 0.5+ | 2006 10 28 | 704 | 1.4− | 0.3+ | | |
| 1999 12 13 | 704 | 0.0 | 0.4− | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 10 28 | 704 | (1.8− | 0.7+) | | |
| 1999 12 13 | 704 | 1.4− | 0.8+ | 2006 09 26 | 704 | 0.9− | 0.1− | 2006 10 28 | 704 | 0.2+ | 0.4− | | |
| 1999 12 13 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 1.0− | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.0 | | |
| 2002 08 20 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.2+ | 0.1− | | |
| 2002 08 20 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.9− | 0.2− | 2006 10 29 | G96 | 0.1− | 0.2− | | |
| 2002 08 20 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.1− | | |
| 2002 09 09 | 644 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.5+ | | |
| 2002 09 09 | 644 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2002 09 09 | 644 | 0.9− | 0.9− | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 11 01 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 12 | 608 | (1.7+ | 0.8+) | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 12 | 608 | (1.8+ | 1.1+) | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 09 12 | 608 | (1.8+ | 1.3+) | 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2002 09 16 | 644 | 0.4− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.0 | | |
| 2002 09 16 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.4+ | | |
| 2002 09 16 | 644 | 0.1− | 0.2+ | 2006 10 01 | 704 | (0.3− | 1.8+) | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2002 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | (0.9− | 2.2+) | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2002 09 16 | 644 | 0.3− | 0.1+ | 2006 10 01 | 704 | (0.1+ | 2.4+) | 2006 11 11 | G96 | 0.1+ | 0.5− | | |
| 2002 09 16 | 644 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.8+ | 0.1+ | | |
| 2002 09 17 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.5− | | |
| 2002 09 17 | 644 | 0.6+ | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− | | |
| 2002 09 17 | 644 | 0.4+ | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.3+ | | |
| 2004 01 17 | 644 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.1− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.5− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.3+ | | |
| 2004 01 17 | 644 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.3+ | 0.7− | 2006 11 17 | 703 | 0.5− | 0.4− | | |
| 2004 02 15 | 704 | 0.1+ | 0.7+ | 2006 10 15 | 703 | 0.6− | 0.8− | 2006 11 17 | 703 | 0.4− | 0.0 | | |
| 2004 02 15 | 704 | 0.5− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.4− | | |
| 2004 02 15 | 704 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.9− | | |
| 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.8+ | | |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.2− | | |
| 2004 02 16 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.5+ | | |
| 2004 03 17 | 645 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.4+ | | |
| 2004 03 17 | 645 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.9+ | 0.6+ | | |
| 2006 09 16 | 699 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 22 | 291 | 0.5+ | 0.1+ | | |
| 2006 09 16 | 699 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 22 | 291 | 0.4+ | 0.1+ | | |
| 2006 09 16 | 699 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 22 | 291 | 0.2+ | 0.3+ | | |
| 2006 09 18 | 699 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.5− | 2006 11 22 | G96 | 0.2+ | 0.2− | | |
| 2006 09 18 | 699 | 0.7+ | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.9− | 2006 11 22 | G96 | 0.4− | 0.3− | | |
| 2006 09 18 | 699 | (2.0− | 0.6+) | 2006 10 21 | 703 | 0.1+ | 0.5− | 2006 11 22 | G96 | 0.2+ | 0.4− | | |
| 2006 09 18 | 699 | 0.6+ | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.7− | 2006 11 22 | G96 | 0.2+ | 0.6− | | |
| 2006 09 22 | 704 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.7− | 0.8− | | |
| 2006 09 22 | 704 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 1.0− | 0.7+ | | |
| 2006 09 22 | 704 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.6+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.5− | | |
| 2006 09 22 | 704 | 0.7− | 0.6− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.4− | | |
| 2006 09 22 | 704 | (1.8− | 1.2+) | 2006 10 28 | 691 | 0.1+ | 0.0 | | | | | | |

**(142284)∗ 2002 RO$_{132}$**

Discovered 2002 Sept. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 80.29932 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27083118 | $\omega$ | | 35.09902 | | +0.53173833 | | +0.84071057 | |
| $a$ | 2.3659394 | $\Omega$ | | 267.22842 | | −0.79856312 | | +0.45749701 | |
| $e$ | 0.1460439 | $i$ | | 5.87706 | | −0.28204837 | | +0.28965882 | |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.2− | 0.0 | 2002 09 20 | 644 | 0.5− | 0.1+ | 2005 05 12 | 703 | 1.1+ | 1.2− | | |
| 2000 01 12 | 691 | 0.3+ | 0.0 | 2002 10 05 | 704 | 0.1+ | 0.2− | 2005 05 12 | 703 | 0.7− | 0.3+ | | |
| 2000 01 12 | 691 | 0.3+ | 0.2+ | 2002 10 05 | 704 | 0.1+ | 0.3+ | 2005 05 19 | 644 | 0.3+ | 0.5+ | | |
| 2002 09 03 | 644 | 0.2− | 0.2+ | 2002 10 05 | 704 | 0.3+ | 0.1+ | 2005 05 19 | 644 | 0.8+ | 0.6+ | | |
| 2002 09 03 | 644 | 0.2− | 0.3+ | 2002 10 05 | 704 | 0.1+ | 0.2− | 2005 05 19 | 644 | 0.4+ | 0.4+ | | |
| 2002 09 03 | 644 | 0.2− | 0.2+ | 2002 10 05 | 704 | 0.4+ | 0.8− | 2005 06 03 | 703 | 0.4− | 0.2− | | |
| 2002 09 11 | 608 | (1.7− | 0.9−) | 2002 10 07 | 699 | (1.9+ | 0.0 ) | 2005 06 03 | 703 | (0.3+ | 2.5+) | | |
| 2002 09 11 | 608 | 0.5− | 0.8− | 2002 10 07 | 704 | 0.4− | 0.5− | 2005 06 03 | 703 | 0.4− | 0.9+ | | |
| 2002 09 11 | 608 | 0.1+ | 0.9− | 2002 10 07 | 699 | 0.1+ | 0.7+ | 2005 06 03 | 703 | 0.7− | 0.5− | | |
| 2002 09 12 | 644 | 0.0 | 0.5+ | 2002 10 07 | 704 | 0.2− | 0.4+ | 2006 10 27 | 703 | (2.0+ | 0.0 ) | | |
| 2002 09 12 | 644 | 0.3− | 0.6+ | 2002 10 07 | 699 | 1.2+ | 0.3− | 2006 10 27 | 703 | 0.5+ | 0.4+ | | |
| 2002 09 12 | 644 | 0.4+ | 0.3− | 2002 10 07 | 704 | 0.9− | 0.1+ | 2006 10 27 | 703 | 0.6+ | 1.3+ | | |
| 2002 09 12 | 644 | 0.4− | 0.5+ | 2002 10 07 | 699 | 1.2+ | 0.7+ | 2006 10 27 | 703 | 1.4− | 0.7− | | |
| 2002 09 12 | 644 | 0.2− | 0.3+ | 2002 10 07 | 704 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.2− | 0.3− | | |
| 2002 09 12 | 644 | 0.6− | 0.2+ | 2002 10 07 | 704 | 0.5+ | 1.2− | 2006 11 14 | G96 | 0.2+ | 0.3− | | |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2003 12 22 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.4− | | |
| 2002 09 13 | 644 | 0.1+ | 0.5+ | 2003 12 22 | 691 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.1− | | |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2003 12 22 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.2− | | |
| 2002 09 15 | 608 | 0.2+ | 0.9+ | 2004 01 18 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.3− | | |
| 2002 09 15 | 608 | 0.2− | 0.3+ | 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− | | |
| 2002 09 15 | 608 | 0.1− | 0.1+ | 2004 01 18 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− | | |
| 2002 09 20 | 644 | 0.4− | 0.3+ | 2005 05 12 | 703 | 0.2− | 0.8+ | | | | | | |
| 2002 09 20 | 644 | 0.9− | 0.2+ | 2005 05 12 | 703 | 0.9+ | 0.7+ | | | | | | |

**(142285)∗ 2002 RR$_{132}$**

Discovered 2002 Sept. 10 at George Observatory, Needville.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 286.71216 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26207028 | $\omega$ | | 94.12495 | | −0.07281604 | | −0.99734538 | |
| $a$ | 2.4183781 | $\Omega$ | | 0.05111 | | +0.86620261 | | −0.06328978 | |
| $e$ | 0.0886738 | $i$ | | 6.27456 | | +0.49435903 | | −0.03600818 | |
| $P$ | 3.76 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 1.1− | 0.7+ | 2004 01 13 | 699 | 1.1− | 0.8+ | 2006 09 18 | 699 | 0.2+ | 0.0 | | |
| 1999 12 15 | 704 | 0.3− | 0.7− | 2004 01 13 | 699 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.7− | 0.5+ | | |
| 1999 12 15 | 704 | 1.3+ | 0.8− | 2004 01 13 | 699 | 0.3− | 0.7− | 2006 09 18 | 699 | 0.8+ | 0.4− | | |
| 1999 12 15 | 704 | 0.2+ | 0.1+ | 2004 01 18 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 699 | (1.0− | 1.7+) | | |
| 2002 08 20 | 644 | 0.3− | 0.6+ | 2004 01 18 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.1− | | |
| 2002 08 20 | 644 | 0.4− | 0.5+ | 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.0 | | |
| 2002 08 20 | 644 | 0.6− | 0.9+ | 2004 01 28 | 703 | 0.9+ | 1.1+ | 2006 09 19 | 691 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.1+ | 0.1+ | 2004 01 28 | 703 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 2002 09 06 | 704 | 0.0 | 0.2− | 2004 01 28 | 703 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.1+ | | |
| 2002 09 06 | 704 | 0.6− | 0.4− | 2004 01 28 | 703 | 1.0+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2002 09 06 | 704 | 0.0 | 1.1− | 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2002 09 06 | 704 | 0.3− | 0.5+ | 2004 01 30 | 704 | 0.2− | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.1− | | |
| 2002 09 10 | 735 | 1.1+ | 0.7− | 2004 01 30 | 704 | (0.2+ | 2.1+) | 2006 09 30 | 691 | 0.1+ | 0.1− | | |
| 2002 09 10 | 735 | 0.4− | 0.6+ | 2004 01 30 | 704 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2002 09 10 | 735 | 0.7− | 0.5+ | 2004 02 15 | 704 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 09 12 | 735 | 1.1− | 0.2− | 2004 02 15 | 704 | 0.5+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 09 12 | 735 | 0.9+ | 0.9+ | 2004 02 15 | 704 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.6+ | | |
| 2002 09 12 | 735 | 0.6− | 1.0+ | 2004 02 15 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.5− | | |
| 2002 09 15 | 644 | 0.7− | 0.2+ | 2004 02 15 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1− | | |
| 2002 09 15 | 644 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.4− | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.3− | 0.4+ | 2004 03 19 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 02 | 735 | 0.4+ | 0.2+ | 2004 03 19 | 704 | 0.5+ | 1.2− | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2002 10 02 | 735 | 0.3− | 0.2+ | 2005 06 11 | 735(11.5+ | | 6.3−) | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2002 10 02 | 735 | 0.2+ | 0.3− | 2005 06 11 | 735(17.7+ | | 2.5+) | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.6+ | 0.8+ | 2006 07 21 | G96 | 0.7− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.5− | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 1.0− | 0.8− | | |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.5+ | | |
| 2002 10 09 | 291 | 0.1− | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.7− | 0.3− | | |
| 2002 10 09 | 291 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.6− | | |
| 2002 10 09 | 291 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.0− | 1.0− | | |
| 2002 10 11 | 704 | 0.3− | 1.5+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.8− | | |
| 2002 10 11 | 704 | 0.6+ | 0.3− | 2006 09 17 | 704 | 1.2+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.7− | | |
| 2002 10 11 | 704 | 0.4− | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.9− | 2006 11 11 | 703 | 0.3− | 0.7− | | |
| 2004 01 13 | 699 | 0.7− | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.7− | | | | | | |

**(142286)∗ 2002 RB$_{134}$**

Discovered 2002 Sept. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 47.87803 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25875775 | $\omega$ | | 252.06521 | | +0.77597263 | | +0.61254484 | |
| $a$ | 2.4389738 | $\Omega$ | | 69.88954 | | −0.50088732 | | +0.74342913 | |
| $e$ | 0.0916333 | $i$ | | 9.22369 | | −0.38337757 | | +0.26851807 | |
| $P$ | 3.81 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 644 | 0.2− | 0.3+ | 2003 12 29 | 704 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.2+ | | |
| 2002 09 10 | 644 | 0.3− | 0.1+ | 2004 01 16 | 644 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.3− | | |
| 2002 09 10 | 644 | 0.5− | 0.3+ | 2004 01 16 | 644 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.1+ | 0.2− | | |
| 2002 09 13 | 704 | 0.6+ | 0.4+ | 2004 01 16 | 644 | 0.5+ | 0.6+ | 2006 09 26 | 703 | 0.3+ | 0.4− | | |
| 2002 09 13 | 704 | 0.7+ | 0.6+ | 2005 04 30 | 599 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.8− | 0.7− | | |
| 2002 09 13 | 699 | 0.0 | 0.4− | 2005 05 01 | 599 | 0.2+ | 0.2− | 2006 09 26 | 703 | 1.1− | 1.0− | | |
| 2002 09 13 | 704 | 0.1− | 0.0 | 2005 05 01 | 599 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.5+ | 0.2− | | |
| 2002 09 13 | 699 | 0.4− | 0.6+ | 2005 05 03 | 704 | (0.5+ | 2.0+) | 2006 09 29 | 699 | 0.1− | 1.3+ | | |
| 2002 09 13 | 699 | 0.1− | 0.7+ | 2005 05 03 | 704 | 0.0 | 0.8+ | 2006 09 29 | 699 | 1.0− | 0.8+ | | |
| 2002 09 13 | 699 | 0.2+ | 0.9+ | 2005 05 03 | 704 | 0.6+ | 0.7+ | 2006 09 29 | 699 | 0.4+ | 0.1− | | |
| 2002 09 13 | 608 | 0.2− | 1.0− | 2005 05 03 | 704 | 1.4− | 0.2− | 2006 10 03 | 704 | (0.2− | 1.7+) | | |
| 2002 09 13 | 608 | 0.1+ | 0.9− | 2005 05 08 | 704 | (0.9+ | 1.9+) | 2006 10 03 | 704 | 0.2+ | 0.5+ | | |
| 2002 09 13 | 608 | 0.6− | 0.4− | 2005 05 08 | 704 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.7− | 0.5+ | | |
| 2002 09 17 | 644 | 0.1− | 0.1+ | 2005 05 08 | 704 | 0.1− | 1.2+ | 2006 10 10 | 644 | 0.3+ | 0.3+ | | |
| 2002 09 17 | 644 | 0.3− | 0.1+ | 2005 05 08 | 704 | 0.9+ | 0.9− | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2002 09 17 | 644 | 0.3− | 0.1− | 2005 05 09 | 699 | 0.3+ | 1.4+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 17 | 644 | 0.1− | 0.3− | 2005 05 09 | 699 | 1.5+ | 0.3− | 2006 10 16 | 703 | (3.7+ | 1.6−) | | |
| 2002 09 17 | 644 | 0.4− | 0.0 | 2005 05 09 | 699 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.5+ | | |
| 2002 09 17 | 644 | 0.2− | 0.1+ | 2005 05 09 | 699 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.6− | 0.6− | | |
| 2002 09 27 | 704 | (1.2+ | 1.9+) | 2005 05 13 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2002 09 27 | 704 | 1.5+ | 0.7+ | 2005 05 13 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 704 | (2.5+ | 0.4+) | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.3− |
| 2002 09 29 | 608 | 0.3− | 0.7+ | 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.6+ |
| 2002 09 29 | 608 | 0.5− | 1.1+ | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2002 09 29 | 608 | 0.1− | 0.9+ | 2005 05 14 | G96 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 10 06 | 608 | 0.1− | 0.6− | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2002 10 06 | 608 | 0.0 | 0.5− | 2005 05 14 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 10 06 | 608 | 0.2+ | 0.0 | 2005 05 14 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 10 08 | 644 | 0.2− | 0.4− | 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 10 08 | 644 | 0.5− | 0.7− | 2005 06 13 | G96 | 0.6− | 0.3− | 2006 11 13 | 703 | 0.3− | 0.9− |
| 2002 10 08 | 644 | 0.2− | 0.4− | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.1− |
| 2002 10 10 | 699 | (3.0+ | 0.7+) | 2005 06 13 | G96 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.3− | 1.2− |
| 2002 10 10 | 699 | 1.2+ | 0.1− | 2005 06 13 | G96 | 0.5− | 0.0 | 2006 11 13 | 703 | 1.0− | 0.6− |
| 2002 10 10 | 699 | (2.2+ | 0.6+) | 2005 06 27 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2002 10 10 | 699 | 0.4− | 0.8+ | 2005 06 27 | 644 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.6+ | 1.1+ |
| 2003 12 29 | 704 | 0.2− | 0.6+ | 2005 06 27 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 1.3+ | 2.0+ |
| 2003 12 29 | 704 | 0.0 | 1.0+ | 2006 09 18 | 703 | 0.5− | 0.1+ | | | | |
| 2003 12 29 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 703 | 0.5+ | 0.2− | | | | |

**(142287)∗ 2002 RZ$_{134}$**

Discovered 2002 Sept. 10 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.57701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26149957 | $\omega$ | 298.63048 | | +0.57225983 | +0.81980642 | |
| $a$ | 2.4218955 | $\Omega$ | 6.39863 | | −0.67169005 | +0.48317372 | |
| $e$ | 0.2591233 | $i$ | 10.80026 | | −0.47047971 | +0.30734441 | |
| $P$ | 3.77 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.1− | 0.8− | 2002 11 05 | 699 | 1.5+ | 0.3+ | 2006 09 25 | 704 | 0.8+ | 1.0+ |
| 2002 08 09 | 608 | 0.1+ | 0.5− | 2003 12 30 | 704 | 0.7− | 0.4− | 2006 09 25 | 704 | 0.2+ | 0.7+ |
| 2002 08 09 | 608 | 0.1+ | 0.5− | 2003 12 30 | 704 | 0.3− | 0.2+ | 2006 09 25 | 704 | 1.2+ | 0.3+ |
| 2002 08 14 | 704 | 0.8− | 0.3+ | 2003 12 30 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.7− | 0.5− |
| 2002 08 14 | 704 | 0.4+ | 0.6+ | 2003 12 30 | 704 | 0.6+ | 0.4− | 2006 09 29 | 704 | 0.7− | 0.1− |
| 2002 08 14 | 704 | 0.7+ | 0.3− | 2005 03 04 | G96 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.8− | 1.0+ |
| 2002 08 14 | 704 | 0.0 | 0.3+ | 2005 03 04 | G96 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.7+ |
| 2002 08 14 | 704 | 0.1+ | 0.7− | 2005 03 04 | G96 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.4− | 0.3− |
| 2002 09 10 | 608 | 0.7− | 0.1− | 2005 03 04 | G96 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2002 09 10 | 608 | 0.8− | 0.6− | 2005 03 10 | G96 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2002 09 10 | 608 | 0.8− | 0.4− | 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2002 09 13 | 704 | 0.4+ | 0.3− | 2005 03 10 | G96 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.8+ | 0.2− |
| 2002 09 13 | 704 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2002 09 13 | 704 | 0.5+ | 0.3+ | 2005 03 13 | 703 | 0.0 | 0.7+ | 2006 10 19 | 703 | 0.5− | 0.3− |
| 2002 09 13 | 704 | 0.5+ | 0.0 | 2005 03 13 | 703 | 0.9+ | 0.8+ | 2006 10 19 | 703 | 0.3− | 0.8− |
| 2002 09 13 | 704 | 0.2+ | 0.3+ | 2005 03 13 | 703 | 0.3+ | 0.6− | 2006 10 19 | A50 | 0.0 | 0.0 |
| 2002 09 16 | 644 | 0.1− | 0.7+ | 2005 03 13 | 703 | 1.3+ | 0.1− | 2006 10 19 | A50 | 0.1− | 0.3− |
| 2002 09 16 | 644 | 0.0 | 0.7+ | 2005 04 04 | 703 | 1.1+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2002 09 16 | 644 | 0.2− | 0.7+ | 2005 04 04 | 703 | 0.5+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 09 17 | 608 | 1.4− | 0.7+ | 2005 04 04 | 703 | 0.1− | 1.1+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2002 09 17 | 608 | 1.4− | 0.7+ | 2005 04 04 | 703 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 09 17 | 608 | (1.7− | 0.7+) | 2005 05 14 | G96 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2002 10 01 | 699 | 0.2+ | 0.1− | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 10 01 | 699 | 0.2− | 0.2+ | 2005 05 14 | G96 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 10 01 | 699 | 0.3− | 0.1− | 2005 05 14 | G96 | 0.0 | 0.2− | 2006 10 21 | 704 | 0.3− | 0.1+ |
| 2002 10 01 | 699 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 21 | 704 | 0.0 | 0.8− |
| 2002 10 03 | 704 | 0.1− | 0.8− | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 10 21 | 704 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.4− | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.1− | 2006 08 28 | 703 | 1.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 703 | (1.6− | 0.7−) | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.8− | 1.3− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 10 05 | 704 | 0.7+ | 0.2− | 2006 09 15 | 703 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 10 05 | 704 | 0.5+ | 0.1− | 2006 09 15 | 703 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 10 07 | 704 | 0.1− | 0.4− | 2006 09 15 | 703 | 0.1− | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 10 07 | 704 | 0.1− | 0.3− | 2006 09 15 | 703 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.6+ | 0.0 |
| 2002 10 07 | 704 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.3− | 1.5+ | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 10 07 | 704 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 09 18 | 704 | 0.2+ | 0.6− | 2006 10 27 | 703 | 0.3− | 0.1+ |
| 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 704 | 0.8+ | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.7+ | 1.4− | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.3+ | 0.8+ | 2006 11 07 | 644 | 0.5− | 0.3+ |
| 2002 10 11 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 699 | 0.1+ | 1.0+ | 2006 11 15 | 703 | 0.0 | 0.5− |
| 2002 11 05 | 699 | 0.6− | 0.2− | 2006 09 20 | 699 | 0.2+ | 0.6+ | 2006 11 15 | 703 | 0.5− | 0.6− |
| 2002 11 05 | 699 | 0.4− | 0.9+ | 2006 09 25 | 704 | 0.3− | 1.1+ | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2002 11 05 | 699 | 1.4+ | 1.0− | 2006 09 25 | 704 | (1.6+ | 0.3−) | 2006 11 15 | 703 | 0.0 | 0.3− |

**(142288)∗ 2002 RW$_{135}$**

Discovered 2002 Sept. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.21096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26555359 | $\omega$ | 283.82004 | | +0.90458798 | +0.41699445 | |
| $a$ | 2.3971834 | $\Omega$ | 51.61047 | | −0.33432198 | +0.82280904 | |
| $e$ | 0.2121072 | $i$ | 6.48477 | | −0.26447948 | +0.38613587 | |
| $P$ | 3.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.3+ | 0.1− | 2002 11 11 | 704 | 0.4+ | 0.6− | 2006 10 29 | G96 | 0.3+ | 0.2+ |
| 1993 01 23 | 691 | 0.4− | 0.3− | 2002 11 11 | 704 | 0.6+ | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.3+ |
| 1993 01 23 | 691 | 0.0 | 0.2+ | 2002 11 11 | 704 | 0.3+ | 0.3− | 2006 10 30 | G96 | 0.2+ | 0.1+ |
| 2001 04 16 | 645 | 0.2+ | 0.2+ | 2002 11 11 | 704 | 0.5+ | 0.2− | 2006 10 30 | G96 | 0.4+ | 0.2+ |
| 2001 04 16 | 645 | 0.2+ | 0.2+ | 2004 01 17 | 644 | 0.1− | 0.6+ | 2006 10 30 | G96 | 0.1+ | 0.1+ |
| 2002 07 09 | 704 | 0.1− | 0.6+ | 2004 01 17 | 644 | 0.1+ | 1.2+ | 2006 10 30 | G96 | 0.2− | 0.2+ |
| 2002 07 09 | 704 | 1.0+ | 0.5+ | 2004 01 17 | 644 | 0.4+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 07 09 | 704 | 0.2+ | 0.2− | 2005 04 16 | 691 | 0.6+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 07 09 | 704 | 0.1− | 0.5+ | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 07 09 | 704 | 0.2− | 1.0+ | 2005 04 16 | 691 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2002 08 30 | 699 | 0.6− | 0.0 | 2005 06 13 | G96 | 0.6− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 08 30 | 699 | 0.5− | 0.1+ | 2005 06 13 | G96 | 0.4− | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 08 30 | 699 | 1.0− | 0.3+ | 2005 06 13 | G96 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2002 08 30 | 699 | 0.6− | 0.2+ | 2005 06 13 | G96 | 0.5− | 1.1+ | 2006 11 11 | 703 | 0.7+ | 0.6− |
| 2002 09 05 | 608 | 0.3+ | 0.1− | 2005 07 09 | 291 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2002 09 05 | 608 | 0.4+ | 0.0 | 2005 07 09 | 291 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2002 09 05 | 608 | 0.6+ | 0.4+ | 2005 07 09 | 291 | 0.6− | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2002 09 11 | 608 | 0.2− | 0.7− | 2006 08 28 | 703 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2002 09 11 | 608 | 0.5− | 0.4− | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 11 11 | G96 | 1.3+ | 0.1+ |
| 2002 09 11 | 608 | 0.4− | 0.4− | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2002 09 13 | 704 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.6+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2002 09 13 | 704 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 09 13 | 699 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2002 09 13 | 704 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2002 09 13 | 704 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2002 09 13 | 699 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 1.0− | 0.3− |
| 2002 09 13 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.2− | 0.5− |
| 2002 09 13 | 699 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2002 09 13 | 699 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2002 09 16 | 644 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.8+ |
| 2002 09 16 | 644 | 0.5− | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 09 16 | 644 | 0.7− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2002 09 17 | 644 | 0.3− | 0.5− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2002 09 17 | 644 | 0.3− | 0.6− | 2006 10 28 | 704 | 0.5+ | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2002 09 17 | 644 | 0.2− | 0.7− | 2006 10 28 | 704 | 0.9− | 0.9+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2002 09 27 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 1.3− | 0.8+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 09 27 | 704 | 0.5− | 0.8+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2002 09 27 | 704 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2002 09 27 | 704 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 09 27 | 704 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2002 10 04 | 704 | 0.7− | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | (0.6+ | 1.5+) |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.5− | 0.4− |
| 2002 10 04 | 704 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.7− | 0.1+ |
| 2002 10 04 | 704 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.3− | 1.8+ |
| 2002 10 09 | 699 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.0 | 0.4− |
| 2002 10 09 | 699 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.8+ |
| 2002 10 09 | 699 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 29 | 704 | 0.9+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.3+ | 1.0+ | | |
| 2002 10 29 | 704 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.2− | 1.0+ | | |
| 2002 10 29 | 704 | 0.2− | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.0 | 0.4− | | |
| 2002 10 29 | 704 | 0.5− | 1.1+ | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.4− | | |
| 2002 10 29 | 704 | (0.1+ | 1.9+) | 2006 10 29 | G96 | 0.7− | 0.6− | 2006 12 01 | G96 | 0.2− | 0.3− | | |
| 2002 11 07 | 704 | 0.4+ | 1.1+ | 2006 10 29 | G96 | 0.2− | 0.6− | 2006 12 01 | G96 | 0.4+ | 0.3+ | | |
| 2002 11 07 | 704 | (1.1+ | 1.5+) | 2006 10 29 | G96 | 1.1+ | 0.6− | | | | | | |
| 2002 11 07 | 704 | 0.1+ | 0.7+ | 2006 10 29 | G96 | 0.2− | 0.3+ | | | | | | |

**(142289)∗ 2002 RJ$_{137}$**

Discovered 2002 Sept. 12 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.54067 | | (2000.0) | | | |
| $n$ | 0.23670913 | $\omega$ | 216.03429 | | +0.97570261 | −0.19166261 |
| $a$ | 2.5881694 | $\Omega$ | 154.39116 | | +0.20858844 | +0.96084688 |
| $e$ | 0.1962047 | $i$ | 14.21800 | | −0.06704678 | +0.20009677 |
| $P$ | 4.16 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 19 | 704 | 0.1− | 0.4+ | 2003 01 28 | 704 | 1.1− | 0.6− | 2006 09 19 | 703 | 0.2− | 0.1− | | |
| 1998 12 19 | 704 | 0.9− | 0.3− | 2003 01 28 | 704 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.7− | 0.1+ | | |
| 1998 12 19 | 704 | 0.3+ | 0.6− | 2003 01 28 | 704 | (1.5+ | 0.3−) | 2006 09 19 | 703 | 0.2+ | 0.4+ | | |
| 1998 12 19 | 704 | 0.2− | 0.4+ | 2005 04 15 | 703 | 0.7− | 1.0+ | 2006 09 19 | 703 | 0.5− | 0.6− | | |
| 1998 12 19 | 704 | (0.5− | 2.5+) | 2005 04 15 | 703 | 0.6+ | 0.4− | 2006 09 21 | 699 | 0.2+ | 0.2+ | | |
| 2002 09 12 | 683 | 1.1+ | 0.5+ | 2005 04 15 | 703 | (0.3− | 4.9+) | 2006 09 21 | 699 | 0.1− | 0.2+ | | |
| 2002 09 12 | 683 | 0.7+ | 0.5− | 2005 04 15 | 703 | (4.0+ | 3.6+) | 2006 09 21 | 699 | 0.5+ | 0.2+ | | |
| 2002 09 12 | 683 | 0.7+ | 0.7− | 2005 05 01 | 691 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.0 | | |
| 2002 09 13 | 683 | (1.6− | 1.9+) | 2005 05 01 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.2+ | | |
| 2002 09 13 | 683 | 0.4− | 0.2+ | 2005 05 01 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.5+ | | |
| 2002 09 13 | 683 | (1.9− | 1.7+) | 2005 05 04 | 703 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.3− | 0.2+ | | |
| 2002 10 28 | 644 | 0.1− | 0.1+ | 2005 05 04 | 703 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.3− | 0.1+ | | |
| 2002 10 28 | 644 | 0.3+ | 0.0 | 2005 05 04 | 703 | (0.3+ | 2.2−) | 2006 09 26 | 703 | 0.0 | 0.4+ | | |
| 2002 10 28 | 644 | 0.2− | 0.0 | 2005 05 04 | 703 | (1.7− | 0.3−) | 2006 09 26 | 703 | 0.5+ | 0.1− | | |
| 2002 10 30 | 704 | 0.0 | 0.3− | 2005 05 08 | 699 | 0.9+ | 0.6− | 2006 09 26 | 703 | 0.2− | 0.1− | | |
| 2002 10 30 | 704 | 0.0 | 0.2+ | 2005 05 08 | 699 | 1.3+ | 1.0+ | 2006 09 26 | 703 | 1.2+ | 0.3+ | | |
| 2002 10 30 | 704 | 0.0 | 0.3+ | 2005 05 08 | 699 | 0.5+ | 0.5+ | 2006 10 02 | 703 | 0.5− | 0.1− | | |
| 2002 10 30 | 704 | 0.3+ | 0.1− | 2005 05 08 | 699 | 0.8+ | 0.6− | 2006 10 02 | 703 | 0.2− | 0.5− | | |
| 2002 10 30 | 704 | 0.2+ | 0.3+ | 2005 05 13 | 703 | 0.2− | 1.0− | 2006 10 02 | 703 | 0.6− | 0.3+ | | |
| 2002 11 06 | 644 | 0.1+ | 0.2− | 2005 05 13 | 703 | 0.5− | 1.0− | 2006 10 02 | 703 | 0.5− | 0.2− | | |
| 2002 11 06 | 644 | 0.2+ | 0.2− | 2005 05 13 | 703 | 0.2− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2002 11 06 | 644 | 0.2+ | 0.0 | 2005 05 13 | 703 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 11 16 | 644 | 0.2+ | 0.2− | 2005 05 15 | 644 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 11 16 | 699 | 0.0 | 0.1− | 2005 05 15 | 644 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 11 16 | 699 | 0.0 | 0.3+ | 2005 05 15 | 644 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 2002 11 16 | 644 | 0.2+ | 0.1− | 2005 05 20 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2002 11 16 | 699 | 1.2− | 0.2− | 2005 05 20 | 644 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 11 16 | 699 | 0.6− | 0.5+ | 2005 05 20 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1− | | |
| 2002 11 16 | 644 | 0.2+ | 0.1− | 2006 08 19 | 699 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2002 11 30 | 704 | 0.3− | 0.3+ | 2006 08 19 | 699 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.1+ | | |
| 2002 11 30 | 704 | 0.8− | 0.3+ | 2006 08 19 | 699 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.2+ | | |
| 2002 11 30 | 704 | 0.1− | 0.3+ | 2006 08 19 | 699 | 0.6− | 0.8+ | 2006 10 21 | 703 | 0.3− | 0.3− | | |
| 2002 11 30 | 704 | 0.4+ | 0.2− | 2006 08 23 | 704 | (0.1− | 2.6+) | 2006 10 21 | 703 | 0.3+ | 0.1− | | |
| 2002 11 30 | 704 | (2.1+ | 0.2+) | 2006 08 23 | 704 | (0.2− | 1.9+) | 2006 10 31 | 703 | 0.4+ | 0.3− | | |
| 2003 01 02 | 704 | 0.7+ | 0.1+ | 2006 08 23 | 704 | 0.4+ | 1.3+ | 2006 10 31 | 703 | 1.0+ | 0.4− | | |
| 2003 01 02 | 704 | 0.8+ | 0.8+ | 2006 09 19 | 958 | 0.3+ | 0.1− | 2006 10 31 | 703 | 0.1+ | 0.3− | | |
| 2003 01 02 | 704 | 0.2+ | 0.3− | 2006 09 19 | 958 | 0.4+ | 1.0− | 2006 10 31 | 703 | 0.2− | 0.8− | | |
| 2003 01 28 | 704 | 0.2− | 1.1+ | 2006 09 19 | 958 | 0.2− | 0.9− | | | | | | |

**(142290)∗ 2002 RB$_{138}$**

Discovered 2002 Sept. 10 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.72915 | | (2000.0) | | | |
| $n$ | 0.24187660 | $\omega$ | 247.38500 | | +0.87947098 | −0.45484747 |
| $a$ | 2.5511744 | $\Omega$ | 139.29375 | | +0.47584912 | +0.84642829 |
| $e$ | 0.2903398 | $i$ | 12.41015 | | −0.00992063 | +0.27689875 |
| $P$ | 4.07 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 645 | 0.1+ | 0.3+ | 2002 10 18 | 644 | 0.1− | 0.1+ | 2006 07 21 | 704 | 0.1+ | 0.7+ | | |
| 2001 06 15 | 645 | 0.0 | 0.3+ | 2002 10 18 | 644 | 0.3− | 0.0 | 2006 07 21 | 704 | 0.1+ | 0.4+ | | |
| 2002 08 12 | 704 | 0.3− | 0.9+ | 2002 10 23 | 644 | 0.4− | 0.1− | 2006 08 21 | 644 | 0.0 | 0.1+ | | |
| 2002 08 12 | 704 | 0.5− | 0.6+ | 2002 10 23 | 644 | 0.5− | 0.2− | 2006 08 21 | 644 | 0.5− | 0.2+ | | |
| 2002 08 12 | 704 | 0.2− | 0.8+ | 2002 10 23 | 644 | 0.5− | 0.0 | 2006 08 21 | 644 | 0.4− | 0.1+ | | |
| 2002 08 12 | 704 | 0.2− | 0.8+ | 2002 10 28 | 704 | 0.3− | 0.4+ | 2006 09 05 | F84 | 0.1− | 0.5− | | |
| 2002 08 12 | 704 | (0.8+ | 1.7+) | 2002 10 28 | 704 | 0.0 | 0.7+ | 2006 09 05 | F84 | 0.2+ | 0.2− | | |
| 2002 08 24 | 644 | 0.1− | 0.1+ | 2002 10 28 | 704 | 0.4+ | 0.5+ | 2006 09 05 | F84 | 0.2+ | 0.4+ | | |
| 2002 08 24 | 644 | 0.4− | 0.4+ | 2002 10 28 | 704 | 0.0 | 0.9+ | 2006 09 12 | 704 | 0.2− | 0.4+ | | |
| 2002 08 24 | 644 | 0.3− | 0.3+ | 2002 10 28 | 704 | (0.2− | 2.0+) | 2006 09 12 | 704 | 0.0 | 0.7+ | | |
| 2002 09 10 | 608 | 0.1− | 0.1− | 2002 11 04 | 644 | 0.1− | 0.3+ | 2006 09 12 | 704 | 0.2− | 0.7+ | | |
| 2002 09 10 | 608 | 0.0 | 0.3− | 2002 11 04 | 644 | 0.4− | 0.3+ | 2006 09 12 | 704 | 0.3− | 0.7+ | | |
| 2002 09 10 | 608 | 0.1− | 0.2− | 2002 11 04 | 644 | 0.1− | 0.4+ | 2006 09 12 | 704 | 0.2+ | 0.1− | | |
| 2002 09 14 | 608 | 0.8− | 0.4− | 2002 11 27 | 699 | 0.6− | 0.8+ | 2006 09 14 | 644 | 0.0 | 0.0 | | |
| 2002 09 14 | 608 | 0.5− | 0.6− | 2002 11 27 | 699 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.1− | | |
| 2002 09 14 | 608 | 0.7− | 0.8− | 2002 11 27 | 699 | 0.4− | 0.1− | 2006 09 14 | 644 | 0.1− | 0.1− | | |
| 2002 09 30 | 608 | 0.4+ | 1.1+ | 2002 11 27 | 699 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.6− | 0.3− | | |
| 2002 09 30 | 608 | 0.6+ | 0.8+ | 2003 01 28 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 703 | 0.0 | 0.3− | | |
| 2002 09 30 | 608 | 0.5+ | 0.8+ | 2003 01 28 | 704 | 0.0 | 0.5+ | 2006 09 20 | 703 | 0.7− | 0.7− | | |
| 2002 10 05 | 704 | 0.3+ | 0.2+ | 2003 01 28 | 704 | 0.2+ | 0.5− | 2006 09 20 | 703 | (1.7− | 0.8+) | | |
| 2002 10 05 | 704 | 0.5+ | 0.1+ | 2004 01 18 | 691 | 0.2− | 0.0 | 2006 09 21 | 608 | (1.9+ | 4.2+) | | |
| 2002 10 05 | 704 | 0.1+ | 0.1+ | 2004 01 18 | 691 | 0.0 | 0.7+ | 2006 09 21 | 608 | (2.0+ | 4.4+) | | |
| 2002 10 05 | 704 | 0.3+ | 0.1− | 2004 01 18 | 691 | 0.5+ | 0.1+ | 2006 09 21 | 608 | (1.6+ | 4.3+) | | |
| 2002 10 05 | 704 | 0.3+ | 0.2− | 2004 01 18 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.3+ | | |
| 2002 10 06 | 608 | 1.5+ | 1.0− | 2004 01 18 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.3+ | 0.3+ | | |
| 2002 10 06 | 608 | 1.2+ | 0.5− | 2004 01 18 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.0 | | |
| 2002 10 06 | 608 | (2.2+ | 0.8−) | 2004 01 18 | 691 | 0.4− | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.5+ | | |
| 2002 10 10 | 699 | 0.3− | 0.5+ | 2004 01 18 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 608 | 0.2+ | 0.7− | | |
| 2002 10 10 | 699 | 0.6− | 0.6+ | 2004 01 18 | 691 | 0.1− | 0.5+ | 2006 09 30 | 608 | 0.2+ | 0.6− | | |
| 2002 10 10 | 699 | 0.0 | 0.1+ | 2004 01 27 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 608 | 0.2+ | 0.4− | | |
| 2002 10 10 | 699 | 0.2− | 0.5+ | 2004 01 27 | 691 | 0.2− | 0.4+ | 2006 10 12 | E12 | 0.1− | 0.4− | | |
| 2002 10 11 | 704 | 0.0 | 1.2+ | 2004 01 27 | 691 | 0.2+ | 0.5+ | 2006 10 12 | E12 | 0.1+ | 0.1− | | |
| 2002 10 11 | 704 | 0.2+ | 1.3+ | 2004 02 29 | 691 | 0.1+ | 0.6+ | 2006 10 12 | E12 | 0.3+ | 0.7− | | |
| 2002 10 11 | 704 | 0.1− | 1.4+ | 2004 02 29 | 691 | 0.3+ | 0.1− | 2006 10 12 | E12 | 0.1− | 0.2− | | |
| 2002 10 11 | 704 | 0.3+ | 1.3+ | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 11 09 | E12 | 0.6+ | 0.2+ | | |
| 2002 10 11 | 704 | (0.1+ | 1.5+) | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 11 09 | E12 | 0.2+ | 0.2− | | |
| 2002 10 12 | 704 | 0.6− | 0.8+ | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 11 09 | E12 | 0.2− | 0.3− | | |
| 2002 10 12 | 704 | 0.8− | 0.6+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 11 09 | E12 | 0.3+ | 0.3− | | |
| 2002 10 12 | 704 | 0.8− | 1.1+ | 2004 03 19 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.1− | | |
| 2002 10 12 | 704 | (0.8− | 1.8+) | 2004 03 19 | 644 | 0.2+ | 0.6+ | 2006 11 17 | 644 | 0.2− | 0.1− | | |
| 2002 10 12 | 704 | 0.6− | 1.2+ | 2004 03 19 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1− | | |
| 2002 10 15 | 704 | 0.1+ | 0.1− | 2006 07 21 | 704 | 1.0− | 1.3+ | 2006 11 19 | 703 | 0.6− | 0.3− | | |
| 2002 10 15 | 704 | 0.2− | 0.1− | 2006 07 21 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 0.3+ | 0.3− | | |
| 2002 10 15 | 704 | 0.4− | 0.1+ | 2006 07 21 | 704 | 0.4− | 1.2+ | 2006 11 19 | 703 | (2.5+ | 1.4+) | | |
| 2002 10 15 | 704 | 0.3− | 0.5+ | 2006 07 21 | 704 | (0.0 | 1.6−) | 2006 11 19 | 703 | 0.7+ | 0.1− | | |
| 2002 10 15 | 704 | 0.1− | 0.1+ | 2006 07 21 | 704 | 0.2+ | 0.9+ | | | | | | |
| 2002 10 18 | 644 | 0.1− | 0.2− | 2006 07 21 | 704 | 0.7− | 0.9+ | | | | | | |

**(142291)∗ 2002 RE$_{138}$ = 1998 MZ$_{36}$**

Discovered 2002 Sept. 12 by E. W. Elst at Hoher List.

Id. G. V. Williams (*MPO* 37896)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.38336 | | (2000.0) | | | |
| $n$ | 0.26074770 | $\omega$ | 23.97068 | | +0.89747802 | +0.43820653 |
| $a$ | 2.4265489 | $\Omega$ | 309.94439 | | −0.41448743 | +0.79913709 |
| $e$ | 0.1481126 | $i$ | 3.74550 | | −0.15077592 | +0.41152759 |
| $P$ | 3.78 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 28 | 691 | 0.3+ | 0.2+ | 2002 09 13 | 017 | (0.1+ | 1.8−) | 2002 10 11 | 645 | 0.0 | 0.1− |
| 1998 06 28 | 691 | 0.1+ | 0.1+ | 2002 09 13 | 017 | 0.5+ | 0.1− | 2004 01 28 | 691 | 0.0 | 0.5+ |
| 1998 06 28 | 691 | 0.8− | 0.3+ | 2002 09 30 | 704 | 1.0− | 1.1+ | 2004 01 28 | 691 | 0.0 | 0.5+ |
| 1998 07 03 | 691 | 0.0 | 0.5+ | 2002 09 30 | 704 | 0.4+ | 1.0+ | 2004 01 28 | 691 | 0.3+ | 0.5+ |
| 1998 07 03 | 691 | 0.1− | 0.4+ | 2002 09 30 | 704 | 0.8+ | 0.4+ | 2004 02 12 | 691 | 0.1+ | 0.2+ |
| 1998 07 03 | 691 | 0.1− | 0.2+ | 2002 09 30 | 704 | 0.3− | 0.5+ | 2004 02 12 | 691 | 0.4+ | 0.3+ |
| 2002 08 14 | 699 | 0.1+ | 1.1+ | 2002 10 01 | 699 | 0.9− | 0.3− | 2004 02 12 | 691 | 0.2− | 0.0 |
| 2002 08 14 | 699 | 0.9− | 0.5+ | 2002 10 01 | 699 | 0.1− | 1.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2002 08 14 | 699 | 0.9− | 0.6+ | 2002 10 01 | 699 | 0.6− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2002 08 14 | 699 | 0.8− | 0.2− | 2002 10 01 | 699 | 0.4− | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | (3.9− | 0.5−) | 2002 10 04 | 704 | 0.6− | 1.4+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | (4.2− | 1.0+) | 2002 10 04 | 704 | 0.8− | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2002 09 06 | 704 | (3.3− | 0.4−) | 2002 10 04 | 704 | 0.3− | 0.8+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2002 09 06 | 704 | (2.8− | 0.0 ) | 2002 10 04 | 704 | 0.4+ | 0.9+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2002 09 06 | 704 | (3.1− | 0.4+) | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 09 12 | 017 | 1.3+ | 1.2− | 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2002 10 10 | 645 | 0.1+ | 0.0 | | | | |
| 2002 09 13 | 644 | 0.1+ | 0.5+ | 2002 10 11 | 645 | 0.0 | 0.2− | | | | |

**(142292)∗ 2002 RF$_{142}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.22043 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27091316 | $\omega$ | 282.47937 | | −0.70448970 | −0.70746412 |
| $a$ | 2.3654621 | $\Omega$ | 212.54370 | | +0.68509349 | −0.65711862 |
| $e$ | 0.0694102 | $i$ | 6.02559 | | +0.18531372 | −0.26017232 |
| $P$ | 3.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.8− | 0.6− | 2004 01 27 | 699 | 0.3+ | 0.8− | 2006 09 27 | G96 | 0.1− | 0.3− |
| 1995 10 28 | 691 | 1.1− | 0.3− | 2004 01 27 | 699 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.7+ | 0.2− |
| 1995 10 28 | 691 | 1.6+ | 1.7+ | 2004 01 27 | 699 | 0.4− | 0.6− | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 2002 09 11 | 644 | 0.9− | 0.1+ | 2004 01 28 | 608 | 0.3+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2002 09 11 | 644 | 0.4− | 0.3+ | 2004 01 28 | 608 | 0.7+ | 0.5− | 2006 10 12 | 691 | 0.4− | 0.1+ |
| 2002 09 11 | 644 | 0.3− | 0.4+ | 2004 01 28 | 608 | 0.5+ | 0.5− | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2002 09 13 | 644 | 0.3− | 0.5+ | 2004 02 11 | 644 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.3+ | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2004 02 11 | 644 | 0.2+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.1+ |
| 2002 09 13 | 644 | 0.4− | 0.3+ | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.2− | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 02 14 | 699 | 0.4− | 0.8+ | 2006 10 16 | 691 | 0.1+ | 1.1− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 02 14 | 699 | 0.6+ | 1.1+ | 2006 10 16 | 691 | 0.3+ | 0.4− |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2004 02 14 | 699 | 0.6+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.1− |
| 2002 10 10 | 645 | 0.1+ | 0.1+ | 2004 02 14 | 699 | (1.8+ | 0.7+) | 2006 10 20 | 691 | 0.1+ | 0.3− |
| 2004 01 14 | 644 | 0.1− | 0.8+ | 2004 02 18 | 704 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2004 01 14 | 644 | 0.0 | 0.2− | 2004 02 18 | 704 | 0.8− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2004 01 14 | 644 | 0.4+ | 0.1+ | 2004 02 18 | 704 | 0.7+ | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2004 01 14 | 644 | 0.1− | 0.1+ | 2004 02 18 | 704 | 0.7+ | 1.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2004 01 14 | 644 | 0.3− | 0.0 | 2004 03 11 | 644 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.6+ | 0.2− |
| 2004 01 14 | 644 | 0.1+ | 0.1+ | 2004 03 11 | 644 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2004 01 18 | 703 | 0.2− | 0.7+ | 2004 03 11 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.8+ |
| 2004 01 18 | 703 | 1.1− | 0.2− | 2004 03 11 | 644 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2004 01 18 | 703 | 0.1− | 0.3+ | 2004 03 11 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2004 01 18 | 703 | 0.9− | 0.5− | 2004 03 11 | 644 | 0.1+ | 0.0 | | | | |
| 2004 01 27 | 699 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.2− | | | | |

**(142293)∗ 2002 RH$_{142}$ = 2000 AU$_{209}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37899)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.93226 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24002380 | $\omega$ | 7.62232 | | −0.09017329 | +0.99396109 |
| $a$ | 2.5642863 | $\Omega$ | 257.21941 | | −0.91709410 | −0.10735415 |
| $e$ | 0.2334264 | $i$ | 3.67631 | | −0.38833902 | +0.02272528 |
| $P$ | 4.11 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 16 | 413 | 0.4− | 1.7− | 2002 09 06 | 704 | 0.3+ | 0.9+ | 2006 08 15 | 644 | 0.2− | 0.1+ |
| 2000 01 05 | 691 | 0.3+ | 0.1− | 2002 09 11 | 644 | 0.1− | 0.7− | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2000 01 05 | 691 | 0.1+ | 0.3− | 2002 09 11 | 644 | 0.3− | 0.6− | 2006 08 15 | 644 | 0.1− | 0.3+ |
| 2000 01 05 | 691 | 0.2+ | 0.2− | 2002 09 11 | 644 | 0.0 | 0.8− | 2006 08 24 | 704 | 0.9+ | 1.0+ |
| 2000 01 11 | 691 | 0.5− | 0.1+ | 2002 09 13 | 644 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.2+ | 0.5+ |
| 2000 01 11 | 691 | 0.4− | 0.6+ | 2002 09 13 | 644 | 0.5− | 0.2+ | 2006 08 24 | 704 | 0.1− | 0.9+ |
| 2000 01 11 | 691 | 0.1+ | 0.2− | 2002 09 13 | 644 | 0.2− | 0.4+ | 2006 08 24 | 704 | 0.2+ | 0.6+ |
| 2001 02 22 | 645 | 0.0 | 0.2+ | 2002 09 17 | 644 | 1.0− | 0.3+ | 2006 08 24 | 704 | 0.1− | 0.3+ |
| 2001 02 22 | 645 | 0.0 | 0.2+ | 2002 09 17 | 644 | 0.4− | 0.7+ | 2006 08 28 | 699 | 0.6+ | 0.2+ |
| 2001 03 02 | 699 | 0.0 | 0.1+ | 2002 09 17 | 644 | 0.7− | 0.6+ | 2006 08 28 | 699 | 0.4+ | 0.0 |
| 2001 03 02 | 699 | 0.2+ | 0.5− | 2002 10 04 | 704 | 0.6+ | 0.9+ | 2006 08 28 | 699 | 0.8+ | 0.4+ |
| 2001 03 02 | 699 | 0.5− | 0.8+ | 2002 10 04 | 704 | 0.8+ | 1.0+ | 2006 08 28 | 699 | 0.7− | 0.4+ |
| 2001 03 02 | 699 | 1.3+ | 0.6+ | 2002 10 04 | 704 | 0.9+ | 1.3+ | 2006 08 29 | 703 | 0.6− | 0.5− |
| 2002 08 16 | 704 | 0.3− | 0.4− | 2002 10 04 | 704 | 0.5+ | 0.4+ | 2006 08 29 | 703 | 0.1+ | 0.1+ |
| 2002 08 16 | 704 | 0.2− | 0.1+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.5− |
| 2002 08 16 | 704 | 0.0 | 0.2− | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.1− |
| 2002 08 16 | 704 | 1.4+ | 0.6+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.1+ |
| 2002 08 16 | 704 | 0.4+ | 0.1+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.9− | 0.4− |
| 2002 08 16 | 704 | 1.1− | 0.5− | 2005 03 03 | 703 | 1.1+ | 0.7− | 2006 08 30 | 704 | 0.3− | 0.5− |
| 2002 08 16 | 704 | 0.5+ | 0.8+ | 2005 03 03 | 703 | 0.8+ | 1.2+ | 2006 08 30 | 704 | 0.4− | 0.2− |
| 2002 08 16 | 704 | 1.7− | 1.3+ | 2005 03 03 | 703 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.3− | 0.1− |
| 2002 09 06 | 704 | 0.1+ | 1.1+ | 2005 03 03 | 703 | 0.2− | 0.6− | 2006 10 02 | G96 | 0.4− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.3+ | 2006 07 21 | 644 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2006 07 21 | 644 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.9+ | 0.6+ | 2006 07 21 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.1+ |

**(142294)∗ 2002 RY$_{142}$ = 2000 CJ$_{67}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37899)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.60984 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25451669 | $\omega$ | 140.99057 | | −0.34384627 | −0.93690733 |
| $a$ | 2.4659932 | $\Omega$ | 328.97226 | | +0.82801635 | −0.27084813 |
| $e$ | 0.0884440 | $i$ | 7.02518 | | +0.44289804 | −0.22101117 |
| $P$ | 3.87 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 734 | 0.1+ | 1.0− | 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.7− |
| 2000 02 07 | 734 | 1.3− | 0.7− | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.3+ |
| 2000 02 07 | 734 | 0.2− | 0.5− | 2004 02 10 | 644 | 0.2+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.3+ |
| 2000 02 08 | 734 | 0.2+ | 0.8− | 2004 02 11 | 291 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.1+ |
| 2000 02 08 | 734 | 0.5+ | 0.4− | 2004 02 11 | 291 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.8+ | 0.4+ |
| 2000 02 08 | 734 | 0.0 | 0.5+ | 2004 02 11 | 291 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.8+ |
| 2000 02 08 | 734 | 0.1− | 0.7− | 2004 02 11 | 699 | 0.5− | 0.8+ | 2006 09 25 | 704 | 0.3+ | 0.5− |
| 2002 09 06 | 704 | 0.7+ | 0.4+ | 2004 02 11 | 699 | 0.5− | 0.1+ | 2006 09 25 | 704 | 0.2− | 0.8+ |
| 2002 09 06 | 704 | 0.5+ | 0.6+ | 2004 02 11 | 699 | 0.4+ | 0.1− | 2006 09 25 | 704 | (1.9+ | 1.5+) |
| 2002 09 06 | 704 | 0.3− | 0.3+ | 2004 02 11 | 699 | 0.9+ | 0.6− | 2006 09 27 | A13 | 0.1− | 0.4− |
| 2002 09 06 | 704 | 0.2− | 0.3− | 2004 02 16 | 704 | 0.4+ | 0.0 | 2006 09 27 | A13 | 0.0 | 0.3− |
| 2002 09 11 | 644 | 0.2− | 0.3+ | 2004 02 16 | 704 | (1.9+ | 2.2−) | 2006 09 27 | A13 | 0.5+ | 0.4− |
| 2002 09 11 | 644 | 0.2− | 0.6+ | 2004 02 16 | 704 | 0.7+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 09 11 | 644 | 0.5− | 0.5+ | 2004 02 16 | 704 | 0.5+ | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2002 09 13 | 644 | 0.3− | 0.6+ | 2004 02 16 | 704 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.3+ | 2004 02 19 | 608 | 0.3− | 0.4− | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2004 02 19 | 608 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.1− | 0.4− | 2004 02 19 | 608 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.3− | 2004 02 23 | 704 | 1.1+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.0 | 0.3− | 2004 02 23 | 704 | 0.6+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 09 19 | 644 | 0.2− | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 09 19 | 644 | 0.5− | 0.6+ | 2004 02 23 | 704 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 09 19 | 644 | 0.8− | 0.3+ | 2004 02 23 | 704 | 1.2+ | 0.5− | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2004 03 19 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 03 19 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.1− | 0.5+ | 2006 08 31 | A13 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2004 01 22 | 704 | 0.1+ | 0.2− | 2006 08 31 | A13 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.3− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.1+ | 0.7+ | 2006 08 31 | A13 | 0.4− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.5− | 0.3− | 2006 09 17 | 703 | 0.8− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.3− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2004 01 30 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 703 | 1.0− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 09 18 | 704 | 0.6+ | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2004 01 30 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | (1.6− | 1.2+) | | | | |
| 2004 01 30 | 704 | 0.6− | 0.1− | 2006 09 18 | 704 | 1.2− | 0.2− | | | | |

**(142295)∗ 2002 RV$_{143}$ = 2000 CJ$_{115}$ = 2000 DU$_{18}$ = 2004 FA$_{93}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61323), A. Doppler (*MPO* 72711)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 314.58119 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26396655 | $\omega$ | 157.27047 | | +0.01910467 | −0.99870773 | |
| *a* | 2.4067822 | $\Omega$ | 291.60842 | | +0.90935359 | +0.03693567 | |
| *e* | 0.1839608 | *i* | 2.90352 | | +0.41558520 | −0.03490887 | |
| *P* | 3.73 | *H* | 16.8 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.7− | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2000 02 02 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.7+ | 1.4+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2000 02 02 | 704 | 0.3+ | 0.2+ | 2004 03 18 | 704 | (2.8+ | 1.8+) | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 0.2+ | 0.2− | 2004 03 19 | 704 | 1.1+ | 0.0 | 2006 10 19 | 704 | 0.1+ | 0.8+ |
| 2000 02 02 | 704 | 0.3− | 0.2+ | 2004 03 19 | 704 | (2.0+ | 0.3−) | 2006 10 19 | 704 | 0.4+ | 0.8+ |
| 2000 02 29 | 704 | 0.5− | 0.3− | 2004 03 19 | 704 | (2.2+ | 0.6+) | 2006 10 19 | 704 | 1.2− | 0.2+ |
| 2000 02 29 | 704 | 0.3+ | 0.1− | 2004 03 19 | 704 | 0.6+ | 0.8+ | 2006 10 21 | 704 | 0.9− | 0.3− |
| 2000 02 29 | 704 | 0.6+ | 0.7− | 2004 03 24 | 699 | 0.2− | 0.6+ | 2006 10 21 | 704 | 0.7− | 0.4+ |
| 2000 02 29 | 704 | 0.6+ | 1.7− | 2004 03 24 | 699 | 0.5+ | 1.2+ | 2006 10 21 | 704 | 0.5+ | 0.4+ |
| 2000 03 03 | 704 | 0.2+ | 0.3+ | 2004 03 24 | 699 | (1.2− | 1.8+) | 2006 10 21 | 704 | 0.5− | 0.3+ |
| 2000 03 03 | 704 | 0.8+ | 0.7+ | 2004 03 24 | 699 | (1.7− | 1.2+) | 2006 10 23 | 644 | 0.4− | 0.3+ |
| 2000 03 03 | 704 | 0.8− | 0.3+ | 2004 03 26 | 699 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2000 03 03 | 704 | 0.1− | 0.0 | 2004 03 26 | 699 | 0.2+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2000 03 05 | 704 | 0.5− | 0.7+ | 2004 03 26 | 699 | 1.1− | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2000 03 05 | 704 | 0.3− | 0.4− | 2004 03 26 | 699 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2000 03 05 | 704 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.1− | 2006 10 27 | 703 | 0.3+ | 0.7− |
| 2002 09 07 | 704 | 0.4− | 0.3+ | 2004 03 27 | 704 | 1.2+ | 0.7+ | 2006 10 27 | 703 | 0.3+ | 1.0− |
| 2002 09 07 | 704 | 0.3− | 1.1+ | 2004 03 27 | 704 | (0.6+ | 1.8+) | 2006 10 29 | 704 | 0.3− | 0.6+ |
| 2002 09 07 | 704 | 0.2− | 0.5+ | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.7− | 0.7+ |
| 2002 09 07 | 704 | 1.3− | 1.0− | 2004 03 28 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.7+ |
| 2002 09 11 | 644 | 0.5− | 1.0+ | 2004 03 28 | 704 | 1.3+ | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.8+ |
| 2002 09 11 | 644 | 0.3− | 0.8+ | 2004 03 28 | 704 | (0.0 | 1.5+) | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 09 11 | 644 | 0.3− | 0.8+ | 2004 03 28 | 704 | 0.5+ | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2002 09 13 | 644 | 0.5− | 0.8+ | 2004 03 28 | 704 | 0.0 | 1.1+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.8+ | 2004 03 29 | 704 | (1.0+ | 1.5+) | 2006 11 14 | 703 | 0.8− | 0.4− |
| 2002 09 13 | 644 | 0.2− | 1.1+ | 2004 03 29 | 704 | 0.3+ | 1.0+ | 2006 11 14 | 703 | 0.3− | 0.2+ |
| 2002 09 14 | 644 | 0.4− | 0.0 | 2004 03 29 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.9− | 0.1+ |
| 2002 09 14 | 644 | 0.4− | 0.0 | 2004 04 15 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 1.4− | 0.8− |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2004 04 15 | 691 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.6+ | 0.9+ |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2004 04 15 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 1.2+ | 0.4+ |
| 2002 10 04 | 704 | 1.3+ | 1.1+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.2− |
| 2002 10 04 | 704 | (0.6− | 2.0+) | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.9+ | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.9+ | 0.0 |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.5− | 0.4− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.0 | 0.1+ | | | | |
| 2004 03 18 | 704 | 0.7− | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.0 | | | | |

**(142296)∗ 2002 RP$_{144}$ = 2004 CQ$_5$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61323)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 283.79443 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26131868 | $\omega$ | 133.56445 | | −0.25294091 | −0.96588737 | |
| *a* | 2.4230130 | $\Omega$ | 330.95054 | | +0.85142973 | −0.19498119 | |
| *e* | 0.0735767 | *i* | 6.56565 | | +0.45944349 | −0.17042279 | |
| *P* | 3.77 | *H* | 16.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.0 | 0.7− | 2004 01 22 | 704 | 1.1+ | 0.4− | 2004 02 26 | 704 | 0.4− | 0.2+ |
| 1999 12 10 | 704 | 0.0 | 0.6+ | 2004 01 22 | 704 | 0.6+ | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.1+ |
| 1999 12 10 | 704 | 1.4− | 0.3+ | 2004 01 22 | 704 | 0.6+ | 0.9+ | 2004 02 26 | 704 | 0.6− | 0.3+ |
| 1999 12 10 | 704 | 0.4− | 0.4− | 2004 01 22 | 704 | 1.4+ | 0.3+ | 2004 03 18 | 704 | 1.2+ | 0.1+ |
| 2000 01 04 | 704 | 0.8− | 0.8− | 2004 01 23 | 699 | (0.4− | 2.3−) | 2004 03 18 | 704 | 0.6+ | 0.3+ |
| 2000 01 04 | 704 | 0.2+ | 0.6− | 2004 01 23 | 699 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.9− | 0.4− |
| 2000 01 04 | 704 | 0.5− | 0.2− | 2004 01 23 | 699 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.2− | 0.6+ |
| 2000 01 31 | 704 | 0.3+ | 0.4− | 2004 01 23 | 699 | 0.2+ | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.6+ |
| 2000 01 31 | 704 | 1.3+ | 0.1− | 2004 02 10 | 703 | 0.4− | 0.3− | 2004 03 19 | 704 | 0.1+ | 0.2− |
| 2000 01 31 | 704 | 0.5+ | 0.2− | 2004 02 10 | 644 | 0.4+ | 0.5+ | 2004 03 19 | 704 | 0.0 | 0.5+ |
| 2002 09 06 | 704 | (0.8− | 3.0+) | 2004 02 10 | 703 | 0.7+ | 0.1+ | 2006 09 28 | 703 | 0.6− | 0.1+ |
| 2002 09 06 | 704 | (1.0− | 2.4+) | 2004 02 10 | 644 | 0.3+ | 0.6+ | 2006 09 28 | 703 | 0.4− | 0.2− |
| 2002 09 06 | 704 | (1.1− | 2.2+) | 2004 02 10 | 703 | (1.8− | 0.1+) | 2006 09 28 | 703 | 0.1− | 0.5− |
| 2002 09 11 | 644 | 0.7− | 0.7+ | 2004 02 10 | 703 | 0.3− | 0.6− | 2006 09 28 | 703 | 0.2+ | 0.1+ |
| 2002 09 11 | 644 | 0.6− | 1.0+ | 2004 02 10 | 644 | (1.6+ | 0.6+) | 2006 10 17 | 703 | 1.2− | 0.8+ |
| 2002 09 11 | 644 | 0.4− | 0.8+ | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 1.0+ | 0.1− |
| 2002 09 13 | 644 | 0.5− | 1.2+ | 2004 02 11 | 644 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2002 09 13 | 644 | 0.6− | 1.5+ | 2004 02 11 | 644 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 1.2+ | 1.0+ |
| 2002 09 13 | 644 | 0.6− | 1.2+ | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.1− | 2004 02 12 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.2− | 2004 02 12 | 333 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2002 09 14 | 644 | 0.4− | 0.1− | 2004 02 12 | 691 | 0.4+ | 0.6− | 2006 10 31 | 703 | 0.9+ | 0.3− |
| 2002 09 19 | 644 | 0.3− | 0.5+ | 2004 02 12 | 333 | 0.3− | 0.1+ | 2006 10 31 | 703 | 0.2+ | 0.1− |
| 2002 09 19 | 644 | 0.3− | 0.5+ | 2004 02 12 | 333 | 0.3− | 0.0 | 2006 10 31 | 703 | 1.1+ | 1.0− |
| 2002 09 19 | 644 | 0.0 | 0.7+ | 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 10 31 | 703 | 1.1− | 0.1− |
| 2002 09 30 | 704 | 0.2+ | 0.8+ | 2004 02 17 | 704 | 0.3− | 0.7+ | 2006 11 14 | 703 | 0.8− | 0.1− |
| 2002 09 30 | 704 | (0.1− | 1.8+) | 2004 02 17 | 704 | 0.2− | 0.4− | 2006 11 14 | 703 | 0.4− | 1.6− |
| 2002 09 30 | 704 | 0.7− | 0.3+ | 2004 02 17 | 704 | 0.1+ | 0.9+ | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.2− | 0.6+ | 2006 11 14 | 703 | 1.2+ | 2.0− |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2004 02 26 | 704 | 1.0+ | 0.4+ | | | | |
| 2004 01 22 | 704 | (1.7+ | 0.3+) | 2004 02 26 | 704 | 0.4− | 0.4+ | | | | |

**(142297)∗ 2002 RF$_{145}$ = 2002 RW$_{149}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Id. A. Doppler (d, *MPO* 48394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 306.16469 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.25866346 | $\omega$ | 57.00122 | | +0.22988620 | −0.97272207 | |
| *a* | 2.4395665 | $\Omega$ | 19.77889 | | +0.85950235 | +0.18795603 | |
| *e* | 0.0828872 | *i* | 5.26477 | | +0.45651730 | +0.13595702 | |
| *P* | 3.81 | *H* | 16.1 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.1− | 0.8− | 2002 10 01 | 699 | 0.7+ | 0.1+ | 2006 09 20 | 704 | 1.1− | 0.4− |
| 2000 01 04 | 704 | 0.0 | 0.7− | 2002 10 03 | 704 | 0.9+ | 0.3− | 2006 09 20 | 704 | 0.4− | 0.9+ |
| 2000 01 04 | 704 | 0.2+ | 0.1+ | 2002 10 03 | 704 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2000 01 04 | 704 | 0.4+ | 0.4− | 2002 10 03 | 704 | 0.5+ | 1.0+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2000 01 29 | 704 | 0.0 | 0.3− | 2002 10 03 | 704 | 0.4+ | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2000 01 29 | 704 | 0.3+ | 0.3+ | 2002 10 03 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2000 01 29 | 704 | 0.1+ | 0.0 | 2004 01 18 | 644 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2000 01 29 | 704 | 1.0− | 0.7+ | 2004 01 18 | 644 | 0.3− | 0.8+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2002 09 04 | 699 | (0.6− | 1.5+) | 2004 01 18 | 644 | 0.2− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 1.0− | 0.5+ | 2004 01 23 | 704 | 0.1+ | 1.1+ | 2006 10 13 | A50 | 0.1+ | 0.0 |
| 2002 09 04 | 699 | 0.4− | 1.4+ | 2004 01 23 | 704 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2002 09 04 | 699 | 0.9− | 1.3− | 2004 01 23 | 704 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2002 09 11 | 644 | 0.1− | 0.4+ | 2004 02 16 | 704 | 1.1+ | 0.9+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2002 09 11 | 644 | 0.2− | 0.4+ | 2004 02 16 | 704 | 0.4+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 09 11 | 644 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 608 | 0.9− | 0.9− | 2004 02 16 | 704 | 0.6+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 09 11 | 608 | 0.4− | 0.5− | 2006 09 14 | 703 | 0.9+ | 0.7+ | 2006 11 11 | 703 | 0.4+ | 0.6− |
| 2002 09 11 | 608 | 1.0− | 0.0 | 2006 09 14 | 703 | (1.5− | 0.1−) | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2002 09 13 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.7+ |
| 2002 09 13 | 644 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.9− | 0.6+ |
| 2002 09 13 | 644 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 10 01 | 699 | 0.3+ | 1.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2002 10 01 | 699 | (1.8− | 0.5+) | 2006 09 18 | 691 | (1.5− | 2.4+) | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2002 10 01 | 699 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.6+ | 0.7− | 2006 11 15 | G96 | 0.2+ | 0.6− |

**(142298)∗ 2002 RO$_{145}$ = 2004 DM$_{27}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61323)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.74619 | | (2000.0) | | +0.06868749 | −0.99693535 |
| $n$ | 0.26730985 | $\omega$ | 340.32638 | | +0.92044533 | +0.04885238 |
| $a$ | 2.3866720 | $\Omega$ | 105.72093 | | +0.38478881 | +0.06110116 |
| $e$ | 0.1577879 | $i$ | 2.22922 | | | |
| $P$ | 3.69 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 120 | (3.5− | 0.3−) | 2004 03 19 | 704 | 0.8+ | 0.3− | 2006 11 02 | 703 | 1.1+ | 0.8+ |
| 1999 12 31 | 120 | 0.3− | 0.7− | 2004 03 19 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.5− | 1.1+ |
| 1999 12 31 | 120 | (2.3− | 0.4+) | 2004 03 20 | 699 | 1.0+ | 1.0+ | 2006 11 02 | 703 | 0.9+ | 0.7+ |
| 2000 01 06 | 704 | 1.1− | 1.2− | 2004 03 20 | 699 | 0.8− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2000 01 06 | 704 | 0.9− | 1.3− | 2004 03 20 | 699 | 0.4+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2000 01 06 | 704 | (0.1− | 2.4−) | 2004 03 20 | 699 | 0.6− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2000 01 06 | 704 | 0.3− | 1.0− | 2004 03 22 | 704 | 1.5+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 02 03 | 704 | 0.3+ | 1.1− | 2004 03 22 | 704 | 0.9+ | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2000 02 03 | 704 | 0.8+ | 0.8− | 2004 03 22 | 704 | 0.1+ | 1.3+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2000 02 03 | 704 | 0.2+ | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 2002 09 11 | 644 | 0.8− | 0.7+ | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2002 09 11 | 644 | 0.8− | 0.7+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2002 09 11 | 644 | 0.7− | 0.9+ | 2004 03 25 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2002 09 13 | 644 | 0.4− | 0.5+ | 2004 03 25 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.1− |
| 2002 09 13 | 644 | 0.4− | 0.6+ | 2004 03 25 | 704 | 1.2+ | 1.0− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 09 13 | 644 | 0.6− | 0.7+ | 2004 03 26 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.5+ |
| 2002 09 17 | 644 | (0.2+ | 2.4+) | 2004 03 26 | 704 | 0.3− | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 09 17 | 644 | (0.0 | 2.0+) | 2004 03 26 | 704 | 0.3+ | 1.0+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 09 17 | 644 | (0.1− | 2.0+) | 2004 03 26 | 704 | 0.2+ | 1.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | (0.3− | 2.0+) | 2004 03 26 | 704 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.4+ | 1.3+ | 2004 03 26 | 704 | 0.0 | 1.0+ | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | (2.6+ | 1.2+) | 2004 03 28 | 704 | 0.9− | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.9+ |
| 2002 10 03 | 704 | 0.6+ | 0.7+ | 2004 03 28 | 704 | 0.0 | 0.9− | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2004 02 16 | 703 | 1.1+ | 0.1+ | 2004 03 28 | 704 | 0.4− | 0.8+ | 2006 11 17 | 703 | 0.1− | 0.5+ |
| 2004 02 16 | 703 | 0.8+ | 0.1+ | 2004 03 28 | 704 | 0.8− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2004 02 16 | 703 | 0.4+ | 0.3+ | 2004 04 21 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.6− |
| 2004 02 16 | 703 | 0.2+ | 0.5− | 2004 04 21 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2004 02 23 | 704 | 0.2+ | 0.1+ | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.8+ | 0.6+ | 2006 10 15 | D35 | 0.1− | 0.2+ | 2006 11 19 | 704 | (0.5+ | 2.3−) |
| 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 10 15 | D35 | 0.1+ | 0.4+ | 2006 11 19 | 704 | (2.2+ | 1.0−) |
| 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 10 15 | D35 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2004 02 23 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.6− | 2006 11 19 | 704 | (2.6+ | 0.5+) |
| 2004 03 15 | 703 | 1.1− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 20 | 704 | (1.6+ | 1.5+) |
| 2004 03 15 | 703 | 0.2+ | 1.2+ | 2006 10 16 | 703 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2004 03 15 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 1.1− | 0.3− | 2006 11 20 | 704 | 0.5− | 0.7+ |
| 2004 03 15 | 703 | 0.6− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2004 03 15 | 704 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.5+ |
| 2004 03 15 | 704 | 0.6+ | 0.8− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 1.6+ | 0.1− |
| 2004 03 15 | 703 | (0.4+ | 2.2+) | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.1+ |
| 2004 03 19 | 704 | (1.7+ | 1.2+) | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.9+ | 0.1− |
| 2004 03 19 | 704 | (1.9+ | 1.6+) | 2006 11 02 | 703 | 1.3+ | 0.2+ | | | | |

**(142299)∗ 2002 RO$_{147}$**

Discovered 2002 Sept. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.68506 | | (2000.0) | | +0.99173315 | −0.12825161 |
| $n$ | 0.25968183 | $\omega$ | 192.44022 | | +0.12135027 | +0.92699362 |
| $a$ | 2.4331843 | $\Omega$ | 174.92296 | | +0.04170708 | +0.35246895 |
| $e$ | 0.1083308 | $i$ | 2.66197 | | | |
| $P$ | 3.80 | $H$ | 17.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 691 | 0.5+ | 0.6+ | 2002 10 03 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 04 16 | 691 | 0.4− | 0.1+ | 2002 10 04 | 704 | 0.2+ | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.5+ |
| 2001 04 16 | 691 | 0.5+ | 0.3+ | 2002 10 04 | 704 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.3+ |
| 2001 05 24 | 691 | 0.5+ | 1.1+ | 2002 10 04 | 704 | 0.6− | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.1− |
| 2001 05 24 | 691 | 0.0 | 0.7+ | 2002 10 04 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.4+ |
| 2001 05 24 | 691 | 0.3+ | 0.5+ | 2002 11 07 | 695 | 0.1− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.6+ | 0.4+ | 2002 11 07 | 695 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 0.6+ | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.2− | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2002 09 11 | 644 | 0.3− | 0.6− | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 09 11 | 644 | 0.0 | 0.6− | 2004 03 01 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 09 11 | 644 | 0.2− | 0.5− | 2004 03 01 | 691 | 0.0 | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2002 09 13 | 644 | 0.3− | 0.9+ | 2004 03 01 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.9+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.5+ |
| 2002 09 13 | 644 | 0.3− | 0.8+ | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2005 05 19 | G96 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2002 09 14 | 644 | 0.2+ | 0.4+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 09 15 | 608 | 0.3− | 0.8+ | 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2002 09 15 | 608 | 1.0− | 1.0+ | 2006 07 21 | G96 | 0.3− | 0.4− | 2006 11 11 | 691 | 0.4+ | 0.1− |
| 2002 09 15 | 608 | 1.4− | 0.1− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2002 09 28 | 608 | (1.5− | 1.9−) | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.4+ | 0.1− |
| 2002 09 28 | 608 | (1.6− | 1.5−) | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.4− | 0.5− |
| 2002 09 28 | 608 | (1.8− | 1.4−) | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | | | |

**(142300)∗ 2002 RY$_{148}$**

Discovered 2002 Sept. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.90016 | | (2000.0) | | +0.86226041 | −0.49786921 |
| $n$ | 0.26997292 | $\omega$ | 126.27972 | | +0.42952864 | +0.81606923 |
| $a$ | 2.3709510 | $\Omega$ | 263.74968 | | +0.26835075 | +0.29352556 |
| $e$ | 0.1139832 | $i$ | 5.36331 | | | |
| $P$ | 3.65 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.5− | 0.3+ | 2004 01 23 | 704 | 0.5+ | 0.2− | 2006 10 29 | 704 | 0.3− | 0.6+ |
| 2002 08 12 | 704 | 0.1+ | 0.4+ | 2004 01 29 | 699 | 1.1+ | 0.0 | 2006 10 29 | 704 | (0.4− | 1.8+) |
| 2002 08 12 | 704 | 0.1− | 0.7+ | 2004 01 29 | 699 | 0.7− | 0.3+ | 2006 10 29 | 704 | 0.2− | 1.1+ |
| 2002 08 12 | 704 | 0.2− | 0.2+ | 2004 01 29 | 699 | 0.6− | 0.3− | 2006 10 29 | 704 | (2.4− | 1.9+) |
| 2002 08 12 | 704 | 0.3− | 0.3+ | 2004 01 29 | 699 | 0.6− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2002 08 16 | 644 | 0.0 | 0.3+ | 2004 02 26 | 704 | (2.5+ | 0.1+) | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2002 08 16 | 644 | 0.0 | 0.3+ | 2004 02 26 | 704 | (1.7+ | 0.1+) | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2002 08 16 | 644 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2002 08 26 | 644 | 0.1− | 0.2− | 2005 05 29 | E12 | 0.1+ | 1.3+ | 2006 11 02 | 691 | 0.0 | 0.0 |
| 2002 08 26 | 644 | 0.3− | 0.4− | 2005 05 29 | E12 | (0.1+ | 2.7+) | 2006 11 02 | 691 | 0.2+ | 0.0 |
| 2002 08 26 | 644 | 0.3− | 0.1− | 2005 05 29 | E12 | 0.2− | 1.5+ | 2006 11 02 | 691 | 0.1+ | 0.1− |
| 2002 09 01 | 608 | 0.5+ | 0.9+ | 2005 05 29 | E12 | 0.4+ | 1.2+ | 2006 11 14 | 703 | (0.6+ | 1.6+) |
| 2002 09 01 | 608 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.2+ | 0.2− |
| 2002 09 01 | 608 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.3− |
| 2002 09 07 | 704 | 0.4+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.4− |
| 2002 09 07 | 704 | 0.3+ | 0.7− | 2006 10 19 | 703 | 0.7− | 0.5− | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2002 09 07 | 704 | 1.2+ | 0.6− | 2006 10 19 | 703 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 2002 09 11 | 608 | 0.6+ | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.7− | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2002 09 11 | 608 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.5− | 0.6− |
| 2002 09 11 | 608 | 1.2+ | 0.3− | 2006 10 21 | 704 | 0.5+ | 0.2− | 2006 11 16 | 704 | 0.9+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.3− | 0.2− | 2006 10 21 | 704 | 0.1− | 0.4+ | 2006 11 17 | 704 | (2.6+ | 0.5−) | | |
| 2002 09 13 | 644 | 0.5− | 0.2− | 2006 10 21 | 704 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.2+ | | |
| 2002 09 13 | 644 | 0.6− | 0.3− | 2006 10 21 | 704 | 0.7− | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.9− | | |
| 2002 09 15 | 608 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.4− | 0.1+ | 2006 11 17 | 704 | 1.1+ | 0.3+ | | |
| 2002 09 15 | 608 | 0.8− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.4+ | 2006 11 22 | 704 | (0.9+ | 2.1+) | | |
| 2002 09 15 | 608 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.4+ | 2006 11 22 | 704 | (0.7+ | 2.7+) | | |
| 2002 10 04 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | (0.2+ | 2.5+) | | |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | (0.2− | 2.2+) | | |
| 2002 10 04 | 704 | 0.1− | 0.9+ | 2006 10 23 | 644 | 0.4+ | 0.1+ | 2006 11 22 | 704 | (0.3− | 1.8+) | | |
| 2002 10 04 | 704 | (1.8+ | 1.0+) | 2006 10 27 | 703 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.3+ | 1.5+ | | |
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.3+ | | |
| 2004 01 23 | 704 | 0.7+ | 1.4+ | 2006 10 27 | 703 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 2.1− | 0.3+ | | |
| 2004 01 23 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 1.1− | 0.9− | | | | | | |
| 2004 01 23 | 704 | 0.0 | 0.5+ | 2006 10 29 | 704 | 0.9− | 1.4+ | | | | | | |

**(142301)∗ 2002 RT$_{149}$**

Discovered 2002 Sept. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.24481 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26847476 | $\omega$ | 232.67567 | | −0.73263747 | | −0.67289170 |
| $a$ | 2.3797632 | $\Omega$ | 264.78593 | | +0.65242875 | | −0.65152232 |
| $e$ | 0.0564834 | $i$ | 5.89436 | | +0.19385318 | | −0.35033616 |
| $P$ | 3.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.1+ | 0.8− | 2004 01 28 | 608 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2000 01 05 | 691 | 0.1+ | 0.9− | 2004 01 29 | 704 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2000 01 05 | 691 | 0.5− | 0.8− | 2004 01 29 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 704 | (1.9− | 0.7+) | | |
| 2002 08 16 | 704 | 0.5− | 0.0 | 2004 01 29 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 704 | 0.1+ | 0.3− | | |
| 2002 08 16 | 704 | 0.6− | 0.4− | 2004 01 29 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 691 | 1.0− | 0.3+ | | |
| 2002 08 16 | 704 | 1.1+ | 0.9− | 2004 01 29 | 704 | 0.8+ | 0.1− | 2006 10 21 | 704 | 0.0 | 0.3+ | | |
| 2002 08 16 | 704 | 0.6− | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2002 09 05 | 699 | 0.5+ | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 704 | 0.3+ | 0.1+ | | |
| 2002 09 05 | 699 | (1.1− | 1.5+) | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.0 | | |
| 2002 09 05 | 699 | (2.5− | 0.1−) | 2004 02 13 | 333 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.4+ | | |
| 2002 09 05 | 699 | 0.0 | 1.2+ | 2004 02 13 | 333 | 0.7− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.2+ | | |
| 2002 09 11 | 608 | 0.2− | 0.9− | 2004 02 13 | 333 | 0.1− | 0.2− | 2006 10 27 | 703 | (0.2− | 2.0−) | | |
| 2002 09 11 | 608 | 0.6− | 0.9− | 2004 02 13 | 333 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.1+ | | |
| 2002 09 11 | 608 | 0.1− | 0.8− | 2004 02 13 | 333 | 0.3− | 0.6− | 2006 10 29 | 704 | (2.2+ | 0.0 ) | | |
| 2002 09 13 | 644 | 0.7− | 0.5− | 2004 02 13 | 333 | 0.1− | 0.4− | 2006 10 29 | 704 | 0.3+ | 0.0 | | |
| 2002 09 13 | 644 | 0.2− | 0.0 | 2004 02 18 | 704 | 0.6− | 0.2− | 2006 10 29 | 704 | 0.9− | 0.1+ | | |
| 2002 09 13 | 644 | 0.3− | 0.7− | 2004 02 18 | 704 | 0.5+ | 0.3+ | 2006 10 29 | 704 | 0.6− | 0.2+ | | |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2004 02 18 | 704 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.2− | | |
| 2002 09 13 | 644 | 0.5− | 0.6− | 2004 02 18 | 704 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.3− | | |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2004 02 18 | 704 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.3− | | |
| 2002 09 17 | 608 | 1.3− | 0.0 | 2004 02 18 | 608 | 0.1+ | 0.3− | 2006 11 14 | 703 | 1.2− | 0.5− | | |
| 2002 09 17 | 608 | (1.7− | 0.1+) | 2004 02 18 | 608 | 0.2+ | 0.2− | 2006 11 14 | 703 | 1.4− | 0.5− | | |
| 2002 09 17 | 608 | (1.8− | 0.1+) | 2004 02 18 | 608 | 0.3+ | 0.1− | 2006 11 14 | 703 | (1.5+ | 0.6+) | | |
| 2002 10 04 | 704 | 0.6+ | 0.9+ | 2004 02 23 | 704 | 0.3+ | 1.0+ | 2006 11 14 | 703 | 0.8+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2004 02 23 | 704 | 0.9+ | 0.6− | 2006 11 16 | 704 | (1.5+ | 0.3+) | | |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.6+ | 0.9+ | 2006 11 16 | 704 | 0.8+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.5+ | 1.0+ | | |
| 2002 10 04 | 704 | 0.8+ | 0.8+ | 2004 02 26 | 704 | 0.9+ | 0.3− | 2006 11 16 | 704 | 1.2+ | 0.9− | | |
| 2002 10 05 | 704 | 0.6+ | 1.0+ | 2004 02 26 | 704 | 0.5+ | 0.9+ | 2006 11 18 | G96 | 0.1+ | 0.5− | | |
| 2002 10 05 | 704 | 0.2+ | 1.0+ | 2004 03 16 | 291 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2002 10 05 | 704 | 0.7+ | 0.5+ | 2004 03 16 | 291 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.4− | | |
| 2002 10 05 | 704 | 0.5+ | 0.4− | 2004 03 16 | 291 | 0.1− | 0.6+ | 2006 11 18 | G96 | 0.3+ | 0.3− | | |
| 2002 10 05 | 704 | 0.8+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.6+ | 2006 11 19 | 704 | 0.3− | 1.1+ | | |
| 2002 10 07 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.0 | 1.1+ | | |
| 2002 10 07 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4− | 1.0+ | | |
| 2002 10 07 | 704 | 0.5− | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.3+ | | |
| 2002 10 09 | 704 | 0.4− | 0.5+ | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.5+ | | |
| 2002 10 09 | 704 | 0.9− | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 1.2+ | 0.6− | | |
| 2002 10 09 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.8+ | | |
| 2002 11 02 | 049 | 0.2− | 0.9+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.3+ | | |
| 2002 11 02 | 049 | 0.7+ | 1.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.9+ | | |
| 2002 11 02 | 049 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.6− | 2006 11 22 | 704 | 1.4+ | 0.8+ | | |
| 2004 01 23 | 704 | 1.3− | 1.2+ | 2006 10 19 | 703 | 0.2+ | 0.6− | 2006 11 29 | 704 | 0.4+ | 0.3+ | | |
| 2004 01 23 | 704 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.6− | 2006 11 29 | 704 | 0.5− | 0.1− | | |
| 2004 01 23 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.6+ | 0.9+ | | |
| 2004 01 23 | 704 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.5− | 0.3+ | 2006 11 29 | 704 | 0.8− | 0.4− | | |
| 2004 01 23 | 704 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.3− | 0.8+ | | |
| 2004 01 28 | 608 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | | | | | |
| 2004 01 28 | 608 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1− | | | | | | |

**(142302)∗ 2002 RR$_{150}$**

Discovered 2002 Sept. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.64558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28611096 | $\omega$ | 74.38230 | | +0.38740763 | | +0.91829256 |
| $a$ | 2.2809357 | $\Omega$ | 218.73102 | | −0.88789897 | | +0.34784112 |
| $e$ | 0.1353730 | $i$ | 7.49141 | | −0.24809423 | | +0.18906435 |
| $P$ | 3.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 20 | 691 | 0.1− | 0.4− | 2002 09 07 | 704 | 0.6− | 0.1+ | 2002 10 31 | 704 | 0.6− | 0.5+ | | |
| 1992 11 20 | 691 | 0.4+ | 0.1− | 2002 09 07 | 704 | 0.4− | 0.4− | 2002 10 31 | 704 | 0.5+ | 0.5+ | | |
| 1992 11 20 | 691 | 0.1− | 0.1− | 2002 09 07 | 704 | 0.4− | 0.2− | 2002 10 31 | 704 | 0.1+ | 0.3+ | | |
| 1998 05 24 | 704 | 0.2− | 0.8− | 2002 09 11 | 608 | 0.7+ | 0.2− | 2002 11 08 | 704 | 0.1+ | 0.9+ | | |
| 1998 05 24 | 704 | 1.4− | 0.9+ | 2002 09 11 | 608 | 0.5+ | 0.5− | 2002 11 08 | 704 | 0.5+ | 0.7+ | | |
| 1998 05 24 | 704 | (4.9− | 0.9−) | 2002 09 11 | 608 | 0.5+ | 0.9− | 2002 11 08 | 704 | 0.5+ | 0.0 | | |
| 1998 05 24 | 704 | 0.8− | 1.2− | 2002 09 13 | 644 | 0.0 | 0.3+ | 2002 11 08 | 704 | 0.1+ | 0.8+ | | |
| 1998 05 24 | 704 | (2.3− | 1.2−) | 2002 09 13 | 644 | 0.1− | 0.4+ | 2004 01 28 | 291 | 0.1+ | 0.4+ | | |
| 1998 06 23 | 691 | 0.4− | 0.4+ | 2002 09 13 | 644 | 0.1− | 0.6− | 2004 01 28 | 291 | 0.2+ | 0.3+ | | |
| 1998 06 23 | 691 | 0.7− | 0.3+ | 2002 09 15 | 608 | (1.6− | 1.3−) | 2004 01 28 | 291 | 0.1+ | 0.3+ | | |
| 1998 06 23 | 691 | 0.5− | 0.3+ | 2002 09 15 | 608 | 1.4− | 1.2− | 2005 07 14 | 608 | 0.3+ | 0.0 | | |
| 1998 06 30 | 691 | 0.6+ | 0.1− | 2002 09 15 | 608 | 1.0− | 1.2− | 2005 07 14 | 608 | 0.2+ | 0.2− | | |
| 1998 06 30 | 691 | 0.7+ | 0.0 | 2002 10 04 | 704 | 0.2+ | 0.6+ | 2005 07 14 | 608 | 0.3+ | 0.1− | | |
| 1998 06 30 | 691 | 0.7+ | 0.2+ | 2002 10 04 | 704 | 0.5− | 1.2+ | 2006 11 17 | 704 | 0.8− | 0.1− | | |
| 2001 03 19 | 699 | 0.5+ | 0.7+ | 2002 10 04 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.6+ | 0.3+ | | |
| 2001 03 19 | 699 | 0.2− | 0.1+ | 2002 10 04 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.3+ | | |
| 2001 03 19 | 699 | 1.3+ | 0.7+ | 2002 10 04 | 704 | 0.5− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.1+ | | |
| 2001 03 19 | 699 | 0.3+ | 0.1− | 2002 10 08 | 704 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.1− | | |
| 2002 07 13 | 704 | (1.6+ | 1.6+) | 2002 10 08 | 704 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1+ | | |
| 2002 07 13 | 704 | (2.5+ | 0.6+) | 2002 10 08 | 704 | 0.6− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2002 07 13 | 704 | 0.3+ | 1.2+ | 2002 10 12 | 704 | 0.8+ | 0.7+ | 2006 12 01 | G96 | 1.5− | 0.4− | | |
| 2002 07 13 | 704 | 0.9+ | 0.3− | 2002 10 12 | 704 | 1.0+ | 0.6+ | 2006 12 01 | G96 | 0.2− | 0.2− | | |
| 2002 09 07 | 704 | 0.3+ | 0.5+ | 2002 10 12 | 704 | 1.1− | 0.5+ | 2006 12 01 | G96 | 0.4+ | 0.0 | | |
| 2002 09 07 | 704 | 1.0− | 0.8− | 2002 10 12 | 704 | 0.5+ | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.0 | | |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2002 10 31 | 704 | 0.0 | 0.6+ | | | | | | |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2002 10 31 | 704 | 0.5− | 0.7+ | | | | | | |

**(142303)∗ 2002 RW$_{153}$ = 2005 ER$_{319}$**

Discovered 2002 Sept. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 75590)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.21987 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22934193 | $\omega$ | 82.14979 | | +0.18915170 | | +0.98176620 |
| $a$ | 2.6433037 | $\Omega$ | 198.78554 | | −0.92245328 | | +0.17106480 |
| $e$ | 0.1074291 | $i$ | 3.36252 | | −0.33660301 | | +0.08289726 |
| $P$ | 4.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 22 | 691 | 0.2+ | 0.0 | 2005 03 14 | G96 | 0.6− | 0.2− | 2006 08 15 | 644 | 0.3+ | 0.1− | | |
| 1993 07 22 | 691 | 0.2− | 0.1− | 2005 03 14 | G96 | 0.5− | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.3− | | |
| 1993 07 22 | 691 | 0.0 | 0.1+ | 2005 03 14 | G96 | 0.2− | 0.2− | 2006 08 18 | 644 | 0.2+ | 0.4− | | |
| 2002 09 13 | 291 | 0.1− | 0.1+ | 2005 04 04 | 104 | 1.1+ | 0.6+ | 2006 08 18 | 644 | 0.1+ | 0.0 | | |
| 2002 09 13 | 291 | 0.0 | 0.2+ | 2005 04 04 | 104 | 0.7+ | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.5− | | |
| 2002 09 13 | 291 | 0.3+ | 0.1+ | 2005 04 04 | 104 | 0.5− | 0.8+ | 2006 08 19 | 644 | 0.3+ | 0.1− | | |
| 2002 09 14 | 291 | 0.3− | 0.3+ | 2005 04 04 | 104 | 0.8+ | 0.2+ | 2006 08 19 | 644 | 0.1− | 0.2− | | |
| 2002 09 14 | 291 | 0.4− | 0.4+ | 2005 04 05 | G96 | 0.3− | 0.1+ | 2006 08 19 | 644 | 0.9+ | 0.3− | | |
| 2002 09 14 | 291 | 0.2− | 0.4+ | 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 08 23 | A50 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.1+ | 0.2+ | 2005 04 05 | G96 | 0.2− | 0.0 | 2006 08 23 | A50 | 0.0 | 0.0 | |
| 2002 09 26 | 644 | 0.0 | 0.3+ | 2005 04 05 | G96 | 0.3− | 0.0 | 2006 08 24 | 704 | 0.2− | 0.5− | |
| 2002 09 26 | 644 | 0.5− | 0.6+ | 2005 04 05 | 104 | 0.5+ | 0.4+ | 2006 08 24 | 704 | 0.3+ | 0.4+ | |
| 2002 09 27 | 644 | 0.5+ | 1.4+ | 2005 04 05 | 104 | 0.7+ | 0.4+ | 2006 08 24 | 704 | 0.2− | 0.3+ | |
| 2002 09 27 | 644 | 0.0 | 1.2+ | 2005 04 05 | 104 | 0.5+ | 0.4+ | 2006 08 24 | 704 | 0.0 | 0.7+ | |
| 2002 09 27 | 644 | 0.1− | 1.0+ | 2005 04 05 | 104 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.9− | |
| 2002 09 30 | 704 | 1.3+ | 0.2+ | 2005 04 30 | 691 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.3+ | |
| 2002 09 30 | 704 | 0.2− | 0.2− | 2005 04 30 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 1.4− | 0.5− | |
| 2002 09 30 | 704 | 0.4− | 0.3+ | 2005 04 30 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.8− | |
| 2002 10 03 | 704 | 0.8− | 0.1+ | 2005 05 10 | 691 | 0.3+ | 0.4− | 2006 09 27 | G96 | 0.2+ | 0.2− | |
| 2002 10 03 | 704 | 0.4− | 1.2+ | 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.4+ | 0.2− | |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2005 05 10 | 691 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2− | |
| 2002 10 03 | 704 | 0.7− | 0.4− | 2005 05 13 | G96 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.2− | |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2005 05 13 | G96 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.1− | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2005 05 13 | G96 | 0.5− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3− | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2005 05 13 | G96 | 0.5− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.2− | |
| 2005 03 14 | G96 | 0.7− | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.2− | |

**(142304)∗ 2002 RZ$_{154}$**

Discovered 2002 Sept. 10 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 313.24819 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24004013 | $\omega$ | 310.17383 | | +0.33726209 | | −0.93034895 | |
| $a$ | 2.5641700 | $\Omega$ | 119.55773 | | +0.90618474 | | +0.27940710 | |
| $e$ | 0.2157183 | $i$ | 9.52168 | | +0.25511468 | | +0.23745000 | |
| $P$ | 4.11 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 699 | 0.4+ | 0.0 | 2002 10 06 | 608 | 0.6− | 1.2− | 2005 02 18 | 809 | 0.2− | 0.6+ | |
| 1998 10 29 | 699 | 0.0 | 1.4+ | 2002 10 06 | 608 | 1.2− | 1.3− | 2005 02 18 | 809 | 0.2− | 0.6+ | |
| 1998 10 29 | 699 | 0.2+ | 1.1+ | 2002 10 06 | 608 | 0.6− | 1.5− | 2005 02 18 | 809 | 0.3− | 0.6+ | |
| 1998 11 13 | 704 | 0.4+ | 0.2+ | 2002 10 08 | 699 | 0.6+ | 0.3+ | 2006 08 28 | D35 | 0.6+ | 0.5+ | |
| 1998 11 13 | 704 | 0.2− | 0.5− | 2002 10 08 | 699 | 0.3− | 0.4+ | 2006 08 28 | D35 | 0.7+ | 0.6+ | |
| 1998 11 13 | 704 | 0.5+ | 0.1+ | 2002 10 08 | 699 | 1.3+ | 0.0 | 2006 08 28 | D35 | 0.0 | 0.5+ | |
| 1998 11 13 | 704 | (4.8− | 1.1−) | 2002 10 08 | 699 | 1.0+ | 0.5+ | 2006 08 30 | D35 | 0.4+ | 0.0 | |
| 1998 12 23 | 699 | 0.2+ | 0.2+ | 2002 10 16 | 644 | 0.2− | 0.4+ | 2006 08 30 | D35 | 0.2+ | 0.0 | |
| 1998 12 23 | 699 | 0.7+ | 0.8− | 2002 10 16 | 644 | 0.1− | 0.3+ | 2006 08 30 | D35 | 0.6+ | 0.2+ | |
| 1998 12 23 | 699 | 0.3− | 1.2+ | 2002 10 16 | 644 | 0.0 | 0.4+ | 2006 09 17 | 699 | 0.4− | 1.1+ | |
| 2002 09 10 | 608 | 0.1− | 0.4− | 2002 10 29 | 704 | 0.4− | 1.0+ | 2006 09 17 | 699 | 0.3+ | 0.0 | |
| 2002 09 10 | 608 | 0.3+ | 0.4− | 2002 10 29 | 704 | (0.0 | 1.7+) | 2006 09 17 | 699 | 0.1− | 0.4+ | |
| 2002 09 10 | 608 | 0.0 | 0.6− | 2002 10 29 | 704 | 0.8+ | 0.1− | 2006 09 19 | 703 | 1.0− | 0.4+ | |
| 2002 09 14 | 608 | 0.5− | 0.7− | 2002 11 05 | 644 | 0.5− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.5+ | |
| 2002 09 14 | 608 | 0.5− | 0.6− | 2002 11 05 | 644 | 0.5− | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.7+ | |
| 2002 09 14 | 608 | 0.3+ | 1.2− | 2002 11 05 | 644 | 0.4− | 0.6+ | 2006 09 19 | 703 | 0.2+ | 0.4+ | |
| 2002 09 17 | 608 | 0.1+ | 0.8− | 2004 03 23 | 704 | 0.5+ | 1.2+ | 2006 09 25 | 703 | 0.5+ | 0.4− | |
| 2002 09 17 | 608 | 0.6+ | 0.6− | 2004 03 23 | 704 | 1.0− | 0.1+ | 2006 09 25 | 703 | 1.1+ | 0.2+ | |
| 2002 09 17 | 608 | 0.4+ | 0.4− | 2004 03 23 | 704 | 0.7+ | 0.0 | 2006 09 25 | 703 | 0.6+ | 0.4+ | |
| 2002 09 30 | 608 | 0.3+ | 0.3+ | 2004 03 30 | 704 | 0.2− | 0.6+ | 2006 09 25 | 703 | 0.8− | 0.2+ | |
| 2002 09 30 | 608 | 0.4− | 0.1− | 2004 03 30 | 704 | 0.9+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.4+ | |
| 2002 09 30 | 608 | 0.4− | 0.1+ | 2004 03 30 | 704 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | |
| 2002 10 06 | 704 | 0.7− | 0.5− | 2004 03 30 | 704 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.4+ | |
| 2002 10 06 | 704 | 0.5− | 1.0− | 2004 03 30 | 704 | 0.2+ | 0.8− | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2002 10 06 | 704 | 0.2+ | 0.1+ | 2004 03 30 | 704 | 0.2+ | 1.0+ | 2006 10 12 | 644 | 0.3− | 0.6+ | |
| 2002 10 06 | 704 | 1.1− | 0.1+ | 2004 03 30 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.6+ | |
| 2002 10 06 | 704 | 0.9− | 0.2+ | 2005 02 18 | 809 | 0.3− | 0.6+ | | | | | |

**(142305)∗ 2002 RN$_{155}$ = 1995 VM$_3$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37902)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 43.20297 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27303197 | $\omega$ | 160.08537 | | +0.97947310 | | +0.20088837 | |
| $a$ | 2.3532084 | $\Omega$ | 188.37803 | | −0.19692966 | | +0.93604092 | |
| $e$ | 0.1338031 | $i$ | 6.55082 | | −0.04302505 | | +0.28891395 | |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.5− | 0.3− | 2002 09 15 | 699 | 0.1− | 0.2− | 2005 06 14 | 691 | 0.1+ | 0.1+ | |
| 1995 11 14 | 691 | 0.5− | 0.4− | 2002 10 03 | 704 | 0.2+ | 0.5+ | 2005 06 14 | 691 | 0.1− | 0.2+ | |
| 1995 11 14 | 691 | 0.2− | 0.5− | 2002 10 03 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | |
| 1995 11 19 | 691 | 0.5+ | 0.1− | 2002 10 03 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | |
| 1995 11 19 | 691 | 0.7+ | 0.4− | 2002 10 03 | 704 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 1995 11 19 | 691 | 0.2+ | 0.3− | 2002 10 03 | 704 | 0.5+ | 1.4+ | 2006 11 15 | 703 | (1.5− | 0.2+) | |
| 1997 04 07 | 691 | 0.0 | 0.4− | 2002 10 07 | 704 | 0.6+ | 0.9+ | 2006 11 15 | 703 | (3.3+ | 1.1+) | |
| 1997 04 07 | 691 | 0.1+ | 0.8− | 2002 10 07 | 704 | 0.1− | 1.2+ | 2006 11 15 | 703 | 1.2− | 0.1+ | |
| 1997 04 07 | 691 | 0.2− | 0.3− | 2002 10 07 | 704 | 0.3+ | 1.2+ | 2006 11 15 | 683 | 1.1+ | 0.5− | |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2002 10 11 | 704 | 0.6+ | 0.6− | 2006 11 15 | 703 | (3.7− | 1.0−) | |
| 2002 08 28 | 644 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.5+ | 0.7− | 2006 11 15 | 683 | (0.4− | 2.3+) | |
| 2002 08 28 | 644 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.2+ | 1.2− | 2006 11 15 | 683 | (0.7+ | 3.3+) | |
| 2002 09 11 | 644 | 0.2− | 0.5− | 2002 10 11 | 704 | 0.7+ | 1.1− | 2006 11 23 | G96 | 0.1− | 0.1+ | |
| 2002 09 11 | 644 | 0.3− | 0.3− | 2005 05 16 | G96 | 0.0 | 1.0− | 2006 11 23 | G96 | 0.0 | 0.0 | |
| 2002 09 11 | 644 | 0.1− | 0.3− | 2005 05 16 | G96 | 0.5− | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.0 | |
| 2002 09 14 | 644 | 0.1− | 1.2− | 2005 05 16 | G96 | 0.4− | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.2+ | |
| 2002 09 14 | 644 | 0.2− | 1.2− | 2005 05 16 | G96 | 0.9− | 0.0 | 2006 11 28 | 704 | 0.0 | 1.2+ | |
| 2002 09 14 | 644 | 0.1− | 1.3− | 2005 06 09 | 691 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.9+ | |
| 2002 09 15 | 699 | 0.5− | 0.8+ | 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.4− | 2.0+ | |
| 2002 09 15 | 699 | 0.4− | 0.0 | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.8− | 1.1+ | |
| 2002 09 15 | 699 | 0.0 | 0.2− | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.2+ | 1.0+ | |

**(142306)∗ 2002 RL$_{157}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 148.43278 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23667846 | $\omega$ | 231.36530 | | −0.98611045 | | +0.16409955 | |
| $a$ | 2.5883930 | $\Omega$ | 318.06179 | | −0.13796239 | | −0.89524888 | |
| $e$ | 0.1250469 | $i$ | 2.19884 | | −0.09248004 | | −0.41424724 | |
| $P$ | 4.16 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 27 | 691 | 0.1+ | 0.9− | 2002 09 17 | 644 | 0.1+ | 0.9+ | 2005 04 18 | 703 | 0.9− | 0.4− | |
| 1994 10 27 | 691 | 0.0 | 0.8− | 2003 11 20 | 695 | 0.1+ | 0.1+ | 2005 04 18 | 703 | 0.5− | 0.3+ | |
| 1994 10 27 | 691 | 0.4+ | 1.1− | 2003 11 20 | 695 | 0.1− | 0.0 | 2005 04 18 | 703 | 0.5− | 1.1− | |
| 2000 01 03 | 704 | 1.4+ | 0.1− | 2003 12 18 | 704 | 0.2+ | 0.1− | 2005 04 18 | 703 | 0.4+ | 0.2− | |
| 2000 01 03 | 704 | 0.6+ | 1.1− | 2003 12 18 | 704 | 0.5+ | 0.3− | 2005 05 04 | 699 | 0.5+ | 0.4+ | |
| 2000 01 03 | 704 | 0.8+ | 0.8− | 2003 12 18 | 704 | 0.9+ | 0.0 | 2005 05 04 | 699 | 0.3− | 0.2+ | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2003 12 18 | 704 | 0.3+ | 0.3+ | 2005 05 04 | 699 | 0.4− | 0.6− | |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2003 12 22 | 704 | 1.0− | 0.5+ | 2005 05 04 | 699 | 0.3+ | 1.2+ | |
| 2002 09 11 | 644 | 0.2− | 0.4+ | 2003 12 22 | 704 | 0.6− | 0.9+ | 2005 05 04 | 644 | 0.5+ | 0.1+ | |
| 2002 09 11 | 644 | 0.0 | 0.7+ | 2003 12 22 | 704 | 0.4− | 0.5+ | 2005 05 04 | 644 | 0.1+ | 0.2+ | |
| 2002 09 11 | 644 | 0.0 | 0.7+ | 2003 12 22 | 704 | 0.2− | 0.4+ | 2005 05 04 | 644 | 0.3+ | 0.3+ | |
| 2002 09 14 | 644 | 0.2− | 0.7+ | 2003 12 22 | 704 | 0.1+ | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.1+ | |
| 2002 09 14 | 644 | 0.1+ | 0.5+ | 2003 12 27 | 704 | 0.7− | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2003 12 27 | 704 | 0.3− | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.0 | |
| 2002 09 16 | 644 | 0.1− | 1.6+ | 2003 12 27 | 704 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.0 | |
| 2002 09 16 | 644 | 0.1+ | 1.4+ | 2003 12 27 | 704 | 0.3− | 1.7+ | 2006 09 27 | G96 | 0.0 | 0.0 | |
| 2002 09 16 | 644 | 0.4− | 1.5+ | 2004 01 13 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.1− | |
| 2002 09 17 | 644 | 0.0 | 0.5+ | 2004 01 13 | 691 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.5− | |
| 2002 09 17 | 644 | 0.1− | 0.6+ | 2004 01 13 | 691 | 0.0 | 0.0 | | | | | |

**(142307)∗ 2002 RS$_{158}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 27.75195 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22730158 | $\omega$ | 9.68037 | | +0.23689020 | | +0.97133037 | |
| $a$ | 2.6590984 | $\Omega$ | 274.02469 | | −0.89270349 | | +0.20949572 | |
| $e$ | 0.1747115 | $i$ | 1.14931 | | −0.38335821 | | +0.11237817 | |
| $P$ | 4.34 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.2+ | 0.6+ | 2005 03 09 | G96 | 0.2+ | 0.3− | 2006 07 20 | 644 | 0.3+ | 0.1− | |
| 2002 09 11 | 644 | 0.3− | 0.1+ | 2005 03 09 | G96 | 0.2− | 0.1− | 2006 07 20 | 644 | 0.4+ | 0.0 | |
| 2002 09 11 | 644 | 0.2− | 0.4+ | 2005 03 09 | G96 | 0.1+ | 0.0 | 2006 07 20 | 644 | 0.0 | 0.1− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.7− | 0.3+ | 2005 03 11 | G96 | 0.3+ | 0.0 | 2006 07 21 | G96 | 0.0 | 0.1− |
| 2002 09 14 | 644 | 0.5− | 0.3+ | 2005 03 11 | G96 | 0.6− | 0.2+ | 2006 07 21 | G96 | 0.6− | 0.1− |
| 2002 09 14 | 644 | 0.9− | 0.2+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.2− | 1.3+ |
| 2002 09 17 | 644 | 0.2− | 0.0 | 2005 03 11 | G96 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.2− |
| 2002 09 17 | 644 | 0.3− | 0.3+ | 2005 03 12 | 695 | 0.3+ | 0.4+ | 2006 08 21 | 807 | 0.0 | 0.0 |
| 2002 09 17 | 644 | 0.6− | 0.2+ | 2005 03 12 | 695 | 0.5+ | 0.2+ | 2006 08 21 | 807 | 0.1+ | 0.0 |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2005 04 09 | G96 | 0.8+ | 0.1− | 2006 08 22 | 807 | 0.0 | 0.1− |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2005 04 09 | G96 | 0.3− | 1.0+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2002 11 07 | 695 | 0.3+ | 0.0 | 2005 04 09 | G96 | 0.7− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2002 11 07 | 695 | 0.3+ | 0.0 | 2005 04 09 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2003 11 21 | 695 | 0.0 | 0.3+ | 2006 07 19 | D35 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2003 11 21 | 695 | 0.1+ | 0.3+ | 2006 07 19 | D35 | 0.2+ | 0.6+ | | | | |
| 2005 03 09 | G96 | 0.4+ | 0.0 | 2006 07 19 | D35 | 0.2− | 0.1− | | | | |

**(142308)∗ 2002 RJ$_{162}$ = 1999 XM$_{65}$**

Discovered 2002 Sept. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37904)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 248.33090 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26885288 | $\omega$ | 308.58897 | | −0.79013693 | −0.61284637 | |
| *a* | 2.3775314 | $\Omega$ | 193.62531 | | +0.57489581 | −0.73526372 | |
| *e* | 0.0968044 | *i* | 2.46866 | | +0.21255222 | −0.28949367 | |
| *P* | 3.67 | *H* | 16.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.7− | 0.5− | 2004 01 21 | 704 | 0.0 | 0.3− | 2006 10 11 | 691 | 0.5− | 0.5+ |
| 1999 12 07 | 704 | 0.1− | 0.4− | 2004 01 21 | 704 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.1− |
| 1999 12 07 | 704 | 0.9− | 1.1− | 2004 01 21 | 704 | 0.6+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.3+ | 0.7− | 2004 01 21 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.2+ |
| 1999 12 07 | 704 | 0.3+ | 0.6− | 2004 01 21 | 704 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.3− |
| 1999 12 08 | 704 | 0.2− | 0.9− | 2004 01 24 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 0.2− | 0.6− | 2004 01 24 | 704 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.0 |
| 1999 12 08 | 704 | 0.9+ | 1.1− | 2004 01 24 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.4− |
| 1999 12 08 | 704 | 0.6− | 0.6+ | 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.5− |
| 2001 05 17 | 704 | 0.3+ | 0.1− | 2004 01 30 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.4− |
| 2001 05 17 | 704 | 0.6− | 0.7+ | 2004 01 30 | 704 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.4+ |
| 2001 05 17 | 704 | 0.5− | 0.9+ | 2004 01 30 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 05 17 | 704 | (2.0+ | 2.5+) | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.0 |
| 2002 08 16 | 291 | 0.1+ | 0.1− | 2004 02 01 | 608 | 0.3− | 1.3+ | 2006 10 23 | 691 | 0.4− | 0.4− |
| 2002 08 16 | 291 | 0.2+ | 0.2− | 2004 02 01 | 608 | 0.4− | 1.3+ | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2002 08 16 | 291 | 0.0 | 0.0 | 2004 02 01 | 608 | 0.1− | 1.4+ | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2002 08 29 | 291 | 0.2− | 0.3+ | 2004 02 14 | 691 | 0.0 | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2002 08 29 | 291 | 0.2+ | 0.3+ | 2004 02 14 | 691 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2002 08 29 | 291 | 0.2− | 0.2+ | 2004 02 14 | 691 | 0.0 | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 1.2− | 0.1− | 2004 02 17 | 644 | 0.3− | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2004 02 17 | 644 | 0.4− | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 1.2− | 0.7+ | 2004 02 17 | 644 | 0.2− | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 0.7+ | 2004 02 17 | 704 | 1.4+ | 0.1+ | 2006 11 11 | 703 | 0.7+ | 1.1+ |
| 2002 09 12 | 644 | 0.3+ | 1.2+ | 2004 02 17 | 704 | (0.8+ | 1.7+) | 2006 11 11 | 703 | 0.5+ | 0.9+ |
| 2002 09 12 | 644 | 0.2+ | 1.1+ | 2004 02 17 | 704 | 1.5+ | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 09 12 | 644 | 0.2+ | 1.3+ | 2004 02 17 | 704 | 1.4+ | 1.4+ | 2006 11 11 | 703 | 1.4+ | 0.5− |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 1.1+ | 1.7− |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 1.5− | 0.6− |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.9− | 0.3− |
| 2002 10 04 | 291 | 0.2− | 0.9+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2002 10 04 | 291 | 0.1− | 1.0+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 20 | G96 | 1.1+ | 1.1− |
| 2002 10 04 | 291 | 0.0 | 0.9+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.2+ |
| 2003 10 24 | 691 | 0.2+ | 1.0− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 20 | G96 | 0.2+ | 0.7− |
| 2003 10 24 | 691 | 0.8+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.4+ | 0.5− |
| 2003 10 24 | 691 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2003 12 18 | 644 | 0.7− | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 2003 12 18 | 644 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2003 12 18 | 644 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.6− | 0.2+ | | | | |

**(142309)∗ 2002 RZ$_{162}$ = 1995 SK$_{13}$**

Discovered 2002 Sept. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37904)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 287.02592 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.28000311 | $\omega$ | 136.86478 | | −0.63659138 | −0.77115366 | |
| *a* | 2.3139864 | $\Omega$ | 352.65872 | | +0.68807004 | −0.56291636 | |
| *e* | 0.1823239 | *i* | 3.84578 | | +0.34829732 | −0.29740075 | |
| *P* | 3.52 | *H* | 16.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.9− | 0.7+ | 2004 02 27 | 695 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.5+ | 0.8+ |
| 1995 09 18 | 691 | 1.2− | 0.9+ | 2004 03 14 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1995 09 18 | 691 | 1.1− | 0.5+ | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 1995 09 23 | 691 | 0.4+ | 0.1+ | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 1995 09 23 | 691 | 0.7+ | 0.1− | 2004 03 15 | 704 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 1995 09 23 | 691 | 0.4+ | 0.2+ | 2004 03 15 | 704 | 1.1+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.6+ |
| 1995 09 27 | 691 | 0.2− | 0.0 | 2004 03 15 | 704 | 0.1+ | 1.1+ | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 1995 09 27 | 691 | 0.0 | 0.6+ | 2004 03 15 | 704 | 0.7+ | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 1995 09 27 | 691 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.3+ | 1.4+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 09 12 | 644 | 0.8− | 0.7+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 09 12 | 644 | 0.9− | 1.0+ | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 0.1+ | 0.7− |
| 2002 09 12 | 644 | 0.7− | 0.8+ | 2004 03 18 | 704 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.2− |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.9− |
| 2002 09 14 | 644 | 0.4− | 1.0+ | 2004 03 20 | 699 | 0.6− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.8− |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2004 03 20 | 699 | 0.5+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2002 09 15 | 644 | 0.6− | 0.9+ | 2004 03 20 | 699 | 0.7− | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2002 09 15 | 644 | 0.2− | 0.6+ | 2004 03 20 | 699 | 0.5− | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 09 15 | 644 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.6+ | 2006 11 14 | G96 | 0.7+ | 0.3− |
| 2002 09 28 | 291 | 0.1− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 09 28 | 291 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.8− |
| 2002 09 28 | 291 | 0.0 | 0.7+ | 2004 03 27 | 704 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2003 12 22 | 704 | (0.8− | 2.0+) | 2004 03 27 | 704 | 0.2+ | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2003 12 22 | 704 | 0.6+ | 0.6+ | 2004 03 28 | 691 | 0.2+ | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.8+ | 0.4− | 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.7+ |
| 2004 02 14 | 703 | 0.1− | 0.3− | 2004 03 28 | 691 | 0.2+ | 0.4+ | 2006 11 15 | 704 | 1.2+ | 0.7+ |
| 2004 02 14 | 703 | 0.3+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 15 | 704 | 0.3− | 1.2+ |
| 2004 02 14 | 703 | (0.8− | 1.5+) | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 16 | 704 | (1.7− | 1.8−) |
| 2004 02 14 | 703 | 0.4− | 1.1+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2004 02 16 | 333 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.1− | 0.5− |
| 2004 02 16 | 333 | 0.1− | 0.0 | 2006 10 18 | A50 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2004 02 16 | 333 | 0.1− | 0.4+ | 2006 10 18 | A50 | 0.6− | 0.4− | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2004 02 18 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2004 02 18 | 704 | 0.6+ | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2004 02 18 | 704 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2004 02 18 | 704 | 1.3+ | 0.1+ | 2006 10 19 | 703 | 0.8− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2004 02 18 | 704 | 0.1+ | 0.9+ | 2006 10 19 | G96 | 0.2+ | 0.6− | 2006 11 19 | 704 | 0.4− | 0.6− |
| 2004 02 26 | 704 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.5+ | 1.2+ |
| 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 10 19 | 703 | 0.0 | 1.0+ | 2006 11 22 | 704 | (0.6+ | 2.8+) |
| 2004 02 26 | 704 | 0.5− | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2004 02 26 | 704 | 0.3− | 0.5+ | 2006 10 23 | 691 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.8+ |
| 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2004 02 27 | 695 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2+ | | | | |

**(142310)∗ 2002 RE$_{164}$ = 1997 GE$_{30}$ = 2005 GV$_{65}$**

Discovered 2002 Sept. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 89326)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 34.54788 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.25202110 | $\omega$ | 129.07585 | | +0.73946888 | +0.67316321 | |
| *a* | 2.4822458 | $\Omega$ | 188.61851 | | −0.62950874 | +0.68825300 | |
| *e* | 0.1627431 | *i* | 2.32859 | | −0.23854669 | +0.27047939 | |
| *P* | 3.91 | *H* | 17.1 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 691 | 0.7− | 0.6− | 2005 03 08 | G96 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.2+ | 0.4+ |
| 1997 04 07 | 691 | 0.2+ | 0.8− | 2005 03 08 | G96 | 0.4− | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.1− | 0.4+ | 2005 04 02 | G96 | 0.8− | 0.6− | 2006 10 01 | 704 | 0.1+ | 0.6− |
| 2002 09 05 | 704 | 0.1+ | 0.2− | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.3− | 0.6− | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2002 09 12 | 644 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.0 | 0.5+ |
| 2002 09 12 | 644 | 0.5+ | 0.5+ | 2005 04 11 | 691 | 0.5+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2002 09 12 | 644 | 0.5+ | 0.2+ | 2005 04 11 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2002 09 14 | 644 | 0.1+ | 0.2+ | 2005 04 11 | 691 | 0.4+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2002 09 14 | 644 | 0.5+ | 0.3− | 2005 05 06 | G96 | 0.2− | 0.4− | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2005 05 06 | G96 | 0.0 | 0.8+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2002 09 15 | 699 | 0.5− | 0.7+ | 2005 05 06 | G96 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2002 09 15 | 699 | 0.9+ | 1.3− | 2005 05 06 | G96 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 09 15 | 699 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.0 | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 09 15 | 699 | 0.6+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.7+ | 0.8− |
| 2002 09 17 | 608 | 1.2− | 0.6− | 2006 09 19 | 703 | (2.4− | 1.2+) | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2002 09 17 | 608 | 0.9− | 0.6− | 2006 09 19 | 703 | 0.2− | 1.4+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2002 09 17 | 608 | 1.2− | 0.3− | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.8− | 0.3+ |
| 2002 10 03 | 704 | 0.5+ | 1.3− | 2006 09 25 | 691 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.4− | 0.2+ |
| 2002 10 03 | 704 | (1.6+ | 0.0 ) | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.6+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.6− | 0.7+ |
| 2005 03 08 | G96 | 0.7− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− | | | | |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.9− | 0.7+ | | | | |

**(142311)∗ 2002 RR$_{164}$ = 2001 HB$_{43}$**

Discovered 2002 Sept. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37904)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.74493 | | (2000.0) | | −0.18216346 | +0.98322552 |
| $n$ | 0.23690631 | $\omega$ | 71.32129 | | −0.92462276 | −0.17446302 |
| $a$ | 2.5867332 | $\Omega$ | 188.19919 | | −0.33449846 | −0.05319991 |
| $e$ | 0.1041910 | $i$ | 3.68570 | | | |
| $P$ | 4.16 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.1+ | 0.3− | 2005 03 17 | 691 | 0.0 | 0.6+ | 2005 05 06 | G96 | 0.4− | 0.3− |
| 1994 11 01 | 691 | 0.2− | 0.3+ | 2005 03 17 | 691 | 0.4+ | 0.4+ | 2006 08 13 | 644 | 0.1− | 0.3− |
| 1994 11 01 | 691 | 0.0 | 0.2+ | 2005 03 31 | 699 | 0.6+ | 0.8− | 2006 08 13 | 644 | 0.1− | 0.3− |
| 2001 04 16 | 699 | 0.6+ | 0.9+ | 2005 03 31 | 699 | 0.6+ | 0.2− | 2006 08 13 | 644 | 0.1+ | 0.1− |
| 2001 04 16 | 699 | 0.0 | 0.1+ | 2005 03 31 | 699 | 0.5− | 1.2+ | 2006 08 19 | 691 | 0.1+ | 0.2− |
| 2001 04 16 | 699 | 0.5− | 0.2− | 2005 03 31 | 699 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.1− |
| 2001 04 16 | 699 | 0.4+ | 0.8+ | 2005 04 04 | 704 | 0.6+ | 0.6− | 2006 08 19 | 691 | 0.1− | 0.1− |
| 2001 04 18 | 608 | 0.1+ | 0.8− | 2005 04 04 | 704 | 1.0+ | 1.0+ | 2006 08 24 | 704 | (0.2+ | 1.6+) |
| 2001 04 18 | 608 | 0.2− | 1.2− | 2005 04 04 | G96 | 0.3− | 0.2− | 2006 08 24 | 704 | 0.6+ | 0.1+ |
| 2001 04 18 | 608 | 0.5− | 0.4− | 2005 04 04 | 704 | 0.5+ | 1.0+ | 2006 08 24 | 704 | 0.0 | 1.2+ |
| 2002 09 12 | 644 | (3.2+ | 0.4+) | 2005 04 04 | G96 | 0.1− | 0.3− | 2006 08 24 | 704 | 0.9+ | 0.9+ |
| 2002 09 12 | 644 | 0.3+ | 1.1+ | 2005 04 04 | G96 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.9− | 0.4− |
| 2002 09 12 | 644 | 0.4− | 1.2+ | 2005 04 04 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 04 04 | G96 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.5+ |
| 2002 09 14 | 644 | 0.8− | 0.5+ | 2005 05 04 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.2− |
| 2002 09 14 | 644 | 0.5− | 0.8+ | 2005 05 04 | 644 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2002 09 17 | 644 | 0.4− | 1.0+ | 2005 05 04 | 644 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2002 09 17 | 644 | 0.6− | 0.9+ | 2005 05 04 | G96 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2002 09 17 | 644 | 0.7− | 1.0+ | 2005 05 04 | G96 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2002 10 01 | 699 | (0.2+ | 2.1+) | 2005 05 04 | G96 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.1+ |
| 2002 10 01 | 699 | (2.4+ | 0.4+) | 2005 05 04 | G96 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2002 10 01 | 699 | (0.6+ | 1.6+) | 2005 05 06 | G96 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.4− | 0.4− |
| 2002 10 01 | 699 | 1.2+ | 1.3+ | 2005 05 06 | G96 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2005 03 17 | 691 | 0.2− | 0.6+ | 2005 05 06 | G96 | 0.2− | 0.4− | | | | |

**(142312)∗ 2002 RU$_{164}$**

Discovered 2002 Sept. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 111.21422 | | (2000.0) | | −0.02782100 | +0.99957339 |
| $n$ | 0.27422479 | $\omega$ | 71.86294 | | −0.92852032 | −0.02913529 |
| $a$ | 2.3463794 | $\Omega$ | 196.55039 | | −0.37023776 | −0.00204308 |
| $e$ | 0.1371989 | $i$ | 1.78839 | | | |
| $P$ | 3.59 | $H$ | 16.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.2+ | 0.4− | 2005 05 08 | G96 | 0.1− | 0.1− | 2005 06 04 | 704 | 0.7− | 0.7+ |
| 1995 09 24 | 691 | 0.1+ | 0.4− | 2005 05 08 | G96 | 0.1− | 0.2− | 2005 06 10 | 691 | 0.2+ | 0.2+ |
| 1995 09 24 | 691 | 0.1+ | 0.3− | 2005 05 17 | 704 | 0.6+ | 0.5− | 2005 06 10 | 691 | 0.4+ | 0.2+ |
| 2002 09 07 | 704 | 0.4− | 0.1− | 2005 05 17 | 704 | 0.3+ | 1.1+ | 2005 06 10 | 691 | 0.3+ | 0.4+ |
| 2002 09 07 | 704 | 0.4+ | 1.1− | 2005 05 17 | 704 | 0.3+ | 0.4+ | 2005 06 14 | 691 | 0.4+ | 0.3+ |
| 2002 09 07 | 704 | 0.7+ | 0.4− | 2005 05 18 | 644 | 0.1+ | 0.1− | 2005 06 14 | 691 | 0.3+ | 0.4+ |
| 2002 09 12 | 644 | 0.0 | 0.7+ | 2005 05 18 | 644 | 0.0 | 0.1− | 2005 06 14 | 691 | 0.0 | 0.3+ |
| 2002 09 12 | 644 | 0.0 | 0.7+ | 2005 05 18 | 644 | 0.1− | 0.2− | 2005 06 16 | G96 | 0.5− | 0.4− |
| 2002 09 12 | 644 | 0.1+ | 0.6+ | 2005 05 20 | G96 | 0.2− | 0.0 | 2005 06 16 | G96 | 0.5− | 0.3− |
| 2002 09 14 | 644 | 0.6− | 0.1+ | 2005 05 20 | G96 | 0.2− | 0.2− | 2005 06 16 | G96 | 0.4− | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.1− | 2005 05 20 | G96 | 0.2− | 0.1− | 2005 06 16 | G96 | 0.8− | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2005 05 20 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2002 09 15 | 699 | 0.3− | 0.1+ | 2005 05 21 | 644 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2002 09 15 | 699 | 0.1+ | 0.4+ | 2005 05 21 | 644 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.7− |
| 2002 09 15 | 699 | 0.1− | 1.0+ | 2005 05 21 | 644 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2002 09 15 | 699 | 0.3+ | 0.5− | 2005 06 03 | 703 | (1.0− | 2.4+) | 2006 10 16 | 691 | 0.5− | 0.2+ |
| 2002 10 01 | 699 | 0.2+ | 0.5− | 2005 06 03 | 703 | 1.3− | 1.5+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2002 10 01 | 699 | (1.5− | 0.8+) | 2005 06 03 | 703 | 0.4− | 0.9− | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2002 10 01 | 699 | 0.9+ | 0.9− | 2005 06 03 | 703 | 1.4+ | 1.5− | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2002 10 01 | 699 | (0.7+ | 1.7+) | 2005 06 04 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2005 06 04 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | 0.6− | 0.8+ | 2005 06 04 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.6− | 0.5− | 2005 06 04 | 704 | 0.8− | 0.4− | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2005 05 08 | G96 | 0.4− | 0.2− | 2005 06 04 | 704 | 1.1− | 1.3− | 2006 11 13 | G96 | 0.4− | 0.5− |
| 2005 05 08 | G96 | 0.1− | 0.2− | 2005 06 04 | 704 | 0.9+ | 1.0− | 2006 11 13 | G96 | 1.5+ | 1.2− |

**(142313)∗ 2002 RD$_{165}$ = 2000 EY$_{71}$**

Discovered 2002 Sept. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37905)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.37605 | | (2000.0) | | +0.63314710 | −0.77402753 |
| $n$ | 0.26060952 | $\omega$ | 234.29003 | | +0.72237048 | +0.58973666 |
| $a$ | 2.4274066 | $\Omega$ | 176.42432 | | +0.27803890 | +0.23041715 |
| $e$ | 0.1938937 | $i$ | 2.27602 | | | |
| $P$ | 3.78 | $H$ | 17.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 691 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2000 03 10 | 691 | 0.9− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.3− |
| 2000 03 10 | 691 | 0.2+ | 0.8− | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2000 03 12 | 691 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2000 03 12 | 691 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2000 03 12 | 691 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.9− | 0.7− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2002 08 16 | 291 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 08 16 | 291 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2002 08 16 | 291 | 0.0 | 0.1+ | 2006 10 16 | 703 | (1.6− | 1.0−) | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2002 09 12 | 644 | 0.3− | 1.0+ | 2006 10 16 | 691 | 0.7− | 0.7− | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2002 09 12 | 644 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.9− | 2006 11 11 | 703 | 1.0+ | 0.6+ |
| 2002 09 12 | 644 | 0.2+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2002 09 14 | 644 | 0.6− | 0.1+ | 2006 10 17 | G96 | 1.1+ | 1.1+ | 2006 11 11 | 703 | 1.0− | 0.3+ |
| 2002 09 14 | 644 | 0.9− | 0.0 | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2002 09 14 | 644 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2002 10 04 | 291 | 0.0 | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.4+ | 0.1+ |
| 2002 10 04 | 291 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.3+ |
| 2002 10 04 | 291 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 691 | 0.7+ | 0.6+ | 2006 10 19 | 683 | 0.1+ | 1.1− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 683 | (0.3+ | 1.5−) | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 03 15 | 691 | 0.7+ | 0.4+ | 2006 10 19 | 683 | (1.5− | 0.3−) | 2006 11 16 | G96 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 291 | 0.3+ | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.5+ | | |
| 2004 03 16 | 291 | 0.1− | 0.9+ | 2006 10 20 | 683 | 0.7+ | 0.2− | 2006 11 17 | 703 | 0.4− | 1.2− | | |
| 2004 03 16 | 291 | 0.3− | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.1+ | 0.1− | | |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 20 | 683 | (1.8+ | 0.5−) | 2006 11 17 | 703 | 0.3− | 1.0− | | |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 1.2+ | | |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 20 | 683 | 0.9− | 1.3+ | 2006 11 18 | 704 | 0.7− | 0.8+ | | |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 18 | 704 | (0.7− | 2.0+) | | |
| 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 1.1+ | 1.2+ | | |
| 2006 10 12 | 691 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | | | | | |

**(142314)∗ 2002 RH$_{165}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.91828 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27721949 | $\omega$ | 195.72763 | | +0.96919873 | −0.24625693 | |
| $a$ | 2.3294508 | $\Omega$ | 178.51598 | | +0.23765481 | +0.93157997 | |
| $e$ | 0.1290317 | $i$ | 7.47382 | | +0.06460664 | +0.26742530 | |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.1+ | 0.4+ | 2002 09 14 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.7− | | |
| 2002 07 12 | 644 | 0.2+ | 0.1+ | 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | | |
| 2002 07 12 | 644 | 0.1+ | 0.1+ | 2004 01 27 | 699 | (3.0+ | 1.0−) | 2006 10 20 | 644 | 0.3+ | 0.5+ | | |
| 2002 07 21 | 644 | 0.0 | 0.0 | 2004 01 27 | 699 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | | |
| 2002 07 21 | 644 | 0.1− | 0.2− | 2004 01 27 | 699 | 0.6+ | 1.4+ | 2006 10 22 | 703 | 0.9+ | 0.5− | | |
| 2002 07 21 | 644 | 0.1− | 0.1+ | 2004 01 27 | 699 | (1.2− | 1.7+) | 2006 10 22 | 703 | 1.3+ | 0.4+ | | |
| 2002 08 05 | 644 | 0.1− | 0.1− | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.8+ | 0.2+ | | |
| 2002 08 05 | 644 | 0.1− | 0.0 | 2005 05 04 | 691 | 0.3− | 0.0 | 2006 10 22 | 703 | (0.2+ | 1.5+) | | |
| 2002 08 05 | 644 | 0.2− | 0.1− | 2005 05 04 | 691 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.8+ | 0.3− | | |
| 2002 08 12 | 704 | 0.6− | 0.2+ | 2005 06 15 | 691 | 0.0 | 0.3+ | 2006 11 01 | 703 | 0.3+ | 0.8+ | | |
| 2002 08 12 | 704 | 0.1+ | 0.2+ | 2005 06 15 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 703 | 0.3− | 0.3+ | | |
| 2002 08 12 | 704 | 0.9− | 0.3− | 2005 06 15 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 703 | 0.2+ | 0.0 | | |
| 2002 08 12 | 704 | 0.8+ | 0.1+ | 2006 09 16 | 703 | 0.6− | 1.4− | 2006 11 13 | 703 | 0.2+ | 0.8− | | |
| 2002 08 16 | 644 | 0.3− | 0.7− | 2006 09 16 | 703 | 1.3− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.8+ | | |
| 2002 08 16 | 644 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.6− | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.9+ | | |
| 2002 08 16 | 644 | 0.0 | 0.6− | 2006 09 16 | 703 | 0.9− | 0.1− | 2006 11 13 | 703 | 0.4+ | 0.4+ | | |
| 2002 08 16 | 608 | 0.3+ | 1.0+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.6+ | | |
| 2002 08 16 | 608 | 1.0+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.5+ | | |
| 2002 08 16 | 608 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.8+ | | |
| 2002 09 13 | 644 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 11 19 | 703 | 0.1− | 0.3+ | | |
| 2002 09 13 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.9− | 1.1+ | 2006 11 19 | 703 | 0.1+ | 0.6+ | | |
| 2002 09 13 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.9+ | 2006 11 19 | 703 | 0.4− | 0.9− | | |
| 2002 09 14 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | 1.0− | 0.1− | 2006 11 19 | 703 | 0.7− | 0.2− | | |

**(142315)∗ 2002 RU$_{165}$ = 1993 FE$_{28}$ = 1999 YC$_{29}$ = 2003 YT$_{76}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56579)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.53329 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25628785 | $\omega$ | 198.25437 | | −0.99983360 | −0.00324656 | |
| $a$ | 2.4546187 | $\Omega$ | 341.53192 | | +0.01092085 | −0.89474107 | |
| $e$ | 0.1502626 | $i$ | 3.24854 | | −0.01461195 | −0.44657348 | |
| $P$ | 3.85 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (4.4− | 0.2−) | 2002 09 13 | 644 | 0.4− | 0.1− | 2003 12 27 | 704 | 0.1+ | 0.3− | | |
| 1993 03 22 | 809 | 0.3− | 0.5− | 2002 09 14 | 644 | 0.4− | 0.5+ | 2003 12 27 | 704 | 0.6+ | 0.5− | | |
| 1993 03 26 | 809 | 0.8+ | 0.0 | 2002 09 14 | 644 | 0.2+ | 0.9+ | 2003 12 27 | 704 | 0.3− | 0.1+ | | |
| 1993 04 17 | 413 | 0.2+ | 0.4+ | 2002 09 14 | 644 | 0.4+ | 0.9+ | 2004 01 27 | 704 | 0.7− | 0.5− | | |
| 1998 09 13 | 691 | 0.2+ | 0.2− | 2003 11 20 | 704 | (1.9+ | 0.7−) | 2004 01 27 | 704 | 0.6+ | 0.6− | | |
| 1998 09 13 | 691 | 0.1+ | 0.8− | 2003 11 20 | 704 | 0.0 | 0.5− | 2004 01 27 | 704 | 0.1− | 0.6+ | | |
| 1998 09 13 | 691 | 0.5− | 0.2− | 2003 11 20 | 704 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.7+ | 0.1− | | |
| 1999 12 16 | 704 | 0.4+ | 0.7+ | 2003 11 20 | 704 | 0.3− | 0.5+ | 2006 07 22 | G96 | 0.3+ | 0.5+ | | |
| 1999 12 16 | 704 | 0.3+ | 0.0 | 2003 12 18 | 704 | 0.2− | 1.0+ | 2006 07 22 | G96 | 0.4− | 0.2+ | | |
| 1999 12 16 | 704 | (1.0− | 2.5+) | 2003 12 18 | 704 | 0.2− | 0.1− | 2006 07 22 | G96 | 0.3− | 0.4− | | |
| 2001 05 24 | 704 | 0.5− | 0.7+ | 2003 12 18 | 704 | 0.5− | 0.5+ | 2006 09 17 | 691 | 0.2+ | 0.1− | | |
| 2001 05 24 | 704 | 0.1+ | 0.4+ | 2003 12 18 | 704 | 0.3− | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.2+ | | |
| 2001 05 24 | 704 | 0.4+ | 0.3− | 2003 12 18 | 704 | 0.5− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 | | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.1− | | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2002 09 13 | 644 | 0.4− | 0.5− | 2003 12 22 | 704 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.1− | | |
| 2002 09 13 | 644 | 0.3− | 0.0 | 2003 12 22 | 704 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.1− | | |

**(142316)∗ 2002 RB$_{166}$ = 2001 FQ$_{119}$ = 2005 JG$_{134}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.85687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27244530 | $\omega$ | 117.62551 | | +0.48355868 | +0.87531138 | |
| $a$ | 2.3565853 | $\Omega$ | 181.29386 | | −0.81785549 | +0.45141078 | |
| $e$ | 0.1604780 | $i$ | 2.53316 | | −0.31190287 | +0.17337330 | |
| $P$ | 3.62 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.0 | 0.4+ | 2002 09 15 | 699 | (2.6+ | 0.5−) | 2005 05 19 | G96 | 0.2− | 0.0 | | |
| 1994 04 06 | 691 | 0.2− | 0.8+ | 2002 09 15 | 699 | 1.0+ | 0.7+ | 2005 05 19 | G96 | 0.3− | 0.1+ | | |
| 1994 04 06 | 691 | 0.2+ | 0.3+ | 2002 09 17 | 608 | 0.3− | 0.8− | 2006 09 28 | G96 | 0.3− | 0.0 | | |
| 2001 03 27 | 691 | 0.8+ | 0.4− | 2002 09 17 | 608 | 0.4− | 0.7− | 2006 09 28 | G96 | 0.1− | 0.2− | | |
| 2001 03 27 | 691 | 0.7+ | 0.2+ | 2002 09 17 | 608 | (0.7− | 1.6−) | 2006 09 28 | G96 | 0.2+ | 0.1+ | | |
| 2001 03 27 | 691 | 0.0 | 0.2+ | 2005 04 16 | 691 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.1− | | |
| 2001 03 29 | 691 | 0.6+ | 0.2+ | 2005 04 16 | 691 | 0.6+ | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | | |
| 2001 03 29 | 691 | 0.2+ | 0.1− | 2005 04 16 | 691 | 0.4− | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | | |
| 2001 03 29 | 691 | 0.8+ | 0.5+ | 2005 05 03 | 691 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.5+ | | |
| 2001 04 16 | 645 | 0.1− | 0.0 | 2005 05 03 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3− | 0.2− | | |
| 2001 04 16 | 645 | 0.3− | 0.1+ | 2005 05 03 | 691 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.4+ | | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.7+ | | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ | | |
| 2002 09 13 | 644 | 0.2− | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.0 | | |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2005 05 14 | G96 | 0.8− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2+ | | |
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2005 05 17 | G96 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.7− | 0.2− | | |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2005 05 17 | G96 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.1− | 0.1− | | |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2005 05 17 | G96 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.3− | | |
| 2002 09 14 | 644 | 0.1+ | 0.4+ | 2005 05 17 | G96 | 0.4+ | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.3+ | | |
| 2002 09 15 | 699 | (2.6+ | 1.0+) | 2005 05 19 | G96 | 0.4− | 0.2− | | | | | | |
| 2002 09 15 | 699 | 1.1+ | 1.3+ | 2005 05 19 | G96 | 0.4− | 0.0 | | | | | | |

**(142317)∗ 2002 RE$_{166}$ = 2003 YC$_{17}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56579)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.54200 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26258725 | $\omega$ | 174.30700 | | −0.94186821 | −0.33581149 | |
| $a$ | 2.4152029 | $\Omega$ | 346.05666 | | +0.30647584 | −0.84563801 | |
| $e$ | 0.1299056 | $i$ | 2.54997 | | +0.13768387 | −0.41488190 | |
| $P$ | 3.75 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 703 | 0.5− | 0.4+ | 2003 12 22 | 704 | 0.5+ | 0.4+ | 2004 01 30 | 704 | 0.6+ | 0.1− | | |
| 1999 12 05 | 703 | (1.3+ | 2.1−) | 2003 12 22 | 704 | 0.1− | 0.1− | 2004 01 31 | 691 | 0.2+ | 0.1+ | | |
| 1999 12 05 | 703 | 0.6− | 1.0+ | 2003 12 22 | 704 | 0.2− | 0.8+ | 2004 01 31 | 691 | 0.1+ | 0.0 | | |
| 1999 12 05 | 703 | 0.6− | 0.6+ | 2003 12 22 | 704 | 0.4+ | 0.4− | 2004 01 31 | 691 | 0.0 | 0.1+ | | |
| 2000 01 04 | 704 | 1.0+ | 0.9− | 2003 12 26 | 608 | 0.0 | 0.5− | 2004 02 15 | 704 | 0.7− | 0.4+ | | |
| 2000 01 04 | 704 | 0.3+ | 0.6− | 2003 12 26 | 608 | 0.4+ | 0.3− | 2004 02 15 | 704 | 0.2− | 0.7+ | | |
| 2000 01 04 | 704 | 0.3+ | 1.2+ | 2003 12 26 | 608 | 0.5+ | 0.4− | 2004 02 15 | 704 | 0.6− | 0.0 | | |
| 2002 09 13 | 644 | 0.7− | 0.1− | 2003 12 27 | 704 | 0.1− | 0.7− | 2004 02 15 | 704 | 0.1− | 0.1+ | | |
| 2002 09 13 | 644 | 0.5− | 0.1+ | 2003 12 27 | 704 | 0.2− | 0.9− | 2004 02 15 | 704 | 1.0− | 0.8+ | | |
| 2002 09 13 | 644 | 0.7− | 0.3+ | 2003 12 27 | 704 | 0.7− | 0.4− | 2004 03 18 | 704 | 0.1− | 1.4+ | | |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2003 12 27 | 704 | 0.1− | 0.7− | 2004 03 18 | 704 | 0.1− | 0.0 | | |
| 2002 09 14 | 644 | 0.1+ | 0.6+ | 2003 12 27 | 704 | 0.6+ | 0.5+ | 2004 03 18 | 704 | 0.6+ | 0.2− | | |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2003 12 29 | 699 | 0.2− | 0.5− | 2004 03 18 | 704 | 0.1− | 0.8+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 291 | 0.4+ | 0.1− | 2003 12 29 | 699 | 0.8+ | 0.6+ | 2006 07 22 | G96 | 0.0 | 0.1+ | | |
| 2002 09 16 | 291 | 0.0 | 0.1+ | 2003 12 29 | 699 | 0.1− | 0.3− | 2006 07 22 | G96 | 0.0 | 0.5− | | |
| 2002 09 16 | 291 | 0.0 | 0.2+ | 2003 12 29 | 699 | 0.4+ | 0.2+ | 2006 07 22 | G96 | 0.4− | 0.3− | | |
| 2003 11 20 | 704 | 0.5+ | 0.3+ | 2004 01 13 | 699 | 0.8− | 0.2+ | 2006 07 22 | G96 | 0.6+ | 0.1− | | |
| 2003 11 20 | 704 | 0.0 | 0.6+ | 2004 01 13 | 699 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.1− | | |
| 2003 11 20 | 704 | 0.2− | 0.6− | 2004 01 13 | 699 | 0.9+ | 1.0− | 2006 09 15 | 691 | 0.1− | 0.0 | | |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2004 01 13 | 699 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.3− | 0.2+ | | |
| 2003 12 17 | 691 | 0.0 | 0.1+ | 2004 01 20 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2− | | |
| 2003 12 17 | 691 | 0.0 | 0.0 | 2004 01 20 | 704 | 0.7+ | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1− | | |
| 2003 12 18 | 704 | 0.2+ | 0.3+ | 2004 01 20 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 | | |
| 2003 12 18 | 704 | 0.2+ | 0.2− | 2004 01 22 | 704 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1− | | |
| 2003 12 18 | 704 | 0.7− | 0.5− | 2004 01 22 | 704 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1− | | |
| 2003 12 18 | 704 | 0.4− | 0.2− | 2004 01 22 | 704 | 0.7− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2003 12 19 | 691 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2− | 0.4+ | | |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.2+ | | |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2004 01 26 | 699 | 0.1− | 0.9− | 2006 10 17 | 703 | 0.3+ | 0.5+ | | |
| 2003 12 21 | 691 | 0.1− | 0.1+ | 2004 01 26 | 699 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.2+ | | |
| 2003 12 21 | 691 | 0.2− | 0.0 | 2004 01 26 | 699 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2003 12 21 | 691 | 0.2− | 0.1+ | 2004 01 26 | 699 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2003 12 21 | 608 | 0.3+ | 0.8− | 2004 01 30 | 704 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2003 12 21 | 608 | 0.4+ | 0.9− | 2004 01 30 | 704 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2003 12 21 | 608 | 0.5+ | 1.4− | 2004 01 30 | 704 | 0.3− | 0.1− | | | | | | |
| 2003 12 22 | 704 | 0.1− | 0.8+ | 2004 01 30 | 704 | 0.2+ | 0.2+ | | | | | | |

**(142318)∗ 2002 RQ$_{166}$**

Discovered 2002 Sept. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.22011 | | (2000.0) | | | |
| $n$ | 0.24112122 | $\omega$ | 41.58837 | | +0.92670941 | −0.37533114 |
| $a$ | 2.5564998 | $\Omega$ | 340.43319 | | +0.32869834 | +0.83328668 |
| $e$ | 0.2693557 | $i$ | 3.13851 | | +0.18211831 | +0.40590620 |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.8+ | 0.1− | 2002 08 29 | 644 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.9− | 0.6+ | | |
| 1998 08 17 | 704 | 1.5− | 0.0 | 2002 08 29 | 644 | 0.2− | 0.2− | 2004 02 11 | 291 | 0.0 | 0.3+ | | |
| 1998 08 17 | 704 | 1.4− | 0.6+ | 2002 09 05 | 704 | 0.1+ | 0.3+ | 2004 02 11 | 291 | 0.1+ | 0.6+ | | |
| 1998 08 17 | 704 | 1.4+ | 1.1− | 2002 09 05 | 704 | 0.7+ | 0.7+ | 2004 02 11 | 291 | 0.1− | 0.3+ | | |
| 1998 08 17 | 704 | (3.4− | 0.4+) | 2002 09 05 | 704 | 0.6+ | 0.3− | 2004 02 12 | 691 | 0.1+ | 0.4+ | | |
| 1998 09 18 | 699 | 0.0 | 1.1+ | 2002 09 05 | 704 | 0.4+ | 0.3− | 2004 02 12 | 691 | 0.2+ | 0.3+ | | |
| 1998 09 18 | 699 | 0.3+ | 1.0− | 2002 09 05 | 704 | 0.1+ | 0.5− | 2004 02 12 | 691 | 0.4+ | 0.4+ | | |
| 1998 09 18 | 699 | 0.1− | 0.3− | 2002 09 13 | 704 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.3− | 0.0 | | |
| 2000 02 04 | 691 | 0.2− | 1.0− | 2002 09 13 | 704 | 0.5+ | 0.9+ | 2006 08 14 | 644 | 0.3− | 0.2+ | | |
| 2000 02 04 | 691 | 0.2− | 0.4+ | 2002 09 13 | 704 | 0.1+ | 0.5− | 2006 08 14 | 644 | 0.2− | 0.2+ | | |
| 2000 02 04 | 691 | 0.2+ | 0.6− | 2002 09 13 | 704 | 0.1+ | 0.1− | 2006 08 20 | 644 | 0.0 | 0.5+ | | |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2002 09 14 | 608 | 0.6− | 0.3− | 2006 08 20 | 644 | 0.1− | 0.2+ | | |
| 2002 08 08 | 644 | 0.0 | 0.7+ | 2002 09 14 | 608 | 0.0 | 0.6− | 2006 08 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 08 | 644 | 0.2− | 0.6+ | 2002 09 14 | 608 | 0.1+ | 0.6− | 2006 09 30 | G96 | (2.6− | 1.1−) | | |
| 2002 08 12 | 807 | 0.2− | 0.3+ | 2002 10 08 | 699 | 0.3+ | 0.3− | 2006 09 30 | G96 | 0.6− | 0.5− | | |
| 2002 08 12 | 807 | 0.7− | 0.2+ | 2002 10 08 | 699 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.3− | | |
| 2002 08 14 | 704 | 0.2+ | 0.4+ | 2002 10 08 | 699 | 0.7+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.1− | | |
| 2002 08 14 | 704 | 0.6− | 0.5+ | 2002 10 08 | 699 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− | | |
| 2002 08 14 | 704 | 0.4− | 0.5+ | 2002 10 11 | 704 | 0.4− | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.7− | | |
| 2002 08 14 | 704 | 1.2− | 0.3+ | 2002 10 11 | 704 | 0.0 | 1.0+ | 2006 10 28 | G96 | 2.1+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.0 | 0.6− | 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |

**(142319)∗ 2002 RD$_{168}$ = 2005 GA$_{27}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75597)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 107.79910 | | (2000.0) | | | |
| $n$ | 0.26451097 | $\omega$ | 74.83803 | | −0.23130764 | +0.97287984 |
| $a$ | 2.4034786 | $\Omega$ | 181.78934 | | −0.90735138 | −0.21619393 |
| $e$ | 0.1630199 | $i$ | 2.30835 | | −0.35101317 | −0.08224957 |
| $P$ | 3.73 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.2− | 0.1+ | 2005 04 06 | G96 | 0.3− | 0.1+ | 2005 05 14 | 644 | 0.2+ | 0.1− | | |
| 1997 02 03 | 691 | 0.0 | 0.3+ | 2005 04 06 | G96 | 0.1+ | 0.3− | 2005 05 14 | 644 | 0.3− | 0.1− | | |
| 1997 02 03 | 691 | 0.1− | 0.1− | 2005 04 06 | G96 | 0.2+ | 0.2− | 2005 05 14 | 644 | 0.5+ | 0.2− | | |
| 1998 09 27 | 691 | 0.1+ | 0.1+ | 2005 04 06 | G96 | 0.5− | 0.1− | 2005 05 19 | G96 | 0.2− | 0.1− | | |
| 1998 09 27 | 691 | 0.5− | 0.1+ | 2005 04 16 | 691 | 0.3+ | 0.3+ | 2005 05 19 | G96 | 0.3− | 0.2− | | |
| 1998 09 27 | 691 | 0.1− | 0.3+ | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2005 05 19 | G96 | 0.3− | 0.1− | | |
| 2001 03 26 | 691 | 0.5+ | 0.9+ | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.3− | 0.9+ | | |
| 2001 03 26 | 691 | 0.7+ | 0.8+ | 2005 04 18 | 703 | 0.6+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.4+ | | |
| 2001 03 26 | 691 | 0.3+ | 0.9+ | 2005 04 18 | 703 | 0.1− | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.4+ | | |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2005 04 18 | 703 | 1.2− | 0.9+ | 2006 09 24 | 691 | 0.2+ | 0.3+ | | |
| 2002 09 13 | 644 | 0.3− | 0.3+ | 2005 04 18 | 704 | 0.1− | 0.8+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2005 04 18 | 703 | 0.5− | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.4+ | | |
| 2002 09 14 | 644 | 0.3+ | 0.7+ | 2005 04 18 | 704 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.1+ | 0.0 | | |
| 2002 09 14 | 644 | 0.6+ | 0.8+ | 2005 04 18 | 704 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1− | | |
| 2002 09 14 | 644 | 0.5+ | 0.9+ | 2005 05 09 | 704 | 0.0 | 1.2+ | 2006 10 02 | 691 | 0.0 | 0.3+ | | |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2005 05 09 | 704 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2005 05 09 | 704 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.4+ | | |
| 2002 10 03 | 704 | 0.5− | 1.3+ | 2005 05 10 | 704 | 0.8+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.4+ | | |
| 2005 03 12 | G96 | 0.1− | 0.0 | 2005 05 10 | 704 | (0.2− | 1.9+) | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2005 03 12 | G96 | 0.2− | 0.6+ | 2005 05 10 | 704 | (1.8+ | 0.0 ) | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2005 03 12 | G96 | 0.3− | 0.5+ | 2005 05 10 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2005 03 12 | G96 | 0.3− | 0.2− | 2005 05 13 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.3− | 0.3+ | | |
| 2005 04 02 | G96 | 0.4− | 0.4+ | 2005 05 13 | 704 | 1.0+ | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.2− | | |
| 2005 04 02 | G96 | 0.1− | 0.7+ | 2005 05 13 | 704 | 1.0+ | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.5+ | | |
| 2005 04 02 | G96 | 0.6− | 0.0 | 2005 05 13 | 704 | (1.9+ | 0.4+) | 2006 10 31 | 691 | 0.2− | 0.0 | | |
| 2005 04 02 | G96 | 0.5− | 0.2+ | 2005 05 13 | 704 | 0.4+ | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | | |
| 2005 04 05 | 691 | 0.3− | 0.4+ | 2005 05 14 | 644 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.4+ | | |
| 2005 04 05 | 691 | 0.3+ | 0.3+ | 2005 05 14 | 644 | 0.2+ | 0.3+ | | | | | | |
| 2005 04 05 | 691 | 0.1− | 0.0 | 2005 05 14 | 644 | 0.1− | 0.0 | | | | | | |

**(142320)∗ 2002 RH$_{169}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.78782 | | (2000.0) | | | |
| $n$ | 0.24319123 | $\omega$ | 108.98965 | | +0.22840748 | +0.97326994 |
| $a$ | 2.5419721 | $\Omega$ | 174.05691 | | −0.95747016 | +0.22902575 |
| $e$ | 0.1547069 | $i$ | 13.39839 | | −0.17629781 | +0.01711201 |
| $P$ | 4.05 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2005 03 18 | 703 | 0.8+ | 0.7− | 2006 09 12 | 703 | 0.2− | 0.7− | | |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2005 03 18 | 703 | 0.5+ | 0.5+ | 2006 09 12 | 703 | 0.6− | 0.3− | | |
| 2001 03 19 | 704 | 0.7− | 0.2− | 2005 03 18 | 703 | 0.6− | 0.5− | 2006 09 12 | 703 | 0.7+ | 0.5− | | |
| 2001 03 19 | 704 | 0.3− | 0.3+ | 2005 03 31 | 699 | 0.8+ | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.1+ | | |
| 2001 03 19 | 704 | 0.5− | 0.0 | 2005 03 31 | 699 | (1.6+ | 0.8−) | 2006 09 13 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 645 | 0.0 | 0.3− | 2005 03 31 | 699 | 0.4+ | 1.4+ | 2006 09 13 | 644 | 0.0 | 0.0 | | |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2005 03 31 | 699 | 0.5+ | 0.6+ | 2006 09 16 | 699 | 0.9− | 0.7+ | | |
| 2002 09 07 | 704 | 1.2+ | 1.1+ | 2005 04 04 | 703 | (1.9− | 0.1+) | 2006 09 16 | 699 | 0.2− | 0.4+ | | |
| 2002 09 07 | 704 | 0.8+ | 0.8+ | 2005 04 04 | 703 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.4− | 0.4+ | | |
| 2002 09 07 | 704 | 0.4+ | 0.1− | 2005 04 04 | 703 | 0.4− | 0.3+ | 2006 09 17 | 704 | 0.6− | 0.5− | | |
| 2002 09 07 | 704 | 1.2+ | 0.1− | 2005 04 04 | 703 | 0.9− | 0.9− | 2006 09 17 | 704 | 0.1+ | 0.8− | | |
| 2002 09 13 | 644 | 0.2− | 0.3+ | 2005 04 08 | 704 | (1.7+ | 0.4+) | 2006 09 17 | 704 | 0.2− | 0.3− | | |
| 2002 09 13 | 644 | 0.1− | 0.1+ | 2005 04 08 | 704 | 1.2+ | 0.8− | 2006 09 17 | 704 | 0.6− | 1.0− | | |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2005 04 08 | 704 | (2.1+ | 1.0+) | 2006 09 19 | 699 | 0.1− | 0.0 | | |
| 2002 09 14 | 644 | 0.1+ | 0.6+ | 2005 04 08 | 704 | (2.7+ | 0.1−) | 2006 09 19 | 703 | 0.1− | 0.1+ | | |
| 2002 09 14 | 644 | 0.2+ | 0.4+ | 2005 04 13 | 704 | 0.6+ | 0.2− | 2006 09 19 | 699 | 1.4+ | 0.2− | | |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2005 04 13 | 704 | (1.7+ | 0.4+) | 2006 09 19 | 703 | 0.1− | 0.8+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2005 04 13 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.4− | 0.6+ | 2005 04 13 | 704 | 0.9+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.2− | | |
| 2002 10 03 | 704 | 1.0+ | 0.5+ | 2006 07 21 | D35 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.6− | 0.1− | | |
| 2002 10 03 | 704 | (0.2− | 2.4+) | 2006 07 21 | D35 | 0.0 | 0.5− | 2006 09 19 | 699 | 0.5+ | 0.1− | | |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2006 07 21 | D35 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.1− | 1.0+ | | |
| 2002 10 04 | 704 | 0.5+ | 0.5− | 2006 08 20 | 691 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 04 | 704 | 0.8− | 1.0− | 2006 08 20 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.8+ | 0.5+ | | |
| 2002 10 06 | 704 | 0.7− | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.3+ | | |
| 2002 10 06 | 704 | (0.5+ | 2.3+) | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | | |
| 2002 10 06 | 704 | (0.1+ | 1.6+) | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− | | |
| 2005 03 09 | 699 | (0.5+ | 2.3+) | 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2005 03 09 | 699 | 0.3− | 0.6+ | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.1− | | |
| 2005 03 09 | 699 | 0.5+ | 0.1− | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 1.1− | 0.1− | | |
| 2005 03 09 | 699 | (2.2+ | 1.0+) | 2006 08 24 | 704 | 1.0− | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.2+ | | |
| 2005 03 10 | G96 | 0.1− | 0.5− | 2006 08 24 | 704 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.1− | 0.4+ | | |
| 2005 03 10 | G96 | 0.0 | 0.2− | 2006 08 24 | 704 | 1.0− | 0.1+ | 2006 09 28 | 704 | 0.4+ | 0.5+ | | |
| 2005 03 10 | G96 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 28 | 704 | (1.2+ | 1.7+) | | |
| 2005 03 10 | G96 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.1− | 1.3− | 2006 09 28 | 704 | (0.4+ | 1.8+) | | |
| 2005 03 10 | G96 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 28 | 704 | 0.8+ | 1.0+ | | |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.8+ | 1.4+ | | |
| 2005 03 10 | G96 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.7+ | | |
| 2005 03 10 | G96 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.8− | 1.4+ | 2006 09 30 | 703 | 0.2− | 0.4+ | | |
| 2005 03 13 | 703 | (1.5− | 0.7+) | 2006 08 30 | 704 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.7+ | | |
| 2005 03 13 | 703 | 0.9− | 1.3+ | 2006 08 30 | 704 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2005 03 13 | 703 | 0.8− | 0.1− | 2006 08 30 | 704 | 0.6+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1− | | |
| 2005 03 13 | 703 | 0.1− | 1.3+ | 2006 09 01 | 704 | 0.0 | 0.6− | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 2005 03 14 | G96 | 0.5− | 0.2− | 2006 09 01 | 704 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 2005 03 14 | G96 | 0.2+ | 0.5− | 2006 09 01 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.7− | 0.0 | | |
| 2005 03 14 | G96 | 0.1− | 0.1− | 2006 09 01 | 704 | 0.7− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.4+ | | |
| 2005 03 14 | G96 | 0.3− | 0.3− | 2006 09 01 | 704 | 1.0− | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.5+ | | |
| 2005 03 18 | 703 | 0.3− | 0.8− | 2006 09 12 | 703 | 0.8+ | 0.1− | | | | | | |

**(142321)∗ 2002 RO$_{171}$**

Discovered 2002 Sept. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.40090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25421716 | $\omega$ | 30.81397 | | +0.52042976 | −0.85187863 | |
| $a$ | 2.4679299 | $\Omega$ | 27.95206 | | +0.75566739 | +0.42740623 | |
| $e$ | 0.1427621 | $i$ | 7.20457 | | +0.39764263 | +0.30269904 | |
| $P$ | 3.88 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 704 | 1.0+ | 1.6+ | 2004 02 16 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 704 | 0.1+ | 0.3− | | |
| 2000 04 02 | 704 | 0.6+ | 1.0+ | 2004 02 16 | 704 | 0.1− | 0.3+ | 2006 09 19 | 704 | 0.6− | 0.1− | | |
| 2000 04 02 | 704 | 0.3+ | 1.6+ | 2004 02 16 | 704 | 0.5+ | 0.1− | 2006 09 19 | 704 | 0.4+ | 1.4− | | |
| 2000 04 02 | 704 | 0.8+ | 0.2− | 2004 02 16 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 704 | 0.3+ | 0.6− | | |
| 2002 08 30 | 644 | 0.1− | 0.8+ | 2004 02 17 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.1+ | | |
| 2002 08 30 | 644 | 0.3+ | 0.7+ | 2004 02 17 | 608 | 0.1− | 0.8+ | 2006 09 19 | 703 | 0.1+ | 0.4+ | | |
| 2002 08 30 | 644 | 0.0 | 0.8+ | 2004 02 17 | 691 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.3+ | | |
| 2002 09 13 | 704 | 0.2− | 0.2+ | 2004 02 17 | 608 | 0.5− | 1.0+ | 2006 09 19 | 703 | 0.3+ | 0.2+ | | |
| 2002 09 13 | 704 | 0.3− | 0.4+ | 2004 02 17 | 608 | 0.1− | 1.0+ | 2006 09 20 | 644 | 0.1− | 0.1− | | |
| 2002 09 13 | 704 | 0.1+ | 0.3+ | 2004 02 17 | 691 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.0 | | |
| 2002 09 13 | 704 | 0.8− | 0.0 | 2004 03 14 | 704 | 0.1+ | 1.5+ | 2006 09 20 | 644 | 0.0 | 0.2− | | |
| 2002 09 14 | 608 | 0.5− | 0.4− | 2004 03 14 | 704 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.1− | 0.1− | | |
| 2002 09 14 | 608 | 0.7− | 0.1− | 2004 03 14 | 704 | (1.6− | 0.5−) | 2006 09 22 | 704 | 0.5− | 0.1− | | |
| 2002 09 14 | 608 | 0.7− | 0.3− | 2004 03 14 | 704 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.3− | 0.4+ | | |
| 2002 09 16 | 644 | 0.3− | 0.3+ | 2004 03 19 | 644 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.1− | | |
| 2002 09 16 | 644 | 0.1− | 0.4+ | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.1+ | | |
| 2002 09 16 | 644 | 0.2− | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.4− | | |
| 2002 09 25 | 608 | (2.5− | 0.5+) | 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.0 | | |
| 2002 09 25 | 608 | (1.8− | 0.2+) | 2004 03 20 | 704 | 0.1− | 1.1+ | 2006 09 26 | 704 | 0.4+ | 0.3+ | | |
| 2002 09 25 | 608 | (1.6− | 0.1+) | 2004 03 20 | 704 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.1− | | |
| 2002 10 03 | 704 | (0.3+ | 1.6+) | 2004 03 20 | 704 | 0.7+ | 0.1− | 2006 09 26 | 704 | 0.2− | 0.3− | | |
| 2002 10 03 | 704 | 0.4− | 1.4+ | 2004 03 20 | 704 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.6− | 0.0 | | |
| 2002 10 03 | 704 | 0.2+ | 1.3+ | 2004 03 29 | 703 | 0.3+ | 0.2− | 2006 09 28 | 704 | 0.5+ | 0.2− | | |
| 2002 10 03 | 704 | (0.1− | 1.7+) | 2004 03 29 | 703 | 0.2− | 0.9− | 2006 09 28 | 704 | 0.2− | 0.1− | | |
| 2002 10 03 | 704 | (0.1− | 2.0+) | 2004 03 29 | 703 | 0.7+ | 0.5− | 2006 09 28 | 704 | 0.0 | 0.1− | | |
| 2002 10 05 | 704 | 0.8− | 0.7+ | 2004 03 29 | 703 | 0.1+ | 1.0− | 2006 09 28 | 704 | 0.2− | 1.1+ | | |
| 2002 10 05 | 704 | (0.4+ | 1.8+) | 2006 08 28 | 704 | 0.4− | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.0 | | |
| 2002 10 05 | 704 | (1.0− | 3.1+) | 2006 08 28 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.7+ | 0.3− | | |
| 2002 10 05 | 704 | 0.7− | 1.1+ | 2006 08 28 | 704 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.5+ | 0.4− | | |
| 2003 12 27 | 704 | 0.4− | 0.0 | 2006 08 28 | 704 | 0.3+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.6− | | |
| 2003 12 27 | 704 | 0.4− | 0.1− | 2006 09 12 | 703 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.2− | | |
| 2003 12 27 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.2− | 2006 10 09 | 644 | 0.3+ | 0.1− | | |
| 2003 12 29 | 704 | 0.0 | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.2− | | |
| 2003 12 29 | 704 | 0.7− | 0.9+ | 2006 09 12 | 703 | 0.3− | 0.5+ | 2006 10 09 | 644 | 0.3+ | 0.0 | | |
| 2003 12 29 | 704 | (1.3+ | 1.6−) | 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.2− | | |
| 2003 12 29 | 704 | 0.6+ | 1.3+ | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.3− | | |
| 2004 01 30 | 699 | 0.6+ | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 2004 01 30 | 699 | 0.6− | 0.5− | 2006 09 16 | 704 | 0.7− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 1.1+ | | |
| 2004 01 30 | 699 | 1.0− | 0.9− | 2006 09 16 | 704 | 0.4− | 1.1+ | 2006 10 17 | 703 | 0.9− | 0.4− | | |
| 2004 01 30 | 699 | 0.2− | 1.2− | 2006 09 16 | 704 | (1.5− | 1.6+) | 2006 10 17 | 703 | 0.9+ | 0.1− | | |
| 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 09 16 | 704 | 0.5− | 0.0 | 2006 10 17 | 703 | 1.2− | 0.9− | | |
| 2004 01 30 | 704 | 0.4+ | 0.5− | 2006 09 16 | 704 | 0.9− | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.4− | | |
| 2004 01 30 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.4− | | |
| 2004 02 11 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.8+ | 0.4− | 2006 10 22 | 644 | 0.4+ | 0.2− | | |
| 2004 02 11 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.7+ | 0.8+ | 2006 10 22 | 644 | 0.5+ | 0.4− | | |
| 2004 02 11 | 644 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.4− | | |
| 2004 02 14 | 608 | 0.9+ | 0.7− | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.2− | | |
| 2004 02 14 | 608 | 1.0+ | 0.6− | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 11 06 | 644 | 0.5+ | 0.5− | | |
| 2004 02 14 | 608 | 0.5+ | 1.3− | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 11 06 | 644 | 0.1+ | 0.3− | | |
| 2004 02 16 | 704 | 0.0 | 0.0 | 2006 09 19 | 704 | 0.6+ | 0.2− | | | | | | |

**(142322)∗ 2002 RX$_{171}$ = 1998 RT$_6$**

Discovered 2002 Sept. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 37906)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.46532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25334107 | $\omega$ | 13.65540 | | +0.97733907 | −0.21167853 | |
| $a$ | 2.4736162 | $\Omega$ | 358.56472 | | +0.19133412 | +0.88489095 | |
| $e$ | 0.2098251 | $i$ | 1.69212 | | +0.09055167 | +0.41492193 | |
| $P$ | 3.89 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 12 | 691 | 0.2+ | 0.6− | 2002 10 11 | 704 | 0.3− | 1.1+ | 2006 10 21 | 703 | 0.1− | 0.0 | | |
| 1998 09 12 | 691 | 0.1− | 0.4− | 2002 10 11 | 704 | 1.1+ | 0.4+ | 2006 10 21 | 703 | 0.8+ | 0.3− | | |
| 1998 09 12 | 691 | 0.6+ | 0.0 | 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.9− | | |
| 1998 09 18 | 691 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 1.0+ | | |
| 1998 09 18 | 691 | 0.5− | 0.1+ | 2002 10 30 | 645 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.3− | 0.2− | | |
| 1998 09 18 | 691 | 0.3− | 0.1+ | 2002 10 30 | 645 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2000 02 06 | 695 | 0.3+ | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2000 02 06 | 695 | 0.8+ | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1− | 0.3− | | |
| 2002 09 13 | 291 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.5+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 13 | 291 | 0.1+ | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | | |
| 2002 09 13 | 291 | 0.0 | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 | | |
| 2002 09 14 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2002 09 14 | 644 | 0.4+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.1− | | |
| 2002 09 14 | 644 | 0.3+ | 0.6+ | 2006 10 03 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2− | | |
| 2002 09 30 | 704 | 0.4− | 0.8+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (0.7+ | 2.1−) | | |
| 2002 09 30 | 704 | 0.2− | 0.8+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (0.7+ | 1.6−) | | |
| 2002 09 30 | 704 | 1.3− | 0.1− | 2006 10 16 | 104 | 0.2− | 1.4− | 2006 11 11 | 703 | 0.6− | 0.3− | | |
| 2002 09 30 | 704 | 0.5+ | 0.7+ | 2006 10 16 | 104 | 1.0+ | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.6− | | |
| 2002 10 02 | 704 | 1.0+ | 0.7+ | 2006 10 16 | 104 | 0.2+ | 1.4+ | 2006 11 15 | 691 | 0.3+ | 0.5− | | |
| 2002 10 02 | 704 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.2− | | |
| 2002 10 02 | 704 | (0.5+ | 1.8+) | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2− | | |
| 2002 10 03 | 704 | 0.4+ | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2002 10 03 | 704 | 0.7+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.3− | 0.2+ | | |
| 2002 10 03 | 704 | 0.1+ | 1.3+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2− | 0.2+ | | |
| 2002 10 04 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.1+ | | |
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.1+ | | |
| 2002 10 04 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | | | | | |

**(142323)∗ 2002 RW$_{172}$ = 1995 VM$_8$**

Discovered 2002 Sept. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37907)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.98405 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26564510 | $\omega$ | 229.37357 | | +0.24182631 | | +0.96331270 |
| $a$ | 2.3966328 | $\Omega$ | 54.99364 | | −0.84183147 | | +0.26794415 |
| $e$ | 0.2842422 | $i$ | 8.16983 | | −0.48253478 | | +0.01531607 |
| $P$ | 3.71 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.2+ | 0.1− | 2002 10 10 | 704 | (0.0 | 1.6+) | 2006 10 19 | 691 | 0.0 | 0.0 |
| 1995 11 14 | 691 | 0.4+ | 0.2− | 2002 10 10 | 704 | (0.0 | 1.5+) | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 1995 11 19 | 691 | 0.1− | 0.5− | 2005 03 16 | 703 | 1.0+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 1995 11 19 | 691 | 0.0 | 0.5− | 2005 03 16 | 703 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 1995 11 19 | 691 | 0.2+ | 0.4− | 2005 03 16 | 703 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2002 09 13 | 704 | (3.6+ | 3.1−) | 2005 03 16 | 703 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2002 09 13 | 704 | (2.8+ | 2.8−) | 2005 04 16 | 703 | 0.9− | 0.1− | 2006 10 27 | 691 | 0.4− | 0.1− |
| 2002 09 13 | 704 | (2.6+ | 3.2−) | 2005 04 16 | 703 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 608 | 0.5+ | 1.3− | 2005 04 16 | 703 | 1.0+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 09 14 | 608 | 0.7+ | 0.6− | 2005 04 16 | 703 | 0.8− | 1.0− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2002 09 14 | 608 | 0.5+ | 0.7− | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 09 19 | 644 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.6+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2002 09 19 | 644 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2002 09 19 | 644 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2002 09 30 | 608 | 0.6− | 0.6− | 2006 10 11 | 691 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 09 30 | 608 | 0.3− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2002 09 30 | 608 | 0.8− | 0.8− | 2006 10 11 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 1.0− | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 1.2− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.8− |
| 2002 10 04 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 10 05 | 704 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.0− | 0.0 |
| 2002 10 05 | 704 | (0.8− | 1.7+) | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.0 | 1.0− |
| 2002 10 05 | 704 | 0.5− | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.5+ | 1.0+ |
| 2002 10 10 | 704 | 0.9+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.6+ | 1.0− |

**(142324)∗ 2002 RC$_{173}$**

Discovered 2002 Sept. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.09178 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27958430 | $\omega$ | 19.18814 | | +0.34561981 | | −0.92829789 |
| $a$ | 2.3162968 | $\Omega$ | 50.83739 | | +0.83616232 | | +0.23833214 |
| $e$ | 0.1594367 | $i$ | 10.18841 | | +0.42588675 | | +0.28541340 |
| $P$ | 3.53 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.0 | 0.4− | 2002 10 07 | 608 | 0.2− | 0.5− | 2004 03 23 | 704 | 0.6+ | 0.3+ |
| 1999 12 15 | 704 | 0.7+ | 0.5+ | 2002 10 07 | 608 | 0.1+ | 0.6− | 2004 03 23 | 704 | 0.8+ | 0.2+ |
| 1999 12 15 | 704 | 0.1+ | 0.5+ | 2002 10 07 | 608 | 0.2+ | 0.4− | 2004 03 23 | 704 | 0.7+ | 0.3+ |
| 1999 12 15 | 704 | 0.6+ | 0.7+ | 2002 10 16 | 644 | 0.3− | 0.6+ | 2004 04 10 | 644 | 0.2+ | 0.4+ |
| 1999 12 15 | 704 | 0.2− | 0.2− | 2002 10 16 | 644 | 0.1− | 0.3+ | 2004 04 10 | 644 | 0.0 | 0.3+ |
| 2000 01 02 | 704 | 0.2− | 0.5− | 2002 10 16 | 644 | 0.3− | 0.4+ | 2004 04 10 | 644 | 0.1+ | 0.3+ |
| 2000 01 02 | 704 | 0.4− | 1.1+ | 2002 10 28 | 608 | 0.2+ | 0.0 | 2004 04 15 | 644 | 0.6+ | 0.8+ |
| 2000 01 02 | 704 | 1.2− | 0.6− | 2002 10 28 | 608 | 0.2+ | 0.7+ | 2004 04 15 | 704 | 0.9+ | 0.8+ |
| 2000 01 02 | 704 | 1.0− | 0.8− | 2002 10 28 | 608 | 0.2+ | 0.5+ | 2004 04 15 | 644 | 0.3+ | 0.6+ |
| 2000 01 02 | 704 | 0.8− | 0.6− | 2002 10 29 | 704 | 0.3− | 0.4+ | 2004 04 15 | 704 | 0.9+ | 0.2+ |
| 2000 01 10 | 699 | 1.9+ | 0.2+ | 2002 10 29 | 704 | 0.2− | 0.6+ | 2004 04 15 | 704 | 0.7+ | 0.8+ |
| 2000 01 10 | 699 | 0.5+ | 0.2+ | 2002 10 29 | 704 | 0.4− | 0.3+ | 2004 04 15 | 644 | 0.6+ | 0.4+ |
| 2000 01 10 | 699 | 0.5+ | 0.1− | 2002 10 29 | 704 | 0.0 | 0.0 | 2004 04 15 | 704 | 0.1+ | 0.4+ |
| 2000 01 27 | 704 | 0.8− | 1.3+ | 2002 10 29 | 704 | 0.8− | 0.3− | 2004 04 15 | 704 | 1.1+ | 0.2+ |
| 2000 01 27 | 704 | 0.8+ | 0.9+ | 2002 11 01 | 608 | 1.3+ | 0.0 | 2004 04 21 | 704 | (1.6+ | 1.2+) |
| 2000 01 27 | 704 | 0.1− | 1.2+ | 2002 11 01 | 608 | 1.0+ | 0.8+ | 2004 04 21 | 704 | 0.5+ | 0.8+ |
| 2000 01 27 | 704 | 0.1− | 0.9+ | 2002 11 01 | 608 | (1.6+ | 0.5+) | 2004 04 21 | 704 | 0.0 | 1.1+ |
| 2000 03 27 | 704 | 1.1+ | 0.6− | 2002 11 06 | 608 | 0.2− | 0.4+ | 2004 04 21 | 703 | 0.9− | 1.4− |
| 2000 03 27 | 704 | 0.6+ | 0.6+ | 2002 11 06 | 608 | 0.1+ | 0.3+ | 2004 04 21 | 703 | (0.9+ | 1.7−) |
| 2000 03 27 | 704 | 0.3+ | 0.4− | 2002 11 06 | 608 | 0.2+ | 0.2+ | 2004 04 21 | 704 | 0.1− | 0.9+ |
| 2002 09 13 | 704 | (1.9+ | 0.7+) | 2002 11 11 | 704 | 1.2+ | 0.6+ | 2004 04 21 | 703 | (2.5+ | 1.0+) |
| 2002 09 13 | 704 | (1.8+ | 0.3+) | 2002 11 11 | 704 | 0.1+ | 0.7+ | 2004 04 21 | 703 | 0.1− | 0.1− |
| 2002 09 13 | 704 | (2.0+ | 0.1+) | 2002 11 11 | 704 | (2.2+ | 1.4+) | 2004 04 23 | 704 | 0.1− | 0.7+ |
| 2002 09 13 | 704 | (2.8+ | 1.0+) | 2002 11 11 | 704 | 0.5− | 0.7+ | 2004 04 23 | 704 | 0.2+ | 0.1− |
| 2002 09 14 | 608 | 1.4+ | 0.0 | 2002 11 11 | 704 | 0.3+ | 0.0 | 2004 04 23 | 704 | 0.4+ | 0.1+ |
| 2002 09 14 | 608 | (2.2+ | 0.9+) | 2002 11 11 | 704 | 0.1+ | 0.3− | 2004 04 23 | 704 | 0.3+ | 0.0 |
| 2002 09 14 | 608 | 0.6+ | 0.0 | 2002 11 11 | 704 | (0.7+ | 1.9+) | 2004 04 23 | 704 | 0.4+ | 0.6+ |
| 2002 09 17 | 644 | 0.5− | 0.4+ | 2002 11 11 | 704 | 0.3− | 0.4+ | 2005 07 05 | E12 | 0.4+ | 0.1− |
| 2002 09 17 | 644 | 0.6− | 0.4+ | 2002 11 11 | 704 | 0.1− | 1.2+ | 2005 07 05 | E12 | 1.2+ | 0.7+ |
| 2002 09 17 | 644 | 0.6− | 0.4+ | 2002 12 07 | 704 | 0.4− | 0.8+ | 2005 07 05 | E12 | 0.1− | 0.5+ |
| 2002 09 19 | 644 | 0.8− | 0.3+ | 2002 12 07 | 704 | 0.7− | 0.1− | 2005 07 05 | E12 | 1.0− | 0.1+ |
| 2002 09 19 | 644 | 0.8− | 0.4+ | 2002 12 07 | 704 | 0.3− | 1.0+ | 2006 10 28 | 703 | 0.9+ | 0.8− |
| 2002 09 19 | 644 | 0.9− | 0.3+ | 2004 03 15 | 704 | 0.0 | 0.8+ | 2006 10 28 | 703 | 0.3− | 1.2− |
| 2002 09 30 | 608 | 0.9− | 0.3+ | 2004 03 15 | 704 | 0.4+ | 1.0+ | 2006 10 28 | 703 | 1.5+ | 1.1− |
| 2002 09 30 | 608 | 1.0− | 0.8+ | 2004 03 15 | 704 | 0.3− | 0.7+ | 2006 10 28 | 703 | 0.1− | 0.5− |
| 2002 09 30 | 608 | 1.0− | 0.5+ | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | 0.0 | 0.7+ | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 704 | 0.6+ | 0.6+ |
| 2002 10 05 | 704 | 0.2− | 0.7+ | 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 11 15 | 704 | 1.1− | 0.1+ |
| 2002 10 05 | 704 | 0.1+ | 0.6+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.1− | 0.8+ | 2004 03 21 | 691 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.5+ | 0.6+ |
| 2002 10 05 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 699 | 0.3− | 1.0+ | 2006 11 21 | 703 | 0.3− | 0.8− |
| 2002 10 06 | 704 | 0.9− | 0.4+ | 2004 03 22 | 699 | 0.6− | 1.0+ | 2006 11 21 | 703 | 0.6− | 0.8− |
| 2002 10 06 | 704 | 1.3− | 0.6+ | 2004 03 22 | 699 | 0.5+ | 0.5+ | 2006 11 21 | 703 | 0.2+ | 0.1+ |
| 2002 10 06 | 704 | 1.0− | 0.7+ | 2004 03 22 | 699 | 0.1− | 0.4+ | 2006 11 21 | 703 | 0.0 | 0.0 |
| 2002 10 06 | 704 | 1.2− | 0.4+ | 2004 03 23 | 704 | 0.8+ | 0.4+ | | | | |
| 2002 10 06 | 704 | 1.1− | 0.2+ | 2004 03 23 | 704 | 0.7+ | 0.4+ | | | | |

**(142325)∗ 2002 RB$_{175}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.54299 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28204640 | $\omega$ | 62.69214 | | +0.57362327 | | +0.81588128 |
| $a$ | 2.3027971 | $\Omega$ | 242.49714 | | −0.77753948 | | +0.51441142 |
| $e$ | 0.1800238 | $i$ | 4.70531 | | −0.25766006 | | +0.26404285 |
| $P$ | 3.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.4− | 0.2+ | 2002 10 04 | 704 | 0.5+ | 0.2− | 2005 06 14 | G96 | 0.4− | 0.0 |
| 1995 10 24 | 691 | 0.4+ | 0.1+ | 2002 10 04 | 704 | 0.3+ | 0.4+ | 2005 06 14 | G96 | 0.4− | 0.1− |
| 1995 10 24 | 691 | 0.0 | 0.1− | 2002 10 04 | 704 | 0.0 | 0.8+ | 2005 06 14 | G96 | 0.5− | 0.2− |
| 2002 08 11 | 704 | 0.0 | 0.9+ | 2002 10 04 | 704 | 0.3+ | 0.8+ | 2005 06 14 | G96 | 0.5− | 0.3+ |
| 2002 08 11 | 704 | 0.1− | 0.2+ | 2002 10 30 | 645 | 0.0 | 0.4− | 2005 06 27 | 644 | 0.3+ | 0.0 |
| 2002 08 11 | 704 | 0.0 | 0.1− | 2002 10 30 | 645 | 0.0 | 0.3− | 2005 06 27 | 644 | 0.1+ | 0.2+ |
| 2002 08 11 | 704 | 1.1+ | 0.0 | 2005 05 12 | 644 | 0.1+ | 0.1− | 2005 06 27 | 644 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.6+ | 0.8+ | 2005 05 12 | 644 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2002 08 28 | 644 | 0.5+ | 0.9+ | 2005 05 12 | 644 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.3+ |
| 2002 08 28 | 644 | 0.4+ | 0.8+ | 2005 05 14 | 704 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.4+ |
| 2002 09 13 | 644 | 0.1+ | 0.0 | 2005 05 14 | 704 | 0.4+ | 1.2− | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2005 05 14 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.8+ | 0.3+ |
| 2002 09 13 | 644 | 0.1+ | 0.0 | 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2002 09 14 | 608 | 0.7− | 0.2− | 2005 05 16 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2002 09 14 | 608 | 0.7− | 0.4+ | 2005 05 16 | 691 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2002 09 14 | 608 | 0.9− | 0.1− | 2005 05 19 | 644 | 0.1+ | 0.5− | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2002 09 30 | 704 | 0.7− | 0.8+ | 2005 05 19 | 644 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 2002 09 30 | 704 | 1.2− | 1.1+ | 2005 05 19 | 644 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.4− | 0.2+ |
| 2002 09 30 | 704 | 0.3+ | 0.7+ | 2005 06 06 | 691 | 0.2+ | 0.6+ | 2006 11 23 | 691 | 0.4+ | 0.3+ |
| 2002 09 30 | 704 | 0.5+ | 1.0+ | 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.3− | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 10 04 | 704 | 0.2− | 0.4+ | 2005 06 11 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 2.3− | 1.5− |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2005 06 11 | 691 | 0.1+ | 0.1+ | | | | |

**(142326)∗ 2002 RZ$_{176}$ = 2004 DH$_{18}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61329)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.07210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28210730 | $\omega$ | 299.44977 | | −0.68776978 | −0.72499033 | |
| $a$ | 2.3024657 | $\Omega$ | 194.19627 | | +0.70720739 | −0.65769583 | |
| $e$ | 0.1409044 | $i$ | 8.65417 | | +0.16380000 | −0.20451213 | |
| $P$ | 3.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 703 | 0.7− | 0.3+ | 2004 03 13 | 644 | 0.6+ | 0.2+ | 2004 03 22 | 608 | 0.8− | 1.0− |
| 1999 11 17 | 703 | 0.0 | 0.3+ | 2004 03 13 | 644 | 0.2− | 0.3+ | 2004 03 23 | 683 | 0.2− | 0.8− |
| 1999 11 17 | 703 | 0.5− | 0.5+ | 2004 03 13 | 644 | 0.1− | 0.1− | 2004 03 23 | 683 | 0.0 | 1.0− |
| 1999 11 17 | 703 | 0.4− | 0.9+ | 2004 03 13 | 644 | 0.7+ | 0.6− | 2004 03 23 | 683 | 0.8− | 0.8− |
| 1999 12 14 | 704 | 1.0+ | 0.6− | 2004 03 16 | 704 | 0.3+ | 0.3− | 2004 03 27 | 843 | 1.2− | 1.0+ |
| 1999 12 14 | 704 | 0.8+ | 0.3− | 2004 03 16 | 704 | 0.4+ | 0.2+ | 2004 03 27 | 843 | 0.5− | 0.5+ |
| 1999 12 14 | 704 | 0.2− | 0.2− | 2004 03 16 | 704 | 0.0 | 0.3+ | 2004 03 27 | 843 | 0.5− | 0.8+ |
| 2001 06 26 | 691 | 0.2+ | 0.5+ | 2004 03 16 | 704 | 0.1+ | 0.0 | 2004 03 27 | 843 | 0.3− | 0.8+ |
| 2001 06 26 | 691 | 0.3+ | 0.3+ | 2004 03 17 | 704 | 0.4+ | 0.1− | 2004 03 27 | 843 | 0.9− | 0.4+ |
| 2001 06 26 | 691 | 0.3+ | 0.5+ | 2004 03 17 | 704 | 0.1+ | 0.2+ | 2004 04 14 | 699 | 0.8− | 0.2− |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2004 03 17 | 704 | 0.3+ | 0.4+ | 2004 04 14 | 699 | 0.8− | 0.6+ |
| 2002 09 13 | 644 | 0.0 | 0.9+ | 2004 03 17 | 704 | 0.0 | 0.1+ | 2004 04 14 | 699 | (1.8− | 0.3+) |
| 2002 09 13 | 644 | 0.4− | 0.6+ | 2004 03 17 | 704 | 0.8+ | 0.7+ | 2004 04 14 | 699 | 0.1− | 1.0+ |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2004 03 17 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 704 | 0.5+ | 0.5− |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2004 03 17 | 704 | 0.1+ | 0.4+ | 2004 04 15 | 704 | 0.6+ | 0.0 |
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2004 03 17 | 704 | 0.6+ | 0.1+ | 2004 04 15 | 704 | 0.3− | 0.9+ |
| 2002 09 19 | 644 | 0.7− | 0.6+ | 2004 03 17 | 704 | 0.7+ | 0.1− | 2005 05 15 | G96 | 0.5− | 0.1+ |
| 2002 09 19 | 644 | 0.6− | 0.7+ | 2004 03 17 | 704 | 0.3+ | 0.0 | 2005 05 15 | G96 | 0.6− | 0.2+ |
| 2002 09 19 | 644 | 0.6− | 0.4+ | 2004 03 18 | 704 | 0.1+ | 0.8+ | 2005 05 15 | G96 | 0.4− | 0.2+ |
| 2004 02 14 | 699 | 0.2− | 0.6− | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2005 05 15 | G96 | 0.1− | 0.0 |
| 2004 02 14 | 699 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2004 02 14 | 699 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.5+ |
| 2004 02 14 | 699 | 0.1− | 0.6− | 2004 03 18 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2004 02 17 | 703 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.5+ | 0.8+ |
| 2004 02 17 | 703 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.4+ |
| 2004 02 17 | 703 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.4− | 0.9+ | 2006 10 22 | 703 | 0.0 | 0.9+ |
| 2004 02 17 | 703 | (3.9− | 3.5+) | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.8+ |
| 2004 02 18 | 608 | 0.2+ | 1.0− | 2004 03 19 | 704 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 02 18 | 608 | 0.0 | 0.4− | 2004 03 19 | 704 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2004 02 18 | 608 | 0.3− | 0.8− | 2004 03 19 | 704 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2004 02 19 | 704 | 0.1− | 0.4+ | 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 02 19 | 704 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.5+ | 1.5+ |
| 2004 02 19 | 704 | 1.3+ | 0.4− | 2004 03 19 | 704 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2004 02 19 | 704 | 0.5+ | 0.5− | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.9− | 0.9+ |
| 2004 02 19 | 704 | 0.5+ | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2004 02 23 | 608 | 0.7+ | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2004 02 23 | 608 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.3− | 0.7+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2004 02 23 | 608 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.5+ | 0.1− |
| 2004 03 13 | 644 | 0.3− | 0.0 | 2004 03 22 | 608 | 0.9− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2004 03 13 | 644 | 0.2− | 0.4+ | 2004 03 22 | 608 | 0.6− | 0.9− | | | | |

**(142327)∗ 2002 RH$_{180}$**

Discovered 2002 Sept. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.70378 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24140219 | $\omega$ | 124.01709 | | +0.52015074 | +0.85406107 | |
| $a$ | 2.5545157 | $\Omega$ | 177.31167 | | −0.81338753 | +0.49707253 | |
| $e$ | 0.1821752 | $i$ | 5.85621 | | −0.26046870 | +0.15329250 | |
| $P$ | 4.08 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 17 | 691 | 0.1+ | 0.6+ | 2002 10 05 | 704 | 1.0+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.2− |
| 2001 03 17 | 691 | 0.2+ | 0.5+ | 2002 10 05 | 734 | 0.2+ | 0.6+ | 2006 09 15 | 691 | 0.2+ | 0.1− |
| 2001 03 17 | 691 | 0.0 | 0.3+ | 2002 10 05 | 734 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.3+ | 1.1+ |
| 2002 09 14 | 291 | 0.3+ | 0.2+ | 2002 10 07 | 704 | 0.4− | 0.4− | 2006 09 17 | 704 | 0.0 | 0.4+ |
| 2002 09 14 | 291 | 0.3+ | 0.1+ | 2002 10 07 | 704 | 1.0+ | 0.9+ | 2006 09 17 | 704 | 0.7+ | 1.4+ |
| 2002 09 14 | 291 | 0.3+ | 0.2− | 2002 10 07 | 704 | 1.2+ | 0.7+ | 2006 09 19 | 699 | 0.1− | 0.2+ |
| 2002 09 15 | 291 | 0.1+ | 0.1+ | 2002 10 10 | 645 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.1− | 0.6− |
| 2002 09 15 | 291 | 0.1− | 0.0 | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.6− | 0.3− |
| 2002 09 15 | 291 | 0.1− | 0.1+ | 2002 10 11 | 704 | 1.0− | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.0 |
| 2002 09 28 | 644 | 0.3− | 0.1+ | 2002 10 11 | 704 | 0.1− | 1.3+ | 2006 09 20 | 704 | 0.3+ | 0.7− |
| 2002 09 28 | 644 | 0.4− | 0.0 | 2002 10 11 | 704 | 0.8− | 0.8+ | 2006 09 20 | 704 | 0.5− | 0.5− |
| 2002 09 28 | 644 | 0.0 | 0.4− | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 20 | 704 | (2.3− | 0.4+) |
| 2002 09 30 | 704 | 0.4+ | 0.0 | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 20 | 704 | 1.1− | 0.6− |
| 2002 09 30 | 704 | 0.0 | 0.5+ | 2005 03 08 | G96 | 0.1− | 0.0 | 2006 09 22 | D35 | 0.8− | 0.2− |
| 2002 09 30 | 704 | 0.8+ | 1.0+ | 2005 03 08 | G96 | 0.3+ | 0.4+ | 2006 09 22 | D35 | 1.4− | 0.4− |
| 2002 09 30 | 704 | 0.0 | 0.3− | 2005 03 08 | G96 | 0.4− | 0.2+ | 2006 09 22 | D35 | 1.2− | 0.1− |
| 2002 10 02 | 704 | 0.4+ | 0.5− | 2005 03 08 | G96 | 0.2− | 0.9+ | 2006 09 23 | 691 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 1.2+ | 0.6+ | 2005 04 06 | G96 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.9+ | 0.4− |
| 2002 10 02 | 704 | 0.9+ | 0.9+ | 2005 04 06 | G96 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | (1.8+ | 1.5+) | 2005 04 06 | G96 | 0.5− | 0.3− | 2006 09 25 | 699 | 0.8− | 0.4+ |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2005 04 06 | G96 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.3− |
| 2002 10 03 | 704 | 1.4− | 0.6+ | 2005 04 12 | 695 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.5− |
| 2002 10 03 | 704 | (1.8− | 0.2+) | 2005 04 12 | 695 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.5+ | 0.3− |
| 2002 10 03 | 704 | 0.8− | 0.1− | 2005 04 30 | 691 | 0.5+ | 0.0 | 2006 09 28 | 704 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 1.4− | 0.2+ | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.6+ | 0.2+ |
| 2002 10 05 | 704 | (1.7− | 0.1+) | 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.4+ | 0.5− |
| 2002 10 05 | 704 | (1.9− | 0.4+) | 2005 05 12 | G96 | 0.4− | 0.3− | 2006 09 30 | 704 | 1.3+ | 0.4− |
| 2002 10 05 | 704 | 1.3− | 0.9+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.6− | 0.4+ |
| 2002 10 05 | 704 | 0.1− | 1.0+ | 2005 05 12 | G96 | 0.5− | 0.5+ | 2006 09 30 | 704 | 1.2− | 0.4− |
| 2002 10 05 | 704 | 0.5− | 1.0+ | 2005 05 12 | G96 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2002 10 05 | 704 | 0.6− | 0.8+ | 2006 09 12 | 703 | 0.6− | 0.4− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 10 05 | 704 | 0.6− | 1.0+ | 2006 09 12 | 703 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2002 10 05 | 704 | 0.2+ | 1.1+ | 2006 09 12 | 703 | 0.1− | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 10 05 | 649 | 0.1− | 0.5+ | 2006 09 12 | 703 | 0.2− | 1.0+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2002 10 05 | 649 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2002 10 05 | 649 | 0.2+ | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2002 10 05 | 704 | 1.4− | 0.6+ | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2002 10 05 | 704 | (1.8− | 0.3+) | 2006 09 15 | 691 | 0.1− | 0.4+ | | | | |

**(142328)∗ 2002 RL$_{180}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.85577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26795255 | $\omega$ | 319.79561 | | +0.58012729 | +0.81448920 | |
| $a$ | 2.3828541 | $\Omega$ | 345.65841 | | −0.73907757 | +0.52238131 | |
| $e$ | 0.1892047 | $i$ | 1.78697 | | −0.34236921 | +0.25243831 | |
| $P$ | 3.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2002 10 04 | 644 | 0.0 | 0.5+ | 2005 05 01 | 644 | 0.3+ | 0.8+ |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2002 10 04 | 644 | 0.1+ | 0.5+ | 2005 05 01 | 644 | 0.6+ | 0.9+ |
| 2002 09 14 | 644 | 0.1+ | 0.2+ | 2002 10 04 | 644 | 0.0 | 0.7+ | 2005 05 01 | 644 | 0.5+ | 0.5+ |
| 2002 09 15 | 291 | 0.4+ | 0.1− | 2002 10 06 | 608 | 0.4+ | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2002 09 15 | 291 | 0.1+ | 0.6− | 2002 10 06 | 608 | 0.7+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.3+ |
| 2002 09 15 | 291 | 0.2+ | 0.1+ | 2002 10 06 | 608 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.6− | 0.6+ |
| 2002 09 29 | 608 | 0.3− | 0.3+ | 2002 10 07 | 704 | (1.0+ | 1.6+) | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 09 29 | 608 | 0.4− | 0.3− | 2002 10 07 | 704 | (0.6+ | 1.9+) | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2002 09 29 | 608 | 0.2− | 0.0 | 2002 10 07 | 704 | (0.2− | 1.6+) | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 09 30 | 704 | 0.8− | 0.5+ | 2002 10 07 | 704 | (0.4+ | 2.2+) | 2006 10 31 | G96 | 0.1+ | 0.4+ |
| 2002 09 30 | 704 | 1.4− | 0.7+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.7+ |
| 2002 09 30 | 704 | 1.0− | 0.2+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 09 30 | 704 | 0.6+ | 0.3+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.4+ | 0.5+ |
| 2002 09 30 | 704 | 1.4− | 0.6+ | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.9− |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2004 02 16 | 691 | 0.1− | 0.3− | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 1.1− | 0.5+ | 2005 04 14 | 691 | 0.1− | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.7− |
| 2002 10 03 | 704 | 0.6+ | 0.1+ | 2005 04 14 | 691 | 0.1+ | 0.5+ | | | | |

**(142329)∗ 2002 RW$_{182}$ = 1996 CR$_6$ = 2000 CQ$_{69}$**

Discovered 2002 Sept. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37911)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.51241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24345571 | $\omega$ | 38.97125 | | +0.97635356 | | +0.11601212 |
| $a$ | 2.5401307 | $\Omega$ | 313.32328 | | −0.19839415 | | +0.81601876 |
| $e$ | 0.1432778 | $i$ | 14.52149 | | +0.08586901 | | +0.56626370 |
| $P$ | 4.05 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.4− | 0.2− | 2002 09 14 | 699 | (1.7− | 0.9+) | 2006 09 21 | 699 | 1.5− | 0.1− |
| 1996 02 10 | 691 | 0.1− | 0.1− | 2002 09 14 | 699 | 0.6+ | 0.6+ | 2006 09 21 | 699 | 1.2+ | 0.4− |
| 1996 02 10 | 691 | 0.2+ | 0.1+ | 2002 10 03 | 644 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.3+ | 0.2+ |
| 1996 02 16 | 691 | 0.5− | 0.1− | 2002 10 03 | 644 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.5− | 0.9− |
| 1996 02 16 | 691 | 0.1+ | 0.4− | 2002 10 03 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.3− |
| 1996 02 16 | 691 | 0.0 | 0.0 | 2002 10 06 | 704 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.4− |
| 2000 02 01 | 691 | 0.0 | 0.3− | 2002 10 06 | 704 | 0.3+ | 0.2− | 2006 09 27 | 703 | 0.0 | 0.2+ |
| 2000 02 01 | 691 | 0.0 | 0.1− | 2002 10 06 | 704 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.4+ | 0.2+ |
| 2000 02 01 | 691 | 0.6+ | 0.0 | 2002 10 06 | 704 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.6+ | 0.1+ |
| 2000 02 07 | 691 | 0.2− | 0.0 | 2002 10 09 | 704 | 1.0− | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2000 02 07 | 691 | 0.2− | 0.1− | 2002 10 09 | 704 | 0.0 | 0.7− | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2000 02 07 | 691 | 0.3− | 0.1− | 2002 10 09 | 704 | (0.4+ | 1.8−) | 2006 10 16 | 106 | 0.8+ | 0.4− |
| 2002 09 11 | 644 | 0.2+ | 0.4+ | 2004 01 28 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 106 | 0.4+ | 0.6− |
| 2002 09 11 | 644 | 0.0 | 0.3+ | 2004 01 28 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 106 | 0.2− | 0.3+ |
| 2002 09 11 | 644 | 0.0 | 0.3+ | 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 106 | 0.2− | 0.7− |
| 2002 09 14 | 699 | 0.5− | 0.5− | 2004 02 26 | 695 | 0.2+ | 0.2+ | | | | |
| 2002 09 14 | 699 | 0.2+ | 0.2− | 2004 02 26 | 695 | 0.1− | 0.3+ | | | | |

**(142330)∗ 2002 RE$_{185}$**
Discovered 2002 Sept. 12 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.76466 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24495514 | $\omega$ | 45.22764 | | +0.30618752 | | +0.94320417 |
| $a$ | 2.5297543 | $\Omega$ | 243.00291 | | −0.90917023 | | +0.24958424 |
| $e$ | 0.1300562 | $i$ | 8.31780 | | −0.28223871 | | +0.21925691 |
| $P$ | 4.02 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 699 | 1.0+ | 0.0 | 2005 04 14 | 703 | 0.8− | 0.2+ | 2006 09 22 | 703 | 0.2− | 0.2+ |
| 1998 09 18 | 699 | 1.5− | 1.1+ | 2005 04 14 | 703 | 0.1+ | 0.7+ | 2006 09 22 | 703 | 0.2+ | 0.3+ |
| 1998 09 18 | 699 | 0.8− | 0.7+ | 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 09 22 | 703 | 0.6− | 0.1− |
| 2001 04 24 | 608 | 0.3+ | 0.6− | 2005 05 14 | 644 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.6− |
| 2001 04 24 | 608 | 0.4+ | 0.1− | 2005 05 14 | 644 | 0.3− | 0.0 | 2006 09 27 | 703 | (1.2− | 1.6−) |
| 2001 04 24 | 608 | 0.0 | 0.5− | 2006 08 29 | 699 | 0.3+ | 0.9+ | 2006 09 27 | 703 | 0.3− | 0.2− |
| 2002 07 17 | 704 | 0.9− | 1.1− | 2006 08 29 | 699 | 0.2− | 0.6+ | 2006 09 29 | 699 | 0.5+ | 0.4− |
| 2002 07 17 | 704 | 0.2− | 0.7− | 2006 08 29 | 699 | 0.4− | 0.8+ | 2006 09 29 | 699 | 0.4+ | 0.2+ |
| 2002 07 17 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 683 | 0.7+ | 0.3− | 2006 09 29 | 699 | 0.2+ | 0.1− |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2006 08 29 | 699 | 0.6+ | 0.4+ | 2006 09 29 | 699 | 1.4+ | 0.6− |
| 2002 09 07 | 704 | 0.6+ | 0.0 | 2006 08 29 | 683 | 1.2+ | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.2+ | 0.7+ | 2006 08 29 | 683 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2002 09 12 | 644 | 0.1− | 0.1− | 2006 09 15 | 704 | 0.4− | 0.2+ | 2006 10 18 | 691 | 0.7− | 0.5+ |
| 2002 09 12 | 644 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.8− | 0.8− | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2002 09 12 | 644 | 0.2− | 0.3− | 2006 09 15 | 704 | 1.1− | 0.3− | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 699 | 0.2− | 1.1+ | 2006 09 15 | 704 | (2.2− | 1.5−) | 2006 10 22 | 691 | 0.2+ | 0.1+ |
| 2002 09 14 | 699 | 1.0+ | 0.1+ | 2006 09 15 | 704 | 0.1− | 0.2− | 2006 10 23 | 703 | (1.6− | 0.2+) |
| 2002 09 14 | 699 | 0.7+ | 0.7+ | 2006 09 16 | G92 | 0.3+ | 0.1− | 2006 10 23 | 703 | 1.3− | 1.5− |
| 2002 09 14 | 699 | 0.5+ | 0.3− | 2006 09 16 | G92 | 0.8+ | 0.1− | 2006 10 23 | 703 | 0.3+ | 0.6− |
| 2002 09 20 | 644 | 0.5− | 1.0+ | 2006 09 16 | G92 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.6+ | 0.8− |
| 2002 09 20 | 644 | 0.2− | 1.1+ | 2006 09 16 | 644 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.8− |
| 2002 09 20 | 644 | 0.3− | 0.8+ | 2006 09 16 | 644 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.8− |
| 2002 10 04 | 644 | 0.3− | 0.0 | 2006 09 16 | 644 | 0.4+ | 0.4− | 2006 11 11 | G96 | 0.4+ | 1.0− |
| 2002 10 04 | 644 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.3− | 1.1− |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.0 | 2006 11 17 | 291 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.5− | 2006 11 17 | 291 | 0.3+ | 0.4+ |
| 2002 10 05 | 704 | 0.1− | 1.4− | 2006 09 17 | 703 | 0.6− | 0.3− | 2006 11 17 | 291 | (2.5+ | 1.5−) |
| 2002 10 05 | 704 | 0.5+ | 0.6− | 2006 09 21 | 699 | (0.2− | 1.6−) | 2006 11 19 | 703 | 2.1− | 0.4+ |
| 2002 10 05 | 704 | 0.3+ | 0.0 | 2006 09 21 | 699 | 0.1+ | 1.2− | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2002 10 05 | 704 | 0.9− | 0.7− | 2006 09 21 | 699 | 0.7+ | 0.9+ | 2006 11 19 | 703 | 0.2+ | 0.1− |
| 2005 04 14 | 703 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.4+ | 1.1− | 2006 11 19 | 703 | 0.3+ | 0.4− |
| 2005 04 14 | 703 | 0.2+ | 0.4+ | 2006 09 22 | 703 | 0.0 | 0.4+ | | | | |

**(142331)∗ 2002 RL$_{186}$ = 1998 LJ$_2$**
Discovered 2002 Sept. 12 by NEAT at Palomar.
Id. A. Doppler (*MPO* 37913)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.74888 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27119042 | $\omega$ | 60.13699 | | +0.18651653 | | +0.97711455 |
| $a$ | 2.3638495 | $\Omega$ | 221.01831 | | −0.94656774 | | +0.15085135 |
| $e$ | 0.2417934 | $i$ | 8.96465 | | −0.26309902 | | +0.14997011 |
| $P$ | 3.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.3+ | 0.5− | 2002 09 14 | 699 | 0.5+ | 0.7+ | 2005 04 15 | 691 | 0.1− | 0.4+ |
| 1995 10 15 | 691 | 0.3+ | 0.3− | 2002 10 05 | 704 | 0.7+ | 0.0 | 2005 07 11 | 291 | 0.5+ | 0.0 |
| 1995 10 15 | 691 | 0.1+ | 0.7− | 2002 10 05 | 704 | 0.7− | 0.0 | 2005 07 11 | 291 | 0.3+ | 0.2+ |
| 1998 06 01 | 809 | 0.0 | 1.4− | 2002 10 05 | 704 | 0.2+ | 0.4+ | 2005 07 11 | 291 | 0.0 | 0.1+ |
| 1998 06 01 | 809 | 0.7+ | 1.5− | 2002 10 05 | 704 | 1.0+ | 0.9− | 2005 07 13 | 291 | 0.4+ | 0.1− |
| 1998 06 01 | 809 | 0.5− | 0.1− | 2002 10 05 | 704 | 0.2− | 0.2+ | 2005 07 13 | 291 | 0.2+ | 0.1+ |
| 1998 06 02 | 809 | 1.1+ | 0.3− | 2002 10 07 | 699 | (1.0+ | 1.7+) | 2005 07 13 | 291 | 0.1+ | 0.4+ |
| 1998 06 02 | 809 | 1.0+ | 1.8− | 2002 10 07 | 699 | 1.0− | 0.6+ | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 1998 06 02 | 809 | (2.1+ | 3.2−) | 2002 10 07 | 699 | (0.3− | 1.7+) | 2006 09 27 | G96 | 0.5+ | 0.0 |
| 1998 06 25 | 704 | 0.4− | 0.7+ | 2002 10 07 | 699 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 1998 06 25 | 704 | 0.9− | 0.5− | 2005 04 05 | 699 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.1− | 0.3− |
| 1998 06 25 | 704 | 0.4− | 1.6− | 2005 04 05 | 699 | 0.4− | 0.8− | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 1998 06 25 | 704 | 1.9− | 1.3+ | 2005 04 05 | 699 | 0.7+ | 0.5− | 2006 10 20 | 691 | 0.5− | 0.7+ |
| 2002 09 04 | 644 | 0.0 | 1.0+ | 2005 04 05 | 699 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2002 09 04 | 644 | 0.1− | 1.0+ | 2005 04 06 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2002 09 04 | 644 | 0.1− | 0.7+ | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2002 09 12 | 644 | 0.0 | 0.7+ | 2005 04 06 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2002 09 12 | 644 | 0.1− | 0.6+ | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.9+ | 0.5− |
| 2002 09 12 | 644 | 0.2− | 0.7+ | 2005 04 10 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 09 14 | 699 | 0.1+ | 0.8+ | 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.4− | 0.1− |
| 2002 09 14 | 699 | 0.5+ | 0.5+ | 2005 04 15 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 09 14 | 699 | 0.5− | 0.8+ | 2005 04 15 | 691 | 0.1− | 0.5+ | | | | |

**(142332)∗ 2002 RG$_{187}$**
Discovered 2002 Sept. 13 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.16992 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26651684 | $\omega$ | 359.90421 | | −0.17041724 | | +0.98055896 |
| $a$ | 2.3914039 | $\Omega$ | 260.28324 | | −0.90399549 | | −0.19486242 |
| $e$ | 0.1112295 | $i$ | 5.66369 | | −0.39210984 | | +0.02308180 |
| $P$ | 3.70 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 049 | 1.2+ | 0.1− | 2002 10 07 | 699 | 0.4− | 1.0+ | 2005 06 14 | G96 | 0.1− | 0.2+ |
| 2002 08 18 | 049 | 0.2+ | 0.0 | 2002 10 07 | 699 | 0.4+ | 0.5+ | 2005 06 14 | G96 | 0.3+ | 0.1− |
| 2002 08 18 | 049 | 0.6+ | 0.2− | 2002 10 07 | 699 | 0.2+ | 1.1+ | 2005 07 04 | 644 | 0.2+ | 0.2+ |
| 2002 09 01 | 049 | 0.8− | 0.3+ | 2002 10 07 | 699 | (1.4− | 1.6+) | 2005 07 04 | 644 | 0.0 | 0.0 |
| 2002 09 01 | 049 | 0.6− | 0.1− | 2003 12 23 | 704 | 0.5+ | 1.0+ | 2005 07 04 | 644 | 0.2+ | 0.1+ |
| 2002 09 01 | 049 | 0.3− | 0.2+ | 2003 12 23 | 704 | 0.0 | 0.9+ | 2006 09 19 | 703 | 0.0 | 1.4− |
| 2002 09 07 | 704 | 0.6− | 0.2+ | 2003 12 23 | 704 | (0.8− | 1.8+) | 2006 09 19 | 703 | 0.4− | 0.3+ |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2005 05 04 | 644 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.4+ |
| 2002 09 07 | 704 | 0.2+ | 0.7+ | 2005 05 04 | 644 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.4− |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2005 05 04 | 644 | 0.2+ | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.3+ | 1.0+ | 2005 05 28 | 599 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.4+ | 1.1+ | 2005 05 28 | 599 | 0.8− | 0.9+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2002 09 13 | 644 | 0.1+ | 0.8+ | 2005 05 28 | 599 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2002 09 14 | 699 | 0.5− | 0.5+ | 2005 05 28 | 599 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.8− |
| 2002 09 14 | 699 | 1.0+ | 0.0 | 2005 05 29 | E12 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.1+ |
| 2002 09 14 | 699 | (1.6+ | 0.6+) | 2005 05 29 | E12 | 0.6− | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.0 |
| 2002 09 14 | 699 | 0.9+ | 0.3+ | 2005 05 29 | E12 | 0.8+ | 0.2− | 2006 10 19 | 703 | 1.3+ | 1.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 608 | 0.9− | 0.6− | 2005 05 29 | E12 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 09 15 | 608 | 0.9− | 0.7− | 2005 06 04 | 704 | 0.1− | 1.4− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 09 15 | 608 | 0.6− | 0.7− | 2005 06 04 | 704 | (1.6− | 1.3−) | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.8− | 0.1− | 2005 06 04 | 704 | 0.8− | 0.4+ | 2006 10 27 | 703 | 0.8− | 0.9+ |
| 2002 10 04 | 704 | 0.2+ | 0.8− | 2005 06 04 | 704 | (2.2− | 0.6−) | 2006 10 27 | 703 | 0.0 | 1.3− |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2005 06 04 | 704 | 0.6− | 1.1− | 2006 10 27 | 703 | 0.4− | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.3− | 2005 06 11 | 703 | 0.7− | 0.0 | 2006 10 27 | 703 | 0.3+ | 1.5− |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2005 06 11 | 703 | 0.4+ | 1.1− | 2006 11 19 | 704 | 0.9+ | 0.2− |
| 2002 10 05 | 704 | 0.8+ | 0.2− | 2005 06 11 | 703 | 0.0 | 0.5− | 2006 11 19 | 704 | 1.0− | 0.5− |
| 2002 10 05 | 704 | 0.7− | 0.8− | 2005 06 11 | 703 | 1.0+ | 1.0− | 2006 11 19 | 704 | 0.6− | 0.7+ |
| 2002 10 05 | 704 | 0.2− | 0.8− | 2005 06 14 | G96 | 0.1− | 0.2+ | | | | |
| 2002 10 05 | 704 | 0.4− | 0.1− | 2005 06 14 | G96 | 0.1− | 0.0 | | | | |

**(142333)∗ 2002 RX$_{187}$ = 2004 BX$_{13}$**

Discovered 2002 Sept. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56587)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 285.83008 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26168925 | $\omega$ | 38.77175 | | −0.06561632 | −0.99761299 | |
| *a* | 2.4207250 | $\Omega$ | 55.00065 | | +0.90883852 | −0.06865041 | |
| *e* | 0.0389261 | *i* | 1.50492 | | +0.41195515 | −0.00744633 | |
| *P* | 3.77 | *H* | 16.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 291 | 0.0 | 0.7+ | 2004 01 24 | 704 | (1.7+ | 0.0 ) | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2001 05 24 | 291 | 0.4+ | 1.0+ | 2004 01 26 | 699 | 0.7− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 05 24 | 291 | 0.5+ | 1.0+ | 2004 01 26 | 699 | 0.8− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.6+ | 0.9+ | 2004 01 26 | 699 | 0.7+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.7+ | 0.5− | 2004 01 26 | 699 | 0.1− | 0.6+ | 2006 10 15 | 703 | 0.6+ | 0.1− |
| 2002 09 06 | 704 | (0.1− | 1.7+) | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.9− |
| 2002 09 06 | 704 | 0.7+ | 1.0+ | 2004 01 28 | 691 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.6− | 0.6+ |
| 2002 09 12 | 644 | 0.3− | 0.6+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.6+ | 0.3− |
| 2002 09 12 | 644 | 0.3− | 0.8+ | 2004 01 30 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2002 09 12 | 644 | 0.0 | 0.7+ | 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2002 09 15 | 699 | 0.1− | 0.8+ | 2004 01 30 | 691 | 0.2+ | 0.1− | 2006 10 16 | 291 | 0.1+ | 0.1+ |
| 2002 09 15 | 699 | 0.7− | 1.0+ | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2002 09 15 | 699 | 0.2− | 0.7− | 2004 01 30 | 704 | (1.4+ | 1.8+) | 2006 10 16 | 291 | 0.1− | 0.2+ |
| 2002 09 15 | 699 | 0.1+ | 0.7+ | 2004 01 30 | 704 | (1.7− | 1.6+) | 2006 10 16 | 291 | 0.1− | 0.1+ |
| 2002 09 17 | 608 | (1.6− | 0.6−) | 2004 01 30 | 704 | 0.3− | 1.4+ | 2006 10 19 | 644 | 0.6− | 0.4+ |
| 2002 09 17 | 608 | 1.2− | 0.7− | 2004 02 10 | 703 | 0.4− | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.1− |
| 2002 09 17 | 608 | 0.9− | 0.8− | 2004 02 10 | 703 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.6− |
| 2003 12 27 | 704 | 0.5+ | 1.1+ | 2004 02 10 | 703 | 0.2− | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2003 12 27 | 704 | 0.3+ | 0.1+ | 2004 02 10 | 703 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2003 12 27 | 704 | 0.2+ | 0.4− | 2004 02 14 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2003 12 27 | 704 | 0.7+ | 0.7+ | 2004 02 14 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2003 12 27 | 704 | 0.6− | 0.7+ | 2004 02 14 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.1− |
| 2004 01 17 | 644 | 0.3+ | 0.3+ | 2004 02 16 | 704 | 0.5+ | 1.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2004 01 17 | 644 | 0.4+ | 0.0 | 2004 02 16 | 704 | 0.9+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2004 02 16 | 704 | 0.2− | 1.0− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.8− | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.0− | 0.9+ |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 04 15 | 645 | 0.1− | 0.2− | 2006 11 11 | 703 | 1.2− | 0.2+ |
| 2004 01 22 | 704 | 0.1− | 0.7+ | 2006 09 14 | 703 | 1.2− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2004 01 22 | 704 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.1+ |
| 2004 01 22 | 704 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.9− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | (2.0− | 4.7−) | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.4− | 0.2− |
| 2004 01 24 | 704 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2004 01 24 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.5− |
| 2004 01 24 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2004 01 24 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.5− |

**(142334)∗ 2002 RM$_{189}$ = 1995 UO$_{82}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37914)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 35.09988 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26840703 | $\omega$ | 153.59751 | | +0.97749824 | +0.20927433 | |
| *a* | 2.3801635 | $\Omega$ | 194.39689 | | −0.20743597 | +0.93083698 | |
| *e* | 0.1374360 | *i* | 6.11471 | | −0.03830800 | +0.29957766 | |
| *P* | 3.67 | *H* | 16.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 06 | 691 | 0.8− | 1.8+ | 2002 09 15 | 699 | 0.6− | 0.3− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 1994 06 06 | 691 | 0.9− | 1.6− | 2002 09 18 | 644 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1− |
| 1994 06 06 | 691 | 1.0+ | 0.6+ | 2002 09 18 | 644 | 0.5− | 0.2− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 1995 10 25 | 691 | 0.2+ | 0.4− | 2002 09 18 | 644 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.5+ |
| 1995 10 25 | 691 | 0.1+ | 0.5− | 2002 10 03 | 704 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 1995 10 25 | 691 | 0.1+ | 0.3− | 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 1995 10 28 | 691 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.6− | 0.2+ |
| 1995 10 28 | 691 | 0.2+ | 0.0 | 2002 10 03 | 704 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 1995 10 28 | 691 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.6+ | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.5+ |
| 2002 08 28 | 644 | 0.2− | 0.3+ | 2002 10 11 | 704 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.2+ |
| 2002 08 28 | 644 | 0.0 | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2002 08 28 | 644 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2002 09 06 | 704 | 0.6+ | 1.2− | 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.8− |
| 2002 09 06 | 704 | 1.4+ | 0.1+ | 2005 05 16 | G96 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.5− | 0.1− |
| 2002 09 06 | 704 | 1.2+ | 0.5+ | 2005 05 16 | G96 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2002 09 06 | 704 | 0.7+ | 0.8− | 2005 05 16 | G96 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.5− | 0.1− |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.5− | 1.0− | 2005 05 19 | G96 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.1+ | 1.3+ |
| 2002 09 14 | 644 | 0.4− | 1.0− | 2005 05 19 | G96 | 0.5− | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.3+ |
| 2002 09 14 | 644 | 0.5− | 1.0− | 2005 05 19 | G96 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.8− | 1.3+ |
| 2002 09 15 | 699 | 0.2− | 0.3+ | 2005 06 08 | 691 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2002 09 15 | 699 | 0.9− | 0.7+ | 2005 06 08 | 691 | 0.2+ | 0.1− | | | | |
| 2002 09 15 | 699 | 1.1− | 0.5+ | 2005 06 08 | 691 | 0.5+ | 0.2− | | | | |

**(142335)∗ 2002 RU$_{189}$ = 1997 GX$_{9}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37914)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 336.64131 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26837676 | $\omega$ | 226.57284 | | +0.53723977 | −0.84316507 | |
| *a* | 2.3803425 | $\Omega$ | 190.98911 | | +0.80230981 | +0.51861099 | |
| *e* | 0.0936608 | *i* | 6.36136 | | +0.26013919 | +0.14182841 | |
| *P* | 3.67 | *H* | 16.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 1.1+ | 0.9+ | 2005 07 12 | G96 | 0.4+ | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.1+ |
| 1997 04 03 | 704 | 0.6+ | 0.6+ | 2005 07 12 | G96 | 0.5+ | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 1997 04 07 | 704 | 1.0+ | 0.2− | 2005 07 12 | G96 | (2.6+ | 2.4−) | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 1997 04 07 | 704 | (2.2+ | 0.4+) | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2002 08 28 | 644 | 0.5− | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.3+ | 0.3+ |
| 2002 09 06 | 704 | 0.2+ | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.5− | 0.4− |
| 2002 09 06 | 704 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2002 09 06 | 704 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.9+ | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.5− | 1.0− |
| 2002 09 06 | 704 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2002 09 14 | 644 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.6+ | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 09 15 | 699 | 0.3− | 0.6+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.2+ |
| 2002 09 15 | 699 | 0.5− | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.4+ | 0.0 |
| 2002 09 15 | 699 | 0.8− | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.4− | 0.4+ |
| 2002 09 15 | 699 | 0.3+ | 1.2+ | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 1.0− | 1.2+ | 2006 10 16 | 683 | (3.0+ | 0.5−) | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.5− | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 1.4+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 1.3− | 0.1− | 2006 10 16 | 683 | (1.6+ | 0.2−) | 2006 11 16 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.6− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2004 02 23 | 704 | 0.2+ | 0.9− | 2006 10 16 | 683 | (2.0+ | 0.1+) | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2004 02 23 | 704 | 0.1− | 0.2+ | 2006 10 17 | 683 | 0.8+ | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 02 23 | 704 | 0.6− | 0.6+ | 2006 10 17 | 683 | (1.6+ | 0.1−) | 2006 11 17 | 704 | 0.6+ | 0.2− |
| 2004 02 26 | 704 | 0.1− | 1.3+ | 2006 10 17 | 683 | 0.5+ | 0.4− | 2006 11 17 | 704 | 0.9− | 0.1+ |
| 2004 02 26 | 704 | (2.1− | 1.8+) | 2006 10 20 | 683 | (0.7+ | 1.9−) | 2006 11 17 | 704 | 0.8− | 0.5+ |
| 2004 02 26 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 683 | 0.8+ | 0.2+ | 2006 11 17 | 704 | 0.7− | 0.1− |
| 2004 02 26 | 704 | 1.1− | 0.4+ | 2006 10 20 | 683 | 0.8+ | 1.3− | 2006 11 19 | 703 | 0.3− | 0.5+ |
| 2004 02 26 | 704 | 1.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.8+ |
| 2004 03 12 | 644 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 19 | 703 | 1.3− | 0.4+ |
| 2004 03 12 | 644 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.2+ | 0.2+ |
| 2004 03 12 | 644 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.0 | 1.0− |
| 2004 03 18 | 704 | (2.0+ | 0.8+) | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.5− |
| 2004 03 18 | 704 | 0.9+ | 1.4+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.4− | 0.9+ |
| 2004 03 18 | 704 | 1.0+ | 0.1− | 2006 11 01 | 703 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2004 03 18 | 704 | (2.4+ | 0.6+) | 2006 11 01 | 703 | 0.8+ | 0.1+ | 2006 11 20 | 704 | (1.5− | 0.6+) |
| 2004 03 21 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 703 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 03 21 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 703 | 0.6+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2005 07 12 | G96 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.2− |

**(142336)∗ 2002 RL$_{190}$ = 2005 JQ$_{75}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75603)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 102.86496 | | (2000.0) | | | |
| $n$ | 0.27446345 | $\omega$ | 34.94762 | | +0.02066314 | +0.99951668 |
| $a$ | 2.3450190 | $\Omega$ | 236.24703 | | −0.92353378 | +0.01018364 |
| $e$ | 0.2016425 | $i$ | 1.60074 | | −0.38296005 | +0.02937179 |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1+ | 0.0 | 2005 05 09 | 704 | 0.3+ | 0.9+ | 2006 09 27 | G96 | 0.4+ | 0.2− |
| 1995 10 02 | 691 | 0.1+ | 0.3− | 2005 05 09 | 704 | 1.3+ | 0.7+ | 2006 10 12 | 691 | 0.3+ | 0.1+ |
| 1995 10 02 | 691 | 0.1+ | 0.4− | 2005 05 09 | 704 | 1.1+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2005 05 11 | G96 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.4+ |
| 2002 09 14 | 644 | 1.1− | 0.2+ | 2005 05 11 | G96 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.4+ |
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2005 05 11 | G96 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.7− | 0.1− |
| 2002 09 15 | 699 | 0.4+ | 1.3+ | 2005 05 11 | G96 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.6+ | 0.2+ |
| 2002 09 15 | 699 | 0.9− | 0.0 | 2005 05 12 | 699 | 0.3+ | 0.9− | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2002 09 15 | 699 | 0.4+ | 0.1− | 2005 05 12 | 699 | (0.7+ | 1.8−) | 2006 10 20 | 691 | 0.0 | 0.4+ |
| 2002 09 15 | 699 | 0.4+ | 0.4− | 2005 05 12 | 699 | 0.3+ | 0.8− | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2002 09 17 | 608 | 0.0 | 0.4+ | 2005 05 12 | 699 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2002 09 17 | 608 | 0.3− | 0.3+ | 2005 05 13 | 704 | (0.4+ | 1.6+) | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 09 17 | 608 | 0.0 | 0.7+ | 2005 05 13 | 704 | (1.8+ | 0.1−) | 2006 10 28 | 691 | 0.3− | 0.2− |
| 2002 10 03 | 704 | (1.6+ | 0.1+) | 2005 05 13 | 704 | 0.4+ | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.5+ |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2005 05 13 | 704 | 0.8+ | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2005 06 01 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2005 04 17 | 691 | 0.5− | 0.5+ | 2005 06 01 | G96 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2005 04 17 | 691 | 0.1+ | 0.5+ | 2005 06 01 | G96 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.1− |
| 2005 04 17 | 691 | 0.2+ | 0.4+ | 2005 06 01 | G96 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.3− | 0.2− |
| 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.2− | 0.4+ |
| 2005 05 01 | 644 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.4− | | | | |
| 2005 05 01 | 644 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.2− | | | | |

**(142337)∗ 2002 RR$_{195}$**

Discovered 2002 Sept. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.97450 | | (2000.0) | | | |
| $n$ | 0.28404268 | $\omega$ | 152.27102 | | −0.92181837 | −0.38745367 |
| $a$ | 2.2919949 | $\Omega$ | 4.97442 | | +0.32677079 | −0.79262349 |
| $e$ | 0.0363574 | $i$ | 7.57198 | | +0.20849880 | −0.47077346 |
| $P$ | 3.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1+ | 0.2− | 2003 12 17 | 644 | 0.4+ | 0.3− | 2004 02 15 | 704 | 0.3+ | 1.2+ |
| 1999 10 13 | 704 | 0.3+ | 0.4− | 2004 01 20 | 704 | 0.1+ | 0.3+ | 2004 02 22 | 703 | 0.3+ | 0.7+ |
| 1999 10 13 | 704 | 0.4− | 0.5+ | 2004 01 20 | 704 | 0.5+ | 0.6+ | 2004 02 22 | 703 | 0.6+ | 0.5− |
| 1999 10 13 | 704 | 0.1− | 1.5+ | 2004 01 20 | 704 | 0.6+ | 0.3+ | 2004 02 22 | 703 | 0.3+ | 0.7+ |
| 2001 04 26 | 699 | 0.6− | 0.5− | 2004 01 20 | 704 | 0.5+ | 0.1− | 2004 02 22 | 703 | 0.5− | 0.1− |
| 2001 04 26 | 699 | 0.7+ | 0.7+ | 2004 01 28 | 703 | 0.2+ | 0.1+ | 2004 03 18 | 645 | 0.1− | 0.1− |
| 2001 04 26 | 699 | (0.6− | 1.6+) | 2004 01 28 | 703 | 0.4− | 0.8− | 2004 03 18 | 645 | 0.1− | 0.1− |
| 2001 04 26 | 699 | 0.2+ | 1.3+ | 2004 01 28 | 703 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.2+ |
| 2002 09 12 | 644 | 0.8− | 0.5+ | 2004 01 28 | 703 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.9+ | 0.8+ |
| 2002 09 12 | 644 | 0.8− | 0.5+ | 2004 01 31 | 704 | 0.6− | 1.1+ | 2004 03 20 | 704 | 0.1+ | 0.1− |
| 2002 09 12 | 644 | 0.8− | 0.4+ | 2004 01 31 | 704 | (1.5+ | 0.1−) | 2004 03 20 | 704 | 1.0+ | 0.8+ |
| 2002 09 15 | 644 | 0.1− | 0.9+ | 2004 01 31 | 704 | 1.0+ | 0.8+ | 2004 03 20 | 704 | 0.9+ | 0.4− |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2004 01 31 | 704 | 1.0+ | 0.0 | 2006 10 29 | 703 | 0.7− | 0.2− |
| 2002 09 15 | 644 | 0.6− | 0.7+ | 2004 01 31 | 704 | 0.6+ | 0.8+ | 2006 10 29 | 703 | 1.2− | 0.8− |
| 2002 09 15 | 644 | 0.9− | 0.4+ | 2004 01 31 | 599 | 0.3− | 0.5+ | 2006 10 29 | 703 | 0.8− | 1.1− |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2004 01 31 | 599 | 0.7− | 0.1− | 2006 10 29 | 703 | 0.5+ | 1.2− |
| 2002 09 15 | 644 | 0.9− | 0.8+ | 2004 01 31 | 599 | 0.6+ | 0.8+ | 2006 11 10 | 235 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2004 01 31 | 599 | 0.1+ | 0.3+ | 2006 11 15 | 291 | 0.4+ | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.4+ | 2006 11 15 | 291 | 0.4+ | 0.4− |
| 2002 10 03 | 704 | (0.8− | 1.8+) | 2004 02 11 | 691 | 0.1− | 0.4+ | 2006 11 15 | 291 | 0.3+ | 0.3− |
| 2002 10 09 | 291 | 0.3− | 0.6+ | 2004 02 11 | 691 | 0.0 | 0.5+ | 2006 11 22 | 703 | 0.0 | 0.7− |
| 2002 10 09 | 291 | 0.2+ | 0.7+ | 2004 02 15 | 704 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.0 | 0.8− |
| 2002 10 09 | 291 | 0.1− | 0.5+ | 2004 02 15 | 704 | 0.1− | 0.6+ | 2006 11 22 | 703 | 0.4+ | 0.8− |
| 2003 12 17 | 644 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.3+ | 0.8+ | 2006 11 22 | 703 | 0.7− | 0.2+ |
| 2003 12 17 | 644 | 0.5+ | 0.1− | 2004 02 15 | 704 | 0.3+ | 0.7+ | | | | |

**(142338)∗ 2002 RT$_{199}$ = 2005 JE$_{31}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 85612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.22074 | | (2000.0) | | | |
| $n$ | 0.26575353 | $\omega$ | 277.38658 | | +0.51803016 | +0.85529453 |
| $a$ | 2.3959809 | $\Omega$ | 23.82317 | | −0.77388493 | +0.47401196 |
| $e$ | 0.2150942 | $i$ | 1.52809 | | −0.36434443 | +0.20924609 |
| $P$ | 3.71 | $H$ | 17.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1− | 0.2+ | 2005 04 11 | G90 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2001 02 22 | 691 | 0.6+ | 0.1+ | 2005 04 11 | G90 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 02 22 | 691 | 0.0 | 0.1− | 2005 04 11 | G90 | 0.7+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2001 02 22 | 691 | 1.1+ | 0.3+ | 2005 04 11 | 691 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.8− | 0.4+ | 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2002 09 13 | 644 | 0.6− | 0.2+ | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.6+ |
| 2002 09 13 | 644 | 0.6− | 0.3+ | 2005 04 11 | G96 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.5+ |
| 2002 09 15 | 644 | 0.4− | 0.9+ | 2005 04 11 | G96 | 0.5− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2002 09 15 | 644 | 0.4− | 0.9+ | 2005 05 04 | G96 | 0.2− | 0.5− | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2002 09 15 | 644 | 0.9− | 1.2+ | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.8+ | 2005 05 04 | G96 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.5+ | 0.9+ | 2005 05 04 | G96 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.5+ | 0.4+ | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.7− |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2005 03 08 | G96 | 0.8− | 0.1− | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.6− | 0.0 |
| 2005 03 08 | G96 | 0.0 | 0.2− | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2005 03 08 | G96 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.0 | 0.1− |

**(142339)∗ 2002 RX$_{201}$**

Discovered 2002 Sept. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.69306 | | (2000.0) | | +0.14517504 | +0.98155336 |
| $n$ | 0.25902445 | $\omega$ | 201.57156 | | −0.88806248 | +0.18470545 |
| $a$ | 2.4372993 | $\Omega$ | 76.94573 | | −0.43619862 | −0.04936496 |
| $e$ | 0.1218059 | $i$ | 7.33716 | | | |
| $P$ | 3.81 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 704 | 0.4+ | 0.5+ | 2005 04 07 | 691 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.5− |
| 2001 03 16 | 704 | 0.4+ | 0.3+ | 2005 04 07 | 691 | 0.0 | 0.4+ | 2006 09 26 | 703 | 1.3− | 0.4− |
| 2001 03 16 | 704 | 0.9+ | 0.1+ | 2005 04 09 | 704 | 1.4+ | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.3− |
| 2001 03 16 | 704 | 1.3+ | 0.1− | 2005 04 09 | 704 | 0.6+ | 0.8+ | 2006 09 29 | 699 | 0.3− | 1.2+ |
| 2001 03 26 | 608 | 0.4− | 0.1+ | 2005 04 09 | 704 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.2+ | 0.4+ |
| 2001 03 26 | 608 | 0.0 | 0.1− | 2005 04 09 | 704 | 0.2− | 0.7+ | 2006 09 29 | 699 | 0.3+ | 0.4− |
| 2001 03 26 | 608 | 0.6− | 0.0 | 2005 04 13 | 704 | (0.4+ | 1.6+) | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2002 09 01 | 644 | 0.5+ | 0.1− | 2005 04 13 | 704 | 1.5+ | 0.5+ | 2006 10 10 | 644 | 0.5− | 0.0 |
| 2002 09 01 | 644 | 0.5+ | 0.0 | 2005 04 13 | 704 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 09 01 | 644 | 0.3+ | 0.2+ | 2005 04 18 | 703 | (2.0− | 0.2−) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 09 13 | 704 | 0.4+ | 0.1− | 2005 04 18 | 703 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 13 | 699 | 0.1+ | 0.3− | 2005 04 18 | 703 | 1.0− | 0.8+ | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 2002 09 13 | 704 | 0.5+ | 0.4− | 2005 04 18 | 703 | 1.1− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 09 13 | 699 | 1.4− | 0.2+ | 2005 05 03 | 704 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 09 13 | 704 | 0.2+ | 0.6+ | 2005 05 03 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 09 13 | 699 | 0.1− | 0.1+ | 2005 05 03 | 704 | 0.7+ | 0.3− | 2006 10 22 | 703 | 0.4+ | 1.4+ |
| 2002 09 13 | 699 | 0.2− | 0.4+ | 2005 05 03 | 704 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2002 09 15 | 608 | 0.0 | 1.3− | 2005 05 08 | 703 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.9+ |
| 2002 09 15 | 608 | 1.1− | 1.0− | 2005 05 08 | 703 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.5+ | 1.0+ |
| 2002 09 15 | 608 | 0.1+ | 0.4− | 2005 05 08 | 703 | 0.3+ | 1.1+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 09 17 | 644 | 0.6− | 0.8+ | 2005 05 08 | 703 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 09 17 | 644 | 0.3− | 0.9+ | 2005 06 03 | 703 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.6+ | 0.3+ |
| 2002 09 17 | 644 | 0.3− | 1.0+ | 2005 06 03 | 703 | 0.7− | 1.0+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2003 12 22 | 704 | 0.2− | 0.5+ | 2005 06 03 | 703 | 0.1− | 1.4− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2003 12 22 | 704 | 0.6− | 0.5+ | 2005 06 03 | 703 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2003 12 22 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 703 | 0.6− | 0.9+ | 2006 10 28 | 703 | 0.3− | 1.1+ |
| 2005 04 05 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.5− | 0.4− | 2006 10 28 | 703 | 0.0 | 1.2+ |
| 2005 04 05 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.6+ | 2006 10 28 | 703 | 1.3− | 0.1+ |
| 2005 04 05 | 704 | 0.7+ | 0.5− | 2006 09 18 | 703 | 0.2− | 0.9− | 2006 10 28 | 703 | 0.0 | 0.2− |
| 2005 04 05 | 704 | 0.2+ | 0.9− | 2006 09 26 | 703 | 0.2+ | 0.5+ | | | | |
| 2005 04 07 | 691 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.4+ | 0.1+ | | | | |

**(142340)∗ 2002 RP$_{202}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 260.95185 | | (2000.0) | | −0.71819965 | −0.69171783 |
| $n$ | 0.26694688 | $\omega$ | 209.40188 | | +0.65283595 | −0.63222549 |
| $a$ | 2.3888349 | $\Omega$ | 286.62504 | | +0.24082044 | −0.34902346 |
| $e$ | 0.1071822 | $i$ | 4.52537 | | | |
| $P$ | 3.69 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5− | 0.8− | 2004 01 29 | 704 | 0.8+ | 0.4+ | 2004 03 15 | 704 | 0.6− | 0.5− |
| 1999 12 07 | 704 | 0.7− | 0.5− | 2004 01 29 | 704 | 0.2+ | 0.8+ | 2004 03 15 | 704 | 0.2− | 0.3− |
| 1999 12 07 | 704 | 0.4− | 0.6− | 2004 01 29 | 704 | 0.3+ | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.2− | 1.3− | 2004 01 29 | 704 | 0.5+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2000 01 04 | 704 | 0.1− | 0.2− | 2004 01 30 | 704 | 0.4+ | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2000 01 04 | 704 | 0.0 | 0.5− | 2004 01 30 | 704 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.5+ | 0.1+ |
| 2000 01 04 | 704 | 0.3+ | 0.3− | 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2000 01 04 | 704 | 0.7+ | 0.6− | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.5+ | 1.0+ | 2004 01 30 | 704 | 0.6+ | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.7+ | 2004 01 30 | 691 | 0.5− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.5− | 0.6+ | 2004 01 30 | 691 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2002 09 06 | 704 | 1.0− | 0.9+ | 2004 01 30 | 691 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.6− | 0.3+ |
| 2002 09 06 | 704 | 0.2− | 1.2+ | 2004 01 30 | 608 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.3+ | 0.3+ |
| 2002 09 13 | 644 | 0.2+ | 0.9+ | 2004 01 30 | 608 | 0.3− | 0.5− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.8+ | 0.9+ | 2004 01 30 | 608 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2002 09 13 | 644 | 0.3+ | 0.7+ | 2004 01 31 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2002 09 15 | 608 | 1.0− | 0.0 | 2004 01 31 | 704 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2002 09 15 | 608 | (1.6− | 0.2+) | 2004 01 31 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.8− | 1.2− |
| 2002 09 15 | 608 | 1.1− | 0.4+ | 2004 01 31 | 704 | 0.3− | 0.6+ | 2006 10 27 | 703 | 0.4− | 0.1+ |
| 2002 09 19 | 644 | 0.5− | 0.3− | 2004 01 31 | 704 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.7− | 0.8− |
| 2002 09 19 | 644 | 0.3− | 0.3− | 2004 02 03 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.9− | 0.1+ |
| 2002 09 19 | 644 | 0.2− | 0.0 | 2004 02 03 | 704 | 0.6− | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.6+ |
| 2002 10 04 | 704 | 0.1− | 0.4+ | 2004 02 03 | 704 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.9− | 0.2+ |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2004 02 03 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.5+ | 0.9+ | 2004 02 04 | 608 | 0.0 | 0.7− | 2006 11 14 | 703 | 0.6− | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2004 02 04 | 608 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.8− | 0.9− |
| 2002 10 04 | 704 | 1.0− | 1.3+ | 2004 02 04 | 608 | 0.3+ | 0.6− | 2006 11 19 | 704 | 0.7− | 0.3− |
| 2003 12 20 | 704 | (1.7+ | 0.1−) | 2004 02 11 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.3− |
| 2003 12 20 | 704 | 1.1+ | 0.4+ | 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | (0.1+ | 1.6−) |
| 2003 12 20 | 704 | (1.9+ | 0.5+) | 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.8− |
| 2003 12 20 | 704 | 0.5+ | 0.9+ | 2004 02 18 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | (5.2+ | 0.2−) |
| 2003 12 20 | 704 | 1.3+ | 0.4+ | 2004 02 18 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.7+ | 0.1+ |
| 2003 12 21 | 704 | (2.2+ | 0.3−) | 2004 02 18 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2003 12 21 | 704 | (1.6+ | 0.3+) | 2004 02 18 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2003 12 21 | 704 | (1.7+ | 0.1+) | 2004 02 18 | 704 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.9− |
| 2004 01 23 | 699 | 1.3− | 0.9+ | 2004 02 18 | 704 | 0.3+ | 0.5+ | 2006 11 23 | 703 | 1.2− | 0.8− |
| 2004 01 23 | 699 | 0.9− | 0.6+ | 2004 02 18 | 704 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.4− | 0.1− |
| 2004 01 23 | 699 | (0.2+ | 1.9+) | 2004 02 18 | 704 | 0.3+ | 0.2+ | 2006 11 23 | 703 | 0.3+ | 0.2− |
| 2004 01 23 | 699 | 0.7+ | 0.5− | 2004 02 19 | 608 | 0.4+ | 0.1+ | 2006 11 23 | 703 | (1.7− | 0.4+) |
| 2004 01 24 | 704 | 1.0+ | 0.1− | 2004 02 19 | 608 | 0.7+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2004 01 24 | 704 | 0.8+ | 0.3+ | 2004 02 19 | 608 | 0.5+ | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 0.9+ | 0.2+ | 2004 03 15 | 704 | 0.4+ | 0.7− | 2006 11 25 | G96 | 0.4+ | 0.1+ |
| 2004 01 29 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | (0.3− | 2.8−) | 2006 11 25 | G96 | 0.4+ | 0.2+ |

**(142341)∗ 2002 RM$_{203}$ = 1997 CO$_{17}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 40995)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.69812 | | (2000.0) | | +0.93086738 | −0.36232827 |
| $n$ | 0.27789844 | $\omega$ | 45.02090 | | +0.29404991 | +0.81924302 |
| $a$ | 2.3256551 | $\Omega$ | 336.10378 | | +0.21684228 | +0.44447620 |
| $e$ | 0.1352208 | $i$ | 6.65546 | | | |
| $P$ | 3.55 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 691 | 0.2+ | 0.3− | 2002 09 05 | 704 | 0.1− | 0.2+ | 2006 10 23 | 703 | 0.5+ | 0.4− |
| 1997 02 01 | 691 | 0.0 | 0.5+ | 2002 09 05 | 704 | 1.1− | 0.0 | 2006 10 23 | 703 | 0.0 | 0.6− |
| 1997 02 01 | 691 | 0.3+ | 0.1− | 2002 09 05 | 704 | 0.7− | 0.5+ | 2006 10 23 | 703 | 0.6− | 0.0 |
| 1997 02 06 | 691 | 0.4− | 0.2− | 2002 09 14 | 644 | 0.4− | 1.0+ | 2006 10 29 | 703 | 0.0 | 0.3+ |
| 1997 02 06 | 691 | 0.7− | 0.1− | 2002 09 14 | 644 | 0.1− | 0.8+ | 2006 10 29 | 703 | 0.2− | 0.1− |
| 1997 02 06 | 691 | 0.1+ | 0.1− | 2002 09 14 | 644 | 0.0 | 0.8+ | 2006 10 29 | 703 | 0.4+ | 0.2+ |
| 1997 02 11 | 691 | 0.2− | 0.3+ | 2002 09 15 | 644 | 0.1+ | 1.1+ | 2006 10 29 | 703 | 0.1+ | 0.2+ |
| 1997 02 11 | 691 | 0.4+ | 0.2+ | 2002 09 15 | 644 | 0.1− | 1.5+ | 2006 11 02 | G96 | 0.1− | 0.1− |
| 1997 02 11 | 691 | 0.5+ | 0.1+ | 2002 09 15 | 644 | (0.3+ | 1.6+) | 2006 11 02 | G96 | 0.0 | 0.0 |
| 1999 12 12 | 704 | 0.3+ | 0.4+ | 2004 01 22 | 704 | 0.2− | 0.7+ | 2006 11 02 | G96 | 0.0 | 0.0 |
| 1999 12 12 | 704 | 0.2− | 0.6− | 2004 01 22 | 704 | 0.2− | 1.4+ | 2006 11 02 | G96 | 0.0 | 0.4− |
| 1999 12 12 | 704 | 0.1+ | 0.3− | 2004 01 22 | 704 | (1.7+ | 1.7+) | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2002 08 12 | 699 | 0.6− | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2002 08 12 | 699 | 0.9− | 0.1+ | 2004 01 22 | 704 | 0.6+ | 1.5+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2002 08 12 | 699 | 0.2+ | 0.7+ | 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2002 08 12 | 699 | (0.1− | 2.3−) | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.1− | 0.9+ | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.9+ | 1.1+ | 2006 11 15 | 703 | 1.3+ | 0.1− |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.1+ | 1.2+ | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2004 03 01 | 691 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.6+ |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2004 03 01 | 691 | 0.5+ | 0.0 | 2006 11 15 | 703 | 0.7− | 0.4+ |
| 2002 09 04 | 644 | 0.3− | 0.7+ | 2004 03 01 | 691 | 0.4+ | 0.4+ | 2006 11 21 | 703 | 0.4− | 0.5− |
| 2002 09 04 | 644 | 0.4− | 1.1+ | 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.0 | 0.7− |
| 2002 09 04 | 644 | 0.1− | 1.2+ | 2006 10 19 | 703 | 0.1− | 0.7+ | 2006 11 21 | 703 | 0.0 | 0.1− |
| 2002 09 04 | 644 | 0.6− | 0.5+ | 2006 10 19 | 703 | 0.8+ | 0.2+ | 2006 11 21 | 703 | 0.1− | 0.6− |
| 2002 09 04 | 644 | 0.4− | 1.4+ | 2006 10 19 | 703 | 0.1+ | 0.2− | | | | |
| 2002 09 04 | 644 | 0.5− | 0.5+ | 2006 10 23 | 703 | 0.8− | 0.1− | | | | |

**(142342)∗ 2002 RR$_{203}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.80247 | | | (2000.0) | | |
| $n$ | 0.27741370 | $\omega$ | 29.66762 | | +0.99227820 | −0.11719371 |
| $a$ | 2.3283635 | $\Omega$ | 336.95664 | | +0.08315362 | +0.87153346 |
| $e$ | 0.1232015 | $i$ | 5.95585 | | +0.09202960 | +0.47612504 |
| $P$ | 3.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.4+ | 1.1+ | 2002 09 14 | 644 | 0.5− | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.4+ |
| 1995 08 22 | 809 | 0.4+ | 0.6+ | 2002 09 14 | 644 | 0.6− | 0.4+ | 2006 10 19 | 703 | 0.8− | 0.3+ |
| 1995 09 17 | 809 | 0.1− | 0.5− | 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 1999 12 15 | 704 | 0.8− | 1.8− | 2002 09 15 | 644 | 0.9− | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 1999 12 15 | 704 | 0.3− | 1.3− | 2002 09 15 | 644 | (0.1− | 2.6+) | 2006 10 27 | 703 | 0.9+ | 0.5+ |
| 1999 12 15 | 704 | 0.2+ | 0.7− | 2004 01 22 | 704 | 0.7+ | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 1.1+ | 2004 01 22 | 704 | 0.1− | 1.4+ | 2006 11 02 | G96 | 0.2+ | 0.4− |
| 2002 08 08 | 644 | 0.1+ | 1.2+ | 2004 01 22 | 704 | (0.3+ | 1.7+) | 2006 11 02 | G96 | 0.2+ | 0.4− |
| 2002 08 08 | 644 | 0.3− | 0.8+ | 2004 01 22 | 704 | (0.3− | 2.0+) | 2006 11 02 | G96 | 0.2− | 0.4− |
| 2002 08 12 | 699 | 0.2+ | 0.0 | 2004 01 22 | 704 | 1.0+ | 1.4+ | 2006 11 02 | G96 | 0.1+ | 0.4− |
| 2002 08 12 | 699 | 0.3− | 1.0+ | 2004 01 31 | 691 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.5− |
| 2002 08 12 | 699 | 1.4− | 0.0 | 2004 01 31 | 691 | 0.0 | 0.5+ | 2006 11 02 | 703 | (0.2− | 1.8+) |
| 2002 08 12 | 699 | (1.6− | 0.7+) | 2004 01 31 | 691 | 0.2− | 0.2+ | 2006 11 02 | 703 | 0.5+ | 0.6+ |
| 2002 08 18 | 644 | 0.1− | 1.1+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 11 02 | 703 | 0.2− | 0.0 |
| 2002 08 18 | 644 | 0.3− | 1.0+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 1.1− | 0.6+ |
| 2002 08 18 | 644 | 0.4− | 1.1+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.9+ | 0.7+ |
| 2002 08 29 | 644 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.6+ | 0.1− |
| 2002 08 29 | 644 | 0.4− | 0.4− | 2004 02 23 | 704 | 0.6− | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.6+ |
| 2002 08 29 | 644 | 0.1+ | 0.2− | 2004 02 23 | 704 | 0.7− | 0.2− | 2006 11 21 | 703 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 703 | 0.2− | 0.4− |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 703 | 0.5− | 0.0 |
| 2002 09 05 | 704 | 0.5+ | 0.4− | 2004 02 29 | 691 | 0.3+ | 0.7+ | 2006 11 21 | 703 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | 0.5− | 0.1− | 2006 10 19 | 703 | (2.3+ | 0.7+) | | | | |
| 2002 09 14 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.1− | 0.4+ | | | | |

**(142343)∗ 2002 RK$_{204}$ = 2000 CO$_{121}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37917)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.12667 | | | (2000.0) | | |
| $n$ | 0.26437919 | $\omega$ | 77.64556 | | +0.46753165 | −0.88392469 |
| $a$ | 2.4042772 | $\Omega$ | 344.46945 | | +0.79653413 | +0.42594691 |
| $e$ | 0.1868101 | $i$ | 2.04524 | | +0.38333736 | +0.19299322 |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.2− | 0.3− | 2004 03 16 | 599 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.2− |
| 1991 10 08 | 691 | 0.2+ | 0.1+ | 2004 03 16 | 599 | 0.1− | 0.2+ | 2006 10 21 | 703 | 1.0− | 0.5− |
| 1991 10 08 | 691 | 0.0 | 0.2+ | 2004 03 16 | 599 | 0.1+ | 0.1+ | 2006 10 25 | 106 | 0.1− | 0.2− |
| 1993 03 24 | 809 | (2.2+ | 1.1−) | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 10 25 | 106 | 0.1− | 0.3− |
| 2000 02 03 | 704 | 0.1+ | 0.3− | 2004 03 18 | 704 | 0.5+ | 1.0+ | 2006 10 25 | 106 | 0.0 | 0.8− |
| 2000 02 03 | 704 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.9+ | 0.1+ | 2006 10 25 | 106 | 0.5+ | 0.5+ |
| 2000 02 03 | 704 | 0.0 | 0.1− | 2004 03 18 | 704 | (0.5+ | 2.3+) | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2000 02 03 | 704 | 1.1− | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.9+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 0.1− | 0.5− | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2000 02 11 | 704 | 0.5+ | 0.1− | 2004 03 18 | 691 | 0.2− | 0.2+ | 2006 10 29 | 704 | 0.3+ | 0.0 |
| 2000 02 11 | 704 | 0.7+ | 0.6− | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 10 29 | 704 | (1.1+ | 1.8+) |
| 2002 08 18 | 608 | 0.1+ | 0.2− | 2004 03 20 | 291 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.3− | 0.4+ |
| 2002 08 18 | 608 | 0.0 | 0.0 | 2004 03 20 | 291 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.6+ | 0.9+ |
| 2002 08 18 | 608 | 0.3+ | 0.1− | 2004 03 20 | 291 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.1+ | 1.0+ |
| 2002 08 29 | 644 | 0.1− | 0.9+ | 2004 03 23 | 704 | 1.0− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.7+ | 2004 03 23 | 704 | 0.2+ | 0.7− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.2− | 1.0+ | 2004 03 23 | 704 | (2.3+ | 0.0 ) | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 09 05 | 699 | (0.2+ | 1.7+) | 2004 03 23 | 704 | 0.2− | 0.6− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | (0.1+ | 1.7+) | 2004 03 23 | 704 | (1.9+ | 0.0 ) | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2002 09 05 | 699 | 1.0− | 0.0 | 2006 07 22 | G96 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.2+ | 2006 07 22 | G96 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | (0.8− | 1.9+) | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 699 | 0.5− | 0.5− | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.3− | 2006 11 10 | 683 | 0.8− | 0.2+ |
| 2002 09 05 | 699 | 0.7− | 0.9+ | 2006 09 25 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 683 | 0.0 | 0.5+ |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.4− | 0.8− | 2006 11 10 | 683 | 1.3− | 0.1− |
| 2002 09 14 | 644 | 0.4− | 0.9+ | 2006 09 29 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.9+ | 2006 09 29 | 704 | 1.1− | 1.0+ | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2002 09 14 | 644 | 0.3− | 1.1+ | 2006 09 29 | 704 | 0.5− | 0.9+ | 2006 11 11 | 703 | 1.0+ | 0.5− |
| 2002 09 15 | 644 | (0.2+ | 1.8+) | 2006 09 29 | 704 | (0.2− | 1.5+) | 2006 11 11 | 703 | 0.8− | 1.3− |
| 2002 09 15 | 644 | (0.4+ | 1.7+) | 2006 09 29 | 691 | 0.1+ | 0.1− | 2006 11 13 | 683 | 1.2− | 1.3− |
| 2002 09 15 | 644 | (0.1+ | 1.8+) | 2006 09 29 | 691 | 0.2− | 0.1− | 2006 11 13 | 683 | 1.4− | 0.2− |
| 2004 02 19 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 691 | 0.2− | 0.2+ | 2006 11 13 | 683 | (2.7− | 1.6+) |
| 2004 02 19 | 704 | 0.1+ | 0.7− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2004 02 19 | 704 | 0.3− | 1.1− | 2006 10 16 | 691 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.5+ |
| 2004 02 26 | 704 | 0.9+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.7+ |
| 2004 02 26 | 704 | 1.1+ | 0.2+ | 2006 10 19 | 644 | 0.6− | 0.0 | 2006 11 16 | 704 | 1.1− | 0.9+ |
| 2004 02 26 | 704 | 1.2+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.3− |
| 2004 03 15 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.2+ |
| 2004 03 15 | 291 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 1.1+ | 0.8+ |
| 2004 03 15 | 291 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.2+ |
| 2004 03 15 | 599 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.9+ | 0.8+ |
| 2004 03 15 | 599 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2004 03 15 | 599 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.6− | | | | |
| 2004 03 16 | 599 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.1− | | | | |

**(142344)∗ 2002 RM$_{205}$ = 2004 BR$_{71}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 56589)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.18526 | | | (2000.0) | | |
| $n$ | 0.26462601 | $\omega$ | 325.80423 | | −0.87974100 | −0.47527388 |
| $a$ | 2.4027819 | $\Omega$ | 185.86371 | | +0.45978689 | −0.84344014 |
| $e$ | 0.1102852 | $i$ | 7.34352 | | +0.12104456 | −0.25044654 |
| $P$ | 3.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.0 | 0.7+ | 2004 01 29 | 704 | 0.9− | 0.7+ | 2006 10 15 | 703 | 0.5− | 0.5− |
| 1999 12 14 | 704 | 0.0 | 0.2+ | 2004 01 29 | 704 | (1.8− | 0.6+) | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 1999 12 14 | 704 | 0.2+ | 0.6+ | 2004 01 29 | 704 | 0.4+ | 0.3− | 2006 10 17 | G96 | 0.6+ | 0.6− |
| 1999 12 14 | 704 | 0.5− | 0.0 | 2004 01 29 | 704 | 0.9− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2001 05 21 | 691 | 0.4+ | 0.6+ | 2004 01 29 | 704 | 0.8− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2001 05 21 | 691 | 0.3− | 0.3− | 2004 02 11 | 644 | 0.4+ | 0.2− | 2006 10 21 | 703 | 0.2− | 1.2+ |
| 2001 05 21 | 691 | 0.0 | 0.6+ | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2004 02 11 | 644 | 0.2+ | 0.0 | 2006 10 21 | 703 | (1.6− | 0.9−) |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 09 14 | 644 | 1.0− | 0.1+ | 2004 02 17 | 704 | 0.1+ | 1.1+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 09 15 | 644 | 0.2+ | 0.5+ | 2004 02 17 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 703 | 1.1− | 1.0+ |
| 2002 09 15 | 644 | 0.7+ | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.5− | 0.2− | 2006 10 21 | 703 | (1.5− | 0.6+) |
| 2002 09 16 | 644 | 0.3− | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 09 16 | 644 | 0.3− | 0.0 | 2006 07 21 | G96 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 09 16 | 644 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2002 09 17 | 644 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2002 09 17 | 644 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.8− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 09 17 | 644 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 0.8+ | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.6+ |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (1.7+ | 1.4−) |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.2− | 1.4− |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2006 09 30 | 703 | (1.6− | 0.5+) | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2003 12 27 | 608 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.2− | 1.5+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2003 12 27 | 608 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2003 12 27 | 608 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 699 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.6+ | 0.4− |
| 2004 01 23 | 699 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.4− | 0.7+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2004 01 23 | 699 | 0.4+ | 0.5− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2004 01 23 | 699 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2004 01 26 | 699 | 0.7+ | 0.1− | 2006 10 01 | 691 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2004 01 26 | 699 | 0.5− | 0.2+ | 2006 10 15 | 703 | 0.6− | 0.8− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 01 26 | 699 | 0.5− | 0.1− | 2006 10 15 | 703 | 0.9+ | 1.0− | 2006 11 23 | G96 | 0.8+ | 0.4− |
| 2004 01 26 | 699 | 1.0+ | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.5− | 2006 11 23 | G96 | 0.3− | 0.1− |

**(142345)∗ 2002 RC$_{207}$ = 2001 FK$_{32}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37918)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.52857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23270516 | $\omega$ | 96.21027 | | +0.23782348 | +0.97069796 | |
| $a$ | 2.6177733 | $\Omega$ | 187.80809 | | −0.96087499 | +0.22993940 | |
| $e$ | 0.1011891 | $i$ | 14.68083 | | −0.14198324 | +0.06980928 | |
| $P$ | 4.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 691 | 0.6− | 0.0 | 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.5− |
| 2001 03 22 | 691 | 0.5− | 0.0 | 2005 03 12 | 691 | 0.3+ | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.1− |
| 2001 03 22 | 691 | 0.7− | 0.1− | 2005 03 12 | 691 | 0.2+ | 0.4+ | 2006 08 23 | 644 | 0.4+ | 0.1− |
| 2001 03 24 | 691 | 0.5+ | 0.0 | 2005 03 13 | 703 | (1.5+ | 2.1+) | 2006 08 27 | 699 | 0.1− | 1.0− |
| 2001 03 24 | 691 | 0.7+ | 0.3− | 2005 03 13 | 703 | 1.3+ | 0.3− | 2006 08 27 | 699 | 0.3− | 0.2+ |
| 2001 03 24 | 691 | 0.6+ | 0.1− | 2005 03 13 | 703 | (1.0− | 2.2+) | 2006 08 27 | 699 | 0.2+ | 0.2− |
| 2002 09 06 | 704 | 1.5− | 0.7+ | 2005 03 13 | 703 | 1.3− | 1.3+ | 2006 08 27 | 699 | 0.2− | 0.5+ |
| 2002 09 06 | 704 | 1.7− | 0.2+ | 2005 04 04 | 703 | 0.1+ | 0.7− | 2006 09 11 | 703 | 0.4+ | 1.0− |
| 2002 09 06 | 704 | 0.2− | 1.4+ | 2005 04 04 | 703 | 0.2− | 0.6+ | 2006 09 11 | 703 | 0.8− | 0.4+ |
| 2002 09 06 | 704 | 1.2− | 0.2− | 2005 04 04 | 703 | 0.8− | 0.1+ | 2006 09 11 | 703 | (2.1− | 0.2−) |
| 2002 09 14 | 644 | 0.3+ | 0.2+ | 2005 04 04 | 703 | 0.5− | 1.0+ | 2006 09 11 | 703 | 0.7− | 0.0 |
| 2002 09 14 | 644 | 0.3+ | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.3− | 2006 09 14 | 691 | 0.2+ | 0.0 |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2005 04 06 | G96 | 0.3− | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2005 04 06 | G96 | 0.1− | 0.5− | 2006 09 14 | 691 | 0.0 | 0.2+ |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2005 04 06 | G96 | 0.4− | 0.4− | 2006 09 17 | 703 | 0.1+ | 1.0+ |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2005 05 02 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.8+ |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2005 05 02 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.6+ | 0.3− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 05 02 | 691 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.2− |
| 2002 10 07 | 704 | 0.2− | 0.6+ | 2005 05 04 | 644 | 0.3− | 1.1+ | 2006 09 18 | 703 | 1.7− | 0.9− |
| 2002 10 07 | 704 | 0.3+ | 0.3− | 2005 05 04 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.7+ |
| 2002 10 07 | 704 | 0.2+ | 1.7+ | 2005 05 04 | 644 | 0.5− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.9+ |
| 2002 10 07 | 704 | 0.0 | 0.7+ | 2005 05 10 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.3+ |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.5+ | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.5+ | 0.3+ |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.6− | 1.3− |
| 2002 10 11 | 704 | 0.8+ | 0.2+ | 2006 08 22 | 644 | 0.3− | 0.2− | | | | |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2006 08 22 | 644 | 0.0 | 0.2− | | | | |

**(142346)∗ 2002 RN$_{207}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.60624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26809240 | $\omega$ | 259.55387 | | −0.07575306 | +0.99712468 | |
| $a$ | 2.3820254 | $\Omega$ | 6.10266 | | −0.90746860 | −0.06812538 | |
| $e$ | 0.1664519 | $i$ | 1.05834 | | −0.41323385 | −0.03318607 | |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.3− | 0.2+ | 2002 10 04 | 291 | 0.1− | 0.4+ | 2005 05 09 | 699 | 0.1− | 0.3+ |
| 1995 11 21 | 691 | 0.7− | 0.2+ | 2002 10 04 | 291 | 0.0 | 0.3+ | 2005 05 09 | 699 | 0.0 | 0.6+ |
| 1995 11 21 | 691 | 0.5− | 0.2+ | 2002 10 04 | 291 | 0.1− | 0.4+ | 2005 05 10 | 704 | 0.0 | 0.1+ |
| 1998 06 30 | 691 | 0.0 | 0.6+ | 2002 10 05 | 645 | 0.2+ | 0.2− | 2005 05 10 | 704 | 0.1+ | 0.1+ |
| 1998 06 30 | 691 | 0.0 | 0.6+ | 2002 10 05 | 645 | 0.1+ | 0.2− | 2005 05 10 | 704 | 0.1+ | 0.7+ |
| 1998 06 30 | 691 | 0.5− | 0.5+ | 2002 10 11 | 704 | 0.4− | 0.5− | 2005 05 10 | 704 | 0.1− | 0.2+ |
| 2001 03 24 | 691 | 0.6+ | 0.8+ | 2002 10 11 | 704 | 0.2+ | 1.1− | 2005 05 10 | 704 | 0.6+ | 0.2− |
| 2001 03 24 | 691 | 0.9+ | 0.5+ | 2002 10 11 | 704 | 0.6− | 1.0− | 2005 05 10 | G96 | 0.3− | 0.1− |
| 2001 03 24 | 691 | 0.6+ | 0.8+ | 2002 10 11 | 704 | 0.2− | 0.9− | 2005 05 10 | G96 | 0.3− | 0.2− |
| 2002 09 07 | 704 | 0.2+ | 1.0+ | 2005 04 17 | 691 | 0.2− | 0.0 | 2005 05 10 | G96 | 0.2− | 0.2− |
| 2002 09 07 | 704 | 0.3+ | 0.4+ | 2005 04 17 | 691 | 0.2− | 0.1− | 2005 05 10 | G96 | 0.3− | 0.1− |
| 2002 09 07 | 704 | 0.5+ | 0.1+ | 2005 04 17 | 691 | 0.2− | 0.2− | 2005 05 13 | 704 | 0.2− | 0.4− |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2005 05 04 | E12 | 0.5− | 1.1+ | 2005 05 13 | 704 | 1.0+ | 0.3− |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2005 05 04 | E12 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2005 05 04 | E12 | 0.2− | 0.3+ | 2005 05 19 | 644 | 0.4− | 0.0 |
| 2002 09 15 | 644 | 0.2− | 1.0+ | 2005 05 04 | E12 | 0.4+ | 1.3+ | 2005 05 19 | 644 | 0.3− | 0.2+ |
| 2002 09 15 | 644 | 0.5+ | 0.9+ | 2005 05 07 | 691 | 0.3− | 0.1+ | 2005 05 19 | 644 | 0.3− | 0.0 |
| 2002 09 15 | 644 | 0.2+ | 0.6+ | 2005 05 07 | 691 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.7− | 0.4− |
| 2002 09 30 | 704 | (2.3− | 0.7+) | 2005 05 07 | 691 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.0 |
| 2002 09 30 | 704 | (1.6− | 0.0 ) | 2005 05 08 | 699 | 0.7− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.5− |
| 2002 09 30 | 704 | 0.9− | 1.1+ | 2005 05 08 | 699 | 0.8− | 0.8+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2002 09 30 | 704 | 1.2− | 0.2− | 2005 05 08 | 699 | 0.9− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2002 10 01 | 699 | 0.2+ | 0.3+ | 2005 05 08 | 699 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.5− | 0.1+ |
| 2002 10 01 | 699 | 0.6+ | 0.2+ | 2005 05 08 | E12 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 0.2+ | 0.5+ | 2005 05 08 | E12 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 10 01 | 699 | 0.4− | 1.0+ | 2005 05 08 | E12 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2002 10 02 | 608 | 0.7− | 0.3− | 2005 05 08 | E12 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 10 02 | 608 | 0.7− | 1.0− | 2005 05 09 | 704 | 0.2+ | 0.6− | 2006 11 11 | G96 | 0.1− | 0.3+ |
| 2002 10 02 | 608 | 0.3− | 0.9− | 2005 05 09 | 704 | 0.3+ | 0.9− | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.5+ | 0.9+ | 2005 05 09 | 704 | 1.1+ | 0.1− | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.6+ | 0.6+ | 2005 05 09 | 699 | 1.2+ | 0.7− | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2005 05 09 | 704 | 0.5+ | 1.0− | 2006 11 14 | G96 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.6− | 1.2+ | 2005 05 09 | 704 | 0.7+ | 1.0− | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 0.8+ | 1.2+ | 2005 05 09 | 699 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.0 |

**(142347)∗ 2002 RT$_{208}$**

Discovered 2002 Sept. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.56602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26453543 | $\omega$ | 292.93927 | | +0.36526546 | +0.93090300 | |
| $a$ | 2.4033304 | $\Omega$ | 358.48385 | | −0.84167567 | +0.32985774 | |
| $e$ | 0.2173958 | $i$ | 1.87184 | | −0.39769739 | +0.15688681 | |
| $P$ | 3.73 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 691 | 0.3+ | 0.8+ | 2002 10 11 | 704 | 0.8+ | 0.7− | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2001 03 18 | 691 | 0.5+ | 1.0+ | 2002 10 11 | 704 | 0.4+ | 1.3− | 2006 09 30 | G96 | 0.5+ | 0.2− |
| 2001 03 18 | 691 | 0.4+ | 0.9+ | 2002 10 11 | 704 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 2002 09 13 | 291 | 0.3+ | 0.5+ | 2002 10 11 | 291 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2002 09 13 | 291 | 0.4+ | 0.6+ | 2002 10 11 | 291 | 0.1− | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2002 09 13 | 291 | 0.1− | 0.5+ | 2002 10 11 | 291 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2002 10 31 | 645 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2002 10 31 | 645 | 0.2− | 0.1− | 2006 10 03 | 291 | 0.2− | 0.2+ |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 10 03 | 291 | 0.4− | 0.1− |
| 2002 09 14 | 644 | 0.7− | 0.6+ | 2005 03 10 | G96 | 0.3− | 0.7+ | 2006 10 03 | 291 | 0.4− | 0.0 |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 03 10 | G96 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 2002 09 14 | 644 | 0.7− | 0.8+ | 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2002 09 16 | 291 | 0.5− | 0.3+ | 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.5+ |
| 2002 09 16 | 291 | 0.4+ | 0.2− | 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2002 09 16 | 291 | 0.1− | 0.2+ | 2005 04 09 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2002 09 29 | 608 | 0.7− | 1.0+ | 2005 04 09 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.5+ |
| 2002 09 29 | 608 | 0.5− | 1.2+ | 2005 04 09 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2002 09 29 | 608 | 1.0− | 1.3+ | 2005 04 09 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.1− | 1.2+ | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.4+ | 0.2− |
| 2002 10 03 | 704 | 0.0 | 1.3+ | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 1.0− | 0.6− | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2002 10 04 | 644 | 0.1+ | 0.2+ | 2005 05 12 | G96 | 0.9− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 10 04 | 644 | 0.3− | 0.3+ | 2005 05 12 | G96 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2005 05 12 | G96 | 1.2+ | 0.8− | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2002 10 11 | 704 | 1.0+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |

**(142348)∗ 2002 RX$_{211}$**

Discovered 2002 Sept. 9 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 99.08286 | | (2000.0) | | +0.48669617 | −0.86726753 |
| $n$ | 0.33194737 | $\omega$ | 323.85344 | | +0.82420334 | +0.41613638 |
| $a$ | 2.0658077 | $\Omega$ | 96.80829 | | +0.28950941 | +0.27327192 |
| $e$ | 0.4592834 | $i$ | 6.05599 | | | |
| $P$ | 2.97 | $H$ | 18.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.5+ | 1.2+ | 2005 11 03 | 844 | (0.8− | 1.7+) | 2005 12 22 | 084 | 0.2− | 0.1− |
| 1999 09 11 | 704 | 1.3+ | 0.0 | 2005 11 03 | 844 | 0.3− | 1.2+ | 2005 12 22 | 084 | 0.2− | 0.5− |
| 1999 09 11 | 704 | 1.2+ | 0.8− | 2005 11 03 | 379 | 0.5+ | 0.1− | 2005 12 22 | 560 | 0.4+ | 0.4+ |
| 1999 09 11 | 704 | 1.1+ | 1.5− | 2005 11 03 | 379 | 0.2+ | 0.2− | 2005 12 22 | 560 | 0.0 | 0.1+ |
| 2002 08 20 | 644 | 0.9− | 0.3+ | 2005 11 03 | 379 | 0.1+ | 0.3− | 2005 12 22 | 560 | 0.1− | 0.1+ |
| 2002 08 20 | 644 | 1.0− | 0.0 | 2005 11 03 | 379 | 0.4+ | 0.3− | 2005 12 23 | H45 | 0.1+ | 0.3+ |
| 2002 08 20 | 644 | 0.7− | 0.1− | 2005 11 06 | 703 | 0.4− | 0.0 | 2005 12 23 | H45 | 0.2− | 0.0 |
| 2002 09 09 | 608 | 1.1− | 1.3+ | 2005 11 06 | 703 | 0.0 | 0.0 | 2005 12 23 | H45 | 0.2− | 0.8− |
| 2002 09 09 | 608 | 0.9− | 0.9+ | 2005 11 06 | 703 | 0.2− | 0.0 | 2005 12 23 | H45 | 0.1− | 0.1− |
| 2002 09 09 | 608 | 0.9− | 0.9+ | 2005 11 06 | 703 | 0.2+ | 0.0 | 2005 12 23 | H45 | 1.0− | 0.6− |
| 2002 09 10 | 644 | 0.5− | 0.2− | 2005 11 08 | 834 | 0.2− | 0.0 | 2005 12 24 | I77 | 0.1+ | 0.5+ |
| 2002 09 10 | 644 | 0.4− | 0.5− | 2005 11 08 | 834 | 0.0 | 0.0 | 2005 12 24 | I77 | 0.3− | 0.1+ |
| 2002 09 10 | 644 | 0.5− | 0.2− | 2005 11 08 | 834 | 0.0 | 0.1+ | 2005 12 24 | I77 | 0.1− | 0.5+ |
| 2002 09 17 | 644 | 0.4− | 0.2− | 2005 11 08 | 844 | 0.2+ | 0.0 | 2005 12 24 | 703 | 0.5− | 0.5− |
| 2002 09 17 | 644 | 0.5− | 0.2− | 2005 11 08 | 844 | 0.1+ | 0.1− | 2005 12 24 | 703 | 0.3− | 0.3− |
| 2002 09 17 | 644 | 0.5− | 0.3− | 2005 11 08 | 844 | 0.5+ | 0.0 | 2005 12 24 | 703 | 0.2− | 0.4− |
| 2002 09 26 | 704 | 0.5− | 0.2− | 2005 11 08 | 844 | 0.2+ | 0.1− | 2005 12 24 | 703 | 0.2− | 0.1− |
| 2002 09 26 | 704 | 0.0 | 0.0 | 2005 11 08 | 844 | 0.5+ | 0.2+ | 2005 12 25 | I77 | 0.1− | 0.1+ |
| 2002 09 26 | 704 | 1.1+ | 0.5+ | 2005 11 08 | E14 | 0.5+ | 0.2+ | 2005 12 25 | I77 | 0.5− | 0.1− |
| 2002 09 26 | 704 | 0.2+ | 0.1− | 2005 11 08 | E14 | 0.3+ | 0.2− | 2005 12 25 | I77 | 0.8+ | 0.6− |
| 2002 09 26 | 620 | (2.3− | 0.4−) | 2005 11 08 | E14 | 0.1+ | 0.3− | 2005 12 25 | 170 | 0.1+ | 0.1− |
| 2002 09 26 | 620 | (2.9− | 0.4−) | 2005 11 10 | 844 | 0.1+ | 0.0 | 2005 12 25 | 170 | 0.3+ | 0.4− |
| 2002 09 26 | 620 | (2.8− | 0.4−) | 2005 11 10 | 844 | 0.2− | 0.1+ | 2005 12 25 | 170 | 0.1+ | 0.4− |
| 2002 09 26 | 620 | (2.0− | 0.4−) | 2005 11 10 | 844 | 0.1+ | 0.3+ | 2005 12 26 | H45 | 0.4− | 0.5− |
| 2002 09 27 | 704 | 0.3− | 0.6+ | 2005 11 10 | 844 | 0.1− | 0.3− | 2005 12 26 | H45 | 0.2− | 0.4− |
| 2002 09 27 | 704 | 0.0 | 0.5+ | 2005 11 10 | 844 | 0.2+ | 0.2− | 2005 12 26 | H45 | 0.2+ | 0.2− |
| 2002 09 27 | 704 | 0.6− | 0.9+ | 2005 11 13 | 808 | 0.2− | 0.7− | 2005 12 26 | H45 | 0.1+ | 0.4− |
| 2002 09 27 | 428 | 0.3− | 0.1+ | 2005 11 13 | 808 | 0.0 | 0.4− | 2005 12 26 | H45 | 0.1+ | 0.2− |
| 2002 09 27 | 428 | 0.8+ | 0.3+ | 2005 11 13 | 808 | (1.7+ | 0.8+) | 2005 12 26 | H45 | 0.7− | 0.6− |
| 2002 09 27 | 428 | 0.5+ | 0.3+ | 2005 11 14 | 644 | 0.0 | 0.1− | 2005 12 26 | 084 | 0.3+ | 0.1− |
| 2002 09 30 | 704 | 1.0− | 0.2− | 2005 11 14 | 644 | 0.0 | 0.2− | 2005 12 26 | 084 | 0.5+ | 0.2+ |
| 2002 09 30 | 704 | 1.0− | 0.6− | 2005 11 14 | 644 | 0.0 | 0.1− | 2005 12 26 | 084 | 0.1− | 0.1− |
| 2002 09 30 | 704 | 0.7− | 0.0 | 2005 11 18 | 294 | 0.2− | 0.2− | 2005 12 26 | 084 | 0.3− | 0.2− |
| 2002 09 30 | 704 | 0.7− | 0.1+ | 2005 11 18 | 294 | 0.0 | 1.0− | 2005 12 27 | 699 | 0.5− | 0.2+ |
| 2002 09 30 | 704 | 0.9− | 0.3− | 2005 11 18 | 644 | 0.1+ | 0.0 | 2005 12 27 | 699 | 0.2− | 0.3+ |
| 2002 10 02 | 428 | 0.1+ | 0.0 | 2005 11 18 | 644 | 0.2+ | 0.1+ | 2005 12 27 | 699 | 0.0 | 0.3+ |
| 2002 10 02 | 428 | 0.1− | 0.2− | 2005 11 18 | 644 | 0.5− | 0.0 | 2005 12 27 | 704 | 0.0 | 0.0 |
| 2002 10 02 | 428 | 0.0 | 0.4− | 2005 11 18 | 379 | 0.5+ | 0.3− | 2005 12 27 | 704 | 0.0 | 0.0 |
| 2002 10 05 | 670 | (2.6− | 0.2−) | 2005 11 18 | 379 | 0.4+ | 0.3− | 2005 12 27 | 704 | 0.1− | 0.1− |
| 2002 10 05 | 670 | 0.4− | 0.2− | 2005 11 18 | 379 | 0.1+ | 0.3− | 2005 12 27 | 704 | 0.1− | 0.2+ |
| 2002 10 16 | 413 | 0.1+ | 0.1− | 2005 11 18 | 379 | 0.1+ | 0.3− | 2005 12 27 | 704 | 0.0 | 0.4+ |
| 2002 10 16 | 413 | 0.2+ | 0.1− | 2005 11 19 | 379 | 0.3− | 0.3+ | 2005 12 27 | 084 | 0.1− | 0.1− |
| 2002 10 16 | 413 | 0.1+ | 0.2− | 2005 11 19 | 379 | 0.1+ | 0.1+ | 2005 12 27 | 084 | 0.2+ | 0.0 |
| 2002 10 26 | 704 | 0.1− | 0.2− | 2005 11 19 | 379 | 0.1− | 0.4− | 2005 12 27 | 084 | 0.1− | 0.3− |
| 2002 10 26 | 704 | 0.4+ | 0.9− | 2005 11 19 | 379 | 0.4− | 0.3+ | 2005 12 27 | 084 | 0.5− | 0.6− |
| 2002 10 26 | 704 | 0.2− | 0.1− | 2005 11 19 | 379 | 0.7+ | 0.1− | 2005 12 28 | 704 | 1.0− | 1.4+ |
| 2002 10 26 | 704 | (1.6− | 0.6+) | 2005 11 19 | 379 | 0.5+ | 0.3+ | 2005 12 28 | 704 | 0.1− | 0.6+ |
| 2002 10 28 | 428 | 0.2− | 0.0 | 2005 11 20 | 379 | 0.1+ | 0.2− | 2005 12 28 | 704 | 0.1− | 0.1− |
| 2002 10 28 | 428 | 0.8− | 0.1+ | 2005 11 20 | 379 | 0.3+ | 0.6− | 2005 12 28 | 084 | 0.1+ | 0.1− |
| 2002 11 17 | 448 | 0.2− | 0.2+ | 2005 11 21 | 294 | 0.1− | 0.1+ | 2005 12 28 | 084 | 0.2+ | 0.4− |
| 2002 11 17 | 448 | 0.2− | 0.2+ | 2005 11 21 | 294 | 0.2+ | 0.1− | 2005 12 29 | H45 | 0.2− | 0.5− |
| 2002 11 17 | 448 | 0.3− | 0.1+ | 2005 11 21 | 294 | 0.1− | 0.2− | 2005 12 29 | H45 | 0.0 | 0.1+ |
| 2002 11 27 | 699 | 0.8+ | 0.2+ | 2005 11 21 | 379 | 0.5+ | 0.3+ | 2005 12 29 | H45 | 0.1+ | 0.1+ |
| 2002 11 27 | 699 | 0.6+ | 0.0 | 2005 11 21 | 379 | 0.5+ | 0.2+ | 2005 12 29 | H45 | 0.1− | 0.1− |
| 2002 11 27 | 699 | 0.1+ | 0.1− | 2005 11 21 | 379 | 0.2+ | 0.1− | 2005 12 29 | H45 | 0.2− | 0.1− |
| 2002 11 27 | 699 | 0.2+ | 0.6+ | 2005 11 21 | 379 | 0.5+ | 0.4− | 2005 12 29 | A53 | 0.2− | 0.2+ |
| 2002 11 29 | 711 | 0.3+ | 0.9+ | 2005 11 22 | 084 | 0.3− | 0.2+ | 2005 12 29 | A53 | 0.2− | 0.2− |
| 2002 11 29 | 711 | 0.3− | 0.2+ | 2005 11 22 | 084 | 0.6− | 0.1+ | 2005 12 29 | A53 | 0.2− | 0.1+ |
| 2002 11 29 | 711 | (2.0− | 1.8−) | 2005 11 23 | 844 | 0.4− | 0.5− | 2005 12 29 | A53 | 0.4− | 0.4+ |
| 2002 12 18 | 608 | 0.3− | 0.3− | 2005 11 23 | 844 | (1.3+ | 2.8+) | 2005 12 29 | A53 | 0.2− | 0.4+ |
| 2002 12 18 | 608 | 0.2− | 0.3− | 2005 11 23 | 844 | 0.4− | 0.3− | 2005 12 31 | 704 | (1.7− | 0.7−) |
| 2002 12 18 | 608 | 0.3− | 0.4− | 2005 11 23 | 844 | 0.5− | 0.2− | 2005 12 31 | 704 | 0.9+ | 0.7− |
| 2002 12 27 | H86 | (0.4+ | 2.2+) | 2005 11 23 | 844 | 0.0 | 0.1− | 2005 12 31 | 704 | 1.0+ | 0.0 |
| 2003 01 04 | 941 | (3.2− | 1.4−) | 2005 11 23 | 844 | 0.1− | 0.3− | 2005 12 31 | 704 | (1.6+ | 0.8−) |
| 2003 01 04 | 941 | (2.2+ | 0.5−) | 2005 11 23 | 379 | 0.6− | 0.6− | 2005 12 31 | 704 | (0.6− | 2.9−) |
| 2003 01 08 | 704 | 0.3− | 0.8+ | 2005 11 23 | 379 | 0.1+ | 0.7− | 2006 01 03 | H45 | 0.4− | 0.3− |
| 2003 01 08 | 704 | 0.4+ | 0.7+ | 2005 11 23 | 379 | 0.2+ | 0.4− | 2006 01 03 | H45 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 0.4+ | 1.3+ | 2005 11 24 | 379 | 0.2− | 0.2+ | 2006 01 03 | H45 | 0.3− | 0.1− |
| 2003 01 08 | 704 | (0.4+ | 1.9+) | 2005 11 24 | 379 | 0.3− | 0.6− | 2006 01 03 | H45 | 0.2+ | 0.4− |
| 2003 01 08 | 704 | (0.2− | 1.6+) | 2005 11 24 | 379 | 0.2− | 0.0 | 2006 01 03 | H45 | 0.8− | 0.1+ |
| 2003 02 01 | 704 | 1.4+ | 0.6+ | 2005 11 24 | 379 | 0.2− | 0.4− | 2006 01 04 | H45 | 0.3− | 0.4− |
| 2003 02 01 | 704 | 0.3+ | 1.1+ | 2005 11 24 | 379 | 0.2− | 0.2+ | 2006 01 04 | H45 | 0.2+ | 0.0 |
| 2003 02 01 | 704 | 0.3+ | 0.1− | 2005 11 25 | 844 | 0.0 | 0.5+ | 2006 01 04 | H45 | 0.0 | 0.7− |
| 2003 02 01 | 704 | 0.1+ | 0.3+ | 2005 11 25 | 844 | 0.1− | 0.6+ | 2006 01 04 | H45 | 0.1− | 0.2− |
| 2003 02 04 | 704 | 0.2− | 0.3+ | 2005 11 25 | 844 | 0.1− | 0.5+ | 2006 01 04 | H45 | 0.1− | 0.8− |
| 2003 02 04 | 704 | 0.7+ | 0.2− | 2005 11 25 | 844 | 0.2− | 0.4+ | 2006 01 04 | 434 | 0.1− | 0.0 |
| 2003 02 04 | 704 | 0.2+ | 1.0+ | 2005 11 25 | 844 | 0.1− | 0.5+ | 2006 01 04 | 434 | 0.1− | 0.6+ |
| 2003 02 04 | 704 | 0.4+ | 0.4+ | 2005 11 25 | 379 | 0.5− | 0.1− | 2006 01 04 | 434 | 0.2+ | 0.1+ |
| 2005 07 02 | 291 | 0.5− | 0.3+ | 2005 11 25 | 379 | 0.0 | 0.1− | 2006 01 04 | 434 | 0.5+ | 0.1− |
| 2005 07 02 | 291 | 0.3− | 0.5+ | 2005 11 25 | 379 | 0.5+ | 0.3+ | 2006 01 05 | 704 | 0.5− | 0.8+ |
| 2005 07 02 | 291 | 0.5− | 0.2+ | 2005 11 25 | 379 | 0.2− | 0.8− | 2006 01 05 | 704 | 0.4− | 0.8+ |
| 2005 07 14 | J50 | 0.2− | 0.2− | 2005 11 26 | 379 | 0.2+ | 0.3+ | 2006 01 05 | 704 | 0.3− | 0.6+ |
| 2005 07 14 | J50 | 0.2− | 0.3− | 2005 11 26 | 379 | 0.0 | 0.2− | 2006 01 05 | G96 | 0.1− | 0.2− |
| 2005 07 14 | J50 | 0.2− | 0.1− | 2005 11 26 | 379 | 0.1− | 0.5− | 2006 01 05 | 704 | 0.4− | 0.7+ |
| 2005 07 14 | J50 | 0.2− | 0.3− | 2005 11 27 | 379 | 0.4+ | 0.5− | 2006 01 05 | G96 | 0.0 | 0.2− |
| 2005 07 14 | J50 | 0.2− | 0.2− | 2005 11 27 | 379 | 0.4+ | 0.0 | 2006 01 05 | 704 | 0.3− | 0.6+ |
| 2005 07 14 | J50 | 0.1− | 0.2− | 2005 11 27 | 379 | 0.0 | 0.3− | 2006 01 05 | G96 | 0.2− | 0.1− |
| 2005 07 14 | J50 | 0.2− | 0.2− | 2005 11 27 | 379 | 0.2− | 0.2− | 2006 01 05 | G96 | 0.2+ | 0.2− |
| 2005 08 27 | 699 | 0.2+ | 1.0+ | 2005 11 29 | A50 | 0.2− | 0.0 | 2006 01 05 | A13 | 0.7+ | 0.7+ |
| 2005 08 27 | 699 | 0.6− | 0.0 | 2005 11 29 | A50 | 0.2− | 0.3+ | 2006 01 05 | A13 | 0.5+ | 0.2+ |
| 2005 08 27 | 699 | 0.2− | 0.3+ | 2005 11 29 | A50 | 0.1+ | 0.2+ | 2006 01 05 | A13 | 0.3+ | 0.4+ |
| 2005 08 27 | 699 | 0.4+ | 0.5− | 2005 11 29 | A50 | 0.1+ | 0.0 | 2006 01 06 | 565 | 0.1+ | 0.6+ |
| 2005 08 28 | E14 | 0.2− | 0.2− | 2005 11 30 | 703 | 0.3− | 0.1+ | 2006 01 06 | 565 | 0.4− | 0.4+ |
| 2005 08 28 | E14 | 0.3+ | 0.1+ | 2005 11 30 | 703 | 0.3+ | 0.3− | 2006 01 06 | 565 | 0.1− | 0.1+ |
| 2005 08 28 | E14 | 0.3+ | 0.1+ | 2005 11 30 | 703 | 0.5+ | 0.1+ | 2006 01 06 | 565 | 0.3− | 0.2+ |
| 2005 09 03 | 084 | 0.2− | 0.4+ | 2005 11 30 | 703 | 0.1− | 0.1− | 2006 01 07 | G96 | 0.0 | 0.3− |
| 2005 09 10 | 084 | 0.4+ | 0.1− | 2005 11 30 | 379 | 0.2+ | 0.6− | 2006 01 07 | G96 | 0.1− | 0.3− |
| 2005 09 14 | E12 | 0.1− | 0.4+ | 2005 11 30 | 379 | 0.1+ | 0.2− | 2006 01 07 | G96 | 0.1− | 0.2− |
| 2005 09 14 | E12 | 0.2+ | 0.3+ | 2005 11 30 | 379 | 0.1+ | 0.2− | 2006 01 07 | G96 | 0.1+ | 0.2− |
| 2005 09 14 | E12 | 0.2− | 0.4+ | 2005 11 30 | 379 | 0.0 | 0.4− | 2006 01 07 | 145 | 0.6+ | 0.2+ |
| 2005 09 14 | E12 | 0.1+ | 0.1+ | 2005 11 30 | 379 | 0.0 | 0.3− | 2006 01 07 | 145 | 0.5− | 0.1− |
| 2005 09 26 | 704 | 0.7+ | 0.8− | 2005 11 30 | 379 | 0.2− | 0.2− | 2006 01 07 | 145 | 0.4+ | 0.2+ |
| 2005 09 26 | 704 | 0.2− | 0.2− | 2005 12 01 | 434 | 0.0 | 0.9+ | 2006 01 07 | 145 | 0.0 | 0.0 |
| 2005 09 26 | 704 | 0.2+ | 0.2− | 2005 12 01 | 434 | 0.1− | 0.3+ | 2006 01 08 | 084 | 0.2− | 0.2− |
| 2005 09 26 | 704 | 0.1+ | 0.2− | 2005 12 01 | 434 | 0.3− | 0.4− | 2006 01 08 | 084 | 0.0 | 0.1− |
| 2005 09 26 | 704 | 0.0 | 0.4− | 2005 12 01 | 434 | 0.7− | 0.2+ | 2006 01 08 | 084 | 0.0 | 0.1− |
| 2005 09 27 | 844 | 0.4+ | 0.5− | 2005 12 02 | 071 | 0.6− | 0.6− | 2006 01 08 | A62 | 0.2+ | 0.1+ |
| 2005 09 27 | 844 | 0.2+ | 0.5− | 2005 12 02 | 071 | 0.2+ | 0.8− | 2006 01 08 | A62 | 0.1+ | 0.1+ |
| 2005 09 27 | 844 | 0.4+ | 0.9− | 2005 12 02 | 071 | 0.2− | 0.5− | 2006 01 08 | A62 | 0.1+ | 0.0 |
| 2005 09 27 | 844 | 0.2+ | 0.6− | 2005 12 02 | 071 | 0.8− | 0.4− | 2006 01 08 | A62 | 0.2+ | 0.2+ |
| 2005 09 29 | 844 | 0.3+ | 0.3− | 2005 12 03 | 355 | 0.5+ | 0.4− | 2006 01 08 | A62 | 0.1+ | 0.0 |
| 2005 09 29 | 844 | 0.3+ | 0.4− | 2005 12 03 | 355 | 0.3+ | 0.0 | 2006 01 08 | A62 | 0.1+ | 0.2− |
| 2005 09 29 | 844 | 1.1+ | 0.3− | 2005 12 03 | 355 | 0.3+ | 0.3− | 2006 01 08 | A62 | 0.0 | 0.1+ |
| 2005 09 29 | 844 | 0.1− | 0.3+ | 2005 12 03 | 355 | 0.2− | 0.2+ | 2006 01 08 | A62 | 0.2− | 0.1+ |
| 2005 09 29 | 844 | 0.6− | 0.0 | 2005 12 05 | 932 | 0.2+ | 0.1− | 2006 01 08 | A62 | 0.0 | 0.1+ |
| 2005 09 29 | 844 | 0.3+ | 0.2− | 2005 12 05 | 932 | 0.3+ | 0.0 | 2006 01 08 | A62 | 0.1− | 0.0 |
| 2005 09 29 | 844 | 0.8+ | 0.2+ | 2005 12 05 | 932 | 0.4+ | 0.1− | 2006 01 08 | A62 | 0.0 | 0.0 |
| 2005 09 29 | 844 | 0.0 | 0.1+ | 2005 12 06 | H45 | 0.2+ | 0.3− | 2006 01 08 | A62 | 0.2− | 0.2− |
| 2005 09 29 | 844 | 0.8+ | 0.3− | 2005 12 06 | H45 | 0.1− | 0.2− | 2006 01 08 | A62 | 0.2− | 0.1− |
| 2005 09 29 | 844 | 0.2− | 0.2− | 2005 12 06 | H45 | 0.1− | 0.3+ | 2006 01 08 | A62 | 0.2− | 0.1− |
| 2005 10 11 | E12 | 0.4+ | 0.4+ | 2005 12 06 | H45 | 0.2− | 0.4+ | 2006 01 08 | A62 | 0.3− | 0.1− |
| 2005 10 11 | E12 | 0.1+ | 0.2+ | 2005 12 06 | H45 | 0.4− | 0.0 | 2006 01 08 | A62 | 0.0 | 0.0 |
| 2005 10 11 | E12 | 0.5+ | 0.1− | 2005 12 07 | H98 | 1.3+ | 1.4− | 2006 01 09 | A30 | 0.1+ | 0.0 |
| 2005 10 11 | E12 | 0.0 | 0.3− | 2005 12 07 | H98 | 0.3+ | 0.1+ | 2006 01 09 | A30 | 0.1+ | 0.1− |
| 2005 10 14 | 808 | 0.1+ | 0.2+ | 2005 12 09 | A32 | 0.0 | 0.4+ | 2006 01 09 | A30 | 0.1+ | 0.0 |
| 2005 10 14 | 808 | 0.5+ | 0.4+ | 2005 12 09 | A32 | 0.0 | 0.1+ | 2006 01 09 | A30 | 0.1+ | 0.1+ |
| 2005 10 14 | 808 | 1.0− | 0.3+ | 2005 12 09 | A32 | 0.1− | 0.4+ | 2006 01 13 | 240 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 14 | 808 | 0.2+ | 0.3+ | 2005 12 09 | A32 | 0.2− | 0.3+ | 2006 01 13 | 240 | 0.8+ | 0.2+ | | |
| 2005 10 17 | 808 | 0.1− | 0.1+ | 2005 12 09 | A32 | 0.2− | 0.5+ | 2006 01 13 | 240 | 0.8+ | 0.1+ | | |
| 2005 10 17 | 808 | 0.3+ | 0.0 | 2005 12 09 | 130 | 0.2+ | 0.1+ | 2006 01 13 | 240 | 0.3+ | 0.0 | | |
| 2005 10 17 | 808 | 0.0 | 0.2+ | 2005 12 09 | 130 | 0.0 | 0.3− | 2006 01 13 | 240 | 0.0 | 0.3− | | |
| 2005 10 20 | 844 | 0.4− | 0.5+ | 2005 12 09 | 130 | 0.2+ | 0.1− | 2006 01 13 | 240 | 0.4+ | 0.3− | | |
| 2005 10 20 | 844 | 0.4+ | 0.8+ | 2005 12 09 | 130 | 0.1− | 0.3− | 2006 01 14 | 204 | 0.2+ | 0.4+ | | |
| 2005 10 20 | 844 | 0.2+ | 0.1+ | 2005 12 10 | 084 | 0.3− | 0.5− | 2006 01 14 | 204 | (1.8+ | 0.4−) | | |
| 2005 10 24 | 704 | (1.5− | 0.9+) | 2005 12 13 | 084 | 0.3− | 0.3+ | 2006 01 14 | 204 | 0.3+ | 0.3+ | | |
| 2005 10 24 | 704 | 0.2− | 0.6+ | 2005 12 13 | 084 | 0.3+ | 0.0 | 2006 01 14 | 204 | 0.0 | 0.3+ | | |
| 2005 10 24 | 704 | 0.5− | 0.2− | 2005 12 13 | 084 | 0.1+ | 0.4− | 2006 01 15 | A53 | 0.8+ | 0.6+ | | |
| 2005 10 24 | 704 | 0.1− | 1.4− | 2005 12 17 | A41 | 0.5− | 0.6+ | 2006 01 15 | A53 | 0.4+ | 0.1+ | | |
| 2005 10 24 | 704 | 0.6+ | 0.6− | 2005 12 17 | A41 | 0.2− | 0.4+ | 2006 01 15 | 185 | (1.1− | 2.0−) | | |
| 2005 10 27 | E14 | 0.6+ | 0.2− | 2005 12 17 | A41 | 0.6− | 0.6+ | 2006 01 15 | 185 | 0.2− | 0.4− | | |
| 2005 10 27 | E14 | 0.6+ | 0.1− | 2005 12 17 | A41 | 0.2− | 0.6+ | 2006 01 18 | H45 | 0.1+ | 0.0 | | |
| 2005 10 27 | E14 | 0.7+ | 0.1− | 2005 12 17 | A41 | 0.1− | 0.1− | 2006 01 18 | H45 | 1.0− | 0.4− | | |
| 2005 10 28 | E14 | 0.4+ | 0.0 | 2005 12 18 | H98 | 0.2− | 0.2− | 2006 01 18 | H45 | 0.1+ | 0.0 | | |
| 2005 10 28 | E14 | 0.6+ | 0.1+ | 2005 12 18 | H98 | 0.4+ | 0.7− | 2006 01 18 | H45 | 0.7− | 0.3− | | |
| 2005 10 28 | E14 | 0.4+ | 0.1− | 2005 12 18 | H98 | 0.6− | 0.2− | 2006 01 18 | 084 | 0.9− | 0.2+ | | |
| 2005 10 30 | 703 | 0.3+ | 0.1− | 2005 12 18 | 160 | 0.0 | 0.1+ | 2006 01 19 | A30 | 0.2− | 0.1− | | |
| 2005 10 30 | 703 | 0.1+ | 0.0 | 2005 12 18 | 160 | 0.2− | 0.0 | 2006 01 19 | A30 | 0.2− | 0.2− | | |
| 2005 10 30 | 703 | 0.3+ | 0.1+ | 2005 12 18 | 160 | 0.1− | 0.0 | 2006 01 19 | A30 | 0.2− | 0.1− | | |
| 2005 10 30 | 703 | 0.2+ | 0.1− | 2005 12 18 | 160 | 0.1− | 0.1+ | 2006 01 19 | A30 | 0.2− | 0.2− | | |
| 2005 10 31 | 379 | 0.7+ | 0.3+ | 2005 12 18 | 160 | 0.2− | 0.0 | 2006 01 19 | A30 | 0.3− | 0.2− | | |
| 2005 10 31 | 379 | 0.1+ | 0.3+ | 2005 12 19 | H45 | 0.6− | 0.2+ | 2006 01 22 | 670 | 0.2+ | 0.0 | | |
| 2005 11 01 | 844 | 0.4− | 1.1+ | 2005 12 19 | H45 | 0.1+ | 0.0 | 2006 01 22 | 670 | 0.5+ | 0.5− | | |
| 2005 11 01 | 844 | 0.4− | 1.3+ | 2005 12 19 | H45 | 0.1− | 0.2+ | 2006 01 26 | H45 | 1.0+ | 0.6− | | |
| 2005 11 01 | 844 | 0.3− | 0.8+ | 2005 12 19 | H45 | 0.3+ | 0.4+ | 2006 01 26 | H45 | 0.1+ | 0.7− | | |
| 2005 11 01 | 844 | 0.5− | 1.2+ | 2005 12 19 | H45 | 0.2+ | 0.2+ | 2006 01 26 | H45 | 0.3+ | 0.0 | | |
| 2005 11 01 | 844 | 0.4− | 1.3+ | 2005 12 20 | H93 | 0.4− | 0.3+ | 2006 01 26 | H45 | 0.4+ | 0.1− | | |
| 2005 11 01 | E14 | 0.1+ | 0.2− | 2005 12 20 | 726 | 0.1+ | 0.1− | 2006 01 26 | H45 | 0.9− | 0.2− | | |
| 2005 11 01 | E14 | 0.1+ | 0.2− | 2005 12 20 | 726 | 0.1+ | 0.2+ | 2006 01 27 | 113 | 0.0 | 0.0 | | |
| 2005 11 01 | E14 | 0.3+ | 0.4− | 2005 12 20 | 726 | 0.6+ | 0.8+ | 2006 01 27 | 113 | 0.3− | 0.2− | | |
| 2005 11 02 | E14 | 0.2+ | 0.0 | 2005 12 20 | H93 | 0.5+ | 1.1+ | 2006 01 27 | 113 | 0.9+ | 0.2− | | |
| 2005 11 02 | E14 | 0.3+ | 0.2− | 2005 12 20 | H93 | 0.1+ | 0.5+ | 2006 01 31 | A53 | 0.1+ | 1.2+ | | |
| 2005 11 02 | E14 | 0.1+ | 0.3− | 2005 12 21 | 560 | 0.1− | 0.1+ | 2006 01 31 | A53 | 0.3+ | 1.0+ | | |
| 2005 11 03 | 834 | 0.4− | 1.0+ | 2005 12 21 | 560 | 0.0 | 0.2+ | 2006 01 31 | A53 | 0.1+ | 0.4+ | | |
| 2005 11 03 | 834 | 0.6− | 0.7+ | 2005 12 21 | 560 | 0.0 | 0.3+ | 2006 03 19 | 240 | 0.2+ | 0.1+ | | |
| 2005 11 03 | 834 | 0.4− | 0.5+ | 2005 12 21 | A81 | 0.0 | 0.3− | 2006 03 19 | 240 | 0.2+ | 0.1+ | | |
| 2005 11 03 | 844 | 0.3− | 1.2+ | 2005 12 21 | A81 | 0.1− | 0.1− | 2006 03 19 | 240 | 0.2− | 0.0 | | |
| 2005 11 03 | 844 | 0.4− | 0.9+ | 2005 12 21 | A81 | 0.0 | 0.2+ | 2006 03 19 | 240 | 0.1+ | 0.1+ | | |
| 2005 11 03 | 844 | 0.1+ | 1.1+ | 2005 12 21 | A81 | 0.2+ | 0.3+ | 2006 03 19 | 240 | 0.4+ | 0.1+ | | |

**(142349)∗ 2002 RR$_{212}$**

Discovered 2002 Sept. 15 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.23852 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24213702 | $\omega$ | 1.88902 | | +0.64032942 | −0.74820832 | |
| $a$ | 2.5493449 | $\Omega$ | 48.34490 | | +0.70163542 | +0.47776696 | |
| $e$ | 0.1794919 | $i$ | 13.44108 | | +0.31254756 | +0.46035099 | |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.1+ | 0.1− | 2002 10 16 | 644 | 0.3− | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.2+ | | |
| 1994 12 01 | 691 | 0.2+ | 0.1− | 2002 10 16 | 644 | 0.4− | 0.4+ | 2006 09 17 | 699 | 0.2+ | 0.8+ | | |
| 1994 12 01 | 691 | 0.7− | 0.2− | 2002 10 25 | 644 | 0.3− | 1.3+ | 2006 09 17 | 699 | 0.0 | 0.3− | | |
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2002 10 25 | 644 | 0.1− | 1.2+ | 2006 09 17 | 699 | 0.6+ | 1.1+ | | |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2002 10 25 | 644 | 0.1− | 1.5+ | 2006 09 17 | 699 | (1.6+ | 0.8−) | | |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2002 10 29 | 704 | 1.4+ | 0.6+ | 2006 09 20 | 703 | 1.1+ | 1.0+ | | |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2002 10 29 | 704 | 0.7+ | 0.4− | 2006 09 20 | 703 | 0.7+ | 0.7+ | | |
| 1998 10 17 | 699 | 1.2+ | 0.4+ | 2002 10 29 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 703 | 0.3+ | 0.0 | | |
| 1998 10 17 | 699 | 0.9+ | 1.0+ | 2002 10 29 | 704 | 1.1+ | 0.7+ | 2006 09 20 | 703 | 0.5+ | 0.3− | | |
| 1998 10 17 | 699 | 0.2+ | 0.5+ | 2002 11 02 | 608 | 0.8− | 0.7− | 2006 09 26 | 703 | 0.3− | 0.6− | | |
| 1998 11 14 | 699 | 1.7+ | 0.1+ | 2002 11 02 | 608 | 0.3− | 0.6− | 2006 09 26 | 703 | 0.5− | 0.9− | | |
| 1998 11 14 | 699 | 0.1− | 0.2− | 2002 11 02 | 608 | 0.5− | 0.7− | 2006 09 26 | 703 | 0.6− | 0.1− | | |
| 1998 11 14 | 699 | 0.1+ | 0.1− | 2002 11 06 | 644 | 0.8− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.2− | | |
| 2002 09 15 | 608 | 1.2− | 0.7− | 2002 11 06 | 644 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 09 15 | 608 | 1.0− | 0.7− | 2002 11 06 | 644 | 0.8− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 15 | 608 | 0.8− | 0.3− | 2002 11 06 | 644 | 0.3− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 19 | 644 | 0.4− | 0.4+ | 2002 11 06 | 644 | 0.7− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2002 09 19 | 644 | 0.3− | 0.6+ | 2002 11 06 | 644 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2002 09 19 | 644 | 0.1− | 0.4+ | 2002 11 11 | 704 | 0.6− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2002 09 28 | 608 | (3.5− | 0.2+) | 2002 11 11 | 704 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.2− | | |
| 2002 09 28 | 608 | (3.7− | 0.8+) | 2002 11 11 | 704 | 0.8− | 0.2− | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2002 09 28 | 608 | (3.3− | 1.0+) | 2002 11 11 | 704 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2002 10 06 | 704 | 0.9− | 0.2− | 2004 03 10 | 644 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.1+ | 0.5+ | | |
| 2002 10 06 | 704 | 0.8− | 0.1+ | 2004 03 10 | 644 | 0.4+ | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.2− | | |
| 2002 10 06 | 704 | 0.5− | 0.7+ | 2004 03 10 | 644 | 0.3+ | 1.0+ | 2006 10 28 | 703 | 0.7− | 0.6− | | |
| 2002 10 06 | 704 | 0.8− | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.1− | 0.7+ | | |
| 2002 10 16 | 644 | 0.5− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.1+ | | | | | | |

**(142350)∗ 2002 RA$_{213}$**

Discovered 2002 Sept. 12 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.47822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26227725 | $\omega$ | 276.32625 | | +0.96486062 | +0.23233382 | |
| $a$ | 2.4171057 | $\Omega$ | 70.29139 | | −0.15817968 | +0.88656429 | |
| $e$ | 0.1462216 | $i$ | 7.49138 | | −0.20981701 | +0.40003095 | |
| $P$ | 3.76 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 699 | 0.3+ | 0.4+ | 2005 04 30 | 599 | 1.1+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.0 | | |
| 2002 08 15 | 699 | 0.1+ | 0.1+ | 2005 04 30 | 599 | 0.4+ | 1.1+ | 2006 10 16 | 703 | 0.4− | 0.2+ | | |
| 2002 08 15 | 699 | 0.5+ | 0.8+ | 2005 06 15 | G96 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.5+ | | |
| 2002 08 15 | 699 | 1.1+ | 1.1+ | 2005 06 15 | G96 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2002 08 18 | 608 | 0.4+ | 1.2− | 2005 06 15 | G96 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2002 08 18 | 608 | 0.5+ | 0.5− | 2005 06 15 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 08 18 | 608 | 0.5+ | 1.5− | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 1.3− | 0.5− | | |
| 2002 08 20 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.7+ | 1.0+ | 2006 10 22 | 703 | 0.6− | 0.8− | | |
| 2002 08 20 | 644 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.1+ | | |
| 2002 08 20 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.8− | | |
| 2002 09 09 | 644 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2002 09 09 | 644 | 0.5+ | 0.3+ | 2006 09 25 | 699 | 0.6+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.2+ | | |
| 2002 09 09 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2002 09 12 | 608 | 0.3− | 1.0− | 2006 09 25 | 699 | 0.2− | 0.5− | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2002 09 12 | 608 | 0.1+ | 1.0− | 2006 09 26 | 703 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2002 09 12 | 608 | 0.1− | 1.0− | 2006 09 26 | 703 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2002 09 16 | 608 | 0.4− | 0.8− | 2006 09 26 | 703 | 0.2− | 0.8− | 2006 11 16 | 703 | (2.1− | 1.7−) | | |
| 2002 09 16 | 608 | 0.0 | 0.8− | 2006 09 26 | 703 | 0.6− | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.2− | | |
| 2002 09 16 | 608 | 0.7− | 0.9− | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.4+ | 0.3− | | |
| 2002 09 17 | 644 | 0.4− | 0.5+ | 2006 09 29 | 699 | 0.4− | 0.1+ | 2006 11 16 | 703 | 0.8+ | 0.2− | | |
| 2002 09 17 | 644 | 0.4− | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.2+ | 0.5+ | | |
| 2002 09 17 | 644 | 0.3− | 0.5+ | 2006 09 29 | 699 | (0.3+ | 1.7+) | 2006 11 17 | 704 | 0.0 | 1.2+ | | |
| 2002 09 26 | 704 | 1.2− | 0.4+ | 2006 10 01 | 704 | 0.0 | 0.7+ | 2006 11 17 | 704 | 0.7− | 0.5+ | | |
| 2002 09 26 | 704 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2002 09 26 | 704 | 0.4− | 0.4+ | 2006 10 01 | 704 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.6+ | 1.2+ | | |
| 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.6+ | 2006 11 20 | 704 | 0.3+ | 0.0 | | |
| 2004 02 17 | 691 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 1.4+ | 1.4+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2005 04 15 | 691 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.3− | | |
| 2005 04 15 | 691 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.5− | 0.2− | | |
| 2005 04 15 | 691 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.3− | | |
| 2005 04 30 | 599 | 1.1− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | | | | | |
| 2005 04 30 | 599 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.1+ | | | | | | |

**(142351)∗ 2002 RJ$_{213}$ = 1999 TJ$_{284}$**

Discovered 2002 Sept. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37921)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.38435 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29941557 | $\omega$ | 344.30267 | | +0.23404782 | | −0.96623586 |
| $a$ | 2.2128559 | $\Omega$ | 92.06892 | | +0.90320108 | | +0.17507812 |
| $e$ | 0.1967380 | $i$ | 6.18963 | | +0.35979080 | | +0.18903945 |
| $P$ | 3.29 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2+ | 1.2+ | 2002 08 14 | 704 | (1.8− | 0.7−) | 2002 09 16 | 644 | 0.1+ | 0.3+ |
| 1999 10 09 | 704 | 0.5+ | 1.4+ | 2002 08 14 | 704 | 0.1+ | 0.4− | 2004 03 22 | 699 | 0.6− | 0.1− |
| 1999 10 09 | 704 | 0.3− | 0.0 | 2002 08 14 | 704 | 0.1− | 0.8− | 2004 03 22 | 699 | 0.6+ | 0.5+ |
| 1999 10 09 | 704 | 0.3− | 0.1+ | 2002 08 19 | 644 | 0.3+ | 0.7+ | 2004 03 22 | 699 | 1.0+ | 1.3+ |
| 1999 10 09 | 704 | 0.6+ | 0.5+ | 2002 08 19 | 644 | 0.6− | 0.1+ | 2004 03 22 | 699 | 0.5− | 0.9+ |
| 1999 10 19 | 704 | 0.9+ | 0.9+ | 2002 08 19 | 644 | 0.1− | 0.2+ | 2004 04 23 | 704 | (2.1+ | 0.3+) |
| 1999 10 19 | 704 | 1.0− | 0.0 | 2002 08 30 | 644 | 0.2+ | 0.4+ | 2004 04 23 | 704 | 1.0+ | 0.8− |
| 1999 10 19 | 704 | 0.0 | 0.3+ | 2002 08 30 | 644 | 0.1− | 0.1+ | 2004 04 23 | 704 | 0.7+ | 0.3+ |
| 1999 10 19 | 704 | 0.1− | 0.3+ | 2002 08 30 | 644 | 0.3− | 0.6+ | 2004 04 23 | 704 | (2.1+ | 0.4−) |
| 1999 10 19 | 704 | 0.4+ | 1.0+ | 2002 09 08 | 608 | 0.1− | 0.6− | 2004 04 23 | 704 | (2.0+ | 2.3−) |
| 1999 11 05 | 704 | 0.5− | 0.4+ | 2002 09 08 | 608 | 0.3− | 0.5− | 2006 10 22 | 691 | 0.1− | 0.5+ |
| 1999 11 05 | 704 | 0.6− | 0.2+ | 2002 09 08 | 608 | 0.0 | 0.4− | 2006 10 22 | 691 | 0.5+ | 0.3+ |
| 1999 11 05 | 704 | 0.5− | 0.2− | 2002 09 13 | 699 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.5+ | 0.5+ |
| 1999 11 05 | 704 | 0.9− | 0.0 | 2002 09 13 | 699 | 0.3+ | 0.4− | 2006 11 27 | G96 | 0.4− | 0.3+ |
| 2001 05 16 | 691 | 0.3+ | 0.7+ | 2002 09 13 | 699 | 0.1+ | 1.0+ | 2006 11 27 | G96 | 0.4− | 0.1+ |
| 2001 05 16 | 691 | 0.2+ | 0.5+ | 2002 09 13 | 699 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.8− | 0.1+ |
| 2001 05 16 | 691 | 0.1+ | 0.7+ | 2002 09 16 | 644 | 0.7− | 0.2+ | 2006 11 27 | G96 | 0.5− | 0.4+ |
| 2002 08 14 | 704 | 0.1− | 0.6+ | 2002 09 16 | 644 | 0.0 | 0.2+ | | | | |

**(142352)∗ 2002 RW$_{214}$**

Discovered 2002 Sept. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.76633 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25571035 | $\omega$ | 308.04997 | | +0.86312325 | | +0.50358897 |
| $a$ | 2.4583130 | $\Omega$ | 21.79045 | | −0.42573789 | | +0.76572010 |
| $e$ | 0.2080823 | $i$ | 5.81890 | | −0.27159807 | | +0.40008859 |
| $P$ | 3.85 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 807 | 0.2+ | 0.0 | 2005 04 09 | G96 | 0.7− | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.1+ |
| 2001 05 22 | 807 | 0.2− | 0.0 | 2005 04 09 | G96 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 15 | 699 | 0.6− | 1.1− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 08 15 | 699 | 0.0 | 0.2− | 2005 05 08 | G96 | 0.9− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 15 | 699 | 0.6− | 1.4− | 2005 05 08 | G96 | 0.7− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2002 08 15 | 699 | 1.2− | 0.3+ | 2005 05 08 | G96 | 0.3− | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2002 08 19 | 644 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2002 08 19 | 644 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.4+ | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2002 08 19 | 644 | 0.5+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.3− |
| 2002 08 30 | 644 | 0.1+ | 0.5− | 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.9− | 0.6+ |
| 2002 08 30 | 644 | 0.4+ | 0.4− | 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.7− | 0.3− |
| 2002 08 30 | 644 | 0.2+ | 0.3− | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.9− | 0.5− |
| 2002 09 13 | 704 | 0.1− | 0.6+ | 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 09 13 | 704 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 09 13 | 704 | 0.7+ | 1.2+ | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 13 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 09 16 | 644 | 0.1− | 1.0+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 09 16 | 644 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 09 16 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 09 17 | 608 | 0.6− | 0.0 | 2006 09 20 | 704 | 1.4+ | 0.3− | 2006 11 02 | G96 | 0.0 | 0.4+ |
| 2002 09 17 | 608 | 0.2− | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 11 02 | G96 | 0.4− | 0.3+ |
| 2002 09 17 | 608 | 0.2− | 0.1− | 2006 09 20 | 704 | (2.2+ | 0.4−) | 2006 11 02 | G96 | 0.1+ | 0.3+ |
| 2005 03 08 | G96 | 0.8− | 0.0 | 2006 09 20 | 704 | 0.8+ | 0.2− | 2006 11 02 | G96 | 0.0 | 0.1+ |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2005 03 08 | G96 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.3− | 0.2− |
| 2005 03 08 | G96 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.1+ | 0.0 |
| 2005 03 17 | 691 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 1.3− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2005 03 17 | 691 | 0.7+ | 0.3+ | 2006 10 01 | 704 | 1.3− | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 10 01 | 704 | (0.8+ | 2.0+) | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 04 04 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 04 04 | 691 | 0.7+ | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.1+ | 2006 11 23 | 291 | 0.1+ | 0.1+ |
| 2005 04 04 | 691 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.5− | 0.7+ | 2006 11 23 | 291 | 0.1− | 0.2+ |
| 2005 04 09 | G96 | 0.5− | 0.3+ | 2006 10 01 | 704 | (0.3− | 2.3+) | 2006 11 23 | 291 | 0.1− | 0.4+ |
| 2005 04 09 | G96 | 0.6− | 0.4+ | 2006 10 01 | 704 | 1.0+ | 0.4− | | | | |

**(142353)∗ 2002 RC$_{217}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.90735 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27299093 | $\omega$ | 85.99592 | | +0.95284143 | | +0.30291892 |
| $a$ | 2.3534442 | $\Omega$ | 256.37036 | | −0.28535021 | | +0.87385275 |
| $e$ | 0.1875424 | $i$ | 1.07645 | | −0.10328825 | | +0.38029134 |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.8− | 0.6− | 2002 09 16 | 644 | 0.1− | 1.2+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 2002 08 12 | 704 | 0.5− | 0.3+ | 2004 01 30 | 691 | 0.2+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2002 08 12 | 704 | 0.8− | 0.4− | 2004 01 30 | 691 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2002 08 12 | 704 | (1.7− | 1.4+) | 2004 01 30 | 691 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.4+ |
| 2002 08 12 | 704 | 0.2− | 0.3+ | 2004 02 11 | 691 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2002 09 01 | 608 | 0.6+ | 0.5− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2002 09 01 | 608 | 0.5+ | 0.2+ | 2004 02 11 | 691 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2002 09 01 | 608 | 1.0+ | 0.4+ | 2004 02 17 | 291 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 699 | 1.0− | 0.2− | 2004 02 17 | 291 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2004 02 17 | 291 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2002 09 05 | 699 | 0.1− | 0.0 | 2005 05 07 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.8+ |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2005 05 07 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.4− |
| 2002 09 05 | 699 | 0.6− | 0.4+ | 2005 05 07 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | (1.6− | 1.4−) |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2005 05 10 | G96 | 0.3+ | 1.1+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.2+ | 0.6+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2002 09 05 | 699 | 0.7− | 1.0+ | 2005 05 10 | G96 | 0.3+ | 0.7+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2005 05 10 | G96 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.5− | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2002 09 16 | 644 | 0.2− | 1.1+ | 2006 09 27 | G96 | 0.0 | 0.0 | | | | |
| 2002 09 16 | 644 | 0.0 | 1.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | | | | |

**(142354)∗ 2002 RL$_{217}$ = 2004 CF$_{30}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69390)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.88665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26742442 | $\omega$ | 20.34267 | | +0.97020148 | | +0.24210028 |
| $a$ | 2.3859903 | $\Omega$ | 325.64206 | | −0.22464376 | | +0.88356840 |
| $e$ | 0.1428946 | $i$ | 0.99762 | | −0.09079801 | | +0.40086699 |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 291 | 0.4− | 0.4+ | 2004 02 12 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2002 08 15 | 291 | 0.4− | 0.6+ | 2004 02 12 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2002 08 15 | 291 | 0.2− | 0.5+ | 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 08 18 | 608 | 0.6+ | 0.0 | 2004 02 14 | 691 | 0.3+ | 0.7+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2002 08 18 | 608 | 0.4+ | 0.7+ | 2004 02 14 | 691 | 0.3+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 08 18 | 608 | 0.3− | 0.4+ | 2004 02 14 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2005 05 07 | 691 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.5− | 0.1+ | 2005 05 07 | 691 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.3− | 0.3− | 2005 05 07 | 691 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.7+ |
| 2002 09 14 | 644 | 0.5− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.4− | 1.3− |
| 2002 09 14 | 644 | 0.4− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 2002 09 16 | 644 | 0.8− | 0.6+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.5− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.5− |
| 2002 09 16 | 644 | 0.5− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 10 09 | 291 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2002 10 09 | 291 | 0.1+ | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2002 10 09 | 291 | 0.1+ | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2004 01 30 | 691 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2004 01 30 | 691 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.2+ | 1.9− |
| 2004 01 30 | 691 | 0.3− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1− | | | | |

**(142355)∗ 2002 RT$_{218}$ = 2001 OK$_9$**

Discovered 2002 Sept. 14 by NEAT at Haleakala.
Id. A. Doppler (*MPO* 37922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.71376 | | (2000.0) | | | |
| $n$ | 0.22816970 | $\omega$ | 111.93566 | | +0.10239016 | +0.99299951 |
| $a$ | 2.6523494 | $\Omega$ | 163.60927 | | −0.97221561 | +0.11242416 |
| $e$ | 0.0230229 | $i$ | 12.04606 | | −0.21050668 | −0.03623234 |
| $P$ | 4.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.3− | 0.1− | 2005 04 04 | 703 | 0.6− | 0.4− | 2006 08 16 | 644 | 0.2+ | 0.3− |
| 2001 06 21 | 704 | 0.3+ | 0.3− | 2005 04 04 | 703 | 0.4+ | 0.0 | 2006 08 18 | 704 | 0.2+ | 1.0+ |
| 2001 06 21 | 704 | 1.1− | 0.4+ | 2005 04 04 | 703 | 0.2+ | 0.1− | 2006 08 18 | 704 | 0.3+ | 0.2− |
| 2001 06 21 | 704 | 0.4− | 0.6− | 2005 04 12 | 699 | 0.2+ | 0.5+ | 2006 08 18 | 704 | 0.0 | 0.3− |
| 2001 07 19 | 691 | 0.4− | 0.2− | 2005 04 12 | 699 | 0.1− | 0.2− | 2006 08 18 | 704 | 0.8− | 0.4+ |
| 2001 07 19 | 691 | 0.4− | 0.3− | 2005 04 12 | 699 | 0.3+ | 1.1+ | 2006 08 28 | 703 | 0.5− | 0.6− |
| 2001 07 19 | 691 | 0.3− | 0.0 | 2005 04 12 | 699 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.8− |
| 2001 07 21 | 691 | 0.3+ | 0.4+ | 2005 04 18 | 703 | 0.3+ | 1.2+ | 2006 08 28 | 703 | 0.0 | 1.1− |
| 2001 07 21 | 691 | 0.5+ | 0.4+ | 2005 04 18 | 703 | 0.0 | 1.1+ | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2001 07 21 | 691 | 0.7+ | 0.2− | 2005 04 18 | 703 | 0.2+ | 0.9+ | 2006 09 12 | 699 | 0.8+ | 1.2+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2005 04 18 | 703 | 0.1− | 0.9+ | 2006 09 12 | 699 | (0.6− | 2.1+) |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2005 05 04 | 703 | 0.1+ | 0.1+ | 2006 09 12 | 699 | 0.3+ | 0.9+ |
| 2002 09 06 | 704 | 0.1− | 1.4+ | 2005 05 04 | 703 | 0.3− | 0.5− | 2006 09 12 | 699 | (2.0+ | 0.0 ) |
| 2002 09 06 | 704 | 0.5− | 0.4+ | 2005 05 04 | 703 | 0.9+ | 0.4− | 2006 09 14 | 703 | 0.7− | 0.1− |
| 2002 09 06 | 704 | 0.6− | 0.6− | 2005 05 04 | 703 | 0.3− | 0.6− | 2006 09 14 | 703 | 0.2− | 0.6− |
| 2002 09 06 | 704 | 0.8+ | 0.6− | 2005 05 06 | 704 | 0.7+ | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.4− |
| 2002 09 14 | 608 | 0.6− | 0.3− | 2005 05 06 | 704 | 0.8+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.7+ |
| 2002 09 14 | 608 | 0.8− | 0.5− | 2005 05 06 | 704 | 0.9+ | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.5+ |
| 2002 09 14 | 608 | 0.6− | 0.1− | 2005 05 06 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 704 | 0.0 | 0.8+ |
| 2002 09 16 | 644 | 0.2− | 0.2+ | 2005 05 07 | 683 | (0.5+ | 1.5+) | 2006 09 17 | 704 | 0.6− | 0.5+ |
| 2002 09 16 | 644 | 0.1− | 0.3+ | 2005 05 07 | 683 | 0.1− | 1.0+ | 2006 09 17 | 704 | 0.4+ | 0.8+ |
| 2002 09 16 | 644 | 0.1+ | 0.2+ | 2005 05 07 | 683 | (0.3+ | 4.8+) | 2006 09 17 | 704 | 0.4+ | 1.1+ |
| 2002 09 16 | 644 | 0.1+ | 0.5+ | 2005 05 11 | 703 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 2002 09 16 | 644 | 0.1+ | 0.3+ | 2005 05 11 | 703 | 1.2− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2002 09 16 | 644 | 0.1+ | 0.3+ | 2005 05 11 | 703 | 0.7− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2002 09 28 | 608 | (1.7− | 0.9−) | 2005 05 11 | 703 | 1.0− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2002 09 28 | 608 | (1.6− | 1.0−) | 2005 05 12 | 683 | 0.7+ | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2002 09 28 | 608 | (2.2− | 1.6−) | 2005 05 12 | 683 | (0.6+ | 2.1−) | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2002 10 08 | 699 | 0.6− | 1.1+ | 2005 05 12 | 683 | (0.5+ | 1.7+) | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2002 10 08 | 699 | (1.2− | 1.9+) | 2005 05 15 | 644 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2002 10 08 | 699 | 1.4− | 1.2+ | 2005 05 15 | 644 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.6+ | 0.1− |
| 2002 10 08 | 699 | 0.2− | 0.9+ | 2005 05 15 | 644 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2002 10 29 | 704 | (1.2− | 1.7+) | 2005 05 31 | 703 | 0.1+ | 1.4− | 2006 10 17 | G96 | 0.3− | 0.8− |
| 2002 10 29 | 704 | (0.8+ | 1.8+) | 2005 05 31 | 703 | 0.4− | 1.2− | 2006 10 17 | G96 | 0.0 | 0.5− |
| 2002 10 29 | 704 | 0.4+ | 1.3+ | 2005 05 31 | 703 | (0.4− | 1.7−) | 2006 10 28 | G96 | 0.6− | 0.8− |
| 2002 10 29 | 704 | (0.8+ | 1.6+) | 2005 05 31 | 703 | 0.8− | 1.0− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2002 10 29 | 704 | (0.2+ | 3.4+) | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2005 04 04 | 703 | 0.2+ | 0.5− | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.2− |

**(142356)∗ 2002 RX$_{218}$ = 1995 YC$_9$**

Discovered 2002 Sept. 15 by NEAT at Palomar.
Id. A. Doppler (*MPO* 37922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.84902 | | (2000.0) | | | |
| $n$ | 0.26105698 | $\omega$ | 220.47638 | | +0.60531995 | +0.79433032 |
| $a$ | 2.4246321 | $\Omega$ | 86.83703 | | −0.71640437 | +0.57173740 |
| $e$ | 0.1690838 | $i$ | 2.94248 | | −0.34691863 | +0.20531852 |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.1+ | 0.3+ | 2002 09 15 | 644 | 0.2+ | 0.4+ | 2006 09 06 | 644 | 0.4− | 0.2+ |
| 1995 12 18 | 691 | 0.4− | 0.3+ | 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 09 12 | 703 | 1.1− | 0.9+ |
| 1995 12 18 | 691 | 0.1− | 0.1+ | 2002 09 16 | 644 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.5+ | 0.1+ |
| 1995 12 23 | 691 | 0.2− | 0.6+ | 2002 09 16 | 644 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.5− | 0.0 |
| 1995 12 23 | 691 | 0.1+ | 0.5+ | 2002 09 16 | 644 | 0.1− | 0.1− | 2006 09 12 | 703 | (0.1− | 2.3−) |
| 1995 12 23 | 691 | 0.1− | 0.2+ | 2005 03 10 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | 1.0+ | 0.1− |
| 2002 08 14 | 704 | 0.5+ | 0.6+ | 2005 03 10 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.5− | 0.1+ |
| 2002 08 14 | 704 | 0.4− | 0.9+ | 2005 03 10 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.2− |
| 2002 08 14 | 704 | 0.0 | 0.0 | 2005 03 11 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.5− | 0.4− |
| 2002 08 14 | 704 | 0.4+ | 0.1+ | 2005 03 11 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2005 03 11 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2005 03 18 | 703 | 1.0− | 1.2+ | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2002 08 18 | 644 | 0.4− | 0.0 | 2005 03 18 | 703 | (1.5− | 0.6+) | 2006 10 01 | 704 | 0.8− | 0.1+ |
| 2002 08 29 | 644 | 0.2+ | 0.4+ | 2005 03 18 | 703 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 1.0+ | 1.3+ |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2005 03 18 | 703 | (2.1− | 1.4−) | 2006 10 01 | 704 | 0.8− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2005 04 04 | 703 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.7− | 0.3− |
| 2002 09 05 | 704 | 0.2+ | 0.9+ | 2005 04 04 | 703 | 0.5− | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2005 04 04 | 703 | 0.8+ | 0.4− | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.9+ | 0.6+ | 2005 04 04 | 703 | 0.7+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.8+ | 0.6+ | 2005 05 04 | 691 | 0.6+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.7− |
| 2002 09 05 | 608 | 0.8− | 0.1− | 2005 05 04 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 09 05 | 608 | 1.0− | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 608 | 1.2− | 0.1− | 2005 05 13 | 691 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 09 11 | 608 | 0.2− | 0.8− | 2005 05 13 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 09 11 | 608 | 0.0 | 0.4− | 2005 05 13 | 691 | 0.2+ | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2002 09 11 | 608 | 0.3+ | 0.5− | 2006 09 06 | 644 | 0.5− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.0 | | | | |

**(142357)∗ 2002 RE$_{219}$**

Discovered 2002 Sept. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.24661 | | (2000.0) | | | |
| $n$ | 0.25809162 | $\omega$ | 216.76093 | | −0.35464786 | +0.93468531 |
| $a$ | 2.4431687 | $\Omega$ | 32.48730 | | −0.84673718 | −0.31005937 |
| $e$ | 0.1698603 | $i$ | 2.58818 | | −0.39656151 | −0.17385789 |
| $P$ | 3.82 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 608 | 0.4− | 0.1− | 2005 03 10 | G96 | 0.3− | 0.0 | 2005 04 04 | 704 | 0.6+ | 1.2+ |
| 2002 08 11 | 608 | 0.0 | 0.1+ | 2005 03 10 | G96 | 0.2− | 0.0 | 2005 04 04 | 704 | 0.1+ | 0.9+ |
| 2002 08 11 | 608 | 0.3+ | 0.3+ | 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 691 | 0.1+ | 0.1+ |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2005 03 11 | 691 | 0.0 | 0.1+ | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 691 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2005 03 12 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 2002 08 29 | 644 | 0.2− | 0.6− | 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.4− | 2005 03 12 | 691 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.4− | 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 09 04 | 644 | 0.1+ | 0.8+ | 2005 03 16 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.3− |
| 2002 09 04 | 644 | 0.3− | 0.4+ | 2005 03 16 | 691 | 0.2− | 0.8+ | 2006 09 30 | 691 | 0.6− | 0.3+ |
| 2002 09 04 | 644 | 0.1− | 0.2+ | 2005 03 17 | 703 | 0.0 | 0.7− | 2006 09 30 | G96 | 0.5− | 0.2+ |
| 2002 09 15 | 644 | 0.1− | 0.6+ | 2005 03 17 | 703 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2002 09 15 | 644 | 0.1− | 0.2+ | 2005 03 17 | 703 | 0.9− | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.2+ |
| 2002 09 15 | 644 | 0.1− | 0.4+ | 2005 03 17 | 703 | 0.9− | 0.3− | 2006 09 30 | G96 | 0.9+ | 0.1+ |
| 2002 09 16 | 644 | 0.7− | 0.5+ | 2005 04 01 | 683 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 09 16 | 644 | 0.2+ | 0.6+ | 2005 04 01 | 683 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.4+ | 0.2+ |
| 2002 09 16 | 644 | 0.2− | 0.3+ | 2005 04 01 | 683 | (0.1− | 1.6+) | 2006 10 20 | G96 | 0.6− | 0.2+ |
| 2003 12 17 | 691 | 0.1− | 0.6+ | 2005 04 02 | 683 | 0.1− | 0.8− | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2003 12 17 | 691 | 0.6+ | 0.0 | 2005 04 02 | 683 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.3− | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.5− | 0.1− | 2005 04 02 | 683 | 0.8+ | 0.5− | 2006 10 20 | G96 | 0.4− | 0.3+ |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.7+ | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.2+ |
| 2005 03 10 | G96 | 0.1− | 0.1− | 2005 04 04 | 703 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2005 04 04 | 703 | 0.8+ | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 04 04 | 703 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2005 03 10 | G96 | 0.1− | 0.1− | 2005 04 04 | 704 | (2.7+ | 2.2+) | 2006 11 15 | G96 | 0.3− | 0.4+ |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2005 04 04 | 704 | 0.7+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.0 |

**(142358)∗ 2002 RW$_{220}$**

Discovered 2002 Sept. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.26757 | | (2000.0) | | | |
| $n$ | 0.23127556 | $\omega$ | 156.97190 | | +0.29060934 | +0.95401283 |
| $a$ | 2.6285499 | $\Omega$ | 129.83991 | | −0.89211194 | +0.29793060 |
| $e$ | 0.1257908 | $i$ | 5.49473 | | −0.34595160 | +0.03311907 |
| $P$ | 4.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 09 | 691 | 0.2+ | 0.2+ | 2002 09 15 | 644 | 0.2+ | 0.4+ | 2005 04 17 | 691 | 0.2+ | 0.2+ |
| 1994 11 09 | 691 | 0.0 | 1.0− | 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 05 26 | G96 | 0.3+ | 0.4− |
| 1996 02 17 | 691 | 0.1− | 0.5− | 2002 09 15 | 644 | 0.3+ | 0.4+ | 2006 05 26 | G96 | 0.0 | 0.4− |
| 1996 02 17 | 691 | 0.2− | 0.2− | 2002 09 16 | 644 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.2− | 0.4− |
| 1996 02 17 | 691 | 0.0 | 0.5− | 2002 09 16 | 644 | 0.1+ | 0.4+ | 2006 05 26 | G96 | 0.0 | 0.6− |
| 2002 08 20 | 644 | 0.5− | 0.3+ | 2002 09 16 | 644 | 0.1− | 0.3+ | 2006 07 20 | 644 | 0.3+ | 0.5− |
| 2002 08 21 | 644 | 1.6− | 0.6− | 2002 09 25 | 608 | 0.7− | 0.5− | 2006 07 20 | 644 | 0.1− | 0.8− |
| 2002 08 21 | 644 | 1.3− | 0.4− | 2002 10 01 | 608 | 0.5+ | 0.8+ | 2006 07 20 | 644 | 0.6− | 0.3− |
| 2002 08 21 | 644 | 0.8− | 0.1− | 2002 10 01 | 608 | 0.5+ | 0.8+ | 2006 07 21 | G96 | 0.1+ | 0.6− |
| 2002 08 29 | 644 | 0.6+ | 0.6+ | 2005 03 03 | 703 | 1.3− | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.8− |
| 2002 08 30 | 699 | 0.1+ | 0.0 | 2005 03 03 | 703 | 0.4− | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.6− |
| 2002 08 30 | 699 | 0.2− | 1.6+ | 2005 03 03 | 703 | 0.5− | 0.2− | 2006 07 21 | G96 | 0.1− | 0.4− |
| 2002 08 30 | 699 | 0.8+ | 1.8+ | 2005 03 03 | 703 | 1.4− | 0.8+ | 2006 08 13 | 644 | 0.0 | 0.4− |
| 2002 08 30 | 699 | 0.9+ | 1.2+ | 2005 03 12 | 704 | 0.4+ | 1.4+ | 2006 08 13 | 644 | 0.1− | 0.2− |
| 2002 08 31 | 644 | 0.6+ | 0.0 | 2005 03 12 | 704 | (0.5+ | 2.2+) | 2006 08 13 | 644 | 0.0 | 0.3− |
| 2002 09 14 | 608 | 0.8− | 0.2− | 2005 03 12 | 704 | 1.0+ | 1.4+ | 2006 08 15 | 644 | 0.3+ | 0.5− |
| 2002 09 14 | 608 | 0.1+ | 0.5+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 08 15 | 644 | 0.3+ | 0.4− |
| 2002 09 14 | 608 | 0.5− | 0.3− | 2005 04 17 | 691 | 0.6+ | 0.4− | 2006 08 15 | 644 | 0.0 | 0.3− |

**(142359)∗ 2002 RP$_{223}$**

Discovered 2002 Sept. 13 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.32440 | | (2000.0) | | | |
| $n$ | 0.23594323 | $\omega$ | 221.69249 | | +0.98751154 | −0.12397595 |
| $a$ | 2.5937675 | $\Omega$ | 145.07081 | | +0.14570779 | +0.95337470 |
| $e$ | 0.1078180 | $i$ | 9.77564 | | −0.05991835 | +0.27514842 |
| $P$ | 4.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2002 09 17 | 608 | 1.2− | 0.6− | 2006 08 16 | 644 | 0.4− | 0.0 |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2002 09 29 | 608 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.1+ |
| 2000 02 02 | 691 | 0.0 | 0.3− | 2002 09 29 | 608 | 0.1− | 0.1− | 2006 08 21 | 704 | 0.8+ | 0.1+ |
| 2000 02 02 | 691 | 0.1+ | 0.2− | 2002 09 29 | 608 | 0.2− | 0.1+ | 2006 08 21 | 704 | 0.3− | 0.9+ |
| 2000 02 02 | 691 | 0.2− | 0.2− | 2002 10 04 | 704 | 1.1+ | 0.5+ | 2006 08 21 | 704 | 0.1+ | 0.6+ |
| 2000 02 27 | 691 | 0.6− | 0.5+ | 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 08 21 | 704 | 0.1+ | 0.7+ |
| 2000 02 27 | 691 | 0.5− | 0.3+ | 2002 10 04 | 704 | 0.2− | 1.3+ | 2006 08 21 | 704 | 0.0 | 0.9+ |
| 2000 02 27 | 691 | 0.4− | 0.5+ | 2002 10 06 | 608 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.5+ |
| 2001 04 16 | 691 | 0.1+ | 0.3+ | 2002 10 06 | 608 | 0.4+ | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.1+ |
| 2001 04 16 | 691 | 0.3+ | 0.1+ | 2002 10 06 | 608 | 0.2+ | 1.0+ | 2006 08 28 | 703 | 0.5− | 0.6+ |
| 2001 04 16 | 691 | 0.3+ | 0.6+ | 2004 04 13 | 645 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.2− |
| 2002 09 13 | 608 | 1.0− | 0.5+ | 2004 04 13 | 645 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.6+ |
| 2002 09 13 | 608 | 1.0− | 0.2+ | 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.1+ |
| 2002 09 13 | 608 | 0.5− | 0.5+ | 2004 04 16 | 645 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.1+ |
| 2002 09 16 | 644 | 0.4− | 0.4+ | 2006 07 18 | G96 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.0 | 0.5+ |
| 2002 09 16 | 644 | 0.6− | 0.3+ | 2006 07 18 | G96 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.7+ | 0.3+ |
| 2002 09 16 | 644 | 0.3− | 0.7+ | 2006 07 18 | G96 | 0.7+ | 0.6− | 2006 09 14 | 703 | 0.2+ | 0.3− |
| 2002 09 17 | 608 | 1.4− | 0.9− | 2006 07 18 | G96 | 0.1− | 0.1− | 2006 09 14 | 703 | 1.0− | 1.0+ |
| 2002 09 17 | 608 | 0.8− | 0.6− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.9− | 0.1− |

**(142360)∗ 2002 RL$_{224}$ = 1995 YY$_6$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75615)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.84516 | | (2000.0) | | | |
| $n$ | 0.26445958 | $\omega$ | 100.94769 | | +0.85020026 | +0.52144362 |
| $a$ | 2.4037899 | $\Omega$ | 227.66861 | | −0.51316988 | +0.79009627 |
| $e$ | 0.1204547 | $i$ | 5.62799 | | −0.11754231 | +0.32224902 |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.0 | 0.4+ | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 1995 12 16 | 691 | 0.0 | 0.2+ | 2002 10 11 | 645 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.2− |
| 1995 12 16 | 691 | 0.4− | 0.4+ | 2005 05 04 | G96 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 1995 12 28 | 691 | 0.2+ | 0.2− | 2005 05 04 | G96 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 1995 12 28 | 691 | 0.0 | 0.6− | 2005 05 04 | G96 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.5+ |
| 1995 12 28 | 691 | 0.2+ | 0.4− | 2005 05 04 | G96 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2002 09 13 | 644 | 0.3+ | 1.5+ | 2005 05 13 | G96 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2002 09 13 | 644 | 0.1+ | 1.3+ | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.4+ | 1.3+ | 2005 05 13 | G96 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.3+ |
| 2002 09 17 | 608 | 0.9− | 0.2+ | 2005 05 13 | G96 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2002 09 17 | 608 | 1.0− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2002 09 17 | 608 | 1.1− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.1− |

**(142361)∗ 2002 RO$_{225}$ = 2002 TJ$_{354}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Id. A. Doppler (d, *MPO* 72714)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.39635 | | (2000.0) | | | |
| $n$ | 0.23559243 | $\omega$ | 52.10229 | | −0.44777998 | +0.89273395 |
| $a$ | 2.5963416 | $\Omega$ | 191.61728 | | −0.87850367 | −0.44970699 |
| $e$ | 0.0491010 | $i$ | 14.43289 | | −0.16650642 | −0.02810191 |
| $P$ | 4.18 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 699 | 0.8+ | 0.3− | 2005 03 14 | G96 | 0.0 | 0.3− | 2005 05 13 | 703 | 0.5− | 0.3+ |
| 2001 05 18 | 699 | 0.0 | 0.3+ | 2005 04 01 | 691 | 0.2− | 0.0 | 2005 05 15 | 644 | 0.1+ | 0.2− |
| 2001 05 18 | 699 | 0.4− | 0.1− | 2005 04 01 | 691 | 0.2+ | 0.2+ | 2005 05 15 | 644 | 0.0 | 0.3− |
| 2001 05 18 | 699 | 0.4− | 1.0+ | 2005 04 01 | 691 | 0.0 | 0.1+ | 2005 05 15 | 644 | 0.2− | 0.4− |
| 2001 06 12 | 699 | 0.1+ | 1.2+ | 2005 04 02 | 691 | 0.3+ | 0.2+ | 2005 05 16 | 644 | 0.1− | 0.2− |
| 2001 06 12 | 699 | 0.1+ | 0.0 | 2005 04 02 | 691 | 0.3+ | 0.1+ | 2005 05 16 | 644 | 0.2+ | 0.1− |
| 2001 06 12 | 699 | (1.2+ | 2.6+) | 2005 04 02 | 691 | 0.2+ | 0.1+ | 2005 05 16 | 644 | 0.3+ | 0.0 |
| 2001 06 12 | 699 | 0.2+ | 0.5− | 2005 04 10 | 691 | 0.2+ | 0.1+ | 2005 05 18 | 644 | 0.5+ | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2005 04 10 | 691 | 0.1+ | 0.0 | 2005 05 18 | 644 | 0.2+ | 0.5− |
| 2002 08 28 | 644 | 0.3− | 0.3+ | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2005 05 18 | 644 | 0.5+ | 0.1+ |
| 2002 08 28 | 644 | 0.3+ | 0.3+ | 2005 04 13 | 704 | 0.0 | 1.5− | 2006 08 30 | 699 | 1.8− | 0.6+ |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2005 04 13 | 704 | 0.3− | 1.4− | 2006 08 30 | 699 | 0.7+ | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2005 04 13 | 704 | 0.4− | 1.2− | 2006 08 30 | 699 | 1.6+ | 0.6− |
| 2002 09 13 | 644 | 0.1− | 0.5+ | 2005 04 13 | 704 | 0.1+ | 1.3− | 2006 08 30 | 699 | 0.9+ | 0.4− |
| 2002 09 17 | 644 | 0.1− | 0.2+ | 2005 04 18 | 703 | 0.9− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 09 17 | 644 | 0.2+ | 0.9+ | 2005 04 18 | 703 | 0.1− | 0.5− | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2002 09 17 | 644 | 0.2+ | 0.5+ | 2005 04 18 | 703 | 0.3+ | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | (0.1+ | 2.2+) | 2005 04 18 | 703 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.3− | 1.8+ | 2005 05 08 | 703 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.9+ | 0.7− |
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2005 05 08 | 703 | 0.9− | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.6− | 1.3+ | 2005 05 08 | 703 | 0.2− | 0.1+ | 2006 09 22 | 691 | 0.2− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2005 05 08 | 703 | 0.4+ | 0.0 | 2006 09 22 | 691 | 0.2− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2005 05 13 | 691 | 0.3− | 0.1+ | 2006 09 22 | 691 | 0.1− | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2005 05 13 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.0 |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2005 05 13 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2005 03 14 | G96 | 0.4− | 0.0 | 2005 05 13 | 703 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 03 14 | G96 | 0.1− | 0.9+ | 2005 05 13 | 703 | 0.2− | 0.5− | | | | |
| 2005 03 14 | G96 | 0.0 | 0.0 | 2005 05 13 | 703 | 1.7− | 0.4+ | | | | |

**(142362)∗ 2002 RD$_{226}$**

Discovered 2002 Sept. 13 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.89815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27786845 | $\omega$ | 188.16518 | | +0.30058642 | | +0.95090321 |
| $a$ | 2.3258224 | $\Omega$ | 99.35117 | | −0.87077913 | | +0.30513728 |
| $e$ | 0.2410000 | $i$ | 4.28325 | | −0.38909061 | | +0.05171397 |
| $P$ | 3.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 1.2− | 0.6− | 2002 10 04 | 704 | 0.5+ | 0.1− | 2005 04 18 | 703 | (3.4+ | 1.2−) |
| 1998 04 22 | 704 | 0.4− | 1.3+ | 2002 10 04 | 704 | 0.5− | 0.8+ | 2005 04 18 | 703 | (0.2+ | 2.1+) |
| 1998 04 22 | 704 | 0.3+ | 1.1− | 2002 10 04 | 704 | 0.1+ | 0.1+ | 2005 04 18 | 703 | 0.1− | 0.1+ |
| 1998 04 22 | 704 | 1.0− | 0.9+ | 2002 10 04 | 704 | 0.0 | 0.4− | 2005 04 18 | 703 | 0.2+ | 0.2− |
| 1998 04 28 | 691 | 0.4+ | 0.3+ | 2003 12 29 | 691 | 0.1+ | 0.2+ | 2005 04 30 | 599 | 0.1+ | 0.2+ |
| 1998 04 28 | 691 | 0.4+ | 0.4+ | 2003 12 29 | 691 | 0.2+ | 0.4+ | 2005 04 30 | 599 | 0.1− | 0.3+ |
| 1998 04 28 | 691 | (0.6+ | 3.8−) | 2003 12 29 | 691 | 0.4+ | 0.2+ | 2005 04 30 | 599 | (0.4− | 2.1+) |
| 1998 05 24 | 704 | 0.0 | 0.0 | 2005 04 05 | 703 | 1.2− | 0.6− | 2005 04 30 | 599 | 0.3+ | 0.2+ |
| 1998 05 24 | 704 | 0.5− | 0.5− | 2005 04 05 | 703 | 1.0− | 0.9+ | 2005 05 03 | 704 | 0.7+ | 0.2− |
| 1998 05 24 | 704 | 0.0 | 0.4− | 2005 04 05 | 703 | 0.6+ | 0.0 | 2005 05 03 | 704 | 0.7+ | 0.9+ |
| 1998 05 24 | 704 | 0.8− | 0.0 | 2005 04 05 | 703 | (0.2− | 2.3−) | 2005 05 03 | 704 | 0.1+ | 0.4− |
| 1998 05 24 | 704 | 0.1+ | 0.4− | 2005 04 07 | 691 | 0.1− | 0.0 | 2005 05 03 | 704 | 0.6+ | 0.6+ |
| 2002 09 04 | 699 | 1.1+ | 0.5+ | 2005 04 07 | 691 | 0.3− | 1.0+ | 2005 05 08 | 703 | 0.8− | 0.8− |
| 2002 09 04 | 699 | 0.3− | 0.4+ | 2005 04 07 | 691 | 0.0 | 0.1+ | 2005 05 08 | 703 | 0.7− | 0.5− |
| 2002 09 04 | 699 | 0.1− | 0.0 | 2005 04 13 | 699 | 0.6+ | 0.9− | 2005 05 08 | 703 | 1.0− | 1.3− |
| 2002 09 04 | 699 | 0.3+ | 1.0+ | 2005 04 13 | 699 | 0.6+ | 0.0 | 2005 05 08 | 703 | 0.3− | 0.2− |
| 2002 09 08 | 608 | 0.1− | 0.7+ | 2005 04 13 | 699 | 0.1+ | 0.8+ | 2005 05 12 | 704 | 0.8+ | 0.8+ |
| 2002 09 08 | 608 | 0.6− | 0.5+ | 2005 04 13 | 704 | 0.1+ | 0.5− | 2005 05 12 | 704 | (2.0+ | 0.6+) |
| 2002 09 08 | 608 | 0.4− | 0.4+ | 2005 04 13 | 699 | 0.5+ | 0.1− | 2005 05 12 | 704 | 0.5+ | 0.4+ |
| 2002 09 13 | 608 | 0.1+ | 0.8+ | 2005 04 13 | 704 | 0.2+ | 0.1− | 2005 05 12 | 704 | 0.9+ | 0.9+ |
| 2002 09 13 | 608 | 0.6+ | 0.4+ | 2005 04 13 | 704 | 0.3+ | 0.6+ | 2005 05 12 | 704 | (0.7+ | 1.5−) |
| 2002 09 13 | 608 | 0.2+ | 0.7+ | 2005 04 13 | 704 | 0.6+ | 0.2− | 2006 10 22 | G96 | 0.5− | 0.1+ |
| 2002 09 16 | 644 | 0.6− | 0.7+ | 2005 04 13 | 704 | 0.6− | 0.7+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2002 09 16 | 644 | 0.7− | 0.7+ | 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2002 09 16 | 644 | 0.4− | 0.8+ | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.2+ |
| 2002 09 17 | 608 | (1.6− | 0.5−) | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.5+ |
| 2002 09 17 | 608 | 1.3− | 0.4− | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2002 09 17 | 608 | 1.6− | 0.8− | 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.3− | 0.3+ |
| 2002 10 04 | 704 | 1.1+ | 0.6+ | 2005 04 17 | 691 | 0.1+ | 0.2+ | | | | |

**(142363)∗ 2002 RH$_{227}$ = 2002 TG$_{373}$ = 2005 EZ$_{264}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75616)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.40994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25931186 | $\omega$ | 338.46018 | | +0.29490732 | | +0.95520364 |
| $a$ | 2.4354981 | $\Omega$ | 308.68312 | | −0.87197030 | | +0.25840897 |
| $e$ | 0.2237543 | $i$ | 1.82152 | | −0.39076524 | | +0.14425951 |
| $P$ | 3.80 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 03 13 | 691 | 0.0 | 0.3+ | 2006 09 20 | 291 | 0.8+ | 0.0 |
| 2002 09 07 | 704 | 0.9+ | 0.6+ | 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 291 | 0.2+ | 0.0 |
| 2002 09 07 | 704 | 0.6+ | 0.4+ | 2005 03 17 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 291 | 0.3+ | 0.0 |
| 2002 09 07 | 704 | 1.0+ | 1.0− | 2005 03 17 | 691 | 0.4+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.3+ |
| 2002 09 07 | 704 | 0.1− | 0.9+ | 2005 03 17 | 691 | 0.4+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.3+ |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2005 04 05 | G96 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.7− | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2005 04 05 | G96 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2005 04 05 | G96 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.4− |
| 2002 09 17 | 644 | 0.3− | 1.0+ | 2005 04 05 | G96 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.6− |
| 2002 09 17 | 644 | 0.3− | 0.6+ | 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.0 |
| 2002 09 17 | 644 | 0.2− | 1.1+ | 2005 04 12 | G96 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2002 09 17 | 608 | 1.0− | 0.2+ | 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2002 09 17 | 608 | 0.5− | 0.2− | 2005 04 12 | G96 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.6− |
| 2002 09 17 | 608 | 0.6− | 0.3+ | 2006 09 15 | 291 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.8− | 0.3+ | 2006 09 15 | 291 | 0.5− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.8− | 0.3+ | 2006 09 15 | 291 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.6− | 0.5− |
| 2002 10 03 | 704 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | | | | |
| 2002 10 03 | 704 | 0.3− | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.3+ | | | | |

**(142364)∗ 2002 RD$_{228}$**

Discovered 2002 Sept. 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.87018 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26966000 | $\omega$ | 300.69187 | | +0.82471575 | | −0.55033694 |
| $a$ | 2.3727848 | $\Omega$ | 92.99771 | | +0.55319329 | | +0.73711706 |
| $e$ | 0.1229197 | $i$ | 7.49616 | | +0.11756323 | | +0.39215774 |
| $P$ | 3.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.0 | 0.4− | 2004 01 23 | 699 | (2.5+ | 0.5−) | 2006 11 01 | 703 | 0.5− | 0.9+ |
| 2000 01 03 | 704 | 0.1− | 0.6− | 2004 01 23 | 699 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2000 01 03 | 704 | 0.3− | 0.5− | 2004 01 23 | 699 | 0.1+ | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2000 01 03 | 704 | 0.2+ | 0.4− | 2004 02 10 | 644 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2000 01 04 | 704 | 0.5− | 0.8− | 2004 02 10 | 644 | 0.1− | 0.2− | 2006 11 09 | 958 | 0.4− | 0.1− |
| 2000 01 04 | 704 | (0.9− | 2.2−) | 2004 02 10 | 644 | 0.2+ | 0.1− | 2006 11 09 | 958 | 0.6+ | 0.6− |
| 2000 01 04 | 704 | 0.5+ | 0.7− | 2004 02 13 | 644 | 0.1+ | 0.4+ | 2006 11 09 | 958 | (1.9+ | 0.6−) |
| 2000 01 04 | 704 | 0.5− | 0.9− | 2004 02 13 | 644 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 01 04 | 704 | 1.3+ | 0.1− | 2004 02 13 | 644 | 0.2+ | 0.9+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2001 03 19 | 691 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.2− | 1.1+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2001 03 19 | 691 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.6+ | 0.7− | 2006 11 11 | 644 | 0.1+ | 0.3+ |
| 2001 03 19 | 691 | 0.2− | 0.1− | 2004 02 16 | 704 | 0.2+ | 0.1− | 2006 11 11 | 644 | 0.2− | 0.4+ |
| 2002 08 15 | 704 | 1.2+ | 0.8+ | 2004 02 16 | 704 | (0.6− | 1.7+) | 2006 11 11 | 644 | 0.1+ | 0.0 |
| 2002 08 15 | 704 | 0.7+ | 0.1+ | 2004 03 23 | 704 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.1+ |
| 2002 08 15 | 704 | 0.6− | 1.4− | 2004 03 23 | 704 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.1− |
| 2002 08 20 | 644 | (0.2− | 1.8+) | 2004 03 23 | 704 | 0.5+ | 0.9+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2002 08 20 | 644 | (0.1− | 1.8+) | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 11 13 | 703 | (0.9− | 1.9+) |
| 2002 08 20 | 644 | (0.1− | 1.9+) | 2004 03 23 | 704 | 0.5+ | 1.1+ | 2006 11 13 | 958 | 0.4− | 1.4− |
| 2002 09 09 | 644 | 0.2− | 0.3+ | 2005 06 17 | G96 | 0.4+ | 0.2+ | 2006 11 13 | 958 | 0.7+ | 1.3− |
| 2002 09 09 | 644 | 0.3+ | 0.3+ | 2005 06 17 | G96 | 0.4+ | 0.2+ | 2006 11 14 | 958 | 0.2+ | 0.5− |
| 2002 09 09 | 644 | 0.0 | 0.3+ | 2005 06 17 | G96 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.4+ |
| 2002 09 14 | 608 | 0.9− | 0.1− | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 11 19 | 703 | 0.5− | 0.2− |
| 2002 09 14 | 608 | 0.5− | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.8− | 0.8+ |
| 2002 09 14 | 608 | 0.6− | 0.6− | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 11 19 | 703 | 0.4− | 0.2+ |
| 2002 09 17 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.3− | 2006 11 20 | 704 | 1.3− | 0.1+ |
| 2002 09 17 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.9− | 0.8− | 2006 11 20 | 704 | 0.0 | 0.5− |
| 2002 09 17 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 11 20 | 704 | (1.7+ | 0.9+) |
| 2002 10 01 | 608 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.9− | 0.4+ |
| 2002 10 01 | 608 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 11 20 | 704 | 1.5+ | 0.8+ |
| 2002 10 01 | 608 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2002 10 10 | 699 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.8+ |
| 2002 10 10 | 699 | 0.6− | 0.4− | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2002 10 10 | 699 | 0.9+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2002 10 10 | 699 | 0.3− | 1.0− | 2006 10 31 | A50 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 01 18 | 644 | 0.1− | 0.0 | 2006 10 31 | A50 | 0.5− | 0.8+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 01 18 | 644 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 01 18 | 644 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2004 01 23 | 699 | (1.5+ | 0.4−) | 2006 11 01 | 703 | 0.5+ | 0.2+ | | | | |

**(142365)∗ 2002 RT$_{228}$**

Discovered 2002 Sept. 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.45825 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26236984 | $\omega$ | 230.51020 | | +0.74834368 | | +0.64985261 |
| $a$ | 2.4165370 | $\Omega$ | 88.53229 | | −0.56042401 | | +0.72665163 |
| $e$ | 0.1441850 | $i$ | 7.64210 | | −0.35483329 | | +0.22286544 |
| $P$ | 3.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.7+ | 1.0− | 2005 04 18 | 703 | (0.8+ | 1.9+) | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 2002 08 14 | 704 | 1.3+ | 0.7− | 2005 04 18 | 703 | 1.1+ | 0.9+ | 2006 10 03 | 704 | 0.1− | 0.8+ |
| 2002 08 14 | 704 | 1.1+ | 0.3− | 2005 04 18 | 703 | (1.1+ | 1.9+) | 2006 10 03 | 704 | 1.5− | 0.5+ |
| 2002 08 20 | 644 | 0.2+ | 0.7+ | 2005 05 04 | 703 | (2.5+ | 1.7+) | 2006 10 03 | 704 | 0.0 | 0.6+ |
| 2002 08 20 | 644 | 0.1+ | 0.7+ | 2005 05 04 | 703 | 1.4− | 1.4− | 2006 10 03 | 704 | 0.6− | 0.2+ |
| 2002 08 20 | 644 | 0.2− | 0.7+ | 2005 05 04 | 703 | 0.7+ | 0.6− | 2006 10 03 | 704 | 0.5− | 0.3− |
| 2002 09 09 | 608 | 0.8− | 0.2− | 2005 05 04 | 703 | (2.3+ | 2.7−) | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 09 09 | 608 | 0.1− | 0.4+ | 2005 05 11 | 703 | (0.2− | 2.3+) | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 09 09 | 608 | 0.6− | 0.4− | 2005 05 11 | 703 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2002 09 14 | 608 | 0.0 | 0.9− | 2005 05 11 | 703 | 1.4− | 0.8− | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2002 09 14 | 608 | 0.3− | 0.7− | 2005 05 11 | 703 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2002 09 14 | 608 | 0.3− | 0.7− | 2006 09 16 | 699 | 0.6+ | 0.6− | 2006 10 16 | 703 | 0.4− | 0.7− |
| 2002 09 17 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2002 09 17 | 644 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.4+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2002 09 17 | 644 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.8− |
| 2002 09 17 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 1.0+ | 0.5− | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 2002 09 17 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.2− | 2006 10 17 | 703 | 0.9− | 0.3− |
| 2002 09 17 | 644 | 0.0 | 0.5+ | 2006 09 18 | 703 | (1.6− | 0.4+) | 2006 10 22 | 703 | 1.0+ | 0.9+ |
| 2002 10 09 | 699 | 1.2+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.3− | 2006 10 22 | 703 | 1.2+ | 0.6+ |
| 2002 10 09 | 699 | 0.1+ | 0.4− | 2006 09 26 | 703 | 1.0− | 0.2+ | 2006 10 22 | 703 | (0.8+ | 1.6+) |
| 2002 10 09 | 699 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 10 22 | 703 | (0.7− | 3.6+) |
| 2002 10 09 | 699 | 0.7− | 0.0 | 2006 09 26 | 703 | 0.6+ | 0.5− | 2006 10 28 | 703 | (2.0− | 3.0−) |
| 2004 01 18 | 691 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.3+ | 1.5− |
| 2004 01 18 | 691 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.7+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.1+ |
| 2004 01 18 | 691 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.3− | 0.6+ | 2006 10 28 | 703 | 0.3+ | 0.7− |
| 2005 04 05 | 703 | (1.8− | 1.0+) | 2006 09 29 | 699 | 1.0+ | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2005 04 05 | 703 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.5+ | 0.5+ | 2006 11 16 | 703 | 0.6+ | 0.1+ |
| 2005 04 05 | 703 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.1+ |
| 2005 04 05 | 703 | 0.7− | 0.8− | 2006 10 01 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.5+ | 0.6+ |
| 2005 04 18 | 703 | (3.3+ | 0.1+) | 2006 10 01 | 704 | 0.7− | 0.0 | | | | |

**(142366)∗ 2002 RD$_{230}$**

Discovered 2002 Sept. 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.22934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25961602 | $\omega$ | 286.36488 | | +0.74281616 | −0.66004127 | |
| $a$ | 2.4335955 | $\Omega$ | 115.08801 | | +0.65175301 | +0.67462197 | |
| $e$ | 0.1599826 | $i$ | 7.11109 | | +0.15310835 | +0.33050070 | |
| $P$ | 3.80 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | (0.8+ | 2.8+) | 2002 10 15 | 644 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.2− | 0.7+ |
| 1998 08 17 | 704 | (2.9− | 0.4+) | 2002 10 15 | 644 | 0.1+ | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 1998 08 17 | 704 | 1.6− | 0.5+ | 2002 10 15 | 644 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1998 08 17 | 704 | 1.9− | 0.4− | 2002 10 28 | 644 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2000 03 05 | 704 | 0.0 | 0.2− | 2002 10 28 | 644 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 03 05 | 704 | 0.9+ | 0.8+ | 2002 10 28 | 644 | 0.2+ | 0.8+ | 2006 11 05 | 644 | 0.2+ | 0.1+ |
| 2000 03 05 | 704 | 0.2− | 1.2+ | 2002 10 30 | 704 | 0.4− | 0.9+ | 2006 11 05 | 644 | 0.3+ | 0.1− |
| 2000 03 05 | 704 | 0.2− | 1.4+ | 2002 10 30 | 704 | 0.2− | 0.9+ | 2006 11 05 | 644 | 0.2+ | 0.2− |
| 2002 08 25 | 644 | 0.2− | 0.9+ | 2002 10 30 | 704 | 0.2+ | 1.4+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 2002 08 25 | 644 | 0.1− | 0.6+ | 2002 10 30 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 703 | 0.0 | 0.2+ |
| 2002 08 25 | 644 | 0.0 | 1.0+ | 2002 10 30 | 704 | 0.3+ | 1.3+ | 2006 11 15 | 703 | 1.2− | 1.0− |
| 2002 09 14 | 608 | 0.7− | 0.5− | 2002 11 04 | 608 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.3− |
| 2002 09 14 | 608 | 0.9− | 0.6− | 2002 11 04 | 608 | 0.6− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2002 09 14 | 608 | 1.0− | 0.3− | 2002 11 04 | 608 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2002 09 17 | 608 | 0.3+ | 0.5− | 2002 11 21 | 644 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.8− | 0.7+ |
| 2002 09 17 | 608 | 0.2+ | 0.8− | 2002 11 21 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2002 09 17 | 608 | 0.2+ | 0.4− | 2002 11 21 | 644 | 0.1+ | 0.8+ | 2006 11 23 | G96 | 0.5+ | 0.5− |
| 2002 09 30 | 608 | 1.0− | 0.7− | 2004 02 25 | 704 | 0.7+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2002 09 30 | 608 | (0.5− | 1.9+) | 2004 02 25 | 704 | 0.2+ | 0.6− | 2006 11 23 | G96 | 0.4+ | 0.5− |
| 2002 09 30 | 608 | (0.4− | 2.4+) | 2004 02 25 | 704 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2002 10 04 | 704 | 0.5+ | 0.9− | 2004 03 12 | 644 | 0.1+ | 0.0 | 2006 11 25 | 704 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 1.1− | 2004 03 12 | 644 | 0.2− | 0.2− | 2006 11 25 | 704 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | (0.7+ | 1.6−) | 2004 03 12 | 644 | 0.2+ | 0.3− | 2006 11 25 | 704 | 0.5+ | 0.3− |
| 2002 10 04 | 704 | 1.0+ | 1.2− | 2004 03 18 | 691 | 0.1+ | 0.4− | 2006 11 25 | 704 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 1.1+ | 1.2− | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.0 | 1.0− |
| 2002 10 09 | 704 | 1.0+ | 1.4+ | 2004 03 18 | 691 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.5− | 0.7− |
| 2002 10 09 | 704 | (1.7+ | 0.4+) | 2004 03 23 | 704 | 0.8+ | 1.4+ | 2006 11 28 | 704 | 0.4− | 0.4− |
| 2002 10 09 | 704 | 1.1+ | 0.5− | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.4− |
| 2002 10 09 | 704 | 1.0+ | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.7+ | 2006 11 28 | 704 | 0.4− | 0.3− |
| 2002 10 09 | 704 | 0.9+ | 0.2− | 2006 10 09 | 644 | 0.4− | 1.2+ | | | | |

**(142367)∗ 2002 RC$_{233}$**

Discovered 2002 Sept. 14 by R. Matson on NEAT images taken at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.20753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27124217 | $\omega$ | 204.63602 | | +0.58154583 | +0.81215894 | |
| $a$ | 2.3635488 | $\Omega$ | 100.95628 | | −0.73823433 | +0.55108891 | |
| $e$ | 0.0837719 | $i$ | 2.73978 | | −0.34178141 | +0.19156949 | |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1+ | 0.0 | 2004 01 15 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 1995 10 21 | 691 | 0.1+ | 0.1− | 2004 01 15 | 691 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 1995 10 21 | 691 | 0.2− | 0.1+ | 2004 01 22 | 704 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 03 25 | 695 | 0.6+ | 0.5+ | 2004 01 22 | 704 | 0.2− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 03 25 | 695 | 0.4+ | 0.6+ | 2004 01 22 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 08 20 | 644 | 0.4− | 0.7+ | 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 08 20 | 644 | 0.3− | 0.4+ | 2005 05 14 | G96 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2002 08 21 | 644 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2002 08 21 | 644 | 0.1− | 0.5+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2002 08 21 | 644 | 0.5− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2002 09 09 | 608 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2002 09 09 | 608 | 1.0+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.3− | 0.2− |
| 2002 09 09 | 608 | 1.1− | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.6+ | 0.3− |
| 2002 09 14 | 608 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 09 14 | 608 | 0.5+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2002 09 14 | 608 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.8+ | 0.5+ |
| 2002 09 15 | 644 | 0.7− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.4+ | 0.3+ |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 10 01 | 608 | (1.1+ | 1.8+) | 2006 10 17 | G96 | 0.7+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 10 01 | 608 | 0.6+ | 0.8+ | 2006 10 17 | G96 | 0.8+ | 0.6− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 10 01 | 608 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 12 21 | 291 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 1.1− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2003 12 21 | 291 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.8− |
| 2003 12 21 | 291 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ | | | | |

**(142368)∗ 2002 RH$_{233}$**

Discovered 2002 Sept. 14 by R. Matson on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.28969 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28407326 | $\omega$ | 306.28147 | | −0.69031563 | +0.72332549 | |
| $a$ | 2.2918304 | $\Omega$ | 280.05485 | | −0.65839656 | −0.63735285 | |
| $e$ | 0.1280266 | $i$ | 0.94651 | | −0.29996382 | −0.26567193 | |
| $P$ | 3.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 261 | 0.5− | 0.5+ | 2002 08 28 | 644 | 0.1+ | 0.9+ | 2006 10 16 | 691 | 0.4+ | 0.5+ |
| 1994 03 05 | 261 | 0.6− | 0.3+ | 2002 08 28 | 644 | 0.3+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 1996 12 17 | 566 | 1.6+ | 0.9+ | 2002 08 28 | 644 | 0.1+ | 1.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 1996 12 17 | 566 | 1.2+ | 1.2+ | 2002 09 05 | 704 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2− |
| 1996 12 17 | 566 | 0.7+ | 1.7+ | 2002 09 05 | 704 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.1− |
| 1999 11 15 | 691 | 0.6− | 0.3− | 2002 09 05 | 704 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.4− | 0.0 |
| 1999 11 15 | 691 | 0.1+ | 0.1− | 2002 09 05 | 704 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.5− | 0.3+ |
| 1999 11 15 | 691 | 0.0 | 0.1+ | 2002 09 05 | 704 | 0.6− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 01 26 | 704 | 0.8− | 0.5+ | 2002 09 08 | 608 | 0.1+ | 0.9+ | 2006 11 11 | 703 | (3.0+ | 1.1+) |
| 2001 01 26 | 704 | 0.5+ | 0.2− | 2002 09 08 | 608 | 0.3+ | 0.4+ | 2006 11 11 | 703 | (8.3+ | 6.3+) |
| 2001 01 26 | 704 | 0.2− | 0.9− | 2002 09 08 | 608 | 0.8+ | 1.1− | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 2001 01 26 | 704 | 0.8+ | 0.1+ | 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.3− |
| 2001 01 26 | 704 | 0.5− | 1.0+ | 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 704 | (0.2+ | 2.6+) | 2002 09 14 | 644 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.2+ | | |
| 2001 02 22 | 704 | 0.0 | 1.0+ | 2002 09 16 | 608 | 0.7− | 0.2− | 2006 11 12 | G96 | 0.1− | 0.2− | | |
| 2001 02 22 | 704 | 0.1+ | 0.6+ | 2002 09 16 | 608 | 0.5− | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.2− | | |
| 2001 02 22 | 704 | 0.2− | 0.7− | 2002 09 16 | 608 | (2.5− | 0.2+) | 2006 11 15 | G96 | 0.1− | 0.6− | | |
| 2001 03 18 | 704 | 0.3− | 0.4+ | 2002 09 30 | 608 | 0.4− | 0.7+ | 2006 11 15 | G96 | 0.5+ | 0.7− | | |
| 2001 03 18 | 704 | 0.1− | 0.4− | 2002 09 30 | 608 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.5− | | |
| 2001 03 18 | 704 | 1.3− | 0.0 | 2002 09 30 | 608 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.2− | | |
| 2001 03 18 | 704 | 1.0+ | 0.5+ | 2005 02 15 | 809 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.6+ | | |
| 2001 03 18 | 704 | 0.3− | 0.6+ | 2005 02 15 | 809 | 0.2+ | 0.2+ | 2006 11 17 | 703 | (0.4− | 1.6−) | | |
| 2001 03 19 | 608 | 0.3+ | 0.3+ | 2005 02 15 | 809 | 0.2+ | 0.4+ | 2006 11 17 | 703 | (1.9− | 0.8+) | | |
| 2001 03 19 | 608 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 1.1− | 1.1− | | |
| 2001 03 30 | 608 | 1.2+ | 0.1+ | 2006 09 27 | G96 | 0.6+ | 0.3− | 2006 11 22 | 104 | (1.0+ | 2.3−) | | |
| 2001 03 30 | 608 | 0.5+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 22 | 104 | 0.4+ | 0.3− | | |
| 2001 03 30 | 608 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 22 | 104 | 0.4+ | 0.2− | | |
| 2002 08 19 | 608 | 0.2+ | 1.1+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.7− | | |
| 2002 08 19 | 608 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.3− | | |
| 2002 08 27 | 644 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.3− | | |
| 2002 08 27 | 644 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.3− | | |

**(142369)∗ 2002 RE$_{234}$**

Discovered 2002 Sept. 14 by R. Matson on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 190.51085 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25662525 | $\omega$ | 6.17398 | | −0.97892346 | | −0.20064508 | | |
| $a$ | 2.4524667 | $\Omega$ | 162.11347 | | +0.18167042 | | −0.94071705 | | |
| $e$ | 0.0840590 | $i$ | 7.12296 | | +0.09329904 | | −0.27348306 | | |
| $P$ | 3.84 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.0 | 0.2− | 2005 05 08 | 691 | 0.2+ | 0.3+ | 2005 07 05 | 644 | 0.2− | 0.2− | | |
| 2001 05 24 | 645 | 0.1− | 0.2− | 2005 05 08 | 691 | 0.0 | 0.2+ | 2005 07 05 | 644 | 0.3− | 0.1− | | |
| 2002 08 30 | 291 | 0.4+ | 0.4+ | 2005 05 13 | 691 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.6− | | |
| 2002 08 30 | 291 | 0.1+ | 0.2+ | 2005 05 13 | 691 | 0.1− | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.4− | | |
| 2002 08 30 | 291 | 0.3+ | 0.2+ | 2005 05 13 | 691 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.4+ | 0.3− | | |
| 2002 09 14 | 644 | 0.6− | 0.5− | 2005 06 03 | 691 | 0.2− | 0.3− | 2006 07 21 | G96 | 0.3− | 0.5− | | |
| 2002 09 14 | 644 | 0.1+ | 1.1− | 2005 06 03 | 691 | 0.2+ | 0.2+ | 2006 08 18 | 691 | 0.0 | 0.3− | | |
| 2002 09 14 | 644 | 0.3− | 0.7− | 2005 06 03 | 691 | 0.2+ | 0.1− | 2006 08 18 | 691 | 0.1+ | 0.1− | | |
| 2002 09 15 | 644 | 0.8− | 0.6− | 2005 06 03 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 691 | 0.2+ | 0.1− | | |
| 2002 09 15 | 644 | 1.6− | 0.8− | 2005 06 03 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.2+ | 0.4− | 2005 06 03 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.0 | | |
| 2002 09 16 | 644 | 0.0 | 0.4− | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.2− | | |
| 2002 09 16 | 644 | 0.2+ | 0.2− | 2005 06 15 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | (0.5+ | 2.3−) | | |
| 2005 05 03 | 703 | 0.5− | 0.0 | 2005 06 15 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.8− | 0.1− | | |
| 2005 05 03 | 703 | 0.3− | 0.4− | 2005 06 15 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | | |
| 2005 05 03 | 703 | 1.4− | 1.1− | 2005 06 15 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 1.6− | 0.0 | | |
| 2005 05 03 | 703 | 0.0 | 0.1+ | 2005 06 15 | 691 | 0.4− | 0.3− | 2006 09 26 | 691 | 0.3− | 0.3+ | | |
| 2005 05 04 | 691 | 0.2+ | 0.2+ | 2005 06 28 | 644 | 0.3+ | 0.4− | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 2005 05 04 | 691 | 0.1− | 0.2+ | 2005 06 28 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.3+ | | |
| 2005 05 04 | 691 | 0.0 | 0.1+ | 2005 06 28 | 644 | 0.1+ | 0.3− | | | | | | |
| 2005 05 08 | 691 | 0.3− | 0.8+ | 2005 07 05 | 644 | 0.2− | 0.6− | | | | | | |

**(142370)∗ 2002 RZ$_{239}$**

Discovered 2002 Sept. 15 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 127.98362 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27246911 | $\omega$ | 101.85342 | | −0.59126950 | | +0.80640388 | | |
| $a$ | 2.3564480 | $\Omega$ | 131.89415 | | −0.74537732 | | −0.54139265 | | |
| $e$ | 0.1673997 | $i$ | 0.81880 | | −0.30791724 | | −0.23792178 | | |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 691 | 0.7+ | 0.5+ | 2005 04 06 | G96 | 0.3− | 0.1− | 2005 05 11 | G96 | 0.4− | 0.3− | | |
| 2001 01 18 | 691 | 0.9+ | 0.2+ | 2005 04 07 | 704 | 0.0 | 0.5+ | 2005 05 11 | G96 | 0.5− | 0.1+ | | |
| 2001 01 18 | 691 | 0.1+ | 0.9+ | 2005 04 07 | 704 | (1.6+ | 0.6−) | 2005 05 11 | G96 | 0.2− | 0.3− | | |
| 2001 03 19 | 691 | 0.4− | 0.5+ | 2005 04 07 | 704 | 0.3+ | 0.3+ | 2005 05 11 | G96 | 0.2− | 0.6− | | |
| 2001 03 19 | 691 | 0.2− | 0.3+ | 2005 04 07 | 704 | 0.1− | 0.2+ | 2005 05 13 | 704 | 0.7+ | 1.4+ | | |
| 2001 03 19 | 691 | 0.1− | 0.4+ | 2005 04 12 | 704 | 0.4+ | 0.8+ | 2005 05 13 | 704 | 0.1+ | 0.9+ | | |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2005 04 12 | 704 | 0.5+ | 0.4− | 2005 05 13 | 704 | 0.1+ | 1.0+ | | |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2005 04 12 | 704 | 0.2+ | 0.0 | 2005 05 13 | 704 | 0.2− | 1.0+ | | |
| 2002 08 18 | 644 | 0.3+ | 0.4+ | 2005 04 13 | 699 | (2.2+ | 0.3+) | 2005 05 13 | 704 | 0.1− | 1.3+ | | |
| 2002 08 29 | 644 | 0.5+ | 0.3+ | 2005 04 13 | 699 | 1.2+ | 0.1− | 2005 05 26 | 699 | 1.3− | 0.4+ | | |
| 2002 08 29 | 644 | 0.0 | 1.1+ | 2005 04 13 | 699 | 1.3+ | 1.0+ | 2005 05 26 | 699 | 1.5+ | 0.5− | | |
| 2002 08 29 | 644 | 0.6− | 0.2+ | 2005 04 13 | 699 | (1.7+ | 0.5+) | 2005 05 26 | 699 | (1.7− | 1.4+) | | |
| 2002 09 01 | 644 | 0.2− | 0.8+ | 2005 04 16 | 691 | 0.3+ | 0.2+ | 2005 05 26 | 699 | 0.8+ | 1.0+ | | |
| 2002 09 01 | 644 | 0.4− | 0.9+ | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2005 06 13 | G96 | 0.9− | 0.2− | | |
| 2002 09 04 | 644 | 0.3− | 0.6+ | 2005 04 16 | 691 | 0.4+ | 0.2+ | 2005 06 13 | G96 | 0.4− | 0.0 | | |
| 2002 09 04 | 644 | 0.3+ | 0.6+ | 2005 04 18 | 703 | 1.3− | 0.5− | 2005 06 13 | G96 | 0.5− | 0.0 | | |
| 2002 09 04 | 644 | 0.3− | 0.6+ | 2005 04 18 | 703 | 0.9− | 1.2− | 2005 06 13 | G96 | 0.5− | 0.1− | | |
| 2002 09 15 | 644 | 0.3− | 0.5+ | 2005 04 18 | 703 | 0.9− | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.0 | | |
| 2002 09 15 | 644 | 0.9− | 0.3+ | 2005 04 18 | 703 | 0.8− | 0.9− | 2006 09 14 | 691 | 0.2+ | 0.4+ | | |
| 2002 09 15 | 644 | 0.9− | 0.5+ | 2005 04 18 | 703 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.2+ | | |
| 2005 03 10 | G96 | 0.4− | 0.3− | 2005 04 18 | 703 | 1.1− | 1.4− | 2006 09 18 | 691 | 0.1+ | 0.0 | | |
| 2005 03 10 | G96 | 0.1+ | 0.2− | 2005 04 18 | 704 | 1.1+ | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.1− | | |
| 2005 03 10 | G96 | 0.8− | 0.1− | 2005 04 18 | 703 | 0.8− | 0.4− | 2006 09 18 | 691 | 0.6− | 0.4+ | | |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2005 04 18 | 703 | 0.0 | 0.8− | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2005 04 18 | 704 | 0.5+ | 0.2− | 2006 09 25 | 691 | 0.4− | 0.1+ | | |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2005 04 18 | 704 | 1.3+ | 1.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | | |
| 2005 03 10 | G96 | 0.6− | 0.2+ | 2005 05 09 | 704 | (1.5− | 0.1−) | 2006 09 26 | G96 | 0.2+ | 0.1+ | | |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2005 05 09 | 704 | 1.1− | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.0 | | |
| 2005 04 04 | 704 | 1.2+ | 0.4− | 2005 05 09 | 704 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.4+ | | |
| 2005 04 04 | 704 | 0.8+ | 0.4+ | 2005 05 09 | 699 | 0.9+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.3− | | |
| 2005 04 04 | 704 | 0.8+ | 0.2+ | 2005 05 09 | 704 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.8+ | | |
| 2005 04 06 | G96 | 0.1− | 0.1− | 2005 05 09 | 699 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 1.1− | 0.0 | | |
| 2005 04 06 | G96 | 0.2− | 0.1− | 2005 05 09 | 699 | 0.5− | 0.7+ | 2006 10 17 | G96 | 0.9− | 1.3+ | | |
| 2005 04 06 | G96 | 0.2+ | 0.1+ | 2005 05 09 | 699 | 0.6+ | 0.0 | 2006 10 17 | G96 | 0.9− | 1.6+ | | |

**(142371)∗ 2002 RB$_{240}$ = 1998 HW$_{64}$**

Discovered 2002 Sept. 8 by R. Matson on NEAT images taken at Haleakala. Id. K. E. Smalley (*MPO* 50127)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 190.04022 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29855259 | $\omega$ | 8.18657 | | −0.75947229 | | +0.64963847 | | |
| $a$ | 2.2171180 | $\Omega$ | 212.40945 | | −0.60041767 | | −0.72023972 | | |
| $e$ | 0.1336932 | $i$ | 3.66176 | | −0.25040061 | | −0.24336107 | | |
| $P$ | 3.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 04 20 | 260 | 0.1− | 0.1+ | 2001 02 16 | 608 | 0.8+ | 0.3+ | 2005 06 28 | 691 | 0.1− | 0.1+ | | |
| 1988 04 20 | 260 | 0.0 | 0.5− | 2001 03 23 | 699 | 1.0+ | 1.1+ | 2005 06 28 | 691 | 0.3− | 0.3+ | | |
| 1996 11 18 | 691 | 0.2− | 0.4+ | 2001 03 23 | 699 | 0.1+ | 0.5+ | 2005 07 08 | 691 | 0.1− | 0.3+ | | |
| 1996 11 18 | 691 | 0.5− | 0.0 | 2001 03 23 | 699 | 0.3− | 0.7+ | 2005 07 08 | 691 | 0.5− | 0.1+ | | |
| 1996 11 18 | 691 | 0.7− | 0.0 | 2001 03 23 | 699 | 0.7− | 1.0+ | 2005 07 08 | 691 | 0.3− | 0.1+ | | |
| 1998 04 21 | 704 | 0.8+ | 1.2+ | 2002 08 27 | 644 | 0.2+ | 1.0+ | 2006 09 27 | G96 | 0.2− | 0.0 | | |
| 1998 04 21 | 704 | 0.7− | 0.8− | 2002 08 27 | 644 | 0.5+ | 0.6+ | 2006 09 27 | G96 | 0.6+ | 0.1− | | |
| 1998 04 21 | 704 | (2.0+ | 2.1−) | 2002 08 28 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.0 | | |
| 1998 04 21 | 704 | 0.8+ | 1.1+ | 2002 08 28 | 644 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.5− | 0.7− | | |
| 1998 04 21 | 704 | 0.8− | 1.1+ | 2002 08 28 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.4+ | | |
| 1998 04 22 | 704 | 1.4− | 1.0− | 2002 08 28 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.3− | 0.1+ | | |
| 1998 04 22 | 704 | 0.8+ | 1.2− | 2002 08 28 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 1998 04 22 | 704 | 0.1+ | 1.8+ | 2002 08 28 | 644 | 0.6+ | 0.3+ | 2006 11 12 | G96 | 0.4+ | 0.2− | | |
| 1998 04 22 | 704 | 0.5+ | 0.8+ | 2002 09 08 | 608 | 1.1+ | 1.0− | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 1998 04 22 | 704 | 1.4− | 1.9+ | 2002 09 08 | 608 | 0.9+ | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.0 | | |
| 1998 04 28 | 566 | 1.3+ | 0.1+ | 2002 09 08 | 608 | 1.0+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.1+ | | |
| 1998 04 28 | 566 | 1.5+ | 0.6+ | 2002 09 09 | 644 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.1− | 0.0 | | |
| 2001 01 26 | 704 | 0.7+ | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.4+ | | |
| 2001 01 26 | 704 | (1.7+ | 0.2−) | 2002 09 14 | 644 | 0.1+ | 0.7+ | 2006 11 15 | 691 | 0.4− | 0.2+ | | |
| 2001 01 26 | 704 | (1.6+ | 0.4+) | 2002 09 14 | 644 | 0.5+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2001 01 26 | 704 | 1.0+ | 0.2+ | 2002 09 16 | 608 | 0.8+ | 1.4+ | 2006 11 19 | 691 | 0.3+ | 0.3+ | | |
| 2001 01 26 | 704 | 0.1− | 0.1− | 2002 09 16 | 608 | 0.6+ | 1.0+ | 2006 11 19 | 691 | 0.0 | 0.3+ | | |
| 2001 02 16 | 608 | 0.7+ | 0.2− | 2002 09 16 | 608 | 0.7+ | 1.2+ | | | | | | |
| 2001 02 16 | 608 | 1.1+ | 0.1+ | 2005 06 28 | 691 | 0.2− | 0.4+ | | | | | | |

**(142372)∗ 2002 RN$_{243}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 90.41703 | | | (2000.0) | | |
| $n$ | 0.23769795 | $\omega$ | 268.06034 | | −0.60098105 | +0.78755400 |
| $a$ | 2.5809867 | $\Omega$ | 323.84696 | | −0.61018005 | −0.56223796 |
| $e$ | 0.0410695 | $i$ | 13.35926 | | −0.51623840 | −0.25228392 |
| $P$ | 4.15 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 25 | 644 | 0.6+ | 0.0 | 2002 09 14 | 644 | 0.2− | 0.8+ | 2005 04 14 | 703 | 0.5+ | 0.9+ |
| 2001 04 25 | 644 | 0.5+ | 0.2− | 2002 09 14 | 644 | 0.4− | 0.1+ | 2005 04 14 | 703 | 1.4− | 0.3+ |
| 2001 04 25 | 644 | 0.9+ | 0.1− | 2002 09 14 | 644 | 0.3+ | 1.1+ | 2005 04 14 | 703 | 0.1− | 0.0 |
| 2002 08 12 | 704 | 0.4− | 0.6− | 2002 09 22 | 644 | 0.1− | 0.7− | 2006 07 25 | 644 | 0.0 | 0.1− |
| 2002 08 12 | 704 | 0.1− | 0.3− | 2002 09 28 | 608 | 0.5− | 0.2− | 2006 07 25 | 644 | 0.1− | 0.3− |
| 2002 08 12 | 704 | 0.0 | 0.0 | 2002 09 28 | 608 | 0.5− | 0.4+ | 2006 07 25 | 644 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | 0.7− | 0.3− | 2002 09 28 | 608 | 0.4− | 0.3+ | 2006 08 20 | 644 | 0.4+ | 0.2− |
| 2002 08 12 | 704 | 0.9− | 0.1− | 2004 01 19 | 704 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.4+ | 0.2− |
| 2002 08 17 | 644 | 0.0 | 0.2− | 2004 01 19 | 704 | 0.0 | 0.3+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.4+ | 0.2− | 2004 01 19 | 704 | 0.3+ | 0.5− | 2006 08 24 | 644 | 0.3+ | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.0 | 2004 01 19 | 704 | 0.5+ | 0.1+ | 2006 08 24 | 644 | 0.4+ | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2005 03 09 | E12 | 0.1− | 0.3+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2005 03 09 | E12 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.9− |
| 2002 09 06 | 704 | 0.0 | 0.2+ | 2005 03 09 | E12 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.8+ |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2005 03 09 | E12 | 0.4+ | 0.6− | 2006 08 28 | 703 | 1.1+ | 0.9+ |
| 2002 09 06 | 704 | 0.1+ | 0.6− | 2005 03 13 | 699 | 0.1+ | 0.5− | 2006 08 28 | 703 | (0.4− | 1.8+) |
| 2002 09 06 | 704 | 0.3+ | 0.0 | 2005 03 13 | 699 | 0.4− | 1.5+ | 2006 10 22 | G96 | 0.7− | 0.4− |
| 2002 09 14 | 644 | 0.6− | 0.1− | 2005 03 13 | 699 | 0.1− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.6− |
| 2002 09 14 | 644 | 0.1− | 0.6+ | 2005 03 13 | 699 | (1.0+ | 1.6+) | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2005 04 14 | 703 | 1.2− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.4− |

**(142373)∗ 2002 RJ$_{244}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.85424 | | | (2000.0) | | |
| $n$ | 0.27665575 | $\omega$ | 221.95900 | | +0.81986504 | −0.57251859 |
| $a$ | 2.3326142 | $\Omega$ | 172.95775 | | +0.53862029 | +0.76729887 |
| $e$ | 0.1815246 | $i$ | 3.09387 | | +0.19418935 | +0.28892023 |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.8− | 0.7+ | 2002 09 28 | 608 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 08 09 | 608 | 0.0 | 0.1− | 2004 02 16 | 691 | 0.3+ | 0.5+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 08 09 | 608 | 0.5− | 0.1− | 2004 02 16 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 08 16 | 608 | 0.2− | 0.4+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 08 16 | 608 | 0.3− | 0.7+ | 2004 03 14 | 691 | 0.1− | 0.8+ | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2002 08 16 | 608 | 0.2− | 0.3+ | 2004 03 14 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.5− |
| 2002 08 17 | 644 | 0.8− | 1.1+ | 2004 03 14 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2002 08 17 | 644 | 0.5− | 1.0+ | 2005 06 17 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2002 08 17 | 644 | 0.1− | 1.2+ | 2005 06 17 | G96 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2005 06 17 | G96 | 0.2− | 0.2+ | 2006 11 20 | 704 | 1.0+ | 0.4− |
| 2002 08 28 | 644 | 0.0 | 0.0 | 2005 06 17 | G96 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2006 10 21 | D35 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2002 09 05 | 704 | 0.8+ | 0.7+ | 2006 10 21 | D35 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2006 10 21 | D35 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.7+ | 1.4+ | 2006 11 17 | 704 | 0.0 | 0.7− | 2006 11 22 | 691 | 0.9− | 1.0+ |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.7− | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2002 09 14 | 644 | 0.5− | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2002 09 14 | 644 | 0.8− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.1− | 0.2− |
| 2002 09 28 | 608 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.7+ |
| 2002 09 28 | 608 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.4+ | 0.5− |

**(142374)∗ 2002 RX$_{246}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.44060 | | | (2000.0) | | |
| $n$ | 0.26280649 | $\omega$ | 105.44137 | | +0.87238260 | +0.48815671 |
| $a$ | 2.4138595 | $\Omega$ | 225.34714 | | −0.46112138 | +0.80449042 |
| $e$ | 0.1055621 | $i$ | 2.05644 | | −0.16222108 | +0.33837582 |
| $P$ | 3.75 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 09 | 691 | 0.5+ | 0.2− | 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 1991 10 09 | 691 | 0.5− | 0.0 | 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 1991 10 09 | 691 | 0.1+ | 0.1− | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2002 07 30 | 608 | 1.2− | 0.5+ | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.0 |
| 2002 07 30 | 608 | 0.8− | 0.7+ | 2005 04 17 | 691 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 08 13 | 699 | 0.0 | 0.7+ | 2005 05 11 | G96 | 0.6− | 0.8− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 08 13 | 699 | 0.3− | 0.4+ | 2005 05 11 | G96 | 0.2− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 08 13 | 699 | (2.2+ | 0.5+) | 2005 05 11 | G96 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2002 08 13 | 699 | 0.6+ | 0.3− | 2005 05 11 | G96 | 0.9− | 0.3− | 2006 10 17 | 703 | 0.9− | 0.6+ |
| 2002 08 16 | 608 | 0.5− | 0.2− | 2005 06 01 | G96 | 0.5− | 0.3− | 2006 10 17 | 703 | 0.6− | 0.9− |
| 2002 08 16 | 608 | 0.2− | 0.7− | 2005 06 01 | G96 | 0.2− | 0.5− | 2006 10 17 | 703 | 0.1− | 0.7− |
| 2002 08 17 | 644 | 0.1+ | 0.3− | 2005 06 01 | G96 | 0.5− | 0.7− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 08 17 | 644 | 0.2+ | 0.2− | 2005 06 01 | G96 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 08 17 | 644 | 0.1− | 0.0 | 2006 08 28 | 204 | 0.4− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2002 08 19 | 644 | 0.3+ | 0.1− | 2006 08 28 | 204 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.9+ |
| 2002 08 27 | 644 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 09 05 | 704 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2002 09 05 | 704 | 0.0 | 1.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 09 05 | 704 | 1.0+ | 1.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2002 09 14 | 644 | 0.4+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.0 | | | | |

**(142375)∗ 2002 RL$_{247}$ = 2000 AC$_{16}$**

Discovered 2002 Sept. 9 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 85618)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.89161 | | | (2000.0) | | |
| $n$ | 0.27464153 | $\omega$ | 340.37487 | | +0.36440955 | −0.92422672 |
| $a$ | 2.3440052 | $\Omega$ | 88.11888 | | +0.86891793 | +0.29340660 |
| $e$ | 0.1542900 | $i$ | 6.55320 | | +0.33494374 | +0.24437173 |
| $P$ | 3.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5+ | 0.1+ | 2004 02 17 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 704 | 0.2+ | 0.3− |
| 1999 12 07 | 704 | 0.2− | 0.7− | 2004 02 17 | 704 | 0.1− | 0.1− | 2006 11 14 | 704 | 1.3+ | 0.6+ |
| 1999 12 07 | 704 | 0.9− | 0.9− | 2004 02 17 | 704 | 1.0+ | 0.9+ | 2006 11 14 | 704 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2004 02 17 | 704 | 0.3− | 0.8+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2000 01 03 | 704 | 0.6+ | 0.9− | 2004 02 17 | 704 | 0.9+ | 1.3+ | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2000 01 03 | 704 | 0.4+ | 0.5− | 2004 03 23 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.8+ | 0.6+ |
| 2000 01 03 | 704 | 0.1+ | 0.9+ | 2004 03 23 | 704 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.5− |
| 2000 01 04 | 704 | 0.4+ | 1.2− | 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2000 01 04 | 704 | 0.1− | 1.0− | 2004 03 23 | 704 | 0.3− | 1.0+ | 2006 11 18 | G96 | 0.1+ | 0.7− |
| 2000 01 04 | 704 | (2.3+ | 0.3+) | 2004 03 23 | 704 | 0.9− | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.6− |
| 2002 08 19 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 08 19 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.6− | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2002 08 30 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.6− |
| 2002 08 30 | 644 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2002 08 30 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.8− | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2002 09 09 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.4− | 1.1+ | 2006 11 20 | 704 | 0.8+ | 1.2+ |
| 2002 09 09 | 644 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.1+ |
| 2002 09 09 | 644 | 0.1− | 0.3− | 2006 11 01 | 703 | 1.1− | 0.5− | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 2002 09 15 | 608 | 0.5− | 0.5+ | 2006 11 01 | 703 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2002 09 15 | 608 | 0.7− | 0.4− | 2006 11 01 | 703 | 0.4− | 0.2+ | 2006 11 25 | 704 | 0.2+ | 0.6− |
| 2002 09 15 | 608 | 0.7− | 0.2+ | 2006 11 01 | 703 | 0.2+ | 0.4+ | 2006 11 25 | 704 | 0.2+ | 0.6+ |
| 2002 09 16 | 644 | 0.7− | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 25 | 704 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 25 | 704 | 0.1+ | 0.0 |
| 2002 09 16 | 644 | 0.1+ | 0.0 | 2006 11 09 | 644 | 1.1+ | 0.0 | 2006 11 28 | 704 | 0.9− | 0.4+ |
| 2002 09 17 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.6− | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.3+ |
| 2002 09 17 | 644 | 0.3+ | 1.0+ | 2006 11 13 | 703 | 0.7− | 0.3− | 2006 11 28 | 704 | 0.7− | 0.4+ |
| 2002 09 17 | 644 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.6− | 0.7+ |
| 2003 12 25 | 691 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.5− | 0.7+ |
| 2003 12 25 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.0 | | | | |
| 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.8+ | 0.3+ | | | | |

**(142376)∗ 2002 RM$_{248}$ = 1995 SG$_{66}$**

Discovered 2002 Sept. 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 94843)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.46425 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27926538 | $\omega$ | 185.11471 | | −0.98000833 | −0.19771411 | |
| $a$ | 2.3180599 | $\Omega$ | 343.43159 | | +0.18518857 | −0.86570953 | |
| $e$ | 0.1289775 | $i$ | 4.46492 | | +0.07272465 | −0.45984360 | |
| $P$ | 3.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1+ | 0.0 | 2002 08 20 | 644 | 0.1+ | 0.9+ | 2003 12 28 | 691 | 0.2− | 0.0 |
| 1995 09 17 | 691 | 0.1+ | 0.2− | 2002 08 20 | 644 | 0.1+ | 0.7+ | 2004 01 31 | 704 | 0.1− | 0.0 |
| 1995 09 17 | 691 | 0.3+ | 1.0− | 2002 08 28 | 644 | 0.9+ | 0.3+ | 2004 01 31 | 704 | 0.4− | 0.3+ |
| 1995 09 22 | 691 | 0.3− | 0.0 | 2002 08 28 | 644 | 0.2+ | 0.1+ | 2004 01 31 | 704 | 0.2+ | 0.4− |
| 1995 09 22 | 691 | 0.3+ | 0.0 | 2002 08 28 | 644 | 0.0 | 0.5+ | 2004 01 31 | 704 | 0.4+ | 0.7+ |
| 1995 09 22 | 691 | 0.3− | 0.2− | 2002 09 08 | 608 | 0.1− | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.4− |
| 1997 01 12 | 566 | 0.9− | 0.4− | 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.0 |
| 1997 01 12 | 566 | 0.1+ | 0.3− | 2002 09 14 | 644 | 0.6− | 0.8+ | 2006 10 15 | 691 | 0.8+ | 0.2− |
| 1997 01 12 | 566 | 0.7+ | 0.1− | 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 1999 10 12 | 704 | 0.7− | 0.6+ | 2002 09 17 | 608 | 0.8− | 1.1+ | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 1999 10 12 | 704 | 0.9+ | 1.0+ | 2002 10 01 | 608 | 0.5+ | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.5+ |
| 1999 10 12 | 704 | 0.9+ | 1.3+ | 2002 10 01 | 608 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 03 29 | 608 | 0.3+ | 0.0 | 2002 10 01 | 608 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2001 03 29 | 608 | 0.4+ | 0.0 | 2003 12 23 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2001 03 29 | 608 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2001 04 27 | 608 | 0.8− | 0.2+ | 2003 12 23 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2001 04 27 | 608 | 1.2− | 0.3+ | 2003 12 23 | 704 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 05 18 | 699 | (1.9+ | 0.9+) | 2003 12 23 | 704 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2001 05 18 | 699 | 0.7+ | 0.5+ | 2003 12 28 | 704 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 05 18 | 699 | 0.9+ | 0.7+ | 2003 12 28 | 704 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2001 05 18 | 699 | 0.8+ | 1.4+ | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2001 05 19 | 608 | 0.1− | 0.2− | 2003 12 28 | 704 | 0.2+ | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2001 05 19 | 608 | 0.6+ | 0.3+ | 2003 12 28 | 704 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2001 05 19 | 608 | 0.7+ | 0.8+ | 2003 12 28 | 704 | 0.5+ | 0.6+ | 2006 11 25 | G96 | 0.4− | 0.3− |
| 2002 08 20 | 644 | 0.6− | 0.1+ | 2003 12 28 | 691 | 0.0 | 0.1− | | | | |

**(142377)∗ 2002 RW$_{249}$**

Discovered 2002 Sept. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.30129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26912274 | $\omega$ | 11.35287 | | −0.58250389 | +0.81066994 | |
| $a$ | 2.3759417 | $\Omega$ | 223.05595 | | −0.75237936 | −0.56530957 | |
| $e$ | 0.0532623 | $i$ | 4.97370 | | −0.30759473 | −0.15244454 | |
| $P$ | 3.66 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.2+ | 0.3+ | 2002 08 16 | 608 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 1995 11 30 | 691 | 0.2+ | 0.2+ | 2002 08 28 | 644 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.7+ | 0.8+ |
| 1995 11 30 | 691 | 0.2− | 0.1+ | 2002 08 28 | 644 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.2+ |
| 1997 03 05 | 691 | 0.4− | 0.0 | 2002 08 28 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 1997 03 05 | 691 | 0.1+ | 0.3− | 2002 09 10 | 608 | 0.1− | 0.9+ | 2006 10 16 | 691 | 0.4− | 0.5+ |
| 1997 03 05 | 691 | 0.2− | 0.2− | 2002 09 10 | 608 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2001 03 20 | 608 | 0.2− | 0.7+ | 2002 09 11 | 644 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2001 03 20 | 608 | 0.2− | 0.5+ | 2002 09 11 | 644 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2001 03 20 | 608 | 0.2+ | 0.4+ | 2002 09 11 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2001 03 31 | 691 | 0.0 | 0.2+ | 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2001 03 31 | 691 | 0.2+ | 0.0 | 2002 09 13 | 644 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.9− |
| 2001 03 31 | 691 | 0.3− | 0.3+ | 2002 09 13 | 644 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 04 16 | 699 | (1.8− | 1.8+) | 2002 09 17 | 644 | 0.7− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 04 16 | 699 | 0.6+ | 1.3+ | 2002 09 17 | 644 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 04 16 | 699 | 0.5+ | 0.3+ | 2002 09 17 | 644 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2001 04 16 | 699 | 0.2+ | 0.6+ | 2002 09 18 | 644 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.4+ | 0.3+ |
| 2001 04 16 | 608 | 0.6+ | 0.5− | 2002 09 18 | 644 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.5+ |
| 2001 04 16 | 608 | 0.1− | 0.4− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.5+ |
| 2001 04 30 | 691 | 0.1+ | 0.1+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2001 04 30 | 691 | 0.4+ | 0.2+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2001 04 30 | 691 | 0.2+ | 0.1+ | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2001 05 22 | 807 | 0.4− | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2001 05 22 | 807 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2001 05 22 | 807 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2001 05 22 | 807 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2002 08 16 | 608 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1− | | | | |

**(142378)∗ 2002 SJ$_1$ = 2000 DJ$_{90}$**

Discovered 2002 Sept. 27 at Ametlla de Mar.

Id. T. B. Spahr (*MPO* 37925)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.18464 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24218859 | $\omega$ | 37.21583 | | +0.98177735 | +0.18568318 | |
| $a$ | 2.5489830 | $\Omega$ | 312.03205 | | −0.18481362 | +0.88340420 | |
| $e$ | 0.2046537 | $i$ | 3.12063 | | −0.04423991 | +0.43025432 | |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.5− | 0.1+ | 2004 02 11 | 691 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.2+ | 0.5− |
| 2000 02 27 | 691 | 0.2− | 0.3− | 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.3+ |
| 2000 02 27 | 691 | 0.1+ | 0.0 | 2004 02 11 | 291 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.2+ |
| 2000 03 03 | 691 | 0.1− | 0.5− | 2004 02 11 | 291 | 1.0+ | 0.7+ | 2006 09 16 | 699 | 0.3+ | 0.1− |
| 2000 03 03 | 691 | 0.0 | 0.1+ | 2004 02 11 | 291 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.9− | 0.4+ |
| 2000 03 03 | 691 | 0.1− | 0.2− | 2005 04 16 | 691 | (2.0+ | 0.5+) | 2006 09 18 | 704 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.9+ | 0.8− | 2005 04 16 | 691 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 0.3+ | 0.1− |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2005 04 16 | 691 | 0.4+ | 0.8+ | 2006 09 18 | 704 | 0.2+ | 0.6+ |
| 2002 09 06 | 704 | 0.8+ | 0.2− | 2006 08 20 | 691 | 0.3− | 0.4+ | 2006 09 18 | 704 | 0.8+ | 0.2+ |
| 2002 09 06 | 704 | 0.8+ | 0.6− | 2006 08 20 | 691 | 0.5− | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.1− |
| 2002 09 06 | 704 | 1.5+ | 0.8− | 2006 08 20 | 691 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.4+ |
| 2002 09 17 | 608 | 1.0− | 1.0− | 2006 08 25 | 704 | 1.3+ | 0.4− | 2006 09 19 | 703 | 1.1− | 0.2− |
| 2002 09 17 | 608 | 1.4− | 0.8− | 2006 08 25 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.3− |
| 2002 09 17 | 608 | 1.2− | 0.7− | 2006 08 25 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 2002 09 27 | 946 | (0.0 | 1.6+) | 2006 08 25 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.7+ | 0.1+ |
| 2002 09 27 | 946 | (0.2+ | 2.8+) | 2006 08 27 | 699 | 0.5+ | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.0 |
| 2002 09 27 | 946 | 0.8− | 0.2+ | 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 0.3− | 0.8+ |
| 2002 09 27 | 946 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.1+ |
| 2002 09 27 | 946 | 1.0+ | 1.0+ | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.4− | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.2− | 2006 09 25 | 699 | 1.3− | 0.4+ |
| 2002 10 04 | 704 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.3− | 0.7− | 2006 09 26 | 704 | (3.0− | 0.8+) |
| 2002 10 04 | 704 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.6− | 0.1− |
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.3− | 0.4− |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.8− | 0.8+ |
| 2002 10 12 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.9+ | 0.1− |
| 2002 10 12 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.2− |
| 2002 10 12 | 704 | 0.4+ | 0.0 | 2006 08 30 | 704 | 1.1+ | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2006 08 30 | 704 | 0.3+ | 1.3+ | 2006 09 29 | 704 | 0.2+ | 0.3− |
| 2002 10 12 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.5+ | 0.0 | 2006 09 30 | 704 | 1.1− | 0.1− |
| 2002 10 28 | 608 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2002 10 28 | 608 | 0.5− | 0.1− | 2006 08 30 | 704 | (0.7− | 1.9+) | 2006 09 30 | 704 | 0.5− | 0.2+ |
| 2002 10 28 | 608 | 0.0 | 0.6− | 2006 09 01 | 704 | 0.3− | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2002 12 06 | 704 | (1.8+ | 0.8+) | 2006 09 01 | 704 | 0.5− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | (0.4+ | 1.6+) | 2006 09 01 | 704 | 1.0− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 1.5+ | 2006 09 01 | 704 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.3+ | 1.2+ |
| 2004 01 30 | 691 | 0.2− | 0.1− | 2006 09 01 | 704 | 1.0+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2004 01 30 | 691 | 0.5− | 0.4+ | 2006 09 12 | 703 | 0.1− | 0.5− | 2006 11 11 | 703 | (0.8+ | 1.5+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.7+ | 0.3− | | | | |

**(142379)∗ 2002 SN$_3$ = 2005 GH$_{155}$**

Discovered 2002 Sept. 26 by NEAT at Palomar.

Id. A. Doppler (*MPO* 75627)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.02449 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23569489 | $\omega$ | 252.02381 | | +0.99945549 | | +0.01662416 |
| $a$ | 2.5955891 | $\Omega$ | 107.01614 | | −0.00420848 | | +0.92097560 |
| $e$ | 0.1381999 | $i$ | 1.70805 | | −0.03272625 | | +0.38926543 |
| $P$ | 4.18 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2002 10 04 | 644 | 0.2− | 0.7+ | 2005 05 14 | G96 | 0.7− | 0.3+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2002 10 04 | 644 | 0.1+ | 0.7+ | 2005 05 14 | G96 | 0.0 | 0.2− |
| 2002 09 26 | 644 | 0.8− | 0.6+ | 2004 01 28 | 691 | 0.1+ | 0.7+ | 2006 08 13 | 644 | 0.4+ | 0.0 |
| 2002 09 26 | 644 | 0.6− | 0.5+ | 2004 01 28 | 691 | 0.0 | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.2+ |
| 2002 09 26 | 644 | 0.9− | 0.8+ | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 08 13 | 644 | 0.1− | 0.6+ |
| 2002 09 28 | 644 | 0.9− | 0.6+ | 2005 04 10 | G96 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.3− | 0.2+ |
| 2002 09 28 | 644 | 0.7− | 0.4+ | 2005 04 10 | G96 | 0.4+ | 0.4+ | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 2002 09 28 | 644 | 0.9− | 0.9+ | 2005 04 10 | G96 | 0.1− | 1.1+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2002 09 29 | 608 | 0.2− | 0.3+ | 2005 04 10 | G96 | 1.2− | 0.8+ | 2006 08 28 | 703 | 0.3+ | 0.0 |
| 2002 09 29 | 608 | 0.8− | 0.3+ | 2005 04 16 | 691 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2002 09 29 | 608 | 0.2− | 0.0 | 2005 04 16 | 691 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 1.3+ | 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.8+ | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.3− | 2005 05 11 | 807 | 0.3− | 0.7+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2005 05 11 | 807 | 0.3− | 0.9+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2005 05 14 | G96 | 0.5− | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 10 04 | 644 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.5− | 0.4− |

**(142380)∗ 2002 SB$_5$ = 1998 VD$_7$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37927)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.09133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24236652 | $\omega$ | 30.25788 | | +0.53874552 | | −0.84066613 |
| $a$ | 2.5477352 | $\Omega$ | 27.25768 | | +0.74684263 | | +0.44631919 |
| $e$ | 0.1832915 | $i$ | 6.90722 | | +0.38984529 | | +0.30672404 |
| $P$ | 4.07 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 05 | 691 | 0.1+ | 0.5− | 2002 10 08 | 699 | 0.8+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.2+ |
| 1994 11 05 | 691 | 0.1+ | 0.5− | 2002 10 11 | 704 | 0.0 | 1.2+ | 2006 09 18 | 703 | 0.3+ | 0.5− |
| 1994 11 05 | 691 | 0.2+ | 0.3− | 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.5+ | 1.0− |
| 1996 03 12 | 691 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.7− |
| 1996 03 12 | 691 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.7− | 0.4+ |
| 1996 03 12 | 691 | 0.3− | 0.3− | 2002 10 11 | 704 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.6+ |
| 1998 10 17 | 699 | 0.4+ | 0.3+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 09 18 | 699 | 1.3+ | 0.4− |
| 1998 10 17 | 699 | 0.5+ | 0.2+ | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.5− | 0.3+ |
| 1998 10 17 | 699 | 0.2− | 0.9+ | 2002 10 31 | 704 | 1.0− | 0.9+ | 2006 09 19 | 704 | 0.1+ | 0.4− |
| 1998 11 10 | 704 | 1.2− | 0.5+ | 2002 10 31 | 704 | 0.7− | 0.1− | 2006 09 19 | 704 | 0.2+ | 0.6+ |
| 1998 11 10 | 704 | 1.1− | 0.6− | 2002 10 31 | 704 | 0.4− | 0.6+ | 2006 09 19 | 704 | 1.5+ | 0.4+ |
| 1998 11 10 | 704 | 0.9+ | 1.0− | 2002 10 31 | 645 | 0.2+ | 0.1− | 2006 09 19 | 704 | 1.1− | 1.2+ |
| 1998 11 10 | 704 | 1.2− | 1.6− | 2002 10 31 | 645 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.6− | 0.1− |
| 1998 11 11 | 704 | 0.6+ | 1.9+ | 2002 10 31 | 704 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.5− | 0.2− |
| 1998 11 11 | 704 | 0.3− | 1.0+ | 2002 10 31 | 704 | 0.2− | 0.9+ | 2006 09 20 | 644 | 0.4− | 0.1− |
| 1998 11 11 | 704 | 1.5− | 0.0 | 2002 11 06 | 704 | 0.3+ | 1.1+ | 2006 09 22 | 704 | 0.1+ | 0.7+ |
| 1998 11 11 | 704 | (2.6− | 0.7+) | 2002 11 06 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.3+ |
| 2002 09 05 | 704 | 0.9− | 0.7− | 2002 11 06 | 704 | 0.3− | 1.2+ | 2006 09 22 | 704 | (0.2− | 1.8+) |
| 2002 09 05 | 704 | 1.0− | 1.0+ | 2002 11 06 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.2+ |
| 2002 09 05 | 704 | 0.2− | 0.7− | 2002 11 06 | 608 | 0.6− | 0.6+ | 2006 09 22 | 704 | 0.6− | 0.2+ |
| 2002 09 05 | 704 | 1.1− | 0.4− | 2002 11 06 | 608 | 1.1− | 0.7+ | 2006 09 26 | 704 | 0.4− | 0.8+ |
| 2002 09 05 | 704 | 0.2− | 0.0 | 2002 11 06 | 608 | 0.7− | 1.0+ | 2006 09 26 | 704 | 0.3+ | 0.0 |
| 2002 09 27 | 644 | 0.5− | 0.4+ | 2002 11 08 | 645 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.9− | 0.5+ |
| 2002 09 27 | 644 | 0.2− | 0.4+ | 2002 11 08 | 645 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.7+ |
| 2002 09 27 | 644 | 0.4− | 0.1+ | 2004 02 25 | 704 | (2.4+ | 0.4+) | 2006 09 26 | 704 | 0.0 | 0.5+ |
| 2002 09 28 | 644 | 0.7− | 0.2+ | 2004 02 25 | 704 | 0.8+ | 0.5+ | 2006 10 09 | 644 | 0.7− | 0.0 |
| 2002 09 28 | 644 | 0.5− | 0.3+ | 2004 02 25 | 704 | 1.2− | 0.2+ | 2006 10 09 | 644 | 0.9− | 0.0 |
| 2002 09 28 | 644 | 0.5− | 0.4+ | 2004 02 25 | 704 | 1.0+ | 0.6+ | 2006 10 09 | 644 | 0.6− | 0.2+ |
| 2002 09 30 | 704 | 0.4+ | 0.6+ | 2004 02 25 | 704 | 0.0 | 1.3+ | 2006 10 16 | 703 | (1.3+ | 2.2+) |
| 2002 09 30 | 704 | 0.5+ | 0.5+ | 2004 02 26 | 704 | 0.5− | 1.3+ | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2002 09 30 | 704 | 0.0 | 0.4− | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.8− | 1.1+ |
| 2002 09 30 | 704 | 0.0 | 1.0+ | 2004 02 26 | 704 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.4+ | 1.2+ |
| 2002 09 30 | 704 | 0.3+ | 0.5+ | 2004 03 15 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 10 01 | 608 | 0.2− | 1.5+ | 2004 03 15 | 704 | 0.2− | 1.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2002 10 01 | 608 | 0.3− | 1.3+ | 2004 03 15 | 704 | 1.1+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 10 01 | 608 | 0.4− | 1.4+ | 2004 03 15 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2002 10 02 | 704 | 0.0 | 0.0 | 2004 03 16 | 291 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2002 10 02 | 704 | 0.3− | 1.1+ | 2004 03 16 | 291 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.6− | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.5+ | 2004 03 16 | 291 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.5− | 0.3+ | 2004 03 17 | 691 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.3− | 1.0− | 2004 03 17 | 691 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 1.1− | 0.7+ | 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | 0.7− | 1.0+ | 2004 04 13 | 291 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.8− | 0.8+ | 2004 04 13 | 291 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2004 04 13 | 291 | 0.1+ | 0.3+ | 2006 10 24 | 644 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.4− | 1.5+ | 2006 08 29 | 691 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2002 10 05 | 645 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.4− | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 11 18 | 703 | 0.1− | 0.8+ |
| 2002 10 08 | 699 | 0.8+ | 0.1− | 2006 09 16 | 704 | (0.7− | 2.7+) | 2006 11 18 | 703 | 0.3+ | 0.3− |
| 2002 10 08 | 699 | 0.3− | 0.8+ | 2006 09 16 | 704 | 1.3− | 1.0+ | 2006 11 18 | 703 | 1.4− | 1.5− |
| 2002 10 08 | 699 | 0.2+ | 0.6+ | 2006 09 16 | 704 | (1.8− | 0.9+) | 2006 11 18 | 703 | 0.6+ | 0.7+ |

**(142381)∗ 2002 SE$_5$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.18941 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21265581 | $\omega$ | 255.88928 | | +0.54566160 | | −0.83747409 |
| $a$ | 2.7798278 | $\Omega$ | 160.95013 | | +0.79981070 | | +0.50983233 |
| $e$ | 0.1504956 | $i$ | 5.24597 | | +0.25011250 | | +0.19674388 |
| $P$ | 4.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 09 | 691 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.7− | 1.6+ |
| 1995 03 09 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.7+ | 1.1+ | 2004 03 18 | 704 | 0.0 | 0.1+ |
| 1995 03 09 | 691 | 0.3− | 0.1− | 2002 10 11 | 704 | 0.7+ | 1.6+ | 2004 03 18 | 704 | 0.5+ | 0.3+ |
| 2002 09 12 | 683 | (0.2− | 4.0+) | 2002 10 22 | 644 | 0.8− | 1.3+ | 2005 04 04 | G96 | 0.9− | 0.1− |
| 2002 09 12 | 683 | 0.8+ | 0.7+ | 2002 10 22 | 644 | 0.3− | 1.7+ | 2005 04 04 | G96 | 0.8− | 0.3− |
| 2002 09 12 | 683 | (1.1− | 3.0+) | 2002 10 22 | 644 | 0.1+ | 1.7+ | 2005 04 04 | G96 | 0.1− | 0.0 |
| 2002 09 27 | 644 | 1.1− | 0.0 | 2002 11 02 | 608 | 0.9− | 0.8− | 2005 04 04 | G96 | 1.1− | 0.3− |
| 2002 09 27 | 644 | 0.3− | 0.4+ | 2002 11 02 | 608 | 1.0− | 0.1− | 2005 04 11 | 691 | 0.1+ | 0.3+ |
| 2002 09 27 | 644 | 0.4− | 0.6+ | 2002 11 02 | 608 | 1.3− | 0.5− | 2005 04 11 | 691 | 0.2+ | 0.4+ |
| 2002 09 28 | 644 | 0.5− | 0.4+ | 2004 01 29 | 704 | 0.5− | 0.8+ | 2005 04 11 | 691 | 0.1− | 0.5+ |
| 2002 09 28 | 644 | 0.3− | 0.4+ | 2004 01 29 | 704 | 0.2+ | 0.1− | 2005 04 18 | 691 | 0.2+ | 0.8+ |
| 2002 09 28 | 644 | 0.4− | 0.5+ | 2004 01 29 | 704 | 0.0 | 0.3− | 2005 04 18 | 691 | 0.1+ | 0.2+ |
| 2002 09 30 | 704 | 0.1− | 0.1− | 2004 01 30 | 691 | 0.3+ | 0.1+ | 2005 04 18 | 691 | 0.2+ | 0.3+ |
| 2002 09 30 | 704 | 0.7+ | 0.8+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2005 05 04 | 691 | 0.4+ | 0.4+ |
| 2002 09 30 | 704 | 0.6+ | 0.8+ | 2004 01 30 | 691 | 0.3+ | 0.1+ | 2005 05 04 | 691 | 0.3+ | 0.5+ |
| 2002 10 01 | 699 | 0.0 | 0.2+ | 2004 02 11 | 644 | 0.5+ | 0.3+ | 2005 05 04 | 691 | 1.0+ | 0.4+ |
| 2002 10 01 | 699 | 0.5+ | 0.7+ | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2005 05 11 | 691 | 0.2+ | 0.1+ |
| 2002 10 01 | 699 | 1.2+ | 0.6+ | 2004 02 11 | 644 | 0.3+ | 0.6+ | 2005 05 11 | 691 | 0.1− | 0.1+ |
| 2002 10 01 | 699 | 0.3+ | 0.7+ | 2004 02 13 | 691 | 0.2+ | 0.3+ | 2005 05 11 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.2+ | 0.3+ | 2004 02 13 | 691 | 0.3+ | 0.0 | 2005 05 14 | 691 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | 0.1− | 1.0+ | 2004 02 13 | 691 | 0.2+ | 0.4+ | 2005 05 14 | 691 | 0.0 | 0.5+ |
| 2002 10 02 | 704 | 0.0 | 1.3+ | 2004 02 17 | 704 | 0.9− | 0.1− | 2005 05 14 | 691 | 0.2+ | 0.6+ |
| 2002 10 02 | 704 | 0.3− | 1.2+ | 2004 02 17 | 704 | 0.3− | 1.4+ | 2006 06 19 | G96 | 0.5− | 0.2− |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2004 02 17 | 704 | 0.1+ | 1.0+ | 2006 06 19 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2004 02 17 | 704 | 0.2− | 0.7+ | 2006 06 19 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.5− | 1.5+ | 2004 02 17 | 704 | 0.2− | 0.8+ | 2006 06 19 | G96 | 0.5− | 0.7− |
| 2002 10 03 | 704 | 0.3+ | 1.7+ | 2004 02 26 | 704 | 0.5− | 1.1+ | 2006 06 19 | 691 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2004 02 26 | 704 | 0.6− | 0.9+ | 2006 06 19 | 691 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | 1.4− | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.9+ | 2006 06 19 | 691 | 0.2− | 0.1+ | | |
| 2002 10 08 | 699 | 0.6− | 0.0 | 2004 02 26 | 704 | 0.4− | 0.8+ | 2006 07 23 | G96 | 0.5− | 0.1+ | | |
| 2002 10 08 | 699 | 1.1− | 0.9+ | 2004 03 10 | 644 | 0.1+ | 0.3+ | 2006 07 23 | G96 | 0.3− | 0.0 | | |
| 2002 10 08 | 699 | 0.9− | 1.0+ | 2004 03 10 | 644 | 0.1+ | 0.3+ | 2006 07 23 | G96 | 0.5− | 0.3+ | | |
| 2002 10 11 | 704 | 0.5− | 1.2+ | 2004 03 10 | 644 | 0.0 | 0.2+ | 2006 07 23 | G96 | 0.3− | 0.1− | | |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.0 | 1.8+ | | | | | | |

**(142382)∗ 2002 SS$_5$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.24739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24039095 | $\omega$ | 209.12362 | | +0.84776024 | −0.53035130 | |
| $a$ | 2.5616747 | $\Omega$ | 182.92304 | | +0.50505869 | +0.81040073 | |
| $e$ | 0.2969719 | $i$ | 6.17379 | | +0.16192067 | +0.24895412 | |
| $P$ | 4.10 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 0.6− | 0.1− | 2002 10 28 | 644 | 0.1− | 0.1− | 2006 09 11 | 703 | 0.4+ | 0.5+ | | |
| 1998 11 11 | 704 | 0.7− | 0.4+ | 2002 10 30 | 704 | 0.1− | 0.6+ | 2006 09 16 | 608 | 0.7+ | 1.0− | | |
| 1998 11 11 | 704 | 0.8− | 0.6+ | 2002 10 30 | 704 | 0.3− | 0.6+ | 2006 09 16 | 608 | 0.8+ | 0.9− | | |
| 1998 11 19 | 699 | 0.1− | 0.9+ | 2002 10 30 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 608 | 0.9+ | 0.7− | | |
| 1998 11 19 | 699 | 1.2+ | 0.9+ | 2002 10 30 | 704 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.8− | 0.3− | | |
| 1998 11 19 | 699 | 0.7+ | 0.8+ | 2002 10 30 | 704 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.1− | | |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.2− | 0.2− | | |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.2+ | 0.0 | | |
| 2002 08 11 | 704 | 0.6− | 0.0 | 2002 11 02 | 608 | 0.2− | 0.0 | 2006 09 17 | 608 | (0.7+ | 1.9−) | | |
| 2002 08 11 | 704 | 0.7− | 0.6+ | 2002 11 02 | 608 | 0.2+ | 0.2− | 2006 09 17 | 608 | (0.2+ | 1.9−) | | |
| 2002 08 11 | 704 | 0.3− | 0.2− | 2002 11 02 | 608 | 0.2− | 0.1+ | 2006 09 17 | 608 | 0.2+ | 1.5− | | |
| 2002 08 11 | 704 | 0.5+ | 0.5+ | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.2− | 0.5− | | |
| 2002 08 11 | 704 | 0.6− | 0.7+ | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.0 | 0.2− | | |
| 2002 08 16 | 704 | 0.4+ | 0.3+ | 2002 11 20 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.3− | 0.4− | | |
| 2002 08 16 | 704 | 0.5− | 0.1− | 2002 11 20 | 644 | 0.0 | 0.5+ | 2006 09 18 | 704 | 0.0 | 0.3+ | | |
| 2002 08 16 | 704 | 1.0− | 0.6+ | 2002 11 20 | 644 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.2− | 0.0 | | |
| 2002 09 27 | 644 | 0.2− | 0.4− | 2004 03 15 | 691 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.1− | 0.2+ | | |
| 2002 09 27 | 644 | 0.4− | 0.3− | 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.1+ | 0.3+ | | |
| 2002 09 27 | 644 | 0.3− | 0.2− | 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.1+ | 0.5+ | | |
| 2002 09 28 | 644 | 0.4− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.8− | | |
| 2002 09 28 | 644 | 0.4− | 0.2− | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.7+ | | |
| 2002 09 28 | 644 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.2− | | |
| 2002 10 01 | 608 | 0.3− | 0.5− | 2006 08 19 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.1− | | |
| 2002 10 01 | 608 | 0.1− | 0.5− | 2006 08 19 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 01 | 608 | 0.0 | 0.4− | 2006 08 19 | 644 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.1− | | |
| 2002 10 02 | 704 | 0.3− | 0.0 | 2006 08 24 | 704 | 1.3+ | 1.0− | 2006 09 27 | G96 | 0.4− | 0.2− | | |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2006 08 24 | 704 | 0.1− | 1.0+ | 2006 09 27 | G96 | 0.1+ | 0.1− | | |
| 2002 10 02 | 704 | 0.2− | 0.1+ | 2006 08 24 | 704 | 1.3+ | 0.1− | 2006 09 27 | G96 | 0.5− | 0.2− | | |
| 2002 10 02 | 704 | 0.5− | 0.2− | 2006 08 24 | 704 | 0.7+ | 0.8+ | 2006 09 29 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 02 | 704 | 0.9− | 0.2+ | 2006 08 24 | 704 | 0.2+ | 0.4− | 2006 09 29 | 704 | (1.9+ | 0.8+) | | |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.9+ | 0.6+ | 2006 09 29 | 704 | 0.8+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2006 08 27 | 699 | 1.2− | 0.4− | 2006 09 29 | 704 | 0.6+ | 0.9+ | | |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.7+ | 1.2+ | | |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 09 30 | 699 | 0.6− | 0.4+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 09 30 | 699 | 0.7− | 0.0 | | |
| 2002 10 04 | 683 | 0.4+ | 0.7+ | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 09 30 | 699 | 0.0 | 0.3− | | |
| 2002 10 04 | 683 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.1+ | 2006 09 30 | 608 | (0.3+ | 1.8−) | | |
| 2002 10 04 | 683 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.4+ | 0.1+ | 2006 09 30 | 608 | (0.1+ | 2.0−) | | |
| 2002 10 05 | 683 | 0.2+ | 1.5+ | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 09 30 | 608 | (0.2− | 1.9−) | | |
| 2002 10 05 | 683 | 0.4+ | 0.5+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3− | 0.3− | | |
| 2002 10 05 | 683 | 0.9+ | 1.0+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.4− | 0.0 | | |
| 2002 10 07 | 704 | 0.5+ | 0.1+ | 2006 08 30 | 699 | 0.7+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.0 | | |
| 2002 10 07 | 704 | 0.8+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.0 | | |
| 2002 10 07 | 704 | 1.3+ | 0.1+ | 2006 08 30 | 699 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.0 | | |
| 2002 10 07 | 704 | 0.4+ | 0.6+ | 2006 08 30 | 704 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.0 | | |
| 2002 10 07 | 704 | 0.6+ | 0.5+ | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2002 10 08 | 704 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2002 10 08 | 704 | 0.3− | 0.7+ | 2006 08 30 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.9− | | |
| 2002 10 08 | 704 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2+ | | |
| 2002 10 08 | 704 | 0.3− | 0.6+ | 2006 09 01 | 704 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.2+ | | |
| 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 09 01 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.7− | | |
| 2002 10 11 | 704 | 0.1+ | 0.7+ | 2006 09 01 | 704 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.1− | | |
| 2002 10 11 | 704 | 0.1− | 0.7+ | 2006 09 01 | 704 | 0.3− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2002 10 11 | 704 | 0.3+ | 0.4+ | 2006 09 01 | 704 | 0.1− | 0.3+ | 2006 11 17 | G96 | 1.2+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 09 11 | 703 | 0.1− | 0.8+ | 2006 11 17 | G96 | 0.9− | 0.3− | | |
| 2002 10 28 | 644 | 0.3− | 0.3− | 2006 09 11 | 703 | 0.1− | 0.6+ | | | | | | |
| 2002 10 28 | 644 | 0.1− | 0.2− | 2006 09 11 | 703 | 0.4+ | 0.6+ | | | | | | |

**(142383)∗ 2002 SX$_6$ = 2001 FK$_{182}$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 37928)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.85270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26888548 | $\omega$ | 83.57049 | | +0.15993926 | +0.98707870 | |
| $a$ | 2.3773392 | $\Omega$ | 195.64305 | | −0.91936388 | +0.14535621 | |
| $e$ | 0.1958319 | $i$ | 2.07223 | | −0.35942940 | +0.06743296 | |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 29 | 910 | 1.3+ | 0.4− | 2002 10 11 | 704 | 0.1− | 0.3+ | 2005 05 12 | 691 | 0.3+ | 0.4+ | | |
| 1998 07 29 | 910 | 1.4+ | 0.2− | 2002 10 11 | 704 | 1.0− | 0.6+ | 2005 05 12 | 691 | 0.2+ | 0.4+ | | |
| 1998 07 29 | 910 | 0.1− | 0.3+ | 2002 10 11 | 704 | 0.4− | 0.4+ | 2005 05 27 | 699 | 0.3+ | 0.2+ | | |
| 2001 03 24 | 691 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.8− | 0.6− | 2005 05 27 | 699 | 0.8− | 1.2+ | | |
| 2001 03 24 | 691 | 0.0 | 0.3+ | 2002 11 06 | 291 | 0.0 | 0.4+ | 2005 05 27 | 699 | 1.1− | 0.2+ | | |
| 2001 03 24 | 691 | 0.1+ | 0.6+ | 2002 11 06 | 291 | 0.1− | 0.5+ | 2005 05 27 | 699 | 1.4− | 0.2− | | |
| 2001 03 26 | 695 | 0.0 | 0.6+ | 2002 11 06 | 291 | 0.1− | 0.3+ | 2005 06 13 | G96 | 0.0 | 0.0 | | |
| 2001 03 26 | 695 | 0.1+ | 0.6+ | 2005 01 21 | 809 | 0.4+ | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.1+ | | |
| 2002 09 05 | 704 | 0.1− | 0.7− | 2005 01 21 | 809 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.4− | 2005 03 10 | G96 | 0.2− | 0.7− | 2005 06 13 | G96 | 0.2− | 0.3+ | | |
| 2002 09 05 | 704 | 0.2− | 0.3− | 2005 03 10 | G96 | 1.4+ | 0.9− | 2006 09 28 | G96 | 0.1+ | 0.3− | | |
| 2002 09 27 | 644 | 0.7− | 0.6− | 2005 03 10 | G96 | 0.8− | 0.9− | 2006 09 28 | G96 | 0.1+ | 0.2+ | | |
| 2002 09 27 | 644 | 0.7− | 0.1− | 2005 03 10 | G96 | 0.6− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | | |
| 2002 09 27 | 644 | 0.3− | 0.2+ | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.1− | | |
| 2002 09 28 | 644 | 0.8− | 0.4− | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.2− | | |
| 2002 09 28 | 644 | 0.6− | 0.2− | 2005 04 11 | G96 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 28 | 644 | 0.4− | 0.1− | 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.4+ | 2005 05 04 | 704 | 0.5− | 1.1+ | 2006 10 20 | 691 | 0.1− | 0.7+ | | |
| 2002 10 02 | 704 | 1.0+ | 0.5+ | 2005 05 04 | 704 | (1.6+ | 0.3+) | 2006 10 20 | 691 | 0.4− | 0.3+ | | |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2005 05 04 | 704 | 0.9+ | 0.8− | 2006 10 20 | 691 | 0.4− | 0.1+ | | |
| 2002 10 02 | 704 | 0.4− | 0.2− | 2005 05 04 | 608 | 0.2+ | 0.1− | 2006 10 28 | G96 | 1.2− | 1.4+ | | |
| 2002 10 03 | 704 | 0.1− | 0.2+ | 2005 05 04 | 608 | 0.8+ | 0.2+ | 2006 10 28 | G96 | 1.1+ | 0.9+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.1− | 2005 05 04 | 608 | 0.1+ | 0.5− | 2006 10 28 | G96 | 0.0 | 0.4− | | |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2005 05 08 | 691 | 0.3+ | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.1− | | |
| 2002 10 05 | 704 | 0.0 | 0.5+ | 2005 05 08 | 691 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2002 10 05 | 704 | 0.3− | 0.6+ | 2005 05 08 | 691 | 0.4+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2002 10 05 | 704 | 0.5+ | 0.5+ | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.0 | | |
| 2002 10 05 | 704 | 0.1+ | 0.4+ | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.6− | 0.4− | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 11 12 | 703 | 0.6− | 0.9+ | | |
| 2002 10 06 | 291 | 0.5− | 0.1+ | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 11 12 | 703 | 1.1− | 0.6+ | | |
| 2002 10 06 | 291 | 0.3− | 0.0 | 2005 05 09 | 704 | (1.9− | 2.3+) | 2006 11 12 | 703 | 0.1+ | 0.4+ | | |
| 2002 10 06 | 291 | 0.2− | 0.1− | 2005 05 09 | 704 | (1.5− | 1.4+) | 2006 11 12 | 703 | 0.7+ | 0.6+ | | |
| 2002 10 07 | 699 | 0.0 | 0.8+ | 2005 05 09 | 704 | (2.0− | 2.3+) | 2006 11 14 | 691 | 0.3+ | 0.1+ | | |
| 2002 10 07 | 699 | 0.2− | 0.2+ | 2005 05 09 | 704 | (2.0− | 1.4+) | 2006 11 14 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 07 | 699 | 0.5− | 0.2+ | 2005 05 09 | 704 | 0.7− | 0.2+ | 2006 11 14 | 691 | 0.3+ | 0.2+ | | |
| 2002 10 07 | 699 | 0.7+ | 0.1+ | 2005 05 12 | 691 | 0.2+ | 0.5+ | | | | | | |

**(142384)∗ 2002 SX$_8$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.29668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27447624 | $\omega$ | 29.01853 | | −0.79235524 | −0.60951771 | |
| $a$ | 2.3449462 | $\Omega$ | 113.40405 | | +0.55417306 | −0.73675414 | |
| $e$ | 0.1019423 | $i$ | 1.60575 | | +0.25507921 | −0.29271401 | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1+ | 0.0 | 2004 03 20 | 699 | 0.8− | 0.1+ | 2005 07 12 | G96 | 0.3+ | 1.3+ |
| 1999 12 07 | 704 | 0.9+ | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.8+ | 2005 07 12 | G96 | 0.3− | 0.4+ |
| 1999 12 07 | 704 | 1.6+ | 0.2− | 2004 03 20 | 699 | 0.5− | 0.8+ | 2005 07 12 | G96 | 0.1+ | 0.6+ |
| 2000 01 05 | 704 | 0.2− | 0.8− | 2004 03 20 | 704 | 0.2− | 0.5+ | 2006 10 29 | G96 | 0.3+ | 0.1− |
| 2000 01 05 | 704 | 0.1+ | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 10 29 | G96 | 0.5+ | 0.3− |
| 2000 01 05 | 704 | 0.6+ | 1.1− | 2004 03 20 | 699 | 0.4− | 0.7+ | 2006 10 29 | G96 | 0.0 | 0.0 |
| 2002 09 27 | 644 | 0.7− | 1.0+ | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 10 29 | G96 | 0.4− | 0.0 |
| 2002 09 27 | 644 | 0.5− | 0.2+ | 2004 03 20 | 704 | 1.4− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2002 09 27 | 644 | 0.4− | 0.8+ | 2004 03 20 | 699 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2002 09 28 | 644 | 0.6− | 0.5+ | 2004 03 22 | 704 | 0.2+ | 1.0+ | 2006 10 31 | G96 | 0.5+ | 0.2+ |
| 2002 09 28 | 644 | 0.7− | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2002 09 28 | 644 | 0.5− | 0.6+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2002 10 07 | 291 | 0.3− | 0.6+ | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2002 10 07 | 291 | 0.1− | 0.5+ | 2004 03 22 | 704 | 0.6+ | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2002 10 07 | 291 | 0.4+ | 0.5− | 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2002 10 31 | 645 | 0.2− | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2002 10 31 | 645 | 0.2− | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2004 02 16 | 703 | 0.2+ | 0.3− | 2004 03 25 | 704 | 0.1− | 0.9+ | 2006 11 18 | 704 | 1.6− | 0.6+ |
| 2004 02 16 | 703 | 0.9+ | 0.0 | 2004 03 25 | 704 | 0.5+ | 0.7+ | 2006 11 18 | 704 | (0.7− | 2.3+) |
| 2004 02 16 | 703 | (0.6− | 1.6+) | 2004 03 25 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.6+ | 0.6− |
| 2004 02 16 | 703 | 0.5+ | 0.0 | 2004 03 25 | 704 | 0.3+ | 0.7+ | 2006 11 18 | 704 | (0.0 | 1.6+) |
| 2004 02 19 | 704 | 0.8+ | 0.8− | 2004 03 28 | 703 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2004 02 19 | 704 | 0.6+ | 0.5− | 2004 03 28 | 704 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2004 02 19 | 704 | 0.3+ | 0.3− | 2004 03 28 | 703 | 1.3+ | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2004 02 19 | 704 | 0.4+ | 0.2+ | 2004 03 28 | 704 | (1.5+ | 0.5+) | 2006 11 21 | 704 | 0.2− | 1.0+ |
| 2004 02 19 | 704 | 0.5+ | 0.4− | 2004 03 28 | 704 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2004 02 23 | 704 | 0.5+ | 0.1− | 2004 03 28 | 703 | 0.6− | 0.2− | 2006 11 21 | 704 | 1.1− | 0.3− |
| 2004 02 23 | 704 | 0.3− | 0.5− | 2004 03 28 | 704 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.9− | 0.9+ |
| 2004 02 23 | 704 | 0.1+ | 0.1− | 2004 03 28 | 703 | 0.8+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.0 | 0.2− | 2004 03 30 | 691 | 0.3+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2004 02 23 | 704 | 0.1+ | 0.2+ | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2004 03 31 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.4− |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2004 03 31 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2004 03 15 | 704 | 0.0 | 0.5+ | 2004 03 31 | 691 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 704 | 0.1+ | 0.4+ | 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 704 | 0.0 | 0.4+ | 2004 04 12 | 691 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 1.9+ | 0.8− |
| 2004 03 15 | 704 | 0.3+ | 0.5+ | 2004 04 12 | 691 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 1.6+ | 1.0− |
| 2004 03 15 | 704 | 0.1+ | 0.3+ | 2004 05 21 | 704 | 0.5+ | 0.4− | 2006 11 28 | 704 | 1.2+ | 1.8− |
| 2004 03 19 | 704 | 0.5+ | 0.4− | 2004 05 21 | 704 | 0.3− | 0.8+ | 2006 11 28 | 704 | 1.6+ | 1.1− |
| 2004 03 19 | 704 | 0.0 | 0.1+ | 2004 05 21 | 704 | 0.5− | 0.3+ | 2006 11 28 | 704 | 1.3+ | 0.9− |
| 2004 03 19 | 704 | 0.3− | 0.1− | 2005 07 05 | 691 | 0.0 | 0.8+ | 2006 12 01 | 704 | 0.0 | 1.3+ |
| 2004 03 19 | 704 | 0.1− | 0.7− | 2005 07 05 | 691 | 0.0 | 0.8+ | 2006 12 01 | 704 | (1.1+ | 3.8+) |
| 2004 03 19 | 704 | 0.4− | 0.3+ | 2005 07 05 | 691 | 0.0 | 0.7+ | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.2+ | 0.4− | 2005 07 09 | 691 | 0.0 | 0.8+ | 2006 12 01 | 704 | 0.2+ | 1.7+ |
| 2004 03 19 | 704 | 0.2− | 0.0 | 2005 07 09 | 691 | 0.1− | 0.9+ | 2006 12 01 | 691 | 0.5− | 1.0+ |
| 2004 03 19 | 704 | 0.3− | 0.6− | 2005 07 09 | 691 | 0.4− | 0.8+ | 2006 12 01 | 704 | 2.7− | 2.4+ |
| 2004 03 19 | 704 | 0.3− | 0.1− | 2005 07 12 | G96 | 0.1− | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.0 |

**(142385)∗ 2002 SZ$_8$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.31158 | | (2000.0) | | | |
| $n$ | 0.26022056 | $\omega$ | 140.22478 | | +0.93708588 | +0.34893870 |
| $a$ | 2.4298249 | $\Omega$ | 199.36074 | | −0.32786249 | +0.86927242 |
| $e$ | 0.2352212 | $i$ | 1.82807 | | −0.11990098 | +0.35015318 |
| $P$ | 3.79 | $H$ | 16.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 691 | 0.5+ | 0.2+ | 2002 10 09 | 291 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 1997 03 10 | 691 | 0.4− | 0.4− | 2002 10 09 | 291 | 0.0 | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 1997 03 10 | 691 | 0.1− | 0.2− | 2002 10 09 | 291 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2002 08 11 | 704 | 0.6− | 0.4− | 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2002 08 11 | 704 | 0.3− | 0.2− | 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 08 11 | 704 | 0.3+ | 0.3+ | 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.2+ | 0.1+ | 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.3− |
| 2002 09 07 | 704 | 0.1+ | 0.0 | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2002 09 07 | 704 | 0.4+ | 0.0 | 2002 10 31 | 699 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.1+ | 0.0 | 2002 10 31 | 699 | 0.3− | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.6− | 0.3− | 2002 10 31 | 699 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.3− |
| 2002 09 27 | 644 | 0.2− | 0.6+ | 2002 10 31 | 699 | 1.2− | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.2− |
| 2002 09 27 | 644 | 0.2− | 0.7+ | 2002 10 31 | 704 | (1.6+ | 0.5+) | 2006 11 11 | 703 | 1.3− | 0.7+ |
| 2002 09 27 | 644 | 0.0 | 0.7+ | 2002 10 31 | 704 | (1.9+ | 0.4+) | 2006 11 11 | 703 | (1.7+ | 3.9−) |
| 2002 09 28 | 644 | 0.5− | 1.1− | 2002 10 31 | 704 | 0.6− | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 2002 09 28 | 644 | 0.4− | 1.1− | 2002 10 31 | 704 | 0.5− | 1.3+ | 2006 11 18 | 704 | 0.8− | 0.1+ |
| 2002 09 28 | 644 | 0.3− | 1.0− | 2002 10 31 | 704 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2002 10 01 | 608 | 0.3− | 0.0 | 2002 11 21 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2002 10 01 | 608 | 0.2− | 0.1− | 2002 11 21 | 644 | 0.7− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2002 10 01 | 608 | 0.2+ | 0.3+ | 2002 11 21 | 644 | 0.3− | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.4+ | 2005 04 02 | G96 | 0.1− | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.1− | 0.4+ | 2005 04 02 | G96 | 0.1+ | 0.5+ | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2002 10 02 | 704 | 0.1− | 0.8+ | 2005 04 02 | G96 | 1.2− | 0.2+ | 2006 11 21 | 704 | (0.4+ | 2.4+) |
| 2002 10 02 | 704 | 0.6− | 0.3+ | 2005 04 02 | G96 | (1.6− | 0.0 ) | 2006 11 21 | 704 | 0.2+ | 1.1+ |
| 2002 10 03 | 704 | 0.5+ | 0.5− | 2005 04 07 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2002 10 03 | 704 | 0.6+ | 0.7− | 2005 04 07 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | (0.6− | 1.5+) |
| 2002 10 03 | 704 | 0.5+ | 0.2− | 2005 04 07 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.8+ | 0.3− | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.4+ | 1.0− |
| 2002 10 03 | 704 | 0.6+ | 0.2− | 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.5− |
| 2002 10 07 | 699 | 0.1+ | 0.7+ | 2005 04 16 | 691 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 1.1+ | 0.5− |
| 2002 10 07 | 699 | 0.2+ | 0.2+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.2− |
| 2002 10 07 | 699 | 0.4+ | 0.8+ | 2005 05 10 | G96 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.6− | 0.6− |
| 2002 10 07 | 699 | 0.6− | 0.3+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.6+ | 0.1− |
| 2002 10 07 | 704 | 0.2+ | 0.3+ | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2002 10 07 | 704 | 0.3− | 0.4+ | 2005 06 13 | G96 | 0.1+ | 0.6+ | 2006 11 27 | 703 | 0.8− | 0.2− |
| 2002 10 07 | 704 | 0.1− | 0.3− | 2005 06 13 | G96 | 0.3− | 0.5+ | 2006 11 29 | 704 | 0.4− | 0.7+ |
| 2002 10 07 | 704 | 0.4− | 0.6− | 2005 06 13 | G96 | 0.7− | 0.5+ | 2006 11 29 | 704 | 0.1+ | 1.0+ |
| 2002 10 07 | 704 | 0.0 | 0.3− | 2005 06 13 | G96 | 0.5− | 0.5+ | 2006 11 29 | 704 | 0.1− | 0.3− |

**(142386)∗ 2002 SU$_9$ = 2003 YQ$_{151}$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69393)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 172.79887 | | (2000.0) | | | |
| $n$ | 0.24002791 | $\omega$ | 166.37589 | | −0.98571355 | +0.14046604 |
| $a$ | 2.5642570 | $\Omega$ | 22.34814 | | −0.16812512 | −0.78735737 |
| $e$ | 0.0746889 | $i$ | 14.14829 | | −0.01013646 | −0.60028132 |
| $P$ | 4.11 | $H$ | 15.4 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 20 | 809 | (2.0+ | 4.6+) | 2002 10 11 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.1+ | 1.0− |
| 1998 09 20 | 809 | (3.4+ | 3.3+) | 2002 10 11 | 704 | 1.0+ | 1.1− | 2006 09 18 | 703 | 1.1+ | 0.2− |
| 1998 09 20 | 809 | (3.7+ | 2.2+) | 2002 10 11 | 704 | 0.3+ | 1.3− | 2006 09 30 | 703 | 0.3+ | 0.3+ |
| 1998 10 17 | 699 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.3+ | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.2− |
| 1998 10 17 | 699 | 0.6+ | 0.9+ | 2002 10 31 | 704 | 1.1+ | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.0 |
| 1998 10 17 | 699 | 0.9+ | 0.2− | 2002 10 31 | 704 | 0.6− | 0.9+ | 2006 09 30 | 703 | 0.4+ | 0.8− |
| 2000 01 02 | 704 | 0.2− | 1.3+ | 2002 10 31 | 704 | 0.7+ | 1.1+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2000 01 02 | 704 | 0.3− | 0.1− | 2002 10 31 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.8+ |
| 2000 01 02 | 704 | 0.8− | 1.2− | 2003 12 17 | 704 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.3− |
| 2000 01 29 | 704 | 0.2− | 0.6+ | 2003 12 17 | 704 | 1.0+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.5+ |
| 2000 01 29 | 704 | 0.2− | 0.3− | 2003 12 17 | 704 | 0.8+ | 0.4+ | 2006 10 10 | 644 | 0.4+ | 0.0 |
| 2000 01 29 | 704 | 0.3+ | 0.1− | 2003 12 17 | 704 | 1.0+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.4− |
| 2000 01 29 | 704 | 0.3+ | 0.7− | 2003 12 17 | 699 | 0.8+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2000 01 29 | 704 | 0.2− | 0.5− | 2003 12 17 | 699 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.5+ | 0.4+ |
| 2002 09 27 | 644 | 0.7− | 0.4+ | 2003 12 17 | 699 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.4+ |
| 2002 09 27 | 644 | 0.9− | 0.2+ | 2003 12 17 | 699 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.5+ | 0.3+ |
| 2002 09 27 | 644 | 1.1− | 0.5+ | 2003 12 29 | 703 | 1.3− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2002 09 28 | 644 | 0.9− | 0.0 | 2003 12 29 | 703 | 0.7− | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2002 09 28 | 644 | 1.0− | 0.1+ | 2003 12 29 | 703 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2002 09 28 | 644 | 0.9− | 0.3+ | 2003 12 29 | 703 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2002 10 02 | 704 | 0.2− | 0.3− | 2003 12 30 | 704 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.7− | 2003 12 30 | 704 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.5− | 0.6− | 2003 12 30 | 704 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2002 10 02 | 704 | 1.3− | 0.5− | 2003 12 30 | 704 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.3+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | (1.1− | 1.6−) | 2003 12 30 | 704 | 0.4− | 0.7− | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.9− | 0.2− | 2004 01 02 | 704 | (1.3+ | 1.7+) | 2006 10 22 | 644 | 0.0 | 0.7+ |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2004 01 02 | 704 | (0.6+ | 1.8+) | 2006 10 22 | 703 | (2.1+ | 0.5+) |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2004 01 02 | 704 | 1.5+ | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.2+ |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2004 01 02 | 704 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.7− | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2004 01 30 | 703 | 0.5− | 0.7− | 2006 10 22 | 703 | 0.1+ | 0.8− |
| 2002 10 07 | 699 | 1.0+ | 1.1+ | 2004 01 30 | 703 | 0.3− | 0.8− | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2002 10 07 | 699 | 0.9+ | 0.2− | 2004 01 30 | 703 | 1.2− | 0.7+ | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2002 10 07 | 699 | 0.6− | 0.3+ | 2004 01 30 | 703 | 0.4− | 0.8− | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2002 10 07 | 699 | 0.3− | 0.1− | 2004 02 26 | 703 | 0.4− | 1.1− | 2006 11 11 | 703 | 0.8− | 2.2− |
| 2002 10 07 | 704 | 0.7− | 0.2− | 2004 02 26 | 703 | 0.4+ | 1.0+ | 2006 11 11 | 703 | 0.1+ | 2.8− |
| 2002 10 07 | 704 | (0.4− | 1.8+) | 2004 02 26 | 703 | 0.2− | 0.8+ | 2006 11 11 | 703 | 1.5− | 0.9− |
| 2002 10 07 | 704 | 0.4+ | 0.8+ | 2004 02 26 | 703 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.6− | 1.0− |
| 2002 10 07 | 704 | 0.2+ | 0.2+ | 2006 08 22 | 644 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 10 08 | 704 | 0.3− | 0.4+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 10 08 | 704 | 0.0 | 1.2+ | 2006 08 22 | 644 | 0.3− | 0.5+ | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2002 10 08 | 704 | 0.7+ | 0.8− | 2006 09 18 | 703 | 0.5+ | 1.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.1+ | | | | |

**(142387)∗ 2002 SV$_{10}$ = 2000 AG$_{160}$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37930)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.17944 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26616638 | $\omega$ | 106.11835 | | −0.99650292 | | −0.06399616 |
| $a$ | 2.3935027 | $\Omega$ | 70.23690 | | +0.03602273 | | −0.90918156 |
| $e$ | 0.0353473 | $i$ | 3.27268 | | +0.07539422 | | −0.41145277 |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.6− | 0.2− | 2002 10 05 | 704 | 0.7− | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2000 01 03 | 704 | 0.2− | 1.6− | 2002 10 05 | 704 | 0.7− | 1.5+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2000 01 03 | 704 | 0.1− | 0.1− | 2002 10 05 | 704 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2000 01 03 | 704 | 0.8− | 0.3− | 2002 10 05 | 704 | 0.7− | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2000 01 04 | 704 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.2− | 1.1+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2000 01 04 | 704 | 1.4+ | 0.5− | 2002 10 11 | 704 | 1.4− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 1.6+ | 0.9− | 2002 10 11 | 704 | 1.2− | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2000 01 04 | 704 | 1.2− | 0.0 | 2002 10 30 | 645 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2000 01 04 | 704 | 0.8+ | 0.9− | 2002 10 30 | 645 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2001 05 24 | 704 | 0.5− | 0.2− | 2003 12 21 | 645 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2001 05 24 | 704 | 0.6+ | 0.1− | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2001 05 24 | 704 | 0.0 | 0.2+ | 2003 12 25 | 645 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2002 09 15 | 327 | (5.1− | 2.3−) | 2003 12 25 | 645 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.1+ |
| 2002 09 15 | 327 | (4.0− | 1.3−) | 2004 01 23 | 704 | 0.1+ | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2002 09 15 | 327 | (5.0− | 1.8−) | 2004 01 23 | 704 | 0.4+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2002 09 27 | 644 | 1.2− | 0.7+ | 2004 01 23 | 704 | 0.8− | 0.8+ | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2002 09 27 | 644 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.1+ | 0.8+ | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2002 09 27 | 644 | 0.7− | 0.3+ | 2004 01 30 | 704 | 0.6− | 1.2+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2002 09 28 | 644 | 0.5− | 0.1+ | 2004 01 30 | 704 | 1.3− | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.4− |
| 2002 09 28 | 644 | 0.2− | 0.1+ | 2004 02 16 | 704 | 1.0+ | 0.2+ | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2002 09 28 | 644 | 0.4− | 0.4+ | 2004 02 16 | 704 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.7+ |
| 2002 09 30 | 704 | 1.1− | 0.7− | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.6− | 1.4+ |
| 2002 09 30 | 704 | 1.3− | 0.2+ | 2004 02 16 | 704 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.2− | 1.3+ |
| 2002 09 30 | 704 | 0.2+ | 1.1+ | 2004 02 16 | 704 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2002 10 01 | 699 | 0.6+ | 0.5+ | 2004 02 22 | 291 | 0.2− | 0.2+ | 2006 11 18 | 704 | (1.0+ | 1.6−) |
| 2002 10 01 | 699 | 0.5+ | 1.1+ | 2004 02 22 | 291 | 1.0+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 1.4+ |
| 2002 10 01 | 699 | 0.4− | 0.8+ | 2004 02 22 | 291 | 1.0+ | 0.9+ | 2006 11 18 | 704 | 1.0− | 1.2+ |
| 2002 10 01 | 699 | 0.6+ | 0.3− | 2004 03 20 | 704 | (0.6+ | 2.0+) | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.9+ | 1.4+ | 2006 11 21 | 704 | 1.0+ | 0.4+ |
| 2002 10 03 | 704 | 1.5− | 0.2+ | 2004 03 20 | 704 | 0.4+ | 0.9+ | 2006 11 21 | 704 | 0.7− | 1.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.5− | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.9− |
| 2002 10 03 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 1.3+ | 0.5+ |
| 2002 10 04 | 704 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.5+ | 0.1− |
| 2002 10 04 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.2− | 0.8− |
| 2002 10 04 | 704 | 0.5− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.4− | 0.4− |
| 2002 10 04 | 704 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.4− | 1.3− |
| 2002 10 04 | 704 | 0.7+ | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.9− | 0.4+ |

**(142388)∗ 2002 SL$_{11}$ = 2004 CA$_{114}$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61339)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.36485 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24016810 | $\omega$ | 273.12969 | | −0.20385540 | | −0.97850388 |
| $a$ | 2.5632590 | $\Omega$ | 188.82027 | | +0.95947116 | | −0.19335444 |
| $e$ | 0.0462294 | $i$ | 11.73838 | | +0.19457152 | | −0.07172320 |
| $P$ | 4.10 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.6− | 0.3+ | 2004 01 29 | 699 | 0.6+ | 1.2+ | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 2002 09 27 | 644 | 0.5− | 0.0 | 2004 02 13 | 699 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.5+ |
| 2002 09 27 | 644 | 0.3− | 0.0 | 2004 02 13 | 699 | 0.3+ | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.4+ |
| 2002 09 28 | 644 | 0.4− | 0.1+ | 2004 02 13 | 699 | (0.5+ | 1.8+) | 2006 09 19 | 699 | 0.7+ | 0.3+ |
| 2002 09 28 | 644 | 0.6− | 0.1+ | 2004 02 13 | 699 | 1.1− | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.6+ |
| 2002 09 28 | 644 | 0.8− | 0.0 | 2004 02 19 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.9− | 0.9+ | 2004 02 19 | 704 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.9− | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 0.6+ | 2004 02 19 | 704 | 1.2+ | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.5− | 0.5− | 2004 02 19 | 704 | 0.9+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.5− | 0.8+ | 2004 02 19 | 704 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2005 07 11 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2005 07 11 | 691 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.4− | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.2− | 2006 08 28 | 703 | 1.2− | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2004 01 29 | 699 | 0.8+ | 1.2+ | 2006 08 28 | 703 | 0.7+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2004 01 29 | 699 | (1.7− | 0.1+) | 2006 08 28 | 703 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2004 01 29 | 699 | 1.2− | 0.8+ | 2006 08 28 | 703 | 1.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |

**(142389)∗ 2002 SQ$_{11}$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.08894 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23610479 | $\omega$ | 272.95056 | | +0.18160803 | | +0.98330957 |
| $a$ | 2.5925841 | $\Omega$ | 7.53971 | | −0.86567695 | | +0.16516492 |
| $e$ | 0.1754910 | $i$ | 4.80528 | | −0.46649967 | | +0.07630756 |
| $P$ | 4.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 691 | 0.3+ | 0.2+ | 2005 04 04 | 704 | 0.6+ | 0.9+ | 2006 09 17 | 704 | 0.5− | 0.6− |
| 1998 10 16 | 691 | 0.4+ | 0.0 | 2005 04 04 | 704 | 0.9+ | 0.2+ | 2006 09 17 | 704 | 1.1− | 0.7+ |
| 1998 10 16 | 691 | 0.2+ | 0.2− | 2005 04 04 | 704 | 0.5+ | 1.1+ | 2006 09 17 | 704 | 0.2− | 0.5− |
| 2001 04 27 | 608 | 0.5− | 0.9− | 2005 04 05 | G96 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.2+ |
| 2001 04 27 | 608 | 0.4− | 1.1− | 2005 04 05 | G96 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.5− |
| 2001 04 27 | 608 | 0.6− | 0.5− | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.7+ |
| 2002 09 27 | 644 | 0.4− | 1.3+ | 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.0 |
| 2002 09 27 | 644 | (0.5− | 1.5+) | 2005 04 06 | G96 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2002 09 27 | 644 | 0.6− | 1.5+ | 2005 04 06 | G96 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.4+ |
| 2002 09 28 | 644 | 1.1− | 0.2+ | 2005 04 06 | G96 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.4− | 0.9+ |
| 2002 09 28 | 644 | 1.0− | 0.5+ | 2005 04 06 | G96 | 0.5− | 0.1− | 2006 09 19 | 703 | 0.9+ | 0.3+ |
| 2002 09 28 | 644 | 0.9− | 0.4+ | 2005 04 06 | G96 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 2002 10 01 | 699 | 0.4+ | 0.1+ | 2005 04 06 | G96 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.3− |
| 2002 10 01 | 699 | (2.2− | 1.1+) | 2005 04 06 | G96 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.2− | 0.0 |
| 2002 10 01 | 699 | 0.4− | 0.7+ | 2005 04 06 | G96 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2002 10 01 | 699 | 0.2− | 0.8+ | 2005 04 07 | G96 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.5− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2005 04 07 | G96 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.4− | 0.4− |
| 2002 10 03 | 704 | 0.4− | 1.1+ | 2005 04 07 | G96 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2005 04 07 | G96 | 0.3− | 0.2− | 2006 09 20 | 704 | 1.1+ | 0.4− |
| 2002 10 03 | 704 | 0.9+ | 0.5+ | 2005 04 10 | 695 | 0.5− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.0 |
| 2002 10 05 | 644 | 0.2− | 0.2+ | 2005 04 10 | 695 | 0.3− | 0.3+ | 2006 09 25 | 699 | 1.0+ | 0.9− |
| 2002 10 05 | 291 | 0.3− | 0.2− | 2005 04 13 | 699 | 0.9+ | 0.5+ | 2006 09 25 | 699 | 0.4+ | 0.6+ |
| 2002 10 05 | 644 | 0.4− | 0.2+ | 2005 04 13 | 699 | 1.2+ | 0.3− | 2006 09 25 | 699 | 0.4+ | 0.2− |
| 2002 10 05 | 291 | 0.4− | 0.1− | 2005 04 13 | 699 | 1.2− | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.5+ |
| 2002 10 05 | 291 | 0.5− | 0.1− | 2005 04 13 | 699 | (1.7− | 0.9−) | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2002 10 05 | 644 | 0.5− | 0.3+ | 2005 05 12 | G96 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.1+ | 0.7− | 2005 05 12 | G96 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 0.6− | 0.2− | 2005 05 12 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 0.6+ | 2005 05 12 | G96 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.2− | 0.2− | 2005 05 12 | 291 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.2− | 0.2− | 2005 05 12 | 291 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2002 11 07 | 695 | 0.1+ | 1.2+ | 2005 05 12 | 291 | 0.5+ | 0.5+ | 2006 09 27 | 704 | 0.4+ | 0.2− |
| 2002 11 07 | 695 | 0.1− | 1.1+ | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.3− | 1.0− |
| 2005 03 08 | 699 | 0.2− | 0.5− | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.0 | 0.0 |
| 2005 03 08 | 699 | 1.3+ | 1.4− | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.9+ | 0.2+ |
| 2005 03 08 | 699 | 1.2+ | 0.4− | 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2005 03 08 | G96 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2005 03 08 | G96 | 0.2− | 0.2+ | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2005 03 08 | 699 | 0.1− | 0.6+ | 2006 08 21 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.8+ |
| 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 08 21 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.1− |
| 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 08 21 | 704 | 0.8− | 0.9+ | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2005 03 11 | G96 | 0.0 | 0.0 | 2006 08 21 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2005 03 11 | G96 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2005 03 11 | G96 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2005 03 13 | 703 | 0.7− | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2005 03 13 | 703 | 0.3+ | 1.0+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 03 13 | 703 | 1.0− | 0.5− | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2005 03 13 | 703 | 0.3− | 0.2− | 2006 08 25 | 704 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2005 03 17 | 691 | 0.2+ | 0.6+ | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2005 03 17 | 691 | 0.1+ | 0.6+ | 2006 08 25 | 704 | 0.7+ | 1.0+ | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2005 03 21 | 701 | 0.5+ | 0.5− | 2006 08 28 | 699 | 0.7+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2005 03 21 | 701 | 0.5− | 0.0 | 2006 08 28 | 699 | 0.9+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2005 03 21 | 701 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2005 03 31 | 699 | (2.0+ | 0.7−) | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2005 03 31 | 699 | 0.6+ | 0.4− | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.5− | 0.4− |
| 2005 03 31 | 699 | (2.6+ | 1.1−) | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2005 03 31 | 699 | 0.3− | 0.8+ | 2006 09 16 | 699 | 0.9+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2005 04 02 | 644 | 0.8+ | 0.8+ | 2006 09 16 | 699 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2005 04 02 | 644 | 0.5+ | 0.7+ | 2006 09 16 | 699 | 0.3+ | 0.6+ | | | | |
| 2005 04 02 | 644 | 0.9+ | 0.8+ | 2006 09 16 | 699 | 0.8− | 0.4− | | | | |

**(142390)∗ 2002 SR$_{12}$ = 1994 VA$_6$ = 2000 AN$_{162}$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37931)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 132.87245 | | (2000.0) | | −0.59401919 | +0.80367835 |
| $n$ | 0.24487762 | $\omega$ | 181.70304 | | −0.73753842 | −0.52659216 |
| $a$ | 2.5302882 | $\Omega$ | 51.85589 | | −0.32121375 | −0.27713139 |
| $e$ | 0.0459257 | $i$ | 2.56866 | | | |
| $P$ | 4.02 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 09 | 691 | 0.2− | 1.2− | 2003 12 27 | 704 | 0.6+ | 0.6+ | 2004 02 23 | 704 | 0.0 | 0.2+ |
| 1994 11 09 | 691 | 0.0 | 0.7− | 2003 12 27 | 704 | 1.2+ | 0.7+ | 2004 02 23 | 704 | (0.5+ | 1.6+) |
| 1994 11 09 | 691 | 0.8− | 0.3+ | 2003 12 27 | 704 | 0.6+ | 1.2+ | 2004 02 23 | 704 | 0.3+ | 0.0 |
| 1994 11 10 | 691 | 0.6− | 0.5+ | 2003 12 29 | 699 | 0.0 | 0.6+ | 2005 06 04 | 704 | (2.1− | 2.5+) |
| 1994 11 10 | 691 | 0.1− | 0.2+ | 2003 12 29 | 699 | 0.3− | 0.1− | 2005 06 04 | 704 | (1.6− | 1.9+) |
| 1994 11 10 | 691 | 0.7− | 0.6− | 2003 12 29 | 699 | 1.1− | 0.3+ | 2005 06 04 | 704 | 0.8− | 0.4+ |
| 1996 02 16 | 691 | 0.9+ | 0.0 | 2003 12 29 | 699 | 0.4+ | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.1+ |
| 1996 02 16 | 691 | 0.6+ | 0.8− | 2004 01 12 | 644 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.2+ | 0.1− |
| 1996 02 16 | 691 | 0.7+ | 0.5− | 2004 01 12 | 644 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1+ |
| 1998 10 12 | 691 | 1.0+ | 0.2− | 2004 01 12 | 644 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 1998 10 12 | 691 | 1.0+ | 0.1− | 2004 01 12 | 644 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.3+ |
| 1998 10 12 | 691 | 1.1+ | 0.2− | 2004 01 12 | 644 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.4+ | 0.3+ |
| 1998 10 17 | 691 | 0.3− | 0.2− | 2004 01 12 | 644 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.6− | 0.7+ |
| 1998 10 17 | 691 | 0.0 | 0.0 | 2004 01 13 | 699 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.4+ |
| 1998 10 17 | 691 | 0.5− | 0.0 | 2004 01 13 | 699 | 0.1− | 0.9− | 2006 09 18 | 699 | 0.4− | 0.9− |
| 2000 01 04 | 704 | 0.9− | 0.0 | 2004 01 13 | 699 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.5+ |
| 2000 01 04 | 704 | 0.7− | 0.5− | 2004 01 13 | 699 | 1.0− | 0.9+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 1.2− | 0.4− | 2004 01 16 | 644 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.3− | 0.7+ |
| 2000 01 06 | 704 | 0.2− | 0.4+ | 2004 01 16 | 644 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2000 01 06 | 704 | 1.1− | 0.2+ | 2004 01 16 | 644 | 0.3− | 0.4− | 2006 10 01 | 704 | 0.5+ | 0.2− |
| 2000 01 06 | 704 | (1.9− | 2.2−) | 2004 01 16 | 691 | 0.2− | 0.3− | 2006 10 01 | 704 | 0.5+ | 0.2+ |
| 2000 01 06 | 704 | 1.1− | 1.6− | 2004 01 16 | 691 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.9− | 0.4+ |
| 2002 09 27 | 644 | 0.5− | 0.0 | 2004 01 16 | 691 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 09 27 | 644 | 0.3− | 0.1− | 2004 01 17 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 09 27 | 644 | 0.3− | 0.1+ | 2004 01 17 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 09 28 | 644 | 0.4− | 0.2+ | 2004 01 17 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.1− |
| 2002 09 28 | 644 | 0.0 | 0.0 | 2004 01 17 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.8+ |
| 2002 09 28 | 644 | 0.3− | 0.2+ | 2004 01 17 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2002 10 01 | 699 | 1.1− | 0.1− | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.6− |
| 2002 10 01 | 699 | 0.1+ | 1.0+ | 2004 01 22 | 704 | 0.3− | 0.5− | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 2002 10 01 | 699 | 0.5− | 0.7+ | 2004 01 22 | 704 | 0.6− | 0.6− | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2002 10 01 | 699 | 0.4+ | 0.2− | 2004 01 22 | 704 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2002 10 02 | 704 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.5− | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.2+ | 0.7+ | 2004 01 22 | 704 | (1.8− | 1.4+) | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 10 02 | 704 | 1.3+ | 1.2+ | 2004 01 26 | 699 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2004 01 26 | 699 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.5+ | 0.9+ | 2004 01 26 | 699 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 1.2+ | 2004 01 26 | 699 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | (0.1− | 1.8+) | 2004 01 30 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2002 10 07 | 704 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 07 | 704 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | 0.5+ | 0.3+ | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2002 10 07 | 704 | 1.1+ | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2002 10 11 | 704 | (1.5+ | 0.5−) | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.0 | 1.5− | 2004 02 15 | 704 | (0.0 | 1.6+) | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 0.1+ | 0.9− | 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 10 11 | 704 | 0.3+ | 1.2− | 2004 02 15 | 704 | 0.3+ | 0.6+ | 2006 11 14 | G96 | 2.5− | 1.5− |
| 2003 12 22 | 704 | 0.4− | 1.2+ | 2004 02 15 | 704 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.9− | 1.4− |
| 2003 12 22 | 704 | 0.1− | 1.5+ | 2004 02 17 | 608 | 0.1+ | 1.0+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2003 12 22 | 704 | 0.2− | 1.1+ | 2004 02 17 | 608 | (0.2− | 1.6+) | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2003 12 22 | 704 | 0.7− | 1.4+ | 2004 02 17 | 608 | 0.3− | 1.0+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2003 12 27 | 704 | 1.0+ | 1.0+ | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2003 12 27 | 704 | 0.3+ | 0.8+ | 2004 02 23 | 704 | 0.2+ | 0.9+ | | | | |

**(142391)∗ 2002 SY$_{13}$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.50661 | | (2000.0) | | −0.27520629 | +0.96126897 |
| $n$ | 0.26433413 | $\omega$ | 246.48817 | | −0.83557729 | −0.23147353 |
| $a$ | 2.4045504 | $\Omega$ | 7.58393 | | −0.47547039 | −0.14960604 |
| $e$ | 0.0510750 | $i$ | 6.50360 | | | |
| $P$ | 3.73 | $H$ | 16.6 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.9+ | 0.6+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.5− | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1− |
| 2002 09 05 | 704 | 0.4+ | 1.0+ | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2002 09 13 | 608 | 1.1− | 0.6− | 2004 01 16 | 703 | (0.5− | 1.6+) | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2002 09 13 | 608 | 0.6− | 0.7− | 2004 01 16 | 703 | (1.3+ | 2.1+) | 2006 10 21 | 644 | 0.3− | 0.7+ |
| 2002 09 13 | 608 | 0.4− | 0.4− | 2004 01 16 | 703 | 1.1+ | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2002 09 27 | 644 | 0.9− | 0.6+ | 2004 01 16 | 703 | 0.7− | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2002 09 27 | 644 | 0.5− | 0.3+ | 2004 02 11 | 699 | 0.7+ | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2002 09 27 | 644 | 0.5− | 0.5+ | 2004 02 11 | 699 | 1.3− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 09 28 | 644 | 0.1− | 0.7+ | 2004 02 11 | 699 | 0.4− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2002 09 28 | 644 | 0.1− | 0.5+ | 2004 02 11 | 699 | 0.7− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 09 28 | 644 | 0.3− | 0.7+ | 2005 01 21 | 809 | 0.6− | 1.1− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.2− | 0.8− | 2005 01 21 | 809 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 1.0+ | 0.1− | 2005 01 21 | 809 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | (1.6+ | 1.8+) | 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.6+ | 1.1+ |
| 2002 10 04 | 644 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.4− | 0.2− | 2006 11 19 | 704 | (1.6+ | 1.3+) |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.9+ | 1.4+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.4+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.4− |

**(142392)∗ 2002 SO$_{17}$**

Discovered 2002 Sept. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.90136 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26486817 | $\omega$ | 135.49378 | | +0.82237967 | +0.56858042 | |
| $a$ | 2.4013172 | $\Omega$ | 189.91397 | | −0.54922232 | +0.78411392 | |
| $e$ | 0.1198087 | $i$ | 6.73745 | | −0.14848073 | +0.24876026 | |
| $P$ | 3.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 691 | 0.1+ | 0.8+ | 2002 10 07 | 704 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2001 03 21 | 691 | 0.1− | 0.4+ | 2002 10 08 | 704 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2001 03 21 | 691 | 0.3+ | 0.2+ | 2002 10 08 | 704 | 0.0 | 0.8+ | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 1.2+ | 1.2+ | 2002 10 08 | 704 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.2+ | 1.0+ |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2002 10 30 | 645 | 0.1+ | 0.2− | 2006 10 16 | 703 | (2.3+ | 1.7+) |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2002 10 30 | 645 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.6+ |
| 2002 09 26 | 644 | 0.4− | 0.6− | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.1− |
| 2002 09 26 | 644 | 0.5− | 0.5− | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.2− | 0.4+ |
| 2002 09 26 | 644 | 0.4− | 0.5− | 2002 11 06 | 704 | (1.9+ | 0.3+) | 2006 10 18 | 691 | 0.3− | 0.0 |
| 2002 09 29 | 291 | 0.2+ | 0.0 | 2002 11 06 | 704 | 0.5+ | 0.1− | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2002 09 29 | 291 | 0.1+ | 0.1− | 2002 11 06 | 704 | 0.4− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2002 09 29 | 291 | 0.4+ | 0.0 | 2005 05 17 | G96 | 0.5− | 0.0 | 2006 10 22 | 691 | 0.8+ | 0.2− |
| 2002 10 02 | 704 | 0.2+ | 0.0 | 2005 05 17 | G96 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2002 10 02 | 704 | 0.1− | 0.3+ | 2005 05 17 | G96 | 0.4− | 0.2− | 2006 11 02 | 703 | 0.6− | 0.0 |
| 2002 10 02 | 704 | 0.4− | 0.1+ | 2005 05 17 | G96 | 0.2− | 0.0 | 2006 11 02 | 703 | 1.4− | 0.0 |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2005 05 27 | 599 | 0.5+ | 0.4+ | 2006 11 02 | 703 | 0.9+ | 0.4+ |
| 2002 10 03 | 704 | 1.0− | 0.2− | 2005 05 27 | 599 | 0.4+ | 0.5+ | 2006 11 02 | 703 | (1.9− | 0.2+) |
| 2002 10 03 | 704 | 1.0− | 1.0+ | 2005 05 27 | 599 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.3− | 1.1+ | 2005 05 27 | 599 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2005 06 02 | 703 | (2.2− | 1.0−) | 2006 11 18 | G96 | 0.4− | 0.1+ |
| 2002 10 05 | 683 | 1.4− | 0.7+ | 2005 06 02 | 703 | 0.1− | 1.0− | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2002 10 05 | 683 | 1.0− | 0.2− | 2005 06 02 | 703 | 1.1− | 1.1− | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2002 10 05 | 683 | (3.0− | 1.0+) | 2005 06 02 | 703 | 1.0− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2002 10 06 | 644 | 0.1− | 1.4+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2002 10 06 | 644 | 0.3− | 1.2+ | 2005 06 14 | 691 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2002 10 06 | 644 | 0.2− | 1.4+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2002 10 07 | 704 | 0.1− | 0.1− | 2005 06 28 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.7− | 0.2+ |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2005 06 28 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 1.7+ | 1.0+ |
| 2002 10 07 | 704 | 0.1− | 0.4+ | 2005 06 28 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2002 10 07 | 704 | 0.7− | 0.4+ | 2006 10 02 | G96 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.5− | 0.1+ |

**(142393)∗ 2002 SW$_{17}$ = 1996 FB$_{14}$**

Discovered 2002 Sept. 26 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37933)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.95912 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23261561 | $\omega$ | 71.68803 | | −0.16678288 | +0.98530392 | |
| $a$ | 2.6184451 | $\Omega$ | 188.95546 | | −0.97024088 | −0.17066165 | |
| $e$ | 0.0553006 | $i$ | 13.70220 | | −0.17554518 | +0.00712689 | |
| $P$ | 4.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 19 | 691 | 0.7+ | 0.0 | 2002 10 03 | 704 | 0.6+ | 0.8+ | 2005 05 11 | 703 | (1.3− | 2.1−) |
| 1996 03 19 | 691 | 0.4+ | 0.1− | 2002 10 03 | 704 | 0.3+ | 0.5+ | 2005 05 11 | 703 | 0.2+ | 0.5− |
| 1996 03 19 | 691 | 0.3+ | 0.2− | 2002 10 03 | 704 | 1.2+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.5− |
| 1996 03 27 | 691 | 0.7− | 0.9− | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 1.3+ | 0.5+ |
| 1996 03 27 | 691 | 0.5− | 0.2− | 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 08 29 | 703 | (1.7− | 2.7−) |
| 1996 03 27 | 691 | 0.7− | 0.2− | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.5− | 0.1− |
| 2001 06 23 | 644 | 0.1+ | 0.1+ | 2002 10 31 | 645 | 0.1+ | 0.2− | 2006 09 13 | 644 | 0.6− | 0.4− |
| 2001 06 23 | 644 | 0.3+ | 0.0 | 2005 04 10 | 691 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.3− | 0.5− |
| 2001 06 23 | 644 | 0.2+ | 0.0 | 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.4− | 0.6− |
| 2002 09 26 | 644 | 0.6− | 0.0 | 2005 04 10 | 691 | 0.2+ | 0.1− | 2006 09 20 | 699 | 0.6− | 0.8− |
| 2002 09 26 | 644 | 1.0− | 0.1− | 2005 04 15 | 691 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.6+ | 0.7+ |
| 2002 09 26 | 644 | 0.5− | 0.1− | 2005 04 15 | 691 | 0.1− | 0.2− | 2006 09 20 | 699 | (2.2− | 0.8−) |
| 2002 09 29 | 291 | 0.3− | 0.2− | 2005 04 15 | 691 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.1+ | 1.1− |
| 2002 09 29 | 291 | 0.3− | 0.1+ | 2005 05 04 | 703 | 0.3+ | 1.0+ | 2006 11 16 | G96 | 0.6− | 0.9− |
| 2002 09 29 | 291 | 0.0 | 0.1− | 2005 05 04 | 703 | 0.7+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | (1.3+ | 1.7+) | 2005 05 04 | 703 | 0.9− | 1.2− | 2006 11 16 | G96 | 0.7− | 0.7− |
| 2002 10 02 | 704 | 0.0 | 1.2+ | 2005 05 04 | 703 | 1.0− | 1.4− | 2006 11 16 | G96 | 0.6+ | 0.7− |
| 2002 10 02 | 704 | 0.3+ | 0.3+ | 2005 05 11 | 703 | 0.3− | 0.2+ | | | | |
| 2002 10 03 | 704 | 0.1− | 1.0+ | 2005 05 11 | 703 | (0.7+ | 1.8−) | | | | |

**(142394)∗ 2002 SK$_{18}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.84016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26549415 | $\omega$ | 294.29866 | | +0.80201428 | −0.58421123 | |
| $a$ | 2.3975412 | $\Omega$ | 101.67935 | | +0.58367252 | +0.72229522 | |
| $e$ | 0.1244639 | $i$ | 7.29681 | | +0.12688375 | +0.37011735 | |
| $P$ | 3.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.2− | 1.6+ | 2002 10 29 | 704 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.2+ |
| 2000 02 11 | 704 | 0.1+ | 0.9+ | 2002 10 29 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2000 02 11 | 704 | 0.0 | 1.5+ | 2002 10 29 | 704 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2000 02 11 | 704 | 0.9+ | 0.7+ | 2002 10 29 | 704 | 0.5− | 0.4− | 2006 11 17 | 704 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 1.1+ | 0.9+ | 2002 11 05 | 644 | 0.5+ | 1.0+ | 2006 11 18 | 704 | 0.2− | 0.8− |
| 2001 05 18 | 704 | 1.3+ | 0.6+ | 2002 11 05 | 644 | 0.4+ | 1.1+ | 2006 11 18 | 704 | 0.8+ | 0.8+ |
| 2001 05 18 | 704 | 0.1− | 0.5+ | 2002 11 05 | 644 | 0.4+ | 1.0+ | 2006 11 18 | 704 | 0.3+ | 1.3− |
| 2001 05 18 | 704 | 0.3− | 0.4+ | 2004 02 17 | 704 | 0.5+ | 0.7+ | 2006 11 20 | 691 | 0.0 | 0.4− |
| 2002 08 24 | 644 | 0.2+ | 0.4+ | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.3− |
| 2002 08 24 | 644 | 0.2− | 0.2+ | 2004 02 17 | 704 | 0.1+ | 1.1+ | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2002 08 24 | 644 | 0.3+ | 0.6+ | 2004 02 27 | 704 | 0.2+ | 1.4+ | 2006 11 20 | 691 | 0.1− | 0.4− |
| 2002 09 11 | 608 | 0.5+ | 0.4+ | 2004 02 27 | 704 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2002 09 11 | 608 | 0.1+ | 0.6+ | 2004 02 27 | 704 | 0.7− | 0.8+ | 2006 11 20 | 704 | 0.5+ | 0.2+ |
| 2002 09 11 | 608 | 0.8+ | 1.1+ | 2004 03 23 | 704 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.3− |
| 2002 09 15 | 608 | 1.0− | 0.9− | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 2002 09 15 | 608 | 0.6− | 0.9− | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.1− | 0.4− |
| 2002 09 15 | 608 | 1.1− | 1.1− | 2004 03 23 | 704 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.5− | 0.0 |
| 2002 09 19 | 644 | 0.1− | 0.4− | 2004 03 23 | 704 | 0.8− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2002 09 19 | 644 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.9− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 09 19 | 644 | 0.1− | 0.3− | 2006 09 19 | 699 | (0.7+ | 1.6−) | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2002 09 28 | 608 | 0.9− | 0.1− | 2006 09 19 | 699 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2002 09 28 | 608 | 1.2− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 09 28 | 608 | 1.2− | 0.1+ | 2006 10 03 | 704 | 0.0 | 0.8+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2002 09 29 | 291 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.8+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 09 29 | 291 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.6− |
| 2002 09 29 | 291 | 0.3− | 0.2+ | 2006 10 27 | 704 | 0.3− | 0.9+ | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2002 10 06 | 704 | 0.6+ | 1.2+ | 2006 10 27 | 704 | (0.1− | 1.9+) | 2006 11 25 | 704 | 1.8+ | 0.6+ |
| 2002 10 06 | 704 | 0.1− | 0.8+ | 2006 10 27 | 704 | 0.1− | 0.1+ | 2006 11 25 | 704 | 0.0 | 0.5+ |
| 2002 10 06 | 704 | 0.5+ | 0.8+ | 2006 10 27 | 704 | 1.1− | 0.1− | 2006 11 25 | 704 | 0.8+ | 0.6+ |
| 2002 10 06 | 704 | 0.1+ | 1.0+ | 2006 11 14 | 704 | 0.2+ | 0.4− | 2006 11 25 | 704 | 0.8+ | 0.2+ |
| 2002 10 06 | 704 | 0.2+ | 0.8+ | 2006 11 14 | 704 | 0.2+ | 0.5− | 2006 11 25 | 704 | 0.7+ | 0.3− |
| 2002 10 16 | 644 | 0.3− | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.3+ |
| 2002 10 16 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.2+ |
| 2002 10 16 | 644 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.7− | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.1+ |
| 2002 10 25 | 644 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2002 10 25 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.6+ | 0.5+ |
| 2002 10 25 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.3+ | | | | |
| 2002 10 29 | 704 | 0.5− | 0.5− | 2006 11 17 | 704 | 0.3− | 0.4− | | | | |

**(142395)∗ 2002 ST$_{18}$**

Discovered 2002 Sept. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.39229 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26849273 | $\omega$ | 254.32786 | | +0.12981650 | +0.99148319 | |
| $a$ | 2.3796570 | $\Omega$ | 23.13883 | | −0.89925195 | +0.12215857 | |
| $e$ | 0.1723338 | $i$ | 1.52077 | | −0.41772432 | +0.04514831 | |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 05 | 691 | 0.0 | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 13 | 704 | 0.7+ | 0.2+ |
| 1991 10 05 | 691 | 0.5− | 0.9+ | 2002 10 31 | 645 | 0.1− | 0.0 | 2005 05 16 | G96 | 0.1− | 0.0 |
| 1991 10 05 | 691 | 0.6− | 1.4+ | 2002 10 31 | 645 | 0.1− | 0.1+ | 2005 05 16 | G96 | 0.2− | 0.2+ |
| 2001 02 27 | 691 | 0.3+ | 0.6+ | 2005 03 10 | G96 | 0.3− | 0.4+ | 2005 05 16 | G96 | 0.2+ | 0.3− |
| 2001 02 27 | 691 | 0.4+ | 1.2+ | 2005 03 10 | G96 | 0.0 | 0.2− | 2005 05 16 | G96 | 0.1+ | 0.2+ |
| 2001 02 27 | 691 | 0.7+ | 0.7+ | 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 05 19 | 644 | 0.0 | 0.3+ |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 03 10 | G96 | 0.6− | 0.5− | 2005 05 19 | 644 | 0.0 | 0.2+ |
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.0 | 2005 05 19 | 644 | 0.0 | 0.4+ |
| 2002 09 14 | 644 | 0.9− | 0.0 | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.9+ | 2005 04 17 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.9− |
| 2002 09 14 | 644 | 0.5− | 0.4+ | 2005 05 07 | 691 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2002 09 26 | 644 | 1.0− | 0.4+ | 2005 05 07 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.1− |
| 2002 09 26 | 644 | 1.2− | 0.4+ | 2005 05 07 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 2002 09 26 | 644 | 0.9− | 0.4+ | 2005 05 08 | 699 | 0.2+ | 0.9+ | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2002 09 29 | 608 | 0.3+ | 0.7+ | 2005 05 08 | 699 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2002 09 29 | 608 | 0.6+ | 0.4+ | 2005 05 08 | 699 | 1.2− | 1.2− | 2006 10 20 | 691 | 0.3− | 0.6+ |
| 2002 09 29 | 608 | 0.1+ | 0.6+ | 2005 05 08 | 699 | 0.4+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 09 30 | 704 | (0.1+ | 1.8+) | 2005 05 09 | 699 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 09 30 | 704 | 0.1+ | 1.3+ | 2005 05 09 | 699 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.6+ |
| 2002 09 30 | 704 | 0.2+ | 0.3− | 2005 05 09 | 699 | 0.9− | 1.2+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 09 30 | 704 | 0.9+ | 0.8+ | 2005 05 09 | 699 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2002 10 04 | 644 | 0.0 | 0.6+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2002 10 04 | 644 | 0.2+ | 0.7+ | 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.6− |
| 2002 10 04 | 644 | 0.2+ | 0.6+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.8+ | 0.3+ | | | | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 13 | 704 | 0.0 | 1.1+ | | | | |

**(142396)∗ 2002 SW$_{18}$**

Discovered 2002 Sept. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.96739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26026977 | $\omega$ | 186.12753 | | +0.72215502 | −0.69168621 | |
| $a$ | 2.4295186 | $\Omega$ | 217.64023 | | +0.63519859 | +0.66761125 | |
| $e$ | 0.1862806 | $i$ | 0.74063 | | +0.27388844 | +0.27543677 | |
| $P$ | 3.79 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.1− | 0.5− | 2002 10 07 | 704 | 1.3− | 0.9+ | 2006 11 12 | 703 | 0.3+ | 0.5+ |
| 2000 01 12 | 691 | 0.2− | 0.3− | 2002 10 07 | 704 | (1.6− | 1.0+) | 2006 11 12 | 703 | 0.5− | 0.0 |
| 2000 01 12 | 691 | 0.1− | 0.2− | 2002 10 07 | 704 | 0.7− | 0.3+ | 2006 11 12 | 703 | 0.7− | 0.1− |
| 2002 09 05 | 704 | 0.1− | 0.3− | 2002 10 07 | 704 | 0.2− | 1.2+ | 2006 11 13 | 104 | 0.3+ | 0.2+ |
| 2002 09 05 | 704 | 0.7− | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 11 14 | 104 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 1.0− | 2002 10 11 | 704 | 0.2− | 1.2+ | 2006 11 14 | 104 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.6− | 2002 10 11 | 704 | 0.6+ | 0.6+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 291 | 0.5+ | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 291 | 0.2+ | 0.2+ | 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 291 | 0.7+ | 0.1+ | 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.5− | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2002 10 31 | 704 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.7− | 0.1− |
| 2002 09 14 | 644 | 0.5+ | 0.6+ | 2002 10 31 | 704 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.6− | 0.3− |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2002 10 31 | 704 | 0.0 | 0.0 | 2006 11 16 | 703 | 1.2− | 0.7− |
| 2002 09 17 | 608 | 0.9− | 1.0− | 2004 03 15 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2002 09 17 | 608 | 0.6− | 0.8− | 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2002 09 17 | 608 | 0.8− | 0.6− | 2004 03 15 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2002 09 26 | 644 | 0.5− | 0.8− | 2004 03 23 | 691 | 0.1− | 0.6+ | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2002 09 26 | 644 | 0.6− | 0.8− | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2002 09 26 | 644 | 0.5− | 0.6− | 2004 03 23 | 691 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.9− |
| 2002 09 29 | 608 | 0.1− | 0.3− | 2004 03 27 | 291 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2002 09 29 | 608 | 0.0 | 0.2− | 2004 03 27 | 291 | 0.1− | 0.4+ | 2006 11 18 | 704 | 1.0+ | 0.4+ |
| 2002 09 29 | 608 | 0.1− | 0.5− | 2004 03 27 | 291 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 0.2+ | 0.0 | 2004 03 30 | 691 | 0.7+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 2002 09 30 | 704 | 0.1− | 0.7+ | 2004 03 30 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.4− |
| 2002 09 30 | 704 | 1.0− | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2002 09 30 | 704 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2002 09 30 | 704 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.4− | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2002 10 02 | 704 | 0.8+ | 0.5+ | 2006 09 27 | G96 | 0.0 | 1.2+ | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 1.0+ | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | (0.3− | 2.7−) |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.9+ | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.9+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.3− |
| 2002 10 06 | 608 | 0.9− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.4− |
| 2002 10 06 | 608 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 29 | 704 | 1.3+ | 0.2+ |
| 2002 10 06 | 608 | 1.0− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 1.2− | 1.0+ |
| 2002 10 07 | 699 | (1.0− | 1.5+) | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.7+ |
| 2002 10 07 | 699 | 0.7− | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2002 10 07 | 699 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2002 10 07 | 699 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2002 10 07 | 704 | 1.4− | 1.2+ | 2006 11 12 | 703 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.5− | 0.3− |

**(142397)∗ 2002 SM$_{19}$ = 1994 VY$_5$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 50131)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.71739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24358400 | $\omega$ | 165.08458 | | +0.99975555 | +0.02193370 | |
| $a$ | 2.5392388 | $\Omega$ | 193.65952 | | −0.02130033 | +0.92173333 | |
| $e$ | 0.1835423 | $i$ | 0.67550 | | −0.00592740 | +0.38720355 | |
| $P$ | 4.05 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 09 | 691 | 0.5− | 0.4+ | 2002 10 03 | 704 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.9− | 0.0 |
| 1994 11 09 | 691 | 0.1− | 0.8− | 2002 10 04 | 291 | 0.1+ | 0.3− | 2006 09 13 | 644 | 0.3− | 0.4− |
| 1994 11 09 | 691 | 0.4+ | 0.1− | 2002 10 04 | 291 | 0.3+ | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.5− |
| 1994 11 10 | 691 | 0.1− | 0.0 | 2002 10 04 | 291 | 0.3+ | 0.3+ | 2006 09 13 | 644 | 0.1+ | 0.1− |
| 1994 11 10 | 691 | 0.0 | 0.1− | 2002 10 11 | 704 | 1.2+ | 0.6− | 2006 09 16 | 699 | 1.2− | 0.9− |
| 1994 11 10 | 691 | 1.1− | 0.3− | 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.7− | 0.0 |
| 1998 09 12 | 691 | 0.6+ | 0.0 | 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 09 16 | 699 | 0.4− | 0.4− |
| 1998 09 12 | 691 | 0.2+ | 0.4− | 2002 10 11 | 704 | 1.0− | 0.8− | 2006 09 16 | 699 | 0.6− | 0.3+ |
| 1998 09 12 | 691 | 0.4+ | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.7+ | 0.1+ |
| 2000 02 03 | 691 | 0.5+ | 0.1− | 2004 02 11 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.6+ | 1.1− |
| 2000 02 03 | 691 | 0.6+ | 0.4− | 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 1.2− | 0.9+ |
| 2000 02 03 | 691 | 0.3+ | 0.2− | 2004 02 11 | 691 | 0.4− | 0.5+ | 2006 09 17 | 704 | 0.3− | 0.5+ |
| 2000 02 27 | 691 | 0.2+ | 0.6+ | 2006 07 25 | G96 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.6− |
| 2000 02 27 | 691 | 0.4− | 0.2+ | 2006 07 25 | G96 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.7− | 0.4+ |
| 2000 02 27 | 691 | 0.4− | 0.7+ | 2006 07 25 | G96 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.5− | 0.2+ |
| 2002 09 07 | 704 | 0.4− | 0.6+ | 2006 07 25 | G96 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.5+ |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2006 08 15 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.2+ | 1.0+ |
| 2002 09 07 | 704 | 0.6+ | 0.3+ | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 09 20 | 704 | 1.0− | 0.3+ |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.5+ |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.4+ | 1.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.4+ | 0.6− |
| 2002 09 28 | 608 | (2.3− | 1.4−) | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.5− |
| 2002 09 28 | 608 | (2.0− | 1.5−) | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 1.1+ | 0.6+ |
| 2002 09 28 | 608 | (1.7− | 0.8−) | 2006 08 23 | 644 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2002 09 30 | 239 | 0.4+ | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2002 09 30 | 239 | 0.6+ | 0.1+ | 2006 08 27 | 699 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 09 30 | 239 | 0.4+ | 0.1+ | 2006 08 27 | 699 | 1.4− | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.7− |
| 2002 09 30 | 239 | 0.6+ | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.6− |
| 2002 10 01 | 699 | 0.9+ | 0.7+ | 2006 08 27 | 699 | (0.4+ | 1.8+) | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2002 10 01 | 699 | 0.8− | 1.2+ | 2006 08 28 | 703 | 0.9− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2002 10 01 | 699 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 10 01 | 699 | 0.9+ | 0.7+ | 2006 08 28 | 703 | (1.8− | 0.1−) | 2006 11 15 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 1.5+ | 0.5+ | 2006 08 28 | 703 | 0.7+ | 1.3− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 10 02 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 691 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.4− |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2006 08 28 | 691 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.6+ | 0.5+ | 2006 09 12 | 703 | 1.1− | 0.5− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 1.2− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.2− | 1.3+ | 2006 09 12 | 703 | 0.2− | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.4− |

**(142398)∗ 2002 SP$_{19}$**

Discovered 2002 Sept. 28 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.97013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22889548 | $\omega$ | 116.87212 | | +0.45278863 | +0.89161787 | |
| $a$ | 2.6467398 | $\Omega$ | 180.05151 | | −0.86972086 | +0.44162742 | |
| $e$ | 0.1005112 | $i$ | 10.71014 | | −0.19638756 | +0.09991392 | |
| $P$ | 4.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 12 | 699 | 0.5+ | 0.1− | 2002 10 11 | 704 | (1.8− | 0.4+) | 2006 08 25 | 704 | 0.4− | 0.0 |
| 2001 06 12 | 699 | 0.2− | 0.3+ | 2002 10 11 | 704 | (1.8− | 0.5+) | 2006 08 25 | 704 | 0.4+ | 0.5+ |
| 2001 06 12 | 699 | 0.1+ | 0.7− | 2002 10 11 | 704 | (0.1+ | 1.9+) | 2006 08 26 | 704 | 0.6+ | 0.0 |
| 2001 06 12 | 699 | 0.9− | 1.5− | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 08 26 | 704 | (1.7+ | 0.6+) |
| 2002 09 07 | 704 | 0.9− | 1.0− | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 08 26 | 704 | 0.7+ | 0.3− |
| 2002 09 07 | 704 | 0.2− | 0.8+ | 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.4− |
| 2002 09 07 | 704 | 0.1+ | 1.3+ | 2005 03 09 | G96 | 0.4− | 0.3+ | 2006 08 29 | 703 | 0.1+ | 0.2− |
| 2002 09 12 | 461 | 0.1− | 0.0 | 2005 03 09 | G96 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.4+ | 0.9− |
| 2002 09 12 | 461 | 0.1− | 1.1+ | 2005 03 09 | G96 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.4− | 0.5− |
| 2002 09 15 | 608 | 1.1− | 0.8− | 2005 04 12 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.8+ | 0.5− |
| 2002 09 15 | 608 | 0.6− | 0.0 | 2005 04 12 | 691 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.6+ | 0.3+ |
| 2002 09 15 | 608 | 0.1+ | 0.3− | 2005 04 12 | 691 | (2.5− | 0.0 ) | 2006 09 19 | 699 | 0.5+ | 0.5+ |
| 2002 09 27 | 644 | 0.5− | 0.3+ | 2005 04 15 | 699 | 0.9− | 0.1− | 2006 09 19 | 703 | 0.6− | 1.2− |
| 2002 09 27 | 644 | 0.6− | 0.2+ | 2005 04 15 | 699 | 0.5− | 0.8+ | 2006 09 19 | 699 | 0.5− | 0.1+ |
| 2002 09 27 | 644 | 0.4− | 0.5+ | 2005 04 15 | 699 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2002 09 28 | 683 | (2.3+ | 0.2+) | 2005 04 15 | 699 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2002 09 28 | 683 | (3.4+ | 1.0+) | 2005 05 04 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.5− |
| 2002 09 29 | 683 | 0.7+ | 0.7+ | 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2002 09 29 | 683 | 0.5+ | 1.4+ | 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2002 09 29 | 683 | (0.3+ | 1.7+) | 2005 05 07 | 691 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2002 09 30 | 683 | (3.0− | 2.8+) | 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.0 |
| 2002 09 30 | 683 | 0.0 | 0.3− | 2005 05 07 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.5− | 0.1− |
| 2002 10 02 | 704 | 1.1+ | 0.1+ | 2005 05 15 | 644 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.8− | 0.3+ | 2005 05 15 | 644 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.3+ | 2005 05 15 | 644 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.9− | 0.8− | 2006 08 24 | 704 | 0.9+ | 0.6+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2002 10 03 | 704 | 0.1− | 0.6− | 2006 08 24 | 704 | 0.5+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 0.7+ | 2006 08 24 | 704 | 0.2+ | 1.4+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.7+ | 0.2− | 2006 08 24 | 704 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 0.9+ | 0.1− | 2006 08 25 | 704 | 0.3+ | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2006 08 25 | 704 | 0.6− | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2002 10 11 | 704 | (2.2− | 1.0−) | 2006 08 25 | 704 | 0.2− | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.1− |

**(142399)∗ 2002 SQ$_{19}$**

Discovered 2002 Sept. 28 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.52855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23386338 | $\omega$ | 330.28250 | | +0.77819138 | −0.62073173 | |
| $a$ | 2.6091231 | $\Omega$ | 68.39953 | | +0.59455163 | +0.67919694 | |
| $e$ | 0.2226684 | $i$ | 5.89220 | | +0.20230309 | +0.39164223 | |
| $P$ | 4.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.5+ | 1.0− | 2002 10 11 | 704 | 0.3− | 0.0 | 2003 01 04 | 704 | 0.4+ | 0.9+ |
| 1998 12 17 | 704 | 0.6− | 0.2− | 2002 10 31 | 699 | 0.3− | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.4+ |
| 1998 12 17 | 704 | (2.0− | 2.4−) | 2002 10 31 | 699 | 1.0− | 0.3+ | 2004 02 29 | 691 | 0.1+ | 0.3+ |
| 1998 12 17 | 704 | 0.8− | 0.1− | 2002 10 31 | 704 | 0.6− | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.2+ |
| 1998 12 17 | 704 | 0.4+ | 0.9− | 2002 10 31 | 704 | 0.4− | 0.1+ | 2004 03 17 | 691 | 0.2+ | 0.1− |
| 2002 08 25 | 644 | 0.2− | 0.2+ | 2002 10 31 | 699 | 0.9− | 0.4+ | 2004 03 17 | 691 | 0.1+ | 0.0 |
| 2002 08 25 | 644 | 0.2− | 0.4+ | 2002 10 31 | 704 | 0.4− | 0.2− | 2004 03 17 | 691 | 0.1− | 0.3+ |
| 2002 08 25 | 644 | 0.1− | 0.1+ | 2002 10 31 | 699 | 0.5− | 0.5+ | 2006 08 16 | 644 | 0.5+ | 0.5+ |
| 2002 09 28 | 683 | (0.6+ | 1.6+) | 2002 10 31 | 704 | 0.1− | 0.5− | 2006 08 16 | 644 | 0.2+ | 0.5+ |
| 2002 09 28 | 683 | 0.0 | 1.0+ | 2002 10 31 | 704 | 0.1− | 0.6− | 2006 08 16 | 644 | 0.2+ | 0.6+ |
| 2002 09 28 | 683 | 1.0+ | 0.1+ | 2002 11 04 | 608 | 0.2− | 0.7− | 2006 08 30 | 699 | 0.3+ | 0.0 |
| 2002 09 29 | 683 | (0.0 | 1.6+) | 2002 11 04 | 608 | 0.2− | 1.0− | 2006 08 30 | 699 | 0.0 | 0.3+ |
| 2002 09 29 | 683 | 0.2+ | 0.4+ | 2002 11 04 | 608 | 0.2− | 0.9− | 2006 08 30 | 699 | 0.1+ | 0.7+ |
| 2002 09 29 | 683 | 1.1+ | 0.1− | 2002 11 05 | 699 | 0.4+ | 0.4+ | 2006 09 20 | 703 | 0.3+ | 0.3− |
| 2002 09 30 | 704 | 0.2− | 0.3− | 2002 11 05 | 699 | 0.6+ | 0.1− | 2006 09 20 | 703 | 0.1− | 0.7+ |
| 2002 09 30 | 704 | 0.1− | 1.0− | 2002 11 05 | 699 | 0.6+ | 0.7+ | 2006 09 20 | 703 | 0.9− | 0.6− |
| 2002 09 30 | 704 | 0.7− | 0.0 | 2002 11 05 | 699 | 0.5+ | 0.8+ | 2006 09 20 | 703 | 0.5− | 1.5+ |
| 2002 10 03 | 704 | 0.3+ | 0.6− | 2002 11 07 | 704 | 0.4− | 0.1− | 2006 09 25 | 699 | 0.1+ | 1.0− |
| 2002 10 03 | 704 | 1.0+ | 0.7− | 2002 11 07 | 704 | 0.9− | 1.1+ | 2006 09 25 | 699 | 0.2− | 0.6− |
| 2002 10 03 | 704 | 1.4+ | 1.4− | 2002 11 07 | 704 | 0.9+ | 0.2+ | 2006 09 25 | 699 | 1.1+ | 0.1+ |
| 2002 10 03 | 704 | 1.5+ | 1.4− | 2002 11 07 | 704 | 1.3+ | 0.9− | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.6+ | 0.5− | 2002 11 11 | 704 | 0.2− | 0.2+ | 2006 09 26 | 703 | 1.1− | 0.3− |
| 2002 10 04 | 683 | (0.2+ | 2.2+) | 2002 11 11 | 704 | 0.6− | 0.3− | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2002 10 04 | 683 | 0.5+ | 0.7+ | 2002 11 11 | 704 | 0.9− | 0.2− | 2006 09 26 | 703 | 0.5+ | 0.1+ |
| 2002 10 04 | 683 | 1.0+ | 1.0+ | 2002 11 11 | 704 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.1− | 0.7+ |
| 2002 10 05 | 683 | (2.6− | 0.6−) | 2002 11 11 | 704 | 1.0− | 1.3+ | 2006 10 21 | 703 | 0.9− | 0.3− |
| 2002 10 05 | 683 | (2.4− | 0.4−) | 2002 11 20 | 644 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.5+ |
| 2002 10 05 | 683 | (3.0− | 1.5−) | 2002 11 20 | 644 | 0.6− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.3− |
| 2002 10 07 | 608 | 0.1+ | 0.1− | 2002 11 20 | 644 | 0.2− | 0.2+ | 2006 10 21 | 703 | (2.0+ | 1.5+) |
| 2002 10 07 | 608 | 0.2+ | 0.2− | 2002 12 07 | 704 | 0.4+ | 0.9+ | 2006 11 27 | 703 | 0.4− | 1.2+ |
| 2002 10 07 | 608 | 0.1+ | 0.1− | 2002 12 07 | 704 | 0.2− | 1.2+ | 2006 11 27 | 703 | 0.6− | 1.5− |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2002 12 07 | 704 | 0.8− | 0.8+ | 2006 11 27 | 703 | 0.7− | 0.1− |
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2003 01 04 | 704 | 0.5+ | 0.0 | 2006 11 27 | 703 | 0.4− | 0.6+ |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2003 01 04 | 704 | 0.5+ | 0.3− | | | | |
| 2002 10 11 | 704 | 0.3+ | 0.1− | 2003 01 04 | 704 | 0.4+ | 0.5+ | | | | |

**(142400)∗ 2002 SE$_{20}$**

Discovered 2002 Sept. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.31089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26700811 | $\omega$ | 143.87916 | | +0.64366593 | +0.76528597 | |
| $a$ | 2.3884698 | $\Omega$ | 166.18365 | | −0.70755480 | +0.59787428 | |
| $e$ | 0.1790157 | $i$ | 1.34769 | | −0.29165112 | +0.23850310 | |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 1.0+ | 1.0+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2005 05 16 | 691 | 0.1+ | 0.5+ |
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.5+ | 0.4+ | 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.3− | 0.3+ |
| 2002 09 14 | 683 | (0.1− | 2.2+) | 2002 10 30 | 645 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.4− | 0.4+ |
| 2002 09 14 | 683 | 0.7+ | 0.4− | 2003 12 17 | 291 | 0.8− | 0.1− | 2005 06 13 | G96 | 0.3+ | 0.0 |
| 2002 09 14 | 683 | 1.3+ | 1.4+ | 2003 12 17 | 291 | 0.9− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.3+ |
| 2002 09 16 | 683 | 0.6− | 0.3+ | 2003 12 17 | 291 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2002 09 16 | 683 | (2.2− | 0.2+) | 2004 01 16 | 691 | 0.5+ | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.3+ |
| 2002 09 26 | 644 | 0.6− | 0.2+ | 2004 01 16 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2002 09 26 | 644 | 0.6− | 0.2+ | 2004 01 16 | 691 | 0.5+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 09 26 | 644 | 0.5− | 0.4+ | 2004 01 27 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.3+ |
| 2002 09 30 | 704 | 0.3− | 0.4− | 2004 01 27 | 691 | 0.6+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2002 09 30 | 704 | 0.0 | 0.0 | 2004 01 27 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 09 30 | 704 | 0.1+ | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 0.5− | 1.1+ | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 09 30 | 704 | 0.1+ | 0.9+ | 2005 04 16 | 691 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 0.4+ | 2005 04 29 | 185 | 0.4+ | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.2− | 0.6+ | 2005 04 29 | 185 | 0.3− | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.2− | 0.7+ | 2005 04 29 | 185 | 0.4− | 0.3− | 2006 11 13 | G96 | 0.5− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 1.0+ | 2005 05 03 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.4− | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 1.1+ | 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 1.0− | 0.7+ | 2005 05 03 | 691 | 0.3+ | 0.7+ | 2006 11 13 | G96 | 0.4+ | 0.1+ |
| 2002 10 03 | 704 | 0.7− | 0.5+ | 2005 05 10 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.4− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1− | 1.0+ | 2005 05 10 | 691 | 0.6+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.4+ | | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.4+ | | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.2+ | | |
| 2002 10 06 | 608 | 0.8− | 0.9+ | 2005 05 10 | G96 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.2− | 0.4+ | | |
| 2002 10 06 | 608 | 0.7− | 0.8+ | 2005 05 10 | G96 | 0.4− | 0.2+ | 2006 11 14 | 691 | 0.3+ | 0.2+ | | |
| 2002 10 06 | 608 | 1.0− | 0.7+ | 2005 05 10 | G96 | 0.5− | 0.0 | 2006 11 17 | 703 | 1.2+ | 0.6+ | | |
| 2002 10 07 | 704 | 0.8− | 0.6+ | 2005 05 11 | G96 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.7+ | 1.1+ | | |
| 2002 10 07 | 704 | 0.1+ | 0.1− | 2005 05 11 | G96 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.0 | | |
| 2002 10 07 | 704 | 0.9+ | 0.9+ | 2005 05 11 | G96 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.9+ | | |
| 2002 10 07 | 704 | 0.3− | 0.5+ | 2005 05 11 | G96 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 07 | 704 | 0.2− | 0.4− | 2005 05 12 | G96 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.9− | | |
| 2002 10 11 | 704 | 0.4− | 0.7+ | 2005 05 12 | G96 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.2− | | |
| 2002 10 11 | 704 | 0.9− | 0.1− | 2005 05 12 | G96 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.8+ | | |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2005 05 12 | G96 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.7+ | | |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2005 05 16 | 691 | 0.1+ | 0.4+ | | | | | | |
| 2002 10 11 | 704 | 0.3− | 1.0+ | 2005 05 16 | 691 | 0.0 | 0.4+ | | | | | | |

**(142401)∗ 2002 SH$_{23}$**

Discovered 2002 Sept. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.89585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26116589 | $\omega$ | 260.86657 | | +0.11392662 | | +0.98874319 |
| $a$ | 2.4239580 | $\Omega$ | 16.63994 | | −0.72529172 | | +0.14949350 |
| $e$ | 0.2203741 | $i$ | 19.79855 | | −0.67894967 | | +0.00621220 |
| $P$ | 3.77 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 699 | 1.1+ | 1.0+ | 2002 11 06 | 704 | 0.6+ | 0.7+ | 2005 05 14 | 703 | 0.9− | 0.5− | | |
| 2001 03 18 | 699 | (1.3− | 1.8+) | 2002 11 06 | 704 | 0.2+ | 0.6+ | 2005 06 09 | E12 | (0.9+ | 1.7+) | | |
| 2001 03 18 | 699 | 0.1+ | 0.1− | 2005 03 10 | 699 | (1.3− | 1.8+) | 2005 06 09 | E12 | 0.5− | 0.5+ | | |
| 2001 03 18 | 699 | 0.2+ | 0.7+ | 2005 03 10 | 699 | 1.1+ | 0.7+ | 2005 06 09 | E12 | 0.4− | 0.5+ | | |
| 2002 09 27 | 644 | 0.9− | 0.8+ | 2005 03 10 | 699 | 1.0+ | 0.7+ | 2005 06 09 | E12 | 0.7− | 0.3− | | |
| 2002 09 27 | 644 | 0.7− | 0.9+ | 2005 03 10 | 699 | 1.5+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.4+ | | |
| 2002 09 27 | 644 | 1.1− | 0.5+ | 2005 03 10 | 699 | 0.6+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.5+ | | |
| 2002 09 30 | 704 | 0.9− | 0.5+ | 2005 03 10 | 699 | (1.8+ | 0.5+) | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2002 09 30 | 704 | 0.4− | 0.9+ | 2005 03 10 | 699 | 1.0− | 0.9− | 2006 10 19 | 703 | (3.5− | 3.0+) | | |
| 2002 09 30 | 704 | 0.6− | 0.6+ | 2005 03 10 | 699 | 0.7− | 0.4+ | 2006 10 19 | 703 | (2.4+ | 1.7+) | | |
| 2002 10 01 | 699 | 0.4− | 0.7+ | 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 1.2+ | | |
| 2002 10 01 | 699 | 0.3− | 0.2+ | 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.4+ | | |
| 2002 10 01 | 699 | 0.6− | 1.1+ | 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 10 19 | A50 | 0.4− | 0.3− | | |
| 2002 10 01 | 699 | 0.6− | 0.1+ | 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.6+ | | |
| 2002 10 01 | 608 | 0.6− | 0.3+ | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2002 10 01 | 608 | 0.7− | 0.2− | 2005 04 09 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2002 10 01 | 608 | 0.6− | 0.2+ | 2005 04 15 | 691 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2002 10 02 | 704 | 0.5− | 0.8+ | 2005 04 15 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2002 10 02 | 704 | 0.6+ | 0.9+ | 2005 04 15 | 691 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.6+ | | |
| 2002 10 02 | 704 | 0.7− | 0.6+ | 2005 04 19 | 699 | 0.9+ | 0.0 | 2006 10 27 | 703 | 0.0 | 0.4− | | |
| 2002 10 02 | 704 | 0.4− | 1.4+ | 2005 04 19 | 699 | 0.2− | 0.5+ | 2006 10 27 | 703 | (1.9+ | 1.5−) | | |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2005 04 19 | 699 | 0.0 | 0.2+ | 2006 10 27 | 703 | (1.8+ | 0.8+) | | |
| 2002 10 03 | 704 | 0.6+ | 0.6+ | 2005 04 19 | 699 | 0.8+ | 0.5+ | 2006 10 27 | 703 | 1.2− | 0.0 | | |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 1.1+ | 0.3− | | |
| 2002 10 03 | 704 | 0.9− | 0.3+ | 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.7− | 0.3+ | | |
| 2002 10 11 | 704 | 0.5− | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.9+ | | |
| 2002 10 11 | 704 | 0.4− | 0.6+ | 2005 05 04 | E12 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.0 | 1.4+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2005 05 04 | E12 | 1.2− | 0.4+ | 2006 11 15 | 703 | 0.7− | 0.3+ | | |
| 2002 10 11 | 704 | (0.6− | 1.7+) | 2005 05 04 | E12 | 0.5− | 1.0+ | 2006 11 15 | 703 | 0.3− | 0.5+ | | |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2005 05 04 | E12 | 0.7+ | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.8− | | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2005 05 08 | 699 | (1.8+ | 0.1−) | 2006 11 15 | 703 | 0.1− | 0.2+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2005 05 08 | 699 | 1.3+ | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.1− | | |
| 2002 10 31 | 699 | 0.4+ | 0.5− | 2005 05 08 | 699 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.9− | 0.9− | | |
| 2002 10 31 | 699 | 0.4+ | 1.1+ | 2005 05 08 | 699 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.6− | | |
| 2002 10 31 | 699 | (1.7− | 0.1+) | 2005 05 14 | 703 | 0.4− | 0.5− | 2006 11 22 | 703 | 1.0+ | 0.2+ | | |
| 2002 10 31 | 699 | (2.4− | 0.9+) | 2005 05 14 | 703 | 0.5− | 0.0 | | | | | | |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2005 05 14 | 703 | (1.5− | 1.2−) | | | | | | |

**(142402)∗ 2002 SH$_{24}$**

Discovered 2002 Sept. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.25862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26359828 | $\omega$ | 229.30972 | | +0.93661823 | | −0.34597539 |
| $a$ | 2.4090233 | $\Omega$ | 150.80690 | | +0.34578514 | | +0.88750661 |
| $e$ | 0.1235557 | $i$ | 6.49849 | | +0.05638206 | | +0.30435676 |
| $P$ | 3.74 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.0− | 0.5− | 2002 10 03 | 704 | (2.1− | 0.6+) | 2005 06 14 | 691 | 0.1− | 0.5+ | | |
| 1998 08 17 | 704 | 0.5+ | 0.1− | 2002 10 06 | 704 | 0.2− | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.6+ | | |
| 1998 08 17 | 704 | 0.3+ | 0.7+ | 2002 10 06 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.8− | | |
| 1998 08 17 | 704 | 1.3− | 0.7+ | 2002 10 06 | 704 | 0.5− | 0.3+ | 2006 09 18 | 703 | (0.0 | 1.7−) | | |
| 1998 09 15 | 691 | 0.2− | 0.3+ | 2002 10 08 | 699 | 0.1− | 0.5− | 2006 09 18 | 703 | 0.3− | 0.9− | | |
| 1998 09 15 | 691 | 0.1+ | 0.7+ | 2002 10 08 | 699 | 0.6− | 1.4+ | 2006 09 18 | 703 | (0.2− | 4.1−) | | |
| 1998 09 15 | 691 | 0.0 | 0.5+ | 2002 10 08 | 699 | 0.5− | 0.9+ | 2006 09 30 | 699 | (1.8+ | 0.4+) | | |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 10 08 | 699 | 1.3− | 0.1+ | 2006 09 30 | 699 | 1.0− | 0.9+ | | |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2002 10 16 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 699 | 0.2− | 0.0 | | |
| 2002 09 06 | 704 | 0.4+ | 1.3+ | 2002 10 16 | 644 | 0.2− | 0.4+ | 2006 09 30 | 699 | 0.5+ | 0.4− | | |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2002 10 16 | 644 | 0.0 | 0.5+ | 2006 09 30 | 703 | (0.6+ | 2.7+) | | |
| 2002 09 06 | 704 | 0.8+ | 0.7+ | 2002 10 29 | 704 | 0.3− | 0.4+ | 2006 09 30 | 703 | 1.1− | 1.1+ | | |
| 2002 09 06 | 704 | 0.6+ | 0.5+ | 2002 10 29 | 704 | 0.7+ | 1.1+ | 2006 09 30 | 703 | (0.4+ | 1.6+) | | |
| 2002 09 06 | 704 | 0.8+ | 0.1+ | 2002 10 29 | 704 | 0.6+ | 1.2+ | 2006 09 30 | 703 | 0.8+ | 0.5+ | | |
| 2002 09 16 | 644 | 0.2− | 0.8+ | 2004 01 24 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.3+ | | |
| 2002 09 16 | 644 | 0.2− | 0.9+ | 2004 01 24 | 704 | 0.0 | 1.4+ | 2006 10 22 | 703 | 0.5+ | 0.3− | | |
| 2002 09 16 | 644 | 0.0 | 0.8+ | 2004 01 24 | 704 | 0.8− | 1.1+ | 2006 10 22 | 703 | 0.7+ | 0.8+ | | |
| 2002 09 27 | 699 | (0.2− | 2.2+) | 2004 01 24 | 704 | 0.9+ | 1.0+ | 2006 10 22 | 703 | 0.9+ | 0.2− | | |
| 2002 09 27 | 699 | 0.5+ | 0.6+ | 2004 02 19 | 704 | 0.8+ | 0.3− | 2006 11 01 | 703 | 1.2− | 0.0 | | |
| 2002 09 27 | 699 | 1.2− | 0.2− | 2004 02 19 | 704 | 0.4− | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.2+ | | |
| 2002 09 27 | 699 | 0.9− | 0.1− | 2004 02 19 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 703 | 0.8+ | 0.0 | | |
| 2002 09 30 | 608 | 0.2+ | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.2+ | 2006 11 01 | 703 | 1.4+ | 0.8− | | |
| 2002 09 30 | 608 | 0.1− | 0.9+ | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 09 30 | 608 | 0.1+ | 0.9+ | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ | | |
| 2002 10 01 | 699 | 0.7− | 0.8+ | 2004 02 23 | 704 | 0.8+ | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.0 | | |
| 2002 10 01 | 699 | 0.8− | 0.5+ | 2004 02 23 | 704 | 0.3− | 1.1+ | 2006 11 13 | 703 | 0.6− | 0.4+ | | |
| 2002 10 01 | 699 | (0.3+ | 1.5+) | 2004 02 26 | 704 | 0.3+ | 1.2+ | 2006 11 13 | 703 | 0.2+ | 0.2− | | |
| 2002 10 01 | 699 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 0.5− | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.2− | | |
| 2002 10 02 | 704 | 1.1− | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.9+ | 2006 11 13 | 703 | 0.2+ | 0.5− | | |
| 2002 10 02 | 704 | 0.3− | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 11 13 | 644 | 0.3− | 0.1+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.6+ | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.4− | 0.2+ | | |
| 2002 10 02 | 704 | 0.4− | 0.3+ | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.4− | 0.1+ | | |
| 2002 10 03 | 704 | (2.9− | 0.4−) | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.0 | 0.7− | | |
| 2002 10 03 | 704 | (2.5− | 1.2+) | 2004 03 26 | 691 | 0.1− | 0.6+ | 2006 11 19 | 703 | 0.1− | 0.2+ | | |
| 2002 10 03 | 704 | (2.1− | 0.6+) | 2004 03 26 | 691 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | (2.4− | 0.1+) | 2005 06 14 | 691 | 0.0 | 0.5+ | 2006 11 19 | 703 | 0.6− | 0.5− | | |

**(142403)∗ 2002 SQ$_{24}$ = 2000 EQ$_{142}$**

Discovered 2002 Sept. 28 by NEAT at Palomar.

Id. A. Doppler (*MPO* 37938)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.65544 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24242370 | $\omega$ | 136.27962 | | −0.91993075 | | +0.38860187 |
| $a$ | 2.5473346 | $\Omega$ | 66.65446 | | −0.37352697 | | −0.82821686 |
| $e$ | 0.0597311 | $i$ | 3.25398 | | −0.11918478 | | −0.40378882 |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 688 | 0.4+ | 0.0 | 2003 12 27 | 704 | 0.0 | 0.7− | 2004 02 15 | 704 | 0.2− | 0.2+ | | |
| 2000 03 03 | 688 | 0.4+ | 0.1+ | 2003 12 27 | 704 | 0.6+ | 0.6− | 2004 02 15 | 704 | 0.0 | 0.5+ | | |
| 2000 03 04 | 704 | 0.3+ | 0.6+ | 2003 12 27 | 704 | 0.4− | 0.3− | 2004 02 15 | 704 | 0.1− | 0.1− | | |
| 2000 03 04 | 704 | 0.8+ | 0.3+ | 2004 01 16 | 644 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.1+ | 1.3+ | | |
| 2000 03 04 | 704 | 0.4+ | 0.1+ | 2004 01 16 | 644 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.2− | 0.6+ | | |
| 2000 03 04 | 704 | 0.0 | 0.9+ | 2004 01 16 | 644 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.0 | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 644 | 0.4− | 0.9+ | 2004 01 19 | 699 | 0.9+ | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.1+ | | |
| 2002 09 28 | 644 | 0.3− | 0.3+ | 2004 01 19 | 699 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.1− | 0.4+ | | |
| 2002 09 28 | 644 | 0.7− | 0.6+ | 2004 01 19 | 699 | 0.2+ | 0.2+ | 2005 06 16 | G96 | 0.4+ | 0.7+ | | |
| 2002 09 30 | 704 | 0.5+ | 1.1+ | 2004 01 19 | 699 | 1.1+ | 0.2+ | 2005 06 16 | G96 | 0.2+ | 0.9+ | | |
| 2002 09 30 | 704 | 1.1+ | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.9+ | 2005 06 16 | G96 | 0.5+ | 0.5+ | | |
| 2002 09 30 | 704 | (0.8− | 1.7+) | 2004 01 22 | 704 | 0.5+ | 0.1− | 2005 06 16 | G96 | 0.8− | 1.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.6− | 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 09 18 | 703 | (1.0− | 2.0−) | | |
| 2002 10 03 | 704 | 0.3+ | 0.4− | 2004 01 22 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.7− | 1.3+ | | |
| 2002 10 03 | 704 | 0.7− | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.9+ | | |
| 2002 10 03 | 704 | 1.4− | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 1.1− | 0.1+ | | |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.1+ | | |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.0 | 0.7− | 2006 09 30 | 703 | (0.4− | 2.2+) | | |
| 2003 12 21 | 691 | 0.0 | 0.4− | 2004 01 30 | 704 | (0.7− | 1.6+) | 2006 09 30 | 703 | (0.6+ | 2.2+) | | |
| 2003 12 21 | 691 | 0.1+ | 0.4− | 2004 01 30 | 704 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.6+ | 1.4+ | | |
| 2003 12 21 | 691 | 0.1+ | 0.3− | 2004 01 30 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2003 12 22 | 704 | 0.1+ | 0.3+ | 2004 02 11 | 699 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.9+ | | |
| 2003 12 22 | 704 | 0.5+ | 0.1− | 2004 02 11 | 699 | 0.6− | 0.5− | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2003 12 22 | 704 | (1.6+ | 0.5−) | 2004 02 11 | 699 | 0.7− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2003 12 22 | 704 | 0.4− | 0.1− | 2004 02 11 | 699 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2003 12 27 | 704 | 0.2− | 0.2− | 2004 02 15 | 704 | 0.7− | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 2003 12 27 | 704 | 0.3− | 0.5− | 2004 02 15 | 704 | 0.3− | 1.4+ | | | | | | |

**(142404)∗ 2002 SX$_{24}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.87464 | | (2000.0) | | | |
| $n$ | 0.26485375 | $\omega$ | 212.58915 | | +0.49686054 | −0.86662352 |
| $a$ | 2.4014044 | $\Omega$ | 207.69857 | | +0.81582014 | +0.48441034 |
| $e$ | 0.1981442 | $i$ | 5.64879 | | +0.29591740 | +0.11962567 |
| $P$ | 3.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 02 | 691 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.9+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 1991 11 02 | 691 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.9− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2000 02 02 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2000 02 02 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.3− | 0.8+ | 2006 10 22 | G96 | 0.6+ | 0.6+ | | |
| 2000 02 02 | 704 | 0.0 | 0.2+ | 2004 03 20 | 704 | 0.3− | 1.1+ | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2000 02 02 | 704 | 0.4− | 0.5− | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2002 09 06 | 704 | 0.3+ | 0.3− | 2004 03 26 | 704 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.0 | | |
| 2002 09 06 | 704 | 0.2+ | 1.4+ | 2004 03 26 | 704 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2004 03 26 | 704 | 0.1+ | 0.7+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | (1.8+ | 0.9+) | 2004 03 26 | 704 | (1.8− | 0.4+) | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2002 09 06 | 704 | 0.6+ | 0.3+ | 2004 03 26 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 704 | 0.2− | 0.4+ | | |
| 2002 09 06 | 704 | 0.5+ | 0.5+ | 2004 03 26 | 704 | 1.3− | 1.4+ | 2006 10 27 | 704 | 0.3− | 0.2− | | |
| 2002 09 06 | 704 | 0.1− | 0.0 | 2004 03 26 | 704 | 0.9− | 0.2+ | 2006 10 27 | 704 | 0.4− | 0.3+ | | |
| 2002 09 06 | 704 | (0.0 | 1.8+) | 2004 03 26 | 704 | 0.4− | 1.3− | 2006 10 27 | 704 | 0.1+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2004 03 26 | 704 | 0.3− | 0.1+ | 2006 10 27 | 704 | 0.6− | 0.3− | | |
| 2002 09 06 | 704 | 0.6+ | 1.3+ | 2004 03 26 | 704 | (3.0− | 0.3+) | 2006 11 02 | 703 | 1.1− | 0.9+ | | |
| 2002 09 28 | 683 | 0.7− | 0.7+ | 2004 03 26 | 704 | (2.2− | 0.5+) | 2006 11 02 | 703 | 0.6+ | 0.5+ | | |
| 2002 09 28 | 683 | 0.7− | 0.0 | 2004 03 26 | 704 | 1.0− | 0.7− | 2006 11 02 | 703 | 0.3− | 0.1− | | |
| 2002 09 28 | 683 | 0.6− | 0.0 | 2004 03 26 | 704 | 0.2− | 0.0 | 2006 11 02 | 703 | 0.6− | 0.2− | | |
| 2002 09 28 | 608 | 0.9+ | 1.2+ | 2004 03 26 | 704 | 0.2− | 0.6+ | 2006 11 10 | 644 | 0.3− | 0.0 | | |
| 2002 09 28 | 608 | 1.0+ | 0.6+ | 2004 03 26 | 704 | 0.8+ | 0.6− | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 2002 09 28 | 608 | 0.9+ | 1.1+ | 2004 03 26 | 704 | (1.6− | 0.1+) | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 2002 09 30 | 683 | (0.9+ | 2.6+) | 2004 03 26 | 704 | (1.7− | 1.6+) | 2006 11 12 | G96 | 0.1− | 0.1− | | |
| 2002 09 30 | 683 | (1.1+ | 1.7+) | 2004 03 26 | 704 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.1− | | |
| 2002 09 30 | 683 | 1.0+ | 1.1+ | 2004 03 26 | 704 | (2.1− | 0.6+) | 2006 11 12 | G96 | 0.3− | 0.1− | | |
| 2002 09 30 | 704 | 0.4− | 1.2+ | 2004 03 26 | 704 | 0.3+ | 1.2− | 2006 11 12 | G96 | 0.0 | 0.2− | | |
| 2002 09 30 | 704 | 0.3− | 0.6+ | 2004 03 26 | 704 | (1.9− | 1.1+) | 2006 11 14 | 704 | (0.9+ | 1.7+) | | |
| 2002 09 30 | 704 | 0.6− | 0.5+ | 2004 03 26 | 704 | 0.3− | 0.8+ | 2006 11 14 | 704 | 0.4− | 1.4+ | | |
| 2002 09 30 | 704 | 0.6− | 0.9+ | 2004 03 26 | 704 | (1.8− | 0.2+) | 2006 11 14 | 704 | 0.1− | 0.7+ | | |
| 2002 09 30 | 704 | 0.5− | 0.5+ | 2004 03 26 | 704 | 0.3− | 1.1− | 2006 11 14 | 704 | 0.3+ | 1.2+ | | |
| 2002 10 04 | 704 | 0.2− | 1.0+ | 2004 03 27 | 704 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.5+ | 0.8+ | | |
| 2002 10 04 | 704 | 0.8− | 0.8+ | 2004 03 27 | 704 | 0.9+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.3+ | | |
| 2002 10 04 | 704 | 0.9− | 0.9+ | 2004 03 27 | 704 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.4+ | | |
| 2002 10 04 | 704 | 0.2+ | 1.1+ | 2004 03 27 | 704 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.3+ | | |
| 2002 10 04 | 704 | 0.0 | 1.2+ | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 1.3+ | | |
| 2002 10 12 | 704 | 0.3+ | 0.5+ | 2004 03 29 | 691 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.7+ | | |
| 2002 10 12 | 704 | 0.0 | 1.0+ | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 1.0+ | | |
| 2002 10 12 | 704 | 0.2− | 0.8+ | 2004 03 29 | 691 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 12 | 704 | 0.2− | 0.9+ | 2004 04 15 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.4+ | | |
| 2002 10 26 | 608 | 0.3− | 0.5− | 2004 04 15 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.3− | | |
| 2002 10 26 | 608 | 0.0 | 0.3+ | 2004 04 15 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.0 | | |
| 2002 10 26 | 608 | 0.5− | 0.5− | 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.0 | | |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.2+ | | |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.0 | | |
| 2002 10 30 | 704 | 0.5− | 0.2− | 2006 08 28 | 703 | 0.1+ | 1.2+ | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2002 10 30 | 704 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.6− | 0.8+ | 2006 11 18 | G96 | 0.4− | 0.3− | | |
| 2002 10 30 | 704 | 1.0− | 1.1− | 2006 08 28 | 703 | 0.6+ | 1.3+ | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2002 11 06 | 704 | (0.4− | 3.5+) | 2006 08 28 | 703 | (1.4+ | 3.0+) | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 2002 11 06 | 704 | (1.4− | 1.9+) | 2006 09 02 | 152 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.1+ | | |
| 2002 11 06 | 704 | (1.8− | 1.7+) | 2006 09 03 | 152 | 0.5− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.9− | 1.1− | 2006 11 20 | 691 | (2.9+ | 4.0−) | | |
| 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 09 16 | 703 | 1.0− | 1.0− | 2006 11 20 | 704 | 0.1− | 0.9+ | | |
| 2003 01 04 | 704 | 0.4− | 0.9+ | 2006 09 16 | 703 | 0.0 | 0.7− | 2006 11 20 | 704 | 0.3− | 0.9+ | | |
| 2003 01 04 | 704 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.1+ | 1.1− | 2006 11 20 | 704 | 0.0 | 1.0+ | | |
| 2003 01 04 | 704 | 0.6+ | 1.2+ | 2006 09 19 | 699 | 0.8− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.9+ | | |
| 2003 01 04 | 704 | 0.6+ | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.6+ | 2006 11 20 | 704 | 1.1− | 1.0+ | | |
| 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.1+ | 0.6− | 2006 11 24 | 691 | 0.1− | 0.1+ | | |
| 2004 03 13 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.1− | 2006 11 24 | 691 | 0.1− | 0.1+ | | |
| 2004 03 13 | 644 | 1.3+ | 0.1− | 2006 09 20 | 704 | 0.4+ | 0.7− | 2006 11 24 | 691 | 0.2− | 0.1+ | | |
| 2004 03 16 | 703 | (1.8+ | 1.1+) | 2006 09 20 | 704 | 1.4+ | 0.4− | 2006 11 24 | G96 | 0.3− | 0.3− | | |
| 2004 03 16 | 703 | 1.3+ | 1.0− | 2006 09 20 | 704 | 1.3+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2004 03 16 | 703 | (1.7+ | 0.6+) | 2006 09 20 | 704 | 0.7+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2004 03 16 | 703 | 0.8+ | 1.0+ | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− | | |
| 2004 03 18 | 704 | 0.1+ | 1.0+ | 2006 09 27 | 704 | 0.4− | 0.4+ | 2006 11 25 | 704 | 0.6+ | 0.9+ | | |
| 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 09 27 | 704 | 1.3− | 1.2+ | 2006 11 25 | 704 | 1.1+ | 0.5+ | | |
| 2004 03 18 | 704 | 1.2+ | 0.5− | 2006 09 27 | 704 | 1.0− | 0.5+ | 2006 11 25 | 704 | 0.5+ | 0.3+ | | |
| 2004 03 18 | 704 | 0.8+ | 0.9+ | 2006 09 27 | 704 | 0.2+ | 0.6− | 2006 11 28 | 704 | 0.1+ | 0.2− | | |
| 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.2− | 0.5− | | |
| 2004 03 19 | 704 | 0.4− | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.3− | 0.1+ | | |
| 2004 03 19 | 704 | 1.0+ | 0.1− | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.1− | 0.1+ | | |
| 2004 03 19 | 704 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.1− | 0.2− | | |

**(142405)∗ 2002 SQ$_{25}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.23167 | | (2000.0) | | | |
| $n$ | 0.23146450 | $\omega$ | 149.91678 | | −0.92634831 | +0.36754619 |
| $a$ | 2.6271193 | $\Omega$ | 51.87841 | | −0.36309557 | −0.81315404 |
| $e$ | 0.1310668 | $i$ | 6.01173 | | −0.10020186 | −0.45132062 |
| $P$ | 4.26 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.8− | 0.9+ | 2003 12 23 | 704 | 0.3+ | 0.5+ | 2005 05 29 | E12 | 0.2− | 0.7+ | | |
| 2000 01 03 | 704 | 0.2− | 0.2− | 2003 12 23 | 704 | 0.3− | 1.2+ | 2005 05 29 | E12 | 0.1+ | 0.7+ | | |
| 2000 01 03 | 704 | 0.1− | 0.1+ | 2003 12 23 | 704 | 0.2− | 0.7+ | 2005 06 04 | 704 | 0.2+ | 0.0 | | |
| 2000 01 03 | 704 | 1.6+ | 0.0 | 2003 12 23 | 704 | 0.0 | 1.2+ | 2005 06 04 | 704 | 0.6+ | 0.6+ | | |
| 2002 09 28 | 608 | (2.1− | 0.9−) | 2003 12 28 | 704 | 0.3+ | 0.1+ | 2005 06 04 | 704 | 0.4+ | 0.1− | | |
| 2002 09 28 | 608 | (2.2− | 0.8−) | 2003 12 28 | 704 | 0.0 | 1.0− | 2005 06 04 | 704 | 0.1− | 0.4+ | | |
| 2002 09 28 | 608 | 2.0− | 0.3− | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2005 06 04 | 704 | 0.1− | 0.0 | | |
| 2002 09 30 | 704 | 1.2− | 0.0 | 2003 12 28 | 704 | 0.3+ | 0.2+ | 2005 06 26 | 644 | 0.1+ | 0.3+ | | |
| 2002 09 30 | 704 | 1.3− | 0.6− | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2005 06 26 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 30 | 704 | 1.3− | 0.6+ | 2004 01 19 | 704 | (2.7− | 0.4−) | 2005 06 26 | 644 | 0.1− | 0.3+ | | |
| 2002 10 03 | 704 | 1.3− | 0.4+ | 2004 01 19 | 704 | (2.8− | 0.1−) | 2006 08 30 | 699 | 1.2+ | 0.4+ | | |
| 2002 10 03 | 704 | 1.7− | 0.5+ | 2004 01 19 | 704 | (3.2− | 0.1+) | 2006 08 30 | 699 | 0.1+ | 0.4+ | | |
| 2002 10 03 | 704 | 1.5− | 0.9+ | 2004 01 19 | 704 | (2.9− | 0.3+) | 2006 08 30 | 699 | 0.9+ | 0.7− | | |
| 2002 10 03 | 704 | 1.2− | 0.3+ | 2005 05 04 | 704 | 0.0 | 0.9− | 2006 08 30 | 699 | 0.0 | 1.4+ | | |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2005 05 04 | 704 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.4− | 0.4+ | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 05 04 | 704 | 0.0 | 0.7− | 2006 09 14 | 644 | 0.7− | 0.0 | | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2005 05 04 | 704 | 0.5− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 | | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2005 05 04 | 704 | 0.7+ | 0.4− | 2006 09 14 | 703 | 0.0 | 0.0 | | |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 05 09 | 704 | 1.4+ | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.7+ | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 05 09 | 704 | 0.4− | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.5+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2005 05 09 | 704 | 0.0 | 0.9+ | 2006 09 14 | 703 | 1.4+ | 0.2+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2005 05 09 | 704 | 0.1− | 0.5+ | 2006 09 16 | 704 | 1.1− | 0.1− |
| 2003 12 18 | 704 | 0.1− | 0.3+ | 2005 05 09 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 0.0 | 0.1− |
| 2003 12 18 | 704 | 0.0 | 0.3+ | 2005 05 26 | E12 | 0.5− | 0.5+ | 2006 09 16 | 704 | 0.4− | 0.2+ |
| 2003 12 18 | 704 | 0.5− | 0.2− | 2005 05 26 | E12 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.6+ |
| 2003 12 18 | 704 | 0.5− | 0.2− | 2005 05 26 | E12 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2003 12 18 | 704 | 0.1− | 0.1− | 2005 05 26 | E12 | 0.0 | 0.2+ | 2006 09 26 | 703 | 1.5− | 0.7− |
| 2003 12 23 | 704 | 0.1+ | 1.7+ | 2005 05 29 | E12 | 0.2− | 0.8+ | 2006 09 26 | 703 | 1.1+ | 0.9− |

**(142406)∗ 2002 SH$_{26}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.75886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23559002 | $\omega$ | 315.20955 | | +0.37963812 | −0.92225113 | |
| $a$ | 2.5963593 | $\Omega$ | 112.35326 | | +0.86937757 | +0.32866879 | |
| $e$ | 0.1685524 | $i$ | 4.52660 | | +0.31631875 | +0.20354283 | |
| $P$ | 4.18 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 699 | 0.4+ | 0.3+ | 2002 10 30 | 704 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.8+ |
| 1998 12 11 | 699 | 0.0 | 0.3− | 2002 10 30 | 704 | 0.0 | 1.4+ | 2004 03 20 | 704 | 0.2+ | 1.3+ |
| 1998 12 11 | 699 | 0.8+ | 0.7− | 2002 10 30 | 704 | 0.8+ | 0.4+ | 2004 03 20 | 699 | 0.6− | 1.1− |
| 2002 09 06 | 704 | 1.1− | 0.1− | 2002 10 30 | 704 | 0.6+ | 1.0+ | 2004 03 22 | 704 | 0.4− | 1.4+ |
| 2002 09 06 | 704 | 0.6+ | 1.3+ | 2002 11 03 | 608 | 0.3− | 0.3− | 2004 03 22 | 704 | 0.1− | 1.3+ |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2002 11 03 | 608 | 0.7− | 0.5− | 2004 03 22 | 704 | 0.2+ | 0.1− |
| 2002 09 06 | 704 | 0.3+ | 0.2− | 2002 11 03 | 608 | 0.5− | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.6+ |
| 2002 09 06 | 704 | 0.6− | 0.2− | 2002 11 11 | 704 | 0.4− | 0.4+ | 2004 03 22 | 704 | 0.4+ | 1.3+ |
| 2002 09 15 | 608 | 0.1+ | 0.1+ | 2002 11 11 | 704 | 0.0 | 0.0 | 2004 03 28 | 703 | 0.1− | 0.0 |
| 2002 09 15 | 608 | 0.2+ | 0.0 | 2002 11 11 | 704 | 0.6− | 0.5+ | 2004 03 28 | 703 | 0.3− | 1.3− |
| 2002 09 15 | 608 | 0.2− | 0.4− | 2002 11 11 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 703 | (0.6+ | 1.7+) |
| 2002 09 28 | 608 | (2.5− | 0.2−) | 2002 11 11 | 704 | 0.2− | 0.3− | 2004 03 28 | 703 | 0.2+ | 0.7+ |
| 2002 09 28 | 608 | (2.6− | 0.3+) | 2004 01 30 | 691 | 0.3− | 0.0 | 2004 04 09 | 644 | 0.2+ | 0.4+ |
| 2002 09 28 | 608 | (2.5− | 0.2−) | 2004 01 30 | 691 | 0.1− | 0.1+ | 2004 04 09 | 644 | 0.1+ | 0.4+ |
| 2002 09 30 | 704 | 0.3+ | 0.4+ | 2004 01 30 | 691 | 0.0 | 0.0 | 2004 04 09 | 644 | 0.7+ | 0.4+ |
| 2002 09 30 | 704 | 0.4− | 0.0 | 2004 01 30 | 691 | 0.2− | 0.1− | 2005 06 17 | G96 | 0.3− | 0.7+ |
| 2002 09 30 | 704 | 0.4− | 0.2+ | 2004 01 30 | 691 | 0.2− | 0.0 | 2005 06 17 | G96 | 0.0 | 1.0+ |
| 2002 09 30 | 704 | 1.0+ | 0.2− | 2004 01 30 | 691 | 0.2− | 0.1+ | 2005 06 17 | G96 | 0.4− | 0.9+ |
| 2002 09 30 | 704 | 1.0− | 0.7+ | 2004 02 18 | 704 | 0.8+ | 1.3+ | 2005 06 17 | G96 | 0.3− | 1.1+ |
| 2002 10 02 | 704 | (2.8+ | 1.4+) | 2004 02 18 | 704 | 0.2+ | 0.9+ | 2006 08 30 | 699 | 0.6+ | 0.5+ |
| 2002 10 02 | 704 | (2.0+ | 1.1+) | 2004 02 18 | 704 | 0.2+ | 1.4+ | 2006 08 30 | 699 | 0.7+ | 0.3+ |
| 2002 10 02 | 704 | (3.0+ | 1.6+) | 2004 02 25 | 704 | 1.5+ | 0.8+ | 2006 08 30 | 699 | 0.7+ | 0.0 |
| 2002 10 02 | 608 | 0.4+ | 1.2+ | 2004 02 25 | 704 | 1.0+ | 0.8+ | 2006 08 30 | 699 | (0.2+ | 1.7+) |
| 2002 10 02 | 608 | 0.2+ | 0.6+ | 2004 02 25 | 704 | 0.7+ | 1.3+ | 2006 09 14 | 644 | 0.2− | 0.6+ |
| 2002 10 02 | 608 | 0.3+ | 1.0+ | 2004 02 25 | 704 | 0.9+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.5+ |
| 2002 10 04 | 704 | 0.6− | 0.7+ | 2004 02 25 | 704 | 0.6+ | 0.8+ | 2006 09 14 | 703 | 1.1− | 0.6+ |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2004 03 15 | 704 | 1.4+ | 0.4− | 2006 09 14 | 703 | 0.8+ | 0.7− |
| 2002 10 04 | 704 | 0.8− | 0.3+ | 2004 03 15 | 704 | 0.1− | 0.8+ | 2006 09 14 | 644 | 0.4− | 0.6+ |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2004 03 15 | 704 | (1.7+ | 0.3−) | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.8− | 1.0+ |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.6− | 0.2− | 2006 09 21 | 699 | 0.8− | 0.1+ |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2004 03 16 | 291 | 0.6+ | 0.3+ | 2006 09 21 | 699 | 1.1− | 0.9+ |
| 2002 10 08 | 699 | 0.1+ | 0.7+ | 2004 03 16 | 291 | 0.8+ | 0.4+ | 2006 09 21 | 699 | 0.2+ | 1.1+ |
| 2002 10 08 | 699 | 0.3− | 0.6+ | 2004 03 16 | 291 | 1.1+ | 0.3+ | 2006 09 21 | 699 | 0.7+ | 1.0+ |
| 2002 10 08 | 699 | 0.2− | 0.3− | 2004 03 17 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 704 | (0.5− | 1.7+) |
| 2002 10 08 | 699 | 0.2− | 0.4+ | 2004 03 17 | 704 | 0.1− | 0.8+ | 2006 09 26 | 704 | (0.6− | 1.8+) |
| 2002 10 11 | 704 | 0.8− | 0.5+ | 2004 03 17 | 704 | (0.6− | 1.6+) | 2006 09 26 | 704 | 0.1+ | 1.1+ |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2004 03 17 | 704 | 0.7− | 0.7+ | 2006 09 26 | 703 | 0.5− | 0.7+ |
| 2002 10 11 | 704 | 1.2− | 0.6+ | 2004 03 17 | 704 | (0.2− | 1.7+) | 2006 09 26 | 703 | 0.8− | 1.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.7+ | 2004 03 17 | 704 | 0.2− | 0.5+ | 2006 09 26 | 703 | (0.1− | 1.7+) |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 03 17 | 704 | 0.2− | 1.0+ | 2006 09 26 | 703 | (0.3− | 1.8+) |
| 2002 10 11 | 645 | 0.0 | 0.2− | 2004 03 17 | 704 | 0.1+ | 0.9+ | 2006 10 02 | 703 | 1.4− | 0.8+ |
| 2002 10 15 | 644 | 0.2− | 0.5+ | 2004 03 17 | 704 | (1.0− | 1.8+) | 2006 10 02 | 703 | 0.3− | 0.7+ |
| 2002 10 15 | 644 | 0.2− | 0.3+ | 2004 03 20 | 699 | 1.5− | 0.1− | 2006 10 02 | 703 | 0.2+ | 1.3+ |
| 2002 10 15 | 644 | 0.0 | 0.5+ | 2004 03 20 | 704 | 0.2+ | 0.6+ | 2006 10 02 | 703 | 0.3− | 0.0 |
| 2002 10 28 | 644 | 0.4− | 0.3+ | 2004 03 20 | 699 | 0.6− | 0.3− | 2006 10 12 | 291 | 0.0 | 0.4+ |
| 2002 10 28 | 644 | 0.8− | 0.5+ | 2004 03 20 | 704 | (0.9− | 2.3+) | 2006 10 12 | 291 | 0.1− | 0.4+ |
| 2002 10 28 | 644 | 0.3− | 0.6+ | 2004 03 20 | 699 | 1.0− | 0.2+ | 2006 10 12 | 291 | 0.0 | 0.5+ |

**(142407)∗ 2002 SA$_{27}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.02616 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26607633 | $\omega$ | 256.22943 | | +0.70704572 | +0.69880197 | |
| $a$ | 2.3940427 | $\Omega$ | 59.30854 | | −0.59028067 | +0.66765217 | |
| $e$ | 0.1442183 | $i$ | 7.24539 | | −0.38942918 | +0.25674185 | |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 09 16 | 608 | 0.8− | 0.1− | 2004 02 17 | 645 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2002 09 16 | 608 | 0.6− | 0.3+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2002 09 16 | 608 | 0.8− | 0.2+ | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 09 29 | 608 | 0.0 | 0.1+ | 2004 02 18 | 691 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.5+ |
| 2002 09 29 | 608 | 0.0 | 0.2− | 2004 02 18 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.5+ |
| 2002 09 29 | 608 | 0.1− | 0.1+ | 2005 03 17 | G96 | 0.5− | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2002 09 30 | 704 | 0.2− | 0.6+ | 2005 03 17 | G96 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2002 09 30 | 704 | 0.1− | 0.5+ | 2005 03 17 | G96 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.5− |
| 2002 09 30 | 704 | 0.5+ | 0.2− | 2005 03 17 | G96 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2002 09 30 | 704 | 0.7− | 0.3+ | 2005 05 04 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2002 09 30 | 704 | 0.8− | 0.2+ | 2005 05 04 | G96 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 1.2+ | 0.9+ | 2005 05 04 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2005 05 04 | G96 | 0.6+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.8− | 0.4+ | 2005 07 03 | 644 | 0.0 | 0.0 | 2006 11 18 | 185 | 0.6− | 0.5+ |
| 2002 10 04 | 704 | 0.5− | 0.8+ | 2005 07 03 | 644 | 0.1− | 0.0 | 2006 11 18 | 185 | 0.4− | 0.8+ |
| 2002 10 04 | 704 | 0.5+ | 0.6+ | 2005 07 03 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.1+ | 1.1− |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.7− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.6− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2002 10 08 | 699 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2002 10 08 | 699 | 0.7− | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 10 08 | 699 | 0.1+ | 0.6− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 10 08 | 699 | 1.2− | 0.6+ | 2006 10 19 | G96 | 0.6+ | 0.0 | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2002 10 11 | 645 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2002 10 28 | 644 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 10 28 | 644 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 10 28 | 644 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | | | |

**(142408)∗ 2002 SU$_{27}$ = 2005 GD$_{151}$**

Discovered 2002 Sept. 30 by M. Kretlow at Michael Adrian Observatory, Trebur.

Id. G. V. Williams (*MPO* 75641)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.52063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25440218 | $\omega$ | 97.09882 | | +0.11091863 | +0.99382842 | |
| $a$ | 2.4667331 | $\Omega$ | 179.26472 | | −0.95072420 | +0.10653429 | |
| $e$ | 0.0979334 | $i$ | 6.51241 | | −0.28951778 | +0.03091128 | |
| $P$ | 3.87 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 28 | 691 | 0.2+ | 0.5− | 2002 10 06 | 704 | 0.3+ | 0.1+ | 2006 07 21 | G96 | 0.2− | 0.5− |
| 1998 10 28 | 691 | 0.0 | 0.8− | 2002 10 06 | 704 | 0.1+ | 0.2− | 2006 09 14 | 691 | 0.6+ | 0.1+ |
| 1998 10 28 | 691 | 0.1− | 0.2− | 2002 10 06 | 704 | 0.0 | 0.7+ | 2006 09 14 | 691 | 0.1+ | 0.0 |
| 2001 04 16 | 699 | 0.4+ | 0.7+ | 2002 10 11 | 704 | (1.7− | 0.3+) | 2006 09 14 | 691 | 0.2+ | 0.1+ |
| 2001 04 16 | 699 | 1.4+ | 0.1+ | 2002 10 11 | 704 | (1.1− | 2.1+) | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 2001 04 16 | 699 | 0.2+ | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.3+ | 0.1+ |
| 2001 04 16 | 699 | (1.0+ | 1.7+) | 2002 10 11 | 704 | 0.0 | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2001 05 24 | 645 | 0.1− | 0.2− | 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 1.0− | 0.3− |
| 2001 05 24 | 645 | 0.1− | 0.2− | 2005 04 11 | 691 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.0 | 2005 04 11 | 691 | 0.5+ | 0.4− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2005 04 15 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 1.5− | 0.8+ |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2002 09 30 | 239 | 0.0 | 0.0 | 2005 04 15 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 239 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.6+ | | |
| 2002 09 30 | 239 | 0.0 | 0.0 | 2005 04 30 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.7− | 0.3+ | | |
| 2002 09 30 | 239 | 0.0 | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.7− | 0.1+ | | |
| 2002 09 30 | 239 | 0.3− | 0.1− | 2005 05 03 | 704 | 1.1+ | 1.4+ | 2006 10 19 | 644 | 1.4− | 0.2− | | |
| 2002 09 30 | 239 | 0.3− | 0.0 | 2005 05 03 | 704 | (2.0+ | 1.2+) | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 09 30 | 239 | 0.5− | 0.2− | 2005 05 03 | 704 | 0.4+ | 1.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 09 30 | 239 | 0.2− | 0.1+ | 2005 05 08 | 699 | 0.5− | 1.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2002 09 30 | 239 | 0.0 | 0.1+ | 2005 05 08 | 699 | 1.0− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.2− | | |
| 2002 09 30 | 239 | 0.3+ | 0.4+ | 2005 05 08 | 699 | 0.4− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 30 | 239 | 0.1+ | 0.6+ | 2005 05 08 | 699 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.1− | | |
| 2002 09 30 | 239 | 0.1+ | 0.2+ | 2005 05 11 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2002 09 30 | 621 | 0.4+ | 0.6+ | 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.4− | | |
| 2002 09 30 | 239 | 0.4+ | 0.2+ | 2005 05 11 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.5− | | |
| 2002 09 30 | 621 | 0.0 | 0.3+ | 2005 05 11 | 699 | 0.6+ | 0.6− | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 2002 09 30 | 621 | 0.5+ | 0.3+ | 2005 05 11 | 699 | 1.0+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3+ | | |
| 2002 09 30 | 621 | 0.7+ | 0.5+ | 2005 05 11 | 699 | 0.3+ | 1.4− | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2005 05 11 | 699 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.4− | 0.0 | | |
| 2002 10 03 | 704 | 0.7− | 0.5− | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.2− | | | | | | |
| 2002 10 03 | 704 | 0.4+ | 1.5+ | 2006 07 21 | G96 | 0.2− | 0.4− | | | | | | |

**(142409)∗ 2002 SJ$_{29}$**

Discovered 2002 Sept. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.83841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26944977 | $\omega$ | 115.29207 | | +0.71002700 | | +0.70409237 |
| $a$ | 2.3740189 | $\Omega$ | 199.95750 | | −0.65686715 | | +0.65674766 |
| $e$ | 0.2080590 | $i$ | 1.80502 | | −0.25374635 | | +0.27006748 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 691 | 0.2+ | 0.3− | 2002 10 07 | 699 | 0.8+ | 0.5+ | 2005 05 08 | 691 | 0.6− | 0.0 | | |
| 1991 10 06 | 691 | 0.2+ | 0.3− | 2002 10 07 | 699 | 1.4+ | 0.7+ | 2005 05 08 | 691 | 0.3+ | 0.1+ | | |
| 1991 10 06 | 691 | 0.0 | 0.4− | 2002 10 07 | 699 | 0.1+ | 1.2+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | | |
| 2001 03 26 | 691 | 0.0 | 0.0 | 2002 10 07 | 699 | (1.7+ | 0.5+) | 2005 06 13 | G96 | 0.9− | 0.2− | | |
| 2001 03 26 | 691 | 0.2− | 0.3+ | 2002 10 07 | 704 | 0.3− | 0.2+ | 2005 06 13 | G96 | 0.6− | 0.0 | | |
| 2001 03 26 | 691 | 0.2+ | 0.4+ | 2002 10 07 | 704 | 0.9− | 0.1+ | 2005 06 13 | G96 | 0.3− | 0.5+ | | |
| 2002 09 07 | 704 | 0.8− | 0.9+ | 2002 10 07 | 704 | 0.3− | 0.0 | 2005 06 13 | G96 | 0.4− | 0.1+ | | |
| 2002 09 07 | 704 | 0.2+ | 1.0+ | 2002 10 07 | 704 | 0.7− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2− | | |
| 2002 09 07 | 704 | 0.5− | 0.2+ | 2002 10 07 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.2− | | |
| 2002 09 07 | 704 | 0.2− | 0.1− | 2002 10 09 | 291 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2002 09 15 | 608 | 1.1− | 0.1− | 2002 10 09 | 291 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.4− | 0.1− | | |
| 2002 09 15 | 608 | (1.8− | 0.2+) | 2002 10 09 | 291 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.3+ | 0.2− | | |
| 2002 09 15 | 608 | 0.7− | 0.1+ | 2002 10 11 | 704 | 0.7+ | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.3− | | |
| 2002 09 28 | 644 | 0.6− | 0.7+ | 2002 10 11 | 704 | 0.9− | 0.6− | 2006 10 29 | G96 | 0.5+ | 0.1− | | |
| 2002 09 28 | 644 | 0.4− | 0.5+ | 2002 10 11 | 704 | 0.8+ | 0.0 | 2006 10 29 | G96 | 0.1− | 0.2+ | | |
| 2002 09 28 | 644 | 0.5− | 0.7+ | 2002 10 11 | 704 | 0.5− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1− | | |
| 2002 10 01 | 699 | 1.0− | 0.4+ | 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.4+ | 0.0 | | |
| 2002 10 01 | 699 | 0.5+ | 1.1+ | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.0 | | |
| 2002 10 01 | 699 | 0.1+ | 0.6+ | 2004 01 30 | 691 | 0.4+ | 0.3+ | 2006 11 23 | H07 | 0.0 | 0.4+ | | |
| 2002 10 01 | 699 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.2+ | 0.2+ | 2006 11 23 | H07 | (2.1+ | 0.7+) | | |
| 2002 10 02 | 704 | 1.0− | 0.3+ | 2005 05 03 | 691 | 0.3+ | 0.0 | 2006 11 23 | H07 | 1.4− | 0.2− | | |
| 2002 10 02 | 704 | 0.3− | 0.5+ | 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 11 23 | H07 | 0.7+ | 1.2− | | |
| 2002 10 02 | 704 | 0.3− | 0.6+ | 2005 05 03 | 691 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.1− | | |
| 2002 10 02 | 704 | 0.6− | 0.9+ | 2005 05 04 | 701 | 1.2+ | 0.6− | 2006 11 24 | G96 | 0.6− | 0.0 | | |
| 2002 10 03 | 704 | 0.5+ | 0.0 | 2005 05 04 | 701 | 0.1− | 0.9+ | 2006 11 24 | G96 | 0.3− | 0.1− | | |
| 2002 10 03 | 704 | 0.8+ | 0.1+ | 2005 05 04 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2− | 0.2+ | | |
| 2002 10 03 | 704 | 1.1+ | 0.0 | 2005 05 04 | G96 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.8+ | 0.3+ | 2005 05 04 | G96 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2002 10 03 | 704 | 0.9+ | 0.2− | 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ | | |

**(142410)∗ 2002 SA$_{30}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.22880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23309733 | $\omega$ | 252.38387 | | +0.44836253 | | +0.89363887 |
| $a$ | 2.6148363 | $\Omega$ | 44.27146 | | −0.80913310 | | +0.41504511 |
| $e$ | 0.1129550 | $i$ | 1.60150 | | −0.37983505 | | +0.17072530 |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 691 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.7+ | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.1+ | | |
| 2001 04 24 | 691 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.5+ | 0.6− | 2006 08 16 | 644 | 0.3+ | 0.1+ | | |
| 2001 04 24 | 691 | 0.1+ | 0.2+ | 2002 11 07 | 695 | 0.5+ | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.1− | | |
| 2002 09 05 | 704 | 0.5− | 0.4− | 2002 11 07 | 695 | 0.6+ | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.2− | | |
| 2002 09 05 | 704 | 0.3− | 0.4− | 2005 04 04 | 703 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.1+ | | |
| 2002 09 05 | 704 | (1.7+ | 0.8+) | 2005 04 04 | 703 | 0.5− | 0.0 | 2006 08 19 | 699 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.7− | 0.1+ | 2005 04 04 | 703 | 0.8+ | 0.1− | 2006 08 19 | 699 | 0.3− | 0.2− | | |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2005 04 04 | 703 | 0.2+ | 0.6− | 2006 08 19 | 699 | 0.2− | 0.8− | | |
| 2002 09 15 | 644 | 0.0 | 0.1− | 2005 04 06 | G96 | 0.4− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 15 | 644 | 0.9− | 0.0 | 2005 04 06 | G96 | 0.5− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.2+ | | |
| 2002 09 28 | 608 | (2.5− | 0.5−) | 2005 04 06 | G96 | 0.5− | 0.2− | 2006 08 27 | 691 | 0.2+ | 0.1− | | |
| 2002 09 28 | 608 | (2.3− | 0.3−) | 2005 04 06 | G96 | 0.3− | 0.4− | 2006 08 28 | 703 | 1.0− | 0.5+ | | |
| 2002 09 28 | 608 | (2.4− | 0.4−) | 2005 05 04 | 644 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.1− | 0.1+ | | |
| 2002 10 01 | 699 | 0.5− | 0.2+ | 2005 05 04 | 644 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.9− | | |
| 2002 10 01 | 699 | 0.1− | 1.2+ | 2005 05 04 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.8+ | 0.5− | | |
| 2002 10 01 | 699 | 0.8+ | 0.5− | 2005 05 06 | G96 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2002 10 01 | 699 | 0.6− | 0.3− | 2005 05 06 | G96 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.7+ | 0.1+ | 2005 05 06 | G96 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.4− | | |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2005 05 06 | G96 | 0.4+ | 0.7− | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.0 | | | | | | |

**(142411)∗ 2002 SC$_{30}$ = 2005 LU$_{42}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 75642)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.87046 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25985253 | $\omega$ | 127.52576 | | +0.57984326 | | +0.81470625 |
| $a$ | 2.4321186 | $\Omega$ | 177.88672 | | −0.78917767 | | +0.56346168 |
| $e$ | 0.0251004 | $i$ | 9.30151 | | −0.20243615 | | +0.13698418 |
| $P$ | 3.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.1− | 0.9+ | 2004 01 28 | 645 | 0.1+ | 0.2+ | 2005 07 03 | 691 | 0.1− | 0.2+ | | |
| 1998 08 17 | 704 | 0.0 | 0.4− | 2005 05 26 | 599 | 0.4− | 0.2+ | 2005 07 03 | 691 | 0.1+ | 0.2− | | |
| 1998 08 17 | 704 | 0.1+ | 1.0− | 2005 05 26 | 599 | 0.1+ | 0.2− | 2006 07 21 | G96 | 0.0 | 0.0 | | |
| 1998 08 17 | 704 | (2.7− | 0.1−) | 2005 05 26 | 599 | 0.0 | 0.5+ | 2006 07 21 | G96 | 0.1+ | 0.0 | | |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2005 05 26 | 599 | 0.2− | 0.5+ | 2006 07 21 | G96 | 0.3+ | 0.2+ | | |
| 2001 05 24 | 645 | 0.1− | 0.0 | 2005 06 02 | 703 | (2.2− | 0.6+) | 2006 07 21 | G96 | 0.2− | 0.1− | | |
| 2002 09 04 | 699 | (2.7+ | 1.0−) | 2005 06 02 | 703 | 0.2+ | 1.3+ | 2006 09 30 | 703 | 0.1+ | 0.6− | | |
| 2002 09 04 | 699 | 1.2+ | 0.0 | 2005 06 02 | 703 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1− | 0.4− | | |
| 2002 09 04 | 699 | 0.8+ | 1.0+ | 2005 06 02 | 703 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.6+ | 1.1− | | |
| 2002 09 04 | 699 | (2.6+ | 0.9+) | 2005 06 03 | 691 | 0.3− | 0.1+ | 2006 09 30 | 703 | (0.3− | 1.6−) | | |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2005 06 03 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.0 | | |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2005 06 03 | 691 | 0.0 | 1.1− | 2006 10 02 | G96 | 0.0 | 0.0 | | |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.1− | | |
| 2002 09 28 | 608 | (2.1− | 1.5−) | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.0 | | |
| 2002 09 28 | 608 | (2.1− | 1.3−) | 2005 06 14 | 691 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.6+ | | |
| 2002 09 28 | 608 | (2.6− | 1.4−) | 2005 06 15 | 291 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.4+ | | |
| 2002 10 01 | 699 | 0.0 | 1.4+ | 2005 06 15 | 291 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.3− | | |
| 2002 10 01 | 699 | (0.9− | 2.5+) | 2005 06 15 | 291 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 10 01 | 699 | 0.0 | 0.2− | 2005 06 16 | 291 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 2002 10 01 | 699 | 0.6− | 0.8+ | 2005 06 16 | 291 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.0 | | |
| 2002 10 02 | 608 | 0.0 | 0.0 | 2005 06 16 | 291 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 02 | 608 | 0.1− | 0.3− | 2005 06 24 | 644 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.5+ | | |
| 2002 10 02 | 608 | 0.3− | 0.1− | 2005 06 24 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2002 10 03 | 704 | (2.1− | 0.2−) | 2005 06 24 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5− | 1.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2005 06 29 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 1.2− | 0.4+ | | |
| 2002 10 03 | 704 | (1.6+ | 0.5−) | 2005 06 29 | 691 | 0.5− | 0.2− | 2006 10 22 | 703 | 1.0− | 1.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1− | 0.2− | 2005 06 29 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.5− | 1.2+ | | |
| 2004 01 28 | 645 | 0.0 | 0.2+ | 2005 07 03 | 691 | 0.0 | 0.6+ | | | | | | |

**(142412)∗ 2002 $SO_{30}$ = 1998 $UK_{48}$ = 2001 $JB_{11}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37942), A. Doppler (*MPO* 75642)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.98423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24129376 | $\omega$ | 277.88074 | | +0.82628689 | +0.54940275 | |
| $a$ | 2.5552810 | $\Omega$ | 48.88994 | | −0.42969672 | +0.75734408 | |
| $e$ | 0.1470086 | $i$ | 9.48215 | | −0.36415753 | +0.35296820 | |
| $P$ | 4.08 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 19 | 691 | 0.1− | 0.5+ | 2002 10 06 | 704 | 1.0− | 0.2+ | 2006 09 12 | 704 | 0.7− | 0.2− | | |
| 1990 11 19 | 691 | 0.0 | 0.2+ | 2002 10 06 | 704 | 0.4− | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.1− | | |
| 1990 11 19 | 691 | 0.1− | 0.3+ | 2002 10 06 | 704 | 0.5− | 0.9+ | 2006 09 20 | 703 | 0.0 | 0.5+ | | |
| 1998 10 17 | 699 | 0.4+ | 1.4− | 2002 10 06 | 704 | 0.8− | 0.5+ | 2006 09 20 | 703 | 0.1− | 0.3− | | |
| 1998 10 17 | 699 | 0.0 | 1.0− | 2002 10 06 | 704 | 0.2− | 0.8+ | 2006 09 20 | 703 | 0.3+ | 0.5+ | | |
| 1998 10 17 | 699 | 0.1+ | 1.4− | 2002 10 16 | 644 | 0.5+ | 0.9+ | 2006 09 21 | 699 | (1.7+ | 0.6−) | | |
| 1998 10 20 | 699 | 0.6+ | 0.5− | 2002 10 16 | 644 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.2− | 0.4− | | |
| 1998 10 20 | 699 | 0.1− | 0.4+ | 2002 10 16 | 644 | 0.2− | 0.4+ | 2006 09 21 | 699 | 0.5+ | 0.0 | | |
| 1998 10 20 | 699 | 0.6+ | 0.5+ | 2002 10 29 | 704 | (1.8+ | 1.5+) | 2006 09 21 | 699 | 0.6+ | 0.2+ | | |
| 2001 05 02 | 691 | 0.2+ | 0.0 | 2002 10 29 | 704 | 0.2− | 0.9+ | 2006 09 26 | 703 | 0.9− | 0.3− | | |
| 2001 05 02 | 691 | 0.3+ | 0.1+ | 2002 10 29 | 704 | (1.5+ | 0.9+) | 2006 09 26 | 703 | 0.8− | 0.2− | | |
| 2001 05 02 | 691 | 0.4− | 0.3− | 2002 10 29 | 704 | (0.2− | 1.7+) | 2006 09 26 | 703 | 0.4+ | 0.4− | | |
| 2001 05 18 | 699 | 0.6+ | 0.8+ | 2002 10 29 | 704 | (0.2+ | 1.8+) | 2006 09 26 | 703 | 0.6− | 0.1− | | |
| 2001 05 18 | 699 | 0.3− | 1.5+ | 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 0.8+ | 0.1− | | |
| 2001 05 18 | 699 | 1.4− | 1.2+ | 2005 04 02 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.1− | | |
| 2001 05 18 | 699 | 0.1+ | 0.9− | 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 0.7+ | 0.0 | | |
| 2002 09 10 | 608 | 0.8+ | 1.0− | 2005 04 09 | 704 | 0.1+ | 0.4− | 2006 10 02 | 703 | 0.2+ | 0.5− | | |
| 2002 09 10 | 608 | 0.9+ | 1.0− | 2005 04 09 | 704 | 0.3+ | 0.1− | 2006 10 10 | 644 | 0.3− | 0.1+ | | |
| 2002 09 10 | 608 | 0.2− | 1.0− | 2005 04 09 | 704 | 0.6+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2002 09 28 | 608 | 1.3− | 0.3− | 2005 04 09 | 704 | 0.7+ | 0.7− | 2006 10 10 | 644 | 0.3+ | 0.3− | | |
| 2002 09 28 | 608 | 1.3− | 0.0 | 2005 04 11 | 699 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2− | | |
| 2002 09 28 | 608 | 1.3− | 0.6− | 2005 04 11 | 699 | 0.6− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 10 01 | 699 | 0.7+ | 0.4+ | 2005 04 11 | 699 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2002 10 01 | 699 | 0.4+ | 0.5+ | 2005 04 11 | 699 | 0.1+ | 0.9− | 2006 10 11 | 644 | 0.3− | 0.1− | | |
| 2002 10 01 | 699 | 1.1− | 1.1+ | 2005 05 14 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 10 01 | 699 | 0.4− | 0.5+ | 2005 05 14 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 10 01 | 608 | 0.5+ | 0.6+ | 2005 05 14 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 10 01 | 608 | (0.4+ | 2.1+) | 2006 07 31 | E12 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2002 10 01 | 608 | 0.3+ | 1.4+ | 2006 07 31 | E12 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 07 31 | E12 | 0.8+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2002 10 04 | 704 | 0.3+ | 0.1− | 2006 07 31 | E12 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2002 10 04 | 704 | 0.5− | 0.2+ | 2006 09 12 | 704 | 1.0+ | 0.8+ | 2006 10 23 | 644 | 0.3− | 0.1+ | | |
| 2002 10 04 | 704 | 0.6− | 0.0 | 2006 09 12 | 704 | 0.3+ | 0.4+ | | | | | | |
| 2002 10 04 | 704 | 0.3− | 0.5− | 2006 09 12 | 704 | 0.8+ | 0.8− | | | | | | |

**(142413)∗ 2002 $SR_{30}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.59726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26192212 | $\omega$ | 212.18632 | | +0.97909309 | +0.18676302 | |
| $a$ | 2.4192900 | $\Omega$ | 136.81456 | | −0.15257548 | +0.93633581 | |
| $e$ | 0.1630250 | $i$ | 6.76361 | | −0.13452672 | +0.29731266 | |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.7+ | 0.3+ | 2002 10 01 | 608 | 1.0+ | 0.3+ | 2005 05 20 | G96 | 0.8− | 0.1+ | | |
| 1998 08 17 | 704 | 1.1+ | 1.1− | 2002 10 04 | 704 | 0.5+ | 0.4+ | 2005 05 20 | G96 | 0.2− | 0.2+ | | |
| 1998 08 17 | 704 | 0.5+ | 0.9+ | 2002 10 04 | 704 | 1.0− | 0.3+ | 2005 05 20 | G96 | 0.0 | 0.6+ | | |
| 1998 08 17 | 704 | (2.6+ | 1.4+) | 2002 10 04 | 704 | 0.9− | 1.3+ | 2005 06 17 | 691 | 0.4− | 0.2+ | | |
| 1998 08 17 | 704 | 0.7+ | 0.4+ | 2002 10 04 | 704 | 0.3− | 0.5+ | 2005 06 17 | 691 | 0.2+ | 0.6+ | | |
| 2002 08 12 | 704 | 0.8− | 0.1+ | 2002 10 04 | 704 | 0.0 | 0.6+ | 2005 06 17 | 691 | 0.1+ | 0.5+ | | |
| 2002 08 12 | 704 | (0.8− | 1.7+) | 2002 10 06 | 704 | 0.7− | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.8+ | | |
| 2002 08 12 | 704 | (0.0 | 1.8+) | 2002 10 06 | 704 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.5+ | 1.2+ | | |
| 2002 09 09 | 599 | 0.1− | 0.1− | 2002 10 06 | 704 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.5+ | | |
| 2002 09 09 | 599 | 0.1+ | 0.2− | 2002 10 06 | 704 | 0.0 | 1.3+ | 2006 10 22 | 703 | 0.5+ | 0.8+ | | |
| 2002 09 09 | 599 | 0.2+ | 0.2− | 2002 10 06 | 704 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.8+ | 0.4+ | | |
| 2002 09 14 | 608 | 1.2− | 0.9− | 2002 10 16 | 644 | 0.2− | 0.1+ | 2006 10 30 | 703 | 0.5+ | 0.9+ | | |
| 2002 09 14 | 608 | 0.9− | 1.0− | 2002 10 16 | 644 | 0.1− | 0.1+ | 2006 10 30 | 703 | 0.8− | 0.5+ | | |
| 2002 09 14 | 608 | 1.0− | 0.4− | 2002 10 16 | 644 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.2+ | 0.9+ | | |
| 2002 09 28 | 608 | (0.7− | 1.6−) | 2002 10 25 | 644 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.9+ | | |
| 2002 09 28 | 608 | 0.7− | 1.2− | 2002 10 25 | 644 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.5+ | | |
| 2002 09 28 | 608 | (1.1− | 1.8−) | 2002 10 25 | 644 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.3+ | | |
| 2002 10 01 | 699 | 1.3− | 1.4+ | 2004 01 30 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.9+ | 0.7− | | |
| 2002 10 01 | 699 | 0.8− | 0.3+ | 2004 01 30 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 703 | 0.7− | 0.3+ | | |
| 2002 10 01 | 699 | 0.8+ | 0.5− | 2004 01 30 | 691 | 0.3− | 0.7+ | 2006 11 13 | 703 | 0.3+ | 0.4− | | |
| 2002 10 01 | 699 | 0.5− | 0.1+ | 2005 04 30 | 691 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.9+ | 0.1− | | |
| 2002 10 01 | 699 | 0.7+ | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.3+ | 0.6− | | |
| 2002 10 01 | 699 | 0.7− | 0.5+ | 2005 04 30 | 691 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.0 | 0.2− | | |
| 2002 10 01 | 699 | 0.5+ | 0.2− | 2005 05 12 | 599 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.1+ | | |
| 2002 10 01 | 699 | 0.8− | 0.3+ | 2005 05 12 | 599 | 1.0+ | 0.4+ | 2006 11 19 | 703 | 0.4+ | 0.2− | | |
| 2002 10 01 | 608 | 0.6+ | 0.0 | 2005 05 13 | 599 | 0.3+ | 0.4+ | | | | | | |
| 2002 10 01 | 608 | 0.8+ | 0.2− | 2005 05 20 | G96 | 0.3− | 0.1+ | | | | | | |

**(142414)∗ 2002 $SS_{31}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.69996 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24273005 | $\omega$ | 328.13933 | | +0.24677811 | −0.96292819 | |
| $a$ | 2.5451908 | $\Omega$ | 107.37892 | | +0.91135565 | +0.19238921 | |
| $e$ | 0.2452910 | $i$ | 6.55520 | | +0.32944112 | +0.18909177 | |
| $P$ | 4.06 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 09 | 691 | 0.1− | 0.2− | 2002 10 06 | 704 | 1.4− | 0.6+ | 2004 03 26 | 691 | 0.4+ | 0.1+ | | |
| 1994 11 09 | 691 | 0.2− | 0.2− | 2002 10 25 | 644 | 0.2− | 1.1+ | 2004 03 26 | 691 | 0.5+ | 0.3+ | | |
| 1994 11 09 | 691 | 0.2+ | 0.1− | 2002 10 25 | 644 | 0.1+ | 1.3+ | 2004 03 26 | 691 | 0.3+ | 0.3+ | | |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2002 10 25 | 644 | 0.2− | 1.3+ | 2004 03 28 | 704 | 1.2+ | 1.0+ | | |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2002 10 29 | 704 | 0.6+ | 0.8+ | 2004 03 28 | 704 | 1.1+ | 1.0+ | | |
| 1998 09 24 | 699 | 0.1+ | 1.0+ | 2002 10 29 | 704 | 0.5− | 0.2+ | 2004 03 28 | 704 | 0.8+ | 0.6+ | | |
| 1998 09 24 | 699 | 0.5+ | 1.5+ | 2002 10 29 | 704 | 0.4− | 1.1+ | 2004 03 28 | 704 | 0.6+ | 0.9+ | | |
| 1998 09 24 | 699 | 0.8− | 1.0+ | 2002 10 29 | 704 | (1.2− | 1.9+) | 2004 03 29 | 704 | 0.9+ | 0.6+ | | |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2002 10 29 | 704 | (0.3− | 1.5+) | 2004 03 29 | 704 | 0.5+ | 0.5+ | | |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2002 10 30 | 704 | 1.0− | 0.0 | 2004 03 29 | 704 | 0.1− | 0.7+ | | |
| 1998 10 17 | 699 | 0.9− | 0.2− | 2002 10 30 | 704 | 0.8− | 0.5+ | 2004 03 29 | 704 | 0.4− | 0.1+ | | |
| 1998 10 17 | 699 | 0.7− | 0.2+ | 2002 10 30 | 704 | 1.2− | 0.5+ | 2006 09 17 | 699 | 0.1− | 0.8− | | |
| 1998 10 17 | 699 | 0.9+ | 0.5+ | 2002 11 02 | 608 | 0.2− | 0.3− | 2006 09 17 | 699 | 0.1− | 0.2− | | |
| 2000 05 04 | 645 | 0.2− | 0.2+ | 2002 11 02 | 608 | 0.2− | 0.3− | 2006 09 17 | 699 | (4.4+ | 1.2+) | | |
| 2000 05 04 | 645 | 0.2− | 0.1+ | 2002 11 02 | 608 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.2+ | 0.7+ | | |
| 2002 09 28 | 608 | (2.4− | 1.4−) | 2002 11 05 | 644 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.2− | | |
| 2002 09 28 | 608 | (2.0− | 1.2−) | 2002 11 05 | 644 | 0.1− | 0.7+ | 2006 09 19 | 703 | 0.7− | 0.2+ | | |
| 2002 09 28 | 608 | (2.3− | 1.2−) | 2002 11 05 | 644 | 0.5+ | 0.3− | 2006 09 19 | 703 | 0.1− | 0.2+ | | |
| 2002 10 01 | 608 | 0.6− | 0.2− | 2002 11 07 | 699 | 0.1− | 0.4+ | 2006 09 25 | 703 | 0.1− | 0.1+ | | |
| 2002 10 01 | 608 | 0.5− | 0.1− | 2002 11 07 | 699 | 0.8− | 1.5+ | 2006 09 25 | 703 | 0.4+ | 0.0 | | |
| 2002 10 01 | 608 | 0.3− | 0.6+ | 2002 11 07 | 699 | 0.8− | 0.4+ | 2006 09 25 | 703 | 0.2− | 0.5− | | |
| 2002 10 04 | 704 | 0.4− | 1.2+ | 2002 11 07 | 699 | 0.1− | 0.3− | 2006 09 25 | 703 | 0.4+ | 0.0 | | |
| 2002 10 04 | 704 | 0.6− | 0.7+ | 2004 03 15 | 683 | 0.5− | 0.7+ | 2006 10 19 | 703 | 0.1+ | 0.0 | | |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2004 03 15 | 683 | (1.8− | 0.5−) | 2006 10 19 | 703 | 1.0− | 0.2+ | | |
| 2002 10 04 | 704 | 0.0 | 1.0+ | 2004 03 15 | 683 | (1.7+ | 1.4+) | 2006 10 19 | 703 | 0.1− | 0.1+ | | |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2004 03 23 | 704 | 1.3+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.5+ | | |
| 2002 10 06 | 704 | 0.3− | 1.4+ | 2004 03 23 | 704 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 10 06 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.3+ | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.4+ | | |
| 2002 10 06 | 704 | (1.0− | 1.6+) | 2004 03 23 | 704 | 1.3+ | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.3+ | | |
| 2002 10 06 | 704 | 0.1− | 0.3+ | 2004 03 23 | 704 | 1.0+ | 0.3+ | | | | | | |

**(142415)∗ 2002 $SD_{32}$ = 1998 $UN_{19}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37942)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.34977 | | (2000.0) | | | |
| $n$ | 0.24005326 | $\omega$ | 340.25633 | | +0.99399998 | −0.02227014 |
| $a$ | 2.5640765 | $\Omega$ | 21.86824 | | +0.08479118 | +0.77537336 |
| $e$ | 0.1557590 | $i$ | 16.70883 | | −0.06909776 | +0.63111028 |
| $P$ | 4.11 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 20 | 910 | 0.6+ | 0.2− | 2002 10 08 | 699 | 0.3− | 1.1+ | 2005 05 16 | 644 | 0.0 | 0.0 |
| 1998 09 20 | 910 | 1.5+ | 0.4− | 2002 10 08 | 699 | 0.3+ | 1.2+ | 2006 08 19 | 644 | 0.0 | 0.0 |
| 1998 09 20 | 910 | 1.4+ | 0.5− | 2002 10 08 | 699 | 0.6+ | 0.5+ | 2006 08 19 | 644 | 0.3− | 0.3− |
| 1998 10 10 | 699 | 0.7+ | 0.7− | 2002 10 08 | 608 | 0.8− | 0.2+ | 2006 08 19 | 644 | 0.0 | 0.3− |
| 1998 10 10 | 699 | (2.1+ | 0.2+) | 2002 10 08 | 608 | 1.2− | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.1+ |
| 1998 10 10 | 699 | (2.1+ | 0.6+) | 2002 10 08 | 608 | 1.1− | 0.3+ | 2006 08 23 | 644 | 0.3+ | 0.4− |
| 1998 10 15 | 704 | 0.3+ | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 08 23 | 644 | 0.1− | 0.1− |
| 1998 10 15 | 704 | 0.7− | 1.8+ | 2002 10 11 | 704 | 0.3− | 0.6+ | 2006 08 24 | 644 | 0.1+ | 0.0 |
| 1998 10 15 | 704 | 0.7+ | 0.9+ | 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 08 24 | 644 | 0.2+ | 0.1− |
| 1998 10 15 | 704 | (2.5− | 0.9+) | 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.2− |
| 1998 10 28 | 704 | 0.2+ | 0.9+ | 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.2+ |
| 1998 10 28 | 704 | 0.2+ | 1.9− | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.6+ | 0.0 |
| 1998 10 28 | 704 | 0.3+ | 0.3− | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.3− | 0.6− |
| 1998 10 28 | 704 | 1.0+ | 1.0+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.8+ |
| 1998 10 29 | 704 | 0.0 | 1.1− | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.5− | 0.3− |
| 1998 10 29 | 704 | 1.2+ | 0.4− | 2002 10 31 | 699 | 1.2+ | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.3− |
| 1998 10 29 | 704 | 0.5+ | 0.5+ | 2002 10 31 | 699 | 0.5+ | 0.7+ | 2006 09 18 | 703 | 0.1+ | 0.1+ |
| 1998 10 29 | 704 | 1.1+ | 0.0 | 2002 10 31 | 704 | 0.1− | 0.5+ | 2006 09 20 | 703 | 1.1+ | 0.1− |
| 1998 11 16 | 566 | 1.7− | 1.5− | 2002 10 31 | 699 | 0.2+ | 0.7+ | 2006 09 20 | 703 | 0.2− | 0.2+ |
| 1998 11 16 | 566 | 0.9− | 1.6− | 2002 10 31 | 704 | 0.3− | 0.4+ | 2006 09 20 | 703 | 0.3− | 0.1+ |
| 1998 11 16 | 566 | 1.5− | 1.1− | 2002 10 31 | 699 | (1.5+ | 1.7+) | 2006 09 20 | 703 | 0.1− | 0.2+ |
| 2002 08 24 | 644 | 0.1− | 0.4+ | 2002 10 31 | 704 | 0.1− | 0.1+ | 2006 09 20 | 608 | (1.1+ | 1.8+) |
| 2002 08 24 | 644 | 0.2− | 0.4+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 09 20 | 608 | (1.3+ | 1.9+) |
| 2002 08 24 | 644 | 0.0 | 0.5+ | 2002 10 31 | 645 | 0.1− | 0.1+ | 2006 09 20 | 608 | (0.9+ | 2.0+) |
| 2002 09 28 | 608 | (2.9− | 0.3−) | 2002 10 31 | 704 | 0.1− | 0.7+ | 2006 09 21 | 699 | 0.5+ | 0.2+ |
| 2002 09 28 | 608 | (3.0− | 0.1−) | 2002 10 31 | 704 | 0.1− | 1.0+ | 2006 09 21 | 699 | 1.4+ | 0.4− |
| 2002 09 28 | 608 | (2.8− | 0.3−) | 2002 11 06 | 704 | 0.8− | 0.1+ | 2006 09 21 | 699 | 0.7+ | 0.0 |
| 2002 10 01 | 608 | 0.2+ | 0.3+ | 2002 11 06 | 704 | 0.7− | 0.4+ | 2006 09 21 | 699 | 0.2− | 0.9+ |
| 2002 10 01 | 608 | 0.1− | 0.2+ | 2002 11 06 | 704 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2002 10 01 | 608 | 0.1+ | 0.6− | 2002 11 13 | 291 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.6− | 0.7+ |
| 2002 10 02 | 704 | 0.7− | 0.5+ | 2002 11 13 | 291 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.4− | 0.6+ |
| 2002 10 02 | 704 | 0.4− | 0.2− | 2002 11 13 | 291 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.7− | 0.1+ |
| 2002 10 02 | 704 | 1.4− | 0.1+ | 2002 11 21 | 644 | 0.5− | 0.7+ | 2006 10 02 | 703 | 0.0 | 0.4− |
| 2002 10 02 | 704 | (1.6− | 0.0 ) | 2002 11 21 | 644 | 0.6− | 0.6+ | 2006 10 02 | 703 | 0.7+ | 1.4− |
| 2002 10 03 | 704 | 0.7− | 0.0 | 2002 11 21 | 644 | 0.5− | 0.7+ | 2006 10 02 | 703 | 0.2+ | 0.4− |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2003 01 03 | 460 | (3.2− | 0.4−) | 2006 10 02 | 703 | 0.8− | 0.3+ |
| 2002 10 03 | 704 | 1.0− | 0.1+ | 2003 01 03 | 460 | 0.4− | 0.7− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.2− | 2003 01 05 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.8− | 0.0 | 2003 01 05 | 704 | 1.0− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2003 01 05 | 704 | (3.4− | 1.0+) | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 10 05 | 645 | 0.1+ | 0.2− | 2005 05 16 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 10 08 | 699 | 0.6+ | 1.1+ | 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1+ |

**(142416)∗ 2002 SF$_{32}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.35346 | | (2000.0) | | | |
| $n$ | 0.23791462 | $\omega$ | 295.35607 | | +0.76749288 | +0.63571114 |
| $a$ | 2.5794194 | $\Omega$ | 25.42578 | | −0.49693424 | +0.67140170 |
| $e$ | 0.0826603 | $i$ | 11.09484 | | −0.40498277 | +0.38090827 |
| $P$ | 4.14 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 910 | 0.5+ | 0.2− | 2002 10 31 | 704 | 0.4+ | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.1− |
| 1998 09 18 | 910 | 0.4+ | 0.1+ | 2002 10 31 | 704 | 0.4− | 0.3+ | 2006 08 22 | 644 | 0.1+ | 0.2+ |
| 1998 09 18 | 910 | 0.3− | 0.8+ | 2002 10 31 | 704 | 0.6+ | 0.4− | 2006 08 22 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 11 08 | 645 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 11 08 | 645 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2002 09 28 | 608 | (2.7− | 0.1+) | 2005 03 11 | G96 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.0 |
| 2002 09 28 | 608 | (3.1− | 0.2+) | 2005 03 11 | G96 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.6− |
| 2002 09 28 | 608 | (2.5− | 0.1−) | 2005 03 11 | G96 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.0 |
| 2002 10 01 | 608 | 0.9− | 1.0+ | 2005 03 11 | G96 | 0.4− | 0.3− | 2006 09 15 | 703 | (1.9− | 0.1+) |
| 2002 10 01 | 608 | 0.9− | 0.0 | 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 09 15 | 703 | 0.0 | 0.3+ |
| 2002 10 01 | 608 | 0.5− | 0.3+ | 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 09 15 | 703 | 0.8+ | 0.9+ |
| 2002 10 10 | 645 | 0.1+ | 0.1+ | 2005 04 14 | 691 | 0.1− | 0.1− | 2006 09 15 | 703 | 1.1− | 0.7− |
| 2002 10 10 | 645 | 0.2+ | 0.1+ | 2005 05 01 | 644 | 0.2+ | 0.4− | 2006 09 26 | 703 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.6− | 2005 05 01 | 644 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2002 10 11 | 704 | 0.3− | 0.6+ | 2005 05 01 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.0 |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2005 05 19 | 644 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.9− | 0.6− |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2005 05 19 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2002 10 11 | 704 | 0.7− | 0.5+ | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.5+ | 0.2− |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.0 | | | | |

**(142417)∗ 2002 SX$_{32}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.32247 | | (2000.0) | | | |
| $n$ | 0.23155390 | $\omega$ | 98.14729 | | +0.68327238 | −0.72885412 |
| $a$ | 2.6264430 | $\Omega$ | 308.65765 | | +0.64593993 | +0.63128476 |
| $e$ | 0.1077578 | $i$ | 3.20874 | | +0.34044156 | +0.26504948 |
| $P$ | 4.26 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 704 | (2.4+ | 0.1−) | 2002 11 12 | 704 | 0.2− | 1.2− | 2006 08 18 | 699 | 0.2− | 1.1+ |
| 1998 11 18 | 704 | (0.1− | 2.3−) | 2002 11 12 | 704 | 0.5− | 1.2− | 2006 08 18 | 699 | 0.2− | 0.5− |
| 1998 11 18 | 704 | 1.5+ | 0.2− | 2002 12 06 | 704 | 0.4− | 1.0+ | 2006 08 18 | 699 | 0.0 | 0.5+ |
| 1998 11 18 | 704 | (3.1+ | 0.1+) | 2002 12 06 | 704 | (0.1+ | 1.5+) | 2006 08 19 | 691 | 0.1− | 0.2+ |
| 1998 11 18 | 704 | (3.2+ | 0.6+) | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.2− | 0.7+ | 2003 11 30 | 691 | 0.3− | 0.4− | 2006 08 19 | 691 | 0.3− | 0.2+ |
| 2000 03 03 | 704 | 0.3− | 0.3+ | 2003 11 30 | 691 | 0.0 | 0.1+ | 2006 08 19 | A50 | 0.6+ | 0.1+ |
| 2000 03 03 | 704 | 0.6+ | 0.0 | 2003 11 30 | 691 | 0.0 | 0.0 | 2006 08 19 | A50 | 0.6− | 0.1− |
| 2002 09 06 | 704 | 0.7+ | 1.2+ | 2003 12 21 | 704 | 0.2+ | 0.9− | 2006 08 21 | 704 | 0.0 | 0.4+ |
| 2002 09 06 | 704 | 0.2+ | 0.1− | 2003 12 21 | 704 | 0.4− | 1.0+ | 2006 08 21 | 704 | 0.3− | 0.9+ |
| 2002 09 06 | 704 | 1.0+ | 0.4+ | 2003 12 21 | 704 | 0.3+ | 1.0+ | 2006 08 21 | 704 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 1.3+ | 0.1+ | 2003 12 21 | 704 | (1.7+ | 1.0+) | 2006 08 21 | 704 | 0.2+ | 1.1+ |
| 2002 09 06 | 704 | 0.3+ | 0.5+ | 2004 01 24 | 704 | 1.0+ | 0.9+ | 2006 08 21 | 704 | 0.1− | 0.8+ |
| 2002 09 28 | 608 | (1.8− | 1.0−) | 2004 01 24 | 704 | 0.5+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.1+ |
| 2002 09 28 | 608 | 1.5− | 1.3− | 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.6− | 0.1+ |
| 2002 09 28 | 608 | 1.4− | 1.3− | 2004 01 24 | 704 | 0.1+ | 0.9+ | 2006 08 22 | 644 | 0.2− | 0.3+ |
| 2002 10 01 | 699 | 0.1− | 0.2+ | 2004 01 24 | 704 | 0.1+ | 0.7+ | 2006 08 25 | 704 | 1.2− | 1.1+ |
| 2002 10 01 | 699 | 0.2− | 0.4− | 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 08 25 | 704 | 1.1+ | 1.0+ |
| 2002 10 01 | 699 | 0.4+ | 0.2− | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 08 25 | 704 | 0.7− | 0.4− |
| 2002 10 01 | 699 | 0.2− | 0.1+ | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 08 25 | 704 | 0.5+ | 1.3+ |
| 2002 10 03 | 599 | 0.1+ | 0.2− | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 08 27 | 691 | 0.3− | 0.2+ |
| 2002 10 03 | 599 | 0.1+ | 0.2− | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2002 10 03 | 599 | 0.2+ | 0.2− | 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 1.1+ | 0.4− | 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 08 29 | 691 | 0.2− | 0.4+ |
| 2002 10 04 | 704 | 0.6+ | 0.1− | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 1.0+ | 0.6− | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | 0.9+ | 0.2− | 2004 02 14 | 703 | 0.0 | 0.4+ | 2006 08 30 | 704 | (1.7− | 0.6−) |
| 2002 10 04 | 704 | 1.0+ | 0.8− | 2004 02 14 | 703 | 0.5− | 0.5+ | 2006 08 30 | 704 | 0.9+ | 0.2− |
| 2002 10 04 | 644 | 0.4+ | 0.2+ | 2004 02 14 | 703 | (0.5+ | 2.6+) | 2006 08 30 | 704 | 0.6+ | 0.6+ |
| 2002 10 04 | 644 | 0.3+ | 0.3− | 2004 02 14 | 703 | 0.4− | 0.1+ | 2006 08 30 | D35 | 0.3− | 0.5+ |
| 2002 10 04 | 644 | 0.3+ | 0.1+ | 2004 02 17 | 704 | 0.7− | 0.1+ | 2006 08 30 | D35 | 0.2− | 0.7+ |
| 2002 10 05 | 599 | 0.2− | 0.2− | 2004 02 17 | 704 | 0.6+ | 0.3+ | 2006 08 30 | D35 | 0.1+ | 0.4+ |
| 2002 10 05 | 599 | 0.3+ | 0.4− | 2004 02 17 | 704 | 0.6+ | 0.2+ | 2006 09 13 | 644 | 0.3+ | 0.3+ |
| 2002 10 05 | 599 | 0.2+ | 0.3− | 2004 02 17 | 704 | 0.2− | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.8− | 0.3+ | 2004 02 17 | 704 | 0.4+ | 0.0 | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.3− | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.4− |
| 2002 10 09 | 704 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.2− |
| 2002 10 09 | 704 | 0.5+ | 1.0+ | 2004 02 26 | 704 | 0.7− | 0.5+ | 2006 09 17 | 704 | 0.5+ | 0.4+ |
| 2002 10 12 | 704 | 0.7− | 0.4− | 2004 02 26 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.4+ | 1.4+ |
| 2002 10 12 | 704 | 0.0 | 0.2− | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.4− | 0.3− | 2004 02 29 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.1+ |
| 2002 10 12 | 704 | 0.1+ | 0.4− | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.2− | 0.1− |
| 2002 10 12 | 704 | 0.1+ | 1.1− | 2004 03 11 | 644 | 1.0+ | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.4− |
| 2002 10 31 | 699 | 1.1− | 0.7+ | 2004 03 11 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.5+ |
| 2002 10 31 | 699 | 0.0 | 0.7+ | 2004 03 11 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.6+ | 0.0 |
| 2002 10 31 | 699 | (1.6− | 0.1−) | 2004 03 18 | 704 | (1.6+ | 0.8+) | 2006 09 20 | 699 | 0.9− | 1.0+ |
| 2002 10 31 | 699 | 0.4− | 0.7+ | 2004 03 18 | 704 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2002 11 02 | 608 | 0.0 | 1.0− | 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2002 11 02 | 608 | 0.1− | 0.7− | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 09 28 | G96 | 0.5+ | 0.1+ |
| 2002 11 02 | 608 | 0.1− | 0.6− | 2004 03 18 | 704 | 0.0 | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2002 11 08 | 704 | 0.5− | 0.4+ | 2004 03 20 | 691 | 0.0 | 0.3+ | 2006 09 30 | 699 | 1.4− | 0.8+ |
| 2002 11 08 | 704 | 0.0 | 0.2+ | 2004 03 20 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 1.4− | 0.9+ |
| 2002 11 08 | 704 | 0.2− | 0.3+ | 2004 03 20 | 691 | 0.1− | 0.3+ | 2006 09 30 | 699 | 1.0− | 0.7+ |
| 2002 11 08 | 704 | 1.0− | 0.8+ | 2004 03 23 | 704 | 0.8+ | 0.8+ | 2006 09 30 | 699 | 0.3− | 0.1+ |
| 2002 11 08 | 704 | 0.3− | 0.5+ | 2004 03 23 | 704 | 0.8+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.6− | 1.0− | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2002 11 12 | 704 | (0.1− | 1.7−) | 2006 08 18 | 699 | (2.5− | 0.1+) | 2006 10 09 | 644 | 0.1− | 0.1+ |

**(142418)∗ 2002 SN$_{33}$**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.77541 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26079228 | $\omega$ | 167.63062 | | +0.91127542 | | −0.40749576 |
| $a$ | 2.4262724 | $\Omega$ | 216.59872 | | +0.36882506 | | +0.87177388 |
| $e$ | 0.1449367 | $i$ | 5.71456 | | +0.18315343 | | +0.27195131 |
| $P$ | 3.78 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 05 | 691 | 0.0 | 0.4+ | 2002 10 09 | 704 | 0.3+ | 0.7− | 2006 11 11 | G96 | 0.4− | 0.3− |
| 1997 05 05 | 691 | 0.2− | 0.0 | 2002 10 09 | 704 | 0.8+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 1997 05 05 | 691 | 0.2− | 0.0 | 2002 10 12 | 704 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 1998 08 17 | 704 | 1.3+ | 0.2− | 2002 10 12 | 704 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 1998 08 17 | 704 | (2.4+ | 2.0+) | 2002 10 12 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.6− | 1.3+ |
| 1998 08 17 | 704 | 1.5+ | 1.2− | 2002 10 12 | 704 | 0.4− | 0.1− | 2006 11 14 | 704 | (1.8+ | 1.0−) |
| 1998 08 17 | 704 | 1.2− | 0.0 | 2002 10 12 | 704 | 0.3− | 0.2− | 2006 11 14 | 704 | 0.4+ | 0.9+ |
| 2002 09 28 | 608 | (2.1− | 1.2−) | 2002 11 05 | 291 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.7+ | 0.1+ |
| 2002 09 28 | 608 | (2.5− | 1.5−) | 2002 11 05 | 291 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.3+ | 0.4− |
| 2002 09 28 | 608 | (1.9− | 2.0−) | 2002 11 05 | 291 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2002 10 01 | 699 | 0.3+ | 0.9+ | 2002 11 06 | 704 | 0.7− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2002 10 01 | 699 | 1.0+ | 0.6+ | 2002 11 06 | 704 | 0.8− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2002 10 01 | 699 | 0.6+ | 0.0 | 2002 11 06 | 704 | 0.0 | 1.1+ | 2006 11 17 | 704 | 0.2+ | 0.5− |
| 2002 10 01 | 699 | (1.7+ | 1.4+) | 2002 11 06 | 704 | 0.7− | 0.4+ | 2006 11 17 | 704 | 0.4+ | 0.0 |
| 2002 10 02 | 049 | 0.3+ | 0.2+ | 2004 02 19 | 704 | 0.3+ | 1.0+ | 2006 11 17 | 704 | 0.4− | 0.6− |
| 2002 10 02 | 049 | 0.3+ | 0.1+ | 2004 02 19 | 704 | 1.1+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2002 10 02 | 049 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.7+ | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.9− |
| 2002 10 03 | 599 | 0.0 | 0.2+ | 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | (1.9+ | 0.5+) |
| 2002 10 03 | 599 | 0.0 | 0.2+ | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 1.0+ |
| 2002 10 03 | 599 | 0.2− | 0.4+ | 2004 03 16 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | 0.6− | 0.1+ | 2005 06 27 | G96 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 1.3+ |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2005 06 27 | G96 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.0 | 2005 06 27 | G96 | 0.9− | 0.3− | 2006 11 18 | 704 | (0.2− | 1.7−) |
| 2002 10 04 | 704 | 0.2− | 0.1− | 2005 06 27 | G96 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2005 07 12 | G96 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.8− | 0.1− |
| 2002 10 04 | 644 | 0.1− | 0.5+ | 2005 07 12 | G96 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2002 10 04 | 644 | 0.1− | 0.5+ | 2005 07 12 | G96 | 0.4+ | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 644 | 0.1+ | 0.7+ | 2005 07 12 | G96 | 0.1+ | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 10 05 | 049 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2002 10 05 | 049 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.6− | 2006 11 20 | 704 | 0.5− | 0.4+ |
| 2002 10 05 | 599 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.9+ |
| 2002 10 05 | 049 | 0.7+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.4+ | 1.2+ |
| 2002 10 05 | 599 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | (0.0 | 2.5+) |
| 2002 10 05 | 599 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2002 10 07 | 704 | 0.6+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2002 10 07 | 704 | 0.5− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 0.9− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.6− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 10 07 | 704 | 0.4− | 0.5+ | 2006 10 21 | G96 | 0.5− | 0.6− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.3− | 0.8− | 2006 10 21 | G96 | 0.3− | 0.6− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 0.7− | 0.7+ | 2006 10 21 | G96 | 0.5− | 0.4− | 2006 11 24 | 691 | 0.1+ | 0.4+ |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2006 11 02 | 703 | 0.4+ | 0.3− | 2006 11 29 | 704 | 0.4+ | 0.1− |
| 2002 10 09 | 704 | 0.4+ | 0.2− | 2006 11 02 | 703 | 1.4− | 1.4− | 2006 11 29 | 704 | 0.7+ | 0.6− |
| 2002 10 09 | 704 | 0.0 | 0.9+ | 2006 11 02 | 703 | 0.4+ | 0.6− | 2006 11 29 | 704 | 0.9+ | 0.6− |
| 2002 10 09 | 704 | 0.5+ | 0.8− | 2006 11 02 | 703 | 1.2+ | 0.2− | 2006 11 29 | 704 | 0.4− | 0.1− |
| 2002 10 09 | 704 | 0.6− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.5− | 0.3+ |
| 2002 10 09 | 704 | 0.2− | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.1− | | | | |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2− | | | | |

**(142419)∗ 2002 SC$_{34}$ = 2004 DW$_{46}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 61347)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.85433 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26094466 | $\omega$ | 238.91770 | | +0.58384615 | | −0.81181262 |
| $a$ | 2.4253278 | $\Omega$ | 175.32953 | | +0.77793632 | | +0.55618326 |
| $e$ | 0.1177975 | $i$ | 6.46044 | | +0.23224719 | | +0.17782137 |
| $P$ | 3.78 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.3+ | 0.6− | 2002 10 06 | 704 | 0.5+ | 0.5− | 2006 10 15 | D35 | 0.1− | 0.2− |
| 1998 08 17 | 704 | (3.8− | 0.3−) | 2002 10 06 | 704 | 0.1+ | 0.3− | 2006 10 15 | D35 | 0.3− | 0.0 |
| 1998 08 17 | 704 | 0.9− | 1.9− | 2002 10 06 | 704 | (1.3− | 2.1−) | 2006 10 15 | D35 | 0.3− | 0.1+ |
| 1998 08 17 | 704 | 1.4− | 0.8+ | 2002 10 07 | 704 | 0.0 | 1.4+ | 2006 10 16 | 703 | 0.4− | 1.1− |
| 2000 02 02 | 704 | 0.6+ | 1.7+ | 2002 10 07 | 704 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 2000 02 02 | 704 | 0.1+ | 0.1+ | 2002 10 07 | 704 | (1.8− | 1.1+) | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2000 02 02 | 704 | 0.4− | 0.1− | 2002 10 07 | 704 | 0.8+ | 0.5− | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2000 02 02 | 704 | 0.6+ | 1.2+ | 2002 10 11 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2000 02 02 | 704 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 1.0+ | 0.8+ | 2006 10 22 | 703 | 0.9− | 0.5+ |
| 2001 05 26 | 691 | 0.1− | 0.5+ | 2002 10 11 | 704 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.3− | 1.3+ |
| 2001 05 26 | 691 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.4− | 0.6− | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2001 05 26 | 691 | 0.3+ | 0.7+ | 2002 10 11 | 704 | 0.1− | 1.0− | 2006 11 13 | 703 | 1.2− | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.9+ | 2004 02 19 | 704 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.2− | 0.7+ | 2004 02 19 | 704 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2002 09 05 | 704 | (1.1+ | 2.2+) | 2004 02 19 | 704 | 0.6+ | 0.3+ | 2006 11 13 | 703 | 0.7− | 0.6+ |
| 2002 09 14 | 644 | 0.4− | 0.1+ | 2004 02 19 | 704 | 0.9− | 0.0 | 2006 11 14 | 704 | (1.3+ | 2.4+) |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2004 02 19 | 704 | 0.6− | 0.9+ | 2006 11 14 | 704 | (0.9− | 2.9+) |
| 2002 09 14 | 644 | 0.3− | 0.0 | 2004 02 26 | 704 | 0.1− | 0.4+ | 2006 11 14 | 704 | (0.6− | 1.7+) |
| 2002 09 16 | 608 | 0.3+ | 0.4+ | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 11 14 | 704 | (0.9− | 1.6+) |
| 2002 09 16 | 608 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.3+ | 1.3+ | 2006 11 14 | 704 | 0.8+ | 0.1+ |
| 2002 09 16 | 608 | 0.4− | 1.2+ | 2004 02 26 | 704 | 0.3− | 1.5+ | 2006 11 17 | 704 | 0.3+ | 0.6− |
| 2002 09 29 | 608 | 0.6− | 0.9− | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.3− | 0.3− |
| 2002 09 29 | 608 | 0.1+ | 0.5− | 2004 03 15 | 704 | 0.6+ | 0.5− | 2006 11 17 | 704 | 0.5− | 0.7− |
| 2002 09 29 | 608 | 0.6− | 0.7− | 2004 03 15 | 704 | 0.8+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.7− |
| 2002 10 01 | 699 | 0.4− | 1.0+ | 2004 03 15 | 704 | (1.7+ | 1.0+) | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2002 10 01 | 699 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.4− | 0.5+ |
| 2002 10 01 | 699 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 11 19 | 703 | 0.4+ | 0.5+ |
| 2002 10 01 | 699 | 0.7− | 0.6+ | 2004 03 18 | 704 | 0.3− | 0.7+ | 2006 11 19 | 703 | 0.1+ | 1.0+ |
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.9+ | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.5+ |
| 2002 10 02 | 704 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.4+ | 1.3+ | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.7+ | 2006 11 20 | 704 | 0.9+ | 1.4− |
| 2002 10 02 | 704 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.1− | 1.2+ | 2006 11 20 | 704 | 0.7+ | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.1+ | 2006 11 20 | 704 | 1.4+ | 1.1− |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.5+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 1.1+ | 1.4+ | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2002 10 03 | 704 | 0.1− | 1.2+ | 2006 09 30 | 703 | 0.1+ | 0.8+ | 2006 11 23 | G96 | 0.8− | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.5− | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2002 10 06 | 704 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ | | | | |
| 2002 10 06 | 704 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1+ | | | | |

**(142420)∗ 2002 SQ$_{34}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.73814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22406473 | $\omega$ | 126.31614 | | +0.25544365 | +0.96388323 | |
| $a$ | 2.6846462 | $\Omega$ | 158.11655 | | −0.93915870 | +0.26588995 | |
| $e$ | 0.1394259 | $i$ | 11.66349 | | −0.22962900 | −0.01522021 | |
| $P$ | 4.40 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 17 | 699 | 0.2− | 0.3+ | 2002 09 29 | 608 | 0.1− | 0.9+ | 2005 03 09 | 704 | 1.0+ | 0.3+ |
| 2001 04 17 | 699 | 1.4− | 1.1+ | 2002 10 01 | 699 | 1.2− | 1.7+ | 2005 03 09 | 704 | 0.1+ | 1.2+ |
| 2001 04 17 | 699 | 0.9+ | 0.2− | 2002 10 01 | 699 | 0.7+ | 1.4+ | 2005 03 09 | 704 | 0.5+ | 0.4− |
| 2001 04 17 | 699 | 0.6− | 0.6+ | 2002 10 01 | 699 | 0.6+ | 1.1+ | 2005 03 12 | 704 | 0.2− | 1.4+ |
| 2001 04 27 | 704 | 0.4+ | 0.2+ | 2002 10 01 | 699 | 1.0− | 0.4+ | 2005 03 12 | 704 | 0.4+ | 0.6+ |
| 2001 04 27 | 704 | 0.6+ | 1.3+ | 2002 10 06 | 608 | 0.0 | 0.0 | 2005 03 12 | 704 | 0.1− | 0.1+ |
| 2001 04 27 | 704 | 0.2+ | 1.1+ | 2002 10 06 | 608 | 0.1− | 0.3+ | 2005 03 12 | 704 | 0.2− | 0.5− |
| 2001 04 27 | 704 | 0.6+ | 0.7+ | 2002 10 06 | 608 | 0.3− | 0.6+ | 2005 03 12 | 704 | 1.1+ | 1.8+ |
| 2002 09 04 | 699 | 0.7+ | 0.1− | 2005 03 01 | 691 | 0.1+ | 0.2+ | 2005 04 16 | 691 | 0.0 | 0.0 |
| 2002 09 04 | 699 | 0.6− | 0.8+ | 2005 03 01 | 691 | 0.1+ | 0.2+ | 2005 04 16 | 691 | 0.3+ | 0.3+ |
| 2002 09 04 | 699 | 1.2+ | 0.1− | 2005 03 01 | 691 | 0.2− | 0.4+ | 2005 04 16 | 691 | 0.2+ | 0.1+ |
| 2002 09 04 | 699 | 1.6+ | 1.1+ | 2005 03 03 | 703 | 1.0− | 1.6− | 2006 05 29 | 691 | 0.1+ | 0.1− |
| 2002 09 08 | 608 | 0.3− | 1.8+ | 2005 03 03 | 703 | 0.2+ | 1.0− | 2006 05 29 | 691 | 0.0 | 0.0 |
| 2002 09 08 | 608 | 0.2+ | 1.1+ | 2005 03 03 | 703 | 0.0 | 0.5− | 2006 05 29 | 691 | 0.2+ | 0.2− |
| 2002 09 08 | 608 | 0.2+ | 0.3+ | 2005 03 03 | 703 | 1.7− | 0.2− | 2006 08 13 | 644 | 0.3− | 0.0 |
| 2002 09 13 | 608 | 1.0− | 0.0 | 2005 03 04 | 704 | 0.3+ | 1.1+ | 2006 08 13 | 644 | 0.3− | 0.1− |
| 2002 09 13 | 608 | 0.7− | 0.1+ | 2005 03 04 | 704 | 0.0 | 0.4+ | 2006 08 13 | 644 | 0.4− | 0.1− |
| 2002 09 13 | 608 | 0.2− | 0.1− | 2005 03 04 | 704 | 1.1+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2002 09 16 | 644 | 0.6− | 0.2+ | 2005 03 08 | 699 | 1.4− | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2002 09 16 | 644 | 0.5− | 0.1+ | 2005 03 08 | 699 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 09 16 | 644 | 0.3− | 0.3+ | 2005 03 08 | 699 | 1.2− | 1.9+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 09 29 | 608 | 0.2− | 0.8+ | 2005 03 08 | 699 | 1.0+ | 0.9− | | | | |
| 2002 09 29 | 608 | 0.9− | 1.4+ | 2005 03 09 | 704 | 0.9+ | 0.4+ | | | | |

**(142421)∗ 2002 SW$_{35}$ = 2000 GU$_6$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37944)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.96602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23178878 | $\omega$ | 55.51072 | | +0.27186581 | −0.95948899 | |
| $a$ | 2.6246684 | $\Omega$ | 19.12846 | | +0.79227377 | +0.17953608 | |
| $e$ | 0.1387123 | $i$ | 13.04396 | | +0.54625201 | +0.21713516 | |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 0.0 | 1.0− | 2002 10 12 | 704 | 1.1− | 0.5− | 2004 02 17 | 703 | 0.8+ | 0.1− |
| 1998 11 16 | 704 | 0.3− | 0.5− | 2002 10 12 | 704 | 0.7− | 0.7− | 2004 02 17 | 703 | 0.9+ | 0.3+ |
| 1998 11 16 | 704 | 0.7+ | 0.7+ | 2002 10 15 | 704 | 0.0 | 0.3+ | 2004 02 17 | 703 | 0.5+ | 0.2+ |
| 1998 11 16 | 704 | 0.1− | 0.7− | 2002 10 15 | 704 | 0.4− | 0.3+ | 2004 02 17 | 703 | 0.2+ | 0.3+ |
| 1998 12 14 | 704 | 1.3+ | 0.6+ | 2002 10 15 | 704 | 1.0− | 1.0− | 2004 02 21 | 608 | 0.5+ | 0.5− |
| 1998 12 14 | 704 | 0.7+ | 1.5− | 2002 10 15 | 704 | 1.2− | 0.0 | 2004 02 21 | 608 | 0.1− | 0.7− |
| 1998 12 14 | 704 | (0.3+ | 2.8−) | 2002 10 15 | 704 | 0.8− | 0.6− | 2004 02 21 | 608 | (1.7− | 1.2+) |
| 1998 12 14 | 704 | 1.3+ | 0.8+ | 2002 10 25 | 704 | (3.0+ | 0.1+) | 2004 02 25 | 113 | 0.1− | 0.0 |
| 1998 12 14 | 704 | 0.9− | 1.9+ | 2002 10 25 | 704 | 0.2+ | 0.3− | 2004 02 25 | 113 | 0.7+ | 0.5+ |
| 2000 04 04 | 704 | 0.4+ | 0.1+ | 2002 10 25 | 704 | 1.2+ | 0.4+ | 2004 02 25 | 113 | 0.1− | 0.1+ |
| 2000 04 04 | 704 | 0.4+ | 1.4+ | 2002 10 25 | 704 | 0.1+ | 0.8− | 2004 03 15 | 704 | 0.2+ | 0.1− |
| 2000 04 04 | 704 | 0.9+ | 1.1+ | 2002 10 25 | 704 | 0.3+ | 0.7− | 2004 03 15 | 704 | 0.6− | 0.9+ |
| 2000 04 04 | 704 | 0.7− | 1.5+ | 2002 10 26 | 704 | 0.4+ | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.4+ |
| 2000 04 04 | 704 | 0.3+ | 1.3+ | 2002 10 26 | 704 | 0.3+ | 1.1+ | 2004 03 15 | 704 | 0.4+ | 0.5+ |
| 2000 04 05 | 704 | 0.8+ | 0.8− | 2002 10 26 | 704 | 0.0 | 0.3− | 2004 03 15 | 704 | 0.3− | 0.3− |
| 2000 04 05 | 704 | 0.7+ | 0.6+ | 2002 10 26 | 704 | 0.1− | 0.7+ | 2004 03 19 | 644 | 0.3+ | 0.4+ |
| 2000 04 05 | 704 | 0.5+ | 1.0− | 2002 10 26 | 704 | 1.3+ | 0.8− | 2004 03 19 | 644 | 0.3+ | 0.4+ |
| 2000 04 05 | 704 | 0.0 | 0.6− | 2002 10 26 | 704 | 0.2+ | 0.5+ | 2004 03 19 | 644 | 0.4+ | 0.4+ |
| 2000 04 05 | 704 | 0.1+ | 0.0 | 2002 10 26 | 704 | 0.2− | 1.0+ | 2004 03 23 | 704 | 1.0+ | 0.3+ |
| 2000 04 06 | 704 | 0.1− | 0.3+ | 2002 10 26 | 704 | 1.2+ | 0.7− | 2004 03 23 | 704 | 0.2+ | 0.3+ |
| 2000 04 06 | 704 | 0.4− | 0.2+ | 2002 10 26 | 704 | 0.3+ | 1.0+ | 2004 03 23 | 704 | 0.8+ | 0.3+ |
| 2000 04 06 | 704 | 0.4− | 0.1+ | 2002 10 31 | 699 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.0 | 1.1+ |
| 2000 04 06 | 704 | 0.2− | 0.1− | 2002 10 31 | 699 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.6+ |
| 2002 09 29 | 608 | 0.5+ | 0.7− | 2002 10 31 | 699 | 0.5+ | 0.0 | 2004 03 25 | 704 | 0.4+ | 0.1− |
| 2002 09 29 | 608 | 0.8+ | 0.6− | 2002 10 31 | 699 | 0.7− | 0.1− | 2004 03 25 | 704 | 0.1− | 0.8+ |
| 2002 09 29 | 608 | 0.8+ | 0.9− | 2002 11 01 | 704 | 0.3− | 0.7− | 2004 03 25 | 704 | 0.3+ | 0.1− |
| 2002 10 01 | 699 | 0.6+ | 0.1+ | 2002 11 01 | 704 | 0.7− | 0.1− | 2004 03 25 | 704 | 0.5− | 0.2− |
| 2002 10 01 | 699 | 0.1+ | 0.0 | 2002 11 01 | 704 | 0.0 | 0.0 | 2004 03 25 | 704 | (0.1− | 1.6+) |
| 2002 10 01 | 699 | 0.6+ | 0.0 | 2002 11 01 | 704 | 0.1+ | 0.1− | 2004 03 26 | 703 | 0.3− | 0.3− |
| 2002 10 01 | 699 | 0.2+ | 0.5+ | 2002 11 03 | 608 | 1.1− | 0.3+ | 2004 03 26 | 703 | 0.2+ | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.4− | 2002 11 03 | 608 | 1.4− | 0.8+ | 2004 03 26 | 703 | 0.7− | 0.3− |
| 2002 10 02 | 704 | 0.3− | 0.6+ | 2002 11 03 | 608 | 1.0− | 0.3+ | 2004 03 26 | 703 | 1.5− | 0.2− |
| 2002 10 02 | 704 | 0.1− | 0.5+ | 2002 11 08 | 704 | 0.3+ | 1.0+ | 2006 08 16 | 644 | 0.0 | 0.3+ |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2002 11 08 | 704 | 1.2+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.6− | 0.4+ | 2002 11 08 | 704 | 0.8+ | 0.8+ | 2006 08 16 | 644 | 0.2+ | 0.0 |
| 2002 10 02 | 608 | 0.3− | 1.3− | 2002 11 12 | 704 | 0.5+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.5+ |
| 2002 10 02 | 608 | 0.1− | 1.4− | 2002 11 12 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.3+ |
| 2002 10 02 | 608 | 0.1+ | 1.5− | 2002 11 12 | 704 | 0.8+ | 0.9+ | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2002 11 12 | 704 | 0.9+ | 0.2+ | 2006 09 14 | 703 | (0.4+ | 1.6+) |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2002 11 12 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 1.1+ | 0.7+ |
| 2002 10 03 | 704 | 0.7− | 0.4+ | 2002 11 22 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.8+ |
| 2002 10 03 | 704 | 0.9− | 0.4+ | 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.6− | 1.1+ |
| 2002 10 07 | 644 | 0.6− | 0.6− | 2002 11 22 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.7− | 0.1+ |
| 2002 10 07 | 644 | 0.4− | 0.4− | 2002 12 01 | 704 | 0.5+ | 0.8− | 2006 09 20 | 703 | 0.5− | 0.4+ |
| 2002 10 07 | 704 | 0.2− | 0.5− | 2002 12 01 | 704 | 0.3− | 0.3+ | 2006 09 20 | 703 | 0.2− | 0.4+ |
| 2002 10 07 | 704 | 0.6− | 0.5− | 2002 12 01 | 704 | 0.5+ | 1.4+ | 2006 09 20 | 703 | 1.0− | 0.2+ |
| 2002 10 07 | 704 | 0.2+ | 0.4− | 2002 12 06 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 703 | (0.7+ | 1.9+) |
| 2002 10 07 | 644 | 0.6− | 0.6− | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 1.2+ | 0.8+ |
| 2002 10 07 | 704 | 0.2− | 0.1− | 2002 12 06 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 1.4+ |
| 2002 10 11 | 704 | 0.6− | 0.1+ | 2002 12 11 | 704 | 0.4− | 0.8+ | 2006 09 26 | 703 | (1.1+ | 2.6+) |
| 2002 10 11 | 704 | 0.6− | 0.3− | 2002 12 11 | 704 | 0.5− | 0.3+ | 2006 10 02 | 703 | 1.2− | 0.3+ |
| 2002 10 11 | 704 | 0.2− | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.5− | 1.0+ |
| 2002 10 11 | 704 | 0.5− | 0.5− | 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 703 | 0.4− | 1.1+ |
| 2002 10 11 | 704 | 0.6− | 0.2+ | 2004 02 17 | 704 | 0.3− | 0.5+ | 2006 10 02 | 703 | 1.4− | 1.3+ |
| 2002 10 12 | 704 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.8+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.6+ |
| 2002 10 12 | 704 | 0.2− | 0.2+ | 2004 02 17 | 704 | 0.2− | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 1.2− | 0.1− | 2004 02 17 | 704 | 0.1− | 1.0+ | 2006 10 09 | 644 | 0.0 | 0.2+ |

**(142422)∗ 2002 SY$_{35}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.45962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23002172 | $\omega$ | 199.36728 | | +0.88775148 | −0.46030898 | |
| $a$ | 2.6380933 | $\Omega$ | 188.04259 | | +0.42565891 | +0.82385176 | |
| $e$ | 0.1759819 | $i$ | 1.47404 | | +0.17524782 | +0.33073240 | |
| $P$ | 4.28 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 08 | 691 | 0.7+ | 0.7− | 2002 10 31 | 699 | 1.1− | 1.1+ | 2006 08 30 | 704 | 1.1+ | 0.6− |
| 1994 12 08 | 691 | 0.1+ | 0.0 | 2002 10 31 | 699 | 0.4− | 0.8+ | 2006 08 30 | 704 | (2.1+ | 2.5−) |
| 1994 12 08 | 691 | 0.3− | 0.1+ | 2002 11 03 | 608 | 0.3+ | 0.7+ | 2006 09 01 | 704 | 1.1+ | 0.2+ |
| 2000 04 11 | 691 | 0.2− | 0.1+ | 2002 11 03 | 608 | 0.1− | 0.2+ | 2006 09 01 | 704 | 0.9+ | 0.1− |
| 2000 04 11 | 691 | 0.8− | 0.1+ | 2002 11 03 | 608 | 0.1+ | 0.4+ | 2006 09 01 | 704 | 0.9+ | 1.1+ |
| 2000 04 11 | 691 | 0.0 | 0.9− | 2002 11 06 | 704 | 0.2− | 0.8+ | 2006 09 09 | 644 | 0.0 | 0.2− |
| 2002 09 29 | 608 | 0.1− | 0.6− | 2002 11 06 | 704 | 0.6+ | 1.3+ | 2006 09 09 | 644 | 0.1− | 0.2− |
| 2002 09 29 | 608 | 0.1− | 0.8− | 2002 11 06 | 704 | 0.5− | 1.2+ | 2006 09 09 | 644 | 0.2+ | 0.1− |
| 2002 09 29 | 608 | 0.0 | 0.6− | 2002 11 06 | 704 | 0.3+ | 1.0+ | 2006 09 14 | 703 | 0.5− | 0.6− |
| 2002 10 01 | 699 | 0.4− | 0.1+ | 2002 11 06 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 2002 10 01 | 699 | 0.2+ | 0.2+ | 2004 02 29 | 691 | 0.4+ | 0.4+ | 2006 09 14 | 644 | 0.5− | 0.1− |
| 2002 10 01 | 699 | 0.7− | 0.4+ | 2004 02 29 | 691 | 0.5+ | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2002 10 01 | 699 | 0.3− | 0.4+ | 2004 02 29 | 691 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.5− | 0.8− |
| 2002 10 02 | 704 | 0.5− | 0.7− | 2004 03 26 | 691 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.4+ | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 0.5− | 2004 03 26 | 691 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.8− | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.4+ |
| 2002 10 02 | 704 | 0.2− | 1.1− | 2005 05 12 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.8− | 0.7+ |
| 2002 10 02 | 704 | 0.6− | 1.1− | 2005 05 12 | 691 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.3− | 1.1− | 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 1.1− | 0.4− |
| 2002 10 03 | 704 | 0.6− | 0.3− | 2006 08 13 | 644 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.3− | 0.3+ |
| 2002 10 03 | 704 | 0.3− | 0.5− | 2006 08 13 | 644 | 0.6− | 0.0 | 2006 09 18 | 699 | 0.8− | 0.4+ |
| 2002 10 03 | 704 | 0.2− | 0.2− | 2006 08 13 | 644 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.6− | 0.9− | 2006 08 19 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.6+ | 1.1+ |
| 2002 10 07 | 704 | 0.1− | 0.3+ | 2006 08 19 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.0 |
| 2002 10 07 | 704 | 0.9+ | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.8− | 0.2− |
| 2002 10 07 | 704 | 0.4+ | 0.2− | 2006 08 28 | 699 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.0 |
| 2002 10 07 | 704 | 0.2+ | 0.3− | 2006 08 28 | 699 | 0.4− | 0.6+ | 2006 09 20 | 704 | 0.7− | 0.3+ |
| 2002 10 07 | 704 | 0.6+ | 0.4− | 2006 08 28 | 699 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.7− | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.4− | 0.1+ |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2002 10 11 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.8− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2002 10 30 | 644 | 0.0 | 0.7+ | 2006 08 29 | 704 | 1.2+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2002 10 30 | 644 | 0.1+ | 0.4+ | 2006 08 29 | 704 | 0.9+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2002 10 30 | 644 | 0.0 | 0.5+ | 2006 08 29 | 704 | 0.7+ | 0.8+ | 2006 10 27 | G96 | 0.8− | 0.3− |
| 2002 10 31 | 699 | 0.3− | 0.4− | 2006 08 29 | 704 | 1.2+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 10 31 | 699 | 0.0 | 0.6+ | 2006 08 30 | 704 | 1.1+ | 0.0 | | | | |

**(142423)∗ 2002 SZ$_{35}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.00125 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23704137 | $\omega$ | 186.69413 | | +0.93182077 | | −0.36241829 |
| $a$ | 2.5857505 | $\Omega$ | 194.59870 | | +0.33637856 | | +0.88219360 |
| $e$ | 0.2069202 | $i$ | 4.33543 | | +0.13623333 | | +0.30064504 |
| $P$ | 4.16 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.2− | 0.1+ | 2002 11 06 | 704 | 0.2− | 0.3+ | 2006 09 18 | 704 | (0.4+ | 1.7−) |
| 1996 03 20 | 691 | 0.3− | 0.0 | 2002 11 06 | 704 | 0.8− | 0.7+ | 2006 09 19 | 703 | (2.5− | 1.5+) |
| 1996 03 20 | 691 | 0.3− | 0.1+ | 2002 11 07 | 695 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 1998 11 18 | 704 | 0.0 | 0.9+ | 2002 11 07 | 695 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.2− |
| 1998 11 18 | 704 | 1.0+ | 0.5− | 2002 11 20 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.2− |
| 1998 11 18 | 704 | (0.0 | 2.2−) | 2002 11 20 | 644 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.8− |
| 1998 11 18 | 704 | 1.2− | 0.3− | 2002 11 20 | 644 | 0.1− | 0.8+ | 2006 09 19 | 699 | 0.3− | 0.0 |
| 1998 11 23 | 699 | (0.4− | 2.4+) | 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.1+ |
| 1998 11 23 | 699 | 1.2+ | 0.3+ | 2002 12 05 | 704 | 0.5− | 0.0 | 2006 09 24 | 608 | 0.8+ | 0.5− |
| 1998 11 23 | 699 | 0.7+ | 0.8+ | 2002 12 05 | 704 | 0.1− | 0.7+ | 2006 09 24 | 608 | 0.5+ | 0.6− |
| 1998 11 24 | 704 | 0.7− | 1.4+ | 2005 05 08 | 691 | 0.0 | 0.0 | 2006 09 24 | 608 | 0.2+ | 0.0 |
| 1998 11 24 | 704 | 1.8+ | 0.5+ | 2005 05 08 | 691 | 0.8+ | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.2+ |
| 1998 11 24 | 704 | 0.6− | 1.2− | 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.9+ |
| 1998 11 24 | 704 | 1.3− | 1.8− | 2005 05 12 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.1+ |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2005 05 12 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.2− |
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2005 05 12 | 691 | 0.7− | 0.4− | 2006 09 26 | 704 | 1.4− | 0.5+ |
| 2002 09 29 | 608 | 0.6+ | 0.3− | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.3− | 0.5+ |
| 2002 09 29 | 608 | 0.5+ | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.4+ |
| 2002 09 29 | 608 | 0.6+ | 0.2− | 2006 08 15 | 644 | 0.4− | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.6− |
| 2002 10 01 | 699 | 0.1− | 0.5+ | 2006 08 20 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.7− | 0.3− |
| 2002 10 01 | 699 | 0.3− | 0.4+ | 2006 08 20 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.2− |
| 2002 10 01 | 699 | 1.2+ | 0.1− | 2006 08 20 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.2− |
| 2002 10 01 | 699 | 0.5− | 0.8+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.6− |
| 2002 10 02 | 704 | 0.1+ | 0.6− | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2002 10 02 | 704 | 0.3+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 10 02 | 704 | 0.7− | 0.6− | 2006 08 23 | 644 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.5+ | 0.2− | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2002 10 02 | 704 | 0.2− | 1.5− | 2006 08 23 | 644 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.5+ | 0.1+ |
| 2002 10 02 | 704 | 0.5+ | 0.5− | 2006 08 24 | 704 | 0.8+ | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.5+ | 0.9− | 2006 08 24 | 704 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.3− | 1.1− | 2006 08 24 | 704 | 0.0 | 0.4− | 2006 09 29 | 704 | 1.4+ | 0.1+ |
| 2002 10 03 | 704 | 0.5+ | 0.6− | 2006 08 24 | 704 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.7+ | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.4− | 2006 08 24 | 704 | 1.3+ | 0.3+ | 2006 09 30 | 704 | (0.8+ | 1.6+) |
| 2002 10 03 | 704 | 0.2+ | 1.2− | 2006 08 27 | 699 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.2+ | 1.1+ |
| 2002 10 07 | 704 | 0.5+ | 1.1+ | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 09 30 | 699 | 0.4+ | 0.0 |
| 2002 10 07 | 704 | 0.2+ | 1.1+ | 2006 08 27 | 699 | 0.6− | 0.7+ | 2006 09 30 | 704 | (1.8− | 0.3+) |
| 2002 10 07 | 704 | 0.7− | 1.2+ | 2006 08 27 | 699 | 0.1+ | 0.9− | 2006 09 30 | 699 | 0.1+ | 0.4+ |
| 2002 10 07 | 704 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 2002 10 07 | 704 | 0.0 | 1.0+ | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 09 30 | 699 | 0.2− | 0.8+ |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.4− | 0.6+ |
| 2002 10 11 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.3+ | 2006 09 30 | 699 | 0.8− | 0.8+ |
| 2002 10 11 | 704 | 0.7+ | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 0.6+ | 0.6+ | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3− |
| 2002 10 12 | 704 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.2− | 0.3− | 2006 08 30 | 704 | 0.6− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 10 12 | 704 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.7− | 2006 11 11 | G96 | 0.5− | 0.8− |
| 2002 10 14 | 704 | (1.6− | 1.1−) | 2006 08 30 | 704 | (0.5+ | 1.8+) | 2006 11 11 | 703 | 0.9+ | 0.8− |
| 2002 10 14 | 704 | 0.8− | 0.3− | 2006 08 30 | 704 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2002 10 14 | 704 | 1.5− | 0.1+ | 2006 08 30 | 704 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2002 10 14 | 704 | 0.8− | 0.1− | 2006 09 01 | 704 | 0.8− | 1.4+ | 2006 11 11 | 703 | (2.1− | 0.8−) |
| 2002 10 14 | 704 | 0.5− | 0.4+ | 2006 09 01 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.7+ | 0.4− |
| 2002 10 30 | 644 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.8+ | 0.6− | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2002 10 30 | 644 | 0.2− | 0.1+ | 2006 09 01 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.8+ |
| 2002 10 30 | 644 | 0.3− | 0.1+ | 2006 09 01 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2002 10 31 | 704 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2002 10 31 | 704 | 0.3− | 0.3− | 2006 09 12 | 703 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 10 31 | 704 | 0.4+ | 0.1− | 2006 09 12 | 703 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 10 31 | 704 | 0.2− | 0.4− | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.5− | 0.0 |
| 2002 11 03 | 608 | 0.2− | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 11 03 | 608 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 11 18 | 703 | 0.0 | 0.5− |
| 2002 11 03 | 608 | 0.2+ | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 11 18 | 703 | 0.6− | 0.5− |
| 2002 11 05 | 699 | 0.5+ | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 11 18 | 703 | (0.5+ | 2.0−) |
| 2002 11 05 | 699 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 11 18 | 703 | 0.4+ | 1.5− |
| 2002 11 05 | 699 | 0.2− | 0.5− | 2006 09 18 | 704 | 0.9− | 1.1− | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2002 11 05 | 699 | 0.2+ | 0.4− | 2006 09 18 | 704 | 0.6+ | 0.8− | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2002 11 06 | 704 | (1.6+ | 0.7+) | 2006 09 18 | 704 | 1.3− | 0.7− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2002 11 06 | 704 | 0.1− | 0.5+ | 2006 09 18 | 704 | (0.0 | 1.5−) | 2006 11 21 | G96 | 0.2− | 0.0 |

**(142424)∗ 2002 SC$_{36}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.37531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26838426 | $\omega$ | 69.57476 | | +0.48856379 | | +0.87230112 |
| $a$ | 2.3802981 | $\Omega$ | 229.68745 | | −0.80994458 | | +0.44491895 |
| $e$ | 0.1352416 | $i$ | 1.49575 | | −0.32449222 | | +0.20282475 |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 691 | 0.3− | 1.0− | 2002 10 03 | 704 | 0.5+ | 0.0 | 2006 10 17 | G96 | 0.7− | 0.4− |
| 1997 04 07 | 691 | 0.2− | 0.6− | 2002 10 11 | 704 | 0.8+ | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.4− |
| 1997 04 07 | 691 | 0.7− | 0.0 | 2002 10 11 | 704 | 0.6− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 1998 08 17 | 704 | (2.3− | 1.6+) | 2002 10 11 | 704 | 0.9− | 1.0+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 1998 08 17 | 704 | 1.0− | 1.1+ | 2002 10 11 | 704 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 1998 08 17 | 704 | 0.8+ | 0.5+ | 2002 10 11 | 704 | 0.6+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 1998 08 17 | 704 | (0.1− | 2.1−) | 2002 10 28 | 049 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.7− |
| 1998 08 17 | 704 | 0.9− | 0.7− | 2002 10 28 | 049 | 0.4+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2001 03 23 | 691 | 0.3+ | 1.0+ | 2002 10 28 | 049 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 2001 03 23 | 691 | 0.2+ | 0.5+ | 2004 01 30 | 691 | 0.5+ | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2001 03 23 | 691 | 0.4+ | 0.7+ | 2004 01 30 | 691 | 0.2+ | 0.3+ | 2006 11 23 | 291 | 0.3− | 0.3+ |
| 2001 04 16 | 699 | 0.6+ | 0.1− | 2004 01 30 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 291 | 0.3− | 0.4+ |
| 2001 04 16 | 699 | 0.7+ | 0.8+ | 2005 06 16 | G96 | 0.1+ | 0.2+ | 2006 11 23 | 291 | 0.4− | 0.3+ |
| 2001 04 16 | 699 | 0.2+ | 0.3+ | 2005 06 16 | G96 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 04 16 | 699 | 0.7− | 0.4+ | 2005 06 16 | G96 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2002 09 29 | 608 | 0.7− | 0.2− | 2005 06 16 | G96 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2002 09 29 | 608 | 0.0 | 0.2− | 2005 07 05 | G96 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.6− | 0.3+ |
| 2002 09 29 | 608 | 0.3− | 0.2+ | 2005 07 05 | G96 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 10 01 | 699 | 0.6− | 0.4− | 2005 07 05 | G96 | 0.7− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2002 10 01 | 699 | 0.1+ | 0.0 | 2005 07 05 | G96 | (0.1− | 1.9−) | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 10 01 | 699 | 0.8+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2002 10 01 | 699 | 0.4− | 1.0+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 27 | 703 | 1.2− | 0.5− |
| 2002 10 03 | 704 | 1.2+ | 0.3− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.6+ | 0.7+ | 2006 09 27 | G96 | 0.3− | 0.5− | 2006 11 27 | 703 | 0.7+ | 0.0 |
| 2002 10 03 | 704 | 0.1− | 1.4+ | 2006 10 17 | G96 | 0.5− | 0.0 | 2006 11 27 | 703 | 0.5+ | 0.7− |

**(142425)∗ 2002 SQ$_{37}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.86382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23152439 | $\omega$ | 291.50826 | | +0.71759284 | +0.69132313 | |
| $a$ | 2.6266662 | $\Omega$ | 25.00410 | | −0.54186453 | +0.63036660 | |
| $e$ | 0.1921599 | $i$ | 11.52584 | | −0.43754240 | +0.35314343 | |
| $P$ | 4.26 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.0 | 0.2+ | 2002 10 11 | 704 | 0.1− | 0.4+ | 2005 05 13 | G96 | 0.2− | 0.4+ |
| 2001 05 24 | 807 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.5− | 0.6+ | 2005 05 13 | G96 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.6− | 0.6− | 2002 10 11 | 704 | 0.6− | 0.5+ | 2005 05 13 | G96 | 0.6− | 0.3+ |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2002 10 30 | 291 | 0.2− | 0.0 | 2005 05 13 | G96 | 1.2− | 0.1− |
| 2002 09 07 | 704 | 1.1− | 1.2− | 2002 10 30 | 291 | 0.1− | 0.0 | 2006 07 30 | E12 | 0.8+ | 1.4+ |
| 2002 09 14 | 608 | 0.4− | 0.2+ | 2002 10 30 | 291 | 0.1− | 0.1− | 2006 07 30 | E12 | 0.2− | 0.3− |
| 2002 09 14 | 608 | 0.6− | 0.4− | 2002 11 01 | 704 | 0.4− | 0.5+ | 2006 07 30 | E12 | 0.2− | 1.0+ |
| 2002 09 14 | 608 | 0.4− | 0.6− | 2002 11 01 | 704 | 0.4+ | 1.5+ | 2006 07 30 | E12 | 0.6− | 0.7− |
| 2002 09 29 | 608 | 0.7+ | 0.4+ | 2002 11 01 | 704 | 0.8+ | 1.3+ | 2006 08 14 | 644 | 0.2− | 0.2+ |
| 2002 09 29 | 608 | 0.6+ | 0.6+ | 2002 11 22 | 644 | 0.5− | 0.7+ | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 2002 09 29 | 608 | 0.9+ | 1.2+ | 2002 11 22 | 644 | 0.3− | 0.7+ | 2006 08 14 | 644 | 0.3− | 0.1− |
| 2002 10 01 | 699 | (0.6+ | 2.2−) | 2002 11 22 | 644 | 0.5− | 0.5+ | 2006 08 28 | E12 | 0.3+ | 0.2+ |
| 2002 10 01 | 699 | (1.9+ | 0.3+) | 2005 03 10 | 691 | 0.1− | 0.2+ | 2006 08 28 | E12 | 0.4− | 0.1− |
| 2002 10 01 | 699 | 1.4− | 0.7+ | 2005 03 10 | 691 | 0.2+ | 0.2+ | 2006 08 28 | E12 | 0.3− | 0.4− |
| 2002 10 01 | 699 | 1.0+ | 0.4+ | 2005 03 10 | 691 | 0.3− | 0.5+ | 2006 08 28 | E12 | 0.8− | 0.8+ |
| 2002 10 02 | 704 | (1.8+ | 0.8−) | 2005 03 11 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 703 | 0.7− | 0.3+ |
| 2002 10 02 | 704 | (1.7+ | 0.3+) | 2005 03 11 | 691 | 0.3+ | 0.0 | 2006 09 20 | 703 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.3+ | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 703 | 0.5− | 0.4+ |
| 2002 10 02 | 704 | 0.0 | 0.6− | 2005 04 01 | 691 | 0.4+ | 0.5+ | 2006 09 20 | 703 | 0.3− | 1.0+ |
| 2002 10 03 | 704 | 0.7− | 0.5+ | 2005 04 01 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.4+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2005 04 01 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2005 04 04 | 703 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2005 04 04 | 703 | 0.7+ | 0.4− | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2002 10 07 | 704 | 0.4+ | 0.0 | 2005 04 04 | 703 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.4− |
| 2002 10 07 | 704 | 0.2+ | 0.4+ | 2005 04 04 | 703 | 0.7+ | 0.9− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2002 10 07 | 704 | 0.3+ | 0.8+ | 2005 05 06 | G96 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.5+ | 0.1− |
| 2002 10 07 | 704 | (0.2+ | 1.6+) | 2005 05 06 | G96 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2002 10 10 | 644 | 0.4− | 0.5− | 2005 05 06 | G96 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.3+ |
| 2002 10 10 | 644 | 0.5− | 0.4− | 2005 05 06 | G96 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2002 10 10 | 644 | 0.2− | 0.4− | 2005 05 12 | 691 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.4− |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2005 05 12 | 691 | 0.1− | 0.3− | | | | |
| 2002 10 11 | 704 | 0.4− | 0.1− | 2005 05 12 | 691 | 0.3+ | 0.1+ | | | | |

**(142426)∗ 2002 SH$_{39}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.10487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23231072 | $\omega$ | 317.63433 | | +0.86172412 | −0.50147834 | |
| $a$ | 2.6207357 | $\Omega$ | 72.61645 | | +0.48448640 | +0.76812698 | |
| $e$ | 0.1696262 | $i$ | 4.63656 | | +0.15068004 | +0.39812111 | |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 11 | 691 | 0.3− | 0.7− | 2002 10 06 | 608 | 1.2+ | 1.3+ | 2005 04 07 | G96 | 0.4+ | 0.1+ |
| 1996 04 11 | 691 | 0.1− | 0.3− | 2002 10 11 | 704 | 1.0− | 0.1− | 2005 05 08 | G96 | 0.2+ | 0.2+ |
| 1996 04 11 | 691 | 0.3− | 0.1− | 2002 10 11 | 704 | 1.1− | 1.0+ | 2005 05 08 | G96 | 0.1− | 0.3+ |
| 2002 09 16 | 608 | 0.4− | 0.1− | 2002 10 11 | 704 | 0.7− | 0.1+ | 2005 05 08 | G96 | 0.0 | 0.4+ |
| 2002 09 16 | 608 | 0.4− | 0.4− | 2002 10 11 | 704 | 0.4− | 1.2+ | 2005 05 08 | G96 | 0.2+ | 0.0 |
| 2002 09 16 | 608 | 0.3− | 0.2− | 2002 10 11 | 704 | 0.7− | 0.0 | 2005 06 13 | G96 | 0.3+ | 0.4+ |
| 2002 09 29 | 683 | 1.4− | 0.1+ | 2002 10 31 | 704 | 0.4+ | 0.4− | 2005 06 13 | G96 | 0.3+ | 0.8+ |
| 2002 09 29 | 683 | 1.1+ | 0.7+ | 2002 10 31 | 704 | 0.1+ | 0.1− | 2005 06 13 | G96 | 0.2+ | 0.8+ |
| 2002 09 29 | 683 | 0.8− | 0.5+ | 2002 10 31 | 704 | 0.5+ | 0.0 | 2005 06 13 | G96 | 0.2+ | 0.2+ |
| 2002 09 30 | 704 | 1.2− | 0.0 | 2002 10 31 | 704 | 0.7+ | 0.4− | 2006 08 15 | 644 | 0.7− | 0.1− |
| 2002 09 30 | 704 | 0.7+ | 0.2+ | 2002 10 31 | 704 | 0.8+ | 0.5− | 2006 08 15 | 644 | 0.6− | 0.0 |
| 2002 09 30 | 704 | 0.1+ | 0.3− | 2002 11 05 | 699 | 0.4+ | 0.1− | 2006 08 15 | 644 | 0.5− | 0.1+ |
| 2002 09 30 | 704 | 0.7+ | 0.9− | 2002 11 05 | 699 | 0.3+ | 0.6+ | 2006 08 19 | 644 | 0.2+ | 0.3+ |
| 2002 09 30 | 704 | 0.3+ | 0.5+ | 2002 11 05 | 699 | 0.1− | 0.2+ | 2006 08 19 | 644 | 0.3− | 0.1− |
| 2002 10 01 | 699 | 0.4+ | 0.7− | 2002 11 05 | 699 | 1.4− | 0.6− | 2006 08 19 | 644 | 0.1− | 0.4+ |
| 2002 10 01 | 699 | 0.1+ | 0.1+ | 2002 11 07 | 704 | 1.3+ | 0.6− | 2006 09 18 | 699 | 1.2+ | 0.1− |
| 2002 10 01 | 699 | 0.1+ | 0.2− | 2002 11 07 | 704 | 0.1− | 0.9− | 2006 09 18 | 699 | 0.6+ | 0.0 |
| 2002 10 01 | 699 | 0.3+ | 0.4− | 2002 11 07 | 704 | 0.4− | 0.7− | 2006 09 18 | 699 | 0.0 | 0.6+ |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2002 11 07 | 704 | 0.4− | 1.2+ | 2006 09 18 | 699 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2004 02 17 | 691 | 0.2+ | 0.8+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.5− | 2004 02 17 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.2− | 0.2− | 2004 02 17 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.6+ |
| 2002 10 03 | 704 | 0.5− | 0.2+ | 2005 04 07 | G96 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 1.0− | 0.4+ |
| 2002 10 06 | 608 | 1.6+ | 1.0+ | 2005 04 07 | G96 | 0.4+ | 0.3+ | | | | |
| 2002 10 06 | 608 | 1.2+ | 1.0+ | 2005 04 07 | G96 | 0.4+ | 0.5+ | | | | |

**(142427)∗ 2002 SY$_{39}$**

Discovered 2002 Sept. 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.43969 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25186122 | $\omega$ | 7.93842 | | +0.15471988 | −0.98038894 | |
| $a$ | 2.4832961 | $\Omega$ | 73.22360 | | +0.89928634 | +0.08859639 | |
| $e$ | 0.1015493 | $i$ | 7.32450 | | +0.40907925 | +0.17603467 | |
| $P$ | 3.91 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | (3.6+ | 0.5−) | 2004 02 14 | 201 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.2− |
| 2000 03 04 | 704 | 1.0+ | 0.1− | 2004 02 16 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 703 | 0.4+ | 0.1+ |
| 2000 03 04 | 704 | 0.0 | 0.4+ | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.3− |
| 2002 09 14 | 608 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.2− | 0.5+ | 2006 09 18 | 703 | (3.6− | 0.8−) |
| 2002 09 14 | 608 | 0.6− | 0.4− | 2004 02 16 | 704 | 0.0 | 0.7+ | 2006 09 21 | 699 | 0.4+ | 0.2+ |
| 2002 09 14 | 608 | 0.7− | 0.1+ | 2004 02 16 | 704 | 0.3− | 0.5+ | 2006 09 21 | 699 | 0.3+ | 0.4+ |
| 2002 09 17 | 644 | 0.4− | 0.5+ | 2004 02 17 | 691 | 0.3− | 0.3+ | 2006 09 21 | 699 | (2.9+ | 0.8+) |
| 2002 09 17 | 644 | 0.4− | 0.6+ | 2004 02 17 | 691 | 0.3− | 0.3+ | 2006 09 21 | 699 | 0.1+ | 0.6+ |
| 2002 09 17 | 644 | 0.4− | 0.5+ | 2004 02 17 | 691 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.0 |
| 2002 09 30 | 608 | 0.8− | 0.0 | 2004 02 18 | 291 | 0.1+ | 0.0 | 2006 09 25 | 699 | (1.0− | 1.6+) |
| 2002 09 30 | 608 | 0.1− | 0.3− | 2004 02 18 | 291 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.1+ |
| 2002 09 30 | 608 | 0.4− | 0.2− | 2004 02 18 | 291 | 0.9+ | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.2− |
| 2002 10 01 | 699 | 0.6+ | 0.4+ | 2004 02 18 | 608 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.1+ |
| 2002 10 01 | 699 | 0.1− | 0.6+ | 2004 02 18 | 608 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.6− | 0.0 |
| 2002 10 01 | 699 | 0.2− | 0.6+ | 2004 02 18 | 608 | 0.0 | 0.5− | 2006 09 26 | 703 | 0.6+ | 1.2− |
| 2002 10 01 | 699 | 0.5− | 0.2+ | 2004 02 19 | 704 | 0.4− | 0.7+ | 2006 09 26 | 703 | 1.0− | 0.9− |
| 2002 10 04 | 704 | (2.8+ | 1.1+) | 2004 02 19 | 704 | 0.1+ | 0.7+ | 2006 09 30 | 704 | 0.3− | 0.4− |
| 2002 10 04 | 704 | (2.5+ | 1.4+) | 2004 02 19 | 704 | 0.3− | 0.7+ | 2006 09 30 | 704 | 0.2− | 0.6+ |
| 2002 10 04 | 704 | (2.6+ | 1.2+) | 2004 02 19 | 704 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.5− | 0.4− |
| 2002 10 04 | 704 | (3.0+ | 1.4+) | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 704 | 0.0 | 0.7+ |
| 2002 10 04 | 704 | (3.6+ | 1.0+) | 2004 02 23 | 608 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2002 10 05 | 704 | 1.1+ | 0.5− | 2004 02 23 | 608 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 1.2+ |
| 2002 10 05 | 704 | 0.3+ | 0.7+ | 2004 02 23 | 608 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 10 05 | 704 | 0.0 | 1.1+ | 2004 03 14 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2002 10 05 | 704 | 0.6− | 0.2+ | 2004 03 14 | 704 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.0 |
| 2002 10 16 | 644 | 0.1− | 0.7+ | 2004 03 14 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2002 10 16 | 644 | 0.0 | 0.3+ | 2004 03 14 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 16 | 644 | 0.4− | 0.8+ | 2004 03 15 | 704 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 10 29 | 704 | 0.7− | 0.5+ | 2004 03 15 | 704 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 10 29 | 704 | (1.0− | 1.7+) | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 10 29 | 704 | 0.2− | 0.8+ | 2004 03 15 | 704 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.8+ | 0.4− |
| 2002 10 29 | 704 | 0.3− | 1.1+ | 2004 03 15 | 704 | 0.6+ | 0.3− | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2003 12 23 | 704 | 0.3+ | 0.8+ | 2004 03 18 | 703 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2003 12 23 | 704 | 0.8+ | 0.8+ | 2004 03 18 | 703 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2003 12 23 | 704 | 1.0+ | 0.3− | 2004 03 18 | 703 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2004 01 29 | 703 | 0.5− | 0.5− | 2004 03 18 | 703 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2004 01 29 | 703 | 0.7− | 0.9− | 2004 03 23 | 704 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2004 01 29 | 703 | 1.0− | 1.1− | 2004 03 23 | 704 | 0.7+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2004 01 29 | 703 | 1.1− | 0.8− | 2004 03 23 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2004 01 30 | 699 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2004 01 30 | 699 | 1.3− | 1.1− | 2004 03 23 | 704 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.5+ | 0.5− |
| 2004 01 30 | 699 | 0.3− | 0.3+ | 2004 04 13 | 703 | 1.1+ | 0.5+ | 2006 10 28 | 703 | 0.5+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 699 | 1.0− | 1.1− | 2004 04 13 | 703 | (1.8+ | 0.8+) | 2006 10 28 | 703 | 0.1+ | 0.7− |
| 2004 01 30 | 704 | 0.1− | 1.3− | 2004 04 13 | 703 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2004 01 30 | 704 | 0.5+ | 0.6− | 2004 04 13 | 703 | 0.9+ | 0.8+ | 2006 11 10 | 644 | 0.1+ | 0.4− |
| 2004 01 30 | 704 | 0.2− | 0.7− | 2004 04 25 | 703 | 0.7− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.4− |
| 2004 01 30 | 704 | 0.2+ | 0.4− | 2004 04 25 | 703 | (1.8− | 0.6+) | 2006 11 10 | 644 | 0.2+ | 0.5− |
| 2004 02 13 | 201 | 0.2− | 0.1− | 2004 04 25 | 703 | 0.9− | 0.6− | | | | |
| 2004 02 14 | 201 | 0.6− | 0.3− | 2004 04 25 | 703 | (2.4− | 1.2−) | | | | |

**(142428)∗ 2002 SH$_{41}$**

Discovered 2002 Sept. 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.60860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25761674 | $\omega$ | 220.32424 | | +0.99933858 | −0.00189742 | |
| $a$ | 2.4461701 | $\Omega$ | 139.73987 | | +0.01477512 | +0.93367931 | |
| $e$ | 0.2135356 | $i$ | 3.22132 | | −0.03322783 | +0.35810521 | |
| $P$ | 3.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.6− | 0.1+ | 2002 10 31 | 699 | 0.0 | 0.7+ | 2006 10 27 | 291 | 0.2− | 0.2− |
| 1996 01 13 | 691 | 0.4− | 0.1+ | 2002 10 31 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 291 | 0.1− | 0.1− |
| 1996 01 13 | 691 | 0.2− | 0.0 | 2002 10 31 | 699 | 0.4− | 0.9+ | 2006 10 27 | 291 | 0.0 | 0.1− |
| 2000 02 05 | 691 | 0.4+ | 0.4− | 2002 10 31 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 291 | 0.4− | 0.8+ |
| 2000 02 05 | 691 | 0.4+ | 0.5− | 2002 10 31 | 704 | 0.0 | 0.0 | 2006 10 28 | 291 | 0.3− | 0.1− |
| 2000 02 05 | 691 | 0.3+ | 0.5− | 2002 10 31 | 699 | 0.2− | 0.1− | 2006 10 28 | 291 | 0.4− | 0.1− |
| 2002 09 05 | 704 | 0.1− | 0.8− | 2002 10 31 | 704 | 0.3− | 0.2+ | 2006 10 28 | 291 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | (1.0+ | 1.8−) | 2002 10 31 | 704 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.2+ |
| 2002 09 05 | 704 | (0.6+ | 2.4−) | 2002 11 07 | 704 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2002 09 05 | 704 | (0.9+ | 1.8−) | 2002 11 07 | 704 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.2+ |
| 2002 09 05 | 704 | 0.7+ | 1.5− | 2002 11 07 | 704 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.5− | 0.3− |
| 2002 09 30 | 608 | 0.3− | 0.2− | 2002 11 07 | 704 | 0.9+ | 0.4+ | 2006 11 02 | 703 | 0.2− | 0.4− |
| 2002 09 30 | 608 | 0.2+ | 0.5− | 2002 11 07 | 704 | 0.6+ | 0.5+ | 2006 11 02 | 703 | 0.3− | 0.4+ |
| 2002 09 30 | 608 | 0.0 | 0.4− | 2002 11 11 | 704 | 0.0 | 0.4− | 2006 11 02 | 703 | 0.4− | 0.4+ |
| 2002 10 01 | 704 | 0.8− | 0.4+ | 2002 11 11 | 704 | 0.8− | 0.0 | 2006 11 14 | 704 | 0.4+ | 1.3+ |
| 2002 10 01 | 704 | 0.4+ | 0.3− | 2002 11 11 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.1− |
| 2002 10 01 | 704 | 0.6− | 0.3+ | 2002 11 11 | 704 | 0.5− | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.1+ |
| 2002 10 01 | 704 | 0.1− | 0.0 | 2004 02 17 | 691 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.5− | 0.7− |
| 2002 10 02 | 704 | 0.2− | 0.5− | 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 704 | 0.6+ | 0.3+ |
| 2002 10 02 | 704 | 0.4− | 0.6+ | 2004 02 17 | 691 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.0 | 1.0− |
| 2002 10 02 | 704 | 0.1− | 1.0− | 2004 02 29 | 691 | 0.6+ | 0.7+ | 2006 11 17 | 704 | 0.3+ | 0.2− |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.7+ | 2006 11 17 | 704 | 0.3+ | 1.1− |
| 2002 10 03 | 704 | 0.5− | 0.7− | 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.6+ | 0.5− | 2005 05 14 | G96 | 0.5− | 0.3+ | 2006 11 18 | G96 | 0.7+ | 0.3− |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2005 05 14 | G96 | 0.5− | 0.4+ | 2006 11 18 | G96 | 0.5+ | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2005 05 14 | G96 | 0.5− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.6+ | 0.1− | 2005 05 14 | G96 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2002 10 09 | 699 | 0.3+ | 1.4+ | 2005 06 10 | 691 | 1.2+ | 0.2+ | 2006 11 20 | 704 | 0.7− | 1.2− |
| 2002 10 09 | 699 | 0.0 | 1.0+ | 2005 06 10 | 691 | 0.1+ | 0.5+ | 2006 11 20 | 704 | (0.6− | 1.8+) |
| 2002 10 09 | 699 | (2.2+ | 0.4+) | 2005 06 10 | 691 | 0.2− | 0.4+ | 2006 11 20 | 704 | (0.0 | 1.6+) |
| 2002 10 09 | 699 | 1.2+ | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2002 10 11 | 704 | 0.3− | 1.0+ | 2005 06 14 | 691 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2002 10 11 | 704 | 0.6− | 0.7+ | 2005 06 14 | 691 | 0.0 | 0.5+ | 2006 11 25 | 704 | 1.4+ | 1.6+ |
| 2002 10 11 | 704 | 0.0 | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.5+ | 2006 11 25 | 704 | 0.3− | 1.4+ |
| 2002 10 11 | 704 | 0.5− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 25 | 704 | 0.7− | 0.7+ |
| 2002 10 11 | 704 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.7− | 0.8+ |
| 2002 10 15 | 704 | 0.5− | 0.1+ | 2006 10 23 | G96 | 0.8+ | 0.3+ | 2006 11 29 | 704 | 0.9+ | 0.7+ |
| 2002 10 15 | 704 | 0.3+ | 0.7− | 2006 10 23 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.3+ |
| 2002 10 15 | 704 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.3+ | 0.5+ |
| 2002 10 15 | 704 | 0.5+ | 1.0+ | 2006 10 23 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.4− |
| 2002 10 15 | 704 | 0.3+ | 0.8+ | 2006 10 27 | 291 | 0.0 | 0.1− | | | | |
| 2002 10 31 | 699 | 0.3− | 0.4+ | 2006 10 27 | 291 | 0.2− | 0.2− | | | | |

**(142429)∗ 2002 SH$_{43}$ = 6248 P-L**

Discovered 2002 Sept. 28 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37951)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.97267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25851808 | $\omega$ | 9.27554 | | +0.99971352 | +0.02289711 | |
| $a$ | 2.4404810 | $\Omega$ | 349.40496 | | −0.02366287 | +0.90171404 | |
| $e$ | 0.1812147 | $i$ | 2.17292 | | −0.00359813 | +0.43172621 | |
| $P$ | 3.81 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.1+ | 0.4+ | 2002 10 07 | 704 | 0.4− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1960 09 24 | 675 | 0.3+ | 0.1+ | 2002 10 07 | 704 | (0.1− | 1.6+) | 2006 10 17 | 691 | (1.2− | 1.5+) |
| 1960 09 25 | 675 | 0.1− | 0.7+ | 2002 10 11 | 704 | 0.2+ | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.2− |
| 1960 09 25 | 675 | 0.4− | 0.2+ | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 1960 09 26 | 675 | 0.4− | 0.3− | 2002 10 11 | 704 | 0.6− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.3− |
| 1960 09 26 | 675 | 0.3− | 0.1+ | 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 1960 09 28 | 675 | 0.6− | 0.0 | 2002 10 11 | 704 | 0.7− | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.2− |
| 1960 09 28 | 675 | 0.7+ | 0.4+ | 2002 10 28 | 644 | 0.6− | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2001 05 22 | 807 | 0.2+ | 0.7+ | 2002 10 28 | 644 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2001 05 23 | 807 | 0.1+ | 0.8+ | 2002 10 28 | 644 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2002 09 15 | 608 | 1.0− | 0.5− | 2002 10 30 | 644 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 09 15 | 608 | 0.3− | 0.9− | 2002 10 30 | 644 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.5+ | 0.1+ |
| 2002 09 15 | 608 | 0.2− | 0.4− | 2002 10 30 | 644 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.9+ |
| 2002 09 28 | 608 | (2.0− | 1.1−) | 2002 11 06 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2002 09 28 | 608 | (1.8− | 1.4−) | 2002 11 06 | 704 | 0.8+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2002 09 28 | 608 | (1.6− | 1.3−) | 2002 11 06 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2002 10 02 | 704 | 0.2+ | 1.0+ | 2002 11 06 | 704 | 0.4− | 0.7− | 2006 11 13 | 691 | 0.1− | 0.3− |
| 2002 10 02 | 704 | 0.4+ | 0.2+ | 2004 02 12 | 691 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.3− |
| 2002 10 02 | 704 | 0.6− | 0.3+ | 2004 02 12 | 691 | 0.5+ | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.6+ | 0.8+ | 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2002 10 03 | 704 | (1.9+ | 1.5−) | 2004 02 22 | 695 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2004 02 22 | 691 | 0.0 | 0.5+ | 2006 11 13 | 691 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.6− | 0.9+ | 2004 02 22 | 691 | 0.5+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.0 | 1.1+ | 2004 02 22 | 695 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 704 | (0.7− | 2.5+) | 2004 02 22 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 10 06 | 644 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 11 19 | 704 | 1.4+ | 0.9+ |
| 2002 10 06 | 644 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.9+ | 0.6+ |
| 2002 10 06 | 644 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 2002 10 07 | 704 | 0.3+ | 1.0+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.8+ | 1.1+ |

**(142430)∗ 2002 SA$_{44}$ = 2002 RA$_{212}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Id. M. E. Sansaturio (d, *MPO* 41011)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.79110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25367218 | $\omega$ | 204.16261 | | +0.91946063 | +0.39181188 | |
| $a$ | 2.4714632 | $\Omega$ | 132.72848 | | −0.35307823 | +0.85950075 | |
| $e$ | 0.1532703 | $i$ | 2.55890 | | −0.17299683 | +0.32824063 | |
| $P$ | 3.89 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.2− | 0.1+ | 2002 10 08 | 699 | 0.4+ | 1.2+ | 2006 10 01 | 941 | 0.1− | 0.4− |
| 1993 03 23 | 691 | 0.3+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.2− | 2006 10 01 | 941 | 0.2− | 0.4− |
| 1993 03 23 | 691 | 0.0 | 0.2− | 2002 10 11 | 704 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 1998 08 30 | 699 | 0.8+ | 0.8+ | 2002 10 11 | 704 | 0.5+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 1998 08 30 | 699 | (2.5+ | 1.2+) | 2002 10 11 | 704 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 1998 08 30 | 699 | 0.5+ | 1.1+ | 2002 10 11 | 704 | (0.2− | 2.0+) | 2006 10 02 | G96 | 0.4+ | 0.4− |
| 2000 01 16 | 691 | 0.4+ | 0.2+ | 2004 01 28 | 691 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2000 01 16 | 691 | 0.1+ | 0.2+ | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2000 01 16 | 691 | 0.4+ | 0.1+ | 2004 01 28 | 691 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.5+ | 0.4+ |
| 2000 02 02 | 691 | 0.2− | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 02 02 | 691 | 0.3− | 0.5− | 2004 01 30 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2000 02 02 | 691 | 0.1− | 0.5− | 2004 01 30 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 09 07 | 704 | 0.8+ | 0.1+ | 2005 06 15 | G96 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 1.1− |
| 2002 09 07 | 704 | 0.0 | 0.5+ | 2005 06 15 | G96 | 0.2+ | 1.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 09 07 | 704 | 0.1+ | 0.2− | 2005 06 15 | G96 | 1.0+ | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 0.2− | 2005 06 15 | G96 | 0.0 | 1.3+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2002 09 13 | 608 | 0.6− | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 608 | 0.7− | 0.2+ | 2006 09 16 | 699 | 0.9− | 1.0− | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2002 09 13 | 608 | 0.6− | 0.6+ | 2006 09 16 | 699 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 09 17 | 608 | (1.3− | 1.7−) | 2006 09 16 | 699 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.0 | 0.1+ |
| 2002 09 17 | 608 | 0.8− | 1.2− | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 09 17 | 608 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.6− | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 29 | 608 | 1.1− | 0.5+ | 2006 09 18 | 699 | 0.9− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 09 29 | 608 | 0.4− | 0.5+ | 2006 09 18 | 699 | 0.6− | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2002 09 29 | 608 | 1.1− | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 10 02 | 704 | 0.7− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | 0.5− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.6+ |
| 2002 10 02 | 704 | 0.1− | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.8− |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.0− |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 1.0+ | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.7+ | 2006 11 17 | 703 | 1.0+ | 1.2− |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2002 10 04 | 644 | 0.4− | 0.2− | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 11 18 | G96 | 0.6+ | 0.2− |
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2002 10 08 | 699 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 1.1− | 2006 11 18 | G96 | 0.7+ | 0.2− |
| 2002 10 08 | 699 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 2002 10 08 | 699 | 0.0 | 0.4+ | 2006 10 01 | 941 | 0.0 | 0.2− | | | | |

**(142431)∗ 2002 SO$_{44}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.10643 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23799461 | $\omega$ | 256.90709 | | +0.83731717 | +0.54518287 | |
| $a$ | 2.5788414 | $\Omega$ | 70.04194 | | −0.48321878 | +0.77301188 | |
| $e$ | 0.1625430 | $i$ | 2.49599 | | −0.25573338 | +0.32438908 | |
| $P$ | 4.14 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 691 | 0.0 | 0.3− | 2005 04 06 | G96 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.9+ |
| 1998 10 17 | 691 | 0.1− | 0.1− | 2005 04 07 | G96 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.3− | 0.4− |
| 1998 10 17 | 691 | 0.1− | 0.2− | 2005 04 07 | G96 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.3+ |
| 2002 09 16 | 608 | 0.4− | 0.6+ | 2005 04 07 | G96 | 1.3− | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 2002 09 16 | 608 | 0.4+ | 0.4− | 2005 04 07 | G96 | 0.1− | 0.6− | 2006 09 25 | 699 | 0.8− | 0.1− |
| 2002 09 16 | 608 | 0.8+ | 0.2− | 2005 04 10 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.1− |
| 2002 09 29 | 608 | 0.5− | 0.8− | 2005 04 10 | 691 | 0.3+ | 0.6+ | 2006 09 25 | 699 | (1.6− | 0.4+) |
| 2002 09 29 | 608 | 1.1− | 1.0− | 2005 04 10 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2002 09 29 | 608 | 0.1− | 0.8− | 2005 05 14 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.3+ | 0.5− | 2005 05 14 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.3+ | 0.0 | 2005 05 14 | 691 | 0.6+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.5+ |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.4+ |
| 2002 10 02 | 704 | 0.5+ | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.9+ |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.4+ | 1.5+ |
| 2002 10 03 | 704 | 0.9− | 0.2− | 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 30 | 703 | 1.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.8+ | 1.0+ |
| 2002 10 03 | 704 | 1.3+ | 1.0+ | 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.9+ |
| 2002 10 03 | 704 | 0.8+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 1.4+ | 0.5− | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.9− | 0.1− | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 10 11 | 704 | 0.6+ | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.8+ | 2006 10 16 | 703 | (0.8− | 1.6+) |
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 08 28 | 699 | 1.2− | 0.1+ | 2006 10 16 | 703 | (0.3+ | 1.5+) |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2002 10 31 | 699 | 0.8+ | 0.3+ | 2006 08 28 | 699 | 0.9+ | 0.2− | 2006 10 16 | 703 | 0.8− | 1.5− |
| 2002 10 31 | 699 | 0.9− | 1.4+ | 2006 09 12 | 703 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 0.7+ | 2006 09 12 | 703 | 0.9− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 699 | (0.9+ | 1.9−) | 2006 09 12 | 703 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 10 31 | 704 | 0.6+ | 0.9+ | 2006 09 12 | 703 | 0.9− | 1.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 699 | 1.2− | 0.2− | 2006 09 16 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 704 | 0.0 | 0.7+ | 2006 09 16 | 704 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.7− | 0.3+ | 2006 09 16 | 704 | 0.9− | 0.4+ | 2006 10 22 | 644 | 0.6− | 0.6+ |
| 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 09 16 | 699 | 1.2+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2004 02 12 | 691 | 0.4+ | 0.6+ | 2006 09 16 | 704 | 0.3− | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2004 02 12 | 691 | 0.2+ | 1.1+ | 2006 09 16 | 699 | 0.4+ | 1.2+ | 2006 10 24 | 644 | 0.8− | 0.3+ |
| 2005 03 14 | G96 | 0.3+ | 0.2− | 2006 09 16 | 699 | 0.5+ | 0.6+ | 2006 10 24 | 644 | 0.5− | 0.1+ |
| 2005 03 14 | G96 | 0.6− | 0.0 | 2006 09 16 | 699 | 1.3− | 0.7+ | 2006 10 24 | 644 | 0.5− | 0.1− |
| 2005 03 14 | G96 | 0.7− | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2005 03 14 | G96 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2005 04 06 | G96 | 0.6− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2005 04 06 | G96 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.5+ | 0.4− | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2005 04 06 | G96 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.4+ | 0.6− | | | | |

**(142432)∗ 2002 SD$_{45}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.86390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26267787 | $\omega$ | 303.13487 | | +0.98928460 | +0.14096276 | |
| $a$ | 2.4146474 | $\Omega$ | 48.79197 | | −0.11136877 | +0.89697923 | |
| $e$ | 0.2319415 | $i$ | 2.89674 | | −0.09440853 | +0.41899614 | |
| $P$ | 3.75 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 31 | 699 | 0.4+ | 0.3+ | 2002 10 31 | 704 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.2− |
| 1998 07 31 | 699 | 0.1− | 0.2− | 2002 10 31 | 704 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 1998 07 31 | 699 | 0.2− | 0.2− | 2002 10 31 | 704 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.4− |
| 2002 08 05 | 704 | 0.3+ | 0.2− | 2002 10 31 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 08 05 | 704 | 0.1+ | 0.2+ | 2002 10 31 | 704 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.1− |
| 2002 08 05 | 704 | 0.5+ | 0.6+ | 2002 11 06 | 704 | 0.2− | 0.4− | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2002 09 29 | 608 | 0.1+ | 0.2− | 2002 11 06 | 704 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.6− | 1.2+ |
| 2002 09 29 | 608 | 0.1− | 0.3− | 2002 11 06 | 704 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.1− | 1.1+ |
| 2002 09 29 | 608 | 0.2+ | 0.3− | 2002 11 06 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.6+ | 0.1+ |
| 2002 10 02 | 704 | 0.1+ | 0.3− | 2002 11 06 | 704 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.7+ | 0.5− |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 12 01 | 704 | 1.1− | 0.8− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 12 01 | 704 | 0.1+ | 0.7− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 12 01 | 704 | 1.1− | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.1+ | 0.1− | 2002 12 01 | 704 | 0.8− | 0.6+ | 2006 11 18 | 704 | 0.1+ | 1.0− |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2002 12 02 | 608 | 1.2+ | 0.0 | 2006 11 18 | 704 | 0.5− | 1.3+ |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2002 12 02 | 608 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2002 12 02 | 608 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2005 04 11 | G96 | 0.8− | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2005 04 11 | G96 | 1.1− | 1.3+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 10 07 | 704 | 0.6+ | 0.6+ | 2005 04 11 | G96 | 1.0− | 0.1+ | 2006 11 20 | 691 | 0.7+ | 0.8+ |
| 2002 10 07 | 704 | 0.3+ | 0.3− | 2005 04 11 | G96 | 1.1− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 10 07 | 704 | 0.4+ | 0.1− | 2005 05 09 | G96 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.4− |
| 2002 10 07 | 704 | 0.3+ | 0.4− | 2005 05 09 | G96 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 10 07 | 704 | 0.0 | 0.4− | 2005 05 09 | G96 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2005 05 09 | G96 | 0.2+ | 0.0 | 2006 11 30 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2005 05 16 | 691 | 0.3+ | 0.2+ | 2006 11 30 | 691 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.6− | 0.3+ | 2005 05 16 | 691 | 0.6+ | 0.1+ | 2006 11 30 | 691 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2005 05 16 | 691 | 0.2+ | 0.0 | | | | |
| 2002 10 11 | 704 | 1.4− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.3− | | | | |

**(142433)∗ 2002 SY$_{45}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.09650 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22086522 | $\omega$ | 263.30691 | | +0.64044100 | +0.75863726 | |
| $a$ | 2.7105110 | $\Omega$ | 47.24827 | | −0.62447610 | +0.60504923 | |
| $e$ | 0.1879250 | $i$ | 9.37408 | | −0.44706256 | +0.24162976 | |
| $P$ | 4.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 691 | 0.1+ | 0.2+ | 2002 09 29 | 608 | 0.4− | 0.2− | 2002 10 31 | 704 | 0.4− | 1.0+ |
| 2001 04 27 | 691 | 0.2+ | 0.1+ | 2002 09 29 | 608 | 0.5− | 0.0 | 2002 10 31 | 704 | 0.5+ | 1.5+ |
| 2001 04 27 | 691 | 0.2+ | 0.2+ | 2002 09 29 | 608 | 0.4− | 0.0 | 2005 03 10 | 699 | (3.1− | 1.0+) |
| 2001 05 03 | 608 | 0.6+ | 0.2− | 2002 10 02 | 704 | 0.2+ | 0.6+ | 2005 03 10 | 699 | 1.0+ | 0.9+ |
| 2001 05 03 | 608 | 0.5+ | 0.3− | 2002 10 02 | 704 | 0.4− | 0.8+ | 2005 03 10 | 699 | 1.9+ | 0.4+ |
| 2001 05 03 | 608 | 0.5+ | 0.0 | 2002 10 02 | 704 | 1.8+ | 0.2− | 2005 03 10 | 699 | 1.7+ | 0.3+ |
| 2001 05 27 | 608 | 0.2+ | 0.2+ | 2002 10 06 | 608 | 0.2+ | 0.0 | 2006 05 28 | E12 | 0.1− | 0.1− |
| 2001 05 27 | 608 | 0.2+ | 0.0 | 2002 10 06 | 608 | 0.5− | 0.2− | 2006 05 28 | E12 | 1.4− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 27 | 608 | 0.2+ | 0.6+ | 2002 10 06 | 608 | 0.2− | 0.0 | 2006 05 28 | E12 | 0.3+ | 0.3− | | |
| 2001 06 12 | 644 | 0.4− | 0.8+ | 2002 10 09 | 644 | 0.4− | 0.2+ | 2006 07 26 | E12 | 0.2+ | 0.3− | | |
| 2001 06 12 | 644 | 0.2− | 1.1+ | 2002 10 09 | 644 | 0.3− | 0.3+ | 2006 07 26 | E12 | 0.2+ | 0.1− | | |
| 2001 06 12 | 644 | 0.5− | 0.4+ | 2002 10 09 | 644 | 0.3− | 0.1+ | 2006 07 26 | E12 | 0.4+ | 0.1− | | |
| 2001 06 12 | 644 | 0.2− | 1.3+ | 2002 10 11 | 704 | 0.4+ | 1.0− | 2006 07 26 | E12 | 0.9+ | 0.3− | | |
| 2002 08 25 | 644 | 0.0 | 0.4− | 2002 10 11 | 704 | 0.3+ | 0.3− | 2006 08 12 | E12 | 0.2− | 0.3− | | |
| 2002 08 25 | 644 | 0.1− | 0.2− | 2002 10 11 | 704 | 1.7− | 0.0 | 2006 08 12 | E12 | 0.0 | 0.1− | | |
| 2002 08 25 | 644 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.4+ | 1.3+ | 2006 08 12 | E12 | 0.4+ | 0.1− | | |
| 2002 09 14 | 608 | 0.3− | 0.0 | 2002 10 29 | 644 | 0.3+ | 0.6+ | 2006 08 12 | E12 | 0.1+ | 0.1− | | |
| 2002 09 14 | 608 | 0.2− | 0.1+ | 2002 10 29 | 644 | 0.4− | 0.5+ | 2006 08 26 | E12 | 0.1+ | 1.1− | | |
| 2002 09 14 | 608 | 0.0 | 0.2+ | 2002 10 29 | 644 | 0.2+ | 0.7+ | 2006 08 26 | E12 | 0.2− | 0.3+ | | |
| 2002 09 17 | 608 | 0.6− | 0.3+ | 2002 10 31 | 704 | 0.9+ | 0.8+ | 2006 08 26 | E12 | 0.1− | 0.1+ | | |
| 2002 09 17 | 608 | 0.8− | 0.3− | 2002 10 31 | 704 | 0.4− | 0.7+ | 2006 08 26 | E12 | 0.6− | 1.0+ | | |
| 2002 09 17 | 608 | 1.4− | 0.0 | 2002 10 31 | 704 | 0.6+ | 0.8+ | | | | | | |

**(142434)∗ 2002 SE$_{46}$ = 2000 GA$_{132}$**

Discovered 2002 Sept. 29 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 37953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.55835 | | (2000.0) | | | |
| $n$ | 0.23980790 | $\omega$ | 30.73879 | | +0.50291736 | −0.86339078 |
| $a$ | 2.5658251 | $\Omega$ | 29.12485 | | +0.77518890 | +0.42989152 |
| $e$ | 0.2198317 | $i$ | 4.75891 | | +0.38230394 | +0.26410158 |
| $P$ | 4.11 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 691 | 0.1+ | 0.3− | 2002 10 30 | 644 | 0.5− | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.2− | | |
| 2000 04 08 | 691 | 0.3+ | 0.5− | 2002 11 06 | 704 | 0.1+ | 0.4− | 2006 09 26 | 704 | 0.3+ | 0.3+ | | |
| 2000 04 08 | 691 | 0.2+ | 0.3− | 2002 11 06 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1+ | | |
| 2000 04 12 | 691 | 0.8− | 0.1− | 2002 11 06 | 704 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.1+ | | |
| 2000 04 12 | 691 | 0.1+ | 0.1+ | 2002 11 06 | 704 | 0.4+ | 0.8− | 2006 09 28 | 691 | 0.4− | 0.3+ | | |
| 2000 04 12 | 691 | 0.0 | 0.4+ | 2002 11 06 | 704 | 0.4+ | 1.4− | 2006 09 28 | 691 | 0.2− | 0.4+ | | |
| 2002 09 29 | 608 | 0.2+ | 0.2+ | 2002 11 22 | 644 | 0.4− | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.3+ | | |
| 2002 09 29 | 608 | 0.3− | 0.2− | 2002 11 22 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 29 | 608 | 0.1− | 0.3+ | 2002 11 22 | 644 | 0.6− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.5+ | 0.4+ | 2002 12 07 | 291 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1− | | |
| 2002 10 02 | 704 | 0.8− | 0.5+ | 2002 12 07 | 291 | 0.3+ | 0.3+ | 2006 10 18 | 291 | 0.7+ | 0.1− | | |
| 2002 10 02 | 704 | 0.3+ | 0.6+ | 2002 12 07 | 291 | 0.7+ | 0.2+ | 2006 10 18 | 291 | 0.1− | 0.2− | | |
| 2002 10 02 | 704 | 0.1− | 0.6+ | 2004 04 12 | 691 | 0.2+ | 0.6+ | 2006 10 18 | 291 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 0.9− | 1.4− | 2004 04 12 | 691 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.5+ | 0.0 | | |
| 2002 10 03 | 704 | 0.6− | 0.8− | 2004 04 12 | 691 | 0.7+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.0 | | |
| 2002 10 03 | 704 | 0.7− | 1.1− | 2004 04 19 | 691 | 0.4− | 0.8+ | 2006 10 21 | G96 | 0.3− | 0.4+ | | |
| 2002 10 03 | 704 | (0.6+ | 1.6−) | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.3− | 1.4− | 2004 04 19 | 691 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 07 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.9− | 1.2− | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2002 10 07 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | (2.2− | 0.2−) | 2006 10 22 | 644 | 0.3− | 0.2− | | |
| 2002 10 07 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 699 | 0.6+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2002 10 07 | 704 | 0.6+ | 1.2+ | 2006 09 18 | 699 | 0.1− | 1.0+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2002 10 07 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 691 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.4+ | | |
| 2002 10 11 | 704 | (1.9− | 0.5+) | 2006 09 20 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2002 10 11 | 704 | 1.1− | 0.5+ | 2006 09 20 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2002 10 11 | 704 | 1.0− | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1+ | | |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.3− | | |
| 2002 10 30 | 644 | 0.6− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.2+ | | | | | | |
| 2002 10 30 | 644 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.9− | 0.1− | | | | | | |

**(142435)∗ 2002 SC$_{47}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.21504 | | (2000.0) | | | |
| $n$ | 0.26072198 | $\omega$ | 111.49520 | | +0.61065588 | +0.79148211 |
| $a$ | 2.4267085 | $\Omega$ | 196.22094 | | −0.75624674 | +0.57326953 |
| $e$ | 0.1985293 | $i$ | 5.25864 | | −0.23492610 | +0.21193896 |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.1+ | 0.3− | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 1998 08 17 | 704 | (3.2+ | 1.2+) | 2005 04 02 | G96 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 1998 08 17 | 704 | 0.7+ | 0.2− | 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 1998 08 17 | 704 | 0.2− | 0.5− | 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2005 04 05 | G96 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1− | | |
| 2002 09 06 | 704 | 0.3− | 0.7+ | 2005 04 05 | G96 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.7+ | 0.2+ | 2005 04 05 | G96 | 0.3− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.5− | | |
| 2002 09 06 | 704 | 0.2+ | 0.4+ | 2005 04 06 | G96 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | | |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2005 04 06 | G96 | 0.3− | 0.9+ | 2006 10 16 | 691 | 0.2+ | 0.4+ | | |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2005 04 06 | G96 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.8+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2005 04 06 | G96 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.6+ | 0.5− | | |
| 2002 09 30 | 704 | (1.9− | 0.5+) | 2005 04 07 | G96 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1+ | | |
| 2002 09 30 | 704 | (1.6− | 0.1−) | 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.1− | | |
| 2002 09 30 | 704 | (2.1− | 0.3+) | 2005 04 07 | G96 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.1− | | |
| 2002 09 30 | 704 | 1.5− | 0.8+ | 2005 04 07 | G96 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.2+ | | |
| 2002 09 30 | 704 | 1.3− | 0.0 | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.2+ | 0.1+ | 2005 04 09 | 691 | 0.5+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2005 04 09 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2002 10 02 | 704 | 0.2− | 0.2+ | 2005 04 11 | 691 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4− | | |
| 2002 10 02 | 704 | 0.5+ | 0.1− | 2005 04 11 | 691 | 0.0 | 0.9+ | 2006 10 21 | 644 | 1.0+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.8+ | 2005 04 11 | 691 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.6+ | 2005 04 11 | 699 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.2+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.9+ | 2005 04 11 | 699 | 0.2− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2005 04 11 | 699 | 0.8− | 0.1− | 2006 10 31 | G96 | 0.3− | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2005 04 11 | 699 | (1.7+ | 0.5+) | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2002 10 07 | 704 | 1.5− | 0.4− | 2005 04 12 | 704 | (0.1+ | 1.9+) | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 2002 10 07 | 704 | 0.8− | 0.3+ | 2005 04 12 | 704 | 0.5+ | 1.4+ | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2002 10 07 | 704 | 0.7− | 0.1+ | 2005 04 12 | 704 | (1.9+ | 0.0 ) | 2006 11 11 | 703 | 0.4− | 0.1+ | | |
| 2002 10 07 | 704 | 0.9− | 0.6− | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.0 | | |
| 2002 10 07 | 704 | 1.2− | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.7+ | | |
| 2002 10 11 | 704 | 0.2− | 0.5+ | 2005 04 18 | 691 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.4− | | |
| 2002 10 11 | 704 | 0.1− | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.2− | 1.0− | | |
| 2002 10 11 | 704 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.3+ | 1.0+ | | |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 14 | 704 | 1.1− | 0.4− | | |
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 14 | 704 | 1.3− | 0.7+ | | |
| 2002 10 30 | 645 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2003 12 22 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.4− | | |
| 2003 12 22 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 291 | 0.5− | 0.2+ | 2006 11 17 | 703 | 0.1− | 1.8− | | |
| 2005 03 10 | G96 | 0.4− | 0.1+ | 2006 09 28 | 291 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.6+ | | |
| 2005 03 10 | G96 | 0.2− | 0.4+ | 2006 09 28 | 291 | 0.6− | 0.2+ | 2006 11 17 | 703 | 1.2− | 0.3− | | |
| 2005 03 10 | G96 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5+ | 2.3+ | | |
| 2005 03 10 | G96 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1− | | | | | | |

**(142436)∗ 2002 SK$_{48}$ = 2000 EH$_{191}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37955)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.66107 | | (2000.0) | | | |
| $n$ | 0.23375647 | $\omega$ | 233.78802 | | +0.83169815 | −0.55347103 |
| $a$ | 2.6099185 | $\Omega$ | 159.70294 | | +0.54146377 | +0.79092320 |
| $e$ | 0.1287584 | $i$ | 7.30984 | | +0.12286242 | +0.26097951 |
| $P$ | 4.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.0 | 1.2+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 08 25 | 704 | 0.3− | 0.8+ |
| 2000 03 03 | 704 | 0.8+ | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 08 25 | 704 | 0.5− | 0.4+ |
| 2000 03 03 | 704 | 1.2+ | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 08 27 | 122 | 0.2+ | 0.1+ |
| 2000 03 03 | 704 | 0.0 | 0.1− | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 122 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 0.8+ | 0.5+ | 2004 02 12 | 691 | 0.3+ | 0.4+ | 2006 08 27 | 122 | 0.3+ | 0.3− |
| 2000 03 11 | 704 | 0.5− | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.5+ |
| 2000 03 11 | 704 | 0.1+ | 1.1+ | 2004 02 17 | 704 | 0.7− | 1.0+ | 2006 08 28 | 703 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.5+ | 0.9+ | 2004 02 17 | 704 | 0.4− | 0.8+ | 2006 08 28 | 703 | 0.4+ | 0.3− |
| 2000 03 11 | 704 | 0.8+ | 1.1+ | 2004 02 17 | 704 | 0.2− | 0.8+ | 2006 08 28 | 699 | 0.0 | 0.8+ |
| 2002 09 30 | 704 | 0.7+ | 0.6+ | 2005 05 16 | 691 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.2− |
| 2002 09 30 | 704 | 0.2− | 1.1+ | 2005 05 16 | 691 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.4+ | 0.1− |
| 2002 09 30 | 704 | 0.2+ | 0.3− | 2005 05 16 | 691 | 0.6− | 0.0 | 2006 08 28 | 699 | 0.1− | 1.2+ |
| 2002 09 30 | 704 | 0.1− | 0.8+ | 2005 06 01 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | 1.2+ | 0.7+ |
| 2002 09 30 | 704 | 1.4+ | 0.2− | 2005 06 01 | 691 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2005 06 01 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.3+ |
| 2002 10 02 | 704 | 0.2− | 0.4− | 2005 06 05 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.8+ |
| 2002 10 02 | 704 | 0.1− | 1.2+ | 2005 06 05 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 2002 10 02 | 704 | 0.7+ | 0.0 | 2005 06 05 | 691 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.7+ |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2005 06 09 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | (0.3− | 1.6+) |
| 2002 10 03 | 704 | 1.1− | 0.3− | 2005 06 09 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2005 06 09 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2005 06 13 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 1.1− | 0.8+ | 2005 06 13 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.9− | 0.5+ | 2005 06 13 | 691 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.5+ | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.2− | 2006 08 21 | 704 | (0.2+ | 1.7+) | 2006 10 22 | G96 | 0.0 | 0.2+ |
| 2002 10 11 | 704 | 1.3− | 0.3− | 2006 08 21 | 704 | 0.2+ | 1.4+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.5− | 0.9− | 2006 08 21 | 704 | 0.0 | 0.9+ | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2002 11 02 | 608 | 0.3+ | 0.1− | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2002 11 02 | 608 | 0.2+ | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.6+ | 0.3− |
| 2002 11 02 | 608 | 0.1− | 0.4− | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.4+ |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 08 25 | 704 | 0.5− | 0.5+ | 2006 11 23 | G96 | 0.4− | 0.2+ |
| 2004 02 11 | 644 | 0.3− | 0.6+ | 2006 08 25 | 704 | 0.8− | 0.5− | 2006 11 23 | G96 | 0.8− | 0.3− |
| 2004 02 11 | 644 | 0.1+ | 0.9+ | 2006 08 25 | 704 | 0.1− | 0.5+ | | | | |

**(142437)∗ 2002 SA$_{49}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.24311 | | (2000.0) | | | |
| $n$ | 0.23689010 | $\omega$ | 266.91972 | | +0.91236644 | −0.40717445 |
| $a$ | 2.5868512 | $\Omega$ | 117.10434 | | +0.39196428 | +0.83899705 |
| $e$ | 0.2143468 | $i$ | 2.72909 | | +0.11811642 | +0.36096110 |
| $P$ | 4.16 | $H$ | 16.5 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 699 | 0.9+ | 0.9+ | 2002 11 07 | 704 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 0.1− | 0.8− |
| 1998 11 24 | 699 | 0.3+ | 0.3+ | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.6+ | 0.3− |
| 1998 11 24 | 699 | 0.1+ | 0.5+ | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.5− |
| 2002 09 28 | 683 | 1.3+ | 0.8− | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.7− |
| 2002 09 28 | 683 | (3.7+ | 0.8−) | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2002 09 30 | 704 | 0.3+ | 0.4− | 2004 02 16 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.1− |
| 2002 09 30 | 704 | 0.5− | 0.5− | 2004 03 14 | 691 | 0.6+ | 0.5+ | 2006 09 16 | 704 | 0.2+ | 0.2− |
| 2002 09 30 | 683 | 1.0+ | 0.1+ | 2004 03 14 | 691 | 0.2+ | 0.6+ | 2006 09 16 | 704 | (3.0+ | 0.3−) |
| 2002 09 30 | 683 | 0.5− | 0.3− | 2004 03 14 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 704 | 0.1− | 0.9+ |
| 2002 09 30 | 704 | 0.3− | 0.2− | 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 09 16 | 704 | (1.6+ | 0.9+) |
| 2002 09 30 | 683 | 0.9+ | 0.1+ | 2005 05 08 | 691 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.9+ | 1.5+ |
| 2002 10 02 | 704 | 0.4− | 0.4− | 2005 05 08 | 691 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.0 |
| 2002 10 02 | 704 | 0.3+ | 0.6− | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.6+ |
| 2002 10 02 | 704 | 0.0 | 0.4− | 2005 05 11 | G96 | 0.7− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.1+ | 0.2− | 2005 05 11 | G96 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.1− |
| 2002 10 02 | 608 | 0.2− | 0.5− | 2005 05 11 | G96 | 0.1− | 0.0 | 2006 09 19 | 704 | 0.7+ | 0.2− |
| 2002 10 02 | 608 | 0.1− | 0.1− | 2005 05 12 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 704 | 0.0 | 0.2+ |
| 2002 10 02 | 608 | 0.4− | 0.3− | 2005 05 12 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 704 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2005 05 12 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 704 | 0.5+ | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.9+ | 0.5+ |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.0 | 1.0+ | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.3+ | 0.2− | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 25 | 699 | 1.4− | 0.1+ |
| 2002 10 04 | 683 | 0.6+ | 1.4+ | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.7− | 1.2+ |
| 2002 10 04 | 683 | 0.8− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.8+ | 1.1+ |
| 2002 10 04 | 683 | (0.3+ | 3.3−) | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.4+ |
| 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 08 18 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.9+ |
| 2002 10 11 | 704 | 0.5+ | 0.9+ | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.5+ |
| 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 08 23 | 704 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 0.3+ | 1.3+ |
| 2002 10 11 | 704 | 0.8+ | 1.2+ | 2006 08 23 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 2002 10 11 | 704 | 0.6+ | 0.8+ | 2006 08 23 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.8+ |
| 2002 10 31 | 645 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 645 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2006 08 28 | 704 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2002 10 31 | 704 | 0.6+ | 0.1+ | 2006 08 28 | 704 | 0.6− | 0.4+ | 2006 11 11 | 703 | 1.4− | 0.9− |
| 2002 10 31 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 703 | (1.8− | 2.6−) |
| 2002 10 31 | 704 | 0.1− | 0.0 | 2006 08 28 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2002 11 05 | 699 | (2.3− | 1.3+) | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2002 11 05 | 699 | 0.5− | 0.9+ | 2006 08 30 | 699 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2002 11 05 | 699 | 0.5− | 0.2+ | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2002 11 05 | 699 | 1.2− | 1.1+ | 2006 08 30 | 699 | 0.1− | 0.5− | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2002 11 07 | 704 | 0.1− | 0.9+ | 2006 08 31 | 704 | 0.5+ | 1.0+ | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.8+ | 2006 08 31 | 704 | 0.9+ | 0.5− | | | | |
| 2002 11 07 | 704 | 0.3− | 0.7+ | 2006 08 31 | 704 | 0.3− | 1.4− | | | | |

**(142438)∗ 2002 ST$_{50}$**

Discovered 2002 Sept. 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.37023 | | (2000.0) | | | |
| $n$ | 0.23174564 | $\omega$ | 292.18073 | | +0.94334404 | +0.24876285 |
| $a$ | 2.6249941 | $\Omega$ | 54.09140 | | −0.09920495 | +0.84295113 |
| $e$ | 0.1576997 | $i$ | 15.73047 | | −0.31663922 | +0.47702246 |
| $P$ | 4.25 | $H$ | 15.0 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 699 | 0.3+ | 0.1+ | 2002 12 10 | 644 | 0.5− | 0.2+ | 2005 05 09 | 704 | 0.3− | 0.7+ |
| 2002 09 16 | 699 | 0.4+ | 0.4+ | 2002 12 10 | 704 | 1.3− | 0.3− | 2005 05 09 | 704 | 1.0+ | 0.1+ |
| 2002 09 16 | 699 | 0.9+ | 0.5− | 2002 12 10 | 704 | 0.5− | 0.7+ | 2005 05 09 | 704 | 1.0+ | 0.4+ |
| 2002 09 16 | 699 | 0.0 | 0.2+ | 2002 12 10 | 704 | 0.8− | 0.0 | 2005 05 10 | 691 | 0.2+ | 0.2+ |
| 2002 09 30 | 608 | 0.4− | 0.4− | 2002 12 10 | 704 | 0.4− | 0.1− | 2005 05 10 | 691 | 0.3+ | 0.3+ |
| 2002 09 30 | 608 | 0.3− | 0.2− | 2002 12 10 | 704 | 0.6− | 0.7+ | 2005 05 10 | 691 | 0.3+ | 0.3+ |
| 2002 09 30 | 608 | 0.2− | 1.1− | 2002 12 31 | 704 | (1.6+ | 1.3+) | 2005 05 11 | G96 | 0.5− | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 0.5+ | 2002 12 31 | 704 | (2.1+ | 1.1+) | 2005 05 11 | G96 | 0.3− | 0.2+ |
| 2002 10 02 | 704 | 0.6− | 0.3− | 2002 12 31 | 704 | 0.3+ | 1.5+ | 2005 05 11 | G96 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2002 12 31 | 704 | 0.2− | 1.3+ | 2005 05 11 | G96 | 0.2− | 0.1+ |
| 2002 10 02 | 704 | 0.4− | 0.5+ | 2002 12 31 | 704 | 0.5+ | 1.3+ | 2005 05 13 | 704 | 1.2+ | 0.6+ |
| 2002 10 09 | 704 | 0.7− | 0.0 | 2003 01 05 | 699 | 0.9+ | 0.4− | 2005 05 13 | 704 | 0.4+ | 1.0+ |
| 2002 10 09 | 704 | 0.4− | 0.3− | 2003 01 05 | 699 | 0.1+ | 1.3+ | 2005 05 13 | 704 | 0.7+ | 0.9+ |
| 2002 10 09 | 704 | 0.7− | 0.1+ | 2003 01 05 | 704 | 0.3+ | 0.7+ | 2005 05 13 | 704 | 0.7+ | 1.0+ |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2003 01 05 | 704 | 0.4+ | 0.1+ | 2005 05 13 | 704 | 0.1+ | 1.5+ |
| 2002 10 09 | 704 | 0.5− | 0.9− | 2003 01 05 | 699 | 0.4− | 0.8+ | 2005 05 16 | 691 | 0.3+ | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.8− | 2003 01 05 | 704 | 0.1+ | 0.8+ | 2005 05 16 | 691 | 0.2+ | 0.3+ |
| 2002 10 11 | 704 | 0.0 | 1.0− | 2003 01 05 | 699 | 0.9− | 1.5+ | 2005 05 16 | 691 | 0.4+ | 0.5+ |
| 2002 10 11 | 704 | 0.6− | 0.7− | 2003 01 05 | 704 | 0.4− | 0.8+ | 2005 05 30 | 699 | 1.2+ | 1.4+ |
| 2002 10 31 | 644 | 0.4− | 0.3+ | 2003 01 19 | 644 | 0.7− | 0.2+ | 2005 05 30 | 699 | 0.0 | 0.9+ |
| 2002 10 31 | 644 | 0.4− | 0.3+ | 2003 01 19 | 644 | 0.3− | 0.5+ | 2005 05 30 | 699 | 0.2− | 0.1− |
| 2002 10 31 | 644 | 0.2− | 0.4+ | 2003 01 19 | 644 | 0.3− | 0.7+ | 2005 05 30 | 699 | 0.6+ | 0.8+ |
| 2002 11 07 | 704 | 0.1+ | 0.0 | 2004 01 30 | 703 | 0.7− | 1.0+ | 2005 06 12 | G96 | 0.3− | 0.2− |
| 2002 11 07 | 704 | 0.0 | 0.5+ | 2004 01 30 | 703 | 0.3+ | 0.1− | 2005 06 12 | G96 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 703 | 0.6+ | 0.9+ | 2005 06 12 | G96 | 0.6− | 0.1− |
| 2002 11 07 | 704 | 0.1+ | 0.5+ | 2004 01 30 | 703 | 1.0− | 0.6+ | 2005 06 12 | G96 | 0.0 | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.5+ | 2004 02 14 | 201 | 0.1+ | 0.4− | 2006 08 05 | E12 | 0.1+ | 0.4+ |
| 2002 11 10 | 704 | 0.0 | 0.3+ | 2004 02 14 | 201 | 0.4+ | 0.6− | 2006 08 05 | E12 | 0.2− | 0.2+ |
| 2002 11 10 | 704 | 0.4− | 0.4+ | 2004 02 14 | 201 | 0.6+ | 0.3− | 2006 08 05 | E12 | 0.0 | 0.3+ |
| 2002 11 10 | 704 | 0.4− | 0.2+ | 2004 03 23 | 703 | 0.6− | 0.6− | 2006 08 05 | E12 | 1.5+ | 0.6− |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2004 03 23 | 703 | 0.4+ | 0.9+ | 2006 09 12 | 704 | (1.6+ | 0.6+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.1+ | 0.1− | 2004 03 23 | 703 | (2.4+ | 1.0+) | 2006 09 12 | 704 | 0.1+ | 0.0 |
| 2002 11 11 | 704 | 0.1+ | 0.4+ | 2004 03 23 | 703 | (0.0 | 3.5−) | 2006 09 12 | 704 | 0.6+ | 0.5+ |
| 2002 11 11 | 704 | 0.1+ | 0.1− | 2005 04 04 | G96 | 0.3− | 0.2+ | 2006 09 12 | 704 | (0.0 | 2.5+) |
| 2002 11 11 | 704 | 0.5− | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.2− | 2006 09 12 | 704 | 0.3+ | 0.6+ |
| 2002 11 12 | 644 | 0.2− | 0.5+ | 2005 04 04 | G96 | 0.0 | 0.4+ | 2006 09 22 | 703 | 0.6− | 0.2+ |
| 2002 11 12 | 644 | 0.2− | 0.6+ | 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 22 | 703 | 0.1− | 0.2+ |
| 2002 11 12 | 644 | 0.5− | 0.4+ | 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 09 22 | 703 | 0.2− | 0.3+ |
| 2002 11 22 | 644 | 0.1+ | 1.2+ | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 22 | 703 | 0.3− | 0.2+ |
| 2002 11 22 | 644 | 0.0 | 1.2+ | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.4− | 0.2+ |
| 2002 11 22 | 644 | 0.2+ | 1.0+ | 2005 04 18 | 703 | 0.3+ | 0.1− | 2006 09 27 | 703 | 0.3− | 0.3+ |
| 2002 11 23 | 644 | 0.1− | 0.3+ | 2005 04 18 | 703 | 1.4− | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.3+ |
| 2002 11 23 | 644 | 0.4− | 0.3+ | 2005 04 18 | 703 | 0.5+ | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.0 |
| 2002 11 23 | 644 | 0.2− | 0.3+ | 2005 04 18 | 703 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.6− | 0.3+ |
| 2002 12 01 | 704 | 0.3− | 0.5− | 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.4− | 0.3+ |
| 2002 12 01 | 704 | (0.7+ | 1.7+) | 2005 05 03 | 691 | 0.3+ | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.3+ |
| 2002 12 01 | 704 | 0.5− | 1.0+ | 2005 05 03 | 691 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 12 01 | 704 | 0.1− | 0.2+ | 2005 05 04 | 699 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 12 01 | 704 | 0.7+ | 1.2+ | 2005 05 04 | 699 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2005 05 04 | 699 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.6− | 2005 05 04 | 699 | 1.5+ | 0.7+ | 2006 10 11 | 644 | 0.5− | 0.3+ |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2005 05 08 | 699 | 1.0+ | 0.3+ | 2006 10 11 | 644 | 0.6− | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2005 05 08 | 699 | 0.7+ | 0.3+ | 2006 11 17 | 703 | 1.0− | 0.3− |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2005 05 08 | 699 | (1.7+ | 0.9+) | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2002 12 10 | 644 | 0.3− | 0.4+ | 2005 05 08 | 699 | (1.4+ | 1.7+) | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2002 12 10 | 644 | 0.6− | 0.4+ | 2005 05 09 | 704 | 0.3− | 0.5− | 2006 11 17 | 703 | 0.2− | 1.6+ |

**(142439)∗ 2002 SW$_{53}$**

Discovered 2002 Sept. 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.31495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24353946 | $\omega$ | 345.63163 | | +0.21051589 | −0.95277907 | |
| $a$ | 2.5395484 | $\Omega$ | 91.86279 | | +0.91714927 | +0.11499296 | |
| $e$ | 0.2207276 | $i$ | 12.64826 | | +0.33840844 | +0.28104922 | |
| $P$ | 4.05 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 12 09 | 691 | 0.0 | 0.1+ | 2002 10 08 | 608 | 1.1+ | 0.3− | 2004 03 13 | 644 | 0.2+ | 0.2+ |
| 1990 12 09 | 691 | 0.1− | 0.1− | 2002 10 08 | 608 | 1.2+ | 0.8− | 2004 04 25 | 699 | 0.5+ | 0.6+ |
| 1990 12 09 | 691 | 0.1− | 0.1− | 2002 10 08 | 608 | 0.9+ | 0.8− | 2004 04 25 | 699 | 1.1− | 0.6+ |
| 1998 12 14 | 699 | 0.3+ | 0.5− | 2002 10 11 | 704 | 0.4− | 1.2+ | 2004 04 25 | 699 | 0.3− | 0.6+ |
| 1998 12 14 | 699 | 0.4+ | 1.5− | 2002 10 11 | 704 | 0.5− | 0.2+ | 2004 04 25 | 699 | (0.2+ | 1.9+) |
| 1998 12 14 | 699 | 0.3− | 0.1+ | 2002 10 11 | 704 | 0.5− | 0.6+ | 2006 09 24 | 699 | 0.3− | 0.1− |
| 2000 05 03 | 704 | 0.8+ | 1.9+ | 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 09 24 | 699 | 0.2− | 0.3+ |
| 2000 05 03 | 704 | 1.2+ | 1.6+ | 2002 10 11 | 704 | 0.2+ | 0.4+ | 2006 09 24 | 699 | 0.3+ | 0.0 |
| 2000 05 03 | 704 | 1.0+ | 0.4+ | 2002 10 12 | 704 | 0.2− | 0.8− | 2006 09 25 | 703 | 0.5− | 0.3− |
| 2002 09 21 | 644 | 0.2− | 0.3− | 2002 10 12 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 703 | 0.4− | 0.0 |
| 2002 09 21 | 644 | 0.2− | 0.2− | 2002 10 12 | 704 | 0.7− | 0.3+ | 2006 09 25 | 703 | 0.1− | 0.2+ |
| 2002 09 21 | 644 | 0.1− | 0.1− | 2002 10 12 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 703 | 0.4+ | 0.6+ |
| 2002 09 22 | 608 | 1.1− | 0.2− | 2002 10 16 | 644 | 0.0 | 0.0 | 2006 10 04 | 703 | 1.2− | 0.1− |
| 2002 09 22 | 608 | 1.1− | 0.1+ | 2002 10 16 | 644 | 0.1+ | 0.1− | 2006 10 04 | 703 | 0.3− | 0.3− |
| 2002 09 22 | 608 | 1.1− | 0.2+ | 2002 10 16 | 644 | 0.1+ | 0.1− | 2006 10 04 | 703 | 0.0 | 0.3+ |
| 2002 09 22 | 644 | 0.6− | 0.2− | 2002 10 29 | 704 | (5.6+ | 16.6+) | 2006 10 04 | 703 | 0.2+ | 0.9+ |
| 2002 09 22 | 644 | 0.6− | 0.1− | 2002 10 29 | 704 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2002 09 22 | 644 | 0.5− | 0.1− | 2002 10 29 | 704 | 0.1− | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 10 01 | 608 | 0.4+ | 0.0 | 2002 10 29 | 704 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2002 10 01 | 608 | 0.6− | 0.1+ | 2002 11 05 | 644 | 0.0 | 0.9+ | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2002 10 01 | 608 | 0.1− | 0.4+ | 2002 11 05 | 644 | 0.2+ | 1.1+ | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 2002 10 05 | 704 | 1.0+ | 0.6− | 2002 11 05 | 644 | 0.1+ | 1.1+ | 2006 10 21 | 703 | 0.4+ | 0.3− |
| 2002 10 05 | 704 | 0.1+ | 0.4− | 2002 12 07 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2002 10 05 | 704 | 1.1+ | 0.2− | 2002 12 07 | 644 | 0.2− | 0.4+ | 2006 10 31 | 703 | 0.1+ | 1.1− |
| 2002 10 05 | 644 | 0.2− | 0.1− | 2002 12 07 | 644 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 1.0− | 0.1+ |
| 2002 10 05 | 704 | 0.3+ | 0.2− | 2003 01 02 | 704 | 0.2+ | 0.7+ | 2006 10 31 | 703 | 0.6− | 0.1+ |
| 2002 10 05 | 644 | 0.1− | 0.2− | 2003 01 02 | 704 | 1.4+ | 1.4+ | 2006 10 31 | 703 | (1.0+ | 2.8+) |
| 2002 10 05 | 704 | 0.3+ | 0.2+ | 2003 01 02 | 704 | 1.2+ | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2002 10 05 | 644 | 0.3− | 0.2− | 2003 01 02 | 704 | 0.1+ | 1.0+ | 2006 11 19 | 703 | 0.3+ | 0.7+ |
| 2002 10 06 | 644 | 0.1− | 0.2− | 2003 01 02 | 704 | 0.3− | 0.2− | 2006 11 19 | 703 | 0.0 | 0.4+ |
| 2002 10 06 | 644 | 0.0 | 0.3− | 2004 03 13 | 644 | 0.0 | 0.5− | 2006 11 19 | 703 | 0.2+ | 0.0 |
| 2002 10 06 | 644 | 0.2− | 0.2− | 2004 03 13 | 644 | 0.2+ | 0.1+ | | | | |

**(142440)∗ 2002 SM$_{55}$ = 2005 GU$_{108}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75657)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.52352 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23567877 | $\omega$ | 255.93983 | | +0.76788152 | +0.63786440 | |
| $a$ | 2.5957075 | $\Omega$ | 64.39243 | | −0.55956779 | +0.71277485 | |
| $e$ | 0.1034922 | $i$ | 3.75457 | | −0.31183628 | +0.29168651 | |
| $P$ | 4.18 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 608 | 0.1− | 1.1+ | 2004 01 22 | 704 | 0.4+ | 0.7+ | 2005 04 12 | G96 | 0.1+ | 0.1+ |
| 2002 09 15 | 608 | 1.0− | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.8+ | 2005 04 12 | G96 | 0.1+ | 0.2+ |
| 2002 09 15 | 608 | 1.3− | 0.1+ | 2004 01 22 | 704 | 0.4+ | 1.3+ | 2005 04 12 | G96 | 0.1+ | 0.1+ |
| 2002 09 15 | 327 | (4.5− | 1.7−) | 2004 01 22 | 704 | 0.6− | 0.6+ | 2005 04 12 | G96 | 0.2− | 0.1+ |
| 2002 09 15 | 327 | (4.2− | 1.2−) | 2005 03 14 | G96 | 0.7− | 0.1+ | 2005 04 12 | G96 | 0.1− | 0.3+ |
| 2002 09 15 | 327 | (5.2− | 1.7−) | 2005 03 14 | G96 | 0.8− | 0.0 | 2005 04 12 | G96 | 0.2+ | 0.3+ |
| 2002 09 30 | 704 | (2.1− | 1.3+) | 2005 03 14 | G96 | 1.0− | 0.1− | 2005 04 12 | G96 | 0.1+ | 0.1+ |
| 2002 09 30 | 704 | 1.2− | 0.6+ | 2005 03 14 | G96 | 0.8− | 0.1− | 2005 04 16 | 691 | 0.5+ | 0.3+ |
| 2002 09 30 | 704 | (1.5− | 2.1+) | 2005 04 10 | G96 | 0.3+ | 0.1− | 2005 04 16 | 691 | 0.3+ | 0.5+ |
| 2002 09 30 | 704 | 1.5− | 1.4+ | 2005 04 10 | G96 | 0.4+ | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.2− | 2005 04 10 | G96 | 0.4+ | 0.0 | 2006 08 22 | 644 | 0.7− | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.7− | 2005 04 10 | G96 | 0.2+ | 0.1+ | 2006 08 22 | 644 | 0.7+ | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 0.4− | 2005 04 11 | G96 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.8+ | 0.1+ |
| 2002 10 04 | 704 | 0.3+ | 0.5+ | 2005 04 11 | G96 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1+ | 1.1+ |
| 2002 10 04 | 704 | 0.1+ | 0.5+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.1− | 1.2− |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.8− |
| 2002 10 04 | 704 | 0.9− | 0.1+ | 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.0 |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2005 04 12 | G96 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 1.3+ |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2005 04 12 | G96 | 0.1− | 0.1+ | 2006 09 30 | 703 | (1.8+ | 1.3+) |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2005 04 12 | G96 | 0.2− | 0.0 | 2006 09 30 | 703 | (0.1+ | 2.3+) |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 09 30 | 703 | 1.5+ | 0.3+ |
| 2003 12 21 | 691 | 0.2− | 0.0 | 2005 04 12 | G96 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2003 12 21 | 691 | 0.0 | 0.2− | 2005 04 12 | G96 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 1.2+ | 0.4+ |
| 2003 12 21 | 691 | 0.3+ | 0.1− | 2005 04 12 | G96 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.3− | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.6+ | 2005 04 12 | G96 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.4− |

**(142441)∗ 2002 SQ$_{55}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.82840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25672588 | $\omega$ | 294.18524 | | +0.98281357 | +0.15164271 | |
| $a$ | 2.4518258 | $\Omega$ | 57.24967 | | −0.08766358 | +0.88525248 | |
| $e$ | 0.1430450 | $i$ | 7.19047 | | −0.16245798 | +0.43969595 | |
| $P$ | 3.84 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 809 | 0.2− | 0.6+ | 2005 03 17 | G96 | 0.6− | 0.1− | 2006 10 28 | 704 | 0.4− | 0.5+ |
| 2001 04 16 | 691 | 0.6+ | 0.7+ | 2005 03 17 | G96 | 0.3− | 0.4+ | 2006 10 28 | 704 | 0.7+ | 0.0 |
| 2001 04 16 | 691 | 0.7+ | 0.7+ | 2005 03 17 | G96 | 1.0− | 0.2+ | 2006 10 28 | 704 | 0.2+ | 0.4− |
| 2001 04 16 | 691 | 0.4+ | 0.7+ | 2005 03 17 | G96 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2001 05 24 | 807 | 0.1+ | 0.8+ | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 05 24 | 807 | 0.0 | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 09 30 | 704 | 0.4+ | 0.3+ | 2005 05 13 | G96 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2002 09 30 | 704 | 0.6− | 0.3− | 2005 05 13 | G96 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 10 02 | 608 | 0.3− | 0.8− | 2006 09 30 | 703 | 0.0 | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 10 02 | 608 | 0.4− | 1.0− | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 10 02 | 608 | 0.4− | 0.7− | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2002 10 04 | 704 | 0.3− | 0.4+ | 2006 10 03 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.2− | 0.1+ | 2006 10 03 | 704 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2002 10 04 | 704 | 0.4− | 0.1− | 2006 10 03 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2002 10 04 | 704 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 1.1+ | 0.7+ |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.3− |
| 2002 10 08 | 699 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2002 10 08 | 699 | 0.4+ | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2002 10 08 | 699 | 0.0 | 0.2+ | 2006 10 04 | 850 | 0.4− | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 10 08 | 699 | 0.4− | 0.7+ | 2006 10 04 | 850 | 0.1− | 1.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 10 15 | 644 | 0.2− | 0.3+ | 2006 10 04 | 850 | 0.2− | 1.1− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 10 15 | 644 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 10 15 | 644 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2002 10 28 | 644 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2002 10 28 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.8− | 0.5− |
| 2002 10 28 | 644 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2002 10 30 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2002 10 30 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2002 10 30 | 704 | 0.0 | 0.7− | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.8+ |
| 2002 10 30 | 704 | 0.4− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2002 11 03 | 608 | 1.0+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 2002 11 03 | 608 | 1.1+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5− | 0.7− |
| 2002 11 03 | 608 | 1.1+ | 1.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2002 11 06 | 644 | 0.1− | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2002 11 06 | 644 | (0.2− | 1.7+) | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.6− |
| 2002 11 06 | 644 | 0.2− | 1.4+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2002 11 11 | 704 | 0.6− | 1.4+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.4− | 1.2− |
| 2002 11 11 | 704 | 1.0− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 1.0− |
| 2002 11 11 | 704 | 0.8− | 1.2− | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.6− |
| 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 0.3+ | 0.3+ | | | | |
| 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 10 28 | 704 | 0.0 | 0.7+ | | | | |

**(142442)∗ 2002 SQ$_{56}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.21226 | | (2000.0) | | | |
| $n$ | 0.25716214 | $\omega$ | 255.53892 | | +0.95873827 | +0.26874033 |
| $a$ | 2.4490521 | $\Omega$ | 88.80772 | | −0.21174579 | +0.89268838 |
| $e$ | 0.2166593 | $i$ | 5.32206 | | −0.18969620 | +0.36178182 |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 17 | 699 | 0.5+ | 0.1− | 2002 10 30 | 704 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 1998 09 17 | 699 | 0.4+ | 0.9+ | 2002 10 30 | 704 | 1.1− | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.1+ |
| 1998 09 17 | 699 | 0.2+ | 1.2+ | 2002 10 30 | 704 | 0.6− | 0.1+ | 2006 11 02 | 703 | 0.7− | 0.9+ |
| 2001 05 24 | 645 | 0.1+ | 0.0 | 2002 10 30 | 704 | 0.0 | 0.1− | 2006 11 02 | 703 | (2.1− | 2.0+) |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2002 10 31 | 704 | 0.3− | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.1+ |
| 2002 08 25 | 644 | 1.1− | 0.0 | 2002 10 31 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 08 25 | 644 | 0.4− | 0.3+ | 2002 10 31 | 704 | 0.8− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2002 08 25 | 644 | 0.2− | 0.4+ | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 09 17 | 608 | 0.9− | 0.3− | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.8+ | 0.7+ |
| 2002 09 17 | 608 | 0.8− | 0.2− | 2002 11 11 | 704 | 0.5+ | 0.3− | 2006 11 13 | 703 | 0.1− | 0.1− |
| 2002 09 17 | 608 | 0.5− | 0.3− | 2002 11 11 | 704 | 0.1− | 1.1+ | 2006 11 13 | 703 | 0.7− | 0.7+ |
| 2002 09 30 | 704 | 0.0 | 0.1− | 2002 11 11 | 704 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.3+ | 0.6+ |
| 2002 09 30 | 704 | 0.2− | 0.3+ | 2002 11 11 | 704 | 0.7+ | 0.8+ | 2006 11 14 | 704 | 0.2+ | 1.0+ |
| 2002 09 30 | 704 | 1.1− | 0.5+ | 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 0.4+ | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.7− | 0.1+ |
| 2002 10 04 | 704 | 0.5+ | 0.4+ | 2004 02 13 | 691 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.2+ | 1.1+ |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2005 04 11 | 691 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.6− | 0.5− |
| 2002 10 04 | 704 | 0.5+ | 0.1− | 2005 04 11 | 691 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2005 04 11 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 05 04 | 691 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 05 04 | 691 | 0.0 | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2002 10 06 | 608 | 0.3− | 1.1+ | 2005 05 04 | 691 | (2.3+ | 1.3+) | 2006 11 17 | 704 | 0.2+ | 0.8+ |
| 2002 10 06 | 608 | 0.6− | 1.0+ | 2005 05 11 | 691 | 0.3+ | 0.7+ | 2006 11 17 | 704 | 0.4+ | 0.7+ |
| 2002 10 06 | 608 | 0.4− | 1.3+ | 2005 05 11 | 691 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.3+ | 1.1+ |
| 2002 10 08 | 699 | 0.3− | 0.2+ | 2005 05 11 | 691 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.1− |
| 2002 10 08 | 699 | 0.1+ | 0.6+ | 2005 05 11 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.8− | 0.5+ |
| 2002 10 08 | 699 | 1.3+ | 0.8+ | 2005 05 11 | 691 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.9− | 0.7+ |
| 2002 10 08 | 699 | 0.1− | 0.5+ | 2005 05 11 | 691 | 0.4+ | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 17 | G92 | 0.3− | 0.7+ | 2006 11 19 | 704 | 0.6− | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 17 | G92 | 0.7− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2002 10 15 | 644 | 0.4− | 0.1+ | 2006 09 17 | G92 | (2.4− | 0.1+) | 2006 11 20 | 704 | 0.3− | 1.4+ |
| 2002 10 15 | 644 | 0.5− | 0.3+ | 2006 09 18 | 703 | 1.1+ | 1.3+ | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2002 10 15 | 644 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.9+ | 2006 11 20 | 704 | 0.2− | 0.9+ |
| 2002 10 28 | 644 | 0.6− | 0.9+ | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | (0.3− | 1.6+) |
| 2002 10 28 | 644 | 0.5− | 1.0+ | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.2− | 0.6+ |
| 2002 10 28 | 644 | 0.3+ | 1.3+ | 2006 10 15 | A44 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.3− |
| 2002 10 30 | 704 | 0.3+ | 0.6+ | 2006 10 15 | A44 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.1+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.2+ | 0.4+ |

**(142443)∗ 2002 SW$_{56}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.65236 | | (2000.0) | | | |
| $n$ | 0.24035287 | $\omega$ | 280.24028 | | +0.99174600 | −0.05463268 |
| $a$ | 2.5619452 | $\Omega$ | 82.96089 | | +0.09774278 | +0.90764842 |
| $e$ | 0.0874306 | $i$ | 6.71191 | | −0.08298320 | +0.41616055 |
| $P$ | 4.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 17 | 608 | 0.5+ | 0.9+ | 2004 01 23 | 704 | 0.1− | 1.3+ | 2006 08 28 | 699 | 0.6+ | 0.5+ |
| 2002 09 17 | 608 | 0.5+ | 1.1+ | 2004 01 28 | 703 | 0.7+ | 0.5+ | 2006 08 28 | 699 | 0.1+ | 1.4+ |
| 2002 09 17 | 608 | 0.5+ | 1.0+ | 2004 01 28 | 703 | 0.4− | 0.5+ | 2006 08 28 | 699 | 0.1− | 1.2+ |
| 2002 09 30 | 704 | (2.4+ | 0.8−) | 2004 01 28 | 703 | 0.8+ | 1.4+ | 2006 08 28 | 699 | 1.0− | 0.6+ |
| 2002 09 30 | 704 | 0.2+ | 0.1+ | 2004 01 28 | 703 | 1.1+ | 0.8+ | 2006 09 12 | 703 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 1.2+ | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.3− | 2006 09 12 | 703 | 0.6− | 0.6− |
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 01 30 | 704 | 0.8− | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.6+ |
| 2002 10 04 | 704 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.3− | 0.7+ | 2006 09 12 | 703 | 0.4+ | 1.0+ |
| 2002 10 04 | 704 | 0.2− | 0.6+ | 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.5+ |
| 2002 10 04 | 704 | 0.3− | 0.3+ | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2006 09 13 | 644 | 0.4− | 0.4+ |
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.7+ |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.7− | 0.4+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.9− | 1.2+ |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.6+ |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2004 02 15 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2002 10 15 | 644 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 703 | (0.4+ | 1.7+) |
| 2002 10 15 | 644 | 0.1− | 0.5+ | 2004 02 15 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.6+ |
| 2002 10 29 | 645 | 0.0 | 0.1− | 2005 05 03 | 703 | (1.9− | 0.5+) | 2006 09 19 | 703 | 0.2− | 0.7+ |
| 2002 10 29 | 645 | 0.0 | 0.1− | 2005 05 03 | 703 | (2.7− | 1.2+) | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 05 03 | 703 | 1.4− | 0.4+ | 2006 09 26 | 703 | 1.4− | 1.3+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 05 03 | 703 | 0.4+ | 1.1− | 2006 09 26 | 703 | (1.5+ | 3.5+) |
| 2002 11 05 | 699 | 0.6− | 0.9+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 2002 11 05 | 699 | 0.4+ | 1.4+ | 2005 05 14 | G96 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.1+ |
| 2002 11 05 | 699 | 1.3− | 0.2+ | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.2+ | 0.1+ |
| 2002 11 05 | 699 | 0.4− | 0.4+ | 2005 05 14 | G96 | 0.2− | 0.2+ | 2006 10 02 | 703 | 1.4− | 0.7+ |
| 2002 11 07 | 704 | 0.3− | 0.8+ | 2005 06 03 | 703 | (1.5− | 1.9+) | 2006 10 02 | 703 | 0.5− | 0.6+ |
| 2002 11 07 | 704 | 0.3− | 0.4+ | 2005 06 03 | 703 | 0.6− | 1.0+ | 2006 10 02 | 703 | 0.1− | 0.4+ |
| 2002 11 07 | 704 | (0.1+ | 1.7+) | 2005 06 03 | 703 | 0.7− | 0.4+ | 2006 10 02 | 703 | 0.1+ | 0.5+ |
| 2002 11 11 | 704 | (2.7+ | 1.8+) | 2005 06 03 | 703 | 0.9− | 0.0 | 2006 10 02 | 703 | 0.3+ | 0.4+ |
| 2002 11 11 | 704 | 0.0 | 0.4+ | 2005 06 04 | 704 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.7− | 0.5+ |
| 2002 11 11 | 704 | 0.4− | 0.2+ | 2005 06 04 | 704 | 0.9+ | 1.4+ | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 11 11 | 704 | 0.6+ | 0.5+ | 2005 06 04 | 704 | 0.9+ | 1.1− | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2002 11 11 | 704 | 0.5− | 0.4+ | 2005 06 04 | 704 | 1.0+ | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2004 01 18 | 644 | 0.0 | 0.6+ | 2005 06 04 | 704 | 0.6+ | 0.6− | 2006 10 22 | 703 | 0.3− | 1.0− |
| 2004 01 18 | 644 | 0.5− | 0.7+ | 2005 06 14 | 691 | 0.5+ | 0.8+ | 2006 10 22 | 703 | 0.2+ | 0.6+ |
| 2004 01 18 | 644 | 0.2+ | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2004 01 23 | 704 | 1.3+ | 0.5+ | 2005 06 14 | 691 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2004 01 23 | 704 | 0.2+ | 0.6+ | 2005 06 23 | 644 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2004 01 23 | 704 | 0.2+ | 0.4+ | 2005 06 23 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2004 01 23 | 704 | 0.1+ | 0.8+ | 2005 06 23 | 644 | 0.6+ | 0.5+ | 2006 10 23 | 644 | 0.3+ | 0.2+ |

**(142444)∗ 2002 SL$_{57}$**

Discovered 2002 Sept. 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.30249 | | | (2000.0) | | |
| $n$ | 0.26193796 | $\omega$ | 239.20822 | | +0.82734659 | +0.55588797 |
| $a$ | 2.4191925 | $\Omega$ | 86.90501 | | −0.48384657 | +0.77814589 |
| $e$ | 0.2096099 | $i$ | 4.62619 | | −0.28528954 | +0.29236542 |
| $P$ | 3.76 | $H$ | 16.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2004 01 22 | 704 | (1.9+ | 0.4−) | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.6+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 09 09 | 608 | (1.6− | 3.6+) | 2004 01 22 | 704 | (3.7+ | 1.3−) | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2002 09 09 | 608 | 0.3− | 1.3+ | 2004 01 30 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2002 09 09 | 608 | 0.4+ | 0.8+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2002 09 14 | 608 | 1.0− | 0.9+ | 2004 01 30 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.9− |
| 2002 09 14 | 608 | 0.6− | 0.6+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 09 14 | 608 | 0.7− | 0.1+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 11 13 | 683 | (1.8+ | 0.9−) |
| 2002 09 30 | 608 | 0.4− | 0.0 | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 683 | 0.2+ | 0.1− |
| 2002 09 30 | 608 | 0.5− | 0.7− | 2005 04 14 | 691 | 0.3+ | 0.9+ | 2006 11 13 | 683 | (1.9+ | 0.2+) |
| 2002 09 30 | 608 | 0.4− | 0.2− | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 2002 10 04 | 704 | 0.1− | 1.5+ | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.9+ | 1.2+ | 2005 04 18 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.7− | 1.2+ |
| 2002 10 04 | 704 | 0.4+ | 0.6+ | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 683 | (0.1− | 1.5−) |
| 2002 10 04 | 704 | 0.2+ | 0.7+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 15 | 683 | (0.5− | 1.6−) |
| 2002 10 04 | 704 | 0.8+ | 1.2+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 15 | 683 | 0.8− | 0.1+ |
| 2002 10 06 | 704 | 0.3+ | 0.1− | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.8+ |
| 2002 10 06 | 704 | 0.8− | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.5− | 1.1+ |
| 2002 10 06 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.9+ | 2006 11 17 | 704 | (1.9− | 1.3+) |
| 2002 10 06 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.7+ | 2006 11 17 | 704 | 0.4− | 0.1− |
| 2002 10 06 | 704 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.1− | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 10 07 | 608 | 0.3− | 0.2− | 2006 10 16 | 703 | 1.2+ | 1.0+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2002 10 07 | 608 | 0.1+ | 0.6− | 2006 10 18 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 10 07 | 608 | 0.0 | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 10 16 | 644 | 0.3− | 0.7+ | 2006 10 18 | 691 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.1+ |
| 2002 10 16 | 644 | 0.8− | 0.8+ | 2006 10 22 | 691 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2002 10 16 | 644 | 0.5− | 0.6+ | 2006 10 22 | 691 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.5+ | 1.1+ |
| 2002 10 25 | 644 | 0.5+ | 1.4+ | 2006 10 22 | 691 | 0.5− | 0.0 | 2006 11 20 | 704 | (0.3+ | 1.7+) |
| 2002 10 25 | 644 | 0.0 | 1.2+ | 2006 10 26 | 106 | 0.5− | 0.2− | 2006 11 23 | 683 | 0.4+ | 0.6− |
| 2002 10 25 | 644 | (0.7+ | 1.8+) | 2006 10 26 | 106 | 0.2− | 0.1− | 2006 11 23 | 683 | (0.6− | 1.8+) |
| 2002 10 29 | 704 | 0.3+ | 0.5− | 2006 10 26 | 106 | 0.2+ | 0.4− | 2006 11 23 | 683 | 0.4+ | 0.0 |
| 2002 10 29 | 704 | 0.4− | 0.9− | 2006 10 26 | 106 | 0.3− | 0.2+ | 2006 11 28 | 704 | 2.6+ | 0.1+ |
| 2002 10 29 | 704 | 0.1− | 0.8− | 2006 11 02 | 703 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.6− |
| 2002 10 29 | 704 | 0.0 | 0.4− | 2006 11 02 | 703 | 0.1− | 0.7− | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2002 10 29 | 704 | 0.2+ | 1.4− | 2006 11 02 | 703 | 0.6− | 0.7+ | 2006 11 28 | 704 | 0.7+ | 0.0 |
| 2004 01 22 | 704 | 0.2− | 0.6+ | 2006 11 02 | 703 | 0.3− | 0.1+ | | | | |

**(142445)∗ 2002 SR$_{58}$ = 2005 GJ$_{68}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75658)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.10393 | | | (2000.0) | | |
| $n$ | 0.26206125 | $\omega$ | 95.37022 | | +0.49525247 | +0.86871550 |
| $a$ | 2.4184337 | $\Omega$ | 204.32084 | | −0.80422850 | +0.45512718 |
| $e$ | 0.1832576 | $i$ | 1.06298 | | −0.32854453 | +0.19542938 |
| $P$ | 3.76 | $H$ | 17.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 16 | 691 | 0.1+ | 1.2− | 2005 05 04 | 568 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1998 07 16 | 691 | 0.0 | 0.5+ | 2005 05 05 | 568 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 1998 07 16 | 691 | 0.2− | 0.6+ | 2005 05 08 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.2+ | 0.1+ | 2005 05 08 | G96 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2005 05 08 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2002 09 30 | 704 | 1.2− | 0.2+ | 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 09 30 | 704 | 0.3− | 0.7+ | 2005 06 13 | G96 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2002 09 30 | 704 | 0.0 | 1.0+ | 2005 06 13 | G96 | 0.3− | 0.9+ | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 2002 10 04 | 291 | 1.2− | 0.0 | 2005 06 13 | G96 | 0.1− | 0.7+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2002 10 04 | 291 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 291 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 09 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 11 09 | 691 | 0.3+ | 0.2+ |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.4+ |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2006 10 04 | G96 | 1.1− | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.0 |
| 2005 03 10 | G96 | 0.7− | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.2− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.6+ | 0.2+ |
| 2005 04 02 | G96 | 0.0 | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.1− | 0.7+ |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.3+ | 0.7− |
| 2005 04 02 | G96 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.3− | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2005 04 09 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2005 04 09 | 691 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2005 04 09 | 691 | 0.6+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2005 05 04 | 568 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.5+ | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2005 05 04 | 568 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ | | | | |

**(142446)∗ 2002 SV$_{58}$**

Discovered 2002 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 90.61160 | | | (2000.0) | | |
| $n$ | 0.26341439 | $\omega$ | 101.77603 | | +0.16068006 | +0.98700584 |
| $a$ | 2.4101443 | $\Omega$ | 177.46945 | | −0.91563758 | +0.14950721 |
| $e$ | 0.1737292 | $i$ | 1.52955 | | −0.36849660 | +0.05888178 |
| $P$ | 3.74 | $H$ | 17.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 608 | 0.1− | 1.0− | 2005 03 10 | G96 | 0.5− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2001 03 20 | 608 | 0.4− | 0.8− | 2005 03 10 | G96 | 0.6− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2001 03 20 | 608 | 0.3− | 0.4− | 2005 03 10 | G96 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2002 09 07 | 704 | 0.2− | 0.2− | 2005 04 02 | G96 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | (1.9+ | 0.8+) | 2005 04 02 | G96 | 0.7− | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.0 |
| 2002 09 15 | 291 | 0.1− | 0.1− | 2005 04 02 | G96 | 0.4− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2002 09 15 | 291 | 0.1− | 0.2− | 2005 04 13 | 699 | 1.0+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2002 09 15 | 291 | 0.0 | 0.0 | 2005 04 13 | 699 | 1.3+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2002 09 30 | 704 | 1.4− | 0.9+ | 2005 04 13 | 699 | 0.7+ | 0.4− | 2006 10 16 | 691 | 0.4− | 0.1− |
| 2002 09 30 | 704 | 0.3+ | 0.5+ | 2005 04 13 | 699 | 0.2− | 1.0− | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2002 09 30 | 704 | 0.3− | 0.3+ | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2002 09 30 | 704 | 0.3− | 1.0+ | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2002 09 30 | 704 | 0.5− | 1.0+ | 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.6+ |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2005 04 18 | 703 | 0.7+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.6+ |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2005 04 18 | 703 | 0.2− | 1.3+ | 2006 10 29 | 691 | 0.2− | 0.5+ |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2005 04 18 | 703 | (0.6+ | 2.1+) | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.9+ | 0.2+ | 2005 04 18 | 704 | 0.0 | 1.4+ | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2005 04 18 | 703 | (1.6+ | 0.7+) | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2005 04 18 | 704 | 1.0+ | 1.0+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2002 10 04 | 644 | 0.3− | 0.0 | 2005 04 18 | 704 | (2.6+ | 0.4−) | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 10 04 | 644 | 0.4− | 0.1− | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2002 10 30 | 645 | 0.1+ | 0.2− | 2005 05 14 | G96 | 0.5− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2002 10 30 | 645 | 0.1+ | 0.2− | 2005 05 14 | G96 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2005 03 10 | G96 | 0.4− | 0.2+ | 2005 05 14 | G96 | 0.5− | 0.6− | | | | |

**(142447)∗ 2002 ST$_{59}$**

Discovered 2002 Sept. 16 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.49851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25732416 | $\omega$ | 222.69492 | | +0.94342432 | +0.30875629 | |
| $a$ | 2.4480240 | $\Omega$ | 118.94875 | | −0.25455638 | +0.90806360 | |
| $e$ | 0.1152637 | $i$ | 7.94247 | | −0.21248907 | +0.28300186 | |
| $P$ | 3.83 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 644 | 0.0 | 1.2+ | 2004 02 14 | 691 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.5+ | 0.0 | |
| 2002 09 10 | 644 | 0.1+ | 1.4+ | 2004 02 14 | 691 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.8+ | 0.1+ | |
| 2002 09 10 | 644 | 0.0 | 1.5+ | 2005 05 07 | 703 | 0.7− | 0.5− | 2006 10 11 | 644 | 0.6+ | 0.0 | |
| 2002 09 16 | 608 | 0.6− | 0.3− | 2005 05 07 | 703 | 0.6− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2002 09 16 | 608 | 0.5− | 0.2− | 2005 05 07 | 703 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2002 09 16 | 608 | 0.4− | 0.3− | 2005 05 07 | 703 | 0.9− | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.1− | |
| 2002 09 17 | 644 | 0.0 | 0.1− | 2005 05 15 | 644 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 1.0− | |
| 2002 09 17 | 644 | 0.3+ | 0.4− | 2005 05 15 | 644 | 0.9+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.7+ | |
| 2002 09 17 | 644 | 0.2+ | 0.2− | 2005 05 15 | 644 | 0.9+ | 0.4+ | 2006 10 16 | 703 | 1.0+ | 0.2− | |
| 2002 09 29 | 608 | 0.1− | 0.5+ | 2006 09 18 | 703 | 1.5+ | 1.2− | 2006 10 16 | 703 | 0.1− | 1.1+ | |
| 2002 09 29 | 608 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.1+ | |
| 2002 09 29 | 608 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 10 22 | 703 | 0.8− | 0.1− | |
| 2002 10 10 | 699 | 0.1+ | 1.2− | 2006 09 18 | 703 | 0.2− | 1.2− | 2006 10 22 | 703 | 0.0 | 0.3+ | |
| 2002 10 10 | 699 | 0.2− | 0.7+ | 2006 09 21 | 699 | 0.7− | 0.8+ | 2006 10 22 | 703 | 0.5− | 0.1+ | |
| 2002 10 10 | 699 | 0.3− | 1.1+ | 2006 09 21 | 699 | 0.5+ | 0.6+ | 2006 10 28 | 703 | 0.5+ | 0.4+ | |
| 2002 10 10 | 699 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.7− | 1.3+ | 2006 10 28 | 703 | 0.0 | 0.1− | |
| 2004 01 19 | 691 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.6− | 0.3+ | 2006 10 28 | 703 | 1.1+ | 0.5− | |
| 2004 01 19 | 691 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.5− | |
| 2004 01 19 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.3− | |
| 2004 01 22 | 704 | 0.9+ | 0.9− | 2006 09 26 | 703 | 0.5+ | 0.4+ | 2006 11 16 | 703 | 0.9+ | 0.1− | |
| 2004 01 22 | 704 | 0.5+ | 0.8− | 2006 09 26 | 703 | 1.0− | 0.9+ | 2006 11 16 | 703 | (3.3− | 1.7−) | |
| 2004 01 22 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.5+ | 0.1− | 2006 11 16 | 703 | 1.1− | 1.7− | |
| 2004 01 22 | 704 | 0.0 | 0.9− | 2006 10 10 | 644 | 0.4+ | 0.1− | | | | | |
| 2004 02 14 | 691 | (1.9− | 0.4−) | 2006 10 10 | 644 | 0.4+ | 0.1− | | | | | |

**(142448)∗ 2002 SS$_{60}$**

Discovered 2002 Sept. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.95796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27401778 | $\omega$ | 20.11882 | | +0.35328332 | −0.92976916 | |
| $a$ | 2.3475610 | $\Omega$ | 49.34238 | | +0.83856410 | +0.26566121 | |
| $e$ | 0.0706519 | $i$ | 7.84440 | | +0.41473021 | +0.25485963 | |
| $P$ | 3.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1− | 0.2− | 2002 10 05 | 704 | (0.4− | 2.5+) | 2006 11 18 | 691 | 0.1+ | 0.2+ | |
| 1995 10 21 | 691 | 0.0 | 0.2− | 2002 10 05 | 704 | 0.7+ | 0.8+ | 2006 11 19 | 704 | 0.8− | 0.1− | |
| 1995 10 21 | 691 | 0.2+ | 0.3− | 2002 10 05 | 704 | 0.0 | 1.2− | 2006 11 19 | 704 | 0.1+ | 0.4+ | |
| 1997 03 02 | 691 | 0.1− | 0.3− | 2002 10 05 | 704 | 1.1+ | 0.7+ | 2006 11 19 | 704 | 0.3+ | 0.5+ | |
| 1997 03 02 | 691 | 0.2− | 0.1+ | 2004 02 16 | 704 | (0.2− | 1.8+) | 2006 11 19 | 704 | 0.3+ | 0.5+ | |
| 1997 03 02 | 691 | 0.2− | 0.1+ | 2004 02 16 | 704 | 0.7+ | 1.0− | 2006 11 19 | 704 | 0.9+ | 0.2+ | |
| 1999 12 12 | 704 | 0.5+ | 0.5− | 2004 02 16 | 704 | 0.4− | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.2+ | |
| 1999 12 12 | 704 | 0.5+ | 0.7− | 2004 02 16 | 704 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.1+ | |
| 1999 12 12 | 704 | 0.1+ | 0.5− | 2004 02 16 | 704 | 0.6+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.2+ | |
| 1999 12 12 | 704 | 0.0 | 0.1+ | 2004 03 23 | 704 | (0.5+ | 1.6+) | 2006 11 22 | 691 | 0.0 | 0.1+ | |
| 1999 12 12 | 704 | 1.2+ | 0.7+ | 2004 03 23 | 704 | 0.5+ | 1.2+ | 2006 11 22 | 691 | 0.2+ | 0.2+ | |
| 2000 01 02 | 704 | 0.6− | 0.3− | 2004 03 23 | 704 | (0.5+ | 1.7+) | 2006 11 22 | 704 | 0.2+ | 0.7+ | |
| 2000 01 02 | 704 | 0.1+ | 0.3− | 2004 03 23 | 704 | (0.6+ | 1.9+) | 2006 11 22 | 691 | 0.1+ | 0.1+ | |
| 2000 01 02 | 704 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.1+ | |
| 2002 09 10 | 644 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.1− | |
| 2002 09 10 | 644 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.0 | |
| 2002 09 10 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.2− | |
| 2002 09 16 | 644 | 0.7− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 25 | 691 | 1.4− | 1.5− | |
| 2002 09 16 | 644 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 25 | 691 | 0.4− | 0.8+ | |
| 2002 09 16 | 644 | 0.8− | 0.5+ | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.1− | |
| 2002 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.4− | 0.3− | 2006 11 27 | 704 | 0.0 | 0.3+ | |
| 2002 09 16 | 644 | 0.7− | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 27 | 704 | 0.1+ | 0.8+ | |
| 2002 09 16 | 644 | 0.6+ | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 27 | 704 | 0.1− | 0.5+ | |
| 2002 09 17 | 644 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 27 | 704 | 0.1+ | 0.4+ | |
| 2002 09 17 | 644 | 0.6− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.1− | 2.2− | |
| 2002 09 17 | 644 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.6+ | |
| 2002 09 29 | 608 | 1.1+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.4− | |
| 2002 09 29 | 608 | 0.8+ | 0.6− | 2006 11 10 | 691 | 0.9− | 0.2− | 2006 11 28 | 704 | 2.4− | 0.9− | |
| 2002 09 29 | 608 | 0.6+ | 1.0− | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 1.0+ | 0.2− | |
| 2002 10 05 | 704 | 0.6− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 12 01 | 704 | 1.1+ | 0.4− | |
| 2002 10 05 | 704 | (2.4+ | 0.2−) | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.8+ | 0.3+ | |
| 2002 10 05 | 704 | 0.2− | 0.5+ | 2006 11 18 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 1.0+ | 0.0 | |
| 2002 10 05 | 704 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.8+ | 0.3− | |

**(142449)∗ 2002 TB = 2004 BF$_{111}$**

Discovered 2002 Oct. 1 by P. Pravec at Ondřejov.

Id. G. V. Williams (*MPO* 61360)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.03766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21871841 | $\omega$ | 256.52590 | | +0.48800270 | −0.87228709 | |
| $a$ | 2.7282185 | $\Omega$ | 164.15107 | | +0.83841842 | +0.45854358 | |
| $e$ | 0.0535520 | $i$ | 6.54357 | | +0.24270954 | +0.16986177 | |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | (0.1+ | 2.1−) | 2004 02 03 | 704 | 1.2+ | 0.6+ | 2006 08 17 | 644 | 0.2− | 0.1+ | |
| 1998 12 22 | 704 | 1.2+ | 0.3− | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.3− | 0.1+ | |
| 1998 12 22 | 704 | 0.3− | 0.8− | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 08 17 | 644 | 0.6− | 0.0 | |
| 1998 12 22 | 704 | 0.9− | 0.7+ | 2004 02 11 | 644 | 0.3− | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.0 | |
| 2000 03 29 | 704 | 0.7+ | 0.4+ | 2004 02 11 | 691 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.4− | 0.2+ | |
| 2000 03 29 | 704 | 0.2+ | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 08 18 | 644 | 0.5− | 0.1− | |
| 2000 03 29 | 704 | 0.5+ | 0.2− | 2004 02 11 | 691 | 0.2− | 0.4+ | 2006 08 19 | 699 | 0.5− | 0.1− | |
| 2000 03 29 | 704 | 0.5+ | 0.9+ | 2004 02 14 | 333 | 0.1− | 0.1− | 2006 08 19 | 699 | 0.7+ | 0.5+ | |
| 2002 09 29 | 608 | 0.5− | 1.0+ | 2004 02 14 | 333 | 0.4+ | 0.8− | 2006 08 19 | 699 | 0.1+ | 0.7+ | |
| 2002 09 29 | 608 | (0.8− | 2.0+) | 2004 02 14 | 333 | 0.1+ | 0.5− | 2006 08 19 | 699 | 0.1+ | 0.8+ | |
| 2002 09 29 | 608 | (0.3− | 1.8+) | 2004 02 17 | 704 | (0.1+ | 1.8+) | 2006 08 28 | 691 | 0.0 | 0.4+ | |
| 2002 10 01 | 557 | 0.1+ | 0.7+ | 2004 02 17 | 704 | 0.1− | 1.4+ | 2006 08 28 | 691 | 0.1− | 0.6+ | |
| 2002 10 01 | 557 | 0.1− | 0.2+ | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 691 | 0.2− | 0.4+ | |
| 2002 10 01 | 557 | (1.7+ | 0.4−) | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.2− | |
| 2002 10 02 | 557 | 0.7− | 0.7+ | 2004 02 18 | 608 | 0.4+ | 0.6− | 2006 08 28 | 703 | 0.4− | 0.5− | |
| 2002 10 02 | 557 | 1.5− | 0.0 | 2004 02 18 | 608 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.5+ | 0.5+ | |
| 2002 10 02 | 704 | (1.6− | 1.3+) | 2004 02 18 | 608 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.6− | 0.5− | |
| 2002 10 02 | 704 | 0.2+ | 1.2+ | 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.1+ | 1.4− | |
| 2002 10 02 | 704 | 0.5+ | 0.7+ | 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 08 29 | 704 | 0.5+ | 0.3− | |
| 2002 10 11 | 704 | 0.5− | 0.6+ | 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 704 | 0.3− | 0.4− | |
| 2002 10 11 | 704 | 1.3− | 1.2+ | 2005 06 01 | 691 | 0.1− | 0.1+ | 2006 08 29 | 704 | 0.8+ | 0.3+ | |
| 2002 10 11 | 704 | (0.4− | 1.6+) | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3+ | |
| 2002 10 11 | 704 | 0.3− | 1.4+ | 2005 06 01 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.4+ | |
| 2004 01 29 | 704 | 0.0 | 0.8+ | 2005 06 05 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.6+ | |
| 2004 01 29 | 704 | 0.4+ | 0.7+ | 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.5+ | |
| 2004 01 29 | 704 | 0.0 | 0.1+ | 2005 06 05 | 691 | (0.7+ | 3.0−) | 2006 10 28 | G96 | 0.2− | 0.5+ | |
| 2004 01 29 | 704 | 0.8+ | 0.9+ | 2005 06 09 | 691 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.4+ | |
| 2004 01 30 | 704 | 0.1− | 0.4+ | 2005 06 09 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.6+ | 0.6− | |
| 2004 01 30 | 704 | 0.2+ | 0.9+ | 2005 06 09 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.6+ | 0.1− | |
| 2004 01 30 | 704 | 0.3− | 0.1+ | 2005 06 13 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.2+ | |
| 2004 01 30 | 704 | 1.1+ | 0.2− | 2005 06 13 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.2+ | |
| 2004 01 30 | 704 | 1.2+ | 0.6+ | 2005 06 13 | 691 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.4+ | 0.4− | |
| 2004 02 03 | 704 | 0.3− | 0.3+ | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 1.1− | 0.3− | |
| 2004 02 03 | 704 | 0.0 | 0.4+ | 2006 08 13 | 644 | 0.2+ | 0.1+ | | | | | |
| 2004 02 03 | 704 | 0.2+ | 0.5+ | 2006 08 13 | 644 | 0.3+ | 0.1+ | | | | | |

**(142450)∗ 2002 TV = 2000 CM$_{147}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 43230)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.80180 | | (2000.0) | | | |
| $n$ | 0.27157205 | $\omega$ | 299.67780 | | +0.14360651 | −0.98832218 |
| $a$ | 2.3616344 | $\Omega$ | 141.95944 | | +0.93415409 | +0.11837819 |
| $e$ | 0.1151923 | $i$ | 4.74322 | | +0.32670063 | +0.09594726 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 12 | 691 | 0.5− | 0.1+ | 2002 10 06 | 704 | 0.6+ | 0.6+ | 2004 03 19 | 704 | 0.1− | 0.5+ |
| 1997 04 12 | 691 | 0.4− | 0.1+ | 2002 10 11 | 704 | (0.2− | 1.7+) | 2004 03 19 | 704 | 0.2+ | 0.7+ |
| 1997 04 12 | 691 | 0.5− | 0.2− | 2002 10 11 | 704 | 1.0− | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.8+ |
| 1998 08 30 | 691 | 0.4− | 0.8+ | 2002 10 11 | 704 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.3+ | 0.5+ |
| 1998 08 30 | 691 | 0.2− | 0.6+ | 2002 10 11 | 704 | 0.6− | 0.2− | 2004 03 20 | 699 | 0.4+ | 1.4+ |
| 1998 08 30 | 691 | 0.4− | 0.6+ | 2002 10 29 | 704 | 0.5+ | 0.4− | 2004 03 20 | 699 | 0.8+ | 1.5− |
| 1999 12 31 | 699 | 0.5+ | 0.3+ | 2002 10 29 | 704 | 0.7+ | 0.8+ | 2004 03 20 | 699 | 0.0 | 0.0 |
| 1999 12 31 | 699 | 0.6+ | 0.6− | 2002 10 29 | 704 | 0.2+ | 0.3− | 2004 03 20 | 699 | 0.4− | 0.6+ |
| 1999 12 31 | 699 | 0.6+ | 0.4+ | 2002 10 29 | 704 | 0.2− | 1.0+ | 2004 03 26 | 691 | 0.0 | 0.4+ |
| 2000 02 02 | 704 | 0.1− | 0.0 | 2004 02 16 | 703 | (1.8+ | 0.1+) | 2004 03 26 | 691 | 0.0 | 0.4+ |
| 2000 02 02 | 704 | 0.1− | 0.8− | 2004 02 16 | 703 | 0.0 | 0.2− | 2004 03 26 | 691 | 0.3− | 0.1+ |
| 2000 02 02 | 704 | 0.3− | 0.0 | 2004 02 16 | 703 | (0.1+ | 1.8+) | 2006 11 17 | 704 | 0.5− | 0.3− |
| 2000 02 02 | 704 | 0.3− | 0.4+ | 2004 02 16 | 703 | 1.3+ | 0.9+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2000 02 02 | 704 | 0.1+ | 1.1+ | 2004 02 19 | 704 | 1.0+ | 0.4+ | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2000 02 03 | 704 | 0.3− | 0.5− | 2004 02 19 | 704 | 1.1+ | 0.9+ | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2000 02 03 | 704 | 0.6+ | 0.7− | 2004 02 19 | 704 | 1.4+ | 0.7+ | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2000 02 03 | 704 | 0.0 | 0.5+ | 2004 02 19 | 704 | 0.7+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2000 02 03 | 704 | 0.6+ | 0.4+ | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 10 01 | 699 | (0.3+ | 1.5+) | 2004 02 23 | 704 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 10 01 | 699 | 0.9− | 0.2+ | 2004 02 23 | 704 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 10 01 | 699 | 1.0+ | 0.8+ | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 10 01 | 699 | 0.3− | 1.0+ | 2004 02 23 | 704 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.4− | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.5+ | 2004 03 11 | 644 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.4+ | 1.4+ | 2004 03 11 | 644 | 0.4+ | 0.8+ | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2004 03 11 | 644 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.6− | 0.6− | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2002 10 03 | 704 | 1.3+ | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.2− | 2006 11 28 | 704 | 1.2− | 0.4− |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2004 03 15 | 704 | 0.8+ | 0.2+ | 2006 11 28 | 704 | 0.6− | 0.2+ |
| 2002 10 03 | 704 | 0.2− | 1.2+ | 2004 03 15 | 704 | 0.5+ | 0.6+ | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2002 10 03 | 704 | 1.0− | 0.0 | 2004 03 15 | 704 | 1.0+ | 0.2+ | 2006 11 28 | 704 | 2.5− | 0.2+ |
| 2002 10 06 | 704 | (2.4+ | 1.4+) | 2004 03 15 | 185 | 0.8+ | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2002 10 06 | 704 | 0.2+ | 0.0 | 2004 03 15 | 185 | 0.7+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.2− |
| 2002 10 06 | 704 | 1.3+ | 0.1+ | 2004 03 15 | 185 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2002 10 06 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.4+ | | | | |

**(142451)∗ 2002 TG$_1$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.46148 | | (2000.0) | | | |
| $n$ | 0.26938193 | $\omega$ | 272.60860 | | +0.69772992 | +0.71290902 |
| $a$ | 2.3744174 | $\Omega$ | 41.93307 | | −0.60838329 | +0.64147243 |
| $e$ | 0.2062276 | $i$ | 6.03343 | | −0.37820991 | +0.28332639 |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.0 | 0.3− | 2002 10 11 | 704 | 0.5+ | 0.5+ | 2005 06 01 | G96 | 0.4− | 0.0 |
| 1993 01 22 | 691 | 0.1− | 0.7+ | 2002 10 11 | 704 | 0.6− | 0.3+ | 2005 06 01 | G96 | 0.2− | 0.0 |
| 1993 01 22 | 691 | 0.3+ | 0.1+ | 2002 10 11 | 704 | 0.9+ | 0.5+ | 2005 06 02 | G96 | 0.2− | 0.2+ |
| 2002 09 14 | 608 | 0.9− | 0.7− | 2002 10 11 | 704 | 0.3+ | 0.5+ | 2005 06 02 | G96 | 0.1− | 0.2+ |
| 2002 09 14 | 608 | 0.8− | 0.5− | 2005 04 02 | G96 | 0.4− | 0.1− | 2005 06 02 | G96 | 0.0 | 0.0 |
| 2002 09 14 | 608 | 0.5− | 0.0 | 2005 04 02 | G96 | 0.5− | 0.1+ | 2005 06 02 | G96 | 0.4− | 0.1− |
| 2002 09 17 | 608 | 1.0− | 0.6− | 2005 04 02 | G96 | 0.7− | 0.1− | 2005 06 02 | G96 | 0.3− | 0.4+ |
| 2002 09 17 | 608 | (1.6− | 0.1+) | 2005 04 02 | G96 | 0.2− | 0.1+ | 2005 06 02 | G96 | 0.3+ | 0.0 |
| 2002 09 17 | 608 | 1.4− | 0.2− | 2005 04 11 | G96 | 0.3− | 0.3+ | 2005 06 02 | G96 | 0.1− | 0.3+ |
| 2002 10 01 | 699 | 0.6+ | 0.0 | 2005 04 11 | G96 | 0.3− | 0.5+ | 2005 06 02 | G96 | 0.3− | 0.0 |
| 2002 10 01 | 699 | 0.3+ | 0.7− | 2005 04 11 | G96 | 0.2− | 0.2+ | 2005 06 02 | G96 | 0.3+ | 0.0 |
| 2002 10 01 | 699 | 0.4+ | 0.4+ | 2005 04 11 | G96 | 0.3− | 0.3+ | 2005 06 02 | G96 | 0.2− | 0.1+ |
| 2002 10 01 | 699 | 0.6+ | 0.4− | 2005 04 16 | 691 | 0.5+ | 0.2+ | 2005 06 02 | G96 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.3+ | 1.5+ | 2005 04 16 | 691 | 0.5+ | 0.4+ | 2005 06 02 | G96 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 1.1− | 0.4+ | 2005 04 16 | 691 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | 0.6− | 1.3+ | 2005 05 07 | G96 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2005 05 07 | G96 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 1.2+ | 1.1+ | 2005 05 07 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | (1.0+ | 1.7+) | 2005 05 07 | G96 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.4+ | 0.5+ | 2005 05 14 | 644 | 0.5+ | 0.7+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2002 10 08 | 699 | 0.4+ | 1.0+ | 2005 05 14 | 644 | 0.4+ | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2002 10 08 | 699 | 0.8− | 0.1− | 2005 05 14 | 644 | 0.4+ | 0.4+ | 2006 11 25 | 691 | 0.1− | 0.2+ |
| 2002 10 08 | 699 | 1.2− | 0.6− | 2005 06 01 | G96 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.0 | 0.6+ |
| 2002 10 08 | 699 | 0.4+ | 0.5+ | 2005 06 01 | G96 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.1− |

**(142452)∗ 2002 TP$_1$ = 2004 CL$_{43}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61360)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.21881 | | (2000.0) | | | |
| $n$ | 0.23842148 | $\omega$ | 55.51199 | | +0.83479647 | −0.55053382 |
| $a$ | 2.5757624 | $\Omega$ | 337.89024 | | +0.50046196 | +0.76276167 |
| $e$ | 0.1336344 | $i$ | 0.79627 | | +0.22946170 | +0.33927444 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.3+ | 0.1+ | 2004 02 12 | 291 | 0.3− | 0.2+ | 2006 09 17 | 704 | 1.2− | 0.7+ |
| 2000 03 11 | 704 | 0.7+ | 0.2+ | 2004 02 12 | 291 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.7+ | 0.5+ | 2004 02 12 | 291 | 0.9+ | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.4+ |
| 2000 03 11 | 704 | 0.8+ | 0.0 | 2004 02 16 | 691 | 0.5+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.5+ | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | (0.2− | 1.7+) |
| 2002 09 17 | 608 | 1.0− | 0.0 | 2004 02 16 | 691 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.5− |
| 2002 09 17 | 608 | 1.1− | 0.1+ | 2004 02 26 | 704 | 0.5+ | 0.8+ | 2006 09 20 | 704 | (0.0 | 1.8+) |
| 2002 09 17 | 608 | 0.6− | 0.0 | 2004 02 26 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 704 | 0.3− | 1.2+ |
| 2002 10 01 | 699 | 1.2− | 0.6− | 2004 02 26 | 704 | 0.6− | 0.5− | 2006 09 20 | 704 | 0.3− | 0.4+ |
| 2002 10 01 | 699 | 0.5+ | 0.6+ | 2004 02 26 | 704 | 0.1+ | 1.3+ | 2006 09 20 | 704 | (0.9− | 2.0+) |
| 2002 10 01 | 699 | 0.3− | 0.6− | 2004 02 26 | 704 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.1+ | 1.3− |
| 2002 10 01 | 699 | 0.9+ | 1.3+ | 2004 02 29 | 291 | 0.3− | 0.3+ | 2006 09 26 | 704 | (1.3+ | 1.6+) |
| 2002 10 02 | 704 | 1.0+ | 0.2− | 2004 02 29 | 291 | 0.0 | 0.5+ | 2006 09 26 | 704 | (2.8+ | 1.5+) |
| 2002 10 02 | 704 | 0.3− | 0.5− | 2004 02 29 | 291 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.3− |
| 2002 10 02 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 704 | 0.3− | 1.2+ | 2006 09 27 | 704 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 704 | (0.3− | 2.0−) |
| 2002 10 02 | 704 | 0.8+ | 1.1+ | 2004 03 18 | 704 | 0.6− | 0.8+ | 2006 09 27 | 704 | 0.7− | 1.5+ |
| 2002 10 03 | 704 | 0.6+ | 1.1+ | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.2− |
| 2002 10 03 | 704 | 0.7+ | 0.5+ | 2005 06 14 | G96 | 0.1− | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | (1.8+ | 0.8−) | 2005 06 14 | G96 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 0.4− | 2005 06 14 | G96 | 0.2− | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.9− |
| 2002 10 07 | 704 | 0.4− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.1− |
| 2002 10 07 | 704 | 0.3+ | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.3− | 0.2− |
| 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.2− |
| 2002 10 07 | 704 | 0.1+ | 0.2− | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.8− |
| 2002 10 09 | 704 | 0.5− | 0.1− | 2006 08 19 | 691 | 0.7− | 0.5+ | 2006 10 01 | 704 | 0.9+ | 0.2+ |
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.2+ | 1.0+ |
| 2002 10 09 | 704 | 1.3− | 0.8− | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 1.0− | 0.3− | 2006 08 25 | 704 | 0.6− | 1.2+ | 2006 10 01 | 704 | 0.4+ | 0.1+ |
| 2002 10 09 | 704 | 0.4− | 0.1+ | 2006 08 25 | 704 | (0.0 | 2.2+) | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.2+ | 2006 08 25 | 704 | 0.2− | 1.5+ | 2006 10 17 | 703 | 1.4− | 0.9+ |
| 2002 10 11 | 704 | 0.3− | 0.7− | 2006 08 25 | 704 | (1.6− | 2.2+) | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2002 10 11 | 704 | 0.8+ | 0.4− | 2006 08 28 | 703 | 0.1− | 0.9− | 2006 10 17 | 703 | (2.8− | 1.8−) |
| 2002 10 11 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.5− | 1.3− | 2006 10 17 | 106 | (0.7− | 1.5−) |
| 2002 10 11 | 704 | 0.1− | 0.7− | 2006 08 28 | 703 | 0.3− | 0.9− | 2006 10 17 | 106 | 0.4+ | 0.1− |
| 2002 10 30 | 291 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 10 17 | 106 | 0.9− | 0.1− |
| 2002 10 30 | 291 | 0.3+ | 0.3− | 2006 09 12 | 703 | (0.5+ | 1.5+) | 2006 10 17 | 106 | 0.5+ | 0.1+ |
| 2002 10 30 | 291 | 0.4+ | 0.3− | 2006 09 12 | 703 | (0.0 | 1.7+) | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2002 11 01 | 704 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2002 11 01 | 704 | 0.7+ | 0.3− | 2006 09 12 | 703 | 1.0+ | 1.1+ | 2006 10 19 | 644 | 0.4+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 704 | 0.3− | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 11 06 | 704 | 0.3− | 0.3− | 2006 09 13 | 644 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2002 11 06 | 704 | 0.2− | 0.1− | 2006 09 13 | 644 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.7+ | 0.1+ | 2006 09 16 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.6− | 0.5− | 2006 09 16 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 11 06 | 704 | 0.1− | 0.5− | 2006 09 16 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 11 10 | 704 | 0.2+ | 0.6− | 2006 09 17 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 11 10 | 704 | 0.7− | 0.3+ | 2006 09 17 | 704 | 0.6− | 0.7+ | | | | |
| 2002 11 10 | 704 | 0.1− | 0.2− | 2006 09 17 | 704 | 1.1− | 0.2+ | | | | |

**(142453)∗ 2002 TS$_1$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.14371 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24097882 | $\omega$ | 259.01213 | | +0.20239211 | +0.97469171 | |
| $a$ | 2.5575068 | $\Omega$ | 23.32886 | | −0.77854750 | +0.21895210 | |
| $e$ | 0.1182972 | $i$ | 13.87127 | | −0.59405489 | +0.04512259 | |
| $P$ | 4.09 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 15 | 910 | 0.4+ | 0.6− | 2002 11 06 | 704 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.3+ | 0.2− |
| 1998 10 15 | 910 | 0.8+ | 0.0 | 2002 11 06 | 704 | 1.0− | 0.2− | 2006 09 29 | 699 | 0.3− | 0.5+ |
| 1998 10 15 | 910 | 0.2+ | 0.5− | 2002 11 06 | 704 | 0.4− | 0.9+ | 2006 09 29 | 699 | 0.2+ | 0.3− |
| 2002 09 17 | 608 | 0.4− | 0.9− | 2002 11 06 | 704 | 0.9− | 0.8+ | 2006 09 29 | 699 | 0.2− | 1.0− |
| 2002 09 17 | 608 | 0.8− | 0.5− | 2002 11 22 | 644 | 0.2− | 0.5+ | 2006 09 29 | 699 | 0.3− | 0.1+ |
| 2002 09 17 | 608 | 0.7− | 0.4− | 2002 11 22 | 644 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2002 10 01 | 699 | 0.9− | 1.2+ | 2002 11 22 | 644 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.5− | 0.4+ |
| 2002 10 01 | 699 | 1.3+ | 0.2− | 2003 12 29 | 703 | 0.5+ | 0.5+ | 2006 10 02 | 691 | 0.5− | 0.3+ |
| 2002 10 01 | 699 | 1.2+ | 0.8− | 2003 12 29 | 703 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 10 01 | 699 | 0.4− | 1.0+ | 2003 12 29 | 703 | (1.5− | 1.8+) | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.3− | 2003 12 29 | 703 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.2− | 0.2− | 2005 04 11 | 699 | 1.1− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.7− |
| 2002 10 02 | 704 | 0.1− | 0.3− | 2005 04 11 | 699 | 0.7− | 0.5+ | 2006 10 17 | 703 | 1.0+ | 0.2+ |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2005 04 11 | 699 | (2.5+ | 1.0−) | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2005 04 18 | 703 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 1.3+ | 0.1− | 2005 04 18 | 703 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 1.1− | 2005 04 18 | 703 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.6+ | 0.3+ |
| 2002 10 03 | 704 | 0.6+ | 0.1+ | 2005 04 18 | 703 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2005 05 16 | 644 | 1.0+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2002 10 07 | 704 | 0.8− | 0.3+ | 2005 05 16 | 644 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 10 07 | 704 | 0.1− | 0.0 | 2005 05 16 | 644 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.1− | 0.2+ | 2005 06 26 | 644 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 10 07 | 704 | 0.2− | 0.0 | 2005 06 26 | 644 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.3− | 0.3+ | 2005 06 26 | 644 | 0.7+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 10 09 | 704 | (2.5− | 0.2+) | 2006 07 30 | D35 | 1.3− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 10 09 | 704 | (2.6− | 0.0 ) | 2006 07 30 | D35 | (2.4− | 0.9+) | 2006 10 22 | G96 | 0.4− | 0.1− |
| 2002 10 09 | 704 | (2.7− | 0.1+) | 2006 07 30 | D35 | (1.7− | 1.1+) | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2002 10 09 | 704 | (3.3− | 0.6+) | 2006 09 12 | 703 | 1.1+ | 1.1− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | (1.6− | 0.7+) | 2006 09 12 | 703 | 0.8− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 10 09 | 291 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.6− | 0.3− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 10 09 | 291 | 0.2− | 0.2− | 2006 09 12 | 703 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 10 09 | 291 | 0.0 | 0.0 | 2006 09 21 | 699 | 1.1+ | 1.1− | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2002 10 11 | 704 | 0.5− | 0.7+ | 2006 09 21 | 699 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.3− | 1.1+ |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 09 21 | 699 | 0.8+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2002 10 11 | 704 | 0.1+ | 0.7+ | 2006 09 22 | 704 | (0.6− | 2.2+) | 2006 11 11 | 703 | 0.9+ | 0.8+ |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 09 22 | 704 | 1.2− | 1.1+ | 2006 11 13 | G96 | 0.3− | 0.8− |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 704 | (1.0− | 2.1+) | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2002 10 30 | 644 | 0.3− | 0.4− | 2006 09 22 | 704 | 0.9− | 0.5+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2002 10 30 | 644 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2002 10 30 | 644 | 0.2− | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2002 10 31 | 699 | 0.5+ | 0.7+ | 2006 09 25 | 699 | 1.4+ | 0.6− | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2002 10 31 | 699 | 0.7+ | 0.2− | 2006 09 25 | 699 | 0.0 | 0.7− | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2002 10 31 | 699 | 1.0+ | 0.5+ | 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2002 10 31 | 699 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.3+ | 0.2− | | | | |

**(142454)∗ 2002 TW$_1$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.04838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24278568 | $\omega$ | 129.21836 | | +0.00414242 | −0.99984474 | |
| $a$ | 2.5448020 | $\Omega$ | 320.53405 | | +0.90897020 | +0.01090431 | |
| $e$ | 0.1737598 | $i$ | 1.54407 | | +0.41684052 | −0.01384202 | |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.9+ | 0.9+ | 2002 11 01 | 704 | 1.1+ | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.6− |
| 2000 04 05 | 704 | 0.7+ | 0.4+ | 2002 11 05 | 699 | 0.6− | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.0 |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | 2002 11 05 | 699 | 0.7+ | 0.2− | 2006 09 17 | 703 | 0.3+ | 0.0 |
| 2000 04 05 | 704 | 0.7+ | 1.3+ | 2002 11 05 | 699 | 0.3− | 0.3+ | 2006 09 18 | 699 | 1.0− | 0.1− |
| 2000 04 05 | 704 | 1.1+ | 0.8+ | 2002 11 05 | 699 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.6− | 0.1− |
| 2002 10 01 | 699 | 1.3− | 0.2− | 2002 11 06 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | (1.0− | 1.9+) |
| 2002 10 01 | 699 | 1.1− | 0.7+ | 2002 11 06 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.8+ |
| 2002 10 01 | 699 | (1.6− | 1.9+) | 2002 11 06 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 1.2− | 1.3+ | 2002 11 06 | 704 | 0.6+ | 1.2+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2002 11 22 | 644 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 2002 10 02 | 704 | 0.7− | 0.9+ | 2002 11 22 | 644 | 0.2− | 0.1− | 2006 09 22 | A50 | 0.1− | 1.0+ |
| 2002 10 02 | 704 | 0.2− | 1.1+ | 2002 11 22 | 644 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.2+ | 1.1+ |
| 2002 10 03 | 704 | 0.6− | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.7+ | 2006 09 27 | 699 | 0.8− | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2004 03 18 | 704 | 0.8− | 0.2+ | 2006 09 27 | 699 | 0.1+ | 0.6+ |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2004 03 18 | 704 | 0.6+ | 0.8+ | 2006 09 27 | 699 | 1.0− | 0.9+ |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2004 03 24 | 699 | 0.7− | 0.5+ | 2006 09 27 | 699 | (1.8+ | 0.4+) |
| 2002 10 04 | 704 | 0.6− | 0.6+ | 2004 03 24 | 699 | 1.2− | 1.0+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2002 10 04 | 704 | 0.8− | 0.4+ | 2004 03 24 | 699 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.2− | 0.1+ | 2004 03 24 | 699 | 0.6+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | 0.7− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 10 15 | 106 | 0.6− | 0.2+ |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.3− | 0.9− | 2006 10 15 | 106 | 0.0 | 0.5+ |
| 2002 10 09 | 704 | 0.4+ | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 10 15 | 106 | 0.6− | 0.4− |
| 2002 10 09 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.8− | 0.2+ | 2006 10 15 | 106 | 0.8+ | 0.1+ |
| 2002 10 09 | 704 | 0.6− | 0.4+ | 2004 03 27 | 704 | 1.3− | 0.3+ | 2006 10 16 | 621 | 0.3+ | 0.1− |
| 2002 10 09 | 704 | 0.9+ | 0.4+ | 2004 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 621 | 0.2+ | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.1− | 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 10 16 | 621 | 0.5+ | 0.1− |
| 2002 10 12 | 704 | 0.8− | 0.2− | 2004 04 12 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 1.2− |
| 2002 10 12 | 704 | 0.2+ | 1.0+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2002 10 12 | 704 | (1.9− | 1.4+) | 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.8+ | 0.0 |
| 2002 10 12 | 704 | 0.8+ | 0.6+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2002 10 12 | 704 | (0.5− | 1.6+) | 2004 04 23 | 291 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 10 12 | 704 | 0.7+ | 0.7+ | 2004 04 23 | 291 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2002 10 12 | 704 | 0.3+ | 0.8− | 2004 04 23 | 291 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.7+ | 0.2− |
| 2002 10 31 | 699 | 0.4+ | 0.1− | 2004 04 28 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2002 10 31 | 699 | (0.1+ | 2.2+) | 2004 04 28 | 691 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2002 10 31 | 699 | 1.0+ | 0.8+ | 2004 04 28 | 691 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 699 | 0.1− | 0.0 | 2006 09 15 | 691 | 1.3− | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2002 11 01 | 704 | 1.0− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2002 11 01 | 704 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.6+ | 0.5+ | | | | |
| 2002 11 01 | 704 | 0.7− | 0.0 | 2006 09 17 | 703 | 0.5− | 0.1+ | | | | |

**(142455)∗ 2002 TT$_2$ = 1993 FL$_{52}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37962)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.06550 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26421377 | $\omega$ | 138.91274 | | −0.91409743 | −0.40394161 | |
| $a$ | 2.4052806 | $\Omega$ | 17.36219 | | +0.33401052 | −0.79964621 | |
| $e$ | 0.0465164 | $i$ | 6.82362 | | +0.22991926 | −0.44429395 | |
| $P$ | 3.73 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.0 | 0.4− | 2004 01 23 | 704 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.1+ | | |
| 1993 03 18 | 809 | 0.3+ | 0.1+ | 2004 01 23 | 699 | 0.2− | 1.1+ | 2006 10 04 | G96 | 0.2+ | 0.5− | | |
| 1993 04 16 | 413 | 0.8− | 1.4− | 2004 01 23 | 704 | 0.0 | 1.0+ | 2006 10 04 | G96 | 0.2+ | 0.4− | | |
| 2002 09 05 | 704 | 0.4+ | 1.1+ | 2004 01 23 | 699 | 0.2− | 1.2+ | 2006 10 04 | G96 | 0.3− | 0.0 | | |
| 2002 09 05 | 704 | 0.7+ | 0.1+ | 2004 01 23 | 699 | 0.4+ | 0.6− | 2006 10 04 | G96 | 0.3− | 0.2− | | |
| 2002 09 05 | 704 | 0.4+ | 0.7+ | 2004 01 29 | 703 | 0.6+ | 0.3+ | 2006 10 19 | A50 | 0.3+ | 0.8− | | |
| 2002 10 01 | 699 | 1.2− | 0.1− | 2004 01 29 | 703 | 0.7+ | 0.1− | 2006 10 19 | A50 | 0.5+ | 0.6− | | |
| 2002 10 01 | 699 | 0.0 | 0.5+ | 2004 01 29 | 703 | 1.3+ | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.4+ | | |
| 2002 10 01 | 699 | 0.1− | 1.1+ | 2004 01 29 | 703 | 1.0+ | 1.1+ | 2006 10 19 | 703 | 0.2+ | 0.7− | | |
| 2002 10 01 | 699 | 0.9− | 0.4+ | 2004 01 30 | 704 | 0.9+ | 0.0 | 2006 10 19 | 703 | 1.0+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.7+ | 0.6− | 2004 01 30 | 704 | (0.2+ | 1.6+) | 2006 10 19 | 703 | 0.9− | 0.2− | | |
| 2002 10 02 | 704 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.9+ | 0.8+ | 2006 10 19 | 691 | 0.3+ | 0.0 | | |
| 2002 10 02 | 704 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.8− | 0.6− | 2006 10 19 | 691 | 0.4+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.3− | 1.3+ | 2004 02 13 | 644 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | | |
| 2002 10 02 | 049 | 0.8+ | 0.3− | 2004 02 13 | 644 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.1+ | | |
| 2002 10 02 | 049 | 0.7+ | 0.1− | 2004 02 13 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 | | |
| 2002 10 02 | 049 | 0.9+ | 0.3− | 2004 02 13 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2004 02 13 | 644 | 0.1− | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 1.0− | 0.3+ | 2004 02 13 | 644 | 0.2+ | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 1.0− | 0.1+ | 2004 02 16 | 704 | 0.1− | 0.8+ | 2006 10 27 | 691 | 0.2+ | 0.1− | | |
| 2002 10 03 | 704 | 0.4− | 0.9+ | 2004 02 16 | 704 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2002 10 07 | 704 | 0.6− | 0.0 | 2004 02 16 | 704 | 1.1− | 0.8+ | 2006 10 31 | 691 | 0.5− | 0.2− | | |
| 2002 10 07 | 704 | 0.3+ | 0.1+ | 2004 02 16 | 704 | 0.3+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.0 | | |
| 2002 10 07 | 704 | 0.1− | 0.2− | 2004 02 16 | 704 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2002 10 07 | 704 | 0.3+ | 0.7− | 2004 03 10 | 644 | 0.7− | 1.2− | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 2002 10 08 | 291 | 0.3− | 0.0 | 2004 03 10 | 644 | 0.6− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2002 10 08 | 291 | 0.3− | 0.0 | 2004 03 10 | 644 | 0.6− | 0.7+ | 2006 11 14 | 703 | 0.8+ | 1.0+ | | |
| 2002 10 08 | 291 | 0.4− | 0.0 | 2004 03 14 | 704 | 1.3+ | 0.5− | 2006 11 14 | 703 | 0.1+ | 0.7+ | | |
| 2002 10 11 | 704 | 0.1+ | 1.5+ | 2004 03 14 | 704 | 0.5+ | 1.4+ | 2006 11 14 | 703 | 0.0 | 1.0− | | |
| 2002 10 11 | 704 | 0.5− | 1.0+ | 2004 03 14 | 704 | 0.2+ | 0.8+ | 2006 11 14 | 703 | 0.2− | 0.5− | | |
| 2002 10 11 | 704 | 0.3+ | 0.4− | 2004 03 14 | 704 | 0.6− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.5− | | |
| 2002 10 11 | 704 | 0.3+ | 0.8+ | 2004 03 19 | 644 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.3+ | 0.2− | | |
| 2002 10 30 | 644 | 0.6− | 0.6+ | 2004 03 19 | 644 | 0.5+ | 0.4+ | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2002 10 30 | 644 | 0.4− | 0.5+ | 2004 03 20 | 704 | (1.6+ | 0.8+) | 2006 11 15 | G96 | 0.6+ | 0.5− | | |
| 2002 10 30 | 644 | 0.5− | 0.5+ | 2004 03 20 | 704 | (2.1+ | 0.6+) | 2006 11 15 | G96 | 0.2+ | 0.6− | | |
| 2002 11 06 | 704 | (2.8+ | 1.0−) | 2004 03 20 | 704 | 1.1+ | 0.7+ | 2006 11 15 | G96 | 0.2+ | 0.5− | | |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2004 03 20 | 704 | 1.1+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2002 11 06 | 704 | 0.1− | 0.5− | 2004 03 20 | 704 | (1.5+ | 0.6+) | 2006 11 19 | 704 | (2.1+ | 0.8+) | | |
| 2002 11 06 | 704 | (1.8− | 0.5−) | 2004 03 26 | 703 | (1.5− | 1.6−) | 2006 11 19 | 704 | 0.6+ | 0.2+ | | |
| 2003 12 25 | 645 | 0.1− | 0.3− | 2004 03 26 | 703 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.1+ | | |
| 2003 12 25 | 645 | 0.2− | 0.3− | 2004 03 26 | 703 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.0 | | |
| 2004 01 23 | 704 | 0.6+ | 0.5+ | 2004 03 26 | 703 | 0.3− | 0.6+ | 2006 11 22 | 704 | (2.3+ | 2.5+) | | |
| 2004 01 23 | 704 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 22 | 704 | (1.1+ | 3.4+) | | |
| 2004 01 23 | 704 | 0.5+ | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 22 | 704 | (1.9+ | 3.7+) | | |
| 2004 01 23 | 699 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.4− | 0.1− | | | | | | |

**(142456)∗ 2002 TQ$_3$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.60790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22871257 | $\omega$ | 255.44669 | | +0.08807344 | −0.99570295 | |
| $a$ | 2.6481507 | $\Omega$ | 189.63765 | | +0.96702852 | +0.09235718 | |
| $e$ | 0.2595993 | $i$ | 9.84072 | | +0.23895380 | −0.00676716 | |
| $P$ | 4.31 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 10 | 691 | 0.5+ | 0.1− | 2002 10 05 | 704 | (2.4− | 1.8−) | 2002 11 11 | 704 | (1.6+ | 2.1−) | | |
| 1991 04 10 | 691 | 0.3− | 0.2− | 2002 10 07 | 704 | 1.0+ | 0.5+ | 2002 11 20 | 644 | 0.0 | 0.5+ | | |
| 1991 04 10 | 691 | 0.3− | 0.2− | 2002 10 07 | 704 | 0.2+ | 0.2+ | 2002 11 20 | 644 | 0.0 | 0.6+ | | |
| 1998 12 15 | 704 | (0.4− | 3.0−) | 2002 10 07 | 704 | 0.5+ | 0.4+ | 2002 11 20 | 644 | 0.3+ | 0.3+ | | |
| 1998 12 15 | 704 | 0.4− | 0.0 | 2002 10 07 | 704 | 0.2− | 0.4+ | 2002 12 07 | 704 | 0.8+ | 0.3− | | |
| 1998 12 15 | 704 | 0.8+ | 0.7− | 2002 10 07 | 704 | 0.3+ | 0.0 | 2002 12 07 | 704 | 0.8+ | 1.1+ | | |
| 1998 12 15 | 704 | 0.5− | 1.3+ | 2002 10 11 | 704 | (0.4+ | 2.8+) | 2002 12 07 | 704 | 0.2− | 1.0+ | | |
| 1998 12 15 | 704 | (3.0− | 0.3−) | 2002 10 11 | 704 | 0.5+ | 1.3+ | 2004 03 16 | 691 | 0.3+ | 0.4+ | | |
| 2002 09 07 | 704 | 0.5+ | 0.3− | 2002 10 11 | 704 | (0.2− | 2.4+) | 2004 03 16 | 691 | 0.2+ | 0.4+ | | |
| 2002 09 07 | 704 | 0.7+ | 0.8− | 2002 10 11 | 704 | (0.7+ | 3.4+) | 2004 03 16 | 691 | 0.3+ | 0.5+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2002 10 11 | 704 | (0.3+ | 2.6+) | 2004 03 18 | 704 | 0.5+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.6+ | 0.0 | 2002 10 29 | 683 | 1.7− | 0.9+ | 2004 03 18 | 704 | 0.1− | 0.4− | | |
| 2002 09 07 | 704 | 0.8+ | 0.7− | 2002 10 29 | 683 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.3− | 1.0− | | |
| 2002 09 16 | 608 | 0.2− | 0.2− | 2002 10 29 | 683 | 0.6− | 0.6+ | 2004 03 18 | 704 | 0.2+ | 0.5+ | | |
| 2002 09 16 | 608 | 0.0 | 0.3− | 2002 10 31 | 699 | 0.4+ | 0.1− | 2004 04 09 | E12 | 0.9− | 1.1+ | | |
| 2002 09 16 | 608 | 0.1+ | 0.4− | 2002 10 31 | 699 | 0.7− | 1.2+ | 2004 04 09 | E12 | 0.6− | 0.3+ | | |
| 2002 10 01 | 699 | 0.4+ | 0.7+ | 2002 10 31 | 704 | 0.1+ | 0.4+ | 2004 04 09 | E12 | 0.9+ | 0.2− | | |
| 2002 10 01 | 699 | 0.9− | 1.7+ | 2002 10 31 | 704 | 0.3− | 0.3+ | 2004 04 09 | E12 | 0.1− | 0.4+ | | |
| 2002 10 01 | 699 | 0.8+ | 0.3+ | 2002 10 31 | 699 | 0.1− | 0.6+ | 2004 04 13 | 691 | 0.3+ | 0.3+ | | |
| 2002 10 01 | 699 | 0.5− | 0.7+ | 2002 10 31 | 704 | 0.1+ | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 01 | 699 | 0.6+ | 0.4+ | 2002 10 31 | 699 | 0.2+ | 0.1+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 01 | 699 | 0.7− | 0.6+ | 2002 10 31 | 704 | 0.2+ | 0.0 | 2004 04 20 | 691 | 0.2− | 0.3+ | | |
| 2002 10 01 | 699 | 0.0 | 0.6+ | 2002 10 31 | 704 | 0.3− | 0.0 | 2004 04 20 | 691 | 0.2− | 0.4+ | | |
| 2002 10 01 | 699 | 0.6− | 0.1+ | 2002 11 03 | 608 | 1.0− | 1.1− | 2004 04 20 | 691 | 0.0 | 0.2+ | | |
| 2002 10 02 | 704 | 0.9− | 0.7− | 2002 11 03 | 608 | 0.1− | 0.4− | 2006 08 29 | 703 | 0.0 | 0.3− | | |
| 2002 10 02 | 704 | 1.3− | 0.7+ | 2002 11 03 | 608 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.1− | 0.7+ | | |
| 2002 10 02 | 704 | 0.6− | 0.3− | 2002 11 07 | 704 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.4+ | 0.6+ | | |
| 2002 10 02 | 704 | 1.3− | 1.3+ | 2002 11 07 | 704 | 0.7+ | 0.4− | 2006 08 29 | 703 | 0.1− | 1.1+ | | |
| 2002 10 03 | 704 | 0.6− | 0.8− | 2002 11 07 | 704 | 0.6− | 0.7+ | 2006 09 13 | 644 | 0.2− | 0.4+ | | |
| 2002 10 03 | 704 | 0.2+ | 2.0− | 2002 11 07 | 704 | 0.2− | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.2+ | | |
| 2002 10 03 | 704 | 0.5+ | 1.8− | 2002 11 07 | 704 | 0.2− | 1.3+ | 2006 09 13 | 644 | 0.1− | 0.2+ | | |
| 2002 10 03 | 704 | 0.1+ | 1.9− | 2002 11 11 | 704 | 1.2+ | 1.0− | 2006 09 17 | 703 | 0.3− | 0.1+ | | |
| 2002 10 03 | 704 | (0.4+ | 2.2−) | 2002 11 11 | 704 | 0.3+ | 0.9− | 2006 09 17 | 703 | 0.3− | 0.1− | | |
| 2002 10 05 | 704 | 0.6+ | 0.7+ | 2002 11 11 | 704 | (1.0+ | 2.1−) | 2006 09 17 | 703 | 0.4+ | 0.7+ | | |
| 2002 10 05 | 704 | 0.5− | 0.3− | 2002 11 11 | 704 | (0.8+ | 2.1−) | 2006 09 17 | 703 | 1.2− | 0.4+ | | |

**(142457)∗ 2002 TX$_4$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.58945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26240232 | $\omega$ | 21.44195 | | +0.33476595 | −0.93777588 | |
| $a$ | 2.4163375 | $\Omega$ | 49.12522 | | +0.84583764 | +0.25590870 | |
| $e$ | 0.1244141 | $i$ | 7.00681 | | +0.41531968 | +0.23470648 | |
| $P$ | 3.76 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.5− | 0.1− | 2003 01 04 | 704 | 0.9− | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.7− | | |
| 2000 02 03 | 704 | 0.4− | 0.2− | 2004 01 23 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.4− | | |
| 2000 02 03 | 704 | 0.4+ | 0.3+ | 2004 01 23 | 704 | 0.6+ | 1.0+ | 2006 08 29 | 703 | 0.0 | 0.0 | | |
| 2000 02 03 | 704 | 0.1− | 0.0 | 2004 01 23 | 704 | 1.4+ | 0.2+ | 2006 08 29 | 703 | 0.0 | 0.4+ | | |
| 2000 02 03 | 704 | 1.1− | 0.0 | 2004 02 18 | 703 | 0.7+ | 0.6+ | 2006 09 16 | 703 | 0.3− | 1.1+ | | |
| 2000 03 04 | 704 | 0.0 | 0.4− | 2004 02 18 | 703 | 0.4− | 0.4− | 2006 09 16 | 703 | 0.8− | 0.3+ | | |
| 2000 03 04 | 704 | 0.1+ | 1.7+ | 2004 02 18 | 703 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.4+ | 0.3+ | | |
| 2000 03 04 | 704 | 0.8+ | 0.6+ | 2004 02 18 | 703 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.3+ | | |
| 2000 03 04 | 704 | 1.1+ | 0.3− | 2004 02 19 | 704 | 0.1− | 1.4− | 2006 09 20 | 704 | 0.2− | 1.1− | | |
| 2000 03 04 | 704 | 0.2+ | 1.2+ | 2004 02 19 | 704 | 0.8+ | 0.2− | 2006 09 20 | 704 | 0.1− | 0.3+ | | |
| 2002 08 25 | 644 | 0.0 | 1.5+ | 2004 02 19 | 704 | 0.9+ | 1.0− | 2006 09 20 | 704 | 0.3− | 0.1+ | | |
| 2002 08 25 | 644 | 0.3− | 1.3+ | 2004 02 19 | 704 | 0.0 | 0.8+ | 2006 09 20 | 704 | 0.3− | 0.1+ | | |
| 2002 08 25 | 644 | 0.1− | 1.5+ | 2004 02 19 | 704 | 0.3− | 1.3− | 2006 09 20 | 704 | 0.3− | 0.0 | | |
| 2002 10 01 | 704 | 0.2+ | 0.1+ | 2004 02 25 | 704 | 0.1− | 1.1− | 2006 09 27 | G96 | 0.2+ | 0.4− | | |
| 2002 10 01 | 704 | 0.2− | 0.4+ | 2004 02 25 | 704 | 1.0− | 1.0+ | 2006 09 27 | G96 | 0.2− | 0.5− | | |
| 2002 10 01 | 704 | 0.2− | 0.1+ | 2004 02 25 | 704 | 0.6− | 0.9+ | 2006 09 27 | G96 | 0.2+ | 0.3− | | |
| 2002 10 01 | 704 | 0.1+ | 0.4+ | 2004 02 25 | 704 | 1.0− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.4− | | |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2004 02 25 | 704 | (0.8− | 1.6+) | 2006 10 19 | G96 | 0.1+ | 0.4− | | |
| 2002 10 02 | 704 | 0.7− | 0.5+ | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.0 | | |
| 2002 10 02 | 704 | 0.1− | 0.5+ | 2004 03 15 | 704 | 0.6+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2002 10 02 | 704 | 0.3− | 0.1− | 2004 03 15 | 704 | 0.6− | 0.5− | 2006 11 01 | G96 | 0.2+ | 0.8− | | |
| 2002 10 03 | 704 | 0.1− | 1.0+ | 2004 03 15 | 704 | 0.7+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.5− | | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2004 03 15 | 704 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.6− | | |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.5− | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.7− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.5− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.0 | | |
| 2002 10 07 | 608 | 1.2− | 1.0+ | 2004 03 20 | 704 | 0.7− | 0.5+ | 2006 11 14 | 703 | 0.5− | 0.9− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 608 | 0.9− | 1.1+ | 2004 03 20 | 704 | 0.7− | 0.8+ | 2006 11 14 | 703 | (2.3− | 2.3−) | | |
| 2002 10 07 | 608 | 0.7− | 0.8+ | 2004 03 21 | 704 | 0.6+ | 0.3+ | 2006 11 14 | 703 | (0.2− | 2.0−) | | |
| 2002 10 11 | 704 | 0.3− | 0.6+ | 2004 03 21 | 704 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.3− | | |
| 2002 10 11 | 704 | 0.1+ | 0.5+ | 2004 03 21 | 704 | (1.6+ | 0.3+) | 2006 11 15 | 704 | (0.2+ | 1.6+) | | |
| 2002 10 11 | 704 | 0.3− | 0.6+ | 2004 03 22 | 704 | 0.4+ | 0.0 | 2006 11 15 | 704 | 0.6− | 0.8+ | | |
| 2002 10 11 | 704 | 0.2− | 0.6+ | 2004 03 22 | 704 | 1.0+ | 0.2− | 2006 11 15 | 704 | 0.2− | 1.4+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.7+ | 2004 03 22 | 704 | 0.9+ | 0.5+ | 2006 11 15 | 704 | 0.7− | 1.4+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.3+ | 2004 03 22 | 704 | 0.6+ | 0.2+ | 2006 11 16 | 704 | (3.6− | 1.1+) | | |
| 2002 10 31 | 704 | 0.6+ | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.0 | 2006 11 16 | 704 | 0.8− | 0.3− | | |
| 2002 10 31 | 704 | 0.9+ | 1.0+ | 2004 03 30 | 703 | (1.5+ | 0.3+) | 2006 11 16 | 704 | 1.4− | 0.5+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.9+ | 2004 03 30 | 703 | 0.8+ | 1.0+ | 2006 11 16 | 704 | (1.3− | 2.1+) | | |
| 2002 10 31 | 704 | 0.2+ | 0.3+ | 2004 03 30 | 703 | 0.6+ | 1.1+ | 2006 11 16 | 704 | (3.0− | 0.2−) | | |
| 2002 11 07 | 704 | 0.7− | 0.2+ | 2004 03 30 | 703 | (0.9+ | 1.7+) | 2006 11 16 | 691 | 0.2+ | 0.2− | | |
| 2002 11 07 | 704 | 0.1− | 0.1+ | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 11 16 | 704 | 1.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 644 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.8− | 0.0 | | |
| 2002 11 07 | 704 | 0.1− | 0.1− | 2004 04 15 | 644 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.2− | | |
| 2002 11 07 | 704 | 0.6+ | 0.1− | 2004 04 15 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 704 | 0.9− | 0.2+ | | |
| 2002 11 10 | 704 | (1.6− | 0.0 ) | 2004 04 15 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 1.5− | 1.1− | | |
| 2002 11 10 | 704 | 0.1+ | 0.7+ | 2004 04 15 | 704 | 0.5+ | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.5− | | |
| 2002 11 10 | 704 | 0.4− | 0.1+ | 2004 04 15 | 704 | 0.4+ | 0.6− | 2006 11 16 | 704 | (2.5− | 0.2−) | | |
| 2002 11 10 | 704 | 1.5− | 0.0 | 2004 04 16 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2002 11 11 | 644 | 0.1+ | 0.4+ | 2004 04 16 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2002 11 11 | 644 | 0.1− | 0.2− | 2004 04 16 | 691 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.3+ | | |
| 2002 11 11 | 644 | 0.9− | 0.2− | 2004 04 20 | 704 | 0.6− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2002 11 20 | 644 | 0.3− | 0.8− | 2004 04 20 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2002 11 20 | 644 | 0.0 | 0.6− | 2004 04 20 | 704 | 0.5+ | 0.9+ | 2006 11 20 | 691 | 0.6+ | 0.2− | | |
| 2002 11 20 | 644 | 0.1− | 0.8− | 2004 04 20 | 704 | 1.0+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.3− | | |
| 2002 11 30 | 704 | 0.1− | 0.7− | 2004 04 20 | 704 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.4+ | 0.3− | | |
| 2002 11 30 | 704 | 0.1+ | 0.3+ | 2004 04 21 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.7+ | | |
| 2002 11 30 | 704 | 0.7− | 0.6+ | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.1+ | 1.0+ | | |
| 2002 12 05 | 704 | 0.7− | 0.3+ | 2004 04 21 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2004 04 22 | 704 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2002 12 05 | 704 | (1.7+ | 0.7+) | 2004 04 22 | 704 | 0.5+ | 0.8− | 2006 11 24 | 691 | 0.2+ | 0.3− | | |
| 2002 12 05 | 704 | 0.5+ | 0.1+ | 2004 04 25 | 699 | 1.0− | 0.4− | 2006 11 24 | 691 | 0.3+ | 0.3− | | |
| 2002 12 10 | 704 | 0.4+ | 0.2− | 2004 04 25 | 699 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.4+ | 0.3− | | |
| 2002 12 10 | 704 | 0.4− | 0.3+ | 2004 04 25 | 699 | 1.0− | 0.7+ | 2006 11 27 | 704 | 0.3− | 0.2− | | |
| 2002 12 10 | 704 | 0.7− | 1.1+ | 2004 04 25 | 699 | 0.0 | 0.2+ | 2006 11 27 | 704 | 0.6− | 0.1+ | | |
| 2002 12 10 | 704 | 0.9− | 0.8+ | 2004 06 13 | 644 | 0.4+ | 0.3+ | 2006 11 27 | 704 | 0.8− | 0.1+ | | |
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2004 06 13 | 644 | 0.4+ | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.6+ | | |
| 2003 01 04 | 704 | 0.2+ | 0.2− | 2004 06 13 | 644 | 0.8+ | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.3+ | | |
| 2003 01 04 | 704 | 0.2− | 0.2− | 2005 07 03 | 644 | 0.5− | 0.8+ | 2006 11 28 | 704 | 0.7+ | 0.7+ | | |
| 2003 01 04 | 704 | 0.1− | 0.3+ | 2005 07 03 | 644 | 0.4− | 1.1+ | 2006 11 28 | 704 | 0.3+ | 0.1− | | |
| 2003 01 04 | 704 | 0.1− | 0.3+ | 2005 07 03 | 644 | 0.4− | 1.0+ | | | | | | |

**(142458)∗ 2002 TZ$_5$ = 1998 SH$_{148}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37965)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.14311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25593546 | $\omega$ | 17.30170 | | +0.23190562 | −0.97154827 | |
| $a$ | 2.4568713 | $\Omega$ | 59.31260 | | +0.88572239 | +0.19045939 | |
| $e$ | 0.1714695 | $i$ | 3.20647 | | +0.40213882 | +0.14078065 | |
| $P$ | 3.85 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.5− | 1.1+ | 2002 11 06 | 704 | 0.6− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.1− | | |
| 1998 09 26 | 704 | (0.8+ | 2.7−) | 2002 11 06 | 704 | 0.7− | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 1998 09 26 | 704 | 0.1+ | 0.5− | 2002 11 06 | 704 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 1998 09 26 | 704 | 0.1− | 1.4− | 2002 11 06 | 704 | 1.4− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 1998 09 26 | 704 | 1.2− | 0.8− | 2002 11 10 | 704 | 0.4− | 1.0+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 1998 09 27 | 704 | (0.3− | 3.0+) | 2002 11 10 | 704 | 0.7− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | | |
| 1998 09 27 | 704 | 1.1+ | 0.8+ | 2002 11 10 | 704 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 1998 09 27 | 704 | 0.4− | 0.5+ | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.1+ | | |
| 1998 09 27 | 704 | 0.1+ | 0.1− | 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.3− | 0.1− | 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2000 03 11 | 699 | 0.7+ | 0.7− | 2004 03 16 | 704 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2000 03 11 | 699 | 0.6+ | 0.9+ | 2004 03 16 | 704 | 0.8+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2000 03 11 | 699 | 0.2− | 0.2− | 2004 03 16 | 704 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1− | | |
| 2002 10 01 | 699 | 0.6− | 0.9+ | 2004 03 16 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | | |
| 2002 10 01 | 699 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.5− | 1.3+ | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 2002 10 01 | 699 | 0.4+ | 0.6+ | 2004 03 19 | 704 | 0.4− | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.1+ | | |
| 2002 10 01 | 699 | (0.3− | 1.7+) | 2004 03 19 | 704 | 0.1− | 1.4+ | 2006 11 11 | 703 | 0.1− | 0.1+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.4− | 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.2− | | |
| 2002 10 02 | 704 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.3− | 1.2+ | 2006 11 13 | G96 | 0.2− | 0.5− | | |
| 2002 10 02 | 704 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 0.8− | 1.0+ | 2006 11 13 | G96 | 0.1+ | 0.6− | | |
| 2002 10 02 | 704 | 0.3− | 1.0− | 2004 03 20 | 704 | 0.8+ | 1.0+ | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2002 10 02 | 608 | 0.8− | 1.3+ | 2004 03 20 | 704 | 0.4− | 0.7+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2002 10 02 | 608 | (1.2− | 1.5+) | 2004 03 20 | 704 | 0.7+ | 1.0+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2002 10 02 | 608 | 1.0− | 1.2+ | 2004 03 22 | 704 | 0.6+ | 0.2− | 2006 11 13 | 644 | 0.1− | 0.1+ | | |
| 2002 10 04 | 704 | 0.4− | 0.7+ | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.3− | 0.2− | | |
| 2002 10 04 | 704 | 0.0 | 0.9+ | 2004 03 22 | 704 | 0.3+ | 0.9− | 2006 11 17 | 703 | 0.2+ | 0.4− | | |
| 2002 10 04 | 704 | 0.5− | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3+ | | |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.3− | | |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2004 03 28 | 704 | 1.5+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.7+ | | |
| 2002 10 07 | 704 | 0.5− | 0.6+ | 2004 03 28 | 704 | 0.4+ | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.1− | | |
| 2002 10 07 | 704 | 0.6− | 0.0 | 2004 03 28 | 704 | 0.9+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.1+ | | |
| 2002 10 07 | 704 | 0.2− | 0.7+ | 2004 03 28 | 704 | 0.8+ | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.3+ | | |
| 2002 10 07 | 704 | 0.6− | 0.8+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.7+ | | |
| 2002 10 07 | 704 | 0.5− | 0.5+ | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.4− | 0.4+ | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.5+ | 0.7+ | 2004 04 15 | 644 | 0.5+ | 0.5+ | 2006 11 18 | 704 | 0.4+ | 0.4− | | |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2004 04 15 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.1− | 0.6+ | 2004 04 15 | 644 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 0.4+ | 0.5+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 04 23 | 691 | 0.6− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.3− | | |
| 2002 10 12 | 704 | 0.5− | 0.6+ | 2004 04 23 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.4− | | |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2004 04 23 | 691 | 0.1− | 0.6+ | 2006 11 21 | 704 | 0.3+ | 1.1− | | |
| 2002 10 12 | 704 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.0 | 0.4− | | |
| 2002 10 12 | 704 | 0.3− | 0.5+ | 2006 08 28 | 703 | 1.2− | 0.7− | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2002 10 12 | 704 | 0.4− | 0.3+ | 2006 08 28 | 703 | (0.3− | 1.9−) | 2006 11 21 | 704 | 0.5+ | 0.8− | | |
| 2002 10 15 | 704 | 0.3− | 1.2+ | 2006 08 28 | 703 | (0.6+ | 2.7−) | 2006 11 21 | 704 | 0.7+ | 1.0− | | |
| 2002 10 15 | 704 | 0.1− | 1.3+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.2− | | |
| 2002 10 15 | 704 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6+ | 1.0− | | |
| 2002 10 29 | 683 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 29 | 683 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.7− | 0.7− | | |
| 2002 10 29 | 683 | 0.7− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 26 | 704 | 0.5− | 0.4− | | |
| 2002 10 30 | 683 | 1.3+ | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.6− | 0.4− | | |
| 2002 10 30 | 683 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.5− | 0.7− | | |
| 2002 10 30 | 683 | 1.3+ | 0.8+ | 2006 10 20 | 691 | 0.5+ | 0.9− | 2006 11 27 | 703 | 0.2− | 0.3− | | |
| 2002 10 31 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.4− | 0.1+ | | |
| 2002 10 31 | 704 | 0.6+ | 0.6+ | 2006 10 28 | 704 | 0.1− | 1.0+ | 2006 11 29 | 704 | 0.3− | 0.2+ | | |
| 2002 10 31 | 704 | 0.6+ | 0.9+ | 2006 10 28 | 704 | 0.2− | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.4− | | |
| 2002 10 31 | 704 | 0.7+ | 0.7+ | 2006 10 28 | 704 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.5+ | | |
| 2002 10 31 | 704 | 0.6+ | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.2+ | 1.0− | | |
| 2002 11 03 | 608 | 0.6− | 0.1+ | 2006 10 28 | 704 | 0.6+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.2+ | | |
| 2002 11 03 | 608 | 0.9− | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.2− | | | | | | |
| 2002 11 03 | 608 | 0.6− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− | | | | | | |

**(142459)∗ 2002 TD$_6$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.72797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23807602 | $\omega$ | 290.26996 | | +0.69920106 | −0.71142246 | |
| $a$ | 2.5782535 | $\Omega$ | 115.15893 | | +0.68161745 | +0.63353453 | |
| $e$ | 0.1789516 | $i$ | 4.47881 | | +0.21567460 | +0.30415798 | |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 23 | 691 | 0.4− | 0.9− | 2002 10 31 | 704 | 0.3+ | 1.1− | 2006 09 18 | 703 | 1.0− | 0.5+ | | |
| 1996 04 23 | 691 | 0.6− | 1.0− | 2002 10 31 | 704 | 0.3+ | 0.4− | 2006 09 18 | 703 | 0.5− | 0.2− | | |
| 1996 04 23 | 691 | 0.3− | 0.7− | 2002 10 31 | 704 | 0.0 | 0.7− | 2006 09 18 | 703 | 0.5− | 0.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 699 | 0.6+ | 0.7− | 2002 10 31 | 608 | 0.3− | 1.1− | 2006 09 18 | 703 | 0.4− | 0.4− |
| 1998 11 23 | 699 | 1.7+ | 0.2− | 2002 10 31 | 608 | (0.0 | 1.6−) | 2006 09 18 | 699 | (1.5+ | 1.6+) |
| 1998 11 23 | 699 | 0.8+ | 0.0 | 2002 10 31 | 608 | 0.1− | 1.3− | 2006 09 18 | 699 | 0.1+ | 0.9+ |
| 1998 12 11 | 699 | 0.6+ | 0.3− | 2002 11 06 | 699 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.4− | 0.5+ |
| 1998 12 11 | 699 | 0.9+ | 0.8+ | 2002 11 06 | 699 | 0.5− | 0.2+ | 2006 09 18 | 699 | 1.1− | 1.1+ |
| 1998 12 11 | 699 | 0.0 | 0.2− | 2002 11 06 | 699 | 0.4− | 0.0 | 2006 09 22 | 704 | (0.8+ | 3.3+) |
| 2002 09 06 | 599 | 0.1− | 0.0 | 2002 11 06 | 699 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.3− | 1.1+ |
| 2002 09 06 | 599 | 0.1+ | 0.1+ | 2002 11 07 | 704 | (2.2− | 0.3+) | 2006 09 22 | 704 | 0.1+ | 0.7+ |
| 2002 09 06 | 599 | 0.1+ | 0.3+ | 2002 11 07 | 704 | 1.1− | 0.5+ | 2006 09 22 | 704 | 1.5+ | 0.7+ |
| 2002 09 06 | 599 | 0.1− | 0.2+ | 2002 11 07 | 704 | 1.3− | 0.5− | 2006 09 26 | 704 | 0.8+ | 0.4+ |
| 2002 10 01 | 704 | 0.4− | 0.9+ | 2002 11 07 | 704 | 0.9− | 0.8− | 2006 09 26 | 704 | 0.4+ | 0.1+ |
| 2002 10 01 | 704 | 0.9− | 1.0+ | 2002 11 07 | 704 | 1.1− | 0.2− | 2006 09 26 | 704 | 0.9+ | 0.5+ |
| 2002 10 01 | 704 | 0.9− | 0.6+ | 2002 11 11 | 704 | 0.4− | 0.7− | 2006 09 26 | 704 | 0.9+ | 0.9+ |
| 2002 10 01 | 704 | 0.1− | 0.9+ | 2002 11 11 | 704 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.3− |
| 2002 10 02 | 704 | (1.2− | 2.1+) | 2002 11 11 | 704 | 0.5− | 0.3+ | 2006 09 30 | 704 | (1.7− | 0.5+) |
| 2002 10 02 | 704 | (0.5− | 2.2+) | 2002 11 11 | 704 | 0.8− | 0.2− | 2006 09 30 | 704 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | (0.9− | 1.7+) | 2002 11 11 | 704 | 0.9− | 0.3+ | 2006 09 30 | 704 | 0.1+ | 1.0− |
| 2002 10 02 | 608 | 0.1+ | 1.2− | 2004 03 15 | 703 | (1.8+ | 0.2+) | 2006 09 30 | 704 | 0.4− | 1.0+ |
| 2002 10 02 | 608 | 0.2− | 0.8− | 2004 03 15 | 704 | 0.5− | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 2002 10 02 | 608 | 0.7− | 0.6− | 2004 03 15 | 703 | 0.0 | 1.2+ | 2006 09 30 | 703 | (1.7− | 0.8−) |
| 2002 10 03 | 704 | (0.3− | 1.7+) | 2004 03 15 | 704 | 1.5+ | 0.3− | 2006 09 30 | 703 | 0.5+ | 1.0+ |
| 2002 10 03 | 704 | (1.3− | 1.9+) | 2004 03 15 | 703 | 0.1+ | 0.0 | 2006 10 02 | 703 | (3.4+ | 0.6−) |
| 2002 10 03 | 704 | (0.8− | 2.2+) | 2004 03 15 | 704 | 0.3+ | 0.9+ | 2006 10 02 | 703 | 0.4− | 0.4+ |
| 2002 10 03 | 704 | (0.4− | 1.7+) | 2004 03 15 | 703 | (2.1+ | 0.7+) | 2006 10 02 | 703 | 0.9− | 0.4+ |
| 2002 10 03 | 704 | (0.7− | 2.4+) | 2004 03 15 | 704 | 1.0+ | 1.3+ | 2006 10 02 | 703 | 0.2+ | 0.1+ |
| 2002 10 09 | 699 | 0.4− | 0.3− | 2004 03 15 | 691 | 0.2+ | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2002 10 09 | 699 | 0.0 | 0.1+ | 2004 03 15 | 691 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2002 10 09 | 699 | 0.0 | 0.6+ | 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2002 10 09 | 699 | 0.2+ | 0.1+ | 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.3+ | 0.9− | 2004 03 27 | 691 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2004 03 27 | 691 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2002 10 11 | 704 | 0.1− | 1.3− | 2006 08 28 | 699 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 1.4− | 2006 08 28 | 699 | (1.7+ | 1.0+) | 2006 10 16 | 703 | 0.7− | 0.4− |
| 2002 10 11 | 704 | 0.2+ | 0.4− | 2006 08 28 | 699 | 1.4+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2002 10 14 | 704 | 0.5− | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.6− |
| 2002 10 14 | 704 | 0.9+ | 0.1+ | 2006 09 12 | 703 | 0.6− | 0.9+ | 2006 10 22 | 703 | 0.6+ | 0.3− |
| 2002 10 14 | 704 | 1.1+ | 0.2+ | 2006 09 12 | 703 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.4− | 1.0+ |
| 2002 10 15 | 704 | 0.8+ | 0.2+ | 2006 09 12 | 703 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.7+ | 0.3− |
| 2002 10 15 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.8− | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.6− |
| 2002 10 15 | 704 | 0.6+ | 0.2+ | 2006 09 13 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 10 15 | 704 | 0.8+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 10 15 | 704 | 0.7+ | 0.1− | 2006 09 13 | 644 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 10 15 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 0.1− | 0.5+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 1.0− | 2006 09 16 | 704 | 0.6− | 0.0 | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2002 10 31 | 704 | 0.4+ | 1.0− | 2006 09 16 | 704 | 0.3− | 1.5+ | 2006 11 07 | 644 | 0.1− | 0.0 |

**(142460)∗ 2002 TJ$_6$ = 1998 SN$_{128}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 37966)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.13406 | | (2000.0) | | | |
| $n$ | 0.24601542 | $\omega$ | 216.56585 | | +0.99220198 | −0.12198282 |
| $a$ | 2.5224806 | $\Omega$ | 150.40991 | | +0.12307468 | +0.92639277 |
| $e$ | 0.2154416 | $i$ | 2.97191 | | +0.01969412 | +0.35625359 |
| $P$ | 4.01 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 1.9− | 0.3− | 2002 11 05 | 699 | 0.2− | 1.3+ | 2006 09 25 | 699 | 0.7− | 0.2+ |
| 1998 09 26 | 704 | 0.9+ | 0.7− | 2002 11 05 | 699 | 0.5− | 0.5+ | 2006 09 25 | 699 | 0.4− | 0.4+ |
| 1998 09 26 | 704 | 1.1− | 0.0 | 2002 11 05 | 699 | (2.1− | 2.4+) | 2006 09 26 | 704 | 0.0 | 0.0 |
| 1998 09 26 | 704 | 1.1+ | 1.7− | 2004 02 22 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.5+ |
| 1998 09 27 | 704 | 1.0+ | 0.8− | 2004 02 22 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.5+ |
| 1998 09 27 | 704 | 1.0+ | 1.2+ | 2004 02 22 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1+ |
| 1998 09 27 | 704 | 1.6− | 1.3+ | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.5− | 0.2+ |
| 1998 09 27 | 704 | 0.9− | 0.7+ | 2004 03 18 | 691 | 0.4− | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.1+ |
| 1998 09 27 | 704 | 0.5− | 1.3− | 2004 03 18 | 691 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.1− | 1.0− |
| 2000 01 12 | 691 | 0.3+ | 0.1− | 2005 05 04 | 691 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.2+ | 1.2+ |
| 2000 01 12 | 691 | 0.2+ | 0.6− | 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.3− | 0.2+ |
| 2000 01 12 | 691 | 0.4+ | 0.1− | 2005 05 04 | 691 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.6+ | 0.3− |
| 2002 10 01 | 699 | 0.0 | 0.6+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 2002 10 01 | 699 | 0.8+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.4+ |
| 2002 10 01 | 699 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.7− | 0.3+ |
| 2002 10 01 | 699 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.7− | 0.7− |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.8+ |
| 2002 10 02 | 704 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.0 | 0.6+ | 2006 09 16 | 704 | 0.5− | 0.8− | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2002 10 03 | 704 | 0.5+ | 0.3− | 2006 09 16 | 704 | (1.7− | 0.5−) | 2006 10 16 | 703 | 0.3− | 1.1+ |
| 2002 10 03 | 704 | 0.2− | 1.0− | 2006 09 16 | 704 | 0.7− | 0.9− | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.7− | 2006 09 16 | 704 | 0.6− | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 1.0+ | 1.2− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 1.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 2002 10 07 | 644 | 0.4− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 07 | 644 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 07 | 644 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.9− | 0.8− |
| 2002 10 11 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 699 | 0.8+ | 0.9− | 2006 10 22 | 703 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 1.3+ | 1.0− | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.3− | 1.3+ | 2006 10 22 | 703 | 0.4+ | 1.2− |
| 2002 10 11 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 704 | (0.6+ | 1.7+) | 2006 10 22 | 703 | 1.1+ | 1.0− |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 704 | (1.3− | 1.6+) | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 704 | 0.5+ | 0.2− | 2006 09 20 | 704 | 1.2− | 0.1− | 2006 11 06 | 644 | 0.3+ | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.6− | 2006 09 20 | 704 | 1.0− | 0.2− | 2006 11 06 | 644 | 0.7+ | 0.6− |
| 2002 10 31 | 704 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2002 10 31 | 704 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 11 05 | 699 | (1.6− | 0.3+) | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.3− |

**(142461)∗ 2002 TD$_7$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.13292 | | (2000.0) | | | |
| $n$ | 0.23735885 | $\omega$ | 250.36805 | | +0.87902297 | +0.47563209 |
| $a$ | 2.5834443 | $\Omega$ | 81.21934 | | −0.42394896 | +0.81146219 |
| $e$ | 0.0925770 | $i$ | 1.91681 | | −0.21814192 | +0.33956328 |
| $P$ | 4.15 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 0.7+ | 0.8+ | 2004 01 28 | 691 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.5+ | 0.2+ |
| 2002 10 01 | 699 | (1.2− | 2.1+) | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.2+ | 1.5+ |
| 2002 10 01 | 699 | 0.3+ | 0.5+ | 2004 01 28 | 691 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.2+ |
| 2002 10 01 | 699 | (1.6+ | 0.7+) | 2004 02 11 | 691 | 0.3+ | 0.2− | 2006 09 16 | 704 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 0.5+ | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.0 | 0.7+ |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.5− | 0.0 |
| 2002 10 02 | 704 | 0.5− | 0.3+ | 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.5− | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.0 | 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.6− | 0.2+ |
| 2002 10 02 | 704 | 0.5− | 0.5+ | 2005 04 16 | 691 | 0.7+ | 0.5− | 2006 09 19 | 699 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 1.0− | 0.7− | 2005 04 30 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.0 | 1.0+ |
| 2002 10 03 | 704 | 0.8+ | 0.4+ | 2005 04 30 | 691 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.3+ | 0.8+ |
| 2002 10 03 | 704 | 1.4− | 0.8+ | 2005 04 30 | 691 | 0.1− | 0.7+ | 2006 09 22 | 704 | 1.0+ | 0.6+ |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2005 05 14 | 644 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.3+ | 0.4+ |
| 2002 10 03 | 704 | 0.7+ | 0.5+ | 2005 05 14 | 644 | 0.2+ | 0.8+ | 2006 09 22 | 704 | 0.2+ | 0.3− |
| 2002 10 07 | 704 | 0.8− | 0.4+ | 2005 05 14 | 644 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 1.3+ | 0.8+ |
| 2002 10 07 | 704 | 0.9− | 0.5− | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 25 | 699 | 1.5− | 0.2− |
| 2002 10 07 | 704 | 0.5− | 0.3− | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 09 25 | 699 | 0.7− | 1.2+ |
| 2002 10 07 | 704 | 0.5− | 0.0 | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.6+ |
| 2002 10 07 | 291 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.7+ |
| 2002 10 07 | 291 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.1+ | 1.4+ |
| 2002 10 07 | 291 | 0.3+ | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.7+ |
| 2002 10 11 | 704 | 0.2+ | 1.1+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | 1.2− | 0.1+ |
| 2002 10 11 | 704 | 0.7− | 0.5− | 2006 08 28 | 703 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2002 10 11 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.1− | 1.2+ | | |
| 2002 10 11 | 704 | 0.3− | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.9− | 2006 09 30 | 703 | 0.7− | 0.2+ | | |
| 2002 10 31 | 704 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.5+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− | | |
| 2002 10 31 | 704 | 0.5− | 1.0− | 2006 08 30 | 704 | 0.6− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.4− | | |
| 2002 10 31 | 704 | 0.9+ | 0.8− | 2006 08 30 | 704 | 0.4− | 0.4− | 2006 10 02 | G96 | 0.4+ | 0.3− | | |
| 2002 10 31 | 704 | 0.5− | 0.5− | 2006 08 30 | 704 | 0.4− | 0.3− | 2006 10 02 | G96 | 0.2− | 0.4− | | |
| 2002 11 06 | 704 | 0.6− | 0.9+ | 2006 08 30 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 1.0+ | 1.0+ | | |
| 2002 11 06 | 704 | 0.7+ | 0.1+ | 2006 09 12 | 703 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.8− | 0.4− | | |
| 2002 11 06 | 704 | 0.9+ | 0.0 | 2006 09 12 | 703 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.6− | 0.2+ | | |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.7+ | 1.0− | | |
| 2004 01 19 | 691 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.1+ | 1.3+ | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.2+ | | |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.4− | | |
| 2004 01 22 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.9− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.5− | | |
| 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.1− | | | | | | |
| 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 09 16 | 704 | 1.0+ | 0.3+ | | | | | | |

**(142462)∗ 2002 TT$_7$**

Discovered 2002 Oct. 1 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.91465 | | (2000.0) | | +0.39847899 | −0.91484958 |
| $n$ | 0.27158125 | $\omega$ | 353.56953 | | +0.84450797 | +0.33819893 |
| $a$ | 2.3615811 | $\Omega$ | 72.93172 | | +0.35779991 | +0.22061672 |
| $e$ | 0.1510650 | $i$ | 3.91715 | | | |
| $P$ | 3.63 | $H$ | 16.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 27 | 691 | 0.1+ | 0.4− | 2002 10 03 | 704 | 0.3− | 0.5+ | 2004 03 26 | 704 | 0.1+ | 0.1− | | |
| 1995 11 27 | 691 | 0.1− | 0.5− | 2002 10 03 | 704 | 0.1+ | 0.1+ | 2004 03 26 | 704 | 0.4+ | 0.8+ | | |
| 1995 11 27 | 691 | 0.2+ | 0.4− | 2002 10 03 | 704 | 0.2+ | 0.2+ | 2004 03 26 | 704 | 0.0 | 1.2+ | | |
| 1995 12 19 | 566 | 0.0 | 0.7+ | 2002 10 03 | 704 | 0.2− | 0.7+ | 2004 03 30 | 703 | 0.8+ | 0.1− | | |
| 1995 12 19 | 566 | 0.1− | 0.4+ | 2002 10 03 | 704 | 0.6− | 0.3+ | 2004 03 30 | 703 | (0.6− | 2.1+) | | |
| 1995 12 19 | 566 | 0.6+ | 0.8+ | 2002 10 08 | 699 | 0.0 | 0.2+ | 2004 03 30 | 703 | (1.0+ | 2.1+) | | |
| 2000 02 11 | 704 | 0.1+ | 0.1+ | 2002 10 08 | 699 | 0.9− | 0.4+ | 2004 03 30 | 703 | (1.8− | 0.9−) | | |
| 2000 02 11 | 704 | 0.8− | 0.5+ | 2002 10 08 | 699 | 0.3+ | 0.9+ | 2006 11 16 | 704 | 0.0 | 0.6+ | | |
| 2000 02 11 | 704 | 0.1+ | 1.2+ | 2002 10 08 | 699 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.7+ | 0.5+ | | |
| 2000 02 11 | 704 | 0.8+ | 2.0+ | 2002 10 11 | 704 | 0.5− | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.0 | | |
| 2000 03 04 | 704 | 0.3+ | 0.2+ | 2002 10 11 | 704 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.5− | | |
| 2000 03 04 | 704 | 0.7+ | 0.6+ | 2002 10 11 | 704 | 0.5− | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.3− | | |
| 2000 03 04 | 704 | 0.5− | 0.3+ | 2002 10 11 | 704 | 0.1− | 0.6+ | 2006 11 18 | 704 | 0.3− | 0.3+ | | |
| 2000 03 04 | 704 | 0.2+ | 0.0 | 2002 10 11 | 704 | 0.6− | 0.7+ | 2006 11 18 | 704 | 0.6− | 0.4− | | |
| 2000 03 04 | 704 | 0.1+ | 0.3− | 2002 11 06 | 644 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.3− | 0.6− | | |
| 2002 09 05 | 704 | 0.3− | 0.4+ | 2002 11 06 | 644 | 0.3− | 0.6+ | 2006 11 21 | 704 | 0.2+ | 0.8− | | |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2002 11 06 | 644 | 0.3− | 0.7+ | 2006 11 21 | 704 | 0.4+ | 0.3− | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 03 12 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.7− | | |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2004 03 12 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.0 | | |
| 2002 09 05 | 704 | 0.4+ | 1.0+ | 2004 03 12 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 1.1− | | |
| 2002 09 14 | 608 | 0.3− | 1.1+ | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.3− | 0.6+ | | |
| 2002 09 14 | 608 | 0.8− | 0.7+ | 2004 03 20 | 704 | 0.2− | 0.7+ | 2006 11 28 | 704 | 1.0+ | 0.1− | | |
| 2002 09 14 | 608 | 0.6− | 0.8+ | 2004 03 20 | 704 | 0.4+ | 1.2+ | 2006 11 28 | 704 | 0.5+ | 0.5+ | | |
| 2002 10 01 | 608 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.6+ | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.1− | | |
| 2002 10 01 | 608 | 0.3+ | 0.8+ | 2004 03 20 | 704 | 0.6+ | 1.2+ | 2006 12 01 | 704 | 0.0 | 0.2+ | | |
| 2002 10 01 | 608 | 0.6+ | 1.0+ | 2004 03 22 | 704 | 0.1+ | 1.0+ | 2006 12 01 | 704 | 0.3+ | 0.7+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.0 | 1.1+ | 2006 12 01 | 704 | 0.3+ | 0.1− | | |
| 2002 10 02 | 704 | 0.1− | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 12 01 | 704 | 0.2+ | 0.0 | | |
| 2002 10 02 | 704 | 0.3− | 0.2− | 2004 03 26 | 704 | 0.5+ | 0.6+ | 2006 12 01 | 704 | 0.3+ | 0.4− | | |

**(142463)∗ 2002 TH$_8$ = 1998 UX$_{35}$**

Discovered 2002 Oct. 1 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 37967)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.19597 | | (2000.0) | | +0.54044186 | −0.84120423 |
| $n$ | 0.24193328 | $\omega$ | 213.05350 | | +0.78078625 | +0.50906008 |
| $a$ | 2.5507759 | $\Omega$ | 204.24626 | | +0.31352101 | +0.18229995 |
| $e$ | 0.1982964 | $i$ | 2.40937 | | | |
| $P$ | 4.07 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 699 | 0.5+ | 0.1+ | 2004 04 13 | 691 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.6− | 0.2− | | |
| 1998 10 17 | 699 | 0.9+ | 1.6+ | 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.9− | 0.3− | | |
| 1998 10 17 | 699 | 0.8+ | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.4+ | | |
| 1998 10 28 | 704 | 0.1− | 0.4+ | 2004 04 24 | 691 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.0 | 0.4+ | | |
| 1998 10 28 | 704 | (1.1+ | 2.3−) | 2005 06 17 | G96 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.6+ | | |
| 1998 10 28 | 704 | 1.0− | 0.6+ | 2005 06 17 | G96 | 0.0 | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 1998 10 28 | 704 | 1.4− | 0.8+ | 2005 06 17 | G96 | 0.6+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.4+ | | |
| 1998 10 29 | 704 | 1.3− | 0.3+ | 2005 06 17 | G96 | 0.4− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 1998 10 29 | 704 | 0.4− | 1.0− | 2006 08 19 | 691 | 0.9− | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.5+ | | |
| 1998 10 29 | 704 | 0.7+ | 2.0+ | 2006 08 19 | 691 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 1998 10 29 | 704 | 1.5+ | 0.8+ | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 09 26 | 644 | 0.4− | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 26 | 644 | 0.2− | 0.5+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− | | |
| 2002 09 26 | 644 | 0.4− | 0.7+ | 2006 08 28 | 691 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 2002 10 01 | 608 | 0.3− | 1.1− | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.3− | | |
| 2002 10 01 | 608 | 0.7− | 0.8− | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.2+ | | |
| 2002 10 01 | 608 | 0.3− | 0.7− | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.1− | | |
| 2002 10 02 | 704 | 1.1− | 1.5+ | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.7− | 1.0− | | |
| 2002 10 02 | 704 | 0.7− | 1.3+ | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 10 22 | 703 | (1.5+ | 0.8+) | | |
| 2002 10 02 | 704 | 1.0− | 1.3+ | 2006 09 16 | 699 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.2+ | 0.1− | | |
| 2002 10 02 | 704 | (1.4− | 1.7+) | 2006 09 16 | 699 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.8− | | |
| 2002 10 03 | 704 | 0.1+ | 0.9+ | 2006 09 17 | 704 | 0.5+ | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.3+ | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.4− | | |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.5− | 0.1+ | | |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2006 09 19 | 699 | (2.2− | 1.4+) | 2006 10 23 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 07 | 704 | 0.3− | 0.3− | 2006 09 19 | 699 | 0.2− | 1.3+ | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2002 10 07 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.2− | | |
| 2002 10 07 | 704 | 0.5− | 0.0 | 2006 09 20 | 704 | 1.1− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 10 07 | 704 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.4− | 2006 09 20 | 704 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 2002 10 11 | 704 | 0.0 | 0.8− | 2006 09 20 | 704 | (1.5− | 0.1−) | 2006 10 23 | G96 | 0.2+ | 0.5− | | |
| 2002 10 11 | 704 | 0.4− | 0.5− | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.0 | | |
| 2002 10 11 | 704 | 0.0 | 0.5− | 2006 09 28 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.6− | 0.1+ | | |
| 2002 10 11 | 704 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.2+ | | |
| 2002 10 31 | 704 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.1− | | |
| 2002 10 31 | 704 | 0.5+ | 0.1− | 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.2− | 0.2− | | |
| 2002 10 31 | 704 | 0.4+ | 0.6− | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.2− | 0.5− | | |
| 2002 10 31 | 704 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2004 03 12 | 644 | 0.1− | 1.0+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 2.4+ | 0.7− | | |
| 2004 03 12 | 644 | 0.1− | 0.7+ | 2006 09 29 | 704 | 1.1+ | 0.9+ | 2006 11 21 | G96 | 0.3+ | 0.1− | | |
| 2004 03 12 | 644 | 0.1− | 0.6+ | 2006 09 29 | 704 | 0.1− | 1.0+ | 2006 11 21 | 704 | 1.9+ | 0.2+ | | |
| 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 1.3− | | |
| 2004 04 13 | 691 | 0.4+ | 0.8+ | 2006 09 29 | 704 | 0.3− | 0.8+ | | | | | | |

**(142464)∗ 2002 TC$_9$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 116.58107 | | (2000.0) | | −0.75762922 | +0.65011991 |
| $n$ | 0.71953915 | $\omega$ | 29.19500 | | −0.63992752 | −0.75732761 |
| $a$ | 1.2333881 | $\Omega$ | 191.90214 | | −0.12841626 | −0.06163595 |
| $e$ | 0.1544526 | $i$ | 16.27850 | | | |
| $P$ | 1.37 | $H$ | 18.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 14 | 261 | 0.9− | 0.1− | 2006 07 01 | 198 | 0.2+ | 0.4+ | 2006 09 08 | 240 | 0.2+ | 0.4− | | |
| 1991 09 14 | 261 | 0.4+ | 1.4− | 2006 07 02 | H45 | 0.5− | 0.0 | 2006 09 08 | 240 | 0.0 | 0.1− | | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.2− | 0.7+ | 2006 07 02 | H45 | 0.1− | 0.3− | 2006 09 09 | 639 | 0.2− | 0.3+ | 2002 10 12 | 941 | 1.2+ | 0.5+ | 2006 08 23 | J86 | 0.1+ | 0.1+ | 2006 09 17 | 113 | 0.4+ | 0.1+ |
| 2002 09 06 | 704 | 0.5− | 0.3+ | 2006 07 02 | H45 | 0.0 | 0.3− | 2006 09 09 | 639 | 0.5+ | 0.5− | 2002 10 12 | 941 | 0.6− | 0.3+ | 2006 08 23 | 198 | 0.1+ | 0.1+ | 2006 09 17 | 113 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 0.7− | 0.7+ | 2006 07 02 | H45 | 0.0 | 0.4− | 2006 09 09 | 639 | 0.2− | 0.2+ | 2002 10 12 | 941 | 0.4− | 0.4− | 2006 08 23 | 198 | 0.1+ | 0.0 | 2006 09 20 | 113 | 0.3− | 0.1− |
| 2002 09 06 | 704 | (1.6− | 0.8+) | 2006 07 02 | H45 | 0.0 | 0.2− | 2006 09 09 | 639 | 0.2+ | 0.2− | 2002 10 12 | 941 | 0.1− | 0.1+ | 2006 08 23 | 198 | 0.1+ | 0.1+ | 2006 09 20 | 113 | 0.1− | 0.1− |
| 2002 09 06 | 704 | 0.8− | 1.3+ | 2006 07 02 | H45 | 0.2− | 0.2− | 2006 09 09 | 639 | 0.1− | 0.4+ | 2002 10 12 | 941 | 0.1+ | 0.6− | 2006 08 23 | 198 | 0.0 | 0.1+ | 2006 09 20 | 113 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.9− | 2006 07 03 | H45 | 0.1+ | 0.5− | 2006 09 09 | 639 | 0.1+ | 0.1− | 2002 10 12 | 941 | 0.2− | 0.0 | 2006 08 23 | 198 | 0.1− | 0.1+ | 2006 09 20 | 113 | 0.2− | 0.1− |
| 2002 10 02 | 704 | 0.5− | 0.9− | 2006 07 03 | H45 | 0.2+ | 0.1− | 2006 09 09 | 113 | 0.1+ | 0.1− | 2002 10 14 | 118 | 0.3− | 0.4+ | 2006 08 23 | J86 | 0.1− | 0.1+ | 2006 09 20 | 113 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.6− | 2006 07 03 | H45 | 0.1+ | 0.2− | 2006 09 09 | 113 | 0.2+ | 0.1+ | 2002 10 14 | 118 | 0.8− | 0.0 | 2006 08 23 | J86 | 0.0 | 0.2+ | 2006 09 20 | 157 | 0.5− | 0.2− |
| 2002 10 02 | 704 | 1.3+ | 0.2− | 2006 07 03 | H45 | 0.0 | 0.2− | 2006 09 09 | 113 | 0.5− | 0.0 | 2002 10 14 | 118 | 0.6− | 0.0 | 2006 08 23 | J86 | 0.0 | 0.1+ | 2006 09 20 | 157 | 0.3+ | 0.4− |
| 2002 10 02 | 118 | 0.2− | 0.2− | 2006 07 03 | H45 | 0.1− | 0.0 | 2006 09 09 | 560 | 0.3+ | 0.0 | 2002 10 15 | 644 | 0.2− | 0.6− | 2006 08 24 | J86 | 0.1+ | 0.2+ | 2006 09 20 | 157 | 0.0 | 0.4+ |
| 2002 10 02 | 118 | 0.4− | 0.0 | 2006 07 10 | A13 | (0.2− | 1.6−) | 2006 09 09 | 560 | 0.7+ | 1.1+ | 2002 10 15 | 644 | 0.3+ | 0.6− | 2006 08 24 | J86 | 0.0 | 0.1+ | 2006 09 20 | 240 | 0.3− | 0.1− |
| 2002 10 02 | 118 | 0.2− | 0.4− | 2006 07 10 | A13 | (1.6− | 1.1−) | 2006 09 09 | 560 | 0.2− | 0.2+ | 2002 10 15 | 644 | 0.2− | 0.7− | 2006 08 24 | J86 | 0.1+ | 0.2+ | 2006 09 20 | 240 | 0.3− | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.6− | 2006 07 10 | A13 | 0.2− | 0.0 | 2006 09 11 | 703 | 0.4− | 0.1− | 2002 10 19 | 176 | 0.4+ | 0.3+ | 2006 08 25 | H55 | 1.3− | 0.4− | 2006 09 20 | 240 | 0.0 | 0.1− |
| 2002 10 03 | 678 | 0.6+ | 0.1− | 2006 07 10 | 198 | 0.1− | 0.5+ | 2006 09 11 | 703 | 0.1+ | 0.1+ | 2002 10 19 | 176 | 0.3+ | 0.3+ | 2006 08 25 | H55 | 1.4− | 0.4+ | 2006 09 20 | 240 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 07 10 | 198 | 0.1− | 0.5+ | 2006 09 11 | 703 | 1.0− | 0.3+ | 2002 10 19 | 176 | 0.2+ | 0.3+ | 2006 08 25 | H55 | 1.4− | 0.5− | 2006 09 20 | 240 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 07 10 | A13 | 0.1+ | 0.2− | 2006 09 12 | 113 | 0.2+ | 0.2− | 2002 10 19 | 176 | 0.2+ | 0.2+ | 2006 08 25 | 151 | 0.2− | 0.3− | 2006 09 20 | 240 | 0.2+ | 0.7− |
| 2002 10 03 | 678 | 0.2+ | 0.3− | 2006 07 10 | 198 | 0.1+ | 0.1− | 2006 09 12 | 113 | 0.2+ | 0.1− | 2002 10 20 | 118 | 0.6− | 0.5+ | 2006 08 25 | 151 | 0.0 | 0.3− | 2006 09 20 | 240 | 0.3+ | 0.3− |
| 2002 10 03 | 678 | 0.8− | 0.9− | 2006 07 18 | 198 | 0.0 | 0.3+ | 2006 09 12 | 113 | 0.0 | 0.1+ | 2002 10 20 | 118 | 0.5− | 0.6+ | 2006 08 25 | 151 | 0.2+ | 0.3− | 2006 09 20 | 240 | 0.3+ | 0.1− |
| 2002 10 03 | 704 | 0.4− | 0.9− | 2006 07 18 | 198 | 0.0 | 0.1+ | 2006 09 12 | 113 | 0.1− | 0.5− | 2006 08 25 | 151 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.7− | 0.4+ |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2006 07 18 | 198 | 0.2+ | 0.1+ | 2006 09 13 | H45 | 0.0 | 0.0 | 2002 10 28 | 644 | 0.2− | 0.0 | 2006 08 30 | 157 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.5− | 0.3+ |
| 2002 10 03 | 704 | 0.8− | 0.4+ | 2006 07 24 | 151 | 0.2+ | 0.4+ | 2006 09 13 | H45 | 0.0 | 0.0 | 2002 10 28 | 644 | 0.0 | 0.1+ | 2006 08 30 | 157 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.8− | 0.4+ |
| 2002 10 03 | 704 | 0.6− | 1.3− | 2006 07 24 | 151 | 0.0 | 0.3+ | 2006 09 13 | H45 | 0.1− | 0.1− | 2002 10 28 | 644 | 0.0 | 0.3+ | 2006 08 30 | 157 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.5+ |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 07 24 | 151 | 0.0 | 0.4+ | 2006 09 13 | H45 | 0.2− | 0.1− | 2002 10 29 | 428 | 0.1− | 0.6+ | 2006 08 31 | 240 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.6− | 0.5+ |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2006 07 24 | 198 | 0.0 | 0.2+ | 2006 09 13 | H45 | 0.1− | 0.2− | 2002 10 29 | 428 | 0.5+ | 1.3+ | 2006 08 31 | 240 | 0.4+ | 0.4− | 2006 09 26 | H45 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 0.1− | 1.0− | 2006 07 24 | 198 | 0.1− | 0.2+ | 2006 09 13 | 151 | 0.7− | 0.5+ | 2002 10 29 | 428 | 0.1− | 0.5+ | 2006 08 31 | 240 | 0.3+ | 0.0 | 2006 09 26 | H45 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.1− | 2006 07 24 | 198 | 0.1− | 0.3+ | 2006 09 13 | 151 | 0.2− | 0.3+ | 2002 11 02 | 212 | 0.1− | 0.2− | 2006 08 31 | 240 | 0.3+ | 0.1− | 2006 09 26 | H45 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2006 07 25 | H45 | 0.1− | 0.2− | 2006 09 13 | 151 | 0.3+ | 0.1+ | 2002 11 02 | 212 | 0.1+ | 0.6+ | 2006 08 31 | 240 | 0.1+ | 0.2− | 2006 09 26 | H45 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.9− | 2006 07 25 | H45 | 0.1− | 0.1− | 2006 09 13 | 151 | 0.2+ | 0.0 | 2002 11 05 | 644 | 0.0 | 0.1+ | 2006 09 01 | H45 | 0.1− | 0.1+ | 2006 09 26 | H45 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2006 07 25 | H45 | 0.2+ | 0.2+ | 2006 09 13 | 151 | 0.1− | 0.3+ | 2002 11 05 | 644 | 0.0 | 0.2+ | 2006 09 01 | H45 | 0.1− | 0.0 | 2006 09 28 | A53 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.7− | 0.8+ | 2006 07 25 | H45 | 0.1+ | 0.2− | 2006 09 13 | 639 | 0.2+ | 0.3+ | 2002 11 05 | 644 | 0.2− | 0.1+ | 2006 09 01 | H45 | 0.0 | 0.1+ | 2006 09 28 | A53 | 0.9+ | 0.2− |
| 2002 10 03 | 428 | 0.1+ | 1.3− | 2006 07 25 | H45 | 0.0 | 0.1− | 2006 09 13 | 639 | 0.1+ | 0.2+ | 2002 12 05 | 644 | 0.1− | 1.3+ | 2006 09 01 | H45 | 0.1− | 0.1+ | 2006 09 28 | A53 | 0.2+ | 0.4+ |
| 2002 10 03 | 428 | 0.4− | 1.1− | 2006 07 31 | H45 | 0.0 | 0.2− | 2006 09 13 | 639 | 0.0 | 0.1+ | 2002 12 05 | 644 | 0.3− | 0.9+ | 2006 09 01 | H45 | 0.2− | 0.0 | 2006 09 29 | 808 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.7− | 0.4− | 2006 07 31 | H45 | 0.2+ | 0.1− | 2006 09 13 | 639 | 0.1+ | 0.1+ | 2002 12 05 | 644 | 0.2− | 0.7+ | 2006 09 01 | 379 | 0.2+ | 0.1+ | 2006 09 29 | 808 | 0.2− | 1.1− |
| 2002 10 04 | 704 | 0.0 | 0.0 | 2006 07 31 | H45 | 0.1− | 0.1− | 2006 09 13 | 639 | 0.2− | 0.1+ | 2003 03 09 | 711 | 0.9+ | 0.3− | 2006 09 01 | 379 | 0.4− | 0.3− | 2006 09 29 | 808 | 0.3− | 0.6+ |
| 2002 10 04 | 704 | 0.1+ | 0.9− | 2006 07 31 | H45 | 0.0 | 0.0 | 2006 09 13 | 639 | 0.1− | 0.2+ | 2003 03 09 | 711 | 0.8− | 1.2− | 2006 09 01 | 379 | 0.1− | 0.4− | 2006 09 29 | 639 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.4− | 0.7− | 2006 07 31 | H45 | 0.0 | 0.1− | 2006 09 13 | 639 | 0.2− | 0.1+ | 2003 03 09 | 711 | 0.0 | 0.3− | 2006 09 01 | 379 | 0.0 | 0.1+ | 2006 09 29 | 639 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.5− | 0.1+ | 2006 07 31 | H45 | 0.0 | 0.1− | 2006 09 13 | 639 | 0.0 | 0.1+ | 2003 09 07 | 413 | 1.2+ | 0.0 | 2006 09 01 | 379 | 0.3− | 0.4− | 2006 09 29 | 639 | 0.0 | 0.3+ |
| 2002 10 04 | 176 | 0.2− | 0.3+ | 2006 08 17 | H45 | 0.1− | 0.0 | 2006 09 13 | 113 | 0.0 | 0.2− | 2005 12 28 | 696 | 1.4+ | 0.9+ | 2006 09 01 | 473 | 0.6+ | 0.2+ | 2006 09 29 | 639 | 0.5+ | 0.0 |
| 2002 10 04 | 176 | 0.1− | 0.3+ | 2006 08 17 | H45 | 0.1− | 0.1− | 2006 09 13 | 113 | 0.0 | 0.2− | 2005 12 28 | 696 | 1.2+ | 0.6+ | 2006 09 01 | 204 | 0.1+ | 0.3+ | 2006 09 29 | A41 | 0.0 | 0.1− |
| 2002 10 04 | 176 | 0.1+ | 0.2+ | 2006 08 17 | H45 | 0.0 | 0.0 | 2006 09 13 | 113 | 0.1+ | 0.4− | 2005 12 29 | 696 | 0.2− | 0.6+ | 2006 09 01 | 204 | 0.0 | 0.2+ | 2006 09 29 | A41 | 0.5+ | 0.5− |
| 2002 10 05 | 176 | 0.3+ | 0.1+ | 2006 08 17 | H45 | 0.0 | 0.1− | 2006 09 14 | 113 | 0.2+ | 0.4− | 2005 12 29 | 696 | 0.2− | 0.0 | 2006 09 02 | 108 | 0.4+ | 0.9− | 2006 09 29 | A41 | 0.3+ | 0.1− |
| 2002 10 05 | 176 | 0.3+ | 0.1+ | 2006 08 17 | H45 | 0.0 | 0.0 | 2006 09 14 | 113 | 0.2+ | 0.5− | 2006 03 16 | 448 | (0.0 | 1.7+) | 2006 09 02 | 108 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 10 05 | J95 | 0.7+ | 1.1− | 2006 08 18 | H45 | 0.1+ | 0.0 | 2006 09 14 | 113 | 0.1− | 0.3− | 2006 03 16 | 448 | 1.1− | 0.1− | 2006 09 02 | 108 | 0.2− | 1.3+ | 2006 10 01 | 704 | 1.0+ | 0.2+ |
| 2002 10 05 | J95 | 0.7+ | 0.4+ | 2006 08 18 | H45 | 0.1− | 0.1− | 2006 09 14 | 113 | 0.1+ | 0.6− | 2006 03 16 | 448 | 0.0 | 1.4+ | 2006 09 02 | 130 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.3+ |
| 2002 10 05 | J95 | 0.9+ | 0.3+ | 2006 08 18 | H45 | 0.1− | 0.0 | 2006 09 14 | 113 | 0.5+ | 0.6− | 2006 04 30 | 198 | 0.7+ | 0.4+ | 2006 09 02 | 130 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 2002 10 05 | 649 | 0.1− | 0.6+ | 2006 08 18 | H45 | 0.0 | 0.1− | 2006 09 15 | H45 | 0.1+ | 0.0 | 2006 04 30 | 198 | 0.7+ | 0.4+ | 2006 09 02 | 130 | 0.3+ | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.7+ |
| 2002 10 05 | 649 | 0.2− | 0.7+ | 2006 08 18 | H45 | 0.1− | 0.0 | 2006 09 15 | H45 | 0.1− | 0.1+ | 2006 04 30 | 198 | 0.5+ | 0.3+ | 2006 09 02 | 130 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 2002 10 05 | 649 | 0.6+ | 0.6+ | 2006 08 18 | J86 | 0.0 | 0.5+ | 2006 09 15 | H45 | 0.0 | 0.1+ | 2006 04 30 | 198 | 0.2+ | 0.1+ | 2006 09 03 | 560 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 10 05 | 670 | 0.1+ | 0.4− | 2006 08 18 | J86 | 0.1+ | 0.3+ | 2006 09 15 | H45 | 0.0 | 0.0 | 2006 04 30 | 198 | 0.0 | 0.1+ | 2006 09 03 | 560 | 0.5− | 0.8+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2002 10 05 | 670 | 1.4+ | 0.5+ | 2006 08 18 | J86 | 0.0 | 0.4+ | 2006 09 15 | H45 | 0.3− | 0.2− | 2006 05 25 | H45 | 0.2+ | 0.4+ | 2006 09 03 | 560 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 10 06 | 941 | (1.8− | 0.3+) | 2006 08 19 | J86 | 0.2+ | 0.3+ | 2006 09 15 | H45 | 0.0 | 0.2− | 2006 05 25 | H45 | 0.5+ | 0.1+ | 2006 09 04 | H55 | 0.5− | 0.5+ | 2006 10 15 | 703 | 0.4− | 0.2+ |
| 2002 10 06 | 941 | 0.2+ | 1.4+ | 2006 08 19 | J86 | 0.0 | 0.2+ | 2006 09 15 | 585 | 0.2− | 0.1+ | 2006 05 25 | H45 | 0.2+ | 0.3+ | 2006 09 04 | H55 | 0.6− | 0.6+ | 2006 10 15 | 703 | 0.2+ | 0.1+ |
| 2002 10 06 | 941 | 1.0− | 0.3+ | 2006 08 19 | J86 | 0.1+ | 0.2+ | 2006 09 15 | 585 | 0.9+ | 0.1+ | 2006 05 25 | H45 | 0.2+ | 0.3+ | 2006 09 04 | H55 | 0.5− | 0.8− | 2006 10 15 | 703 | 0.6+ | 0.9+ |
| 2002 10 06 | 670 | 0.1+ | 0.0 | 2006 08 20 | 113 | 0.1+ | 0.1− | 2006 09 15 | 585 | 0.3+ | 0.1− | 2006 05 25 | H45 | 0.3+ | 0.5+ | 2006 09 06 | 447 | 0.2− | 0.4− | 2006 10 15 | 703 | 0.5− | 0.1+ |
| 2002 10 06 | 670 | 0.0 | 0.5+ | 2006 08 20 | 113 | 0.1+ | 0.1+ | 2006 09 15 | 585 | 0.1+ | 0.0 | 2006 06 12 | 198 | 0.3+ | 0.3+ | 2006 09 06 | 447 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 10 06 | 670 | 0.3− | 0.0 | 2006 08 20 | 113 | 0.3+ | 0.3− | 2006 09 15 | 585 | 0.6+ | 0.0 | 2006 06 12 | 198 | 0.2+ | 0.4+ | 2006 09 06 | 447 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 10 06 | 670 | 1.4+ | 0.5+ | 2006 08 20 | 113 | 0.1− | 0.2− | 2006 09 15 | 585 | 0.4+ | 0.1− | 2006 06 12 | 198 | 0.2+ | 0.2+ | 2006 09 06 | H45 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 0.0 | 0.2− | 2006 08 22 | 157 | 0.3+ | 0.3− | 2006 09 16 | H68 | (0.7+ | 2.7−) | 2006 06 12 | 198 | 0.1+ | 0.3+ | 2006 09 06 | H45 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 10 07 | 704 | 0.6− | 0.4+ | 2006 08 22 | 157 | 0.2+ | 0.2− | 2006 09 16 | H68 | (0.0 | 1.6−) | 2006 06 20 | H45 | 0.3+ | 0.1+ | 2006 09 06 | H45 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2006 08 22 | 157 | 0.1+ | 0.4− | 2006 09 16 | H68 | (0.5− | 1.9−) | 2006 06 20 | H45 | 0.2+ | 0.2− | 2006 09 06 | H45 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 0.5− | 0.2+ | 2006 08 22 | 157 | 0.3− | 0.1+ | 2006 09 16 | H45 | 0.2− | 0.2− | 2006 06 20 | H45 | 0.1+ | 0.1+ | 2006 09 06 | H45 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.6− | 0.2− |
| 2002 10 09 | 699 | 0.3+ | 0.2+ | 2006 08 22 | 157 | 0.1− | 0.2− | 2006 09 16 | H45 | 0.1− | 0.1− | 2006 06 20 | H45 | 0.0 | 0.3− | 2006 09 06 | 240 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 2002 10 09 | 699 | 0.4− | 0.2− | 2006 08 22 | 157 | 0.4+ | 0.2− | 2006 09 16 | H45 | 0.2− | 0.1− | 2006 06 20 | H45 | 0.1+ | 0.4− | 2006 09 06 | 240 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.8− |
| 2002 10 09 | 699 | 0.2+ | 0.5− | 2006 08 22 | J86 | 0.1+ | 0.2+ | 2006 09 16 | H45 | 0.2− | 0.3− | 2006 06 21 | H45 | 0.2+ | 0.0 | 2006 09 06 | 240 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 10 09 | 699 | 0.5− | 0.1+ | 2006 08 22 | J86 | 0.1+ | 0.2+ | 2006 09 16 | H45 | 0.1− | 0.1− | 2006 06 21 | H45 | 0.2+ | 0.2+ | 2006 09 06 | 240 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 0.9− |
| 2002 10 09 | 644 | 0.3− | 0.0 | 2006 08 22 | J86 | 0.0 | 0.1+ | 2006 09 17 | 113 | 0.2+ | 0.2+ | 2006 06 21 | H45 | 0.0 | 0.2− | 2006 09 06 | 240 | 0.9+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 10 09 | 644 | 0.4− | 0.1− | 2006 08 23 | J86 | 0.0 | 0.2+ | 2006 09 17 | 113 | 0.3+ | 0.4− | 2006 06 21 | H45 | 0.2+ | 0.2− | 2006 09 06 | 240 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 10 09 | 644 | 0.2− | 0.1− | 2006 08 23 | J86 | 0.1+ | 0.2+ | 2006 09 17 | 113 | 0.2+ | 0.4− | 2006 06 21 | H45 | 0.2+ | 0.1− | 2006 09 06 | 240 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 06 24 | A94 | 0.1− | 0.3+ | 2006 09 06 | 240 | 0.5− | 0.2+ | 2006 10 23 | 704 | 0.4− | 0.1+ |
| 2006 06 24 | A94 | 0.4+ | 0.7+ | 2006 09 07 | H45 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.5− | 0.9+ |
| 2006 06 24 | A94 | 0.1− | 0.1+ | 2006 09 07 | H45 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.7− | 0.7+ |
| 2006 06 30 | H45 | 0.1− | 0.1− | 2006 09 07 | H45 | 0.0 | 0.3+ | 2006 10 23 | 704 | 1.2− | 0.2+ |
| 2006 06 30 | H45 | 0.1+ | 0.1− | 2006 09 07 | H45 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 2006 06 30 | H45 | 0.2+ | 0.1+ | 2006 09 07 | H45 | 0.1− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2006 06 30 | H45 | 0.1+ | 0.0 | 2006 09 08 | 240 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2006 06 30 | H45 | 0.1+ | 0.1− | 2006 09 08 | 240 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2006 07 01 | 198 | 0.1− | 0.4+ | 2006 09 08 | 240 | 0.2+ | 0.1+ | | | | |
| 2006 07 01 | 198 | 0.1+ | 0.5+ | 2006 09 08 | 240 | 0.2+ | 0.2− | | | | |

**(142465)∗ 2002 TJ$_9$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.36735 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26221063 | $\omega$ | 261.03131 | | +0.93031411 | +0.36016441 | |
| $a$ | 2.4175150 | $\Omega$ | 77.83487 | | −0.30247657 | +0.86024249 | |
| $e$ | 0.2066085 | $i$ | 4.06300 | | −0.20742129 | +0.36092167 | |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 31 | 699 | 0.1− | 0.1− | 2004 02 18 | 691 | 0.0 | 0.2+ | 2006 11 10 | 291 | 0.0 | 0.2+ |
| 2002 08 31 | 699 | 0.0 | 0.6− | 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 291 | 0.0 | 0.2+ |
| 2002 08 31 | 699 | 0.3+ | 0.5+ | 2004 02 18 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 2002 08 31 | 699 | 1.0− | 0.0 | 2005 04 30 | 691 | 0.3+ | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2002 09 04 | 699 | 0.4− | 0.2+ | 2005 04 30 | 691 | 0.2+ | 0.6+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2002 09 04 | 699 | 0.2− | 0.6+ | 2005 04 30 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 644 | 0.0 | 0.2+ |
| 2002 09 04 | 699 | 0.3− | 0.2+ | 2005 05 14 | 644 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2002 09 04 | 699 | 0.1+ | 0.8+ | 2005 05 14 | 644 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 10 01 | 699 | 0.3+ | 0.4+ | 2005 05 14 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 644 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.1− | 0.4− | 2006 10 15 | D35 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2002 10 01 | 699 | 0.1− | 0.2+ | 2006 10 15 | D35 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2002 10 01 | 699 | 0.0 | 0.3+ | 2006 10 15 | D35 | 0.2+ | 0.1− | 2006 11 11 | 644 | 0.1+ | 0.3− |
| 2002 10 02 | 608 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 10 02 | 608 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 10 02 | 608 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 10 04 | 704 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.7+ |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.8+ | 0.1+ | 2006 10 18 | 691 | 0.5− | 1.4− | 2006 11 17 | 703 | 0.6+ | 0.5+ |
| 2002 10 05 | 704 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2002 10 05 | 704 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.9+ |
| 2002 10 05 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2002 10 05 | 704 | 0.1− | 0.6+ | 2006 10 27 | 704 | (0.4− | 1.9+) | 2006 11 18 | 704 | 0.7+ | 0.5+ |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2006 10 27 | 704 | 1.1+ | 1.2+ | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2002 10 07 | 704 | 0.4− | 0.0 | 2006 10 27 | 704 | 0.0 | 0.6− | 2006 11 21 | 704 | 0.4− | 0.7− |
| 2002 10 07 | 704 | 0.6+ | 0.5− | 2006 10 27 | 704 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2002 10 07 | 704 | 0.1+ | 0.2− | 2006 11 02 | 703 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.4− |
| 2002 10 07 | 704 | 0.4− | 0.3− | 2006 11 02 | 703 | 1.0− | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.5− |
| 2002 10 07 | 704 | 0.4− | 1.0− | 2006 11 02 | 703 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2002 10 29 | 704 | 0.3− | 0.9− | 2006 11 02 | 703 | 0.7− | 0.3− | 2006 11 28 | 704 | 0.6− | 2.4+ |
| 2002 10 29 | 704 | 0.9+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2002 10 29 | 704 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.5− | 1.1+ |
| 2002 10 29 | 704 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.4+ | 1.5+ |
| 2002 10 29 | 704 | 1.2− | 1.1+ | 2006 11 10 | 291 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.6− | 0.1+ |

**(142466)∗ 2002 TO$_9$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.11693 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23205178 | $\omega$ | 262.94277 | | +0.14922188 | −0.98879256 | |
| $a$ | 2.6226849 | $\Omega$ | 178.45168 | | +0.96196267 | +0.14406916 | |
| $e$ | 0.1880707 | $i$ | 10.02180 | | +0.22882449 | +0.03915810 | |
| $P$ | 4.25 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 10 | 691 | 0.3+ | 0.1+ | 2002 11 12 | 704 | 0.3− | 0.4+ | 2006 09 20 | 644 | 0.4− | 0.1− |
| 1996 05 10 | 691 | 0.4− | 0.5+ | 2002 11 20 | 644 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.2− | 0.1+ |
| 1996 05 10 | 691 | 0.3+ | 0.4+ | 2002 11 20 | 644 | 0.1− | 0.6+ | 2006 09 20 | 704 | 0.7− | 0.7+ |
| 1998 12 22 | 704 | (2.2− | 1.4−) | 2002 11 20 | 644 | (0.3− | 1.5+) | 2006 09 20 | 644 | 0.0 | 0.0 |
| 1998 12 22 | 704 | (1.0+ | 2.4−) | 2002 11 21 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.8− |
| 1998 12 22 | 704 | 0.5− | 1.1+ | 2002 11 21 | 644 | 0.6− | 0.2− | 2006 09 20 | 644 | 0.2− | 0.1− |
| 1998 12 22 | 704 | 2.0− | 0.0 | 2002 11 21 | 644 | 0.0 | 0.3+ | 2006 09 25 | 699 | 1.1+ | 0.3+ |
| 1998 12 22 | 704 | 0.9+ | 0.7− | 2004 03 17 | 704 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.2+ | 0.4− |
| 2002 10 01 | 704 | 0.5− | 0.8+ | 2004 03 17 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 0.8+ | 0.1− |
| 2002 10 01 | 704 | 0.9− | 0.0 | 2004 03 17 | 704 | (2.1− | 0.4+) | 2006 09 25 | 699 | 0.4− | 0.7− |
| 2002 10 01 | 704 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.4+ | 1.3+ | 2006 09 26 | 291 | 0.2− | 0.3+ |
| 2002 10 01 | 704 | 0.7+ | 0.1+ | 2004 03 19 | 704 | (0.1− | 1.6+) | 2006 09 26 | 291 | 0.3− | 0.4+ |
| 2002 10 02 | 608 | 0.7− | 0.4+ | 2004 03 19 | 704 | 0.9+ | 0.2+ | 2006 09 26 | 291 | 0.4− | 0.3+ |
| 2002 10 02 | 608 | 0.6− | 0.8+ | 2004 03 19 | 704 | 0.5− | 0.1− | 2006 09 27 | 704 | 1.3− | 0.5+ |
| 2002 10 02 | 608 | 0.2− | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.9+ | 2006 09 27 | 704 | 0.3− | 0.6− |
| 2002 10 03 | 704 | 0.4− | 0.8− | 2004 03 22 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.6+ |
| 2002 10 03 | 704 | 0.8+ | 1.3− | 2004 03 22 | 704 | 1.0+ | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 1.2− | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2006 09 27 | 704 | (1.5− | 1.3+) |
| 2002 10 03 | 704 | 0.0 | 0.6− | 2004 03 22 | 704 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.4+ |
| 2002 10 03 | 704 | 1.3+ | 0.4− | 2004 03 22 | 704 | 0.7+ | 1.0+ | 2006 10 16 | 703 | 0.4− | 0.9− |
| 2002 10 09 | 699 | 0.1+ | 0.4+ | 2004 03 28 | 704 | 0.4− | 0.2+ | 2006 10 16 | 703 | (0.3+ | 1.9+) |
| 2002 10 09 | 699 | 0.7+ | 1.2+ | 2004 03 28 | 704 | 0.9− | 0.7− | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 2002 10 09 | 699 | 0.3− | 0.3− | 2004 03 28 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 10 09 | 699 | 0.5+ | 0.6+ | 2004 03 28 | 704 | 1.2− | 1.0− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.6− | 0.6+ | 2004 03 28 | 704 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.4− | 0.5+ | 2006 08 27 | 699 | 0.3+ | 1.2− | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.7+ | 0.6− | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.9+ | 0.8+ | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.4+ | 0.1+ | 2006 09 12 | 703 | (0.5− | 1.5−) | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 1.1+ | 0.1+ | 2006 09 12 | 703 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2002 10 31 | 704 | 0.5+ | 0.1+ | 2006 09 12 | 703 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.4− | 2006 09 12 | 703 | 0.4+ | 0.6− | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 10 31 | 704 | 0.6+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2002 11 06 | 699 | 0.3+ | 1.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.4− |
| 2002 11 06 | 699 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2002 11 06 | 699 | 0.5− | 1.2+ | 2006 09 17 | 704 | 0.3− | 0.2− | 2006 11 25 | G96 | 0.5+ | 0.1− |
| 2002 11 06 | 699 | 0.4− | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.5− | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | (2.1− | 1.3+) | 2006 09 17 | 704 | 0.5+ | 0.9+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.4+ | | | | |

**(142467)∗ 2002 TV$_9$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.56509 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22857426 | $\omega$ | 231.56543 | | +0.99839580 | +0.04360052 | |
| $a$ | 2.6492189 | $\Omega$ | 125.90692 | | −0.02698586 | +0.92728395 | |
| $e$ | 0.1391419 | $i$ | 2.55607 | | −0.04977534 | +0.37181107 | |
| $P$ | 4.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 0.4+ | 0.7+ | 2002 10 31 | 704 | 0.3− | 1.0− | 2006 08 13 | 644 | 0.2− | 0.2+ |
| 2002 10 01 | 699 | (0.1+ | 1.9+) | 2003 12 19 | 291 | 0.5+ | 0.5+ | 2006 08 13 | 644 | 0.2− | 0.1+ |
| 2002 10 01 | 699 | 0.9− | 0.5+ | 2003 12 19 | 291 | 0.6+ | 0.4+ | 2006 08 13 | 644 | 0.1− | 0.2+ |
| 2002 10 01 | 699 | 0.4+ | 1.5+ | 2003 12 19 | 291 | 0.5− | 0.8+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2002 10 02 | 608 | 0.8− | 0.8+ | 2005 03 14 | G96 | 0.5+ | 0.6− | 2006 08 27 | 691 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 608 | 1.0− | 0.3+ | 2005 03 14 | G96 | 0.1+ | 0.6+ | 2006 08 27 | 691 | 0.1+ | 0.0 | | |
| 2002 10 02 | 608 | 0.7− | 0.6+ | 2005 03 14 | G96 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.7+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2005 03 14 | G96 | 0.4− | 0.5+ | 2006 08 28 | 699 | 0.5+ | 1.2+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2005 04 10 | G96 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.7+ | | |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2005 04 10 | G96 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.1− | | |
| 2002 10 11 | 704 | 0.4− | 0.1+ | 2005 04 10 | G96 | 0.1− | 0.4+ | 2006 08 28 | 699 | 1.2− | 0.7− | | |
| 2002 10 11 | 704 | 1.1+ | 0.4+ | 2005 04 10 | G96 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.2+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.5+ | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.7− | 0.6+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.5+ | 2005 04 16 | 691 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.5− | | |
| 2002 10 11 | 704 | 0.2− | 0.2+ | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.1− | | |
| 2002 10 31 | 704 | 0.4− | 0.1− | 2005 05 10 | 807 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.4− | 0.2− | | |
| 2002 10 31 | 704 | 0.0 | 0.0 | 2005 05 10 | 807 | 0.4− | 0.6+ | 2006 11 23 | G96 | 1.1+ | 0.4− | | |
| 2002 10 31 | 704 | 0.5− | 0.1+ | 2005 05 10 | 807 | 0.0 | 0.4+ | | | | | | |

**(142468)∗ 2002 TU$_{11}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.61126 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27328501 | $\omega$ | 28.52035 | | +0.74451025 | −0.66682501 | |
| $a$ | 2.3517556 | $\Omega$ | 13.45533 | | +0.58304369 | +0.62580499 | |
| $e$ | 0.1024567 | $i$ | 8.00073 | | +0.32521462 | +0.40461404 | |
| $P$ | 3.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 1.0+ | 0.9− | 2002 10 03 | 704 | 0.3− | 0.7+ | 2006 09 18 | 703 | 0.3+ | 0.4+ | | |
| 1999 12 12 | 704 | 0.8+ | 0.8− | 2002 10 03 | 704 | (0.1− | 1.7+) | 2006 09 18 | 703 | 1.2− | 0.1+ | | |
| 1999 12 12 | 704 | 0.4− | 0.5+ | 2002 10 03 | 704 | (0.1+ | 3.5+) | 2006 09 18 | 703 | 0.7− | 0.1+ | | |
| 1999 12 12 | 704 | (0.3− | 3.3+) | 2002 10 03 | 704 | (2.0− | 0.4−) | 2006 10 19 | 703 | 0.4− | 0.2− | | |
| 1999 12 15 | 704 | 0.7+ | 0.7− | 2002 10 03 | 704 | 1.5− | 0.6+ | 2006 10 19 | 703 | 0.7− | 0.7+ | | |
| 1999 12 15 | 704 | 0.2− | 0.7− | 2002 10 11 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 703 | 0.3+ | 0.6+ | | |
| 1999 12 15 | 704 | 0.1− | 1.1− | 2002 10 11 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.4− | | |
| 1999 12 15 | 704 | 0.8− | 0.5− | 2002 10 11 | 704 | 1.0− | 0.5+ | 2006 11 13 | 644 | 0.5+ | 0.3+ | | |
| 2000 01 29 | 704 | 0.5− | 0.5+ | 2004 01 23 | 699 | 0.5+ | 0.5+ | 2006 11 13 | 644 | 0.5+ | 0.4+ | | |
| 2000 01 29 | 704 | 0.7− | 0.5+ | 2004 01 23 | 699 | 0.7+ | 0.9+ | 2006 11 13 | 644 | 0.7+ | 0.1+ | | |
| 2000 01 29 | 704 | 0.3− | 0.5− | 2004 01 23 | 699 | 0.6+ | 0.4− | 2006 11 15 | 704 | 0.1+ | 0.5+ | | |
| 2002 09 05 | 704 | 0.6− | 0.0 | 2004 01 23 | 699 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.5+ | | |
| 2002 09 05 | 704 | 1.1+ | 0.3− | 2004 02 17 | 704 | (0.9+ | 1.6+) | 2006 11 15 | 704 | 0.5+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.8+ | 0.3− | 2004 02 17 | 704 | 1.1+ | 0.1− | 2006 11 17 | 644 | 0.5+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.8+ | 0.7+ | 2004 02 17 | 704 | 0.9+ | 0.6+ | 2006 11 17 | 644 | 0.5+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.2− | 1.1+ | 2004 02 17 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 644 | 0.3+ | 0.1+ | | |
| 2002 09 06 | 704 | (4.9+ | 0.3+) | 2004 02 17 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 703 | 0.1− | 1.0− | | |
| 2002 09 06 | 704 | 0.7− | 0.0 | 2004 02 18 | 691 | 0.0 | 0.5+ | 2006 11 22 | 703 | 1.0+ | 1.3− | | |
| 2002 09 06 | 704 | 0.5− | 0.4+ | 2004 02 18 | 691 | 0.4− | 0.7+ | 2006 11 22 | 703 | 0.0 | 0.4+ | | |
| 2002 09 11 | 608 | 1.0− | 0.4− | 2004 02 18 | 691 | 0.6+ | 0.2− | 2006 11 22 | 703 | 0.3+ | 0.1− | | |
| 2002 09 11 | 608 | 0.5− | 1.0− | 2004 03 20 | 704 | 0.9− | 0.6+ | 2006 11 29 | 704 | 1.0− | 1.5− | | |
| 2002 09 11 | 608 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 1.2− | 0.3− | | |
| 2002 10 01 | 699 | 0.1− | 1.0+ | 2004 03 20 | 704 | 0.3− | 0.6− | 2006 11 29 | 704 | 0.3+ | 0.5− | | |
| 2002 10 01 | 699 | 0.2− | 0.7+ | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.4− | 0.7+ | | |
| 2002 10 01 | 699 | 0.7+ | 1.0+ | 2004 03 20 | 704 | 0.1− | 0.9+ | | | | | | |
| 2002 10 01 | 699 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.7+ | | | | | | |

**(142469)∗ 2002 TY$_{11}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.12692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25525153 | $\omega$ | 288.35527 | | +0.66175819 | +0.74817100 | |
| $a$ | 2.4612580 | $\Omega$ | 23.29242 | | −0.63368718 | +0.59249238 | |
| $e$ | 0.2565865 | $i$ | 6.99086 | | −0.40064530 | +0.29865186 | |
| $P$ | 3.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 10 05 | 704 | 1.1+ | 0.1− | 2006 09 20 | 704 | 0.8− | 0.7+ | | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 10 05 | 704 | 1.3+ | 0.2− | 2006 09 20 | 704 | 1.2− | 0.5+ | | |
| 2002 04 08 | 807 | 0.5− | 0.3+ | 2002 10 05 | 704 | (1.5+ | 0.1+) | 2006 09 20 | 704 | (0.2+ | 1.6+) | | |
| 2002 04 08 | 807 | 1.0− | 0.0 | 2002 10 06 | 704 | (1.9− | 0.6+) | 2006 10 13 | A50 | 0.7+ | 0.7+ | | |
| 2002 07 09 | 704 | 1.2+ | 0.7− | 2002 10 06 | 704 | 0.6− | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.2− | | |
| 2002 07 09 | 704 | 0.7+ | 0.1+ | 2002 10 06 | 704 | (0.7− | 1.6+) | 2006 10 16 | 691 | 0.2− | 0.3− | | |
| 2002 07 09 | 704 | 0.1− | 1.4− | 2002 10 06 | 704 | 1.3− | 0.9+ | 2006 10 16 | 691 | 0.3− | 0.3− | | |
| 2002 08 14 | 704 | (1.6− | 0.9+) | 2002 10 06 | 704 | 1.0− | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 08 14 | 704 | (2.3− | 1.7−) | 2002 10 11 | 704 | (1.7− | 0.8+) | 2006 10 19 | 644 | 0.1− | 0.3− | | |
| 2002 08 14 | 704 | (0.8− | 2.4+) | 2002 10 11 | 704 | 0.5− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2002 08 14 | 704 | (2.7− | 1.6+) | 2002 10 11 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 19 | 608 | 0.3+ | 0.1− | 2002 10 11 | 704 | 0.7− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 08 19 | 608 | 0.4− | 0.3+ | 2002 11 05 | 699 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2002 08 19 | 608 | 0.0 | 0.5+ | 2002 11 05 | 699 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 09 05 | 699 | 0.4− | 0.0 | 2002 11 05 | 699 | (1.9− | 0.4−) | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2002 09 05 | 699 | 0.1− | 0.0 | 2002 11 05 | 699 | 0.1− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 09 05 | 699 | 0.6− | 0.1+ | 2002 11 06 | 704 | 0.7− | 1.4+ | 2006 10 21 | 703 | 0.1− | 1.0− | | |
| 2002 09 05 | 699 | 0.3− | 0.3+ | 2002 11 06 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.9− | | |
| 2002 09 05 | 608 | 0.2− | 0.4− | 2002 11 06 | 704 | 0.6+ | 0.5− | 2006 10 21 | 703 | 0.6− | 0.9− | | |
| 2002 09 05 | 608 | 0.5+ | 0.5− | 2002 11 06 | 704 | 0.3− | 1.0− | 2006 10 21 | 703 | 0.3+ | 0.6− | | |
| 2002 09 05 | 608 | 0.5+ | 1.2− | 2005 03 11 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 09 11 | 608 | (1.6− | 0.7+) | 2005 03 11 | 691 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 09 11 | 608 | (1.5− | 1.2+) | 2005 03 11 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 09 11 | 608 | (1.7− | 1.0+) | 2005 04 09 | G96 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.6+ | | |
| 2002 09 15 | 608 | 0.9− | 0.3+ | 2005 04 09 | G96 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 15 | 608 | 0.8− | 0.5+ | 2005 04 09 | G96 | (0.2− | 1.6+) | 2006 10 27 | 691 | 0.1+ | 0.3+ | | |
| 2002 09 15 | 608 | 1.1− | 0.3+ | 2005 04 09 | G96 | 0.2+ | 1.3+ | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2002 09 16 | 644 | 0.7− | 0.5− | 2005 05 09 | G96 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.6+ | 0.0 | | |
| 2002 09 16 | 644 | 0.8− | 0.6− | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− | | |
| 2002 09 16 | 644 | 0.8− | 0.5− | 2005 05 09 | G96 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.0 | | |
| 2002 10 01 | 699 | 0.6+ | 0.7+ | 2005 05 09 | G96 | 0.7− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2002 10 01 | 699 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.4− | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.0 | | |
| 2002 10 01 | 699 | 0.8+ | 0.1+ | 2006 09 17 | 704 | 0.3+ | 1.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2002 10 01 | 699 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.2− | 2006 11 06 | 644 | 0.5+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2006 09 17 | 704 | 1.1+ | 0.6− | 2006 11 06 | 644 | 0.2− | 0.2+ | | |
| 2002 10 03 | 704 | 0.5+ | 1.0+ | 2006 09 17 | 704 | 0.3− | 0.8+ | 2006 11 06 | 644 | 0.3+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.7+ | 1.0+ | 2006 09 18 | 699 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.3+ | 1.0− | | |
| 2002 10 03 | 704 | (4.2+ | 1.8+) | 2006 09 18 | 699 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.3− | | |
| 2002 10 03 | 704 | (1.1− | 1.8+) | 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.1− | | |
| 2002 10 05 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.6− | | |
| 2002 10 05 | 704 | 0.9+ | 0.1− | 2006 09 20 | 704 | 0.9− | 0.6+ | | | | | | |

**(142470)∗ 2002 TE$_{13}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.74103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12662398 | $\omega$ | 109.15131 | | +0.99709451 | −0.06988326 | |
| $a$ | 3.9275833 | $\Omega$ | 254.86494 | | +0.05257182 | +0.91928803 | |
| $e$ | 0.2337782 | $i$ | 1.79950 | | +0.05512476 | +0.38733171 | |
| $P$ | 7.78 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 03 | 691 | 0.4− | 0.3+ | 2002 10 07 | 704 | 0.1+ | 0.9+ | 2002 11 06 | 704 | 1.4− | 0.9− | | |
| 1997 01 03 | 691 | 0.0 | 0.3− | 2002 10 07 | 704 | 0.4+ | 0.8+ | 2002 11 22 | 644 | 0.2− | 0.2− | | |
| 1997 01 03 | 691 | 0.0 | 0.2+ | 2002 10 07 | 704 | 0.3+ | 0.7+ | 2002 11 22 | 644 | 0.2− | 0.3− | | |
| 1997 01 11 | 691 | 0.6+ | 0.1− | 2002 10 09 | 704 | 0.2+ | 0.9+ | 2002 11 22 | 644 | 0.2− | 0.2− | | |
| 1997 01 11 | 691 | 0.1+ | 0.1− | 2002 10 09 | 704 | 0.9− | 1.5+ | 2004 01 30 | 691 | 0.1+ | 0.5+ | | |
| 1997 01 11 | 691 | 0.1+ | 0.4− | 2002 10 09 | 704 | 0.8+ | 0.2+ | 2004 01 30 | 691 | 0.3− | 0.2+ | | |
| 1997 01 17 | 691 | 0.5− | 0.0 | 2002 10 09 | 704 | 0.6+ | 0.4+ | 2004 01 30 | 691 | 0.1+ | 0.1+ | | |
| 1997 01 17 | 691 | 0.1− | 0.7− | 2002 10 09 | 704 | 0.2− | 0.1− | 2005 01 19 | 691 | 0.6+ | 0.2+ | | |
| 1997 01 17 | 691 | 0.9− | 0.4− | 2002 10 11 | 704 | 0.6+ | 0.4− | 2005 01 19 | 691 | 0.1− | 0.2+ | | |
| 1997 01 31 | 691 | 0.1− | 0.3− | 2002 10 11 | 704 | 0.0 | 0.5− | 2005 01 19 | 691 | 0.2+ | 0.3+ | | |
| 1997 01 31 | 691 | 0.3+ | 0.4− | 2002 10 11 | 704 | 0.1+ | 0.7− | 2005 03 09 | G96 | 0.8− | 0.1− | | |
| 1997 01 31 | 691 | 0.1+ | 0.1− | 2002 10 11 | 704 | 0.3+ | 0.5− | 2005 03 09 | G96 | 0.3− | 0.1− | | |
| 2002 10 01 | 699 | 0.9− | 0.6+ | 2002 10 11 | 704 | 0.9+ | 0.6− | 2005 03 09 | G96 | 0.8+ | 0.7− | | |
| 2002 10 01 | 699 | 0.0 | 0.0 | 2002 10 18 | 644 | 0.0 | 0.2− | 2005 03 09 | G96 | 0.3− | 0.1+ | | |
| 2002 10 01 | 699 | 0.5− | 0.4− | 2002 10 18 | 644 | 0.2− | 0.3− | 2006 02 25 | 691 | 0.6+ | 0.4+ | | |
| 2002 10 01 | 699 | 1.7− | 0.5+ | 2002 10 18 | 644 | 0.1+ | 0.0 | 2006 02 25 | 691 | 0.4+ | 0.8+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3+ | 0.9+ | 2002 10 30 | 644 | 0.5− | 0.4− | 2006 02 25 | 691 | 0.0 | 0.7+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2002 10 30 | 644 | 0.3− | 0.3− | 2006 04 02 | G96 | 0.1− | 0.4+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2002 10 30 | 644 | 0.3− | 0.3− | 2006 04 02 | G96 | 0.2+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.4+ | 1.5+ | 2002 11 06 | 704 | (2.5− | 1.7−) | 2006 04 02 | G96 | 0.1− | 0.5+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.7+ | 2002 11 06 | 704 | (2.0− | 2.2−) | 2006 04 02 | G96 | 0.0 | 0.7+ | | |
| 2002 10 07 | 704 | 0.3− | 1.1+ | 2002 11 06 | 704 | (1.5− | 2.4−) | | | | | | |

**(142471)∗ 2002 TN$_{13}$ = 2001 HL$_{42}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 37971)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.07054 | | (2000.0) | | | |
| $n$ | 0.23059450 | $\omega$ | 124.64949 | | +0.25999518 | +0.96545705 |
| $a$ | 2.6337229 | $\Omega$ | 160.39880 | | −0.90184479 | +0.24914619 |
| $e$ | 0.2221826 | $i$ | 2.93562 | | −0.34507750 | +0.07628139 |
| $P$ | 4.27 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 704 | 1.0− | 0.1+ | 2005 03 14 | 704 | (2.3+ | 3.6+) | 2006 09 13 | 644 | 0.0 | 0.0 | | |
| 2001 04 16 | 699 | (0.7− | 1.7+) | 2005 03 14 | 704 | (0.9+ | 2.4+) | 2006 09 13 | 644 | 0.0 | 0.1− | | |
| 2001 04 16 | 704 | 0.2+ | 0.7+ | 2005 03 14 | 704 | 0.5+ | 1.4+ | 2006 09 13 | 644 | 0.4− | 0.0 | | |
| 2001 04 16 | 704 | (0.4− | 1.8+) | 2005 04 04 | 703 | (2.3+ | 0.2+) | 2006 09 13 | 644 | 0.3+ | 0.0 | | |
| 2001 04 16 | 699 | 0.2+ | 1.3+ | 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.0 | | |
| 2001 04 16 | 704 | 1.0− | 0.0 | 2005 04 04 | 703 | (1.6+ | 0.2−) | 2006 09 16 | 699 | 0.0 | 0.3+ | | |
| 2001 04 16 | 699 | 0.3+ | 0.4− | 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.1+ | | |
| 2001 04 16 | 699 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.9+ | 0.6+ | 2006 09 16 | 699 | 0.1+ | 0.2+ | | |
| 2001 04 18 | 608 | 1.1+ | 0.2− | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.0 | 0.1− | | |
| 2001 04 18 | 608 | 0.3+ | 1.3− | 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.4+ | | |
| 2001 04 18 | 608 | 0.2− | 0.7− | 2005 04 04 | 703 | (1.6+ | 0.1+) | 2006 09 17 | 704 | 0.2− | 0.8+ | | |
| 2002 10 01 | 699 | 0.2+ | 0.7− | 2005 04 11 | G96 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.2+ | | |
| 2002 10 01 | 699 | 0.8− | 0.6+ | 2005 04 11 | G96 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.6− | | |
| 2002 10 01 | 699 | 0.1+ | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.3+ | | |
| 2002 10 01 | 699 | 0.0 | 0.1+ | 2005 04 11 | G96 | (0.2− | 2.4+) | 2006 09 19 | 699 | 0.3− | 0.3+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.8+ | 2006 08 15 | 644 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.2− | 1.1+ | | |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.7+ | 0.5− | | |
| 2002 10 03 | 704 | 0.5− | 1.1+ | 2006 08 15 | 644 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.2− | | |
| 2002 10 03 | 704 | 0.7− | 0.1+ | 2006 08 21 | 704 | 0.0 | 1.1+ | 2006 09 20 | 644 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.5+ | 0.4+ | 2006 08 21 | 704 | 0.7+ | 1.2+ | 2006 09 20 | 644 | 0.1− | 0.3+ | | |
| 2002 10 10 | 644 | 0.3+ | 0.2+ | 2006 08 21 | 704 | 0.0 | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.0 | | |
| 2002 10 10 | 644 | 0.0 | 0.1+ | 2006 08 21 | 704 | 1.0+ | 0.1− | 2006 09 25 | 699 | 0.5+ | 0.1+ | | |
| 2002 10 10 | 644 | 0.1+ | 1.0− | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.4− | | |
| 2002 10 31 | 704 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.6− | 0.3+ | | |
| 2002 10 31 | 704 | 0.9+ | 0.9+ | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.4− | 0.5+ | | |
| 2002 10 31 | 704 | 0.8− | 0.1− | 2006 08 27 | 699 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.3+ | | |
| 2002 10 31 | 704 | 0.0 | 0.0 | 2006 08 27 | 699 | 0.4+ | 0.3+ | 2006 09 27 | 704 | 0.4− | 1.4+ | | |
| 2005 03 04 | G96 | 0.6− | 0.3+ | 2006 08 27 | 699 | 0.1+ | 0.2− | 2006 09 27 | 704 | 1.1− | 0.1+ | | |
| 2005 03 04 | G96 | 0.8− | 0.3+ | 2006 08 27 | 699 | 0.8+ | 0.8+ | 2006 09 27 | 704 | 0.2− | 0.5+ | | |
| 2005 03 04 | G96 | 0.0 | 0.4+ | 2006 08 28 | H07 | 0.7+ | 0.1− | 2006 09 27 | 704 | 0.4− | 0.3+ | | |
| 2005 03 04 | G96 | 0.4− | 0.2+ | 2006 08 28 | H07 | 0.5+ | 0.6− | 2006 09 30 | 703 | (0.5+ | 1.7+) | | |
| 2005 03 10 | G96 | 0.1+ | 0.3+ | 2006 08 28 | H07 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.7− | 0.3+ | | |
| 2005 03 10 | G96 | 0.1− | 0.3+ | 2006 08 28 | 703 | 1.1+ | 0.3+ | 2006 09 30 | 703 | (1.6+ | 0.0 ) | | |
| 2005 03 10 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.4− | 2006 09 30 | 703 | 0.6− | 0.2+ | | |
| 2005 03 10 | G96 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.7+ | 2006 11 15 | G96 | 0.3− | 0.5− | | |
| 2005 03 11 | 691 | 0.5+ | 0.4+ | 2006 08 28 | 703 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.1− | | |
| 2005 03 11 | 691 | 0.4+ | 0.6+ | 2006 08 28 | H07 | 0.2+ | 0.7− | 2006 11 15 | G96 | 0.2− | 0.3− | | |
| 2005 03 11 | 691 | 0.4+ | 0.4+ | 2006 08 29 | 704 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.1− | | |
| 2005 03 11 | 704 | (1.5+ | 1.9+) | 2006 08 29 | 704 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.2− | | |
| 2005 03 11 | 704 | 0.3+ | 0.6+ | 2006 08 29 | 704 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.4− | | |
| 2005 03 11 | 704 | (0.4+ | 2.1+) | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2005 03 13 | 683 | 0.2− | 1.4+ | 2006 09 12 | 703 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.2+ | | |
| 2005 03 13 | 683 | (0.4− | 2.9+) | 2006 09 12 | 703 | 0.9− | 0.4− | | | | | | |
| 2005 03 13 | 683 | (2.1+ | 3.8+) | 2006 09 13 | 644 | 0.1− | 0.1+ | | | | | | |

**(142472)∗ 2002 TH$_{14}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.65444 | | (2000.0) | | | |
| $n$ | 0.24108538 | $\omega$ | 278.35919 | | +0.77896827 | +0.60930507 |
| $a$ | 2.5567531 | $\Omega$ | 44.26846 | | −0.45854803 | +0.71467759 |
| $e$ | 0.3151540 | $i$ | 12.25590 | | −0.42771736 | +0.34348693 |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 691 | 0.2− | 0.6− | 2002 11 01 | 704 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.3− | 0.2− | | |
| 1998 10 12 | 691 | 0.4+ | 0.2+ | 2002 11 01 | 704 | 0.4− | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.3+ | | |
| 2001 03 19 | 645 | 0.0 | 0.2+ | 2002 11 10 | 704 | 0.1− | 1.1− | 2006 10 02 | 703 | 0.2+ | 0.3− | | |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2002 11 10 | 704 | 0.4− | 0.6− | 2006 10 02 | 703 | 0.4− | 0.2+ | | |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2002 11 10 | 704 | 0.8− | 0.3− | 2006 10 02 | 703 | 0.2+ | 0.1+ | | |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2002 11 10 | 704 | 0.4+ | 0.5+ | 2006 10 02 | 703 | 0.2− | 0.1+ | | |
| 2002 10 01 | 704 | 0.1− | 0.5− | 2002 11 22 | 644 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.7+ | 1.0+ | | |
| 2002 10 01 | 704 | 0.5+ | 0.3+ | 2002 11 22 | 644 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.5+ | | |
| 2002 10 01 | 704 | 0.4+ | 0.0 | 2002 11 22 | 644 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.1+ | | |
| 2002 10 01 | 704 | 0.1+ | 0.8− | 2002 12 01 | 704 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.4+ | | |
| 2002 10 01 | 704 | 0.4+ | 0.2+ | 2002 12 01 | 704 | 0.1+ | 0.5− | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2002 12 01 | 704 | 1.3− | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2002 12 01 | 704 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1− | | |
| 2002 10 03 | 704 | 1.3− | 0.3+ | 2006 08 05 | E12 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | 0.0 | 1.1+ | 2006 08 05 | E12 | 1.2− | 1.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | 0.4− | 0.6+ | 2006 08 05 | E12 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2002 10 11 | 704 | (1.8+ | 0.2−) | 2006 08 05 | E12 | (0.7+ | 2.3+) | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 10 11 | 704 | 1.5+ | 0.6− | 2006 09 20 | 703 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2002 10 11 | 704 | 1.2+ | 0.5− | 2006 09 20 | 703 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 10 11 | 704 | (1.7+ | 0.6−) | 2006 09 20 | 703 | 0.6+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.2− | | |
| 2002 10 11 | 704 | 1.3+ | 0.6− | 2006 09 20 | 703 | 0.4+ | 0.1− | 2006 11 06 | 644 | 0.0 | 0.1− | | |
| 2002 10 30 | 644 | 0.4− | 0.3+ | 2006 09 20 | 608 | 0.2− | 0.3− | 2006 11 06 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 30 | 644 | 0.7− | 0.0 | 2006 09 20 | 608 | 0.9− | 1.0− | 2006 11 10 | 704 | 0.4− | 0.2+ | | |
| 2002 10 30 | 644 | 0.5− | 0.2+ | 2006 09 20 | 608 | 0.9− | 0.5− | 2006 11 10 | 704 | 0.2− | 0.7− | | |
| 2002 10 31 | 608 | 0.5+ | 0.4− | 2006 09 24 | 699 | 0.3+ | 0.2+ | 2006 11 10 | 704 | 0.2+ | 0.3+ | | |
| 2002 10 31 | 608 | 0.3+ | 0.1+ | 2006 09 24 | 699 | 0.6+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 31 | 608 | 0.2+ | 0.1+ | 2006 09 24 | 699 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.5− | 1.8+ | | |
| 2002 11 01 | 704 | 0.9− | 0.7− | 2006 09 26 | 703 | 0.4− | 0.1− | 2006 11 20 | 704 | 1.0− | 2.4+ | | |
| 2002 11 01 | 704 | 0.2+ | 1.1+ | 2006 09 26 | 703 | 0.6− | 0.2− | | | | | | |

**(142473)∗ 2002 TF$_{15}$**

Discovered 2002 Oct. 1 at Kleť Observatory-KLENOT.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.58524 | | (2000.0) | | | |
| $n$ | 0.23805559 | $\omega$ | 262.99474 | | +0.82253692 | +0.54887697 |
| $a$ | 2.5784010 | $\Omega$ | 63.61104 | | −0.43373038 | +0.77476373 |
| $e$ | 0.1241385 | $i$ | 9.56725 | | −0.36784640 | +0.31380762 |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 608 | 0.4− | 0.2+ | 2002 10 04 | 704 | 0.7− | 1.2+ | 2006 09 17 | 699 | 0.6+ | 0.4+ | | |
| 2001 05 15 | 608 | 0.2+ | 0.7+ | 2002 10 04 | 704 | 0.2− | 0.6+ | 2006 09 17 | 699 | 0.2+ | 0.5− | | |
| 2001 05 15 | 608 | 0.5− | 0.1+ | 2002 10 04 | 645 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.1− | 0.0 | | |
| 2001 05 29 | 608 | 0.6+ | 0.8+ | 2002 10 04 | 645 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.2− | | |
| 2001 05 29 | 608 | 1.0+ | 1.0+ | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.9+ | | |
| 2001 05 29 | 608 | 0.3+ | 0.1+ | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.9+ | | |
| 2002 10 01 | 246 | 0.1− | 0.1− | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.8+ | 0.4+ | | |
| 2002 10 01 | 246 | 0.2+ | 0.1− | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.0 | 0.1− | | |
| 2002 10 01 | 246 | 0.5+ | 0.0 | 2002 10 15 | 644 | (0.0 | 1.6+) | 2006 09 25 | 703 | 0.2− | 0.3+ | | |
| 2002 10 01 | 246 | 0.4+ | 0.2− | 2002 10 15 | 644 | (0.1+ | 1.6+) | 2006 09 25 | 703 | 1.1− | 0.0 | | |
| 2002 10 01 | 246 | 0.4− | 0.5+ | 2002 10 15 | 644 | 0.2+ | 1.2+ | 2006 09 25 | 703 | 1.2− | 0.4+ | | |
| 2002 10 01 | 246 | 0.1− | 0.3+ | 2002 10 30 | 704 | 0.0 | 0.8− | 2006 10 12 | 644 | 0.4− | 0.0 | | |
| 2002 10 01 | 246 | 0.3+ | 0.7+ | 2002 10 30 | 704 | 0.0 | 1.0− | 2006 10 12 | 644 | 0.3− | 0.0 | | |
| 2002 10 01 | 246 | 0.1+ | 0.2+ | 2002 10 30 | 704 | 0.3− | 1.5− | 2006 10 12 | 644 | 0.3− | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.6− | 0.1− | 2002 10 30 | 704 | 0.3− | 0.6− | 2006 10 21 | 703 | 0.9− | 0.1+ |
| 2002 10 02 | 704 | 0.9− | 0.7− | 2002 10 30 | 704 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2004 01 18 | 644 | 0.7+ | 0.9+ | 2006 10 21 | 703 | (0.1− | 1.5+) |
| 2002 10 02 | 704 | 0.3− | 0.2+ | 2004 01 18 | 644 | 0.5+ | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.9+ |
| 2002 10 03 | 704 | 0.9− | 0.4+ | 2004 01 18 | 644 | 0.5+ | 0.8+ | 2006 10 28 | 703 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.9− | 0.2− | 2004 02 14 | 704 | 0.9− | 1.3+ | 2006 10 28 | 703 | 0.8− | 1.1+ |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2004 02 14 | 704 | (0.1− | 1.8+) | 2006 10 28 | 703 | 0.4+ | 0.8+ |
| 2002 10 03 | 704 | 0.3+ | 0.7− | 2004 02 14 | 704 | (0.2− | 2.1+) | 2006 10 28 | 703 | 1.0− | 0.3+ |
| 2002 10 03 | 704 | 0.5+ | 1.3− | 2006 08 19 | 644 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.7− | 0.2+ |
| 2002 10 04 | 704 | 0.6− | 0.3− | 2006 08 19 | 644 | 0.0 | 0.2− | 2006 11 23 | 703 | 1.9+ | 0.9+ |
| 2002 10 04 | 704 | 1.0− | 0.8+ | 2006 08 19 | 644 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.3− | 1.6+ |
| 2002 10 04 | 704 | 0.2− | 0.7+ | 2006 09 17 | 699 | 0.5+ | 0.3− | 2006 11 23 | 703 | 0.4− | 1.2+ |

**(142474)∗ 2002 TF$_{17}$ = 2005 JL$_{118}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75667)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.72105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26889111 | $\omega$ | 57.94740 | | +0.74883615 | +0.66223904 | |
| $a$ | 2.3773060 | $\Omega$ | 260.56767 | | −0.61665386 | +0.68174524 | |
| $e$ | 0.1567098 | $i$ | 1.51906 | | −0.24286300 | +0.31090654 | |
| $P$ | 3.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 09 | 691 | 0.3− | 0.2− | 2002 10 11 | 704 | 0.5− | 0.1+ | 2005 06 06 | 691 | 0.4− | 0.4+ |
| 1997 03 09 | 691 | 0.2− | 0.4− | 2002 10 11 | 704 | 0.5+ | 0.2+ | 2005 06 06 | 691 | 0.0 | 0.1− |
| 1997 03 09 | 691 | 0.2− | 0.2− | 2002 10 11 | 704 | (0.3+ | 1.5+) | 2005 06 06 | 691 | 0.1+ | 0.0 |
| 1998 06 16 | 691 | 0.0 | 0.2+ | 2002 10 11 | 704 | 0.6+ | 0.4− | 2005 06 15 | 691 | 0.1− | 0.3− |
| 1998 06 16 | 691 | 0.1− | 0.2+ | 2002 10 11 | 704 | 0.3+ | 0.3+ | 2005 06 15 | 691 | 0.1+ | 0.0 |
| 1998 06 16 | 691 | 0.1+ | 0.3+ | 2004 02 14 | 691 | 0.3+ | 0.6+ | 2005 06 15 | 691 | 0.2+ | 0.3+ |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2004 02 14 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 850 | 0.0 | 1.4+ |
| 2002 09 06 | 704 | 0.5+ | 0.8− | 2004 02 14 | 691 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2002 09 06 | 704 | 0.6+ | 0.5− | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 0.5− | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 10 02 | 704 | 1.1− | 0.2+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.1− | 0.3+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 11 10 | 691 | 1.0+ | 0.4− |
| 2002 10 02 | 704 | 0.3− | 0.2− | 2005 05 16 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.5− | 0.1− | 2005 05 16 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.1− | 0.2− | 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2005 06 04 | 704 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2005 06 04 | 703 | 0.3+ | 0.9− | 2006 11 18 | 704 | 0.6+ | 0.7− |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2005 06 04 | 704 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2005 06 04 | 703 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.7− | 0.3+ |
| 2002 10 07 | 699 | 0.1− | 1.0+ | 2005 06 04 | 703 | (2.3− | 0.2−) | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2002 10 07 | 699 | 0.2− | 0.3+ | 2005 06 04 | 704 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.9− | 0.3+ |
| 2002 10 07 | 699 | 0.7− | 0.1− | 2005 06 04 | 703 | 0.9+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2002 10 07 | 699 | 0.5+ | 0.5− | 2005 06 04 | 704 | 0.9− | 0.6− | 2006 11 21 | 704 | 0.2+ | 0.1− |

**(142475)∗ 2002 TG$_{17}$ = 1999 XZ$_{211}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37974)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.87283 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24567851 | $\omega$ | 224.07222 | | −0.70055538 | +0.71356709 | |
| $a$ | 2.5247862 | $\Omega$ | 1.50396 | | −0.56439816 | −0.54835949 | |
| $e$ | 0.1215159 | $i$ | 14.66791 | | −0.43666563 | −0.43603197 | |
| $P$ | 4.01 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 02 | 691 | 0.0 | 0.3− | 2002 10 12 | 704 | 1.2+ | 0.9+ | 2006 09 20 | 704 | 1.3+ | 0.4− |
| 1998 09 02 | 691 | 0.1+ | 0.4− | 2002 10 16 | 644 | 0.5− | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.5− |
| 1998 09 02 | 691 | 0.1+ | 0.1− | 2002 10 16 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 1.1+ | 0.9+ |
| 1998 10 14 | 699 | 0.2+ | 0.7− | 2002 10 16 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.7+ |
| 1998 10 14 | 699 | 0.0 | 1.2+ | 2002 10 31 | 704 | (1.7− | 2.1+) | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 1998 10 14 | 699 | 0.9+ | 0.8+ | 2002 10 31 | 704 | (2.3− | 2.9+) | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 1999 12 13 | 704 | 0.9+ | 1.0− | 2002 10 31 | 704 | (2.7− | 1.9+) | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 1999 12 13 | 704 | 0.5+ | 0.8− | 2002 10 31 | 704 | (2.3− | 2.2+) | 2006 09 27 | 699 | 1.4− | 0.7− |
| 1999 12 13 | 704 | 0.1− | 0.6− | 2002 10 31 | 704 | (2.9− | 1.9+) | 2006 09 27 | 699 | 0.0 | 0.6− |
| 1999 12 13 | 704 | 0.7− | 0.6− | 2003 11 20 | 704 | 1.1− | 0.7− | 2006 09 27 | 704 | 0.5+ | 1.2+ |
| 1999 12 15 | 704 | 0.4− | 1.3− | 2003 11 20 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.6+ |
| 1999 12 15 | 704 | 0.1− | 0.5+ | 2003 11 20 | 704 | 0.3− | 0.7+ | 2006 09 27 | 699 | 0.3+ | 0.3+ |
| 1999 12 15 | 704 | 0.4− | 0.4+ | 2003 11 20 | 704 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.7+ | 0.2+ |
| 2000 01 27 | 704 | 0.3+ | 0.5+ | 2003 12 15 | 704 | 1.4− | 0.3− | 2006 09 27 | 704 | (0.9− | 1.6+) |
| 2000 01 27 | 704 | 0.6+ | 0.0 | 2003 12 15 | 704 | 0.4+ | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.2+ |
| 2000 01 27 | 704 | 0.7− | 0.1+ | 2003 12 15 | 704 | 0.1+ | 0.8+ | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 2002 09 07 | 704 | 0.7− | 0.5+ | 2003 12 15 | 704 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.4+ | 0.2− |
| 2002 09 07 | 704 | 0.2+ | 0.4+ | 2003 12 30 | 704 | 0.9+ | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.3+ |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2003 12 30 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.6+ |
| 2002 09 07 | 704 | 0.5− | 0.3+ | 2003 12 30 | 704 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.6+ | 0.3− |
| 2002 09 07 | 704 | 0.8− | 0.3+ | 2005 01 19 | 809 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.5− | 0.3+ |
| 2002 09 13 | 291 | 0.0 | 0.2− | 2005 01 19 | 809 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.6+ | 1.0+ |
| 2002 09 13 | 291 | 0.2+ | 0.2− | 2005 01 19 | 809 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.5+ |
| 2002 09 13 | 291 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.9− | 0.5+ | 2006 10 01 | 704 | 0.4− | 0.3+ |
| 2002 09 17 | 608 | (1.7− | 0.8−) | 2006 08 28 | 703 | 0.5− | 0.4+ | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2002 09 17 | 608 | (2.1− | 0.7−) | 2006 08 28 | 703 | 0.8+ | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2002 09 17 | 608 | (2.1− | 0.7−) | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.3+ | 0.6+ | 2006 09 12 | 703 | (1.8− | 0.0 ) | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2002 10 02 | 704 | 0.3− | 0.5+ | 2006 09 12 | 703 | 1.1− | 0.4− | 2006 10 09 | 644 | 0.2+ | 0.4− |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 1.1− | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.5+ | 0.0 | 2006 09 12 | 703 | 0.0 | 1.2− | 2006 10 17 | 703 | 0.3+ | 1.0+ |
| 2002 10 03 | 704 | 0.7− | 0.4− | 2006 09 17 | 704 | 0.8+ | 0.1+ | 2006 10 17 | 703 | (1.5+ | 1.6+) |
| 2002 10 03 | 704 | 0.9− | 0.1+ | 2006 09 17 | 704 | 0.5+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.5− | 0.7− | 2006 09 17 | 704 | 0.4+ | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.6− | 2006 09 17 | 704 | 0.9+ | 0.6− | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 1.1− | 0.4− | 2006 09 17 | 704 | 0.7+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 10 07 | 699 | 0.0 | 1.0− | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2002 10 07 | 699 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.4− | 0.2− |
| 2002 10 07 | 699 | 0.4− | 0.9+ | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 10 07 | 699 | 0.6− | 0.9+ | 2006 09 17 | 291 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.5− | 0.2+ |
| 2002 10 12 | 704 | 0.8+ | 0.7+ | 2006 09 17 | 291 | 0.1− | 0.2− | | | | |
| 2002 10 12 | 704 | 0.7+ | 1.3+ | 2006 09 17 | 291 | 0.2− | 0.2− | | | | |

**(142476)∗ 2002 TW$_{17}$ = 2004 BG$_{10}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56630)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.55079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26202918 | $\omega$ | 239.36415 | | +0.70271916 | +0.70826391 | |
| $a$ | 2.4186310 | $\Omega$ | 75.44465 | | −0.62659023 | +0.66099782 | |
| $e$ | 0.0632435 | $i$ | 3.99533 | | −0.33700217 | +0.24787923 | |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.4+ | 0.4− | 2004 02 15 | 704 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2000 01 04 | 704 | 0.3− | 0.0 | 2004 02 15 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2000 01 04 | 704 | 0.8+ | 0.6− | 2004 02 15 | 704 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 05 30 | 691 | 0.2+ | 0.8+ | 2004 02 18 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 05 30 | 691 | 0.1+ | 0.7+ | 2004 02 18 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2001 05 30 | 691 | 0.6+ | 0.9+ | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2004 02 26 | 695 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2002 10 02 | 704 | 0.3− | 0.2+ | 2004 02 26 | 695 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 0.5+ | 0.5+ | 2004 02 27 | 695 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2002 10 02 | 704 | 0.4+ | 0.6+ | 2004 02 27 | 695 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2002 10 03 | 704 | 0.5− | 0.9+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 1.1+ |
| 2002 10 03 | 704 | (0.3+ | 1.5+) | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1− | 0.3+ |
| 2002 10 03 | 704 | 0.5+ | 0.7+ | 2005 02 16 | 809 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.8− | 0.4− | 2005 02 16 | 809 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.4+ | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.9+ | 2005 02 16 | 809 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.4+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.1− | 2005 02 18 | 809 | 0.4+ | 0.4+ | 2006 11 14 | 704 | (1.0+ | 1.6+) | | |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2005 02 18 | 809 | 0.1+ | 0.1+ | 2006 11 14 | 704 | (1.0+ | 2.3+) | | |
| 2002 10 11 | 704 | 0.3− | 0.2+ | 2005 02 18 | 809 | 0.1+ | 0.2+ | 2006 11 14 | 704 | (1.6+ | 0.5−) | | |
| 2002 10 11 | 704 | 0.7+ | 0.9+ | 2005 07 03 | 644 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.4+ | | |
| 2002 10 11 | 704 | 1.3− | 0.4+ | 2005 07 03 | 644 | 0.4+ | 0.9+ | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2002 10 11 | 704 | 0.5− | 1.0+ | 2005 07 03 | 644 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.1− | | |
| 2002 10 11 | 704 | 0.1+ | 1.2+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2004 01 16 | 644 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2004 01 16 | 644 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 1.3− | 1.0+ | | |
| 2004 01 16 | 644 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.8− | 0.9+ | | |
| 2004 01 18 | 644 | 0.1+ | 0.3+ | 2006 10 15 | D35 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.7+ | | |
| 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 10 15 | D35 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 1.4− | 0.1+ | | |
| 2004 01 18 | 644 | 0.0 | 0.2+ | 2006 10 15 | D35 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.8+ | | |
| 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.3+ | | |
| 2004 01 22 | 704 | 1.1+ | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.3− | | |
| 2004 01 22 | 704 | 1.4− | 1.1+ | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 0.1+ | | |
| 2004 01 22 | 704 | 1.4+ | 0.1+ | 2006 11 02 | 703 | (0.5+ | 1.8−) | 2006 11 18 | 704 | (1.6+ | 0.6+) | | |
| 2004 01 22 | 704 | 0.5+ | 0.1− | 2006 11 02 | 703 | 0.3− | 1.0− | 2006 11 18 | 704 | 0.8+ | 1.2+ | | |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.6− | 0.4+ | 2006 11 18 | 704 | 0.7+ | 0.7+ | | |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.3− | 0.7− | 2006 11 18 | 704 | (1.6+ | 1.5+) | | |
| 2004 02 11 | 691 | 0.1− | 0.1− | 2006 11 02 | 703 | 1.2− | 0.0 | 2006 11 21 | 704 | 0.8− | 0.1+ | | |
| 2004 02 13 | 699 | 0.1− | 0.5+ | 2006 11 02 | 703 | 0.1+ | 0.9− | 2006 11 21 | 704 | 0.4− | 0.4+ | | |
| 2004 02 13 | 699 | 1.3− | 0.9− | 2006 11 02 | 703 | 0.7− | 0.5− | 2006 11 21 | 704 | 0.0 | 0.6+ | | |
| 2004 02 13 | 699 | 1.1− | 0.0 | 2006 11 02 | 703 | 0.8− | 0.8− | 2006 11 21 | 704 | 0.3− | 0.6+ | | |
| 2004 02 13 | 699 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.3+ | | |

**(142477)∗ 2002 TT$_{19}$ = 2001 HZ$_{66}$ = 2005 GS$_{76}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.54716 | | (2000.0) | | | |
| $n$ | 0.23974778 | $\omega$ | 142.43089 | | +0.88728220 | +0.46098683 |
| $a$ | 2.5662541 | $\Omega$ | 190.15051 | | −0.44100174 | +0.83848311 |
| $e$ | 0.1735126 | $i$ | 4.84368 | | −0.13508424 | +0.29058084 |
| $P$ | 4.11 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 691 | 0.3+ | 0.3+ | 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1− | | |
| 2001 04 27 | 691 | 0.0 | 0.5+ | 2005 04 09 | 691 | 0.2− | 0.5+ | 2006 09 13 | 644 | 0.0 | 0.0 | | |
| 2001 04 27 | 691 | 0.1− | 0.1+ | 2005 04 09 | 691 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.1− | 0.5− | | |
| 2002 09 27 | 644 | 0.0 | 0.3− | 2005 04 09 | 691 | 0.4+ | 0.0 | 2006 09 16 | 699 | 0.5− | 0.2+ | | |
| 2002 09 27 | 644 | 0.6− | 0.5+ | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.6+ | | |
| 2002 09 27 | 644 | 0.5− | 0.2− | 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.5+ | 0.2− | | |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2005 04 11 | 691 | 0.2+ | 0.7+ | 2006 09 17 | 704 | 0.5+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2005 05 07 | 691 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.2+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2005 05 07 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | (0.4− | 1.7+) | | |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2005 05 07 | 691 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.4+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.1+ | 0.7− | | |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2005 05 10 | G96 | 1.1− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.2− | | |
| 2002 10 03 | 704 | 0.1+ | 0.8+ | 2005 05 10 | G96 | 0.1+ | 0.5− | 2006 09 19 | 699 | 0.3+ | 1.0− | | |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2005 05 10 | G96 | (0.6+ | 1.5+) | 2006 09 19 | 703 | 0.5− | 0.1− | | |
| 2002 10 03 | 704 | 0.1− | 0.8+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.9− | 0.4+ | 2006 08 22 | 644 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.4− | | |
| 2002 10 05 | 704 | 0.4− | 0.5+ | 2006 08 22 | 644 | 0.3+ | 0.4− | 2006 09 19 | 703 | (2.9− | 0.7−) | | |
| 2002 10 05 | 704 | 0.7− | 0.5+ | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.3+ | | |
| 2002 10 05 | 704 | 0.7− | 0.7+ | 2006 08 23 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 704 | (2.4+ | 0.8−) | | |
| 2002 10 05 | 704 | 0.7− | 0.7+ | 2006 08 23 | 644 | 0.7+ | 0.1+ | 2006 09 20 | 704 | 1.3+ | 0.6− | | |
| 2002 10 11 | 704 | (1.4+ | 1.7+) | 2006 08 28 | 703 | 0.6+ | 0.3− | 2006 09 20 | 704 | (2.4+ | 1.2−) | | |
| 2002 10 11 | 704 | (1.0+ | 1.7+) | 2006 08 28 | 703 | 0.5+ | 0.5− | 2006 09 27 | 704 | 0.4− | 1.5+ | | |
| 2002 10 11 | 704 | (1.3+ | 2.3+) | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.0 | | |
| 2002 10 11 | 704 | (1.2+ | 1.6+) | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 1.1− | | |
| 2002 10 11 | 704 | (1.2+ | 1.9+) | 2006 08 30 | 704 | 0.8+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.4− | | |
| 2002 10 31 | 704 | (2.0+ | 1.4+) | 2006 08 30 | 704 | 0.6− | 0.3− | 2006 10 19 | G96 | 0.0 | 0.4− | | |
| 2002 10 31 | 704 | 0.3+ | 1.1+ | 2006 08 30 | 704 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 2002 10 31 | 704 | 1.2+ | 0.3+ | 2006 08 30 | 704 | 0.5− | 1.2− | 2006 10 19 | G96 | 0.4+ | 0.1+ | | |
| 2002 10 31 | 704 | 0.8+ | 0.2+ | 2006 08 30 | 704 | 1.1− | 1.1− | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.2− | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.8− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.2− | | |
| 2005 04 05 | G96 | 0.2− | 0.2− | 2006 09 12 | 703 | 0.7− | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.0 | | |
| 2005 04 05 | G96 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.6+ | 1.0+ | 2006 11 11 | G96 | 0.5− | 0.2+ | | |
| 2005 04 05 | G96 | 0.4+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1+ | | | | | | |

**(142478)∗ 2002 TB$_{20}$ = 2005 GR$_{98}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.30837 | | (2000.0) | | | |
| $n$ | 0.23885830 | $\omega$ | 141.35241 | | +0.99728193 | −0.07002199 |
| $a$ | 2.5726211 | $\Omega$ | 222.68024 | | +0.05636084 | +0.92541619 |
| $e$ | 0.1571571 | $i$ | 1.93818 | | +0.04745745 | +0.37242690 |
| $P$ | 4.13 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 691 | 0.3− | 0.4− | 2002 10 11 | 704 | (0.8− | 2.3+) | 2006 08 28 | 691 | 0.0 | 0.2− | | |
| 1998 10 19 | 691 | 0.3− | 0.4− | 2002 10 11 | 704 | 0.3− | 1.8+ | 2006 09 12 | 703 | 1.9− | 0.8− | | |
| 1998 10 19 | 691 | 0.5− | 0.2− | 2002 10 11 | 704 | (1.4+ | 2.2+) | 2006 09 12 | 703 | 1.0− | 1.2+ | | |
| 1998 10 27 | 691 | 0.5+ | 0.2− | 2002 10 31 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.0 | 1.2+ | | |
| 1998 10 27 | 691 | 0.5+ | 0.6− | 2002 10 31 | 704 | 1.2+ | 0.4+ | 2006 09 12 | 703 | (0.1− | 2.8+) | | |
| 1998 10 27 | 691 | 0.5+ | 0.2− | 2002 10 31 | 704 | 0.1+ | 1.2+ | 2006 09 16 | 699 | 0.8+ | 0.1− | | |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2002 10 31 | 704 | 0.4+ | 0.8+ | 2006 09 16 | 699 | 0.2+ | 0.9− | | |
| 2002 10 02 | 704 | 0.4+ | 0.6+ | 2002 10 31 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 699 | 0.6+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.2+ | 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 1.7+ | 0.8− | | |
| 2002 10 02 | 704 | 0.2+ | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.7+ | 0.7+ | | |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2004 02 12 | 691 | 0.1− | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.5− | | |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2005 04 07 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 1.2+ | 1.0− | | |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2005 04 07 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.2+ | 1.9− | | |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2005 04 07 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.4− | | |
| 2002 10 03 | 704 | 0.1+ | 1.0+ | 2005 04 11 | G96 | 0.5− | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.2+ | | |
| 2002 10 04 | 704 | 0.5− | 0.2+ | 2005 04 11 | G96 | 0.1+ | 0.3− | 2006 09 19 | 699 | 0.0 | 0.6+ | | |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2005 04 11 | G96 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2005 04 11 | G96 | 0.5+ | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.4+ | | |
| 2002 10 04 | 704 | 0.3− | 0.0 | 2005 06 01 | G96 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.4− | 0.7+ | | |
| 2002 10 04 | 704 | 0.1− | 0.4+ | 2005 06 01 | G96 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.7+ | | |
| 2002 10 06 | 644 | 0.2− | 0.0 | 2005 06 01 | G96 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.1− | | |
| 2002 10 06 | 644 | 0.2− | 0.3+ | 2005 06 01 | G96 | 0.5− | 0.3+ | 2006 09 20 | 704 | 0.7− | 0.1+ | | |
| 2002 10 06 | 644 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.6− | | |
| 2002 10 07 | 704 | 0.6− | 0.6+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2002 10 07 | 704 | 1.1− | 0.4+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.7− | | |
| 2002 10 07 | 704 | 0.4− | 0.3− | 2006 08 27 | 699 | 0.8+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.2− | | |
| 2002 10 07 | 704 | 0.2− | 0.0 | 2006 08 27 | 699 | 0.3− | 0.8+ | 2006 09 29 | 704 | 0.3+ | 0.5− | | |
| 2002 10 07 | 704 | 1.0− | 0.0 | 2006 08 27 | 699 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.3− | 0.3+ | | |
| 2002 10 09 | 291 | 0.2− | 0.5+ | 2006 08 27 | 699 | 0.6− | 0.0 | 2006 09 29 | 704 | 0.9+ | 0.5+ | | |
| 2002 10 09 | 291 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 09 | 291 | 0.2− | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.2− | | | | | | |

**(142479)∗ 2002 TB$_{21}$ = 1996 FL$_{3}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37975)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.19317 | | (2000.0) | | | |
| $n$ | 0.23135292 | $\omega$ | 353.47276 | | −0.99296718 | +0.10340399 |
| $a$ | 2.6279639 | $\Omega$ | 192.89616 | | −0.09354606 | −0.98374922 |
| $e$ | 0.0826562 | $i$ | 14.97023 | | −0.07256255 | −0.14678248 |
| $P$ | 4.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 566 | (1.6+ | 2.8+) | 2002 10 31 | 704 | 1.0+ | 1.2+ | 2005 06 30 | 644 | 0.2+ | 0.0 | | |
| 1996 03 24 | 566 | (2.2+ | 2.6+) | 2002 10 31 | 704 | 0.4+ | 0.5− | 2005 06 30 | 644 | 0.4+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 566 | (1.4+ | 2.6+) | 2002 10 31 | 704 | (1.9− | 0.7−) | 2006 08 29 | 703 | 0.6− | 0.0 |
| 1996 03 24 | 260 | 0.4− | 0.3+ | 2002 10 31 | 704 | 0.5− | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.9+ |
| 1996 03 24 | 260 | 0.4− | 0.1− | 2002 10 31 | 704 | 1.1− | 0.2− | 2006 08 29 | 703 | 0.5− | 0.5− |
| 1996 03 25 | 566 | 0.4+ | 0.7+ | 2004 01 29 | 704 | 0.1− | 1.0+ | 2006 08 29 | 703 | 0.6− | 0.0 |
| 1996 03 25 | 566 | 0.2+ | 0.0 | 2004 01 29 | 704 | 0.1− | 0.9+ | 2006 09 12 | 703 | (0.6+ | 3.1−) |
| 1996 03 25 | 566 | 0.6+ | 0.5+ | 2004 01 29 | 704 | 0.8+ | 1.3+ | 2006 09 12 | 703 | (2.3+ | 0.8+) |
| 2002 09 07 | 704 | 0.8− | 0.4− | 2004 01 29 | 704 | (0.6+ | 1.6+) | 2006 09 12 | 703 | 0.2− | 1.2− |
| 2002 09 07 | 704 | 1.3+ | 0.2+ | 2005 04 14 | 703 | 0.1− | 0.5− | 2006 09 12 | 703 | 0.7− | 0.7+ |
| 2002 09 07 | 704 | 0.2− | 0.2+ | 2005 04 14 | 703 | 0.1− | 0.4− | 2006 09 18 | 704 | 0.2− | 0.6+ |
| 2002 09 27 | 644 | 0.2− | 0.7− | 2005 04 14 | 703 | 0.4− | 0.6− | 2006 09 18 | 704 | 0.2− | 0.8+ |
| 2002 09 27 | 644 | 0.1− | 0.4− | 2005 04 14 | 703 | 0.6− | 0.1+ | 2006 09 18 | 704 | 0.3+ | 1.2+ |
| 2002 09 27 | 644 | 0.1− | 0.4− | 2005 04 30 | 941 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.0 | 0.9+ |
| 2002 10 02 | 704 | 0.8+ | 0.3+ | 2005 04 30 | 941 | 0.2− | 0.2− | 2006 09 18 | 704 | (0.1− | 3.1+) |
| 2002 10 02 | 704 | 0.0 | 0.5+ | 2005 04 30 | 941 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.5− | 1.2− |
| 2002 10 02 | 704 | 0.4+ | 0.4+ | 2005 04 30 | 941 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2002 10 02 | 704 | 0.1+ | 0.0 | 2005 05 09 | 703 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.6− |
| 2002 10 03 | 704 | 0.7− | 0.0 | 2005 05 09 | 703 | 1.0− | 0.6+ | 2006 09 19 | 703 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.7− | 0.2− | 2005 05 09 | 703 | 0.4− | 0.8+ | 2006 09 25 | 704 | 1.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2005 05 09 | 703 | 0.9− | 0.6+ | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2005 05 14 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.5+ | 0.8− |
| 2002 10 06 | 291 | 0.1+ | 0.3− | 2005 05 14 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 704 | (0.1− | 1.7−) |
| 2002 10 06 | 291 | 0.0 | 0.2− | 2005 05 14 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.6− |
| 2002 10 06 | 291 | 0.1− | 0.2− | 2005 05 21 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.5+ |
| 2002 10 07 | 704 | 0.2+ | 0.2− | 2005 05 21 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 1.2+ | 0.4+ |
| 2002 10 07 | 704 | 0.6− | 0.1− | 2005 05 21 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2002 10 07 | 704 | 1.0− | 0.8+ | 2005 05 31 | 703 | 0.1− | 0.9− | 2006 10 16 | 703 | 0.8+ | 1.3+ |
| 2002 10 07 | 704 | 1.0− | 0.4+ | 2005 05 31 | 703 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 1.1+ |
| 2002 10 07 | 704 | 0.1+ | 1.0+ | 2005 05 31 | 703 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2005 05 31 | 703 | (0.8− | 1.7−) | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.6− | 0.1− | 2005 06 25 | 644 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.8+ | 0.5+ | 2005 06 25 | 644 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.9− | 0.2+ |
| 2002 10 11 | 704 | 0.6+ | 0.3− | 2005 06 25 | 644 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.4− |
| 2002 10 11 | 704 | 0.4+ | 0.3− | 2005 06 30 | 644 | 0.0 | 0.1− | | | | |

**(142480)∗ 2002 TP$_{21}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.27718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23047363 | $\omega$ | 7.63783 | | +0.99837128 | +0.05702894 | |
| $a$ | 2.6346437 | $\Omega$ | 349.09251 | | −0.05277314 | +0.91267650 | |
| $e$ | 0.1268180 | $i$ | 0.47685 | | −0.02167432 | +0.40468421 | |
| $P$ | 4.28 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 691 | 0.1− | 0.1− | 2002 10 31 | 699 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 1.3+ | 0.3+ |
| 1998 11 25 | 691 | 0.1+ | 0.6− | 2002 10 31 | 704 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.4+ | 0.0 |
| 1998 11 25 | 691 | 0.1− | 0.5− | 2002 10 31 | 704 | 0.1+ | 1.0− | 2006 08 28 | 699 | 0.8+ | 0.7+ |
| 2002 09 07 | 704 | 1.0+ | 0.0 | 2002 10 31 | 704 | 0.5− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.4+ |
| 2002 09 07 | 704 | 0.7+ | 0.4+ | 2002 10 31 | 704 | 1.2− | 0.6− | 2006 08 28 | 703 | 0.2− | 0.4+ |
| 2002 09 07 | 704 | 0.2− | 0.6+ | 2004 02 11 | 691 | 0.0 | 0.4+ | 2006 08 28 | 699 | 0.3+ | 0.6+ |
| 2002 09 07 | 704 | 1.0+ | 0.2− | 2004 02 11 | 691 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.4− |
| 2002 09 07 | 704 | 0.4− | 0.5+ | 2004 02 11 | 691 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2002 09 27 | 644 | 0.5− | 0.1+ | 2005 04 10 | G96 | 0.3− | 0.1+ | 2006 08 28 | 703 | 1.3− | 0.0 |
| 2002 09 27 | 644 | 0.2− | 0.3− | 2005 04 10 | G96 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.5+ | 0.2+ |
| 2002 09 27 | 644 | 0.5− | 0.1− | 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.7+ | 0.6− |
| 2002 10 02 | 704 | 0.4+ | 0.1− | 2005 04 10 | G96 | 0.1− | 0.0 | 2006 08 29 | 704 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | 0.0 | 0.7+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 704 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2005 04 17 | 691 | 0.6+ | 0.7+ | 2006 08 29 | 704 | 0.6− | 0.1− |
| 2002 10 02 | 704 | 0.2+ | 1.1+ | 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 704 | 0.5− | 0.2− |
| 2002 10 03 | 704 | 0.8+ | 0.8+ | 2005 05 11 | G96 | 0.4− | 0.2+ | 2006 09 12 | 699 | 0.0 | 1.0+ |
| 2002 10 03 | 704 | 1.3+ | 0.2− | 2005 05 11 | G96 | 0.6− | 0.5− | 2006 09 12 | 699 | (1.6+ | 0.1−) |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2005 05 11 | G96 | 0.2− | 0.3− | 2006 09 12 | 699 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2005 05 11 | G96 | 0.2+ | 0.1+ | 2006 09 12 | 699 | 0.2+ | 1.0+ |
| 2002 10 03 | 704 | (2.2+ | 0.6+) | 2005 06 01 | G96 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.0 |
| 2002 10 07 | 704 | 0.5+ | 0.5+ | 2005 06 01 | G96 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2002 10 07 | 704 | 0.4+ | 1.0+ | 2005 06 01 | G96 | 0.1− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 1.0+ | 0.3− | 2005 06 01 | G96 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2002 10 07 | 704 | 0.1− | 0.1+ | 2006 06 20 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2002 10 10 | 291 | 0.2− | 0.2+ | 2006 06 20 | G96 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2002 10 10 | 291 | 0.4− | 0.3+ | 2006 06 20 | G96 | (1.8+ | 0.1+) | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2002 10 10 | 291 | 0.9− | 0.2+ | 2006 06 20 | G96 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.7+ | 2006 06 21 | 703 | (2.2+ | 0.5−) | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 06 21 | 703 | 0.8+ | 0.9− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.5+ | 0.3+ | 2006 06 21 | 703 | 1.2− | 1.0− | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.7+ | 0.3+ | 2006 06 21 | 703 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.7− | 0.0 |
| 2002 10 31 | 699 | 0.1+ | 0.1− | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 10 31 | 699 | 0.1+ | 0.9+ | 2006 08 15 | 644 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.5− |
| 2002 10 31 | 699 | 0.1− | 0.4− | 2006 08 15 | 644 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.5− |

**(142481)∗ 2002 TU$_{22}$ = 2004 BN$_{50}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56631)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.73108 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25436347 | $\omega$ | 336.92852 | | −0.96861768 | +0.24813703 | |
| $a$ | 2.4669834 | $\Omega$ | 217.44808 | | −0.22419013 | −0.89723870 | |
| $e$ | 0.1188706 | $i$ | 1.35850 | | −0.10732464 | −0.36522696 | |
| $P$ | 3.87 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 01 | 691 | 0.1− | 0.2− | 2004 01 24 | 704 | 0.7+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1994 09 01 | 691 | 0.1+ | 0.5− | 2004 01 24 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 701 | 0.6+ | 0.0 |
| 1994 09 01 | 691 | 0.3− | 0.2− | 2004 01 25 | 608 | 1.0+ | 0.4+ | 2006 10 01 | 701 | 0.3+ | 0.0 |
| 1994 10 08 | 691 | 0.5− | 0.4+ | 2004 01 25 | 608 | 1.0+ | 0.4+ | 2006 10 01 | 701 | 0.9+ | 0.5+ |
| 1994 10 08 | 691 | 0.3− | 0.6+ | 2004 01 25 | 608 | 0.9+ | 0.4+ | 2006 10 04 | G96 | 0.4− | 0.1− |
| 1998 09 02 | 691 | 0.7+ | 0.5+ | 2004 01 30 | 704 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 1998 09 02 | 691 | 0.5+ | 0.1+ | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.4− |
| 1998 09 02 | 691 | 0.1+ | 0.3− | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.4− |
| 2000 01 05 | 704 | 0.1− | 0.5− | 2004 01 30 | 704 | 0.9− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2000 01 05 | 704 | 0.1+ | 0.5− | 2004 01 30 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2000 01 05 | 704 | 0.0 | 0.6+ | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.5− |
| 2000 01 05 | 704 | 0.0 | 1.0− | 2004 02 10 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.0 |
| 2000 01 05 | 704 | 0.9− | 0.3− | 2004 02 10 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.3+ |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2004 02 11 | 703 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.9− | 0.3+ | 2004 02 11 | 703 | 0.8− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.1+ |
| 2002 10 02 | 704 | 0.2− | 0.8− | 2004 02 11 | 699 | 0.6− | 0.3− | 2006 10 20 | 691 | 0.6− | 0.1+ |
| 2002 10 02 | 704 | 1.1− | 0.2+ | 2004 02 11 | 703 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2004 02 11 | 703 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2004 02 11 | 699 | 0.9− | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.6− |
| 2002 10 03 | 704 | (2.0− | 0.3−) | 2004 02 11 | 699 | 0.2+ | 0.7+ | 2006 10 21 | 703 | (0.5+ | 1.8−) |
| 2002 10 06 | 599 | 0.0 | 0.1− | 2004 02 11 | 699 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.2− | 0.3− |
| 2002 10 06 | 599 | 0.1− | 0.6+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 10 06 | 599 | 0.4+ | 0.3+ | 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2002 10 06 | 599 | 0.5+ | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 10 07 | 291 | 0.3− | 0.1+ | 2004 02 12 | 291 | 0.6+ | 1.0+ | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2002 10 07 | 291 | 0.2− | 0.0 | 2004 02 12 | 291 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2002 10 07 | 291 | 0.3− | 0.0 | 2004 02 12 | 291 | 0.5− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2002 10 07 | 291 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2002 10 07 | 291 | 0.7+ | 0.2+ | 2004 02 14 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 10 07 | 291 | 0.7+ | 0.2+ | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2002 10 11 | 704 | 0.1− | 0.5− | 2004 02 16 | 704 | 0.4+ | 0.9− | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.5+ | 0.8+ | 2004 02 16 | 704 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2002 10 11 | 704 | 0.6− | 0.8− | 2004 02 16 | 704 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 0.4+ | 0.2+ | 2006 11 15 | 691 | (0.3+ | 2.0+) |
| 2002 10 11 | 704 | 0.0 | 0.9− | 2004 02 16 | 704 | 1.1+ | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2004 01 13 | 699 | 0.8+ | 0.6+ | 2004 02 22 | 704 | 0.2− | 0.9− | 2006 11 17 | 703 | 0.1+ | 1.6+ |
| 2004 01 13 | 699 | 0.4− | 0.5− | 2004 02 22 | 704 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2004 01 13 | 699 | 0.4+ | 0.5− | 2004 02 22 | 704 | 0.4+ | 0.3− | 2006 11 17 | 703 | 1.0− | 1.2− |
| 2004 01 13 | 699 | 0.3+ | 0.5− | 2004 02 26 | 704 | 1.2− | 0.5− | 2006 11 17 | 703 | 1.1− | 0.9+ |
| 2004 01 21 | 704 | 0.6− | 0.7− | 2004 02 26 | 704 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2004 01 21 | 704 | 0.4− | 0.3− | 2004 02 26 | 704 | (1.1− | 1.5−) | 2006 11 20 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 704 | 0.2− | 0.3− | 2004 02 26 | 704 | 1.3− | 0.1− | 2006 11 20 | 691 | 0.5+ | 0.1− |
| 2004 01 21 | 704 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.6− | 0.4− | 2006 11 21 | 701 | 0.7− | 0.4− |
| 2004 01 24 | 704 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 21 | 701 | 0.4− | 0.4− |
| 2004 01 24 | 704 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.5− | 2006 11 21 | 701 | 0.0 | 0.2− |
| 2004 01 24 | 704 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 21 | 701 | 0.5+ | 0.5+ |

**(142482)∗ 2002 TX$_{22}$ = 2004 CG$_{37}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61369)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 245.50913 | | (2000.0) | | −0.98895816 | −0.14469029 |
| $n$ | 0.27397276 | $\omega$ | 333.50347 | | +0.14750950 | −0.94033430 |
| $a$ | 2.3478182 | $\Omega$ | 198.26227 | | +0.01423716 | −0.30795474 |
| $e$ | 0.0605669 | $i$ | 5.86816 | | | |
| $P$ | 3.60 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 15 | 691 | 0.0 | 0.4+ | 2004 01 30 | 699 | 0.6− | 0.0 | 2004 03 27 | 703 | 0.3− | 0.6− |
| 1991 09 15 | 691 | 0.4+ | 0.0 | 2004 01 30 | 699 | 0.2− | 0.4+ | 2004 03 27 | 703 | 0.2+ | 1.0+ |
| 1991 09 15 | 691 | 0.0 | 0.2− | 2004 01 30 | 699 | (1.9− | 2.0+) | 2004 03 27 | 703 | 0.5+ | 0.7+ |
| 2002 10 02 | 704 | 0.0 | 1.2+ | 2004 02 12 | 644 | 0.3− | 0.7+ | 2004 03 27 | 703 | 0.4+ | 0.5− |
| 2002 10 02 | 704 | 0.3− | 0.1+ | 2004 02 12 | 644 | 0.1− | 0.4+ | 2005 06 29 | 691 | 0.0 | 0.3+ |
| 2002 10 02 | 704 | 0.3− | 1.0+ | 2004 02 12 | 644 | 0.0 | 0.6+ | 2005 06 29 | 691 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.3+ | 2004 02 14 | 608 | 0.0 | 0.5− | 2005 06 29 | 691 | 0.4− | 0.3+ |
| 2002 10 03 | 704 | 0.9− | 0.2+ | 2004 02 14 | 608 | 0.2+ | 0.3− | 2005 07 08 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.6− | 1.0+ | 2004 02 14 | 608 | 0.1+ | 0.6− | 2005 07 08 | 691 | 0.1+ | 0.6+ |
| 2002 10 03 | 704 | 1.1− | 1.0+ | 2004 02 15 | 644 | 0.2+ | 0.4+ | 2005 07 08 | 691 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 1.2− | 0.0 | 2004 02 15 | 644 | 0.0 | 0.5+ | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2002 10 05 | 291 | 0.0 | 0.0 | 2004 02 15 | 644 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.0 |
| 2002 10 05 | 291 | 0.4− | 0.1− | 2004 02 19 | 704 | 0.3− | 0.6+ | 2006 11 02 | G96 | 0.4− | 0.2− |
| 2002 10 05 | 291 | 0.2− | 0.0 | 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 11 02 | G96 | 0.7− | 0.5− |
| 2002 10 06 | 599 | 0.4+ | 0.2+ | 2004 02 19 | 704 | (0.9− | 1.7+) | 2006 11 17 | 704 | (1.6+ | 1.0−) |
| 2002 10 06 | 599 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.7+ | 0.2− | 2006 11 17 | 704 | 1.0+ | 1.3+ |
| 2002 10 06 | 599 | 0.5+ | 0.4+ | 2004 02 19 | 704 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 0.8+ | 0.6+ |
| 2002 10 06 | 599 | 0.1+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 1.1+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 10 07 | 644 | 0.3− | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 10 07 | 644 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.8+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 10 07 | 644 | 0.2− | 0.4+ | 2004 02 26 | 704 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 10 08 | 291 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.7+ | 0.1− | 2006 11 20 | 704 | 1.3+ | 0.1+ |
| 2002 10 08 | 291 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.5− | 0.9+ | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2002 10 08 | 291 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.8− | 0.4+ | 2006 11 20 | 704 | 0.5+ | 0.3− |
| 2002 10 31 | 704 | 0.7− | 0.8− | 2004 03 15 | 704 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2004 03 15 | 704 | 0.8− | 0.4+ | 2006 11 25 | 703 | 0.6− | 0.2+ |
| 2002 10 31 | 704 | 0.3+ | 0.5+ | 2004 03 15 | 704 | 0.0 | 1.0+ | 2006 11 25 | 703 | 0.6+ | 0.5− |
| 2004 01 29 | 699 | 0.4+ | 0.7+ | 2004 03 19 | 704 | 0.3+ | 0.9+ | 2006 11 25 | 703 | 0.2+ | 0.1− |
| 2004 01 29 | 699 | 0.5− | 0.2− | 2004 03 19 | 704 | 0.1+ | 1.1+ | 2006 11 25 | 703 | 0.1− | 0.4− |
| 2004 01 29 | 699 | (0.8− | 1.7+) | 2004 03 19 | 704 | 0.1+ | 0.9+ | 2006 11 28 | 704 | 0.1− | 0.2− |
| 2004 01 29 | 699 | 0.9+ | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.9+ | 2006 11 28 | 704 | 0.1+ | 0.8+ |
| 2004 01 30 | 699 | 0.1+ | 0.4− | 2004 03 19 | 704 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.9+ | 0.4+ |

**(142483)∗ 2002 TQ$_{24}$ = 2004 CF$_{32}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61370)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.61162 | | (2000.0) | | +0.96395279 | +0.26542940 |
| $n$ | 0.22397631 | $\omega$ | 141.09661 | | −0.25422877 | +0.89829754 |
| $a$ | 2.6853527 | $\Omega$ | 203.53075 | | −0.07850324 | +0.35015534 |
| $e$ | 0.0827559 | $i$ | 2.65596 | | | |
| $P$ | 4.40 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.6+ | 0.8+ | 2005 04 02 | G96 | 0.2− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.4+ |
| 2000 03 11 | 704 | 0.0 | 0.5+ | 2005 04 02 | G96 | 0.7− | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.0 |
| 2000 03 11 | 704 | 0.4+ | 0.3− | 2005 04 02 | G96 | 0.5− | 0.3− | 2006 08 20 | 644 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 0.2− | 0.7+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.6+ | 0.9+ | 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.2+ | 2005 05 01 | 644 | 0.3+ | 0.4+ | 2006 08 20 | 644 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2005 05 11 | G96 | 0.2− | 0.3+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | 0.1+ | 0.4+ | 2005 05 11 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 1.0− | 1.0+ |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2005 05 11 | G96 | 0.4− | 0.1+ | 2006 08 28 | 699 | 0.4− | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2005 05 11 | G96 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.8+ |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2005 05 13 | 704 | 1.0+ | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.8− | 0.1+ | 2005 05 13 | 704 | 1.0+ | 0.0 | 2006 08 28 | 699 | 0.5− | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2005 05 13 | 704 | 0.3− | 1.5+ | 2006 08 28 | 703 | 0.3− | 0.9+ |
| 2002 10 11 | 704 | 0.1− | 0.3− | 2005 05 13 | 704 | 1.2+ | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.7+ |
| 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 07 25 | 644 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.2+ | 0.2− |
| 2002 10 11 | 704 | 0.0 | 1.4− | 2006 07 25 | 644 | 0.5− | 0.1− | 2006 08 29 | 704 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 07 25 | 644 | 0.1− | 0.1− | 2006 08 29 | 704 | (0.3+ | 2.1+) |
| 2002 10 11 | 704 | 0.3− | 0.6− | 2006 07 27 | A79 | (1.0+ | 2.3+) | 2006 08 29 | 704 | 0.0 | 1.4+ |
| 2002 10 30 | 644 | 0.2− | 0.2+ | 2006 07 27 | A79 | 0.0 | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2002 10 30 | 644 | 0.1− | 0.0 | 2006 07 27 | A79 | (2.0+ | 2.1−) | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2002 10 30 | 644 | 0.1+ | 0.2+ | 2006 08 16 | A50 | 0.5− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 08 16 | A50 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.2− |
| 2004 02 12 | 691 | 0.3+ | 0.4+ | 2006 08 18 | 704 | 0.1+ | 1.0+ | 2006 10 21 | G96 | 0.8− | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.5+ | 2006 08 18 | 704 | 0.4+ | 1.1− | 2006 10 21 | G96 | 0.7− | 0.1+ |
| 2004 02 14 | 691 | 0.1− | 0.5+ | 2006 08 18 | 704 | 0.5+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 02 14 | 691 | 0.0 | 0.6+ | 2006 08 18 | 704 | 0.3− | 0.7+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2004 02 14 | 691 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.4+ | | | | |
| 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.5+ | | | | |

**(142484)∗ 2002 TY$_{24}$ = 1999 XP$_{203}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.11275 | | (2000.0) | | −0.96373160 | −0.25947283 |
| $n$ | 0.27052929 | $\omega$ | 137.63511 | | +0.19394674 | −0.84160209 |
| $a$ | 2.3676992 | $\Omega$ | 27.51170 | | +0.18331959 | −0.47368742 |
| $e$ | 0.0812247 | $i$ | 7.76507 | | | |
| $P$ | 3.64 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 05 | 691 | 0.6− | 0.2− | 2004 02 02 | 699 | 0.1− | 0.1− | 2005 07 10 | E12 | 0.5+ | 0.6+ |
| 1991 10 05 | 691 | 0.5+ | 0.4− | 2004 02 02 | 699 | 1.0− | 0.4+ | 2005 07 10 | E12 | 0.1− | 0.3+ |
| 1991 10 05 | 691 | 0.3− | 0.0 | 2004 02 02 | 699 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.2− | 0.0 |
| 1999 12 12 | 704 | 0.1− | 1.7− | 2004 02 02 | 699 | 1.1− | 0.3− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 1999 12 12 | 704 | 1.0− | 1.2− | 2004 02 17 | 704 | 0.0 | 1.1+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 1999 12 12 | 704 | 0.0 | 0.6− | 2004 02 17 | 704 | 0.1− | 0.9+ | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 1999 12 12 | 704 | 1.1+ | 1.4− | 2004 02 17 | 704 | (0.1+ | 1.5+) | 2006 11 16 | 704 | 0.2− | 1.0+ |
| 1999 12 12 | 704 | 1.2+ | 1.2+ | 2004 02 17 | 704 | 0.2− | 1.2+ | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 1999 12 15 | 704 | 0.6+ | 1.6− | 2004 02 17 | 704 | 0.4+ | 1.3+ | 2006 11 16 | 704 | (0.1+ | 1.6+) |
| 1999 12 15 | 704 | 0.1− | 1.0− | 2004 02 27 | 704 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.3− | 0.9+ |
| 1999 12 15 | 704 | (1.0+ | 2.2−) | 2004 02 27 | 704 | 0.6+ | 0.2+ | 2006 11 17 | 691 | (2.2+ | 2.5−) |
| 2000 01 29 | 704 | 0.4+ | 0.2+ | 2004 02 27 | 704 | 0.9+ | 0.1− | 2006 11 17 | 691 | 0.5− | 0.2+ |
| 2000 01 29 | 704 | 0.5+ | 0.1− | 2004 03 15 | 704 | 1.0+ | 1.0+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2000 01 29 | 704 | 1.0+ | 1.1− | 2004 03 15 | 704 | (1.1+ | 1.9+) | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2000 01 29 | 704 | 0.0 | 0.2− | 2004 03 15 | 704 | (1.5− | 2.3+) | 2006 11 19 | 704 | 1.0− | 0.7+ |
| 2002 10 02 | 704 | 0.5− | 0.7+ | 2004 03 15 | 704 | 0.8+ | 0.7+ | 2006 11 19 | 704 | 0.8− | 0.9+ |
| 2002 10 02 | 704 | 0.2− | 1.2+ | 2004 03 15 | 704 | 0.5+ | 1.3+ | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2002 10 02 | 704 | 0.4+ | 0.3+ | 2004 03 19 | 644 | 0.8+ | 0.4− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.8+ | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.5− | 0.8+ | 2004 03 19 | 644 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.3+ | 0.8− |
| 2002 10 03 | 704 | 1.4− | 1.1+ | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.7+ | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 11 22 | 704 | 0.8+ | 0.0 |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2004 03 20 | 704 | 0.8+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.4− |
| 2002 10 11 | 704 | (1.5+ | 1.0+) | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.3− |
| 2002 10 11 | 704 | 1.0− | 0.9+ | 2004 03 22 | 704 | 0.3− | 1.0+ | 2006 11 23 | 644 | 0.3+ | 0.2+ |
| 2002 10 11 | 704 | 0.9+ | 0.5+ | 2004 03 22 | 704 | 0.3− | 0.5+ | 2006 11 23 | 644 | 0.3+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | (0.1+ | 1.5+) | 2004 03 22 | 704 | 0.8− | 0.2+ | 2006 11 23 | 644 | 0.1− | 0.3+ | | |
| 2002 10 11 | 704 | 0.6+ | 1.3+ | 2004 03 22 | 704 | 0.0 | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.1− | | |
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2004 03 22 | 704 | 0.2− | 1.0+ | 2006 11 25 | 691 | 0.1− | 0.1− | | |
| 2002 10 11 | 704 | 0.6− | 0.3+ | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 11 25 | 691 | 0.0 | 0.0 | | |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2004 04 20 | 704 | (1.2+ | 1.6+) | 2006 11 27 | 704 | 0.6+ | 0.2− | | |
| 2002 10 11 | 704 | 0.5+ | 0.8+ | 2004 04 20 | 704 | 0.4+ | 1.4+ | 2006 11 27 | 704 | 0.3+ | 0.4− | | |
| 2002 10 30 | 644 | 0.7− | 0.6+ | 2004 04 20 | 704 | 0.3+ | 0.6+ | 2006 11 27 | 704 | 0.1+ | 0.9− | | |
| 2002 10 30 | 644 | 0.4− | 0.5+ | 2005 07 10 | E12 | (0.5+ | 1.9+) | | | | | | |
| 2002 10 30 | 644 | 0.4− | 0.1+ | 2005 07 10 | E12 | 0.0 | 1.0+ | | | | | | |

**(142485)∗ 2002 TJ$_{25}$ = 2004 DK$_{12}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61371)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.53221 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26862593 | $\omega$ | 101.96186 | | −0.61410459 | | −0.78772080 |
| $a$ | 2.3788703 | $\Omega$ | 26.11717 | | +0.67421087 | | −0.55568678 |
| $e$ | 0.0660116 | $i$ | 6.35134 | | +0.41026242 | | −0.26591002 |
| $P$ | 3.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.1+ | 0.1− | 2004 03 15 | 703 | (2.1+ | 0.8+) | 2004 04 15 | 704 | 0.1− | 0.3− | | |
| 1991 09 30 | 691 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2004 04 15 | 704 | 0.1− | 0.4− | | |
| 1991 09 30 | 691 | 0.5+ | 0.6− | 2004 03 15 | 703 | 0.3− | 0.1− | 2004 04 19 | 704 | 0.3+ | 0.0 | | |
| 2000 01 29 | 704 | 0.6− | 0.2− | 2004 03 15 | 704 | 0.7+ | 0.2− | 2004 04 19 | 704 | 0.1+ | 0.2− | | |
| 2000 01 29 | 704 | 0.7− | 0.2− | 2004 03 15 | 703 | 0.2− | 1.0+ | 2004 04 19 | 704 | (1.2+ | 1.5−) | | |
| 2000 01 29 | 704 | 0.2− | 0.6+ | 2004 03 15 | 704 | 1.1+ | 0.2+ | 2004 04 19 | 704 | 1.2+ | 1.3− | | |
| 2000 01 29 | 704 | 0.3− | 0.3+ | 2004 03 15 | 704 | 0.8+ | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.0 | | |
| 2000 01 29 | 704 | 0.2− | 0.0 | 2004 03 15 | 691 | 0.4− | 0.0 | 2004 05 17 | 704 | 1.0+ | 0.5+ | | |
| 2002 10 02 | 704 | 0.1+ | 1.5+ | 2004 03 15 | 691 | 0.4− | 0.1− | 2004 05 17 | 704 | 1.4+ | 0.6+ | | |
| 2002 10 02 | 704 | 1.1+ | 1.0− | 2004 03 15 | 691 | 0.3− | 0.0 | 2004 05 17 | 704 | 0.1+ | 0.1− | | |
| 2002 10 02 | 704 | 0.8− | 0.3+ | 2004 03 15 | A41 | 0.2− | 0.2− | 2005 07 29 | E12 | 1.2− | 0.7+ | | |
| 2002 10 02 | 704 | 0.5− | 0.2− | 2004 03 15 | A41 | 1.3− | 0.2− | 2005 07 29 | E12 | 0.5+ | 0.0 | | |
| 2002 10 02 | 704 | 1.0− | 0.3+ | 2004 03 16 | A41 | 0.1+ | 0.5− | 2005 07 29 | E12 | 0.7− | 1.2+ | | |
| 2002 10 03 | 704 | (1.2− | 2.3+) | 2004 03 20 | 699 | 0.2+ | 0.4− | 2005 07 29 | E12 | (0.0 | 1.7+) | | |
| 2002 10 03 | 704 | 1.2− | 0.8+ | 2004 03 20 | 699 | 0.0 | 0.4+ | 2005 08 12 | E12 | 0.1+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.6− | 0.5+ | 2004 03 20 | 704 | 0.2− | 0.1+ | 2005 08 12 | E12 | 1.1+ | 0.0 | | |
| 2002 10 03 | 704 | (1.7− | 0.8+) | 2004 03 20 | 704 | 0.4+ | 0.1+ | 2005 08 12 | E12 | 0.5− | 0.2+ | | |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2004 03 20 | 704 | 0.2+ | 0.1+ | 2005 08 12 | E12 | (6.5− | 3.2−) | | |
| 2002 10 11 | 704 | (0.3− | 2.1+) | 2004 03 20 | 704 | 0.0 | 0.1− | 2006 11 15 | 704 | 1.1+ | 0.8+ | | |
| 2002 10 11 | 704 | 0.1− | 0.6+ | 2004 03 20 | 704 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.2− | 0.0 | | |
| 2002 10 11 | 704 | 0.9− | 0.8+ | 2004 03 20 | 699 | 0.5− | 0.0 | 2006 11 15 | 704 | 0.6− | 0.7+ | | |
| 2002 10 11 | 704 | (0.8+ | 1.9+) | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.4− | 0.4+ | | |
| 2002 10 12 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.6− | 0.2+ | 2006 11 15 | 704 | 0.1− | 0.0 | | |
| 2002 10 12 | 704 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.2+ | | |
| 2002 10 12 | 704 | 0.7− | 0.1− | 2004 03 20 | 704 | 0.6− | 0.5+ | 2006 11 15 | 704 | 0.0 | 0.3+ | | |
| 2002 10 12 | 704 | 1.0− | 0.5+ | 2004 03 20 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.5+ | | |
| 2004 02 17 | 703 | 0.4− | 1.0+ | 2004 03 20 | 699 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.3+ | | |
| 2004 02 17 | 703 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.2+ | | |
| 2004 02 17 | 703 | 1.1− | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.8+ | 0.3− | | |
| 2004 02 17 | 703 | 0.5+ | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.0 | | |
| 2004 02 17 | 608 | 0.0 | 0.8− | 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 11 17 | 691 | 0.4− | 0.1+ | | |
| 2004 02 17 | 608 | 0.4− | 0.7− | 2004 03 22 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 691 | 0.4− | 0.0 | | |
| 2004 02 17 | 608 | 0.1− | 0.7− | 2004 03 28 | 704 | 0.1+ | 0.8+ | 2006 11 17 | 691 | 0.2− | 0.0 | | |
| 2004 02 18 | 704 | 0.7+ | 0.7+ | 2004 03 28 | 703 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.6+ | 1.4− | | |
| 2004 02 18 | 704 | 0.9+ | 0.2+ | 2004 03 28 | 704 | (0.6− | 1.6+) | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2004 02 18 | 704 | (1.7+ | 1.0+) | 2004 03 28 | 703 | 1.1+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.4− | | |
| 2004 02 18 | 704 | 0.7+ | 0.2− | 2004 03 28 | 704 | 0.5− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.4+ | | |
| 2004 02 18 | 704 | (2.2+ | 1.1−) | 2004 03 28 | 704 | 0.1+ | 1.0+ | 2006 11 19 | 704 | 0.6+ | 0.2− | | |
| 2004 02 25 | 704 | 0.6+ | 0.0 | 2004 03 28 | 703 | 0.9+ | 0.5+ | 2006 11 22 | 704 | 0.9+ | 0.0 | | |
| 2004 02 25 | 704 | 1.2+ | 0.2+ | 2004 03 28 | 704 | 0.8− | 0.6+ | 2006 11 22 | 704 | 0.4+ | 0.4− | | |
| 2004 02 25 | 704 | 1.4+ | 0.4− | 2004 03 28 | 703 | 0.9+ | 0.6+ | 2006 11 22 | 704 | 0.2+ | 0.2− | | |
| 2004 02 25 | 704 | 0.9+ | 0.5+ | 2004 04 06 | 608 | 0.6− | 0.7− | 2006 11 22 | 704 | 0.7+ | 0.0 | | |
| 2004 03 11 | 644 | 0.1− | 0.2+ | 2004 04 06 | 608 | 1.0− | 1.2− | 2006 11 22 | 704 | 0.3+ | 0.3− | | |
| 2004 03 11 | 644 | 0.3− | 0.1+ | 2004 04 06 | 608 | 0.8− | 0.1− | 2006 11 27 | 704 | 0.3+ | 0.2− | | |
| 2004 03 11 | 644 | 0.2− | 0.2+ | 2004 04 15 | 704 | 1.4+ | 0.1+ | 2006 11 27 | 704 | 0.4+ | 0.2+ | | |
| 2004 03 15 | 703 | 1.2− | 1.0+ | 2004 04 15 | 704 | 0.3+ | 1.0− | 2006 11 27 | 704 | 0.4+ | 0.1− | | |
| 2004 03 15 | 704 | 0.4+ | 0.0 | 2004 04 15 | 704 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.6+ | 0.0 | | |

**(142486)∗ 2002 TK$_{25}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.13802 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24540108 | $\omega$ | 297.84967 | | +0.68411378 | | +0.72847626 |
| $a$ | 2.5266887 | $\Omega$ | 15.48776 | | −0.61240658 | | +0.60065553 |
| $e$ | 0.1187357 | $i$ | 7.79190 | | −0.39616476 | | +0.32944691 |
| $P$ | 4.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 699 | 0.1+ | 0.3+ | 2002 10 15 | 704 | 0.8− | 0.9− | 2006 09 27 | 704 | 0.1+ | 0.3+ | | |
| 1998 10 17 | 699 | 0.5+ | 0.5+ | 2002 10 15 | 704 | 0.3− | 1.3+ | 2006 09 27 | 704 | 0.1+ | 0.1+ | | |
| 1998 10 17 | 699 | 1.3+ | 0.6+ | 2002 10 15 | 704 | 0.6− | 0.3− | 2006 09 27 | 704 | 0.7+ | 0.3− | | |
| 2002 09 07 | 704 | 0.0 | 0.8+ | 2002 10 15 | 704 | 0.3− | 0.6+ | 2006 09 27 | 704 | 0.1+ | 0.4+ | | |
| 2002 09 07 | 704 | 0.4− | 0.3− | 2002 10 25 | 644 | 0.3− | 0.2+ | 2006 09 29 | 704 | (0.0 | 1.6+) | | |
| 2002 09 07 | 704 | 0.2+ | 0.4− | 2002 10 25 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.1+ | 1.0+ | | |
| 2002 09 07 | 704 | 0.7+ | 0.1+ | 2002 10 25 | 644 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.0 | 1.4− | | |
| 2002 09 07 | 704 | 0.3+ | 0.4+ | 2002 10 30 | 644 | 0.1+ | 0.8− | 2006 09 29 | 704 | 0.0 | 1.0− | | |
| 2002 09 11 | 049 | 0.0 | 0.3− | 2002 10 30 | 644 | 0.1− | 0.6− | 2006 10 10 | 644 | 0.4− | 0.0 | | |
| 2002 09 11 | 049 | 0.6− | 0.5− | 2002 10 30 | 644 | 0.1+ | 0.7− | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2002 09 11 | 049 | 0.8− | 0.0 | 2002 10 31 | 699 | 0.5− | 0.3− | 2006 10 10 | 644 | 0.2− | 0.0 | | |
| 2002 10 02 | 704 | 0.0 | 0.6+ | 2002 10 31 | 699 | 1.2− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.2+ | 0.6+ | 2002 10 31 | 699 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1− | | |
| 2002 10 02 | 704 | 0.1− | 0.6+ | 2002 10 31 | 699 | (1.4− | 1.9+) | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.2− | 0.3− | 2002 11 03 | 608 | 0.3− | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1− | | |
| 2002 10 02 | 704 | 0.2− | 0.5+ | 2002 11 03 | 608 | 0.3− | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.7− | 0.1+ | 2002 11 03 | 608 | 0.2− | 0.7− | 2006 10 16 | 691 | 0.1− | 0.1− | | |
| 2002 10 03 | 704 | 0.7− | 0.8+ | 2002 11 08 | 704 | 1.3+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 10 03 | 704 | 0.1− | 0.6+ | 2002 11 08 | 704 | 1.4+ | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.4+ | | |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2002 11 08 | 704 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.5+ | 0.3+ | | |
| 2002 10 07 | 704 | 0.0 | 0.2− | 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.0 | | |
| 2002 10 07 | 704 | 0.6− | 0.1+ | 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 07 | 704 | 0.9− | 0.0 | 2005 05 04 | 644 | 0.5+ | 0.6+ | 2006 10 21 | 703 | (1.7+ | 1.3−) | | |
| 2002 10 09 | 704 | 0.3+ | 0.3+ | 2005 05 04 | 644 | 0.4+ | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.4− | | |
| 2002 10 09 | 704 | 0.4− | 0.2+ | 2005 05 04 | 644 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.1− | 0.9− | | |
| 2002 10 09 | 704 | 0.3+ | 0.8+ | 2005 05 12 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.7− | | |
| 2002 10 09 | 704 | 0.3− | 0.6+ | 2005 05 12 | 644 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 10 11 | 704 | 1.2+ | 0.6− | 2005 05 12 | 644 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 10 11 | 704 | 0.5− | 0.1− | 2006 08 06 | 699 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.9− | 0.4+ | 2006 08 06 | 699 | 0.5+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2002 10 11 | 704 | 0.7+ | 0.5+ | 2006 08 06 | 699 | 0.4− | 0.9+ | 2006 10 27 | 691 | 0.0 | 0.3− | | |
| 2002 10 11 | 704 | (1.9+ | 0.7+) | 2006 08 06 | 699 | 1.2− | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2002 10 13 | 649 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.9+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2002 10 13 | 734 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.7+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 | | |
| 2002 10 13 | 734 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.0 | 0.9+ | 2006 10 31 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 13 | 649 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.6+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.5− | | |
| 2002 10 13 | 734 | 0.1− | 0.6+ | 2006 09 17 | 704 | 0.6+ | 0.8− | 2006 11 17 | G96 | 0.2+ | 0.4− | | |
| 2002 10 13 | 649 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2002 10 14 | 649 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2002 10 14 | 649 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | | | | | | |

**(142487)∗ 2002 TC$_{27}$ = 1996 RT$_{15}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37979)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.43645 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17106703 | $\omega$ | 125.38974 | | +0.91871744 | −0.39472628 | |
| $a$ | 3.2138468 | $\Omega$ | 257.86193 | | +0.35815237 | +0.84583572 | |
| $e$ | 0.1969915 | $i$ | 0.71645 | | +0.16638856 | +0.35882183 | |
| $P$ | 5.76 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 691 | 0.1− | 0.1− | 2002 10 10 | 644 | 0.2− | 0.2+ | 2002 11 06 | 704 | 0.3− | 0.5+ | |
| 1996 09 13 | 691 | 0.2+ | 0.1− | 2002 10 10 | 644 | 0.0 | 1.0+ | 2002 11 06 | 704 | 0.6+ | 0.5+ | |
| 1996 09 13 | 691 | 0.2+ | 0.3− | 2002 10 10 | 644 | 0.1+ | 0.3+ | 2002 11 06 | 704 | 0.3+ | 0.8+ | |
| 1996 09 21 | 691 | 0.4− | 0.1+ | 2002 10 10 | 644 | 0.1+ | 1.0+ | 2002 11 06 | 704 | 0.1+ | 1.6+ | |
| 1996 09 21 | 691 | 0.4− | 0.1− | 2002 10 11 | 704 | 0.3+ | 0.3+ | 2002 11 11 | 704 | 0.2− | 0.8− | |
| 1996 09 21 | 691 | 0.5− | 0.1− | 2002 10 11 | 704 | 0.2− | 0.0 | 2002 11 11 | 704 | 1.8− | 1.2− | |
| 1999 03 14 | 691 | 0.6+ | 0.1− | 2002 10 11 | 704 | 0.4+ | 0.1− | 2002 11 11 | 704 | 0.7− | 1.3− | |
| 1999 03 14 | 691 | 0.7+ | 0.2− | 2002 10 11 | 704 | 0.4+ | 1.2+ | 2002 11 11 | 704 | 0.9− | 0.1− | |
| 1999 03 14 | 691 | 1.2+ | 1.1− | 2002 10 11 | 704 | 0.6+ | 0.5+ | 2002 11 22 | 644 | 0.3− | 0.7− | |
| 2002 10 02 | 704 | 0.0 | 0.3− | 2002 10 11 | 704 | 0.0 | 1.6+ | 2002 11 22 | 644 | 0.6− | 1.0− | |
| 2002 10 02 | 704 | 0.3− | 0.4+ | 2002 10 11 | 704 | 0.3+ | 0.4+ | 2002 11 22 | 644 | 0.7+ | 0.2− | |
| 2002 10 02 | 704 | 0.6− | 0.4− | 2002 10 11 | 704 | 0.0 | 0.3+ | 2002 12 07 | 291 | 0.0 | 0.5− | |
| 2002 10 02 | 704 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.2+ | 1.2+ | 2002 12 07 | 291 | 0.2+ | 0.3− | |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2002 10 11 | 704 | 0.5− | 0.1+ | 2002 12 07 | 291 | 0.9+ | 0.4− | |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2002 10 11 | 291 | 0.0 | 0.0 | 2004 01 19 | 691 | 0.5− | 0.2+ | |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 291 | 0.2− | 0.1− | 2004 01 19 | 691 | 0.3− | 0.3+ | |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2002 10 11 | 291 | 0.1− | 0.1− | 2004 01 19 | 691 | 0.5− | 0.3+ | |
| 2002 10 03 | 704 | 0.8− | 0.2− | 2002 10 12 | 704 | 0.1+ | 0.6+ | 2004 02 14 | 691 | 0.1− | 0.5+ | |
| 2002 10 04 | 599 | 0.1+ | 0.1− | 2002 10 12 | 704 | 0.5+ | 0.3+ | 2004 02 14 | 691 | 0.0 | 0.5+ | |
| 2002 10 04 | 599 | 0.1− | 0.1+ | 2002 10 12 | 704 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.4− | 0.4+ | |
| 2002 10 04 | 599 | 0.1+ | 0.1− | 2002 10 12 | 704 | 0.6+ | 0.8+ | 2005 03 11 | G96 | 0.7− | 0.3+ | |
| 2002 10 06 | 599 | 0.3+ | 0.0 | 2002 10 12 | 704 | 0.5+ | 0.3+ | 2005 03 11 | G96 | 0.3− | 0.4+ | |
| 2002 10 06 | 599 | 0.4+ | 0.2− | 2002 10 15 | 704 | 0.1− | 1.0+ | 2005 03 11 | G96 | 0.1− | 0.6+ | |
| 2002 10 06 | 599 | 0.3+ | 0.1− | 2002 10 15 | 704 | 0.2+ | 1.0+ | 2005 03 11 | G96 | 0.1− | 0.2+ | |
| 2002 10 07 | 704 | 0.6− | 0.3− | 2002 10 15 | 704 | 0.1+ | 0.0 | 2005 04 05 | G96 | 0.4+ | 0.1+ | |
| 2002 10 07 | 704 | 0.4− | 0.5− | 2002 10 15 | 704 | 0.0 | 0.3+ | 2005 04 05 | G96 | 0.3− | 0.3+ | |
| 2002 10 07 | 704 | 0.5− | 1.7+ | 2002 10 15 | 704 | 0.4+ | 1.1+ | 2005 04 05 | G96 | 0.1+ | 0.2+ | |
| 2002 10 07 | 704 | 0.8− | 0.6− | 2002 10 30 | 644 | 0.1+ | 0.0 | 2005 04 05 | G96 | 0.8− | 0.4+ | |
| 2002 10 09 | 704 | 0.6+ | 0.0 | 2002 10 30 | 644 | 0.1+ | 0.0 | 2006 05 20 | 691 | 0.5+ | 0.4+ | |
| 2002 10 09 | 704 | 1.1+ | 0.5+ | 2002 10 30 | 644 | 0.0 | 0.2+ | 2006 05 20 | 691 | 0.5− | 0.8+ | |
| 2002 10 09 | 704 | 0.6+ | 0.6+ | 2002 10 31 | 699 | 0.1+ | 0.1+ | 2006 05 20 | 691 | 0.1+ | 0.4+ | |
| 2002 10 09 | 704 | (1.2+ | 2.1+) | 2002 10 31 | 699 | 0.1+ | 0.9− | 2006 05 24 | 691 | 0.1+ | 0.5+ | |
| 2002 10 09 | 704 | 0.3+ | 1.2+ | 2002 10 31 | 699 | 0.8+ | 0.3− | 2006 05 24 | 691 | 0.0 | 0.1+ | |
| 2002 10 10 | 644 | 0.1− | 0.2+ | 2002 10 31 | 699 | 0.5− | 0.2+ | 2006 05 24 | 691 | 0.0 | 0.2+ | |
| 2002 10 10 | 644 | 0.1− | 0.6+ | 2002 11 06 | 704 | 0.3− | 0.6+ | | | | | |

**(142488)∗ 2002 TK$_{27}$ = 1998 SV$_{92}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37980)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.32161 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25221258 | $\omega$ | 67.60385 | | +0.56264924 | −0.82667816 | |
| $a$ | 2.4809893 | $\Omega$ | 348.15241 | | +0.74849535 | +0.51218349 | |
| $e$ | 0.2132291 | $i$ | 1.50450 | | +0.35097087 | +0.23296201 | |
| $P$ | 3.91 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 02 | 691 | 0.8− | 0.1− | 2002 10 10 | 644 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.0 | |
| 1998 09 02 | 691 | 0.7− | 0.1− | 2002 10 10 | 704 | 0.4− | 0.9+ | 2006 10 26 | A13 | 0.2+ | 0.4− | |
| 1998 09 02 | 691 | 0.7− | 0.3− | 2002 10 11 | 704 | 0.3+ | 1.4+ | 2006 10 26 | A13 | 0.0 | 0.0 | |
| 1998 09 26 | 704 | 0.8+ | 0.5+ | 2002 10 11 | 704 | 0.5− | 0.6+ | 2006 10 26 | A13 | 0.0 | 0.3− | |
| 1998 09 26 | 704 | 0.9+ | 0.4+ | 2002 10 11 | 704 | 0.7+ | 1.3+ | 2006 10 29 | 704 | 0.1− | 0.8+ | |
| 1998 09 26 | 704 | 0.9+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 704 | (1.6− | 1.0+) | |
| 1998 09 26 | 704 | 0.8+ | 0.0 | 2002 10 12 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 704 | (1.8− | 0.5+) | |
| 1998 09 26 | 704 | 0.8− | 0.2− | 2002 10 12 | 704 | 0.4− | 0.7+ | 2006 10 29 | 704 | 0.2− | 0.6+ | |
| 1998 09 27 | 704 | 0.9+ | 1.7− | 2002 10 12 | 704 | 0.8− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.4− | |
| 1998 09 27 | 704 | (2.2− | 0.0 ) | 2002 10 12 | 704 | 0.4+ | 1.0+ | 2006 11 01 | G96 | 0.3+ | 0.4− | |
| 1998 09 27 | 704 | 0.8− | 0.8+ | 2002 10 12 | 704 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.4− | |
| 1998 09 27 | 704 | 0.7− | 0.9− | 2002 10 18 | 644 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− | |
| 1998 10 14 | 699 | 0.3+ | 0.6+ | 2002 10 18 | 644 | 0.0 | 0.5+ | 2006 11 09 | 691 | 0.2+ | 0.1− | |
| 1998 10 14 | 699 | 0.8+ | 0.5+ | 2002 10 18 | 644 | 0.1+ | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.1− | |
| 1998 10 14 | 699 | 0.6+ | 0.6+ | 2002 10 30 | 644 | 0.1− | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.2− | |
| 1998 12 13 | 704 | 0.5+ | 0.6− | 2002 10 30 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.6− | |
| 1998 12 13 | 704 | 0.6− | 1.4+ | 2002 10 30 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 1.2− | |
| 1998 12 13 | 704 | 0.4+ | 0.3+ | 2002 11 01 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2− | |
| 1998 12 13 | 704 | 0.3+ | 0.8− | 2002 11 01 | 704 | 0.7+ | 0.7+ | 2006 11 15 | 704 | 0.4+ | 0.5+ | |
| 1998 12 13 | 704 | 0.3+ | 0.5− | 2002 11 01 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.2+ | 0.3− | |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2002 11 04 | 608 | (0.6− | 1.6−) | 2006 11 15 | 704 | 0.1+ | 0.2− | |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2002 11 04 | 608 | 0.4− | 1.0− | 2006 11 15 | 704 | 0.2+ | 0.8− | |
| 2002 10 02 | 704 | 0.5+ | 0.1+ | 2002 11 04 | 608 | 1.1+ | 0.7− | 2006 11 16 | 691 | 0.2− | 0.2− | |
| 2002 10 02 | 704 | 0.3+ | 0.7− | 2002 11 06 | 704 | (0.2− | 1.9−) | 2006 11 16 | 691 | 0.0 | 0.1− | |
| 2002 10 02 | 704 | 0.9+ | 0.5+ | 2002 11 06 | 704 | 0.4− | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.1− | |
| 2002 10 02 | 704 | 0.3+ | 0.0 | 2002 11 06 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.6+ | 1.3+ | |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2002 11 06 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.2+ | |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2002 11 12 | 644 | 0.3− | 0.7− | 2006 11 16 | 704 | 0.3− | 0.8+ | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2002 11 12 | 644 | 0.6− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.1+ | |
| 2002 10 03 | 704 | 1.2− | 0.7+ | 2002 11 12 | 644 | 0.5+ | 0.7− | 2006 11 16 | 704 | 0.5− | 0.8+ | |
| 2002 10 07 | 704 | 0.1+ | 0.5+ | 2002 11 22 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.0 | |
| 2002 10 07 | 704 | 0.0 | 0.5+ | 2002 11 22 | 644 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.1− | |
| 2002 10 07 | 704 | 0.8+ | 0.1− | 2002 11 22 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.1+ | |
| 2002 10 07 | 704 | 0.1− | 0.1− | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.1− | |
| 2002 10 09 | 704 | 0.8+ | 0.4+ | 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.4− | |
| 2002 10 09 | 704 | 0.0 | 0.6+ | 2004 04 14 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.9− | 0.1− | |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.7− | 0.0 | |
| 2002 10 09 | 704 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.5− | 1.3− | |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.3− | |
| 2002 10 10 | 644 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.4− | |
| 2002 10 10 | 644 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 1.3+ | 0.2+ | |
| 2002 10 10 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.0 | 0.5+ | |
| 2002 10 10 | 704 | 0.2+ | 0.4− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.7− | 0.2+ | |
| 2002 10 10 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 1.6− | 0.5+ | |
| 2002 10 10 | 704 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.3− | 0.0 | |

**(142489)∗ 2002 TO$_{28}$ = 2000 EG$_{126}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37982)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.33622 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25953561 | $\omega$ | 37.11203 | | +0.07128541 | −0.99645897 | |
| $a$ | 2.4340981 | $\Omega$ | 48.84594 | | +0.90034836 | +0.04504293 | |
| $e$ | 0.1601540 | $i$ | 3.39479 | | +0.42929154 | +0.07099758 | |
| $P$ | 3.80 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.3+ | 0.6+ | 2002 11 06 | 704 | 0.0 | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.2− | |
| 2000 03 11 | 699 | 1.4+ | 0.1+ | 2004 03 19 | 704 | 0.6− | 1.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | |
| 2000 03 11 | 699 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.5+ | 1.3+ | 2006 11 15 | 703 | 0.1− | 0.4− | |
| 2000 03 11 | 699 | 0.3+ | 0.7+ | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.5− | |
| 2000 03 14 | 608 | 0.3− | 0.1− | 2004 03 19 | 704 | 1.1+ | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.3− | |
| 2000 03 14 | 608 | 0.3+ | 0.5+ | 2004 03 20 | 699 | 1.0+ | 1.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 | |
| 2000 03 14 | 608 | 0.3− | 0.9+ | 2004 03 20 | 699 | 1.3− | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.9− | |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2004 03 20 | 699 | 0.6− | 0.2+ | 2006 11 15 | 691 | 0.9− | 0.2− | |
| 2002 10 02 | 704 | 0.4− | 0.2− | 2004 03 20 | 699 | 0.4− | 1.1+ | 2006 11 15 | 691 | 0.0 | 0.1− | |
| 2002 10 02 | 704 | 0.4− | 0.6+ | 2004 03 22 | 704 | (0.3− | 2.4+) | 2006 11 17 | 704 | 0.0 | 1.2− | |
| 2002 10 02 | 704 | 0.5− | 0.7+ | 2004 03 22 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.9− | |
| 2002 10 03 | 704 | 0.8+ | 0.7+ | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.9− | 0.7+ | |
| 2002 10 03 | 704 | 0.3− | 0.7+ | 2004 03 22 | 704 | 0.2+ | 1.1+ | 2006 11 17 | 704 | (0.4− | 2.2+) | |
| 2002 10 03 | 704 | 0.0 | 0.9+ | 2004 03 25 | 699 | 0.6− | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.1− | |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2004 03 25 | 699 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.1− | 0.0 | |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2004 03 25 | 699 | 1.2+ | 0.0 | 2006 11 17 | 644 | 0.4− | 1.1− | |
| 2002 10 07 | 704 | 0.1+ | 0.1+ | 2004 03 25 | 699 | 0.9+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.6+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.3− | 0.6− | 2004 03 28 | 704 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 07 | 704 | 0.1− | 0.5+ | 2004 03 28 | 704 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2002 10 07 | 608 | 0.4− | 0.7+ | 2004 03 28 | 704 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.3+ | | |
| 2002 10 07 | 704 | 0.4− | 0.3+ | 2004 04 19 | 704 | 1.1− | 1.1+ | 2006 11 18 | 704 | 0.5+ | 0.5+ | | |
| 2002 10 07 | 608 | 0.5− | 0.4+ | 2004 04 19 | 704 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2002 10 07 | 608 | 0.7− | 0.9+ | 2004 04 19 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2002 10 10 | 644 | 0.6− | 0.4+ | 2004 04 22 | 704 | 1.3+ | 0.6− | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2002 10 10 | 644 | 0.3− | 0.5+ | 2004 04 22 | 704 | 0.3+ | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.0 | | |
| 2002 10 10 | 644 | 0.5− | 0.3+ | 2004 04 22 | 704 | 0.6+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.4+ | | |
| 2002 10 11 | 704 | 0.8− | 1.2+ | 2004 04 22 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.7+ | | |
| 2002 10 11 | 704 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.3+ | | |
| 2002 10 11 | 704 | (1.7− | 0.3+) | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3− | 0.3+ | | |
| 2002 10 30 | 644 | 0.6− | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.2− | | |
| 2002 10 30 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.4+ | 0.2− | | |
| 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.6+ | 2006 11 23 | 691 | 0.4+ | 0.2− | | |
| 2002 11 05 | 699 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.3− | | |
| 2002 11 05 | 699 | 0.4+ | 0.9+ | 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 27 | 704 | 0.3+ | 0.3− | | |
| 2002 11 05 | 699 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.3+ | 2006 11 27 | 704 | 0.0 | 0.2+ | | |
| 2002 11 05 | 699 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 12 01 | 704 | 0.2− | 0.2− | | |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 12 01 | 704 | 0.4− | 0.6+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 12 01 | 704 | 0.0 | 0.8+ | | |
| 2002 11 06 | 704 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 12 01 | 704 | 0.4+ | 1.0+ | | |
| 2002 11 06 | 704 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.0 | | | | | | |

**(142490)∗ 2002 TU$_{28}$ = 1998 QV$_{100}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37982)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.38755 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25904427 | $\omega$ | 249.23914 | | +0.51565944 | +0.85553823 | |
| $a$ | 2.4371751 | $\Omega$ | 51.88794 | | −0.76254739 | +0.48293887 | |
| $e$ | 0.1734810 | $i$ | 3.37827 | | −0.39066204 | +0.18661294 | |
| $P$ | 3.80 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 809 | (2.9− | 1.1−) | 2005 05 14 | 704 | 0.8− | 0.6− | 2006 11 09 | 644 | 0.3− | 0.1+ | | |
| 1998 08 26 | 809 | (3.3− | 2.1−) | 2005 05 14 | 704 | (0.3− | 1.8−) | 2006 11 09 | 644 | 0.4− | 0.1+ | | |
| 1998 08 26 | 809 | (2.6− | 1.0−) | 2005 05 14 | 704 | 0.1+ | 1.5− | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 1998 08 27 | 809 | 0.6− | 0.3+ | 2005 05 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (0.3− | 1.8+) | | |
| 1998 08 27 | 809 | 1.2− | 0.5− | 2005 05 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.7+ | | |
| 1998 08 27 | 809 | 0.8− | 0.2+ | 2005 05 16 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 1998 09 24 | 699 | 0.5− | 0.1+ | 2005 05 19 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.4− | | |
| 1998 09 24 | 699 | 1.0+ | 0.3+ | 2005 05 19 | 644 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.3− | | |
| 1998 09 24 | 699 | 0.9+ | 1.3+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2005 05 27 | 699 | 0.6+ | 0.9− | 2006 11 11 | 703 | 0.3+ | 0.8− | | |
| 2002 10 02 | 704 | 0.3+ | 0.2− | 2005 05 27 | 699 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.6− | | |
| 2002 10 02 | 704 | 0.8+ | 1.1− | 2005 05 27 | 699 | 0.8+ | 0.5− | 2006 11 12 | 703 | 0.4− | 0.2+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.4+ | 2005 05 27 | 699 | 0.8− | 1.1− | 2006 11 12 | 703 | 0.2− | 0.1− | | |
| 2002 10 03 | 704 | 0.6+ | 1.1+ | 2005 05 30 | 699 | 0.8+ | 0.4+ | 2006 11 12 | 703 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | (1.6+ | 0.5−) | 2005 05 30 | 699 | 0.5− | 0.4+ | 2006 11 12 | 703 | 0.6− | 0.5− | | |
| 2002 10 03 | 704 | 0.4+ | 0.6− | 2005 05 30 | 699 | 0.6+ | 1.0+ | 2006 11 14 | 691 | 0.0 | 0.3+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2005 05 30 | 699 | 0.3+ | 0.9+ | 2006 11 14 | 691 | 0.1− | 0.3+ | | |
| 2002 10 10 | 644 | 0.2− | 0.3− | 2005 06 11 | 703 | 0.4− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.2+ | | |
| 2002 10 10 | 644 | 0.2− | 0.3− | 2005 06 11 | 703 | 0.2− | 0.7+ | 2006 11 17 | 703 | 0.2+ | 0.2− | | |
| 2002 10 10 | 644 | 0.1− | 0.3− | 2005 06 11 | 703 | 1.0− | 0.4+ | 2006 11 17 | 703 | 1.0+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.2+ | 1.5− | 2005 06 11 | 703 | (2.4− | 1.5−) | 2006 11 17 | 703 | 0.1− | 0.0 | | |
| 2002 10 11 | 704 | 0.6− | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.4+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.3+ | 1.1− | 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 11 18 | 704 | 1.2+ | 0.1− | | |
| 2002 10 11 | 704 | 0.6+ | 0.9− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.1+ | | |
| 2005 03 12 | G96 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 1.0+ | | |
| 2005 03 12 | G96 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1− | 0.4− | | |
| 2005 03 12 | G96 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.2− | | |
| 2005 03 12 | G96 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1+ | | |
| 2005 04 11 | G96 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1+ | | |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1− | | |
| 2005 04 11 | G96 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.8− | | |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.9− | 0.5− | | |
| 2005 05 09 | 704 | 0.9− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.3− | 0.7+ | | |
| 2005 05 09 | 704 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.6− | | |
| 2005 05 09 | 704 | 1.3+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.5+ | 0.9− | | |
| 2005 05 13 | G96 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 12 01 | G96 | 0.1+ | 0.0 | | |
| 2005 05 13 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.4− | | |
| 2005 05 13 | G96 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.4+ | 0.0 | | |
| 2005 05 13 | G96 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.3− | 0.1+ | | | | | | |
| 2005 05 14 | 704 | 0.9+ | 0.9− | 2006 10 28 | 691 | 0.3− | 0.2+ | | | | | | |

**(142491)∗ 2002 TB$_{29}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.86083 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23205557 | $\omega$ | 319.64090 | | +0.99857270 | +0.03285377 | |
| $a$ | 2.6226564 | $\Omega$ | 38.53861 | | −0.01067435 | +0.89528256 | |
| $e$ | 0.0905871 | $i$ | 3.87539 | | −0.05233192 | +0.44428568 | |
| $P$ | 4.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.3+ | 0.1− | 2002 11 04 | 291 | 0.2+ | 0.1+ | 2005 05 13 | 291 | 0.4− | 0.2+ | | |
| 2002 10 02 | 704 | 0.7+ | 0.3+ | 2002 11 04 | 291 | 0.1+ | 0.0 | 2005 05 13 | 291 | 0.2− | 0.4+ | | |
| 2002 10 02 | 704 | 0.2− | 0.4− | 2002 11 04 | 291 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 1.2+ | 0.1− | | |
| 2002 10 03 | 704 | (1.9+ | 0.7−) | 2002 11 06 | 704 | 0.4+ | 0.7− | 2006 08 27 | 699 | 0.1− | 0.1− | | |
| 2002 10 03 | 704 | (2.1+ | 0.8−) | 2002 11 06 | 704 | 0.1− | 0.3− | 2006 08 27 | 699 | 0.7+ | 0.7+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.5− | 2002 11 06 | 704 | 1.1− | 0.6+ | 2006 08 27 | 699 | 0.7+ | 0.2+ | | |
| 2002 10 07 | 704 | 0.4+ | 0.0 | 2004 02 11 | 644 | 0.3+ | 1.1+ | 2006 09 14 | 703 | 0.4− | 0.1+ | | |
| 2002 10 07 | 704 | 0.4− | 0.3− | 2004 02 11 | 644 | 0.6+ | 1.0+ | 2006 09 14 | 703 | 0.0 | 0.1− | | |
| 2002 10 07 | 704 | 0.5+ | 0.7+ | 2004 02 11 | 644 | 0.3+ | 0.9+ | 2006 09 14 | 703 | 0.0 | 0.4− | | |
| 2002 10 07 | 704 | 0.9+ | 0.5− | 2005 03 10 | G96 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.2− | | |
| 2002 10 08 | 699 | 0.5− | 0.1+ | 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 16 | 704 | 0.4− | 0.8− | | |
| 2002 10 08 | 699 | 0.5+ | 0.2− | 2005 03 10 | G96 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.1− | 0.4+ | | |
| 2002 10 08 | 699 | 0.3− | 1.0+ | 2005 03 10 | G96 | 1.5− | 0.2− | 2006 09 16 | 704 | 0.1− | 0.8+ | | |
| 2002 10 08 | 699 | 0.7− | 0.6+ | 2005 04 11 | G96 | 0.1+ | 0.2− | 2006 09 16 | 704 | 0.4− | 1.0+ | | |
| 2002 10 09 | 704 | 0.5+ | 0.1+ | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.5− | 1.2+ | | |
| 2002 10 09 | 704 | 0.6+ | 0.6+ | 2005 04 11 | G96 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.5− | 0.5+ | | |
| 2002 10 09 | 704 | 0.1− | 0.1− | 2005 04 11 | G96 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.9− | 1.1− | | |
| 2002 10 09 | 704 | 0.1+ | 0.9+ | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.7+ | | |
| 2002 10 10 | 291 | 0.2− | 0.2− | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 09 22 | 704 | 1.0− | 0.3− | | |
| 2002 10 10 | 291 | 0.3− | 0.2− | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 09 22 | 704 | 1.3− | 1.1+ | | |
| 2002 10 10 | 291 | 0.3− | 0.2− | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.3− | 0.5+ | | |
| 2002 10 11 | 644 | 0.1+ | 0.5+ | 2005 05 11 | 691 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.9+ | 0.4− | | |
| 2002 10 11 | 704 | 1.3+ | 0.0 | 2005 05 11 | 691 | 0.4+ | 0.1− | 2006 09 26 | 704 | 1.1+ | 0.7− | | |
| 2002 10 11 | 644 | 0.1+ | 0.6+ | 2005 05 11 | 691 | 0.8+ | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.1− | | |
| 2002 10 11 | 704 | 0.6+ | 1.2− | 2005 05 12 | G96 | 0.1+ | 0.2− | 2006 09 26 | 704 | 1.3+ | 0.4− | | |
| 2002 10 11 | 704 | 0.9+ | 0.1+ | 2005 05 12 | G96 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.5− | | |
| 2002 10 11 | 704 | 1.0+ | 0.6− | 2005 05 12 | 291 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.1− | | |
| 2002 10 11 | 704 | 0.0 | 0.8− | 2005 05 12 | G96 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.0 | 0.4− | | |
| 2002 10 11 | 644 | 0.2− | 0.5+ | 2005 05 12 | 291 | 0.0 | 0.0 | 2006 09 30 | 703 | (0.2+ | 1.7−) | | |
| 2002 10 30 | 291 | 0.3− | 0.2+ | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.5+ | 0.0 | | |
| 2002 10 30 | 291 | 0.6− | 0.2+ | 2005 05 12 | 291 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.2+ | | |
| 2002 10 30 | 291 | 0.6− | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.1+ | | |
| 2002 10 31 | 699 | (0.8+ | 2.1+) | 2005 05 12 | G96 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2− | 0.6+ | | |
| 2002 10 31 | 699 | (1.6+ | 0.4−) | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.8− | 0.2− | | |
| 2002 10 31 | 699 | 0.2+ | 0.2+ | 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.3− | | |
| 2002 10 31 | 699 | 0.2+ | 0.3+ | 2005 05 13 | 291 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.2− | | |

**(142492)∗ 2002 TC$_{29}$ = 2001 JB$_{8}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37983)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.73589 | | (2000.0) | | | |
| $n$ | 0.23722829 | $\omega$ | 141.83961 | | +0.87410449 | +0.48558135 |
| $a$ | 2.5843921 | $\Omega$ | 189.13454 | | −0.46256731 | +0.82439165 |
| $e$ | 0.1625369 | $i$ | 4.45545 | | −0.14823232 | +0.29084217 |
| $P$ | 4.15 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 699 | 0.2− | 1.2+ | 2002 11 06 | 704 | 0.8− | 0.5+ | 2006 09 16 | 608 | 0.3+ | 1.5− |
| 2001 05 15 | 699 | 1.2+ | 0.5− | 2002 11 06 | 704 | 0.4+ | 0.5− | 2006 09 17 | 704 | 0.9− | 0.4+ |
| 2001 05 15 | 699 | 0.2− | 0.3− | 2005 03 14 | G96 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.6− | 0.2+ |
| 2001 05 15 | 699 | 0.2+ | 0.4+ | 2005 03 14 | G96 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.1− |
| 2001 05 17 | 691 | 0.2+ | 0.5+ | 2005 03 14 | G96 | 0.4− | 0.3− | 2006 09 17 | 704 | 0.3− | 0.5− |
| 2001 05 17 | 691 | 0.2− | 0.6+ | 2005 03 14 | G96 | 0.6− | 0.5+ | 2006 09 17 | 704 | 0.5− | 0.5− |
| 2001 05 17 | 691 | 0.0 | 0.5+ | 2005 04 16 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.6+ |
| 2002 09 29 | 291 | 0.1+ | 0.2+ | 2005 04 16 | 691 | 0.1− | 0.7+ | 2006 09 18 | 699 | 0.1+ | 0.4− |
| 2002 09 29 | 291 | 0.3+ | 0.1+ | 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.1− |
| 2002 09 29 | 291 | 0.6+ | 0.2+ | 2005 05 09 | 699 | 0.3− | 0.7+ | 2006 09 20 | 704 | 0.4+ | 1.1+ |
| 2002 10 02 | 704 | 0.5− | 0.8− | 2005 05 09 | 699 | (1.0− | 1.6+) | 2006 09 20 | 704 | 0.2+ | 0.9+ |
| 2002 10 02 | 704 | 0.1− | 0.3+ | 2005 05 09 | 699 | (2.1+ | 1.3+) | 2006 09 20 | 704 | 0.6+ | 0.7+ |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2005 05 09 | 699 | 0.5− | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.4− |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2005 05 14 | 644 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.5+ |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2005 05 14 | 644 | 0.4+ | 0.2+ | 2006 09 26 | 704 | (1.8− | 1.2−) |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2005 05 14 | 644 | 0.7+ | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.8+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 08 21 | 691 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.7+ |
| 2002 10 03 | 704 | 0.2− | 1.1+ | 2006 08 21 | 691 | 0.2+ | 0.2− | 2006 09 26 | 704 | (2.1+ | 0.5−) |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2006 08 21 | 691 | 0.2+ | 0.1− | 2006 09 26 | 704 | 1.0− | 0.4+ |
| 2002 10 07 | 704 | 0.1− | 0.9+ | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2002 10 07 | 704 | 0.4− | 1.0+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2002 10 07 | 704 | 0.5− | 1.2+ | 2006 08 24 | 644 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2002 10 07 | 704 | 0.0 | 1.2+ | 2006 08 25 | 704 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2002 10 07 | 704 | 0.7− | 0.7+ | 2006 08 25 | 704 | 0.2+ | 1.0− | 2006 09 27 | 704 | 0.4+ | 0.9+ |
| 2002 10 09 | 699 | 0.3− | 1.3+ | 2006 08 25 | 704 | 0.5− | 1.1− | 2006 09 27 | 704 | 1.3+ | 0.3+ |
| 2002 10 09 | 699 | 0.4+ | 0.8+ | 2006 08 25 | 704 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.5+ |
| 2002 10 09 | 699 | 0.0 | 1.3+ | 2006 08 25 | 704 | 0.3− | 1.2− | 2006 09 27 | 704 | 0.6+ | 0.2+ |
| 2002 10 09 | 704 | 0.7− | 0.2+ | 2006 08 28 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 704 | 0.3− | 1.0+ |
| 2002 10 09 | 699 | 1.5− | 1.3+ | 2006 08 28 | 704 | 0.3+ | 0.5− | 2006 09 29 | 704 | 0.7+ | 0.8+ |
| 2002 10 09 | 704 | 0.2− | 0.6+ | 2006 08 28 | 704 | 0.4+ | 0.1+ | 2006 09 29 | 704 | (0.8+ | 1.6+) |
| 2002 10 09 | 704 | 0.7− | 0.5− | 2006 08 28 | 703 | 0.3+ | 0.8− | 2006 09 29 | 704 | 0.3+ | 0.7+ |
| 2002 10 09 | 704 | 0.4− | 0.1− | 2006 08 28 | 704 | 0.6+ | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2002 10 09 | 704 | 1.0− | 0.6+ | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.7+ |
| 2002 10 11 | 644 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.1+ |
| 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.0 | 0.7+ |
| 2002 10 11 | 644 | 0.5− | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.5− | 0.4+ |
| 2002 10 11 | 704 | 0.1− | 0.2− | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.3− | 0.4− |
| 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.1− | 0.5− |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.0 | 0.9− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 0.4− | 0.8+ | 2006 09 12 | 703 | 0.6− | 0.1− | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2002 10 11 | 644 | 0.5− | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.6− | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2002 10 30 | 644 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.8− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2002 10 30 | 644 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2002 10 30 | 644 | 0.2− | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 2002 11 01 | 704 | 0.9+ | 0.5− | 2006 09 13 | 644 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2002 11 01 | 704 | 0.5+ | 0.0 | 2006 09 16 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.6− | 0.5− |
| 2002 11 01 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 01 | 704 | 1.1+ | 0.0 | 2006 09 16 | 691 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.8− | 0.4− | 2006 09 16 | 608 | (0.2+ | 1.7−) | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | (1.7− | 1.2+) | 2006 09 16 | 608 | (0.4+ | 1.8−) | | | | |

**(142493)∗ 2002 TY$_{29}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.87100 | | (2000.0) | | | |
| $n$ | 0.23783654 | $\omega$ | 147.30032 | | +0.99523428 | +0.09015320 |
| $a$ | 2.5799839 | $\Omega$ | 207.59953 | | −0.09738375 | +0.93849597 |
| $e$ | 0.2414654 | $i$ | 4.60101 | | +0.00501242 | +0.33331324 |
| $P$ | 4.14 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 691 | 0.4− | 0.5− | 2002 10 31 | 608 | 0.6+ | 0.5+ | 2006 09 12 | 703 | 0.4+ | 0.7− |
| 1998 12 11 | 691 | 0.6− | 0.6− | 2002 10 31 | 608 | 0.6+ | 0.5+ | 2006 09 12 | 703 | 0.2+ | 1.4− |
| 1998 12 11 | 691 | 0.1+ | 0.3− | 2002 11 22 | 644 | 0.0 | 0.6+ | 2006 09 18 | 704 | 0.0 | 0.3− |
| 2001 05 14 | 691 | 0.4+ | 0.1+ | 2002 11 22 | 644 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 0.1+ | 0.5− |
| 2001 05 14 | 691 | 0.2+ | 0.8+ | 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 09 18 | 704 | 0.6+ | 0.4− |
| 2001 05 14 | 691 | 0.0 | 0.5+ | 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.3− |
| 2002 10 02 | 704 | (1.3+ | 1.7+) | 2005 04 02 | G96 | 0.5+ | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.6+ | 0.5+ | 2005 04 02 | G96 | 1.0− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.2− |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.3+ | 0.1+ | 2005 04 11 | G96 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2005 04 11 | G96 | (1.6− | 0.9−) | 2006 09 19 | 703 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2005 04 11 | G96 | 0.8− | 0.5− | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 2002 10 03 | 704 | 0.8+ | 0.0 | 2005 04 11 | G96 | 0.8+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.1+ |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.9− | 0.8− |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2005 04 16 | 691 | 0.6+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 0.7− | 0.1+ | 2005 04 16 | 691 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.1− | 1.0+ |
| 2002 10 07 | 704 | 0.5− | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.7+ |
| 2002 10 07 | 704 | 0.3− | 0.6+ | 2005 05 08 | G96 | 1.4− | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.4− |
| 2002 10 07 | 704 | 0.2− | 0.6+ | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.7+ | 0.9− |
| 2002 10 09 | 704 | 0.4− | 0.5+ | 2005 05 08 | G96 | 0.5+ | 0.9+ | 2006 09 25 | 704 | 0.5+ | 1.0+ |
| 2002 10 09 | 704 | 0.1− | 0.4+ | 2006 07 21 | D35 | 0.5− | 0.0 | 2006 09 26 | 704 | 0.9+ | 0.2+ |
| 2002 10 09 | 704 | 0.5+ | 0.5+ | 2006 07 21 | D35 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.6− |
| 2002 10 09 | 704 | 0.4− | 0.3+ | 2006 07 21 | D35 | 0.7− | 0.2+ | 2006 09 26 | 704 | 0.7+ | 0.7+ |
| 2002 10 09 | 704 | 1.1+ | 0.7+ | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | 1.3+ | 0.3− |
| 2002 10 11 | 644 | 0.1+ | 0.5− | 2006 08 18 | 644 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.5+ | 0.2+ |
| 2002 10 11 | 704 | (0.1− | 2.0+) | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.6− | 0.0 |
| 2002 10 11 | 704 | 0.6+ | 0.5+ | 2006 08 28 | 704 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.8+ | 2006 08 28 | 704 | 0.3+ | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.4− |
| 2002 10 11 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 704 | (1.4− | 1.7+) | 2006 10 03 | G96 | 0.1− | 0.6− |
| 2002 10 11 | 704 | 0.1− | 0.6+ | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.4− |
| 2002 10 11 | 704 | 0.4+ | 0.3− | 2006 08 29 | 703 | 0.1+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.5− |
| 2002 10 11 | 644 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.4− | 0.6− |
| 2002 10 30 | 644 | 0.2− | 1.0+ | 2006 08 29 | 703 | 0.8− | 0.8+ | 2006 10 17 | 106 | 0.1+ | 0.7− |
| 2002 10 30 | 644 | 0.1− | 1.1+ | 2006 08 30 | 704 | 1.5− | 0.6+ | 2006 10 17 | 106 | 0.8− | 0.4− |
| 2002 10 30 | 644 | 0.3− | 1.1+ | 2006 08 30 | 704 | (1.6− | 0.4+) | 2006 10 17 | 106 | 0.3− | 0.4− |
| 2002 10 31 | 699 | 0.4− | 0.4+ | 2006 08 30 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 106 | 0.1+ | 0.7− |
| 2002 10 31 | 699 | 0.8− | 1.0+ | 2006 08 30 | 704 | (1.8− | 1.1+) | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 10 31 | 699 | 0.6− | 0.4+ | 2006 08 30 | 704 | 0.8− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2002 10 31 | 699 | 0.5− | 1.5+ | 2006 09 12 | 703 | 0.5− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2002 10 31 | 608 | 0.4+ | 0.8+ | 2006 09 12 | 703 | 0.6− | 0.6− | 2006 11 14 | G96 | 0.3− | 0.1− |

**(142494)∗ 2002 TG$_{30}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.82922 | | (2000.0) | | | |
| $n$ | 0.22608968 | $\omega$ | 17.62855 | | +0.82476443 | −0.56351545 |
| $a$ | 2.6685923 | $\Omega$ | 16.92412 | | +0.49739562 | +0.68336747 |
| $e$ | 0.1145890 | $i$ | 9.30184 | | +0.26900045 | +0.46417587 |
| $P$ | 4.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 1.0+ | 1.1+ | 2002 10 12 | 704 | 0.5+ | 0.1+ | 2006 08 19 | 644 | 0.5− | 0.3+ |
| 2000 04 05 | 704 | 0.2− | 1.6+ | 2002 11 04 | 608 | 0.5− | 0.8+ | 2006 08 30 | 699 | 1.4− | 1.3+ |
| 2000 04 05 | 704 | 0.4+ | 0.8+ | 2002 11 04 | 608 | 0.5− | 0.6+ | 2006 08 30 | 699 | 0.3− | 0.6+ |
| 2000 04 05 | 704 | (2.1+ | 0.1+) | 2002 11 04 | 608 | 1.2− | 0.6+ | 2006 08 30 | 699 | 0.4− | 0.9+ |
| 2000 04 05 | 704 | 0.8+ | 0.9+ | 2002 11 05 | 699 | 1.4+ | 1.3− | 2006 09 14 | 703 | (0.5− | 1.6−) |
| 2000 05 04 | 645 | 0.1+ | 0.2+ | 2002 11 05 | 699 | 0.0 | 0.8+ | 2006 09 14 | 703 | 1.3− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1+ | 0.2+ | 2002 11 05 | 699 | 1.2− | 1.3+ | 2006 09 14 | 703 | 0.9− | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.7+ | 2002 11 05 | 699 | 0.1+ | 0.9+ | 2006 09 14 | 703 | 1.2− | 0.9− |
| 2002 09 07 | 704 | 0.2+ | 0.6+ | 2002 11 08 | 704 | 0.2+ | 0.2− | 2006 09 16 | 704 | 0.0 | 0.4+ |
| 2002 09 07 | 704 | 0.3− | 0.5− | 2002 11 08 | 704 | 0.2+ | 0.5− | 2006 09 16 | 704 | 1.0+ | 0.1− |
| 2002 09 07 | 704 | 0.1− | 1.5+ | 2002 11 08 | 704 | 0.0 | 0.4− | 2006 09 16 | 704 | 0.3− | 0.5+ |
| 2002 10 02 | 704 | 0.6− | 0.6+ | 2002 11 08 | 704 | 0.7+ | 0.0 | 2006 09 16 | 704 | 0.0 | 0.7+ |
| 2002 10 02 | 704 | 0.1+ | 0.4− | 2002 11 12 | 644 | 0.2+ | 0.1− | 2006 09 16 | 704 | 0.3+ | 1.1+ |
| 2002 10 02 | 704 | 0.8− | 0.2+ | 2002 11 12 | 704 | 0.9+ | 0.4− | 2006 09 18 | 699 | 0.2+ | 0.8+ |
| 2002 10 02 | 704 | 0.5− | 0.2+ | 2002 11 12 | 644 | 0.4+ | 0.5− | 2006 09 18 | 699 | 0.3+ | 0.8+ |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2002 11 12 | 704 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.7+ | 2002 11 12 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.6+ |
| 2002 10 03 | 704 | 0.8− | 0.2− | 2002 11 12 | 704 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.9− | 1.1+ |
| 2002 10 03 | 704 | 0.6− | 0.0 | 2002 11 12 | 704 | 1.0+ | 0.7− | 2006 09 25 | 699 | 0.6− | 0.7+ |
| 2002 10 03 | 704 | 1.0− | 0.1− | 2002 11 12 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 1.2+ | 0.3+ |
| 2002 10 07 | 704 | 0.0 | 0.9− | 2004 02 13 | 644 | 0.5− | 0.9+ | 2006 09 25 | 699 | 0.4+ | 0.1− |
| 2002 10 07 | 704 | 0.4+ | 0.1− | 2004 02 13 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2002 10 07 | 704 | 0.3− | 0.0 | 2004 02 13 | 644 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.5− |
| 2002 10 07 | 704 | 0.1− | 0.1+ | 2004 02 16 | 704 | 0.9+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.5− |
| 2002 10 07 | 704 | 0.3+ | 0.5+ | 2004 02 16 | 704 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.1− | 0.0 |
| 2002 10 08 | 699 | 1.2+ | 0.5+ | 2004 02 16 | 704 | 0.8+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 10 08 | 699 | 0.6+ | 0.3− | 2004 02 16 | 704 | 1.3+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2002 10 08 | 699 | 0.4+ | 0.8− | 2004 02 16 | 704 | 1.1+ | 0.7+ | 2006 10 12 | 644 | 0.5− | 0.1+ |
| 2002 10 08 | 699 | 0.2+ | 1.3+ | 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.0 |
| 2002 10 09 | 704 | 1.4− | 0.6+ | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.1− |
| 2002 10 09 | 704 | 0.3− | 0.5+ | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.4− | 1.0+ |
| 2002 10 09 | 704 | 0.6− | 0.4+ | 2004 03 23 | 704 | 0.2+ | 1.3+ | 2006 10 21 | 703 | 0.0 | 1.3+ |
| 2002 10 09 | 704 | 0.6− | 0.8+ | 2004 03 23 | 704 | 0.3− | 0.9+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 10 09 | 704 | (2.3− | 0.7+) | 2004 03 23 | 704 | 0.4− | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 10 12 | 704 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2002 10 12 | 704 | 0.4+ | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.3− | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2002 10 12 | 704 | 0.3− | 0.0 | 2006 08 19 | 644 | 0.2+ | 0.0 | | | | |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2006 08 19 | 644 | 0.3− | 0.4+ | | | | |

**(142495)∗ 2002 TP$_{30}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.15585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27135146 | $\omega$ | 185.05532 | | +0.75402667 | −0.65658552 | |
| $a$ | 2.3629141 | $\Omega$ | 216.00650 | | +0.60373524 | +0.70383360 | |
| $e$ | 0.2085390 | $i$ | 1.79538 | | +0.25874223 | +0.27113414 | |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 1.1− | 0.7− | 2002 10 30 | 644 | 0.3+ | 0.4− | 2002 12 11 | 704 | 0.4− | 0.4+ |
| 2000 03 03 | 704 | 0.0 | 0.7− | 2002 10 30 | 644 | 0.4+ | 0.3− | 2002 12 11 | 704 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.5− | 2002 10 30 | 644 | 0.4+ | 0.4− | 2002 12 11 | 704 | 0.3− | 0.6+ |
| 2002 10 02 | 704 | 0.2− | 0.5− | 2002 10 31 | 608 | 0.7+ | 1.4+ | 2002 12 11 | 704 | 0.6+ | 0.3+ |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2002 10 31 | 608 | 0.8+ | 1.3+ | 2003 01 04 | 704 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.6− | 2002 10 31 | 608 | 0.9+ | 1.2+ | 2003 01 04 | 704 | 0.7− | 1.0+ |
| 2002 10 02 | 704 | 0.2− | 0.2+ | 2002 11 01 | 704 | 0.9+ | 0.5− | 2003 01 04 | 704 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.5− | 0.3− | 2002 11 01 | 704 | 0.2+ | 1.4+ | 2003 01 04 | 704 | 0.1− | 1.3+ |
| 2002 10 03 | 704 | 0.4− | 0.3− | 2002 11 01 | 704 | 0.1+ | 0.4+ | 2003 01 04 | 704 | 0.7− | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.2− | 2002 11 01 | 704 | 1.2− | 1.0− | 2004 03 29 | 691 | 0.3+ | 0.6+ |
| 2002 10 03 | 704 | 0.4− | 0.4− | 2002 11 04 | 608 | 0.0 | 0.2+ | 2004 03 29 | 691 | 0.1+ | 0.5+ |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2002 11 04 | 608 | 0.9− | 0.3− | 2004 03 29 | 691 | 0.5+ | 0.6+ |
| 2002 10 07 | 704 | 1.3+ | 0.0 | 2002 11 04 | 608 | 0.4− | 0.5− | 2004 04 23 | 691 | 0.4− | 0.7+ |
| 2002 10 07 | 704 | 0.1+ | 0.2+ | 2002 11 05 | 699 | 0.4+ | 0.3− | 2004 04 23 | 691 | 0.3+ | 0.7+ |
| 2002 10 07 | 704 | 0.3− | 0.3+ | 2002 11 05 | 699 | 0.6+ | 0.7+ | 2004 04 23 | 291 | 0.2+ | 0.4+ |
| 2002 10 07 | 704 | 0.2+ | 0.4+ | 2002 11 05 | 699 | 0.2+ | 0.5+ | 2004 04 23 | 691 | 0.6− | 0.5+ |
| 2002 10 07 | 704 | 0.3+ | 0.4− | 2002 11 05 | 699 | 0.4+ | 0.5+ | 2004 04 23 | 291 | 0.5+ | 0.2+ |
| 2002 10 08 | 699 | 0.1+ | 0.6+ | 2002 11 06 | 704 | 0.6− | 0.5+ | 2004 04 23 | 291 | 0.8+ | 0.2+ |
| 2002 10 08 | 699 | 0.4+ | 0.2+ | 2002 11 06 | 704 | 1.1− | 0.5+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2002 10 08 | 699 | 0.1+ | 0.2+ | 2002 11 06 | 704 | 0.7− | 0.9+ | 2006 10 01 | 691 | (0.1+ | 2.1−) |
| 2002 10 08 | 699 | 0.0 | 0.3+ | 2002 11 06 | 704 | 1.1− | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.4− |
| 2002 10 09 | 704 | 0.0 | 0.8+ | 2002 11 06 | 704 | 1.1− | 0.5+ | 2006 10 29 | G96 | 0.8− | 0.7− |
| 2002 10 09 | 704 | 0.7+ | 0.6+ | 2002 11 10 | 704 | 1.2− | 0.3+ | 2006 10 29 | G96 | 0.3− | 0.3− |
| 2002 10 09 | 704 | 0.3+ | 0.8+ | 2002 11 10 | 704 | (1.6− | 1.6+) | 2006 10 29 | G96 | 0.5− | 0.3− |
| 2002 10 09 | 704 | 0.0 | 0.6+ | 2002 11 10 | 704 | 1.2− | 0.6+ | 2006 10 29 | G96 | 0.3− | 0.2− |
| 2002 10 09 | 704 | 0.6− | 0.3+ | 2002 11 10 | 704 | 1.0− | 0.9+ | 2006 11 01 | G96 | 0.6− | 0.8− |
| 2002 10 11 | 644 | 0.2+ | 0.7− | 2002 11 22 | 644 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2002 10 11 | 704 | 0.1− | 0.9+ | 2002 11 22 | 644 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.7− |
| 2002 10 11 | 704 | 0.2− | 0.8+ | 2002 11 22 | 644 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.9− |
| 2002 10 11 | 704 | 0.3− | 0.7+ | 2002 12 10 | 704 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 10 11 | 644 | 0.1+ | 0.7− | 2002 12 10 | 704 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.9− |
| 2002 10 11 | 704 | 0.5− | 0.7+ | 2002 12 10 | 704 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2002 10 11 | 704 | 0.7− | 0.6+ | 2002 12 10 | 704 | 0.8+ | 0.0 | 2006 11 15 | G96 | 0.5− | 0.9− |
| 2002 10 11 | 644 | 0.8+ | 1.5− | 2002 12 11 | 704 | 0.4− | 0.4− | | | | |

**(142496)∗ 2002 TK$_{31}$ = 1998 SQ$_{64}$ = 2000 EF$_{126}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37986), M. E. Sansaturio (*MPO* 43231)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.95313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24697422 | $\omega$ | 20.70432 | | +0.23661057 | −0.96994162 | |
| $a$ | 2.5159479 | $\Omega$ | 55.64991 | | +0.88147128 | +0.18969408 | |
| $e$ | 0.0951369 | $i$ | 3.94645 | | +0.40868547 | +0.15241196 | |
| $P$ | 3.99 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 20 | 809 | (2.7+ | 2.1+) | 2002 11 22 | 644 | 0.2− | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.2+ |
| 1998 09 20 | 809 | 1.2+ | 0.8+ | 2003 12 19 | 691 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1998 09 20 | 809 | (1.7+ | 2.9+) | 2003 12 19 | 691 | 0.2+ | 0.7− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1998 09 20 | 809 | 0.2− | 0.4− | 2003 12 19 | 691 | 0.1− | 0.9− | 2006 10 15 | 691 | 0.1+ | 0.1− |
| 1998 09 20 | 809 | 0.5+ | 0.9− | 2004 01 18 | 691 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.1− |
| 1998 09 20 | 809 | (0.3+ | 2.2−) | 2004 01 18 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 1998 09 21 | 809 | (2.7+ | 2.2+) | 2004 01 18 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 1998 09 21 | 809 | (2.4+ | 2.3+) | 2004 01 18 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 1998 09 21 | 809 | (1.7+ | 2.8+) | 2004 01 18 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.2− |
| 1998 09 21 | 809 | (0.7− | 2.1−) | 2004 01 18 | 691 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 1998 09 21 | 809 | 0.0 | 1.9− | 2004 02 18 | 704 | 0.7− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 1998 09 21 | 809 | (0.2+ | 2.2−) | 2004 02 18 | 704 | 0.5− | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 1999 01 18 | 691 | 0.1+ | 0.8− | 2004 02 18 | 704 | 0.7− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 1999 01 18 | 691 | 0.1− | 0.8− | 2004 02 18 | 704 | 1.2− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2000 03 11 | 699 | 0.1− | 0.6+ | 2004 02 25 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2000 03 11 | 699 | 0.6+ | 0.8+ | 2004 02 25 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2000 03 11 | 699 | 1.2+ | 0.5+ | 2004 02 25 | 704 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.7+ | 0.5− |
| 2000 03 11 | 699 | 1.0+ | 0.3+ | 2004 02 25 | 704 | 1.2+ | 0.9+ | 2006 10 21 | 703 | 0.3− | 0.5− |
| 2000 03 12 | 704 | 1.2+ | 1.1− | 2004 02 25 | 704 | 1.1+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 2000 03 12 | 704 | 0.8+ | 0.2− | 2004 03 15 | 703 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.7− |
| 2000 03 12 | 704 | 0.6+ | 0.1− | 2004 03 15 | 704 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2000 03 12 | 704 | 0.3− | 0.6+ | 2004 03 15 | 703 | 1.1− | 1.0+ | 2006 10 23 | 691 | 0.2− | 0.8− |
| 2000 03 12 | 704 | 1.4+ | 0.3+ | 2004 03 15 | 704 | 0.2− | 0.0 | 2006 10 23 | 704 | 0.4− | 0.5+ |
| 2002 10 02 | 704 | 0.5+ | 0.9+ | 2004 03 15 | 703 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.5− | 1.3+ | 2004 03 15 | 704 | 0.4− | 0.6+ | 2006 10 23 | 704 | 1.2− | 0.7+ |
| 2002 10 02 | 704 | (0.2+ | 2.1+) | 2004 03 15 | 703 | 0.8− | 1.3+ | 2006 10 23 | 704 | 0.2− | 1.1+ |
| 2002 10 02 | 704 | 0.0 | 0.9+ | 2004 03 15 | 704 | 0.4− | 0.5+ | 2006 10 23 | 704 | 0.4+ | 1.0+ |
| 2002 10 03 | 704 | 1.1− | 0.2− | 2004 03 15 | 704 | 0.5+ | 1.2+ | 2006 10 28 | 691 | 0.2− | 0.6+ |
| 2002 10 03 | 704 | 0.9− | 0.5+ | 2004 03 19 | 704 | 0.1− | 1.3+ | 2006 10 28 | 691 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.6− | 2004 03 19 | 704 | 0.6+ | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.4− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2002 10 09 | 699 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2002 10 09 | 699 | 0.3− | 0.8+ | 2004 03 20 | 699 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2002 10 09 | 699 | 0.4− | 0.3− | 2004 03 20 | 699 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2002 10 09 | 699 | 0.4− | 0.9+ | 2004 03 20 | 699 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.9− | 1.4+ |
| 2002 10 11 | 644 | 0.3− | 0.3+ | 2004 03 20 | 699 | 0.6− | 0.3− | 2006 11 11 | 703 | 1.3− | 0.3+ |
| 2002 10 11 | 704 | 0.7− | 0.7+ | 2004 03 22 | 704 | (2.4+ | 0.9+) | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 10 11 | 704 | 0.5− | 0.0 | 2004 03 22 | 704 | 1.4+ | 0.9+ | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2002 10 11 | 704 | 0.1+ | 0.4− | 2004 03 22 | 704 | 0.0 | 1.3− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2002 10 11 | 644 | 0.6− | 0.4+ | 2004 03 25 | 704 | 0.0 | 0.9+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2002 10 11 | 704 | 0.8− | 0.2− | 2004 03 25 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.4+ | 0.6− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 644 | 0.1− | 0.4+ | 2004 03 25 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 1.4+ | 1.3+ |
| 2002 10 31 | 699 | 1.1− | 0.5+ | 2004 03 25 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | (2.0+ | 0.7+) |
| 2002 10 31 | 699 | 0.0 | 0.1− | 2004 03 25 | 704 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2002 10 31 | 699 | 0.4− | 0.3− | 2004 03 26 | 704 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.9+ | 0.3− |
| 2002 10 31 | 699 | 0.1− | 0.1− | 2004 03 26 | 704 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.3− | 0.2+ | 2004 03 26 | 704 | 0.3+ | 0.4− | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.3− | 0.4− | 2004 03 27 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.1− | 0.5+ | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2002 11 06 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 1.2+ |
| 2002 11 10 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.9+ | 0.3+ |
| 2002 11 10 | 704 | 1.1+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.9+ | 0.6− |
| 2002 11 10 | 704 | 1.2+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2002 11 10 | 704 | 0.9+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 26 | 704 | 0.7+ | 0.3+ |
| 2002 11 22 | 644 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 26 | 704 | 0.4− | 0.1+ |
| 2002 11 22 | 644 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 26 | 704 | 0.4+ | 0.4+ |

**(142497)∗ 2002 TL$_{31}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.13439 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24040348 | $\omega$ | 307.04226 | | +0.99319443 | +0.10272236 |
| $a$ | 2.5615857 | $\Omega$ | 47.13320 | | −0.06793126 | +0.89374399 |
| $e$ | 0.2000992 | $i$ | 4.29495 | | −0.09460532 | +0.43665752 |
| $P$ | 4.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.7+ | 0.3+ | 2002 11 06 | 704 | 0.3+ | 0.3− | 2006 09 22 | 704 | 0.5− | 0.7− |
| 2002 10 02 | 704 | 0.7− | 1.0+ | 2002 11 06 | 704 | 0.7+ | 0.2− | 2006 09 26 | 704 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2002 11 10 | 704 | 1.0− | 1.0− | 2006 09 26 | 704 | 0.3+ | 1.4− |
| 2002 10 02 | 704 | 0.9− | 0.8+ | 2002 11 10 | 704 | 0.1− | 0.5− | 2006 09 26 | 704 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.9− | 0.4+ | 2002 11 10 | 704 | 0.4+ | 0.3− | 2006 09 26 | 704 | 0.1+ | 0.6− |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2002 11 10 | 704 | 0.9− | 1.2− | 2006 09 26 | 704 | 0.3− | 0.2− |
| 2002 10 03 | 704 | 0.7− | 0.8+ | 2002 12 07 | 291 | 0.2− | 0.3− | 2006 09 28 | 704 | (1.0+ | 2.5−) |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2002 12 07 | 291 | 0.1− | 0.3− | 2006 09 28 | 704 | (1.9+ | 2.4−) |
| 2002 10 03 | 704 | 0.1− | 0.2+ | 2002 12 07 | 291 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.4+ | 0.1+ |
| 2002 10 07 | 704 | 0.1− | 0.3− | 2004 02 13 | 691 | 0.5+ | 0.3+ | 2006 09 28 | 704 | 0.5+ | 1.0− |
| 2002 10 07 | 704 | 0.1− | 1.4+ | 2004 02 13 | 691 | 0.6+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.6+ |
| 2002 10 07 | 704 | 0.3+ | 1.0+ | 2004 02 13 | 691 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.7+ | 0.1− |
| 2002 10 07 | 704 | 0.8− | 0.1+ | 2005 04 02 | G96 | 0.5− | 0.5+ | 2006 09 30 | 703 | 0.7+ | 0.5+ |
| 2002 10 09 | 699 | 0.8− | 1.2− | 2005 04 02 | G96 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.5− |
| 2002 10 09 | 699 | 0.4− | 0.1+ | 2005 04 02 | G96 | 0.7− | 0.7+ | 2006 09 30 | 704 | 0.4− | 0.9+ |
| 2002 10 09 | 699 | 0.2+ | 0.9+ | 2005 04 02 | G96 | 0.7− | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.6+ |
| 2002 10 09 | 704 | 0.6+ | 0.5+ | 2005 04 16 | 691 | 0.5+ | 0.5+ | 2006 09 30 | 704 | 0.3− | 0.1+ |
| 2002 10 09 | 699 | 0.2− | 0.7+ | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.2+ |
| 2002 10 09 | 704 | 1.2+ | 0.3+ | 2005 04 16 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.0 | 1.0+ | 2005 05 10 | G96 | 0.2− | 0.5+ | 2006 10 15 | 106 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 1.2+ | 1.1+ | 2005 05 10 | G96 | 0.2− | 0.4+ | 2006 10 15 | 106 | 0.2+ | 0.3− |
| 2002 10 09 | 704 | 0.5− | 1.0+ | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 10 15 | 106 | 0.4− | 1.2− |
| 2002 10 11 | 644 | 0.2− | 0.1− | 2005 05 10 | G96 | 0.0 | 0.4+ | 2006 10 15 | 106 | 0.4+ | 0.2+ |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 0.5− | 2006 09 12 | 703 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 10 11 | 644 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.4+ | 0.9− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.1− | 0.8− | 2006 09 16 | 704 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 1.3− | 2006 09 16 | 704 | 0.1− | 0.9+ | 2006 10 21 | 703 | 0.9− | 0.9+ |
| 2002 10 11 | 644 | 0.2− | 0.1− | 2006 09 16 | 704 | (1.7+ | 0.3+) | 2006 10 21 | 703 | 1.4− | 1.1+ |
| 2002 10 31 | 608 | 0.9− | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 10 31 | 608 | 0.4− | 0.2− | 2006 09 18 | 703 | 0.7+ | 0.6+ | 2006 10 21 | 703 | 1.0− | 1.2+ |
| 2002 10 31 | 608 | 0.2− | 0.3− | 2006 09 18 | 703 | 1.3+ | 0.8+ | 2006 10 21 | 703 | 1.4− | 1.0+ |
| 2002 11 01 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 10 22 | 704 | 0.0 | 1.1− |
| 2002 11 01 | 704 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.0 | 0.7+ | 2006 10 22 | 704 | 0.2− | 0.4+ |
| 2002 11 01 | 704 | (1.7− | 0.1+) | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 22 | 704 | 0.8− | 0.0 |
| 2002 11 04 | 291 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 704 | 0.3− | 0.4+ |
| 2002 11 04 | 291 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.9+ | 1.5+ | 2006 10 22 | 704 | 0.1+ | 0.7− |
| 2002 11 04 | 291 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 11 06 | 704 | 1.1+ | 1.0+ | 2006 09 22 | 704 | 0.3+ | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.2+ | 0.9− | 2006 09 22 | 704 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 11 06 | 704 | 0.3+ | 0.6+ | 2006 09 22 | 704 | 0.4+ | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.1− |

**(142498)∗ 2002 TY$_{31}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.33739 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25819571 | $\omega$ | 211.00553 | | +0.65216557 | −0.75736339 |
| $a$ | 2.4425120 | $\Omega$ | 198.35635 | | +0.71515935 | +0.62904988 |
| $e$ | 0.0729243 | $i$ | 5.99198 | | +0.25145014 | +0.17520542 |
| $P$ | 3.82 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 30 | 691 | 0.2+ | 0.8+ | 2004 02 23 | 704 | 1.1+ | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 1997 05 30 | 691 | 0.0 | 1.0+ | 2004 02 23 | 704 | 0.2− | 0.8+ | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 1997 05 30 | 691 | 0.1+ | 1.0+ | 2004 02 25 | 704 | 1.1− | 0.8− | 2006 10 23 | G96 | 0.2− | 0.2+ |
| 1998 10 24 | 691 | 0.5+ | 0.5+ | 2004 02 25 | 704 | 0.9− | 0.7+ | 2006 10 23 | G96 | 0.5+ | 0.2− |
| 1998 10 24 | 691 | 0.2+ | 0.4+ | 2004 02 25 | 704 | 0.7+ | 0.3− | 2006 10 23 | G96 | 0.6+ | 0.1− |
| 1998 10 24 | 691 | 0.3+ | 0.3+ | 2004 02 25 | 704 | 1.2+ | 0.4+ | 2006 11 02 | 703 | 0.2+ | 0.7+ |
| 1998 10 28 | 691 | 0.8− | 0.4− | 2004 03 13 | 644 | 0.4+ | 0.4+ | 2006 11 02 | 703 | 0.1+ | 0.3+ |
| 1998 10 28 | 691 | (0.1− | 6.1−) | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 11 02 | 703 | 1.0− | 0.8− |
| 1998 10 28 | 691 | 0.8− | 1.0− | 2004 03 13 | 644 | 0.6+ | 0.6+ | 2006 11 02 | 703 | 0.6− | 0.9− |
| 2002 10 02 | 704 | 0.4− | 1.3+ | 2004 03 16 | 704 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | 0.5− | 0.2− | 2004 03 16 | 704 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.1− | 0.6+ |
| 2002 10 02 | 704 | 0.1+ | 0.6− | 2004 03 16 | 704 | 0.7− | 1.0− | 2006 11 13 | 703 | 1.1− | 0.4− |
| 2002 10 03 | 704 | 1.0+ | 0.6+ | 2004 03 16 | 704 | 0.9− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 1.4+ | 0.3+ | 2004 03 20 | 704 | (0.3+ | 1.6+) | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 1.1+ | 0.9+ | 2004 03 20 | 704 | 0.9+ | 0.1− | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2004 03 20 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2002 10 07 | 704 | (2.3+ | 0.7−) | 2004 03 20 | 704 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.2− | 0.5+ |
| 2002 10 07 | 704 | 0.6+ | 0.7− | 2004 03 20 | 704 | 0.1+ | 0.5− | 2006 11 17 | 704 | 1.5+ | 0.4+ |
| 2002 10 07 | 704 | 0.7− | 1.4− | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2002 10 08 | 699 | 0.7+ | 0.7+ | 2004 03 23 | 704 | 0.8+ | 1.2+ | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2002 10 08 | 699 | (1.9+ | 0.9+) | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2002 10 08 | 699 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2002 10 08 | 699 | 0.4+ | 0.9+ | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2002 10 10 | 704 | 0.2+ | 0.9+ | 2004 03 27 | 704 | (1.9− | 0.8+) | 2006 11 20 | 704 | 0.6− | 0.2+ |
| 2002 10 10 | 704 | 0.1+ | 0.1− | 2004 03 27 | 704 | 1.4− | 0.0 | 2006 11 20 | 704 | 1.3+ | 0.9+ |
| 2002 10 10 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.0 | 1.0− | 2006 11 20 | 704 | 0.1+ | 1.4+ |
| 2002 10 10 | 704 | 0.2− | 0.5− | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.9+ | 0.5− |
| 2002 10 11 | 704 | 0.8+ | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.5+ | 0.4− |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2002 10 11 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 11 24 | G96 | 0.5+ | 0.4− |
| 2002 11 05 | 699 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 2.1− | 0.4+ |
| 2002 11 05 | 699 | (1.6+ | 0.2+) | 2006 10 20 | 644 | 0.1+ | 0.6+ | 2006 11 28 | 704 | 1.8− | 0.8+ |
| 2002 11 05 | 699 | 0.6− | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.5− | 0.1+ |
| 2002 11 05 | 699 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.0 | 0.4− |
| 2004 02 23 | 704 | (1.7+ | 0.5+) | 2006 10 23 | G96 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.7− | 0.2+ |

**(142499)∗ 2002 TE$_{32}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.93004 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25876847 | $\omega$ | 34.78298 | | +0.46847781 | −0.88172319 |
| $a$ | 2.4389065 | $\Omega$ | 27.40616 | | +0.78068596 | +0.38368269 |
| $e$ | 0.1017167 | $i$ | 6.93939 | | +0.41359156 | +0.27450285 |
| $P$ | 3.81 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.4− | 0.6+ | 2002 11 06 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.9− | 0.4− |
| 1998 09 25 | 699 | 0.8− | 1.9+ | 2002 11 06 | 704 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.8− | 0.3− |
| 1998 09 25 | 699 | 0.8+ | 1.3+ | 2002 11 06 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.4+ | 0.5− | 2002 11 12 | 644 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.8− | 0.0 | | |
| 2000 03 12 | 704 | 0.2− | 0.2− | 2002 11 12 | 644 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.5+ | 0.1+ | | |
| 2000 03 12 | 704 | 1.0− | 1.1− | 2002 11 12 | 644 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.3− | | |
| 2002 10 02 | 704 | 0.5+ | 0.4− | 2002 11 22 | 644 | 0.1+ | 1.4+ | 2006 10 27 | 703 | 0.4+ | 0.5+ | | |
| 2002 10 02 | 704 | 0.2− | 0.1+ | 2002 11 22 | 644 | 0.2− | 1.1+ | 2006 10 27 | 703 | 0.1− | 0.4− | | |
| 2002 10 02 | 704 | 0.6− | 0.1+ | 2002 11 22 | 644 | 0.2+ | 1.3+ | 2006 11 14 | 703 | 0.5− | 0.2− | | |
| 2002 10 02 | 704 | 0.1− | 0.4− | 2002 12 05 | 938 | (1.9− | 1.0+) | 2006 11 14 | 703 | 0.9− | 1.3− | | |
| 2002 10 03 | 704 | 0.7+ | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.5− | 2006 11 14 | 703 | 0.3− | 1.2− | | |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2004 03 15 | 704 | 0.6+ | 1.0+ | 2006 11 14 | 703 | (0.8+ | 1.5−) | | |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.8+ | 0.4+ | 2006 11 15 | 704 | (0.7+ | 2.1+) | | |
| 2002 10 03 | 704 | 0.9− | 1.2+ | 2004 03 15 | 704 | 0.5+ | 0.7+ | 2006 11 15 | 704 | 1.0+ | 1.2+ | | |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2006 11 15 | 704 | (0.1+ | 2.1+) | | |
| 2002 10 08 | 699 | (1.5− | 0.2+) | 2004 03 15 | 938 | (0.3− | 2.1+) | 2006 11 15 | 704 | (1.7+ | 0.1−) | | |
| 2002 10 08 | 699 | 0.4− | 1.2− | 2004 03 18 | 938 | 0.8− | 0.5− | 2006 11 16 | 704 | 0.7+ | 0.3+ | | |
| 2002 10 08 | 699 | 0.5− | 0.7+ | 2004 03 18 | 938 | 1.0− | 0.4+ | 2006 11 16 | 704 | 0.8+ | 0.6+ | | |
| 2002 10 08 | 699 | 1.3− | 0.3− | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.3− | | |
| 2002 10 09 | 704 | 0.5− | 0.2+ | 2004 03 22 | 704 | 0.5+ | 0.1− | 2006 11 16 | 704 | 0.0 | 0.8+ | | |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2004 03 22 | 704 | 1.4+ | 0.3+ | 2006 11 16 | 704 | 0.5+ | 0.7+ | | |
| 2002 10 09 | 704 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2002 10 09 | 704 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.4+ | 1.0+ | 2006 11 17 | G96 | 0.2+ | 0.4− | | |
| 2002 10 09 | 704 | 0.5− | 0.2− | 2004 03 28 | 704 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2004 03 28 | 704 | 0.8+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2002 10 11 | 704 | 0.4− | 0.4− | 2004 03 28 | 704 | 0.8− | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2004 03 28 | 704 | 0.7+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.6− | | |
| 2002 10 11 | 704 | 0.4− | 0.3− | 2004 03 28 | 704 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.0 | | |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.8+ | 0.2− | | |
| 2002 10 30 | 291 | 0.4− | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | (1.6+ | 0.7−) | | |
| 2002 10 30 | 291 | 0.3− | 0.3+ | 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.3− | | |
| 2002 10 30 | 291 | 0.3− | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.3− | | |
| 2002 10 31 | 644 | 0.2+ | 0.6+ | 2004 04 19 | 704 | 0.8+ | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.4− | | |
| 2002 10 31 | 644 | 0.0 | 0.5+ | 2004 04 19 | 704 | 1.0+ | 0.7+ | 2006 11 22 | 704 | 1.0− | 0.3+ | | |
| 2002 10 31 | 644 | 0.3− | 0.8+ | 2004 04 19 | 704 | 0.9− | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.4− | | |
| 2002 10 31 | 608 | (1.7− | 0.6+) | 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.3− | | |
| 2002 10 31 | 608 | 1.1− | 0.9+ | 2004 04 25 | 691 | 0.2− | 0.5+ | 2006 11 22 | 704 | 0.3+ | 0.8− | | |
| 2002 10 31 | 608 | 1.0− | 1.1+ | 2004 04 25 | 691 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.3− | 0.3+ | | |
| 2002 11 03 | 704 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.4− | | |
| 2002 11 03 | 704 | 1.3+ | 0.9+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 27 | 704 | 1.3+ | 0.5+ | | |
| 2002 11 03 | 704 | 1.2+ | 1.2+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 27 | 704 | 0.1− | 0.2− | | |
| 2002 11 06 | 704 | 1.0+ | 0.3− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.3− | 0.6+ | | |

**(142500)∗ 2002 TM$_{32}$ = 1999 XX$_{201}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37987)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.91057 | | (2000.0) | | | |
| $n$ | 0.30334388 | $\omega$ | 79.08918 | | −0.11099428 | −0.99352342 |
| $a$ | 2.1937100 | $\Omega$ | 17.33972 | | +0.87697209 | −0.10942746 |
| $e$ | 0.0731284 | $i$ | 4.68063 | | +0.46754702 | −0.03060781 |
| $P$ | 3.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.3+ | 1.2+ | 2002 11 12 | 704 | 1.1− | 0.7− | 2005 08 29 | 704 | 0.4− | 0.8− | | |
| 1999 12 12 | 704 | 0.3+ | 0.0 | 2002 11 12 | 644 | 0.0 | 0.5+ | 2005 08 29 | 704 | 1.3+ | 1.1+ | | |
| 1999 12 12 | 704 | 0.3− | 0.6− | 2002 11 12 | 704 | 0.6+ | 1.4+ | 2005 08 29 | 704 | 0.3− | 0.3+ | | |
| 1999 12 15 | 704 | 0.1− | 0.1+ | 2002 11 12 | 644 | 0.0 | 0.3+ | 2005 09 06 | 699 | 0.3− | 0.6− | | |
| 1999 12 15 | 704 | 0.5+ | 0.4− | 2002 11 12 | 704 | 0.7− | 0.3+ | 2005 09 06 | 699 | 0.5− | 0.6− | | |
| 1999 12 15 | 704 | 0.5+ | 0.2− | 2002 11 12 | 704 | 1.5− | 0.6− | 2005 09 06 | 699 | 0.7− | 0.5+ | | |
| 1999 12 15 | 704 | 0.5+ | 1.2− | 2002 11 12 | 704 | 0.9− | 0.6− | 2005 09 06 | 699 | 0.2+ | 1.3− | | |
| 2000 01 02 | 704 | 0.0 | 1.3+ | 2002 11 22 | 644 | 0.4+ | 0.6+ | 2005 09 12 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 02 | 704 | 0.2− | 0.7+ | 2002 11 22 | 644 | 0.2+ | 0.4+ | 2005 09 12 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 02 | 704 | 0.8+ | 0.1+ | 2002 11 22 | 644 | 0.1+ | 0.1+ | 2005 09 12 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.3− | 0.6+ | 2002 12 01 | 704 | (0.3+ | 1.8+) | 2005 09 22 | 644 | 0.2− | 0.1− | | |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2002 12 01 | 704 | (1.2+ | 2.1+) | 2005 09 22 | 644 | 0.3− | 0.3− | | |
| 2002 10 02 | 704 | 0.7+ | 0.4− | 2002 12 01 | 704 | (1.0+ | 2.2+) | 2005 09 22 | 644 | 0.2− | 0.4− | | |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2004 04 12 | 699 | 0.3+ | 0.0 | 2005 09 24 | 644 | 0.5− | 0.1− | | |
| 2002 10 03 | 704 | 0.9− | 0.0 | 2004 04 12 | 644 | 0.4+ | 0.8+ | 2005 09 24 | 644 | 0.0 | 0.2− | | |
| 2002 10 03 | 704 | 0.9− | 0.6− | 2004 04 12 | 699 | 0.0 | 0.3− | 2005 09 24 | 644 | 0.2− | 0.0 | | |
| 2002 10 03 | 704 | 1.3− | 0.8+ | 2004 04 12 | 644 | 0.1+ | 0.8+ | 2005 10 01 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 03 | 704 | (1.6− | 0.4+) | 2004 04 12 | 699 | 0.3+ | 0.4− | 2005 10 01 | 704 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 0.2− | 1.1− | 2004 04 12 | 699 | 0.1− | 0.2+ | 2005 10 01 | 704 | 0.1− | 0.0 | | |
| 2002 10 07 | 704 | 0.7− | 0.8+ | 2004 04 12 | 644 | 0.1+ | 0.7+ | 2005 10 01 | 704 | 0.5− | 1.1− | | |
| 2002 10 07 | 704 | 0.6+ | 0.7+ | 2004 04 15 | 699 | 0.1+ | 0.0 | 2005 10 01 | 704 | 0.9+ | 0.6+ | | |
| 2002 10 07 | 704 | 0.0 | 0.4+ | 2004 04 15 | 699 | 0.8+ | 1.3+ | 2005 10 05 | 704 | 0.6+ | 1.5+ | | |
| 2002 10 07 | 704 | 0.5− | 0.1+ | 2004 04 15 | 699 | 0.5− | 1.3+ | 2005 10 05 | 704 | 0.6+ | 1.0+ | | |
| 2002 10 07 | 704 | 0.2− | 0.4+ | 2004 04 15 | 699 | 0.0 | 0.3− | 2005 10 05 | 704 | 0.6− | 0.9+ | | |
| 2002 10 08 | 699 | (1.6+ | 1.1+) | 2004 04 20 | 704 | 0.6+ | 0.8+ | 2005 10 05 | 704 | 0.5+ | 1.1+ | | |
| 2002 10 08 | 699 | 0.8− | 0.4+ | 2004 04 20 | 704 | 0.4+ | 0.8+ | 2005 10 06 | G96 | 0.0 | 0.4− | | |
| 2002 10 08 | 699 | 0.4− | 1.1+ | 2004 04 20 | 704 | 0.0 | 0.7+ | 2005 10 06 | G96 | 0.0 | 0.4− | | |
| 2002 10 08 | 699 | (2.0+ | 1.4+) | 2004 04 20 | 704 | 0.3+ | 0.2+ | 2005 10 06 | G96 | 0.3− | 0.3− | | |
| 2002 10 09 | 704 | 0.1− | 0.0 | 2004 04 25 | 703 | 1.1+ | 0.3− | 2005 10 06 | G96 | 0.2− | 0.2− | | |
| 2002 10 09 | 704 | 0.1− | 0.2+ | 2004 04 25 | 703 | 0.1+ | 0.3+ | 2005 10 07 | 699 | 0.7− | 0.4+ | | |
| 2002 10 09 | 704 | 0.1− | 0.5+ | 2004 04 25 | 703 | 0.1+ | 0.6+ | 2005 10 07 | 699 | 1.3+ | 1.1+ | | |
| 2002 10 09 | 704 | 0.1− | 0.6+ | 2004 04 25 | 703 | 0.5− | 1.2+ | 2005 10 07 | 699 | 0.2+ | 0.6+ | | |
| 2002 10 09 | 704 | 0.6+ | 0.3+ | 2004 05 13 | 704 | 0.8− | 0.3+ | 2005 10 07 | 699 | 1.4− | 1.0+ | | |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2004 05 13 | 704 | (0.2− | 1.5+) | 2005 10 28 | G96 | 0.2− | 0.5− | | |
| 2002 10 11 | 704 | 0.8− | 0.2− | 2004 05 13 | 704 | 0.4+ | 1.2+ | 2005 10 28 | G96 | 0.1+ | 0.9− | | |
| 2002 10 11 | 704 | 0.4− | 0.5+ | 2004 05 13 | 704 | 0.5+ | 1.0+ | 2005 10 28 | G96 | 0.2+ | 0.1− | | |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2004 05 21 | 691 | 0.1+ | 0.4+ | 2005 11 25 | G96 | (1.5+ | 0.5−) | | |
| 2002 10 11 | 704 | 0.6+ | 0.4+ | 2004 05 21 | 691 | 0.4+ | 0.5+ | 2005 11 25 | G96 | (0.3+ | 1.7−) | | |
| 2002 10 28 | 049 | 0.7− | 0.4+ | 2004 05 21 | 691 | 0.1+ | 0.4+ | 2005 11 25 | G96 | 0.5− | 0.3− | | |
| 2002 10 28 | 049 | 0.7− | 0.5− | 2005 08 25 | 644 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.1− | 0.4− | | |
| 2002 10 28 | 049 | 0.5− | 0.2− | 2005 08 25 | 644 | 0.2− | 0.1− | 2005 12 01 | G96 | 0.2− | 0.3− | | |
| 2002 11 08 | 704 | 0.5+ | 0.1+ | 2005 08 25 | 644 | 0.1+ | 0.0 | 2005 12 01 | G96 | 0.0 | 0.1− | | |
| 2002 11 08 | 704 | 0.8+ | 0.6+ | 2005 08 26 | 699 | 1.4+ | 1.1+ | 2005 12 01 | G96 | 0.1+ | 0.1− | | |
| 2002 11 08 | 704 | 0.3+ | 0.8+ | 2005 08 26 | 699 | 0.8+ | 0.7+ | 2005 12 01 | G96 | 0.3− | 0.2− | | |
| 2002 11 08 | 704 | (0.4+ | 4.1+) | 2005 08 26 | 699 | 0.0 | 1.3+ | 2006 11 12 | G96 | 0.2+ | 0.1− | | |
| 2002 11 10 | 049 | 0.2+ | 0.1+ | 2005 08 26 | 699 | 1.0− | 0.8+ | 2006 11 12 | G96 | 0.4− | 0.4− | | |
| 2002 11 10 | 049 | 0.2− | 0.2+ | 2005 08 26 | 699 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.4+ | | |
| 2002 11 10 | 049 | 0.2− | 0.5+ | 2005 08 26 | 699 | 0.1− | 0.4− | 2006 11 12 | G96 | 1.3+ | 1.1+ | | |
| 2002 11 11 | 049 | 1.1− | 0.3− | 2005 08 26 | 699 | 0.8+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.4+ | | |
| 2002 11 11 | 049 | 1.2− | 0.3+ | 2005 08 26 | 699 | 0.0 | 0.6− | 2006 11 19 | 691 | 0.2− | 0.4+ | | |
| 2002 11 11 | 049 | (1.6− | 0.4+) | 2005 08 29 | 704 | 0.3+ | 1.0+ | 2006 11 19 | 691 | 0.6+ | 0.3+ | | |
| 2002 11 12 | 644 | 0.4− | 0.5+ | 2005 08 29 | 704 | 0.2− | 0.2+ | | | | | | |

**(142501)∗ 2002 TX$_{32}$ = 2003 YZ$_{43}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 72720)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.68852 | | (2000.0) | | | |
| $n$ | 0.24213098 | $\omega$ | 297.64593 | | −0.23080706 | +0.97273382 |
| $a$ | 2.5493872 | $\Omega$ | 318.98892 | | −0.88005572 | −0.21867000 |
| $e$ | 0.0263346 | $i$ | 1.98573 | | −0.41500607 | −0.07728092 |
| $P$ | 4.07 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 691 | 0.3+ | 0.1+ | 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 1.1− | 0.1+ | | |
| 2000 02 12 | 691 | 0.1− | 0.3+ | 2004 01 19 | 699 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.1− | 1.3− | | |
| 2000 02 12 | 691 | 0.3− | 0.3− | 2004 01 19 | 699 | (1.7+ | 1.5−) | 2006 08 28 | 691 | 0.1− | 0.4+ | | |
| 2000 02 12 | 691 | 0.3+ | 0.5+ | 2004 01 19 | 699 | 0.3+ | 0.1+ | 2006 08 28 | 691 | 0.4− | 0.4+ | | |
| 2000 02 12 | 691 | 0.4+ | 0.8+ | 2004 01 19 | 699 | 0.3− | 0.4+ | 2006 08 28 | 691 | 0.3− | 0.4+ | | |
| 2000 02 12 | 691 | 0.2− | 0.7+ | 2004 01 24 | 704 | 0.8+ | 1.0+ | 2006 09 13 | 644 | 0.0 | 0.2+ | | |
| 2002 10 02 | 704 | 0.7+ | 0.4+ | 2004 01 24 | 704 | 0.6+ | 0.2+ | 2006 09 13 | 644 | 0.5− | 0.3+ | | |
| 2002 10 02 | 704 | 0.4− | 0.1− | 2004 01 24 | 704 | 0.0 | 0.3+ | 2006 09 13 | 644 | 0.5− | 0.4+ | | |
| 2002 10 02 | 704 | 0.3− | 0.1+ | 2004 01 24 | 704 | (1.9+ | 0.2+) | 2006 09 14 | 644 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.9+ | 2004 01 24 | 704 | 0.6− | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.2+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.7− | 2005 05 11 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.4− | 0.1+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2005 05 11 | 644 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | 0.1− | 0.6+ | 2005 05 11 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 691 | 0.1− | 0.3+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.4− | 2005 05 16 | 644 | 0.0 | 0.3+ | 2006 09 20 | 691 | 0.3− | 0.0 | | |
| 2002 10 11 | 704 | 0.2+ | 0.6− | 2005 05 16 | 644 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.9+ | 0.6− | 2005 05 16 | 644 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.1− | 0.9− | 2005 05 19 | 644 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.2− | 1.1− | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2003 12 19 | 691 | 0.2+ | 0.2− | 2005 05 19 | 644 | 0.2− | 0.3− | 2006 09 29 | 291 | 0.6+ | 0.4+ |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2005 05 30 | E12 | 0.3+ | 0.5+ | 2006 09 29 | 291 | 0.1+ | 0.3+ |
| 2003 12 19 | 691 | 0.1+ | 0.2− | 2005 05 30 | E12 | (1.9− | 1.6+) | 2006 09 29 | 291 | 0.4+ | 0.2+ |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2005 05 30 | E12 | (1.5+ | 2.1+) | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2005 05 30 | E12 | 0.6+ | 0.2− | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2003 12 21 | 691 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.8+ | 0.6− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2003 12 21 | 691 | 0.0 | 0.2− | 2006 08 28 | 703 | (2.1− | 0.7+) | 2006 10 23 | G96 | 0.0 | 0.3− |

**(142502)∗ 2002 TA$_{34}$ = 2004 DB$_{14}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.84283 | | (2000.0) | | | |
| $n$ | 0.24564944 | $\omega$ | 315.01707 | | +0.96141110 | −0.27117694 |
| $a$ | 2.5249854 | $\Omega$ | 60.76920 | | +0.26499520 | +0.86747385 |
| $e$ | 0.1382793 | $i$ | 3.04706 | | +0.07393408 | +0.41707575 |
| $P$ | 4.01 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 10 | 699 | 0.3+ | 0.2+ | 2004 02 19 | 704 | (1.7+ | 0.6+) | 2006 10 01 | 704 | 0.2+ | 0.3+ |
| 1998 10 10 | 699 | 0.3+ | 0.4− | 2004 03 20 | 291 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 1.2+ | 0.9− |
| 1998 10 10 | 699 | 0.4− | 1.2+ | 2004 03 20 | 291 | 0.2− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.4+ | 0.6+ | 2004 03 20 | 291 | 0.0 | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.6+ | 0.8+ | 2005 05 13 | G96 | 0.2+ | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.6+ | 0.6+ | 2005 05 13 | G96 | 0.6+ | 0.0 | 2006 10 16 | 703 | (1.6− | 0.5+) |
| 2002 10 03 | 704 | 0.2− | 1.0+ | 2005 05 13 | G96 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2005 05 13 | G96 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2005 06 13 | G96 | 0.1+ | 1.0+ | 2006 10 16 | 703 | 0.6− | 0.8− |
| 2002 10 03 | 704 | 0.6+ | 0.2+ | 2005 06 13 | G96 | 0.1− | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 10 07 | 644 | 0.5− | 0.4+ | 2005 06 13 | G96 | 0.2+ | 0.9+ | 2006 10 19 | 644 | 0.3+ | 0.3− |
| 2002 10 07 | 644 | 0.6− | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 10 07 | 644 | 0.7− | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 10 11 | 704 | (1.7− | 0.1+) | 2006 08 18 | 644 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 10 11 | 704 | 0.6− | 0.8+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.6− | 0.0 | 2006 09 22 | 704 | 1.5− | 0.5− | 2006 10 22 | 703 | 0.9+ | 0.6+ |
| 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 1.0+ | 0.4+ |
| 2002 10 11 | 704 | 0.7− | 0.5+ | 2006 09 22 | 704 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2002 10 31 | 704 | 0.3− | 0.3− | 2006 09 22 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | (2.8− | 0.3+) | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2002 10 31 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | 1.0− | 1.5− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 704 | 0.4− | 0.0 | 2006 09 26 | 704 | 1.1− | 1.0+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2002 10 31 | 704 | 0.9− | 0.6− | 2006 09 26 | 704 | 1.3+ | 0.8+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2004 02 16 | 691 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.6− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2004 02 16 | 691 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2004 02 19 | 704 | 1.0+ | 1.0+ | 2006 09 29 | 699 | 0.2+ | 0.9− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2004 02 19 | 704 | 0.7+ | 1.0+ | 2006 10 01 | 704 | 0.7+ | 0.4+ | | | | |
| 2004 02 19 | 704 | 1.0+ | 0.7− | 2006 10 01 | 704 | 0.4+ | 0.4− | | | | |

**(142503)∗ 2002 TT$_{34}$ = 2005 JB$_{23}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75677)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.16816 | | (2000.0) | | | |
| $n$ | 0.23987540 | $\omega$ | 305.70809 | | +0.76098280 | +0.64864609 |
| $a$ | 2.5653438 | $\Omega$ | 13.86730 | | −0.57668017 | +0.68531845 |
| $e$ | 0.2194451 | $i$ | 3.05761 | | −0.29722915 | +0.33105419 |
| $P$ | 4.11 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 0.1− | 0.4+ | 2002 10 11 | 704 | 0.0 | 0.8− | 2006 09 17 | 704 | 0.1+ | 0.4+ |
| 1998 10 20 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.7− | 2006 09 17 | 704 | 0.2+ | 1.1+ |
| 1998 10 20 | 691 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.9− | 0.4− | 2006 09 20 | 704 | 0.1− | 0.7+ |
| 2001 03 23 | 691 | 0.3+ | 0.3+ | 2002 11 05 | 291 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.5− | 1.0+ |
| 2001 03 23 | 691 | 0.1+ | 0.5+ | 2002 11 05 | 291 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.6+ | 1.3+ |
| 2001 03 23 | 691 | 0.1+ | 0.2+ | 2002 11 05 | 291 | 0.1− | 0.3+ | 2006 09 22 | A50 | 0.1− | 0.7− |
| 2002 09 07 | 704 | 1.0− | 0.3− | 2005 03 12 | 691 | 0.4− | 0.6+ | 2006 09 22 | A50 | 0.8− | 0.1+ |
| 2002 09 07 | 704 | 0.0 | 0.3+ | 2005 03 12 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.8− |
| 2002 09 07 | 704 | 0.4− | 0.3+ | 2005 03 12 | 691 | 0.6+ | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.9− |
| 2002 10 02 | 704 | 0.2− | 1.2+ | 2005 05 02 | 691 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.8− | 0.6− |
| 2002 10 02 | 704 | 0.7+ | 0.1− | 2005 05 02 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.9− |
| 2002 10 02 | 704 | 0.7+ | 0.6− | 2005 05 02 | 691 | 0.2+ | 0.6+ | 2006 10 09 | 644 | 0.1− | 0.6+ |
| 2002 10 03 | 704 | 1.1− | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2005 05 08 | G96 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2005 05 08 | G96 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.3+ | 1.3+ |
| 2002 10 03 | 704 | 0.7− | 0.1− | 2005 05 08 | G96 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.6− |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.9+ | 2006 08 17 | 644 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.5− | 1.0+ |
| 2002 10 04 | 704 | 0.1+ | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | 0.4+ | 0.9+ | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.5+ | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2002 10 04 | 704 | 0.9− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.6− |
| 2002 10 05 | 291 | (0.2− | 1.6+) | 2006 08 18 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.4− |
| 2002 10 05 | 291 | 0.2− | 0.3− | 2006 08 18 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2002 10 05 | 291 | 0.1− | 0.3− | 2006 08 18 | 691 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.5− |
| 2002 10 06 | 599 | 0.4+ | 0.1+ | 2006 08 21 | 807 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2002 10 06 | 599 | 0.3+ | 0.1+ | 2006 08 21 | 807 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2002 10 06 | 599 | 0.4+ | 0.2+ | 2006 08 22 | 807 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2002 10 06 | 599 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2002 10 07 | 644 | 0.4− | 1.5+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2002 10 07 | 644 | 0.2− | 1.3+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2002 10 07 | 644 | 0.2− | 1.2+ | 2006 09 17 | 704 | 0.9+ | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.7− | 2006 09 17 | 704 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.5+ | 2006 11 21 | G96 | 0.5+ | 0.0 |

**(142504)∗ 2002 TS$_{35}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.08197 | | (2000.0) | | | |
| $n$ | 0.22164614 | $\omega$ | 90.04238 | | +0.44321343 | +0.89039642 |
| $a$ | 2.7041406 | $\Omega$ | 207.03563 | | −0.88611724 | +0.41769201 |
| $e$ | 0.1040788 | $i$ | 13.18910 | | −0.13549205 | +0.18090770 |
| $P$ | 4.45 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.7− | 1.1+ | 2006 08 27 | 699 | 0.4+ | 0.7+ |
| 2000 03 04 | 645 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.8+ | 2006 08 27 | 699 | 1.0+ | 0.1+ |
| 2001 05 26 | 704 | 0.4− | 0.8− | 2002 10 11 | 704 | 0.2− | 0.1− | 2006 08 27 | 699 | 0.7+ | 0.2− |
| 2001 05 26 | 704 | 0.4− | 0.5− | 2002 10 31 | 699 | (1.2+ | 1.7+) | 2006 08 28 | 704 | (0.5+ | 1.7+) |
| 2001 05 26 | 704 | 0.3+ | 0.2+ | 2002 10 31 | 699 | 0.5− | 1.5+ | 2006 08 28 | 704 | 0.6− | 0.5+ |
| 2001 05 26 | 704 | 0.1+ | 0.2+ | 2002 10 31 | 699 | 0.1+ | 0.3+ | 2006 08 28 | 704 | 0.3+ | 0.8+ |
| 2001 05 26 | 704 | 0.7+ | 0.0 | 2002 10 31 | 699 | 0.3− | 0.5− | 2006 08 30 | 699 | 0.3− | 0.8+ |
| 2001 06 13 | 691 | 0.6− | 0.3+ | 2005 03 17 | G96 | 0.5− | 0.1+ | 2006 08 30 | 699 | 0.2− | 0.6+ |
| 2001 06 13 | 691 | 0.4− | 0.6+ | 2005 03 17 | G96 | 0.5− | 0.1− | 2006 08 30 | 699 | 0.5+ | 0.3− |
| 2001 06 13 | 691 | 0.2− | 0.4+ | 2005 03 17 | G96 | 0.3− | 0.0 | 2006 08 30 | 699 | 1.1− | 0.6+ |
| 2001 07 21 | 691 | 0.5+ | 0.0 | 2005 03 17 | G96 | 0.5− | 0.1− | 2006 09 11 | 703 | 1.1− | 0.7− |
| 2001 07 21 | 691 | 0.2+ | 0.4− | 2005 04 05 | 699 | 0.3+ | 1.1+ | 2006 09 11 | 703 | 0.3− | 0.5− |
| 2001 07 21 | 691 | 0.5+ | 0.2+ | 2005 04 05 | 699 | 0.7+ | 0.5+ | 2006 09 11 | 703 | 0.6− | 1.1− |
| 2002 10 02 | 704 | 1.1+ | 0.4+ | 2005 04 05 | 699 | 1.0− | 0.3− | 2006 09 11 | 703 | 0.3+ | 1.2− |
| 2002 10 02 | 704 | 0.0 | 1.5+ | 2005 04 05 | 699 | 0.9+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.4+ | 0.5+ | 2005 04 09 | 691 | 0.4+ | 0.0 | 2006 09 19 | 699 | 0.5+ | 0.3− |
| 2002 10 02 | 704 | 0.2− | 1.2+ | 2005 04 09 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.4− | 1.1+ | 2005 04 09 | 691 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 1.0− | 0.3+ | 2005 04 12 | 704 | 0.4− | 1.4+ | 2006 09 26 | 703 | 0.4+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2005 04 12 | 704 | 0.3− | 0.9+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2005 04 12 | 704 | 0.8+ | 0.5− | 2006 09 26 | 703 | 0.1− | 0.7− |
| 2002 10 09 | 704 | 0.3− | 0.7+ | 2005 04 12 | 704 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.7− |
| 2002 10 09 | 704 | 0.8+ | 0.5+ | 2005 05 08 | 703 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.6− |
| 2002 10 09 | 704 | 0.7+ | 1.0+ | 2005 05 08 | 703 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.7+ | 1.2+ |
| 2002 10 09 | 704 | 0.8+ | 0.3+ | 2005 05 08 | 703 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.4+ | 0.5− |
| 2002 10 11 | 704 | 0.4− | 0.2− | 2005 05 08 | 703 | 0.7− | 1.3+ | 2006 10 16 | 703 | 1.1− | 0.3− |
| 2002 10 11 | 704 | 0.4− | 1.3+ | 2006 08 27 | 699 | 0.2+ | 1.1− | | | | |

**(142505)∗ 2002 TT$_{35}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.37471 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23183888 | $\omega$ | 164.35690 | | +0.91865967 | −0.39369871 | |
| $a$ | 2.6242903 | $\Omega$ | 218.87894 | | +0.35664419 | +0.86205523 | |
| $e$ | 0.1298590 | $i$ | 2.98131 | | +0.16990976 | +0.31915845 | |
| $P$ | 4.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.8− | 0.7− | 2002 10 25 | 644 | 0.4− | 0.5+ | 2006 08 19 | 644 | 0.4+ | 0.3+ |
| 2002 10 02 | 704 | 0.2+ | 0.5− | 2002 10 30 | 291 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.4− |
| 2002 10 02 | 704 | 0.0 | 0.5− | 2002 10 30 | 291 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.5+ |
| 2002 10 02 | 704 | 0.0 | 0.2+ | 2002 10 30 | 291 | 0.0 | 0.1+ | 2006 08 28 | 703 | 1.3− | 0.2+ |
| 2002 10 03 | 704 | 1.0+ | 0.8+ | 2002 11 25 | 291 | 0.7+ | 0.2− | 2006 08 28 | 703 | 0.2− | 0.9+ |
| 2002 10 03 | 704 | 0.6+ | 0.0 | 2002 11 25 | 291 | 0.6+ | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2002 11 25 | 291 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.4− | 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.5− | 1.2+ |
| 2002 10 07 | 704 | (1.9− | 1.6−) | 2004 02 12 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.7+ | 0.9+ |
| 2002 10 07 | 704 | 0.9− | 0.3− | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 703 | (0.2+ | 1.9+) |
| 2002 10 07 | 704 | 0.2− | 1.3− | 2004 02 29 | 691 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.3− | 0.8+ |
| 2002 10 07 | 704 | (0.0 | 1.6−) | 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.5− | 0.7− |
| 2002 10 09 | 704 | 0.8− | 0.4− | 2005 05 09 | G96 | 0.2+ | 0.2+ | 2006 09 20 | 699 | (1.0− | 1.6−) |
| 2002 10 09 | 704 | (0.0 | 1.7+) | 2005 05 09 | G96 | 0.0 | 0.0 | 2006 09 20 | 699 | (0.9+ | 2.1+) |
| 2002 10 09 | 704 | 0.3− | 0.3+ | 2005 05 09 | G96 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.9+ | 0.5+ |
| 2002 10 09 | 704 | 0.0 | 0.4+ | 2005 05 09 | G96 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2002 10 11 | 704 | (0.8− | 1.6+) | 2005 05 13 | G96 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.4− | 0.0 |
| 2002 10 11 | 704 | 0.4+ | 0.5+ | 2005 05 13 | G96 | 0.6− | 0.5− | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2002 10 11 | 704 | 0.4+ | 0.2− | 2005 05 13 | G96 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 0.4− | 2005 05 13 | G96 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 10 25 | 644 | 0.5− | 0.1+ | 2006 08 19 | 644 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 10 25 | 644 | 0.6− | 0.0 | 2006 08 19 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 |

**(142506)∗ 2002 TC$_{36}$ = 2000 FR$_{62}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37989)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.06259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22610779 | $\omega$ | 358.66206 | | +0.79866612 | −0.59894070 | |
| $a$ | 2.6684498 | $\Omega$ | 38.32891 | | +0.55298711 | +0.69222824 | |
| $e$ | 0.1148670 | $i$ | 5.39694 | | +0.23735561 | +0.40260416 | |
| $P$ | 4.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 26 | 699 | (0.3+ | 2.1+) | 2002 11 10 | 704 | 0.1+ | 0.1− | 2006 08 28 | 704 | 0.6+ | 0.4+ |
| 2000 03 26 | 699 | 0.6− | 1.5+ | 2002 11 10 | 704 | 1.1− | 0.9− | 2006 08 28 | 699 | 0.4− | 0.7+ |
| 2000 03 26 | 699 | 0.6− | 0.4+ | 2002 11 11 | 644 | 0.1− | 0.4− | 2006 08 28 | 699 | 0.7− | 0.5+ |
| 2000 03 26 | 699 | 0.9+ | 0.7+ | 2002 11 11 | 644 | 0.2− | 0.3− | 2006 08 28 | 699 | 0.6− | 0.0 |
| 2000 04 07 | 699 | 0.2+ | 1.0+ | 2002 11 11 | 644 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.2− | 0.6+ |
| 2000 04 07 | 699 | 1.9+ | 0.6+ | 2002 11 22 | 644 | 0.0 | 0.0 | 2006 08 31 | 704 | 0.7+ | 0.6− |
| 2000 04 07 | 699 | 0.0 | 0.1+ | 2002 11 22 | 644 | 0.0 | 0.0 | 2006 08 31 | 704 | 0.7+ | 1.2− |
| 2000 04 07 | 699 | 0.2− | 0.4+ | 2002 11 22 | 644 | 0.3+ | 0.1+ | 2006 08 31 | 704 | 1.4+ | 0.5+ |
| 2002 10 02 | 704 | 0.2+ | 0.8+ | 2003 12 25 | 645 | 0.1− | 0.1+ | 2006 09 16 | 704 | 1.1− | 0.2− |
| 2002 10 02 | 704 | 0.6− | 1.3+ | 2003 12 25 | 645 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.2+ |
| 2002 10 02 | 704 | 0.5− | 0.6+ | 2004 02 11 | 644 | 0.7+ | 0.5+ | 2006 09 16 | 704 | 0.3− | 0.5− |
| 2002 10 03 | 704 | 0.7+ | 1.5+ | 2004 02 11 | 644 | 0.4+ | 0.8+ | 2006 09 18 | 699 | 0.7+ | 0.6+ |
| 2002 10 03 | 704 | (0.7+ | 1.6+) | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 02 11 | 644 | 0.5+ | 1.0+ | 2006 09 18 | 699 | 1.3− | 0.4+ |
| 2002 10 03 | 704 | 0.8+ | 0.7+ | 2004 02 11 | 644 | 0.9+ | 0.4+ | 2006 09 18 | 699 | 0.9+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.2+ | 2004 02 11 | 644 | 1.0+ | 0.7+ | 2006 09 20 | 703 | 0.7− | 0.0 |
| 2002 10 07 | 704 | 1.5− | 0.3− | 2004 02 16 | 704 | 0.5+ | 1.0+ | 2006 09 20 | 703 | 0.4− | 1.0+ |
| 2002 10 07 | 704 | 0.0 | 0.4− | 2004 02 16 | 704 | 0.6+ | 0.7+ | 2006 09 20 | 703 | 1.1− | 0.8+ |
| 2002 10 07 | 704 | 0.5− | 0.3+ | 2004 02 16 | 704 | 0.0 | 0.9+ | 2006 09 20 | 703 | 0.7− | 0.7+ |
| 2002 10 09 | 699 | 0.1− | 0.2− | 2004 02 16 | 704 | 0.7+ | 0.4− | 2006 09 25 | 699 | 0.3+ | 0.1− |
| 2002 10 09 | 699 | 0.1− | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.5+ | 0.2+ |
| 2002 10 09 | 699 | 1.0+ | 0.2− | 2004 02 17 | 608 | 0.4+ | 0.5− | 2006 09 25 | 699 | 0.9− | 1.0+ |
| 2002 10 09 | 699 | 0.8− | 0.0 | 2004 02 17 | 608 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.5− | 0.5− |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 608 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.4− |
| 2002 10 11 | 704 | 0.5+ | 0.2− | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 09 26 | 704 | 1.2− | 0.6+ |
| 2002 10 11 | 704 | 0.5+ | 0.6− | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.1+ | 1.3− |
| 2002 11 01 | 704 | 0.9+ | 0.6+ | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.9+ | 0.8+ |
| 2002 11 01 | 704 | 1.4+ | 0.4− | 2006 08 19 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.9+ | 1.3+ |
| 2002 11 01 | 704 | 0.6+ | 0.1+ | 2006 08 19 | 644 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.3+ | 1.0+ |
| 2002 11 01 | 704 | 0.2+ | 0.4− | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 1.2− | 0.7+ |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2006 08 19 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 1.2− | 0.5+ |
| 2002 11 06 | 704 | 0.3+ | 0.6− | 2006 08 19 | 644 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2006 08 19 | 644 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.4− |
| 2002 11 06 | 704 | 0.2− | 0.3− | 2006 08 28 | 704 | (1.7+ | 0.6+) | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.2− | 0.5+ | 2006 08 28 | 704 | 0.2− | 1.1+ | 2006 10 12 | 644 | 0.5− | 0.3− |
| 2002 11 10 | 704 | 0.2− | 0.9− | 2006 08 28 | 704 | 0.8+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 11 10 | 704 | 0.7− | 0.0 | 2006 08 28 | 704 | 1.1+ | 0.1+ | 2006 10 12 | 644 | 0.5− | 0.2+ |

**(142507)∗ 2002 TN$_{36}$ = 1996 FY$_{3}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37990)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.07544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24218133 | $\omega$ | 190.30528 | | +0.51221871 | −0.85793887 | |
| $a$ | 2.5490339 | $\Omega$ | 228.89545 | | +0.79168209 | +0.48955598 | |
| $e$ | 0.1614265 | $i$ | 3.01705 | | +0.33297367 | +0.15580705 | |
| $P$ | 4.07 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 608 | 0.4+ | 0.6+ | 2002 10 09 | 704 | 1.2− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.3− |
| 1996 03 20 | 608 | 0.2+ | 0.7+ | 2002 10 09 | 704 | 0.7− | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.6− |
| 1996 03 21 | 608 | 1.4+ | 0.3+ | 2002 10 11 | 704 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.8+ |
| 1996 03 21 | 608 | 0.1+ | 1.2+ | 2002 10 11 | 704 | (1.6− | 0.6+) | 2006 09 14 | 703 | 1.1− | 0.9− |
| 1998 10 19 | 691 | 0.0 | 0.3− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.1− |
| 1998 10 19 | 691 | 0.3+ | 0.1− | 2002 10 11 | 704 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 1998 10 19 | 691 | 0.2+ | 0.1− | 2002 10 11 | 704 | 0.5− | 0.4− | 2006 09 17 | 691 | 0.5+ | 0.1+ |
| 1998 11 11 | 704 | 1.1+ | 0.4+ | 2002 10 13 | 649 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 1998 11 11 | 704 | 1.1+ | 0.5− | 2002 10 13 | 649 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− |
| 1998 11 11 | 704 | (0.4− | 2.0−) | 2002 10 13 | 734 | 0.0 | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 1998 11 11 | 704 | (3.7− | 1.7+) | 2002 10 13 | 649 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.4+ | 0.1+ |
| 1998 11 11 | 699 | 0.3+ | 0.1− | 2002 10 13 | 734 | 0.4− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 1998 11 11 | 699 | 0.3+ | 0.7+ | 2002 10 14 | 649 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 1998 11 11 | 699 | 0.1− | 0.1− | 2002 10 14 | 649 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.9+ |
| 1998 11 22 | 950 | 0.6− | 0.1− | 2002 10 18 | 644 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 1998 11 22 | 950 | 0.4− | 0.1− | 2002 10 18 | 644 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 1998 11 22 | 950 | 0.4− | 0.0 | 2002 10 18 | 644 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.7+ |
| 1998 11 23 | 691 | 0.3− | 0.3− | 2002 10 30 | 644 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 1998 11 23 | 691 | 0.1− | 0.3+ | 2002 10 30 | 644 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 1998 11 23 | 691 | 0.2− | 0.4− | 2002 10 30 | 644 | 0.7+ | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 1998 11 26 | 691 | (2.7+ | 1.6+) | 2002 10 31 | 644 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 1998 11 26 | 691 | 0.2+ | 0.3− | 2002 10 31 | 644 | 0.5− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 1998 11 26 | 691 | 0.3+ | 0.3− | 2002 10 31 | 644 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.1− | 1.2− | 2002 11 06 | 704 | 0.6− | 0.2− | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2002 11 06 | 704 | 0.8− | 1.4+ | 2006 10 19 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2002 11 06 | 704 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2002 11 06 | 704 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2002 11 22 | 644 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2002 11 22 | 644 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.3− | | |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2002 11 22 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.4− | | |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2002 12 06 | 291 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.5− | | |
| 2002 10 04 | 704 | (0.5− | 2.6+) | 2002 12 06 | 291 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.6+ | | |
| 2002 10 04 | 704 | 0.9− | 0.0 | 2002 12 06 | 291 | 1.2+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.5− | | |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2004 04 21 | 691 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2002 10 09 | 704 | 1.4− | 0.2− | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 10 09 | 704 | 1.0− | 0.3+ | 2004 04 21 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.2− | | |

**(142508)∗ 2002 TP$_{36}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.10653 | | (2000.0) | | +0.59837017 | −0.76631308 |
| $n$ | 0.23376892 | $\omega$ | 16.84172 | | +0.68351636 | +0.33589936 |
| $a$ | 2.6098259 | $\Omega$ | 37.37039 | | +0.41804131 | +0.54766402 |
| $e$ | 0.0400709 | $i$ | 22.66787 | | | |
| $P$ | 4.22 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.4+ | 0.9+ | 2002 10 31 | 608 | 0.3+ | 0.0 | 2004 03 24 | 703 | 0.8+ | 1.4− | | |
| 2000 03 04 | 704 | 0.6− | 0.7+ | 2002 10 31 | 608 | 0.1+ | 0.4− | 2004 03 24 | 703 | 0.4+ | 0.0 | | |
| 2000 03 04 | 704 | 0.9+ | 0.2+ | 2002 11 03 | 704 | 0.3+ | 0.2− | 2004 03 24 | 703 | 0.7+ | 0.5+ | | |
| 2000 03 04 | 704 | 0.1+ | 0.0 | 2002 11 03 | 704 | 0.1+ | 1.3+ | 2004 03 24 | 703 | 1.3− | 0.2+ | | |
| 2002 10 02 | 704 | 0.3+ | 1.0+ | 2002 11 03 | 704 | 0.3− | 0.3+ | 2006 09 24 | 699 | 0.4− | 0.4− | | |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2002 11 06 | 704 | (1.8− | 0.6−) | 2006 09 24 | 699 | 0.4− | 1.3+ | | |
| 2002 10 02 | 704 | 0.4− | 0.5− | 2002 11 06 | 704 | (1.6− | 0.5−) | 2006 09 24 | 699 | 0.0 | 0.3+ | | |
| 2002 10 03 | 704 | 0.2− | 1.1− | 2002 11 06 | 704 | (2.6− | 0.2+) | 2006 09 24 | 699 | 0.2+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2002 11 06 | 704 | (1.9− | 0.4−) | 2006 09 25 | 703 | 0.5+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.5− | 0.4− | 2002 11 06 | 704 | 1.0− | 0.0 | 2006 09 25 | 703 | 0.3− | 1.3+ | | |
| 2002 10 03 | 704 | 0.6+ | 1.1− | 2002 11 10 | 704 | 1.2+ | 0.2− | 2006 09 25 | 703 | 0.7+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.9+ | 0.7− | 2002 11 10 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.1− | 1.4+ | | |
| 2002 10 08 | 699 | 0.0 | 0.2− | 2002 11 10 | 704 | 0.1− | 0.4− | 2006 10 09 | 644 | 0.2− | 0.4− | | |
| 2002 10 08 | 699 | 0.2− | 0.7− | 2002 11 10 | 704 | 1.3+ | 0.7− | 2006 10 09 | 644 | 0.6− | 0.1− | | |
| 2002 10 08 | 699 | 0.5− | 0.4+ | 2002 11 22 | 644 | 0.2+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.3− | | |
| 2002 10 08 | 699 | 0.2− | 0.1− | 2002 11 22 | 644 | 0.2+ | 0.6+ | 2006 10 09 | 644 | 0.7− | 0.2− | | |
| 2002 10 09 | 704 | 0.2+ | 0.2+ | 2002 11 22 | 644 | 0.2− | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.3− | | |
| 2002 10 09 | 704 | 0.3+ | 0.2+ | 2002 12 01 | 704 | 1.0+ | 1.5+ | 2006 10 09 | 644 | 0.6− | 0.1− | | |
| 2002 10 09 | 704 | 0.3− | 0.5− | 2002 12 01 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.5− | 0.7− | | |
| 2002 10 09 | 704 | 0.1− | 0.9− | 2002 12 01 | 704 | 0.7+ | 0.3− | 2006 10 21 | 703 | 0.5− | 0.9− | | |
| 2002 10 11 | 704 | 0.7− | 0.2− | 2002 12 01 | 704 | 0.8+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.5− | | |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2002 12 01 | 246 | 0.6− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.2− | | |
| 2002 10 11 | 704 | 0.7− | 0.4+ | 2002 12 01 | 246 | 0.8− | 0.4+ | 2006 10 24 | 644 | 0.5− | 0.0 | | |
| 2002 10 11 | 704 | 0.3− | 0.4− | 2002 12 01 | 246 | 0.7− | 0.8+ | 2006 10 24 | 644 | 0.3− | 0.2− | | |
| 2002 10 26 | 608 | 0.6− | 0.3− | 2002 12 01 | 246 | (1.7− | 2.1+) | 2006 10 24 | 644 | 0.3− | 0.5− | | |
| 2002 10 26 | 608 | 1.0− | 0.3− | 2002 12 11 | 704 | 1.3+ | 1.1− | 2006 10 28 | 703 | 0.1− | 1.2+ | | |
| 2002 10 26 | 608 | 0.7− | 0.1− | 2002 12 11 | 704 | 0.3+ | 0.9− | 2006 10 28 | 703 | (0.3+ | 2.3+) | | |
| 2002 10 30 | 644 | 0.1− | 0.3+ | 2002 12 11 | 704 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.4− | 0.0 | | |
| 2002 10 30 | 644 | 0.3− | 0.2+ | 2002 12 11 | 704 | 0.4+ | 0.1− | 2006 10 28 | 703 | 0.8+ | 0.2− | | |
| 2002 10 30 | 644 | 0.1+ | 0.2+ | 2004 02 09 | 644 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.5+ | 0.7− | | |
| 2002 10 31 | 699 | 0.2+ | 0.2+ | 2004 02 09 | 644 | 0.1+ | 0.7+ | 2006 11 23 | 703 | 1.0+ | 0.9− | | |
| 2002 10 31 | 699 | 0.7+ | 0.1− | 2004 02 09 | 644 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.1+ | | |
| 2002 10 31 | 699 | 0.4+ | 0.0 | 2004 03 17 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.4− | 1.2+ | | |
| 2002 10 31 | 699 | 0.4− | 0.8+ | 2004 03 17 | 644 | 0.4+ | 0.0 | | | | | | |
| 2002 10 31 | 608 | 0.1+ | 0.2− | 2004 03 17 | 644 | 0.1+ | 0.0 | | | | | | |

**(142509)∗ 2002 TJ$_{37}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.16203 | | (2000.0) | | +0.98821648 | −0.15230618 |
| $n$ | 0.24172860 | $\omega$ | 171.60512 | | +0.13727436 | +0.92582558 |
| $a$ | 2.5522156 | $\Omega$ | 197.17792 | | +0.06770473 | +0.34590436 |
| $e$ | 0.1714627 | $i$ | 2.94989 | | | |
| $P$ | 4.08 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 291 | 0.2− | 0.2+ | 2002 11 10 | 704 | (1.7− | 1.5+) | 2006 09 29 | 704 | 0.3+ | 0.2− | | |
| 2001 05 23 | 291 | 0.1− | 0.2+ | 2002 11 10 | 704 | 1.2− | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.1+ | | |
| 2001 05 23 | 291 | 0.0 | 0.4+ | 2002 11 22 | 644 | 0.2− | 0.2+ | 2006 09 29 | 691 | 0.2+ | 0.1− | | |
| 2002 10 02 | 704 | 1.0+ | 1.0− | 2002 11 22 | 644 | 0.1− | 0.2+ | 2006 09 29 | 691 | 0.0 | 0.3+ | | |
| 2002 10 02 | 704 | 0.5+ | 0.7− | 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 10 03 | 691 | 0.3+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.0 | 0.4− | 2004 02 29 | 691 | 0.3− | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.3+ | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.3− | | |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.7− | 0.1− | | |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.3− | 0.4− | | |
| 2002 10 07 | 704 | 0.2− | 0.2− | 2004 03 17 | 691 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.5− | 0.1− | | |
| 2002 10 07 | 704 | 0.7+ | 0.3− | 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.3− | | |
| 2002 10 07 | 704 | 0.4+ | 0.4+ | 2005 06 10 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.3− | | |
| 2002 10 07 | 704 | 0.8− | 0.5+ | 2005 06 10 | 691 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.5+ | 0.3− | | |
| 2002 10 08 | 699 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.3− | | |
| 2002 10 08 | 699 | 0.7− | 0.4− | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2002 10 08 | 699 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.5+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 08 | 699 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 10 09 | 704 | 0.7− | 0.4+ | 2006 09 17 | 704 | 1.1− | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.4+ | 0.0 | | |
| 2002 10 09 | 704 | (0.0 | 1.6+) | 2006 09 17 | 704 | 0.9− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2002 10 09 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 704 | 1.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 10 09 | 704 | 0.0 | 1.0+ | 2006 09 18 | 691 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2002 10 11 | 704 | 0.1− | 0.8+ | 2006 09 18 | 691 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2002 10 11 | 704 | 0.8− | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 10 11 | 704 | 0.4− | 0.8+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 29 | 291 | 0.1+ | 0.5− | | |
| 2002 10 11 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 1.1− | 0.0 | 2006 10 29 | 291 | 0.0 | 0.1− | | |
| 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 09 18 | 699 | (2.5− | 1.4−) | 2006 10 29 | 291 | 0.0 | 0.1− | | |
| 2002 10 30 | 644 | 0.3+ | 1.1+ | 2006 09 18 | 699 | (1.7− | 1.2−) | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2002 10 30 | 644 | 0.2+ | 1.0+ | 2006 09 20 | 704 | 1.1− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.5− | | |
| 2002 10 30 | 644 | 0.5+ | 0.9+ | 2006 09 20 | 704 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.5+ | 0.5− | | |
| 2002 10 31 | 699 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2002 10 31 | 699 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 1.1− | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.4− | | |
| 2002 10 31 | 699 | 0.1− | 0.6− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.4− | | |
| 2002 10 31 | 699 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.4− | 1.0− | | |
| 2002 10 31 | 608 | (1.7− | 0.9+) | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.0 | 0.5− | | |
| 2002 10 31 | 608 | 1.1− | 1.3+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2002 10 31 | 608 | 0.7− | 0.9+ | 2006 09 27 | 704 | 0.8+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 1.1− | | |
| 2002 11 06 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.7− | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2002 11 06 | 704 | 0.5+ | 0.7+ | 2006 09 27 | 704 | 0.4+ | 1.0+ | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2002 11 06 | 704 | 0.1+ | 1.1+ | 2006 09 27 | 704 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.8+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2006 09 29 | 704 | 1.0+ | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.2+ | | |
| 2002 11 06 | 704 | 0.5− | 0.8+ | 2006 09 29 | 704 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.5+ | 0.0 | | |
| 2002 11 10 | 704 | (1.3− | 1.8+) | 2006 09 29 | 704 | 0.4− | 0.6+ | 2006 11 14 | G96 | 0.3+ | 0.2+ | | |

**(142510)∗ 2002 TM$_{37}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.71697 | | (2000.0) | | +0.35217317 | −0.93593393 |
| $n$ | 0.24338624 | $\omega$ | 248.04225 | | +0.87812779 | +0.33090755 |
| $a$ | 2.5406141 | $\Omega$ | 181.33956 | | +0.32382966 | +0.12053160 |
| $e$ | 0.1441957 | $i$ | 3.22593 | | | |
| $P$ | 4.05 | $H$ | 16.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 691 | 0.2+ | 0.5− | 2002 11 07 | 704 | 1.1− | 0.1− | 2006 10 15 | 703 | 0.4− | 0.8+ | | |
| 1998 10 17 | 691 | 0.1− | 0.1− | 2002 11 07 | 704 | 0.2− | 0.2− | 2006 10 15 | 703 | 0.8− | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 691 | 0.3+ | 0.7− | 2002 11 07 | 704 | 0.3− | 0.7+ | 2006 10 15 | 703 | 0.5− | 0.7+ | | |
| 1998 11 11 | 704 | 0.1− | 0.8− | 2002 11 07 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.0 | | |
| 1998 11 11 | 704 | (2.6+ | 1.7+) | 2002 11 07 | 704 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1− | | |
| 1998 11 11 | 704 | 0.8+ | 1.1− | 2004 03 17 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ | | |
| 1998 11 11 | 704 | 0.3+ | 0.9− | 2004 03 17 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.5− | 0.3+ | | |
| 2000 04 05 | 704 | 0.6+ | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.1+ | | |
| 2000 04 05 | 704 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.1− | | |
| 2000 04 05 | 704 | 0.5+ | 0.6− | 2004 03 18 | 704 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.3+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.6+ | 2004 03 18 | 704 | 0.1+ | 1.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2000 04 05 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2000 04 05 | 688 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2000 04 05 | 688 | 0.2− | 0.2+ | 2004 03 24 | 699 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1− | | |
| 2002 10 02 | 704 | 0.8+ | 0.8+ | 2004 03 24 | 699 | 0.3− | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2004 03 24 | 699 | 0.2− | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1− | | |
| 2002 10 02 | 704 | 0.3+ | 0.7+ | 2004 03 24 | 699 | (1.8+ | 1.6+) | 2006 10 29 | G96 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.2− | | |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2004 03 29 | 691 | 0.1− | 0.0 | 2006 10 29 | G96 | 0.1− | 0.2− | | |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.2+ | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 04 22 | 691 | 0.4+ | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2004 04 22 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1− | | |
| 2002 10 09 | 704 | 0.2− | 0.2+ | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2002 10 09 | 704 | 0.5+ | 0.4+ | 2006 07 21 | G96 | 0.6− | 0.3+ | 2006 11 09 | 644 | 0.6− | 0.1+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.4− | 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2002 10 09 | 704 | 0.8+ | 0.3− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 09 | 704 | 0.6+ | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.1+ | | |
| 2002 10 11 | 704 | 0.4− | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (3.6− | 1.3+) | | |
| 2002 10 11 | 704 | 0.3− | 1.1− | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | (1.8− | 1.1+) | | |
| 2002 10 11 | 704 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | (0.3+ | 1.9+) | | |
| 2002 10 11 | 704 | 0.8− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.4+ | 0.9+ | | |
| 2002 10 28 | 644 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.7− | 0.7− | | |
| 2002 10 28 | 644 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.2+ | | |
| 2002 10 28 | 644 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.9+ | 0.2− | | |
| 2002 10 31 | 608 | 0.4− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1− | | |
| 2002 10 31 | 608 | 0.4− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.0 | | |
| 2002 10 31 | 608 | 0.5− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1− | | |
| 2002 11 06 | 704 | 1.0− | 0.5− | 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 11 20 | G96 | 0.5+ | 0.5− | | |
| 2002 11 06 | 704 | 0.4− | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.5− | | |
| 2002 11 06 | 704 | 0.9− | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.1− | | |
| 2002 11 06 | 704 | 0.2− | 0.7+ | 2006 10 15 | 703 | 0.6− | 0.8+ | 2006 11 20 | G96 | 0.2− | 0.6− | | |

### (142511)∗ 2002 TE$_{38}$

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.80675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23384335 | $\omega$ | 310.48349 | | +0.97672347 | +0.19659356 | |
| $a$ | 2.6092720 | $\Omega$ | 38.40448 | | −0.12979409 | +0.86013711 | |
| $e$ | 0.2106080 | $i$ | 7.93926 | | −0.17077691 | +0.47065394 | |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 1.1− | 0.1+ | 2002 11 06 | 704 | 0.8+ | 0.3− | 2006 09 17 | 699 | 0.2− | 0.8− | | |
| 2002 10 02 | 704 | 0.2+ | 0.1− | 2002 11 06 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 699 | 0.5− | 0.5+ | | |
| 2002 10 02 | 704 | 0.2+ | 0.4− | 2002 11 06 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.0 | | |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 11 06 | 704 | 0.9− | 0.2− | 2006 09 19 | 699 | 0.0 | 0.3+ | | |
| 2002 10 02 | 704 | 0.3− | 0.7+ | 2002 11 06 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.7+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2002 11 06 | 608 | 0.8+ | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.8+ | | |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2002 11 06 | 608 | 0.8+ | 0.1− | 2006 09 21 | 699 | (0.4− | 1.6+) | | |
| 2002 10 03 | 704 | 0.4+ | 0.1− | 2002 11 06 | 608 | 0.4+ | 1.4− | 2006 09 21 | 699 | 0.5+ | 1.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2002 11 10 | 704 | 0.4+ | 0.5− | 2006 09 21 | 699 | (0.5− | 1.6+) | | |
| 2002 10 03 | 704 | 0.4− | 0.1− | 2002 11 10 | 704 | 0.9− | 0.8− | 2006 09 25 | 703 | 0.5− | 0.3+ | | |
| 2002 10 09 | 704 | 0.2− | 0.5+ | 2002 11 10 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.2− | 0.4+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2002 11 10 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 703 | 0.3− | 0.4− | | |
| 2002 10 09 | 704 | 0.3− | 0.2+ | 2002 11 12 | 644 | 0.4+ | 0.5− | 2006 09 25 | 703 | 0.5− | 0.1+ | | |
| 2002 10 11 | 704 | 0.9+ | 1.1+ | 2002 11 12 | 644 | (1.6+ | 0.7−) | 2006 10 02 | 703 | 0.2+ | 0.8− | | |
| 2002 10 11 | 704 | 0.4− | 1.3+ | 2002 11 12 | 644 | 0.2+ | 0.9− | 2006 10 02 | 703 | 0.4+ | 1.3− | | |
| 2002 10 11 | 704 | 0.3− | 1.4+ | 2002 12 01 | 704 | 0.3+ | 0.2− | 2006 10 02 | 703 | 0.4+ | 0.0 | | |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2002 12 01 | 704 | 0.7− | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.6− | | |
| 2002 10 11 | 704 | 0.2+ | 1.5+ | 2002 12 01 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 703 | 0.4− | 0.3− | | |
| 2002 10 16 | 644 | 0.2− | 0.0 | 2004 02 13 | 691 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.1− | 0.5− | | |
| 2002 10 16 | 644 | 0.1+ | 0.0 | 2004 02 13 | 691 | 0.4+ | 0.6+ | 2006 10 02 | 703 | 0.4− | 0.1− | | |
| 2002 10 16 | 644 | 0.0 | 0.2+ | 2004 02 13 | 691 | 0.5− | 0.4− | 2006 10 02 | 703 | 0.6− | 0.1− | | |
| 2002 10 30 | 291 | 0.3− | 0.3− | 2005 04 02 | G96 | 0.3− | 0.7− | 2006 10 19 | 703 | 0.4+ | 0.9+ | | |
| 2002 10 30 | 291 | 0.2− | 0.3− | 2005 04 02 | G96 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.4− | | |
| 2002 10 30 | 291 | 0.1+ | 0.3− | 2005 04 02 | G96 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.7+ | 0.8+ | | |
| 2002 10 31 | 699 | 0.1− | 0.6− | 2005 04 02 | G96 | 0.2− | 0.7+ | 2006 10 19 | 703 | 1.3+ | 0.4+ | | |
| 2002 10 31 | 699 | 0.4− | 0.4+ | 2005 05 11 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3− | | |
| 2002 10 31 | 699 | 0.0 | 0.3+ | 2005 05 11 | G96 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2002 10 31 | 699 | 0.8− | 0.3− | 2005 05 11 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2002 11 04 | 699 | 0.6− | 0.0 | 2005 05 11 | G96 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2002 11 04 | 699 | 0.0 | 0.2+ | 2006 09 17 | 699 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.3− | | |
| 2002 11 04 | 699 | 0.2− | 0.6+ | 2006 09 17 | 699 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.3+ | 0.3− | | |
| 2002 11 04 | 699 | 0.9+ | 0.4+ | 2006 09 17 | 699 | (0.2+ | 1.6+) | 2006 11 23 | G96 | 0.1+ | 0.2− | | |

### (142512)∗ 2002 TG$_{39}$

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.06606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23550480 | $\omega$ | 284.31120 | | +0.69544730 | +0.71534301 | |
| $a$ | 2.5969856 | $\Omega$ | 30.11152 | | −0.59582482 | +0.62702586 | |
| $e$ | 0.1977275 | $i$ | 7.80141 | | −0.40167876 | +0.30842008 | |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.7− | 1.5− | 2002 12 11 | 644 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 05 17 | 704 | 0.2− | 0.9− | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 05 17 | 704 | 0.2+ | 0.0 | 2002 12 11 | 644 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.4− | | |
| 2001 05 17 | 704 | 0.3+ | 0.5+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.2− | 0.1+ | | |
| 2002 10 02 | 704 | 0.7− | 0.0 | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.3− | 0.1+ | | |
| 2002 10 02 | 704 | 0.6+ | 0.4+ | 2005 04 10 | G96 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2005 04 10 | G96 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.2+ | | |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2005 04 10 | G96 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2005 04 10 | G96 | 0.2+ | 0.3+ | 2006 10 18 | H07 | 0.1+ | 0.1− | | |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2005 04 12 | 691 | 0.2+ | 0.5+ | 2006 10 18 | H07 | 0.3+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2005 04 12 | 691 | 0.0 | 0.7+ | 2006 10 18 | H07 | 0.2+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2005 04 12 | 691 | 0.1+ | 0.7+ | 2006 10 18 | H07 | 0.1+ | 0.0 | | |
| 2002 10 07 | 704 | 0.7− | 0.9+ | 2005 04 17 | 691 | (2.1+ | 0.3−) | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 07 | 704 | 0.8+ | 0.7+ | 2005 04 17 | 691 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2002 10 07 | 704 | 0.0 | 0.2+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 10 07 | 704 | 0.9+ | 1.1+ | 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 703 | 0.3− | 0.1− | | |
| 2002 10 10 | 704 | 0.2− | 0.1− | 2005 05 01 | 644 | 0.5+ | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.2+ | | |
| 2002 10 10 | 704 | 0.3+ | 0.1− | 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 703 | 0.4− | 0.6− | | |
| 2002 10 10 | 704 | 0.0 | 0.3− | 2005 05 09 | 704 | 0.5+ | 0.0 | 2006 10 20 | 703 | 0.6− | 0.2+ | | |
| 2002 10 11 | 704 | 1.4− | 0.1− | 2005 05 09 | 704 | 1.2− | 0.3+ | 2006 10 21 | 703 | 0.2− | 1.0− | | |
| 2002 10 11 | 704 | 0.6− | 0.2− | 2005 05 09 | 704 | 0.2+ | 1.3+ | 2006 10 21 | 703 | 0.3− | 0.8− | | |
| 2002 10 11 | 704 | 0.7− | 0.1+ | 2005 05 09 | 704 | (1.6+ | 0.5−) | 2006 10 21 | 703 | 0.7− | 0.4− | | |
| 2002 10 11 | 704 | (1.6− | 0.8+) | 2005 05 12 | 699 | 1.0+ | 0.6− | 2006 10 21 | 703 | 0.6− | 0.3− | | |
| 2002 10 11 | 704 | 1.2− | 1.0− | 2005 05 12 | 699 | (1.7− | 1.1+) | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2002 11 04 | 644 | 0.2− | 0.1+ | 2005 05 12 | 699 | (0.5+ | 1.6+) | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 04 | 644 | 0.1+ | 0.2+ | 2005 05 12 | 699 | 1.3+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2002 11 04 | 644 | 0.1− | 0.2+ | 2005 05 13 | 704 | 0.5+ | 1.4+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 05 | 704 | 0.5+ | 0.1+ | 2005 05 13 | 704 | 1.2+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ | | |
| 2002 11 05 | 704 | 0.1− | 0.2+ | 2005 05 13 | 704 | (1.0+ | 1.8+) | 2006 10 27 | 691 | 0.1− | 0.2+ | | |
| 2002 11 05 | 704 | 0.4+ | 0.5− | 2005 05 13 | 704 | 0.6+ | 1.0+ | 2006 10 27 | G96 | 0.2− | 0.2− | | |
| 2002 11 05 | 704 | 0.5+ | 0.2+ | 2005 05 14 | 644 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 11 08 | 704 | 0.1− | 0.2+ | 2005 05 14 | 644 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2002 11 08 | 704 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.6+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2002 11 08 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 1.2− | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2002 11 12 | 704 | 0.6− | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.4+ | | |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.8− | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2002 11 12 | 704 | 0.3− | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2002 11 12 | 704 | 0.1+ | 0.7+ | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 2002 11 12 | 704 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.5+ | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.6+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 11 14 | 704 | 0.2+ | 0.5− | 2006 09 17 | 704 | 0.7− | 1.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 11 14 | 704 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.6− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.1− | 1.4+ | 2006 11 11 | 691 | 0.3− | 0.5+ |
| 2002 11 24 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2002 11 24 | 644 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2002 12 02 | 704 | 0.2− | 0.4− | 2006 09 20 | 704 | 0.5− | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2002 12 02 | 704 | 1.3+ | 0.4− | 2006 09 20 | 704 | 0.4− | 0.5+ | 2006 11 11 | 703 | (3.6− | 1.6−) |
| 2002 12 02 | 704 | 0.0 | 1.1− | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.7− |
| 2002 12 02 | 704 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 0.2− | 1.3+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2002 12 06 | 704 | 0.5− | 0.1− | 2006 09 27 | 704 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2006 09 27 | 704 | 0.2− | 0.5− | 2006 11 18 | 291 | (1.8+ | 1.2+) |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2− | 0.6− | 2006 11 18 | 291 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 291 | 0.6+ | 0.6+ |

**(142513)∗ 2002 TK$_{39}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.76198 | | (2000.0) | | | |
| $n$ | 0.23073889 | $\omega$ | 336.28778 | | +0.47053076 | −0.87542335 |
| $a$ | 2.6326241 | $\Omega$ | 85.48261 | | +0.82628421 | +0.39315659 |
| $e$ | 0.1905620 | $i$ | 6.37040 | | +0.30960493 | +0.28117940 |
| $P$ | 4.27 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.2− | 0.8− | 2002 12 27 | 644 | 0.2+ | 1.0+ | 2004 03 27 | 704 | 0.4+ | 0.1+ |
| 1998 12 17 | 704 | 0.1− | 0.0 | 2002 12 27 | 644 | 0.2+ | 0.9+ | 2004 03 27 | 704 | 0.4+ | 0.2+ |
| 1998 12 17 | 704 | (1.2− | 2.1−) | 2003 01 03 | 291 | 0.3+ | 0.4− | 2004 03 27 | 704 | 0.7+ | 0.7+ |
| 1998 12 17 | 704 | 0.8+ | 1.4− | 2003 01 03 | 291 | 0.0 | 0.3− | 2004 03 28 | 704 | 1.4+ | 0.0 |
| 1998 12 17 | 704 | 1.0+ | 0.3− | 2003 01 03 | 291 | 0.3+ | 0.3− | 2004 03 28 | 704 | 1.4+ | 0.6− |
| 2002 09 05 | 699 | 0.2+ | 0.2− | 2003 01 04 | 704 | 0.4− | 0.3− | 2004 03 28 | 704 | 0.8+ | 0.7+ |
| 2002 09 05 | 699 | 0.1− | 1.5+ | 2003 01 04 | 704 | 0.7− | 0.1+ | 2004 03 28 | 704 | 1.1+ | 0.3+ |
| 2002 09 05 | 699 | 1.3− | 0.1− | 2003 01 04 | 704 | 0.7− | 0.3− | 2004 03 28 | 704 | (1.7+ | 0.6+) |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2003 01 04 | 704 | 0.5− | 0.0 | 2004 03 30 | 703 | 0.1+ | 0.3+ |
| 2002 09 05 | 699 | 1.0− | 0.1− | 2003 01 04 | 704 | 0.9− | 0.7+ | 2004 03 30 | 703 | (1.6+ | 1.1+) |
| 2002 09 05 | 704 | 0.9− | 0.1+ | 2003 01 08 | 704 | 0.1− | 0.5− | 2004 03 30 | 703 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.8− | 0.2− | 2003 01 08 | 704 | 0.4+ | 0.1+ | 2004 03 30 | 703 | 0.0 | 0.6+ |
| 2002 09 05 | 704 | 0.8− | 0.5− | 2003 01 08 | 704 | 0.5− | 0.3− | 2004 04 15 | 704 | 0.5− | 1.1+ |
| 2002 10 02 | 704 | 0.0 | 0.3+ | 2003 01 08 | 704 | 0.1+ | 1.1− | 2004 04 15 | 704 | (0.2− | 2.0+) |
| 2002 10 02 | 704 | 0.8− | 0.3− | 2003 01 08 | 704 | 0.5− | 0.0 | 2004 04 15 | 704 | 0.8+ | 0.1+ |
| 2002 10 02 | 704 | 0.5− | 0.4− | 2003 01 19 | 644 | 0.3− | 0.2+ | 2004 04 25 | 699 | 0.9+ | 0.1− |
| 2002 10 02 | 704 | 0.3+ | 0.4− | 2003 01 19 | 644 | 0.1− | 0.0 | 2004 04 25 | 699 | 1.1− | 0.3− |
| 2002 10 02 | 704 | 0.0 | 0.4− | 2003 01 19 | 644 | 0.2− | 0.1− | 2004 04 25 | 699 | (1.4− | 2.1+) |
| 2002 10 03 | 704 | 0.1− | 0.5− | 2003 01 27 | 704 | 0.6+ | 0.2− | 2004 04 25 | 699 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.5− | 0.2− | 2003 01 27 | 704 | 0.8+ | 0.1+ | 2006 09 21 | 151 | 0.4− | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2003 01 27 | 704 | 0.2+ | 0.2− | 2006 09 21 | 151 | 0.4− | 0.4+ |
| 2002 10 03 | 704 | 0.2− | 1.2− | 2003 01 27 | 704 | 0.2+ | 0.0 | 2006 09 21 | 151 | 0.3− | 0.4+ |
| 2002 10 22 | 608 | 0.2− | 0.6− | 2003 01 27 | 704 | 0.3+ | 0.5− | 2006 09 22 | B14 | 0.0 | 0.2+ |
| 2002 10 22 | 608 | 0.6− | 0.5− | 2003 01 28 | 608 | 1.4+ | 1.2+ | 2006 09 22 | B14 | 0.3− | 0.2+ |
| 2002 10 22 | 608 | 0.4− | 0.2− | 2003 01 28 | 608 | (1.7+ | 1.6+) | 2006 09 23 | B14 | 0.4− | 0.2− |
| 2002 10 30 | 608 | 0.4− | 0.9+ | 2003 01 28 | 608 | 1.4+ | 0.7+ | 2006 09 23 | B14 | 0.2− | 0.2− |
| 2002 10 30 | 608 | 0.5− | 0.8+ | 2004 01 23 | 704 | 1.3+ | 0.7− | 2006 09 30 | 704 | 0.1+ | 0.7+ |
| 2002 10 30 | 608 | 0.3− | 0.5+ | 2004 01 23 | 704 | 0.4+ | 0.9+ | 2006 09 30 | 704 | 0.0 | 0.6+ |
| 2002 11 05 | 699 | 0.2− | 0.5+ | 2004 01 23 | 704 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.6+ |
| 2002 11 05 | 699 | 0.4− | 0.3− | 2004 02 25 | 704 | 1.0+ | 0.6+ | 2006 09 30 | 704 | 0.2+ | 0.7+ |
| 2002 11 05 | 699 | 0.2− | 0.1+ | 2004 02 25 | 704 | 1.4+ | 0.6+ | 2006 09 30 | 704 | 0.1− | 0.3+ |
| 2002 11 05 | 699 | 0.7− | 0.3+ | 2004 02 25 | 704 | 1.2+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.4+ |
| 2002 11 07 | 704 | 0.1− | 0.3− | 2004 02 25 | 704 | 0.6+ | 1.3+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.5− | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.2+ | 2004 03 16 | 704 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.4− | 0.5+ | 2004 03 16 | 704 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2002 11 11 | 704 | 0.2− | 0.6+ | 2004 03 16 | 704 | 0.8− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2002 11 11 | 704 | 0.2+ | 0.6+ | 2004 03 18 | 683 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.7− | 0.0 |
| 2002 11 11 | 704 | 0.0 | 0.5+ | 2004 03 18 | 683 | 0.3+ | 1.1+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2002 11 11 | 704 | 0.5− | 0.6+ | 2004 03 18 | 691 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2002 11 23 | 644 | 0.2+ | 0.2+ | 2004 03 18 | 691 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 2002 11 23 | 644 | 0.3+ | 0.1+ | 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 11 23 | 644 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 11 28 | 699 | 0.0 | 0.2+ | 2004 03 20 | 704 | (2.1+ | 0.1+) | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 11 28 | 699 | 0.3+ | 1.2− | 2004 03 20 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2002 11 28 | 699 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.4+ |
| 2002 11 28 | 699 | 0.5+ | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 12 01 | 704 | 0.7+ | 0.2− | 2004 03 22 | 699 | 0.3− | 0.8+ | 2006 10 28 | 703 | 0.5+ | 0.8+ |
| 2002 12 01 | 704 | 0.9+ | 0.1− | 2004 03 22 | 704 | 0.2+ | 0.9+ | 2006 10 28 | 703 | 0.6− | 0.1+ |
| 2002 12 01 | 704 | 0.7+ | 0.3− | 2004 03 22 | 704 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.4− |
| 2002 12 01 | 704 | 0.7+ | 0.2− | 2004 03 22 | 699 | 0.7− | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.3− |
| 2002 12 01 | 704 | 1.1+ | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 11 19 | G92 | 1.3+ | 0.8+ |
| 2002 12 10 | 644 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 11 19 | G92 | 1.4+ | 0.5+ |
| 2002 12 10 | 644 | 0.0 | 0.2− | 2004 03 22 | 699 | 0.2+ | 0.8+ | 2006 11 19 | G92 | 1.3+ | 0.5+ |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2002 12 11 | 704 | 0.0 | 0.7+ | 2004 03 22 | 699 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2002 12 11 | 704 | 0.1− | 0.2+ | 2004 03 26 | 704 | 0.3− | 0.2+ | 2006 11 20 | 704 | 2.4− | 1.7+ |
| 2002 12 11 | 704 | 0.1+ | 0.8+ | 2004 03 26 | 704 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2004 03 26 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.5+ |
| 2002 12 11 | 704 | 0.1+ | 0.2+ | 2004 03 26 | 704 | 0.9− | 0.0 | | | | |
| 2002 12 27 | 644 | 0.3+ | 0.9+ | 2004 03 27 | 704 | 0.0 | 0.6+ | | | | |

**(142514)∗ 2002 TU$_{39}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.82023 | | (2000.0) | | | |
| $n$ | 0.22321841 | $\omega$ | 165.10487 | | +0.90116513 | −0.42163634 |
| $a$ | 2.6914277 | $\Omega$ | 220.31472 | | +0.38010981 | +0.88021695 |
| $e$ | 0.2865286 | $i$ | 8.94694 | | +0.20836971 | +0.21780937 |
| $P$ | 4.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 691 | 0.1− | 0.0 | 2002 11 07 | 704 | 0.3+ | 0.1− | 2006 06 21 | 703 | (1.6− | 0.5+) |
| 1993 10 10 | 691 | 0.1+ | 0.0 | 2002 11 07 | 704 | (0.0 | 1.6+) | 2006 06 21 | 703 | 0.2− | 0.1− |
| 1993 10 10 | 691 | 0.0 | 0.0 | 2002 11 07 | 704 | 0.7− | 0.6+ | 2006 06 21 | 703 | 0.6+ | 0.1− |
| 2002 09 05 | 704 | 0.8− | 0.9+ | 2002 11 11 | 704 | 0.1+ | 0.3+ | 2006 06 21 | 703 | (0.1− | 1.6−) |
| 2002 09 05 | 704 | 0.3− | 0.3+ | 2002 11 11 | 704 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.2− | 0.8+ |
| 2002 09 05 | 704 | 0.4− | 0.0 | 2002 11 11 | 704 | 0.4− | 0.5+ | 2006 08 27 | 699 | 0.3+ | 0.6+ |
| 2002 10 02 | 704 | 0.3− | 0.2+ | 2002 11 11 | 704 | 0.5− | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.7+ |
| 2002 10 02 | 704 | 0.2+ | 0.3+ | 2002 11 11 | 704 | 0.7− | 0.4+ | 2006 08 27 | 699 | 0.7− | 0.4+ |
| 2002 10 02 | 704 | 0.3+ | 0.3− | 2002 11 24 | 644 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.5+ | 0.4− | 2002 11 24 | 644 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.6− | 0.5+ |
| 2002 10 02 | 704 | 0.9− | 0.4− | 2002 11 24 | 644 | (1.1− | 1.7−) | 2006 09 18 | 703 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.9+ | 2002 11 28 | 699 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.5+ | 0.1− | 2002 11 28 | 699 | 0.5− | 0.7+ | 2006 09 19 | 699 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2002 11 28 | 699 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.2− | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.5− | 2002 11 28 | 699 | 0.8− | 0.5+ | 2006 09 19 | 699 | (0.1+ | 2.2−) |
| 2002 10 09 | 704 | 1.0+ | 0.3+ | 2002 12 01 | 704 | (0.6+ | 2.2+) | 2006 09 19 | 699 | (1.6+ | 0.2+) |
| 2002 10 09 | 704 | 0.8+ | 0.0 | 2002 12 01 | 704 | (1.4+ | 2.1+) | 2006 09 23 | 703 | 0.2− | 0.6+ |
| 2002 10 09 | 704 | 0.3+ | 0.0 | 2002 12 01 | 704 | (1.1+ | 2.7+) | 2006 09 23 | 703 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.0 | 0.3− | 2002 12 10 | 644 | 0.3− | 0.1− | 2006 09 23 | 703 | 0.1+ | 0.6− |
| 2002 10 11 | 704 | 0.3+ | 0.3+ | 2002 12 10 | 644 | 0.1− | 0.1+ | 2006 09 23 | 703 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.5+ | 0.0 | 2002 12 10 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.5− |
| 2002 10 11 | 704 | 0.2+ | 0.4− | 2003 01 27 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2002 10 11 | 704 | 0.8+ | 1.4− | 2003 01 27 | 644 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.7+ | 1.1+ |
| 2002 10 31 | 608 | 0.1+ | 0.2+ | 2003 01 27 | 644 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.5+ |
| 2002 10 31 | 608 | 0.2+ | 0.2− | 2005 04 07 | G96 | 0.8− | 0.5+ | 2006 10 22 | 703 | 1.2− | 1.2− |
| 2002 10 31 | 608 | 0.3+ | 0.2− | 2005 04 07 | G96 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.2− |
| 2002 11 06 | 608 | 0.4+ | 0.2+ | 2005 04 07 | G96 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2002 11 06 | 608 | 0.6+ | 0.4− | 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2002 11 06 | 608 | 0.6+ | 0.5+ | 2005 05 08 | 691 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.9+ | 0.4+ |
| 2002 11 07 | 704 | 0.9− | 0.8+ | 2005 05 08 | 691 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2002 11 07 | 704 | 0.3− | 0.7+ | 2005 05 08 | 691 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.5− |

**(142515)∗ 2002 TZ$_{39}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| $M$ | 358.33221 | | (2000.0) | **P** | **Q** |
| $n$ | 0.22625476 | $\omega$ | 316.09620 | +0.98640955 | −0.04670202 |
| $a$ | 2.6672941 | $\Omega$ | 47.28690 | +0.12331579 | +0.84401094 |
| $e$ | 0.2117833 | $i$ | 12.37998 | −0.10857903 | +0.53428874 |
| $P$ | 4.36 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 608 | 0.5− | 0.9− | 2002 12 14 | 704 | 0.7− | 0.8− | 2005 05 26 | 699 | 0.7− | 0.0 |
| 1996 04 20 | 608 | 0.4− | 0.6− | 2002 12 14 | 704 | 0.5− | 1.1− | 2006 07 31 | E12 | 0.0 | 0.0 |
| 1996 04 20 | 608 | 0.2− | 0.4− | 2002 12 14 | 704 | 0.3− | 0.7− | 2006 07 31 | E12 | 0.6− | 0.1+ |
| 2002 10 02 | 704 | 0.4− | 0.2+ | 2002 12 14 | 704 | 0.2− | 1.3− | 2006 07 31 | E12 | 0.1− | 0.9− |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.1− | 0.7− | 2006 07 31 | E12 | 0.4− | 0.2+ |
| 2002 10 02 | 704 | 0.2+ | 0.0 | 2004 02 16 | 704 | 1.0+ | 1.2+ | 2006 09 12 | 704 | 0.2+ | 0.3+ |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2004 02 16 | 704 | 1.2+ | 1.4+ | 2006 09 12 | 704 | 0.4− | 0.5+ |
| 2002 10 02 | 704 | 0.2− | 0.6+ | 2004 02 16 | 704 | (0.7+ | 1.6+) | 2006 09 12 | 704 | 0.0 | 0.9+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2004 02 16 | 704 | (2.0+ | 0.5+) | 2006 09 12 | 704 | 0.3− | 0.7+ |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 09 12 | 704 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 09 17 | 699 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2005 04 11 | G96 | 0.3− | 0.0 | 2006 09 17 | 699 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.1− | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 09 17 | 699 | 0.4+ | 0.1+ |
| 2002 10 07 | 704 | 1.1+ | 0.7+ | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 09 17 | 699 | 0.2+ | 0.5+ |
| 2002 10 07 | 704 | 0.5+ | 0.5+ | 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.5− |
| 2002 10 07 | 704 | 0.4− | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.3− |
| 2002 10 07 | 704 | 0.2+ | 0.2+ | 2005 05 04 | 699 | 1.2− | 1.1− | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2002 10 10 | 704 | 0.3+ | 0.5+ | 2005 05 04 | 699 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.4− |
| 2002 10 10 | 704 | 0.0 | 0.0 | 2005 05 04 | 699 | 0.2+ | 0.1+ | 2006 09 24 | 608 | 0.6+ | 0.3+ |
| 2002 10 10 | 704 | 0.0 | 0.9− | 2005 05 04 | 699 | 0.2− | 0.0 | 2006 09 24 | 608 | 0.8+ | 0.5+ |
| 2002 10 10 | 704 | 0.6+ | 0.1+ | 2005 05 08 | 699 | 0.7− | 0.6− | 2006 09 24 | 608 | 0.6+ | 0.3+ |
| 2002 10 10 | 704 | 0.4+ | 0.7− | 2005 05 08 | 699 | 1.2− | 0.9− | 2006 09 25 | 703 | 0.0 | 0.6− |
| 2002 10 11 | 704 | 0.1− | 0.2− | 2005 05 08 | 699 | 0.6− | 0.1+ | 2006 09 25 | 703 | 0.4− | 0.2− |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2005 05 08 | 699 | 1.2− | 0.1+ | 2006 09 25 | 703 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.7+ | 0.7− | 2005 05 09 | 699 | 0.4− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.1− | 2005 05 09 | 699 | 1.1+ | 0.2+ | 2006 10 04 | 703 | 0.2− | 0.4− |
| 2002 11 12 | 704 | 0.3− | 0.0 | 2005 05 09 | G96 | 0.1+ | 0.2+ | 2006 10 04 | 703 | 0.4+ | 0.2− |
| 2002 11 12 | 704 | 0.0 | 0.4+ | 2005 05 09 | G96 | 0.1− | 0.3+ | 2006 10 04 | 703 | 0.6+ | 0.4− |
| 2002 11 12 | 704 | 0.0 | 0.4+ | 2005 05 09 | G96 | 0.1+ | 0.3+ | 2006 10 04 | 703 | 0.3− | 0.2− |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2005 05 09 | 699 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2002 11 14 | 704 | 1.0+ | 0.3+ | 2005 05 09 | G96 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.5− |
| 2002 11 14 | 704 | 0.9+ | 0.3+ | 2005 05 09 | 699 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.4+ | 0.3+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 1.0+ | 0.4− | 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.5+ | 1.0+ |
| 2002 11 14 | 704 | 0.3+ | 1.1− | 2005 05 11 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.8+ | 0.7+ |
| 2002 12 06 | 704 | 0.9− | 0.1+ | 2005 05 16 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.4+ | 0.6+ |
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2005 05 16 | 691 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.7+ | 0.1+ |
| 2002 12 06 | 704 | 0.5− | 0.5+ | 2005 05 16 | 691 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 0.4− | 0.8+ | 2005 05 19 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 2.4− | 0.1+ |
| 2002 12 06 | 704 | 0.4− | 1.1+ | 2005 05 19 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 0.4− | 0.2+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.9− | 0.2+ |
| 2002 12 11 | 704 | 0.5− | 0.4+ | 2005 05 26 | 699 | 0.8+ | 0.5− | 2006 11 20 | 704 | 0.4− | 0.4− |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2005 05 26 | 699 | 0.3+ | 0.1+ | | | | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2005 05 26 | 699 | 0.5− | 0.2+ | | | | |

**(142516)∗ 2002 TD$_{40}$ = 1998 XY$_{54}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 37995)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| $M$ | 13.53912 | | (2000.0) | **P** | **Q** |
| $n$ | 0.24191067 | $\omega$ | 130.45415 | +0.95239100 | −0.28571473 |
| $a$ | 2.5509348 | $\Omega$ | 246.38799 | +0.23257492 | +0.90648249 |
| $e$ | 0.1778172 | $i$ | 6.66760 | +0.19713011 | +0.31089642 |
| $P$ | 4.07 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.7− | 0.4+ | 2002 12 09 | 012 | 0.8− | 0.3+ | 2006 10 21 | 704 | 0.7+ | 0.5+ |
| 1998 12 15 | 704 | 0.3− | 0.4− | 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 10 21 | 704 | 0.9+ | 0.5− |
| 1998 12 15 | 704 | 0.3− | 0.8− | 2002 12 10 | 704 | 0.3− | 0.2+ | 2006 10 21 | 704 | 0.3+ | 0.2− |
| 1998 12 15 | 704 | 0.2− | 1.2− | 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 10 21 | 704 | 0.4+ | 0.5+ |
| 1998 12 16 | 704 | 1.0− | 0.4− | 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 10 21 | 704 | 0.6+ | 1.5− |
| 1998 12 16 | 704 | 0.3− | 1.3− | 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 1998 12 16 | 704 | (2.4− | 2.0−) | 2002 12 10 | 012 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1− | 0.3− |
| 1998 12 16 | 704 | 0.2− | 2.0− | 2002 12 10 | 012 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.2− |
| 1998 12 16 | 704 | 0.9− | 1.3− | 2002 12 10 | 012 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.2− |
| 1998 12 22 | 704 | 0.1+ | 1.5− | 2002 12 10 | 012 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 1998 12 22 | 704 | (2.8+ | 0.1+) | 2002 12 10 | 012 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.3− |
| 1998 12 22 | 704 | 0.2− | 1.2− | 2002 12 10 | 012 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 1998 12 22 | 704 | 1.0+ | 1.1− | 2002 12 27 | 644 | 0.3− | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2002 09 06 | 704 | 1.0− | 0.6− | 2002 12 27 | 644 | 0.3− | 0.3+ | 2006 10 27 | 691 | 1.0− | 0.1− |
| 2002 09 06 | 704 | 1.2− | 0.4− | 2002 12 27 | 644 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 0.8− | 1.1− |
| 2002 09 06 | 704 | 0.0 | 1.0+ | 2002 12 27 | 644 | 0.3− | 0.5+ | 2006 10 29 | 704 | (0.7− | 1.7−) |
| 2002 09 06 | 704 | 0.3− | 0.1− | 2002 12 27 | 644 | 0.1+ | 0.5+ | 2006 10 29 | 704 | 0.3− | 0.9+ |
| 2002 10 02 | 704 | 0.3+ | 0.1− | 2002 12 27 | 644 | 0.0 | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2002 12 28 | 699 | 0.0 | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.4+ | 0.9+ | 2002 12 28 | 699 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.5− | 0.6+ | 2002 12 28 | 699 | 0.4+ | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.4+ | 0.2− | 2002 12 28 | 699 | 0.3− | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2002 12 31 | 699 | 0.7− | 0.8+ | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.5+ | 0.6+ | 2002 12 31 | 699 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.7+ | 1.4+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2002 12 31 | 699 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.9+ | 0.2+ | 2002 12 31 | 704 | 0.7+ | 0.8+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2002 10 10 | 704 | 0.2− | 0.7+ | 2002 12 31 | 699 | 0.4− | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 10 10 | 704 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2002 10 10 | 704 | 0.4− | 0.2− | 2002 12 31 | 704 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.1− | 0.1+ | 2003 01 01 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2002 10 10 | 704 | 0.8+ | 0.5+ | 2003 01 01 | 704 | 1.0+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 10 11 | 704 | 0.7+ | 1.1+ | 2003 01 01 | 704 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2003 01 01 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2003 01 01 | 704 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.5+ | 1.0+ | 2003 01 04 | 704 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2003 01 04 | 704 | 0.1− | 0.8− | 2006 11 17 | 704 | (3.6− | 0.8−) |
| 2002 11 05 | 049 | (6.2− | 0.9−) | 2003 01 04 | 704 | 0.7+ | 1.3− | 2006 11 17 | 704 | 0.6− | 0.1+ |
| 2002 11 05 | 049 | (5.4− | 0.2−) | 2003 01 04 | 704 | 0.4+ | 0.6− | 2006 11 17 | 704 | 0.4− | 0.2+ |
| 2002 11 05 | 049 | (5.6− | 0.1−) | 2003 01 04 | 704 | 0.8− | 0.3− | 2006 11 17 | 704 | 0.7− | 0.4− |
| 2002 11 05 | 704 | (2.1+ | 1.1+) | 2003 01 19 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.9− | 0.2− |
| 2002 11 05 | 704 | (2.0+ | 0.3−) | 2003 01 19 | 644 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 11 05 | 704 | (2.6+ | 0.1−) | 2003 01 19 | 644 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | (2.5+ | 0.6−) | 2003 01 31 | 704 | 0.8− | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | (1.7+ | 0.3−) | 2003 01 31 | 704 | 0.3+ | 1.5+ | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2002 11 06 | 704 | 1.1+ | 0.2− | 2003 01 31 | 704 | 0.5− | 0.1+ | 2006 11 18 | 704 | 1.2− | 0.2− |
| 2002 11 06 | 704 | 0.7+ | 0.3− | 2003 01 31 | 704 | 0.7+ | 0.3+ | 2006 11 18 | 704 | 1.2− | 0.3− |
| 2002 11 06 | 704 | 0.8+ | 0.3− | 2004 03 20 | 704 | (0.8+ | 1.6+) | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2002 11 06 | 704 | (1.9+ | 0.8+) | 2004 03 20 | 704 | (2.2− | 1.6+) | 2006 11 18 | 704 | (2.1− | 0.3−) |
| 2002 11 06 | 704 | 0.6+ | 0.7− | 2004 03 20 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.0 | 1.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.3− | 2005 01 19 | 809 | (2.1+ | 0.5−) | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.8+ | 0.3+ | 2005 01 19 | 809 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.0 |
| 2002 11 14 | 704 | 0.2− | 0.3+ | 2005 01 19 | 809 | 1.0+ | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2002 12 02 | 704 | 0.3− | 0.7+ | 2005 06 18 | G96 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2002 12 02 | 704 | 0.5− | 0.9+ | 2005 06 18 | G96 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2002 12 02 | 704 | 0.1+ | 1.2+ | 2005 06 18 | G96 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2002 12 04 | 333 | 0.2+ | 0.0 | 2005 06 18 | G96 | 0.5− | 0.3+ | 2006 11 27 | 704 | 0.7+ | 1.0+ |
| 2002 12 04 | 333 | 0.5− | 0.6− | 2005 08 04 | 644 | 0.3− | 0.2+ | 2006 11 27 | 704 | 0.1− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 04 | 333 | 0.4− | 0.6− | 2005 08 04 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 704 | 0.1− | 1.8+ |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2005 08 04 | 644 | 0.5+ | 0.3+ | 2006 11 27 | 704 | 0.3− | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.9+ | 0.1+ | 2006 11 27 | 704 | 0.4− | 0.7+ |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.4+ | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2002 12 09 | 012 | 0.6+ | 0.0 | 2006 10 19 | 704 | (2.5+ | 0.3−) | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2002 12 09 | 012 | 0.2+ | 0.1+ | 2006 10 19 | 704 | (2.0+ | 1.1−) | 2006 12 01 | 704 | 0.1− | 0.2+ |
| 2002 12 09 | 012 | 0.4− | 0.4− | 2006 10 19 | 704 | 1.0+ | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.7+ |
| 2002 12 09 | 012 | 0.2+ | 0.1− | 2006 10 19 | 704 | 0.4+ | 0.2− | 2006 12 01 | 704 | 0.3− | 0.2+ |
| 2002 12 09 | 012 | 0.1− | 0.0 | 2006 10 19 | 691 | (2.6− | 2.3+) | 2006 12 01 | 704 | 0.3+ | 0.4+ |
| 2002 12 09 | 012 | 0.1+ | 0.0 | 2006 10 19 | 691 | (2.9− | 0.2−) | 2006 12 01 | 704 | 0.9+ | 0.1+ |
| 2002 12 09 | 012 | 0.7+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | | | | |

**(142517)∗ 2002 TJ$_{40}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.56237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22621356 | $\omega$ | 134.51194 | | +0.98473757 | −0.05802020 | |
| $a$ | 2.6676179 | $\Omega$ | 229.53499 | | +0.01356424 | +0.96551539 | |
| $e$ | 0.1284817 | $i$ | 12.45544 | | +0.17351634 | +0.25379851 | |
| $P$ | 4.36 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.6+ | 0.6+ | 2002 12 14 | 704 | 0.5+ | 1.1+ | 2006 09 28 | 703 | 0.2− | 0.6+ |
| 2002 10 02 | 704 | 0.4− | 0.5− | 2002 12 14 | 704 | 0.9− | 0.5− | 2006 09 28 | 703 | 0.0 | 0.4+ |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2003 01 27 | 644 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.3+ | 0.1+ |
| 2002 10 02 | 704 | 0.5− | 0.6+ | 2003 01 27 | 644 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.5− |
| 2002 10 02 | 704 | 0.1+ | 0.2− | 2003 01 27 | 644 | 0.2− | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.5− |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2004 03 14 | 644 | 0.2+ | 0.7+ | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2004 03 14 | 644 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2004 03 14 | 644 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.9+ | 0.4+ | 2004 03 16 | 704 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.3− |
| 2002 10 10 | 704 | 0.2− | 0.5− | 2004 03 16 | 704 | 0.4+ | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2002 10 10 | 704 | 0.6+ | 0.1− | 2004 03 16 | 704 | 0.2+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 2002 10 10 | 704 | 0.6+ | 0.3− | 2004 03 16 | 704 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2005 05 22 | 644 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.0 | 0.6+ | 2005 05 22 | 644 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.8− | 0.2− | 2005 05 22 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2002 10 11 | 704 | 0.2− | 0.4− | 2005 06 01 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2002 10 11 | 704 | 0.7− | 0.0 | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.3− |
| 2002 10 31 | 608 | 0.0 | 0.3− | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2002 10 31 | 608 | 0.2− | 0.0 | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3− |
| 2002 10 31 | 608 | 0.0 | 0.0 | 2005 06 06 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.3− | 0.5− | 2005 06 06 | 691 | (2.3+ | 0.2+) | 2006 10 21 | 644 | 0.5− | 0.3− |
| 2002 11 05 | 704 | 0.2− | 0.4+ | 2005 06 16 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2002 11 05 | 704 | 0.6− | 0.1+ | 2005 06 16 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2002 11 05 | 704 | 0.4− | 0.0 | 2005 06 16 | 691 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.1+ | 0.1− | 2005 06 23 | 644 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2002 11 07 | 704 | 0.3+ | 0.7− | 2005 06 23 | 644 | 0.1+ | 0.2+ | 2006 10 26 | 704 | 0.9− | 1.4− |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2005 06 23 | 644 | 0.3− | 0.6+ | 2006 10 26 | 704 | 0.4+ | 0.2− |
| 2002 11 07 | 704 | 0.9+ | 0.4+ | 2005 07 05 | 644 | 0.5− | 0.2+ | 2006 10 26 | 704 | 0.6+ | 0.1+ |
| 2002 11 07 | 704 | 0.5+ | 0.6− | 2005 07 05 | 644 | 0.4− | 0.4+ | 2006 10 26 | 704 | 0.6+ | 0.0 |
| 2002 11 11 | 704 | 0.5− | 0.7+ | 2005 07 05 | 644 | 0.2− | 0.4+ | 2006 11 10 | 683 | 0.4+ | 0.6+ |
| 2002 11 11 | 704 | 0.2− | 0.3+ | 2006 08 20 | 644 | 0.1− | 0.2− | 2006 11 10 | 683 | 0.3− | 1.3+ |
| 2002 11 11 | 704 | 0.5− | 0.3+ | 2006 08 20 | 644 | 0.3− | 0.1− | 2006 11 10 | 683 | 1.4− | 0.8+ |
| 2002 11 11 | 704 | 0.0 | 0.9+ | 2006 08 20 | 644 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.4+ | 1.0+ |
| 2002 11 11 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.7+ |
| 2002 11 14 | 704 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.8+ | 0.7+ |
| 2002 11 14 | 704 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.5+ | 1.0+ |
| 2002 11 14 | 704 | 1.0+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.1+ | 0.8+ |
| 2002 11 14 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 1.2+ | 0.4+ |
| 2002 11 14 | 704 | 0.0 | 0.6− | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.9+ |
| 2002 11 24 | 644 | 0.4+ | 0.1− | 2006 09 16 | 703 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.4+ | 0.4+ |
| 2002 11 24 | 644 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.7− | 0.2− | 2006 11 16 | 704 | 0.5− | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.6− | 0.5+ |
| 2002 12 01 | 704 | 0.4+ | 1.1+ | 2006 09 16 | 703 | 0.5− | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 12 01 | 704 | 0.5+ | 1.2+ | 2006 09 20 | 699 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.1+ | 0.6+ |
| 2002 12 01 | 704 | 0.2+ | 1.0+ | 2006 09 20 | 699 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 12 01 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 699 | 0.3− | 0.2− | 2006 11 19 | 704 | 1.0+ | 0.2− |
| 2002 12 10 | 644 | 0.5− | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 09 21 | 704 | 0.6+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2002 12 10 | 644 | 0.5− | 0.3+ | 2006 09 21 | 704 | 0.1+ | 1.1+ | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 09 21 | 704 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.7+ | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.2− | 2006 09 21 | 704 | 0.1− | 0.9+ | 2006 11 19 | 704 | 0.7− | 1.8+ |
| 2002 12 11 | 704 | 0.4+ | 0.7− | 2006 09 22 | 699 | 0.8+ | 0.2− | 2006 11 22 | 704 | 0.5− | 0.1+ |
| 2002 12 11 | 704 | 0.5− | 0.6+ | 2006 09 22 | 699 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.5− | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 0.8− | 2006 09 22 | 699 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 2002 12 14 | 704 | 0.4+ | 0.4− | 2006 09 22 | 699 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.6− |
| 2002 12 14 | 704 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 0.4− | 0.6+ | 2006 09 28 | 703 | 0.0 | 0.5+ | | | | |

**(142518)∗ 2002 TP$_{40}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.08957 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24228994 | $\omega$ | 307.43099 | | +0.95295144 | +0.26998528 | |
| $a$ | 2.5482721 | $\Omega$ | 37.47672 | | −0.15231954 | +0.81957443 | |
| $e$ | 0.2979785 | $i$ | 13.09093 | | −0.26207310 | +0.50537679 | |
| $P$ | 4.07 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 29 | 691 | 0.1+ | 0.1− | 2002 11 08 | 704 | 0.1− | 0.0 | 2006 10 18 | 106 | 0.5− | 0.2+ |
| 1997 04 29 | 691 | 0.6− | 0.4− | 2002 11 08 | 704 | 0.0 | 0.0 | 2006 10 18 | 106 | 0.3+ | 0.7+ |
| 1997 04 29 | 691 | 0.1+ | 0.2+ | 2002 11 08 | 704 | 0.1+ | 0.7+ | 2006 10 18 | 106 | 0.1+ | 1.1− |
| 1997 05 08 | 691 | 0.1− | 0.3+ | 2002 11 10 | 704 | (0.0 | 1.9+) | 2006 10 19 | 644 | 0.2− | 0.0 |
| 1997 05 08 | 691 | 0.2− | 0.2+ | 2002 11 10 | 704 | 0.6− | 0.4− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 1997 05 08 | 691 | 0.1+ | 0.0 | 2002 11 10 | 704 | 0.6+ | 0.6− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 1998 11 11 | 704 | 0.5− | 0.2− | 2002 11 10 | 704 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1998 11 11 | 704 | (1.6+ | 2.2−) | 2002 11 10 | 704 | (1.8− | 0.7−) | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1998 11 11 | 704 | 1.2− | 0.8− | 2002 11 10 | 704 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1998 11 11 | 704 | (4.3− | 0.9+) | 2002 11 10 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 704 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 0.6− | 0.5+ | 2002 11 10 | 704 | 0.2− | 0.7+ | 2006 10 22 | 704 | (0.7+ | 1.9+) |
| 2002 10 02 | 704 | 0.7− | 0.8+ | 2002 11 10 | 704 | 0.0 | 0.6− | 2006 10 22 | 704 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.7− | 1.0+ | 2002 11 12 | 644 | 0.5− | 0.4+ | 2006 10 22 | 704 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 11 12 | 644 | 0.6− | 0.7+ | 2006 10 22 | 704 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2002 11 12 | 644 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2002 10 08 | 699 | (0.2+ | 1.6+) | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.9+ |
| 2002 10 08 | 699 | 1.3+ | 0.8+ | 2005 05 04 | 691 | 0.7+ | 0.0 | 2006 10 27 | 704 | (0.3− | 1.7+) |
| 2002 10 08 | 699 | 0.2− | 0.0 | 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 704 | 0.4+ | 0.3+ |
| 2002 10 08 | 699 | 0.6+ | 0.7+ | 2005 05 04 | 691 | 0.5+ | 0.3− | 2006 10 27 | 704 | 0.1+ | 0.8− |
| 2002 10 09 | 704 | 0.2+ | 0.2+ | 2005 05 10 | G96 | 1.1− | 0.2+ | 2006 10 27 | 704 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 0.1− | 0.7+ | 2005 05 10 | G96 | 0.0 | 0.4+ | 2006 11 06 | 644 | 0.3− | 0.3+ |
| 2002 10 09 | 704 | 0.5+ | 0.6+ | 2005 05 10 | G96 | 0.7− | 0.6+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 0.0 | 0.5+ | 2005 05 10 | G96 | 0.5− | 0.5+ | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2002 10 09 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.4+ |
| 2002 10 11 | 704 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.4+ | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.0 | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2002 10 26 | 608 | 0.9+ | 0.2− | 2006 09 21 | 699 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.4− | 1.0− |
| 2002 10 26 | 608 | 0.7+ | 1.0− | 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 10 26 | 608 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 644 | 0.5+ | 0.1− | 2006 09 25 | 699 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2002 10 31 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2002 10 31 | 644 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.1+ | 1.4− |
| 2002 11 01 | 608 | 0.3− | 0.7− | 2006 09 26 | 703 | 0.1− | 0.1+ | 2006 11 17 | 703 | (1.0+ | 2.1−) |
| 2002 11 01 | 608 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.9− | 0.7− |
| 2002 11 01 | 608 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.2− | 2006 11 17 | 703 | 1.0− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 704 | 1.4− | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 11 18 | 704 | 1.3+ | 1.0− |
| 2002 11 03 | 704 | 0.3− | 0.2− | 2006 09 29 | 699 | 0.6+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2002 11 03 | 704 | 0.9− | 0.7+ | 2006 09 29 | 699 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.4+ |
| 2002 11 05 | 699 | 0.4− | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2002 11 05 | 699 | (1.6− | 0.3−) | 2006 09 29 | 699 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.7+ | 0.5− |
| 2002 11 05 | 699 | 1.0+ | 0.3+ | 2006 09 30 | 704 | 0.4+ | 0.0 | 2006 11 20 | G96 | 0.1− | 0.8− |
| 2002 11 05 | 699 | 0.9+ | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 1.0− | 0.5+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2002 11 06 | 704 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.4− | 0.6− | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.3+ | 1.2− |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2002 11 06 | 704 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 1.1+ | 1.0− |
| 2002 11 07 | 704 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 1.0− | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.4+ |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.5+ | 0.9+ |
| 2002 11 07 | 704 | 0.1− | 0.6− | 2006 10 16 | 703 | 1.3+ | 1.0− | 2006 11 21 | 704 | 0.9− | 1.1+ |
| 2002 11 08 | 704 | 0.1+ | 0.0 | 2006 10 18 | 106 | 0.5+ | 0.3+ | | | | |

**(142519)∗ 2002 TJ$_{41}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.85080 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23791989 | $\omega$ | 168.08307 | | +0.99790913 | | +0.05535971 |
| $a$ | 2.5793813 | $\Omega$ | 188.94664 | | −0.06080458 | | +0.97909159 |
| $e$ | 0.1692426 | $i$ | 12.38579 | | +0.02191295 | | +0.19574209 |
| $P$ | 4.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | (1.9− | 0.6−) | 2005 04 17 | 691 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.6+ | 0.3− |
| 2002 10 02 | 704 | 1.3− | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.4− |
| 2002 10 02 | 704 | 0.3+ | 0.5− | 2005 05 04 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 0.3+ | 0.8− | 2005 05 04 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 644 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2005 05 04 | 691 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.2− | 1.1− | 2005 05 11 | 703 | 0.5− | 1.2+ | 2006 09 20 | 644 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.3+ | 0.8− | 2005 05 11 | 703 | 0.3+ | 0.3+ | 2006 09 22 | A50 | 0.1+ | 0.5− |
| 2002 10 03 | 704 | 0.1− | 0.5− | 2005 05 11 | 703 | 0.4− | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 699 | 0.6+ | 0.2+ | 2005 05 11 | 703 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 699 | 0.2− | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 699 | (1.5+ | 0.9+) | 2005 05 15 | 644 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 2002 10 09 | 699 | 0.6+ | 0.3+ | 2005 05 15 | 644 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2002 10 18 | 644 | 0.1− | 0.6+ | 2005 05 15 | 644 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2002 10 18 | 644 | 0.1+ | 0.5+ | 2005 05 15 | 644 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2002 10 18 | 644 | 0.2+ | 0.4+ | 2005 05 15 | 644 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.8+ |
| 2002 10 28 | 608 | 0.6− | 0.3+ | 2006 08 31 | 704 | 1.0− | 0.5+ | 2006 09 27 | 704 | 0.7+ | 0.3− |
| 2002 10 28 | 608 | 0.7− | 0.2+ | 2006 08 31 | 704 | 0.3+ | 0.5− | 2006 09 27 | 704 | 0.9+ | 0.3+ |
| 2002 10 28 | 608 | 0.7− | 0.5+ | 2006 08 31 | 704 | 0.6− | 0.2+ | 2006 09 27 | 704 | 1.3+ | 0.2+ |
| 2002 10 31 | 704 | 0.7+ | 0.4+ | 2006 08 31 | 704 | 0.1− | 0.6+ | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 2002 10 31 | 704 | 0.3+ | 0.3+ | 2006 08 31 | 704 | 1.2− | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.4+ |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2006 09 06 | 644 | 0.7− | 0.1− | 2006 10 01 | 704 | 0.2− | 1.2+ |
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 10 01 | 704 | 0.4+ | 0.6+ |
| 2002 10 31 | 704 | 0.2+ | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2002 11 01 | 608 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 11 01 | 608 | (0.4− | 1.9−) | 2006 09 14 | 703 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 11 01 | 608 | (0.9− | 2.0−) | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.8+ | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.3− | 1.0+ | 2006 09 15 | 704 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 1.0+ | 0.7+ | 2006 09 15 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.3+ | 0.3+ | 2006 09 15 | 704 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2002 11 05 | 704 | 1.0− | 0.9+ | 2006 09 15 | 704 | 0.7+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2002 11 06 | 699 | 0.6− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2002 11 06 | 699 | 0.2+ | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.3+ |
| 2002 11 06 | 699 | 0.3− | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 2002 11 06 | 699 | (0.4+ | 1.6+) | 2006 09 16 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2002 11 12 | 704 | 0.9− | 0.8+ | 2006 09 16 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 1.0+ | 0.8+ | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 11 12 | 704 | 1.2− | 0.8+ | 2006 09 17 | 704 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 11 12 | 704 | 0.5− | 0.2− | 2006 09 17 | 704 | 0.4− | 0.4− | 2006 10 22 | 704 | 0.5− | 0.3+ |
| 2002 11 30 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.5− | 0.5+ | 2006 10 22 | 704 | 0.3+ | 0.3+ |
| 2002 11 30 | 704 | 0.5+ | 1.1− | 2006 09 17 | 704 | 0.0 | 0.3− | 2006 10 22 | 704 | 0.3− | 0.4+ |
| 2002 11 30 | 704 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 22 | 704 | 0.1− | 0.3+ |
| 2002 11 30 | 704 | 0.1− | 0.2+ | 2006 09 18 | 699 | 1.0− | 0.3+ | 2006 10 22 | 704 | 0.1+ | 0.4+ |
| 2004 02 14 | 644 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2004 02 14 | 644 | 0.1− | 0.9+ | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2004 02 14 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.3− | 1.0+ | 2006 10 22 | 703 | 0.7− | 1.0− |
| 2004 02 23 | 704 | (2.6+ | 0.9+) | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.5− | 0.4+ |
| 2004 02 23 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.7− | 0.2+ |
| 2004 02 23 | 704 | 1.0+ | 1.2+ | 2006 09 20 | 704 | 0.3− | 0.7+ | | | | |
| 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.6− | | | | |

**(142520)∗ 2002 TO$_{41}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.46072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24436968 | $\omega$ | 286.86896 | | +0.91047474 | | +0.39429290 |
| $a$ | 2.5337932 | $\Omega$ | 50.09386 | | −0.28961738 | | +0.82326372 |
| $e$ | 0.2362530 | $i$ | 9.36127 | | −0.29522451 | | +0.40837478 |
| $P$ | 4.03 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 21 | 691 | 0.5+ | 0.2− | 2002 11 30 | 608 | 0.9− | 1.1+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 1998 11 21 | 691 | 0.4+ | 0.1− | 2002 12 10 | 644 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 1998 11 21 | 691 | 0.6+ | 0.4− | 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2002 10 02 | 704 | 1.4+ | 0.5+ | 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 1.0+ | 0.1− | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.9+ | 0.1+ | 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.8+ | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 1.3− | 0.1+ | 2005 04 16 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 1.2− | 0.3+ | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | (1.7− | 0.4+) | 2005 05 14 | G96 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 1.4− | 0.3− | 2005 05 14 | G96 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 10 09 | 704 | (1.7− | 1.3−) | 2005 05 14 | G96 | 0.9+ | 1.4+ | 2006 11 11 | 703 | 1.2− | 0.2− |
| 2002 10 09 | 704 | 0.7− | 0.1− | 2005 05 14 | G96 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.8− |
| 2002 10 09 | 704 | 0.3− | 0.4+ | 2005 06 13 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2002 10 09 | 704 | (0.8− | 1.6+) | 2005 06 13 | G96 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | 0.1− | 0.7+ | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2002 10 31 | 699 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2002 10 31 | 699 | 0.1− | 0.8+ | 2005 07 06 | 291 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 699 | 0.1+ | 0.5+ | 2005 07 06 | 291 | 0.7+ | 0.8+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 699 | 1.1− | 0.2+ | 2005 07 06 | 291 | 0.9+ | 0.7+ | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2002 10 31 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2002 10 31 | 644 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.2− | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 11 15 | G92 | 0.4− | 0.2− |
| 2002 11 06 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 15 | G92 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 15 | G92 | 0.2+ | 0.5− |
| 2002 11 06 | 704 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 17 | G92 | 0.3+ | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 17 | G92 | 0.1+ | 0.3+ |
| 2002 11 06 | 704 | 0.5+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 17 | G92 | 0.0 | 0.6+ |
| 2002 11 06 | 704 | 0.5− | 0.4− | 2006 10 19 | 644 | 0.3− | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2002 11 06 | 704 | 0.2− | 0.9− | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | (0.7− | 1.5+) |
| 2002 11 06 | 704 | 1.0− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | (0.8+ | 1.8+) |
| 2002 11 06 | 704 | 0.3+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.5+ |
| 2002 11 07 | 699 | 0.9− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 18 | G92 | 0.5+ | 1.2+ |
| 2002 11 07 | 699 | 0.4− | 1.0+ | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 18 | G92 | 0.1− | 0.6+ |
| 2002 11 07 | 699 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 18 | G92 | 0.2− | 1.2+ |
| 2002 11 07 | 699 | 0.6+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 18 | G92 | 0.8+ | 0.3+ |
| 2002 11 10 | 704 | 1.0− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.7+ |
| 2002 11 10 | 704 | 0.1− | 0.5− | 2006 10 22 | 704 | 0.1− | 0.3+ | 2006 11 18 | G92 | (0.6+ | 2.3+) |
| 2002 11 10 | 704 | 0.9− | 0.7− | 2006 10 22 | 704 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2002 11 10 | 704 | 0.7− | 1.5− | 2006 10 22 | 704 | 0.2− | 0.5− | 2006 11 18 | G92 | 0.7+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 644 | 0.5− | 0.2+ | 2006 10 22 | 704 | 1.0− | 1.5+ | 2006 11 18 | 704 | 0.9+ | 0.2− |
| 2002 11 12 | 644 | 0.4− | 0.2+ | 2006 10 27 | 704 | 0.5− | 0.9+ | 2006 11 18 | 704 | 0.9− | 0.5− |
| 2002 11 12 | 644 | 0.3− | 0.3+ | 2006 10 27 | 704 | 0.5+ | 1.0+ | 2006 11 18 | 704 | 1.0+ | 0.9+ |
| 2002 11 22 | 644 | 0.2− | 0.6− | 2006 10 27 | 704 | 0.4+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2002 11 22 | 644 | 0.3− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2002 11 22 | 644 | 0.1− | 0.5− | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2002 11 30 | 608 | 0.8− | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.3− | | | | |
| 2002 11 30 | 608 | 0.9− | 1.5+ | 2006 11 01 | G96 | 0.2− | 0.4− | | | | |

**(142521)∗ 2002 TL$_{42}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.20060 | | (2000.0) | | | |
| $n$ | 0.24444170 | $\omega$ | 43.70452 | | −0.41447953 | +0.90653115 |
| $a$ | 2.5332955 | $\Omega$ | 202.18179 | | −0.88234657 | −0.42184207 |
| $e$ | 0.1088897 | $i$ | 12.24115 | | −0.22287049 | −0.01582848 |
| $P$ | 4.03 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.1+ | 0.2− | 2004 01 22 | 644 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2000 02 06 | 704 | 0.0 | 0.4+ | 2004 01 23 | 699 | 0.6− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2000 02 06 | 704 | 0.9− | 0.3+ | 2004 01 23 | 699 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 2000 02 06 | 704 | 0.6+ | 1.0+ | 2004 01 23 | 699 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.5+ |
| 2000 02 08 | 645 | 0.0 | 0.0 | 2004 01 23 | 699 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2000 02 08 | 645 | 0.0 | 0.0 | 2004 01 29 | 704 | 0.2− | 0.9+ | 2006 10 11 | 691 | 0.2+ | 0.2− |
| 2001 06 21 | 704 | 0.0 | 0.6+ | 2004 01 29 | 704 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.4− |
| 2001 06 21 | 704 | 0.4− | 0.9+ | 2004 01 29 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.8− | 0.5+ |
| 2001 06 21 | 704 | 0.4− | 0.8+ | 2004 01 29 | 704 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 06 21 | 704 | 0.1− | 0.7+ | 2004 01 29 | 704 | 0.1+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 06 21 | 704 | 0.1− | 0.4− | 2004 02 02 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2004 02 02 | 704 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | 0.3+ | 0.6+ | 2004 02 02 | 704 | 0.8+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.8+ | 2004 02 02 | 704 | 0.1− | 0.4− | 2006 10 15 | 691 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.8+ | 2004 02 02 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.5+ | 1.1+ |
| 2002 10 03 | 704 | 0.1− | 1.2+ | 2004 02 12 | 644 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.4+ | 0.5+ | 2004 02 12 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | (0.1+ | 1.6+) | 2004 02 12 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.5+ | 0.1− | 2004 02 19 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.1+ | 1.3+ | 2004 02 19 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 07 | 704 | 0.3− | 0.6− | 2004 02 19 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2002 10 07 | 704 | 0.1+ | 0.3− | 2004 02 19 | 704 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 10 07 | 704 | 0.5+ | 0.2− | 2004 02 19 | 704 | 0.1+ | 0.9+ | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2005 06 03 | E12 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2002 10 09 | 704 | 0.8− | 0.1+ | 2005 06 03 | E12 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2002 10 09 | 704 | (1.3− | 1.9+) | 2005 06 03 | E12 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2002 10 09 | 704 | (1.8+ | 3.2+) | 2005 06 03 | E12 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.2− | 0.8+ | 2005 06 09 | 704 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.7+ | 0.4− | 2005 06 09 | 704 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.3− | 2005 06 09 | 704 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 10 11 | 704 | 0.3+ | 0.1− | 2005 06 09 | 704 | 0.1− | 0.9− | 2006 11 01 | 691 | 0.5− | 0.1− |
| 2002 10 11 | 704 | 1.2+ | 0.5+ | 2005 06 27 | G96 | 0.3+ | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 1.2+ | 0.4+ | 2005 06 27 | G96 | 0.2− | 0.6+ | 2006 11 11 | 703 | 1.3+ | 1.0+ |
| 2002 10 31 | 608 | 0.5+ | 0.9+ | 2005 06 27 | G96 | 0.9+ | 0.7+ | 2006 11 11 | 703 | 1.0− | 0.8+ |
| 2002 10 31 | 608 | 0.2+ | 0.3+ | 2005 06 27 | G96 | 0.0 | 0.6+ | 2006 11 11 | 703 | 1.3+ | 0.2+ |
| 2002 10 31 | 608 | 0.1+ | 0.9+ | 2005 06 27 | G96 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 2002 11 07 | 704 | 0.5− | 1.2− | 2005 06 27 | G96 | 0.1+ | 0.8+ | 2006 11 17 | 704 | 2.1+ | 0.3+ |
| 2002 11 07 | 704 | 1.3− | 0.1+ | 2005 06 27 | G96 | 0.1− | 0.9+ | 2006 11 17 | 704 | 0.3− | 0.3− |
| 2002 11 07 | 704 | 0.7− | 0.8+ | 2005 06 27 | G96 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.5− | 0.0 |
| 2002 11 07 | 704 | 0.7− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.0 | 0.8− |
| 2004 01 22 | 644 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.4− | | | | |
| 2004 01 22 | 644 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | | | | |

**(142522)∗ 2002 TM$_{43}$ = 1999 BU$_{27}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 37998)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.87191 | | (2000.0) | | | |
| $n$ | 0.23688763 | $\omega$ | 166.86547 | | +0.64040359 | −0.76743167 |
| $a$ | 2.5868691 | $\Omega$ | 243.30377 | | +0.70153705 | +0.60066928 |
| $e$ | 0.0924527 | $i$ | 1.95812 | | +0.31261639 | +0.22415407 |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 25 | 691 | 0.0 | 0.3+ | 2002 11 05 | 699 | 0.8− | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.0 |
| 1998 12 25 | 691 | 0.7− | 0.0 | 2002 11 05 | 699 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.1− | 0.5− |
| 1998 12 25 | 691 | 0.1− | 0.2− | 2002 11 05 | 699 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.1− |
| 1999 01 17 | 691 | 0.7+ | 0.5− | 2002 11 05 | 699 | 0.1+ | 1.0+ | 2006 09 21 | A50 | 0.4+ | 0.1− |
| 1999 01 17 | 691 | 0.6+ | 0.2− | 2002 11 06 | 704 | 0.1− | 0.3− | 2006 09 22 | A50 | 0.1− | 0.3+ |
| 1999 01 17 | 691 | 0.8+ | 0.2− | 2002 11 06 | 704 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 1999 01 23 | 691 | 0.5+ | 0.8− | 2002 11 06 | 704 | 0.3− | 0.6− | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1999 01 23 | 691 | 0.5+ | 0.1− | 2002 11 06 | 704 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 1999 01 23 | 691 | 0.6− | 0.7− | 2002 11 10 | 704 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.3+ |
| 1999 01 24 | 691 | 0.3− | 0.1− | 2002 11 10 | 704 | 0.8− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 1999 01 24 | 691 | 0.1+ | 0.0 | 2002 11 10 | 704 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1999 01 24 | 691 | 0.4− | 0.1+ | 2002 11 10 | 704 | 0.1− | 0.8+ | 2006 09 29 | 704 | 1.2+ | 0.2+ |
| 2000 04 06 | 704 | 0.5+ | 0.2+ | 2002 11 22 | 644 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.5+ | 0.3+ |
| 2000 04 06 | 704 | 0.1− | 0.2+ | 2002 11 22 | 644 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.3− |
| 2000 04 06 | 704 | 0.4+ | 0.1+ | 2002 11 22 | 644 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.9+ | 0.1+ |
| 2000 04 06 | 704 | 0.1+ | 1.3+ | 2002 12 05 | 704 | 0.5+ | 0.9+ | 2006 10 15 | 106 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | (0.7− | 1.8+) | 2002 12 05 | 704 | 0.4+ | 0.8+ | 2006 10 15 | 106 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | (2.1− | 1.2+) | 2002 12 05 | 704 | 0.1− | 0.8+ | 2006 10 15 | 106 | 0.2+ | 0.6− |
| 2002 10 02 | 704 | (1.8− | 1.0+) | 2004 03 15 | 704 | 0.5− | 0.4+ | 2006 10 15 | 106 | 0.7+ | 0.8− |
| 2002 10 02 | 704 | 1.5− | 1.3+ | 2004 03 15 | 704 | 0.9− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2002 10 03 | 704 | 0.5+ | 0.2+ | 2004 03 15 | 704 | 1.3+ | 1.0+ | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2002 10 03 | 704 | (1.0− | 1.7+) | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.9− | 1.1+ | 2004 03 18 | 704 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 0.6− | 0.9+ | 2004 03 18 | 704 | (1.3+ | 2.1+) | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 0.5+ | 0.3− | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 10 31 | G96 | 0.6+ | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.9+ | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 703 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.1− | 1.3+ | 2006 09 17 | 691 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 11 04 | 699 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 11 04 | 699 | 1.1− | 1.1+ | 2006 09 17 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 11 04 | 699 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.5+ | 0.4− | | | | |
| 2002 11 04 | 699 | 0.1+ | 1.3+ | 2006 09 17 | 691 | 0.3+ | 0.1− | | | | |

**(142523)∗ 2002 TO$_{43}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.21058 | | (2000.0) | | | |
| $n$ | 0.26088435 | $\omega$ | 37.50849 | | +0.92884609 | −0.37045276 |
| $a$ | 2.4257015 | $\Omega$ | 344.23418 | | +0.33706005 | +0.84854769 |
| $e$ | 0.1950200 | $i$ | 0.65659 | | +0.15373831 | +0.37779830 |
| $P$ | 3.78 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 11 | 691 | 0.0 | 0.9− | 2002 10 03 | 704 | 0.1− | 1.0+ | 2002 11 06 | 704 | 1.4+ | 0.3− |
| 1994 07 11 | 691 | 0.0 | 0.4− | 2002 10 08 | 699 | 0.6+ | 0.2+ | 2002 11 06 | 704 | 0.7+ | 0.7+ |
| 1994 07 11 | 691 | 0.1+ | 0.0 | 2002 10 08 | 699 | 0.1− | 0.8+ | 2002 11 06 | 704 | (0.9− | 1.6+) |
| 1996 02 17 | 691 | 0.2− | 0.5− | 2002 10 08 | 699 | 0.6− | 0.3+ | 2002 11 06 | 704 | 0.8− | 0.9+ |
| 1996 02 17 | 691 | 0.4− | 0.4− | 2002 10 08 | 699 | 0.8− | 0.5− | 2002 11 10 | 704 | 1.1+ | 1.1+ |
| 1996 02 17 | 691 | 0.3− | 0.6− | 2002 10 09 | 704 | (1.8− | 0.8+) | 2002 11 10 | 704 | 0.8− | 1.2− |
| 2000 02 04 | 691 | 0.2− | 0.2+ | 2002 10 09 | 704 | 0.6− | 1.1+ | 2002 11 10 | 704 | 0.0 | 1.0− |
| 2000 02 04 | 691 | 0.1− | 0.0 | 2002 10 09 | 704 | 0.7+ | 0.0 | 2002 11 22 | 644 | 0.2+ | 0.7− |
| 2000 02 04 | 691 | 0.1+ | 0.1+ | 2002 10 09 | 704 | 0.2+ | 0.9+ | 2002 11 22 | 644 | 0.2+ | 0.5− |
| 2000 04 03 | 691 | 0.7+ | 0.6− | 2002 10 09 | 704 | 0.2+ | 0.1− | 2002 11 22 | 644 | 0.1+ | 0.6− |
| 2000 04 03 | 691 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.1+ | 0.0 | 2004 03 15 | 691 | 0.3− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 691 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.5+ | 1.1+ | 2004 03 15 | 691 | 0.0 | 0.5+ |
| 2002 09 05 | 704 | 0.4+ | 0.6− | 2002 10 11 | 704 | 0.4− | 0.9+ | 2004 03 15 | 691 | 0.4+ | 0.4+ |
| 2002 09 05 | 704 | 1.1− | 0.6− | 2002 10 11 | 704 | 0.5− | 0.8+ | 2004 03 23 | 691 | 0.2+ | 0.1+ |
| 2002 09 05 | 704 | 0.3− | 0.4− | 2002 11 01 | 608 | 0.0 | 0.4− | 2004 03 23 | 691 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | 0.2+ | 0.1+ | 2002 11 01 | 608 | 0.2+ | 0.4− | 2004 03 23 | 691 | 0.4+ | 0.1+ |
| 2002 10 02 | 704 | (0.5+ | 2.1+) | 2002 11 01 | 608 | 0.2+ | 0.5− | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.3+ | 1.5+ | 2002 11 05 | 699 | 1.1− | 1.2− | 2006 11 16 | 691 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.2− | 0.9+ | 2002 11 05 | 699 | 0.5− | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.5+ | 0.8+ | 2002 11 05 | 699 | 0.3+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.9+ | 2002 11 05 | 699 | 0.2− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2002 11 06 | 704 | (1.8+ | 0.6+) | 2006 11 24 | 691 | 0.1− | 0.1− |

**(142524)∗ 2002 TT$_{44}$ = 2001 KC$_{78}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.57603 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24516305 | $\omega$ | 208.95973 | | +0.99075543 | +0.13246436 |
| $a$ | 2.5283239 | $\Omega$ | 143.39188 | | −0.11308645 | +0.92562699 |
| $e$ | 0.1742251 | $i$ | 2.81359 | | −0.07493417 | +0.35449665 |
| $P$ | 4.02 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.0 | 0.1+ | 2002 11 11 | 704 | 1.2+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 1994 10 31 | 691 | 0.1− | 0.1− | 2002 11 11 | 704 | 1.1+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 1994 10 31 | 691 | 0.8− | 0.9+ | 2002 11 11 | 704 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 1996 02 15 | 691 | 0.7+ | 0.3+ | 2002 11 11 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1996 02 15 | 691 | 0.6+ | 0.2+ | 2002 11 11 | 704 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1996 02 15 | 691 | 0.7+ | 0.1+ | 2002 11 11 | 704 | 0.5− | 0.5− | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2000 01 10 | 691 | 0.4− | 0.3+ | 2002 11 11 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | (0.8− | 1.6−) |
| 2000 01 10 | 691 | 0.5− | 0.3− | 2002 11 11 | 704 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 1.3− |
| 2000 01 10 | 691 | 0.8− | 0.0 | 2004 02 12 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2001 05 24 | 691 | 0.1− | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 05 24 | 691 | 0.2− | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 05 24 | 691 | 0.2+ | 0.0 | 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.5+ | 0.2− | 2004 03 20 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 10 02 | 704 | 0.8− | 0.3+ | 2004 03 20 | 691 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.1− | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.4+ |
| 2002 10 02 | 704 | 0.7− | 0.5− | 2005 05 12 | G96 | 0.4− | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2005 05 13 | 691 | 0.2+ | 0.7+ | 2006 10 27 | 704 | (1.1− | 1.9+) |
| 2002 10 03 | 704 | 0.1− | 0.6+ | 2005 05 13 | 691 | 0.4+ | 0.6+ | 2006 10 27 | 704 | 1.0− | 0.1+ |
| 2002 10 08 | 699 | 0.3+ | 0.2+ | 2005 05 13 | 691 | 0.2+ | 0.5+ | 2006 10 27 | 704 | (1.8− | 2.6+) |
| 2002 10 08 | 699 | 1.3+ | 0.4− | 2005 05 14 | 644 | 0.2+ | 0.6+ | 2006 10 27 | 704 | (1.3− | 1.9+) |
| 2002 10 08 | 699 | 1.3+ | 0.3+ | 2005 05 14 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 704 | (0.8− | 1.5+) |
| 2002 10 08 | 699 | 0.4− | 0.9− | 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 10 09 | 704 | 0.1+ | 0.5+ | 2006 09 15 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 10 09 | 704 | 0.2+ | 0.1+ | 2006 09 15 | 644 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.0 | 0.1+ | 2006 09 15 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.2− | 0.5+ | 2006 09 26 | 704 | 0.5+ | 1.2+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 10 26 | 608 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.9+ | 0.9− |
| 2002 10 26 | 608 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.6+ | 2006 11 11 | 703 | 1.1− | 0.8− |
| 2002 10 26 | 608 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 11 11 | 703 | 1.7+ | 0.7− |
| 2002 10 31 | 608 | 0.2+ | 0.5− | 2006 09 30 | 703 | 1.0− | 0.2− | 2006 11 14 | 704 | 0.3− | 0.5+ |
| 2002 10 31 | 608 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.0 | 0.9+ | 2006 11 14 | 704 | 0.4+ | 0.8+ |
| 2002 10 31 | 608 | 0.0 | 0.7− | 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 11 14 | 704 | 1.0+ | 0.7+ |
| 2002 11 01 | 704 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.4+ | 1.1+ |
| 2002 11 01 | 704 | 0.8− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2002 11 01 | 704 | 0.3− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.8− |
| 2002 11 07 | 704 | 0.1+ | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2002 11 07 | 704 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.7+ |
| 2002 11 07 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 1.2− | 0.2− |
| 2002 11 07 | 704 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.9+ | 1.2− |
| 2002 11 07 | 704 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | | | |

**(142525)∗ 2002 TA$_{45}$ = 1998 SR$_{56}$ = 2004 BT**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56638)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.83437 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26001729 | $\omega$ | 138.13274 | | +0.54802832 | +0.83633258 |
| $a$ | 2.4310911 | $\Omega$ | 165.08021 | | −0.78169303 | +0.51827493 |
| $e$ | 0.2659496 | $i$ | 3.24782 | | −0.29769276 | +0.17871460 |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 17 | 699 | 0.1− | 0.4+ | 2004 01 16 | 691 | 0.2+ | 0.0 | 2005 04 18 | 691 | 0.5+ | 0.1+ |
| 1998 09 17 | 699 | 0.3+ | 0.2− | 2004 01 16 | 691 | 0.2+ | 0.3− | 2005 05 12 | 691 | 0.2+ | 0.1+ |
| 1998 09 17 | 699 | 0.2+ | 1.8− | 2004 01 16 | 691 | 0.1+ | 0.4− | 2005 05 12 | 691 | 0.3+ | 0.3+ |
| 1998 09 25 | 699 | 1.2− | 0.9+ | 2004 01 17 | 691 | 0.2− | 0.3+ | 2005 05 12 | 691 | 0.1+ | 0.3+ |
| 1998 09 25 | 699 | 0.4+ | 1.3+ | 2004 01 17 | 691 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.2− |
| 1998 09 25 | 699 | 0.4+ | 0.6+ | 2004 01 17 | 691 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2001 03 21 | 691 | 0.1+ | 0.4+ | 2004 01 27 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2001 03 21 | 691 | 0.2− | 0.6+ | 2004 01 27 | 691 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2001 03 21 | 691 | 0.0 | 0.4+ | 2004 01 27 | 691 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.3− | 1.1+ | 2005 03 14 | G96 | 1.2− | 0.0 | 2006 11 12 | G96 | 0.6+ | 0.1− |
| 2002 10 02 | 704 | 0.1+ | 1.1+ | 2005 03 14 | G96 | 1.0− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.1− | 1.0+ | 2005 03 14 | G96 | 1.1− | 0.0 | 2006 11 12 | G96 | 0.6+ | 0.0 |
| 2002 10 02 | 704 | 0.8− | 0.9+ | 2005 03 14 | G96 | 1.0− | 0.3− | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2005 04 06 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | (1.2+ | 1.7+) | 2005 04 06 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.5− |
| 2002 10 03 | 704 | (0.3+ | 2.0+) | 2005 04 06 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 1.0− | 1.1+ | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 704 | (1.6− | 0.2+) | 2005 04 11 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.4− | 0.1− | 2005 04 11 | G96 | 0.2− | 0.3− | 2006 11 24 | 691 | 0.7− | 0.1+ |
| 2002 10 09 | 704 | (1.6− | 0.4+) | 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.3+ |
| 2002 10 09 | 704 | 0.4− | 1.0+ | 2005 04 18 | 691 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2002 10 09 | 704 | 0.0 | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.1+ | | | | |

**(142526)∗ 2002 TD$_{45}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.97770 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23872887 | $\omega$ | 213.00048 | | +0.53560290 | −0.83955777 |
| $a$ | 2.5735509 | $\Omega$ | 204.98020 | | +0.81393465 | +0.54193363 |
| $e$ | 0.1054469 | $i$ | 12.43727 | | +0.22503316 | +0.03808782 |
| $P$ | 4.13 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 13 | 704 | 0.6− | 1.9+ | 2002 11 07 | 704 | 0.3− | 0.7− | 2006 09 27 | 683 | 0.9+ | 0.5− |
| 1998 11 13 | 704 | 0.2+ | 1.6− | 2002 11 11 | 704 | 0.2− | 0.6− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 1998 11 13 | 704 | 1.1− | 0.6− | 2002 11 11 | 704 | 1.2− | 0.3− | 2006 09 27 | 683 | 0.4+ | 0.4− |
| 1998 11 13 | 704 | 0.2− | 0.4+ | 2002 11 11 | 704 | 0.4− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1998 11 13 | 704 | 0.5+ | 1.4+ | 2002 11 11 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 683 | 0.2+ | 0.2+ |
| 1998 11 16 | 699 | 0.6− | 1.3+ | 2002 11 11 | 704 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1998 11 16 | 699 | (2.3+ | 1.0−) | 2002 11 14 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.6+ |
| 1998 11 16 | 699 | 0.4+ | 0.8− | 2002 11 14 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.2+ | 0.1+ | 2002 11 14 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.7+ |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2002 11 30 | 704 | 0.4− | 0.1− | 2006 09 29 | 704 | 0.4+ | 1.0+ |
| 2002 09 05 | 704 | 0.3+ | 1.1+ | 2002 11 30 | 704 | 0.1− | 1.2− | 2006 09 29 | 704 | 0.9− | 0.7+ |
| 2002 10 02 | 704 | 0.0 | 1.1+ | 2002 11 30 | 704 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.3− |
| 2002 10 02 | 704 | (0.2+ | 1.6+) | 2002 12 08 | 644 | 0.3− | 0.5− | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.3+ | 1.3+ | 2002 12 08 | 644 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 0.0 | 1.3+ | 2002 12 08 | 644 | 0.3− | 0.6− | 2006 10 03 | 704 | 0.8− | 0.3+ |
| 2002 10 03 | 704 | 0.9− | 0.2− | 2004 02 17 | 703 | 0.7− | 0.9+ | 2006 10 03 | 704 | 0.3− | 0.6+ |
| 2002 10 03 | 704 | 0.8− | 0.5− | 2004 02 17 | 703 | 0.3− | 0.8+ | 2006 10 03 | 704 | (0.2− | 2.4+) |
| 2002 10 03 | 704 | 0.8− | 0.2− | 2004 02 17 | 703 | 0.9+ | 0.6− | 2006 10 03 | 704 | 0.1− | 1.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.8− | 1.1− | 2004 02 17 | 703 | 0.8− | 1.1+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2004 03 20 | 704 | 0.4+ | 0.5− | 2006 10 17 | 703 | 0.3+ | 0.1+ |
| 2002 10 07 | 704 | (1.3+ | 1.7+) | 2004 03 20 | 704 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2002 10 07 | 704 | 0.7+ | 0.9+ | 2004 03 20 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.0 |
| 2002 10 07 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.5− |
| 2002 10 07 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.6− | 2006 10 19 | G96 | 0.6+ | 0.3+ |
| 2002 10 07 | 704 | 1.4+ | 0.1− | 2005 06 09 | 703 | 0.5+ | 1.1+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2002 10 08 | 699 | 0.4+ | 0.3− | 2005 06 09 | 703 | 0.7− | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2002 10 08 | 699 | 0.0 | 0.2− | 2005 06 09 | 703 | 0.5+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 10 08 | 699 | 0.4− | 0.2− | 2005 06 09 | 703 | (2.1+ | 1.2−) | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 10 08 | 699 | 0.4− | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2002 10 09 | 704 | 1.1+ | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.9− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 10 09 | 704 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.7− | 0.8− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.7+ | 0.0 |
| 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.4+ | 2006 10 28 | 704 | 0.3+ | 0.7+ |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 28 | 704 | (1.9+ | 0.4+) |
| 2002 10 11 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.7− | 2006 10 28 | 704 | 0.4+ | 0.0 |
| 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 28 | 704 | (0.9− | 2.3+) |
| 2002 10 11 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 11 06 | 644 | 0.3+ | 0.0 |
| 2002 10 26 | 608 | 1.3+ | 1.4+ | 2006 09 18 | 704 | 1.1+ | 0.7− | 2006 11 06 | 644 | 0.3+ | 0.3− |
| 2002 10 26 | 608 | 1.3+ | 0.5+ | 2006 09 18 | 704 | 0.5+ | 0.0 | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2002 10 26 | 608 | 0.9+ | 0.8+ | 2006 09 18 | 704 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.6− | 0.6− |
| 2002 11 01 | 704 | 0.1− | 1.0+ | 2006 09 18 | 704 | 0.8+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2002 11 01 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 704 | 0.5− | 1.4+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2002 11 01 | 704 | 0.2− | 1.0+ | 2006 09 18 | 699 | 0.8+ | 0.5− | 2006 11 11 | G96 | 0.0 | 0.9− |
| 2002 11 01 | 704 | 0.1− | 1.5+ | 2006 09 18 | 699 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2002 11 01 | 608 | 0.1+ | 0.8− | 2006 09 18 | 699 | 0.2− | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.9− |
| 2002 11 01 | 608 | 0.1+ | 0.4− | 2006 09 18 | 699 | 0.7+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.8− |
| 2002 11 01 | 608 | 0.4+ | 0.9− | 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 11 05 | 704 | 0.4− | 0.8− | 2006 09 19 | 703 | 0.5+ | 1.1− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.8− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2002 11 05 | 704 | 0.5− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 11 05 | 704 | 0.4− | 0.3+ | 2006 09 22 | 224 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2002 11 05 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 224 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.4+ | 0.7− |
| 2002 11 06 | 699 | 0.1− | 0.3− | 2006 09 22 | 224 | 0.6+ | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.2+ |
| 2002 11 06 | 699 | 0.3− | 0.5− | 2006 09 25 | 683 | 1.0+ | 0.2− | 2006 11 14 | 703 | 0.0 | 0.6− |
| 2002 11 06 | 699 | 0.3+ | 0.8− | 2006 09 25 | 683 | (1.7+ | 0.9−) | 2006 11 18 | 704 | 0.7− | 0.0 |
| 2002 11 06 | 699 | 0.1− | 0.1− | 2006 09 25 | 683 | (1.9+ | 0.2−) | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 0.1− | 0.2− | 2006 09 26 | 683 | (1.5+ | 0.0 ) | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2002 11 07 | 704 | 0.2− | 0.5− | 2006 09 26 | 683 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.6− | 0.9− |
| 2002 11 07 | 704 | 0.2− | 0.4− | 2006 09 26 | 683 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.7− |

**(142527)∗ 2002 TF$_{45}$ = 2004 CW$_{102}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61385)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.44422 | | (2000.0) | | | |
| $n$ | 0.23988292 | $\omega$ | 165.02895 | | +0.99490755 | −0.08820321 |
| $a$ | 2.5652902 | $\Omega$ | 200.22351 | | +0.07171604 | +0.95953054 |
| $e$ | 0.0079473 | $i$ | 8.11163 | | +0.07082218 | +0.26743473 |
| $P$ | 4.11 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.2− | 0.0 | 2006 10 18 | H07 | 0.5+ | 0.4− |
| 2000 03 04 | 645 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.2− | 0.2− | 2006 10 18 | H07 | 0.2+ | 0.8− |
| 2002 10 02 | 704 | 0.9+ | 1.4− | 2004 02 23 | 704 | 1.1+ | 0.4+ | 2006 10 18 | H07 | 0.3+ | 0.3− |
| 2002 10 02 | 704 | (1.6+ | 0.4−) | 2004 03 12 | 644 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.4+ | 0.2+ |
| 2002 10 02 | 704 | 1.0+ | 1.2− | 2004 03 12 | 644 | 0.1− | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2004 03 12 | 644 | 0.3− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.5+ | 0.1− | 2004 03 12 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | (0.2+ | 1.5−) | 2004 03 12 | 644 | 0.4− | 0.6+ | 2006 10 20 | 703 | 0.2− | 0.7− |
| 2002 10 09 | 704 | 0.5− | 0.3+ | 2004 03 12 | 644 | 0.0 | 0.5+ | 2006 10 20 | 703 | 0.5− | 0.2− |
| 2002 10 09 | 704 | 0.5+ | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | 0.5− | 0.6+ | 2004 03 15 | 704 | 0.8+ | 0.5− | 2006 10 20 | 703 | 0.3− | 0.2− |
| 2002 10 11 | 704 | 1.0− | 0.3− | 2004 03 15 | 704 | 0.5+ | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.9− | 1.5+ | 2004 03 15 | 704 | 0.4− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 1.1− | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.9− | 1.2+ | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.3+ |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.7− |
| 2002 10 15 | 644 | 0.3+ | 0.4+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.7+ |
| 2002 10 15 | 644 | 0.2+ | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2002 10 15 | 644 | 0.2+ | 0.4+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 11 06 | 608 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 11 06 | 608 | 0.3− | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2002 11 06 | 608 | 0.0 | 1.2+ | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.1+ | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.2+ | 1.4− | 2006 09 27 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.1− | 1.0− | 2006 09 27 | 704 | 0.8− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.8+ | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 11 22 | 644 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.4− |
| 2002 11 22 | 644 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.3− |
| 2004 02 12 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2004 02 12 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.3− |
| 2004 02 12 | 644 | 0.7+ | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.6− |
| 2004 02 19 | 704 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2004 02 19 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.9− |
| 2004 02 19 | 704 | 0.5− | 1.1+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.6− |
| 2004 02 19 | 704 | 0.2+ | 0.5+ | 2006 10 18 | H07 | 0.6+ | 0.7+ | | | | |

**(142528)∗ 2002 TL$_{45}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.16453 | | (2000.0) | | | |
| $n$ | 0.24341930 | $\omega$ | 115.00197 | | −0.45806878 | −0.88891525 |
| $a$ | 2.5403840 | $\Omega$ | 2.26257 | | +0.79992196 | −0.41300956 |
| $e$ | 0.2519050 | $i$ | 2.37150 | | +0.38768266 | −0.19812315 |
| $P$ | 4.05 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 699 | 0.6+ | 0.4− | 2002 11 12 | 644 | 0.1− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 1998 10 18 | 699 | 0.0 | 0.5+ | 2002 11 12 | 644 | 0.2− | 1.5− | 2006 10 19 | 644 | 0.6+ | 0.1+ |
| 1998 10 18 | 699 | 0.6+ | 0.8− | 2002 12 31 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 1998 11 10 | 704 | 0.2− | 1.6− | 2002 12 31 | 704 | 0.1+ | 0.7− | 2006 10 19 | 644 | 0.3− | 0.0 |
| 1998 11 10 | 704 | 1.3− | 0.8+ | 2002 12 31 | 704 | 1.1+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 1998 11 10 | 704 | 1.7− | 0.3+ | 2002 12 31 | 704 | 0.3− | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 1998 11 10 | 704 | 1.2− | 1.4+ | 2003 01 27 | 704 | 0.7− | 0.8− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1998 11 10 | 699 | 0.0 | 0.4− | 2003 01 27 | 704 | 0.9− | 0.3− | 2006 10 21 | 703 | 0.6+ | 0.1+ |
| 1998 11 10 | 699 | 1.5+ | 0.4− | 2003 01 27 | 704 | 0.3− | 0.5− | 2006 10 21 | 703 | 1.2− | 0.7+ |
| 1998 11 10 | 699 | 0.0 | 1.9− | 2003 01 27 | 704 | 0.8− | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.3− |
| 1998 11 20 | 699 | 1.0+ | 1.7+ | 2003 01 27 | 704 | (0.8+ | 1.8+) | 2006 10 21 | 703 | 0.3− | 0.8− |
| 1998 11 20 | 699 | 0.8+ | 0.6+ | 2003 02 01 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1998 11 20 | 699 | 0.4+ | 0.8+ | 2003 02 01 | 704 | (1.0+ | 1.6−) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.3+ | 1.3− | 2003 02 01 | 704 | (1.7+ | 0.5−) | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 1.4− | 2003 02 01 | 704 | 1.4− | 0.3− | 2006 10 23 | 704 | 0.6− | 0.4+ |
| 2002 09 07 | 704 | 0.5+ | 1.4− | 2003 02 04 | 704 | 0.1− | 0.4+ | 2006 10 23 | 704 | (1.5+ | 0.5+) |
| 2002 09 07 | 704 | 0.6+ | 0.7− | 2003 02 04 | 704 | 0.4− | 0.1− | 2006 10 23 | 704 | 0.8+ | 0.6+ |
| 2002 10 02 | 704 | 0.3− | 0.4+ | 2003 02 04 | 704 | 0.6+ | 0.0 | 2006 10 23 | 704 | 0.2+ | 0.2+ |
| 2002 10 02 | 704 | 0.3− | 0.6− | 2003 02 04 | 704 | 1.4+ | 0.5+ | 2006 11 03 | 130 | 0.7+ | 0.7+ |
| 2002 10 02 | 704 | 0.1− | 0.4− | 2003 02 04 | 704 | 0.5− | 0.1− | 2006 11 03 | 130 | 0.8+ | 0.2− |
| 2002 10 02 | 704 | 0.6− | 0.7− | 2003 02 19 | 699 | 0.1+ | 0.9+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2003 02 19 | 699 | (0.6+ | 2.1+) | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2003 02 19 | 699 | (2.1+ | 1.1+) | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2003 02 19 | 699 | 0.3+ | 0.4+ | 2006 11 10 | 683 | 0.8+ | 0.2− |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2004 04 20 | 704 | 0.3+ | 0.3− | 2006 11 10 | 683 | 1.3+ | 0.5− |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2004 04 20 | 704 | 0.6− | 0.3− | 2006 11 10 | 683 | (2.0+ | 0.6−) |
| 2002 10 07 | 704 | 0.0 | 0.2+ | 2004 04 20 | 704 | 0.6− | 0.9+ | 2006 11 11 | 703 | 0.7− | 0.3− |
| 2002 10 07 | 704 | 0.2+ | 1.4+ | 2004 05 13 | 699 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2002 10 07 | 704 | 0.7+ | 1.0+ | 2004 05 13 | 699 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.7− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.9− | 1.0+ | 2004 05 13 | 699 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2002 10 11 | 704 | 0.6− | 0.5+ | 2004 05 13 | 699 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2002 10 11 | 704 | 0.7− | 1.0+ | 2005 07 11 | 691 | 0.6− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.5− | 0.3+ | 2005 07 11 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 1.1− | 0.6+ | 2005 07 11 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 683 | 0.2− | 0.0 |
| 2002 10 16 | 644 | 0.5− | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 11 15 | 683 | 0.6+ | 0.9+ |
| 2002 10 16 | 644 | 0.4− | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.5− | 2006 11 15 | 683 | 0.2− | 0.5+ |
| 2002 10 16 | 644 | 0.4− | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 11 08 | 704 | 0.0 | 0.7− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2002 11 08 | 704 | 0.1+ | 0.5− | 2006 09 20 | 699 | (1.6+ | 0.4+) | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 11 08 | 704 | 0.9+ | 0.7− | 2006 09 20 | 699 | 0.5+ | 1.2+ | 2006 11 18 | 704 | 0.3− | 0.3− |
| 2002 11 08 | 704 | 0.1+ | 0.4− | 2006 09 20 | 699 | (0.4+ | 2.1+) | 2006 11 18 | 704 | 0.2+ | 1.1− |
| 2002 11 08 | 704 | (0.0 | 1.7−) | 2006 09 20 | 699 | 1.2− | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.9− |
| 2002 11 10 | 704 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.6− |
| 2002 11 10 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2002 11 10 | 704 | 0.6+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 11 10 | 704 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 11 10 | 704 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.1− | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2002 11 11 | 704 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2002 11 11 | 704 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.6+ |
| 2002 11 11 | 704 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2002 11 11 | 704 | 0.7− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2002 11 12 | 704 | 0.5− | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.9+ | 0.5+ |
| 2002 11 12 | 704 | 0.2− | 0.5+ | 2006 10 16 | 691 | 0.2− | 1.1− | 2006 11 28 | 704 | 0.5− | 0.4− |
| 2002 11 12 | 704 | 0.9+ | 1.0− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 1.0+ | 0.3+ |
| 2002 11 12 | 644 | 0.1+ | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 1.5+ | 0.7+ |
| 2002 11 12 | 704 | 0.7+ | 1.1+ | 2006 10 16 | 691 | 0.3− | 0.0 | | | | |

**(142529)∗ 2002 TG$_{47}$ = 1998 YZ$_{31}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38002)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 343.82784 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23794874 | $\omega$ | 7.78241 | | +0.84865524 | | −0.52178986 | |
| $a$ | 2.5791728 | $\Omega$ | 24.28723 | | +0.47323554 | | +0.67576372 | |
| $e$ | 0.1911852 | $i$ | 12.17085 | | +0.23628881 | | +0.52065223 | |
| $P$ | 4.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 704 | 1.1+ | 1.7− | 2002 11 08 | 704 | 0.7+ | 1.0− | 2006 09 28 | 691 | 0.1− | 0.1− |
| 1998 12 16 | 704 | 0.5+ | 1.2− | 2002 11 12 | 704 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 1998 12 16 | 704 | 2.0+ | 0.7− | 2002 11 12 | 704 | 0.1+ | 0.6− | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 1998 12 16 | 704 | 0.9− | 0.0 | 2002 11 12 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 1998 12 17 | 704 | 0.4+ | 1.6+ | 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.6− |
| 1998 12 17 | 704 | 0.4+ | 1.4− | 2002 11 12 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 1998 12 17 | 704 | 0.9− | 0.2+ | 2002 11 13 | 644 | 0.2+ | 0.6− | 2006 10 01 | 704 | 0.2− | 0.7+ |
| 1998 12 17 | 704 | 0.6+ | 1.1− | 2002 11 13 | 644 | 0.1+ | 0.7− | 2006 10 01 | 704 | 0.9+ | 0.5− |
| 1998 12 17 | 704 | 1.1− | 0.5− | 2002 11 13 | 644 | 0.3+ | 0.5− | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.9− | 1.3− | 2002 11 14 | 704 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.9+ |
| 2002 09 05 | 704 | 0.6+ | 0.2− | 2002 11 14 | 704 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.1− | 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 1.3+ | 0.3+ | 2002 11 14 | 704 | (1.3+ | 1.6+) | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | 0.7+ | 0.1+ | 2002 12 02 | 704 | (1.0+ | 2.2+) | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.9+ | 0.2+ | 2002 12 02 | 704 | 0.6+ | 1.0− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.6+ | 0.3+ | 2002 12 02 | 704 | (0.7− | 1.9+) | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.6+ | 0.3+ | 2002 12 02 | 704 | 0.2− | 0.9− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2002 12 02 | 704 | (2.3− | 0.7−) | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.3+ | 0.9+ | 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 0.5+ | 2002 12 05 | 704 | 1.1+ | 0.2+ | 2006 10 13 | 644 | 0.4− | 0.2+ |
| 2002 10 03 | 704 | 1.1+ | 0.8+ | 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 10 13 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.0 | 1.0− | 2002 12 05 | 704 | 0.6+ | 0.2− | 2006 10 13 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.6− | 1.1− | 2002 12 05 | 704 | 0.7+ | 0.1− | 2006 10 16 | 703 | 1.1− | 0.1− |
| 2002 10 04 | 704 | 0.9− | 0.7− | 2002 12 11 | 644 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2002 10 04 | 704 | 0.9− | 0.7− | 2002 12 11 | 644 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.1+ | 0.3− | 2002 12 11 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 0.6+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2002 10 09 | 704 | 0.3− | 0.6+ | 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | 0.2− | 0.2− | 2002 12 31 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 0.2− | 2002 12 31 | 704 | 0.5− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 0.3+ | 0.1− | 2002 12 31 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 12 | 704 | 0.3− | 0.2− | 2004 03 15 | 691 | 0.4− | 1.0+ | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 2002 10 12 | 704 | 0.3− | 0.0 | 2004 03 15 | 691 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2004 03 15 | 691 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.9+ | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 10 12 | 704 | 0.6− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2002 10 16 | 644 | 0.3− | 0.1+ | 2004 03 23 | 704 | 0.7+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2002 10 16 | 699 | 0.4− | 0.7+ | 2006 09 18 | 703 | 0.6− | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2002 10 16 | 699 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2002 10 16 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 23 | 704 | (2.0− | 0.8−) |
| 2002 10 16 | 644 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.7− | 0.2− | 2006 10 23 | 704 | 0.5+ | 0.7+ |
| 2002 10 16 | 699 | 0.5− | 1.2+ | 2006 09 19 | 704 | 0.1− | 0.3− | 2006 10 23 | 704 | 0.4+ | 0.1+ |
| 2002 10 16 | 644 | 0.2− | 0.3+ | 2006 09 19 | 704 | 0.2+ | 0.2+ | 2006 10 23 | 704 | (1.9+ | 0.3+) |
| 2002 10 26 | 608 | 0.6− | 0.7− | 2006 09 19 | 704 | 0.2− | 1.1− | 2006 10 28 | 704 | (1.1+ | 1.6+) |
| 2002 10 26 | 608 | 1.0− | 0.1− | 2006 09 19 | 704 | 0.2− | 0.6− | 2006 10 28 | 704 | (0.2− | 3.5+) |
| 2002 10 26 | 608 | 0.3− | 0.4− | 2006 09 19 | 704 | 0.3− | 0.2+ | 2006 10 28 | 704 | 0.7− | 0.7+ |
| 2002 11 01 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.8− | 0.4+ | 2006 10 28 | 704 | 1.3− | 0.5+ |
| 2002 11 01 | 644 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.4− | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 11 01 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.2+ | 1.2+ | 2006 09 22 | 704 | 0.3− | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.4− | 1.0+ | 2006 09 22 | 704 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.5− | 1.0− |
| 2002 11 05 | 704 | 1.2− | 0.7+ | 2006 09 22 | 704 | 0.2+ | 1.1+ | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2002 11 05 | 704 | 0.9− | 1.1+ | 2006 09 22 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.5− | 0.9+ | 2006 09 22 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2002 11 06 | 699 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2002 11 06 | 699 | 0.2− | 0.8+ | 2006 09 26 | 704 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.0 |
| 2002 11 06 | 699 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2002 11 06 | 699 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.9− | 1.0− | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2002 11 06 | 608 | 0.6− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.5+ | 2006 11 21 | 704 | 1.3+ | 0.2+ |
| 2002 11 06 | 608 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.8− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2002 11 06 | 608 | 0.6− | 0.3+ | 2006 09 28 | 704 | 0.5− | 0.4+ | 2006 11 21 | 704 | 1.1+ | 0.5+ |
| 2002 11 08 | 704 | 0.7− | 0.1− | 2006 09 28 | 704 | 0.6− | 0.4+ | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2002 11 08 | 704 | 0.1− | 0.5+ | 2006 09 28 | 704 | 0.5− | 0.6+ | 2006 11 21 | 704 | 1.0+ | 0.4+ |
| 2002 11 08 | 704 | 0.1+ | 0.6− | 2006 09 28 | 691 | 0.1− | 0.1− | | | | |

**(142530)∗ 2002 TL$_{47}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 327.89336 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22246748 | $\omega$ | 356.80214 | | +0.86992675 | | −0.48482524 | |
| $a$ | 2.6974808 | $\Omega$ | 32.69833 | | +0.45611679 | | +0.72120257 | |
| $e$ | 0.0618161 | $i$ | 9.63309 | | +0.18757643 | | +0.49478415 | |
| $P$ | 4.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 704 | 0.2− | 0.7+ | 2002 11 14 | 704 | 0.5+ | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.4− |
| 2000 04 04 | 704 | 0.5+ | 0.1+ | 2002 11 23 | 644 | 0.2+ | 0.1+ | 2004 04 14 | 644 | 0.2− | 0.1− |
| 2000 04 04 | 704 | 0.1+ | 2.0+ | 2002 11 23 | 644 | 0.2+ | 0.2− | 2004 04 14 | 644 | 0.1− | 0.2− |
| 2000 04 04 | 704 | 0.1+ | 0.7+ | 2002 11 23 | 644 | 0.4+ | 0.1+ | 2004 04 14 | 644 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.2+ | 0.2− | 2002 12 02 | 704 | 0.8+ | 0.1− | 2005 05 11 | 644 | 0.6+ | 0.8+ |
| 2002 10 02 | 704 | 0.5− | 0.1+ | 2002 12 02 | 704 | 0.8+ | 0.2+ | 2005 05 11 | 644 | 0.9+ | 0.9+ |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2002 12 02 | 704 | 0.6+ | 0.7+ | 2005 05 11 | 644 | 0.8+ | 1.1+ |
| 2002 10 02 | 704 | 0.0 | 0.0 | 2002 12 02 | 704 | 0.4+ | 0.9− | 2006 08 30 | 699 | 0.0 | 0.5+ |
| 2002 10 03 | 704 | 0.5− | 0.3− | 2002 12 02 | 704 | 0.0 | 0.6− | 2006 08 30 | 699 | 0.2+ | 1.3+ |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2002 12 06 | 704 | 0.7+ | 0.5+ | 2006 08 30 | 699 | 0.1− | 0.7+ |
| 2002 10 03 | 704 | 0.1− | 0.2+ | 2002 12 06 | 704 | 1.0+ | 0.5+ | 2006 08 30 | 699 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 1.0+ | 0.4− | 2002 12 06 | 704 | 1.2+ | 0.0 | 2006 08 30 | F84 | 0.2− | 0.5+ |
| 2002 10 07 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 644 | 0.2− | 0.2− | 2006 08 30 | F84 | (6.5+ | 2.3+) |
| 2002 10 07 | 704 | 0.8− | 0.1− | 2002 12 11 | 644 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.1− | 0.7+ |
| 2002 10 07 | 704 | 0.2+ | 0.2+ | 2002 12 11 | 644 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.0 | 0.4− |
| 2002 10 11 | 704 | 0.6− | 1.1− | 2002 12 11 | 704 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.1+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.6− | 0.0 | 2002 12 11 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.6− | 0.3− |
| 2002 10 11 | 704 | 1.1− | 0.6+ | 2002 12 11 | 704 | 0.7− | 0.1+ | 2006 09 15 | 703 | 0.4− | 0.6+ |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2003 01 05 | 704 | 1.2− | 0.1+ | 2006 09 15 | 703 | 0.5− | 0.2+ |
| 2002 10 31 | 699 | 0.4+ | 0.3+ | 2003 01 05 | 704 | 0.4− | 0.4− | 2006 09 15 | 703 | 0.6− | 0.8+ |
| 2002 10 31 | 699 | 0.4− | 0.6− | 2003 01 05 | 704 | 0.0 | 1.2+ | 2006 09 15 | 703 | 1.2− | 0.3+ |
| 2002 10 31 | 699 | 0.3− | 0.3− | 2004 01 29 | 703 | 0.4− | 0.7+ | 2006 09 20 | 608 | 0.8+ | 1.3− |
| 2002 10 31 | 699 | 0.0 | 0.7− | 2004 01 29 | 703 | 1.5+ | 0.3− | 2006 09 20 | 608 | 1.1+ | 1.3− |
| 2002 10 31 | 699 | 0.8− | 0.3− | 2004 01 29 | 703 | 0.2+ | 0.2+ | 2006 09 20 | 608 | 0.6+ | 1.3− |
| 2002 10 31 | 699 | 0.0 | 0.0 | 2004 01 29 | 703 | 0.7− | 0.2+ | 2006 09 21 | 699 | 0.9− | 0.4+ |
| 2002 10 31 | 699 | 0.0 | 0.8− | 2004 01 30 | 699 | 0.2+ | 0.8− | 2006 09 21 | 699 | 0.3− | 0.4+ |
| 2002 10 31 | 699 | 0.8+ | 0.0 | 2004 01 30 | 699 | 0.6− | 0.8+ | 2006 09 21 | 699 | 0.1+ | 0.7+ |
| 2002 11 01 | 644 | 0.0 | 0.0 | 2004 01 30 | 699 | 0.4+ | 0.9+ | 2006 09 26 | 703 | 0.3+ | 0.0 |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2004 01 30 | 699 | 0.9+ | 1.2+ | 2006 09 26 | 703 | 0.7+ | 0.9− |
| 2002 11 01 | 644 | 0.2+ | 0.1+ | 2004 02 14 | 608 | 0.3− | 0.3+ | 2006 09 26 | 703 | 1.0− | 0.1+ |
| 2002 11 05 | 704 | 0.1− | 0.6+ | 2004 02 14 | 608 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.6− | 0.5+ |
| 2002 11 05 | 704 | 0.1− | 0.3+ | 2004 02 14 | 608 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 1.0− | 0.1− |
| 2002 11 05 | 704 | 0.1+ | 0.2+ | 2004 02 16 | 704 | 0.1− | 0.7+ | 2006 09 26 | 703 | 1.4− | 0.6+ |
| 2002 11 05 | 704 | 0.2+ | 0.2− | 2004 02 16 | 704 | (0.0 | 1.8+) | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 2002 11 06 | 704 | 0.8− | 0.8+ | 2004 02 16 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 1.0− | 0.8− |
| 2002 11 06 | 704 | (1.0− | 2.0+) | 2004 02 16 | 704 | 0.3+ | 0.8+ | 2006 10 02 | 703 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 0.6− | 0.9+ | 2004 02 17 | 691 | 0.1− | 0.2− | 2006 10 02 | 703 | 0.1− | 0.7− |
| 2002 11 06 | 704 | 1.0− | 0.5+ | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.5− | 0.4− |
| 2002 11 06 | 704 | 1.1− | 0.8+ | 2004 02 17 | 691 | 0.2+ | 0.4− | 2006 10 02 | 703 | 0.4+ | 0.1+ |
| 2002 11 08 | 704 | 0.7− | 0.0 | 2004 03 18 | 703 | 0.3− | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.7+ |
| 2002 11 08 | 704 | 0.2− | 0.1− | 2004 03 18 | 644 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 11 08 | 704 | 0.3− | 0.0 | 2004 03 18 | 703 | (1.6+ | 0.4−) | 2006 10 11 | 644 | 0.2+ | 0.6+ |
| 2002 11 08 | 704 | 0.0 | 0.0 | 2004 03 18 | 703 | 0.5− | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.6+ |
| 2002 11 12 | 704 | 0.3+ | 0.5+ | 2004 03 18 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2002 11 12 | 704 | 0.3− | 0.3+ | 2004 03 18 | 703 | 0.3+ | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.7+ |
| 2002 11 12 | 704 | 0.3+ | 0.2+ | 2004 03 18 | 644 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.6+ | 0.2+ |
| 2002 11 12 | 704 | 0.5+ | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.6− | 2006 10 19 | 703 | 0.6− | 0.5+ |
| 2002 11 14 | 704 | 0.7+ | 0.3− | 2004 03 23 | 704 | 0.4+ | 1.0+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2002 11 14 | 704 | 0.6+ | 0.6+ | 2004 03 23 | 704 | 0.2− | 0.1− | | | | |

**(142531)∗ 2002 TN$_{47}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.46523 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23187814 | $\omega$ | 145.34676 | | +0.99155374 | +0.12593079 | |
| $a$ | 2.6239941 | $\Omega$ | 207.46836 | | −0.12891620 | +0.93077089 | |
| $e$ | 0.1313679 | $i$ | 3.85685 | | −0.01420532 | +0.34323024 | |
| $P$ | 4.25 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.2+ | 0.0 | 2002 11 07 | 699 | 0.2− | 0.2− | 2006 09 18 | 704 | 0.3− | 0.3− |
| 2002 10 02 | 704 | 0.1+ | 0.1− | 2002 11 07 | 699 | 0.9+ | 0.2+ | 2006 09 18 | 704 | 0.3+ | 1.4− |
| 2002 10 02 | 704 | 1.0+ | 0.4− | 2002 11 12 | 644 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 1.3+ | 0.1− | 2002 11 12 | 644 | 0.2− | 0.7− | 2006 09 19 | 699 | 0.2− | 0.5− |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2002 11 12 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.4− | 2002 11 22 | 644 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.8+ | 0.1+ |
| 2002 10 03 | 704 | 0.5− | 0.5− | 2002 11 22 | 644 | 0.1− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 0.6+ | 2002 11 22 | 644 | 0.2− | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 1.1− | 0.6+ | 2002 11 30 | 608 | 1.1− | 1.4− | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 1.0+ | 0.2+ | 2002 11 30 | 608 | 1.1− | 0.8− | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2002 11 30 | 608 | 0.9− | 1.2− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2002 12 01 | 704 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2002 10 04 | 599 | 0.0 | 0.2+ | 2002 12 01 | 704 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 599 | 0.0 | 0.1− | 2002 12 01 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 599 | 0.0 | 0.0 | 2002 12 01 | 704 | 1.0− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2002 10 04 | 599 | 0.2+ | 0.1+ | 2002 12 05 | 704 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2002 10 04 | 599 | 0.3+ | 0.1− | 2002 12 05 | 704 | 0.7− | 0.3+ | 2006 09 29 | 704 | 0.3+ | 0.5− |
| 2002 10 04 | 599 | 0.1+ | 0.0 | 2002 12 05 | 704 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 1.4+ | 0.8− | 2002 12 05 | 704 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.8+ | 0.7+ |
| 2002 10 09 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.8− | 0.2− | 2004 03 20 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.8− | 0.1+ | 2005 04 07 | G96 | 0.4− | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.2+ |
| 2002 10 11 | 704 | 0.4− | 0.4+ | 2005 04 07 | G96 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.6− |
| 2002 10 11 | 704 | 0.2− | 0.4+ | 2005 04 07 | G96 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.7− |
| 2002 10 18 | 644 | 0.0 | 0.3+ | 2005 04 07 | G96 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.2+ |
| 2002 10 18 | 644 | 0.2+ | 0.2+ | 2005 04 07 | G96 | 0.3− | 0.4+ | 2006 10 01 | 704 | 0.0 | 0.4− |
| 2002 10 18 | 644 | 0.3− | 0.1+ | 2005 04 07 | G96 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2002 10 28 | 608 | 0.9+ | 1.2+ | 2005 04 07 | G96 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2002 10 28 | 608 | 0.9+ | 1.1+ | 2005 04 07 | G96 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2002 10 28 | 608 | (1.2+ | 1.5+) | 2005 05 12 | 691 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.7− |
| 2002 10 31 | 699 | 0.6− | 0.5+ | 2005 05 12 | 691 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.6+ | 1.1+ |
| 2002 10 31 | 699 | 0.6+ | 0.7+ | 2005 05 12 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 1.3− |
| 2002 10 31 | 699 | 0.7− | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.1− | 2006 10 17 | 703 | 0.7+ | 1.0+ |
| 2002 10 31 | 699 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 02 | 608 | 0.5+ | 0.8+ | 2006 08 28 | 703 | 0.9+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 02 | 608 | 0.2+ | 1.4+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 11 02 | 608 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2002 11 05 | 049 | 0.6− | 0.8− | 2006 08 30 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 11 05 | 049 | (0.1+ | 2.0−) | 2006 08 30 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 11 05 | 049 | (0.1− | 1.8−) | 2006 08 30 | 704 | 0.2− | 0.2− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 11 06 | 704 | 0.4+ | 1.2+ | 2006 09 15 | 704 | 0.8− | 0.8− | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2006 09 15 | 704 | 0.5− | 0.1− | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2002 11 06 | 704 | 0.0 | 0.6+ | 2006 09 15 | 704 | 0.7− | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2002 11 06 | 704 | 0.1+ | 0.8+ | 2006 09 15 | 704 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.4− | 0.3− |
| 2002 11 06 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 704 | 0.3− | 1.0+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2002 11 07 | 699 | 0.3+ | 0.7− | 2006 09 18 | 704 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2002 11 07 | 699 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3− |

**(142532)∗ 2002 TU$_{47}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.51653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23019390 | $\omega$ | 250.43942 | | +0.88605765 | +0.45993165 | |
| $a$ | 2.6367777 | $\Omega$ | 82.14116 | | −0.40035032 | +0.82228190 | |
| $e$ | 0.0480284 | $i$ | 3.35693 | | −0.23371233 | +0.33513483 | |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.6− | 0.3+ | 2002 12 05 | 704 | 0.7− | 0.4+ | 2006 09 12 | 703 | 0.9− | 0.4− |
| 2002 10 02 | 704 | 0.4− | 0.3+ | 2004 01 18 | 644 | 0.3+ | 0.3− | 2006 09 16 | 704 | 1.0+ | 0.3− |
| 2002 10 02 | 704 | 0.5− | 0.3− | 2004 01 18 | 644 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.5+ | 1.1− |
| 2002 10 02 | 704 | 0.2+ | 0.3− | 2004 01 18 | 644 | 0.3+ | 0.1− | 2006 09 16 | 704 | 0.5− | 0.6− |
| 2002 10 03 | 704 | 0.1− | 0.5− | 2004 01 22 | 704 | (3.0+ | 1.8−) | 2006 09 16 | 704 | 0.7+ | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 0.3− | 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 704 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.4− | 1.1− | 2004 01 22 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 703 | (1.8+ | 0.5+) |
| 2002 10 03 | 704 | 0.3+ | 0.3− | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.5− | 2004 01 23 | 699 | (2.2+ | 2.0+) | 2006 09 18 | 703 | 0.4+ | 0.7+ |
| 2002 10 07 | 704 | 0.3− | 1.0− | 2004 01 23 | 699 | 0.5+ | 1.2+ | 2006 09 18 | 703 | 0.0 | 0.6+ |
| 2002 10 07 | 704 | 1.0− | 0.5− | 2004 01 23 | 699 | 0.0 | 1.0+ | 2006 09 18 | 699 | 0.4+ | 0.4+ |
| 2002 10 07 | 704 | 1.3− | 0.6+ | 2004 01 23 | 699 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.6+ |
| 2002 10 09 | 704 | 0.2− | 0.9− | 2004 02 10 | 333 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.2− | 0.0 |
| 2002 10 09 | 704 | (1.6− | 0.2−) | 2004 02 10 | 333 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.0 | 0.4+ |
| 2002 10 09 | 704 | 0.6− | 0.3− | 2004 02 10 | 333 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.0 | 0.0 |
| 2002 10 18 | 644 | 1.0+ | 0.1+ | 2004 02 11 | 333 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2002 10 18 | 644 | 0.1+ | 0.4+ | 2004 02 11 | 333 | 0.4− | 0.4+ | 2006 09 20 | 644 | 0.4+ | 0.3+ |
| 2002 10 18 | 644 | 0.0 | 0.2+ | 2004 02 13 | 691 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.6− | 0.1+ |
| 2002 10 31 | 644 | 0.1+ | 0.2+ | 2004 02 13 | 691 | 0.3− | 0.4+ | 2006 09 22 | 704 | 0.4− | 0.1+ |
| 2002 10 31 | 644 | 0.1+ | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.5+ |
| 2002 10 31 | 644 | 0.0 | 0.4+ | 2004 02 14 | 608 | 0.5− | 0.6− | 2006 09 22 | 704 | 0.4− | 0.2+ |
| 2002 11 02 | 608 | 0.2− | 0.4− | 2004 02 14 | 608 | 0.0 | 0.7− | 2006 09 22 | 704 | 0.0 | 0.1+ |
| 2002 11 02 | 608 | 0.2− | 0.4− | 2004 02 14 | 608 | 0.4− | 0.7− | 2006 09 26 | 704 | 0.6+ | 0.1− |
| 2002 11 02 | 608 | 0.2− | 0.3− | 2004 02 16 | 704 | 0.9+ | 0.1+ | 2006 09 26 | 704 | (1.5+ | 2.3−) |
| 2002 11 04 | 699 | 0.6− | 0.5− | 2004 02 16 | 704 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.4− |
| 2002 11 04 | 699 | 0.3− | 0.5+ | 2004 02 16 | 704 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.9− |
| 2002 11 04 | 699 | 0.5+ | 0.3+ | 2004 02 16 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | (1.9+ | 1.7−) |
| 2002 11 04 | 699 | 0.8+ | 1.0+ | 2004 02 27 | 608 | 0.1+ | 0.8− | 2006 09 28 | 704 | 0.6+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.1+ | 0.9− | 2004 02 27 | 608 | 0.3+ | 0.4− | 2006 09 28 | 704 | 0.5− | 0.8+ | | |
| 2002 11 07 | 704 | 0.0 | 0.1− | 2004 02 27 | 608 | 0.7+ | 0.3− | 2006 09 28 | 704 | 0.4− | 1.4+ | | |
| 2002 11 07 | 704 | 0.0 | 0.2− | 2004 03 10 | 644 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.9− | | |
| 2002 11 07 | 704 | 0.0 | 0.4− | 2004 03 10 | 644 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.8− | 0.5+ | | |
| 2002 11 07 | 704 | 0.2− | 0.4− | 2004 03 10 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.1− | | |
| 2002 11 08 | 704 | 0.4+ | 1.1+ | 2004 03 14 | 704 | 0.5+ | 1.2+ | 2006 09 30 | 703 | 0.4− | 0.7+ | | |
| 2002 11 08 | 704 | 0.7+ | 1.0+ | 2004 03 14 | 704 | 0.5− | 0.3− | 2006 09 30 | 703 | 1.0+ | 0.1− | | |
| 2002 11 08 | 704 | 0.1+ | 1.0+ | 2004 03 14 | 704 | 0.9− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.8+ | | |
| 2002 11 08 | 704 | 0.1+ | 0.5+ | 2005 05 04 | 644 | 0.2− | 0.7+ | 2006 09 30 | 704 | 0.2− | 0.0 | | |
| 2002 11 11 | 704 | 0.2+ | 0.6− | 2005 05 04 | 644 | 0.1+ | 0.8+ | 2006 09 30 | 704 | (0.2+ | 1.8+) | | |
| 2002 11 11 | 704 | 0.5+ | 0.0 | 2005 05 04 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.2− | 1.4+ | | |
| 2002 11 11 | 704 | 0.0 | 0.7− | 2005 06 04 | 704 | (0.1− | 1.7+) | 2006 09 30 | 704 | (0.3− | 1.6+) | | |
| 2002 11 11 | 704 | 0.0 | 0.3− | 2005 06 04 | 704 | 0.0 | 0.7+ | 2006 09 30 | 704 | (0.4− | 1.6+) | | |
| 2002 11 11 | 704 | 0.5+ | 0.4+ | 2005 06 04 | 704 | (0.2+ | 1.6+) | 2006 10 20 | 644 | 0.5+ | 0.3+ | | |
| 2002 11 15 | 704 | 0.1− | 0.2+ | 2005 06 04 | 704 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 15 | 704 | 1.4+ | 0.3+ | 2005 06 04 | 704 | 1.1+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2002 11 15 | 704 | (1.8+ | 0.5+) | 2006 08 23 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 22 | 644 | 0.3− | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ | | |
| 2002 11 22 | 644 | 0.1− | 0.3− | 2006 08 23 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 2.2− | 1.4+ | | |
| 2002 11 22 | 644 | 0.1− | 0.2− | 2006 08 23 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 12 01 | 704 | 1.0+ | 1.2− | 2006 08 23 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 1.6− | 0.7− | | |
| 2002 12 01 | 704 | 0.5− | 0.9+ | 2006 08 23 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 2.0− | 1.3+ | | |
| 2002 12 01 | 704 | 0.6+ | 0.8+ | 2006 08 24 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 1.2− | 2.5− | | |
| 2002 12 01 | 704 | 0.5− | 0.3− | 2006 08 24 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.5+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.3+ | | |
| 2002 12 05 | 704 | 0.1− | 0.6+ | 2006 09 12 | 703 | 0.5+ | 0.5− | 2006 10 22 | 703 | 0.1+ | 1.2− | | |
| 2002 12 05 | 704 | 0.0 | 0.4− | 2006 09 12 | 703 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.6− | 0.4+ | | |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.2+ | 0.4+ | | | | | | |

**(142533)∗ 2002 TR$_{48}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.81898 | | (2000.0) | | | |
| $n$ | 0.24127385 | $\omega$ | 150.84111 | | +0.99839643 | +0.03976558 |
| $a$ | 2.5554215 | $\Omega$ | 206.96968 | | −0.05068998 | +0.94484859 |
| $e$ | 0.1593162 | $i$ | 5.09679 | | +0.02520128 | +0.32508436 |
| $P$ | 4.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 691 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.5− | 0.1+ | | |
| 2001 06 16 | 691 | 0.1− | 0.5+ | 2005 05 14 | G96 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 2001 06 16 | 691 | 0.0 | 0.3+ | 2005 06 14 | 691 | 0.2+ | 0.1− | 2006 10 23 | 704 | 1.5− | 0.2+ | | |
| 2002 10 02 | 704 | 0.8− | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.6+ | 0.4+ | | |
| 2002 10 02 | 704 | 0.6− | 1.1− | 2005 06 14 | 691 | 0.1− | 0.1− | 2006 10 23 | 704 | (1.6+ | 0.9−) | | |
| 2002 10 02 | 704 | 0.3+ | 0.1− | 2006 09 22 | 224 | 0.0 | 0.5− | 2006 10 23 | 704 | 0.0 | 0.8+ | | |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2006 09 22 | 224 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.1− | | |
| 2002 10 03 | 704 | 1.1+ | 0.3− | 2006 09 22 | 224 | 0.6+ | 0.0 | 2006 10 28 | 704 | 0.8− | 0.3+ | | |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.5+ | 1.1− | 2006 09 27 | 704 | (0.7− | 1.7−) | 2006 10 28 | 704 | 0.3− | 0.6+ | | |
| 2002 10 04 | 599 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.8− | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 2002 10 04 | 599 | 0.4+ | 0.2− | 2006 09 27 | 704 | (0.4− | 3.1−) | 2006 10 28 | 704 | 0.6− | 0.6+ | | |
| 2002 10 04 | 599 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.3− | | |
| 2002 10 05 | 291 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.4− | | |
| 2002 10 05 | 291 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.6+ | 0.2− | | |
| 2002 10 05 | 291 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.2− | | |
| 2002 11 02 | 950 | 0.7+ | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.9+ | 1.5− | | |
| 2002 11 02 | 950 | 0.7+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.5− | | |
| 2002 11 02 | 950 | 0.8+ | 0.7+ | 2006 10 19 | 691 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2002 11 04 | 699 | 1.3+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2002 11 04 | 699 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.7− | | |
| 2002 11 04 | 699 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2002 11 04 | 699 | 0.6− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.2+ | 1.6−) | | |
| 2002 11 06 | 704 | 1.1− | 0.3− | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.3− | 0.6− | | |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.4− | 0.6− | | |
| 2002 11 06 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.4− | | |
| 2002 11 06 | 704 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.2− | 0.4− | | |
| 2002 11 07 | 704 | (1.0− | 1.6+) | 2006 10 21 | 703 | 1.0− | 0.6− | 2006 11 17 | 703 | 0.1− | 0.4+ | | |
| 2002 11 07 | 704 | 0.9− | 0.5+ | 2006 10 21 | 703 | (0.3− | 1.6−) | 2006 11 17 | 703 | 0.2+ | 0.5+ | | |
| 2002 11 07 | 704 | 0.7− | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.6− | 2006 11 17 | 703 | 0.4+ | 0.5+ | | |
| 2002 11 07 | 704 | 0.8− | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.7− | 2006 11 17 | 703 | 0.5− | 0.6+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.0 | 0.2+ | | |
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.9+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 1.4+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.7+ | | |
| 2005 05 14 | G96 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.1− | | |
| 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 23 | 691 | (1.7− | 2.1−) | | | | | | |

**(142534)∗ 2002 TY$_{48}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.43542 | | (2000.0) | | | |
| $n$ | 0.22084374 | $\omega$ | 142.48139 | | +0.99171330 | −0.07318811 |
| $a$ | 2.7106867 | $\Omega$ | 222.09709 | | +0.04025749 | +0.95750577 |
| $e$ | 0.1309250 | $i$ | 9.06173 | | +0.12200029 | +0.27897347 |
| $P$ | 4.46 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 1.1− | 0.1+ | 2002 11 10 | 704 | 0.2− | 0.5− | 2006 08 18 | 644 | 0.1− | 0.2+ | | |
| 2002 10 02 | 704 | 1.3− | 0.1− | 2002 11 10 | 704 | 0.1− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.2+ | | |
| 2002 10 02 | 704 | 0.9− | 0.4− | 2002 11 12 | 644 | 0.2+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.2+ | | |
| 2002 10 02 | 704 | 1.3− | 0.8− | 2002 11 12 | 644 | 0.3+ | 0.2+ | 2006 08 27 | 699 | 0.3− | 0.3+ | | |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2002 11 12 | 644 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.0 | 0.1+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.5− | 2002 11 22 | 644 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.0 | 0.5+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.4− | 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 08 27 | 699 | 1.0− | 0.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.7− | 2002 11 22 | 644 | 0.1− | 0.2+ | 2006 08 28 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.3− | 0.6− | 2002 12 01 | 704 | 1.0+ | 0.6+ | 2006 08 28 | 704 | 0.3− | 0.2+ | | |
| 2002 10 07 | 704 | 0.5+ | 0.5+ | 2002 12 01 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 704 | 0.1+ | 1.0+ | | |
| 2002 10 07 | 699 | 0.3− | 0.4− | 2002 12 01 | 704 | 0.0 | 0.7+ | 2006 08 28 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 07 | 704 | 0.4+ | 0.5+ | 2002 12 01 | 704 | 1.4+ | 0.0 | 2006 08 28 | 704 | 0.6− | 0.1+ | | |
| 2002 10 07 | 699 | 0.0 | 0.2+ | 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 08 30 | 699 | 0.2− | 0.3+ | | |
| 2002 10 07 | 704 | 0.8− | 0.7− | 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.1− | 0.2+ | | |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 08 30 | 699 | 0.7− | 0.2+ | | |
| 2002 10 07 | 699 | 0.4− | 0.1+ | 2002 12 05 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 0.1+ | 0.2− | | |
| 2002 10 07 | 704 | 0.8− | 0.5− | 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 09 11 | 703 | 0.5− | 0.4+ | | |
| 2002 10 07 | 699 | 0.2− | 0.3− | 2002 12 08 | 608 | 0.5+ | 0.1+ | 2006 09 11 | 703 | 0.5− | 0.7+ | | |
| 2002 10 09 | 704 | 0.9− | 0.2+ | 2002 12 08 | 608 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.3− | 1.0+ | | |
| 2002 10 09 | 704 | 0.9− | 0.6+ | 2002 12 08 | 608 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.5+ | 0.8+ | | |
| 2002 10 09 | 704 | 0.9− | 0.2+ | 2002 12 10 | 704 | 0.4− | 1.0+ | 2006 09 19 | 699 | 0.3+ | 1.0+ | | |
| 2002 10 09 | 704 | 0.2− | 0.1+ | 2002 12 10 | 704 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.7+ | 0.3+ | | |
| 2002 10 09 | 704 | 0.7− | 0.8+ | 2002 12 10 | 704 | 0.6+ | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.8− | | |
| 2002 10 11 | 704 | 0.0 | 0.1− | 2002 12 10 | 704 | 0.8+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.4− | | |
| 2002 10 11 | 704 | 0.3− | 0.3− | 2003 01 04 | 704 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.5− | 0.0 | | |
| 2002 10 11 | 704 | 0.0 | 0.4− | 2003 01 04 | 704 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.1− | 0.7− | | |
| 2002 10 11 | 704 | 0.0 | 0.6− | 2003 01 04 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.2− | 0.5− | | |
| 2002 10 11 | 704 | 0.3− | 0.3− | 2003 01 04 | 704 | 0.2+ | 0.9− | 2006 09 26 | 703 | 0.7− | 0.0 | | |
| 2002 10 16 | 699 | 0.7+ | 0.7− | 2003 01 04 | 704 | 0.6+ | 0.7− | 2006 09 26 | 704 | 0.1+ | 0.1− | | |
| 2002 10 16 | 699 | 0.2+ | 0.1+ | 2004 01 28 | 704 | 0.5+ | 0.4− | 2006 09 26 | 704 | 0.1− | 0.3− | | |
| 2002 10 16 | 699 | 0.4− | 0.4+ | 2004 01 28 | 704 | 0.9+ | 0.7+ | 2006 09 26 | 704 | 0.3− | 0.2+ | | |
| 2002 10 16 | 699 | 1.0+ | 1.3+ | 2004 01 28 | 704 | 0.2+ | 1.2+ | 2006 09 26 | 704 | 0.7+ | 0.1− | | |
| 2002 10 16 | 699 | 0.5+ | 0.5− | 2004 01 28 | 704 | (0.5+ | 1.7+) | 2006 09 26 | 704 | 0.5− | 0.1− | | |
| 2002 10 16 | 699 | 0.8+ | 1.0+ | 2004 02 17 | 703 | (1.6− | 1.6+) | 2006 09 29 | 699 | 0.2− | 0.2− | | |
| 2002 10 16 | 699 | 0.1+ | 0.5+ | 2004 02 17 | 703 | 0.1+ | 1.3+ | 2006 09 29 | 699 | 0.0 | 0.3− | | |
| 2002 10 16 | 699 | 1.0+ | 0.1− | 2004 02 17 | 703 | 1.1− | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.0 | | |
| 2002 10 31 | 699 | 0.4− | 0.1− | 2004 02 17 | 703 | 0.4− | 1.2+ | 2006 09 29 | 699 | 1.2+ | 0.2− | | |
| 2002 10 31 | 699 | 0.2− | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.4+ | 0.1− | | |
| 2002 10 31 | 699 | 0.6− | 0.4+ | 2004 02 19 | 704 | 1.0+ | 1.1+ | 2006 10 01 | 704 | 0.4− | 0.1+ | | |
| 2002 10 31 | 699 | 1.1− | 0.2+ | 2004 02 19 | 704 | 0.8+ | 1.3+ | 2006 10 01 | 704 | 0.2+ | 0.2+ | | |
| 2002 11 02 | 608 | 0.3+ | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.9+ | 2006 10 01 | 704 | 0.6+ | 0.5+ | | |
| 2002 11 02 | 608 | 0.2+ | 1.0− | 2004 02 19 | 704 | 0.0 | 0.8+ | 2006 10 01 | 704 | 1.1+ | 1.0+ | | |
| 2002 11 02 | 608 | 0.2+ | 0.1− | 2005 05 03 | 691 | 0.0 | 0.5+ | 2006 11 10 | 704 | 0.2− | 1.0+ | | |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2005 05 03 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 704 | 0.8− | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2005 05 03 | 691 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.3+ | 0.4+ |
| 2002 11 06 | 704 | 0.4− | 0.6+ | 2005 05 09 | 699 | 0.6+ | 0.1− | 2006 11 10 | 704 | 1.1− | 0.7+ |
| 2002 11 06 | 704 | 0.1+ | 0.2+ | 2005 05 09 | 699 | 0.7+ | 0.7+ | 2006 11 10 | 704 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2005 05 09 | 699 | 0.2+ | 0.6+ | 2006 11 16 | 703 | (1.1− | 2.9−) |
| 2002 11 10 | 704 | 0.3+ | 0.7+ | 2005 05 09 | 699 | 0.1+ | 0.0 | 2006 11 16 | 703 | (2.0− | 0.8−) |
| 2002 11 10 | 704 | 0.8+ | 0.7+ | 2005 05 13 | 704 | 0.5− | 0.1− | 2006 11 16 | 703 | (2.5+ | 1.0−) |
| 2002 11 10 | 704 | 0.1− | 0.5+ | 2005 05 13 | 704 | 0.3+ | 0.8+ | 2006 11 16 | 703 | 0.1+ | 0.4− |
| 2002 11 10 | 704 | 0.1+ | 0.9+ | 2005 05 13 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.5− | 1.0+ |
| 2002 11 10 | 704 | 0.2+ | 1.0+ | 2005 05 13 | 704 | 0.8+ | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2002 11 10 | 704 | 0.2+ | 0.5− | 2005 05 13 | 704 | 0.3− | 0.9+ | 2006 11 19 | 704 | 1.3+ | 0.1+ |

**(142535)∗ 2002 TD$_{49}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.73613 | | (2000.0) | | | |
| $n$ | 0.24351489 | $\omega$ | 292.53854 | | +0.78310132 | +0.60747540 |
| $a$ | 2.5397192 | $\Omega$ | 30.54344 | | −0.42936167 | +0.68299916 |
| $e$ | 0.1689934 | $i$ | 15.18791 | | −0.44988985 | +0.40556846 |
| $P$ | 4.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 20 | 644 | 0.6+ | 0.9+ | 2002 11 14 | 704 | 0.5+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 06 20 | 644 | 0.8+ | 0.7+ | 2002 11 14 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2001 06 20 | 644 | 0.6+ | 0.6+ | 2002 11 27 | 699 | 0.6− | 0.0 | 2006 10 23 | 691 | 0.8− | 0.2+ |
| 2002 10 02 | 704 | 1.4− | 0.1+ | 2002 11 27 | 699 | 0.1− | 1.2− | 2006 10 23 | 691 | 1.0− | 0.2− |
| 2002 10 02 | 704 | (1.9− | 0.1−) | 2002 11 27 | 699 | 0.9+ | 0.9− | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2002 10 02 | 704 | 0.0 | 0.6− | 2002 11 27 | 699 | (0.2+ | 1.9+) | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.3− | 0.8− | 2004 01 31 | 645 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | (1.7+ | 0.1−) | 2004 01 31 | 645 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 0.2+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.9+ | 0.3− | 2004 02 17 | 645 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.7+ | 0.7+ | 2005 05 04 | 644 | 0.0 | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 1.3+ | 0.3+ | 2005 05 04 | 644 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2002 10 12 | 704 | 1.2+ | 0.8− | 2005 05 04 | 644 | 0.7+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.1− | 0.1+ | 2005 05 12 | 644 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 0.0 | 0.4− | 2005 05 12 | 644 | 0.5+ | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2002 10 29 | 049 | (1.8− | 0.3−) | 2005 05 12 | 644 | 0.1+ | 0.8+ | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2002 10 30 | 049 | (2.7− | 0.1−) | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2002 10 30 | 049 | (2.2− | 0.0 ) | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 11 15 | 185 | (2.5+ | 0.5−) |
| 2002 10 30 | 049 | (2.5− | 0.2+) | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 15 | 185 | 0.5− | 0.9− |
| 2002 11 05 | 704 | 0.7+ | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 15 | 185 | 1.1− | 0.2+ |
| 2002 11 05 | 704 | 0.7+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.7− | 1.3+ |
| 2002 11 05 | 704 | 0.1+ | 1.0− | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.3− | 1.0+ |
| 2002 11 05 | 704 | 0.5+ | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 2002 11 05 | 704 | 0.1+ | 1.4− | 2006 09 27 | 704 | 1.0− | 0.7− | 2006 11 16 | 704 | (0.0 | 2.3+) |
| 2002 11 08 | 704 | 0.2− | 1.1− | 2006 09 27 | 704 | 0.3− | 0.6− | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2002 11 08 | 704 | 0.4− | 0.2− | 2006 09 27 | 704 | (2.0− | 0.9−) | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2002 11 08 | 704 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 11 12 | 704 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.6+ |
| 2002 11 12 | 704 | 0.6+ | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 1.4+ | 0.2− |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.6− |
| 2002 11 13 | 644 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2002 11 13 | 644 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2002 11 13 | 644 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.8+ |
| 2002 11 14 | 704 | 0.4− | 0.3+ | 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.5− | 0.5− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 1.0− | 0.3+ |
| 2002 11 14 | 704 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.4+ |

**(142536)∗ 2002 TE$_{49}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.20888 | | (2000.0) | | | |
| $n$ | 0.21878110 | $\omega$ | 90.46615 | | +0.65573267 | +0.73647178 |
| $a$ | 2.7276974 | $\Omega$ | 222.11654 | | −0.75289051 | +0.62144677 |
| $e$ | 0.0941904 | $i$ | 14.34912 | | −0.05630763 | +0.26723252 |
| $P$ | 4.50 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.2+ | 0.1+ | 2002 12 10 | 704 | 0.2+ | 0.5− | 2006 09 11 | 703 | 0.2+ | 0.7+ |
| 2002 10 02 | 704 | 0.4− | 0.0 | 2002 12 10 | 704 | 0.3− | 0.1− | 2006 09 11 | 703 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2002 12 10 | 704 | 0.5− | 0.6+ | 2006 09 11 | 703 | 0.6− | 0.5+ |
| 2002 10 03 | 704 | 0.6+ | 0.3− | 2003 12 22 | 644 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2003 12 22 | 644 | 0.2+ | 0.4+ | 2006 09 16 | 683 | 0.7+ | 0.1+ |
| 2002 10 03 | 704 | 1.5+ | 0.4+ | 2003 12 22 | 644 | 0.2− | 0.0 | 2006 09 16 | 683 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.7+ | 0.4+ | 2004 02 12 | 644 | 0.0 | 0.4− | 2006 09 16 | 644 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | (2.2+ | 0.2−) | 2004 02 12 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.4+ |
| 2002 10 07 | 704 | 0.1+ | 0.7− | 2004 02 12 | 644 | 0.0 | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.2+ |
| 2002 10 07 | 704 | 0.7− | 0.4− | 2005 04 12 | 704 | 1.4+ | 0.6− | 2006 09 17 | 683 | (1.8+ | 0.0 ) |
| 2002 10 07 | 704 | 0.4− | 0.1+ | 2005 04 12 | 704 | 0.6− | 1.2+ | 2006 09 17 | 683 | 0.2+ | 0.4+ |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2005 04 12 | 704 | 0.5+ | 1.4+ | 2006 09 17 | 683 | 1.0+ | 0.0 |
| 2002 10 11 | 704 | 0.3− | 0.6− | 2005 04 12 | 704 | 1.0− | 0.4− | 2006 09 20 | 185 | 0.4+ | 0.3− |
| 2002 10 11 | 704 | 0.7− | 0.2− | 2005 05 09 | 704 | 0.8+ | 0.2− | 2006 09 20 | 185 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2005 05 09 | 704 | 0.6+ | 0.1+ | 2006 09 20 | 185 | 0.5+ | 0.3− |
| 2002 10 11 | 704 | (2.7− | 0.7−) | 2005 05 09 | 704 | 0.7+ | 0.8+ | 2006 09 21 | 699 | 0.3+ | 0.2+ |
| 2002 10 12 | 941 | 0.5− | 1.0− | 2005 05 09 | 699 | 0.2+ | 1.3+ | 2006 09 21 | 699 | 0.2+ | 0.6+ |
| 2002 10 12 | 941 | 0.4− | 0.6− | 2005 05 09 | 704 | (0.8+ | 2.0+) | 2006 09 21 | 699 | 0.1− | 0.4+ |
| 2002 10 12 | 941 | 0.4− | 0.1− | 2005 05 09 | 699 | 0.3+ | 0.6+ | 2006 09 21 | 699 | 1.1+ | 0.1+ |
| 2002 10 12 | 941 | 0.1− | 0.4+ | 2005 05 09 | 699 | 0.4− | 0.4+ | 2006 09 21 | A50 | 0.3+ | 0.3− |
| 2002 10 31 | 699 | 0.0 | 0.1− | 2005 05 09 | 699 | (1.6+ | 1.5+) | 2006 09 21 | A50 | 0.1+ | 0.0 |
| 2002 10 31 | 699 | 0.2− | 0.5+ | 2005 05 13 | 704 | 0.1− | 0.9+ | 2006 09 21 | A50 | 0.4+ | 0.2+ |
| 2002 10 31 | 699 | 0.2− | 0.0 | 2005 05 13 | 704 | 0.3+ | 0.5+ | 2006 09 21 | A50 | 0.3− | 1.1+ |
| 2002 10 31 | 699 | 0.2− | 0.4+ | 2005 05 13 | 704 | 0.6+ | 1.0+ | 2006 09 21 | A50 | 0.7+ | 0.1− |
| 2002 11 06 | 704 | 0.1− | 0.5+ | 2005 05 13 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.4+ |
| 2002 11 06 | 704 | 0.7+ | 1.4+ | 2005 05 13 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.7− | 0.2− |
| 2002 11 06 | 704 | 0.6+ | 1.1+ | 2005 05 26 | 699 | 1.0− | 0.3+ | 2006 09 27 | 703 | 1.4− | 1.5− |
| 2002 11 06 | 704 | 0.1− | 1.2+ | 2005 05 26 | 699 | 0.1− | 0.3− | 2006 09 27 | 703 | 0.6− | 0.4− |
| 2002 11 06 | 704 | 0.5− | 0.9+ | 2005 05 26 | 699 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.2− |
| 2002 11 10 | 704 | (0.1+ | 1.6−) | 2005 05 26 | 699 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.6+ | 0.0 |
| 2002 11 10 | 704 | 0.3+ | 1.2− | 2005 05 30 | 699 | (1.7+ | 1.2+) | 2006 09 29 | 699 | 0.7− | 0.8+ |
| 2002 11 10 | 704 | 0.3− | 0.8− | 2005 05 30 | 699 | 0.2− | 0.5− | 2006 09 29 | 699 | 0.4+ | 0.5+ |
| 2002 11 12 | 644 | 0.1+ | 0.4+ | 2005 05 30 | 699 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2002 11 12 | 644 | 0.1+ | 0.3+ | 2005 05 30 | 699 | (1.6+ | 0.3+) | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2002 11 12 | 644 | 0.1+ | 0.3+ | 2005 06 04 | 703 | 0.8− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.2− |
| 2002 11 22 | 644 | 0.4+ | 1.2+ | 2005 06 04 | 703 | 0.7− | 0.9+ | 2006 10 17 | 703 | 0.9− | 0.1+ |
| 2002 11 22 | 644 | 0.6+ | 0.8+ | 2005 06 04 | 703 | 1.1− | 0.2+ | 2006 10 29 | 703 | 0.3− | 0.1− |
| 2002 11 22 | 644 | 0.3+ | 1.2+ | 2005 06 04 | 703 | (1.4− | 2.8+) | 2006 10 29 | 703 | 0.2+ | 0.1+ |
| 2002 12 01 | 704 | 1.3− | 0.0 | 2006 08 29 | 699 | 0.1+ | 0.1− | 2006 10 29 | 703 | 1.0− | 0.4− |
| 2002 12 01 | 704 | 1.1+ | 0.3+ | 2006 08 29 | 699 | 0.1+ | 0.0 | 2006 10 29 | 703 | 0.5+ | 0.1− |
| 2002 12 01 | 704 | 0.4+ | 1.1+ | 2006 08 29 | 699 | (0.1− | 1.8+) | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2002 12 01 | 704 | 0.4− | 0.6+ | 2006 08 29 | 699 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.5+ | 0.3+ |
| 2002 12 01 | 704 | 0.5+ | 1.0+ | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.3− | 1.3− |
| 2002 12 10 | 704 | 0.7− | 0.4+ | 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 11 13 | 703 | 0.9+ | 1.4− |
| 2002 12 10 | 704 | 0.3− | 0.7− | 2006 09 06 | 644 | 0.2− | 0.2+ | | | | |

**(142537)∗ 2002 TV$_{50}$ = 1998 XC$_{86}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38005)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.12060 | | (2000.0) | | | |
| $n$ | 0.23114043 | $\omega$ | 203.23681 | | +0.37857487 | −0.90906674 |
| $a$ | 2.6295742 | $\Omega$ | 225.04737 | | +0.88310503 | +0.41105726 |
| $e$ | 0.0605058 | $i$ | 14.23391 | | +0.27714000 | −0.06804110 |
| $P$ | 4.26 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 1.3+ | 1.0− | 2002 11 22 | 644 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.3− | 0.5− |
| 1998 12 15 | 704 | 1.0− | 0.4− | 2002 11 22 | 644 | 0.1+ | 0.6+ | 2006 09 21 | 704 | 0.8+ | 0.3− |
| 1998 12 15 | 704 | 0.8+ | 0.2+ | 2002 11 23 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 704 | 0.2− | 0.3+ |
| 1998 12 15 | 704 | 0.2− | 1.0+ | 2002 11 23 | 644 | 0.2+ | 0.3+ | 2006 09 21 | 704 | 0.5+ | 0.0 |
| 1998 12 22 | 704 | 0.9− | 1.3− | 2002 11 23 | 644 | 0.5+ | 0.1+ | 2006 09 28 | 703 | 0.3+ | 1.3+ |
| 1998 12 22 | 704 | 1.0+ | 0.2+ | 2002 12 01 | 704 | 0.0 | 0.4− | 2006 09 28 | 703 | 1.1+ | 1.2+ |
| 1998 12 22 | 704 | 1.1− | 0.4+ | 2002 12 01 | 704 | 0.7+ | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.4+ |
| 1998 12 22 | 704 | 0.2+ | 1.1− | 2002 12 01 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.5+ | 0.7+ |
| 2002 09 18 | 049 | 0.4− | 0.0 | 2002 12 01 | 704 | 0.7+ | 0.4+ | 2006 10 04 | 703 | 0.2− | 0.1− |
| 2002 09 18 | 049 | 0.6− | 0.1− | 2002 12 07 | 704 | 0.1+ | 0.8+ | 2006 10 04 | 703 | 1.2− | 0.4+ |
| 2002 09 18 | 049 | 0.0 | 0.1− | 2002 12 07 | 704 | 0.4− | 0.2+ | 2006 10 04 | 703 | 0.7− | 0.3− |
| 2002 10 02 | 704 | 0.1− | 0.1+ | 2002 12 07 | 704 | 0.3− | 0.0 | 2006 10 04 | 703 | 0.3+ | 0.4+ |
| 2002 10 02 | 704 | 0.3− | 0.1− | 2002 12 07 | 704 | 0.1+ | 0.9− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2002 12 07 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.5− | 2002 12 10 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2002 10 03 | 704 | 1.0− | 0.5− | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2002 12 11 | 704 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2002 12 11 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.2− | 0.2− | 2002 12 11 | 704 | 0.5+ | 0.3− | 2006 11 11 | 683 | 0.7+ | 0.5+ |
| 2002 10 11 | 704 | 0.5+ | 0.1+ | 2002 12 11 | 704 | 0.8+ | 1.2− | 2006 11 11 | 683 | (2.6− | 2.4+) |
| 2002 10 11 | 704 | 0.4− | 0.5− | 2003 01 27 | 644 | 0.5− | 0.5+ | 2006 11 11 | 683 | (2.0− | 2.8+) |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2003 01 27 | 644 | 0.1− | 0.7+ | 2006 11 12 | 106 | 1.1+ | 0.3− |
| 2002 10 11 | 704 | 0.3+ | 0.4+ | 2003 01 27 | 644 | 0.9− | 0.4− | 2006 11 12 | 106 | 1.2+ | 0.4− |
| 2002 10 31 | 699 | (1.7− | 0.9+) | 2004 03 14 | 644 | 0.1+ | 0.5+ | 2006 11 12 | 106 | 0.9+ | 0.6− |
| 2002 10 31 | 699 | 0.0 | 0.9− | 2004 03 14 | 644 | 0.1+ | 0.5+ | 2006 11 12 | 106 | (0.5+ | 2.1−) |
| 2002 10 31 | 699 | 0.3+ | 0.7− | 2004 03 14 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.1− | 0.3− |
| 2002 10 31 | 699 | 1.0− | 0.2+ | 2004 04 16 | 704 | 0.3+ | 0.1− | 2006 11 14 | 703 | 1.3− | 0.5− |
| 2002 10 31 | 644 | 0.4− | 0.1− | 2004 04 16 | 704 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.4+ |
| 2002 10 31 | 644 | 0.3− | 0.1− | 2004 04 16 | 704 | 0.2− | 0.9+ | 2006 11 14 | 703 | 0.6− | 0.3+ |
| 2002 10 31 | 644 | 0.5− | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2002 11 06 | 704 | 1.0+ | 0.2+ | 2006 09 14 | 644 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2002 11 06 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.7− | 0.8+ |
| 2002 11 06 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.4− |
| 2002 11 06 | 704 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.5− | 0.6− | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2002 11 10 | 704 | 0.5− | 0.1− | 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.4− | 0.4− |
| 2002 11 10 | 704 | 0.3− | 0.1− | 2006 09 20 | 699 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.6+ | 1.3− |
| 2002 11 10 | 704 | 0.7− | 0.7+ | 2006 09 20 | 699 | 0.1− | 0.8+ | | | | |
| 2002 11 22 | 644 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.1+ | | | | |

**(142538)∗ 2002 TX$_{50}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.26792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23686238 | $\omega$ | 305.62769 | | +0.93679344 | +0.31799880 | |
| $a$ | 2.5870530 | $\Omega$ | 36.46958 | | −0.18430485 | +0.80301733 | |
| $e$ | 0.2184283 | $i$ | 14.21170 | | −0.29740506 | +0.50402374 | |
| $P$ | 4.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.3− | 0.9+ | 2002 12 13 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2002 12 13 | 644 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | (1.5− | 2.0−) | 2003 01 20 | 644 | (0.2+ | 2.1+) | 2006 10 01 | 704 | 1.0− | 0.1− |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2003 01 20 | 644 | (0.1+ | 1.6+) | 2006 10 01 | 704 | 0.8− | 0.4+ |
| 2002 09 07 | 704 | 1.2+ | 0.2+ | 2003 01 20 | 644 | (0.1+ | 1.6+) | 2006 10 01 | 704 | 1.4− | 0.1− |
| 2002 09 07 | 704 | 1.4+ | 0.8+ | 2004 01 17 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 1.0− | 0.2− |
| 2002 09 07 | 704 | 0.6− | 0.5− | 2004 01 17 | 691 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.8− | 0.3− |
| 2002 10 02 | 704 | 0.2− | 0.1+ | 2004 01 17 | 691 | 0.4+ | 0.1− | 2006 10 03 | G96 | 0.4+ | 0.2− |
| 2002 10 02 | 704 | 0.1− | 0.1+ | 2004 02 11 | 644 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.1+ | 0.5+ | 2004 02 11 | 644 | 0.6+ | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2005 04 07 | 691 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 07 | 704 | 0.8− | 0.8− | 2005 04 07 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 07 | 704 | 0.0 | 0.5+ | 2005 04 07 | 691 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.3− | 0.9+ | 2005 04 14 | 691 | 0.7+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 10 07 | 704 | 0.2+ | 0.8+ | 2005 04 14 | 691 | 0.6+ | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2002 10 07 | 704 | 0.1+ | 1.2+ | 2005 04 14 | 691 | 0.5+ | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2002 10 10 | 704 | 0.8− | 0.5+ | 2005 04 16 | 691 | 0.5+ | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2002 10 10 | 704 | 0.5− | 0.3− | 2005 04 16 | 691 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 2002 10 10 | 704 | 0.4− | 0.3− | 2005 04 16 | 691 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 10 10 | 704 | 0.9− | 0.4+ | 2005 05 04 | 699 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2005 05 04 | 699 | 0.2+ | 0.6− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.4+ | 2005 05 04 | 699 | 0.7+ | 1.1+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2005 05 04 | 699 | 0.5+ | 0.4+ | 2006 10 22 | 704 | 0.3− | 1.1+ |
| 2002 10 11 | 704 | 0.3+ | 0.3− | 2006 09 16 | 704 | 0.3− | 0.7+ | 2006 10 22 | 704 | 0.3− | 0.7− |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.3+ | 1.0+ | 2006 10 22 | 704 | (2.8− | 1.6+) |
| 2002 10 16 | 699 | 0.8− | 0.8+ | 2006 09 16 | 704 | 0.6− | 0.6+ | 2006 10 22 | 704 | 0.6− | 0.5− |
| 2002 10 16 | 699 | 0.1− | 0.1− | 2006 09 16 | 704 | 0.2− | 0.0 | 2006 10 22 | 704 | 0.7− | 0.1+ |
| 2002 10 16 | 699 | 0.5− | 0.5− | 2006 09 16 | 704 | 1.0− | 0.0 | 2006 10 27 | 704 | 0.4+ | 0.4+ |
| 2002 10 16 | 699 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.3+ | 0.4+ | 2006 10 27 | 704 | 0.4+ | 0.1− |
| 2002 11 05 | 644 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.3+ | 0.3− | 2006 10 27 | 704 | 0.2+ | 0.4+ |
| 2002 11 05 | 644 | 0.0 | 0.2− | 2006 09 16 | 699 | 0.1+ | 0.6+ | 2006 10 27 | 704 | 0.8+ | 0.1+ |
| 2002 11 05 | 644 | 0.8− | 0.8+ | 2006 09 16 | 699 | 0.0 | 0.4+ | 2006 10 31 | 704 | 1.4− | 0.3− |
| 2002 11 06 | 699 | 0.1− | 0.8− | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 31 | 704 | 1.0− | 0.6+ |
| 2002 11 06 | 699 | 0.8− | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.1− | 2006 10 31 | 704 | 0.1− | 0.9+ |
| 2002 11 06 | 699 | 1.0− | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 31 | 704 | 0.9− | 0.8+ |
| 2002 11 06 | 699 | 0.8− | 0.8− | 2006 09 18 | 703 | 0.0 | 0.6− | 2006 10 31 | 704 | 0.3+ | 1.3+ |
| 2002 11 08 | 704 | (0.6+ | 1.5−) | 2006 09 19 | 704 | 0.5− | 0.9− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 11 08 | 704 | 0.3− | 1.2− | 2006 09 19 | 704 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2002 11 08 | 704 | 0.4+ | 1.2− | 2006 09 19 | 704 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2002 11 08 | 704 | 0.4+ | 0.7− | 2006 09 19 | 704 | 0.2+ | 0.7+ | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 2002 11 12 | 704 | 0.5− | 0.5− | 2006 09 19 | 704 | 0.3− | 0.1− | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2006 09 21 | 699 | 0.8+ | 0.6− | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2002 11 12 | 704 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2002 11 12 | 704 | 0.1+ | 0.3− | 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.2− | 0.5− | 2006 09 21 | 699 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5+ |
| 2002 11 14 | 704 | 1.2+ | 0.0 | 2006 09 22 | 704 | 0.3− | 1.5+ | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2002 11 14 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2002 11 14 | 704 | 0.6+ | 0.2+ | 2006 09 22 | 704 | 0.9+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.4− |
| 2002 11 14 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2002 11 27 | 699 | 0.4− | 0.0 | 2006 09 25 | 704 | 1.0− | 0.7+ | 2006 11 17 | 703 | 0.4+ | 0.6+ |
| 2002 11 27 | 699 | 0.4− | 0.4+ | 2006 09 25 | 704 | 1.3− | 0.4+ | 2006 11 17 | 703 | 1.0+ | 0.5+ |
| 2002 11 27 | 699 | 1.1− | 0.5+ | 2006 09 25 | 704 | 0.8− | 0.1− | 2006 11 17 | 703 | 1.4+ | 0.4+ |
| 2002 11 27 | 699 | 0.6− | 0.3+ | 2006 09 25 | 704 | (1.9− | 0.2+) | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2002 12 02 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2002 12 02 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 699 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2002 12 02 | 704 | 0.5− | 0.0 | 2006 09 25 | 699 | 1.0+ | 0.4− | 2006 11 18 | 704 | 0.6− | 1.0+ |
| 2002 12 02 | 704 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.3+ | 1.1+ |
| 2002 12 02 | 704 | 0.4+ | 1.1+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 11 20 | 704 | (1.2+ | 1.6+) |
| 2002 12 06 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.9− | 0.2+ |
| 2002 12 06 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.2− | 2006 11 20 | 704 | 1.1− | 0.1+ |
| 2002 12 06 | 704 | 0.7+ | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 20 | 704 | (1.9− | 0.7+) |
| 2002 12 06 | 704 | 0.8+ | 0.5+ | 2006 09 29 | 699 | 0.0 | 0.1− | 2006 11 21 | 704 | (0.1+ | 2.1+) |
| 2002 12 12 | 644 | 0.4+ | 0.6+ | 2006 09 29 | 699 | 0.2− | 0.5− | 2006 11 21 | 704 | 1.5+ | 1.2+ |
| 2002 12 12 | 644 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.1+ | 2006 11 21 | 704 | (0.0 | 2.0+) |
| 2002 12 12 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.1− | | | | |
| 2002 12 13 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.0 | | | | |

**(142539)∗ 2002 TD$_{51}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.65564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24074310 | $\omega$ | 304.61186 | | +0.94702118 | +0.23484691 | |
| $a$ | 2.5591760 | $\Omega$ | 43.01251 | | −0.06224288 | +0.80341121 | |
| $e$ | 0.2417654 | $i$ | 18.73328 | | −0.31508208 | +0.54715386 | |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 691 | 0.4+ | 0.2+ | 2002 11 28 | 699 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2001 04 24 | 691 | 0.1+ | 0.3+ | 2002 11 28 | 699 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 04 24 | 691 | 0.0 | 0.3+ | 2002 11 28 | 699 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2002 10 02 | 704 | 0.2− | 0.2+ | 2002 12 02 | 704 | 0.5− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.8− | 0.5+ | 2002 12 02 | 704 | 1.2− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.6+ | 0.4+ | 2002 12 02 | 704 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 1.0− | 0.3− | 2002 12 02 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.7− | 0.6+ | 2002 12 02 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2002 12 06 | 704 | 0.8− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2002 12 06 | 704 | 0.9− | 0.3+ | 2006 10 22 | 704 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.6− | 0.4+ | 2006 10 22 | 704 | 0.9+ | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2002 12 06 | 704 | 0.8− | 0.6+ | 2006 10 22 | 704 | 0.0 | 0.5+ |
| 2002 10 07 | 699 | 1.2+ | 0.2+ | 2002 12 06 | 704 | 1.0− | 0.0 | 2006 10 22 | 704 | 0.5− | 0.6+ |
| 2002 10 07 | 704 | 0.6− | 0.1− | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 10 22 | 704 | 0.6− | 0.4+ |
| 2002 10 07 | 699 | 0.7+ | 0.2− | 2002 12 11 | 644 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 10 07 | 704 | 0.0 | 0.2+ | 2002 12 11 | 644 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2002 10 07 | 699 | 1.3+ | 0.6+ | 2002 12 27 | 644 | 0.2+ | 0.8+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2002 10 07 | 704 | 0.5+ | 0.5− | 2002 12 27 | 644 | 0.7+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2002 10 07 | 699 | 0.7+ | 0.0 | 2002 12 27 | 644 | 0.1+ | 0.7+ | 2006 10 27 | 704 | 0.4− | 0.4− |
| 2002 10 09 | 704 | 0.3− | 0.2− | 2002 12 27 | 644 | 0.3+ | 0.1− | 2006 10 27 | 704 | 1.0− | 0.7+ |
| 2002 10 09 | 704 | 0.2− | 0.4− | 2002 12 27 | 644 | 0.6+ | 0.8+ | 2006 10 27 | 704 | 0.1− | 0.3+ |
| 2002 10 09 | 704 | 0.2+ | 0.2− | 2002 12 27 | 644 | 0.5+ | 0.2+ | 2006 10 27 | 704 | 1.0− | 0.2+ |
| 2002 10 09 | 704 | 0.3+ | 0.1+ | 2005 04 16 | 691 | 0.5+ | 0.5+ | 2006 10 27 | 704 | 1.3− | 0.8+ |
| 2002 10 09 | 704 | 0.9+ | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.6− |
| 2002 10 11 | 704 | 0.1− | 0.3− | 2005 05 01 | 644 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2002 10 11 | 704 | 0.4− | 0.6− | 2005 05 01 | 644 | 0.4+ | 0.2+ | 2006 10 31 | 704 | 0.5− | 0.4− |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2005 05 01 | 644 | 0.2+ | 0.5+ | 2006 10 31 | 704 | 0.2− | 0.6+ |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2005 05 14 | 644 | 0.1+ | 0.7+ | 2006 10 31 | 704 | 1.0− | 0.3+ |
| 2002 10 31 | 699 | 0.3+ | 1.0+ | 2005 05 14 | 644 | 0.3+ | 0.5+ | 2006 10 31 | 704 | 1.4− | 0.2+ |
| 2002 10 31 | 699 | 0.2+ | 0.1+ | 2005 05 14 | 644 | 0.3+ | 0.7+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 699 | 0.4− | 0.6+ | 2005 06 01 | G96 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.3+ | 0.1+ |
| 2002 10 31 | 699 | 0.3− | 0.9+ | 2005 06 01 | G96 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2002 11 04 | 644 | 0.0 | 0.1+ | 2005 06 01 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.6− |
| 2002 11 04 | 644 | 0.1+ | 0.1+ | 2005 06 01 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2002 11 04 | 644 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2002 11 05 | 704 | 0.2− | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2002 11 05 | 704 | 0.3− | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.7− |
| 2002 11 05 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 699 | 0.9− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2002 11 05 | 704 | (1.6+ | 0.8+) | 2006 09 18 | 703 | 0.4− | 0.7− | 2006 11 14 | G96 | 0.5+ | 0.7− |
| 2002 11 05 | 704 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.7− |
| 2002 11 06 | 704 | 0.6− | 0.2− | 2006 09 18 | 703 | 1.1− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2002 11 06 | 704 | 1.0− | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2002 11 06 | 704 | 0.2− | 0.9+ | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.5− | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.5− |
| 2002 11 06 | 704 | 0.9− | 0.4− | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 2002 11 08 | 704 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.5− | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2002 11 08 | 704 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.5− | 0.9+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2002 11 08 | 704 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.6− | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2002 11 08 | 704 | 1.2− | 0.2− | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.2− |
| 2002 11 12 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.5− |
| 2002 11 12 | 704 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.5+ | 1.0+ |
| 2002 11 12 | 704 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 11 12 | 704 | 0.3− | 0.4− | 2006 09 29 | 699 | 0.1+ | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.2− | 0.5− | 2006 09 29 | 608 | 0.7+ | 0.6− | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2006 09 29 | 608 | 0.7+ | 0.7− | 2006 11 26 | 704 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2006 09 29 | 608 | 0.5+ | 0.5− | 2006 11 26 | 704 | 0.2− | 0.1− |
| 2002 11 14 | 704 | 0.5+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.3+ | 2006 11 26 | 704 | 0.4− | 0.4+ |
| 2002 11 14 | 704 | 0.7+ | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 704 | 0.8+ | 0.4+ | 2006 11 28 | 704 | 0.3+ | 0.4+ |
| 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 1.6+ | 0.3+ |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.6+ |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 28 | 704 | 1.1+ | 1.6+ |
| 2002 11 28 | 699 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | | | | |

**(142540)∗ 2002 TN$_{51}$ = 1981 UY$_4$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75687)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.81716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23483429 | $\omega$ | 313.52626 | | +0.98608196 | +0.04664041 | |
| $a$ | 2.6019266 | $\Omega$ | 44.52711 | | +0.04691251 | +0.84279111 | |
| $e$ | 0.2363722 | $i$ | 13.15415 | | −0.15950416 | +0.53621620 | |
| $P$ | 4.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 10 30 | 381 | 0.2− | 1.8− | 2002 11 12 | 704 | 0.3− | 0.3− | 2005 05 04 | E12 | 0.9+ | 1.2+ |
| 1981 10 30 | 381 | 2.1+ | 1.7− | 2002 11 14 | 704 | 0.5− | 0.1− | 2005 05 13 | G96 | 0.2− | 0.2+ |
| 2002 10 02 | 704 | 0.6− | 0.1− | 2002 11 14 | 704 | 0.4− | 0.5− | 2005 05 13 | G96 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.0 | 0.3− | 2002 11 14 | 704 | 0.1− | 0.3− | 2005 05 13 | G96 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.1− | 0.3− | 2002 11 14 | 704 | 0.1+ | 0.0 | 2005 05 13 | G96 | 0.4− | 0.2+ |
| 2002 10 02 | 704 | 0.4+ | 0.2+ | 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 08 05 | E12 | 0.4+ | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.8− | 2002 11 23 | 644 | 0.1− | 0.0 | 2006 08 05 | E12 | 0.1− | 1.0+ |
| 2002 10 03 | 704 | 1.0− | 0.4− | 2002 11 23 | 644 | 0.1− | 0.1+ | 2006 08 05 | E12 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2002 11 23 | 644 | 0.0 | 0.1+ | 2006 08 05 | E12 | 0.2+ | 0.6− |
| 2002 10 03 | 704 | 1.1− | 0.3− | 2002 11 24 | 644 | 0.1− | 0.0 | 2006 08 10 | 644 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 1.1− | 0.1+ | 2002 11 24 | 644 | 0.5− | 0.3− | 2006 08 10 | 644 | 0.2+ | 0.3+ |
| 2002 10 07 | 699 | 1.3+ | 0.5+ | 2002 11 24 | 644 | 0.4− | 0.4− | 2006 08 10 | 644 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.6+ | 0.3+ | 2002 11 27 | 699 | 0.5− | 0.2+ | 2006 09 12 | 704 | 0.2+ | 0.3+ |
| 2002 10 07 | 699 | 0.1+ | 0.8− | 2002 11 27 | 699 | 0.3− | 0.2+ | 2006 09 12 | 704 | 0.8− | 0.2− |
| 2002 10 07 | 704 | 0.7+ | 0.1− | 2002 11 27 | 699 | 0.5− | 0.4+ | 2006 09 12 | 704 | 0.4− | 0.9− |
| 2002 10 07 | 699 | 0.9+ | 0.3+ | 2002 11 27 | 699 | 0.2− | 0.2− | 2006 09 12 | 704 | 1.0− | 0.5+ |
| 2002 10 07 | 704 | 0.1− | 0.8− | 2002 11 28 | 699 | 0.1+ | 0.4+ | 2006 09 12 | 704 | 0.7− | 0.3+ |
| 2002 10 07 | 699 | (0.7− | 2.1+) | 2002 11 28 | 699 | 0.1+ | 0.4+ | 2006 09 24 | 699 | 0.1− | 0.3+ |
| 2002 10 07 | 704 | 0.7+ | 0.4+ | 2002 11 28 | 699 | 0.1+ | 0.6+ | 2006 09 24 | 699 | 0.1− | 0.3+ |
| 2002 10 09 | 704 | 0.3− | 0.3+ | 2002 11 28 | 699 | 0.3+ | 0.0 | 2006 09 24 | 699 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 1.0− | 0.6+ | 2002 12 01 | 608 | 0.8− | 0.8− | 2006 09 25 | 703 | 0.1− | 0.3+ |
| 2002 10 09 | 704 | 1.3− | 1.3+ | 2002 12 01 | 608 | 0.8− | 1.1− | 2006 09 25 | 703 | 0.7+ | 0.8+ |
| 2002 10 09 | 704 | 0.2+ | 0.2+ | 2002 12 01 | 608 | 1.0− | 1.1− | 2006 09 25 | 703 | 0.3+ | 0.3+ |
| 2002 10 09 | 704 | 0.4− | 1.5+ | 2002 12 02 | 704 | 0.0 | 0.3+ | 2006 09 25 | 703 | 0.8− | 0.2+ |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2002 12 02 | 704 | 0.1− | 0.2+ | 2006 09 29 | 608 | (0.7+ | 2.0−) |
| 2002 10 11 | 704 | 0.2− | 0.2− | 2002 12 02 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 608 | (0.6+ | 2.0−) |
| 2002 10 11 | 704 | 0.1+ | 0.3− | 2002 12 02 | 704 | 0.3+ | 0.0 | 2006 09 29 | 608 | (0.7+ | 1.9−) |
| 2002 10 11 | 704 | 0.4− | 0.2− | 2002 12 02 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2002 12 05 | 695 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.5− |
| 2002 10 16 | 699 | 0.1+ | 0.7+ | 2002 12 05 | 695 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2002 10 16 | 699 | 0.1+ | 0.5− | 2002 12 06 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2002 10 16 | 699 | 0.5+ | 0.5+ | 2002 12 06 | 704 | 0.4− | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 10 16 | 699 | 0.8+ | 1.0+ | 2002 12 06 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.3− |
| 2002 10 31 | 699 | 0.5+ | 0.4+ | 2002 12 06 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2002 10 31 | 699 | 0.9+ | 0.0 | 2002 12 11 | 644 | 0.3+ | 0.9+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 10 31 | 699 | 1.3+ | 0.2+ | 2002 12 11 | 704 | 0.2− | 0.6− | 2006 10 23 | 644 | 0.2− | 0.3− |
| 2002 10 31 | 699 | 0.5+ | 0.1+ | 2002 12 11 | 644 | 0.2+ | 0.8+ | 2006 10 23 | 644 | 0.3− | 0.2− |
| 2002 11 01 | 644 | 0.4+ | 0.1− | 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.9+ | 0.3− |
| 2002 11 01 | 644 | 0.2− | 0.0 | 2002 12 11 | 644 | 0.2+ | 0.9+ | 2006 10 28 | 703 | 0.5− | 0.4+ |
| 2002 11 01 | 644 | 0.6+ | 0.0 | 2002 12 11 | 704 | 0.6− | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.4− |
| 2002 11 05 | 704 | 0.3+ | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.5− | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2002 11 05 | 704 | 0.1− | 0.3+ | 2002 12 11 | 704 | 1.0− | 0.8− | 2006 11 10 | 644 | 0.2+ | 0.8− |
| 2002 11 05 | 704 | 0.4+ | 0.2+ | 2002 12 12 | 608 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.1− | 0.2+ |
| 2002 11 05 | 704 | 0.8− | 0.2+ | 2002 12 12 | 608 | 0.4+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 699 | 0.6− | 0.8+ | 2002 12 12 | 608 | 0.3+ | 0.1− | 2006 11 10 | 704 | (0.4− | 1.5+) |
| 2002 11 05 | 704 | 0.5− | 0.1+ | 2002 12 27 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 704 | 0.7− | 0.8+ |
| 2002 11 05 | 699 | 0.1− | 0.2− | 2002 12 27 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2002 11 05 | 699 | 0.0 | 0.8+ | 2002 12 27 | 644 | 1.4+ | 1.1+ | 2006 11 10 | 704 | 0.2+ | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 699 | 0.2− | 0.4+ | 2002 12 31 | 704 | 0.4− | 0.7− | 2006 11 10 | 704 | 0.2+ | 1.1+ | | |
| 2002 11 06 | 704 | 1.1− | 0.3− | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.1+ | 1.3− | | |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2002 12 31 | 704 | 1.1+ | 0.3− | 2006 11 14 | 704 | 0.0 | 0.8− | | |
| 2002 11 06 | 704 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 0.3+ | 1.0+ | 2006 11 14 | 704 | 0.3− | 0.4− | | |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2003 01 20 | 644 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.4+ | | |
| 2002 11 06 | 704 | 0.8+ | 0.0 | 2003 01 20 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.6+ | | |
| 2002 11 06 | 704 | 0.2− | 0.1− | 2003 01 20 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.0 | | |
| 2002 11 06 | 704 | 0.6+ | 0.3− | 2005 04 07 | 691 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.2− | | |
| 2002 11 06 | 704 | (1.7− | 0.1−) | 2005 04 07 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.6+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2005 04 07 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.3+ | | |
| 2002 11 06 | 704 | 0.4− | 0.1− | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.4+ | | |
| 2002 11 07 | 704 | 0.2− | 0.6+ | 2005 04 16 | 691 | 0.7+ | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.7+ | | |
| 2002 11 07 | 704 | 0.5− | 0.5+ | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.6+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.3+ | 2005 05 04 | G96 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.7+ | | |
| 2002 11 07 | 704 | 0.1+ | 0.2+ | 2005 05 04 | G96 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.5+ | | |
| 2002 11 07 | 704 | 0.1+ | 0.4+ | 2005 05 04 | G96 | 0.6+ | 1.0+ | 2006 11 22 | 704 | 1.2− | 0.9+ | | |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2005 05 04 | G96 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.2+ | | |
| 2002 11 12 | 704 | 0.4− | 0.3− | 2005 05 04 | E12 | 0.6+ | 0.8+ | 2006 11 22 | 704 | 0.7− | 1.2+ | | |
| 2002 11 12 | 704 | 0.4− | 0.4− | 2005 05 04 | E12 | 0.3− | 1.2+ | | | | | | |
| 2002 11 12 | 704 | 0.1− | 0.6− | 2005 05 04 | E12 | (0.6− | 1.7+) | | | | | | |

**(142541)∗ 2002 TR$_{51}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.17767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24090665 | $\omega$ | 276.71884 | | +0.91059570 | −0.40301853 | |
| $a$ | 2.5580175 | $\Omega$ | 107.08040 | | +0.40686084 | +0.83514914 | |
| $e$ | 0.1668099 | $i$ | 5.49922 | | +0.07266180 | +0.37430199 | |
| $P$ | 4.09 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.2+ | 0.2+ | 2003 01 27 | 704 | 0.4+ | 0.5− | 2006 10 22 | 704 | 0.2+ | 0.0 | | |
| 2000 03 12 | 704 | 0.2+ | 1.3+ | 2003 01 27 | 704 | 0.4+ | 1.1+ | 2006 10 22 | 703 | (0.9− | 2.2+) | | |
| 2000 03 12 | 704 | 0.2+ | 1.1+ | 2003 01 27 | 704 | 1.1+ | 0.3+ | 2006 10 22 | 703 | (0.0 | 1.9+) | | |
| 2000 03 12 | 704 | 1.1+ | 0.2+ | 2003 01 27 | 704 | 0.0 | 0.9+ | 2006 10 22 | 703 | 0.1− | 0.4− | | |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2003 01 31 | 704 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.0 | | |
| 2002 09 06 | 704 | 0.2+ | 1.0+ | 2003 01 31 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 704 | 0.0 | 0.0 | | |
| 2002 09 06 | 704 | 0.4− | 1.1+ | 2003 01 31 | 704 | 0.0 | 0.5− | 2006 10 27 | 704 | 0.4− | 0.1+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.9+ | 2004 02 18 | 704 | 0.5+ | 0.2− | 2006 10 27 | 704 | 0.1− | 0.1− | | |
| 2002 10 02 | 704 | 0.5+ | 0.5+ | 2004 02 18 | 704 | (1.5+ | 0.3+) | 2006 10 27 | 704 | 0.0 | 0.1+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.8+ | 2004 02 18 | 704 | 0.8+ | 1.1− | 2006 10 27 | 704 | 1.0+ | 0.1− | | |
| 2002 10 02 | 704 | 0.4+ | 0.1− | 2004 02 25 | 704 | 0.5+ | 0.3− | 2006 11 01 | 704 | 0.4− | 0.5+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.1− | 2004 02 25 | 704 | 0.3+ | 0.6− | 2006 11 01 | 703 | 0.0 | 0.2− | | |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2004 02 25 | 704 | 0.5+ | 0.1+ | 2006 11 01 | 703 | 0.2+ | 1.4− | | |
| 2002 10 03 | 704 | 0.4+ | 0.8+ | 2004 02 25 | 704 | 0.3+ | 0.1+ | 2006 11 01 | 704 | 0.4− | 0.1+ | | |
| 2002 10 03 | 704 | 1.0− | 0.4+ | 2004 03 12 | 644 | 0.2+ | 0.1− | 2006 11 01 | 703 | (1.5+ | 2.2−) | | |
| 2002 11 07 | 704 | 0.3− | 0.0 | 2004 03 12 | 644 | 0.1+ | 0.0 | 2006 11 01 | 703 | 0.7+ | 0.3− | | |
| 2002 11 07 | 704 | 0.1− | 0.1+ | 2004 03 12 | 644 | 0.2+ | 0.0 | 2006 11 01 | 704 | 0.3− | 0.2+ | | |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2004 03 15 | 704 | (0.5+ | 1.8+) | 2006 11 08 | 644 | 0.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 11 08 | 644 | 0.2− | 0.0 | | |
| 2002 11 07 | 704 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2002 11 11 | 704 | 0.0 | 0.3− | 2004 03 15 | 704 | 0.8− | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2002 11 11 | 704 | 0.1− | 0.7− | 2004 03 15 | 704 | 1.1− | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.4− | | |
| 2002 11 11 | 704 | 0.4− | 0.3− | 2004 03 15 | 185 | 1.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2002 11 11 | 704 | 0.4− | 0.6− | 2004 03 15 | 185 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 2002 11 11 | 704 | 0.5− | 0.5− | 2004 03 15 | 185 | 0.5− | 0.4− | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 2002 11 28 | 699 | 0.4+ | 0.3− | 2004 03 18 | 691 | 0.1− | 0.4− | 2006 11 11 | 644 | 0.1− | 0.0 | | |
| 2002 11 28 | 699 | 0.1+ | 0.4− | 2004 03 18 | 691 | 0.0 | 0.4− | 2006 11 11 | 644 | 0.1− | 0.0 | | |
| 2002 11 28 | 699 | 0.5+ | 0.2− | 2004 03 18 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.2+ | | |
| 2002 11 28 | 699 | 0.2+ | 0.1− | 2004 03 20 | 699 | 1.3− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.1+ | | |
| 2002 12 01 | 704 | 0.1+ | 0.0 | 2004 03 20 | 699 | 0.2− | 0.8− | 2006 11 11 | 644 | 0.1− | 0.0 | | |
| 2002 12 01 | 704 | 0.6+ | 0.4− | 2004 03 20 | 699 | (2.1− | 1.4−) | 2006 11 11 | 644 | 0.1− | 0.1+ | | |
| 2002 12 01 | 704 | 0.6− | 0.0 | 2004 03 20 | 699 | 0.8− | 0.3− | 2006 11 11 | 644 | 0.0 | 0.1− | | |
| 2002 12 01 | 704 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.2+ | 1.1+ | 2006 11 11 | 644 | 0.4+ | 0.2+ | | |
| 2002 12 03 | 608 | 0.2+ | 0.3− | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.3− | 0.2− | | |
| 2002 12 03 | 608 | 0.2− | 0.3− | 2004 03 20 | 704 | 0.3+ | 1.2− | 2006 11 14 | 704 | 1.4− | 0.9− | | |
| 2002 12 03 | 608 | 0.2− | 0.3− | 2004 03 20 | 704 | 1.0+ | 0.7− | 2006 11 14 | 704 | 0.8− | 0.4− | | |
| 2002 12 11 | 704 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.2− | 0.1+ | | |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 704 | 0.5− | 0.4− | | |
| 2002 12 11 | 704 | 0.5− | 0.9− | 2004 03 22 | 704 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.0 | | |
| 2002 12 11 | 704 | 0.4− | 0.4− | 2004 03 22 | 704 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.9− | 0.5− | | |
| 2002 12 11 | 704 | 0.1+ | 0.3− | 2004 03 22 | 704 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.1+ | | |
| 2002 12 27 | 644 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 704 | 0.9− | 0.4+ | | |
| 2002 12 27 | 644 | 0.1+ | 0.1+ | 2004 04 12 | 703 | (0.4− | 1.6+) | 2006 11 19 | 703 | 0.4− | 0.3+ | | |
| 2002 12 27 | 644 | 0.1+ | 0.1+ | 2004 04 12 | 703 | 0.3− | 0.9+ | 2006 11 19 | 703 | 0.2− | 0.2− | | |
| 2002 12 31 | 704 | (1.7− | 0.1−) | 2004 04 12 | 703 | 1.2+ | 1.0+ | 2006 11 19 | 703 | 0.6− | 0.1− | | |
| 2002 12 31 | 704 | 1.4− | 0.5+ | 2004 04 12 | 703 | 0.1+ | 1.0+ | 2006 11 19 | 703 | 0.6− | 0.5− | | |
| 2002 12 31 | 704 | (2.1− | 0.3+) | 2006 08 31 | 704 | 0.6− | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.1− | | |
| 2003 01 07 | 704 | 0.2− | 0.4− | 2006 08 31 | 704 | 0.2− | 0.3+ | 2006 11 20 | 704 | 1.1+ | 1.1+ | | |
| 2003 01 07 | 704 | 0.7+ | 0.7− | 2006 08 31 | 704 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.6+ | 0.2− | 2006 08 31 | 704 | 0.7− | 0.6+ | 2006 11 20 | 704 | 0.6+ | 0.6+ | | |
| 2003 01 07 | 704 | 0.1− | 0.5+ | 2006 09 16 | 704 | (0.5+ | 1.6+) | 2006 11 20 | 704 | 0.9+ | 0.4+ | | |
| 2003 01 07 | 704 | (2.2+ | 0.4+) | 2006 09 16 | 704 | 0.4− | 0.2+ | 2006 11 20 | 704 | 1.2+ | 0.2+ | | |
| 2003 01 08 | 704 | 0.2− | 0.1− | 2006 09 16 | 704 | 1.0+ | 0.4− | 2006 11 20 | 704 | 0.7+ | 0.6+ | | |
| 2003 01 08 | 704 | 1.1+ | 0.1− | 2006 09 16 | 704 | 0.2+ | 0.8+ | 2006 11 20 | 704 | 1.1+ | 0.7+ | | |
| 2003 01 08 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.4+ | | |
| 2003 01 19 | 644 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 20 | 704 | 1.2+ | 0.4+ | | |
| 2003 01 19 | 644 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2003 01 19 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.4+ | 0.3− | | |
| 2003 01 25 | 699 | 0.1− | 0.1+ | 2006 10 22 | 704 | 0.1− | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.4+ | | |
| 2003 01 25 | 699 | 0.9− | 0.3− | 2006 10 22 | 704 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.5+ | 0.5+ | | |
| 2003 01 25 | 699 | 0.4− | 0.4+ | 2006 10 22 | 704 | 0.5− | 0.1+ | | | | | | |
| 2003 01 25 | 699 | 0.6− | 0.9+ | 2006 10 22 | 704 | 0.2− | 0.2+ | | | | | | |

**(142542)∗ 2002 TS$_{51}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.07965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23786495 | $\omega$ | 164.00707 | | +0.91998837 | −0.34761577 | |
| $a$ | 2.5797785 | $\Omega$ | 217.94455 | | +0.31954314 | +0.93272407 | |
| $e$ | 0.2600272 | $i$ | 17.12539 | | +0.22696602 | +0.09585969 | |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 17 | 691 | 0.1− | 0.4+ | 2002 11 11 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 704 | 0.3− | 0.7− | | |
| 2001 06 17 | 691 | 0.3− | 0.1+ | 2002 11 11 | 704 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2001 06 17 | 691 | 0.3− | 0.3+ | 2002 11 11 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 10 02 | 704 | 0.6+ | 0.8+ | 2002 11 16 | 644 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.2+ | 0.9+ | 2002 11 16 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 1.1+ | 0.7+ | 2002 11 16 | 644 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2002 12 07 | 644 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2002 12 07 | 644 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.7− | | |
| 2002 10 03 | 704 | 0.3− | 0.7+ | 2002 12 07 | 644 | 0.8− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.3− | | |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2002 12 13 | 644 | 0.0 | 1.2+ | 2006 10 17 | 703 | 0.3+ | 0.5− | | |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2002 12 13 | 644 | 0.1− | 0.8+ | 2006 10 17 | 703 | 0.2− | 0.0 | | |
| 2002 10 07 | 704 | 1.0+ | 0.4+ | 2002 12 13 | 644 | 0.0 | 0.9+ | 2006 10 17 | 703 | 0.3− | 0.1+ | | |
| 2002 10 07 | 704 | 0.2− | 0.4+ | 2003 01 26 | 644 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.3− | | |
| 2002 10 07 | 704 | 0.2− | 0.1− | 2003 01 26 | 644 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.0 | 0.4− | | |
| 2002 10 07 | 704 | 0.2+ | 0.7+ | 2003 01 26 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.2− | | |
| 2002 10 07 | 704 | 0.2+ | 0.8+ | 2005 05 10 | 691 | 0.0 | 0.3+ | 2006 10 26 | 704 | 0.8− | 0.5+ | | |
| 2002 10 09 | 704 | 1.1+ | 0.1− | 2005 05 10 | 691 | 0.4+ | 0.4+ | 2006 10 26 | 704 | 0.1− | 0.4− | | |
| 2002 10 09 | 704 | 1.1+ | 0.3+ | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 10 26 | 704 | 0.1− | 0.2+ | | |
| 2002 10 09 | 704 | 1.4+ | 0.1+ | 2005 05 17 | G96 | 0.2+ | 0.2− | 2006 11 06 | 644 | 0.2+ | 0.1− | | |
| 2002 10 09 | 704 | 1.3+ | 0.2− | 2005 05 17 | G96 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.2+ | | |
| 2002 10 09 | 704 | 0.3− | 1.1+ | 2005 05 17 | G96 | 0.8− | 0.2+ | 2006 11 06 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.5− | 0.2− | 2005 05 17 | G96 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2002 10 11 | 704 | 1.0+ | 0.1+ | 2005 05 20 | G96 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.7+ | 0.5− | | |
| 2002 10 11 | 704 | 0.8+ | 0.5− | 2005 05 20 | G96 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.6− | | |
| 2002 10 11 | 704 | 0.9+ | 0.4− | 2005 05 20 | G96 | 0.7− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− | | |
| 2002 10 11 | 704 | 0.1− | 0.5− | 2005 05 20 | G96 | 0.6− | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.6− | | |
| 2002 10 16 | 699 | 0.3+ | 1.3+ | 2005 06 13 | 691 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.3+ | | |
| 2002 10 16 | 699 | 0.5− | 0.2− | 2005 06 13 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 699 | 0.4− | 0.7− | 2005 06 13 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.8− | 0.3− |
| 2002 10 16 | 699 | 0.1− | 0.9+ | 2006 08 23 | 704 | (1.4− | 2.0−) | 2006 11 18 | 704 | 0.9+ | 1.0+ |
| 2002 10 30 | 608 | 0.3− | 0.7− | 2006 08 23 | 704 | 0.7− | 0.5+ | 2006 11 18 | 704 | (1.5+ | 0.9−) |
| 2002 10 30 | 608 | 0.3− | 0.7− | 2006 08 23 | 704 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2002 10 30 | 608 | 0.4− | 1.2− | 2006 09 17 | 703 | 0.5− | 0.3+ | 2006 11 18 | 704 | (1.6+ | 0.6+) |
| 2002 11 05 | 699 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.2+ | 2006 11 20 | 704 | (0.5− | 1.6+) |
| 2002 11 05 | 699 | 0.7− | 0.8+ | 2006 09 17 | 703 | 0.4− | 0.1− | 2006 11 20 | 704 | 1.4+ | 0.4+ |
| 2002 11 05 | 699 | 0.7− | 0.2− | 2006 09 17 | 703 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.5− | 1.2+ |
| 2002 11 05 | 699 | 0.7− | 0.7+ | 2006 09 28 | 703 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.5− | 0.4− |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.7− | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2002 11 07 | 704 | 0.4− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.8− | 2006 11 21 | 704 | 0.9+ | 0.0 |
| 2002 11 07 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.3− | 0.8− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2002 11 07 | 704 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 11 07 | 704 | 0.4− | 0.0 | 2006 09 30 | 704 | 0.2− | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.1− |
| 2002 11 11 | 704 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.4− | 0.3− | | | | |
| 2002 11 11 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 704 | 0.3+ | 0.2+ | | | | |

**(142543)∗ 2002 TT$_{51}$ = 1998 YK$_{24}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38006)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.70893 | | (2000.0) | | | |
| $n$ | 0.23912231 | $\omega$ | 57.96577 | | −0.26959650 | −0.96207416 |
| $a$ | 2.5707271 | $\Omega$ | 47.73354 | | +0.86346944 | −0.26064044 |
| $e$ | 0.2382505 | $i$ | 3.22299 | | +0.42630771 | −0.08049764 |
| $P$ | 4.12 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.3− | 0.1− | 2002 12 02 | 608 | 0.0 | 0.2+ | 2006 10 28 | 704 | 0.5− | 0.3− |
| 1998 12 14 | 704 | 0.1− | 0.6− | 2002 12 05 | 704 | 0.4− | 0.3− | 2006 10 28 | 704 | 0.2+ | 0.2+ |
| 1998 12 14 | 704 | (0.8− | 3.2−) | 2002 12 05 | 704 | 0.0 | 0.3− | 2006 10 28 | 704 | 0.1− | 0.4+ |
| 1998 12 14 | 704 | 1.2− | 0.8− | 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 1998 12 16 | 704 | 1.2+ | 0.4− | 2002 12 05 | 704 | 0.9− | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 1998 12 16 | 704 | 1.2+ | 0.8+ | 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 1998 12 16 | 704 | 0.4+ | 1.8+ | 2002 12 10 | 704 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1998 12 16 | 704 | (1.3+ | 2.2+) | 2002 12 10 | 704 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1998 12 16 | 704 | 0.5+ | 1.3+ | 2002 12 10 | 704 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1998 12 17 | 704 | 0.1+ | 0.5− | 2002 12 10 | 704 | 0.4+ | 0.7+ | 2006 11 10 | 683 | 1.5+ | 0.7− |
| 1998 12 17 | 704 | (2.9+ | 0.8+) | 2002 12 10 | 704 | 0.4+ | 0.7+ | 2006 11 10 | 683 | 0.7+ | 0.4− |
| 1998 12 17 | 704 | 0.0 | 0.3+ | 2003 01 31 | 704 | 1.5− | 0.4− | 2006 11 10 | 683 | 0.2− | 1.0+ |
| 1998 12 17 | 704 | 0.2+ | 0.0 | 2003 01 31 | 704 | 1.0− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 1999 01 16 | 704 | 0.3− | 0.6+ | 2003 01 31 | 704 | 1.5− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 1999 01 16 | 704 | 1.2+ | 0.1− | 2003 01 31 | 704 | 1.2− | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 1999 01 16 | 704 | 1.3− | 0.1− | 2003 01 31 | 704 | 0.5− | 0.2− | 2006 11 11 | 683 | 0.7+ | 1.2− |
| 1999 01 16 | 704 | 0.7+ | 1.8− | 2003 02 01 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 683 | 1.1+ | 0.8− |
| 1999 01 16 | 704 | (2.0− | 0.4−) | 2003 02 01 | 644 | 0.0 | 0.6+ | 2006 11 11 | 683 | 0.9− | 1.1− |
| 2002 10 02 | 704 | 0.3− | 0.3− | 2003 02 01 | 644 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.7+ | 0.5+ | 2003 02 04 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2002 10 02 | 704 | 0.7+ | 0.3− | 2003 02 04 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2002 10 02 | 704 | 0.6+ | 0.5− | 2003 02 04 | 704 | 0.9− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2002 10 03 | 704 | 0.1− | 0.2− | 2003 02 04 | 704 | 0.9− | 0.4− | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2003 02 04 | 704 | 0.9− | 0.3− | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.7− | 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2002 10 28 | 291 | 0.7− | 0.1+ | 2004 04 28 | 691 | 0.2+ | 0.7+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 10 28 | 291 | 1.0− | 0.0 | 2004 04 28 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 291 | 0.1− | 0.0 |
| 2002 10 28 | 291 | (2.3− | 0.3+) | 2004 04 28 | 691 | 0.1− | 0.4+ | 2006 11 14 | 291 | 0.1− | 0.1+ |
| 2002 10 30 | 608 | (0.0 | 2.2+) | 2004 05 15 | 704 | 0.9+ | 0.0 | 2006 11 14 | 291 | 0.0 | 0.1+ |
| 2002 10 30 | 608 | (0.2+ | 2.3+) | 2004 05 15 | 704 | 1.4+ | 0.5+ | 2006 11 14 | 291 | 0.0 | 0.0 |
| 2002 10 30 | 608 | (0.2− | 2.3+) | 2004 05 15 | 704 | 0.8+ | 1.1+ | 2006 11 14 | 291 | 0.2− | 0.1+ |
| 2002 11 01 | 644 | 1.1+ | 0.1− | 2004 05 15 | 704 | 0.1+ | 0.7− | 2006 11 14 | 291 | 0.1− | 0.1+ |
| 2002 11 01 | 644 | 1.2+ | 0.2+ | 2004 05 15 | 704 | 0.5− | 0.0 | 2006 11 14 | 683 | 0.3+ | 0.6− |
| 2002 11 01 | 644 | 0.1+ | 0.2+ | 2005 07 02 | 691 | 0.3− | 0.2+ | 2006 11 14 | 683 | 1.2+ | 0.0 |
| 2002 11 05 | 704 | 0.8+ | 0.4− | 2005 07 02 | 691 | 0.2− | 0.2+ | 2006 11 14 | 683 | (1.6+ | 0.8+) |
| 2002 11 05 | 704 | 0.3+ | 0.2+ | 2005 07 02 | 691 | 0.0 | 0.1+ | 2006 11 15 | 683 | (1.6+ | 0.9−) |
| 2002 11 05 | 704 | 0.5+ | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 11 15 | 683 | 0.6+ | 0.0 |
| 2002 11 05 | 704 | 0.6+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 11 15 | 683 | (0.4+ | 1.9−) |
| 2002 11 05 | 699 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.5− | 0.4− | 2006 11 17 | 703 | 0.1− | 0.6− |
| 2002 11 05 | 704 | 0.5+ | 0.8− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.5+ | 0.8− |
| 2002 11 05 | 699 | 0.7− | 0.7− | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2002 11 05 | 699 | (1.8+ | 0.3−) | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2002 11 05 | 699 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 1.4− | 2006 11 18 | 704 | 0.4− | 1.1+ |
| 2002 11 06 | 704 | 0.7+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.9− | 1.0+ |
| 2002 11 06 | 704 | 0.2− | 0.3− | 2006 10 03 | 704 | 0.1− | 0.4+ | 2006 11 18 | 704 | (0.4− | 2.4+) |
| 2002 11 06 | 704 | 0.6+ | 0.5− | 2006 10 03 | 704 | 0.2− | 0.9+ | 2006 11 18 | 704 | 0.1− | 1.5+ |
| 2002 11 06 | 704 | 0.7+ | 0.5− | 2006 10 03 | 704 | 0.8− | 1.0+ | 2006 11 18 | 704 | 0.0 | 1.4+ |
| 2002 11 06 | 704 | 0.0 | 0.7− | 2006 10 03 | 704 | (2.1− | 0.4+) | 2006 11 19 | 704 | (0.3+ | 1.6+) |
| 2002 11 10 | 704 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2002 11 10 | 704 | 0.2− | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 1.4+ |
| 2002 11 10 | 704 | 0.8+ | 0.3− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2002 11 13 | 644 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2002 11 13 | 644 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.5− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2002 11 14 | 704 | 0.7− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 1.0− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2002 11 27 | 699 | (6.4+ | 2.0+) | 2006 10 20 | 644 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2002 11 27 | 699 | 0.7+ | 0.0 | 2006 10 21 | H07 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2002 11 28 | 699 | 0.2+ | 0.4− | 2006 10 21 | H07 | 0.3+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2002 11 28 | 699 | 1.4+ | 0.6− | 2006 10 21 | H07 | 0.5− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.4− |
| 2002 11 28 | 699 | 0.8+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2002 11 28 | 699 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 26 | 704 | 0.8− | 0.9+ |
| 2002 12 02 | 704 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 26 | 704 | 0.4+ | 0.2+ |
| 2002 12 02 | 704 | 0.2− | 0.6+ | 2006 10 23 | 704 | (0.6+ | 1.8−) | 2006 11 26 | 704 | 0.2+ | 0.4+ |
| 2002 12 02 | 704 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.2+ | 1.5+ | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2002 12 02 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 704 | (0.5− | 1.6+) | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2002 12 02 | 704 | 0.1+ | 0.3− | 2006 10 23 | 704 | 0.7− | 0.6+ | 2006 11 28 | 704 | 0.3− | 0.6+ |
| 2002 12 02 | 608 | 0.4− | 0.1+ | 2006 10 28 | 704 | 0.4+ | 0.8+ | | | | |
| 2002 12 02 | 608 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.3+ | 0.4+ | | | | |

**(142544)∗ 2002 TB$_{52}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.10742 | | (2000.0) | | | |
| $n$ | 0.21527111 | $\omega$ | 143.28268 | | +0.99178806 | +0.10343349 |
| $a$ | 2.7572674 | $\Omega$ | 211.03508 | | −0.12050896 | +0.95275115 |
| $e$ | 0.1724843 | $i$ | 8.38926 | | +0.04282559 | +0.28559893 |
| $P$ | 4.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 12 | 691 | 0.1+ | 0.5+ | 2002 11 15 | 704 | (0.3+ | 2.2+) | 2005 05 01 | 644 | 0.2+ | 0.4+ |
| 1996 05 12 | 691 | 0.4+ | 0.3+ | 2002 11 15 | 704 | 0.1− | 1.0+ | 2005 05 11 | G96 | 0.5− | 0.1+ |
| 1996 05 12 | 691 | 0.2− | 0.6+ | 2002 11 15 | 704 | 0.0 | 0.3− | 2005 05 11 | G96 | 0.3− | 0.0 |
| 2002 10 02 | 704 | 0.8+ | 0.1− | 2002 11 23 | 644 | 0.2− | 0.2+ | 2005 05 11 | G96 | 0.5− | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 1.2− | 2002 11 23 | 644 | 0.5− | 0.1+ | 2005 05 11 | G96 | 0.8− | 0.2+ |
| 2002 10 02 | 704 | 0.2+ | 0.3− | 2002 11 23 | 644 | 0.3− | 0.0 | 2005 05 14 | 644 | 0.4+ | 0.5+ |
| 2002 10 02 | 704 | (0.1− | 1.6−) | 2002 11 28 | 699 | 0.9− | 0.6+ | 2005 05 14 | 644 | 0.1+ | 0.7+ |
| 2002 10 03 | 704 | 1.1+ | 0.7− | 2002 11 28 | 699 | 0.3− | 0.2− | 2005 05 14 | 644 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.4+ | 0.3− | 2002 11 28 | 699 | 0.6− | 0.7+ | 2006 08 23 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 0.3− | 2002 11 28 | 699 | 1.1− | 0.6+ | 2006 08 23 | 644 | 0.3− | 0.3+ |
| 2002 11 05 | 699 | 0.4− | 0.8− | 2002 12 01 | 704 | 0.8− | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 699 | 0.4− | 0.1− | 2002 12 01 | 704 | 0.3+ | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.1+ |
| 2002 11 05 | 699 | 1.0− | 0.4− | 2002 12 01 | 704 | 0.2+ | 0.9+ | 2006 08 23 | 644 | 0.1− | 0.0 |
| 2002 11 05 | 699 | 0.2− | 1.0+ | 2002 12 01 | 704 | (0.2− | 1.8+) | 2006 08 23 | 644 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.4+ | 0.7+ | 2002 12 01 | 704 | 0.4+ | 1.4+ | 2006 09 16 | 691 | 0.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2002 12 02 | 608 | (1.0+ | 1.9−) | 2006 09 16 | 691 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 1.1+ | 2002 12 02 | 608 | (1.1+ | 1.6−) | 2006 09 16 | 691 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 1.1+ | 0.6+ | 2002 12 02 | 608 | (0.4+ | 1.6−) | 2006 09 17 | 703 | 0.4+ | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.1+ | 0.2− | 2004 02 18 | 691 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.9− | 0.2− |
| 2002 11 11 | 704 | 1.1+ | 0.8− | 2004 02 18 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.6− | 0.3− |
| 2002 11 11 | 704 | 1.2+ | 0.1− | 2004 02 18 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.5− |
| 2002 11 11 | 704 | 0.2+ | 1.3+ | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 23 | 703 | 0.6+ | 0.7+ |
| 2002 11 11 | 704 | 0.3+ | 0.4+ | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 09 23 | 703 | 1.1− | 0.2− |
| 2002 11 11 | 704 | 0.2+ | 1.4+ | 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 09 23 | 703 | 0.5− | 0.4− |
| 2002 11 13 | 704 | 0.1− | 0.4+ | 2005 04 02 | G96 | 0.6− | 0.0 | 2006 09 23 | 703 | 0.5− | 0.0 |
| 2002 11 13 | 704 | 0.7− | 0.8+ | 2005 04 16 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.3+ | 1.0+ |
| 2002 11 13 | 704 | 0.5− | 1.1+ | 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 1.0+ | 1.2+ |
| 2002 11 13 | 704 | 0.5− | 0.4+ | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.9+ |
| 2002 11 13 | 704 | 0.6− | 0.4+ | 2005 05 01 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.6+ | 1.2+ |
| 2002 11 15 | 704 | 1.0− | 0.3− | 2005 05 01 | 644 | 0.1+ | 0.2+ | | | | |

**(142545)∗ 2002 TK$_{52}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.87063 | | (2000.0) | | +0.69993019 | −0.71413107 |
| $n$ | 0.24065904 | $\omega$ | 233.36660 | | +0.67783239 | +0.65948264 |
| $a$ | 2.5597719 | $\Omega$ | 172.18484 | | +0.22503552 | +0.23473274 |
| $e$ | 0.2159126 | $i$ | 4.51426 | | | |
| $P$ | 4.10 | $H$ | 15.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.3+ | 0.6+ | 2002 12 28 | 699 | 0.2− | 0.5+ | 2006 10 19 | 683 | 0.3+ | 0.2+ |
| 1998 12 15 | 704 | 0.0 | 1.5− | 2002 12 31 | 699 | 0.2+ | 1.0+ | 2006 10 20 | 683 | 0.1+ | 0.0 |
| 1998 12 15 | 704 | 0.3− | 0.8+ | 2002 12 31 | 699 | (1.6+ | 0.2+) | 2006 10 20 | 683 | 0.7− | 0.5− |
| 1998 12 15 | 704 | 0.6− | 1.1+ | 2002 12 31 | 699 | 0.9+ | 0.1− | 2006 10 20 | 683 | 0.2+ | 0.3+ |
| 1998 12 15 | 704 | 1.9+ | 1.3+ | 2002 12 31 | 699 | 1.2+ | 0.0 | 2006 10 21 | 683 | 0.9+ | 1.3− |
| 2002 10 02 | 704 | (1.7− | 1.5−) | 2003 01 18 | 644 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.7+ | 0.5− | 2003 01 18 | 644 | 0.0 | 0.1− | 2006 10 21 | 683 | 0.1− | 0.6− |
| 2002 10 02 | 704 | 0.8− | 0.5− | 2003 01 18 | 644 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.2− | 0.6− | 2004 04 19 | 704 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 0.7+ | 0.0 | 2006 10 21 | 683 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 1.3+ | 0.1+ | 2004 04 19 | 704 | (1.6+ | 0.2+) | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 1.1+ | 1.0+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 704 | 1.1+ | 0.7+ |
| 2002 10 09 | 704 | 0.9− | 0.6− | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 10 22 | 704 | 0.6+ | 0.9+ |
| 2002 10 09 | 704 | 1.1− | 0.8− | 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 10 22 | 704 | 0.5+ | 0.1+ |
| 2002 10 09 | 704 | 0.6+ | 0.1− | 2006 08 21 | 704 | 0.1− | 0.8+ | 2006 10 22 | 704 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 08 21 | 704 | 0.1− | 0.3+ | 2006 10 22 | 704 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 0.5+ | 0.2+ | 2006 08 21 | 704 | 0.8− | 0.9+ | 2006 10 23 | 683 | 0.5− | 0.0 |
| 2002 10 11 | 704 | 0.5+ | 0.3− | 2006 08 21 | 704 | 0.4+ | 1.3+ | 2006 10 23 | 683 | (1.2− | 1.6+) |
| 2002 10 11 | 704 | 1.2+ | 0.1− | 2006 08 25 | 704 | 0.3− | 0.1+ | 2006 10 23 | 683 | 1.3− | 1.0+ |
| 2002 10 11 | 704 | 0.6+ | 0.2− | 2006 08 25 | 704 | 0.1− | 0.6+ | 2006 10 27 | 704 | 0.6− | 0.4+ |
| 2002 10 31 | 608 | 0.4− | 0.3− | 2006 08 25 | 704 | (1.1+ | 1.6+) | 2006 10 27 | 704 | 0.7− | 0.1− |
| 2002 10 31 | 608 | 0.3− | 0.3− | 2006 08 25 | 704 | 0.5+ | 0.5+ | 2006 10 27 | 704 | 0.8+ | 0.3+ |
| 2002 10 31 | 608 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.8− | 2006 10 27 | 704 | 1.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.6+ | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.5+ | 2006 10 27 | 704 | 0.6− | 0.8+ |
| 2002 11 07 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.7− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.6+ | 1.2− | 2006 08 28 | 703 | 0.8− | 0.5− | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.4− | 1.1− | 2006 09 16 | 704 | (0.9+ | 1.7+) | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.2+ | 0.9− | 2006 09 16 | 703 | 0.0 | 0.4− | 2006 11 14 | 704 | 0.0 | 0.2+ |
| 2002 11 11 | 291 | 0.2− | 0.1− | 2006 09 16 | 704 | 0.7+ | 0.9+ | 2006 11 14 | 704 | 0.9− | 1.3+ |
| 2002 11 11 | 291 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.1+ |
| 2002 11 11 | 291 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 11 14 | 704 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.1− | 1.5+ | 2006 11 14 | 704 | 0.4− | 0.6+ |
| 2002 11 11 | 704 | 0.2+ | 0.7− | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 11 17 | 704 | (0.8− | 1.7+) |
| 2002 11 11 | 704 | 0.2− | 0.6− | 2006 09 17 | 699 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 2002 11 11 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 699 | 0.0 | 0.2− | 2006 11 17 | 704 | (0.5− | 1.5+) |
| 2002 11 11 | 704 | 0.3− | 0.3− | 2006 09 17 | 699 | 0.5+ | 0.2− | 2006 11 17 | 704 | 0.4− | 1.2− |
| 2002 11 11 | 291 | 1.1− | 0.2− | 2006 09 17 | 699 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.8+ |
| 2002 11 11 | 291 | 0.4− | 0.0 | 2006 09 19 | 704 | 1.2− | 0.4+ | 2006 11 17 | 704 | 0.1− | 1.1− |
| 2002 11 11 | 291 | 0.6− | 0.1− | 2006 09 19 | 704 | (1.8− | 0.1−) | 2006 11 17 | 704 | (0.6− | 1.7+) |
| 2002 11 18 | 644 | 0.0 | 0.0 | 2006 09 19 | 704 | (1.9+ | 0.0 ) | 2006 11 17 | 704 | 0.7− | 0.7− |
| 2002 11 18 | 644 | 0.2− | 0.0 | 2006 09 19 | 704 | 0.9+ | 0.1− | 2006 11 17 | 704 | (1.0− | 3.3+) |
| 2002 11 18 | 644 | 0.8− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.9− | 0.8− |
| 2002 12 01 | 704 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 12 01 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2002 12 01 | 704 | 0.2+ | 0.3− | 2006 09 26 | 704 | 0.2− | 0.7− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2002 12 01 | 704 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.8+ | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.1+ | 1.1+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2002 12 05 | 608 | 0.1+ | 0.2− | 2006 10 03 | 704 | 0.8+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2002 12 05 | 608 | 0.0 | 0.3− | 2006 10 03 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 704 | 0.5+ | 0.1− |
| 2002 12 05 | 608 | 0.2+ | 0.2− | 2006 10 03 | 704 | 0.2+ | 1.1− | 2006 11 20 | 704 | 0.5+ | 0.1− |
| 2002 12 10 | 644 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.2− | 0.3+ |
| 2002 12 10 | 644 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2002 12 10 | 644 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 25 | 704 | 0.1− | 0.4− |
| 2002 12 28 | 699 | 0.3+ | 0.9+ | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 25 | 704 | 0.4− | 0.9− |
| 2002 12 28 | 699 | 0.6− | 0.1+ | 2006 10 19 | 683 | 0.1+ | 0.2+ | 2006 11 25 | 704 | 1.3− | 0.2− |
| 2002 12 28 | 699 | 0.4+ | 0.0 | 2006 10 19 | 683 | 0.4− | 0.3− | | | | |

**(142546)∗ 2002 TS$_{52}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.47855 | | (2000.0) | | +0.71786320 | −0.67360177 |
| $n$ | 0.22192336 | $\omega$ | 180.18453 | | +0.63906076 | +0.73780516 |
| $a$ | 2.7018882 | $\Omega$ | 223.94314 | | +0.27617708 | +0.04363720 |
| $e$ | 0.1065188 | $i$ | 14.68158 | | | |
| $P$ | 4.44 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | 0.5− | 0.3− | 2002 11 07 | 704 | 0.7+ | 0.6+ | 2006 09 16 | 703 | 0.3− | 0.7− |
| 2000 04 26 | 699 | 0.4− | 0.5+ | 2002 11 07 | 704 | 0.2+ | 0.7+ | 2006 09 21 | 699 | 0.2+ | 0.7+ |
| 2000 04 26 | 699 | 0.1− | 1.1+ | 2002 11 07 | 704 | 1.0+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.3+ |
| 2000 04 26 | 699 | 0.2+ | 0.1− | 2002 11 07 | 704 | 1.3+ | 0.2− | 2006 09 21 | 699 | 0.2+ | 0.3− |
| 2000 04 30 | 699 | 1.0+ | 0.9− | 2002 11 11 | 704 | 0.7− | 0.1− | 2006 09 21 | 699 | 0.7+ | 0.6+ |
| 2000 04 30 | 699 | (2.6− | 0.8+) | 2002 11 11 | 704 | 0.4− | 0.2− | 2006 09 27 | 703 | 0.6− | 0.2+ |
| 2000 04 30 | 699 | 0.2− | 0.5− | 2002 11 11 | 704 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.0 |
| 2000 04 30 | 699 | 0.8+ | 0.3− | 2002 11 11 | 704 | 0.7− | 0.2+ | 2006 09 27 | 703 | 0.4− | 0.0 |
| 2000 05 23 | 699 | (4.8− | 3.9+) | 2002 11 11 | 704 | 0.5− | 0.6− | 2006 09 27 | 703 | 0.0 | 0.0 |
| 2000 05 23 | 699 | (3.8− | 0.8+) | 2002 11 28 | 699 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.6+ | 0.5+ |
| 2000 05 23 | 699 | (1.0− | 2.2−) | 2002 11 28 | 699 | 1.1+ | 0.4− | 2006 09 29 | 699 | 0.1+ | 0.1+ |
| 2000 05 23 | 699 | 1.9− | 0.1+ | 2002 11 28 | 699 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.3+ |
| 2002 09 05 | 704 | 1.1+ | 0.9− | 2002 11 28 | 699 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.2+ | 0.4+ |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2002 12 01 | 704 | 0.5− | 0.5− | 2006 10 03 | 704 | 0.3+ | 0.3+ |
| 2002 09 05 | 704 | 0.7− | 0.7+ | 2002 12 01 | 704 | 0.4+ | 1.2− | 2006 10 03 | 704 | 0.4− | 1.0+ |
| 2002 09 05 | 704 | 0.8− | 1.2+ | 2002 12 01 | 704 | 0.2− | 0.3− | 2006 10 03 | 704 | 0.3− | 0.6+ |
| 2002 10 02 | 704 | 0.2+ | 0.3− | 2002 12 01 | 704 | 0.4− | 0.3− | 2006 10 03 | 704 | 0.0 | 0.6+ |
| 2002 10 02 | 704 | 0.2+ | 0.3− | 2002 12 01 | 704 | 0.2+ | 0.7− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.5+ | 0.0 | 2003 01 26 | 644 | 0.0 | 0.9+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.7− | 0.3+ | 2003 01 26 | 644 | 0.1− | 1.2+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.6− | 2003 01 26 | 644 | 0.2+ | 0.9+ | 2006 10 16 | 683 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2003 01 27 | 704 | 1.1+ | 0.6+ | 2006 10 16 | 683 | 0.6− | 0.1+ |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2003 01 27 | 704 | 1.0+ | 0.2− | 2006 10 16 | 683 | 1.1+ | 0.5+ |
| 2002 10 03 | 704 | 0.3− | 0.3− | 2003 01 27 | 704 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.7− |
| 2002 10 03 | 704 | 0.1+ | 0.0 | 2003 01 27 | 704 | 0.9+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 0.2+ | 0.8− | 2004 03 17 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.3+ | 1.4− |
| 2002 10 03 | 704 | 0.5+ | 0.3− | 2004 03 17 | 704 | 1.3+ | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.9− |
| 2002 10 03 | 704 | 0.1− | 0.8− | 2004 03 17 | 704 | 0.4− | 0.3− | 2006 10 23 | 703 | 0.7− | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2004 03 29 | 703 | 0.9− | 0.1+ | 2006 10 23 | 703 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2004 03 29 | 703 | 0.5− | 0.7+ | 2006 10 23 | 703 | (1.6− | 0.3+) |
| 2002 10 07 | 704 | 0.3+ | 0.2− | 2004 03 29 | 703 | 0.9+ | 1.3+ | 2006 10 23 | 703 | 0.8− | 1.1− |
| 2002 10 07 | 704 | 0.2+ | 0.5+ | 2004 03 29 | 703 | 0.2− | 0.6+ | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2002 10 07 | 704 | 0.3− | 0.5− | 2005 01 24 | 809 | 0.2− | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.6+ | 2005 01 24 | 809 | 0.1− | 0.2+ | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.7+ | 2005 01 24 | 809 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.6− | 0.2− | 2005 07 04 | 599 | 0.1+ | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2005 07 04 | 599 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2005 07 04 | 599 | 0.5+ | 1.1+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.3− | 0.4+ | 2005 07 04 | 599 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.4− |
| 2002 10 30 | 608 | 0.0 | 0.8+ | 2006 08 29 | 699 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2002 10 30 | 608 | 0.6− | 0.5+ | 2006 08 29 | 699 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.7+ |
| 2002 10 31 | 699 | 0.5+ | 0.0 | 2006 08 29 | 699 | 0.3+ | 0.8+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2002 10 31 | 699 | 0.7− | 0.2− | 2006 08 29 | 699 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2002 10 31 | 699 | 0.8− | 0.3+ | 2006 09 16 | 703 | 0.5− | 0.7− | 2006 11 13 | 703 | 0.5− | 0.1− |
| 2002 10 31 | 699 | 0.6− | 0.3+ | 2006 09 16 | 703 | 0.8− | 0.2− | | | | |
| 2002 11 07 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 703 | 0.6− | 0.1− | | | | |

**(142547)∗ 2002 TT$_{52}$ = 1991 PH$_{26}$ = 2000 CP$_{74}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38008), M. E. Sansaturio (*MPO* 41047)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 78.04843 | | (2000.0) | | +0.96608391 | +0.25818157 |
| *n* | 0.27864271 | $\omega$ | 184.84696 | | −0.23642979 | +0.89202512 |
| *a* | 2.3215120 | $\Omega$ | 160.18874 | | −0.10384046 | +0.37098984 |
| *e* | 0.2602407 | *i* | 0.83096 | | | |
| *P* | 3.54 | *H* | 16.1 | *G* 0.15 | *U* 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 08 05 | 809 | 0.1− | 1.3+ | 2002 10 03 | 704 | 0.2− | 0.4− | 2002 11 24 | 644 | 0.3− | 0.2+ |
| 1991 08 05 | 809 | 0.4− | 1.7+ | 2002 10 03 | 704 | 0.0 | 0.0 | 2002 11 27 | 699 | (0.4− | 2.8−) |
| 1991 08 05 | 809 | 0.8− | 1.8+ | 2002 10 30 | 608 | 0.3− | 0.5+ | 2002 11 27 | 699 | (0.4− | 1.6−) |
| 2000 01 03 | 691 | 0.5+ | 0.5− | 2002 10 30 | 608 | 0.4− | 0.6+ | 2002 11 27 | 699 | 0.3− | 0.0 |
| 2000 01 03 | 691 | 0.4+ | 0.6− | 2002 10 30 | 608 | 0.6− | 0.2+ | 2002 11 27 | 699 | 0.3+ | 0.0 |
| 2000 01 03 | 691 | 0.3+ | 1.1− | 2002 10 31 | 699 | 0.6+ | 0.3+ | 2002 11 28 | 699 | 0.3− | 0.4− |
| 2000 02 08 | 691 | 0.4+ | 1.4+ | 2002 10 31 | 699 | 0.3− | 0.3− | 2002 11 28 | 699 | 0.3− | 0.5+ |
| 2000 02 08 | 691 | 0.3+ | 1.3+ | 2002 10 31 | 699 | 0.0 | 0.7+ | 2002 11 28 | 699 | 0.3− | 0.1+ |
| 2000 02 08 | 691 | 0.3+ | 1.6+ | 2002 10 31 | 699 | 0.4− | 0.3+ | 2002 11 28 | 699 | 0.3− | 0.1+ |
| 2000 02 10 | 691 | 1.1− | 0.4− | 2002 11 05 | 699 | 0.1− | 0.4+ | 2002 12 02 | 704 | 0.3+ | 0.6+ |
| 2000 02 10 | 691 | 0.7− | 0.9− | 2002 11 05 | 704 | 0.6+ | 0.0 | 2002 12 02 | 704 | 0.5− | 0.2+ |
| 2000 02 10 | 691 | 0.2− | 0.6− | 2002 11 05 | 699 | 0.2− | 0.1− | 2002 12 02 | 704 | 0.1+ | 0.1− |
| 2001 03 26 | 807 | 0.9− | 0.6+ | 2002 11 05 | 704 | 1.0+ | 0.0 | 2002 12 02 | 704 | 0.1− | 0.3+ |
| 2001 03 26 | 807 | 0.3− | 0.5+ | 2002 11 05 | 699 | 0.1− | 0.1+ | 2002 12 02 | 704 | 0.4+ | 0.4− |
| 2001 03 26 | 807 | 0.3− | 0.5+ | 2002 11 05 | 704 | 0.6+ | 0.3− | 2002 12 06 | 704 | 0.1+ | 0.2+ |
| 2001 03 26 | 807 | 0.6− | 0.8+ | 2002 11 05 | 699 | 0.1− | 0.4+ | 2002 12 06 | 704 | 0.4+ | 0.4+ |
| 2001 03 26 | 807 | 0.6− | 0.2+ | 2002 11 05 | 704 | 0.0 | 0.9− | 2002 12 06 | 704 | 0.3+ | 0.8+ |
| 2001 03 26 | 807 | 0.9− | 0.3+ | 2002 11 05 | 704 | 0.5+ | 0.5− | 2002 12 06 | 704 | 0.2+ | 0.8+ |
| 2001 03 26 | 807 | 0.6− | 0.7+ | 2002 11 06 | 704 | 0.2+ | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.7+ |
| 2001 03 26 | 807 | (1.9+ | 0.7−) | 2002 11 06 | 704 | 0.6− | 0.4+ | 2002 12 10 | 704 | 0.0 | 1.3+ |
| 2001 03 26 | 807 | 0.7− | 0.5+ | 2002 11 06 | 704 | 0.3− | 0.5− | 2002 12 10 | 704 | 0.8+ | 0.7− |
| 2001 03 26 | 807 | 0.2+ | 0.5+ | 2002 11 06 | 704 | 0.3− | 0.3+ | 2002 12 10 | 644 | 0.3− | 0.1+ |
| 2001 03 26 | 807 | 0.5− | 0.6+ | 2002 11 06 | 704 | 0.6− | 0.0 | 2002 12 10 | 704 | 0.3− | 0.1− |
| 2001 04 24 | 291 | 0.5+ | 0.4+ | 2002 11 13 | 644 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.9+ | 1.2− |
| 2001 04 24 | 291 | 0.8+ | 0.3+ | 2002 11 13 | 644 | 0.2− | 0.2+ | 2002 12 10 | 644 | 0.1+ | 0.2+ |
| 2001 04 24 | 291 | 0.9+ | 0.2+ | 2002 11 13 | 644 | 0.1+ | 0.3+ | 2002 12 10 | 644 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 0.3− | 2002 11 14 | 704 | 0.1− | 0.2+ | 2002 12 27 | 644 | 0.2− | 1.2+ |
| 2002 09 07 | 704 | 0.5+ | 1.1+ | 2002 11 14 | 704 | 0.2− | 0.9+ | 2002 12 27 | 644 | 0.2− | 1.2+ |
| 2002 09 07 | 704 | 0.0 | 0.8+ | 2002 11 14 | 704 | 0.3− | 0.2− | 2002 12 27 | 644 | 0.3− | 1.1+ |
| 2002 10 02 | 704 | 0.2+ | 0.2+ | 2002 11 14 | 704 | 0.5+ | 0.4− | 2004 02 13 | 291 | 0.6− | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.5+ | 2002 11 14 | 704 | 0.4+ | 0.6− | 2004 02 13 | 291 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.1− | 1.2+ | 2002 11 15 | 704 | 0.2− | 0.0 | 2004 02 13 | 291 | 0.4+ | 0.3+ |
| 2002 10 02 | 704 | 0.0 | 0.7− | 2002 11 15 | 704 | 0.7+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2002 11 15 | 704 | 0.8− | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.6− | 0.5− | 2002 11 15 | 704 | 0.6− | 0.2+ | 2006 09 25 | G96 | 0.5− | 0.6− |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2002 11 15 | 704 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.5− | 0.5− |
| 2002 10 03 | 704 | 0.0 | 0.5− | 2002 11 23 | 644 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.9+ | 0.8− | 2002 11 23 | 644 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.5− | 0.8− |
| 2002 10 03 | 704 | 1.4− | 0.5− | 2002 11 23 | 644 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2002 10 03 | 704 | 0.7+ | 0.0 | 2002 11 24 | 644 | 0.8− | 0.5− | 2006 11 15 | G96 | 0.9− | 0.7− |
| 2002 10 03 | 704 | 0.3+ | 0.9− | 2002 11 24 | 644 | 0.4− | 0.3+ | | | | |

**(142548)∗ 2002 TG$_{53}$ = 1998 RB$_{40}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41047)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 24.40705 | | (2000.0) | | +0.62897035 | −0.77385654 |
| *n* | 0.26739788 | $\omega$ | 298.14245 | | +0.73858625 | +0.56490819 |
| *a* | 2.3861482 | $\Omega$ | 112.68757 | | +0.24266571 | +0.28639971 |
| *e* | 0.2434409 | *i* | 4.62827 | | | |
| *P* | 3.69 | *H* | 16.4 | *G* 0.15 | *U* 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 29 | 691 | 0.3+ | 0.2+ | 2002 11 07 | 704 | 0.6− | 0.6− | 2003 01 07 | 704 | 0.4− | 0.0 |
| 1996 01 29 | 691 | 0.0 | 0.6− | 2002 11 11 | 704 | 0.3− | 0.5− | 2003 01 07 | 704 | 0.4+ | 0.3+ |
| 1996 01 29 | 691 | 0.2+ | 0.0 | 2002 11 11 | 704 | 0.4− | 0.4− | 2003 01 07 | 704 | 1.1+ | 0.8+ |
| 1997 05 29 | 691 | 0.2− | 0.0 | 2002 11 11 | 704 | 0.7− | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.5+ |
| 1997 05 29 | 691 | 0.2− | 0.3+ | 2002 11 11 | 704 | 0.6− | 0.5− | 2003 01 08 | 704 | 0.4+ | 0.6+ |
| 1997 05 29 | 691 | 0.9− | 0.6+ | 2002 11 11 | 704 | 0.7− | 0.5− | 2003 01 08 | 704 | 0.5+ | 0.2+ |
| 1998 09 14 | 704 | 0.1+ | 0.4+ | 2002 11 19 | 644 | 0.4− | 0.5+ | 2003 01 08 | 704 | 0.4+ | 0.3+ |
| 1998 09 14 | 704 | 0.7− | 0.3+ | 2002 11 19 | 644 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.4+ | 0.9+ |
| 1998 09 14 | 704 | 0.9+ | 1.3− | 2002 11 19 | 644 | 0.3− | 0.4+ | 2003 01 31 | 704 | 0.4− | 0.5+ |
| 1998 09 14 | 704 | 0.4+ | 0.2+ | 2002 12 01 | 704 | 0.7+ | 0.6− | 2003 01 31 | 704 | 0.6− | 0.5+ |
| 1998 09 18 | 704 | 1.5+ | 2.0+ | 2002 12 01 | 704 | 0.2− | 0.0 | 2003 01 31 | 704 | 0.9− | 0.5+ |
| 1998 09 18 | 704 | 1.3− | 0.5+ | 2002 12 01 | 704 | 0.1+ | 0.1− | 2003 01 31 | 704 | 0.2− | 0.6+ |
| 1998 09 18 | 704 | 0.1+ | 0.0 | 2002 12 01 | 704 | 1.3+ | 0.1− | 2003 01 31 | 704 | 0.0 | 0.2+ |
| 1998 09 18 | 704 | 0.2+ | 1.3+ | 2002 12 03 | 644 | 0.3− | 0.1+ | 2005 06 03 | 691 | 0.0 | 0.1+ |
| 1998 09 18 | 704 | (1.5− | 2.5+) | 2002 12 03 | 644 | 0.2− | 0.2+ | 2005 06 03 | 691 | 0.2− | 0.1− |
| 1998 09 27 | 699 | 0.7+ | 0.2− | 2002 12 03 | 644 | 0.0 | 0.2+ | 2005 06 03 | 691 | 0.1+ | 0.3− |
| 1998 09 27 | 699 | 1.2+ | 0.3+ | 2002 12 11 | 704 | 0.6− | 0.3+ | 2005 06 08 | 691 | 0.1+ | 0.1+ |
| 1998 09 27 | 699 | 0.3+ | 1.0+ | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2005 06 08 | 691 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.7+ | 0.3− | 2002 12 11 | 704 | 1.0− | 0.6+ | 2005 06 08 | 691 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.2+ | 0.8− | 2002 12 11 | 704 | 0.8− | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.3+ |
| 2002 10 02 | 704 | 1.5− | 0.5− | 2002 12 11 | 704 | 0.4− | 0.2+ | 2005 06 13 | G96 | 0.3+ | 0.5+ |
| 2002 10 02 | 704 | 0.1− | 0.6− | 2002 12 16 | 608 | 0.6− | 0.3+ | 2005 06 13 | G96 | 0.5+ | 0.0 |
| 2002 10 03 | 704 | 1.1+ | 0.3+ | 2002 12 16 | 608 | 0.6− | 0.5+ | 2005 06 13 | G96 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2002 12 16 | 608 | 0.6− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 1.0− | 0.5− | 2002 12 21 | 608 | 1.1+ | 1.1− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 10 09 | 704 | (0.8− | 2.1−) | 2002 12 21 | 608 | 0.7+ | 1.0− | 2006 10 27 | G96 | 0.7+ | 0.4− |
| 2002 10 09 | 704 | (0.8− | 2.6−) | 2002 12 21 | 608 | (1.1+ | 1.7−) | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 10 09 | 704 | (0.1+ | 2.3−) | 2002 12 26 | 185 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2002 10 11 | 704 | (3.8− | 1.4+) | 2002 12 26 | 185 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.7+ | 0.0 |
| 2002 10 11 | 704 | (0.6+ | 3.0+) | 2002 12 26 | 185 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2002 10 11 | 704 | (0.9− | 1.6+) | 2002 12 31 | 704 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.5+ | 0.1+ |
| 2002 10 11 | 704 | (1.6− | 1.7+) | 2002 12 31 | 704 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 1.4+ | 2002 12 31 | 704 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.3+ | 0.4− | 2002 12 31 | 704 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.7+ | 0.0 |
| 2002 11 07 | 704 | 0.1− | 0.6− | 2002 12 31 | 704 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 11 07 | 704 | 0.8− | 0.7− | 2003 01 07 | 704 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2002 11 07 | 704 | 0.6− | 0.7− | 2003 01 07 | 704 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.3− |

**(142549)∗ 2002 TJ$_{53}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 73.96401 | | (2000.0) | | +0.52264494 | +0.76636706 |
| *n* | 0.23429862 | $\omega$ | 259.10339 | | −0.45066171 | +0.62025987 |
| *a* | 2.6058909 | $\Omega$ | 49.17506 | | −0.72370318 | +0.16721012 |
| *e* | 0.0775282 | *i* | 29.57891 | | | |
| *P* | 4.21 | *H* | 15.1 | *G* 0.15 | *U* 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 27 | 691 | 0.3+ | 0.1− | 2004 01 28 | 645 | 0.1+ | 0.2− | 2006 11 14 | 704 | 1.4+ | 0.9+ |
| 1992 04 27 | 691 | 0.2+ | 0.1− | 2004 03 24 | 703 | (0.8+ | 1.7+) | 2006 11 14 | 704 | (0.2+ | 1.8+) |
| 1992 04 27 | 691 | 0.0 | 0.3+ | 2004 03 24 | 703 | (0.2+ | 2.2+) | 2006 11 14 | 704 | 0.1− | 0.0 |
| 2000 04 03 | 704 | 0.1− | 1.8+ | 2004 03 24 | 703 | 1.4− | 0.4+ | 2006 11 14 | 704 | (1.0+ | 2.2+) |
| 2000 04 03 | 704 | 0.4− | 1.6+ | 2004 03 24 | 703 | 0.1+ | 0.4− | 2006 11 14 | 704 | 0.2+ | 1.2− |
| 2000 04 03 | 704 | 0.4− | 1.4+ | 2004 03 30 | 704 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2002 10 02 | 704 | 0.8+ | 0.4− | 2004 03 30 | 704 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.7− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2004 03 30 | 704 | 0.4+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2002 10 02 | 704 | 0.7− | 0.5+ | 2004 03 30 | 704 | 0.9− | 1.0+ | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2002 10 03 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 699 | (0.5+ | 1.6−) | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 699 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.6+ | 0.0 | 2006 09 30 | 699 | 1.2+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2002 10 03 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 1.0− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.6− |
| 2002 10 11 | 704 | 0.1+ | 0.8− | 2006 09 30 | 699 | 0.5− | 0.9+ | 2006 11 18 | 704 | 0.9− | 1.3+ |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.7− | 0.7− | 2006 11 18 | 704 | 0.7− | 0.9+ |
| 2002 10 11 | 704 | 0.1+ | 0.6− | 2006 09 30 | 703 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.7− | 0.4+ | 2006 11 18 | 704 | (2.1− | 1.0−) |
| 2002 11 12 | 704 | (1.7− | 1.5+) | 2006 10 16 | 703 | 0.2+ | 1.1+ | 2006 11 18 | 704 | 1.0+ | 1.3− |
| 2002 11 12 | 704 | 1.1− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2002 11 12 | 704 | 0.2− | 1.2+ | 2006 10 16 | 703 | (0.4− | 1.5+) | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2002 11 12 | 704 | 0.5+ | 0.1− | 2006 10 22 | 704 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.6− |
| 2002 11 12 | 644 | 0.5+ | 0.1+ | 2006 10 22 | 704 | 1.3+ | 0.8− | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2002 11 12 | 644 | 0.2+ | 0.4− | 2006 10 22 | 704 | 0.8− | 0.9+ | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2002 11 12 | 644 | 0.1+ | 0.2− | 2006 10 22 | 704 | 1.2− | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2002 11 15 | 704 | 0.5− | 0.4+ | 2006 10 22 | 704 | 0.5− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2002 11 15 | 704 | 0.8− | 0.1+ | 2006 11 01 | 703 | 0.8− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2002 11 15 | 704 | 0.8− | 0.3− | 2006 11 01 | 703 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.0 |
| 2002 11 15 | 704 | 0.0 | 0.1+ | 2006 11 01 | 703 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 2002 11 15 | 704 | 1.2− | 0.1+ | 2006 11 01 | 703 | 0.0 | 0.1− | 2006 11 26 | 704 | 1.5+ | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 1.1+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.4+ | 0.3+ |
| 2002 12 05 | 704 | 1.0− | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 26 | 704 | 0.8+ | 0.1+ |
| 2002 12 05 | 704 | 0.7− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.4− | 0.4− |
| 2002 12 05 | 704 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.1− | 0.6− |
| 2002 12 05 | 704 | 0.4− | 0.8− | 2006 11 11 | 703 | 0.6− | 0.2− | 2006 11 27 | 703 | 0.5− | 0.3− |
| 2002 12 13 | 704 | 1.4+ | 0.3− | 2006 11 11 | 703 | 0.8− | 0.0 | 2006 11 27 | 703 | 1.6− | 0.2− |
| 2002 12 13 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.6+ |
| 2002 12 13 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.7+ | 0.7+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2002 12 13 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 703 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.8+ | 0.3+ |
| 2002 12 13 | 704 | 0.5+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.3+ | 0.5− |
| 2004 01 28 | 645 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.4− | 0.4− |

**(142550)∗ 2002 TK$_{53}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 329.84042 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24059694 | $\omega$ | 175.82809 | | +0.26317801 | −0.96294895 |
| $a$ | 2.5602123 | $\Omega$ | 258.90556 | | +0.88339300 | +0.26506511 |
| $e$ | 0.1920856 | $i$ | 3.43979 | | +0.38775525 | +0.04969714 |
| $P$ | 4.10 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 20 | 691 | 0.4+ | 0.2− | 2002 12 10 | 704 | 0.6+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 1991 01 20 | 691 | 0.8− | 0.2− | 2002 12 10 | 704 | 0.1− | 1.3− | 2006 11 01 | G96 | 0.1− | 0.6− |
| 1991 01 20 | 691 | 0.1− | 0.4− | 2002 12 10 | 704 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1991 02 05 | 691 | 0.2+ | 0.1+ | 2002 12 11 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1991 02 05 | 691 | 0.0 | 0.5− | 2002 12 11 | 333 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1991 02 05 | 691 | 0.2+ | 0.9+ | 2002 12 11 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 1998 12 15 | 704 | 1.9+ | 0.4+ | 2002 12 11 | 333 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1998 12 15 | 704 | 0.0 | 0.9− | 2002 12 11 | 704 | 0.7+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1998 12 15 | 704 | 0.6+ | 0.3− | 2002 12 11 | 333 | 0.6− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1998 12 15 | 704 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.5+ | 0.2+ | 2002 12 11 | 704 | 0.6− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 09 07 | 704 | 1.0+ | 0.2+ | 2002 12 15 | 608 | 0.7− | 0.3− | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | (2.9+ | 0.4−) | 2002 12 15 | 608 | 0.4− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.1+ | 0.2− | 2002 12 15 | 608 | 0.4− | 0.1− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.2+ | 0.3+ | 2002 12 27 | 644 | 0.6+ | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 0.5+ | 2002 12 27 | 644 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2002 10 02 | 704 | 0.5− | 0.0 | 2002 12 27 | 644 | 0.3+ | 1.3+ | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2002 10 03 | 704 | 0.3− | 1.0+ | 2002 12 31 | 704 | (2.2− | 1.3+) | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2002 10 03 | 704 | 0.8− | 0.1− | 2002 12 31 | 704 | 0.7+ | 1.2− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.7− | 0.3+ | 2002 12 31 | 704 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 049 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.5− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 10 31 | 049 | 0.1+ | 0.2+ | 2003 01 19 | 644 | 0.2− | 1.0+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 049 | 0.2+ | 0.4+ | 2003 01 19 | 644 | 0.0 | 1.2+ | 2006 11 16 | 704 | 0.5+ | 1.5+ |
| 2002 11 06 | 704 | 0.4− | 0.9+ | 2003 01 19 | 644 | 0.2− | 1.2+ | 2006 11 16 | 704 | 0.0 | 1.1+ |
| 2002 11 06 | 704 | 0.6+ | 0.9+ | 2003 01 25 | 699 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 0.2+ | 0.9+ |
| 2002 11 06 | 704 | 0.5− | 0.1+ | 2003 01 25 | 699 | 1.1− | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.7+ |
| 2002 11 06 | 704 | 0.5+ | 0.1+ | 2003 01 25 | 699 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.2+ |
| 2002 11 06 | 704 | 0.2− | 0.3+ | 2003 01 25 | 699 | 0.3+ | 0.7+ | 2006 11 17 | 704 | (0.1+ | 1.8+) |
| 2002 11 14 | 704 | 0.1− | 0.3+ | 2004 04 12 | 644 | 0.2+ | 0.6+ | 2006 11 17 | 704 | (0.4+ | 2.9+) |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2004 04 12 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.7− | 1.1+ |
| 2002 11 14 | 704 | 0.0 | 0.3+ | 2004 04 12 | 644 | 0.2+ | 0.7+ | 2006 11 17 | 704 | (0.5− | 1.6+) |
| 2002 11 14 | 704 | 0.5+ | 1.0+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.8+ |
| 2002 11 27 | 599 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2002 11 27 | 599 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.5+ |
| 2002 11 28 | 599 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.9− | 0.0 |
| 2002 11 28 | 599 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 1.5− | 1.0+ |
| 2002 12 02 | 704 | 0.8− | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2002 12 02 | 704 | 0.7− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2002 12 02 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.3− |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.8− | 1.1+ | 2006 10 21 | 691 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 12 05 | 704 | 0.6− | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.5− | 0.2+ |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 12 07 | 333 | (1.6+ | 0.7+) | 2006 10 23 | 644 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2002 12 07 | 333 | 0.1− | 0.5− | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.4+ |
| 2002 12 07 | 333 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2002 12 10 | 704 | 0.3+ | 0.9− | 2006 10 27 | 703 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2002 12 10 | 704 | 0.5+ | 1.1− | 2006 10 27 | 703 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.5− |
| 2002 12 10 | 704 | 0.2+ | 1.4− | 2006 10 27 | 703 | 1.2− | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.4+ |
| 2002 12 10 | 704 | 0.2+ | 1.1− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.8− | 0.2+ |
| 2002 12 10 | 704 | 0.1+ | 1.1− | 2006 11 01 | G96 | 0.2− | 0.4− | | | | |

**(142551)∗ 2002 TV$_{53}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 9.53240 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23729490 | $\omega$ | 107.11810 | | +0.98863848 | −0.14405474 |
| $a$ | 2.5839084 | $\Omega$ | 261.18034 | | +0.11603455 | +0.91292210 |
| $e$ | 0.2226974 | $i$ | 2.48939 | | +0.09555072 | +0.38186578 |
| $P$ | 4.15 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 12 | 809 | 0.9− | 1.0+ | 2002 12 31 | 704 | 0.3+ | 0.6− | 2006 10 23 | 691 | 0.5− | 0.0 |
| 1993 07 12 | 809 | 0.2+ | 0.9+ | 2002 12 31 | 704 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 1993 07 12 | 809 | 0.3+ | 1.5+ | 2002 12 31 | 704 | 0.4− | 0.7− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 1998 12 15 | 704 | 0.8− | 2.0− | 2002 12 31 | 704 | 0.8− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 1998 12 15 | 704 | 1.1− | 1.2− | 2003 01 04 | 704 | 0.6+ | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 1998 12 15 | 704 | 0.8+ | 0.7− | 2003 01 04 | 704 | 0.6+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 1998 12 15 | 704 | (5.0− | 2.7−) | 2003 01 04 | 704 | 0.9+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2002 10 02 | 704 | 0.8− | 0.0 | 2003 01 04 | 704 | 0.7+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2003 01 04 | 704 | 0.5+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2003 01 04 | 704 | 0.8+ | 0.1− | 2006 10 29 | 704 | 0.1+ | 1.1+ |
| 2002 10 03 | 704 | 0.9− | 0.6+ | 2003 01 04 | 704 | 0.4+ | 0.2+ | 2006 10 29 | 704 | 1.0− | 1.0+ |
| 2002 10 03 | 704 | 0.6− | 0.9+ | 2003 01 04 | 704 | (0.5+ | 1.6−) | 2006 10 29 | 704 | 0.6− | 1.3+ |
| 2002 10 03 | 704 | 0.0 | 1.1+ | 2003 01 04 | 704 | 0.0 | 0.2− | 2006 10 29 | 704 | 0.5− | 0.9+ |
| 2002 10 03 | 704 | 0.3+ | 0.5− | 2003 01 19 | 644 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.4− | 0.7+ |
| 2002 10 03 | 704 | (0.2− | 1.6+) | 2003 01 19 | 644 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2002 10 10 | 704 | 0.7− | 0.5− | 2003 01 19 | 644 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 10 10 | 704 | 0.3− | 0.2+ | 2004 01 29 | 291 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 10 10 | 704 | 0.8+ | 1.0− | 2004 01 29 | 291 | 0.9+ | 0.5+ | 2006 11 02 | 704 | 0.5− | 0.9+ |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2004 01 29 | 291 | 0.0 | 0.7+ | 2006 11 02 | 704 | 0.9− | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 11 02 | 704 | (0.1− | 1.5−) |
| 2002 10 11 | 704 | 0.4+ | 0.6− | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 11 02 | 704 | 0.6− | 0.8+ |
| 2002 10 31 | 608 | 0.6+ | 0.7− | 2004 03 18 | 704 | 0.2− | 0.9+ | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2002 10 31 | 608 | 0.7+ | 0.8− | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 10 31 | 608 | 0.3+ | 1.2− | 2004 03 18 | 704 | 0.5− | 0.6− | 2006 11 09 | 644 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.1+ | 0.5+ | 2004 03 28 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.7− |
| 2002 11 05 | 704 | 0.3− | 0.5+ | 2004 03 28 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 11 05 | 704 | 0.6+ | 0.1− | 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.5+ | 0.1− | 2005 06 14 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.6+ | 1.1− | 2005 06 14 | G96 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.3+ | 1.1+ |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.8+ |
| 2002 11 06 | 704 | 0.2− | 0.6+ | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2002 11 06 | 704 | 0.7− | 0.4+ | 2006 08 25 | 704 | 0.5+ | 0.8+ | 2006 11 16 | 704 | 0.7− | 1.5+ |
| 2002 11 14 | 704 | 0.1− | 0.4− | 2006 08 25 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.8− | 0.7− |
| 2002 11 14 | 704 | 0.6+ | 0.4+ | 2006 08 25 | 704 | (1.7+ | 1.4+) | 2006 11 17 | 703 | 0.5− | 1.2− |
| 2002 11 14 | 704 | 0.5− | 0.2− | 2006 08 28 | 703 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2002 11 14 | 704 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.3− | 1.2− | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2002 11 14 | 704 | 0.7− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.4+ | 2006 11 17 | 703 | 0.3+ | 0.2− |
| 2002 11 24 | 644 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.1− | 1.0+ |
| 2002 11 24 | 644 | 0.0 | 0.5− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 18 | 704 | 1.3+ | 0.0 |
| 2002 11 24 | 644 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.5+ | 0.5− | 2006 11 18 | 704 | 0.5+ | 0.3− |
| 2002 12 02 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2002 12 02 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2002 12 02 | 704 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 1.5+ | 0.0 |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (0.7− | 1.9+) |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | (0.6+ | 1.6−) |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.7− |
| 2002 12 07 | 333 | 0.6− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2002 12 07 | 333 | 0.5− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2002 12 07 | 333 | 0.3+ | 0.2− | 2006 10 19 | 704 | 1.2− | 1.1+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2002 12 10 | 704 | 0.3+ | 0.2− | 2006 10 19 | 704 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.6− |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.4− |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2006 10 19 | 704 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2002 12 10 | 704 | 0.4− | 0.9+ | 2006 10 19 | 704 | 0.4+ | 0.9+ | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2002 12 10 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.5+ |
| 2002 12 27 | 644 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.3+ |
| 2002 12 27 | 644 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.5+ | 1.0+ |
| 2002 12 28 | 699 | (2.5− | 0.4+) | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2002 12 28 | 699 | 1.1+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.4+ | 1.3+ |
| 2002 12 28 | 699 | 0.7+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.6− |
| 2002 12 28 | 699 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− | | | | |
| 2002 12 31 | 704 | 0.5+ | 0.7− | 2006 10 22 | 644 | 0.0 | 0.0 | | | | |

**(142552)∗ 2002 TO$_{54}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.16213 | | (2000.0) | | +0.84110935 | −0.54043297 |
| $n$ | 0.23251170 | $\omega$ | 196.58539 | | +0.50462467 | +0.79850748 |
| $a$ | 2.6192252 | $\Omega$ | 196.18254 | | +0.19465097 | +0.26517542 |
| $e$ | 0.2300865 | $i$ | 4.44840 | | | |
| $P$ | 4.24 | $H$ | 16.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.5+ | 0.1+ | 2002 11 10 | 704 | (0.4− | 1.6−) | 2006 08 24 | 704 | 0.4− | 0.0 |
| 2002 10 02 | 704 | 0.4− | 0.2− | 2002 11 10 | 704 | 0.0 | 0.8− | 2006 08 24 | 704 | 0.3− | 0.1− |
| 2002 10 02 | 704 | 0.0 | 0.7+ | 2002 11 11 | 704 | 0.4− | 0.4+ | 2006 08 24 | 704 | 0.3− | 1.1+ |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2002 11 11 | 704 | 0.2+ | 0.1− | 2006 08 24 | 704 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.7+ | 0.7+ | 2002 11 11 | 704 | 0.2− | 0.4− | 2006 08 27 | 699 | 0.4− | 0.8+ |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2002 11 11 | 704 | 0.3− | 0.5− | 2006 08 27 | 699 | 0.8+ | 0.7+ |
| 2002 10 03 | 704 | 0.4+ | 0.2+ | 2002 11 11 | 704 | 0.9− | 0.6− | 2006 08 27 | 699 | (0.2− | 2.3+) |
| 2002 10 07 | 704 | 0.2+ | 0.5+ | 2002 11 12 | 704 | 0.0 | 0.8− | 2006 08 27 | 699 | (2.1+ | 0.1+) |
| 2002 10 07 | 704 | 0.6+ | 1.0− | 2002 11 12 | 704 | 0.4+ | 1.2− | 2006 08 28 | 703 | 0.8− | 0.0 |
| 2002 10 07 | 704 | (1.8+ | 2.0−) | 2002 11 12 | 704 | 0.7− | 0.8− | 2006 08 28 | 703 | 0.0 | 0.3+ |
| 2002 10 08 | 699 | 0.2+ | 1.0+ | 2002 11 12 | 704 | 0.1− | 0.8− | 2006 08 28 | 703 | 0.2− | 0.2− |
| 2002 10 08 | 699 | 0.8+ | 0.0 | 2002 11 12 | 644 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.6− |
| 2002 10 08 | 699 | 0.7+ | 0.7− | 2002 11 12 | 644 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.5+ | 0.7+ |
| 2002 10 08 | 699 | 0.6− | 0.6+ | 2002 11 12 | 644 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.5− | 0.1− |
| 2002 10 09 | 704 | 0.9+ | 1.1− | 2002 11 22 | 644 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.4− |
| 2002 10 09 | 704 | 0.0 | 0.9− | 2002 11 22 | 644 | 0.2+ | 0.0 | 2006 09 12 | 703 | 1.2− | 0.1+ |
| 2002 10 09 | 704 | 0.4+ | 0.2− | 2002 11 22 | 644 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.4+ |
| 2002 10 09 | 704 | 1.0− | 0.7+ | 2002 11 30 | 608 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.4+ | 0.4− |
| 2002 10 11 | 704 | 0.5− | 0.6+ | 2002 11 30 | 608 | 0.5− | 1.0+ | 2006 09 19 | 703 | (2.5− | 2.8−) |
| 2002 10 11 | 704 | 0.5+ | 0.6− | 2002 11 30 | 608 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.3+ | 0.1− | 2002 12 01 | 704 | (1.8− | 0.1+) | 2006 09 19 | 699 | 0.2− | 0.8+ |
| 2002 10 11 | 704 | 0.1− | 0.1− | 2002 12 01 | 704 | 0.0 | 0.5− | 2006 09 19 | 699 | 0.6+ | 1.2− |
| 2002 10 11 | 704 | 0.8+ | 0.5+ | 2002 12 01 | 704 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.7− | 0.4+ |
| 2002 10 15 | 704 | 0.4+ | 0.0 | 2002 12 01 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 704 | 0.5+ | 1.1+ |
| 2002 10 15 | 704 | 0.7+ | 0.4+ | 2002 12 01 | 704 | 0.7− | 0.9+ | 2006 09 20 | 704 | 0.0 | 0.7+ |
| 2002 10 15 | 704 | 0.1− | 0.6+ | 2004 03 15 | 691 | 0.2+ | 0.7+ | 2006 09 20 | 704 | 0.3+ | 0.5+ |
| 2002 10 18 | 644 | (1.3+ | 1.8+) | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.6− |
| 2002 10 18 | 644 | 0.1+ | 0.3+ | 2004 03 15 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.8+ | 0.7+ |
| 2002 10 18 | 644 | 0.1+ | 0.4+ | 2004 03 21 | 691 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 1.1+ | 0.4+ |
| 2002 10 28 | 608 | 0.2− | 0.0 | 2004 03 21 | 691 | 0.0 | 0.6+ | 2006 09 25 | 699 | 1.0+ | 0.2− |
| 2002 10 28 | 608 | 0.4+ | 0.1+ | 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.8+ |
| 2002 10 28 | 608 | 0.2− | 0.3+ | 2005 05 14 | G96 | 0.7+ | 0.1− | 2006 09 26 | 704 | 0.6+ | 0.0 |
| 2002 11 02 | 608 | 0.2+ | 0.3+ | 2005 05 14 | G96 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.6− | 0.7− |
| 2002 11 02 | 608 | 0.6+ | 0.7− | 2005 05 14 | G96 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.5− | 0.1+ |
| 2002 11 02 | 608 | 0.8+ | 0.5− | 2005 05 14 | G96 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.0 |
| 2002 11 04 | 699 | 0.2− | 0.3+ | 2006 08 15 | 644 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2002 11 04 | 699 | 0.3+ | 1.0+ | 2006 08 15 | 644 | 0.0 | 0.1− | 2006 09 29 | 704 | 1.0+ | 0.1− |
| 2002 11 04 | 699 | 0.1− | 0.2+ | 2006 08 15 | 644 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2002 11 04 | 699 | 0.1− | 0.1+ | 2006 08 20 | 691 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.8+ |
| 2002 11 07 | 704 | 0.2− | 0.1− | 2006 08 20 | 691 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.6− | 0.2+ | 2006 08 20 | 691 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2002 11 07 | 704 | 0.1+ | 0.6+ | 2006 08 22 | 644 | 0.5− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.6+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 11 08 | 704 | 0.1− | 0.6− | 2006 08 23 | 644 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2002 11 08 | 704 | 0.2− | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2002 11 08 | 704 | 0.5− | 0.0 | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.7− |
| 2002 11 08 | 704 | 0.1+ | 0.6− | 2006 08 23 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2002 11 10 | 704 | 0.6+ | 0.4+ | 2006 08 23 | 644 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2002 11 10 | 704 | 0.3− | 0.6+ | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 11 10 | 704 | 1.3− | 0.3+ | 2006 08 24 | 704 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2− |

**(142553)∗ 2002 TX$_{54}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.29136 | | (2000.0) | | +0.46784160 | −0.88129451 |
| $n$ | 0.22261830 | $\omega$ | 20.50526 | | +0.79627146 | +0.38757132 |
| $a$ | 2.6962623 | $\Omega$ | 41.67651 | | +0.38350488 | +0.27038576 |
| $e$ | 0.1636298 | $i$ | 5.75411 | | | |
| $P$ | 4.43 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 691 | 0.6− | 0.2+ | 2002 12 11 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 0.0 | 1.0+ |
| 2000 04 29 | 691 | 0.3+ | 0.4+ | 2002 12 27 | 644 | 0.1+ | 1.4+ | 2006 09 18 | 699 | 0.4+ | 0.3− |
| 2000 04 29 | 691 | 0.0 | 0.3+ | 2002 12 27 | 644 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.2+ |
| 2000 05 11 | 691 | 0.1− | 0.5− | 2002 12 27 | 644 | 0.2+ | 1.1+ | 2006 09 20 | 644 | 0.4− | 0.2+ |
| 2000 05 11 | 691 | 0.3− | 0.9− | 2002 12 31 | 699 | 0.5+ | 0.0 | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 2000 05 11 | 691 | 0.2+ | 0.3− | 2002 12 31 | 699 | (1.7+ | 0.6+) | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 12 31 | 704 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.2− | 0.2+ |
| 2002 10 02 | 704 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.4+ | 1.0+ |
| 2002 10 02 | 704 | 0.3+ | 0.3− | 2002 12 31 | 699 | (1.8+ | 0.5−) | 2006 09 26 | 704 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 1.2− | 1.0+ | 2002 12 31 | 704 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2002 12 31 | 699 | 0.8+ | 0.9+ | 2006 09 26 | 704 | 0.1+ | 1.3+ |
| 2002 10 03 | 704 | 1.1+ | 0.7+ | 2002 12 31 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 2002 10 31 | 049 | 0.4− | 0.3− | 2002 12 31 | 704 | 0.6− | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.5− |
| 2002 10 31 | 049 | 0.6− | 0.4+ | 2003 01 20 | 644 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.5+ | 0.2+ |
| 2002 10 31 | 049 | 0.5− | 0.5− | 2003 01 20 | 644 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2002 11 12 | 704 | 0.9− | 0.1+ | 2003 01 20 | 644 | 0.8− | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.2− | 0.2− | 2004 03 19 | 704 | 0.4− | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 0.9− | 0.6− | 2004 03 19 | 704 | 1.3+ | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2002 11 12 | 704 | 0.8− | 0.3− | 2004 03 19 | 704 | (1.6+ | 0.6+) | 2006 10 03 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.2− | 0.2− | 2004 03 19 | 704 | 0.1− | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.4− |
| 2002 11 14 | 704 | 0.2− | 0.3− | 2004 04 23 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.4− | 0.3+ | 2004 04 23 | 691 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2002 11 14 | 704 | 0.4+ | 0.4− | 2004 04 23 | 691 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 11 14 | 704 | (0.9− | 1.6+) | 2006 08 28 | 699 | (0.1− | 1.6+) | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.5+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2002 11 24 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.8− | 2006 10 21 | 644 | 0.4+ | 0.4− |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.1− | 0.9− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 699 | 0.4+ | 0.3− | 2006 08 29 | 691 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2002 12 05 | 699 | 0.6+ | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2002 12 05 | 699 | 0.1+ | 0.5− | 2006 08 29 | 691 | 0.8− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 12 05 | 699 | 1.0+ | 1.4− | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.4+ | 0.2− |
| 2002 12 06 | 704 | 0.8+ | 0.9+ | 2006 09 14 | 703 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 0.2+ | 0.5− | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.3+ | 0.9− | 2006 09 18 | 703 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 12 11 | 704 | 0.3+ | 0.9− | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.7+ | 0.5− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.6− | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 1.4+ | | | | |

**(142554)∗ 2002 TX$_{56}$ = 1998 UK$_9$**

Discovered 2002 Oct. 2 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 38009)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 133.01307 | | (2000.0) | | | |
| $n$ | 0.24272931 | $\omega$ | 29.72583 | | −0.79830477 | +0.60131222 |
| $a$ | 2.5451960 | $\Omega$ | 187.51305 | | −0.59077979 | −0.79272983 |
| $e$ | 0.0567802 | $i$ | 14.91854 | | −0.11699881 | −0.10001513 |
| $P$ | 4.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 23 | 691 | 0.1− | 1.2+ | 2005 04 05 | 703 | 0.1− | 1.0+ | 2006 08 29 | 703 | 0.2+ | 0.7− |
| 1990 10 23 | 691 | 0.3− | 1.2+ | 2005 04 05 | 703 | 0.2+ | 0.7+ | 2006 09 12 | 703 | 0.2− | 1.0− |
| 1990 10 23 | 691 | 0.4− | 1.2+ | 2005 04 05 | 703 | 1.0− | 1.1+ | 2006 09 12 | 703 | 0.7+ | 0.5− |
| 1994 10 02 | 691 | 0.0 | 0.0 | 2005 04 05 | 703 | 0.4− | 0.4− | 2006 09 12 | 703 | 0.5− | 0.5− |
| 1994 10 02 | 691 | 0.0 | 0.0 | 2005 04 15 | 703 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.2− | 1.0− |
| 1994 10 02 | 691 | 0.0 | 0.2− | 2005 04 15 | 703 | 0.8− | 0.2+ | 2006 09 16 | 699 | 0.3− | 0.0 |
| 1998 10 16 | 691 | 0.4− | 0.8− | 2005 04 15 | 703 | 0.3− | 0.6+ | 2006 09 16 | 699 | 0.2+ | 0.0 |
| 1998 10 16 | 691 | 0.4− | 0.7− | 2005 04 15 | 703 | 0.0 | 0.5− | 2006 09 16 | 699 | 0.6− | 0.2− |
| 1998 10 16 | 691 | 0.4− | 0.7− | 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 1.0− | 0.8+ |
| 1998 10 20 | 691 | 1.0+ | 0.1+ | 2005 04 16 | 691 | 0.4+ | 0.0 | 2006 09 18 | 704 | 0.1− | 0.4− |
| 1998 10 20 | 691 | 1.0+ | 0.5− | 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.2− | 1.2+ |
| 1998 10 20 | 691 | 0.9+ | 0.2− | 2005 04 20 | 703 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.9− | 1.4+ |
| 2001 05 23 | 704 | 0.6+ | 0.1+ | 2005 04 20 | 703 | 0.4− | 0.9− | 2006 09 18 | 704 | (1.2− | 3.3+) |
| 2001 05 23 | 704 | 0.5+ | 0.4+ | 2005 04 20 | 703 | 1.2− | 0.5+ | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2001 05 23 | 704 | 0.3− | 0.7− | 2005 04 20 | 703 | 0.5− | 0.5− | 2006 09 20 | 691 | 0.1− | 0.1+ |
| 2001 05 23 | 704 | 0.7− | 1.3+ | 2005 05 11 | 699 | 0.1− | 0.0 | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.1− | 2005 05 11 | 699 | 0.7− | 0.5− | 2006 09 23 | 291 | 0.2+ | 0.2+ |
| 2002 09 06 | 704 | 0.2− | 0.3+ | 2005 05 11 | 699 | 0.8+ | 0.1− | 2006 09 23 | 291 | 0.3+ | 0.3+ |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2005 05 11 | 703 | 0.7− | 0.5+ | 2006 09 23 | 291 | 0.2+ | 0.2+ |
| 2002 09 06 | 704 | 1.3+ | 0.6+ | 2005 05 11 | 703 | 0.5− | 0.3− | 2006 09 24 | 291 | 0.8− | 0.4+ |
| 2002 09 06 | 704 | 0.3− | 0.0 | 2005 05 11 | 699 | 0.1− | 0.0 | 2006 09 24 | 291 | 0.1+ | 1.1+ |
| 2002 09 14 | 644 | 0.2+ | 1.0+ | 2005 05 11 | 703 | 0.0 | 0.4− | 2006 09 24 | 291 | 0.1+ | 0.2+ |
| 2002 09 14 | 644 | 0.0 | 1.0+ | 2005 05 11 | 703 | (1.9− | 0.2+) | 2006 09 25 | 699 | 1.4+ | 1.0+ |
| 2002 09 14 | 644 | 0.3+ | 1.0+ | 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.1− | 1.0− |
| 2002 09 30 | 704 | 0.3− | 0.9+ | 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 1.1+ | 0.7+ |
| 2002 09 30 | 704 | 0.6− | 0.6+ | 2005 05 15 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2002 09 30 | 704 | 1.0− | 0.4+ | 2005 05 20 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.3− |
| 2002 09 30 | 704 | 1.1− | 0.5+ | 2005 05 20 | 644 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.3− |
| 2002 10 02 | 608 | 0.4+ | 0.6+ | 2005 05 20 | 644 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 10 02 | 608 | 0.8− | 0.3+ | 2005 05 31 | 703 | 0.5− | 0.7− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2002 10 02 | 608 | 0.4− | 0.1− | 2005 05 31 | 703 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.8− | 0.1− | 2005 05 31 | 703 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2005 05 31 | 703 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2005 06 06 | 704 | 0.5+ | 0.7− | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2005 06 06 | 704 | 1.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 10 05 | 645 | 0.1+ | 0.2− | 2005 06 06 | 704 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2002 10 05 | 645 | 0.1+ | 0.3− | 2005 06 06 | 704 | 0.9+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2002 10 07 | 704 | 0.4+ | 0.6+ | 2005 06 25 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 10 07 | 704 | 0.9+ | 0.2+ | 2005 06 25 | 644 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2002 10 07 | 704 | 0.2+ | 0.4+ | 2005 06 25 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 701 | 0.4− | 0.3− |
| 2002 10 07 | 704 | 0.4− | 1.4+ | 2006 08 27 | 699 | (0.5+ | 3.4+) | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 10 10 | 645 | 0.1− | 0.2− | 2006 08 27 | 699 | 1.1+ | 0.2− | 2006 11 21 | 701 | 0.0 | 0.4+ |
| 2002 10 10 | 645 | 0.2− | 0.1− | 2006 08 27 | 699 | 0.6+ | 0.6− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.8− | 0.4− | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2002 10 11 | 704 | 0.4− | 0.9+ | 2006 08 29 | 703 | 0.1− | 0.7− | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2002 10 11 | 704 | 0.5+ | 1.5+ | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 11 21 | 701 | 0.1− | 1.0− |
| 2002 10 11 | 704 | 1.3+ | 0.6+ | 2006 08 29 | 703 | 0.6+ | 1.0+ | | | | |

**(142555)∗ 2002 TB$_{58}$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.02946 | | (2000.0) | | | |
| $n$ | 0.23173958 | $\omega$ | 266.90183 | | −0.55223643 | −0.79296173 |
| $a$ | 2.6250399 | $\Omega$ | 220.36306 | | +0.83053295 | −0.55010401 |
| $e$ | 0.5674102 | $i$ | 23.41733 | | −0.07245654 | −0.26191080 |
| $P$ | 4.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.7− | 0.2+ | 2002 10 31 | 704 | 0.7+ | 0.2− | 2003 05 27 | 608 | 0.7+ | 0.4− |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2002 10 31 | 704 | 0.1− | 0.9− | 2003 05 27 | 608 | 1.4+ | 0.7− |
| 2002 09 05 | 704 | 0.2− | 0.9+ | 2002 11 08 | 118 | 0.3+ | 0.0 | 2003 05 27 | 608 | 0.6+ | 0.9− |
| 2002 10 03 | 704 | 0.8+ | 0.1− | 2002 11 08 | 118 | 0.2− | 0.1− | 2003 05 29 | 691 | 0.8− | 0.5+ |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2002 11 08 | 118 | 0.7− | 0.2− | 2003 05 29 | 691 | 0.8− | 0.0 |
| 2002 10 03 | 704 | 1.0− | 0.7+ | 2002 11 09 | 118 | 0.3+ | 0.2+ | 2003 05 29 | 691 | 1.0− | 0.1+ |
| 2002 10 03 | 704 | 0.5+ | 0.8+ | 2002 11 09 | 118 | 0.2+ | 0.1− | 2003 05 30 | 704 | 0.3− | 1.0+ |
| 2002 10 04 | J95 | 0.7− | 0.4+ | 2002 11 09 | 118 | 0.1+ | 0.0 | 2003 05 30 | 704 | 0.0 | 0.4+ |
| 2002 10 04 | J95 | 0.3− | 0.0 | 2002 12 11 | 428 | 0.4− | 0.1+ | 2003 05 30 | 704 | 0.2+ | 0.5+ |
| 2002 10 04 | J95 | 0.4+ | 0.1− | 2002 12 11 | 428 | 0.4+ | 0.0 | 2003 05 30 | 704 | 0.4+ | 0.5+ |
| 2002 10 04 | J95 | 0.1+ | 0.1+ | 2002 12 11 | 428 | 0.2+ | 0.3+ | 2003 05 30 | 704 | 0.4− | 0.8+ |
| 2002 10 04 | J95 | 0.2− | 0.2+ | 2003 01 10 | 428 | 0.7+ | 0.2+ | 2005 09 12 | 291 | 0.5+ | 0.3+ |
| 2002 10 04 | J95 | 0.5+ | 0.2− | 2003 01 10 | 428 | 0.4+ | 0.2− | 2005 09 12 | 291 | 0.2+ | 0.1− |
| 2002 10 04 | 651 | 0.8+ | 1.1+ | 2003 01 10 | 428 | 0.2− | 0.2+ | 2005 09 12 | 291 | 0.0 | 1.3+ |
| 2002 10 04 | 704 | 0.0 | 0.0 | 2003 02 08 | 428 | 0.3− | 0.2+ | 2006 09 02 | 673 | 0.5+ | 0.0 |
| 2002 10 04 | 651 | 0.8+ | 1.0+ | 2003 02 28 | 860 | 0.0 | 0.5− | 2006 09 02 | 673 | 0.3+ | 0.1+ |
| 2002 10 04 | 651 | 0.6+ | 0.6+ | 2003 02 28 | 860 | 0.9− | 0.4+ | 2006 09 02 | 673 | 0.4+ | 0.2+ |
| 2002 10 04 | 704 | 0.4− | 0.0 | 2003 03 12 | 322 | (0.6− | 2.3−) | 2006 09 06 | H55 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2003 03 12 | 322 | (0.5− | 2.2−) | 2006 09 06 | H55 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.4+ | 0.3− | 2003 03 29 | 428 | 0.2− | 0.3− | 2006 09 06 | H55 | 0.8+ | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.6− | 2003 03 29 | 428 | 0.7− | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.1+ | 2003 03 29 | 428 | 0.5− | 0.3− | 2006 09 17 | 703 | 0.3− | 0.5+ |
| 2002 10 04 | 670 | 0.7− | 0.2+ | 2003 03 30 | 860 | 1.0− | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.1+ | 0.1+ | 2003 03 30 | 860 | 0.0 | 0.8+ | 2006 09 17 | 703 | 0.6− | 0.4+ |
| 2002 10 04 | 670 | 1.2− | 0.2+ | 2003 03 30 | 860 | (1.6− | 0.8−) | 2006 09 28 | 703 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | 0.5+ | 0.6+ | 2003 04 05 | 428 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.3+ |
| 2002 10 04 | 670 | 0.6+ | 0.0 | 2003 04 05 | 428 | 0.2− | 0.5− | 2006 09 28 | 703 | 0.1+ | 0.1− |
| 2002 10 05 | 246 | 0.4+ | 0.2+ | 2003 04 05 | 428 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.1− |
| 2002 10 05 | 246 | 0.4+ | 0.1− | 2003 04 05 | 428 | 0.4− | 0.0 | 2006 10 15 | H55 | 0.5− | 0.1+ |
| 2002 10 05 | J95 | 0.2+ | 0.6+ | 2003 04 12 | 704 | 0.1− | 0.8− | 2006 10 15 | H55 | (0.3− | 9.9−) |
| 2002 10 05 | J95 | 0.1− | 0.6+ | 2003 04 12 | 704 | 0.0 | 0.2− | 2006 10 15 | H55 | 0.3− | 0.1+ |
| 2002 10 05 | J95 | 0.0 | 0.4+ | 2003 04 12 | 704 | 0.1+ | 0.8− | 2006 10 15 | 113 | 0.3+ | 0.2+ |
| 2002 10 05 | J95 | 0.0 | 0.8+ | 2003 04 12 | 704 | 0.3− | 0.0 | 2006 10 15 | 113 | 0.7+ | 1.1+ |
| 2002 10 05 | 649 | 0.1− | 0.0 | 2003 04 12 | 704 | 0.2+ | 0.5− | 2006 10 17 | 130 | 0.5+ | 0.6+ |
| 2002 10 05 | 649 | 0.0 | 0.4+ | 2003 04 12 | 428 | 1.1− | 0.5+ | 2006 10 17 | 130 | 0.2+ | 0.1+ |
| 2002 10 05 | 649 | 0.1− | 0.4+ | 2003 04 12 | 428 | 0.5− | 0.0 | 2006 10 17 | 130 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.6+ | 0.1+ | 2003 04 20 | 170 | 0.8− | 0.5− | 2006 10 17 | 130 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 0.7+ | 0.2+ | 2003 04 20 | 170 | 0.7− | 0.5− | 2006 10 19 | 703 | 0.9− | 0.4− |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2003 04 20 | 170 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.8− |
| 2002 10 05 | 704 | 1.0+ | 0.2− | 2003 04 21 | 170 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | 0.4− | 0.5+ | 2003 04 21 | E14 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 10 05 | 704 | 1.4+ | 0.8− | 2003 04 21 | E14 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 10 05 | 704 | 0.3− | 0.2+ | 2003 04 21 | E14 | 0.4− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 1.4+ | 1.1− | 2003 04 29 | 608 | 0.2− | 1.0+ | 2006 10 25 | 113 | 0.0 | 0.6+ | | |
| 2002 10 05 | 670 | 0.6+ | 0.4+ | 2003 04 29 | 608 | 0.2− | 1.3+ | 2006 10 25 | 113 | 0.2+ | 0.4+ | | |
| 2002 10 05 | 704 | 0.6− | 0.1− | 2003 04 29 | 608 | 0.2− | 1.1+ | 2006 10 25 | 113 | 0.1+ | 0.5+ | | |
| 2002 10 05 | 734 | 0.3− | 0.2− | 2003 04 30 | 704 | 0.2+ | 0.6+ | 2006 10 25 | 113 | 0.1− | 0.3+ | | |
| 2002 10 05 | 734 | 0.1+ | 0.3+ | 2003 04 30 | 704 | 0.1+ | 0.3+ | 2006 10 25 | 113 | 0.1− | 0.3+ | | |
| 2002 10 05 | 704 | 0.7− | 0.4+ | 2003 04 30 | 704 | 0.1+ | 0.5+ | 2006 10 25 | 113 | 0.1− | 0.1+ | | |
| 2002 10 05 | 448 | 0.2+ | 0.4+ | 2003 04 30 | 704 | 0.1+ | 0.6+ | 2006 10 25 | A41 | 0.2+ | 0.0 | | |
| 2002 10 05 | 448 | 0.2+ | 0.4+ | 2003 04 30 | 704 | 0.1− | 0.5+ | 2006 10 26 | A41 | 0.4− | 0.5+ | | |
| 2002 10 05 | 448 | 0.5+ | 0.6+ | 2003 05 01 | 704 | 0.1+ | 0.4+ | 2006 10 26 | A41 | 0.3− | 0.1+ | | |
| 2002 10 05 | 670 | 0.2− | 0.0 | 2003 05 01 | 704 | 0.4+ | 0.6+ | 2006 10 28 | H45 | 0.2− | 0.2− | | |
| 2002 10 09 | 118 | 0.1− | 0.4+ | 2003 05 01 | 704 | 0.1− | 0.7+ | 2006 10 28 | H45 | 0.4+ | 0.3+ | | |
| 2002 10 09 | 118 | 0.1− | 0.2+ | 2003 05 04 | 118 | 0.9+ | 0.2+ | 2006 10 28 | H45 | 0.1+ | 0.4+ | | |
| 2002 10 09 | 118 | 0.1+ | 0.3+ | 2003 05 04 | 118 | 0.4+ | 0.2+ | 2006 10 28 | H45 | 0.2− | 0.0 | | |
| 2002 10 09 | 704 | 0.7+ | 0.3+ | 2003 05 04 | 118 | 0.2+ | 0.4+ | 2006 10 28 | H45 | 0.3+ | 0.3− | | |
| 2002 10 09 | 704 | (0.7+ | 1.5+) | 2003 05 04 | 859 | 0.7− | 0.5+ | 2006 11 11 | 683 | 1.1− | 1.5− | | |
| 2002 10 09 | 704 | 0.6+ | 0.6+ | 2003 05 04 | 859 | 0.5+ | 0.7+ | 2006 11 11 | 683 | (0.1− | 1.8−) | | |
| 2002 10 09 | 704 | 1.3+ | 0.3+ | 2003 05 04 | 859 | 0.0 | 0.2− | 2006 11 11 | 683 | (1.6− | 2.7−) | | |
| 2002 10 15 | 649 | 0.0 | 0.6+ | 2003 05 04 | 632 | 0.4+ | 0.0 | 2006 11 14 | 703 | 1.1− | 0.6− | | |
| 2002 10 15 | 649 | 0.0 | 0.3+ | 2003 05 04 | 632 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.4− | 0.6− | | |
| 2002 10 15 | 649 | 0.0 | 0.5+ | 2003 05 04 | 151 | 0.1− | 1.1+ | 2006 11 14 | 703 | 0.9− | 0.1+ | | |
| 2002 10 21 | 649 | 0.2+ | 0.1+ | 2003 05 04 | 632 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.3− | 0.2− | | |
| 2002 10 21 | 649 | 0.1+ | 0.2+ | 2003 05 04 | 151 | 0.2− | 1.0+ | 2006 11 16 | 704 | 1.0+ | 1.0+ | | |
| 2002 10 21 | 649 | 0.1+ | 0.2+ | 2003 05 06 | 704 | 0.1− | 0.8+ | 2006 11 16 | 704 | 0.3+ | 0.6+ | | |
| 2002 10 28 | 670 | 0.6+ | 0.3− | 2003 05 06 | 704 | 0.6+ | 1.1+ | 2006 11 16 | 704 | 0.9− | 1.5+ | | |
| 2002 10 28 | 670 | 0.1+ | 0.2+ | 2003 05 06 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.0 | | |
| 2002 10 29 | 118 | 1.2− | 0.3+ | 2003 05 06 | 704 | 0.5+ | 0.1− | 2006 11 16 | 704 | (1.3+ | 1.8+) | | |
| 2002 10 29 | 118 | 0.2+ | 0.4+ | 2003 05 10 | 691 | 1.0+ | 1.4+ | 2006 11 19 | 704 | 0.3+ | 1.4+ | | |
| 2002 10 29 | 118 | 0.6+ | 0.3− | 2003 05 10 | 691 | 1.0+ | 1.1+ | 2006 11 19 | 704 | 0.3− | 1.1+ | | |
| 2002 10 29 | 118 | 0.6− | 0.3+ | 2003 05 10 | 691 | 0.8+ | 1.0+ | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2002 10 31 | 704 | 0.1− | 0.1− | 2003 05 22 | 703 | (2.4+ | 1.0−) | 2006 11 19 | 704 | 0.0 | 0.5+ | | |
| 2002 10 31 | 704 | 0.0 | 0.1− | 2003 05 22 | 703 | (2.5+ | 0.8+) | 2006 11 20 | G96 | 0.3− | 0.2− | | |
| 2002 10 31 | 704 | 0.2− | 0.1+ | 2003 05 22 | 703 | (2.9+ | 0.4−) | 2006 11 20 | G96 | 0.2+ | 0.3− | | |
| 2002 10 31 | 670 | 0.6+ | 0.7− | 2003 05 22 | 703 | (2.6+ | 0.3+) | 2006 11 20 | G96 | 0.1+ | 0.4− | | |

**(142556)∗ 2002 TK$_{58}$ = 2001 FC$_{130}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 38010)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.57074 | | (2000.0) | | +0.28619747 | +0.95812318 |
| $n$ | 0.25616730 | $\omega$ | 289.32512 | | −0.78741939 | +0.22951207 |
| $a$ | 2.4553887 | $\Omega$ | 357.25127 | | −0.54595028 | +0.17124302 |
| $e$ | 0.2232122 | $i$ | 11.47196 | | | |
| $P$ | 3.85 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 809 | (2.1+ | 3.3+) | 2002 10 05 | 678 | 0.5+ | 0.1+ | 2006 09 19 | 703 | (2.0+ | 0.9−) | | |
| 1998 08 26 | 809 | (1.5+ | 2.6+) | 2002 10 09 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 1.1− | 0.8+ | | |
| 1998 08 26 | 809 | (1.7+ | 3.0+) | 2002 10 09 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 0.8− | 0.8− | | |
| 1998 09 14 | 704 | 0.1+ | 1.0− | 2002 10 09 | 704 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.0 | | |
| 1998 09 14 | 704 | 0.4+ | 0.6− | 2002 10 09 | 704 | 0.1− | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 1998 09 14 | 704 | 1.4− | 0.5+ | 2002 10 09 | 704 | 0.2+ | 0.7− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 1998 09 14 | 704 | 0.7− | 1.2+ | 2002 10 12 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2001 03 29 | 704 | 0.1+ | 1.4+ | 2002 10 12 | 704 | 0.2+ | 0.9+ | 2006 10 19 | 703 | 0.5− | 1.0+ | | |
| 2001 03 29 | 704 | 0.1− | 0.8+ | 2002 10 12 | 704 | 0.6+ | 0.9+ | 2006 10 19 | 703 | 0.7+ | 1.4+ | | |
| 2001 03 29 | 704 | 0.0 | 1.2+ | 2002 10 12 | 704 | 0.6− | 1.0+ | 2006 10 19 | 703 | (1.8+ | 0.2+) | | |
| 2001 04 01 | 704 | 0.2+ | 0.0 | 2002 10 12 | 704 | 0.5− | 0.8+ | 2006 10 19 | 703 | 1.4+ | 0.3+ | | |
| 2001 04 01 | 704 | (1.9+ | 0.6+) | 2002 11 22 | 644 | 0.0 | 0.5+ | 2006 10 19 | A50 | 0.0 | 0.3+ | | |
| 2001 04 01 | 704 | 0.5+ | 0.4+ | 2002 11 22 | 644 | 0.2− | 0.7+ | 2006 10 19 | A50 | 0.4+ | 0.7− | | |
| 2001 04 01 | 704 | 0.3+ | 0.8− | 2002 11 22 | 644 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2002 09 15 | 608 | 1.3− | 0.3− | 2005 04 06 | 699 | 1.3+ | 0.8− | 2006 10 22 | 644 | 0.6+ | 0.0 | | |
| 2002 09 15 | 608 | 1.1− | 0.3− | 2005 04 06 | 699 | 1.3+ | 0.1− | 2006 10 22 | 644 | 0.6+ | 0.1+ | | |
| 2002 09 15 | 608 | 1.4− | 0.4− | 2005 04 06 | 699 | 0.2+ | 0.9+ | 2006 10 27 | 703 | 1.3− | 0.2− | | |
| 2002 10 01 | 699 | 0.2+ | 0.5+ | 2005 04 06 | 699 | 0.7+ | 0.4− | 2006 10 27 | 703 | 0.3+ | 0.1− | | |
| 2002 10 01 | 699 | 0.2− | 0.3+ | 2005 04 18 | E12 | 0.1+ | 0.9− | 2006 10 27 | 703 | 0.4+ | 0.2− | | |
| 2002 10 01 | 699 | 0.6+ | 0.3+ | 2005 04 18 | E12 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.1− | 1.3− | | |
| 2002 10 01 | 699 | 0.5+ | 0.2+ | 2005 04 18 | E12 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 1.0− | 0.2− | | |
| 2002 10 04 | 704 | 0.3+ | 0.8+ | 2005 04 18 | E12 | 1.0+ | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.7− | | |
| 2002 10 04 | 678 | 0.5− | 0.7− | 2005 04 19 | 703 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.5− | 0.9+ | | |
| 2002 10 04 | 704 | 0.2− | 0.7+ | 2005 04 19 | 703 | 1.0− | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.7− | | |
| 2002 10 04 | 678 | 0.9− | 1.0− | 2005 04 19 | 703 | 0.9+ | 0.1− | 2006 11 15 | 703 | 0.7− | 0.0 | | |
| 2002 10 04 | 704 | 0.4+ | 0.3+ | 2005 04 19 | 703 | 0.8+ | 0.7+ | 2006 11 15 | 703 | 0.3+ | 0.6+ | | |
| 2002 10 04 | 678 | 1.3+ | 0.4− | 2005 05 01 | 644 | 0.3+ | 0.6+ | 2006 11 15 | 703 | (2.6− | 4.0+) | | |
| 2002 10 04 | 704 | 0.5− | 0.6+ | 2005 05 01 | 644 | 0.4− | 0.8+ | 2006 11 15 | 703 | (0.8+ | 5.7+) | | |
| 2002 10 04 | 644 | 0.1+ | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 0.3− | 1.0− | | |
| 2002 10 04 | 644 | 0.1+ | 0.3+ | 2005 05 14 | 703 | 0.4− | 0.8+ | 2006 11 22 | 703 | (2.1− | 0.6+) | | |
| 2002 10 04 | 644 | 0.4+ | 0.4+ | 2005 05 14 | 703 | 0.6− | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.4− | | |
| 2002 10 05 | 678 | 1.4+ | 0.1− | 2005 05 14 | 703 | 0.3− | 0.1− | 2006 11 22 | 703 | 1.3− | 0.4+ | | |
| 2002 10 05 | 678 | 0.4+ | 0.5− | 2005 05 14 | 703 | 0.7− | 0.6+ | | | | | | |

**(142557)∗ 2002 TS$_{60}$ = 1999 CM$_{11}$**

Discovered 2002 Oct. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41052)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.09636 | | (2000.0) | | −0.38110088 | −0.89654730 |
| $n$ | 0.23228129 | $\omega$ | 321.66194 | | +0.91867114 | −0.39467581 |
| $a$ | 2.6209570 | $\Omega$ | 148.76531 | | +0.10394927 | +0.20108194 |
| $e$ | 0.3232125 | $i$ | 25.80830 | | | |
| $P$ | 4.24 | $H$ | 14.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 699 | 0.3+ | 0.1− | 2002 10 11 | 704 | 0.6+ | 0.4− | 2003 01 29 | 704 | 0.5− | 0.3+ | | |
| 1999 01 17 | 699 | 0.6+ | 0.4− | 2002 10 11 | 704 | 0.0 | 0.2− | 2003 02 01 | 699 | 0.1− | 1.5+ | | |
| 1999 01 17 | 699 | 0.2− | 0.9− | 2002 10 11 | 704 | 0.0 | 0.4− | 2003 02 01 | 699 | 0.7− | 0.9+ | | |
| 1999 02 12 | 704 | 0.0 | 0.7− | 2002 10 11 | 704 | 0.2− | 0.3− | 2003 02 01 | 699 | 0.3− | 0.8+ | | |
| 1999 02 12 | 704 | 0.9− | 0.2+ | 2002 10 11 | 704 | 0.7+ | 0.9− | 2003 02 01 | 699 | 0.6− | 0.1− | | |
| 1999 02 12 | 704 | 0.3+ | 0.6− | 2002 10 12 | 704 | 0.0 | 0.3+ | 2003 04 02 | 704 | 0.8+ | 0.3+ | | |
| 1999 02 12 | 704 | 0.1− | 0.1− | 2002 10 12 | 704 | 0.3+ | 1.0− | 2003 04 02 | 704 | 0.2+ | 0.3+ | | |
| 1999 02 16 | 704 | 0.1− | 0.6− | 2002 10 12 | 704 | 0.4− | 0.3− | 2003 04 02 | 704 | 0.1+ | 0.4+ | | |
| 1999 02 16 | 704 | 0.4+ | 0.9− | 2002 10 15 | 704 | 0.5+ | 0.4+ | 2003 04 02 | 704 | (1.5+ | 0.2−) | | |
| 1999 02 16 | 704 | 0.8+ | 1.0− | 2002 10 15 | 704 | 0.5+ | 0.4+ | 2004 05 20 | 703 | 1.2− | 0.9+ | | |
| 1999 02 16 | 704 | 0.3+ | 0.1+ | 2002 10 15 | 704 | 0.3+ | 0.5+ | 2004 05 20 | 703 | 0.6− | 0.9+ | | |
| 1999 02 16 | 704 | 1.0+ | 0.7− | 2002 10 15 | 704 | 0.8+ | 0.2+ | 2004 05 20 | 703 | 1.4− | 0.6+ | | |
| 1999 03 18 | 261 | 0.2+ | 0.5+ | 2002 10 15 | 704 | 0.1+ | 0.3+ | 2004 05 20 | 703 | 0.0 | 0.3− | | |
| 1999 03 18 | 261 | 0.2− | 0.7+ | 2002 10 27 | 704 | 0.7+ | 0.2− | 2004 06 08 | 644 | 0.5+ | 0.5+ | | |
| 1999 03 20 | 699 | 0.3− | 1.0+ | 2002 10 27 | 704 | 0.2+ | 0.8− | 2004 06 08 | 644 | 0.3+ | 0.5+ | | |
| 1999 03 20 | 699 | 0.5+ | 0.2− | 2002 10 27 | 704 | 0.2+ | 0.2− | 2004 06 08 | 644 | 0.3+ | 0.3+ | | |
| 1999 03 20 | 699 | 0.1+ | 1.0+ | 2002 10 28 | 704 | 0.6+ | 0.4− | 2006 09 22 | 703 | 0.3+ | 1.1+ | | |
| 1999 04 06 | 704 | 0.0 | 0.7+ | 2002 10 28 | 704 | 0.4+ | 1.0− | 2006 09 22 | 703 | 0.0 | 0.1− | | |
| 1999 04 06 | 704 | (2.1− | 0.7+) | 2002 10 28 | 704 | 0.2+ | 1.0− | 2006 09 22 | 703 | 0.7− | 0.4+ | | |
| 1999 04 06 | 704 | (0.2+ | 3.3+) | 2002 11 25 | 704 | (1.2− | 2.1−) | 2006 09 22 | 703 | 0.5− | 0.2− | | |
| 1999 04 06 | 704 | 0.4− | 0.3+ | 2002 11 25 | 704 | 0.7− | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.6+ | | |
| 1999 04 06 | 704 | (6.2− | 2.5+) | 2002 11 25 | 704 | 0.5− | 0.9− | 2006 09 27 | 703 | 0.5+ | 0.7+ | | |
| 2001 08 17 | 644 | 0.1− | 0.3+ | 2002 11 25 | 704 | 0.1− | 1.3− | 2006 09 27 | 703 | 0.3− | 0.3− | | |
| 2001 08 17 | 644 | 0.1+ | 0.3+ | 2002 12 30 | 704 | 0.7− | 0.1+ | 2006 09 27 | 703 | 1.0+ | 0.7+ | | |
| 2001 08 17 | 644 | 0.1− | 0.2+ | 2002 12 30 | 704 | 0.2− | 0.3− | 2006 10 11 | E12 | 0.5+ | 0.4− | | |
| 2002 10 05 | 704 | 0.4+ | 0.3+ | 2002 12 30 | 704 | 0.5− | 0.1+ | 2006 10 11 | E12 | 0.9+ | 0.0 | | |
| 2002 10 05 | 704 | 0.8− | 0.2+ | 2002 12 30 | 704 | 0.5− | 0.3− | 2006 10 11 | E12 | 0.6+ | 0.1+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.0 | 2002 12 30 | 704 | 0.5− | 0.2− | 2006 10 11 | E12 | 0.4+ | 0.2− | | |
| 2002 10 05 | 704 | 1.0− | 0.2− | 2003 01 03 | 704 | 0.5− | 0.6+ | 2006 10 30 | E12 | 0.1− | 0.7− | | |
| 2002 10 05 | 704 | 0.3− | 0.6+ | 2003 01 03 | 704 | 0.3− | 0.4+ | 2006 10 30 | E12 | 0.6+ | 0.3+ | | |
| 2002 10 06 | 704 | 0.5+ | 0.0 | 2003 01 03 | 704 | 0.2+ | 0.3+ | 2006 10 30 | E12 | 0.2− | 1.0+ | | |
| 2002 10 06 | 704 | 0.1+ | 0.2+ | 2003 01 03 | 704 | 0.1− | 0.1+ | 2006 10 30 | E12 | 0.2+ | 0.1+ | | |
| 2002 10 06 | 704 | 0.0 | 0.1+ | 2003 01 03 | 704 | 0.2+ | 0.8− | 2006 11 11 | E12 | 0.0 | 0.3− | | |
| 2002 10 06 | 704 | 0.1+ | 0.4+ | 2003 01 13 | 644 | 0.1− | 1.3+ | 2006 11 11 | E12 | 0.6+ | 0.5+ | | |
| 2002 10 06 | 704 | 0.2+ | 0.2+ | 2003 01 13 | 644 | 0.0 | 1.3+ | 2006 11 11 | E12 | 0.5− | 0.9+ | | |
| 2002 10 10 | 704 | 0.7− | 0.1+ | 2003 01 13 | 644 | 0.1− | 1.3+ | 2006 11 11 | E12 | 0.1+ | 0.4+ | | |
| 2002 10 10 | 704 | 0.3− | 0.0 | 2003 01 29 | 704 | 0.2− | 0.4+ | 2006 11 18 | E12 | 0.4+ | 0.5+ | | |
| 2002 10 10 | 704 | 0.5+ | 0.7− | 2003 01 29 | 704 | 0.6− | 0.5+ | 2006 11 18 | E12 | 1.3− | 0.9− | | |
| 2002 10 10 | 704 | 0.3− | 0.3+ | 2003 01 29 | 704 | 0.4− | 0.3+ | 2006 11 18 | E12 | 0.2+ | 0.6− | | |
| 2002 10 10 | 704 | 1.0− | 0.2− | 2003 01 29 | 704 | 0.3− | 0.3+ | 2006 11 18 | E12 | 0.9+ | 0.9− | | |

**(142558)∗ 2002 TP$_{61}$ = 2000 AM$_{35}$**

Discovered 2002 Oct. 3 by CINEOS at Campo Imperatore.

Id. G. V. Williams (*MPO* 38011)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.34227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28534340 | $\omega$ | 106.62726 | | +0.84864356 | −0.51776824 | |
| $a$ | 2.2850243 | $\Omega$ | 284.67194 | | +0.43258625 | +0.79711272 | |
| $e$ | 0.1158507 | $i$ | 6.42536 | | +0.30442280 | +0.31068854 | |
| $P$ | 3.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.4+ | 0.4− | 2002 10 04 | 644 | 0.1+ | 0.8+ | 2005 06 26 | G96 | 0.4− | 0.3+ |
| 2000 01 03 | 704 | 0.1− | 1.1− | 2002 10 04 | 644 | 0.0 | 0.5+ | 2005 06 26 | G96 | 0.2+ | 0.4+ |
| 2000 01 03 | 704 | 0.9+ | 0.8− | 2002 10 05 | 704 | 0.5− | 0.4+ | 2005 06 26 | G96 | 0.3+ | 0.1− |
| 2000 01 03 | 704 | 0.1+ | 0.2+ | 2002 10 05 | 704 | 0.7+ | 1.0+ | 2005 06 26 | G96 | 0.0 | 0.2− |
| 2000 01 04 | 704 | 0.1+ | 0.2+ | 2002 10 05 | 704 | 0.4− | 0.8− | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2000 01 04 | 704 | 0.9+ | 0.2+ | 2002 10 05 | 704 | 0.7+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2000 01 04 | 704 | 0.0 | 0.1− | 2002 10 05 | 599 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.0 |
| 2000 01 05 | 557 | 1.0− | 0.2+ | 2002 10 05 | 599 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2000 01 06 | 557 | 0.9− | 0.3+ | 2002 10 05 | 599 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2000 01 06 | 557 | 0.2+ | 0.4+ | 2002 10 09 | 704 | 0.4− | 0.1− | 2006 10 31 | G96 | (0.3+ | 1.7−) |
| 2000 01 06 | 557 | 0.7− | 0.8+ | 2002 10 09 | 704 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2000 01 06 | 557 | 0.1+ | 0.3+ | 2002 10 09 | 704 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2002 09 07 | 704 | (0.6− | 2.1+) | 2002 10 09 | 704 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 09 07 | 704 | 0.5− | 0.3+ | 2002 10 09 | 704 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.5− | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2002 10 31 | 644 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.2− | 0.6− | 2002 10 31 | 644 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 599 | 0.3+ | 0.3− | 2002 10 31 | 644 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 599 | 0.2+ | 0.2− | 2005 06 08 | 691 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2002 10 03 | 599 | 0.3+ | 0.5− | 2005 06 08 | 691 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2002 10 04 | 644 | 0.1+ | 0.8+ | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2− | 0.3− |

**(142559)∗ 2002 TO$_{64}$ = 1999 XY$_{230}$**

Discovered 2002 Oct. 5 by C. W. Juels and P. R. Holvorcem at Fountain Hills.

Id. G. V. Williams (*MPO* 38012)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.65919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23833201 | $\omega$ | 189.52198 | | −0.98361172 | +0.18026128 | |
| $a$ | 2.5764070 | $\Omega$ | 0.88903 | | −0.14557909 | −0.78184711 | |
| $e$ | 0.1071076 | $i$ | 13.88044 | | −0.10637064 | −0.59684250 | |
| $P$ | 4.14 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.9+ | 0.9− | 2003 12 03 | 704 | 0.1− | 0.3+ | 2006 09 17 | 704 | (1.5− | 2.3+) |
| 1999 12 07 | 703 | 0.2+ | 0.9+ | 2003 12 03 | 704 | 0.5+ | 0.4− | 2006 09 17 | 704 | 0.2+ | 0.7+ |
| 1999 12 07 | 703 | 0.4+ | 1.0+ | 2003 12 03 | 704 | 0.0 | 0.3− | 2006 09 17 | 704 | (1.9+ | 0.0 ) |
| 1999 12 07 | 703 | 0.6− | 0.8− | 2003 12 03 | 704 | 0.3+ | 0.3− | 2006 09 17 | 703 | 0.0 | 1.1− |
| 1999 12 10 | 704 | 0.3+ | 0.2− | 2003 12 03 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.5− |
| 1999 12 10 | 704 | 0.3+ | 0.3+ | 2003 12 29 | 703 | 1.0− | 0.5− | 2006 09 17 | 703 | 1.1− | 0.4− |
| 1999 12 10 | 704 | 0.9− | 0.3+ | 2003 12 29 | 703 | 0.4− | 0.6− | 2006 09 17 | 703 | 0.0 | 0.6− |
| 1999 12 10 | 704 | 0.1+ | 0.3+ | 2003 12 29 | 703 | (1.6− | 0.4−) | 2006 09 19 | 699 | 0.0 | 0.6− |
| 1999 12 10 | 704 | 0.0 | 0.3+ | 2003 12 29 | 703 | 0.9− | 0.4− | 2006 09 19 | 699 | 0.7+ | 0.1+ |
| 2000 03 04 | 704 | (4.0+ | 1.2+) | 2003 12 30 | 704 | 0.3− | 0.9− | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 2000 03 04 | 704 | (4.9+ | 0.6−) | 2003 12 30 | 704 | 0.0 | 0.8− | 2006 09 20 | 704 | 0.1− | 0.7+ |
| 2000 03 04 | 704 | (4.4+ | 1.0−) | 2003 12 30 | 704 | 0.2+ | 1.1− | 2006 09 20 | 704 | 0.4+ | 0.2− |
| 2000 03 04 | 704 | (4.2+ | 1.4−) | 2003 12 30 | 704 | 0.4− | 0.8− | 2006 09 20 | 704 | 0.1+ | 0.8− |
| 2000 03 12 | 699 | 0.1+ | 0.1− | 2003 12 30 | 704 | 0.8− | 1.0− | 2006 09 20 | 704 | 0.1+ | 0.2+ |
| 2000 03 12 | 699 | 0.7+ | 0.5+ | 2004 01 02 | 704 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.4+ | 0.0 |
| 2000 03 12 | 699 | 0.4+ | 0.2− | 2004 01 02 | 704 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2000 03 12 | 699 | 0.0 | 0.7+ | 2004 01 02 | 704 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2000 04 02 | 704 | 1.2+ | 0.1+ | 2004 01 02 | 704 | 0.2− | 0.4+ | 2006 09 27 | 699 | 0.3+ | 0.0 |
| 2000 04 02 | 704 | 0.4+ | 0.9+ | 2004 01 02 | 704 | 1.2− | 1.3+ | 2006 09 27 | 699 | 0.3− | 0.7+ |
| 2000 04 02 | 704 | 0.8+ | 0.9+ | 2004 01 18 | 644 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.8+ |
| 2000 04 02 | 704 | 0.4+ | 1.0+ | 2004 01 18 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.2+ |
| 2000 04 02 | 704 | 0.9− | 0.3+ | 2004 01 18 | 703 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.3+ |
| 2002 09 06 | 704 | (0.9− | 1.7−) | 2004 01 18 | 703 | 0.4+ | 0.6+ | 2006 09 27 | 699 | 0.3− | 0.4+ |
| 2002 09 06 | 704 | 1.1− | 0.4− | 2004 01 18 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.7− |
| 2002 09 06 | 704 | 0.2− | 0.6− | 2004 01 18 | 703 | 0.4− | 0.5− | 2006 09 27 | 704 | 0.5− | 0.8+ |
| 2002 10 01 | 699 | 0.9− | 0.4− | 2004 01 18 | 703 | 0.6− | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2002 10 01 | 699 | (2.4− | 0.2+) | 2004 01 19 | 704 | 0.6+ | 0.7− | 2006 09 29 | 704 | 1.2+ | 0.5− |
| 2002 10 01 | 699 | 0.0 | 0.4+ | 2004 01 19 | 704 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2002 10 01 | 699 | 0.1− | 0.4+ | 2004 01 19 | 704 | 0.4− | 0.4− | 2006 09 29 | 704 | 0.7+ | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2004 01 19 | 704 | 0.4+ | 0.4− | 2006 09 29 | 704 | 0.4+ | 0.5− |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2004 01 19 | 704 | 0.3+ | 0.5+ | 2006 10 01 | 704 | (2.7− | 1.3+) |
| 2002 10 04 | 704 | 0.2− | 0.4+ | 2004 01 30 | 699 | 0.3− | 0.5− | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.6− | 0.1− | 2004 01 30 | 699 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.3+ | 1.0+ |
| 2002 10 04 | 704 | 0.3− | 0.5− | 2004 01 30 | 699 | 0.6+ | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.6+ |
| 2002 10 05 | 678 | 0.9+ | 1.0+ | 2004 01 30 | 699 | 0.6− | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.5+ |
| 2002 10 05 | 678 | 0.3+ | 1.3+ | 2004 02 02 | 704 | 0.5+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 678 | 0.6− | 0.9− | 2004 02 02 | 704 | 0.7+ | 0.6− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 678 | (1.8− | 0.4+) | 2004 02 02 | 704 | 0.3+ | 0.5− | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2002 10 07 | 678 | 0.4+ | 1.4+ | 2004 02 02 | 704 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2002 10 07 | 678 | 0.7− | 0.6+ | 2004 02 11 | 704 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2002 10 07 | 678 | 1.4− | 0.2− | 2004 02 11 | 704 | 0.5− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 0.6+ | 0.4+ | 2004 02 11 | 704 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2002 10 09 | 704 | 0.2− | 0.4+ | 2004 02 11 | 704 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 0.5+ | 0.0 | 2004 02 11 | 704 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 10 09 | 704 | 0.4− | 0.1− | 2004 03 23 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.8+ | 0.5+ |
| 2002 10 12 | 704 | 0.4+ | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.8− | 0.9− |
| 2002 10 12 | 704 | 0.5− | 0.3+ | 2004 03 23 | 704 | 1.1+ | 0.1− | 2006 10 17 | 703 | (1.0+ | 1.6−) |
| 2002 10 12 | 704 | 0.4+ | 0.4+ | 2004 04 14 | 699 | 0.2+ | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.6− |
| 2002 10 12 | 704 | 0.8− | 0.5+ | 2004 04 14 | 699 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.4+ | 0.3+ | 2004 04 14 | 699 | 1.3+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 10 31 | 644 | 0.2− | 0.1− | 2004 04 14 | 699 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.5− |
| 2002 10 31 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 1.0+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.6− |
| 2002 11 12 | 704 | 0.7− | 1.4− | 2006 08 28 | 703 | 1.4− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.7− |
| 2002 11 12 | 704 | 0.3− | 1.4− | 2006 08 28 | 703 | 0.7+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.6− |
| 2002 11 12 | 704 | 0.3+ | 0.2+ | 2006 08 28 | 703 | (0.5− | 1.5−) | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 11 22 | 644 | 0.2− | 0.5+ | 2006 09 15 | 704 | 1.4− | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 11 22 | 644 | 0.3+ | 0.3+ | 2006 09 15 | 704 | 0.0 | 1.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 09 15 | 704 | 0.2+ | 0.2+ | | | | |

**(142560)∗ 2002 TW$_{67}$**

Discovered 2002 Oct. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.76453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23983565 | $\omega$ | 144.89193 | | +0.38198878 | −0.84941448 | |
| $a$ | 2.5656272 | $\Omega$ | 280.13817 | | +0.74051752 | +0.51704366 | |
| $e$ | 0.0641674 | $i$ | 21.70885 | | +0.55291806 | −0.10564510 | |
| $P$ | 4.11 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 1.4+ | 0.1+ | 2002 10 12 | 704 | (1.6− | 2.1−) | 2002 12 29 | 704 | 0.2− | 0.0 |
| 1998 11 14 | 704 | 0.1− | 0.3+ | 2002 10 12 | 704 | 0.5+ | 0.1− | 2004 01 03 | 704 | 0.3+ | 0.8− |
| 1998 11 14 | 704 | 1.3− | 0.3+ | 2002 10 12 | 704 | 0.1+ | 0.1− | 2004 01 03 | 704 | 0.7− | 0.0 |
| 1998 11 14 | 704 | 0.0 | 0.8− | 2002 10 15 | 704 | 0.2− | 0.0 | 2004 01 03 | 704 | 0.2+ | 0.1+ |
| 1998 11 14 | 704 | 2.0− | 0.2+ | 2002 10 15 | 704 | 0.7+ | 0.6− | 2004 01 03 | 704 | 0.6+ | 0.9− |
| 1998 11 16 | 704 | 0.1+ | 1.8− | 2002 10 15 | 704 | 0.4− | 0.0 | 2004 01 11 | 644 | 0.5+ | 0.2+ |
| 1998 11 16 | 704 | 0.1− | 1.0+ | 2002 10 15 | 704 | 0.5+ | 0.5− | 2004 01 11 | 644 | 0.7+ | 0.4+ |
| 1998 11 16 | 704 | 0.9− | 1.7− | 2002 10 15 | 704 | 0.7− | 0.1+ | 2004 01 11 | 644 | 0.5+ | 0.3+ |
| 1998 11 16 | 704 | 0.4+ | 0.8− | 2002 10 15 | 704 | 1.2− | 1.4+ | 2004 03 15 | 644 | 0.0 | 0.1+ |
| 1999 01 09 | 699 | 0.0 | 0.5+ | 2002 10 15 | 704 | 0.1− | 1.0+ | 2004 03 15 | 644 | 0.2+ | 0.1− |
| 1999 01 09 | 699 | 0.9− | 1.1+ | 2002 10 15 | 704 | 0.5− | 0.1+ | 2004 03 15 | 644 | 0.2+ | 0.2− |
| 1999 01 09 | 699 | 0.3− | 0.1− | 2002 10 15 | 704 | 0.9+ | 0.6− | 2004 03 17 | 704 | 0.2− | 0.1− |
| 2002 08 27 | 704 | 0.2− | 0.1+ | 2002 10 29 | 704 | 0.3+ | 0.0 | 2004 03 17 | 704 | 0.1− | 0.1+ |
| 2002 08 27 | 704 | 0.6+ | 0.5− | 2002 10 29 | 704 | 0.6− | 0.3− | 2004 03 17 | 704 | 0.4− | 0.5+ |
| 2002 08 27 | 704 | 0.6− | 0.4+ | 2002 10 29 | 704 | 0.5− | 0.5− | 2004 03 17 | 704 | 0.0 | 0.1− |
| 2002 09 25 | 644 | 0.4− | 0.4+ | 2002 10 29 | 704 | 0.4− | 0.3− | 2004 03 17 | 704 | 0.4+ | 0.6+ |
| 2002 09 25 | 644 | 0.6− | 0.3+ | 2002 10 29 | 704 | 0.4− | 0.3− | 2004 03 26 | 704 | 0.3+ | 0.2− |
| 2002 09 25 | 644 | 0.4− | 0.3+ | 2002 10 30 | 704 | 0.4+ | 0.4− | 2004 03 26 | 704 | 0.0 | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 704 | 0.3+ | 0.3+ | 2002 10 30 | 704 | 0.2+ | 0.2− | 2004 03 26 | 704 | 0.7− | 0.2− | | |
| 2002 09 30 | 704 | 0.5− | 0.2+ | 2002 10 30 | 704 | 0.3+ | 0.6+ | 2004 03 26 | 704 | 0.2− | 0.3− | | |
| 2002 09 30 | 704 | 0.3+ | 0.0 | 2002 10 30 | 704 | 0.3+ | 0.2+ | 2004 03 26 | 704 | 0.2+ | 0.0 | | |
| 2002 09 30 | 704 | 0.5+ | 0.1− | 2002 10 31 | 704 | 0.3− | 0.3− | 2004 04 02 | 608 | 0.1− | 0.4− | | |
| 2002 09 30 | 704 | 0.3+ | 0.1+ | 2002 10 31 | 704 | 0.2− | 0.1− | 2004 04 02 | 608 | 0.7− | 0.0 | | |
| 2002 10 05 | 704 | 0.2+ | 0.5− | 2002 10 31 | 704 | 0.2− | 0.5− | 2004 04 02 | 608 | 0.5− | 0.9− | | |
| 2002 10 05 | 704 | 0.2+ | 0.2− | 2002 10 31 | 704 | 0.0 | 0.6− | 2004 04 17 | 704 | 0.5− | 0.2+ | | |
| 2002 10 05 | 704 | 0.2+ | 0.3− | 2002 10 31 | 704 | 0.5− | 0.4− | 2004 04 17 | 704 | 0.3+ | 0.6+ | | |
| 2002 10 05 | 704 | 0.7+ | 0.2+ | 2002 11 13 | 704 | 0.2− | 0.1− | 2004 04 17 | 704 | 0.6− | 0.0 | | |
| 2002 10 05 | 704 | 0.6+ | 0.6− | 2002 11 13 | 704 | 0.1− | 0.2+ | 2004 04 17 | 704 | 0.1− | 1.0+ | | |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2002 11 13 | 704 | 0.1− | 0.3− | 2004 04 17 | 704 | 0.9+ | 0.2+ | | |
| 2002 10 09 | 704 | 0.3− | 0.1− | 2002 11 13 | 704 | 0.1+ | 0.2− | 2006 09 20 | 151 | 0.6− | 1.1− | | |
| 2002 10 09 | 704 | 0.1− | 0.0 | 2002 11 13 | 704 | 0.1− | 0.3+ | 2006 09 20 | 151 | 0.4− | 0.6− | | |
| 2002 10 09 | 704 | 0.1+ | 1.1− | 2002 11 15 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 151 | 0.5− | 0.0 | | |
| 2002 10 09 | 704 | 0.6− | 0.1+ | 2002 11 15 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 704 | 0.1− | 0.3+ | | |
| 2002 10 10 | 704 | 0.8+ | 0.1+ | 2002 11 15 | 704 | 0.2− | 0.3+ | 2006 10 16 | 704 | 0.5− | 0.4+ | | |
| 2002 10 10 | 704 | 0.6+ | 0.1− | 2002 11 15 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 704 | 0.0 | 0.4+ | | |
| 2002 10 10 | 704 | 1.0+ | 0.2+ | 2002 11 15 | 704 | 0.2+ | 0.8+ | 2006 10 16 | 704 | 0.4− | 0.8+ | | |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2002 12 10 | 704 | 0.9+ | 0.8+ | 2006 10 16 | 704 | 0.0 | 0.1− | | |
| 2002 10 12 | 704 | 0.5+ | 0.3− | 2002 12 10 | 704 | 0.5+ | 0.7+ | 2006 11 14 | 704 | 0.4− | 0.1− | | |
| 2002 10 12 | 704 | 0.6+ | 0.1+ | 2002 12 10 | 704 | 0.4+ | 0.9+ | 2006 11 14 | 704 | 0.5− | 1.0+ | | |
| 2002 10 12 | 704 | 1.5+ | 0.1− | 2002 12 10 | 704 | 0.1− | 1.3+ | 2006 11 14 | 704 | 1.1− | 0.6+ | | |
| 2002 10 12 | 704 | 0.8+ | 0.7− | 2002 12 29 | 704 | 0.3+ | 0.4− | 2006 11 14 | 704 | 0.3− | 0.9− | | |
| 2002 10 12 | 704 | 0.5+ | 0.2− | 2002 12 29 | 704 | 0.2+ | 0.7− | | | | | | |

**(142561)∗ 2002 TX$_{68}$**

Discovered 2002 Oct. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.94135 | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.45508616 | $\omega$ | 122.28094 | +0.06173086 | | +0.98791450 | |
| $a$ | 1.6739416 | $\Omega$ | 150.24906 | −0.98470832 | | +0.08353222 | |
| $e$ | 0.2933587 | $i$ | 16.64934 | −0.16290743 | | −0.13056536 | |
| $P$ | 2.17 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 644 | 0.8+ | 1.2+ | 2004 07 07 | 198 | 0.0 | 0.1− | 2004 08 08 | H41 | 0.6− | 0.5+ | | |
| 2002 10 08 | 644 | 0.3+ | 1.2+ | 2004 07 07 | 198 | 0.0 | 0.2− | 2004 08 08 | H41 | 0.1+ | 0.4− | | |
| 2002 10 08 | 644 | 0.1− | 0.9+ | 2004 07 07 | 198 | 0.1− | 0.3− | 2004 08 08 | 185 | 0.1+ | 0.2+ | | |
| 2002 10 09 | 926 | 1.2+ | 0.2− | 2004 07 07 | 198 | 0.2+ | 0.2− | 2004 08 08 | 185 | 0.1+ | 0.4+ | | |
| 2002 10 09 | 926 | 0.4− | 0.0 | 2004 07 08 | H41 | 0.2− | 0.3+ | 2004 08 08 | 113 | 0.0 | 0.1+ | | |
| 2002 10 09 | 474 | 0.3+ | 0.2− | 2004 07 08 | H41 | 0.3+ | 0.1+ | 2004 08 08 | 113 | 0.1− | 0.4+ | | |
| 2002 10 09 | 474 | 0.6− | 0.3− | 2004 07 08 | H41 | 0.4− | 0.0 | 2004 08 08 | 113 | 0.1+ | 0.0 | | |
| 2002 10 10 | 734 | (2.6− | 0.5−) | 2004 07 08 | H41 | 0.1− | 0.0 | 2004 08 08 | 113 | 0.1+ | 0.2+ | | |
| 2002 10 10 | 734 | 1.4+ | 0.5+ | 2004 07 09 | 938 | (0.3− | 1.6−) | 2004 08 08 | 113 | 0.1+ | 0.3+ | | |
| 2002 10 10 | 734 | 1.0− | 0.7+ | 2004 07 09 | 938 | 0.2+ | 0.8− | 2004 08 08 | 240 | 0.3− | 0.0 | | |
| 2002 10 10 | 651 | 0.1− | 0.0 | 2004 07 09 | A16 | (2.0+ | 1.5−) | 2004 08 08 | 240 | 0.3− | 0.1− | | |
| 2002 10 10 | 651 | 1.3+ | 0.6+ | 2004 07 09 | A16 | 0.1− | 0.6+ | 2004 08 08 | 240 | 0.3− | 0.2− | | |
| 2002 10 10 | 651 | 0.2− | 0.1+ | 2004 07 09 | A16 | (2.8+ | 0.8−) | 2004 08 08 | 240 | 0.1− | 0.2− | | |
| 2002 10 10 | 649 | 0.1+ | 0.2+ | 2004 07 09 | A16 | 0.6− | 1.2− | 2004 08 08 | 240 | 0.1− | 0.1− | | |
| 2002 10 10 | 926 | 0.1− | 0.3+ | 2004 07 09 | A16 | 0.2+ | 0.1− | 2004 08 08 | 240 | 0.4+ | 0.4− | | |
| 2002 10 10 | 926 | 0.6− | 0.3+ | 2004 07 09 | A16 | (2.7+ | 0.2+) | 2004 08 08 | 046 | 0.2+ | 0.1+ | | |
| 2002 10 10 | 649 | 0.0 | 0.2+ | 2004 07 10 | 130 | 0.2+ | 0.0 | 2004 08 08 | 046 | 0.1+ | 0.4+ | | |
| 2002 10 10 | 926 | 0.2− | 0.1+ | 2004 07 10 | 130 | 0.0 | 0.1+ | 2004 08 08 | 046 | 0.1+ | 0.4+ | | |
| 2002 10 10 | 649 | 0.3+ | 0.5+ | 2004 07 10 | 130 | 0.0 | 0.1+ | 2004 08 08 | 046 | 0.2− | 0.3+ | | |
| 2002 10 15 | 649 | 0.0 | 0.2+ | 2004 07 10 | 130 | 0.2− | 0.3− | 2004 08 08 | 046 | 0.2+ | 0.0 | | |
| 2002 10 15 | 649 | 0.6− | 0.2− | 2004 07 11 | A30 | 0.3+ | 0.4− | 2004 08 08 | 145 | 0.4− | 1.2− | | |
| 2002 10 15 | 649 | 0.2− | 0.9− | 2004 07 11 | A30 | 0.3+ | 0.1− | 2004 08 08 | 145 | 0.5− | 0.9− | | |
| 2002 10 15 | 413 | 0.2− | 0.1+ | 2004 07 11 | A30 | 0.2+ | 0.4+ | 2004 08 08 | 145 | 0.1− | 0.4− | | |
| 2002 10 15 | 413 | 0.3− | 0.2− | 2004 07 11 | A30 | 0.4+ | 0.3+ | 2004 08 09 | H06 | 0.1+ | 0.2+ | | |
| 2002 10 15 | 413 | 0.2− | 0.2+ | 2004 07 14 | H41 | 0.2− | 0.5+ | 2004 08 09 | H06 | 0.1− | 0.3+ | | |
| 2002 10 18 | 644 | (1.1− | 2.1+) | 2004 07 14 | H41 | 0.1+ | 0.2− | 2004 08 09 | H06 | 0.8+ | 0.1+ | | |
| 2002 10 18 | 644 | (0.6− | 2.2+) | 2004 07 14 | H41 | 0.8− | 0.7− | 2004 08 09 | H06 | 0.1− | 0.1+ | | |
| 2002 10 18 | 644 | 1.0− | 1.3+ | 2004 07 14 | A16 | 0.1+ | 0.6− | 2004 08 09 | 704 | 1.1+ | 0.1+ | | |
| 2002 10 31 | 696 | 0.1− | 0.4− | 2004 07 14 | A16 | (2.1− | 0.9+) | 2004 08 09 | 704 | 1.0+ | 0.2+ | | |
| 2002 10 31 | 696 | 0.2+ | 0.1− | 2004 07 14 | A16 | 0.1− | 0.5− | 2004 08 09 | 704 | 0.2+ | 0.1+ | | |
| 2002 11 04 | 644 | 1.0− | 1.3+ | 2004 07 14 | A16 | 0.1− | 0.8− | 2004 08 09 | 704 | 0.9+ | 0.4+ | | |
| 2002 11 04 | 644 | 0.6− | 0.4+ | 2004 07 14 | A16 | 0.3− | 0.0 | 2004 08 09 | 704 | 0.4+ | 0.6+ | | |
| 2002 11 04 | 644 | 0.3− | 0.1− | 2004 07 15 | A16 | (1.9− | 0.8−) | 2004 08 09 | 379 | 0.5+ | 0.1+ | | |
| 2002 12 12 | 413 | 0.2+ | 0.3+ | 2004 07 15 | A16 | 0.9− | 0.5+ | 2004 08 09 | 379 | 0.6− | 0.0 | | |
| 2002 12 12 | 413 | 0.2− | 0.2− | 2004 07 15 | A16 | 1.0− | 1.1+ | 2004 08 09 | 379 | 0.1+ | 0.6− | | |
| 2002 12 13 | 413 | 0.1+ | 0.1+ | 2004 07 15 | A16 | 0.6− | 0.8− | 2004 08 09 | 379 | 0.8+ | 0.6+ | | |
| 2003 12 25 | 291 | 0.0 | 0.4+ | 2004 07 15 | A16 | (2.8− | 0.5−) | 2004 08 09 | 379 | 0.7+ | 0.3+ | | |
| 2003 12 25 | 291 | (1.8− | 1.2+) | 2004 07 16 | 127 | 0.1− | 0.9+ | 2004 08 09 | 046 | 0.3− | 0.0 | | |
| 2003 12 25 | 291 | 1.4− | 0.7+ | 2004 07 16 | 127 | 0.1+ | 0.1− | 2004 08 09 | 046 | 0.0 | 0.7+ | | |
| 2004 01 30 | 291 | 0.6− | 0.2+ | 2004 07 16 | 127 | 0.0 | 1.1+ | 2004 08 09 | 046 | 0.3− | 1.0+ | | |
| 2004 01 30 | 291 | 1.2+ | 0.1− | 2004 07 17 | A16 | 0.6− | 0.1− | 2004 08 09 | 046 | 0.2− | 0.1+ | | |
| 2004 01 30 | 291 | 0.3+ | 0.4+ | 2004 07 17 | A16 | 0.2− | 0.8− | 2004 08 09 | 046 | 0.1− | 0.3+ | | |
| 2004 03 15 | 704 | (1.9− | 0.8+) | 2004 07 17 | A16 | 0.1+ | 0.4− | 2004 08 09 | 046 | 0.1+ | 0.0 | | |
| 2004 03 15 | 704 | 0.7+ | 0.3− | 2004 07 17 | A16 | 0.8+ | 0.9− | 2004 08 09 | A16 | 0.1+ | 0.8− | | |
| 2004 03 15 | 704 | 0.5+ | 0.2+ | 2004 07 17 | A16 | 0.6− | 0.1− | 2004 08 09 | A16 | 0.5+ | 0.7− | | |
| 2004 03 15 | 704 | 1.2+ | 0.1+ | 2004 07 20 | A55 | 0.2+ | 0.1− | 2004 08 09 | A16 | 0.1+ | 0.5− | | |
| 2004 03 21 | 941 | (0.5+ | 1.6+) | 2004 07 20 | A55 | 0.2− | 0.2− | 2004 08 09 | A16 | 0.1+ | 0.6− | | |
| 2004 03 21 | 941 | 0.3+ | 1.1+ | 2004 07 20 | A55 | 0.0 | 0.0 | 2004 08 09 | A16 | 0.6+ | 0.4− | | |
| 2004 03 21 | 941 | 0.6+ | 1.0+ | 2004 07 20 | 126 | 0.3+ | 0.4+ | 2004 08 09 | A55 | 0.1− | 0.3+ | | |
| 2004 03 21 | 941 | 0.1− | 0.5+ | 2004 07 20 | 126 | 0.6+ | 0.0 | 2004 08 09 | A55 | 0.1− | 0.3+ | | |
| 2004 04 14 | 704 | 0.5− | 0.5+ | 2004 07 21 | A55 | 0.0 | 0.5− | 2004 08 09 | A55 | 0.0 | 0.1+ | | |
| 2004 04 14 | 704 | 0.4+ | 0.2+ | 2004 07 21 | A55 | 0.5− | 0.6+ | 2004 08 10 | H41 | 0.2− | 0.4+ | | |
| 2004 04 14 | 704 | 0.5+ | 0.9+ | 2004 07 21 | 203 | 0.3+ | 0.2− | 2004 08 10 | H41 | 0.2− | 0.4− | | |
| 2004 04 14 | 704 | 0.0 | 0.2+ | 2004 07 21 | A55 | 0.0 | 0.0 | 2004 08 10 | H41 | 0.0 | 0.0 | | |
| 2004 04 14 | 704 | 0.1− | 0.5+ | 2004 07 21 | A55 | 0.0 | 0.5+ | 2004 08 10 | H41 | 0.2+ | 0.2− | | |
| 2004 04 14 | 703 | 0.2− | 1.1+ | 2004 07 21 | 203 | 0.1− | 0.1− | 2004 08 10 | H41 | 0.6+ | 0.0 | | |
| 2004 04 14 | 703 | 0.2− | 0.2+ | 2004 07 21 | A55 | 0.1+ | 0.5+ | 2004 08 12 | H41 | 0.0 | 0.6+ | | |
| 2004 04 14 | 703 | (0.3− | 2.2+) | 2004 07 22 | A55 | 0.0 | 0.2− | 2004 08 12 | H41 | 0.1− | 0.0 | | |
| 2004 04 14 | 703 | 0.9− | 0.4+ | 2004 07 22 | A55 | 0.5+ | 0.3+ | 2004 08 12 | H41 | 0.2− | 0.4− | | |
| 2004 04 20 | 711 | (2.6+ | 2.0−) | 2004 07 22 | 071 | (0.7+ | 1.6−) | 2004 08 12 | H41 | 0.1− | 0.2− | | |
| 2004 04 20 | 711 | (0.6+ | 1.9−) | 2004 07 22 | 071 | 0.5+ | 0.2− | 2004 08 12 | H41 | 0.2+ | 0.5− | | |
| 2004 04 20 | 711 | (3.3+ | 1.2−) | 2004 07 22 | 071 | 0.1+ | 0.5+ | 2004 08 13 | 434 | 0.3+ | 0.2− | | |
| 2004 04 24 | 198 | 0.1+ | 0.1− | 2004 07 22 | 198 | 0.8+ | 0.4+ | 2004 08 13 | 434 | 0.2+ | 0.2+ | | |
| 2004 04 24 | 198 | 0.0 | 0.1+ | 2004 07 22 | 198 | 0.5+ | 0.3+ | 2004 08 13 | 434 | 0.1− | 0.8+ | | |
| 2004 04 24 | 170 | 0.3+ | 0.5+ | 2004 07 22 | 198 | 0.1− | 0.1+ | 2004 08 13 | 434 | 0.4+ | 0.1− | | |
| 2004 04 24 | 170 | 0.0 | 0.2+ | 2004 07 22 | 198 | 0.2− | 0.2+ | 2004 08 13 | J87 | 0.2− | 0.2− | | |
| 2004 05 02 | 704 | 0.0 | 1.0− | 2004 07 22 | 203 | 0.3+ | 0.3+ | 2004 08 13 | J87 | 0.1+ | 0.1− | | |
| 2004 05 02 | 704 | 0.1− | 0.1+ | 2004 07 22 | 127 | 0.3+ | 0.8+ | 2004 08 13 | J87 | 0.1− | 0.0 | | |
| 2004 05 02 | 704 | 1.0+ | 0.8+ | 2004 07 22 | 127 | 0.0 | 0.8+ | 2004 08 13 | 204 | 0.3− | 0.1− | | |
| 2004 05 02 | 704 | 0.9+ | 0.5− | 2004 07 22 | 127 | 0.2+ | 0.9+ | 2004 08 13 | 204 | 0.5− | 0.9+ | | |
| 2004 05 02 | 704 | 0.2+ | 0.4− | 2004 07 22 | 203 | 0.3− | 0.4− | 2004 08 13 | 204 | 0.2− | 0.1− | | |
| 2004 05 11 | 704 | 0.9+ | 0.9+ | 2004 07 25 | A16 | 0.7− | 0.5− | 2004 08 14 | H41 | 0.2− | 0.3+ | | |
| 2004 05 11 | 704 | 0.9+ | 0.6+ | 2004 07 25 | A16 | 0.5− | 1.2− | 2004 08 14 | H41 | 0.5+ | 0.0 | | |
| 2004 05 11 | 704 | 0.7+ | 0.2+ | 2004 07 25 | A16 | 0.8− | 0.8− | 2004 08 14 | H41 | 0.1− | 0.3+ | | |
| 2004 05 11 | 704 | 1.1+ | 1.4+ | 2004 07 25 | A16 | 1.5− | 0.4+ | 2004 08 14 | H41 | 0.0 | 0.0 | | |
| 2004 05 11 | 704 | 0.5+ | 1.0+ | 2004 07 25 | A16 | 0.6− | 0.6+ | 2004 08 14 | H41 | 0.2− | 0.0 | | |
| 2004 05 16 | 198 | 0.1− | 0.5+ | 2004 07 27 | H41 | 0.5− | 0.4− | 2004 08 14 | A56 | 0.1− | 0.0 | | |
| 2004 05 16 | 198 | 0.0 | 0.1+ | 2004 07 27 | H41 | 0.1− | 0.6− | 2004 08 14 | A56 | 0.6+ | 0.5− | | |
| 2004 05 16 | 198 | 0.2− | 0.0 | 2004 07 27 | H41 | 0.1+ | 0.2− | 2004 08 14 | A30 | 0.2− | 0.3− | | |
| 2004 05 19 | H41 | 0.8− | 0.9− | 2004 07 27 | H41 | 0.3− | 0.4− | 2004 08 14 | A30 | 0.1− | 0.2− | | |
| 2004 05 19 | H41 | 0.9− | 0.3− | 2004 07 27 | 185 | 0.1− | 0.1− | 2004 08 14 | A30 | 0.1+ | 0.1+ | | |
| 2004 05 19 | H41 | 0.2− | 1.0− | 2004 07 27 | 185 | 0.2+ | 0.1− | 2004 08 14 | A30 | 0.0 | 0.3− | | |
| 2004 05 19 | H41 | 0.0 | 0.6+ | 2004 07 27 | 185 | 0.2+ | 0.3− | 2004 08 15 | 046 | 0.0 | 0.4+ | | |
| 2004 05 20 | 198 | 0.2+ | 0.3+ | 2004 07 27 | 185 | 0.3+ | 0.2+ | 2004 08 15 | 046 | 0.2− | 0.4+ | | |
| 2004 05 20 | 198 | 0.2+ | 0.2+ | 2004 07 27 | 185 | 0.4+ | 0.1+ | 2004 08 15 | 046 | 0.2− | 0.5+ | | |
| 2004 05 20 | 198 | 0.0 | 0.2+ | 2004 07 27 | 185 | 0.4+ | 0.0 | 2004 08 15 | 046 | 0.1− | 0.4+ | | |
| 2004 05 20 | H41 | 0.3+ | 0.7+ | 2004 07 27 | 185 | 0.6+ | 0.0 | 2004 08 15 | 046 | 0.1− | 0.4+ | | |
| 2004 05 20 | H41 | 0.2− | 0.0 | 2004 07 27 | 185 | 0.2+ | 0.1+ | 2004 08 15 | 046 | 0.4+ | 0.3+ | | |
| 2004 05 20 | H41 | 0.6+ | 0.4+ | 2004 07 27 | 151 | 0.2− | 0.3− | 2004 08 16 | H41 | 0.3+ | 0.3+ | | |
| 2004 05 20 | H41 | 0.0 | 0.4− | 2004 07 27 | 185 | 0.4+ | 0.0 | 2004 08 16 | H41 | 0.2− | 0.1+ | | |
| 2004 05 20 | H41 | 0.1+ | 0.2− | 2004 07 27 | 151 | 0.1− | 0.3− | 2004 08 16 | H41 | 0.0 | 0.2− | | |
| 2004 05 20 | H41 | 0.5− | 0.9− | 2004 07 27 | 151 | 0.1+ | 0.1+ | 2004 08 16 | H41 | 0.3+ | 0.0 | | |
| 2004 05 21 | H41 | 0.0 | 0.3− | 2004 07 27 | 185 | 0.0 | 0.0 | 2004 08 16 | H41 | 0.1+ | 0.1+ | | |
| 2004 05 21 | H41 | 0.4− | 0.5+ | 2004 07 27 | 151 | 0.0 | 0.4− | 2004 08 18 | 151 | 0.2+ | 0.1− | | |
| 2004 05 21 | H41 | 0.2+ | 0.1+ | 2004 07 27 | 151 | 0.2− | 0.1+ | 2004 08 18 | 151 | 0.0 | 0.1+ | | |
| 2004 05 21 | H41 | 0.0 | 0.3− | 2004 07 27 | 151 | 0.6− | 0.3− | 2004 08 18 | 151 | 0.1− | 0.1+ | | |
| 2004 05 21 | H41 | 0.6+ | 0.2− | 2004 07 27 | 203 | 0.0 | 0.3− | 2004 08 18 | 151 | 0.3+ | 0.3+ | | |
| 2004 05 22 | H41 | 0.3− | 0.1− | 2004 07 27 | 151 | 0.4− | 0.2+ | 2004 08 18 | 151 | 0.1− | 0.2+ | | |
| 2004 05 22 | A16 | 0.1− | 0.4− | 2004 07 27 | 151 | 0.1− | 0.4+ | 2004 08 18 | 151 | 0.1− | 0.4+ | | |
| 2004 05 22 | A16 | 0.3+ | 0.2− | 2004 07 27 | 151 | 0.1+ | 0.2+ | 2004 08 18 | 151 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 22 | A16 | 0.3− | 0.2+ | 2004 07 27 | 151 | 0.1+ | 0.1+ | 2004 08 18 | 151 | 0.1− | 0.5+ | 2004 06 13 | 704 | 0.1− | 0.6+ | 2004 08 05 | H41 | 0.4+ | 0.4+ | 2004 09 12 | 704 | 0.3+ | 0.8− |
| 2004 05 22 | A16 | 0.4− | 0.4+ | 2004 07 27 | 127 | 0.2− | 1.0+ | 2004 08 18 | 151 | 0.2+ | 0.5+ | 2004 06 13 | 704 | 0.3+ | 0.7+ | 2004 08 05 | 046 | 0.3+ | 0.3+ | 2004 09 15 | E12 | 0.1− | 0.3+ |
| 2004 05 23 | 198 | 0.1+ | 0.1+ | 2004 07 27 | 127 | 0.2− | 1.4+ | 2004 08 18 | 151 | 0.1+ | 0.1+ | 2004 06 13 | 704 | 0.4+ | 0.4+ | 2004 08 05 | 046 | 0.2+ | 0.1− | 2004 09 15 | E12 | 0.1+ | 0.5+ |
| 2004 05 23 | 198 | 0.2− | 0.2+ | 2004 07 27 | 127 | 0.4− | 1.0+ | 2004 08 18 | A56 | 0.2+ | 0.4− | 2004 06 13 | H41 | 0.1− | 0.8− | 2004 08 05 | 046 | 0.1+ | 0.4+ | 2004 09 15 | E12 | 0.2+ | 0.2+ |
| 2004 05 23 | 198 | 0.0 | 0.0 | 2004 07 27 | 203 | 0.1− | 0.3− | 2004 08 18 | A56 | 0.2− | 0.8+ | 2004 06 13 | H41 | 0.0 | 0.0 | 2004 08 05 | 046 | 0.3+ | 0.4+ | 2004 09 15 | E12 | 0.3+ | 0.1− |
| 2004 05 23 | 198 | 0.0 | 0.2− | 2004 07 27 | A13 | 0.2− | 0.3+ | 2004 08 18 | A56 | 0.5+ | 0.5+ | 2004 06 13 | H41 | 0.0 | 0.4− | 2004 08 05 | 046 | 0.1+ | 0.2+ | 2004 10 04 | G90 | 0.2+ | 0.1+ |
| 2004 05 23 | 198 | 0.4+ | 0.1− | 2004 07 27 | A13 | 0.2− | 0.4+ | 2004 08 19 | H41 | 0.3− | 0.1+ | 2004 06 18 | H41 | 0.6− | 0.2− | 2004 08 05 | 046 | 0.1− | 0.4+ | 2004 10 04 | G90 | 0.0 | 0.6+ |
| 2004 05 23 | 198 | 0.3− | 0.1− | 2004 07 27 | A13 | 0.4− | 0.2+ | 2004 08 19 | H41 | 0.1− | 0.5− | 2004 06 18 | H41 | 0.1− | 0.4− | 2004 08 05 | A30 | 0.2+ | 0.1− | 2004 10 04 | G90 | 0.2− | 0.2+ |
| 2004 05 23 | A16 | 1.3− | 0.7− | 2004 07 27 | A13 | 0.1− | 0.4+ | 2004 08 19 | H41 | 0.2− | 0.1− | 2004 06 18 | H41 | 0.8+ | 0.2+ | 2004 08 05 | A30 | 0.2+ | 0.0 | 2004 10 05 | G90 | 0.3− | 0.5+ |
| 2004 05 23 | A16 | 0.1− | 0.7− | 2004 07 27 | A13 | 0.1− | 0.2+ | 2004 08 19 | H41 | 0.2− | 0.1+ | 2004 06 18 | H41 | 0.5− | 0.1− | 2004 08 05 | A30 | 0.3+ | 1.0+ | 2004 10 05 | G90 | 0.5− | 0.1+ |
| 2004 05 23 | A16 | 1.2− | 1.4− | 2004 07 28 | H41 | 0.8+ | 0.6− | 2004 08 19 | H41 | 0.0 | 0.1+ | 2004 06 23 | 198 | 0.2− | 0.2− | 2004 08 06 | H06 | 0.2− | 0.4+ | 2004 10 05 | G90 | 0.1− | 0.2+ |
| 2004 05 23 | A16 | 0.4− | 0.3− | 2004 07 28 | H41 | 0.2+ | 0.6− | 2004 08 19 | 071 | 0.3+ | 1.1+ | 2004 06 23 | 198 | 0.3− | 0.0 | 2004 08 06 | H06 | 0.2− | 0.2+ | 2006 01 22 | 691 | 0.0 | 0.7+ |
| 2004 05 23 | A16 | 0.0 | 0.2− | 2004 07 28 | H41 | 0.6+ | 0.5− | 2004 08 19 | 071 | 0.3− | 0.6− | 2004 06 23 | 198 | 0.3− | 0.1− | 2004 08 06 | H06 | 0.2− | 0.5+ | 2006 01 22 | 691 | 0.0 | 0.7+ |
| 2004 05 23 | A16 | 0.4+ | 0.7− | 2004 07 28 | A13 | 0.1+ | 0.0 | 2004 08 19 | A48 | 0.1− | 0.2− | 2004 06 23 | 198 | 0.3− | 0.1− | 2004 08 06 | H41 | 0.7− | 0.0 | 2006 01 22 | 691 | 0.1− | 0.4+ |
| 2004 05 26 | A41 | 0.3+ | 0.2− | 2004 07 28 | A13 | 0.1+ | 0.1+ | 2004 08 19 | A48 | 0.2+ | 0.0 | 2004 06 24 | H41 | 0.7− | 0.4− | 2004 08 06 | H41 | 0.4− | 0.0 | 2006 01 26 | 691 | 0.2+ | 0.3+ |
| 2004 05 26 | A41 | 0.0 | 0.3+ | 2004 07 28 | A13 | 0.3+ | 0.2− | 2004 08 19 | A48 | 0.2+ | 0.4− | 2004 06 24 | H41 | 0.2− | 0.1+ | 2004 08 06 | H41 | 0.4+ | 0.2+ | 2006 01 26 | 691 | 0.1+ | 0.1+ |
| 2004 05 27 | H41 | 0.0 | 0.2+ | 2004 07 29 | 203 | 0.2+ | 0.7− | 2004 08 19 | A48 | 0.2+ | 0.1+ | 2004 06 24 | H41 | 1.0− | 0.2− | 2004 08 06 | H41 | 0.2− | 0.1− | 2006 01 26 | 691 | 0.1+ | 0.1+ |
| 2004 05 27 | H41 | 0.2+ | 0.0 | 2004 07 29 | 203 | 0.1+ | 0.4− | 2004 08 22 | A56 | 0.2− | 0.7+ | 2004 06 24 | H41 | 0.1+ | 0.1+ | 2004 08 06 | H41 | 0.2+ | 0.1+ | 2006 01 30 | 691 | 0.2+ | 0.1+ |
| 2004 05 27 | H41 | 0.1+ | 0.2+ | 2004 07 29 | 203 | 0.0 | 0.0 | 2004 08 22 | A56 | 0.2+ | 0.4+ | 2004 06 24 | H41 | 0.0 | 0.1− | 2004 08 06 | H41 | 1.1− | 0.2− | 2006 01 30 | 691 | 0.3+ | 0.5+ |
| 2004 05 27 | H41 | 0.1− | 0.1− | 2004 07 30 | 170 | 0.0 | 0.3+ | 2004 08 22 | A56 | 0.5− | 0.5+ | 2004 06 25 | A16 | 0.3+ | 0.6− | 2004 08 06 | G70 | 0.3− | 0.1+ | 2006 01 30 | 691 | 0.2+ | 0.0 |
| 2004 05 27 | H41 | 0.3− | 0.5− | 2004 07 30 | 170 | 0.2− | 0.3+ | 2004 08 22 | A56 | 0.2− | 0.5+ | 2004 06 25 | A16 | 0.5− | 1.0+ | 2004 08 06 | G70 | 0.2− | 0.0 | 2006 02 20 | 703 | 0.1− | 1.1+ |
| 2004 05 28 | 240 | 0.0 | 0.1+ | 2004 07 30 | 170 | 0.1+ | 0.4− | 2004 08 24 | H41 | 0.4+ | 0.9+ | 2004 06 25 | A16 | 0.5− | 0.3+ | 2004 08 07 | G70 | 0.3− | 0.4− | 2006 02 20 | 703 | 0.3− | 0.7+ |
| 2004 05 28 | 240 | 0.1− | 0.1− | 2004 07 31 | H41 | 0.2− | 0.7− | 2004 08 24 | H41 | 0.5+ | 0.0 | 2004 06 25 | A16 | 0.2+ | 0.2− | 2004 08 07 | G70 | 0.3+ | 0.0 | 2006 02 20 | 703 | 1.1+ | 0.0 |
| 2004 05 28 | 240 | 0.1− | 0.1− | 2004 07 31 | H41 | 0.0 | 0.2+ | 2004 08 24 | H41 | 0.2− | 0.5+ | 2004 06 25 | A16 | 0.6− | 0.3− | 2004 08 07 | G70 | 0.2− | 0.1− | 2006 02 20 | 703 | 0.8− | 0.9+ |
| 2004 05 28 | 240 | 0.1+ | 0.1− | 2004 07 31 | H41 | 0.2+ | 0.5+ | 2004 08 24 | H41 | 0.1+ | 0.3− | 2004 06 25 | A16 | 0.2− | 0.2− | 2004 08 07 | H41 | 0.2− | 0.4− | 2006 02 22 | 699 | 0.5− | 0.8+ |
| 2004 05 28 | 240 | 0.0 | 0.1− | 2004 07 31 | H41 | 0.0 | 0.1− | 2004 08 24 | H41 | 0.3+ | 0.3+ | 2004 06 27 | 670 | 0.6+ | 0.0 | 2004 08 07 | H41 | 0.3− | 0.0 | 2006 02 22 | 699 | 0.3+ | 1.3+ |
| 2004 05 28 | 240 | 0.2+ | 0.0 | 2004 07 31 | H41 | 0.1+ | 0.1+ | 2004 08 26 | H41 | 0.4− | 0.0 | 2004 06 27 | 670 | 0.0 | 0.2+ | 2004 08 07 | H41 | 0.3− | 0.0 | 2006 02 22 | 699 | 0.4+ | 0.4+ |
| 2004 05 28 | 240 | 0.2+ | 0.1− | 2004 08 01 | 048 | 0.4+ | 0.4− | 2004 08 26 | H41 | 0.2+ | 0.2+ | 2004 06 28 | 198 | 0.1+ | 0.1− | 2004 08 07 | H41 | 0.0 | 0.2− | 2006 02 22 | 699 | 0.2− | 0.8+ |
| 2004 05 28 | 240 | 0.3+ | 0.0 | 2004 08 01 | 048 | 0.1+ | 0.4− | 2004 08 26 | H41 | 0.2+ | 0.4+ | 2004 06 29 | H41 | 0.4+ | 0.2+ | 2004 08 07 | H41 | 0.3− | 0.4− | 2006 02 25 | 704 | (1.9− | 0.2+) |
| 2004 05 29 | H41 | 0.4− | 0.0 | 2004 08 01 | 048 | 0.6+ | 0.7− | 2004 08 26 | H41 | 0.3− | 0.6+ | 2004 06 29 | H41 | 0.1− | 0.3− | 2004 08 07 | 620 | 0.1− | 0.1+ | 2006 02 25 | 704 | 0.8− | 1.4+ |
| 2004 05 29 | H41 | 0.5− | 0.2+ | 2004 08 01 | 048 | 0.5− | 0.7+ | 2004 08 26 | H41 | 0.4− | 0.0 | 2004 06 29 | H41 | 0.1+ | 0.4− | 2004 08 07 | 620 | 0.1+ | 0.1+ | 2006 02 25 | 704 | 0.7− | 0.5+ |
| 2004 05 29 | H41 | 0.3+ | 0.3− | 2004 08 01 | 048 | 0.3− | 0.0 | 2004 08 26 | H41 | 0.2+ | 0.0 | 2004 06 29 | H41 | 0.4+ | 0.4− | 2004 08 07 | 620 | 0.1− | 0.3+ | 2006 02 25 | 704 | 0.6− | 0.6+ |
| 2004 05 29 | H41 | 0.0 | 0.4+ | 2004 08 02 | H41 | 0.2+ | 0.2− | 2004 08 30 | H41 | 1.0+ | 0.1+ | 2004 06 29 | 185 | 0.1− | 0.2+ | 2004 08 07 | A16 | 0.9+ | 0.2+ | 2006 02 25 | 704 | 0.3− | 0.8+ |
| 2004 05 29 | H41 | 0.0 | 0.5+ | 2004 08 02 | H41 | 0.2− | 0.1+ | 2004 08 30 | H41 | 0.0 | 0.2− | 2004 06 29 | 185 | 0.2− | 0.2− | 2004 08 07 | A16 | 0.2+ | 0.8− | 2006 02 28 | 704 | 0.2+ | 0.7+ |
| 2004 05 29 | 704 | 0.1+ | 0.3− | 2004 08 02 | H41 | 0.3− | 0.7+ | 2004 08 30 | H41 | 1.1+ | 0.1+ | 2004 06 29 | 185 | 0.4− | 0.1+ | 2004 08 07 | A16 | (0.4− | 1.9+) | 2006 02 28 | 704 | 0.0 | 0.0 |
| 2004 05 29 | 704 | 0.0 | 0.1− | 2004 08 02 | H41 | 0.1+ | 0.4− | 2004 08 30 | H41 | 0.1− | 0.9+ | 2004 06 29 | A16 | 0.5− | 0.4− | 2004 08 07 | A16 | (0.2+ | 1.8−) | 2006 02 28 | 704 | 0.7+ | 0.8− |
| 2004 05 29 | 704 | 1.0− | 0.1+ | 2004 08 02 | H41 | 0.2− | 0.7− | 2004 08 30 | H41 | 0.8+ | 0.4+ | 2004 06 29 | A16 | 0.1− | 0.2− | 2004 08 07 | 160 | 0.1− | 0.3− | 2006 02 28 | 704 | 0.1+ | 0.6+ |
| 2004 05 29 | 704 | 0.3+ | 0.7+ | 2004 08 02 | 185 | 0.0 | 0.2+ | 2004 09 01 | H41 | 0.3− | 0.2+ | 2004 06 29 | A16 | (2.3+ | 0.8−) | 2004 08 07 | A16 | 1.3− | 0.3− | 2006 02 28 | 704 | 0.0 | 1.0− |
| 2004 05 29 | 704 | 0.3− | 0.3− | 2004 08 02 | 185 | 0.0 | 0.2+ | 2004 09 01 | H41 | 0.2− | 0.2− | 2004 06 29 | A16 | (2.1+ | 0.0 ) | 2004 08 07 | 160 | 0.2− | 0.2+ | 2006 03 03 | 699 | 0.3+ | 0.1− |
| 2004 05 30 | A41 | 1.2− | 0.6+ | 2004 08 02 | 185 | 0.1+ | 0.0 | 2004 09 01 | H41 | 0.1+ | 0.1+ | 2004 06 29 | A16 | (1.0+ | 1.8+) | 2004 08 07 | 160 | 0.4+ | 0.1+ | 2006 03 03 | 699 | 0.9+ | 1.0+ |
| 2004 05 30 | A41 | (2.4− | 1.6−) | 2004 08 02 | 185 | 0.2+ | 0.3+ | 2004 09 01 | H41 | 0.3− | 0.3+ | 2004 06 30 | A16 | 1.0+ | 0.7+ | 2004 08 07 | 160 | 0.4− | 0.1− | 2006 03 03 | 699 | 0.0 | 0.5+ |
| 2004 05 30 | A41 | 0.2− | 0.7+ | 2004 08 02 | 185 | 0.3+ | 0.2+ | 2004 09 01 | H41 | 0.0 | 0.1− | 2004 06 30 | A16 | 0.7+ | 0.1− | 2004 08 07 | 160 | 0.5− | 0.4− | 2006 03 03 | 699 | (3.1+ | 0.0 ) |
| 2004 05 31 | H41 | 0.5+ | 0.5− | 2004 08 02 | A13 | 0.4+ | 0.1− | 2004 09 01 | H41 | 0.2+ | 0.2− | 2004 06 30 | A16 | 0.8+ | 0.6− | 2004 08 07 | 160 | 0.2+ | 0.4− | 2006 03 19 | 704 | (0.2+ | 1.8+) |
| 2004 05 31 | H41 | 0.2− | 0.2− | 2004 08 02 | A13 | 0.0 | 0.7+ | 2004 09 02 | H41 | 0.6− | 0.3+ | 2004 06 30 | A16 | (0.1+ | 1.6−) | 2004 08 07 | 160 | 0.1+ | 0.3− | 2006 03 19 | 704 | 0.8+ | 0.3+ |
| 2004 05 31 | H41 | 0.2− | 0.2+ | 2004 08 02 | A13 | 0.4+ | 0.4− | 2004 09 02 | H41 | 0.3+ | 0.2+ | 2004 07 03 | J87 | 0.6− | 0.2+ | 2004 08 07 | 160 | 0.1+ | 0.1+ | 2006 03 19 | 704 | 0.4+ | 1.4+ |
| 2004 05 31 | H41 | 0.1− | 0.8− | 2004 08 02 | A13 | 0.1+ | 0.7+ | 2004 09 02 | H41 | 0.7+ | 0.1− | 2004 07 03 | J87 | 0.1+ | 0.1+ | 2004 08 07 | 160 | 0.6− | 0.1− | 2006 03 19 | 704 | (1.7+ | 1.1−) |
| 2004 05 31 | H41 | 0.3+ | 0.5+ | 2004 08 02 | A13 | 0.4− | 0.5+ | 2004 09 02 | H41 | 0.3− | 0.4+ | 2004 07 03 | J87 | 0.4+ | 0.1+ | 2004 08 07 | 160 | 0.2− | 0.0 | 2006 03 22 | 704 | 1.1+ | 0.6+ |
| 2004 06 05 | H41 | 0.8− | 0.2− | 2004 08 02 | A13 | 0.8+ | 0.1+ | 2004 09 02 | H41 | 0.3− | 0.2− | 2004 07 03 | J87 | 0.3+ | 0.0 | 2004 08 07 | 160 | 0.0 | 0.3+ | 2006 03 22 | 704 | 0.4+ | 1.1+ |
| 2004 06 05 | H41 | 0.6− | 1.1− | 2004 08 03 | H41 | 0.0 | 0.2− | 2004 09 02 | 151 | 0.1− | 0.6+ | 2004 07 04 | A16 | 0.6− | 0.3− | 2004 08 07 | 160 | 0.3+ | 0.4− | 2006 03 22 | 704 | 0.6+ | 0.1+ |
| 2004 06 05 | H41 | 0.3− | 0.7− | 2004 08 03 | H41 | 0.1+ | 0.2− | 2004 09 02 | 151 | 0.1− | 0.2+ | 2004 07 04 | A16 | 0.3− | 0.5− | 2004 08 07 | 160 | 0.0 | 0.2+ | 2006 03 22 | 704 | 0.8+ | 0.3− |
| 2004 06 05 | H41 | 0.2− | 0.2− | 2004 08 03 | H41 | 0.0 | 0.0 | 2004 09 02 | 151 | 0.1− | 0.1− | 2004 07 04 | A16 | 0.5+ | 0.3+ | 2004 08 07 | A48 | 0.1− | 0.4+ | 2006 03 24 | 703 | 1.5− | 0.5+ |
| 2004 06 05 | H41 | 0.9− | 0.2− | 2004 08 03 | H41 | 1.3− | 0.5− | 2004 09 02 | 151 | 0.2− | 1.0− | 2004 07 06 | H41 | 0.4+ | 0.1− | 2004 08 08 | H41 | 0.3− | 0.0 | 2006 03 24 | 703 | 0.6− | 0.5+ |
| 2004 06 07 | A41 | 0.2+ | 0.0 | 2004 08 03 | H41 | 0.1− | 0.2− | 2004 09 07 | 704 | 0.3− | 0.5+ | 2004 07 06 | H41 | 0.1+ | 0.0 | 2004 08 08 | H41 | 0.0 | 0.0 | 2006 03 24 | 703 | 1.2− | 1.0+ |
| 2004 06 07 | 240 | 0.1− | 0.2− | 2004 08 04 | H41 | 0.3+ | 0.0 | 2004 09 07 | 704 | 0.1+ | 0.5+ | 2004 07 06 | H41 | 0.1+ | 0.0 | 2004 08 08 | H41 | 0.1− | 0.1− | 2006 03 24 | 703 | 0.5− | 0.6+ |
| 2004 06 07 | A41 | 0.1+ | 0.2− | 2004 08 04 | H41 | 0.0 | 0.3− | 2004 09 07 | 704 | 0.3− | 0.8+ | 2004 07 06 | H41 | 0.5− | 0.3+ | 2004 08 08 | H41 | 0.4− | 0.6− | | | | |
| 2004 06 07 | 240 | 0.1− | 0.2− | 2004 08 04 | H41 | 0.3− | 0.0 | 2004 09 07 | 704 | 0.1+ | 0.6+ | | | | | | | | | | | | |
| 2004 06 07 | 240 | 0.0 | 0.2− | 2004 08 04 | H41 | 0.1+ | 0.2− | 2004 09 07 | 704 | 0.8+ | 0.9+ | | | | | | | | | | | | |
| 2004 06 08 | H41 | 0.4− | 0.3− | 2004 08 04 | H41 | 0.0 | 0.3+ | 2004 09 08 | 859 | 0.3− | 0.4− | | | | | | | | | | | | |
| 2004 06 08 | H41 | 0.7− | 0.1+ | 2004 08 04 | 048 | 0.3+ | 0.0 | 2004 09 08 | 859 | 0.7− | 0.9+ | | | | | | | | | | | | |
| 2004 06 08 | H41 | 0.6− | 0.3− | 2004 08 04 | 048 | 0.6+ | 0.3+ | 2004 09 09 | 704 | 0.1+ | 0.1− | | | | | | | | | | | | |
| 2004 06 08 | H41 | 0.1− | 0.0 | 2004 08 04 | 048 | 0.9+ | 0.2+ | 2004 09 09 | 704 | 0.2− | 0.2− | | | | | | | | | | | | |
| 2004 06 09 | A16 | 0.7+ | 0.5− | 2004 08 04 | 048 | 0.4+ | 0.3− | 2004 09 09 | 704 | 0.6− | 0.3+ | | | | | | | | | | | | |
| 2004 06 09 | A16 | (0.5− | 1.6−) | 2004 08 04 | 048 | 0.1+ | 0.2+ | 2004 09 09 | 704 | 0.6− | 0.1− | | | | | | | | | | | | |
| 2004 06 09 | A16 | 0.1+ | 0.1− | 2004 08 05 | H41 | 0.5− | 0.7− | 2004 09 09 | 704 | 0.6+ | 0.3+ | | | | | | | | | | | | |
| 2004 06 09 | A16 | 0.6− | 0.2− | 2004 08 05 | H41 | 0.2+ | 0.5+ | 2004 09 12 | 704 | 0.2+ | 0.2− | | | | | | | | | | | | |
| 2004 06 09 | A16 | 1.0− | 0.7− | 2004 08 05 | H41 | 0.3+ | 0.8− | 2004 09 12 | 704 | 0.3+ | 0.1+ | | | | | | | | | | | | |
| 2004 06 13 | 704 | 0.8+ | 0.3+ | 2004 08 05 | H41 | 0.6+ | 0.2− | 2004 09 12 | 704 | 0.2− | 0.3− | | | | | | | | | | | | |
| 2004 06 13 | 704 | 0.8+ | 1.2+ | 2004 08 05 | H41 | 0.3+ | 0.7− | 2004 09 12 | 704 | 0.3− | 0.3− | | | | | | | | | | | | |

**(142562)∗ 2002 TL$_{69}$**

Discovered 2002 Oct. 10 by M. Kretlow at Michael Adrian Observatory, Trebur.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.63750 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23944292 | $\omega$ | 39.43754 | | +0.39337792 | −0.91813365 |
| $a$ | 2.5684319 | $\Omega$ | 27.49578 | | +0.81519233 | +0.32429045 |
| $e$ | 0.0578678 | $i$ | 5.94215 | | +0.42510619 | +0.22774172 |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.6+ | 0.7+ | 2002 11 14 | 704 | 0.5+ | 0.9− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 1996 04 13 | 691 | 0.7+ | 1.1+ | 2002 11 14 | 704 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.6+ |
| 1996 04 13 | 691 | 0.6+ | 0.9+ | 2002 11 14 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.9+ |
| 2000 03 03 | 645 | 0.1− | 0.1− | 2002 11 27 | 699 | 0.9− | 0.4+ | 2006 10 21 | H07 | 1.1+ | 0.6+ |
| 2000 03 03 | 645 | 0.2− | 0.1− | 2002 11 27 | 699 | 0.9+ | 0.2+ | 2006 10 21 | H07 | 1.2+ | 1.0+ |
| 2000 04 05 | 704 | 0.0 | 0.9+ | 2002 11 27 | 699 | 0.8− | 0.2− | 2006 10 21 | H07 | 0.7+ | 1.0+ |
| 2000 04 05 | 704 | 0.4− | 0.5− | 2002 11 27 | 699 | 0.1+ | 1.2− | 2006 10 22 | 644 | 0.9+ | 0.2+ |
| 2000 04 05 | 704 | 0.3+ | 1.0+ | 2002 12 06 | 704 | 1.3+ | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2000 04 05 | 704 | 0.2− | 0.3+ | 2002 12 06 | 704 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.5+ | 1.2+ | 2002 12 06 | 704 | 0.2+ | 1.1+ | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 2002 10 10 | 239 | 1.1− | 0.6− | 2004 03 15 | 704 | (1.6+ | 0.2−) | 2006 10 23 | 691 | 0.6− | 0.4+ |
| 2002 10 10 | 239 | 0.5− | 0.0 | 2004 03 15 | 704 | 0.8+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 2002 10 10 | 239 | 0.4− | 0.1+ | 2004 03 15 | 704 | 0.2− | 0.0 | 2006 10 26 | A13 | 0.8− | 0.3− |
| 2002 10 10 | 239 | 0.0 | 0.4− | 2004 03 16 | 599 | 0.4− | 0.0 | 2006 10 26 | A13 | 0.2− | 0.7− |
| 2002 10 11 | 239 | 0.2− | 0.3− | 2004 03 16 | 599 | 0.2+ | 0.1− | 2006 10 26 | A13 | 0.1− | 0.3− |
| 2002 10 11 | 239 | 0.2+ | 0.2− | 2004 03 16 | 599 | 0.7− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 10 11 | 239 | 0.3+ | 0.2− | 2004 03 18 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2002 11 05 | 704 | 0.6− | 1.1− | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.7+ |
| 2002 11 05 | 704 | (0.1+ | 2.0−) | 2004 03 18 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 11 05 | 704 | 0.9+ | 1.3− | 2004 03 19 | 704 | 0.5+ | 1.0+ | 2006 11 01 | 691 | 0.3− | 0.0 |
| 2002 11 08 | 704 | 0.5− | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2002 11 08 | 704 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2002 11 08 | 704 | 0.8+ | 0.5+ | 2004 03 28 | 704 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.3− | 1.1− |
| 2002 11 12 | 704 | 0.3+ | 0.4+ | 2004 03 28 | 704 | 0.6+ | 0.7− | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2002 11 12 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 704 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.5− |
| 2002 11 12 | 704 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.9+ | 2006 11 22 | 104 | 1.5− | 0.1+ |
| 2002 11 12 | 704 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 22 | 104 | 0.0 | 0.4+ |
| 2002 11 12 | 704 | 0.2− | 0.5− | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 22 | 104 | 0.5+ | 0.1− |
| 2002 11 14 | 704 | 0.0 | 1.1− | 2006 09 27 | G96 | 0.0 | 0.3− | | | | |
| 2002 11 14 | 704 | 0.0 | 0.8− | 2006 09 27 | G96 | 0.1+ | 0.5− | | | | |

**(142563)∗ 2002 TR$_{69}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 163.05671 | | (2000.0) | | | | |
| $n$ | 0.46077688 | $\omega$ | 192.08407 | | −0.99070735 | | −0.08289346 |
| $a$ | 1.6601306 | $\Omega$ | 342.06403 | | +0.13427136 | | −0.72246710 |
| $e$ | 0.3437150 | $i$ | 20.49676 | | −0.02168281 | | −0.68641821 |
| $P$ | 2.14 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 261 | 0.1− | 0.2− | 2002 10 11 | 658 | 0.3− | 0.1− | 2004 09 23 | 170 | 0.1+ | 1.0− |
| 1997 01 31 | 261 | 0.3+ | 0.4+ | 2002 10 11 | 658 | 0.7+ | 0.3− | 2004 09 23 | 170 | 0.0 | 0.9− |
| 2000 08 04 | 608 | 0.2+ | 0.8+ | 2002 10 11 | 658 | 0.9+ | 0.6− | 2004 10 04 | G90 | 0.1+ | 0.2+ |
| 2002 10 03 | 644 | 0.3− | 0.8+ | 2002 10 15 | 644 | 0.3− | 0.2+ | 2004 10 04 | G90 | 0.1− | 0.1− |
| 2002 10 03 | 644 | 0.1− | 0.8+ | 2002 10 15 | 644 | 0.3− | 0.4+ | 2004 10 04 | G90 | 0.2+ | 0.4+ |
| 2002 10 03 | 644 | 0.2+ | 0.5+ | 2002 10 15 | 644 | 0.5− | 0.2+ | 2004 10 05 | G90 | 0.2− | 0.2− |
| 2002 10 10 | 704 | 0.5+ | 0.3+ | 2002 10 26 | 540 | 0.1− | 0.0 | 2004 10 05 | G90 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.6− | 0.3+ | 2002 10 26 | 540 | 0.4+ | 0.3− | 2004 10 05 | G90 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | (2.0− | 0.9−) | 2002 10 26 | 540 | 0.7+ | 0.4− | 2006 08 02 | H55 | 0.5− | 0.2− |
| 2002 10 10 | 704 | 0.7+ | 0.2− | 2002 11 12 | 649 | 0.1− | 0.3+ | 2006 08 02 | H55 | 0.9− | 0.2+ |
| 2002 10 10 | 704 | 0.6+ | 0.7+ | 2002 11 12 | 649 | 0.3− | 0.0 | 2006 08 02 | H55 | 0.3− | 0.4− |
| 2002 10 10 | 704 | 0.4+ | 0.4+ | 2002 11 12 | 649 | 0.2+ | 0.4+ | 2006 08 21 | 691 | 0.3− | 0.6+ |
| 2002 10 10 | 704 | 0.2+ | 0.0 | 2002 12 15 | 715 | 0.3+ | 0.3+ | 2006 08 21 | 691 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2002 12 15 | 715 | 0.2− | 0.3+ | 2006 08 21 | 691 | 0.3+ | 0.1− |
| 2002 10 11 | 734 | 0.6− | 0.1− | 2002 12 15 | 715 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.4− | 0.3− |
| 2002 10 11 | 734 | (3.2+ | 0.8−) | 2004 09 02 | 568 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.8+ | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 1.1− | 2004 09 02 | 568 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.8+ | 0.1+ |
| 2002 10 11 | 926 | 0.9− | 0.5− | 2004 09 05 | 151 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.8+ | 0.8+ |
| 2002 10 11 | 926 | 0.3− | 0.4− | 2004 09 05 | 151 | 0.0 | 0.3+ | 2006 08 28 | 703 | (3.8− | 2.0+) |
| 2002 10 11 | 926 | 0.1+ | 0.6− | 2004 09 05 | 151 | 0.5− | 0.7+ | 2006 08 28 | 703 | 1.3+ | 0.2+ |
| 2002 10 11 | 704 | 0.8+ | 0.9+ | 2004 09 10 | 704 | 0.6− | 0.2+ | 2006 08 28 | 699 | 1.1− | 0.4− |
| 2002 10 11 | 649 | 0.1+ | 0.0 | 2004 09 10 | 704 | 0.4− | 0.7+ | 2006 08 28 | 699 | (0.4+ | 3.1+) |
| 2002 10 11 | 649 | 0.0 | 0.0 | 2004 09 10 | 704 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.0 |
| 2002 10 11 | 649 | 0.3+ | 0.1+ | 2004 09 13 | 691 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2002 10 11 | 448 | 0.0 | 0.2− | 2004 09 13 | 691 | 0.1+ | 0.3− | 2006 09 27 | G96 | 0.2− | 1.5− |
| 2002 10 11 | 448 | 0.0 | 0.3+ | 2004 09 13 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2002 10 11 | 448 | 0.3− | 0.6+ | 2004 09 23 | 170 | 0.0 | 1.1− | | | | |

**(142564)∗ 2002 TR$_{70}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 352.06204 | | (2000.0) | | | | |
| $n$ | 0.23783139 | $\omega$ | 41.97625 | | +0.97609153 | | +0.12764707 |
| $a$ | 2.5800211 | $\Omega$ | 309.81232 | | −0.20241673 | | +0.82873861 |
| $e$ | 0.1893187 | $i$ | 13.24013 | | +0.07920097 | | +0.54488397 |
| $P$ | 4.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 02 | 699 | 0.1+ | 0.3− | 2004 01 19 | 691 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.5− | 0.3+ |
| 1998 10 02 | 699 | 0.6+ | 0.5+ | 2004 01 30 | 704 | 0.8+ | 0.5− | 2006 08 30 | 704 | 0.0 | 0.6+ |
| 1998 10 02 | 699 | 0.7+ | 0.6− | 2004 01 30 | 704 | 0.0 | 0.7+ | 2006 09 11 | 703 | 0.0 | 0.4+ |
| 1998 10 30 | 699 | 0.9− | 0.2+ | 2004 01 30 | 704 | 0.6+ | 0.4+ | 2006 09 11 | 703 | 0.3− | 0.8+ |
| 1998 10 30 | 699 | 0.9− | 0.5− | 2004 01 30 | 704 | 1.2+ | 0.3− | 2006 09 11 | 703 | 0.6+ | 0.6+ |
| 1998 10 30 | 699 | 0.6− | 1.1− | 2006 07 21 | 703 | 0.7− | 0.2− | 2006 09 11 | 703 | (1.6+ | 0.7+) |
| 2002 08 10 | 704 | 0.5− | 0.1+ | 2006 07 21 | 703 | 0.3− | 0.7+ | 2006 09 14 | 691 | 0.0 | 0.0 |
| 2002 08 10 | 704 | 0.5− | 0.1− | 2006 07 21 | 703 | 0.5− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2002 08 10 | 704 | 0.8− | 0.6+ | 2006 07 21 | 703 | 1.0− | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2002 08 10 | 704 | 0.9+ | 0.5− | 2006 07 25 | 644 | 0.0 | 0.1− | 2006 09 16 | 691 | 0.0 | 0.1− |
| 2002 08 10 | 704 | 0.9− | 0.2− | 2006 07 25 | 644 | 0.3+ | 0.0 | 2006 09 16 | 691 | 0.1− | 0.2− |
| 2002 08 16 | 704 | 0.1+ | 0.5+ | 2006 07 25 | 644 | 0.3+ | 0.1− | 2006 09 16 | 691 | 0.0 | 0.1− |
| 2002 08 16 | 704 | 0.2− | 0.0 | 2006 08 12 | D35 | 0.2+ | 0.9+ | 2006 09 17 | 703 | 1.3+ | 0.1− |
| 2002 08 16 | 704 | 0.2+ | 0.3− | 2006 08 12 | D35 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.2− |
| 2002 08 16 | 704 | 1.0− | 0.2− | 2006 08 12 | D35 | 0.3+ | 0.5+ | 2006 09 17 | 703 | 0.2+ | 0.3− |
| 2002 08 16 | 704 | 0.5− | 0.3− | 2006 08 19 | 699 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.5− | 0.5− |
| 2002 09 11 | 644 | 0.3+ | 0.0 | 2006 08 19 | 699 | 0.1− | 0.7+ | 2006 09 18 | 691 | 0.4− | 0.2− |
| 2002 09 11 | 644 | 0.0 | 0.4+ | 2006 08 19 | 699 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.1− |
| 2002 09 11 | 644 | 0.2− | 0.3+ | 2006 08 19 | 699 | 0.8− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1− |
| 2002 10 03 | 644 | 0.0 | 0.1+ | 2006 08 24 | 608 | (0.9+ | 2.4−) | 2006 09 19 | 699 | 0.2+ | 0.2+ |
| 2002 10 03 | 644 | 0.0 | 0.2+ | 2006 08 24 | 608 | (0.7+ | 2.5−) | 2006 09 19 | 699 | 0.0 | 0.1− |
| 2002 10 03 | 644 | 0.0 | 0.1+ | 2006 08 24 | 608 | (0.4+ | 2.5−) | 2006 09 19 | 699 | 0.8− | 0.1− |
| 2002 10 04 | 699 | 0.6+ | 0.5+ | 2006 08 30 | 699 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.4+ |
| 2002 10 04 | 699 | 0.5+ | 0.2+ | 2006 08 30 | 699 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.2− | 0.9+ |
| 2002 10 04 | 699 | 0.7+ | 0.3− | 2006 08 30 | 699 | 0.6− | 0.5− | 2006 10 22 | 703 | 0.2+ | 1.2− |
| 2002 10 04 | 699 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2002 10 06 | 704 | 0.5+ | 0.4+ | 2006 08 30 | 699 | 0.3− | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.9− |
| 2002 10 06 | 704 | 0.8+ | 0.6+ | 2006 08 30 | 704 | 0.5+ | 0.3− | 2006 11 19 | 703 | 1.3− | 0.3+ |
| 2002 10 06 | 704 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 1.5+ | 2.1− |
| 2002 10 06 | 704 | 0.3+ | 1.0+ | 2006 08 30 | 704 | 1.1+ | 0.6+ | 2006 11 19 | 703 | 0.4+ | 0.6− |
| 2002 10 06 | 704 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.5+ | 1.2− |
| 2004 01 19 | 691 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.1+ | 0.5+ | | | | |
| 2004 01 19 | 691 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.4+ | | | | |

**(142565)∗ 2002 TN$_{75}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 317.47829 | | (2000.0) | | | | |
| $n$ | 0.24444362 | $\omega$ | 3.11249 | | +0.73810299 | | −0.66627287 |
| $a$ | 2.5332823 | $\Omega$ | 39.35874 | | +0.61534015 | | +0.60020975 |
| $e$ | 0.0476074 | $i$ | 9.64287 | | +0.27669563 | | +0.44252539 |
| $P$ | 4.03 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 699 | 0.5+ | 0.7+ | 2002 10 10 | 704 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.4+ | 1.0+ |
| 1998 09 24 | 699 | 0.0 | 0.1+ | 2002 10 10 | 704 | 0.2+ | 0.6+ | 2005 03 10 | G96 | 0.9+ | 1.0+ |
| 1998 09 24 | 699 | 1.6+ | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.6− | 2005 03 10 | G96 | 0.1− | 1.4+ |
| 2002 09 16 | 644 | 0.3− | 0.3+ | 2002 10 11 | 704 | 0.0 | 0.3− | 2005 03 11 | G96 | 0.5− | 0.5+ |
| 2002 09 16 | 644 | 0.0 | 0.4+ | 2002 10 11 | 704 | 0.2− | 0.6− | 2005 03 11 | G96 | 0.2+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.5− | 0.0 | 2002 10 11 | 704 | 0.8− | 0.2− | 2005 03 11 | G96 | 0.9+ | 0.6+ |
| 2002 09 17 | 608 | (1.6− | 0.6+) | 2002 10 11 | 704 | 0.1+ | 0.3− | 2005 03 11 | G96 | 0.0 | 0.7+ |
| 2002 09 17 | 608 | 1.4− | 0.7+ | 2003 12 28 | 704 | 0.3+ | 0.5− | 2006 09 14 | 644 | 0.3+ | 0.4+ |
| 2002 09 17 | 608 | (1.5− | 0.6+) | 2003 12 28 | 704 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.4+ | 0.0 |
| 2002 10 01 | 699 | 0.7− | 0.2− | 2003 12 28 | 704 | 0.8+ | 0.0 | 2006 09 14 | 644 | 0.8+ | 0.1− |
| 2002 10 01 | 699 | 0.2+ | 0.3+ | 2003 12 30 | 704 | 0.0 | 0.5+ | 2006 09 15 | F84 | 0.4− | 0.6− |
| 2002 10 01 | 699 | 0.9− | 0.3− | 2003 12 30 | 704 | 0.5− | 0.5+ | 2006 09 15 | F84 | 0.1− | 0.5+ |
| 2002 10 01 | 699 | 0.1+ | 0.6− | 2003 12 30 | 704 | 0.4− | 0.8+ | 2006 09 18 | 703 | 1.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2003 12 30 | 704 | 0.5− | 0.4− | 2006 09 18 | 703 | 0.9+ | 0.2− |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2003 12 30 | 704 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.6+ |
| 2002 10 04 | 704 | 0.3+ | 0.3+ | 2003 12 30 | 704 | 1.2+ | 1.4− | 2006 09 18 | 703 | 0.6+ | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 1.0− | 2003 12 30 | 704 | 0.7− | 0.5+ | 2006 10 02 | 703 | 0.9− | 0.1− |
| 2002 10 04 | 704 | 0.4− | 1.2+ | 2003 12 30 | 704 | 0.4− | 0.3+ | 2006 10 02 | 703 | 0.6− | 1.3+ |
| 2002 10 04 | 704 | 1.2− | 1.1+ | 2004 01 18 | 644 | 0.2− | 0.0 | 2006 10 02 | 703 | 1.4− | 0.4+ |
| 2002 10 04 | 704 | 1.0+ | 0.2+ | 2004 01 18 | 644 | 0.4− | 0.4− | 2006 10 02 | 703 | 1.0− | 0.7+ |
| 2002 10 04 | 704 | 0.7+ | 0.4− | 2004 01 18 | 703 | 0.4+ | 1.0+ | 2006 10 02 | 703 | 0.8− | 0.3− |
| 2002 10 05 | 704 | 0.5+ | 1.1− | 2004 01 18 | 703 | 0.0 | 0.6+ | 2006 10 02 | 703 | 0.3− | 0.1+ |
| 2002 10 05 | 704 | 0.8+ | 0.1− | 2004 01 18 | 703 | 0.2+ | 0.2− | 2006 10 02 | 703 | 1.3− | 0.0 |
| 2002 10 05 | 704 | 0.0 | 1.0+ | 2004 01 18 | 644 | 0.2− | 0.1− | 2006 10 02 | 703 | 0.2− | 0.1− |
| 2002 10 05 | 704 | 0.1− | 0.6+ | 2004 01 18 | 703 | 0.9− | 1.3− | 2006 10 19 | 703 | 1.2+ | 0.8+ |
| 2002 10 05 | 704 | 0.2− | 0.2− | 2004 01 19 | 704 | 0.7+ | 0.7+ | 2006 10 19 | 703 | (2.7+ | 1.2−) |
| 2002 10 06 | 704 | 0.3− | 0.3+ | 2004 01 19 | 704 | 1.1+ | 1.1+ | 2006 10 19 | 703 | (0.8+ | 1.7−) |
| 2002 10 06 | 608 | 0.2− | 0.0 | 2004 01 19 | 704 | 1.3+ | 0.6+ | 2006 10 19 | 703 | (0.4+ | 1.6+) |
| 2002 10 06 | 608 | 0.4− | 0.2− | 2004 01 19 | 704 | 0.7+ | 1.0+ | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 2002 10 06 | 704 | 0.5− | 0.5− | 2004 02 14 | 704 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.6+ | 0.1− |
| 2002 10 06 | 608 | 0.4− | 0.0 | 2004 02 14 | 704 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 10 06 | 704 | 0.5− | 0.6− | 2004 02 14 | 704 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.5+ | 0.1− |
| 2002 10 06 | 704 | 0.6− | 0.4− | 2004 02 14 | 704 | 0.5− | 0.3+ | 2006 10 24 | 644 | 0.6+ | 0.0 |
| 2002 10 10 | 704 | 0.4+ | 0.3+ | 2005 03 10 | G96 | 0.1+ | 1.0+ | 2006 10 24 | 644 | 0.3+ | 0.1− |

**(142566)∗ 2002 TH$_{77}$**

Discovered 2002 Oct. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.44271 | | (2000.0) | | | |
| $n$ | 0.23619543 | $\omega$ | 301.70045 | | +0.37220161 | +0.92805548 |
| $a$ | 2.5919208 | $\Omega$ | 350.12357 | | −0.82298576 | +0.32332963 |
| $e$ | 0.2431246 | $i$ | 4.47359 | | −0.42913913 | +0.18485395 |
| $P$ | 4.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 25 | 691 | 0.0 | 0.3− | 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.2+ |
| 1996 01 25 | 691 | 0.1+ | 0.1− | 2005 04 12 | G96 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.3− | 0.5− |
| 1996 01 25 | 691 | 0.1+ | 0.4− | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.1+ |
| 2002 10 01 | 699 | 1.1+ | 1.0− | 2006 07 21 | 704 | (1.6− | 1.4−) | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.3+ | 0.4− | 2006 07 21 | 704 | 0.4− | 0.2− | 2006 09 25 | 699 | 0.5− | 0.0 |
| 2002 10 01 | 699 | 0.9− | 0.2− | 2006 07 21 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.6− |
| 2002 10 01 | 699 | 0.3− | 0.0 | 2006 07 21 | 704 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 1.0+ | 2006 07 21 | 703 | (2.5− | 1.0+) | 2006 09 26 | 704 | 0.9+ | 0.3− |
| 2002 10 04 | 704 | 1.2+ | 0.4+ | 2006 07 21 | 703 | 0.7+ | 0.8+ | 2006 09 26 | 704 | 0.6− | 0.3+ |
| 2002 10 04 | 704 | 0.6+ | 0.2+ | 2006 07 21 | 703 | 0.8+ | 0.7+ | 2006 09 26 | 704 | 0.2+ | 0.5+ |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 07 21 | 703 | (0.3+ | 1.8+) | 2006 09 27 | 704 | 0.4− | 0.1− |
| 2002 10 06 | 704 | 0.6− | 0.5+ | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.4+ |
| 2002 10 06 | 704 | 0.3− | 1.2+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.5− |
| 2002 10 06 | 704 | 0.7− | 0.7− | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.2− | 0.1− |
| 2002 10 06 | 704 | 0.3+ | 0.1− | 2006 08 18 | 699 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.4− | 0.2+ |
| 2002 10 09 | 704 | 0.4− | 0.9− | 2006 08 18 | 699 | 0.1+ | 1.1− | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2002 10 09 | 704 | 0.5− | 0.3+ | 2006 08 18 | 699 | 0.8− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 0.1+ | 0.8− | 2006 08 18 | 699 | 0.6+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.5− | 0.0 | 2006 08 19 | 691 | (0.9− | 2.9−) | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 10 12 | 704 | 0.8− | 0.9− | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2002 10 12 | 704 | 0.7− | 0.0 | 2006 08 21 | 704 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.7+ | 2006 08 21 | 704 | 0.5− | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2006 08 21 | 704 | 0.2− | 1.3+ | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2002 10 30 | 644 | 0.1+ | 1.3+ | 2006 08 21 | 704 | 1.1− | 1.0+ | 2006 09 29 | 704 | 0.8+ | 0.1+ |
| 2002 10 30 | 644 | 0.2+ | 1.2+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2002 10 30 | 644 | 0.7+ | 1.3+ | 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 703 | 0.2− | 0.5− |
| 2002 10 31 | 699 | 0.9− | 1.1+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 10 01 | 703 | 0.6+ | 0.6− |
| 2002 10 31 | 699 | 1.5− | 1.0+ | 2006 08 25 | 704 | 0.5+ | 1.2+ | 2006 10 01 | 703 | 0.2− | 0.6− |
| 2002 10 31 | 699 | 0.9− | 1.0+ | 2006 08 25 | 704 | 0.9+ | 0.5+ | 2006 10 01 | 703 | 0.6+ | 0.3− |
| 2002 10 31 | 699 | 0.6− | 0.7− | 2006 08 25 | 704 | (1.5+ | 1.4−) | 2006 10 01 | 704 | 1.4− | 0.7+ |
| 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 08 25 | 704 | (1.6− | 1.3+) | 2006 10 01 | 704 | 0.6− | 0.1+ |
| 2002 11 22 | 644 | 0.2+ | 0.0 | 2006 08 25 | 704 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.4+ |
| 2002 11 22 | 644 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.9− | 1.1+ | 2006 10 01 | 704 | 0.5+ | 0.2+ |
| 2005 03 12 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 703 | (1.3− | 1.6+) | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2005 03 12 | 691 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 0.6− | 1.3+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2005 03 12 | 691 | 0.3+ | 0.4+ | 2006 08 28 | 703 | (0.3− | 1.9+) | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2005 03 14 | 704 | (1.6+ | 0.4−) | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | (0.6− | 1.7+) |
| 2005 03 14 | 704 | 1.1+ | 0.9+ | 2006 08 28 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.6− |
| 2005 03 14 | 704 | 0.9+ | 0.4− | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.5+ | 1.1+ |
| 2005 03 16 | 691 | 0.4+ | 0.8+ | 2006 09 01 | 704 | 0.7− | 0.7− | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2005 03 16 | 691 | 0.3+ | 0.4+ | 2006 09 01 | 704 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 09 01 | 704 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2005 03 17 | G96 | 0.0 | 0.1+ | 2006 09 01 | 704 | 1.3− | 0.7− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2005 03 17 | G96 | 0.6+ | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2005 03 17 | G96 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.3+ | 0.6− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2005 04 04 | 703 | 0.4− | 0.5− | 2006 09 17 | 704 | 0.8+ | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.3− |
| 2005 04 04 | 703 | 0.5− | 0.5− | 2006 09 17 | 704 | 0.2+ | 0.9− | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2005 04 04 | 703 | 0.6− | 1.0+ | 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2005 04 04 | 703 | 0.8− | 0.9− | 2006 09 19 | 699 | 0.4+ | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2005 04 06 | G96 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.8+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2005 04 06 | G96 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.6+ | 0.2− |
| 2005 04 06 | G96 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 04 06 | G96 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 04 11 | 695 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.7+ | 0.3− |
| 2005 04 11 | 695 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.6+ | | | | |
| 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.2+ | | | | |

**(142567)∗ 2002 TQ$_{78}$ = 2000 GH$_{12}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38019)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.98569 | | (2000.0) | | | |
| $n$ | 0.23907857 | $\omega$ | 249.06596 | | +0.17824316 | −0.98118381 |
| $a$ | 2.5710407 | $\Omega$ | 191.44858 | | +0.98293257 | +0.18103491 |
| $e$ | 0.1013165 | $i$ | 21.95607 | | +0.04552947 | −0.06711705 |
| $P$ | 4.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 23 | 691 | 0.2+ | 0.4− | 2002 10 28 | 644 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.4+ | 0.2+ |
| 1996 04 23 | 691 | 0.4+ | 0.3− | 2002 10 30 | 704 | 0.6− | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.4− |
| 1996 04 23 | 691 | 0.1+ | 0.4− | 2002 10 30 | 704 | 0.7+ | 0.2− | 2006 09 18 | 699 | 0.7+ | 0.6+ |
| 2000 04 05 | 704 | 0.8+ | 0.6+ | 2002 10 30 | 704 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.1+ |
| 2000 04 05 | 704 | 0.0 | 0.1+ | 2002 10 30 | 704 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.4+ | 0.4− | 2002 11 21 | 644 | 0.4− | 0.7− | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.1− | 0.8− | 2002 11 21 | 644 | 0.8− | 0.7− | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.9+ | 0.4− | 2002 11 21 | 644 | 0.6− | 0.0 | 2006 09 22 | A50 | 0.4− | 0.2+ |
| 2000 04 06 | 704 | 0.6+ | 0.8− | 2004 03 01 | 703 | 0.9+ | 0.1+ | 2006 09 22 | A50 | 0.3+ | 0.5+ |
| 2000 04 06 | 704 | 0.8+ | 1.1+ | 2004 03 01 | 703 | 1.1+ | 1.2− | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2000 04 06 | 704 | 0.6+ | 0.1+ | 2004 03 01 | 703 | 0.9− | 1.0+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2000 05 04 | 645 | 0.1− | 0.2+ | 2004 03 01 | 703 | 1.4+ | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2000 05 04 | 645 | 0.2− | 0.2+ | 2006 08 06 | 699 | 1.5− | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2000 05 05 | 645 | 0.1− | 0.2+ | 2006 08 06 | 699 | 0.6− | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2000 05 05 | 645 | 0.1− | 0.3+ | 2006 08 06 | 699 | 0.9− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 10 01 | 704 | 0.1− | 0.3+ | 2006 08 06 | 699 | 1.3+ | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 10 01 | 704 | 0.2+ | 1.3− | 2006 08 29 | 699 | 0.1+ | 1.4− | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2002 10 01 | 704 | 0.6+ | 0.5+ | 2006 08 29 | 699 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 10 01 | 704 | 0.2− | 0.9+ | 2006 08 29 | 699 | (0.8+ | 2.1+) | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2006 08 29 | 699 | 0.3− | 1.0+ | 2006 10 16 | 703 | 0.2+ | 0.7+ |
| 2002 10 04 | 704 | 0.6+ | 0.3+ | 2006 08 31 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.7+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2006 08 31 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2002 10 04 | 704 | 0.3+ | 1.4+ | 2006 08 31 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 2002 10 04 | 704 | (0.6+ | 1.8+) | 2006 08 31 | 704 | 0.6+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2002 10 09 | 699 | 0.7+ | 0.2− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 10 09 | 699 | 0.6− | 0.6− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 10 09 | 699 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.6− | 0.5− |
| 2002 10 09 | 699 | 0.5− | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.7− |
| 2002 10 28 | 644 | 0.2− | 0.6+ | 2006 09 17 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.8− |
| 2002 10 28 | 644 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.9− |

**(142568)∗ 2002 TV$_{78}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.75500 | | (2000.0) | | | |
| $n$ | 0.23721730 | $\omega$ | 217.44848 | | +0.92723127 | +0.36749520 |
| $a$ | 2.5844719 | $\Omega$ | 120.84215 | | −0.32009045 | +0.87758648 |
| $e$ | 0.2304211 | $i$ | 4.81295 | | −0.19438176 | +0.30787863 |
| $P$ | 4.15 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 14 | 691 | 0.3+ | 0.0 | 2002 11 07 | 704 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.1− |
| 2001 04 14 | 691 | 0.1+ | 0.1+ | 2005 05 03 | 691 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.2− |
| 2001 04 14 | 691 | 0.7+ | 0.1+ | 2005 05 03 | 691 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.2− |
| 2002 07 06 | 291 | 0.7− | 0.2− | 2005 05 03 | 691 | (1.9+ | 0.2−) | 2006 09 22 | 704 | 0.4− | 0.2+ |
| 2002 07 06 | 291 | 0.7− | 0.3− | 2005 05 14 | 691 | 0.1− | 0.5+ | 2006 09 22 | 704 | 0.1− | 0.3− |
| 2002 07 06 | 291 | 0.9− | 0.2− | 2005 05 14 | 691 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.1− | 0.5− |
| 2002 10 01 | 704 | 0.4− | 0.7+ | 2005 05 14 | 691 | 0.2− | 0.6+ | 2006 09 22 | 704 | 0.5− | 0.1+ |
| 2002 10 01 | 704 | 1.2− | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.4− | 2006 09 22 | 704 | 0.5− | 0.5+ |
| 2002 10 01 | 704 | 0.3− | 0.9+ | 2006 08 16 | 644 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.1+ |
| 2002 10 01 | 704 | 0.6+ | 0.9+ | 2006 08 16 | 644 | 0.3+ | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.5+ |
| 2002 10 01 | 704 | 0.1+ | 0.0 | 2006 08 23 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.1− |
| 2002 10 02 | 608 | 0.1− | 1.1− | 2006 08 23 | 704 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.5+ | 0.8− |
| 2002 10 02 | 608 | 0.4− | 1.2− | 2006 08 23 | 704 | 0.6+ | 0.6+ | 2006 09 26 | 704 | 0.1+ | 0.4+ |
| 2002 10 02 | 608 | 0.3+ | 0.5− | 2006 08 23 | 704 | 0.0 | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 1.2− | 0.9− | 2006 09 26 | 704 | 0.2+ | 0.3− |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2006 08 28 | 699 | 0.3+ | 0.3− | 2006 09 26 | 704 | 0.2− | 1.4+ |
| 2002 10 04 | 704 | 1.0+ | 0.3− | 2006 08 28 | 699 | 0.3+ | 0.4− | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 699 | 0.8+ | 0.5+ | 2006 10 02 | 703 | 0.6− | 0.0 |
| 2002 10 09 | 699 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.3+ | 0.7+ | 2006 10 02 | 703 | 0.7+ | 0.3+ |
| 2002 10 09 | 699 | 0.9+ | 1.0− | 2006 08 30 | 704 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.3+ | 0.3+ |
| 2002 10 09 | 699 | 0.7+ | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.4− | 2006 10 02 | 703 | 0.1− | 0.4+ |
| 2002 10 09 | 699 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.0 | 0.2+ | 2006 10 04 | 703 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.3+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.4+ | 2006 10 04 | 703 | 0.6+ | 0.5− |
| 2002 10 31 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.7+ | 2006 10 04 | 703 | 0.3− | 0.2+ |
| 2002 10 31 | 704 | 0.5+ | 0.9+ | 2006 09 14 | 703 | 0.2− | 0.8− | 2006 10 04 | 703 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.7+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.9+ | 2006 09 16 | 704 | 0.5− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 608 | 0.1− | 0.2− | 2006 09 16 | 704 | 0.3+ | 0.8− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2002 10 31 | 608 | 0.2− | 0.4− | 2006 09 16 | 704 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 10 31 | 608 | 0.0 | 0.5− | 2006 09 16 | 704 | 0.7− | 0.4− | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 1.0− | 0.0 | 2006 09 17 | 699 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.5− | 2006 09 17 | 699 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 1.2− | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 699 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.5− | 0.7+ |
| 2002 11 07 | 704 | 0.6+ | 0.9+ | 2006 09 17 | 699 | 0.8− | 0.8+ | 2006 10 19 | 703 | 0.8+ | 0.7+ |
| 2002 11 07 | 704 | 0.8− | 0.6+ | 2006 09 19 | 704 | 0.7+ | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.2− | 0.9+ | 2006 09 19 | 704 | 0.8+ | 0.2− | 2006 10 24 | 644 | 0.8− | 1.3− |
| 2002 11 07 | 704 | 0.7− | 0.4+ | 2006 09 19 | 704 | 1.2− | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2002 11 07 | 704 | (0.6+ | 1.6+) | 2006 09 19 | 704 | 0.3+ | 0.8− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | (0.5+ | 1.7+) | 2006 09 19 | 704 | 0.1+ | 0.5+ | | | | |

**(142569)∗ 2002 TA$_{79}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.66436 | | (2000.0) | | | |
| $n$ | 0.23303944 | $\omega$ | 288.70152 | | +0.04412284 | −0.99747804 |
| $a$ | 2.6152694 | $\Omega$ | 158.53880 | | +0.96427773 | +0.02797298 |
| $e$ | 0.2434023 | $i$ | 8.73999 | | +0.26119270 | +0.06523094 |
| $P$ | 4.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.2− | 0.1+ | 2003 01 02 | 704 | 1.3+ | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.1+ |
| 1998 12 15 | 704 | 0.6− | 0.1− | 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.3− |
| 1998 12 15 | 704 | 0.3− | 0.2+ | 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.8− | 1.4+ |
| 1998 12 15 | 704 | 0.5− | 0.9+ | 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.2+ |
| 1998 12 15 | 704 | 0.7− | 0.5+ | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.8+ |
| 2002 09 18 | 699 | 0.1+ | 1.0− | 2004 03 20 | 704 | 1.3+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.4+ |
| 2002 09 18 | 699 | 0.4+ | 0.9+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 704 | 1.1− | 0.3− |
| 2002 09 18 | 699 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 0.3− | 1.0+ | 2006 09 19 | 704 | 0.2− | 0.2+ |
| 2002 09 18 | 699 | 0.1+ | 1.1+ | 2004 03 20 | 704 | 0.6+ | 0.5+ | 2006 09 19 | 704 | 0.1− | 0.2− |
| 2002 10 01 | 704 | 0.5− | 1.0+ | 2004 03 22 | 704 | 0.3− | 1.3+ | 2006 09 19 | 704 | 0.2+ | 0.4+ |
| 2002 10 01 | 704 | 0.3+ | 0.5+ | 2004 03 22 | 704 | 0.5+ | 0.6+ | 2006 09 22 | 704 | (1.5+ | 1.6+) |
| 2002 10 01 | 704 | 0.8− | 0.3+ | 2004 03 22 | 704 | 0.9+ | 0.4+ | 2006 09 22 | 704 | (2.3+ | 0.7+) |
| 2002 10 01 | 704 | 0.4− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 1.1+ | 2006 09 22 | 704 | (1.7+ | 0.5+) |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2004 03 30 | 704 | 0.9+ | 0.1− | 2006 09 22 | 704 | (1.9+ | 2.0+) |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2004 03 30 | 704 | 1.1+ | 0.1+ | 2006 09 26 | 704 | 0.9+ | 1.0− |
| 2002 10 04 | 704 | 0.9− | 0.6+ | 2004 03 30 | 704 | 0.0 | 0.1− | 2006 09 26 | 704 | 1.0+ | 0.6+ |
| 2002 10 04 | 704 | 0.8− | 0.2− | 2004 03 30 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.4− |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2004 03 30 | 704 | 0.8− | 0.9+ | 2006 09 26 | 704 | 0.1+ | 1.0− |
| 2002 10 05 | 683 | 0.3− | 0.3+ | 2004 03 31 | 704 | 1.2+ | 0.8+ | 2006 09 26 | 704 | 0.3+ | 0.4+ |
| 2002 10 05 | 683 | 0.1+ | 0.5+ | 2004 03 31 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 704 | 0.4− | 0.0 |
| 2002 10 05 | 683 | 0.3+ | 0.1+ | 2004 03 31 | 704 | 1.2− | 0.5+ | 2006 09 28 | 704 | 0.9− | 0.8+ |
| 2002 10 09 | 699 | 0.2+ | 0.2+ | 2004 03 31 | 704 | 0.3− | 0.6+ | 2006 09 28 | 704 | 0.3+ | 0.4− |
| 2002 10 09 | 699 | 0.6− | 0.5+ | 2004 04 09 | E12 | 0.8− | 0.8+ | 2006 09 28 | 704 | 0.5− | 0.4+ |
| 2002 10 09 | 699 | 0.4− | 0.3+ | 2004 04 09 | E12 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2002 10 09 | 699 | 0.3− | 0.8+ | 2004 04 09 | E12 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2002 10 29 | 645 | 0.1+ | 0.0 | 2004 04 09 | E12 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.5− |
| 2002 10 29 | 645 | 0.1+ | 0.0 | 2004 04 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.3− | 0.3− |
| 2002 10 30 | 704 | 0.1+ | 0.4+ | 2004 04 14 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 10 30 | 704 | 0.1− | 0.4+ | 2004 04 14 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.5− | 0.8+ |
| 2002 10 30 | 704 | 0.4− | 1.0+ | 2004 04 17 | 699 | 1.3− | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.1+ |
| 2002 10 30 | 704 | 0.6− | 0.1− | 2004 04 17 | 699 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2002 10 30 | 704 | 0.1+ | 0.2+ | 2004 04 17 | 699 | 0.6− | 0.3− | 2006 10 17 | 106 | 1.0+ | 0.4+ |
| 2002 11 05 | 704 | 0.6− | 0.3− | 2004 04 17 | 699 | (1.6− | 0.0 ) | 2006 10 17 | 106 | 0.7+ | 0.7− |
| 2002 11 05 | 704 | 0.0 | 0.5− | 2004 04 21 | 703 | 1.2− | 0.3+ | 2006 10 17 | 106 | 0.8+ | 0.8− |
| 2002 11 05 | 704 | 0.9+ | 0.3− | 2004 04 21 | 703 | (1.8− | 2.0+) | 2006 10 17 | 106 | 0.4+ | 0.2+ |
| 2002 11 05 | 704 | 0.3− | 0.9− | 2004 04 21 | 703 | 0.4+ | 0.9− | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2002 11 05 | 704 | 0.0 | 0.0 | 2004 04 21 | 703 | (1.4+ | 4.1+) | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2002 11 12 | 704 | (2.2− | 1.1+) | 2004 04 23 | 704 | 0.9− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | (2.5− | 1.1+) | 2004 04 23 | 704 | 1.3+ | 0.8+ | 2006 10 19 | 703 | 0.6− | 0.0 |
| 2002 11 12 | 704 | (2.1− | 0.9+) | 2004 04 23 | 704 | 0.5+ | 0.9+ | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2002 11 12 | 704 | (1.5− | 1.0+) | 2004 04 23 | 704 | 0.1+ | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.6− |
| 2002 11 12 | 704 | (2.3− | 0.6+) | 2006 09 12 | 703 | 0.2− | 1.0+ | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2002 11 21 | 644 | 0.2+ | 1.1+ | 2006 09 12 | 703 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 11 21 | 644 | 0.1+ | 1.3+ | 2006 09 12 | 703 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 11 21 | 644 | 0.2− | 1.1+ | 2006 09 16 | 704 | 0.5− | 0.7+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2002 12 07 | 644 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 12 07 | 644 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.6− | 1.0+ | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2002 12 07 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.2− | 1.3+ | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2002 12 18 | 608 | 0.5+ | 0.8− | 2006 09 18 | 703 | 0.1+ | 0.5+ | 2006 11 27 | 703 | 0.8− | 1.0+ |
| 2002 12 18 | 608 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 0.4+ | 1.2− |
| 2002 12 18 | 608 | 0.4+ | 0.5− | 2006 09 18 | 703 | 0.8− | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.8+ |
| 2003 01 02 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.4+ | 1.1− |
| 2003 01 02 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.1− | | | | |
| 2003 01 02 | 704 | 1.3+ | 0.4− | 2006 09 18 | 703 | 0.3+ | 0.3− | | | | |

**(142570)∗ 2002 TG$_{79}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.87855 | | (2000.0) | | | |
| $n$ | 0.24619800 | $\omega$ | 242.08606 | | +0.98717365 | +0.12465829 |
| $a$ | 2.5212333 | $\Omega$ | 110.60881 | | −0.08082970 | +0.92901771 |
| $e$ | 0.1991077 | $i$ | 6.11714 | | −0.13767623 | +0.34840552 |
| $P$ | 4.00 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.4− | 0.5+ | 2002 11 06 | 699 | 1.2− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 1998 10 12 | 699 | 0.4− | 0.3+ | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 1998 10 12 | 699 | (0.1+ | 2.3−) | 2004 02 16 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 1998 12 11 | 699 | 0.5+ | 0.2− | 2004 02 16 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.6+ | 0.4− |
| 1998 12 11 | 699 | 1.7+ | 0.9− | 2005 05 10 | 691 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 1998 12 11 | 699 | 0.8+ | 0.3− | 2005 05 10 | 691 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 2002 10 01 | 704 | 0.9− | 0.1+ | 2005 05 10 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 10 01 | 704 | 0.6− | 0.5− | 2005 05 14 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 10 01 | 704 | 0.1+ | 0.3− | 2005 05 14 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 10 01 | 704 | 0.2− | 0.8+ | 2005 05 14 | 691 | 0.4+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | (0.2− | 3.1+) | 2006 09 29 | 699 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | (0.2+ | 2.1+) | 2006 09 29 | 699 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 1.5+ | 2006 09 29 | 699 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.6− |
| 2002 10 31 | 704 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.7+ | 0.3+ | 2006 10 28 | 703 | 0.6+ | 0.3+ |
| 2002 10 31 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.4− | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 10 28 | 703 | 0.2− | 0.4− |
| 2002 10 31 | 704 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.0 | 0.5− |
| 2002 10 31 | 704 | 0.9− | 0.9+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2002 10 31 | 608 | 1.1+ | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.6− | 2006 11 13 | 703 | 0.6− | 0.1− |
| 2002 10 31 | 608 | 0.9+ | 0.5− | 2006 10 01 | 704 | 0.3+ | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.1− |
| 2002 10 31 | 608 | 1.4+ | 0.7− | 2006 10 01 | 704 | 0.1− | 0.0 | 2006 11 19 | 703 | 1.1− | 0.9+ |
| 2002 11 05 | 704 | 1.0− | 0.6+ | 2006 10 01 | 704 | 0.4+ | 1.0+ | 2006 11 19 | 703 | 1.0− | 1.7+ |
| 2002 11 05 | 704 | 0.9− | 0.1− | 2006 10 01 | 704 | (0.9− | 1.7+) | 2006 11 19 | 703 | 0.3− | 1.3+ |
| 2002 11 05 | 704 | 0.3− | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 19 | 703 | 1.0+ | 1.9+ |
| 2002 11 05 | 704 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.3− |
| 2002 11 06 | 699 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 1.3+ |
| 2002 11 06 | 699 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 1.5− | 0.2− |
| 2002 11 06 | 699 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.3+ | 2006 11 21 | 704 | 1.1− | 0.5− |

**(142571)∗ 2002 TA$_{80}$ = 1998 XJ$_{89}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38020)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.18007 | | (2000.0) | | | |
| $n$ | 0.23187147 | $\omega$ | 302.23410 | | +0.53227257 | −0.84179513 |
| $a$ | 2.6240444 | $\Omega$ | 115.35025 | | +0.80631676 | +0.47177393 |
| $e$ | 0.2046888 | $i$ | 5.70381 | | +0.25795192 | +0.26231720 |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.3− | 0.2− | 2002 11 05 | 704 | 1.0+ | 1.5− | 2006 09 12 | 704 | (2.3− | 0.4+) |
| 1995 01 29 | 691 | 0.2− | 0.0 | 2002 11 05 | 704 | 0.6+ | 0.2− | 2006 09 12 | 704 | 0.1− | 0.8+ |
| 1995 01 29 | 691 | 0.3− | 0.1− | 2002 11 05 | 704 | 0.4+ | 0.1− | 2006 09 12 | 704 | 0.9− | 0.7+ |
| 1998 12 15 | 704 | (2.5+ | 0.1−) | 2002 11 06 | 699 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.7− | 0.2− |
| 1998 12 15 | 704 | 1.1+ | 1.3− | 2002 11 06 | 699 | 0.2− | 0.8+ | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 1998 12 15 | 704 | 1.0+ | 1.1− | 2002 11 06 | 699 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.5− | 0.2− |
| 1998 12 15 | 704 | 0.4+ | 1.7− | 2002 11 06 | 699 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.2− |
| 1998 12 22 | 704 | 1.1+ | 0.4− | 2002 11 06 | 608 | 0.9− | 0.4− | 2006 09 16 | 704 | 0.3+ | 0.2+ |
| 1998 12 22 | 704 | 1.6+ | 1.8+ | 2002 11 06 | 608 | 0.9− | 0.0 | 2006 09 16 | 704 | 0.2+ | 0.0 |
| 1998 12 22 | 704 | 1.1+ | 0.2− | 2002 11 06 | 608 | 1.0− | 0.6− | 2006 09 16 | 704 | 0.4+ | 0.7− |
| 1998 12 22 | 704 | (0.3− | 2.6−) | 2002 11 11 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 704 | 0.7− | 0.1+ |
| 2002 10 01 | 704 | 0.2+ | 0.4+ | 2002 11 11 | 704 | 0.4− | 0.9+ | 2006 09 16 | 704 | 0.4+ | 0.6− |
| 2002 10 01 | 704 | 1.2− | 0.9+ | 2002 11 11 | 704 | 0.3− | 0.7+ | 2006 09 16 | 704 | 0.2+ | 0.7+ |
| 2002 10 01 | 704 | 0.8− | 0.0 | 2002 11 11 | 704 | 0.2− | 0.5+ | 2006 09 16 | 704 | 0.2− | 0.8− |
| 2002 10 04 | 704 | 0.3− | 0.3+ | 2002 11 11 | 704 | 1.3− | 0.1+ | 2006 09 16 | 704 | 1.1+ | 0.4+ |
| 2002 10 04 | 704 | 0.6+ | 1.1+ | 2002 11 11 | 644 | 0.4+ | 0.8+ | 2006 09 19 | 699 | 0.3− | 1.5+ |
| 2002 10 04 | 704 | 1.1− | 1.0+ | 2002 11 11 | 644 | 0.0 | 0.8+ | 2006 09 19 | 699 | (0.2− | 1.6−) |
| 2002 10 04 | 704 | 0.5− | 0.8− | 2002 11 11 | 644 | 0.1+ | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.7− | 0.6+ | 2002 11 30 | 704 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.8+ | 0.4− |
| 2002 10 06 | 608 | 0.1− | 0.7− | 2002 11 30 | 704 | 0.0 | 1.0+ | 2006 09 22 | 704 | (0.3+ | 1.6+) |
| 2002 10 06 | 608 | 0.4− | 1.1− | 2002 11 30 | 704 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.7+ | 0.4+ |
| 2002 10 06 | 608 | 0.2+ | 0.9− | 2002 11 30 | 704 | 0.1+ | 0.1− | 2006 09 22 | 704 | 1.3+ | 0.9+ |
| 2002 10 28 | 608 | 0.6− | 0.2− | 2002 11 30 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.2+ | 0.0 |
| 2002 10 28 | 608 | 0.6− | 0.7− | 2002 12 08 | 608 | 0.8− | 0.6− | 2006 09 26 | 704 | 0.2+ | 0.4− |
| 2002 10 28 | 608 | 0.6− | 0.8− | 2002 12 08 | 608 | 0.6− | 0.8− | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 2002 10 30 | 644 | 0.2− | 0.8+ | 2002 12 08 | 608 | 1.1− | 0.7− | 2006 09 26 | 704 | 0.3+ | 0.7− |
| 2002 10 30 | 644 | 0.2− | 0.9+ | 2004 03 22 | 704 | 0.8+ | 1.2+ | 2006 09 26 | 704 | 0.2− | 0.1− |
| 2002 10 30 | 644 | 0.3− | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.3+ | 1.4− |
| 2002 10 31 | 704 | 0.0 | 0.2+ | 2004 03 22 | 704 | (0.1− | 1.6+) | 2006 10 19 | 703 | 0.3+ | 0.4+ |
| 2002 10 31 | 704 | 0.3− | 0.1− | 2004 04 16 | 691 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.3− | 0.8+ |
| 2002 10 31 | 704 | 0.4+ | 0.4+ | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 1.3+ | 0.7+ |
| 2002 10 31 | 704 | 0.3+ | 0.6+ | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.6+ | 0.9+ | 2004 04 21 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.5− | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2004 04 21 | 691 | 0.0 | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.9+ | 0.1− | 2004 04 21 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2− | 0.2+ |

**(142572)∗ 2002 TG$_{81}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.12679 | | (2000.0) | | | |
| $n$ | 0.22221821 | $\omega$ | 253.25457 | | +0.99278100 | −0.04420341 |
| $a$ | 2.6994977 | $\Omega$ | 109.16980 | | +0.08175715 | +0.92958270 |
| $e$ | 0.0658607 | $i$ | 6.77924 | | −0.08775902 | +0.36595362 |
| $P$ | 4.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 0.8− | 0.6+ | 2004 01 30 | 704 | 0.3− | 0.8+ | 2006 08 23 | 704 | 0.1− | 0.8− |
| 2002 10 01 | 704 | 0.9− | 1.1+ | 2004 01 30 | 704 | 0.7+ | 0.4+ | 2006 08 23 | 704 | 0.3+ | 0.4− |
| 2002 10 01 | 704 | 1.7− | 0.8+ | 2004 01 30 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 704 | 0.6− | 0.1− |
| 2002 10 04 | 704 | 0.8− | 0.9+ | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 08 23 | 704 | 0.9+ | 0.5− |
| 2002 10 04 | 704 | 1.1− | 0.5− | 2004 02 14 | 608 | 0.1− | 1.2+ | 2006 08 23 | 704 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2004 02 14 | 608 | 0.2+ | 1.5+ | 2006 08 28 | 704 | 0.6− | 1.7+ |
| 2002 10 09 | 699 | 0.1+ | 0.7− | 2004 02 14 | 608 | 0.1− | 1.2+ | 2006 08 28 | 704 | 0.8+ | 1.6+ |
| 2002 10 09 | 699 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.9+ | 0.0 | 2006 08 28 | 704 | 0.9− | 0.7+ |
| 2002 10 09 | 699 | 0.5− | 0.0 | 2004 02 16 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 704 | 0.3+ | 1.5+ |
| 2002 10 09 | 699 | 0.3− | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.2− | 2006 08 28 | 704 | 0.3+ | 1.4+ |
| 2002 10 31 | 704 | 0.3+ | 0.4+ | 2004 02 16 | 704 | 0.7+ | 1.5+ | 2006 08 28 | 699 | 0.3+ | 0.1+ |
| 2002 10 31 | 704 | 0.4− | 0.3+ | 2005 05 14 | 691 | 0.3− | 0.6+ | 2006 08 28 | 699 | 2.0+ | 0.7− |
| 2002 10 31 | 704 | 0.1+ | 0.4+ | 2005 05 14 | 691 | 0.0 | 0.6+ | 2006 08 28 | 699 | 0.3− | 0.3+ |
| 2002 10 31 | 704 | 0.1− | 0.1+ | 2005 05 14 | 691 | 0.0 | 0.7+ | 2006 08 28 | 699 | 0.3+ | 0.1+ |
| 2002 10 31 | 704 | 0.4+ | 0.1− | 2005 05 14 | 644 | 0.2− | 0.2+ | 2006 08 31 | 704 | 0.3− | 0.1− |
| 2002 10 31 | 608 | 0.5+ | 1.2+ | 2005 05 14 | 644 | 0.4− | 0.7+ | 2006 08 31 | 704 | 0.5+ | 1.0+ |
| 2002 10 31 | 608 | 0.2+ | 1.2+ | 2005 05 14 | 644 | 0.3− | 0.5+ | 2006 08 31 | 704 | 0.1− | 1.0+ |
| 2002 10 31 | 608 | 0.2+ | 1.0+ | 2005 05 31 | 699 | 1.7+ | 1.0+ | 2006 09 18 | 699 | 0.2− | 0.4− |
| 2002 11 05 | 704 | 0.4+ | 0.3− | 2005 05 31 | 699 | (1.9+ | 3.2+) | 2006 09 18 | 699 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.0 | 0.5+ | 2005 05 31 | 699 | 1.8+ | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.1+ |
| 2002 11 05 | 704 | 0.1− | 0.3− | 2005 05 31 | 699 | 1.8+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.9− |
| 2002 11 05 | 704 | 0.9+ | 0.1+ | 2006 08 15 | 644 | 0.6− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.6− | 0.5+ | 2006 08 15 | 644 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2004 01 22 | 704 | 0.9+ | 0.4+ | 2006 08 15 | 644 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.7− | 0.6− |
| 2004 01 22 | 704 | 0.6− | 0.1+ | 2006 08 19 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 0.7+ | 2006 08 19 | 644 | 0.4− | 0.1+ | | | | |
| 2004 01 30 | 704 | 0.0 | 1.3+ | 2006 08 19 | 644 | 0.4− | 0.2+ | | | | |

**(142573)∗ 2002 TC$_{82}$**

Discovered 2002 Oct. 1 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.05790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22995879 | $\omega$ | 317.69649 | | +0.96584345 | +0.22402725 | |
| $a$ | 2.6385745 | $\Omega$ | 30.10458 | | −0.10604171 | +0.80025507 | |
| $e$ | 0.1867086 | $i$ | 15.04794 | | −0.23643516 | +0.55624060 | |
| $P$ | 4.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 24 | 644 | 0.4− | 0.2+ | 2002 10 30 | 704 | 0.2− | 0.2− | 2006 07 18 | E12 | 0.2+ | 0.1+ | |
| 2002 08 24 | 644 | 0.1− | 0.0 | 2002 10 30 | 704 | 0.1+ | 1.1+ | 2006 07 18 | E12 | 0.0 | 0.6+ | |
| 2002 08 24 | 644 | 0.3− | 0.2+ | 2002 10 30 | 704 | 0.3− | 0.5+ | 2006 07 18 | E12 | 0.3+ | 0.2− | |
| 2002 10 01 | 608 | 0.4− | 0.6− | 2002 10 30 | 704 | (0.6+ | 1.7+) | 2006 07 18 | E12 | 0.4− | 0.1− | |
| 2002 10 01 | 608 | 0.7− | 0.5− | 2002 11 06 | 644 | 0.0 | 0.7+ | 2006 08 13 | E12 | 0.0 | 0.4− | |
| 2002 10 01 | 608 | 0.2− | 0.4− | 2002 11 06 | 644 | 0.4− | 0.8+ | 2006 08 13 | E12 | 0.5− | 0.5− | |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2002 11 06 | 644 | 0.1− | 0.8+ | 2006 08 13 | E12 | 0.6+ | 0.7− | |
| 2002 10 04 | 704 | 0.3− | 0.4+ | 2004 01 30 | 703 | 0.4− | 0.3+ | 2006 08 25 | E12 | 0.7+ | 0.3+ | |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2004 01 30 | 703 | 0.9+ | 0.9+ | 2006 08 25 | E12 | 0.2+ | 0.2− | |
| 2002 10 04 | 704 | 0.6− | 0.5+ | 2004 01 30 | 703 | 0.4+ | 0.1− | 2006 08 25 | E12 | 0.2− | 0.2− | |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2004 01 30 | 703 | 0.5− | 0.4− | 2006 08 25 | E12 | 0.1+ | 0.0 | |
| 2002 10 06 | 704 | 0.0 | 0.0 | 2005 04 01 | 691 | 0.2− | 0.4+ | 2006 10 13 | E12 | 0.2− | 0.3+ | |
| 2002 10 06 | 704 | 0.4− | 0.4+ | 2005 04 01 | 691 | 0.2+ | 0.4+ | 2006 10 13 | E12 | 0.2+ | 0.7+ | |
| 2002 10 06 | 704 | 0.1− | 0.9+ | 2005 04 01 | 691 | 0.1+ | 0.2+ | 2006 10 13 | E12 | 0.8− | 0.1+ | |
| 2002 10 06 | 704 | 0.9− | 0.4+ | 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 10 13 | E12 | 0.1− | 0.1+ | |
| 2002 10 06 | 704 | 0.5+ | 0.9+ | 2005 04 12 | 691 | 0.4+ | 0.6+ | | | | | |
| 2002 10 30 | 704 | (0.5− | 1.8+) | 2005 04 12 | 691 | 0.7+ | 0.1− | | | | | |

**(142574)∗ 2002 TS$_{82}$ = 2003 YF$_{130}$**

Discovered 2002 Oct. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. Minor Planet Center (*MPO* 61414)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.96379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26927122 | $\omega$ | 147.54427 | | −0.99688086 | −0.04106897 | |
| $a$ | 2.3750683 | $\Omega$ | 30.32062 | | +0.00188094 | −0.86605627 | |
| $e$ | 0.0908629 | $i$ | 7.67163 | | +0.07889881 | −0.49825684 | |
| $P$ | 3.66 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.3+ | 0.4− | 2003 12 29 | 704 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.0 | 1.4+ | |
| 1995 11 24 | 691 | 0.0 | 0.2− | 2003 12 29 | 704 | 0.5+ | 0.5+ | 2004 03 23 | 704 | 0.2− | 0.8+ | |
| 1995 11 24 | 691 | 0.1− | 0.5− | 2003 12 29 | 704 | 1.2+ | 0.2− | 2004 03 29 | 703 | 0.1+ | 0.2+ | |
| 1999 12 12 | 704 | 0.8+ | 0.7+ | 2004 01 28 | 703 | 0.5+ | 1.0+ | 2004 03 29 | 703 | 0.6− | 0.1+ | |
| 1999 12 12 | 704 | 0.6+ | 0.8− | 2004 01 28 | 703 | 0.9− | 0.1+ | 2004 03 29 | 703 | 0.6+ | 0.7+ | |
| 1999 12 12 | 704 | 0.5− | 0.9− | 2004 01 28 | 703 | 0.8+ | 0.4− | 2004 03 29 | 703 | 0.7+ | 0.5+ | |
| 2002 10 02 | 704 | 0.2+ | 1.2+ | 2004 01 28 | 703 | 0.2− | 0.2− | 2004 04 20 | 704 | (1.7− | 0.5−) | |
| 2002 10 02 | 704 | 0.9− | 0.4+ | 2004 01 30 | 699 | 0.2− | 0.4+ | 2004 04 20 | 704 | 0.1− | 0.1− | |
| 2002 10 02 | 704 | 0.5− | 1.1+ | 2004 01 30 | 699 | 0.2− | 0.5− | 2004 04 20 | 704 | 0.1− | 0.4+ | |
| 2002 10 02 | 704 | 0.5− | 0.5+ | 2004 01 30 | 699 | 0.7− | 0.5− | 2004 04 20 | 704 | 1.1+ | 0.2− | |
| 2002 10 04 | 704 | 0.5− | 0.4+ | 2004 01 30 | 699 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.1− | 0.2− | |
| 2002 10 04 | 704 | 0.5− | 0.2+ | 2004 01 30 | 704 | 0.6+ | 0.8+ | 2004 04 22 | 704 | (4.3− | 0.2−) | |
| 2002 10 04 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 704 | (1.7+ | 1.0−) | 2004 04 22 | 704 | 1.4+ | 0.9+ | |
| 2002 10 04 | 704 | 0.2− | 0.1+ | 2004 01 30 | 704 | 1.1− | 1.0+ | 2004 04 22 | 704 | (0.1− | 1.7+) | |
| 2002 10 04 | 704 | 0.4+ | 0.6+ | 2004 01 30 | 704 | 1.1+ | 0.8+ | 2004 04 22 | 704 | 0.2− | 0.3+ | |
| 2002 10 10 | 704 | 0.9+ | 0.4− | 2004 01 30 | 704 | 0.2+ | 0.6+ | 2005 07 10 | E12 | 0.5− | 0.6+ | |
| 2002 10 10 | 704 | 0.5+ | 0.7+ | 2004 02 11 | 644 | 0.1+ | 0.2− | 2005 07 10 | E12 | 0.5− | 0.8+ | |
| 2002 10 10 | 704 | 0.4+ | 0.7+ | 2004 02 11 | 644 | 0.2− | 0.1+ | 2005 07 10 | E12 | 0.2− | 0.5− | |
| 2002 10 10 | 704 | 0.1− | 0.4+ | 2004 02 11 | 644 | 0.3+ | 0.0 | 2005 07 10 | E12 | 0.3+ | 0.4+ | |
| 2002 10 11 | 704 | 0.8− | 0.3+ | 2004 02 13 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.6+ | |
| 2002 10 11 | 704 | 1.0− | 1.2+ | 2004 02 13 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.1+ | |
| 2002 10 11 | 704 | 0.6− | 0.8+ | 2004 02 13 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.4+ | |
| 2002 10 11 | 704 | 0.6− | 0.3− | 2004 02 16 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.9− | 0.5− | |
| 2002 10 11 | 704 | 1.2− | 0.3+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.3− | 0.1− | |
| 2002 10 11 | 704 | 0.9+ | 0.4+ | 2004 02 16 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1− | |
| 2002 10 11 | 704 | 1.0− | 0.1− | 2004 02 17 | 608 | 0.2− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.0 | |
| 2002 10 11 | 704 | 0.5− | 1.2+ | 2004 02 17 | 608 | 0.1− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.1− | |
| 2002 10 12 | 704 | 0.3+ | 0.7+ | 2004 02 17 | 608 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.0 | 0.0 | |
| 2002 10 12 | 704 | 0.2− | 0.8+ | 2004 03 09 | 644 | 0.6+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.2− | |
| 2002 10 12 | 704 | (0.4+ | 1.6+) | 2004 03 09 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.1+ | |
| 2002 10 12 | 704 | 0.6+ | 0.1− | 2004 03 09 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.1+ | |
| 2003 12 27 | 704 | 0.1+ | 0.4+ | 2004 03 14 | 704 | 0.1− | 0.6+ | 2006 11 19 | 704 | 1.0+ | 0.5− | |
| 2003 12 27 | 704 | 0.5+ | 0.7+ | 2004 03 14 | 704 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.3+ | |
| 2003 12 27 | 704 | 0.7+ | 0.2+ | 2004 03 14 | 704 | (1.5− | 2.2+) | 2006 11 19 | 704 | 0.5− | 0.9+ | |
| 2003 12 28 | 699 | 0.1+ | 0.3− | 2004 03 14 | 704 | 0.3− | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.3− | |
| 2003 12 28 | 699 | 0.4+ | 0.1+ | 2004 03 14 | 704 | 0.5− | 0.1+ | 2006 12 01 | G96 | 0.8+ | 0.3− | |
| 2003 12 28 | 699 | 0.2− | 0.4− | 2004 03 23 | 704 | 0.1+ | 1.2+ | 2006 12 01 | G96 | 0.5+ | 0.5− | |
| 2003 12 28 | 699 | 0.8+ | 0.6− | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.4+ | 0.4− | |
| 2003 12 29 | 704 | 0.2+ | 0.0 | 2004 03 23 | 704 | 0.2+ | 1.0+ | | | | | |

**(142575)∗ 2002 TP$_{85}$**

Discovered 2002 Oct. 2 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.43979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21495632 | $\omega$ | 244.78585 | | +0.83416832 | −0.54442115 | |
| $a$ | 2.7599586 | $\Omega$ | 147.98482 | | +0.54664989 | +0.79501983 | |
| $e$ | 0.1772620 | $i$ | 9.57035 | | +0.07305551 | +0.26748660 | |
| $P$ | 4.59 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 10 | 691 | 0.1− | 0.1+ | 2002 11 06 | 644 | 0.1+ | 0.3+ | 2004 02 26 | 704 | (0.2+ | 2.1+) | |
| 1997 08 10 | 691 | 0.1− | 0.3+ | 2002 11 06 | 644 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.3+ | |
| 1997 08 10 | 691 | 0.3+ | 1.0− | 2002 11 06 | 644 | 0.3+ | 0.3+ | 2004 02 29 | 691 | 0.3+ | 0.1− | |
| 2002 08 16 | 608 | 0.3− | 0.4+ | 2002 11 12 | 704 | (0.9− | 2.9−) | 2004 02 29 | 691 | 0.1+ | 0.0 | |
| 2002 08 16 | 608 | 0.4− | 0.9+ | 2002 11 12 | 704 | (0.8− | 2.6−) | 2004 02 29 | 691 | 0.1+ | 0.1+ | |
| 2002 08 16 | 608 | 0.2− | 0.1− | 2002 11 12 | 704 | 0.5− | 1.1− | 2004 03 15 | 703 | 1.5− | 0.3+ | |
| 2002 09 22 | 644 | 0.3− | 0.3+ | 2002 11 12 | 704 | (0.1+ | 1.8−) | 2004 03 15 | 704 | 0.8− | 0.9+ | |
| 2002 09 22 | 644 | 0.3− | 0.3+ | 2002 11 22 | 644 | 0.3− | 0.1− | 2004 03 15 | 703 | 0.7− | 0.3− | |
| 2002 09 22 | 644 | 0.2− | 0.3+ | 2002 11 22 | 644 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.4− | 0.9+ | |
| 2002 10 02 | 608 | 0.1− | 0.1− | 2002 11 22 | 644 | 0.0 | 0.2− | 2004 03 15 | 703 | 0.7− | 1.2+ | |
| 2002 10 02 | 608 | 0.2+ | 0.7+ | 2003 01 02 | 704 | 0.3+ | 0.3+ | 2004 03 15 | 704 | (1.8+ | 1.0−) | |
| 2002 10 02 | 608 | 0.7+ | 0.5+ | 2003 01 02 | 704 | 0.1+ | 0.1− | 2004 03 15 | 703 | 0.6− | 0.9+ | |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2003 01 02 | 704 | 0.2− | 0.6+ | 2006 08 12 | 644 | 0.1+ | 0.7+ | |
| 2002 10 04 | 704 | 0.2+ | 0.3− | 2004 02 11 | 291 | 0.6+ | 0.0 | 2006 08 12 | 644 | 0.0 | 0.6+ | |
| 2002 10 04 | 704 | 1.0− | 1.2+ | 2004 02 11 | 291 | 0.3− | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.7+ | |
| 2002 10 04 | 704 | 0.4− | 0.3− | 2004 02 11 | 291 | 0.3− | 0.0 | 2006 08 14 | 644 | 0.1− | 0.6+ | |
| 2002 10 10 | 644 | 0.2− | 0.1− | 2004 02 11 | 644 | 1.0+ | 0.3+ | 2006 08 14 | 644 | 0.1− | 0.8+ | |
| 2002 10 10 | 644 | 0.3− | 0.0 | 2004 02 11 | 644 | 0.7+ | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.8+ | |
| 2002 10 10 | 644 | 0.1− | 0.2− | 2004 02 11 | 644 | 0.7+ | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.4+ | |
| 2002 10 15 | 644 | 0.2− | 0.1− | 2004 02 14 | 608 | 0.5+ | 0.2− | 2006 09 13 | 644 | 0.1− | 0.5+ | |
| 2002 10 15 | 644 | 0.2− | 0.0 | 2004 02 14 | 608 | 0.1+ | 0.3− | 2006 09 13 | 644 | 0.1− | 0.4+ | |
| 2002 10 15 | 644 | 0.2− | 0.1− | 2004 02 14 | 608 | 0.3+ | 0.5− | 2006 09 26 | G96 | 0.3− | 0.3+ | |
| 2002 10 28 | 644 | 0.5+ | 0.8+ | 2004 02 17 | 704 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.5+ | |
| 2002 10 28 | 644 | 0.0 | 0.3− | 2004 02 17 | 704 | 1.0− | 0.5− | 2006 09 26 | G96 | 0.0 | 0.3+ | |
| 2002 10 28 | 644 | 0.6+ | 1.2+ | 2004 02 17 | 704 | 1.1− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.4+ | |
| 2002 10 28 | 644 | 0.2+ | 0.1− | 2004 02 17 | 704 | 0.9− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.6+ | |
| 2002 10 28 | 644 | 0.8+ | 0.6+ | 2004 02 23 | 704 | 0.9+ | 1.4+ | 2006 09 26 | G96 | 0.3− | 0.2+ | |
| 2002 10 28 | 644 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.4+ | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.4+ | |
| 2002 10 30 | 704 | 0.2+ | 0.7− | 2004 02 23 | 704 | 0.6+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3+ | |
| 2002 10 30 | 704 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.1+ | |
| 2002 10 30 | 704 | 0.6+ | 0.6− | 2004 02 23 | 704 | (0.2− | 1.6+) | 2006 10 20 | G96 | 0.1+ | 0.4+ | |
| 2002 10 30 | 704 | 0.2+ | 0.4− | 2004 02 26 | 704 | 0.5+ | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.2+ | |
| 2002 10 30 | 704 | 0.7− | 0.7− | 2004 02 26 | 704 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.3+ | |

**(142576)∗ 2002 TZ$_{85}$**

Discovered 2002 Oct. 2 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.04459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27992800 | $\omega$ | 329.27691 | | −0.01004564 | +0.99926187 | |
| $a$ | 2.3144004 | $\Omega$ | 300.12423 | | −0.90850403 | −0.02461192 | |
| $e$ | 0.1658488 | $i$ | 2.45692 | | −0.41775533 | +0.02949526 | |
| $P$ | 3.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.3− | 0.5− | 2002 10 12 | 704 | (1.3+ | 1.7−) | 2005 06 04 | 704 | 0.6− | 0.1− |
| 1997 01 09 | 691 | 0.0 | 0.6− | 2002 10 12 | 704 | (1.5+ | 1.3−) | 2005 06 04 | 704 | 0.1+ | 0.3+ |
| 1997 01 09 | 691 | 0.1− | 0.4− | 2002 10 30 | 644 | 0.1+ | 0.5+ | 2005 06 04 | 704 | 0.4+ | 0.0 |
| 2001 03 18 | 704 | 0.5+ | 0.5− | 2002 10 30 | 644 | 0.1+ | 0.7+ | 2005 11 25 | G96 | 0.4− | 0.2+ |
| 2001 03 18 | 704 | 0.1+ | 1.0+ | 2002 10 30 | 644 | 0.2+ | 0.7+ | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2001 03 18 | 704 | (0.2+ | 1.5+) | 2002 11 02 | 608 | 1.1− | 0.9− | 2005 11 25 | G96 | 0.1+ | 0.0 |
| 2001 03 18 | 704 | 0.7+ | 1.2+ | 2002 11 02 | 608 | 0.6− | 1.2− | 2005 11 25 | G96 | 0.3− | 0.2− |
| 2001 03 18 | 704 | 1.5+ | 0.9+ | 2002 11 02 | 608 | 0.8− | 0.7− | 2006 09 17 | 291 | 0.5− | 0.3+ |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2003 12 19 | 691 | 0.3+ | 0.2− | 2006 09 17 | 291 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.8+ | 0.2+ | 2003 12 19 | 691 | 0.1− | 0.1− | 2006 09 17 | 291 | 0.7− | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2002 09 06 | 704 | 1.0− | 0.1− | 2003 12 21 | 291 | 0.4− | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.5− |
| 2002 09 28 | 608 | (2.1− | 0.2−) | 2003 12 21 | 291 | 0.6− | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.2− |
| 2002 09 28 | 608 | (2.7− | 0.2+) | 2003 12 21 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2002 09 28 | 608 | (2.3− | 0.0 ) | 2003 12 21 | 291 | 0.5− | 0.6+ | 2006 11 15 | 703 | 0.4+ | 0.9+ |
| 2002 10 02 | 599 | 0.0 | 0.3− | 2003 12 21 | 691 | 0.3+ | 0.1− | 2006 11 15 | 703 | 1.0+ | 0.0 |
| 2002 10 02 | 599 | 0.1− | 0.2+ | 2003 12 21 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | (0.5+ | 1.7−) |
| 2002 10 02 | 599 | 0.1− | 0.2+ | 2004 01 15 | 691 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 1.3+ |
| 2002 10 02 | 599 | 0.5+ | 0.1+ | 2004 01 15 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.5+ |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2004 01 15 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 2002 10 04 | 704 | 0.2+ | 0.0 | 2004 01 21 | 704 | 0.5+ | 1.2+ | 2006 11 19 | 704 | 1.2+ | 0.8+ |
| 2002 10 04 | 704 | 0.0 | 0.3+ | 2004 01 21 | 704 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2004 01 21 | 704 | 0.4+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.2+ | 0.6+ | 2004 01 24 | 704 | 0.8− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 10 07 | 699 | 0.2+ | 0.0 | 2004 01 24 | 704 | 0.2− | 0.2+ | 2006 11 22 | 691 | 1.2+ | 0.6− |
| 2002 10 07 | 699 | (1.8− | 1.2+) | 2004 01 24 | 704 | 0.1+ | 0.3− | 2006 11 27 | 704 | 1.8+ | 0.3− |
| 2002 10 07 | 699 | 0.1+ | 0.3+ | 2004 01 24 | 704 | (1.6− | 0.1−) | 2006 11 27 | 704 | 0.7− | 0.3+ |
| 2002 10 07 | 699 | 0.4+ | 0.7+ | 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 11 27 | 704 | 0.8+ | 0.3− |
| 2002 10 12 | 704 | (1.5+ | 1.8−) | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 11 27 | 704 | 1.4− | 0.6− |
| 2002 10 12 | 704 | (1.5+ | 2.2−) | 2004 01 27 | 691 | 0.1− | 0.2+ | | | | |

**(142577)∗ 2002 TC$_{86}$**

Discovered 2002 Oct. 2 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.34912 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23826504 | $\omega$ | 37.38302 | | +0.89213037 | +0.45031876 | |
| $a$ | 2.5768897 | $\Omega$ | 295.81554 | | −0.42362367 | +0.80592386 | |
| $e$ | 0.1544299 | $i$ | 2.30993 | | −0.15699169 | +0.38431726 | |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 1.5+ | 0.4+ | 2002 11 02 | 608 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.8+ | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2002 11 02 | 608 | 0.3− | 0.9− | 2006 08 28 | 703 | 0.0 | 0.4+ |
| 2002 09 06 | 704 | 0.1− | 0.3− | 2003 12 18 | 291 | 0.6− | 0.5+ | 2006 08 28 | 703 | 1.2− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2003 12 18 | 291 | 0.9− | 0.5+ | 2006 08 30 | 704 | 0.5− | 0.0 |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2003 12 18 | 291 | (1.9− | 0.0 ) | 2006 08 30 | 704 | 0.1+ | 1.2− |
| 2002 09 28 | 608 | (1.7− | 0.2−) | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.3− | 0.1+ |
| 2002 09 28 | 608 | (2.5− | 0.7−) | 2003 12 29 | 691 | 0.0 | 0.5− | 2006 08 30 | 704 | 0.3− | 0.2+ |
| 2002 09 28 | 608 | (2.4− | 0.5−) | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 09 12 | 703 | 1.1− | 0.1+ |
| 2002 10 02 | 599 | 0.2− | 0.6+ | 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.7+ | 1.2+ |
| 2002 10 02 | 599 | 1.1− | 0.3+ | 2004 01 19 | 691 | 0.4+ | 0.2− | 2006 09 12 | 703 | 0.5− | 0.3+ |
| 2002 10 02 | 599 | 0.0 | 0.4− | 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 09 12 | 703 | 1.4− | 0.5+ |
| 2002 10 04 | 704 | 0.3− | 0.1− | 2004 01 28 | 691 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.4− | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.3− |
| 2002 10 04 | 704 | 0.3+ | 0.1− | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 1.1+ | 0.8+ |
| 2002 10 04 | 644 | 0.3− | 0.2+ | 2004 02 11 | 691 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.2− |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.0 | 0.8+ |
| 2002 10 04 | 644 | 0.2− | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.8+ | 0.4+ |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2004 02 13 | 291 | 0.0 | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2004 02 13 | 291 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.4+ |
| 2002 10 05 | 644 | 0.1− | 0.1− | 2004 02 13 | 291 | 1.1+ | 1.0+ | 2006 09 20 | 704 | 0.4+ | 0.0 |
| 2002 10 05 | 644 | 0.0 | 0.0 | 2005 03 17 | G96 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.8+ |
| 2002 10 05 | 704 | (1.7− | 1.3−) | 2005 03 17 | G96 | 0.7− | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.5+ |
| 2002 10 05 | 704 | 0.3− | 1.4+ | 2005 03 17 | G96 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.7+ |
| 2002 10 05 | 704 | (2.0+ | 2.2+) | 2005 03 17 | G96 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.4− |
| 2002 10 05 | 644 | 0.1− | 0.1+ | 2005 04 15 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 1.2− | 0.6+ |
| 2002 10 05 | 704 | 0.9+ | 0.7− | 2005 04 15 | 691 | 0.5+ | 0.5+ | 2006 09 25 | 699 | 0.2+ | 1.0+ |
| 2002 10 06 | 644 | 0.5− | 0.0 | 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.6− |
| 2002 10 06 | 644 | 0.4− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.6− | 1.3− |
| 2002 10 06 | 644 | 0.3− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.5− |
| 2002 10 07 | 699 | 0.2+ | 0.1+ | 2006 08 19 | 691 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.9− |
| 2002 10 07 | 699 | 0.6+ | 0.3− | 2006 08 21 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2002 10 07 | 699 | 0.3+ | 0.2− | 2006 08 21 | 704 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 10 07 | 699 | (0.4− | 1.9+) | 2006 08 21 | 704 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2002 10 12 | 704 | 0.1+ | 0.6+ | 2006 08 27 | 699 | 0.9− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.1− | 2006 08 27 | 699 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.3+ | 1.0− |
| 2002 10 12 | 704 | 0.3+ | 0.1+ | 2006 08 27 | 699 | (1.7− | 0.6+) | 2006 11 14 | G96 | 0.3+ | 1.0− |
| 2002 10 12 | 704 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.3+ |
| 2002 11 02 | 608 | 0.1− | 0.6− | 2006 08 28 | 703 | 0.6− | 0.4− | | | | |

**(142578)∗ 2002 TB$_{88}$ = 2004 ED$_{53}$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69398)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.10450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24001111 | $\omega$ | 56.14021 | | +0.27397783 | −0.95952916 | |
| $a$ | 2.5643767 | $\Omega$ | 18.29615 | | +0.79959536 | +0.18964338 | |
| $e$ | 0.1658171 | $i$ | 11.97116 | | +0.53440005 | +0.20818066 | |
| $P$ | 4.11 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.2− | 1.1+ |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.3− | 1.0+ |
| 2000 04 05 | 704 | 0.9+ | 0.7+ | 2002 11 22 | 644 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.1+ |
| 2000 04 05 | 704 | 0.4− | 0.1+ | 2002 11 22 | 644 | 0.3+ | 0.0 | 2006 09 30 | 704 | (1.1− | 2.6+) |
| 2000 04 05 | 704 | 0.6− | 0.5+ | 2002 11 22 | 644 | 0.2+ | 0.0 | 2006 09 30 | 704 | (0.3− | 2.9+) |
| 2000 04 05 | 704 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 1.2+ | 0.1− | 2006 09 30 | 704 | 0.6+ | 1.2+ |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.7− | 0.4− | 2006 09 30 | 704 | 0.7− | 1.1+ |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.8+ |
| 2002 10 03 | 704 | 0.8+ | 0.1+ | 2004 03 18 | 691 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.2+ | 0.2+ | 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.0 | 0.9+ | 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.5− | 0.4+ | 2004 03 20 | 704 | (2.7+ | 2.6+) | 2006 10 02 | G96 | 0.4− | 0.3+ |
| 2002 10 04 | 704 | 1.2+ | 0.4− | 2004 03 20 | 704 | 1.0+ | 0.5+ | 2006 10 21 | G96 | 0.4+ | 0.2+ |
| 2002 10 07 | 644 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.9+ | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 10 07 | 644 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2002 10 07 | 644 | 0.1− | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2002 10 08 | 291 | 0.0 | 0.2− | 2006 09 19 | 703 | 1.3− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2002 10 08 | 291 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.9− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.7− |
| 2002 10 08 | 291 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2002 10 11 | 704 | 0.4+ | 0.6− | 2006 09 28 | 691 | 0.5− | 0.4+ | 2006 11 11 | G96 | 0.5− | 0.1− |
| 2002 10 11 | 704 | 0.0 | 0.5− | 2006 09 28 | 691 | 0.4− | 0.4+ | | | | |
| 2002 10 11 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | (0.8− | 2.2+) | | | | |

**(142579)∗ 2002 TK$_{88}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.95146 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24035807 | $\omega$ | 349.47862 | | −0.08716120 | +0.99170953 | |
| $a$ | 2.5619083 | $\Omega$ | 275.47393 | | −0.90696256 | −0.11820452 | |
| $e$ | 0.2849169 | $i$ | 5.44283 | | −0.41209446 | +0.05039736 | |
| $P$ | 4.10 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.6− | 0.4− | 2002 10 31 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 0.3+ | 0.3+ |
| 2001 03 03 | 704 | 0.4− | 0.9+ | 2002 10 31 | 644 | 0.6− | 0.4+ | 2006 09 19 | 699 | 1.4+ | 0.4+ |
| 2001 03 03 | 704 | 1.2− | 0.8+ | 2002 10 31 | 644 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 0.3+ | 0.1− |
| 2001 03 03 | 704 | 0.0 | 0.5+ | 2002 10 31 | 644 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.5+ |
| 2001 03 19 | 699 | 0.1− | 0.5+ | 2002 10 31 | 644 | 0.5+ | 0.8+ | 2006 09 27 | 703 | 0.2+ | 0.8− |
| 2001 03 19 | 699 | 1.2+ | 0.8− | 2005 03 03 | G92 | 0.4− | 0.1+ | 2006 09 27 | 703 | (0.6+ | 2.6−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.0 | 0.2+ | 2005 03 03 | G92 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.6− | 0.7− |
| 2001 03 19 | 699 | 0.4+ | 0.4+ | 2005 03 03 | G92 | 0.3+ | 0.2− | 2006 09 27 | 703 | (0.9+ | 2.3+) |
| 2001 03 26 | 704 | 0.9+ | 0.1− | 2005 03 04 | 703 | (2.3− | 1.4+) | 2006 09 30 | 683 | 0.2+ | 0.8− |
| 2001 03 26 | 704 | 1.2+ | 0.7+ | 2005 03 04 | 703 | 0.3+ | 0.8− | 2006 09 30 | 683 | 0.8+ | 0.0 |
| 2001 03 26 | 704 | 0.3+ | 1.0+ | 2005 03 04 | 703 | 0.5− | 0.8− | 2006 09 30 | 683 | 0.5− | 1.2− |
| 2002 10 03 | 644 | 0.2+ | 0.2+ | 2005 03 04 | 703 | (0.8− | 1.6−) | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2002 10 03 | 644 | 0.6+ | 0.4+ | 2005 03 09 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2002 10 03 | 644 | 0.8+ | 0.1+ | 2005 03 09 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2002 10 04 | 704 | 0.5+ | 0.3− | 2005 03 09 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.4+ | 0.2+ | 2005 03 10 | 703 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.7+ | 0.7+ | 2005 03 10 | 703 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 1.0− | 0.4+ | 2005 03 10 | 703 | 0.7− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2005 03 10 | 703 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.4+ | 1.0− |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2005 03 17 | 703 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.3− | 0.4+ |
| 2002 10 10 | 704 | 0.9− | 0.5− | 2005 03 17 | 703 | 0.1+ | 0.8+ | 2006 10 17 | 703 | (0.0 | 2.4−) |
| 2002 10 10 | 704 | 0.7− | 0.5+ | 2005 03 17 | 703 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 1.2− | 0.0 | 2005 03 17 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2005 04 04 | 703 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2002 10 11 | 704 | 0.2− | 0.5+ | 2005 04 04 | 703 | 0.4+ | 0.8− | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 0.2+ | 0.3− | 2005 04 04 | 703 | 0.4+ | 0.4− | 2006 10 23 | G96 | 0.4− | 0.2+ |
| 2002 10 12 | 704 | 0.2− | 1.4− | 2005 04 04 | 703 | 0.9− | 0.5− | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2002 10 12 | 704 | 0.0 | 1.0− | 2006 08 29 | 699 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2002 10 12 | 704 | 0.5+ | 1.4− | 2006 08 29 | 699 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2+ |
| 2002 10 12 | 704 | 0.2+ | 1.0− | 2006 08 29 | 699 | 0.1− | 0.5+ | | | | |
| 2002 10 31 | 644 | 0.6− | 0.5+ | 2006 08 29 | 699 | 0.4− | 0.3+ | | | | |

**(142580)∗ 2002 TM$_{89}$ = 1998 XO$_{95}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Id. A. Doppler (*MPO* 38024)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.74025 | | (2000.0) | | | |
| $n$ | 0.22009634 | $\omega$ | 201.19163 | | +0.19141993 | −0.97399155 |
| $a$ | 2.7168198 | $\Omega$ | 237.95656 | | +0.91983244 | +0.22111415 |
| $e$ | 0.1580651 | $i$ | 8.22322 | | +0.34244224 | −0.04948739 |
| $P$ | 4.48 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 1.0− | 0.2− | 2002 10 31 | 644 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 0.3+ | 0.6− |
| 1998 12 15 | 704 | 0.7+ | 1.1− | 2002 10 31 | 699 | 0.7+ | 0.0 | 2003 01 04 | 704 | 0.4+ | 0.1− |
| 1998 12 15 | 704 | (2.4+ | 1.7−) | 2002 10 31 | 644 | 0.3+ | 0.2+ | 2003 01 04 | 704 | 0.4− | 0.7+ |
| 1998 12 15 | 704 | 0.3− | 0.8+ | 2002 10 31 | 699 | 1.7+ | 1.0+ | 2004 02 17 | 703 | 0.4+ | 0.8+ |
| 1998 12 22 | 704 | 0.3− | 0.2− | 2002 11 03 | 704 | 0.1+ | 0.6+ | 2004 02 17 | 703 | 0.0 | 0.1− |
| 1998 12 22 | 704 | 1.0+ | 0.3− | 2002 11 03 | 704 | 0.1− | 0.6+ | 2004 02 17 | 703 | 0.8+ | 1.0+ |
| 1998 12 22 | 704 | 1.6+ | 0.2− | 2002 11 03 | 704 | 0.5− | 0.1− | 2004 02 17 | 703 | 0.5− | 0.3+ |
| 1998 12 22 | 704 | 0.2− | 1.2− | 2002 11 03 | 704 | 0.9+ | 0.2+ | 2004 03 14 | 644 | 0.0 | 0.8+ |
| 2002 09 21 | 644 | 0.1− | 0.1+ | 2002 11 08 | 704 | 1.0− | 0.0 | 2004 03 14 | 644 | 0.4+ | 1.0+ |
| 2002 09 21 | 644 | 0.0 | 0.1+ | 2002 11 08 | 704 | 0.3− | 0.4− | 2004 03 14 | 644 | 0.3+ | 0.8+ |
| 2002 09 21 | 644 | 0.0 | 0.0 | 2002 11 08 | 704 | 0.6− | 0.1+ | 2004 03 27 | 691 | 0.2+ | 0.5+ |
| 2002 10 03 | 644 | 0.2− | 0.1+ | 2002 11 12 | 644 | 0.3+ | 0.3+ | 2004 03 27 | 691 | 0.2+ | 0.4+ |
| 2002 10 03 | 644 | 0.3+ | 0.0 | 2002 11 12 | 704 | 0.6− | 0.0 | 2004 03 27 | 691 | 0.1+ | 0.5+ |
| 2002 10 03 | 644 | 0.1+ | 0.1+ | 2002 11 12 | 644 | 0.0 | 0.0 | 2005 06 16 | G96 | 0.4− | 0.7+ |
| 2002 10 04 | 704 | 0.2+ | 0.7+ | 2002 11 12 | 704 | 0.2+ | 0.5− | 2005 06 16 | G96 | 0.3− | 0.7+ |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2002 11 12 | 644 | 0.1+ | 0.1− | 2005 06 16 | G96 | 0.1− | 1.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2002 11 12 | 704 | 0.5− | 0.7− | 2005 06 16 | G96 | 0.4− | 0.8+ |
| 2002 10 04 | 704 | 1.2− | 0.2− | 2002 11 12 | 704 | (0.5− | 2.1−) | 2006 08 23 | 644 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.8− | 0.8− | 2002 11 22 | 644 | 0.1− | 0.9− | 2006 08 23 | 644 | 0.4− | 0.0 |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2002 11 22 | 644 | 0.2+ | 0.7− | 2006 08 23 | 644 | 0.6− | 0.4− |
| 2002 10 09 | 704 | 0.8− | 0.5+ | 2002 11 22 | 644 | 0.0 | 0.6− | 2006 08 27 | 699 | 0.6+ | 0.1− |
| 2002 10 09 | 704 | 1.3− | 0.8+ | 2002 12 01 | 704 | 0.2− | 0.7+ | 2006 08 27 | 699 | 0.1+ | 1.0− |
| 2002 10 09 | 704 | 1.1− | 0.6+ | 2002 12 01 | 704 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.1− | 0.7+ |
| 2002 10 09 | 704 | 1.4− | 0.6+ | 2002 12 01 | 704 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.6+ | 0.3− |
| 2002 10 12 | 704 | 1.2− | 0.3− | 2002 12 01 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 703 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.2− | 0.3+ | 2002 12 01 | 704 | 0.3− | 1.7+ | 2006 09 20 | 703 | 0.6+ | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.6+ | 2002 12 06 | 704 | 0.6+ | 0.5− | 2006 09 20 | 703 | (2.1− | 1.8−) |
| 2002 10 12 | 704 | 0.2− | 0.1+ | 2002 12 06 | 704 | 0.5− | 0.4− | 2006 09 20 | 703 | 1.4− | 1.5− |
| 2002 10 12 | 704 | 0.8− | 0.4+ | 2002 12 06 | 704 | 0.2− | 0.6− | 2006 09 23 | 691 | 0.8+ | 0.8+ |
| 2002 10 25 | 644 | 0.1+ | 0.9+ | 2002 12 11 | 704 | 0.5− | 0.4+ | 2006 09 23 | 691 | 0.8+ | 0.1+ |
| 2002 10 25 | 644 | 0.5+ | 1.0+ | 2002 12 11 | 704 | 0.3− | 0.6− | 2006 09 23 | 691 | 0.4+ | 0.5+ |
| 2002 10 25 | 644 | 1.1+ | 1.4+ | 2002 12 11 | 704 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2002 10 31 | 699 | (2.6+ | 0.6−) | 2002 12 11 | 704 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.4− | 0.2− |
| 2002 10 31 | 644 | 0.1− | 0.1+ | 2002 12 11 | 704 | 0.5− | 0.8− | 2006 10 01 | 691 | 0.4− | 0.0 |
| 2002 10 31 | 699 | 0.1+ | 0.5+ | 2003 01 04 | 704 | 1.3+ | 0.4− | | | | |

**(142581)∗ 2002 TH$_{90}$ = 2004 CD$_{76}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61417)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.96238 | | (2000.0) | | | |
| $n$ | 0.21153828 | $\omega$ | 128.82464 | | +0.77981120 | −0.62332661 |
| $a$ | 2.7896095 | $\Omega$ | 269.81208 | | +0.55490247 | +0.73111316 |
| $e$ | 0.0737197 | $i$ | 3.32228 | | +0.28978913 | +0.27737607 |
| $P$ | 4.66 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.4− | 0.7− | 2002 11 12 | 704 | 1.1− | 0.2− | 2004 02 11 | 644 | 0.1+ | 0.6+ |
| 2000 04 05 | 699 | 0.1− | 1.4+ | 2002 11 12 | 704 | 0.5− | 1.3+ | 2004 02 11 | 699 | (1.6+ | 1.0+) |
| 2000 04 05 | 699 | 1.1+ | 1.3+ | 2002 11 22 | 644 | 0.5− | 0.5+ | 2004 02 11 | 691 | 0.2+ | 0.1+ |
| 2000 04 05 | 699 | 0.3+ | 1.1+ | 2002 11 22 | 644 | 0.3− | 0.5+ | 2004 02 17 | 704 | 1.0+ | 0.8+ |
| 2002 10 03 | 644 | 0.0 | 0.4+ | 2002 11 22 | 644 | 0.2− | 0.9+ | 2004 02 17 | 704 | 0.1+ | 1.0+ |
| 2002 10 03 | 644 | 0.2+ | 0.3+ | 2003 12 25 | 645 | 0.1− | 0.2− | 2004 02 17 | 704 | 0.4+ | 1.1+ |
| 2002 10 03 | 644 | 0.1+ | 0.2+ | 2003 12 25 | 645 | 0.2− | 0.1− | 2005 05 04 | 644 | 0.2+ | 0.6+ |
| 2002 10 04 | 704 | 0.7+ | 0.9+ | 2004 01 31 | 691 | 0.3+ | 0.2+ | 2005 05 04 | 644 | 0.5+ | 0.4+ |
| 2002 10 04 | 704 | 0.1− | 1.3+ | 2004 01 31 | 691 | 0.3+ | 0.1+ | 2005 05 04 | 644 | 0.5+ | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 1.3+ | 2004 01 31 | 691 | 0.2+ | 0.2+ | 2006 07 25 | 644 | 0.1− | 0.7+ |
| 2002 10 04 | 704 | 0.5+ | 0.2+ | 2004 02 11 | 703 | 0.6− | 0.1− | 2006 07 25 | 644 | 0.3− | 0.4+ |
| 2002 10 09 | 704 | 1.1+ | 0.5− | 2004 02 11 | 703 | 0.3− | 0.1− | 2006 07 25 | 644 | 0.1− | 0.6+ |
| 2002 10 09 | 704 | 1.3+ | 0.1+ | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 08 14 | E12 | 0.4− | 0.0 |
| 2002 10 09 | 704 | 0.1+ | 0.5− | 2004 02 11 | 644 | 0.2+ | 0.8+ | 2006 08 14 | E12 | 0.3− | 0.3+ |
| 2002 10 12 | 704 | 0.0 | 0.1+ | 2004 02 11 | 699 | 0.6+ | 0.3+ | 2006 08 14 | E12 | 0.2+ | 0.3− |
| 2002 10 12 | 704 | 0.1− | 0.1− | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 08 14 | E12 | 0.1− | 0.2− |
| 2002 10 12 | 704 | 0.2− | 0.9− | 2004 02 11 | 703 | 0.6− | 0.6− | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 2002 10 12 | 704 | 0.8− | 0.6− | 2004 02 11 | 699 | (0.2− | 1.6+) | 2006 08 18 | 644 | 0.1+ | 0.4+ |
| 2002 11 05 | 699 | 0.8− | 0.6+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.6+ |
| 2002 11 05 | 699 | 0.5+ | 0.2+ | 2004 02 11 | 703 | 0.7− | 0.0 | 2006 10 22 | G96 | 0.6− | 0.2− |
| 2002 11 05 | 699 | 1.1− | 0.9− | 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2002 11 05 | 699 | 0.2− | 0.3+ | 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | 0.1− | 0.2+ | 2004 02 11 | 699 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 11 12 | 704 | (1.8+ | 1.2+) | 2004 02 11 | 644 | 0.1− | 0.3+ | | | | |

**(142582)∗ 2002 TE$_{95}$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.56090 | | (2000.0) | | | |
| $n$ | 0.22469241 | $\omega$ | 67.73802 | | +0.42680236 | −0.90434279 |
| $a$ | 2.6796441 | $\Omega$ | 356.99501 | | +0.81530281 | +0.38571903 |
| $e$ | 0.0236234 | $i$ | 2.14931 | | +0.39130687 | +0.18271549 |
| $P$ | 4.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.2+ | 0.2− | 2004 01 16 | 644 | 0.5+ | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.7+ |
| 2000 03 03 | 704 | 0.4− | 0.3− | 2004 01 16 | 644 | 0.5+ | 0.3+ | 2006 08 16 | 644 | 0.4− | 0.8+ |
| 2000 03 03 | 704 | 0.3+ | 0.1− | 2004 01 22 | 704 | 0.4− | 0.5− | 2006 08 16 | 644 | 0.4− | 0.1+ |
| 2000 03 03 | 704 | 0.7+ | 0.4+ | 2004 01 22 | 704 | 0.2+ | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 2000 03 03 | 704 | 0.0 | 0.8+ | 2004 01 22 | 704 | 0.1+ | 0.7− | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 0.4− | 0.5+ | 2004 01 22 | 704 | 0.4− | 0.5− | 2006 08 19 | 691 | 0.1− | 0.2+ |
| 2000 03 11 | 704 | 1.1+ | 1.6− | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.2− | 0.6+ | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.5+ |
| 2000 03 11 | 704 | 0.1− | 1.3+ | 2004 01 28 | 691 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.4− | 0.2+ |
| 2002 10 03 | 704 | 0.8+ | 0.5− | 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 08 27 | A79 | 0.5+ | 1.3+ |
| 2002 10 03 | 704 | 0.2− | 0.4− | 2004 01 30 | 704 | 0.2− | 0.7+ | 2006 08 28 | A79 | (0.3+ | 2.2+) |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2004 01 30 | 704 | 0.4− | 1.0+ | 2006 08 28 | 703 | 0.4− | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.5+ | 1.0+ | 2004 02 12 | 291 | 0.0 | 0.3+ | 2006 08 28 | 703 | (1.4+ | 2.3+) |
| 2002 10 03 | 704 | 0.0 | 0.6− | 2004 02 12 | 291 | 0.1+ | 0.4+ | 2006 08 28 | 703 | (0.6+ | 1.7+) |
| 2002 10 04 | 644 | 0.8− | 0.0 | 2004 02 12 | 291 | 0.2+ | 0.2+ | 2006 08 28 | 703 | (1.9− | 0.9+) |
| 2002 10 04 | 644 | 0.9− | 0.1− | 2004 02 14 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2002 10 04 | 644 | 0.5− | 0.1− | 2004 02 14 | 691 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.5+ | 2004 02 14 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.7− | 0.3+ | 2004 02 23 | 704 | 0.5− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.8− | 2004 02 23 | 704 | 1.2+ | 0.5+ | 2006 10 27 | G96 | 0.4− | 0.5− |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 02 23 | 704 | 0.7− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2002 10 28 | 291 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.5− |
| 2002 10 28 | 291 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.7− |
| 2002 10 28 | 291 | 0.3+ | 0.3− | 2005 05 19 | 644 | 0.1+ | 0.3+ | | | | |
| 2004 01 16 | 644 | 0.4+ | 0.6+ | 2005 05 19 | 644 | 0.4− | 0.3+ | | | | |

**(142583)∗ 2002 TE$_{96}$ = 1996 JG$_{13}$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41062)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.46783 | | (2000.0) | | +0.80759715 | −0.58561280 |
| $n$ | 0.23717498 | $\omega$ | 300.42521 | | +0.56221976 | +0.72890691 |
| $a$ | 2.5847793 | $\Omega$ | 95.50834 | | +0.17803313 | +0.35461580 |
| $e$ | 0.2827203 | $i$ | 4.00970 | | | |
| $P$ | 4.16 | $H$ | 15.7 | $G$ 0.15 | | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 17 | 691 | 0.2+ | 0.1− | 2002 11 14 | 704 | 1.4+ | 0.9+ | 2006 09 16 | 703 | 0.4+ | 0.0 |
| 1991 02 17 | 691 | 0.3− | 0.4+ | 2002 12 05 | 704 | 0.5− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.5+ |
| 1991 02 17 | 691 | 0.4+ | 1.0+ | 2002 12 05 | 704 | 0.7− | 0.3+ | 2006 09 16 | 703 | 0.3+ | 0.1+ |
| 1991 02 20 | 691 | 0.2− | 0.1− | 2002 12 05 | 704 | 0.5− | 0.3− | 2006 09 19 | 704 | 0.7− | 0.2− |
| 1991 02 20 | 691 | 0.3− | 0.3− | 2002 12 05 | 704 | 0.2− | 0.5+ | 2006 09 19 | 704 | 0.0 | 0.4− |
| 1991 02 20 | 691 | 0.2− | 0.1− | 2002 12 10 | 704 | 0.4+ | 0.6+ | 2006 09 19 | 704 | 1.4− | 0.2− |
| 1991 02 21 | 691 | 0.2− | 0.0 | 2002 12 10 | 704 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.4− | 0.2− |
| 1991 02 21 | 691 | 0.3− | 0.2+ | 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.5− | 0.8+ |
| 1991 02 21 | 691 | 0.2− | 0.2− | 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 1991 03 08 | 691 | 0.1+ | 0.2− | 2002 12 31 | 704 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.8− | 0.4+ |
| 1991 03 08 | 691 | 0.6− | 0.2+ | 2002 12 31 | 704 | 0.1+ | 0.7+ | 2006 11 17 | 704 | 0.8+ | 0.5+ |
| 1991 03 08 | 691 | 0.2+ | 0.6− | 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.4− | 0.9+ |
| 1996 05 11 | 691 | 0.6− | 0.1+ | 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.8+ |
| 1996 05 11 | 691 | 0.6− | 0.4+ | 2002 12 31 | 704 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 1996 05 15 | 691 | 0.6+ | 0.6+ | 2002 12 31 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 1996 05 15 | 691 | 1.1+ | 0.7+ | 2002 12 31 | 704 | 0.6− | 0.3− | 2006 11 17 | 704 | 0.3− | 0.2+ |
| 1996 05 15 | 691 | 1.0+ | 0.9+ | 2003 01 04 | 704 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 1999 01 19 | 704 | 0.5+ | 1.4+ | 2003 01 04 | 704 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.9+ | 1.1+ |
| 1999 01 19 | 704 | 0.7− | 0.4− | 2003 01 04 | 704 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.0 |
| 1999 01 19 | 704 | 0.2+ | 1.0+ | 2003 01 04 | 704 | 0.2− | 0.1+ | 2006 11 20 | 704 | 1.0+ | 0.5− |
| 1999 01 19 | 704 | (4.6− | 0.1+) | 2003 01 04 | 704 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.2+ | 1.0− |
| 1999 01 23 | 691 | 0.6+ | 1.0− | 2003 01 08 | 704 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.2− |
| 1999 01 23 | 691 | 0.2+ | 0.7− | 2003 01 08 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.1− |
| 1999 01 23 | 691 | 0.4+ | 0.7− | 2003 01 08 | 704 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.1− |
| 2002 10 03 | 704 | 0.3+ | 1.0+ | 2003 01 08 | 704 | 0.4+ | 0.0 | 2006 11 25 | 704 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.5+ | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.1+ | 2006 11 25 | 704 | 0.8+ | 0.3− |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2003 02 03 | 704 | 0.2+ | 1.2− | 2006 11 25 | 704 | 0.4+ | 0.4+ |
| 2002 10 04 | 644 | 0.2+ | 0.3+ | 2003 02 03 | 704 | 0.6+ | 0.8− | 2006 11 27 | 704 | 1.7− | 1.9+ |
| 2002 10 04 | 644 | 0.3+ | 0.1+ | 2003 02 03 | 704 | 0.1− | 0.1+ | 2006 11 27 | 704 | 0.5− | 2.4− |
| 2002 10 04 | 644 | 0.0 | 0.1+ | 2003 02 03 | 704 | 0.5− | 0.8− | 2006 11 27 | 704 | 0.2+ | 0.3+ |
| 2002 11 05 | 704 | 0.4+ | 0.8+ | 2003 02 04 | 704 | 0.3− | 0.1− | 2006 11 27 | 704 | 0.6− | 0.3+ |
| 2002 11 05 | 704 | 1.2+ | 0.9+ | 2003 02 04 | 704 | 0.6− | 0.2+ | 2006 11 27 | 691 | 0.5− | 0.6− |
| 2002 11 05 | 704 | 1.0+ | 1.2+ | 2003 02 04 | 704 | 0.7− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.4− | 1.0+ | 2003 02 04 | 704 | 0.9− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | (1.0+ | 1.7+) | 2003 02 04 | 704 | 1.3− | 0.3− | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2002 11 06 | 704 | 0.1− | 1.5+ | 2006 08 29 | 703 | 0.8+ | 1.4− | 2006 12 01 | 704 | 0.9− | 0.3+ |
| 2002 11 06 | 704 | 0.2+ | 1.1+ | 2006 08 29 | 703 | 0.4+ | 0.2+ | 2006 12 01 | 704 | 0.2+ | 0.2+ |
| 2002 11 14 | 704 | (1.8+ | 0.0 ) | 2006 08 29 | 703 | (1.5+ | 2.3+) | 2006 12 01 | 704 | 1.0− | 0.2+ |
| 2002 11 14 | 704 | (2.1+ | 0.4+) | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.6+ | 0.3+ |
| 2002 11 14 | 704 | (1.6+ | 0.3−) | 2006 09 16 | 703 | (2.6− | 0.9−) | | | | |

**(142584)∗ 2002 TF$_{96}$ = 1999 GC$_{47}$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41062)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.56363 | | (2000.0) | | −0.78838112 | −0.60451149 |
| $n$ | 0.23460764 | $\omega$ | 44.00878 | | +0.52772990 | −0.75989237 |
| $a$ | 2.6036021 | $\Omega$ | 98.45510 | | +0.31615875 | −0.23901764 |
| $e$ | 0.2889947 | $i$ | 6.62460 | | | |
| $P$ | 4.20 | $H$ | 14.9 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 699 | 0.2+ | 0.6+ | 2003 01 05 | 704 | 1.0+ | 0.4+ | 2003 03 25 | 699 | 0.3− | 0.1+ |
| 1999 01 23 | 699 | 0.0 | 0.2− | 2003 01 05 | 704 | 1.3+ | 0.3+ | 2003 03 25 | 704 | 0.0 | 0.1+ |
| 1999 01 23 | 699 | 0.1+ | 0.0 | 2003 01 05 | 704 | 1.0+ | 0.4+ | 2003 03 25 | 699 | 0.2+ | 0.1− |
| 1999 04 06 | 699 | 0.5+ | 0.6+ | 2003 01 05 | 704 | (1.5+ | 0.2+) | 2003 03 25 | 704 | 0.1+ | 0.2+ |
| 1999 04 06 | 699 | 0.5+ | 0.5+ | 2003 01 09 | 704 | 0.2− | 0.8+ | 2003 03 25 | 704 | 0.3− | 0.2+ |
| 1999 04 06 | 699 | 0.5+ | 0.3+ | 2003 01 09 | 704 | 0.0 | 0.4+ | 2003 03 25 | 704 | 0.4− | 0.0 |
| 1999 04 12 | 704 | 0.8+ | 0.5+ | 2003 01 09 | 704 | 0.2+ | 0.4+ | 2003 03 25 | 704 | 0.6− | 0.3+ |
| 1999 04 12 | 704 | 1.1− | 1.2+ | 2003 01 09 | 704 | 0.1+ | 0.1− | 2003 03 30 | 704 | 0.6+ | 1.0+ |
| 1999 04 12 | 704 | 0.2+ | 0.3− | 2003 01 09 | 704 | 0.0 | 0.3− | 2003 03 30 | 704 | 0.8+ | 0.8+ |
| 1999 04 12 | 704 | 1.9+ | 1.5+ | 2003 01 24 | 628 | 0.2− | 0.3− | 2003 03 30 | 704 | 0.2− | 0.4+ |
| 1999 04 12 | 704 | 0.9− | 0.9− | 2003 01 24 | 628 | 0.3− | 0.1− | 2003 03 30 | 704 | 0.6− | 1.3+ |
| 1999 05 08 | 704 | 1.1− | 0.1− | 2003 01 24 | 628 | 0.0 | 0.2− | 2003 03 30 | 704 | 0.3− | 0.9− |
| 1999 05 08 | 704 | 0.2− | 0.1+ | 2003 01 24 | 628 | 0.2+ | 0.1− | 2003 05 01 | 704 | 0.9+ | 0.7+ |
| 1999 05 08 | 704 | 0.8+ | 0.6+ | 2003 01 24 | 127 | 0.4− | 0.0 | 2003 05 01 | 704 | 0.4+ | 0.9+ |
| 1999 05 08 | 704 | (2.2+ | 0.9+) | 2003 01 24 | 127 | 0.2− | 0.1− | 2003 05 01 | 704 | 0.7+ | 0.4+ |
| 1999 05 08 | 704 | (3.5+ | 1.1+) | 2003 01 24 | 127 | 0.3− | 0.1− | 2003 05 01 | 704 | 1.2+ | 0.5+ |
| 2001 09 12 | 704 | 1.1− | 0.9+ | 2003 01 25 | 645 | 0.1− | 0.2− | 2005 07 29 | 644 | 0.3− | 0.6+ |
| 2001 09 12 | 704 | 0.6− | 1.4+ | 2003 01 25 | 645 | 0.1− | 0.2− | 2005 07 29 | 644 | 0.5− | 0.6+ |
| 2001 09 12 | 704 | 0.1+ | 1.4+ | 2003 01 25 | 699 | 0.4+ | 0.1− | 2005 07 29 | 644 | 0.1− | 0.4+ |
| 2001 09 12 | 704 | 1.0− | 0.9+ | 2003 01 25 | 699 | 0.6+ | 0.0 | 2005 08 27 | 644 | 0.3− | 0.4+ |
| 2002 10 03 | 704 | 1.4+ | 0.4− | 2003 01 25 | 699 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.3− | 0.5+ |
| 2002 10 03 | 704 | 0.7+ | 1.0− | 2003 01 25 | 699 | 0.3+ | 0.3+ | 2005 08 27 | 644 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.5+ | 0.0 | 2003 01 26 | 644 | 0.4− | 0.1− | 2006 11 14 | 704 | 0.5+ | 0.1− |
| 2002 10 04 | 644 | 0.3− | 0.0 | 2003 01 26 | 644 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.7+ | 0.4− |
| 2002 10 04 | 644 | 0.2− | 0.2− | 2003 01 26 | 644 | 0.4− | 0.1+ | 2006 11 14 | 704 | (1.1+ | 1.5−) |
| 2002 10 04 | 644 | 0.1− | 0.1− | 2003 02 01 | 704 | (0.1+ | 1.5+) | 2006 11 14 | 704 | 0.4+ | 0.4− |
| 2002 10 11 | 704 | 0.2− | 0.2− | 2003 02 01 | 704 | 0.2+ | 0.7+ | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2002 10 11 | 704 | 0.7+ | 0.3+ | 2003 02 01 | 704 | 0.2− | 1.1+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 10 11 | 704 | 1.2+ | 0.3− | 2003 02 01 | 704 | 0.4− | 1.3+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2002 12 01 | 608 | 1.4+ | 0.8+ | 2003 02 04 | 704 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.4− | 0.0 |
| 2002 12 01 | 608 | (1.5+ | 0.5+) | 2003 02 04 | 704 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 12 01 | 608 | 1.1+ | 0.9+ | 2003 02 04 | 704 | 0.1− | 0.5− | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2002 12 02 | 704 | 0.4− | 0.5+ | 2003 02 04 | 704 | 0.1− | 0.6− | 2006 11 17 | 704 | 0.6− | 0.1+ |
| 2002 12 02 | 704 | 0.2− | 1.0+ | 2003 02 04 | 704 | 0.4− | 0.7− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2002 12 02 | 704 | 0.5− | 0.1+ | 2003 02 07 | 704 | 0.4− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2003 02 07 | 704 | 0.8− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.4+ | 0.4− | 2003 02 07 | 704 | 0.8− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2003 02 07 | 704 | 0.4− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2003 02 07 | 704 | 0.6− | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2002 12 10 | 704 | 0.0 | 0.1− | 2003 02 09 | 127 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.2− | 0.3− |
| 2002 12 10 | 704 | 0.4+ | 0.2− | 2003 02 09 | 127 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2002 12 10 | 704 | 0.5+ | 0.3+ | 2003 02 09 | 127 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2002 12 18 | 608 | 0.7− | 0.4+ | 2003 02 10 | 127 | 0.2+ | 0.6− | 2006 11 18 | 704 | 0.5− | 0.1− |
| 2002 12 18 | 608 | 0.4− | 0.3+ | 2003 02 10 | 127 | 0.2+ | 0.6− | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2002 12 18 | 608 | 0.3− | 0.3+ | 2003 02 10 | 127 | 0.2+ | 0.7− | 2006 11 18 | 704 | 0.6− | 0.8− |
| 2002 12 27 | 699 | 0.2+ | 0.1− | 2003 03 06 | 704 | 0.1− | 0.7− | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2002 12 27 | 699 | 0.3+ | 0.2− | 2003 03 06 | 704 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.1− |
| 2002 12 27 | 699 | 0.1+ | 0.1+ | 2003 03 06 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2002 12 27 | 699 | 0.3+ | 0.2− | 2003 03 06 | 704 | 0.6+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2002 12 28 | 291 | 0.1− | 0.1+ | 2003 03 06 | 704 | (1.6+ | 0.0 ) | 2006 11 20 | 704 | 0.2+ | 0.2+ |
| 2002 12 28 | 291 | 0.2− | 0.0 | 2003 03 07 | 644 | 0.2− | 0.2+ | 2006 11 25 | 704 | (0.9+ | 3.1+) |
| 2002 12 28 | 291 | 0.2− | 0.1+ | 2003 03 07 | 644 | 0.0 | 0.2+ | 2006 11 25 | 704 | 0.2+ | 1.8+ |
| 2002 12 28 | 699 | 0.6+ | 0.1− | 2003 03 07 | 644 | 0.0 | 0.1+ | 2006 11 25 | 704 | 0.8+ | 1.4+ |
| 2002 12 28 | 699 | 0.3− | 0.4− | 2003 03 07 | 644 | 0.0 | 0.2+ | 2006 11 25 | 704 | 0.6+ | 1.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 28 | 699 | 0.5+ | 0.0 | 2003 03 07 | 644 | 0.1− | 0.2+ | 2006 11 25 | 704 | 0.4− | 1.3+ |
| 2002 12 28 | 699 | 0.3+ | 0.3− | 2003 03 07 | 644 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.7− |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2003 03 25 | 699 | 0.7+ | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2002 12 31 | 704 | 0.1− | 0.0 | 2003 03 25 | 699 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.2− | 0.1− |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2003 03 25 | 699 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.5− |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2003 03 25 | 699 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.9− |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2003 03 25 | 699 | 0.4− | 0.7+ | | | | |
| 2003 01 05 | 704 | 0.7+ | 0.6+ | 2003 03 25 | 699 | 0.0 | 0.2− | | | | |

**(142585)∗ 2002 TH$_{96}$ = 2001 LK$_{11}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Id. M. Kretlow (*MPO* 43231)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 47.22748 | | (2000.0) | | | |
| *n* | 0.23368622 | $\omega$ | 82.14991 | | +0.86001722 | +0.33185285 |
| *a* | 2.6104416 | $\Omega$ | 257.80261 | | −0.45503310 | +0.84251654 |
| *e* | 0.2632257 | *i* | 23.36365 | | +0.23090096 | +0.42431069 |
| *P* | 4.22 | *H* | 14.1 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.3− | 0.6+ | 2003 01 01 | 704 | 0.1− | 0.3+ | 2006 10 19 | 704 | 0.1− | 1.1+ |
| 2001 06 15 | 704 | 0.2− | 0.5+ | 2003 01 05 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 704 | (0.6+ | 1.9+) |
| 2001 06 15 | 704 | 0.0 | 0.3+ | 2003 01 05 | 704 | 0.4− | 0.3+ | 2006 10 29 | 704 | (2.1− | 0.5−) |
| 2001 06 15 | 704 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.1− | 0.2− | 2006 10 29 | 704 | 0.3+ | 0.6+ |
| 2001 06 21 | 704 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.6+ |
| 2001 06 21 | 704 | 0.5+ | 0.3+ | 2003 01 05 | 704 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.8− | 1.1+ |
| 2001 06 21 | 704 | 0.3+ | 0.3− | 2005 05 18 | E12 | 0.4− | 0.3+ | 2006 10 29 | 704 | 0.8− | 0.4− |
| 2001 06 21 | 704 | 0.4+ | 0.2+ | 2005 05 18 | E12 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.3+ | 0.1+ |
| 2001 06 21 | 704 | 0.0 | 0.0 | 2005 05 18 | E12 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.1− | 0.3− |
| 2001 06 24 | 704 | 0.1− | 0.4+ | 2005 05 18 | E12 | 0.1− | 0.3+ | 2006 11 15 | 704 | 1.3+ | 0.4− |
| 2001 06 24 | 704 | 1.0− | 0.3− | 2005 06 11 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.2− |
| 2001 06 24 | 704 | 0.2+ | 0.4+ | 2005 06 11 | 704 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.4+ | 0.8− |
| 2001 06 24 | 704 | 0.1− | 0.0 | 2005 06 11 | 704 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.2− | 0.4− |
| 2001 06 24 | 704 | 0.1+ | 0.2− | 2005 06 11 | 704 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.3+ | 0.5− |
| 2001 07 29 | 636 | (73.6− | 29.0+) | 2005 06 26 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.3− | 1.2+ |
| 2001 07 29 | 636 | (74.6− | 29.1+) | 2005 06 26 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 704 | 0.6− | 0.4+ |
| 2002 10 03 | 644 | (0.1+ | 1.6+) | 2005 06 26 | 644 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.4− | 0.1+ |
| 2002 10 03 | 644 | (0.2− | 1.7+) | 2005 07 01 | 703 | (5.3− | 1.7+) | 2006 11 16 | 704 | 0.6+ | 0.7− |
| 2002 10 03 | 644 | (0.3+ | 1.7+) | 2005 07 01 | 703 | (3.0− | 3.7−) | 2006 11 16 | 704 | 0.4− | 0.0 |
| 2002 10 04 | 644 | 0.2+ | 1.0+ | 2005 07 01 | 703 | 0.5− | 0.9− | 2006 11 16 | 704 | 1.2− | 0.9+ |
| 2002 10 04 | 644 | 0.1− | 1.4+ | 2005 07 01 | 703 | 0.6− | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.2− |
| 2002 10 04 | 644 | (0.0 | 1.5+) | 2005 07 03 | 704 | 0.3+ | 1.0+ | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.4+ | 0.4− | 2005 07 03 | 704 | 0.3− | 1.2+ | 2006 11 19 | 704 | (1.5+ | 0.9−) |
| 2002 10 10 | 704 | 0.7− | 0.5− | 2005 07 03 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2002 10 10 | 704 | (1.8− | 1.0−) | 2005 07 03 | 704 | 0.5+ | 1.3+ | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 2002 10 11 | 704 | 0.9− | 0.8+ | 2005 07 03 | 704 | 0.5+ | 1.1+ | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2002 10 11 | 704 | 1.1− | 0.1+ | 2005 07 04 | 608 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.8− | 0.7− | 2005 07 04 | 608 | 0.5− | 0.5− | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2002 10 11 | 704 | 0.7− | 0.6+ | 2005 07 04 | 608 | 0.4− | 0.6− | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2002 11 11 | 704 | 0.4− | 0.4+ | 2005 07 06 | 704 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2005 07 06 | 704 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.2− | 0.8+ | 2005 07 06 | 704 | 0.1+ | 0.8− | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2002 11 11 | 704 | 0.0 | 0.9+ | 2005 07 06 | 704 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.6+ | 0.7+ |
| 2002 12 14 | 704 | 0.6+ | 0.2− | 2006 10 02 | 704 | 0.3+ | 0.5− | 2006 11 27 | 704 | (0.7+ | 1.7+) |
| 2002 12 14 | 704 | 0.4+ | 0.6− | 2006 10 02 | 704 | 0.7+ | 0.1− | 2006 11 27 | 704 | 0.4+ | 0.6+ |
| 2002 12 14 | 704 | 0.6+ | 0.4− | 2006 10 02 | 704 | 0.6+ | 1.0− | 2006 11 28 | 704 | 0.5− | 0.4+ |
| 2002 12 14 | 704 | 0.8+ | 0.2− | 2006 10 02 | 704 | 0.7+ | 0.6− | 2006 11 28 | 704 | 0.3+ | 0.5− |
| 2002 12 14 | 704 | 1.0+ | 0.7+ | 2006 10 19 | 704 | 0.4+ | 1.0+ | 2006 11 28 | 704 | (0.3+ | 1.6+) |
| 2003 01 01 | 704 | 0.0 | 0.3− | 2006 10 19 | 704 | 1.2+ | 0.5+ | 2006 11 28 | 704 | (2.1− | 0.7+) |
| 2003 01 01 | 704 | 0.6+ | 0.7− | 2006 10 19 | 704 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.3− | 0.6+ |

**(142586)∗ 2002 TL$_{100}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 75.31414 | | (2000.0) | | | |
| *n* | 0.26881763 | $\omega$ | 343.18617 | | +0.54474953 | +0.83452277 |
| *a* | 2.3777392 | $\Omega$ | 319.71678 | | −0.75395623 | +0.44427190 |
| *e* | 0.1252010 | *i* | 7.33804 | | −0.36714842 | +0.32587455 |
| *P* | 3.67 | *H* | 16.5 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.4+ | 0.7+ | 2005 05 13 | E12 | 0.2+ | 0.0 |
| 2002 08 16 | 704 | 0.4− | 0.2+ | 2002 10 05 | 644 | 0.1− | 0.7+ | 2005 06 05 | E12 | 0.2+ | 1.0+ |
| 2002 08 16 | 704 | 0.1− | 0.2+ | 2002 10 05 | 644 | 0.3− | 0.4+ | 2005 06 05 | E12 | 0.1− | 0.2− |
| 2002 08 16 | 704 | 0.1− | 0.1− | 2002 10 05 | 644 | 0.2− | 0.6+ | 2005 06 05 | E12 | 0.5+ | 0.5+ |
| 2002 08 16 | 704 | 0.2+ | 0.4− | 2002 10 12 | 704 | 0.9− | 0.3− | 2005 06 05 | E12 | 0.5− | 0.1− |
| 2002 08 16 | 704 | 0.1− | 0.8− | 2002 10 12 | 704 | 0.3− | 0.3+ | 2005 06 27 | 644 | 0.4+ | 0.5+ |
| 2002 08 16 | 704 | 0.1− | 1.0+ | 2002 10 12 | 704 | (0.1− | 2.0+) | 2005 06 27 | 644 | 0.4+ | 0.3+ |
| 2002 08 16 | 704 | 0.0 | 0.1+ | 2003 12 21 | 645 | 0.0 | 0.0 | 2005 06 27 | 644 | 0.5+ | 0.4+ |
| 2002 09 06 | 704 | 0.1+ | 0.6− | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.3+ | 0.3− | 2004 01 18 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | (2.5− | 0.3+) |
| 2002 09 06 | 704 | 0.8− | 0.4− | 2004 01 18 | 691 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2004 01 18 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.9− |
| 2002 09 06 | 704 | 0.3− | 0.5+ | 2004 01 19 | 699 | 0.7− | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.5− |
| 2002 09 10 | 608 | 0.6+ | 0.2+ | 2004 01 19 | 699 | 0.3− | 0.9+ | 2006 10 27 | 703 | 0.1− | 0.2+ |
| 2002 09 10 | 608 | 0.6− | 0.1+ | 2004 01 19 | 699 | 1.5+ | 0.5+ | 2006 10 27 | 703 | 0.4+ | 0.9− |
| 2002 09 10 | 608 | 0.1+ | 0.0 | 2004 01 19 | 699 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 1.0− | 0.8− |
| 2002 09 13 | 644 | 0.5− | 0.5+ | 2004 01 22 | 704 | 0.2+ | 1.1+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2004 01 22 | 704 | 0.6− | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2004 01 22 | 704 | (0.5− | 1.7+) | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.6+ | 1.0+ | 2006 11 15 | 703 | 1.4− | 0.5+ |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2005 05 13 | E12 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2005 05 13 | E12 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 1.0+ | 2005 05 13 | E12 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.6+ | 0.1+ |

**(142587)∗ 2002 TZ$_{101}$ = 2004 CZ$_{75}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61421)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 307.82225 | | (2000.0) | | | |
| *n* | 0.22974962 | $\omega$ | 104.15249 | | +0.75513823 | −0.65482440 |
| *a* | 2.6401758 | $\Omega$ | 296.76393 | | +0.58720486 | +0.69676607 |
| *e* | 0.0826165 | *i* | 2.00027 | | +0.29147333 | +0.29278328 |
| *P* | 4.29 | *H* | 16.0 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.1+ | 0.3+ | 2002 10 27 | 941 | 0.4+ | 0.1− | 2005 05 12 | G96 | 0.2+ | 0.8+ |
| 2000 03 11 | 704 | 0.2+ | 0.4+ | 2002 10 27 | 941 | 0.3− | 0.6− | 2005 05 12 | G96 | 0.2+ | 0.8+ |
| 2000 03 11 | 704 | (1.7+ | 2.1+) | 2002 10 27 | 941 | 0.0 | 1.0− | 2005 05 12 | G96 | 0.2+ | 0.8+ |
| 2002 10 04 | 704 | 0.5− | 0.3− | 2002 10 30 | 644 | 0.3− | 0.7+ | 2006 06 20 | G96 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.7− | 0.1+ | 2002 10 30 | 644 | 0.3− | 0.2+ | 2006 06 20 | G96 | 0.4− | 0.4− |
| 2002 10 04 | 704 | 0.2+ | 0.4− | 2002 10 30 | 644 | 0.1− | 0.5+ | 2006 06 20 | G96 | 0.4− | 0.1− |
| 2002 10 04 | 704 | 0.2− | 0.2− | 2002 10 31 | 704 | 0.4− | 0.4− | 2006 06 20 | G96 | 0.6+ | 0.2− |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2002 10 31 | 704 | 0.5+ | 0.2+ | 2006 08 15 | 644 | 0.4− | 0.2+ |
| 2002 10 05 | 644 | 0.4− | 0.0 | 2002 10 31 | 704 | 1.0− | 0.3− | 2006 08 15 | 644 | 0.3− | 0.4+ |
| 2002 10 05 | 644 | 0.5− | 0.3− | 2002 10 31 | 704 | 0.8− | 1.0− | 2006 08 15 | 644 | 0.2− | 0.3+ |
| 2002 10 05 | 644 | 0.3− | 0.1− | 2002 11 02 | 608 | 0.0 | 1.1− | 2006 08 19 | 691 | 0.1− | 0.2+ |
| 2002 10 06 | 644 | 0.3− | 0.4− | 2002 11 02 | 608 | 0.3− | 0.2− | 2006 08 19 | 691 | 0.1− | 0.2+ |
| 2002 10 06 | 644 | 0.1− | 0.1− | 2002 11 02 | 608 | 0.9− | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.0 |
| 2002 10 06 | 644 | 0.4− | 0.2− | 2004 01 31 | 691 | 0.1− | 0.2+ | 2006 08 28 | 699 | 1.1− | 0.0 |
| 2002 10 07 | 699 | 0.4+ | 1.6+ | 2004 01 31 | 691 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.8+ | 1.0+ |
| 2002 10 07 | 699 | 0.6+ | 0.5− | 2004 01 31 | 691 | 0.2− | 0.3+ | 2006 08 28 | 699 | 0.2− | 1.4+ |
| 2002 10 07 | 699 | 0.2− | 0.5− | 2004 02 11 | 644 | 0.3+ | 0.9+ | 2006 08 28 | 699 | 0.0 | 0.4+ |
| 2002 10 07 | 699 | 1.1+ | 0.2− | 2004 02 11 | 691 | 0.0 | 0.4+ | 2006 08 29 | 704 | 0.6− | 1.8+ |
| 2002 10 12 | 704 | 0.7− | 1.1+ | 2004 02 11 | 644 | 0.2+ | 0.7+ | 2006 08 29 | 704 | 0.4+ | 0.3+ |
| 2002 10 12 | 704 | 0.5− | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 08 29 | 704 | 0.8+ | 0.6+ |
| 2002 10 12 | 704 | (2.4− | 0.3+) | 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.4+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.4− | 0.3− | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.9+ | | |
| 2002 10 26 | 941 | 0.8+ | 0.4+ | 2004 02 17 | 704 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.6− | 0.5+ | | |
| 2002 10 26 | 941 | 0.4− | 0.5− | 2004 02 17 | 704 | 0.3− | 0.6− | 2006 09 14 | 703 | 0.6− | 1.1+ | | |
| 2002 10 26 | 941 | 1.7+ | 1.8+ | 2004 02 17 | 704 | 0.4− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.1+ | | |
| 2002 10 26 | 941 | 1.2+ | 0.7+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2+ | | |
| 2002 10 26 | 941 | 1.5+ | 0.4− | 2004 02 29 | 691 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2+ | | |
| 2002 10 26 | 941 | 0.6+ | 1.0+ | 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.6− | 0.6− | | |
| 2002 10 27 | 941 | 1.1+ | 0.1+ | 2005 05 12 | G96 | 0.4+ | 1.0+ | | | | | | |

**(142588)∗ 2002 TD$_{102}$ = 1998 YQ$_{10}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38029)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.40723 | | (2000.0) | | | |
| $n$ | 0.22385924 | $\omega$ | 177.50602 | | +0.71044936 | −0.69922963 |
| $a$ | 2.6862888 | $\Omega$ | 227.20715 | | +0.64378383 | +0.69144062 |
| $e$ | 0.0937552 | $i$ | 6.22908 | | +0.28426060 | +0.18162543 |
| $P$ | 4.40 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 910 | 0.8− | 0.6+ | 2002 10 09 | 704 | 0.6+ | 0.7+ | 2005 04 11 | G96 | 0.1− | 0.1+ | | |
| 1998 12 16 | 910 | 0.7− | 0.5+ | 2002 10 09 | 704 | 0.1+ | 0.7+ | 2005 04 11 | G96 | 0.1− | 0.1− | | |
| 1998 12 16 | 910 | 0.7− | 0.6+ | 2002 10 09 | 704 | 0.5− | 0.3+ | 2005 05 07 | 691 | 0.0 | 0.5+ | | |
| 1998 12 25 | 910 | 0.8+ | 0.5+ | 2002 10 09 | 704 | 0.6+ | 0.5+ | 2005 05 07 | 691 | 0.1− | 0.6+ | | |
| 1998 12 25 | 910 | 0.8+ | 0.7+ | 2002 10 10 | 704 | 0.3− | 0.5+ | 2005 05 07 | 691 | 0.2− | 0.7+ | | |
| 1998 12 26 | 910 | 1.1+ | 0.5+ | 2002 10 10 | 704 | 0.8+ | 0.6− | 2005 05 11 | 691 | 0.5+ | 0.4+ | | |
| 2002 09 28 | 608 | 1.4− | 1.4− | 2002 10 10 | 704 | (0.4+ | 3.9+) | 2005 05 11 | 691 | 0.4+ | 0.1+ | | |
| 2002 09 28 | 608 | 1.6− | 1.5− | 2002 10 10 | 704 | 0.9− | 1.2+ | 2005 05 11 | 691 | 0.4+ | 0.6+ | | |
| 2002 09 28 | 608 | 1.2− | 1.4− | 2002 10 10 | 704 | 0.8+ | 1.6+ | 2005 05 13 | G96 | 0.3− | 0.2+ | | |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.7− | 0.5+ | 2005 05 13 | G96 | 0.3− | 0.1+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.2− | 2002 10 11 | 704 | 0.6+ | 0.8+ | 2005 05 13 | G96 | 0.3− | 0.3+ | | |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.5+ | 2005 05 13 | G96 | 0.4− | 0.0 | | |
| 2002 10 04 | 644 | 0.9+ | 0.1− | 2002 10 11 | 704 | 0.2− | 1.0+ | 2005 05 19 | 644 | 0.1− | 0.3+ | | |
| 2002 10 04 | 704 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.5− | 1.5+ | 2005 05 19 | 644 | 0.5+ | 0.1+ | | |
| 2002 10 04 | 644 | 0.1− | 0.5+ | 2003 12 29 | 699 | 0.3+ | 1.0+ | 2005 05 19 | 644 | 0.4− | 0.2+ | | |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2003 12 29 | 699 | 0.1− | 0.6+ | 2006 08 30 | 699 | 0.3− | 0.2− | | |
| 2002 10 04 | 704 | 0.1− | 0.3− | 2003 12 29 | 699 | 0.6+ | 0.5− | 2006 08 30 | 699 | 1.6− | 0.7+ | | |
| 2002 10 05 | 644 | 0.1− | 1.1+ | 2003 12 29 | 699 | 0.9− | 0.4+ | 2006 08 30 | 699 | 1.4− | 0.1− | | |
| 2002 10 05 | 644 | 0.0 | 1.2+ | 2004 02 11 | 644 | 0.2+ | 1.1+ | 2006 08 30 | 699 | 0.2+ | 0.1− | | |
| 2002 10 05 | 644 | 0.0 | 1.3+ | 2004 02 11 | 644 | 0.2+ | 0.8+ | 2006 09 18 | 691 | 0.4+ | 0.6− | | |
| 2002 10 06 | 644 | 0.5− | 0.3+ | 2004 02 11 | 644 | 0.7+ | 1.2+ | 2006 09 18 | 691 | 0.5+ | 0.1+ | | |
| 2002 10 06 | 644 | 0.4− | 0.2+ | 2005 04 11 | G96 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.2+ | 0.3+ | | |
| 2002 10 06 | 644 | 0.3− | 0.5+ | 2005 04 11 | G96 | 0.0 | 0.2+ | | | | | | |

**(142589)∗ 2002 TY$_{103}$ = 2000 DR$_{10}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38030)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.19599 | | (2000.0) | | | |
| $n$ | 0.22333787 | $\omega$ | 154.56228 | | +0.55139650 | +0.83385007 |
| $a$ | 2.6904678 | $\Omega$ | 148.88186 | | −0.77362145 | +0.52257658 |
| $e$ | 0.0572808 | $i$ | 2.84064 | | −0.31220466 | +0.17778579 |
| $P$ | 4.41 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 09 | 568 | (1.0− | 4.2−) | 2002 10 05 | 645 | 0.0 | 0.0 | 2005 05 11 | G96 | 1.3− | 0.4+ | | |
| 1999 03 09 | 568 | (0.5− | 4.8−) | 2002 10 05 | 645 | 0.0 | 0.0 | 2005 05 11 | G96 | 0.1+ | 0.2+ | | |
| 2000 02 11 | 691 | 0.3− | 0.1+ | 2002 10 06 | 644 | 0.3− | 0.1+ | 2005 05 11 | G96 | 0.2+ | 0.2− | | |
| 2000 02 11 | 691 | 0.2− | 0.3+ | 2002 10 06 | 644 | 0.5− | 0.1+ | 2005 05 11 | G96 | 0.2− | 0.3− | | |
| 2000 02 11 | 691 | 0.4− | 0.2− | 2002 10 06 | 644 | 0.3− | 0.3+ | 2006 05 26 | G96 | 0.2− | 0.4− | | |
| 2000 02 26 | 691 | 0.3− | 0.1− | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.1− | 0.4− | | |
| 2000 02 26 | 691 | 0.1− | 0.2− | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.1− | 0.6− | | |
| 2000 02 26 | 691 | 0.2+ | 0.2− | 2005 03 09 | G96 | 0.3− | 0.3− | 2006 05 26 | G96 | (1.6+ | 1.7+) | | |
| 2000 03 02 | 691 | 0.6+ | 0.2− | 2005 03 09 | G96 | 0.3− | 0.2− | 2006 08 14 | 644 | 0.3+ | 0.0 | | |
| 2000 03 02 | 691 | 0.5+ | 0.1− | 2005 03 09 | G96 | 1.1− | 0.2+ | 2006 08 14 | 644 | 0.2+ | 0.2− | | |
| 2000 03 02 | 691 | 0.1− | 0.0 | 2005 03 09 | G96 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.3+ | 0.1+ | | |
| 2002 09 26 | 644 | 0.3− | 0.8+ | 2005 03 11 | 691 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.1+ | 0.1− | | |
| 2002 09 26 | 644 | 0.3− | 0.2+ | 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.1− | | |
| 2002 09 26 | 644 | 0.2+ | 0.3+ | 2005 03 11 | 691 | 0.5+ | 0.6+ | 2006 08 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.4− | 1.0+ | 2005 04 01 | 691 | 0.7+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.6− | | |
| 2002 10 04 | 704 | 0.4+ | 1.2+ | 2005 04 01 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2002 10 04 | 704 | 0.6+ | 0.2+ | 2005 04 01 | 691 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.2− | | |
| 2002 10 05 | 644 | 0.1+ | 0.5+ | 2005 04 12 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.5− | | |
| 2002 10 05 | 644 | 0.5− | 0.5+ | 2005 04 12 | 691 | 0.2+ | 0.0 | | | | | | |
| 2002 10 05 | 644 | 0.1− | 0.4+ | 2005 04 12 | 691 | 0.1− | 0.0 | | | | | | |

**(142590)∗ 2002 TB$_{105}$ = 2004 HY$_3$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61422)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.11599 | | (2000.0) | | | |
| $n$ | 0.28851327 | $\omega$ | 242.55715 | | −0.57633488 | −0.81586882 |
| $a$ | 2.2682566 | $\Omega$ | 242.71299 | | +0.76716345 | −0.52038661 |
| $e$ | 0.1263474 | $i$ | 3.02268 | | +0.28159963 | −0.25210284 |
| $P$ | 3.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.6− | 0.6+ | 2002 10 12 | 704 | 0.4+ | 0.3+ | 2004 05 24 | 691 | 0.2+ | 0.3+ | | |
| 1999 12 07 | 704 | 0.8− | 0.6+ | 2002 10 12 | 704 | 1.5− | 0.5+ | 2005 07 31 | 644 | 0.5+ | 0.1− | | |
| 1999 12 07 | 704 | 0.3− | 0.9+ | 2004 03 31 | 704 | 0.0 | 0.2− | 2005 07 31 | 644 | 0.0 | 0.2+ | | |
| 2000 01 05 | 704 | 0.2+ | 0.3− | 2004 03 31 | 704 | 0.7+ | 0.4+ | 2005 07 31 | 644 | 0.4+ | 0.2+ | | |
| 2000 01 05 | 704 | 0.3+ | 0.5+ | 2004 03 31 | 704 | 0.7− | 0.4+ | 2005 08 06 | 644 | 0.0 | 0.2+ | | |
| 2000 01 05 | 704 | 1.2+ | 1.3− | 2004 04 17 | 704 | 0.0 | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.4+ | | |
| 2000 01 05 | 704 | 0.3+ | 0.0 | 2004 04 17 | 704 | 0.5+ | 0.2− | 2005 08 06 | 644 | 0.4− | 0.2− | | |
| 2002 10 04 | 704 | 0.3+ | 0.8+ | 2004 04 17 | 704 | 0.4− | 0.6− | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2002 10 04 | 704 | 0.3+ | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 644 | (1.6− | 0.3+) | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.4− | 0.3− | | |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1+ | | |
| 2002 10 04 | 644 | 0.2− | 0.7+ | 2004 04 20 | 704 | 0.6+ | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.5+ | | |
| 2002 10 05 | 644 | 0.3− | 0.3+ | 2004 04 20 | 704 | 0.5+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.4+ | | |
| 2002 10 05 | 644 | 0.3− | 0.5+ | 2004 04 20 | 704 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.8+ | 1.0+ | | |
| 2002 10 05 | 644 | 0.4− | 0.5+ | 2004 04 22 | 704 | 0.3+ | 1.2+ | 2006 11 18 | G96 | 0.1− | 0.1+ | | |
| 2002 10 06 | 644 | 0.2− | 0.5+ | 2004 04 22 | 704 | 0.7+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1+ | | |
| 2002 10 06 | 644 | 0.2− | 0.5+ | 2004 04 22 | 704 | 0.6− | 0.2− | 2006 11 18 | G96 | 0.2− | 0.0 | | |
| 2002 10 06 | 644 | 0.1− | 0.4+ | 2004 04 22 | 704 | 0.0 | 0.6− | 2006 11 18 | G96 | 0.2− | 0.1+ | | |
| 2002 10 12 | 704 | 0.3+ | 0.0 | 2004 05 24 | 691 | 0.1+ | 0.3+ | | | | | | |
| 2002 10 12 | 704 | 1.1− | 0.6+ | 2004 05 24 | 691 | 0.0 | 0.2+ | | | | | | |

**(142591)∗ 2002 TG$_{108}$ = 2001 NU$_{14}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38031)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 289.38439 | | (2000.0) | | | |
| $n$ | 0.20591809 | $\omega$ | 76.80739 | | +0.49345958 | −0.86760762 |
| $a$ | 2.8401398 | $\Omega$ | 343.20208 | | +0.69308182 | +0.43480362 |
| $e$ | 0.1982013 | $i$ | 12.24119 | | +0.52548571 | +0.24125262 |
| $P$ | 4.79 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 691 | 0.0 | 0.5− | 2002 10 30 | 704 | 0.7− | 0.2− | 2004 03 18 | 704 | (0.3+ | 2.3+) | | |
| 1999 03 13 | 691 | 0.0 | 0.3− | 2002 10 30 | 704 | 0.8− | 0.1− | 2004 03 18 | 704 | 0.5+ | 1.1+ | | |
| 1999 03 13 | 691 | 0.1+ | 0.4− | 2002 11 15 | 704 | 1.3+ | 0.9+ | 2004 03 18 | 704 | 0.5+ | 0.6+ | | |
| 2001 07 13 | 644 | 1.0− | 0.5+ | 2002 11 15 | 704 | 1.7+ | 0.3+ | 2004 03 20 | 704 | 0.5− | 1.0+ | | |
| 2001 07 13 | 644 | 0.5− | 0.4+ | 2002 11 15 | 704 | 1.4+ | 0.4+ | 2004 03 20 | 704 | 0.9− | 0.2+ | | |
| 2001 07 13 | 644 | 0.7− | 0.4+ | 2002 11 15 | 704 | 1.7+ | 0.4+ | 2004 03 20 | 704 | 0.5+ | 1.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.4− | 0.4+ | 2002 11 15 | 704 | 1.1+ | 0.2− | 2004 03 20 | 704 | 1.1− | 0.0 |
| 2001 07 20 | 644 | 0.2− | 0.6+ | 2002 12 07 | 704 | 0.0 | 0.2+ | 2004 03 26 | 699 | 0.7− | 0.5+ |
| 2001 07 20 | 644 | 0.6− | 0.4+ | 2002 12 07 | 704 | 0.1+ | 0.5+ | 2004 03 26 | 699 | 0.3+ | 0.2+ |
| 2002 10 01 | 704 | 0.4− | 0.1+ | 2002 12 07 | 704 | 0.3− | 0.2+ | 2004 03 26 | 699 | 0.1− | 0.4+ |
| 2002 10 01 | 704 | 0.2+ | 1.3− | 2002 12 07 | 704 | 0.3− | 0.6+ | 2004 03 26 | 699 | 0.2+ | 0.5− |
| 2002 10 01 | 704 | 0.4− | 0.3+ | 2002 12 07 | 704 | 0.6+ | 0.3+ | 2004 03 28 | 691 | 0.4+ | 0.2+ |
| 2002 10 01 | 704 | 0.7− | 0.2− | 2002 12 15 | 704 | 0.1+ | 0.0 | 2004 03 28 | 691 | 0.4+ | 0.3+ |
| 2002 10 05 | 704 | 0.7− | 0.5+ | 2002 12 15 | 704 | 0.1− | 0.7+ | 2004 03 28 | 691 | 0.3+ | 0.2+ |
| 2002 10 05 | 704 | 0.3− | 0.6+ | 2002 12 15 | 704 | 0.3− | 0.1− | 2004 04 19 | 704 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.4− | 0.3+ | 2002 12 15 | 704 | 0.3− | 0.3+ | 2004 04 19 | 704 | 0.7+ | 0.6+ |
| 2002 10 05 | 704 | 0.4− | 0.1+ | 2002 12 29 | 704 | 0.6− | 0.3+ | 2004 04 19 | 704 | 0.9+ | 1.3+ |
| 2002 10 05 | 704 | 0.3− | 0.0 | 2002 12 29 | 704 | 0.7− | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.8+ |
| 2002 10 14 | 704 | 1.0− | 0.8+ | 2002 12 29 | 704 | 0.3− | 0.2− | 2006 08 17 | 644 | 0.2− | 0.7+ |
| 2002 10 14 | 704 | 0.9− | 1.3+ | 2003 02 02 | 704 | 0.2− | 0.4− | 2006 08 17 | 644 | 0.1− | 0.9+ |
| 2002 10 14 | 704 | 0.7− | 1.2+ | 2003 02 02 | 704 | 1.3+ | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.7+ |
| 2002 10 14 | 704 | 1.1− | 0.7+ | 2003 02 02 | 704 | 0.5− | 0.0 | 2006 08 23 | 644 | 0.0 | 0.5+ |
| 2002 10 15 | 704 | 0.1+ | 0.0 | 2003 02 02 | 704 | 0.5− | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.7+ |
| 2002 10 15 | 704 | 0.9+ | 0.3− | 2004 03 16 | 703 | 0.0 | 0.7+ | 2006 08 28 | E12 | 0.1− | 0.3+ |
| 2002 10 15 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 703 | 0.1+ | 0.5+ | 2006 08 28 | E12 | 0.5− | 0.7+ |
| 2002 10 15 | 704 | 0.9+ | 0.1+ | 2004 03 16 | 703 | 1.0+ | 0.8+ | 2006 08 28 | E12 | 0.8+ | 0.2− |
| 2002 10 30 | 704 | 0.7− | 0.0 | 2004 03 16 | 703 | 0.6+ | 0.7+ | 2006 08 28 | E12 | 0.3+ | 0.5+ |
| 2002 10 30 | 704 | 1.4− | 0.1+ | 2004 03 18 | 704 | 0.0 | 1.3+ | | | | |
| 2002 10 30 | 704 | 1.0− | 0.0 | 2004 03 18 | 704 | 0.1− | 1.1+ | | | | |

**(142592)∗ 2002 TL$_{108}$**

Discovered 2002 Oct. 1 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.85083 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26839014 | $\omega$ | 33.79787 | | +0.22793013 | −0.97190620 | |
| $a$ | 2.3802633 | $\Omega$ | 43.10957 | | +0.87324801 | +0.17738026 | |
| $e$ | 0.1220229 | $i$ | 4.92783 | | +0.43068058 | +0.15470804 | |
| $P$ | 3.67 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.8+ | 0.7+ | 2004 03 20 | 704 | 0.7+ | 0.9+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 1999 12 15 | 704 | 0.6+ | 0.4− | 2004 03 20 | 704 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 |
| 1999 12 15 | 704 | 0.4+ | 0.1− | 2004 03 26 | 703 | 0.4+ | 1.0+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 1999 12 15 | 704 | 0.0 | 0.5− | 2004 03 26 | 703 | 0.2+ | 1.3+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2000 01 08 | 704 | 0.5− | 0.3− | 2004 03 26 | 703 | 1.4+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2000 01 08 | 704 | 0.4− | 0.8− | 2004 03 26 | 703 | 1.2+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2000 01 08 | 704 | 0.2− | 1.0− | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2000 01 08 | 704 | 0.3+ | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2000 01 08 | 704 | 0.2+ | 0.6− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2000 01 30 | 704 | 1.0− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 1.0+ |
| 2000 01 30 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2000 01 30 | 704 | 0.2− | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.2+ |
| 2000 01 30 | 704 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 2000 01 30 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 09 05 | 704 | 0.4+ | 1.4+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 1.1+ | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2002 09 05 | 704 | (1.1− | 1.8−) | 2006 10 19 | 691 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.3− |
| 2002 09 14 | 608 | 0.7− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2002 09 14 | 608 | 0.3− | 0.4− | 2006 10 23 | 704 | 0.6+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2002 09 14 | 608 | 0.5− | 0.0 | 2006 10 23 | 704 | 0.1− | 1.4− | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2002 09 16 | 644 | 0.3− | 1.2+ | 2006 10 23 | 704 | 0.5+ | 0.7− | 2006 11 18 | 704 | 0.7+ | 0.7+ |
| 2002 09 16 | 644 | 0.4− | 1.0+ | 2006 10 23 | 704 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2002 09 16 | 644 | 0.4− | 1.1+ | 2006 10 23 | 704 | 0.6+ | 0.7− | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2002 10 01 | 608 | 1.0− | 1.2+ | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2002 10 01 | 608 | 0.9− | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2002 10 01 | 608 | (1.7− | 0.7+) | 2006 10 23 | 691 | 0.5− | 0.4− | 2006 11 21 | 704 | 0.8− | 0.2− |
| 2002 10 05 | 704 | 0.3+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2002 10 05 | 704 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2002 10 05 | 704 | 0.9− | 0.0 | 2006 10 27 | 691 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2004 02 17 | 704 | 0.6− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 26 | 704 | 0.2+ | 0.4+ |
| 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 26 | 704 | 1.7+ | 0.6− |
| 2004 02 17 | 704 | 0.2− | 0.8+ | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 26 | 704 | 0.3− | 0.5+ |
| 2004 02 17 | 704 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 26 | 704 | 0.5+ | 1.2+ |
| 2004 02 17 | 704 | 0.1− | 0.6+ | 2006 10 28 | 704 | (0.8+ | 1.8+) | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2004 02 19 | 608 | 0.2− | 0.4+ | 2006 10 28 | 704 | 0.0 | 1.0+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2004 02 19 | 608 | 0.2− | 0.3+ | 2006 10 28 | 704 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2004 02 19 | 608 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2004 03 20 | 704 | (1.3+ | 1.9+) | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.5− | 0.7+ |
| 2004 03 20 | 704 | 0.8+ | 0.6+ | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.8− | 0.0 |
| 2004 03 20 | 704 | 0.4+ | 0.6+ | 2006 11 13 | 644 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.1− | 1.0+ |

**(142593)∗ 2002 TK$_{109}$**

Discovered 2002 Oct. 2 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.37998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26366229 | $\omega$ | 306.70769 | | +0.54529964 | −0.83674661 | |
| $a$ | 2.4086334 | $\Omega$ | 110.17401 | | +0.78506977 | +0.48887918 | |
| $e$ | 0.1981131 | $i$ | 3.05557 | | +0.29379204 | +0.24668249 | |
| $P$ | 3.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 261 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 1991 10 06 | 261 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 1991 10 07 | 261 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 1991 10 07 | 261 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 1991 10 16 | 261 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.1− |
| 1991 10 16 | 261 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2002 08 31 | 699 | 1.3+ | 0.9+ | 2006 10 17 | G96 | 0.5+ | 0.4− | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2002 08 31 | 699 | 1.0− | 0.7+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.1− |
| 2002 08 31 | 699 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2002 08 31 | 699 | 0.3− | 0.5+ | 2006 10 18 | 691 | 0.4− | 0.4+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2002 09 04 | 699 | 0.9− | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 09 04 | 699 | 0.3− | 0.9− | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2002 09 04 | 699 | 0.8− | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2002 09 04 | 699 | 0.5+ | 0.6+ | 2006 11 13 | 703 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2002 09 15 | 644 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2002 09 15 | 644 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 1.1− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2002 09 15 | 644 | 0.1+ | 0.6+ | 2006 11 13 | 703 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.7− |
| 2002 09 28 | 608 | 1.0− | 0.9− | 2006 11 14 | 704 | 0.6+ | 0.6+ | 2006 11 28 | 704 | 0.3− | 0.8− |
| 2002 09 28 | 608 | 0.8− | 0.4− | 2006 11 14 | 704 | 0.5+ | 0.6+ | 2006 11 28 | 704 | 0.3− | 0.5− |
| 2002 09 28 | 608 | (2.0− | 1.7−) | 2006 11 14 | 704 | 0.6+ | 0.9+ | 2006 11 28 | 704 | 0.4− | 0.4− |
| 2002 10 02 | 608 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.4+ | 1.0+ | 2006 11 28 | 704 | 0.2− | 0.7− |
| 2002 10 02 | 608 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.6+ | 0.7+ | 2006 11 29 | 704 | 0.4− | 0.4− |
| 2002 10 02 | 608 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.4− | 2006 11 29 | 704 | 0.8+ | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.6− | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.5− | 0.8− |
| 2002 10 03 | 704 | 0.8+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.8− | 0.1+ |
| 2002 10 05 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 2002 10 05 | 704 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.6− | 0.2− |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 1.7− | 0.8+ |
| 2002 10 05 | 704 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.1− |
| 2002 10 05 | 704 | 0.6− | 0.9− | 2006 11 17 | 704 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.3− | 0.4+ |
| 2004 03 30 | 691 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 0.2+ | 0.4+ | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2004 03 30 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.1− | 0.2− |
| 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.4+ | 0.3− |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.7− | 0.5+ | | | | |

**(142594)∗ 2002 TZ$_{109}$**

Discovered 2002 Oct. 2 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.50357 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27602648 | $\omega$ | 319.62728 | | +0.95810496 | +0.16377233 | |
| $a$ | 2.3361580 | $\Omega$ | 33.27844 | | +0.04489122 | +0.72439136 | |
| $e$ | 0.2230302 | $i$ | 25.35554 | | −0.28287749 | +0.66965347 | |
| $P$ | 3.57 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 704 | 0.3+ | 1.6+ | 2002 11 02 | 608 | 0.9− | 0.6+ | 2003 01 01 | 704 | 0.1+ | 0.3+ |
| 1999 12 17 | 704 | 1.5+ | 0.5− | 2002 11 02 | 608 | 0.9− | 0.7+ | 2003 01 01 | 704 | 0.4+ | 1.1+ |
| 1999 12 17 | 704 | 1.7+ | 0.8− | 2002 11 02 | 608 | 0.7− | 0.5+ | 2003 01 01 | 704 | 0.6− | 0.9+ |
| 2000 04 25 | 645 | 0.1− | 0.2− | 2002 11 06 | 644 | 0.2− | 0.2+ | 2003 01 01 | 704 | 0.6− | 1.1+ |
| 2000 04 25 | 645 | 0.2− | 0.3− | 2002 11 06 | 644 | 0.2− | 0.1+ | 2003 01 05 | 704 | 0.0 | 0.9+ |
| 2001 03 24 | 699 | (0.2+ | 2.1+) | 2002 11 06 | 644 | 0.3− | 0.2+ | 2003 01 05 | 704 | 1.0+ | 0.6+ |
| 2001 03 24 | 699 | 0.1+ | 0.8+ | 2002 11 07 | 704 | 0.7+ | 0.1− | 2003 01 05 | 704 | 0.7+ | 0.5+ |
| 2001 03 24 | 699 | 0.1− | 1.3+ | 2002 11 07 | 704 | 0.5+ | 0.0 | 2003 01 05 | 704 | 0.9+ | 1.0+ |
| 2001 03 24 | 699 | 0.9+ | 0.8+ | 2002 11 07 | 704 | 0.1− | 0.3+ | 2003 01 05 | 704 | 0.4− | 0.2− |
| 2001 04 17 | 699 | 0.7+ | 0.2+ | 2002 11 07 | 704 | 0.5+ | 0.1+ | 2003 01 27 | 704 | 0.4+ | 0.2+ |
| 2001 04 17 | 699 | 1.4+ | 0.0 | 2002 11 07 | 704 | 0.4+ | 0.0 | 2003 01 27 | 704 | 0.8+ | 0.2− |
| 2001 04 17 | 699 | 1.4+ | 1.0+ | 2002 11 11 | 704 | 0.5+ | 0.4+ | 2003 01 27 | 704 | 0.4− | 0.4− |
| 2001 04 17 | 699 | 0.3+ | 0.3+ | 2002 11 11 | 704 | 0.1+ | 0.4+ | 2003 01 27 | 704 | 0.2+ | 0.6− |
| 2002 09 01 | 704 | 0.1− | 0.1− | 2002 11 11 | 704 | 0.2− | 0.5+ | 2004 03 08 | 644 | 0.1+ | 0.5+ |
| 2002 09 01 | 704 | 0.0 | 0.6− | 2002 11 11 | 704 | 1.2+ | 0.8+ | 2004 03 08 | 644 | 0.0 | 0.5+ |
| 2002 09 01 | 704 | 0.3+ | 0.4− | 2002 11 11 | 704 | 0.1+ | 1.0+ | 2004 03 08 | 644 | 0.1− | 0.6+ |
| 2002 09 27 | 704 | 0.1− | 0.5− | 2002 11 19 | 644 | 0.0 | 0.2− | 2004 05 12 | 645 | 0.0 | 0.1+ |
| 2002 09 27 | 704 | 0.1− | 0.8− | 2002 11 19 | 644 | 0.1− | 0.0 | 2004 05 12 | 645 | 0.1+ | 0.1+ |
| 2002 09 27 | 704 | 0.4− | 0.6− | 2002 11 19 | 644 | 0.1− | 0.1− | 2005 06 02 | E12 | 0.6+ | 0.2+ |
| 2002 10 02 | 608 | (0.1+ | 1.8+) | 2002 11 30 | 704 | 0.4+ | 0.6+ | 2005 06 02 | E12 | 0.1− | 0.4− |
| 2002 10 02 | 608 | (0.1− | 1.6+) | 2002 11 30 | 704 | 0.4+ | 0.7+ | 2005 06 02 | E12 | 0.8+ | 0.2+ |
| 2002 10 02 | 608 | 0.0 | 1.4+ | 2002 11 30 | 704 | 0.3+ | 1.1+ | 2005 06 02 | E12 | 0.4+ | 0.1− |
| 2002 10 05 | 704 | (0.1+ | 2.3+) | 2002 12 01 | 608 | 0.2− | 0.7− | 2006 10 03 | 704 | 0.1+ | 0.6+ |
| 2002 10 05 | 704 | (0.8+ | 1.9+) | 2002 12 01 | 608 | 0.0 | 0.3− | 2006 10 03 | 704 | 0.2+ | 0.4+ |
| 2002 10 05 | 704 | (0.1+ | 2.2+) | 2002 12 01 | 608 | 0.0 | 0.5− | 2006 10 03 | 704 | 0.6+ | 0.6− |
| 2002 10 05 | 704 | (0.3+ | 2.2+) | 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 10 03 | 704 | 0.2− | 0.7+ |
| 2002 10 05 | 704 | (0.0 | 2.2+) | 2002 12 05 | 704 | 0.5− | 0.2+ | 2006 10 21 | 703 | 1.0− | 0.7− |
| 2002 10 25 | 644 | 0.2− | 1.0− | 2002 12 05 | 704 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.6− |
| 2002 10 25 | 644 | 0.1− | 1.0− | 2002 12 05 | 704 | 1.1− | 1.0+ | 2006 10 21 | 703 | 1.4− | 0.3− |
| 2002 10 25 | 644 | 0.3− | 1.0− | 2002 12 05 | 704 | 1.2− | 0.1− | 2006 10 21 | 703 | 0.6− | 0.0 |
| 2002 10 29 | 704 | 0.2− | 0.7− | 2002 12 11 | 704 | 0.9− | 0.1+ | 2006 11 18 | 703 | 0.2+ | 0.2− |
| 2002 10 29 | 704 | 0.5− | 0.3− | 2002 12 11 | 704 | 0.1− | 0.0 | 2006 11 18 | 703 | 0.3+ | 1.1+ |
| 2002 10 29 | 704 | 0.3− | 0.0 | 2002 12 11 | 704 | 0.3− | 0.1− | 2006 11 18 | 703 | 0.1+ | 0.6− |
| 2002 10 29 | 704 | 0.4− | 0.0 | 2002 12 11 | 704 | 0.7+ | 0.8− | 2006 11 18 | 703 | 0.5+ | 0.8+ |
| 2002 10 29 | 704 | 0.3− | 0.3+ | 2003 01 01 | 704 | 0.4− | 0.6+ | | | | |

**(142595)∗ 2002 TF$_{111}$**

Discovered 2002 Oct. 2 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.73313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23576134 | $\omega$ | 96.29991 | | +0.00370552 | −0.99966388 | |
| $a$ | 2.5951014 | $\Omega$ | 353.32449 | | +0.80785015 | +0.01811562 | |
| $e$ | 0.1317850 | $i$ | 12.75196 | | +0.58937629 | −0.01854576 | |
| $P$ | 4.18 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.5+ | 0.1+ | 2004 03 15 | 704 | 0.9− | 0.4− | 2006 09 20 | 704 | 0.6− | 1.1+ |
| 2000 04 05 | 699 | 0.0 | 0.9+ | 2004 03 15 | 704 | 0.6− | 0.1− | 2006 09 20 | 704 | 0.1+ | 1.0+ |
| 2000 04 05 | 699 | 0.5+ | 0.4+ | 2004 03 15 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 2000 04 05 | 699 | 0.5+ | 1.3+ | 2004 03 15 | 704 | 0.8− | 0.5− | 2006 09 20 | 704 | 0.5− | 0.9+ |
| 2002 09 06 | 704 | 0.2− | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.7+ |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2004 03 16 | 704 | 0.5+ | 0.9+ | 2006 09 25 | 699 | 0.5− | 0.9+ |
| 2002 09 06 | 704 | 0.9− | 0.6+ | 2004 03 16 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 699 | 1.4− | 0.6+ |
| 2002 09 06 | 704 | 0.5+ | 0.6+ | 2004 03 16 | 704 | 1.2+ | 0.5− | 2006 09 25 | 699 | 1.3− | 0.4+ |
| 2002 09 06 | 704 | 0.4− | 1.0+ | 2004 03 16 | 704 | 0.7+ | 0.3− | 2006 09 25 | 699 | 1.0− | 0.3+ |
| 2002 10 02 | 599 | 0.6+ | 0.3+ | 2004 03 18 | 704 | 0.6+ | 1.1+ | 2006 09 26 | 704 | 0.6+ | 0.7+ |
| 2002 10 02 | 599 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.7+ | 0.9+ | 2006 09 26 | 704 | (1.9+ | 0.7−) |
| 2002 10 02 | 599 | 0.1− | 0.4− | 2004 03 18 | 704 | 1.1+ | 1.4+ | 2006 09 26 | 704 | 1.2− | 0.8+ |
| 2002 10 02 | 599 | 0.2+ | 0.9− | 2004 03 18 | 704 | 0.9+ | 1.0+ | 2006 09 26 | 704 | 0.9+ | 0.6+ |
| 2002 10 05 | 704 | 0.8+ | 0.3+ | 2004 03 18 | 704 | 0.7+ | 0.8+ | 2006 09 27 | 704 | 0.4+ | 0.2− |
| 2002 10 05 | 704 | 0.5+ | 0.3+ | 2004 03 25 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.3− |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2004 03 25 | 704 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.1− |
| 2002 10 05 | 704 | 1.1+ | 1.2− | 2004 03 25 | 704 | 0.4+ | 0.9+ | 2006 09 27 | 704 | 0.2− | 0.4+ |
| 2002 10 07 | 704 | 0.6− | 1.5− | 2004 03 25 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.4− |
| 2002 10 07 | 704 | 0.0 | 0.2+ | 2004 03 25 | 704 | 1.2+ | 0.5+ | 2006 09 29 | 704 | (1.6+ | 1.0+) |
| 2002 10 07 | 704 | 0.1− | 0.2− | 2004 03 27 | 704 | 1.1+ | 0.4+ | 2006 09 29 | 704 | 0.5− | 1.0+ |
| 2002 10 07 | 704 | 0.4+ | 0.2− | 2004 03 27 | 704 | 1.1+ | 0.2+ | 2006 09 29 | 704 | 1.0− | 0.9+ |
| 2002 10 07 | 704 | 1.2+ | 0.4− | 2004 03 27 | 704 | 0.8+ | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.8− |
| 2002 10 07 | 704 | 0.2− | 1.5− | 2004 03 27 | 704 | 0.9+ | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 2002 10 07 | 704 | 0.8+ | 0.5+ | 2004 03 27 | 704 | 0.8+ | 0.3− | 2006 10 01 | 703 | 0.7+ | 0.3+ |
| 2002 10 07 | 704 | 0.2+ | 0.2− | 2004 04 09 | 703 | (0.1+ | 3.0+) | 2006 10 01 | 703 | 0.6+ | 0.5− |
| 2002 10 07 | 704 | 0.1+ | 0.7− | 2004 04 09 | 703 | 0.6− | 0.1+ | 2006 10 01 | 703 | 0.2+ | 0.4+ |
| 2002 10 07 | 704 | 0.7+ | 0.9− | 2004 04 09 | 703 | 0.9− | 0.5+ | 2006 10 01 | 703 | 0.3− | 0.8+ |
| 2002 10 07 | 704 | 0.2+ | 0.2+ | 2004 04 09 | 703 | 0.4− | 1.3+ | 2006 10 01 | 704 | 0.3− | 0.0 |
| 2002 10 07 | 704 | 0.6− | 0.0 | 2004 04 15 | 704 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.1− | 0.6+ |
| 2002 10 08 | 704 | 0.2+ | 0.6− | 2004 04 15 | 704 | 0.8+ | 0.2+ | 2006 10 01 | 704 | 0.3+ | 1.3+ |
| 2002 10 08 | 704 | 0.1− | 0.1− | 2004 04 15 | 704 | 1.0+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.2− |
| 2002 10 08 | 704 | 0.2+ | 0.5− | 2004 04 15 | 704 | 1.1− | 1.0− | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 1.1− | 0.3− | 2006 08 18 | 699 | 0.6+ | 0.5+ | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2002 10 12 | 704 | 0.1− | 0.6− | 2006 08 18 | 699 | (0.4+ | 2.1+) | 2006 10 03 | G96 | 0.2+ | 0.4+ |
| 2002 10 12 | 704 | 1.2− | 0.2+ | 2006 08 18 | 699 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 10 12 | 704 | 0.5− | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 644 | 0.1− | 0.6+ | 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2002 10 31 | 644 | 0.0 | 0.5+ | 2006 08 19 | 691 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 644 | 0.3+ | 0.6+ | 2006 08 21 | 704 | 1.0− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2002 11 06 | 704 | 0.1+ | 1.3+ | 2006 08 21 | 704 | 1.1− | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 0.4− | 0.5+ | 2006 08 21 | 704 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.2+ | 0.5+ | 2006 08 21 | 704 | 1.2− | 0.9+ | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2006 08 21 | 704 | 0.9− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 11 12 | 644 | 0.3− | 1.2− | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2002 11 12 | 644 | 0.0 | 0.4− | 2006 08 22 | 644 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2002 11 12 | 644 | 0.3+ | 0.6− | 2006 08 22 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | (1.6− | 3.3−) |
| 2004 02 13 | 644 | 0.2+ | 0.5+ | 2006 09 01 | 704 | 0.5− | 0.6− | 2006 10 16 | 703 | (1.3+ | 2.8−) |
| 2004 02 13 | 644 | 0.2+ | 0.7+ | 2006 09 01 | 704 | 0.5− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2004 02 13 | 644 | 0.3+ | 0.2+ | 2006 09 01 | 704 | 0.5+ | 0.9− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2004 02 16 | 703 | 0.7+ | 1.0+ | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2004 02 16 | 703 | 0.3− | 0.7− | 2006 09 13 | 644 | 0.8− | 0.4+ | 2006 10 22 | 703 | 1.2− | 0.2− |
| 2004 02 16 | 703 | 0.3+ | 0.8+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2004 02 16 | 703 | 0.1+ | 1.1+ | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2004 02 18 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.3+ |
| 2004 02 18 | 704 | 0.4− | 0.1− | 2006 09 14 | 644 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2004 02 18 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.6− | 1.2+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2004 02 18 | 704 | 0.3− | 0.4+ | 2006 09 17 | 704 | (2.1+ | 0.2+) | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2004 02 18 | 704 | 0.1+ | 1.4+ | 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.5− | 0.1− |
| 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2004 02 23 | 704 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.4− | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2004 02 23 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 699 | 0.6+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2004 02 23 | 704 | 0.7+ | 0.3+ | 2006 09 19 | 699 | 1.3+ | 0.1− | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2004 02 23 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 1.1− | 0.7− | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2004 03 15 | 704 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.9+ | 2006 10 24 | 644 | 0.0 | 0.1+ |

**(142596)∗ 2002 TG$_{112}$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.57960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26023655 | $\omega$ | 351.14627 | | +0.21847206 | −0.97391843 | |
| $a$ | 2.4297254 | $\Omega$ | 86.21741 | | +0.89903540 | +0.17646691 | |
| $e$ | 0.2089987 | $i$ | 3.51985 | | +0.37948032 | +0.14262654 | |
| $P$ | 3.79 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 14 | 691 | 0.4+ | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.2− | 2006 10 27 | 704 | 0.1+ | 0.8− |
| 1991 12 14 | 691 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.6+ | 1.2+ | 2006 10 27 | 704 | 0.1− | 0.5+ |
| 1991 12 14 | 691 | 0.5+ | 0.3− | 2004 03 22 | 704 | 0.6− | 0.0 | 2006 10 27 | 704 | 0.9+ | 0.3+ |
| 1996 01 12 | 691 | 0.7− | 0.2− | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 10 27 | 704 | 0.1− | 0.5+ |
| 1996 01 12 | 691 | 0.5− | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.1− |
| 1996 01 12 | 691 | (2.3− | 0.0 ) | 2004 03 22 | 704 | 0.3+ | 1.0+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2000 03 02 | 703 | 1.7+ | 0.2− | 2004 03 24 | 699 | (1.8+ | 0.6−) | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2000 03 02 | 703 | (0.7+ | 2.6+) | 2004 03 24 | 699 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2000 03 02 | 703 | 0.7− | 0.8+ | 2004 03 24 | 699 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2000 03 02 | 703 | (3.9+ | 0.4−) | 2004 03 24 | 699 | 0.8− | 1.1− | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 2000 03 05 | 704 | 0.3+ | 0.9+ | 2004 04 21 | 691 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.1+ | 1.1+ | 2004 04 21 | 691 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.3+ | | |
| 2000 03 05 | 704 | 0.1− | 1.0+ | 2004 04 21 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2000 03 05 | 704 | 0.3+ | 1.3+ | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.0 | | |
| 2000 03 05 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.7+ | 2006 11 13 | 703 | 0.8− | 0.3+ | | |
| 2002 09 05 | 704 | 0.7− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 11 13 | 644 | 0.0 | 0.4+ | | |
| 2002 09 05 | 704 | 0.8− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.0 | | |
| 2002 09 05 | 704 | 0.9+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 11 13 | 703 | 0.6− | 0.3+ | | |
| 2002 09 15 | 608 | 0.8− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 14 | 704 | (0.4− | 1.7+) | | |
| 2002 09 15 | 608 | 1.2− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 14 | 704 | (1.3+ | 2.5+) | | |
| 2002 09 15 | 608 | 1.2− | 0.9+ | 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 11 14 | 704 | 0.7+ | 0.9+ | | |
| 2002 09 16 | 644 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.7+ | | |
| 2002 09 16 | 644 | 0.6− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 1.1+ | 1.2− | | |
| 2002 09 16 | 644 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.2− | | |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.2− | | |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.3− | | |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.0 | | |
| 2002 10 03 | 704 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 05 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.7+ | 0.5+ | | |
| 2002 10 05 | 704 | 0.8− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.1+ | | |
| 2002 10 05 | 704 | 0.6+ | 0.5− | 2006 10 22 | 704 | (2.1+ | 0.5+) | 2006 11 20 | 704 | 0.3+ | 0.6+ | | |
| 2002 10 05 | 704 | 0.6− | 0.3+ | 2006 10 22 | 704 | 1.4− | 0.4+ | 2006 11 20 | 704 | 0.5+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.5+ | 0.5− | 2006 10 22 | 704 | 1.1− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2004 03 19 | 704 | 0.4− | 0.8+ | 2006 10 22 | 704 | 0.6− | 0.2+ | 2006 11 20 | 704 | 1.3− | 1.1− | | |
| 2004 03 19 | 704 | 0.0 | 1.1+ | 2006 10 22 | 704 | (2.2− | 2.5+) | 2006 11 20 | 704 | 0.0 | 0.0 | | |
| 2004 03 19 | 704 | 1.2+ | 0.5+ | 2006 10 27 | 704 | 0.0 | 1.3+ | 2006 11 20 | 704 | 0.6+ | 0.6+ | | |

**(142597)∗ 2002 TQ$_{112}$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.09929 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25771381 | $\omega$ | 214.53066 | | +0.01342646 | +0.99956765 | |
| $a$ | 2.4455559 | $\Omega$ | 56.25201 | | −0.91016007 | +0.02304953 | |
| $e$ | 0.1720340 | $i$ | 1.80278 | | −0.41403910 | −0.01825457 | |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 699 | 1.2+ | 0.1+ | 2005 04 12 | 704 | (1.8− | 0.6−) | 2006 09 26 | G96 | 1.4− | 0.9+ | | |
| 2001 03 29 | 699 | (0.2+ | 1.8+) | 2005 04 12 | 704 | 0.2− | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2001 03 29 | 699 | 1.3+ | 1.3+ | 2005 04 12 | 704 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2001 03 29 | 699 | 0.8+ | 0.4+ | 2005 04 12 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.2+ | | |
| 2001 04 15 | 691 | 0.1− | 0.8+ | 2005 04 13 | 699 | (0.6+ | 1.6+) | 2006 09 28 | 691 | 0.3+ | 0.0 | | |
| 2001 04 15 | 691 | 0.2+ | 0.6+ | 2005 04 13 | 699 | 0.5+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.0 | | |
| 2001 04 15 | 691 | 0.2+ | 0.5+ | 2005 04 13 | 699 | 1.2+ | 0.3− | 2006 10 11 | 691 | 0.3− | 0.1− | | |
| 2002 09 15 | 644 | 0.7− | 0.3+ | 2005 04 13 | 699 | (0.6− | 2.1+) | 2006 10 11 | 691 | 0.1− | 0.2+ | | |
| 2002 09 15 | 644 | 0.5− | 0.3+ | 2005 04 18 | 703 | (1.6− | 0.2+) | 2006 10 11 | 691 | 0.3− | 0.4+ | | |
| 2002 09 15 | 644 | 0.4− | 0.7+ | 2005 04 18 | 703 | 0.5− | 0.8+ | 2006 10 15 | 691 | 0.2− | 0.3+ | | |
| 2002 09 26 | 644 | 0.5− | 0.3+ | 2005 04 18 | 704 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 26 | 644 | 0.3− | 0.2+ | 2005 04 18 | 703 | 0.6− | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | | |
| 2002 09 26 | 644 | 0.4− | 0.4+ | 2005 04 18 | 703 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.4− | 0.0 | | |
| 2002 09 30 | 608 | 0.3− | 0.8− | 2005 04 18 | 704 | 0.8+ | 1.4+ | 2006 10 19 | 691 | 0.3− | 0.1+ | | |
| 2002 09 30 | 608 | 0.8− | 0.4− | 2005 04 18 | 704 | 0.8+ | 1.1+ | 2006 10 19 | 691 | 0.2− | 0.2+ | | |
| 2002 09 30 | 608 | 0.6− | 1.3+ | 2005 05 01 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.5+ | | |
| 2002 10 03 | 704 | 0.6− | 0.6+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2005 05 01 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.2+ | | |
| 2002 10 03 | 704 | 0.5− | 1.1+ | 2005 05 01 | 644 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.2− | | |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2005 05 01 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.8+ | | |
| 2002 10 05 | 704 | 0.1+ | 0.9+ | 2005 05 01 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.0 | | |
| 2002 10 05 | 704 | 0.2− | 0.4+ | 2005 05 09 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.7− | | |
| 2002 10 05 | 704 | 0.4+ | 0.3+ | 2005 05 09 | 704 | 0.4+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.6+ | | |
| 2002 10 06 | 644 | 0.0 | 0.2+ | 2005 05 09 | 699 | 0.5− | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2002 10 06 | 644 | 0.0 | 0.3+ | 2005 05 09 | 704 | 0.6+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.5+ | | |
| 2002 10 06 | 644 | 0.0 | 0.3+ | 2005 05 09 | 699 | 0.5− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.4+ | | |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2005 05 09 | 699 | 0.1+ | 1.4+ | 2006 11 01 | 691 | 0.2− | 0.6+ | | |
| 2002 10 10 | 645 | 0.2+ | 0.0 | 2005 05 09 | 699 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.3− | 0.7+ | 2005 05 11 | G96 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2002 10 11 | 704 | 1.0− | 0.2+ | 2005 05 11 | G96 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.3− | | |
| 2002 10 11 | 704 | 0.4− | 0.4− | 2005 05 11 | G96 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.5− | | |
| 2002 10 11 | 704 | 1.1− | 1.0+ | 2005 05 11 | G96 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 05 13 | 704 | 1.4+ | 0.9+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2005 05 13 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.3− | | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.0 | 0.6− | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.3+ | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.2+ | | |
| 2005 04 10 | G96 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.1+ | | |
| 2005 04 10 | G96 | 0.6− | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.2+ | | |
| 2005 04 10 | G96 | 0.5− | 0.0 | 2006 09 18 | 691 | 0.7− | 0.5− | | | | | | |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.3− | | | | | | |

**(142598)∗ 2002 TY$_{112}$ = 1998 WA$_{29}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Id. M. E. Sansaturio (*MPO* 41065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.09726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22665101 | $\omega$ | 311.15345 | | −0.98244541 | −0.04023833 | |
| $a$ | 2.6641844 | $\Omega$ | 227.40412 | | +0.08266729 | −0.96925715 | |
| $e$ | 0.0763872 | $i$ | 14.32664 | | −0.16723377 | −0.24273743 | |
| $P$ | 4.35 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 691 | 0.0 | 0.0 | 2002 10 10 | 704 | 0.2+ | 0.6+ | 2005 05 30 | 699 | 0.9+ | 0.8− | | |
| 1998 11 23 | 691 | 0.1+ | 0.3− | 2002 10 10 | 704 | 0.7+ | 0.5+ | 2005 05 30 | 699 | 0.9+ | 0.8− | | |
| 1998 11 23 | 691 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.7+ | 1.3+ | 2005 05 30 | 699 | 0.1+ | 0.3− | | |
| 1998 11 26 | 691 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.7+ | 1.4+ | 2005 05 30 | 699 | 1.2+ | 0.4+ | | |
| 1998 11 26 | 691 | 0.1+ | 0.4− | 2002 10 11 | 704 | 0.4− | 1.5+ | 2005 06 04 | 703 | 1.4− | 0.4− | | |
| 1998 11 26 | 691 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.8+ | 1.6+ | 2005 06 04 | 703 | 0.0 | 0.6− | | |
| 2000 03 09 | 704 | 0.4− | 1.0+ | 2002 10 11 | 704 | 0.9+ | 0.6+ | 2005 06 04 | 703 | 1.0− | 0.5+ | | |
| 2000 03 09 | 704 | 0.2+ | 0.3+ | 2005 04 18 | 703 | (0.7+ | 2.0+) | 2005 06 04 | 703 | 0.6− | 0.3− | | |
| 2000 03 09 | 704 | 0.3+ | 0.5− | 2005 04 18 | 703 | 1.2+ | 1.1+ | 2005 06 08 | 691 | 0.0 | 0.2+ | | |
| 2000 03 09 | 704 | 0.4+ | 0.7+ | 2005 04 18 | 703 | 1.7+ | 0.1+ | 2005 06 08 | 691 | 0.1− | 0.2+ | | |
| 2000 03 09 | 704 | 0.6− | 0.6+ | 2005 04 18 | 703 | 0.3+ | 0.9+ | 2005 06 08 | 691 | 0.1− | 0.3+ | | |
| 2000 04 06 | 699 | 0.3+ | 0.6− | 2005 05 04 | 704 | 0.4− | 0.5− | 2005 06 16 | 691 | 0.3− | 0.2+ | | |
| 2000 04 06 | 699 | 0.2+ | 0.2− | 2005 05 04 | 704 | 0.8+ | 0.2+ | 2005 06 16 | 691 | 0.3− | 0.2+ | | |
| 2000 04 06 | 699 | 0.3− | 0.6+ | 2005 05 04 | 704 | 0.0 | 0.5− | 2005 06 16 | 691 | 0.1− | 0.3+ | | |
| 2000 04 06 | 699 | 0.5+ | 1.2+ | 2005 05 04 | 704 | 0.2− | 0.4− | 2006 08 29 | 699 | 0.8+ | 0.0 | | |
| 2000 05 05 | 699 | 0.2+ | 1.8+ | 2005 05 08 | G96 | 0.6− | 0.5− | 2006 08 29 | 699 | 0.5+ | 0.3+ | | |
| 2000 05 05 | 699 | (4.7+ | 3.5−) | 2005 05 08 | G96 | 0.0 | 0.3+ | 2006 08 29 | 699 | 0.1+ | 0.1+ | | |
| 2000 05 05 | 699 | 0.6− | 0.4+ | 2005 05 08 | G96 | 0.7− | 0.6− | 2006 08 29 | 699 | 0.4− | 0.0 | | |
| 2000 05 05 | 699 | 0.3+ | 1.1+ | 2005 05 08 | G96 | 0.5− | 0.5− | 2006 09 11 | 703 | 1.5− | 0.5+ | | |
| 2002 10 03 | 644 | 0.7− | 0.8+ | 2005 05 09 | 704 | 0.4− | 0.2− | 2006 09 11 | 703 | 0.5− | 0.5− | | |
| 2002 10 03 | 644 | 0.6− | 0.9+ | 2005 05 09 | 704 | 0.2− | 0.4− | 2006 09 11 | 703 | 0.6− | 0.3− | | |
| 2002 10 03 | 644 | 0.9− | 0.8+ | 2005 05 09 | 704 | 0.1+ | 0.4+ | 2006 09 11 | 703 | 0.3− | 0.9− | | |
| 2002 10 05 | 704 | 1.0− | 1.4+ | 2005 05 09 | 704 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.5− | | |
| 2002 10 05 | 704 | 0.4− | 0.1+ | 2005 05 09 | 704 | (0.1+ | 2.4−) | 2006 09 20 | 699 | 0.2+ | 1.0− | | |
| 2002 10 05 | 704 | 1.0− | 0.1− | 2005 05 27 | 699 | 0.9+ | 0.1+ | 2006 09 20 | 699 | 1.1+ | 1.0− | | |
| 2002 10 10 | 704 | 1.0− | 0.4+ | 2005 05 27 | 699 | 1.3+ | 0.9− | 2006 09 20 | 699 | 0.6+ | 0.5− | | |
| 2002 10 10 | 704 | 0.6− | 0.6+ | 2005 05 27 | 699 | 1.0+ | 0.4+ | | | | | | |
| 2002 10 10 | 704 | 0.7− | 0.9+ | 2005 05 27 | 699 | (2.3+ | 1.3+) | | | | | | |

**(142599)∗ 2002 TY$_{115}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.34570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24315857 | $\omega$ | 49.49228 | | +0.34761441 | +0.91823052 | |
| $a$ | 2.5421997 | $\Omega$ | 241.81276 | | −0.91217153 | +0.28432187 | |
| $e$ | 0.1604111 | $i$ | 12.43406 | | −0.21704224 | +0.27570598 | |
| $P$ | 4.05 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 12 | 608 | 0.2− | 0.1− | 2002 10 07 | 704 | 0.9+ | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.2+ | | |
| 2001 06 12 | 608 | 0.4+ | 0.3− | 2002 10 07 | 704 | 1.1+ | 1.1+ | 2005 05 01 | 644 | 0.5+ | 0.1+ | | |
| 2001 06 12 | 608 | 0.3+ | 0.2− | 2002 10 09 | 704 | 0.5− | 0.4+ | 2005 05 01 | 644 | 0.3+ | 0.3+ | | |
| 2002 09 20 | 644 | 0.5− | 0.1− | 2002 10 09 | 704 | 1.0− | 0.7− | 2005 05 01 | 644 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 20 | 644 | 0.7− | 0.1− | 2002 10 09 | 704 | 0.4− | 0.1− | 2005 05 01 | 644 | 0.2+ | 0.4+ | | |
| 2002 09 20 | 644 | 0.7− | 0.2+ | 2002 10 09 | 704 | 0.6− | 0.3− | 2005 05 04 | E12 | 0.3− | 0.9+ | | |
| 2002 10 03 | 644 | 0.5+ | 1.1+ | 2002 10 09 | 704 | 0.3− | 0.3+ | 2005 05 04 | E12 | 0.3− | 0.4+ | | |
| 2002 10 03 | 644 | 0.6+ | 0.9+ | 2002 10 10 | 704 | 0.3− | 0.1− | 2005 05 04 | E12 | 0.0 | 0.4− | | |
| 2002 10 03 | 644 | 0.6+ | 0.9+ | 2002 10 10 | 704 | 0.5+ | 0.3+ | 2005 05 04 | E12 | 0.6+ | 0.8+ | | |
| 2002 10 05 | 704 | 0.3− | 0.6− | 2002 10 10 | 704 | 0.6− | 0.5− | 2006 09 16 | 703 | 0.5− | 0.5− | | |
| 2002 10 05 | 704 | 0.0 | 0.1+ | 2002 10 10 | 704 | 0.5− | 0.6− | 2006 09 16 | 703 | 0.2+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.0 | 0.6− | 2002 10 10 | 704 | 0.1+ | 0.7− | 2006 09 16 | 703 | 0.7− | 0.4+ | | |
| 2002 10 05 | 704 | 0.4+ | 0.5+ | 2002 10 10 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.5− | | |
| 2002 10 05 | 704 | 0.3+ | 0.5− | 2002 10 10 | 704 | 0.2− | 0.4− | 2006 09 22 | 699 | 0.5+ | 0.0 | | |
| 2002 10 06 | 699 | 0.5− | 0.1+ | 2002 10 10 | 704 | 0.1− | 0.3+ | 2006 09 22 | 699 | 0.4+ | 0.6− | | |
| 2002 10 06 | 699 | 1.0+ | 0.4− | 2002 10 10 | 704 | 0.3− | 0.1+ | 2006 09 22 | 699 | (1.6+ | 0.5+) | | |
| 2002 10 06 | 699 | 0.9− | 0.5+ | 2002 10 10 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.2+ | | |
| 2002 10 06 | 699 | 0.9+ | 0.9+ | 2002 10 31 | 644 | 0.2− | 0.7+ | 2006 10 19 | 703 | 0.4− | 0.0 | | |
| 2002 10 06 | 699 | 0.4+ | 0.2− | 2002 10 31 | 644 | 0.4− | 1.0+ | 2006 10 19 | 703 | 0.1+ | 0.5+ | | |
| 2002 10 06 | 699 | 1.1+ | 0.4+ | 2002 10 31 | 644 | 0.4− | 1.1+ | 2006 10 19 | 703 | 0.5+ | 0.1− | | |
| 2002 10 06 | 699 | 0.9+ | 1.2− | 2002 11 22 | 644 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2002 10 06 | 699 | 0.4+ | 0.1+ | 2002 11 22 | 644 | 0.7− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2002 10 06 | 704 | 0.3− | 0.0 | 2002 11 22 | 644 | 0.5− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2002 10 06 | 704 | 0.6− | 0.8− | 2005 04 15 | 703 | (1.8− | 1.0+) | 2006 10 23 | 644 | 0.9+ | 0.1+ | | |
| 2002 10 06 | 704 | (0.1− | 1.7−) | 2005 04 15 | 703 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.5+ | 0.1+ | | |
| 2002 10 06 | 704 | 1.0− | 0.7− | 2005 04 15 | 703 | 0.2− | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2002 10 06 | 704 | 0.7− | 0.9− | 2005 04 15 | 703 | 0.6− | 0.1+ | | | | | | |
| 2002 10 07 | 704 | 0.9+ | 0.2+ | 2005 05 01 | 644 | 0.2+ | 0.4+ | | | | | | |

**(142600)∗ 2002 TG$_{116}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 102.11727 | | (2000.0) | | | |
| $n$ | 0.26234018 | $\omega$ | 6.74989 | | +0.14860672 | +0.98293118 |
| $a$ | 2.4167191 | $\Omega$ | 271.83649 | | −0.91229239 | +0.09394436 |
| $e$ | 0.1256244 | $i$ | 6.22943 | | −0.38162630 | +0.15817949 |
| $P$ | 3.76 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 19 | 704 | 0.9+ | 0.9+ | 2002 10 03 | 644 | 0.3− | 0.0 | 2004 01 18 | 691 | 0.1+ | 0.1− | | |
| 1998 08 19 | 704 | 1.4+ | 0.3+ | 2002 10 03 | 644 | 0.1+ | 0.6+ | 2004 01 18 | 691 | 0.1+ | 0.2− | | |
| 1998 08 19 | 704 | 0.3− | 1.1− | 2002 10 05 | 704 | 0.3− | 0.5+ | 2004 01 18 | 691 | 0.1+ | 0.2− | | |
| 1998 08 19 | 704 | 0.5+ | 1.5− | 2002 10 05 | 704 | 0.4− | 0.1− | 2006 10 19 | 703 | 0.6+ | 0.7+ | | |
| 1998 08 19 | 704 | (7.0− | 1.1−) | 2002 10 05 | 704 | 0.2− | 0.2+ | 2006 10 19 | 703 | (1.5+ | 0.4−) | | |
| 1998 08 27 | 704 | 0.0 | 0.1− | 2002 10 05 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.9+ | 1.2+ | | |
| 1998 08 27 | 704 | 1.5+ | 0.8− | 2002 10 05 | 704 | 0.3− | 0.2− | 2006 10 19 | 703 | 0.8+ | 0.2+ | | |
| 1998 08 27 | 704 | (2.9+ | 0.8−) | 2002 10 07 | 699 | 0.1+ | 1.0+ | 2006 10 27 | 703 | 0.2− | 0.4− | | |
| 1998 08 27 | 704 | (4.1− | 0.7−) | 2002 10 07 | 699 | 0.5− | 1.0− | 2006 10 27 | 703 | 0.3− | 0.8+ | | |
| 2001 03 26 | 704 | 0.9+ | 0.2+ | 2002 10 07 | 699 | 0.7− | 0.2+ | 2006 10 27 | 703 | (0.7− | 2.6−) | | |
| 2001 03 26 | 704 | 0.4− | 1.0− | 2002 10 07 | 699 | 0.6− | 0.4+ | 2006 10 27 | 703 | 1.3+ | 0.9− | | |
| 2001 03 26 | 704 | 0.7− | 0.4− | 2002 10 09 | 704 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.0 | | |
| 2001 04 16 | 704 | 0.5+ | 1.2+ | 2002 10 09 | 704 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2− | | |
| 2001 04 16 | 704 | 0.2− | 0.3+ | 2002 10 09 | 704 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 2001 04 16 | 704 | 0.5+ | 1.0+ | 2002 10 09 | 704 | 0.6− | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.8+ | | |
| 2001 04 16 | 704 | 0.6− | 0.6− | 2002 10 09 | 704 | 0.6− | 0.9− | 2006 11 14 | 703 | 0.9+ | 0.0 | | |
| 2002 09 07 | 704 | 0.4+ | 0.6− | 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 0.3− | 0.6− | | |
| 2002 09 07 | 704 | 0.3+ | 0.4− | 2002 10 31 | 644 | 0.3− | 0.1− | 2006 11 14 | 703 | 1.0− | 0.8− | | |
| 2002 09 07 | 704 | 0.0 | 0.4− | 2002 10 31 | 644 | 0.8− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.6− | | |
| 2002 09 10 | 608 | 0.6− | 0.5+ | 2002 11 22 | 644 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.6− | | |
| 2002 09 10 | 608 | 0.3− | 0.0 | 2002 11 22 | 644 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.5+ | 0.3− | | |
| 2002 09 10 | 608 | 1.0− | 0.1+ | 2002 11 22 | 644 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.4− | | |
| 2002 09 28 | 608 | (3.0− | 1.3−) | 2003 12 29 | 699 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.6− | 0.1− | | |
| 2002 09 28 | 608 | (2.9− | 1.5−) | 2003 12 29 | 699 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.8+ | 0.3+ | | |
| 2002 09 28 | 608 | (3.1− | 1.2−) | 2003 12 29 | 699 | 1.2− | 0.7+ | 2006 11 22 | 704 | 0.5− | 0.6+ | | |
| 2002 10 03 | 644 | 0.1− | 0.3+ | 2003 12 29 | 699 | 0.4− | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.6+ | | |

**(142601)∗ 2002 TF$_{117}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.65902 | | (2000.0) | | | |
| $n$ | 0.22888835 | $\omega$ | 303.20065 | | +0.17651451 | +0.98050423 |
| $a$ | 2.6467947 | $\Omega$ | 336.50565 | | −0.81555546 | +0.09657961 |
| $e$ | 0.1473375 | $i$ | 12.50758 | | −0.55110064 | +0.17112518 |
| $P$ | 4.31 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.1− | 0.2− | 2005 04 14 | 703 | (1.6− | 0.6−) | 2006 08 30 | 704 | 0.4+ | 0.1− | | |
| 1996 02 15 | 691 | 0.1+ | 0.2+ | 2005 04 14 | 703 | (1.0+ | 1.9+) | 2006 08 30 | 704 | 0.4− | 0.4− | | |
| 1996 02 15 | 691 | 0.1+ | 0.0 | 2005 04 14 | 703 | 0.9+ | 1.2+ | 2006 08 30 | 704 | 0.1+ | 0.3+ | | |
| 1998 06 18 | 696 | 0.5+ | 0.6− | 2005 04 14 | 703 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.1− | 0.4+ | | |
| 1998 06 18 | 696 | 0.0 | 0.7− | 2005 05 04 | E12 | 0.4− | 0.4+ | 2006 09 01 | 704 | 0.1+ | 0.3+ | | |
| 2000 02 11 | 704 | 0.4− | 0.0 | 2005 05 04 | E12 | 0.4− | 0.2− | 2006 09 01 | 704 | 0.3+ | 0.3− | | |
| 2000 02 11 | 704 | 0.7− | 0.6+ | 2005 05 04 | E12 | 0.9− | 0.0 | 2006 09 01 | 704 | 0.3+ | 1.0− | | |
| 2000 02 11 | 704 | 0.2− | 0.8+ | 2005 05 04 | E12 | 0.3+ | 0.1+ | 2006 09 11 | 703 | 0.3− | 0.5− | | |
| 2002 10 03 | 644 | 0.4− | 0.3+ | 2005 05 08 | 699 | (0.7+ | 2.0+) | 2006 09 11 | 703 | 0.3+ | 0.0 | | |
| 2002 10 03 | 644 | 0.7− | 0.1− | 2005 05 08 | 699 | 0.6− | 0.1− | 2006 09 11 | 703 | 0.2− | 0.0 | | |
| 2002 10 03 | 644 | 0.1− | 0.2− | 2005 05 08 | 699 | 0.3+ | 0.6+ | 2006 09 11 | 703 | 0.6− | 0.5− | | |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2005 05 08 | 699 | 1.2+ | 0.9+ | 2006 09 13 | 644 | 0.3+ | 0.2− | | |
| 2002 10 05 | 704 | 0.2− | 0.1− | 2006 08 06 | 699 | 0.3+ | 0.2− | 2006 09 13 | 644 | 0.3− | 0.2− | | |
| 2002 10 05 | 704 | 0.6− | 0.5+ | 2006 08 06 | 699 | 0.2+ | 1.3+ | 2006 09 13 | 644 | 0.0 | 0.4− | | |
| 2002 10 05 | 704 | (1.6− | 0.2−) | 2006 08 06 | 699 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.2− | | |
| 2002 10 05 | 704 | 0.4− | 0.4+ | 2006 08 06 | 699 | 1.1− | 0.2+ | 2006 09 16 | 644 | 0.1− | 0.0 | | |
| 2002 10 09 | 704 | 0.1− | 1.1+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.2− | | |
| 2002 10 09 | 704 | 0.5+ | 1.3+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.2− | | |
| 2002 10 09 | 704 | 1.3− | 1.0+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 1.0− | 0.2+ | | |
| 2002 10 09 | 704 | 1.1+ | 1.4+ | 2006 08 21 | 704 | 0.0 | 0.5− | 2006 09 17 | 703 | 0.6− | 0.3− | | |
| 2002 10 12 | 704 | 1.2− | 0.5+ | 2006 08 21 | 704 | 0.1− | 1.0+ | 2006 09 17 | 703 | 0.3− | 0.3+ | | |
| 2002 10 12 | 704 | 0.9− | 0.2+ | 2006 08 21 | 704 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.2− | | |
| 2002 10 12 | 704 | 0.1− | 0.4+ | 2006 08 21 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 1.3− | 0.3+ | | |
| 2002 10 12 | 704 | 0.8− | 0.6− | 2006 08 25 | 704 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 31 | 644 | 0.3− | 0.9+ | 2006 08 25 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 699 | 0.3− | 1.1+ | | |
| 2002 10 31 | 644 | 0.2+ | 0.9+ | 2006 08 25 | 704 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.0 | 1.1+ | | |
| 2002 10 31 | 644 | 0.2+ | 1.1+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 699 | (1.7− | 0.7+) | | |
| 2005 04 03 | 704 | 0.5+ | 0.7+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.4+ | 1.0− | | |
| 2005 04 03 | 704 | 0.9+ | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2005 04 03 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.7− | | |
| 2005 04 05 | 644 | 0.8+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.5− | | |
| 2005 04 05 | 644 | 0.5+ | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.4+ | 0.4− | | |
| 2005 04 05 | 644 | 0.7+ | 0.8+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.3− | | |
| 2005 04 06 | 699 | 0.4+ | 0.7+ | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 2005 04 06 | 699 | 0.5+ | 0.5+ | 2006 08 28 | 703 | 0.9− | 1.1− | 2006 10 10 | 644 | 0.1− | 0.3− | | |
| 2005 04 06 | 699 | 0.9+ | 0.4+ | 2006 08 28 | 699 | 0.3− | 0.7+ | | | | | | |
| 2005 04 06 | 699 | 0.2+ | 0.8+ | 2006 08 28 | 699 | 0.6+ | 1.2+ | | | | | | |

**(142602)∗ 2002 TB$_{118}$ = 2004 GY$_{35}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61424)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.45625 | | (2000.0) | | | |
| $n$ | 0.30021372 | $\omega$ | 194.22159 | | −0.59369123 | −0.79996631 |
| $a$ | 2.2089320 | $\Omega$ | 292.26967 | | +0.74718318 | −0.50784372 |
| $e$ | 0.1089178 | $i$ | 5.40006 | | +0.29874406 | −0.31960704 |
| $P$ | 3.28 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 703 | 0.1+ | 1.0+ | 2002 11 22 | 644 | 0.4+ | 0.5+ | 2005 08 26 | 644 | 0.3− | 0.2− | | |
| 1999 12 13 | 703 | 0.6− | 0.9− | 2002 11 22 | 644 | 0.4+ | 0.9+ | 2005 08 26 | 644 | 0.1− | 0.3− | | |
| 1999 12 13 | 703 | 0.1+ | 0.2− | 2002 11 22 | 644 | 0.3+ | 1.0+ | 2005 08 26 | 644 | 0.2− | 0.3− | | |
| 1999 12 13 | 703 | 0.4− | 0.1+ | 2004 03 26 | 699 | 0.8− | 0.7+ | 2005 08 27 | 699 | 0.8− | 0.5+ | | |
| 1999 12 31 | 703 | 0.9− | 1.2− | 2004 03 26 | 699 | 0.1+ | 1.2+ | 2005 08 27 | 699 | 0.3− | 0.1+ | | |
| 1999 12 31 | 703 | 0.2− | 0.3− | 2004 03 26 | 699 | 0.6+ | 0.2+ | 2005 08 27 | 699 | 0.4+ | 0.4+ | | |
| 1999 12 31 | 703 | 0.1− | 0.4+ | 2004 03 26 | 699 | 0.4− | 0.1− | 2005 08 27 | 699 | 0.2− | 0.1− | | |
| 1999 12 31 | 703 | 1.2+ | 1.2+ | 2004 04 13 | 644 | 0.6+ | 0.5+ | 2005 08 30 | 691 | 0.1+ | 0.4− | | |
| 2002 10 03 | 644 | 0.0 | 0.4+ | 2004 04 13 | 644 | 0.3+ | 0.3+ | 2005 08 30 | 691 | 0.1− | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.0 | 0.2+ | 2004 04 13 | 644 | 0.4+ | 0.6+ | 2005 08 30 | 691 | 0.2+ | 0.3− |
| 2002 10 03 | 644 | 0.1− | 0.3+ | 2004 04 17 | 704 | 0.3+ | 0.2+ | 2005 09 12 | 691 | 0.2+ | 0.2− |
| 2002 10 05 | 704 | 0.1+ | 0.4+ | 2004 04 17 | 704 | 0.4+ | 0.1+ | 2005 09 12 | 691 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.5− | 0.3− | 2004 04 17 | 704 | 0.9+ | 0.2− | 2005 09 12 | 691 | 0.1+ | 0.2− |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2004 04 17 | 704 | 1.0+ | 0.6+ | 2005 09 25 | 691 | 0.3− | 0.2− |
| 2002 10 05 | 704 | 0.1− | 0.6− | 2004 04 25 | 704 | 0.4+ | 0.3− | 2005 09 25 | 691 | 0.6+ | 0.9+ |
| 2002 10 05 | 704 | 0.0 | 0.4− | 2004 04 25 | 704 | 1.0+ | 0.4− | 2005 09 25 | 691 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.4+ | 0.5− | 2004 04 25 | 704 | 0.5+ | 0.3− | 2005 10 06 | 691 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 0.4+ | 0.7+ | 2004 04 25 | 704 | 0.6+ | 0.2− | 2005 10 06 | 691 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.1− | 0.1− | 2004 04 25 | 704 | 0.1+ | 0.6− | 2005 10 06 | 691 | 0.3− | 0.1+ |
| 2002 10 09 | 704 | 0.8+ | 0.8+ | 2004 04 27 | 704 | 0.9− | 0.5+ | 2006 10 19 | 695 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.6− | 1.3+ | 2004 04 27 | 704 | 1.2− | 0.5+ | 2006 10 19 | 695 | 0.2+ | 0.3− |
| 2002 10 12 | 704 | 0.4+ | 0.1− | 2004 04 27 | 704 | 0.4− | 1.0+ | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2002 10 12 | 704 | 0.5− | 0.9+ | 2004 04 27 | 704 | 1.2− | 1.3+ | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2002 10 12 | 704 | 0.5− | 1.3+ | 2004 04 27 | 704 | (0.5− | 1.6+) | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2002 10 31 | 644 | 0.6− | 0.2+ | 2005 08 26 | 644 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 10 31 | 644 | 0.6− | 0.0 | 2005 08 26 | 644 | 0.5− | 0.1− | | | | |
| 2002 10 31 | 644 | 0.6− | 0.1+ | 2005 08 26 | 644 | 0.2− | 0.1− | | | | |

**(142603)∗ 2002 TR$_{124}$ = 1998 SN$_{166}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.95718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24682415 | $\omega$ | 11.42584 | | +0.93164409 | −0.35889977 | |
| $a$ | 2.5169675 | $\Omega$ | 10.17314 | | +0.30286054 | +0.68051587 | |
| $e$ | 0.1713941 | $i$ | 18.77110 | | +0.20078541 | +0.63881853 | |
| $P$ | 3.99 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 704 | 0.1+ | 0.6− | 2002 10 29 | 704 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 1998 09 21 | 704 | 0.9+ | 0.7− | 2002 11 04 | 608 | 0.3− | 0.8− | 2006 09 14 | 703 | 0.1− | 0.1− |
| 1998 09 21 | 704 | 0.3− | 0.1− | 2002 11 04 | 608 | 0.3− | 0.9− | 2006 09 20 | 703 | 0.0 | 0.1− |
| 1998 09 21 | 704 | (0.1− | 2.4−) | 2002 11 04 | 608 | 0.3+ | 0.8− | 2006 09 20 | 703 | 0.1− | 0.7− |
| 1998 09 21 | 704 | (1.0− | 2.4−) | 2002 11 06 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.1− |
| 1998 09 22 | 699 | 0.4+ | 1.2− | 2002 11 06 | 704 | 0.2+ | 0.0 | 2006 09 21 | 699 | 0.1+ | 0.0 |
| 1998 09 22 | 699 | 0.1+ | 1.3− | 2002 11 06 | 704 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.3+ | 0.5+ |
| 1998 09 22 | 699 | 1.2+ | 1.6− | 2002 11 06 | 704 | 0.5− | 0.1− | 2006 09 21 | 699 | 0.2− | 0.7+ |
| 2002 08 11 | 608 | 0.6+ | 0.9+ | 2002 11 06 | 704 | 0.9+ | 0.6+ | 2006 09 21 | 699 | 0.2− | 0.5+ |
| 2002 08 11 | 608 | (0.3+ | 1.5+) | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 1.0− | 0.1− |
| 2002 08 11 | 608 | 0.2+ | 0.9+ | 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2002 08 14 | 704 | 0.3− | 0.0 | 2004 01 17 | 644 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.7− | 0.2− |
| 2002 08 14 | 704 | 0.0 | 0.1+ | 2004 01 30 | 703 | 0.4+ | 0.1− | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2002 08 14 | 704 | 0.3− | 0.5− | 2004 01 30 | 703 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.4− |
| 2002 08 14 | 704 | 0.5+ | 0.9− | 2004 01 30 | 703 | 0.1− | 0.7− | 2006 10 02 | 703 | 0.1+ | 1.1− |
| 2002 08 30 | 699 | 0.4− | 0.1− | 2004 01 30 | 703 | 0.5+ | 0.2+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 2002 08 30 | 699 | 0.5− | 0.2+ | 2004 01 31 | 704 | 1.1+ | 0.4+ | 2006 10 02 | 703 | 0.3+ | 0.4− |
| 2002 08 30 | 699 | 0.4− | 0.8+ | 2004 01 31 | 704 | 1.1− | 0.3+ | 2006 10 12 | 291 | 0.1+ | 0.1+ |
| 2002 08 30 | 699 | 0.4− | 0.6+ | 2004 01 31 | 704 | 1.0− | 0.7− | 2006 10 12 | 291 | 0.1+ | 0.0 |
| 2002 09 05 | 608 | 0.2+ | 0.3− | 2004 01 31 | 704 | 0.0 | 0.8− | 2006 10 12 | 291 | 0.0 | 0.1+ |
| 2002 09 05 | 608 | 0.1+ | 0.9− | 2004 02 10 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.7− |
| 2002 09 05 | 608 | 0.1− | 0.2− | 2004 02 10 | 644 | 0.4+ | 0.3− | 2006 10 19 | 703 | 0.8− | 1.0− |
| 2002 09 13 | 699 | 0.3− | 0.3+ | 2004 02 10 | 644 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.8− | 0.1− |
| 2002 09 13 | 699 | 0.4− | 0.2+ | 2004 02 14 | 704 | 0.9+ | 0.5+ | 2006 10 19 | 703 | 0.8− | 1.3− |
| 2002 09 13 | 699 | 0.3− | 0.1− | 2004 02 14 | 704 | 0.8+ | 0.2− | 2006 10 22 | 704 | (0.7+ | 1.9−) |
| 2002 09 13 | 699 | 0.2+ | 0.0 | 2004 02 14 | 704 | 0.6+ | 0.9+ | 2006 10 22 | 704 | 0.4+ | 0.8− |
| 2002 09 17 | 644 | 0.4− | 1.3+ | 2004 02 14 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 704 | 0.7+ | 0.9+ |
| 2002 09 17 | 644 | 0.3− | 1.2+ | 2004 02 14 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 704 | 0.4+ | 0.5− |
| 2002 09 17 | 644 | 0.1− | 1.1+ | 2004 02 15 | 644 | 0.0 | 0.2− | 2006 10 22 | 704 | 0.8− | 0.8+ |
| 2002 09 27 | 704 | 0.6+ | 0.5+ | 2004 02 15 | 644 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2002 09 27 | 704 | 0.1+ | 0.6+ | 2004 02 15 | 644 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 09 27 | 704 | 0.2− | 0.9+ | 2004 03 17 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 09 27 | 704 | 0.0 | 0.2+ | 2004 03 17 | 644 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2002 09 27 | 704 | 0.5− | 0.4+ | 2004 03 17 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.4− | 2004 03 18 | 645 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2004 03 25 | 704 | 0.9+ | 0.4+ | 2006 11 18 | 703 | 0.9− | 0.3+ |
| 2002 10 04 | 704 | 0.0 | 0.8+ | 2004 03 25 | 704 | (1.7− | 0.6−) | 2006 11 18 | 704 | 1.0+ | 1.0+ |
| 2002 10 04 | 704 | 0.3− | 1.0+ | 2004 03 25 | 704 | 0.7+ | 1.2+ | 2006 11 18 | 703 | 0.8− | 0.7− |
| 2002 10 05 | 704 | 0.7+ | 0.2− | 2004 03 25 | 704 | 0.0 | 0.2+ | 2006 11 18 | 703 | 0.6− | 0.2− |
| 2002 10 05 | 704 | 0.7+ | 0.4− | 2004 03 25 | 704 | 0.9+ | 1.1+ | 2006 11 18 | 703 | (2.2− | 2.5+) |
| 2002 10 05 | 704 | 0.5+ | 0.4− | 2005 05 14 | E12 | (1.6− | 2.1+) | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2002 10 05 | 704 | 0.4+ | 0.1− | 2005 05 14 | E12 | (2.4− | 3.1+) | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2002 10 05 | 704 | 0.8+ | 0.2− | 2005 05 14 | E12 | 0.6+ | 1.3+ | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2002 10 09 | 699 | 1.3+ | 0.2+ | 2005 05 14 | E12 | (1.1− | 3.6+) | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2002 10 09 | 699 | 0.8− | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.8+ | 2006 11 21 | G96 | 0.6+ | 0.1− |
| 2002 10 09 | 699 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2002 10 09 | 699 | 0.0 | 1.2+ | 2006 08 30 | 699 | 1.0+ | 0.4+ | 2006 11 21 | 704 | 1.2− | 0.6− |
| 2002 10 11 | 704 | 0.8− | 0.1− | 2006 08 30 | 699 | 0.6− | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.8− | 0.0 | 2006 09 12 | 704 | 0.8− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2002 10 11 | 704 | 0.0 | 0.4− | 2006 09 12 | 704 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.6− |
| 2002 10 11 | 704 | 0.7− | 0.4+ | 2006 09 12 | 704 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.9− | 0.5+ |
| 2002 10 29 | 704 | 0.4+ | 0.4+ | 2006 09 12 | 704 | 1.0+ | 0.4+ | 2006 11 27 | 703 | 0.3− | 0.9+ |
| 2002 10 29 | 704 | 0.3+ | 0.9− | 2006 09 12 | 704 | 0.4− | 0.0 | 2006 11 27 | 703 | 0.4− | 0.1− |
| 2002 10 29 | 704 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 11 27 | 703 | 0.1+ | 0.4+ |
| 2002 10 29 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.1− | | | | |

**(142604)∗ 2002 TJ$_{125}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.17234 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25878537 | $\omega$ | 318.88264 | | +0.97012988 | −0.22338551 | |
| $a$ | 2.4388003 | $\Omega$ | 54.27031 | | +0.24165318 | +0.85574608 | |
| $e$ | 0.1558207 | $i$ | 6.69127 | | +0.02125446 | +0.46668786 | |
| $P$ | 3.81 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 691 | 0.3+ | 0.6+ | 2004 02 13 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 04 16 | 691 | 0.3+ | 0.6+ | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 04 16 | 691 | 0.1− | 0.4+ | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 05 24 | 807 | 0.0 | 0.7+ | 2004 03 16 | 691 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2001 05 24 | 807 | 0.1− | 0.8+ | 2004 03 16 | 691 | 0.2+ | 1.4+ | 2006 11 07 | 644 | 0.4+ | 0.1− |
| 2002 09 01 | 644 | 0.4− | 0.6+ | 2006 09 28 | 704 | 1.5+ | 0.0 | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 2002 09 01 | 644 | 0.9− | 0.8+ | 2006 09 28 | 704 | 0.6+ | 0.3− | 2006 11 07 | 644 | 0.2+ | 0.0 |
| 2002 09 01 | 644 | 0.6− | 0.8+ | 2006 09 28 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.7− |
| 2002 09 13 | 704 | 0.6− | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2002 09 13 | 704 | 0.1+ | 1.2+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.2+ | 0.4+ |
| 2002 09 13 | 704 | 0.6− | 1.1+ | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 09 13 | 704 | 0.2− | 1.0+ | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 09 16 | 644 | 0.7− | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.9− | 0.1+ |
| 2002 09 16 | 644 | 0.8− | 0.4+ | 2006 10 16 | 703 | 1.0+ | 0.0 | 2006 11 16 | G96 | 0.6+ | 0.0 |
| 2002 09 16 | 644 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.4− |
| 2002 09 17 | 644 | 0.7− | 0.9+ | 2006 10 16 | 703 | (1.7− | 1.4−) | 2006 11 17 | 703 | 0.9+ | 0.0 |
| 2002 09 17 | 644 | 0.8− | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.7+ | 1.1− |
| 2002 09 17 | 644 | 0.4− | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 1.0− | 0.4− |
| 2002 10 04 | 704 | 0.2+ | 1.4+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.3− | 2006 11 18 | 704 | 1.0− | 0.1− |
| 2002 10 04 | 704 | 0.5+ | 0.1− | 2006 10 21 | 703 | 0.5− | 1.1+ | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2002 10 04 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 11 18 | 704 | 1.5− | 0.5− |
| 2002 10 05 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.9− | 2006 11 18 | 704 | 0.6+ | 0.4− |
| 2002 10 05 | 704 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.5− | 0.9+ |
| 2002 10 05 | 704 | 1.3+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.5− | 0.3+ |
| 2002 10 05 | 704 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2002 10 29 | 704 | 0.7− | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.7+ | 1.8+ |
| 2002 10 29 | 704 | 0.8− | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 1.2− | 0.3− |
| 2002 10 29 | 704 | 0.9− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ | | | | |
| 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.0 | | | | |

**(142605)∗ 2002 TQ$_{125}$**

Discovered 2002 Oct. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.65205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27541125 | $\omega$ | 359.65136 | | +0.06331804 | +0.99346335 | |
| $a$ | 2.3396358 | $\Omega$ | 273.97734 | | −0.91541044 | +0.01990699 | |
| $e$ | 0.1166174 | $i$ | 5.46343 | | −0.39751045 | +0.11240231 | |
| $P$ | 3.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.6+ | 1.1− | 2002 10 07 | 699 | 0.3− | 0.5− | 2006 11 11 | 691 | 0.0 | 0.0 | |
| 1999 12 07 | 704 | 0.5− | 0.0 | 2002 10 07 | 699 | 0.3− | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.1− | |
| 1999 12 07 | 704 | 1.6+ | 0.8− | 2002 10 09 | 704 | 0.7− | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.3+ | |
| 2001 03 05 | 608 | 0.2− | 0.7− | 2002 10 09 | 704 | 1.1+ | 0.4+ | 2006 11 17 | 691 | 0.2− | 0.0 | |
| 2001 03 05 | 608 | 0.0 | 0.2− | 2002 10 09 | 704 | 0.6− | 0.5+ | 2006 11 17 | 691 | 0.1− | 0.0 | |
| 2001 03 05 | 608 | 0.6− | 0.4− | 2002 10 09 | 704 | 0.4+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.0 | |
| 2001 03 26 | 704 | 1.4+ | 0.8+ | 2002 10 09 | 704 | 0.9− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1+ | |
| 2001 03 26 | 704 | 0.5+ | 0.5+ | 2002 10 09 | 704 | 0.8+ | 0.7+ | 2006 11 19 | 691 | 0.5+ | 0.1− | |
| 2001 03 26 | 704 | 0.4+ | 0.4+ | 2002 10 09 | 704 | 1.1− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1+ | |
| 2001 03 26 | 704 | 0.2+ | 0.5− | 2002 10 09 | 704 | 0.9− | 0.0 | 2006 11 20 | G96 | 0.0 | 0.5− | |
| 2001 03 26 | 704 | 0.9+ | 0.9+ | 2002 10 09 | 704 | 0.1+ | 0.5+ | 2006 11 20 | G96 | 0.1+ | 0.5− | |
| 2002 09 17 | 608 | 0.3− | 0.3+ | 2002 10 09 | 704 | 1.2+ | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.4− | |
| 2002 09 17 | 608 | 1.0− | 0.1+ | 2003 12 23 | 704 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.3− | |
| 2002 09 17 | 608 | 0.6− | 0.0 | 2003 12 23 | 704 | 0.7− | 0.8+ | 2006 11 22 | 691 | 0.5− | 0.2− | |
| 2002 10 04 | 644 | 0.5− | 0.1+ | 2003 12 23 | 704 | 0.9− | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.0 | |
| 2002 10 04 | 644 | 0.3− | 0.0 | 2003 12 27 | 691 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.1+ | |
| 2002 10 04 | 644 | 0.4− | 0.0 | 2003 12 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.9+ | 1.1− | |
| 2002 10 05 | 704 | 1.0− | 0.5− | 2003 12 27 | 691 | 0.4− | 0.3+ | 2006 11 22 | 704 | 1.4+ | 0.8− | |
| 2002 10 05 | 704 | 0.2+ | 0.4+ | 2004 01 21 | 704 | 0.7+ | 1.4+ | 2006 11 22 | 704 | 0.2+ | 0.1− | |
| 2002 10 05 | 704 | 0.1+ | 0.8+ | 2004 01 21 | 704 | 0.2− | 1.4+ | 2006 11 22 | 704 | (2.0+ | 1.4−) | |
| 2002 10 05 | 704 | 0.3+ | 0.1+ | 2004 01 21 | 704 | 0.2+ | 0.7+ | 2006 11 23 | G96 | 0.2+ | 0.2− | |
| 2002 10 05 | 704 | 0.4− | 0.2+ | 2004 01 28 | 291 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.0 | |
| 2002 10 05 | 704 | 0.1− | 0.8− | 2004 01 28 | 291 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.3− | |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2004 01 28 | 291 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.3− | |
| 2002 10 05 | 704 | 0.3+ | 0.2− | 2004 01 28 | 291 | 0.2+ | 0.1+ | 2006 11 24 | 703 | 0.2− | 0.1− | |
| 2002 10 05 | 704 | 0.4+ | 0.1+ | 2004 01 28 | 291 | 0.1+ | 0.1+ | 2006 11 24 | 703 | 0.2− | 0.7− | |
| 2002 10 07 | 704 | 0.4+ | 0.1+ | 2004 01 28 | 291 | 0.1− | 0.0 | 2006 11 24 | 703 | 0.2− | 0.4+ | |
| 2002 10 07 | 704 | 0.6+ | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.5− | 0.9− | |
| 2002 10 07 | 704 | 0.0 | 0.7+ | 2006 10 27 | 691 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.8− | 0.4− | |
| 2002 10 07 | 704 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.5− | 0.9− | |
| 2002 10 07 | 704 | (0.3+ | 2.1+) | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.8− | |
| 2002 10 07 | 699 | 1.4− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.5+ | | | | | |
| 2002 10 07 | 699 | 0.6− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.0 | | | | | |

**(142606)∗ 2002 TX$_{125}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.39003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27439000 | $\omega$ | 290.53728 | | +0.90181570 | +0.42250162 | |
| $a$ | 2.3454375 | $\Omega$ | 44.60040 | | −0.33252394 | +0.81251222 | |
| $e$ | 0.1649702 | $i$ | 7.41925 | | −0.27596426 | +0.40164198 | |
| $P$ | 3.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 608 | 0.0 | 0.6+ | 2002 10 04 | 704 | 0.4− | 0.6+ | 2005 05 16 | 644 | 0.5+ | 0.1+ | |
| 2002 08 18 | 608 | 0.2+ | 0.9+ | 2002 10 04 | 704 | 0.0 | 1.3+ | 2005 05 18 | E12 | 0.4+ | 0.6+ | |
| 2002 08 18 | 608 | 0.3+ | 0.6+ | 2002 10 05 | 704 | 0.7+ | 0.3− | 2005 05 18 | E12 | 0.5+ | 0.3+ | |
| 2002 09 01 | 644 | 0.0 | 0.1+ | 2002 10 05 | 704 | 0.4+ | 0.5+ | 2005 05 18 | E12 | 0.3+ | 0.5+ | |
| 2002 09 01 | 644 | 0.1− | 0.0 | 2002 10 05 | 704 | 0.3− | 0.3+ | 2005 05 18 | E12 | 0.5+ | 0.4+ | |
| 2002 09 01 | 644 | 0.2− | 0.1− | 2002 10 05 | 704 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.6+ | 0.4− | |
| 2002 09 13 | 704 | (1.6+ | 0.8−) | 2002 10 05 | 704 | 0.8+ | 0.1− | 2006 09 28 | G96 | 0.6+ | 0.5− | |
| 2002 09 13 | 704 | 0.3+ | 0.5− | 2002 10 29 | 704 | 0.3− | 1.4+ | 2006 09 28 | G96 | 0.1+ | 0.3− | |
| 2002 09 13 | 704 | 0.6+ | 0.1− | 2002 10 29 | 704 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.2− | |
| 2002 09 13 | 704 | 0.6+ | 0.4+ | 2002 10 29 | 704 | 0.7− | 0.6+ | 2006 11 10 | 691 | 0.2− | 0.6+ | |
| 2002 09 13 | 704 | 0.1+ | 0.5− | 2002 10 29 | 704 | 0.8− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.3− | |
| 2002 09 16 | 644 | 0.3− | 0.2+ | 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− | |
| 2002 09 16 | 644 | 0.3− | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.8− | 1.1− | |
| 2002 09 16 | 644 | 0.1− | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.2+ | |
| 2002 09 17 | 644 | 0.2− | 0.4+ | 2004 02 18 | 691 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.1+ | 0.5+ | |
| 2002 09 17 | 644 | 0.2− | 0.3+ | 2004 02 18 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 704 | 0.5+ | 1.3+ | |
| 2002 09 17 | 644 | 0.2− | 0.4+ | 2004 02 18 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.2− | |
| 2002 09 28 | 608 | 1.2− | 0.2+ | 2005 05 10 | 704 | (0.8− | 1.5+) | 2006 11 21 | 691 | 0.0 | 0.1− | |
| 2002 09 28 | 608 | 1.3− | 0.0 | 2005 05 10 | 704 | 0.3− | 1.3+ | 2006 11 21 | 691 | 0.0 | 0.1− | |
| 2002 09 28 | 608 | 1.5− | 0.2− | 2005 05 10 | 704 | 1.0− | 1.4+ | 2006 11 27 | 704 | (1.5− | 2.8+) | |
| 2002 10 04 | 704 | 1.1+ | 0.3+ | 2005 05 10 | 704 | (1.9− | 0.8+) | 2006 11 27 | 704 | 0.2− | 0.8− | |
| 2002 10 04 | 704 | 0.1− | 0.3− | 2005 05 16 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 704 | (1.5+ | 2.3+) | |
| 2002 10 04 | 704 | 1.0− | 0.3+ | 2005 05 16 | 644 | 0.3+ | 0.2+ | 2006 11 27 | 704 | 0.4− | 0.3+ | |

**(142607)∗ 2002 TC$_{126}$ = 2000 AW$_{181}$**

Discovered 2002 Oct. 4 by NEAT at Palomar.

Id. A. Doppler (*MPO* 38038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.25822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23144805 | $\omega$ | 329.48156 | | −0.83623089 | +0.52387028 | |
| $a$ | 2.6272438 | $\Omega$ | 242.97657 | | −0.45917376 | −0.83051727 | |
| $e$ | 0.1292942 | $i$ | 10.48464 | | −0.29979554 | −0.18921153 | |
| $P$ | 4.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.3+ | 1.3− | 2002 10 09 | 704 | 0.7+ | 0.2+ | 2005 05 08 | 699 | 0.2+ | 0.4− | |
| 2000 01 07 | 704 | 0.0 | 0.0 | 2003 12 19 | 704 | 0.6− | 0.3+ | 2005 05 08 | 699 | 0.5− | 0.3− | |
| 2000 01 07 | 704 | 0.7+ | 0.5+ | 2003 12 19 | 704 | 0.1− | 0.3+ | 2005 05 08 | 699 | 0.2− | 0.5− | |
| 2000 01 07 | 704 | 1.1+ | 0.5− | 2003 12 19 | 704 | 0.2− | 0.2− | 2005 05 08 | 699 | 0.4− | 0.1+ | |
| 2000 01 07 | 704 | 0.3− | 0.2+ | 2003 12 19 | 704 | 0.5+ | 0.2+ | 2005 05 08 | E12 | 0.1− | 0.1− | |
| 2000 01 11 | 704 | 0.8− | 0.4+ | 2003 12 19 | 704 | 0.6+ | 0.0 | 2005 05 08 | E12 | 0.2− | 0.0 | |
| 2000 01 11 | 704 | 0.7− | 0.5− | 2003 12 22 | 704 | 0.3+ | 0.4+ | 2005 05 08 | E12 | 0.2− | 0.1− | |
| 2000 01 11 | 704 | 1.4− | 0.8− | 2003 12 22 | 704 | 0.4+ | 0.4+ | 2005 05 08 | E12 | 0.0 | 0.3+ | |
| 2000 01 11 | 704 | 1.5− | 0.1− | 2003 12 22 | 704 | 0.2+ | 0.4+ | 2005 05 16 | 644 | 0.2+ | 0.1− | |
| 2002 09 03 | 644 | 0.1− | 0.4+ | 2003 12 22 | 704 | 0.4+ | 1.3+ | 2005 05 16 | 644 | 0.1+ | 0.1− | |
| 2002 09 03 | 644 | 0.2− | 0.1+ | 2003 12 22 | 704 | 0.5+ | 0.6+ | 2005 05 16 | 644 | 0.1+ | 0.1+ | |
| 2002 09 03 | 644 | 0.1− | 0.5+ | 2005 03 06 | E12 | 0.2− | 0.0 | 2005 05 30 | 699 | 0.4+ | 0.2+ | |
| 2002 10 04 | 644 | 0.4− | 0.3− | 2005 03 06 | E12 | 0.6+ | 1.1+ | 2005 05 30 | 699 | 0.3+ | 0.2+ | |
| 2002 10 04 | 644 | 0.1− | 0.6+ | 2005 03 06 | E12 | 0.0 | 0.5+ | 2005 05 30 | 699 | 0.0 | 0.3+ | |
| 2002 10 04 | 644 | 0.4− | 0.1+ | 2005 03 06 | E12 | 0.2+ | 0.2+ | 2005 05 30 | 699 | 0.8+ | 0.5+ | |
| 2002 10 05 | 704 | 0.2− | 1.0+ | 2005 04 02 | E12 | 0.0 | 0.2+ | 2006 08 30 | 699 | 1.0− | 0.0 | |
| 2002 10 05 | 704 | 0.4+ | 0.1− | 2005 04 02 | E12 | 0.4+ | 0.2+ | 2006 08 30 | 699 | (1.7+ | 0.3−) | |
| 2002 10 05 | 704 | 0.2+ | 0.0 | 2005 04 02 | E12 | 0.1− | 0.5− | 2006 08 30 | 699 | (1.8+ | 1.1−) | |
| 2002 10 05 | 704 | 0.1− | 0.3+ | 2005 04 02 | E12 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.0 | |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2005 04 06 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.0 | |
| 2002 10 05 | 704 | 0.5+ | 0.2+ | 2005 04 06 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 644 | 0.0 | 0.1− | |
| 2002 10 05 | 704 | 0.5+ | 0.1+ | 2005 04 06 | 704 | 0.0 | 0.5+ | 2006 09 16 | 644 | 0.8− | 0.4− | |
| 2002 10 05 | 704 | 0.2− | 1.2− | 2005 04 10 | E12 | 0.6+ | 0.1− | 2006 09 20 | 699 | 0.6− | 0.2− | |
| 2002 10 05 | 704 | 0.4+ | 0.1− | 2005 04 10 | E12 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.2− | 0.7+ | |
| 2002 10 05 | 704 | 0.3− | 0.2+ | 2005 04 10 | E12 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.5− | 0.4+ | |
| 2002 10 09 | 704 | 1.4+ | 0.3− | 2005 04 10 | E12 | 0.4+ | 0.2− | 2006 09 20 | 699 | 0.1− | 0.2− | |
| 2002 10 09 | 704 | 0.3+ | 0.0 | 2005 04 14 | 703 | 0.8− | 0.0 | 2006 10 01 | 703 | 0.7− | 0.9− | |
| 2002 10 09 | 704 | 1.2+ | 0.4− | 2005 04 14 | 703 | 0.4− | 0.4− | 2006 10 01 | 703 | 0.1− | 0.4+ | |
| 2002 10 09 | 704 | 0.2− | 0.3− | 2005 04 14 | 703 | 0.6− | 0.2− | 2006 10 01 | 703 | 0.7+ | 0.2+ | |
| 2002 10 09 | 704 | (1.7+ | 0.5−) | 2005 04 14 | 703 | 1.0− | 0.4− | 2006 10 01 | 703 | (0.1+ | 2.0−) | |
| 2002 10 09 | 704 | 0.1+ | 0.2− | 2005 04 19 | 703 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | |
| 2002 10 09 | 704 | (2.7+ | 0.3−) | 2005 04 19 | 703 | (2.0− | 0.0 ) | 2006 10 11 | 644 | 0.3− | 0.1− | |
| 2002 10 09 | 704 | 0.3+ | 0.1+ | 2005 04 19 | 703 | 1.0− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | |
| 2002 10 09 | 704 | 0.3− | 0.9− | 2005 04 19 | 703 | 1.1+ | 0.6− | | | | | |

**(142608)∗ 2002 TE$_{126}$ = 2003 YH$_{148}$**

Discovered 2002 Oct. 4 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69400)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.87701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24188845 | $\omega$ | 292.60409 | | +0.00169951 | +0.99539674 | |
| $a$ | 2.5510911 | $\Omega$ | 336.86568 | | −0.80435581 | −0.05557344 | |
| $e$ | 0.0777302 | $i$ | 14.11678 | | −0.59414547 | +0.07808275 | |
| $P$ | 4.07 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 17 | 608 | 0.5− | 0.7+ | 2003 12 30 | 704 | 0.2+ | 0.6− | 2006 09 17 | 703 | 0.1− | 0.4− |
| 2002 09 17 | 608 | 0.4− | 0.9+ | 2003 12 30 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.1− | 0.3− |
| 2002 09 17 | 608 | 0.3− | 1.0+ | 2003 12 30 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.6− | 0.2− |
| 2002 10 04 | 644 | 0.2+ | 0.5− | 2003 12 30 | 704 | 0.2− | 0.4− | 2006 09 17 | 703 | 1.1− | 0.5− |
| 2002 10 04 | 644 | 0.1+ | 0.8− | 2003 12 30 | 704 | 0.7+ | 0.8+ | 2006 09 20 | 699 | 0.2+ | 1.1+ |
| 2002 10 04 | 644 | 0.1− | 0.7− | 2004 01 19 | 704 | 0.6+ | 0.3+ | 2006 09 20 | 699 | 0.6− | 0.5+ |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2004 01 19 | 704 | 0.7+ | 1.1+ | 2006 09 20 | 699 | 0.0 | 0.2− |
| 2002 10 05 | 704 | 0.2+ | 0.2+ | 2004 01 19 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.2− |
| 2002 10 05 | 704 | 0.1− | 0.4+ | 2005 05 16 | E12 | 0.2+ | 1.0+ | 2006 09 29 | 699 | 0.7− | 0.7− |
| 2002 10 05 | 704 | 0.2+ | 0.0 | 2005 05 16 | E12 | 0.6+ | 0.6+ | 2006 09 29 | 699 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2005 05 16 | E12 | 0.9+ | 1.0+ | 2006 09 29 | 699 | 0.5+ | 1.1− |
| 2002 10 09 | 704 | 0.5+ | 0.7+ | 2005 05 16 | E12 | 0.3+ | 0.9+ | 2006 09 29 | 699 | 0.1− | 0.4− |
| 2002 10 09 | 704 | 0.3− | 0.1− | 2006 08 29 | 703 | 0.4− | 1.0+ | 2006 10 01 | 703 | 0.9+ | 1.3+ |
| 2002 10 09 | 704 | 0.8+ | 0.6− | 2006 08 29 | 703 | 0.3− | 0.8+ | 2006 10 01 | 703 | 0.8− | 0.1+ |
| 2002 10 09 | 704 | (1.7+ | 0.9−) | 2006 08 29 | 703 | (2.1+ | 0.0 ) | 2006 10 01 | 703 | 0.1+ | 0.3+ |
| 2002 10 09 | 704 | 0.2− | 0.6− | 2006 08 29 | 703 | (0.4− | 1.6+) | 2006 10 01 | 703 | (2.1+ | 0.3−) |
| 2003 12 29 | 703 | 0.7− | 0.3− | 2006 08 30 | 704 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 12 29 | 703 | 0.7− | 0.3− | 2006 08 30 | 704 | 0.1+ | 1.2+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2003 12 29 | 703 | 0.6− | 0.0 | 2006 08 30 | 704 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2003 12 29 | 703 | 0.8− | 0.4− | 2006 08 30 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2003 12 29 | 704 | 1.0+ | 0.4+ | 2006 08 30 | 704 | (0.3+ | 1.6+) | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2003 12 29 | 704 | 0.0 | 0.5+ | 2006 09 06 | 644 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2003 12 29 | 704 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2003 12 30 | 704 | 0.3+ | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 23 | 703 | 0.3− | 0.0 |
| 2003 12 30 | 704 | 0.7+ | 1.1+ | 2006 09 13 | 118 | 0.8+ | 0.1+ | 2006 10 23 | 703 | 0.5− | 0.3+ |
| 2003 12 30 | 704 | 0.1− | 0.4+ | 2006 09 13 | 118 | 0.4+ | 0.2− | 2006 10 23 | 703 | 0.7+ | 0.3+ |
| 2003 12 30 | 704 | 0.1− | 0.5+ | 2006 09 13 | 118 | 0.2− | 0.1− | 2006 10 23 | 703 | 0.2− | 0.0 |
| 2003 12 30 | 704 | 0.3− | 0.2+ | 2006 09 13 | 118 | 0.4+ | 0.1+ | | | | |

**(142609)∗ 2002 TJ$_{131}$ = 2004 BF$_{19}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 56665)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.58302 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24586799 | $\omega$ | 356.33965 | | +0.96525577 | +0.25878777 | |
| $a$ | 2.5234888 | $\Omega$ | 348.46655 | | −0.23491238 | +0.79872191 | |
| $e$ | 0.0669809 | $i$ | 10.43018 | | −0.11444422 | +0.54320549 | |
| $P$ | 4.01 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 29 | 691 | 0.3− | 0.4− | 2004 01 20 | 704 | (0.2+ | 1.6+) | 2006 09 18 | 704 | 0.9+ | 0.8− |
| 1992 01 29 | 691 | 0.5− | 0.6− | 2004 02 11 | 691 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.7+ | 1.4− |
| 1992 01 29 | 691 | 0.1− | 0.0 | 2004 02 11 | 691 | 0.4+ | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.8+ |
| 2002 10 04 | 704 | 0.6− | 0.5+ | 2004 02 11 | 691 | 0.4+ | 0.0 | 2006 09 24 | 104 | 0.4− | 0.2+ |
| 2002 10 04 | 704 | (1.9− | 0.2+) | 2004 02 15 | 704 | 0.4+ | 0.3− | 2006 09 24 | 104 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.4+ | 0.2+ | 2006 09 24 | 104 | 0.3+ | 0.0 |
| 2002 10 04 | 644 | 0.4− | 0.0 | 2004 02 15 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 704 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | (1.7− | 0.1−) | 2004 02 18 | 691 | 0.4− | 0.2+ | 2006 09 25 | 704 | 1.0− | 0.4+ |
| 2002 10 04 | 644 | 0.4− | 0.2+ | 2004 02 18 | 691 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.2− | 0.1+ |
| 2002 10 04 | 644 | 0.3− | 0.1+ | 2004 02 18 | 691 | 0.2− | 0.0 | 2006 09 25 | 704 | 1.0− | 0.3+ |
| 2002 10 04 | 704 | 1.3− | 0.4+ | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 09 27 | 699 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.7− | 0.3− | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.2− | 0.9− |
| 2002 10 05 | 704 | 0.3− | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.3− |
| 2002 10 05 | 704 | 0.1+ | 0.0 | 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 09 27 | 699 | 0.3− | 0.0 |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.7− | 0.3− |
| 2002 10 05 | 704 | 0.2− | 0.2+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.4− | 0.2+ |
| 2002 10 07 | 699 | 0.1+ | 0.0 | 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.1− | 1.0− |
| 2002 10 07 | 699 | 1.1+ | 0.0 | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.4− | 0.4− |
| 2002 10 07 | 699 | 0.3− | 0.4+ | 2006 07 22 | G96 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.0 | 1.2+ |
| 2002 10 07 | 699 | 0.5+ | 1.0− | 2006 07 22 | G96 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.5− |
| 2002 10 09 | 704 | 0.6+ | 0.4+ | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2002 10 09 | 704 | 0.0 | 0.4+ | 2006 07 22 | G96 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2002 10 09 | 704 | 0.8+ | 0.3+ | 2006 08 29 | 699 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.2− | 0.4− |
| 2002 10 09 | 704 | 1.0+ | 0.6+ | 2006 08 29 | 699 | (1.2− | 2.9+) | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2002 10 09 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 699 | (2.5− | 1.0+) | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2002 10 12 | 704 | 0.1− | 0.3+ | 2006 08 29 | 699 | 0.9− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | 0.1+ | 0.8+ | 2006 09 16 | 644 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 1.0+ | 0.0 | 2006 09 16 | 644 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.4− |
| 2002 10 12 | 704 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.7− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2004 01 17 | 644 | 0.0 | 0.6+ | 2006 09 17 | 703 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2004 01 17 | 644 | 0.6+ | 0.8+ | 2006 09 17 | 703 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.3+ | 2006 10 17 | 703 | 1.0+ | 0.3+ |
| 2004 01 17 | 644 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.6+ | 0.5− | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2004 01 17 | 644 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 1.1+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2004 01 17 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.5+ | 0.8− | 2006 10 20 | 644 | 0.9+ | 0.5+ |
| 2004 01 20 | 704 | 0.8+ | 1.3+ | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2004 01 20 | 704 | 0.9+ | 1.2+ | 2006 09 18 | 704 | 0.0 | 0.9− | 2006 10 20 | 644 | 0.1− | 0.5− |

**(142610)∗ 2002 TU$_{132}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.37417 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25172903 | $\omega$ | 55.79017 | | +0.91253467 | −0.40534109 | |
| $a$ | 2.4841654 | $\Omega$ | 328.02300 | | +0.33310723 | +0.81399437 | |
| $e$ | 0.1127690 | $i$ | 5.91568 | | +0.23731846 | +0.41606701 | |
| $P$ | 3.92 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 31 | 691 | 0.5+ | 0.5− | 2002 10 05 | 704 | 0.3+ | 0.4+ | 2006 09 28 | 703 | 0.2+ | 1.2+ |
| 1994 08 31 | 691 | 0.1+ | 0.6− | 2002 10 05 | 704 | (1.6− | 0.4+) | 2006 10 19 | 703 | (3.3− | 0.2+) |
| 1994 08 31 | 691 | 0.7+ | 1.0− | 2002 10 05 | 704 | (1.6+ | 0.1−) | 2006 10 19 | 703 | 0.2+ | 0.6+ |
| 2000 02 11 | 691 | 0.2− | 0.7− | 2002 10 31 | 644 | 0.0 | 0.7+ | 2006 10 19 | 703 | 0.4+ | 0.1+ |
| 2000 02 11 | 691 | 0.4− | 0.5− | 2002 10 31 | 644 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 1.2− | 0.6− |
| 2000 02 11 | 691 | 0.0 | 0.6− | 2002 10 31 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2000 03 09 | 691 | 0.2− | 0.1− | 2004 02 17 | 691 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2000 03 09 | 691 | 0.3− | 0.5− | 2004 02 17 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2000 03 09 | 691 | 0.2− | 0.0 | 2004 02 17 | 691 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.9+ | 1.0+ |
| 2002 10 04 | 704 | 0.2− | 0.1− | 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.5+ | 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.4+ |
| 2002 10 04 | 704 | 0.3− | 0.4− | 2004 02 29 | 691 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.8− | 0.3− |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 1.2− | 0.8− |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.7− |
| 2002 10 04 | 644 | 0.2− | 0.0 | 2004 03 17 | 691 | 0.1− | 0.3− | 2006 11 15 | 703 | 1.0− | 0.5− |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.6+ | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2002 10 04 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.5+ | 0.7+ | | | | |
| 2002 10 05 | 704 | 0.5− | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.1+ | | | | |

**(142611)∗ 2002 TT$_{135}$**

Discovered 2002 Oct. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.11596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24158534 | $\omega$ | 289.72113 | | +0.17697873 | +0.98329639 | |
| $a$ | 2.5532245 | $\Omega$ | 350.17798 | | −0.78367970 | +0.11466050 | |
| $e$ | 0.0896869 | $i$ | 14.42852 | | −0.59541973 | +0.14135481 | |
| $P$ | 4.08 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 25 | 691 | 0.4+ | 0.6+ | 2002 11 07 | 704 | 0.7− | 0.2+ | 2004 02 13 | 699 | 0.0 | 1.1− |
| 1992 02 25 | 691 | 0.2+ | 0.0 | 2002 11 07 | 704 | 0.4+ | 0.1− | 2004 02 13 | 699 | 0.7− | 0.3+ |
| 1992 02 25 | 691 | 0.4− | 0.2− | 2002 11 14 | 644 | 0.4+ | 0.1+ | 2006 08 06 | 699 | 0.6− | 1.1+ |
| 2002 10 04 | 699 | 0.5− | 0.7− | 2002 11 14 | 644 | 0.3+ | 0.1− | 2006 08 06 | 699 | 0.7+ | 0.3− |
| 2002 10 04 | 699 | 0.5+ | 0.7+ | 2002 11 14 | 644 | 0.4+ | 0.2− | 2006 08 06 | 699 | 1.5+ | 0.5− |
| 2002 10 04 | 699 | 0.2− | 0.1− | 2003 12 29 | 704 | 0.6− | 0.1− | 2006 08 06 | 699 | 0.1− | 0.4− |
| 2002 10 04 | 699 | 0.9− | 0.2+ | 2003 12 29 | 704 | 0.4− | 0.2− | 2006 08 30 | 699 | 0.6+ | 0.4− |
| 2002 10 05 | 704 | 0.8− | 0.1+ | 2003 12 29 | 704 | 0.4+ | 0.0 | 2006 08 30 | 699 | 0.2− | 0.3+ |
| 2002 10 05 | 704 | 0.2− | 0.8+ | 2003 12 29 | 704 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.7+ | 0.1− |
| 2002 10 05 | 704 | 0.5− | 0.6+ | 2004 01 18 | 644 | 0.3− | 0.2+ | 2006 08 30 | 699 | 0.7+ | 0.3+ |
| 2002 10 05 | 704 | 0.3− | 0.4+ | 2004 01 18 | 644 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.2− | 0.2+ | 2004 01 18 | 703 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.4− |
| 2002 10 10 | 704 | 0.5− | 0.3− | 2004 01 18 | 703 | 1.1+ | 0.6+ | 2006 10 11 | 644 | 0.5− | 0.1− |
| 2002 10 10 | 704 | 0.6+ | 0.0 | 2004 01 18 | 703 | 0.7− | 0.0 | 2006 10 19 | 703 | 1.0− | 0.3− |
| 2002 10 10 | 704 | 0.9− | 0.4− | 2004 01 18 | 644 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.5− |
| 2002 10 10 | 704 | 0.2+ | 1.5+ | 2004 01 18 | 703 | 1.3− | 0.2− | 2006 10 19 | 703 | 0.9− | 0.7− |
| 2002 11 01 | 644 | 0.7+ | 0.1− | 2004 02 02 | 704 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.0 | 0.9− |
| 2002 11 01 | 644 | 0.1+ | 0.9+ | 2004 02 02 | 704 | 0.9+ | 0.0 | 2006 10 31 | 703 | (1.0+ | 1.7+) |
| 2002 11 01 | 644 | 0.9+ | 1.2+ | 2004 02 02 | 704 | 0.8+ | 0.2− | 2006 10 31 | 703 | 1.3+ | 0.6+ |
| 2002 11 07 | 704 | 0.3+ | 1.1− | 2004 02 13 | 699 | 0.2+ | 0.0 | 2006 10 31 | 703 | 0.3+ | 0.5+ |
| 2002 11 07 | 704 | 0.8− | 0.8− | 2004 02 13 | 699 | 0.1+ | 0.9− | 2006 10 31 | 703 | 0.7+ | 0.3− |

**(142612)∗ 2002 TQ$_{136}$**

Discovered 2002 Oct. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.33942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23667601 | $\omega$ | 56.26346 | | +0.76697117 | −0.63833686 | |
| $a$ | 2.5884109 | $\Omega$ | 343.09683 | | +0.48869607 | +0.64715246 | |
| $e$ | 0.1698550 | $i$ | 13.00521 | | +0.41585018 | +0.41679701 | |
| $P$ | 4.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 1.2− | 0.5− | 2004 02 14 | 703 | (1.6+ | 0.3+) | 2006 09 19 | 699 | 0.0 | 0.2+ |
| 1998 12 12 | 704 | 1.6+ | 0.2− | 2004 02 14 | 703 | (0.7+ | 1.5+) | 2006 09 20 | 691 | 0.1− | 0.1+ |
| 1998 12 12 | 704 | 0.1− | 0.4+ | 2004 02 14 | 703 | (1.6+ | 1.2+) | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 1998 12 12 | 704 | 0.4+ | 1.1+ | 2004 02 14 | 703 | (0.7+ | 1.9+) | 2006 09 20 | 691 | 0.1− | 0.0 |
| 2002 08 04 | 704 | 0.4− | 1.0− | 2004 02 26 | 704 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.5+ | 0.3+ |
| 2002 08 04 | 704 | 0.8− | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 704 | 0.2− | 0.8+ |
| 2002 08 04 | 704 | 0.3+ | 0.8+ | 2004 02 26 | 704 | 0.7+ | 1.2+ | 2006 09 25 | 699 | 0.4+ | 0.4− |
| 2002 08 04 | 704 | 1.2− | 0.2− | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.6+ |
| 2002 08 04 | 704 | 0.7+ | 1.4+ | 2004 02 26 | 704 | 1.2+ | 0.7+ | 2006 09 25 | 699 | 0.0 | 0.9+ |
| 2002 09 07 | 704 | 1.0+ | 1.1+ | 2004 03 29 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 1.0− | 0.1− |
| 2002 09 07 | 704 | 0.8− | 0.8+ | 2004 03 29 | 691 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 1.0+ |
| 2002 09 07 | 704 | 0.5− | 0.1+ | 2004 03 29 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 704 | 0.0 | 0.9+ |
| 2002 09 07 | 704 | 0.8− | 1.4+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.5+ |
| 2002 09 11 | 608 | 0.6− | 0.4− | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.9+ |
| 2002 09 11 | 608 | 1.1− | 0.3− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2002 09 11 | 608 | 0.7− | 0.4− | 2006 08 25 | 704 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.2− | 1.0+ |
| 2002 10 04 | 699 | 0.3+ | 0.1+ | 2006 08 25 | 704 | 0.0 | 0.4− | 2006 09 27 | 704 | (0.0 | 2.1+) |
| 2002 10 04 | 699 | 0.7− | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 2002 10 04 | 699 | 0.1− | 0.3− | 2006 08 25 | 704 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.2+ |
| 2002 10 04 | 699 | 0.0 | 0.6+ | 2006 08 27 | 699 | (0.7− | 1.6−) | 2006 10 01 | 704 | 0.1+ | 0.3+ |
| 2002 10 05 | 704 | 0.1+ | 0.6− | 2006 08 27 | 699 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.2− | 1.1+ |
| 2002 10 05 | 704 | 0.1− | 0.6− | 2006 08 27 | 699 | 0.5− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.6+ |
| 2002 10 05 | 704 | 0.1− | 0.3− | 2006 08 27 | 699 | 1.0− | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.1+ |
| 2002 10 05 | 704 | 0.4+ | 0.4− | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.8− | 0.9− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 10 10 | 704 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | 0.1+ | 0.5− | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 10 16 | 703 | 1.4+ | 0.1+ |
| 2002 10 10 | 704 | 0.1+ | 0.3− | 2006 09 01 | 704 | 0.1− | 1.2+ | 2006 10 16 | 703 | 0.6− | 0.2+ |
| 2002 10 10 | 704 | 0.0 | 0.5− | 2006 09 01 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2002 10 10 | 704 | 0.5+ | 0.5+ | 2006 09 01 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.5+ | 0.3− | 2006 09 01 | 704 | 0.2− | 0.3− | 2006 11 15 | 704 | 0.6+ | 0.3+ |
| 2002 11 07 | 704 | 0.9+ | 0.6+ | 2006 09 12 | 703 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 1.1+ | 0.0 | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 11 15 | 704 | 0.2+ | 0.4− |
| 2002 11 07 | 704 | 0.8+ | 0.1− | 2006 09 12 | 703 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.7− | 0.0 |
| 2002 11 14 | 704 | 0.6− | 1.3− | 2006 09 12 | 703 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.8+ | 0.3− |
| 2002 11 14 | 704 | 0.3− | 0.6− | 2006 09 18 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 704 | 0.6+ | 0.5− |
| 2002 11 14 | 704 | 0.8− | 0.5− | 2006 09 18 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2002 11 14 | 704 | 1.1− | 1.0− | 2006 09 18 | 704 | 0.4+ | 1.1+ | 2006 11 19 | 703 | 0.7− | 0.8− |
| 2002 12 06 | 704 | 0.9− | 0.8+ | 2006 09 18 | 704 | (2.3+ | 0.8−) | 2006 11 19 | 703 | 0.3− | 1.4− |
| 2002 12 06 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 11 19 | 703 | 0.1− | 0.8− |
| 2002 12 06 | 704 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.3− | 2006 11 19 | 703 | 0.8+ | 1.1− |
| 2002 12 06 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2002 12 27 | 644 | 0.7+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.5− | 1.0− |
| 2002 12 27 | 644 | 0.6+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2002 12 27 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.7+ |

**(142613)∗ 2002 TH$_{137}$ = 2000 JH$_{79}$**

Discovered 2002 Oct. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 38043)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.63496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23965106 | $\omega$ | 150.80518 | | −0.73556115 | −0.67542509 | |
| $a$ | 2.5669445 | $\Omega$ | 346.30732 | | +0.57060581 | −0.57595274 | |
| $e$ | 0.2163728 | $i$ | 12.80097 | | +0.36518324 | −0.46052078 | |
| $P$ | 4.11 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 704 | 0.1− | 0.3− | 2003 12 22 | 704 | 0.8+ | 0.6− | 2004 04 08 | 608 | 1.1+ | 0.6− |
| 2000 03 30 | 704 | 0.3+ | 0.7+ | 2003 12 22 | 704 | 0.6+ | 0.7+ | 2004 04 08 | 608 | 0.8+ | 0.5− |
| 2000 03 30 | 704 | 0.2− | 0.4+ | 2003 12 22 | 704 | 0.9+ | 0.3− | 2004 04 08 | 608 | 0.6+ | 0.6− |
| 2000 03 30 | 704 | 1.2+ | 0.9+ | 2003 12 27 | 704 | 0.2+ | 0.9+ | 2004 04 17 | 704 | 0.4+ | 0.3+ |
| 2000 03 30 | 704 | (1.0+ | 2.5+) | 2003 12 27 | 704 | 0.2− | 0.9+ | 2004 04 17 | 704 | 0.2+ | 0.2+ |
| 2000 05 05 | 699 | 0.7+ | 0.4− | 2003 12 27 | 704 | 0.6− | 0.4+ | 2004 04 17 | 704 | 0.2+ | 0.3+ |
| 2000 05 05 | 699 | 0.1− | 0.2+ | 2003 12 27 | 704 | (1.9+ | 2.0+) | 2004 04 17 | 704 | 0.1+ | 0.5+ |
| 2000 05 05 | 699 | 0.0 | 0.4+ | 2003 12 27 | 704 | 0.3− | 0.8+ | 2004 04 17 | 699 | 0.2− | 0.2− |
| 2000 05 05 | 699 | 0.2+ | 0.2+ | 2004 01 24 | 704 | 0.2− | 0.0 | 2004 04 17 | 699 | 0.3− | 0.4− |
| 2000 05 07 | 704 | 0.0 | 0.1− | 2004 01 24 | 704 | 0.4− | 0.2− | 2004 04 17 | 699 | 0.3+ | 0.1− |
| 2000 05 07 | 704 | 0.6+ | 0.6+ | 2004 01 24 | 704 | 0.3− | 0.3+ | 2004 04 17 | 699 | 0.2− | 0.0 |
| 2000 05 07 | 704 | 0.6+ | 0.8− | 2004 01 24 | 704 | 0.1− | 0.5+ | 2004 04 25 | 703 | 0.7− | 0.8+ |
| 2000 05 07 | 704 | 0.1− | 0.8+ | 2004 01 24 | 704 | 0.7− | 0.0 | 2004 04 25 | 703 | 0.4− | 0.3+ |
| 2000 05 07 | 704 | 0.4− | 0.4+ | 2004 01 28 | 704 | 0.3− | 0.3+ | 2004 04 25 | 703 | 0.3+ | 0.6+ |
| 2002 09 06 | 704 | 0.3− | 0.5+ | 2004 01 28 | 704 | 0.3− | 0.1+ | 2004 04 25 | 703 | 0.2− | 1.2+ |
| 2002 09 06 | 704 | 0.9+ | 0.5+ | 2004 01 28 | 704 | 0.0 | 1.1+ | 2004 04 26 | 608 | 0.0 | 0.3− |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2004 01 28 | 704 | 0.4+ | 0.6− | 2004 04 26 | 608 | 0.1− | 0.6− |
| 2002 09 06 | 704 | 0.2+ | 0.2+ | 2004 01 28 | 704 | 0.0 | 0.8− | 2004 04 26 | 608 | 0.0 | 0.5− |
| 2002 10 04 | 699 | 0.1+ | 0.6+ | 2004 01 29 | 704 | 0.0 | 0.3+ | 2004 07 21 | E12 | 0.1− | 0.5+ |
| 2002 10 04 | 699 | 0.8− | 0.6− | 2004 01 29 | 704 | 0.1+ | 1.0+ | 2004 07 21 | E12 | 0.3+ | 0.8− |
| 2002 10 04 | 699 | 0.2+ | 0.4+ | 2004 01 29 | 704 | 0.3− | 0.2− | 2004 07 21 | E12 | 0.3+ | 1.2+ |
| 2002 10 04 | 699 | (1.8− | 0.7+) | 2004 01 29 | 704 | 0.8+ | 0.5− | 2004 07 21 | E12 | 0.3− | 1.0+ |
| 2002 10 05 | 704 | 1.2− | 0.1− | 2004 01 29 | 704 | 0.3− | 0.7+ | 2006 09 06 | 644 | 0.2+ | 0.7+ |
| 2002 10 05 | 704 | 0.7− | 0.3+ | 2004 01 29 | 704 | 0.6− | 0.3− | 2006 09 06 | 644 | 0.2− | 0.8+ |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2004 01 29 | 704 | 0.2− | 0.5− | 2006 09 06 | 644 | 0.1− | 0.7+ |
| 2002 10 05 | 704 | 0.6− | 0.9+ | 2004 01 29 | 704 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.3+ | 1.2+ |
| 2002 10 05 | 704 | 0.4− | 0.7+ | 2004 01 29 | 704 | 0.4− | 0.4− | 2006 09 19 | 699 | 0.4− | 0.9+ |
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2004 01 29 | 704 | 0.4+ | 0.6− | 2006 09 19 | 699 | 1.5− | 0.5+ |
| 2002 10 09 | 704 | 0.4− | 0.5+ | 2004 02 16 | 703 | 1.1+ | 0.8+ | 2006 09 19 | 699 | 0.6+ | 0.2− |
| 2002 10 09 | 704 | 0.5− | 0.0 | 2004 02 16 | 703 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 0.4− | 0.1− |
| 2002 10 09 | 704 | 0.4− | 0.3+ | 2004 02 16 | 703 | 0.8+ | 0.7+ | 2006 09 25 | 704 | 0.6− | 1.0+ |
| 2002 10 09 | 704 | 0.9− | 0.3+ | 2004 02 16 | 703 | 0.6+ | 0.6+ | 2006 09 25 | 704 | 0.7− | 0.6+ |
| 2002 10 09 | 704 | 0.0 | 0.6− | 2004 03 17 | 704 | 0.5− | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.8+ |
| 2002 10 09 | 704 | 0.6+ | 0.1+ | 2004 03 17 | 704 | 0.2− | 0.9+ | 2006 09 25 | 704 | 1.3− | 0.3+ |
| 2002 10 09 | 704 | 0.2− | 0.3− | 2004 03 17 | 704 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.4− | 0.7+ |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2004 03 17 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 1.0+ | 0.2− |
| 2002 10 12 | 704 | 0.9− | 0.9− | 2004 03 17 | 704 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2002 10 12 | 704 | (0.8− | 1.6+) | 2004 03 26 | 699 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2002 10 12 | 704 | 0.3− | 0.4+ | 2004 03 26 | 699 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.0 | 0.5+ | 2004 03 26 | 699 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.6+ | | |
| 2002 10 12 | 704 | 0.3− | 0.3− | 2004 03 26 | 699 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2002 11 06 | 704 | 0.5+ | 0.1− | 2004 03 31 | 704 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.1+ | | |
| 2002 11 06 | 704 | 1.0+ | 0.2− | 2004 03 31 | 704 | 0.5+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.1− | | |
| 2002 11 06 | 704 | 1.0+ | 0.7− | 2004 03 31 | 704 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.0 | | |
| 2002 11 06 | 704 | 1.3+ | 0.2+ | 2004 03 31 | 704 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.1+ | | |
| 2003 12 22 | 704 | 0.6+ | 0.1+ | 2004 03 31 | 704 | 0.6+ | 0.1− | | | | | | |

**(142614)∗ 2002 TV$_{138}$**

Discovered 2002 Oct. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.35756 | | (2000.0) | | | |
| $n$ | 0.29503752 | $\omega$ | 206.32660 | | −0.82842020 | −0.55186047 |
| $a$ | 2.2346931 | $\Omega$ | 299.85151 | | +0.53139800 | −0.72035265 |
| $e$ | 0.0139574 | $i$ | 6.33892 | | +0.17702016 | −0.42016911 |
| $P$ | 3.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.2+ | 0.3− | 2002 11 14 | 704 | 0.7+ | 0.1+ | 2005 08 30 | 704 | 0.3+ | 0.1+ | | |
| 1992 09 24 | 691 | 0.2+ | 0.1− | 2002 11 14 | 704 | 0.2− | 0.1+ | 2005 08 30 | 704 | 0.3+ | 0.5+ | | |
| 1992 09 24 | 691 | 0.2− | 0.4− | 2002 11 14 | 704 | 1.0− | 0.0 | 2005 09 06 | 704 | 0.1+ | 0.6− | | |
| 1999 12 15 | 704 | 0.8+ | 0.7+ | 2004 03 17 | 703 | 0.9+ | 0.1+ | 2005 09 06 | 704 | 0.0 | 0.7− | | |
| 1999 12 15 | 704 | 0.2+ | 0.2+ | 2004 03 17 | 703 | 0.1− | 1.0+ | 2005 09 06 | 704 | 0.3− | 0.1+ | | |
| 1999 12 15 | 704 | 0.0 | 0.5− | 2004 03 17 | 704 | 0.2− | 0.6− | 2005 09 14 | 703 | 1.2− | 0.3− | | |
| 2002 10 04 | 699 | 0.6+ | 0.4− | 2004 03 17 | 703 | 1.4+ | 0.5+ | 2005 09 14 | 703 | 1.0− | 0.1+ | | |
| 2002 10 04 | 699 | 0.1− | 0.4− | 2004 03 17 | 704 | 0.1− | 0.6+ | 2005 09 14 | 703 | 0.4− | 0.1+ | | |
| 2002 10 04 | 699 | 0.6− | 0.5+ | 2004 03 17 | 703 | 0.1− | 0.8+ | 2005 09 14 | 703 | 0.7+ | 0.6+ | | |
| 2002 10 04 | 699 | 0.2+ | 0.6− | 2004 03 17 | 704 | 0.2− | 0.1+ | 2005 09 23 | 644 | 0.2− | 0.1+ | | |
| 2002 10 05 | 704 | 0.4− | 0.6+ | 2004 03 17 | 704 | (1.8− | 0.8−) | 2005 09 23 | 644 | 0.1− | 0.2+ | | |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2004 03 17 | 704 | 0.5+ | 0.5+ | 2005 09 23 | 644 | 0.2− | 0.2+ | | |
| 2002 10 05 | 704 | 0.2− | 0.4− | 2004 03 26 | 699 | 0.3− | 0.3+ | 2005 09 23 | A50 | 0.0 | 0.3− | | |
| 2002 10 05 | 704 | 0.6− | 0.7+ | 2004 03 26 | 699 | 0.6− | 0.6+ | 2005 09 25 | 691 | 0.5+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.1+ | 0.0 | 2004 03 26 | 699 | 0.2+ | 1.1+ | 2005 09 25 | 691 | 0.4+ | 0.6+ | | |
| 2002 10 10 | 704 | 0.5+ | 0.5− | 2004 03 26 | 699 | 0.6− | 0.2− | 2005 09 25 | 691 | 0.3+ | 0.2+ | | |
| 2002 10 10 | 704 | 0.8+ | 0.4+ | 2004 03 31 | 704 | (0.4+ | 1.5+) | 2005 09 30 | 699 | 1.0− | 0.4+ | | |
| 2002 10 10 | 704 | 0.5+ | 0.4+ | 2004 03 31 | 704 | 0.5+ | 0.6+ | 2005 09 30 | 703 | 0.8− | 0.5− | | |
| 2002 10 10 | 704 | 0.1+ | 0.4− | 2004 03 31 | 704 | 1.2+ | 1.4+ | 2005 09 30 | 703 | 0.6− | 1.1− | | |
| 2002 10 10 | 704 | 0.3− | 0.6− | 2004 04 16 | 644 | 0.5+ | 0.5+ | 2005 09 30 | 703 | 0.8− | 0.5+ | | |
| 2002 10 30 | 608 | (1.4− | 2.2+) | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2005 09 30 | 703 | 1.0− | 0.4− | | |
| 2002 10 30 | 608 | (1.1− | 2.1+) | 2004 04 16 | 644 | 0.3+ | 0.5+ | 2005 09 30 | 699 | 0.8+ | 0.7+ | | |
| 2002 10 30 | 608 | (1.0− | 2.2+) | 2004 04 25 | 703 | 0.2+ | 0.7+ | 2005 09 30 | 699 | (0.1+ | 2.4+) | | |
| 2002 11 05 | 704 | 0.1− | 1.3+ | 2004 04 25 | 703 | 1.2+ | 1.0− | 2005 09 30 | 699 | (0.1− | 2.4+) | | |
| 2002 11 05 | 704 | 0.6− | 0.8− | 2004 04 25 | 703 | 1.1− | 1.4+ | 2005 10 07 | 691 | 0.0 | 0.4+ | | |
| 2002 11 05 | 704 | 0.5− | 0.1+ | 2004 04 25 | 703 | (1.3+ | 4.1−) | 2005 10 07 | 691 | 0.0 | 0.2+ | | |
| 2002 11 05 | 704 | 0.9− | 0.2+ | 2005 08 26 | 644 | 0.1− | 0.2+ | 2005 10 07 | 691 | 0.1+ | 0.0 | | |
| 2002 11 05 | 704 | 0.8− | 0.3+ | 2005 08 26 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.1− | 0.6+ | 2005 08 26 | 644 | 1.1− | 0.7− | 2006 10 23 | G96 | 0.2− | 0.2+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.7+ | 2005 08 27 | 699 | 0.8− | 0.8+ | 2006 10 23 | G96 | 0.5+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.3− | 0.1+ | 2005 08 27 | 699 | 0.8− | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2002 11 06 | 704 | 0.1− | 0.6+ | 2005 08 27 | 699 | 1.0+ | 0.5+ | 2006 11 16 | G96 | 0.4− | 0.2+ | | |
| 2002 11 06 | 704 | (1.1− | 2.1+) | 2005 08 27 | 699 | 0.9− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.1+ | | |
| 2002 11 06 | 704 | (1.5− | 1.1+) | 2005 08 30 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | (2.4+ | 0.4−) | | |
| 2002 11 06 | 704 | 1.1− | 0.7+ | 2005 08 30 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | (2.2− | 2.0+) | | |
| 2002 11 06 | 704 | 0.6− | 0.4+ | 2005 08 30 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.1− | | |
| 2002 11 07 | 704 | 0.3− | 0.1+ | 2005 08 30 | 704 | 0.6+ | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.0 | | |
| 2002 11 07 | 704 | 0.0 | 0.6+ | 2005 08 30 | 704 | 0.8+ | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.1− | | |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2005 08 30 | 704 | 0.9+ | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.0 | | |

**(142615)∗ 2002 TW$_{138}$ = 1998 WR$_{45}$**

Discovered 2002 Oct. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61433)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.96242 | | (2000.0) | | | |
| $n$ | 0.24086911 | $\omega$ | 94.74141 | | +0.17984111 | −0.98260462 |
| $a$ | 2.5582834 | $\Omega$ | 344.66079 | | +0.81880097 | +0.17562427 |
| $e$ | 0.0849295 | $i$ | 10.08404 | | +0.54518084 | +0.06036782 |
| $P$ | 4.09 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 26 | 699 | 0.7+ | 0.3− | 2002 12 31 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.4+ | 0.5+ | | |
| 1998 11 26 | 699 | 0.6+ | 0.7− | 2002 12 31 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.8− | 0.2+ | | |
| 1998 11 26 | 699 | (2.3+ | 0.1+) | 2002 12 31 | 704 | 0.5− | 1.0− | 2004 03 20 | 704 | 0.3− | 0.0 | | |
| 2000 03 09 | 704 | 0.3+ | 0.9+ | 2004 01 18 | 703 | 0.3+ | 0.1− | 2004 03 21 | 691 | 0.1− | 0.0 | | |
| 2000 03 09 | 704 | 0.3− | 0.4− | 2004 01 18 | 703 | 0.3− | 0.9+ | 2004 03 21 | 691 | 0.2− | 0.1+ | | |
| 2000 03 09 | 704 | 1.5+ | 0.2+ | 2004 01 18 | 703 | 0.9− | 0.2+ | 2004 03 21 | 691 | 0.1− | 0.0 | | |
| 2000 03 09 | 704 | 0.3− | 0.7+ | 2004 01 18 | 703 | 0.2− | 0.3− | 2004 03 23 | 683 | 0.3− | 0.1+ | | |
| 2002 10 04 | 699 | 0.0 | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.1− | 2004 03 23 | 683 | 0.9+ | 0.3− | | |
| 2002 10 04 | 699 | 0.3− | 0.8− | 2004 01 27 | 691 | 0.1+ | 0.3− | 2004 03 23 | 683 | 0.2− | 1.2+ | | |
| 2002 10 04 | 699 | 0.4+ | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.2− | 2004 03 27 | 683 | 0.8+ | 0.4− | | |
| 2002 10 04 | 699 | 0.3− | 0.1+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2004 03 27 | 683 | 0.9− | 0.3− | | |
| 2002 10 05 | 704 | 1.0− | 0.7+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2004 03 27 | 683 | (1.2− | 1.9−) | | |
| 2002 10 05 | 704 | 0.3− | 0.9+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.1− | | |
| 2002 10 05 | 704 | 0.5− | 0.7+ | 2004 01 30 | 691 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.3− | | |
| 2002 10 05 | 704 | 0.3− | 0.5+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.1− | 0.5− | | |
| 2002 10 05 | 704 | 0.3− | 1.0+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.5+ | 0.6+ | | |
| 2002 10 10 | 704 | (0.2− | 1.6−) | 2004 02 13 | 291 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.5+ | | |
| 2002 10 10 | 704 | 0.3+ | 1.0− | 2004 02 13 | 291 | 0.8− | 0.2+ | 2004 03 28 | 683 | (2.0+ | 2.0−) | | |
| 2002 10 10 | 704 | (0.0 | 1.6−) | 2004 02 13 | 291 | 0.4− | 0.1+ | 2004 03 28 | 683 | (0.3+ | 1.8−) | | |
| 2002 10 10 | 704 | (0.6+ | 2.0−) | 2004 02 14 | 703 | 0.1+ | 0.1+ | 2004 03 28 | 683 | (2.8+ | 0.8+) | | |
| 2002 10 12 | 704 | (0.2− | 2.9−) | 2004 02 14 | 703 | 0.1− | 0.9+ | 2004 04 09 | 703 | 1.2+ | 1.3+ | | |
| 2002 10 12 | 704 | (0.8+ | 2.6−) | 2004 02 14 | 703 | (1.7+ | 1.7+) | 2004 04 09 | 703 | 0.5+ | 0.8− | | |
| 2002 10 12 | 704 | (0.6+ | 1.7−) | 2004 02 14 | 703 | 0.3− | 0.6+ | 2004 04 09 | 703 | 1.1+ | 0.6+ | | |
| 2002 10 12 | 704 | (0.2+ | 3.0−) | 2004 02 19 | 704 | (1.6+ | 0.5−) | 2004 04 09 | 703 | 1.0+ | 1.1− | | |
| 2002 10 12 | 704 | (1.1+ | 2.7−) | 2004 02 19 | 704 | 0.2+ | 0.6− | 2006 08 30 | 699 | 0.1+ | 0.8− | | |
| 2002 10 12 | 704 | 0.3− | 0.2+ | 2004 02 19 | 704 | 0.8+ | 0.1+ | 2006 08 30 | 699 | 0.9+ | 0.1− | | |
| 2002 10 12 | 704 | 0.4− | 0.3− | 2004 02 19 | 704 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.7− | 1.0+ | | |
| 2002 10 12 | 704 | 0.2− | 0.4− | 2004 02 19 | 704 | 1.1+ | 0.3+ | 2006 08 30 | 699 | (0.3+ | 1.5+) | | |
| 2002 10 12 | 704 | 0.7− | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 644 | 0.3+ | 0.7+ | | |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2004 02 26 | 704 | 0.0 | 0.5− | 2006 09 14 | 644 | 0.0 | 0.7+ | | |
| 2002 10 14 | 704 | 1.0− | 0.9− | 2004 02 26 | 704 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.8+ | | |
| 2002 10 14 | 704 | (0.4− | 1.8−) | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 704 | 1.0+ | 0.3− | | |
| 2002 10 14 | 704 | 0.2− | 1.2− | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 09 18 | 704 | 0.0 | 0.8+ | | |
| 2002 10 14 | 704 | 1.0− | 1.1− | 2004 03 14 | 691 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.7− | | |
| 2002 10 14 | 704 | (0.7− | 1.9−) | 2004 03 14 | 691 | 0.1+ | 0.1− | 2006 09 18 | 704 | (0.8+ | 1.6+) | | |
| 2002 11 01 | 644 | 0.1+ | 0.5+ | 2004 03 14 | 691 | 0.1+ | 0.1− | 2006 09 18 | 704 | 1.1− | 0.1+ | | |
| 2002 11 01 | 644 | 0.1+ | 0.6+ | 2004 03 15 | 683 | (1.1+ | 2.0−) | 2006 09 28 | 703 | 0.5− | 0.2+ | | |
| 2002 11 01 | 644 | 0.2+ | 0.5+ | 2004 03 15 | 683 | 1.0+ | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.1+ | | |
| 2002 11 03 | 704 | 0.6− | 1.0+ | 2004 03 15 | 683 | (2.1− | 0.4−) | 2006 09 28 | 703 | 0.1+ | 0.3− | | |
| 2002 11 03 | 704 | 0.3+ | 0.1− | 2004 03 16 | 683 | 0.3+ | 0.6+ | 2006 09 28 | 703 | 0.1+ | 0.1+ | | |
| 2002 11 03 | 704 | 0.8− | 0.3− | 2004 03 16 | 683 | (0.1+ | 2.0+) | 2006 10 04 | 703 | 0.5− | 0.2− | | |
| 2002 11 07 | 704 | 0.2+ | 0.9− | 2004 03 16 | 683 | 0.4+ | 0.7+ | 2006 10 04 | 703 | 0.7− | 1.3+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.4− | 2004 03 16 | 704 | 0.5+ | 0.3− | 2006 10 04 | 703 | 0.2+ | 0.3− | | |
| 2002 11 07 | 704 | 0.6+ | 0.0 | 2004 03 16 | 704 | 0.2− | 0.2+ | 2006 10 04 | 703 | 0.5+ | 0.7+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.4− | 2004 03 16 | 704 | 1.2− | 1.5+ | 2006 10 11 | 644 | 0.2− | 0.4+ | | |
| 2002 11 07 | 704 | 0.8+ | 0.7− | 2004 03 16 | 704 | 1.1− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2002 11 14 | 644 | 0.1+ | 0.0 | 2004 03 16 | 704 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.4+ | | |
| 2002 11 14 | 644 | 0.1− | 0.2+ | 2004 03 18 | 683 | (1.1+ | 2.3−) | 2006 10 17 | 703 | 0.0 | 0.4− | | |
| 2002 11 14 | 704 | 0.3+ | 0.5+ | 2004 03 18 | 683 | (1.2− | 1.5−) | 2006 10 17 | 703 | 0.5− | 0.2− | | |
| 2002 11 14 | 704 | 0.2+ | 0.1+ | 2004 03 18 | 683 | 0.1+ | 1.3− | 2006 10 17 | 703 | 0.4− | 0.1+ | | |
| 2002 11 14 | 644 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 1.3− | | |
| 2002 11 14 | 704 | 0.4− | 0.4− | 2004 03 18 | 704 | 0.6+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2002 11 14 | 704 | 0.7+ | 0.5+ | 2004 03 18 | 704 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2002 12 02 | 704 | 0.4− | 0.9+ | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2002 12 02 | 704 | 1.2+ | 0.8+ | 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2002 12 02 | 704 | 1.0+ | 0.6− | 2004 03 20 | 704 | 0.7+ | 0.6− | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2002 12 31 | 704 | 0.8+ | 0.5+ | 2004 03 20 | 704 | 0.7− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.3+ | | |

**(142616)∗ 2002 TX$_{143}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.83441 | | | (2000.0) | | |
| $n$ | 0.25820207 | $\omega$ | 270.75048 | | +0.97133261 | −0.20200376 |
| $a$ | 2.4424719 | $\Omega$ | 100.90983 | | +0.23477764 | +0.89790163 |
| $e$ | 0.2219986 | $i$ | 7.33302 | | −0.03731527 | +0.39111013 |
| $P$ | 3.82 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 03 | 691 | 1.8− | 1.0− | 2002 11 05 | 704 | 0.4+ | 0.4− | 2005 06 27 | 644 | 0.5− | 0.3+ |
| 1997 05 03 | 691 | 0.3+ | 0.3− | 2002 11 06 | 699 | 0.3+ | 0.1− | 2005 07 12 | G96 | 0.3− | 0.3+ |
| 1997 05 03 | 691 | 0.8+ | 0.2− | 2002 11 06 | 699 | 0.5− | 0.3− | 2005 07 12 | G96 | 0.5− | 0.2+ |
| 1998 09 22 | 699 | 0.7+ | 0.2+ | 2002 11 06 | 699 | 0.6− | 0.9+ | 2005 07 12 | G96 | 0.4− | 0.1+ |
| 1998 09 22 | 699 | 1.0+ | 1.1− | 2002 11 06 | 699 | 0.5+ | 0.9+ | 2005 07 12 | G96 | 0.4+ | 0.4+ |
| 1998 09 22 | 699 | 0.7+ | 0.4+ | 2002 11 12 | 704 | 0.6+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.6− |
| 2002 10 04 | 704 | 0.9+ | 0.3− | 2002 11 12 | 704 | 0.3+ | 1.1+ | 2006 11 14 | 704 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | (1.7+ | 0.9−) | 2002 11 12 | 704 | 1.3+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | (1.6+ | 0.9−) | 2002 11 12 | 704 | 0.6+ | 0.4+ | 2006 11 14 | 704 | 0.3+ | 0.6− |
| 2002 10 04 | 704 | 1.3+ | 0.2+ | 2002 11 12 | 704 | 1.4+ | 0.6+ | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 2002 10 04 | 704 | 0.8+ | 0.9− | 2002 11 20 | 644 | 1.1− | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.0 |
| 2002 10 06 | 608 | 0.7+ | 0.9− | 2002 11 20 | 644 | 0.3− | 0.8+ | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 10 06 | 608 | 0.2+ | 0.9− | 2002 11 20 | 644 | 0.7− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.0 |
| 2002 10 06 | 608 | 0.7+ | 0.5− | 2002 11 30 | 704 | 0.6− | 1.1+ | 2006 11 17 | 704 | 0.8+ | 0.1− |
| 2002 10 09 | 699 | 0.7− | 0.5− | 2002 11 30 | 704 | 0.2− | 1.2+ | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2002 10 09 | 699 | 0.2− | 0.0 | 2002 11 30 | 704 | 0.4− | 1.1+ | 2006 11 17 | G96 | 0.7+ | 0.2− |
| 2002 10 09 | 699 | 0.5− | 0.5− | 2002 11 30 | 704 | 1.3− | 1.3+ | 2006 11 17 | G96 | 0.3− | 0.5− |
| 2002 10 09 | 699 | 0.7− | 0.4+ | 2002 12 08 | 644 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.5− |
| 2002 10 26 | 608 | 1.1− | 0.0 | 2002 12 08 | 644 | 0.3− | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.8− |
| 2002 10 26 | 608 | 0.8− | 0.3− | 2002 12 08 | 644 | 0.4− | 0.0 | 2006 11 18 | 704 | 1.3− | 0.3− |
| 2002 10 26 | 608 | 1.1− | 0.2− | 2003 01 07 | 704 | 0.7+ | 0.8+ | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2002 10 31 | 704 | 0.2− | 0.2+ | 2003 01 07 | 704 | (0.8+ | 1.8+) | 2006 11 18 | 704 | 0.1+ | 0.7− |
| 2002 10 31 | 704 | 0.1+ | 0.1− | 2003 01 07 | 704 | 0.8+ | 1.1+ | 2006 11 20 | 704 | (1.5− | 2.3+) |
| 2002 10 31 | 704 | (2.5− | 0.2−) | 2005 05 20 | G96 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 1.3+ | 0.8+ |
| 2002 10 31 | 704 | 0.2− | 0.3− | 2005 05 20 | G96 | 0.2+ | 0.5+ | 2006 11 20 | 704 | (0.6+ | 1.5+) |
| 2002 10 31 | 704 | 0.3− | 0.3− | 2005 05 20 | G96 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.2− |
| 2002 11 05 | 704 | 0.1+ | 0.7− | 2005 05 20 | G96 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2002 11 05 | 704 | 0.2− | 1.3− | 2005 06 06 | 691 | 0.1+ | 0.4+ | 2006 11 25 | 704 | 0.2+ | 0.9+ |
| 2002 11 05 | 704 | 1.0− | 0.8− | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 11 25 | 704 | 0.1− | 1.0+ |
| 2002 11 05 | 704 | 0.2+ | 0.7− | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 11 25 | 704 | 0.7+ | 0.7+ |
| 2002 11 05 | 704 | 0.3− | 0.2− | 2005 06 16 | 691 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.3+ | 0.2+ |
| 2002 11 05 | 704 | 0.5− | 0.9− | 2005 06 16 | 691 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2002 11 05 | 704 | 0.4− | 0.3− | 2005 06 16 | 691 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2002 11 05 | 704 | 0.2− | 0.7− | 2005 06 27 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.8+ |
| 2002 11 05 | 704 | 0.2− | 0.2+ | 2005 06 27 | 644 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.2− |

**(142617)∗ 2002 TE$_{146}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 298.05659 | | | (2000.0) | | |
| $n$ | 0.24285599 | $\omega$ | 78.44345 | | +0.10962462 | −0.99281498 |
| $a$ | 2.5443109 | $\Omega$ | 5.92951 | | +0.62988112 | +0.03205676 |
| $e$ | 0.1792396 | $i$ | 27.66672 | | +0.76891626 | +0.11528566 |
| $P$ | 4.06 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 704 | 0.6+ | 1.2− | 2002 10 12 | 704 | 0.3+ | 0.0 | 2006 09 22 | 704 | 0.1+ | 1.1+ |
| 1998 09 27 | 704 | 1.0+ | 1.0− | 2002 10 12 | 704 | 0.7+ | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 1998 09 27 | 704 | 0.8+ | 0.7+ | 2004 03 19 | 704 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1998 09 27 | 704 | 0.3− | 1.6+ | 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1998 09 27 | 704 | (2.2− | 1.9+) | 2004 03 19 | 704 | (1.6+ | 0.1+) | 2006 09 26 | G96 | 0.1− | 0.2− |
| 1998 10 12 | 699 | (2.6+ | 0.2−) | 2004 03 19 | 704 | 0.9+ | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.2+ |
| 1998 10 12 | 699 | (2.5+ | 0.1+) | 2004 03 19 | 704 | 1.1+ | 1.0+ | 2006 09 28 | 704 | 0.0 | 0.7+ |
| 1998 10 12 | 699 | 1.2+ | 0.1− | 2004 03 22 | 704 | 1.1+ | 0.1− | 2006 09 28 | 704 | 0.1− | 0.3+ |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 1.5+ | 0.1− | 2006 09 29 | 704 | 0.2+ | 1.3+ |
| 2000 03 03 | 645 | 0.2+ | 0.0 | 2004 03 22 | 704 | 1.0+ | 0.1− | 2006 09 29 | 704 | 0.7+ | 0.7+ |
| 2000 03 11 | 691 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.2+ | 2006 09 29 | 704 | 1.1+ | 0.5+ |
| 2000 03 11 | 691 | 0.8− | 0.1− | 2004 03 22 | 704 | 0.9+ | 0.3+ | 2006 09 29 | 704 | 1.1+ | 0.6+ |
| 2000 03 11 | 691 | 0.7− | 0.1− | 2004 03 24 | 699 | 0.4+ | 0.1− | 2006 10 01 | 704 | 0.9− | 0.3− |
| 2002 09 07 | 704 | 0.3+ | 1.1+ | 2004 03 24 | 699 | 0.1− | 0.8+ | 2006 10 01 | 704 | (1.7− | 0.0 ) |
| 2002 09 07 | 704 | 1.1− | 0.9+ | 2004 03 24 | 699 | 0.5+ | 0.5− | 2006 10 01 | 704 | (1.7− | 0.0 ) |
| 2002 09 07 | 704 | 0.2+ | 0.3− | 2004 03 24 | 699 | 0.2− | 0.5+ | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2002 09 07 | 704 | 0.5+ | 0.4+ | 2004 03 28 | 704 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2002 09 28 | 608 | (2.8− | 0.2+) | 2004 03 28 | 704 | 0.8+ | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 09 28 | 608 | (3.2− | 0.1+) | 2004 03 28 | 704 | 0.5− | 0.7+ | 2006 10 17 | 703 | 1.1− | 0.4− |
| 2002 09 28 | 608 | (3.2− | 0.5+) | 2004 03 28 | 704 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 1.4− | 0.7+ |
| 2002 10 04 | 704 | 0.4− | 0.5− | 2004 03 28 | 704 | 0.6− | 1.1+ | 2006 10 17 | 703 | 0.7− | 0.0 |
| 2002 10 04 | 704 | 1.2− | 0.3− | 2006 09 20 | 691 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.7− | 0.4− | 2006 09 20 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 10 04 | 704 | 0.4− | 0.1− | 2006 09 20 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2002 10 04 | 704 | 0.7− | 0.4− | 2006 09 20 | 644 | 0.7− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 10 06 | 644 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.6− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.7− |
| 2002 10 06 | 644 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.4− | 0.6+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2002 10 06 | 644 | 0.2− | 0.1+ | 2006 09 22 | 704 | (1.7− | 1.1−) | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 10 12 | 704 | 0.9− | 0.7− | 2006 09 22 | 704 | 1.2− | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2002 10 12 | 704 | 0.8+ | 1.2− | 2006 09 22 | 704 | 1.0+ | 1.1− | | | | |

**(142618)∗ 2002 TF$_{146}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 103.37266 | | | (2000.0) | | |
| $n$ | 0.27450998 | $\omega$ | 54.43831 | | +0.23027144 | +0.97087077 |
| $a$ | 2.3447540 | $\Omega$ | 229.01417 | | −0.91880817 | +0.19449736 |
| $e$ | 0.1992505 | $i$ | 5.03261 | | −0.32057232 | +0.13993115 |
| $P$ | 3.59 | $H$ | 16.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.0 | 0.1− | 2005 05 04 | E12 | 0.4− | 0.1+ | 2005 06 16 | G96 | 0.2− | 0.4+ |
| 1995 10 15 | 691 | 0.0 | 0.0 | 2005 05 09 | 704 | 0.0 | 0.1+ | 2005 06 16 | G96 | 0.4− | 0.3+ |
| 1995 10 15 | 691 | 0.0 | 0.1− | 2005 05 09 | 704 | (2.7+ | 0.3+) | 2005 06 16 | G96 | 0.8− | 0.3+ |
| 2002 09 06 | 704 | 0.1+ | 0.1− | 2005 05 09 | 704 | 0.3− | 0.3+ | 2005 06 16 | G96 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2005 05 09 | 704 | 0.3+ | 0.4+ | 2005 06 23 | 644 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.8+ | 2005 05 09 | 704 | 1.0+ | 0.5+ | 2005 06 23 | 644 | 0.0 | 0.0 |
| 2002 09 06 | 704 | 0.1+ | 0.7+ | 2005 05 13 | G96 | 0.2− | 0.2− | 2005 06 23 | 644 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.7+ | 0.7+ | 2005 05 13 | G96 | 0.3− | 0.2− | 2005 06 27 | 644 | 0.1− | 0.0 |
| 2002 09 28 | 608 | (2.0− | 0.6−) | 2005 05 13 | G96 | 0.1− | 0.2− | 2005 06 27 | 644 | 0.0 | 0.1− |
| 2002 09 28 | 608 | 1.5− | 0.6− | 2005 05 13 | G96 | 0.2− | 0.3− | 2005 06 27 | 644 | 0.0 | 0.1− |
| 2002 09 28 | 608 | (1.9− | 0.9−) | 2005 05 17 | 704 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2005 05 17 | 704 | 0.1+ | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2005 05 17 | 704 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2005 05 18 | 644 | 0.5− | 0.2− | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.4− | 0.5− | 2005 05 18 | 644 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.9− | 0.4− | 2005 05 18 | 644 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2002 10 06 | 644 | 0.9− | 0.7− | 2005 05 29 | E12 | 0.7− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 10 06 | 644 | 0.5− | 0.7− | 2005 05 29 | E12 | 0.9− | 0.2− | 2006 10 19 | G96 | 0.5+ | 0.1+ |
| 2002 10 06 | 644 | 0.6− | 0.8− | 2005 05 29 | E12 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2002 10 12 | 704 | 0.4− | 0.6− | 2005 05 29 | E12 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 10 12 | 704 | 0.3− | 0.1− | 2005 06 03 | 703 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.9− | 0.5− | 2005 06 03 | 703 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 10 12 | 704 | 0.4+ | 0.2− | 2005 06 03 | 703 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2002 10 12 | 704 | 1.3+ | 0.7+ | 2005 06 03 | 703 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2002 10 30 | 644 | 0.2+ | 0.1+ | 2005 06 04 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2002 10 30 | 644 | 0.2− | 0.0 | 2005 06 04 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.5+ | 0.1+ |
| 2002 10 30 | 644 | 0.5− | 0.1+ | 2005 06 04 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.4+ |
| 2002 12 31 | 291 | 0.8+ | 0.2+ | 2005 06 04 | 704 | (2.0+ | 0.5+) | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2002 12 31 | 291 | 0.8+ | 0.1+ | 2005 06 04 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.5+ |
| 2002 12 31 | 291 | 1.0+ | 0.1+ | 2005 06 04 | 704 | 0.8+ | 0.5− | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2005 04 17 | E12 | 0.5+ | 0.1+ | 2005 06 04 | 704 | 0.2+ | 0.8− | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2005 04 17 | E12 | 0.4+ | 0.6+ | 2005 06 04 | 704 | 0.4+ | 0.2+ | 2006 11 19 | 691 | 0.6− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 704 | 0.8− | 0.1+ | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 1.0+ | | |
| 2005 05 04 | 704 | 0.4− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | (0.6+ | 1.6+) | | |
| 2005 05 04 | G96 | 0.1+ | 0.2+ | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | (1.1+ | 2.0+) | | |
| 2005 05 04 | 704 | 0.2− | 1.2+ | 2005 06 14 | 699 | 0.0 | 1.0+ | 2006 11 21 | 704 | (0.0 | 2.0+) | | |
| 2005 05 04 | G96 | 0.1+ | 0.0 | 2005 06 14 | 691 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.4− | 0.4+ | | |
| 2005 05 04 | G96 | 0.1+ | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2− | 0.3+ | | |
| 2005 05 04 | G96 | 0.0 | 0.3+ | 2005 06 14 | 699 | 0.4+ | 0.5+ | 2006 11 23 | 691 | 0.2− | 0.5+ | | |
| 2005 05 04 | E12 | 0.1+ | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.5+ | | |
| 2005 05 04 | E12 | 0.1+ | 0.4+ | 2005 06 14 | 699 | 1.2+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2005 05 04 | E12 | 0.2− | 0.2+ | 2005 06 14 | 699 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.3+ | | |

**(142619)∗ 2002 TR$_{146}$ = 2002 TT$_{147}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 41953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.65866 | | (2000.0) | | | |
| $n$ | 0.28454846 | $\omega$ | 76.60136 | | +0.98923435 | +0.13507633 |
| $a$ | 2.2892781 | $\Omega$ | 275.61425 | | −0.14629945 | +0.90377941 |
| $e$ | 0.1208919 | $i$ | 3.24308 | | −0.00344651 | +0.40612457 |
| $P$ | 3.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.1+ | 0.5− | 2002 10 09 | 704 | 0.1+ | 0.6+ | 2002 12 06 | 704 | (0.5+ | 2.1−) | | |
| 2000 01 04 | 704 | 0.2− | 0.2− | 2002 10 09 | 704 | 0.6− | 0.7+ | 2002 12 06 | 704 | (0.1+ | 1.9−) | | |
| 2000 01 04 | 704 | 0.1− | 0.8− | 2002 10 09 | 704 | 0.1− | 0.7+ | 2003 01 05 | 704 | 1.4− | 1.3+ | | |
| 2000 01 04 | 704 | 0.2+ | 0.4− | 2002 10 12 | 704 | 0.6+ | 0.1+ | 2003 01 05 | 704 | 0.2− | 0.4+ | | |
| 2002 08 04 | 704 | 0.4− | 0.0 | 2002 10 12 | 704 | 0.3+ | 0.1+ | 2003 01 05 | 704 | 1.3− | 0.9+ | | |
| 2002 08 04 | 704 | 0.4+ | 1.1+ | 2002 10 12 | 704 | 0.0 | 0.1− | 2003 01 05 | 704 | 1.1− | 0.0 | | |
| 2002 08 04 | 704 | 0.0 | 0.4− | 2002 10 12 | 704 | 0.5+ | 0.2− | 2004 02 19 | 704 | 0.4+ | 0.7+ | | |
| 2002 08 04 | 704 | 0.1− | 0.6+ | 2002 10 12 | 704 | 0.6+ | 0.4− | 2004 02 19 | 704 | 0.1− | 0.8+ | | |
| 2002 08 16 | 608 | 0.6− | 0.5− | 2002 11 01 | 704 | 0.3+ | 0.7+ | 2004 02 19 | 704 | 0.5+ | 1.0+ | | |
| 2002 08 16 | 608 | 0.3− | 0.1+ | 2002 11 01 | 704 | 0.1− | 0.7− | 2004 02 19 | 704 | 1.1+ | 0.3+ | | |
| 2002 08 16 | 608 | 0.6− | 0.4− | 2002 11 01 | 704 | 0.0 | 0.5− | 2004 02 19 | 704 | 0.5+ | 0.2+ | | |
| 2002 09 15 | 608 | 0.4− | 0.1− | 2002 11 01 | 704 | 0.5− | 0.2− | 2004 03 27 | 704 | 0.7− | 1.4+ | | |
| 2002 09 15 | 608 | 0.0 | 0.0 | 2002 11 01 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | (0.0 | 2.1+) | | |
| 2002 09 15 | 608 | 0.4− | 0.1− | 2002 11 02 | 608 | 0.3− | 0.5− | 2004 03 27 | 704 | (1.1− | 2.0+) | | |
| 2002 10 04 | 704 | 0.2+ | 0.2+ | 2002 11 02 | 608 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.1− | 0.2+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.0 | 2002 11 02 | 608 | 0.1− | 0.6− | 2006 09 19 | 691 | 0.5+ | 0.0 | | |
| 2002 10 04 | 704 | 0.3+ | 0.3− | 2002 11 08 | 704 | 0.1+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2002 10 04 | 704 | 0.4+ | 0.2+ | 2002 11 08 | 704 | 0.8+ | 0.9− | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2002 10 04 | 704 | 0.8+ | 0.3− | 2002 11 08 | 704 | 1.0+ | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | | |
| 2002 10 04 | 644 | 0.1− | 0.1+ | 2002 11 22 | 644 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 2002 10 04 | 644 | 0.2+ | 0.2+ | 2002 11 22 | 644 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2002 10 04 | 644 | 0.1− | 0.1+ | 2002 11 22 | 644 | 0.3− | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 06 | 644 | 0.1− | 0.1− | 2002 12 01 | 704 | 0.1− | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2002 10 06 | 644 | 0.5− | 0.2− | 2002 12 01 | 704 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.5− | 0.3− | | |
| 2002 10 06 | 644 | 0.1− | 0.0 | 2002 12 01 | 704 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.4− | 0.4− | | |
| 2002 10 07 | 699 | 0.4+ | 0.7− | 2002 12 01 | 704 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 2002 10 07 | 699 | 0.5+ | 0.6+ | 2002 12 01 | 608 | 0.0 | 0.3− | 2006 10 28 | G96 | 1.0− | 0.2− | | |
| 2002 10 07 | 699 | 0.1− | 0.2+ | 2002 12 01 | 608 | 0.3− | 0.1− | 2006 12 01 | G96 | 1.4+ | 1.9− | | |
| 2002 10 07 | 699 | 0.4− | 1.0+ | 2002 12 01 | 608 | 0.1− | 0.6− | 2006 12 01 | G96 | 0.5− | 0.4− | | |
| 2002 10 09 | 704 | 0.2− | 0.5+ | 2002 12 06 | 704 | (1.9+ | 0.9−) | 2006 12 01 | G96 | 0.3− | 0.2+ | | |
| 2002 10 09 | 704 | 0.2− | 0.5+ | 2002 12 06 | 704 | (1.4+ | 1.7−) | 2006 12 01 | G96 | 0.7− | 0.1− | | |

**(142620)∗ 2002 TL$_{154}$ = 2004 FB$_{17}$**

Discovered 2002 Oct. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69401)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.84126 | | (2000.0) | | | |
| $n$ | 0.25609664 | $\omega$ | 151.20486 | | +0.93906618 | −0.33287639 |
| $a$ | 2.4558403 | $\Omega$ | 228.50087 | | +0.28936038 | +0.90014745 |
| $e$ | 0.2278665 | $i$ | 6.57202 | | +0.18554052 | +0.28094106 |
| $P$ | 3.85 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 049 | 0.0 | 0.2+ | 2002 10 07 | 699 | 0.5− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2− | | |
| 2002 08 17 | 049 | 0.2+ | 0.5+ | 2002 10 07 | 699 | 0.5− | 0.3− | 2006 10 17 | 703 | 0.4− | 0.6− | | |
| 2002 08 17 | 049 | 0.3− | 0.4− | 2004 03 16 | 568 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.4− | | |
| 2002 08 27 | 644 | 0.1− | 0.2+ | 2004 03 16 | 568 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.3− | | |
| 2002 08 27 | 644 | 0.3+ | 0.6− | 2004 03 16 | 568 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.6− | | |
| 2002 08 27 | 644 | 0.3− | 0.2+ | 2004 03 17 | 568 | 0.6+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 2002 09 04 | 644 | 0.2+ | 0.5+ | 2004 03 17 | 568 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2002 09 04 | 644 | 0.4+ | 0.5+ | 2004 03 17 | 568 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1− | | |
| 2002 09 04 | 644 | 0.2+ | 0.4+ | 2004 03 19 | 568 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.8− | 0.9− | 2004 03 19 | 568 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2002 09 07 | 704 | 0.4− | 0.9− | 2004 03 19 | 568 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 09 07 | 704 | (2.6− | 0.0 ) | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 09 12 | 644 | 0.0 | 0.1+ | 2005 05 13 | G96 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 09 12 | 644 | 0.0 | 0.4+ | 2005 05 13 | G96 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 09 12 | 644 | 0.0 | 0.3+ | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 10 29 | 704 | 0.0 | 0.2+ | | |
| 2002 09 17 | 608 | 0.6− | 1.2− | 2006 08 30 | 699 | 0.2+ | 0.4− | 2006 10 29 | 704 | 0.5+ | 0.0 | | |
| 2002 09 17 | 608 | 0.6− | 0.9− | 2006 08 30 | 699 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.1+ | 0.2+ | | |
| 2002 09 17 | 608 | 1.0− | 1.1− | 2006 08 30 | 699 | 1.3+ | 0.6+ | 2006 10 29 | 704 | 0.6+ | 1.2+ | | |
| 2002 09 30 | 704 | (2.4+ | 0.8−) | 2006 08 30 | 699 | 0.6− | 0.4+ | 2006 10 29 | 704 | 0.1+ | 0.4+ | | |
| 2002 09 30 | 704 | 1.1+ | 0.9+ | 2006 09 20 | 699 | (0.4+ | 1.5+) | 2006 11 07 | 644 | 0.8− | 0.1+ | | |
| 2002 09 30 | 704 | (2.7+ | 0.7−) | 2006 09 20 | 699 | 0.4− | 0.0 | 2006 11 07 | 644 | 0.0 | 0.2+ | | |
| 2002 09 30 | 704 | 1.4+ | 0.5+ | 2006 09 20 | 699 | 1.2− | 0.1− | 2006 11 07 | 644 | 0.1− | 0.0 | | |
| 2002 09 30 | 704 | (1.8+ | 1.0+) | 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2− | | |
| 2002 10 05 | 704 | 0.6+ | 0.6− | 2006 09 25 | 704 | 0.7− | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2002 10 05 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 1.4+ | 0.8+ | 2006 11 10 | 691 | 0.3+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.4− | 1.0− | 2006 09 25 | 704 | 0.1− | 0.6+ | 2006 11 16 | 691 | 0.2− | 0.2− | | |
| 2002 10 05 | 704 | 0.2− | 0.7+ | 2006 09 25 | 704 | 0.4− | 1.1− | 2006 11 16 | 691 | 0.2− | 0.3− | | |
| 2002 10 05 | 644 | 0.1+ | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.3− | 0.0 | | |
| 2002 10 05 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.9+ | 0.6+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 1.2+ | | |
| 2002 10 05 | 644 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1+ | | |
| 2002 10 06 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.5− | 1.3+ | | |
| 2002 10 06 | 644 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.0 | | |
| 2002 10 06 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.0 | | |
| 2002 10 06 | 644 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2− | | |
| 2002 10 06 | 644 | 0.1+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.3+ | | |
| 2002 10 06 | 644 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.0 | | |
| 2002 10 07 | 699 | 0.7− | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.0 | | |
| 2002 10 07 | 699 | 0.6− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.6− | | |

**(142621)∗ 2002 TU$_{157}$**

Discovered 2002 Oct. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.71770 | | (2000.0) | | | |
| $n$ | 0.24630415 | $\omega$ | 331.87060 | | +0.79536578 | −0.57689176 |
| $a$ | 2.5205089 | $\Omega$ | 64.56815 | | +0.58755328 | +0.65841775 |
| $e$ | 0.1830947 | $i$ | 11.88440 | | +0.14891077 | +0.48340662 |
| $P$ | 4.00 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 28 | 699 | 0.6+ | 0.4− | 2002 11 13 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.6+ | 0.4− | | |
| 1998 09 28 | 699 | 0.8+ | 0.4− | 2002 11 13 | 704 | 1.2+ | 0.1− | 2006 09 29 | 699 | 0.2− | 0.2− | | |
| 1998 09 28 | 699 | 0.5+ | 0.8− | 2002 11 13 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.1+ | 0.3+ | | |
| 1999 01 15 | 691 | 0.3+ | 0.3− | 2002 11 13 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.4− | | |
| 1999 01 15 | 691 | 0.2+ | 0.1+ | 2002 11 13 | 704 | 0.9+ | 1.0− | 2006 09 30 | 704 | 0.7− | 0.6+ | | |
| 1999 01 15 | 691 | 0.3+ | 0.5− | 2002 11 13 | 704 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.6− | 0.0 | | |
| 2002 08 26 | 644 | 0.4− | 0.2+ | 2002 11 13 | 704 | 1.1+ | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.6+ | | |
| 2002 08 26 | 644 | 0.4− | 0.1+ | 2002 11 13 | 704 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.5− | 0.0 | 2002 11 21 | 644 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2002 09 30 | 608 | 0.0 | 0.3− | 2002 11 21 | 644 | 0.1+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2002 09 30 | 608 | 0.1− | 0.4− | 2002 11 21 | 644 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.2− | | |
| 2002 09 30 | 608 | 0.5− | 0.2− | 2003 01 04 | 704 | 0.3− | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.1− | | |
| 2002 10 05 | 644 | 0.1− | 0.9+ | 2003 01 04 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.1− | | |
| 2002 10 05 | 644 | 0.2− | 0.8+ | 2003 01 04 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.3+ | | |
| 2002 10 05 | 644 | 0.3− | 0.9+ | 2003 01 04 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.1+ | | |
| 2002 10 06 | 644 | 0.1− | 0.9+ | 2004 02 18 | 201 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.4− | | |
| 2002 10 06 | 644 | 0.2− | 0.7+ | 2004 02 18 | 201 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.3− | | |
| 2002 10 06 | 704 | 0.5− | 0.4− | 2004 02 18 | 201 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.1− | | |
| 2002 10 06 | 704 | 1.2− | 0.5− | 2004 03 19 | 644 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.5+ | 0.4− | | |
| 2002 10 06 | 644 | 0.2− | 0.9+ | 2004 03 19 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.1+ | | |
| 2002 10 06 | 704 | 0.9− | 0.5− | 2004 03 19 | 644 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 0.4− | 0.1− | | |
| 2002 10 06 | 704 | 1.1− | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 11 10 | 704 | 0.5− | 0.8+ | | |
| 2002 10 06 | 704 | 0.5− | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.1+ | 2006 11 10 | 704 | 0.0 | 0.3+ | | |
| 2002 10 15 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.2− | 2006 11 10 | 704 | 0.8+ | 0.1− | | |
| 2002 10 15 | 644 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 11 10 | 704 | 0.1− | 0.8+ | | |
| 2002 10 15 | 644 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.4+ | 0.4− | 2006 11 10 | 704 | 0.4− | 0.9+ | | |
| 2002 10 30 | 704 | 0.6+ | 0.4− | 2006 09 21 | 699 | 0.5+ | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.3− | | |
| 2002 10 30 | 704 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.6+ | 0.2− | | |
| 2002 10 30 | 704 | 0.1− | 0.2− | 2006 09 21 | 699 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.5− | | |
| 2002 10 30 | 704 | 0.4− | 0.3+ | 2006 09 25 | 699 | 0.1+ | 1.2+ | 2006 11 16 | 703 | 0.2+ | 0.8− | | |
| 2002 10 30 | 704 | 1.0+ | 0.8− | 2006 09 25 | 699 | 0.1+ | 0.7+ | 2006 11 16 | 703 | 0.0 | 0.0 | | |
| 2002 11 04 | 608 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.2− | 0.8+ | | |
| 2002 11 04 | 608 | 0.2− | 0.4− | 2006 09 25 | 699 | 0.6+ | 0.9+ | 2006 11 16 | 703 | 0.1+ | 1.1+ | | |
| 2002 11 04 | 608 | 0.2− | 0.4− | 2006 09 26 | 703 | 0.3− | 0.0 | 2006 11 22 | 704 | 1.7− | 0.1− | | |
| 2002 11 12 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.4− | 2006 11 22 | 704 | 1.9− | 0.8− | | |
| 2002 11 12 | 704 | 1.0− | 0.0 | 2006 09 26 | 703 | 0.3− | 0.8− | 2006 11 22 | 704 | 1.8+ | 0.7+ | | |
| 2002 11 12 | 704 | 0.3− | 1.0− | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.3− | 0.3− | | |
| 2002 11 12 | 704 | 1.0+ | 1.0− | 2006 09 29 | 699 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 1.2− | 0.5+ | | |
| 2002 11 12 | 704 | 0.1+ | 0.8− | 2006 09 29 | 699 | 0.2+ | 0.1− | | | | | | |

**(142622)∗ 2002 TK$_{158}$**

Discovered 2002 Oct. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.65318 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23942902 | $\omega$ | 254.27578 | | +0.78441730 | | −0.60180898 |
| $a$ | 2.5685313 | $\Omega$ | 142.36066 | | +0.62013453 | | +0.75667406 |
| $e$ | 0.1115155 | $i$ | 14.22371 | | +0.01107581 | | +0.25548056 |
| $P$ | 4.12 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 608 | 0.5− | 0.6− | 2002 12 05 | 704 | 0.2+ | 0.0 | 2005 05 15 | 644 | 0.5− | 0.3+ | | |
| 2002 09 30 | 608 | 0.8− | 1.4− | 2003 11 24 | 291 | 0.5− | 0.5+ | 2005 05 19 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 30 | 608 | 0.5− | 1.4− | 2003 11 24 | 291 | 0.4− | 0.6+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 05 | 704 | 0.5− | 0.8+ | 2003 11 24 | 291 | 0.4− | 0.5+ | 2005 05 19 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 05 | 704 | 0.1− | 0.4+ | 2004 01 22 | 704 | 0.1+ | 0.1− | 2005 06 07 | 703 | 1.0− | 0.8+ | | |
| 2002 10 05 | 644 | 0.2− | 0.6+ | 2004 01 22 | 704 | 0.8+ | 0.4+ | 2005 06 07 | 703 | 0.3− | 0.2− | | |
| 2002 10 05 | 704 | 0.3+ | 0.2+ | 2004 01 22 | 704 | 0.0 | 0.7+ | 2005 06 07 | 703 | 0.4− | 0.8+ | | |
| 2002 10 05 | 704 | 0.6− | 0.6− | 2004 01 22 | 704 | 0.1+ | 0.3+ | 2005 06 07 | 703 | 0.8− | 0.3− | | |
| 2002 10 05 | 644 | 0.2− | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.1− | 2005 06 24 | 644 | 0.1+ | 0.5+ | | |
| 2002 10 05 | 704 | 0.0 | 0.8− | 2004 02 11 | 703 | 1.0− | 1.2+ | 2005 06 24 | 644 | 0.0 | 0.1− | | |
| 2002 10 05 | 644 | 0.4− | 0.4+ | 2004 02 11 | 703 | 0.9− | 0.5− | 2005 06 24 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 06 | 644 | 0.0 | 0.4+ | 2004 02 11 | 703 | 0.1+ | 0.7− | 2005 06 30 | 644 | 0.2− | 0.2+ | | |
| 2002 10 06 | 644 | 0.3− | 0.5+ | 2004 02 11 | 703 | 1.2− | 0.8+ | 2005 06 30 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 06 | 644 | 0.0 | 0.4+ | 2004 02 17 | 691 | 0.2+ | 0.1+ | 2005 06 30 | 644 | 0.1+ | 0.3+ | | |
| 2002 10 10 | 704 | 0.2+ | 0.3+ | 2004 02 17 | 691 | 0.1+ | 0.2+ | 2005 07 01 | 644 | 0.2− | 0.2+ | | |
| 2002 10 10 | 704 | 0.6+ | 0.2+ | 2004 02 17 | 691 | 0.3+ | 0.0 | 2005 07 01 | 644 | 0.2− | 0.3+ | | |
| 2002 10 10 | 704 | 0.4+ | 0.5+ | 2004 02 17 | 704 | 0.4+ | 0.6+ | 2005 07 01 | 644 | 0.0 | 0.2− | | |
| 2002 10 10 | 704 | 0.6+ | 0.3+ | 2004 02 17 | 704 | 0.1+ | 0.3+ | 2005 07 06 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 10 | 704 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.7+ | 0.1+ | 2005 07 06 | 691 | 0.0 | 0.4+ | | |
| 2002 10 16 | 644 | 0.1− | 0.8+ | 2004 02 17 | 704 | 0.6+ | 0.9+ | 2005 07 06 | 691 | 0.2− | 0.7+ | | |
| 2002 10 16 | 644 | 0.1− | 0.6+ | 2004 02 17 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 699 | 1.0+ | 0.7+ | | |
| 2002 10 16 | 644 | 0.0 | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.1− | 2006 09 17 | 699 | 0.7− | 0.0 | | |
| 2002 10 29 | 704 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 09 17 | 699 | 0.4+ | 0.9+ | | |
| 2002 10 29 | 704 | 0.8− | 1.1+ | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2006 09 17 | 699 | 0.1− | 0.7+ | | |
| 2002 10 29 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | 1.1+ | 0.9+ | 2006 09 19 | 703 | 0.4− | 1.1+ | | |
| 2002 11 05 | 644 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 1.1+ | 0.8+ | 2006 09 19 | 703 | 0.4− | 0.4+ | | |
| 2002 11 05 | 644 | 0.0 | 0.8+ | 2004 03 22 | 704 | 0.7+ | 0.4− | 2006 09 19 | 703 | 0.1− | 0.1+ | | |
| 2002 11 05 | 644 | 0.1+ | 0.8+ | 2004 03 22 | 704 | 0.4+ | 0.9+ | 2006 09 19 | 703 | 0.2− | 0.2+ | | |
| 2002 12 05 | 704 | 0.2− | 0.7+ | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 703 | 0.0 | 0.4+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.1+ | 2004 03 22 | 704 | 0.5− | 0.8+ | 2006 09 25 | 703 | 1.0− | 0.1− | | |
| 2002 12 05 | 704 | 0.2− | 1.5+ | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.7+ | 0.6+ | | |
| 2002 12 05 | 704 | 0.3− | 1.2+ | 2005 05 13 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 0.3+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2005 05 13 | 691 | 1.0+ | 1.1+ | 2006 10 12 | 644 | 0.3− | 0.3+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.9+ | 2005 05 15 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.1+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.4+ | 2005 05 15 | 644 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |

**(142623)∗ 2002 TT$_{160}$ = 2001 HF$_{50}$**

Discovered 2002 Oct. 5 by NEAT at Palomar.

Id. A. Doppler (*MPO* 38050)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.94862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23226084 | $\omega$ | 201.51993 | | +0.33333545 | | +0.90990383 |
| $a$ | 2.6211108 | $\Omega$ | 88.64330 | | −0.82496955 | | +0.40827093 |
| $e$ | 0.2430603 | $i$ | 14.29858 | | −0.45641289 | | −0.07341571 |
| $P$ | 4.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 704 | 0.9− | 1.1+ | 2002 10 06 | 644 | 0.3− | 0.2+ | 2006 08 20 | 644 | 0.1+ | 0.1− | | |
| 2001 03 31 | 704 | 0.6− | 0.8+ | 2002 10 06 | 704 | 0.1− | 0.3− | 2006 08 20 | 644 | 0.0 | 0.3+ | | |
| 2001 03 31 | 704 | 0.4− | 0.9+ | 2002 10 06 | 644 | 0.2− | 0.5+ | 2006 08 20 | 644 | 0.2− | 0.2+ | | |
| 2001 04 21 | 608 | 0.1− | 0.5+ | 2002 10 16 | 644 | 0.1+ | 1.2+ | 2006 09 16 | E12 | 0.1− | 0.2− | | |
| 2001 04 21 | 608 | 0.5+ | 1.1+ | 2002 10 16 | 644 | 0.1+ | 1.4+ | 2006 09 16 | E12 | 0.4− | 0.1+ | | |
| 2001 04 21 | 608 | 0.1+ | 0.6+ | 2002 10 16 | 644 | 0.3− | 0.9+ | 2006 09 16 | E12 | 0.2− | 0.1+ | | |
| 2001 04 25 | 699 | 0.6+ | 0.0 | 2005 03 08 | 704 | 0.4+ | 0.2+ | 2006 09 22 | E12 | 1.2− | 0.9− | | |
| 2001 04 25 | 699 | 0.8+ | 0.2+ | 2005 03 08 | 704 | 0.3+ | 1.2+ | 2006 09 22 | E12 | 0.3− | 0.8+ | | |
| 2001 04 25 | 699 | 0.9+ | 0.2− | 2005 03 08 | 704 | 0.6+ | 0.4+ | 2006 09 22 | E12 | 0.4− | 0.3+ | | |
| 2001 04 25 | 699 | 0.7+ | 1.1+ | 2005 03 09 | 704 | 0.8− | 1.2+ | 2006 09 22 | E12 | 0.4− | 1.1+ | | |
| 2001 06 18 | 699 | 0.0 | 0.8+ | 2005 03 09 | 704 | 1.0+ | 1.4+ | 2006 10 03 | E12 | 0.3+ | 0.4− | | |
| 2001 06 18 | 699 | (0.4− | 2.6+) | 2005 03 09 | 704 | 0.9− | 1.2− | 2006 10 03 | E12 | 0.1− | 0.1− | | |
| 2001 06 18 | 699 | (3.0− | 1.7+) | 2005 03 09 | 704 | 1.2+ | 0.4− | 2006 10 03 | E12 | 0.6− | 0.7+ | | |
| 2001 06 18 | 699 | (0.8− | 2.3+) | 2005 03 15 | 703 | 0.1+ | 0.8− | 2006 10 03 | E12 | 0.6+ | 0.2+ | | |
| 2002 10 05 | 644 | 0.4− | 0.4+ | 2005 03 15 | 703 | 0.7+ | 0.3+ | 2006 10 12 | E12 | 0.1+ | 0.1+ | | |
| 2002 10 05 | 644 | 0.2− | 0.4+ | 2005 03 15 | 703 | 0.2+ | 0.4+ | 2006 10 12 | E12 | 0.7+ | 0.7+ | | |
| 2002 10 05 | 644 | 0.1− | 0.2+ | 2005 03 15 | 703 | 0.5+ | 0.2+ | 2006 10 12 | E12 | 0.4+ | 0.1− | | |
| 2002 10 06 | 704 | 0.4− | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.1− | 2006 10 12 | E12 | 0.6− | 0.1+ | | |
| 2002 10 06 | 644 | 0.1− | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.1− | | | | | | |
| 2002 10 06 | 704 | 0.4− | 1.3+ | 2006 08 14 | 644 | 0.3− | 0.2+ | | | | | | |

**(142624)∗ 2002 TU$_{160}$**

Discovered 2002 Oct. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.53410 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23093956 | $\omega$ | 179.72590 | | +0.03443723 | | +0.97218723 |
| $a$ | 2.6310988 | $\Omega$ | 92.24013 | | −0.91737847 | | +0.12271721 |
| $e$ | 0.0817224 | $i$ | 13.40522 | | −0.39652342 | | −0.19948051 |
| $P$ | 4.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.3− | 0.4− | 2005 05 06 | 703 | 0.3+ | 0.5+ | 2005 06 04 | 703 | 0.7− | 0.1+ | | |
| 2002 10 05 | 644 | 0.1− | 0.1− | 2005 05 06 | 703 | 0.6− | 0.6+ | 2005 06 07 | 699 | 1.1+ | 0.2− | | |
| 2002 10 05 | 644 | 0.5− | 0.2− | 2005 05 06 | 703 | 0.4− | 0.2− | 2005 06 07 | 699 | 0.2− | 0.5+ | | |
| 2002 10 06 | 644 | 0.3+ | 0.4− | 2005 05 06 | 703 | 0.5− | 0.0 | 2005 06 07 | 699 | 1.1+ | 0.3+ | | |
| 2002 10 06 | 644 | 0.0 | 0.1− | 2005 05 06 | 703 | 0.9− | 0.5− | 2005 06 07 | 699 | 0.8+ | 0.1+ | | |
| 2002 10 06 | 644 | 0.0 | 0.1− | 2005 05 06 | 703 | 0.4− | 0.2− | 2005 06 29 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 15 | 644 | 0.1+ | 0.7+ | 2005 05 06 | 703 | 0.6+ | 0.3− | 2005 06 29 | 644 | 0.0 | 0.3− | | |
| 2002 10 15 | 644 | 0.0 | 0.7+ | 2005 05 08 | 699 | 0.2− | 0.2− | 2005 06 29 | 644 | 0.4+ | 1.0− | | |
| 2002 10 15 | 644 | 0.2− | 0.9+ | 2005 05 08 | 699 | 1.4+ | 0.6+ | 2006 09 20 | 703 | 1.2+ | 0.5− | | |
| 2002 10 28 | 644 | 0.4− | 0.8+ | 2005 05 08 | 699 | 0.5+ | 0.2+ | 2006 09 20 | 703 | 0.3+ | 0.0 | | |
| 2002 10 28 | 644 | 0.4− | 0.7+ | 2005 05 08 | 699 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.1− | 0.3− | | |
| 2002 10 28 | 644 | 0.4− | 0.6+ | 2005 05 11 | 703 | (1.7+ | 1.2+) | 2006 09 20 | 703 | 1.5− | 0.5+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 703 | 0.4− | 0.6− | 2005 05 11 | 703 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.5+ | 0.3− |
| 2004 01 16 | 703 | 0.9+ | 0.5+ | 2005 05 11 | 703 | 0.0 | 0.7+ | 2006 09 27 | 703 | 0.1− | 0.8+ |
| 2004 01 16 | 703 | 1.1+ | 0.1+ | 2005 05 11 | 703 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.2− |
| 2004 01 16 | 703 | 1.1− | 0.7+ | 2005 05 15 | 644 | 0.3− | 0.2− | 2006 09 27 | 703 | 0.8+ | 1.0− |
| 2005 04 15 | 703 | 0.2− | 0.3+ | 2005 05 15 | 644 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.3+ |
| 2005 04 15 | 703 | 0.4+ | 0.4+ | 2005 05 15 | 644 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2005 04 15 | 703 | 0.1− | 0.0 | 2005 06 04 | 703 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.4− | 0.0 |
| 2005 04 15 | 703 | 0.0 | 0.3+ | 2005 06 04 | 703 | 1.0− | 0.6+ | | | | |
| 2005 05 06 | 703 | (5.5+ | 5.2−) | 2005 06 04 | 703 | 0.6− | 0.5− | | | | |

**(142625)∗ 2002 TO$_{165}$**

Discovered 2002 Oct. 2 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.35440 | | (2000.0) | | +0.63820591 | −0.75564929 |
| $n$ | 0.24490402 | $\omega$ | 295.57745 | | +0.75145368 | +0.56985452 |
| $a$ | 2.5301063 | $\Omega$ | 113.95785 | | +0.16736362 | +0.32289313 |
| $e$ | 0.2105342 | $i$ | 9.27367 | | | |
| $P$ | 4.02 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 13 | 704 | 1.5− | 0.5− | 2003 01 05 | 704 | (2.1+ | 1.5−) | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 1998 11 13 | 704 | 0.9+ | 1.2− | 2003 01 28 | 704 | 0.2+ | 0.5− | 2006 09 26 | 703 | 0.8+ | 0.3− |
| 1998 11 13 | 704 | 0.1+ | 1.7− | 2003 01 28 | 704 | 0.2− | 1.1+ | 2006 09 29 | 699 | 0.1− | 0.1− |
| 1998 11 13 | 704 | (4.6− | 0.6+) | 2003 01 28 | 704 | 1.1+ | 0.3− | 2006 09 29 | 699 | 0.2− | 0.2+ |
| 1998 12 14 | 699 | 0.1− | 1.2+ | 2003 01 28 | 704 | 1.1+ | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.2− |
| 1998 12 14 | 699 | 0.6− | 0.1− | 2003 02 02 | 704 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.1− |
| 1998 12 14 | 699 | 0.4− | 0.2+ | 2003 02 02 | 704 | 0.7+ | 1.0− | 2006 09 30 | 704 | (2.4− | 0.3+) |
| 1999 01 17 | 699 | 0.6− | 1.5− | 2003 02 02 | 704 | 0.0 | 0.4+ | 2006 09 30 | 704 | (2.4− | 0.1+) |
| 1999 01 17 | 699 | 0.5− | 0.1− | 2003 02 02 | 704 | 0.2+ | 0.7− | 2006 09 30 | 704 | (1.7− | 0.0 ) |
| 1999 01 17 | 699 | 1.4− | 0.3− | 2003 02 19 | 699 | (0.7+ | 1.6+) | 2006 09 30 | 704 | (2.0− | 0.3−) |
| 2002 08 12 | 704 | 0.4− | 1.0+ | 2003 02 19 | 699 | 0.1− | 0.5+ | 2006 09 30 | 704 | (1.9− | 0.7+) |
| 2002 08 12 | 704 | 0.0 | 1.0+ | 2003 02 19 | 699 | (0.2+ | 2.2+) | 2006 10 02 | 703 | 0.2− | 0.1+ |
| 2002 08 12 | 704 | 0.7− | 0.2+ | 2003 02 19 | 699 | 0.5− | 1.1+ | 2006 10 02 | 703 | 0.5− | 0.2+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.7+ | 0.8+ | 2006 10 02 | 703 | 0.2− | 0.2+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.6− | 0.0 | 2006 10 02 | 703 | 0.3− | 0.0 |
| 2002 09 11 | 608 | 0.7− | 1.1− | 2004 02 18 | 704 | 1.5+ | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 09 11 | 608 | 0.7− | 0.8− | 2004 02 18 | 704 | 0.7− | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2002 09 11 | 608 | 0.7− | 0.6− | 2004 02 18 | 704 | 0.5− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 09 22 | 644 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 09 22 | 644 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 09 22 | 644 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 10 02 | 608 | 0.8+ | 0.7− | 2004 03 23 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 10 02 | 608 | 0.6+ | 0.4− | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 10 02 | 608 | 0.8+ | 1.1− | 2004 03 25 | 704 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.3− |
| 2002 10 06 | 704 | 0.0 | 0.2+ | 2004 03 25 | 704 | (1.7+ | 0.0 ) | 2006 10 12 | 644 | 0.4− | 0.0 |
| 2002 10 06 | 704 | 0.3− | 0.0 | 2004 03 25 | 704 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 10 06 | 704 | 0.5+ | 1.2+ | 2005 07 12 | G96 | 0.8+ | 1.2+ | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2002 10 06 | 704 | 0.6− | 0.4− | 2005 07 12 | G96 | 0.8− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2002 10 06 | 704 | 0.4− | 0.4+ | 2005 07 12 | G96 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2002 10 15 | 644 | 0.1− | 0.5+ | 2005 07 12 | G96 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 10 15 | 644 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2002 10 30 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2002 10 30 | 704 | 0.3+ | 0.7+ | 2006 09 19 | 703 | 1.3− | 0.9+ | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2002 10 30 | 704 | 0.2+ | 0.8+ | 2006 09 21 | 699 | 0.1− | 0.9+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2002 10 30 | 704 | 0.1− | 0.6+ | 2006 09 21 | 699 | 0.1+ | 1.2+ | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2002 10 30 | 704 | 0.0 | 0.7+ | 2006 09 21 | 699 | 0.2+ | 0.7+ | 2006 10 28 | 703 | 0.1− | 0.3− |
| 2002 11 21 | 644 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2002 11 21 | 644 | 0.1− | 0.4+ | 2006 09 24 | 608 | (1.0+ | 1.9−) | 2006 10 28 | 703 | 0.3+ | 0.1− |
| 2002 11 21 | 644 | 0.2− | 0.2+ | 2006 09 24 | 608 | (0.9+ | 1.9−) | 2006 11 23 | 703 | 0.9− | 0.5+ |
| 2003 01 02 | 704 | 0.3+ | 0.4+ | 2006 09 24 | 608 | (0.6+ | 1.7−) | 2006 11 23 | 703 | 0.4− | 0.3+ |
| 2003 01 02 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.2− | 0.2− |
| 2003 01 02 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 0.2+ | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.3+ |
| 2003 01 02 | 704 | 0.9+ | 0.4− | 2006 09 25 | 699 | 0.1− | 0.3+ | 2006 12 03 | 644 | 0.4+ | 0.4− |
| 2003 01 05 | 704 | 0.7− | 0.2− | 2006 09 25 | 699 | 0.1− | 0.6+ | 2006 12 03 | 644 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.0 | 2006 12 03 | 644 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 1.1+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.2− | | | | |

**(142626)∗ 2002 TQ$_{168}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.38926 | | (2000.0) | | +0.28787493 | −0.94172354 |
| $n$ | 0.23395129 | $\omega$ | 188.89251 | | +0.89007009 | +0.33016129 |
| $a$ | 2.6084694 | $\Omega$ | 244.53323 | | +0.35341655 | −0.06442280 |
| $e$ | 0.1829895 | $i$ | 11.11356 | | | |
| $P$ | 4.21 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 10 | 704 | 0.9− | 0.6+ | 2002 10 03 | 644 | 0.1− | 0.1− | 2004 03 17 | 704 | 0.1− | 1.4− |
| 1998 11 10 | 704 | 0.8− | 0.3+ | 2002 10 06 | 704 | 0.8− | 0.7+ | 2004 03 17 | 704 | 0.2+ | 0.4− |
| 1998 11 10 | 704 | 1.5− | 0.9+ | 2002 10 06 | 704 | 0.1− | 0.4+ | 2005 06 17 | G96 | 0.2− | 0.7+ |
| 1998 11 10 | 704 | (2.6− | 0.9−) | 2002 10 06 | 704 | 0.1+ | 0.6+ | 2005 06 17 | G96 | 0.2− | 0.5+ |
| 1998 11 10 | 704 | (5.5− | 2.7+) | 2002 10 06 | 704 | 0.5− | 0.8+ | 2005 06 17 | G96 | 0.3+ | 0.4+ |
| 1998 11 15 | 699 | 0.4+ | 0.7− | 2002 10 06 | 704 | 0.3− | 0.2− | 2005 06 17 | G96 | 0.1+ | 0.2+ |
| 1998 11 15 | 699 | 0.8+ | 0.3+ | 2002 10 07 | 699 | 0.4+ | 0.3− | 2006 08 26 | 704 | 0.4− | 0.2− |
| 1998 11 15 | 699 | 0.2+ | 0.4− | 2002 10 07 | 699 | 0.1+ | 0.4+ | 2006 08 26 | 704 | 0.2− | 0.4− |
| 1998 12 08 | 699 | 0.9+ | 0.7− | 2002 10 07 | 699 | 0.5+ | 0.3− | 2006 08 26 | 704 | 0.5− | 0.8− |
| 1998 12 08 | 699 | 0.2− | 0.2+ | 2002 10 07 | 699 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 0.4− | 0.2+ |
| 1998 12 08 | 699 | 1.5− | 0.8+ | 2002 10 09 | 704 | 1.4+ | 1.2+ | 2006 08 27 | 699 | 0.8+ | 0.2+ |
| 2002 08 13 | 704 | 0.5+ | 0.0 | 2002 10 09 | 704 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 0.4+ | 0.9− |
| 2002 08 13 | 704 | 1.2+ | 0.8− | 2002 10 09 | 704 | 0.2+ | 0.9+ | 2006 08 27 | 699 | 0.3+ | 0.3+ |
| 2002 08 13 | 704 | 1.0+ | 1.2− | 2002 10 09 | 704 | 1.3+ | 0.4+ | 2006 09 11 | 703 | 0.7− | 0.8+ |
| 2002 08 13 | 704 | 0.7− | 1.0+ | 2002 10 09 | 704 | 0.6+ | 1.0+ | 2006 09 11 | 703 | 0.1− | 0.3− |
| 2002 08 30 | 704 | 0.3+ | 0.3+ | 2002 10 31 | 644 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.2− | 0.8− |
| 2002 08 30 | 704 | 0.2+ | 1.0+ | 2002 10 31 | 644 | 0.2− | 0.1− | 2006 09 11 | 703 | 1.2− | 0.9+ |
| 2002 08 30 | 704 | 0.8− | 0.1+ | 2002 10 31 | 644 | 0.2− | 0.1− | 2006 09 17 | G92 | 0.0 | 0.2+ |
| 2002 08 30 | 704 | 0.5− | 0.6+ | 2002 11 06 | 704 | 0.1+ | 0.7− | 2006 09 17 | G92 | 0.0 | 0.0 |
| 2002 09 03 | 644 | 0.1− | 0.3− | 2002 11 06 | 704 | 0.1+ | 0.5− | 2006 09 17 | G92 | 0.1− | 0.1+ |
| 2002 09 03 | 644 | 0.0 | 0.2− | 2002 11 06 | 704 | 0.3− | 0.5− | 2006 09 18 | G92 | 0.1− | 0.5− |
| 2002 09 03 | 644 | 0.1+ | 0.1− | 2002 11 06 | 704 | 0.3− | 0.7− | 2006 09 18 | G92 | 0.2− | 0.1− |
| 2002 09 03 | 644 | 0.5+ | 1.0+ | 2002 12 01 | 704 | 0.9− | 1.5− | 2006 09 18 | G92 | 0.2+ | 0.2− |
| 2002 09 03 | 644 | 0.6+ | 1.1+ | 2002 12 01 | 704 | 0.7+ | 0.4− | 2006 09 19 | G92 | 0.1+ | 0.4+ |
| 2002 09 03 | 644 | 0.6+ | 0.5+ | 2002 12 01 | 704 | 0.4− | 0.3+ | 2006 09 19 | G92 | 0.1− | 0.0 |
| 2002 09 12 | 644 | 0.3+ | 0.6− | 2002 12 11 | 704 | 0.1− | 0.7+ | 2006 09 19 | G92 | 0.6− | 0.2− |
| 2002 09 12 | 644 | 0.3+ | 0.4− | 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 10 12 | 291 | 0.2+ | 0.2− |
| 2002 09 12 | 644 | 0.2+ | 0.6− | 2002 12 11 | 704 | 0.1− | 0.9− | 2006 10 12 | 291 | 0.1+ | 0.3− |
| 2002 10 03 | 644 | 0.2− | 0.4− | 2004 03 17 | 704 | 0.7+ | 0.7+ | 2006 10 12 | 291 | 0.0 | 0.3− |
| 2002 10 03 | 644 | 0.0 | 0.1− | 2004 03 17 | 704 | 0.5− | 0.6+ | | | | |

**(142627)∗ 2002 TZ$_{169}$ = 2000 CV$_{60}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Id. A. Doppler (*MPO* 38054)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.11003 | | (2000.0) | | −0.57259223 | −0.80099939 |
| $n$ | 0.24415701 | $\omega$ | 174.38698 | | +0.74297821 | −0.41687507 |
| $a$ | 2.5352643 | $\Omega$ | 310.40541 | | +0.34658551 | −0.42966865 |
| $e$ | 0.1030793 | $i$ | 13.26706 | | | |
| $P$ | 4.04 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.4+ | 0.3+ | 2003 11 20 | 691 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.5+ | 0.0 |
| 2000 02 02 | 704 | 0.2+ | 0.4− | 2003 11 20 | 691 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.8+ | 0.0 |
| 2000 02 02 | 704 | 0.0 | 1.9+ | 2003 11 20 | 691 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.0 | 0.6− |
| 2000 02 02 | 704 | 0.4+ | 0.8+ | 2003 11 30 | 691 | 0.4− | 0.1+ | 2004 02 26 | 704 | 0.8+ | 0.1+ |
| 2000 02 08 | 704 | 0.1+ | 0.5+ | 2003 11 30 | 691 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.7− | 0.2− |
| 2000 02 08 | 704 | 0.1− | 0.7+ | 2003 11 30 | 691 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.3− |
| 2000 02 08 | 704 | 0.2− | 0.2+ | 2003 12 21 | 704 | 0.7+ | 0.1+ | 2004 02 26 | 704 | (0.0 | 1.8−) |
| 2000 02 08 | 704 | 0.5+ | 0.4− | 2003 12 21 | 704 | 0.3+ | 0.2+ | 2004 03 01 | 703 | 0.1+ | 0.4+ |
| 2000 03 04 | 645 | 0.0 | 0.2− | 2003 12 21 | 704 | 0.3+ | 0.5− | 2004 03 01 | 703 | 0.6+ | 1.3+ |
| 2000 03 04 | 645 | 0.0 | 0.1− | 2003 12 21 | 704 | 0.3− | 0.2+ | 2004 03 01 | 703 | (0.4− | 1.6+) |
| 2000 03 08 | 704 | 0.7− | 0.7+ | 2003 12 21 | 704 | 0.4+ | 0.5+ | 2004 03 01 | 703 | 0.9+ | 0.5+ |
| 2000 03 08 | 704 | 1.4− | 0.3− | 2004 01 18 | 608 | 0.7− | 1.2− | 2004 03 13 | 644 | 0.3− | 0.2+ |
| 2000 03 08 | 704 | 0.7− | 0.4− | 2004 01 18 | 608 | 0.3− | 1.1− | 2004 03 13 | 644 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | 1.2− | 1.1− | 2004 01 18 | 608 | 0.1+ | 1.5− | 2004 03 13 | 644 | 0.0 | 0.2+ |
| 2002 09 03 | 644 | 0.1− | 0.6+ | 2004 01 29 | 704 | 0.2− | 0.2− | 2004 03 16 | 704 | 0.5− | 0.5+ |
| 2002 09 03 | 644 | 0.2− | 0.7+ | 2004 01 29 | 704 | 0.6− | 0.2− | 2004 03 16 | 704 | 0.2− | 0.2− |
| 2002 09 03 | 644 | 0.5− | 0.5+ | 2004 01 29 | 704 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.9− | 0.4− |
| 2002 10 03 | 644 | 0.4+ | 0.6+ | 2004 01 29 | 704 | 0.1− | 0.3− | 2004 03 16 | 704 | 0.3+ | 0.8+ |
| 2002 10 03 | 644 | 0.3+ | 0.3+ | 2004 02 12 | 644 | 0.6− | 0.2+ | 2004 03 16 | 704 | 0.1− | 1.0+ |
| 2002 10 03 | 644 | 0.3− | 0.1+ | 2004 02 12 | 644 | 0.6− | 0.1+ | 2004 03 27 | 703 | 0.9− | 0.4+ |
| 2002 10 06 | 699 | 1.3− | 0.8− | 2004 02 12 | 644 | 0.3− | 0.2+ | 2004 03 27 | 703 | 1.1− | 0.9+ |
| 2002 10 06 | 699 | 0.1− | 0.5+ | 2004 02 15 | 608 | 1.0+ | 0.7+ | 2004 03 27 | 703 | (0.0 | 2.3+) |
| 2002 10 06 | 699 | 0.6+ | 0.0 | 2004 02 15 | 608 | 1.3+ | 0.8+ | 2004 03 27 | 703 | 1.0− | 0.6+ |
| 2002 10 06 | 699 | 1.0− | 0.3− | 2004 02 15 | 608 | 1.2+ | 0.7+ | 2006 09 16 | 703 | 0.6− | 0.7− |
| 2002 10 06 | 704 | (0.1− | 1.7+) | 2004 02 19 | 704 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.1− | 0.6− |
| 2002 10 06 | 704 | 0.6+ | 0.7+ | 2004 02 19 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.9+ | 0.9− |
| 2002 10 06 | 704 | 0.2+ | 0.1− | 2004 02 19 | 704 | 0.1− | 0.3− | 2006 09 16 | 703 | 0.7− | 0.5+ |
| 2002 10 06 | 704 | 1.0+ | 0.5+ | 2004 02 19 | 704 | 0.1+ | 0.0 | 2006 09 22 | 699 | 0.6+ | 0.5+ |
| 2002 10 10 | 704 | 0.1+ | 0.1+ | 2004 02 19 | 704 | 0.2− | 0.1− | 2006 09 22 | 699 | 0.3+ | 0.3+ |
| 2002 10 10 | 704 | 0.1− | 0.6− | 2004 02 20 | 704 | 0.2+ | 0.5− | 2006 09 22 | 699 | 0.3+ | 0.7+ |
| 2002 10 10 | 704 | 0.6+ | 0.9− | 2004 02 20 | 704 | 0.3− | 0.3+ | 2006 09 22 | 699 | 0.3+ | 1.0+ |
| 2002 10 10 | 704 | 0.5− | 0.9− | 2004 02 20 | 704 | 0.3+ | 0.0 | 2006 10 20 | 703 | 0.4− | 0.3+ |
| 2002 10 15 | 644 | 0.1− | 0.2+ | 2004 02 23 | 704 | 0.9+ | 0.0 | 2006 10 20 | 703 | 0.2+ | 0.3− |
| 2002 10 15 | 644 | 0.2− | 0.0 | 2004 02 23 | 704 | 1.0+ | 0.1− | 2006 10 20 | 703 | 0.8− | 1.2− |
| 2002 10 15 | 644 | 0.2− | 0.1− | 2004 02 23 | 704 | 1.0+ | 0.1+ | 2006 10 20 | 703 | 0.2+ | 0.1+ |

**(142628)∗ 2002 TL$_{171}$**

Discovered 2002 Oct. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.54641 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24520698 | $\omega$ | 172.27905 | | +0.21760219 | | −0.96371271 |
| $a$ | 2.5280219 | $\Omega$ | 265.05750 | | +0.88699878 | | +0.26135883 |
| $e$ | 0.2100949 | $i$ | 8.92818 | | +0.40728670 | | −0.05430808 |
| $P$ | 4.02 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 20 | 699 | 0.4− | 1.5+ | 2002 11 07 | 704 | (1.6+ | 0.4+) | 2006 08 29 | 699 | (0.1− | 1.7−) |
| 1998 09 20 | 699 | 0.1+ | 0.2− | 2002 11 07 | 704 | 1.1+ | 1.1+ | 2006 08 29 | 699 | 0.8− | 1.0+ |
| 1998 09 20 | 699 | 0.1+ | 0.2+ | 2002 12 01 | 704 | 0.1− | 0.2− | 2006 08 29 | 699 | 0.7− | 0.5+ |
| 1998 10 29 | 699 | 0.5− | 0.2− | 2002 12 01 | 704 | 0.2− | 0.4+ | 2006 09 16 | 703 | 0.1− | 0.0 |
| 1998 10 29 | 699 | 0.3+ | 0.2− | 2002 12 01 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.5− | 0.3+ |
| 1998 10 29 | 699 | 0.1− | 0.2− | 2002 12 01 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.2− |
| 1998 12 09 | 704 | 1.1− | 1.4− | 2002 12 05 | 704 | 0.7− | 0.3− | 2006 09 16 | 703 | 0.1− | 0.1+ |
| 1998 12 09 | 704 | 0.6+ | 1.0− | 2002 12 05 | 704 | 1.0− | 0.1+ | 2006 09 21 | 704 | 0.4+ | 0.1+ |
| 1998 12 09 | 704 | 0.4+ | 1.4− | 2002 12 05 | 704 | 0.9− | 0.2+ | 2006 09 21 | 704 | 0.7− | 0.4− |
| 1998 12 09 | 704 | 0.1+ | 0.9− | 2002 12 05 | 704 | 0.4− | 0.6− | 2006 09 21 | 704 | (1.8− | 0.4−) |
| 1998 12 09 | 704 | 0.5− | 0.3+ | 2002 12 19 | 644 | 0.3+ | 0.0 | 2006 09 21 | 704 | (0.9− | 1.8+) |
| 2002 08 10 | 704 | 0.9+ | 0.3+ | 2002 12 19 | 644 | 0.1+ | 0.2+ | 2006 09 22 | 699 | 0.2− | 0.0 |
| 2002 08 10 | 704 | 0.3+ | 0.5+ | 2002 12 19 | 644 | 0.2+ | 0.6+ | 2006 09 22 | 699 | 0.2+ | 0.4− |
| 2002 08 10 | 704 | 0.2+ | 0.3+ | 2003 01 01 | 704 | 0.5+ | 1.5+ | 2006 09 22 | 699 | 0.1+ | 0.3− |
| 2002 08 30 | 704 | 0.6+ | 0.4+ | 2003 01 01 | 704 | 0.6− | 0.6+ | 2006 09 22 | 699 | 0.1− | 0.3− |
| 2002 08 30 | 704 | 0.1+ | 0.2+ | 2003 01 01 | 704 | 1.0− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.1− |
| 2002 08 30 | 704 | 0.4+ | 0.7+ | 2003 01 01 | 704 | 0.1− | 0.6− | 2006 09 28 | 703 | 0.5− | 0.4− |
| 2002 08 30 | 704 | 0.5− | 0.8+ | 2003 01 05 | 704 | 0.7− | 0.7+ | 2006 09 28 | 703 | 0.4+ | 0.1+ |
| 2002 10 03 | 644 | 0.1− | 0.6− | 2003 01 05 | 704 | 0.7− | 0.7+ | 2006 09 28 | 703 | (2.3+ | 2.5−) |
| 2002 10 03 | 644 | 0.0 | 0.5− | 2003 01 05 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2002 10 03 | 644 | 0.2− | 0.7− | 2003 01 05 | 704 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 10 06 | 699 | 0.2+ | 0.7+ | 2003 01 05 | 704 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.1− |
| 2002 10 06 | 699 | 0.0 | 0.1− | 2003 01 27 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 10 06 | 699 | 1.0− | 0.2+ | 2003 01 27 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 10 06 | 699 | 0.3− | 0.5+ | 2003 01 27 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 10 06 | 704 | 0.2+ | 0.4+ | 2004 03 17 | 703 | 0.5+ | 1.1+ | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2002 10 06 | 704 | 0.0 | 0.4+ | 2004 03 17 | 703 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2002 10 06 | 704 | 0.2+ | 0.5+ | 2004 03 17 | 703 | 1.3+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2002 10 06 | 704 | 0.1+ | 0.3+ | 2004 03 17 | 703 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2002 10 06 | 704 | 0.0 | 0.4+ | 2004 03 26 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.2− | 0.2− | 2004 03 26 | 704 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.1− | 0.1+ | 2004 03 26 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 10 | 704 | 0.2− | 0.2+ | 2004 03 26 | 704 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.1− | 0.2− | 2004 04 12 | 644 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.2− | 0.5− | 2004 04 12 | 644 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 10 15 | 704 | 1.2+ | 0.1− | 2004 04 12 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 10 15 | 704 | 0.2− | 0.0 | 2004 04 15 | 703 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 15 | 704 | 0.6+ | 0.1− | 2004 04 15 | 703 | 1.0− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 10 15 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 703 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.3− | 0.8− | 2004 04 15 | 703 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 644 | 0.3− | 0.9− | 2004 04 26 | 608 | 0.4+ | 0.6− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.3− | 0.9− | 2004 04 26 | 608 | 0.5+ | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.6+ |
| 2002 11 03 | 704 | 1.0+ | 0.3+ | 2004 04 26 | 608 | 0.6+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.2− |
| 2002 11 03 | 704 | 0.5+ | 0.9− | 2006 08 24 | 704 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.4+ |
| 2002 11 03 | 704 | 1.3+ | 0.3− | 2006 08 24 | 704 | 0.1+ | 0.7− | 2006 11 28 | 704 | 1.7+ | 0.9+ |
| 2002 11 07 | 704 | 0.3− | 0.8+ | 2006 08 24 | 704 | (0.0 | 1.7+) | 2006 11 28 | 704 | 1.1+ | 0.1+ |
| 2002 11 07 | 704 | 1.2+ | 0.4+ | 2006 08 29 | 699 | 0.4+ | 1.2+ | | | | |

**(142629)∗ 2002 TU$_{173}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.40785 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22959957 | $\omega$ | 238.69740 | | +0.94278785 | | −0.32496291 |
| $a$ | 2.6413260 | $\Omega$ | 140.12926 | | +0.33149840 | | +0.88993473 |
| $e$ | 0.1009707 | $i$ | 6.67361 | | +0.03549468 | | +0.32002387 |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 21 | 691 | 0.4+ | 0.2− | 2002 10 08 | 608 | 0.2− | 0.5− | 2006 08 19 | 699 | 0.0 | 0.8− |
| 1996 04 21 | 691 | 0.3− | 0.5− | 2002 10 30 | 704 | (1.4− | 2.0+) | 2006 08 19 | 699 | 0.7+ | 0.1+ |
| 1996 04 21 | 691 | 0.3+ | 0.2− | 2002 10 30 | 704 | 0.2− | 1.9+ | 2006 08 19 | 699 | 0.5+ | 0.9+ |
| 2002 09 05 | 645 | 0.1− | 0.1− | 2002 10 30 | 704 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 1.5+ | 0.3+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 01 24 | 704 | 1.9+ | 1.5+ | 2006 08 28 | 704 | 0.8− | 1.1+ |
| 2002 09 06 | 704 | 0.5+ | 0.8− | 2004 01 24 | 704 | 0.3+ | 1.0+ | 2006 08 28 | 704 | 1.3− | 0.2− |
| 2002 09 06 | 704 | 0.4+ | 1.0− | 2004 01 24 | 704 | 1.2− | 1.7+ | 2006 08 28 | 704 | 0.2− | 1.0+ |
| 2002 09 06 | 704 | 0.7+ | 0.6+ | 2004 01 24 | 704 | 1.1+ | 1.1+ | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.5+ | 0.5− | 2004 02 29 | 691 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.4+ |
| 2002 09 28 | 608 | (2.9− | 1.7−) | 2004 02 29 | 691 | 0.2+ | 0.6+ | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 2002 09 28 | 608 | (3.0− | 1.7−) | 2004 02 29 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.9− |
| 2002 09 28 | 608 | (2.9− | 1.4−) | 2005 04 18 | 691 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.3+ | 1.3+ |
| 2002 10 04 | 704 | 0.5− | 0.6− | 2005 04 18 | 691 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.0 |
| 2002 10 04 | 704 | 0.6− | 0.2− | 2005 04 18 | 691 | 0.3− | 0.4+ | 2006 09 14 | 703 | 1.1+ | 0.7− |
| 2002 10 04 | 704 | 1.1+ | 1.1− | 2006 07 18 | G96 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.5+ | 1.9+ |
| 2002 10 04 | 704 | 0.8− | 0.1− | 2006 07 18 | G96 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.3− | 1.0+ | 2006 07 18 | G96 | 0.1− | 0.3− | 2006 09 18 | 699 | 1.8+ | 1.2+ |
| 2002 10 06 | 704 | (0.5− | 2.8+) | 2006 07 18 | G96 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.2+ |
| 2002 10 06 | 704 | (0.8− | 3.9+) | 2006 08 13 | 644 | 0.0 | 0.3+ | 2006 09 24 | 699 | 0.8− | 0.2+ |
| 2002 10 06 | 704 | (1.0− | 3.6+) | 2006 08 13 | 644 | 0.2− | 0.2+ | 2006 09 24 | 699 | 0.6+ | 0.8+ |
| 2002 10 08 | 608 | 0.5− | 0.3− | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 09 24 | 699 | 0.1− | 0.2− |
| 2002 10 08 | 608 | 0.8− | 0.0 | 2006 08 19 | 699 | 0.1− | 0.0 | 2006 09 24 | 699 | 0.2+ | 2.2+ |

**(142630)∗ 2002 TV$_{175}$ = 2004 DX$_{14}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61440)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.02707 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22323208 | $\omega$ | 217.44849 | | +0.28903519 | | −0.95059727 |
| $a$ | 2.6913178 | $\Omega$ | 216.15015 | | +0.91819945 | | +0.30874713 |
| $e$ | 0.0680887 | $i$ | 11.06749 | | +0.27086607 | | −0.03224982 |
| $P$ | 4.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.7+ | 0.5+ | 2002 11 03 | 608 | 0.1− | 1.3− | 2005 05 27 | 599 | 0.3+ | 0.3− |
| 2002 10 04 | 704 | 1.5+ | 0.8− | 2002 11 22 | 644 | 0.5− | 0.5+ | 2005 05 27 | 599 | 0.1+ | 0.6+ |
| 2002 10 04 | 704 | (3.2+ | 0.3−) | 2002 11 22 | 644 | 0.4− | 0.5+ | 2005 05 27 | 599 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 1.0+ | 1.2+ | 2002 11 22 | 644 | 0.4− | 0.6+ | 2005 05 27 | 599 | 1.1+ | 0.3+ |
| 2002 10 06 | 704 | 0.6+ | 0.3− | 2004 01 28 | 704 | (0.4− | 2.4+) | 2005 06 04 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 1.1− | 0.3+ | 2004 01 28 | 704 | 0.4+ | 0.9+ | 2005 06 04 | 691 | 0.0 | 0.1+ |
| 2002 10 06 | 704 | 0.9− | 1.2+ | 2004 01 28 | 704 | (0.7− | 3.7+) | 2005 06 04 | 691 | 0.2− | 0.2+ |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2004 01 28 | 704 | 0.3− | 2.0+ | 2005 06 14 | 691 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 0.1− | 0.4+ | 2004 01 28 | 704 | 0.9+ | 2.0+ | 2005 06 14 | 691 | 0.3+ | 0.1+ |
| 2002 10 09 | 704 | 0.5− | 0.6+ | 2004 02 17 | 644 | 0.1+ | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.3+ |
| 2002 10 09 | 704 | 0.5− | 0.3+ | 2004 02 17 | 703 | 0.8− | 0.4+ | 2005 06 28 | 644 | 0.5− | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 0.7+ | 2004 02 17 | 703 | (2.9− | 0.3+) | 2005 06 28 | 644 | 0.2− | 0.1+ |
| 2002 10 09 | 704 | 0.5+ | 0.1− | 2004 02 17 | 703 | 0.0 | 1.9− | 2005 06 28 | 644 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 0.7+ | 0.8+ | 2004 02 17 | 644 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2002 10 12 | 704 | 0.7− | 0.8+ | 2004 02 17 | 703 | 0.6− | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 0.3− | 0.4+ | 2004 02 17 | 644 | 0.2+ | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.0 | 1.0+ | 2004 02 19 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 691 | 0.1+ | 0.4+ |
| 2002 10 30 | 644 | 0.5− | 0.6− | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 09 16 | 691 | 0.0 | 0.1+ |
| 2002 10 30 | 644 | 0.1− | 0.5+ | 2004 02 19 | 704 | 0.3− | 0.6+ | 2006 09 16 | 691 | 0.1+ | 0.0 |
| 2002 10 30 | 644 | 0.1− | 0.8− | 2004 02 19 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2002 10 30 | 644 | 0.3− | 0.8+ | 2004 03 15 | 703 | 0.6+ | 0.2− | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 2002 10 30 | 644 | 0.4− | 0.7− | 2004 03 15 | 703 | 0.9+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2002 10 30 | 644 | 0.2+ | 0.6+ | 2004 03 15 | 703 | 0.3− | 1.0+ | 2006 09 26 | 703 | 1.4− | 1.1− |
| 2002 11 01 | 704 | (4.6+ | 5.3−) | 2004 03 15 | 703 | (0.7+ | 2.3+) | 2006 09 26 | 703 | 1.3+ | 0.8+ |
| 2002 11 01 | 704 | (1.5+ | 2.7−) | 2005 05 16 | G96 | 0.5− | 0.1− | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2002 11 01 | 704 | 0.5+ | 0.6− | 2005 05 16 | G96 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.2− |
| 2002 11 03 | 608 | 0.0 | 1.1− | 2005 05 16 | G96 | 0.5− | 0.1+ | | | | |
| 2002 11 03 | 608 | 0.2+ | 1.3− | 2005 05 16 | G96 | 0.1− | 0.0 | | | | |

**(142631)∗ 2002 TX$_{175}$**

Discovered 2002 Oct. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.27841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24498537 | $\omega$ | 293.78229 | | −0.97202561 | +0.04690283 | |
| $a$ | 2.5295462 | $\Omega$ | 249.57008 | | +0.02676863 | −0.95135174 | |
| $e$ | 0.0340773 | $i$ | 14.21682 | | −0.23334450 | −0.30451600 | |
| $P$ | 4.02 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 02 | 699 | 0.5+ | 0.4− | 2002 12 31 | 704 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.3+ |
| 1998 10 02 | 699 | 0.6+ | 0.6+ | 2002 12 31 | 704 | 0.0 | 0.9+ | 2004 04 16 | 704 | 0.5+ | 0.1− |
| 1998 10 02 | 699 | 0.3+ | 0.0 | 2002 12 31 | 704 | 1.1+ | 0.6+ | 2004 04 16 | 704 | 0.1− | 0.3− |
| 1998 10 29 | 699 | 0.2− | 1.5+ | 2002 12 31 | 704 | 1.1+ | 0.8+ | 2004 04 16 | 704 | 0.0 | 0.3+ |
| 1998 10 29 | 699 | 0.4+ | 0.1− | 2003 12 22 | 644 | 0.1+ | 0.2+ | 2004 04 16 | 704 | 0.1− | 0.3+ |
| 1998 10 29 | 699 | 0.4+ | 0.8+ | 2003 12 22 | 644 | 0.3+ | 0.3+ | 2005 07 05 | 704 | (1.5+ | 1.8+) |
| 2000 03 09 | 704 | 0.2+ | 0.3+ | 2003 12 22 | 644 | 0.1+ | 0.7+ | 2005 07 05 | 704 | 0.1+ | 0.7+ |
| 2000 03 09 | 704 | 0.6+ | 1.0+ | 2003 12 29 | 699 | 0.3− | 0.3+ | 2005 07 05 | 704 | 0.1− | 0.1− |
| 2000 03 09 | 704 | 0.1− | 0.3− | 2003 12 29 | 699 | 1.0− | 0.9− | 2006 08 12 | 644 | 0.1+ | 0.2+ |
| 2000 03 09 | 704 | 0.0 | 0.2+ | 2003 12 29 | 699 | 0.6− | 0.3+ | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2000 03 09 | 704 | 0.5− | 0.7+ | 2003 12 29 | 699 | 0.9− | 0.1− | 2006 08 12 | 644 | 0.3+ | 0.4+ |
| 2000 04 04 | 704 | 0.6− | 1.2+ | 2004 01 22 | 608 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.1− | 0.1+ |
| 2000 04 04 | 704 | 0.3− | 0.3+ | 2004 01 22 | 608 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.1− |
| 2000 04 04 | 704 | 1.0+ | 1.1+ | 2004 01 22 | 608 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 2000 04 04 | 704 | 0.3+ | 1.1+ | 2004 01 28 | 704 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.4+ |
| 2002 09 27 | 644 | 0.4− | 0.3− | 2004 01 28 | 704 | 0.7+ | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.2− |
| 2002 09 27 | 644 | 0.3− | 0.4− | 2004 01 28 | 704 | 1.4+ | 0.3− | 2006 09 28 | 703 | 0.1+ | 0.4+ |
| 2002 09 27 | 644 | 0.4− | 0.1− | 2004 01 28 | 704 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.4− | 0.0 |
| 2002 10 04 | 699 | 0.4+ | 0.3+ | 2004 01 28 | 704 | 0.1+ | 0.8+ | 2006 09 28 | 703 | 0.5+ | 0.4− |
| 2002 10 04 | 699 | 0.3− | 0.7+ | 2004 01 28 | 608 | 0.0 | 1.1− | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2002 10 04 | 699 | 0.7− | 0.1− | 2004 01 28 | 608 | 0.2+ | 1.2− | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2002 10 04 | 699 | 0.1− | 0.6+ | 2004 01 28 | 608 | 0.1− | 1.0− | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2002 10 06 | 704 | 0.1+ | 0.2+ | 2004 01 29 | 699 | 0.4+ | 0.8− | 2006 10 19 | 703 | 0.4− | 0.6− |
| 2002 10 06 | 704 | 0.0 | 0.0 | 2004 01 29 | 699 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.1+ | 1.0− |
| 2002 10 06 | 704 | 0.0 | 0.5+ | 2004 01 29 | 699 | (0.7− | 1.8−) | 2006 10 19 | 703 | 0.2− | 0.9− |
| 2002 10 06 | 704 | 0.3− | 0.5+ | 2004 01 29 | 699 | 0.4− | 0.6− | 2006 10 19 | 703 | 0.3+ | 0.6− |
| 2002 10 06 | 704 | 0.3− | 0.3+ | 2004 02 02 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 1.2− | 0.8− |
| 2002 10 10 | 704 | 0.1− | 0.2− | 2004 02 02 | 704 | 0.2− | 0.9+ | 2006 10 19 | 703 | 0.1+ | 0.7− |
| 2002 10 10 | 704 | 0.3− | 0.1− | 2004 02 02 | 704 | 0.4+ | 0.5− | 2006 10 19 | 703 | 0.2− | 0.5− |
| 2002 10 10 | 704 | 0.1− | 0.1+ | 2004 02 02 | 704 | 0.3+ | 0.5− | 2006 10 19 | 703 | 0.5− | 1.1− |
| 2002 10 10 | 704 | 0.3+ | 0.4− | 2004 02 02 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 704 | 0.3+ | 0.6+ |
| 2002 10 10 | 704 | 0.4− | 0.6+ | 2004 02 02 | 608 | 0.6− | 0.6+ | 2006 10 21 | 704 | 0.5+ | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.4+ | 2004 02 02 | 608 | 0.6− | 0.5+ | 2006 10 21 | 704 | 0.4+ | 0.2+ |
| 2002 11 07 | 704 | 0.9− | 0.5− | 2004 02 02 | 608 | 0.4− | 1.0+ | 2006 10 21 | 704 | 0.4+ | 0.8+ |
| 2002 11 07 | 704 | 0.7− | 0.3− | 2004 02 03 | 704 | 0.5+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 0.5− | 0.3− | 2004 02 03 | 704 | 0.2+ | 0.6− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.8− | 0.2+ | 2004 02 03 | 704 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2004 02 03 | 704 | 0.2− | 0.5− | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2002 11 13 | 644 | 0.2+ | 0.4+ | 2004 02 03 | 704 | 0.6+ | 1.2− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2002 11 13 | 644 | 0.3+ | 0.2+ | 2004 02 13 | 644 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 11 14 | 644 | 0.2− | 0.0 | 2004 02 13 | 644 | 0.9− | 0.3− | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2002 11 14 | 644 | 0.0 | 0.0 | 2004 02 13 | 644 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.5− |
| 2002 11 14 | 644 | 0.1− | 0.0 | 2004 02 19 | 704 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.6+ | 0.1− |
| 2002 11 14 | 704 | 0.4− | 1.0+ | 2004 02 19 | 704 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.9− |
| 2002 11 14 | 704 | 0.1− | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.1− | 0.3− |
| 2002 11 14 | 704 | (1.6+ | 0.1−) | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 0.5− | 0.4+ | 2004 02 19 | 704 | 0.7− | 0.0 | 2006 11 23 | 703 | 0.2+ | 0.0 |
| 2002 11 19 | 644 | 0.0 | 0.1+ | 2004 02 24 | 608 | 0.2+ | 0.4− | 2006 11 23 | 703 | 0.1+ | 0.3− |
| 2002 11 19 | 644 | 0.8+ | 0.2− | 2004 02 24 | 608 | 0.2+ | 0.6− | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2002 11 19 | 644 | 0.6+ | 0.3+ | 2004 02 24 | 608 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2002 12 02 | 704 | 0.3− | 0.3− | 2004 03 16 | 704 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.1− | 0.3− |
| 2002 12 02 | 704 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.9− |
| 2002 12 02 | 704 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.4+ | 0.5+ | | | | |

**(142632)∗ 2002 TU$_{177}$**

Discovered 2002 Oct. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.56758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23135144 | $\omega$ | 154.92396 | | +0.58476678 | −0.73297125 | |
| $a$ | 2.6279751 | $\Omega$ | 257.34958 | | +0.67120787 | +0.67780023 | |
| $e$ | 0.0531899 | $i$ | 20.86772 | | +0.45555221 | −0.05779274 | |
| $P$ | 4.26 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.0 | 0.7+ | 2002 11 11 | 699 | 0.1− | 0.4− | 2004 01 27 | 704 | 1.4+ | 0.7+ |
| 1998 12 14 | 704 | 1.4− | 0.8− | 2002 11 11 | 699 | 0.7− | 0.5+ | 2004 01 27 | 704 | 1.3+ | 0.1− |
| 1998 12 14 | 704 | (2.5− | 2.1−) | 2002 11 11 | 699 | 0.4− | 0.3+ | 2004 01 27 | 704 | (0.1+ | 2.9+) |
| 1998 12 14 | 704 | (5.4− | 0.4−) | 2002 11 13 | 446 | 0.8− | 0.2− | 2004 01 27 | 704 | 0.7+ | 0.9+ |
| 1999 01 24 | 691 | 0.0 | 0.2− | 2002 11 13 | 446 | 1.3− | 1.4− | 2004 02 20 | 704 | 1.4− | 0.3− |
| 1999 01 24 | 691 | 0.1− | 0.3+ | 2002 11 13 | 446 | 0.0 | 0.9− | 2004 02 20 | 704 | 0.4− | 0.4− |
| 1999 01 24 | 691 | 0.1+ | 0.8− | 2002 11 14 | 644 | 0.2− | 0.9+ | 2004 02 20 | 704 | 0.9− | 0.5+ |
| 1999 02 07 | 691 | 1.0+ | 0.1− | 2002 11 14 | 644 | 0.3− | 1.0+ | 2004 03 17 | 704 | 0.1+ | 0.1+ |
| 1999 02 07 | 691 | 0.7+ | 0.3+ | 2002 11 14 | 644 | 0.3− | 1.1− | 2004 03 17 | 704 | 0.1− | 0.3+ |
| 1999 02 07 | 691 | 0.5+ | 0.1+ | 2002 11 14 | 446 | 0.8+ | 0.6− | 2004 03 17 | 704 | 0.1− | 0.4+ |
| 1999 02 12 | 691 | 0.8− | 0.3− | 2002 11 14 | 446 | 0.4+ | 0.1− | 2004 03 17 | 704 | 0.2− | 0.5+ |
| 1999 02 12 | 691 | 1.0− | 0.8− | 2002 11 14 | 446 | 0.4− | 0.7+ | 2005 06 26 | 644 | 0.1+ | 0.6+ |
| 1999 02 12 | 691 | 0.3− | 0.1+ | 2002 11 17 | 446 | (0.3+ | 3.5−) | 2005 06 26 | 644 | 0.2+ | 0.5+ |
| 2002 10 11 | 644 | 0.3− | 1.1+ | 2002 11 17 | 446 | (0.5− | 1.9−) | 2005 06 26 | 644 | 0.2+ | 0.5+ |
| 2002 10 11 | 644 | 0.4− | 1.2+ | 2002 11 17 | 446 | (1.5− | 1.0−) | 2006 09 19 | 703 | 0.2+ | 0.3− |
| 2002 10 11 | 644 | 0.4− | 0.9+ | 2002 12 02 | 704 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2002 10 15 | 704 | 0.8+ | 1.0+ | 2002 12 02 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.4− |
| 2002 10 15 | 704 | 0.1+ | 1.0+ | 2002 12 02 | 704 | 0.4− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.5− |
| 2002 10 15 | 704 | 0.0 | 0.1+ | 2002 12 02 | 704 | 0.5− | 0.2+ | 2006 10 20 | 703 | 0.6+ | 0.3− |
| 2002 10 15 | 704 | 0.1+ | 0.1− | 2002 12 06 | 291 | 0.1+ | 0.0 | 2006 10 20 | 703 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.1+ | 0.0 | 2002 12 06 | 291 | 0.4+ | 0.2− | 2006 10 20 | 703 | 0.3+ | 0.1+ |
| 2002 10 31 | 704 | 0.4+ | 0.2− | 2002 12 06 | 291 | 0.4+ | 0.1− | 2006 11 23 | 703 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.4− | 0.0 | 2002 12 20 | 644 | 0.4+ | 1.2+ | 2006 11 23 | 703 | 0.1− | 0.9− |
| 2002 10 31 | 704 | 0.1+ | 0.5− | 2002 12 20 | 644 | 0.1− | 0.9+ | 2006 11 23 | 703 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.3− | 0.3+ | 2002 12 20 | 644 | 0.6+ | 0.6+ | 2006 11 23 | 703 | 0.0 | 0.3− |
| 2002 11 11 | 699 | 0.9− | 0.6+ | 2004 01 27 | 704 | 0.5+ | 0.9+ | | | | |

**(142633)∗ 2002 TC$_{178}$**

Discovered 2002 Oct. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.73697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24162734 | $\omega$ | 81.07720 | | +0.92393186 | −0.34971111 | |
| $a$ | 2.5529286 | $\Omega$ | 299.26069 | | +0.24196279 | +0.84820988 | |
| $e$ | 0.2855481 | $i$ | 10.23989 | | +0.29631729 | +0.39779660 | |
| $P$ | 4.08 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 1.0+ | 0.6− | 2002 11 07 | 699 | 0.4− | 1.1+ | 2006 09 06 | 644 | 0.3− | 0.5− |
| 1998 11 14 | 704 | 0.5− | 0.4+ | 2002 11 07 | 699 | 0.8− | 0.9+ | 2006 09 06 | 644 | 0.0 | 0.3+ |
| 1998 11 14 | 704 | 1.2− | 1.2− | 2002 11 07 | 699 | 0.1− | 0.8+ | 2006 09 16 | 703 | 0.2− | 0.0 |
| 1998 11 14 | 704 | 1.5+ | 0.1+ | 2002 11 07 | 699 | 0.5− | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.3+ |
| 1998 12 14 | 704 | (2.0+ | 1.6+) | 2002 11 08 | 704 | 0.1+ | 1.1+ | 2006 09 16 | 703 | 0.2− | 0.0 |
| 1998 12 14 | 704 | (2.8+ | 2.0−) | 2002 11 08 | 704 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.5− | 0.1− |
| 1998 12 14 | 704 | 0.7− | 0.6− | 2002 11 08 | 704 | 0.0 | 0.4+ | 2006 09 21 | 704 | 0.3+ | 0.3− |
| 1998 12 14 | 704 | (0.3+ | 2.8+) | 2002 11 08 | 704 | 0.3− | 0.7+ | 2006 09 21 | 704 | 0.1+ | 0.6+ |
| 2002 10 01 | 704 | 0.4− | 0.3− | 2002 11 08 | 704 | 0.3+ | 0.3+ | 2006 09 21 | 704 | 0.2− | 0.1− |
| 2002 10 01 | 704 | 0.3− | 0.1− | 2002 11 15 | 704 | 0.3+ | 0.1− | 2006 09 21 | 704 | 0.5+ | 0.1− |
| 2002 10 01 | 704 | 0.4− | 0.1− | 2002 11 15 | 704 | 0.4+ | 0.0 | 2006 09 22 | 699 | 0.3+ | 0.0 |
| 2002 10 01 | 704 | 0.4+ | 0.6− | 2002 11 15 | 704 | 0.7+ | 0.3− | 2006 09 22 | 699 | 0.4+ | 0.5+ |
| 2002 10 06 | 704 | (1.3− | 1.9−) | 2002 11 15 | 704 | 0.5+ | 0.5− | 2006 09 22 | 699 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.5− | 0.4− | 2002 11 15 | 704 | 0.3+ | 0.0 | 2006 09 22 | 699 | 0.4− | 0.1+ |
| 2002 10 06 | 704 | 0.3− | 0.5− | 2002 12 31 | 704 | 0.3− | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.4− |
| 2002 10 11 | 644 | 0.3− | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.3− |
| 2002 10 11 | 644 | 0.2− | 0.2+ | 2002 12 31 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2002 10 11 | 644 | 0.4− | 0.3+ | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2002 10 15 | 704 | 0.1+ | 0.0 | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 20 | 703 | (4.7+ | 1.1+) |
| 2002 10 15 | 704 | 0.0 | 0.1− | 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 10 20 | 703 | 0.1+ | 0.1+ |
| 2002 10 15 | 704 | 0.9+ | 0.0 | 2006 08 29 | 699 | 0.5+ | 0.2− | 2006 10 20 | 703 | 0.2+ | 0.2− |
| 2002 10 15 | 704 | 0.4+ | 0.5− | 2006 08 29 | 699 | 0.0 | 0.4+ | 2006 10 21 | 704 | 0.5− | 0.2+ |
| 2002 10 20 | 644 | 0.1+ | 0.4+ | 2006 08 29 | 699 | 0.8+ | 0.2+ | 2006 10 21 | 704 | 0.0 | 0.2+ |
| 2002 10 20 | 644 | 0.0 | 0.1+ | 2006 08 29 | 699 | 0.7− | 0.3+ | 2006 10 21 | 704 | 0.1+ | 0.2− |
| 2002 10 20 | 644 | 0.2+ | 0.4+ | 2006 08 29 | 699 | 0.7+ | 0.2− | 2006 10 21 | 704 | 0.0 | 0.2+ |
| 2002 10 31 | 704 | 0.0 | 0.8− | 2006 08 29 | 699 | 0.1− | 0.0 | 2006 10 21 | 704 | 0.5+ | 0.4− |
| 2002 10 31 | 704 | 0.3− | 0.6− | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.4− | 0.1− |
| 2002 10 31 | 704 | 0.0 | 0.6− | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.1− | 0.3− |
| 2002 10 31 | 704 | 0.1− | 0.5− | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.9+ | 0.3− |
| 2002 10 31 | 704 | 0.2+ | 0.7− | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.8− | 0.1+ |

**(142634)∗ 2002 TL$_{179}$**

Discovered 2002 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.69736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23746696 | $\omega$ | 57.57377 | | +0.87161915 | +0.42321029 | |
| $a$ | 2.5826601 | $\Omega$ | 276.32393 | | −0.48990462 | +0.76912605 | |
| $e$ | 0.0742661 | $i$ | 14.40925 | | +0.01653859 | +0.47889265 | |
| $P$ | 4.15 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.2+ | 0.9− | 2002 11 13 | 644 | 0.1+ | 1.2+ | 2005 08 04 | 644 | 0.4+ | 0.3+ |
| 1998 12 17 | 704 | 0.0 | 1.4− | 2002 11 13 | 644 | 1.0+ | 0.3− | 2005 08 04 | 644 | 0.1+ | 1.2+ |
| 1998 12 17 | 704 | 0.1− | 1.0− | 2002 11 13 | 644 | 0.3+ | 1.2+ | 2005 08 04 | 644 | 0.4− | 0.6+ |
| 1998 12 17 | 704 | (1.8− | 2.4−) | 2002 11 15 | 704 | 0.6− | 0.3− | 2006 08 12 | 644 | 0.4− | 0.2+ |
| 2000 03 09 | 704 | 0.1− | 0.2+ | 2002 11 15 | 704 | 0.8− | 0.3− | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2000 03 09 | 704 | 0.0 | 0.5+ | 2002 11 15 | 704 | 0.7− | 0.1− | 2006 08 12 | 644 | 0.3− | 0.3+ |
| 2000 03 09 | 704 | 0.2+ | 0.1− | 2002 11 15 | 704 | 0.4− | 0.7− | 2006 08 12 | 644 | 0.3− | 0.4+ |
| 2002 10 01 | 704 | 0.6+ | 0.3+ | 2002 11 15 | 704 | 0.1− | 0.3− | 2006 08 12 | 644 | 0.2− | 0.2+ |
| 2002 10 01 | 704 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.1− | 2006 08 12 | 644 | 0.0 | 0.1+ |
| 2002 10 01 | 704 | 0.9− | 0.3+ | 2002 12 06 | 704 | 0.5+ | 0.3− | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2002 10 06 | 704 | 0.8+ | 1.1+ | 2002 12 06 | 704 | 0.9− | 0.1− | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 2002 10 06 | 704 | (0.5− | 2.7+) | 2002 12 06 | 704 | 0.2− | 1.0+ | 2006 09 19 | 703 | 0.6− | 0.2+ |
| 2002 10 06 | 704 | 0.8+ | 1.4+ | 2002 12 06 | 704 | 1.3− | 0.2− | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2002 10 06 | 704 | 1.1+ | 0.4− | 2002 12 11 | 644 | 0.1+ | 0.4+ | 2006 09 25 | 703 | (1.4− | 2.4−) |
| 2002 10 13 | 644 | 0.4− | 0.3+ | 2002 12 11 | 644 | 0.0 | 0.3+ | 2006 09 25 | 703 | (0.5+ | 2.1−) |
| 2002 10 13 | 644 | 0.0 | 0.2+ | 2002 12 11 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 703 | (2.5+ | 2.4−) |
| 2002 10 13 | 644 | 0.0 | 0.3+ | 2003 01 20 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 703 | 0.9+ | 0.0 |
| 2002 10 15 | 704 | 0.3+ | 0.6− | 2003 01 20 | 644 | 0.2+ | 0.3+ | 2006 10 02 | 704 | 1.1+ | 0.7+ |
| 2002 10 15 | 704 | (1.3− | 3.9−) | 2003 01 20 | 644 | 0.1+ | 0.5+ | 2006 10 02 | 704 | 0.8+ | 1.0+ |
| 2002 10 15 | 704 | 0.4− | 0.1− | 2004 01 28 | 704 | 0.9+ | 0.8+ | 2006 10 02 | 704 | 0.5+ | 1.0+ |
| 2002 10 15 | 704 | (1.6− | 0.6−) | 2004 01 28 | 704 | 0.4+ | 0.6+ | 2006 10 02 | 703 | 0.8+ | 0.7− |
| 2002 10 20 | 644 | 0.4+ | 0.0 | 2004 01 28 | 704 | 0.8+ | 0.8+ | 2006 10 02 | 703 | 0.4− | 0.1+ |
| 2002 10 20 | 644 | 0.4+ | 0.1+ | 2004 01 28 | 704 | 1.1+ | 0.7+ | 2006 10 02 | 703 | 0.4− | 0.0 |
| 2002 10 20 | 644 | 0.2+ | 0.0 | 2004 01 30 | 608 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.4− | 0.1− |
| 2002 10 31 | 704 | 0.5− | 0.0 | 2004 01 30 | 608 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2002 10 31 | 704 | 0.2− | 0.2+ | 2004 01 30 | 608 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.3+ |
| 2002 10 31 | 704 | 0.9− | 0.2− | 2004 02 13 | 644 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2002 10 31 | 704 | 0.7− | 0.8− | 2004 02 13 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 2002 10 31 | 704 | 0.4− | 0.5− | 2004 02 13 | 644 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.7− | 0.9+ |
| 2002 11 01 | 704 | 0.2+ | 0.3+ | 2004 02 17 | 703 | 0.9− | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.5− |
| 2002 11 01 | 704 | 0.3+ | 0.0 | 2004 02 17 | 703 | 0.4+ | 0.5− | 2006 11 15 | 703 | 0.3+ | 0.3+ |
| 2002 11 01 | 704 | 1.0+ | 0.1+ | 2004 02 17 | 703 | 0.7+ | 1.3+ | 2006 11 15 | 703 | 1.1− | 0.3+ |
| 2002 11 05 | 704 | 0.5+ | 0.3− | 2004 02 17 | 703 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.8+ | 1.2− |
| 2002 11 05 | 704 | 0.4+ | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.1− | 2006 11 16 | 704 | (1.6+ | 0.9−) |
| 2002 11 05 | 704 | 0.2+ | 0.8− | 2004 02 19 | 704 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.7+ | 0.8− |
| 2002 11 08 | 704 | 1.2− | 0.6+ | 2004 02 19 | 704 | 0.7− | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.3− |
| 2002 11 08 | 704 | 1.1− | 0.2− | 2004 02 19 | 704 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.3+ |
| 2002 11 08 | 704 | (1.7− | 0.3+) | 2004 02 19 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.4− |
| 2002 11 08 | 704 | 1.0− | 0.4+ | 2005 07 10 | E12 | 0.5− | 0.9+ | 2006 11 22 | 703 | 0.1+ | 0.1− |
| 2002 11 13 | 644 | 1.3+ | 0.2+ | 2005 07 10 | E12 | 0.1+ | 0.6+ | 2006 11 22 | 703 | 0.1− | 0.8− |
| 2002 11 13 | 644 | 0.1+ | 1.2+ | 2005 07 10 | E12 | 0.1+ | 0.3+ | | | | |
| 2002 11 13 | 644 | (1.5+ | 0.0 ) | 2005 07 10 | E12 | 0.4+ | 1.1+ | | | | |

**(142635)∗ 2002 TY$_{179}$**

Discovered 2002 Oct. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.29275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22458834 | $\omega$ | 34.84977 | | +0.89861810 | −0.43679613 | |
| $a$ | 2.6804719 | $\Omega$ | 350.76939 | | +0.32104388 | +0.71861813 | |
| $e$ | 0.1402720 | $i$ | 14.87035 | | +0.29902564 | +0.54110732 | |
| $P$ | 4.39 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 26 | 699 | 0.0 | 1.4− | 2002 12 27 | 699 | 0.1− | 0.4− | 2006 09 19 | 699 | 0.5− | 0.5+ |
| 1998 11 26 | 699 | 0.4+ | 0.3− | 2002 12 27 | 699 | 0.4− | 0.4− | 2006 09 19 | 703 | 0.5− | 0.2+ |
| 1998 11 26 | 699 | 1.0+ | 0.3− | 2003 01 22 | 644 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.4− | 0.7+ |
| 1998 12 12 | 704 | 0.4− | 0.1− | 2003 01 22 | 644 | 0.1+ | 0.6− | 2006 09 20 | 704 | 0.5− | 1.1+ |
| 1998 12 12 | 704 | 1.4− | 0.3+ | 2003 01 22 | 644 | 0.1− | 0.3− | 2006 09 20 | 704 | 0.9− | 0.8− |
| 1998 12 12 | 704 | (2.6− | 0.9+) | 2004 01 22 | 704 | 0.8+ | 0.7+ | 2006 09 20 | 704 | 0.7− | 0.2− |
| 1998 12 12 | 704 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.5+ | 1.1+ | 2006 09 20 | 704 | 0.9− | 0.4+ |
| 1998 12 27 | 699 | 0.7+ | 0.6+ | 2004 01 22 | 704 | 0.5− | 0.3+ | 2006 09 20 | 704 | 1.5− | 0.6+ |
| 1998 12 27 | 699 | 0.2+ | 0.4+ | 2004 02 02 | 699 | 0.5+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.0 |
| 1998 12 27 | 699 | 0.1− | 0.7+ | 2004 02 02 | 699 | 0.3+ | 0.9+ | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 1999 01 08 | 699 | 0.5− | 0.3− | 2004 02 02 | 699 | 0.5+ | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.6+ |
| 1999 01 08 | 699 | 0.7+ | 0.1− | 2004 02 02 | 699 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.4+ |
| 1999 01 08 | 699 | 0.4− | 0.7− | 2004 02 16 | 291 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.8− | 0.2− |
| 1999 01 14 | 704 | 0.8− | 1.3− | 2004 02 16 | 291 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.6+ |
| 1999 01 14 | 704 | 0.1+ | 1.1− | 2004 02 16 | 291 | 0.3+ | 0.1+ | 2006 09 26 | 704 | (1.6+ | 0.8−) |
| 1999 01 14 | 704 | 0.7− | 0.1− | 2004 02 19 | 704 | (1.7+ | 1.4+) | 2006 09 26 | 704 | 0.7− | 0.6+ |
| 1999 01 14 | 704 | 0.5+ | 0.8− | 2004 02 19 | 704 | 1.2+ | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.7+ |
| 1999 01 14 | 704 | (2.6− | 5.0−) | 2004 02 19 | 704 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.6+ |
| 2002 09 07 | 704 | 0.8− | 0.7+ | 2004 02 19 | 704 | 1.2+ | 0.5+ | 2006 09 27 | 704 | 0.9+ | 0.5− |
| 2002 09 07 | 704 | 0.4− | 0.8+ | 2004 02 19 | 704 | 1.2+ | 0.2− | 2006 09 27 | 704 | 1.0+ | 0.7+ |
| 2002 09 07 | 704 | 0.1− | 0.0 | 2004 02 23 | 704 | (0.9− | 1.6+) | 2006 09 27 | 704 | 0.8+ | 0.6+ |
| 2002 10 06 | 704 | 0.2− | 0.5+ | 2004 02 23 | 704 | 0.3+ | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2004 02 23 | 704 | 0.5− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2002 10 06 | 704 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.1− | 0.9+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2002 10 06 | 704 | 0.1+ | 0.4+ | 2004 02 23 | 704 | 0.4+ | 1.3+ | 2006 09 28 | G96 | 0.4− | 0.2− |
| 2002 10 14 | 704 | 0.5+ | 0.0 | 2004 02 23 | 704 | 1.2+ | 0.7+ | 2006 09 29 | 704 | 0.6+ | 0.6+ |
| 2002 10 14 | 704 | (0.8+ | 1.8−) | 2004 02 23 | 704 | 0.8+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.6+ |
| 2002 10 14 | 704 | 0.5− | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2002 10 14 | 704 | 0.7+ | 0.6− | 2004 02 23 | 704 | 0.4+ | 1.1+ | 2006 09 29 | 704 | 0.2+ | 0.1− |
| 2002 10 14 | 704 | 0.1+ | 0.3− | 2004 02 23 | 704 | (1.8+ | 0.0 ) | 2006 09 29 | 704 | 0.3+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 704 | 0.1− | 0.2+ | 2004 03 11 | 644 | 0.5+ | 0.2+ | 2006 09 30 | 704 | 0.9+ | 0.5− |
| 2002 10 15 | 704 | (1.6+ | 0.2+) | 2004 03 11 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.3+ |
| 2002 10 15 | 704 | 1.0+ | 0.6− | 2004 03 11 | 644 | (1.6+ | 0.0 ) | 2006 09 30 | 704 | 0.1+ | 0.1− |
| 2002 10 15 | 704 | 0.4+ | 0.5− | 2004 03 19 | 704 | 0.9+ | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.4+ |
| 2002 10 15 | 704 | 1.0+ | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.7+ | 2006 09 30 | 704 | 0.3+ | 0.0 |
| 2002 10 20 | 644 | 0.1+ | 1.0+ | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 10 20 | 644 | 0.0 | 1.0+ | 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 10 20 | 644 | 0.1+ | 1.1+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2002 10 30 | 704 | 0.3+ | 0.8− | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2002 10 30 | 704 | 0.1− | 1.0− | 2004 03 29 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 2002 10 30 | 704 | 0.1+ | 0.8− | 2004 04 14 | 699 | 1.2+ | 0.9+ | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2002 10 30 | 704 | 0.1+ | 0.8− | 2004 04 14 | 699 | (1.8+ | 0.2−) | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2002 11 08 | 704 | 0.7− | 0.6+ | 2004 04 14 | 699 | 0.3+ | 1.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 11 08 | 704 | 0.0 | 0.3+ | 2004 04 14 | 699 | (0.3+ | 2.2+) | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 11 08 | 704 | 0.2− | 0.8+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 15 | 644 | 0.4− | 0.1− | 2006 08 22 | 644 | 0.4− | 0.2+ | 2006 10 22 | 703 | (1.8− | 0.4−) |
| 2002 11 15 | 644 | 0.2− | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2002 11 15 | 644 | 0.3− | 0.1− | 2006 08 23 | 704 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.5− |
| 2002 11 15 | 704 | 0.1+ | 0.2− | 2006 08 23 | 704 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.9− |
| 2002 11 15 | 704 | 0.1− | 0.4− | 2006 08 23 | 704 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2002 11 15 | 704 | 0.9+ | 0.2− | 2006 08 23 | 704 | 0.7− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2002 11 15 | 704 | 1.3− | 1.2− | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.1− |
| 2002 11 15 | 704 | 0.7+ | 0.1− | 2006 08 23 | 644 | 0.2− | 0.2− | 2006 11 10 | 704 | 0.6+ | 0.0 |
| 2002 12 08 | 699 | 0.4+ | 0.2− | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 11 10 | 704 | 0.7+ | 0.5+ |
| 2002 12 08 | 699 | 0.8+ | 0.0 | 2006 08 28 | 703 | 0.7− | 0.4− | 2006 11 10 | 704 | 1.1+ | 0.2+ |
| 2002 12 08 | 699 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 11 10 | 704 | 0.7+ | 0.1− |
| 2002 12 08 | 699 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.6+ | 1.0+ |
| 2002 12 10 | 704 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 11 14 | 644 | 0.4− | 0.0 |
| 2002 12 10 | 704 | 1.2− | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.2− | 2006 11 14 | 644 | 0.2− | 0.2+ |
| 2002 12 10 | 704 | 0.7− | 0.3− | 2006 09 12 | 703 | 0.4− | 0.1+ | 2006 11 14 | 644 | 0.3− | 0.0 |
| 2002 12 10 | 704 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.5− | 0.5+ | 2006 11 14 | 644 | 0.1− | 0.1+ |
| 2002 12 12 | 644 | 0.2− | 0.7+ | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 11 14 | 644 | 0.2+ | 0.2+ |
| 2002 12 12 | 644 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.5− | 0.4+ | 2006 11 14 | 644 | 0.1− | 0.2+ |
| 2002 12 12 | 644 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.4− | 0.2+ |
| 2002 12 12 | 644 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.2− | 0.9+ | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 2002 12 12 | 644 | 0.1− | 0.8+ | 2006 09 17 | 704 | 0.8− | 0.3− | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2002 12 12 | 644 | 0.2− | 0.3− | 2006 09 17 | 704 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2002 12 15 | 704 | 0.6− | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 704 | (0.8− | 2.4+) |
| 2002 12 15 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.8− | 0.6+ |
| 2002 12 15 | 704 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.5− |
| 2002 12 15 | 704 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2002 12 27 | 699 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.3+ | | | | |
| 2002 12 27 | 699 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.6− | 0.1+ | | | | |

**(142636)∗ 2002 TS$_{181}$ = 2000 EU$_{163}$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38059)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.35595 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22791211 | $\omega$ | 340.80721 | | +0.98022794 | +0.19764956 |
| $a$ | 2.6543475 | $\Omega$ | 7.81110 | | −0.17133086 | +0.87149066 |
| $e$ | 0.1172083 | $i$ | 3.95410 | | −0.09898946 | +0.44881920 |
| $P$ | 4.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.1− | 0.3− | 2002 11 14 | 704 | 0.6+ | 0.1− | 2006 09 17 | 704 | 0.7+ | 0.1+ |
| 2000 03 03 | 704 | 0.5+ | 0.6+ | 2002 11 14 | 704 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.8+ |
| 2000 03 03 | 704 | 1.1+ | 0.5+ | 2002 11 14 | 704 | 0.3+ | 1.0− | 2006 09 17 | 704 | 0.3+ | 0.1+ |
| 2000 03 03 | 704 | 0.0 | 0.5+ | 2002 11 14 | 704 | 0.3− | 0.4− | 2006 09 19 | 699 | 0.5− | 0.5+ |
| 2000 03 03 | 704 | 0.8+ | 1.1+ | 2002 11 23 | 644 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.3+ |
| 2000 03 11 | 704 | 0.0 | 1.2+ | 2002 11 23 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.4+ |
| 2000 03 11 | 704 | 0.2+ | 0.9+ | 2002 11 23 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 1.1− | 0.3+ |
| 2000 03 11 | 704 | 1.9+ | 0.4+ | 2002 11 30 | 608 | 0.1− | 0.5− | 2006 09 20 | 704 | 0.2+ | 0.4− |
| 2000 03 11 | 704 | 0.2+ | 0.7+ | 2002 11 30 | 608 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.1− | 0.9− |
| 2000 03 11 | 704 | 0.7+ | 1.2+ | 2002 11 30 | 608 | 0.4+ | 0.4− | 2006 09 20 | 704 | 1.0− | 0.2− |
| 2002 10 03 | 704 | 0.9− | 0.6− | 2002 12 06 | 704 | 0.4+ | 0.9− | 2006 09 20 | 704 | 0.6− | 0.4− |
| 2002 10 03 | 704 | 0.2+ | 0.7− | 2002 12 06 | 704 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.5− |
| 2002 10 03 | 704 | 0.5− | 0.5− | 2002 12 06 | 704 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.6− | 0.5− |
| 2002 10 03 | 704 | 0.1− | 0.5− | 2004 02 13 | 691 | 0.3− | 0.5+ | 2006 09 25 | 699 | 1.2− | 0.0 |
| 2002 10 03 | 704 | 1.1− | 0.5− | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 1.4− | 0.3+ |
| 2002 10 04 | 704 | (1.8+ | 0.1−) | 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 1.2+ | 0.6+ |
| 2002 10 04 | 704 | 0.3+ | 0.4+ | 2004 02 16 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.3+ |
| 2002 10 04 | 704 | 0.0 | 0.5− | 2004 02 16 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 704 | (2.0+ | 0.2+) |
| 2002 10 04 | 704 | 0.2− | 0.6+ | 2004 02 16 | 704 | 0.7+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2002 10 07 | 699 | 1.1+ | 0.2− | 2004 02 16 | 704 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.6+ | 0.2− |
| 2002 10 07 | 699 | 0.2+ | 0.7− | 2004 02 18 | 704 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2002 10 07 | 699 | 0.9+ | 1.0+ | 2004 02 18 | 704 | 0.6+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2002 10 07 | 699 | 0.1+ | 0.4− | 2004 02 18 | 704 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2002 10 18 | 644 | 0.1− | 0.0 | 2004 02 18 | 704 | 0.4− | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2002 10 18 | 644 | 0.2+ | 0.2+ | 2004 02 23 | 704 | (0.1− | 1.6−) | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2002 10 18 | 644 | 0.4+ | 0.2+ | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 691 | 0.8+ | 1.0+ |
| 2002 10 28 | 608 | 0.0 | 0.8− | 2004 02 23 | 704 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.9+ | 1.0+ |
| 2002 10 28 | 608 | 0.0 | 0.9− | 2004 02 25 | 704 | (0.4+ | 1.8+) | 2006 09 30 | 704 | (0.1− | 2.3+) |
| 2002 10 28 | 608 | 0.0 | 1.1− | 2004 02 25 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 704 | 0.2+ | 1.2+ |
| 2002 10 31 | 699 | 0.9− | 0.6+ | 2004 02 25 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 704 | 1.1− | 0.3+ |
| 2002 10 31 | 699 | 1.2− | 0.3+ | 2004 02 25 | 704 | 0.3+ | 1.2+ | 2006 09 30 | 704 | 0.1− | 0.4+ |
| 2002 10 31 | 699 | 0.5− | 0.0 | 2004 02 25 | 704 | 0.6+ | 0.0 | 2006 10 01 | 703 | 0.6+ | 1.0− |
| 2002 10 31 | 699 | 0.5− | 0.3+ | 2005 05 04 | E12 | 0.5− | 0.2+ | 2006 10 01 | 703 | 0.1+ | 0.3− |
| 2002 11 05 | 704 | 0.7+ | 0.2+ | 2005 05 04 | E12 | 0.2− | 0.2+ | 2006 10 01 | 703 | 0.2+ | 0.3− |
| 2002 11 05 | 704 | 0.3+ | 0.9+ | 2005 05 04 | E12 | 0.3− | 0.5+ | 2006 10 01 | 703 | 0.3− | 0.3− |
| 2002 11 05 | 704 | 1.1+ | 0.9+ | 2005 05 04 | E12 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.4+ | 0.1− | 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.2+ |
| 2002 11 06 | 704 | 0.3+ | 0.6− | 2006 08 18 | 691 | 0.4− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2002 11 06 | 704 | 1.1+ | 0.7− | 2006 08 18 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2002 11 06 | 704 | 0.1+ | 0.0 | 2006 08 21 | 807 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.4− | 0.6− |
| 2002 11 06 | 704 | 0.1− | 0.6− | 2006 08 21 | 704 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2002 11 06 | 704 | 0.3− | 0.6− | 2006 08 21 | 807 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.8− |
| 2002 11 07 | 704 | (2.8+ | 0.8+) | 2006 08 21 | 704 | 0.3− | 0.7+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2002 11 07 | 704 | (2.9+ | 0.2+) | 2006 08 21 | 704 | 0.2+ | 0.5− | 2006 10 16 | G96 | 0.7− | 0.7− |
| 2002 11 07 | 704 | (3.0+ | 0.1+) | 2006 08 22 | 807 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2002 11 07 | 704 | (3.0+ | 0.0 ) | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.6− | 0.8− |
| 2002 11 08 | 704 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.7− |
| 2002 11 08 | 704 | 0.8− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.8− |
| 2002 11 08 | 704 | 0.6+ | 0.3− | 2006 09 16 | 699 | 0.7+ | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2002 11 12 | 704 | 0.2+ | 1.1+ | 2006 09 16 | 699 | 0.4+ | 1.3+ | 2006 10 27 | G96 | 0.4− | 0.5− |
| 2002 11 12 | 704 | 0.9− | 0.7+ | 2006 09 16 | 699 | (1.8+ | 1.4+) | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2002 11 12 | 704 | 0.2− | 0.7+ | 2006 09 16 | 699 | 1.3+ | 0.6+ | 2006 11 21 | G96 | 0.7+ | 0.4− |
| 2002 11 12 | 704 | 1.3− | 0.7+ | 2006 09 17 | 704 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.8+ | 0.7+ | 2006 09 17 | 704 | 0.1− | 0.1− | | | | |

**(142637)∗ 2002 TL$_{183}$ = 2002 RT$_{56}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 56682)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.27885 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27265389 | $\omega$ | 76.00020 | | +0.83290191 | +0.55261659 |
| $a$ | 2.3553833 | $\Omega$ | 250.44524 | | −0.51918576 | +0.76158460 |
| $e$ | 0.1873864 | $i$ | 1.81353 | | −0.19162610 | +0.33853184 |
| $P$ | 3.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.1− | 0.1− | 2002 10 07 | 704 | 0.8+ | 0.1+ | 2005 06 27 | 644 | 0.2+ | 0.3+ |
| 1993 01 23 | 691 | 0.5− | 0.3− | 2002 10 07 | 704 | 0.1− | 0.0 | 2005 06 27 | 644 | 0.3+ | 0.3+ |
| 1993 01 23 | 691 | 0.6− | 0.2− | 2002 10 07 | 704 | 0.3+ | 0.5− | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2000 01 06 | 691 | 0.8+ | 0.1+ | 2002 10 07 | 704 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2000 01 06 | 691 | 0.5+ | 0.0 | 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.4− | 0.4− |
| 2000 01 06 | 691 | 0.4+ | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2002 08 05 | 704 | 0.2− | 0.3+ | 2002 10 11 | 704 | 0.2− | 0.9+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2002 08 05 | 704 | 0.5− | 0.3+ | 2002 10 11 | 704 | 0.8+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2002 08 05 | 704 | 0.7+ | 0.1+ | 2002 10 11 | 704 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 0.0 | 0.1− | 2005 05 08 | E12 | 0.1− | 0.7− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 09 05 | 699 | 0.1+ | 0.4+ | 2005 05 08 | E12 | 0.0 | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2002 09 05 | 699 | 0.1− | 0.5− | 2005 05 08 | E12 | 0.6+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 699 | 0.2− | 0.6+ | 2005 05 08 | E12 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.7− | 0.2+ | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.7− |
| 2002 09 06 | 704 | 0.2− | 0.9+ | 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 11 15 | 703 | 1.0− | 0.1+ |
| 2002 09 06 | 704 | 0.7− | 0.5+ | 2005 05 09 | G96 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.0 | 1.0+ | 2005 05 09 | G96 | 0.0 | 0.2+ | 2006 11 15 | 703 | 1.2− | 0.8+ |
| 2002 09 06 | 704 | 0.9− | 0.3+ | 2005 05 10 | 699 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.9− | 2005 05 10 | 699 | (1.6+ | 0.6+) | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.4− | 0.8− | 2005 05 10 | 699 | 1.4− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.8− | 2005 05 10 | 699 | 0.6+ | 0.8− | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2002 09 16 | 608 | 0.8− | 1.4− | 2005 05 11 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.8+ |
| 2002 09 16 | 608 | 0.5− | 0.8− | 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.6+ |
| 2002 09 16 | 608 | 0.4− | 1.3− | 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.4− |
| 2002 10 04 | 704 | 0.4+ | 0.1− | 2005 05 16 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | (0.9− | 3.2+) |
| 2002 10 04 | 704 | 0.5+ | 0.8+ | 2005 05 16 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.9+ |
| 2002 10 04 | 704 | 0.4− | 1.2− | 2005 05 16 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.8+ |
| 2002 10 04 | 704 | 0.0 | 0.8+ | 2005 05 19 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.6− |
| 2002 10 04 | 704 | 0.2+ | 0.7− | 2005 05 19 | 644 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 0.6+ | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.9− | 2005 05 26 | 699 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 1.1+ | 2005 05 26 | 699 | 0.8+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.1+ | 0.9− | 2005 05 26 | 699 | (1.6− | 1.2+) | 2006 11 27 | 691 | 0.9+ | 0.1+ |
| 2002 10 04 | 704 | 0.3+ | 1.4+ | 2005 05 26 | 699 | (0.6+ | 1.8+) | 2006 11 27 | 691 | 0.4− | 0.4+ |
| 2002 10 07 | 699 | 0.7+ | 0.3− | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2002 10 07 | 699 | 0.6+ | 0.3+ | 2005 06 14 | G96 | 0.2− | 0.3− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 10 07 | 699 | 0.7+ | 0.6− | 2005 06 14 | G96 | 0.1− | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 10 07 | 699 | 0.0 | 0.3+ | 2005 06 14 | G96 | 0.3− | 0.0 | | | | |
| 2002 10 07 | 704 | 0.1− | 0.1+ | 2005 06 27 | 644 | 0.3+ | 0.1+ | | | | |

**(142638)∗ 2002 TN$_{184}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.63364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25765271 | $\omega$ | 302.88704 | | +0.12844848 | +0.99056066 | |
| $a$ | 2.4459425 | $\Omega$ | 334.36410 | | −0.86893091 | +0.08915441 | |
| $e$ | 0.1828364 | $i$ | 6.35107 | | −0.47797495 | +0.10412050 | |
| $P$ | 3.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 09 | 691 | 0.2− | 0.1− | 2005 04 03 | E12 | 0.3+ | 0.0 | 2006 09 20 | 699 | 0.2− | 0.5+ |
| 1997 04 09 | 691 | 0.1+ | 0.2− | 2005 04 03 | E12 | 0.7+ | 0.3− | 2006 09 20 | 699 | 0.3− | 0.0 |
| 1997 04 09 | 691 | 0.1− | 0.2− | 2005 04 03 | E12 | (0.7− | 2.1+) | 2006 09 20 | 699 | 0.0 | 0.4− |
| 2001 03 19 | 699 | 0.3+ | 0.7+ | 2005 04 18 | 703 | 0.2+ | 0.6− | 2006 09 20 | 699 | 1.4− | 0.9− |
| 2001 03 19 | 699 | 0.5+ | 1.2+ | 2005 04 18 | 703 | 0.3+ | 0.8− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 03 19 | 699 | 0.8− | 0.7+ | 2005 04 18 | 703 | 0.4+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2001 03 19 | 699 | 1.0+ | 1.5+ | 2005 04 18 | 703 | 0.5− | 0.6− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 03 24 | 704 | 0.5+ | 0.9+ | 2005 05 01 | 644 | 0.4+ | 0.1− | 2006 09 28 | 703 | 1.0+ | 0.9− |
| 2001 03 24 | 704 | 0.7+ | 1.1+ | 2005 05 01 | 644 | 0.4+ | 0.1− | 2006 09 28 | 703 | 1.0− | 0.2− |
| 2001 03 24 | 704 | 0.0 | 1.2+ | 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 09 28 | 703 | 1.4− | 0.1+ |
| 2002 09 06 | 704 | 0.4+ | 0.8− | 2005 05 01 | E12 | 0.0 | 0.1− | 2006 09 28 | 703 | (0.3− | 2.1−) |
| 2002 09 06 | 704 | 0.3− | 0.3+ | 2005 05 01 | E12 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.3− | 2005 05 01 | E12 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2002 09 06 | 704 | 0.5+ | 0.3− | 2005 05 01 | E12 | 0.0 | 0.8+ | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2002 09 17 | 608 | 1.3− | 0.8+ | 2005 05 04 | E12 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2002 09 17 | 608 | 1.3− | 0.2+ | 2005 05 04 | E12 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.1− | 0.3+ |
| 2002 09 17 | 608 | 1.3− | 0.2− | 2005 05 04 | E12 | 0.3+ | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.1− | 0.8+ | 2005 05 04 | E12 | 1.0+ | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.7+ | 0.2+ | 2005 05 09 | 703 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.5+ | 0.7+ | 2005 05 09 | 703 | 0.3− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2002 10 04 | 644 | 0.2+ | 0.7+ | 2005 05 09 | 703 | 1.0− | 0.7+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.2+ | 0.5+ | 2005 05 09 | 703 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.6+ | 0.7+ | 2005 05 09 | E12 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2002 10 04 | 704 | 0.3+ | 0.1+ | 2005 05 09 | E12 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.4+ | 0.8+ | 2005 05 09 | E12 | 0.3− | 0.1+ | 2006 10 31 | 703 | 0.1− | 0.4+ |
| 2002 10 07 | 699 | 0.3− | 0.2+ | 2005 05 09 | E12 | 0.1− | 0.5− | 2006 10 31 | 703 | 0.8+ | 0.4+ |
| 2002 10 07 | 699 | 0.3− | 0.8+ | 2005 05 10 | 699 | 0.7+ | 0.9+ | 2006 10 31 | 703 | 0.5− | 1.1+ |
| 2002 10 07 | 699 | 0.4− | 0.0 | 2005 05 10 | 699 | 0.3− | 0.4+ | 2006 10 31 | 703 | 1.1− | 1.9+ |
| 2002 10 07 | 699 | 0.0 | 0.8− | 2005 05 10 | 699 | 0.1− | 1.0+ | | | | |
| 2005 04 03 | E12 | 0.0 | 1.1+ | 2005 05 10 | 699 | 0.2+ | 0.5+ | | | | |

**(142639)∗ 2002 TO$_{186}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.22836 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25376766 | $\omega$ | 157.02629 | | +0.80667017 | −0.58468407 | |
| $a$ | 2.4708433 | $\Omega$ | 239.03722 | | +0.52543359 | +0.77626796 | |
| $e$ | 0.0942821 | $i$ | 5.76834 | | +0.27056014 | +0.23569599 | |
| $P$ | 3.88 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 699 | 0.8− | 0.2− | 2004 02 19 | 704 | 0.3− | 0.8+ | 2006 10 21 | 691 | 0.3− | 0.3− |
| 1998 08 30 | 699 | 0.2+ | 0.7+ | 2004 02 19 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.4− |
| 1998 08 30 | 699 | 1.6+ | 0.9+ | 2004 02 19 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.1− |
| 1998 10 11 | 699 | 0.6+ | 0.0 | 2004 02 19 | 704 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 1998 10 11 | 699 | 0.9+ | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 1998 10 11 | 699 | 0.1− | 0.6+ | 2004 02 23 | 704 | 0.5+ | 0.2− | 2006 10 21 | 703 | 0.6− | 0.6− |
| 2000 02 06 | 704 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.6+ |
| 2000 02 06 | 704 | 0.8+ | 0.6+ | 2004 02 23 | 704 | 0.3+ | 0.1− | 2006 10 25 | 106 | 0.3− | 0.2+ |
| 2000 02 06 | 704 | 0.4+ | 0.7+ | 2004 02 23 | 704 | 0.7+ | 0.4+ | 2006 10 25 | 106 | 0.5+ | 0.1− |
| 2000 02 06 | 704 | 0.0 | 0.3+ | 2004 03 15 | 704 | (0.7+ | 3.3+) | 2006 10 25 | 106 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | (0.1− | 1.6+) | 2004 03 15 | 704 | (0.5+ | 3.1+) | 2006 10 25 | 106 | 0.4+ | 0.9− |
| 2002 09 06 | 704 | 0.3− | 0.1+ | 2004 03 15 | 704 | (2.7+ | 2.1+) | 2006 10 28 | 691 | 0.2+ | 0.3− |
| 2002 09 06 | 704 | 0.7+ | 0.1− | 2004 03 15 | 704 | (1.1+ | 2.1+) | 2006 10 28 | 691 | 0.3+ | 0.3− |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.2− |
| 2002 09 06 | 704 | 0.2− | 0.8+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.1+ | 0.2− |
| 2002 09 14 | 608 | 0.8− | 0.3− | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 608 | 1.0− | 0.3− | 2005 06 17 | G96 | 0.0 | 0.2+ | 2006 10 29 | 704 | 1.0+ | 1.2+ |
| 2002 09 14 | 608 | 0.9− | 0.3+ | 2005 06 17 | G96 | 0.2+ | 0.4+ | 2006 10 29 | G96 | 0.1− | 0.2− |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2005 06 17 | G96 | 0.3+ | 0.2+ | 2006 10 29 | G96 | 0.2+ | 0.2− |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2005 06 17 | G96 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.7− | 0.8+ | 2006 09 20 | 699 | 0.3+ | 0.1− | 2006 10 29 | 704 | 0.4− | 0.0 |
| 2002 10 04 | 644 | 0.3+ | 0.1− | 2006 09 20 | 699 | 0.2− | 0.5− | 2006 10 29 | 704 | 0.8+ | 0.5− |
| 2002 10 04 | 704 | 0.2− | 0.6+ | 2006 09 20 | 699 | 0.3− | 0.6+ | 2006 10 29 | 704 | 0.4+ | 0.8+ |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.6+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 10 04 | 704 | 0.5− | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 10 04 | 704 | 0.5− | 1.2+ | 2006 09 25 | 704 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 10 07 | 699 | 1.1− | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 10 07 | 699 | 0.6− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2002 10 07 | 699 | 0.4− | 1.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2002 10 07 | 699 | 0.3− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.6+ | 1.0+ | 2006 11 07 | 644 | 1.1+ | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.8+ | 0.6+ | 2006 11 07 | 644 | 0.8− | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.8+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.5+ | 2006 11 07 | 644 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2002 10 12 | 704 | (0.8+ | 1.8+) | 2006 09 30 | 691 | 1.2− | 0.2+ | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | (1.8− | 0.8+) | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2002 10 12 | 704 | (2.3− | 1.5+) | 2006 10 15 | 104 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2002 10 12 | 704 | (2.3− | 1.7+) | 2006 10 15 | 104 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2002 10 12 | 704 | (1.7− | 2.3+) | 2006 10 15 | 104 | 0.4+ | 1.4− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 10 28 | 608 | 1.2− | 0.3− | 2006 10 17 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2002 10 28 | 608 | 0.7− | 0.2− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2002 10 28 | 608 | 0.6− | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.4− | 1.0+ |
| 2002 11 01 | 704 | 0.3+ | 1.1+ | 2006 10 17 | 703 | 0.6+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 11 01 | 704 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.7+ | 0.8+ | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2002 11 01 | 704 | 0.4− | 0.3+ | 2006 10 17 | 703 | 1.0+ | 1.0+ | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2002 11 08 | 704 | 0.9+ | 0.8− | 2006 10 19 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2002 11 08 | 704 | 0.5+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.5− |
| 2002 11 08 | 704 | 0.3+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 1.4+ | 0.2+ |
| 2002 12 06 | 704 | 1.0− | 1.2− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.7+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.3− | 1.2− | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 23 | 683 | (0.2− | 1.6+) | | |
| 2002 12 06 | 704 | 0.6− | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 23 | 683 | 1.2+ | 0.5+ | | |
| 2004 02 12 | 644 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 23 | 683 | 0.5+ | 0.1+ | | |
| 2004 02 12 | 644 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 27 | 113 | 0.6− | 0.4− | | |
| 2004 02 12 | 644 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 27 | 113 | 0.6+ | 1.1− | | |
| 2004 02 19 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 | | | | | | |

**(142640)∗ 2002 TK$_{187}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.30474 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21588173 | $\omega$ | 72.06738 | | +0.68389721 | −0.72863847 | |
| $a$ | 2.7520656 | $\Omega$ | 334.66368 | | +0.63236056 | +0.61731105 | |
| $e$ | 0.0933580 | $i$ | 4.96302 | | +0.36387461 | +0.29666994 | |
| $P$ | 4.57 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.5− | 0.9+ | 2002 10 31 | 699 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.6+ | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.3+ | 2002 10 31 | 699 | 0.2+ | 0.9− | 2004 02 16 | 704 | 0.4+ | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.1+ | 2002 10 31 | 699 | 0.6+ | 1.3+ | 2004 02 16 | 704 | 0.2+ | 0.4− |
| 2002 09 06 | 704 | 0.1− | 0.3− | 2002 10 31 | 699 | 0.2+ | 1.1+ | 2004 02 16 | 704 | 0.7+ | 0.6+ |
| 2002 09 06 | 704 | 0.3− | 0.2− | 2004 01 16 | 644 | 0.0 | 0.4+ | 2004 02 23 | 704 | 0.4+ | 1.2+ |
| 2002 09 28 | 608 | (2.1− | 1.5−) | 2004 01 16 | 644 | 0.4+ | 0.2+ | 2004 02 23 | 704 | 1.1− | 0.7+ |
| 2002 09 28 | 608 | (1.9− | 1.6−) | 2004 01 16 | 644 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.5− | 0.7+ |
| 2002 09 28 | 608 | (2.3− | 1.6−) | 2004 01 18 | 644 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.6− | 1.0+ |
| 2002 10 04 | 704 | 0.6+ | 0.2+ | 2004 01 18 | 644 | 1.0− | 0.6+ | 2005 05 16 | 644 | 0.4+ | 0.9+ |
| 2002 10 04 | 704 | 0.3+ | 0.2+ | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2005 05 16 | 644 | 0.4+ | 0.9+ |
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2004 01 22 | 704 | 0.3+ | 0.4+ | 2005 05 16 | 644 | 0.3+ | 0.9+ |
| 2002 10 04 | 644 | 0.3− | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 08 15 | 644 | 0.1− | 0.6+ |
| 2002 10 04 | 704 | 0.5+ | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.4+ | 2006 08 15 | 644 | 0.1− | 0.6+ |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.6+ |
| 2002 10 04 | 644 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.5+ | 0.6+ | 2006 08 20 | 644 | 0.0 | 0.5+ |
| 2002 10 04 | 704 | 0.8+ | 0.1+ | 2004 01 30 | 691 | 0.0 | 0.3− | 2006 08 20 | 644 | 0.1− | 0.8+ |
| 2002 10 07 | 699 | 0.4− | 0.5− | 2004 01 30 | 704 | (0.6+ | 2.9+) | 2006 08 20 | 644 | 0.4− | 0.7+ |
| 2002 10 07 | 699 | 0.4− | 0.8+ | 2004 01 30 | 704 | 0.8+ | 0.9+ | 2006 08 24 | 644 | 0.4− | 0.6+ |
| 2002 10 07 | 699 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.9+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.6+ |
| 2002 10 07 | 699 | 0.4− | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.5+ | 2006 08 24 | 644 | 0.4+ | 0.7+ |
| 2002 10 09 | 704 | 1.3− | 0.5+ | 2004 01 30 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2002 10 09 | 704 | 0.1− | 0.8− | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.3+ |
| 2002 10 09 | 704 | 0.7− | 0.6+ | 2004 01 30 | 691 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 0.7− | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | (0.4+ | 2.4−) | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 0.4+ | 0.4− | 2004 02 11 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2002 10 12 | 704 | 0.2+ | 0.0 | 2004 02 11 | 699 | 0.4− | 0.4− | 2006 10 28 | G96 | 0.2− | 0.4+ |
| 2002 10 12 | 704 | 0.5+ | 0.8− | 2004 02 11 | 699 | 0.1− | 0.5− | 2006 10 28 | G96 | 0.8− | 0.3− |
| 2002 10 12 | 704 | 0.3+ | 0.8− | 2004 02 11 | 699 | 0.6+ | 0.4+ | | | | |
| 2002 10 12 | 704 | 1.4− | 0.8− | 2004 02 11 | 699 | 0.6− | 1.4+ | | | | |

**(142641)∗ 2002 TU$_{187}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.66039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24333294 | $\omega$ | 7.57958 | | +0.87726583 | +0.47724669 | |
| $a$ | 2.5409850 | $\Omega$ | 323.76996 | | −0.44483166 | +0.76808856 | |
| $e$ | 0.1821262 | $i$ | 4.98753 | | −0.18035923 | +0.42693742 | |
| $P$ | 4.05 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 327 | 0.3− | 0.5+ | 2002 11 22 | 644 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1− |
| 1998 10 29 | 327 | 0.8− | 0.3− | 2002 11 22 | 644 | 0.3− | 0.1+ | 2006 09 18 | 704 | 1.1+ | 1.0+ |
| 1998 10 29 | 327 | 0.4+ | 0.3− | 2002 11 22 | 644 | 0.2− | 0.1+ | 2006 09 18 | 704 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.6− | 0.1+ | 2004 01 22 | 704 | 0.9+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | 0.5− | 0.5− | 2004 01 22 | 704 | 0.9+ | 1.1+ | 2006 09 18 | 704 | 0.5+ | 0.1− |
| 2002 09 06 | 704 | 0.2+ | 0.4− | 2004 01 22 | 704 | 0.1+ | 0.3− | 2006 09 18 | 704 | 1.0+ | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.8+ | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.4− |
| 2002 09 06 | 704 | 0.1− | 0.4+ | 2004 01 24 | 704 | (2.6+ | 1.3+) | 2006 09 19 | 699 | 0.3− | 0.0 |
| 2002 09 28 | 608 | (2.7− | 0.6+) | 2004 01 24 | 704 | (2.5+ | 0.9+) | 2006 09 19 | 699 | 0.0 | 0.6+ |
| 2002 09 28 | 608 | (2.7− | 0.8+) | 2004 01 24 | 704 | 0.0 | 1.0+ | 2006 09 19 | 699 | 0.4− | 0.2− |
| 2002 09 28 | 608 | (2.5− | 0.5+) | 2004 01 24 | 704 | 0.4+ | 0.2− | 2006 09 25 | 704 | 0.5− | 1.3+ |
| 2002 10 04 | 704 | 0.0 | 0.3+ | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.3− | 0.9+ |
| 2002 10 04 | 704 | 0.3+ | 0.3+ | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 1.2− | 0.1+ |
| 2002 10 04 | 704 | 0.2− | 0.5+ | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.2− |
| 2002 10 04 | 704 | 0.6− | 0.5+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.3− | 0.4+ | 2004 02 12 | 691 | 0.5− | 0.2+ | 2006 09 29 | 704 | 0.2+ | 1.0− |
| 2002 10 04 | 644 | 0.2− | 0.2+ | 2004 02 12 | 691 | 0.8− | 1.0− | 2006 09 29 | 704 | 0.8+ | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2004 02 14 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 1.1+ | 1.1− |
| 2002 10 04 | 644 | 0.1− | 0.3+ | 2004 02 14 | 691 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.8+ | 0.7− |
| 2002 10 07 | 699 | 0.0 | 0.5+ | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.4+ | 0.4+ |
| 2002 10 07 | 699 | 0.0 | 0.1− | 2004 04 13 | 645 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.5+ |
| 2002 10 07 | 699 | 0.5+ | 0.2+ | 2004 04 13 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 10 07 | 699 | 0.4+ | 0.2− | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 1.1+ | 0.1− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.1− |
| 2002 10 09 | 704 | 0.7+ | 0.1+ | 2005 04 16 | 691 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.5− |
| 2002 10 09 | 704 | 0.3+ | 0.1− | 2005 04 16 | 691 | 0.9+ | 1.1+ | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2002 10 09 | 704 | 0.2+ | 0.3− | 2005 04 16 | 691 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2002 10 09 | 704 | 0.1− | 0.5− | 2006 07 21 | 703 | 1.1− | 0.2− | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 0.7− | 0.3+ | 2006 07 21 | 703 | 0.2+ | 0.2− | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 0.8− | 0.3+ | 2006 07 21 | 703 | (1.9− | 1.7−) | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 0.6− | 0.6+ | 2006 07 21 | 703 | 0.2− | 0.7− | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.6+ | 0.6− |
| 2002 10 12 | 704 | 0.4− | 0.4+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2002 10 30 | 644 | 0.5− | 0.1+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | 1.2− | 0.4− |
| 2002 10 30 | 644 | 0.4− | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 10 30 | 644 | 0.3− | 0.2+ | 2006 09 15 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 11 08 | 704 | 1.0+ | 1.4+ | 2006 09 15 | 704 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 11 08 | 704 | 0.9+ | 1.1+ | 2006 09 15 | 704 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 11 08 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 11 08 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 0.9− | 0.0 | 2006 10 23 | 644 | 0.3− | 0.1+ |

**(142642)∗ 2002 TX$_{187}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.53898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22559174 | $\omega$ | 134.18517 | | +0.89589669 | −0.43590446 | |
| $a$ | 2.6725177 | $\Omega$ | 251.82994 | | +0.37750364 | +0.84873413 | |
| $e$ | 0.0814488 | $i$ | 5.17920 | | +0.23422238 | +0.29939552 | |
| $P$ | 4.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 19 | 691 | 0.1+ | 0.7+ | 2002 10 12 | 704 | (3.2+ | 0.8+) | 2005 05 11 | 691 | 0.2+ | 0.3+ |
| 1993 07 19 | 691 | 0.4− | 0.0 | 2002 10 12 | 704 | (3.4+ | 0.6+) | 2005 05 11 | 691 | 0.3+ | 0.4+ |
| 1993 07 19 | 691 | 0.1− | 0.0 | 2002 10 28 | 644 | 0.4− | 0.6− | 2005 05 11 | 691 | 0.1+ | 0.4+ |
| 2002 09 06 | 704 | 0.5+ | 0.6+ | 2002 10 28 | 644 | 0.4− | 0.6− | 2006 07 25 | 224 | 0.1− | 1.5+ |
| 2002 09 06 | 704 | 0.5+ | 0.1− | 2002 10 28 | 644 | 0.3− | 0.5− | 2006 07 25 | 224 | 1.1− | 0.6+ |
| 2002 09 06 | 704 | 0.3+ | 0.6+ | 2002 10 30 | 644 | 0.1+ | 0.2− | 2006 07 25 | 224 | 1.1− | 1.6+ |
| 2002 09 06 | 704 | 0.8+ | 0.4+ | 2002 10 30 | 644 | 0.1− | 0.2− | 2006 08 24 | 704 | 0.0 | 0.0 |
| 2002 09 28 | 608 | (2.4− | 1.2−) | 2002 10 30 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 704 | 0.1− | 0.4− |
| 2002 09 28 | 608 | (2.4− | 1.2−) | 2002 11 08 | 704 | 0.4− | 0.4− | 2006 08 24 | 704 | 0.1+ | 0.1− |
| 2002 09 28 | 608 | (2.4− | 1.8−) | 2002 11 08 | 704 | 0.2+ | 0.1− | 2006 08 24 | 704 | 0.2+ | 0.4− |
| 2002 10 04 | 704 | 1.0+ | 0.2+ | 2002 11 08 | 704 | 0.5+ | 0.5+ | 2006 08 29 | 703 | 0.5+ | 0.5+ |
| 2002 10 04 | 704 | 0.3+ | 0.6− | 2002 11 08 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.6− | 0.4+ |
| 2002 10 04 | 704 | 0.1+ | 0.1+ | 2002 11 22 | 644 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.2− | 0.7− |
| 2002 10 04 | 704 | 0.2+ | 0.0 | 2002 11 22 | 644 | 0.1+ | 0.4− | 2006 08 29 | 703 | 0.2− | 0.8− |
| 2002 10 04 | 644 | 0.4− | 0.0 | 2002 11 22 | 644 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.4− |
| 2002 10 04 | 644 | 0.3− | 0.1+ | 2004 01 26 | 699 | 0.9− | 1.5+ | 2006 08 30 | 704 | 0.6− | 0.0 |
| 2002 10 04 | 644 | 0.4− | 0.2+ | 2004 01 26 | 699 | 0.6+ | 0.1+ | 2006 08 30 | 704 | 1.3+ | 0.1+ |
| 2002 10 07 | 699 | 0.1− | 0.4+ | 2004 01 26 | 699 | 0.4+ | 0.5+ | 2006 08 30 | 704 | 0.2− | 0.1+ |
| 2002 10 07 | 699 | 0.4− | 0.3− | 2004 01 26 | 699 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.1+ | 0.0 |
| 2002 10 07 | 699 | 0.6− | 0.6+ | 2004 02 11 | 644 | 0.4+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 1.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 699 | 0.2− | 0.7+ | 2004 02 11 | 644 | 0.1− | 0.7+ | 2006 08 30 | 704 | 2.0− | 1.2+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.2+ | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 08 30 | 704 | 0.7− | 0.7+ | | |
| 2002 10 09 | 704 | 0.1− | 1.0+ | 2004 02 19 | 704 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 09 | 704 | 0.6− | 0.8+ | 2004 02 19 | 704 | 0.6+ | 0.8+ | 2006 09 23 | 691 | 0.3+ | 0.1− | | |
| 2002 10 09 | 704 | 0.7− | 0.8+ | 2004 02 19 | 704 | 0.1+ | 1.2+ | 2006 09 23 | 691 | 0.0 | 0.0 | | |
| 2002 10 09 | 704 | 0.4+ | 0.7+ | 2004 02 19 | 704 | 0.5− | 0.2− | 2006 09 23 | 691 | 0.2− | 0.1− | | |
| 2002 10 12 | 704 | (3.6+ | 0.5+) | 2004 02 22 | 704 | 0.4+ | 0.1− | 2006 10 01 | 691 | 0.3+ | 0.0 | | |
| 2002 10 12 | 704 | (3.5+ | 1.3+) | 2004 02 22 | 704 | 0.3+ | 1.3+ | 2006 10 01 | 691 | 0.2+ | 0.1− | | |
| 2002 10 12 | 704 | (2.6+ | 1.1+) | 2004 02 22 | 704 | 0.2− | 1.0+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |

**(142643)∗ 2002 TS$_{188}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.42891 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23359865 | $\omega$ | 60.08873 | | +0.35587922 | −0.93429573 | |
| $a$ | 2.6110939 | $\Omega$ | 9.13810 | | +0.80532063 | +0.29518987 | |
| $e$ | 0.1775594 | $i$ | 7.60247 | | +0.47413993 | +0.19988603 | |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | (1.0− | 2.4−) | 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.9− | 0.4+ | | |
| 1998 11 16 | 704 | 0.1− | 0.2− | 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 09 19 | 699 | 1.0+ | 0.2− | | |
| 1998 11 16 | 704 | (0.7+ | 2.4−) | 2002 11 24 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 1.0− | 1.4− | | |
| 1998 11 16 | 704 | (3.8− | 0.0 ) | 2002 11 27 | 699 | 0.8+ | 0.1+ | 2006 09 19 | 699 | (0.3− | 1.8−) | | |
| 1998 12 14 | 704 | 0.9− | 0.4+ | 2002 11 27 | 699 | 0.4+ | 0.9− | 2006 09 20 | 704 | 0.5+ | 0.6+ | | |
| 1998 12 14 | 704 | (2.4− | 1.2−) | 2002 11 27 | 699 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.7− | 0.3+ | | |
| 1998 12 14 | 704 | 1.3− | 0.5− | 2002 11 27 | 699 | 0.7+ | 0.0 | 2006 09 20 | 704 | 1.3+ | 0.5+ | | |
| 1998 12 14 | 704 | (5.3− | 0.2+) | 2002 12 02 | 704 | (1.8+ | 0.1+) | 2006 09 20 | 704 | 0.3− | 0.3+ | | |
| 2002 10 04 | 704 | 0.4− | 0.7+ | 2002 12 02 | 704 | 0.9+ | 0.2+ | 2006 09 20 | 704 | 0.7+ | 0.7+ | | |
| 2002 10 04 | 704 | 0.6− | 0.3+ | 2002 12 02 | 704 | (3.1+ | 1.0−) | 2006 09 24 | 691 | 0.3− | 0.1+ | | |
| 2002 10 04 | 704 | 0.8− | 0.1+ | 2002 12 02 | 704 | (1.6+ | 2.7−) | 2006 09 24 | 691 | 0.4− | 0.1+ | | |
| 2002 10 04 | 704 | 0.5− | 0.5+ | 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.5− | 0.4+ | | |
| 2002 10 07 | 699 | 0.9− | 0.3+ | 2002 12 05 | 704 | 0.1+ | 1.1− | 2006 09 25 | G96 | 0.1+ | 0.3− | | |
| 2002 10 07 | 699 | 0.3− | 0.0 | 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.5− | | |
| 2002 10 07 | 699 | 0.7+ | 0.4+ | 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.4− | | |
| 2002 10 07 | 699 | 0.5− | 1.0+ | 2002 12 27 | 644 | 1.0+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.2− | | |
| 2002 10 10 | 704 | 0.8+ | 0.4− | 2002 12 27 | 644 | 0.2+ | 0.1− | 2006 09 28 | 291 | 0.3− | 0.5+ | | |
| 2002 10 10 | 704 | 1.3+ | 0.3+ | 2002 12 27 | 644 | 0.4+ | 0.1− | 2006 09 28 | 291 | 0.4− | 0.3+ | | |
| 2002 10 10 | 704 | 0.3+ | 0.1+ | 2002 12 31 | 704 | 0.7+ | 0.5− | 2006 09 28 | 291 | 0.1− | 0.3+ | | |
| 2002 10 10 | 704 | 0.3− | 0.5+ | 2002 12 31 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 1.4+ | | |
| 2002 10 10 | 704 | 0.6− | 0.7− | 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.2− | 0.5+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.2+ | 0.7+ | 2006 09 28 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 12 | 704 | (1.7+ | 1.0−) | 2003 12 25 | 291 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.7+ | 0.7− | | |
| 2002 10 12 | 704 | 0.3+ | 0.1+ | 2003 12 25 | 291 | 0.8− | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.2+ | | |
| 2002 10 12 | 704 | (1.7+ | 0.4+) | 2003 12 25 | 291 | 0.7− | 0.4+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.4+ | 0.0 | 2004 03 27 | 704 | 0.2− | 0.4− | 2006 09 29 | 704 | 0.3+ | 0.0 | | |
| 2002 11 01 | 644 | 0.1− | 0.7− | 2004 03 27 | 704 | 0.3+ | 1.1− | 2006 09 29 | 704 | 0.8+ | 0.6− | | |
| 2002 11 01 | 644 | 0.2− | 0.5− | 2004 03 27 | 704 | 0.7+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.3− | | |
| 2002 11 01 | 644 | 0.0 | 0.7− | 2004 03 27 | 704 | 0.8+ | 0.7+ | 2006 10 01 | 704 | 0.1+ | 0.3+ | | |
| 2002 11 03 | 704 | 0.2− | 0.7+ | 2004 03 27 | 704 | 0.7− | 0.3− | 2006 10 01 | 704 | 0.5− | 0.5+ | | |
| 2002 11 03 | 704 | 0.1− | 0.4− | 2004 03 29 | 691 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.1+ | | |
| 2002 11 03 | 704 | 0.3− | 0.1+ | 2004 03 29 | 691 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.1+ | | |
| 2002 11 07 | 704 | 0.3− | 0.0 | 2004 03 29 | 691 | 0.5+ | 0.5+ | 2006 10 02 | 691 | 0.3− | 0.3+ | | |
| 2002 11 07 | 704 | 0.1+ | 0.7+ | 2004 04 14 | 691 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2004 04 14 | 691 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.1+ | | |
| 2002 11 07 | 704 | 0.1+ | 0.7+ | 2004 04 14 | 691 | 0.7+ | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.3− | | |
| 2002 11 07 | 704 | 0.3+ | 0.9+ | 2006 09 12 | 703 | (1.5− | 0.8+) | 2006 10 17 | 703 | 0.1+ | 0.6+ | | |
| 2002 11 08 | 704 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.5+ | 0.8− | 2006 10 17 | G96 | 0.0 | 0.5− | | |
| 2002 11 08 | 704 | 0.8− | 0.1+ | 2006 09 12 | 703 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.1− | | |
| 2002 11 08 | 704 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.7+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.1+ | | |
| 2002 11 08 | 704 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2+ | | |
| 2002 11 10 | 704 | 0.1+ | 0.4− | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.0 | | |
| 2002 11 10 | 704 | 1.0+ | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.4− | | |
| 2002 11 10 | 704 | 0.2− | 1.1− | 2006 09 17 | 704 | 0.2+ | 0.3− | 2006 10 19 | G96 | 0.1− | 0.1− | | |
| 2002 11 10 | 704 | 0.2− | 0.1− | 2006 09 17 | 704 | 1.1+ | 1.0− | 2006 10 19 | G96 | 0.2− | 0.3− | | |
| 2002 11 14 | 704 | 0.2− | 0.5+ | 2006 09 17 | 704 | 0.6+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.9+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.1+ | 0.4− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2− | | |
| 2002 11 14 | 704 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2− | | | | | | |

**(142644)∗ 2002 TT$_{188}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.98401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22952245 | $\omega$ | 134.92720 | | +0.98644378 | −0.13516370 | |
| $a$ | 2.6419176 | $\Omega$ | 233.06291 | | +0.09739869 | +0.93863209 | |
| $e$ | 0.2178210 | $i$ | 6.68569 | | +0.13206879 | +0.31733353 | |
| $P$ | 4.29 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1− | 0.3+ | 2002 10 31 | 644 | 0.5+ | 0.3+ | 2005 05 07 | G96 | 0.2+ | 0.3+ | | |
| 2001 05 24 | 807 | 0.5− | 0.5+ | 2002 10 31 | 699 | 0.2+ | 0.6+ | 2005 05 07 | G96 | 0.4+ | 0.1+ | | |
| 2002 09 11 | 049 | (0.9− | 2.5−) | 2002 11 02 | 608 | 0.3− | 0.9− | 2005 05 07 | G96 | 0.2+ | 0.6+ | | |
| 2002 09 11 | 049 | (2.0+ | 2.2−) | 2002 11 02 | 608 | 0.0 | 0.6− | 2005 05 07 | G96 | 0.2+ | 0.5+ | | |
| 2002 09 11 | 049 | 1.3+ | 1.7− | 2002 11 02 | 608 | 0.2− | 0.8− | 2005 06 01 | G96 | 0.1− | 0.7+ | | |
| 2002 10 04 | 704 | (0.7+ | 2.3+) | 2002 11 05 | 704 | 0.6− | 0.2− | 2005 06 01 | G96 | 0.1+ | 0.1− | | |
| 2002 10 04 | 704 | (0.7+ | 3.1+) | 2002 11 05 | 704 | 0.3− | 0.1− | 2005 06 01 | G96 | 0.1+ | 0.3+ | | |
| 2002 10 04 | 704 | (0.6+ | 2.4+) | 2002 11 05 | 704 | 0.4− | 0.2+ | 2005 06 01 | G96 | 0.3+ | 0.3+ | | |
| 2002 10 04 | 704 | (1.7+ | 2.1+) | 2002 11 05 | 704 | 0.0 | 0.0 | 2006 08 27 | 699 | 1.1+ | 0.1+ | | |
| 2002 10 07 | 699 | 0.7+ | 0.9+ | 2002 11 05 | 704 | 0.4− | 0.2− | 2006 08 27 | 699 | 0.7+ | 0.3− | | |
| 2002 10 07 | 699 | 0.5+ | 0.4− | 2002 11 06 | 704 | 0.3− | 1.1+ | 2006 08 27 | 699 | (0.1+ | 2.3+) | | |
| 2002 10 07 | 699 | 0.7+ | 0.4− | 2002 11 06 | 704 | 0.6+ | 0.2+ | 2006 08 27 | 699 | 0.8+ | 0.0 | | |
| 2002 10 07 | 699 | 0.1+ | 0.3+ | 2002 11 06 | 704 | 0.9− | 0.3+ | 2006 08 30 | 699 | 0.9− | 0.1+ | | |
| 2002 10 10 | 704 | 0.6+ | 0.3− | 2002 11 06 | 704 | 0.7− | 0.6+ | 2006 08 30 | 699 | 0.1+ | 0.2− | | |
| 2002 10 10 | 704 | 0.5− | 0.8− | 2002 11 06 | 704 | 0.4− | 0.1+ | 2006 08 30 | 699 | 0.0 | 0.7+ | | |
| 2002 10 10 | 704 | 0.2+ | 1.5+ | 2002 11 10 | 704 | 0.4+ | 0.6− | 2006 08 30 | 699 | 0.2− | 0.2− | | |
| 2002 10 10 | 704 | 0.4+ | 0.8− | 2002 11 10 | 704 | 0.3+ | 0.1− | 2006 09 11 | 703 | 0.3− | 0.1− | | |
| 2002 10 12 | 704 | 0.3+ | 0.3+ | 2002 11 10 | 704 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.8− | 0.1+ | | |
| 2002 10 12 | 704 | 0.0 | 0.8+ | 2002 11 14 | 704 | 0.3− | 0.4+ | 2006 09 11 | 703 | 0.2− | 0.0 | | |
| 2002 10 12 | 704 | 0.7+ | 0.5− | 2002 11 14 | 704 | 0.3− | 0.9+ | 2006 09 11 | 703 | 0.6− | 0.1+ | | |
| 2002 10 12 | 704 | 0.5+ | 0.7+ | 2002 11 14 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.0 | | |
| 2002 10 28 | 608 | 0.1+ | 0.6− | 2002 11 14 | 704 | 0.8− | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.1+ | | |
| 2002 10 28 | 608 | 0.2− | 0.4− | 2002 11 14 | 704 | 0.4− | 0.6− | 2006 09 18 | 703 | 0.3− | 0.4− | | |
| 2002 10 28 | 608 | 0.2− | 0.5− | 2002 12 01 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.4+ | | |
| 2002 10 31 | 699 | 0.0 | 0.4+ | 2002 12 01 | 704 | 0.3− | 0.9− | 2006 09 20 | 699 | 0.3+ | 0.3− | | |
| 2002 10 31 | 699 | 0.4+ | 0.7+ | 2002 12 01 | 704 | 0.5− | 0.6+ | 2006 09 20 | 699 | 0.5+ | 1.0+ | | |
| 2002 10 31 | 699 | 0.7+ | 0.2− | 2002 12 01 | 704 | 0.6+ | 1.3+ | 2006 09 20 | 699 | 0.7− | 0.5− | | |
| 2002 10 31 | 699 | 0.5+ | 0.3+ | 2002 12 09 | 291 | 0.3− | 0.2− | 2006 09 20 | 699 | 0.1− | 0.1+ | | |
| 2002 10 31 | 699 | 0.3+ | 0.3+ | 2002 12 09 | 291 | 0.6− | 0.2− | 2006 09 30 | 699 | 1.1+ | 0.5+ | | |
| 2002 10 31 | 644 | 1.0+ | 0.0 | 2002 12 09 | 291 | 0.7− | 0.1− | 2006 09 30 | 699 | 0.2− | 0.2+ | | |
| 2002 10 31 | 699 | 1.1+ | 0.2+ | 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 09 30 | 699 | 0.6− | 0.8− | | |
| 2002 10 31 | 644 | 1.1+ | 0.1− | 2002 12 10 | 644 | 0.2− | 0.2+ | | | | | | |
| 2002 10 31 | 699 | 0.2+ | 0.7+ | 2002 12 10 | 644 | 0.1− | 0.3+ | | | | | | |

**(142645)∗ 2002 TX$_{188}$ = 1998 WY$_{33}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38062)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.26421 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24223235 | $\omega$ | 196.63477 | | +0.49014350 | −0.85357829 | |
| $a$ | 2.5486760 | $\Omega$ | 224.43998 | | +0.82567964 | +0.51957372 | |
| $e$ | 0.1493264 | $i$ | 14.60359 | | +0.27930714 | −0.03804268 | |
| $P$ | 4.07 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 327 | 1.3− | 0.0 | 2002 12 01 | 704 | 0.3+ | 0.2+ | 2006 10 29 | 704 | 0.6− | 0.7+ | | |
| 1998 09 25 | 327 | 0.6− | 0.4− | 2002 12 01 | 704 | 0.0 | 0.5+ | 2006 10 29 | 704 | (0.8− | 1.6+) | | |
| 1998 09 25 | 327 | 0.2+ | 0.9− | 2002 12 07 | 704 | 1.4+ | 0.1− | 2006 10 29 | 704 | 0.7− | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 699 | 0.7+ | 0.2+ | 2002 12 07 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 704 | (0.7− | 2.0+) | | |
| 1998 11 23 | 699 | 0.2+ | 0.2− | 2002 12 07 | 704 | 0.6+ | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 1998 11 23 | 699 | 1.2+ | 0.6+ | 2002 12 07 | 704 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 1998 11 24 | 704 | 0.1+ | 0.6+ | 2002 12 07 | 704 | 0.9+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 1998 11 24 | 704 | 0.6+ | 1.4− | 2002 12 11 | 704 | 0.7+ | 0.3+ | 2006 11 02 | 704 | 0.1− | 0.6− | | |
| 1998 11 24 | 704 | 0.4− | 1.2− | 2002 12 11 | 704 | 0.7+ | 0.4+ | 2006 11 02 | 704 | 0.2+ | 0.2− | | |
| 1998 11 24 | 704 | 0.0 | 1.6− | 2002 12 11 | 704 | 0.5+ | 0.1− | 2006 11 02 | 704 | 1.0− | 1.0+ | | |
| 1998 11 24 | 704 | 0.9− | 1.1− | 2002 12 11 | 704 | 0.2− | 0.2− | 2006 11 02 | 704 | 1.2− | 0.7+ | | |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2002 12 12 | 608 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2− | | |
| 2002 10 04 | 704 | 1.2− | 0.1− | 2002 12 12 | 608 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.3− | | |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2002 12 12 | 608 | 0.5− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.2− | | |
| 2002 10 04 | 704 | 0.3− | 0.5− | 2003 01 07 | 704 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.4+ | 1.1− | | |
| 2002 10 04 | 704 | 0.1− | 0.4− | 2003 01 07 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.2+ | | |
| 2002 10 07 | 699 | 0.1+ | 0.5− | 2003 01 07 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.4− | | |
| 2002 10 07 | 704 | 0.9− | 0.7− | 2004 03 17 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.6− | | |
| 2002 10 07 | 699 | 0.4− | 0.0 | 2004 03 17 | 704 | 0.8− | 0.9+ | 2006 11 17 | 703 | 0.5− | 0.0 | | |
| 2002 10 07 | 704 | 1.2− | 0.1+ | 2004 03 17 | 704 | 0.1− | 1.0− | 2006 11 17 | 703 | 0.3+ | 0.4− | | |
| 2002 10 07 | 704 | 0.1− | 1.1− | 2004 03 17 | 704 | 0.8− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.2− | | |
| 2002 10 07 | 699 | 0.6+ | 0.7− | 2004 03 26 | 704 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.3− | | |
| 2002 10 07 | 704 | 0.3− | 0.2− | 2004 03 26 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 07 | 699 | 0.0 | 0.2− | 2004 03 26 | 704 | 0.7+ | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.9+ | | |
| 2002 10 07 | 704 | 0.7− | 0.4− | 2004 03 26 | 704 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.5− | | |
| 2002 10 10 | 704 | 1.2− | 0.8− | 2004 04 17 | 704 | 0.2− | 1.3− | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2002 10 10 | 704 | 1.0− | 1.0− | 2004 04 17 | 704 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.6+ | | |
| 2002 10 10 | 704 | 0.5− | 0.5− | 2004 04 17 | 704 | 0.9+ | 0.4+ | 2006 11 19 | 704 | 0.5− | 0.2− | | |
| 2002 10 10 | 704 | 0.8− | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.0 | 0.8+ | | |
| 2002 10 10 | 704 | 0.5− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.4− | 0.2+ | | |
| 2002 10 11 | 704 | 0.9− | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.2− | 0.3+ | | |
| 2002 10 11 | 704 | 0.8− | 0.7− | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 19 | 704 | 1.1− | 1.1+ | | |
| 2002 10 11 | 704 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 1.2+ | 1.0+ | | |
| 2002 10 11 | 704 | 0.9− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5+ | 1.1+ | | |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6− | 1.0+ | | |
| 2002 10 16 | 699 | 0.2+ | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.9+ | | |
| 2002 10 16 | 699 | 0.8+ | 0.7− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.6+ | | |
| 2002 10 16 | 699 | 0.3+ | 0.5− | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.3− | | |
| 2002 10 16 | 699 | 0.6− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− | | |
| 2002 11 03 | 608 | 0.6+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.5+ | 0.1− | | |
| 2002 11 03 | 608 | 0.6+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.2− | | |
| 2002 11 03 | 608 | 0.5+ | 0.3+ | 2006 10 19 | 704 | 1.2− | 0.6− | 2006 11 22 | 683 | 0.6+ | 0.4− | | |
| 2002 11 05 | 644 | 0.0 | 0.2− | 2006 10 19 | 704 | 0.4− | 0.0 | 2006 11 22 | 683 | 0.9+ | 0.6+ | | |
| 2002 11 05 | 644 | 0.2+ | 0.2− | 2006 10 19 | 704 | 0.5+ | 0.1− | 2006 11 22 | 683 | 0.3+ | 0.2− | | |
| 2002 11 05 | 644 | 0.3+ | 0.1− | 2006 10 19 | 704 | 0.1− | 0.1− | 2006 11 23 | 683 | 0.9+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2006 10 19 | 704 | 1.3− | 0.5+ | 2006 11 23 | 683 | 0.1+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.1− | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 26 | 704 | 0.4+ | 1.0+ | | |
| 2002 11 06 | 704 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.3− | 2006 11 26 | 704 | 0.0 | 1.1+ | | |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 26 | 704 | 0.2+ | 0.9+ | | |
| 2002 11 06 | 704 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.0 | 0.1− | | |
| 2002 11 22 | 644 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.2− | 0.4+ | | |
| 2002 11 22 | 644 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.3− | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.2+ | | |
| 2002 11 22 | 644 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.2+ | 1.0+ | 2006 11 28 | 704 | 0.2+ | 0.4− | | |
| 2002 12 01 | 704 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.7+ | 0.5+ | | |
| 2002 12 01 | 704 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2+ | | | | | | |
| 2002 12 01 | 704 | 0.2+ | 0.4+ | 2006 10 29 | 704 | 0.7− | 0.3+ | | | | | | |

**(142646)∗ 2002 TG$_{190}$**

Discovered 2002 Oct. 14 by G. Hug at Farpoint Observatory, Eskridge.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.54027 | | (2000.0) | | | |
| $n$ | 0.22941367 | $\omega$ | 108.33965 | | +0.99196024 | −0.10853132 |
| $a$ | 2.6427526 | $\Omega$ | 257.93034 | | +0.07547604 | +0.92019011 |
| $e$ | 0.0990692 | $i$ | 3.81611 | | +0.10157875 | +0.37612646 |
| $P$ | 4.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 1.0− | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.1− | 0.2+ | | |
| 1995 02 03 | 691 | 0.0 | 0.2− | 2002 12 05 | 704 | 0.4− | 0.6− | 2006 09 19 | 703 | 0.1+ | 0.4+ | | |
| 1995 02 03 | 691 | 0.0 | 0.3− | 2002 12 06 | 699 | 1.4+ | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.6− | | |
| 1997 08 30 | 910 | 0.1+ | 0.1− | 2002 12 06 | 699 | 1.1+ | 1.1+ | 2006 09 25 | 704 | 0.9− | 0.4+ | | |
| 1997 08 30 | 910 | 0.3+ | 0.1+ | 2002 12 06 | 699 | 0.8+ | 0.7− | 2006 09 25 | 704 | 0.6− | 0.8− | | |
| 1997 08 30 | 910 | 0.0 | 0.0 | 2002 12 07 | 704 | 0.0 | 0.3+ | 2006 09 25 | 704 | 1.3− | 0.3+ | | |
| 2002 10 14 | 734 | 0.0 | 0.1+ | 2002 12 07 | 704 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 14 | 734 | 0.6+ | 0.0 | 2002 12 07 | 704 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 14 | 734 | 0.2− | 0.1− | 2002 12 10 | 704 | 0.7− | 0.8+ | 2006 09 29 | 704 | 0.7− | 0.4+ | | |
| 2002 10 15 | 734 | 0.1+ | 0.3+ | 2002 12 10 | 704 | (0.2− | 1.7+) | 2006 09 29 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 15 | 734 | 0.7− | 0.7− | 2002 12 10 | 704 | (1.3− | 2.5+) | 2006 09 29 | 704 | 0.9+ | 0.3− | | |
| 2002 10 15 | 734 | 0.2− | 0.2− | 2002 12 10 | 704 | (0.7− | 2.3+) | 2006 10 03 | 704 | 0.6− | 0.3− | | |
| 2002 10 15 | 734 | 0.0 | 0.1− | 2002 12 11 | 644 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.1− | 0.8+ | | |
| 2002 10 30 | 608 | 0.1− | 0.4− | 2002 12 11 | 644 | 0.3− | 0.1− | 2006 10 03 | 704 | 0.1+ | 0.0 | | |
| 2002 10 30 | 608 | 0.3− | 1.0− | 2002 12 11 | 644 | 0.0 | 0.7+ | 2006 10 03 | G96 | 0.1− | 0.6− | | |
| 2002 10 30 | 608 | 0.7− | 0.8− | 2002 12 27 | 644 | 0.2+ | 0.5+ | 2006 10 03 | G96 | 0.4− | 0.6− | | |
| 2002 11 01 | 644 | 0.3+ | 0.5+ | 2002 12 27 | 644 | 0.2− | 0.2+ | 2006 10 03 | 704 | 0.7− | 0.2+ | | |
| 2002 11 01 | 644 | 0.1+ | 0.7+ | 2002 12 27 | 644 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.5− | | |
| 2002 11 01 | 644 | 0.2+ | 0.7+ | 2002 12 31 | 699 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.5− | | |
| 2002 11 05 | 704 | 0.5+ | 0.4− | 2002 12 31 | 699 | 1.1+ | 0.7+ | 2006 10 10 | 644 | 0.3− | 0.1− | | |
| 2002 11 05 | 704 | (2.0+ | 0.0 ) | 2002 12 31 | 699 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.1+ | | |
| 2002 11 05 | 704 | 0.8+ | 0.2− | 2002 12 31 | 699 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 2002 11 05 | 704 | 1.1+ | 0.6+ | 2005 02 15 | 809 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 1.3− | 0.2− | | |
| 2002 11 05 | 704 | 0.9+ | 0.8+ | 2005 02 15 | 809 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.6+ | 0.5+ | 2005 06 13 | G96 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.0 | | |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.5+ | 0.7+ | 2006 10 17 | 703 | 0.1+ | 1.2− | | |
| 2002 11 06 | 704 | 1.4− | 0.3+ | 2005 06 13 | G96 | 0.2+ | 0.6+ | 2006 10 19 | 683 | 0.5− | 1.0− | | |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.4+ | 0.5+ | 2006 10 19 | 683 | 0.7− | 1.2− | | |
| 2002 11 06 | 704 | 1.1− | 0.5+ | 2006 08 06 | 699 | 1.4+ | 0.8+ | 2006 10 19 | 683 | 0.1− | 1.1− | | |
| 2002 11 13 | 644 | 0.7+ | 0.9+ | 2006 08 06 | 699 | 0.6− | 0.8− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2002 11 13 | 644 | 0.4+ | 1.1+ | 2006 08 06 | 699 | 0.6− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 11 13 | 644 | 0.2+ | 1.0+ | 2006 08 06 | 699 | (1.4− | 2.1+) | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2002 11 14 | 704 | 0.4+ | 0.3− | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 22 | 683 | 0.9+ | 0.6− | | |
| 2002 11 14 | 704 | 0.1+ | 0.8− | 2006 09 14 | 644 | 0.3− | 0.3− | 2006 10 22 | 683 | 0.4− | 0.6+ | | |
| 2002 11 14 | 704 | 0.9+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 22 | 683 | 0.8+ | 0.1− | | |
| 2002 11 14 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 11 06 | 644 | 0.2− | 0.2− | | |
| 2002 11 24 | 644 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.5+ | 0.1− | 2006 11 06 | 644 | 0.2− | 0.2+ | | |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 11 06 | 644 | 0.1− | 0.2− | | |
| 2002 11 24 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 11 06 | 644 | 0.0 | 0.1− | | |
| 2002 11 28 | 699 | 1.0+ | 0.3+ | 2006 09 18 | 704 | (1.6+ | 0.5+) | 2006 11 06 | 644 | 0.2+ | 0.2− | | |
| 2002 11 28 | 699 | 0.8+ | 0.3− | 2006 09 18 | 704 | 0.1− | 0.8+ | 2006 11 06 | 644 | 0.1+ | 0.0 | | |
| 2002 11 28 | 699 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.5− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.5− | | |
| 2002 11 28 | 699 | 1.1+ | 0.5+ | 2006 09 18 | 704 | 0.4+ | 1.3+ | 2006 11 18 | G96 | 0.0 | 0.5− | | |
| 2002 12 02 | 704 | 0.7− | 1.1− | 2006 09 18 | 699 | 0.8+ | 0.5− | 2006 11 18 | G96 | 0.4+ | 0.5− | | |
| 2002 12 02 | 704 | 0.7− | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.4− | | |
| 2002 12 02 | 704 | 1.0− | 0.9+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 1.0− | | |
| 2002 12 05 | 704 | 0.8− | 0.3+ | 2006 09 18 | 699 | 0.6+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.2+ | | |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.4− | | |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.6+ | 2006 11 19 | 704 | (0.6+ | 2.2−) | | |

**(142647)∗ 2002 TH$_{190}$**

Discovered 2002 Oct. 14 by G. Hug at Farpoint Observatory, Eskridge.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.70408 | | (2000.0) | | | |
| $n$ | 0.22409137 | $\omega$ | 116.28748 | | −0.92949773 | −0.33728257 |
| $a$ | 2.6844333 | $\Omega$ | 44.43432 | | +0.21338029 | −0.82181099 |
| $e$ | 0.1346347 | $i$ | 12.30884 | | +0.30083687 | −0.45920276 |
| $P$ | 4.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.5− | 0.7− | 2002 12 11 | 704 | 0.3− | 0.4− | 2004 04 17 | 699 | (0.0 | 2.1+) | | |
| 1998 12 17 | 704 | (2.2− | 2.9−) | 2002 12 11 | 704 | 1.5− | 1.4− | 2004 04 20 | E12 | 1.3− | 1.0+ | | |
| 1998 12 17 | 704 | 1.1+ | 1.1− | 2004 03 13 | 644 | 0.4+ | 0.4+ | 2004 04 20 | E12 | 0.5− | 0.9+ | | |
| 1998 12 17 | 704 | (1.1− | 2.7−) | 2004 03 13 | 644 | 0.0 | 0.2+ | 2004 04 20 | E12 | 0.2− | 0.1− | | |
| 1999 01 09 | 699 | 0.8− | 0.4− | 2004 03 13 | 644 | 0.1+ | 0.3+ | 2004 04 20 | E12 | 0.5− | 0.2− | | |
| 1999 01 09 | 699 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.3− | 0.2− | 2004 04 22 | 704 | 0.2+ | 0.4+ | | |
| 1999 01 09 | 699 | 0.1+ | 0.1+ | 2004 03 16 | 704 | 0.3− | 0.0 | 2004 04 22 | 704 | 0.5+ | 0.2− | | |
| 2002 10 14 | 734 | 0.4− | 0.3+ | 2004 03 16 | 704 | 0.2− | 0.2+ | 2004 04 22 | 704 | 0.6+ | 0.2+ | | |
| 2002 10 14 | 734 | 0.5+ | 0.3− | 2004 03 16 | 704 | 0.3− | 0.9− | 2004 04 22 | 704 | 0.1− | 0.6+ | | |
| 2002 10 14 | 734 | 0.0 | 0.2− | 2004 03 16 | 704 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 734 | 0.5− | 0.9+ | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2002 10 15 | 734 | 0.4+ | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 10 15 | 734 | 0.3+ | 0.3− | 2004 03 23 | 704 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2002 11 07 | 291 | 0.0 | 0.6− | 2004 03 23 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2002 11 07 | 291 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 11 07 | 291 | 0.1+ | 0.2+ | 2004 03 29 | 703 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.4− | 0.9+ | 2004 03 29 | 703 | 1.2− | 1.0− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 11 24 | 644 | 0.3− | 0.8+ | 2004 03 29 | 703 | 1.4− | 0.4− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 11 24 | 644 | 0.2+ | 0.9+ | 2004 03 29 | 703 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.1+ |
| 2002 12 02 | 704 | 0.5+ | 0.6+ | 2004 04 09 | E12 | 0.1− | 1.0− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 12 02 | 704 | 0.0 | 0.0 | 2004 04 09 | E12 | 0.5+ | 0.6− | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2002 12 02 | 704 | 0.1+ | 0.4+ | 2004 04 09 | E12 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 12 02 | 704 | 0.0 | 0.6+ | 2004 04 09 | E12 | 0.0 | 0.9− | 2006 11 18 | G96 | 0.3− | 0.3− |
| 2002 12 06 | 704 | 0.5+ | 0.1− | 2004 04 15 | 644 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.6+ | 0.5+ | 2004 04 15 | 644 | 0.5+ | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2002 12 06 | 704 | 0.1+ | 1.3+ | 2004 04 15 | 644 | 0.5+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.7− | 0.3− | 2004 04 17 | 699 | 0.9+ | 0.7+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2004 04 17 | 699 | 0.9+ | 1.1− | | | | |
| 2002 12 11 | 704 | 0.5− | 0.4− | 2004 04 17 | 699 | 0.5+ | 0.5− | | | | |

**(142648)∗ 2002 TC$_{191}$**

Discovered 2002 Oct. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.42029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21385046 | $\omega$ | 145.91591 | | −0.07150834 | −0.98327530 | |
| $a$ | 2.7694653 | $\Omega$ | 307.60836 | | +0.86152014 | +0.02374183 | |
| $e$ | 0.0815056 | $i$ | 12.20654 | | +0.50266252 | −0.18057135 | |
| $P$ | 4.61 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.4+ | 0.5+ | 2002 12 07 | 704 | 0.8+ | 0.0 | 2004 03 15 | 703 | 0.3− | 0.1− |
| 2001 08 16 | 704 | 0.7− | 0.5− | 2002 12 07 | 704 | 1.1+ | 0.3+ | 2004 03 15 | 703 | 0.1+ | 0.0 |
| 2001 08 16 | 704 | 1.0− | 0.3+ | 2002 12 07 | 704 | 0.2+ | 0.4+ | 2004 03 16 | 704 | 0.6+ | 0.3+ |
| 2001 08 23 | 691 | 0.2− | 0.2+ | 2002 12 07 | 704 | 0.5+ | 0.8+ | 2004 03 16 | 704 | 0.1+ | 0.0 |
| 2001 08 23 | 691 | 0.1+ | 0.1+ | 2002 12 09 | 699 | 0.7+ | 0.1− | 2004 03 16 | 704 | 0.0 | 0.5+ |
| 2001 08 23 | 691 | 0.5+ | 0.0 | 2002 12 09 | 699 | 0.4+ | 0.9− | 2004 03 16 | 704 | 0.0 | 0.4+ |
| 2002 10 01 | 704 | 0.3+ | 0.0 | 2002 12 09 | 699 | 0.3+ | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.2+ |
| 2002 10 01 | 704 | 0.4+ | 0.5− | 2002 12 09 | 699 | 1.0+ | 0.2+ | 2004 03 27 | 703 | 0.5− | 0.1+ |
| 2002 10 01 | 704 | 0.1− | 0.5− | 2002 12 28 | 699 | 0.1− | 0.3+ | 2004 03 27 | 703 | 0.1+ | 0.6+ |
| 2002 10 05 | 699 | 0.1− | 0.9+ | 2002 12 28 | 699 | 0.4− | 0.3− | 2004 03 27 | 703 | 0.5− | 0.5+ |
| 2002 10 05 | 699 | 0.1+ | 0.7+ | 2002 12 28 | 699 | 0.4− | 0.3+ | 2004 03 27 | 703 | 0.7+ | 0.5+ |
| 2002 10 05 | 699 | 0.9− | 0.8+ | 2002 12 28 | 699 | 0.4+ | 1.3+ | 2006 08 18 | 644 | 0.1+ | 0.4+ |
| 2002 10 05 | 699 | 0.4− | 0.2+ | 2003 12 21 | 703 | (2.8+ | 1.5+) | 2006 08 18 | 644 | 0.1+ | 0.6+ |
| 2002 10 06 | 704 | 0.3+ | 0.1+ | 2003 12 21 | 703 | (2.5+ | 2.7+) | 2006 08 18 | 644 | 0.1− | 0.3+ |
| 2002 10 06 | 704 | 0.1− | 0.4+ | 2003 12 21 | 703 | 1.4+ | 0.9+ | 2006 08 19 | 644 | 0.1+ | 0.6+ |
| 2002 10 06 | 704 | 0.5+ | 0.1+ | 2003 12 21 | 703 | (3.5− | 0.5−) | 2006 08 19 | 644 | 0.2− | 0.6+ |
| 2002 10 06 | 704 | 0.1+ | 0.3+ | 2004 01 23 | 704 | 1.0+ | 0.4+ | 2006 08 19 | 644 | 0.0 | 0.5+ |
| 2002 10 06 | 704 | 0.1− | 0.2− | 2004 01 23 | 704 | 0.3− | 0.4− | 2006 08 22 | 644 | 0.1− | 0.4+ |
| 2002 10 31 | 704 | 1.4− | 0.2− | 2004 01 23 | 704 | 0.8+ | 0.4− | 2006 08 22 | 644 | 0.1− | 0.5+ |
| 2002 10 31 | 704 | 0.6− | 0.1− | 2004 01 23 | 704 | 0.2+ | 0.6− | 2006 08 22 | 644 | 0.0 | 0.4+ |
| 2002 10 31 | 704 | 1.2− | 0.3− | 2004 01 28 | 704 | 0.2+ | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.3+ |
| 2002 10 31 | 704 | 1.5− | 0.6− | 2004 01 28 | 704 | 0.3+ | 0.4+ | 2006 08 22 | 644 | 0.3+ | 0.6+ |
| 2002 10 31 | 704 | 1.0− | 0.2− | 2004 01 28 | 704 | 0.3+ | 0.3− | 2006 08 22 | 644 | 0.1+ | 0.3+ |
| 2002 11 07 | 699 | 0.1+ | 0.5+ | 2004 01 28 | 704 | 0.3+ | 0.5− | 2006 08 29 | 703 | 0.8− | 0.0 |
| 2002 11 07 | 699 | 0.1− | 0.3+ | 2004 01 28 | 704 | 0.2+ | 0.6− | 2006 08 29 | 703 | 0.6− | 0.2+ |
| 2002 11 07 | 699 | 0.1− | 0.4+ | 2004 02 18 | 608 | 0.3+ | 1.2+ | 2006 08 29 | 703 | 0.9− | 0.6+ |
| 2002 11 07 | 699 | 0.3− | 0.1+ | 2004 02 18 | 608 | 0.2− | 1.1+ | 2006 08 29 | 703 | 0.3− | 0.1− |
| 2002 11 08 | 704 | 0.8− | 0.8− | 2004 02 18 | 608 | 0.2+ | 0.9+ | 2006 08 30 | 699 | 1.5− | 1.7+ |
| 2002 11 08 | 704 | 0.3− | 0.5+ | 2004 02 19 | 704 | 0.1− | 0.8+ | 2006 08 30 | 699 | 0.1+ | 0.1+ |
| 2002 11 08 | 704 | 0.1+ | 0.6+ | 2004 02 19 | 704 | 0.6− | 0.8+ | 2006 08 30 | 699 | 0.3+ | 0.6+ |
| 2002 11 08 | 704 | 1.4− | 0.6+ | 2004 02 19 | 704 | 0.0 | 0.6+ | 2006 08 30 | 699 | 0.7+ | 0.3+ |
| 2002 11 15 | 704 | 0.6+ | 1.3− | 2004 02 19 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.8− |
| 2002 11 15 | 704 | 1.0+ | 1.3− | 2004 02 19 | 704 | 0.3− | 0.9+ | 2006 09 18 | 703 | 0.3+ | 0.4− |
| 2002 11 15 | 704 | 0.8+ | 1.3− | 2004 03 01 | 703 | 0.5+ | 1.0− | 2006 09 18 | 703 | 0.8− | 0.1+ |
| 2002 11 15 | 704 | 0.3+ | 0.9− | 2004 03 01 | 703 | 1.3+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.2− |
| 2002 11 15 | 704 | 0.4+ | 1.3− | 2004 03 01 | 703 | 0.6− | 0.4− | 2006 09 26 | 703 | 0.5− | 0.1− |
| 2002 11 25 | 644 | 0.2+ | 0.8+ | 2004 03 01 | 703 | (0.3− | 3.8−) | 2006 09 26 | 703 | 0.2− | 0.7− |
| 2002 11 25 | 644 | 0.2+ | 0.6+ | 2004 03 15 | 703 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.6+ |
| 2002 11 25 | 644 | 0.2+ | 0.8+ | 2004 03 15 | 703 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.8− |

**(142649)∗ 2002 TA$_{192}$**

Discovered 2002 Oct. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.38561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23951208 | $\omega$ | 48.08972 | | +0.88952129 | −0.45083004 | |
| $a$ | 2.5679374 | $\Omega$ | 338.38406 | | +0.33637969 | +0.75608905 | |
| $e$ | 0.1812045 | $i$ | 11.61845 | | +0.30919343 | +0.47442768 | |
| $P$ | 4.12 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.2− | 0.0 | 2002 12 02 | 704 | 0.8+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.3+ |
| 2000 02 12 | 645 | 0.2− | 0.1+ | 2002 12 02 | 704 | 0.4+ | 0.8− | 2006 09 19 | 699 | 0.6− | 0.8+ |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2004 02 17 | 291 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.6− | 0.1− |
| 2000 03 03 | 645 | 0.3+ | 0.0 | 2004 02 17 | 291 | 0.2+ | 0.0 | 2006 09 27 | 699 | 0.4+ | 0.2+ |
| 2002 10 05 | 699 | 0.7− | 0.4+ | 2004 02 17 | 291 | 0.3+ | 0.3+ | 2006 09 27 | 699 | 0.5+ | 0.2− |
| 2002 10 05 | 699 | 0.4− | 0.4− | 2004 02 26 | 704 | 0.2− | 1.1+ | 2006 09 27 | 699 | 0.1+ | 0.2− |
| 2002 10 05 | 699 | 0.6− | 0.3− | 2004 02 26 | 704 | (1.7+ | 1.3+) | 2006 09 27 | 699 | 0.2− | 0.2+ |
| 2002 10 05 | 699 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.5+ |
| 2002 10 06 | 704 | 0.3+ | 0.0 | 2004 02 26 | 704 | 1.3+ | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.6− |
| 2002 10 06 | 704 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.6− | 0.5+ | 2006 09 27 | 703 | 0.9− | 0.3− |
| 2002 10 06 | 704 | 0.1− | 0.7− | 2006 08 29 | 703 | 0.5− | 0.7+ | 2006 09 27 | 703 | (3.0− | 0.9−) |
| 2002 10 06 | 704 | 0.3+ | 0.3− | 2006 08 29 | 703 | 1.3− | 0.3− | 2006 10 03 | 704 | 0.1+ | 0.8+ |
| 2002 10 06 | 704 | 0.4+ | 0.1+ | 2006 08 29 | 703 | 0.4+ | 0.3+ | 2006 10 03 | 704 | 0.5+ | 0.5+ |
| 2002 10 10 | 704 | (1.2+ | 3.8+) | 2006 08 29 | 699 | 0.9+ | 0.3+ | 2006 10 03 | 704 | 0.5+ | 0.2+ |
| 2002 10 10 | 704 | 0.2+ | 1.0+ | 2006 08 29 | 699 | 0.2− | 0.3− | 2006 10 03 | 704 | 0.4+ | 1.0+ |
| 2002 10 10 | 704 | (1.1+ | 2.4+) | 2006 08 29 | 699 | 0.7− | 0.8+ | 2006 10 03 | 704 | 0.6− | 1.4+ |
| 2002 10 10 | 704 | (0.5+ | 2.7+) | 2006 08 29 | 699 | 0.2− | 0.4− | 2006 10 19 | 703 | 0.5− | 0.2+ |
| 2002 11 01 | 704 | (1.2+ | 1.6−) | 2006 08 30 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.9− |
| 2002 11 01 | 704 | (1.6+ | 0.6−) | 2006 08 30 | 704 | 0.3+ | 0.8+ | 2006 10 19 | 703 | (0.9− | 1.7−) |
| 2002 11 01 | 704 | 0.9+ | 1.0+ | 2006 08 30 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2002 11 08 | 704 | (2.0− | 0.4+) | 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2002 11 08 | 704 | (2.5− | 0.2+) | 2006 08 30 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 11 08 | 704 | 1.3− | 0.4− | 2006 09 16 | 703 | 0.8− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2002 11 14 | 644 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 10 24 | 644 | 0.2+ | 0.1− |
| 2002 11 14 | 644 | 0.4+ | 0.2− | 2006 09 16 | 703 | 0.5− | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 11 14 | 644 | 0.4+ | 0.3− | 2006 09 16 | 703 | 0.7− | 0.7− | 2006 10 24 | 644 | 0.2+ | 0.3− |
| 2002 12 02 | 704 | 0.1− | 0.5− | 2006 09 19 | 699 | 0.3+ | 0.1+ | | | | |

**(142650)∗ 2002 TH$_{192}$**

Discovered 2002 Oct. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.80853 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23736303 | $\omega$ | 93.88788 | | +0.44731838 | −0.88824959 | |
| $a$ | 2.5834139 | $\Omega$ | 328.85657 | | +0.71927550 | +0.42671749 | |
| $e$ | 0.2437022 | $i$ | 11.65653 | | +0.53155340 | +0.17007309 | |
| $P$ | 4.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 0.4− | 0.2− | 2002 11 07 | 699 | 0.2− | 0.3− | 2006 08 29 | 703 | 0.5− | 0.4+ |
| 1998 11 16 | 704 | 0.2− | 0.4− | 2002 11 07 | 699 | 0.4+ | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.4+ |
| 1998 11 16 | 704 | 0.0 | 0.5− | 2002 11 07 | 699 | 0.4+ | 0.0 | 2006 08 29 | 703 | 0.5− | 0.0 |
| 1998 11 16 | 704 | (4.4− | 1.7+) | 2002 11 07 | 699 | 0.6− | 0.5− | 2006 08 29 | 703 | 0.5− | 0.1− |
| 1998 12 12 | 704 | 1.4+ | 0.1− | 2002 11 12 | 699 | 0.1− | 0.4− | 2006 08 29 | 699 | 0.1+ | 0.2+ |
| 1998 12 12 | 704 | 0.1+ | 0.2− | 2002 11 12 | 699 | 0.1− | 0.3+ | 2006 08 29 | 699 | 0.2− | 0.1+ |
| 1998 12 12 | 704 | 0.4− | 0.1− | 2002 11 12 | 699 | 0.1− | 0.2− | 2006 08 29 | 699 | 1.2+ | 0.1− |
| 1998 12 12 | 704 | (4.5− | 2.6−) | 2002 11 12 | 699 | 0.4− | 0.3+ | 2006 08 29 | 699 | 0.5− | 1.0+ |
| 2000 05 03 | 645 | 0.0 | 0.1+ | 2002 11 15 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2000 05 03 | 645 | 0.1+ | 0.1+ | 2002 11 15 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.2+ |
| 2002 10 05 | 699 | 0.2+ | 0.1− | 2002 11 15 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 699 | 0.1+ | 0.2− | 2002 11 15 | 704 | 0.4+ | 1.2+ | 2006 09 19 | 699 | 0.3− | 0.7+ |
| 2002 10 05 | 699 | 0.4+ | 0.3− | 2002 11 15 | 704 | 0.1+ | 1.0+ | 2006 09 27 | 703 | 0.1+ | 0.2− |
| 2002 10 05 | 699 | 0.1− | 0.1+ | 2002 11 25 | 644 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.2+ | 0.6− |
| 2002 10 06 | 704 | (1.6− | 1.0+) | 2002 11 25 | 644 | 0.3− | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.5− |
| 2002 10 06 | 704 | 0.8− | 0.5− | 2002 11 25 | 644 | 0.4− | 0.1− | 2006 09 27 | 703 | 0.4− | 0.4− |
| 2002 10 06 | 704 | 0.9− | 0.6+ | 2002 12 03 | 644 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.8+ | 0.8+ |
| 2002 10 06 | 704 | (2.4− | 0.5−) | 2002 12 03 | 644 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.4+ | 0.3− |
| 2002 10 06 | 704 | 0.8− | 0.6− | 2002 12 03 | 644 | 0.3+ | 0.1− | 2006 10 03 | 704 | 0.3− | 0.5+ |
| 2002 10 15 | 704 | 0.1+ | 0.6− | 2002 12 07 | 704 | 0.7− | 0.3+ | 2006 10 03 | 704 | 0.1− | 0.2− |
| 2002 10 15 | 704 | 0.4+ | 0.4− | 2002 12 07 | 704 | 0.3− | 0.4+ | 2006 10 03 | 704 | 0.4+ | 1.1+ |
| 2002 10 15 | 704 | 0.0 | 0.2− | 2002 12 07 | 704 | 1.0− | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2002 10 15 | 704 | 0.1+ | 0.1+ | 2002 12 07 | 704 | 0.9− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2002 10 15 | 704 | 0.5+ | 0.7+ | 2002 12 07 | 704 | 1.0− | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2002 10 20 | 644 | 0.1− | 0.2+ | 2002 12 11 | 699 | 0.2+ | 0.3− | 2006 10 20 | 703 | 0.2+ | 0.4− |
| 2002 10 20 | 644 | 0.0 | 0.1+ | 2002 12 11 | 699 | 0.0 | 0.4+ | 2006 10 20 | 703 | 0.4− | 1.0− |
| 2002 10 20 | 644 | 0.0 | 0.0 | 2002 12 11 | 699 | 0.1+ | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.4− |
| 2002 10 31 | 704 | 0.6+ | 0.1+ | 2002 12 11 | 699 | 0.5− | 0.7− | 2006 10 20 | 703 | 0.1+ | 0.7− |
| 2002 10 31 | 704 | 1.0+ | 0.0 | 2002 12 28 | 699 | 0.0 | 0.7− | 2006 10 26 | 704 | 0.8+ | 0.5− |
| 2002 10 31 | 704 | 0.1+ | 0.3+ | 2002 12 28 | 699 | 0.2− | 0.1+ | 2006 10 26 | 704 | 0.6+ | 0.5+ |
| 2002 10 31 | 704 | 0.3+ | 0.0 | 2002 12 28 | 699 | 0.6− | 0.1+ | 2006 10 26 | 704 | 0.3− | 0.4− |
| 2002 10 31 | 704 | 0.6+ | 0.2+ | 2002 12 28 | 699 | 0.1− | 0.5+ | 2006 10 26 | 704 | 0.3− | 0.0 |

**(142651)∗ 2002 TR$_{192}$**

Discovered 2002 Oct. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.13415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22751840 | $\omega$ | 18.22341 | | +0.27151335 | +0.93582117 | |
| $a$ | 2.6574088 | $\Omega$ | 268.00814 | | −0.90863197 | +0.17225709 | |
| $e$ | 0.1657163 | $i$ | 12.99704 | | −0.31728292 | +0.30751622 | |
| $P$ | 4.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 13 | 691 | 0.0 | 0.5+ | 2002 12 05 | 704 | 0.8− | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.2+ |
| 1997 07 13 | 691 | 0.4− | 0.6+ | 2002 12 05 | 704 | (2.2− | 1.0+) | 2006 09 16 | 703 | 0.4− | 0.2+ |
| 1997 07 13 | 691 | 0.3− | 0.6+ | 2002 12 05 | 704 | (1.4− | 1.9−) | 2006 09 16 | 703 | 0.3+ | 0.2+ |
| 2000 02 08 | 645 | 0.0 | 0.2+ | 2002 12 05 | 704 | 1.4− | 0.2+ | 2006 09 22 | 699 | 0.5+ | 0.4− |
| 2000 02 08 | 645 | 0.0 | 0.1+ | 2002 12 31 | 704 | 1.4− | 1.3− | 2006 09 22 | 699 | 0.2− | 0.7+ |
| 2000 03 04 | 645 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 0.2− | 0.5+ | 2006 09 22 | 699 | 0.0 | 0.4− |
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.9+ | 0.0 | 2006 09 22 | 699 | 0.3+ | 0.6+ |
| 2002 10 05 | 699 | 1.0− | 0.2+ | 2005 03 18 | E12 | 0.5− | 0.6− | 2006 09 28 | 703 | 0.0 | 0.7− |
| 2002 10 05 | 699 | 0.2+ | 0.1− | 2005 03 18 | E12 | 0.6+ | 0.1+ | 2006 09 28 | 703 | 0.3+ | 0.3− |
| 2002 10 05 | 699 | 0.4− | 0.6+ | 2005 03 18 | E12 | 0.7− | 0.1+ | 2006 09 28 | 703 | (1.6+ | 0.4−) |
| 2002 10 05 | 699 | 0.5− | 0.3− | 2005 03 18 | E12 | 0.7− | 0.3+ | 2006 09 28 | 703 | 0.3+ | 0.0 |
| 2002 10 06 | 704 | 0.6+ | 0.7+ | 2005 04 09 | E12 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.3+ |
| 2002 10 06 | 704 | 0.4− | 0.7+ | 2005 04 09 | E12 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.7+ | 0.4− |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2005 04 09 | E12 | 0.1+ | 0.5+ | 2006 09 28 | 703 | 0.7− | 0.1− |
| 2002 10 06 | 704 | 0.5+ | 0.6+ | 2005 04 09 | E12 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.1− |
| 2002 10 06 | 704 | 0.8− | 0.6+ | 2005 04 19 | E12 | 0.7+ | 0.5+ | 2006 10 20 | 703 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.2+ | 2005 04 19 | E12 | 0.4+ | 0.2+ | 2006 10 20 | 703 | 0.3− | 0.3− |
| 2002 11 07 | 704 | 0.0 | 0.1− | 2005 04 19 | E12 | 0.3+ | 0.6+ | 2006 10 20 | 703 | 0.6+ | 0.3− |
| 2002 11 07 | 704 | 0.7+ | 0.0 | 2005 04 19 | E12 | 0.2+ | 0.6+ | 2006 10 20 | 703 | 0.4+ | 0.6− |
| 2002 11 07 | 704 | (1.7+ | 0.1−) | 2005 06 08 | E12 | 0.3− | 0.6+ | 2006 10 31 | 703 | 0.2− | 1.2+ |
| 2002 11 14 | 644 | 0.1+ | 0.3+ | 2005 06 08 | E12 | 0.6+ | 1.2+ | 2006 10 31 | 703 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | (2.2− | 0.4+) | 2005 06 08 | E12 | 0.1+ | 1.2+ | 2006 10 31 | 703 | 0.2− | 0.7+ |
| 2002 11 14 | 644 | 0.0 | 0.3+ | 2005 06 26 | E12 | 0.2− | 0.1+ | 2006 10 31 | 703 | 0.4− | 0.2− |
| 2002 11 14 | 704 | 1.3− | 1.2+ | 2005 06 26 | E12 | 0.3+ | 0.5+ | 2006 11 25 | 703 | 0.0 | 1.4+ |
| 2002 11 14 | 644 | 0.0 | 0.4+ | 2005 06 26 | E12 | 0.5+ | 0.4+ | 2006 11 25 | 703 | 0.2− | 0.0 |
| 2002 11 14 | 704 | 0.4+ | 0.5+ | 2005 06 26 | E12 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.4− | 0.9+ |
| 2002 11 14 | 704 | 1.2− | 1.0+ | 2006 09 16 | 703 | 0.4+ | 0.3+ | 2006 11 25 | 703 | 0.0 | 0.5+ |

**(142652)∗ 2002 TY$_{196}$ = 2001 KE$_{63}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 61449)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.21830 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23096288 | $\omega$ | 82.83210 | | +0.44605131 | +0.89293811 | |
| $a$ | 2.6309217 | $\Omega$ | 213.87018 | | −0.85819516 | +0.40742547 | |
| $e$ | 0.1068351 | $i$ | 6.26579 | | −0.25404586 | +0.19148370 | |
| $P$ | 4.27 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.6− | 1.2+ | 2005 03 17 | G96 | 0.4− | 0.3− | 2006 08 29 | 703 | 0.1− | 1.1− |
| 2001 05 18 | 704 | 0.3− | 0.5+ | 2005 03 17 | G96 | 0.6− | 0.1+ | 2006 08 29 | 703 | 1.0− | 0.1− |
| 2001 05 18 | 704 | 0.1− | 0.5+ | 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.0 |
| 2001 05 22 | 691 | 0.1− | 0.1+ | 2005 04 11 | 691 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.1− | 1.0− |
| 2001 05 22 | 691 | 0.2+ | 0.0 | 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.5− | 0.4+ |
| 2001 05 22 | 691 | 0.0 | 0.3− | 2005 04 12 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.8− | 1.2+ | 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.9− | 1.1+ |
| 2002 10 04 | 704 | 0.8− | 1.1+ | 2005 04 12 | 704 | 0.5+ | 1.3+ | 2006 08 30 | 704 | 0.2− | 1.2+ |
| 2002 10 04 | 704 | 0.3− | 1.0+ | 2005 04 12 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.9+ |
| 2002 10 04 | 704 | (0.4+ | 2.2+) | 2005 04 12 | 704 | 0.3− | 0.6+ | 2006 09 12 | 703 | 0.8− | 0.6− |
| 2002 10 04 | 704 | 0.1+ | 1.2+ | 2005 04 12 | 704 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.1− |
| 2002 10 07 | 704 | 0.5+ | 0.5+ | 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 09 12 | 703 | (1.9− | 0.1+) |
| 2002 10 07 | 704 | 0.8+ | 0.0 | 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.1− | 0.3+ |
| 2002 10 07 | 704 | 0.3+ | 1.1+ | 2005 04 15 | 691 | 0.4− | 0.2− | 2006 09 16 | 699 | 0.2+ | 0.9+ |
| 2002 10 09 | 704 | 0.8− | 0.9+ | 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.2+ | 0.5− |
| 2002 10 09 | 704 | 0.2− | 0.9+ | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.9+ | 0.3+ |
| 2002 10 09 | 704 | 0.0 | 1.3+ | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 0.2+ |
| 2002 10 09 | 704 | 0.8− | 0.4+ | 2005 04 18 | 704 | 0.5+ | 0.9− | 2006 09 18 | 703 | 0.6− | 0.7− |
| 2002 10 09 | 704 | 0.8− | 0.0 | 2005 04 18 | 704 | 0.1+ | 0.6− | 2006 09 18 | 703 | (0.2− | 1.8−) |
| 2002 10 12 | 704 | 0.9+ | 0.5+ | 2005 04 18 | 704 | 0.7+ | 0.6− | 2006 09 18 | 703 | 0.3+ | 0.3− |
| 2002 10 12 | 704 | 0.4+ | 0.1+ | 2005 04 18 | 704 | 0.9+ | 0.3− | 2006 09 30 | 699 | 0.6− | 0.0 |
| 2002 10 12 | 704 | 0.6− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 30 | 699 | 0.5+ | 0.0 |
| 2002 10 12 | 704 | 0.8+ | 0.2− | 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 30 | 699 | 0.5+ | 0.2+ |
| 2003 12 24 | 413 | 0.1− | 0.6+ | 2006 08 18 | 644 | 0.6− | 0.5− | 2006 09 30 | 699 | 0.2− | 0.7− |
| 2003 12 24 | 413 | 0.1− | 0.7+ | 2006 08 24 | 704 | 0.5− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.3+ |
| 2003 12 24 | 413 | 0.1− | 0.6+ | 2006 08 24 | 704 | 0.3+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.6+ |
| 2003 12 24 | 413 | 0.2− | 0.8+ | 2006 08 24 | 704 | 0.1+ | 1.1− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2003 12 24 | 413 | 0.0 | 0.7+ | 2006 08 27 | 699 | 0.9− | 0.7+ | 2006 10 22 | 703 | (3.1+ | 1.8+) |
| 2003 12 24 | 413 | 0.1− | 0.7+ | 2006 08 27 | 699 | 1.2+ | 1.0+ | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2005 03 17 | G96 | 0.7− | 0.2+ | 2006 08 27 | 699 | (1.5+ | 0.2−) | 2006 10 22 | 703 | 1.0+ | 0.7+ |
| 2005 03 17 | G96 | 0.6− | 0.1− | 2006 08 27 | 699 | (0.6− | 2.6−) | 2006 10 22 | 703 | 0.9− | 2.9− |

**(142653)∗ 2002 TM$_{197}$ = 2000 EW$_{83}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.82196 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23473309 | $\omega$ | 54.50421 | | +0.50582213 | −0.86251349 | |
| $a$ | 2.6026744 | $\Omega$ | 5.17455 | | +0.72951992 | +0.41864448 | |
| $e$ | 0.0265565 | $i$ | 9.34478 | | +0.46037449 | +0.28426622 | |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.5− | 0.4− | 2004 02 15 | 704 | 0.8+ | 0.2+ | 2006 09 19 | 703 | 0.9− | 0.9− |
| 2000 03 05 | 704 | 0.2− | 0.7+ | 2004 02 15 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.6− |
| 2000 03 05 | 704 | 0.5− | 1.6+ | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | (2.1− | 0.8−) |
| 2000 03 12 | 704 | 0.5+ | 0.8+ | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 09 19 | 699 | 1.0− | 0.3+ |
| 2000 03 12 | 704 | 1.2+ | 0.6+ | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 09 19 | 699 | (1.7− | 0.6+) |
| 2000 03 12 | 704 | 1.0+ | 0.5+ | 2004 03 18 | 645 | 0.1− | 0.0 | 2006 09 25 | 699 | (1.5+ | 1.1−) |
| 2000 03 12 | 704 | 0.5+ | 0.4+ | 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.3− | 0.6+ |
| 2000 03 12 | 704 | 0.6+ | 0.6+ | 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.1+ | 0.3− | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | (0.4+ | 1.7+) |
| 2002 10 04 | 704 | 0.1+ | 1.3− | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.7− | 1.4+ |
| 2002 10 04 | 704 | 0.8+ | 0.4+ | 2006 08 28 | 703 | 0.4+ | 1.0− | 2006 09 26 | 691 | 0.4+ | 0.4+ |
| 2002 10 04 | 704 | 0.0 | 1.2− | 2006 08 28 | 703 | 1.1+ | 1.1− | 2006 09 26 | 691 | 1.4+ | 0.4− |
| 2002 10 04 | 644 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.4+ | 0.3− | 2006 09 30 | 703 | (1.8− | 0.6−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.4− | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.0 |
| 2002 10 04 | 644 | 0.4− | 0.6+ | 2006 09 12 | 703 | 1.1+ | 0.6+ | 2006 09 30 | 703 | 0.9− | 0.1− |
| 2002 10 07 | 704 | 0.4− | 0.1− | 2006 09 12 | 703 | 0.4− | 0.0 | 2006 09 30 | 703 | 1.0− | 0.0 |
| 2002 10 07 | 704 | 0.4+ | 0.6+ | 2006 09 12 | 703 | (1.5− | 0.2+) | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 09 12 | 703 | 1.2+ | 0.8− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 10 07 | 704 | 0.8− | 0.4+ | 2006 09 14 | 644 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 10 12 | 704 | 0.5+ | 0.8+ | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.9+ | 0.5+ | 2006 09 16 | 699 | 0.0 | 1.4+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2002 10 12 | 704 | 0.8− | 0.4+ | 2006 09 16 | 699 | 1.2− | 0.7− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2004 02 11 | 691 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.7+ | 0.7− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.6+ | 0.5+ | 2006 11 11 | G96 | 0.5− | 0.7− |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | (2.9+ | 1.7−) | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2004 02 15 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.9− | 1.1− | 2006 11 11 | G96 | 0.3+ | 0.7− |
| 2004 02 15 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.9− | 0.8− | | | | |

**(142654)∗ 2002 TP$_{200}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.37925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27916836 | $\omega$ | 238.67991 | | −0.34888020 | −0.93332600 | |
| $a$ | 2.3185969 | $\Omega$ | 231.97799 | | +0.89225238 | −0.30313278 | |
| $e$ | 0.0558088 | $i$ | 6.17706 | | +0.28665013 | −0.19238790 | |
| $P$ | 3.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.4− | 0.5− | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2004 04 14 | 699 | 0.4+ | 0.6− |
| 2000 01 05 | 704 | 0.1+ | 0.4+ | 2002 10 12 | 704 | (1.0+ | 1.7−) | 2004 04 14 | 699 | 0.7+ | 1.0+ |
| 2000 01 05 | 704 | 0.0 | 0.1+ | 2002 10 12 | 704 | 0.1+ | 0.1+ | 2004 04 16 | 704 | 0.5+ | 0.7+ |
| 2000 01 05 | 704 | 0.5+ | 0.5+ | 2002 10 12 | 704 | 0.2+ | 0.3− | 2004 04 16 | 704 | 0.4+ | 1.1+ |
| 2000 01 05 | 704 | 0.1+ | 0.3+ | 2002 10 12 | 704 | 0.2− | 0.4+ | 2004 04 16 | 704 | 0.6+ | 0.8+ |
| 2002 09 10 | 608 | 0.7− | 0.5− | 2002 10 12 | 704 | 0.6+ | 0.6+ | 2004 04 19 | 704 | 0.0 | 0.4+ |
| 2002 09 10 | 608 | 0.4− | 0.4− | 2002 10 12 | 704 | 1.3+ | 1.3+ | 2004 04 19 | 704 | 1.4+ | 0.7+ |
| 2002 09 10 | 608 | 0.8− | 0.1− | 2002 10 12 | 704 | 0.3+ | 0.6− | 2004 04 19 | 704 | 0.1− | 0.6+ |
| 2002 10 04 | 704 | 1.2− | 0.6+ | 2002 10 12 | 704 | 0.3− | 1.4− | 2004 04 19 | 704 | 0.4+ | 0.9+ |
| 2002 10 04 | 704 | (2.1+ | 2.5+) | 2002 10 28 | 608 | 0.7− | 0.3+ | 2004 04 19 | 704 | 1.1+ | 1.4+ |
| 2002 10 04 | 644 | 0.2− | 0.2+ | 2002 10 28 | 608 | 0.7− | 0.0 | 2005 06 27 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | (1.9+ | 1.1+) | 2002 10 28 | 608 | 0.3+ | 0.2+ | 2005 06 27 | 644 | 0.1+ | 0.3+ |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2002 11 08 | 704 | 1.2− | 0.0 | 2005 06 27 | 644 | 0.5+ | 0.4+ |
| 2002 10 04 | 644 | 0.3− | 0.2+ | 2002 11 08 | 704 | 0.2+ | 0.0 | 2005 06 29 | 691 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | (0.5+ | 2.5+) | 2002 11 08 | 704 | 0.4− | 0.5+ | 2005 06 29 | 691 | 0.1− | 0.5+ |
| 2002 10 08 | 704 | 0.5+ | 0.3+ | 2002 12 10 | 704 | 0.4− | 0.2− | 2005 06 29 | 691 | 0.2− | 0.2+ |
| 2002 10 08 | 704 | 1.1+ | 0.3− | 2002 12 10 | 704 | 0.0 | 1.2+ | 2005 07 15 | 691 | 0.1+ | 0.1− |
| 2002 10 08 | 704 | 0.4+ | 0.7+ | 2002 12 10 | 704 | 0.5+ | 1.3+ | 2005 07 15 | 691 | 0.1+ | 0.7+ |
| 2002 10 09 | 704 | 1.1− | 0.5+ | 2004 02 19 | 704 | 0.6+ | 1.4+ | 2005 07 15 | 691 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 1.1− | 0.6+ | 2004 02 19 | 704 | 0.3− | 1.3+ | 2005 07 16 | 691 | 0.1− | 0.5+ |
| 2002 10 09 | 704 | 1.0− | 0.3+ | 2004 02 19 | 704 | (0.6+ | 2.3+) | 2005 07 16 | 691 | 0.3− | 0.5+ |
| 2002 10 09 | 704 | 0.8− | 0.9+ | 2004 02 19 | 704 | (2.0+ | 0.3+) | 2005 07 16 | 691 | 0.3− | 0.3+ |
| 2002 10 09 | 704 | 0.7− | 0.6+ | 2004 03 16 | 704 | 0.7+ | 0.4+ | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2002 10 10 | 704 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.6+ | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2002 10 10 | 704 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.6+ | 0.7+ | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2004 03 16 | 704 | 0.6+ | 0.6+ | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2002 10 10 | 704 | 0.5+ | 0.4− | 2004 03 29 | 703 | 1.2− | 1.4+ | 2006 11 29 | 704 | 0.7+ | 0.7+ |
| 2002 10 10 | 704 | 0.8+ | 0.3+ | 2004 03 29 | 703 | (2.4+ | 2.0+) | 2006 11 29 | 704 | 0.5+ | 1.6+ |
| 2002 10 11 | 704 | 0.2+ | 0.3+ | 2004 03 29 | 703 | 0.1− | 1.2+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 03 29 | 703 | 0.4+ | 0.8+ | 2006 11 29 | 704 | 1.0+ | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2004 04 14 | 699 | 0.1− | 1.0+ | | | | |
| 2002 10 11 | 704 | 0.7+ | 0.0 | 2004 04 14 | 699 | 0.7− | 0.3− | | | | |

**(142655)∗ 2002 TB$_{203}$ = 1995 YB$_8$ = 2000 BV$_{15}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38066)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.19725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27263688 | $\omega$ | 317.04183 | | +0.86475108 | −0.48735782 | |
| $a$ | 2.3554812 | $\Omega$ | 72.49720 | | +0.48830505 | +0.75959669 | |
| $e$ | 0.1223417 | $i$ | 7.30072 | | +0.11731900 | +0.43069156 | |
| $P$ | 3.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.4+ | 0.1− | 2002 09 28 | 608 | (2.1− | 0.4+) | 2002 11 07 | 699 | 0.1+ | 0.2− |
| 1995 12 18 | 691 | 0.2− | 0.3− | 2002 09 28 | 608 | (2.1− | 0.6+) | 2002 11 07 | 699 | 0.5− | 0.8+ |
| 1995 12 18 | 691 | 0.0 | 0.0 | 2002 09 28 | 608 | (2.0− | 0.3+) | 2002 11 07 | 704 | 0.1− | 0.5− |
| 1995 12 23 | 691 | 0.0 | 0.2− | 2002 10 04 | 704 | 0.2− | 0.1− | 2002 11 07 | 699 | 0.3− | 0.7+ |
| 1995 12 23 | 691 | 0.1− | 0.1− | 2002 10 04 | 704 | 0.3− | 0.2+ | 2002 11 07 | 699 | (1.6− | 0.2−) |
| 1995 12 23 | 691 | 0.0 | 0.1− | 2002 10 04 | 704 | 0.0 | 0.3− | 2002 11 07 | 704 | 0.1− | 0.5+ |
| 2000 01 29 | 704 | 0.2+ | 1.6+ | 2002 10 04 | 704 | 0.7− | 0.2+ | 2002 11 07 | 704 | 0.6− | 1.2+ |
| 2000 01 29 | 704 | 0.3− | 0.3+ | 2002 10 04 | 704 | 0.7− | 0.3− | 2004 02 17 | 703 | 0.0 | 0.1− |
| 2000 01 29 | 704 | 0.0 | 0.2+ | 2002 10 06 | 704 | (2.1− | 1.8+) | 2004 02 17 | 703 | (2.4+ | 0.7+) |
| 2000 01 29 | 704 | 0.1− | 0.1+ | 2002 10 06 | 704 | 0.9− | 1.5+ | 2004 02 17 | 703 | 0.0 | 0.8+ |
| 2000 01 31 | 704 | 0.4+ | 0.0 | 2002 10 06 | 704 | 0.7+ | 0.8+ | 2004 02 17 | 703 | 0.2− | 1.1+ |
| 2000 01 31 | 704 | 0.2+ | 0.1− | 2002 10 06 | 704 | (0.4− | 1.6+) | 2004 03 23 | 704 | 0.9+ | 0.6+ |
| 2000 01 31 | 704 | 0.1+ | 0.0 | 2002 10 08 | 699 | 0.2+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.0 |
| 2000 01 31 | 704 | 0.8+ | 0.3+ | 2002 10 08 | 699 | 0.3+ | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.6+ |
| 2001 05 18 | 691 | 0.4+ | 0.4+ | 2002 10 08 | 699 | 0.5+ | 0.3+ | 2004 03 23 | 704 | 0.1− | 1.4+ |
| 2001 05 18 | 691 | 0.2− | 0.5+ | 2002 10 08 | 699 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.9+ |
| 2001 05 18 | 691 | 0.4+ | 0.6+ | 2002 10 29 | 704 | 0.8+ | 0.4− | 2006 11 21 | 704 | (2.7+ | 0.2−) |
| 2002 08 24 | 644 | 0.2+ | 0.4+ | 2002 10 29 | 704 | 0.5− | 0.2− | 2006 11 21 | 704 | (2.8+ | 0.3+) |
| 2002 08 24 | 644 | 0.0 | 0.4+ | 2002 10 29 | 704 | 1.1+ | 0.1− | 2006 11 21 | 704 | (3.0+ | 0.2−) |
| 2002 08 24 | 644 | 0.2+ | 0.1+ | 2002 10 29 | 704 | 0.2+ | 0.9+ | 2006 11 21 | 691 | 0.7+ | 0.5+ |
| 2002 09 08 | 608 | 0.0 | 0.7− | 2002 11 02 | 608 | 0.6− | 1.2+ | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2002 09 08 | 608 | 0.6+ | 0.5− | 2002 11 02 | 608 | 0.9− | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2002 09 08 | 608 | 0.1+ | 0.6− | 2002 11 02 | 608 | 0.8− | 0.7+ | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2002 09 15 | 608 | 0.9− | 0.0 | 2002 11 06 | 644 | 0.3− | 0.5+ | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2002 09 15 | 608 | 0.8− | 0.9+ | 2002 11 06 | 644 | 0.0 | 0.3+ | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2002 09 15 | 608 | 0.5− | 0.4− | 2002 11 06 | 644 | 0.3− | 0.3+ | | | | |

**(142656)∗ 2002 TF$_{203}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.50120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23815949 | $\omega$ | 253.62242 | | +0.98909738 | +0.10913241 | |
| $a$ | 2.5776510 | $\Omega$ | 100.03139 | | −0.06386880 | +0.92289421 | |
| $e$ | 0.1441701 | $i$ | 5.76285 | | −0.13269191 | +0.36926466 | |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | 0.6− | 0.6− | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.9+ |
| 2002 09 28 | 608 | 0.7− | 0.4+ | 2004 04 25 | 291 | 0.1+ | 0.4+ | 2006 08 30 | 699 | 0.8− | 0.6+ |
| 2002 09 28 | 608 | 0.6− | 0.3− | 2004 04 25 | 291 | 0.8+ | 0.5+ | 2006 08 30 | 699 | 0.3+ | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 1.1+ | 2004 04 25 | 291 | 0.3+ | 0.5+ | 2006 08 30 | 699 | 0.5− | 1.4+ |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2005 04 15 | 691 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.4− |
| 2002 10 04 | 704 | 0.6− | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.9+ | 2006 09 14 | 703 | 0.4− | 0.3− |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2005 04 15 | 691 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.3+ | 0.6− |
| 2002 10 04 | 704 | 0.4+ | 0.2+ | 2006 07 21 | 703 | 0.1+ | 1.0− | 2006 09 21 | 699 | 0.3+ | 0.9+ |
| 2002 10 08 | 699 | 0.5+ | 0.1+ | 2006 07 21 | 703 | 0.5− | 0.7− | 2006 09 21 | 699 | 0.1+ | 0.4+ |
| 2002 10 08 | 699 | 0.3− | 0.8+ | 2006 07 21 | 703 | (0.4− | 2.4−) | 2006 09 21 | 699 | 0.9+ | 1.0+ |
| 2002 10 08 | 699 | 0.2+ | 0.5+ | 2006 07 21 | 703 | (1.1+ | 1.7−) | 2006 09 21 | 699 | 0.4− | 0.3− |
| 2002 10 08 | 699 | 0.3+ | 0.0 | 2006 08 23 | 704 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2002 10 15 | 644 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.7− | 0.7− | 2006 09 26 | 703 | 0.6− | 0.4− |
| 2002 10 15 | 644 | 0.0 | 0.3+ | 2006 08 23 | 704 | 0.6− | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.6+ |
| 2002 10 15 | 644 | 0.2+ | 0.1+ | 2006 08 26 | 104 | 0.8+ | 0.1+ | 2006 09 26 | 703 | (1.6− | 0.1+) |
| 2002 10 30 | 704 | 0.1+ | 0.3+ | 2006 08 26 | 104 | 0.2+ | 0.6+ | 2006 10 02 | 703 | (2.0+ | 1.2+) |
| 2002 10 30 | 704 | 1.1+ | 0.9+ | 2006 08 26 | 104 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.8+ | 1.3+ |
| 2002 10 30 | 704 | 1.4− | 0.8+ | 2006 08 27 | D35 | 0.6− | 0.8+ | 2006 10 02 | 703 | (2.0+ | 1.0+) |
| 2002 10 30 | 704 | 0.2+ | 0.8+ | 2006 08 27 | D35 | 0.3− | 0.8+ | 2006 10 02 | 703 | 0.1+ | 0.6+ |
| 2004 02 18 | 691 | 0.1+ | 0.3+ | 2006 08 27 | D35 | 0.2− | 0.6+ | 2006 10 24 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 691 | 0.3+ | 0.2+ | 2006 08 28 | D35 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.1+ | 0.2+ | | |
| 2004 02 18 | 691 | 0.3− | 0.3+ | 2006 08 28 | D35 | 0.3+ | 0.0 | 2006 10 24 | 644 | 0.2− | 0.5+ | | |
| 2004 04 15 | 645 | 0.0 | 0.0 | 2006 08 28 | D35 | 0.0 | 0.2− | | | | | | |

**(142657)∗ 2002 TJ$_{203}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.71203 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25684234 | $\omega$ | 246.73943 | | +0.87461627 | −0.48028786 | |
| $a$ | 2.4510846 | $\Omega$ | 141.87326 | | +0.47468623 | +0.82061734 | |
| $e$ | 0.1171242 | $i$ | 6.14647 | | +0.09858686 | +0.30969461 | |
| $P$ | 3.84 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.1+ | 0.1+ | 2002 10 08 | 699 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.2+ | | |
| 1996 01 13 | 691 | 0.0 | 0.2− | 2002 10 15 | 644 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.1− | | |
| 1996 01 13 | 691 | 0.0 | 0.0 | 2002 10 15 | 644 | 0.0 | 0.5+ | 2006 10 22 | 703 | (1.7− | 0.5−) | | |
| 2000 02 03 | 691 | 0.2+ | 0.2− | 2002 10 15 | 644 | 0.1− | 0.5+ | 2006 10 22 | 703 | 1.2− | 0.9+ | | |
| 2000 02 03 | 691 | 0.1+ | 0.2− | 2002 11 03 | 608 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.9+ | 0.2− | | |
| 2000 02 03 | 691 | 0.1− | 0.4− | 2002 11 03 | 608 | 0.7+ | 0.4+ | 2006 10 22 | 703 | 0.2− | 1.2− | | |
| 2000 03 01 | 691 | 0.1− | 0.1+ | 2002 11 03 | 608 | 0.5− | 0.9+ | 2006 11 01 | 703 | 0.6+ | 1.1+ | | |
| 2000 03 01 | 691 | 0.2− | 0.4+ | 2004 02 16 | 691 | 0.1− | 0.2− | 2006 11 01 | 703 | 0.1+ | 0.1+ | | |
| 2000 03 01 | 691 | 0.2− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.3+ | 2006 11 01 | 703 | (1.2− | 1.7−) | | |
| 2002 09 15 | 608 | 1.0− | 0.4− | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.1+ | 0.3+ | | |
| 2002 09 15 | 608 | 0.5− | 0.4− | 2004 03 14 | 691 | 0.4+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 2002 09 15 | 608 | 0.6− | 0.3− | 2004 03 14 | 691 | 0.4+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.3+ | 0.2+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2− | | |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2005 07 11 | G96 | 0.2− | 0.5+ | 2006 11 19 | 703 | 1.2− | 0.4− | | |
| 2002 10 04 | 704 | 0.2+ | 0.3− | 2005 07 11 | G96 | 0.2− | 0.5+ | 2006 11 19 | 703 | 0.4+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.5+ | 0.8− | 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.8− | | |
| 2002 10 08 | 699 | 0.1− | 0.6+ | 2005 07 11 | G96 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.1− | | |
| 2002 10 08 | 699 | 0.8+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.1+ | | | | | | |
| 2002 10 08 | 699 | 0.6− | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.9+ | | | | | | |

**(142658)∗ 2002 TY$_{203}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.84756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24049025 | $\omega$ | 127.92741 | | +0.55159331 | +0.83386599 | |
| $a$ | 2.5609695 | $\Omega$ | 175.40727 | | −0.82252026 | +0.54781045 | |
| $e$ | 0.1298609 | $i$ | 14.69029 | | −0.13858296 | +0.06761086 | |
| $P$ | 4.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 691 | 0.2+ | 0.2+ | 2002 10 30 | 704 | 0.8− | 0.1− | 2006 09 12 | 703 | 0.3− | 0.4− | | |
| 2001 03 18 | 691 | 0.1+ | 0.3+ | 2002 11 06 | 644 | 0.2− | 0.6+ | 2006 09 12 | 703 | 0.2− | 0.2− | | |
| 2001 03 18 | 691 | 0.1− | 0.2+ | 2002 11 06 | 644 | 0.5− | 0.6+ | 2006 09 12 | 703 | 1.0− | 0.2+ | | |
| 2001 04 24 | 699 | 0.3− | 0.1+ | 2002 11 06 | 644 | 0.2− | 0.3+ | 2006 09 12 | 703 | 0.4− | 0.2− | | |
| 2001 04 24 | 699 | 0.3+ | 0.3+ | 2005 03 04 | 704 | 1.1+ | 0.8+ | 2006 09 16 | 704 | 0.1+ | 0.1− | | |
| 2001 04 24 | 699 | 0.9+ | 0.4+ | 2005 03 04 | 704 | 1.1+ | 0.8+ | 2006 09 16 | 704 | 0.3+ | 0.0 | | |
| 2001 04 24 | 699 | 1.2− | 0.6+ | 2005 03 04 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 704 | 0.6− | 0.6+ | | |
| 2001 05 21 | 683 | 0.0 | 1.5− | 2005 04 04 | 703 | 1.1− | 1.3− | 2006 09 18 | 699 | 0.6− | 0.4+ | | |
| 2001 05 21 | 683 | 0.2− | 0.8− | 2005 04 04 | 703 | 0.7− | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | | |
| 2001 05 21 | 683 | 0.8− | 0.3− | 2005 04 04 | 703 | 1.0− | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.4− | | |
| 2001 05 23 | 704 | 0.1+ | 0.2− | 2005 04 04 | 703 | 1.3− | 0.6+ | 2006 09 18 | 699 | 0.3− | 0.7− | | |
| 2001 05 23 | 704 | 0.8+ | 0.5− | 2005 04 09 | 704 | 0.9+ | 0.3+ | 2006 09 19 | 704 | 0.1− | 0.8+ | | |
| 2001 05 23 | 704 | 0.4+ | 0.1− | 2005 04 09 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 704 | 0.8− | 1.2+ | | |
| 2001 05 23 | 704 | 0.2− | 0.3− | 2005 04 09 | 704 | 1.0+ | 0.7+ | 2006 09 19 | 704 | 0.1− | 0.3+ | | |
| 2001 05 23 | 704 | 0.1+ | 0.1+ | 2005 04 18 | 704 | 0.0 | 0.7+ | 2006 09 19 | 704 | 0.2+ | 1.1− | | |
| 2002 09 05 | 704 | 0.2− | 1.4+ | 2005 04 18 | 704 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.1− | | |
| 2002 09 05 | 704 | 0.4− | 1.0+ | 2005 04 18 | 704 | 0.8− | 0.6+ | 2006 09 20 | 691 | 0.1+ | 0.2− | | |
| 2002 09 05 | 704 | 0.8− | 0.3+ | 2005 04 18 | 704 | 0.6− | 0.8+ | 2006 09 20 | 691 | 0.3+ | 0.3− | | |
| 2002 09 14 | 608 | 0.1− | 0.6− | 2005 04 18 | 704 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 1.2+ | 1.1+ | | |
| 2002 09 14 | 608 | 0.4− | 1.2− | 2005 05 02 | 608 | 0.1− | 1.1− | 2006 09 22 | 704 | (1.7+ | 1.2−) | | |
| 2002 09 14 | 608 | 0.2− | 0.9− | 2005 05 02 | 608 | 0.1− | 0.7− | 2006 09 22 | 704 | 0.3+ | 0.4+ | | |
| 2002 09 16 | 683 | 0.6+ | 1.0+ | 2005 05 02 | 608 | 0.1+ | 0.9− | 2006 09 22 | 704 | 0.2+ | 0.4+ | | |
| 2002 09 16 | 683 | 0.0 | 0.9− | 2005 05 04 | 703 | 0.6− | 0.4− | 2006 09 22 | 704 | 0.2+ | 0.2+ | | |
| 2002 09 16 | 683 | 0.6+ | 0.7+ | 2005 05 04 | 703 | 1.3− | 1.4− | 2006 09 26 | 704 | 0.6+ | 0.1+ | | |
| 2002 09 29 | 608 | 0.2+ | 0.1+ | 2005 05 04 | 703 | (2.3− | 0.8−) | 2006 09 26 | 704 | 0.0 | 0.5+ | | |
| 2002 09 29 | 608 | 0.6+ | 0.3− | 2005 05 04 | 703 | (0.2+ | 1.6−) | 2006 09 26 | 704 | 0.3− | 0.2+ | | |
| 2002 09 29 | 608 | 0.5+ | 0.3− | 2005 05 06 | 704 | 1.0+ | 0.6− | 2006 09 26 | 704 | 0.1+ | 0.1− | | |
| 2002 10 04 | 704 | 0.0 | 0.8+ | 2005 05 06 | 704 | 1.2+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.2− | | |
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2005 05 06 | 704 | (0.0 | 1.6+) | 2006 09 28 | 704 | (1.5+ | 1.7+) | | |
| 2002 10 04 | 704 | 0.6− | 0.5+ | 2005 05 06 | 704 | 1.2+ | 1.3+ | 2006 09 28 | 704 | 0.1− | 1.4+ | | |
| 2002 10 04 | 704 | 0.5− | 0.1+ | 2005 05 06 | 704 | (1.3+ | 2.0+) | 2006 09 28 | 704 | 0.2− | 1.1+ | | |
| 2002 10 04 | 704 | 0.5+ | 0.1− | 2005 05 11 | 703 | 0.3− | 0.1+ | 2006 09 28 | 704 | 0.1− | 0.2+ | | |
| 2002 10 04 | 645 | 0.1+ | 0.1− | 2005 05 11 | 703 | 0.7− | 0.7− | 2006 09 28 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2005 05 11 | 703 | 0.2+ | 0.6− | 2006 09 30 | 703 | 0.6− | 0.7+ | | |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2005 05 11 | 703 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2005 05 13 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.6+ | | |
| 2002 10 08 | 699 | 0.9− | 0.3+ | 2005 05 13 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.3− | | |
| 2002 10 08 | 699 | 1.1− | 0.2+ | 2005 05 13 | 704 | 0.2− | 0.3+ | 2006 09 30 | 704 | 0.9− | 0.1− | | |
| 2002 10 08 | 699 | 0.1+ | 0.5− | 2005 05 13 | 704 | 0.1− | 0.9+ | 2006 09 30 | 704 | 0.6− | 0.0 | | |
| 2002 10 08 | 699 | 0.9− | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.5− | 0.0 | | |
| 2002 10 15 | 644 | 0.2− | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.0 | 0.1− | | |
| 2002 10 15 | 644 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.4− | | |
| 2002 10 15 | 644 | 0.2− | 0.7+ | 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.7− | | |
| 2002 10 30 | 704 | 0.8− | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 1.0− | | |
| 2002 10 30 | 704 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.0 | | | | | | |
| 2002 10 30 | 704 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.2+ | | | | | | |

**(142659)∗ 2002 TH$_{206}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.30563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24010627 | $\omega$ | 322.96157 | | +0.72674532 | +0.68687802 | |
| $a$ | 2.5636991 | $\Omega$ | 353.64362 | | −0.61577940 | +0.64739381 | |
| $e$ | 0.2461445 | $i$ | 3.26772 | | −0.30439608 | +0.33027237 | |
| $P$ | 4.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | (1.2+ | 2.5−) | 2005 05 02 | 691 | 0.4+ | 0.5+ | 2006 09 21 | 621 | 0.2+ | 0.2− | | |
| 1998 11 11 | 704 | (2.8+ | 1.9−) | 2005 05 02 | 691 | 0.4+ | 0.6+ | 2006 09 21 | 621 | 0.2+ | 0.3− | | |
| 1998 11 11 | 704 | (1.3+ | 2.8−) | 2005 05 02 | 691 | 0.7+ | 0.8+ | 2006 09 21 | 621 | 0.3+ | 0.1− | | |
| 1998 11 11 | 704 | (3.6− | 0.8−) | 2005 05 14 | G96 | 0.2+ | 0.2+ | 2006 09 21 | 621 | 0.3+ | 0.2− | | |
| 2002 10 04 | 704 | 0.2+ | 0.4− | 2005 05 14 | G96 | 0.1− | 0.3+ | 2006 09 22 | A50 | 0.9− | 0.6+ | | |
| 2002 10 04 | 704 | 0.3− | 0.5− | 2005 05 14 | G96 | 0.0 | 0.0 | 2006 09 22 | A50 | 0.9− | 0.1+ | | |
| 2002 10 04 | 704 | 1.1− | 0.4+ | 2005 05 14 | G96 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.4+ | | |
| 2002 10 04 | 704 | 1.2+ | 0.3− | 2006 07 21 | G96 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.7+ | 0.2+ | | |
| 2002 10 08 | 699 | 0.4− | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.0 | | |
| 2002 10 08 | 699 | 0.0 | 0.7− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.2+ | | |
| 2002 10 08 | 699 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.5+ | 0.6+ | | |
| 2002 10 08 | 699 | 0.0 | 0.8− | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 09 29 | 704 | 1.1− | 1.4+ | | |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.5+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.6− | 1.5+ | | |
| 2002 10 09 | 704 | 0.1− | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 1.1+ | | |
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.4+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.2+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 1.3− | 2006 09 30 | 691 | 0.3− | 0.2+ | | |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.4− | 1.3− | 2006 09 30 | 691 | 0.3− | 0.1+ | | |
| 2002 10 12 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | (1.6− | 0.3−) | 2006 10 15 | 106 | 0.1+ | 0.3+ | | |
| 2002 10 12 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.7− | 1.4− | 2006 10 15 | 106 | 0.0 | 0.6− | | |
| 2002 10 31 | 699 | 0.4+ | 0.4+ | 2006 09 15 | 691 | 0.6+ | 0.9+ | 2006 10 15 | 106 | 0.3− | 0.7− | | |
| 2002 10 31 | 699 | 0.5− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 15 | 106 | 0.1+ | 0.1− | | |
| 2002 10 31 | 699 | 0.5− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 16 | 621 | 0.0 | 0.3− | | |
| 2002 10 31 | 699 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.4+ | 0.4− | 2006 10 16 | 621 | 0.2+ | 0.2− | | |
| 2002 10 31 | 608 | 0.2− | 0.8− | 2006 09 17 | 704 | 0.2− | 0.1+ | 2006 10 16 | 621 | 0.3+ | 0.1− | | |
| 2002 10 31 | 608 | 0.3− | 0.9− | 2006 09 17 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.9+ | | |
| 2002 10 31 | 608 | 0.2− | 0.8− | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.6+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.5+ | | |
| 2002 11 08 | 704 | 0.4− | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.6+ | 0.2− | | |
| 2002 11 08 | 704 | 0.1− | 1.0− | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 17 | 621 | 0.6+ | 0.2− | | |
| 2002 11 12 | 644 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.4− | 2006 10 17 | 621 | 0.1+ | 0.1− | | |
| 2002 11 12 | 644 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 17 | 621 | 0.0 | 0.2− | | |
| 2002 11 12 | 644 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.9+ | 2006 10 19 | 644 | 0.3− | 0.3− | | |
| 2002 11 22 | 644 | 0.0 | 1.3+ | 2006 09 18 | 699 | 0.3− | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 22 | 644 | 0.7+ | 1.2+ | 2006 09 18 | 699 | 0.6+ | 0.2− | 2006 10 19 | 644 | 0.3− | 0.1− | | |
| 2002 11 22 | 644 | 0.7+ | 1.3+ | 2006 09 18 | 699 | 0.6− | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.2+ | | |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.2− | | |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.3− | | |
| 2004 01 28 | 691 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2006 09 20 | 704 | (3.4− | 1.0+) | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2005 03 10 | G96 | 0.2− | 0.6+ | 2006 09 20 | 704 | 0.6− | 1.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 09 20 | 704 | (1.7− | 2.3+) | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2005 04 02 | 644 | 0.5+ | 1.0+ | 2006 09 20 | 704 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 2005 04 02 | 644 | 0.4+ | 0.6+ | 2006 09 21 | 621 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2005 04 02 | 644 | 0.3+ | 0.8+ | 2006 09 21 | 621 | 0.3+ | 0.2− | | | | | | |

**(142660)∗ 2002 TC$_{207}$ = 1998 YO$_{13}$ = 2002 TE$_{275}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38069), A. Doppler (d, *ibid.*), G. V. Williams (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 359.27484 | | (2000.0) | | | |
| *n* | 0.23934354 | $\omega$ | 97.49665 | | +0.99337163 | −0.10752117 |
| *a* | 2.5691428 | $\Omega$ | 268.68201 | | +0.08273135 | +0.91426016 |
| *e* | 0.2104330 | *i* | 2.33004 | | +0.07980182 | +0.39059897 |
| *P* | 4.12 | *H* | 16.6 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 19 | 691 | 0.2− | 0.1− | 2002 11 12 | 644 | 0.0 | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.4− | | |
| 1998 12 19 | 691 | 0.1− | 0.1− | 2002 11 12 | 704 | 0.2− | 1.1+ | 2006 09 18 | 704 | (2.2+ | 0.1−) | | |
| 1998 12 19 | 691 | 0.1− | 0.1− | 2002 11 12 | 704 | 0.4− | 1.1+ | 2006 09 19 | 699 | 0.3− | 0.4− | | |
| 1998 12 23 | 691 | 0.5− | 0.0 | 2002 11 12 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | | |
| 1998 12 23 | 691 | 0.6− | 0.4− | 2002 11 12 | 704 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.6− | 0.1+ | | |
| 1998 12 23 | 691 | 0.6− | 0.2+ | 2002 11 12 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.0 | | |
| 1999 01 10 | 691 | 0.1− | 1.0− | 2002 11 23 | 644 | 0.1− | 0.6+ | 2006 09 21 | 704 | (1.8+ | 1.1−) | | |
| 1999 01 10 | 691 | 0.4+ | 0.5− | 2002 11 23 | 644 | 0.3+ | 0.3+ | 2006 09 21 | 704 | 0.4+ | 0.2− | | |
| 1999 01 10 | 691 | 0.4+ | 0.4− | 2002 11 23 | 644 | 0.1− | 0.6+ | 2006 09 21 | 704 | 0.1+ | 0.6− | | |
| 1999 01 24 | 691 | 0.9+ | 0.4− | 2004 02 19 | 735 | 0.6− | 0.6+ | 2006 09 25 | 704 | 0.2+ | 0.6+ | | |
| 1999 01 24 | 691 | 1.2+ | 0.1+ | 2004 02 19 | 735 | 0.7+ | 0.9− | 2006 09 25 | 704 | 0.5+ | 0.2+ | | |
| 1999 01 24 | 691 | 0.9+ | 0.1− | 2004 02 19 | 735 | 0.3− | 1.3+ | 2006 09 25 | 704 | 1.2+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.7+ | 0.9+ | 2004 03 17 | 691 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.0 | 0.1+ | | |
| 2002 10 04 | 704 | 0.4− | 0.1+ | 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.3+ | | |
| 2002 10 04 | 704 | 0.2− | 0.5+ | 2004 03 17 | 691 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.1− | | |
| 2002 10 04 | 704 | 0.2− | 0.4− | 2005 05 07 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 2002 10 08 | 699 | 0.3+ | 0.4− | 2005 05 07 | 691 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1− | | |
| 2002 10 08 | 699 | (1.6− | 0.2−) | 2005 05 07 | 691 | 0.0 | 0.1+ | 2006 09 27 | 699 | 0.0 | 0.0 | | |
| 2002 10 08 | 699 | 0.9− | 0.4− | 2005 05 07 | 691 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.5+ | 0.6+ | | |
| 2002 10 08 | 699 | 0.2− | 0.0 | 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 699 | 0.3+ | 0.3+ | | |
| 2002 10 09 | 704 | 0.4+ | 0.0 | 2005 05 07 | 691 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.5− | | |
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2006 07 21 | 703 | (2.1+ | 1.3+) | 2006 09 29 | 704 | 0.1− | 0.3+ | | |
| 2002 10 09 | 704 | 0.5+ | 0.6+ | 2006 07 21 | 703 | 1.0− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.3− | | |
| 2002 10 09 | 704 | 1.4− | 0.0 | 2006 07 21 | 703 | 0.3− | 0.5− | 2006 09 29 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 12 | 704 | 0.6− | 0.4+ | 2006 07 21 | 703 | 0.3+ | 1.1− | 2006 09 29 | 704 | 0.2− | 0.2+ | | |
| 2002 10 12 | 704 | 1.4− | 0.3− | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 2002 10 12 | 704 | 0.5− | 0.1+ | 2006 09 06 | 644 | 0.3+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.1− | | |
| 2002 10 12 | 704 | 0.0 | 0.7+ | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2002 10 12 | 704 | 0.1− | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2002 10 26 | 608 | 0.3− | 0.3− | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2002 10 26 | 608 | 0.2+ | 0.5− | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2002 10 26 | 608 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.4− | 1.1+ | 2006 10 17 | 703 | 1.2− | 0.0 | | |
| 2002 10 28 | 644 | 0.1+ | 0.3+ | 2006 09 15 | 704 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.4− | | |
| 2002 10 28 | 644 | 0.2− | 0.4+ | 2006 09 15 | 704 | 0.8− | 1.3+ | 2006 10 17 | 703 | 0.5+ | 0.3− | | |
| 2002 10 28 | 644 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.8− | | |
| 2002 11 03 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.7− | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2002 11 03 | 704 | 0.5− | 0.6+ | 2006 09 17 | 703 | 0.8− | 0.5− | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 11 03 | 704 | 0.9− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2002 11 08 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.3− | | |
| 2002 11 08 | 704 | 0.4+ | 1.3+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2002 11 08 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.4− | | |
| 2002 11 08 | 704 | (0.9− | 2.2+) | 2006 09 18 | 704 | (1.4+ | 1.6+) | 2006 10 22 | G96 | 0.1− | 0.3− | | |
| 2002 11 12 | 644 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.7+ | 1.0+ | | | | | | |
| 2002 11 12 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 704 | 0.8+ | 0.4+ | | | | | | |

**(142661)∗ 2002 TU$_{207}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 317.95872 | | (2000.0) | | | |
| *n* | 0.22980973 | $\omega$ | 27.36933 | | +0.62791152 | −0.76595551 |
| *a* | 2.6397154 | $\Omega$ | 24.52882 | | +0.63938618 | +0.40659329 |
| *e* | 0.1669565 | *i* | 19.41258 | | +0.44374817 | +0.49799002 |
| *P* | 4.29 | *H* | 15.2 | *G* | 0.15 | *U* 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 1.2− | 0.9− | 2002 11 05 | 704 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.9+ | 0.7+ | | |
| 1998 12 12 | 704 | (0.7− | 2.2−) | 2002 11 05 | 704 | 0.1+ | 0.3+ | 2004 03 25 | 704 | 0.3+ | 0.3+ | | |
| 1998 12 12 | 704 | 1.7− | 0.6− | 2002 11 05 | 704 | 0.2+ | 0.1− | 2004 03 25 | 704 | 0.0 | 0.8+ | | |
| 1998 12 12 | 704 | 0.9+ | 0.1− | 2002 11 06 | 704 | 0.0 | 0.5+ | 2004 03 25 | 704 | 0.9+ | 0.2+ | | |
| 1998 12 12 | 704 | 1.2− | 1.2− | 2002 11 06 | 704 | 0.3+ | 0.5+ | 2004 07 14 | 807 | 0.1− | 0.4+ | | |
| 2000 04 06 | 704 | 0.1− | 0.4+ | 2002 11 06 | 704 | 0.2+ | 0.6+ | 2004 07 15 | 807 | 0.1+ | 0.0 | | |
| 2000 04 06 | 704 | 0.8+ | 1.1+ | 2002 11 06 | 699 | 0.5+ | 0.1− | 2004 07 15 | 807 | 0.1+ | 0.2+ | | |
| 2000 04 06 | 704 | 1.5+ | 1.4+ | 2002 11 06 | 704 | 0.0 | 0.8+ | 2004 07 16 | 807 | 0.4+ | 0.2− | | |
| 2000 04 06 | 704 | 1.0+ | 0.3− | 2002 11 06 | 699 | 1.3+ | 0.1+ | 2006 09 17 | 699 | 0.2− | 0.1− | | |
| 2002 09 07 | 704 | 0.9− | 1.0+ | 2002 11 06 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 699 | 0.8+ | 1.1+ | | |
| 2002 09 07 | 704 | (1.5+ | 1.2+) | 2002 11 06 | 699 | 1.1+ | 0.1+ | 2006 09 17 | 699 | 0.7− | 0.5+ | | |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2002 11 06 | 699 | 0.9+ | 0.3− | 2006 09 17 | 699 | 0.3+ | 0.9− | | |
| 2002 09 07 | 704 | 0.3+ | 0.3+ | 2002 11 14 | 644 | 0.1+ | 0.2− | 2006 09 20 | 703 | 0.2− | 1.1+ | | |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2002 11 14 | 644 | 0.2+ | 0.1− | 2006 09 20 | 703 | 0.0 | 1.3+ | | |
| 2002 10 04 | 704 | 0.1− | 0.4− | 2002 11 14 | 644 | 0.1+ | 0.2− | 2006 09 20 | 703 | 0.3− | 0.9− | | |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2002 11 14 | 704 | (1.6+ | 1.5−) | 2006 09 20 | 703 | 0.5+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.6+ | 0.3+ | 2002 11 14 | 704 | (1.6+ | 1.0−) | 2006 09 26 | 703 | 0.9− | 0.2+ | | |
| 2002 10 04 | 704 | 1.5− | 0.4+ | 2002 11 14 | 704 | (1.7+ | 0.9−) | 2006 09 26 | 703 | 0.2− | 0.3− | | |
| 2002 10 08 | 699 | 0.3+ | 0.2− | 2002 12 02 | 704 | 0.2− | 0.7+ | 2006 09 26 | 703 | (2.3− | 0.7+) | | |
| 2002 10 08 | 699 | 0.4+ | 0.2+ | 2002 12 02 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | (3.2− | 4.4+) | | |
| 2002 10 08 | 699 | 0.4+ | 0.3+ | 2002 12 02 | 704 | 0.2− | 0.2− | 2006 10 02 | 703 | 0.3+ | 0.4− | | |
| 2002 10 08 | 699 | 0.4+ | 0.2+ | 2002 12 02 | 704 | 0.4+ | 0.7+ | 2006 10 02 | 703 | 0.6− | 0.3− | | |
| 2002 10 10 | 704 | 0.5− | 0.4+ | 2002 12 02 | 704 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.8− | 0.3− | | |
| 2002 10 10 | 704 | 0.2+ | 1.1+ | 2002 12 05 | 699 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.5− | | |
| 2002 10 10 | 704 | 0.1− | 0.1+ | 2002 12 05 | 699 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.4− | 0.2+ | | |
| 2002 10 10 | 704 | 0.2− | 1.0+ | 2002 12 05 | 699 | 0.0 | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.7+ | | |
| 2002 10 10 | 704 | 0.7− | 0.1− | 2002 12 05 | 699 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.4− | 0.1+ | | |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2002 10 12 | 704 | 1.3− | 0.4+ | 2002 12 06 | 704 | 0.8+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 10 12 | 704 | 0.8− | 0.8+ | 2002 12 06 | 704 | 1.0+ | 0.2− | 2006 10 23 | 644 | 0.4− | 0.3+ | | |
| 2002 10 12 | 704 | 1.0− | 0.9− | 2002 12 06 | 704 | 1.2− | 0.0 | 2006 10 24 | 644 | 0.6− | 0.4+ | | |
| 2002 10 12 | 704 | 0.1− | 0.5− | 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 10 24 | 644 | 0.0 | 0.0 | | |
| 2002 11 03 | 704 | 0.2− | 0.6− | 2004 02 17 | 704 | 0.4− | 0.4− | 2006 10 24 | 644 | 0.3− | 0.4+ | | |
| 2002 11 03 | 704 | 0.4− | 0.8− | 2004 02 17 | 704 | 0.8+ | 0.3− | 2006 10 28 | 703 | 0.7− | 0.3− | | |
| 2002 11 03 | 704 | 0.0 | 0.0 | 2004 03 23 | 704 | (1.7+ | 0.0 ) | 2006 10 28 | 703 | 1.4+ | 0.9− | | |
| 2002 11 03 | 704 | 0.2− | 0.4+ | 2004 03 23 | 704 | 0.7+ | 0.1− | 2006 10 28 | 703 | 1.9− | 0.4− | | |
| 2002 11 05 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 1.3+ | 1.3+ | 2006 10 28 | 703 | 0.2+ | 0.9− | | |
| 2002 11 05 | 704 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.2+ | 1.0+ | | | | | | |

**(142662)∗ 2002 TN$_{208}$ = 1998 SZ$_{129}$ = 2002 TX$_{276}$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38070), A. Doppler (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.83359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25196014 | $\omega$ | 298.12447 | | +0.71888948 | +0.69392802 | |
| $a$ | 2.4826461 | $\Omega$ | 18.03470 | | −0.58260906 | +0.63347882 | |
| $e$ | 0.3306724 | $i$ | 7.56634 | | −0.37916302 | +0.34229882 | |
| $P$ | 3.91 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 699 | 0.5− | 0.7+ | 2002 10 09 | 704 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.3− |
| 1998 09 18 | 699 | 0.1− | 1.3+ | 2002 10 12 | 704 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 1998 09 18 | 699 | 0.1+ | 0.7+ | 2002 10 12 | 704 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 1998 09 26 | 704 | 0.3− | 0.2− | 2002 10 12 | 704 | 0.1− | 0.3+ | 2006 10 18 | A50 | 0.6+ | 0.3+ |
| 1998 09 26 | 704 | 0.7+ | 1.3− | 2002 10 12 | 704 | 0.9− | 0.5− | 2006 10 27 | 703 | 0.3− | 0.3+ |
| 1998 09 26 | 704 | 0.0 | 0.0 | 2002 10 12 | 704 | 0.2− | 0.3+ | 2006 10 27 | 703 | (0.7− | 4.0−) |
| 1998 09 26 | 704 | 0.5+ | 1.2− | 2002 11 01 | 644 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.3− |
| 1998 09 26 | 704 | 0.8+ | 0.3− | 2002 11 01 | 644 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.5− |
| 1998 09 27 | 704 | 0.6− | 0.3− | 2002 11 01 | 644 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1998 09 27 | 704 | 1.4− | 0.1+ | 2002 11 05 | 704 | 0.8+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1998 09 27 | 704 | 1.5− | 1.2− | 2002 11 05 | 704 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 1998 09 27 | 704 | 1.8− | 0.9− | 2002 11 05 | 704 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 1998 10 11 | 699 | 0.1− | 0.9+ | 2002 11 05 | 704 | 0.8+ | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.0 |
| 1998 10 11 | 699 | 0.4+ | 0.8+ | 2002 11 05 | 704 | 0.6+ | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1998 10 11 | 699 | 0.5+ | 0.2+ | 2002 11 06 | 608 | 0.0 | 0.7+ | 2006 11 18 | 704 | 1.3+ | 0.6+ |
| 1998 10 17 | 699 | 0.4+ | 0.5+ | 2002 11 06 | 608 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.3− | 0.4− |
| 1998 10 17 | 699 | 0.3+ | 0.9+ | 2002 11 06 | 608 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 1998 10 17 | 699 | 0.2+ | 0.2+ | 2005 05 04 | G96 | 0.8+ | 0.8+ | 2006 11 18 | 704 | 0.1− | 1.0− |
| 2001 03 16 | 691 | 0.0 | 0.2+ | 2005 05 04 | G96 | 0.8+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2001 03 16 | 691 | 0.2+ | 0.5+ | 2005 05 04 | G96 | 0.2+ | 0.6− | 2006 11 19 | 704 | 1.0− | 0.1+ |
| 2001 03 16 | 691 | 0.1− | 0.2+ | 2005 05 04 | G96 | 0.2+ | 0.6− | 2006 11 19 | 704 | 1.2− | 0.5+ |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.8− | 0.4− | 2006 11 19 | 704 | (0.0 | 1.7+) |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.2+ | 0.8− |
| 2002 10 04 | 704 | 0.7− | 0.3+ | 2005 05 13 | G96 | 0.2− | 0.3− | 2006 11 22 | 703 | 0.7− | 1.3− |
| 2002 10 08 | 699 | 0.3− | 0.0 | 2005 05 13 | G96 | 0.4− | 0.5− | 2006 11 22 | 703 | 0.3+ | 1.3− |
| 2002 10 08 | 699 | 0.8+ | 0.7− | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.2− | 0.7− |
| 2002 10 08 | 699 | 0.1+ | 0.0 | 2006 07 22 | G96 | 0.5− | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.4+ |
| 2002 10 08 | 699 | (1.9+ | 1.2+) | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.0 |
| 2002 10 09 | 704 | 0.7+ | 0.8+ | 2006 07 22 | G96 | 0.0 | 0.4− | 2006 11 23 | 703 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 1.2+ | 0.2− | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 23 | 703 | 0.9+ | 0.2− |

**(142663)∗ 2002 TD$_{209}$**

Discovered 2002 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.52798 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23111723 | $\omega$ | 285.19505 | | +0.95988349 | +0.21229326 | |
| $a$ | 2.6297503 | $\Omega$ | 62.84094 | | −0.10250182 | +0.87373588 | |
| $e$ | 0.2128296 | $i$ | 11.88106 | | −0.26099244 | +0.43762676 | |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 21 | 704 | (6.5+ | 6.5−) | 2002 10 06 | 704 | 0.0 | 0.0 | 2006 06 22 | E12 | 0.3+ | 0.1− |
| 1998 11 21 | 704 | 0.9+ | 0.3+ | 2002 10 06 | 704 | 0.0 | 0.3+ | 2006 06 22 | E12 | 0.1+ | 0.2− |
| 1998 11 21 | 704 | 0.1+ | 0.7− | 2002 10 06 | 704 | 0.2+ | 0.3+ | 2006 06 22 | E12 | 0.7+ | 0.3+ |
| 1998 11 21 | 704 | (5.2− | 1.8−) | 2002 10 06 | 704 | 0.1+ | 0.6+ | 2006 06 22 | E12 | 0.3− | 0.1− |
| 1998 11 24 | 704 | 0.9+ | 0.4− | 2002 10 08 | 699 | 0.8− | 0.3+ | 2006 07 18 | E12 | 0.1+ | 0.4− |
| 1998 11 24 | 704 | 0.9+ | 0.3− | 2002 10 08 | 699 | 0.0 | 0.9+ | 2006 07 18 | E12 | 0.3− | 0.0 |
| 1998 11 24 | 704 | 0.6− | 0.4+ | 2002 10 08 | 699 | 0.1− | 0.3+ | 2006 07 18 | E12 | 0.2+ | 0.1+ |
| 1998 11 24 | 704 | (0.8− | 2.1+) | 2002 10 08 | 699 | 0.7− | 0.6+ | 2006 07 18 | E12 | 0.3+ | 0.2− |
| 1998 11 25 | 699 | 0.4+ | 1.2+ | 2002 10 16 | 644 | 0.6− | 1.0+ | 2006 08 14 | E12 | 0.7+ | 0.2− |
| 1998 11 25 | 699 | 0.6+ | 0.2+ | 2002 10 16 | 644 | 0.5− | 0.9+ | 2006 08 14 | E12 | 0.5+ | 0.0 |
| 1998 11 25 | 699 | 0.2+ | 0.0 | 2002 10 16 | 644 | 0.4− | 1.0+ | 2006 08 14 | E12 | 0.5+ | 0.4− |
| 2001 04 15 | 691 | 0.1+ | 0.1+ | 2002 10 29 | 704 | 1.4− | 0.2− | 2006 08 14 | E12 | 0.6+ | 0.2− |
| 2001 04 15 | 691 | 0.1+ | 0.3+ | 2002 10 29 | 704 | 1.1− | 0.6+ | 2006 08 14 | E12 | 0.1+ | 0.4− |
| 2001 04 15 | 691 | 0.1+ | 0.5+ | 2002 10 29 | 704 | 0.7− | 0.3+ | 2006 08 14 | E12 | 0.6− | 0.2− |
| 2001 05 25 | 691 | 0.2+ | 0.4+ | 2002 10 29 | 704 | 0.5+ | 0.9+ | 2006 08 14 | E12 | 0.3+ | 0.3− |
| 2001 05 25 | 691 | 0.1+ | 0.3+ | 2002 11 03 | 608 | 0.8− | 0.3− | 2006 08 14 | E12 | 0.0 | 0.3− |
| 2001 05 25 | 691 | 0.2+ | 0.4+ | 2002 11 03 | 608 | 0.6− | 0.5− | 2006 10 13 | E12 | 0.3− | 0.0 |
| 2002 09 29 | 608 | 0.3− | 0.4− | 2002 11 03 | 608 | 0.2− | 0.1− | 2006 10 13 | E12 | 0.7+ | 0.2+ |
| 2002 09 29 | 608 | 0.1− | 0.7− | 2002 12 02 | 608 | 0.1− | 0.3+ | 2006 10 13 | E12 | 0.3+ | 0.0 |
| 2002 09 29 | 608 | 0.4− | 0.7− | 2002 12 02 | 608 | 0.1− | 0.1+ | 2006 10 13 | E12 | 0.1− | 0.3− |
| 2002 10 06 | 704 | (2.1− | 0.4−) | 2002 12 02 | 608 | 0.5− | 0.4− | | | | |

**(142664)∗ 2002 TK$_{210}$ = 2005 JJ$_{57}$**

Discovered 2002 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.88704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22762007 | $\omega$ | 114.55523 | | +0.99922254 | −0.02964906 | |
| $a$ | 2.6566174 | $\Omega$ | 247.15251 | | +0.01726901 | +0.92167690 | |
| $e$ | 0.0973288 | $i$ | 1.61583 | | +0.03544134 | +0.38682377 | |
| $P$ | 4.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.2+ | 1.3+ | 2002 12 06 | 291 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.4+ |
| 2000 03 03 | 704 | 0.1+ | 0.8+ | 2002 12 06 | 291 | 0.2+ | 0.3− | 2006 08 25 | 704 | 0.2+ | 1.0− |
| 2000 03 03 | 704 | 0.3− | 1.0+ | 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 08 25 | 704 | 0.8+ | 0.1− |
| 2000 03 03 | 704 | 0.9+ | 0.4− | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 08 25 | 704 | 0.6+ | 0.9+ |
| 2002 10 03 | 704 | 0.5− | 1.2+ | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | (2.4− | 1.0+) | 2005 05 07 | 691 | 0.5+ | 0.1− | 2006 08 25 | 704 | (2.0+ | 0.7+) |
| 2002 10 03 | 704 | 0.3− | 0.7− | 2005 05 07 | 691 | 0.6+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2005 05 07 | 691 | 0.7− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 1.0+ | 0.6+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.5− | 0.5− |
| 2002 10 07 | 704 | 0.1+ | 0.7+ | 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.8+ | 0.3+ |
| 2002 10 07 | 704 | 0.7− | 0.8+ | 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.6+ | 0.8+ |
| 2002 10 07 | 704 | 0.7+ | 1.1+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.4+ |
| 2002 10 07 | 704 | (0.1− | 2.2+) | 2005 05 13 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.3− |
| 2002 10 08 | 699 | (1.7− | 1.2+) | 2005 05 13 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.9− | 0.5+ | 2005 05 13 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.7− |
| 2002 10 08 | 699 | 1.0− | 0.5+ | 2005 05 13 | G96 | 0.3− | 0.1− | 2006 08 28 | 699 | 1.1− | 0.5− |
| 2002 10 08 | 699 | 0.3− | 0.2+ | 2005 06 14 | G96 | 0.2+ | 1.4+ | 2006 08 28 | 699 | 1.2+ | 0.2+ |
| 2002 10 09 | 704 | 0.9− | 0.5+ | 2005 06 14 | G96 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 1.2+ | 0.7− |
| 2002 10 09 | 704 | 0.1+ | 0.8− | 2005 06 14 | G96 | 0.5− | 0.5+ | 2006 09 17 | 703 | 0.5+ | 0.3+ |
| 2002 10 09 | 704 | 0.6− | 0.1− | 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.4+ | 1.1− |
| 2002 10 11 | 644 | 0.5− | 0.2− | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.7− | 0.4− |
| 2002 10 11 | 644 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.6+ | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.9+ |
| 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 08 15 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.8+ | 0.1− |
| 2002 10 11 | 704 | 0.4− | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 1.2+ | 0.2− |
| 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.2− | 0.5+ |
| 2002 10 11 | 704 | 0.5+ | 0.3− | 2006 08 19 | 691 | 0.5− | 0.2− | 2006 09 20 | 699 | 0.9+ | 0.7+ |
| 2002 10 11 | 644 | 0.3− | 0.4+ | 2006 08 19 | A50 | 0.3− | 0.0 | 2006 09 20 | 699 | (1.7+ | 2.0−) |
| 2002 10 30 | 644 | 0.2+ | 0.2+ | 2006 08 19 | A50 | 0.3+ | 0.1− | 2006 09 20 | 699 | (1.6+ | 1.1+) |
| 2002 10 30 | 644 | 0.1+ | 0.1− | 2006 08 21 | 704 | 1.0− | 1.2+ | 2006 09 28 | G96 | 0.6− | 0.4− |
| 2002 10 30 | 644 | 0.2− | 0.4+ | 2006 08 21 | 704 | 0.7− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2002 11 22 | 644 | 0.4− | 0.1+ | 2006 08 21 | 704 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 2002 11 22 | 644 | 0.3− | 0.3+ | 2006 08 21 | 704 | 0.6− | 0.4− | 2006 09 28 | G96 | 0.6+ | 0.2− |
| 2002 11 22 | 644 | 0.3− | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.3+ | | | | |
| 2002 12 06 | 291 | 0.6+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1+ | | | | |

**(142665)∗ 2002 TK$_{212}$**

Discovered 2002 Oct. 7 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.63732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23735769 | $\omega$ | 276.65391 | | +0.43039074 | −0.88948445 | |
| $a$ | 2.5834527 | $\Omega$ | 146.47272 | | +0.89829649 | +0.40540004 | |
| $e$ | 0.1627033 | $i$ | 16.14227 | | +0.08847159 | +0.21087490 | |
| $P$ | 4.15 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 704 | 0.8− | 0.2− | 2004 03 20 | 704 | 0.1+ | 1.4+ | 2006 08 23 | 704 | 0.4+ | 0.3− |
| 2002 09 13 | 704 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.6− | 0.4+ | 2006 08 23 | 704 | 0.0 | 1.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 704 | 0.6+ | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.5+ | 2006 08 23 | 704 | 0.7+ | 0.3+ |
| 2002 09 13 | 704 | (2.0+ | 1.6+) | 2004 03 20 | 704 | 0.3− | 1.3+ | 2006 08 23 | 704 | (0.4+ | 1.8+) |
| 2002 09 14 | 608 | 0.0 | 1.0− | 2004 03 23 | 704 | (1.3+ | 1.7+) | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 09 14 | 608 | 0.5− | 1.1− | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.0 |
| 2002 09 14 | 608 | 0.4− | 0.7− | 2004 03 23 | 704 | (1.0+ | 1.8+) | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2002 09 17 | 644 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.9+ | 0.5+ | 2006 08 28 | 704 | 0.1+ | 0.0 |
| 2002 09 17 | 644 | 0.2+ | 0.4+ | 2004 03 23 | 704 | (0.3− | 1.6+) | 2006 08 28 | 704 | 0.4+ | 1.4+ |
| 2002 09 17 | 644 | 0.3+ | 0.9+ | 2005 05 09 | 691 | 0.5+ | 0.6+ | 2006 08 28 | 704 | 0.9+ | 0.5− |
| 2002 09 19 | 644 | 0.0 | 0.2+ | 2005 05 09 | 691 | (1.8+ | 0.2−) | 2006 08 28 | 704 | 0.1− | 0.1+ |
| 2002 09 19 | 644 | 0.4− | 0.6+ | 2005 05 09 | 691 | 0.1− | 0.1+ | 2006 08 28 | 704 | 0.3− | 0.0 |
| 2002 09 19 | 644 | 0.3− | 0.3+ | 2005 05 15 | 644 | 0.4− | 0.1− | 2006 08 31 | 704 | 1.0+ | 0.2+ |
| 2002 09 19 | 644 | 0.2− | 0.1+ | 2005 05 15 | 644 | 0.2− | 0.3+ | 2006 08 31 | 704 | 0.5+ | 0.9+ |
| 2002 09 19 | 644 | 0.2+ | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.5− | 0.3+ |
| 2002 09 19 | 644 | 0.7+ | 0.0 | 2005 05 20 | 644 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.8− | 1.2+ |
| 2002 09 30 | 608 | 0.4+ | 0.2− | 2005 05 20 | 644 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.5+ | 0.4+ |
| 2002 09 30 | 608 | 0.3+ | 0.3+ | 2005 05 20 | 644 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.9− |
| 2002 09 30 | 608 | 0.2+ | 0.6+ | 2005 06 11 | 703 | 1.0− | 1.0− | 2006 09 18 | 699 | 0.3− | 0.3+ |
| 2002 10 07 | 608 | 0.4− | 0.1+ | 2005 06 11 | 703 | 0.5+ | 0.7− | 2006 09 18 | 699 | 0.7− | 0.0 |
| 2002 10 07 | 608 | 0.7− | 0.4+ | 2005 06 11 | 703 | 0.6− | 0.1+ | 2006 09 20 | 703 | 0.6− | 0.0 |
| 2002 10 07 | 608 | 0.5− | 0.5+ | 2005 06 11 | 703 | 0.1− | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.9+ |
| 2002 10 08 | 644 | 0.0 | 1.1+ | 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.8+ | 0.3− |
| 2002 10 08 | 644 | 0.2+ | 1.2+ | 2005 06 30 | 644 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.6+ |
| 2002 10 08 | 644 | 0.4+ | 1.2+ | 2005 06 30 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.3− | 1.2− |
| 2004 02 17 | 704 | 0.4+ | 1.2+ | 2005 07 06 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | (1.9− | 0.3−) |
| 2004 02 17 | 704 | 0.4+ | 0.5− | 2005 07 06 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.8+ |
| 2004 02 17 | 704 | 0.8− | 1.3+ | 2005 07 06 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.8− | 0.7+ |
| 2004 02 17 | 704 | 0.7+ | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.6− | 0.1+ |
| 2004 02 24 | 608 | 0.4+ | 0.1− | 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2004 02 24 | 608 | 0.6+ | 0.0 | 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.5+ |
| 2004 02 24 | 608 | 0.5+ | 0.4+ | 2006 08 17 | 644 | 0.3− | 0.2− | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2004 03 14 | 704 | 0.3− | 0.8+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2004 03 14 | 704 | 0.5− | 0.9+ | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2004 03 14 | 704 | 0.3− | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2004 03 14 | 704 | 0.6+ | 0.7+ | 2006 08 22 | 644 | 0.3+ | 0.3+ | | | | |
| 2004 03 20 | 704 | 0.2− | 1.2+ | 2006 08 22 | 644 | 0.4− | 0.3+ | | | | |

**(142666)∗ 2002 TR$_{213}$ = 2004 BK$_{125}$ = 2005 JO$_9$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85673)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 39.37259 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24215039 | ω | 247.99265 | | +0.68976507 | +0.72337560 | |
| *a* | 2.5492510 | Ω | 65.65721 | | −0.65117409 | +0.63842043 | |
| *e* | 0.1550443 | *i* | 1.94060 | | −0.31653824 | +0.26295836 | |
| *P* | 4.07 | *H* | 16.9 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 691 | 0.2− | 0.4+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2001 04 16 | 691 | 0.4− | 0.0 | 2004 01 27 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2001 04 16 | 691 | 0.2+ | 0.3+ | 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 09 27 | 291 | 0.2− | 0.4+ |
| 2001 05 25 | 691 | 0.2+ | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 09 27 | 291 | 0.3− | 0.4+ |
| 2001 05 25 | 691 | 0.2+ | 0.0 | 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 27 | 291 | 0.0 | 0.4+ |
| 2001 05 25 | 691 | 0.6+ | 0.3+ | 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.0 | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.4− | 0.3+ |
| 2002 10 03 | 704 | 1.3+ | 0.6+ | 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.3+ |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.3+ |
| 2002 10 03 | 704 | 1.0− | 0.9+ | 2005 04 17 | 691 | 0.2+ | 0.7+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.9− | 2005 05 04 | 568 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2002 10 07 | 644 | 0.7− | 0.2+ | 2005 05 04 | 568 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2002 10 07 | 644 | 0.8− | 0.3+ | 2005 05 04 | 568 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2002 10 07 | 644 | 0.6− | 0.5+ | 2005 05 05 | 568 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 1.5+ | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2002 10 11 | 704 | 0.9− | 1.0− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2002 10 11 | 704 | 0.4+ | 1.2− | 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.8− | 0.4+ | 2006 10 01 | 704 | 0.5+ | 1.2− |
| 2002 10 11 | 704 | 1.4+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.7− |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.9+ | 0.2+ | 2006 10 01 | 704 | 0.5− | 0.8− |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.3− | | | | |
| 2004 01 16 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | | | |

**(142667)∗ 2002 TB$_{214}$ = 1997 HN$_{12}$ = 2001 JZ$_9$**

Discovered 2002 Oct. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41094)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 101.70861 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.25338848 | ω | 98.87943 | | +0.09328981 | +0.99563128 | |
| *a* | 2.4733076 | Ω | 176.46638 | | −0.93665005 | +0.08909668 | |
| *e* | 0.0710471 | *i* | 3.64559 | | −0.33761470 | +0.02793077 | |
| *P* | 3.89 | *H* | 16.6 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.6− | 0.2+ | 2001 05 21 | 704 | 0.6− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.2+ |
| 1994 09 11 | 691 | 0.8− | 0.1+ | 2001 05 21 | 704 | 0.8− | 1.3+ | 2006 10 15 | 691 | 0.2+ | 0.1− |
| 1994 09 11 | 691 | 0.6− | 0.3− | 2001 05 21 | 704 | 0.3− | 0.9+ | 2006 10 15 | 691 | 0.4+ | 0.3+ |
| 1997 04 30 | 704 | 1.4+ | 1.0+ | 2001 05 21 | 704 | 0.8− | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 1997 04 30 | 704 | 0.5+ | 1.7+ | 2002 10 03 | 704 | 0.2+ | 0.9+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 1997 04 30 | 704 | 1.8+ | 0.1− | 2002 10 03 | 704 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 1997 04 30 | 704 | 0.6+ | 0.4+ | 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.5− | 0.2+ |
| 1997 05 05 | 704 | (2.5+ | 0.6+) | 2002 10 07 | 644 | 0.6− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 1997 05 05 | 704 | 1.2+ | 0.4− | 2002 10 07 | 644 | 1.3− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 1997 05 05 | 704 | 1.8+ | 0.6+ | 2002 10 07 | 644 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 1997 05 05 | 704 | 0.8+ | 0.0 | 2002 10 11 | 704 | 1.1+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 1997 05 05 | 704 | 1.3+ | 0.6− | 2002 10 11 | 704 | 1.0+ | 0.9− | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1998 09 17 | 691 | 0.5− | 0.7− | 2002 10 11 | 704 | 0.9+ | 0.6− | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 1998 09 17 | 691 | 0.5− | 0.7− | 2004 04 13 | 645 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 1998 09 17 | 691 | 0.6− | 0.4− | 2004 04 13 | 645 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 1998 10 20 | 691 | 1.1+ | 1.0+ | 2005 07 11 | G96 | 0.6− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 1998 10 20 | 691 | 1.1+ | 0.1+ | 2005 07 11 | G96 | 0.5− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 1998 10 20 | 691 | 1.2+ | 0.1+ | 2005 07 11 | G96 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2001 05 15 | 608 | 0.5− | 0.1+ | 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 05 15 | 608 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 05 15 | 608 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2001 05 21 | 699 | 0.0 | 0.6+ | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2001 05 21 | 699 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2001 05 21 | 699 | (1.1− | 2.2+) | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2001 05 21 | 699 | 0.2− | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | | | | |

**(142668)∗ 2002 TG$_{214}$ = 1991 TZ$_8$**

Discovered 2002 Oct. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38072)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 51.61188 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26376714 | ω | 282.38633 | | +0.54887810 | +0.83406679 | |
| *a* | 2.4079951 | Ω | 21.18979 | | −0.69503079 | +0.49217338 | |
| *e* | 0.2564762 | *i* | 8.81093 | | −0.46439750 | +0.24919461 | |
| *P* | 3.74 | *H* | 16.5 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.4+ | 0.4− | 2002 10 04 | 704 | 1.1+ | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.3+ |
| 1991 10 01 | 691 | 0.0 | 0.7− | 2002 10 04 | 704 | 0.6− | 0.5− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 1991 10 01 | 691 | 0.6+ | 0.8− | 2002 10 04 | 704 | 0.2− | 0.8− | 2006 10 19 | 644 | 0.5− | 0.1+ |
| 1991 10 13 | 691 | 0.0 | 0.2− | 2002 10 07 | 608 | 0.7− | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.7+ |
| 1991 10 13 | 691 | 0.4+ | 0.2+ | 2002 10 07 | 608 | 0.6− | 0.5− | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 1991 10 13 | 691 | 0.1+ | 0.5− | 2002 10 07 | 608 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2002 08 12 | 608 | 0.3− | 0.7− | 2002 10 10 | 699 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2002 08 12 | 608 | 0.6− | 0.9− | 2002 10 10 | 699 | 0.9+ | 1.3+ | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2002 08 12 | 608 | 0.5− | 0.9− | 2002 10 10 | 699 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2002 08 14 | 704 | 1.0+ | 0.3+ | 2002 10 10 | 699 | (0.2+ | 1.9+) | 2006 10 21 | 644 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.2+ | 0.0 | 2005 04 04 | 703 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 08 14 | 704 | 0.9− | 0.1− | 2005 04 04 | 703 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2002 08 14 | 704 | 1.4+ | 0.1− | 2005 04 04 | 703 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.3− | | |
| 2002 08 19 | 608 | 0.3+ | 0.3+ | 2005 04 04 | 703 | 0.8− | 1.3− | 2006 10 21 | 644 | 0.5+ | 0.0 | | |
| 2002 08 19 | 608 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 10 29 | 704 | 0.5+ | 0.8+ | | |
| 2002 08 19 | 608 | (0.7− | 2.3+) | 2006 08 28 | 703 | 0.2+ | 1.2+ | 2006 10 29 | 704 | 0.2+ | 0.3+ | | |
| 2002 08 20 | 644 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.6+ | 0.6+ | 2006 10 29 | 704 | 1.0+ | 0.6+ | | |
| 2002 08 20 | 644 | 0.4− | 0.3+ | 2006 08 28 | 703 | (1.1− | 1.8+) | 2006 10 31 | 691 | 0.1− | 0.2+ | | |
| 2002 08 20 | 644 | 0.2− | 0.1− | 2006 09 22 | 699 | 0.0 | 1.1+ | 2006 10 31 | 691 | 0.1− | 0.3+ | | |
| 2002 09 03 | 608 | 0.1− | 1.3− | 2006 09 22 | 699 | 0.5+ | 0.3− | 2006 10 31 | 691 | 0.1− | 0.3+ | | |
| 2002 09 03 | 608 | 0.2+ | 1.0− | 2006 09 22 | 699 | 1.1+ | 0.9+ | 2006 11 14 | 703 | 0.1− | 0.7+ | | |
| 2002 09 03 | 608 | 0.3+ | 0.8− | 2006 09 22 | 699 | 0.8− | 1.2− | 2006 11 14 | 703 | 0.5+ | 0.2− | | |
| 2002 09 09 | 644 | 0.3− | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 14 | 703 | 1.0− | 0.4− | | |
| 2002 09 09 | 644 | 0.4− | 1.0+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 11 14 | 703 | 1.2+ | 0.1+ | | |
| 2002 09 09 | 644 | 0.2− | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.4− | | |
| 2002 09 13 | 699 | 0.4+ | 0.2+ | 2006 10 04 | 703 | (1.8− | 0.3+) | 2006 11 19 | 691 | 0.1− | 0.4− | | |
| 2002 09 13 | 699 | 0.0 | 0.1+ | 2006 10 04 | 703 | 1.3− | 1.2− | 2006 11 19 | 691 | 0.3+ | 0.0 | | |
| 2002 09 13 | 699 | 0.3+ | 0.4+ | 2006 10 04 | 703 | 0.7− | 0.4+ | 2006 11 21 | 691 | 0.2+ | 0.0 | | |
| 2002 09 13 | 699 | 0.3+ | 0.2+ | 2006 10 04 | 703 | 0.8− | 0.7+ | 2006 11 21 | 691 | 0.3+ | 0.1− | | |
| 2002 09 16 | 644 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 | | |
| 2002 09 16 | 644 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.0 | | |
| 2002 09 16 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 11 22 | 704 | 1.0+ | 1.0+ | | |
| 2002 10 04 | 704 | 0.4− | 1.0+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.8+ | | |

**(142669)∗ 2002 TU$_{218}$ = 2000 AT$_{82}$**

Discovered 2002 Oct. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38073)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.77134 | | (2000.0) | | +0.69091147 | −0.71604073 |
| $n$ | 0.28251895 | $\omega$ | 133.90297 | | +0.63142614 | +0.66480841 |
| $a$ | 2.3002286 | $\Omega$ | 272.10971 | | +0.35205449 | +0.21287428 |
| $e$ | 0.1252206 | $i$ | 5.72201 | | | |
| $P$ | 3.49 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.3+ | 0.5− | 2002 11 06 | 699 | 0.3− | 0.3+ | 2004 03 27 | 703 | 0.1+ | 0.3+ | | |
| 2000 01 05 | 704 | 0.1+ | 0.8− | 2002 11 06 | 699 | 0.1+ | 0.4+ | 2004 03 27 | 703 | 0.4+ | 0.9+ | | |
| 2000 01 05 | 704 | 0.4+ | 1.2− | 2002 11 08 | 446 | (0.8+ | 2.7+) | 2004 03 27 | 703 | 0.2− | 0.7+ | | |
| 2000 01 06 | 704 | 0.1+ | 0.5− | 2002 11 08 | 704 | 0.5− | 0.0 | 2004 03 27 | 703 | 1.0− | 0.2− | | |
| 2000 01 06 | 704 | 0.7− | 0.1+ | 2002 11 08 | 704 | 0.0 | 0.3+ | 2005 06 03 | 691 | 0.3+ | 0.0 | | |
| 2000 01 06 | 704 | 0.2+ | 0.9− | 2002 11 08 | 446 | 0.4− | 1.0+ | 2005 06 03 | 691 | 0.2+ | 0.1− | | |
| 2002 09 17 | 608 | 1.1− | 0.7− | 2002 11 08 | 704 | 0.3− | 0.0 | 2005 06 03 | 691 | 0.2+ | 0.2− | | |
| 2002 09 17 | 608 | 1.2− | 1.4− | 2002 11 09 | 446 | 0.5+ | 0.4− | 2005 06 14 | G96 | 0.0 | 0.1+ | | |
| 2002 09 17 | 608 | 1.1− | 1.4− | 2002 11 09 | 446 | 0.6+ | 0.0 | 2005 06 14 | G96 | 0.3+ | 0.2+ | | |
| 2002 10 04 | 644 | 0.3− | 0.3+ | 2002 11 09 | 446 | 0.3+ | 0.8+ | 2005 06 14 | G96 | 0.0 | 0.1+ | | |
| 2002 10 04 | 644 | 0.4− | 0.3+ | 2002 11 12 | 704 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.3− | 0.0 | | |
| 2002 10 04 | 644 | 0.4− | 0.2+ | 2002 11 12 | 704 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.2+ | | |
| 2002 10 05 | 704 | 1.2+ | 0.5+ | 2002 11 12 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.6− | 0.2+ | | |
| 2002 10 05 | 704 | 1.0− | 1.5+ | 2002 11 12 | 704 | 0.5− | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.1+ | | |
| 2002 10 05 | 704 | 1.3+ | 0.9+ | 2002 12 01 | 704 | 0.4− | 0.8+ | 2006 11 14 | G96 | 0.1− | 0.1− | | |
| 2002 10 05 | 704 | 0.2− | 0.9+ | 2002 12 01 | 704 | 0.1+ | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.0 | | |
| 2002 10 05 | 704 | (0.5− | 2.0+) | 2002 12 01 | 704 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2002 12 06 | 704 | (0.9+ | 2.1+) | 2006 11 18 | 704 | 0.4+ | 0.2− | | |
| 2002 10 09 | 704 | 0.4+ | 0.0 | 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.5− | | |
| 2002 10 09 | 704 | 0.3+ | 0.1+ | 2002 12 06 | 704 | (1.1+ | 2.5+) | 2006 11 18 | 704 | 0.3+ | 0.6− | | |
| 2002 10 09 | 704 | 0.1− | 0.1+ | 2002 12 06 | 704 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.2+ | | |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2004 02 17 | I03 | 0.4− | 0.9+ | 2006 12 01 | G96 | 0.2+ | 0.0 | | |
| 2002 10 12 | 704 | 0.4+ | 0.5+ | 2004 02 17 | I03 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.0 | 0.1− | | |
| 2002 10 12 | 704 | 0.9− | 0.0 | 2004 02 17 | I03 | 0.3− | 0.8+ | 2006 12 01 | G96 | 0.2− | 0.1− | | |
| 2002 10 12 | 704 | 0.2− | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.2− | | |
| 2002 11 06 | 699 | 0.1+ | 0.0 | 2004 03 16 | 691 | 0.2+ | 0.4+ | | | | | | |
| 2002 11 06 | 699 | 0.0 | 0.1+ | 2004 03 16 | 691 | 0.3+ | 0.5+ | | | | | | |

**(142670)∗ 2002 TN$_{219}$ = 2000 AQ$_{40}$**

Discovered 2002 Oct. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38073)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 150.38092 | | (2000.0) | | −0.83922382 | +0.53850154 |
| $n$ | 0.24018733 | $\omega$ | 239.60579 | | −0.42478453 | −0.73602682 |
| $a$ | 2.5631223 | $\Omega$ | 332.75974 | | −0.33950182 | −0.41022021 |
| $e$ | 0.1165468 | $i$ | 9.51030 | | | |
| $P$ | 4.10 | $H$ | 15.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 06 | 809 | 0.8+ | 1.5+ | 2003 12 17 | 699 | 0.3+ | 0.4− | 2004 01 19 | 704 | (2.1+ | 0.6−) | | |
| 1996 02 15 | 691 | 0.0 | 0.1− | 2003 12 17 | 699 | 0.2+ | 0.5+ | 2004 01 19 | 704 | (2.9+ | 0.5+) | | |
| 1996 02 15 | 691 | 0.1+ | 0.1− | 2003 12 17 | 699 | 0.0 | 0.3+ | 2004 02 14 | 704 | (3.3+ | 0.2+) | | |
| 1996 02 15 | 691 | 0.0 | 0.1− | 2003 12 17 | 699 | 0.3+ | 0.6− | 2004 02 14 | 704 | 0.1− | 1.1− | | |
| 2000 01 03 | 704 | 0.4+ | 0.0 | 2003 12 18 | 704 | 0.3+ | 0.4− | 2004 02 14 | 704 | (0.8+ | 1.7−) | | |
| 2000 01 03 | 704 | 0.7+ | 0.0 | 2003 12 18 | 704 | 0.1+ | 0.2− | 2004 02 14 | 704 | 0.7+ | 1.1+ | | |
| 2000 01 03 | 704 | 0.1+ | 0.1− | 2003 12 18 | 704 | 1.3+ | 0.9+ | 2004 02 14 | 704 | 1.1+ | 0.5+ | | |
| 2000 01 03 | 704 | 0.0 | 0.5− | 2003 12 18 | 704 | 0.5− | 0.5− | 2006 09 16 | 703 | 1.1− | 0.3− | | |
| 2000 01 03 | 704 | 0.2+ | 0.1− | 2003 12 27 | 704 | 0.4− | 1.1− | 2006 09 16 | 703 | 0.7− | 0.8+ | | |
| 2000 01 04 | 704 | 0.0 | 0.3− | 2003 12 27 | 704 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.3− | 0.6+ | | |
| 2000 01 04 | 704 | 0.1− | 0.8+ | 2003 12 27 | 704 | 0.6− | 0.4− | 2006 09 16 | 703 | 0.9+ | 0.1+ | | |
| 2000 01 04 | 704 | 0.5− | 0.1+ | 2003 12 27 | 704 | 0.1+ | 0.9− | 2006 09 27 | 703 | 1.1− | 0.2− | | |
| 2000 01 04 | 704 | 0.4+ | 0.4+ | 2003 12 27 | 704 | 0.4− | 0.5− | 2006 09 27 | 703 | (0.9+ | 1.6−) | | |
| 2000 02 11 | 704 | 0.3− | 0.4+ | 2003 12 29 | 704 | 1.0− | 0.2+ | 2006 09 27 | 703 | 0.4− | 0.2+ | | |
| 2000 02 11 | 704 | 0.3+ | 0.2− | 2003 12 29 | 704 | 0.6− | 0.0 | 2006 09 27 | 703 | 0.6+ | 1.2− | | |
| 2000 02 11 | 704 | 0.6+ | 0.1− | 2003 12 29 | 704 | 0.4− | 1.2+ | 2006 10 04 | G96 | 0.0 | 0.5− | | |
| 2000 02 11 | 704 | (3.0+ | 1.1−) | 2003 12 29 | 704 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.1− | | |
| 2000 02 24 | 703 | 1.4− | 0.6+ | 2003 12 29 | 704 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.2− | | |
| 2000 02 24 | 703 | 0.5− | 0.5+ | 2003 12 30 | 704 | 0.2− | 0.6+ | 2006 10 04 | G96 | 0.3+ | 0.3− | | |
| 2000 02 24 | 703 | 0.1− | 0.8+ | 2003 12 30 | 704 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 2000 02 24 | 703 | 1.1− | 0.1− | 2003 12 30 | 704 | 0.4+ | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.6+ | | |
| 2002 09 15 | 608 | 0.4− | 0.8− | 2003 12 30 | 704 | 0.8+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 15 | 608 | 0.7− | 0.5− | 2004 01 16 | 699 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2002 09 15 | 608 | (0.1+ | 2.0−) | 2004 01 16 | 699 | 0.4− | 1.0− | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 2002 10 05 | 704 | 0.6+ | 0.2− | 2004 01 16 | 699 | 0.8− | 1.3− | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2002 10 05 | 704 | 0.4+ | 0.0 | 2004 01 16 | 699 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2004 01 16 | 703 | 1.0+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.1+ | 0.2− | 2004 01 16 | 703 | (2.0+ | 1.5+) | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2002 10 05 | 704 | 0.4+ | 0.2− | 2004 01 16 | 703 | (1.7+ | 1.2+) | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 09 | 704 | 1.1+ | 1.0+ | 2004 01 16 | 703 | 0.7+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2002 10 09 | 704 | 0.7− | 0.3+ | 2004 01 19 | 704 | (2.8+ | 0.2+) | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 09 | 704 | 1.2− | 0.5+ | 2004 01 19 | 704 | (2.2+ | 0.1+) | | | | | | |

**(142671)∗ 2002 TV$_{219}$**

Discovered 2002 Oct. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.34980 | | (2000.0) | | +0.98366736 | +0.02479586 |
| $n$ | 0.22660611 | $\omega$ | 129.01158 | | −0.06987544 | +0.96539136 |
| $a$ | 2.6645363 | $\Omega$ | 230.32267 | | +0.16587933 | +0.25962411 |
| $e$ | 0.1104392 | $i$ | 13.39346 | | | |
| $P$ | 4.35 | $H$ | 14.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.4− | 0.0 | 2002 12 01 | 704 | 0.7+ | 1.0+ | 2005 04 29 | 941 | 0.1− | 1.3+ | | |
| 2002 10 05 | 704 | 0.4− | 0.1+ | 2002 12 01 | 704 | 0.2+ | 0.4+ | 2005 04 30 | 941 | 0.2+ | 1.2+ | | |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2002 12 02 | 608 | 0.2− | 0.7− | 2005 04 30 | 941 | 0.3+ | 0.8+ | | |
| 2002 10 05 | 704 | 0.6− | 0.0 | 2002 12 02 | 608 | 0.3− | 0.7− | 2005 05 04 | 699 | 0.5− | 0.8+ | | |
| 2002 10 05 | 704 | 0.5− | 0.2+ | 2002 12 02 | 608 | 0.3− | 1.0− | 2005 05 04 | 699 | (1.7+ | 2.1−) | | |
| 2002 10 09 | 704 | 0.4+ | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.0 | 2005 05 04 | 699 | 0.0 | 0.3+ | | |
| 2002 10 09 | 704 | 0.4+ | 0.4+ | 2002 12 06 | 704 | 0.1+ | 0.6+ | 2005 05 04 | 699 | 0.2+ | 1.1+ | | |
| 2002 10 09 | 704 | 0.7+ | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.9+ | 2006 06 21 | 703 | 0.7− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.8+ | 0.0 | 2002 12 06 | 704 | 0.5− | 0.4+ | 2006 06 21 | 703 | 1.2+ | 0.9+ |
| 2002 10 09 | 704 | 1.0+ | 0.6− | 2002 12 11 | 704 | 0.6− | 0.2+ | 2006 06 21 | 703 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 0.6+ | 0.0 | 2002 12 11 | 704 | 0.4− | 0.3+ | 2006 06 21 | 703 | 0.8+ | 0.7+ |
| 2002 10 12 | 704 | 0.1+ | 0.1− | 2002 12 11 | 704 | 0.7− | 0.0 | 2006 08 30 | 699 | 0.3− | 0.2+ |
| 2002 10 12 | 704 | 0.2+ | 0.1− | 2002 12 11 | 704 | 1.0− | 0.8+ | 2006 08 30 | 699 | 0.3− | 1.5+ |
| 2002 10 12 | 704 | 0.5+ | 0.3+ | 2002 12 11 | 704 | (1.0+ | 1.6−) | 2006 08 30 | 699 | 0.6− | 0.3− |
| 2002 10 12 | 704 | 0.5+ | 0.3+ | 2003 01 04 | 704 | 0.3+ | 0.5− | 2006 08 30 | 699 | 0.7+ | 0.5− |
| 2002 11 08 | 704 | 0.3− | 0.3− | 2003 01 04 | 704 | 0.3− | 1.1+ | 2006 09 11 | 703 | 0.3− | 0.4− |
| 2002 11 08 | 704 | 0.3− | 0.2+ | 2003 01 04 | 704 | 0.1− | 0.1− | 2006 09 11 | 703 | 1.0− | 0.4− |
| 2002 11 08 | 704 | 0.6− | 0.2+ | 2003 01 04 | 704 | 0.2+ | 0.6− | 2006 09 11 | 703 | 0.9+ | 0.6− |
| 2002 11 08 | 704 | 0.8− | 0.2+ | 2003 01 04 | 704 | 0.5− | 0.8+ | 2006 09 15 | 704 | 0.6+ | 1.0+ |
| 2002 11 08 | 704 | 0.5− | 0.4+ | 2003 12 29 | 699 | 0.8− | 0.4− | 2006 09 15 | 704 | (1.9+ | 0.4+) |
| 2002 11 12 | 644 | 0.3− | 0.0 | 2003 12 29 | 699 | 0.4+ | 0.4− | 2006 09 15 | 704 | 0.6− | 1.5+ |
| 2002 11 12 | 704 | 0.2+ | 0.0 | 2003 12 29 | 699 | (1.6− | 0.4+) | 2006 09 15 | 704 | 0.4− | 0.7+ |
| 2002 11 12 | 704 | 0.2− | 0.1+ | 2003 12 29 | 699 | 0.2+ | 0.3− | 2006 09 20 | 699 | 1.0+ | 0.9− |
| 2002 11 12 | 644 | 0.4+ | 0.2− | 2004 01 23 | 699 | 0.6− | 1.1− | 2006 09 20 | 699 | 1.4+ | 0.5− |
| 2002 11 12 | 704 | 0.5− | 0.7+ | 2004 01 23 | 699 | (1.5+ | 0.5+) | 2006 09 20 | 699 | 0.2− | 0.4− |
| 2002 11 12 | 644 | 0.4+ | 0.3− | 2004 01 23 | 699 | 0.5− | 1.0− | 2006 09 20 | 699 | 0.0 | 0.1+ |
| 2002 11 12 | 704 | 0.4+ | 0.9+ | 2004 01 23 | 699 | 0.0 | 0.1+ | 2006 10 15 | 106 | 0.6− | 0.1− |
| 2002 11 12 | 704 | 0.2− | 0.4+ | 2004 01 25 | 608 | 1.1+ | 0.6+ | 2006 10 15 | 106 | 0.7− | 0.4+ |
| 2002 11 22 | 644 | 0.1− | 0.3+ | 2004 01 25 | 608 | 0.2+ | 0.4− | 2006 10 15 | 106 | 0.7− | 0.2− |
| 2002 11 22 | 644 | 0.1− | 0.2+ | 2004 01 25 | 608 | 0.5− | 0.2− | 2006 10 15 | 106 | 0.3− | 0.2− |
| 2002 11 22 | 644 | 0.0 | 0.4+ | 2004 01 28 | 704 | 1.0+ | 1.0+ | 2006 10 17 | 703 | 1.3+ | 0.8− |
| 2002 12 01 | 704 | 0.1+ | 0.3− | 2004 01 28 | 704 | 0.3− | 1.2+ | 2006 10 17 | 703 | 0.2+ | 1.5− |
| 2002 12 01 | 704 | 0.2+ | 0.1− | 2004 01 28 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2002 12 01 | 704 | 0.0 | 0.8+ | 2005 04 29 | 941 | (0.4− | 1.6+) | 2006 10 17 | 703 | 0.5− | 1.2− |

**(142672)∗ 2002 TW$_{219}$ = 2000 EH$_{173}$ = 2000 EH$_{139}$**

Discovered 2002 Oct. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41095)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.77672 | | (2000.0) | | | |
| $n$ | 0.22041673 | $\omega$ | 264.61019 | | −0.25662717 | +0.96580401 |
| $a$ | 2.7141865 | $\Omega$ | 350.27817 | | −0.77729280 | −0.22895492 |
| $e$ | 0.0073048 | $i$ | 12.63845 | | −0.57442005 | −0.12166451 |
| $P$ | 4.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.7+ | 0.3+ | 2003 12 30 | 704 | 0.5+ | 0.8+ | 2006 08 23 | 704 | 0.5− | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.6− | 2003 12 30 | 704 | 0.1+ | 0.8+ | 2006 08 23 | 704 | 0.2+ | 0.9+ |
| 2000 03 03 | 704 | 0.3+ | 0.6+ | 2003 12 30 | 704 | (0.2+ | 1.8+) | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 0.8+ | 2003 12 30 | 704 | 0.4− | 1.3+ | 2006 08 24 | 644 | 0.2− | 0.3+ |
| 2000 03 11 | 704 | 0.4+ | 0.5+ | 2004 01 18 | 644 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.4+ | 1.5+ | 2004 01 18 | 644 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.6− | 1.0− |
| 2000 03 11 | 704 | 0.4− | 1.0+ | 2004 01 18 | 703 | 0.5− | 0.5+ | 2006 08 28 | 704 | 0.3− | 0.2+ |
| 2000 03 15 | 691 | 0.0 | 0.2− | 2004 01 18 | 703 | 0.5− | 0.3+ | 2006 08 28 | 704 | 0.1+ | 0.2+ |
| 2000 03 15 | 691 | 0.0 | 0.3− | 2004 01 18 | 703 | 0.3+ | 0.3− | 2006 08 28 | 699 | (0.4− | 1.8+) |
| 2000 03 15 | 691 | 0.1− | 0.2− | 2004 01 18 | 644 | 0.0 | 0.0 | 2006 08 28 | 699 | 1.0+ | 1.1+ |
| 2002 10 05 | 704 | 0.2− | 0.2− | 2004 01 18 | 703 | 0.3+ | 0.5− | 2006 08 28 | 699 | 0.1+ | 0.0 |
| 2002 10 05 | 704 | 0.6− | 0.1− | 2004 01 19 | 704 | (1.6− | 0.5+) | 2006 08 31 | 704 | 0.2+ | 0.7+ |
| 2002 10 05 | 704 | 0.9+ | 0.5− | 2004 01 19 | 704 | 0.4+ | 0.1+ | 2006 08 31 | 704 | 0.1− | 0.4+ |
| 2002 10 05 | 704 | 1.0+ | 0.6+ | 2004 01 19 | 704 | 0.2− | 0.4− | 2006 08 31 | 704 | 0.2− | 1.0+ |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2004 01 30 | 699 | 0.1+ | 0.3+ | 2006 08 31 | 704 | 0.7− | 0.1+ |
| 2002 10 09 | 704 | (0.3+ | 2.1+) | 2004 01 30 | 699 | 0.5− | 0.7+ | 2006 08 31 | 704 | 0.1+ | 1.1− |
| 2002 10 09 | 704 | (0.5− | 1.7+) | 2004 01 30 | 699 | 0.1− | 0.5+ | 2006 09 11 | 415 | 0.3+ | 0.6+ |
| 2002 10 09 | 704 | (0.9+ | 2.4+) | 2004 01 30 | 699 | 0.1+ | 0.2+ | 2006 09 11 | 415 | 0.3+ | 0.5+ |
| 2002 10 09 | 704 | (0.6− | 2.1+) | 2004 01 31 | 704 | 1.4+ | 1.2+ | 2006 09 14 | 703 | 0.3− | 0.2− |
| 2002 10 09 | 704 | (0.0 | 1.8+) | 2004 01 31 | 704 | (0.6+ | 1.9+) | 2006 09 14 | 703 | 0.9− | 0.5− |
| 2002 10 12 | 704 | 0.3+ | 0.2+ | 2004 01 31 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.1+ | 0.5− |
| 2002 10 12 | 704 | 0.4+ | 0.5− | 2004 01 31 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 1.0+ | 0.4+ | 2004 01 31 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 1.1+ | 0.2+ |
| 2002 10 12 | 704 | 0.2− | 0.3+ | 2004 02 14 | 704 | 0.2+ | 1.3+ | 2006 09 25 | 699 | 1.2− | 0.3− |
| 2002 10 12 | 704 | 0.1+ | 0.8− | 2004 02 14 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 1.0− | 0.4+ |
| 2002 11 01 | 644 | 0.4− | 0.2+ | 2004 02 14 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 1.1+ |
| 2002 11 01 | 644 | 0.2− | 0.2+ | 2004 02 14 | 704 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2004 02 14 | 704 | 0.9+ | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.4− |
| 2002 11 13 | 644 | 0.3− | 0.0 | 2006 08 14 | 644 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2002 11 13 | 644 | 0.4− | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.5+ | 2006 10 17 | G96 | 0.7+ | 0.3− |
| 2002 11 13 | 644 | 0.5− | 0.1− | 2006 08 14 | 644 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.4+ |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2003 12 28 | 704 | 0.3− | 0.3− | 2006 08 16 | 644 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2003 12 28 | 704 | 0.5+ | 0.6+ | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2003 12 28 | 704 | 0.8+ | 0.9+ | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.9− |
| 2003 12 28 | 704 | 0.6+ | 0.6+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.8− |
| 2003 12 28 | 704 | (0.8+ | 1.6+) | 2006 08 23 | 704 | 0.1− | 0.5− | 2006 11 13 | G96 | 0.9− | 0.6− |
| 2003 12 30 | 704 | 0.2+ | 1.2+ | 2006 08 23 | 704 | 0.5− | 0.5+ | | | | |

**(142673)∗ 2002 TY$_{219}$ = 1995 YQ$_{17}$**

Discovered 2002 Oct. 5 by NEAT at Palomar.

Id. A. Doppler (*MPO* 38074)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.42535 | | (2000.0) | | | |
| $n$ | 0.26715582 | $\omega$ | 177.30507 | | +0.60957450 | −0.78283562 |
| $a$ | 2.3875893 | $\Omega$ | 235.10370 | | +0.72443787 | +0.61405877 |
| $e$ | 0.1124301 | $i$ | 8.75561 | | +0.32188306 | +0.10049986 |
| $P$ | 3.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 22 | 691 | 0.4+ | 0.1− | 2004 01 28 | 704 | 0.1+ | 0.8− | 2006 11 12 | G96 | 0.2− | 0.1− |
| 1995 12 22 | 691 | 0.1+ | 0.1− | 2004 02 19 | 704 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 1995 12 22 | 691 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.1+ | 1.0+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 1995 12 27 | 691 | 0.4− | 0.1+ | 2004 02 19 | 704 | 1.1− | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 1995 12 27 | 691 | 0.2− | 0.2− | 2004 02 19 | 704 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 1995 12 27 | 691 | 0.2− | 0.3− | 2004 02 19 | 704 | (0.2− | 2.3+) | 2006 11 17 | 704 | (0.1− | 1.9+) |
| 2002 08 16 | 704 | 0.3− | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 17 | 704 | 1.0− | 0.7− |
| 2002 08 16 | 704 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.7− | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2002 08 16 | 704 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.2− | 1.1− |
| 2002 08 16 | 704 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.6+ | 0.0 |
| 2002 09 12 | 644 | 0.2− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 1.0− |
| 2002 09 12 | 644 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2002 09 12 | 644 | 0.4− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2002 09 12 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.3− |
| 2002 09 12 | 644 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2002 09 12 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.5− | 1.2+ |
| 2002 10 05 | 644 | 0.3+ | 1.0+ | 2006 10 19 | 703 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.3− |
| 2002 10 05 | 644 | 0.0 | 1.2+ | 2006 10 19 | 703 | 0.6− | 1.3− | 2006 11 18 | 704 | 0.9− | 0.5+ |
| 2002 10 05 | 644 | 0.3+ | 1.0+ | 2006 10 19 | 703 | (0.5+ | 1.7−) | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2002 10 09 | 704 | 0.9− | 0.2+ | 2006 10 19 | 703 | (1.4+ | 1.8−) | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.7− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | (1.6+ | 0.2+) |
| 2002 10 09 | 704 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2002 10 09 | 704 | 0.3− | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.7− | 0.5+ |
| 2002 10 09 | 704 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.6+ | 0.2− | 2006 11 27 | 703 | 0.6− | 0.6+ |
| 2002 10 31 | 704 | 0.4− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 1.4− | 0.0 |
| 2002 10 31 | 704 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.6+ | 0.1− | 2006 11 27 | 703 | 1.5+ | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 0.7+ | 2006 11 08 | 644 | 1.0+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.5− |
| 2004 01 16 | 644 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.8+ |
| 2004 01 16 | 644 | 0.3+ | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.3− | 0.6+ |
| 2004 01 16 | 644 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.9+ |
| 2004 01 16 | 644 | 0.3+ | 1.0+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1− | 0.9+ |
| 2004 01 16 | 644 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.9− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2004 01 16 | 644 | 0.3− | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.5+ | 0.3+ |
| 2004 01 28 | 704 | 1.3+ | 0.7− | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2004 01 28 | 704 | (0.1− | 1.6+) | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2004 01 28 | 704 | 0.3+ | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.2− | | | | |

**(142674)∗ 2002 TB$_{221}$ = 1988 AF$_{3}$**

Discovered 2002 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 72725)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.07841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25471876 | $\omega$ | 141.94752 | | −0.05258329 | −0.98947457 | |
| $a$ | 2.4646888 | $\Omega$ | 310.63982 | | +0.86712689 | +0.02171795 | |
| $e$ | 0.2197687 | $i$ | 10.23374 | | +0.49530390 | −0.14306781 | |
| $P$ | 3.87 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 01 11 | 033 | 0.2+ | 0.8+ | 2002 10 06 | 704 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.6+ |
| 1988 01 11 | 033 | 0.1+ | 0.6+ | 2002 10 06 | 704 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.0 | 0.1− |
| 1998 08 17 | 704 | (1.7+ | 2.5−) | 2002 10 06 | 704 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 0.3− | 0.0 |
| 1998 08 17 | 704 | (2.2+ | 1.2−) | 2002 10 09 | 704 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.8+ | 0.1− |
| 1998 08 17 | 704 | 0.7+ | 0.0 | 2002 10 09 | 704 | 0.7− | 0.6− | 2006 09 28 | 703 | 0.2+ | 0.5+ |
| 1998 08 17 | 704 | 1.4− | 1.3+ | 2002 10 09 | 704 | 0.6− | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 1998 09 19 | 699 | 0.7+ | 1.3+ | 2002 10 09 | 704 | 0.6− | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.0 |
| 1998 09 19 | 699 | 1.3− | 0.5+ | 2002 10 09 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 1998 09 19 | 699 | 0.0 | 0.2+ | 2002 10 15 | 644 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 1998 09 27 | 699 | 0.2− | 0.8+ | 2002 10 15 | 644 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.2− |
| 1998 09 27 | 699 | 0.9+ | 0.1+ | 2002 10 15 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.0 |
| 1998 09 27 | 699 | 0.9− | 1.2+ | 2004 03 26 | 704 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.9+ | 0.2+ |
| 2000 03 12 | 699 | 0.4+ | 0.6− | 2004 03 26 | 704 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2000 03 12 | 699 | 0.2+ | 1.7+ | 2004 03 26 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 703 | 0.3+ | 0.9− |
| 2000 03 12 | 699 | (0.3− | 2.3+) | 2004 03 26 | 704 | 0.7− | 0.6+ | 2006 11 16 | 703 | 0.8− | 0.2− |
| 2000 03 12 | 699 | 0.4+ | 1.1+ | 2004 04 17 | 704 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.1− | 0.5− |
| 2000 04 07 | 704 | 0.9+ | 0.8+ | 2004 04 17 | 704 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.2− |
| 2000 04 07 | 704 | 0.5+ | 0.3+ | 2004 04 17 | 704 | 0.7+ | 0.0 | 2006 11 22 | 703 | 0.1− | 0.1+ |
| 2000 04 07 | 704 | 0.5+ | 0.9+ | 2004 04 17 | 704 | 0.4+ | 0.1− | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2000 04 07 | 704 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.4− | 0.3+ | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2002 10 06 | 704 | 0.2− | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.9− | 2006 11 22 | 703 | 0.2− | 0.3+ |

**(142675)∗ 2002 TN$_{222}$**

Discovered 2002 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.13999 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21528504 | $\omega$ | 136.08127 | | +0.95419025 | +0.29625039 | |
| $a$ | 2.7571484 | $\Omega$ | 206.77063 | | −0.29372203 | +0.90079827 | |
| $e$ | 0.0693077 | $i$ | 5.33925 | | −0.05699419 | +0.31748730 | |
| $P$ | 4.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.4− | 1.5+ | 2002 10 11 | 704 | 1.4− | 0.0 | 2005 04 12 | 691 | 0.3+ | 0.4+ |
| 2000 04 05 | 704 | 1.2+ | 0.9+ | 2002 10 11 | 704 | 0.1+ | 0.0 | 2005 05 01 | 644 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 1.3+ | 0.9+ | 2002 10 11 | 704 | 0.6− | 0.6+ | 2005 05 01 | 644 | 0.2+ | 0.4+ |
| 2000 04 05 | 704 | 0.7− | 0.3+ | 2002 10 11 | 704 | 0.7− | 0.2+ | 2005 05 01 | 644 | 0.3+ | 0.3+ |
| 2000 04 05 | 704 | 0.2+ | 1.3+ | 2002 10 15 | 704 | 0.3+ | 0.2− | 2005 05 08 | G96 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.5− | 2002 10 15 | 704 | 0.2− | 1.1− | 2005 05 08 | G96 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2002 10 15 | 704 | 0.5− | 0.0 | 2005 05 08 | G96 | 0.5− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2002 10 30 | 291 | 0.0 | 0.1− | 2005 05 08 | G96 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2002 10 30 | 291 | 0.1− | 0.1− | 2005 05 09 | 699 | 0.1− | 0.6+ |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2002 10 30 | 291 | 0.0 | 0.0 | 2005 05 09 | 699 | 0.0 | 0.8− |
| 2002 10 07 | 704 | 0.4+ | 0.9+ | 2002 11 04 | 291 | 0.2− | 0.1+ | 2005 05 09 | 699 | 0.4+ | 0.8+ |
| 2002 10 07 | 704 | 0.6+ | 1.3+ | 2002 11 04 | 291 | 0.1− | 0.0 | 2005 05 09 | 699 | 1.5+ | 1.3+ |
| 2002 10 07 | 704 | 1.0+ | 0.1+ | 2002 11 04 | 291 | 0.1− | 0.0 | 2006 08 14 | E12 | 0.3− | 0.1− |
| 2002 10 07 | 704 | 0.7+ | 0.7+ | 2002 11 06 | 704 | 0.0 | 1.3+ | 2006 08 14 | E12 | 0.5+ | 0.1+ |
| 2002 10 07 | 704 | 0.1− | 0.7+ | 2002 11 06 | 704 | 0.3+ | 1.2+ | 2006 08 14 | E12 | 0.6− | 0.3+ |
| 2002 10 09 | 704 | 0.4+ | 0.6+ | 2002 11 06 | 704 | 0.1− | 1.6+ | 2006 08 14 | E12 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.5+ | 0.6+ | 2002 11 06 | 704 | (1.4+ | 2.1+) | 2006 08 14 | E12 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 0.3+ | 1.0+ | 2005 03 11 | G96 | 0.1− | 0.2− | 2006 08 18 | 644 | 0.3− | 0.6+ |
| 2002 10 09 | 704 | 0.0 | 1.1+ | 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.7− | 0.6+ | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.0 |
| 2002 10 10 | 644 | 0.4− | 0.5− | 2005 03 11 | G96 | 1.6− | 0.0 | 2006 08 30 | 704 | 0.7+ | 0.1− |
| 2002 10 10 | 644 | 0.3+ | 0.0 | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.8+ | 0.1+ |
| 2002 10 10 | 644 | 0.3− | 0.4− | 2005 04 02 | G96 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.3+ | 1.5+ |
| 2002 10 10 | 644 | 0.1+ | 0.1+ | 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2002 10 10 | 644 | 0.4− | 0.3− | 2005 04 02 | G96 | 0.5− | 0.0 | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2002 10 10 | 644 | 0.4+ | 0.3+ | 2005 04 12 | 691 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2005 04 12 | 691 | 0.4+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.3− |

**(142676)∗ 2002 TU$_{223}$**

Discovered 2002 Oct. 7 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.31453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27098837 | $\omega$ | 112.93945 | | +0.99934145 | +0.03159429 | |
| $a$ | 2.3650244 | $\Omega$ | 245.25395 | | −0.03605431 | +0.92004356 | |
| $e$ | 0.2301056 | $i$ | 1.12592 | | +0.00409192 | +0.39054021 | |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 10 | 691 | 0.3− | 0.6− | 2002 10 16 | 644 | 0.1− | 0.1+ | 2002 11 23 | 644 | 0.1− | 0.1− |
| 1991 10 10 | 691 | 0.1+ | 0.5− | 2002 10 16 | 644 | 0.5+ | 0.8+ | 2002 11 23 | 644 | 0.1+ | 0.4+ |
| 1991 10 10 | 691 | 0.4+ | 0.4− | 2002 10 16 | 644 | 0.1− | 0.1+ | 2002 11 30 | 608 | 0.3+ | 0.3− |
| 2000 02 07 | 691 | 0.0 | 0.2− | 2002 10 16 | 644 | 0.4+ | 1.0+ | 2002 11 30 | 608 | 0.2+ | 0.4− |
| 2000 02 07 | 691 | 0.3+ | 0.6− | 2002 10 16 | 644 | 0.1+ | 0.1+ | 2002 11 30 | 608 | 0.4+ | 0.1− |
| 2000 02 07 | 691 | 0.3+ | 0.7− | 2002 10 31 | 699 | 0.6− | 1.1+ | 2002 12 01 | 704 | 0.9− | 0.4+ |
| 2000 03 03 | 688 | 0.2+ | 0.3+ | 2002 10 31 | 699 | 0.1− | 0.4+ | 2002 12 01 | 704 | 0.4− | 0.4− |
| 2000 03 03 | 688 | 0.7+ | 0.1− | 2002 10 31 | 699 | 0.3+ | 0.1+ | 2002 12 01 | 704 | 0.7− | 0.0 |
| 2002 09 07 | 704 | 0.7+ | 0.4+ | 2002 10 31 | 699 | (1.0− | 1.6+) | 2002 12 01 | 704 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.1+ | 0.7+ | 2002 11 04 | 699 | 0.3− | 0.1+ | 2004 02 17 | 291 | 0.3+ | 0.4+ |
| 2002 09 07 | 704 | 0.4+ | 0.1+ | 2002 11 04 | 699 | 0.7− | 0.2+ | 2004 02 17 | 291 | 0.3− | 0.9+ |
| 2002 10 02 | 704 | 0.4+ | 0.9+ | 2002 11 04 | 699 | 0.4− | 0.1− | 2004 02 17 | 291 | 0.0 | 0.6+ |
| 2002 10 02 | 704 | 0.2+ | 0.7+ | 2002 11 04 | 699 | 0.5− | 0.2− | 2005 06 13 | G96 | 0.0 | 0.3+ |
| 2002 10 02 | 704 | 0.9− | 0.2+ | 2002 11 05 | 291 | 0.4− | 0.1+ | 2005 06 13 | G96 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 1.1− | 0.6+ | 2002 11 05 | 291 | 0.1− | 0.1+ | 2005 06 13 | G96 | 0.0 | 0.3+ |
| 2002 10 07 | 704 | 0.3+ | 0.1+ | 2002 11 05 | 291 | 0.1− | 0.2+ | 2005 06 26 | G96 | 0.0 | 0.7+ |
| 2002 10 07 | 699 | 1.4− | 0.0 | 2002 11 06 | 704 | 0.2− | 0.6+ | 2005 06 26 | G96 | 0.2+ | 0.8+ |
| 2002 10 07 | 704 | 0.3+ | 0.2− | 2002 11 06 | 704 | 0.0 | 0.5+ | 2005 06 26 | G96 | 0.2+ | 0.7+ |
| 2002 10 07 | 699 | 0.7− | 0.5+ | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2005 06 26 | G96 | 0.2+ | 0.6+ |
| 2002 10 07 | 704 | 1.0− | 0.5− | 2002 11 06 | 333 | 0.2+ | 0.3+ | 2005 06 28 | G96 | 0.2− | 0.5+ |
| 2002 10 07 | 699 | 0.7− | 0.3+ | 2002 11 06 | 704 | 0.3+ | 0.1+ | 2005 06 28 | G96 | 0.2+ | 0.7+ |
| 2002 10 07 | 704 | 0.9+ | 0.6− | 2002 11 06 | 704 | 0.6+ | 0.1− | 2005 06 28 | G96 | 0.5+ | 0.4+ |
| 2002 10 07 | 699 | 0.0 | 0.2+ | 2002 11 06 | 333 | (2.3− | 0.1−) | 2005 06 28 | G96 | 0.2− | 0.6+ |
| 2002 10 09 | 704 | 0.7+ | 1.2+ | 2002 11 06 | 608 | 0.2− | 0.7− | 2006 09 24 | 691 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 1.4+ | 0.7− | 2002 11 06 | 608 | 0.2− | 0.3− | 2006 09 24 | 691 | 0.4− | 0.2+ |
| 2002 10 09 | 704 | 0.2− | 0.6− | 2002 11 06 | 608 | 0.1+ | 0.4− | 2006 09 24 | 691 | 0.8− | 0.0 |
| 2002 10 09 | 704 | 0.4+ | 0.3+ | 2002 11 10 | 704 | 1.1+ | 0.8+ | 2006 09 24 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.1− | 0.7+ | 2002 11 10 | 704 | 0.3− | 0.0 | 2006 09 24 | 691 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.0 | 2002 11 10 | 704 | 0.2+ | 0.3− | 2006 09 24 | 691 | (3.1+ | 2.6−) |
| 2002 10 11 | 704 | 0.4+ | 0.1− | 2002 11 12 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2002 11 12 | 644 | 0.4+ | 0.1− | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.5+ | 0.3+ | 2002 11 12 | 644 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.8+ |
| 2002 10 16 | 644 | 0.3+ | 0.9+ | 2002 11 23 | 644 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.5+ | 0.5+ |

**(142677)∗ 2002 TA$_{224}$**

Discovered 2002 Oct. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.36850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23709810 | $\omega$ | 197.57982 | | −0.27161030 | −0.96047568 | |
| $a$ | 2.5853380 | $\Omega$ | 268.21374 | | +0.89015541 | −0.22664208 | |
| $e$ | 0.2501105 | $i$ | 3.49576 | | +0.36585679 | −0.16161630 | |
| $P$ | 4.16 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 06 | 691 | 0.1− | 0.4− | 2002 11 08 | 704 | 0.6+ | 0.1− | 2006 09 17 | 703 | 0.2+ | 1.3+ |
| 1997 07 06 | 691 | 0.6+ | 0.8− | 2002 11 08 | 704 | 0.0 | 1.0+ | 2006 09 19 | 699 | (1.6+ | 0.8+) |
| 1997 07 06 | 691 | 0.2+ | 0.6− | 2002 11 08 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.9+ | 0.7+ |
| 1998 11 24 | 704 | 0.2− | 1.8− | 2002 11 12 | 644 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.2− |
| 1998 11 24 | 704 | 0.1− | 1.4− | 2002 11 12 | 704 | 0.5− | 0.4− | 2006 09 19 | 699 | 0.1− | 0.5+ |
| 1998 11 24 | 704 | 0.8+ | 0.6− | 2002 11 12 | 644 | 0.4− | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 704 | (0.9− | 2.2+) | 2002 11 12 | 704 | 0.2− | 0.1− | 2006 09 25 | 704 | 1.0+ | 0.8+ | | |
| 1998 12 14 | 704 | 0.6+ | 0.7− | 2002 11 12 | 704 | 0.6− | 0.1− | 2006 09 25 | 704 | 0.2− | 0.2+ | | |
| 1998 12 14 | 704 | 0.1− | 0.8+ | 2002 11 12 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.3+ | | |
| 1998 12 14 | 704 | 1.7+ | 0.8+ | 2002 11 12 | 704 | 0.9− | 0.7− | 2006 09 29 | 704 | 0.2+ | 0.1− | | |
| 1998 12 14 | 704 | (3.8− | 1.0−) | 2002 11 12 | 704 | 0.7− | 0.5− | 2006 09 29 | 704 | 0.8− | 0.5+ | | |
| 2002 10 04 | 704 | 0.2+ | 0.4− | 2002 12 01 | 704 | 0.6− | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.9+ | | |
| 2002 10 04 | 704 | 0.8− | 0.1− | 2002 12 01 | 704 | 0.4− | 0.1+ | 2006 09 29 | 704 | 1.0+ | 0.3+ | | |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2002 12 01 | 704 | 0.7− | 0.1− | 2006 09 29 | 704 | (0.0 | 1.6+) | | |
| 2002 10 04 | 704 | (1.5− | 0.5−) | 2002 12 01 | 704 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.4− | | |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2002 12 01 | 704 | 0.9− | 0.4− | 2006 10 17 | 703 | 0.7− | 0.4− | | |
| 2002 10 08 | 699 | 0.9+ | 0.1+ | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.4− | | |
| 2002 10 08 | 699 | 0.3+ | 0.1− | 2003 01 08 | 704 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.3− | 0.5+ | | |
| 2002 10 08 | 699 | 0.4+ | 0.1− | 2003 01 08 | 704 | 0.0 | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 08 | 699 | 0.7− | 0.9− | 2004 05 14 | 691 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.5+ | | |
| 2002 10 09 | 704 | 0.4− | 0.7+ | 2004 05 14 | 691 | 0.2+ | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.2− | | |
| 2002 10 09 | 704 | (1.6+ | 1.7+) | 2004 05 14 | 691 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.4+ | 2004 05 15 | 704 | (1.3+ | 1.5+) | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2002 10 09 | 704 | (1.6+ | 0.2+) | 2004 05 15 | 704 | 1.1+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.3− | 0.1− | 2004 05 15 | 704 | (2.0+ | 1.3+) | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 10 12 | 704 | 0.0 | 0.2− | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 12 | 704 | 0.1− | 0.2− | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 10 12 | 704 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 12 | 704 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.6+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.3+ | 0.2− | 2006 09 16 | 703 | 1.2− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2002 10 31 | 644 | 0.1− | 1.2+ | 2006 09 16 | 703 | 1.4− | 0.7+ | 2006 11 20 | G96 | 0.4+ | 0.4− | | |
| 2002 10 31 | 644 | 0.3− | 0.9+ | 2006 09 16 | 703 | 0.5− | 1.0+ | 2006 11 20 | G96 | 0.2+ | 0.3− | | |
| 2002 10 31 | 644 | 0.3− | 1.0+ | 2006 09 17 | 703 | 0.3+ | 1.0+ | 2006 11 20 | G96 | 0.2+ | 0.2− | | |
| 2002 11 08 | 704 | 0.4− | 0.3+ | 2006 09 17 | 703 | 0.7+ | 0.5+ | 2006 11 20 | G96 | 0.1− | 0.2− | | |
| 2002 11 08 | 704 | 0.3− | 0.4− | 2006 09 17 | 703 | 0.2+ | 1.2+ | | | | | | |

**(142678)∗ 2002 TC$_{224}$**

Discovered 2002 Oct. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.57517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24402499 | $\omega$ | 30.80375 | | +0.69740635 | +0.71525304 | |
| $a$ | 2.5361787 | $\Omega$ | 283.45846 | | −0.66662995 | +0.62429513 | |
| $e$ | 0.1082070 | $i$ | 2.66021 | | −0.26311382 | +0.31411570 | |
| $P$ | 4.04 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 0.0 | 0.1+ | 2002 11 04 | 699 | 1.3+ | 0.5− | 2004 02 29 | 691 | 0.1− | 0.2+ | | |
| 1998 11 11 | 704 | 0.2− | 0.2+ | 2002 11 04 | 699 | 0.5− | 0.2+ | 2005 06 26 | 644 | 0.1− | 0.4+ | | |
| 1998 11 11 | 704 | 0.1− | 1.1− | 2002 11 04 | 699 | 0.8− | 0.3− | 2005 06 26 | 644 | 0.0 | 0.4+ | | |
| 1998 11 11 | 704 | 0.1− | 1.1+ | 2002 11 12 | 644 | 0.4− | 0.8+ | 2005 06 26 | 644 | 0.4+ | 0.6+ | | |
| 1998 11 25 | 691 | 0.0 | 0.6− | 2002 11 12 | 644 | 0.0 | 0.7+ | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 1998 11 25 | 691 | 0.1+ | 0.6− | 2002 11 12 | 644 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.5− | 1.4+ | | |
| 1998 11 25 | 691 | 0.3+ | 0.6− | 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.2+ | | |
| 2000 02 02 | 691 | 0.0 | 0.3− | 2004 01 24 | 704 | 0.9+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.2− | | |
| 2000 02 02 | 691 | 0.2− | 0.4− | 2004 01 24 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.0 | | |
| 2000 02 02 | 691 | 0.1+ | 0.3− | 2004 01 24 | 704 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.2+ | 0.0 | | |
| 2002 10 08 | 699 | 1.2+ | 0.7+ | 2004 01 31 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2002 10 08 | 699 | 0.2− | 0.4+ | 2004 01 31 | 691 | 1.1+ | 0.3− | 2006 10 20 | 644 | 0.5− | 0.0 | | |
| 2002 10 08 | 699 | 0.0 | 0.1− | 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.1− | | |
| 2002 10 08 | 699 | 0.1− | 0.6− | 2004 01 31 | 691 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1− | | |
| 2002 10 09 | 704 | 0.9− | 0.1+ | 2004 01 31 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.5+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.4− | 0.5+ | 2004 01 31 | 691 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 2002 10 09 | 704 | 0.0 | 0.6− | 2004 02 11 | 703 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 10 09 | 704 | (1.8− | 0.1+) | 2004 02 11 | 703 | 1.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 10 26 | 608 | 0.1− | 0.9− | 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2002 10 26 | 608 | 0.1− | 0.4− | 2004 02 11 | 691 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.2+ | | |
| 2002 10 26 | 608 | 0.2− | 0.6− | 2004 02 11 | 703 | 0.0 | 0.9− | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2002 10 31 | 644 | 0.1+ | 0.2− | 2004 02 11 | 644 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2002 10 31 | 644 | 0.5+ | 1.1+ | 2004 02 11 | 703 | 0.4− | 1.4+ | 2006 11 07 | 644 | 0.1+ | 0.0 | | |
| 2002 10 31 | 644 | 0.0 | 0.2− | 2004 02 11 | 691 | 0.2− | 0.4+ | 2006 11 07 | 644 | 0.3− | 0.3− | | |
| 2002 10 31 | 644 | 0.6+ | 1.0+ | 2004 02 11 | 644 | 0.5+ | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.1+ | | |
| 2002 10 31 | 644 | 0.3− | 0.1− | 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2002 10 31 | 644 | 0.3+ | 1.0+ | 2004 02 17 | 704 | 1.2+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ | | |
| 2002 11 01 | 608 | 0.0 | 0.3− | 2004 02 17 | 704 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1+ | | |
| 2002 11 01 | 608 | 0.5+ | 1.0− | 2004 02 17 | 704 | 0.6+ | 1.0+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 01 | 608 | 0.2− | 0.2− | 2004 02 29 | 691 | 0.6− | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.1+ | | |
| 2002 11 04 | 699 | 0.1− | 0.8− | 2004 02 29 | 691 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.0 | | |

**(142679)∗ 2002 TT$_{225}$ = 2005 GA$_{166}$**

Discovered 2002 Oct. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 85678)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.84436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23089474 | $\omega$ | 136.82544 | | +0.84454338 | +0.53484099 | |
| $a$ | 2.6314393 | $\Omega$ | 190.93200 | | −0.52126799 | +0.80988341 | |
| $e$ | 0.2089986 | $i$ | 7.97099 | | −0.12258123 | +0.24090243 | |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 704 | 0.6− | 0.2− | 2005 04 11 | G96 | 0.4− | 0.1− | 2006 09 21 | A50 | 0.2+ | 0.0 | | |
| 2001 05 26 | 704 | 0.6+ | 0.5+ | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 09 24 | 608 | 0.0 | 1.0− | | |
| 2001 05 26 | 704 | 0.4− | 0.8+ | 2005 04 11 | G96 | 0.3− | 0.2− | 2006 09 24 | 608 | 0.1+ | 1.2− | | |
| 2001 05 26 | 704 | 0.6+ | 1.3+ | 2005 04 11 | G96 | 0.3− | 0.0 | 2006 09 24 | 608 | 0.7− | 0.5− | | |
| 2002 09 05 | 704 | 0.7− | 0.4+ | 2005 04 12 | 695 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1− | | |
| 2002 09 05 | 704 | 0.8− | 1.0+ | 2005 04 12 | 695 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.3− | 1.3+ | 2005 04 18 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.4− | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 699 | 0.1+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.3− | 1.0− | 2005 04 18 | 691 | 0.9− | 1.2+ | 2006 09 27 | 699 | 0.2+ | 0.2+ | | |
| 2002 10 03 | 704 | (0.6+ | 1.6−) | 2005 05 12 | 699 | (1.1− | 2.0+) | 2006 09 27 | 704 | 0.1− | 0.0 | | |
| 2002 10 08 | 699 | 0.1+ | 0.1+ | 2005 05 12 | 699 | 0.4+ | 0.6+ | 2006 09 27 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 08 | 699 | 0.7− | 0.7− | 2005 05 12 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.2− | | |
| 2002 10 08 | 699 | 0.1+ | 1.3+ | 2005 05 12 | 699 | (1.6+ | 1.6−) | 2006 09 27 | 699 | 0.5+ | 0.1− | | |
| 2002 10 08 | 699 | 0.8− | 0.3+ | 2005 05 12 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.0 | | |
| 2002 10 09 | 704 | 0.8+ | 0.5+ | 2005 05 12 | 699 | (0.3+ | 5.3−) | 2006 09 27 | 704 | 0.4+ | 0.1− | | |
| 2002 10 09 | 704 | 0.5+ | 0.3+ | 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 09 | 704 | 0.9− | 0.2+ | 2006 08 31 | 704 | 0.4− | 0.7+ | 2006 09 29 | 704 | 0.2+ | 0.7+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.3+ | 2006 08 31 | 704 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.4+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.3− | 2006 08 31 | 704 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.5+ | | |
| 2002 11 07 | 704 | (0.2− | 1.6+) | 2006 08 31 | 704 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.8+ | | |
| 2002 11 07 | 704 | 0.2− | 1.0+ | 2006 08 31 | 704 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.3− | 0.3+ | | |
| 2002 11 11 | 704 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.6+ | 0.1− | | |
| 2002 11 11 | 704 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.7+ | 0.4+ | | |
| 2002 11 11 | 704 | 0.6+ | 0.1+ | 2006 09 06 | 644 | 0.6+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.3− | | |
| 2002 11 11 | 704 | 0.1− | 0.1+ | 2006 09 14 | A50 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.9+ | | |
| 2002 11 11 | 704 | 0.4+ | 0.0 | 2006 09 14 | A50 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 | | |
| 2002 11 14 | 644 | 0.2− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1− | | |
| 2002 11 14 | 644 | 0.4− | 0.2+ | 2006 09 16 | 644 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.2− | | |
| 2002 11 14 | 644 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.2+ | | |
| 2002 11 22 | 644 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 1.1− | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.5+ | | |
| 2002 11 22 | 644 | 0.3+ | 0.8+ | 2006 09 17 | 704 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.6+ | | |
| 2002 11 22 | 644 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 1.0+ | | |
| 2002 12 01 | 704 | 0.3− | 1.1+ | 2006 09 17 | 704 | 0.8− | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.7− | | |
| 2002 12 01 | 704 | 0.3+ | 1.0+ | 2006 09 17 | 691 | 0.7− | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.7+ | | |
| 2002 12 01 | 704 | 0.5− | 0.9+ | 2006 09 17 | 691 | 0.5− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 1.0+ | | |
| 2002 12 01 | 704 | 0.4− | 1.2+ | 2006 09 17 | 691 | 0.6− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.4+ | | |
| 2002 12 01 | 704 | 1.0− | 1.3+ | 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 01 | 608 | 0.1− | 0.7+ | 2006 09 17 | 703 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 2002 12 01 | 608 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.6+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 2002 12 01 | 608 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2005 03 13 | G96 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2005 03 13 | G96 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.0 | | |
| 2005 03 13 | G96 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2005 03 13 | G96 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2005 04 06 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.2− | | |
| 2005 04 06 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.3− | | |
| 2005 04 06 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− | | |
| 2005 04 10 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.2+ | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 21 | A50 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.3− |

**(142680)∗ 2002 TF$_{227}$**

Discovered 2002 Oct. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.38459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23271011 | $\omega$ | 281.73413 | | +0.73361696 | −0.67808100 | |
| $a$ | 2.6177362 | $\Omega$ | 120.97836 | | +0.64209050 | +0.67003423 | |
| $e$ | 0.0854541 | $i$ | 2.99920 | | +0.22254428 | +0.30209317 | |
| $P$ | 4.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 1.0+ | 0.4+ | 2002 11 11 | 704 | 0.4− | 0.8− | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 1.5+ | 2002 11 11 | 704 | 0.3− | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2000 03 11 | 704 | 0.3− | 0.2+ | 2002 11 11 | 704 | 0.5− | 0.4− | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2000 03 11 | 704 | 0.5− | 0.5− | 2002 11 11 | 704 | 0.2+ | 0.6− | 2006 09 18 | 699 | 0.8+ | 0.7+ |
| 2002 09 07 | 704 | 0.2− | 1.0− | 2002 11 11 | 644 | 0.3− | 0.8− | 2006 09 18 | 699 | 0.7− | 0.5+ |
| 2002 09 07 | 704 | 1.0− | 0.5− | 2002 11 11 | 644 | 0.1+ | 0.9− | 2006 09 18 | 699 | (2.3+ | 0.3+) |
| 2002 09 07 | 704 | 0.3+ | 0.4+ | 2002 11 11 | 644 | 0.1+ | 0.6− | 2006 09 18 | 699 | 0.0 | 0.2+ |
| 2002 10 08 | 699 | 0.8− | 0.7− | 2002 12 07 | 704 | 0.3+ | 0.9− | 2006 09 22 | 704 | 0.1− | 0.7− |
| 2002 10 08 | 699 | 1.0− | 0.3− | 2002 12 07 | 704 | 0.4+ | 0.1− | 2006 09 22 | 704 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.1− | 0.7+ | 2002 12 07 | 704 | 0.5+ | 0.3− | 2006 09 22 | 704 | 0.3+ | 0.0 |
| 2002 10 08 | 699 | 0.8+ | 0.4+ | 2002 12 07 | 704 | 0.1− | 0.1− | 2006 09 26 | 704 | (0.3+ | 1.6+) |
| 2002 10 09 | 704 | 0.3+ | 0.7+ | 2002 12 07 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.0 | 0.8+ |
| 2002 10 09 | 704 | 0.3+ | 0.8− | 2002 12 11 | 704 | 0.8+ | 1.2+ | 2006 09 26 | 704 | (0.3+ | 1.6+) |
| 2002 10 09 | 704 | 0.7+ | 0.0 | 2002 12 11 | 704 | 1.1− | 0.1+ | 2006 09 26 | 704 | (0.1+ | 1.5+) |
| 2002 10 09 | 704 | 0.1− | 0.4− | 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.6+ | 1.1+ |
| 2002 10 11 | 704 | (0.8+ | 1.9+) | 2002 12 11 | 704 | (0.6+ | 2.1−) | 2006 09 27 | 691 | 0.3− | 0.9− |
| 2002 10 11 | 704 | (0.7− | 2.1+) | 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.8+ | 2004 02 18 | 704 | 0.7+ | 1.3+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | (0.4− | 2.1+) | 2004 02 18 | 704 | 0.5− | 0.2+ | 2006 09 28 | 704 | 0.8+ | 0.6− |
| 2002 10 30 | 644 | 0.4+ | 0.1+ | 2004 02 18 | 704 | 0.0 | 0.9+ | 2006 09 28 | 704 | 0.1+ | 0.2− |
| 2002 10 30 | 644 | 0.1+ | 0.9− | 2004 02 18 | 704 | (0.8+ | 1.8+) | 2006 09 28 | 704 | 0.4+ | 0.2+ |
| 2002 10 30 | 644 | 0.5+ | 0.1+ | 2004 03 11 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.8− |
| 2002 11 02 | 608 | 1.4+ | 0.2+ | 2004 03 11 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.6− | 0.0 |
| 2002 11 02 | 608 | 1.3+ | 0.5+ | 2004 03 11 | 644 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.2+ |
| 2002 11 02 | 608 | 1.2+ | 0.3+ | 2004 03 19 | 704 | (0.1+ | 1.6+) | 2006 09 30 | 704 | 0.2− | 0.7+ |
| 2002 11 04 | 699 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 704 | 0.7− | 0.2+ |
| 2002 11 04 | 699 | 0.8− | 0.6− | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.5+ |
| 2002 11 04 | 699 | 0.3+ | 0.6− | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2002 11 04 | 699 | 0.6+ | 0.2+ | 2004 03 19 | 704 | (1.7− | 0.8+) | 2006 10 19 | 644 | 0.2− | 0.6+ |
| 2002 11 06 | 608 | 0.4− | 0.6− | 2006 09 12 | 703 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2002 11 06 | 608 | 0.4− | 0.9− | 2006 09 12 | 703 | (1.7− | 0.5−) | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 06 | 608 | 0.4− | 0.5− | 2006 09 12 | 703 | 0.8− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.6+ | 1.7+ |
| 2002 11 07 | 704 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.8− | 2.2+ |
| 2002 11 07 | 704 | 0.1− | 0.9+ | 2006 09 16 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.2+ | 2006 09 16 | 704 | 0.5+ | 0.3− | 2006 10 21 | 703 | 0.2− | 1.4+ |
| 2002 11 07 | 704 | 0.4− | 0.1+ | 2006 09 16 | 704 | 1.0− | 0.5− | 2006 10 21 | 703 | 0.6− | 0.4+ |
| 2002 11 11 | 704 | 0.3+ | 0.8+ | 2006 09 16 | 704 | 0.6− | 1.1+ | | | | |

**(142681)∗ 2002 TM$_{228}$ = 2004 DJ$_{26}$**

Discovered 2002 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61462)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.82695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22590424 | $\omega$ | 327.95265 | | +0.86216365 | −0.50486240 | |
| $a$ | 2.6700525 | $\Omega$ | 62.42636 | | +0.47431142 | +0.77501853 | |
| $e$ | 0.1024722 | $i$ | 2.73406 | | +0.17805201 | +0.38007925 | |
| $P$ | 4.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.6+ | 0.6+ | 2002 10 31 | 699 | 1.1+ | 0.5+ | 2005 04 07 | G96 | 0.3+ | 0.0 |
| 2002 10 07 | 704 | 0.7+ | 0.4− | 2003 12 21 | 645 | 0.1− | 0.1− | 2005 04 07 | G96 | 0.3+ | 0.4+ |
| 2002 10 07 | 704 | 0.3− | 0.8− | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.0 | 0.0 |
| 2002 10 09 | 699 | 0.4− | 0.0 | 2004 01 22 | 704 | 0.5+ | 0.0 | 2006 08 16 | 644 | 0.5− | 0.3+ |
| 2002 10 09 | 699 | 0.1− | 0.5− | 2004 01 22 | 704 | 0.1+ | 1.1+ | 2006 08 16 | 644 | 0.1− | 0.1+ |
| 2002 10 09 | 699 | 0.8− | 1.1+ | 2004 01 22 | 704 | 1.2+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.3+ |
| 2002 10 09 | 699 | 0.6+ | 0.4+ | 2004 01 22 | 704 | 0.0 | 0.8+ | 2006 08 16 | 644 | 0.3+ | 0.3+ |
| 2002 10 11 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | (2.5+ | 0.4+) | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.9− | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.5+ |
| 2002 10 11 | 704 | (1.6+ | 1.6−) | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 0.9+ | 0.6− | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 10 11 | 704 | 0.1− | 1.0− | 2004 02 23 | 704 | 0.8+ | 1.2+ | 2006 08 22 | 644 | 0.2− | 0.3+ |
| 2002 10 30 | 644 | 0.5− | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.8+ | 2006 08 22 | 644 | 0.2+ | 0.4+ |
| 2002 10 30 | 644 | 0.3− | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.4+ |
| 2002 10 30 | 644 | 0.1− | 0.2+ | 2004 02 23 | 704 | 1.1+ | 1.1+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 10 31 | 699 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 10 31 | 699 | 0.7− | 1.4+ | 2005 04 07 | G96 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2002 10 31 | 699 | (1.7− | 0.0 ) | 2005 04 07 | G96 | 0.8− | 0.3+ | | | | |

**(142682)∗ 2002 TR$_{228}$**

Discovered 2002 Oct. 7 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.23335 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23885077 | $\omega$ | 136.80829 | | +0.71348495 | +0.70064595 | |
| $a$ | 2.5726752 | $\Omega$ | 178.66867 | | −0.69176538 | +0.70572421 | |
| $e$ | 0.1292561 | $i$ | 14.64115 | | −0.11135481 | +0.10511231 | |
| $P$ | 4.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 699 | 0.4+ | 0.5− | 2005 04 18 | 703 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.0 |
| 2001 05 22 | 699 | 0.0 | 0.4− | 2005 05 06 | 704 | 1.4+ | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.2+ |
| 2001 05 22 | 699 | 0.4− | 0.4+ | 2005 05 06 | 704 | 0.3+ | 0.6+ | 2006 09 23 | 691 | 0.3+ | 0.0 |
| 2001 05 22 | 699 | 0.9− | 1.0+ | 2005 05 06 | 704 | 0.1+ | 0.9− | 2006 09 23 | 691 | 0.3+ | 0.1− |
| 2002 09 19 | 599 | 0.3+ | 0.1− | 2005 05 08 | 683 | 0.6+ | 0.8− | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2002 09 19 | 599 | 0.5+ | 0.2+ | 2005 05 08 | 683 | 0.6+ | 0.9+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2002 09 19 | 599 | 0.2+ | 0.1− | 2005 05 08 | 683 | (1.5+ | 1.2+) | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 1.4+ | 0.0 | 2005 05 11 | 703 | 0.7− | 1.0+ | 2006 09 28 | 704 | 0.6+ | 0.5− |
| 2002 10 04 | 704 | 0.5+ | 0.0 | 2005 05 11 | 703 | 0.9− | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2002 10 04 | 704 | 0.5− | 0.4+ | 2005 05 11 | 703 | 0.2+ | 0.9+ | 2006 09 28 | 704 | (1.6+ | 1.1−) |
| 2002 10 07 | 608 | 0.7− | 0.5− | 2005 05 11 | 703 | 0.6+ | 0.3− | 2006 09 28 | 704 | 0.2− | 0.4+ |
| 2002 10 07 | 608 | 0.6− | 0.4− | 2005 05 15 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 1.2+ |
| 2002 10 07 | 608 | 0.2+ | 0.0 | 2005 05 15 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.3+ |
| 2002 10 09 | 699 | 0.7+ | 0.1− | 2005 05 15 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2002 10 09 | 699 | 0.9− | 0.7+ | 2006 09 06 | 644 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.1− |
| 2002 10 09 | 699 | 1.0− | 0.3+ | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 10 16 | 703 | (1.5+ | 0.2−) |
| 2002 10 09 | 699 | 0.1− | 1.2+ | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.8− | 0.1+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 10 15 | 644 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 15 | 644 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 15 | 644 | 0.2− | 0.7+ | 2006 09 19 | 691 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 28 | 644 | 0.1+ | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 10 28 | 644 | 0.1+ | 1.1+ | 2006 09 19 | 703 | 0.9− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 10 28 | 644 | 0.3+ | 1.2+ | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2002 10 30 | 704 | 1.2− | 0.9+ | 2006 09 19 | 703 | 1.0− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 10 30 | 704 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 10 30 | 704 | 0.9− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 1.4− |
| 2002 10 30 | 704 | 0.7− | 0.8+ | 2006 09 20 | 704 | 0.3+ | 0.9+ | 2006 10 22 | 703 | 0.2+ | 0.2+ |
| 2005 04 18 | 703 | (2.5− | 1.5+) | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2005 04 18 | 703 | 0.4− | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.8− | 0.4− |
| 2005 04 18 | 703 | (1.6− | 0.5+) | 2006 09 20 | 644 | 0.1+ | 0.1+ | | | | |

**(142683)∗ 2002 TC$_{232}$**

Discovered 2002 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.71220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24121560 | $\omega$ | 73.82847 | | +0.84724980 | +0.48556183 | |
| $a$ | 2.5558329 | $\Omega$ | 256.68065 | | −0.53119279 | +0.77554487 | |
| $e$ | 0.0879101 | $i$ | 12.78863 | | +0.00141701 | +0.40343508 | |
| $P$ | 4.09 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 699 | 0.2+ | 0.5− | 2002 10 10 | 704 | 0.2+ | 0.3+ | 2005 05 16 | 644 | 0.1− | 0.5+ |
| 1998 10 29 | 699 | 0.6+ | 0.9− | 2002 10 15 | 704 | 0.7− | 0.3− | 2005 05 16 | 644 | 0.1+ | 0.7+ |
| 1998 10 29 | 699 | 0.2− | 0.2+ | 2002 10 15 | 644 | 0.3− | 1.1+ | 2006 09 06 | 644 | 0.3+ | 0.0 |
| 1998 11 26 | 699 | 0.0 | 0.6+ | 2002 10 15 | 704 | 0.2− | 0.3+ | 2006 09 06 | 644 | 0.3+ | 0.0 |
| 1998 11 26 | 699 | 0.1− | 1.1+ | 2002 10 15 | 644 | 0.2− | 1.0+ | 2006 09 06 | 644 | 0.3+ | 0.1+ |
| 1998 11 26 | 699 | 0.8+ | 0.5+ | 2002 10 15 | 704 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.0 | 0.1− |
| 2002 08 15 | 704 | (2.0+ | 1.5−) | 2002 10 15 | 704 | 0.1− | 0.6− | 2006 09 16 | 703 | 0.4+ | 0.3− |
| 2002 08 15 | 704 | 1.4+ | 1.1− | 2002 10 15 | 644 | 0.2− | 1.0+ | 2006 09 16 | 703 | 0.6+ | 0.5− |
| 2002 08 15 | 704 | 1.0+ | 0.6− | 2002 10 17 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.4− |
| 2002 08 30 | 704 | 0.2+ | 0.2+ | 2002 10 17 | 704 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.5+ | 0.4− |
| 2002 08 30 | 704 | 0.8− | 0.5− | 2002 10 17 | 704 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.3+ | 0.5+ |
| 2002 08 30 | 704 | 0.4− | 0.4− | 2002 11 01 | 644 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.2+ | 0.0 |
| 2002 08 30 | 704 | 0.6− | 0.2+ | 2002 11 01 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.6+ | 0.1+ |
| 2002 08 30 | 704 | 0.3− | 0.4+ | 2002 11 01 | 644 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.5+ | 0.3+ |
| 2002 09 03 | 644 | 0.2+ | 0.1+ | 2002 11 07 | 704 | 0.0 | 1.0− | 2006 09 28 | 703 | 0.9+ | 1.0+ |
| 2002 09 03 | 644 | 0.1+ | 0.1+ | 2002 11 07 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.8+ | 0.4+ |
| 2002 09 03 | 644 | 0.2+ | 0.1+ | 2002 11 07 | 704 | 0.0 | 0.8− | 2006 09 29 | 704 | 0.6− | 0.6− |
| 2002 09 14 | 699 | 0.2+ | 0.3− | 2002 11 07 | 704 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 2002 09 14 | 699 | 0.3+ | 0.2+ | 2002 12 01 | 704 | 0.6− | 0.7+ | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2002 09 14 | 699 | 0.2− | 0.2+ | 2002 12 01 | 704 | 0.1− | 1.0+ | 2006 10 20 | 703 | 0.7− | 0.0 |
| 2002 09 14 | 699 | 0.4− | 0.3+ | 2002 12 01 | 704 | 0.2+ | 0.3− | 2006 10 20 | 703 | 0.1− | 0.3+ |
| 2002 09 28 | 644 | 0.6− | 0.1+ | 2002 12 01 | 704 | (1.2+ | 1.8+) | 2006 10 20 | 703 | 0.1− | 0.3− |
| 2002 09 28 | 644 | 0.6− | 0.1+ | 2002 12 01 | 704 | 0.4− | 0.8+ | 2006 10 20 | 703 | 0.5+ | 0.2− |
| 2002 09 28 | 644 | 0.6− | 0.1− | 2002 12 05 | 704 | 0.6+ | 1.1+ | 2006 10 26 | 703 | 0.2+ | 0.1+ |
| 2002 10 06 | 699 | 0.2+ | 0.2+ | 2002 12 05 | 704 | 0.6+ | 1.4+ | 2006 10 26 | 703 | 0.1− | 0.6− |
| 2002 10 06 | 699 | 0.4− | 0.6+ | 2002 12 05 | 704 | (0.8− | 1.7+) | 2006 10 26 | 703 | 0.5+ | 1.0− |
| 2002 10 06 | 699 | 0.3− | 0.6+ | 2002 12 05 | 704 | 0.6− | 0.2+ | 2006 10 26 | 703 | 0.2− | 0.3+ |
| 2002 10 06 | 699 | 0.4+ | 0.4+ | 2004 01 18 | 644 | 0.0 | 0.4+ | 2006 10 26 | 704 | 0.6− | 0.2− |
| 2002 10 06 | 704 | 0.2− | 0.0 | 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 10 26 | 704 | 0.4− | 0.3− |
| 2002 10 06 | 704 | 0.3− | 0.1− | 2004 01 18 | 644 | 0.2+ | 0.5+ | 2006 10 26 | 704 | 0.1− | 0.4+ |
| 2002 10 06 | 704 | 0.2− | 0.3− | 2005 05 12 | 644 | 0.2+ | 0.8+ | 2006 11 13 | 683 | 0.7+ | 0.7− |
| 2002 10 06 | 704 | 0.4− | 0.3− | 2005 05 12 | 644 | 0.2+ | 0.6+ | 2006 11 13 | 683 | 0.5− | 1.5+ |
| 2002 10 06 | 704 | 0.5− | 0.4− | 2005 05 12 | 644 | 0.2+ | 0.6+ | 2006 11 13 | 683 | 0.6− | 2.0− |
| 2002 10 10 | 704 | 0.5− | 0.4+ | 2005 05 16 | 644 | 0.2− | 0.7+ | 2006 11 14 | 703 | 0.0 | 0.3+ |
| 2002 10 10 | 704 | 0.2− | 0.1+ | 2005 05 16 | 644 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.3+ | 0.2− |
| 2002 10 10 | 704 | 0.5− | 0.2+ | 2005 05 16 | 644 | 0.1+ | 0.6+ | 2006 11 14 | 703 | 1.1− | 0.3− |
| 2002 10 10 | 704 | 0.0 | 0.3+ | 2005 05 16 | 644 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.1− |

**(142684)∗ 2002 TN$_{232}$**

Discovered 2002 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.10231 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23741639 | $\omega$ | 69.26466 | | +0.67521109 | −0.73107468 | |
| $a$ | 2.5830268 | $\Omega$ | 337.33589 | | +0.54585474 | +0.58466364 | |
| $e$ | 0.1205809 | $i$ | 14.74620 | | +0.49611751 | +0.35170761 | |
| $P$ | 4.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | (0.1− | 2.5−) | 2004 02 17 | 608 | 0.6− | 0.4+ | 2006 08 24 | 704 | 1.0− | 1.4+ |
| 1998 11 16 | 704 | 0.9+ | 0.9+ | 2004 02 17 | 608 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.5− | 0.1+ |
| 1998 11 16 | 704 | 0.0 | 0.0 | 2004 02 17 | 608 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.4− | 0.3+ |
| 1998 11 16 | 704 | 0.7− | 0.4+ | 2004 02 26 | 704 | 0.2+ | 0.8+ | 2006 08 24 | 644 | 0.3− | 0.2+ |
| 2000 03 03 | 645 | 0.1+ | 0.2+ | 2004 02 26 | 704 | 0.4− | 0.3+ | 2006 08 27 | 699 | 0.8− | 0.6− |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.4− | 0.6+ | 2006 08 27 | 699 | 1.5+ | 0.6− |
| 2002 10 06 | 699 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 0.5+ | 0.3+ |
| 2002 10 06 | 699 | 0.7− | 0.5− | 2004 02 26 | 704 | 0.4+ | 0.2− | 2006 08 27 | 699 | 0.5+ | 0.3+ |
| 2002 10 06 | 699 | 1.4+ | 0.4− | 2004 02 27 | 012 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.7+ | 0.3+ |
| 2002 10 06 | 699 | 0.8− | 0.2+ | 2004 02 27 | 012 | 0.7− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.2+ |
| 2002 10 06 | 699 | 0.5+ | 0.6− | 2004 02 27 | 012 | 0.5+ | 0.3− | 2006 08 30 | 704 | 0.0 | 1.0− |
| 2002 10 06 | 699 | 0.4− | 0.7+ | 2004 02 27 | 012 | 0.7− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.4+ |
| 2002 10 06 | 699 | 1.3+ | 0.7+ | 2004 02 27 | 012 | 0.3− | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.7+ |
| 2002 10 06 | 699 | 0.0 | 0.1+ | 2004 03 15 | 704 | 1.3+ | 0.2− | 2006 09 01 | 704 | 0.1− | 0.6− |
| 2002 10 06 | 704 | 0.8− | 0.1− | 2004 03 15 | 704 | 0.8+ | 0.3− | 2006 09 01 | 704 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.9− | 0.4− | 2004 03 15 | 704 | 1.3+ | 0.3+ | 2006 09 01 | 704 | 0.1+ | 0.2− |
| 2002 10 06 | 704 | 0.6− | 0.3+ | 2004 03 15 | 704 | 0.3+ | 0.6− | 2006 09 01 | 704 | 0.1− | 0.7+ |
| 2002 10 06 | 704 | 1.1− | 0.1+ | 2004 03 16 | 608 | 0.2+ | 0.9− | 2006 09 01 | 704 | 0.3+ | 0.3− |
| 2002 10 06 | 704 | 0.6− | 0.0 | 2004 03 16 | 608 | 0.8− | 1.2− | 2006 09 06 | 644 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.1− | 0.1− | 2004 03 16 | 608 | 0.1− | 1.3− | 2006 09 06 | 644 | 0.3− | 0.4+ |
| 2002 10 10 | 704 | 0.2− | 0.1− | 2004 03 17 | 691 | 0.1− | 0.1− | 2006 09 06 | 644 | 0.3− | 0.1+ |
| 2002 10 10 | 704 | 0.2− | 0.6+ | 2004 03 17 | 691 | 0.1− | 0.1− | 2006 09 06 | 644 | 0.3− | 0.0 |
| 2002 10 10 | 704 | 0.3+ | 0.2+ | 2004 03 17 | 691 | 0.1− | 0.2− | 2006 09 06 | 644 | 0.3− | 0.2+ |
| 2002 11 01 | 644 | 0.3+ | 0.4− | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.1+ |
| 2002 11 01 | 644 | 0.2+ | 0.6− | 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 09 12 | 703 | 0.8− | 0.2+ |
| 2002 11 01 | 644 | 0.4+ | 0.2− | 2004 03 18 | 704 | 0.8+ | 0.3+ | 2006 09 12 | 703 | 1.0− | 0.1+ |
| 2002 11 08 | 704 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 09 12 | 703 | 0.4− | 0.3+ |
| 2002 11 08 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.0 | 2006 09 12 | 703 | 1.1− | 0.1+ |
| 2002 11 08 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.8− |
| 2002 11 08 | 704 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.0 |
| 2002 11 12 | 644 | 0.3+ | 0.1− | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.4+ |
| 2002 11 12 | 644 | 0.4+ | 0.6− | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 09 16 | 699 | 0.4+ | 1.3+ |
| 2002 11 12 | 644 | 0.3+ | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | (1.6− | 0.8+) |
| 2002 11 14 | 704 | 1.3+ | 0.5− | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 704 | 0.1− | 0.4+ |
| 2002 11 14 | 704 | 0.6+ | 0.1+ | 2004 03 23 | 704 | 1.0+ | 0.0 | 2006 09 18 | 704 | 0.7− | 0.3+ |
| 2002 11 14 | 704 | 0.1− | 0.5− | 2004 03 23 | 704 | 0.5+ | 0.1− | 2006 09 18 | 704 | 0.9− | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.8− | 2004 03 25 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.4− | 1.4− | 2004 03 25 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.7+ |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2004 03 25 | 704 | (1.8+ | 0.0 ) | 2006 09 19 | 703 | 0.1− | 1.0− |
| 2002 12 06 | 704 | 0.3− | 0.1− | 2004 03 25 | 704 | 0.7− | 1.2− | 2006 09 19 | 699 | 0.1+ | 0.3+ |
| 2002 12 06 | 704 | 0.3+ | 0.8− | 2004 03 25 | 704 | 0.6+ | 0.3− | 2006 09 19 | 703 | 0.5− | 0.3− |
| 2002 12 27 | 644 | 0.4+ | 0.2− | 2004 03 25 | 704 | 0.7+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.3− |
| 2002 12 27 | 644 | 0.5+ | 0.2− | 2004 03 25 | 704 | 1.1+ | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.0 |
| 2002 12 27 | 644 | 0.3+ | 0.0 | 2004 03 25 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.1− |
| 2004 01 22 | 704 | 0.0 | 0.3+ | 2004 03 25 | 704 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.2− | 1.0+ |
| 2004 01 22 | 704 | 0.6− | 0.1− | 2004 03 25 | 704 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.8+ |
| 2004 01 22 | 704 | 0.5− | 0.1+ | 2004 03 25 | 704 | (1.8+ | 1.3+) | 2006 09 25 | 704 | 0.6+ | 0.9+ |
| 2004 01 22 | 704 | 1.0− | 0.1+ | 2004 03 25 | 704 | 0.4+ | 0.3− | 2006 09 25 | 699 | 0.2− | 0.4+ |
| 2004 02 11 | 291 | 1.1− | 0.1+ | 2004 03 25 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.5− | 0.9+ |
| 2004 02 11 | 291 | 0.1+ | 0.0 | 2004 03 25 | 704 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.1+ | 1.0+ |
| 2004 02 11 | 291 | 0.1+ | 0.1− | 2004 03 25 | 704 | 1.0+ | 1.2+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2004 02 11 | 703 | 0.8− | 0.4− | 2004 03 25 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 0.7+ | 1.3+ |
| 2004 02 11 | 703 | 0.2+ | 0.9+ | 2004 03 25 | 704 | 0.5+ | 0.0 | 2006 09 25 | 699 | 0.4− | 0.1+ |
| 2004 02 11 | 703 | 0.4− | 0.7+ | 2004 03 25 | 704 | 0.4+ | 0.4− | 2006 09 25 | 699 | 0.4+ | 0.5− |
| 2004 02 11 | 703 | 1.1− | 1.1+ | 2004 03 25 | 704 | 1.0+ | 0.5+ | 2006 10 01 | 704 | 0.2+ | 0.7+ |
| 2004 02 11 | 644 | 0.2− | 0.1− | 2004 03 25 | 704 | 0.6+ | 0.3− | 2006 10 01 | 704 | 0.8+ | 0.4− |
| 2004 02 11 | 644 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.4+ | 0.5+ |
| 2004 02 11 | 644 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.5+ |
| 2004 02 14 | 608 | 0.4+ | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.2+ |
| 2004 02 14 | 608 | 0.2+ | 0.3+ | 2004 03 27 | 704 | (0.9+ | 1.6−) | 2006 10 17 | 703 | 0.2− | 1.4− |
| 2004 02 14 | 608 | 0.1− | 0.4+ | 2004 03 31 | 691 | 0.3− | 0.4+ | 2006 10 17 | 703 | (1.4+ | 2.1−) |
| 2004 02 17 | 691 | 0.1− | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.2− | 2006 10 17 | 703 | (2.0+ | 1.1−) |
| 2004 02 17 | 691 | 0.3− | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2004 02 17 | 691 | 0.2− | 0.1+ | 2006 08 17 | 644 | 0.6− | 0.3+ | 2006 11 19 | 703 | 0.9− | 0.6+ |
| 2004 02 17 | 704 | 1.5+ | 0.1− | 2006 08 17 | 644 | 0.2− | 0.4+ | 2006 11 19 | 703 | 2.0− | 0.2+ |
| 2004 02 17 | 704 | 0.2+ | 0.5+ | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.7− | 0.7+ |
| 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 08 24 | 704 | 0.5− | 0.7+ | 2006 11 19 | 703 | 0.2− | 0.5+ |
| 2004 02 17 | 704 | 0.5+ | 0.4+ | 2006 08 24 | 704 | (1.5− | 1.7+) | | | | |
| 2004 02 17 | 704 | 0.1+ | 0.4− | 2006 08 24 | 704 | (1.5− | 0.9+) | | | | |

**(142685)∗ 2002 TL$_{233}$**

Discovered 2002 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.81374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22078532 | $\omega$ | 51.87942 | | +0.93865014 | −0.31940080 | |
| $a$ | 2.7111648 | $\Omega$ | 326.17307 | | +0.19459955 | +0.80191774 | |
| $e$ | 0.1070653 | $i$ | 13.51243 | | +0.28472256 | +0.50488718 | |
| $P$ | 4.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.3− | 0.1− | 2002 10 10 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 699 | (1.2+ | 1.8+) |
| 1997 10 04 | 691 | 0.3− | 0.3− | 2002 10 10 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 699 | 0.7− | 1.2+ |
| 1997 10 04 | 691 | 1.1+ | 0.7− | 2004 01 22 | 704 | 0.5− | 0.2− | 2006 08 28 | 699 | 0.3− | 0.6+ |
| 2002 09 20 | 644 | 0.1+ | 0.1+ | 2004 01 22 | 704 | 0.7− | 0.3− | 2006 08 28 | 703 | 0.6+ | 0.8+ |
| 2002 09 20 | 644 | 0.4− | 0.1+ | 2004 01 22 | 704 | 0.3− | 0.5− | 2006 08 28 | 703 | 1.0− | 1.5+ |
| 2002 09 20 | 644 | 0.3− | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.0 | 2006 08 28 | 703 | 1.1− | 0.5+ |
| 2002 09 20 | 644 | 0.5− | 0.3+ | 2004 01 31 | 691 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.6+ |
| 2002 09 20 | 644 | 0.3+ | 0.0 | 2004 01 31 | 691 | 0.2− | 0.0 | 2006 08 29 | 704 | 0.7− | 0.1− |
| 2002 09 20 | 644 | 0.7− | 0.3+ | 2004 01 31 | 691 | 0.4− | 0.0 | 2006 08 29 | 704 | 0.7+ | 0.7+ |
| 2002 09 27 | 644 | 0.2− | 0.0 | 2004 02 10 | 644 | 0.8+ | 0.1+ | 2006 08 29 | 704 | 0.1+ | 0.8− |
| 2002 09 27 | 644 | 0.5+ | 0.3− | 2004 02 10 | 644 | 0.5+ | 0.4+ | 2006 08 29 | 704 | 0.9+ | 0.4+ |
| 2002 09 27 | 644 | 0.6+ | 0.1+ | 2004 02 10 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.1+ |
| 2002 10 06 | 699 | 0.1+ | 1.0− | 2004 02 16 | 704 | (1.1+ | 1.9+) | 2006 09 14 | 703 | 0.8− | 0.4+ |
| 2002 10 06 | 699 | 0.3− | 0.5+ | 2004 02 16 | 704 | 0.4+ | 0.8+ | 2006 09 14 | 703 | 0.4− | 0.3+ |
| 2002 10 06 | 699 | 0.6+ | 1.1− | 2004 02 16 | 704 | 1.4+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.4− |
| 2002 10 06 | 699 | 0.0 | 0.4+ | 2004 02 16 | 704 | 0.5− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2002 10 06 | 704 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2002 10 06 | 704 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2002 10 06 | 704 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2002 10 06 | 704 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2002 10 06 | 704 | 0.1− | 0.3− | 2004 02 29 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.4− | 0.3− |
| 2002 10 10 | 704 | 0.1− | 0.1− | 2004 02 29 | 691 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.3− | 0.3− | 2004 02 29 | 691 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.6+ | 0.0 |
| 2002 10 10 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 699 | (0.6+ | 1.7+) | | | | |

**(142686)∗ 2002 TJ$_{235}$**

Discovered 2002 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.84462 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24407635 | $\omega$ | 78.35032 | | +0.93685928 | +0.30006751 | |
| $a$ | 2.5358229 | $\Omega$ | 263.98961 | | −0.34714254 | +0.86005779 | |
| $e$ | 0.1176089 | $i$ | 10.40396 | | +0.04226982 | +0.41262585 | |
| $P$ | 4.04 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 0.4+ | 0.0 | 2004 01 18 | 703 | 1.2− | 0.5+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 1998 11 14 | 704 | 1.3+ | 1.6− | 2004 01 18 | 703 | (1.7− | 0.8+) | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 1998 11 14 | 704 | 1.3− | 0.3+ | 2004 01 18 | 703 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 1998 11 14 | 704 | 0.6− | 1.0+ | 2004 01 28 | 608 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 10 06 | 704 | 0.2− | 0.3+ | 2004 01 28 | 608 | 1.0+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 10 06 | 704 | 0.2− | 0.6+ | 2004 01 28 | 608 | 0.8+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 10 06 | 704 | 0.1− | 0.8+ | 2004 02 14 | 699 | 0.7+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 10 06 | 704 | 0.0 | 0.2+ | 2004 02 14 | 699 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 10 06 | 704 | 0.3− | 0.4+ | 2004 02 14 | 699 | 1.2+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.2− | 0.4+ | 2004 02 14 | 699 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.3− |
| 2002 10 10 | 704 | 0.2+ | 0.2+ | 2004 02 16 | 703 | 0.4− | 0.6− | 2006 10 19 | 703 | 1.5− | 0.6− |
| 2002 10 10 | 704 | 0.1− | 0.3− | 2004 02 16 | 703 | 0.5− | 0.4− | 2006 10 19 | 703 | 0.4− | 0.3+ |
| 2002 10 10 | 704 | 0.2+ | 0.1+ | 2004 02 16 | 703 | 0.2+ | 1.0+ | 2006 10 19 | 703 | 1.3+ | 0.6+ |
| 2002 10 10 | 704 | 0.7+ | 1.2+ | 2004 02 16 | 703 | 1.1− | 0.0 | 2006 10 21 | 704 | 0.2− | 0.5+ |
| 2002 10 12 | 704 | 0.1− | 0.1+ | 2005 05 12 | 703 | 0.1− | 0.0 | 2006 10 21 | 704 | 0.4− | 0.1− |
| 2002 10 12 | 704 | 0.4− | 0.1+ | 2005 05 12 | 703 | 0.3− | 0.5+ | 2006 10 21 | 704 | 1.3− | 0.2+ |
| 2002 10 12 | 704 | 0.1+ | 0.5− | 2005 05 12 | 703 | (5.4− | 2.4−) | 2006 10 21 | 704 | 0.6− | 0.8− |
| 2002 10 12 | 704 | 0.1− | 0.1− | 2005 05 12 | 703 | (1.5− | 4.8−) | 2006 10 21 | 704 | 1.1− | 0.0 |
| 2002 10 12 | 704 | 0.4+ | 0.7− | 2005 05 19 | 644 | 0.4+ | 1.0+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2002 11 07 | 704 | 0.3+ | 0.4+ | 2005 05 19 | 644 | 0.4+ | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2002 11 07 | 704 | 0.5+ | 0.5+ | 2005 05 19 | 644 | 0.3+ | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2002 11 07 | 704 | 0.6− | 0.8− | 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 11 07 | 704 | 0.6− | 0.4− | 2006 09 17 | 703 | 0.0 | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 11 13 | 644 | 0.4− | 0.2+ | 2006 09 22 | 699 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2002 11 13 | 644 | 0.4− | 0.1+ | 2006 09 22 | 699 | 0.5+ | 0.8− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 11 13 | 644 | 0.3− | 0.0 | 2006 09 22 | 699 | 0.2+ | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 0.7− | 0.9+ | 2006 09 22 | 699 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.8+ | 0.4− |
| 2002 11 14 | 704 | 0.3+ | 0.8+ | 2006 09 28 | 703 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.0 | 0.6− |
| 2002 11 14 | 704 | 0.8− | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.5− | 0.6− | 2006 09 28 | 703 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2002 12 05 | 704 | 0.6− | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.6− |
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 1.2+ | 0.4+ | 2006 09 30 | 704 | 0.9− | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2002 12 05 | 704 | 1.0+ | 1.3+ | 2006 09 30 | 704 | 0.6− | 0.5+ | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 2002 12 05 | 704 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2004 01 18 | 703 | 0.7− | 0.8+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | | | | |

**(142687)∗ 2002 TX$_{235}$ = 1999 AK$_{37}$**

Discovered 2002 Oct. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41101)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.97317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23826969 | $\omega$ | 186.09865 | | +0.11945587 | −0.97012968 | |
| $a$ | 2.5768562 | $\Omega$ | 257.18246 | | +0.91981857 | +0.18818628 | |
| $e$ | 0.2655161 | $i$ | 12.50544 | | +0.37371660 | −0.15308271 | |
| $P$ | 4.14 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.9+ | 0.3+ | 2002 11 07 | 704 | 0.0 | 0.2− | 2004 04 12 | E12 | 0.2− | 0.2+ |
| 1998 12 14 | 704 | 0.7− | 0.2− | 2002 11 07 | 704 | 0.2− | 0.8− | 2004 04 12 | E12 | 0.3+ | 0.0 |
| 1998 12 14 | 704 | 0.9+ | 0.9− | 2002 11 13 | 644 | 0.2+ | 0.4− | 2004 04 14 | 644 | 0.1− | 0.3− |
| 1998 12 14 | 704 | 0.7− | 0.3+ | 2002 11 13 | 644 | 0.2+ | 0.5− | 2004 04 14 | 644 | 0.3+ | 0.2+ |
| 1998 12 14 | 704 | 0.1− | 0.6+ | 2002 11 13 | 644 | 0.1+ | 0.5− | 2004 04 14 | 644 | 0.2+ | 0.3+ |
| 1999 01 06 | 699 | 0.6− | 0.2+ | 2002 11 14 | 704 | 0.5+ | 1.1+ | 2006 09 16 | 703 | 0.3+ | 0.0 |
| 1999 01 06 | 699 | 0.3+ | 0.5+ | 2002 11 14 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.0 | 0.2+ |
| 1999 01 06 | 699 | 0.2+ | 0.0 | 2002 11 14 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.6+ | 0.0 |
| 1999 01 07 | 691 | 0.2− | 0.2− | 2002 11 14 | 704 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.1+ |
| 1999 01 07 | 691 | 0.1− | 0.3− | 2002 11 14 | 704 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.0 | 0.7+ |
| 1999 01 07 | 691 | 0.1− | 0.2− | 2002 11 19 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.3− | 0.4− |
| 2002 09 27 | 644 | 0.1+ | 0.0 | 2002 11 19 | 644 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.1− | 0.8+ |
| 2002 09 27 | 644 | 0.1+ | 0.1− | 2002 11 19 | 644 | 0.2+ | 0.1+ | 2006 09 21 | 699 | (0.1+ | 1.6−) |
| 2002 09 27 | 644 | 0.2+ | 0.1+ | 2002 12 19 | 644 | 0.1− | 0.8+ | 2006 09 28 | 703 | 0.3− | 0.8− |
| 2002 10 06 | 704 | 0.5− | 0.1− | 2002 12 19 | 644 | 0.1− | 0.8+ | 2006 09 28 | 703 | (2.9+ | 0.4+) |
| 2002 10 06 | 704 | 0.3− | 0.2+ | 2002 12 19 | 644 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.4+ | 0.3− |
| 2002 10 06 | 704 | 0.2− | 0.1+ | 2002 12 31 | 704 | 0.8+ | 1.0+ | 2006 10 20 | 703 | 0.5− | 0.4− |
| 2002 10 06 | 704 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.6+ | 0.8+ | 2006 10 20 | 703 | 0.6− | 0.7+ |
| 2002 10 06 | 704 | 0.2+ | 0.2− | 2002 12 31 | 704 | 0.3− | 0.1+ | 2006 10 20 | 703 | 0.7− | 0.5− |
| 2002 10 10 | 704 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.4− | 0.3+ | 2006 10 20 | 703 | 0.4− | 0.6+ |
| 2002 10 10 | 704 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.3+ | 0.2+ | 2006 10 31 | 703 | 0.6− | 0.5− |
| 2002 10 10 | 704 | 0.3− | 0.1+ | 2003 01 05 | 704 | 1.1+ | 1.0− | 2006 10 31 | 703 | 1.2+ | 0.7− |
| 2002 10 10 | 704 | 0.5− | 0.2+ | 2003 01 05 | 704 | (0.5+ | 2.3−) | 2006 10 31 | 703 | 0.7− | 0.2− |
| 2002 10 10 | 704 | 0.4− | 0.2+ | 2003 01 05 | 704 | (1.4+ | 2.8−) | 2006 10 31 | 703 | 0.0 | 0.0 |
| 2002 10 15 | 704 | 1.0+ | 1.1+ | 2003 01 05 | 704 | (0.2+ | 2.6−) | 2006 11 14 | 703 | 0.6− | 0.2− |
| 2002 10 15 | 704 | 0.8+ | 0.5+ | 2003 01 27 | 704 | 0.8− | 0.7+ | 2006 11 14 | 703 | 0.4− | 1.1− |
| 2002 10 15 | 704 | 0.5− | 1.4+ | 2003 01 27 | 704 | (0.3− | 1.9+) | 2006 11 14 | 703 | 0.2+ | 0.4− |
| 2002 10 15 | 704 | 0.2+ | 0.6+ | 2003 01 27 | 704 | 0.4+ | 0.9+ | 2006 11 14 | 703 | 0.4+ | 0.1+ |
| 2002 11 01 | 644 | 0.3+ | 0.7− | 2003 01 27 | 704 | 0.3+ | 1.1+ | 2006 11 25 | 703 | 0.0 | 0.1− |
| 2002 11 01 | 644 | 0.2+ | 0.9− | 2003 01 31 | 704 | (1.7− | 0.4+) | 2006 11 25 | 703 | 0.3+ | 0.5− |
| 2002 11 01 | 644 | 0.1+ | 0.7− | 2003 01 31 | 704 | 0.7− | 0.5+ | 2006 11 25 | 703 | 0.6+ | 0.8+ |
| 2002 11 07 | 704 | 0.2+ | 1.0− | 2003 01 31 | 704 | 0.7− | 0.5− | 2006 11 25 | 703 | 0.4+ | 0.1− |
| 2002 11 07 | 704 | 0.2− | 0.6− | 2004 04 12 | E12 | 0.7+ | 0.7− | | | | |
| 2002 11 07 | 704 | 0.5− | 0.8− | 2004 04 12 | E12 | 0.8− | 0.9+ | | | | |

**(142688)∗ 2002 TU$_{238}$ = 2000 HB$_{82}$**

Discovered 2002 Oct. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38081)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.47934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21680325 | $\omega$ | 356.96793 | | +0.71906622 | −0.67389065 | |
| $a$ | 2.7442617 | $\Omega$ | 46.96742 | | +0.64238296 | +0.55136198 | |
| $e$ | 0.0871368 | $i$ | 13.42824 | | +0.26511865 | +0.49180419 | |
| $P$ | 4.55 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.4+ | 0.2− | 2002 11 24 | 644 | 0.4+ | 1.1+ | 2004 04 14 | 644 | 0.6− | 0.4+ |
| 2000 04 29 | 704 | 0.4+ | 1.0+ | 2002 12 06 | 704 | 0.5− | 0.1− | 2004 04 14 | 644 | 0.3+ | 0.7+ |
| 2000 04 29 | 704 | 0.6− | 0.4− | 2002 12 06 | 704 | 0.9− | 0.3− | 2004 04 14 | 703 | 0.2+ | 1.0+ |
| 2000 04 29 | 704 | 0.8+ | 1.0+ | 2002 12 06 | 704 | 0.6− | 0.3− | 2004 04 14 | 703 | (2.0− | 1.8+) |
| 2000 05 01 | 699 | 0.7− | 0.4+ | 2002 12 06 | 704 | 0.8− | 0.4+ | 2004 04 14 | 703 | 0.4+ | 0.1− |
| 2000 05 01 | 699 | 0.0 | 0.4+ | 2002 12 06 | 704 | 0.4+ | 0.4+ | 2004 04 14 | 703 | 0.4+ | 0.3+ |
| 2000 05 01 | 699 | 0.8+ | 0.6+ | 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 07 31 | E12 | 0.3− | 0.2− |
| 2000 05 01 | 699 | 0.6+ | 0.7+ | 2002 12 11 | 704 | 0.0 | 0.4− | 2006 07 31 | E12 | 0.8− | 1.3− |
| 2002 10 07 | 704 | 0.2− | 0.1+ | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 07 31 | E12 | 0.5− | 0.5+ |
| 2002 10 07 | 704 | 0.3− | 0.8+ | 2002 12 11 | 704 | 0.1− | 0.1− | 2006 07 31 | E12 | 0.1− | 1.1+ |
| 2002 10 07 | 704 | 0.7− | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.4+ | 2006 08 19 | 644 | 0.4− | 0.3+ |
| 2002 10 10 | 704 | 0.1− | 0.7− | 2002 12 14 | 704 | 0.6− | 0.5− | 2006 08 19 | 644 | 0.5− | 0.1+ |
| 2002 10 10 | 704 | 0.3− | 0.4+ | 2002 12 14 | 704 | 0.9− | 0.3− | 2006 08 19 | 644 | 0.3− | 0.5+ |
| 2002 10 10 | 704 | 0.8+ | 1.3− | 2002 12 14 | 704 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.4− | 0.4+ |
| 2002 10 10 | 704 | 0.1+ | 0.8− | 2002 12 14 | 704 | 0.6− | 0.1− | 2006 09 17 | 699 | 1.4− | 1.0+ |
| 2002 10 10 | 704 | 0.4− | 0.1− | 2002 12 14 | 704 | 0.2− | 0.9− | 2006 09 17 | 699 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2004 02 16 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 699 | 0.8− | 0.5+ |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2004 02 16 | 704 | 0.5− | 0.3+ | 2006 09 20 | 703 | 0.5+ | 0.4− |
| 2002 10 11 | 704 | 0.4+ | 0.3− | 2004 02 16 | 704 | 0.1− | 1.3+ | 2006 09 20 | 703 | 0.7+ | 0.5+ |
| 2002 10 12 | 704 | 0.6− | 0.4− | 2004 03 14 | 704 | 0.4− | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.2− |
| 2002 10 12 | 704 | (2.1− | 1.5−) | 2004 03 14 | 704 | 0.2+ | 1.1+ | 2006 09 20 | 703 | 0.8− | 0.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.0 | 2004 03 14 | 704 | 1.1+ | 0.6− | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2002 10 12 | 704 | 0.7− | 0.2− | 2004 03 14 | 704 | 0.5+ | 0.8− | 2006 09 26 | 703 | 0.3− | 0.7+ |
| 2002 11 12 | 704 | 0.8− | 0.4− | 2004 03 19 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.3+ | 1.2+ |
| 2002 11 12 | 704 | (1.0− | 1.8+) | 2004 03 19 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 703 | (0.9+ | 1.7+) |
| 2002 11 12 | 704 | 0.1− | 0.9+ | 2004 03 19 | 644 | 0.5+ | 0.7+ | 2006 10 28 | 703 | 0.0 | 0.5+ |
| 2002 11 12 | 704 | 0.4+ | 0.5+ | 2004 03 26 | 703 | 0.2− | 0.8− | 2006 10 28 | 703 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 1.5+ | 0.5− | 2004 03 26 | 703 | (1.6+ | 3.5+) | 2006 10 28 | 703 | 0.4+ | 1.2+ |
| 2002 11 14 | 704 | 1.1+ | 0.5+ | 2004 03 26 | 703 | 1.1+ | 0.4− | 2006 10 28 | 703 | 0.5+ | 1.0+ |
| 2002 11 14 | 704 | 1.1+ | 1.0+ | 2004 03 26 | 703 | (0.6− | 2.0+) | 2006 11 19 | 703 | 0.7− | 0.5− |
| 2002 11 14 | 704 | (1.7+ | 0.4+) | 2004 04 14 | 644 | 0.2+ | 0.8+ | 2006 11 19 | 703 | 0.6+ | 0.5+ |
| 2002 11 14 | 704 | 1.4+ | 0.3+ | 2004 04 14 | 644 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.7− | 0.2+ |
| 2002 11 24 | 644 | 0.1− | 0.9+ | 2004 04 14 | 644 | 0.2+ | 0.8+ | 2006 11 19 | 703 | 0.2− | 0.4+ |
| 2002 11 24 | 644 | 0.4+ | 1.0+ | 2004 04 14 | 644 | 0.1+ | 0.4+ | | | | |

**(142689)∗ 2002 TL$_{240}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.50443 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23346109 | $\omega$ | 201.71530 | | +0.71422804 | −0.69385814 | |
| $a$ | 2.6121195 | $\Omega$ | 203.03501 | | +0.67174578 | +0.71641475 | |
| $e$ | 0.2440697 | $i$ | 13.57823 | | +0.19656019 | +0.07287513 | |
| $P$ | 4.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 09 | 691 | 0.1− | 0.3+ | 2003 01 29 | 683 | 0.9+ | 0.7− | 2006 09 21 | 704 | 0.3− | 0.3+ |
| 1996 05 09 | 691 | 0.1− | 0.1+ | 2003 01 29 | 683 | 0.7+ | 1.4− | 2006 09 21 | 704 | 0.4+ | 0.9− |
| 1996 05 09 | 691 | 0.4+ | 0.2+ | 2003 02 04 | 644 | 0.3− | 0.8+ | 2006 09 25 | 704 | 0.1− | 0.6+ |
| 2002 10 04 | 704 | 0.2− | 0.4+ | 2003 02 04 | 644 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.2− | 0.3− | 2003 02 04 | 644 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 1.0+ | 0.2− | 2004 03 27 | 699 | 1.4+ | 0.9+ | 2006 09 25 | 704 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.3+ | 0.7+ | 2004 03 27 | 699 | 1.4− | 0.5+ | 2006 09 25 | 704 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | 1.0+ | 0.2+ | 2004 03 27 | 699 | 0.4− | 0.8− | 2006 09 29 | 704 | 0.2− | 0.1+ |
| 2002 10 09 | 704 | 0.2+ | 0.4− | 2004 03 27 | 699 | 0.8− | 0.5+ | 2006 09 29 | 704 | 0.6− | 0.2+ |
| 2002 10 09 | 704 | 0.8+ | 0.6− | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 704 | 0.8− | 0.4+ |
| 2002 10 09 | 704 | 0.8+ | 0.5+ | 2004 03 27 | 704 | 0.5+ | 1.2+ | 2006 09 29 | 704 | 0.7− | 0.3+ |
| 2002 10 09 | 704 | 0.7+ | 0.0 | 2004 03 27 | 704 | 0.0 | 0.0 | 2006 09 29 | 704 | 1.0− | 0.2− |
| 2002 10 10 | 704 | 0.2+ | 0.5− | 2004 03 27 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 683 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.2+ | 1.4+ | 2006 09 30 | 683 | 0.7+ | 1.4+ |
| 2002 10 10 | 704 | 0.2− | 0.0 | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 683 | 0.9− | 1.0+ |
| 2002 10 10 | 704 | 0.7+ | 0.2+ | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.0 | 0.2+ | 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.1+ | 0.8− | 2004 03 29 | 246 | 0.9+ | 1.2+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.3+ | 0.5− | 2004 03 29 | 246 | 0.9+ | 1.3+ | 2006 10 03 | 704 | 0.2+ | 0.5+ |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2004 03 29 | 246 | 0.8+ | 0.6+ | 2006 10 03 | 704 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.4+ | 0.4+ | 2004 03 29 | 246 | 0.7+ | 0.4+ | 2006 10 03 | 704 | 0.3+ | 0.2+ |
| 2002 10 10 | 704 | 0.1+ | 0.2+ | 2004 03 29 | 246 | 0.2− | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.1+ |
| 2002 10 10 | 704 | 0.1− | 0.2+ | 2004 03 29 | 246 | 0.8+ | 0.1+ | 2006 10 03 | 704 | 0.3+ | 0.2+ |
| 2002 10 10 | 704 | 0.1+ | 0.4+ | 2004 03 29 | 246 | 1.0+ | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.0 |
| 2002 10 10 | 704 | 0.7− | 1.1+ | 2004 03 29 | 246 | 0.4+ | 0.0 | 2006 10 15 | 703 | 0.8− | 0.1+ |
| 2002 10 10 | 704 | 0.1+ | 0.6− | 2004 03 30 | 291 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.1+ |
| 2002 10 10 | 704 | 0.3+ | 0.2− | 2004 03 30 | 291 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.4− | 0.2− |
| 2002 10 10 | 704 | 0.3− | 0.4+ | 2004 03 30 | 291 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 10 10 | 704 | 0.0 | 0.5+ | 2004 03 30 | 649 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.4− | 0.4+ | 2004 03 30 | 649 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 31 | 608 | 1.1− | 0.2+ | 2004 03 30 | 649 | 0.3− | 0.1+ | 2006 10 23 | 704 | (2.5− | 0.3−) |
| 2002 10 31 | 608 | 0.8− | 0.4+ | 2004 03 30 | 474 | 0.2− | 0.1+ | 2006 10 23 | 704 | 0.4− | 0.2+ |
| 2002 10 31 | 608 | 0.7− | 0.2+ | 2004 03 30 | 474 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.3− | 0.6+ |
| 2002 11 01 | 704 | 0.5− | 0.4− | 2004 03 30 | 474 | 0.8− | 0.2+ | 2006 10 23 | 704 | 0.1− | 0.4+ |
| 2002 11 01 | 704 | 0.2− | 0.1+ | 2004 03 31 | 649 | 0.8− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2002 11 01 | 704 | (1.9− | 0.2+) | 2004 03 31 | 649 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2002 11 05 | 704 | 1.1− | 0.6− | 2004 03 31 | 649 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 11 05 | 704 | 1.2− | 0.0 | 2004 03 31 | 926 | 1.2+ | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 1.2− | 0.4+ | 2004 03 31 | 926 | 0.9+ | 0.2+ | 2006 10 28 | 704 | 0.5− | 0.6+ |
| 2002 11 05 | 704 | 0.4− | 0.7− | 2004 03 31 | 926 | (0.9− | 2.4+) | 2006 10 28 | 704 | 0.1− | 0.5+ |
| 2002 11 06 | 608 | 0.7− | 0.9− | 2004 03 31 | 291 | 0.1+ | 0.4+ | 2006 10 28 | 704 | 0.3− | 0.3+ |
| 2002 11 06 | 608 | 0.7− | 0.7− | 2004 03 31 | 291 | 0.4+ | 0.4+ | 2006 10 28 | 704 | 0.1− | 0.4+ |
| 2002 11 06 | 608 | 0.8− | 0.8− | 2004 03 31 | 291 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 1.1− | 0.3+ |
| 2002 11 27 | 699 | 0.3+ | 0.0 | 2004 04 23 | 691 | 0.2− | 0.4+ | 2006 10 31 | 704 | 0.6+ | 0.5+ |
| 2002 11 27 | 699 | 0.1+ | 0.4+ | 2004 04 23 | 691 | 0.8− | 0.9− | 2006 10 31 | 704 | 0.3− | 0.1+ |
| 2002 11 27 | 699 | 0.3+ | 0.1+ | 2004 04 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | 704 | 0.3− | 0.2+ |
| 2002 11 27 | 699 | 0.1− | 0.3+ | 2005 06 13 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 1.2+ |
| 2002 11 30 | 704 | 0.1+ | 0.8− | 2005 06 13 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2002 11 30 | 704 | 0.3+ | 0.5− | 2005 06 13 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2002 11 30 | 704 | 0.0 | 0.3− | 2006 08 20 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.6− | 1.5+ |
| 2002 11 30 | 704 | 0.1+ | 0.2− | 2006 08 20 | 644 | 0.1− | 0.1+ | 2006 11 14 | 704 | (1.5+ | 0.1−) |
| 2002 12 08 | 644 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.8+ | 1.2+ |
| 2002 12 08 | 644 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 0.7+ | 0.0 | 2006 11 14 | 704 | 0.7− | 1.0+ |
| 2002 12 08 | 644 | 0.0 | 0.2+ | 2006 08 24 | 704 | 1.1− | 0.3− | 2006 11 14 | 704 | 0.4+ | 1.0− |
| 2002 12 13 | 608 | 0.0 | 0.9− | 2006 08 24 | 704 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 12 13 | 608 | 0.0 | 0.8− | 2006 08 24 | 704 | 0.5+ | 0.8+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2002 12 13 | 608 | 0.2+ | 0.7− | 2006 08 29 | 699 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2003 01 02 | 704 | 0.9+ | 0.4− | 2006 08 29 | 699 | 0.0 | 0.0 | 2006 11 17 | 704 | (0.2+ | 1.9+) |
| 2003 01 02 | 704 | 0.0 | 0.5− | 2006 08 29 | 699 | 0.4+ | 0.2− | 2006 11 17 | 704 | (2.5+ | 0.1−) |
| 2003 01 02 | 704 | 0.7− | 0.1+ | 2006 08 29 | 699 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2003 01 26 | 699 | 1.4+ | 0.5+ | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.8+ |
| 2003 01 26 | 699 | 0.5+ | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 11 17 | 704 | 1.3+ | 0.8− |
| 2003 01 26 | 699 | 0.4+ | 0.7+ | 2006 09 16 | 703 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2003 01 26 | 699 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.7− | 0.7− | 2006 11 20 | 704 | 0.0 | 1.1+ |
| 2003 01 26 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2003 01 26 | 644 | 0.3− | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.2+ | 1.2+ |
| 2003 01 26 | 644 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2003 01 27 | 699 | 0.7− | 0.1+ | 2006 09 18 | 704 | 0.0 | 0.7+ | 2006 11 21 | 704 | (0.5− | 2.1+) |
| 2003 01 27 | 699 | 1.2+ | 0.6+ | 2006 09 18 | 704 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.9+ |
| 2003 01 27 | 699 | 1.2+ | 0.5+ | 2006 09 18 | 704 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.9+ | 1.1+ |
| 2003 01 27 | 699 | 0.0 | 1.0+ | 2006 09 18 | 704 | 0.1− | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.5− |
| 2003 01 28 | 683 | 0.5− | 1.0+ | 2006 09 18 | 704 | 0.4+ | 1.0+ | 2006 11 21 | 704 | 0.8− | 1.2+ |
| 2003 01 28 | 683 | 1.1− | 0.5+ | 2006 09 18 | 699 | 0.5+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2003 01 28 | 683 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2003 01 28 | 704 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.7+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2003 01 28 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2003 01 28 | 704 | 0.4− | 0.1+ | 2006 09 21 | 704 | 0.2− | 0.1+ | | | | |
| 2003 01 29 | 683 | 0.2− | 0.2− | 2006 09 21 | 704 | 0.0 | 0.5+ | | | | |

**(142690)∗ 2002 TR$_{241}$**

Discovered 2002 Oct. 7 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.69603 | | (2000.0) | | +0.98140926 | +0.00093860 |
| $n$ | 0.24409820 | $\omega$ | 244.22432 | | +0.05889948 | +0.95026223 |
| $a$ | 2.5356716 | $\Omega$ | 115.20888 | | +0.18266556 | +0.31144953 |
| $e$ | 0.1483538 | $i$ | 12.24704 | | | |
| $P$ | 4.04 | $H$ | 16.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 699 | 1.2+ | 0.1+ | 2004 02 18 | 691 | 0.0 | 0.4+ | 2005 06 29 | 644 | 0.3+ | 0.2+ |
| 1998 11 19 | 699 | 0.3+ | 1.1+ | 2004 02 18 | 691 | 0.1− | 0.4+ | 2005 06 29 | 644 | 0.2+ | 0.3+ |
| 1998 11 19 | 699 | 0.1− | 1.1+ | 2004 02 19 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.8+ |
| 2001 06 26 | 691 | 0.3− | 0.3+ | 2004 02 19 | 704 | (0.4− | 2.0+) | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 06 26 | 691 | 1.3− | 0.1+ | 2004 02 19 | 704 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 06 26 | 691 | 0.4− | 0.2+ | 2004 02 19 | 704 | 0.2− | 0.6− | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 2002 10 07 | 608 | 0.2+ | 0.5+ | 2005 05 15 | 691 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.2− |
| 2002 10 07 | 608 | 0.1+ | 0.7+ | 2005 05 15 | 691 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 1.4+ |
| 2002 10 07 | 608 | 0.0 | 0.7+ | 2005 05 15 | 691 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2002 10 10 | 644 | 0.0 | 0.5+ | 2005 06 02 | 703 | 1.3− | 0.4− | 2006 11 17 | 703 | 0.3− | 0.7+ |
| 2002 10 10 | 644 | 0.0 | 0.6+ | 2005 06 02 | 703 | (0.6+ | 2.0+) | 2006 11 17 | 703 | 0.3+ | 0.5+ |
| 2002 10 10 | 644 | 0.1+ | 0.5+ | 2005 06 02 | 703 | 0.6+ | 0.6+ | 2006 11 17 | 703 | 0.4+ | 0.9+ |
| 2002 10 30 | 704 | 0.4+ | 0.3− | 2005 06 02 | 703 | (1.0+ | 2.8+) | 2006 11 17 | 703 | (2.3− | 3.3−) |
| 2002 10 30 | 704 | 0.3− | 0.5− | 2005 06 02 | 621 | 0.1− | 0.2+ | 2006 11 20 | 704 | 1.9− | 0.2+ |
| 2002 10 30 | 704 | (0.6− | 2.1+) | 2005 06 02 | 621 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.6− | 0.6+ |
| 2002 10 30 | 704 | 0.7− | 0.1+ | 2005 06 02 | 621 | 0.4+ | 0.6+ | 2006 11 20 | 704 | 0.9+ | 0.5− |
| 2002 10 30 | 704 | 0.1+ | 0.5+ | 2005 06 14 | 691 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 1.8− | 0.1+ |
| 2002 11 06 | 644 | 0.1− | 0.1+ | 2005 06 14 | 691 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.8+ |
| 2002 11 06 | 644 | 0.0 | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.2+ | 1.1+ |
| 2002 11 06 | 644 | 0.0 | 0.1− | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.1− | 0.4+ |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2005 06 17 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.3+ | 0.1+ |
| 2003 12 25 | 645 | 0.1+ | 0.0 | 2005 06 17 | 691 | 0.4+ | 0.2+ | 2006 11 23 | 703 | 0.6− | 0.1+ |
| 2004 02 18 | 691 | 0.0 | 0.5+ | 2005 06 29 | 644 | 0.1+ | 0.1+ | | | | |

**(142691)∗ 2002 TT$_{241}$**

Discovered 2002 Oct. 7 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.37416 | | (2000.0) | | −0.06412590 | −0.99736656 |
| $n$ | 0.24244151 | $\omega$ | 280.75955 | | +0.98746914 | −0.06832182 |
| $a$ | 2.5472099 | $\Omega$ | 172.65919 | | +0.14419627 | +0.02433255 |
| $e$ | 0.1640627 | $i$ | 15.37627 | | | |
| $P$ | 4.07 | $H$ | 15.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.1+ | 0.3− | 2002 11 30 | 704 | 0.6− | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2000 04 12 | 691 | 0.0 | 0.4− | 2002 11 30 | 704 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2000 04 12 | 691 | 0.1+ | 0.3− | 2002 12 07 | 644 | 0.3− | 0.5+ | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2002 09 16 | 699 | 1.2− | 1.5+ | 2002 12 07 | 644 | 0.8− | 0.1− | 2006 10 28 | 703 | 0.5− | 0.1− |
| 2002 09 16 | 699 | 0.6+ | 0.5− | 2002 12 07 | 644 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.7− | 0.1+ |
| 2002 09 16 | 699 | 0.2+ | 0.1+ | 2004 03 17 | 621 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2002 09 16 | 699 | 0.1+ | 1.0+ | 2004 03 17 | 621 | 0.3− | 0.8+ | 2006 11 07 | 644 | 0.3+ | 0.1− |
| 2002 10 07 | 608 | 0.5− | 0.3− | 2004 03 17 | 621 | 0.5− | 1.2+ | 2006 11 07 | 644 | 0.5+ | 0.0 |
| 2002 10 07 | 608 | 0.9− | 0.2− | 2004 03 17 | 621 | 0.3− | 0.2− | 2006 11 07 | 644 | 0.4+ | 0.1+ |
| 2002 10 07 | 608 | 0.5− | 0.4− | 2004 03 17 | 621 | 0.3− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2002 10 10 | 644 | 0.1+ | 1.1+ | 2004 04 10 | 644 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2002 10 10 | 644 | 0.0 | 1.0+ | 2004 04 10 | 644 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.5+ | 0.1− |
| 2002 10 10 | 644 | 0.1+ | 1.0+ | 2004 04 10 | 644 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2002 10 28 | 644 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2002 10 28 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 1.2− | 0.9+ | 2006 11 08 | 644 | 1.0− | 0.3− |
| 2002 10 28 | 644 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.6− | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2002 10 30 | 704 | 0.4+ | 1.1− | 2006 09 26 | 703 | 1.0− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2002 10 30 | 704 | 1.4+ | 0.2− | 2006 10 01 | 704 | 0.9+ | 0.8− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2002 10 30 | 704 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2002 10 30 | 704 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.5− | 0.5− | 2006 11 23 | 703 | 0.6+ | 0.6− |
| 2002 11 16 | 644 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.4+ | 0.1+ | 2006 11 23 | 703 | 0.4+ | 1.1− |
| 2002 11 16 | 644 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 23 | 703 | 1.1+ | 0.2+ |
| 2002 11 16 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 23 | 703 | (0.8+ | 1.7−) |
| 2002 11 30 | 704 | 0.4+ | 0.6− | 2006 10 17 | 703 | (1.9+ | 1.6−) | | | | |
| 2002 11 30 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.8+ | 0.1− | | | | |

**(142692)∗ 2002 TY$_{242}$ = 1998 YE$_{13}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38082)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.38318 | | (2000.0) | | +0.99737690 | +0.05478189 |
| $n$ | 0.23475889 | $\omega$ | 114.20778 | | −0.06856106 | +0.92457060 |
| $a$ | 2.6024837 | $\Omega$ | 242.68153 | | +0.02320993 | +0.37705193 |
| $e$ | 0.2103832 | $i$ | 3.05240 | | | |
| $P$ | 4.20 | $H$ | 16.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 691 | 0.0 | 0.0 | 2002 11 22 | 644 | 0.1+ | 0.4+ | 2006 09 01 | 704 | 0.4+ | 0.5+ |
| 1998 12 17 | 691 | 0.4− | 0.2+ | 2002 11 22 | 644 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.2− | 0.5+ |
| 1998 12 17 | 691 | 0.3− | 1.3− | 2002 11 22 | 644 | 0.6+ | 0.5+ | 2006 09 01 | 704 | 0.8+ | 0.1+ |
| 1998 12 25 | 691 | 0.1− | 0.6− | 2002 12 06 | 291 | 0.1+ | 0.1+ | 2006 09 01 | 704 | 0.2+ | 0.5+ |
| 1998 12 25 | 691 | 0.1− | 0.1− | 2002 12 06 | 291 | 0.7− | 0.3− | 2006 09 01 | 704 | 0.3− | 0.2+ |
| 1998 12 25 | 691 | 0.1+ | 0.1− | 2002 12 06 | 291 | 1.0− | 0.1+ | 2006 09 11 | 703 | (0.6+ | 2.2−) |
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 09 11 | 703 | (2.5+ | 1.4−) |
| 2002 10 04 | 704 | 0.7+ | 0.3− | 2004 01 30 | 691 | 0.4+ | 0.2+ | 2006 09 11 | 703 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.1− | 1.1+ | 2004 01 30 | 691 | 0.1− | 0.5+ | 2006 09 11 | 703 | 0.1− | 0.5+ |
| 2002 10 04 | 704 | 0.4+ | 0.4− | 2006 08 24 | 704 | 0.4− | 0.2− | 2006 09 13 | 644 | 0.3− | 0.3− |
| 2002 10 04 | 704 | 0.4− | 1.0+ | 2006 08 24 | 704 | 0.2− | 1.4+ | 2006 09 13 | 644 | 0.1− | 0.2− |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2006 08 24 | 704 | 0.6− | 0.8− | 2006 09 13 | 644 | 0.2− | 0.3− |
| 2002 10 09 | 704 | 1.0+ | 0.1− | 2006 08 24 | 704 | 0.3− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.4− |
| 2002 10 09 | 704 | 0.6+ | 0.3+ | 2006 08 24 | 704 | 0.8+ | 0.4− | 2006 09 16 | 644 | 0.1− | 0.3− |
| 2002 10 09 | 704 | 0.7+ | 1.1+ | 2006 08 27 | 699 | 0.2+ | 0.1− | 2006 09 16 | 644 | 0.8− | 0.8+ |
| 2002 10 10 | 644 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.2− |
| 2002 10 10 | 644 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.2− | 0.4− |
| 2002 10 10 | 644 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.4− | 0.7+ | 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.9− |
| 2002 10 12 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 703 | 0.5+ | 0.0 | 2006 09 18 | 704 | 0.9+ | 0.6+ |
| 2002 10 12 | 704 | 1.2+ | 0.5− | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 09 18 | 704 | 0.6+ | 0.1+ |
| 2002 10 12 | 704 | 0.7+ | 0.8− | 2006 08 29 | 703 | 0.5− | 0.5+ | 2006 09 18 | 704 | 0.9+ | 0.1− |
| 2002 10 12 | 704 | 0.5+ | 0.3− | 2006 08 29 | 691 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.8+ | 0.4+ |
| 2002 10 31 | 699 | 0.5+ | 0.6+ | 2006 08 29 | 691 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.2− | 0.5− |
| 2002 10 31 | 699 | 0.5− | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.2− | 2006 09 25 | 704 | 0.2+ | 0.6+ |
| 2002 10 31 | 644 | 0.1+ | 0.5+ | 2006 08 30 | 699 | 0.0 | 0.6− | 2006 09 25 | 704 | 0.6− | 0.8− |
| 2002 10 31 | 699 | 1.2− | 0.3+ | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.0 |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 08 30 | 699 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.6− | 0.0 |
| 2002 10 31 | 699 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.7− | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2002 10 31 | 644 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.6+ | 0.0 | 2006 11 11 | 703 | 1.2− | 0.5+ |
| 2002 11 06 | 704 | (0.9− | 2.5+) | 2006 08 30 | 699 | 0.1+ | 0.4− | 2006 11 11 | 703 | 2.9− | 1.9− |
| 2002 11 06 | 704 | 0.3+ | 1.1− | 2006 08 30 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 1.3− | 0.2+ |
| 2002 11 06 | 704 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.2+ | 0.2+ | | | | |
| 2002 11 06 | 704 | 1.4+ | 1.2+ | 2006 08 30 | 699 | 0.0 | 0.5+ | | | | |

**(142693)∗ 2002 TZ$_{242}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.72480 | | (2000.0) | | −0.17851831 | −0.97939259 |
| $n$ | 0.24556967 | $\omega$ | 241.70714 | | +0.94717811 | −0.14506204 |
| $a$ | 2.5255322 | $\Omega$ | 218.94251 | | +0.26642979 | −0.14052456 |
| $e$ | 0.0924452 | $i$ | 8.64278 | | | |
| $P$ | 4.01 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 21 | 910 | 0.6+ | 0.5+ | 2002 12 01 | 704 | 0.5+ | 0.4− | 2006 10 17 | 691 | 0.5+ | 0.0 |
| 1998 10 21 | 910 | 0.4+ | 0.5+ | 2002 12 01 | 704 | 0.3+ | 0.8+ | 2006 10 17 | 691 | 0.6+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 22 | 910 | 0.3+ | 0.3+ | 2002 12 01 | 704 | 0.3− | 1.0+ | 2006 10 17 | 691 | 0.5+ | 0.1− | | |
| 2000 03 09 | 704 | 0.9− | 0.5− | 2004 02 17 | 703 | 0.6− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.2+ | | |
| 2000 03 09 | 704 | 0.2+ | 0.1+ | 2004 02 17 | 703 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.4− | 0.1− | | |
| 2000 03 09 | 704 | 0.0 | 0.1+ | 2004 02 17 | 703 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.0 | | |
| 2000 03 09 | 704 | 0.9+ | 0.2− | 2004 02 17 | 703 | 0.9+ | 0.5− | 2006 10 17 | 703 | 0.5− | 0.8− | | |
| 2002 10 04 | 704 | (1.5+ | 1.9+) | 2004 03 16 | 704 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.8− | 0.3− | | |
| 2002 10 04 | 704 | 0.2− | 1.4+ | 2004 03 16 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.0 | | |
| 2002 10 04 | 704 | (0.3+ | 1.6+) | 2004 03 16 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.1− | | |
| 2002 10 09 | 704 | 1.3− | 0.5− | 2004 03 16 | 704 | 0.9− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.4+ | | |
| 2002 10 09 | 704 | 0.6− | 0.7+ | 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 10 23 | 683 | 0.5+ | 1.3− | | |
| 2002 10 09 | 704 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.1− | 2006 10 23 | 683 | 0.8+ | 0.1− | | |
| 2002 10 10 | 644 | 0.4− | 0.1− | 2004 03 20 | 704 | (2.0− | 1.3−) | 2006 10 23 | 683 | 0.8+ | 0.2− | | |
| 2002 10 10 | 644 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2002 10 10 | 644 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.9+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2002 10 12 | 704 | 0.6+ | 0.6+ | 2004 03 29 | 703 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2002 10 12 | 704 | 0.5+ | 0.6+ | 2004 03 29 | 703 | 0.5− | 0.4− | 2006 11 10 | 691 | 0.3− | 0.5− | | |
| 2002 10 12 | 704 | 0.2− | 0.5+ | 2004 03 29 | 703 | 0.3− | 0.9− | 2006 11 10 | 691 | 0.3− | 0.1− | | |
| 2002 10 12 | 704 | 1.3− | 0.6+ | 2004 03 29 | 703 | 0.4+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.2− | | |
| 2002 10 12 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 699 | (0.4− | 2.3−) | 2006 11 11 | 703 | 1.4+ | 0.4+ | | |
| 2002 10 30 | 644 | 0.0 | 1.3+ | 2006 09 20 | 699 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.2− | | |
| 2002 10 30 | 644 | 0.0 | 1.3+ | 2006 09 20 | 699 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4− | | |
| 2002 10 30 | 644 | 0.1+ | 1.4+ | 2006 09 20 | 699 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.3− | | |
| 2002 11 01 | 704 | 0.9− | 1.0− | 2006 09 28 | 691 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.7− | | |
| 2002 11 01 | 704 | 0.5− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.5− | | |
| 2002 11 01 | 704 | 0.1+ | 1.0+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.5− | | |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.5− | | |
| 2002 11 11 | 704 | 0.1− | 1.0+ | 2006 10 02 | 691 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.5+ | | |
| 2002 11 11 | 704 | 0.5− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 1.4+ | 0.0 | | |
| 2002 11 11 | 704 | (0.2+ | 2.5+) | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.7− | | |
| 2002 11 11 | 704 | 0.7− | 0.8+ | 2006 10 10 | 644 | 0.4− | 0.2+ | 2006 11 17 | 703 | (1.6− | 0.0 | ) | |
| 2002 11 22 | 644 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2− | 2006 11 20 | G96 | 0.3− | 0.5− | | |
| 2002 11 22 | 644 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.2+ | | |
| 2002 11 22 | 644 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.3− | | |
| 2002 12 01 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.2− | 0.9− | | |

**(142694)∗ 2002 TW$_{243}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.48870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24324024 | $\omega$ | 64.61943 | | +0.42905593 | −0.90327792 | |
| $a$ | 2.5416306 | $\Omega$ | 359.97288 | | +0.81158102 | +0.38551045 | |
| $e$ | 0.1297620 | $i$ | 2.60058 | | +0.39654414 | +0.18833663 | |
| $P$ | 4.05 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 10 31 | 699 | (0.6+ | 1.9−) | 2006 09 26 | 691 | 0.0 | 0.3+ | | |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 10 31 | 699 | 0.7− | 1.0− | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2000 04 02 | 691 | 0.0 | 0.8− | 2002 10 31 | 699 | 0.6+ | 0.7− | 2006 09 26 | G96 | 0.3− | 0.0 | | |
| 2000 04 02 | 691 | 0.4− | 0.7− | 2002 10 31 | 699 | 0.9+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− | | |
| 2000 04 02 | 691 | 0.3− | 0.5− | 2004 03 16 | 291 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2002 10 03 | 704 | 0.8+ | 0.1− | 2004 03 16 | 291 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2004 03 16 | 291 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2002 10 03 | 704 | 0.6− | 0.9− | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.5+ | | |
| 2002 10 09 | 704 | 0.9+ | 0.6− | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.2− | | |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2004 03 30 | 691 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.6− | | |
| 2002 10 09 | 704 | 0.5+ | 1.2− | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.4+ | | |
| 2002 10 09 | 704 | 0.9+ | 0.1− | 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 10 11 | 291 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2002 10 11 | 291 | 0.1+ | 0.3− | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2002 10 11 | 291 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2002 10 18 | 644 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2002 10 18 | 644 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2002 10 18 | 644 | 0.3− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.4− | | |

**(142695)∗ 2002 TU$_{245}$**

Discovered 2002 Oct. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.19479 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22839669 | $\omega$ | 230.88752 | | +0.89437946 | −0.44653124 | |
| $a$ | 2.6505918 | $\Omega$ | 155.59981 | | +0.42757433 | +0.83611834 | |
| $e$ | 0.1135804 | $i$ | 3.65947 | | +0.13139853 | +0.31861571 | |
| $P$ | 4.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 0.5+ | 0.7+ | 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.2+ | | |
| 2002 10 09 | 699 | 0.8− | 0.7+ | 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.3+ | | |
| 2002 10 09 | 699 | 0.5+ | 0.1− | 2005 06 08 | 691 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.9+ | 0.7+ | | |
| 2002 10 09 | 699 | 0.0 | 0.5+ | 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 1.2− | 0.8+ | | |
| 2002 10 11 | 644 | 0.1+ | 0.6+ | 2005 06 08 | 691 | 0.1− | 0.6+ | 2006 08 28 | 699 | 0.1− | 0.5− | | |
| 2002 10 11 | 644 | 0.5− | 0.2+ | 2006 07 25 | G96 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.2− | | |
| 2002 10 11 | 644 | 0.5− | 0.5+ | 2006 07 25 | G96 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.8− | 0.8+ | | |
| 2002 10 31 | 704 | 0.3− | 0.7+ | 2006 07 25 | G96 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.6+ | 1.1− | | |
| 2002 10 31 | 704 | 0.3− | 0.6+ | 2006 07 25 | G96 | 0.1− | 0.2− | 2006 09 18 | 699 | (2.1+ | 0.5+) | | |
| 2002 10 31 | 704 | 0.2− | 0.1− | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.0 | | |
| 2002 10 31 | 704 | 0.1− | 0.5+ | 2006 08 18 | 644 | 0.7+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1− | | |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.7− | | |
| 2004 02 12 | 691 | 0.8+ | 0.2+ | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.3− | | |
| 2004 02 12 | 691 | 0.1+ | 0.6+ | 2006 08 19 | 691 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.6− | 0.0 | | |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.2+ | | |
| 2004 02 29 | 691 | 0.2− | 0.5+ | 2006 08 28 | 699 | (0.1+ | 1.6+) | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2004 02 29 | 691 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.4+ | 0.8+ | 2006 11 17 | G96 | 0.6+ | 0.6− | | |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.5+ | 0.2+ | | | | | | |

**(142696)∗ 2002 TM$_{246}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.48553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25870245 | $\omega$ | 257.54895 | | +0.36915679 | +0.92493162 | |
| $a$ | 2.4393214 | $\Omega$ | 34.55466 | | −0.77845248 | +0.36104146 | |
| $e$ | 0.2172265 | $i$ | 9.20073 | | −0.50767608 | +0.11895610 | |
| $P$ | 3.81 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 19 | 691 | 0.0 | 0.1+ | 2002 11 04 | 291 | 0.4+ | 0.1+ | 2005 04 18 | 704 | 0.1+ | 0.5+ | | |
| 2001 06 19 | 691 | 0.1+ | 0.1+ | 2002 11 04 | 291 | 0.3+ | 0.0 | 2005 04 18 | 704 | 1.2+ | 1.1+ | | |
| 2001 06 19 | 691 | 0.2+ | 0.2+ | 2002 11 05 | 699 | 0.2+ | 1.2− | 2005 05 01 | 644 | 0.1+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2002 11 05 | 699 | 0.5− | 0.6+ | 2005 05 01 | 644 | 0.7− | 0.0 | | |
| 2002 10 03 | 704 | 0.7+ | 0.2− | 2002 11 05 | 699 | (0.5+ | 1.7−) | 2005 05 01 | 644 | 0.2− | 0.2+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2002 11 05 | 699 | 1.1+ | 0.4− | 2005 05 04 | 699 | 0.7− | 0.2+ | | |
| 2002 10 03 | 704 | (0.4− | 1.6−) | 2002 11 06 | 704 | 0.7− | 0.5+ | 2005 05 04 | 699 | 0.7+ | 0.6+ | | |
| 2002 10 03 | 704 | 1.1+ | 0.5− | 2002 11 06 | 704 | 1.2− | 1.2+ | 2005 05 04 | 699 | 0.9+ | 0.6− | | |
| 2002 10 09 | 699 | 0.2− | 1.3+ | 2002 11 06 | 704 | 1.1− | 1.0+ | 2005 05 04 | 699 | 0.7− | 0.5+ | | |
| 2002 10 09 | 699 | (0.2− | 1.9+) | 2002 11 22 | 644 | 0.1+ | 0.8+ | 2005 05 09 | 704 | 0.2− | 0.2+ | | |
| 2002 10 09 | 699 | 0.2− | 1.4+ | 2002 11 22 | 644 | 0.2+ | 0.5+ | 2005 05 09 | 704 | 0.8+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.7+ | 1.5+ | 2002 11 22 | 644 | 0.1− | 0.2+ | 2005 05 09 | 704 | 1.1+ | 1.0+ | | |
| 2002 10 09 | 699 | 0.2+ | 0.3+ | 2002 12 07 | 291 | 0.2− | 0.1− | 2005 05 13 | 704 | 0.2+ | 0.9+ | | |
| 2002 10 09 | 704 | 0.2− | 0.9+ | 2002 12 07 | 291 | 0.2− | 0.4+ | 2005 05 13 | 704 | 0.6+ | 0.4+ | | |
| 2002 10 09 | 704 | 0.1+ | 1.2+ | 2002 12 07 | 291 | 0.4− | 0.0 | 2005 05 13 | 704 | 0.1− | 0.7+ | | |
| 2002 10 09 | 704 | 0.6− | 0.9+ | 2005 04 02 | G96 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.3+ | 0.0 | | |
| 2002 10 09 | 704 | 0.2− | 0.0 | 2005 04 02 | G96 | 0.1+ | 0.2+ | 2005 05 19 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 11 | 644 | 0.1+ | 0.2+ | 2005 04 02 | G96 | 0.1− | 0.3+ | 2005 05 19 | 644 | 0.4+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.2− | | |
| 2002 10 11 | 704 | 0.5+ | 1.0− | 2005 04 07 | 691 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.5− | | |
| 2002 10 11 | 704 | 0.5+ | 0.9− | 2005 04 07 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.3− | | |
| 2002 10 11 | 644 | 0.2− | 0.3+ | 2005 04 07 | 691 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.1− | | |
| 2002 10 11 | 704 | 0.6+ | 0.1+ | 2005 04 13 | 699 | 0.6− | 0.9+ | 2006 10 21 | G96 | 0.2− | 0.3+ | | |
| 2002 10 11 | 644 | 0.0 | 0.3+ | 2005 04 13 | 699 | 0.2+ | 1.1+ | 2006 10 21 | G96 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 291 | 0.6− | 0.1+ | 2005 04 13 | 699 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 10 30 | 291 | 0.8− | 0.0 | 2005 04 13 | 699 | 0.4+ | 1.3+ | 2006 10 21 | 691 | 0.4− | 0.4+ |
| 2002 10 30 | 291 | 0.8− | 0.2+ | 2005 04 18 | 703 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.5+ |
| 2002 10 31 | 699 | 0.2+ | 0.5+ | 2005 04 18 | 703 | 0.2− | 1.3+ | 2006 10 21 | 691 | 0.2− | 0.5+ |
| 2002 10 31 | 699 | 0.8+ | 0.9+ | 2005 04 18 | 704 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 10 31 | 699 | 1.4− | 0.9− | 2005 04 18 | 703 | 0.5− | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 10 31 | 699 | 0.4+ | 0.6− | 2005 04 18 | 703 | 0.9− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2002 11 04 | 291 | 0.1+ | 0.1+ | 2005 04 18 | 704 | 0.8+ | 0.7+ | | | | |

**(142697)∗ 2002 TT$_{246}$ = 1994 TJ$_7$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41107)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.45983 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25104824 | $\omega$ | 248.61717 | | +0.15031784 | −0.98854858 | |
| $a$ | 2.4886544 | $\Omega$ | 192.75903 | | +0.92786812 | +0.14570086 | |
| $e$ | 0.1412431 | $i$ | 3.44632 | | +0.34127013 | +0.03928062 | |
| $P$ | 3.93 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 04 | 691 | 0.3+ | 0.2+ | 2002 10 11 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1994 10 04 | 691 | 0.1+ | 0.4+ | 2002 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.6− |
| 1994 10 04 | 691 | 0.5+ | 0.0 | 2002 10 31 | 699 | (1.9+ | 0.4−) | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 1994 10 06 | 691 | 0.1+ | 0.3− | 2002 10 31 | 699 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 1994 10 06 | 691 | 0.5+ | 0.3+ | 2002 10 31 | 699 | 0.3− | 0.7− | 2006 10 27 | 691 | 0.2− | 0.7− |
| 1994 10 06 | 691 | 0.3+ | 0.5− | 2002 10 31 | 699 | 0.6− | 1.4+ | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 1994 10 11 | 691 | 0.7+ | 0.2+ | 2004 03 31 | 291 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 1994 10 11 | 691 | 0.5+ | 0.6+ | 2004 03 31 | 291 | 1.0+ | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 1994 10 11 | 691 | 0.1− | 0.7+ | 2004 03 31 | 291 | 0.6+ | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.1+ |
| 1994 10 11 | 691 | 0.9− | 0.9− | 2004 04 14 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 1994 10 11 | 691 | 0.4− | 0.6− | 2004 04 14 | 691 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 1994 10 11 | 691 | 0.2− | 0.2− | 2004 04 14 | 691 | 0.5− | 0.5+ | 2006 11 08 | 644 | 0.5+ | 0.0 |
| 1998 10 14 | 691 | 0.6− | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 1998 10 14 | 691 | 0.8− | 0.0 | 2006 07 21 | G96 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 1998 10 14 | 691 | 0.8− | 0.4+ | 2006 07 21 | G96 | 0.6− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.3− |
| 2000 03 03 | 645 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2000 03 03 | 645 | 0.1− | 0.1− | 2006 10 12 | 291 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 1.4+ | 2006 10 12 | 291 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.3− |
| 2002 10 03 | 704 | 0.9+ | 1.2+ | 2006 10 12 | 291 | 0.2− | 0.3+ | 2006 11 11 | 703 | 1.1+ | 0.4− |
| 2002 10 03 | 704 | 0.2− | 1.0+ | 2006 10 12 | 291 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.7+ | 1.0− |
| 2002 10 09 | 704 | 0.1+ | 0.8+ | 2006 10 12 | 291 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2002 10 09 | 704 | 1.0+ | 0.5+ | 2006 10 12 | 291 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2002 10 09 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 10 11 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− |

**(142698)∗ 2002 TO$_{248}$**

Discovered 2002 Oct. 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.17524 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26073818 | $\omega$ | 243.55554 | | +0.60104987 | +0.79445499 | |
| $a$ | 2.4266080 | $\Omega$ | 63.66219 | | −0.69430574 | +0.57300170 | |
| $e$ | 0.1939841 | $i$ | 5.57507 | | −0.39582647 | +0.20127176 | |
| $P$ | 3.78 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | (0.4+ | 3.9+) | 2005 04 05 | 691 | 0.8+ | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2002 10 03 | 704 | 1.2− | 0.6+ | 2005 04 30 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | (0.2− | 2.1+) | 2005 04 30 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.5+ |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 1.3− | 0.9+ | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.5+ |
| 2002 10 07 | 644 | 0.1− | 0.6+ | 2005 05 01 | 644 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2002 10 07 | 644 | 0.1− | 0.5+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2002 10 07 | 644 | 0.1− | 0.6+ | 2005 05 09 | 704 | 0.2+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.5+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2005 05 09 | 704 | 0.1− | 0.5+ | 2006 11 02 | 621 | 0.3+ | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2005 05 09 | 704 | 0.4+ | 1.1+ | 2006 11 02 | 621 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 0.7− | 2005 05 14 | 644 | 0.2+ | 0.0 | 2006 11 02 | 621 | 0.2+ | 0.6− |
| 2002 10 11 | 704 | 0.9− | 0.5− | 2005 05 14 | 644 | 0.1+ | 0.0 | 2006 11 02 | 703 | 1.2− | 0.9+ |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.7− | 0.8− |
| 2002 10 11 | 704 | 0.4− | 0.0 | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 11 02 | 703 | 0.3+ | 0.9+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 11 02 | 703 | 0.7− | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 19 | G96 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.6− | 1.8− |
| 2002 10 15 | 644 | 0.0 | 1.5+ | 2005 05 19 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2002 10 15 | 644 | (0.1+ | 1.7+) | 2005 06 13 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2002 10 15 | 644 | (0.1+ | 1.7+) | 2005 06 13 | G96 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5+ |
| 2002 10 16 | 644 | 0.5− | 0.6+ | 2005 06 13 | G96 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2002 10 16 | 644 | 0.5− | 0.5+ | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2002 10 16 | 644 | 0.2− | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.2+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2004 01 28 | 691 | 0.3+ | 0.5− | 2006 09 30 | G96 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.8+ |
| 2004 01 28 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.6− | 0.2+ |
| 2005 04 05 | 691 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1+ | | | | |
| 2005 04 05 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | | | |

**(142699)∗ 2002 TU$_{251}$**

Discovered 2002 Oct. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.85284 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25963707 | $\omega$ | 251.75256 | | +0.43033562 | +0.89919936 | |
| $a$ | 2.4334639 | $\Omega$ | 44.00871 | | −0.77923182 | +0.41427543 | |
| $e$ | 0.1983770 | $i$ | 6.53471 | | −0.45564133 | +0.14077062 | |
| $P$ | 3.80 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.1+ | 0.1+ | 2005 04 06 | 691 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2001 03 24 | 691 | 0.3+ | 0.4+ | 2005 04 06 | 691 | 0.5− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.3− |
| 2001 03 24 | 691 | 0.4+ | 0.1+ | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.4− |
| 2002 09 28 | 608 | (2.3− | 0.4−) | 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.8− | 0.2− |
| 2002 09 28 | 608 | (2.4− | 0.2−) | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 09 28 | 608 | (2.3− | 0.4−) | 2005 04 11 | 699 | 1.2+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 09 30 | 704 | 0.4− | 0.4+ | 2005 04 11 | 699 | 1.4+ | 1.1+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2002 09 30 | 704 | 0.3− | 0.8+ | 2005 04 11 | 699 | 0.7+ | 1.2+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2002 09 30 | 704 | 0.5+ | 0.2− | 2005 04 11 | 699 | 1.4+ | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 09 30 | 704 | 0.2− | 0.8+ | 2005 04 18 | 703 | 1.5− | 1.1− | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2005 04 18 | 703 | 0.3+ | 1.0− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2005 04 18 | 703 | 1.1− | 1.2+ | 2006 10 31 | 691 | 0.8+ | 0.3− |
| 2002 10 03 | 704 | (1.1+ | 1.7−) | 2005 04 18 | 703 | 1.4− | 1.0+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2005 05 06 | G96 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2005 05 06 | G96 | 0.2− | 0.3+ | 2006 11 11 | 703 | (1.5− | 7.2−) |
| 2002 10 08 | 699 | 1.1+ | 0.1− | 2005 05 06 | G96 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2002 10 08 | 699 | 0.8− | 1.4+ | 2005 05 06 | G96 | 0.0 | 0.6+ | 2006 11 11 | 703 | (2.9− | 0.1+) |
| 2002 10 08 | 699 | 0.8+ | 1.1+ | 2005 05 10 | 807 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | (0.2− | 1.6+) | 2005 05 10 | 807 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2005 05 11 | 807 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.6+ |
| 2002 10 11 | 704 | 1.1− | 0.5− | 2005 06 13 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.6− | 1.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.4− | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.9+ | 0.3− |
| 2002 10 11 | 704 | 0.8− | 0.9+ | 2005 06 13 | G96 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 1.1− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 1.0+ | 1.3− |
| 2002 11 08 | 645 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.1− | 0.6− |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2004 01 16 | 691 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2004 01 16 | 691 | 0.2− | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.5+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2004 01 16 | 691 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2005 03 16 | G96 | 0.5− | 1.3− | 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2005 03 16 | G96 | 0.3− | 0.7− | 2006 10 15 | 691 | 0.2+ | 0.6+ | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2005 03 16 | G96 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.2+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.8− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | |
| 2005 04 06 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | |

**(142700)∗ 2002 TK$_{254}$**

Discovered 2002 Oct. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.53763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22375886 | $\omega$ | 340.41191 | | −0.22243437 | −0.97357200 | |
| $a$ | 2.6870921 | $\Omega$ | 122.40884 | | +0.90247625 | −0.22570089 | |
| $e$ | 0.1712579 | $i$ | 3.51589 | | +0.36886254 | −0.03488070 | |
| $P$ | 4.40 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.1− | 1.2+ | 2004 03 22 | 704 | 0.2+ | 0.7+ | |
| 1995 02 25 | 691 | 0.1− | 0.4− | 2004 03 15 | 683 | 0.6+ | 1.3+ | 2004 03 24 | 699 | 1.4− | 0.2− | |
| 1995 02 25 | 691 | 0.0 | 0.3− | 2004 03 15 | 683 | (1.3+ | 1.6+) | 2004 03 24 | 699 | 0.1+ | 0.8+ | |
| 2002 10 09 | 699 | 0.8+ | 1.1− | 2004 03 15 | 683 | 0.5+ | 0.9+ | 2004 03 24 | 699 | 0.2− | 0.1+ | |
| 2002 10 09 | 699 | 0.7+ | 1.0+ | 2004 03 15 | 703 | 0.9− | 1.2− | 2004 03 24 | 699 | 0.1− | 0.3+ | |
| 2002 10 09 | 699 | 0.4− | 0.1+ | 2004 03 15 | 703 | (0.7+ | 1.6−) | 2004 03 28 | 704 | 1.1− | 1.1+ | |
| 2002 10 09 | 699 | 0.1+ | 0.2+ | 2004 03 15 | 703 | 1.0+ | 1.5+ | 2004 03 28 | 704 | 0.5− | 0.2+ | |
| 2002 10 11 | 704 | 1.3− | 1.2− | 2004 03 15 | 703 | 1.3+ | 1.4+ | 2004 03 28 | 704 | 1.0− | 0.8+ | |
| 2002 10 11 | 704 | 0.9+ | 0.9− | 2004 03 16 | 704 | (2.3+ | 0.5−) | 2004 03 28 | 704 | 0.7− | 1.3− | |
| 2002 10 11 | 704 | 0.2+ | 0.4+ | 2004 03 16 | 704 | 1.3+ | 0.1+ | 2004 03 30 | 703 | 0.3+ | 0.2+ | |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2004 03 16 | 683 | 0.6+ | 0.1− | 2004 03 30 | 703 | 0.3+ | 0.4+ | |
| 2002 10 11 | 704 | 0.4− | 0.1+ | 2004 03 16 | 704 | 1.2+ | 0.3+ | 2004 03 30 | 703 | 0.7− | 0.0 | |
| 2002 10 30 | 644 | 0.6+ | 0.0 | 2004 03 16 | 683 | 0.2− | 1.0+ | 2004 03 30 | 703 | (0.9− | 1.6−) | |
| 2002 10 30 | 644 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.3+ | 0.3− | 2004 04 15 | 644 | 0.3+ | 0.5+ | |
| 2002 10 30 | 644 | 0.1− | 0.5+ | 2004 03 16 | 683 | 0.5+ | 0.3+ | 2004 04 15 | 644 | 0.4+ | 0.4+ | |
| 2002 10 31 | 608 | 0.2+ | 0.7+ | 2004 03 16 | 704 | 1.5+ | 0.9+ | 2004 04 15 | 644 | 0.4+ | 0.5+ | |
| 2002 10 31 | 608 | 0.2+ | 0.5+ | 2004 03 18 | 106 | 0.1+ | 0.2+ | 2004 04 16 | 691 | 0.2+ | 0.3+ | |
| 2002 10 31 | 608 | 0.2+ | 1.2+ | 2004 03 18 | 106 | 0.1− | 0.1+ | 2004 04 16 | 691 | 0.1+ | 0.4+ | |
| 2002 11 01 | 704 | 0.2+ | 1.2+ | 2004 03 18 | 106 | 0.0 | 0.7− | 2004 04 16 | 691 | 0.0 | 0.3+ | |
| 2002 11 01 | 704 | 1.0− | 1.2+ | 2004 03 19 | 704 | 0.0 | 0.4+ | 2004 04 16 | 621 | 0.2− | 0.3− | |
| 2002 11 01 | 704 | 0.5− | 0.7+ | 2004 03 19 | 704 | 0.0 | 0.7+ | 2004 04 16 | 621 | 0.1+ | 0.2− | |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.6+ | 0.6+ | 2004 04 16 | 621 | 0.1+ | 0.4− | |
| 2002 11 07 | 704 | 0.4− | 1.2+ | 2004 03 19 | 704 | 0.0 | 0.7+ | 2004 04 21 | 691 | 0.2− | 0.2+ | |
| 2002 11 07 | 704 | 1.2− | 0.1+ | 2004 03 19 | 704 | 0.9+ | 0.4+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | |
| 2002 11 07 | 704 | 0.1− | 1.0+ | 2004 03 21 | 704 | 0.4+ | 0.8+ | 2004 04 21 | 691 | 0.1+ | 0.3+ | |
| 2002 11 07 | 704 | 0.4− | 0.1+ | 2004 03 21 | 699 | 0.1− | 0.8+ | 2006 08 18 | 691 | 0.6− | 0.2+ | |
| 2002 11 11 | 704 | 0.7− | 0.3+ | 2004 03 21 | 704 | 0.7+ | 0.2+ | 2006 08 18 | 691 | 0.1− | 0.7+ | |
| 2002 11 11 | 704 | 0.4− | 1.1+ | 2004 03 21 | 704 | 0.1− | 0.3+ | 2006 08 18 | 691 | 0.3− | 0.6+ | |
| 2002 11 11 | 704 | 0.0 | 1.0+ | 2004 03 21 | 699 | 0.3+ | 0.7+ | 2006 08 27 | 691 | 0.4− | 0.9+ | |
| 2002 11 11 | 704 | 0.2+ | 1.4+ | 2004 03 21 | 699 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.6+ | |
| 2002 11 11 | 704 | 0.2− | 1.0+ | 2004 03 21 | 699 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.2− | 1.0+ | |
| 2004 02 19 | 704 | 0.3+ | 1.1+ | 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.1− | |
| 2004 02 19 | 704 | 0.1− | 1.0+ | 2004 03 22 | 704 | 0.6+ | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.1− | |
| 2004 02 19 | 704 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.4+ | 0.2− | 2006 11 27 | G96 | 0.3− | 0.2+ | |
| 2004 02 19 | 704 | 0.9+ | 1.5+ | 2004 03 22 | 704 | 0.8+ | 0.2+ | 2006 11 27 | G96 | 0.5− | 0.2+ | |

**(142701)∗ 2002 TL$_{254}$**

Discovered 2002 Oct. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.15757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23522041 | $\omega$ | 268.07128 | | +0.61749433 | +0.76831042 | |
| $a$ | 2.5990784 | $\Omega$ | 41.66084 | | −0.58241126 | +0.59060146 | |
| $e$ | 0.0755990 | $i$ | 14.68615 | | −0.52867558 | +0.24675699 | |
| $P$ | 4.19 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 0.1+ | 0.2+ | 2004 01 19 | 704 | 1.0+ | 1.0+ | 2005 05 19 | 644 | 0.1− | 0.3+ | |
| 2002 10 09 | 699 | 0.9− | 0.7− | 2004 02 02 | 704 | 0.4+ | 0.1+ | 2005 05 19 | 644 | 0.6+ | 0.6+ | |
| 2002 10 09 | 699 | 0.3− | 0.2+ | 2004 02 02 | 704 | 0.8+ | 0.5− | 2005 05 19 | E12 | 0.5+ | 0.1− | |
| 2002 10 09 | 699 | 0.2+ | 0.2− | 2004 02 02 | 704 | 0.0 | 0.5+ | 2005 05 19 | E12 | 0.5+ | 0.1− | |
| 2002 10 11 | 704 | 0.3+ | 0.5+ | 2004 02 11 | 704 | 0.2+ | 0.6+ | 2005 05 19 | E12 | 0.6− | 0.3− | |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2004 02 11 | 704 | 0.6− | 0.7+ | 2005 05 19 | E12 | 0.6+ | 0.9+ | |
| 2002 10 11 | 704 | 0.4+ | 0.9+ | 2004 02 11 | 704 | (2.1− | 0.4−) | 2006 09 20 | 703 | 0.5− | 0.2− | |
| 2002 10 11 | 704 | (1.5− | 1.5+) | 2004 02 11 | 704 | 0.4− | 0.2+ | 2006 09 20 | 703 | 0.1+ | 0.8+ | |
| 2002 10 31 | 608 | 0.5− | 0.5− | 2004 02 17 | 644 | 0.5− | 0.6+ | 2006 09 20 | 703 | 0.1+ | 0.1− | |
| 2002 10 31 | 608 | 0.1+ | 0.4− | 2004 02 17 | 644 | 0.5− | 0.5+ | 2006 09 20 | 703 | 0.3+ | 0.1− | |
| 2002 10 31 | 608 | 0.0 | 0.8− | 2004 02 17 | 644 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.5+ | |
| 2002 11 01 | 704 | 1.2+ | 1.2+ | 2005 03 12 | G96 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.8+ | |
| 2002 11 01 | 704 | 0.3− | 1.2+ | 2005 03 12 | G96 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.3+ | |
| 2002 11 01 | 704 | 0.7− | 0.0 | 2005 03 12 | G96 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.2+ | |
| 2002 11 06 | 704 | (0.6− | 2.7−) | 2005 03 12 | G96 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.4− | |
| 2002 11 06 | 704 | 0.2+ | 0.3− | 2005 04 18 | 703 | (0.9+ | 1.9+) | 2006 10 02 | 703 | 0.5− | 0.4− | |
| 2002 11 06 | 704 | 0.3+ | 0.1+ | 2005 04 18 | 703 | (1.4+ | 3.3+) | 2006 10 02 | 703 | 0.7− | 1.5− | |
| 2002 11 06 | 704 | 0.4− | 0.0 | 2005 04 18 | 703 | 0.0 | 0.0 | 2006 10 02 | 703 | 0.9− | 0.3+ | |
| 2002 11 06 | 704 | 0.3− | 0.5− | 2005 04 18 | 703 | 1.1− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.1+ | |
| 2002 11 10 | 704 | 0.1− | 0.4+ | 2005 05 08 | E12 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.6+ | |
| 2002 11 10 | 704 | 0.2− | 1.3+ | 2005 05 08 | E12 | 0.2+ | 1.0+ | 2006 10 17 | 703 | 1.3+ | 0.5+ | |
| 2002 11 10 | 704 | 1.4− | 0.2+ | 2005 05 08 | E12 | 0.8+ | 0.5− | 2006 10 17 | 703 | 0.4− | 0.0 | |
| 2002 11 22 | 644 | 0.1− | 0.1+ | 2005 05 11 | 644 | 0.6+ | 0.4+ | 2006 10 23 | 644 | 0.5+ | 0.4+ | |
| 2002 11 22 | 644 | 0.0 | 0.2+ | 2005 05 11 | 644 | 0.7+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.4+ | |
| 2002 11 22 | 644 | 0.3− | 0.0 | 2005 05 11 | 644 | 0.6+ | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.2+ | |
| 2003 12 30 | 704 | 0.8− | 0.5+ | 2005 05 12 | 703 | 0.3− | 0.0 | 2006 10 28 | 703 | 1.1− | 0.2+ | |
| 2003 12 30 | 704 | 0.2+ | 0.3− | 2005 05 12 | 703 | 0.2− | 0.6+ | 2006 10 28 | 703 | 0.5− | 0.0 | |
| 2003 12 30 | 704 | 0.4− | 0.4+ | 2005 05 12 | 703 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.2− | 0.6+ | |
| 2003 12 30 | 704 | 0.9+ | 0.1+ | 2005 05 12 | 703 | 0.0 | 0.6+ | 2006 10 28 | 703 | 1.3− | 0.2− | |
| 2003 12 30 | 704 | 0.3+ | 0.3− | 2005 05 19 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.1+ | |
| 2004 01 19 | 704 | 0.6+ | 0.5− | 2005 05 19 | 644 | 0.6+ | 0.5+ | 2006 11 25 | G96 | 0.4+ | 0.2+ | |
| 2004 01 19 | 704 | 0.2+ | 0.0 | 2005 05 19 | 644 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.5+ | 0.1− | |
| 2004 01 19 | 704 | 0.8+ | 0.8+ | 2005 05 19 | 644 | 0.7+ | 0.4+ | | | | | |

**(142702)∗ 2002 TY$_{254}$**

Discovered 2002 Oct. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.79239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23890418 | $\omega$ | 216.64230 | | +0.99298816 | −0.11087844 | |
| $a$ | 2.5722917 | $\Omega$ | 149.64662 | | +0.11820406 | +0.93575873 | |
| $e$ | 0.1785250 | $i$ | 4.65309 | | −0.00152203 | +0.33475599 | |
| $P$ | 4.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2002 11 30 | 704 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.4+ | |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 02 17 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.5+ | 0.2− | |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.0 | |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2004 02 17 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.5+ | |
| 2002 10 03 | 704 | 0.1+ | 1.1+ | 2004 03 17 | 691 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.3− | 0.6+ | |
| 2002 10 09 | 699 | 1.4− | 0.1− | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.5− | 0.6+ | |
| 2002 10 09 | 699 | 0.2+ | 0.5+ | 2004 03 17 | 691 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.5− | 0.9− | |
| 2002 10 09 | 699 | 0.6− | 0.4− | 2005 05 03 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.1− | 0.4− | |
| 2002 10 09 | 699 | 0.1+ | 0.7− | 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 0.2− | |
| 2002 10 11 | 704 | 0.6+ | 0.8− | 2005 05 03 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.2− | 0.5− | |
| 2002 10 11 | 704 | 0.2− | 1.3+ | 2005 05 19 | G96 | 0.1− | 0.6+ | 2006 10 01 | 704 | 0.5− | 0.5− | |
| 2002 10 11 | 704 | 0.5+ | 0.6+ | 2005 05 19 | G96 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.2− | |
| 2002 10 11 | 704 | 0.0 | 0.4+ | 2005 05 19 | G96 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.4− | |
| 2002 10 11 | 704 | 0.3+ | 0.9+ | 2005 05 19 | G96 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− | |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2005 06 08 | 691 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.2− | |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2005 06 08 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.8+ | 0.1+ | |
| 2002 10 16 | 644 | 0.1− | 0.2+ | 2005 06 08 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | (2.6− | 0.2−) | |
| 2002 11 01 | 704 | 0.4− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.3− | 1.2+ | |
| 2002 11 01 | 704 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | (1.1+ | 1.7+) | |
| 2002 11 01 | 704 | 0.1− | 0.2+ | 2006 09 06 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2− | |
| 2002 11 01 | 608 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.0 | |
| 2002 11 01 | 608 | 0.6+ | 1.0+ | 2006 09 12 | 703 | 0.4+ | 0.6− | 2006 10 19 | 644 | 0.2− | 0.2+ | |
| 2002 11 01 | 608 | 0.4+ | 1.3+ | 2006 09 12 | 703 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 | |
| 2002 11 07 | 704 | 0.1+ | 0.4− | 2006 09 12 | 703 | (0.3− | 2.5−) | 2006 10 20 | 644 | 0.1+ | 0.1− | |
| 2002 11 07 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.0 | |
| 2002 11 07 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2002 11 07 | 704 | 0.9− | 0.9− | 2006 09 18 | 703 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 11 11 | 704 | 0.3− | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.5+ | 0.2− | 2006 09 22 | 704 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 11 11 | 704 | 0.7− | 1.3+ | 2006 09 22 | 704 | 0.7− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.6− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.8+ |
| 2002 11 11 | 704 | 0.0 | 1.0+ | 2006 09 22 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.6− | 0.4− |
| 2002 11 13 | 644 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.7− | 0.8− | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.5+ | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | (1.8+ | 0.9+) | 2006 11 10 | 644 | 0.4+ | 0.2− |
| 2002 11 30 | 704 | 0.3− | 0.3− | 2006 09 25 | 699 | 1.1− | 1.5− | 2006 11 10 | 644 | 0.8+ | 0.2− |
| 2002 11 30 | 704 | 0.8− | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 11 30 | 704 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.0 | | | | |

**(142703)∗ 2002 TJ$_{256}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.77516 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22449959 | $\omega$ | 177.71437 | | +0.72207664 | −0.69164165 | |
| $a$ | 2.6811782 | $\Omega$ | 226.05889 | | +0.63438632 | +0.67085337 | |
| $e$ | 0.0841688 | $i$ | 1.22548 | | +0.27596978 | +0.26755855 | |
| $P$ | 4.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.3+ | 0.3+ | 2002 10 31 | 644 | 0.1+ | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.3− |
| 1995 02 03 | 691 | 0.0 | 0.2+ | 2002 10 31 | 644 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.2− |
| 1997 07 12 | 691 | 1.7− | 0.1− | 2002 11 06 | 704 | 1.1− | 0.2− | 2006 08 27 | 691 | 0.3+ | 0.6+ |
| 1997 07 12 | 691 | 0.9− | 0.0 | 2002 11 06 | 704 | 0.2+ | 0.8+ | 2006 08 27 | 691 | 0.1+ | 0.4+ |
| 1997 07 12 | 691 | 1.0− | 0.3+ | 2002 11 06 | 704 | 0.1+ | 0.9+ | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 1997 08 10 | 691 | 1.1+ | 0.3+ | 2003 11 21 | 291 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.6+ | 0.2− |
| 1997 08 10 | 691 | 0.9+ | 0.3+ | 2003 11 21 | 291 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.5− |
| 1997 08 10 | 691 | 0.8+ | 0.2+ | 2003 11 21 | 291 | 0.5− | 1.0+ | 2006 08 28 | 703 | 0.5− | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 0.2− | 2004 02 14 | 691 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.9− |
| 2002 10 09 | 704 | 0.1− | 0.2− | 2004 02 14 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | 0.5+ | 0.5− | 2004 02 14 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 1.1+ |
| 2002 10 11 | 704 | (2.5− | 0.1+) | 2005 06 13 | G96 | 0.1− | 0.8+ | 2006 09 20 | 704 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.2− | 0.2− | 2005 06 13 | G96 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 0.5+ | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 0.5− | 2005 06 13 | G96 | 0.2+ | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.4− | 1.1+ | 2005 06 13 | G96 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.3− |
| 2002 10 29 | 291 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2002 10 29 | 291 | 0.1− | 0.0 | 2006 08 19 | 691 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2002 10 29 | 291 | 0.1+ | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.2− | | | | |
| 2002 10 31 | 644 | 0.2+ | 0.3+ | 2006 08 24 | 644 | 0.3− | 0.5+ | | | | |

**(142704)∗ 2002 TM$_{256}$ = 1998 SQ$_{101}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38086)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.36662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25314922 | $\omega$ | 130.58055 | | +0.78451540 | +0.61981249 | |
| $a$ | 2.4748658 | $\Omega$ | 191.16225 | | −0.59467229 | +0.74320409 | |
| $e$ | 0.2336236 | $i$ | 5.68747 | | −0.17578525 | +0.25195270 | |
| $P$ | 3.89 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 1.9+ | 0.8+ | 2002 11 07 | 704 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.2− | 0.1− |
| 1998 09 26 | 704 | 0.3+ | 0.9− | 2002 11 11 | 704 | (0.4− | 2.7+) | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 1998 09 26 | 704 | 1.2− | 0.7+ | 2002 11 11 | 704 | (0.6− | 1.8+) | 2006 09 30 | G96 | 0.0 | 0.2− |
| 1998 09 26 | 704 | 0.1+ | 0.3− | 2002 11 11 | 704 | (0.5− | 2.4+) | 2006 09 30 | G96 | 0.3− | 0.0 |
| 1998 09 26 | 704 | 0.9− | 0.1− | 2002 11 11 | 704 | (1.4− | 2.6+) | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 1998 09 27 | 704 | 0.1− | 0.1+ | 2002 11 11 | 704 | (0.8− | 3.2+) | 2006 10 15 | D35 | 0.1− | 0.7+ |
| 1998 09 27 | 704 | 0.6− | 0.1+ | 2005 03 14 | G96 | 0.3− | 0.0 | 2006 10 15 | D35 | 0.2− | 0.4+ |
| 1998 09 27 | 704 | 1.5− | 0.8+ | 2005 03 14 | G96 | 0.6− | 0.0 | 2006 10 15 | D35 | 0.4− | 0.2+ |
| 1998 09 27 | 691 | 0.3− | 0.2− | 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 1998 09 27 | 704 | (2.2− | 0.1+) | 2005 03 14 | G96 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.2− | 0.5− |
| 1998 09 27 | 691 | 0.2− | 0.3− | 2005 04 10 | G96 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.2+ |
| 1998 09 27 | 704 | (3.9− | 0.6+) | 2005 04 10 | G96 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.7+ |
| 1998 09 27 | 691 | 0.0 | 0.2− | 2005 04 10 | G96 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 1998 10 19 | 699 | 1.6+ | 0.5+ | 2005 04 10 | G96 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 1998 10 19 | 699 | 1.4+ | 0.7+ | 2005 04 12 | G96 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 1998 10 19 | 699 | 0.5+ | 1.2+ | 2005 04 12 | G96 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.0 |
| 2002 10 03 | 704 | 1.0+ | 0.4+ | 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2002 10 03 | 704 | 1.2+ | 0.3+ | 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2005 04 12 | G96 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.6+ | 0.2− |
| 2002 10 03 | 704 | 0.9+ | 0.8+ | 2005 04 12 | G96 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.5− | 1.0− |
| 2002 10 03 | 704 | (1.6+ | 0.2+) | 2005 04 12 | G96 | 0.3− | 1.0+ | 2006 11 02 | 703 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.9+ | 0.4+ | 2005 04 12 | G96 | 0.2+ | 1.0+ | 2006 11 02 | 703 | 0.8+ | 0.0 |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2005 04 12 | G96 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2002 10 09 | 704 | 1.3− | 0.1+ | 2005 04 12 | G96 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.4+ | 0.7+ | 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 10 11 | 704 | (0.3− | 1.6−) | 2005 04 12 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | (0.9+ | 1.6+) |
| 2002 10 11 | 704 | 1.4− | 0.1− | 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2002 10 11 | 704 | 0.5− | 0.6+ | 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.9− | 0.0 | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2002 10 31 | 608 | 0.2− | 0.2+ | 2005 05 14 | 644 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 10 31 | 608 | 0.1+ | 0.1+ | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2002 10 31 | 608 | 0.0 | 0.6− | 2005 05 14 | 644 | 0.7+ | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.4− |
| 2002 11 07 | 704 | 0.2+ | 0.4− | 2006 08 28 | 703 | (0.9− | 2.6−) | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.2− | 2006 08 28 | 703 | (1.6− | 2.2−) | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.5+ | | | | |

**(142705)∗ 2002 TE$_{257}$ = 2000 FO$_{68}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38087)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.55507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21789577 | $\omega$ | 164.79035 | | +0.98558364 | −0.16574077 | |
| $a$ | 2.7350809 | $\Omega$ | 204.82716 | | +0.14555418 | +0.93301747 | |
| $e$ | 0.0812295 | $i$ | 4.64235 | | +0.08624883 | +0.31938754 | |
| $P$ | 4.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 21 | 691 | 0.2− | 0.3− | 2002 11 06 | 608 | 0.7+ | 0.3+ | 2006 08 23 | 704 | (0.2− | 3.1+) |
| 1996 05 21 | 691 | 0.0 | 0.1− | 2002 11 12 | 644 | 0.6− | 0.6+ | 2006 08 23 | 704 | 0.5− | 1.2+ |
| 1996 05 21 | 691 | 0.1+ | 0.1− | 2002 11 12 | 644 | 0.3− | 0.4+ | 2006 08 23 | 704 | (0.3− | 3.5+) |
| 2000 03 26 | 699 | 0.7− | 0.5+ | 2002 11 12 | 644 | 0.5− | 0.5+ | 2006 08 23 | 704 | 0.9+ | 0.6+ |
| 2000 03 26 | 699 | 0.6+ | 0.3+ | 2002 11 22 | 644 | 0.2− | 0.5+ | 2006 08 23 | 704 | (0.5− | 4.1+) |
| 2000 03 26 | 699 | 0.8+ | 0.3+ | 2002 11 22 | 644 | 0.2− | 0.6+ | 2006 08 24 | 704 | 0.7+ | 0.5− |
| 2000 03 26 | 699 | 0.9+ | 0.5+ | 2002 11 22 | 644 | 0.1− | 0.5+ | 2006 08 24 | 704 | 0.5− | 0.3− |
| 2000 04 05 | 704 | 0.6− | 0.3− | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 08 24 | 704 | 0.4− | 0.6− |
| 2000 04 05 | 704 | 0.5+ | 1.2+ | 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 08 24 | 704 | 0.2− | 0.1+ |
| 2000 04 05 | 704 | 0.6− | 0.1− | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.1− | 0.4− |
| 2000 04 05 | 704 | 0.8+ | 0.1− | 2005 04 11 | G96 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.6− |
| 2000 04 05 | 704 | 0.9+ | 0.1− | 2005 05 03 | 691 | 0.7− | 0.5+ | 2006 08 29 | 703 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2005 05 03 | 691 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.3+ | 0.5− |
| 2002 10 03 | 704 | 0.6+ | 0.1− | 2005 05 03 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 699 | 0.0 | 0.9+ |
| 2002 10 03 | 704 | 0.1+ | 0.7− | 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 09 12 | 699 | 0.1− | 1.1− |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 09 12 | 699 | 0.6− | 0.5+ |
| 2002 10 03 | 704 | 0.6+ | 0.2− | 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 699 | 0.7− | 0.4− |
| 2002 10 09 | 704 | 0.7− | 0.2+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.9− | 0.1− |
| 2002 10 09 | 704 | 1.2− | 0.5− | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 0.4− | 0.5− | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.1− |
| 2002 10 09 | 704 | 0.4− | 0.1− | 2005 05 08 | G96 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.6+ | 0.9− |
| 2002 10 11 | 704 | 0.5− | 0.8+ | 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.3+ | 2005 05 12 | 691 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.0 | 0.5− | 2005 05 12 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.8− | 0.7+ | 2006 08 18 | 704 | 0.2+ | 1.2− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 10 31 | 644 | 0.2− | 0.7+ | 2006 08 18 | 704 | 0.2− | 0.5− | 2006 09 17 | 691 | 1.0− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.1− | 0.7+ | 2006 08 18 | 704 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2− |
| 2002 10 31 | 644 | 0.1− | 0.6+ | 2006 08 19 | 699 | 0.7+ | 0.6+ | 2006 09 28 | G96 | 0.5− | 0.1− |
| 2002 11 01 | 608 | 0.8− | 0.1− | 2006 08 19 | 699 | 0.9+ | 0.9+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2002 11 01 | 608 | 0.4− | 0.1− | 2006 08 19 | 699 | 1.0− | 0.6− | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 11 01 | 608 | 0.3− | 0.1+ | 2006 08 19 | 699 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2002 11 06 | 704 | 1.1+ | 0.8+ | 2006 08 21 | 704 | 0.0 | 0.0 | 2006 11 16 | 291 | 0.4+ | 0.3+ |
| 2002 11 06 | 704 | (1.9+ | 0.3+) | 2006 08 21 | 704 | 0.0 | 0.0 | 2006 11 16 | 291 | 0.6+ | 0.2− |
| 2002 11 06 | 704 | 0.1+ | 0.1− | 2006 08 21 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 291 | 0.5+ | 0.4+ |
| 2002 11 06 | 704 | 0.8+ | 0.8+ | 2006 08 21 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 291 | 0.2+ | 0.3+ |
| 2002 11 06 | 704 | 0.6+ | 0.2− | 2006 08 21 | 704 | 0.3+ | 0.4− | 2006 11 17 | 291 | 0.5+ | 0.3+ |
| 2002 11 06 | 608 | 0.0 | 0.3+ | 2006 08 23 | 704 | 0.5− | 1.0− | 2006 11 17 | 291 | 0.5+ | 0.4+ |
| 2002 11 06 | 608 | 0.1+ | 0.4+ | 2006 08 23 | 704 | (1.2− | 3.2+) | | | | |

**(142706)∗ 2002 TB$_{258}$ = 1996 HX$_3$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38087)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.23201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23574928 | $\omega$ | 318.12518 | | +0.41951196 | −0.90536928 | |
| $a$ | 2.5951899 | $\Omega$ | 106.97583 | | +0.85001966 | +0.36640408 | |
| $e$ | 0.1596883 | $i$ | 3.93878 | | +0.31855343 | +0.21460314 | |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 691 | 0.3+ | 0.5+ | 2002 12 01 | 704 | 0.7− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1996 04 17 | 691 | 0.2− | 0.2+ | 2002 12 01 | 704 | 0.1− | 0.9+ | 2006 09 28 | 704 | 0.0 | 0.9+ |
| 1996 04 17 | 691 | 0.5− | 0.6+ | 2002 12 01 | 704 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.7− | 0.3+ |
| 1996 04 21 | 691 | 0.6+ | 0.6+ | 2002 12 01 | 704 | 0.0 | 0.3− | 2006 09 28 | 704 | 0.2− | 0.1+ |
| 1996 04 21 | 691 | 0.4+ | 0.3+ | 2002 12 01 | 704 | 0.4+ | 1.1− | 2006 09 28 | 704 | 0.3− | 0.2+ |
| 1996 04 21 | 691 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2002 10 09 | 704 | 0.5− | 0.2+ | 2004 02 23 | 704 | 1.1+ | 0.1− | 2006 09 30 | 704 | (3.4− | 0.2−) |
| 2002 10 09 | 704 | 0.8− | 0.4+ | 2004 02 23 | 704 | (2.3+ | 1.1+) | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2002 10 09 | 704 | 0.5− | 0.3− | 2004 03 12 | 644 | 0.7+ | 0.9+ | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 2002 10 09 | 704 | 0.0 | 0.7+ | 2004 03 12 | 644 | 0.3+ | 0.6+ | 2006 09 30 | 704 | 0.8+ | 0.6+ |
| 2002 10 09 | 704 | 0.1+ | 0.3− | 2004 03 12 | 644 | 0.4+ | 0.8+ | 2006 09 30 | 704 | 0.7+ | 0.2+ |
| 2002 10 11 | 704 | (0.6− | 1.6+) | 2004 03 19 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2002 10 11 | 704 | 0.8+ | 0.6− | 2004 03 19 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.6+ |
| 2002 10 11 | 704 | 0.8+ | 0.8+ | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 704 | 0.8− | 0.7+ |
| 2002 10 11 | 704 | 0.9+ | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.4+ |
| 2002 10 11 | 704 | 0.6+ | 0.1+ | 2004 03 22 | 704 | 0.4− | 1.0+ | 2006 09 30 | 704 | 1.4+ | 0.1− |
| 2002 10 28 | 608 | 0.4− | 0.1− | 2004 03 22 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 704 | (1.2+ | 1.6+) |
| 2002 10 28 | 608 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2002 10 28 | 608 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.7+ | 1.4− | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2002 11 01 | 704 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2002 11 01 | 704 | 0.3− | 1.0+ | 2004 04 16 | 691 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 11 01 | 704 | 0.7− | 0.0 | 2004 04 16 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 11 02 | 608 | 0.6− | 0.5− | 2004 04 16 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.3+ |
| 2002 11 02 | 608 | 0.6− | 0.5− | 2004 04 21 | 691 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 11 02 | 608 | 0.6− | 0.8− | 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 11 06 | 699 | 0.3+ | 0.0 | 2004 04 21 | 691 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 11 06 | 699 | 0.6+ | 0.8+ | 2006 09 12 | 703 | 0.6+ | 0.2− | 2006 10 16 | 703 | (1.7− | 0.2−) |
| 2002 11 06 | 699 | 0.4− | 0.2− | 2006 09 12 | 703 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.8− |
| 2002 11 06 | 699 | 0.2− | 0.4+ | 2006 09 12 | 703 | 0.8− | 0.4− | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2002 11 07 | 704 | 0.5− | 0.7− | 2006 09 12 | 703 | (1.0− | 1.7−) | 2006 10 16 | 703 | 0.8− | 0.4− |
| 2002 11 07 | 704 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.7− | 1.0+ | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2002 11 07 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.8+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.9+ | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2002 11 11 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.3− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 11 | 704 | 0.7+ | 0.8+ | 2006 09 18 | 699 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 11 11 | 644 | 0.3+ | 0.2− | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 22 | 703 | 1.1− | 0.0 |
| 2002 11 11 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 1.3+ |
| 2002 11 11 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.8+ | 2006 10 22 | 703 | 0.5+ | 0.5+ |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.8− | 2006 10 22 | 703 | 1.0− | 0.8+ |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ | | | | |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.2+ | | | | |

**(142707)∗ 2002 TV$_{259}$ = 2000 GQ$_{130}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41113)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.62735 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24153633 | $\omega$ | 38.94500 | | +0.35116955 | −0.93569632 | |
| $a$ | 2.5535698 | $\Omega$ | 30.53979 | | +0.84148157 | +0.29949662 | |
| $e$ | 0.1691905 | $i$ | 3.83050 | | +0.41059555 | +0.18647831 | |
| $P$ | 4.08 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.8− | 0.6− | 2002 11 06 | 704 | 1.1− | 1.1− | 2006 10 16 | 291 | 0.2− | 0.1+ |
| 1996 04 13 | 691 | 0.1− | 0.1− | 2002 11 22 | 644 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 1996 04 13 | 691 | 0.1− | 0.1− | 2002 11 22 | 644 | 0.4− | 0.2+ | 2006 10 16 | 291 | 0.2− | 0.3+ |
| 1998 09 19 | 910 | 0.3+ | 0.8− | 2002 11 22 | 644 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.3− |
| 1998 09 19 | 910 | 0.3+ | 1.2− | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.6− |
| 1998 09 19 | 910 | 0.6+ | 0.3− | 2004 04 14 | 691 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2000 04 05 | 691 | 0.2+ | 0.1− | 2004 04 14 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2000 04 05 | 691 | 0.1+ | 0.1+ | 2004 04 19 | 691 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2000 04 05 | 691 | 0.2+ | 0.1+ | 2004 04 19 | 691 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2000 04 12 | 691 | 0.3+ | 0.1+ | 2004 04 19 | 691 | 0.5− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2000 04 12 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2000 04 12 | 691 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.8+ | 2006 09 14 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.5− |
| 2002 10 03 | 704 | 0.9− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 10 09 | 704 | 1.1+ | 0.6− | 2006 09 18 | 699 | 1.2+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2002 10 09 | 704 | 0.6− | 1.3+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2002 10 09 | 704 | 1.4+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2002 10 09 | 704 | 0.9+ | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.6− | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 2002 10 11 | 704 | 0.2+ | 1.4+ | 2006 09 18 | 699 | (0.5− | 1.7+) | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2002 10 11 | 704 | 0.3− | 1.4+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2002 10 11 | 704 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.2− | 0.9− |
| 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1+ | 1.0− |
| 2002 10 31 | 699 | 1.3− | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 10 31 | 644 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2002 10 31 | 699 | 0.1− | 1.0− | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.4− | 0.1+ |
| 2002 10 31 | 644 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.3− | 0.2− |
| 2002 10 31 | 699 | 0.7− | 0.0 | 2006 10 15 | 703 | 0.0 | 1.1− | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2002 10 31 | 644 | 0.4+ | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.6+ | 2006 11 22 | G96 | 0.3+ | 0.5− |
| 2002 10 31 | 699 | (2.3− | 0.1−) | 2006 10 15 | 703 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2002 11 06 | 704 | 0.6− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.5− |
| 2002 11 06 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | | | |
| 2002 11 06 | 704 | 0.8− | 0.4− | 2006 10 16 | 291 | 0.0 | 0.2+ | | | | |

**(142708)∗ 2002 TH$_{260}$ = 2404 T-2**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38089)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.36987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23928164 | $\omega$ | 173.95009 | | +0.86102836 | −0.50707387 | |
| $a$ | 2.5695859 | $\Omega$ | 216.60265 | | +0.46382063 | +0.81429415 | |
| $e$ | 0.2721611 | $i$ | 3.73201 | | +0.20856797 | +0.28249093 | |
| $P$ | 4.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.1+ | 0.9+ | 2002 11 22 | 644 | 0.1− | 0.1− | 2006 09 27 | 699 | 0.1− | 0.3+ |
| 1973 09 19 | 675 | 0.7− | 1.9− | 2002 11 22 | 644 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.8− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 20 | 675 | 1.8+ | 2.4− | 2002 11 22 | 644 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.2+ | 0.4+ |
| 1973 09 24 | 675 | (0.5+ | 2.9−) | 2002 12 01 | 704 | (0.5+ | 1.6+) | 2006 09 29 | 704 | 0.5+ | 0.1− |
| 1973 09 24 | 675 | (1.5+ | 2.7−) | 2002 12 01 | 704 | 0.8− | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.1+ |
| 1973 09 25 | 675 | 1.2+ | 2.0− | 2002 12 01 | 704 | 0.3− | 0.6+ | 2006 09 29 | 704 | 0.4− | 0.3+ |
| 1973 09 25 | 675 | 0.5+ | 2.0− | 2002 12 01 | 704 | 0.9+ | 0.0 | 2006 10 15 | 106 | 0.8+ | 0.1− |
| 2002 09 07 | 704 | 0.8− | 0.1+ | 2002 12 01 | 704 | 0.2+ | 0.7− | 2006 10 15 | 106 | 0.2+ | 0.1− |
| 2002 09 07 | 704 | 0.5− | 0.6+ | 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 106 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 1.0− | 0.4− | 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 10 15 | 106 | 0.7+ | 0.4− |
| 2002 09 07 | 704 | 0.9− | 0.2− | 2002 12 05 | 704 | 0.5− | 1.1− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2002 10 07 | 704 | (0.7− | 2.9+) | 2002 12 05 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2002 10 07 | 704 | 1.1+ | 0.1+ | 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2002 10 07 | 704 | 0.3− | 0.1− | 2002 12 10 | 644 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.6+ |
| 2002 10 07 | 704 | 0.4+ | 0.6− | 2002 12 10 | 644 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 10 09 | 704 | 0.8+ | 0.7+ | 2002 12 10 | 644 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2002 10 09 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 691 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 10 09 | 704 | 0.9− | 0.0 | 2004 03 23 | 691 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 10 11 | 704 | 0.2− | 0.3+ | 2004 03 23 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.5− | 0.3− | 2006 09 14 | A50 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.4− | 0.3+ | 2006 09 14 | A50 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.7− | 0.4− | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2002 10 11 | 704 | 0.4− | 0.2− | 2006 09 17 | 703 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2002 10 16 | 699 | 0.6− | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 10 16 | 699 | 0.4− | 1.0+ | 2006 09 17 | 703 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 10 16 | 699 | 0.4− | 1.0+ | 2006 09 18 | 704 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 10 16 | 699 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.4− | 0.7+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2002 10 31 | 699 | 0.6− | 0.2+ | 2006 09 18 | 704 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2002 10 31 | 699 | 1.0− | 0.1− | 2006 09 18 | 704 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2002 10 31 | 699 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2002 10 31 | 699 | 1.0− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.2− | 0.6+ | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2002 11 06 | 704 | 0.4− | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.8− |
| 2002 11 06 | 704 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.6+ | 0.3− |
| 2002 11 06 | 704 | 0.0 | 0.4− | 2006 09 19 | 699 | 0.2− | 0.7+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2002 11 06 | 704 | 0.2− | 1.0− | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.2+ |
| 2002 11 10 | 704 | 0.8+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.7+ | 2006 11 21 | 704 | 1.1+ | 0.6+ |
| 2002 11 10 | 704 | 0.6+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 1.1− | 2006 11 22 | G96 | 0.4+ | 0.5− |
| 2002 11 10 | 704 | 1.1+ | 0.5− | 2006 09 25 | 704 | 0.0 | 0.6− | 2006 11 22 | G96 | 0.6+ | 1.4− |
| 2002 11 10 | 704 | 0.9+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 0.9+ | 2006 11 22 | G96 | 0.1− | 1.3− |
| 2002 11 10 | 704 | 1.0+ | 0.6− | 2006 09 25 | 691 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.6− |
| 2002 11 10 | 704 | 0.8+ | 0.8+ | 2006 09 25 | 704 | 0.2− | 0.2− | 2006 11 28 | 701 | 0.4− | 2.0+ |
| 2002 11 10 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 691 | 0.4− | 0.4+ | 2006 11 28 | 701 | 0.0 | 0.1+ |
| 2002 11 10 | 704 | 0.6+ | 0.6+ | 2006 09 25 | 704 | 0.8− | 0.7+ | 2006 11 28 | 701 | 0.0 | 0.1− |
| 2002 11 12 | 644 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 11 28 | 701 | 0.5+ | 0.2− |
| 2002 11 12 | 644 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.3− | 0.7+ | | | | |
| 2002 11 12 | 644 | (0.5− | 1.9+) | 2006 09 27 | 699 | 0.1+ | 0.4+ | | | | |

**(142709)∗ 2002 TS$_{260}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.75800 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23071895 | $\omega$ | 352.14952 | | +0.60682544 | −0.76324243 | |
| $a$ | 2.6327757 | $\Omega$ | 60.20567 | | +0.74243325 | +0.44461500 | |
| $e$ | 0.2322869 | $i$ | 14.81263 | | +0.28382346 | +0.46880540 | |
| $P$ | 4.27 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 21 | 691 | 0.5+ | 0.4+ | 2002 11 14 | 704 | (0.7− | 2.9+) | 2003 01 04 | 704 | 1.1− | 0.9− |
| 1996 05 21 | 691 | 0.2+ | 0.9+ | 2002 11 14 | 704 | (0.8− | 2.2+) | 2003 01 04 | 704 | 0.0 | 0.8− |
| 1996 05 21 | 691 | 0.3+ | 0.5+ | 2002 11 14 | 704 | (0.8− | 2.8+) | 2003 01 04 | 704 | 0.1+ | 1.3− |
| 1999 01 14 | 704 | 1.8+ | 0.5+ | 2002 11 14 | 704 | (0.7− | 2.0+) | 2003 01 31 | 704 | 0.9+ | 1.2− |
| 1999 01 14 | 704 | 0.4− | 1.0+ | 2002 11 14 | 704 | (0.5− | 2.3+) | 2003 01 31 | 704 | 0.7+ | 0.3− |
| 1999 01 14 | 704 | 0.2+ | 0.6+ | 2002 11 24 | 644 | 0.1− | 0.1+ | 2003 01 31 | 704 | 0.9+ | 0.2− |
| 1999 01 14 | 704 | 0.5− | 0.2− | 2002 11 24 | 644 | 0.1− | 0.2+ | 2003 01 31 | 704 | 0.5+ | 0.2+ |
| 1999 01 14 | 704 | 0.7+ | 0.5− | 2002 11 24 | 644 | 0.1+ | 0.2+ | 2006 09 22 | 703 | 0.3− | 0.5+ |
| 1999 02 11 | 704 | 0.3− | 0.6+ | 2002 12 06 | 704 | 0.1− | 0.4+ | 2006 09 22 | 703 | 0.2+ | 0.5+ |
| 1999 02 11 | 704 | (1.7− | 2.3+) | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 09 22 | 703 | 0.8− | 0.1− |
| 1999 02 11 | 704 | 1.2− | 0.9+ | 2002 12 06 | 704 | 0.2− | 1.1− | 2006 09 22 | 703 | 1.2− | 0.1+ |
| 1999 02 11 | 704 | (5.3− | 0.5−) | 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 09 24 | 699 | 0.5− | 0.6+ |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 09 24 | 699 | 0.2+ | 0.2+ |
| 2002 10 09 | 704 | 0.6− | 0.5− | 2002 12 07 | 704 | 0.1+ | 0.0 | 2006 09 24 | 699 | 0.3− | 0.3+ |
| 2002 10 09 | 704 | 0.2− | 0.2− | 2002 12 07 | 704 | 0.0 | 0.1+ | 2006 09 24 | 699 | 0.5− | 0.6+ |
| 2002 10 09 | 704 | 0.8− | 1.0+ | 2002 12 07 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2002 10 09 | 704 | 0.4+ | 0.1− | 2002 12 07 | 704 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.6− | 0.1+ | 2002 12 07 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 2002 10 11 | 704 | 0.5+ | 0.5− | 2002 12 11 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.3+ | 0.3+ | 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 0.7− | 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.8− |
| 2002 10 11 | 704 | 1.0+ | 0.9− | 2002 12 11 | 704 | 0.0 | 0.5− | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 608 | 0.3− | 0.5− | 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2002 10 31 | 608 | 0.8− | 0.6+ | 2002 12 14 | 704 | 0.4− | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2002 10 31 | 608 | 0.2− | 0.2− | 2002 12 14 | 704 | 0.3− | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.6− |
| 2002 11 05 | 704 | 0.3− | 0.5+ | 2002 12 14 | 704 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.7+ | 0.2+ |
| 2002 11 05 | 704 | 0.2− | 0.7+ | 2002 12 14 | 704 | 0.5+ | 0.4+ | 2006 10 28 | 703 | 0.4− | 0.3− |
| 2002 11 05 | 704 | 0.1+ | 0.6+ | 2002 12 14 | 704 | 0.6− | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.4− | 0.5+ | 2002 12 30 | 704 | 0.4+ | 0.1− | 2006 11 11 | 644 | 0.1− | 0.5+ |
| 2002 11 05 | 704 | 0.4− | 0.8+ | 2002 12 30 | 704 | 0.1+ | 0.4− | 2006 11 11 | 644 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.3+ | 0.3+ | 2002 12 30 | 704 | 0.7+ | 0.4− | 2006 11 11 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.2+ | 0.4+ | 2002 12 30 | 704 | 0.5+ | 1.4+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.1+ | 0.2+ | 2002 12 30 | 704 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2002 11 06 | 704 | 0.1+ | 0.3+ | 2003 01 04 | 704 | 0.1− | 0.8+ | 2006 11 17 | 703 | 1.1− | 1.3+ |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.3− | 1.1− | | | | |

**(142710)∗ 2002 TO$_{261}$ = 2005 EA$_{152}$**

Discovered 2002 Oct. 9 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 75743)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.10840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23318960 | $\omega$ | 248.30750 | | +0.03520027 | +0.99588332 | |
| $a$ | 2.6141466 | $\Omega$ | 24.16856 | | −0.82485875 | +0.07614149 | |
| $e$ | 0.1844778 | $i$ | 11.77216 | | −0.56424195 | −0.04918213 | |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 608 | 0.4− | 0.6− | 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.4− | 0.2+ |
| 2001 04 15 | 608 | 0.7+ | 1.1− | 2005 03 18 | 703 | 0.3+ | 0.6+ | 2006 08 22 | 644 | 0.5− | 0.3+ |
| 2001 04 15 | 608 | 0.6+ | 1.4− | 2005 03 18 | 703 | 0.9− | 0.9+ | 2006 08 22 | 644 | 0.5− | 0.3+ |
| 2001 05 14 | 644 | 0.4− | 0.3+ | 2005 03 18 | 703 | 0.4+ | 0.3+ | 2006 09 20 | 644 | 0.6− | 0.6+ |
| 2001 05 14 | 644 | 0.4− | 0.3+ | 2005 03 18 | 703 | 0.3+ | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 2001 05 14 | 644 | 0.3− | 0.0 | 2005 04 01 | 691 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.5− | 0.6+ |
| 2001 05 25 | 644 | 0.7− | 0.1− | 2005 04 01 | 691 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.3− | 0.3+ |
| 2001 05 25 | 644 | 0.4− | 0.5− | 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.9+ |
| 2001 05 25 | 644 | 0.6− | 0.5− | 2005 04 04 | 704 | 0.1− | 0.5− | 2006 09 26 | 704 | (0.7− | 1.7+) |
| 2002 10 03 | 704 | 0.8+ | 0.4− | 2005 04 04 | 704 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 10 03 | 704 | 0.9− | 0.7− | 2005 04 04 | 704 | 0.9+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 0.1− | 2005 04 04 | 704 | 1.0+ | 0.4+ | 2006 10 16 | 703 | 0.8+ | 1.4+ |
| 2002 10 09 | 291 | 0.1− | 0.0 | 2005 04 04 | 704 | 0.0 | 0.7+ | 2006 10 16 | 703 | (0.5+ | 1.6+) |
| 2002 10 09 | 291 | 0.2− | 0.1+ | 2005 05 03 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 291 | 0.1+ | 0.0 | 2005 05 03 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2005 05 03 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.0 | 1.4+ | 2005 05 08 | 703 | 0.3− | 1.3+ | 2006 10 23 | 644 | 0.2− | 1.1+ |
| 2002 10 11 | 704 | (0.6− | 1.5+) | 2005 05 08 | 703 | 0.6− | 0.9+ | 2006 10 23 | 644 | 0.7− | 0.2+ |
| 2005 03 10 | 691 | 0.2+ | 0.2− | 2005 05 08 | 703 | 0.9− | 0.9+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2005 03 10 | 691 | 0.1+ | 0.0 | 2005 05 08 | 703 | 0.2− | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.4+ |
| 2005 03 10 | 691 | 0.4+ | 0.1− | 2005 05 12 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.5− | 0.0 |
| 2005 03 11 | 691 | 0.0 | 0.1+ | 2005 05 12 | 691 | 0.5+ | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.7+ |
| 2005 03 11 | 691 | 0.1+ | 0.0 | 2005 05 12 | 691 | 0.3+ | 0.1+ | | | | |

**(142711)∗ 2002 TE$_{263}$ = 1994 XT$_1$ = 2004 FD$_{139}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69405)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.39983 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24519742 | $\omega$ | 209.06980 | | +0.14006554 | −0.98861286 | |
| $a$ | 2.5280876 | $\Omega$ | 232.93194 | | +0.92124242 | +0.15048064 | |
| $e$ | 0.1001051 | $i$ | 3.95331 | | +0.36289675 | −0.00043692 | |
| $P$ | 4.02 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.2− | 0.0 | 2002 10 12 | 704 | 1.0+ | 0.4− | 2006 09 26 | 691 | 0.2− | 0.0 | |
| 1994 12 01 | 691 | 0.1− | 0.5− | 2002 10 12 | 704 | 0.6+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.0 | |
| 1994 12 01 | 691 | 0.2− | 0.6− | 2002 10 12 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | (1.7− | 1.0−) | |
| 1994 12 03 | 691 | 0.0 | 0.1− | 2002 10 30 | 644 | 0.7− | 0.6+ | 2006 10 17 | 703 | 0.3+ | 1.1+ | |
| 1994 12 03 | 691 | 0.0 | 0.1+ | 2002 10 30 | 644 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.3− | 1.0− | |
| 1994 12 03 | 691 | 0.1− | 0.2+ | 2002 10 30 | 644 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.0 | |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 03 13 | 644 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.5− | 0.4+ | |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 03 13 | 644 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | |
| 2002 10 04 | 704 | 0.9+ | 0.7+ | 2004 03 13 | 644 | 0.8− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 1.4− | |
| 2002 10 04 | 704 | 0.1+ | 0.9+ | 2004 03 20 | 699 | 0.9+ | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.8− | |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 699 | (2.3− | 0.7+) | 2006 10 21 | 703 | 0.3+ | 1.0+ | |
| 2002 10 04 | 704 | 0.2− | 0.6+ | 2004 03 20 | 699 | (2.1− | 0.4+) | 2006 10 21 | 703 | 0.7− | 0.1− | |
| 2002 10 10 | 704 | 0.2+ | 1.1+ | 2004 03 20 | 699 | 0.2− | 1.2+ | 2006 11 06 | 644 | 0.1− | 0.1+ | |
| 2002 10 10 | 704 | 0.2+ | 1.2+ | 2004 03 23 | 704 | 0.2− | 0.2− | 2006 11 06 | 644 | 0.0 | 0.5+ | |
| 2002 10 10 | 704 | 1.2+ | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.5− | 2006 11 06 | 644 | 0.5− | 0.1+ | |
| 2002 10 10 | 704 | 0.9+ | 0.0 | 2004 03 23 | 704 | 0.9+ | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.4− | |
| 2002 10 10 | 704 | 0.9+ | 0.2− | 2004 03 23 | 704 | 0.4− | 0.5− | 2006 11 15 | G96 | 0.0 | 0.6− | |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 699 | (2.1+ | 0.7−) | 2006 11 15 | G96 | 0.0 | 0.3− | |
| 2002 10 11 | 704 | 1.1+ | 1.4− | 2006 09 18 | 699 | (1.5+ | 0.1−) | 2006 11 15 | G96 | 0.3+ | 0.3− | |
| 2002 10 11 | 704 | 0.4− | 0.2− | 2006 09 18 | 699 | (1.8+ | 1.3−) | 2006 11 18 | 291 | 0.0 | 0.1+ | |
| 2002 10 11 | 704 | 0.8− | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 11 18 | 291 | 0.0 | 0.0 | |
| 2002 10 11 | 704 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 11 18 | 291 | 0.2− | 0.1+ | |
| 2002 10 12 | 704 | 0.9+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 | | | | | |

**(142712)∗ 2002 TQ$_{264}$ = 2000 DX$_{109}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69405)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.48059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24425778 | $\omega$ | 153.94457 | | +0.78135640 | −0.62370506 | |
| $a$ | 2.5345670 | $\Omega$ | 244.65992 | | +0.56829490 | +0.72549367 | |
| $e$ | 0.0800341 | $i$ | 1.38059 | | +0.25792069 | +0.29094833 | |
| $P$ | 4.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.2+ | 0.3− | 2002 12 07 | 291 | 1.1+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.8+ | |
| 1998 10 13 | 691 | 0.2− | 0.4− | 2002 12 07 | 291 | (1.8+ | 0.2+) | 2006 10 19 | 644 | 0.0 | 0.2− | |
| 1998 10 13 | 691 | 0.1− | 0.4− | 2004 02 26 | 704 | 1.4+ | 0.9+ | 2006 10 20 | G96 | 0.1− | 0.5− | |
| 2000 02 29 | 704 | (0.6− | 2.0+) | 2004 02 26 | 704 | 0.9− | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.2− | |
| 2000 02 29 | 704 | 0.4+ | 1.4+ | 2004 02 26 | 704 | 0.7+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.4− | |
| 2000 02 29 | 704 | 0.3+ | 1.0+ | 2004 02 26 | 704 | 1.2+ | 0.9− | 2006 10 20 | G96 | 0.2− | 0.1− | |
| 2000 03 03 | 704 | 1.8− | 0.2+ | 2004 03 18 | 704 | (1.6+ | 0.5−) | 2006 10 21 | 703 | 0.3− | 0.0 | |
| 2000 03 03 | 704 | 0.2+ | 0.4+ | 2004 03 18 | 704 | 0.9+ | 0.9− | 2006 10 21 | 703 | 0.1− | 0.7+ | |
| 2000 03 03 | 704 | 1.3− | 0.3− | 2004 03 18 | 704 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.2− | 0.0 | |
| 2000 03 03 | 704 | 0.2+ | 0.1+ | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.1− | |
| 2000 03 03 | 704 | 0.2+ | 1.0+ | 2004 03 30 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2002 10 10 | 644 | 0.2− | 0.3+ | 2004 03 30 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2005 06 13 | G96 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.5+ | |
| 2002 10 10 | 704 | (0.6− | 2.6+) | 2005 06 13 | G96 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.1+ | |
| 2002 10 10 | 704 | 0.9− | 0.0 | 2005 06 13 | G96 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1+ | |
| 2002 10 10 | 704 | 0.3+ | 1.1+ | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.3− | |
| 2002 10 10 | 644 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.0 | |
| 2002 10 10 | 704 | (0.1− | 2.0+) | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.4− | |
| 2002 10 11 | 704 | 0.0 | 0.7− | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− | |
| 2002 10 11 | 704 | (0.3+ | 1.6+) | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.3− | |
| 2002 10 11 | 704 | 0.7+ | 0.6− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.1− | |
| 2002 10 11 | 704 | (2.0− | 0.6+) | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.0 | |
| 2002 10 11 | 704 | 0.5− | 1.3+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− | |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.5− | 0.0 | |
| 2002 10 11 | 704 | 0.9+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.0 | |
| 2002 10 30 | 644 | (0.6+ | 1.7+) | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.5− | |
| 2002 10 30 | 644 | 0.2+ | 1.3+ | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.0 | |
| 2002 10 30 | 644 | 0.8+ | 1.4+ | 2006 10 15 | 691 | 0.1− | 0.1+ | | | | | |
| 2002 12 07 | 291 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2− | 0.3+ | | | | | |

**(142713)∗ 2002 TW$_{264}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.92216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24388147 | $\omega$ | 87.12277 | | +0.81054050 | +0.57271218 | |
| $a$ | 2.5371736 | $\Omega$ | 237.90638 | | −0.57822140 | +0.74919345 | |
| $e$ | 0.0708451 | $i$ | 8.31914 | | −0.09318856 | +0.33273103 | |
| $P$ | 4.04 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 0.4− | 1.4− | 2002 12 02 | 704 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.3− | |
| 1992 03 25 | 691 | 0.7− | 0.4− | 2002 12 02 | 704 | 0.7+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1− | |
| 1998 11 17 | 691 | 0.3+ | 0.7− | 2002 12 02 | 704 | 1.1+ | 0.0 | 2006 10 23 | 644 | 0.5− | 0.1− | |
| 1998 11 17 | 691 | 0.3+ | 0.8− | 2002 12 02 | 704 | 0.4+ | 1.1− | 2006 10 27 | 703 | 0.4− | 0.8− | |
| 1998 11 17 | 691 | 0.0 | 0.9− | 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.8− | |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.7− | 0.3− | |
| 2000 05 05 | 645 | 0.1+ | 0.1− | 2002 12 05 | 704 | 0.2+ | 0.8− | 2006 10 27 | 703 | 0.2+ | 0.4− | |
| 2002 10 10 | 704 | 0.7− | 0.1+ | 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.4+ | 1.1− | |
| 2002 10 10 | 704 | 1.0− | 0.1− | 2002 12 05 | 704 | 0.4− | 0.2+ | 2006 10 29 | 704 | 0.5+ | 1.0− | |
| 2002 10 10 | 704 | 0.9− | 0.3+ | 2002 12 10 | 644 | 0.0 | 0.6− | 2006 10 29 | 704 | (0.0 | 2.0−) | |
| 2002 10 10 | 704 | 0.5+ | 1.2+ | 2002 12 10 | 704 | 0.3− | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.4− | |
| 2002 10 11 | 704 | 0.6− | 0.7+ | 2002 12 10 | 644 | 0.2− | 0.7− | 2006 11 01 | G96 | 0.0 | 0.5− | |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2002 12 10 | 704 | 0.1+ | 0.9− | 2006 11 01 | G96 | 0.3+ | 0.5− | |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2002 12 10 | 704 | 0.5− | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.4− | |
| 2002 10 11 | 704 | 0.1+ | 1.1+ | 2002 12 10 | 644 | 0.3− | 0.7− | 2006 11 08 | 644 | 0.1− | 0.2− | |
| 2002 10 11 | 704 | 0.1− | 0.9+ | 2002 12 10 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1− | |
| 2002 11 03 | 608 | 0.4− | 0.0 | 2002 12 10 | 704 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2− | |
| 2002 11 03 | 608 | 0.1− | 0.3+ | 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2+ | |
| 2002 11 03 | 608 | 0.3− | 0.1+ | 2002 12 11 | 704 | 0.8− | 1.0+ | 2006 11 11 | 703 | 0.3− | 0.5+ | |
| 2002 11 05 | 704 | 0.8− | 0.2+ | 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.3+ | |
| 2002 11 05 | 704 | (0.2− | 2.9+) | 2002 12 11 | 704 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.6+ | 0.7− | |
| 2002 11 05 | 704 | 1.2− | 1.4+ | 2002 12 11 | 704 | 0.4− | 1.2+ | 2006 11 13 | G96 | 0.1+ | 0.6− | |
| 2002 11 05 | 704 | (0.9− | 1.8+) | 2004 01 28 | 704 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.4− | |
| 2002 11 05 | 699 | 0.4+ | 0.2+ | 2004 01 28 | 704 | 0.0 | 0.9+ | 2006 11 13 | G96 | 0.1+ | 0.4− | |
| 2002 11 05 | 699 | (0.7− | 1.5+) | 2004 01 28 | 704 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.2− | |
| 2002 11 05 | 699 | 0.2+ | 0.1+ | 2004 01 28 | 704 | 0.5− | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.2− | |
| 2002 11 05 | 699 | 0.8+ | 0.4− | 2004 02 19 | 704 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.1− | |
| 2002 11 06 | 704 | 0.8− | 0.2+ | 2004 02 19 | 704 | 0.4+ | 1.1+ | 2006 11 13 | 104 | 0.4+ | 0.0 | |
| 2002 11 06 | 704 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 104 | 0.2+ | 0.1− | |
| 2002 11 06 | 704 | 0.0 | 0.6+ | 2004 02 19 | 704 | 0.8+ | 0.3+ | 2006 11 13 | 104 | 0.3+ | 0.2− | |
| 2002 11 06 | 704 | 0.0 | 0.5+ | 2004 02 19 | 704 | 1.1+ | 0.4+ | 2006 11 16 | 704 | 0.6+ | 1.2+ | |
| 2002 11 06 | 704 | (0.3+ | 2.3+) | 2004 02 24 | 097 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.5+ | 0.6+ | |
| 2002 11 06 | 704 | 0.4+ | 0.6+ | 2004 02 24 | 097 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.7+ | |
| 2002 11 06 | 704 | 0.2+ | 1.0+ | 2004 03 16 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.3+ | |
| 2002 11 06 | 704 | 0.1− | 0.9+ | 2004 03 16 | 704 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.8+ | 0.1+ | |
| 2002 11 06 | 704 | 0.1+ | 1.0+ | 2004 03 16 | 704 | 0.3+ | 0.8+ | 2006 11 17 | 704 | (1.4+ | 1.6+) | |
| 2002 11 06 | 704 | 0.4+ | 0.1− | 2004 03 16 | 704 | 0.5− | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.1+ | |
| 2002 11 07 | 704 | 0.9+ | 0.9− | 2004 03 16 | 704 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.2− | 0.5+ | |
| 2002 11 07 | 704 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.5+ | |
| 2002 11 07 | 704 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.6− | 1.3+ | |
| 2002 11 07 | 704 | 0.5− | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.0 | 0.1+ | |
| 2002 11 07 | 704 | 0.1+ | 0.7+ | 2006 10 04 | G96 | 0.4+ | 0.4− | 2006 11 17 | 703 | 0.1− | 0.3− | |
| 2002 11 14 | 704 | 0.4+ | 0.9+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.2− | |
| 2002 11 14 | 704 | 0.4+ | 1.2+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.6− | |
| 2002 11 14 | 704 | 1.2+ | 0.4+ | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.4+ | |
| 2002 11 14 | 704 | 0.3− | 1.0+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.7+ | |
| 2002 11 14 | 704 | (0.9+ | 2.5+) | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.9+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 27 | 699 | 0.3− | 1.1+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6− | 0.6+ | |
| 2002 11 27 | 699 | 0.7− | 0.3+ | 2006 10 21 | 704 | 0.7− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.9+ | |
| 2002 11 27 | 699 | 0.8− | 1.4+ | 2006 10 21 | 704 | 0.9+ | 0.3+ | 2006 11 29 | 704 | 0.4− | 0.4+ | |
| 2002 11 27 | 699 | 1.2+ | 0.9+ | 2006 10 21 | 704 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.8− | 0.2− | |
| 2002 12 01 | 608 | 0.7− | 0.9− | 2006 10 21 | 704 | 0.4− | 0.7+ | 2006 11 29 | 704 | 0.3− | 0.5− | |
| 2002 12 01 | 608 | 0.7− | 0.8− | 2006 10 21 | 691 | 0.0 | 0.5− | 2006 11 29 | 704 | 0.6− | 0.4+ | |
| 2002 12 01 | 608 | 0.5− | 0.7− | 2006 10 21 | 691 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.3+ | |
| 2002 12 02 | 704 | 0.2+ | 0.7− | 2006 10 21 | 691 | 0.1− | 0.5− | | | | | |

**(142714)∗ 2002 TQ$_{265}$ = 1998 XE$_{39}$ = 2000 GU$_{60}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38091)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.32496 | | (2000.0) | | | |
| $n$ | 0.23974869 | $\omega$ | 356.75011 | | +0.68948208 | −0.72330667 |
| $a$ | 2.5662476 | $\Omega$ | 49.65652 | | +0.66565321 | +0.61211435 |
| $e$ | 0.1206552 | $i$ | 2.85573 | | +0.28551755 | +0.31959893 |
| $P$ | 4.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 1.8− | 1.8+ | 2002 12 13 | 413 | 0.0 | 0.2− | 2006 10 28 | 704 | 0.1− | 0.0 | |
| 1998 12 14 | 704 | 0.2− | 0.6+ | 2002 12 27 | 644 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ | |
| 1998 12 14 | 704 | 1.4− | 1.5− | 2002 12 27 | 644 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 1998 12 14 | 704 | 0.1− | 1.2+ | 2002 12 27 | 644 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 1998 12 16 | 704 | 0.1− | 0.4+ | 2002 12 31 | 704 | 0.4+ | 0.2− | 2006 11 11 | 703 | 1.0− | 0.2− | |
| 1998 12 16 | 704 | 1.0− | 0.6− | 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.1− | |
| 1998 12 16 | 704 | 1.0− | 1.8+ | 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.0 | |
| 1998 12 16 | 704 | (2.6+ | 1.3+) | 2002 12 31 | 704 | 0.4+ | 0.8− | 2006 11 11 | 703 | 0.8− | 0.2− | |
| 1998 12 16 | 704 | 0.8+ | 0.6+ | 2002 12 31 | 704 | 0.8+ | 1.0− | 2006 11 11 | G96 | 0.0 | 0.4− | |
| 1998 12 17 | 704 | 1.0+ | 0.9− | 2003 01 04 | 704 | 0.9+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.4− | |
| 1998 12 17 | 704 | (1.4+ | 2.3−) | 2003 01 04 | 704 | 0.0 | 0.8− | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 1998 12 17 | 704 | (1.2− | 2.0−) | 2003 01 04 | 704 | 0.6+ | 0.8− | 2006 11 11 | G96 | 0.2− | 0.4− | |
| 2000 04 05 | 704 | 0.1+ | 0.5− | 2003 01 04 | 704 | 0.6+ | 0.7− | 2006 11 12 | G96 | 0.3− | 0.3− | |
| 2000 04 05 | 704 | 0.2− | 0.9− | 2003 01 04 | 704 | 0.2− | 0.6− | 2006 11 12 | G96 | 0.1+ | 0.3− | |
| 2000 04 05 | 704 | 0.1− | 0.4+ | 2003 02 01 | 644 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.6+ | 0.2− | |
| 2000 04 05 | 704 | 0.5− | 0.7+ | 2003 02 01 | 644 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.1− | 0.2− | |
| 2000 04 06 | 704 | 0.8− | 0.8− | 2003 02 01 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.1+ | |
| 2000 04 06 | 704 | 0.5+ | 0.1− | 2004 03 13 | 644 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.0 | |
| 2000 04 06 | 704 | 0.1− | 0.3− | 2004 03 13 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1+ | |
| 2000 04 06 | 704 | 0.6− | 1.4− | 2004 03 13 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.0 | |
| 2002 10 02 | 704 | 0.3− | 0.2− | 2004 03 19 | 704 | 1.1− | 0.1+ | 2006 11 14 | 691 | 0.3− | 0.1+ | |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.3− | 0.4− | 2006 11 14 | 691 | 0.2− | 0.0 | |
| 2002 10 02 | 704 | 0.7− | 0.7− | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.2+ | |
| 2002 10 02 | 704 | 0.2+ | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.2+ | |
| 2002 10 10 | 704 | 0.4− | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.7− | 0.3+ | |
| 2002 10 10 | 704 | 0.3+ | 0.1− | 2004 03 22 | 704 | 0.1− | 0.4+ | 2006 11 17 | 704 | 1.0+ | 1.1− | |
| 2002 10 10 | 704 | 0.8+ | 0.9− | 2004 03 22 | 704 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.2+ | |
| 2002 10 11 | 704 | 1.2− | 0.4− | 2004 03 22 | 704 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.4− | |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2004 03 24 | 699 | 0.4− | 0.4− | 2006 11 17 | 703 | 0.3+ | 0.3+ | |
| 2002 10 11 | 704 | 0.8+ | 0.1+ | 2004 03 24 | 699 | 0.3+ | 0.5− | 2006 11 17 | 703 | 0.2− | 0.8− | |
| 2002 10 11 | 704 | 0.4+ | 1.0+ | 2004 03 24 | 699 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.2− | |
| 2002 11 05 | 704 | 1.1+ | 0.2− | 2004 03 24 | 699 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.6− | |
| 2002 11 05 | 704 | 0.4+ | 0.4+ | 2004 03 28 | 704 | (1.3+ | 1.6+) | 2006 11 18 | 704 | 0.3+ | 0.4− | |
| 2002 11 05 | 704 | 0.4+ | 0.3+ | 2004 03 28 | 704 | 0.9+ | 0.6− | 2006 11 18 | 704 | 0.5+ | 0.2− | |
| 2002 11 05 | 704 | 0.2+ | 0.2− | 2004 03 28 | 704 | 0.6+ | 0.9+ | 2006 11 18 | 704 | 0.9+ | 0.3+ | |
| 2002 11 06 | 704 | 0.8+ | 0.0 | 2004 03 28 | 704 | 0.6+ | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.7+ | |
| 2002 11 06 | 704 | 0.6+ | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.1+ | |
| 2002 11 06 | 704 | 0.4+ | 0.7+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.1+ | |
| 2002 11 06 | 704 | 0.6+ | 0.1+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.8+ | |
| 2002 11 06 | 704 | 0.6+ | 0.2+ | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.0 | |
| 2002 11 14 | 704 | 0.1+ | 0.3+ | 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.2− | |
| 2002 11 14 | 704 | 0.1+ | 0.5+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.2− | |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.2− | |
| 2002 11 14 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 1.1+ | 0.7− | 2006 11 21 | G96 | 0.1+ | 0.3− | |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 1.0+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.5+ | |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.2+ | 1.0+ | 2006 11 21 | 704 | 0.2− | 0.2+ | |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.9− | 1.0− | 2006 11 21 | 704 | 0.4+ | 0.0 | |
| 2002 12 02 | 704 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.2+ | 0.0 | |
| 2002 12 02 | 704 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.5− | 0.1+ | |
| 2002 12 02 | 704 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.3− | 0.5− | |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.2− | 0.6− | |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.2− | |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.4− | |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.2− | |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.5+ | 1.0+ | 2006 11 29 | 704 | 0.3− | 0.2+ | |
| 2002 12 08 | 333 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.4− | 0.1− | |
| 2002 12 08 | 333 | 0.5− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.2+ | |
| 2002 12 08 | 333 | 1.2− | 0.0 | 2006 10 23 | 704 | (0.8− | 3.8+) | 2006 11 29 | 704 | 0.2− | 0.2+ | |
| 2002 12 09 | 333 | 0.6+ | 0.2− | 2006 10 23 | 704 | 0.5− | 1.2+ | 2006 12 01 | G96 | 0.3+ | 0.3− | |
| 2002 12 09 | 333 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.3− | 0.8− | |
| 2002 12 09 | 333 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.2− | |
| 2002 12 10 | 704 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.3− | |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1− | 0.3− | |
| 2002 12 10 | 704 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2− | 0.4− | |
| 2002 12 10 | 704 | 0.2− | 0.3− | 2006 10 28 | 704 | 1.1+ | 0.9+ | 2006 12 01 | G96 | 0.2+ | 0.0 | |
| 2002 12 10 | 704 | 0.5+ | 1.0− | 2006 10 28 | 704 | 0.5+ | 0.5+ | 2006 12 01 | G96 | 0.1+ | 0.5− | |
| 2002 12 13 | 413 | 0.0 | 0.3− | 2006 10 28 | 704 | 1.1− | 0.5+ | | | | | |
| 2002 12 13 | 413 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.7− | 0.3+ | | | | | |

**(142715)∗ 2002 TJ$_{266}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.72783 | | (2000.0) | | | |
| $n$ | 0.23516478 | $\omega$ | 115.09974 | | +0.94749864 | −0.24105786 |
| $a$ | 2.5994883 | $\Omega$ | 259.41875 | | +0.15654468 | +0.92259524 |
| $e$ | 0.2052530 | $i$ | 12.34064 | | +0.27881910 | +0.30117956 |
| $P$ | 4.19 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.5+ | 0.5+ | 2005 06 26 | G96 | 0.1− | 0.4+ | |
| 2002 09 06 | 704 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.0 | 0.2+ | 2005 06 26 | G96 | 0.1− | 0.4+ | |
| 2002 09 06 | 704 | 0.8− | 0.1+ | 2002 12 31 | 704 | 0.3+ | 0.5+ | 2005 06 26 | G96 | 0.3− | 0.3+ | |
| 2002 10 04 | 704 | 0.7+ | 0.5+ | 2003 01 01 | 704 | 0.0 | 0.3− | 2005 06 28 | G96 | 0.1− | 0.4+ | |
| 2002 10 04 | 704 | (0.2− | 1.8+) | 2003 01 01 | 704 | 0.3− | 0.1− | 2005 06 28 | G96 | 0.1+ | 0.4+ | |
| 2002 10 04 | 704 | 0.3+ | 0.2+ | 2003 01 01 | 704 | 0.2− | 0.1− | 2005 06 28 | G96 | 0.2− | 0.4+ | |
| 2002 10 04 | 704 | 0.1+ | 1.2+ | 2003 01 01 | 704 | (1.2+ | 1.7+) | 2005 06 28 | G96 | 0.0 | 0.3+ | |
| 2002 10 10 | 704 | 1.0− | 0.9+ | 2003 01 07 | 704 | 0.1− | 0.4+ | 2005 07 03 | 704 | 0.4+ | 1.4− | |
| 2002 10 10 | 704 | 0.4− | 0.6− | 2003 01 07 | 704 | 0.3− | 0.6+ | 2005 07 03 | 704 | 0.4+ | 0.5+ | |
| 2002 10 10 | 704 | 0.1− | 0.6− | 2003 01 07 | 704 | 0.2+ | 0.4+ | 2005 07 03 | 704 | 0.4− | 0.7+ | |
| 2002 10 10 | 704 | 0.0 | 0.2− | 2003 01 07 | 704 | 0.0 | 0.8+ | 2005 07 03 | 704 | 0.9+ | 0.6+ | |
| 2002 10 10 | 704 | 0.2− | 0.6− | 2003 01 07 | 704 | 0.3− | 0.8+ | 2005 07 04 | 644 | 0.1− | 0.1+ | |
| 2002 10 11 | 704 | (1.9+ | 0.1−) | 2003 01 08 | 704 | 0.0 | 0.0 | 2005 07 04 | 644 | 0.2− | 0.1+ | |
| 2002 10 11 | 704 | 1.4+ | 0.7− | 2003 01 08 | 704 | 0.7− | 1.0− | 2005 07 04 | 644 | 0.1+ | 0.4+ | |
| 2002 10 11 | 704 | (1.9+ | 1.4−) | 2003 01 08 | 704 | 1.2− | 0.4− | 2006 09 19 | 704 | 1.2+ | 0.0 | |
| 2002 10 11 | 704 | (1.9+ | 0.8−) | 2003 01 27 | 704 | 0.1− | 0.6+ | 2006 09 19 | 704 | (1.6+ | 0.2+) | |
| 2002 10 11 | 704 | 1.4+ | 1.0− | 2003 01 27 | 704 | 0.3+ | 0.0 | 2006 09 19 | 704 | 0.1+ | 0.8+ | |
| 2002 11 06 | 704 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.1+ | 0.4− | 2006 09 19 | 704 | 0.8+ | 0.9+ | |
| 2002 11 06 | 704 | 0.2+ | 0.0 | 2003 01 27 | 704 | 0.1− | 0.1− | 2006 10 23 | 703 | 0.3− | 0.0 | |
| 2002 11 06 | 704 | 0.2+ | 0.1− | 2003 01 27 | 704 | 0.6− | 0.1− | 2006 10 23 | 703 | 0.2− | 0.1− | |
| 2002 11 06 | 704 | 0.1+ | 0.3+ | 2003 02 28 | 704 | 0.7− | 0.2− | 2006 10 23 | 703 | 0.4− | 0.1− | |
| 2002 11 06 | 704 | 0.0 | 0.9− | 2003 02 28 | 704 | 1.1+ | 0.2+ | 2006 10 23 | 703 | 0.4− | 0.0 | |
| 2002 11 14 | 704 | 0.3+ | 0.4+ | 2003 02 28 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 703 | 0.3+ | 0.4+ | |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2003 02 28 | 704 | 0.3+ | 0.4+ | 2006 10 29 | 703 | 0.3+ | 0.0 | |
| 2002 11 14 | 704 | 0.5+ | 0.1+ | 2004 03 15 | 644 | 0.1− | 0.4+ | 2006 10 29 | 703 | 0.2− | 0.2+ | |
| 2002 11 14 | 704 | 1.4+ | 0.9− | 2004 03 15 | 644 | 0.1− | 0.2+ | 2006 10 29 | 703 | 0.2+ | 0.1− | |
| 2002 11 14 | 704 | 0.2+ | 0.0 | 2004 03 15 | 644 | 0.2− | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.2+ | |
| 2002 12 05 | 704 | 0.5+ | 0.4+ | 2004 03 17 | 704 | (0.4− | 2.4+) | 2006 11 02 | 703 | 0.1− | 0.4+ | |
| 2002 12 05 | 704 | 0.4+ | 0.1− | 2004 03 17 | 704 | (0.4+ | 3.0+) | 2006 11 02 | 703 | 0.6− | 0.5+ | |
| 2002 12 05 | 704 | (0.3− | 1.8+) | 2004 03 17 | 704 | (0.9− | 2.3+) | 2006 11 02 | 703 | 0.2− | 0.5+ | |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2004 03 17 | 704 | (1.1− | 3.2+) | 2006 11 15 | 703 | 0.4− | 0.1− | |
| 2002 12 05 | 704 | (1.6+ | 1.1−) | 2004 03 17 | 704 | (1.0− | 2.2+) | 2006 11 15 | 703 | 0.0 | 1.0− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.1− | 0.0 | 2004 03 26 | 704 | 0.6− | 0.6+ | 2006 11 15 | 703 | 0.9+ | 0.6− |
| 2002 12 10 | 704 | 0.1− | 0.4+ | 2004 03 26 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.6− | 0.1− |
| 2002 12 10 | 704 | 0.0 | 0.3− | 2004 03 26 | 704 | 0.5+ | 0.5+ | 2006 11 15 | 704 | 0.2− | 0.2+ |
| 2002 12 10 | 704 | 0.5+ | 0.4− | 2004 03 26 | 704 | 0.3+ | 0.0 | 2006 11 15 | 704 | 0.5− | 0.5+ |
| 2002 12 12 | 704 | 1.1− | 0.3+ | 2004 03 26 | 704 | 1.1+ | 0.5+ | 2006 11 15 | 704 | 0.2− | 0.1+ |
| 2002 12 12 | 704 | 0.1+ | 0.3+ | 2004 04 12 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.1+ |
| 2002 12 12 | 704 | 0.8− | 0.0 | 2004 04 12 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.4+ |
| 2002 12 12 | 704 | 0.4+ | 0.5+ | 2004 04 12 | 644 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 12 12 | 704 | 0.9− | 0.3− | 2005 06 17 | G96 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.7+ | 0.6+ |
| 2002 12 12 | 704 | 0.3+ | 0.4+ | 2005 06 17 | G96 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 12 12 | 704 | 0.9− | 0.7− | 2005 06 17 | G96 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 12 12 | 704 | 0.1+ | 0.4+ | 2005 06 17 | G96 | 0.5+ | 0.9+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 0.0 | 0.3+ | 2005 06 17 | G96 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2002 12 14 | 704 | 0.4− | 0.0 | 2005 06 17 | G96 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 0.0 | 0.2+ | 2005 06 17 | G96 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 0.3− | 0.2− | 2005 06 17 | G96 | 0.2− | 0.2+ | 2006 11 25 | 951 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.4+ | 0.4− | 2005 06 17 | G96 | 0.1− | 0.1+ | 2006 11 25 | 951 | 1.0+ | 0.8− |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2005 06 17 | G96 | 0.4− | 0.4+ | 2006 11 25 | 951 | 0.3+ | 0.3− |
| 2002 12 14 | 704 | 0.2− | 0.1− | 2005 06 17 | G96 | 0.3− | 0.2+ | 2006 11 25 | 951 | 0.3− | 0.1− |
| 2002 12 14 | 704 | 0.4− | 0.3− | 2005 06 17 | G96 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.1− |
| 2002 12 14 | 704 | 0.7+ | 0.3+ | 2005 06 23 | 644 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.6− | 0.4+ |
| 2002 12 14 | 704 | 0.2+ | 0.1+ | 2005 06 23 | 644 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2005 06 23 | 644 | 0.1− | 0.2+ | | | | |
| 2002 12 31 | 704 | 0.2+ | 0.8− | 2005 06 26 | G96 | 0.5− | 0.3+ | | | | |

**(142716)∗ 2002 TU$_{266}$ = 1981 UW$_4$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 43233)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.61459 | | (2000.0) | | | |
| $n$ | 0.23744200 | $\omega$ | 130.10064 | | +0.80361691 | −0.59339888 |
| $a$ | 2.5828411 | $\Omega$ | 266.34571 | | +0.53119800 | +0.74969832 |
| $e$ | 0.2594280 | $i$ | 2.61784 | | +0.26838136 | +0.29296791 |
| $P$ | 4.15 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 10 30 | 381 | 0.6+ | 0.7− | 2003 01 04 | 704 | 0.3− | 1.0− | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 1981 10 30 | 381 | 0.5− | 1.2− | 2003 01 04 | 704 | 0.5− | 1.2− | 2006 09 29 | 704 | 0.8+ | 0.6+ |
| 1999 01 10 | 699 | 0.2− | 0.6+ | 2003 01 04 | 704 | 0.5− | 1.1− | 2006 11 10 | 691 | 0.1+ | 0.5− |
| 1999 01 10 | 699 | 0.7+ | 0.3− | 2003 01 04 | 704 | 0.4− | 0.9− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 1999 01 10 | 699 | 1.3+ | 1.2− | 2003 01 04 | 704 | (0.1+ | 2.0−) | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 644 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.8− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2002 10 03 | 644 | 0.6+ | 0.7+ | 2003 01 08 | 704 | 0.6− | 0.0 | 2006 11 15 | 703 | 0.3− | 0.0 |
| 2002 10 03 | 644 | 0.3+ | 0.5+ | 2003 01 08 | 704 | 0.9− | 0.2− | 2006 11 15 | 703 | 0.6− | 0.0 |
| 2002 10 10 | 704 | 0.5+ | 0.1− | 2003 01 08 | 704 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2002 10 10 | 704 | 0.2+ | 0.0 | 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 11 16 | 704 | (1.7− | 1.6+) |
| 2002 10 10 | 704 | 0.2− | 1.0− | 2003 01 31 | 704 | 0.4+ | 0.6+ | 2006 11 16 | 704 | (0.7+ | 1.7+) |
| 2002 10 10 | 704 | 0.3− | 0.7− | 2003 01 31 | 704 | 0.3− | 0.5+ | 2006 11 16 | 704 | (1.9− | 0.8+) |
| 2002 10 10 | 704 | 0.0 | 0.7− | 2003 01 31 | 704 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.0 | 0.6− |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2003 02 03 | 704 | 0.3+ | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2003 02 03 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.5− |
| 2002 10 11 | 704 | 1.0+ | 0.4+ | 2003 02 03 | 704 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 0.2+ | 0.4− |
| 2002 10 11 | 704 | 0.7+ | 0.4− | 2003 02 03 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2003 02 03 | 704 | 0.3+ | 0.7+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.0 | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 1.0− |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2004 03 16 | 691 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2004 04 13 | 691 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.3+ | 1.0+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2002 12 10 | 704 | 0.3− | 0.5+ | 2006 09 01 | 704 | 0.9− | 0.7+ | 2006 11 24 | 118 | 0.0 | 0.3− |
| 2002 12 10 | 704 | 0.0 | 0.5+ | 2006 09 01 | 704 | 0.4− | 0.7+ | 2006 11 24 | 118 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.3− | 0.2+ | 2006 09 18 | 704 | (2.7+ | 1.1−) | 2006 11 24 | 118 | 0.2− | 0.1− |
| 2002 12 31 | 704 | 0.2+ | 0.2− | 2006 09 18 | 704 | 1.2+ | 1.0+ | 2006 11 24 | 703 | 0.4− | 0.3− |
| 2002 12 31 | 704 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.8− | 0.9+ | 2006 11 24 | 703 | 0.6− | 0.3− |
| 2002 12 31 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.6+ | 1.0+ | 2006 11 24 | 703 | 0.2− | 0.3− |
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 09 18 | 704 | 1.2+ | 0.4− | 2006 11 24 | 703 | 0.5− | 0.2− |
| 2003 01 01 | 557 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 11 24 | 691 | 0.3− | 0.2+ |
| 2003 01 01 | 557 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2003 01 01 | 557 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2003 01 01 | 557 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.7+ | 2006 11 28 | 704 | 1.2+ | 0.0 |
| 2003 01 01 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 1.4+ | 0.1+ |
| 2003 01 01 | 704 | 0.4− | 0.6− | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 1.4+ | 0.4+ |
| 2003 01 01 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.5− | 0.4+ | 2006 11 28 | 704 | 0.6+ | 0.5+ |
| 2003 01 01 | 704 | 0.2− | 1.1− | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.8+ | 0.2+ |
| 2003 01 01 | 704 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.3− | 0.9+ | 2006 11 30 | 691 | 0.1+ | 0.3− |
| 2003 01 01 | 704 | 0.0 | 0.8− | 2006 09 27 | 704 | 0.5+ | 0.2+ | 2006 11 30 | 691 | 0.2− | 0.1− |
| 2003 01 01 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.5+ | 2006 11 30 | 691 | 0.5− | 1.7+ |
| 2003 01 01 | 704 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.8− | 0.0 | 2006 12 01 | 704 | 0.3− | 0.4+ |
| 2003 01 01 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.5− | 0.2+ | 2006 12 01 | 704 | 0.2− | 0.5+ |
| 2003 01 03 | 557 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.5− | 0.1+ | 2006 12 01 | 704 | 0.5− | 0.8+ |
| 2003 01 03 | 557 | 0.4+ | 0.6− | 2006 09 29 | 704 | 1.0+ | 0.8+ | 2006 12 01 | 704 | 0.4− | 0.7+ |
| 2003 01 03 | 557 | 0.3+ | 0.5− | 2006 09 29 | 704 | 0.2+ | 0.3+ | 2006 12 01 | 704 | 0.4− | 0.8+ |

**(142717)∗ 2002 TC$_{270}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.91705 | | (2000.0) | | | |
| $n$ | 0.21467084 | $\omega$ | 50.27850 | | +0.73298233 | +0.67512713 |
| $a$ | 2.7624050 | $\Omega$ | 267.08447 | | −0.64685431 | +0.65385378 |
| $e$ | 0.0585321 | $i$ | 4.78496 | | −0.21051465 | +0.34158249 |
| $P$ | 4.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 13 | 691 | 0.2+ | 0.2− | 2002 10 09 | 704 | 0.1− | 0.9+ | 2005 04 05 | 699 | 0.3+ | 0.3− |
| 1993 10 13 | 691 | 0.0 | 0.2− | 2002 10 09 | 704 | 0.4+ | 0.3− | 2005 04 05 | 699 | 1.4+ | 0.6+ |
| 1993 10 13 | 691 | 0.2− | 0.2− | 2002 10 12 | 704 | 0.3+ | 0.5+ | 2005 04 05 | 699 | 0.1− | 0.6− |
| 1993 11 20 | 691 | 0.6+ | 0.5− | 2002 10 12 | 704 | 0.3− | 0.6+ | 2005 04 05 | 699 | 0.2+ | 0.6− |
| 1993 11 20 | 691 | 0.1+ | 0.4+ | 2002 10 12 | 704 | (0.0 | 2.2+) | 2005 04 10 | 691 | 0.1− | 0.2+ |
| 1993 11 20 | 691 | 0.6− | 0.1− | 2002 10 30 | 644 | 0.6− | 0.4− | 2005 04 10 | 691 | 0.3+ | 0.7+ |
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2002 10 30 | 644 | 0.5− | 0.2− | 2005 04 10 | 691 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | 0.8+ | 0.4+ | 2002 10 30 | 644 | 0.6− | 0.1− | 2005 04 15 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 1.1+ | 1.1+ | 2003 12 21 | 645 | 0.1− | 0.0 | 2005 04 15 | 691 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 1.1− | 1.5+ | 2003 12 21 | 645 | 0.1− | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.5+ | 1.1+ | 2003 12 21 | 691 | 0.1+ | 0.2+ | 2006 05 30 | G96 | 0.4− | 0.3− |
| 2002 10 04 | 644 | 0.4− | 1.0+ | 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 05 30 | G96 | 0.2− | 0.1− |
| 2002 10 04 | 644 | 0.0 | 1.1+ | 2003 12 21 | 691 | 0.2+ | 0.5− | 2006 05 30 | G96 | 0.1− | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.7+ | 2004 01 13 | 691 | 0.2+ | 0.2+ | 2006 05 30 | G96 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | 0.8− | 0.8+ | 2004 01 13 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 448 | 1.0− | 0.7+ |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2004 01 13 | 691 | 0.1− | 0.2+ | | | | |

**(142718)∗ 2002 TF$_{275}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.44672 | | (2000.0) | | | |
| $n$ | 0.23751340 | $\omega$ | 298.21988 | | +0.67532846 | +0.73570414 |
| $a$ | 2.5823235 | $\Omega$ | 14.62674 | | −0.58438719 | +0.57654304 |
| $e$ | 0.2556406 | $i$ | 11.80951 | | −0.44991452 | +0.35543991 |
| $P$ | 4.15 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 23 | 691 | 0.3+ | 0.8+ | 2006 08 28 | 704 | (0.1+ | 2.2+) | 2006 09 27 | 704 | 0.3+ | 0.1+ |
| 2001 03 23 | 691 | 0.2+ | 0.6+ | 2006 08 28 | 704 | 0.1+ | 1.0− | 2006 09 27 | 704 | 0.2− | 1.0+ |
| 2001 03 23 | 691 | 0.4+ | 0.6+ | 2006 08 28 | 704 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.5+ | 0.1− |
| 2002 09 05 | 704 | 0.5− | 0.7+ | 2006 08 28 | 704 | 0.4− | 0.8+ | 2006 09 28 | 704 | 0.5+ | 0.2+ |
| 2002 09 05 | 704 | 0.7− | 0.1+ | 2006 08 31 | 704 | 0.1− | 0.5+ | 2006 09 28 | 704 | 0.6+ | 0.6+ |
| 2002 09 05 | 704 | 0.5+ | 1.0+ | 2006 08 31 | 704 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.4+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2006 08 31 | 704 | 0.1+ | 0.8+ | 2006 09 28 | 704 | 0.0 | 0.3− |
| 2002 10 04 | 704 | 0.1− | 1.3+ | 2006 08 31 | 704 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.4− |
| 2002 10 04 | 704 | 0.6− | 0.8− | 2006 09 12 | 703 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.4− | 0.0 |
| 2002 10 04 | 704 | 0.5− | 0.0 | 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.8− | 0.1− |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.4− | 0.0 | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 2002 10 09 | 704 | 0.3− | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 10 01 | 704 | 0.1+ | 0.5− |
| 2002 10 09 | 704 | 1.1+ | 0.4+ | 2006 09 16 | 704 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 2002 10 09 | 704 | (2.5+ | 0.8−) | 2006 09 16 | 704 | 0.0 | 0.3− | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2002 10 09 | 704 | (0.5+ | 1.9+) | 2006 09 16 | 704 | 0.0 | 0.7+ | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2002 10 12 | 704 | 0.3− | 0.4+ | 2006 09 16 | 704 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2002 10 12 | 704 | 0.8− | 0.3− | 2006 09 16 | 704 | 0.3+ | 0.7+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2002 10 12 | 704 | 0.9− | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.8− | 2006 10 17 | 703 | 0.4− | 0.8+ |
| 2002 10 28 | 644 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2002 10 28 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.7− |
| 2002 10 28 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.4+ |
| 2002 11 05 | 699 | 0.5− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 11 05 | 699 | 0.9+ | 1.1− | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 11 05 | 699 | 0.6− | 1.5+ | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2002 11 05 | 699 | 0.4− | 0.5− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.9− | 0.2− | 2006 09 18 | 699 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.8− | 0.6+ | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.4− | 0.6+ | 2006 09 18 | 699 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 0.8− | 0.3+ | 2006 09 19 | 704 | 0.1− | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.1− | 1.1+ | 2006 09 19 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | (2.6− | 0.3+) | 2006 09 19 | 704 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.5− |
| 2002 11 06 | 704 | 0.9− | 1.1+ | 2006 09 20 | 644 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.6− |
| 2002 11 06 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.6− |
| 2002 11 06 | 704 | 1.3− | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 11 07 | 446 | 0.9+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 11 07 | 446 | 1.2+ | 0.6− | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2002 11 07 | 446 | 1.2+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 11 08 | 446 | 0.4+ | 0.7− | 2006 09 22 | 704 | 0.1+ | 0.4− | 2006 11 06 | 644 | 0.0 | 0.3− |
| 2002 11 08 | 446 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.5+ | 0.2− | 2006 11 06 | 644 | 0.4− | 0.3+ |
| 2002 11 09 | 446 | 0.9+ | 0.3− | 2006 09 22 | 704 | 0.4− | 0.3− | 2006 11 06 | 644 | 0.1− | 0.2− |
| 2002 11 09 | 446 | (1.7+ | 2.1+) | 2006 09 22 | 704 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.3+ | 0.2− |
| 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 09 22 | 704 | 0.7− | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.0 |
| 2005 03 11 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2− |
| 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2005 05 08 | G96 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.6+ | 1.0+ | 2006 11 11 | 703 | 0.4+ | 0.9− |
| 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.3− |
| 2005 05 08 | G96 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.1+ | | | | |

**(142719)∗ 2002 TZ$_{276}$ = 2000 JK$_{69}$**

Discovered 2002 Oct. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. Kretlow (*MPO* 43233)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 277.57735 | | (2000.0) | | | |
| $n$ | 0.24404281 | $\omega$ | 130.60172 | | −0.61506117 | −0.78846171 |
| $a$ | 2.5360552 | $\Omega$ | 357.33802 | | +0.68472211 | −0.53079102 |
| $e$ | 0.1934221 | $i$ | 6.52954 | | +0.39096725 | −0.31078776 |
| $P$ | 4.04 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 699 | 0.2− | 0.8− | 2002 11 13 | 644 | 0.2− | 0.3− | 2004 05 21 | 704 | 0.3− | 0.3+ |
| 2000 05 01 | 699 | 1.5+ | 0.0 | 2002 11 14 | 704 | 0.9− | 0.7− | 2004 05 21 | 704 | 0.3+ | 0.7+ |
| 2000 05 01 | 699 | 0.9+ | 0.1− | 2002 11 14 | 704 | 0.6− | 0.1− | 2004 05 21 | 704 | 0.1+ | 0.3+ |
| 2000 05 01 | 699 | 1.0+ | 0.5+ | 2002 11 14 | 704 | 1.1− | 0.3− | 2006 09 30 | 291 | 0.3+ | 0.4+ |
| 2000 05 03 | 704 | 0.8+ | 1.1+ | 2002 12 06 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 291 | 0.4+ | 0.4+ |
| 2000 05 03 | 704 | 0.1− | 0.8+ | 2002 12 06 | 704 | 0.1− | 0.1− | 2006 09 30 | 291 | 0.3+ | 0.4+ |
| 2000 05 03 | 704 | 1.4+ | 0.0 | 2002 12 06 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.3− |
| 2000 05 03 | 704 | 0.3− | 0.5+ | 2003 01 05 | 704 | 0.0 | 0.9− | 2006 10 17 | 691 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.3− | 0.4+ | 2003 01 05 | 704 | 0.4+ | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | (0.2+ | 2.5+) | 2003 01 05 | 704 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 704 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.6− | 1.0+ | 2004 03 20 | 704 | 0.2− | 0.5− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.6− | 0.1− | 2004 03 20 | 704 | 0.7− | 0.9+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2002 10 09 | 704 | 1.3− | 0.7+ | 2004 03 20 | 704 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2002 10 12 | 704 | 0.8− | 0.4+ | 2004 04 13 | 644 | 0.2+ | 0.6+ | 2006 10 29 | 704 | 0.3− | 0.0 |
| 2002 10 12 | 704 | 0.5− | 0.2− | 2004 04 13 | 644 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.2− | 0.9+ |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2004 04 13 | 644 | 0.3− | 0.3+ | 2006 10 29 | 704 | (2.0+ | 0.3+) |
| 2002 10 28 | 644 | 0.1− | 1.0+ | 2004 04 14 | 699 | 1.0− | 0.4+ | 2006 10 31 | 703 | 0.1+ | 1.3− |
| 2002 10 28 | 644 | 0.1− | 0.5+ | 2004 04 14 | 699 | 0.4− | 0.3− | 2006 10 31 | 703 | 0.3− | 1.2− |
| 2002 10 28 | 644 | 0.2− | 0.9+ | 2004 04 14 | 699 | 0.7− | 0.4+ | 2006 10 31 | 703 | 0.5− | 1.4− |
| 2002 10 28 | 644 | 0.1+ | 0.3+ | 2004 04 14 | 699 | 0.4+ | 0.6+ | 2006 10 31 | 703 | 0.9+ | 0.9− |
| 2002 10 28 | 644 | 0.2− | 1.2+ | 2004 04 17 | 704 | 0.5+ | 0.5+ | 2006 11 07 | 644 | 0.0 | 0.3+ |
| 2002 10 28 | 644 | 0.1+ | 0.6+ | 2004 04 17 | 704 | 0.5+ | 0.1− | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 699 | 0.5− | 0.2− | 2004 04 17 | 704 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2002 10 31 | 699 | 0.2+ | 0.5+ | 2004 04 21 | 704 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.0 |
| 2002 10 31 | 699 | 0.4− | 0.3+ | 2004 04 21 | 704 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.2+ |
| 2002 10 31 | 699 | 0.2− | 0.3+ | 2004 04 21 | 704 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.5− | 1.4+ |
| 2002 11 05 | 704 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.4+ | 0.1− |
| 2002 11 05 | 704 | 0.8+ | 1.3+ | 2004 04 21 | 704 | (2.6− | 1.4+) | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2002 11 05 | 704 | 0.4+ | 0.4− | 2004 04 25 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.8+ | 1.0+ |
| 2002 11 05 | 704 | 0.3+ | 0.2− | 2004 04 25 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 0.0 | 0.3− | 2004 04 25 | 704 | 0.4+ | 0.9+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2002 11 12 | 704 | 0.6+ | 0.4+ | 2004 04 25 | 704 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2004 04 25 | 704 | 0.6+ | 0.3+ | 2006 11 29 | 704 | 0.3− | 1.1+ |
| 2002 11 12 | 704 | 0.5− | 0.4− | 2004 05 09 | 703 | 0.1+ | 1.4− | 2006 11 29 | 704 | 0.7+ | 0.6+ |
| 2002 11 12 | 704 | 0.6− | 0.5+ | 2004 05 09 | 703 | 0.7− | 0.5+ | 2006 11 29 | 704 | 0.4+ | 0.9+ |
| 2002 11 13 | 644 | 0.3− | 0.3− | 2004 05 09 | 703 | 1.1+ | 1.1+ | 2006 11 29 | 704 | 0.5− | 1.7+ |
| 2002 11 13 | 644 | 0.4− | 0.1− | 2004 05 09 | 703 | 0.5+ | 0.5+ | | | | |

**(142720)∗ 2002 TJ$_{277}$**

Discovered 2002 Oct. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.05714 | | (2000.0) | | | |
| $n$ | 0.22083551 | $\omega$ | 6.83041 | | +0.94531374 | +0.32420145 |
| $a$ | 2.7107540 | $\Omega$ | 334.16422 | | −0.30299135 | +0.83234510 |
| $e$ | 0.1677102 | $i$ | 4.70053 | | −0.12074015 | +0.44954984 |
| $P$ | 4.46 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.1− | 0.6+ | 2004 01 19 | 691 | 0.2+ | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 2002 10 10 | 644 | 0.1+ | 0.8+ | 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 2002 10 10 | 644 | 1.3+ | 0.6+ | 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.4− | 0.5− | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.4− | 0.7+ |
| 2002 10 12 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.9+ |
| 2002 10 12 | 704 | 0.7+ | 0.2+ | 2004 01 30 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.4+ | 1.2+ |
| 2002 10 12 | 704 | 1.0+ | 1.0− | 2005 03 17 | G96 | 0.6− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.8+ |
| 2002 10 18 | 644 | 0.1− | 0.3− | 2005 03 17 | G96 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2002 10 18 | 644 | 0.4+ | 0.2− | 2005 03 17 | G96 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3+ |
| 2002 10 18 | 644 | 0.1− | 0.3− | 2005 03 17 | G96 | 0.6− | 0.3+ | 2006 09 26 | G96 | 0.5+ | 0.0 |
| 2002 10 30 | 608 | 0.8− | 0.9+ | 2005 04 06 | 691 | 0.6+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2002 10 30 | 608 | 1.1− | 0.3+ | 2005 04 06 | 691 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2002 10 30 | 608 | 1.2− | 0.8+ | 2005 04 06 | 691 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2002 11 01 | 950 | 0.1− | 0.4+ | 2005 04 10 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2002 11 01 | 950 | 0.1− | 0.3+ | 2005 04 10 | 691 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2002 11 01 | 950 | 0.0 | 0.3+ | 2005 04 10 | 691 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.7− |
| 2002 11 02 | 950 | 0.6− | 0.2+ | 2006 08 14 | 644 | 0.6− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− |
| 2002 11 02 | 950 | 0.5− | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2002 11 02 | 950 | 0.4− | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.1+ |

**(142721)∗ 2002 TJ$_{279}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.57056 | | (2000.0) | | | |
| $n$ | 0.22977463 | $\omega$ | 340.01049 | | +0.97766879 | +0.20661389 |
| $a$ | 2.6399843 | $\Omega$ | 8.34981 | | −0.13810701 | +0.76940680 |
| $e$ | 0.0449797 | $i$ | 15.33263 | | −0.15839885 | +0.60442027 |
| $P$ | 4.29 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.2+ | 0.1− | 2004 02 16 | 703 | 1.1− | 0.6+ | 2006 09 26 | 704 | 0.3+ | 0.3+ |
| 2000 03 05 | 704 | 1.3+ | 0.9+ | 2004 02 16 | 703 | 0.7+ | 1.0+ | 2006 09 26 | 704 | 0.9− | 0.5+ |
| 2000 03 05 | 704 | 1.0+ | 1.9+ | 2004 02 16 | 703 | 0.6− | 0.0 | 2006 09 28 | 704 | 1.0− | 1.2+ |
| 2000 03 05 | 704 | 0.3+ | 1.3+ | 2004 02 16 | 703 | 1.0− | 0.2+ | 2006 09 28 | 704 | 0.3− | 0.6+ |
| 2000 03 05 | 704 | 0.0 | 0.9+ | 2004 03 18 | 645 | 0.1+ | 0.1+ | 2006 09 28 | 704 | (0.6+ | 1.9+) |
| 2000 04 25 | 699 | 0.9+ | 0.9− | 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.4− | 1.4+ |
| 2000 04 25 | 699 | 0.6+ | 0.6+ | 2004 03 23 | 704 | 0.0 | 0.5+ | 2006 09 30 | 704 | 1.0− | 0.8+ |
| 2000 04 25 | 699 | 0.3− | 1.7+ | 2004 03 23 | 704 | 1.4+ | 0.5− | 2006 09 30 | 703 | 0.5+ | 0.5− |
| 2000 04 25 | 699 | 0.5+ | 0.9+ | 2004 03 23 | 704 | 0.7+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.5− |
| 2002 10 04 | 704 | 0.5− | 0.4− | 2004 03 23 | 704 | 0.8+ | 0.0 | 2006 09 30 | 704 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.5+ | 0.7− | 2006 08 23 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.2+ | 0.6− |
| 2002 10 04 | 704 | 0.6− | 0.3− | 2006 08 23 | 704 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.4− | 0.4+ |
| 2002 10 04 | 704 | 0.4+ | 0.6− | 2006 08 23 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 2002 10 10 | 704 | 0.1+ | 0.4− | 2006 08 23 | 704 | 0.8− | 1.2+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 10 10 | 704 | 0.2+ | 0.3− | 2006 08 23 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.7+ | 1.1− |
| 2002 10 10 | 704 | 0.7− | 0.4− | 2006 08 29 | 691 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2002 10 10 | 704 | 0.8− | 0.1− | 2006 08 29 | 691 | 0.3− | 0.2+ | 2006 10 16 | 703 | 1.0+ | 0.3− |
| 2002 10 10 | 704 | 0.3+ | 0.3− | 2006 08 29 | 691 | 0.4− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2002 10 12 | 704 | 0.0 | 0.5− | 2006 08 31 | 704 | (2.2− | 0.3+) | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 0.1− | 1.1− | 2006 08 31 | 704 | 1.2− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2002 10 12 | 704 | 0.0 | 0.2− | 2006 08 31 | 704 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.4+ | 0.2− | 2006 09 12 | 703 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 10 12 | 704 | 0.4+ | 0.5− | 2006 09 12 | 703 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.6− |
| 2002 10 30 | 608 | 0.6+ | 0.1− | 2006 09 12 | 703 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.5− |
| 2002 10 30 | 608 | 0.6+ | 0.1− | 2006 09 12 | 703 | 0.5− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 30 | 608 | 0.5+ | 0.3+ | 2006 09 16 | 704 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 11 01 | 644 | 0.3− | 0.2+ | 2006 09 16 | 704 | 0.7+ | 0.8− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 11 01 | 644 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2002 11 01 | 644 | 0.1− | 0.2+ | 2006 09 16 | 704 | 1.0+ | 0.4− | 2006 10 22 | 703 | (2.1− | 0.7+) |
| 2002 11 05 | 704 | 1.0+ | 0.4− | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2002 11 05 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2002 11 05 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 1.1− | 2006 10 23 | 644 | 0.2− | 0.8− |
| 2002 11 05 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 703 | (1.9− | 1.1+) | 2006 10 24 | 644 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.9+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 1.3+ | 0.2− | 2006 09 18 | 703 | 0.8+ | 1.1+ | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.9− | 2006 10 24 | 644 | 0.2− | 0.2− |
| 2002 11 07 | 704 | 0.7− | 0.8− | 2006 09 18 | 699 | 0.2+ | 0.6+ | 2006 10 24 | 644 | 0.2+ | 0.2− |
| 2002 11 07 | 704 | 1.5− | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.5+ | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2002 11 13 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2002 11 13 | 644 | 0.2− | 0.1+ | 2006 09 19 | 704 | 0.6− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 11 13 | 644 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.9− | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 11 14 | 704 | 0.1− | 0.2+ | 2006 09 19 | 704 | 0.6− | 0.8+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2002 11 14 | 704 | 0.3+ | 0.3− | 2006 09 19 | 704 | 0.3− | 0.1+ | 2006 11 10 | 704 | 0.2+ | 0.7+ |
| 2002 11 14 | 704 | 0.4− | 0.6− | 2006 09 22 | 704 | 0.8− | 1.2+ | 2006 11 10 | 704 | 0.5+ | 0.7− |
| 2002 11 14 | 704 | 0.3+ | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 704 | 0.5− | 0.2− |
| 2002 11 14 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 704 | 0.8+ | 0.2+ | 2006 11 10 | 704 | 0.4− | 0.7+ |
| 2004 02 12 | 644 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.5− | 0.6− | 2006 11 10 | 704 | 0.4− | 1.4+ |
| 2004 02 12 | 644 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.9+ | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2004 02 12 | 644 | 0.5+ | 0.0 | 2006 09 25 | 699 | 1.1+ | 0.6+ | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2004 02 14 | 704 | 0.5+ | 0.0 | 2006 09 25 | 699 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 2.2+ |
| 2004 02 14 | 704 | 0.5+ | 0.3− | 2006 09 25 | 699 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2004 02 14 | 704 | (1.6+ | 0.7−) | 2006 09 26 | 704 | 0.1− | 0.6+ | | | | |
| 2004 02 14 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.3− | 0.4+ | | | | |

**(142722)∗ 2002 TO$_{279}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.83246 | | (2000.0) | | | |
| $n$ | 0.22722950 | $\omega$ | 73.79524 | | +0.13860988 | −0.98864211 |
| $a$ | 2.6596607 | $\Omega$ | 8.86811 | | +0.70188632 | +0.05668886 |
| $e$ | 0.0608659 | $i$ | 22.13528 | | +0.69867224 | +0.13918748 |
| $P$ | 4.34 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 699 | 1.0+ | 0.2+ | 2004 01 30 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.9− | 0.0 |
| 2000 04 03 | 699 | 0.6+ | 1.4+ | 2004 02 15 | 704 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.5+ |
| 2000 04 03 | 699 | (2.7− | 0.2−) | 2004 02 15 | 704 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.3+ |
| 2000 04 03 | 699 | (2.3− | 1.6+) | 2004 02 15 | 704 | 1.0+ | 0.5− | 2006 09 20 | 644 | 0.4+ | 0.1+ |
| 2002 10 05 | 704 | 0.2+ | 0.2+ | 2004 03 14 | 704 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 0.6+ | 0.1− | 2004 03 14 | 704 | 0.1+ | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.0 |
| 2002 10 05 | 704 | 0.2+ | 0.7− | 2004 03 14 | 704 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.0 |
| 2002 10 05 | 704 | 0.1− | 0.9− | 2004 03 14 | 704 | 0.6+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.1+ |
| 2002 10 05 | 704 | 0.1+ | 1.4− | 2004 03 14 | 704 | (0.6+ | 1.6−) | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2002 10 10 | 704 | 0.3+ | 0.5+ | 2004 03 18 | 703 | 1.1+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 10 10 | 704 | 0.4+ | 0.4− | 2004 03 18 | 703 | 1.1− | 0.9+ | 2006 10 09 | 644 | 0.3+ | 0.5+ |
| 2002 10 10 | 704 | 0.7+ | 1.2+ | 2004 03 18 | 703 | 0.3− | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2002 10 10 | 704 | 0.5− | 0.3− | 2004 03 18 | 703 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.4− | 0.2− | 2004 03 23 | 704 | 0.3− | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2002 10 12 | 704 | 0.5+ | 0.3− | 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.7+ | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 10 12 | 704 | 1.1− | 1.1− | 2004 03 23 | 704 | 1.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2004 03 25 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2002 11 11 | 699 | 1.0+ | 1.3+ | 2004 03 25 | 704 | 1.0+ | 0.0 | 2006 10 12 | 644 | 0.5− | 0.1+ |
| 2002 11 11 | 699 | 1.1+ | 1.0− | 2004 03 25 | 704 | 0.6+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 11 11 | 699 | 1.4− | 0.4− | 2004 03 25 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.9− |
| 2002 11 11 | 699 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.4+ | 0.8+ |
| 2002 11 14 | 644 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2002 11 14 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.1+ |
| 2002 11 14 | 644 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2002 12 02 | 704 | 0.2− | 0.5+ | 2006 09 17 | 291 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2002 12 02 | 704 | 0.3− | 0.1+ | 2006 09 17 | 291 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 12 02 | 704 | 0.3+ | 0.2− | 2006 09 17 | 291 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.1+ |
| 2002 12 02 | 704 | 0.6− | 0.7+ | 2006 09 18 | 703 | 1.4− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.3+ |
| 2004 01 30 | 704 | 0.4+ | 0.7− | 2006 09 18 | 703 | 1.4− | 0.1− | 2006 11 21 | G96 | 0.6− | 0.1+ |
| 2004 01 30 | 704 | 0.4− | 0.2− | 2006 09 18 | 703 | 0.4− | 0.5+ | 2006 11 21 | G96 | 0.4− | 0.4+ |

**(142723)∗ 2002 TW$_{279}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.22248 | | (2000.0) | | | |
| $n$ | 0.23277211 | $\omega$ | 116.67204 | | −0.42978161 | −0.90292148 |
| $a$ | 2.6172714 | $\Omega$ | 358.75454 | | +0.73639927 | −0.34760320 |
| $e$ | 0.2703208 | $i$ | 12.04403 | | +0.52249774 | −0.25279402 |
| $P$ | 4.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 0.2+ | 0.5+ | 2002 11 07 | 704 | 1.4− | 0.2+ | 2004 04 25 | 704 | 0.3− | 0.3+ |
| 1998 12 12 | 704 | 1.5+ | 0.9− | 2002 11 07 | 704 | 0.2− | 0.3− | 2004 04 25 | 704 | 0.0 | 0.9+ |
| 1998 12 12 | 704 | 1.5+ | 0.4− | 2002 11 07 | 704 | 0.6− | 0.1− | 2006 09 16 | 644 | 0.2− | 0.4+ |
| 1998 12 12 | 704 | 0.2− | 0.0 | 2002 11 07 | 704 | 0.4− | 0.3+ | 2006 09 16 | 644 | 0.3− | 0.4+ |
| 1998 12 12 | 704 | 1.7− | 1.0− | 2002 11 11 | 699 | 0.1+ | 0.6− | 2006 09 16 | 644 | 0.3+ | 0.5+ |
| 1999 01 09 | 704 | 0.3− | 0.7+ | 2002 11 11 | 699 | 0.2+ | 0.4+ | 2006 09 17 | 691 | 0.4− | 0.2+ |
| 1999 01 09 | 704 | 0.8− | 0.6+ | 2002 11 11 | 699 | 0.7− | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 1999 01 09 | 704 | 1.0+ | 0.1− | 2002 11 11 | 699 | 0.6+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 1999 01 09 | 704 | 0.7− | 1.5+ | 2002 11 14 | 704 | 0.5− | 0.3− | 2006 09 20 | 704 | 0.6+ | 0.5+ |
| 1999 01 09 | 704 | (3.9− | 0.9−) | 2002 11 14 | 704 | 0.6− | 0.5− | 2006 09 20 | 704 | 0.5− | 0.5− |
| 2002 10 05 | 704 | 0.1+ | 0.6+ | 2002 11 14 | 704 | 0.1+ | 0.4− | 2006 09 20 | 704 | 0.2+ | 0.2+ |
| 2002 10 05 | 704 | 0.3− | 0.2− | 2002 11 14 | 704 | 0.6− | 0.3+ | 2006 09 25 | 691 | 0.5+ | 1.3− |
| 2002 10 05 | 704 | 0.6− | 0.3− | 2002 12 02 | 704 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.4+ |
| 2002 10 05 | 704 | 0.0 | 0.4− | 2002 12 02 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 704 | 0.1+ | 0.9− |
| 2002 10 05 | 704 | 0.6− | 0.9− | 2002 12 02 | 704 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.7− | 0.6+ | 2002 12 02 | 704 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2002 12 20 | 644 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.5− | 0.7+ |
| 2002 10 10 | 704 | 0.7+ | 1.0+ | 2002 12 20 | 644 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.7+ | 0.6+ |
| 2002 10 10 | 704 | 0.5+ | 0.7+ | 2002 12 20 | 644 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.9+ | 0.0 |
| 2002 10 12 | 704 | 0.4+ | 1.1+ | 2002 12 31 | 704 | (1.1+ | 1.5−) | 2006 09 29 | 704 | 0.9+ | 0.3+ |
| 2002 10 12 | 704 | 0.8+ | 1.4+ | 2002 12 31 | 704 | (0.5− | 1.7−) | 2006 09 29 | 704 | 0.0 | 0.4+ |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2002 12 31 | 704 | 0.1− | 1.4− | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2004 04 14 | 644 | 0.8+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.3− |
| 2002 10 30 | 608 | 1.3+ | 0.1+ | 2004 04 14 | 644 | 0.8+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2002 10 30 | 608 | 1.1+ | 0.6+ | 2004 04 14 | 644 | 0.8+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.5− |
| 2002 10 30 | 608 | (1.7+ | 0.9−) | 2004 04 19 | E12 | 0.1+ | 0.7+ | 2006 10 17 | 703 | (0.0 | 2.1+) |
| 2002 11 01 | 644 | 0.1− | 1.1− | 2004 04 19 | E12 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.0 | 1.3+ |
| 2002 11 01 | 644 | 0.2− | 1.1− | 2004 04 19 | E12 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2002 11 01 | 644 | 0.0 | 1.1− | 2004 04 19 | E12 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 11 05 | 704 | 0.1− | 0.3− | 2004 04 20 | E12 | (0.8− | 2.8+) | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.3− | 0.6+ | 2004 04 20 | E12 | (2.1+ | 0.9+) | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | 0.1+ | 0.2+ | 2004 04 20 | E12 | (2.8− | 1.8−) | 2006 11 06 | 644 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.5− | 0.3+ | 2004 04 20 | E12 | 0.0 | 0.4− | 2006 11 06 | 644 | 0.1+ | 0.3+ |
| 2002 11 05 | 704 | 0.6− | 0.7+ | 2004 04 25 | 704 | 0.4− | 0.7+ | 2006 11 06 | 644 | 0.3+ | 0.2− |
| 2002 11 07 | 704 | 0.6− | 0.1− | 2004 04 25 | 704 | (0.2+ | 1.7+) | | | | |

**(142724)∗ 2002 TY$_{279}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 311.16446 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22652750 | $\omega$ | 154.29898 | | +0.66420195 | | −0.73190571 | | |
| $a$ | 2.6651527 | $\Omega$ | 253.67516 | | +0.65560997 | | +0.66810942 | | |
| $e$ | 0.0950769 | $i$ | 9.12230 | | +0.35918149 | | +0.13395458 | | |
| $P$ | 4.35 | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 30 | 691 | 1.4+ | 1.3+ | 2002 11 09 | 446 | (3.4+ | 0.8+) | 2006 08 30 | 699 | 0.5− | 0.1+ |
| 1997 05 30 | 691 | 0.8− | 0.1− | 2002 11 09 | 446 | 0.0 | 0.1− | 2006 08 31 | 185 | 0.1− | 0.5− |
| 1997 05 30 | 691 | 0.7− | 0.2+ | 2002 11 14 | 704 | (1.1+ | 1.7+) | 2006 09 01 | 185 | 0.3− | 0.4− |
| 2002 10 05 | 704 | 1.0+ | 0.1− | 2002 11 14 | 704 | 0.9− | 0.9+ | 2006 09 01 | 185 | 0.2− | 0.0 |
| 2002 10 05 | 704 | 0.4+ | 0.9− | 2002 11 14 | 704 | 0.5+ | 1.4+ | 2006 09 11 | 703 | 0.8+ | 1.5− |
| 2002 10 05 | 704 | 0.2+ | 0.6− | 2002 11 14 | 704 | (0.5+ | 1.9+) | 2006 09 11 | 703 | 0.7+ | 0.5+ |
| 2002 10 05 | 704 | 0.8+ | 1.1− | 2002 12 06 | 704 | 0.3− | 0.4− | 2006 09 11 | 703 | 0.3− | 1.3− |
| 2002 10 05 | 704 | 1.0+ | 0.8− | 2002 12 06 | 704 | 0.2− | 0.0 | 2006 09 11 | 703 | 1.0− | 0.0 |
| 2002 10 10 | 704 | 0.5− | 0.2+ | 2002 12 06 | 704 | 0.8+ | 0.3− | 2006 09 15 | 704 | 0.7+ | 0.5− |
| 2002 10 10 | 704 | 0.3− | 0.5− | 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 09 15 | 704 | 0.4+ | 0.1+ |
| 2002 10 10 | 704 | 0.6− | 0.2+ | 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.1− |
| 2002 10 10 | 704 | 0.8− | 0.1+ | 2002 12 11 | 704 | 1.0− | 0.4+ | 2006 09 15 | 704 | 1.4+ | 0.5− |
| 2002 10 10 | 704 | 0.6− | 0.0 | 2002 12 11 | 704 | 0.4+ | 1.3+ | 2006 09 15 | 704 | 0.9+ | 0.3− |
| 2002 10 12 | 704 | 0.1+ | 0.5+ | 2002 12 11 | 704 | 0.3− | 0.8+ | 2006 09 16 | 644 | 0.2− | 0.3− |
| 2002 10 12 | 704 | 0.0 | 0.9+ | 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 09 16 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.3− | 0.0 | 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 0.4− | 0.5+ | 2003 01 05 | 704 | 1.2+ | 0.9+ | 2006 09 20 | 699 | 0.5− | 0.6+ |
| 2002 11 05 | 699 | 0.6+ | 0.1− | 2003 01 05 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 699 | 0.3− | 0.1− |
| 2002 11 05 | 699 | 0.1− | 0.7− | 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 09 20 | 699 | 0.4+ | 0.2− |
| 2002 11 05 | 699 | (0.9− | 2.0+) | 2003 01 05 | 704 | 0.0 | 0.4− | 2006 09 20 | 699 | 0.5− | 0.2− |
| 2002 11 05 | 699 | 0.8− | 0.5+ | 2004 02 19 | 704 | 1.1+ | 0.5+ | 2006 09 29 | 699 | (1.8− | 0.6+) |
| 2002 11 05 | 704 | 0.1− | 0.3+ | 2004 02 19 | 704 | 0.0 | 0.6− | 2006 09 29 | 699 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | 1.1− | 0.3+ | 2004 02 19 | 704 | 1.2+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.4+ |
| 2002 11 05 | 704 | 0.5− | 0.5+ | 2004 02 19 | 704 | (1.9+ | 0.2−) | 2006 09 29 | 699 | 0.2− | 1.2+ |
| 2002 11 05 | 704 | (1.7− | 0.6−) | 2005 05 12 | 644 | 0.1− | 0.3− | 2006 10 01 | 703 | 0.4+ | 0.4− |
| 2002 11 06 | 704 | 0.3− | 0.8+ | 2005 05 12 | 644 | 0.4− | 0.8+ | 2006 10 01 | 703 | 1.2+ | 0.0 |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2005 05 12 | 644 | 0.1− | 0.7+ | 2006 10 01 | 703 | 0.5+ | 0.6− |
| 2002 11 06 | 704 | 0.4− | 0.4+ | 2005 06 14 | G96 | 0.7− | 0.6+ | 2006 10 01 | 703 | 1.3+ | 1.0+ |
| 2002 11 06 | 704 | 0.4− | 0.9+ | 2005 06 14 | G96 | 1.0− | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.7+ |
| 2002 11 07 | 446 | 0.2− | 0.4− | 2005 06 14 | G96 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2002 11 07 | 446 | 0.2− | 0.1− | 2005 06 14 | G96 | 0.8− | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2002 11 07 | 446 | 1.0− | 0.2− | 2006 08 30 | 699 | 0.9+ | 1.4− | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2002 11 08 | 446 | 0.3+ | 0.0 | 2006 08 30 | 699 | 1.2− | 0.8− | | | | |
| 2002 11 08 | 446 | 0.3− | 0.4− | 2006 08 30 | 699 | 0.1+ | 0.3+ | | | | |

**(142725)∗ 2002 TC$_{281}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 324.57784 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23191088 | $\omega$ | 158.17039 | | +0.71838981 | | −0.68388235 | | |
| $a$ | 2.6237471 | $\Omega$ | 245.63320 | | +0.61577238 | | +0.71033852 | | |
| $e$ | 0.1557382 | $i$ | 8.03721 | | +0.32363632 | | +0.16650562 | | |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.2− | 0.5− | 2002 11 07 | 704 | 0.0 | 0.1+ | 2006 09 22 | 703 | 0.3− | 0.1+ |
| 2002 10 04 | 704 | 1.2− | 1.4+ | 2002 11 07 | 704 | 0.1− | 0.1− | 2006 09 22 | 703 | 1.0− | 0.1− |
| 2002 10 04 | 704 | 0.4− | 0.7− | 2002 11 08 | 704 | 0.4− | 0.1− | 2006 09 22 | 703 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | (2.1− | 0.4+) | 2002 11 08 | 704 | 0.1− | 0.6− | 2006 09 22 | 703 | 0.3+ | 0.5− |
| 2002 10 04 | 704 | 1.0− | 1.3− | 2002 11 08 | 704 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.6− |
| 2002 10 04 | 699 | 0.4− | 0.5+ | 2002 11 12 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 703 | 1.2− | 0.5− |
| 2002 10 04 | 699 | 0.1+ | 1.4+ | 2002 11 12 | 704 | 0.2− | 0.6+ | 2006 09 27 | 703 | 0.2+ | 0.4+ |
| 2002 10 04 | 699 | 0.5− | 0.3+ | 2002 11 12 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.3− |
| 2002 10 04 | 699 | 0.8− | 0.4+ | 2002 11 12 | 704 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.6− | 0.2− |
| 2002 10 10 | 704 | 0.1+ | 0.3+ | 2002 11 13 | 704 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.0 | 0.5− | 2002 11 13 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.5− | 0.5+ |
| 2002 10 10 | 704 | (0.5− | 1.8+) | 2002 11 13 | 704 | 0.2− | 0.0 | 2006 10 17 | 703 | (0.4− | 1.9+) |
| 2002 10 10 | 704 | 0.1− | 0.4+ | 2002 11 14 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2002 10 10 | 704 | 0.5+ | 0.8+ | 2002 11 14 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2002 10 12 | 704 | 1.2+ | 0.7− | 2002 11 14 | 704 | 0.1− | 1.4+ | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2002 10 12 | 704 | 0.6+ | 0.3− | 2002 11 14 | 704 | 1.1− | 1.2− | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 1.2+ | 0.9− | 2002 11 14 | 704 | 0.7− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2002 10 12 | 704 | 1.2+ | 1.0− | 2002 11 23 | 644 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.2− | 0.0 |
| 2002 10 28 | 644 | 0.1+ | 0.7+ | 2002 11 23 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2002 10 28 | 644 | 0.3+ | 0.9+ | 2002 11 23 | 644 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2002 10 28 | 644 | 0.3+ | 0.8+ | 2002 12 06 | 608 | 0.0 | 0.6− | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2002 11 01 | 644 | 0.5+ | 0.1+ | 2002 12 06 | 608 | 0.1− | 1.0− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 11 01 | 644 | 0.2+ | 0.3+ | 2002 12 06 | 608 | (0.3− | 1.6−) | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2004 03 27 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 11 04 | 699 | 0.2+ | 0.5− | 2004 03 27 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2002 11 04 | 699 | 0.1+ | 0.9+ | 2004 03 27 | 691 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 11 04 | 699 | 0.5− | 0.3− | 2005 06 27 | G96 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2002 11 04 | 699 | 0.1− | 0.1− | 2005 06 27 | G96 | 0.6+ | 1.0+ | 2006 11 11 | G96 | 0.8+ | 1.7− |
| 2002 11 05 | 704 | 0.0 | 0.4+ | 2005 06 27 | G96 | 0.3+ | 0.7+ | 2006 11 11 | 291 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.3+ | 0.4− | 2005 06 27 | G96 | 0.3− | 0.1+ | 2006 11 11 | 291 | 0.2+ | 0.2+ |
| 2002 11 05 | 704 | 0.0 | 0.7+ | 2006 09 15 | 704 | 0.8+ | 0.3+ | 2006 11 11 | 291 | 0.1+ | 0.2+ |
| 2002 11 05 | 704 | 0.1+ | 0.6+ | 2006 09 15 | 704 | 1.0+ | 0.1− | 2006 11 17 | 291 | 0.3+ | 0.1+ |
| 2002 11 05 | 704 | 0.2− | 0.4+ | 2006 09 15 | 704 | 0.1+ | 1.0+ | 2006 11 17 | 291 | 0.5+ | 0.1+ |
| 2002 11 07 | 704 | 0.3+ | 1.0− | 2006 09 16 | G92 | 0.4+ | 0.0 | 2006 11 17 | 291 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | 0.5− | 0.6− | 2006 09 16 | G92 | 1.4+ | 0.4+ | | | | |
| 2002 11 07 | 704 | 0.1− | 0.2+ | 2006 09 16 | G92 | 0.6+ | 0.1− | | | | |

**(142726)∗ 2002 TH$_{281}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 3.93483 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24143952 | $\omega$ | 13.10380 | | +0.98907226 | | −0.14632717 | | |
| $a$ | 2.5542524 | $\Omega$ | 355.19971 | | +0.10823107 | | +0.80360638 | | |
| $e$ | 0.1699590 | $i$ | 12.42943 | | +0.10011041 | | +0.57689266 | | |
| $P$ | 4.08 | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.3− | 0.0 | 2002 12 02 | 704 | 0.3− | 0.5− | 2006 09 16 | 703 | 0.3− | 0.2+ |
| 1996 03 11 | 691 | 0.3− | 0.1− | 2002 12 02 | 704 | 0.0 | 0.4− | 2006 09 16 | 703 | 0.1− | 0.3− |
| 1996 03 11 | 691 | 0.3− | 0.1− | 2003 12 27 | 291 | 0.8− | 0.2+ | 2006 09 18 | 704 | 0.4− | 0.6+ |
| 1998 11 14 | 704 | 1.3+ | 0.3− | 2003 12 27 | 291 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.3+ | 0.3+ |
| 1998 11 14 | 704 | 0.3− | 1.5− | 2003 12 27 | 291 | 0.6− | 0.6+ | 2006 09 18 | 704 | 0.8− | 0.2+ |
| 1998 11 14 | 704 | 1.4+ | 0.3− | 2004 01 23 | 704 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 0.5− | 0.1− | 2004 01 23 | 704 | 0.3+ | 0.1− | 2006 09 18 | 704 | 0.3+ | 0.6+ |
| 2002 09 06 | 704 | 0.7− | 0.1− | 2004 01 23 | 704 | 0.3+ | 0.1− | 2006 09 21 | 704 | 1.0+ | 0.3+ |
| 2002 09 06 | 704 | 0.2− | 0.0 | 2004 01 23 | 704 | (1.9+ | 1.8+) | 2006 09 21 | 704 | 0.3+ | 0.1+ |
| 2002 09 06 | 704 | 0.7− | 0.2+ | 2004 02 11 | 644 | 0.9+ | 0.1+ | 2006 09 21 | 704 | 1.1+ | 0.0 |
| 2002 09 06 | 704 | 0.9− | 0.1+ | 2004 02 11 | 644 | 0.9+ | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.5− | 0.4+ | 2004 02 11 | 644 | 0.7+ | 0.0 | 2006 09 25 | 704 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.4+ | 0.8− | 2004 02 17 | 704 | (1.6+ | 0.6+) | 2006 09 25 | 704 | 0.5+ | 0.5+ |
| 2002 10 05 | 704 | 0.4+ | 0.1+ | 2004 02 17 | 704 | 1.5+ | 1.1+ | 2006 09 25 | 704 | 0.1+ | 1.5+ |
| 2002 10 05 | 704 | 0.2+ | 0.6+ | 2004 02 17 | 704 | 0.3+ | 0.2− | 2006 09 25 | 704 | 0.4+ | 0.4+ |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.4+ | 0.8+ | 2006 09 28 | 703 | 0.3− | 0.5− |
| 2002 10 10 | 704 | 0.2+ | 0.3+ | 2004 03 30 | 691 | 0.6+ | 0.3+ | 2006 09 28 | 703 | 0.3+ | 0.8− |
| 2002 10 10 | 704 | 0.6+ | 0.9+ | 2004 03 30 | 691 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2002 10 10 | 704 | 0.3− | 0.3− | 2004 03 30 | 691 | 0.7+ | 0.2+ | 2006 09 29 | 704 | 1.3− | 0.2− |
| 2002 10 10 | 704 | 0.2+ | 0.3− | 2006 08 06 | 699 | 0.5− | 0.6− | 2006 09 29 | 704 | (1.5− | 0.1−) |
| 2002 10 10 | 704 | 0.1+ | 0.2− | 2006 08 06 | 699 | 0.6− | 0.1− | 2006 09 29 | 704 | 1.2− | 0.2− |
| 2002 10 12 | 704 | 0.8− | 0.4+ | 2006 08 06 | 699 | 1.4+ | 0.5+ | 2006 09 29 | 704 | 0.8− | 0.0 |
| 2002 10 12 | 704 | 0.5− | 0.1+ | 2006 08 06 | 699 | 0.1− | 0.5+ | 2006 09 29 | 704 | 1.2− | 0.6− |
| 2002 10 12 | 704 | 0.2+ | 0.1− | 2006 08 20 | 644 | 0.4− | 0.1+ | 2006 10 04 | 703 | 0.7− | 0.4+ |
| 2002 10 12 | 704 | 0.5+ | 0.2+ | 2006 08 20 | 644 | 0.3− | 0.0 | 2006 10 04 | 703 | 0.5− | 0.7− |
| 2002 10 12 | 704 | 0.2+ | 0.9− | 2006 08 20 | 644 | 0.1− | 0.1+ | 2006 10 04 | 703 | 0.8− | 0.1+ |
| 2002 11 01 | 704 | 0.6− | 1.0+ | 2006 08 26 | 704 | 0.3+ | 0.5+ | 2006 10 04 | 703 | 0.0 | 0.5− |
| 2002 11 01 | 704 | 0.3− | 1.1+ | 2006 08 26 | 704 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 11 01 | 704 | 1.1− | 0.6+ | 2006 08 26 | 704 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.6+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.6+ | 0.1− | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2002 11 11 | 699 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.7− | 0.7− |
| 2002 11 11 | 699 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2002 11 11 | 699 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.2+ | 1.1+ | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2002 11 11 | 699 | 0.2− | 0.2− | 2006 08 31 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 11 14 | 644 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 11 14 | 644 | 0.1+ | 0.2+ | 2006 08 31 | 704 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 11 14 | 644 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.4+ | 2006 10 31 | 703 | 0.5+ | 0.8− |
| 2002 11 14 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.4− | 0.2+ | 2006 10 31 | 703 | 0.3+ | 0.2− |
| 2002 11 14 | 644 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 1.1+ | 0.8− |
| 2002 11 14 | 644 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 10 31 | 703 | 0.1− | 0.6− |
| 2002 12 02 | 704 | 0.6+ | 0.6− | 2006 09 16 | 703 | 0.1− | 0.5− | | | | |
| 2002 12 02 | 704 | 0.9+ | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.2+ | | | | |

**(142727)∗ 2002 TN$_{283}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.44591 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22894247 | $\omega$ | 327.91763 | | +0.90200509 | +0.43057019 |
| $a$ | 2.6463776 | $\Omega$ | 6.80853 | | −0.31800500 | +0.71207509 |
| $e$ | 0.1324776 | $i$ | 15.43982 | | −0.29199255 | +0.55457946 |
| $P$ | 4.31 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2005 06 05 | E12 | 0.2+ | 0.7− | 2006 09 27 | 704 | 0.4+ | 0.1− |
| 2002 09 06 | 704 | 0.5− | 0.2− | 2006 08 10 | 644 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.5− |
| 2002 09 06 | 704 | 0.4− | 0.1+ | 2006 08 10 | 644 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.2− |
| 2002 09 06 | 704 | 0.1+ | 0.9+ | 2006 08 10 | 644 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.0 | 0.6− |
| 2002 10 05 | 704 | 0.3+ | 0.2− | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.6+ | 0.0 |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.9+ | 0.2+ |
| 2002 10 05 | 704 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.8+ | 0.5+ |
| 2002 10 05 | 704 | 0.0 | 0.1+ | 2006 08 23 | 704 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.8+ | 0.2− |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2006 08 23 | 704 | 0.5+ | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | 0.6− | 0.4+ | 2006 08 23 | 704 | 0.1+ | 0.9+ | 2006 09 30 | 704 | 0.3+ | 0.6− |
| 2002 10 10 | 704 | 0.3+ | 0.9+ | 2006 08 23 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 704 | 0.5− | 0.3− |
| 2002 10 10 | 704 | 0.2− | 0.4+ | 2006 08 23 | 704 | (0.1+ | 1.6+) | 2006 09 30 | 703 | 0.5− | 0.4− |
| 2002 10 10 | 704 | 0.8− | 1.0+ | 2006 08 28 | 704 | 0.1− | 1.0+ | 2006 09 30 | 703 | 0.5− | 0.5+ |
| 2002 10 10 | 704 | (0.0 | 1.7+) | 2006 08 28 | 704 | 1.2+ | 1.2+ | 2006 09 30 | 704 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 0.3+ | 0.0 | 2006 08 28 | 704 | (0.7+ | 1.9+) | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2002 10 12 | 704 | 1.0+ | 0.0 | 2006 08 28 | 704 | 0.9+ | 0.7+ | 2006 09 30 | 704 | 0.2+ | 0.4− |
| 2002 10 12 | 704 | 0.8+ | 0.8− | 2006 08 28 | 704 | 0.2+ | 1.3+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 2002 10 12 | 704 | 0.6+ | 0.3− | 2006 08 28 | 699 | 0.8+ | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.1+ |
| 2002 11 06 | 699 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.6+ | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2002 11 06 | 699 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2002 11 06 | 699 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.5+ | 0.2− | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 11 06 | 699 | 0.6− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.5+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.1− | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.2− | 2006 09 12 | 703 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.9− |
| 2002 11 14 | 644 | 0.1+ | 0.7− | 2006 09 12 | 703 | 1.0− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.6− |
| 2002 11 14 | 644 | 0.0 | 0.6− | 2006 09 12 | 703 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2002 11 14 | 644 | 0.1− | 0.4− | 2006 09 12 | 703 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.7− |
| 2002 11 25 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 11 25 | 644 | 0.0 | 0.4− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 11 25 | 644 | 0.7+ | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.2− | 2006 09 16 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.6− | 0.9− |
| 2002 12 06 | 704 | 0.8− | 0.1− | 2006 09 16 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.6+ | 0.9− |
| 2002 12 06 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2002 12 06 | 704 | 0.4− | 0.3+ | 2006 09 16 | 704 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2002 12 06 | 704 | 0.5− | 0.4− | 2006 09 16 | 704 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 12 09 | 699 | 0.8+ | 0.2− | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 12 09 | 699 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2002 12 09 | 699 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2002 12 09 | 699 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2004 01 30 | 703 | 0.7− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2004 01 30 | 703 | (1.5+ | 1.9+) | 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 10 23 | 704 | 0.6+ | 0.6+ |
| 2004 01 30 | 703 | (0.3− | 2.1+) | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2004 01 30 | 703 | 1.3− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.2− | 2006 10 23 | 704 | 1.0+ | 0.8+ |
| 2004 02 14 | 704 | 1.1+ | 0.1− | 2006 09 19 | 703 | 0.3− | 0.6− | 2006 10 23 | 704 | 0.3+ | 0.9+ |
| 2004 02 14 | 704 | 0.2− | 0.3+ | 2006 09 19 | 704 | (0.7− | 3.4+) | 2006 10 23 | 704 | 0.8+ | 0.6+ |
| 2004 02 14 | 704 | 0.2− | 0.7+ | 2006 09 19 | 703 | 0.4− | 0.3− | 2006 11 10 | 704 | 0.0 | 0.2− |
| 2004 02 18 | 201 | 0.4+ | 0.5+ | 2006 09 19 | 704 | 1.2− | 0.9+ | 2006 11 10 | 704 | 0.6− | 0.1+ |
| 2004 02 18 | 201 | 1.0+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.2− | 2006 11 10 | 704 | 0.4− | 0.1− |
| 2004 02 18 | 201 | 0.7+ | 0.7+ | 2006 09 19 | 704 | 1.1− | 0.8+ | 2006 11 10 | 704 | 0.1+ | 0.1+ |
| 2004 03 08 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.1+ | 2006 11 10 | 704 | 0.8− | 0.1+ |
| 2004 03 08 | 644 | 0.5+ | 0.7+ | 2006 09 19 | 704 | (0.6− | 3.5+) | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2004 03 08 | 644 | 0.5+ | 0.6+ | 2006 09 19 | 704 | (1.1− | 3.5+) | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2005 04 10 | E12 | 0.5+ | 0.2+ | 2006 09 19 | H06 | 0.0 | 0.7− | 2006 11 15 | G96 | 0.2− | 0.3+ |
| 2005 04 10 | E12 | 0.4− | 0.2+ | 2006 09 19 | H06 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2005 04 10 | E12 | 0.2− | 0.9+ | 2006 09 19 | H06 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2005 04 10 | E12 | (1.0+ | 1.9−) | 2006 09 22 | 704 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.5− | 1.2+ |
| 2005 05 01 | E12 | 0.6+ | 0.1− | 2006 09 22 | 704 | 0.2− | 0.8+ | 2006 11 19 | 704 | 0.0 | 1.7+ |
| 2005 05 01 | E12 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.3− | 1.0+ |
| 2005 05 01 | E12 | 0.5+ | 0.9+ | 2006 09 22 | 704 | 0.4− | 0.9+ | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2005 05 16 | 644 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.7− | 0.7+ |
| 2005 05 16 | 644 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.8+ | 0.6− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2005 05 16 | 644 | 0.5+ | 0.5+ | 2006 09 26 | 704 | 1.0+ | 0.9− | 2006 11 22 | 704 | 0.5− | 0.7+ |
| 2005 06 05 | E12 | 0.2+ | 1.0+ | 2006 09 26 | 704 | 0.6− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2005 06 05 | E12 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.2+ | | | | |
| 2005 06 05 | E12 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.3+ | 0.2− | | | | |

**(142728)∗ 2002 TQ$_{283}$ = 1993 RT$_{12}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38100)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.37801 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22545619 | $\omega$ | 73.85455 | | +0.43117608 | −0.90219753 |
| $a$ | 2.6735888 | $\Omega$ | 350.57957 | | +0.79930380 | +0.38773171 |
| $e$ | 0.2471273 | $i$ | 3.94501 | | +0.41856973 | +0.18895432 |
| $P$ | 4.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 809 | (2.4+ | 0.5−) | 2002 11 14 | 704 | 0.2− | 0.3+ | 2006 08 18 | 699 | 1.2− | 0.9+ |
| 1993 09 14 | 809 | 0.5+ | 1.1− | 2002 11 14 | 704 | 0.1− | 0.5− | 2006 08 21 | 704 | 0.7+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 809 | 0.8+ | 1.1− | 2002 11 14 | 704 | 0.1− | 1.1+ | 2006 08 21 | 704 | 0.9+ | 0.1− |
| 1993 09 19 | 809 | (0.1− | 2.5−) | 2002 11 14 | 704 | 0.2+ | 0.6+ | 2006 08 21 | 704 | 0.3− | 0.1+ |
| 1993 09 19 | 809 | (1.2− | 2.6−) | 2002 11 14 | 704 | 0.1− | 0.7+ | 2006 08 21 | 691 | 0.0 | 0.3+ |
| 1993 09 19 | 809 | (1.5− | 3.0−) | 2002 11 23 | 644 | 0.1− | 0.6+ | 2006 08 21 | 704 | 0.9− | 0.5+ |
| 2002 09 07 | 704 | 0.7+ | 0.6− | 2002 11 23 | 644 | 0.0 | 1.1+ | 2006 08 21 | 691 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.2− | 0.1+ | 2002 11 23 | 644 | 0.0 | 1.0+ | 2006 08 21 | 691 | 0.1− | 0.4+ |
| 2002 09 07 | 704 | 0.2+ | 0.9+ | 2002 12 02 | 704 | 0.2+ | 0.3− | 2006 08 23 | 644 | 0.3+ | 0.4+ |
| 2002 09 07 | 704 | 0.4− | 0.6+ | 2002 12 02 | 704 | 0.2+ | 0.2− | 2006 08 23 | 644 | 0.5+ | 0.5+ |
| 2002 09 07 | 704 | 0.8+ | 0.0 | 2002 12 02 | 704 | 0.1+ | 0.2− | 2006 08 23 | 644 | 0.1+ | 0.8+ |
| 2002 10 10 | 704 | 0.1− | 0.3+ | 2002 12 02 | 704 | 0.3− | 0.3− | 2006 08 25 | 704 | 0.1+ | 0.2+ |
| 2002 10 10 | 704 | 0.0 | 1.3+ | 2002 12 02 | 704 | 0.1− | 0.3− | 2006 08 25 | 704 | 0.3+ | 0.7+ |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2002 12 06 | 704 | 0.6+ | 0.0 | 2006 08 25 | 704 | 0.6+ | 1.4+ |
| 2002 10 10 | 704 | 0.6+ | 0.0 | 2002 12 06 | 704 | 0.4+ | 0.5− | 2006 08 25 | 704 | 0.4+ | 0.0 |
| 2002 10 10 | 704 | 0.8+ | 0.5+ | 2002 12 06 | 704 | 0.5+ | 0.3− | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 0.9− | 0.5+ | 2002 12 06 | 704 | 0.4+ | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.5− | 1.0+ | 2002 12 06 | 704 | 0.1+ | 0.7− | 2006 08 28 | 691 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 1.3− | 1.1+ | 2002 12 11 | 644 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.5− | 0.1− |
| 2002 10 12 | 704 | 0.7− | 0.9+ | 2002 12 11 | 644 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.3− |
| 2002 10 12 | 704 | 1.0− | 1.2+ | 2002 12 11 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.6+ |
| 2002 10 15 | 704 | 1.2− | 0.0 | 2002 12 20 | 644 | 0.0 | 0.5+ | 2006 08 30 | 704 | (1.6− | 0.5+) |
| 2002 10 15 | 704 | 0.6− | 0.3− | 2002 12 20 | 644 | 0.3+ | 0.2+ | 2006 08 31 | 704 | 0.2+ | 0.9+ |
| 2002 10 15 | 704 | 0.2− | 0.5− | 2002 12 20 | 644 | 0.2+ | 0.4+ | 2006 08 31 | 704 | 0.2− | 0.1+ |
| 2002 10 15 | 704 | 0.2− | 0.5− | 2002 12 31 | 704 | 0.2− | 0.1− | 2006 08 31 | 704 | 0.1− | 0.4− |
| 2002 10 26 | 608 | 0.0 | 1.3− | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.0 | 0.1− |
| 2002 10 26 | 608 | 0.0 | 1.3− | 2002 12 31 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.8+ | 0.2− |
| 2002 10 26 | 608 | 0.2− | 0.8− | 2002 12 31 | 704 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.4+ | 2002 12 31 | 704 | 0.0 | 1.2+ | 2006 09 14 | 703 | 1.1− | 0.6− |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.7− | 0.2+ |
| 2002 11 05 | 704 | 0.3+ | 0.1+ | 2003 01 05 | 704 | (0.2− | 1.7−) | 2006 09 18 | 699 | 0.6+ | 0.9+ |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2003 01 05 | 704 | 0.2− | 0.7+ | 2006 09 18 | 699 | 0.6− | 0.2− |
| 2002 11 08 | 704 | 0.3− | 0.0 | 2003 01 05 | 704 | 0.9− | 0.0 | 2006 09 18 | 699 | 1.0− | 1.2− |
| 2002 11 08 | 704 | 0.1+ | 0.0 | 2004 04 14 | 691 | 0.8+ | 0.6+ | 2006 09 18 | 699 | (1.1− | 1.6+) |
| 2002 11 08 | 704 | 0.4− | 0.3− | 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.5+ | 0.7+ |
| 2002 11 08 | 704 | 0.6− | 0.1+ | 2004 04 14 | 691 | 0.3+ | 0.9+ | 2006 09 20 | 704 | 1.0− | 0.3− |
| 2002 11 08 | 704 | 0.4+ | 0.3+ | 2004 04 23 | 691 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 1.1− | 0.2− |
| 2002 11 12 | 704 | 0.3+ | 0.3− | 2004 04 23 | 691 | 0.1− | 0.7+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2002 11 12 | 704 | 0.2+ | 0.2− | 2004 04 23 | 691 | 0.1+ | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2002 11 12 | 704 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 0.2− | 0.0 | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.6− | 0.6− |
| 2002 11 13 | 644 | 0.0 | 0.1− | 2006 08 18 | 699 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2006 08 18 | 699 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2002 11 13 | 644 | 0.1+ | 0.1+ | 2006 08 18 | 699 | 0.9− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.5+ |

**(142729)∗ 2002 TD$_{284}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.44157 | | (2000.0) | | | |
| $n$ | 0.23688771 | $\omega$ | 185.69935 | | +0.43686498 | −0.88371605 |
| $a$ | 2.5868686 | $\Omega$ | 238.50219 | | +0.83288411 | +0.46790065 |
| $e$ | 0.1293096 | $i$ | 11.35743 | | +0.33978383 | −0.01071983 |
| $P$ | 4.16 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 910 | 1.8+ | 0.2+ | 2002 11 14 | 704 | 0.2− | 0.1− | 2004 03 17 | 704 | 0.2+ | 0.5+ |
| 1998 12 17 | 910 | 1.8+ | 0.2+ | 2002 11 14 | 704 | 0.4− | 0.1+ | 2004 03 17 | 704 | 0.7+ | 0.1− |
| 1998 12 17 | 910 | 1.9+ | 0.1+ | 2002 11 14 | 704 | 0.1+ | 0.5+ | 2004 03 17 | 704 | 0.4− | 0.0 |
| 2002 10 04 | 704 | 0.5+ | 0.3− | 2002 11 14 | 704 | 0.4− | 0.0 | 2004 03 26 | 699 | 0.5+ | 0.3− |
| 2002 10 04 | 704 | 0.7+ | 0.6− | 2002 11 23 | 644 | 0.2− | 0.1+ | 2004 03 26 | 699 | 0.2− | 0.5+ |
| 2002 10 04 | 704 | 0.4+ | 1.1− | 2002 11 23 | 644 | 0.3− | 0.0 | 2004 03 26 | 699 | 1.4− | 0.5+ |
| 2002 10 10 | 704 | 0.5+ | 0.3+ | 2002 11 23 | 644 | 0.1− | 0.2+ | 2004 03 26 | 699 | 0.2+ | 0.4+ |
| 2002 10 10 | 704 | 0.7+ | 0.5+ | 2002 11 30 | 608 | (1.7+ | 0.7+) | 2004 04 15 | 703 | 0.1+ | 0.3− |
| 2002 10 10 | 704 | 0.2− | 0.4− | 2002 11 30 | 608 | (1.5+ | 0.6+) | 2004 04 15 | 703 | 0.5− | 0.7+ |
| 2002 10 10 | 704 | 0.5− | 0.3− | 2002 11 30 | 608 | (1.5+ | 0.4+) | 2004 04 15 | 703 | 0.6+ | 0.6− |
| 2002 10 10 | 704 | 0.0 | 0.7− | 2002 12 01 | 704 | 0.3+ | 0.3− | 2004 04 15 | 703 | 0.3− | 0.3− |
| 2002 10 12 | 704 | 0.4− | 0.2− | 2002 12 01 | 704 | 0.1+ | 0.8− | 2004 04 24 | 703 | 0.2+ | 0.6− |
| 2002 10 12 | 704 | 0.1− | 0.1+ | 2002 12 01 | 704 | 0.5+ | 0.8− | 2004 04 24 | 703 | 1.3− | 0.7+ |
| 2002 10 12 | 704 | 0.5− | 0.4+ | 2002 12 01 | 704 | 0.1+ | 1.1− | 2004 04 24 | 703 | 0.1− | 1.4− |
| 2002 10 12 | 704 | 0.4− | 0.1− | 2002 12 01 | 704 | 0.9+ | 0.1+ | 2004 04 24 | 703 | 0.3− | 0.5− |
| 2002 10 12 | 704 | 0.7− | 0.1− | 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.5+ | 0.4+ |
| 2002 10 16 | 699 | 0.6− | 0.3− | 2002 12 05 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 703 | 0.3+ | 1.1+ |
| 2002 10 16 | 699 | 0.7− | 0.1− | 2002 12 05 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 0.6+ | 0.9+ |
| 2002 10 16 | 699 | 0.1+ | 0.3+ | 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 09 16 | 703 | 0.5+ | 0.6+ |
| 2002 10 16 | 699 | 0.9− | 0.2− | 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 09 21 | 704 | 0.5+ | 1.0+ |
| 2002 10 28 | 608 | 0.5− | 0.9+ | 2002 12 10 | 704 | 0.7− | 0.3− | 2006 09 21 | 704 | 0.3+ | 0.2− |
| 2002 10 28 | 608 | 0.5− | 1.1+ | 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 09 21 | 704 | 0.3− | 0.4+ |
| 2002 10 28 | 608 | 0.3− | 0.6+ | 2002 12 10 | 704 | 0.5− | 0.1− | 2006 09 21 | 704 | 0.9+ | 0.3− |
| 2002 10 29 | 049 | 0.7− | 0.8− | 2002 12 10 | 704 | 0.0 | 0.3− | 2006 09 23 | 699 | 0.1− | 0.1+ |
| 2002 10 29 | 049 | (0.7− | 1.6−) | 2002 12 10 | 704 | 0.5− | 0.1+ | 2006 09 23 | 699 | 0.5+ | 0.4− |
| 2002 10 29 | 049 | 0.5− | 0.8− | 2003 01 04 | 704 | (0.8+ | 1.7+) | 2006 09 23 | 699 | 0.6+ | 0.4− |
| 2002 11 01 | 644 | 0.2+ | 0.0 | 2003 01 04 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2002 11 01 | 644 | 0.4+ | 0.1− | 2003 01 04 | 704 | 0.4+ | 1.2+ | 2006 09 28 | 703 | 0.3+ | 0.1+ |
| 2002 11 01 | 644 | 0.1+ | 0.1− | 2003 01 04 | 704 | 0.2+ | 0.6− | 2006 09 28 | 703 | 0.1+ | 0.2+ |
| 2002 11 04 | 699 | 0.7− | 0.7− | 2003 01 04 | 704 | 0.6+ | 0.7+ | 2006 09 28 | 703 | 0.0 | 0.2+ |
| 2002 11 04 | 699 | 0.2− | 0.2− | 2003 01 08 | 704 | 0.3+ | 1.0+ | 2006 09 30 | 704 | 0.8− | 0.2+ |
| 2002 11 04 | 699 | 0.3− | 0.5− | 2003 01 08 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 704 | 0.9− | 0.5+ |
| 2002 11 04 | 699 | 0.2− | 0.1− | 2003 01 08 | 704 | (1.8− | 1.2+) | 2006 09 30 | 704 | 0.9− | 0.2+ |
| 2002 11 05 | 704 | 0.2− | 0.3− | 2003 01 27 | 704 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2002 11 05 | 704 | 0.5− | 0.2− | 2003 01 27 | 704 | 0.8+ | 0.6− | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2002 11 05 | 704 | 0.5− | 0.3− | 2003 01 27 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.2− | 0.4− | 2003 01 27 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.3− | 0.2+ | 2003 01 27 | 704 | 0.3+ | 1.4+ | 2006 11 14 | 703 | 1.0+ | 0.0 |
| 2002 11 06 | 608 | 0.4− | 0.9− | 2003 01 31 | 699 | 0.4− | 0.5+ | 2006 11 14 | 703 | 0.9+ | 0.7+ |
| 2002 11 06 | 608 | 0.2− | 1.1− | 2003 01 31 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.1+ |
| 2002 11 06 | 608 | 0.3− | 0.7− | 2003 01 31 | 699 | 0.4− | 0.4− | 2006 11 14 | 703 | 0.3− | 0.6+ |
| 2002 11 08 | 704 | 0.4− | 0.2+ | 2003 01 31 | 704 | 0.3+ | 0.1− | 2006 11 22 | 683 | 0.4+ | 0.2− |
| 2002 11 08 | 704 | 0.1− | 0.1− | 2003 01 31 | 699 | 0.4− | 0.6− | 2006 11 22 | 683 | 0.1+ | 1.4− |
| 2002 11 08 | 704 | 0.1− | 0.0 | 2003 01 31 | 704 | 0.1− | 0.1− | 2006 11 22 | 683 | 0.3− | 0.0 |
| 2002 11 08 | 704 | 0.2+ | 0.3+ | 2003 01 31 | 699 | 0.7− | 0.0 | 2006 11 23 | 683 | 0.9+ | 0.7− |
| 2002 11 08 | 704 | 0.0 | 0.1+ | 2003 01 31 | 704 | 0.2+ | 1.0− | 2006 11 23 | 683 | 0.3+ | 0.0 |
| 2002 11 12 | 704 | 0.9− | 0.3− | 2004 03 17 | 703 | 1.1+ | 0.2+ | 2006 11 23 | 683 | 1.0− | 0.8+ |
| 2002 11 12 | 704 | 0.5− | 0.4− | 2004 03 17 | 703 | 0.1+ | 1.1+ | 2006 11 28 | 704 | 0.4+ | 0.9+ |
| 2002 11 12 | 704 | 0.8− | 0.6− | 2004 03 17 | 703 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.6+ |
| 2002 11 12 | 704 | 0.5− | 0.4− | 2004 03 17 | 703 | 0.3− | 0.8+ | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2002 11 12 | 704 | 0.6− | 0.5− | 2004 03 17 | 704 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2002 11 14 | 704 | 0.0 | 0.2− | 2004 03 17 | 704 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.5+ |

**(142730)∗ 2002 TN$_{284}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.05580 | | (2000.0) | | | |
| $n$ | 0.23652069 | $\omega$ | 152.73843 | | +0.74797095 | −0.65436584 |
| $a$ | 2.5895439 | $\Omega$ | 248.58286 | | +0.58514693 | +0.72911863 |
| $e$ | 0.1933246 | $i$ | 6.85451 | | +0.31327709 | +0.20047785 |
| $P$ | 4.17 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 704 | 0.5+ | 1.3− | 2002 12 06 | 704 | 0.4− | 0.4− | 2006 09 27 | 703 | 0.4− | 0.6− |
| 1998 12 16 | 704 | (1.9+ | 3.2−) | 2002 12 10 | 644 | 0.1+ | 0.6+ | 2006 09 27 | 703 | 0.3− | 0.8− |
| 1998 12 16 | 704 | (1.2+ | 5.5−) | 2002 12 10 | 644 | 0.2+ | 1.0+ | 2006 09 27 | 703 | 0.2− | 0.7− |
| 1998 12 16 | 704 | (1.4+ | 2.8−) | 2002 12 10 | 644 | 0.0 | 0.7+ | 2006 09 27 | 703 | 0.1− | 0.3− |
| 2002 08 30 | 704 | 0.2− | 0.6− | 2002 12 11 | 704 | 0.5− | 0.4+ | 2006 09 29 | 704 | 0.9+ | 0.1+ |
| 2002 08 30 | 704 | 1.4+ | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.7+ | 0.2+ |
| 2002 08 30 | 704 | (1.6+ | 0.7+) | 2002 12 11 | 704 | 0.5− | 0.2+ | 2006 09 29 | 704 | 0.7+ | 0.6+ |
| 2002 08 30 | 704 | 0.6+ | 0.1− | 2002 12 11 | 704 | 0.5− | 0.4− | 2006 10 03 | 704 | 0.1+ | 0.3+ |
| 2002 09 06 | 704 | 0.3− | 0.6+ | 2002 12 11 | 704 | 1.0− | 0.0 | 2006 10 03 | 704 | 0.1+ | 0.6+ |
| 2002 09 06 | 704 | 0.3− | 1.2+ | 2003 01 04 | 704 | 0.8− | 1.1− | 2006 10 03 | 704 | 0.2− | 0.4+ |
| 2002 09 06 | 704 | 1.2+ | 0.0 | 2003 01 04 | 704 | 1.0− | 0.1− | 2006 10 03 | 704 | 0.4+ | 0.1+ |
| 2002 09 06 | 704 | 0.5+ | 0.1+ | 2003 01 04 | 704 | 1.1− | 0.0 | 2006 10 03 | 704 | 0.1+ | 0.1+ |
| 2002 10 10 | 704 | 0.0 | 1.2+ | 2003 01 04 | 704 | 0.3− | 1.1+ | 2006 10 12 | 644 | 0.4− | 0.3− |
| 2002 10 10 | 704 | 0.3− | 1.0+ | 2003 01 04 | 704 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.4− | 0.4− |
| 2002 10 10 | 704 | 0.3− | 0.4+ | 2003 01 08 | 704 | 0.9− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.4− | 0.5+ | 2003 01 08 | 704 | 0.6− | 0.9+ | 2006 10 17 | 703 | 0.0 | 0.9− | | |
| 2002 10 10 | 704 | 0.7− | 0.5+ | 2003 01 08 | 704 | (0.1− | 1.5+) | 2006 10 17 | 703 | 0.7− | 0.2− | | |
| 2002 10 12 | 704 | 0.3+ | 0.1− | 2003 01 08 | 704 | 0.3+ | 1.1+ | 2006 10 17 | 703 | 0.2− | 0.4+ | | |
| 2002 10 12 | 704 | 1.1+ | 0.5− | 2003 01 19 | 644 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 2002 10 12 | 704 | 1.1+ | 0.1− | 2003 01 19 | 644 | 0.1− | 0.3+ | 2006 10 20 | 683 | 0.4− | 0.5− | | |
| 2002 10 12 | 704 | 0.8+ | 0.2− | 2003 01 19 | 644 | 0.2− | 0.0 | 2006 10 20 | 683 | 0.5− | 1.5− | | |
| 2002 10 12 | 704 | 1.1+ | 0.1− | 2003 01 27 | 704 | 0.1+ | 0.1− | 2006 10 20 | 683 | 0.9+ | 0.2+ | | |
| 2002 10 29 | 049 | 1.0+ | 0.3− | 2003 01 27 | 704 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 10 30 | 049 | 1.2+ | 0.9− | 2003 01 27 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3− | | |
| 2002 10 30 | 049 | 1.3+ | 1.1− | 2003 01 27 | 704 | 0.5− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2002 10 30 | 049 | 1.4+ | 1.0− | 2003 01 27 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 10 31 | 699 | 0.6− | 0.2+ | 2003 01 31 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 10 31 | 699 | 0.7− | 0.3− | 2003 01 31 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 10 31 | 699 | 1.0− | 0.6− | 2003 01 31 | 704 | 0.7+ | 0.6+ | 2006 10 22 | 683 | 0.3− | 1.4− | | |
| 2002 10 31 | 699 | (1.6+ | 0.1+) | 2003 01 31 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 683 | 0.1− | 1.3− | | |
| 2002 11 05 | 704 | 0.6− | 0.3+ | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 22 | 683 | (0.4− | 1.6−) | | |
| 2002 11 05 | 704 | 0.3− | 0.3− | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 683 | 0.1− | 0.3− | | |
| 2002 11 05 | 704 | 0.2− | 0.3+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 683 | 0.4− | 0.1+ | | |
| 2002 11 05 | 704 | 0.3− | 0.1− | 2005 06 16 | G96 | 0.0 | 0.9+ | 2006 10 23 | 683 | 0.6− | 1.1+ | | |
| 2002 11 05 | 704 | 0.5− | 0.3− | 2005 06 16 | G96 | 0.1+ | 0.6+ | 2006 10 26 | 704 | 0.8+ | 0.6− | | |
| 2002 11 08 | 704 | 0.1− | 0.3− | 2005 06 16 | G96 | 0.4− | 0.6+ | 2006 10 26 | 704 | 0.8+ | 0.3− | | |
| 2002 11 08 | 704 | 0.2+ | 0.0 | 2005 06 16 | G96 | 0.1+ | 0.8+ | 2006 10 26 | 704 | 0.0 | 0.4− | | |
| 2002 11 08 | 704 | 0.1− | 0.3− | 2005 06 27 | G96 | 0.0 | 0.7+ | 2006 11 15 | 704 | 0.0 | 0.5+ | | |
| 2002 11 08 | 704 | 0.4− | 0.5− | 2005 06 27 | G96 | 0.1− | 0.9+ | 2006 11 15 | 704 | 0.5− | 0.7+ | | |
| 2002 11 08 | 704 | 0.1+ | 0.6− | 2005 06 27 | G96 | 0.2+ | 0.8+ | 2006 11 15 | 704 | 0.0 | 0.7+ | | |
| 2002 11 12 | 704 | 1.1− | 0.2+ | 2005 06 27 | G96 | 0.1+ | 0.9+ | 2006 11 15 | 704 | 0.0 | 0.1+ | | |
| 2002 11 12 | 704 | 1.1− | 0.4− | 2006 08 20 | 644 | 0.4− | 0.1+ | 2006 11 16 | 704 | (0.8− | 1.5+) | | |
| 2002 11 12 | 704 | 1.1− | 0.6+ | 2006 08 20 | 644 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.7+ | | |
| 2002 11 12 | 704 | 0.8− | 0.7+ | 2006 08 20 | 644 | 0.5− | 0.0 | 2006 11 16 | 704 | 0.1− | 1.1+ | | |
| 2002 11 12 | 704 | 0.6− | 0.8+ | 2006 09 14 | 644 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.6− | 1.0+ | | |
| 2002 11 14 | 704 | 0.4+ | 0.4− | 2006 09 14 | 644 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.9+ | 0.3+ | | |
| 2002 11 14 | 704 | 0.8+ | 0.2− | 2006 09 14 | 644 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.7+ | 1.6+ | | |
| 2002 11 14 | 704 | 0.9+ | 0.9− | 2006 09 16 | 703 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.2+ | | |
| 2002 11 14 | 704 | 1.0+ | 0.6− | 2006 09 16 | 703 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 1.0+ | 1.9+ | | |
| 2002 11 14 | 704 | 1.3+ | 0.9− | 2006 09 16 | 703 | 0.4− | 0.5− | 2006 11 18 | 704 | 1.0+ | 1.3+ | | |
| 2002 11 30 | 608 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.6+ | | |
| 2002 11 30 | 608 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.6− | 1.1+ | | |
| 2002 11 30 | 608 | 0.4+ | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.5+ | 1.1+ | | |
| 2002 12 02 | 704 | 0.3− | 0.4− | 2006 09 20 | 644 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.3+ | 2.1+ | | |
| 2002 12 02 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.5− | 1.1+ | | |
| 2002 12 02 | 704 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.8− | 0.1+ | 2006 11 19 | 704 | 1.1+ | 1.0+ | | |
| 2002 12 02 | 704 | 0.3− | 0.0 | 2006 09 22 | 704 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.9+ | | |
| 2002 12 02 | 704 | 0.3− | 0.6− | 2006 09 22 | 704 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.4+ | 1.0+ | | |
| 2002 12 06 | 704 | 0.5+ | 0.0 | 2006 09 22 | 704 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.5+ | | |
| 2002 12 06 | 704 | 0.1− | 0.7− | 2006 09 27 | 699 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.2+ | 0.6− | | |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2006 09 27 | 699 | 0.4+ | 0.2+ | | | | | | |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.6+ | 0.2− | | | | | | |

**(142731)∗ 2002 TA$_{285}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.47074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22865476 | $\omega$ | 46.69280 | | +0.58175810 | −0.81260542 | |
| $a$ | 2.6485970 | $\Omega$ | 7.96387 | | +0.65358731 | +0.44137969 | |
| $e$ | 0.0876689 | $i$ | 14.66269 | | +0.48412926 | +0.38060006 | |
| $P$ | 4.31 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.3+ | 1.0+ | 2004 02 17 | 704 | 0.6− | 0.5+ | 2006 08 23 | 704 | 0.5+ | 0.2+ | | |
| 2000 04 07 | 704 | 0.1− | 0.3+ | 2004 02 17 | 704 | 1.1− | 1.3+ | 2006 08 28 | 703 | 0.9− | 0.8− | | |
| 2000 04 07 | 704 | 0.3− | 0.5+ | 2004 02 21 | 608 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 1.0− | | |
| 2000 04 07 | 704 | 0.4+ | 0.0 | 2004 02 21 | 608 | 0.5+ | 0.9+ | 2006 08 28 | 703 | 0.3+ | 0.3− | | |
| 2002 09 06 | 704 | (0.4+ | 2.3+) | 2004 02 21 | 608 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.2− | | |
| 2002 09 06 | 704 | 1.1− | 0.7+ | 2004 03 11 | 644 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.2− | 1.3+ | | |
| 2002 09 06 | 704 | 0.2− | 0.4− | 2004 03 11 | 644 | 0.4+ | 0.5+ | 2006 09 12 | 703 | (0.3− | 1.8+) | | |
| 2002 10 05 | 704 | 0.4− | 0.0 | 2004 03 11 | 644 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 1.0− | 1.0+ | | |
| 2002 10 05 | 704 | 0.5− | 0.4+ | 2004 03 15 | 704 | 0.4+ | 1.2+ | 2006 09 12 | 703 | (1.0− | 1.7+) | | |
| 2002 10 05 | 704 | 0.4− | 0.5− | 2004 03 15 | 704 | 0.6+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.3+ | | |
| 2002 10 05 | 704 | 0.2+ | 0.5− | 2004 03 15 | 704 | 0.8+ | 1.1+ | 2006 09 15 | 691 | 0.3− | 0.3+ | | |
| 2002 10 10 | 704 | 1.3+ | 1.3− | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.4+ | | |
| 2002 10 10 | 704 | 0.2+ | 1.2+ | 2004 03 15 | 704 | 1.1+ | 0.5+ | 2006 09 17 | 704 | 0.6− | 0.8+ | | |
| 2002 10 10 | 704 | 0.6− | 0.5− | 2004 03 17 | 704 | 0.4− | 0.7+ | 2006 09 17 | 704 | 0.4− | 1.1+ | | |
| 2002 10 10 | 704 | 0.3− | 0.7− | 2004 03 17 | 704 | 0.1+ | 0.0 | 2006 09 17 | 704 | (0.7− | 1.5+) | | |
| 2002 10 10 | 704 | 1.3+ | 0.1− | 2004 03 17 | 704 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.1+ | 1.4+ | | |
| 2002 10 12 | 704 | 1.0+ | 0.2+ | 2004 03 17 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.9+ | | |
| 2002 10 12 | 704 | 0.4+ | 0.7− | 2004 03 17 | 704 | 1.4+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.4+ | | |
| 2002 10 12 | 704 | 0.3− | 0.8− | 2004 03 17 | 704 | 1.2+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.3− | | |
| 2002 10 12 | 704 | 0.5− | 0.3+ | 2004 03 17 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 0.0 | 0.4− | | |
| 2002 11 07 | 704 | 0.3+ | 0.5− | 2004 03 17 | 704 | 1.0+ | 0.3− | 2006 09 19 | 691 | 0.3− | 0.1+ | | |
| 2002 11 07 | 699 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 691 | 0.4− | 0.2+ | | |
| 2002 11 07 | 704 | 0.7+ | 1.1− | 2004 03 18 | 704 | 0.0 | 0.9+ | 2006 09 19 | 691 | 0.8− | 0.2+ | | |
| 2002 11 07 | 699 | (1.8+ | 0.8−) | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.6+ | 0.3− | | |
| 2002 11 07 | 704 | 0.0 | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 1.0+ | 0.5+ | | |
| 2002 11 07 | 699 | 0.6+ | 0.5− | 2004 03 18 | 704 | 0.0 | 1.0+ | 2006 09 20 | 704 | 0.9+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.3− | 0.7− | 2004 03 19 | 704 | 0.1+ | 0.8+ | 2006 09 20 | 704 | 0.5+ | 1.3+ | | |
| 2002 11 07 | 699 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.1− | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.2− | | |
| 2002 11 07 | 704 | 0.3+ | 0.5− | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.9− | 0.1+ | | |
| 2002 11 12 | 699 | 0.8− | 0.5− | 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.1+ | | |
| 2002 11 12 | 699 | 0.7− | 0.5− | 2004 03 19 | 704 | 0.4+ | 0.9+ | 2006 09 23 | 691 | 0.1− | 0.3+ | | |
| 2002 11 12 | 699 | 0.1+ | 0.2− | 2004 03 20 | 704 | 0.9+ | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.4+ | | |
| 2002 11 12 | 699 | 0.5+ | 0.6+ | 2004 03 20 | 704 | (1.6+ | 1.4+) | 2006 09 23 | 691 | 0.3− | 0.4+ | | |
| 2002 11 15 | 704 | 1.0+ | 0.1− | 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− | | |
| 2002 11 15 | 704 | (1.8+ | 1.0−) | 2004 03 20 | 704 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.4− | | |
| 2002 11 15 | 704 | 0.7+ | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2002 11 15 | 704 | 0.4− | 0.5+ | 2004 03 20 | 704 | 0.8+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 2002 11 25 | 644 | 0.0 | 0.2− | 2004 03 20 | 704 | 1.1+ | 0.8+ | 2006 09 26 | 704 | 0.2− | 0.5− | | |
| 2002 11 25 | 644 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.9+ | 0.5− | 2006 09 26 | 704 | 0.1− | 0.2+ | | |
| 2002 11 25 | 644 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.1− | | |
| 2002 11 26 | 644 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.9+ | 1.2− | 2006 09 27 | 704 | 0.7− | 0.1+ | | |
| 2002 11 26 | 644 | 0.1− | 0.8+ | 2004 03 22 | 704 | 1.3+ | 0.6− | 2006 09 27 | 691 | 0.3− | 0.2+ | | |
| 2002 11 26 | 644 | 0.2− | 0.5+ | 2004 03 22 | 704 | 0.8+ | 0.3− | 2006 09 27 | 704 | 0.1− | 0.1+ | | |
| 2002 12 03 | 644 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.3+ | | |
| 2002 12 03 | 644 | 0.5− | 0.6− | 2004 03 22 | 704 | 0.2− | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.0 | | |
| 2002 12 03 | 644 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.4+ | | |
| 2002 12 06 | 704 | 0.4+ | 0.4− | 2004 03 22 | 704 | 0.7+ | 0.4− | 2006 09 27 | 691 | 0.4− | 0.3+ | | |
| 2002 12 06 | 704 | 0.6+ | 0.6− | 2004 03 22 | 704 | 0.7+ | 0.6+ | 2006 09 27 | 704 | 0.3+ | 0.3− | | |
| 2002 12 06 | 704 | 0.7+ | 0.2− | 2004 03 23 | 704 | 0.9+ | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.1+ | | |
| 2002 12 06 | 704 | 0.5+ | 0.5− | 2004 03 23 | 704 | 1.4+ | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.1− | | |
| 2002 12 06 | 704 | 1.1+ | 0.7− | 2004 03 23 | 704 | 1.0+ | 1.2− | 2006 09 28 | 704 | 0.0 | 0.2− | | |
| 2002 12 08 | 699 | 0.5+ | 0.2− | 2004 03 23 | 704 | 0.9+ | 0.1+ | 2006 09 28 | 704 | 0.3− | 1.1+ | | |
| 2002 12 08 | 699 | 0.2+ | 0.3− | 2004 03 23 | 704 | 0.6+ | 0.2+ | 2006 09 28 | 704 | 1.0− | 0.4+ | | |
| 2002 12 08 | 699 | 1.0− | 0.3+ | 2004 03 26 | 703 | 1.4− | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 08 | 699 | 1.4− | 0.8+ | 2004 03 26 | 703 | 0.4− | 0.7− | 2006 10 01 | 704 | (0.3+ | 1.5+) | | |
| 2002 12 09 | 699 | 0.4+ | 0.3+ | 2004 03 26 | 703 | 0.3− | 0.8− | 2006 10 01 | 704 | 1.0+ | 1.0+ | | |
| 2002 12 09 | 699 | 0.5− | 0.5− | 2004 03 26 | 703 | 1.4− | 1.4− | 2006 10 01 | 704 | 0.5+ | 1.3+ | | |
| 2002 12 09 | 699 | 0.1− | 0.3+ | 2004 04 12 | 703 | (1.9+ | 1.8+) | 2006 10 01 | 704 | 0.0 | 0.9+ | | |
| 2002 12 09 | 699 | 0.0 | 1.0− | 2004 04 12 | 703 | 0.5− | 0.7+ | 2006 10 17 | 104 | 0.1+ | 0.2− | | |
| 2002 12 11 | 644 | 0.6+ | 0.3+ | 2004 04 12 | 703 | (0.7+ | 1.8+) | 2006 10 17 | 104 | 0.4+ | 0.1+ | | |
| 2002 12 11 | 644 | 0.6+ | 0.7+ | 2004 04 12 | 703 | 0.3− | 1.4+ | 2006 10 17 | 104 | 0.2− | 0.1+ | | |
| 2002 12 11 | 644 | 0.7+ | 0.6+ | 2004 04 19 | 704 | 0.1+ | 1.1+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2003 01 22 | 644 | 0.1− | 0.1− | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.1+ | | |
| 2003 01 22 | 644 | 0.3+ | 0.1− | 2004 04 19 | 704 | 0.8+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2003 01 22 | 644 | 0.1+ | 0.4− | 2004 04 19 | 704 | 0.4+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2003 12 28 | 704 | 0.6+ | 0.2+ | 2004 04 19 | 704 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2003 12 28 | 704 | 0.4+ | 0.5+ | 2006 08 17 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2003 12 28 | 704 | 0.5− | 0.2+ | 2006 08 17 | 644 | 0.5− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.9+ | | |
| 2004 02 13 | 691 | 0.3− | 0.2+ | 2006 08 17 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.7+ | | |
| 2004 02 13 | 691 | 0.3− | 0.1+ | 2006 08 23 | 704 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.5− | 1.3+ | | |
| 2004 02 13 | 691 | 0.3− | 0.2+ | 2006 08 23 | 704 | 0.4− | 0.3− | | | | | | |
| 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 08 23 | 704 | 0.7− | 0.1− | | | | | | |

**(142732)∗ 2002 TZ$_{285}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.87975 | | (2000.0) | | | |
| $n$ | 0.22712949 | $\omega$ | 124.04911 | | +0.98193851 | +0.02428794 |
| $a$ | 2.6604414 | $\Omega$ | 235.25573 | | −0.07494432 | +0.96053654 |
| $e$ | 0.1215343 | $i$ | 13.19986 | | +0.17372424 | +0.27709141 |
| $P$ | 4.34 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.5+ | 0.4− | 2002 12 01 | 704 | 0.1− | 1.3+ | 2005 06 13 | G96 | 0.3− | 0.4+ | |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2002 12 01 | 704 | 0.1− | 1.4+ | 2005 06 13 | G96 | 0.4− | 0.4+ | |
| 2002 10 10 | 704 | 0.1+ | 0.5+ | 2002 12 01 | 704 | (0.4− | 1.6+) | 2005 06 13 | G96 | 0.3− | 0.5+ | |
| 2002 10 10 | 704 | 0.2− | 0.6− | 2002 12 01 | 704 | 0.1− | 1.2+ | 2005 06 13 | G96 | 0.2+ | 0.3+ | |
| 2002 10 12 | 704 | 1.0+ | 0.8+ | 2002 12 05 | 704 | 0.4+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.5+ | |
| 2002 10 12 | 704 | (2.5+ | 0.2−) | 2002 12 05 | 704 | 0.3+ | 0.2− | 2005 06 14 | 691 | 0.2+ | 0.7+ | |
| 2002 10 12 | 704 | 0.3− | 1.1+ | 2002 12 05 | 704 | 0.3− | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.3+ | |
| 2002 10 12 | 704 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 08 29 | 699 | 0.1+ | 0.3+ | |
| 2002 10 29 | 926 | 0.3+ | 0.3− | 2002 12 05 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 699 | 0.4− | 0.4+ | |
| 2002 10 29 | 926 | 0.1+ | 0.0 | 2002 12 06 | 704 | 0.6− | 0.2− | 2006 08 29 | 699 | 0.9+ | 0.1− | |
| 2002 10 29 | 926 | 0.3+ | 0.0 | 2002 12 06 | 704 | 0.5− | 0.8+ | 2006 08 29 | 699 | 0.7+ | 0.1− | |
| 2002 10 31 | 926 | 0.3+ | 0.3+ | 2002 12 06 | 704 | 0.4− | 0.7+ | 2006 09 06 | 644 | 0.4+ | 0.5− | |
| 2002 10 31 | 699 | 0.2− | 0.3+ | 2002 12 06 | 704 | 0.4− | 1.4+ | 2006 09 06 | 644 | 0.4+ | 0.1− | |
| 2002 10 31 | 926 | 0.6− | 0.7− | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.2− | |
| 2002 10 31 | 926 | 0.3− | 0.2+ | 2002 12 10 | 644 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.7− | 0.1+ | |
| 2002 10 31 | 699 | 0.2+ | 0.6− | 2002 12 10 | 644 | 0.7+ | 0.1+ | 2006 09 16 | 703 | 1.2− | 0.3− | |
| 2002 10 31 | 699 | 0.9− | 0.6+ | 2002 12 10 | 704 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.9− | 0.0 | |
| 2002 10 31 | 699 | 0.1− | 0.4− | 2002 12 10 | 704 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.4− | 0.5− | |
| 2002 11 01 | 926 | 0.4+ | 0.3− | 2002 12 10 | 704 | (0.1− | 1.9+) | 2006 09 21 | 699 | 0.5+ | 0.1− | |
| 2002 11 01 | 926 | 0.5+ | 0.3− | 2002 12 10 | 704 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.5+ | 0.7+ | |
| 2002 11 01 | 926 | 1.2+ | 0.9− | 2004 01 16 | 644 | 0.3+ | 0.7+ | 2006 09 21 | 699 | 0.5+ | 0.3+ | |
| 2002 11 05 | 704 | 0.2− | 0.4+ | 2004 01 16 | 644 | 0.4+ | 0.5+ | 2006 09 27 | 703 | 0.5− | 0.3+ | |
| 2002 11 05 | 704 | 0.4+ | 0.9− | 2004 01 16 | 644 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 0.5− | 1.0− | |
| 2002 11 05 | 704 | 0.2− | 1.0− | 2005 05 10 | G96 | 0.3− | 0.3+ | 2006 09 27 | 703 | 0.5− | 0.0 | |
| 2002 11 05 | 704 | 0.5− | 0.0 | 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.2+ | |
| 2002 11 05 | 704 | 0.1− | 0.7− | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 10 03 | 704 | 0.5+ | 0.6+ | |
| 2002 11 08 | 704 | 0.0 | 0.2+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.5+ | |
| 2002 11 08 | 704 | 0.5+ | 0.1+ | 2005 05 10 | 703 | 1.0− | 0.1− | 2006 10 03 | 704 | 0.1+ | 0.3+ | |
| 2002 11 08 | 704 | 0.6+ | 0.5+ | 2005 05 10 | 703 | 0.1− | 0.4− | 2006 10 03 | 704 | 0.7+ | 0.6− | |
| 2002 11 12 | 704 | 0.4− | 1.1+ | 2005 05 10 | 703 | 1.0+ | 0.7− | 2006 10 03 | 704 | 0.4− | 0.4+ | |
| 2002 11 12 | 704 | 1.0− | 0.4+ | 2005 05 10 | 703 | 1.3− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.4− | |
| 2002 11 12 | 704 | 0.2− | 0.7+ | 2005 05 11 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.6− | |
| 2002 11 12 | 704 | 0.4− | 0.3+ | 2005 05 11 | 644 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.0 | |
| 2002 11 12 | 704 | (0.1+ | 2.2+) | 2005 05 11 | 644 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.3+ | |
| 2002 11 14 | 704 | (1.7− | 0.5+) | 2005 05 12 | 644 | 0.2− | 0.2+ | 2006 10 19 | 683 | 0.5− | 0.3+ | |
| 2002 11 14 | 704 | 0.2− | 0.8+ | 2005 05 12 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 683 | 1.3+ | 1.2+ | |
| 2002 11 14 | 704 | (0.9− | 1.8+) | 2005 05 12 | 644 | 0.2− | 0.2+ | 2006 10 19 | 683 | 1.3− | 0.9+ | |
| 2002 11 14 | 704 | 0.6− | 1.4+ | 2005 05 19 | 644 | 0.0 | 0.0 | 2006 10 23 | 703 | 0.1− | 0.5− | |
| 2002 11 14 | 704 | 1.0− | 1.4+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.6+ | 0.9− | |
| 2002 11 15 | 704 | (1.2+ | 2.1−) | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 703 | 0.3− | 1.4− | |
| 2002 11 15 | 704 | (1.1− | 1.9+) | 2005 06 10 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 703 | 0.4+ | 0.1− | |
| 2002 11 15 | 704 | 1.0+ | 1.3+ | 2005 06 10 | 691 | (0.0 | 2.1+) | | | | | |
| 2002 11 15 | 704 | (0.4+ | 2.2+) | 2005 06 10 | 691 | 0.0 | 0.9+ | | | | | |

**(142733)∗ 2002 TO$_{286}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.35725 | | (2000.0) | | | |
| $n$ | 0.23747182 | $\omega$ | 136.02855 | | +0.98318516 | −0.02743120 |
| $a$ | 2.5826249 | $\Omega$ | 226.48543 | | −0.01470182 | +0.97355354 |
| $e$ | 0.0959404 | $i$ | 14.41547 | | +0.18201865 | +0.22680615 |
| $P$ | 4.15 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.1− | 0.5− | 2002 11 10 | 704 | 0.6− | 0.6− | 2005 07 05 | 644 | 0.2+ | 0.1+ | |
| 2001 06 21 | 704 | 0.5− | 0.6+ | 2002 11 10 | 704 | 0.0 | 0.2+ | 2005 07 05 | 644 | 0.5− | 0.2− | |
| 2001 06 21 | 704 | 0.1− | 0.9+ | 2002 11 10 | 704 | 0.3− | 1.1+ | 2006 08 12 | 644 | 0.2+ | 0.2− | |
| 2002 09 06 | 704 | 0.9+ | 0.4− | 2002 11 10 | 704 | 0.7− | 0.9− | 2006 08 12 | 644 | 0.0 | 0.1− | |
| 2002 09 06 | 704 | 0.7− | 0.9− | 2002 11 10 | 704 | 0.4− | 0.4+ | 2006 08 12 | 644 | 0.3− | 0.1− | |
| 2002 09 06 | 704 | 0.7− | 0.2+ | 2002 11 10 | 704 | 0.1− | 0.3− | 2006 08 12 | 644 | 0.0 | 0.1− | |
| 2002 09 06 | 704 | 0.7− | 0.1− | 2002 11 10 | 704 | 0.8− | 0.0 | 2006 08 12 | 644 | 0.0 | 0.0 | |
| 2002 10 04 | 704 | 0.8+ | 0.4+ | 2002 11 10 | 408 | 0.9− | 0.6+ | 2006 08 12 | 644 | 0.0 | 0.1+ | |
| 2002 10 04 | 704 | 0.6+ | 1.2− | 2002 11 10 | 408 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.6+ | 0.1− | |
| 2002 10 04 | 704 | 0.4− | 1.0+ | 2002 11 12 | 644 | 0.4+ | 1.4+ | 2006 09 17 | 703 | 0.3− | 0.6− | |
| 2002 10 04 | 704 | 0.6− | 0.1− | 2002 11 12 | 644 | 0.3+ | 1.4+ | 2006 09 17 | 703 | 0.4+ | 0.5− | |
| 2002 10 10 | 704 | 0.1− | 0.0 | 2002 11 12 | 644 | 0.5+ | 1.4+ | 2006 09 17 | 703 | 0.5+ | 0.3+ | |
| 2002 10 10 | 704 | 0.1+ | 0.1+ | 2002 12 01 | 704 | (0.2− | 2.0+) | 2006 10 12 | 644 | 0.2+ | 0.1− | |
| 2002 10 10 | 704 | 0.3+ | 0.6− | 2002 12 01 | 704 | (0.3+ | 2.2+) | 2006 10 12 | 644 | 0.0 | 0.0 | |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2002 12 01 | 704 | 1.0+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | |
| 2002 10 10 | 704 | 0.3− | 0.3+ | 2002 12 05 | 704 | 0.5− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.1− | |
| 2002 10 12 | 704 | 1.1− | 0.5− | 2002 12 05 | 704 | 0.9+ | 0.1− | 2006 10 17 | 703 | 0.6− | 0.4+ | |
| 2002 10 12 | 704 | 0.7− | 0.1+ | 2002 12 05 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.2− | |
| 2002 10 12 | 704 | 0.2+ | 0.2+ | 2002 12 05 | 704 | 0.7− | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.5− | |
| 2002 10 12 | 704 | (1.0+ | 1.7+) | 2002 12 10 | 644 | 0.2+ | 0.5+ | 2006 10 29 | 704 | 0.1+ | 1.1− | |
| 2002 11 05 | 699 | 0.7− | 0.0 | 2002 12 10 | 644 | 0.3+ | 0.6+ | 2006 10 29 | 704 | 0.9+ | 0.7+ | |
| 2002 11 05 | 699 | 0.5− | 0.0 | 2002 12 10 | 644 | 0.4+ | 0.4+ | 2006 10 29 | 704 | (2.3+ | 0.8−) | |
| 2002 11 05 | 699 | 0.1+ | 0.0 | 2005 06 01 | 691 | 0.1− | 0.1+ | 2006 10 29 | 704 | 0.4− | 0.8+ | |
| 2002 11 05 | 699 | 0.2+ | 0.4− | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.1+ | 1.1− | |
| 2002 11 05 | 408 | (1.2+ | 1.7+) | 2005 06 01 | 691 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.3− | |
| 2002 11 05 | 408 | 1.1+ | 1.4+ | 2005 06 03 | 703 | 0.5− | 0.5+ | 2006 11 14 | 703 | 0.6+ | 0.1+ | |
| 2002 11 06 | 704 | 0.8+ | 0.6− | 2005 06 03 | 703 | 0.8− | 0.8− | 2006 11 14 | 703 | 0.5− | 0.2− | |
| 2002 11 06 | 704 | 0.6+ | 0.3− | 2005 06 03 | 703 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.4− | |
| 2002 11 06 | 704 | 0.3+ | 0.4− | 2005 06 03 | 703 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 2.0− | 0.2− | |
| 2002 11 06 | 704 | 0.4+ | 0.2− | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.0 | |
| 2002 11 06 | 704 | 0.7+ | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 1.0+ | 0.8− | |
| 2002 11 06 | 408 | 0.2+ | 1.3+ | 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 11 21 | 012 | 0.7+ | 0.1− | |
| 2002 11 06 | 408 | 0.2+ | 1.1+ | 2005 06 24 | 644 | 0.1+ | 0.0 | 2006 11 21 | 012 | 0.8− | 0.1+ | |
| 2002 11 07 | 704 | 0.4− | 0.0 | 2005 06 24 | 644 | 0.0 | 0.1+ | 2006 11 21 | 012 | 0.1− | 0.4− | |
| 2002 11 07 | 704 | 0.6+ | 0.0 | 2005 06 24 | 644 | 0.2− | 0.1− | 2006 11 21 | 012 | 0.0 | 0.6− | |
| 2002 11 07 | 704 | 0.3− | 1.0+ | 2005 06 29 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.7− | 0.4− | |
| 2002 11 07 | 704 | 0.6+ | 0.2− | 2005 06 29 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3− | 0.3+ | |
| 2002 11 07 | 704 | 0.4− | 0.6+ | 2005 06 29 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.4+ | |
| 2002 11 10 | 704 | 0.1− | 0.2− | 2005 07 05 | 644 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2− | |

**(142734)∗ 2002 TS$_{286}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.49295 | | (2000.0) | | | |
| $n$ | 0.23785197 | $\omega$ | 152.90141 | | +0.92723618 | −0.26898564 |
| $a$ | 2.5798723 | $\Omega$ | 225.33835 | | +0.24121242 | +0.96119078 |
| $e$ | 0.0854374 | $i$ | 21.48755 | | +0.28644308 | +0.06131083 |
| $P$ | 4.14 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 699 | 0.6− | 0.1− | 2002 11 10 | 704 | 0.4+ | 0.3− | 2006 09 28 | 703 | 0.5+ | 0.1− | |
| 1998 12 17 | 699 | 0.5+ | 0.1+ | 2002 11 10 | 704 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.2− | 0.4− | |
| 1998 12 17 | 699 | 0.1− | 0.8+ | 2002 11 12 | 644 | 0.1+ | 0.3+ | 2006 10 17 | A50 | 0.6+ | 0.1− | |
| 2002 09 06 | 704 | 1.2− | 0.3+ | 2002 11 12 | 644 | 0.1+ | 0.2+ | 2006 10 17 | A50 | 0.0 | 0.7+ | |
| 2002 09 06 | 704 | 0.0 | 0.8− | 2002 11 12 | 644 | 0.2+ | 0.2+ | 2006 10 18 | A50 | 0.3+ | 0.0 | |
| 2002 09 06 | 704 | 0.5− | 0.3+ | 2002 11 22 | 644 | 0.3+ | 1.0+ | 2006 10 18 | A50 | 0.2+ | 0.2+ | |
| 2002 10 04 | 704 | 0.5− | 0.2+ | 2002 11 22 | 644 | 0.3+ | 1.0+ | 2006 10 19 | 703 | 0.7+ | 0.1+ | |
| 2002 10 04 | 704 | 0.5− | 0.1− | 2002 11 22 | 644 | 0.1+ | 1.1+ | 2006 10 19 | 703 | 0.2+ | 0.2+ | |
| 2002 10 04 | 704 | 0.5− | 0.3− | 2002 12 01 | 704 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.4+ | |
| 2002 10 04 | 704 | 0.4− | 0.4+ | 2002 12 01 | 704 | 0.2+ | 0.4− | 2006 10 19 | 703 | 0.6+ | 0.4− | |
| 2002 10 04 | 704 | 0.5− | 0.1− | 2002 12 01 | 704 | 0.2− | 0.0 | 2006 10 21 | 704 | (0.3+ | 3.3+) | |
| 2002 10 10 | 704 | 0.0 | 0.4− | 2002 12 01 | 704 | 0.6+ | 0.1− | 2006 10 21 | 704 | 1.0− | 0.7+ | |
| 2002 10 10 | 704 | 0.3+ | 0.6− | 2002 12 01 | 704 | 0.1− | 0.3+ | 2006 10 21 | 704 | 0.1− | 0.1− | |
| 2002 10 10 | 704 | 0.2+ | 0.3+ | 2002 12 07 | 704 | (2.2− | 0.3+) | 2006 10 21 | 704 | 0.3+ | 0.7− | |
| 2002 10 10 | 704 | 0.8− | 0.2− | 2002 12 07 | 704 | 1.5− | 1.1− | 2006 10 21 | 704 | 0.8− | 1.0− | |
| 2002 10 10 | 704 | 0.2− | 0.4+ | 2002 12 07 | 704 | (1.7− | 0.0 ) | 2006 10 22 | 644 | 0.2+ | 0.0 | |
| 2002 10 12 | 704 | 0.5+ | 0.2− | 2002 12 07 | 704 | 1.2− | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.0 | |
| 2002 10 12 | 704 | (1.6− | 0.9+) | 2002 12 11 | 704 | 0.7+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.1− | |
| 2002 10 12 | 704 | 1.5− | 0.0 | 2002 12 11 | 704 | 0.2− | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.1− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.2− | 0.6+ | 2002 12 11 | 704 | 0.5− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.2− | | |
| 2002 10 16 | 699 | (1.4− | 1.7+) | 2002 12 11 | 704 | 0.3− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2002 10 16 | 699 | 0.2+ | 1.0+ | 2005 06 02 | 703 | 1.4− | 0.1+ | 2006 10 27 | 703 | 0.6+ | 1.3− | | |
| 2002 10 16 | 699 | 0.5+ | 0.6− | 2005 06 02 | 703 | 0.5− | 0.3− | 2006 10 27 | 703 | 0.2− | 1.0+ | | |
| 2002 10 16 | 699 | 0.3− | 0.1+ | 2005 06 02 | 703 | 0.1− | 0.6+ | 2006 10 27 | 703 | (0.4+ | 1.5+) | | |
| 2002 10 31 | 644 | 1.4+ | 0.2− | 2005 06 02 | 703 | 0.7− | 0.8− | 2006 10 27 | 703 | 1.0− | 0.7− | | |
| 2002 10 31 | 644 | 1.0+ | 0.5− | 2005 06 09 | 703 | 0.3+ | 0.6+ | 2006 10 31 | 703 | 0.4− | 0.1− | | |
| 2002 10 31 | 644 | 0.8+ | 0.0 | 2005 06 09 | 703 | 0.2− | 0.0 | 2006 10 31 | 703 | 0.5− | 0.0 | | |
| 2002 11 05 | 699 | 0.1+ | 0.7+ | 2005 06 09 | 703 | 0.7+ | 0.5+ | 2006 10 31 | 703 | 0.1− | 0.8+ | | |
| 2002 11 05 | 699 | 0.3+ | 0.7+ | 2005 06 09 | 703 | 0.3+ | 0.2+ | 2006 10 31 | 703 | 0.2+ | 0.2+ | | |
| 2002 11 05 | 699 | 0.8− | 0.3+ | 2005 06 24 | 644 | 0.3+ | 0.1− | 2006 11 07 | 644 | 0.0 | 0.3− | | |
| 2002 11 05 | 699 | (1.7+ | 0.5−) | 2005 06 24 | 644 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.5− | | |
| 2002 11 06 | 704 | 0.2+ | 0.5+ | 2005 06 24 | 644 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.3+ | 0.4− | | |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2005 06 30 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.3− | | |
| 2002 11 06 | 704 | 0.3+ | 0.1+ | 2005 06 30 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.6− | | |
| 2002 11 06 | 704 | 0.1+ | 0.0 | 2005 06 30 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.3− | | |
| 2002 11 06 | 704 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.7+ | 0.7− | | |
| 2002 11 07 | 704 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 703 | 0.8− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.5− | | |
| 2002 11 07 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.2− | | |
| 2002 11 07 | 704 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.3− | | |
| 2002 11 07 | 704 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.3− | | |
| 2002 11 07 | 608 | 0.8+ | 0.7− | 2006 09 17 | 703 | 0.2− | 0.7+ | 2006 11 22 | 704 | (0.5+ | 1.6+) | | |
| 2002 11 07 | 608 | 0.4+ | 0.7+ | 2006 09 17 | 703 | 0.2− | 0.6+ | 2006 11 22 | 704 | (0.4+ | 2.7+) | | |
| 2002 11 07 | 608 | 0.6+ | 0.1− | 2006 09 28 | 703 | 0.0 | 0.2− | 2006 11 22 | 704 | 1.1− | 1.1+ | | |
| 2002 11 10 | 704 | 0.6− | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.4− | 2006 11 22 | 704 | (1.5+ | 0.9+) | | |

**(142735)∗ 2002 TV$_{286}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.08069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22708729 | $\omega$ | 322.07628 | | +0.91499155 | +0.39869220 | |
| $a$ | 2.6607710 | $\Omega$ | 14.80223 | | −0.28476059 | +0.74686005 | |
| $e$ | 0.2634866 | $i$ | 14.02782 | | −0.28583539 | +0.53220728 | |
| $P$ | 4.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.3+ | 0.2− | 2002 11 13 | 644 | 0.0 | 0.5+ | 2006 08 16 | E12 | 0.3+ | 0.5− | | |
| 2002 09 06 | 704 | 0.9+ | 0.4− | 2002 11 13 | 644 | 0.1− | 0.1+ | 2006 08 16 | E12 | 0.5− | 0.3+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.6− | 2002 12 05 | 699 | 0.2+ | 0.3+ | 2006 08 28 | E12 | 0.4− | 0.4+ | | |
| 2002 09 06 | 704 | 0.2− | 0.9− | 2002 12 05 | 699 | 0.2+ | 0.3− | 2006 08 28 | E12 | 0.1− | 0.1+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.3− | 2002 12 05 | 699 | 0.3− | 0.3+ | 2006 08 28 | E12 | 0.0 | 0.3+ | | |
| 2002 10 04 | 704 | 0.1+ | 0.4+ | 2002 12 05 | 699 | 0.3+ | 0.8+ | 2006 08 28 | E12 | 0.3− | 0.3+ | | |
| 2002 10 04 | 704 | 0.6− | 0.0 | 2002 12 06 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.7+ | | |
| 2002 10 04 | 704 | 1.0− | 0.7+ | 2002 12 06 | 704 | 1.0+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.3+ | | |
| 2002 10 04 | 704 | 0.1+ | 0.4+ | 2002 12 06 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.5+ | | |
| 2002 10 04 | 704 | 0.2− | 0.6+ | 2002 12 06 | 704 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.9+ | | |
| 2002 10 04 | 699 | 0.6+ | 0.4− | 2002 12 06 | 704 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2002 10 04 | 699 | 0.1+ | 0.4+ | 2002 12 09 | 699 | 0.4+ | 0.6+ | 2006 10 12 | 644 | 0.5− | 0.0 | | |
| 2002 10 04 | 699 | 0.4− | 0.5+ | 2002 12 09 | 699 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.5− | 0.1+ | | |
| 2002 10 04 | 699 | 0.2− | 0.2+ | 2002 12 09 | 699 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.7+ | | |
| 2002 10 10 | 704 | 0.1− | 0.9− | 2002 12 09 | 699 | 0.6− | 0.2+ | 2006 10 21 | 703 | 0.4− | 1.0+ | | |
| 2002 10 10 | 704 | (0.2− | 1.6−) | 2002 12 11 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.8+ | 0.8+ | | |
| 2002 10 10 | 704 | 0.1− | 0.8− | 2002 12 11 | 644 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.7+ | 0.9+ | | |
| 2002 10 10 | 704 | 0.2− | 0.8− | 2002 12 11 | 644 | 0.0 | 0.3+ | 2006 11 18 | 703 | 0.3− | 0.8− | | |
| 2002 10 10 | 704 | 0.0 | 1.0− | 2004 01 31 | 645 | 0.1− | 0.0 | 2006 11 18 | 703 | 0.9− | 0.6− | | |
| 2002 10 12 | 704 | 0.7− | 0.5− | 2004 01 31 | 645 | 0.0 | 0.0 | 2006 11 18 | 703 | 1.0− | 1.5− | | |
| 2002 10 12 | 704 | 0.6− | 1.0− | 2005 04 02 | 691 | 0.1+ | 0.7+ | 2006 11 18 | 703 | 0.7− | 0.2+ | | |
| 2002 10 12 | 704 | 1.4− | 0.9− | 2005 04 02 | 691 | 0.4+ | 0.8+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2005 04 02 | 691 | 0.6+ | 0.2+ | 2006 11 21 | 704 | 1.3+ | 0.4− | | |
| 2002 11 01 | 704 | (3.5+ | 1.8+) | 2005 04 02 | 644 | 0.4+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2002 11 01 | 704 | (3.5+ | 1.5+) | 2005 04 02 | 644 | 0.8+ | 0.7+ | 2006 11 21 | 704 | 1.4+ | 0.5+ | | |
| 2002 11 01 | 704 | (3.8+ | 2.1+) | 2005 04 02 | 644 | 0.3+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.4− | | |
| 2002 11 06 | 704 | 0.2+ | 1.3+ | 2006 05 29 | E12 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.0 | | |
| 2002 11 06 | 704 | 0.3− | 0.7+ | 2006 05 29 | E12 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2002 11 06 | 704 | 0.2− | 1.0+ | 2006 05 29 | E12 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2002 11 06 | 704 | 0.6− | 0.7+ | 2006 05 29 | E12 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.4+ | | |
| 2002 11 06 | 704 | 0.5− | 0.6+ | 2006 07 30 | E12 | 0.4− | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.5− | | |
| 2002 11 11 | 699 | 0.2− | 0.2+ | 2006 07 30 | E12 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.5− | 0.3− | | |
| 2002 11 11 | 699 | 0.2− | 0.0 | 2006 07 30 | E12 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.1− | 1.2+ | | |
| 2002 11 11 | 699 | 0.3+ | 0.1− | 2006 07 30 | E12 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.7− | 0.2+ | | |
| 2002 11 11 | 699 | 0.1+ | 0.1− | 2006 08 16 | E12 | 0.1− | 0.4− | | | | | | |
| 2002 11 13 | 644 | 0.1− | 0.3+ | 2006 08 16 | E12 | 0.3+ | 0.4+ | | | | | | |

**(142736)∗ 2002 TJ$_{289}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.40250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24491678 | $\omega$ | 24.96445 | | +0.93659541 | −0.35026519 | |
| $a$ | 2.5300185 | $\Omega$ | 355.50240 | | +0.29579193 | +0.80582357 | |
| $e$ | 0.1632261 | $i$ | 7.44815 | | +0.18787275 | +0.47745437 | |
| $P$ | 4.02 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 1.4+ | 1.6− | 2002 12 06 | 699 | 0.1+ | 0.2+ | 2004 03 20 | 699 | 0.0 | 0.7− | | |
| 1998 11 16 | 704 | (2.5+ | 0.9−) | 2002 12 06 | 699 | 0.4+ | 0.3+ | 2004 03 23 | 691 | 0.0 | 0.1+ | | |
| 1998 11 16 | 704 | 0.8− | 0.0 | 2002 12 06 | 699 | 0.9+ | 0.6+ | 2004 03 23 | 691 | 0.1− | 0.0 | | |
| 1998 11 16 | 704 | 0.3+ | 0.1− | 2002 12 06 | 699 | 0.3+ | 1.0+ | 2004 03 23 | 691 | 0.1− | 0.0 | | |
| 1998 11 16 | 704 | 0.9+ | 0.5− | 2002 12 09 | 699 | (1.3+ | 2.0+) | 2004 03 27 | 704 | 0.5+ | 0.1+ | | |
| 1998 12 14 | 704 | (1.7− | 2.4+) | 2002 12 09 | 699 | 0.5− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 1.0− | | |
| 1998 12 14 | 704 | 1.2+ | 1.2− | 2002 12 09 | 699 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.7− | | |
| 1998 12 14 | 704 | 0.3− | 0.0 | 2002 12 09 | 699 | 0.1+ | 0.0 | 2004 03 27 | 704 | (1.8+ | 0.2−) | | |
| 1998 12 14 | 704 | 1.1− | 0.7+ | 2002 12 12 | 644 | 0.1− | 0.6− | 2004 03 30 | 691 | 0.2− | 0.3− | | |
| 1998 12 14 | 704 | (5.0− | 0.7−) | 2002 12 12 | 644 | 0.1+ | 0.5− | 2004 03 30 | 691 | 0.1+ | 0.1− | | |
| 1998 12 24 | 699 | 1.1+ | 0.5+ | 2002 12 12 | 644 | 0.0 | 0.4− | 2004 03 30 | 691 | 0.1+ | 0.2− | | |
| 1998 12 24 | 699 | 0.8− | 1.7− | 2002 12 14 | 704 | 1.4+ | 0.2− | 2004 03 31 | 691 | 0.0 | 0.2− | | |
| 1998 12 24 | 699 | 0.2+ | 0.8+ | 2002 12 14 | 704 | 1.2+ | 0.1− | 2004 03 31 | 691 | 0.0 | 0.0 | | |
| 2000 03 11 | 699 | 0.1− | 0.2− | 2002 12 14 | 704 | 1.4+ | 0.6− | 2004 03 31 | 691 | 0.0 | 0.3− | | |
| 2000 03 11 | 699 | 0.8− | 0.6+ | 2002 12 14 | 704 | (1.6+ | 0.9−) | 2004 04 12 | 691 | 0.2− | 0.0 | | |
| 2000 03 11 | 699 | 0.3+ | 0.7+ | 2002 12 14 | 704 | 1.4+ | 0.8− | 2004 04 12 | 691 | 0.0 | 0.2− | | |
| 2000 03 11 | 699 | 0.7− | 0.6− | 2003 01 04 | 704 | (1.9+ | 0.5−) | 2004 04 12 | 691 | 0.3− | 0.2− | | |
| 2000 03 11 | 704 | 0.6+ | 1.3+ | 2003 01 04 | 704 | (2.9+ | 0.6−) | 2004 04 24 | 691 | 0.3− | 0.2+ | | |
| 2000 03 11 | 704 | 0.7+ | 0.8+ | 2003 01 04 | 704 | (3.1+ | 0.1−) | 2004 04 24 | 691 | 0.4− | 0.0 | | |
| 2000 03 11 | 704 | 0.7+ | 1.1+ | 2003 01 20 | 644 | 0.1+ | 1.0+ | 2004 04 24 | 691 | 0.3− | 0.1+ | | |
| 2000 03 11 | 704 | 0.2+ | 1.0+ | 2003 01 20 | 644 | 0.0 | 1.0+ | 2006 08 30 | 704 | 0.4− | 0.3+ | | |
| 2000 04 05 | 704 | 0.4+ | 0.8+ | 2003 01 20 | 644 | 0.2+ | 1.1+ | 2006 08 30 | 704 | 1.0+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.0 | 0.3− | 2003 01 25 | 699 | 0.1+ | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.3− | | |
| 2000 04 05 | 704 | 0.1+ | 0.2− | 2003 01 25 | 699 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.5− | | |
| 2000 04 05 | 704 | 0.2− | 0.1+ | 2003 01 25 | 699 | 0.3− | 0.2+ | 2006 09 18 | 704 | 1.2+ | 0.6+ | | |
| 2002 09 06 | 704 | 0.0 | 0.5+ | 2003 01 25 | 699 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 1.3+ | 0.4+ | | |
| 2002 09 06 | 704 | 0.5− | 0.6+ | 2003 01 28 | 644 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.4+ | 1.4+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.1+ | 2003 01 28 | 644 | 0.3− | 0.4− | 2006 09 18 | 704 | 0.7+ | 1.0+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.5+ | 2003 01 28 | 644 | 0.4+ | 0.3− | 2006 09 18 | 704 | (0.2− | 2.0+) | | |
| 2002 10 04 | 704 | 0.2− | 0.4+ | 2003 01 31 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.1− | | |
| 2002 10 04 | 704 | 0.2− | 0.4+ | 2003 01 31 | 704 | 0.3− | 0.1+ | 2006 09 18 | 703 | (1.6− | 0.3+) | | |
| 2002 10 04 | 704 | 0.2− | 0.1+ | 2003 01 31 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.1− | | |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2003 01 31 | 704 | 1.0− | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.3+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2003 01 31 | 704 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.3+ | 1.0− | | |
| 2002 10 10 | 704 | 0.5+ | 1.1− | 2003 02 04 | 704 | 1.3− | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.8− | | |
| 2002 10 10 | 704 | 0.5+ | 0.7− | 2003 02 04 | 704 | 0.4− | 0.4+ | 2006 09 25 | 704 | 1.0+ | 0.0 | | |
| 2002 10 10 | 704 | 0.6+ | 0.6− | 2003 02 04 | 704 | (0.7− | 1.6+) | 2006 09 25 | 704 | 1.0+ | 0.0 | | |
| 2002 10 10 | 704 | 0.6+ | 0.5− | 2003 02 04 | 704 | (0.2− | 2.3+) | 2006 09 25 | 704 | 0.4+ | 0.5− | | |
| 2002 10 10 | 704 | 0.4+ | 0.7− | 2003 12 19 | 691 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.4+ | 0.0 | | |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2003 12 19 | 691 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.0 | 0.1− | | |
| 2002 10 12 | 704 | 0.4− | 0.4− | 2003 12 19 | 691 | 0.3+ | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.5− | 0.3− | 2003 12 19 | 691 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.1− | 0.2− | | |
| 2002 10 12 | 704 | 0.3− | 0.1+ | 2003 12 19 | 691 | 0.0 | 0.3− | 2006 10 20 | 704 | 0.3− | 1.3− | | |
| 2002 10 12 | 704 | 0.1− | 0.2− | 2003 12 19 | 691 | 0.1− | 0.3− | 2006 10 20 | 704 | 1.1− | 0.7− | | |
| 2002 11 06 | 704 | 0.1+ | 0.5+ | 2004 02 16 | 703 | 0.1− | 0.7+ | 2006 10 20 | 704 | 0.3− | 0.5+ | | |
| 2002 11 06 | 704 | 0.5− | 0.3− | 2004 02 16 | 703 | 0.2+ | 0.3− | 2006 10 20 | 704 | 0.3− | 0.1− | | |
| 2002 11 06 | 704 | 0.2+ | 0.1− | 2004 02 16 | 703 | 1.1+ | 0.5+ | 2006 10 20 | 704 | 0.6+ | 0.4+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.4− | 2004 02 16 | 703 | 0.5+ | 0.3+ | 2006 11 02 | 703 | 0.7+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.1− | 0.4− | 2004 02 25 | 683 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.3+ |
| 2002 11 12 | 699 | 0.7− | 0.6+ | 2004 02 25 | 683 | 1.0+ | 1.2+ | 2006 11 02 | 703 | 0.1+ | 0.1− |
| 2002 11 12 | 699 | 0.2+ | 0.0 | 2004 02 25 | 683 | (1.8− | 0.7+) | 2006 11 02 | 703 | 0.4− | 0.1+ |
| 2002 11 12 | 699 | 0.4− | 0.4+ | 2004 02 26 | 704 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2002 11 12 | 699 | 0.6− | 0.4+ | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 703 | (0.1− | 2.2+) |
| 2002 11 13 | 644 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 1.0+ | 0.6+ | 2006 11 15 | 703 | 0.5− | 1.0+ |
| 2002 11 13 | 644 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 11 15 | 703 | 1.3− | 0.1+ |
| 2002 11 13 | 644 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.1+ | 0.3+ |
| 2002 11 15 | 704 | 1.0− | 0.1− | 2004 03 01 | 683 | (0.1+ | 1.9−) | 2006 11 15 | 704 | 1.4− | 0.7− |
| 2002 11 15 | 704 | 1.1− | 0.5− | 2004 03 01 | 683 | 0.5− | 1.3− | 2006 11 15 | 704 | 0.4+ | 0.2+ |
| 2002 11 15 | 704 | 0.6− | 0.1− | 2004 03 01 | 683 | 0.4+ | 0.8+ | 2006 11 15 | 704 | 0.2− | 0.5+ |
| 2002 11 15 | 704 | 1.0− | 0.0 | 2004 03 15 | 691 | 0.1− | 0.0 | 2006 11 21 | 703 | 0.1+ | 0.1− |
| 2002 11 15 | 704 | 0.9− | 0.0 | 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 11 21 | 703 | 0.1− | 0.2− |
| 2002 12 05 | 699 | 0.3+ | 0.0 | 2004 03 15 | 691 | 0.1− | 0.0 | 2006 11 21 | 703 | 0.3+ | 0.3− |
| 2002 12 05 | 699 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 11 21 | 703 | 0.5+ | 0.1− |
| 2002 12 05 | 699 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 11 29 | 704 | 0.5− | 0.4+ |
| 2002 12 05 | 699 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.3− | 0.7+ | 2006 11 29 | 704 | 0.4+ | 1.5− |
| 2002 12 06 | 704 | 0.6− | 0.0 | 2004 03 18 | 704 | 0.1− | 0.8+ | 2006 11 29 | 704 | 1.3− | 1.4+ |
| 2002 12 06 | 704 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.8+ | 2006 11 29 | 704 | 0.4+ | 0.6− |
| 2002 12 06 | 704 | 0.5− | 0.4+ | 2004 03 20 | 699 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.9− | 0.9+ |
| 2002 12 06 | 704 | 0.7− | 0.2+ | 2004 03 20 | 699 | 0.8+ | 0.1− | | | | |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2004 03 20 | 699 | 0.1+ | 0.1− | | | | |

**(142737)∗ 2002 TB$_{290}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.01753 | | (2000.0) | | | |
| $n$ | 0.25756514 | $\omega$ | 147.83836 | | +0.41174804 | −0.90450281 |
| $a$ | 2.4464969 | $\Omega$ | 277.63780 | | +0.81057569 | +0.41921011 |
| $e$ | 0.1816015 | $i$ | 6.43476 | | +0.41644999 | +0.07834250 |
| $P$ | 3.83 | $H$ | 15.3 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 20 | 699 | 0.1+ | 0.3− | 2002 12 02 | 704 | 0.0 | 0.2− | 2003 01 18 | 608 | 0.4+ | 0.4+ |
| 1998 09 20 | 699 | 0.1− | 0.4− | 2002 12 02 | 704 | 0.8+ | 0.2+ | 2003 01 18 | 608 | 0.0 | 0.6+ |
| 1998 09 20 | 699 | 0.2+ | 1.3+ | 2002 12 02 | 704 | 0.7+ | 0.2+ | 2003 01 20 | 644 | 0.2− | 0.4+ |
| 1998 10 29 | 699 | 0.1− | 0.1+ | 2002 12 06 | 704 | 0.2+ | 0.2+ | 2003 01 20 | 644 | 0.0 | 0.2+ |
| 1998 10 29 | 699 | 0.4+ | 0.3+ | 2002 12 06 | 704 | 0.0 | 0.1− | 2003 01 20 | 644 | 0.2− | 0.2+ |
| 1998 10 29 | 699 | 0.5− | 0.2− | 2002 12 06 | 704 | 0.1− | 0.2+ | 2003 02 01 | 644 | 0.2+ | 0.2+ |
| 2000 04 06 | 699 | 0.5− | 0.3+ | 2002 12 06 | 704 | 0.3− | 0.1+ | 2003 02 01 | 644 | 0.5+ | 0.7+ |
| 2000 04 06 | 699 | 0.5+ | 0.3− | 2002 12 06 | 704 | 0.5− | 0.2+ | 2003 02 01 | 644 | 0.2+ | 0.6+ |
| 2000 04 06 | 699 | 0.5+ | 0.3+ | 2002 12 07 | 704 | 0.1+ | 0.4+ | 2004 04 13 | 644 | 0.1− | 0.5+ |
| 2000 04 06 | 699 | 0.1+ | 0.2+ | 2002 12 07 | 704 | 0.4+ | 0.4+ | 2004 04 13 | 644 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | 1.0− | 1.0− | 2002 12 07 | 704 | 0.2+ | 0.2+ | 2004 04 13 | 644 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 0.6− | 0.2− | 2002 12 07 | 704 | 0.0 | 0.0 | 2005 07 03 | G96 | 0.0 | 0.6+ |
| 2002 09 06 | 704 | 0.2− | 0.8− | 2002 12 07 | 704 | 0.4+ | 0.1− | 2005 07 03 | G96 | 0.4− | 0.6+ |
| 2002 09 06 | 704 | 0.4− | 0.6− | 2002 12 11 | 704 | 0.1+ | 0.1− | 2005 07 03 | G96 | 0.2− | 0.6+ |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.2+ | 0.2− | 2005 07 03 | G96 | 0.1− | 0.8+ |
| 2002 10 04 | 704 | 0.6− | 0.9− | 2002 12 11 | 704 | 0.2+ | 0.1− | 2005 07 15 | 691 | 0.2− | 0.4+ |
| 2002 10 04 | 704 | 0.2− | 0.8− | 2002 12 11 | 704 | 0.4+ | 0.1+ | 2005 07 15 | 691 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.1− | 1.0− | 2002 12 11 | 704 | 0.0 | 0.0 | 2005 07 15 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.2− | 1.2− | 2002 12 14 | 704 | 0.3− | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.6− |
| 2002 10 10 | 704 | 0.5− | 0.3− | 2002 12 14 | 704 | 0.1− | 0.7+ | 2006 11 02 | G96 | 0.1− | 0.6− |
| 2002 10 10 | 704 | 0.3+ | 0.2− | 2002 12 14 | 704 | 0.1− | 0.6+ | 2006 11 02 | G96 | 0.1− | 0.3− |
| 2002 10 10 | 704 | 0.1+ | 0.4+ | 2002 12 14 | 704 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.4− |
| 2002 10 10 | 704 | 0.9− | 0.6+ | 2002 12 14 | 704 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2002 10 10 | 704 | 0.2+ | 0.1+ | 2002 12 27 | 644 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 10 12 | 704 | 0.7+ | 0.4+ | 2002 12 27 | 644 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.5− | 0.5− |
| 2002 10 12 | 704 | 0.1− | 0.2− | 2002 12 27 | 644 | 0.5+ | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 10 12 | 704 | 0.4+ | 0.4− | 2002 12 27 | 644 | 0.2− | 0.3+ | 2006 11 16 | 704 | (0.3+ | 1.9+) |
| 2002 10 12 | 704 | 0.4+ | 0.4+ | 2002 12 27 | 644 | 0.8+ | 0.8+ | 2006 11 16 | 704 | 0.2+ | 1.0+ |
| 2002 10 12 | 704 | 1.0+ | 0.4+ | 2002 12 27 | 644 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.8+ | 1.1+ |
| 2002 11 08 | 704 | 0.1+ | 0.1− | 2002 12 31 | 699 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.3+ |
| 2002 11 08 | 704 | 0.4− | 0.2+ | 2002 12 31 | 699 | 1.0− | 0.6+ | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2002 11 08 | 704 | 0.3− | 0.1− | 2002 12 31 | 699 | 1.1− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2002 11 08 | 704 | 0.3− | 0.0 | 2002 12 31 | 699 | (1.6− | 0.2+) | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2002 11 08 | 704 | 0.5− | 0.1− | 2003 01 05 | 704 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.6− | 0.5− |
| 2002 11 12 | 704 | 0.5+ | 0.0 | 2003 01 05 | 704 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.1− | 1.8+ |
| 2002 11 12 | 704 | 0.5− | 0.1− | 2003 01 05 | 704 | 0.1− | 0.2− | 2006 12 01 | 704 | 1.2+ | 0.4+ |
| 2002 11 12 | 704 | 0.0 | 0.4− | 2003 01 05 | 704 | 0.5− | 0.4− | 2006 12 01 | 704 | 0.9+ | 0.1+ |
| 2002 11 12 | 704 | 0.2+ | 1.0− | 2003 01 05 | 704 | 0.5− | 0.3− | 2006 12 01 | 704 | 0.3− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2003 01 18 | 608 | 0.3+ | 0.9+ | | | | |

**(142738)∗ 2002 TD$_{290}$ = 1999 CT$_{44}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38105)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 258.96142 | | (2000.0) | | | |
| $n$ | 0.21820576 | $\omega$ | 105.48951 | | −0.61109749 | −0.78960700 |
| $a$ | 2.7324899 | $\Omega$ | 22.46264 | | +0.65910513 | −0.54642067 |
| $e$ | 0.1641227 | $i$ | 8.35271 | | +0.43833810 | −0.27918674 |
| $P$ | 4.52 | $H$ | 14.6 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.3+ | 1.9+ | 2004 01 30 | 699 | 0.8− | 1.5+ | 2004 05 21 | 691 | 0.1+ | 0.2+ |
| 1999 02 10 | 704 | 0.3+ | 1.6+ | 2004 03 14 | 644 | 0.0 | 0.2+ | 2006 09 06 | 644 | 0.5− | 0.4+ |
| 1999 02 10 | 704 | 0.2+ | 1.8+ | 2004 03 14 | 644 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.4− | 0.1+ |
| 1999 02 10 | 704 | 0.6− | 0.7+ | 2004 03 14 | 644 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.4− | 0.7+ |
| 1999 02 13 | 704 | (1.7+ | 2.1−) | 2004 03 17 | 704 | 0.1+ | 0.3− | 2006 09 16 | 704 | 1.4+ | 0.7+ |
| 1999 02 13 | 704 | 0.1− | 0.4− | 2004 03 17 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 704 | (1.8+ | 0.2−) |
| 1999 02 13 | 704 | (1.5+ | 2.1−) | 2004 03 17 | 704 | 0.4− | 0.0 | 2006 09 16 | 704 | 1.0+ | 0.2+ |
| 1999 02 13 | 704 | 0.9+ | 1.2− | 2004 03 17 | 704 | 0.0 | 0.3− | 2006 09 16 | 704 | 0.2+ | 0.0 |
| 1999 02 13 | 704 | 0.7+ | 1.0− | 2004 03 17 | 704 | 0.4− | 0.4− | 2006 09 16 | 704 | 1.2− | 0.4− |
| 2001 08 19 | 704 | (0.0 | 2.9+) | 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.5+ |
| 2001 08 19 | 704 | (0.4+ | 3.6+) | 2004 03 18 | 704 | 0.4− | 0.4− | 2006 09 16 | 644 | 0.6− | 0.3+ |
| 2001 08 19 | 704 | (0.3+ | 2.9+) | 2004 03 18 | 704 | 0.2− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | (2.4− | 1.5+) | 2004 03 18 | 704 | 0.8− | 0.4− | 2006 09 20 | 704 | (1.2− | 1.8+) |
| 2002 10 10 | 704 | (3.8− | 0.8+) | 2004 03 24 | 699 | 1.1− | 1.3+ | 2006 09 20 | 704 | 0.9+ | 1.2+ |
| 2002 10 10 | 704 | (2.4− | 0.6+) | 2004 03 24 | 699 | 0.4− | 0.6+ | 2006 09 20 | 704 | 1.3− | 0.4+ |
| 2002 10 10 | 704 | (2.7− | 0.9+) | 2004 03 24 | 699 | 0.8+ | 0.6+ | 2006 09 20 | 704 | 1.2− | 0.3+ |
| 2002 10 10 | 704 | (2.1− | 0.7+) | 2004 03 24 | 699 | (1.6− | 0.3+) | 2006 09 20 | 644 | 0.5− | 0.5+ |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2004 03 25 | 699 | 1.0− | 0.3+ | 2006 09 20 | 644 | 0.6− | 0.4+ |
| 2002 10 12 | 704 | 0.6+ | 0.1+ | 2004 03 25 | 699 | 0.3− | 0.9+ | 2006 09 20 | 644 | 0.4− | 0.3+ |
| 2002 10 12 | 704 | 0.1+ | 0.4+ | 2004 03 25 | 699 | 1.1− | 0.4+ | 2006 09 27 | 704 | 0.5+ | 1.5+ |
| 2002 10 12 | 704 | 0.3− | 0.8+ | 2004 03 25 | 699 | (1.2+ | 3.5+) | 2006 09 27 | 704 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.9+ | 2006 09 27 | 704 | 0.4+ | 0.5+ |
| 2002 11 12 | 704 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.3− | 1.1+ |
| 2002 11 12 | 704 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.1+ | 0.4+ |
| 2002 11 12 | 704 | 1.0+ | 0.5− | 2004 03 27 | 704 | 0.3− | 0.8+ | 2006 09 28 | 704 | 0.1− | 0.2+ |
| 2002 11 12 | 704 | 1.3− | 0.4− | 2004 03 27 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 704 | 0.5+ | 1.0+ |
| 2002 11 15 | 704 | 0.0 | 0.6+ | 2004 03 31 | 704 | 0.0 | 0.4− | 2006 09 28 | 704 | 0.5+ | 0.1+ |
| 2002 11 15 | 704 | 0.1+ | 0.8+ | 2004 03 31 | 704 | 0.8+ | 0.0 | 2006 10 10 | 644 | 0.4− | 0.3+ |
| 2002 11 15 | 704 | 1.4+ | 1.2+ | 2004 03 31 | 704 | 0.6+ | 0.7+ | 2006 10 10 | 644 | 0.6− | 0.4+ |
| 2002 11 15 | 704 | 0.8+ | 0.8+ | 2004 03 31 | 704 | 0.8+ | 0.3+ | 2006 10 10 | 644 | 0.4− | 0.4+ |
| 2002 12 05 | 704 | 1.2− | 0.5− | 2004 03 31 | 704 | 0.3+ | 0.2− | 2006 10 15 | 106 | 0.9− | 0.3+ |
| 2002 12 05 | 704 | 1.1− | 0.6− | 2004 04 12 | 699 | 0.3+ | 0.2− | 2006 10 15 | 106 | 0.1− | 0.9+ |
| 2002 12 05 | 704 | 1.2− | 0.8− | 2004 04 12 | 699 | 0.0 | 0.1+ | 2006 10 15 | 106 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 1.1− | 0.7− | 2004 04 12 | 699 | 0.2+ | 0.5− | 2006 10 15 | 106 | 0.9− | 0.7− |
| 2002 12 05 | 704 | 1.2− | 0.8− | 2004 04 12 | 699 | (1.6− | 1.2−) | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2002 12 15 | 704 | 0.6+ | 0.2+ | 2004 04 17 | 704 | 0.7− | 1.3+ | 2006 10 19 | 644 | 0.5− | 0.3+ |
| 2002 12 15 | 704 | 0.1+ | 0.8+ | 2004 04 17 | 704 | 1.3+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2002 12 15 | 704 | 0.3+ | 0.3+ | 2004 04 17 | 704 | 0.8+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 12 15 | 704 | 0.3+ | 0.2+ | 2004 04 17 | 704 | 0.2+ | 0.9+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.9+ | 1.0+ | 2004 04 20 | 704 | 0.8+ | 0.6+ | 2006 10 22 | G96 | 0.7− | 0.1− |
| 2003 01 04 | 704 | (0.5+ | 1.7+) | 2004 04 20 | 704 | 0.8+ | 0.8− | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2003 01 04 | 704 | 0.5+ | 0.6+ | 2004 04 20 | 704 | 0.4+ | 0.8+ | 2006 11 06 | 644 | 0.1− | 0.9+ |
| 2003 01 04 | 704 | (0.5− | 1.8+) | 2004 04 20 | 704 | 0.5+ | 0.9+ | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2003 01 04 | 704 | (0.5− | 1.8+) | 2004 05 11 | 699 | 0.1+ | 0.7− | 2006 11 06 | 644 | 0.3− | 0.4+ |
| 2003 01 29 | 644 | 0.4+ | 0.3+ | 2004 05 11 | 699 | 0.6+ | 0.5− | 2006 11 11 | 703 | (1.1+ | 2.0+) |
| 2003 01 29 | 644 | 0.6+ | 0.3+ | 2004 05 11 | 699 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.8+ | 0.4+ |
| 2003 01 29 | 644 | 0.1+ | 0.6+ | 2004 05 11 | 699 | 0.3− | 0.6+ | 2006 11 11 | G96 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 19 | 644 | 0.0 | 0.1+ | 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2003 02 19 | 644 | 0.2− | 0.4− | 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 1.0+ |
| 2003 02 19 | 644 | 0.1+ | 0.3− | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2003 02 22 | 644 | 0.1− | 0.1− | 2004 05 16 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | (0.7+ | 1.6+) |
| 2003 02 22 | 644 | 0.0 | 0.2− | 2004 05 16 | 704 | 1.2+ | 0.5− | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2003 02 22 | 644 | 0.4− | 0.3− | 2004 05 16 | 704 | 0.0 | 0.8+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2004 01 30 | 699 | 0.7+ | 0.6− | 2004 05 16 | 704 | 0.5+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 01 30 | 699 | 0.1+ | 0.6+ | 2004 05 21 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.6− | 0.1− |
| 2004 01 30 | 699 | 0.3+ | 0.2− | 2004 05 21 | 691 | 0.0 | 0.4+ | | | | |

**(142739)∗ 2002 TK$_{290}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.50551 | | (2000.0) | | | |
| $n$ | 0.22440639 | $\omega$ | 105.82632 | | +0.89720255 | +0.20136191 |
| $a$ | 2.6819205 | $\Omega$ | 243.99714 | | −0.29049403 | +0.93944321 |
| $e$ | 0.1945893 | $i$ | 25.93227 | | +0.33262712 | +0.27730821 |
| $P$ | 4.39 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 704 | 0.6+ | 1.0+ | 2002 11 27 | 699 | 0.7+ | 0.1+ | 2006 05 31 | 703 | 1.5− | 0.5− |
| 2001 05 29 | 704 | 0.0 | 0.1− | 2002 11 28 | 699 | 0.4− | 0.2− | 2006 05 31 | 703 | (1.8− | 0.5−) |
| 2001 05 29 | 704 | 0.5− | 0.7+ | 2002 11 28 | 699 | 0.4− | 0.2− | 2006 05 31 | 703 | 0.5− | 0.2− |
| 2001 06 21 | 704 | 0.3− | 0.7+ | 2002 11 28 | 699 | 0.0 | 0.1+ | 2006 06 01 | G96 | 0.1+ | 0.0 |
| 2001 06 21 | 704 | 0.7− | 1.0+ | 2002 11 28 | 699 | 0.5− | 0.0 | 2006 06 01 | G96 | (1.6+ | 2.4−) |
| 2001 06 21 | 704 | 0.8− | 0.7+ | 2002 12 02 | 704 | 0.1+ | 0.1+ | 2006 06 01 | G96 | 0.1− | 0.1+ |
| 2001 06 21 | 704 | 0.4− | 0.7+ | 2002 12 02 | 704 | 0.3+ | 0.1+ | 2006 06 01 | G96 | 0.1+ | 0.1+ |
| 2001 06 21 | 704 | 0.4− | 0.6+ | 2002 12 02 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.4− |
| 2002 09 07 | 704 | (1.9+ | 0.6−) | 2002 12 10 | 644 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.0 | 0.5− |
| 2002 09 07 | 704 | 0.1− | 1.1− | 2002 12 10 | 644 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.4− |
| 2002 09 07 | 704 | 0.7+ | 0.0 | 2002 12 10 | 644 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | 1.3+ | 0.3+ | 2002 12 11 | 704 | 0.9− | 0.8+ | 2006 09 18 | 704 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.7+ | 0.3− | 2002 12 11 | 704 | 0.9− | 0.9+ | 2006 09 18 | 704 | 0.8+ | 0.4+ |
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2002 12 11 | 704 | 0.5− | 0.8+ | 2006 09 18 | 704 | 0.4+ | 0.6+ |
| 2002 10 04 | 704 | 0.5− | 0.0 | 2002 12 11 | 704 | 0.8+ | 1.2+ | 2006 09 18 | 704 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 0.9− | 0.7+ | 2006 10 02 | 703 | 1.2− | 0.0 |
| 2002 10 04 | 704 | 0.2+ | 0.2− | 2002 12 15 | 608 | 0.4+ | 0.2− | 2006 10 02 | 703 | 0.3− | 0.3− |
| 2002 10 10 | 704 | 0.8+ | 0.1− | 2002 12 15 | 608 | 0.5+ | 0.4− | 2006 10 02 | 703 | 0.3− | 0.1− |
| 2002 10 10 | 704 | 1.2+ | 0.0 | 2002 12 15 | 608 | 0.6+ | 0.2− | 2006 10 02 | 703 | 0.6− | 0.4+ |
| 2002 10 10 | 704 | 1.3+ | 0.3− | 2002 12 31 | 699 | 0.2− | 0.3− | 2006 10 03 | 704 | 0.9+ | 0.1+ |
| 2002 10 10 | 704 | 0.8+ | 0.1+ | 2002 12 31 | 699 | 0.6+ | 0.1+ | 2006 10 03 | 704 | 0.9+ | 0.0 |
| 2002 10 10 | 704 | (1.6+ | 0.2−) | 2002 12 31 | 699 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.3+ | 0.1− |
| 2002 10 12 | 704 | 0.3− | 0.1+ | 2002 12 31 | 699 | 1.1+ | 0.0 | 2006 10 03 | 704 | 0.6+ | 0.7+ |
| 2002 10 12 | 704 | 0.1+ | 0.5+ | 2003 01 01 | 704 | 0.4− | 0.0 | 2006 10 23 | 703 | 0.3+ | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.6− | 2003 01 01 | 704 | 0.0 | 0.5+ | 2006 10 23 | 703 | 0.1− | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.4− | 2003 01 01 | 704 | 0.5− | 0.6+ | 2006 10 23 | 703 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 0.0 | 0.2− | 2003 01 01 | 704 | 0.0 | 1.1+ | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 2002 11 02 | 644 | (2.6+ | 2.4+) | 2003 01 01 | 704 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.1+ |
| 2002 11 02 | 644 | (2.0+ | 2.3+) | 2003 01 07 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 703 | (1.2+ | 2.1−) |
| 2002 11 02 | 644 | (2.3+ | 2.1+) | 2003 01 07 | 704 | 0.3− | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.9− |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2003 01 07 | 704 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.6+ | 0.6− |
| 2002 11 06 | 704 | 0.4+ | 0.0 | 2003 01 07 | 704 | (1.6− | 0.0 ) | 2006 11 02 | 703 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | 0.2− | 0.1− | 2003 01 07 | 704 | 0.7− | 0.3− | 2006 11 02 | 703 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2003 01 25 | 699 | (3.2− | 0.4+) | 2006 11 15 | 703 | 0.6+ | 0.3+ |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2003 01 25 | 699 | (2.6− | 1.1+) | 2006 11 15 | 703 | 0.7− | 0.0 |
| 2002 11 14 | 704 | 1.1− | 0.8+ | 2003 01 25 | 699 | 0.4− | 0.6+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | (1.7− | 0.9+) | 2003 01 25 | 699 | 0.5− | 0.2− | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2002 11 14 | 704 | 1.4− | 1.0+ | 2003 02 02 | 704 | (0.4− | 2.2+) | 2006 11 16 | 704 | 0.2− | 0.5− |
| 2002 11 14 | 704 | (1.0− | 1.8+) | 2003 02 02 | 704 | (0.5− | 2.1+) | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2002 11 24 | 644 | 0.0 | 0.5− | 2003 02 02 | 704 | 0.6+ | 0.7+ | 2006 11 16 | 704 | 0.5+ | 0.2+ |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2005 05 10 | 699 | 0.5− | 0.9+ | 2006 11 16 | 704 | 0.1− | 0.1− |
| 2002 11 24 | 644 | 0.1+ | 0.5− | 2005 05 10 | 699 | 0.2− | 1.2+ | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2005 05 10 | 699 | 0.3− | 0.9+ | 2006 11 22 | 703 | 0.3− | 0.2− |
| 2002 11 24 | 644 | 0.2+ | 0.5− | 2005 05 10 | 699 | 0.8+ | 0.2− | 2006 11 22 | 703 | 0.3− | 0.0 |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2005 05 12 | 703 | 0.5+ | 1.3+ | 2006 11 22 | 703 | 0.3+ | 0.1− |
| 2002 11 27 | 699 | 0.5+ | 0.2− | 2005 05 12 | 703 | (0.4+ | 1.7+) | 2006 11 22 | 703 | 0.1− | 0.2− |
| 2002 11 27 | 699 | 0.5+ | 0.4− | 2005 05 12 | 703 | 0.3+ | 0.5+ | | | | |
| 2002 11 27 | 699 | 0.2+ | 0.0 | 2006 05 31 | 703 | 0.5− | 0.1− | | | | |

**(142740)∗ 2002 TC$_{291}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.44636 | | (2000.0) | | | |
| $n$ | 0.20909144 | $\omega$ | 49.22193 | | +0.73734480 | −0.67547995 |
| $a$ | 2.8113303 | $\Omega$ | 353.25880 | | +0.60032409 | +0.66000918 |
| $e$ | 0.1038162 | $i$ | 3.43551 | | +0.30973155 | +0.32880802 |
| $P$ | 4.71 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 691 | 0.2− | 0.7− | 2002 11 12 | 704 | 0.6+ | 0.5+ | 2004 02 16 | 691 | 0.1+ | 0.1+ |
| 1999 01 23 | 691 | 0.2− | 0.8− | 2002 11 12 | 704 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.4+ | 1.4+ |
| 1999 01 23 | 691 | 0.3− | 0.7− | 2002 11 12 | 704 | 0.2− | 0.2− | 2004 02 18 | 704 | 0.8+ | 1.3+ |
| 2002 10 10 | 704 | 1.4+ | 1.3− | 2002 11 12 | 704 | 0.5+ | 0.1+ | 2004 02 18 | 704 | 0.1+ | 0.6+ |
| 2002 10 10 | 704 | 0.5+ | 0.5+ | 2002 11 14 | 704 | 0.4− | 0.2+ | 2004 02 18 | 704 | 0.7+ | 0.1− |
| 2002 10 10 | 704 | 0.5− | 0.3− | 2002 11 14 | 704 | 0.1− | 0.3+ | 2004 03 14 | 691 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.4+ | 0.7− | 2002 11 14 | 704 | 0.6− | 0.0 | 2004 03 14 | 691 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 0.6− | 0.7− | 2002 11 14 | 704 | 0.6− | 0.5+ | 2004 03 14 | 691 | 0.2− | 0.1− |
| 2002 10 12 | 704 | 0.3− | 0.1− | 2002 11 14 | 704 | 0.2− | 0.1+ | 2004 03 30 | 691 | 0.0 | 0.4+ |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2002 11 23 | 644 | 0.1+ | 0.4+ | 2004 03 30 | 691 | 0.8+ | 0.3+ |
| 2002 11 04 | 644 | 0.2+ | 0.1+ | 2002 11 23 | 644 | 0.0 | 0.3+ | 2004 03 30 | 691 | 0.2+ | 0.1+ |
| 2002 11 04 | 644 | 0.0 | 0.3+ | 2002 11 23 | 644 | 0.1+ | 0.3+ | 2005 05 16 | 644 | 0.3+ | 0.4+ |
| 2002 11 04 | 644 | 0.3+ | 0.3+ | 2002 11 24 | 644 | 0.3− | 0.8+ | 2005 05 16 | 644 | 0.0 | 1.0+ |
| 2002 11 05 | 644 | 0.2− | 0.2+ | 2002 11 24 | 644 | 0.4− | 0.8+ | 2005 05 16 | 644 | 0.4− | 0.4+ |
| 2002 11 05 | 704 | 0.6− | 0.5+ | 2002 11 24 | 644 | 0.2− | 0.8+ | 2006 08 15 | 644 | 0.2− | 0.6+ |
| 2002 11 05 | 704 | 0.2+ | 0.6− | 2002 11 28 | 699 | 0.1+ | 0.4+ | 2006 08 15 | 644 | 0.2− | 0.3+ |
| 2002 11 05 | 704 | 0.5+ | 0.6− | 2002 11 28 | 699 | 0.5− | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 699 | 0.1+ | 0.3− | 2002 11 28 | 699 | 0.7+ | 0.8+ | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 644 | 0.1− | 0.3+ | 2002 11 28 | 699 | 1.0+ | 0.6− | 2006 08 18 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.7+ | 0.5− | 2002 12 02 | 704 | 1.3− | 1.1+ | 2006 08 18 | 644 | 0.2+ | 0.3+ |
| 2002 11 05 | 699 | 0.3− | 0.3− | 2002 12 02 | 704 | 1.2− | 1.1− | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2002 11 05 | 699 | 0.8+ | 0.6+ | 2002 12 02 | 704 | 1.1− | 0.6+ | 2006 08 28 | 703 | 1.3+ | 0.2− |
| 2002 11 05 | 699 | (1.8+ | 0.7+) | 2002 12 02 | 704 | (1.7− | 1.2+) | 2006 08 28 | 703 | 0.1+ | 0.6+ |
| 2002 11 05 | 644 | 0.0 | 0.4+ | 2002 12 11 | 644 | 0.1− | 0.4+ | 2006 08 28 | 703 | (4.7− | 0.2+) |
| 2002 11 08 | 704 | 0.2− | 0.3+ | 2002 12 11 | 644 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2002 11 08 | 704 | 0.2+ | 0.5+ | 2002 12 11 | 644 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2002 11 08 | 704 | 0.6+ | 0.4+ | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.3+ |
| 2002 11 08 | 704 | 0.7− | 0.6+ | 2002 12 11 | 704 | 0.4+ | 0.6− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2002 11 10 | 704 | 0.1+ | 0.1− | 2002 12 11 | 704 | 0.3+ | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 11 10 | 704 | 0.2− | 0.4− | 2002 12 11 | 704 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2002 11 10 | 704 | 0.5− | 0.2− | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.1− |

**(142741)∗ 2002 TE$_{291}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.54770 | | (2000.0) | | | |
| $n$ | 0.24184611 | $\omega$ | 326.92573 | | +0.78221512 | +0.62296972 |
| $a$ | 2.5513888 | $\Omega$ | 354.52541 | | −0.55463327 | +0.69124629 |
| $e$ | 0.2877691 | $i$ | 4.17463 | | −0.28376300 | +0.36617932 |
| $P$ | 4.08 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 691 | 0.2− | 0.4+ | 2002 12 11 | 644 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.0 |
| 2001 03 31 | 691 | 0.1− | 0.2+ | 2002 12 11 | 644 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2001 03 31 | 691 | 0.2− | 0.2− | 2004 02 11 | 691 | 0.1− | 0.3− | 2006 10 13 | 691 | 0.4− | 0.3+ |
| 2002 10 10 | 704 | 1.0+ | 0.0 | 2004 02 11 | 691 | 0.4− | 0.2− | 2006 10 13 | 691 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.2− | 0.4− | 2004 02 11 | 691 | 0.2− | 0.3− | 2006 10 13 | 691 | 0.4− | 0.3+ |
| 2002 10 10 | 704 | 0.6+ | 0.7+ | 2005 03 11 | G96 | 0.4− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 0.4+ | 0.8+ | 2005 03 11 | G96 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.7− | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.7− | 0.4+ | 2005 03 11 | G96 | 0.7− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.2+ | 0.1+ | 2005 03 11 | G96 | 0.1+ | 0.8+ | 2006 10 27 | 703 | 0.0 | 0.4− | | |
| 2002 11 01 | 644 | 0.8+ | 1.2+ | 2005 03 13 | 691 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.0 | | |
| 2002 11 01 | 644 | 1.4+ | 1.3+ | 2005 03 13 | 691 | 0.2+ | 0.1− | 2006 10 27 | 703 | 1.0− | 0.3− | | |
| 2002 11 01 | 644 | (1.6+ | 0.1+) | 2005 03 13 | 691 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.2+ | | |
| 2002 11 05 | 644 | 0.1+ | 0.8− | 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | (1.7+ | 0.7+) | | |
| 2002 11 05 | 644 | 0.1− | 0.8− | 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.7+ | | |
| 2002 11 05 | 644 | 0.4+ | 0.5− | 2005 03 17 | 691 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.9− | | |
| 2002 11 08 | 704 | (3.1− | 0.1−) | 2005 04 04 | 691 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 0.5− | 1.1+ | | |
| 2002 11 08 | 704 | 0.9− | 0.6+ | 2005 04 04 | 691 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.0 | 1.0+ | | |
| 2002 11 08 | 704 | 1.4− | 0.6− | 2005 04 04 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.2+ | | |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2006 07 22 | G96 | 0.2− | 1.3+ | 2006 11 16 | 704 | 0.2+ | 0.0 | | |
| 2002 11 12 | 704 | 0.2+ | 0.4− | 2006 07 22 | G96 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.4+ | | |
| 2002 11 12 | 704 | 0.6+ | 0.2− | 2006 07 22 | G96 | 1.1+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.4− | | |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 07 22 | G96 | 1.1− | 0.6− | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2002 11 12 | 704 | 0.8+ | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.8+ | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2002 11 14 | 704 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2002 11 14 | 704 | 0.6− | 1.0+ | 2006 08 28 | 703 | 0.8− | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2− | | |
| 2002 11 14 | 704 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.7+ | | |
| 2002 11 14 | 704 | 0.5− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.5+ | | |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2002 12 06 | 704 | 0.9− | 0.3− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.1+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 1.2+ | 1.0+ | | |
| 2002 12 06 | 704 | 0.3+ | 0.8+ | 2006 10 02 | G96 | 0.3+ | 0.1− | | | | | | |
| 2002 12 11 | 644 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− | | | | | | |

**(142742)∗ 2002 TZ$_{291}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.10837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23170918 | $\omega$ | 53.98485 | | +0.15358851 | −0.98260181 | |
| $a$ | 2.6252694 | $\Omega$ | 27.73633 | | +0.81898297 | +0.06745543 | |
| $e$ | 0.1602009 | $i$ | 12.96594 | | +0.55288106 | +0.17304174 | |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 0.3− | 0.9+ | 2004 04 16 | 644 | 0.4+ | 1.0+ | 2006 10 15 | 691 | 0.1− | 0.2+ | | |
| 1998 12 12 | 704 | 0.0 | 0.2+ | 2004 04 16 | 644 | 0.6+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1+ | | |
| 1998 12 12 | 704 | 1.4− | 0.2− | 2004 04 16 | 644 | 0.5+ | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.2+ | | |
| 1998 12 12 | 704 | 1.7+ | 1.2+ | 2004 04 17 | 704 | 0.5− | 1.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | | |
| 1998 12 12 | 704 | 0.1+ | 1.5− | 2004 04 17 | 704 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.0 | | |
| 2002 09 06 | 704 | 0.4+ | 0.1+ | 2004 04 17 | 704 | 0.5− | 1.4+ | 2006 10 21 | 703 | 0.1− | 0.0 | | |
| 2002 09 06 | 704 | 0.4− | 0.4− | 2004 04 17 | 704 | 0.1− | 1.0+ | 2006 10 21 | 703 | 0.9− | 0.1− | | |
| 2002 09 06 | 704 | 0.7− | 0.5+ | 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.5+ | | |
| 2002 10 04 | 704 | 0.4− | 1.0+ | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2004 04 19 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 2002 10 04 | 704 | 0.5+ | 0.4+ | 2004 04 20 | 703 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.1+ | | |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2004 04 20 | 703 | (0.7+ | 1.6+) | 2006 10 23 | 704 | 0.1+ | 1.2+ | | |
| 2002 10 04 | 704 | 0.5− | 0.9+ | 2004 04 20 | 703 | 1.2+ | 0.5+ | 2006 10 23 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 10 | 704 | (1.6− | 2.3+) | 2004 04 20 | 703 | 1.2− | 0.2− | 2006 10 23 | 704 | 0.3+ | 0.2+ | | |
| 2002 10 10 | 704 | (2.9− | 3.3+) | 2004 04 21 | 704 | 0.8+ | 0.9+ | 2006 10 23 | 704 | 0.2− | 1.2+ | | |
| 2002 10 10 | 704 | (0.7− | 2.8+) | 2004 04 21 | 704 | 0.8+ | 0.7+ | 2006 10 23 | 704 | 0.3− | 0.2+ | | |
| 2002 10 10 | 704 | (1.1− | 2.2+) | 2004 04 21 | 704 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.0 | | |
| 2002 10 12 | 704 | 0.6+ | 0.3+ | 2004 04 25 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.4− | 0.1+ | | |
| 2002 10 12 | 704 | 1.2+ | 1.0+ | 2004 04 25 | 691 | 0.5+ | 0.3+ | 2006 10 27 | 691 | 0.3− | 0.2+ | | |
| 2002 10 12 | 704 | 0.7+ | 0.6− | 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 704 | 0.1− | 1.1+ | | |
| 2002 10 12 | 704 | 0.6− | 0.5+ | 2004 04 26 | 568 | 0.3+ | 0.2+ | 2006 10 28 | 704 | 0.1− | 0.5+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.4+ | 2004 04 26 | 568 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 0.2+ | 0.8+ | | |
| 2002 10 12 | 704 | 0.2+ | 0.3+ | 2004 04 26 | 568 | 0.5+ | 0.4+ | 2006 10 28 | 704 | 0.7+ | 0.2− | | |
| 2002 10 12 | 704 | 0.1+ | 0.0 | 2004 04 27 | 568 | 0.5+ | 0.0 | 2006 10 28 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 12 | 704 | (1.8+ | 0.1−) | 2004 05 10 | 691 | 0.5+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2002 10 12 | 704 | 0.2+ | 0.3+ | 2004 05 10 | 691 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2002 10 31 | 704 | 0.1− | 0.0 | 2004 05 10 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.2− | | |
| 2002 10 31 | 704 | 0.1− | 0.6− | 2004 05 11 | 699 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2002 10 31 | 704 | 0.8+ | 0.5− | 2004 05 11 | 699 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 | | |
| 2002 10 31 | 704 | 0.2+ | 0.4− | 2004 05 11 | 699 | 0.8− | 1.4− | 2006 10 31 | 691 | 0.3+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.2+ | 0.3− | 2004 05 11 | 699 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2002 11 06 | 704 | 0.7− | 0.9− | 2006 09 17 | 704 | 0.4− | 1.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ | | |
| 2002 11 06 | 704 | 0.1+ | 0.5− | 2006 09 17 | 704 | 0.3+ | 0.9+ | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2002 11 06 | 704 | 0.5− | 1.0− | 2006 09 17 | 704 | 0.2− | 0.8+ | 2006 11 09 | 644 | 0.2+ | 1.0+ | | |
| 2002 11 06 | 704 | 0.2− | 1.0− | 2006 09 17 | 704 | 0.5− | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2002 11 06 | 704 | 0.1+ | 1.5− | 2006 09 17 | 704 | 1.1− | 1.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2002 11 15 | 704 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 15 | 704 | 0.1− | 0.5− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.0 | | |
| 2002 11 15 | 704 | 0.4+ | 0.6− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.3+ | | |
| 2002 12 06 | 704 | 1.1− | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 1.3− | 0.8− | | |
| 2002 12 06 | 704 | 0.7− | 0.8+ | 2006 09 20 | 704 | 1.0+ | 0.3− | 2006 11 11 | 703 | 1.1− | 0.4+ | | |
| 2002 12 06 | 704 | 1.2− | 0.4+ | 2006 09 20 | 699 | 0.5− | 0.8− | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2002 12 06 | 704 | 1.2− | 0.3+ | 2006 09 20 | 704 | 0.0 | 1.2+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2002 12 06 | 704 | 0.5− | 0.3+ | 2006 09 20 | 704 | 0.6+ | 1.1+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | | |
| 2002 12 07 | 704 | 0.4− | 0.7+ | 2006 09 20 | 699 | 0.3− | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2002 12 07 | 704 | 0.3+ | 0.1− | 2006 09 20 | 699 | 0.4− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ | | |
| 2002 12 07 | 704 | 0.8+ | 0.1− | 2006 09 20 | 699 | 0.4− | 0.5− | 2006 11 18 | 691 | 0.0 | 0.0 | | |
| 2002 12 07 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2002 12 15 | 704 | 0.1− | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2002 12 15 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.0 | | |
| 2002 12 15 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.2+ | | |
| 2002 12 15 | 704 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.3− | 0.4+ | | |
| 2002 12 15 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 704 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.1− | | |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.2− | | |
| 2004 03 25 | 699 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.2− | | |
| 2004 03 25 | 699 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.5+ | | |
| 2004 03 25 | 699 | 0.7+ | 1.1+ | 2006 09 27 | 691 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.4− | 0.1− | | |
| 2004 03 25 | 699 | 0.9− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.3− | | |
| 2004 04 12 | 699 | 0.4+ | 1.4+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.2− | | |
| 2004 04 12 | 699 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.5− | 0.1+ | 2006 11 28 | 704 | 0.9− | 0.7+ | | |
| 2004 04 12 | 691 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.7+ | | |
| 2004 04 12 | 699 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.2− | 0.0 | | |
| 2004 04 12 | 691 | 0.5+ | 0.5+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.6− | 0.7+ | | |
| 2004 04 12 | 699 | 0.1+ | 0.9+ | 2006 10 15 | 691 | 0.2− | 0.3+ | | | | | | |
| 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.2+ | | | | | | |

**(142743)∗ 2002 TD$_{292}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.41394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24257941 | $\omega$ | 125.43307 | | +0.01709720 | −0.99856997 | |
| $a$ | 2.5462444 | $\Omega$ | 323.48644 | | +0.88754708 | +0.03848467 | |
| $e$ | 0.1360188 | $i$ | 4.88344 | | +0.46039967 | −0.03710732 | |
| $P$ | 4.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.0 | 0.3+ | 2004 03 14 | 644 | 0.3+ | 0.9+ | 2006 10 17 | 703 | 0.3− | 0.3+ | | |
| 2001 05 23 | 807 | 0.1− | 0.9+ | 2004 03 17 | 704 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.9− | | |
| 2002 10 10 | 704 | 0.4+ | 0.3+ | 2004 03 17 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 1.1+ | | |
| 2002 10 10 | 704 | 0.3− | 0.5+ | 2004 03 17 | 704 | 0.2− | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.7+ | | |
| 2002 10 10 | 704 | 0.6+ | 0.5− | 2004 03 17 | 704 | 1.3+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.2− | | |
| 2002 10 12 | 704 | 0.3+ | 0.8− | 2004 04 12 | 644 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.1+ | | |
| 2002 10 12 | 704 | 0.4+ | 0.4− | 2004 04 12 | 644 | 0.3+ | 0.8+ | 2006 10 19 | G96 | 0.2+ | 0.0 | | |
| 2002 10 12 | 704 | 0.9+ | 0.3− | 2004 04 12 | 644 | 0.3+ | 0.7+ | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 2002 11 05 | 704 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2002 11 05 | 704 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.3+ | | |
| 2002 11 05 | 704 | 0.5+ | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 05 | 704 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.1+ | | |
| 2002 11 06 | 699 | (2.1− | 1.2+) | 2006 09 30 | 703 | 0.2− | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2002 11 06 | 699 | 0.1− | 0.7− | 2006 09 30 | 703 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 11 06 | 699 | 0.1− | 0.9+ | 2006 09 30 | 703 | (0.2− | 2.5+) | 2006 10 25 | 106 | 0.5− | 0.3− | | |
| 2002 11 06 | 699 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.1+ | 1.0+ | 2006 10 25 | 106 | 0.2+ | 0.6+ | | |
| 2002 11 14 | 704 | 1.0+ | 1.2− | 2006 09 30 | 691 | 0.1− | 0.5+ | 2006 10 25 | 106 | 0.3− | 0.6− | | |
| 2002 11 14 | 704 | 1.4− | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.4+ | 2006 10 25 | 106 | 0.0 | 0.0 | | |
| 2002 11 14 | 704 | 0.1− | 1.1− | 2006 09 30 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 0.4− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.1− | 0.6− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.2− | 0.8− |
| 2004 03 14 | 644 | 0.2+ | 0.9+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 10 31 | 703 | 0.6− | 0.4+ |
| 2004 03 14 | 644 | 0.1+ | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.6+ | 0.3− |

**(142744)∗ 2002 TL$_{293}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.68683 | | (2000.0) | | | |
| $n$ | 0.26636354 | $\omega$ | 170.78244 | | +0.42525339 | −0.89886462 |
| $a$ | 2.3923214 | $\Omega$ | 253.99158 | | +0.82321590 | +0.43273605 |
| $e$ | 0.1374574 | $i$ | 6.32161 | | +0.37613181 | +0.06915136 |
| $P$ | 3.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 18 | 691 | 0.1+ | 0.6+ | 2002 12 27 | 644 | 0.1− | 0.1+ | 2003 01 31 | 704 | 0.2− | 0.1+ |
| 1996 02 18 | 691 | 0.2+ | 0.1+ | 2002 12 27 | 644 | 0.1− | 0.0 | 2003 01 31 | 704 | 0.6− | 0.5+ |
| 1996 02 18 | 691 | 0.1+ | 0.2+ | 2002 12 28 | 699 | 0.6− | 0.1+ | 2003 01 31 | 704 | 0.1− | 0.7+ |
| 2000 03 12 | 699 | 0.3+ | 1.4+ | 2002 12 28 | 699 | 0.2− | 0.3+ | 2003 01 31 | 704 | 0.7− | 0.7− |
| 2000 03 12 | 699 | 0.2+ | 0.9+ | 2002 12 28 | 699 | 0.1+ | 0.4+ | 2004 04 21 | 704 | 0.4+ | 0.2− |
| 2000 03 12 | 699 | 1.3+ | 1.0+ | 2002 12 28 | 699 | 0.3+ | 0.2+ | 2004 04 21 | 704 | 1.0− | 0.5+ |
| 2000 03 12 | 699 | 0.1+ | 1.5+ | 2002 12 31 | 699 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.5+ | 1.0+ |
| 2002 10 04 | 704 | 0.3− | 1.2− | 2002 12 31 | 699 | 0.8− | 0.5− | 2004 04 21 | 704 | 0.5+ | 0.1+ |
| 2002 10 04 | 704 | 0.1− | 1.0− | 2002 12 31 | 699 | 0.4− | 0.4+ | 2004 04 21 | 704 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 1.1− | 2002 12 31 | 699 | 0.7− | 0.4+ | 2005 06 28 | 644 | 0.6+ | 0.5+ |
| 2002 10 10 | 704 | 0.0 | 0.3+ | 2002 12 31 | 704 | 0.3+ | 0.3+ | 2005 06 28 | 644 | 0.2+ | 0.4+ |
| 2002 10 10 | 704 | 0.4+ | 0.8+ | 2002 12 31 | 704 | 0.1− | 0.1− | 2005 06 28 | 644 | 0.1+ | 0.4+ |
| 2002 10 10 | 704 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.4− | 0.0 | 2005 06 29 | 691 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.4+ | 0.2+ | 2002 12 31 | 704 | 0.1− | 0.4+ | 2005 06 29 | 691 | 0.3− | 0.4+ |
| 2002 10 12 | 704 | 0.6+ | 0.3+ | 2002 12 31 | 704 | 0.0 | 0.5+ | 2005 06 29 | 691 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.7+ | 2003 01 02 | 704 | 0.8− | 0.6+ | 2005 07 04 | 691 | 0.1− | 0.2+ |
| 2002 10 12 | 704 | 0.3+ | 0.0 | 2003 01 02 | 704 | 0.4+ | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 1.3+ | 0.6+ | 2003 01 02 | 704 | 0.2+ | 0.2− | 2005 07 04 | 691 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.1− | 0.3+ | 2003 01 02 | 704 | 0.7+ | 0.4− | 2005 07 08 | 691 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.8− | 0.2+ | 2003 01 02 | 704 | 0.1+ | 0.1− | 2005 07 08 | 691 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2003 01 03 | 704 | 0.2+ | 0.3− | 2005 07 08 | 691 | 0.7− | 1.1+ |
| 2002 11 06 | 704 | 0.2− | 0.3+ | 2003 01 03 | 704 | 0.1+ | 0.7− | 2005 07 29 | 644 | 0.4− | 0.2− |
| 2002 11 06 | 704 | 0.2− | 0.5+ | 2003 01 03 | 704 | 0.2+ | 0.5− | 2005 07 29 | 644 | 0.5− | 0.1− |
| 2002 11 14 | 704 | 0.2+ | 1.5+ | 2003 01 03 | 704 | 0.0 | 0.6− | 2005 07 29 | 644 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.6+ | 0.1+ | 2003 01 03 | 704 | 0.5− | 0.6− | 2005 08 06 | 644 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 0.3+ | 0.1+ | 2003 01 04 | 704 | 0.2+ | 0.8+ | 2005 08 06 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.1− | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.2+ |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2003 01 04 | 704 | 0.4− | 0.1− | 2005 08 24 | 644 | 0.2− | 0.4+ |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2003 01 04 | 704 | 0.3+ | 0.5− | 2005 08 24 | 644 | 0.1− | 0.3+ |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2003 01 04 | 704 | 0.7− | 1.1+ | 2005 08 24 | 644 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2003 01 08 | 704 | 1.0− | 0.2+ | 2005 09 03 | 644 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.2− | 2003 01 08 | 704 | 0.9− | 0.5+ | 2005 09 03 | 644 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.3− | 2003 01 08 | 704 | 0.2+ | 0.1− | 2005 09 03 | 644 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.3− | 2003 01 08 | 704 | (1.7+ | 0.6−) | 2005 09 12 | 691 | 0.1+ | 0.2+ |
| 2002 12 07 | 333 | 1.0− | 0.6− | 2003 01 25 | 699 | 0.5− | 0.8+ | 2005 09 12 | 691 | 0.1+ | 0.2+ |
| 2002 12 07 | 333 | 0.7− | 0.7− | 2003 01 25 | 699 | 0.3+ | 1.2+ | 2005 09 12 | 691 | 0.3+ | 0.2+ |
| 2002 12 07 | 333 | 0.1− | 0.4− | 2003 01 25 | 699 | 1.0+ | 0.2+ | 2006 11 02 | 703 | 1.5− | 0.5− |
| 2002 12 08 | 333 | 0.5− | 0.5− | 2003 01 25 | 699 | 0.3− | 0.0 | 2006 11 02 | 703 | 0.2+ | 0.4+ |
| 2002 12 08 | 333 | 0.7− | 0.6− | 2003 01 27 | 291 | 0.5+ | 0.1+ | 2006 11 02 | 703 | 0.4+ | 0.1+ |
| 2002 12 08 | 333 | 0.8− | 0.5− | 2003 01 27 | 704 | 1.2+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.1+ |
| 2002 12 10 | 704 | 0.1− | 0.5+ | 2003 01 27 | 704 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.8+ | 0.0 |
| 2002 12 10 | 704 | 0.1+ | 0.5+ | 2003 01 27 | 291 | 0.9+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | 0.0 | 0.5+ | 2003 01 27 | 704 | 0.5+ | 0.8+ | 2006 11 28 | 704 | 0.1− | 0.8+ |
| 2002 12 10 | 704 | 0.5+ | 0.6+ | 2003 01 27 | 704 | 0.7+ | 1.4+ | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 2002 12 10 | 704 | 0.1+ | 1.0+ | 2003 01 27 | 291 | 0.2+ | 0.1− | | | | |
| 2002 12 27 | 644 | 0.3− | 0.1+ | 2003 01 31 | 704 | 0.1− | 0.2− | | | | |

**(142745)∗ 2002 TQ$_{293}$**

Discovered 2002 Oct. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.52562 | | (2000.0) | | | |
| $n$ | 0.22230320 | $\omega$ | 334.33607 | | +0.94387737 | −0.27497790 |
| $a$ | 2.6988095 | $\Omega$ | 42.97317 | | +0.32989307 | +0.75747884 |
| $e$ | 0.2222801 | $i$ | 15.57137 | | +0.01631138 | +0.59212580 |
| $P$ | 4.43 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 17 | 691 | 0.0 | 0.0 | 2002 12 15 | 704 | 0.1− | 0.0 | 2006 09 20 | 703 | 0.1− | 0.2+ |
| 1993 11 17 | 691 | 1.2+ | 0.2+ | 2002 12 15 | 704 | 0.1− | 0.8− | 2006 09 24 | 608 | 0.6− | 0.4+ |
| 1993 11 17 | 691 | 0.2+ | 0.0 | 2002 12 15 | 704 | 0.0 | 0.2− | 2006 09 24 | 608 | 0.6− | 0.3+ |
| 1993 12 09 | 691 | 0.2− | 0.4− | 2002 12 15 | 704 | 0.9+ | 0.8+ | 2006 09 24 | 608 | 0.3− | 0.2+ |
| 1993 12 09 | 691 | 0.8− | 0.2− | 2003 01 07 | 704 | 0.8+ | 0.1+ | 2006 09 27 | 703 | 1.5+ | 0.6+ |
| 1993 12 09 | 691 | 0.4− | 0.1− | 2003 01 07 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.1− |
| 1999 01 14 | 704 | (3.1+ | 0.0 ) | 2003 01 07 | 704 | 0.7+ | 0.7+ | 2006 09 27 | 703 | 0.2− | 0.4− |
| 1999 01 14 | 704 | (5.6+ | 1.8+) | 2003 01 07 | 704 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.1− |
| 1999 01 14 | 704 | 1.0+ | 1.9+ | 2003 01 13 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 1.2− | 1.1+ |
| 1999 01 14 | 704 | 1.5+ | 0.6+ | 2003 01 13 | 704 | 0.0 | 0.2+ | 2006 09 27 | 703 | 1.0+ | 0.5+ |
| 1999 01 14 | 704 | 1.8+ | 0.6− | 2003 01 13 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.8+ | 2003 01 13 | 704 | 0.1− | 0.7+ | 2006 09 27 | 703 | 0.4− | 0.1+ |
| 2002 10 04 | 704 | 0.1+ | 0.4+ | 2003 01 13 | 704 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.9− | 0.2+ |
| 2002 10 04 | 704 | 0.3− | 0.7+ | 2004 02 17 | 704 | 1.0+ | 0.1+ | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2002 10 04 | 704 | 0.6− | 1.0+ | 2004 02 17 | 704 | (0.3+ | 1.9+) | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2004 02 17 | 704 | 1.2+ | 1.0+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.1+ | 0.3+ | 2004 02 17 | 704 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.5+ | 1.0+ | 2004 03 11 | 644 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 1.0+ | 0.3+ | 2004 03 11 | 644 | 0.6+ | 0.8+ | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2002 10 12 | 704 | 0.1− | 0.4+ | 2004 03 11 | 644 | 0.6+ | 1.1+ | 2006 10 21 | 703 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.3− | 0.0 | 2004 03 25 | 704 | 0.1+ | 1.4+ | 2006 10 21 | 703 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.3− | 2004 03 25 | 704 | 0.9+ | 0.8+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.5− | 0.1+ | 2004 03 25 | 704 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.3− |
| 2002 10 12 | 704 | 0.1− | 0.1− | 2004 03 25 | 704 | 0.6− | 1.4+ | 2006 10 28 | 703 | 1.1− | 0.2+ |
| 2002 10 31 | 704 | (0.1+ | 1.6−) | 2004 03 26 | 703 | 0.5− | 0.9+ | 2006 10 28 | 703 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 1.1− | 0.6− | 2004 03 26 | 703 | (1.4+ | 2.6+) | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 1.4− | 2004 03 26 | 703 | 1.0+ | 0.9+ | 2006 11 07 | 644 | 0.1+ | 0.5+ |
| 2002 10 31 | 704 | 0.4+ | 0.9− | 2004 03 26 | 703 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.1+ | 0.8− | 2005 05 21 | 644 | 0.1+ | 0.7+ | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.6− | 0.4+ | 2005 05 21 | 644 | 0.1− | 0.6+ | 2006 11 11 | 644 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.1+ | 0.3+ | 2005 05 21 | 644 | 0.4− | 0.7+ | 2006 11 11 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.4− | 0.1+ | 2006 07 31 | E12 | 0.3+ | 0.0 | 2006 11 11 | 644 | 0.4− | 0.1+ |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2006 07 31 | E12 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.6+ |
| 2002 11 06 | 704 | 0.0 | 0.6− | 2006 07 31 | E12 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2002 11 15 | 704 | 0.8− | 0.3− | 2006 07 31 | E12 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2002 11 15 | 704 | 0.2+ | 0.9− | 2006 09 17 | 699 | 0.6− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2002 11 15 | 704 | 0.5+ | 0.4− | 2006 09 17 | 699 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.7+ | 1.4+ |
| 2002 11 15 | 704 | 0.1+ | 0.8− | 2006 09 17 | 699 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2002 12 06 | 704 | 0.7− | 1.1− | 2006 09 17 | 699 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2002 12 06 | 704 | 0.4− | 0.6− | 2006 09 20 | 703 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2002 12 06 | 704 | 0.5− | 0.8− | 2006 09 20 | 703 | 0.3− | 0.3+ | | | | |
| 2002 12 06 | 704 | 0.5− | 0.7− | 2006 09 20 | 703 | 0.2− | 0.2− | | | | |

**(142746)∗ 2002 TS$_{294}$ = 1991 BF$_3$**

Discovered 2002 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65377)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.15056 | | (2000.0) | | | |
| $n$ | 0.24151041 | $\omega$ | 103.60739 | | −0.29258581 | −0.95614347 |
| $a$ | 2.5537526 | $\Omega$ | 3.49410 | | +0.76882310 | −0.24363435 |
| $e$ | 0.1728359 | $i$ | 12.83199 | | +0.56859879 | −0.16257912 |
| $P$ | 4.08 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 18 | 033 | 0.2+ | 1.3− | 2002 12 07 | 704 | 0.9− | 0.2− | 2004 04 25 | 704 | 0.2− | 0.2+ |
| 1991 01 18 | 033 | 0.7+ | 0.6+ | 2002 12 07 | 704 | 0.9− | 0.4+ | 2006 09 18 | 704 | 1.0− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 19 | 033 | 1.4+ | 0.8− | 2002 12 07 | 704 | 1.5− | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.8+ |
| 2000 05 10 | 704 | 0.2− | 1.7+ | 2002 12 07 | 704 | (1.7− | 0.5+) | 2006 09 18 | 704 | 0.1+ | 0.6+ |
| 2000 05 10 | 704 | 0.0 | 1.1+ | 2002 12 12 | 644 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.5− | 0.5+ |
| 2000 05 10 | 704 | 0.5− | 0.5+ | 2002 12 12 | 644 | 0.4− | 0.1+ | 2006 09 18 | 704 | 1.0+ | 0.6+ |
| 2000 05 10 | 704 | 0.0 | 0.8+ | 2002 12 12 | 644 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2001 07 18 | 644 | 0.1+ | 1.1+ | 2003 01 07 | 704 | 1.0− | 0.7+ | 2006 09 28 | 703 | 0.6− | 0.0 |
| 2001 07 18 | 644 | 0.1− | 0.8+ | 2003 01 07 | 704 | 0.4+ | 0.1− | 2006 09 28 | 703 | 0.4− | 0.2− |
| 2001 07 18 | 644 | 0.0 | 0.7+ | 2003 01 07 | 704 | 0.6+ | 0.4+ | 2006 09 28 | 703 | 0.8+ | 0.2− |
| 2002 10 05 | 704 | 0.1+ | 0.2+ | 2003 01 13 | 704 | 0.5− | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2002 10 05 | 704 | 0.4− | 0.3+ | 2003 01 13 | 704 | 0.5+ | 0.6− | 2006 10 19 | 703 | 0.7+ | 0.2+ |
| 2002 10 05 | 704 | 0.3− | 0.0 | 2003 01 13 | 704 | 0.3+ | 0.8− | 2006 10 19 | 703 | 0.7+ | 0.7− |
| 2002 10 05 | 704 | 0.9− | 0.1− | 2003 01 22 | 644 | 0.3− | 0.1+ | 2006 10 20 | 704 | 0.1+ | 1.0+ |
| 2002 10 12 | 704 | 1.1− | 0.3+ | 2003 01 22 | 644 | 0.3− | 0.3+ | 2006 10 20 | 704 | 0.3+ | 0.6+ |
| 2002 10 12 | 704 | 1.0− | 1.0+ | 2003 01 22 | 644 | 0.4− | 0.1− | 2006 10 20 | 704 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 1.1− | 1.0+ | 2003 01 29 | 644 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 13 | 644 | 0.1− | 0.5+ | 2003 01 29 | 644 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 10 13 | 644 | 0.0 | 0.5+ | 2003 01 29 | 644 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 10 13 | 644 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.2− | 0.7+ | 2006 10 23 | 644 | 0.5+ | 0.1− |
| 2002 10 31 | 704 | 0.4− | 0.3− | 2004 03 19 | 704 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.6+ | 0.1+ |
| 2002 10 31 | 704 | 0.2+ | 0.2+ | 2004 03 19 | 704 | 0.0 | 1.1+ | 2006 10 23 | 644 | 0.5+ | 0.0 |
| 2002 10 31 | 704 | 0.4− | 0.4− | 2004 03 19 | 704 | 0.1+ | 0.9− | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2002 10 31 | 704 | 0.3+ | 1.0− | 2004 04 15 | E12 | (4.1+ | 3.3+) | 2006 10 27 | 703 | 0.4+ | 0.2− |
| 2002 11 07 | 704 | 0.0 | 0.2− | 2004 04 15 | E12 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.2− |
| 2002 11 07 | 704 | 0.0 | 0.1− | 2004 04 15 | E12 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.1− | 0.6− | 2004 04 15 | E12 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | 0.3− | 0.2− | 2004 04 16 | 699 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.2− |
| 2002 11 07 | 704 | 0.4− | 0.3+ | 2004 04 16 | 699 | 0.2+ | 1.3+ | 2006 11 15 | 703 | (2.1− | 2.0−) |
| 2002 11 15 | 704 | 0.4− | 0.6+ | 2004 04 16 | 699 | 1.0+ | 0.8+ | 2006 11 15 | 703 | (0.5− | 1.6−) |
| 2002 11 15 | 704 | 0.3− | 0.4+ | 2004 04 16 | 699 | (0.6+ | 1.6+) | 2006 11 21 | 703 | 0.6+ | 0.1− |
| 2002 11 15 | 704 | 0.3− | 0.3+ | 2004 04 16 | E12 | 1.4+ | 1.2− | 2006 11 21 | 703 | 0.5+ | 0.2− |
| 2002 11 15 | 704 | 0.4− | 0.4+ | 2004 04 16 | E12 | 0.5+ | 1.4+ | 2006 11 21 | 703 | 0.6+ | 0.2− |
| 2002 11 15 | 704 | 0.2+ | 0.8+ | 2004 04 16 | E12 | 1.3+ | 0.5+ | 2006 11 21 | 703 | 0.2+ | 0.0 |
| 2002 11 25 | 644 | 0.0 | 0.1+ | 2004 04 16 | E12 | 0.1+ | 1.4+ | 2006 11 29 | 704 | 0.1− | 0.4+ |
| 2002 11 25 | 644 | 0.0 | 0.2+ | 2004 04 25 | 704 | 0.3− | 0.6− | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2002 11 25 | 644 | 0.1− | 0.1+ | 2004 04 25 | 704 | 0.3+ | 0.5− | 2006 11 29 | 704 | 0.2− | 0.8+ |
| 2002 12 07 | 704 | 1.4− | 0.0 | 2004 04 25 | 704 | 0.9+ | 0.4− | 2006 11 29 | 704 | 0.7+ | 1.0+ |

**(142747)∗ 2002 TJ$_{295}$**

Discovered 2002 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.87838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24124155 | $\omega$ | 339.80105 | | +0.75230051 | +0.65376347 | |
| $a$ | 2.5556496 | $\Omega$ | 338.71174 | | −0.56944138 | +0.58305860 | |
| $e$ | 0.1953718 | $i$ | 12.96738 | | −0.33133133 | +0.48232353 | |
| $P$ | 4.09 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 1.9− | 2.0+ | 2002 10 31 | 704 | 0.6− | 1.1+ | 2005 06 05 | E12 | 0.5+ | 0.1− |
| 1998 11 16 | 704 | 0.9− | 1.3+ | 2002 10 31 | 704 | 0.2+ | 0.0 | 2005 06 05 | E12 | 0.2+ | 0.3+ |
| 1998 11 16 | 704 | 0.1+ | 0.6+ | 2002 10 31 | 704 | 0.7+ | 0.9+ | 2005 06 05 | E12 | (0.4− | 1.6+) |
| 1998 11 16 | 704 | 1.3+ | 0.9+ | 2002 11 07 | 699 | 0.2+ | 0.6+ | 2005 06 05 | E12 | 0.4+ | 0.6+ |
| 1998 12 12 | 704 | 1.5+ | 0.9+ | 2002 11 07 | 699 | 0.8− | 0.2− | 2006 09 28 | 703 | 0.4+ | 0.3+ |
| 1998 12 12 | 704 | (0.2+ | 2.9−) | 2002 11 07 | 699 | 0.3+ | 0.4− | 2006 09 28 | 703 | 0.2+ | 0.6+ |
| 1998 12 12 | 704 | 0.1− | 1.7− | 2002 11 07 | 699 | 0.9− | 0.7+ | 2006 09 28 | 703 | 0.8+ | 0.4+ |
| 1998 12 12 | 704 | 1.5+ | 1.3− | 2002 11 08 | 704 | 1.2+ | 0.5+ | 2006 09 28 | 703 | 0.3− | 0.2+ |
| 1998 12 12 | 704 | 1.3− | 0.7+ | 2002 11 08 | 704 | 0.1− | 0.3+ | 2006 10 02 | 704 | (1.2+ | 1.6+) |
| 2002 10 01 | 704 | (2.2− | 1.3−) | 2002 11 08 | 704 | 0.6+ | 0.5+ | 2006 10 02 | 704 | 1.1+ | 0.8+ |
| 2002 10 01 | 704 | (1.7− | 0.8−) | 2002 11 08 | 704 | 0.7− | 1.1+ | 2006 10 02 | 704 | (1.9+ | 1.5+) |
| 2002 10 01 | 704 | (1.1− | 1.7−) | 2002 11 08 | 704 | 0.7+ | 0.5+ | 2006 10 02 | 704 | 1.1+ | 0.4+ |
| 2002 10 06 | 704 | 0.2− | 0.7− | 2002 11 15 | 704 | (1.9+ | 0.1+) | 2006 10 12 | 644 | 0.3− | 0.3− |
| 2002 10 06 | 704 | 0.7− | 0.5− | 2002 11 15 | 704 | 0.8+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.8− | 0.5− | 2002 11 15 | 704 | 0.7+ | 0.8− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 10 06 | 704 | 0.6− | 0.2+ | 2002 11 15 | 704 | 0.1− | 0.1+ | 2006 10 20 | 704 | 1.3+ | 0.8− |
| 2002 10 06 | 704 | 0.7− | 0.1+ | 2002 11 15 | 704 | (0.8− | 2.0−) | 2006 10 20 | 704 | (3.1+ | 0.3+) |
| 2002 10 13 | 644 | 0.2− | 0.1+ | 2002 11 25 | 644 | 0.5− | 0.1+ | 2006 10 20 | 704 | 1.2+ | 0.2− |
| 2002 10 13 | 644 | 0.3− | 0.2+ | 2002 11 25 | 644 | 0.4− | 0.1+ | 2006 10 20 | 704 | 0.2− | 1.1+ |
| 2002 10 13 | 644 | 0.5− | 0.0 | 2002 11 25 | 644 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 14 | 704 | 1.3− | 0.1+ | 2002 12 03 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2002 10 14 | 704 | 0.9− | 0.4− | 2002 12 03 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 14 | 704 | 0.1− | 1.1− | 2002 12 03 | 644 | 0.0 | 0.1+ | 2006 10 23 | 703 | 0.5− | 0.1− |
| 2002 10 14 | 704 | 0.7− | 0.3− | 2002 12 07 | 704 | (2.0− | 0.7−) | 2006 10 23 | 703 | 0.2+ | 0.2− |
| 2002 10 14 | 704 | 0.8− | 0.2− | 2002 12 07 | 704 | 0.4+ | 0.4− | 2006 10 23 | 703 | 0.5− | 0.6− |
| 2002 10 15 | 704 | 0.5+ | 0.1− | 2002 12 07 | 704 | 0.7+ | 0.4− | 2006 10 23 | 703 | 0.0 | 0.8− |
| 2002 10 15 | 704 | 1.2+ | 0.9− | 2002 12 07 | 704 | (1.6− | 0.1+) | 2006 11 16 | 703 | 0.5− | 0.7− |
| 2002 10 15 | 704 | 0.2+ | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2002 10 15 | 704 | 0.8+ | 0.8− | 2004 02 11 | 691 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.1− | 0.3− |
| 2002 10 15 | 704 | (2.1+ | 1.1−) | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.4+ | 0.4− |
| 2002 10 20 | 644 | 0.1+ | 0.2+ | 2005 04 07 | E12 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.4− | 0.3− |
| 2002 10 20 | 644 | 0.2+ | 0.3+ | 2005 04 07 | E12 | 0.6+ | 0.1+ | 2006 11 22 | 703 | 0.3− | 0.2− |
| 2002 10 20 | 644 | 0.1+ | 0.3+ | 2005 04 07 | E12 | 0.2− | 1.0+ | 2006 11 22 | 703 | 0.6− | 0.6− |
| 2002 10 31 | 704 | 0.1− | 0.7+ | 2005 04 07 | E12 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.0 | 0.1− |

**(142748)∗ 2002 TW$_{295}$**

Discovered 2002 Oct. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.34649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23518527 | $\omega$ | 160.12778 | | −0.71130827 | −0.69684451 | |
| $a$ | 2.5993373 | $\Omega$ | 334.93475 | | +0.61198456 | −0.54968651 | |
| $e$ | 0.2119429 | $i$ | 12.53045 | | +0.34571005 | −0.46070866 | |
| $P$ | 4.19 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 0.5− | 1.3− | 2002 11 15 | 704 | (1.1+ | 2.0−) | 2005 10 28 | G96 | 0.9− | 0.2− |
| 1998 12 12 | 704 | 0.3+ | 0.8− | 2002 11 15 | 704 | (0.4+ | 1.7−) | 2005 10 28 | G96 | 0.8− | 0.2− |
| 1998 12 12 | 704 | 0.2− | 0.0 | 2002 11 25 | 644 | 0.0 | 0.6− | 2005 10 28 | G96 | 0.1+ | 0.1− |
| 1998 12 12 | 704 | 0.7+ | 0.4+ | 2002 11 25 | 644 | 0.0 | 0.8− | 2006 09 17 | 703 | 0.8+ | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2002 11 25 | 644 | 0.2− | 0.6− | 2006 09 17 | 703 | 0.4+ | 0.6− |
| 2001 09 19 | 704 | 0.2+ | 0.8+ | 2002 12 07 | 704 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.4+ | 1.1− |
| 2001 09 19 | 704 | 0.8− | 0.0 | 2002 12 07 | 704 | 0.0 | 0.6− | 2006 09 17 | 703 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 0.1− | 2002 12 07 | 704 | 0.5+ | 0.8+ | 2006 09 28 | 703 | 0.9− | 0.7− |
| 2002 10 06 | 704 | 0.7− | 0.1+ | 2002 12 07 | 704 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.2− | 0.7− |
| 2002 10 06 | 704 | 0.4− | 0.3− | 2002 12 12 | 644 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.2− |
| 2002 10 13 | 644 | 0.9+ | 1.3+ | 2002 12 12 | 644 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.2− |
| 2002 10 13 | 644 | 0.3+ | 1.2+ | 2002 12 12 | 644 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 10 13 | 644 | 0.5+ | 1.0+ | 2002 12 15 | 704 | 1.0− | 1.0+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2002 10 14 | 704 | 1.1+ | 0.5+ | 2002 12 15 | 704 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 10 14 | 704 | 1.2+ | 0.2+ | 2002 12 15 | 704 | 0.5− | 0.0 | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2002 10 14 | 704 | 0.1− | 0.5+ | 2002 12 27 | 699 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.0 |
| 2002 10 15 | 704 | 0.4+ | 1.1− | 2002 12 27 | 699 | 0.8− | 0.3− | 2006 10 19 | 703 | 0.5− | 0.5+ |
| 2002 10 15 | 704 | 0.5+ | 1.1+ | 2002 12 27 | 699 | 1.0− | 1.3+ | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 2002 10 15 | 704 | 0.2+ | 0.7+ | 2002 12 27 | 699 | (1.9− | 0.4−) | 2006 10 20 | 703 | 0.7− | 0.0 |
| 2002 10 30 | 704 | 0.6− | 0.5+ | 2003 01 22 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 703 | 0.2− | 0.1− |
| 2002 10 30 | 704 | 0.7− | 1.2+ | 2003 01 22 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 703 | 0.5+ | 0.2+ |
| 2002 10 30 | 704 | 0.5− | 0.7+ | 2003 01 22 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 703 | 1.0+ | 0.8− |
| 2002 10 30 | 704 | 0.4− | 0.7+ | 2003 01 29 | 644 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2002 10 30 | 704 | 0.1− | 0.7+ | 2003 01 29 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 11 08 | 704 | 1.0− | 0.1− | 2003 01 29 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2002 11 08 | 704 | 0.1+ | 0.3+ | 2003 01 31 | 699 | 0.2+ | 0.2− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2002 11 08 | 704 | 0.1+ | 0.7− | 2003 01 31 | 699 | (0.3− | 1.9+) | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2002 11 10 | 704 | 1.1− | 0.1− | 2003 01 31 | 699 | 0.6+ | 1.2+ | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2002 11 10 | 704 | 0.5+ | 0.3− | 2003 01 31 | 699 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.9+ | 0.4+ |
| 2002 11 10 | 704 | 0.5+ | 1.2− | 2004 05 15 | 704 | 0.8+ | 0.3− | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2002 11 15 | 644 | 0.4− | 0.0 | 2004 05 15 | 704 | 0.5+ | 0.7+ | 2006 10 27 | 703 | 1.0+ | 1.0+ |
| 2002 11 15 | 644 | 0.4− | 0.1+ | 2004 05 15 | 704 | 1.2− | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.9− |
| 2002 11 15 | 644 | 0.3− | 0.1− | 2005 07 26 | 644 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.7− |
| 2002 11 15 | 704 | 0.5+ | 1.0− | 2005 07 26 | 644 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.4− |
| 2002 11 15 | 704 | (0.5+ | 1.6−) | 2005 07 26 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2002 11 15 | 704 | (0.9+ | 2.2−) | 2005 10 28 | G96 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.6− |

**(142749)∗ 2002 TS$_{296}$ = 2000 HG$_{74}$**

Discovered 2002 Oct. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38107)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.00924 | | (2000.0) | | | |
| $n$ | 0.24426668 | $\omega$ | 66.87345 | | −0.31229517 | −0.93181519 |
| $a$ | 2.5345054 | $\Omega$ | 42.75392 | | +0.74110399 | −0.36074474 |
| $e$ | 0.2241905 | $i$ | 15.80646 | | +0.59433711 | −0.03979562 |
| $P$ | 4.03 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 691 | 0.0 | 0.1− | 2002 12 01 | 704 | (1.5+ | 1.6−) | 2006 10 22 | 691 | 0.4− | 0.1− |
| 1998 10 17 | 691 | 0.0 | 0.9− | 2002 12 01 | 704 | 0.7+ | 0.0 | 2006 10 27 | 704 | 0.9+ | 0.1− |
| 1998 10 17 | 691 | 0.3− | 0.0 | 2002 12 01 | 704 | 1.3− | 0.5+ | 2006 10 27 | 704 | 0.9+ | 0.0 |
| 1998 11 11 | 704 | 1.6+ | 0.5− | 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 10 27 | 704 | 1.1− | 0.5+ |
| 1998 11 11 | 704 | 0.9− | 0.5− | 2002 12 05 | 704 | 0.1− | 0.3− | 2006 10 27 | 704 | 0.3+ | 1.3+ |
| 1998 11 11 | 704 | 0.9− | 0.5− | 2002 12 05 | 704 | 1.2+ | 0.9+ | 2006 10 31 | G96 | 0.6+ | 0.3− |
| 1998 11 11 | 704 | (6.0− | 0.4−) | 2002 12 05 | 704 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 1998 11 20 | 699 | 0.8+ | 0.3+ | 2004 03 31 | 704 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 1998 11 20 | 699 | 0.6+ | 0.3− | 2004 03 31 | 704 | (0.9+ | 1.7+) | 2006 10 31 | G96 | 0.7+ | 0.4− |
| 1998 11 20 | 699 | 1.0+ | 0.5− | 2004 03 31 | 704 | 0.9+ | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2000 04 29 | 704 | 0.1+ | 0.5+ | 2004 05 23 | 926 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2000 04 29 | 704 | 1.9+ | 1.0+ | 2004 05 23 | 926 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2000 04 29 | 704 | 1.5+ | 0.1− | 2004 05 23 | 926 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.6− |
| 2000 04 29 | 704 | 1.8+ | 1.0− | 2006 09 18 | 703 | 1.4+ | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.5− |
| 2000 04 29 | 704 | 0.7+ | 1.1− | 2006 09 18 | 703 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 0.4+ | 0.5− |
| 2000 05 01 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 1.0− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2000 05 01 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 1.1− | 1.0− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2000 05 01 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.6+ | 2006 11 17 | 703 | 0.8+ | 0.4+ |
| 2000 05 13 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 11 17 | 703 | 0.1− | 1.2− |
| 2000 05 13 | 691 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.1− | 1.2+ | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2000 05 13 | 691 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.4− | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2002 10 11 | 704 | 1.2+ | 0.4+ | 2006 10 10 | 644 | 0.5+ | 0.0 | 2006 11 18 | 704 | 1.1− | 0.7+ |
| 2002 10 11 | 704 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 1.4− | 0.3+ |
| 2002 10 11 | 704 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 1.0− | 0.2+ |
| 2002 10 11 | 704 | (1.7+ | 0.1+) | 2006 10 16 | 703 | (0.3+ | 2.3−) | 2006 11 18 | 704 | 1.1− | 0.3+ |
| 2002 10 15 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.3− | 1.1+ |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.1− | 0.4− |
| 2002 10 15 | 644 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.7− | 0.2+ |
| 2002 11 06 | 704 | 0.8− | 1.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2002 11 06 | 704 | 0.3− | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.7− | 0.8+ |
| 2002 11 06 | 704 | 0.4+ | 0.4− | 2006 10 20 | 644 | 0.5+ | 0.2− | 2006 11 21 | 704 | (1.5− | 0.6−) |
| 2002 11 06 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.6+ |
| 2002 11 06 | 704 | 1.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.3− | 0.3− |
| 2002 11 22 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.5+ | 0.1+ | 2006 11 27 | 703 | 0.8+ | 0.1+ |
| 2002 11 22 | 644 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 27 | 703 | 0.8− | 0.8+ |
| 2002 11 22 | 644 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1− | | | | |

**(142750)∗ 2002 TZ$_{297}$ = 2000 EZ$_{131}$**

Discovered 2002 Oct. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38107)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.88421 | | (2000.0) | | | |
| $n$ | 0.25758187 | $\omega$ | 148.72125 | | +0.25714458 | −0.96455213 |
| $a$ | 2.4463909 | $\Omega$ | 286.32160 | | +0.87338104 | +0.25822430 |
| $e$ | 0.1791324 | $i$ | 3.54226 | | +0.41362088 | +0.05440040 |
| $P$ | 3.83 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.6+ | 0.2+ | 2002 11 08 | 704 | (0.7+ | 1.6+) | 2006 10 29 | 704 | 1.0− | 0.1− |
| 1996 02 10 | 691 | 0.6+ | 0.0 | 2002 11 08 | 704 | 0.5+ | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.7− |
| 1996 02 10 | 691 | 0.4+ | 0.1+ | 2002 11 08 | 704 | 0.5− | 0.7+ | 2006 10 29 | 704 | 0.0 | 0.1− |
| 1996 02 16 | 691 | 0.8− | 0.6− | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 10 29 | 704 | 0.4− | 1.1+ |
| 1996 02 16 | 691 | 0.7− | 0.7− | 2004 03 20 | 704 | 0.6− | 0.9+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 1996 02 16 | 691 | 0.7− | 0.6− | 2004 03 20 | 704 | 0.2− | 0.6+ | 2006 10 31 | 691 | 0.4+ | 0.2− |
| 2000 03 11 | 699 | 0.8+ | 0.7+ | 2004 03 20 | 704 | 0.2− | 0.8− | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2000 03 11 | 699 | 1.1+ | 1.0+ | 2004 04 16 | 644 | 0.9+ | 0.8+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 03 11 | 699 | 0.6− | 0.5+ | 2004 04 16 | 644 | 1.1+ | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2000 03 11 | 699 | 0.5− | 0.9+ | 2004 04 16 | 644 | 0.6+ | 0.8+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2000 03 12 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.6− | 0.6− | 2006 11 14 | 703 | 0.8− | 0.4− |
| 2000 03 12 | 704 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.2− | 0.6− | 2006 11 14 | 703 | 0.1− | 0.0 |
| 2000 03 12 | 704 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.8− | 0.5− | 2006 11 14 | 703 | 0.2+ | 0.4+ |
| 2000 03 12 | 704 | 0.6+ | 0.2− | 2006 08 29 | 703 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.2+ |
| 2002 09 06 | 704 | 0.4− | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.5+ | 1.0+ |
| 2002 09 06 | 704 | 0.1+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.3+ | 1.3+ |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.4− |
| 2002 09 06 | 704 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 608 | 0.3+ | 0.0 | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 09 14 | 608 | 0.1+ | 0.7− | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2002 09 14 | 608 | 0.0 | 0.8− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | (0.6+ | 2.1+) |
| 2002 09 17 | 608 | 0.5− | 0.4− | 2006 10 17 | 691 | 0.9− | 0.1+ | 2006 11 19 | 704 | (0.2− | 1.9+) |
| 2002 09 17 | 608 | 0.5− | 0.6− | 2006 10 17 | 691 | 0.7+ | 0.3+ | 2006 11 19 | 704 | (0.5+ | 1.7+) |
| 2002 09 17 | 608 | 0.6− | 0.8− | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | (1.7+ | 1.8+) |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | (0.2− | 1.6+) |
| 2002 10 04 | 704 | 0.1+ | 0.6− | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2006 10 21 | 704 | 0.6− | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2002 10 04 | 704 | 0.1− | 0.4+ | 2006 10 21 | 704 | 0.8− | 0.6− | 2006 11 22 | 704 | 0.4− | 0.1− |
| 2002 10 04 | 704 | 0.3+ | 0.6− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 10 12 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 704 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2002 10 12 | 704 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 27 | 291 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 27 | 291 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.6− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 291 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 1.3+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.5+ |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.6− | 1.2+ |
| 2002 10 16 | 644 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 1.0− | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.3+ |
| 2002 10 16 | 644 | 0.4+ | 0.7+ | 2006 10 27 | 703 | (0.7− | 1.6+) | 2006 11 29 | 704 | 0.5+ | 0.0 |
| 2002 10 28 | 608 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 1.2+ | 2006 11 29 | 704 | 0.3− | 0.5+ |
| 2002 10 28 | 608 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.2− | 0.1+ | | | | |
| 2002 10 28 | 608 | 0.3+ | 0.2− | 2006 10 29 | 704 | 0.3+ | 0.1+ | | | | |

**(142751)∗ 2002 TG$_{300}$ = 2005 MB$_4$**

Discovered 2002 Oct. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 85696)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.49396 | | (2000.0) | | | |
| $n$ | 0.26504330 | $\omega$ | 185.64737 | | +0.62746085 | +0.77627314 |
| $a$ | 2.4002593 | $\Omega$ | 123.23167 | | −0.71152177 | +0.60331976 |
| $e$ | 0.1306160 | $i$ | 4.16622 | | −0.31627463 | +0.18277110 |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.1+ | 0.0 | 2005 05 20 | G96 | 0.7− | 0.1+ | 2005 07 12 | G96 | 0.0 | 0.4− |
| 2001 05 24 | 645 | 0.1− | 0.0 | 2005 05 20 | G96 | 0.3+ | 0.0 | 2005 07 12 | G96 | 0.4+ | 0.2+ |
| 2002 10 07 | 644 | 0.4− | 0.8+ | 2005 05 20 | G96 | 0.4− | 0.2− | 2005 07 12 | G96 | 0.9+ | 0.2+ |
| 2002 10 07 | 644 | 0.3− | 0.8+ | 2005 05 20 | G96 | 0.6− | 0.3− | 2005 07 12 | G96 | 0.1− | 0.3+ |
| 2002 10 07 | 644 | 0.3− | 0.4+ | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2002 10 15 | 644 | 0.2+ | 0.9+ | 2005 06 16 | 691 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.2+ |
| 2002 10 15 | 644 | 0.1− | 0.7+ | 2005 06 16 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2002 10 15 | 644 | 0.3− | 0.5+ | 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2002 10 16 | 644 | 0.2− | 0.5+ | 2005 06 27 | 691 | 0.4− | 0.1+ | 2006 11 16 | 691 | 0.3− | 0.3+ |
| 2002 10 16 | 644 | 0.1− | 0.4+ | 2005 06 27 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.5+ |
| 2002 10 16 | 644 | 0.3− | 0.6+ | 2005 06 27 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 06 30 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.6+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 06 30 | 691 | 0.1+ | 0.6+ | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2005 06 30 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2005 07 04 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.7+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2005 07 04 | 691 | 0.1− | 0.4+ | | | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2005 07 04 | 691 | 0.2+ | 0.4+ | | | | |

**(142752)∗ 2002 TD$_{312}$**

Discovered 2002 Oct. 4 by the Sloan Digital Sky Survey at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.19850 | | | (2000.0) | | |
| $n$ | 0.23645968 | $\omega$ | 50.38465 | | −0.27185734 | −0.93773391 |
| $a$ | 2.5899894 | $\Omega$ | 56.69939 | | +0.78451979 | −0.34607885 |
| $e$ | 0.0453991 | $i$ | 14.99242 | | +0.55733499 | +0.02974130 |
| $P$ | 4.17 | $H$ | 16.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 691 | 0.2+ | 0.4− | 2004 01 30 | 703 | (1.9+ | 0.7+) | 2004 03 17 | 644 | 0.5+ | 0.1+ |
| 1998 12 15 | 691 | 0.0 | 0.4− | 2004 01 30 | 703 | (1.3+ | 1.6−) | 2004 03 18 | 645 | 0.1− | 0.0 |
| 1998 12 15 | 691 | 0.1+ | 0.6− | 2004 01 31 | 704 | 0.1+ | 1.3− | 2004 03 18 | 645 | 0.1− | 0.0 |
| 2000 03 04 | 704 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.9+ | 0.8+ | 2004 04 15 | 645 | 0.0 | 0.1+ |
| 2000 03 04 | 704 | 0.8+ | 0.1− | 2004 01 31 | 704 | 1.5+ | 1.0− | 2004 04 15 | 645 | 0.0 | 0.1+ |
| 2000 03 04 | 704 | 0.3+ | 0.2− | 2004 01 31 | 704 | 1.4+ | 0.7+ | 2005 01 22 | 809 | 0.7− | 0.1− |
| 2000 03 04 | 704 | 0.3+ | 0.2+ | 2004 01 31 | 704 | 0.1+ | 0.1+ | 2005 01 22 | 809 | 0.9− | 0.1− |
| 2000 03 04 | 704 | 0.0 | 0.1+ | 2004 02 10 | 644 | 1.1− | 1.1+ | 2005 01 22 | 809 | 0.5− | 0.0 |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2004 02 10 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.9− | 0.5− |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2004 02 10 | 644 | 0.0 | 0.7+ | 2006 09 25 | 703 | 0.5+ | 1.4+ |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 02 14 | 704 | 0.2+ | 0.1− | 2006 09 25 | 703 | 1.4− | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2004 02 14 | 704 | 1.2+ | 0.5− | 2006 09 25 | 703 | 0.6− | 0.6− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 02 14 | 704 | 0.5+ | 0.5− | 2006 10 11 | 644 | 0.3+ | 0.5+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 02 14 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.5+ | 0.4+ |
| 2002 10 15 | 644 | 0.1− | 0.7+ | 2004 02 14 | 704 | (1.6+ | 0.2−) | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2002 10 15 | 644 | 0.2− | 0.6+ | 2004 02 26 | 703 | 0.8− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 10 15 | 644 | 0.2− | 0.7+ | 2004 02 26 | 703 | 0.4− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 02 26 | 703 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 02 26 | 703 | 0.3− | 0.0 | 2006 10 28 | 703 | 1.1− | 0.3− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 16 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 1.4− | 1.5+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 16 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2004 01 30 | 703 | (0.5+ | 1.7+) | 2004 03 17 | 644 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 1.0+ | 0.2− |
| 2004 01 30 | 703 | 0.1+ | 0.6− | 2004 03 17 | 644 | 0.4+ | 0.0 | | | | |

**(142753)∗ 2002 TG$_{316}$ = 2000 DN$_{30}$**

Discovered 2002 Oct. 4 by the Sloan Digital Sky Survey at Apache Point.

Id. A. Doppler (*MPO* 69407)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.83730 | | | (2000.0) | | |
| $n$ | 0.23353345 | $\omega$ | 127.73455 | | +0.30845451 | +0.94696510 |
| $a$ | 2.6115799 | $\Omega$ | 159.66670 | | −0.93378141 | +0.31949072 |
| $e$ | 0.1044962 | $i$ | 15.02341 | | −0.18140588 | −0.03439161 |
| $P$ | 4.22 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 1.2+ | 0.4− | 2005 05 08 | 699 | 0.5− | 0.2+ | 2005 07 09 | 291 | 0.9+ | 0.1+ |
| 2000 02 29 | 704 | 1.5+ | 0.4+ | 2005 05 08 | 699 | (1.9+ | 1.6+) | 2005 07 09 | 291 | 0.7+ | 0.2+ |
| 2000 02 29 | 704 | 1.2+ | 0.5+ | 2005 05 08 | 699 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.6− | 1.1+ |
| 2000 02 29 | 704 | 0.0 | 0.8+ | 2005 05 12 | 699 | 0.7− | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.2+ |
| 2000 03 03 | 704 | 1.1− | 0.5+ | 2005 05 12 | 699 | 1.2+ | 0.2+ | 2006 09 18 | 703 | (0.2− | 1.6+) |
| 2000 03 03 | 704 | 0.6+ | 1.3+ | 2005 05 12 | 699 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.9+ | 2005 05 12 | 699 | 0.4+ | 0.8+ | 2006 09 21 | 699 | 1.0+ | 1.3− |
| 2000 03 03 | 704 | 0.2− | 0.8+ | 2005 05 13 | 704 | 0.0 | 0.0 | 2006 09 21 | 699 | (0.5+ | 1.9+) |
| 2000 03 03 | 704 | 0.3− | 0.1+ | 2005 05 13 | 704 | 0.4− | 0.0 | 2006 09 21 | 699 | 0.7+ | 0.4+ |
| 2002 10 04 | 645 | 0.0 | 0.1+ | 2005 05 13 | 704 | 0.8− | 0.2− | 2006 09 21 | 699 | 1.2+ | 0.1+ |
| 2002 10 04 | 645 | 0.1− | 0.1+ | 2005 05 13 | 704 | 0.0 | 0.4+ | 2006 09 25 | 699 | 1.3+ | 0.4− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2005 05 19 | 703 | 0.5− | 0.3− | 2006 09 25 | 699 | (1.9− | 1.2−) |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2005 05 19 | 703 | 1.1− | 0.6− | 2006 09 25 | 699 | 0.2+ | 0.7+ |
| 2002 10 10 | 644 | 0.2− | 0.1+ | 2005 05 19 | 703 | 1.4− | 0.2− | 2006 09 25 | 699 | 0.1+ | 0.2− |
| 2002 10 10 | 644 | 0.3− | 0.2+ | 2005 05 19 | 703 | 1.4− | 0.6+ | 2006 09 29 | 699 | 0.0 | 0.5+ |
| 2002 10 10 | 644 | 0.5− | 0.2+ | 2005 05 31 | 703 | 0.6− | 0.3− | 2006 09 29 | 699 | 0.3+ | 0.9+ |
| 2002 11 06 | 644 | 0.2− | 0.9+ | 2005 05 31 | 703 | 0.8− | 0.8+ | 2006 09 29 | 699 | 1.0+ | 0.3+ |
| 2002 11 06 | 644 | 0.4− | 0.8+ | 2005 05 31 | 703 | 0.9− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.2+ |
| 2002 11 06 | 644 | 0.0 | 1.1+ | 2005 05 31 | 703 | 0.9− | 0.2+ | 2006 09 30 | 704 | 0.2+ | 1.3+ |
| 2004 01 29 | 704 | 0.0 | 0.3+ | 2005 06 01 | 704 | 0.2− | 0.3− | 2006 09 30 | 704 | 0.3− | 0.9+ |
| 2004 01 29 | 704 | 0.5− | 0.8− | 2005 06 01 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 704 | (1.9+ | 1.0+) |
| 2004 01 29 | 704 | (0.6− | 1.6−) | 2005 06 01 | 704 | (1.0+ | 1.6−) | 2006 09 30 | 704 | 0.3− | 0.2− |
| 2005 04 04 | 703 | 0.1+ | 1.4+ | 2005 06 01 | 704 | 0.5+ | 1.1− | 2006 10 17 | 703 | 0.1+ | 0.7− |
| 2005 04 04 | 703 | 0.4+ | 0.1+ | 2005 06 01 | 704 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.1− | 1.0+ |
| 2005 04 04 | 703 | 0.1− | 0.1− | 2005 06 25 | 644 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.4− | 1.0+ |
| 2005 04 04 | 703 | 0.4− | 0.3− | 2005 06 25 | 644 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2005 05 04 | 703 | 0.5− | 0.4− | 2005 06 25 | 644 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1− | 1.7− |
| 2005 05 04 | 703 | 0.8− | 0.2+ | 2005 06 27 | 699 | 0.4+ | 0.9+ | 2006 10 21 | 703 | 1.1− | 0.9− |
| 2005 05 04 | 703 | (0.4− | 1.7−) | 2005 06 27 | 699 | 1.4+ | 0.2+ | 2006 10 21 | 703 | 1.1− | 0.4+ |
| 2005 05 04 | 703 | (2.1− | 0.7−) | 2005 06 27 | 699 | 1.4+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.3− |
| 2005 05 06 | 704 | 0.4+ | 1.0+ | 2005 06 27 | 699 | 0.6− | 1.1+ | 2006 10 28 | 703 | 0.8+ | 0.2+ |
| 2005 05 06 | 704 | 0.1− | 0.5+ | 2005 07 01 | 644 | 0.4− | 0.2− | 2006 10 28 | 703 | 1.8+ | 2.3− |
| 2005 05 06 | 704 | 0.1− | 0.5+ | 2005 07 01 | 644 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.6+ | 0.3+ |
| 2005 05 06 | 704 | 0.8+ | 0.4+ | 2005 07 01 | 644 | 0.7− | 0.2− | 2006 10 28 | 703 | 1.2− | 0.5+ |
| 2005 05 08 | 699 | 0.7+ | 0.8+ | 2005 07 09 | 291 | 0.6+ | 0.2+ | | | | |

**(142754)∗ 2002 TR$_{317}$ = 1998 SX$_{91}$ = 2004 DR$_{17}$**

Discovered 2002 Oct. 5 by the Sloan Digital Sky Survey at Apache Point.

Id. A. Doppler (*MPO* 89356)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.56699 | | | (2000.0) | | |
| $n$ | 0.23863512 | $\omega$ | 196.62038 | | +0.59878961 | −0.79799944 |
| $a$ | 2.5742248 | $\Omega$ | 216.67620 | | +0.74719295 | +0.58725197 |
| $e$ | 0.1699775 | $i$ | 6.55408 | | +0.28836383 | +0.13539576 |
| $P$ | 4.13 | $H$ | 16.9 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 26 | 691 | 0.2+ | 0.1− | 2002 08 28 | 644 | 0.2− | 0.8+ | 2002 10 10 | 645 | 0.1− | 0.1− |
| 1994 10 26 | 691 | 0.2− | 0.1+ | 2002 08 28 | 644 | 0.0 | 0.9+ | 2002 10 10 | 645 | 0.0 | 0.0 |
| 1994 10 26 | 691 | 0.1+ | 0.0 | 2002 08 28 | 644 | 0.3− | 0.7+ | 2004 02 18 | 691 | 0.0 | 0.4+ |
| 1998 09 26 | 704 | 0.3− | 1.4+ | 2002 09 05 | 699 | 0.1− | 0.9+ | 2004 02 18 | 691 | 0.1+ | 0.4+ |
| 1998 09 26 | 704 | 0.3− | 0.1+ | 2002 09 05 | 699 | 0.3− | 0.2− | 2004 02 18 | 691 | 0.2− | 0.5+ |
| 1998 09 26 | 704 | 0.2− | 1.0− | 2002 09 05 | 699 | 0.2+ | 0.4+ | 2004 02 19 | 704 | (0.2+ | 2.2+) |
| 1998 09 26 | 704 | 1.0− | 0.6+ | 2002 09 05 | 699 | 0.1− | 0.3+ | 2004 02 19 | 704 | 0.6+ | 0.2+ |
| 1998 09 26 | 704 | 0.0 | 0.7+ | 2002 09 13 | 644 | 0.1− | 0.2+ | 2004 02 19 | 704 | 0.9+ | 1.8+ |
| 1998 09 27 | 704 | 0.6+ | 1.4+ | 2002 09 13 | 644 | 0.0 | 0.4+ | 2004 02 19 | 704 | 0.8+ | 0.5+ |
| 1998 09 27 | 704 | 0.2+ | 1.5+ | 2002 09 13 | 644 | 0.2− | 0.3+ | 2006 08 27 | 699 | 0.0 | 2.0+ |
| 1998 09 27 | 704 | (2.2+ | 1.1+) | 2002 10 04 | 704 | 0.9− | 1.0+ | 2006 08 27 | 699 | 0.8+ | 0.3+ |
| 1998 09 27 | 704 | 1.2+ | 0.4+ | 2002 10 04 | 704 | 0.6+ | 0.1− | 2006 08 27 | 699 | 0.3+ | 1.2+ |
| 2001 05 24 | 807 | 0.2− | 0.5+ | 2002 10 04 | 704 | 0.1+ | 0.8+ | 2006 08 27 | 699 | 0.4+ | 1.0− |
| 2001 05 24 | 807 | 0.1− | 0.5+ | 2002 10 04 | 704 | 0.8− | 1.0+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 06 16 | 691 | 0.1+ | 0.2+ | 2002 10 04 | 704 | 0.0 | 0.5− | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2001 06 16 | 691 | 0.1+ | 0.4+ | 2002 10 05 | 645 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2001 06 16 | 691 | 0.0 | 0.1+ | 2002 10 05 | 645 | 0.0 | 0.2− | | | | |

**(142755)∗ 2002 TA$_{318}$**

Discovered 2002 Oct. 5 by the Sloan Digital Sky Survey at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.36473 | | | (2000.0) | | |
| $n$ | 0.28647061 | $\omega$ | 217.63908 | | −0.98787148 | −0.13901088 |
| $a$ | 2.2790263 | $\Omega$ | 314.21695 | | +0.15524363 | −0.87545910 |
| $e$ | 0.1348332 | $i$ | 5.53913 | | +0.00305797 | −0.46286860 |
| $P$ | 3.44 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2+ | 0.8+ | 2004 01 17 | 644 | 0.1+ | 0.4+ | 2004 03 18 | 704 | (1.5− | 0.1−) |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2004 01 22 | 704 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.1+ |
| 2002 09 13 | 644 | 0.2+ | 0.4+ | 2004 01 22 | 704 | 0.5+ | 0.4+ | 2004 03 18 | 704 | 0.4− | 0.5+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2005 06 30 | 691 | 0.4− | 1.0+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.2+ | 2005 06 30 | 691 | 0.3− | 0.6+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.0 | 0.5+ | 2005 06 30 | 691 | 0.2+ | 0.3+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2004 01 26 | 699 | 1.0+ | 0.1− | 2005 07 07 | 691 | 0.3+ | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 01 26 | 699 | 0.5+ | 0.2+ | 2005 07 07 | 691 | 0.0 | 0.4+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 01 26 | 699 | 0.5− | 1.4− | 2005 07 07 | 691 | 0.9− | 0.3+ |
| 2003 12 17 | 644 | 0.1+ | 0.6+ | 2004 01 26 | 699 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 644 | 0.1− | 0.8+ | 2004 01 30 | 704 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2003 12 17 | 644 | 0.0 | 0.8+ | 2004 01 30 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.5+ | | |
| 2003 12 22 | 704 | 0.8+ | 0.6+ | 2004 01 30 | 704 | 0.3− | 0.3+ | 2006 10 26 | D35 | 0.4− | 0.3− | | |
| 2003 12 22 | 704 | 0.4− | 1.1+ | 2004 01 30 | 704 | 0.3− | 0.0 | 2006 10 26 | D35 | 0.3− | 0.1+ | | |
| 2003 12 22 | 704 | (0.1− | 1.6+) | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 10 26 | D35 | 0.4− | 0.1− | | |
| 2003 12 22 | 704 | 0.3− | 1.4+ | 2004 02 10 | 703 | 0.6− | 0.0 | 2006 11 02 | 703 | 1.2− | 0.2− | | |
| 2003 12 27 | 704 | 0.9+ | 0.7− | 2004 02 10 | 703 | 0.6− | 0.2+ | 2006 11 02 | 703 | 0.4+ | 0.8− | | |
| 2003 12 27 | 704 | 0.9+ | 0.1− | 2004 02 10 | 703 | 0.6+ | 0.6+ | 2006 11 02 | 703 | 0.2− | 0.0 | | |
| 2003 12 27 | 704 | 0.2+ | 0.1+ | 2004 02 10 | 703 | 0.7− | 1.2+ | 2006 11 02 | 703 | 0.5− | 0.5+ | | |
| 2003 12 27 | 704 | 1.0+ | 0.9− | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.7− | 0.0 | | |
| 2003 12 27 | 704 | 0.7+ | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 28 | 704 | 0.3+ | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2003 12 28 | 704 | 0.5+ | 0.8+ | 2004 02 11 | 699 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2003 12 28 | 704 | 0.5+ | 0.3+ | 2004 02 11 | 699 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2003 12 28 | 704 | 1.2+ | 0.9+ | 2004 02 11 | 699 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2003 12 28 | 704 | 0.7+ | 0.7+ | 2004 02 11 | 699 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.7− | | |
| 2003 12 29 | 699 | 0.5− | 0.1+ | 2004 02 17 | 645 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.4+ | 0.8+ | | |
| 2003 12 29 | 699 | 0.5− | 0.5+ | 2004 02 17 | 645 | 0.0 | 0.2− | 2006 11 22 | 703 | 1.6− | 0.2+ | | |
| 2003 12 29 | 699 | 0.2− | 0.8+ | 2004 02 17 | 608 | 0.3+ | 0.3− | 2006 11 22 | 703 | 1.0− | 0.7+ | | |
| 2003 12 29 | 699 | 0.1− | 0.2− | 2004 02 17 | 608 | 0.1− | 0.3+ | 2006 11 22 | 703 | 1.0− | 0.9− | | |
| 2004 01 12 | 644 | 0.2+ | 0.4+ | 2004 02 17 | 608 | 0.1+ | 0.4+ | 2006 11 22 | 703 | (4.2+ | 0.2−) | | |
| 2004 01 12 | 644 | 0.1+ | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.0 | 1.4+ | | |
| 2004 01 12 | 644 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.6+ | | |
| 2004 01 16 | 644 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 11 22 | 703 | 1.0+ | 0.3+ | | |
| 2004 01 16 | 644 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.4− | 1.2+ | 2006 11 23 | 703 | 0.0 | 0.1+ | | |
| 2004 01 16 | 644 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.5− | 0.7+ | 2006 11 23 | 703 | 0.6+ | 0.2+ | | |
| 2004 01 17 | 644 | 0.2+ | 0.5+ | 2004 03 18 | 645 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.2− | 0.5− | | |
| 2004 01 17 | 644 | 0.2+ | 0.0 | 2004 03 18 | 645 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.3+ | 0.1+ | | |

**(142756)∗ 2002 TF$_{319}$**

Discovered 2002 Oct. 5 by the Sloan Digital Sky Survey at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 143.85267 | | (2000.0) | | | |
| $n$ | 0.26028698 | $\omega$ | 243.41380 | | −0.74471366 | +0.66649333 |
| $a$ | 2.4294115 | $\Omega$ | 338.32776 | | −0.57430218 | −0.66630164 |
| $e$ | 0.1385191 | $i$ | 5.35580 | | −0.33996847 | −0.33440809 |
| $P$ | 3.79 | $H$ | 16.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 1.4+ | 0.3− | 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.4+ | | |
| 2001 03 18 | 704 | 0.4+ | 0.0 | 2002 10 10 | 645 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1+ | | |
| 2001 03 18 | 704 | 0.7+ | 0.4+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.3+ | 0.3+ | | |
| 2001 03 18 | 704 | (2.0+ | 0.5+) | 2002 10 31 | 645 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1+ | | |
| 2001 03 18 | 704 | 0.4− | 1.4+ | 2002 10 31 | 645 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.2+ | | |
| 2001 04 16 | 699 | 1.2+ | 0.2+ | 2003 12 23 | 704 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.2− | 0.0 | | |
| 2001 04 16 | 704 | 0.8− | 0.6− | 2003 12 23 | 704 | 0.5+ | 1.0+ | 2006 09 27 | 691 | 0.2− | 0.1+ | | |
| 2001 04 16 | 699 | 1.1− | 0.9+ | 2003 12 23 | 704 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2001 04 16 | 704 | 0.0 | 0.8+ | 2003 12 23 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.4− | 0.0 | | |
| 2001 04 16 | 704 | (1.9+ | 0.7+) | 2003 12 28 | 704 | 0.6+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 2001 04 16 | 699 | 0.1− | 0.4+ | 2003 12 28 | 704 | 0.4− | 0.4− | 2006 10 19 | 644 | 0.4+ | 0.2+ | | |
| 2001 04 16 | 704 | 1.4+ | 1.1+ | 2003 12 28 | 704 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2001 04 16 | 704 | (1.6+ | 0.2+) | 2003 12 28 | 704 | 1.1− | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2001 04 16 | 699 | 0.4+ | 0.3+ | 2005 05 18 | E12 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.2+ | | |
| 2002 09 14 | 644 | 0.1− | 0.7+ | 2005 05 18 | E12 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.2− | | |
| 2002 09 14 | 644 | 0.3− | 1.0+ | 2005 05 18 | E12 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.0 | 0.1− | | |
| 2002 09 14 | 644 | 0.2− | 0.8+ | 2005 05 18 | E12 | 0.6− | 0.9+ | 2006 11 20 | G96 | 0.1− | 0.5− | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.8+ | 0.8− | | |

**(142757)∗ 2002 TS$_{335}$ = 2005 JF$_{14}$**

Discovered 2002 Oct. 5 by the Sloan Digital Sky Survey at Apache Point.

Id. A. Doppler (*MPO* 75756)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.53666 | | (2000.0) | | | |
| $n$ | 0.24325928 | $\omega$ | 266.85011 | | +0.41329877 | +0.90245943 |
| $a$ | 2.5414980 | $\Omega$ | 28.55173 | | −0.70143905 | +0.40057473 |
| $e$ | 0.1127217 | $i$ | 14.72107 | | −0.58066116 | +0.15845147 |
| $P$ | 4.05 | $H$ | 16.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.0 | 0.1− | 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.5+ | 0.0 | | |
| 1994 10 08 | 691 | 0.1− | 0.4+ | 2005 05 01 | 644 | 0.4+ | 0.5+ | 2006 10 02 | 703 | 1.2− | 0.2+ | | |
| 1994 10 08 | 691 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.5+ | 0.3+ | 2006 10 02 | 703 | 0.7− | 0.5+ | | |
| 1994 10 29 | 691 | 0.2− | 0.1+ | 2005 05 01 | 644 | 0.7+ | 0.1+ | 2006 10 02 | 703 | 1.2− | 0.2+ | | |
| 1994 10 29 | 691 | 0.6− | 0.3− | 2005 05 01 | 644 | 0.4+ | 0.5+ | 2006 10 02 | 703 | 0.7− | 0.3− | | |
| 1994 10 29 | 691 | 0.3− | 0.6+ | 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 2001 04 23 | 691 | 0.1− | 0.2− | 2005 05 06 | 703 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2001 04 23 | 691 | 0.1+ | 0.1− | 2005 05 06 | 703 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2001 04 23 | 691 | 0.0 | 0.1− | 2005 05 06 | 703 | 0.1− | 0.7− | 2006 10 16 | 703 | (1.8+ | 1.3+) | | |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2005 05 06 | 703 | 0.5− | 1.0+ | 2006 10 16 | 703 | 0.5+ | 0.8+ | | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.9− | 0.4− | 2006 10 16 | 703 | 1.2+ | 0.9+ | | |
| 2002 10 10 | 645 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 16 | 703 | (1.4+ | 3.1+) | | |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.8+ | 0.5+ | | |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.7+ | 1.0+ | | |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 09 19 | 703 | (3.2+ | 3.4+) | 2006 10 16 | 703 | 1.0+ | 1.3+ | | |
| 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.7+ | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.7+ | | |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 22 | 703 | 1.5− | 2.5+ | | |
| 2005 04 10 | G96 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.8− | 1.0− | | |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.0 | 2006 10 22 | 703 | 1.2− | 0.4+ | | |
| 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.7− | | | | | | |

**(142758)∗ 2002 TH$_{358}$ = 2004 BK$_{118}$**

Discovered 2002 Oct. 10 by the Sloan Digital Sky Survey at Apache Point.

Id. G. V. Williams (*MPO* 61501)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 267.24008 | | (2000.0) | | | |
| $n$ | 0.26324230 | $\omega$ | 277.00078 | | −0.66480313 | −0.74697950 |
| $a$ | 2.4111946 | $\Omega$ | 214.67035 | | +0.69057198 | −0.61063486 |
| $e$ | 0.1247146 | $i$ | 0.76990 | | +0.28486337 | −0.26295759 |
| $P$ | 3.74 | $H$ | 17.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 16 | 413 | 0.5+ | 1.8+ | 2004 02 18 | 704 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.5− | 0.1− | | |
| 1998 09 02 | 691 | 0.2− | 0.0 | 2004 02 25 | 333 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.4+ | | |
| 1998 09 02 | 691 | 0.2− | 0.1+ | 2004 02 25 | 333 | 0.9− | 1.3+ | 2006 10 04 | G96 | 0.2− | 0.1− | | |
| 1998 09 02 | 691 | 0.8− | 0.0 | 2004 02 25 | 333 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 1999 12 08 | 691 | 0.5− | 0.4− | 2004 02 26 | 333 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.5− | 0.1+ | | |
| 1999 12 08 | 691 | 1.2− | 0.2− | 2004 02 26 | 333 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 1999 12 08 | 691 | 0.6+ | 0.4− | 2004 02 26 | 333 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 05 | 704 | 0.8+ | 0.6− | 2004 02 26 | 333 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.0 | | |
| 2000 01 05 | 704 | 0.7+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.4− | | |
| 2000 01 05 | 704 | 0.1− | 0.5− | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2000 01 05 | 704 | 0.9+ | 0.6− | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.5+ | 0.1+ | | |
| 2000 01 05 | 704 | 0.3+ | 0.3− | 2004 02 26 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2000 02 03 | 704 | 0.2+ | 0.9− | 2004 02 26 | 704 | 0.3− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 2000 02 03 | 704 | 0.6+ | 0.4− | 2004 02 26 | 333 | 0.3− | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.1− | | |
| 2000 02 03 | 704 | 0.0 | 0.3− | 2004 02 26 | 333 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.3− | | |
| 2000 02 03 | 704 | 0.3− | 0.1+ | 2004 02 29 | 291 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ | | |
| 2000 02 03 | 704 | 0.7− | 0.1− | 2004 02 29 | 291 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.2+ | | |
| 2002 10 04 | 644 | 0.3− | 0.2− | 2004 02 29 | 291 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | | |
| 2002 10 04 | 644 | 0.2− | 0.2− | 2004 03 15 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.7− | 0.1− | | |
| 2002 10 04 | 644 | 0.3− | 1.0− | 2004 03 15 | 704 | 0.7+ | 0.1− | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.3− | 0.9+ | 2006 10 27 | G96 | (1.7+ | 0.0 ) | | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.7+ | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2002 10 30 | 645 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.0 | 0.1+ | 2004 03 18 | 704 | (0.8+ | 2.7+) | 2006 10 29 | 691 | 0.0 | 0.3+ | | |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.4+ | 1.4+ | 2006 10 29 | 691 | 0.0 | 0.2+ | | |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 03 23 | 291 | 0.4+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.3+ | | |
| 2003 11 30 | 691 | 0.4− | 0.3+ | 2004 03 23 | 291 | 0.6+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.4+ | | |
| 2003 11 30 | 691 | 0.2+ | 0.0 | 2004 03 23 | 291 | 0.7+ | 0.0 | 2006 11 10 | 644 | 0.3− | 0.5+ | | |
| 2003 11 30 | 691 | 0.1− | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.5+ | | |
| 2004 01 29 | 704 | 0.5+ | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2004 01 29 | 704 | 0.5+ | 0.0 | 2004 03 30 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2004 01 29 | 704 | 0.9+ | 0.6+ | 2005 06 13 | G96 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.2− | | |
| 2004 01 29 | 704 | 0.5+ | 0.2+ | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2004 02 02 | 608 | 0.4+ | 0.6− | 2005 06 13 | G96 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1− | 1.0+ | | |
| 2004 02 02 | 608 | 0.1− | 0.7− | 2005 06 13 | G96 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 2004 02 02 | 608 | 0.6− | 0.0 | 2006 09 25 | G96 | 0.7− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.8− | | |
| 2004 02 18 | 704 | 0.7− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.1− | | |
| 2004 02 18 | 704 | 0.6+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2− | | |
| 2004 02 18 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.4− | 0.5− | 2006 11 27 | 691 | 0.2+ | 0.2+ | | |
| 2004 02 18 | 704 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.4− | 0.0 | | | | | | |

**(142759)∗ 2002 TQ$_{358}$**

Discovered 2002 Oct. 10 by the Sloan Digital Sky Survey at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 237.37566 | | (2000.0) | | | |
| $n$ | 0.25943904 | $\omega$ | 287.85046 | | −0.88520638 | −0.46516081 |
| $a$ | 2.4347021 | $\Omega$ | 224.42941 | | +0.42995139 | −0.81320750 |
| $e$ | 0.1141341 | $i$ | 0.48486 | | +0.17762734 | −0.34974131 |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | (6.5+ | 0.5−) | 2004 02 03 | 333 | 0.2− | 1.2− | 2006 10 11 | 691 | 0.2− | 0.2+ | | |
| 1998 10 20 | 691 | 0.2− | 0.3− | 2004 02 10 | 644 | 0.6− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.4− | | |
| 1998 10 20 | 691 | 0.0 | 0.2− | 2004 02 10 | 644 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2− | | |
| 2000 01 13 | 691 | 0.1− | 0.4− | 2004 02 10 | 644 | 0.1+ | 0.5− | 2006 10 15 | 691 | 0.1− | 0.3− | | |
| 2000 01 13 | 691 | 0.0 | 0.4− | 2004 02 11 | 691 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.3+ | | |
| 2000 01 13 | 691 | 0.1− | 0.4− | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 26 | 644 | 0.4− | 0.3+ | 2004 02 11 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ | | |
| 2002 09 26 | 644 | 0.5− | 0.2− | 2004 02 14 | 608 | 0.2+ | 0.9− | 2006 10 20 | 703 | 1.0− | 0.2+ | | |
| 2002 09 26 | 644 | 0.6− | 0.2− | 2004 02 14 | 608 | 0.4+ | 0.4+ | 2006 10 20 | 703 | (1.9− | 1.0+) | | |
| 2002 10 04 | 644 | 0.0 | 0.8+ | 2004 02 14 | 608 | 0.1+ | 0.4+ | 2006 10 20 | 703 | 0.5− | 0.6+ | | |
| 2002 10 04 | 644 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.0 | 0.3+ | 2006 10 20 | 703 | (0.8− | 1.7+) | | |
| 2002 10 04 | 644 | 0.3+ | 1.0+ | 2004 02 17 | 704 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.4+ | | |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.6+ | | |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2004 02 17 | 704 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 02 19 | 608 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2− | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 19 | 608 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2004 02 19 | 608 | 0.4+ | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.3− | | |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.0 | 1.1+ | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2− | | |
| 2002 11 08 | 645 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− | | |
| 2004 01 24 | 704 | 1.0+ | 0.0 | 2004 02 26 | 704 | 0.1− | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2004 01 24 | 704 | 0.9+ | 0.4+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2004 01 24 | 704 | 0.6+ | 0.4+ | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1+ | | |
| 2004 01 24 | 704 | 0.7+ | 0.9+ | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.3− | | |
| 2004 01 24 | 704 | 0.3+ | 0.0 | 2004 03 10 | 644 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2004 01 26 | 699 | 0.6− | 0.5+ | 2004 03 10 | 644 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.1− | | |
| 2004 01 26 | 699 | 1.3− | 0.6− | 2004 03 10 | 644 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.5− | 1.1− | | |
| 2004 01 26 | 699 | 0.7+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.8− | | |
| 2004 01 26 | 699 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.4− | | |
| 2004 01 30 | 704 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2004 01 30 | 704 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.2− | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 09 24 | 691 | 0.4− | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.3+ | | |
| 2004 01 30 | 704 | 0.6+ | 0.4+ | 2006 09 24 | 691 | 0.4− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.2− | | |
| 2004 01 30 | 704 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.2− | | |
| 2004 01 31 | 333 | 1.0− | 0.6− | 2006 09 28 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.5+ | 0.2− | | |
| 2004 01 31 | 333 | 0.2− | 0.4− | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.2− | | |
| 2004 01 31 | 333 | (0.5− | 1.7−) | 2006 10 11 | 691 | 0.5+ | 0.1− | | | | | | |
| 2004 02 03 | 333 | 1.2− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | | | | | | |

**(142760)∗ 2002 TN$_{361}$**

Discovered 2002 Oct. 10 by the Sloan Digital Sky Survey at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.38640 | | (2000.0) | | | |
| $n$ | 0.23951604 | $\omega$ | 87.90127 | | −0.20158944 | +0.97935067 |
| $a$ | 2.5679091 | $\Omega$ | 170.42760 | | −0.93124407 | −0.18680053 |
| $e$ | 0.1945557 | $i$ | 5.27765 | | −0.30355589 | −0.07731644 |
| $P$ | 4.11 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 11 | 704 | 0.5+ | 1.6− | 2005 03 01 | 691 | 0.1+ | 0.3+ | 2005 04 04 | 703 | 1.3+ | 0.7+ | | |
| 1997 04 11 | 704 | 1.8+ | 0.6+ | 2005 03 01 | 691 | 0.2+ | 0.3− | 2005 04 04 | G96 | 0.7+ | 0.6+ | | |
| 1997 05 07 | 704 | 0.0 | 0.3+ | 2005 03 01 | 691 | 0.5+ | 0.1− | 2005 04 04 | G96 | 0.1+ | 0.1+ | | |
| 1997 05 07 | 704 | 0.9+ | 1.0+ | 2005 03 04 | G96 | 0.1− | 0.2− | 2005 04 04 | G96 | 0.0 | 0.3+ | | |
| 1997 05 07 | 704 | 0.2+ | 0.0 | 2005 03 04 | G96 | 0.4− | 0.3+ | 2005 04 04 | G96 | 0.1+ | 0.2+ | | |
| 1997 05 07 | 704 | 0.4− | 0.4+ | 2005 03 04 | G96 | 0.5− | 0.4+ | 2005 04 09 | G96 | 0.2− | 0.1− | | |
| 1997 05 07 | 704 | 0.4− | 0.1+ | 2005 03 04 | G96 | 0.5− | 0.0 | 2005 04 09 | G96 | 0.0 | 0.1+ | | |
| 2001 03 15 | 691 | 0.0 | 0.6+ | 2005 03 10 | 695 | 0.2− | 0.2+ | 2005 04 09 | G96 | 0.1− | 0.2+ | | |
| 2001 03 15 | 691 | 0.5+ | 0.5+ | 2005 03 10 | 695 | 0.1− | 0.1+ | 2005 04 09 | G96 | 0.1− | 0.3− | | |
| 2001 03 15 | 691 | 0.1− | 0.3+ | 2005 03 11 | G96 | 0.1+ | 0.1− | 2006 07 22 | G96 | 0.3− | 0.6− | | |
| 2001 03 25 | 695 | 0.5− | 0.4+ | 2005 03 11 | G96 | 0.3− | 0.0 | 2006 07 22 | G96 | 0.0 | 0.1+ | | |
| 2001 03 25 | 695 | 0.9− | 0.6+ | 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 07 22 | G96 | 0.5+ | 0.5− | | |
| 2001 04 17 | 699 | 0.1− | 0.4+ | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 07 22 | G96 | 0.3+ | 0.5− | | |
| 2001 04 17 | 699 | 0.2− | 0.8+ | 2005 03 13 | 703 | 0.2− | 0.6− | 2006 09 15 | 691 | 0.2+ | 0.1+ | | |
| 2001 04 17 | 699 | 1.9− | 0.4− | 2005 03 13 | 703 | 0.0 | 0.9+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | | |
| 2001 04 17 | 699 | 0.7− | 0.8+ | 2005 03 13 | 703 | (2.8− | 0.6+) | 2006 09 15 | 691 | 0.3+ | 0.5+ | | |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2005 03 13 | 703 | 0.5− | 0.8− | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2005 03 31 | 699 | 1.5+ | 0.4− | 2006 09 30 | 691 | 1.4− | 1.5− | | |
| 2002 10 11 | 645 | 0.1− | 0.1+ | 2005 03 31 | 699 | 0.2+ | 1.1− | 2006 09 30 | 691 | 0.3+ | 0.4+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2005 03 31 | 699 | 0.2+ | 0.9− | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 2002 10 30 | 645 | 0.0 | 0.1+ | 2005 03 31 | 699 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.1+ | | |
| 2002 10 30 | 645 | 0.1− | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.1+ | | |
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2005 04 04 | 703 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.2− | | |
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2005 04 04 | 703 | (2.1− | 0.7+) | | | | | | |

**(142761)∗ 2002 UU$_2$ = 1998 XD$_{16}$**

Discovered 2002 Oct. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38110)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.07301 | | (2000.0) | | | |
| $n$ | 0.23184255 | $\omega$ | 17.92869 | | +0.09568481 | −0.84192984 |
| $a$ | 2.6242626 | $\Omega$ | 69.49970 | | +0.82970483 | −0.22727765 |
| $e$ | 0.1940894 | $i$ | 34.53708 | | +0.54994027 | +0.48938636 |
| $P$ | 4.25 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.8− | 0.9− | 2002 10 29 | 704 | 0.3+ | 0.8+ | 2004 03 17 | 645 | 0.0 | 0.0 | | |
| 1998 12 14 | 704 | 1.0+ | 0.6− | 2002 10 29 | 704 | 0.1− | 1.0− | 2004 03 23 | 703 | 0.1+ | 0.7− | | |
| 1998 12 14 | 704 | 0.8+ | 0.4− | 2002 10 30 | 704 | 0.3− | 1.0+ | 2004 03 23 | 703 | 0.7+ | 1.2− | | |
| 1998 12 14 | 704 | 0.6+ | 0.0 | 2002 10 30 | 704 | 0.9− | 0.4− | 2004 03 23 | 703 | 0.3+ | 0.4+ | | |
| 1998 12 17 | 704 | 0.5+ | 0.0 | 2002 10 30 | 704 | 0.8− | 0.3+ | 2004 03 23 | 703 | 0.5+ | 0.6+ | | |
| 1998 12 17 | 704 | 0.4+ | 0.3− | 2002 10 30 | 704 | 0.7− | 0.2− | 2004 04 12 | 704 | 0.1+ | 0.1+ | | |
| 1998 12 17 | 704 | (2.0+ | 2.1+) | 2002 10 30 | 704 | 0.0 | 0.2− | 2004 04 12 | 704 | 0.6+ | 0.6− | | |
| 1998 12 17 | 704 | 0.0 | 0.1+ | 2002 10 30 | 704 | (2.0− | 1.2−) | 2004 04 12 | 704 | 0.1− | 0.2+ | | |
| 1998 12 17 | 704 | 0.0 | 0.0 | 2002 10 30 | 704 | 1.3− | 0.2− | 2004 04 12 | 704 | (0.4− | 1.6+) | | |
| 2000 05 31 | 699 | 0.3+ | 0.8+ | 2002 11 04 | 644 | 0.2+ | 0.2+ | 2004 04 16 | 645 | 0.1− | 0.0 | | |
| 2000 05 31 | 699 | 0.6+ | 0.6− | 2002 11 04 | 644 | 0.3+ | 0.2+ | 2004 04 16 | 645 | 0.0 | 0.1+ | | |
| 2000 05 31 | 699 | 1.3+ | 0.4+ | 2002 11 04 | 644 | 0.2+ | 0.1+ | 2004 05 09 | 644 | 0.4+ | 0.3+ | | |
| 2000 05 31 | 699 | (1.0− | 2.0+) | 2002 12 06 | 699 | 0.1+ | 0.7+ | 2004 05 09 | 644 | 0.1+ | 0.5+ | | |
| 2002 10 08 | 644 | 0.2− | 0.0 | 2002 12 06 | 699 | 0.0 | 0.4+ | 2004 05 09 | 644 | 0.4+ | 0.7+ | | |
| 2002 10 08 | 644 | 0.1− | 0.1− | 2002 12 06 | 699 | 1.3− | 0.8+ | 2004 05 16 | 644 | 0.4+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 644 | 0.2− | 0.2− | 2002 12 06 | 699 | 1.1− | 0.4+ | 2004 05 16 | 644 | 0.2+ | 0.1− |
| 2002 10 08 | 644 | 0.1− | 0.3− | 2002 12 06 | 644 | 0.8− | 0.7+ | 2004 05 16 | 644 | 0.2+ | 0.4+ |
| 2002 10 08 | 644 | 0.1+ | 0.2− | 2002 12 06 | 644 | 0.5− | 0.8+ | 2006 09 18 | E12 | 0.7+ | 0.2+ |
| 2002 10 08 | 644 | 0.0 | 0.1+ | 2002 12 06 | 644 | 0.5− | 0.8+ | 2006 09 18 | E12 | 0.1+ | 0.4+ |
| 2002 10 28 | 704 | 0.1+ | 0.3− | 2003 01 02 | 704 | 0.0 | 0.9+ | 2006 09 18 | E12 | 0.9+ | 0.4− |
| 2002 10 28 | 704 | 0.1+ | 0.3− | 2003 01 02 | 704 | 0.4+ | 0.8+ | 2006 09 18 | E12 | 0.4− | 0.2+ |
| 2002 10 28 | 704 | 0.1+ | 0.6− | 2003 01 02 | 704 | 0.1+ | 0.5+ | 2006 10 25 | E12 | 0.4+ | 0.0 |
| 2002 10 28 | 704 | 0.8+ | 0.8− | 2003 01 02 | 704 | 0.4+ | 1.0+ | 2006 10 25 | E12 | 0.2− | 0.1+ |
| 2002 10 28 | 704 | 0.1− | 0.8− | 2003 01 02 | 704 | 0.4− | 0.0 | 2006 10 25 | E12 | 0.2+ | 0.7− |
| 2002 10 29 | 704 | 0.5− | 0.1+ | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 10 25 | E12 | 0.8+ | 0.4− |

**(142762)∗ 2002 UF$_3$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.70970 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21986693 | $\omega$ | 278.16513 | | +0.59808320 | −0.78401848 | |
| $a$ | 2.7187093 | $\Omega$ | 133.71939 | | +0.79555883 | +0.55573792 | |
| $e$ | 0.1515911 | $i$ | 13.29206 | | +0.09686399 | +0.27653279 | |
| $P$ | 4.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 0.1+ | 0.8− | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 08 23 | 704 | 0.5+ | 0.1− |
| 2002 09 15 | 699 | 1.5− | 0.4− | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 08 23 | 704 | 0.1− | 1.2+ |
| 2002 09 15 | 699 | 0.3− | 0.6+ | 2004 03 15 | 704 | 0.8+ | 0.0 | 2006 08 23 | 704 | 0.1+ | 0.3+ |
| 2002 09 15 | 699 | 0.5− | 0.7+ | 2004 03 15 | 704 | 0.7+ | 0.8+ | 2006 08 23 | 704 | 0.5+ | 0.3+ |
| 2002 09 29 | 608 | 0.1− | 0.6− | 2004 03 15 | 704 | 1.2+ | 0.6+ | 2006 08 23 | 704 | 0.3+ | 0.2+ |
| 2002 09 29 | 608 | 0.3− | 0.3− | 2004 03 17 | 704 | 0.5+ | 0.4+ | 2006 08 23 | 644 | 0.0 | 0.0 |
| 2002 09 29 | 608 | 0.0 | 0.1− | 2004 03 17 | 704 | 1.2+ | 0.6+ | 2006 08 23 | 644 | 0.3− | 0.1− |
| 2002 10 05 | 699 | 0.2− | 1.1+ | 2004 03 17 | 704 | 0.4− | 0.5− | 2006 08 23 | 644 | 0.2− | 0.2− |
| 2002 10 05 | 699 | 1.6+ | 0.1− | 2004 03 23 | 704 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.6+ | 0.4+ |
| 2002 10 05 | 699 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.9+ | 0.8+ | 2006 08 28 | 699 | 0.1+ | 1.9+ |
| 2002 10 05 | 699 | 0.0 | 0.8+ | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 08 28 | 699 | 0.5− | 0.9+ |
| 2002 10 28 | 644 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 699 | 0.5− | 0.5+ |
| 2002 10 28 | 644 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.8+ | 2006 09 20 | 703 | 0.6− | 0.5+ |
| 2002 10 28 | 644 | 0.5− | 0.8+ | 2005 05 14 | 691 | 0.3− | 0.1+ | 2006 09 20 | 703 | 0.3+ | 1.1+ |
| 2002 10 29 | 704 | 0.1+ | 0.9+ | 2005 05 14 | 691 | 0.1+ | 0.4− | 2006 09 20 | 703 | 0.2+ | 0.4− |
| 2002 10 29 | 704 | 0.1+ | 0.5− | 2005 05 14 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 1.2+ | 0.9+ |
| 2002 10 29 | 704 | 0.0 | 1.0+ | 2005 06 05 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 1.2+ | 0.4− |
| 2002 10 29 | 704 | 0.8− | 0.6+ | 2005 06 05 | 691 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.6− |
| 2003 12 22 | 691 | 0.1− | 0.1+ | 2005 06 05 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 2003 12 22 | 691 | 0.3+ | 0.5+ | 2006 08 19 | 644 | 0.7− | 0.4+ | 2006 09 26 | 703 | 1.2− | 1.4− |
| 2003 12 22 | 691 | 0.7− | 0.0 | 2006 08 19 | 644 | 0.4− | 0.1+ | | | | |
| 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 08 19 | 644 | 0.7− | 0.4+ | | | | |

**(142763)∗ 2002 UU$_3$ = 2001 FE$_{136}$**

Discovered 2002 Oct. 29 by NEAT at Palomar.

Id. A. Doppler (*MPO* 38110)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.71079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26301979 | $\omega$ | 234.49370 | | +0.26951741 | +0.94245211 | |
| $a$ | 2.4125543 | $\Omega$ | 52.36197 | | −0.78269754 | +0.33407573 | |
| $e$ | 0.2201750 | $i$ | 14.46842 | | −0.56102132 | −0.01332034 | |
| $P$ | 3.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 699 | 0.5+ | 0.5+ | 2005 04 17 | 703 | 0.6− | 0.2+ | 2005 05 18 | E12 | 0.0 | 0.1− |
| 2001 03 21 | 699 | 0.1+ | 0.1+ | 2005 04 17 | 703 | 0.6− | 0.6+ | 2005 05 18 | E12 | 0.0 | 0.2− |
| 2001 03 21 | 699 | 0.3+ | 0.8+ | 2005 04 17 | 703 | 0.3+ | 0.1− | 2005 05 18 | E12 | 0.2+ | 0.1− |
| 2001 03 21 | 699 | 0.4− | 0.7+ | 2005 04 17 | 703 | 0.4+ | 1.2+ | 2005 05 18 | E12 | 0.5+ | 0.2+ |
| 2001 03 24 | 608 | 0.1+ | 0.5+ | 2005 05 04 | 704 | (2.8− | 0.0 ) | 2005 05 19 | E12 | 0.1− | 0.1− |
| 2001 03 24 | 608 | 0.4− | 0.5+ | 2005 05 04 | 704 | 0.7− | 0.7+ | 2005 05 19 | E12 | 0.1+ | 0.2− |
| 2001 03 24 | 608 | 0.0 | 0.3+ | 2005 05 04 | 704 | 0.5− | 0.4+ | 2005 05 19 | E12 | 0.1+ | 0.5+ |
| 2001 04 24 | 608 | 0.2+ | 0.4− | 2005 05 04 | G96 | 0.1+ | 0.3− | 2005 05 19 | E12 | 0.2− | 0.0 |
| 2001 04 24 | 608 | 0.6+ | 1.1− | 2005 05 04 | 704 | 1.4− | 0.1+ | 2005 05 30 | E12 | 0.2− | 0.3− |
| 2001 04 24 | 608 | 0.3+ | 0.9− | 2005 05 04 | G96 | 0.1− | 0.2− | 2005 05 30 | E12 | 0.1+ | 0.1+ |
| 2002 10 05 | 460 | 0.5+ | 1.1− | 2005 05 04 | G96 | 0.1+ | 0.2− | 2005 05 30 | E12 | 0.5+ | 0.6− |
| 2002 10 05 | 460 | 0.3+ | 1.1+ | 2005 05 04 | G96 | 0.2+ | 0.1+ | 2005 05 30 | E12 | 0.2+ | 0.2+ |
| 2002 10 29 | 644 | 0.4− | 0.6+ | 2005 05 09 | 704 | 0.0 | 0.5− | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2002 10 29 | 644 | 0.5− | 0.6+ | 2005 05 09 | 704 | 0.2+ | 0.5− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2002 10 29 | 644 | 0.1− | 0.5+ | 2005 05 09 | 704 | 1.0+ | 0.2− | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2002 10 30 | 644 | 0.4− | 0.7+ | 2005 05 09 | 704 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.0 |
| 2002 10 30 | 644 | 0.2− | 0.6+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2002 10 30 | 644 | 0.1+ | 0.8+ | 2005 05 10 | G96 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.7− | 0.7+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2002 10 31 | 704 | 0.7− | 0.9+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.5− | 1.0+ | 2005 05 11 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2002 10 31 | 704 | 0.5− | 1.0+ | 2005 05 11 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2002 10 31 | 608 | 1.0− | 0.7− | 2005 05 11 | 704 | 0.1− | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2002 10 31 | 608 | 0.1− | 0.9− | 2005 05 11 | 704 | 0.5+ | 0.9+ | 2006 11 21 | 691 | 0.1− | 0.3+ |
| 2002 10 31 | 608 | 0.2+ | 1.2− | 2005 05 11 | 704 | (0.3+ | 1.5+) | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2005 05 11 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.8− | 0.5− |
| 2002 11 07 | 704 | 1.4+ | 1.1− | 2005 05 11 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2002 11 07 | 704 | (1.0+ | 1.6−) | 2005 05 11 | 644 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.5+ |

**(142764)∗ 2002 UV$_4$**

Discovered 2002 Oct. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.13134 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23266216 | $\omega$ | 231.02606 | | +0.48239324 | −0.86962861 | |
| $a$ | 2.6180959 | $\Omega$ | 191.62524 | | +0.87367914 | +0.46902348 | |
| $e$ | 0.2077814 | $i$ | 31.43217 | | −0.06309932 | −0.15415270 | |
| $P$ | 4.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.6+ | 0.8− | 2004 04 23 | 291 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2000 04 12 | 691 | 0.7+ | 0.5− | 2004 04 23 | 291 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2000 04 12 | 691 | 1.2− | 1.1− | 2006 08 29 | 699 | 0.2− | 1.5− | 2006 09 27 | 699 | 0.1+ | 0.1+ |
| 2002 10 29 | 704 | 0.5− | 0.2− | 2006 08 29 | 699 | 0.0 | 0.4+ | 2006 09 27 | 699 | 0.3− | 0.3+ |
| 2002 10 29 | 704 | (0.6+ | 2.0+) | 2006 08 29 | 699 | 0.2− | 0.0 | 2006 09 27 | 699 | 0.5+ | 0.1+ |
| 2002 10 29 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 699 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.9− | 0.9− |
| 2002 10 29 | 704 | 0.4− | 0.2− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 1.4− | 1.4+ |
| 2002 10 30 | 704 | 0.0 | 0.4− | 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.8+ |
| 2002 10 30 | 704 | 0.2+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.2+ |
| 2002 10 30 | 704 | (1.8− | 0.4−) | 2006 09 16 | 703 | 0.0 | 0.4− | 2006 09 29 | 704 | 0.3+ | 0.3+ |
| 2002 10 30 | 704 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.5− | 0.4+ |
| 2002 10 30 | 704 | 0.8− | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 11 04 | 644 | 0.2+ | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 11 04 | 644 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 11 04 | 644 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 11 24 | 699 | 0.3+ | 1.4− | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 11 24 | 699 | (0.4+ | 2.0−) | 2006 09 18 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.7+ |
| 2002 11 24 | 699 | 0.2− | 0.3− | 2006 09 18 | 704 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 11 24 | 699 | 1.0+ | 1.2− | 2006 09 18 | 704 | 0.9+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.1+ | 1.3− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.5− | 0.5− | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.2− | 1.4+ |
| 2004 03 18 | 704 | 1.0− | 0.8+ | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.7+ |
| 2004 03 27 | 704 | 0.1+ | 1.0+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.1− | 1.4+ |
| 2004 03 27 | 704 | 0.4+ | 1.4+ | 2006 09 19 | 699 | 0.5− | 0.0 | 2006 11 14 | 704 | 0.0 | 0.3− |
| 2004 03 27 | 704 | 1.1+ | 1.3+ | 2006 09 22 | 106 | 0.3+ | 0.0 | 2006 11 14 | 704 | 0.8− | 0.2+ |
| 2004 03 27 | 704 | 0.3− | 1.4+ | 2006 09 22 | 106 | 0.2− | 0.4− | 2006 11 17 | 704 | 0.4+ | 0.4+ |
| 2004 03 27 | 704 | (0.1− | 2.0+) | 2006 09 22 | 106 | 0.9+ | 0.4− | 2006 11 17 | 704 | 0.5− | 0.3− |
| 2004 03 29 | 691 | 0.2− | 0.1+ | 2006 09 22 | 106 | 0.8+ | 0.6− | 2006 11 17 | 704 | 0.9− | 0.4− |
| 2004 03 29 | 691 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.1− | 0.0 | 2006 11 17 | 704 | 1.1− | 1.5+ |
| 2004 03 29 | 691 | 0.3− | 0.2+ | 2006 09 25 | 704 | 0.7+ | 0.2+ | 2006 11 17 | 704 | 0.1+ | 1.0+ |
| 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.9+ | 0.3− | 2006 11 23 | 703 | 0.7− | 0.6+ |
| 2004 04 20 | 691 | 0.1− | 0.5+ | 2006 09 25 | 704 | (0.3+ | 1.6+) | 2006 11 23 | 703 | 0.5− | 0.4+ |
| 2004 04 20 | 691 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.4+ | 0.0 |
| 2004 04 23 | 291 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 1.0+ | 0.4− |

**(142765)∗ 2002 UX$_4$**

Discovered 2002 Oct. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 303.72205 | | $\omega$ | (2000.0) | +0.36075559 | −0.93173917 |
| $n$ | 0.21416188 | | $\Omega$ | 254.01880 | +0.93207578 | +0.36174642 |
| $a$ | 2.7667799 | | $i$ | 174.29870 | −0.03301729 | +0.03164886 |
| $e$ | 0.1880280 | | $H$ | 24.65631 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.60 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 557 | 0.9− | 0.0 | 2003 02 09 | 608 | 0.6− | 1.0− | 2006 09 12 | 703 | 0.8− | 0.6+ |
| 1999 03 13 | 557 | 0.4+ | 0.3− | 2003 02 09 | 608 | 0.6− | 1.0− | 2006 09 17 | 704 | 1.3+ | 0.3+ |
| 1999 03 13 | 557 | 0.5− | 0.3+ | 2003 02 09 | 608 | 0.6− | 0.6− | 2006 09 17 | 704 | (1.8+ | 1.3+) |
| 2002 10 29 | 704 | 0.8+ | 1.1+ | 2004 03 23 | 704 | (0.6+ | 2.0+) | 2006 09 17 | 704 | 0.7+ | 0.3+ |
| 2002 10 29 | 704 | 0.3− | 0.9+ | 2004 03 23 | 704 | 0.9+ | 1.0+ | 2006 09 17 | 704 | 1.0+ | 0.3+ |
| 2002 10 29 | 704 | 0.3− | 0.7+ | 2004 03 23 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.4+ |
| 2002 10 29 | 704 | 0.1+ | 0.8+ | 2004 03 23 | 704 | (0.9+ | 1.6+) | 2006 09 19 | 699 | 0.3− | 0.1− |
| 2002 10 30 | 704 | 0.9+ | 1.2+ | 2004 03 29 | 703 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.9+ |
| 2002 10 30 | 704 | 0.1+ | 1.2+ | 2004 03 29 | 703 | 0.7− | 1.2+ | 2006 09 19 | 699 | 0.3− | 0.3+ |
| 2002 10 30 | 704 | (1.2+ | 1.7+) | 2004 03 29 | 703 | 1.3− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.1+ |
| 2003 01 03 | 704 | 0.4+ | 0.6+ | 2004 03 29 | 703 | (1.8− | 2.0+) | 2006 09 19 | 703 | 0.9+ | 0.2+ |
| 2003 01 03 | 704 | (2.1+ | 1.4+) | 2004 04 24 | 291 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.7+ | 0.2− |
| 2003 01 03 | 704 | 0.6+ | 0.3+ | 2004 04 24 | 291 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.1+ |
| 2003 01 03 | 704 | (2.5+ | 1.0+) | 2004 04 24 | 291 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.3+ |
| 2003 01 04 | 699 | 0.1+ | 0.2− | 2005 07 17 | 644 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.2− |
| 2003 01 04 | 699 | 0.5− | 0.2− | 2005 07 17 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.1+ |
| 2003 01 04 | 699 | 0.2− | 1.3+ | 2005 07 17 | 644 | 0.8− | 0.6+ | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2003 01 04 | 699 | 0.1+ | 0.4+ | 2005 07 30 | 644 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.2+ |
| 2003 01 05 | 704 | 0.3− | 0.7− | 2005 07 30 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 0.4+ | 0.3− | 2005 07 30 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.6+ | 1.0+ |
| 2003 01 05 | 704 | 0.1− | 0.4− | 2006 08 24 | 704 | 0.8− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 0.5− | 2006 08 24 | 704 | 0.7− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2003 01 05 | 704 | 0.1− | 0.2− | 2006 08 24 | 704 | 1.0− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.3− |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2003 01 05 | 704 | 0.4− | 0.0 | 2006 08 27 | 699 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.3− | 0.3− |
| 2003 01 05 | 704 | 0.1+ | 0.3− | 2006 08 27 | 699 | 0.2− | 0.6− | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.6− | 2006 09 27 | 704 | (0.3− | 1.8+) |
| 2003 01 05 | 704 | 0.5+ | 0.2− | 2006 08 27 | 699 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.6+ | 1.1+ |
| 2003 01 14 | 644 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.9+ | 0.2+ |
| 2003 01 14 | 644 | 0.3− | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.8+ |
| 2003 01 14 | 644 | 0.5+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.4− | 2006 10 19 | 703 | 0.3− | 0.9+ |
| 2003 01 28 | 608 | 0.3− | 0.9− | 2006 08 28 | 703 | (7.3− | 2.1−) | 2006 10 19 | 703 | 0.4− | 0.4+ |
| 2003 01 28 | 608 | 0.1− | 0.5− | 2006 08 29 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2003 01 28 | 608 | 0.4− | 0.5− | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2003 02 04 | 699 | 0.1− | 0.6+ | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2003 02 04 | 699 | (0.1+ | 1.6+) | 2006 09 12 | 703 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2003 02 04 | 699 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2003 02 04 | 699 | 1.1+ | 0.7+ | 2006 09 12 | 703 | 0.4+ | 0.4− | | | | |

**(142766)∗ 2002 UA$_5$ = 2004 DC$_{59}$**

Discovered 2002 Oct. 26 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 69409)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 270.45392 | | $\omega$ | (2000.0) | +0.19295628 | −0.97824205 |
| $n$ | 0.21234404 | | $\Omega$ | 285.62575 | +0.95209962 | +0.16788465 |
| $a$ | 2.7825480 | | $i$ | 152.88764 | +0.23722183 | +0.12189029 |
| $e$ | 0.1482731 | | $H$ | 9.62845 | $G$ 0.15 | $U$ 0 |
| $P$ | 4.64 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 26 | 608 | 0.5− | 0.0 | 2004 02 23 | 704 | 1.2+ | 0.9+ | 2006 08 15 | 644 | 0.1+ | 0.4+ |
| 2002 10 26 | 608 | 0.6− | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2002 10 26 | 608 | 1.3− | 0.1+ | 2004 02 23 | 704 | 0.6+ | 0.5− | 2006 08 15 | 644 | 0.2− | 0.4+ |
| 2002 10 30 | 704 | 0.1− | 0.9+ | 2004 02 29 | 691 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.2+ |
| 2002 10 30 | 704 | 0.4+ | 0.8+ | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.6− | 0.3+ |
| 2002 10 30 | 704 | 0.0 | 0.3+ | 2004 02 29 | 691 | 0.1− | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2002 10 30 | 704 | 0.2− | 0.6+ | 2005 06 03 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 1.4+ | 0.1− |
| 2002 10 30 | 704 | 0.3+ | 0.6+ | 2005 06 03 | 691 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.5− |
| 2002 11 07 | 645 | 0.0 | 0.2+ | 2005 06 03 | 691 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2005 07 01 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2002 11 22 | 644 | (0.8− | 1.8+) | 2005 07 01 | 691 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.1+ |
| 2002 11 22 | 644 | (0.6− | 1.7+) | 2005 07 01 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 11 22 | 644 | 0.3− | 1.4+ | 2005 07 02 | 691 | 0.2+ | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2004 02 23 | 704 | 0.1+ | 0.8+ | 2005 07 02 | 691 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.4+ |
| 2004 02 23 | 704 | 1.0+ | 0.6+ | 2005 07 02 | 691 | 0.3+ | 0.1− | | | | |

**(142767)∗ 2002 UU$_5$ = 2004 CH$_{93}$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61504)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.44841 | | $\omega$ | (2000.0) | +0.58269661 | +0.79977769 |
| $n$ | 0.24471733 | | $\Omega$ | 222.44103 | −0.70122327 | +0.58453358 |
| $a$ | 2.5313930 | | $i$ | 83.70193 | −0.41079262 | +0.13666067 |
| $e$ | 0.0481022 | | $H$ | 8.34704 | $G$ 0.15 | $U$ 0 |
| $P$ | 4.03 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.8+ | 0.2− | 2004 02 13 | 699 | 1.1+ | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.4+ |
| 2000 02 02 | 704 | 0.3− | 0.2− | 2004 02 13 | 699 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.0 | 0.9+ |
| 2000 02 02 | 704 | 0.4+ | 0.4+ | 2004 02 13 | 699 | 0.1+ | 0.4− | 2006 09 18 | 703 | 0.5− | 0.2− |
| 2002 09 30 | 608 | 0.7− | 1.3+ | 2004 02 15 | 704 | 0.2− | 1.2+ | 2006 09 18 | 703 | (0.4− | 2.0+) |
| 2002 09 30 | 608 | 1.3− | 0.8+ | 2004 02 15 | 704 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.4+ | 0.7+ |
| 2002 09 30 | 608 | 1.0− | 0.9+ | 2004 02 15 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.8+ |
| 2002 10 03 | 599 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.5+ | 0.1− | 2006 09 26 | 703 | 0.6− | 0.4− |
| 2002 10 03 | 599 | 0.3+ | 0.2− | 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.6+ |
| 2002 10 03 | 599 | 0.2− | 0.0 | 2004 02 18 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.8− | 0.1+ |
| 2002 10 03 | 599 | 0.1+ | 0.0 | 2004 02 18 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | (1.7− | 1.0−) |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2005 05 22 | 644 | 0.2− | 0.5+ | 2006 10 22 | 703 | 1.0− | 0.3+ |
| 2002 10 10 | 645 | 0.1+ | 0.2− | 2005 05 22 | 644 | 0.1− | 0.6+ | 2006 10 22 | 703 | 1.2− | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 22 | 644 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 06 27 | G96 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 10 15 | 644 | 0.7− | 0.4+ | 2005 06 27 | G96 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 10 15 | 644 | 0.7− | 0.3+ | 2005 06 27 | G96 | 0.2+ | 0.2+ | 2006 10 28 | 703 | (0.3− | 2.1+) |
| 2002 10 15 | 644 | 0.5− | 0.5+ | 2005 06 28 | G96 | 1.2+ | 0.9− | 2006 10 28 | 703 | (1.2+ | 1.7+) |
| 2002 10 28 | 644 | 0.8+ | 0.6+ | 2005 06 28 | G96 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.1+ | 1.0+ |
| 2002 10 28 | 644 | 0.1+ | 0.1+ | 2005 06 28 | G96 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.4+ | 0.3+ |
| 2002 10 28 | 644 | 0.0 | 0.1+ | 2005 06 28 | G96 | 0.1− | 0.7+ | 2006 11 16 | 703 | 0.2+ | 1.3+ |
| 2002 10 30 | 704 | 0.0 | 0.3− | 2006 09 16 | 699 | 0.8− | 0.4− | 2006 11 16 | 703 | 0.9+ | 0.5− |
| 2002 10 30 | 704 | 0.0 | 1.1− | 2006 09 16 | 699 | 0.3+ | 0.2+ | 2006 11 16 | 703 | 0.8− | 0.7+ |
| 2002 10 30 | 704 | 0.5+ | 1.0− | 2006 09 16 | 699 | 0.9+ | 0.9− | 2006 11 16 | 703 | 0.5+ | 1.6+ |
| 2004 02 13 | 699 | 0.6− | 1.4+ | 2006 09 16 | 699 | 0.7− | 0.9+ | | | | |

**(142768)∗ 2002 UA$_6$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 229.13440 | | $\omega$ | (2000.0) | −0.57081988 | −0.82014754 |
| $n$ | 0.21760493 | | $\Omega$ | 317.24174 | +0.79334143 | −0.56316339 |
| $a$ | 2.7375174 | | $i$ | 167.39917 | +0.21159878 | −0.10101983 |
| $e$ | 0.1372766 | | $H$ | 10.30386 | $G$ 0.15 | $U$ 0 |
| $P$ | 4.53 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 704 | 1.4− | 0.0 | 2004 01 30 | 699 | 0.6− | 0.1− | 2004 03 27 | 704 | 0.8+ | 0.8+ |
| 2000 04 27 | 704 | 1.1+ | 0.5+ | 2004 01 30 | 683 | 0.4+ | 0.1− | 2004 03 27 | 704 | 1.2+ | 0.8+ |
| 2000 04 27 | 704 | 1.1+ | 0.5+ | 2004 01 30 | 699 | 0.5+ | 1.0+ | 2004 03 27 | 704 | (1.1+ | 2.5+) |
| 2000 04 28 | 699 | 0.0 | 0.0 | 2004 01 30 | 683 | 0.6+ | 0.2+ | 2004 03 27 | 704 | 0.6+ | 0.9+ |
| 2000 04 28 | 699 | 0.4− | 0.3+ | 2004 01 30 | 699 | 0.1+ | 0.2− | 2004 05 07 | 703 | 0.3− | 0.6− |
| 2000 04 28 | 699 | 0.3− | 0.7+ | 2004 02 12 | 333 | 0.1− | 0.1− | 2004 05 07 | 703 | 0.4− | 1.0+ |
| 2000 04 28 | 699 | 0.2+ | 0.4+ | 2004 02 12 | 333 | 0.0 | 0.1+ | 2004 05 07 | 703 | 0.3− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 19 | 599 | 0.0 | 0.2+ | 2004 02 12 | 333 | 0.1− | 0.2− | 2004 05 07 | 703 | (1.8+ | 0.0 ) | | |
| 2002 09 19 | 599 | 0.3+ | 0.4+ | 2004 02 12 | 333 | 0.3− | 0.3+ | 2006 08 22 | 644 | 0.4− | 0.9+ | | |
| 2002 09 19 | 599 | 0.1− | 0.4+ | 2004 02 12 | 333 | 0.8− | 0.9+ | 2006 08 22 | 644 | 0.4− | 0.2+ | | |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2004 02 12 | 333 | 0.7− | 0.8+ | 2006 08 22 | 644 | 0.0 | 0.2+ | | |
| 2002 10 04 | 704 | 0.3− | 1.2+ | 2004 02 17 | 691 | 0.2− | 0.3− | 2006 08 28 | 699 | (0.2+ | 2.3+) | | |
| 2002 10 04 | 704 | 0.3− | 1.2+ | 2004 02 17 | 691 | 0.0 | 0.2− | 2006 08 28 | 703 | 1.0− | 0.1+ | | |
| 2002 10 04 | 704 | (0.0 | 1.6+) | 2004 02 17 | 691 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.1− | 0.6+ | | |
| 2002 10 11 | 644 | 0.1− | 0.1+ | 2004 02 17 | 608 | 0.5+ | 0.1− | 2006 08 28 | 699 | 0.2+ | 1.1+ | | |
| 2002 10 11 | 644 | 0.3− | 0.2+ | 2004 02 17 | 608 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.8+ | 0.7− | | |
| 2002 10 11 | 644 | 0.3− | 0.3+ | 2004 02 17 | 608 | 0.5+ | 0.0 | 2006 08 28 | 703 | 0.9− | 0.5− | | |
| 2002 10 28 | 644 | 0.1+ | 0.2+ | 2004 02 18 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 699 | 1.2− | 0.2+ | | |
| 2002 10 28 | 644 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.7+ | 0.7+ | 2006 08 28 | 699 | 1.2+ | 0.9+ | | |
| 2002 10 28 | 644 | 0.4+ | 0.3+ | 2004 02 18 | 704 | 0.2− | 1.0+ | 2006 08 29 | 691 | 0.0 | 0.7+ | | |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.9+ | 0.6+ | 2006 08 29 | 691 | 0.0 | 0.7+ | | |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.6+ | 0.8+ | 2006 08 29 | 691 | 0.0 | 0.8+ | | |
| 2002 10 30 | 704 | 0.9+ | 1.1+ | 2004 02 25 | 333 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.2+ | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 25 | 333 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.5− | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 25 | 333 | 0.5− | 0.2+ | 2006 09 14 | 703 | 1.2− | 0.3+ | | |
| 2002 10 30 | 704 | 0.4− | 0.5+ | 2004 02 25 | 333 | 0.9− | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.4+ | | |
| 2002 10 30 | 704 | 0.6+ | 0.3− | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2+ | | |
| 2002 10 30 | 704 | 0.3+ | 1.2− | 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2003 12 22 | 704 | 0.4− | 0.4− | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | | |
| 2003 12 22 | 704 | 0.4+ | 0.2− | 2004 03 15 | 704 | (1.6− | 0.5+) | 2006 09 25 | G96 | 0.3+ | 0.1+ | | |
| 2003 12 22 | 704 | 0.1− | 1.0− | 2004 03 15 | 704 | 0.9− | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.0 | | |
| 2004 01 27 | 683 | 0.9− | 0.2+ | 2004 03 15 | 704 | 0.7− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2004 01 27 | 683 | (0.4− | 1.5+) | 2004 03 15 | 704 | 1.4− | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.4+ | | |
| 2004 01 27 | 683 | 0.6− | 1.0− | 2004 03 15 | 704 | 1.3− | 1.0+ | 2006 10 28 | G96 | 0.0 | 0.3+ | | |
| 2004 01 29 | 699 | 0.3− | 0.4+ | 2004 03 18 | 704 | 1.0+ | 0.5+ | 2006 11 23 | G96 | 0.6− | 0.2− | | |
| 2004 01 29 | 699 | 0.2+ | 0.3− | 2004 03 18 | 704 | 0.8+ | 0.4+ | 2006 11 23 | G96 | 0.6− | 0.5− | | |
| 2004 01 29 | 699 | 0.0 | 0.3− | 2004 03 18 | 704 | 1.1+ | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.4+ | | |
| 2004 01 29 | 699 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2004 01 30 | 699 | 0.2+ | 0.7+ | 2004 03 18 | 704 | 0.9+ | 0.7+ | | | | | | |
| 2004 01 30 | 683 | (0.7+ | 1.8−) | 2004 03 27 | 704 | 1.1+ | 0.5+ | | | | | | |

**(142769)∗ 2002 UB$_6$ = 2004 DF$_5$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61504)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.95994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21340140 | $\omega$ | 320.32529 | | −0.52853995 | | −0.84734659 |
| $a$ | 2.7733491 | $\Omega$ | 161.40160 | | +0.81408445 | | −0.52311365 |
| $e$ | 0.1347684 | $i$ | 9.28731 | | +0.24064917 | | −0.09141042 |
| $P$ | 4.62 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 07 | 691 | 0.0 | 0.4− | 2004 02 11 | 644 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.3+ | | |
| 1995 04 07 | 691 | 0.1− | 0.0 | 2004 02 11 | 644 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.5+ | 0.7+ | | |
| 1995 04 07 | 691 | 0.2− | 0.3− | 2004 02 11 | 644 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.4+ | | |
| 1999 01 20 | 704 | (1.9− | 2.8−) | 2004 02 17 | 608 | 0.4+ | 0.1− | 2004 03 27 | 704 | 0.0 | 0.0 | | |
| 1999 01 20 | 704 | 1.0− | 1.0− | 2004 02 17 | 608 | 0.5+ | 0.1− | 2004 03 31 | 691 | 0.3+ | 0.3+ | | |
| 1999 01 20 | 704 | 0.2+ | 0.9+ | 2004 02 17 | 608 | 0.5+ | 0.4− | 2004 03 31 | 691 | 0.0 | 0.4+ | | |
| 1999 01 20 | 704 | 0.4− | 1.3− | 2004 02 18 | 704 | 0.2+ | 0.4+ | 2004 03 31 | 691 | 0.3− | 0.1+ | | |
| 1999 01 20 | 704 | 1.5− | 0.6+ | 2004 02 18 | 704 | 0.4+ | 0.4+ | 2004 05 17 | 704 | 0.1+ | 0.7+ | | |
| 2000 05 27 | 704 | 1.6+ | 1.3+ | 2004 02 18 | 704 | 1.0− | 0.1− | 2004 05 17 | 704 | 0.4− | 0.7+ | | |
| 2000 05 27 | 704 | 0.8+ | 1.5+ | 2004 02 18 | 333 | 0.1− | 0.1+ | 2004 05 17 | 704 | 0.8+ | 0.5− | | |
| 2000 05 27 | 704 | 0.2− | 1.1+ | 2004 02 18 | 704 | 1.1− | 0.5+ | 2004 05 17 | 704 | (2.1+ | 0.4−) | | |
| 2000 05 27 | 704 | 0.4+ | 0.6+ | 2004 02 18 | 704 | 0.5+ | 0.5+ | 2006 08 19 | 691 | 0.2− | 0.6+ | | |
| 2002 10 09 | 699 | 0.3− | 0.3+ | 2004 02 18 | 333 | 0.3− | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.7+ | | |
| 2002 10 09 | 699 | 0.4+ | 0.2− | 2004 02 18 | 333 | 0.2− | 0.4+ | 2006 08 19 | 691 | 0.1− | 0.8+ | | |
| 2002 10 09 | 699 | 0.7+ | 0.2− | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 08 30 | 704 | (0.9− | 1.7+) | | |
| 2002 10 09 | 699 | 0.1− | 1.1+ | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 08 30 | 704 | 0.7− | 1.1+ | | |
| 2002 10 15 | 644 | 0.3− | 0.8+ | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 08 30 | 704 | (1.2− | 1.9+) | | |
| 2002 10 15 | 644 | 0.3+ | 1.0+ | 2004 02 26 | 704 | 0.3+ | 0.6+ | 2006 08 30 | 704 | 0.5− | 0.4− | | |
| 2002 10 15 | 644 | 0.2+ | 0.6+ | 2004 02 26 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.6− | | |
| 2002 10 28 | 644 | 0.3+ | 1.1+ | 2004 03 15 | 704 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.7− | | |
| 2002 10 28 | 644 | 0.3− | 1.1+ | 2004 03 15 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.1+ | 1.3− | | |
| 2002 10 28 | 644 | 0.2+ | 0.7+ | 2004 03 15 | 704 | 0.3− | 0.6− | 2006 09 14 | 703 | 0.9− | 0.6− | | |
| 2002 10 30 | 704 | 0.6+ | 0.5+ | 2004 03 15 | 704 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.3− | | |
| 2002 10 30 | 704 | 0.5+ | 0.3− | 2004 03 15 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.2+ | | |
| 2002 10 30 | 704 | 0.7+ | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.6− | 0.0 | | |
| 2002 10 30 | 704 | 0.1+ | 0.9+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.0 | | |
| 2004 01 29 | 704 | 0.6− | 0.1− | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2004 01 29 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.4− | | |
| 2004 01 29 | 704 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1+ | | |
| 2004 01 29 | 704 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.0 | | |

**(142770)∗ 2002 UM$_6$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.31836 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21870417 | $\omega$ | 298.80001 | | +0.96841520 | | −0.16970663 |
| $a$ | 2.7283369 | $\Omega$ | 71.46870 | | +0.23550196 | | +0.86323303 |
| $e$ | 0.1086034 | $i$ | 11.10858 | | −0.08191961 | | +0.47542443 |
| $P$ | 4.51 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.7− | 1.0+ | 2002 11 21 | 644 | 0.2+ | 1.0+ | 2005 04 12 | 699 | 0.6− | 0.5+ | | |
| 2002 10 04 | 704 | 0.1− | 1.1+ | 2002 11 21 | 644 | 0.7+ | 1.2+ | 2005 05 07 | 703 | (2.4+ | 0.1−) | | |
| 2002 10 04 | 704 | 0.2− | 0.7+ | 2003 12 28 | 704 | 1.4+ | 0.7+ | 2005 05 07 | 703 | 0.9+ | 0.5+ | | |
| 2002 10 04 | 704 | 0.5− | 1.1+ | 2003 12 28 | 704 | 0.8+ | 0.5+ | 2005 05 07 | 703 | 1.6− | 1.0+ | | |
| 2002 10 04 | 704 | 0.5− | 1.0+ | 2003 12 28 | 704 | 1.1+ | 0.1− | 2005 05 07 | 703 | 0.4− | 1.1+ | | |
| 2002 10 04 | 645 | 0.1− | 0.0 | 2003 12 28 | 704 | 0.5+ | 0.1+ | 2005 05 15 | 644 | 0.6− | 0.0 | | |
| 2002 10 04 | 645 | 0.1− | 0.1+ | 2004 01 31 | 704 | 1.2+ | 0.5+ | 2005 05 15 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 10 | 645 | 0.1− | 0.0 | 2004 01 31 | 704 | 0.9+ | 0.1− | 2005 05 15 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 10 | 645 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.6+ | 0.9+ | 2005 05 15 | 644 | 0.1+ | 0.3+ | | |
| 2002 10 15 | 644 | 0.3− | 0.5+ | 2004 01 31 | 704 | 1.0+ | 0.1+ | 2005 05 15 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 15 | 644 | 0.2− | 0.3+ | 2004 02 11 | 644 | 0.0 | 0.5+ | 2005 05 15 | 644 | 0.1− | 0.1+ | | |
| 2002 10 15 | 644 | 0.2− | 0.5+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 08 12 | 644 | 0.1− | 0.6+ | | |
| 2002 10 28 | 644 | 0.1+ | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.6+ | 2006 08 12 | 644 | 0.1+ | 0.6+ | | |
| 2002 10 28 | 644 | 0.3− | 0.4+ | 2004 02 14 | 704 | 0.5+ | 0.1− | 2006 08 12 | 644 | 0.2− | 0.5+ | | |
| 2002 10 28 | 644 | 0.0 | 0.3+ | 2004 02 14 | 704 | 0.4+ | 0.3− | 2006 08 14 | 644 | 0.0 | 0.6+ | | |
| 2002 10 30 | 704 | 0.8+ | 0.6+ | 2004 02 14 | 704 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.3− | 0.4+ | | |
| 2002 10 30 | 704 | 0.8+ | 1.1+ | 2004 02 14 | 704 | 0.2− | 0.4− | 2006 08 14 | 644 | 0.1− | 0.6+ | | |
| 2002 10 30 | 704 | 1.3+ | 0.4+ | 2004 02 14 | 704 | 0.8+ | 0.6+ | 2006 08 25 | E12 | 0.1+ | 0.2+ | | |
| 2002 10 30 | 704 | 1.5+ | 0.0 | 2004 02 17 | 645 | 0.1− | 0.1+ | 2006 08 25 | E12 | 1.0− | 0.1− | | |
| 2002 10 30 | 704 | 0.4+ | 0.4+ | 2004 02 17 | 645 | 0.2− | 0.1+ | 2006 08 25 | E12 | 0.2+ | 0.5+ | | |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2005 04 10 | 691 | 0.4+ | 0.5+ | 2006 08 25 | E12 | 0.1+ | 0.2− | | |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2005 04 10 | 691 | 0.4+ | 0.2+ | 2006 09 12 | E12 | 0.1+ | 0.9+ | | |
| 2002 11 12 | 704 | 0.5+ | 0.6− | 2005 04 10 | 691 | 0.4+ | 0.3+ | 2006 09 12 | E12 | 0.1− | 0.5+ | | |
| 2002 11 12 | 704 | 0.5+ | 0.8− | 2005 04 12 | 699 | 0.2+ | 0.5+ | 2006 09 12 | E12 | 0.5+ | 0.3− | | |
| 2002 11 12 | 704 | 0.9− | 0.5− | 2005 04 12 | 699 | 1.2+ | 1.1+ | | | | | | |
| 2002 11 21 | 644 | 0.1+ | 1.3+ | 2005 04 12 | 699 | 0.5− | 0.9+ | | | | | | |

**(142771)∗ 2002 UQ$_6$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.47384 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18735463 | $\omega$ | 182.32746 | | +0.92009019 | | +0.38244428 |
| $a$ | 3.0247751 | $\Omega$ | 154.66212 | | −0.35611178 | | +0.90674246 |
| $e$ | 0.1352915 | $i$ | 11.41226 | | −0.16315158 | | +0.17763580 |
| $P$ | 5.26 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 18 | 691 | 0.0 | 0.2+ | 2002 10 15 | 644 | 0.1− | 0.4+ | 2005 03 09 | 704 | 0.5− | 0.7+ | | |
| 1996 06 18 | 691 | 0.1− | 0.3+ | 2002 10 15 | 644 | 0.2− | 0.5+ | 2005 03 09 | 704 | 0.9+ | 0.7+ | | |
| 1996 06 18 | 691 | 0.0 | 0.3+ | 2002 10 28 | 644 | 0.3− | 0.6+ | 2005 03 09 | 704 | 0.4+ | 0.1− | | |
| 2000 04 08 | 704 | 0.4+ | 1.4+ | 2002 10 28 | 644 | 0.7− | 0.4+ | 2005 03 09 | 704 | 0.1− | 1.0+ | | |
| 2000 04 08 | 704 | 0.5+ | 1.2+ | 2002 10 28 | 644 | 0.4− | 0.5+ | 2005 03 09 | 704 | 1.1+ | 0.5+ | | |
| 2000 04 08 | 704 | 0.1− | 1.0+ | 2002 10 30 | 704 | 0.2− | 1.3+ | 2005 04 18 | 691 | 0.0 | 0.1+ | | |
| 2001 06 21 | 704 | 0.5− | 0.6+ | 2002 10 30 | 704 | 0.4+ | 1.9+ | 2005 04 18 | 691 | 0.2+ | 0.2+ | | |
| 2001 06 21 | 704 | 1.0+ | 0.3+ | 2002 10 30 | 704 | 0.2+ | 2.0+ | 2005 04 18 | 691 | 0.0 | 0.1+ | | |
| 2001 06 21 | 704 | 0.9− | 0.1+ | 2002 10 30 | 704 | (1.3+ | 2.3+) | 2006 04 30 | 703 | 0.4− | 1.0+ | | |
| 2001 06 21 | 704 | 1.2+ | 0.3+ | 2002 11 12 | 704 | 0.6− | 0.0 | 2006 04 30 | 703 | 0.1+ | 1.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.1+ | 0.4+ | 2002 11 12 | 704 | 0.6− | 0.3+ | 2006 04 30 | 703 | 0.3+ | 1.2+ | | |
| 2002 10 04 | 704 | 0.8+ | 0.5+ | 2002 11 12 | 704 | 0.2− | 1.0+ | 2006 04 30 | 703 | 0.3+ | 0.6+ | | |
| 2002 10 04 | 704 | 0.3+ | 0.0 | 2005 03 01 | 691 | 0.1+ | 0.6+ | 2006 05 20 | 703 | 0.2− | 0.1+ | | |
| 2002 10 04 | 704 | 0.8+ | 0.6+ | 2005 03 01 | 691 | 0.1− | 0.5+ | 2006 05 20 | 703 | 0.5+ | 0.7+ | | |
| 2002 10 04 | 704 | 0.9+ | 0.1− | 2005 03 01 | 691 | 0.1+ | 0.4+ | 2006 05 20 | 703 | 0.2+ | 0.3+ | | |
| 2002 10 04 | 704 | 0.7+ | 0.6+ | 2005 03 03 | 703 | 0.5− | 0.4− | 2006 05 20 | 703 | 0.4− | 0.2− | | |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2005 03 03 | 703 | 1.2− | 0.7− | 2006 06 03 | 703 | 0.1− | 1.0− | | |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2005 03 03 | 703 | 1.4− | 1.1− | 2006 06 03 | 703 | 0.4+ | 0.4+ | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 03 03 | 703 | 0.8− | 0.6+ | 2006 06 03 | 703 | 0.7+ | 0.9− | | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 03 08 | 699 | 0.6+ | 0.3− | 2006 06 03 | 703 | 0.9− | 0.6− | | |
| 2002 10 07 | 608 | 0.8− | 1.4+ | 2005 03 08 | 699 | (2.3+ | 0.2−) | 2006 06 21 | 703 | 0.8− | 0.5+ | | |
| 2002 10 07 | 608 | 1.3− | 0.7+ | 2005 03 08 | 699 | 0.4− | 0.2+ | 2006 06 21 | 703 | 0.7− | 0.1+ | | |
| 2002 10 07 | 608 | (1.7− | 2.1+) | 2005 03 08 | 699 | 1.0+ | 0.2+ | 2006 06 21 | 703 | 1.2− | 1.2− | | |
| 2002 10 15 | 644 | 0.1− | 0.3+ | 2005 03 08 | 699 | 0.1+ | 0.7+ | 2006 06 21 | 703 | (0.1− | 3.3−) | | |
| 2002 10 15 | 644 | 0.3− | 0.6+ | 2005 03 08 | 699 | 1.2+ | 0.3− | 2006 06 23 | 644 | 0.4+ | 0.2+ | | |
| 2002 10 15 | 644 | 0.2− | 0.4+ | 2005 03 08 | 699 | 0.5+ | 0.0 | 2006 06 23 | 644 | 0.5+ | 0.2+ | | |
| 2002 10 15 | 644 | 0.3− | 0.6+ | 2005 03 08 | 699 | 1.0+ | 0.2+ | 2006 06 23 | 644 | 0.5+ | 0.1+ | | |

**(142772)∗ 2002 UU$_7$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.21516 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23417550 | $\omega$ | 297.98157 | | +0.96089157 | −0.09650469 | |
| $a$ | 2.6068042 | $\Omega$ | 68.55455 | | +0.21415018 | +0.85322821 | |
| $e$ | 0.2110197 | $i$ | 16.19295 | | −0.17557642 | +0.51253143 | |
| $P$ | 4.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.4− | 0.5+ | 2002 11 01 | 704 | 0.2+ | 0.3+ | 2005 04 14 | 691 | 0.4− | 0.5+ | | |
| 2002 10 10 | 644 | 0.3− | 0.4+ | 2002 11 06 | 644 | (0.1+ | 2.1+) | 2005 04 30 | 691 | 0.3+ | 0.5+ | | |
| 2002 10 10 | 644 | 0.3− | 0.5+ | 2002 11 06 | 644 | 0.1− | 1.2+ | 2005 04 30 | 691 | 0.3+ | 0.3+ | | |
| 2002 10 15 | 644 | 0.3− | 0.0 | 2002 11 06 | 644 | 0.2+ | 1.1+ | 2005 04 30 | 691 | 0.4+ | 0.3+ | | |
| 2002 10 15 | 644 | 0.2− | 0.1+ | 2002 11 30 | 704 | 1.1− | 0.9+ | 2006 07 28 | E12 | 0.0 | 0.2+ | | |
| 2002 10 15 | 644 | 0.1− | 0.0 | 2002 11 30 | 704 | 0.4− | 1.1+ | 2006 07 28 | E12 | 0.9+ | 0.2+ | | |
| 2002 10 28 | 644 | 0.6− | 0.2+ | 2002 11 30 | 704 | 0.8− | 0.6+ | 2006 07 28 | E12 | 0.6− | 1.3+ | | |
| 2002 10 28 | 644 | 0.5− | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 07 28 | E12 | 0.4+ | 0.6+ | | |
| 2002 10 28 | 644 | 0.5− | 0.2+ | 2002 12 11 | 704 | 0.1+ | 0.3− | 2006 09 16 | E12 | 0.2− | 0.0 | | |
| 2002 10 30 | 704 | 0.2− | 0.1− | 2002 12 11 | 704 | (0.2+ | 1.6+) | 2006 09 16 | E12 | 0.4+ | 0.2− | | |
| 2002 10 30 | 704 | 0.1− | 0.7+ | 2002 12 11 | 704 | 0.9+ | 0.8+ | 2006 09 16 | E12 | 0.2− | 0.2+ | | |
| 2002 10 30 | 704 | (2.3+ | 0.5−) | 2002 12 11 | 704 | 0.2− | 0.1− | 2006 09 16 | E12 | 0.5− | 0.1+ | | |
| 2002 10 30 | 704 | (1.6− | 0.4+) | 2003 01 04 | 704 | 0.5+ | 0.3− | 2006 09 22 | E12 | 0.0 | 0.1+ | | |
| 2002 10 30 | 704 | 0.2− | 0.2+ | 2003 01 04 | 704 | 0.3+ | 0.2+ | 2006 09 22 | E12 | 1.3+ | 0.9− | | |
| 2002 10 31 | 704 | 0.2− | 0.2+ | 2003 01 04 | 704 | 0.1− | 0.9− | 2006 09 22 | E12 | 0.2+ | 0.1− | | |
| 2002 10 31 | 704 | 0.8− | 0.1+ | 2003 01 07 | 704 | 0.7+ | 1.4+ | 2006 09 22 | E12 | 1.1+ | 0.1− | | |
| 2002 10 31 | 704 | 0.8− | 0.3− | 2003 01 07 | 704 | 0.2− | 0.7− | 2006 10 28 | E12 | 0.4+ | 0.6+ | | |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2003 01 07 | 704 | 0.9− | 0.9+ | 2006 10 28 | E12 | 0.4+ | 0.1− | | |
| 2002 10 31 | 704 | 0.2− | 0.0 | 2003 01 07 | 704 | (0.9+ | 2.1+) | 2006 10 28 | E12 | 0.0 | 0.1+ | | |
| 2002 10 31 | 704 | 0.0 | 0.3− | 2004 03 16 | 645 | 0.0 | 0.0 | 2006 10 28 | E12 | 0.6− | 0.0 | | |
| 2002 10 31 | 704 | 0.3− | 0.3− | 2004 03 16 | 645 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.5− | 0.3+ | | |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.5− | 0.5+ | | |
| 2002 11 01 | 704 | 0.0 | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 11 17 | 644 | 0.5− | 0.1+ | | |
| 2002 11 01 | 704 | 0.1− | 0.1+ | 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.2− | | |
| 2002 11 01 | 704 | 0.1+ | 0.2− | 2004 04 15 | 645 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.4− | | |
| 2002 11 01 | 704 | 0.2+ | 0.0 | 2004 05 14 | 645 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.4− | 1.0− | | |
| 2002 11 01 | 704 | 1.2+ | 0.1+ | 2004 05 14 | 645 | 0.2− | 0.0 | 2006 11 17 | 703 | 1.1− | 0.3− | | |
| 2002 11 01 | 704 | 0.2− | 0.5+ | 2005 04 14 | 691 | 0.3+ | 0.5+ | | | | | | |
| 2002 11 01 | 704 | 0.4+ | 0.2+ | 2005 04 14 | 691 | 0.3+ | 0.7+ | | | | | | |

**(142773)∗ 2002 UZ$_7$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.68794 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22384634 | $\omega$ | 349.78229 | | −0.43363065 | −0.88424453 | |
| $a$ | 2.6863920 | $\Omega$ | 125.70477 | | +0.84107318 | −0.46624645 | |
| $e$ | 0.1215764 | $i$ | 12.33152 | | +0.32335796 | +0.02694182 | |
| $P$ | 4.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | (0.3+ | 4.3−) | 2002 11 22 | 644 | 0.3− | 0.2+ | 2004 03 14 | 704 | 0.7− | 0.1− | | |
| 1998 12 22 | 704 | (1.0− | 3.5−) | 2002 11 22 | 644 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.5+ | 0.9+ | | |
| 1998 12 22 | 704 | (1.5+ | 3.1−) | 2002 11 22 | 644 | 0.3− | 0.0 | 2004 03 14 | 704 | 0.9− | 0.5+ | | |
| 1998 12 22 | 704 | 0.4− | 0.5− | 2002 11 22 | 644 | 0.3− | 0.1+ | 2004 03 14 | 704 | 0.8− | 0.3+ | | |
| 1998 12 22 | 704 | (3.3− | 1.8−) | 2002 12 07 | 644 | 0.2− | 0.1− | 2004 03 20 | 850 | 0.1− | 0.8− | | |
| 2000 05 31 | 699 | (3.8+ | 0.3+) | 2002 12 07 | 644 | 0.1− | 0.2− | 2004 03 20 | 850 | 0.8+ | 1.3− | | |
| 2000 05 31 | 699 | 0.6+ | 0.4− | 2002 12 07 | 644 | 0.1+ | 0.0 | 2004 03 20 | 850 | 1.1− | 1.5− | | |
| 2000 05 31 | 699 | 1.1− | 1.5+ | 2003 01 24 | 809 | 0.2+ | 0.1− | 2004 03 25 | 704 | 0.1− | 1.4+ | | |
| 2000 05 31 | 699 | 0.5+ | 0.5+ | 2003 01 24 | 809 | 0.2+ | 0.1− | 2004 03 25 | 704 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2003 01 24 | 809 | 0.2+ | 0.1+ | 2004 03 25 | 704 | 0.7+ | 1.1+ | | |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2003 01 28 | 704 | 0.6− | 0.4+ | 2004 03 25 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 10 | 644 | 0.2− | 0.5+ | 2003 01 28 | 704 | 1.0− | 0.8+ | 2004 03 26 | 703 | 0.4+ | 0.7+ | | |
| 2002 10 10 | 644 | 0.2− | 0.5+ | 2003 01 28 | 704 | 0.0 | 0.7+ | 2004 03 26 | 703 | 0.0 | 0.6+ | | |
| 2002 10 10 | 644 | 0.2− | 0.6+ | 2003 11 20 | 691 | 0.1− | 0.0 | 2004 03 26 | 703 | 2.0+ | 0.2+ | | |
| 2002 10 15 | 644 | 0.3− | 0.2+ | 2003 11 20 | 691 | 0.1− | 0.2− | 2004 03 26 | 703 | 1.0+ | 0.8− | | |
| 2002 10 15 | 644 | 0.3− | 0.0 | 2003 11 20 | 691 | 0.4− | 0.3− | 2006 08 16 | 644 | 0.7− | 0.4+ | | |
| 2002 10 15 | 644 | 0.1− | 0.1− | 2004 02 17 | 704 | 1.1+ | 0.5− | 2006 08 16 | 644 | 0.5− | 0.8+ | | |
| 2002 10 28 | 644 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.1+ | 0.2− | 2006 08 16 | 644 | 0.1− | 0.6+ | | |
| 2002 10 28 | 644 | 0.6+ | 0.1− | 2004 02 17 | 704 | 0.4+ | 0.1− | 2006 09 20 | 703 | 0.4− | 0.6+ | | |
| 2002 10 28 | 644 | 0.1+ | 0.8+ | 2004 02 17 | 704 | 0.0 | 0.2− | 2006 09 20 | 703 | 0.8− | 0.1− | | |
| 2002 10 30 | 704 | 1.1+ | 0.4+ | 2004 02 17 | 704 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.0 | 0.6+ | | |
| 2002 10 30 | 704 | 0.7+ | 0.4+ | 2004 02 27 | 704 | 0.4− | 1.1+ | 2006 09 20 | 703 | 0.7+ | 0.7+ | | |
| 2002 10 30 | 704 | 0.5+ | 1.0+ | 2004 02 27 | 704 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.1+ | | |
| 2002 10 30 | 704 | 0.4+ | 0.9+ | 2004 02 27 | 704 | 0.7− | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.5− | | |
| 2002 10 30 | 704 | 0.0 | 0.2+ | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.5+ | | |
| 2002 11 22 | 644 | 0.3− | 0.1+ | 2004 03 11 | 644 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.8+ | 1.0− | | |
| 2002 11 22 | 644 | 0.0 | 0.3+ | 2004 03 11 | 644 | 0.1+ | 0.3+ | | | | | | |

**(142774)∗ 2002 UD$_8$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.31603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23511438 | $\omega$ | 281.17460 | | +0.79323457 | −0.58541762 | |
| $a$ | 2.5998598 | $\Omega$ | 114.87186 | | +0.60543243 | +0.72887229 | |
| $e$ | 0.0823299 | $i$ | 10.64090 | | +0.06504220 | +0.35500901 | |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 12 | 691 | 0.1− | 0.2− | 2002 12 08 | 644 | 0.4− | 0.8+ | 2004 03 29 | 703 | 0.8− | 0.4+ | | |
| 1991 01 12 | 691 | 0.4− | 0.5− | 2002 12 08 | 644 | 0.5− | 0.8+ | 2004 03 29 | 703 | 0.7+ | 1.4+ | | |
| 1991 01 12 | 691 | 0.3+ | 0.1+ | 2002 12 08 | 644 | 0.4− | 1.3+ | 2004 03 29 | 703 | 0.2− | 0.4+ | | |
| 2000 04 03 | 704 | 0.7+ | 0.1− | 2003 01 02 | 704 | 0.5+ | 0.9+ | 2004 03 29 | 703 | 0.9+ | 0.8+ | | |
| 2000 04 03 | 704 | 0.2+ | 0.9+ | 2003 01 02 | 704 | 0.9− | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.7+ | | |
| 2000 04 03 | 704 | 0.9+ | 0.4+ | 2003 01 02 | 704 | 0.7− | 0.0 | 2005 06 14 | 691 | 0.0 | 0.6+ | | |
| 2002 09 29 | 608 | 0.0 | 0.2+ | 2003 01 02 | 704 | 0.6− | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.5+ | | |
| 2002 09 29 | 608 | 0.2− | 0.6+ | 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 08 28 | 699 | 1.1− | 0.6+ | | |
| 2002 09 29 | 608 | 0.4− | 1.0+ | 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.7+ | | |
| 2002 10 10 | 644 | 0.1− | 0.1+ | 2004 02 11 | 644 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.4− | 1.3+ | | |
| 2002 10 10 | 644 | 0.2− | 0.4+ | 2004 02 13 | 644 | 0.1+ | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.0 | | |
| 2002 10 10 | 644 | 0.1+ | 0.1+ | 2004 02 13 | 644 | 0.0 | 0.6− | 2006 09 24 | 699 | (0.6− | 1.8+) | | |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2004 02 13 | 644 | 0.1+ | 0.5+ | 2006 09 24 | 699 | 0.2+ | 1.1+ | | |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2004 02 16 | 704 | 0.0 | 1.1+ | 2006 09 24 | 699 | 0.5− | 0.9+ | | |
| 2002 10 28 | 644 | 0.3− | 0.1+ | 2004 02 16 | 704 | 0.2− | 0.3− | 2006 09 24 | 699 | 0.1+ | 0.9+ | | |
| 2002 10 28 | 644 | 0.2− | 0.1+ | 2004 02 16 | 704 | 0.3− | 0.4+ | 2006 09 25 | 703 | (2.3− | 0.3+) | | |
| 2002 10 28 | 644 | 0.0 | 0.2+ | 2004 02 16 | 704 | 0.3+ | 0.6− | 2006 09 25 | 703 | 0.6− | 1.2+ | | |
| 2002 10 30 | 704 | 0.7− | 0.4− | 2004 02 16 | 704 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.6+ | 0.1− | | |
| 2002 10 30 | 704 | 0.0 | 0.5+ | 2004 03 14 | 704 | 0.1− | 0.8+ | 2006 09 25 | 703 | 0.2+ | 0.2− | | |
| 2002 10 30 | 704 | 1.2− | 0.5− | 2004 03 14 | 704 | 0.2+ | 0.4+ | 2006 10 04 | 703 | 0.8− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.5− | 1.0+ | 2004 03 14 | 704 | 1.1− | 0.3+ | 2006 10 04 | 703 | 0.6+ | 0.2− |
| 2002 10 31 | 704 | 0.2− | 0.1+ | 2004 03 14 | 704 | 0.0 | 0.5− | 2006 10 04 | 703 | 0.3− | 0.7+ |
| 2002 10 31 | 704 | 1.4+ | 0.5+ | 2004 03 18 | 703 | 0.3+ | 1.2+ | 2006 10 04 | 703 | 0.1+ | 1.5+ |
| 2002 10 31 | 704 | 0.2+ | 0.7+ | 2004 03 18 | 644 | 0.8− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2004 03 18 | 703 | 1.1− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.6+ | 2004 03 18 | 703 | 1.0+ | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 11 01 | 704 | 0.5− | 0.1− | 2004 03 18 | 644 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2002 11 01 | 704 | 0.2+ | 0.4− | 2004 03 18 | 703 | 1.1+ | 0.9+ | 2006 10 21 | 703 | 0.3+ | 1.1− |
| 2002 11 01 | 704 | 0.9+ | 0.4− | 2004 03 18 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.3− |
| 2002 11 01 | 704 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2002 11 06 | 644 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.8+ | 1.0+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 644 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.5+ | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 644 | (1.4− | 2.2+) | 2004 03 23 | 704 | (0.1− | 1.8+) | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2002 11 22 | 644 | 0.4− | 0.3+ | 2004 03 23 | 704 | (1.4+ | 2.3+) | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2002 11 22 | 644 | 0.2− | 0.6+ | 2004 03 25 | 704 | 0.7+ | 0.0 | 2006 10 28 | 703 | 1.4− | 0.6+ |
| 2002 11 22 | 644 | 0.0 | 0.3+ | 2004 03 25 | 704 | 0.8+ | 0.6+ | 2006 10 28 | 703 | 0.6− | 0.0 |
| 2002 11 30 | 608 | 0.4+ | 0.1− | 2004 03 25 | 704 | (0.1+ | 1.6+) | 2006 10 28 | 703 | 0.3− | 0.9− |
| 2002 11 30 | 608 | 0.4+ | 0.2+ | 2004 03 25 | 704 | 0.3− | 0.1− | | | | |
| 2002 11 30 | 608 | 0.2+ | 0.6− | 2004 03 25 | 704 | 0.4+ | 0.3+ | | | | |

**(142775)∗ 2002 UP$_8$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.03907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22994114 | $\omega$ | 301.20183 | | −0.04359233 | −0.99257424 | |
| $a$ | 2.6387096 | $\Omega$ | 150.64269 | | +0.97721542 | −0.06599764 | |
| $e$ | 0.2229090 | $i$ | 13.39345 | | +0.20772512 | +0.10217967 | |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2002 12 13 | 644 | 0.3− | 0.6+ | 2004 03 30 | 691 | 0.1+ | 0.0 |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2002 12 13 | 644 | 0.3− | 0.7+ | 2006 08 20 | 691 | 0.1− | 0.6+ |
| 2002 09 29 | 608 | 0.2+ | 0.3− | 2002 12 13 | 644 | 0.0 | 0.6+ | 2006 08 20 | 691 | 0.3− | 0.5+ |
| 2002 09 29 | 608 | 0.0 | 0.8− | 2003 01 25 | 644 | 0.4− | 0.4+ | 2006 08 20 | 691 | 0.2+ | 0.6+ |
| 2002 09 29 | 608 | 0.1− | 0.0 | 2003 01 25 | 644 | 0.6− | 0.4+ | 2006 09 17 | 699 | (0.2− | 1.6+) |
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2003 01 25 | 644 | 0.9− | 0.8+ | 2006 09 17 | 699 | 0.3− | 0.1+ |
| 2002 10 10 | 644 | 0.1+ | 0.3+ | 2003 01 28 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.4− | 0.8+ |
| 2002 10 10 | 644 | 0.1− | 0.4+ | 2003 01 28 | 704 | 0.4− | 0.1+ | 2006 09 17 | 699 | 1.2− | 0.9+ |
| 2002 10 28 | 644 | 0.0 | 0.4+ | 2003 01 28 | 704 | 0.1− | 0.2+ | 2006 09 25 | 703 | 0.5− | 0.5− |
| 2002 10 28 | 644 | 0.2+ | 0.5+ | 2004 01 30 | 291 | 0.2− | 0.5+ | 2006 09 25 | 703 | 0.1− | 1.1− |
| 2002 10 28 | 644 | 0.2− | 0.4+ | 2004 01 30 | 291 | 0.3− | 0.5+ | 2006 09 25 | 703 | 0.4+ | 0.6− |
| 2002 10 30 | 704 | 0.7− | 0.1+ | 2004 01 30 | 291 | 0.2+ | 0.9+ | 2006 09 25 | 703 | 0.3+ | 0.6− |
| 2002 10 30 | 704 | 0.1+ | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.6+ |
| 2002 10 30 | 704 | 0.6+ | 1.1+ | 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2002 10 30 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.9+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2002 11 16 | 644 | 0.4+ | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 11 16 | 644 | 0.1+ | 0.5+ | 2004 03 30 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 11 16 | 644 | 0.8+ | 0.4+ | 2004 03 30 | 691 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2− |

**(142776)∗ 2002 UQ$_8$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.38016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22439601 | $\omega$ | 291.01770 | | +0.67310495 | −0.70444861 | |
| $a$ | 2.6820033 | $\Omega$ | 114.59290 | | +0.73646937 | +0.61074911 | |
| $e$ | 0.0873511 | $i$ | 14.33468 | | +0.06739881 | +0.36157667 | |
| $P$ | 4.39 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 704 | 0.1+ | 0.7+ | 2002 11 16 | 644 | 0.8− | 0.1− | 2004 03 25 | 704 | 0.2+ | 1.2− |
| 2000 04 03 | 704 | 0.0 | 0.6+ | 2002 11 16 | 644 | 0.4− | 0.1+ | 2004 03 25 | 704 | 0.8+ | 1.1+ |
| 2000 04 03 | 704 | 0.6− | 0.3+ | 2002 11 16 | 644 | 0.4− | 0.5+ | 2004 03 25 | 704 | 0.4+ | 1.2+ |
| 2002 10 05 | 699 | 0.5− | 0.1− | 2003 01 02 | 704 | 0.4+ | 0.4+ | 2005 05 14 | 691 | 0.0 | 0.3+ |
| 2002 10 05 | 699 | 0.8+ | 0.6+ | 2003 01 02 | 704 | 0.1− | 0.2+ | 2005 05 14 | 691 | 0.0 | 0.4+ |
| 2002 10 05 | 699 | 0.5+ | 0.1+ | 2003 01 02 | 704 | 0.2+ | 1.1+ | 2005 05 14 | 691 | 0.0 | 0.5+ |
| 2002 10 05 | 699 | 0.8− | 0.0 | 2004 02 11 | 644 | 0.1− | 0.2+ | 2005 06 15 | 691 | 0.4+ | 0.3+ |
| 2002 10 05 | 644 | 0.1+ | 0.3+ | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2005 06 15 | 691 | 0.2+ | 0.3+ |
| 2002 10 05 | 644 | 0.1+ | 0.2− | 2004 02 11 | 644 | 0.2− | 0.3+ | 2005 06 15 | 691 | 0.1+ | 0.3+ |
| 2002 10 05 | 644 | 0.2+ | 0.1+ | 2004 02 14 | 201 | 0.4+ | 0.2+ | 2006 07 31 | E12 | 1.0− | 0.8+ |
| 2002 10 10 | 644 | 0.2+ | 0.8+ | 2004 02 14 | 201 | 0.0 | 0.4+ | 2006 07 31 | E12 | 0.1+ | 0.3+ |
| 2002 10 10 | 644 | 0.3+ | 0.8+ | 2004 02 14 | 201 | 0.4− | 0.1+ | 2006 07 31 | E12 | 0.1+ | 0.5− |
| 2002 10 10 | 644 | 0.1+ | 0.7+ | 2004 02 16 | 704 | 0.4+ | 0.8+ | 2006 07 31 | E12 | 1.2+ | 0.7− |
| 2002 10 28 | 644 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 2002 10 28 | 644 | 0.5− | 0.6+ | 2004 02 16 | 704 | 1.0+ | 1.2+ | 2006 09 26 | 703 | 0.1− | 0.8+ |
| 2002 10 28 | 644 | 0.5− | 0.5+ | 2004 02 16 | 704 | 1.0+ | 0.6+ | 2006 09 26 | 703 | 0.9− | 0.1+ |
| 2002 10 30 | 704 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 703 | 0.9− | 0.4+ |
| 2002 10 30 | 704 | 0.6+ | 0.3− | 2004 02 21 | 097 | 0.2− | 0.5+ | 2006 10 12 | E12 | 0.8− | 0.4+ |
| 2002 10 30 | 704 | 1.2− | 1.0+ | 2004 02 21 | 097 | 0.3+ | 0.7+ | 2006 10 12 | E12 | 0.1+ | 0.7+ |
| 2002 10 30 | 704 | (3.5+ | 2.0+) | 2004 02 24 | 608 | 0.9− | 0.4− | 2006 10 12 | E12 | 0.2+ | 0.1− |
| 2002 11 06 | 644 | 0.1− | 0.3+ | 2004 02 24 | 608 | 0.2+ | 0.6− | 2006 10 12 | E12 | 0.2+ | 1.0+ |
| 2002 11 06 | 644 | 0.1− | 0.3+ | 2004 02 24 | 608 | 0.6− | 0.8− | | | | |
| 2002 11 06 | 644 | 0.1− | 0.6+ | 2004 03 25 | 704 | 0.0 | 0.5+ | | | | |

**(142777)∗ 2002 UX$_8$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.67256 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22139819 | $\omega$ | 290.25484 | | +0.69433614 | −0.68942998 | |
| $a$ | 2.7061592 | $\Omega$ | 113.98017 | | +0.71528275 | +0.62959527 | |
| $e$ | 0.0848928 | $i$ | 13.05299 | | +0.07917014 | +0.35818445 | |
| $P$ | 4.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 0.1+ | 0.7+ | 2003 01 02 | 704 | 0.9− | 0.6+ | 2005 06 03 | 691 | 0.1− | 0.8+ |
| 2002 09 15 | 699 | 0.8+ | 1.0+ | 2003 01 02 | 704 | 0.9− | 1.1+ | 2005 06 09 | 703 | 0.4− | 0.2− |
| 2002 09 15 | 699 | 0.2− | 0.1− | 2003 01 02 | 704 | 0.0 | 0.0 | 2005 06 09 | 703 | 0.9− | 1.0+ |
| 2002 09 15 | 699 | 0.2− | 0.1+ | 2003 01 02 | 704 | 0.3− | 0.2+ | 2005 06 09 | 703 | 0.1+ | 0.9+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2003 01 05 | 704 | 0.9+ | 0.6+ | 2005 06 09 | 703 | 1.1+ | 1.1− |
| 2002 10 04 | 645 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.6+ | 0.5+ | 2005 06 11 | 691 | 0.1+ | 0.3+ |
| 2002 10 10 | 644 | 0.4− | 0.5− | 2003 01 05 | 704 | 0.3+ | 0.5+ | 2005 06 11 | 691 | 0.1+ | 0.3+ |
| 2002 10 10 | 644 | 0.7− | 0.5− | 2003 01 05 | 704 | 1.4+ | 0.2− | 2005 06 11 | 691 | 0.9+ | 0.7+ |
| 2002 10 10 | 644 | 0.6− | 0.5− | 2004 02 02 | 699 | (2.5− | 1.7+) | 2005 06 24 | 644 | 0.2+ | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 02 | 699 | 0.3− | 0.3+ | 2005 06 24 | 644 | 0.5+ | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 02 02 | 699 | 0.3+ | 0.3− | 2005 06 24 | 644 | 0.2+ | 0.2+ |
| 2002 10 28 | 644 | 0.2− | 1.4+ | 2004 02 02 | 699 | 0.1+ | 0.0 | 2005 06 28 | 644 | 0.3+ | 0.5+ |
| 2002 10 28 | 644 | 0.1− | 1.4+ | 2004 02 16 | 704 | 0.2+ | 0.9+ | 2005 06 28 | 644 | 0.2+ | 0.3+ |
| 2002 10 28 | 644 | 0.1− | 1.3+ | 2004 02 16 | 704 | 0.1− | 1.1+ | 2005 06 28 | 644 | 0.5+ | 0.0 |
| 2002 10 30 | 704 | 0.2− | 1.1+ | 2004 02 16 | 704 | 0.9+ | 0.9+ | 2005 06 29 | 691 | 0.2+ | 0.6+ |
| 2002 10 30 | 704 | 0.2+ | 0.6+ | 2004 03 14 | 704 | 0.7+ | 0.9+ | 2005 06 29 | 691 | 0.0 | 0.5+ |
| 2002 10 30 | 704 | 0.9− | 0.4+ | 2004 03 14 | 704 | 0.3+ | 0.6+ | 2005 06 29 | 691 | 0.2+ | 0.6+ |
| 2002 10 30 | 704 | 1.2− | 0.1− | 2004 03 14 | 704 | 0.1− | 0.5+ | 2005 07 03 | 691 | 0.2+ | 0.2+ |
| 2002 10 30 | 704 | 0.3− | 0.6+ | 2004 03 14 | 704 | 0.2+ | 0.3+ | 2005 07 03 | 691 | 0.3+ | 0.3+ |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2004 03 14 | 704 | 0.5+ | 0.5+ | 2005 07 03 | 691 | 0.1+ | 0.4+ |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.7+ | 1.3+ | 2005 07 27 | 644 | 0.2+ | 0.2+ |
| 2002 11 30 | 704 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.2− | 0.5+ | 2005 07 27 | 644 | 0.3+ | 0.3+ |
| 2002 11 30 | 704 | 0.8− | 0.6+ | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2005 07 27 | 644 | 0.1+ | 0.3+ |
| 2002 11 30 | 704 | 0.9− | 0.7+ | 2004 03 15 | 704 | (2.1+ | 0.7+) | 2006 08 30 | 699 | 0.5− | 1.0− |
| 2002 11 30 | 704 | 0.4− | 1.4+ | 2004 03 15 | 704 | 0.7+ | 1.1+ | 2006 08 30 | 699 | 0.2+ | 0.3− |
| 2002 11 30 | 704 | 1.0− | 1.4+ | 2004 03 15 | 704 | 1.0+ | 0.3+ | 2006 08 30 | 699 | 0.5+ | 0.3− |
| 2002 12 10 | 644 | 0.3− | 1.5+ | 2004 03 25 | 704 | 0.5− | 0.7+ | 2006 09 20 | 703 | 0.1− | 0.3+ |
| 2002 12 10 | 644 | 0.1− | 1.4+ | 2004 03 25 | 704 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.2+ | 1.1+ |
| 2002 12 10 | 644 | 0.0 | 1.4+ | 2004 03 25 | 704 | 0.5+ | 0.0 | 2006 09 20 | 703 | 1.9+ | 0.2+ |
| 2002 12 12 | 608 | 0.3− | 0.1+ | 2005 06 02 | 703 | 1.1− | 1.1+ | 2006 09 21 | 699 | 0.8− | 0.8− |
| 2002 12 12 | 608 | 0.5− | 0.0 | 2005 06 02 | 703 | 1.6− | 0.1− | 2006 09 21 | 699 | 1.2− | 1.9− |
| 2002 12 12 | 608 | 1.0− | 0.4− | 2005 06 02 | 703 | (3.1− | 0.9+) | 2006 09 21 | 699 | 1.2+ | 1.0+ |
| 2002 12 13 | 644 | 0.4− | 0.6+ | 2005 06 02 | 703 | (0.7− | 2.6+) | 2006 09 21 | 699 | 0.5− | 0.7+ |
| 2002 12 13 | 644 | 0.1− | 0.5+ | 2005 06 03 | 691 | 0.2− | 0.7+ | | | | |
| 2002 12 13 | 644 | 0.3− | 0.4+ | 2005 06 03 | 691 | 0.0 | 0.6+ | | | | |

**(142778)∗ 2002 UJ$_9$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.65254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22652949 | $\omega$ | 352.61898 | | −0.30325605 | −0.91720189 | |
| $a$ | 2.6651371 | $\Omega$ | 114.74456 | | +0.88817372 | −0.37030926 | |
| $e$ | 0.2021291 | $i$ | 16.53116 | | +0.34522922 | +0.14700937 | |
| $P$ | 4.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 120 | 0.2− | 0.5− | 2003 01 02 | 704 | 0.6+ | 0.5+ | 2004 04 15 | 704 | 0.4− | 1.1+ | |
| 1998 12 16 | 120 | 0.8− | 1.6− | 2003 01 02 | 704 | 0.4+ | 0.8+ | 2004 04 15 | 704 | 0.5+ | 0.0 | |
| 1998 12 16 | 120 | 0.5− | 0.1− | 2003 01 02 | 704 | 0.0 | 0.7+ | 2004 04 15 | 704 | 0.5− | 0.0 | |
| 1998 12 16 | 699 | 0.1− | 0.7− | 2003 01 07 | 704 | 0.1+ | 1.4+ | 2004 04 15 | 704 | 0.5+ | 0.2− | |
| 1998 12 16 | 699 | 0.4− | 0.6− | 2003 01 07 | 704 | 0.2+ | 1.3+ | 2004 04 26 | 704 | 0.4− | 0.8+ | |
| 1998 12 16 | 699 | 0.3+ | 0.8− | 2003 01 07 | 704 | (2.3− | 2.0+) | 2004 04 26 | 704 | 0.2+ | 0.6+ | |
| 2002 10 28 | 644 | 0.5+ | 0.0 | 2003 01 26 | 699 | 0.2+ | 0.0 | 2004 04 26 | 704 | 0.7+ | 1.5+ | |
| 2002 10 28 | 644 | 0.5+ | 0.2+ | 2003 01 26 | 699 | 0.6+ | 1.2+ | 2004 04 26 | 704 | 0.3− | 0.2− | |
| 2002 10 28 | 644 | 0.2+ | 0.1+ | 2003 01 26 | 699 | 0.1+ | 0.3+ | 2004 05 12 | 644 | 0.2+ | 0.4+ | |
| 2002 10 30 | 704 | 0.3− | 0.2+ | 2003 01 26 | 699 | 0.2− | 0.3− | 2004 05 12 | 644 | 0.1− | 0.5+ | |
| 2002 10 30 | 704 | 0.7− | 0.6+ | 2004 03 15 | 704 | 0.6+ | 1.2+ | 2004 05 12 | 644 | 0.0 | 0.3+ | |
| 2002 10 30 | 704 | 0.7− | 0.4+ | 2004 03 15 | 704 | 0.4+ | 1.2+ | 2006 09 22 | 703 | 1.6− | 0.4− | |
| 2002 10 30 | 704 | 0.3− | 1.1+ | 2004 03 15 | 704 | 0.1− | 0.5+ | 2006 09 22 | 703 | 0.7− | 0.3− | |
| 2002 11 16 | 644 | 0.4+ | 0.1+ | 2004 03 15 | 704 | 0.4+ | 0.1− | 2006 09 22 | 703 | (1.6− | 1.0−) | |
| 2002 11 16 | 699 | 0.0 | 0.2− | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 09 22 | 703 | 0.4− | 0.3− | |
| 2002 11 16 | 699 | 0.2+ | 0.7− | 2004 03 15 | 703 | 1.4− | 0.3+ | 2006 09 27 | 703 | 0.7− | 1.0+ | |
| 2002 11 16 | 644 | 0.6+ | 0.2+ | 2004 03 15 | 703 | 0.4+ | 0.7− | 2006 09 27 | 703 | 0.3+ | 0.2+ | |
| 2002 11 16 | 699 | 0.2+ | 0.6− | 2004 03 15 | 703 | 0.2− | 1.0+ | 2006 09 27 | 703 | 0.9− | 0.1+ | |
| 2002 11 16 | 699 | 0.2− | 1.4+ | 2004 03 15 | 703 | 0.2− | 0.5+ | 2006 09 27 | 703 | 0.8− | 0.7− | |
| 2002 11 16 | 644 | 0.5+ | 0.2+ | 2004 03 29 | 704 | 0.7+ | 0.6− | 2006 11 09 | E12 | 0.4+ | 0.8+ | |
| 2002 11 30 | 704 | 1.0− | 0.1+ | 2004 03 29 | 704 | 1.1+ | 0.7− | 2006 11 09 | E12 | 0.5+ | 0.1+ | |
| 2002 11 30 | 704 | 0.4− | 0.4+ | 2004 03 29 | 704 | 0.9+ | 0.2− | 2006 11 09 | E12 | 0.5− | 0.2− | |
| 2002 11 30 | 704 | 0.2+ | 0.9+ | 2004 03 29 | 704 | 1.0+ | 0.1− | 2006 11 09 | E12 | 0.0 | 1.1+ | |
| 2003 01 02 | 704 | 0.3+ | 0.7+ | 2004 03 29 | 704 | 0.9+ | 0.2+ | | | | | |
| 2003 01 02 | 704 | 0.2− | 0.4+ | 2004 04 15 | 704 | 0.2− | 0.7+ | | | | | |

**(142779)∗ 2002 UQ$_9$**

Discovered 2002 Oct. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.26097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26349621 | $\omega$ | 339.50409 | | +0.78488010 | −0.60986393 | |
| $a$ | 2.4096454 | $\Omega$ | 58.55654 | | +0.58491858 | +0.67076828 | |
| $e$ | 0.1410706 | $i$ | 7.38613 | | +0.20453237 | +0.42206148 | |
| $P$ | 3.74 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 699 | 0.8− | 0.1+ | 2002 11 07 | 291 | 0.4− | 0.1+ | 2004 03 26 | 691 | 0.1− | 0.1+ | |
| 1998 09 21 | 699 | 0.9− | 0.1+ | 2002 11 07 | 291 | 0.2− | 0.6+ | 2004 03 26 | 691 | 0.1− | 0.0 | |
| 1998 09 21 | 699 | 0.2+ | 0.8+ | 2002 11 07 | 291 | 0.3− | 0.0 | 2004 04 15 | 644 | 0.4+ | 0.4+ | |
| 1998 10 17 | 699 | 1.0+ | 0.3+ | 2002 11 13 | 644 | 0.2+ | 0.5+ | 2004 04 15 | 644 | 0.5+ | 0.4+ | |
| 1998 10 17 | 699 | 0.1− | 0.5+ | 2002 11 13 | 644 | 0.1+ | 0.4+ | 2004 04 15 | 644 | 0.6+ | 0.5+ | |
| 1998 10 17 | 699 | 0.3+ | 1.7+ | 2002 11 13 | 644 | 0.1+ | 0.4+ | 2004 04 19 | 291 | 0.4+ | 0.1+ | |
| 2002 09 09 | 599 | 0.5− | 0.6+ | 2002 11 14 | 704 | 0.3− | 0.4+ | 2004 04 19 | 291 | 0.2+ | 0.2+ | |
| 2002 09 09 | 599 | 0.5− | 0.2+ | 2002 11 14 | 704 | 0.0 | 0.0 | 2004 04 19 | 291 | 0.3+ | 0.2+ | |
| 2002 09 09 | 599 | 0.9− | 0.2+ | 2002 11 14 | 704 | 0.9+ | 0.4+ | 2004 04 23 | 291 | 0.2+ | 0.2+ | |
| 2002 09 09 | 599 | 0.6− | 0.5+ | 2002 11 14 | 704 | 0.1+ | 1.1+ | 2004 04 23 | 291 | 0.1+ | 0.2+ | |
| 2002 10 02 | 704 | 0.5+ | 0.0 | 2002 11 14 | 704 | 1.0+ | 0.8+ | 2004 04 23 | 291 | 0.2+ | 0.0 | |
| 2002 10 02 | 704 | 0.5+ | 0.0 | 2002 11 27 | 699 | 0.1− | 0.1− | 2004 04 25 | 699 | (1.6+ | 0.3+) | |
| 2002 10 02 | 704 | 0.1+ | 0.5+ | 2002 11 27 | 699 | 0.3+ | 0.0 | 2004 04 25 | 699 | 0.4+ | 0.1+ | |
| 2002 10 02 | 704 | 0.2+ | 0.0 | 2002 11 27 | 699 | 0.0 | 0.1+ | 2004 04 25 | 699 | 0.9− | 1.3+ | |
| 2002 10 11 | 704 | 0.8− | 0.1− | 2002 11 27 | 699 | 0.1− | 0.3+ | 2004 04 25 | 699 | 0.0 | 0.4− | |
| 2002 10 11 | 704 | 0.2− | 0.7− | 2002 12 10 | 704 | 0.6+ | 0.2+ | 2004 04 26 | 691 | 0.1− | 0.2+ | |
| 2002 10 11 | 704 | (1.8+ | 0.6−) | 2002 12 10 | 704 | 0.8+ | 0.2− | 2004 04 26 | 691 | 0.1− | 0.4+ | |
| 2002 10 11 | 704 | 0.6+ | 0.2+ | 2002 12 10 | 704 | 0.9+ | 0.1+ | 2004 04 26 | 691 | 0.1+ | 0.4+ | |
| 2002 10 28 | 291 | 0.8− | 0.1+ | 2002 12 10 | 704 | 0.1+ | 0.0 | 2005 07 06 | E12 | 0.3− | 0.5+ | |
| 2002 10 28 | 291 | 0.3− | 0.1− | 2002 12 28 | 699 | 0.1+ | 0.5− | 2005 07 06 | E12 | 0.0 | 1.1+ | |
| 2002 10 28 | 291 | (1.6− | 0.2+) | 2002 12 28 | 699 | 1.1+ | 0.4+ | 2005 07 06 | E12 | 0.1+ | 0.6+ | |
| 2002 10 30 | 608 | 0.7− | 0.4− | 2002 12 28 | 699 | 0.9+ | 0.6− | 2005 07 06 | E12 | 0.7− | 1.3+ | |
| 2002 10 30 | 608 | 0.4− | 0.4+ | 2002 12 28 | 699 | 0.9+ | 0.1+ | 2006 09 25 | 691 | 0.4+ | 0.3− | |
| 2002 10 30 | 608 | 0.9− | 0.8− | 2002 12 31 | 699 | 0.1− | 0.8− | 2006 09 25 | 691 | 0.3+ | 0.1+ | |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2002 12 31 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.6+ | 0.2− | |
| 2002 11 05 | 704 | 0.7− | 0.2− | 2002 12 31 | 699 | 0.0 | 0.9− | 2006 10 18 | A50 | 0.2+ | 0.2+ | |
| 2002 11 05 | 704 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 10 18 | A50 | 0.4+ | 0.9+ | |
| 2002 11 05 | 704 | 0.4− | 0.4+ | 2002 12 31 | 699 | 1.3− | 0.8+ | 2006 11 02 | G96 | 0.8− | 0.4− | |
| 2002 11 06 | 704 | 0.1− | 0.9− | 2002 12 31 | 704 | 0.3− | 0.4+ | 2006 11 02 | G96 | 0.1+ | 0.5− | |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.3+ | 0.5+ | 2006 11 02 | G96 | 0.2− | 0.6− | |
| 2002 11 06 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 699 | (0.2− | 1.7+) | 2006 11 02 | G96 | 0.3− | 0.9− | |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2002 12 31 | 704 | 0.2+ | 0.4+ | | | | | |
| 2002 11 06 | 704 | 0.3− | 0.3+ | 2004 03 26 | 691 | 0.1− | 0.0 | | | | | |

**(142780)∗ 2002 UN$_{10}$**

Discovered 2002 Oct. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.77508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23423560 | $\omega$ | 274.75657 | | +0.66438888 | −0.74235797 | |
| $a$ | 2.6063582 | $\Omega$ | 133.21269 | | +0.72414039 | +0.61073239 | |
| $e$ | 0.0870631 | $i$ | 6.82073 | | +0.18495434 | +0.27551877 | |
| $P$ | 4.21 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.5+ | |
| 2000 03 29 | 704 | 0.7+ | 0.3− | 2004 03 15 | 704 | 0.3− | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.1+ | |
| 2000 03 29 | 704 | 0.6− | 0.8+ | 2004 03 15 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.0 | 0.8+ | |
| 2000 03 29 | 704 | 0.1+ | 1.0+ | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.1+ | 1.4+ | |
| 2002 09 16 | 699 | 0.3+ | 1.0+ | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 09 21 | 699 | 0.1+ | 0.2− | |
| 2002 09 16 | 699 | 0.4+ | 0.8+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.1− | 0.7+ | |
| 2002 09 16 | 699 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.1+ | 2006 09 22 | 704 | 0.6− | 0.0 | |
| 2002 09 16 | 699 | 0.4+ | 0.5− | 2004 03 18 | 704 | 0.3+ | 0.5+ | 2006 09 22 | 704 | 0.4+ | 1.2+ | |
| 2002 10 07 | 608 | 0.4− | 0.4− | 2004 03 19 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.6− | 0.7+ | |
| 2002 10 07 | 608 | 0.5− | 0.2− | 2004 03 19 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.5− | 0.1+ | |
| 2002 10 07 | 608 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 704 | 0.5− | 0.7+ | |
| 2002 10 28 | 608 | 0.8+ | 1.5− | 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.5+ | |
| 2002 10 28 | 608 | (0.2+ | 1.8−) | 2004 03 19 | 704 | 0.4− | 0.9+ | 2006 09 25 | 699 | 0.2− | 0.5+ | |
| 2002 10 28 | 608 | (0.3− | 2.0−) | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.0 | |
| 2002 10 30 | 644 | 0.5+ | 0.6− | 2004 03 20 | 704 | 1.0+ | 0.9+ | 2006 09 25 | 699 | 0.1+ | 0.1+ | |
| 2002 10 30 | 644 | 0.3+ | 0.7− | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.5+ | 0.1+ | |
| 2002 10 30 | 644 | 0.4+ | 0.3− | 2004 03 20 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.3− | |
| 2002 11 05 | 704 | (1.9+ | 5.8−) | 2004 03 20 | 704 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.4− | 0.3+ | |
| 2002 11 05 | 704 | (2.6+ | 4.5−) | 2004 03 20 | 704 | 0.4+ | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.1+ | |
| 2002 11 05 | 704 | (2.6+ | 5.0−) | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.8− | 0.4+ | |
| 2002 11 05 | 704 | (2.4+ | 4.4−) | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 09 29 | 699 | 0.6− | 0.5− | |
| 2002 11 05 | 704 | (1.8+ | 4.6−) | 2004 03 20 | 704 | 0.7+ | 0.1− | 2006 09 29 | 699 | 0.4− | 0.1− | |
| 2002 11 12 | 704 | 1.0− | 1.2+ | 2004 03 20 | 704 | 1.1+ | 0.1− | 2006 09 29 | 699 | 0.1+ | 0.8+ | |
| 2002 11 12 | 704 | 0.6+ | 0.3− | 2004 03 22 | 704 | 0.7+ | 0.9+ | 2006 09 30 | 704 | 0.5− | 0.8− | |
| 2002 11 12 | 704 | 0.8+ | 0.3− | 2004 03 22 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 704 | 0.7− | 0.4− | |
| 2002 11 12 | 704 | 1.2+ | 0.5− | 2004 03 22 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 704 | 0.0 | 0.4− | |
| 2002 12 01 | 608 | 0.1− | 0.4− | 2004 03 22 | 704 | 0.9+ | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.1− | |
| 2002 12 01 | 608 | 0.7− | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.3+ | |
| 2002 12 01 | 608 | 0.0 | 0.5− | 2004 03 22 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.2+ | |
| 2002 12 08 | 644 | 0.4+ | 0.1− | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | |
| 2002 12 08 | 644 | 0.3+ | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.5+ | |
| 2002 12 08 | 644 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2002 12 30 | 608 | 0.7− | 1.1− | 2004 03 22 | 704 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2002 12 30 | 608 | 0.4− | 0.4− | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 | |
| 2002 12 30 | 608 | 0.9− | 0.3− | 2004 03 23 | 704 | 0.3+ | 0.7− | 2006 10 22 | 703 | 0.5+ | 0.8+ | |
| 2003 12 27 | 704 | 0.8+ | 0.2+ | 2004 03 23 | 704 | 1.1+ | 0.9− | 2006 10 22 | 703 | 0.1− | 0.2− | |
| 2003 12 27 | 704 | 0.1+ | 0.1− | 2004 03 23 | 704 | 0.7+ | 0.7− | 2006 10 22 | 703 | 0.7− | 0.2+ | |
| 2003 12 27 | 704 | 0.2+ | 1.1− | 2004 03 23 | 704 | 1.1+ | 0.7− | 2006 10 22 | 703 | 0.3+ | 0.8+ | |
| 2003 12 27 | 704 | 1.4+ | 0.4+ | 2004 03 23 | 704 | 0.9+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− | |
| 2004 02 18 | 704 | 0.2− | 0.5+ | 2004 03 26 | 703 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2004 02 18 | 704 | 0.2− | 0.2+ | 2004 03 26 | 703 | 0.9− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.1+ | |
| 2004 02 18 | 704 | 0.5− | 0.4+ | 2004 03 26 | 703 | 0.8− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2004 02 18 | 704 | 1.0− | 0.3+ | 2004 03 26 | 703 | 1.2− | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.1− | |
| 2004 02 29 | 691 | 0.7− | 0.0 | 2006 09 18 | 703 | 0.5− | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.0 | |
| 2004 02 29 | 691 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.9+ | 2006 10 28 | 703 | 0.3+ | 0.1+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 691 | 0.7− | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.9+ | 2006 10 28 | 703 | 0.3+ | 0.5− |
| 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.7+ | 2006 10 28 | 703 | 0.8− | 0.2+ |
| 2004 03 15 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.6− |

**(142781)∗ 2002 UM$_{11}$ = 2001 MT$_7$**

Discovered 2002 Oct. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38113)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.12560 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.36150535 | $\omega$ | 229.00565 | | −0.00048565 | −0.86823122 |
| $a$ | 1.9516094 | $\Omega$ | 229.08035 | | +0.99401828 | −0.05460607 |
| $e$ | 0.3866261 | $i$ | 41.04246 | | −0.10921270 | −0.49314574 |
| $P$ | 2.73 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 23 | 644 | 0.0 | 0.2+ | 2002 11 01 | 941 | (0.9− | 1.7+) | 2003 01 02 | 704 | 0.5+ | 0.1+ |
| 2001 06 23 | 644 | 0.6− | 0.2+ | 2002 11 01 | 941 | 0.1+ | 1.3+ | 2003 01 03 | 704 | 0.7+ | 0.6− |
| 2001 06 23 | 644 | 0.3− | 0.2+ | 2002 11 01 | 941 | 0.2+ | 0.9+ | 2003 01 03 | 704 | 0.6+ | 0.2− |
| 2001 06 23 | 046 | 0.8+ | 0.6− | 2002 11 01 | 941 | 0.3− | 0.4+ | 2003 01 03 | 704 | 0.8+ | 0.3− |
| 2001 06 23 | 046 | 0.2+ | 1.1− | 2002 11 01 | 176 | 0.2− | 0.4+ | 2003 01 03 | 704 | 0.5+ | 0.2− |
| 2001 06 23 | 557 | 0.6+ | 1.0+ | 2002 11 01 | 176 | 0.1− | 0.3+ | 2003 02 02 | 704 | 0.1+ | 0.2− |
| 2001 06 23 | 557 | 0.7− | 0.8+ | 2002 11 01 | 176 | 0.0 | 0.3+ | 2003 02 02 | 704 | 0.1− | 0.2− |
| 2001 06 24 | 557 | 0.2+ | 0.7+ | 2002 11 01 | 176 | 0.1+ | 0.3+ | 2003 02 02 | 704 | 0.0 | 0.5− |
| 2001 06 24 | 673 | (0.2− | 2.3+) | 2002 11 01 | 176 | 0.1+ | 0.3+ | 2003 02 02 | 704 | 0.6+ | 0.0 |
| 2001 06 24 | 673 | (0.3− | 2.2+) | 2002 11 03 | 704 | 0.7− | 1.0− | 2003 02 02 | 704 | 0.8− | 0.0 |
| 2001 06 24 | 673 | (0.6+ | 2.3+) | 2002 11 03 | 704 | 0.1+ | 1.0− | 2003 02 02 | 704 | 0.1− | 1.4+ |
| 2001 06 24 | 046 | 0.4− | 0.8+ | 2002 11 03 | 704 | 0.4− | 0.5− | 2003 02 02 | 704 | 0.9+ | 0.1− |
| 2001 06 24 | 557 | 0.3− | 1.2+ | 2002 11 03 | 704 | 0.5− | 0.0 | 2003 02 02 | 704 | (2.5+ | 1.8+) |
| 2001 06 24 | 046 | 1.0− | 0.2− | 2002 11 04 | 649 | 0.0 | 0.1+ | 2004 06 17 | 673 | 0.5− | 0.0 |
| 2001 06 24 | 046 | 0.2+ | 0.1+ | 2002 11 04 | 649 | 0.0 | 0.1+ | 2004 06 17 | 673 | 0.3− | 0.1− |
| 2001 06 24 | 557 | 0.3− | 0.2+ | 2002 11 04 | 649 | 0.2− | 0.0 | 2004 06 17 | 673 | 0.7− | 0.1− |
| 2001 06 24 | 046 | 0.5− | 1.4+ | 2002 11 05 | 176 | 0.2− | 0.0 | 2004 07 16 | 711 | 0.5− | 0.4+ |
| 2001 06 24 | 859 | (3.2+ | 0.3−) | 2002 11 05 | 176 | 0.3− | 0.0 | 2004 07 16 | 711 | 0.3+ | 0.5+ |
| 2001 06 24 | 859 | (2.7− | 0.6+) | 2002 11 05 | 176 | 0.3− | 0.1+ | 2004 07 17 | 711 | 0.8+ | 0.0 |
| 2001 06 24 | 859 | (2.6− | 0.4−) | 2002 11 05 | 176 | 0.4− | 0.0 | 2004 07 17 | 711 | 1.0+ | 0.1+ |
| 2001 06 25 | 644 | 0.5− | 0.2+ | 2002 11 05 | 176 | 0.4− | 0.1+ | 2004 07 17 | 711 | 0.7+ | 0.2− |
| 2001 06 25 | 644 | 0.0 | 0.7+ | 2002 11 07 | 940 | 0.1− | 0.1− | 2004 08 05 | 941 | (0.4+ | 1.6−) |
| 2001 06 25 | 644 | 0.0 | 0.5+ | 2002 11 07 | 940 | 0.2− | 0.1+ | 2004 08 05 | 941 | (0.0 | 1.7−) |
| 2002 10 30 | 704 | 0.2+ | 0.1− | 2002 11 07 | 940 | 0.2+ | 0.1− | 2004 08 05 | 941 | (0.1− | 1.6−) |
| 2002 10 30 | 704 | 0.1+ | 0.2− | 2002 11 07 | 940 | 0.3+ | 0.1− | 2004 08 05 | 941 | 0.2− | 1.5− |
| 2002 10 30 | 704 | 0.1− | 0.2+ | 2002 11 07 | 940 | 0.6+ | 0.2− | 2005 09 13 | 704 | 0.2+ | 1.0+ |
| 2002 10 30 | 704 | 0.2− | 0.7+ | 2002 11 07 | 940 | 0.6+ | 0.2− | 2005 09 13 | 704 | 1.0+ | 1.1+ |
| 2002 10 30 | 704 | 0.1− | 0.2+ | 2002 11 07 | 940 | 0.1− | 1.2− | 2005 09 13 | 704 | 0.9+ | 1.0+ |
| 2002 10 31 | 118 | 0.2+ | 0.1+ | 2002 11 07 | 940 | 1.4+ | 0.4+ | 2005 09 13 | 704 | 0.4+ | 0.5+ |
| 2002 10 31 | 118 | 0.4+ | 0.2+ | 2002 11 07 | 940 | 1.0+ | 0.6+ | 2005 11 26 | 844 | 0.8+ | 0.9+ |
| 2002 10 31 | 118 | 0.3+ | 0.1− | 2002 11 07 | 940 | 0.3− | 1.3− | 2005 11 26 | 844 | 0.1− | 0.9+ |
| 2002 10 31 | 704 | 0.1+ | 0.1+ | 2002 11 08 | 118 | 0.1− | 0.0 | 2005 11 26 | 844 | 1.2+ | 0.5− |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2002 11 08 | 118 | 0.3− | 0.1+ | 2005 11 26 | 844 | 0.7− | 0.4+ |
| 2002 10 31 | 704 | 0.2+ | 0.1− | 2002 11 08 | 118 | 0.1− | 0.1+ | 2005 11 26 | 844 | 0.3− | 0.2− |
| 2002 10 31 | 704 | 0.3− | 0.2+ | 2002 11 13 | 704 | 0.0 | 0.9− | 2005 12 25 | 423 | 0.5+ | 0.2+ |
| 2002 10 31 | 704 | 0.3+ | 0.2− | 2002 11 13 | 704 | 0.1− | 0.1− | 2005 12 25 | 423 | 0.6+ | 0.8+ |
| 2002 10 31 | 704 | 0.3− | 0.3+ | 2002 11 13 | 704 | 0.1+ | 0.6− | 2006 04 09 | 808 | (1.3+ | 4.5+) |
| 2002 10 31 | 926 | 0.1+ | 0.1+ | 2002 11 13 | 704 | 0.2+ | 0.1+ | 2006 04 09 | 808 | (0.5− | 2.4+) |
| 2002 10 31 | 854 | 0.1− | 0.3+ | 2002 12 01 | 704 | 0.4− | 0.2+ | 2006 04 09 | 808 | 0.5+ | 0.4− |
| 2002 10 31 | 926 | 0.4+ | 0.9− | 2002 12 01 | 704 | 0.6− | 0.2+ | 2006 04 22 | E12 | 0.3− | 0.8+ |
| 2002 10 31 | 854 | 0.0 | 0.1+ | 2002 12 01 | 704 | 0.7− | 0.2− | 2006 04 22 | E12 | 0.0 | 0.6− |
| 2002 10 31 | 854 | 0.2− | 0.5+ | 2002 12 01 | 704 | 0.6− | 0.4+ | 2006 04 22 | E12 | 0.0 | 0.3+ |
| 2002 10 31 | 926 | 0.0 | 0.1+ | 2002 12 01 | 704 | 0.4− | 0.1+ | 2006 04 23 | 423 | (2.2+ | 0.9+) |
| 2002 10 31 | 926 | 0.2− | 0.6+ | 2002 12 02 | 704 | 0.2− | 0.9+ | 2006 04 23 | 423 | 0.9− | 0.2+ |
| 2002 10 31 | 704 | 0.4+ | 0.1− | 2002 12 02 | 704 | 0.1+ | 0.2+ | 2006 04 23 | 423 | 0.6+ | 0.6+ |
| 2002 10 31 | 704 | 0.2− | 0.0 | 2002 12 02 | 704 | 0.2+ | 0.3+ | 2006 05 04 | E12 | 0.2+ | 0.2+ |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2002 12 02 | 704 | 0.3− | 0.7+ | 2006 05 04 | E12 | 0.7− | 0.2+ |
| 2002 10 31 | 704 | 0.2+ | 0.0 | 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 05 04 | E12 | 0.2− | 0.5+ |
| 2002 10 31 | 448 | 0.3+ | 0.2+ | 2002 12 06 | 704 | 0.4− | 0.5+ | 2006 05 04 | E12 | 0.8− | 0.3− |
| 2002 10 31 | 448 | 0.3+ | 0.1+ | 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 05 04 | E12 | 0.8− | 0.3+ |
| 2002 10 31 | 448 | 0.1+ | 0.3+ | 2002 12 06 | 704 | 0.2− | 0.8+ | 2006 05 04 | E12 | 0.2+ | 0.5+ |
| 2002 11 01 | 704 | 0.8− | 0.4− | 2002 12 06 | 213 | 0.3+ | 0.5− | 2006 05 04 | E12 | 0.2+ | 0.1+ |
| 2002 11 01 | 704 | 0.4− | 0.1− | 2002 12 06 | 213 | 0.4− | 0.1+ | 2006 05 04 | E12 | 0.4− | 0.0 |
| 2002 11 01 | 704 | 1.0− | 0.1− | 2002 12 07 | 704 | 0.1− | 0.1+ | 2006 05 21 | 699 | 0.5+ | 0.2− |
| 2002 11 01 | 704 | 0.3− | 0.2− | 2002 12 07 | 704 | 0.3− | 0.2+ | 2006 05 21 | 699 | 0.8+ | 0.4− |
| 2002 11 01 | 704 | 0.2− | 0.0 | 2002 12 07 | 704 | 0.3+ | 0.2− | 2006 05 21 | 699 | 0.0 | 0.7+ |
| 2002 11 01 | 170 | 0.6+ | 0.2+ | 2002 12 07 | 704 | 0.1− | 0.5+ | 2006 05 21 | 699 | 0.1− | 0.5− |
| 2002 11 01 | 170 | 0.9+ | 0.3− | 2002 12 07 | 704 | 0.6− | 0.3+ | 2006 05 25 | E12 | 0.3+ | 0.4− |
| 2002 11 01 | 170 | 0.6+ | 0.3− | 2002 12 13 | 670 | 0.1− | 0.6− | 2006 05 25 | E12 | 0.3− | 0.4+ |
| 2002 11 01 | 170 | 0.7+ | 0.1− | 2003 01 02 | 704 | 0.1− | 0.7+ | 2006 05 25 | E12 | 0.2− | 0.8+ |
| 2002 11 01 | 170 | 0.4+ | 0.1− | 2003 01 02 | 704 | 0.5+ | 0.1+ | | | | |
| 2002 11 01 | 170 | 0.1− | 0.3+ | 2003 01 02 | 704 | 0.6+ | 1.1+ | | | | |

**(142782)∗ 2002 UK$_{12}$**

Discovered 2002 Oct. 29 at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.83532 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24579301 | $\omega$ | 266.80031 | | −0.11840751 | −0.99193576 |
| $a$ | 2.5240020 | $\Omega$ | 190.33349 | | +0.98137705 | −0.10997023 |
| $e$ | 0.3063921 | $i$ | 14.59509 | | +0.15125721 | −0.06300784 |
| $P$ | 4.01 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 13 | 704 | 1.2− | 0.3− | 2002 11 23 | 644 | 0.7+ | 0.1+ | 2006 09 22 | 704 | 1.1+ | 0.4− |
| 1998 11 13 | 704 | (3.1+ | 0.2−) | 2002 11 23 | 644 | 0.7+ | 0.1+ | 2006 09 22 | 704 | 1.0+ | 0.8− |
| 1998 11 13 | 704 | 0.8− | 1.5+ | 2002 11 30 | 704 | 0.3− | 0.1+ | 2006 09 22 | 704 | (1.7+ | 0.6+) |
| 1998 11 13 | 704 | 1.4+ | 0.3− | 2002 11 30 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.4− | 1.1+ |
| 1998 11 13 | 704 | (2.9− | 0.3−) | 2002 11 30 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 1998 12 19 | 704 | 0.8− | 1.2− | 2002 11 30 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.6+ |
| 1998 12 19 | 704 | 0.6− | 0.0 | 2002 11 30 | 704 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.0 |
| 1998 12 19 | 704 | 1.9− | 0.3+ | 2003 01 02 | 704 | 0.8+ | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 1998 12 19 | 704 | 1.6− | 0.9+ | 2003 01 02 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2002 09 16 | 699 | 1.0− | 0.2+ | 2003 01 02 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.6− |
| 2002 09 16 | 699 | 0.1− | 1.1+ | 2003 01 17 | 644 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2002 09 16 | 699 | (0.7+ | 1.9+) | 2003 01 17 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2002 09 16 | 699 | 0.4− | 1.3+ | 2003 01 17 | 644 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.7− | 0.6− |
| 2002 10 04 | 704 | 0.8+ | 0.9− | 2003 01 27 | 699 | 0.8+ | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.8− |
| 2002 10 04 | 704 | 0.5+ | 0.9− | 2003 01 27 | 699 | 0.4+ | 0.3+ | 2006 10 31 | 704 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | (1.6+ | 1.0−) | 2003 01 27 | 699 | 0.1+ | 0.4+ | 2006 10 31 | 704 | 0.3− | 0.3− |
| 2002 10 04 | 704 | 0.3+ | 0.8− | 2003 01 27 | 699 | 0.3+ | 0.2− | 2006 10 31 | 704 | 0.4+ | 0.1+ |
| 2002 10 09 | 699 | 0.3− | 0.4+ | 2003 01 28 | 704 | (1.6+ | 0.7−) | 2006 10 31 | 704 | 0.5− | 0.3− |
| 2002 10 09 | 699 | 0.3+ | 0.0 | 2003 01 28 | 704 | 0.1+ | 0.2− | 2006 10 31 | 704 | 0.1− | 0.2− |
| 2002 10 09 | 699 | 0.6+ | 0.0 | 2003 01 28 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.2+ | 0.4− |
| 2002 10 09 | 699 | 0.6+ | 0.1− | 2003 01 28 | 704 | 0.2+ | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.2− |
| 2002 10 29 | 683 | 0.2− | 1.1+ | 2003 01 28 | 704 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.3− |
| 2002 10 29 | 683 | 0.4+ | 0.5+ | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 11 10 | 704 | 0.1+ | 0.4− |
| 2002 10 29 | 683 | 0.1− | 0.4− | 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 704 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.2+ | 0.2+ | 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.6+ |
| 2002 10 31 | 704 | 0.3+ | 0.0 | 2004 05 01 | 291 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.1+ | 0.2− |
| 2002 10 31 | 704 | 0.2+ | 0.4+ | 2004 05 01 | 291 | 0.5+ | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.1− |
| 2002 10 31 | 704 | 0.1+ | 0.1+ | 2004 05 01 | 291 | 0.7− | 0.5+ | 2006 11 16 | 703 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2002 11 07 | 699 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 1.2− | 0.0 | 2006 11 22 | 704 | 1.0− | 0.5+ |
| 2002 11 07 | 699 | 0.8+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2002 11 07 | 699 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2002 11 07 | 699 | 0.7+ | 0.2− | 2006 09 19 | 704 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2002 11 11 | 699 | 0.0 | 0.6− | 2006 09 19 | 704 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.6− | 0.2− |
| 2002 11 11 | 699 | 0.2+ | 0.5+ | 2006 09 19 | 704 | 0.6− | 0.0 | 2006 11 22 | 703 | 0.6− | 0.0 |
| 2002 11 11 | 699 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.6+ | 0.3− | 2006 11 22 | 703 | 0.5− | 0.0 |
| 2002 11 11 | 699 | 0.7+ | 0.1− | 2006 09 19 | 699 | (2.0− | 0.2−) | 2006 11 22 | 703 | 0.2+ | 0.4− |
| 2002 11 23 | 644 | 0.8+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.8+ | | | | |

**(142783)∗ 2002 UQ$_{13}$ = 1995 CX$_6$**

Discovered 2002 Oct. 28 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 72730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.10256 | | (2000.0) | | | |
| $n$ | 0.21320340 | $\omega$ | 196.82204 | | +0.93078608 | +0.34901930 |
| $a$ | 2.7750659 | $\Omega$ | 142.18084 | | −0.31166391 | +0.91308381 |
| $e$ | 0.1637832 | $i$ | 10.21419 | | −0.19105727 | +0.21086368 |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.3− | 0.1− | 2002 10 31 | 704 | 0.5− | 0.3+ | 2006 06 22 | 644 | 0.3+ | 0.2+ | |
| 1995 02 01 | 691 | 0.3+ | 0.1− | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 06 22 | 644 | 0.3− | 0.3+ | |
| 1995 02 01 | 691 | 0.6− | 0.5− | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 07 25 | 644 | 0.1+ | 0.3+ | |
| 1995 02 07 | 691 | (0.2+ | 2.2−) | 2002 11 30 | 704 | 0.4+ | 0.0 | 2006 07 25 | 644 | 0.3− | 0.3+ | |
| 1995 02 07 | 691 | (0.3+ | 2.2−) | 2002 11 30 | 704 | 0.7+ | 0.8+ | 2006 07 25 | 644 | 0.2− | 0.3+ | |
| 2001 06 21 | 704 | 0.1− | 0.6+ | 2002 11 30 | 704 | 0.3+ | 0.6+ | 2006 08 13 | 644 | 0.2− | 0.1+ | |
| 2001 06 21 | 704 | 0.9+ | 0.2+ | 2002 11 30 | 704 | 0.2+ | 0.5− | 2006 08 13 | 644 | 0.1− | 0.0 | |
| 2001 06 21 | 704 | 0.7+ | 0.8− | 2002 12 08 | 644 | 0.3− | 0.8+ | 2006 08 13 | 644 | 0.1− | 0.1+ | |
| 2002 10 07 | 608 | 0.3− | 0.6+ | 2002 12 08 | 644 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.1− | |
| 2002 10 07 | 608 | 0.6− | 0.7+ | 2002 12 08 | 644 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.4+ | |
| 2002 10 07 | 608 | 1.0− | 0.8+ | 2003 12 25 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.5− | 0.6+ | |
| 2002 10 28 | 608 | 0.1− | 0.0 | 2003 12 25 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.5− | 0.3+ | |
| 2002 10 28 | 608 | 0.2− | 0.3+ | 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 704 | 0.9+ | 1.2− | |
| 2002 10 28 | 608 | 0.1− | 0.1+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 704 | (0.8+ | 2.5−) | |
| 2002 10 31 | 704 | (5.4− | 0.6−) | 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 704 | 0.1− | 1.4− | |
| 2002 10 31 | 704 | (5.5− | 0.2−) | 2006 06 11 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.1− | |
| 2002 10 31 | 704 | (5.3− | 0.4−) | 2006 06 11 | 644 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.0 | |
| 2002 10 31 | 704 | (5.0− | 0.1+) | 2006 06 11 | 644 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.0 | |
| 2002 10 31 | 704 | 0.0 | 0.0 | 2006 06 22 | 644 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− | |
| 2002 10 31 | 704 | 0.1− | 0.1− | 2006 06 22 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− | |
| 2002 10 31 | 704 | 0.4+ | 0.1+ | 2006 06 22 | 644 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− | |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2006 06 22 | 644 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.1+ | |

**(142784)∗ 2002 UZ$_{13}$**

Discovered 2002 Oct. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.37712 | | (2000.0) | | | |
| $n$ | 0.22590363 | $\omega$ | 99.85818 | | +0.88487542 | −0.07222098 |
| $a$ | 2.6700573 | $\Omega$ | 265.39160 | | −0.08878577 | +0.94365039 |
| $e$ | 0.0839305 | $i$ | 27.49607 | | +0.45728828 | +0.32296759 |
| $P$ | 4.36 | $H$ | 13.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | 1.1− | 0.8− | 2002 12 15 | 704 | 0.2− | 0.1+ | 2006 05 19 | G96 | 0.3+ | 0.1+ | |
| 1998 12 22 | 704 | (1.7+ | 3.2−) | 2002 12 15 | 704 | 0.3− | 0.4− | 2006 05 19 | G96 | 0.1− | 0.1− | |
| 1998 12 22 | 704 | 0.5+ | 0.3− | 2002 12 15 | 704 | 0.5− | 0.0 | 2006 05 19 | G96 | 0.0 | 0.1− | |
| 1998 12 22 | 704 | 1.2− | 0.4+ | 2002 12 28 | 699 | 0.4+ | 0.5+ | 2006 05 19 | G96 | 0.5− | 0.0 | |
| 2001 05 18 | 704 | 0.2− | 0.2+ | 2002 12 28 | 699 | 0.5+ | 0.0 | 2006 09 12 | 704 | 0.1− | 0.8+ | |
| 2001 05 18 | 704 | 0.0 | 0.6+ | 2002 12 28 | 699 | 0.5− | 0.4+ | 2006 09 12 | 704 | 0.2+ | 0.0 | |
| 2001 05 18 | 704 | 0.1+ | 0.6+ | 2002 12 28 | 699 | 0.2− | 0.7+ | 2006 09 12 | 704 | 0.7− | 0.1− | |
| 2001 05 18 | 704 | 0.3+ | 0.1− | 2002 12 30 | 704 | 0.2− | 0.9+ | 2006 09 12 | 704 | 0.3+ | 0.8− | |
| 2001 06 21 | 704 | 0.3− | 0.4+ | 2002 12 30 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.0 | |
| 2001 06 21 | 704 | 0.3+ | 0.5− | 2002 12 30 | 704 | 0.5− | 0.6+ | 2006 09 17 | 704 | 0.1− | 0.4+ | |
| 2001 06 21 | 704 | 0.4− | 0.1+ | 2003 01 04 | 704 | 0.5+ | 0.7− | 2006 09 17 | 704 | 0.0 | 0.1+ | |
| 2001 06 21 | 704 | 0.1− | 0.2− | 2003 01 04 | 704 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.0 | 0.1+ | |
| 2002 10 29 | 704 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.1+ | 0.6− | 2006 10 04 | 704 | (2.0+ | 1.0−) | |
| 2002 10 29 | 704 | 0.0 | 0.2+ | 2003 01 04 | 704 | 0.1+ | 0.8− | 2006 10 04 | 704 | 0.8+ | 0.9+ | |
| 2002 10 29 | 704 | 0.4+ | 0.5+ | 2003 01 04 | 704 | 0.6+ | 0.4− | 2006 10 04 | 704 | 0.8+ | 0.4− | |
| 2002 10 29 | 704 | 0.4+ | 0.4+ | 2003 01 20 | 644 | 0.1− | 0.3+ | 2006 10 04 | 704 | 1.0+ | 0.3− | |
| 2002 10 29 | 704 | 0.8+ | 0.0 | 2003 01 20 | 644 | 0.3− | 0.5+ | 2006 10 16 | 704 | 0.2− | 0.4+ | |
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2003 01 20 | 644 | 0.5− | 0.1+ | 2006 10 16 | 704 | 0.1− | 0.0 | |
| 2002 10 31 | 704 | 0.1− | 0.5+ | 2003 02 01 | 704 | 0.2+ | 0.6− | 2006 10 16 | 704 | 0.0 | 0.4+ | |
| 2002 10 31 | 704 | 0.0 | 0.4+ | 2003 02 01 | 704 | 1.0+ | 1.0− | 2006 10 16 | 704 | 0.3+ | 0.0 | |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2003 02 01 | 704 | 0.7+ | 0.4− | 2006 10 16 | 704 | 0.0 | 0.3− | |
| 2002 10 31 | 704 | 0.1− | 0.5+ | 2003 02 01 | 704 | 0.0 | 1.3− | 2006 11 01 | 703 | 0.0 | 0.5− | |
| 2002 11 15 | 704 | 0.3+ | 0.2+ | 2003 02 01 | 704 | 0.1+ | 0.8− | 2006 11 01 | G96 | 0.2+ | 0.2− | |
| 2002 11 15 | 704 | 0.6+ | 0.2− | 2003 02 04 | 704 | 0.3− | 0.1− | 2006 11 01 | 703 | 0.2+ | 0.2− | |
| 2002 11 15 | 704 | 0.3+ | 0.1− | 2003 02 04 | 704 | 0.1− | 0.4+ | 2006 11 01 | 703 | 0.1− | 0.2− | |
| 2002 11 15 | 704 | 0.3+ | 0.4+ | 2003 02 04 | 704 | 0.5− | 0.6+ | 2006 11 01 | 703 | 0.1+ | 0.2− | |
| 2002 11 15 | 704 | 0.5+ | 0.3− | 2003 02 04 | 704 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.2− | |
| 2002 12 03 | 644 | 0.5+ | 0.3− | 2003 02 04 | 704 | 0.1− | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.3− | |
| 2002 12 03 | 644 | 0.2+ | 0.4− | 2004 03 16 | 644 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.1− | |
| 2002 12 03 | 644 | 0.2+ | 0.2− | 2004 03 16 | 644 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.4+ | |
| 2002 12 06 | 704 | 0.0 | 0.1+ | 2004 03 16 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.0 | |
| 2002 12 06 | 704 | 0.1+ | 0.2+ | 2004 03 26 | 704 | 0.5+ | 0.1− | 2006 11 14 | 704 | 0.2− | 0.0 | |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2004 03 26 | 704 | 0.6+ | 0.7+ | 2006 11 14 | 704 | 0.3− | 0.1+ | |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2004 03 26 | 704 | 0.2+ | 0.1− | 2006 11 21 | 703 | 0.6− | 0.1− | |
| 2002 12 06 | 704 | 0.0 | 0.1+ | 2004 03 26 | 704 | 0.3− | 0.6+ | 2006 11 21 | 703 | 1.2− | 1.0− | |
| 2002 12 12 | 644 | 0.2− | 0.3+ | 2004 03 26 | 704 | 0.1− | 0.0 | 2006 11 21 | 703 | 0.6− | 0.2− | |
| 2002 12 12 | 644 | 0.1− | 0.3+ | 2005 07 03 | E12 | 0.2+ | 0.1+ | 2006 11 21 | 703 | 0.4− | 0.5− | |
| 2002 12 12 | 644 | 0.3− | 0.2+ | 2005 07 03 | E12 | 0.0 | 0.1+ | | | | | |
| 2002 12 15 | 704 | 0.2− | 0.8− | 2005 07 03 | E12 | 0.2− | 0.1+ | | | | | |

**(142785)∗ 2002 UG$_{14}$**

Discovered 2002 Oct. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.35757 | | (2000.0) | | | |
| $n$ | 0.24102435 | $\omega$ | 262.54415 | | +0.94178080 | +0.26335569 |
| $a$ | 2.5571847 | $\Omega$ | 82.01456 | | −0.15818222 | +0.89563197 |
| $e$ | 0.3445529 | $i$ | 12.18534 | | −0.29669398 | +0.35845106 |
| $P$ | 4.09 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 08 | 699 | 0.1+ | 0.2+ | 2002 12 01 | 704 | 0.1+ | 0.2+ | 2006 08 05 | E12 | 0.2− | 0.1− | |
| 1998 12 08 | 699 | 1.3+ | 0.1− | 2002 12 01 | 704 | 0.1− | 0.1− | 2006 08 05 | E12 | 0.3− | 0.5+ | |
| 1998 12 08 | 699 | 0.2+ | 0.2− | 2002 12 01 | 704 | 0.4+ | 0.6− | 2006 08 05 | E12 | 0.2+ | 0.2− | |
| 1998 12 08 | 699 | 0.7− | 0.3− | 2002 12 01 | 608 | 1.2+ | 1.0+ | 2006 08 30 | 704 | 0.6− | 1.4+ | |
| 1998 12 08 | 699 | 0.2+ | 0.1+ | 2002 12 01 | 608 | 1.4+ | 1.0+ | 2006 08 30 | 704 | 0.2− | 0.4− | |
| 1998 12 08 | 699 | 0.9+ | 0.6− | 2002 12 01 | 608 | 0.9+ | 0.9+ | 2006 08 30 | 704 | 0.2− | 1.0+ | |
| 2002 09 16 | 699 | 0.3− | 0.2− | 2002 12 07 | 704 | 0.4− | 0.0 | 2006 08 30 | 704 | 0.2− | 1.2+ | |
| 2002 09 16 | 699 | 0.4+ | 0.4− | 2002 12 07 | 704 | 0.3− | 0.0 | 2006 08 30 | 704 | 1.1+ | 0.6+ | |
| 2002 09 16 | 699 | 0.2+ | 0.2− | 2002 12 07 | 704 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.1− | 0.3− | |
| 2002 09 16 | 699 | 0.2− | 0.4− | 2002 12 07 | 704 | 0.4+ | 0.4− | 2006 09 25 | 703 | 0.5+ | 0.2− | |
| 2002 10 09 | 699 | 0.2− | 0.5− | 2002 12 07 | 704 | 0.2− | 0.2− | 2006 09 25 | 703 | 0.1− | 0.6− | |
| 2002 10 09 | 699 | 0.7− | 0.0 | 2002 12 11 | 704 | 0.2− | 1.4− | 2006 09 25 | 703 | 0.1− | 0.3− | |
| 2002 10 09 | 699 | 0.2− | 0.4− | 2002 12 11 | 704 | 0.5− | 1.3− | 2006 10 04 | 703 | 0.2+ | 0.2− | |
| 2002 10 09 | 699 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 10 04 | 703 | 0.2+ | 0.3− | |
| 2002 10 29 | 644 | 0.1+ | 1.1− | 2002 12 11 | 704 | 0.2+ | 0.6− | 2006 10 04 | 703 | 0.1+ | 0.4− | |
| 2002 10 29 | 644 | 0.1− | 1.1− | 2002 12 11 | 704 | 0.8+ | 0.5− | 2006 10 04 | 703 | 0.0 | 0.4− | |
| 2002 10 29 | 644 | 0.0 | 0.9− | 2002 12 11 | 704 | 0.9+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.4− | |
| 2002 10 31 | 704 | 0.3+ | 0.0 | 2002 12 12 | 608 | 0.8− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2− | |
| 2002 10 31 | 704 | 0.1+ | 0.0 | 2002 12 12 | 608 | 1.0− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.4− | |
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2002 12 12 | 608 | 0.9− | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.5− | |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2002 12 22 | 608 | 0.9− | 1.0+ | 2006 10 21 | 703 | 0.0 | 0.7− | |
| 2002 10 31 | 704 | 0.4+ | 0.2+ | 2002 12 22 | 608 | 1.0− | 0.8+ | 2006 10 21 | 703 | 0.4+ | 0.5− | |
| 2002 11 05 | 704 | 0.3+ | 0.4+ | 2002 12 22 | 608 | 0.8− | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.7− | |
| 2002 11 05 | 704 | 0.1+ | 0.4+ | 2003 01 01 | 704 | 0.7− | 0.4+ | 2006 10 31 | 703 | 0.8+ | 0.2− | |
| 2002 11 05 | 704 | 0.0 | 0.3+ | 2003 01 01 | 704 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.3+ | 0.3+ | |
| 2002 11 05 | 704 | 0.3− | 0.7+ | 2003 01 01 | 704 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.3+ | 0.3+ | |
| 2002 11 05 | 704 | 0.3− | 0.5+ | 2003 01 01 | 704 | 0.5+ | 0.2− | 2006 10 31 | 703 | 0.9+ | 0.0 | |
| 2002 11 06 | 699 | 0.3− | 0.2− | 2003 01 01 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 704 | 0.1− | 0.1+ | |
| 2002 11 06 | 699 | 0.2+ | 0.1− | 2003 01 18 | 644 | 0.1− | 0.3+ | 2006 11 11 | 704 | 0.5− | 0.4+ | |
| 2002 11 06 | 699 | 0.5+ | 0.1− | 2003 01 18 | 644 | 0.1+ | 0.7+ | 2006 11 11 | 704 | 0.5− | 0.8− | |
| 2002 11 06 | 699 | 0.6− | 0.2− | 2003 01 18 | 644 | 0.1− | 0.3+ | 2006 11 11 | 704 | 0.4− | 0.8+ | |
| 2002 11 12 | 704 | 0.0 | 0.4+ | 2003 01 27 | 608 | 0.7− | 1.3− | 2006 11 17 | 703 | 0.5+ | 0.3+ | |
| 2002 11 12 | 704 | 0.1− | 0.5+ | 2003 01 27 | 608 | 0.4− | 0.9− | 2006 11 17 | 703 | 0.1+ | 0.1+ | |
| 2002 11 12 | 704 | 0.2− | 1.2+ | 2003 01 27 | 608 | 0.6− | 0.9− | 2006 11 17 | 703 | 0.7+ | 0.7+ | |
| 2002 11 12 | 704 | 0.2+ | 0.5+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.7+ | |
| 2002 11 12 | 704 | 0.1+ | 0.2+ | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.5+ | |
| 2002 11 23 | 644 | 0.6− | 0.1+ | 2006 06 26 | E12 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.4− | |
| 2002 11 23 | 644 | 0.7− | 0.3+ | 2006 06 26 | E12 | 0.4− | 0.8+ | 2006 11 22 | 704 | 0.6− | 0.7+ | |
| 2002 11 23 | 644 | 0.6− | 0.1+ | 2006 06 26 | E12 | 0.7− | 0.6+ | 2006 11 22 | 704 | 0.4− | 0.6+ | |
| 2002 12 01 | 704 | 0.3+ | 0.1− | 2006 06 26 | E12 | 0.5− | 0.9+ | 2006 11 22 | 704 | 0.4− | 0.2+ | |
| 2002 12 01 | 704 | 0.2− | 0.1− | 2006 08 05 | E12 | 0.1− | 0.4− | | | | | |

**(142786)∗ 2002 UB$_{15}$**

Discovered 2002 Oct. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.83716 | | (2000.0) | | | |
| $n$ | 0.24024710 | $\omega$ | 259.02896 | | +0.38487905 | −0.92201312 |
| $a$ | 2.5626971 | $\Omega$ | 168.07235 | | +0.90609927 | +0.36880462 |
| $e$ | 0.2965267 | $i$ | 11.71136 | | +0.17564800 | +0.11779203 |
| $P$ | 4.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 13 | 704 | 0.3− | 0.3+ | 2002 11 22 | 644 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.6− |
| 1998 11 13 | 704 | 0.3+ | 0.6+ | 2002 11 22 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 1998 11 13 | 704 | (4.3− | 2.4+) | 2002 12 07 | 644 | 0.3+ | 0.6+ | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 1998 11 13 | 704 | (3.3− | 0.5+) | 2002 12 07 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1998 11 13 | 704 | 1.1− | 0.1− | 2002 12 07 | 644 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.8+ |
| 1998 12 19 | 704 | 0.2− | 0.4+ | 2002 12 21 | 608 | 0.2− | 0.8− | 2006 09 29 | 704 | 0.5+ | 0.3+ |
| 1998 12 19 | 704 | 0.6− | 0.8+ | 2002 12 21 | 608 | 0.6− | 1.0− | 2006 09 29 | 704 | 0.0 | 0.9+ |
| 1998 12 19 | 704 | 0.3− | 0.5− | 2002 12 21 | 608 | 0.1− | 0.7− | 2006 09 29 | 704 | 0.3+ | 0.3+ |
| 1998 12 19 | 704 | 1.5− | 0.2+ | 2003 01 25 | 644 | 0.5+ | 0.3− | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 1998 12 19 | 704 | 0.3− | 1.1+ | 2003 01 25 | 644 | 0.7+ | 0.2− | 2006 09 30 | 704 | 0.3− | 0.5+ |
| 1999 01 09 | 699 | 0.1− | 0.3+ | 2003 01 25 | 644 | 0.5+ | 0.3− | 2006 09 30 | 704 | 0.4− | 0.3+ |
| 1999 01 09 | 699 | 0.0 | 0.1+ | 2003 01 28 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.8+ |
| 1999 01 09 | 699 | 0.4+ | 0.3+ | 2003 01 28 | 704 | 0.7+ | 0.7+ | 2006 09 30 | 704 | 0.4− | 0.6+ |
| 2002 09 05 | 704 | 0.3+ | 0.4− | 2003 01 28 | 704 | (0.6+ | 1.8+) | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.0 | 1.0− | 2004 04 14 | 691 | 0.3− | 0.6+ | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 1.4− | 2004 04 14 | 691 | 0.5+ | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.6− | 2004 04 14 | 691 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2002 10 04 | 704 | 0.9− | 0.8+ | 2006 08 17 | 644 | 0.3− | 0.4+ | 2006 10 17 | 703 | (2.2− | 3.3+) |
| 2002 10 04 | 704 | 0.1− | 0.9+ | 2006 08 17 | 644 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2002 10 04 | 704 | 0.2− | 0.9+ | 2006 08 17 | 644 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | (0.7− | 1.6+) | 2006 09 18 | 703 | 0.4− | 0.7− | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2002 10 10 | 644 | 0.4− | 0.5− | 2006 09 18 | 703 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2002 10 10 | 644 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.5− | 0.9+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.9+ | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 10 10 | 644 | 0.5− | 0.4− | 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 10 17 | 703 | 0.6+ | 0.3− |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 30 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 10 30 | 704 | 0.3− | 0.2+ | 2006 09 19 | 704 | (0.2+ | 1.7+) | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 10 30 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 1.0− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 10 30 | 704 | 0.3− | 0.0 | 2006 09 22 | 704 | 0.6− | 0.4− | 2006 10 28 | 703 | 0.2− | 0.9+ |
| 2002 10 30 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 1.4− | 0.4− | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.5+ | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.0 | 0.5+ |
| 2002 10 31 | 704 | 0.4+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.7− | 2006 10 28 | 703 | 0.7− | 0.5+ |
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.9− | 2006 11 11 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.2− | 0.5− | 2006 11 11 | 644 | 0.1+ | 0.2− |
| 2002 10 31 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 11 11 | 644 | 0.0 | 0.1− |
| 2002 11 22 | 644 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.1+ | | | | |

**(142787)∗ 2002 UD$_{15}$**

Discovered 2002 Oct. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.48200 | | (2000.0) | | | |
| $n$ | 0.20990114 | $\omega$ | 272.97357 | | +0.44920561 | −0.88629503 |
| $a$ | 2.8040958 | $\Omega$ | 149.51918 | | +0.88227457 | +0.42019018 |
| $e$ | 0.1073048 | $i$ | 12.83401 | | +0.14073347 | +0.19473401 |
| $P$ | 4.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.1+ | 0.2+ | 2004 01 29 | 704 | 1.1+ | 1.2+ | 2005 05 13 | 703 | 0.1− | 0.7− |
| 2002 10 05 | 645 | 0.1+ | 0.2+ | 2004 01 29 | 704 | 0.8+ | 0.6− | 2005 05 13 | 703 | 0.3− | 0.0 |
| 2002 10 10 | 644 | 0.1− | 0.4+ | 2004 01 29 | 704 | 0.2+ | 0.1+ | 2005 05 13 | 703 | 0.2− | 0.2− |
| 2002 10 10 | 644 | 0.3− | 0.5+ | 2004 01 29 | 704 | 1.2+ | 1.3− | 2005 05 20 | 644 | 0.1− | 0.2+ |
| 2002 10 10 | 644 | 0.3− | 0.4+ | 2004 02 11 | 291 | 0.3+ | 0.3+ | 2005 05 20 | 644 | 0.2− | 0.2+ |
| 2002 10 20 | 608 | 0.2− | 0.4− | 2004 02 11 | 291 | 0.1− | 0.5+ | 2005 05 20 | 644 | 0.0 | 0.2+ |
| 2002 10 20 | 608 | 0.1− | 0.1+ | 2004 02 11 | 291 | 1.4− | 0.2− | 2005 05 31 | 699 | 0.1− | 0.6+ |
| 2002 10 20 | 608 | 0.1+ | 0.3− | 2004 02 11 | 644 | 0.4+ | 0.6+ | 2005 05 31 | 699 | 0.7+ | 1.0+ |
| 2002 10 30 | 704 | 0.5− | 0.0 | 2004 02 11 | 644 | 0.3+ | 0.1+ | 2005 05 31 | 699 | 0.5+ | 0.1− |
| 2002 10 30 | 704 | 0.2− | 0.1− | 2004 02 11 | 644 | 0.6+ | 0.3+ | 2005 05 31 | 699 | 0.6+ | 0.5− |
| 2002 10 30 | 704 | 0.4− | 0.6+ | 2004 02 17 | 704 | 0.5+ | 0.1+ | 2005 05 31 | 703 | (1.4+ | 1.7−) |
| 2002 10 30 | 704 | (0.5− | 1.5+) | 2004 02 17 | 704 | 0.0 | 0.4+ | 2005 05 31 | 703 | 0.8− | 0.8− |
| 2002 10 30 | 704 | 0.1+ | 1.4+ | 2004 02 17 | 704 | 0.3− | 0.4+ | 2005 05 31 | 703 | 0.5+ | 0.3+ |
| 2002 10 31 | 704 | (2.5− | 0.4+) | 2004 02 17 | 704 | 0.3+ | 0.1− | 2005 05 31 | 703 | 0.0 | 0.4+ |
| 2002 10 31 | 704 | 0.5− | 0.4+ | 2004 02 23 | 704 | 0.6+ | 0.3− | 2005 06 01 | H06 | 1.4− | 0.1+ |
| 2002 10 31 | 704 | (2.1− | 0.0 ) | 2004 02 23 | 704 | 0.2+ | 0.2− | 2005 06 01 | H06 | 0.6+ | 0.0 |
| 2002 10 31 | 704 | 0.3− | 1.1+ | 2004 02 23 | 704 | 0.3+ | 0.5− | 2005 06 01 | H06 | 0.9− | 0.1− |
| 2002 10 31 | 704 | (2.2− | 0.4+) | 2004 02 23 | 704 | 0.6+ | 0.4+ | 2005 06 25 | 644 | 0.1+ | 0.3+ |
| 2002 10 31 | 704 | 0.7− | 0.7+ | 2004 02 23 | 704 | 0.0 | 0.2− | 2005 06 25 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | (2.3− | 0.7+) | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2005 06 25 | 644 | 0.1+ | 0.3+ |
| 2002 10 31 | 704 | 0.5− | 0.6+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2005 06 30 | 644 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | (2.4− | 0.5+) | 2004 02 29 | 691 | 0.0 | 0.4+ | 2005 06 30 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.6− | 0.7+ | 2004 03 15 | 704 | 0.7− | 0.4+ | 2005 06 30 | 644 | 0.2+ | 0.0 |
| 2002 11 06 | 644 | 0.1− | 0.7+ | 2004 03 15 | 704 | 0.7+ | 0.6+ | 2005 07 10 | 699 | (1.7+ | 0.3+) |
| 2002 11 06 | 644 | 0.0 | 0.5+ | 2004 03 15 | 704 | 0.3− | 0.8− | 2005 07 10 | 699 | 0.5− | 1.3+ |
| 2002 11 06 | 644 | 0.1− | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.5+ | 2005 07 10 | 699 | (0.8+ | 1.8+) |
| 2002 11 22 | 644 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.2− | 0.7+ | 2005 07 10 | 699 | 0.1+ | 1.3+ |
| 2002 11 22 | 644 | 0.1− | 0.4+ | 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.3+ |
| 2002 11 22 | 644 | 0.2− | 0.3+ | 2004 03 19 | 704 | 1.2− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2002 12 07 | 644 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.9+ | 0.2− |
| 2002 12 07 | 644 | 0.3− | 0.6+ | 2004 03 22 | 704 | 1.0− | 0.9+ | 2006 08 28 | 703 | 1.2− | 0.1+ |
| 2002 12 07 | 644 | 0.5− | 0.8+ | 2004 03 22 | 704 | 0.2− | 0.4+ | 2006 08 29 | 704 | 0.1+ | 1.2+ |
| 2003 01 28 | 704 | 0.8− | 0.6+ | 2004 03 22 | 704 | 0.1− | 1.0+ | 2006 08 29 | 704 | (1.5+ | 1.7+) |
| 2003 01 28 | 704 | 0.4+ | 1.1− | 2005 05 06 | 691 | 0.0 | 0.9+ | 2006 08 29 | 704 | 0.4+ | 1.1+ |
| 2003 01 28 | 704 | 0.3− | 0.7− | 2005 05 06 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 704 | 0.6+ | 1.2+ |
| 2003 01 28 | 704 | 0.6− | 1.3− | 2005 05 06 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 704 | 1.0+ | 1.0+ |
| 2003 12 21 | 704 | 1.1+ | 0.2− | 2005 05 08 | 699 | 0.7+ | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.3+ |
| 2003 12 21 | 704 | 0.5+ | 0.1+ | 2005 05 08 | 699 | 0.6+ | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2003 12 21 | 704 | 0.4+ | 0.4+ | 2005 05 08 | 699 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.3− | 0.1+ |
| 2004 01 24 | 704 | 0.2+ | 0.1+ | 2005 05 08 | 699 | (0.8− | 1.5+) | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2004 01 24 | 704 | 0.1+ | 0.6− | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2004 01 24 | 704 | 0.7+ | 0.1− | 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.7− | 0.2+ |
| 2004 01 24 | 704 | 0.9+ | 0.3+ | 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2004 01 24 | 704 | 0.9+ | 0.3+ | 2005 05 13 | 703 | 0.9− | 0.5− | | | | |

**(142788)∗ 2002 UD$_{16}$**

Discovered 2002 Oct. 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.13646 | | (2000.0) | | | |
| $n$ | 0.22622269 | $\omega$ | 78.76417 | | +0.04174535 | +0.99759158 |
| $a$ | 2.6675462 | $\Omega$ | 193.99016 | | −0.98258663 | +0.03094443 |
| $e$ | 0.1433999 | $i$ | 13.24571 | | −0.18105479 | +0.06207639 |
| $P$ | 4.36 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 704 | 0.4− | 0.2− | 2005 05 03 | 704 | 0.6− | 0.6− | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2001 05 22 | 704 | 0.1+ | 0.1+ | 2005 05 03 | 704 | 0.9+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.4− |
| 2001 05 22 | 704 | 0.6+ | 0.4+ | 2005 05 03 | 704 | 1.1− | 0.2+ | 2006 10 01 | 703 | 0.7− | 0.6− |
| 2001 05 22 | 704 | 0.4− | 0.0 | 2005 05 03 | 704 | 0.0 | 1.0+ | 2006 10 01 | 703 | 1.4− | 1.0− |
| 2002 10 09 | 699 | 1.3− | 0.4+ | 2005 05 08 | 703 | 0.5− | 0.9− | 2006 10 01 | 703 | 0.1+ | 0.2+ |
| 2002 10 09 | 699 | (0.7− | 2.0+) | 2005 05 08 | 703 | 1.5− | 1.0− | 2006 10 01 | 703 | 0.4+ | 0.6− |
| 2002 10 09 | 699 | 0.5− | 0.2+ | 2005 05 08 | 703 | 1.0− | 0.2− | 2006 10 01 | 704 | 1.0+ | 0.2− |
| 2002 10 09 | 699 | (1.0+ | 3.5+) | 2005 05 08 | 703 | 0.7− | 1.0− | 2006 10 01 | 704 | 1.3+ | 0.4+ |
| 2002 10 30 | 644 | 0.2− | 0.6+ | 2005 05 11 | 699 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.0 | 0.1+ |
| 2002 10 30 | 644 | 0.2− | 0.8+ | 2005 05 11 | 699 | 0.3+ | 0.2− | 2006 10 01 | 704 | 1.0+ | 0.4+ |
| 2002 10 30 | 644 | 0.2− | 0.3+ | 2005 05 11 | 699 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.3+ | 0.3+ | 2005 05 11 | 699 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.8+ | 2005 05 12 | 704 | 1.2+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2002 10 31 | 704 | 0.2+ | 0.4+ | 2005 05 12 | 704 | 0.9+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1+ |
| 2002 10 31 | 704 | 0.1+ | 0.3+ | 2005 05 12 | 704 | 0.7+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.1− | 0.2+ | 2005 05 12 | 704 | 0.7+ | 0.8− | 2006 10 11 | 691 | 0.0 | 1.2+ | | |
| 2002 10 31 | 608 | (1.4− | 1.7+) | 2005 05 13 | 703 | 0.3− | 0.4− | 2006 10 12 | 644 | 0.4+ | 0.0 | | |
| 2002 10 31 | 608 | (0.2− | 1.9+) | 2005 05 13 | 703 | (0.7− | 1.6−) | 2006 10 12 | 644 | 0.6+ | 0.1+ | | |
| 2002 10 31 | 608 | 0.1− | 1.2+ | 2005 05 13 | 703 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.1− | | |
| 2002 11 07 | 704 | 1.1+ | 0.2+ | 2005 05 13 | 703 | 0.5− | 0.8− | 2006 10 16 | 703 | 0.2− | 0.4− | | |
| 2002 11 07 | 704 | 0.3+ | 0.1− | 2006 08 18 | 699 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.8+ | 0.2− | | |
| 2002 11 07 | 704 | 0.3− | 0.8− | 2006 08 18 | 699 | (0.3− | 1.6−) | 2006 10 16 | 703 | 0.3+ | 1.3− | | |
| 2005 03 14 | G96 | 0.5− | 0.1+ | 2006 08 18 | 699 | 1.2+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.5− | | |
| 2005 03 14 | G96 | 0.2− | 0.1+ | 2006 08 18 | 699 | 0.6− | 0.5− | 2006 10 19 | 691 | 0.1− | 0.1+ | | |
| 2005 03 14 | G96 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2005 03 14 | G96 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.9− | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2005 04 02 | 699 | 0.4− | 0.0 | 2006 08 29 | 703 | 0.3− | 0.9− | 2006 10 21 | 691 | 0.1− | 0.7+ | | |
| 2005 04 02 | 699 | 0.0 | 0.3+ | 2006 08 29 | 703 | (2.2− | 2.8−) | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2005 04 02 | 699 | 0.0 | 1.3+ | 2006 08 30 | 704 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.2+ | | |
| 2005 04 02 | 699 | 1.3− | 0.1− | 2006 08 30 | 704 | 0.0 | 1.1+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2005 04 05 | 704 | 0.4+ | 0.4− | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2005 04 05 | 704 | (0.1+ | 1.6+) | 2006 09 06 | 644 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 2005 04 05 | 704 | (0.0 | 2.0+) | 2006 09 06 | 644 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.0 | 0.6− | | |
| 2005 04 05 | 703 | 0.3− | 0.6− | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 1.0− | | |
| 2005 04 05 | 704 | 0.3+ | 0.8+ | 2006 09 17 | 703 | 0.2− | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.6− | | |
| 2005 04 05 | 703 | (0.8+ | 1.9−) | 2006 09 17 | 703 | 0.5− | 0.0 | 2006 10 22 | 703 | 0.8− | 1.2− | | |
| 2005 04 05 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.3− | | |
| 2005 04 05 | 703 | 0.4− | 1.0− | 2006 09 17 | 703 | 0.7− | 0.4− | 2006 10 23 | G96 | 0.4+ | 0.1− | | |
| 2005 04 05 | 703 | 0.2− | 0.1− | 2006 09 18 | 704 | (2.0+ | 1.1−) | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2005 04 06 | 691 | 0.0 | 0.3+ | 2006 09 18 | 704 | (1.9+ | 0.6−) | 2006 10 23 | G96 | 0.4+ | 0.2− | | |
| 2005 04 06 | 691 | 0.0 | 0.1+ | 2006 09 18 | 704 | 1.1+ | 1.2− | 2006 10 23 | G96 | 0.6+ | 0.0 | | |
| 2005 04 06 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 24 | 644 | 0.1− | 0.3+ | | |
| 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.1− | | |
| 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.4− | 2006 10 24 | 644 | 0.0 | 0.1+ | | |
| 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.0 | | |
| 2005 04 18 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.9− | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.2− | | |
| 2005 04 19 | 608 | 0.4+ | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.9+ | 0.4− | | |
| 2005 04 19 | 608 | 0.1+ | 0.8+ | 2006 09 25 | 704 | 0.4− | 0.9+ | 2006 11 13 | G96 | 0.1+ | 0.6− | | |
| 2005 04 19 | 608 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.4− | | |
| 2005 04 27 | 599 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2005 04 27 | 599 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.8− | 0.7+ | 2006 11 21 | G96 | 0.3+ | 0.1− | | |
| 2005 04 27 | 599 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2005 05 03 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.4+ | | | | | | |

**(142789)∗ 2002 UM$_{16}$**

Discovered 2002 Oct. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.97488 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23335577 | $\omega$ | 81.46194 | | +0.95977521 | −0.19906426 | |
| $a$ | 2.6129054 | $\Omega$ | 289.83743 | | +0.09006727 | +0.88623169 | |
| $e$ | 0.1521173 | $i$ | 12.15126 | | +0.26593124 | +0.41829035 | |
| $P$ | 4.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 08 | 691 | 0.3− | 0.7− | 2002 11 15 | 704 | 0.4+ | 0.7+ | 2004 03 16 | 704 | 1.3+ | 0.5+ | | |
| 1995 01 08 | 691 | 0.3− | 0.7− | 2002 11 15 | 704 | 0.8+ | 0.3+ | 2004 03 16 | 704 | 0.4+ | 0.7+ | | |
| 1995 01 08 | 691 | 0.3− | 0.6− | 2002 11 15 | 704 | 0.5+ | 0.7+ | 2006 08 23 | 704 | (2.0+ | 0.7+) | | |
| 2002 10 06 | 704 | 0.8− | 0.6− | 2002 11 15 | 704 | 1.1+ | 0.4− | 2006 08 23 | 704 | (1.8+ | 0.8+) | | |
| 2002 10 06 | 704 | 0.7+ | 0.9+ | 2002 12 03 | 644 | 0.3− | 0.1− | 2006 08 23 | 704 | (1.6+ | 0.9+) | | |
| 2002 10 06 | 704 | 0.6− | 0.3+ | 2002 12 03 | 644 | 0.4− | 0.0 | 2006 08 23 | 704 | 1.5+ | 0.5+ | | |
| 2002 10 06 | 704 | 0.7− | 0.6+ | 2002 12 03 | 644 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.5+ | 0.4− | | |
| 2002 10 14 | 704 | (1.8+ | 0.2−) | 2002 12 06 | 704 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.3− | | |
| 2002 10 14 | 704 | 1.4+ | 0.7− | 2002 12 06 | 704 | 0.5− | 0.4+ | 2006 09 17 | 703 | 0.1+ | 0.0 | | |
| 2002 10 14 | 704 | 0.4+ | 0.8+ | 2002 12 06 | 704 | 0.6− | 0.6+ | 2006 09 17 | 703 | 0.1− | 0.6+ | | |
| 2002 10 30 | 704 | 0.6+ | 1.1+ | 2002 12 06 | 704 | 0.0 | 0.6+ | 2006 09 24 | 699 | 0.1− | 0.1+ | | |
| 2002 10 30 | 704 | 0.2+ | 0.1+ | 2002 12 06 | 704 | 1.1+ | 0.8+ | 2006 09 24 | 699 | 0.5+ | 0.1+ | | |
| 2002 10 30 | 704 | 0.5+ | 0.9+ | 2002 12 13 | 644 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.3− | 0.1+ | | |
| 2002 10 30 | 704 | 0.6+ | 0.7+ | 2002 12 13 | 644 | 0.0 | 0.2− | 2006 09 24 | 699 | 0.2− | 0.1− | | |
| 2002 10 31 | 704 | 0.5− | 0.3+ | 2002 12 13 | 644 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.5− | 0.0 | | |
| 2002 10 31 | 704 | 0.1+ | 0.3+ | 2003 01 04 | 704 | 0.6− | 0.7− | 2006 09 28 | 703 | 0.6− | 0.2− | | |
| 2002 10 31 | 704 | 0.2+ | 0.2+ | 2003 01 04 | 704 | 0.4− | 0.7− | 2006 09 28 | 703 | 0.4− | 0.2− | | |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2003 01 04 | 704 | (1.7− | 0.7−) | 2006 10 01 | 704 | 0.5+ | 0.8− | | |
| 2002 10 31 | 704 | 0.4+ | 0.5+ | 2003 01 04 | 704 | 1.2− | 0.5− | 2006 10 01 | 704 | (1.8+ | 0.0 ) | | |
| 2002 11 07 | 704 | 1.2− | 0.3+ | 2003 02 01 | 704 | 0.5− | 0.4+ | 2006 10 01 | 704 | 1.6+ | 0.1+ | | |
| 2002 11 07 | 704 | 1.3− | 0.3+ | 2003 02 01 | 704 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.4− | | |
| 2002 11 07 | 704 | 0.7− | 0.0 | 2003 02 01 | 704 | 0.7+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.1− | | |
| 2002 11 07 | 704 | 0.8− | 0.4+ | 2003 02 01 | 704 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2002 11 07 | 704 | 1.4− | 0.2+ | 2004 02 17 | 703 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.0 | | |
| 2002 11 15 | 644 | 0.3+ | 0.4− | 2004 02 17 | 703 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.7− | | |
| 2002 11 15 | 644 | 0.0 | 0.3− | 2004 02 17 | 703 | 0.7− | 0.0 | 2006 10 27 | 703 | 0.1− | 1.7− | | |
| 2002 11 15 | 644 | 0.0 | 0.2− | 2004 02 17 | 703 | (1.9− | 0.4−) | 2006 10 27 | 703 | 0.6+ | 1.5− | | |
| 2002 11 15 | 704 | 1.1+ | 1.5+ | 2004 03 01 | 703 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.3− | | |
| 2002 11 15 | 704 | 0.2− | 0.5− | 2004 03 01 | 703 | 0.2+ | 0.5− | 2006 10 30 | B01 | 0.1+ | 0.2− | | |
| 2002 11 15 | 704 | 1.0+ | 1.4+ | 2004 03 01 | 703 | 0.3− | 0.4+ | 2006 10 30 | B01 | 0.0 | 0.2− | | |
| 2002 11 15 | 704 | 0.1+ | 0.2+ | 2004 03 01 | 703 | (1.6+ | 0.7+) | 2006 10 30 | B01 | 0.1+ | 0.2− | | |
| 2002 11 15 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 704 | 0.3+ | 1.0+ | | | | | | |
| 2002 11 15 | 704 | 0.0 | 0.1+ | 2004 03 16 | 704 | 1.2+ | 0.3+ | | | | | | |

**(142790)∗ 2002 UX$_{16}$**

Discovered 2002 Oct. 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.35796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22058916 | $\omega$ | 288.86408 | | +0.27566114 | −0.95626334 | |
| $a$ | 2.7127718 | $\Omega$ | 144.66385 | | +0.93329185 | +0.24188240 | |
| $e$ | 0.1562577 | $i$ | 9.73856 | | +0.23016789 | +0.16447895 | |
| $P$ | 4.47 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 11 | 699 | (0.5+ | 2.1+) | 2002 11 06 | 699 | 0.0 | 0.4− | 2004 03 23 | 704 | 0.5− | 0.2+ | | |
| 1999 02 11 | 699 | 0.3+ | 0.1+ | 2002 11 06 | 699 | 0.7+ | 1.5+ | 2004 03 23 | 704 | 0.9+ | 1.2+ | | |
| 1999 02 11 | 699 | 0.7+ | 0.3+ | 2002 11 06 | 699 | 1.3+ | 0.9+ | 2004 03 28 | 703 | 0.6− | 1.2− | | |
| 1999 03 10 | 691 | 0.1+ | 0.1− | 2002 11 12 | 683 | 0.4+ | 0.7+ | 2004 03 28 | 703 | 0.9+ | 1.5− | | |
| 1999 03 10 | 691 | 0.0 | 0.4− | 2002 11 12 | 683 | 0.9− | 0.2+ | 2004 03 28 | 703 | 1.3− | 1.1+ | | |
| 1999 03 10 | 691 | 0.1+ | 0.1− | 2002 11 12 | 683 | 0.2+ | 0.3+ | 2004 03 28 | 703 | (0.4+ | 1.7−) | | |
| 1999 04 09 | 691 | 0.1+ | 0.1− | 2002 11 30 | 704 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.6− | | |
| 1999 04 09 | 691 | 0.1− | 0.4− | 2002 11 30 | 704 | 0.8− | 0.5+ | 2006 08 17 | 644 | 0.1− | 0.1+ | | |
| 1999 04 09 | 691 | 0.2− | 0.0 | 2002 11 30 | 704 | 0.5− | 0.2+ | 2006 08 17 | 644 | 0.5− | 0.2− | | |
| 2001 07 14 | 644 | 0.1− | 1.1+ | 2002 11 30 | 704 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.8+ | 0.0 | | |
| 2001 07 14 | 644 | 0.5− | 0.5+ | 2002 11 30 | 704 | (0.3+ | 2.0+) | 2006 08 30 | 699 | 0.1+ | 0.8+ | | |
| 2001 07 14 | 644 | 0.7− | 0.6+ | 2002 12 08 | 644 | 0.1− | 0.7+ | 2006 08 30 | 699 | 0.4+ | 0.3+ | | |
| 2002 10 09 | 699 | 0.9+ | 0.6+ | 2002 12 08 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.3+ | 1.0+ | | |
| 2002 10 09 | 699 | 0.9− | 0.0 | 2002 12 08 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 1.1+ | | |
| 2002 10 09 | 699 | 0.5− | 0.2− | 2002 12 13 | 644 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.9+ | 0.9+ | | |
| 2002 10 09 | 699 | 0.9+ | 0.5− | 2002 12 13 | 644 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.0 | | |
| 2002 10 30 | 608 | 0.6− | 1.3− | 2002 12 13 | 644 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.3− | 0.4+ | | |
| 2002 10 30 | 608 | 0.4− | 0.7− | 2004 03 15 | 704 | 0.1− | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.4+ | | |
| 2002 10 30 | 608 | 0.5− | 1.0− | 2004 03 15 | 704 | 0.4− | 1.0+ | 2006 10 09 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 31 | 704 | 0.6− | 0.3+ | 2004 03 15 | 704 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.0 | | |
| 2002 10 31 | 704 | 1.0− | 0.2+ | 2004 03 15 | 704 | 1.4+ | 1.3+ | 2006 10 19 | 703 | 0.0 | 1.3− | | |
| 2002 10 31 | 704 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.1− | 0.9+ | 2006 10 19 | 703 | 0.6− | 0.9− | | |
| 2002 10 31 | 704 | 0.7− | 0.6+ | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 1.1+ | 1.3− | | |
| 2002 10 31 | 704 | 0.1− | 1.3+ | 2004 03 23 | 704 | 1.1+ | 1.0+ | 2006 10 19 | 703 | 0.1+ | 1.8− | | |
| 2002 11 06 | 699 | 0.5+ | 0.6+ | 2004 03 23 | 704 | 0.1− | 0.7+ | | | | | | |

**(142791)∗ 2002 UQ$_{19}$ = 1999 AU$_{22}$**

Discovered 2002 Oct. 30 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 38116)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.46856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23268305 | $\omega$ | 307.44984 | | +0.31679601 | −0.94579538 | |
| $a$ | 2.6179392 | $\Omega$ | 123.93283 | | +0.89517099 | +0.27321861 | |
| $e$ | 0.2266050 | $i$ | 4.94326 | | +0.31354295 | +0.17556392 | |
| $P$ | 4.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 31 | 691 | 0.7+ | 0.4+ | 2002 12 02 | 608 | 0.5− | 1.1− | 2006 09 18 | 699 | 0.2− | 0.6+ |
| 1997 07 31 | 691 | 1.3− | 0.4− | 2002 12 02 | 608 | 0.2− | 1.0− | 2006 09 18 | 699 | 1.3− | 0.5+ |
| 1997 07 31 | 691 | 0.4+ | 0.4+ | 2002 12 02 | 608 | 0.6− | 0.8− | 2006 09 18 | 699 | 1.0− | 0.5+ |
| 1998 12 29 | 327 | 0.9− | 0.6− | 2002 12 11 | 704 | 0.6+ | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.1− |
| 1998 12 29 | 327 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.6+ | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.2− |
| 1998 12 29 | 327 | 0.9− | 0.1+ | 2002 12 11 | 704 | 1.0+ | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.1+ |
| 1999 01 12 | 327 | 0.6+ | 0.8− | 2002 12 11 | 704 | 0.9+ | 0.0 | 2006 09 22 | 704 | 0.7+ | 1.2+ |
| 1999 01 12 | 327 | 0.6+ | 0.7− | 2002 12 11 | 704 | (2.5+ | 0.5−) | 2006 09 22 | 704 | 0.3− | 0.2+ |
| 1999 01 12 | 327 | 0.6+ | 0.8− | 2003 01 01 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 704 | 0.5+ | 0.6− |
| 1999 01 13 | 327 | 0.3+ | 0.4− | 2003 01 01 | 704 | 0.3− | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.2− |
| 1999 01 13 | 327 | 0.2+ | 0.2− | 2003 01 01 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.2− | 0.2− |
| 1999 01 13 | 327 | 0.6+ | 0.3− | 2003 01 07 | 704 | 0.6+ | 0.2− | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 2002 10 30 | 608 | 0.8− | 0.6− | 2003 01 07 | 704 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.3− | 0.1− |
| 2002 10 30 | 608 | 1.1− | 0.3− | 2003 01 07 | 704 | 0.4− | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.4+ |
| 2002 10 30 | 608 | 1.1− | 0.5− | 2003 01 07 | 704 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.2− | 0.3− | 2003 01 26 | 699 | 0.4+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2002 10 31 | 644 | 0.2− | 0.2− | 2003 01 26 | 699 | 0.3− | 0.7− | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.2− | 0.2− | 2003 01 26 | 699 | 0.2+ | 1.1+ | 2006 09 29 | 704 | 1.2+ | 1.2+ |
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2003 01 26 | 699 | 1.3+ | 1.0+ | 2006 09 29 | 704 | 0.3− | 0.4+ |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2003 01 27 | 644 | 0.2− | 1.1+ | 2006 09 29 | 704 | 0.0 | 0.8+ |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2003 01 27 | 644 | 0.1− | 1.3+ | 2006 09 29 | 704 | 0.7− | 0.8+ |
| 2002 11 07 | 704 | 0.4− | 0.4+ | 2003 01 27 | 644 | 0.5− | 1.4+ | 2006 10 15 | 106 | 0.6+ | 0.0 |
| 2002 11 11 | 704 | 0.2− | 0.3+ | 2004 04 14 | 691 | 0.1+ | 0.6+ | 2006 10 15 | 106 | 0.0 | 0.4+ |
| 2002 11 11 | 704 | 0.4− | 0.2+ | 2004 04 14 | 691 | 0.1+ | 0.6+ | 2006 10 15 | 106 | 0.9+ | 0.5− |
| 2002 11 11 | 704 | 0.3− | 0.6+ | 2004 04 14 | 691 | 0.3+ | 0.7+ | 2006 10 15 | 106 | 0.5+ | 0.3− |
| 2002 11 11 | 704 | 0.3− | 0.6+ | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.9+ | 0.1− |
| 2002 11 11 | 704 | 0.1+ | 0.9+ | 2006 08 17 | 644 | 0.8+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.6− |
| 2002 12 01 | 704 | 0.2− | 0.5+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.6+ |
| 2002 12 01 | 704 | 0.1− | 0.4+ | 2006 09 16 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.8− |
| 2002 12 01 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 704 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2002 12 01 | 704 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2002 12 01 | 704 | 0.1+ | 0.9+ | 2006 09 16 | 704 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.8− |
| 2002 12 02 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.4− |
| 2002 12 02 | 704 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 12 02 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2002 12 02 | 704 | 0.9− | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2002 12 02 | 704 | (0.2+ | 1.7−) | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.3− |

**(142792)∗ 2002 UR$_{19}$**

Discovered 2002 Oct. 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.84605 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23157043 | $\omega$ | 356.41593 | | −0.73845769 | | −0.67156295 |
| $a$ | 2.6263180 | $\Omega$ | 141.16863 | | +0.62103993 | | −0.71242982 |
| $e$ | 0.2082090 | $i$ | 5.55446 | | +0.26265882 | | −0.20358526 |
| $P$ | 4.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.2+ | 0.2+ | 2003 02 02 | 644 | 0.2− | 0.7+ | 2004 05 18 | 704 | 0.4− | 0.9+ |
| 2001 09 12 | 695 | 0.1+ | 0.1+ | 2003 02 02 | 704 | 0.2+ | 0.6+ | 2004 05 18 | 704 | 1.1+ | 0.5+ |
| 2002 10 30 | 608 | 0.7− | 0.1+ | 2003 02 02 | 644 | 0.2− | 0.6+ | 2004 05 18 | 704 | 0.8+ | 0.1− |
| 2002 10 30 | 608 | 0.7− | 0.1+ | 2003 02 02 | 704 | 0.2− | 0.7+ | 2004 05 22 | 704 | (0.1+ | 1.6+) |
| 2002 10 30 | 608 | 0.8− | 0.0 | 2003 02 02 | 704 | 0.1+ | 0.5+ | 2004 05 22 | 704 | 0.2+ | 1.4+ |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2003 02 02 | 644 | 0.3− | 0.4+ | 2004 05 22 | 704 | 0.2+ | 0.9+ |
| 2002 10 31 | 644 | 0.3− | 0.6+ | 2004 04 17 | 704 | 0.5− | 0.1+ | 2004 05 22 | 704 | 0.7+ | 0.2− |
| 2002 10 31 | 644 | 0.1− | 0.7+ | 2004 04 17 | 704 | 0.1− | 0.3+ | 2004 05 22 | 704 | 0.2− | 0.6− |
| 2002 11 07 | 704 | 0.3− | 1.1+ | 2004 04 17 | 704 | 0.1+ | 0.0 | 2005 06 30 | 691 | 0.1+ | 0.4+ |
| 2002 11 07 | 704 | 0.0 | 1.5+ | 2004 04 17 | 704 | 0.0 | 0.1+ | 2005 06 30 | 691 | 0.1+ | 0.5+ |
| 2002 11 07 | 704 | 0.5− | 1.5+ | 2004 04 20 | 704 | (1.1+ | 1.8+) | 2005 06 30 | 691 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.3− | 1.0+ | 2004 04 20 | 704 | (0.5+ | 1.9+) | 2005 08 31 | 691 | 0.4− | 0.2− |
| 2002 11 07 | 704 | 0.1− | 0.5+ | 2004 04 20 | 704 | (0.6+ | 2.4+) | 2005 08 31 | 691 | 0.1+ | 0.1+ |
| 2002 11 11 | 704 | 0.7− | 0.3− | 2004 04 20 | 704 | (0.9+ | 2.4+) | 2005 08 31 | 691 | 0.2− | 0.2+ |
| 2002 11 11 | 704 | 0.7− | 0.6− | 2004 04 20 | 704 | 0.7+ | 1.4+ | 2006 09 30 | 703 | 0.2− | 1.1− |
| 2002 11 11 | 704 | (1.6− | 0.6−) | 2004 04 23 | 704 | 0.1+ | 1.3+ | 2006 09 30 | 703 | (1.7− | 0.0 ) |
| 2002 11 11 | 704 | 0.2− | 0.9+ | 2004 04 23 | 704 | 0.6− | 0.4+ | 2006 09 30 | 703 | 1.1− | 0.3− |
| 2002 11 28 | 699 | 0.1+ | 0.0 | 2004 04 23 | 704 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 1.1+ |
| 2002 11 28 | 699 | 0.3− | 0.4+ | 2004 04 23 | 704 | 0.3+ | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2002 11 28 | 699 | 0.1+ | 0.6+ | 2004 04 23 | 704 | 0.1− | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.1− |
| 2002 11 28 | 699 | 0.4+ | 0.8+ | 2004 04 28 | 608 | 0.3+ | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 12 01 | 704 | 0.2+ | 0.7+ | 2004 04 28 | 608 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2002 12 01 | 704 | 0.5+ | 0.2+ | 2004 04 28 | 608 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 12 01 | 704 | 0.5+ | 0.7+ | 2004 05 13 | 699 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 12 01 | 704 | 0.0 | 0.6+ | 2004 05 13 | 699 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 12 01 | 704 | 0.5+ | 0.8+ | 2004 05 13 | 699 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.4− |
| 2002 12 02 | 608 | (0.8+ | 1.6+) | 2004 05 13 | 699 | 0.5− | 0.6+ | 2006 11 20 | 704 | 0.2+ | 0.5− |
| 2002 12 02 | 608 | (0.9+ | 2.0+) | 2004 05 14 | 704 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 1.4+ | 0.6− |
| 2002 12 02 | 608 | (0.4+ | 1.7+) | 2004 05 14 | 704 | 0.7+ | 0.4+ | 2006 11 20 | 704 | 0.7− | 0.2− |
| 2003 01 27 | 644 | 0.3− | 0.5+ | 2004 05 14 | 704 | 0.1− | 0.9− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2003 01 27 | 644 | 0.1− | 0.5+ | 2004 05 14 | 704 | 1.0− | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2003 01 27 | 644 | 0.1+ | 0.4+ | 2004 05 18 | 704 | (1.9+ | 0.5−) | 2006 11 24 | G96 | 0.5+ | 0.0 |
| 2003 02 02 | 704 | 0.2− | 0.1+ | 2004 05 18 | 704 | 1.0+ | 1.2+ | 2006 11 24 | G96 | 0.3− | 0.2− |

**(142793)∗ 2002 UW$_{19}$**

Discovered 2002 Oct. 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.43980 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21033677 | $\omega$ | 319.53560 | | +0.82267975 | | −0.51290287 |
| $a$ | 2.8002228 | $\Omega$ | 72.95990 | | +0.56494526 | | +0.68937714 |
| $e$ | 0.2336385 | $i$ | 14.86074 | | +0.06352079 | | +0.51155626 |
| $P$ | 4.69 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 0.2+ | 1.2− | 2002 11 23 | 644 | 0.2+ | 0.2+ | 2003 02 01 | 644 | 0.1− | 0.2− |
| 1999 02 18 | 704 | 0.4− | 0.0 | 2002 11 23 | 644 | 0.3+ | 0.2+ | 2003 02 01 | 704 | 0.3− | 0.1+ |
| 1999 02 18 | 704 | 0.1− | 0.5− | 2002 11 23 | 644 | 0.2+ | 0.1+ | 2003 02 01 | 704 | 0.6− | 0.3+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2002 11 23 | 644 | 0.4+ | 0.4− | 2003 02 01 | 644 | 0.1+ | 0.0 |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2002 11 23 | 644 | 0.4+ | 0.6− | 2003 02 01 | 704 | 0.3+ | 0.4+ |
| 2002 10 04 | 704 | 0.5− | 0.4− | 2002 11 23 | 644 | 0.2+ | 0.4− | 2003 02 01 | 644 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.8+ | 1.1− | 2002 11 28 | 699 | 0.2+ | 0.1+ | 2003 02 01 | 704 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.5− | 0.5+ | 2002 11 28 | 699 | 0.0 | 0.1+ | 2003 02 04 | 704 | 1.3+ | 0.3+ |
| 2002 10 04 | 704 | 0.5+ | 0.3+ | 2002 11 28 | 699 | 0.2− | 0.3+ | 2003 02 04 | 704 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 0.1+ | 0.4− | 2002 11 28 | 699 | 0.0 | 0.0 | 2003 02 04 | 704 | (2.4+ | 0.9−) |
| 2002 10 09 | 704 | 0.5+ | 0.0 | 2002 12 01 | 704 | 0.2− | 0.2− | 2003 02 04 | 704 | 0.4− | 0.8+ |
| 2002 10 09 | 704 | 0.1− | 0.4− | 2002 12 01 | 704 | 0.4− | 0.0 | 2004 02 16 | 704 | 0.2+ | 0.4+ |
| 2002 10 09 | 704 | 1.0+ | 0.8+ | 2002 12 01 | 704 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.4− | 0.5+ |
| 2002 10 09 | 704 | 0.1− | 1.5+ | 2002 12 01 | 704 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.1− | 0.3+ |
| 2002 10 22 | 608 | 0.2− | 0.4− | 2002 12 01 | 704 | 0.3+ | 0.6+ | 2004 03 14 | 704 | 1.3+ | 0.4− |
| 2002 10 22 | 608 | 0.4− | 1.0− | 2002 12 10 | 704 | 0.6− | 0.3+ | 2004 03 14 | 704 | 0.1− | 0.9+ |
| 2002 10 22 | 608 | 0.1− | 0.6− | 2002 12 10 | 704 | 1.4− | 0.7+ | 2004 03 14 | 704 | 0.6+ | 0.1+ |
| 2002 10 30 | 608 | (1.1− | 2.0+) | 2002 12 10 | 704 | 1.1− | 0.6+ | 2004 03 14 | 704 | 0.6+ | 0.2+ |
| 2002 10 30 | 608 | (1.4− | 2.0+) | 2002 12 10 | 704 | 1.0− | 0.8+ | 2004 03 25 | 704 | 0.0 | 0.2+ |
| 2002 10 30 | 608 | (0.9− | 1.8+) | 2002 12 10 | 704 | 1.3− | 0.6+ | 2004 03 25 | 704 | 0.1+ | 1.0+ |
| 2002 10 31 | 644 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.2− | 0.7+ | 2004 03 25 | 704 | 0.4− | 1.4+ |
| 2002 10 31 | 644 | 0.2− | 0.1− | 2002 12 31 | 704 | 0.2− | 0.0 | 2004 03 25 | 704 | 0.9− | 0.7+ |
| 2002 10 31 | 644 | 0.1− | 0.0 | 2002 12 31 | 704 | 0.3+ | 0.3+ | 2005 05 10 | 691 | 0.2+ | 0.3+ |
| 2002 11 05 | 699 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.3+ | 0.5+ | 2005 05 10 | 691 | 0.4+ | 0.1+ |
| 2002 11 05 | 699 | 0.2+ | 0.6+ | 2002 12 31 | 704 | 0.2+ | 0.4+ | 2005 05 10 | 691 | 0.5+ | 0.1+ |
| 2002 11 05 | 699 | 0.8+ | 0.2+ | 2003 01 04 | 704 | 1.1+ | 0.4+ | 2006 08 26 | E12 | 0.0 | 0.7+ |
| 2002 11 05 | 699 | 0.2+ | 0.2+ | 2003 01 04 | 704 | 0.3+ | 0.2+ | 2006 08 26 | E12 | 0.4− | 0.9+ |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2003 01 04 | 704 | 0.8+ | 0.2+ | 2006 08 26 | E12 | 0.0 | 0.5+ |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2003 01 04 | 704 | 0.3+ | 0.4− | 2006 08 26 | E12 | 0.1+ | 0.7+ |
| 2002 11 07 | 704 | 0.7− | 0.2+ | 2003 01 04 | 704 | 0.3− | 0.4− | 2006 09 27 | E12 | 0.5− | 0.0 |
| 2002 11 07 | 704 | 0.4− | 0.1+ | 2003 01 08 | 704 | 0.5− | 0.2+ | 2006 10 14 | E12 | 0.3+ | 0.2+ |
| 2002 11 07 | 704 | 0.6− | 0.2− | 2003 01 08 | 704 | 1.1+ | 0.3− | 2006 10 14 | E12 | 0.6− | 1.5+ |
| 2002 11 11 | 704 | 0.3− | 0.3− | 2003 01 08 | 704 | 0.8+ | 0.2− | 2006 10 14 | E12 | 0.8+ | 1.4+ |
| 2002 11 11 | 704 | 0.4− | 0.0 | 2003 01 08 | 704 | 0.7+ | 0.3+ | 2006 10 14 | E12 | 0.6− | 0.5+ |
| 2002 11 11 | 704 | 0.4− | 0.5+ | 2003 01 08 | 704 | 0.3+ | 0.3− | | | | |
| 2002 11 11 | 704 | 0.3− | 0.1+ | 2003 02 01 | 704 | 0.0 | 0.4+ | | | | |

**(142794)∗ 2002 UZ$_{19}$ = 2000 AP$_{210}$**

Discovered 2002 Oct. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 38116)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.57782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26368547 | $\omega$ | 1.24497 | | +0.87164120 | +0.48983284 | |
| $a$ | 2.4084922 | $\Omega$ | 329.40572 | | −0.44999500 | +0.78560055 | |
| $e$ | 0.2009290 | $i$ | 1.96772 | | −0.19428358 | +0.37801529 | |
| $P$ | 3.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.4+ | 0.4+ | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.2− |
| 1998 08 17 | 704 | (2.3+ | 2.3+) | 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 1998 08 17 | 704 | 0.2− | 0.0 | 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 1998 08 17 | 704 | 1.6+ | 2.0+ | 2002 10 11 | 704 | 0.3+ | 0.8+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 1998 08 17 | 704 | 0.7− | 0.5− | 2002 10 28 | 291 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 1999 12 16 | 691 | 0.1+ | 0.5+ | 2002 10 28 | 291 | 0.0 | 0.5− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 1999 12 16 | 691 | 0.0 | 0.1+ | 2002 10 28 | 291 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 1999 12 16 | 691 | 0.1+ | 0.1− | 2002 10 31 | 699 | 0.7+ | 0.2− | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2000 01 05 | 691 | 0.2− | 0.3+ | 2002 10 31 | 699 | 0.0 | 0.5− | 2006 11 01 | G96 | 0.5− | 0.2− |
| 2000 01 05 | 691 | 0.0 | 0.2+ | 2002 10 31 | 699 | 0.5− | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2000 01 05 | 691 | 0.2− | 0.1+ | 2002 10 31 | 699 | 0.4− | 0.9+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2000 01 08 | 691 | 0.2+ | 0.1− | 2002 11 02 | 608 | 0.4− | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.2+ |
| 2000 01 08 | 691 | 0.1+ | 0.0 | 2002 11 02 | 608 | 0.6+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2000 01 08 | 691 | 0.2− | 0.0 | 2002 11 02 | 608 | 0.0 | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.3+ | 0.4+ | 2002 11 08 | 704 | (1.0− | 2.0+) | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.4+ | 0.9− | 2002 11 08 | 704 | 0.0 | 0.4− | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2002 09 06 | 704 | 0.2− | 0.7− | 2002 11 08 | 704 | (1.4+ | 2.0+) | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2002 09 06 | 704 | 0.5− | 0.9− | 2002 11 08 | 704 | 0.8− | 0.5+ | 2006 11 19 | 704 | 0.6+ | 1.4+ |
| 2002 09 15 | 608 | 0.9− | 0.2− | 2002 12 01 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 09 15 | 608 | 0.9− | 0.0 | 2002 12 01 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2002 09 15 | 608 | 1.0− | 0.5− | 2002 12 01 | 704 | 0.7− | 0.4+ | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 2002 09 28 | 608 | (2.3− | 1.4−) | 2005 05 11 | 691 | 0.2− | 0.7+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 09 28 | 608 | (2.2− | 1.5−) | 2005 05 11 | 691 | 0.0 | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2002 09 28 | 608 | (2.2− | 1.3−) | 2005 05 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2005 05 19 | 644 | 0.4+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.3+ | 0.9+ | 2005 05 19 | 644 | 0.2+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2005 05 19 | 644 | 0.7+ | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 1.1+ | 0.7− |
| 2002 10 04 | 704 | 0.6− | 0.9+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.4− | 0.3− |
| 2002 10 04 | 644 | 0.5− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.6− | 0.2− |
| 2002 10 04 | 644 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.6+ |
| 2002 10 04 | 644 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 2002 10 11 | 704 | 0.4− | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.1− | | | | |

**(142795)∗ 2002 UG$_{20}$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.37437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21540897 | $\omega$ | 289.17206 | | +0.68155903 | +0.73002169 | |
| $a$ | 2.7560909 | $\Omega$ | 24.02606 | | −0.61617693 | +0.60972864 | |
| $e$ | 0.0926690 | $i$ | 7.11838 | | −0.39471924 | +0.30870589 | |
| $P$ | 4.58 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | (4.3− | 4.2+) | 2003 12 27 | 704 | 0.9+ | 0.6+ | 2005 05 08 | 703 | 0.1− | 1.3+ |
| 1993 12 14 | 691 | 0.0 | 0.4− | 2003 12 29 | 704 | 1.0− | 1.1+ | 2005 05 08 | 703 | 0.4− | 0.5− |
| 1993 12 14 | 691 | 0.0 | 0.1− | 2003 12 29 | 704 | 1.3− | 0.6+ | 2005 05 08 | 703 | 0.8− | 1.2+ |
| 2002 10 02 | 704 | 1.1+ | 1.0+ | 2003 12 29 | 704 | 0.3+ | 0.1+ | 2005 05 08 | 703 | 0.1− | 0.8+ |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2005 03 10 | G96 | 0.4− | 0.0 | 2005 05 09 | 699 | 0.3+ | 0.2+ |
| 2002 10 02 | 704 | 0.2+ | 0.6+ | 2005 03 10 | G96 | 0.3− | 0.0 | 2005 05 09 | 699 | 0.8+ | 0.5+ |
| 2002 10 02 | 704 | 0.9+ | 1.2+ | 2005 03 10 | G96 | 0.2− | 0.1− | 2005 05 09 | 699 | 0.8+ | 0.6− |
| 2002 10 07 | 704 | 1.1+ | 0.9+ | 2005 03 10 | G96 | 0.4− | 0.2+ | 2005 05 09 | 699 | 0.1− | 0.9− |
| 2002 10 07 | 704 | 1.1− | 0.4+ | 2005 04 05 | G96 | 0.3− | 0.1− | 2005 05 12 | 699 | (0.3− | 2.7+) |
| 2002 10 07 | 704 | 0.5− | 0.2+ | 2005 04 05 | G96 | 0.3− | 0.1− | 2005 05 12 | 699 | 0.2+ | 1.2− |
| 2002 10 07 | 704 | 0.5− | 0.7+ | 2005 04 05 | G96 | 0.3− | 0.1− | 2005 05 12 | 699 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 0.3− | 2005 04 05 | G96 | 0.1− | 0.0 | 2005 05 12 | 699 | 0.1+ | 1.0+ |
| 2002 10 11 | 704 | (0.9+ | 2.3+) | 2005 04 11 | 691 | 0.0 | 0.2+ | 2005 05 14 | E14 | 0.8− | 0.1+ |
| 2002 10 11 | 704 | 0.6+ | 0.6+ | 2005 04 11 | 691 | 0.0 | 0.3+ | 2005 05 14 | E14 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 0.6− | 1.0+ | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2005 05 14 | E14 | 0.7− | 0.6− |
| 2002 10 28 | 644 | 0.4− | 0.7+ | 2005 04 12 | 691 | 0.1+ | 0.2+ | 2006 08 16 | 428 | 0.9− | 0.1− |
| 2002 10 28 | 644 | 0.2− | 0.9+ | 2005 04 12 | 691 | 0.3+ | 0.1− | 2006 08 16 | 428 | 0.5+ | 0.1+ |
| 2002 10 28 | 644 | 0.1− | 0.9+ | 2005 04 12 | 704 | 0.2+ | 0.4+ | 2006 08 16 | E12 | 0.2− | 0.3− |
| 2002 10 31 | 699 | (0.7− | 1.6+) | 2005 04 12 | 691 | 0.1+ | 0.1+ | 2006 08 16 | E12 | 0.1+ | 0.5+ |
| 2002 10 31 | 699 | (0.9− | 2.0+) | 2005 04 12 | 704 | 0.5+ | 0.4− | 2006 08 16 | 428 | 0.3− | 0.2− |
| 2002 10 31 | 699 | 1.4− | 0.4− | 2005 04 12 | 704 | 0.5+ | 0.4+ | 2006 08 16 | E12 | 0.6− | 0.4− |
| 2002 10 31 | 699 | (0.1+ | 1.7+) | 2005 04 12 | 704 | 0.5+ | 0.4− | 2006 08 16 | E12 | 0.2− | 0.1+ |
| 2002 11 04 | 699 | (0.3+ | 1.5+) | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 08 17 | 644 | 0.3− | 0.1+ |
| 2002 11 04 | 699 | 0.8− | 1.1+ | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.0 |
| 2002 11 04 | 699 | (0.1− | 1.9+) | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 |
| 2002 11 04 | 699 | 0.9− | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.3+ |
| 2002 11 08 | 704 | 0.1− | 0.8+ | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 2002 11 08 | 704 | 0.6− | 0.4+ | 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2002 11 08 | 704 | 0.8+ | 0.4+ | 2005 04 18 | 703 | 1.1− | 0.6+ | 2006 09 20 | 644 | 0.2+ | 0.4+ |
| 2002 11 08 | 704 | (0.0 | 1.9+) | 2005 04 18 | 703 | 1.0+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.4+ |
| 2002 11 08 | 704 | 0.0 | 0.4− | 2005 04 18 | 703 | 0.7− | 0.2− | 2006 09 20 | 644 | 0.2− | 0.4+ |
| 2002 11 12 | 704 | 0.6+ | 1.4+ | 2005 04 18 | 703 | 0.4− | 0.6− | 2006 10 11 | E12 | 0.9− | 0.4+ |
| 2002 11 12 | 704 | 0.9− | 0.4− | 2005 04 19 | 699 | 1.0+ | 0.6− | 2006 10 11 | E12 | 0.9− | 0.5+ |
| 2002 11 12 | 704 | 0.4+ | 0.2− | 2005 04 19 | 699 | (0.3+ | 2.1−) | 2006 10 11 | E12 | 0.4− | 0.4+ |
| 2003 12 27 | 704 | 0.0 | 0.8+ | 2005 04 19 | 699 | 0.1+ | 1.5+ | 2006 10 11 | E12 | 0.6+ | 0.2− |
| 2003 12 27 | 704 | 0.0 | 0.4+ | 2005 04 19 | 699 | 1.4+ | 0.0 | | | | |

**(142796)∗ 2002 UH$_{20}$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.70087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21931361 | $\omega$ | 66.25241 | | +0.49640619 | +0.86618170 | |
| $a$ | 2.7232802 | $\Omega$ | 233.63452 | | −0.82020810 | +0.44628677 | |
| $e$ | 0.0971515 | $i$ | 4.09719 | | −0.28432299 | +0.22484969 | |
| $P$ | 4.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.6+ | 0.5+ | 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 08 23 | A13 | 0.1− | 0.0 |
| 2000 03 11 | 699 | 0.5+ | 0.2+ | 2005 03 17 | G96 | 0.3− | 0.2− | 2006 08 23 | A13 | 0.3− | 1.0− |
| 2000 03 11 | 699 | 0.5+ | 0.8− | 2005 03 17 | G96 | 0.4− | 0.2+ | 2006 08 23 | A13 | 0.4− | 0.3− |
| 2000 03 11 | 699 | 0.8+ | 0.5+ | 2005 03 17 | G96 | 0.5− | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.6+ |
| 2002 10 11 | 704 | 1.1+ | 1.5+ | 2005 03 17 | G96 | 0.4− | 0.5+ | 2006 08 28 | 699 | 0.1− | 0.7+ |
| 2002 10 11 | 704 | 0.7+ | 1.2+ | 2005 04 12 | 704 | 0.8− | 0.7+ | 2006 08 28 | 699 | 0.3− | 1.3+ |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2005 04 12 | 704 | 0.4− | 1.0+ | 2006 08 28 | 699 | 0.7+ | 0.3+ |
| 2002 10 11 | 704 | 0.2− | 0.5+ | 2005 04 12 | 704 | (0.8− | 2.8+) | 2006 08 30 | 704 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2005 04 12 | 704 | 0.7+ | 0.9+ | 2006 08 30 | 704 | 0.1+ | 0.1+ |
| 2002 10 13 | 291 | 0.2− | 0.3+ | 2005 04 13 | 699 | 0.8+ | 0.4+ | 2006 08 30 | 704 | 0.3+ | 0.2− |
| 2002 10 13 | 291 | 0.4− | 0.3+ | 2005 04 13 | 699 | 0.7+ | 1.2+ | 2006 08 30 | 704 | 0.1+ | 0.8+ |
| 2002 10 13 | 291 | 0.2− | 0.3+ | 2005 04 13 | 699 | 0.6− | 0.2− | 2006 08 30 | 704 | 0.5+ | 0.3+ |
| 2002 10 16 | 644 | 0.2− | 0.7+ | 2005 04 13 | 699 | 0.8− | 0.9+ | 2006 09 11 | 703 | 0.2− | 0.6+ |
| 2002 10 16 | 644 | 0.3− | 0.4+ | 2005 04 14 | 703 | 0.7− | 0.4+ | 2006 09 11 | 703 | 1.2− | 0.8+ |
| 2002 10 16 | 644 | 0.2− | 1.0+ | 2005 04 14 | 703 | 0.4− | 0.1+ | 2006 09 11 | 703 | 0.0 | 0.4+ |
| 2002 10 28 | 644 | 0.7− | 0.3+ | 2005 04 14 | 703 | 0.5− | 0.5+ | 2006 09 11 | 703 | 0.1+ | 1.4+ |
| 2002 10 28 | 644 | 0.3− | 0.7+ | 2005 04 14 | 703 | 0.1− | 1.3+ | 2006 09 17 | 703 | 1.5− | 0.8+ |
| 2002 10 28 | 644 | 0.4− | 0.7+ | 2005 04 17 | 691 | 0.5+ | 0.5+ | 2006 09 17 | 703 | (1.6+ | 1.8+) |
| 2002 10 31 | 699 | 1.1− | 0.4+ | 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 09 17 | 703 | 0.3+ | 0.1− |
| 2002 10 31 | 699 | 0.3− | 0.8+ | 2005 04 17 | 691 | 0.5+ | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.0 |
| 2002 10 31 | 699 | 0.7− | 0.1− | 2005 04 18 | 704 | 0.1+ | 1.4+ | 2006 09 19 | 703 | 0.4+ | 1.1− |
| 2002 10 31 | 699 | (1.6− | 0.4+) | 2005 04 18 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.4− |
| 2002 11 06 | 704 | 0.9+ | 1.4− | 2005 04 18 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 1.2+ | 0.3+ |
| 2002 11 06 | 704 | 0.6+ | 0.5− | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 699 | (1.6− | 0.8+) |
| 2002 11 06 | 704 | 0.7+ | 0.6+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 20 | 699 | 1.3− | 0.2+ |
| 2002 11 11 | 049 | 0.0 | 0.1− | 2006 08 19 | 644 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.3− |
| 2002 11 11 | 049 | 0.6− | 0.3− | 2006 08 19 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.6− | 1.0+ |
| 2002 11 11 | 049 | 1.1− | 0.2+ | 2006 08 19 | 644 | 0.4− | 0.3+ | 2006 10 09 | 644 | 0.4+ | 0.5+ |
| 2004 04 14 | 645 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2004 04 14 | 645 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.9+ |
| 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.3+ | | | | |

**(142797)∗ 2002 UP$_{20}$**

Discovered 2002 Oct. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.07399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23377848 | $\omega$ | 1.44680 | | +0.68472204 | −0.72794107 | |
| $a$ | 2.6097548 | $\Omega$ | 45.34121 | | +0.66816318 | +0.60757352 | |
| $e$ | 0.0630656 | $i$ | 2.85762 | | +0.29105616 | +0.31773608 | |
| $P$ | 4.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 0.1+ | 0.5+ | 2002 11 07 | 704 | 0.7+ | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.0 | |
| 2000 03 10 | 704 | 0.8− | 0.9+ | 2002 11 07 | 704 | 0.7+ | 0.8+ | 2004 03 20 | 704 | 0.0 | 0.1− | |
| 2000 03 10 | 704 | 1.2− | 0.0 | 2002 11 07 | 704 | 0.0 | 0.5+ | 2004 03 20 | 704 | 0.0 | 0.5+ | |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2002 11 07 | 704 | 0.1+ | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.1− | |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2002 11 07 | 704 | 0.4+ | 1.1+ | 2004 03 20 | 704 | 0.8+ | 0.6+ | |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2002 11 10 | 704 | (1.8+ | 1.9+) | 2004 03 20 | 704 | 0.7+ | 0.3+ | |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2002 11 10 | 704 | 0.7− | 0.6− | 2006 08 18 | 644 | 0.4− | 0.3+ | |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2002 11 10 | 704 | 0.2− | 0.3− | 2006 08 18 | 644 | 0.3− | 0.5+ | |
| 2002 10 03 | 704 | 0.8+ | 0.0 | 2002 11 10 | 704 | 1.3+ | 0.2+ | 2006 08 18 | 644 | 0.6− | 0.6+ | |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2002 11 12 | 644 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.1− | 0.1+ | |
| 2002 10 03 | 704 | 0.5+ | 0.0 | 2002 11 12 | 644 | 0.3− | 0.5− | 2006 09 14 | 691 | 0.1− | 0.1+ | |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2002 11 12 | 644 | 0.3− | 0.3− | 2006 09 14 | 691 | 0.0 | 0.1+ | |
| 2002 10 03 | 704 | (1.6+ | 0.8−) | 2002 11 13 | 291 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.0 | 0.4+ | |
| 2002 10 03 | 704 | 1.0+ | 0.9− | 2002 11 13 | 291 | 0.3− | 0.4− | 2006 09 25 | 691 | 0.1− | 0.6+ | |
| 2002 10 03 | 704 | 0.5+ | 0.3− | 2002 11 13 | 291 | 0.0 | 0.5− | 2006 09 25 | 691 | 0.1+ | 0.5+ | |
| 2002 10 03 | 704 | 0.5+ | 1.2− | 2002 11 14 | 291 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.0 | 0.9+ | |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2002 11 14 | 291 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.7− | 0.2− | |
| 2002 10 04 | 599 | 0.1− | 0.0 | 2002 11 14 | 291 | 0.2− | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.8+ | |
| 2002 10 04 | 599 | 0.1+ | 0.1+ | 2002 11 23 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.3+ | |
| 2002 10 04 | 599 | 0.1− | 0.0 | 2002 11 23 | 644 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.5− | 0.2− | |
| 2002 10 28 | 608 | 0.1+ | 0.1− | 2002 11 23 | 644 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.5− | 0.5+ | |
| 2002 10 28 | 608 | 0.6+ | 0.3+ | 2002 12 09 | 291 | 0.3− | 0.8+ | 2006 10 10 | 644 | 0.4− | 0.3+ | |
| 2002 10 28 | 608 | 0.1+ | 0.3− | 2002 12 09 | 291 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ | |
| 2002 10 31 | 699 | 0.3+ | 0.1− | 2002 12 09 | 291 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 2002 10 31 | 699 | 0.2− | 0.3+ | 2002 12 10 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3− | |
| 2002 10 31 | 699 | 0.2− | 0.7+ | 2002 12 10 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1+ | |
| 2002 10 31 | 699 | 0.1− | 0.3+ | 2002 12 10 | 644 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1+ | |
| 2002 11 02 | 608 | (1.7+ | 0.8+) | 2004 02 16 | 291 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.2+ | |
| 2002 11 02 | 608 | 1.4+ | 0.6+ | 2004 02 16 | 291 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.9+ | 0.5− | |
| 2002 11 02 | 608 | (1.8+ | 0.7+) | 2004 02 16 | 291 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.5− | |
| 2002 11 05 | 291 | 0.0 | 0.1− | 2004 02 18 | 704 | 1.3+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.1− | |
| 2002 11 05 | 291 | 0.3− | 0.1− | 2004 02 18 | 704 | 0.9+ | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.0 | |
| 2002 11 05 | 291 | 0.2− | 0.2− | 2004 02 18 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.0 | |
| 2002 11 06 | 704 | 0.2+ | 0.4+ | 2004 02 23 | 704 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2002 11 06 | 704 | 0.2− | 1.0− | 2004 02 23 | 704 | 0.4− | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2002 11 06 | 704 | 0.6− | 0.4+ | 2004 02 23 | 704 | 0.4− | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.5+ | |
| 2002 11 06 | 704 | (1.6+ | 0.1−) | 2004 02 23 | 704 | 0.7− | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.1− | |
| 2002 11 06 | 704 | 0.2− | 0.5+ | 2004 02 23 | 704 | 0.4− | 0.9+ | 2006 10 22 | G96 | 0.2− | 0.3− | |
| 2002 11 06 | 704 | 0.7+ | 1.0− | 2004 02 23 | 704 | 0.7+ | 0.3− | 2006 10 22 | G96 | 0.0 | 0.1− | |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.2− | 0.7+ | 2006 11 14 | G96 | 0.1− | 0.3− | |
| 2002 11 06 | 704 | 0.5− | 0.5− | 2004 02 23 | 704 | 0.5− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.4− | |
| 2002 11 06 | 704 | 0.2+ | 0.7+ | 2004 02 23 | 704 | 1.1− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.2− | |
| 2002 11 07 | 704 | 1.1+ | 1.3− | 2004 02 23 | 704 | 0.9+ | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.3− | |
| 2002 11 07 | 704 | (1.9− | 2.3+) | 2004 03 19 | 704 | (1.8+ | 0.9+) | | | | | |
| 2002 11 07 | 704 | 0.3+ | 1.0+ | 2004 03 19 | 704 | 0.7+ | 0.0 | | | | | |

**(142798)∗ 2002 UT$_{20}$**

Discovered 2002 Oct. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.39174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22621297 | $\omega$ | 288.09148 | | +0.79532876 | +0.59339671 | |
| $a$ | 2.6676226 | $\Omega$ | 35.80255 | | −0.44459331 | +0.70987811 | |
| $e$ | 0.0883751 | $i$ | 12.22012 | | −0.41205455 | +0.37941193 | |
| $P$ | 4.36 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.0 | 1.2+ | 2002 11 14 | 704 | 0.1+ | 1.0+ | 2005 05 19 | 644 | 0.3+ | 0.6+ | |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2002 11 14 | 704 | 0.6− | 0.5+ | 2005 06 26 | 644 | 0.6+ | 0.7+ | |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2002 11 14 | 704 | 0.1+ | 0.3− | 2005 06 26 | 644 | 0.3+ | 0.8+ | |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2002 11 14 | 704 | 0.1+ | 0.5+ | 2005 06 26 | 644 | 0.1− | 0.7+ | |
| 2002 10 11 | 704 | 0.0 | 1.0+ | 2002 11 14 | 704 | 0.7− | 0.0 | 2006 08 28 | D35 | 0.1+ | 0.2− | |
| 2002 10 11 | 704 | 0.2+ | 0.5− | 2002 12 02 | 704 | 0.4− | 0.0 | 2006 08 28 | D35 | 0.1+ | 0.2− | |
| 2002 10 11 | 704 | 0.4− | 1.2− | 2002 12 02 | 704 | 1.2+ | 0.6+ | 2006 08 28 | D35 | 0.1+ | 0.4− | |
| 2002 10 11 | 704 | 0.2− | 0.9− | 2002 12 02 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 699 | 0.1+ | 1.1+ | |
| 2002 10 11 | 704 | 0.8− | 0.8− | 2002 12 02 | 704 | 0.0 | 0.3+ | 2006 09 17 | 699 | 0.3+ | 0.6+ | |
| 2002 10 28 | 608 | 0.3− | 1.1− | 2002 12 06 | 704 | (1.5+ | 1.8+) | 2006 09 17 | 699 | 0.9− | 0.5− | |
| 2002 10 28 | 608 | 0.6− | 0.9− | 2002 12 06 | 704 | 0.3+ | 1.3+ | 2006 09 17 | 699 | 1.0+ | 0.7+ | |
| 2002 10 28 | 608 | 0.7− | 0.7− | 2002 12 06 | 704 | (0.2+ | 2.4+) | 2006 09 19 | 703 | 0.5− | 0.1− | |
| 2002 10 31 | 699 | (1.4− | 1.7+) | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.3− | |
| 2002 10 31 | 699 | 0.8− | 1.0+ | 2002 12 11 | 644 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.3− | |
| 2002 10 31 | 699 | 0.3− | 1.4+ | 2002 12 11 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.7+ | 0.2+ | |
| 2002 10 31 | 699 | 0.3+ | 1.0+ | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.0 | |
| 2002 10 31 | 699 | 0.3+ | 0.9+ | 2002 12 11 | 704 | 0.0 | 0.5+ | 2006 09 25 | 703 | 0.2+ | 0.8+ | |
| 2002 10 31 | 699 | 1.4− | 0.6+ | 2002 12 11 | 704 | 0.5− | 0.3+ | 2006 09 25 | 703 | 0.3+ | 0.5+ | |
| 2002 10 31 | 699 | 0.1+ | 0.4− | 2004 05 14 | 645 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.2− | 0.2+ | |
| 2002 10 31 | 699 | 0.3+ | 1.1+ | 2004 05 14 | 645 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 | |
| 2002 11 04 | 699 | 0.4− | 0.1+ | 2005 05 04 | E12 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2002 11 04 | 699 | 0.1+ | 0.6− | 2005 05 04 | E12 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1− | |
| 2002 11 04 | 699 | 0.8− | 0.2− | 2005 05 04 | E12 | 0.0 | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.3− | |
| 2002 11 04 | 699 | 0.4− | 0.0 | 2005 05 04 | E12 | 0.2− | 1.1+ | 2006 10 21 | 703 | 0.2+ | 1.1+ | |
| 2002 11 05 | 704 | 0.5− | 0.5− | 2005 05 12 | 703 | (2.9− | 0.1−) | 2006 10 21 | 703 | 0.0 | 0.2+ | |
| 2002 11 05 | 704 | 1.0+ | 0.4+ | 2005 05 12 | 703 | 0.1− | 1.1− | 2006 10 21 | 703 | 1.3− | 0.1− | |
| 2002 11 05 | 704 | 0.5− | 0.0 | 2005 05 12 | 703 | 1.2+ | 0.7− | 2006 10 22 | 644 | 0.3− | 0.1+ | |
| 2002 11 05 | 704 | 0.0 | 1.0+ | 2005 05 12 | 703 | 0.8− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2− | |
| 2002 11 05 | 704 | 0.6− | 0.6+ | 2005 05 12 | 644 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.2− | |
| 2002 11 08 | 704 | 0.6+ | 0.9− | 2005 05 12 | 644 | 0.6+ | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2002 11 08 | 704 | 0.5+ | 0.7− | 2005 05 12 | 644 | 0.6+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1− | |
| 2002 11 08 | 704 | 0.5+ | 0.4− | 2005 05 19 | 644 | 0.2+ | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.1− | |
| 2002 11 08 | 704 | 1.3+ | 0.7− | 2005 05 19 | 644 | 0.4+ | 0.9+ | | | | | |

**(142799)∗ 2002 UA$_{23}$ = 1996 JZ$_2$**

Discovered 2002 Oct. 30 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 41150)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.43827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23596800 | $\omega$ | 318.05532 | | +0.78708535 | −0.60275554 | |
| $a$ | 2.5935859 | $\Omega$ | 79.48243 | | +0.59545387 | +0.68696242 | |
| $e$ | 0.0717266 | $i$ | 7.66158 | | +0.16103210 | +0.40591673 | |
| $P$ | 4.18 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 09 | 691 | 0.0 | 0.1+ | 2002 12 01 | 704 | 0.9− | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.4− | |
| 1996 05 09 | 691 | 0.4− | 0.2− | 2002 12 01 | 704 | 1.0− | 0.7− | 2006 10 22 | 703 | 0.2− | 0.9− | |
| 1996 05 09 | 691 | 0.1− | 0.2− | 2002 12 01 | 704 | 1.0− | 0.7+ | 2006 10 22 | 703 | 0.6− | 0.1+ | |
| 1996 05 15 | 691 | 0.5− | 0.2− | 2002 12 01 | 704 | 0.5− | 0.6− | 2006 10 23 | 644 | 0.2− | 0.1+ | |
| 1996 05 15 | 691 | 0.3− | 0.0 | 2002 12 10 | 704 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.3− | |
| 1996 05 15 | 691 | 0.3− | 0.3− | 2002 12 10 | 704 | 0.7+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.1− | |
| 1998 12 17 | 704 | (1.8+ | 2.8−) | 2002 12 10 | 704 | 0.8+ | 0.5− | 2006 11 08 | 644 | 0.4− | 0.2− | |
| 1998 12 17 | 704 | (1.3+ | 3.1−) | 2002 12 27 | 644 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.3− | 0.0 | |
| 1998 12 17 | 704 | (0.4+ | 2.2−) | 2002 12 27 | 644 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1− | |
| 1998 12 17 | 704 | (4.4− | 2.9−) | 2002 12 27 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1− | |
| 2001 07 10 | 644 | 0.6+ | 1.0+ | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.1− | |
| 2001 07 10 | 644 | 0.2+ | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.8+ | 2006 11 09 | 644 | 0.3− | 0.1− | |
| 2001 07 10 | 644 | 0.6+ | 0.6+ | 2004 03 15 | 704 | 0.1− | 0.7− | 2006 11 13 | 703 | 0.2− | 0.3− | |
| 2001 07 18 | 644 | 0.5+ | 0.8+ | 2004 03 18 | 691 | 0.4+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.1− | |
| 2001 07 18 | 644 | 0.0 | 0.6+ | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.2− | |
| 2001 07 18 | 644 | 0.4+ | 0.9+ | 2004 03 18 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.2− | |
| 2001 07 18 | 644 | 0.3− | 0.7+ | 2004 03 23 | 704 | 1.4+ | 1.5+ | 2006 11 14 | 704 | 1.1+ | 1.2+ | |
| 2001 07 18 | 644 | 0.5+ | 0.7+ | 2004 03 23 | 704 | (1.6+ | 0.6+) | 2006 11 14 | 704 | 0.5+ | 0.1− | |
| 2001 07 18 | 644 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.7+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.4+ | |
| 2002 10 30 | 608 | 0.2+ | 0.9− | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 11 14 | 644 | 0.3+ | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.1+ | 1.3− | 2004 03 26 | 703 | (1.6+ | 0.7+) | 2006 11 14 | 704 | 0.6+ | 1.0+ |
| 2002 10 30 | 608 | 0.2+ | 0.9− | 2004 03 26 | 703 | 0.4+ | 1.3+ | 2006 11 14 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 699 | 0.8− | 0.1+ | 2004 03 26 | 703 | (2.0+ | 0.5+) | 2006 11 14 | 704 | 0.7+ | 0.1+ |
| 2002 10 31 | 699 | 0.4− | 0.6− | 2004 03 26 | 703 | 0.2+ | 0.4− | 2006 11 14 | 644 | 0.1− | 0.2− |
| 2002 10 31 | 699 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.0 | 0.4− | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2002 10 31 | 699 | 1.3+ | 0.6+ | 2006 09 29 | 699 | (0.5− | 2.6−) | 2006 11 17 | 644 | 0.3− | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.8+ | 2006 09 29 | 699 | 1.0− | 0.4+ | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.6− | 0.4+ | 2006 09 29 | 699 | 0.7− | 0.1+ | 2006 11 19 | 703 | (0.1+ | 1.6+) |
| 2002 11 07 | 704 | 0.4+ | 1.0+ | 2006 09 30 | 703 | 1.0− | 1.0+ | 2006 11 19 | 703 | 0.1+ | 0.8+ |
| 2002 11 11 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 1.2− | 0.0 | 2006 11 19 | 703 | 0.4− | 1.4+ |
| 2002 11 11 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.5− | 2006 11 19 | 703 | 0.7+ | 1.2+ |
| 2002 11 11 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.5+ | 1.0+ |
| 2002 11 11 | 704 | 0.8+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2002 11 16 | 644 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.8− | 0.3− |
| 2002 11 16 | 644 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.8+ |
| 2002 11 16 | 644 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2002 11 25 | 644 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.7− | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2002 11 25 | 644 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.6− | 2006 11 22 | G96 | 0.3− | 0.5− |
| 2002 11 25 | 644 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 22 | G96 | 0.2− | 0.4− |
| 2002 12 01 | 704 | (1.8− | 1.0+) | 2006 10 22 | 703 | 0.5− | 1.3− | 2006 11 22 | G96 | 0.1− | 0.6− |

**(142800)∗ 2002 UT$_{23}$**

Discovered 2002 Oct. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.80787 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22458188 | $\omega$ | 49.38722 | | +0.30780191 | | −0.95123168 |
| $a$ | 2.6805232 | $\Omega$ | 22.71062 | | +0.85620463 | | +0.26757350 |
| $e$ | 0.0994852 | $i$ | 3.02931 | | +0.41493567 | | +0.15350154 |
| $P$ | 4.39 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.4+ | 0.1+ | 2002 11 06 | 704 | 0.7+ | 1.0+ | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2000 04 26 | 691 | 0.6+ | 0.4+ | 2004 02 16 | 291 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.7+ |
| 2000 04 26 | 691 | 0.1+ | 0.3+ | 2004 02 16 | 291 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2000 05 02 | 691 | 0.4− | 0.2− | 2004 02 16 | 291 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.6− |
| 2000 05 02 | 691 | 0.2− | 0.1+ | 2004 02 23 | 704 | (0.0 | 1.8+) | 2006 09 14 | 703 | 0.2+ | 0.3+ |
| 2000 05 02 | 691 | 0.3− | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.6− | 0.6+ |
| 2002 10 28 | 644 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.6− | 0.7+ | 2006 09 14 | 703 | 0.3− | 0.7+ |
| 2002 10 28 | 644 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2002 10 28 | 644 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.7+ | 1.4+ | 2006 10 20 | G96 | 0.2− | 0.7− |
| 2002 10 31 | 644 | 0.1+ | 0.1+ | 2004 04 14 | 621 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.6− | 0.2− |
| 2002 10 31 | 644 | 0.0 | 0.3+ | 2004 04 14 | 621 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.6− |
| 2002 10 31 | 644 | 0.0 | 0.4+ | 2004 04 14 | 621 | 0.9+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2002 11 04 | 049 | 0.1+ | 0.5− | 2004 04 15 | 621 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.5− |
| 2002 11 04 | 049 | 0.2− | 0.2− | 2004 04 15 | 621 | 1.0+ | 0.5+ | 2006 11 17 | G96 | 0.5− | 0.1− |
| 2002 11 04 | 049 | 0.0 | 0.3− | 2004 04 15 | 621 | (2.5+ | 0.0 ) | 2006 11 17 | G96 | 0.6+ | 0.2− |
| 2002 11 06 | 704 | 0.6− | 1.0+ | 2004 04 16 | 621 | 1.1+ | 0.6+ | | | | |
| 2002 11 06 | 704 | 0.8− | 0.3+ | 2004 04 16 | 621 | 0.3− | 0.3+ | | | | |

**(142801)∗ 2002 US$_{26}$ = 1995 CQ$_{9}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41151)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.28055 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22710440 | $\omega$ | 302.30776 | | +0.56311312 | | −0.82048561 |
| $a$ | 2.6606374 | $\Omega$ | 113.11018 | | +0.78963815 | | +0.49908381 |
| $e$ | 0.1467249 | $i$ | 6.14934 | | +0.24367030 | | +0.27878076 |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 04 | 691 | 0.0 | 0.7− | 2004 01 18 | 691 | 0.2+ | 0.5+ | 2004 03 23 | 704 | 0.0 | 0.1− |
| 1995 02 04 | 691 | 0.4− | 0.4− | 2004 01 18 | 691 | 0.0 | 0.4+ | 2004 03 23 | 704 | 0.5+ | 0.4+ |
| 1995 02 04 | 691 | 0.1− | 0.4− | 2004 01 18 | 691 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.4+ | 0.4+ |
| 1995 02 05 | 691 | 0.0 | 0.6− | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.4− |
| 1995 02 05 | 691 | 0.1− | 0.8− | 2004 01 27 | 691 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.2− |
| 1995 02 05 | 691 | 0.3− | 0.9− | 2004 01 27 | 691 | 0.0 | 0.4+ | 2006 08 23 | 644 | 0.3+ | 0.4+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.2− | 0.6+ | 2006 08 23 | 644 | 0.1+ | 0.1+ |
| 2000 05 05 | 645 | 0.0 | 0.3− | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.1− |
| 2002 10 31 | 704 | (0.3+ | 2.0+) | 2004 01 27 | 691 | 0.2+ | 0.5+ | 2006 08 30 | 699 | 0.9− | 0.6+ |
| 2002 10 31 | 704 | 0.4+ | 0.7+ | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.1− | 1.0+ |
| 2002 10 31 | 704 | 0.6− | 1.5+ | 2004 01 30 | 691 | 0.1+ | 0.5+ | 2006 08 30 | 699 | 0.1− | 0.6+ |
| 2002 10 31 | 704 | (0.2− | 1.7+) | 2004 01 30 | 691 | 0.2− | 0.3+ | 2006 08 30 | 699 | 0.5− | 0.9+ |
| 2002 10 31 | 704 | (0.3+ | 1.7+) | 2004 01 30 | 691 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.9− |
| 2002 11 01 | 608 | 0.4+ | 0.5+ | 2004 01 30 | 691 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.2− |
| 2002 11 01 | 608 | 0.9+ | 0.4+ | 2004 01 30 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2002 11 01 | 608 | 1.2+ | 0.7+ | 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.3− |
| 2002 11 12 | 704 | 1.2− | 0.3− | 2004 02 29 | 691 | 0.5+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 1.2+ |
| 2002 11 12 | 704 | 0.8− | 0.0 | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.3+ |
| 2002 11 12 | 704 | 0.0 | 0.2+ | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 2002 11 13 | 683 | 1.0+ | 0.8− | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.5+ |
| 2002 11 13 | 683 | 1.1− | 1.1− | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 11 30 | 704 | 0.7− | 0.6+ | 2004 03 23 | 704 | 0.7+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2002 11 30 | 704 | 0.8− | 1.4+ | 2004 03 23 | 704 | 0.4− | 0.7− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2002 11 30 | 704 | 0.6− | 1.1+ | 2004 03 23 | 704 | 1.3+ | 0.6− | | | | |

**(142802)∗ 2002 UG$_{27}$ = 2005 JM$_{153}$**

Discovered 2002 Oct. 31 by NEAT at Palomar.

Id. A. Doppler (*MPO* 85708)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.58914 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23500079 | $\omega$ | 322.97156 | | +0.34822639 | | +0.93712750 |
| $a$ | 2.6006975 | $\Omega$ | 327.38919 | | −0.84949612 | | +0.30508485 |
| $e$ | 0.1433797 | $i$ | 2.44928 | | −0.39635178 | | +0.16945584 |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.0− | 0.4+ | 2005 05 16 | G96 | 0.2− | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.2+ | 1.0+ | 2006 08 30 | 699 | 0.4− | 1.4+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 1.1− | 0.7− | 2006 08 30 | 699 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.7+ | 2006 08 30 | 699 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2002 10 15 | 644 | 0.2− | 0.2+ | 2006 08 30 | 699 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 10 15 | 644 | 0.2− | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 10 31 | 644 | 0.1+ | 1.2+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2002 10 31 | 644 | 0.3+ | 1.2+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.7− |
| 2002 10 31 | 644 | 0.2+ | 1.0+ | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 10 17 | 703 | 1.2+ | 0.9− |
| 2002 11 01 | 608 | 0.1+ | 1.1− | 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2002 11 01 | 608 | 0.0 | 1.0− | 2006 09 14 | 703 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 11 01 | 608 | 0.4+ | 0.7− | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2003 12 29 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.3+ | 1.2+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.8+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2003 12 29 | 691 | 0.2− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2004 01 19 | 703 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 2004 01 19 | 703 | 1.0+ | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.1− |
| 2004 01 19 | 703 | 1.2+ | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2004 01 19 | 703 | 0.8− | 0.1− | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2005 05 04 | 699 | 0.5+ | 1.0+ | 2006 09 16 | 644 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 05 04 | 699 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.5− | 0.2− |
| 2005 05 04 | 699 | 1.0+ | 1.1+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2005 05 04 | 699 | 0.2+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 11 06 | 644 | 0.3− | 0.2− |
| 2005 05 16 | G96 | 0.2− | 0.4+ | 2006 09 25 | 704 | 0.7+ | 0.2− | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2005 05 16 | G96 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.6+ | 2006 11 06 | 644 | 0.3− | 0.1− |
| 2005 05 16 | G96 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.0 | 0.2+ | 2006 11 06 | 644 | 0.4− | 0.0 |

**(142803)∗ 2002 UM$_{27}$**

Discovered 2002 Oct. 31 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.69759 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27655999 | $\omega$ | 36.48355 | | +0.20531904 | | +0.97611332 |
| $a$ | 2.3331526 | $\Omega$ | 245.46135 | | −0.91539459 | | +0.16585119 |
| $e$ | 0.2924909 | $i$ | 4.47907 | | −0.34626124 | | +0.14034307 |
| $P$ | 3.56 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 27 | 699 | 0.2− | 0.7+ | 2002 11 01 | 608 | 0.4− | 0.5− | 2005 06 04 | 704 | 0.0 | 0.7− |
| 1998 06 27 | 699 | 0.3− | 0.5+ | 2002 11 01 | 608 | 0.7− | 0.9− | 2005 06 17 | G96 | 0.1− | 0.3+ |
| 1998 06 27 | 699 | 0.1− | 0.6+ | 2002 11 01 | 608 | 0.7− | 0.7− | 2005 06 17 | G96 | 0.2− | 0.4+ |
| 2001 03 02 | 699 | 1.0+ | 1.3+ | 2002 11 11 | 704 | 0.8+ | 0.4+ | 2005 06 17 | G96 | 0.1+ | 0.3+ |
| 2001 03 02 | 699 | (0.1− | 1.8+) | 2002 11 11 | 704 | 0.1+ | 0.0 | 2005 06 17 | G96 | 0.1− | 0.3+ |
| 2001 03 02 | 699 | (0.3− | 2.0+) | 2002 11 11 | 704 | 0.3− | 0.9− | 2005 07 04 | 704 | 0.2+ | 0.1+ |
| 2001 03 02 | 699 | (0.2+ | 1.9+) | 2002 11 11 | 704 | 1.0− | 1.2− | 2005 07 04 | 644 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.4+ | 1.0+ | 2003 12 22 | 691 | 0.1− | 0.2− | 2005 07 04 | 704 | 0.4+ | 0.3+ |
| 2002 10 04 | 704 | 1.0+ | 0.2+ | 2003 12 22 | 691 | 0.1+ | 0.1+ | 2005 07 04 | 704 | 0.1+ | 1.2+ |
| 2002 10 04 | 704 | 0.7− | 0.4+ | 2003 12 22 | 691 | 0.1+ | 0.1+ | 2005 07 04 | 644 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | 0.9− | 1.3+ | 2004 01 22 | 704 | 0.3− | 1.2+ | 2005 07 04 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 1.0+ | 0.2+ | 2004 01 22 | 704 | 0.7+ | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 10 15 | 644 | 0.0 | 0.3+ | 2004 01 22 | 704 | 0.9+ | 1.4+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 10 15 | 644 | 0.1− | 0.3+ | 2004 01 22 | 704 | 1.3− | 1.3+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2002 10 15 | 644 | 0.1+ | 0.4+ | 2005 06 04 | 704 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 10 31 | 644 | 0.1− | 0.2+ | 2005 06 04 | 704 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.5+ | 0.6+ | 2005 06 04 | 704 | 0.2− | 0.8− | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2002 10 31 | 644 | 0.4+ | 0.5+ | 2005 06 04 | 704 | 0.1− | 0.3− | | | | |

**(142804)∗ 2002 UT$_{27}$ = 2004 CU$_4$**

Discovered 2002 Oct. 31 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61518)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.77501 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21939820 | $\omega$ | 159.09336 | | −0.90484936 | | +0.42364558 |
| $a$ | 2.7225802 | $\Omega$ | 46.04441 | | −0.39843234 | | −0.80783919 |
| $e$ | 0.0033468 | $i$ | 3.35237 | | −0.14999769 | | −0.40978077 |
| $P$ | 4.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2002 11 05 | 699 | (0.3+ | 3.0+) | 2005 05 12 | 644 | 0.1− | 0.6+ |
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2002 11 06 | 704 | 0.8− | 0.1+ | 2005 05 12 | 644 | 0.0 | 0.9+ |
| 2000 03 10 | 704 | 1.3− | 0.0 | 2002 11 06 | 704 | 0.9− | 0.0 | 2005 05 12 | 644 | 0.3− | 0.8+ |
| 2000 03 10 | 704 | 0.0 | 0.4+ | 2002 11 06 | 704 | 0.1− | 0.1− | 2006 08 17 | 644 | 0.1− | 0.1+ |
| 2000 03 10 | 704 | (2.2+ | 0.9+) | 2002 11 06 | 608 | 0.4− | 1.0− | 2006 08 17 | 644 | 0.3− | 0.5+ |
| 2001 07 18 | 644 | 0.4− | 0.6+ | 2002 11 06 | 608 | 0.5− | 0.9− | 2006 08 17 | 644 | 0.5+ | 0.5+ |
| 2001 07 18 | 644 | 0.4− | 0.5+ | 2002 11 06 | 608 | 0.9− | 0.3− | 2006 08 30 | 699 | 0.3− | 0.0 |
| 2001 07 18 | 644 | 0.5− | 0.5+ | 2004 01 18 | 644 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.8+ |
| 2002 10 03 | 704 | 0.1− | 0.8− | 2004 01 18 | 644 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.6+ | 0.7+ | 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.6+ | 1.0− |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2004 02 10 | 644 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.0 | 1.3+ |
| 2002 10 03 | 704 | 0.5− | 0.9+ | 2004 02 10 | 644 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.8− | 0.3+ |
| 2002 10 31 | 699 | 0.1− | 0.5+ | 2004 02 10 | 644 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.9+ |
| 2002 10 31 | 699 | 0.2− | 0.8+ | 2004 02 11 | 699 | 0.0 | 0.2+ | 2006 09 14 | 703 | (0.0 | 1.7+) |
| 2002 10 31 | 644 | 0.3+ | 0.4+ | 2004 02 11 | 699 | 0.6− | 0.5− | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2002 10 31 | 699 | 0.2+ | 0.4+ | 2004 02 11 | 699 | 0.7+ | 1.1− | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2002 10 31 | 699 | 0.3− | 0.4− | 2004 02 11 | 699 | 0.1− | 1.2+ | 2006 09 30 | 703 | 0.7+ | 0.8+ |
| 2002 10 31 | 644 | 0.7+ | 0.5+ | 2004 02 16 | 704 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.4− |
| 2002 10 31 | 644 | 0.6+ | 0.6+ | 2004 02 16 | 704 | 0.1+ | 1.1+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2002 11 01 | 608 | 0.2+ | 0.0 | 2004 02 16 | 704 | 0.5+ | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.6+ |
| 2002 11 01 | 608 | 0.3+ | 0.3+ | 2004 02 16 | 704 | 1.4+ | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.8+ |
| 2002 11 01 | 608 | 0.1− | 0.5+ | 2004 02 26 | 704 | 0.1− | 0.6+ | 2006 11 27 | G96 | 0.7− | 0.4− |
| 2002 11 05 | 699 | 0.5+ | 1.4− | 2004 02 26 | 704 | 0.4+ | 1.2+ | 2006 11 27 | G96 | 0.2+ | 0.1+ |
| 2002 11 05 | 699 | 1.2+ | 0.8+ | 2004 02 26 | 704 | 0.0 | 1.0+ | 2006 11 27 | G96 | 0.5− | 0.1− |
| 2002 11 05 | 699 | 0.9− | 0.3+ | 2004 02 26 | 704 | (1.2− | 1.7+) | 2006 11 27 | G96 | 0.1− | 0.1− |

**(142805)∗ 2002 UT$_{28}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.69391 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23908972 | $\omega$ | 110.13263 | | −0.66980603 | | −0.69865813 |
| $a$ | 2.5709607 | $\Omega$ | 27.56177 | | +0.29194440 | | −0.55917535 |
| $e$ | 0.1876032 | $i$ | 32.92061 | | +0.68273592 | | −0.44631798 |
| $P$ | 4.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | (2.2+ | 0.2−) | 2004 03 20 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 1998 12 12 | 704 | (0.9+ | 2.9−) | 2004 03 20 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1− |
| 1998 12 12 | 704 | 1.6− | 1.1+ | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 1998 12 12 | 704 | 1.2− | 0.5− | 2004 03 20 | 704 | 0.4+ | 0.8+ | 2006 10 15 | 691 | 0.2− | 0.2+ |
| 2002 10 05 | 704 | 0.6+ | 0.5− | 2004 03 22 | 699 | 0.0 | 0.9+ | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.3+ | 0.8− | 2004 03 22 | 699 | 0.0 | 0.5− | 2006 10 15 | 691 | 0.2− | 0.2+ |
| 2002 10 05 | 704 | 0.3+ | 1.0+ | 2004 03 22 | 699 | (0.1+ | 1.9+) | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 704 | (0.2− | 1.6+) | 2004 03 22 | 699 | 0.7− | 0.3− | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 1.2+ | 0.3− | 2004 03 27 | 704 | 0.9− | 0.9+ | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 2002 10 31 | 704 | 0.3+ | 0.7− | 2004 03 27 | 704 | (0.1− | 1.8−) | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 2002 10 31 | 704 | 0.3+ | 0.9− | 2004 03 27 | 704 | 0.2− | 0.8− | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2004 03 27 | 704 | 1.0+ | 0.3− | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.9+ | 1.2− | 2004 03 27 | 704 | 0.6− | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.8− |
| 2002 11 01 | 704 | 0.8+ | 0.5− | 2004 04 13 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.4− |
| 2002 11 01 | 704 | 0.6+ | 0.3− | 2004 04 13 | 644 | 0.0 | 0.2+ | 2006 10 19 | 703 | 1.0− | 0.7− |
| 2002 11 01 | 704 | 0.2+ | 0.2+ | 2004 04 13 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.5+ | 1.3− |
| 2002 11 08 | 704 | 0.7+ | 0.4+ | 2004 04 16 | E12 | (0.3+ | 2.2−) | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 11 08 | 704 | 0.1− | 0.2− | 2004 04 16 | E12 | (0.1+ | 2.1−) | 2006 10 20 | 644 | 0.2− | 0.7+ |
| 2002 11 08 | 704 | 1.1+ | 0.4+ | 2004 04 16 | E12 | 1.2+ | 0.8− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 11 15 | 644 | 0.1+ | 0.1− | 2004 04 16 | E12 | 1.2+ | 0.8− | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2002 11 15 | 644 | 0.3+ | 0.3+ | 2004 04 20 | 428 | 0.3+ | 0.7+ | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 2002 11 15 | 644 | 0.0 | 0.1+ | 2004 04 20 | 428 | 0.7+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2002 11 15 | 704 | 0.1+ | 0.2+ | 2004 04 22 | E12 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 15 | 704 | 0.1− | 0.5+ | 2004 04 22 | E12 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 15 | 704 | 0.6− | 0.0 | 2004 04 22 | E12 | 0.6− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 15 | 704 | 0.4− | 0.5− | 2004 04 22 | E12 | (1.7+ | 0.9+) | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2002 11 15 | 704 | 0.1− | 0.1− | 2004 04 25 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2004 04 25 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2002 12 10 | 704 | 0.0 | 0.5+ | 2004 04 25 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | 1.4+ | 0.4− | 2004 04 25 | 704 | 0.1− | 0.2+ | 2006 11 15 | 703 | 1.2+ | 0.7+ |
| 2002 12 10 | 704 | 0.1+ | 0.3− | 2004 04 25 | 704 | 0.1− | 0.1− | 2006 11 15 | 703 | 1.3− | 0.3− |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 15 | 703 | 0.2+ | 0.5+ |
| 2004 02 23 | 704 | 0.9+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 15 | 703 | 0.5+ | 1.0+ |
| 2004 02 23 | 704 | (1.6+ | 0.5+) | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.6− | 0.5− |
| 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.6− | 0.8− | 2006 11 23 | 703 | 0.1+ | 0.5+ |
| 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.0 |
| 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 1.0− | 0.2− |
| 2004 03 20 | 704 | 1.0+ | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.2+ | | | | |

**(142806)∗ 2002 UJ$_{29}$ = 1998 XS$_{34}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 38120)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.51425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24215086 | $\omega$ | 122.65300 | | +0.85967674 | | −0.45843779 |
| $a$ | 2.5492477 | $\Omega$ | 265.53471 | | +0.35923248 | | +0.85619130 |
| $e$ | 0.1666233 | $i$ | 13.06487 | | +0.36319131 | | +0.23826720 |
| $P$ | 4.07 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 25 | 691 | 0.1+ | 0.7− | 2002 12 28 | 699 | 1.1+ | 0.3+ | 2004 03 16 | E12 | 1.0− | 0.6+ |
| 1998 07 25 | 691 | 0.8− | 0.0 | 2002 12 31 | 704 | 0.0 | 0.2+ | 2004 03 16 | E12 | (0.2− | 1.6−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.0 | 0.4− | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2004 03 16 | E12 | 0.3− | 0.1+ |
| 1998 12 14 | 704 | 0.1+ | 0.9− | 2002 12 31 | 704 | 0.1+ | 0.7+ | 2004 03 17 | 704 | 0.1− | 0.9− |
| 1998 12 14 | 704 | 0.2− | 0.8− | 2002 12 31 | 704 | 0.1− | 0.8+ | 2004 03 17 | 704 | 0.1+ | 0.8− |
| 1998 12 14 | 704 | 0.5+ | 0.4− | 2003 01 04 | 704 | 0.2− | 0.2+ | 2004 03 17 | 704 | 0.4− | 0.2− |
| 1998 12 14 | 704 | 1.0+ | 0.9− | 2003 01 04 | 704 | 0.1− | 0.3+ | 2004 03 17 | 704 | 0.7− | 1.1− |
| 1998 12 17 | 704 | 0.3+ | 1.4− | 2003 01 04 | 704 | 0.2+ | 0.7+ | 2004 03 26 | 704 | 0.5+ | 0.7− |
| 1998 12 17 | 704 | (3.2+ | 1.8−) | 2003 01 04 | 704 | 1.4− | 0.0 | 2004 03 26 | 704 | 0.3+ | 0.4− |
| 1998 12 17 | 704 | 0.6+ | 1.6− | 2003 01 04 | 704 | 0.1− | 0.7+ | 2004 03 26 | 704 | 0.0 | 0.1− |
| 1998 12 17 | 704 | (1.2+ | 2.1−) | 2003 01 07 | 608 | (0.7+ | 3.4+) | 2004 03 26 | 704 | 0.4+ | 0.6− |
| 1999 01 11 | 704 | 1.3− | 1.8+ | 2003 01 07 | 608 | 0.8+ | 1.3+ | 2004 03 26 | 704 | 0.4+ | 0.3+ |
| 1999 01 11 | 704 | 0.4+ | 0.1+ | 2003 01 07 | 608 | 0.9+ | 0.9+ | 2004 04 17 | 704 | 0.6− | 0.5− |
| 1999 01 11 | 704 | (1.1− | 2.1+) | 2003 01 08 | 704 | 0.2+ | 0.3+ | 2004 04 17 | 704 | 1.1+ | 0.1+ |
| 1999 01 11 | 704 | (5.4− | 1.5−) | 2003 01 08 | 704 | 0.3+ | 0.2+ | 2004 04 17 | 704 | 1.4+ | 0.1− |
| 2002 09 07 | 704 | 0.2+ | 0.1+ | 2003 01 08 | 704 | 0.1+ | 0.8+ | 2004 04 17 | 704 | 0.9+ | 0.8+ |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2003 01 08 | 704 | 0.2+ | 0.5+ | 2004 04 24 | 703 | 0.4− | 1.1− |
| 2002 09 07 | 704 | 0.0 | 0.4− | 2003 01 08 | 704 | 0.3+ | 0.3+ | 2004 04 24 | 703 | 0.2+ | 1.4+ |
| 2002 10 05 | 704 | 1.5+ | 0.5− | 2003 01 09 | 704 | (2.2+ | 1.4+) | 2004 04 24 | 703 | 0.5− | 0.6+ |
| 2002 10 05 | 704 | 0.3+ | 0.7− | 2003 01 09 | 704 | 0.8− | 0.2− | 2004 04 24 | 703 | 1.0− | 0.8+ |
| 2002 10 05 | 704 | 0.7+ | 0.7− | 2003 01 09 | 704 | 0.4− | 0.1− | 2004 04 24 | 608 | 0.1+ | 0.0 |
| 2002 10 05 | 704 | 1.0+ | 1.0− | 2003 01 09 | 704 | 0.3− | 0.3− | 2004 04 24 | 608 | 0.1+ | 0.5− |
| 2002 10 31 | 704 | 0.7− | 0.5+ | 2003 01 09 | 704 | 0.7+ | 0.7− | 2004 04 24 | 608 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.7− | 0.5+ | 2003 01 18 | 608 | 0.5− | 0.1+ | 2006 09 19 | 704 | 0.0 | 0.4+ |
| 2002 10 31 | 704 | 0.8− | 0.2+ | 2003 01 18 | 608 | 0.5− | 0.1+ | 2006 09 19 | 704 | 0.3− | 0.2+ |
| 2002 10 31 | 704 | 0.6− | 0.3− | 2003 01 18 | 608 | 0.7− | 0.2+ | 2006 09 19 | 704 | 0.6− | 0.1+ |
| 2002 10 31 | 704 | 1.1− | 0.5+ | 2003 01 19 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 704 | 0.1− | 0.5+ |
| 2002 11 01 | 704 | 0.2− | 0.3− | 2003 01 19 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 704 | 0.2+ | 0.9+ |
| 2002 11 01 | 704 | 0.4− | 0.6− | 2003 01 19 | 644 | 0.0 | 0.4+ | 2006 10 23 | 703 | 0.2− | 0.0 |
| 2002 11 01 | 704 | 0.1+ | 0.9− | 2003 01 25 | 699 | 0.7− | 0.1+ | 2006 10 23 | 703 | 0.3+ | 0.1− |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2003 01 25 | 699 | 0.7− | 0.1− | 2006 10 23 | 703 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.1− | 0.5− | 2003 01 25 | 699 | 0.7− | 0.5+ | 2006 10 23 | 703 | 0.3+ | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.4− | 2003 01 25 | 699 | 0.2− | 0.3− | 2006 10 29 | 703 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.1− | 0.5− | 2003 01 28 | 608 | 0.3− | 1.4− | 2006 10 29 | 703 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 0.2− | 0.5− | 2003 01 28 | 608 | 0.1− | 1.3− | 2006 10 29 | 703 | 0.3− | 0.2− |
| 2002 11 15 | 704 | 0.5− | 0.2− | 2003 01 28 | 608 | 0.2− | 1.2− | 2006 10 29 | 703 | 0.1− | 0.3− |
| 2002 11 15 | 704 | 0.4− | 0.1+ | 2003 01 31 | 704 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | 0.1− | 0.3+ | 2003 01 31 | 704 | 0.5− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2002 11 15 | 704 | 0.6− | 0.4+ | 2003 01 31 | 704 | 0.6− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 11 27 | 300 | 0.1− | 1.2− | 2003 01 31 | 704 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2002 11 27 | 300 | (1.8+ | 0.6+) | 2003 01 31 | 704 | 0.4+ | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.4− |
| 2002 12 06 | 704 | 0.1+ | 0.3− | 2003 02 04 | 608 | 0.4+ | 0.9+ | 2006 11 15 | 703 | 0.7+ | 0.8− |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2003 02 04 | 608 | 0.4+ | 1.2+ | 2006 11 15 | 703 | 0.6+ | 0.6− |
| 2002 12 06 | 704 | 0.4+ | 0.1− | 2003 02 04 | 608 | 0.0 | 0.5− | 2006 11 15 | 704 | 0.1+ | 0.3+ |
| 2002 12 06 | 704 | 0.6+ | 0.2+ | 2003 02 07 | 291 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 0.4+ | 0.5+ | 2003 02 07 | 704 | 0.6+ | 0.6− | 2006 11 15 | 704 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.0 | 0.3+ | 2003 02 07 | 704 | 1.0− | 0.2− | 2006 11 15 | 704 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2003 02 07 | 291 | 0.7+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.4+ |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2003 02 07 | 704 | 1.0− | 0.3+ | 2006 11 15 | 704 | 0.3− | 0.3+ |
| 2002 12 11 | 704 | 0.1− | 0.1− | 2003 02 07 | 291 | 0.7+ | 0.0 | 2006 11 21 | 703 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.3+ | 2003 02 07 | 704 | 0.2− | 0.4− | 2006 11 21 | 703 | 0.1− | 0.1− |
| 2002 12 14 | 704 | 0.5− | 0.4+ | 2003 02 07 | 704 | 0.6− | 1.2+ | 2006 11 21 | 703 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 0.5− | 0.2+ | 2003 02 08 | 704 | 0.3+ | 0.5+ | 2006 11 21 | 703 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.6− | 0.5+ | 2003 02 08 | 704 | 0.8+ | 0.3− | 2006 11 24 | H51 | 0.6+ | 0.5+ |
| 2002 12 14 | 704 | 0.6− | 0.2+ | 2003 02 08 | 704 | 0.1+ | 0.1− | 2006 11 24 | H51 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 0.7− | 0.5+ | 2003 03 15 | 608 | 0.2− | 0.2− | 2006 11 24 | H51 | 0.0 | 0.8+ |
| 2002 12 27 | 644 | 0.2+ | 0.2− | 2003 03 15 | 608 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.2+ |
| 2002 12 27 | 644 | 0.2+ | 0.2− | 2003 03 15 | 608 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2002 12 27 | 644 | 0.3+ | 0.1− | 2004 03 15 | 644 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.3+ |
| 2002 12 28 | 699 | 0.0 | 0.4+ | 2004 03 15 | 644 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.1+ |
| 2002 12 28 | 699 | 0.4+ | 0.8+ | 2004 03 15 | 644 | 0.5− | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2002 12 28 | 699 | 0.3− | 0.7+ | 2004 03 16 | E12 | 0.5− | 0.2− | | | | |

**(142807)∗ 2002 UN$_{31}$**

Discovered 2002 Oct. 30 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.03120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23286995 | $\omega$ | 50.41960 | | +0.26928798 | +0.94198055 | |
| $a$ | 2.6165382 | $\Omega$ | 236.32825 | | −0.94085005 | +0.21289065 | |
| $e$ | 0.0623807 | $i$ | 13.93311 | | −0.20563359 | +0.25951918 | |
| $P$ | 4.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 0.0 | 0.2− | 2005 05 14 | 704 | (0.6− | 2.5−) | 2005 06 23 | 644 | 0.2− | 0.1+ |
| 1998 11 17 | 691 | 0.3− | 0.1+ | 2005 05 14 | 704 | 0.1− | 1.4− | 2005 06 23 | 644 | 0.1− | 0.0 |
| 1998 11 17 | 691 | 0.2− | 0.3− | 2005 05 14 | 704 | (0.5+ | 2.9−) | 2005 06 23 | 644 | 0.3− | 0.1+ |
| 2001 06 15 | 704 | 0.4− | 0.3+ | 2005 05 16 | 644 | 0.2− | 0.2− | 2005 06 27 | 644 | 0.1− | 0.1+ |
| 2001 06 15 | 704 | 0.6− | 0.0 | 2005 05 16 | 644 | 0.2− | 0.1− | 2005 06 27 | 644 | 0.1− | 0.0 |
| 2001 06 15 | 704 | 0.1+ | 0.4− | 2005 05 16 | 644 | 0.0 | 0.2− | 2005 06 27 | 644 | 0.3− | 0.3+ |
| 2001 06 15 | 704 | 0.9+ | 1.2− | 2005 05 19 | 644 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.3− | 0.0 |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2005 05 19 | 644 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.3− | 0.2− |
| 2002 10 05 | 704 | 0.7+ | 0.2− | 2005 05 19 | 644 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.0 | 0.8+ |
| 2002 10 05 | 704 | 0.4− | 0.1− | 2005 05 30 | 699 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.4+ | 0.1− |
| 2002 10 05 | 704 | 0.5− | 0.7− | 2005 05 30 | 699 | 0.2− | 0.7+ | 2006 09 14 | 644 | 0.1+ | 0.2− |
| 2002 10 05 | 704 | 0.3+ | 0.3− | 2005 05 30 | 699 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.2− |
| 2002 10 10 | 704 | 0.1+ | 0.6+ | 2005 05 30 | 699 | 0.3− | 0.8+ | 2006 09 14 | 644 | 0.4+ | 0.1+ |
| 2002 10 10 | 704 | 0.4+ | 0.3− | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.8+ | 0.2− | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.3− |
| 2002 10 10 | 704 | 0.2+ | 0.4+ | 2005 06 10 | 691 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.6− | 0.3+ |
| 2002 10 15 | 704 | 0.1+ | 0.4− | 2005 06 13 | G96 | 0.3− | 0.2+ | 2006 09 16 | 703 | 1.1− | 0.2− |
| 2002 10 15 | 704 | 0.2− | 0.4+ | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.5− | 1.1− |
| 2002 10 15 | 704 | 0.4+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 09 21 | 699 | 1.0− | 0.3+ |
| 2002 10 30 | 608 | 0.8− | 1.1+ | 2005 06 13 | G96 | 0.6− | 0.2+ | 2006 09 21 | 699 | 0.8+ | 0.3+ |
| 2002 10 30 | 608 | (0.0 | 1.7+) | 2005 06 14 | 699 | (1.6− | 0.9+) | 2006 09 21 | 699 | 0.5+ | 0.2+ |
| 2002 10 30 | 608 | (0.1− | 1.6+) | 2005 06 14 | 691 | 0.2+ | 0.2− | 2006 09 21 | 699 | 0.4+ | 0.2+ |
| 2002 11 01 | 644 | 0.3+ | 0.2+ | 2005 06 14 | 699 | 0.6+ | 0.4− | 2006 09 21 | 699 | 0.5− | 1.3+ |
| 2002 11 01 | 644 | 0.6+ | 0.2+ | 2005 06 14 | 691 | 0.5+ | 0.4− | 2006 09 21 | 699 | 0.6− | 0.1− |
| 2002 11 01 | 644 | 0.3+ | 0.5+ | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.8− | 0.4+ |
| 2002 11 05 | 704 | 1.3+ | 0.3+ | 2005 06 14 | 699 | 0.3+ | 0.2− | 2006 09 28 | 703 | 1.1+ | 0.2− |
| 2002 11 05 | 704 | (1.8+ | 1.6−) | 2005 06 14 | 699 | 0.9+ | 1.1+ | 2006 09 28 | 703 | 1.6+ | 1.3− |
| 2002 11 05 | 704 | (1.1+ | 1.7+) | 2005 06 16 | G96 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.3+ | 0.5− |
| 2002 11 05 | 704 | 0.6+ | 0.3− | 2005 06 16 | G96 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.4− | 0.2− |
| 2005 05 04 | 644 | 0.1− | 0.2− | 2005 06 16 | G96 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.3+ | 0.7− |
| 2005 05 04 | 644 | 0.1− | 0.2+ | 2005 06 16 | G96 | 0.3− | 0.5− | 2006 10 23 | 703 | 1.8− | 0.1− |
| 2005 05 04 | 644 | 0.0 | 0.0 | 2005 06 23 | 644 | 0.1− | 0.2− | 2006 10 23 | 703 | 0.1− | 0.0 |
| 2005 05 14 | 704 | 0.1+ | 1.1− | 2005 06 23 | 644 | 0.1− | 0.1− | 2006 10 23 | 703 | 0.1− | 0.9+ |
| 2005 05 14 | 704 | (1.3− | 2.2−) | 2005 06 23 | 644 | 0.0 | 0.1+ | | | | |

**(142808)∗ 2002 UQ$_{33}$ = 1998 TW$_{16}$**

Discovered 2002 Oct. 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 38123)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.10118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25361582 | $\omega$ | 176.06692 | | +0.10015124 | −0.99408706 | |
| $a$ | 2.4718294 | $\Omega$ | 268.18172 | | +0.91171993 | +0.10857669 | |
| $e$ | 0.1598585 | $i$ | 2.40606 | | +0.39841750 | +0.00142442 | |
| $P$ | 3.89 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 1.5− | 0.7+ | 2002 11 08 | 704 | 0.7− | 0.3+ | 2005 07 15 | 691 | 0.2− | 0.0 |
| 1998 10 14 | 910 | 0.8+ | 0.5+ | 2002 11 08 | 704 | 0.3+ | 0.7− | 2006 09 28 | G96 | 0.4− | 0.1− |
| 1998 10 15 | 910 | 0.7+ | 0.5+ | 2002 11 08 | 704 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 1998 10 15 | 910 | 0.7+ | 0.6+ | 2002 11 12 | 704 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 1998 10 21 | 910 | 0.9+ | 0.2+ | 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 1998 10 21 | 910 | 0.6+ | 0.5+ | 2002 11 12 | 704 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 1998 10 22 | 910 | 0.9+ | 0.1+ | 2002 11 12 | 704 | 0.8+ | 0.9+ | 2006 11 01 | G96 | 0.5− | 0.5− |
| 2002 10 12 | 704 | 0.3− | 0.3− | 2002 11 12 | 704 | 0.8+ | 0.0 | 2006 11 01 | G96 | 0.3− | 0.6− |
| 2002 10 12 | 704 | 0.9+ | 0.9− | 2002 11 14 | 704 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2002 10 12 | 704 | 1.2+ | 0.6− | 2002 11 14 | 704 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 049 | 0.8− | 0.3+ | 2002 11 14 | 704 | 0.6+ | 1.1− | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2002 10 30 | 049 | 0.8− | 0.1+ | 2002 11 14 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.1+ | | |
| 2002 10 30 | 049 | 0.7− | 0.1+ | 2002 11 14 | 704 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.3− | 0.0 | | |
| 2002 10 31 | 699 | 0.2− | 0.3+ | 2002 12 02 | 704 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.2− | | |
| 2002 10 31 | 699 | 1.3− | 0.0 | 2002 12 02 | 704 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.3− | | |
| 2002 10 31 | 699 | 0.4+ | 0.9− | 2002 12 02 | 704 | 0.5+ | 0.5+ | 2006 11 15 | 703 | 1.0− | 0.4+ | | |
| 2002 10 31 | 699 | 0.6− | 0.1− | 2002 12 05 | 704 | 0.2− | 0.7− | 2006 11 16 | 691 | 0.3− | 0.1+ | | |
| 2002 11 01 | 644 | 0.0 | 0.4+ | 2002 12 05 | 704 | 0.0 | 0.9+ | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2002 11 01 | 644 | 0.1− | 0.2+ | 2002 12 05 | 704 | (0.4+ | 1.8+) | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2002 11 01 | 644 | 0.1− | 0.0 | 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.1+ | | |
| 2002 11 05 | 704 | 0.2− | 0.4− | 2002 12 10 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.2− | | |
| 2002 11 05 | 704 | 0.9− | 0.3+ | 2002 12 10 | 644 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2002 11 05 | 704 | 0.7− | 0.1+ | 2004 04 19 | 691 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.5+ | | |
| 2002 11 05 | 704 | 0.2− | 0.1+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.1+ | | |
| 2002 11 05 | 704 | 0.4+ | 0.4− | 2004 04 19 | 691 | 0.5+ | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.1− | | |
| 2002 11 06 | 704 | 1.0− | 1.2− | 2005 07 03 | G96 | 0.4− | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.0 | | |
| 2002 11 06 | 704 | 0.7− | 0.4+ | 2005 07 03 | G96 | 0.5− | 0.6+ | 2006 11 24 | 691 | 0.0 | 0.0 | | |
| 2002 11 06 | 704 | 0.8− | 0.6− | 2005 07 03 | G96 | 0.1+ | 0.8+ | 2006 11 28 | 704 | 1.5+ | 0.7+ | | |
| 2002 11 06 | 704 | 0.8− | 1.3− | 2005 07 03 | G96 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.6+ | 0.5+ | | |
| 2002 11 07 | 704 | 0.2+ | 1.0+ | 2005 07 15 | G96 | (3.5+ | 2.4−) | 2006 11 28 | 704 | 0.0 | 0.9+ | | |
| 2002 11 07 | 704 | 0.4+ | 0.1− | 2005 07 15 | G96 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 1.4+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.3− | 0.2+ | 2005 07 15 | 691 | 0.4+ | 0.2− | 2006 12 01 | 704 | 0.9+ | 0.4+ | | |
| 2002 11 07 | 704 | 0.1− | 0.0 | 2005 07 15 | G96 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.1− | 1.0+ | | |
| 2002 11 07 | 704 | 0.9− | 0.1− | 2005 07 15 | 691 | 0.6− | 0.4+ | 2006 12 01 | 704 | 0.5+ | 0.4+ | | |
| 2002 11 08 | 704 | 1.3+ | 0.1+ | 2005 07 15 | G96 | 0.7− | 0.2+ | 2006 12 01 | 704 | 0.3+ | 0.7+ | | |

**(142809)∗ 2002 US$_{34}$**

Discovered 2002 Oct. 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.92624 | | (2000.0) | | | |
| $n$ | 0.21361470 | $\omega$ | 276.39924 | | +0.88557047 | +0.46046115 |
| $a$ | 2.7715026 | $\Omega$ | 56.20010 | | −0.39176534 | +0.81113261 |
| $e$ | 0.0949061 | $i$ | 4.22071 | | −0.24956936 | +0.36060979 |
| $P$ | 4.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.5+ | 1.2− | 2003 12 29 | 291 | 0.8− | 0.2+ | 2005 05 14 | G96 | 0.1+ | 0.3+ | | |
| 2002 10 31 | 699 | 0.9− | 0.1+ | 2003 12 29 | 291 | 0.1− | 0.6+ | 2005 05 14 | G96 | 0.2+ | 0.0 | | |
| 2002 10 31 | 699 | 0.4+ | 0.4− | 2003 12 29 | 291 | 0.2− | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.2+ | | |
| 2002 10 31 | 699 | 0.7+ | 0.3− | 2004 03 17 | 645 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.2− | 0.2+ | | |
| 2002 11 02 | 608 | 0.5− | 0.4− | 2004 03 17 | 645 | 0.2+ | 0.1− | 2006 08 17 | 644 | 0.2− | 0.1+ | | |
| 2002 11 02 | 608 | 1.1− | 0.1− | 2005 04 10 | G96 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.2+ | | |
| 2002 11 02 | 608 | 0.6− | 0.1+ | 2005 04 10 | G96 | 0.2− | 0.6+ | 2006 08 23 | 644 | 0.0 | 0.2+ | | |
| 2002 11 06 | 704 | 0.1+ | 1.1+ | 2005 04 10 | G96 | 0.1+ | 0.7+ | 2006 08 23 | 644 | 0.0 | 0.1+ | | |
| 2002 11 06 | 704 | 0.6− | 1.4+ | 2005 04 10 | G96 | 0.1+ | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.1− | | |
| 2002 11 06 | 704 | 0.3− | 0.3− | 2005 05 14 | 644 | 0.5+ | 0.8+ | 2006 08 24 | 644 | 0.1− | 0.0 | | |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2005 05 14 | 644 | 0.5+ | 0.6+ | 2006 08 24 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 22 | 644 | 0.5+ | 1.0+ | 2005 05 14 | 644 | 0.9+ | 0.7+ | 2006 09 14 | 644 | 0.6− | 0.2+ | | |
| 2002 11 22 | 644 | 0.5+ | 1.1+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.2+ | | |
| 2002 11 22 | 644 | 0.1+ | 1.0+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.8+ | 0.3+ | | |

**(142810)∗ 2002 UB$_{36}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.13117 | | (2000.0) | | | |
| $n$ | 0.23484535 | $\omega$ | 284.71523 | | +0.96100508 | −0.07055947 |
| $a$ | 2.6018449 | $\Omega$ | 79.87102 | | +0.18372512 | +0.88555969 |
| $e$ | 0.1535390 | $i$ | 15.76012 | | −0.20667440 | +0.45913548 |
| $P$ | 4.20 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 0.2− | 0.8− | 2002 12 01 | 608 | 0.1+ | 0.5+ | 2005 05 17 | G96 | 0.3− | 0.2− | | |
| 2002 09 15 | 699 | 0.0 | 0.6− | 2002 12 01 | 608 | 0.2− | 0.8+ | 2005 05 17 | G96 | 0.2− | 0.1+ | | |
| 2002 09 15 | 699 | 0.3− | 0.2+ | 2002 12 01 | 608 | 0.1+ | 0.1+ | 2005 05 17 | G96 | 0.4− | 0.0 | | |
| 2002 09 15 | 699 | 0.4+ | 0.1− | 2002 12 07 | 704 | 0.2− | 0.4+ | 2005 06 05 | 704 | 0.6+ | 0.8+ | | |
| 2002 10 16 | 699 | 0.7− | 0.3+ | 2002 12 07 | 704 | 0.5− | 0.5+ | 2005 06 05 | 704 | 0.2− | 0.6+ | | |
| 2002 10 16 | 699 | 0.2− | 0.7+ | 2002 12 07 | 704 | 0.0 | 0.3+ | 2005 06 05 | 704 | 0.0 | 0.7+ | | |
| 2002 10 16 | 699 | 0.8− | 0.6+ | 2002 12 07 | 704 | 0.3− | 0.7+ | 2005 06 09 | 691 | 0.9+ | 0.2+ | | |
| 2002 10 16 | 699 | 0.2+ | 0.6+ | 2002 12 07 | 704 | 0.1+ | 0.7+ | 2005 06 09 | 691 | 0.3+ | 0.3+ | | |
| 2002 10 31 | 704 | 0.2− | 0.6+ | 2002 12 22 | 608 | (0.9− | 1.7+) | 2005 06 09 | 691 | 0.3+ | 0.3+ | | |
| 2002 10 31 | 704 | 0.3− | 0.2+ | 2002 12 22 | 608 | 0.8− | 0.7+ | 2005 06 23 | 644 | 0.1+ | 0.2− | | |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2002 12 22 | 608 | (0.7− | 1.6+) | 2005 06 23 | 644 | 0.1+ | 0.4+ | | |
| 2002 10 31 | 704 | 0.1− | 0.6+ | 2003 01 03 | 704 | 0.1+ | 0.3+ | 2005 06 23 | 644 | 0.2+ | 0.0 | | |
| 2002 10 31 | 704 | 0.1− | 0.5+ | 2003 01 03 | 704 | 1.0− | 0.3− | 2006 08 05 | E12 | 0.8− | 0.8− | | |
| 2002 11 03 | 608 | 0.1− | 0.3− | 2003 01 03 | 704 | 1.0− | 0.2− | 2006 08 05 | E12 | 0.0 | 0.6− | | |
| 2002 11 03 | 608 | 0.1− | 0.8− | 2003 01 18 | 644 | 0.3+ | 0.2+ | 2006 08 05 | E12 | 0.8− | 0.9− | | |
| 2002 11 03 | 608 | 0.3− | 1.5− | 2003 01 18 | 644 | 0.3− | 0.7+ | 2006 08 05 | E12 | 0.1+ | 0.2− | | |
| 2002 11 05 | 704 | 0.1+ | 0.3+ | 2003 01 18 | 644 | 0.3− | 0.3+ | 2006 09 22 | 703 | 0.3+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.2− | 0.1+ | 2003 01 27 | 644 | (0.1+ | 1.7+) | 2006 09 22 | 703 | 0.3− | 0.2+ | | |
| 2002 11 05 | 704 | 1.1− | 0.3+ | 2003 01 27 | 644 | (0.3− | 1.6+) | 2006 09 22 | 703 | 0.7+ | 0.6+ | | |
| 2002 11 05 | 704 | 0.8− | 0.4+ | 2003 01 27 | 644 | (0.2− | 1.7+) | 2006 09 22 | 703 | 0.6− | 0.1− | | |
| 2002 11 05 | 704 | 0.3− | 0.5+ | 2003 01 31 | 704 | (0.6− | 1.9+) | 2006 09 24 | 699 | 0.3− | 0.7− | | |
| 2002 11 06 | 699 | 0.6+ | 1.1+ | 2003 01 31 | 704 | 0.4− | 1.0+ | 2006 09 24 | 699 | 1.2+ | 0.1− | | |
| 2002 11 06 | 699 | 0.7+ | 0.8+ | 2003 01 31 | 704 | 0.8− | 1.3+ | 2006 09 24 | 699 | 0.2− | 0.3− | | |
| 2002 11 06 | 699 | 1.0+ | 0.9+ | 2004 02 14 | 704 | 0.4+ | 0.2+ | 2006 09 24 | 699 | 1.1− | 0.3− | | |
| 2002 11 06 | 699 | 0.3− | 1.2+ | 2004 02 14 | 704 | (2.0+ | 0.3+) | 2006 10 25 | E12 | 0.5+ | 0.3+ | | |
| 2002 11 11 | 644 | 0.0 | 1.1+ | 2004 02 14 | 704 | 1.1+ | 0.8+ | 2006 10 25 | E12 | 0.5+ | 0.7+ | | |
| 2002 11 11 | 644 | 0.1− | 0.4+ | 2005 05 04 | 691 | 0.4+ | 0.3+ | 2006 10 25 | E12 | 1.1+ | 0.1− | | |
| 2002 11 11 | 644 | 0.4− | 0.7+ | 2005 05 04 | 691 | 0.4+ | 0.5+ | 2006 10 25 | E12 | 0.2+ | 0.0 | | |
| 2002 11 12 | 704 | 0.8− | 0.3− | 2005 05 04 | 691 | 0.5+ | 0.4+ | 2006 10 31 | 703 | 0.1+ | 0.6+ | | |
| 2002 11 12 | 704 | 0.5− | 0.1+ | 2005 05 09 | 703 | 0.1− | 1.4+ | 2006 10 31 | 703 | 0.0 | 0.5− | | |
| 2002 11 12 | 704 | 0.0 | 0.6− | 2005 05 09 | 703 | 0.8− | 0.4+ | 2006 10 31 | 703 | 0.2− | 0.1− | | |
| 2002 11 12 | 704 | 0.0 | 0.2− | 2005 05 09 | 703 | (2.2− | 0.1+) | 2006 10 31 | 703 | 0.3− | 0.0 | | |
| 2002 11 12 | 704 | 0.4+ | 0.6− | 2005 05 09 | 703 | (1.7− | 0.8−) | 2006 11 19 | 703 | 0.2+ | 0.8+ | | |
| 2002 11 30 | 704 | 0.1+ | 0.7+ | 2005 05 12 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 703 | 0.1− | 0.5+ | | |
| 2002 11 30 | 704 | 0.7− | 0.8+ | 2005 05 12 | 704 | 0.0 | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.2− | | |
| 2002 11 30 | 704 | 0.1− | 0.5+ | 2005 05 12 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.2+ | 0.1+ | | |
| 2002 11 30 | 704 | 0.2+ | 0.9+ | 2005 05 12 | 704 | 0.6+ | 0.9+ | 2006 11 25 | 703 | 0.4− | 0.2+ | | |
| 2002 11 30 | 704 | 0.1+ | 0.3+ | 2005 05 14 | 691 | 0.2− | 0.7+ | 2006 11 25 | 703 | 0.6− | 0.5+ | | |
| 2002 12 01 | 704 | 0.5− | 0.7+ | 2005 05 14 | 691 | 0.1+ | 0.6+ | 2006 11 25 | 703 | 0.3− | 0.9+ | | |
| 2002 12 01 | 704 | 0.9− | 0.5+ | 2005 05 14 | 691 | 0.1+ | 0.7+ | 2006 11 25 | 703 | 0.5+ | 0.4− | | |
| 2002 12 01 | 704 | 0.7− | 0.6+ | 2005 05 17 | G96 | 0.4− | 0.1− | | | | | | |

**(142811)∗ 2002 UX$_{36}$**

Discovered 2002 Oct. 31 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.18588 | | (2000.0) | | | |
| $n$ | 0.23693878 | $\omega$ | 285.66301 | | +0.32100016 | −0.94685161 |
| $a$ | 2.5864968 | $\Omega$ | 145.59135 | | +0.88239177 | +0.29104172 |
| $e$ | 0.1721138 | $i$ | 2.10526 | | +0.34401113 | +0.13699180 |
| $P$ | 4.16 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 691 | (4.1+ | 0.5+) | 2002 12 11 | 704 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.3− | | |
| 1996 04 20 | 691 | 0.7+ | 1.2+ | 2002 12 27 | 644 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.2− | | |
| 1996 04 20 | 691 | 0.1+ | 0.9+ | 2002 12 27 | 644 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 1998 12 16 | 704 | 0.4− | 1.0− | 2002 12 27 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 1998 12 16 | 704 | 0.2+ | 1.4− | 2003 01 27 | 704 | 0.9+ | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 1998 12 16 | 704 | 0.2− | 1.0− | 2003 01 27 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 1998 12 16 | 704 | 1.0− | 0.8+ | 2003 01 27 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 1998 12 16 | 704 | 0.3+ | 0.7+ | 2003 01 27 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2002 09 05 | 704 | 0.5− | 0.7− | 2003 01 27 | 704 | 1.4+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.2− | | |
| 2002 09 05 | 704 | 1.1− | 1.1− | 2003 01 28 | 608 | 0.9+ | 1.2+ | 2006 10 21 | 703 | 1.2+ | 0.4− | | |
| 2002 09 05 | 704 | 0.1− | 0.6− | 2003 01 28 | 608 | 0.9+ | 1.3+ | 2006 10 21 | 703 | 1.0− | 0.9+ | | |
| 2002 09 05 | 704 | 0.4− | 0.9− | 2003 01 28 | 608 | 1.1+ | 1.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2002 10 02 | 704 | 0.1− | 0.7+ | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.5+ | 0.3− | | |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2004 03 23 | 691 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.4− | | |
| 2002 10 02 | 704 | 0.2+ | 0.0 | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.4− | | |
| 2002 10 02 | 704 | 0.4+ | 0.1− | 2004 03 27 | 704 | 0.9+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.3− | | |
| 2002 10 30 | 608 | 0.1+ | 0.4− | 2004 03 27 | 704 | 0.5+ | 1.3+ | 2006 10 22 | 691 | 0.3− | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.0 | 0.3− | 2004 03 27 | 704 | 0.5+ | 1.2+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2002 10 30 | 608 | 0.3+ | 0.3− | 2004 03 27 | 704 | 1.3+ | 0.9+ | 2006 10 22 | 704 | 0.5− | 1.0+ |
| 2002 10 31 | 049 | 0.1− | 0.1− | 2004 03 28 | 704 | 1.2+ | 1.3+ | 2006 10 22 | 704 | 0.7+ | 0.1+ |
| 2002 10 31 | 049 | 0.3− | 0.7− | 2004 03 28 | 704 | 0.7− | 0.2+ | 2006 10 22 | 704 | 0.8+ | 0.6− |
| 2002 10 31 | 049 | 0.4− | 0.8− | 2004 03 28 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 0.7+ | 0.4+ |
| 2002 11 02 | 049 | 0.5− | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.6+ | 2006 10 28 | 704 | 0.1− | 0.2+ |
| 2002 11 02 | 049 | 0.5− | 0.0 | 2004 03 28 | 704 | 1.4+ | 0.9+ | 2006 10 28 | 704 | 1.4+ | 0.9+ |
| 2002 11 02 | 049 | 0.6− | 0.0 | 2004 03 28 | 704 | 1.3+ | 0.9+ | 2006 10 28 | 704 | 0.2− | 0.5+ |
| 2002 11 05 | 699 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.3+ | 0.7+ | 2006 10 28 | 704 | 0.1+ | 0.2− |
| 2002 11 05 | 699 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.7+ | 2006 11 07 | 644 | 0.5+ | 0.1+ |
| 2002 11 05 | 699 | 0.2− | 0.4+ | 2004 04 15 | 699 | 1.0− | 0.7+ | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2002 11 05 | 699 | 0.2+ | 0.1+ | 2004 04 15 | 699 | (1.2+ | 2.2+) | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.4− | 1.3+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 11 07 | 704 | 0.1− | 0.2+ | 2004 04 15 | 699 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2002 11 07 | 704 | 0.8+ | 0.4+ | 2006 09 15 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.2+ | 2006 09 15 | 644 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2002 11 07 | 704 | 0.5+ | 0.3+ | 2006 09 15 | 644 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 11 11 | 704 | 0.9− | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2002 11 11 | 704 | 0.0 | 0.6+ | 2006 09 20 | 699 | 0.1+ | 0.7+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2002 11 11 | 704 | 0.0 | 0.8+ | 2006 09 20 | 699 | 0.3+ | 0.1− | 2006 11 16 | G96 | (2.4+ | 2.6−) |
| 2002 11 11 | 704 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.5− | 0.9+ | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2002 11 11 | 704 | 0.2− | 0.2− | 2006 09 23 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.4− | 1.2− |
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2002 11 23 | 644 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2002 11 23 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.9− | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.8+ |
| 2002 12 01 | 704 | 0.2− | 0.0 | 2006 09 27 | 704 | 1.2− | 0.9+ | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2002 12 01 | 704 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.6− | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2002 12 01 | 704 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.5− | 0.7+ | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2002 12 01 | 704 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.8− | 0.1+ |
| 2002 12 01 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 2002 12 02 | 608 | 0.4+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.1+ |
| 2002 12 02 | 608 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.4− | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.4− |
| 2002 12 02 | 608 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.5− | 0.3+ | 2006 11 20 | 704 | 1.7− | 0.3− |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 2.0+ | 1.1+ |
| 2002 12 10 | 644 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 1.7+ |
| 2002 12 10 | 644 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 1.1+ | 1.8+ |
| 2002 12 11 | 704 | 0.4− | 0.8− | 2006 10 12 | 644 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2002 12 11 | 704 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.8− | 1.2+ |
| 2002 12 11 | 704 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.4− | | | | |

**(142812)∗ 2002 UL$_{37}$ = 2002 TA$_{302}$ = 2004 CY$_{23}$**

Discovered 2002 Oct. 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (d, *MPO* 43525), G. V. Williams (*MPO* 61523)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.57787 | | (2000.0) | | | |
| $n$ | 0.23285470 | $\omega$ | 319.88525 | | +0.99478718 | +0.09912618 |
| $a$ | 2.6166525 | $\Omega$ | 34.44819 | | −0.07931431 | +0.89961380 |
| $e$ | 0.0887407 | $i$ | 2.42420 | | −0.06409134 | +0.42528697 |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.0 | 0.8+ | 2004 02 13 | 691 | 0.3+ | 0.2− | 2006 09 20 | 704 | 0.9− | 1.2+ |
| 2002 10 15 | 644 | 0.3+ | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 09 20 | 704 | 1.2− | 0.8+ |
| 2002 10 15 | 644 | 0.3+ | 0.4+ | 2004 02 23 | 704 | 0.9+ | 0.6− | 2006 09 20 | 704 | 0.5+ | 0.8+ |
| 2002 10 31 | 699 | 0.2+ | 0.9+ | 2004 02 23 | 704 | 1.1+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 699 | 0.2− | 0.7+ | 2004 02 23 | 704 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2002 10 31 | 644 | 0.0 | 0.4− | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2002 10 31 | 699 | 0.0 | 0.2+ | 2005 01 17 | 809 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2002 10 31 | 644 | 0.2+ | 0.1− | 2005 01 17 | 809 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.4+ | 0.2− |
| 2002 10 31 | 699 | 0.7− | 0.8− | 2005 01 17 | 809 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.2− |
| 2002 10 31 | 644 | 0.3+ | 0.2− | 2005 05 10 | G96 | 0.2− | 1.4+ | 2006 09 27 | 704 | 0.3− | 0.4+ |
| 2002 11 04 | 699 | 0.9− | 0.6− | 2005 05 10 | G96 | 0.8+ | 1.2+ | 2006 09 27 | 704 | 1.0− | 0.9+ |
| 2002 11 04 | 699 | 0.3− | 0.0 | 2005 05 10 | G96 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.1− | 0.5− |
| 2002 11 04 | 699 | 1.3+ | 1.3+ | 2005 05 10 | G96 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 0.7+ | 0.4− |
| 2002 11 04 | 699 | 1.1− | 0.6− | 2006 09 17 | 704 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.2+ | 1.2+ |
| 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.1− |
| 2002 11 22 | 644 | 0.3− | 0.1+ | 2006 09 17 | 704 | 1.0− | 1.4− | 2006 09 28 | 704 | 1.0− | 0.4+ |
| 2002 11 22 | 644 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.4+ | 1.1− | 2006 09 28 | 704 | 0.1+ | 0.8+ |
| 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.7+ | 1.3− | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.7+ | 0.4− |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2004 02 13 | 691 | 1.1− | 1.1+ | 2006 09 20 | 704 | 0.3+ | 0.9+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 02 13 | 691 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.2+ | 1.2+ | | | | |

**(142813)∗ 2002 UP$_{38}$**

Discovered 2002 Oct. 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.17753 | | (2000.0) | | | |
| $n$ | 0.23598705 | $\omega$ | 18.88416 | | +0.31555239 | −0.94593003 |
| $a$ | 2.5934464 | $\Omega$ | 52.79105 | | +0.85801245 | +0.25061981 |
| $e$ | 0.2737615 | $i$ | 5.41222 | | +0.40526698 | +0.20592737 |
| $P$ | 4.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.4+ | 1.3− | 2002 11 27 | 699 | 0.4− | 0.2+ | 2006 09 12 | 703 | 0.2− | 0.6− |
| 1998 12 17 | 704 | 0.4+ | 0.3− | 2002 11 27 | 699 | 0.3+ | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.7− |
| 1998 12 17 | 704 | (0.5+ | 2.2−) | 2002 11 27 | 699 | 0.0 | 0.6− | 2006 09 18 | 703 | 0.6− | 0.3+ |
| 1998 12 17 | 704 | 0.1− | 1.6− | 2002 11 27 | 699 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.7− | 0.1+ |
| 1999 01 16 | 704 | 0.6− | 0.1− | 2002 12 02 | 704 | 0.6− | 0.2− | 2006 09 18 | 703 | 0.2− | 0.3+ |
| 1999 01 16 | 704 | 0.1+ | 0.2+ | 2002 12 02 | 704 | 0.4− | 0.3− | 2006 09 18 | 703 | 0.8− | 0.9− |
| 1999 01 16 | 704 | 0.6− | 0.1− | 2002 12 02 | 704 | 0.4− | 0.4− | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 1999 01 16 | 704 | 1.2+ | 0.7− | 2002 12 02 | 704 | 0.1− | 0.7− | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 1999 01 16 | 704 | 0.4+ | 1.2+ | 2002 12 02 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 644 | 0.2+ | 0.3+ |
| 2002 09 16 | 608 | 0.5+ | 0.5+ | 2002 12 05 | 704 | 0.3− | 0.9+ | 2006 09 22 | 704 | 1.4+ | 0.4− |
| 2002 09 16 | 608 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.7− | 0.4+ | 2006 09 22 | 704 | 0.5+ | 0.3− |
| 2002 09 16 | 608 | 0.6+ | 0.6+ | 2002 12 05 | 704 | 0.2− | 0.1− | 2006 09 22 | 704 | 1.3+ | 0.2+ |
| 2002 10 31 | 699 | 0.3− | 0.3+ | 2002 12 05 | 704 | 1.1− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 2002 10 31 | 699 | 0.0 | 0.2− | 2002 12 10 | 644 | 0.4+ | 0.8+ | 2006 10 01 | 691 | 0.4+ | 0.1+ |
| 2002 10 31 | 699 | 0.0 | 0.2+ | 2002 12 10 | 644 | 0.4+ | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 699 | 0.5− | 0.6+ | 2002 12 10 | 644 | 0.0 | 0.9+ | 2006 10 16 | 703 | (0.6+ | 1.6+) |
| 2002 11 04 | 644 | 0.3− | 0.1+ | 2002 12 10 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2002 11 04 | 644 | 0.3− | 0.0 | 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | (0.6− | 2.6+) |
| 2002 11 04 | 644 | 0.3− | 0.1+ | 2002 12 10 | 704 | 0.9− | 0.7+ | 2006 10 16 | 703 | (1.6+ | 3.9+) |
| 2002 11 05 | 699 | 0.5− | 0.1− | 2002 12 10 | 704 | 1.5− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 699 | 0.4− | 0.1+ | 2002 12 10 | 704 | 1.0− | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.5− |
| 2002 11 05 | 699 | 0.5− | 0.3+ | 2002 12 27 | 644 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 11 05 | 699 | 1.0− | 0.3+ | 2002 12 27 | 644 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2002 11 06 | 704 | 0.9+ | 0.6+ | 2002 12 27 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 1.3+ | 0.2+ | 2003 01 08 | 704 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.5+ | 0.3− | 2003 01 08 | 704 | 0.9+ | 0.0 | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2002 11 06 | 704 | 0.7+ | 0.1− | 2003 01 08 | 704 | 1.2+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2002 11 06 | 704 | 1.1+ | 0.0 | 2003 01 08 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.3+ |
| 2002 11 10 | 704 | 0.2− | 0.6− | 2003 02 01 | 704 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2002 11 10 | 704 | 0.3− | 0.2− | 2003 02 01 | 704 | 0.9+ | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2002 11 10 | 704 | 0.3− | 0.3− | 2003 02 01 | 704 | 0.6+ | 0.1− | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 11 12 | 644 | 0.6+ | 1.3+ | 2003 02 01 | 704 | (0.5− | 1.7+) | 2006 11 17 | 704 | 0.8+ | 0.6+ |
| 2002 11 12 | 644 | 0.4+ | 0.9+ | 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 644 | 0.3+ | 0.9+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2002 11 25 | 291 | 0.1− | 0.5− | 2004 04 14 | 691 | 0.2+ | 0.7+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 11 25 | 291 | 0.1− | 0.4− | 2006 09 12 | 703 | 0.6− | 0.3+ | | | | |
| 2002 11 25 | 291 | 0.1− | 0.5− | 2006 09 12 | 703 | 0.1+ | 1.2− | | | | |

**(142814)∗ 2002 UR$_{38}$**

Discovered 2002 Oct. 31 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.55062 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26935803 | $\omega$ | 342.25829 | | +0.24191025 | −0.96934185 | |
| $a$ | 2.3745579 | $\Omega$ | 93.72566 | | +0.89538257 | +0.20590590 | |
| $e$ | 0.1475542 | $i$ | 2.47424 | | +0.37385756 | +0.13408628 | |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 05 | 691 | 0.3+ | 0.3− | 2002 11 06 | 704 | 0.4+ | 0.2+ | 2002 12 10 | 644 | 0.2+ | 0.4+ |
| 1991 11 05 | 691 | 0.7+ | 0.2+ | 2002 11 06 | 704 | 1.1+ | 0.4+ | 2004 04 16 | 691 | 0.0 | 0.3+ |
| 1991 11 05 | 691 | 0.5+ | 0.1+ | 2002 11 06 | 704 | 0.0 | 0.7− | 2004 04 16 | 691 | 0.0 | 0.3+ |
| 1991 11 08 | 691 | 0.7− | 0.7+ | 2002 11 06 | 704 | 0.6+ | 0.9− | 2004 04 16 | 691 | 0.0 | 0.0 |
| 1991 11 08 | 691 | 0.8− | 0.4+ | 2002 11 06 | 704 | 0.4+ | 0.4− | 2004 04 23 | 691 | 0.3+ | 0.7+ |
| 1991 11 08 | 691 | 1.1− | 0.1+ | 2002 11 11 | 704 | 0.4+ | 1.0+ | 2004 04 23 | 691 | 0.3− | 0.5+ |
| 2000 03 04 | 704 | 0.2+ | 0.2− | 2002 11 11 | 704 | 0.4+ | 0.7+ | 2004 04 23 | 691 | 0.1+ | 0.3+ |
| 2000 03 04 | 704 | 1.4+ | 0.6− | 2002 11 11 | 704 | 0.8+ | 0.5+ | 2005 07 09 | 691 | 0.2− | 0.3+ |
| 2000 03 04 | 704 | 1.9+ | 0.9+ | 2002 11 11 | 704 | 0.4+ | 0.0 | 2005 07 09 | 691 | 0.1− | 0.2+ |
| 2000 03 04 | 704 | 0.5+ | 1.2+ | 2002 11 11 | 704 | 0.5+ | 0.2+ | 2005 07 09 | 691 | 0.1− | 0.2+ |
| 2000 03 04 | 704 | 1.1+ | 0.3− | 2002 11 11 | 704 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.7− | 0.2− |
| 2000 03 04 | 704 | 0.0 | 0.5− | 2002 11 11 | 704 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.7− | 0.1+ |
| 2000 03 04 | 704 | 0.4+ | 1.5+ | 2002 11 11 | 704 | 0.2+ | 1.2+ | 2006 10 28 | G96 | 0.5− | 0.0 |
| 2000 03 04 | 704 | 1.3+ | 0.7− | 2002 11 11 | 704 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 1.4− | 0.8− |
| 2002 10 11 | 704 | 0.0 | 0.8+ | 2002 11 11 | 704 | 0.5+ | 0.9+ | 2006 11 13 | G96 | 1.2− | 0.1+ |
| 2002 10 11 | 704 | (0.6+ | 1.6+) | 2002 11 22 | 644 | 0.6− | 0.4+ | 2006 11 13 | G96 | 0.6− | 0.1+ |
| 2002 10 11 | 704 | (0.8+ | 2.0+) | 2002 11 22 | 644 | 0.6− | 0.2+ | 2006 11 13 | G96 | 1.2− | 0.4+ |
| 2002 10 31 | 644 | 0.2+ | 0.2− | 2002 11 22 | 644 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.1− | 1.2− |
| 2002 10 31 | 644 | 0.1+ | 0.1+ | 2002 12 01 | 704 | 0.5− | 0.6− | 2006 11 27 | G96 | 0.8− | 0.3− |
| 2002 10 31 | 644 | 0.2+ | 0.2+ | 2002 12 01 | 704 | (0.2+ | 1.5−) | 2006 11 27 | G96 | 0.4− | 0.2− |
| 2002 11 04 | 644 | 0.3− | 0.3+ | 2002 12 01 | 704 | (1.7− | 0.4−) | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2002 11 04 | 644 | 0.5− | 0.1− | 2002 12 10 | 644 | 0.5+ | 0.0 | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2002 11 04 | 644 | 0.2− | 0.2+ | 2002 12 10 | 644 | 0.3+ | 0.5+ | | | | |

**(142815)∗ 2002 US$_{39}$**

Discovered 2002 Oct. 31 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.66412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23139865 | $\omega$ | 343.37190 | | +0.93128677 | −0.36253306 | |
| $a$ | 2.6276177 | $\Omega$ | 37.94506 | | +0.34048803 | +0.83141134 | |
| $e$ | 0.1084718 | $i$ | 3.32864 | | +0.12951004 | +0.42109970 | |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.5+ | 1.4− | 2002 12 02 | 704 | 0.4+ | 0.3− | 2006 09 17 | 704 | (1.1− | 2.2+) |
| 1998 12 17 | 704 | 1.1+ | 0.3− | 2002 12 02 | 704 | 1.0+ | 0.4− | 2006 09 17 | 704 | 0.9− | 0.2+ |
| 1998 12 17 | 704 | 0.9+ | 0.6− | 2002 12 02 | 704 | (2.3+ | 0.4−) | 2006 09 17 | 704 | 0.5− | 0.0 |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.2+ |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.5− | 0.3− |
| 2000 03 10 | 704 | 1.0+ | 1.3+ | 2002 12 10 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.1− |
| 2000 03 10 | 704 | 1.3+ | 1.0+ | 2003 01 04 | 704 | 1.2− | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2000 03 10 | 704 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 699 | 0.4− | 0.7+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2003 01 04 | 704 | 1.4+ | 0.0 | 2006 09 18 | 699 | 0.2− | 0.8+ |
| 2002 10 31 | 699 | 0.2+ | 0.2− | 2004 02 19 | 704 | 0.3− | 0.8− | 2006 09 18 | 699 | 0.1− | 0.3− |
| 2002 10 31 | 644 | (1.5+ | 0.5+) | 2004 02 19 | 704 | 1.2+ | 0.5− | 2006 09 18 | 699 | 0.1+ | 0.7+ |
| 2002 10 31 | 699 | 1.2− | 0.6− | 2004 02 19 | 704 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.0 |
| 2002 10 31 | 644 | 1.0+ | 0.5+ | 2004 02 19 | 704 | 0.8− | 1.3+ | 2006 09 20 | 704 | 0.6+ | 0.9+ |
| 2002 10 31 | 699 | 0.3+ | 0.3+ | 2004 02 19 | 704 | 0.8+ | 0.5+ | 2006 09 20 | 704 | 0.5+ | 0.1+ |
| 2002 10 31 | 644 | 0.5+ | 0.9+ | 2004 02 19 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 704 | 1.0+ | 0.2+ |
| 2002 10 31 | 699 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.0 |
| 2002 11 04 | 644 | 0.2+ | 1.3+ | 2004 02 19 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.5+ |
| 2002 11 04 | 644 | 0.1− | 1.2+ | 2004 02 19 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.0 | 1.1+ |
| 2002 11 04 | 644 | 0.0 | 1.2+ | 2004 02 19 | 704 | 0.7− | 0.4− | 2006 09 27 | 704 | 0.1+ | 0.9+ |
| 2002 11 05 | 704 | 0.2− | 0.3+ | 2004 02 19 | 704 | 0.3+ | 0.9+ | 2006 09 27 | 704 | 0.6+ | 0.4+ |
| 2002 11 05 | 704 | 0.1− | 0.0 | 2004 02 19 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.0 | 1.3+ |
| 2002 11 05 | 704 | 0.2− | 0.4− | 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 704 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.3− | 0.7− | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.6+ | 0.8+ |
| 2002 11 06 | 704 | 0.4+ | 0.4− | 2004 02 23 | 704 | 0.5− | 0.2− | 2006 09 28 | 704 | 0.3+ | 0.7+ |
| 2002 11 06 | 704 | 0.3− | 0.5+ | 2004 02 23 | 704 | 0.3+ | 1.4+ | 2006 10 01 | 704 | 1.2+ | 0.2− |
| 2002 11 06 | 704 | 0.3− | 0.5− | 2004 03 19 | 704 | 0.3− | 0.6− | 2006 10 01 | 704 | 0.7+ | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.7+ | 2006 10 01 | 704 | 0.4− | 0.1+ |
| 2002 11 14 | 704 | 0.3− | 0.3− | 2004 03 19 | 704 | 0.9+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 1.3− | 0.4− | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 0.7− | 0.6− | 2004 03 22 | 704 | (0.6+ | 1.8+) | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 11 14 | 704 | 0.4− | 0.4− | 2004 03 22 | 704 | (0.2+ | 1.6+) | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2002 11 14 | 704 | 1.0− | 0.3+ | 2004 03 22 | 704 | 1.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 23 | 644 | 0.1− | 0.1− | 2005 05 22 | 644 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 23 | 644 | 0.0 | 0.2− | 2005 05 22 | 644 | 0.7+ | 0.9+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2002 11 23 | 644 | 0.3+ | 0.2− | 2005 05 22 | 644 | 0.7+ | 0.9+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 12 01 | 608 | 0.7− | 0.5+ | 2006 09 12 | 703 | 1.0− | 1.0− | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2002 12 01 | 608 | 1.3− | 0.3+ | 2006 09 12 | 703 | 0.1− | 0.6− | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2002 12 01 | 608 | 0.9− | 0.3+ | 2006 09 12 | 703 | 0.3− | 0.3− | | | | |
| 2002 12 02 | 704 | 1.0+ | 0.8− | 2006 09 12 | 703 | 1.4− | 1.0− | | | | |

**(142816)∗ 2002 UQ$_{40}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.14620 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21790783 | $\omega$ | 276.68331 | | +0.23333359 | −0.97108464 | |
| $a$ | 2.7349800 | $\Omega$ | 159.60790 | | +0.93958417 | +0.21177903 | |
| $e$ | 0.1668453 | $i$ | 8.33293 | | +0.25047359 | +0.11020098 | |
| $P$ | 4.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.0 | 1.2− | 2002 12 08 | 644 | 0.6− | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.2+ |
| 1995 03 25 | 691 | (0.0 | 2.2−) | 2002 12 08 | 644 | 0.7− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.6+ |
| 1995 03 25 | 691 | 0.0 | 1.3− | 2002 12 08 | 644 | 0.8− | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 1997 08 11 | 691 | 0.0 | 0.2+ | 2002 12 13 | 644 | 0.6− | 0.9+ | 2006 08 27 | 691 | 0.8+ | 1.4− |
| 1997 08 11 | 691 | 0.3− | 0.2+ | 2002 12 13 | 644 | 0.1− | 0.7+ | 2006 08 27 | 691 | 0.0 | 0.3+ |
| 1997 08 11 | 691 | 0.1+ | 0.0 | 2002 12 13 | 644 | 0.3− | 0.8+ | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2000 04 03 | 691 | 0.4− | 0.8+ | 2004 03 15 | 703 | 0.0 | 0.9+ | 2006 08 28 | 703 | (1.3− | 1.7+) |
| 2000 04 03 | 691 | 0.4− | 0.5+ | 2004 03 15 | 703 | (0.9− | 2.1+) | 2006 08 28 | 703 | 0.4− | 0.3+ |
| 2000 04 03 | 691 | 0.1− | 0.5+ | 2004 03 15 | 703 | (2.8+ | 0.9+) | 2006 08 28 | 691 | 0.2+ | 0.4+ |
| 2002 10 31 | 704 | 0.2− | 0.9+ | 2004 03 15 | 703 | 0.7− | 0.9+ | 2006 08 28 | 703 | 1.1− | 0.1− |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 08 28 | 703 | 0.8− | 0.1− |
| 2002 10 31 | 704 | 0.2+ | 1.3+ | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.9− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2002 10 31 | 704 | 0.3− | 0.9− | 2004 03 19 | 704 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2002 11 03 | 608 | 0.4− | 1.4− | 2004 03 22 | 704 | (0.8+ | 2.1+) | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2002 11 03 | 608 | 0.1+ | 0.8− | 2004 03 22 | 704 | 0.3− | 1.4+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2002 11 03 | 608 | 0.3− | 0.9− | 2004 03 22 | 704 | 0.3− | 1.5+ | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 691 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2002 11 05 | 704 | 0.5+ | 0.2+ | 2004 04 16 | 691 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2002 11 30 | 704 | 0.8+ | 0.3+ | 2004 04 16 | 691 | 0.5+ | 0.3− | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2002 11 30 | 704 | 0.5+ | 1.1− | 2006 07 25 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2002 11 30 | 704 | 1.2+ | 0.2− | 2006 07 25 | G96 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2002 11 30 | 704 | 0.4− | 0.8+ | 2006 07 25 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2002 12 01 | 608 | 0.4+ | 0.2+ | 2006 07 25 | G96 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.8+ | 0.2+ |
| 2002 12 01 | 608 | 0.3+ | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.6− | 0.8− |
| 2002 12 01 | 608 | 0.4+ | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.8+ | 0.5− |
| 2002 12 02 | 704 | 0.9− | 0.9+ | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2002 12 02 | 704 | 0.3− | 0.1− | 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2002 12 02 | 704 | 0.2− | 0.4+ | 2006 08 23 | 644 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.6− | 0.9− |
| 2002 12 02 | 704 | 0.1− | 0.4+ | 2006 08 23 | 644 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.6− |
| 2002 12 02 | 704 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.2+ |

**(142817)∗ 2002 UV$_{45}$ = 1997 MW$_{10}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47226)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.04547 | | (2000.0) | | | |
| $n$ | 0.23278608 | $\omega$ | 233.57550 | | +0.85030502 | +0.49653645 |
| $a$ | 2.6171666 | $\Omega$ | 96.04713 | | −0.40902196 | +0.83206739 |
| $e$ | 0.1385654 | $i$ | 10.10348 | | −0.33118334 | +0.24721533 |
| $P$ | 4.23 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 28 | 704 | 0.9+ | 1.1+ | 2002 11 05 | 704 | 1.3− | 0.7+ | 2006 09 12 | 704 | 0.4+ | 0.2− |
| 1997 06 28 | 704 | 0.9+ | 1.8+ | 2002 11 12 | 704 | 0.6− | 0.7+ | 2006 09 17 | 699 | 0.4− | 0.2+ |
| 1997 06 28 | 704 | 0.3− | 1.1+ | 2002 11 12 | 704 | (2.1− | 0.6+) | 2006 09 17 | 699 | 0.1− | 0.9+ |
| 1997 06 29 | 704 | 0.3+ | 1.1+ | 2002 11 12 | 704 | (1.8− | 0.4−) | 2006 09 17 | 699 | 0.2+ | 0.2+ |
| 1997 06 29 | 704 | 0.6− | 0.4+ | 2002 11 30 | 704 | 0.8− | 0.1− | 2006 09 17 | 699 | 0.2+ | 0.5+ |
| 1997 06 29 | 704 | 1.2+ | 0.7+ | 2002 11 30 | 704 | 0.7− | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.3− |
| 1997 06 29 | 704 | 0.3+ | 1.1− | 2002 11 30 | 704 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.3+ |
| 1997 06 29 | 704 | 0.3+ | 0.0 | 2002 11 30 | 704 | (0.5− | 1.6+) | 2006 09 19 | 703 | 0.3− | 0.1− |
| 2000 03 04 | 704 | 0.2− | 1.8+ | 2002 11 30 | 608 | 0.8− | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2000 03 04 | 704 | 0.9+ | 0.3+ | 2002 11 30 | 608 | 1.0− | 0.2+ | 2006 09 25 | 703 | 0.2+ | 0.6− |
| 2000 03 04 | 704 | 0.5+ | 0.7+ | 2002 11 30 | 608 | 0.7− | 0.6+ | 2006 09 25 | 703 | 0.3+ | 0.1+ |
| 2000 03 04 | 704 | 0.7+ | 1.7+ | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.0 | 0.0 |
| 2000 03 04 | 704 | 0.9+ | 0.3− | 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 0.7− | 0.1− |
| 2001 05 25 | 704 | 0.6− | 0.7+ | 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2001 05 25 | 704 | 0.4− | 1.0+ | 2004 02 15 | 704 | 1.1+ | 1.0+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2001 05 25 | 704 | 1.2− | 0.4+ | 2004 02 15 | 704 | 0.2+ | 0.8+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2001 05 25 | 704 | 0.3− | 1.1+ | 2004 02 15 | 704 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 05 25 | 704 | 0.4− | 1.4+ | 2005 03 31 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.4− | 0.6+ | 2005 03 31 | 691 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 10 31 | 704 | 0.6− | 0.7− | 2005 03 31 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2002 10 31 | 704 | 0.5− | 0.6+ | 2005 06 03 | 703 | 0.8− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.2− | 1.0+ | 2005 06 03 | 703 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.9+ | 1.0+ | 2005 06 03 | 703 | 0.4+ | 0.9+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | 0.0 | 0.9+ | 2005 06 03 | 703 | 0.8− | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 11 05 | 704 | 1.0− | 1.0+ | 2006 09 12 | 704 | 1.3+ | 1.2+ | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2002 11 05 | 704 | (0.9+ | 2.1+) | 2006 09 12 | 704 | 0.7+ | 0.2+ | | | | |

**(142818)∗ 2002 UT$_{46}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.14197 | | (2000.0) | | | |
| $n$ | 0.23878666 | $\omega$ | 174.33157 | | +0.28232679 | +0.95436332 |
| $a$ | 2.5731356 | $\Omega$ | 112.03730 | | −0.88423322 | +0.29825239 |
| $e$ | 0.2728222 | $i$ | 6.03016 | | −0.37205267 | +0.01536790 |
| $P$ | 4.13 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.4− | 0.6+ | 2002 11 06 | 699 | 0.0 | 0.3+ | 2006 09 21 | 699 | 1.2+ | 0.7+ |
| 2001 03 19 | 704 | 1.0+ | 0.3+ | 2002 11 06 | 699 | (1.4− | 1.7+) | 2006 09 21 | 699 | 0.7+ | 0.4+ |
| 2001 03 19 | 704 | 0.2+ | 0.1+ | 2002 11 06 | 699 | 0.9+ | 1.4− | 2006 09 25 | 699 | 1.1− | 0.8− |
| 2001 03 19 | 704 | 0.4+ | 0.3+ | 2005 03 03 | 703 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.6+ |
| 2001 03 30 | 704 | 0.2− | 0.4+ | 2005 03 03 | 703 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.6− | 0.4+ |
| 2001 03 30 | 704 | 0.8− | 0.5+ | 2005 03 03 | 703 | 1.0− | 0.2− | 2006 09 25 | 699 | 0.6+ | 0.4+ |
| 2001 03 30 | 704 | 0.7− | 1.0+ | 2005 03 03 | 703 | 0.7+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.5− |
| 2001 04 15 | 704 | (1.4+ | 2.3+) | 2005 03 09 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.5+ | 0.1+ |
| 2001 04 15 | 704 | 0.7+ | 1.1+ | 2005 03 09 | 704 | 0.9− | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 2001 04 15 | 704 | (2.0+ | 0.5+) | 2005 03 09 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.6− | 0.4− |
| 2001 04 15 | 704 | 0.8+ | 0.1+ | 2005 03 09 | 704 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.0 | 0.6+ |
| 2002 10 01 | 704 | 0.2− | 0.2+ | 2005 03 16 | 703 | (0.9− | 3.6−) | 2006 09 29 | 699 | 0.7+ | 0.3− |
| 2002 10 01 | 704 | 0.5+ | 1.0+ | 2005 03 16 | 703 | (3.3+ | 6.4−) | 2006 09 29 | 699 | 0.5+ | 0.4+ |
| 2002 10 01 | 704 | 0.1+ | 0.9− | 2005 03 16 | 703 | 0.8+ | 0.2− | 2006 09 29 | 699 | 0.1+ | 0.4+ |
| 2002 10 01 | 704 | 0.2+ | 0.5− | 2005 03 16 | 703 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.1− | 0.1+ |
| 2002 10 09 | 699 | 0.8− | 0.1+ | 2005 03 17 | 703 | 0.1+ | 0.8− | 2006 09 30 | 704 | 0.4− | 0.2− |
| 2002 10 09 | 699 | 0.9− | 0.2+ | 2005 03 17 | 703 | 0.1+ | 0.7+ | 2006 09 30 | 704 | 1.1− | 1.1+ |
| 2002 10 09 | 699 | 0.2− | 0.4+ | 2005 03 17 | 703 | 0.3+ | 0.3− | 2006 09 30 | 704 | 0.5+ | 0.8− |
| 2002 10 09 | 699 | 0.3− | 0.2+ | 2005 03 17 | 703 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 10 31 | 704 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2002 10 31 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | (0.1+ | 1.7−) | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2002 10 31 | 704 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 2002 10 31 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 703 | (2.2+ | 0.4−) | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2002 10 31 | 608 | 0.0 | 0.5− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 1.0− | 0.5+ |
| 2002 10 31 | 608 | 0.0 | 0.4− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 10 31 | 608 | 0.2− | 0.3− | 2006 09 21 | 699 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 699 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.6+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2− |

**(142819)∗ 2002 UX$_{46}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.78858 | | (2000.0) | | | |
| $n$ | 0.23371121 | $\omega$ | 57.57890 | | −0.42898849 | −0.87857762 |
| $a$ | 2.6102555 | $\Omega$ | 59.22705 | | +0.72483870 | −0.47349150 |
| $e$ | 0.0248631 | $i$ | 14.14227 | | +0.53905263 | −0.06250729 |
| $P$ | 4.22 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 08 | 691 | 0.0 | 0.1+ | 2002 10 09 | 699 | 0.4− | 0.0 | 2004 03 17 | 644 | 0.3+ | 0.3+ |
| 1992 04 08 | 691 | 0.1− | 0.2− | 2002 10 09 | 699 | 0.1− | 0.1+ | 2004 03 17 | 644 | 0.1+ | 0.1− |
| 1992 04 08 | 691 | 0.2+ | 0.2− | 2002 10 09 | 699 | (1.6+ | 0.9+) | 2004 03 18 | 645 | 0.1− | 0.0 |
| 1992 04 29 | 691 | 0.3− | 0.6− | 2002 10 31 | 704 | (0.5− | 1.9+) | 2004 03 18 | 645 | 0.1− | 0.0 |
| 1992 04 29 | 691 | 0.1− | 0.4+ | 2002 10 31 | 704 | 0.3+ | 0.4+ | 2004 04 16 | 645 | 0.0 | 0.1− |
| 1992 04 29 | 691 | 0.3− | 0.3+ | 2002 10 31 | 704 | 0.4+ | 0.0 | 2004 04 16 | 645 | 0.1+ | 0.1+ |
| 1998 11 23 | 691 | 0.2+ | 0.0 | 2002 10 31 | 704 | 0.2− | 0.1+ | 2005 01 24 | 809 | 0.2− | 0.2− |
| 1998 11 23 | 691 | 0.0 | 0.1− | 2002 10 31 | 704 | 0.0 | 0.4+ | 2005 01 24 | 809 | 0.3+ | 0.2− |
| 1998 11 23 | 691 | 0.1− | 0.3− | 2002 10 31 | 608 | 0.6− | 1.0− | 2005 01 24 | 809 | 0.1+ | 0.0 |
| 1998 12 11 | 691 | 0.4+ | 0.5− | 2002 10 31 | 608 | 0.5− | 0.9− | 2006 09 25 | 703 | (2.3− | 1.1+) |
| 1998 12 11 | 691 | 0.3+ | 0.2− | 2002 10 31 | 608 | 1.3− | 1.1− | 2006 09 25 | 703 | 0.7+ | 0.3+ |
| 1998 12 11 | 691 | 0.3+ | 0.1+ | 2002 11 06 | 699 | (0.0 | 1.6+) | 2006 09 25 | 703 | 0.9+ | 0.9+ |
| 2000 03 04 | 704 | 0.2+ | 0.5− | 2002 11 06 | 699 | 1.0− | 0.6+ | 2006 09 25 | 703 | 0.0 | 1.2− |
| 2000 03 04 | 704 | 1.2+ | 0.7− | 2002 11 06 | 699 | 0.4+ | 1.2+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2000 03 04 | 704 | 0.2− | 0.6+ | 2002 11 06 | 699 | 0.8− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 03 04 | 704 | 0.2− | 0.6− | 2004 02 14 | 704 | (0.4+ | 1.8+) | 2006 10 10 | 644 | 0.4− | 1.1+ |
| 2000 03 26 | 699 | 0.5+ | 0.3+ | 2004 02 14 | 704 | 0.7− | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.1− |
| 2000 03 26 | 699 | 0.9+ | 0.1+ | 2004 02 14 | 704 | 0.2+ | 1.4+ | 2006 10 21 | 703 | (2.4+ | 1.3+) |
| 2000 03 26 | 699 | 0.3+ | 0.2+ | 2004 02 14 | 704 | 0.3+ | 1.2+ | 2006 10 21 | 703 | 0.1+ | 1.0+ |
| 2000 03 26 | 699 | 0.4+ | 0.6− | 2004 02 14 | 704 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.6+ |
| 2002 10 09 | 699 | (0.5+ | 1.6+) | 2004 03 17 | 644 | 0.3+ | 0.4+ | | | | |

**(142820)∗ 2002 UU$_{49}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.61268 | | (2000.0) | | | |
| $n$ | 0.22448257 | $\omega$ | 21.40630 | | +0.90446404 | −0.42644632 |
| $a$ | 2.6813137 | $\Omega$ | 3.87468 | | +0.36837745 | +0.76981595 |
| $e$ | 0.3381523 | $i$ | 7.99514 | | +0.21504153 | +0.47489677 |
| $P$ | 4.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 0.5− | 0.2+ | 2004 03 17 | 691 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.3− |
| 1995 02 05 | 691 | 0.1+ | 0.5− | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.2− |
| 1995 02 05 | 691 | 0.0 | 0.5− | 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 1999 02 12 | 699 | 0.3+ | 0.1+ | 2004 04 25 | 691 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 1999 02 12 | 699 | (0.7− | 2.4+) | 2006 08 15 | 644 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.9− | 0.2+ |
| 1999 02 12 | 699 | 1.0+ | 1.4+ | 2006 08 15 | 644 | 0.3− | 0.1− | 2006 09 30 | 703 | 1.0− | 0.5− |
| 2002 09 06 | 704 | 0.0 | 0.5+ | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.6− | 2006 08 15 | F84 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.2+ | 2006 08 15 | F84 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 1.1+ | 1.0+ | 2006 08 15 | F84 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2002 09 06 | 704 | 1.2+ | 0.4− | 2006 08 16 | E12 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2006 08 16 | E12 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.1− | 0.7− | 2006 08 16 | E12 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.0 | 0.0 | 2006 08 16 | E12 | 0.2− | 0.2− | 2006 10 23 | 704 | 0.4+ | 0.2− |
| 2002 10 04 | 704 | 0.9− | 0.6− | 2006 08 28 | 699 | 0.2− | 0.1+ | 2006 10 23 | 704 | 0.5+ | 0.5+ |
| 2002 10 12 | 704 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.4+ | 0.4+ |
| 2002 10 12 | 704 | 0.3+ | 0.4− | 2006 08 28 | 699 | 0.3− | 0.2− | 2006 10 23 | 704 | 0.5+ | 0.2− |
| 2002 10 12 | 704 | 0.2+ | 0.5− | 2006 08 28 | 699 | 0.4− | 0.2+ | 2006 10 23 | 704 | 0.6+ | 0.3+ |
| 2002 10 12 | 704 | 0.0 | 0.7− | 2006 08 28 | E12 | 0.6− | 0.0 | 2006 10 28 | 704 | 1.2+ | 0.1− |
| 2002 10 31 | 704 | 0.2+ | 0.4+ | 2006 08 28 | E12 | 0.6− | 0.0 | 2006 10 28 | 704 | (1.6− | 1.0+) |
| 2002 10 31 | 704 | 0.6− | 0.5+ | 2006 08 28 | E12 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 1.1+ | 2006 08 28 | E12 | 0.2− | 0.1− | 2006 10 28 | 704 | (1.5− | 0.9+) |
| 2002 10 31 | 704 | 0.2+ | 0.4− | 2006 09 16 | 704 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2002 11 06 | 704 | (0.0 | 1.6+) | 2006 09 16 | 704 | 0.1+ | 0.2− | 2006 10 28 | 704 | 1.0− | 0.6+ |
| 2002 11 06 | 704 | 0.5− | 0.5+ | 2006 09 16 | 704 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.2+ | 0.6− | 2006 11 10 | 644 | 0.5− | 0.3+ |
| 2002 11 06 | 704 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.4+ |
| 2002 11 15 | 704 | 0.5− | 1.4− | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 2002 11 15 | 704 | 0.4+ | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2002 11 15 | 704 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.0 |
| 2002 11 15 | 704 | 0.3− | 0.2− | 2006 09 19 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2002 11 15 | 704 | 0.7− | 0.2− | 2006 09 19 | 704 | 0.3− | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.2+ |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2006 09 19 | 704 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2006 09 19 | 704 | 0.1+ | 0.6− | 2006 11 13 | G96 | 0.2+ | 0.2+ |
| 2002 12 06 | 704 | 0.1− | 0.5− | 2006 09 22 | 704 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.1+ |
| 2002 12 06 | 704 | 1.4+ | 1.2− | 2006 09 22 | 704 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2002 12 15 | 704 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 0.2− |
| 2002 12 15 | 704 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2002 12 15 | 704 | 0.8+ | 0.6+ | 2006 09 22 | 704 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2002 12 15 | 704 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2002 12 15 | 704 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.5− | 1.5+ |
| 2002 12 29 | 704 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2002 12 29 | 704 | 0.5+ | 0.4− | 2006 09 25 | 699 | 0.2− | 0.6+ | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2002 12 29 | 704 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.4+ |
| 2003 01 04 | 704 | (0.0 | 2.0+) | 2006 09 26 | 704 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2003 01 04 | 704 | (0.0 | 1.9+) | 2006 09 26 | 704 | 0.6+ | 0.6+ | 2006 11 21 | 704 | 0.8− | 0.3+ |
| 2003 01 04 | 704 | (0.3+ | 2.2+) | 2006 09 26 | 704 | 0.5+ | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2003 01 13 | 704 | 0.4− | 1.1+ | 2006 09 26 | 704 | 0.4+ | 0.8+ | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2003 01 13 | 704 | 0.9− | 1.2+ | 2006 09 28 | 704 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2003 01 13 | 704 | 0.5+ | 0.6+ | 2006 09 28 | 704 | 0.7+ | 0.4− | 2006 11 21 | 704 | 0.6− | 0.1− |
| 2003 01 31 | 704 | 0.8+ | 0.6− | 2006 09 28 | 704 | 0.1+ | 0.9+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2003 01 31 | 704 | 0.5− | 0.7− | 2006 09 28 | 704 | 0.1+ | 1.0+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2003 01 31 | 704 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.8+ | 0.6− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2004 03 17 | 691 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.2− | | | | |
| 2004 03 17 | 691 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.3− | | | | |

**(142821)∗ 2002 UB$_{50}$**

Discovered 2002 Oct. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.66256 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21901267 | $\omega$ | 249.15715 | | +0.95390591 | −0.21246714 | |
| $a$ | 2.7257743 | $\Omega$ | 122.54547 | | +0.26474456 | +0.92835447 | |
| $e$ | 0.2090511 | $i$ | 14.56213 | | −0.14132883 | +0.30498474 | |
| $P$ | 4.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 691 | 0.1+ | 0.4− | 2002 12 15 | 608 | 0.3+ | 0.2− | 2006 08 15 | 428 | 0.2− | 0.3− |
| 1999 01 14 | 691 | 0.0 | 0.3− | 2002 12 15 | 608 | 0.2+ | 0.4− | 2006 08 16 | E12 | 0.1− | 0.2+ |
| 1999 01 14 | 691 | 0.2+ | 0.4− | 2003 01 02 | 704 | 0.1− | 0.9+ | 2006 08 16 | E12 | 0.4− | 0.1− |
| 2002 09 16 | 683 | 0.8+ | 0.9− | 2003 01 02 | 704 | (0.1+ | 1.6+) | 2006 08 16 | E12 | 0.0 | 0.0 |
| 2002 09 16 | 683 | 0.3+ | 1.3− | 2003 01 02 | 704 | 0.5+ | 0.7+ | 2006 08 16 | E12 | 0.4+ | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.4+ | 2003 01 02 | 704 | 0.1+ | 0.8+ | 2006 08 28 | E12 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.7− | 0.3− | 2003 01 26 | 644 | 0.1− | 0.3+ | 2006 08 28 | E12 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.3− | 0.0 | 2003 01 26 | 644 | 0.3− | 0.5+ | 2006 08 28 | E12 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 0.4+ | 2003 01 26 | 644 | 0.6− | 0.5+ | 2006 08 28 | E12 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.3− | 0.4− | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 09 17 | 699 | 0.4− | 0.4− |
| 2002 10 31 | 704 | 0.1+ | 0.3+ | 2004 02 11 | 644 | 0.2− | 0.1− | 2006 09 17 | 699 | 0.0 | 0.3+ |
| 2002 10 31 | 704 | 0.5− | 0.3− | 2004 02 11 | 644 | 0.4− | 1.1+ | 2006 09 17 | 699 | 0.1+ | 0.1− |
| 2002 10 31 | 704 | 0.1+ | 0.1+ | 2004 03 14 | 704 | 0.3+ | 1.1+ | 2006 09 17 | 699 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 0.5− | 2004 03 14 | 704 | 0.5− | 1.3+ | 2006 09 27 | E12 | 0.6+ | 0.1+ |
| 2002 10 31 | 704 | 0.9− | 0.6− | 2004 03 14 | 704 | 0.9+ | 1.1− | 2006 09 27 | E12 | 0.3+ | 0.0 |
| 2002 11 07 | 699 | 0.2− | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2006 09 27 | E12 | 0.4+ | 0.0 |
| 2002 11 07 | 699 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.8− | 0.3+ | 2006 09 27 | E12 | 0.1− | 0.2+ |
| 2002 11 07 | 699 | 0.3− | 0.3+ | 2004 03 23 | 704 | (0.4− | 1.8+) | 2006 10 28 | E12 | 0.1+ | 0.7+ |
| 2002 11 07 | 699 | 0.3− | 0.3+ | 2004 03 23 | 704 | 1.3+ | 0.1+ | 2006 10 28 | E12 | 0.0 | 0.4+ |
| 2002 11 12 | 644 | 0.5− | 0.2− | 2005 05 04 | 703 | 0.6− | 0.6− | 2006 10 28 | E12 | 0.3+ | 0.5+ |
| 2002 11 12 | 644 | 0.5− | 0.0 | 2005 05 04 | 703 | 0.8− | 0.8− | 2006 10 28 | E12 | 0.3+ | 0.5+ |
| 2002 11 12 | 644 | 0.2− | 0.3+ | 2005 05 04 | 703 | 0.9− | 0.6+ | 2006 11 17 | 703 | 0.1+ | 1.3− |
| 2002 11 30 | 704 | 0.0 | 0.5+ | 2005 05 04 | 703 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2002 11 30 | 704 | 0.1− | 0.3− | 2006 08 14 | F84 | 0.9− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.6− |
| 2002 11 30 | 704 | 0.1+ | 0.1+ | 2006 08 14 | F84 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2002 11 30 | 704 | 0.0 | 1.2− | 2006 08 14 | F84 | 0.6+ | 0.1+ | | | | |
| 2002 12 15 | 608 | 1.1+ | 0.6+ | 2006 08 15 | 428 | 0.5+ | 0.1+ | | | | |

**(142822)∗ 2002 US$_{65}$ = 2004 BJ$_5$**

Discovered 2002 Oct. 30 by the Sloan Digital Sky Survey at Apache Point. Id. G. V. Williams (*MPO* 56719)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.79225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26752297 | $\omega$ | 121.04287 | | −0.98297608 | +0.17885927 | |
| $a$ | 2.3854043 | $\Omega$ | 69.28884 | | −0.18014585 | −0.89321755 | |
| $e$ | 0.1236341 | $i$ | 2.57601 | | −0.03613157 | −0.41251881 | |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2004 02 11 | 691 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.9+ | 0.8+ |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2004 02 11 | 691 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.2− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 02 11 | 691 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.1− | 0.2− |
| 2002 10 31 | 645 | 0.1− | 0.0 | 2004 02 12 | 691 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.5+ | 0.1+ |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.0 |
| 2002 11 08 | 645 | 0.1− | 0.0 | 2004 02 12 | 691 | 0.0 | 0.2+ | 2004 04 16 | 645 | 0.1− | 0.1− |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 13 | 699 | 0.2− | 0.5+ | 2004 04 16 | 645 | 0.0 | 0.2− |
| 2004 01 16 | 644 | 0.1− | 0.2+ | 2004 02 13 | 699 | 0.8+ | 0.2− | 2005 07 02 | 691 | 0.0 | 0.2+ |
| 2004 01 16 | 644 | 0.1− | 0.3+ | 2004 02 13 | 699 | 0.0 | 0.2− | 2005 07 02 | 691 | 0.1− | 0.0 |
| 2004 01 17 | 644 | 0.0 | 0.3+ | 2004 02 13 | 699 | (1.9− | 0.4+) | 2005 07 02 | 691 | 0.0 | 0.3+ |
| 2004 01 17 | 644 | 0.6− | 0.2− | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2005 07 11 | 691 | 0.2− | 0.4+ |
| 2004 01 17 | 644 | 0.1+ | 0.2+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2005 07 11 | 691 | 0.0 | 0.4+ |
| 2004 01 22 | 704 | 0.3+ | 0.9+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2005 07 11 | 691 | 0.1− | 0.4+ |
| 2004 01 22 | 704 | 0.7+ | 0.2+ | 2004 02 15 | 704 | 0.6− | 0.8+ | 2006 10 17 | G96 | 1.3+ | 0.4− |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 0.9− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.4+ | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2004 01 22 | 704 | 0.5− | 0.2− | 2004 02 15 | 704 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2004 02 15 | 704 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2004 01 28 | 691 | 0.2+ | 0.3+ | 2004 02 17 | 644 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2004 02 17 | 644 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2004 01 30 | 704 | 0.1+ | 0.0 | 2004 02 17 | 644 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2004 01 30 | 704 | 0.3− | 0.1+ | 2004 02 17 | 644 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 0.4+ | 0.1+ | 2004 02 17 | 644 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2004 01 30 | 704 | 0.3+ | 0.0 | 2004 02 17 | 644 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.4− |

**(142823)∗ 2002 VY$_3$**

Discovered 2002 Nov. 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.75135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23117814 | $\omega$ | 0.00960 | | −0.25897845 | +0.95661851 | |
| $a$ | 2.6292883 | $\Omega$ | 254.98103 | | −0.88618963 | −0.29029028 | |
| $e$ | 0.1460898 | $i$ | 7.94247 | | −0.38418498 | +0.02475020 | |
| $P$ | 4.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 703 | 1.5+ | 0.2− | 2002 11 08 | 704 | 1.1− | 1.1+ | 2006 09 28 | 703 | 0.4− | 0.4− |
| 2000 02 07 | 703 | 0.1+ | 0.7− | 2002 11 12 | 704 | 0.0 | 0.2− | 2006 09 28 | 703 | 0.5+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 703 | 0.7+ | 0.3+ | 2002 11 12 | 704 | 0.2+ | 0.4− | 2006 09 28 | 703 | (1.5− | 2.2−) |
| 2000 02 07 | 703 | 0.2+ | 1.4+ | 2002 11 12 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2000 03 01 | 703 | 0.3− | 0.6− | 2002 11 12 | 704 | 0.9− | 0.1− | 2006 10 17 | 703 | 0.7− | 0.3+ |
| 2000 03 01 | 703 | 0.5− | 0.4+ | 2002 11 12 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.9+ |
| 2000 03 01 | 703 | 0.7− | 0.4+ | 2002 11 14 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2000 03 01 | 703 | 0.8+ | 0.1− | 2002 11 14 | 704 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2002 11 14 | 704 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.6+ | 0.2− |
| 2000 03 04 | 645 | 0.2+ | 0.0 | 2002 11 14 | 704 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.5+ | 0.2− |
| 2000 03 08 | 704 | 0.4− | 1.2+ | 2002 11 14 | 704 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2000 03 08 | 704 | 1.4− | 0.7+ | 2002 11 23 | 644 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.4− |
| 2000 03 08 | 704 | 1.5− | 0.6+ | 2002 11 23 | 644 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.4+ |
| 2000 03 27 | 699 | 0.1− | 1.1+ | 2002 11 23 | 644 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.7+ |
| 2000 03 27 | 699 | 0.5− | 1.7+ | 2002 12 02 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2000 03 27 | 699 | 0.9− | 1.6+ | 2002 12 02 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2000 03 27 | 699 | 0.2+ | 0.3+ | 2002 12 02 | 704 | 0.7+ | 0.9− | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2001 06 21 | 704 | 0.8− | 0.4+ | 2002 12 06 | 704 | 0.4− | 0.6+ | 2006 10 31 | 703 | 0.1+ | 0.6− |
| 2001 06 21 | 704 | 0.5− | 0.7+ | 2002 12 06 | 704 | 0.6− | 0.6+ | 2006 10 31 | 703 | 0.4− | 0.1+ |
| 2001 06 21 | 704 | (2.1+ | 1.0+) | 2002 12 06 | 704 | 0.1+ | 0.8+ | 2006 10 31 | 703 | 0.0 | 0.9− |
| 2001 06 21 | 704 | 0.2− | 1.3+ | 2002 12 06 | 704 | 1.0+ | 0.1+ | 2006 10 31 | 703 | 0.0 | 0.2+ |
| 2001 08 25 | 704 | 0.1− | 0.5+ | 2002 12 06 | 704 | (0.3− | 1.8+) | 2006 11 14 | 703 | 0.4− | 1.1+ |
| 2001 08 25 | 704 | 0.2− | 0.3+ | 2004 01 28 | 645 | 0.1− | 0.2− | 2006 11 14 | 703 | 1.3+ | 0.5− |
| 2001 08 25 | 704 | 0.0 | 0.8+ | 2004 01 28 | 645 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.0 |
| 2002 11 01 | 644 | 0.3+ | 0.7+ | 2004 01 29 | 704 | 0.0 | 0.9+ | 2006 11 14 | 703 | 0.4+ | 1.0+ |
| 2002 11 01 | 644 | 0.1+ | 0.9+ | 2004 01 29 | 704 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 1.1− | 0.6+ |
| 2002 11 01 | 644 | 0.1+ | 0.9+ | 2004 01 29 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2002 11 04 | 644 | 0.0 | 0.1+ | 2004 01 29 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2002 11 04 | 644 | 0.3− | 0.2+ | 2004 01 29 | 704 | 0.9+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2002 11 04 | 644 | 0.1+ | 0.2+ | 2004 02 18 | 704 | 0.2− | 0.4− | 2006 11 19 | 704 | 1.0− | 0.6− |
| 2002 11 05 | 644 | 0.2− | 0.1+ | 2004 02 18 | 704 | 1.1+ | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2002 11 05 | 704 | 0.5− | 0.4− | 2004 02 18 | 704 | 0.3+ | 0.5+ | 2006 11 25 | 703 | 0.2+ | 0.2+ |
| 2002 11 05 | 704 | 0.2+ | 0.6− | 2004 02 18 | 704 | 1.0+ | 0.9+ | 2006 11 25 | 703 | 0.7+ | 0.4− |
| 2002 11 05 | 704 | 0.2− | 0.0 | 2005 06 04 | 704 | (0.1+ | 1.7+) | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2005 06 04 | 704 | 0.5+ | 0.7+ | 2006 11 25 | 703 | 0.5− | 0.3+ |
| 2002 11 05 | 644 | 0.2− | 0.1+ | 2005 06 04 | 704 | 0.3− | 0.5+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2002 11 05 | 644 | 0.3+ | 0.1+ | 2005 06 04 | 704 | 0.4+ | 0.9+ | 2006 11 25 | 703 | 0.5+ | 0.7− |
| 2002 11 08 | 704 | 0.3+ | 0.3+ | 2005 06 04 | 704 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2002 11 08 | 704 | 0.4+ | 0.7+ | 2006 09 28 | 703 | 0.6− | 0.5+ | | | | |

**(142824)∗ 2002 VE$_6$**

Discovered 2002 Nov. 2 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.86909 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21519705 | $\omega$ | 92.53781 | | +0.41216940 | | +0.91075008 |
| $a$ | 2.7578999 | $\Omega$ | 201.85835 | | −0.86078860 | | +0.38007804 |
| $e$ | 0.0809548 | $i$ | 3.92859 | | −0.29859566 | | +0.16147748 |
| $P$ | 4.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2005 04 12 | 695 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 1.2+ | 0.1− |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2005 04 12 | 695 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 1.3+ | 0.7+ | 2005 04 18 | 703 | 1.2− | 0.8+ | 2006 08 29 | 703 | 0.3+ | 0.2− |
| 2000 03 11 | 704 | 0.2+ | 1.7+ | 2005 04 18 | 703 | 0.3− | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.1− |
| 2000 03 11 | 704 | 0.8− | 1.1+ | 2005 04 18 | 703 | 1.3− | 0.7+ | 2006 08 29 | 703 | 0.0 | 0.2− |
| 2000 03 11 | 704 | 0.7+ | 1.0+ | 2005 04 18 | 703 | (1.1− | 1.7+) | 2006 08 29 | 703 | 0.2− | 0.2− |
| 2000 03 11 | 704 | 0.5+ | 0.2+ | 2005 05 09 | 704 | 0.6+ | 0.3− | 2006 08 30 | 704 | 0.3− | 0.9− |
| 2000 04 10 | 691 | 0.5− | 0.0 | 2005 05 09 | 704 | 1.0+ | 0.6+ | 2006 08 30 | 704 | 0.8− | 0.5− |
| 2000 04 10 | 691 | 0.8− | 0.0 | 2005 05 09 | 699 | 0.9+ | 0.9+ | 2006 08 30 | 704 | 0.1− | 0.7+ |
| 2000 04 10 | 691 | 0.0 | 0.4+ | 2005 05 09 | 704 | 0.8+ | 0.1+ | 2006 09 11 | 703 | 0.1+ | 1.2+ |
| 2002 10 11 | 704 | 0.9− | 0.6− | 2005 05 09 | 699 | 0.6+ | 0.0 | 2006 09 11 | 703 | 0.8− | 0.2+ |
| 2002 10 11 | 704 | 1.0− | 0.2− | 2005 05 09 | 699 | 0.7+ | 1.4− | 2006 09 11 | 703 | 0.6− | 1.0+ |
| 2002 10 11 | 704 | 0.2− | 0.3+ | 2005 05 09 | 699 | 0.5+ | 0.5+ | 2006 09 11 | 703 | 0.9− | 0.6+ |
| 2002 11 02 | 608 | 0.3− | 0.3+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2002 11 02 | 608 | 0.1+ | 0.1− | 2005 05 14 | G96 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.0 |
| 2002 11 02 | 608 | 0.5− | 0.3− | 2005 05 14 | G96 | 0.2− | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2002 11 05 | 644 | 0.2+ | 0.7+ | 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 2002 11 05 | 644 | 0.5+ | 0.8+ | 2005 05 17 | G96 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.3+ | 0.3+ |
| 2002 11 05 | 644 | 0.4+ | 0.6+ | 2005 05 17 | G96 | 0.2+ | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.2+ |
| 2002 11 06 | 950 | (1.8+ | 1.1+) | 2005 05 17 | G96 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.1+ |
| 2002 11 06 | 950 | (1.7+ | 1.0+) | 2005 05 19 | G96 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.6+ | 0.2+ |
| 2002 11 06 | 950 | 1.4+ | 1.0+ | 2005 05 19 | G96 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.5+ | 0.4+ |
| 2002 11 06 | 704 | 0.3− | 0.2− | 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 1.2+ | 2005 05 19 | G96 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.8− | 0.6+ |
| 2002 11 06 | 644 | 0.0 | 0.4+ | 2005 05 30 | 699 | (0.1+ | 1.6−) | 2006 09 27 | 704 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.4− | 0.7+ | 2005 05 30 | 699 | (1.6+ | 0.7+) | 2006 09 27 | 704 | 0.3− | 0.5− |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2005 05 30 | 699 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 1.1+ |
| 2002 11 06 | 644 | 0.0 | 0.4+ | 2005 05 30 | 699 | 0.3− | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.3+ |
| 2002 11 06 | 644 | 0.0 | 0.6+ | 2006 08 19 | 644 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2002 11 12 | 644 | 0.4− | 0.7+ | 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2+ |
| 2002 11 12 | 644 | 0.2+ | 0.8+ | 2006 08 19 | 644 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2002 11 12 | 644 | 0.6− | 0.7+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2005 01 21 | 809 | 0.5+ | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2005 01 21 | 809 | 0.0 | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2005 01 21 | 809 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2005 04 02 | G96 | 0.3− | 0.0 | 2006 08 22 | 644 | 0.6− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2005 04 02 | G96 | 0.6− | 0.0 | 2006 08 28 | 699 | 0.6+ | 0.6+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2005 04 02 | G96 | 0.4− | 0.3− | 2006 08 28 | 699 | 0.0 | 0.3+ | | | | |

**(142825)∗ 2002 VV$_6$ = 2005 GW$_{207}$**

Discovered 2002 Nov. 1 by NEAT at Palomar.

Id. A. Doppler (*MPO* 75774)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.83203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21939677 | $\omega$ | 298.10436 | | +0.85500444 | | +0.51653514 |
| $a$ | 2.7225920 | $\Omega$ | 30.86196 | | −0.43836342 | | +0.76765994 |
| $e$ | 0.1766741 | $i$ | 5.19681 | | −0.27713699 | | +0.37932792 |
| $P$ | 4.49 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.5+ | 1.0+ | 2004 02 11 | 691 | 0.0 | 0.4+ | 2006 08 31 | 704 | 0.2− | 0.6+ |
| 1996 04 13 | 691 | 0.2+ | 0.8+ | 2004 02 11 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.2− |
| 1996 04 13 | 691 | 0.3+ | 0.9+ | 2004 02 18 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.2− | 1.1− |
| 2002 10 11 | 704 | 0.1+ | 0.8+ | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.4− |
| 2002 10 11 | 704 | 0.5− | 0.1+ | 2004 02 18 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.4− |
| 2002 10 11 | 704 | 1.0+ | 0.9+ | 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.2+ | 0.2− |
| 2002 11 01 | 644 | 0.4+ | 1.0+ | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 09 16 | 704 | (0.5+ | 1.7+) |
| 2002 11 01 | 644 | 1.2+ | 0.3+ | 2005 04 04 | G96 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.7+ | 0.9+ |
| 2002 11 01 | 644 | 0.8+ | 0.1+ | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 16 | 704 | 0.5+ | 0.3+ |
| 2002 11 05 | 704 | 0.6− | 0.4+ | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 09 16 | 704 | 0.4+ | 0.2− |
| 2002 11 05 | 704 | 0.5− | 0.3+ | 2005 04 04 | G96 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.7+ | 0.7+ |
| 2002 11 05 | 644 | 0.3− | 0.4+ | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 1.5+ |
| 2002 11 05 | 704 | 0.6+ | 1.2+ | 2005 04 09 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.8− | 1.2+ |
| 2002 11 05 | 704 | 1.3+ | 0.6+ | 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.2+ | 1.3+ |
| 2002 11 05 | 699 | 0.3+ | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.0 |
| 2002 11 05 | 699 | (0.5− | 1.8+) | 2005 04 17 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2002 11 05 | 644 | 0.1− | 0.7+ | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.3− |
| 2002 11 05 | 699 | 1.1+ | 0.2+ | 2005 05 08 | G96 | 0.5− | 0.1− | 2006 09 22 | 704 | 0.5− | 1.2+ |
| 2002 11 05 | 699 | 0.9− | 0.6+ | 2005 05 08 | G96 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 0.6− | 0.4+ |
| 2002 11 05 | 644 | 0.2+ | 0.5+ | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.4+ |
| 2002 11 08 | 704 | 0.1+ | 0.5+ | 2005 05 08 | G96 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.5+ |
| 2002 11 08 | 704 | 0.4+ | 1.3+ | 2006 08 14 | 644 | 0.6− | 1.4+ | 2006 09 26 | 704 | 0.7+ | 0.3+ |
| 2002 11 08 | 704 | 0.8− | 0.0 | 2006 08 14 | 644 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.8− | 1.2+ |
| 2002 11 14 | 704 | 0.3+ | 1.1+ | 2006 08 14 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.4+ |
| 2002 11 14 | 704 | 0.1− | 0.4+ | 2006 08 23 | 704 | 0.8− | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.6− | 0.2+ | 2006 08 23 | 704 | 0.4− | 1.4+ | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2002 11 14 | 704 | 0.0 | 0.4− | 2006 08 23 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.7− |
| 2002 12 01 | 608 | 0.5− | 0.7− | 2006 08 23 | 704 | 0.5− | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2002 12 01 | 608 | 0.3− | 0.4− | 2006 08 23 | 704 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2002 12 01 | 608 | 0.7− | 0.3− | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 1.0− | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2002 12 06 | 704 | 0.7+ | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 12 06 | 704 | 0.1− | 0.7+ | 2006 08 28 | 699 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.7− |
| 2002 12 11 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 699 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2002 12 11 | 704 | 0.7− | 0.5− | 2006 08 28 | 699 | 0.3− | 0.7+ | 2006 11 23 | G96 | 0.3− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.9− | 0.8+ | 2006 08 28 | 699 | 0.4− | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.5+ |
| 2002 12 11 | 704 | 0.9− | 0.5− | 2006 08 31 | 704 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 1.2− | 0.4− | 2006 08 31 | 704 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 02 11 | 691 | 0.2− | 0.4+ | 2006 08 31 | 704 | 0.7+ | 0.4− | | | | |

**(142826)∗ 2002 VF$_9$ = 1998 XE$_{62}$**

Discovered 2002 Nov. 1 by NEAT at Palomar.

Id. A. Doppler (*MPO* 38129)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.97868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23606564 | $\omega$ | 88.24407 | | +0.84840857 | +0.48878337 | |
| $a$ | 2.5928707 | $\Omega$ | 242.44777 | | −0.52894980 | +0.79759650 | |
| $e$ | 0.0908349 | $i$ | 13.25012 | | +0.02037176 | +0.35345528 | |
| $P$ | 4.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 704 | (2.7+ | 0.7+) | 2002 11 08 | 704 | 0.9− | 0.7+ | 2005 06 11 | 703 | 0.0 | 0.2− |
| 1998 11 24 | 704 | (1.4− | 2.3−) | 2002 11 08 | 704 | 0.5− | 0.4+ | 2005 06 11 | 703 | 0.5− | 0.5− |
| 1998 11 24 | 704 | 0.3− | 0.2− | 2002 11 08 | 704 | 0.6− | 0.1+ | 2005 06 23 | 644 | 0.3+ | 0.0 |
| 1998 11 24 | 704 | (0.6− | 3.6−) | 2002 11 12 | 704 | 0.1− | 0.2− | 2005 06 23 | 644 | 0.1+ | 0.3− |
| 1998 11 24 | 704 | (5.0− | 0.1+) | 2002 11 12 | 704 | 0.2− | 0.0 | 2005 06 23 | 644 | 0.3+ | 0.1− |
| 1998 11 25 | 699 | 0.0 | 0.4+ | 2002 11 12 | 704 | 0.4− | 0.3+ | 2005 06 27 | 644 | 0.4− | 0.0 |
| 1998 11 25 | 699 | 1.0+ | 0.4+ | 2002 11 12 | 704 | 0.5+ | 0.0 | 2005 06 27 | 644 | 0.2− | 0.1− |
| 1998 11 25 | 699 | 0.2+ | 0.1+ | 2002 11 12 | 704 | 0.8+ | 0.5+ | 2005 06 27 | 644 | 1.0− | 0.1− |
| 1998 12 14 | 691 | 0.2− | 0.3− | 2002 11 13 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.6+ |
| 1998 12 14 | 691 | 0.3− | 0.1− | 2002 11 13 | 644 | 0.2− | 0.3+ | 2006 09 17 | 703 | 0.5− | 0.1− |
| 1998 12 14 | 691 | 0.0 | 0.1− | 2002 11 13 | 644 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.7+ | 0.5+ |
| 1998 12 15 | 691 | 0.7+ | 0.0 | 2002 11 14 | 704 | 0.3− | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.9− |
| 1998 12 15 | 691 | 0.7+ | 0.3− | 2002 11 14 | 704 | 0.5− | 0.1+ | 2006 09 28 | 703 | 0.3+ | 0.3− |
| 1998 12 23 | 691 | 0.3− | 0.1− | 2002 11 14 | 704 | 0.4− | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.9− |
| 1998 12 23 | 691 | 0.4− | 0.1− | 2002 11 14 | 704 | 1.0− | 0.8− | 2006 09 28 | 703 | 0.1+ | 0.5− |
| 1998 12 23 | 691 | 0.3− | 0.3− | 2002 11 14 | 704 | 0.6− | 0.7− | 2006 09 28 | 703 | 0.3+ | 0.6− |
| 2002 10 05 | 704 | 0.8− | 0.4− | 2002 12 02 | 704 | 1.4+ | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.4− |
| 2002 10 05 | 704 | 0.5− | 1.0− | 2002 12 02 | 704 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2002 12 02 | 704 | 1.5+ | 0.9+ | 2006 10 19 | 703 | 0.3+ | 1.2− |
| 2002 10 05 | 704 | 0.4− | 0.4− | 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.5− |
| 2002 10 05 | 704 | 0.0 | 0.2− | 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2002 10 10 | 704 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.9− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.4+ | 0.6+ | 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.5+ | 1.0+ | 2002 12 06 | 608 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2002 10 10 | 704 | 0.5+ | 0.3+ | 2002 12 06 | 608 | 0.5− | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2002 10 10 | 704 | 0.0 | 0.5+ | 2002 12 06 | 608 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.3− | 0.4− |
| 2002 11 01 | 644 | 0.1− | 0.0 | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.7+ | 0.5+ |
| 2002 11 01 | 644 | 0.0 | 0.3+ | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.2+ | 0.4+ |
| 2002 11 01 | 644 | 0.1− | 0.0 | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 10 31 | 703 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 0.4+ | 1.0+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.4− | 1.2+ |
| 2002 11 05 | 704 | 0.4+ | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.8+ | 0.2+ |
| 2002 11 05 | 704 | 0.2− | 0.7+ | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.1+ |
| 2002 11 05 | 704 | 0.6+ | 1.0− | 2005 06 11 | 703 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.7+ | 1.0+ |
| 2002 11 08 | 704 | 0.1− | 1.4+ | 2005 06 11 | 703 | (2.0− | 0.2+) | 2006 11 14 | 703 | 0.5− | 0.7− |

**(142827)∗ 2002 VK$_{10}$**

Discovered 2002 Nov. 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.86935 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21875107 | $\omega$ | 10.68689 | | +0.28350955 | +0.95352303 | |
| $a$ | 2.7279470 | $\Omega$ | 275.84106 | | −0.88723174 | +0.22042283 | |
| $e$ | 0.1117386 | $i$ | 5.88847 | | −0.36392605 | +0.20544492 | |
| $P$ | 4.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 08 | 691 | 0.0 | 0.2+ | 2005 05 04 | 644 | 0.8+ | 0.5+ | 2006 09 17 | 703 | 0.3− | 0.2− |
| 1993 11 08 | 691 | 0.2+ | 0.1− | 2005 05 04 | 644 | 0.4+ | 0.7+ | 2006 09 22 | 703 | 0.3+ | 1.5− |
| 1993 11 08 | 691 | 0.2− | 0.1+ | 2005 05 10 | 699 | 1.0+ | 0.5− | 2006 09 22 | 703 | 0.1+ | 1.3− |
| 2002 11 01 | 644 | 0.5+ | 1.5+ | 2005 05 10 | 699 | 0.4+ | 0.5+ | 2006 09 22 | 703 | (0.6+ | 4.6−) |
| 2002 11 01 | 644 | 0.0 | 0.7+ | 2005 05 10 | 699 | 0.0 | 0.9+ | 2006 09 22 | 703 | (2.1+ | 2.8−) |
| 2002 11 01 | 644 | 0.2+ | 0.7+ | 2005 05 10 | 699 | 0.4+ | 0.8+ | 2006 10 01 | 703 | 0.7− | 0.6− |
| 2002 11 05 | 704 | 0.5+ | 0.3− | 2005 05 30 | 699 | 0.7+ | 0.0 | 2006 10 01 | 703 | 0.5− | 0.5+ |
| 2002 11 05 | 704 | 0.2− | 0.6+ | 2005 05 30 | 699 | 0.9− | 0.2+ | 2006 10 01 | 703 | (1.7− | 0.3−) |
| 2002 11 05 | 704 | 0.3− | 0.6+ | 2005 05 30 | 699 | 1.3− | 0.7+ | 2006 10 01 | 703 | 0.7− | 0.9− |
| 2002 11 12 | 704 | (0.1− | 1.8+) | 2005 05 30 | 699 | 0.6− | 0.4+ | 2006 10 01 | 704 | 1.2+ | 1.3+ |
| 2002 11 12 | 704 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.3− | 0.5+ | 2006 10 01 | 704 | 0.3+ | 0.7+ |
| 2002 11 12 | 704 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 0.2− | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.2− |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2006 08 27 | 699 | 1.0+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2002 11 24 | 644 | 0.4− | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2002 11 24 | 644 | 0.6− | 0.1− | 2006 08 29 | 703 | 0.4+ | 0.4− | 2006 10 22 | 691 | 0.2+ | 0.0 |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.2+ | 0.1+ |
| 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.3+ | 0.1+ |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 15 | 704 | 1.2− | 0.4+ | 2006 10 23 | 703 | 0.1+ | 0.2+ |
| 2005 04 14 | 703 | 0.6− | 0.0 | 2006 09 15 | 704 | 0.9− | 0.1+ | 2006 10 23 | 703 | 0.0 | 0.1+ |
| 2005 04 14 | 703 | 0.3+ | 0.3+ | 2006 09 15 | 704 | 0.9− | 0.6+ | 2006 10 23 | 703 | 0.0 | 0.5+ |
| 2005 04 14 | 703 | (0.9− | 1.6+) | 2006 09 15 | 704 | 0.3+ | 0.4− | 2006 10 23 | 703 | 1.2− | 1.3− |
| 2005 04 14 | 703 | (1.9+ | 0.8+) | 2006 09 17 | 703 | 0.3− | 0.2− | | | | |
| 2005 05 04 | 644 | 0.6+ | 0.7+ | 2006 09 17 | 703 | 0.0 | 0.2− | | | | |

**(142828)∗ 2002 VW$_{10}$ = 2004 CE$_{63}$**

Discovered 2002 Nov. 1 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61531)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.84370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22132305 | $\omega$ | 284.12684 | | +0.79333899 | +0.59860930 | |
| $a$ | 2.7067716 | $\Omega$ | 39.27326 | | −0.46885961 | +0.71689902 | |
| $e$ | 0.0593087 | $i$ | 10.08210 | | −0.38830905 | +0.35738312 | |
| $P$ | 4.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 1.7− | 0.3+ | 2002 11 23 | 644 | 0.2− | 0.0 | 2006 08 30 | D35 | 0.2− | 0.4+ |
| 2000 03 29 | 704 | 0.2+ | 0.2+ | 2002 11 23 | 644 | 0.2− | 0.1+ | 2006 09 17 | 699 | (0.4+ | 1.6+) |
| 2000 03 29 | 704 | 0.6+ | 1.4+ | 2002 11 23 | 644 | 0.3− | 0.2+ | 2006 09 17 | 699 | 0.9+ | 0.2− |
| 2002 10 09 | 704 | 1.2+ | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.4+ | 2006 09 17 | 699 | 0.4+ | 0.8+ |
| 2002 10 09 | 704 | (1.5− | 0.2+) | 2002 12 06 | 704 | 0.7+ | 0.9− | 2006 09 17 | 699 | (1.7− | 1.3+) |
| 2002 10 09 | 704 | 0.8+ | 0.7− | 2002 12 06 | 704 | (1.9− | 0.1−) | 2006 09 25 | 703 | 0.3+ | 0.2− |
| 2002 10 09 | 704 | 0.9− | 0.6+ | 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 09 25 | 703 | 0.6− | 1.0− |
| 2002 11 01 | 644 | 1.1+ | 0.3+ | 2002 12 06 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 703 | 0.8− | 0.0 |
| 2002 11 01 | 644 | (1.6+ | 0.2+) | 2004 02 12 | 644 | 0.4− | 0.0 | 2006 09 25 | 703 | 0.1− | 0.1− |
| 2002 11 01 | 644 | 1.2+ | 0.1+ | 2004 02 12 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2002 11 05 | 704 | 0.2− | 0.5+ | 2004 02 12 | 644 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.7− | 0.5− |
| 2002 11 05 | 704 | 0.2− | 0.3− | 2004 02 15 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.5− | 0.2+ |
| 2002 11 05 | 644 | 0.0 | 0.1− | 2004 02 15 | 704 | 1.0+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.3+ |
| 2002 11 05 | 704 | 0.7+ | 0.4+ | 2004 02 15 | 704 | 0.5− | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 1.2− | 0.3+ | 2005 01 22 | 809 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 11 05 | 644 | 0.5+ | 0.1+ | 2005 01 22 | 809 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 11 05 | 644 | 0.3+ | 0.1− | 2005 01 22 | 809 | 0.1− | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 11 08 | 704 | 0.2− | 0.0 | 2005 05 11 | 644 | 0.7+ | 1.0+ | 2006 10 24 | 644 | 0.4− | 0.0 |
| 2002 11 08 | 704 | 0.0 | 0.3+ | 2005 05 11 | 644 | 0.6+ | 1.1+ | 2006 10 24 | 644 | 0.4− | 0.0 |
| 2002 11 08 | 704 | 0.7− | 0.5+ | 2005 05 11 | 644 | 0.5+ | 0.9+ | 2006 10 28 | 703 | 0.5+ | 0.2− |
| 2002 11 12 | 704 | 0.1+ | 0.4− | 2005 05 21 | 644 | 0.7+ | 1.3+ | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2002 11 12 | 704 | 0.3+ | 0.3+ | 2005 05 21 | 644 | 0.5+ | 1.1+ | 2006 10 28 | 703 | 0.5− | 0.7+ |
| 2002 11 12 | 704 | 0.1− | 0.6+ | 2005 05 21 | 644 | 0.5+ | 1.1+ | 2006 10 28 | 703 | 0.3− | 0.9+ |
| 2002 11 12 | 704 | 0.7− | 0.5+ | 2005 05 30 | E12 | 0.9+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2002 11 14 | 704 | 0.1+ | 0.4+ | 2005 05 30 | E12 | 0.9− | 0.3− | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2002 11 14 | 704 | 1.2− | 1.4+ | 2005 05 30 | E12 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.7− | 0.8+ | 2005 05 30 | E12 | 1.3+ | 0.1− | 2006 11 23 | G96 | 0.5− | 0.3− |
| 2002 11 14 | 704 | 0.3− | 0.5+ | 2006 08 30 | D35 | 0.2− | 0.1+ | | | | |
| 2002 11 14 | 704 | 1.0− | 1.0+ | 2006 08 30 | D35 | 0.1− | 0.3+ | | | | |

**(142829)∗ 2002 VZ$_{10}$**

Discovered 2002 Nov. 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.27184 | | (2000.0) | | | |
| $n$ | 0.24516794 | $\omega$ | 83.78003 | | +0.75216935 | +0.64109209 |
| $a$ | 2.5282903 | $\Omega$ | 236.23253 | | −0.65351372 | +0.69599465 |
| $e$ | 0.2351831 | $i$ | 10.56741 | | −0.08462319 | +0.32340745 |
| $P$ | 4.02 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.6+ | 1.0− | 2005 06 14 | G96 | 0.8− | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 1998 11 16 | 691 | 0.3+ | 0.6− | 2005 06 14 | G96 | 0.4− | 0.7+ | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 1998 11 16 | 691 | 0.3+ | 0.7− | 2005 06 14 | G96 | 0.5− | 0.6+ | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 2002 10 12 | 704 | 0.7− | 1.0+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2002 10 12 | 704 | (1.7+ | 0.0 ) | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 10 12 | 704 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2002 10 12 | 704 | 0.9− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.9− | 0.0 |
| 2002 11 01 | 644 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.4+ |
| 2002 11 01 | 644 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.4+ |
| 2002 11 01 | 644 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.6− | 1.1+ | 2006 10 19 | 703 | 0.0 | 0.7+ | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | 1.2− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.3− | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.6+ | 0.3− |
| 2002 11 05 | 704 | 0.9− | 0.1− | 2006 10 19 | 703 | 0.5− | 1.2− | 2006 11 13 | G96 | 0.6+ | 0.2− |
| 2002 11 05 | 704 | 1.2− | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.5− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.4− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.3− | 1.1+ |
| 2002 11 14 | 704 | (0.8− | 1.6+) | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.5+ | 1.0+ |
| 2002 11 14 | 704 | 0.9− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.8+ |
| 2002 11 14 | 704 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.8+ | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.7− | 2006 10 22 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.5+ | 0.5+ | 2006 11 17 | 703 | 0.8+ | 0.3− |
| 2002 12 05 | 704 | 0.3− | 0.7+ | 2006 10 27 | 703 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.7− |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2002 12 10 | 644 | 0.8− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.6+ |
| 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2002 12 10 | 644 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2005 05 01 | 644 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.4− |
| 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2005 05 10 | 699 | 1.1− | 0.5− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2005 05 10 | 699 | 0.2+ | 0.6− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.4− |
| 2005 05 10 | 699 | 1.0+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.4− |
| 2005 05 10 | 699 | 0.4+ | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 1.0+ |
| 2005 05 19 | 644 | 0.5+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.6− | 1.4+ |
| 2005 05 19 | 644 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2005 05 19 | 644 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | | | | |
| 2005 06 14 | G96 | 0.7− | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.1− | | | | |

**(142830)∗ 2002 VG$_{11}$**

Discovered 2002 Nov. 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 101.25843 | | (2000.0) | | | |
| $n$ | 0.24537431 | $\omega$ | 27.80299 | | +0.26394734 | +0.95751425 |
| $a$ | 2.5268724 | $\Omega$ | 257.69359 | | −0.90554404 | +0.20452019 |
| $e$ | 0.1192048 | $i$ | 6.82946 | | −0.33214723 | +0.20331737 |
| $P$ | 4.02 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.2− | 0.7− | 2002 12 02 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 691 | (0.5− | 2.4−) |
| 2000 02 02 | 704 | 0.4+ | 1.5− | 2002 12 02 | 704 | (0.2− | 2.3−) | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2000 02 02 | 704 | 0.1− | 0.2− | 2002 12 02 | 704 | 0.8− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2000 02 02 | 704 | 0.2− | 0.4+ | 2002 12 06 | 704 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2000 02 02 | 704 | 0.0 | 0.5+ | 2002 12 06 | 704 | 0.2− | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2001 07 10 | 704 | 0.3− | 0.5+ | 2002 12 06 | 704 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 07 10 | 704 | (0.3+ | 1.6+) | 2002 12 06 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 07 10 | 704 | 0.5+ | 1.1+ | 2002 12 06 | 704 | 0.2− | 0.7+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 07 10 | 704 | 0.4− | 0.3+ | 2002 12 11 | 704 | 0.9− | 1.0− | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2002 12 11 | 704 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 704 | (1.7− | 1.2−) | 2002 12 11 | 704 | 0.1+ | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.5+ | 0.4+ | 2002 12 28 | 291 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.2− | 0.3− |
| 2002 10 10 | 704 | 0.1+ | 0.2+ | 2002 12 28 | 291 | 0.2− | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2002 10 10 | 704 | 0.6+ | 1.4+ | 2002 12 28 | 291 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.7+ | 1.1− | 2004 01 29 | 704 | 0.4− | 1.4+ | 2006 11 09 | 691 | 0.0 | 0.3− |
| 2002 10 10 | 704 | 0.7+ | 0.5+ | 2004 01 29 | 704 | (0.8+ | 1.8+) | 2006 11 13 | 691 | 0.2+ | 0.3− |
| 2002 11 01 | 644 | 0.5+ | 1.1+ | 2004 01 29 | 704 | 0.7− | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.4− |
| 2002 11 01 | 644 | 0.8+ | 0.2+ | 2004 01 29 | 704 | 1.1− | 0.4− | 2006 11 13 | 691 | 0.2+ | 0.5− |
| 2002 11 01 | 644 | 0.5+ | 1.0+ | 2004 01 29 | 704 | 0.1− | 1.2+ | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2002 11 01 | 644 | 0.4+ | 0.2+ | 2004 02 11 | 644 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.4+ | 0.3− |
| 2002 11 01 | 644 | 0.8+ | 1.2+ | 2004 02 11 | 644 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2002 11 01 | 644 | 1.3+ | 0.4+ | 2004 02 11 | 644 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.7− |
| 2002 11 05 | 704 | 0.6− | 0.2+ | 2004 02 12 | 644 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.7+ | 0.0 |
| 2002 11 05 | 704 | 0.9− | 0.6− | 2004 02 12 | 644 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2002 11 05 | 704 | 0.7+ | 0.6+ | 2004 02 12 | 644 | 0.5+ | 0.0 | 2006 11 14 | 703 | 0.3− | 0.8− |
| 2002 11 05 | 644 | 0.5− | 0.0 | 2004 02 18 | 704 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2002 11 05 | 704 | 0.3+ | 0.4+ | 2004 02 18 | 704 | 1.0+ | 0.0 | 2006 11 14 | 703 | 0.6+ | 0.6− |
| 2002 11 05 | 704 | 0.0 | 0.4+ | 2004 02 18 | 704 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.6− |
| 2002 11 05 | 644 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2002 11 05 | 644 | 0.2− | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 11 15 | 704 | 0.0 | 0.1+ |
| 2002 11 08 | 704 | 0.1− | 0.3+ | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 704 | 0.6+ | 1.4+ |
| 2002 11 08 | 704 | 0.6+ | 0.7+ | 2004 03 15 | 704 | (0.4+ | 1.6+) | 2006 11 15 | 704 | (0.1+ | 1.6+) |
| 2002 11 08 | 704 | 1.1+ | 0.6− | 2004 03 15 | 704 | 1.0− | 0.5+ | 2006 11 15 | 704 | 0.3− | 1.0+ |
| 2002 11 12 | 704 | 0.8− | 0.8− | 2006 08 29 | 703 | 0.5− | 0.9+ | 2006 11 16 | 691 | 0.1− | 0.3− |
| 2002 11 12 | 704 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.5− | 1.0+ | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.5− | 0.6+ | 2006 08 29 | 703 | 0.4− | 1.1+ | 2006 11 16 | 691 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 0.8− | 1.0+ | 2006 08 29 | 703 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.1− | 1.1+ |
| 2002 11 12 | 704 | 0.4+ | 0.8+ | 2006 10 18 | A50 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | 1.2− | 0.5− | 2006 10 18 | A50 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2002 11 14 | 704 | 0.9− | 0.9+ | 2006 10 19 | A50 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.5+ |
| 2002 11 14 | 704 | 0.3− | 0.6+ | 2006 10 19 | A50 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.3− |
| 2002 11 14 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 1.3− |
| 2002 11 14 | 704 | (1.9− | 1.8+) | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 1.3+ |
| 2002 11 27 | 699 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.3− | 0.5− | 2006 11 19 | 704 | (1.3− | 3.1+) |
| 2002 11 27 | 699 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.2+ |
| 2002 11 27 | 699 | 0.8− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.7− | 1.1+ |
| 2002 11 27 | 699 | 0.7− | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.8+ | 1.3+ |
| 2002 12 01 | 608 | 0.3+ | 0.1− | 2006 10 19 | 703 | 1.4− | 0.6− | 2006 11 22 | 704 | 0.7+ | 1.1+ |
| 2002 12 01 | 608 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.3+ | 1.0− | 2006 11 22 | 704 | 0.6+ | 1.2+ |
| 2002 12 01 | 608 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.2+ | 1.1+ |
| 2002 12 02 | 704 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | (0.5+ | 1.6+) |

**(142831)∗ 2002 VT$_{11}$**

Discovered 2002 Nov. 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.48694 | | (2000.0) | | | |
| $n$ | 0.26862815 | $\omega$ | 239.25334 | | −0.64413637 | −0.75941068 |
| $a$ | 2.3788572 | $\Omega$ | 251.13406 | | +0.73071114 | −0.57551910 |
| $e$ | 0.0680633 | $i$ | 5.55269 | | +0.22616271 | −0.30343564 |
| $P$ | 3.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.6+ | 1.1− | 2002 12 10 | 704 | 0.5− | 0.7+ | 2004 05 14 | 699 | 0.5+ | 0.2− |
| 2000 02 08 | 704 | 0.8− | 0.2− | 2002 12 11 | 644 | 0.1+ | 0.4+ | 2004 05 14 | 699 | (1.5+ | 2.0+) |
| 2000 02 08 | 704 | 0.0 | 0.2+ | 2002 12 11 | 644 | 0.9− | 0.3− | 2004 05 14 | 699 | 1.1− | 0.9− |
| 2000 02 08 | 704 | 0.2+ | 0.2− | 2002 12 11 | 644 | 0.2− | 0.4+ | 2004 05 14 | 699 | 0.5− | 0.4+ |
| 2000 03 04 | 645 | 0.1+ | 0.1− | 2002 12 27 | 644 | (0.6+ | 1.6+) | 2004 05 15 | 704 | 1.0+ | 0.1+ |
| 2000 03 04 | 645 | 0.1+ | 0.1− | 2002 12 27 | 644 | 0.0 | 0.6+ | 2004 05 15 | 704 | 0.9+ | 0.2− |
| 2000 03 30 | 703 | 1.6− | 1.3+ | 2002 12 27 | 644 | 1.1+ | 1.3+ | 2004 05 15 | 704 | 0.1+ | 0.7+ |
| 2000 03 30 | 703 | 0.5− | 0.0 | 2002 12 27 | 644 | 0.0 | 0.4+ | 2004 05 15 | 704 | 1.1+ | 0.1− |
| 2000 03 30 | 703 | 1.1+ | 1.7+ | 2002 12 27 | 644 | (1.5+ | 1.3+) | 2004 05 15 | 704 | 1.0+ | 0.1+ |
| 2000 03 30 | 703 | 0.2+ | 1.1+ | 2002 12 27 | 644 | 0.1− | 0.4+ | 2004 05 16 | 704 | 0.7+ | 0.2+ |
| 2000 04 25 | 699 | 0.2+ | 0.4+ | 2002 12 31 | 704 | 0.4+ | 0.4− | 2004 05 16 | 704 | 0.8+ | 0.4+ |
| 2000 04 25 | 699 | 0.8− | 0.0 | 2002 12 31 | 704 | 0.5− | 1.1+ | 2004 05 16 | 704 | 0.9+ | 0.3+ |
| 2000 04 25 | 699 | 0.9+ | 0.1+ | 2002 12 31 | 704 | 0.9− | 0.4− | 2004 05 16 | 704 | 0.0 | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 699 | 1.0+ | 0.4+ | 2002 12 31 | 704 | 0.7− | 0.1+ | 2004 05 16 | 704 | 0.0 | 0.4+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2004 04 17 | 704 | 0.5− | 0.5+ | 2005 08 26 | 644 | 0.1− | 0.4+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2004 04 17 | 704 | 0.4+ | 0.3+ | 2005 08 26 | 644 | 0.0 | 0.4+ |
| 2002 11 01 | 644 | 0.1+ | 0.1− | 2004 04 17 | 704 | 0.1+ | 0.4+ | 2005 08 26 | 644 | 0.0 | 0.3+ |
| 2002 11 01 | 644 | 0.3+ | 0.2− | 2004 04 21 | 704 | 0.4− | 0.4+ | 2005 09 30 | 703 | 0.5+ | 1.4+ |
| 2002 11 01 | 644 | 0.3+ | 0.3− | 2004 04 21 | 704 | 0.9+ | 0.3+ | 2005 09 30 | 703 | 0.1− | 1.5+ |
| 2002 11 05 | 704 | 1.4+ | 0.2+ | 2004 04 21 | 704 | 0.0 | 0.2+ | 2005 09 30 | 703 | (1.2− | 2.0+) |
| 2002 11 05 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.2+ | 0.4+ | 2005 09 30 | 703 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.1− | 0.5+ | 2004 04 21 | 704 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2002 11 24 | 644 | 0.6− | 0.8+ | 2004 04 25 | 704 | 0.8− | 0.4+ | 2006 09 28 | 691 | 0.6+ | 0.0 |
| 2002 11 24 | 644 | 0.4− | 0.5+ | 2004 04 25 | 704 | 0.8− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.4− | 0.8+ | 2004 04 25 | 704 | 0.3− | 0.3+ | 2006 10 29 | G96 | 0.6− | 0.4− |
| 2002 11 27 | 699 | 1.2− | 0.5+ | 2004 04 25 | 704 | 0.9− | 1.0+ | 2006 10 29 | G96 | 0.3− | 0.7− |
| 2002 11 27 | 699 | 0.6− | 1.1+ | 2004 04 25 | 704 | 0.6− | 0.2− | 2006 10 29 | G96 | 0.3− | 0.4− |
| 2002 11 27 | 699 | 0.6− | 0.3− | 2004 04 26 | 704 | 0.2− | 0.6+ | 2006 10 29 | G96 | 0.4+ | 0.2− |
| 2002 11 27 | 699 | 1.3− | 0.7+ | 2004 04 26 | 704 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2002 12 02 | 704 | 0.3+ | 0.1− | 2004 04 26 | 704 | 0.0 | 0.8+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2002 12 02 | 704 | 0.2− | 0.3+ | 2004 04 26 | 704 | 0.5− | 0.5− | 2006 11 01 | G96 | 0.6− | 0.2+ |
| 2002 12 02 | 704 | 0.7+ | 0.2+ | 2004 04 26 | 704 | 1.1− | 1.3+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2002 12 02 | 704 | 0.3+ | 0.2+ | 2004 04 26 | 704 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 12 02 | 704 | 1.3+ | 0.0 | 2004 04 26 | 704 | 0.5− | 0.3+ | 2006 11 18 | G96 | 0.5− | 0.1− |
| 2002 12 10 | 704 | 0.7− | 0.8+ | 2004 04 26 | 704 | 0.7+ | 0.5− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 12 10 | 704 | 0.8− | 0.5− | 2004 04 26 | 704 | 0.1− | 0.4+ | | | | |
| 2002 12 10 | 704 | (1.8− | 1.3+) | 2004 04 26 | 704 | 0.2+ | 0.7− | | | | |

**(142832)∗ 2002 VZ$_{11}$**

Discovered 2002 Nov. 1 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.67107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21917627 | $\omega$ | 303.94241 | | +0.97948407 | −0.16696866 | |
| $a$ | 2.7244177 | $\Omega$ | 65.89645 | | +0.19995429 | +0.87492782 | |
| $e$ | 0.0552765 | $i$ | 7.10086 | | −0.02508467 | +0.45455777 | |
| $P$ | 4.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 599 | 0.2+ | 0.1− | 2002 11 11 | 704 | 0.7+ | 0.1− | 2005 05 19 | 644 | 0.7− | 0.1+ |
| 2002 09 04 | 599 | 0.2+ | 0.1− | 2002 11 11 | 704 | 0.3+ | 0.3+ | 2005 06 12 | G96 | 0.7+ | 0.0 |
| 2002 09 04 | 599 | 0.4− | 0.2+ | 2002 11 11 | 704 | 0.3+ | 0.7+ | 2005 06 12 | G96 | 0.4+ | 0.1− |
| 2002 09 04 | 599 | 0.1+ | 0.0 | 2002 11 22 | 644 | 0.3− | 0.0 | 2005 06 12 | G96 | 0.6+ | 0.1+ |
| 2002 11 01 | 608 | 0.2− | 0.2+ | 2002 11 22 | 644 | 0.1− | 0.3+ | 2005 06 12 | G96 | 0.3+ | 0.1+ |
| 2002 11 01 | 608 | 0.1+ | 0.0 | 2002 11 22 | 644 | 0.3− | 0.1− | 2006 08 28 | E12 | 0.3+ | 1.1+ |
| 2002 11 01 | 608 | 0.0 | 0.1− | 2004 01 18 | 644 | 0.2+ | 0.8+ | 2006 08 28 | E12 | 0.3− | 0.1− |
| 2002 11 05 | 704 | 0.7+ | 0.7− | 2004 01 18 | 644 | 0.0 | 1.0+ | 2006 08 28 | E12 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.0 | 0.9− | 2004 01 18 | 644 | 0.4+ | 0.8+ | 2006 08 28 | E12 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | 0.2− | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.4− | 0.3− |
| 2002 11 05 | 704 | 0.3+ | 1.5+ | 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 699 | 0.2− | 0.2+ | 2004 02 11 | 644 | 0.3+ | 0.8+ | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 699 | 0.4− | 0.2− | 2004 02 15 | 704 | 0.0 | 0.5+ | 2006 09 20 | 703 | 0.8− | 0.6− |
| 2002 11 06 | 699 | 0.7− | 0.8− | 2004 02 15 | 704 | 0.3+ | 0.4− | 2006 09 20 | 703 | 0.0 | 0.0 |
| 2002 11 06 | 699 | 0.4− | 0.5− | 2004 02 15 | 704 | 0.6+ | 0.7+ | 2006 09 20 | 703 | 1.2− | 0.2+ |
| 2002 11 07 | 704 | 0.5− | 0.4− | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.1+ | 1.3+ |
| 2002 11 07 | 704 | 1.2+ | 0.1+ | 2005 05 08 | G96 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.0 | 0.8+ |
| 2002 11 07 | 704 | 0.8+ | 0.5− | 2005 05 08 | G96 | 0.0 | 0.0 | 2006 09 26 | 703 | 1.3+ | 2.0+ |
| 2002 11 07 | 704 | 0.2− | 0.4− | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2002 11 07 | 704 | 0.2+ | 0.5− | 2005 05 19 | 644 | 0.8− | 0.3+ | 2006 09 26 | 703 | 1.1− | 1.0+ |
| 2002 11 11 | 704 | 0.5− | 0.4+ | 2005 05 19 | 644 | 0.3− | 0.1+ | | | | |

**(142833)∗ 2002 VC$_{12}$**

Discovered 2002 Nov. 2 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.31214 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24264709 | $\omega$ | 325.72646 | | +0.86636983 | +0.49936982 | |
| $a$ | 2.5457709 | $\Omega$ | 4.32723 | | −0.43941276 | +0.76772287 | |
| $e$ | 0.1708611 | $i$ | 4.37373 | | −0.23731783 | +0.40153628 | |
| $P$ | 4.06 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2002 10 04 | 704 | 0.4+ | 0.3+ | 2004 02 16 | 291 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2002 10 04 | 704 | 1.1− | 0.4− | 2004 02 16 | 291 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2002 10 28 | 608 | (0.4+ | 1.5+) | 2004 02 16 | 291 | 0.7− | 0.2− | 2006 10 29 | 704 | 0.7+ | 0.7+ |
| 2002 10 28 | 608 | (0.2+ | 2.0+) | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 10 29 | 704 | 0.5+ | 0.0 |
| 2002 10 28 | 608 | 0.5+ | 1.5+ | 2004 02 23 | 704 | 0.6+ | 0.1− | 2006 10 29 | 704 | 0.1− | 0.3− |
| 2002 11 02 | 049 | (2.3− | 0.3+) | 2004 02 23 | 704 | 0.3+ | 1.2+ | 2006 10 29 | 704 | 0.1− | 0.3+ |
| 2002 11 02 | 049 | (2.1− | 0.7+) | 2005 05 04 | 644 | 0.9+ | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 11 02 | 049 | (2.8− | 0.7+) | 2005 05 04 | 644 | 0.6+ | 0.9+ | 2006 11 01 | 691 | 0.5+ | 0.0 |
| 2002 11 05 | 704 | 0.4+ | 0.2− | 2005 05 04 | 644 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.2+ | 0.0 | 2005 05 11 | 644 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 1.0+ | 0.9+ | 2005 05 11 | 644 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.4+ | 0.9+ | 2005 05 11 | 644 | 0.1+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.8+ | 0.5+ | 2005 06 03 | 703 | 0.6− | 1.0+ | 2006 11 11 | 703 | 1.3− | 0.3− |
| 2002 11 08 | 704 | 0.0 | 0.2+ | 2005 06 03 | 703 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2002 11 08 | 704 | 0.4− | 0.1− | 2005 06 03 | 703 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.8− |
| 2002 11 08 | 704 | 0.4− | 0.6− | 2005 06 03 | 703 | 0.6− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.1− |
| 2002 11 08 | 704 | 0.7− | 0.4− | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.1+ |
| 2002 11 08 | 704 | 1.1− | 0.8+ | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.0 | 1.2+ |
| 2002 11 12 | 704 | 0.5− | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2002 11 12 | 704 | 1.3− | 0.0 | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.6+ | 0.3− |
| 2002 11 12 | 704 | 1.1− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.6− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 11 12 | 704 | 0.9− | 0.4− | 2006 08 28 | 703 | 0.5+ | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2002 11 14 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.9+ | 0.1+ |
| 2002 11 14 | 704 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2002 11 14 | 704 | 0.5− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 11 14 | 704 | 0.3− | 1.0− | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 11 24 | 644 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2002 12 02 | 704 | 0.9+ | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 12 02 | 704 | 1.2+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2002 12 02 | 704 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.1− | 0.5− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.4+ |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.7+ | 0.2+ |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.4− | 1.2+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2002 12 06 | 704 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 12 11 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2002 12 11 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2002 12 11 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2004 01 22 | 704 | 0.8+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.0 |

**(142834)∗ 2002 VD$_{12}$**

Discovered 2002 Nov. 2 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.97992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21515674 | $\omega$ | 28.17264 | | +0.99881993 | +0.03997724 | |
| $a$ | 2.7582444 | $\Omega$ | 329.49832 | | −0.04804043 | +0.89664200 | |
| $e$ | 0.0874808 | $i$ | 3.11471 | | +0.00713239 | +0.44094778 | |
| $P$ | 4.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.0 | 1.9− | 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 08 21 | 704 | 0.1− | 0.6+ |
| 1998 12 17 | 704 | 0.6− | 0.7+ | 2003 10 24 | 291 | 0.7− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 1998 12 17 | 704 | 1.0− | 0.3− | 2003 10 24 | 291 | 0.3− | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 1998 12 17 | 704 | 0.9− | 1.5− | 2003 10 24 | 291 | 0.1− | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 1.0− | 1.0− | 2004 01 24 | 704 | 1.0+ | 1.3+ | 2006 08 28 | 703 | 0.2− | 0.4− |
| 2002 10 04 | 704 | 0.4− | 0.6− | 2004 01 24 | 704 | (1.7+ | 2.5−) | 2006 08 28 | 703 | 0.5− | 0.4− |
| 2002 10 04 | 704 | 0.8− | 0.5− | 2004 01 24 | 704 | (0.8+ | 2.4+) | 2006 08 28 | 703 | 0.3+ | 0.6− |
| 2002 10 04 | 704 | 0.7− | 0.3− | 2004 01 24 | 704 | 0.4+ | 0.9+ | 2006 08 28 | 703 | 0.5− | 0.1− |
| 2002 10 12 | 704 | (2.0− | 1.2+) | 2004 02 11 | 644 | 0.5+ | 0.6+ | 2006 08 28 | 699 | 0.5− | 0.5+ |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2004 02 11 | 644 | 0.6+ | 0.7+ | 2006 08 28 | 699 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.1+ | 0.1+ | 2004 02 11 | 644 | 0.4+ | 0.8+ | 2006 08 28 | 699 | 0.6+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 608 | 0.3+ | 1.0+ | 2004 02 12 | 333 | 0.2− | 1.2− | 2006 08 28 | 699 | 0.1− | 0.5+ |
| 2002 10 28 | 608 | 0.2+ | 0.6+ | 2004 02 12 | 333 | 0.1+ | 0.3− | 2006 08 29 | 704 | 0.6+ | 0.0 |
| 2002 10 28 | 608 | 0.5+ | 0.2+ | 2004 02 12 | 333 | 0.4− | 0.3+ | 2006 08 29 | 704 | 0.1+ | 0.6+ |
| 2002 11 02 | 049 | (2.8− | 0.1−) | 2004 02 17 | 704 | 0.2− | 0.1− | 2006 08 29 | 704 | 0.4+ | 1.0+ |
| 2002 11 02 | 049 | (2.7− | 0.1−) | 2004 02 17 | 704 | 0.9+ | 0.5+ | 2006 08 29 | 704 | 0.6+ | 0.3+ |
| 2002 11 02 | 049 | (3.1− | 0.2+) | 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 08 31 | 704 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 0.6+ | 0.2+ | 2004 02 17 | 704 | 0.4+ | 0.5+ | 2006 08 31 | 704 | 0.5+ | 0.4− |
| 2002 11 05 | 704 | 0.2− | 0.0 | 2004 02 18 | 049 | 0.6+ | 0.3− | 2006 08 31 | 704 | 0.8+ | 1.1− |
| 2002 11 05 | 704 | 0.7+ | 1.0+ | 2004 02 18 | 049 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.5+ |
| 2002 11 05 | 704 | 1.3+ | 0.4− | 2004 02 18 | 049 | 0.6+ | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.7− |
| 2002 11 05 | 704 | 1.4+ | 0.3− | 2005 05 08 | 699 | 1.0+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.7− |
| 2002 11 08 | 704 | 0.6+ | 0.3+ | 2005 05 08 | 699 | 1.2+ | 0.1− | 2006 09 14 | 703 | (1.5− | 0.4+) |
| 2002 11 08 | 704 | 0.4+ | 0.7− | 2005 05 08 | 699 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.5− | 1.0+ |
| 2002 11 08 | 704 | 0.4+ | 0.2− | 2005 05 08 | 699 | 0.9− | 0.7− | 2006 09 18 | 699 | 1.0+ | 0.1− |
| 2002 11 08 | 704 | 0.6+ | 0.3+ | 2005 05 08 | E12 | 0.7− | 0.5+ | 2006 09 18 | 699 | 0.2+ | 0.2+ |
| 2002 11 12 | 704 | 0.3− | 0.4− | 2005 05 08 | E12 | 0.0 | 0.3+ | 2006 09 18 | 699 | 1.2− | 0.8− |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2005 05 08 | E12 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.3+ | 0.0 | 2005 05 08 | E12 | 0.7+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.7− |
| 2002 11 12 | 704 | 0.7− | 0.5− | 2005 05 11 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.6+ |
| 2002 11 12 | 704 | 0.4− | 1.2+ | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 1.0+ |
| 2002 11 30 | 608 | 0.2+ | 1.1+ | 2005 05 11 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.5− |
| 2002 11 30 | 608 | 0.3+ | 1.0+ | 2006 08 13 | 644 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2002 11 30 | 608 | 0.3− | 1.0+ | 2006 08 13 | 644 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2002 12 02 | 704 | 0.7− | 0.8− | 2006 08 13 | 644 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2002 12 02 | 704 | 0.7− | 0.5− | 2006 08 18 | 699 | (3.8− | 0.2−) | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2002 12 02 | 704 | 0.2− | 0.7+ | 2006 08 18 | 699 | 0.1+ | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2002 12 02 | 704 | 0.7− | 0.3+ | 2006 08 18 | 699 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 0.6− | 0.1+ | 2006 08 18 | 699 | 0.5− | 0.8− | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2002 12 06 | 704 | 0.5+ | 0.7− | 2006 08 21 | 704 | 0.3− | 1.3+ | 2006 10 27 | G96 | 0.2− | 1.0− |
| 2002 12 06 | 704 | 0.2− | 0.9+ | 2006 08 21 | 704 | 0.8− | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.3+ | 0.5+ | 2006 08 21 | 704 | 0.1− | 1.0+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2006 08 21 | 704 | 0.0 | 1.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− |

**(142835)∗ 2002 VK$_{12}$ = 2004 DM$_{43}$**

Discovered 2002 Nov. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61533)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.67372 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22025567 | $\omega$ | 168.52375 | | −0.19932451 | −0.97783637 | |
| $a$ | 2.7155095 | $\Omega$ | 292.94775 | | +0.89347475 | −0.15449434 | |
| $e$ | 0.1226076 | $i$ | 3.99004 | | +0.40245822 | −0.14130649 | |
| $P$ | 4.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 644 | 0.3− | 0.6+ | 2002 11 10 | 704 | 1.4+ | 0.7+ | 2004 03 16 | 704 | (0.0 | 1.6+) |
| 2001 07 17 | 644 | 0.0 | 0.5+ | 2002 11 10 | 704 | (0.7+ | 1.7+) | 2004 03 16 | 704 | 1.4+ | 1.5+ |
| 2001 07 17 | 644 | 0.1− | 1.0+ | 2002 11 10 | 704 | 0.7+ | 0.3+ | 2004 03 16 | 704 | (0.8− | 1.6−) |
| 2002 10 08 | 699 | 1.0− | 0.0 | 2002 11 12 | 704 | 0.2+ | 1.0+ | 2004 03 18 | 704 | 0.2+ | 0.4− |
| 2002 10 08 | 699 | 0.5− | 1.1+ | 2002 11 12 | 704 | (1.7− | 0.9+) | 2004 03 18 | 704 | 0.0 | 0.1− |
| 2002 10 08 | 699 | 0.6− | 0.1− | 2002 11 12 | 704 | 0.7− | 1.0+ | 2004 03 18 | 704 | 0.4+ | 0.0 |
| 2002 10 08 | 699 | 0.6− | 1.2− | 2002 11 12 | 704 | (0.1− | 1.7+) | 2004 03 18 | 704 | 0.7+ | 0.2+ |
| 2002 10 16 | 644 | 0.2− | 0.7− | 2002 11 12 | 704 | (0.2+ | 1.5+) | 2004 03 18 | 704 | 1.4+ | 0.8+ |
| 2002 10 16 | 644 | 0.0 | 0.4− | 2002 11 13 | 704 | 0.5− | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.6+ |
| 2002 10 16 | 644 | 0.1+ | 0.5− | 2002 11 13 | 704 | 0.8− | 0.2+ | 2004 03 20 | 704 | 1.1+ | 1.0+ |
| 2002 10 28 | 644 | 0.3− | 0.9+ | 2002 11 13 | 704 | 0.1+ | 1.0+ | 2004 03 20 | 704 | (0.4+ | 1.7−) |
| 2002 10 28 | 644 | 0.1− | 0.9+ | 2002 11 13 | 644 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.8− | 1.1− |
| 2002 10 28 | 644 | 0.2− | 1.0+ | 2002 11 13 | 644 | 0.7+ | 0.2+ | 2006 08 29 | 691 | 0.4− | 0.3+ |
| 2002 11 04 | 699 | 0.7− | 0.0 | 2002 11 13 | 644 | 0.4+ | 0.4+ | 2006 08 29 | 691 | 0.2− | 0.6+ |
| 2002 11 04 | 699 | 0.7+ | 0.2− | 2002 12 01 | 704 | 0.3− | 0.9+ | 2006 08 29 | 691 | (0.6+ | 2.6+) |
| 2002 11 04 | 699 | 1.0− | 0.9− | 2002 12 01 | 704 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.4+ | 0.2+ |
| 2002 11 04 | 699 | 1.0+ | 0.2− | 2002 12 01 | 704 | 0.5− | 0.4− | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | 0.6+ | 0.5− | 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 09 13 | 644 | 0.4− | 0.3+ |
| 2002 11 05 | 704 | 1.3− | 0.7− | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 1.0− | 0.3− |
| 2002 11 05 | 704 | 1.1+ | 0.8+ | 2004 02 23 | 704 | 0.4− | 1.0+ | 2006 09 17 | 703 | 1.1+ | 0.3+ |
| 2002 11 05 | 704 | 0.5+ | 0.3− | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.9− | 0.4+ |
| 2002 11 05 | 704 | 0.5+ | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.6+ |
| 2002 11 07 | 704 | 1.3− | 1.3− | 2004 02 25 | 704 | 0.1+ | 1.2+ | 2006 09 30 | 699 | 0.3− | 1.0− |
| 2002 11 07 | 704 | 0.4− | 1.1− | 2004 02 25 | 704 | (0.1+ | 1.6+) | 2006 09 30 | 699 | 0.8+ | 0.3+ |
| 2002 11 07 | 704 | 0.7− | 0.1+ | 2004 02 25 | 704 | 0.6− | 1.3+ | 2006 09 30 | 699 | 0.4+ | 1.2+ |
| 2002 11 07 | 704 | 0.9+ | 0.2− | 2004 02 25 | 704 | 0.0 | 1.1+ | 2006 09 30 | 699 | 0.8− | 0.5+ |
| 2002 11 10 | 704 | 1.2+ | 0.2− | 2004 02 25 | 704 | 0.4− | 0.9+ | | | | |

**(142836)∗ 2002 VN$_{12}$ = 2000 EH$_{116}$**

Discovered 2002 Nov. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 38131)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.89397 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23788247 | $\omega$ | 217.18572 | | −0.48702630 | +0.86879061 | |
| $a$ | 2.5796518 | $\Omega$ | 24.06240 | | −0.73925387 | −0.35549767 | |
| $e$ | 0.1360141 | $i$ | 12.67849 | | −0.46509043 | −0.34470898 | |
| $P$ | 4.14 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 703 | 0.5+ | 0.4− | 2004 01 02 | 704 | 0.1− | 1.3− | 2006 10 16 | 691 | 0.9+ | 0.9− |
| 2000 03 10 | 703 | 0.6− | 1.1+ | 2004 01 02 | 704 | (1.1+ | 1.6−) | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 2000 03 10 | 703 | 0.5+ | 0.6+ | 2004 01 02 | 704 | 0.2+ | 1.0− | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2000 03 10 | 703 | 0.5− | 0.6− | 2004 01 02 | 704 | 0.1− | 0.6− | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 2000 03 11 | 699 | 0.1− | 0.1+ | 2004 01 02 | 704 | 0.7+ | 1.2− | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2000 03 11 | 699 | 0.2− | 0.4+ | 2004 01 18 | 703 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2000 03 11 | 699 | 0.7+ | 0.2− | 2004 01 18 | 703 | 0.3− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2000 03 11 | 699 | 0.7+ | 0.0 | 2004 01 18 | 703 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2002 10 12 | 704 | (1.6+ | 0.3−) | 2004 01 18 | 703 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2002 10 12 | 704 | 1.2+ | 0.7− | 2004 01 19 | 704 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2002 10 12 | 704 | (1.8+ | 1.4+) | 2004 01 19 | 704 | 1.0+ | 1.4+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 1.0+ | 1.0− | 2004 01 19 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.7+ | 0.2− | 2004 01 19 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2002 11 04 | 699 | 0.1− | 0.1+ | 2004 01 19 | 704 | 0.8− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2002 11 04 | 699 | 0.2+ | 0.1− | 2004 01 30 | 703 | 0.6− | 0.6− | 2006 10 21 | 703 | 0.3+ | 0.7− |
| 2002 11 04 | 699 | 0.4− | 0.3+ | 2004 01 30 | 703 | 1.2− | 1.2− | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 2002 11 04 | 699 | 1.1− | 1.1+ | 2004 01 30 | 703 | 1.0− | 1.5− | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2002 11 05 | 704 | 1.2+ | 0.4+ | 2004 01 30 | 703 | 0.9− | 0.8− | 2006 10 25 | 557 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.2− | 0.5+ | 2004 01 31 | 704 | 0.2+ | 0.6− | 2006 10 25 | 557 | 0.4− | 0.0 |
| 2002 11 05 | 704 | 0.2+ | 0.5+ | 2004 01 31 | 704 | 0.0 | 0.5+ | 2006 10 25 | 557 | 0.3− | 0.3− |
| 2002 11 05 | 704 | 0.2+ | 0.5+ | 2004 01 31 | 704 | (1.7+ | 0.2−) | 2006 10 25 | 557 | 0.4+ | 0.8− |
| 2002 11 05 | 704 | 0.6+ | 0.7+ | 2004 01 31 | 704 | 0.5− | 0.1+ | 2006 10 25 | 557 | 0.4− | 0.5− |
| 2002 11 06 | 608 | 0.3− | 0.7+ | 2004 01 31 | 704 | 0.6+ | 0.4− | 2006 10 25 | 557 | 0.1+ | 0.5+ |
| 2002 11 06 | 608 | 0.1− | 0.2− | 2004 02 02 | 704 | 0.0 | 0.9+ | 2006 10 25 | 557 | 0.6+ | 0.7− |
| 2002 11 06 | 608 | 0.1− | 0.3− | 2004 02 02 | 704 | 0.0 | 0.9+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 11 08 | 704 | 1.5− | 1.1− | 2004 02 02 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 11 08 | 704 | (1.1− | 1.7−) | 2004 02 02 | 704 | (0.8+ | 1.8+) | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2002 11 08 | 704 | (0.6− | 2.0−) | 2004 02 10 | 644 | 0.0 | 0.2+ | 2006 10 28 | 704 | (1.5− | 2.0+) |
| 2002 11 08 | 704 | (0.7− | 1.7−) | 2004 02 10 | 644 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.5− | 0.6− |
| 2002 11 12 | 704 | 0.8− | 0.2+ | 2004 02 10 | 644 | 0.1− | 0.3+ | 2006 10 28 | 704 | 0.7− | 0.8+ |
| 2002 11 12 | 704 | 0.8− | 0.2+ | 2004 02 11 | 704 | 0.3− | 0.4− | 2006 10 28 | 704 | 1.2− | 1.0− |
| 2002 11 12 | 704 | 1.5− | 0.0 | 2004 02 11 | 704 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 0.6− | 0.3+ | 2004 02 11 | 704 | 0.4− | 0.7− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2004 02 11 | 704 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.3− |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2004 02 11 | 704 | 0.2+ | 0.1− | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2004 02 18 | 704 | 0.6− | 0.9− | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 704 | 0.8− | 0.0 | 2004 02 18 | 704 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.2− | 0.1+ | 2004 02 18 | 704 | 0.1+ | 0.8− | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.5− | 0.4+ | 2004 02 18 | 704 | 0.8+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | 0.1+ | 0.2+ | 2004 02 18 | 704 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.3− | 0.4+ | 2004 02 26 | 703 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 1.1− | 0.2− |
| 2002 12 06 | 704 | 0.1+ | 0.6+ | 2004 02 26 | 703 | 0.7− | 0.7− | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2002 12 06 | 704 | 0.1− | 0.3+ | 2004 02 26 | 703 | 1.0− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 1.1− |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2004 02 26 | 703 | 0.3− | 0.8+ | 2006 11 11 | 703 | (1.9− | 0.0 ) |
| 2002 12 06 | 704 | 0.5− | 0.1+ | 2004 03 25 | 704 | 0.1+ | 1.4+ | 2006 11 15 | 683 | 0.1− | 1.5− |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2004 03 25 | 704 | 0.7+ | 0.1− | 2006 11 15 | 683 | 1.0− | 0.2− |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2004 03 25 | 704 | 0.1+ | 0.4− | 2006 11 15 | 683 | 0.5+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.7+ | 0.7+ | 2004 03 25 | 704 | 0.3+ | 0.8+ | 2006 11 19 | 704 | 0.1+ | 0.0 | | |
| 2002 12 11 | 704 | 0.0 | 0.8+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1+ | | |
| 2002 12 12 | 608 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.7+ | | |
| 2002 12 12 | 608 | 0.3+ | 0.6− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.3+ | | |
| 2002 12 12 | 608 | 0.2− | 0.2− | 2006 09 20 | 699 | 0.5+ | 0.7+ | 2006 11 19 | 704 | 0.3+ | 0.3− | | |
| 2003 12 29 | 704 | 0.1− | 0.1− | 2006 09 20 | 699 | 1.3− | 0.7+ | 2006 11 22 | 704 | 0.3+ | 1.3+ | | |
| 2003 12 29 | 704 | 0.5− | 0.4− | 2006 09 20 | 699 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.4− | | |
| 2003 12 29 | 704 | 0.7+ | 0.0 | 2006 09 20 | 699 | 0.5− | 0.2+ | 2006 11 22 | 704 | (0.6− | 2.5+) | | |
| 2003 12 29 | 703 | (0.6+ | 1.7+) | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1+ | 1.4+ | | |
| 2003 12 29 | 703 | 0.3+ | 1.2+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 1.1+ | 0.4− | | |
| 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 1.8+ | 1.0− | | |
| 2003 12 29 | 703 | 0.8− | 0.7+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.3− | 0.3+ | | |
| 2003 12 29 | 703 | 1.0+ | 1.4+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.1− | | |

**(142837)∗ 2002 VH$_{13}$**

Discovered 2002 Nov. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.76279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23351096 | $\omega$ | 175.74636 | | −0.53222228 | −0.84561348 | |
| $a$ | 2.6117476 | $\Omega$ | 306.40414 | | +0.77523557 | −0.46734493 | |
| $e$ | 0.0984029 | $i$ | 2.91674 | | +0.34021943 | −0.25792741 | |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 28 | 691 | 0.2− | 0.6− | 2002 12 11 | 704 | 0.6− | 0.5+ | 2004 04 19 | 691 | 0.1+ | 0.6+ | | |
| 1995 01 28 | 691 | 0.2+ | 0.8− | 2002 12 11 | 704 | 0.7− | 0.2− | 2004 04 19 | 691 | 0.0 | 0.4+ | | |
| 1995 01 28 | 691 | 0.1− | 0.4− | 2002 12 11 | 704 | 0.4− | 0.1− | 2004 04 19 | 691 | 0.2− | 0.3+ | | |
| 2002 11 04 | 644 | 0.3− | 0.3+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.9− | 0.3+ | | |
| 2002 11 04 | 644 | 0.0 | 0.4+ | 2004 03 16 | 703 | 1.1+ | 0.4+ | 2006 09 16 | 703 | (2.8− | 1.1+) | | |
| 2002 11 04 | 644 | 0.2+ | 0.0 | 2004 03 16 | 703 | 0.6− | 0.1− | 2006 09 16 | 703 | 1.2− | 0.4− | | |
| 2002 11 05 | 644 | 0.2− | 0.4+ | 2004 03 16 | 703 | (2.0− | 0.5+) | 2006 09 16 | 703 | (3.2− | 1.6+) | | |
| 2002 11 05 | 704 | 0.1− | 0.1− | 2004 03 16 | 703 | 0.6− | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.2+ | | |
| 2002 11 05 | 704 | 0.2+ | 1.2+ | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ | | |
| 2002 11 05 | 704 | 0.4− | 0.3− | 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ | | |
| 2002 11 05 | 644 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2002 11 05 | 704 | 0.3− | 0.4− | 2004 03 18 | 704 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.0 | 0.3+ | | |
| 2002 11 05 | 644 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.2− | 0.9+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | | |
| 2002 11 14 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 704 | 1.3+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.5+ | | |
| 2002 11 14 | 704 | 0.7+ | 0.5+ | 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 10 17 | 691 | 0.3− | 0.3+ | | |
| 2002 11 14 | 704 | 1.3+ | 0.3− | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.0 | | |
| 2002 11 14 | 704 | 1.3− | 1.0− | 2004 03 20 | 704 | 1.0+ | 0.4+ | 2006 10 30 | 408 | 0.5+ | 0.4+ | | |
| 2002 11 14 | 704 | 0.2− | 0.5− | 2004 03 20 | 704 | 0.4+ | 0.4+ | 2006 10 30 | 408 | 0.0 | 0.4+ | | |
| 2002 11 23 | 644 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 10 31 | 408 | 0.8+ | 0.2+ | | |
| 2002 11 23 | 644 | 0.2− | 0.6+ | 2004 03 27 | 704 | (0.5− | 1.8−) | 2006 10 31 | 408 | 0.9+ | 0.9+ | | |
| 2002 11 23 | 644 | 0.3− | 0.8+ | 2004 03 27 | 704 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.0 | | |
| 2002 12 02 | 704 | 1.4− | 1.3− | 2004 03 27 | 704 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.4+ | | |
| 2002 12 02 | 704 | (1.7− | 0.1−) | 2004 03 31 | 704 | 0.9+ | 0.2− | 2006 11 13 | 691 | 0.5+ | 0.1− | | |
| 2002 12 02 | 704 | 0.5− | 0.3+ | 2004 03 31 | 704 | 0.7+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2002 12 02 | 704 | 1.4− | 0.1− | 2004 03 31 | 704 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1− | | |
| 2002 12 02 | 704 | (1.1− | 1.9−) | 2004 03 31 | 704 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2− | | |
| 2002 12 06 | 704 | 0.4+ | 0.8+ | 2004 04 12 | 691 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.1− | | |
| 2002 12 06 | 704 | 0.3− | 1.0+ | 2004 04 12 | 691 | 0.1+ | 0.6+ | | | | | | |
| 2002 12 06 | 704 | 0.5+ | 1.3+ | 2004 04 12 | 691 | 0.1+ | 0.5+ | | | | | | |

**(142838)∗ 2002 VZ$_{15}$**

Discovered 2002 Nov. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.67423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21925432 | $\omega$ | 186.90418 | | −0.42270749 | −0.90476251 | |
| $a$ | 2.7237711 | $\Omega$ | 288.11235 | | +0.83408626 | −0.36587607 | |
| $e$ | 0.0690227 | $i$ | 3.14739 | | +0.35442698 | −0.21803557 | |
| $P$ | 4.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 21 | 691 | 0.0 | 0.4− | 2004 02 16 | 333 | 0.7− | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.5+ | | |
| 1993 11 21 | 691 | 0.0 | 0.2− | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 704 | (2.3− | 0.3−) | | |
| 1993 11 21 | 691 | 0.4+ | 0.6− | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.3− | 1.3+ | | |
| 2002 10 10 | 704 | 0.1+ | 0.2+ | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.3− | 1.2+ | | |
| 2002 10 10 | 704 | 1.3+ | 0.8− | 2004 02 19 | 704 | 0.2+ | 1.4+ | 2006 08 30 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 10 | 704 | 0.5+ | 1.1− | 2004 02 19 | 704 | 1.0+ | 1.2+ | 2006 09 12 | 703 | 0.7− | 0.7− | | |
| 2002 11 04 | 699 | 0.1− | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.5+ | 2006 09 12 | 703 | 0.3+ | 0.9+ | | |
| 2002 11 04 | 699 | 0.4− | 1.0+ | 2004 02 20 | 704 | 0.2+ | 0.5− | 2006 09 12 | 703 | 0.4− | 0.0 | | |
| 2002 11 04 | 699 | 0.2− | 0.6+ | 2004 02 20 | 704 | 0.0 | 1.1+ | 2006 09 12 | 703 | 0.1+ | 0.6+ | | |
| 2002 11 04 | 699 | 1.1− | 0.5+ | 2004 02 20 | 704 | 0.1− | 0.9+ | 2006 09 16 | 699 | 0.6+ | 0.3+ | | |
| 2002 11 06 | 608 | (1.1− | 1.8+) | 2004 02 20 | 704 | 0.3− | 0.8+ | 2006 09 16 | 699 | 0.5− | 0.4− | | |
| 2002 11 06 | 608 | (1.3− | 1.7+) | 2004 03 12 | 644 | 0.3+ | 0.1+ | 2006 09 16 | 699 | 0.2+ | 1.2+ | | |
| 2002 11 06 | 608 | 0.8− | 1.5+ | 2004 03 12 | 644 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.6− | 0.0 | | |
| 2002 11 12 | 704 | 0.1+ | 0.4− | 2004 03 12 | 644 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 0.4− | 0.9+ | | |
| 2002 11 12 | 704 | 0.2+ | 0.5− | 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 704 | 1.1− | 0.6+ | | |
| 2002 11 12 | 704 | 0.2− | 0.0 | 2004 03 15 | 704 | 1.1+ | 0.3− | 2006 09 18 | 704 | 0.9− | 0.4+ | | |
| 2002 11 12 | 704 | 0.4+ | 0.5+ | 2004 03 15 | 704 | 0.0 | 1.0+ | 2006 09 19 | 699 | 0.1− | 0.1− | | |
| 2002 11 13 | 644 | 0.3− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.6− | | |
| 2002 11 13 | 644 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.9+ | | |
| 2002 11 13 | 644 | 0.1− | 0.2+ | 2004 03 18 | 704 | 1.0+ | 0.2− | 2006 09 19 | 703 | 0.5− | 0.5− | | |
| 2003 11 24 | 291 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.2− | | |
| 2003 11 24 | 291 | 1.0− | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.4+ | | |
| 2003 11 24 | 291 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.2− | 2006 09 19 | 703 | 1.2− | 0.6− | | |
| 2004 01 29 | 699 | 1.1− | 0.3+ | 2004 03 18 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.3+ | 0.5+ | | |
| 2004 01 29 | 699 | 0.3+ | 0.3− | 2004 03 20 | 704 | 0.7+ | 1.1+ | 2006 09 25 | 699 | 0.5+ | 1.1+ | | |
| 2004 01 29 | 699 | 1.2− | 0.2+ | 2004 03 20 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 699 | (0.6+ | 1.6+) | | |
| 2004 01 29 | 699 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 699 | 0.4+ | 0.6+ | | |
| 2004 02 12 | 333 | 0.1+ | 0.4− | 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.8+ | | |
| 2004 02 12 | 333 | 0.6+ | 0.4− | 2004 03 27 | 704 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.5+ | 0.8− | | |
| 2004 02 12 | 333 | 0.2− | 0.3− | 2004 03 27 | 704 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.8+ | 0.8− | | |
| 2004 02 12 | 333 | 0.6+ | 0.0 | 2004 03 27 | 704 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.9− | | |
| 2004 02 12 | 333 | 0.7− | 0.0 | 2006 08 27 | 699 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.2− | 0.8− | | |
| 2004 02 12 | 333 | 0.3+ | 0.1− | 2006 08 27 | 699 | 0.1+ | 1.3+ | 2006 10 21 | 644 | 0.2− | 0.7+ | | |
| 2004 02 14 | 608 | 0.0 | 0.9+ | 2006 08 27 | 699 | 1.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.6+ | | |
| 2004 02 14 | 608 | 0.1+ | 0.5+ | 2006 08 27 | 699 | (1.7+ | 0.4−) | 2006 10 21 | 644 | 0.4− | 0.7+ | | |
| 2004 02 14 | 608 | 0.4+ | 0.7+ | 2006 08 29 | 691 | 0.2− | 0.6+ | | | | | | |
| 2004 02 16 | 333 | 0.4− | 0.0 | 2006 08 29 | 691 | 0.2− | 0.6+ | | | | | | |

**(142839)∗ 2002 VQ$_{16}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.26126 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23255118 | $\omega$ | 266.60514 | | +0.85697310 | +0.45737005 | |
| $a$ | 2.6189288 | $\Omega$ | 66.05747 | | −0.30537715 | +0.82189427 | |
| $e$ | 0.1002814 | $i$ | 15.06224 | | −0.41514081 | +0.33956214 | |
| $P$ | 4.24 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 704 | 0.7− | 1.4− | 2002 12 11 | 704 | (2.0+ | 0.2+) | 2005 06 14 | 691 | 0.0 | 0.2+ | | |
| 1998 11 24 | 704 | 0.5+ | 0.4− | 2003 01 08 | 704 | 0.4+ | 1.5+ | 2005 06 14 | 699 | 0.3+ | 0.3+ | | |
| 1998 11 24 | 704 | 0.6− | 0.2− | 2003 01 08 | 704 | 0.2+ | 0.2+ | 2005 06 14 | 699 | 0.2+ | 0.3+ | | |
| 1998 11 24 | 704 | 0.4− | 0.5+ | 2003 01 08 | 704 | 0.5+ | 1.1+ | 2005 06 16 | G96 | 0.7− | 0.6− | | |
| 2002 10 01 | 704 | (1.6+ | 1.1−) | 2004 02 18 | 703 | 0.2+ | 1.3+ | 2005 06 16 | G96 | 0.4− | 0.3− | | |
| 2002 10 01 | 704 | 0.6+ | 0.3+ | 2004 02 18 | 703 | 0.3+ | 1.1+ | 2005 06 16 | G96 | 0.1− | 0.4− | | |
| 2002 10 01 | 704 | 0.6+ | 0.5− | 2004 02 18 | 703 | (1.5− | 2.4+) | 2005 06 16 | G96 | 0.3− | 0.5− | | |
| 2002 10 01 | 704 | 1.0+ | 0.9− | 2004 02 18 | 703 | (2.5+ | 1.3+) | 2005 06 23 | 644 | 0.2− | 0.1+ | | |
| 2002 10 04 | 704 | (1.7− | 1.7−) | 2005 04 15 | 699 | 0.3+ | 0.2− | 2005 06 23 | 644 | 0.1− | 0.1− | | |
| 2002 10 04 | 704 | (2.5− | 0.1−) | 2005 04 15 | 699 | 0.6− | 1.0+ | 2005 06 23 | 644 | 0.1− | 0.2− | | |
| 2002 10 04 | 704 | (2.2− | 1.3+) | 2005 04 15 | 699 | (1.6+ | 0.2−) | 2005 06 23 | 644 | 0.0 | 0.1+ | | |
| 2002 10 04 | 704 | (2.7− | 1.5+) | 2005 04 15 | 699 | 0.1− | 1.1+ | 2005 06 23 | 644 | 0.5+ | 0.3+ | | |
| 2002 10 06 | 608 | 1.0+ | 1.2− | 2005 05 03 | 704 | 1.0+ | 0.9+ | 2005 06 23 | 644 | 0.1− | 0.0 | | |
| 2002 10 06 | 608 | 0.3+ | 1.1− | 2005 05 03 | 704 | 0.5− | 0.7+ | 2006 09 22 | 703 | 0.1+ | 0.0 | | |
| 2002 10 06 | 608 | 0.7+ | 0.9− | 2005 05 03 | 704 | 1.3+ | 0.3+ | 2006 09 22 | 703 | 0.4+ | 0.5− | | |
| 2002 10 31 | 704 | 0.1+ | 0.1− | 2005 05 03 | 704 | 1.0+ | 1.0− | 2006 09 22 | 703 | 0.3+ | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 1.3+ | 1.3− | 2005 05 08 | 704 | 0.0 | 0.7+ | 2006 09 22 | 703 | 0.9− | 0.4+ | | |
| 2002 10 31 | 704 | (2.0− | 0.2−) | 2005 05 08 | 704 | 0.7− | 0.4+ | 2006 09 24 | 699 | 0.3− | 0.8+ | | |
| 2002 10 31 | 704 | 0.1− | 1.2+ | 2005 05 08 | 704 | 1.1− | 0.1+ | 2006 09 24 | 699 | 0.6− | 0.4+ | | |
| 2002 10 31 | 704 | 0.4− | 0.4+ | 2005 05 08 | 704 | 0.3− | 0.0 | 2006 09 24 | 699 | 0.3+ | 0.6+ | | |
| 2002 11 05 | 704 | 0.2+ | 0.1− | 2005 05 12 | G96 | 0.4− | 0.1− | 2006 09 24 | 699 | 0.3+ | 0.4+ | | |
| 2002 11 05 | 704 | 1.0+ | 0.0 | 2005 05 12 | 704 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.1− | | |
| 2002 11 05 | 704 | 0.6+ | 0.2− | 2005 05 12 | G96 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.4− | 0.2− | | |
| 2002 11 05 | 704 | 0.3+ | 0.3+ | 2005 05 12 | 704 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2002 11 05 | 704 | 0.3+ | 0.4− | 2005 05 12 | G96 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 11 06 | 699 | 0.5− | 0.2+ | 2005 05 12 | G96 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 2002 11 06 | 699 | 0.3− | 0.4+ | 2005 05 12 | 704 | 0.3+ | 0.4− | 2006 10 10 | 644 | 0.5− | 0.0 | | |
| 2002 11 06 | 699 | 0.5− | 0.2+ | 2005 05 12 | 704 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 11 06 | 699 | 0.9− | 0.8+ | 2005 05 14 | 644 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.0 | | |
| 2002 11 06 | 608 | 1.0− | 0.0 | 2005 05 14 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1− | | |
| 2002 11 06 | 608 | 1.1− | 0.0 | 2005 05 14 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.0 | | |
| 2002 11 06 | 608 | 1.3− | 0.1+ | 2005 06 04 | 691 | 0.5+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.0 | | |
| 2002 11 11 | 704 | 0.1− | 0.5+ | 2005 06 04 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1− | | |
| 2002 11 11 | 704 | 0.0 | 0.5+ | 2005 06 04 | 691 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.1− | | |
| 2002 11 11 | 704 | 1.0− | 0.0 | 2005 06 04 | 704 | 0.8+ | 1.0+ | 2006 10 22 | 644 | 0.4− | 0.0 | | |
| 2002 11 11 | 704 | 0.1− | 0.2+ | 2005 06 04 | 703 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.4− | 0.1+ | | |
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2005 06 04 | 703 | 1.0− | 0.1− | 2006 10 24 | 644 | 0.1− | 0.1− | | |
| 2002 12 01 | 704 | 0.1− | 0.6+ | 2005 06 04 | 703 | 0.4− | 0.9− | 2006 10 24 | 644 | 0.0 | 0.1− | | |
| 2002 12 01 | 704 | 0.1− | 0.9+ | 2005 06 04 | 704 | 0.3+ | 1.2+ | 2006 10 24 | 644 | 0.1− | 0.2− | | |
| 2002 12 01 | 704 | 0.7− | 0.7+ | 2005 06 04 | 703 | 0.2+ | 1.4+ | 2006 10 31 | 703 | 0.3+ | 0.6− | | |
| 2002 12 01 | 704 | 0.3− | 0.9+ | 2005 06 04 | 704 | 0.2+ | 0.0 | 2006 10 31 | 703 | 0.4− | 1.0+ | | |
| 2002 12 01 | 704 | 0.2− | 0.7+ | 2005 06 14 | 699 | 1.1− | 0.2− | 2006 10 31 | 703 | 0.7+ | 1.2+ | | |
| 2002 12 11 | 704 | 0.8+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 10 31 | 703 | 1.2+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.6+ | 0.4− | 2005 06 14 | 699 | 0.3− | 0.1+ | | | | | | |
| 2002 12 11 | 704 | (1.5+ | 1.1+) | 2005 06 14 | 691 | 0.0 | 0.0 | | | | | | |

**(142840)∗ 2002 VV$_{16}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.53351 | | (2000.0) | | | |
| $n$ | 0.23866792 | $\omega$ | 187.09055 | | −0.50830411 | −0.85908677 |
| $a$ | 2.5739890 | $\Omega$ | 293.47651 | | +0.79329085 | −0.43999577 |
| $e$ | 0.1045375 | $i$ | 3.74903 | | +0.33513663 | −0.26148355 |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.3− | 0.2+ | 2004 03 16 | 703 | (0.6− | 1.7+) | 2005 06 08 | 691 | 0.1− | 0.3+ | | |
| 2002 10 12 | 704 | 0.6+ | 0.9+ | 2004 03 16 | 703 | 0.4+ | 0.9+ | 2005 06 08 | 691 | 0.2− | 0.2+ | | |
| 2002 10 12 | 704 | 1.1+ | 1.0+ | 2004 03 16 | 703 | 0.4+ | 1.1+ | 2005 06 08 | 691 | 0.0 | 0.2+ | | |
| 2002 11 05 | 704 | 0.8− | 0.4− | 2004 03 16 | 703 | 0.0 | 0.4+ | 2005 06 26 | G96 | 0.1+ | 0.7+ | | |
| 2002 11 05 | 704 | 0.0 | 0.3− | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2005 06 26 | G96 | 0.3+ | 0.8+ | | |
| 2002 11 05 | 704 | 0.2+ | 0.0 | 2004 03 17 | 704 | 0.2+ | 0.5− | 2005 06 26 | G96 | 0.0 | 0.7+ | | |
| 2002 11 05 | 704 | 0.1+ | 0.1− | 2004 03 17 | 704 | 0.2+ | 0.7+ | 2005 06 26 | G96 | 0.3− | 0.6+ | | |
| 2002 11 05 | 704 | 1.4− | 0.4− | 2004 03 17 | 704 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.5+ | 1.1+ | | |
| 2002 11 06 | 608 | 0.6− | 0.7+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.7− | 1.1+ | | |
| 2002 11 06 | 608 | 0.6− | 0.3− | 2004 03 19 | 704 | 1.4+ | 1.3+ | 2006 10 17 | 703 | 0.2+ | 0.5+ | | |
| 2002 11 06 | 608 | 0.6− | 0.2− | 2004 03 19 | 704 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.3+ | | |
| 2002 11 08 | 704 | 0.9+ | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.0 | | |
| 2002 11 08 | 704 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.1− | | |
| 2002 11 08 | 704 | 1.0− | 0.5− | 2004 03 26 | 699 | 0.6+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.0 | | |
| 2002 11 12 | 704 | 0.0 | 0.6+ | 2004 03 26 | 699 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.7+ | | |
| 2002 11 12 | 704 | 0.2+ | 1.2+ | 2004 03 26 | 699 | 0.8− | 0.4− | 2006 10 21 | 703 | 0.3− | 0.0 | | |
| 2002 11 12 | 704 | 1.1− | 0.9+ | 2004 03 26 | 699 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.5− | 1.1+ | | |
| 2002 11 30 | 608 | 0.0 | 0.0 | 2004 03 31 | 704 | (0.1+ | 1.7−) | 2006 10 21 | 703 | 0.1− | 1.2− | | |
| 2002 11 30 | 608 | 0.4+ | 0.6− | 2004 03 31 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2002 11 30 | 608 | 0.1+ | 0.0 | 2004 03 31 | 704 | (1.8− | 0.2+) | 2006 10 21 | 644 | 0.2− | 0.6+ | | |
| 2002 12 06 | 704 | 0.7+ | 0.2+ | 2004 04 11 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 12 06 | 704 | 0.1− | 0.6+ | 2004 04 11 | 644 | 0.5− | 0.6+ | 2006 11 25 | G96 | 0.2− | 0.0 | | |
| 2002 12 06 | 704 | 0.6+ | 0.2+ | 2004 04 11 | 644 | 0.6− | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.1− | | |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2004 04 19 | 704 | 0.2+ | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2002 12 11 | 644 | 0.2+ | 0.3+ | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.2+ | 0.2− | | |
| 2002 12 11 | 644 | 0.3+ | 0.2+ | 2004 04 19 | 704 | 1.0+ | 0.8+ | | | | | | |
| 2002 12 11 | 644 | 0.0 | 0.2+ | 2004 04 19 | 704 | 1.1+ | 0.1− | | | | | | |

**(142841)∗ 2002 VY$_{17}$**

Discovered 2002 Nov. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.39836 | | (2000.0) | | | |
| $n$ | 0.22531625 | $\omega$ | 278.36314 | | −0.25728666 | −0.96632931 |
| $a$ | 2.6746956 | $\Omega$ | 186.54887 | | +0.89776079 | −0.23774383 |
| $e$ | 0.2698603 | $i$ | 1.68428 | | +0.35753202 | −0.09841510 |
| $P$ | 4.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 699 | 0.9+ | 1.0+ | 2003 01 31 | 704 | 0.5− | 0.2+ | 2006 10 23 | 704 | 0.4− | 1.0+ | | |
| 1999 03 24 | 699 | 0.5− | 0.5+ | 2003 01 31 | 704 | 0.5− | 0.1+ | 2006 10 23 | 704 | 0.9− | 0.8+ | | |
| 1999 03 24 | 699 | 0.5+ | 1.1+ | 2003 02 01 | 608 | 0.5+ | 0.8− | 2006 10 23 | 704 | 0.3− | 0.1+ | | |
| 2002 10 04 | 644 | 0.3− | 0.5+ | 2003 02 01 | 608 | 0.6+ | 0.9− | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2002 10 04 | 644 | 0.0 | 0.5+ | 2003 02 01 | 608 | 0.4+ | 0.6− | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2002 10 04 | 644 | 0.3− | 0.5+ | 2003 02 03 | 704 | 0.8+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2002 11 02 | 699 | 0.2+ | 0.4+ | 2003 02 03 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | | |
| 2002 11 02 | 699 | 0.1− | 0.1+ | 2003 02 03 | 704 | 0.5+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.3+ | | |
| 2002 11 02 | 699 | 0.8− | 0.7+ | 2003 02 03 | 704 | 0.5+ | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2002 11 02 | 699 | 0.5+ | 0.4− | 2003 02 03 | 704 | 0.3+ | 0.4+ | 2006 10 28 | 704 | 0.3+ | 0.4− | | |
| 2002 11 06 | 704 | 0.7+ | 0.2+ | 2003 02 06 | 608 | 0.2− | 1.2+ | 2006 10 28 | 704 | 0.7+ | 1.1− | | |
| 2002 11 06 | 704 | 0.1− | 0.6+ | 2003 02 06 | 608 | 0.1− | 0.7+ | 2006 10 28 | 704 | 0.8− | 0.2− | | |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2003 02 06 | 608 | 0.0 | 0.3+ | 2006 10 28 | 704 | 0.1+ | 0.5− | | |
| 2002 11 06 | 704 | 0.8− | 1.1+ | 2003 02 08 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 1.4+ | 0.6− | | |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2003 02 08 | 704 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2002 12 05 | 704 | 0.4− | 0.5+ | 2003 02 08 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2003 02 18 | 608 | 0.8+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 | | |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2003 02 18 | 608 | 1.2+ | 0.7− | 2006 11 11 | 703 | 0.1− | 0.3− | | |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2003 02 18 | 608 | 0.2+ | 0.8− | 2006 11 11 | 703 | 0.2− | 0.1+ | | |
| 2002 12 10 | 704 | 0.1− | 0.6+ | 2003 02 21 | 699 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.3− | | |
| 2002 12 10 | 704 | 1.2+ | 0.5+ | 2003 02 21 | 699 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.1+ | | |
| 2002 12 10 | 704 | 0.4+ | 0.3− | 2003 02 21 | 699 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.4− | | |
| 2002 12 10 | 644 | 0.1+ | 0.6+ | 2003 02 21 | 699 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.4− | | |
| 2002 12 10 | 644 | 0.2+ | 0.5+ | 2003 03 26 | 704 | 1.2− | 1.1+ | 2006 11 13 | G96 | 0.1− | 0.3− | | |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2003 03 26 | 704 | 0.7− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.3− | | |
| 2002 12 27 | 699 | 1.0+ | 0.0 | 2003 03 26 | 704 | 1.1− | 1.0− | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 2002 12 27 | 699 | 0.7+ | 0.8+ | 2003 04 01 | 704 | 0.3− | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.5− | | |
| 2002 12 27 | 699 | 0.5+ | 1.1+ | 2003 04 01 | 704 | 0.9+ | 0.9+ | 2006 11 15 | G96 | 0.3+ | 0.5− | | |
| 2002 12 27 | 699 | 0.1− | 0.5+ | 2003 04 01 | 704 | (0.0 | 2.0+) | 2006 11 15 | G96 | 0.1− | 0.5− | | |
| 2002 12 31 | 704 | 0.2− | 0.3+ | 2005 06 15 | G96 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.4− | | |
| 2002 12 31 | 704 | 0.0 | 0.6+ | 2005 06 15 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.0 | | |
| 2002 12 31 | 704 | 0.0 | 0.6+ | 2005 06 15 | G96 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.1− | 0.2− | | |
| 2002 12 31 | 704 | 0.0 | 0.6+ | 2005 06 15 | G96 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.1+ | | |
| 2002 12 31 | 704 | 0.6− | 0.8+ | 2005 07 02 | 691 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.1+ | | |
| 2003 01 04 | 704 | 0.3− | 0.2− | 2005 07 02 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.4− | | |
| 2003 01 04 | 704 | 0.5− | 0.5+ | 2005 07 02 | 691 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 2003 01 04 | 704 | 0.1− | 0.0 | 2005 07 04 | G96 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.0 | | |
| 2003 01 04 | 704 | 0.4− | 0.4+ | 2005 07 04 | G96 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.4+ | | |
| 2003 01 04 | 704 | 0.6− | 0.2+ | 2005 07 04 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2003 01 08 | 704 | 0.0 | 0.0 | 2005 07 04 | G96 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.0 | | |
| 2003 01 08 | 704 | 0.2− | 0.2− | 2005 07 07 | 691 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.0 | | |
| 2003 01 08 | 704 | 0.4− | 0.5− | 2005 07 07 | 691 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2003 01 08 | 704 | 0.1− | 0.4− | 2005 07 07 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.6+ | | |
| 2003 01 08 | 704 | 0.5+ | 0.6− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.0 | | |
| 2003 01 25 | 699 | 0.8+ | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.3+ | 0.1+ | | |
| 2003 01 25 | 699 | 0.5+ | 0.4− | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2003 01 25 | 699 | 0.7+ | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2003 01 25 | 699 | 0.9+ | 0.2+ | 2006 08 28 | 703 | 1.2+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2+ | | |
| 2003 01 26 | 608 | 0.4− | 0.6− | 2006 08 28 | 703 | 1.4+ | 0.0 | 2006 11 22 | 683 | 0.1+ | 0.0 | | |
| 2003 01 26 | 608 | 0.4− | 0.8− | 2006 08 28 | 703 | 0.3− | 0.6− | 2006 11 22 | 683 | 0.7+ | 0.0 | | |
| 2003 01 26 | 608 | 0.4− | 0.6− | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 11 22 | 683 | 0.7− | 0.0 | | |
| 2003 01 27 | 704 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 23 | 683 | 0.3+ | 0.2− | | |
| 2003 01 27 | 704 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 23 | 683 | 0.7+ | 0.7+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 704 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 23 | 683 | 1.1− | 0.1+ |
| 2003 01 27 | 704 | 0.7− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 25 | 683 | 0.2− | 1.4− |
| 2003 01 27 | 704 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 25 | 683 | 1.0+ | 1.9− |
| 2003 01 28 | 704 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 683 | 0.1− | 1.5− |
| 2003 01 28 | 704 | 0.4− | 0.6− | 2006 10 11 | 691 | 0.2− | 0.7− | 2006 11 27 | 703 | 0.1− | 0.1− |
| 2003 01 28 | 704 | 0.0 | 0.6− | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.7− |
| 2003 01 28 | 704 | 0.1− | 0.8− | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.1+ | 0.7− |
| 2003 01 28 | 704 | 0.1− | 0.7− | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2003 01 30 | 644 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 27 | 958 | 0.6− | 0.2− |
| 2003 01 30 | 699 | (0.6− | 1.8+) | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 27 | 958 | 0.4− | 0.3− |
| 2003 01 30 | 699 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 11 27 | 958 | 0.8− | 0.2− |
| 2003 01 30 | 699 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.9+ | 0.4− |
| 2003 01 30 | 699 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.6− |
| 2003 01 30 | 644 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.6− | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2003 01 30 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2003 01 31 | 704 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.2+ |
| 2003 01 31 | 704 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | | | |
| 2003 01 31 | 704 | 0.3− | 0.4+ | 2006 10 23 | 704 | (0.0 | 2.7−) | | | | |

**(142842)∗ 2002 VG$_{18}$ = 2000 ED$_{195}$**

Discovered 2002 Nov. 2 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 41166)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.40763 | | (2000.0) | | | |
| $n$ | 0.27366370 | $\omega$ | 267.30781 | | −0.49920335 | −0.86625917 |
| $a$ | 2.3495855 | $\Omega$ | 212.66344 | | +0.80883375 | −0.45768204 |
| $e$ | 0.1660361 | $i$ | 2.09986 | | +0.31077963 | −0.20030529 |
| $P$ | 3.60 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 16 | 691 | 0.2− | 0.1+ | 2002 11 02 | 608 | 0.3− | 0.1− | 2002 12 10 | 644 | 0.2− | 0.4+ |
| 1998 09 16 | 691 | 0.3− | 0.2− | 2002 11 02 | 608 | 0.1+ | 0.4+ | 2004 05 21 | 691 | 0.3− | 0.3+ |
| 1998 09 16 | 691 | 0.2− | 0.1− | 2002 11 06 | 704 | 0.8− | 1.2− | 2004 05 21 | 691 | 0.0 | 0.2+ |
| 1998 09 17 | 691 | 0.0 | 0.1+ | 2002 11 06 | 704 | 0.3+ | 1.4− | 2004 05 21 | 691 | 0.3+ | 0.1+ |
| 1998 09 17 | 691 | 0.1+ | 0.1+ | 2002 11 06 | 704 | 0.9+ | 1.2− | 2004 06 13 | 691 | 0.4+ | 0.0 |
| 1998 09 17 | 691 | 0.1− | 0.1− | 2002 11 08 | 704 | 0.2− | 1.5+ | 2004 06 13 | 691 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.0 | 1.3+ | 2002 11 08 | 704 | 0.8+ | 0.2+ | 2004 06 13 | 691 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 1.6+ | 0.8− | 2002 11 08 | 704 | 0.5+ | 0.2+ | 2006 10 21 | G96 | 0.7− | 0.1− |
| 2000 03 03 | 704 | 0.7+ | 0.6− | 2002 11 12 | 644 | 0.6+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.6+ | 0.9− | 2002 11 12 | 644 | 0.1− | 1.1+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2000 03 11 | 704 | 0.4− | 1.0+ | 2002 11 12 | 644 | 0.2+ | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2000 03 11 | 704 | 0.4− | 0.3+ | 2002 11 22 | 644 | 0.2+ | 0.9+ | 2006 11 01 | G96 | 0.5− | 0.1− |
| 2000 03 11 | 704 | 0.7− | 1.2+ | 2002 11 22 | 644 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.7− | 0.2− |
| 2000 03 11 | 704 | 0.6− | 0.1− | 2002 11 22 | 644 | 0.2+ | 0.6+ | 2006 11 01 | G96 | 0.6− | 0.0 |
| 2000 03 11 | 704 | 0.5− | 0.1− | 2002 12 10 | 644 | 0.1+ | 1.5+ | 2006 11 01 | G96 | 0.7− | 0.0 |
| 2002 11 02 | 608 | 0.0 | 0.4+ | 2002 12 10 | 644 | 0.2− | 0.5+ | | | | |

**(142843)∗ 2002 VW$_{18}$ = 2004 CX$_{55}$**

Discovered 2002 Nov. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69413)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.64971 | | (2000.0) | | | |
| $n$ | 0.23134711 | $\omega$ | 323.27805 | | +0.98277863 | +0.17948219 |
| $a$ | 2.6280079 | $\Omega$ | 26.48372 | | −0.13723814 | +0.86823875 |
| $e$ | 0.1536352 | $i$ | 5.65701 | | −0.12374110 | +0.46254472 |
| $P$ | 4.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2+ | 0.4− | 2004 02 13 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.9+ | 0.5+ |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2004 02 13 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.6+ | 0.6+ |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2004 02 17 | 291 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | (2.0− | 1.3−) | 2004 02 17 | 291 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 1.0+ |
| 2002 11 02 | 049 | 0.5− | 0.1− | 2004 02 17 | 291 | 0.2− | 0.1+ | 2006 09 25 | 699 | 1.3− | 0.3− |
| 2002 11 02 | 049 | 0.5− | 0.2+ | 2005 04 07 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.4+ | 0.3− |
| 2002 11 02 | 049 | 0.4− | 0.1+ | 2005 04 07 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.9+ |
| 2002 11 04 | 699 | 1.2+ | 0.0 | 2005 04 07 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 0.4− | 1.0+ |
| 2002 11 04 | 699 | 0.4− | 1.0+ | 2005 04 09 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | (0.4− | 2.9+) |
| 2002 11 04 | 699 | 1.0− | 1.2+ | 2005 04 09 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.5− |
| 2002 11 04 | 699 | 1.3− | 0.1+ | 2005 04 09 | 691 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 1.0+ |
| 2002 11 06 | 704 | 0.6− | 0.5+ | 2005 05 14 | G96 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.0+ |
| 2002 11 06 | 704 | 0.4+ | 0.0 | 2005 05 14 | G96 | 0.6− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2002 11 06 | 704 | 0.4+ | 0.1+ | 2005 05 14 | G96 | 0.6− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | 0.6+ | 0.6+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2002 11 11 | 049 | 0.5+ | 0.6+ | 2006 08 30 | 699 | 0.8− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 11 11 | 049 | 0.4− | 0.1+ | 2006 08 30 | 699 | (1.8− | 2.3+) | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 11 11 | 049 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.7− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2004 02 13 | 691 | 0.2− | 0.6+ | 2006 08 30 | 699 | 0.7− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− |

**(142844)∗ 2002 VQ$_{21}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.17834 | | (2000.0) | | | |
| $n$ | 0.25984714 | $\omega$ | 265.63730 | | −0.68690283 | −0.66233879 |
| $a$ | 2.4321522 | $\Omega$ | 232.54292 | | +0.72021112 | −0.67547640 |
| $e$ | 0.1123610 | $i$ | 22.13648 | | −0.09726475 | −0.32409713 |
| $P$ | 3.79 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 699 | 0.5+ | 0.2− | 2002 12 06 | 704 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2000 04 08 | 699 | 0.2+ | 0.5+ | 2002 12 06 | 704 | 0.3− | 1.0+ | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2000 04 08 | 699 | 0.3− | 0.5+ | 2002 12 06 | 704 | 0.4+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2000 04 08 | 699 | 0.2− | 1.3+ | 2002 12 06 | 704 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.0 |
| 2002 10 05 | 704 | 1.3+ | 0.8+ | 2002 12 11 | 704 | 0.9+ | 0.9− | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.8+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.3− |
| 2002 10 05 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 704 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2002 10 05 | 704 | 1.0+ | 0.4+ | 2002 12 11 | 704 | 0.4+ | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2002 10 05 | 704 | 0.2+ | 0.4+ | 2002 12 11 | 704 | 1.0+ | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2002 10 10 | 704 | 0.4− | 0.4+ | 2003 01 04 | 704 | 0.5− | 0.5+ | 2006 10 19 | G96 | 0.3− | 0.6− |
| 2002 10 10 | 704 | 0.7− | 0.1+ | 2003 01 04 | 704 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2003 01 04 | 704 | 0.1− | 0.8+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2002 11 05 | 704 | 0.1+ | 0.3+ | 2003 01 04 | 704 | 0.5− | 0.6+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2002 11 05 | 704 | 0.3− | 0.8+ | 2004 03 16 | E12 | 0.3− | 0.4+ | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2002 11 05 | 704 | 0.3− | 0.8+ | 2004 03 16 | E12 | 0.3− | 0.5+ | 2006 11 12 | G96 | 0.9+ | 1.3− |
| 2002 11 05 | 704 | 0.5+ | 0.8+ | 2004 03 16 | E12 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.1− | 0.4+ | 2004 03 16 | E12 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.7− |
| 2002 11 06 | 704 | 0.2+ | 0.5+ | 2004 03 18 | E12 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 0.3+ | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2004 03 18 | E12 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.9+ |
| 2002 11 06 | 699 | 0.3− | 0.5+ | 2004 03 18 | E12 | 0.1− | 0.4+ | 2006 11 14 | 704 | 1.2− | 0.7− |
| 2002 11 06 | 704 | 0.8+ | 0.9+ | 2004 03 18 | E12 | 0.2+ | 0.9+ | 2006 11 17 | 704 | 0.2− | 0.8+ |
| 2002 11 06 | 699 | 0.1− | 0.2− | 2004 03 26 | 704 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.5− | 0.0 |
| 2002 11 06 | 704 | 1.1+ | 0.2+ | 2004 03 26 | 704 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.9− | 0.3− |
| 2002 11 06 | 699 | 0.3− | 0.3+ | 2004 03 26 | 704 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.1− | 0.9− |
| 2002 11 06 | 699 | 0.1+ | 0.5− | 2004 03 26 | 704 | 0.6− | 0.1− | 2006 11 18 | 704 | (0.2− | 1.6+) |
| 2002 11 08 | 704 | 0.5− | 0.2− | 2004 03 26 | 704 | 0.5+ | 0.5− | 2006 11 18 | 704 | 0.3− | 0.2− |
| 2002 11 08 | 704 | 0.0 | 0.0 | 2004 04 11 | 428 | 0.9− | 0.4+ | 2006 11 18 | 704 | 0.8+ | 1.2+ |
| 2002 11 08 | 704 | 0.3+ | 0.6+ | 2004 04 12 | E12 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2002 11 08 | 704 | 0.9+ | 1.2+ | 2004 04 12 | E12 | (0.9+ | 1.5−) | 2006 11 18 | 704 | 1.1− | 0.8− |
| 2002 11 12 | 704 | 0.2− | 1.5− | 2004 04 12 | E12 | 1.1+ | 1.3− | 2006 11 18 | G96 | 0.5+ | 0.1− |
| 2002 11 12 | 704 | 0.0 | 0.2+ | 2004 04 12 | E12 | 0.4+ | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.3− | 0.2− | 2004 04 16 | 699 | 0.3− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.7− | 0.4− | 2004 04 16 | 699 | 0.4+ | 0.9+ | 2006 11 20 | 704 | 0.3+ | 0.4− |
| 2002 11 12 | 704 | 0.4− | 0.5− | 2004 04 16 | 699 | 0.5− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2004 04 16 | 699 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.3+ |
| 2002 11 13 | 644 | 0.2− | 0.2+ | 2004 04 23 | 608 | 0.4− | 0.6− | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2002 11 13 | 644 | 0.3+ | 0.1+ | 2004 04 23 | 608 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.3− | 0.4+ | 2004 04 23 | 608 | 0.4− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.1− | 0.0 | 2004 04 28 | 608 | 0.3+ | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | 0.4− | 0.4− | 2004 04 28 | 608 | 0.1+ | 0.6− | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2004 04 28 | 608 | 0.4+ | 0.4− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.7+ | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.4− | 0.1+ | 2004 05 15 | 704 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 11 23 | 644 | 0.2− | 0.3+ | 2004 05 15 | 704 | 0.6+ | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2002 11 23 | 644 | 0.2− | 0.3+ | 2004 05 15 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2002 12 01 | 704 | 0.1− | 0.6− | 2004 05 15 | 704 | 0.6+ | 0.4+ | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2002 12 01 | 704 | (1.7− | 1.3−) | 2005 06 24 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 2002 12 01 | 704 | 0.3− | 0.3− | 2005 06 24 | 644 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.7− | 0.5+ |
| 2002 12 01 | 704 | 1.3− | 1.0− | 2005 06 24 | 644 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.6+ | 0.8+ | 2006 09 28 | G96 | 0.3− | 0.5− | | | | |

**(142845)∗ 2002 VZ$_{21}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.39456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21664346 | $\omega$ | 262.92026 | | −0.98406187 | −0.15477404 | |
| $a$ | 2.7456109 | $\Omega$ | 268.14858 | | +0.17690680 | −0.90207705 | |
| $e$ | 0.0524689 | $i$ | 5.02604 | | −0.01806135 | −0.40286720 | |
| $P$ | 4.55 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 691 | 0.4− | 0.9+ | 2002 11 30 | 608 | 0.2− | 0.1+ | 2004 02 18 | 704 | 0.8+ | 0.3+ |
| 2001 08 10 | 691 | 0.4− | 0.9+ | 2002 11 30 | 608 | 1.0− | 0.4− | 2004 02 26 | 704 | 0.4+ | 0.1+ |
| 2001 08 10 | 691 | 0.2− | 1.0+ | 2004 01 23 | 704 | 0.6− | 1.0+ | 2004 02 26 | 704 | 0.3− | 0.9+ |
| 2002 11 05 | 704 | 0.1− | 0.2− | 2004 01 23 | 704 | 0.7− | 1.0+ | 2004 02 26 | 704 | 0.1+ | 0.3+ |
| 2002 11 05 | 704 | 0.9− | 0.2+ | 2004 01 23 | 704 | 0.8− | 0.9+ | 2004 02 26 | 704 | 0.4+ | 0.5+ |
| 2002 11 05 | 704 | 0.8+ | 0.9+ | 2004 01 23 | 704 | 0.6− | 1.0+ | 2004 02 26 | 704 | 0.5− | 0.8+ |
| 2002 11 05 | 704 | 0.3− | 0.1− | 2004 01 23 | 704 | 1.3− | 1.2+ | 2004 03 12 | 644 | 0.5+ | 0.3+ |
| 2002 11 06 | 704 | 0.2+ | 1.0+ | 2004 01 29 | 704 | 0.3+ | 0.4+ | 2004 03 12 | 644 | 0.4+ | 0.1+ |
| 2002 11 06 | 704 | (0.5− | 1.6−) | 2004 01 29 | 704 | 0.6+ | 0.2− | 2004 03 12 | 644 | 0.3+ | 0.2+ |
| 2002 11 06 | 704 | 0.3− | 0.9− | 2004 01 29 | 704 | 0.7+ | 0.3+ | 2004 03 15 | 704 | 0.6+ | 0.0 |
| 2002 11 06 | 704 | 0.1+ | 0.3− | 2004 01 29 | 704 | 0.5+ | 0.3+ | 2004 03 15 | 704 | 1.4+ | 0.3+ |
| 2002 11 08 | 704 | 0.7+ | 0.1− | 2004 02 11 | 644 | 0.0 | 0.7+ | 2004 03 15 | 704 | 0.5− | 0.2+ |
| 2002 11 08 | 704 | 0.4+ | 0.2+ | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2004 03 15 | 704 | 0.5+ | 0.9+ |
| 2002 11 08 | 704 | 0.1+ | 0.4− | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2004 03 15 | 704 | 0.4+ | 1.0+ |
| 2002 11 08 | 704 | 0.6− | 0.3− | 2004 02 13 | 333 | 0.3+ | 0.0 | 2006 08 29 | 703 | 1.0− | 0.3− |
| 2002 11 11 | 049 | (3.6− | 1.7−) | 2004 02 13 | 333 | 0.4− | 0.8− | 2006 08 29 | 703 | 0.0 | 0.0 |
| 2002 11 11 | 049 | (2.6− | 0.5−) | 2004 02 13 | 333 | 0.2+ | 0.2− | 2006 08 29 | 703 | 0.0 | 0.4+ |
| 2002 11 11 | 049 | (3.0− | 0.3−) | 2004 02 13 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.2+ |
| 2002 11 12 | 704 | 0.0 | 0.7+ | 2004 02 13 | 644 | 0.4− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.7− | 0.4− | 2004 02 13 | 644 | 0.1+ | 0.6+ | 2006 09 16 | 644 | 0.0 | 0.1+ |
| 2002 11 12 | 704 | (1.7+ | 1.0+) | 2004 02 14 | 699 | 0.2+ | 0.0 | 2006 09 16 | 644 | 0.2− | 0.5+ |
| 2002 11 12 | 704 | 0.3+ | 1.1+ | 2004 02 14 | 699 | 0.0 | 0.6+ | 2006 09 20 | 699 | 0.7− | 1.1+ |
| 2002 11 14 | 704 | 0.0 | 1.0+ | 2004 02 14 | 699 | 0.6+ | 0.5+ | 2006 09 20 | 699 | 1.3− | 0.1+ |
| 2002 11 14 | 704 | 0.6+ | 0.5+ | 2004 02 14 | 699 | 0.3− | 0.4− | 2006 09 20 | 699 | 0.3+ | 0.5+ |
| 2002 11 14 | 704 | 0.2+ | 0.6− | 2004 02 18 | 704 | 0.9+ | 0.1− | 2006 09 20 | 699 | 0.8+ | 0.9+ |
| 2002 11 14 | 704 | 0.7+ | 0.7− | 2004 02 18 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.1− | 0.5+ | 2004 02 18 | 704 | 1.0+ | 0.9− | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2002 11 30 | 608 | 0.8− | 0.3− | 2004 02 18 | 704 | 0.7− | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.0 |

**(142846)∗ 2002 VD$_{22}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.74718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22763013 | $\omega$ | 37.32364 | | +0.11904993 | +0.98736341 | |
| $a$ | 2.6565391 | $\Omega$ | 239.73610 | | −0.93767004 | +0.07716151 | |
| $e$ | 0.0760499 | $i$ | 6.95571 | | −0.32649964 | +0.13841823 | |
| $P$ | 4.33 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 049 | (1.8− | 0.4+) | 2003 12 29 | 699 | 0.0 | 0.1− | 2006 08 29 | 699 | (0.7+ | 1.6+) |
| 2002 09 12 | 049 | 1.4− | 0.4+ | 2003 12 29 | 699 | (0.3+ | 1.8+) | 2006 08 29 | 699 | 0.9+ | 0.8+ |
| 2002 09 12 | 049 | 0.9− | 0.3− | 2003 12 29 | 699 | 0.3− | 0.1+ | 2006 09 16 | 703 | (0.0 | 1.6−) |
| 2002 10 12 | 704 | 0.4+ | 0.0 | 2004 01 29 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 1.0− | 0.2− |
| 2002 10 12 | 704 | 0.5− | 0.8+ | 2004 01 29 | 704 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.5+ | 0.0 |
| 2002 10 12 | 704 | 1.5+ | 1.2− | 2004 01 29 | 704 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.4− |
| 2002 10 12 | 704 | 0.1+ | 1.0− | 2004 01 29 | 704 | 0.1− | 1.0+ | 2006 09 19 | 699 | 0.5+ | 0.4+ |
| 2002 10 31 | 699 | 0.1+ | 0.1+ | 2004 01 29 | 704 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.4− | 0.2+ |
| 2002 10 31 | 699 | 1.3+ | 0.1− | 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 1.0− | 0.1+ |
| 2002 10 31 | 699 | 1.0+ | 0.2+ | 2004 02 10 | 644 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.3− | 0.1+ |
| 2002 10 31 | 699 | 1.1+ | 0.9+ | 2004 02 10 | 644 | 0.5+ | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.0 |
| 2002 11 05 | 704 | 0.7− | 1.1+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.2− | 0.2+ | 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2002 11 05 | 704 | 1.4− | 0.3− | 2004 02 11 | 644 | 0.4− | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.3− | 1.0+ | 2005 05 09 | 704 | 0.1− | 0.8− | 2006 10 04 | G96 | 0.5− | 0.0 |
| 2002 11 05 | 704 | 0.3− | 0.0 | 2005 05 09 | 704 | 0.5− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2002 11 06 | 704 | 0.3+ | 0.2− | 2005 05 09 | 704 | (0.0 | 1.8+) | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2002 11 06 | 704 | 0.3+ | 0.0 | 2005 05 09 | 704 | 0.1+ | 1.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | 0.3+ | 0.3− | 2005 06 03 | 703 | (1.6− | 0.7+) | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.3− | 0.7+ | 2005 06 03 | 703 | 1.2− | 0.7− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 11 08 | 704 | 0.4+ | 0.5+ | 2005 06 03 | 703 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 11 08 | 704 | 0.1− | 0.5+ | 2005 06 04 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 11 08 | 704 | 1.2− | 1.0− | 2005 06 04 | 704 | (1.9+ | 2.2+) | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 11 12 | 704 | 0.8− | 1.3+ | 2005 06 04 | 704 | 1.4+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2002 11 12 | 704 | 0.8− | 0.9+ | 2005 06 04 | 704 | 1.1+ | 0.8+ | 2006 10 17 | 703 | 0.0 | 0.7+ |
| 2002 11 12 | 704 | 0.4+ | 0.5+ | 2005 06 11 | 703 | 0.7− | 0.2+ | 2006 10 17 | 703 | 0.8+ | 0.5+ |
| 2002 11 12 | 704 | (1.9− | 0.9+) | 2005 06 11 | 703 | (2.3− | 0.6+) | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2002 11 12 | 704 | 1.0− | 0.0 | 2005 06 11 | 703 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.6− | 0.7+ | 2005 06 11 | 703 | 0.2− | 0.2− | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2005 06 17 | 691 | 0.0 | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 1.0+ | 2005 06 17 | 691 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2005 06 17 | 691 | 0.1+ | 0.5+ | 2006 11 20 | G96 | 0.0 | 0.6− |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2005 07 04 | 644 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.7− |
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.8+ | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2005 07 04 | 644 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.6− |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 699 | 1.4+ | 0.7+ | | | | |
| 2003 12 29 | 699 | 1.1+ | 0.8+ | 2006 08 29 | 699 | 0.1+ | 0.6− | | | | |

**(142847)∗ 2002 VB$_{23}$ = 2005 GM$_{55}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 75778)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.45216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22817497 | $\omega$ | 289.86915 | | +0.83750603 | +0.54217905 | |
| $a$ | 2.6523086 | $\Omega$ | 37.38726 | | −0.45003183 | +0.75499180 | |
| $e$ | 0.2142084 | $i$ | 6.43109 | | −0.30992742 | +0.36882145 | |
| $P$ | 4.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.7− | 0.9− | 2005 05 08 | G96 | 0.5+ | 0.3+ | 2006 09 26 | 704 | 0.4+ | 0.8+ |
| 2002 11 05 | 704 | 0.7− | 0.1− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.7+ |
| 2002 11 05 | 704 | 0.7− | 0.3+ | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.2+ | 1.2+ |
| 2002 11 05 | 644 | 0.0 | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.1− |
| 2002 11 05 | 704 | 0.3− | 0.6+ | 2005 05 10 | 807 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.5+ | 1.3+ |
| 2002 11 05 | 644 | 0.1+ | 0.1+ | 2005 05 11 | 807 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2002 11 05 | 644 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.5− | 0.9+ | 2006 09 28 | 704 | 0.1+ | 0.8+ |
| 2002 11 06 | 704 | 1.1+ | 0.1− | 2006 08 28 | 699 | 0.3− | 1.0− | 2006 09 28 | 704 | 0.0 | 0.8− |
| 2002 11 06 | 704 | 0.7+ | 0.7+ | 2006 08 28 | 699 | 0.2− | 0.4+ | 2006 09 28 | 704 | 0.7+ | 0.1+ |
| 2002 11 06 | 704 | 0.7+ | 1.2+ | 2006 08 28 | 699 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.7− |
| 2002 11 14 | 704 | 1.0− | 0.3+ | 2006 09 01 | 106 | 0.0 | 0.7− | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2002 11 14 | 704 | 0.0 | 0.0 | 2006 09 01 | 106 | 0.7− | 0.8− | 2006 09 30 | 703 | 0.1+ | 0.4− |
| 2002 11 14 | 704 | 0.6− | 0.5+ | 2006 09 01 | 106 | 0.1+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2002 11 14 | 704 | 0.1− | 0.0 | 2006 09 01 | 106 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.6− | 0.6+ |
| 2002 11 14 | 704 | 0.5+ | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.9− | 0.2− |
| 2002 11 24 | 644 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 1.0− | 0.5+ | 2006 09 30 | 704 | 0.9− | 0.4+ |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.2+ | 2006 09 30 | 704 | 0.8− | 0.2− |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2002 12 06 | 704 | 1.0+ | 1.1+ | 2006 09 16 | 704 | 0.1− | 0.7+ | 2006 09 30 | 704 | 0.5− | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.1− | 2006 09 16 | 704 | 0.3+ | 1.1+ | 2006 09 30 | 703 | 0.7− | 0.6+ |
| 2002 12 06 | 704 | 0.7− | 0.2− | 2006 09 16 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.6− | 1.4+ | 2006 09 16 | 704 | 0.9+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.5+ | | |
| 2002 12 06 | 704 | 0.3+ | 0.7− | 2006 09 18 | 703 | 0.5+ | 0.3− | 2006 10 01 | 704 | (1.9− | 1.8+) | | |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 10 01 | 704 | 0.5− | 0.4+ | | |
| 2004 03 18 | 645 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.9− | 2006 10 01 | 704 | 0.2+ | 0.3+ | | |
| 2005 03 14 | G96 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.3+ | 1.1− | 2006 10 16 | 703 | 0.4− | 0.5− | | |
| 2005 03 14 | G96 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.6− | | |
| 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.1− | | |
| 2005 03 14 | G96 | 0.8− | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.8− | 2006 10 16 | 703 | 0.5+ | 0.5+ | | |
| 2005 04 05 | G96 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2005 04 05 | G96 | 0.4+ | 1.3+ | 2006 09 19 | 704 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2005 04 05 | G96 | 0.4+ | 0.1− | 2006 09 19 | 704 | 1.0− | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.3− | | |
| 2005 04 05 | G96 | 0.3− | 0.4+ | 2006 09 19 | 704 | (0.0 | 2.7+) | 2006 11 06 | 644 | 0.4+ | 0.0 | | |
| 2005 04 07 | G96 | 0.1− | 0.5+ | 2006 09 19 | 704 | (0.5+ | 1.5+) | 2006 11 06 | 644 | 0.0 | 0.2+ | | |
| 2005 04 07 | G96 | 0.0 | 0.7+ | 2006 09 19 | 704 | 0.0 | 0.9+ | 2006 11 06 | 644 | 0.1− | 0.1+ | | |
| 2005 04 07 | G96 | 0.3+ | 0.5+ | 2006 09 22 | 704 | 0.9+ | 1.4+ | 2006 11 17 | G96 | 0.8+ | 0.2− | | |
| 2005 04 07 | G96 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.4− | | |
| 2005 04 17 | 691 | 0.5+ | 0.4+ | 2006 09 22 | 704 | (0.2− | 1.6+) | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 09 22 | 704 | 0.6+ | 1.0+ | 2006 11 17 | G96 | 0.3+ | 0.4− | | |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 0.7+ | 0.6+ | | | | | | |

**(142848)∗ 2002 VD$_{23}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.47937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23554509 | $\omega$ | 49.07798 | | +0.12795699 | −0.99124151 | |
| $a$ | 2.5966894 | $\Omega$ | 33.61258 | | +0.89128233 | +0.10048037 | |
| $e$ | 0.1220019 | $i$ | 3.38327 | | +0.43502048 | +0.08569690 | |
| $P$ | 4.18 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.2+ | 0.2− | 2002 12 06 | 704 | 0.1− | 0.1− | 2006 10 20 | 703 | 0.1− | 0.3+ | | |
| 1998 12 17 | 704 | 1.5+ | 1.7− | 2002 12 11 | 644 | 0.0 | 0.2− | 2006 10 20 | 703 | 0.2+ | 0.2+ | | |
| 1998 12 17 | 704 | 1.0+ | 0.5− | 2002 12 11 | 704 | 0.3− | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 1998 12 17 | 704 | 0.6+ | 0.5− | 2002 12 11 | 644 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.1− | | |
| 2000 04 07 | 691 | 0.0 | 0.2+ | 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.1+ | | |
| 2000 04 07 | 691 | 0.0 | 0.2+ | 2002 12 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.1+ | | |
| 2000 04 07 | 691 | 0.0 | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.0 | 0.3− | | |
| 2002 10 11 | 704 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.5− | 1.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.5+ | 0.1+ | 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.2− | 1.0+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.5− | 0.3+ | 2004 03 29 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2002 10 30 | 608 | 0.5− | 0.6+ | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.2− | | |
| 2002 10 30 | 608 | 0.6− | 0.5+ | 2004 04 23 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2002 10 30 | 608 | 0.3− | 0.6+ | 2004 04 23 | 691 | 0.2+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.2+ | | |
| 2002 11 05 | 704 | 0.9− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.2+ | | |
| 2002 11 05 | 704 | 0.9− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 2002 11 05 | 704 | 0.5+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2002 11 05 | 704 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.0 | | |
| 2002 11 05 | 704 | 0.8− | 0.2− | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2002 11 06 | 704 | 0.6− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2002 11 06 | 704 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.2− | | |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2002 11 06 | 704 | 0.3− | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2− | | |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ | | |
| 2002 11 14 | 704 | 1.0− | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 14 | 704 | (1.3− | 2.1+) | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.4+ | | |
| 2002 11 14 | 704 | (0.3− | 1.6+) | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2002 11 14 | 704 | (1.3− | 1.7+) | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2002 11 14 | 704 | (0.9− | 3.3+) | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2002 12 02 | 704 | 0.9+ | 0.8+ | 2006 10 19 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.7− | | |
| 2002 12 02 | 704 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 1.5− | | |
| 2002 12 02 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.3− | | |
| 2002 12 02 | 704 | 0.3− | 1.0+ | 2006 10 19 | 644 | 0.1− | 0.9+ | 2006 11 11 | 703 | 1.3− | 1.1− | | |
| 2002 12 06 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.5− | | |
| 2002 12 06 | 704 | 0.5− | 0.2− | 2006 10 20 | 703 | 0.5+ | 0.2+ | 2006 11 20 | G96 | 0.3− | 0.4− | | |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 703 | 0.3+ | 0.0 | 2006 11 20 | G96 | 0.3− | 0.1− | | |
| 2002 12 06 | 704 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.3− | | |

**(142849)∗ 2002 VF$_{23}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.91183 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23008083 | $\omega$ | 143.63232 | | +0.88620990 | −0.46046670 | |
| $a$ | 2.6376415 | $\Omega$ | 243.86033 | | +0.41052549 | +0.83154643 | |
| $e$ | 0.1370622 | $i$ | 3.25765 | | +0.21471106 | +0.31064603 | |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.2+ | 0.2− | 2004 02 17 | 703 | 1.3+ | 1.1+ | 2006 09 25 | 704 | 0.3+ | 0.7+ | | |
| 2002 10 30 | 608 | 0.4− | 0.0 | 2004 03 16 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.5− | | |
| 2002 10 30 | 608 | 0.4− | 0.0 | 2004 03 16 | 704 | 1.3+ | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.6+ | | |
| 2002 11 05 | 704 | 0.0 | 0.3− | 2004 03 16 | 704 | 0.1+ | 0.6− | 2006 09 26 | 691 | 0.6− | 0.8− | | |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2004 03 16 | 704 | 0.9+ | 1.0+ | 2006 09 26 | 691 | 0.3− | 0.1+ | | |
| 2002 11 05 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.3+ | 1.1+ | 2006 09 26 | 691 | 0.3− | 0.1+ | | |
| 2002 11 05 | 704 | 0.4+ | 0.4+ | 2004 03 18 | 704 | 0.2− | 0.3+ | 2006 09 27 | 699 | 0.6+ | 0.5+ | | |
| 2002 11 05 | 704 | 0.6+ | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 699 | 0.1− | 0.0 | | |
| 2002 11 06 | 704 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 09 27 | 699 | 0.3− | 0.3+ | | |
| 2002 11 06 | 704 | (0.3+ | 1.6−) | 2004 03 18 | 704 | 0.6− | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.1− | | |
| 2002 11 06 | 704 | 0.7+ | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.5+ | | |
| 2002 11 06 | 704 | 1.1+ | 0.5− | 2004 03 20 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.7− | 0.0 | | |
| 2002 11 06 | 704 | 0.6+ | 0.0 | 2004 03 20 | 704 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.6+ | 0.5+ | | |
| 2002 11 10 | 704 | 0.9− | 0.5− | 2004 03 20 | 704 | 0.5− | 0.7+ | 2006 09 29 | 704 | 0.3− | 0.5+ | | |
| 2002 11 10 | 704 | 1.4− | 0.2− | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.1− | 0.5+ | | |
| 2002 11 10 | 704 | 0.5− | 1.1− | 2004 03 27 | 704 | 0.0 | 1.1+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2002 11 14 | 704 | 0.2− | 0.3+ | 2004 03 27 | 704 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 2002 11 14 | 704 | 1.1− | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.9+ | 2006 09 30 | 691 | 0.2+ | 0.0 | | |
| 2002 11 14 | 704 | 0.4− | 0.5− | 2005 06 27 | G96 | 0.1− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.9− | 0.1− | 2005 06 27 | G96 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2002 11 15 | 704 | 0.0 | 0.2− | 2005 06 27 | G96 | 0.3+ | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 2002 11 15 | 704 | 0.2+ | 0.6− | 2006 08 29 | 699 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.5− | 0.3+ | | |
| 2002 11 15 | 704 | 0.2+ | 0.8− | 2006 08 29 | 699 | 0.3− | 1.2+ | 2006 10 10 | 644 | 0.4− | 0.2− | | |
| 2002 11 15 | 704 | 0.0 | 0.7− | 2006 08 29 | 699 | 1.4− | 0.7+ | 2006 10 10 | 644 | 0.7− | 0.6+ | | |
| 2002 11 15 | 704 | 0.3− | 0.8− | 2006 08 29 | 699 | 0.1+ | 0.5+ | 2006 10 13 | 291 | 0.0 | 0.0 | | |
| 2002 12 02 | 704 | 0.1− | 0.9+ | 2006 09 15 | 704 | 1.3+ | 0.1− | 2006 10 13 | 291 | 0.0 | 0.0 | | |
| 2002 12 02 | 704 | 0.2− | 1.2+ | 2006 09 15 | 704 | 0.9+ | 0.3+ | 2006 10 13 | 291 | 0.0 | 0.2+ | | |
| 2002 12 02 | 704 | 0.5− | 0.7+ | 2006 09 15 | 704 | 0.1+ | 1.0+ | 2006 10 17 | 703 | 0.8+ | 0.8− | | |
| 2002 12 02 | 704 | 0.0 | 1.2+ | 2006 09 15 | 704 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2002 12 02 | 704 | 0.4− | 0.9+ | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.3− | | |
| 2002 12 04 | 333 | 0.1+ | 0.6− | 2006 09 17 | 703 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.6+ | 0.8− | | |
| 2002 12 04 | 333 | 0.3− | 0.4− | 2006 09 17 | 703 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2002 12 04 | 333 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.3− | | |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.2− | | |
| 2002 12 05 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 704 | 0.6+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3− | | |
| 2002 12 10 | 644 | 0.3− | 0.4− | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 11 06 | 644 | 0.0 | 0.1+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.1− | 2006 09 18 | 704 | 0.8+ | 0.2− | 2006 11 06 | 644 | 0.3+ | 0.0 | | |
| 2002 12 10 | 704 | 0.6+ | 1.1+ | 2006 09 18 | 704 | 0.3+ | 0.4+ | 2006 11 06 | 644 | 0.1+ | 0.1+ | | |
| 2002 12 10 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.4+ | | |
| 2002 12 10 | 704 | 1.5+ | 0.5− | 2006 09 19 | 699 | 0.2− | 0.3− | 2006 11 06 | 644 | 0.2+ | 0.1− | | |
| 2002 12 10 | 704 | 1.0+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 11 06 | 644 | 0.3+ | 0.0 | | |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.2− | | |
| 2004 02 17 | 703 | 0.2− | 0.1+ | 2006 09 21 | 704 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.3− | 0.2+ | | |
| 2004 02 17 | 703 | 0.3+ | 0.2+ | 2006 09 21 | 704 | 0.4− | 1.0+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2004 02 17 | 703 | (0.6− | 2.3+) | 2006 09 21 | 704 | 0.2+ | 0.2− | | | | | | |

**(142850)∗ 2002 VX$_{23}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.39937 | | (2000.0) | | | |
| $n$ | 0.26505855 | $\omega$ | 63.77352 | | +0.08353678 | −0.99641447 |
| $a$ | 2.4001673 | $\Omega$ | 21.44727 | | +0.90069080 | +0.06974057 |
| $e$ | 0.2354486 | $i$ | 2.10169 | | +0.42635394 | +0.04790050 |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.1− | 2002 11 14 | 704 | 0.1+ | 1.1+ | 2002 12 06 | 704 | 0.7− | 0.3− |
| 1998 09 25 | 645 | 0.0 | 0.1− | 2002 11 14 | 704 | 0.2− | 0.0 | 2002 12 11 | 704 | 1.2− | 0.3+ |
| 1998 10 14 | 910 | 0.2+ | 0.4+ | 2002 11 14 | 704 | 0.2+ | 1.3+ | 2002 12 11 | 704 | 0.8− | 1.1+ |
| 1998 10 14 | 910 | 0.9+ | 0.2+ | 2002 11 14 | 704 | 0.8+ | 0.8+ | 2002 12 11 | 704 | 0.5− | 0.6− |
| 1998 10 14 | 910 | 0.6+ | 0.3+ | 2002 11 24 | 644 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.0 | 0.9− |
| 2000 04 26 | 691 | 0.0 | 0.2− | 2002 11 24 | 644 | 0.0 | 0.2+ | 2003 01 04 | 704 | (0.5− | 1.7−) |
| 2000 04 26 | 691 | 0.5+ | 0.2− | 2002 11 24 | 644 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.3+ | 0.1+ |
| 2000 04 26 | 691 | 0.3+ | 0.2− | 2002 11 27 | 699 | 0.0 | 0.2− | 2003 01 04 | 704 | 0.2− | 0.1− |
| 2000 05 02 | 691 | 0.6− | 0.1+ | 2002 11 27 | 699 | 0.2− | 0.2− | 2003 01 04 | 704 | 0.1− | 0.4+ |
| 2000 05 02 | 691 | 0.3− | 0.0 | 2002 11 27 | 699 | 0.5− | 0.2+ | 2003 01 05 | 704 | 0.8− | 0.9+ |
| 2000 05 02 | 691 | 0.0 | 0.3+ | 2002 11 27 | 699 | 0.2− | 0.0 | 2003 01 05 | 704 | 0.4− | 0.2+ |
| 2002 10 31 | 699 | 0.2+ | 0.4− | 2002 11 28 | 699 | 0.4+ | 0.1+ | 2003 01 05 | 704 | 0.1+ | 0.2+ |
| 2002 10 31 | 699 | 0.8+ | 0.9+ | 2002 11 28 | 699 | 0.4+ | 0.7− | 2003 01 05 | 704 | 0.2+ | 0.8+ |
| 2002 10 31 | 699 | 0.1− | 1.0− | 2002 11 28 | 699 | 0.3− | 0.0 | 2003 01 05 | 704 | 0.2+ | 0.4+ |
| 2002 10 31 | 699 | 0.1+ | 0.7+ | 2002 11 28 | 699 | 0.3− | 0.1− | 2005 07 05 | 691 | 0.2− | 0.5+ |
| 2002 11 05 | 704 | 0.7+ | 0.1− | 2002 12 02 | 704 | 0.1− | 0.1− | 2005 07 05 | 691 | 0.1− | 0.2+ |
| 2002 11 05 | 704 | 0.7+ | 0.4+ | 2002 12 02 | 704 | 0.4− | 0.5− | 2005 07 05 | 691 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.5+ | 0.2− | 2002 12 02 | 704 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.5− |
| 2002 11 05 | 704 | 0.6+ | 0.9− | 2002 12 02 | 704 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.4− | 0.4− |
| 2002 11 06 | 704 | 0.5+ | 0.1+ | 2002 12 02 | 704 | 0.2+ | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.2+ | 0.0 | 2002 12 02 | 608 | 0.2− | 0.4− | 2006 10 03 | G96 | 0.2− | 0.6− |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2002 12 02 | 608 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2002 12 02 | 608 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2002 11 06 | 704 | 0.2− | 0.4− | 2002 12 06 | 704 | 0.2− | 0.6− | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2002 11 10 | 704 | 0.2− | 0.5+ | 2002 12 06 | 704 | 0.5− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2002 11 10 | 704 | 0.6+ | 0.1− | 2002 12 06 | 704 | 0.7− | 0.1− | | | | |
| 2002 11 10 | 704 | 0.7+ | 0.3− | 2002 12 06 | 704 | 0.6− | 0.2− | | | | |

**(142851)∗ 2002 VE$_{24}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.34209 | | (2000.0) | | | |
| $n$ | 0.23287498 | $\omega$ | 277.60781 | | +0.89323903 | +0.44419002 |
| $a$ | 2.6165005 | $\Omega$ | 56.04530 | | −0.37240308 | +0.81753180 |
| $e$ | 0.2646991 | $i$ | 4.80082 | | −0.25187296 | +0.36652010 |
| $P$ | 4.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 21 | 691 | 0.1+ | 0.1− | 2005 03 17 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 704 | (2.1+ | 0.1+) |
| 1996 03 21 | 691 | 0.7− | 0.0 | 2005 04 10 | 691 | 0.2+ | 0.8+ | 2006 09 28 | 691 | 0.4− | 0.4+ |
| 1996 03 21 | 691 | 0.5− | 0.9− | 2005 04 10 | 691 | 0.4+ | 0.4+ | 2006 09 28 | 691 | 0.4− | 0.2+ |
| 2002 10 30 | 608 | 0.0 | 0.5− | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.2+ |
| 2002 10 30 | 608 | 0.2− | 0.5− | 2005 04 14 | 691 | 0.2+ | 0.6+ | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 2002 10 30 | 608 | 0.1− | 0.7− | 2005 04 14 | 691 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | (1.8+ | 0.1−) | 2005 04 14 | 691 | 0.4+ | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.2+ |
| 2002 11 05 | 704 | 0.6− | 0.1− | 2005 04 18 | 691 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.1+ | 0.5+ | 2005 04 18 | 691 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | 0.3− | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | 0.1+ | 0.4+ | 2006 08 19 | 699 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.4− | 0.4+ | 2006 08 19 | 699 | 0.4+ | 0.5− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2006 08 19 | 699 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.7+ | 0.5+ | 2006 08 19 | 699 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.5− | 0.2+ | 2006 09 16 | 704 | 0.3− | 1.3+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 704 | 0.8+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 13 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2006 09 16 | 704 | 0.4+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 11 13 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 1.3− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2002 11 23 | 644 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 11 23 | 644 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2002 11 23 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2002 11 28 | 699 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 11 28 | 699 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2002 11 28 | 699 | 0.3− | 0.6+ | 2006 09 19 | 704 | 0.4− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 11 28 | 699 | 0.3+ | 0.4+ | 2006 09 19 | 704 | 0.1+ | 0.7− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 09 19 | 704 | 1.0− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.3− | 0.9+ | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.3− |
| 2002 12 05 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 699 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.4− |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 10 27 | 704 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.0 | 2006 10 27 | 704 | (0.3+ | 1.9+) |
| 2002 12 10 | 704 | (1.6− | 0.3+) | 2006 09 26 | 704 | 0.1+ | 0.1− | 2006 10 27 | 704 | 0.9− | 0.1+ |
| 2002 12 10 | 704 | 0.9− | 0.6+ | 2006 09 26 | 704 | 0.5− | 0.8+ | 2006 10 27 | 704 | 0.0 | 1.1+ |
| 2002 12 11 | 644 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.7+ | 0.4− | 2006 11 11 | 703 | 2.1+ | 0.9− |
| 2002 12 11 | 644 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.8− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2002 12 11 | 644 | 0.2+ | 0.7+ | 2006 09 26 | 704 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.5+ | 0.0 | | | | |

**(142852)∗ 2002 VM$_{24}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.56405 | | (2000.0) | | | |
| $n$ | 0.24176629 | $\omega$ | 346.56710 | | +0.23910763 | −0.97074613 |
| $a$ | 2.5519503 | $\Omega$ | 89.59574 | | +0.89287999 | +0.21095440 |
| $e$ | 0.1607684 | $i$ | 1.25475 | | +0.38156633 | +0.11467427 |
| $P$ | 4.08 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 691 | 0.1− | 0.2+ | 2002 12 05 | 704 | 0.5− | 0.7− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2000 04 03 | 691 | 0.2− | 0.1+ | 2002 12 05 | 704 | 0.8− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2000 04 03 | 691 | 0.5+ | 0.2+ | 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2000 06 03 | 691 | 0.3− | 0.4+ | 2002 12 10 | 704 | 0.6+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2000 06 03 | 691 | 0.2+ | 0.6+ | 2002 12 10 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2000 06 03 | 691 | 0.4+ | 0.3+ | 2002 12 10 | 704 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2002 10 31 | 699 | 0.5− | 0.6+ | 2002 12 10 | 644 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2002 10 31 | 699 | 0.1+ | 0.5+ | 2002 12 10 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 2002 10 31 | 699 | 0.4+ | 0.3+ | 2002 12 10 | 704 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2002 10 31 | 699 | 0.3− | 0.0 | 2002 12 10 | 644 | 0.0 | 0.9+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2002 11 05 | 704 | 0.5+ | 0.3+ | 2002 12 10 | 644 | 0.3+ | 0.6+ | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2002 11 05 | 704 | 1.1− | 0.4− | 2002 12 27 | 644 | 0.5+ | 1.1− | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 11 05 | 704 | 0.4− | 1.2+ | 2002 12 27 | 644 | 0.4+ | 0.9− | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2002 11 05 | 704 | 0.1+ | 0.6+ | 2002 12 27 | 644 | 0.3+ | 1.1− | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 2002 11 06 | 704 | 0.1− | 0.2− | 2004 04 13 | 691 | 0.3− | 0.8− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 0.0 | 0.0 | 2004 04 13 | 691 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.2− | 0.3+ |
| 2002 11 06 | 704 | 0.7+ | 0.4− | 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.7+ | 0.4+ | 2004 04 19 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2002 11 13 | 644 | 0.9+ | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.3+ |
| 2002 11 13 | 644 | 0.2− | 0.1− | 2004 04 19 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.0− | 0.1− |
| 2002 11 13 | 644 | 0.2− | 0.0 | 2004 05 24 | 691 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2002 11 14 | 704 | 0.2− | 0.3− | 2004 05 24 | 691 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.3− | 0.6+ | 2004 05 24 | 691 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2002 11 14 | 704 | 0.0 | 0.4+ | 2006 10 17 | G96 | (2.2+ | 2.9−) | 2006 11 18 | 704 | 0.6− | 0.3− |
| 2002 11 23 | 644 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.4− |
| 2002 11 23 | 644 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2002 11 23 | 644 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.1− |
| 2002 11 27 | 699 | (0.6− | 1.8−) | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2002 11 27 | 699 | (0.8− | 2.3−) | 2006 10 18 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 1.2− | 1.4− |
| 2002 11 27 | 699 | 0.1+ | 0.8+ | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2002 11 27 | 699 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2002 12 02 | 704 | 0.8− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2002 12 02 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2002 12 02 | 704 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2002 12 02 | 608 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 02 | 608 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2002 12 02 | 608 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2002 12 03 | 644 | 0.2− | 1.0− | 2006 11 02 | 703 | 1.0− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2002 12 03 | 644 | 0.4− | 0.9− | 2006 11 02 | 703 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.3− | | |
| 2002 12 03 | 644 | 0.2− | 0.9− | 2006 11 02 | 703 | 0.1+ | 1.3+ | 2006 11 24 | G96 | 0.5+ | 0.4− | | |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.4− | 0.3+ | 2006 11 24 | G96 | 0.5+ | 0.4− | | |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ | | | | | | |

**(142853)∗ 2002 VS$_{24}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.58038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21465970 | $\omega$ | 326.72960 | | +0.90146092 | −0.43102318 | |
| $a$ | 2.7625006 | $\Omega$ | 58.85217 | | +0.40660816 | +0.81162928 | |
| $e$ | 0.1354709 | $i$ | 2.66813 | | +0.14845202 | +0.39430562 | |
| $P$ | 4.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 691 | 0.3+ | 0.0 | 2002 12 05 | 704 | 0.7+ | 0.2− | 2005 06 14 | G96 | 0.1− | 0.1− | | |
| 2000 04 29 | 691 | 0.3+ | 0.5+ | 2002 12 05 | 704 | 0.1− | 0.2− | 2006 08 14 | 644 | 0.3− | 0.4+ | | |
| 2000 04 29 | 691 | 0.1+ | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.8− | 2006 08 14 | 644 | 0.3+ | 0.5+ | | |
| 2002 11 05 | 704 | 1.0+ | 1.3− | 2002 12 08 | 699 | 1.0+ | 1.0− | 2006 08 14 | 644 | 1.1+ | 0.6+ | | |
| 2002 11 05 | 704 | 0.3− | 0.9+ | 2002 12 08 | 699 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.2− | 0.3+ | | |
| 2002 11 05 | 704 | 0.4+ | 0.3+ | 2002 12 08 | 699 | 0.1− | 0.7− | 2006 08 16 | 644 | 0.2− | 0.1+ | | |
| 2002 11 05 | 704 | 0.1+ | 0.2− | 2002 12 10 | 704 | 0.6− | 1.1+ | 2006 08 16 | 644 | 0.3− | 0.1+ | | |
| 2002 11 05 | 699 | 1.0− | 0.2+ | 2002 12 10 | 704 | 0.3− | 0.5+ | 2006 08 18 | 699 | 1.3− | 0.1− | | |
| 2002 11 05 | 704 | 0.3− | 0.2− | 2002 12 10 | 704 | 0.6− | 1.2+ | 2006 08 18 | 699 | 0.1− | 0.5− | | |
| 2002 11 05 | 699 | 0.9+ | 0.1− | 2002 12 10 | 704 | 0.8− | 0.3− | 2006 08 18 | 699 | 0.0 | 0.2+ | | |
| 2002 11 05 | 699 | 1.6+ | 0.1− | 2002 12 10 | 704 | 0.5− | 0.7+ | 2006 08 18 | 699 | (0.5− | 2.2−) | | |
| 2002 11 05 | 699 | 1.4− | 0.8+ | 2002 12 11 | 704 | 0.5+ | 0.3+ | 2006 08 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.2− | 0.9+ | 2002 12 11 | 704 | 0.3− | 0.0 | 2006 08 21 | 644 | 0.3− | 0.0 | | |
| 2002 11 06 | 704 | 0.0 | 1.2+ | 2002 12 11 | 704 | 0.3− | 0.2− | 2006 08 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.5− | 1.4+ | 2002 12 11 | 704 | 0.3+ | 0.5− | 2006 08 23 | 704 | 0.1+ | 1.5+ | | |
| 2002 11 13 | 644 | 0.2− | 0.1+ | 2002 12 11 | 644 | 0.1+ | 0.1− | 2006 08 23 | 704 | 0.5− | 1.6+ | | |
| 2002 11 13 | 644 | 0.4− | 0.0 | 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 08 23 | 704 | 0.6+ | 0.2+ | | |
| 2002 11 13 | 644 | 0.2− | 0.2− | 2002 12 11 | 644 | 0.2+ | 0.3+ | 2006 08 23 | 704 | 0.3+ | 0.4+ | | |
| 2002 11 14 | 704 | 0.5+ | 0.5+ | 2002 12 11 | 644 | 0.4− | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.5− | | |
| 2002 11 14 | 704 | 0.5− | 0.6+ | 2002 12 27 | 644 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 0.5− | 0.9− | | |
| 2002 11 14 | 704 | 0.6+ | 0.5+ | 2002 12 27 | 644 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.4− | 0.6− | | |
| 2002 11 14 | 704 | 0.5+ | 0.2− | 2002 12 27 | 644 | 0.0 | 0.9+ | 2006 08 28 | 703 | 0.8+ | 0.4− | | |
| 2002 11 14 | 704 | 0.5+ | 0.0 | 2004 02 16 | 291 | 0.7+ | 0.4− | 2006 08 28 | 699 | 0.4− | 1.6+ | | |
| 2002 11 23 | 644 | 0.0 | 0.0 | 2004 02 16 | 291 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.1− | 0.9+ | | |
| 2002 11 23 | 644 | 0.2− | 0.1+ | 2004 02 16 | 291 | 0.1− | 0.6+ | 2006 08 28 | 699 | 0.2+ | 0.9+ | | |
| 2002 11 23 | 644 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.9− | 0.6+ | | |
| 2002 11 27 | 699 | 1.0+ | 0.1+ | 2004 02 23 | 704 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.4+ | | |
| 2002 11 27 | 699 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.6+ | 1.9+ | 2006 09 14 | 703 | 0.6− | 2.0+ | | |
| 2002 11 27 | 699 | 1.1+ | 0.1− | 2005 05 04 | G96 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.2+ | | |
| 2002 11 27 | 699 | 0.7− | 0.3− | 2005 05 04 | G96 | 0.4+ | 0.3− | 2006 09 14 | 703 | 0.9+ | 0.8+ | | |
| 2002 11 28 | 699 | 0.1+ | 0.0 | 2005 05 04 | G96 | 0.3+ | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.7− | | |
| 2002 11 28 | 699 | 0.5− | 0.4− | 2005 05 04 | G96 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.1− | | |
| 2002 11 28 | 699 | 0.6− | 0.1+ | 2005 05 13 | G96 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.1− | | |
| 2002 11 28 | 699 | 0.0 | 0.4+ | 2005 05 13 | G96 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.8+ | 0.8− | | |
| 2002 12 02 | 704 | 0.9− | 0.2+ | 2005 05 13 | G96 | 1.2− | 1.0+ | 2006 09 30 | 703 | 0.6− | 2.8− | | |
| 2002 12 02 | 704 | 0.8− | 0.9− | 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 09 30 | 703 | 1.0− | 0.7− | | |
| 2002 12 02 | 704 | 0.6− | 0.1+ | 2005 06 14 | G96 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | | |
| 2002 12 02 | 704 | 1.4− | 0.6− | 2005 06 14 | G96 | 1.3− | 1.5+ | 2006 09 30 | 703 | 0.2− | 0.5+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.5+ | 2005 06 14 | G96 | 1.1+ | 1.1+ | | | | | | |

**(142854)∗ 2002 VA$_{25}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.99357 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23382864 | $\omega$ | 46.26837 | | +0.77359744 | +0.61905626 | |
| $a$ | 2.6093815 | $\Omega$ | 275.01706 | | −0.61341805 | +0.67801295 | |
| $e$ | 0.0764957 | $i$ | 7.80826 | | −0.15895061 | +0.39631779 | |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2002 11 24 | 644 | 0.1− | 0.2− | 2006 09 22 | 699 | 0.3+ | 0.3− | | |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2002 11 24 | 644 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.5− | 0.6− | | |
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2002 11 24 | 644 | 0.2− | 0.2− | 2006 09 25 | 703 | 0.4− | 0.4− | | |
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2002 12 06 | 704 | 0.5− | 0.0 | 2006 09 25 | 703 | 0.1+ | 0.8− | | |
| 2002 10 05 | 704 | 0.5− | 0.0 | 2002 12 06 | 704 | 1.0− | 0.1+ | 2006 09 25 | 703 | (0.3− | 2.5−) | | |
| 2002 10 05 | 704 | 0.7+ | 0.6+ | 2002 12 06 | 704 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.3− | 0.2− | | |
| 2002 10 05 | 704 | 0.9− | 0.1+ | 2002 12 06 | 704 | (1.0− | 2.4+) | 2006 09 28 | 703 | 0.1+ | 0.0 | | |
| 2002 10 05 | 704 | 0.3+ | 0.4− | 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.3+ | | |
| 2002 10 10 | 704 | 0.0 | 0.2+ | 2002 12 11 | 704 | 0.0 | 0.1− | 2006 09 28 | 703 | 1.5+ | 0.1+ | | |
| 2002 10 10 | 704 | 0.5− | 1.4− | 2002 12 11 | 704 | 0.2+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2002 10 10 | 704 | 0.2− | 0.5− | 2002 12 11 | 704 | 0.2− | 0.7+ | 2006 10 09 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 10 | 704 | 0.1+ | 0.8+ | 2002 12 11 | 704 | 0.3+ | 0.8+ | 2006 10 09 | 644 | 0.2+ | 0.0 | | |
| 2002 11 05 | 704 | 0.0 | 0.3− | 2004 01 23 | 704 | (1.8− | 0.2−) | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 11 05 | 704 | 0.7+ | 1.0− | 2004 01 23 | 704 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 05 | 704 | 0.4+ | 0.0 | 2004 01 23 | 704 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 11 05 | 704 | 0.5+ | 0.0 | 2004 01 28 | 608 | 0.2− | 1.3− | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.7− | 0.9+ | 2004 01 28 | 608 | 1.0− | 0.9− | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2002 11 06 | 704 | 0.5− | 0.2+ | 2004 01 28 | 608 | 0.3+ | 0.9− | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 11 06 | 699 | 0.1− | 0.3− | 2006 08 29 | 699 | 0.3− | 0.6− | 2006 10 12 | 644 | 0.3− | 0.1+ | | |
| 2002 11 06 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 699 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2002 11 06 | 699 | 0.4+ | 0.1+ | 2006 08 29 | 699 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2006 08 29 | 699 | (0.0 | 1.5+) | 2006 10 19 | 703 | 0.0 | 0.3− | | |
| 2002 11 06 | 699 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2002 11 06 | 699 | 0.3+ | 0.5− | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.7− | 0.6− | | |
| 2002 11 13 | 644 | 0.8− | 0.8+ | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 10 19 | 703 | 0.2− | 0.9− | | |
| 2002 11 13 | 644 | 0.0 | 1.3+ | 2006 09 22 | 699 | 1.2+ | 0.1+ | | | | | | |
| 2002 11 13 | 644 | 0.1+ | 0.7+ | 2006 09 22 | 699 | 0.6+ | 0.3+ | | | | | | |

**(142855)∗ 2002 VC$_{26}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.24423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21335551 | $\omega$ | 96.70509 | | +0.93136532 | −0.35918068 | |
| $a$ | 2.7737467 | $\Omega$ | 284.35793 | | +0.30502079 | +0.85908695 | |
| $e$ | 0.0877426 | $i$ | 3.52503 | | +0.19879880 | +0.36463523 | |
| $P$ | 4.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 13 | 691 | 0.3− | 0.5− | 2002 11 14 | 704 | 1.3+ | 0.0 | 2006 08 19 | 644 | 0.0 | 0.0 | | |
| 1998 12 13 | 691 | 0.6− | 0.6− | 2002 11 14 | 704 | 1.7+ | 0.3+ | 2006 08 23 | A13 | 0.2+ | 0.2− | | |
| 1998 12 13 | 691 | 0.1+ | 0.4− | 2002 11 14 | 704 | 1.2+ | 1.3− | 2006 08 23 | A13 | 0.8− | 0.1− | | |
| 1998 12 26 | 691 | 0.1+ | 0.5− | 2002 11 24 | 644 | 0.6− | 0.5+ | 2006 08 23 | A13 | 0.2− | 0.4− | | |
| 1998 12 26 | 691 | 0.2+ | 0.6− | 2002 11 24 | 644 | 0.8− | 0.2+ | 2006 08 25 | A13 | 0.1− | 0.0 | | |
| 1998 12 26 | 691 | 0.2− | 0.6− | 2002 11 24 | 644 | 0.5− | 0.3+ | 2006 08 25 | A13 | 0.2− | 0.2− | | |
| 1999 01 13 | 691 | 0.3+ | 0.0 | 2002 11 28 | 699 | 1.0− | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.0 | | |
| 1999 01 13 | 691 | 0.1+ | 0.0 | 2002 11 28 | 699 | 0.6− | 0.0 | 2006 08 28 | 703 | 1.0− | 0.5+ | | |
| 1999 01 13 | 691 | 0.2+ | 0.3− | 2002 11 28 | 699 | 0.9− | 0.6− | 2006 08 28 | 699 | 0.2− | 0.1− | | |
| 1999 01 22 | 691 | 0.1− | 1.2+ | 2002 11 28 | 699 | 0.5− | 0.4− | 2006 08 28 | 703 | 0.2− | 0.2− | | |
| 1999 01 22 | 691 | 0.6− | 0.3− | 2002 12 02 | 704 | 0.7− | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.6− | | |
| 1999 01 22 | 691 | 0.9− | 0.5+ | 2002 12 02 | 704 | 0.2− | 0.3+ | 2006 08 28 | 699 | 1.1+ | 1.4+ | | |
| 2001 06 27 | 691 | 0.2+ | 0.0 | 2002 12 02 | 704 | 0.6− | 0.5+ | 2006 08 28 | 699 | 0.8− | 0.2− | | |
| 2001 06 27 | 691 | 0.5+ | 0.1− | 2002 12 02 | 704 | 0.3− | 0.7+ | 2006 08 28 | 699 | 0.2+ | 0.1+ | | |
| 2001 06 27 | 691 | 0.2− | 0.2+ | 2002 12 02 | 704 | 0.2− | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.0 | | |
| 2002 11 05 | 704 | 0.4+ | 0.5+ | 2002 12 06 | 704 | (2.1− | 1.0−) | 2006 08 29 | 691 | 0.0 | 0.0 | | |
| 2002 11 05 | 704 | 0.6+ | 1.4+ | 2002 12 06 | 704 | 1.0− | 1.4− | 2006 08 29 | 691 | 0.0 | 0.2+ | | |
| 2002 11 05 | 704 | 0.3+ | 0.8− | 2002 12 06 | 704 | 0.7− | 0.8− | 2006 09 17 | 703 | 0.3− | 0.2− | | |
| 2002 11 05 | 704 | 1.7+ | 0.4+ | 2002 12 06 | 704 | 1.2− | 0.8+ | 2006 09 17 | 703 | 0.5− | 1.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.3+ | 0.0 | 2002 12 10 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 703 | (2.2− | 0.8+) |
| 2002 11 06 | 704 | 0.6+ | 0.3− | 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.5− |
| 2002 11 06 | 704 | 0.2− | 0.2+ | 2002 12 10 | 704 | 0.7+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2002 11 07 | 704 | 0.3+ | 0.8+ | 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 2002 11 07 | 704 | 0.1+ | 0.7+ | 2004 02 17 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.6+ | 0.4+ |
| 2002 11 07 | 704 | 0.0 | 0.4+ | 2004 02 17 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.8− |
| 2002 11 12 | 704 | 0.2− | 0.6+ | 2004 02 23 | 704 | 1.9+ | 1.0+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2004 02 23 | 704 | (3.0+ | 0.1+) | 2006 09 28 | G96 | 0.3+ | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.3+ | 2004 02 23 | 704 | (2.3+ | 1.0+) | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 1.1+ | 0.1− | 2006 08 19 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2002 11 12 | 704 | 1.2+ | 1.2+ | 2006 08 19 | 644 | 0.0 | 0.2+ | | | | |

**(142856)∗ 2002 VS$_{26}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.94924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24257948 | $\omega$ | 154.09819 | | +0.99360260 | −0.10830544 | |
| $a$ | 2.5462440 | $\Omega$ | 212.16935 | | +0.09033320 | +0.93223933 | |
| $e$ | 0.1123162 | $i$ | 3.44538 | | +0.06777754 | +0.34525318 | |
| $P$ | 4.06 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.9− | 0.1+ | 2002 12 02 | 608 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 1996 03 20 | 691 | 1.3− | 0.1− | 2002 12 02 | 608 | 0.2− | 0.7+ | 2006 10 20 | 691 | 0.5− | 0.1− |
| 1996 03 20 | 691 | 0.7− | 0.0 | 2002 12 02 | 608 | 0.1− | 0.9+ | 2006 10 20 | 691 | 0.3− | 0.2− |
| 1996 03 28 | 691 | 0.3+ | 0.5− | 2002 12 05 | 704 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.6− | 0.0 |
| 1996 03 28 | 691 | 0.1− | 0.5− | 2002 12 05 | 704 | 0.1+ | 0.4− | 2006 10 23 | 704 | 0.5+ | 0.7+ |
| 1996 03 28 | 691 | 0.2+ | 0.2− | 2002 12 05 | 704 | 0.7− | 0.0 | 2006 10 23 | 704 | 0.7− | 1.0+ |
| 2000 03 03 | 645 | 0.3+ | 0.1− | 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 10 23 | 704 | (0.2− | 1.7+) |
| 2000 03 03 | 645 | 0.3+ | 0.1− | 2002 12 05 | 704 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2000 03 25 | 691 | 0.3− | 1.0− | 2002 12 07 | 644 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2000 03 25 | 691 | 0.0 | 1.1− | 2002 12 07 | 644 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2000 03 25 | 691 | 0.3− | 1.0− | 2002 12 07 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2000 04 05 | 704 | 0.3+ | 0.7+ | 2002 12 10 | 704 | 0.2− | 0.2− | 2006 10 28 | 704 | 1.0+ | 0.6− |
| 2000 04 05 | 704 | 0.0 | 0.4− | 2002 12 10 | 704 | 0.0 | 0.6+ | 2006 10 28 | 704 | 0.8+ | 0.2− |
| 2000 04 05 | 704 | 0.3+ | 1.0+ | 2002 12 10 | 704 | 0.2− | 0.2+ | 2006 10 28 | 704 | 1.0+ | 1.0− |
| 2000 04 05 | 704 | 0.7+ | 1.2+ | 2002 12 10 | 644 | 0.2− | 0.4+ | 2006 10 28 | 704 | (1.6+ | 0.3+) |
| 2002 09 07 | 704 | 0.3+ | 1.2+ | 2002 12 10 | 704 | 0.5− | 0.8+ | 2006 11 02 | 703 | 0.4+ | 0.0 |
| 2002 09 07 | 704 | 0.5− | 0.2+ | 2002 12 10 | 704 | 0.5+ | 0.1+ | 2006 11 02 | 703 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.3+ | 1.0+ | 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 11 02 | 703 | 0.2− | 0.4− |
| 2002 10 30 | 608 | 0.7+ | 1.1− | 2002 12 10 | 644 | 0.1+ | 0.5+ | 2006 11 02 | 703 | 1.0− | 0.5− |
| 2002 10 30 | 608 | 0.7+ | 1.1− | 2004 01 30 | 291 | 0.4− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 10 30 | 608 | 0.7+ | 1.3− | 2004 01 30 | 291 | 0.5− | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | 0.9+ | 0.9− | 2004 01 30 | 291 | 0.6− | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.3− |
| 2002 11 05 | 704 | 0.8+ | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2002 11 05 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 11 06 | 704 | 0.1+ | 1.2− | 2004 03 18 | 704 | 0.9+ | 1.4+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2002 11 06 | 704 | 0.2+ | 1.2− | 2004 03 18 | 704 | 0.6− | 1.1+ | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.1− | 1.4− | 2004 03 18 | 704 | 0.4+ | 1.2+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2002 11 06 | 704 | 0.0 | 0.7− | 2004 03 20 | 699 | 0.5+ | 0.3+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2002 11 06 | 704 | 0.0 | 1.0− | 2004 03 20 | 699 | 0.5− | 0.1− | 2006 11 13 | G96 | 0.6+ | 0.4− |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2002 11 13 | 644 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.3+ | 1.1+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2002 11 13 | 644 | 0.2+ | 0.3+ | 2004 03 20 | 699 | 1.0− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2002 11 13 | 644 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.0 | 1.4+ | 2006 11 17 | 703 | 0.4+ | 0.5− |
| 2002 11 13 | 644 | 0.3+ | 0.1+ | 2004 03 20 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2002 11 14 | 704 | 0.4− | 0.3− | 2004 03 20 | 699 | (0.1+ | 2.2+) | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 0.9+ | 2006 08 28 | 703 | 0.7− | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.8+ |
| 2002 11 14 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | (0.2− | 1.9+) | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 11 23 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 1.3− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2002 11 23 | 644 | 0.3− | 0.4+ | 2006 08 28 | 703 | 0.7− | 0.2− | 2006 11 21 | 704 | 0.5− | 0.0 |
| 2002 11 23 | 644 | 0.0 | 0.0 | 2006 09 26 | H07 | 0.3− | 0.7+ | 2006 11 21 | 704 | 1.2+ | 0.5− |
| 2002 11 23 | 644 | 0.4− | 0.3+ | 2006 09 26 | H07 | 0.5+ | 0.4− | 2006 11 21 | 704 | 0.9+ | 0.3+ |
| 2002 11 23 | 644 | 0.4− | 0.1− | 2006 09 26 | H07 | 0.7+ | 0.1− | 2006 11 27 | 703 | 0.1− | 0.4− |
| 2002 11 23 | 644 | 0.3− | 0.3+ | 2006 09 26 | H07 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.2− | 0.0 |
| 2002 12 01 | 704 | (2.1− | 0.5+) | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.2− | 0.7− |
| 2002 12 01 | 704 | (2.1− | 0.7+) | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.4− | 0.4− |
| 2002 12 01 | 704 | 1.4− | 1.2+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 29 | 704 | 2.2+ | 2.0+ |
| 2002 12 01 | 704 | 1.2− | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 1.6+ | 0.1− |
| 2002 12 01 | 704 | (2.4− | 1.0+) | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 2.1+ | 1.4− |

**(142857)∗ 2002 VF$_{27}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.06292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21479059 | $\omega$ | 193.10050 | | +0.14138727 | −0.98815171 | |
| $a$ | 2.7613781 | $\Omega$ | 248.79648 | | +0.91394252 | +0.15347337 | |
| $e$ | 0.0901336 | $i$ | 3.67235 | | +0.38041913 | −0.00145565 | |
| $P$ | 4.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.4− | 0.8+ | 2002 12 02 | 704 | 1.7− | 0.6+ | 2004 03 20 | 704 | 0.0 | 0.2+ |
| 2001 08 22 | 691 | 0.1+ | 0.8+ | 2002 12 02 | 704 | 0.1− | 0.3− | 2004 03 27 | 704 | 0.1+ | 0.9− |
| 2001 08 22 | 691 | 0.1− | 0.3+ | 2002 12 02 | 704 | 1.1− | 0.6+ | 2004 03 27 | 704 | 0.7− | 1.0+ |
| 2002 10 30 | 608 | 0.0 | 0.1+ | 2002 12 02 | 704 | 0.7− | 1.9+ | 2004 03 27 | 704 | 1.5+ | 1.1− |
| 2002 10 30 | 608 | 0.4− | 0.1+ | 2002 12 02 | 608 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.0 | 0.5+ |
| 2002 10 30 | 608 | 0.5− | 0.2+ | 2002 12 02 | 608 | 1.3+ | 0.7− | 2004 04 12 | 691 | 0.4− | 0.1+ |
| 2002 11 05 | 704 | 0.0 | 0.4− | 2002 12 02 | 608 | 0.7+ | 0.5+ | 2004 04 12 | 691 | 0.3+ | 0.3+ |
| 2002 11 05 | 704 | 0.4+ | 0.8− | 2002 12 05 | 704 | (0.5− | 2.2+) | 2004 04 12 | 691 | 0.0 | 0.2+ |
| 2002 11 05 | 704 | 1.2− | 0.0 | 2002 12 05 | 704 | 1.2− | 0.9+ | 2004 04 17 | 691 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 0.5+ | 2002 12 05 | 704 | 0.3− | 0.7+ | 2004 04 17 | 691 | 0.4+ | 0.1+ |
| 2002 11 06 | 704 | 0.3+ | 0.6− | 2002 12 05 | 704 | 0.4+ | 0.6+ | 2004 04 17 | 691 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 0.4− | 0.1− | 2002 12 10 | 704 | 0.2+ | 1.5+ | 2006 08 29 | 703 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2002 12 10 | 704 | 0.3+ | 1.1+ | 2006 08 29 | 703 | 0.6− | 0.5− |
| 2002 11 06 | 704 | 0.8+ | 0.8+ | 2002 12 10 | 704 | 0.1− | 0.8+ | 2006 08 29 | 703 | 0.1− | 0.2− |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2004 03 16 | 703 | 0.4+ | 0.6+ | 2006 08 29 | 703 | 0.6− | 1.1+ |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2004 03 16 | 703 | 0.8+ | 1.8+ | 2006 08 29 | 691 | 0.0 | 0.4+ |
| 2002 11 13 | 644 | 0.3− | 0.1+ | 2004 03 16 | 703 | 0.4+ | 1.6+ | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2004 03 16 | 703 | 1.2+ | 1.2+ | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2004 03 20 | 704 | 1.3+ | 1.1+ | 2006 09 12 | 703 | 0.6− | 0.3− |
| 2002 11 14 | 704 | 0.3+ | 0.5+ | 2004 03 20 | 704 | 1.1+ | 0.0 | 2006 09 12 | 703 | 0.1− | 0.7+ |
| 2002 11 14 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.8+ | 0.4+ |
| 2002 11 27 | 699 | 1.0+ | 0.2− | 2004 03 20 | 704 | 1.0− | 0.3+ | 2006 09 12 | 703 | 0.6− | 0.5+ |
| 2002 11 27 | 699 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.5+ | 1.5+ | 2006 09 19 | 703 | 0.1− | 0.6+ |
| 2002 11 27 | 699 | 0.3+ | 0.1− | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.4+ |
| 2002 11 27 | 699 | 1.9+ | 0.7− | 2004 03 20 | 704 | 0.2− | 1.0+ | 2006 09 19 | 703 | 0.9+ | 0.5+ |
| 2002 11 28 | 699 | 0.6+ | 0.6− | 2004 03 20 | 704 | 0.3− | 0.0 | 2006 09 19 | 703 | 1.5− | 0.4+ |
| 2002 11 28 | 699 | 0.4− | 1.0− | 2004 03 20 | 704 | 0.1− | 1.5+ | | | | |

**(142858)∗ 2002 VV$_{27}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.82083 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23016785 | $\omega$ | 331.09208 | | +0.92004188 | −0.38614843 | |
| $a$ | 2.6369766 | $\Omega$ | 51.77603 | | +0.37378509 | +0.81414730 | |
| $e$ | 0.1439841 | $i$ | 4.85037 | | +0.11750591 | +0.43365144 | |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | (0.6− | 2.9−) | 2002 12 10 | 704 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.2+ | 0.4+ |
| 1998 12 17 | 704 | (0.4− | 2.1−) | 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.8− | 1.3+ |
| 1998 12 17 | 704 | 1.1− | 0.9− | 2002 12 10 | 704 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.9− | 0.9+ |
| 1998 12 17 | 704 | 1.5− | 0.2− | 2002 12 10 | 704 | 0.5+ | 0.0 | 2006 09 22 | 704 | 0.6− | 0.0 |
| 1998 12 17 | 704 | 1.8− | 0.5− | 2002 12 27 | 644 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.3+ | 0.1+ |
| 2002 10 02 | 704 | 0.7− | 0.3− | 2002 12 27 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.0 |
| 2002 10 02 | 704 | 0.0 | 1.0− | 2002 12 27 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.3− |
| 2002 10 02 | 704 | 0.3+ | 0.7− | 2002 12 27 | 644 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.7+ | 1.2− | 2002 12 27 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 699 | 0.9− | 0.5+ | 2002 12 27 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 1.1+ | 0.3+ |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2002 12 28 | 699 | 0.3+ | 0.5− | 2006 09 26 | 704 | 1.2+ | 1.1+ |
| 2002 11 05 | 699 | 0.1+ | 0.3+ | 2002 12 28 | 699 | 1.0− | 0.3+ | 2006 09 26 | 704 | 0.8+ | 0.3+ |
| 2002 11 05 | 704 | 0.9+ | 0.5− | 2002 12 28 | 699 | 1.3− | 0.4− | 2006 09 26 | 704 | 0.1+ | 0.9+ |
| 2002 11 05 | 699 | 0.0 | 0.1+ | 2002 12 28 | 699 | 0.0 | 0.6− | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2002 12 31 | 704 | 1.2+ | 0.3− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2002 11 05 | 699 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.4+ | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2002 11 05 | 704 | 0.6+ | 0.2+ | 2002 12 31 | 704 | 0.9− | 0.7+ | 2006 09 29 | 699 | 0.2− | 0.1+ |
| 2002 11 05 | 704 | 0.6+ | 0.2− | 2003 01 20 | 644 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.2− |
| 2002 11 06 | 704 | 0.3+ | 0.9+ | 2003 01 20 | 644 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.0 | 0.9+ |
| 2002 11 06 | 704 | 0.6+ | 0.4− | 2003 01 20 | 644 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.0 | 0.5− |
| 2002 11 06 | 704 | 0.0 | 1.3+ | 2003 01 28 | 644 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.4− |
| 2002 11 06 | 704 | 0.7+ | 1.2− | 2003 01 28 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.4− | 0.6+ |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2003 01 28 | 644 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | (0.3+ | 2.7−) | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.7− | 0.5− |
| 2002 11 06 | 704 | 0.1+ | 0.6+ | 2004 01 30 | 691 | 0.3+ | 0.0 | 2006 10 01 | 704 | 0.5− | 0.4+ |
| 2002 11 06 | 704 | 0.4− | 0.5+ | 2004 01 30 | 691 | 1.0− | 0.4+ | 2006 10 02 | 691 | 0.5− | 0.2+ |
| 2002 11 14 | 704 | 0.1+ | 0.1+ | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2002 11 14 | 704 | 0.2+ | 1.5− | 2004 01 30 | 691 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.4+ |
| 2002 11 14 | 704 | 0.2− | 0.5− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 11 14 | 704 | 0.6− | 0.7− | 2004 02 15 | 703 | 0.1− | 0.8− | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.1− | 0.7− | 2004 02 15 | 703 | 1.3+ | 0.8+ | 2006 10 16 | 703 | (0.5− | 1.5−) |
| 2002 11 16 | 644 | 0.6− | 0.3+ | 2004 02 15 | 703 | 1.3+ | 1.4+ | 2006 10 16 | 703 | (0.4+ | 2.3−) |
| 2002 11 16 | 644 | 0.4− | 0.3+ | 2004 02 15 | 703 | 0.9+ | 1.1+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2002 11 16 | 644 | 0.4− | 0.2+ | 2004 02 29 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2002 11 18 | 644 | 0.2+ | 0.2− | 2004 02 29 | 691 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2002 11 18 | 644 | 0.3+ | 0.5− | 2004 02 29 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 11 18 | 644 | 0.1+ | 0.4− | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 27 | 699 | 0.6− | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 11 27 | 699 | 0.5− | 0.7+ | 2004 03 20 | 704 | (1.7+ | 1.1+) | 2006 10 22 | 704 | 0.7+ | 0.3+ |
| 2002 11 27 | 699 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.1− | 0.0 | 2006 10 22 | 704 | 0.2− | 1.3+ |
| 2002 11 27 | 699 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.2− | 1.0+ | 2006 10 22 | 704 | 0.1− | 0.3+ |
| 2002 12 02 | 704 | (2.0+ | 0.8+) | 2005 02 10 | 809 | 0.5+ | 0.0 | 2006 10 22 | 704 | 0.7− | 0.9− |
| 2002 12 02 | 704 | 1.2+ | 0.4+ | 2005 02 10 | 809 | 0.5+ | 0.2+ | 2006 10 22 | 704 | 0.2− | 0.3− |
| 2002 12 02 | 704 | (1.9+ | 0.4+) | 2005 02 10 | 809 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.8− | 1.0− |
| 2002 12 02 | 704 | 1.4+ | 0.8+ | 2006 09 16 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.7− |
| 2002 12 02 | 704 | 1.1+ | 0.2+ | 2006 09 16 | 704 | 0.8− | 0.4+ | 2006 10 22 | 703 | (2.3+ | 1.2−) |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.7− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 09 16 | 704 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2− | 0.8− |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.6− | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2002 12 06 | 704 | 0.5+ | 0.8+ | 2006 09 21 | 699 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2002 12 06 | 704 | 0.5+ | 0.2− | 2006 09 21 | 699 | 0.1− | 0.4+ | | | | |
| 2002 12 10 | 704 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 0.2+ | 0.1+ | | | | |

**(142859)∗ 2002 VB$_{28}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.99631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22326203 | $\omega$ | 3.87797 | | −0.00451208 | −0.99819780 | |
| $a$ | 2.6910771 | $\Omega$ | 86.38752 | | +0.91585215 | −0.02815062 | |
| $e$ | 0.0493622 | $i$ | 3.43746 | | +0.40149033 | +0.05299720 | |
| $P$ | 4.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.3+ | 1.2+ | 2003 12 19 | 691 | 0.2+ | 0.0 | 2004 03 20 | 699 | (2.0− | 0.0 ) |
| 1998 12 17 | 704 | (0.8+ | 3.0−) | 2003 12 19 | 691 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.5− | 1.4+ |
| 1998 12 17 | 704 | 0.3+ | 0.7− | 2003 12 19 | 691 | 0.3+ | 0.2− | 2004 03 20 | 704 | 1.0+ | 1.2+ |
| 1998 12 17 | 704 | 0.3− | 0.4− | 2003 12 19 | 691 | 0.1− | 0.1− | 2004 03 20 | 699 | 0.2+ | 1.0+ |
| 2000 06 03 | 608 | 0.3− | 0.1− | 2004 02 16 | 703 | (1.6+ | 1.0+) | 2004 03 22 | 704 | 0.2− | 0.6+ |
| 2000 06 03 | 608 | 0.5− | 0.3− | 2004 02 16 | 703 | 1.3+ | 0.2− | 2004 03 22 | 704 | 0.4+ | 1.4+ |
| 2000 06 03 | 608 | 0.3− | 0.3+ | 2004 02 16 | 703 | (2.2+ | 0.2−) | 2004 03 22 | 704 | 0.7− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | (0.7− | 2.0+) | 2004 02 16 | 703 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.9+ |
| 2001 08 13 | 608 | (1.1− | 2.3+) | 2004 02 17 | 608 | 0.0 | 0.6− | 2004 03 28 | 703 | 0.1+ | 0.2+ |
| 2001 08 13 | 608 | (0.8− | 2.2+) | 2004 02 17 | 608 | 0.0 | 0.5− | 2004 03 28 | 704 | 0.4+ | 0.9− |
| 2002 10 31 | 699 | (2.4+ | 1.9+) | 2004 02 17 | 608 | 0.2+ | 0.9− | 2004 03 28 | 703 | 1.0+ | 1.2+ |
| 2002 10 31 | 699 | 0.1+ | 0.7+ | 2004 02 18 | 704 | 0.3+ | 0.7+ | 2004 03 28 | 704 | 1.1+ | 0.5− |
| 2002 10 31 | 699 | 0.3+ | 0.6+ | 2004 02 18 | 704 | 0.1− | 0.2+ | 2004 03 28 | 704 | (0.7+ | 1.8+) |
| 2002 10 31 | 699 | (1.9+ | 0.5−) | 2004 02 18 | 704 | 1.3+ | 0.5+ | 2004 03 28 | 703 | 1.4+ | 0.1+ |
| 2002 11 05 | 699 | 0.4− | 0.0 | 2004 02 18 | 704 | 0.7+ | 0.7+ | 2004 03 28 | 704 | (0.7− | 2.8+) |
| 2002 11 05 | 699 | 0.8+ | 0.9− | 2004 02 25 | 704 | 0.3+ | 0.6− | 2004 03 28 | 703 | 0.3− | 0.8+ |
| 2002 11 05 | 699 | 0.0 | 0.6− | 2004 02 25 | 704 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.6+ |
| 2002 11 05 | 699 | 0.7− | 0.6+ | 2004 02 25 | 704 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.2− | 0.3− |
| 2002 11 06 | 704 | 0.5− | 0.1− | 2004 02 25 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.1− | 1.2+ |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2004 02 25 | 704 | (1.8− | 0.7+) | 2006 09 18 | 703 | 0.1+ | 0.6− |
| 2002 11 06 | 704 | 0.0 | 0.2+ | 2004 02 25 | 704 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.9− | 0.3+ |
| 2002 11 13 | 644 | 0.3+ | 0.1− | 2004 02 25 | 704 | 0.3+ | 0.6+ | 2006 09 22 | 704 | 0.9− | 1.3+ |
| 2002 11 13 | 644 | 0.4+ | 0.0 | 2004 02 25 | 704 | 0.7− | 0.1− | 2006 09 22 | 704 | 0.9− | 0.9+ |
| 2002 11 13 | 644 | 0.4+ | 0.1− | 2004 02 25 | 704 | (0.5+ | 1.5+) | 2006 09 26 | 704 | 1.4− | 1.4+ |
| 2002 11 14 | 704 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.4− | 0.5− | 2006 09 26 | 704 | (1.4− | 2.1+) |
| 2002 11 14 | 704 | 1.5+ | 1.0− | 2004 02 26 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 1.0− | 0.9+ |
| 2002 11 14 | 704 | 0.5− | 0.8− | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.7+ |
| 2002 11 14 | 704 | 0.1+ | 0.2+ | 2004 03 11 | 644 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.8+ | 0.2+ |
| 2002 11 14 | 704 | 0.9+ | 0.1− | 2004 03 11 | 644 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2002 11 23 | 644 | 0.2− | 0.2− | 2004 03 11 | 644 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2002 11 23 | 644 | 0.2− | 0.1− | 2004 03 15 | 703 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.9+ |
| 2002 11 23 | 644 | 0.3+ | 0.1+ | 2004 03 15 | 704 | (1.8+ | 0.4+) | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 2002 12 02 | 704 | 0.6+ | 0.4− | 2004 03 15 | 703 | 0.3− | 0.8+ | 2006 10 01 | 704 | 0.0 | 1.0+ |
| 2002 12 02 | 704 | 0.0 | 0.9+ | 2004 03 15 | 704 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.5+ |
| 2002 12 02 | 704 | 0.1+ | 0.1− | 2004 03 15 | 703 | 0.8− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2002 12 02 | 704 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.5+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2004 03 15 | 703 | 0.3+ | 1.3+ | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.2− | 0.7− | 2004 03 15 | 704 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 12 05 | 704 | 0.7− | 0.2− | 2004 03 15 | 185 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2004 03 15 | 185 | 0.9− | 0.1− | 2006 10 16 | 703 | 0.8− | 1.1+ |
| 2002 12 10 | 704 | 0.2+ | 0.4+ | 2004 03 15 | 185 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2002 12 10 | 704 | 0.5− | 0.6− | 2004 03 17 | 704 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2002 12 10 | 704 | 0.3+ | 0.9− | 2004 03 17 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2002 12 10 | 644 | 1.1+ | 0.9+ | 2004 03 17 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.8+ |
| 2002 12 10 | 704 | 0.4− | 0.9− | 2004 03 17 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 12 10 | 704 | 0.1+ | 0.5− | 2004 03 17 | 704 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2002 12 10 | 644 | 0.8+ | 0.8+ | 2004 03 19 | 704 | 0.9+ | 0.1+ | 2006 10 22 | 703 | 1.3+ | 0.2+ |
| 2002 12 10 | 644 | 0.7+ | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 703 | (0.1− | 2.8+) |
| 2002 12 27 | 644 | 0.7+ | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.5+ |
| 2002 12 27 | 644 | 0.4+ | 0.1− | 2004 03 19 | 704 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.5+ | 0.3+ |
| 2002 12 27 | 644 | 0.6+ | 0.1− | 2004 03 19 | 704 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2003 01 03 | 291 | 0.6− | 0.4− | 2004 03 20 | 699 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2003 01 03 | 291 | 0.3− | 0.1− | 2004 03 20 | 699 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2003 01 03 | 291 | 0.8− | 0.3− | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2003 12 19 | 691 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.4− | 0.7+ | | | | |
| 2003 12 19 | 691 | 0.1+ | 0.2− | 2004 03 20 | 704 | 0.4− | 0.3+ | | | | |

**(142860)∗ 2002 VJ$_{28}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.54600 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23890638 | $\omega$ | 119.47280 | | +0.96852228 | +0.24868564 | |
| $a$ | 2.5722759 | $\Omega$ | 226.12988 | | −0.23332627 | +0.89160666 | |
| $e$ | 0.1969928 | $i$ | 0.87083 | | −0.08673778 | +0.37840852 | |
| $P$ | 4.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 15 | 691 | 0.2+ | 0.5− | 2005 04 11 | G96 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2000 03 15 | 691 | 0.0 | 0.2− | 2005 05 07 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2000 03 15 | 691 | 0.5− | 0.2+ | 2005 05 07 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2001 05 24 | 557 | (1.7− | 0.5+) | 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2001 05 24 | 557 | (0.6− | 1.7+) | 2005 05 09 | G96 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.3+ | 0.6+ | 2005 05 09 | G96 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.5+ | | |
| 2002 10 30 | 608 | 0.2− | 0.9+ | 2005 05 09 | G96 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2002 10 30 | 608 | 0.3− | 0.5+ | 2005 05 09 | G96 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2002 11 05 | 699 | 0.5− | 0.1− | 2005 05 11 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | | |
| 2002 11 05 | 699 | 0.4− | 0.8− | 2005 05 11 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2002 11 05 | 699 | 1.3+ | 0.7− | 2005 05 11 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 11 05 | 699 | 0.7− | 0.1+ | 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2− | | |
| 2002 11 06 | 704 | (1.6+ | 0.5−) | 2005 05 13 | G96 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2005 05 13 | G96 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2002 11 06 | 704 | (1.1+ | 2.1−) | 2005 05 13 | G96 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.6− | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.4+ | 0.6− | | |
| 2002 11 06 | 704 | (0.9− | 1.6+) | 2005 05 16 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 704 | 0.2− | 0.0 | | |
| 2002 11 06 | 704 | 0.6+ | 1.4+ | 2005 05 16 | 691 | 0.4+ | 0.4+ | 2006 10 23 | 704 | 0.5+ | 0.4− | | |
| 2002 11 06 | 704 | 1.0− | 1.4+ | 2005 06 14 | G96 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 2002 11 06 | 704 | 0.3+ | 1.1+ | 2005 06 14 | G96 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2002 11 07 | 704 | 0.8− | 0.3+ | 2005 06 14 | G96 | (2.8+ | 0.1−) | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2002 11 07 | 704 | 0.3− | 0.1+ | 2005 06 14 | G96 | (1.8+ | 0.1−) | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2002 11 07 | 704 | 0.5+ | 0.4− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.3− | 0.2+ | | |
| 2002 11 07 | 704 | 0.8+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.2+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2002 11 14 | 704 | 0.4+ | 1.1− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.4− | 0.0 | | |
| 2002 11 14 | 704 | 0.2+ | 0.9− | 2006 09 27 | 704 | 0.7− | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.3+ | | |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.9− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.5− | | |
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2006 09 27 | 704 | 0.2− | 0.8− | 2006 11 11 | 703 | 1.1− | 0.7− | | |
| 2002 12 05 | 704 | 0.7− | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.0+ | 0.8− | | |
| 2002 12 05 | 704 | 0.7− | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.6+ | 0.1− | | |
| 2002 12 10 | 644 | 0.1− | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.8− | | |
| 2002 12 10 | 644 | 0.2+ | 0.8+ | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.0 | | |
| 2002 12 10 | 704 | 0.9− | 1.1+ | 2006 10 04 | 703 | 0.9− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.1+ | | |
| 2002 12 10 | 644 | 0.0 | 0.9+ | 2006 10 04 | 703 | 0.4− | 0.7− | 2006 11 11 | G96 | 0.3+ | 0.1+ | | |
| 2002 12 10 | 704 | 0.4+ | 0.4+ | 2006 10 04 | 703 | 0.2+ | 0.4+ | 2006 11 17 | 703 | (0.3+ | 2.2−) | | |
| 2002 12 10 | 704 | 0.0 | 1.1+ | 2006 10 04 | 703 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.3+ | 1.1− | | |
| 2002 12 27 | 644 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 1.0+ | 1.0+ | | |
| 2002 12 27 | 644 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.4+ | | |
| 2002 12 27 | 644 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2+ | | |
| 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.2+ | | |
| 2005 04 11 | G96 | 0.5− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.2+ | | |
| 2005 04 11 | G96 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.1− | | | | | | |

**(142861)∗ 2002 VU$_{28}$ = 2000 CV$_{139}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 38134)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.66819 | | (2000.0) | | | |
| $n$ | 0.26853901 | $\omega$ | 222.16447 | | +0.93038430 | −0.36649558 |
| $a$ | 2.3793836 | $\Omega$ | 159.33091 | | +0.34218453 | +0.86028839 |
| $e$ | 0.2011216 | $i$ | 1.31932 | | +0.13150970 | +0.35437955 |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 29 | 691 | 0.6+ | 0.4− | 2002 11 05 | 699 | 0.3+ | 0.5− | 2002 12 05 | 704 | 0.1− | 0.4+ | | |
| 1991 11 29 | 691 | 0.1− | 0.3− | 2002 11 05 | 699 | 0.5+ | 0.1+ | 2002 12 05 | 704 | 0.2+ | 0.1+ | | |
| 1991 11 29 | 691 | 0.7− | 1.0+ | 2002 11 06 | 704 | 1.1+ | 0.5+ | 2002 12 06 | 704 | (1.4− | 2.6+) | | |
| 1998 07 26 | 691 | 0.4− | 0.1+ | 2002 11 06 | 704 | 0.6+ | 0.6− | 2002 12 06 | 704 | 0.2+ | 0.3+ | | |
| 1998 07 26 | 691 | 0.4− | 0.2+ | 2002 11 06 | 704 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.4+ | 0.4+ | | |
| 1998 07 26 | 691 | 0.8− | 0.0 | 2002 11 06 | 704 | 0.1+ | 0.6− | 2002 12 06 | 704 | (1.5+ | 0.9+) | | |
| 1998 08 17 | 704 | 0.9+ | 0.6− | 2002 11 06 | 704 | 0.2− | 0.6− | 2002 12 06 | 704 | 1.0+ | 0.1+ | | |
| 1998 08 17 | 704 | (0.2− | 2.4−) | 2002 11 07 | 704 | 0.2− | 0.4+ | 2002 12 10 | 644 | 0.4− | 0.2+ | | |
| 1998 08 17 | 704 | 1.3+ | 0.4+ | 2002 11 07 | 704 | 0.6+ | 0.3+ | 2002 12 10 | 704 | 0.3− | 0.8+ | | |
| 1998 08 17 | 704 | 0.3− | 1.3− | 2002 11 07 | 704 | 0.1+ | 0.3+ | 2002 12 10 | 644 | 0.1− | 0.6+ | | |
| 1998 08 17 | 704 | 1.5+ | 1.3+ | 2002 11 07 | 704 | 0.7+ | 0.9− | 2002 12 10 | 704 | 0.1− | 0.9+ | | |
| 1998 08 23 | 704 | 1.1+ | 1.0− | 2002 11 07 | 704 | 0.1− | 0.7+ | 2002 12 10 | 704 | (0.2+ | 2.0+) | | |
| 1998 08 23 | 704 | 1.7+ | 1.1− | 2002 11 07 | 704 | 0.3+ | 0.6− | 2002 12 10 | 644 | 0.1− | 0.4+ | | |
| 1998 08 23 | 704 | (2.8+ | 1.2−) | 2002 11 07 | 704 | 0.3+ | 0.7+ | 2002 12 10 | 704 | 0.6− | 0.9+ | | |
| 1998 08 23 | 704 | 0.3− | 1.2− | 2002 11 07 | 704 | 0.8+ | 1.1− | 2003 01 03 | 291 | 0.2+ | 0.2+ | | |
| 2000 01 12 | 691 | 0.6− | 0.5− | 2002 11 07 | 704 | 0.2− | 0.4+ | 2003 01 03 | 291 | 0.2+ | 0.4+ | | |
| 2000 01 12 | 691 | 0.3+ | 0.9− | 2002 11 07 | 704 | 0.1− | 0.9− | 2003 01 03 | 291 | 0.3+ | 0.2+ | | |
| 2000 01 12 | 691 | 0.0 | 0.5− | 2002 11 08 | 704 | 0.1− | 0.4− | 2003 01 04 | 704 | 0.4− | 0.5+ | | |
| 2000 02 04 | 691 | 0.5+ | 0.2+ | 2002 11 08 | 704 | 0.6− | 0.6− | 2003 01 04 | 704 | 0.5+ | 1.0+ | | |
| 2000 02 04 | 691 | 0.2+ | 0.5+ | 2002 11 08 | 704 | 0.3− | 0.5− | 2003 01 04 | 704 | 0.4− | 1.0+ | | |
| 2000 02 04 | 691 | 0.0 | 0.0 | 2002 11 08 | 704 | 0.2− | 1.0− | 2004 03 18 | 704 | 0.3+ | 0.2+ | | |
| 2000 02 06 | 691 | 0.2− | 0.0 | 2002 11 08 | 704 | 0.4− | 0.6− | 2004 03 18 | 704 | 0.4+ | 0.7− | | |
| 2000 02 06 | 691 | 0.2− | 0.4+ | 2002 11 10 | 704 | 0.4− | 1.4− | 2004 03 18 | 704 | (0.5+ | 1.8+) | | |
| 2000 02 06 | 691 | 0.4− | 0.1− | 2002 11 10 | 704 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.3+ | 0.3− | | |
| 2002 10 11 | 704 | (0.9− | 2.8+) | 2002 11 10 | 704 | 0.3− | 0.8− | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2002 10 11 | 704 | 0.2− | 0.2+ | 2002 11 12 | 644 | 0.4+ | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 2002 10 11 | 704 | (1.3− | 2.4−) | 2002 11 12 | 644 | 0.1+ | 1.1+ | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 2002 10 31 | 699 | 0.2− | 0.5+ | 2002 11 12 | 644 | 0.4+ | 1.1+ | 2006 10 21 | G96 | 0.2+ | 0.1− | | |
| 2002 10 31 | 699 | 0.0 | 1.0+ | 2002 12 01 | 704 | 1.0− | 0.1− | 2006 10 21 | G96 | 0.6− | 0.8− | | |
| 2002 10 31 | 699 | 0.0 | 0.1+ | 2002 12 01 | 704 | 1.3− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2002 10 31 | 644 | 0.4+ | 0.1+ | 2002 12 01 | 704 | 1.0− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2002 10 31 | 699 | 0.4− | 0.4+ | 2002 12 01 | 704 | 0.2− | 0.5− | 2006 10 29 | G96 | 0.3− | 0.2− | | |
| 2002 10 31 | 644 | 0.1+ | 0.1+ | 2002 12 01 | 704 | 0.8+ | 0.0 | 2006 10 29 | G96 | 0.3− | 0.1− | | |
| 2002 10 31 | 644 | 0.7− | 0.2+ | 2002 12 01 | 608 | 0.3+ | 0.9− | 2006 10 29 | G96 | 0.6− | 0.1+ | | |
| 2002 11 03 | 608 | 0.3− | 0.5− | 2002 12 01 | 608 | 0.1+ | 0.4− | 2006 10 29 | G96 | 0.2− | 0.6− | | |
| 2002 11 03 | 608 | 0.2− | 0.5− | 2002 12 01 | 608 | 0.3+ | 0.7− | 2006 11 16 | G96 | 0.4− | 0.4− | | |
| 2002 11 03 | 608 | 0.3− | 0.5− | 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.5− | 0.2− | | |
| 2002 11 05 | 699 | 0.7− | 0.3+ | 2002 12 05 | 704 | 0.6+ | 0.3− | 2006 11 16 | G96 | 0.5− | 0.7− | | |
| 2002 11 05 | 699 | 0.1− | 0.0 | 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.6− | 0.2− | | |

**(142862)∗ 2002 VW$_{28}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.03129 | | (2000.0) | | | |
| $n$ | 0.23902060 | $\omega$ | 181.26195 | | +0.97638027 | −0.21598183 |
| $a$ | 2.5714564 | $\Omega$ | 191.21623 | | +0.19848985 | +0.90723053 |
| $e$ | 0.2416142 | $i$ | 1.70297 | | +0.08534252 | +0.36094959 |
| $P$ | 4.12 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.1+ | 0.3+ | 2004 02 17 | 291 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ | | |
| 2001 05 22 | 807 | 0.1− | 0.5+ | 2004 02 22 | 695 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 1.2− | 0.2− | | |
| 2002 10 31 | 644 | 0.2− | 0.6+ | 2004 02 22 | 695 | 0.4+ | 0.1− | 2006 10 16 | 691 | 1.0+ | 0.6+ | | |
| 2002 10 31 | 644 | 0.0 | 0.4+ | 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.3− | | |
| 2002 10 31 | 644 | 0.6− | 0.3+ | 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.1− | | |
| 2002 11 05 | 699 | 0.4− | 0.0 | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.1− | | |
| 2002 11 05 | 699 | 0.6− | 0.7+ | 2006 07 22 | G96 | 0.3− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.3− | | |
| 2002 11 05 | 699 | 0.1− | 1.3+ | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 18 | 106 | 0.1+ | 0.6+ | | |
| 2002 11 05 | 699 | 0.3− | 0.3− | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 18 | 106 | 0.5+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 10 18 | 106 | 0.1+ | 0.6− | | |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 18 | 106 | 0.2+ | 0.6+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 644 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2002 11 06 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.3+ | | |
| 2002 11 12 | 644 | 0.2+ | 0.9+ | 2006 09 18 | 691 | 0.5+ | 0.6− | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 2002 11 12 | 644 | 0.8+ | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.8− | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 11 12 | 644 | 0.3+ | 1.1+ | 2006 09 18 | 699 | 0.5+ | 0.9− | 2006 10 20 | 644 | 0.4− | 0.1− | | |
| 2002 11 15 | 704 | 0.8− | 0.6+ | 2006 09 18 | 691 | 0.9+ | 0.1− | 2006 10 20 | 644 | 0.4− | 0.0 | | |
| 2002 11 15 | 704 | (0.8− | 1.6+) | 2006 09 18 | 699 | 1.4+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 11 15 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 15 | 704 | 0.5− | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 11 15 | 704 | (1.7− | 1.9+) | 2006 09 20 | 704 | 0.2− | 0.7− | 2006 10 23 | 704 | 0.5+ | 0.7− | | |
| 2002 11 16 | 704 | 0.1− | 1.0− | 2006 09 20 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 704 | 0.0 | 0.1+ | | |
| 2002 11 16 | 704 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.4− | 0.8− | 2006 10 23 | 704 | 0.7+ | 0.2+ | | |
| 2002 11 16 | 704 | (0.7− | 2.1−) | 2006 09 20 | 704 | 0.2− | 0.7+ | 2006 10 23 | 704 | 0.8+ | 0.6+ | | |
| 2002 12 01 | 704 | 0.7− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.6− | 2006 10 23 | 704 | 0.1− | 1.0+ | | |
| 2002 12 01 | 704 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2002 12 01 | 704 | 1.0+ | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 2002 12 01 | 608 | 0.2+ | 1.2− | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | | |
| 2002 12 01 | 608 | 0.3− | 1.0− | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− | | |
| 2002 12 01 | 608 | 0.4− | 1.2− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.5− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.1− |
| 2002 12 10 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.3− | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2002 12 10 | 704 | 0.7+ | 0.6+ | 2006 09 27 | 704 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 12 10 | 704 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.8− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 12 10 | 644 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.7− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 12 10 | 704 | (0.7+ | 1.9−) | 2006 09 29 | 691 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2002 12 10 | 704 | 0.4+ | 0.7− | 2006 09 29 | 691 | 0.1+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2003 01 03 | 291 | 0.0 | 0.1+ | 2006 09 29 | 691 | 0.2− | 0.1− | 2006 11 06 | 644 | 0.3+ | 0.2+ |
| 2003 01 03 | 291 | 0.4− | 0.2+ | 2006 10 15 | 703 | 0.2− | 0.2+ | 2006 11 11 | 703 | (0.2+ | 1.6−) |
| 2003 01 03 | 291 | 0.4+ | 1.3− | 2006 10 15 | 703 | 1.5− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2004 02 17 | 291 | 0.7− | 0.0 | 2006 10 15 | 703 | 0.6− | 0.2− | 2006 11 11 | 703 | (1.0− | 2.5−) |
| 2004 02 17 | 291 | 0.4+ | 0.2+ | 2006 10 15 | 703 | 0.8− | 0.8− | 2006 11 11 | 703 | (0.5− | 1.7−) |

**(142863)∗ 2002 VC$_{29}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.95327 | | (2000.0) | | +0.07502592 | −0.99525086 |
| $n$ | 0.26695803 | $\omega$ | 25.37075 | | +0.90230628 | +0.04127743 |
| $a$ | 2.3887684 | $\Omega$ | 60.38108 | | +0.42451677 | +0.08815842 |
| $e$ | 0.1153537 | $i$ | 4.09127 | | | |
| $P$ | 3.69 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.6− | 0.3− | 2004 04 23 | 691 | 0.0 | 0.1+ |
| 2000 03 12 | 704 | 0.7+ | 0.3+ | 2002 12 05 | 704 | (0.0 | 1.8+) | 2004 04 25 | 704 | 0.6+ | 0.5+ |
| 2000 03 12 | 704 | 0.3− | 0.6− | 2002 12 05 | 704 | (1.7− | 0.6+) | 2004 04 25 | 704 | 0.9+ | 0.1+ |
| 2000 03 12 | 704 | 0.3− | 0.1− | 2002 12 05 | 704 | 0.2− | 0.4+ | 2004 04 25 | 704 | (1.3+ | 1.6+) |
| 2000 03 12 | 704 | 0.4+ | 0.6+ | 2002 12 05 | 704 | 0.7+ | 0.2− | 2004 04 25 | 704 | 1.1+ | 0.4− |
| 2002 10 11 | 704 | (0.1− | 1.5+) | 2002 12 05 | 704 | 0.3− | 0.4+ | 2004 04 25 | 704 | 1.2+ | 0.6+ |
| 2002 10 11 | 704 | 0.8− | 0.5+ | 2002 12 10 | 644 | 0.2− | 0.4+ | 2004 04 30 | 691 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 1.4− | 0.5+ | 2002 12 10 | 644 | 0.2− | 0.4+ | 2004 04 30 | 691 | 0.1+ | 0.5+ |
| 2002 11 05 | 699 | 0.3+ | 0.4+ | 2002 12 10 | 704 | 0.0 | 0.1− | 2004 04 30 | 691 | 0.0 | 0.3+ |
| 2002 11 05 | 699 | 0.3+ | 0.5+ | 2002 12 10 | 704 | 0.4− | 1.2+ | 2004 05 15 | 691 | 0.2+ | 0.1− |
| 2002 11 05 | 699 | 0.9+ | 0.0 | 2002 12 10 | 644 | 0.4− | 0.5+ | 2004 05 15 | 691 | 0.2+ | 0.1− |
| 2002 11 05 | 699 | 0.5+ | 0.5+ | 2002 12 10 | 704 | 0.3− | 0.2+ | 2004 05 15 | 691 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.3− | 0.2+ | 2003 01 27 | 704 | 0.6− | 0.9+ | 2006 09 30 | 691 | 0.4+ | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2003 01 27 | 704 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.4+ | 0.2− |
| 2002 11 06 | 704 | 0.4+ | 0.2+ | 2003 01 27 | 704 | (2.0− | 2.5−) | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.5+ | 1.3+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 11 10 | 704 | 0.1+ | 0.2− | 2004 03 19 | 704 | (1.9+ | 1.5+) | 2006 10 22 | G96 | 0.5− | 0.3− |
| 2002 11 10 | 704 | 1.1− | 0.6+ | 2004 03 19 | 704 | (1.4+ | 1.6+) | 2006 10 22 | G96 | 0.8− | 0.0 |
| 2002 11 10 | 704 | 0.2− | 0.1+ | 2004 03 19 | 704 | (1.7+ | 2.1+) | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 11 12 | 644 | 0.1+ | 1.1+ | 2004 03 22 | 704 | 0.8− | 0.6− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 644 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.6− |
| 2002 11 12 | 644 | 0.3+ | 1.0+ | 2004 03 22 | 704 | 0.8− | 0.3− | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2002 11 12 | 644 | 0.1− | 0.0 | 2004 03 31 | 691 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2002 11 12 | 644 | 0.1− | 0.9+ | 2004 03 31 | 691 | 0.4− | 0.2− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 11 12 | 644 | 0.1+ | 0.4+ | 2004 03 31 | 691 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.7− |
| 2002 11 27 | 699 | 0.4− | 0.6+ | 2004 04 16 | 704 | 0.7+ | 0.6+ | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2002 11 27 | 699 | 0.2− | 0.5+ | 2004 04 16 | 704 | 1.1+ | 1.3+ | 2006 10 23 | G96 | 0.1− | 0.2+ |
| 2002 11 27 | 699 | 0.4− | 0.1+ | 2004 04 16 | 704 | 1.0+ | 1.2+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 11 27 | 699 | 0.2− | 0.7+ | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2002 12 01 | 608 | 0.3+ | 0.1+ | 2004 04 19 | 704 | 0.0 | 0.3− | 2006 11 22 | G96 | 0.1− | 1.0− |
| 2002 12 01 | 608 | 0.4− | 0.1+ | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.7− |
| 2002 12 01 | 608 | 0.2+ | 0.7− | 2004 04 19 | 704 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.9− |
| 2002 12 05 | 704 | 0.1+ | 0.7+ | 2004 04 23 | 691 | 0.2− | 0.0 | | | | |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2004 04 23 | 691 | 0.0 | 0.1+ | | | | |

**(142864)∗ 2002 VR$_{29}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.36947 | | (2000.0) | | +0.86631614 | −0.43292867 |
| $n$ | 0.24247214 | $\omega$ | 300.69780 | | +0.49918435 | +0.76801318 |
| $a$ | 2.5469953 | $\Omega$ | 85.98603 | | −0.01764430 | +0.47194123 |
| $e$ | 0.2164109 | $i$ | 14.46268 | | | |
| $P$ | 4.06 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 23 | 608 | 0.3+ | 0.1− | 2002 11 25 | 644 | 0.1+ | 0.4− | 2003 01 28 | 608 | 0.3− | 0.8+ |
| 2002 10 23 | 608 | 0.7+ | 0.2− | 2002 11 25 | 644 | 0.0 | 0.1+ | 2003 01 28 | 608 | 0.0 | 0.8+ |
| 2002 10 23 | 608 | 0.6+ | 0.1− | 2002 11 28 | 699 | 0.3− | 0.2+ | 2003 01 29 | 291 | 0.1+ | 0.5+ |
| 2002 10 31 | 608 | 0.1− | 0.7+ | 2002 11 28 | 699 | 0.3− | 0.4+ | 2003 01 29 | 291 | 0.2+ | 0.1− |
| 2002 10 31 | 608 | 0.0 | 0.8+ | 2002 11 28 | 699 | 0.0 | 0.3+ | 2003 01 29 | 291 | 0.0 | 0.2− |
| 2002 10 31 | 608 | 0.2− | 0.9+ | 2002 11 28 | 699 | 0.3− | 0.6+ | 2004 01 28 | 645 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.3− | 0.2+ | 2002 12 01 | 704 | 0.0 | 0.3+ | 2004 01 28 | 645 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.7+ | 1.4+ | 2002 12 01 | 704 | 0.9+ | 0.1− | 2004 02 17 | 691 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.2+ | 0.5+ | 2002 12 01 | 704 | 0.0 | 0.7− | 2004 02 17 | 691 | 0.0 | 0.5+ |
| 2002 11 05 | 704 | 0.6+ | 0.0 | 2002 12 03 | 608 | 0.7− | 0.1− | 2004 02 17 | 691 | 0.2+ | 0.3+ |
| 2002 11 05 | 704 | 0.5− | 0.9− | 2002 12 03 | 608 | 0.5− | 1.1− | 2005 06 17 | G96 | 0.1+ | 0.5+ |
| 2002 11 06 | 704 | 0.2+ | 0.1+ | 2002 12 03 | 608 | 0.4− | 1.2− | 2005 06 17 | G96 | 0.6+ | 0.0 |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2002 12 10 | 644 | 0.4− | 0.1+ | 2005 06 17 | G96 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 0.2− | 2002 12 10 | 644 | 0.5− | 0.1+ | 2005 06 17 | G96 | 0.2+ | 0.4+ |
| 2002 11 06 | 704 | 0.4− | 0.1− | 2002 12 10 | 644 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.4− |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2002 12 27 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.0 |
| 2002 11 07 | 704 | 0.3− | 0.1+ | 2002 12 27 | 644 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.6− | 0.2− |
| 2002 11 07 | 704 | 0.1+ | 0.7− | 2002 12 27 | 644 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.0 | 0.6− | 2002 12 31 | 704 | 0.7+ | 0.6− | 2006 11 13 | 703 | 0.2− | 0.2− |
| 2002 11 07 | 704 | 0.1+ | 0.4− | 2002 12 31 | 704 | 0.9− | 0.4− | 2006 11 13 | 703 | 0.2− | 0.6− |
| 2002 11 11 | 699 | 0.0 | 0.2− | 2002 12 31 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.0 |
| 2002 11 11 | 699 | 0.0 | 0.0 | 2002 12 31 | 704 | 0.4− | 0.3− | 2006 11 13 | 703 | 0.1− | 0.3− |
| 2002 11 11 | 699 | 0.3− | 0.1+ | 2003 01 08 | 704 | 0.4+ | 0.9+ | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2002 11 11 | 699 | 0.1+ | 0.0 | 2003 01 08 | 704 | 0.2− | 0.4+ | 2006 11 19 | 703 | 0.5− | 0.0 |
| 2002 11 12 | 644 | 0.1− | 0.1− | 2003 01 08 | 704 | 0.0 | 0.3− | 2006 11 19 | 703 | 0.4− | 0.0 |
| 2002 11 12 | 644 | 0.0 | 0.1+ | 2003 01 08 | 704 | 0.1− | 0.6+ | 2006 11 19 | 703 | 0.2− | 0.3+ |
| 2002 11 12 | 644 | 0.1+ | 0.1+ | 2003 01 25 | 699 | 0.9− | 0.3+ | 2006 11 21 | 704 | (3.6+ | 1.2−) |
| 2002 11 23 | 644 | 0.4− | 0.6+ | 2003 01 25 | 699 | 1.2+ | 0.0 | 2006 11 21 | 704 | 0.9+ | 0.8− |
| 2002 11 23 | 644 | 0.3− | 0.3+ | 2003 01 25 | 699 | 0.9+ | 0.9+ | 2006 11 21 | 704 | 1.1+ | 0.4− |
| 2002 11 23 | 644 | 0.3− | 0.0 | 2003 01 25 | 699 | 0.4− | 0.1+ | 2006 11 21 | 704 | 2.5− | 1.9+ |
| 2002 11 25 | 644 | 0.3− | 0.1− | 2003 01 28 | 608 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.9− |

**(142865)∗ 2002 VY$_{29}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.62679 | | (2000.0) | | −0.26091822 | −0.94569136 |
| $n$ | 0.23195149 | $\omega$ | 231.42108 | | +0.94298493 | −0.20668675 |
| $a$ | 2.6234408 | $\Omega$ | 234.78910 | | +0.20664247 | −0.25089527 |
| $e$ | 0.1081814 | $i$ | 13.72707 | | | |
| $P$ | 4.25 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 04 | 691 | 0.5− | 0.4− | 2002 12 01 | 704 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.1− |
| 2000 06 04 | 691 | 0.6− | 0.2− | 2002 12 05 | 704 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.7− |
| 2000 06 04 | 691 | 0.4− | 0.6− | 2002 12 05 | 704 | 0.2− | 0.6+ | 2006 10 21 | 704 | 0.4− | 0.4+ |
| 2001 06 15 | 645 | 0.1+ | 0.2+ | 2002 12 05 | 704 | 0.0 | 0.0 | 2006 10 21 | 704 | 0.1− | 0.6+ |
| 2001 06 15 | 645 | 0.0 | 0.2+ | 2002 12 05 | 704 | 0.8− | 0.0 | 2006 10 21 | 704 | 0.3+ | 1.0− |
| 2002 10 31 | 699 | 0.7+ | 1.1− | 2002 12 05 | 704 | 1.0+ | 0.8+ | 2006 10 25 | 106 | 0.7− | 1.0− |
| 2002 10 31 | 699 | 0.5− | 0.0 | 2002 12 10 | 644 | 0.2− | 0.0 | 2006 10 25 | 106 | 0.0 | 0.7− |
| 2002 10 31 | 699 | 0.9− | 0.9+ | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 10 25 | 106 | 0.8+ | 0.2+ |
| 2002 10 31 | 699 | 0.2+ | 0.5− | 2002 12 10 | 644 | 0.0 | 0.0 | 2006 10 25 | 106 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 0.9+ | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 10 27 | 703 | (8.1+ | 0.1−) |
| 2002 11 05 | 704 | 0.0 | 0.2− | 2002 12 11 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.4− | 0.6− |
| 2002 11 05 | 704 | 0.2+ | 0.5+ | 2002 12 11 | 704 | 0.7+ | 0.6− | 2006 10 27 | 703 | 0.3+ | 0.9− |
| 2002 11 05 | 704 | 0.8− | 0.7+ | 2002 12 27 | 644 | 0.4− | 0.1− | 2006 10 27 | 703 | 1.1− | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.9+ | 2002 12 27 | 644 | 0.8+ | 0.3+ | 2006 10 31 | 703 | 0.6+ | 0.4− |
| 2002 11 06 | 704 | 0.9+ | 0.2+ | 2002 12 27 | 644 | 0.2− | 0.2− | 2006 10 31 | 703 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.2− | 0.1− | 2004 03 15 | 644 | 0.4+ | 0.4+ | 2006 10 31 | 703 | 0.5+ | 0.6+ | | |
| 2002 11 06 | 704 | 0.1− | 0.6+ | 2004 03 15 | 644 | 0.5+ | 0.3+ | 2006 10 31 | 703 | 0.1− | 0.5+ | | |
| 2002 11 13 | 644 | 0.2+ | 0.1− | 2004 03 15 | 644 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.5− | 1.3− | | |
| 2002 11 13 | 644 | 0.1+ | 0.2− | 2004 03 26 | 704 | 0.9+ | 0.7+ | 2006 11 14 | 703 | (2.1− | 0.9+) | | |
| 2002 11 13 | 644 | 0.3+ | 0.0 | 2004 03 26 | 704 | 1.2+ | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.4+ | | |
| 2002 11 14 | 704 | 0.4− | 0.4− | 2004 03 26 | 704 | 0.7+ | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.2− | | |
| 2002 11 14 | 704 | 0.3− | 0.4+ | 2004 03 26 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.0 | | |
| 2002 11 14 | 704 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.7+ | 0.1+ | 2006 11 19 | 704 | (0.7+ | 1.7+) | | |
| 2002 11 14 | 704 | 0.2+ | 0.5− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.5+ | | |
| 2002 11 15 | 704 | 0.3− | 0.6+ | 2006 09 17 | 703 | 0.8− | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2002 11 15 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.9+ | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 2002 11 15 | 704 | 0.3+ | 0.6+ | 2006 09 28 | 703 | 0.5− | 0.7− | 2006 11 22 | 704 | 0.1+ | 0.4+ | | |
| 2002 11 15 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.9− | 0.4− | 2006 11 22 | 704 | 0.5− | 0.3+ | | |
| 2002 11 15 | 704 | 0.5− | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.8− | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 2002 11 23 | 644 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.5− | | |
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.5− | | |
| 2002 11 23 | 644 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.6− | | |
| 2002 12 01 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.2− | 0.6− | | |
| 2002 12 01 | 704 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.2− | | | | | | |
| 2002 12 01 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.1+ | | | | | | |

**(142866)∗ 2002 VV$_{30}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.76347 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22105352 | $\omega$ | 124.52888 | | +0.89775305 | −0.43558388 | |
| $a$ | 2.7089714 | $\Omega$ | 261.37226 | | +0.37927367 | +0.84011302 | |
| $e$ | 0.1193700 | $i$ | 3.80565 | | +0.22403333 | +0.32322871 | |
| $P$ | 4.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 691 | 0.0 | 0.1+ | 2005 05 30 | E12 | 0.4− | 1.0+ | 2006 09 29 | 699 | 0.8− | 0.4+ | | |
| 1999 01 10 | 691 | 0.3+ | 0.0 | 2005 05 30 | E12 | (1.1− | 1.7+) | 2006 09 29 | 699 | 0.1− | 0.8+ | | |
| 1999 01 10 | 691 | 0.3+ | 0.2+ | 2005 05 30 | E12 | (1.7− | 0.0 ) | 2006 10 01 | 703 | 0.3− | 0.1− | | |
| 2002 10 31 | 049 | 0.1− | 1.1− | 2005 05 30 | E12 | 0.2+ | 0.8− | 2006 10 01 | 703 | 0.6− | 0.0 | | |
| 2002 10 31 | 049 | 0.9− | 1.2− | 2005 06 14 | G96 | 0.6− | 0.4+ | 2006 10 01 | 703 | 0.4− | 0.1− | | |
| 2002 10 31 | 049 | 0.8− | 0.9− | 2005 06 14 | G96 | 0.3− | 0.4+ | 2006 10 01 | 703 | 0.7− | 0.1− | | |
| 2002 11 05 | 704 | (2.4+ | 1.2−) | 2005 06 14 | G96 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.5+ | 0.5+ | | |
| 2002 11 05 | 704 | 0.7− | 1.5− | 2005 06 14 | G96 | 0.0 | 0.5+ | 2006 10 01 | 704 | 0.3+ | 0.2− | | |
| 2002 11 05 | 704 | 0.1− | 0.2− | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.5+ | 0.2− | | |
| 2002 11 05 | 704 | 0.1+ | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.0 | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.7− | | |
| 2002 11 06 | 704 | 0.2− | 0.4+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.6− | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.2− | | |
| 2002 11 06 | 704 | 0.3− | 0.2+ | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1− | | |
| 2002 11 13 | 644 | 0.1− | 1.0+ | 2006 08 29 | 703 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2002 11 13 | 644 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 13 | 644 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 0.4− | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.0 | | |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 08 29 | 703 | 1.0− | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.4+ | | |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.2− | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | | |
| 2002 11 28 | 699 | 0.5+ | 0.5+ | 2006 08 30 | 704 | 0.4+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2002 11 28 | 699 | 0.1+ | 0.4− | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.1+ | | |
| 2002 11 28 | 699 | 0.1− | 1.4+ | 2006 08 30 | 704 | 0.5− | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 11 28 | 699 | 0.4+ | 0.9− | 2006 09 17 | 703 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.0 | 0.7− | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.9− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.1− | 0.8− | 2006 09 17 | 703 | 0.8− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | | |
| 2002 12 05 | 704 | 0.5+ | 0.3− | 2006 09 20 | 699 | 0.5+ | 1.0+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | |
| 2002 12 10 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.5− | | |
| 2002 12 10 | 704 | 0.7− | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.1− | | |
| 2002 12 10 | 704 | 0.1− | 0.2+ | 2006 09 20 | 699 | 1.1+ | 0.3− | 2006 10 21 | 691 | 0.3− | 0.1+ | | |
| 2002 12 10 | 704 | 0.5− | 0.0 | 2006 09 20 | 703 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.0 | | |
| 2002 12 10 | 704 | 1.1− | 0.1+ | 2006 09 20 | 703 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2002 12 11 | 333 | 0.6− | 0.3− | 2006 09 20 | 703 | 0.6+ | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.0 | | |
| 2002 12 11 | 333 | (3.9+ | 3.3−) | 2006 09 24 | 106 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.2+ | | |
| 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 09 24 | 106 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.3+ | 0.2+ | | |
| 2002 12 31 | 704 | 0.4+ | 1.3+ | 2006 09 24 | 106 | 0.5− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 12 31 | 704 | (0.1+ | 2.3+) | 2006 09 24 | 106 | 0.0 | 0.7− | 2006 10 23 | 691 | 0.3− | 0.4− | | |
| 2002 12 31 | 704 | 0.4− | 0.4− | 2006 09 25 | 704 | 0.8+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2002 12 31 | 704 | 0.0 | 0.9+ | 2006 09 25 | 704 | 0.8+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2− | | |
| 2004 03 13 | 644 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.5+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2− | | |
| 2004 03 13 | 644 | 0.1+ | 0.7+ | 2006 09 25 | 704 | 0.6+ | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.2+ | | |
| 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 1.2+ | 0.2− | 2006 10 24 | 644 | 0.3+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.4− | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.9− | 0.2− | 2006 09 29 | 699 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 18 | 704 | 1.0+ | 0.9− | 2006 09 29 | 704 | 0.6+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.4+ | | |
| 2004 03 18 | 704 | 0.5+ | 1.0+ | 2006 09 29 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.3+ | | |

**(142867)∗ 2002 VW$_{31}$ = 2002 XU$_3$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 48394), G. V. Williams (d, *MPO* 56722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.44236 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21105482 | $\omega$ | 59.48158 | | −0.67561657 | −0.73293376 | |
| $a$ | 2.7938679 | $\Omega$ | 73.24325 | | +0.64469259 | −0.63976831 | |
| $e$ | 0.0433600 | $i$ | 4.77384 | | +0.35765027 | −0.23131061 | |
| $P$ | 4.67 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.4− | 0.5+ | 2003 12 22 | 704 | 0.0 | 1.0+ | 2004 03 18 | 704 | 0.0 | 0.4+ | | |
| 2001 08 27 | 644 | 0.1− | 0.6+ | 2004 01 18 | 691 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.8+ | | |
| 2001 08 27 | 644 | 0.5− | 0.5+ | 2004 01 18 | 691 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.4+ | 0.2+ | | |
| 2002 11 05 | 704 | 0.4+ | 1.3− | 2004 01 18 | 691 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.8+ | | |
| 2002 11 05 | 704 | 1.2+ | 0.8− | 2004 01 18 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 1.1+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.3+ | 0.8− | 2004 01 18 | 691 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 1.4+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.8− | 2004 01 18 | 691 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.1+ | 1.2+ | | |
| 2002 11 06 | 704 | 1.3+ | 0.0 | 2004 02 25 | 704 | 0.3− | 0.2− | 2004 03 22 | 704 | 0.7+ | 0.2− | | |
| 2002 11 06 | 704 | 0.8+ | 0.4+ | 2004 02 25 | 704 | 0.6− | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.6+ | | |
| 2002 12 02 | 704 | 0.9− | 1.3+ | 2004 02 25 | 704 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.3+ | 0.7+ | | |
| 2002 12 02 | 704 | 1.0− | 1.4+ | 2004 02 25 | 704 | 0.7+ | 1.4+ | 2004 03 22 | 704 | 1.2+ | 0.4+ | | |
| 2002 12 02 | 704 | 0.5− | 1.1+ | 2004 03 11 | 644 | 0.1− | 0.4+ | 2006 08 20 | 691 | 0.4− | 0.2+ | | |
| 2002 12 03 | 608 | 0.7− | 0.9− | 2004 03 11 | 644 | 0.0 | 0.4+ | 2006 08 20 | 691 | 0.3− | 0.5+ | | |
| 2002 12 03 | 608 | 0.5− | 1.4− | 2004 03 11 | 644 | 0.1+ | 0.3+ | 2006 08 20 | 691 | 0.1+ | 0.6+ | | |
| 2002 12 03 | 608 | 0.1− | 1.2− | 2004 03 15 | 704 | 0.2− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.8+ | | |
| 2002 12 31 | 704 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.5+ | | |
| 2002 12 31 | 704 | 0.7+ | 0.3+ | 2004 03 15 | 704 | 0.7− | 0.2− | 2006 08 29 | 691 | 0.0 | 0.8+ | | |
| 2002 12 31 | 704 | 0.5+ | 0.4− | 2004 03 15 | 704 | 0.2+ | 0.8− | 2006 09 12 | 703 | 1.2− | 0.0 | | |
| 2002 12 31 | 704 | 0.7− | 1.1+ | 2004 03 18 | 704 | 0.6− | 0.3+ | 2006 09 12 | 703 | 1.1− | 0.1+ | | |
| 2003 12 22 | 704 | 1.0+ | 1.0+ | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 09 12 | 703 | 0.5− | 0.2+ | | |
| 2003 12 22 | 704 | 0.4+ | 1.3+ | 2004 03 18 | 704 | 0.7− | 0.4+ | 2006 09 12 | 703 | 1.1− | 0.3+ | | |

**(142868)∗ 2002 VB$_{32}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.28031 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23572636 | $\omega$ | 278.59926 | | +0.95279339 | +0.29594765 | |
| $a$ | 2.5953581 | $\Omega$ | 64.20931 | | −0.24042888 | +0.87184171 | |
| $e$ | 0.1857175 | $i$ | 4.31987 | | −0.18541497 | +0.39026533 | |
| $P$ | 4.18 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 1.2− | 0.0 | 2005 04 11 | G96 | 0.5− | 0.9+ | 2006 10 22 | 704 | 0.8− | 0.7− | | |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 10 22 | 704 | 0.2+ | 0.5− | | |
| 2002 11 05 | 704 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2− | | |
| 2002 11 05 | 704 | 0.1− | 0.1+ | 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 10 22 | 704 | 1.3− | 0.6+ | | |
| 2002 11 06 | 704 | 0.2− | 0.2+ | 2005 05 08 | G96 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1− | | |
| 2002 11 06 | 704 | 0.4− | 1.4+ | 2005 06 11 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 704 | 0.1+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.7− | 0.7+ | 2005 06 11 | 691 | 0.7+ | 0.7+ | 2006 10 28 | 704 | 0.2− | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 1.4− | 0.5+ | 2005 06 11 | 691 | 0.5+ | 0.5+ | 2006 10 28 | 704 | 0.8+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.1− | 0.7+ | 2005 06 14 | G96 | 0.2+ | 0.7+ | 2006 10 28 | 704 | 0.2− | 0.6− | | |
| 2002 11 07 | 291 | 0.2− | 0.0 | 2005 06 14 | G96 | 0.4− | 0.7+ | 2006 10 28 | 704 | 0.6+ | 0.2− | | |
| 2002 11 07 | 291 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.4− | 0.4+ | 2006 10 28 | 704 | 0.2+ | 0.3− | | |
| 2002 11 07 | 291 | 0.1− | 0.1− | 2005 06 14 | G96 | 0.5− | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2002 11 27 | 699 | 0.7− | 0.3− | 2005 06 15 | 701 | 0.6+ | 0.7+ | 2006 10 31 | G96 | 0.4+ | 0.3− | | |
| 2002 11 27 | 699 | 0.5− | 1.7+ | 2005 06 15 | 701 | 0.7+ | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.4− | | |
| 2002 11 27 | 699 | 0.5− | 0.8− | 2006 09 28 | 683 | 1.8+ | 1.3− | 2006 10 31 | G96 | 0.1− | 0.5− | | |
| 2002 11 27 | 699 | 1.4− | 0.2+ | 2006 09 28 | 683 | 1.5+ | 0.4− | 2006 11 08 | 644 | 0.3+ | 0.0 | | |
| 2002 11 28 | 699 | 0.9+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.0 | | |
| 2002 11 28 | 699 | 1.2+ | 0.6− | 2006 09 30 | 703 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.1− | | |
| 2002 11 28 | 699 | 0.5+ | 0.9+ | 2006 09 30 | 683 | 0.8+ | 1.8− | 2006 11 11 | 703 | 0.0 | 1.3+ | | |
| 2002 11 28 | 699 | 0.4+ | 0.9+ | 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.8+ | | |
| 2002 12 02 | 704 | 1.2− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.4+ | | |
| 2002 12 02 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 683 | 1.0+ | 1.8− | 2006 11 11 | 703 | 0.5+ | 0.3− | | |
| 2002 12 02 | 704 | 0.1− | 1.0− | 2006 09 30 | 683 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.2− | | |
| 2002 12 02 | 704 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.4+ | 0.3− | | |
| 2002 12 02 | 704 | 0.3− | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2002 12 05 | 704 | 0.5+ | 0.3− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.3− | | |
| 2002 12 05 | 704 | 0.1+ | 1.2− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.5+ | | |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2006 10 16 | 683 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.5− | 1.0− | | |
| 2002 12 05 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.0 | | |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 10 16 | 683 | (0.6+ | 2.4+) | 2006 11 17 | 703 | 0.8− | 0.6+ | | |
| 2002 12 08 | 291 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.9+ | 2006 11 18 | 704 | 0.2− | 1.6+ | | |
| 2002 12 08 | 291 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.6+ | | |
| 2002 12 08 | 291 | 0.7+ | 0.4− | 2006 10 16 | 683 | 0.1+ | 1.7+ | 2006 11 18 | 704 | (0.2− | 2.1+) | | |
| 2002 12 10 | 704 | 1.5+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.3− | 2006 11 18 | 704 | 0.9− | 1.7+ | | |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | (0.8+ | 2.1+) | | |
| 2002 12 10 | 704 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 18 | 704 | 1.7− | 0.4+ | | |
| 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 1.4− | 1.7+ | | |
| 2002 12 10 | 704 | 0.6+ | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 18 | 704 | 0.3− | 1.5+ | | |
| 2002 12 31 | 704 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.4− | | |
| 2002 12 31 | 704 | 0.6+ | 0.5− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.2− | | |
| 2002 12 31 | 704 | 0.5− | 0.5− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.1− | | |
| 2002 12 31 | 704 | 0.1− | 0.3− | 2006 10 19 | 683 | 0.9− | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.6− | | |
| 2002 12 31 | 704 | 0.0 | 0.8+ | 2006 10 19 | 683 | 0.5− | 0.8+ | 2006 11 21 | 704 | 0.1+ | 0.2+ | | |
| 2004 02 17 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 683 | 0.7+ | 1.8+ | 2006 11 28 | 704 | 0.3− | 1.1+ | | |
| 2004 02 17 | 691 | 0.3+ | 0.0 | 2006 10 20 | 683 | 0.1− | 0.8+ | 2006 11 28 | 704 | 0.7− | 2.3+ | | |
| 2004 02 17 | 691 | 0.1− | 0.7+ | 2006 10 20 | 683 | 0.5+ | 1.0+ | 2006 11 28 | 704 | 0.1− | 1.3+ | | |
| 2005 04 11 | G96 | 0.3− | 0.4− | 2006 10 20 | 683 | 0.2+ | 1.4+ | 2006 11 28 | 704 | 0.8− | 1.1+ | | |
| 2005 04 11 | G96 | 0.6− | 0.3− | 2006 10 22 | 704 | 1.0− | 1.1− | 2006 11 28 | 704 | 2.1− | 0.2+ | | |
| 2005 04 11 | G96 | 0.7− | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.0 | | | | | | |

**(142869)∗ 2002 VG$_{32}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 324.39734 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23080013 | $\omega$ | 173.99258 | | +0.45581916 | | −0.88999029 | | |
| $a$ | 2.6321584 | $\Omega$ | 248.88924 | | +0.81608497 | | +0.42331289 | | |
| $e$ | 0.1302914 | $i$ | 0.74260 | | +0.35529454 | | +0.16948005 | | |
| $P$ | 4.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | 1.9− | 0.3− | 2002 12 08 | 291 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.4+ | | |
| 1993 09 15 | 809 | 1.5− | 1.0+ | 2002 12 10 | 704 | 0.7− | 0.5+ | 2006 09 15 | 691 | 0.4+ | 0.3+ | | |
| 1993 09 15 | 809 | 0.8+ | 0.1+ | 2002 12 10 | 704 | 0.8− | 0.0 | 2006 09 19 | 691 | 0.4+ | 0.4+ | | |
| 1995 03 08 | 691 | 0.2+ | 1.4− | 2002 12 10 | 704 | 0.0 | 0.5− | 2006 09 19 | 691 | 0.0 | 0.2+ | | |
| 1995 03 08 | 691 | 0.5+ | 1.0− | 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | | |
| 1995 03 08 | 691 | 0.0 | 1.0− | 2002 12 27 | 644 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 11 05 | 704 | 0.1+ | 0.2− | 2002 12 27 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2002 11 05 | 704 | 0.3− | 0.7+ | 2002 12 27 | 644 | (0.6+ | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 11 05 | 704 | 0.1+ | 0.5− | 2002 12 31 | 699 | 0.7+ | 0.3− | 2006 10 20 | H07 | 0.5+ | 0.2− | | |
| 2002 11 05 | 704 | 0.2− | 0.5+ | 2002 12 31 | 704 | 1.3− | 0.8+ | 2006 10 20 | H07 | 0.1− | 0.8+ | | |
| 2002 11 05 | 704 | 0.6− | 0.6+ | 2002 12 31 | 699 | 0.7− | 0.1+ | 2006 10 20 | H07 | (0.1+ | 1.5+) | | |
| 2002 11 06 | 704 | 0.4− | 0.1+ | 2002 12 31 | 704 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.8+ | 0.2− | | |
| 2002 11 06 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 699 | 0.2− | 0.5− | 2006 10 21 | 703 | 0.3− | 0.9+ | | |
| 2002 11 06 | 704 | 1.0− | 0.7+ | 2002 12 31 | 704 | 1.4− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.0 | | |
| 2002 11 06 | 704 | 0.2+ | 0.6+ | 2002 12 31 | 699 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.5+ | | |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 14 | 704 | 0.3+ | 0.2+ | 2004 03 29 | 691 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | | |
| 2002 11 14 | 704 | 0.4+ | 0.3+ | 2004 03 29 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2002 11 14 | 704 | 0.2− | 0.3− | 2004 03 29 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.6+ | 0.3+ | 2004 04 14 | 691 | 0.5+ | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.0 | | |
| 2002 11 24 | 644 | 0.2+ | 0.7+ | 2004 04 14 | 691 | 0.0 | 0.7+ | 2006 10 27 | 691 | 0.3− | 0.1− | | |
| 2002 11 24 | 644 | 0.6+ | 0.5+ | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.0 | | |
| 2002 11 24 | 644 | 0.3+ | 0.5+ | 2004 04 23 | 691 | 0.5− | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.0 | | |
| 2002 12 03 | 608 | 0.2− | 0.1+ | 2004 04 23 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3+ | | |
| 2002 12 03 | 608 | 0.2+ | 0.3+ | 2004 04 23 | 291 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2002 12 03 | 608 | 0.1+ | 0.2+ | 2004 04 23 | 691 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2002 12 05 | 704 | 0.2− | 0.3− | 2004 04 23 | 291 | 0.5− | 0.8+ | 2006 10 28 | G96 | 0.3+ | 0.1− | | |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2004 04 23 | 291 | 0.4− | 0.7+ | 2006 10 28 | G96 | 0.4+ | 0.0 | | |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 | | |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2006 07 22 | G96 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 07 22 | G96 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.4− | 0.1− | | |
| 2002 12 08 | 291 | 0.5− | 0.2+ | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.9− | | |
| 2002 12 08 | 291 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.0 | | |

**(142870)∗ 2002 VQ$_{32}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 336.91798 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26433375 | $\omega$ | 3.34579 | | −0.28801685 | | −0.95679351 | | |
| $a$ | 2.4045527 | $\Omega$ | 103.39633 | | +0.87764900 | | −0.28040527 | | |
| $e$ | 0.1345725 | $i$ | 2.35104 | | +0.38311685 | | −0.07693542 | | |
| $P$ | 3.73 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.3− | 0.5+ | 2002 12 10 | 704 | 0.2− | 0.3+ | 2005 08 04 | 644 | 0.3+ | 0.5+ | | |
| 2002 11 05 | 704 | 0.4+ | 0.2− | 2002 12 10 | 704 | 0.2− | 0.7+ | 2005 08 04 | 644 | 0.5+ | 0.3+ | | |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2002 12 10 | 704 | 0.2+ | 0.7+ | 2005 08 04 | 644 | 0.1+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.4+ | 0.6− | 2002 12 10 | 704 | 0.4− | 0.1+ | 2005 08 05 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 05 | 704 | 1.0+ | 0.2+ | 2002 12 11 | 704 | 0.0 | 0.0 | 2005 08 05 | 644 | 0.3+ | 0.2+ | | |
| 2002 11 06 | 704 | 1.1− | 0.2− | 2002 12 11 | 704 | 0.5+ | 0.2− | 2005 08 05 | 644 | 0.2+ | 0.5+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.0 | 2002 12 11 | 704 | 1.1− | 0.5+ | 2005 08 30 | 644 | 0.3− | 0.3+ | | |
| 2002 11 06 | 704 | 0.0 | 0.2− | 2002 12 11 | 704 | (0.5− | 1.6+) | 2005 08 30 | 644 | 0.6− | 0.2+ | | |
| 2002 11 06 | 704 | 0.9− | 0.1− | 2002 12 27 | 644 | 0.3+ | 1.1+ | 2005 08 30 | 644 | 0.1− | 0.5+ | | |
| 2002 11 14 | 704 | 0.2+ | 0.4+ | 2002 12 27 | 644 | 0.6+ | 1.5+ | 2006 10 01 | 691 | 0.4+ | 0.2− | | |
| 2002 11 14 | 704 | 0.5+ | 1.0+ | 2002 12 27 | 644 | 0.1+ | 1.0+ | 2006 10 01 | 691 | 0.3+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.5− | 0.4+ | 2002 12 31 | 699 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.4− | | |
| 2002 11 14 | 704 | 0.4+ | 0.4+ | 2002 12 31 | 704 | 0.5− | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.5− | | |
| 2002 11 24 | 644 | 0.1+ | 0.4− | 2002 12 31 | 699 | 0.9− | 0.3− | 2006 10 21 | G96 | 0.0 | 0.6− | | |
| 2002 11 24 | 644 | 0.0 | 0.3− | 2002 12 31 | 704 | 0.1+ | 1.2+ | 2006 10 21 | G96 | 0.6− | 0.4− | | |
| 2002 11 24 | 644 | 0.2− | 0.4− | 2002 12 31 | 699 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.4− | | |
| 2002 11 27 | 699 | 0.6− | 0.1+ | 2002 12 31 | 704 | 0.7− | 1.4+ | 2006 10 28 | G96 | 0.6− | 0.6− | | |
| 2002 11 27 | 699 | 0.6− | 0.0 | 2002 12 31 | 704 | 0.9− | 0.9+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | |
| 2002 11 27 | 699 | 0.0 | 0.3+ | 2002 12 31 | 699 | 1.4− | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2002 11 27 | 699 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.4− | 0.8+ | 2006 10 28 | G96 | 0.7− | 0.2− | | |
| 2002 11 28 | 699 | 0.1+ | 0.3+ | 2003 01 29 | 291 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− | | |
| 2002 11 28 | 699 | 0.3+ | 0.7+ | 2003 01 29 | 291 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.3− | | |
| 2002 11 28 | 699 | 0.3− | 0.1− | 2003 01 29 | 291 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 11 28 | 699 | 0.3− | 0.3+ | 2004 04 12 | 691 | 0.6+ | 0.7+ | 2006 11 15 | G96 | 0.4− | 0.4− | | |
| 2002 12 03 | 608 | 0.5+ | 0.4− | 2004 04 12 | 691 | 0.0 | 0.9+ | 2006 11 27 | 703 | 0.9+ | 0.9− | | |
| 2002 12 03 | 608 | 0.4− | 0.7− | 2004 04 12 | 691 | 0.1+ | 0.6+ | 2006 11 27 | 703 | 0.8− | 0.0 | | |
| 2002 12 03 | 608 | 0.0 | 0.9+ | 2004 04 28 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.0 | 0.5− | | |
| 2002 12 05 | 704 | 0.2+ | 0.6+ | 2004 04 28 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.3+ | 0.4+ | | |
| 2002 12 05 | 704 | 0.6− | 0.7+ | 2004 04 28 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.4− | | |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2005 07 12 | G96 | 0.5− | 0.1− | 2006 11 27 | G96 | 0.2− | 0.3− | | |
| 2002 12 05 | 704 | 0.5− | 0.2− | 2005 07 12 | G96 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.5− | 0.2− | | |
| 2002 12 05 | 704 | 0.4− | 0.5+ | 2005 07 12 | G96 | 1.0− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2002 12 10 | 704 | 0.2+ | 0.5+ | 2005 07 12 | G96 | 0.6− | 0.0 | | | | | | |

**(142871)∗ 2002 VL$_{33}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.83181 | | (2000.0) | | | |
| $n$ | 0.21858819 | $\omega$ | 332.36840 | | +0.89579277 | −0.43759620 |
| $a$ | 2.7293020 | $\Omega$ | 53.79505 | | +0.42352689 | +0.78722314 |
| $e$ | 0.1221258 | $i$ | 5.53841 | | +0.13483427 | +0.43449891 |
| $P$ | 4.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.4− | 0.6+ |
| 2002 11 05 | 704 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 699 | 0.2− | 0.6− |
| 2002 11 05 | 704 | 0.0 | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.1− | 0.5+ | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | (0.5+ | 1.7+) | 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.6+ |
| 2002 11 06 | 704 | 1.4+ | 0.9− | 2004 03 17 | 691 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 2002 11 06 | 704 | (1.8+ | 1.2−) | 2004 03 18 | 704 | 0.0 | 0.9+ | 2006 09 26 | 704 | 0.1− | 0.7+ |
| 2002 11 06 | 704 | (1.9+ | 1.2−) | 2004 03 18 | 704 | 0.5+ | 1.1+ | 2006 09 26 | 704 | 0.6+ | 0.0 |
| 2002 11 06 | 704 | (1.7+ | 0.7−) | 2004 03 18 | 704 | 1.3+ | 1.2+ | 2006 09 26 | 704 | 0.7+ | 0.5+ |
| 2002 11 14 | 704 | 0.5+ | 0.5− | 2004 03 18 | 704 | 0.7+ | 1.1+ | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.7− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.5− |
| 2002 11 14 | 704 | 0.6− | 0.0 | 2004 03 20 | 704 | 1.3+ | 0.9+ | 2006 09 30 | 703 | 1.2− | 0.1+ |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.1+ | 1.0+ | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2002 12 02 | 704 | 0.8− | 0.1+ | 2004 03 20 | 704 | (2.1+ | 0.3+) | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 12 02 | 704 | 1.4− | 1.2+ | 2004 03 20 | 704 | 0.6+ | 0.6+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 12 02 | 704 | 0.2− | 1.0+ | 2004 03 20 | 704 | 0.5+ | 0.8− | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2002 12 06 | 704 | 0.4− | 0.4+ | 2005 02 10 | 809 | 0.6− | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.7− |
| 2002 12 06 | 704 | 0.6− | 0.0 | 2005 02 10 | 809 | 0.7− | 0.1− | 2006 10 16 | 703 | (0.4+ | 1.6−) |
| 2002 12 06 | 704 | 0.5− | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2006 08 28 | 699 | 0.1+ | 1.0+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2002 12 11 | 333 | 0.9− | 0.3− | 2006 08 28 | 699 | 0.7+ | 0.4− | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 1.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 12 11 | 333 | 0.4− | 0.4− | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 12 11 | 333 | 0.2− | 1.1− | 2006 09 14 | 703 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.9+ | 0.6+ | 2006 09 16 | 704 | (0.5− | 1.7+) | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 1.1+ | 1.0− | 2006 09 16 | 704 | 0.6− | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 1.2− | 2006 09 16 | 704 | 0.5− | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.4− | 1.2+ | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2002 12 31 | 704 | 0.5+ | 0.0 | 2006 09 18 | 699 | 1.4− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.5− | 0.0 | 2006 10 24 | 644 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | 0.8+ | 0.0 | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.5− | 0.9− | 2006 09 18 | 699 | (2.1+ | 0.2+) | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2003 01 05 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 704 | (0.7− | 1.8+) | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2006 09 19 | 704 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.5+ | 0.7− | 2006 09 19 | 704 | 0.8− | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2003 01 05 | 704 | 0.9+ | 0.1− | 2006 09 19 | 704 | 0.0 | 1.0+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2003 01 05 | 704 | 0.7+ | 0.0 | 2006 09 22 | 704 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2004 02 25 | 704 | 0.3+ | 0.5+ | 2006 09 22 | 704 | (0.5+ | 1.6+) | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2004 02 25 | 704 | 0.7+ | 0.4+ | 2006 09 22 | 704 | 0.5+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.4+ |
| 2004 02 25 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 704 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.5+ | 0.2+ |
| 2004 02 25 | 704 | (2.0+ | 0.9+) | 2006 09 22 | 704 | 0.5+ | 0.4+ | | | | |

**(142872)∗ 2002 VZ$_{33}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.74992 | | (2000.0) | | | |
| $n$ | 0.23354295 | $\omega$ | 235.75069 | | −0.15237046 | −0.98486963 |
| $a$ | 2.6115091 | $\Omega$ | 223.25288 | | +0.94176710 | −0.11935079 |
| $e$ | 0.1535694 | $i$ | 6.91965 | | +0.29976319 | −0.12564716 |
| $P$ | 4.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.8+ | 0.4− | 2003 01 07 | 704 | (1.9+ | 2.2+) | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.4+ | 0.6+ | 2003 01 07 | 704 | (1.6+ | 1.0+) | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.1− | 0.5+ | 2003 01 07 | 704 | (1.9+ | 0.6+) | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2002 11 05 | 704 | 0.4+ | 0.0 | 2003 01 27 | 704 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2002 11 05 | 704 | 0.4+ | 0.3− | 2003 01 27 | 704 | 1.0+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2003 01 27 | 704 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 11 05 | 704 | 0.6+ | 0.1− | 2003 01 27 | 704 | 1.3+ | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 1.0− | 0.1+ | 2003 01 27 | 644 | 0.1+ | 1.0+ | 2006 11 11 | 703 | 0.9+ | 0.8+ |
| 2002 11 06 | 704 | 0.5− | 0.3− | 2003 01 27 | 644 | 0.1+ | 1.0+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2003 01 27 | 644 | 0.3+ | 1.2+ | 2006 11 11 | 703 | 0.7+ | 0.6+ |
| 2002 11 06 | 704 | 0.9− | 1.0− | 2003 02 08 | 608 | 0.1− | 0.9+ | 2006 11 11 | 703 | 0.6+ | 0.7+ |
| 2002 11 06 | 704 | 0.4− | 0.9− | 2003 02 08 | 608 | 0.5− | 1.1+ | 2006 11 11 | 703 | 1.4+ | 0.3+ |
| 2002 11 07 | 704 | 0.6+ | 0.4+ | 2003 02 08 | 608 | 0.6− | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 1.1+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2002 11 07 | 704 | 0.3− | 0.6+ | 2004 03 27 | 704 | 0.2− | 0.7− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2002 11 07 | 704 | 0.2− | 0.1− | 2004 03 27 | 704 | (0.7− | 2.3+) | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 11 07 | 704 | 0.3+ | 1.2+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.1− | 2004 04 20 | 704 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.6+ |
| 2002 11 07 | 704 | 0.4− | 0.2+ | 2004 04 20 | 704 | 1.1+ | 0.4+ | 2006 11 17 | 703 | 1.0− | 0.6+ |
| 2002 11 07 | 704 | 0.1+ | 0.7− | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.6+ |
| 2002 11 07 | 704 | 0.2− | 0.5− | 2004 04 20 | 704 | 0.5+ | 0.5− | 2006 11 18 | 704 | (0.1− | 1.7+) |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2004 05 29 | 691 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.5− | 0.8+ |
| 2002 11 11 | 704 | 0.5+ | 0.4+ | 2004 05 29 | 691 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.4+ | 1.4+ |
| 2002 11 11 | 704 | (2.0+ | 0.6+) | 2004 05 29 | 691 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2002 11 11 | 704 | 1.3− | 0.0 | 2005 06 06 | 691 | 0.4− | 0.7+ | 2006 11 18 | 704 | (0.1+ | 1.7+) |
| 2002 11 11 | 704 | 0.2− | 0.1+ | 2005 06 06 | 691 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.5− |
| 2002 11 14 | 704 | 0.2+ | 0.2− | 2005 06 06 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.2+ | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2002 11 14 | 704 | 0.5+ | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2002 11 14 | 704 | 0.5+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2002 11 14 | 704 | 0.9+ | 0.8− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.6− |
| 2002 11 28 | 608 | (1.6− | 0.3+) | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.4− |
| 2002 11 28 | 608 | (1.5− | 0.4+) | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.0 |
| 2002 11 28 | 608 | (1.7− | 0.3+) | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2002 12 01 | 704 | 0.6− | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.5− |
| 2002 12 01 | 704 | 0.8− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2002 12 01 | 704 | 0.9− | 0.1+ | 2006 10 19 | 691 | (0.5− | 1.6+) | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2002 12 01 | 704 | 0.7− | 0.2+ | 2006 10 21 | H07 | 0.4− | 0.3− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2002 12 10 | 644 | 0.2+ | 0.1+ | 2006 10 21 | H07 | 0.3− | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2002 12 10 | 644 | 0.1+ | 0.0 | 2006 10 21 | H07 | 0.0 | 0.2− | 2006 11 22 | 683 | (1.2− | 2.1−) |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1− | 2006 11 22 | 683 | (1.8− | 3.5−) |
| 2002 12 11 | 704 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 22 | 683 | 0.5− | 1.3− |
| 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.7− | 0.0 | 2006 11 23 | 683 | (1.8+ | 1.7−) |
| 2002 12 11 | 704 | 0.9+ | 0.1+ | 2006 10 23 | 704 | 0.0 | 0.0 | 2006 11 23 | 683 | 0.9+ | 0.5− |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 704 | 0.2− | 0.4+ | 2006 11 23 | 683 | 1.2+ | 0.6+ |
| 2002 12 11 | 704 | 0.8+ | 0.3+ | 2006 10 23 | 704 | 0.7− | 0.0 | 2006 11 25 | 683 | 0.5+ | 0.1+ |
| 2002 12 11 | 628 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.2− | 0.3+ | 2006 11 25 | 683 | 0.5+ | 0.2+ |
| 2002 12 11 | 628 | 0.3− | 0.3+ | 2006 10 23 | 704 | 0.5− | 0.6+ | 2006 11 25 | 683 | 0.6+ | 1.0+ |
| 2002 12 21 | 608 | 0.8− | 1.0− | 2006 10 23 | 644 | 0.2− | 0.0 | 2006 11 26 | 704 | 0.2+ | 1.2+ |
| 2002 12 21 | 608 | 0.4− | 0.9− | 2006 10 23 | 644 | 0.2− | 0.3+ | 2006 11 26 | 704 | 1.2− | 1.2+ |
| 2002 12 21 | 608 | 0.5− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1+ | 2006 11 26 | 704 | 0.0 | 0.7+ |
| 2003 01 01 | 704 | 0.2− | 0.6+ | 2006 10 28 | 704 | 0.2+ | 1.0− | 2006 11 26 | 704 | 0.1+ | 1.6+ |
| 2003 01 01 | 704 | 0.5− | 0.6+ | 2006 10 28 | 704 | 0.9− | 0.7+ | 2006 11 28 | 704 | 0.9+ | 0.8+ |
| 2003 01 01 | 704 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.3− |
| 2003 01 01 | 704 | 0.6− | 0.5− | 2006 10 28 | 704 | 0.8− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2003 01 01 | 704 | 0.6+ | 0.5+ | 2006 10 28 | 704 | 0.9− | 0.7+ | 2006 11 28 | 704 | 0.8+ | 0.9+ |
| 2003 01 07 | 704 | (0.0 | 2.7+) | 2006 10 28 | 691 | 0.1− | 0.1+ | | | | |
| 2003 01 07 | 704 | (1.2+ | 2.1+) | 2006 10 28 | 704 | 1.2− | 0.5− | | | | |

**(142873)∗ 2002 VJ$_{34}$ = 1969 TO$_{7}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75782)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.71719 | | (2000.0) | | +0.99299401 | −0.10743496 |
| $n$ | 0.24125310 | $\omega$ | 145.02641 | | +0.08403482 | +0.93477604 |
| $a$ | 2.5555680 | $\Omega$ | 221.22791 | | +0.08307253 | +0.33860226 |
| $e$ | 0.2545327 | $i$ | 4.28123 | | +0.08307253 | +0.33860226 |
| $P$ | 4.09 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1969 10 08 | 033 | 0.2− | 0.4+ | 2006 09 16 | 703 | 0.9− | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.1+ | |
| 1969 10 08 | 033 | 0.1+ | 0.3− | 2006 09 16 | 703 | (1.5+ | 0.1−) | 2006 11 10 | 644 | 0.1− | 0.0 | |
| 2002 11 05 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.0 | |
| 2002 11 05 | 704 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.2− | |
| 2002 11 05 | 704 | 0.3− | 0.4+ | 2006 09 27 | G96 | 1.1+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.3− | |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.3− | |
| 2002 11 06 | 704 | 1.3+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | (2.4− | 0.0 ) | |
| 2002 11 06 | 704 | (3.1+ | 1.1+) | 2006 10 16 | 703 | 0.6− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.6+ | |
| 2002 11 06 | 704 | (1.6+ | 0.5+) | 2006 10 16 | 703 | 0.7+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1+ | |
| 2002 11 06 | 704 | 1.4+ | 0.2− | 2006 10 16 | 703 | (2.2− | 0.1−) | 2006 11 18 | 704 | 0.0 | 0.5− | |
| 2002 11 12 | 049 | 0.7− | 0.2− | 2006 10 16 | 703 | 1.4− | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.0 | |
| 2002 11 12 | 049 | 0.9− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.6− | 0.2− | |
| 2002 11 12 | 049 | 0.6− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.2+ | |
| 2002 11 14 | 704 | 1.3+ | 0.8− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.2+ | |
| 2002 11 14 | 704 | 0.6+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.3+ | |
| 2002 11 14 | 704 | 1.5+ | 1.1− | 2006 10 17 | 691 | 0.1− | 0.7− | 2006 11 18 | 704 | 0.1− | 0.3+ | |
| 2002 11 14 | 704 | 0.5+ | 0.5− | 2006 10 17 | 691 | 0.7+ | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.0 | |
| 2002 11 14 | 704 | 1.4+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1− | |
| 2002 11 24 | 644 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.1− | |
| 2002 11 24 | 644 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.0 | |
| 2002 11 24 | 644 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2+ | |
| 2002 12 05 | 608 | 0.6− | 0.2− | 2006 10 23 | 704 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.8+ | 0.2+ | |
| 2002 12 05 | 608 | 0.9− | 0.4− | 2006 10 23 | 704 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.6+ | |
| 2002 12 05 | 608 | 0.4− | 0.3− | 2006 10 23 | 704 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.4+ | |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2006 10 23 | 704 | 0.6− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.2− | |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.2+ | |
| 2002 12 10 | 644 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.1− | |
| 2002 12 11 | 704 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.8+ | 0.6− | 2006 11 22 | 704 | 0.0 | 0.5− | |
| 2002 12 11 | 704 | 1.0− | 0.6− | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.0 | |
| 2002 12 11 | 704 | 1.1− | 0.8− | 2006 10 28 | 704 | 1.0− | 0.6+ | 2006 11 29 | 704 | 0.7+ | 0.4+ | |
| 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 1.1− | 0.2+ | |
| 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 10 28 | 704 | 0.2+ | 1.0+ | 2006 11 29 | 704 | 0.2+ | 0.3+ | |
| 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 10 28 | 704 | 0.0 | 1.0+ | 2006 11 29 | 704 | 0.0 | 0.4+ | |
| 2005 05 08 | G96 | 0.3+ | 0.0 | 2006 10 28 | 704 | 0.7+ | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.3+ | |
| 2005 05 20 | G96 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 12 01 | 291 | 0.4− | 0.2+ | |
| 2005 05 20 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 12 01 | 291 | 0.2− | 0.4+ | |
| 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 12 01 | 291 | 0.4− | 0.0 | |
| 2005 05 20 | G96 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1+ | | | | | |

**(142874)∗ 2002 VU$_{34}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.53567 | | (2000.0) | | +0.57105531 | −0.81973910 |
| $n$ | 0.22036684 | $\omega$ | 337.85491 | | +0.75975259 | +0.50752036 |
| $a$ | 2.7145961 | $\Omega$ | 77.29528 | | +0.31092093 | +0.26542587 |
| $e$ | 0.1590988 | $i$ | 2.57689 | | +0.31092093 | +0.26542587 |
| $P$ | 4.47 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 02 | 691 | 0.2− | 0.1+ | 2003 01 05 | 291 | 0.2− | 0.4+ | 2006 09 19 | 704 | 0.4− | 0.0 | |
| 2000 06 02 | 691 | 0.2− | 0.4− | 2003 01 08 | 704 | 1.3+ | 0.7− | 2006 09 20 | 691 | 0.1+ | 0.1+ | |
| 2000 06 02 | 691 | 0.3+ | 0.0 | 2003 01 08 | 704 | 0.2+ | 0.4− | 2006 09 20 | 691 | 0.0 | 0.1+ | |
| 2002 10 10 | 704 | 1.0− | 0.4− | 2003 01 08 | 704 | 0.4+ | 0.2− | 2006 09 20 | 691 | 0.3+ | 0.1+ | |
| 2002 10 10 | 704 | 0.4+ | 0.9+ | 2003 01 08 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.3+ | |
| 2002 10 10 | 704 | 1.1− | 0.0 | 2003 01 08 | 704 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.3− | 0.4− | |
| 2002 10 10 | 704 | 0.2− | 0.3+ | 2004 03 19 | 704 | 1.2+ | 1.2+ | 2006 09 22 | 704 | 0.4− | 0.3− | |
| 2002 11 05 | 704 | 0.6+ | 0.1− | 2004 03 19 | 704 | 0.5+ | 1.0+ | 2006 09 22 | 704 | 0.0 | 1.2− | |
| 2002 11 05 | 704 | 0.3− | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.7+ | |
| 2002 11 05 | 704 | 0.7+ | 0.1+ | 2004 03 21 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.5+ | |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2004 03 21 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.8− | 1.0+ | |
| 2002 11 06 | 704 | 0.4− | 0.7− | 2004 03 21 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.6− | 1.1+ | |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2004 03 28 | 704 | (0.7+ | 1.9+) | 2006 09 26 | 704 | 0.3− | 0.8+ | |
| 2002 11 06 | 704 | 0.7+ | 0.6− | 2004 03 28 | 704 | (0.3− | 2.1+) | 2006 09 26 | 704 | 0.1+ | 0.5+ | |
| 2002 11 06 | 704 | 0.4+ | 0.5+ | 2004 03 28 | 704 | (0.3+ | 2.0+) | 2006 09 26 | 704 | 0.7− | 0.6+ | |
| 2002 12 05 | 704 | 0.1− | 0.4− | 2004 03 28 | 704 | (1.6+ | 1.0+) | 2006 09 26 | 704 | 0.3+ | 0.5+ | |
| 2002 12 05 | 704 | 0.0 | 0.4− | 2004 03 28 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.5+ | |
| 2002 12 05 | 704 | 0.0 | 0.4− | 2004 03 28 | 704 | (0.3− | 2.6+) | 2006 09 28 | 704 | 1.0− | 0.0 | |
| 2002 12 08 | 333 | 0.8− | 0.4+ | 2004 03 28 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 1.0− | 0.7+ | |
| 2002 12 08 | 333 | 0.1+ | 0.1+ | 2004 03 28 | 691 | 0.1+ | 0.7+ | 2006 09 28 | 704 | 0.7− | 0.6+ | |
| 2002 12 08 | 333 | 0.1+ | 0.1+ | 2004 04 19 | 704 | (1.7+ | 1.0+) | 2006 09 28 | 704 | 0.0 | 0.4− | |
| 2002 12 09 | 333 | 0.1− | 0.1+ | 2004 04 19 | 704 | 0.5+ | 1.3+ | 2006 09 28 | 704 | 0.9− | 0.7+ | |
| 2002 12 09 | 333 | 0.3+ | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.0 | 2006 09 30 | 704 | 0.5− | 0.6+ | |
| 2002 12 09 | 333 | 1.3− | 0.2− | 2004 04 20 | 691 | 0.3+ | 0.6+ | 2006 09 30 | 704 | 0.5− | 0.9+ | |
| 2002 12 10 | 704 | 0.0 | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.1− | 0.1+ | |
| 2002 12 10 | 704 | 0.2+ | 0.1− | 2004 04 20 | 691 | 0.5+ | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.2+ | |
| 2002 12 10 | 704 | 0.3+ | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.2− | |
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 703 | (1.2+ | 1.6+) | |
| 2002 12 10 | 704 | 0.2+ | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.5+ | 2006 10 17 | 703 | (0.1− | 2.2+) | |
| 2002 12 31 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 704 | 0.6− | 1.3+ | 2006 10 17 | 703 | (0.9+ | 2.3+) | |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 09 16 | 704 | (0.7− | 1.6+) | 2006 10 17 | 703 | 1.3+ | 1.3+ | |
| 2002 12 31 | 704 | 0.3+ | 1.4+ | 2006 09 16 | 704 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.4− | 0.1+ | |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.5+ | 1.3+ | 2006 10 19 | 644 | 0.1− | 0.1− | |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 10 19 | 644 | 0.5− | 0.4+ | |
| 2003 01 04 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | (1.6+ | 0.7+) | 2006 10 20 | 644 | 0.4− | 0.2+ | |
| 2003 01 04 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 1.1+ | 1.4+ | 2006 10 20 | 644 | 0.6− | 0.3+ | |
| 2003 01 04 | 704 | 0.2− | 0.2− | 2006 09 18 | 699 | 1.3− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 2003 01 04 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2003 01 04 | 704 | 0.2− | 0.1+ | 2006 09 18 | 699 | (7.4+ | 4.2−) | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 2003 01 05 | 291 | 0.0 | 0.1+ | 2006 09 19 | 704 | 1.1+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2003 01 05 | 291 | 0.1− | 0.2− | 2006 09 19 | 704 | 0.2+ | 0.0 | | | | | |

**(142875)∗ 2002 VW$_{34}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.41295 | | (2000.0) | | +0.17980677 | −0.95971086 |
| $n$ | 0.24142060 | $\omega$ | 13.27819 | | +0.87969042 | +0.05863677 |
| $a$ | 2.5543858 | $\Omega$ | 66.70748 | | +0.44024344 | +0.27480320 |
| $e$ | 0.2546290 | $i$ | 13.59677 | | +0.44024344 | +0.27480320 |
| $P$ | 4.08 | $H$ | 15.8 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 699 | 0.1+ | 0.4− | 2002 12 15 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 291 | 0.3− | 0.2− | |
| 1998 12 17 | 699 | 0.2− | 0.7− | 2002 12 29 | 704 | 1.3+ | 0.0 | 2006 10 28 | 291 | 0.2− | 0.2− | |
| 1998 12 17 | 699 | 0.9+ | 0.9− | 2002 12 29 | 704 | 0.0 | 0.2− | 2006 10 28 | 291 | 0.2− | 0.1− | |
| 1998 12 17 | 704 | 0.1+ | 0.9− | 2002 12 29 | 704 | 1.0− | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.4− | |
| 1998 12 17 | 704 | 0.7+ | 1.6− | 2003 01 04 | 704 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− | |
| 1998 12 17 | 704 | 0.2+ | 1.6− | 2003 01 04 | 704 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.3− | |
| 1998 12 17 | 704 | 1.1− | 1.9− | 2003 01 04 | 704 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− | |
| 1998 12 17 | 704 | (1.1− | 2.6−) | 2003 01 04 | 704 | 0.5− | 0.1+ | 2006 11 02 | 703 | 0.3+ | 0.4+ | |
| 1998 12 24 | 699 | 0.3+ | 0.7− | 2003 01 10 | 704 | 0.4− | 0.5− | 2006 11 02 | 703 | 0.4+ | 0.6+ | |
| 1998 12 24 | 699 | 0.3− | 0.2− | 2003 01 10 | 704 | 0.6− | 0.2− | 2006 11 02 | 703 | 0.6+ | 0.1+ | |
| 1998 12 24 | 699 | 0.3+ | 0.2− | 2003 01 10 | 704 | 0.9− | 1.3+ | 2006 11 02 | 703 | 0.7+ | 0.0 | |
| 1999 01 16 | 704 | 0.0 | 0.6− | 2003 01 10 | 704 | 0.6+ | 1.4+ | 2006 11 05 | 644 | 0.3− | 0.1+ | |
| 1999 01 16 | 704 | 0.2− | 0.2− | 2003 01 13 | 704 | 1.2− | 1.1+ | 2006 11 05 | 644 | 0.3− | 0.1− | |
| 1999 01 16 | 704 | 0.2+ | 0.1+ | 2003 01 13 | 704 | 0.9− | 0.8+ | 2006 11 05 | 644 | 0.1− | 0.1− | |
| 1999 01 16 | 704 | 0.4− | 1.0+ | 2003 01 13 | 704 | 0.8− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.4− | |
| 1999 01 16 | 704 | (5.5− | 1.0+) | 2003 01 13 | 704 | 1.4− | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.4− | |
| 2000 05 03 | 691 | 0.3− | 0.0 | 2003 01 31 | 704 | 0.9− | 0.8+ | 2006 11 12 | G96 | 0.1+ | 0.2− | |
| 2000 05 03 | 691 | 0.2+ | 0.4+ | 2003 01 31 | 704 | 0.5− | 0.6+ | 2006 11 12 | G96 | 0.1+ | 0.4− | |
| 2000 05 03 | 691 | 0.6+ | 0.5+ | 2003 01 31 | 704 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.8+ | |
| 2002 10 11 | 704 | (1.9+ | 0.0 ) | 2003 01 31 | 704 | 0.5+ | 1.0+ | 2006 11 17 | 704 | 0.2− | 0.5+ | |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 09 16 | 683 | 0.1+ | 0.8+ | 2006 11 17 | 704 | 0.2+ | 0.8+ | |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2006 09 16 | 683 | 1.0+ | 0.6+ | 2006 11 17 | 704 | 0.3− | 0.6+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.1+ | 1.5+ | 2006 09 16 | 683 | (0.2+ | 1.5+) | 2006 11 17 | 704 | 0.3+ | 0.8+ | | |
| 2002 10 11 | 704 | 0.4+ | 0.1− | 2006 09 17 | 683 | 0.5+ | 1.1− | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 11 | 704 | (0.4− | 2.8+) | 2006 09 17 | 683 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.1+ | 0.1− | | |
| 2002 10 11 | 704 | 1.3− | 1.0+ | 2006 09 17 | 683 | 0.9− | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.5+ | | |
| 2002 10 11 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.6− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.3+ | | |
| 2002 11 05 | 704 | 0.6− | 0.3− | 2006 09 19 | 699 | 0.1+ | 1.2+ | 2006 11 18 | 704 | 0.5+ | 0.3+ | | |
| 2002 11 05 | 704 | 0.3− | 0.7− | 2006 09 19 | 699 | 0.5− | 0.9+ | 2006 11 21 | 704 | 1.2+ | 0.5+ | | |
| 2002 11 05 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.3+ | 1.5+ | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.4− | 0.3+ | 2006 09 22 | 683 | 0.7− | 0.6− | 2006 11 21 | 704 | 0.9+ | 0.2+ | | |
| 2002 11 05 | 704 | 0.5− | 0.6+ | 2006 09 22 | 683 | (1.1− | 1.5−) | 2006 11 23 | 691 | 0.5− | 0.0 | | |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2006 09 22 | 683 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1− | | |
| 2002 11 06 | 704 | 0.2− | 0.1− | 2006 10 01 | 703 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.0 | | |
| 2002 11 06 | 704 | 0.1− | 0.0 | 2006 10 01 | 703 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.5− | | |
| 2002 11 06 | 704 | 0.4+ | 0.0 | 2006 10 01 | 703 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.2− | | |
| 2002 11 06 | 704 | 1.4+ | 0.8+ | 2006 10 01 | 703 | 0.5− | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.4− | | |
| 2002 11 14 | 704 | 1.0− | 0.8+ | 2006 10 03 | 704 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.5− | | |
| 2002 11 14 | 704 | (1.8− | 0.4−) | 2006 10 03 | 704 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2002 11 14 | 704 | 0.0 | 1.0+ | 2006 10 03 | 704 | 0.6+ | 0.1− | 2006 11 27 | 703 | 0.2+ | 0.4− | | |
| 2002 11 14 | 704 | 0.7− | 0.6− | 2006 10 03 | 704 | 0.3− | 0.1− | 2006 11 27 | 704 | 0.2− | 0.1+ | | |
| 2002 11 14 | 704 | 0.5− | 0.7− | 2006 10 09 | 644 | 0.4+ | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.2− | | |
| 2002 12 06 | 704 | 0.7+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 704 | 0.1+ | 0.2+ | | |
| 2002 12 06 | 704 | 0.5+ | 0.4− | 2006 10 09 | 644 | 0.2+ | 0.0 | 2006 11 27 | 704 | 0.3− | 0.2− | | |
| 2002 12 06 | 704 | 0.6+ | 0.2− | 2006 10 22 | 704 | 0.6+ | 0.4− | 2006 11 27 | 704 | 0.2− | 0.0 | | |
| 2002 12 06 | 704 | 0.7+ | 0.3− | 2006 10 22 | 704 | 0.9+ | 0.4− | 2006 11 27 | 704 | 0.5− | 0.1− | | |
| 2002 12 11 | 704 | 0.1− | 0.3− | 2006 10 22 | 704 | 0.9+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.1+ | | |
| 2002 12 11 | 704 | 1.1+ | 0.7− | 2006 10 22 | 704 | 0.7+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.1+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.3− | | |
| 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.2+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.0 | | |
| 2002 12 15 | 704 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.4+ | 0.2− | | |
| 2002 12 15 | 704 | 0.2− | 0.4+ | 2006 10 28 | 291 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.5+ | 0.1− | | |
| 2002 12 15 | 704 | 0.0 | 0.4+ | 2006 10 28 | 291 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.4+ | 0.0 | | |
| 2002 12 15 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 291 | 0.3− | 0.0 | | | | | | |

**(142876)∗ 2002 VO$_{35}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.86189 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22097250 | $\omega$ | 79.04859 | | +0.86990130 | +0.48893538 | |
| $a$ | 2.7096336 | $\Omega$ | 251.65304 | | −0.47502198 | +0.79508097 | |
| $e$ | 0.1641812 | $i$ | 3.92159 | | −0.13276241 | +0.35887107 | |
| $P$ | 4.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 608 | 0.2− | 0.2− | 2005 01 18 | 809 | 0.5+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 31 | 608 | 0.1+ | 0.4+ | 2005 01 18 | 809 | 0.5− | 0.9+ | 2006 09 25 | 704 | 0.2+ | 0.4− | | |
| 2002 10 31 | 608 | 0.2− | 0.2+ | 2005 05 09 | 699 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.0 | 0.9+ | | |
| 2002 11 05 | 704 | 0.2+ | 0.4+ | 2005 05 09 | 699 | 1.2+ | 0.9+ | 2006 09 25 | 704 | 0.1− | 0.4− | | |
| 2002 11 05 | 704 | 0.2+ | 0.1+ | 2005 05 09 | 699 | (2.0− | 1.8+) | 2006 09 25 | 704 | 0.1− | 0.2− | | |
| 2002 11 05 | 704 | 0.1+ | 0.3+ | 2005 05 09 | 699 | 0.2− | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.0 | | |
| 2002 11 06 | 704 | 0.7− | 0.5+ | 2006 07 21 | 703 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ | | |
| 2002 11 06 | 704 | 0.6− | 0.3+ | 2006 07 21 | 703 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.2+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.3+ | 2006 07 21 | 703 | 0.2+ | 0.7− | 2006 09 27 | 699 | 0.7− | 0.1+ | | |
| 2002 11 13 | 644 | 0.3+ | 0.7+ | 2006 07 21 | 703 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.3+ | | |
| 2002 11 13 | 644 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.2+ | 0.4− | 2006 09 27 | 699 | 0.4+ | 0.6+ | | |
| 2002 11 13 | 644 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.1− | 1.0+ | 2006 09 27 | 699 | 0.3− | 0.5+ | | |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 1.2+ | 0.4+ | | |
| 2002 11 14 | 704 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 1.1− | 1.1+ | | |
| 2002 11 14 | 704 | (0.0 | 2.1+) | 2006 08 30 | 704 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.2− | 0.1+ | | |
| 2002 11 14 | 704 | 0.2− | 1.3+ | 2006 09 01 | 704 | 0.6− | 0.3− | 2006 09 29 | 704 | 0.3+ | 0.7+ | | |
| 2002 11 14 | 704 | 0.7+ | 0.8+ | 2006 09 01 | 704 | 1.5+ | 0.6− | 2006 09 29 | 704 | 0.5+ | 0.9+ | | |
| 2002 11 24 | 644 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.0 | 1.2− | 2006 10 01 | 691 | 0.1− | 0.0 | | |
| 2002 11 24 | 644 | 0.3+ | 0.3+ | 2006 09 01 | 704 | 0.4− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 09 01 | 704 | 0.1+ | 1.3− | 2006 10 01 | 703 | 0.0 | 0.2− | | |
| 2002 11 27 | 699 | 0.6+ | 0.4+ | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.2− | 0.7− | | |
| 2002 11 27 | 699 | 0.6− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.0 | 0.9− | | |
| 2002 11 27 | 699 | 1.2+ | 0.9− | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.7− | | |
| 2002 11 27 | 699 | (1.7− | 1.0−) | 2006 09 15 | 704 | 1.4+ | 1.3+ | 2006 10 01 | 703 | 0.4− | 0.2− | | |
| 2002 12 02 | 704 | 0.9+ | 0.5− | 2006 09 15 | 704 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2002 12 02 | 704 | 0.8+ | 0.2+ | 2006 09 15 | 704 | 0.4+ | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.0 | | |
| 2002 12 02 | 704 | (1.8+ | 1.0+) | 2006 09 15 | 704 | 0.1− | 1.0+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.2− | | |
| 2002 12 05 | 704 | 0.3− | 0.4− | 2006 09 17 | 703 | 0.1− | 1.1− | 2006 10 17 | 703 | 0.2− | 0.3− | | |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.4+ | | |
| 2002 12 05 | 704 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.7+ | 0.3− | | |
| 2002 12 08 | 291 | 0.4− | 0.6− | 2006 09 18 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 2002 12 08 | 291 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 2002 12 08 | 291 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 2002 12 10 | 704 | 0.5− | 0.5− | 2006 09 18 | 704 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2002 12 10 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2002 12 10 | 704 | 0.7− | 0.8− | 2006 09 19 | 699 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 12 10 | 704 | 0.4+ | 1.0− | 2006 09 19 | 699 | 0.5− | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.5− | | |
| 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.5− | | |
| 2004 02 18 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− | | |
| 2004 02 18 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2005 01 18 | 809 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | | | | | |

**(142877)∗ 2002 VH$_{36}$ = 1969 TZ$_6$ = 1998 XA$_{94}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41187), M. E. Sansaturio (*MPO* 47228)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.16178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24193528 | $\omega$ | 148.31312 | | +0.92488386 | −0.37468965 | |
| $a$ | 2.5507618 | $\Omega$ | 233.82902 | | +0.32995243 | +0.87549844 | |
| $e$ | 0.2275320 | $i$ | 4.60334 | | +0.18900064 | +0.30513954 | |
| $P$ | 4.07 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1969 10 08 | 033 | 0.4− | 1.3+ | 2003 01 07 | 704 | (1.9− | 2.0−) | 2006 09 17 | 704 | (0.5+ | 1.7+) | | |
| 1969 10 08 | 033 | 0.6− | 0.9+ | 2003 01 07 | 704 | (1.3− | 1.5−) | 2006 09 17 | 704 | 0.1− | 1.4+ | | |
| 1998 12 15 | 704 | 1.0+ | 0.3+ | 2003 01 07 | 704 | (1.6− | 1.4−) | 2006 09 20 | 704 | 1.1+ | 0.8− | | |
| 1998 12 15 | 704 | 0.8− | 0.6+ | 2003 01 08 | 704 | 0.4+ | 0.7− | 2006 09 20 | 704 | 0.6− | 0.9+ | | |
| 1998 12 15 | 704 | 0.8− | 1.1− | 2003 01 08 | 704 | 0.2+ | 0.8− | 2006 09 20 | 704 | 0.9− | 0.5+ | | |
| 1998 12 15 | 704 | 0.0 | 0.2+ | 2003 01 08 | 704 | 0.4− | 0.6− | 2006 09 20 | 704 | 0.2+ | 0.7+ | | |
| 1998 12 15 | 704 | 0.9− | 1.5+ | 2003 01 08 | 704 | 0.5+ | 0.9− | 2006 09 20 | 704 | 0.1+ | 0.9+ | | |
| 1998 12 22 | 704 | 0.4+ | 0.8+ | 2003 01 27 | 704 | 0.8+ | 0.5+ | 2006 10 28 | 704 | (0.3+ | 1.6+) | | |
| 1998 12 22 | 704 | 0.9+ | 1.0− | 2003 01 27 | 704 | 0.3+ | 0.1− | 2006 10 28 | 704 | 0.2+ | 0.0 | | |
| 1998 12 22 | 704 | 1.1+ | 0.1+ | 2003 01 27 | 704 | (0.7+ | 1.7+) | 2006 10 28 | 704 | 0.7+ | 0.1− | | |
| 2000 04 06 | 699 | 1.0+ | 0.1− | 2003 01 27 | 704 | 0.7− | 0.2− | 2006 10 28 | 704 | 0.5− | 0.4− | | |
| 2000 04 06 | 699 | 0.3+ | 0.1+ | 2003 01 27 | 704 | 0.2− | 0.2+ | 2006 11 17 | 951 | 0.0 | 0.2− | | |
| 2000 04 06 | 699 | 0.7+ | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 11 17 | 951 | 0.2− | 0.3+ | | |
| 2000 04 06 | 699 | (2.5+ | 0.3+) | 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.7− | | |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.5− | 0.1− | | |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2004 03 18 | 704 | 1.4− | 1.2+ | 2006 11 17 | 704 | 0.8− | 0.2− | | |
| 2002 10 03 | 704 | 0.9+ | 0.2− | 2004 03 18 | 704 | 0.9− | 0.4+ | 2006 11 17 | 704 | 0.6− | 0.2− | | |
| 2002 10 03 | 704 | 0.5− | 0.9− | 2004 03 31 | 704 | 0.9+ | 0.9+ | 2006 11 18 | 704 | 0.3− | 0.4− | | |
| 2002 10 11 | 704 | (1.5− | 1.6+) | 2004 03 31 | 704 | 1.0+ | 1.2− | 2006 11 18 | 704 | 0.5− | 0.3− | | |
| 2002 10 11 | 704 | 1.2− | 0.1+ | 2004 03 31 | 704 | (1.6+ | 1.7−) | 2006 11 18 | 704 | 0.7− | 0.1− | | |
| 2002 10 11 | 704 | 0.4+ | 0.6+ | 2004 04 11 | 644 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.2− | | |
| 2002 11 05 | 704 | 1.3− | 0.2+ | 2004 04 11 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.0 | | |
| 2002 11 05 | 704 | 0.4− | 0.2+ | 2004 04 11 | 644 | 0.0 | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2004 04 12 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2002 11 06 | 704 | 0.1− | 0.8+ | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.1− | 0.2− | | |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2004 04 16 | 644 | 0.5+ | 0.3+ | 2006 11 20 | G96 | 0.2− | 0.2− | | |
| 2002 11 06 | 704 | 0.5+ | 0.7+ | 2004 04 16 | 644 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.3− | | |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2004 04 16 | 644 | 1.0+ | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.2− | | |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2004 04 19 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3− | 0.6− | | |
| 2002 12 02 | 704 | 0.6+ | 0.5− | 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.4− | | |
| 2002 12 02 | 704 | 0.9+ | 0.2+ | 2004 04 19 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.9− | 0.5− | | |
| 2002 12 02 | 704 | 0.4+ | 0.9+ | 2006 08 24 | 704 | (5.4+ | 1.8+) | 2006 11 21 | 704 | 0.2+ | 0.6− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.9− | 0.2+ | 2006 08 24 | 704 | (1.8+ | 1.6+) | 2006 11 21 | 704 | 0.7− | 0.3+ |
| 2002 12 11 | 704 | 0.4− | 0.1− | 2006 08 24 | 704 | (1.0+ | 1.7+) | 2006 11 28 | 951 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2006 08 24 | 704 | 0.8+ | 0.7+ | 2006 11 29 | 951 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.7+ | 2006 11 29 | 951 | 0.2+ | 0.1+ |
| 2002 12 11 | 704 | 0.4− | 0.2− | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.6+ | 0.3+ |
| 2002 12 31 | 704 | 0.0 | 0.6− | 2006 08 29 | 703 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.5+ | 0.3− |
| 2002 12 31 | 704 | 0.5+ | 0.5− | 2006 08 29 | 703 | 0.3+ | 0.7+ | 2006 12 01 | 704 | 0.6+ | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.8− | 2006 09 01 | 704 | 0.4+ | 0.1+ | 2006 12 01 | 704 | 0.5+ | 0.1− |
| 2002 12 31 | 704 | 0.3− | 0.5− | 2006 09 01 | 704 | 1.0+ | 0.5− | 2006 12 01 | 704 | 0.9+ | 0.0 |
| 2002 12 31 | 704 | 0.3− | 0.5− | 2006 09 01 | 704 | 0.5+ | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.4+ |
| 2003 01 07 | 704 | (2.1− | 2.1−) | 2006 09 17 | 704 | 0.3+ | 0.8+ | 2006 12 01 | 691 | 0.1+ | 0.3+ |
| 2003 01 07 | 704 | (2.0− | 1.8−) | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.0 | 0.3+ |

**(142878)∗ 2002 VQ$_{37}$**

Discovered 2002 Nov. 4 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.70451 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24238425 | $\omega$ | 239.18152 | | +0.57289366 | | −0.81949719 |
| $a$ | 2.5476110 | $\Omega$ | 175.77673 | | +0.80364287 | | +0.55809440 |
| $e$ | 0.1342952 | $i$ | 11.54457 | | +0.16109315 | | +0.13021134 |
| $P$ | 4.07 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 21 | 691 | 0.0 | 0.6− | 2004 02 26 | 704 | 0.9+ | 1.1+ | 2004 04 19 | 704 | 0.9+ | 0.8+ |
| 1996 04 21 | 691 | 0.0 | 1.2− | 2004 03 19 | 704 | 0.6+ | 1.1+ | 2006 09 14 | 703 | 1.3− | 1.1+ |
| 1996 04 21 | 691 | 0.2− | 0.6− | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 0.9+ | 0.9+ |
| 1998 11 13 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.5+ | 1.1− | 2006 09 14 | 703 | (1.7− | 0.4−) |
| 1998 11 13 | 704 | 1.5− | 0.3+ | 2004 03 19 | 704 | 0.7− | 0.3− | 2006 09 14 | 703 | 0.0 | 1.4− |
| 1998 11 13 | 704 | 1.2+ | 0.2+ | 2004 03 19 | 704 | 0.1− | 1.1+ | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 1998 11 13 | 704 | 0.7− | 0.1+ | 2004 03 20 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.1− |
| 2000 03 29 | 704 | (2.3− | 0.2−) | 2004 03 20 | 704 | 1.0− | 1.1+ | 2006 09 20 | 644 | 0.0 | 0.3+ |
| 2000 03 29 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.7− |
| 2000 03 29 | 704 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.4− |
| 2000 03 29 | 704 | (0.1− | 2.1+) | 2004 03 20 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2002 10 30 | 683 | 1.4− | 1.0− | 2004 03 22 | 704 | 0.1+ | 1.4+ | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2002 10 30 | 683 | (1.1− | 1.8−) | 2004 03 22 | 704 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 30 | 683 | 0.2− | 1.0− | 2004 03 22 | 704 | 0.8− | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.5− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.2+ | 0.1+ | 2004 03 24 | 699 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 704 | 0.0 | 0.2+ | 2004 03 24 | 699 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | 0.6+ | 0.0 | 2004 03 24 | 699 | (1.6− | 0.2+) | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2002 11 04 | 608 | 0.7+ | 0.1− | 2004 03 24 | 699 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.9− |
| 2002 11 04 | 608 | 0.2+ | 0.4− | 2004 03 28 | 704 | 1.0− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 11 04 | 608 | 0.8+ | 0.1+ | 2004 03 28 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.6− |
| 2002 11 06 | 699 | 0.1+ | 0.4+ | 2004 03 28 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.4+ |
| 2002 11 06 | 699 | 0.3− | 0.6− | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.3+ |
| 2002 11 06 | 699 | 0.2− | 0.0 | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.7− |
| 2002 11 06 | 699 | 0.0 | 0.1− | 2004 03 29 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2002 11 30 | 704 | 0.4+ | 0.0 | 2004 03 29 | 704 | 0.2− | 0.6− | 2006 11 10 | 704 | 0.1+ | 1.1− |
| 2002 11 30 | 704 | 0.7− | 0.2− | 2004 03 29 | 704 | 0.7+ | 0.1− | 2006 11 10 | 704 | 0.9+ | 0.6− |
| 2002 11 30 | 704 | 0.3− | 1.2− | 2004 03 29 | 704 | 0.1+ | 0.3− | 2006 11 10 | 704 | 0.2+ | 0.4− |
| 2002 11 30 | 704 | 0.7− | 0.1+ | 2004 03 30 | 704 | 0.2+ | 0.6− | 2006 11 10 | 704 | 0.0 | 0.2− |
| 2002 11 30 | 704 | 0.2− | 0.5+ | 2004 03 30 | 704 | 0.2− | 0.2− | 2006 11 10 | 704 | 0.7+ | 0.1− |
| 2002 12 13 | 644 | 0.1− | 0.0 | 2004 03 30 | 704 | 0.1− | 0.1+ | 2006 11 14 | 644 | 0.2+ | 0.0 |
| 2002 12 13 | 644 | 0.1− | 0.0 | 2004 03 30 | 704 | 0.0 | 0.6− | 2006 11 14 | 644 | 0.3+ | 0.2+ |
| 2002 12 13 | 644 | 0.1+ | 0.2+ | 2004 03 30 | 704 | 0.3− | 0.5− | 2006 11 14 | 644 | 0.1+ | 0.3− |
| 2003 01 02 | 704 | 0.2− | 0.2− | 2004 04 12 | 699 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.2+ | 0.2+ |
| 2003 01 02 | 704 | (2.1− | 0.9+) | 2004 04 12 | 699 | 1.0+ | 0.3− | 2006 11 16 | 703 | 0.4+ | 0.4+ |
| 2003 01 02 | 704 | 0.2− | 0.0 | 2004 04 12 | 699 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.0 |
| 2003 01 02 | 704 | 0.0 | 0.6+ | 2004 04 12 | 699 | 1.2− | 0.7+ | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2003 01 02 | 704 | 1.0+ | 0.7+ | 2004 04 16 | 691 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.2− |
| 2004 02 26 | 704 | 0.5− | 0.4− | 2004 04 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 644 | 0.2+ | 0.1− |
| 2004 02 26 | 704 | 0.2+ | 0.5+ | 2004 04 16 | 691 | 0.0 | 0.1− | 2006 11 17 | 644 | 0.2+ | 0.1− |
| 2004 02 26 | 704 | 0.4− | 0.3+ | 2004 04 19 | 704 | 0.4− | 0.1+ | | | | |
| 2004 02 26 | 704 | 1.0+ | 0.2+ | 2004 04 19 | 704 | 1.1+ | 0.0 | | | | |

**(142879)∗ 2002 VX$_{38}$ = 2000 DZ$_{87}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41191)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.77419 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27609150 | $\omega$ | 312.37579 | | +0.64208890 | | −0.75581496 |
| $a$ | 2.3357912 | $\Omega$ | 97.21479 | | +0.73589264 | | +0.56072926 |
| $e$ | 0.0965514 | $i$ | 7.43159 | | +0.21490430 | | +0.33812194 |
| $P$ | 3.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 1.2+ | 0.7− | 2002 11 22 | 644 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.2− | 0.2+ |
| 2000 02 03 | 704 | 0.8+ | 0.3− | 2002 11 22 | 644 | 0.1− | 0.0 | 2004 03 29 | 703 | 1.0+ | 0.4− |
| 2000 02 03 | 704 | 0.8+ | 1.3+ | 2002 11 22 | 644 | 0.1− | 0.0 | 2004 03 29 | 703 | 0.2− | 0.3+ |
| 2000 02 03 | 704 | 0.2+ | 1.7+ | 2002 12 01 | 704 | 0.0 | 0.3+ | 2004 03 29 | 703 | 1.4− | 1.3− |
| 2000 02 29 | 704 | 0.7− | 0.1− | 2002 12 01 | 704 | 0.4− | 0.8+ | 2004 03 29 | 703 | 0.1− | 0.4+ |
| 2000 02 29 | 704 | 1.1− | 0.1− | 2002 12 01 | 704 | 0.0 | 1.2+ | 2004 04 15 | 644 | 0.6+ | 0.2+ |
| 2000 02 29 | 704 | 0.1− | 0.9+ | 2002 12 01 | 704 | 0.3− | 0.8+ | 2004 04 15 | 644 | 0.5+ | 0.4+ |
| 2000 02 29 | 704 | 0.4+ | 0.1− | 2002 12 01 | 704 | (0.5+ | 1.6+) | 2004 04 15 | 644 | 0.7+ | 0.4+ |
| 2000 02 29 | 704 | 0.1− | 0.5+ | 2002 12 01 | 608 | 0.1− | 0.8− | 2004 04 22 | 703 | 0.6+ | 1.3+ |
| 2000 03 04 | 704 | 0.4− | 0.4− | 2002 12 01 | 608 | 0.0 | 1.0− | 2004 04 22 | 703 | 0.2+ | 0.7− |
| 2000 03 04 | 704 | 0.4+ | 0.6+ | 2002 12 01 | 608 | 0.0 | 0.6− | 2004 04 22 | 703 | 1.4− | 0.7+ |
| 2000 03 04 | 704 | 0.1− | 0.0 | 2002 12 11 | 704 | 0.9+ | 0.5+ | 2004 04 22 | 703 | 0.2+ | 0.0 |
| 2000 03 04 | 704 | 0.6+ | 0.2+ | 2002 12 11 | 704 | (1.6+ | 0.7+) | 2004 04 25 | 699 | 1.4− | 0.3− |
| 2000 03 04 | 704 | 0.6− | 0.5+ | 2002 12 11 | 704 | 0.3− | 0.3+ | 2004 04 25 | 699 | 0.4+ | 0.5− |
| 2002 11 03 | 608 | 0.2+ | 0.3+ | 2002 12 11 | 704 | 0.0 | 0.1+ | 2004 04 25 | 699 | 1.3+ | 0.1+ |
| 2002 11 03 | 608 | 0.6+ | 0.5+ | 2003 01 27 | 644 | 0.1+ | 0.5+ | 2004 04 25 | 699 | 0.2− | 0.9+ |
| 2002 11 03 | 608 | 0.2− | 0.5+ | 2003 01 27 | 644 | 0.3+ | 0.4+ | 2004 05 12 | 644 | 0.5+ | 0.1+ |
| 2002 11 05 | 704 | 0.8− | 0.9+ | 2003 01 27 | 644 | 0.3+ | 0.4+ | 2004 05 12 | 644 | 0.3+ | 0.5+ |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2003 02 02 | 644 | 0.2− | 0.3+ | 2004 05 12 | 644 | 0.4+ | 0.2+ |
| 2002 11 05 | 704 | 0.4− | 0.3+ | 2003 02 02 | 644 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 0.8− | 0.1− |
| 2002 11 05 | 704 | 0.1+ | 0.4+ | 2003 02 02 | 644 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.8− | 0.2− |
| 2002 11 05 | 704 | 0.0 | 0.4+ | 2004 03 17 | 621 | 0.4− | 0.3− | 2006 10 17 | G96 | 0.4− | 0.5− |
| 2002 11 06 | 699 | 0.1+ | 0.3− | 2004 03 17 | 621 | 0.6+ | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.9− |
| 2002 11 06 | 699 | 0.3− | 0.6+ | 2004 03 17 | 621 | 0.4− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.7− |
| 2002 11 06 | 699 | 0.0 | 0.0 | 2004 03 17 | 621 | 0.5+ | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.7− |
| 2002 11 06 | 699 | 0.2+ | 0.0 | 2004 03 18 | 621 | 0.5− | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.8− |
| 2002 11 08 | 704 | 0.2+ | 0.1− | 2004 03 18 | 621 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.6− |
| 2002 11 08 | 704 | 0.3+ | 0.3− | 2004 03 22 | 699 | 1.0− | 0.1+ | 2006 11 16 | G96 | 0.0 | 1.0− |
| 2002 11 08 | 704 | 0.2− | 0.3+ | 2004 03 22 | 699 | 1.1− | 1.1+ | 2006 11 16 | G96 | 0.1− | 0.9− |
| 2002 11 11 | 644 | 0.5− | 0.0 | 2004 03 22 | 699 | 0.4− | 0.5+ | 2006 11 16 | G96 | 0.2− | 1.0− |
| 2002 11 11 | 644 | 0.9− | 0.5− | 2004 03 22 | 699 | 0.4− | 0.5+ | 2006 11 16 | G96 | 0.3− | 1.0− |
| 2002 11 11 | 644 | 0.0 | 0.2+ | 2004 03 23 | 704 | 1.0+ | 0.3+ | 2006 11 28 | G96 | 0.0 | 0.5− |
| 2002 11 12 | 704 | 0.2+ | 0.0 | 2004 03 23 | 704 | 0.9+ | 0.0 | 2006 11 28 | G96 | 0.3− | 0.6− |
| 2002 11 12 | 704 | 0.4+ | 0.5+ | 2004 03 23 | 704 | 1.2+ | 0.3− | 2006 11 28 | G96 | 0.0 | 0.8− |
| 2002 11 12 | 704 | 1.1− | 0.1+ | 2004 03 23 | 704 | 0.1− | 0.6+ | 2006 11 28 | G96 | 0.9+ | 1.1− |

**(142880)∗ 2002 VS$_{39}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.98380 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22922963 | $\omega$ | 184.26726 | | +0.99993479 | | −0.00469269 |
| $a$ | 2.6441670 | $\Omega$ | 175.95744 | | +0.00722262 | | +0.96604970 |
| $e$ | 0.1898558 | $i$ | 8.49272 | | −0.00884595 | | +0.25831369 |
| $P$ | 4.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 24 | 691 | 0.2+ | 0.4− | 2006 07 21 | 703 | 0.4− | 0.6+ | 2006 09 27 | 704 | 0.2− | 0.0 |
| 1996 04 24 | 691 | 0.4− | 0.7− | 2006 07 21 | 703 | 0.9+ | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.6+ |
| 1996 04 24 | 691 | 0.2+ | 0.3− | 2006 08 19 | 691 | 0.2− | 0.8+ | 2006 09 27 | 704 | 0.1− | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 1.0+ | 2006 08 19 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.7+ |
| 2000 03 11 | 704 | 0.7+ | 0.8+ | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.6+ | 0.6+ | 2006 08 21 | 704 | 1.3+ | 1.3+ | 2006 09 28 | 704 | 0.1− | 0.4+ | | |
| 2000 03 11 | 704 | 1.5+ | 1.5+ | 2006 08 21 | 704 | 1.2+ | 0.4− | 2006 09 28 | 704 | 0.3− | 0.1− | | |
| 2000 03 25 | 691 | 0.6− | 0.0 | 2006 08 21 | 704 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 2000 03 25 | 691 | 0.2− | 0.4+ | 2006 08 21 | 704 | 1.1+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2000 03 25 | 691 | 0.3− | 0.2− | 2006 08 21 | 704 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ | | |
| 2002 10 09 | 704 | 0.7− | 0.3− | 2006 08 25 | 704 | 0.5− | 0.3+ | 2006 09 30 | 704 | 1.4+ | 0.2− | | |
| 2002 10 09 | 704 | 0.4+ | 0.8− | 2006 08 25 | 704 | 0.6− | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.2+ | | |
| 2002 10 09 | 704 | (0.1− | 2.0−) | 2006 08 25 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 704 | 0.5+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.2− | 0.4+ | 2006 08 25 | 704 | 1.3− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 2002 10 09 | 704 | (0.4+ | 2.6−) | 2006 08 28 | 703 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.2+ | 0.1− | | |
| 2002 10 31 | 644 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.8− | 2006 09 30 | 704 | 0.4+ | 0.2+ | | |
| 2002 10 31 | 644 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.4+ | 0.3− | 2006 09 30 | G96 | 0.1− | 0.2− | | |
| 2002 10 31 | 644 | 1.4+ | 0.4− | 2006 08 28 | 703 | 0.0 | 0.7− | 2006 09 30 | G96 | 0.2+ | 0.2− | | |
| 2002 11 05 | 704 | 1.0+ | 0.5+ | 2006 09 01 | 704 | 1.3+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.1+ | | |
| 2002 11 05 | 704 | 0.7+ | 0.0 | 2006 09 01 | 704 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.0 | | |
| 2002 11 05 | 704 | (1.0+ | 1.6−) | 2006 09 01 | 704 | (2.3+ | 0.7−) | 2006 09 30 | 703 | 0.2+ | 0.1− | | |
| 2002 11 05 | 704 | 0.8+ | 0.2− | 2006 09 01 | 704 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.3− | | |
| 2002 11 06 | 699 | 0.2− | 0.5− | 2006 09 01 | 704 | (2.0− | 0.6−) | 2006 10 09 | 644 | 0.3+ | 0.1− | | |
| 2002 11 06 | 699 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 1.0− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2002 11 06 | 699 | 0.8− | 0.5− | 2006 09 12 | 703 | 0.7− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.1− | | |
| 2002 11 06 | 699 | 0.1+ | 0.8− | 2006 09 12 | 703 | (2.4− | 0.2+) | 2006 10 16 | 703 | 0.0 | 0.0 | | |
| 2002 11 12 | 704 | 0.5− | 0.2− | 2006 09 12 | 703 | 1.0− | 0.2− | 2006 10 16 | 703 | (0.8− | 2.1−) | | |
| 2002 11 12 | 704 | 0.5− | 0.7+ | 2006 09 17 | 704 | 0.1+ | 0.7− | 2006 10 16 | 703 | (0.1+ | 2.5−) | | |
| 2002 11 12 | 704 | 1.3− | 0.4− | 2006 09 17 | 704 | 0.2+ | 0.8− | 2006 10 16 | 703 | 0.4+ | 0.9− | | |
| 2002 11 12 | 704 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.3− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 2002 11 12 | 704 | 0.9+ | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2002 11 30 | 704 | 1.0− | 0.2+ | 2006 09 17 | 704 | 0.8− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2002 11 30 | 704 | 1.0− | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.5− | | |
| 2002 11 30 | 704 | 0.6− | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.7− | | |
| 2002 11 30 | 704 | 0.7− | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.5− | | |
| 2002 11 30 | 704 | (1.7− | 1.0+) | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2002 12 02 | 608 | 0.6+ | 0.7− | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2002 12 02 | 608 | 0.8+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2002 12 02 | 608 | 0.6+ | 0.8− | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.1+ | | |
| 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2004 03 17 | 691 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2004 03 17 | 691 | 0.6+ | 0.8+ | 2006 09 26 | 704 | 0.5− | 0.3− | 2006 11 25 | G96 | 0.2− | 0.4− | | |
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.7− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2004 03 26 | 691 | 0.3− | 0.5− | 2006 09 26 | 704 | 0.7− | 0.3− | 2006 11 25 | G96 | 0.0 | 0.5− | | |
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.5− | | |
| 2006 07 21 | 703 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.8+ | | | | | | |
| 2006 07 21 | 703 | 0.5− | 1.2+ | 2006 09 27 | 704 | 0.5− | 0.2+ | | | | | | |

## (142881)∗ 2002 VH$_{40}$ = 1996 GZ$_{16}$

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41193)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.12909 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24176713 | $\omega$ | 234.55794 | | +0.73610286 | −0.67602487 | |
| $a$ | 2.5519444 | $\Omega$ | 167.85272 | | +0.66135962 | +0.70770675 | |
| $e$ | 0.1224115 | $i$ | 9.24538 | | +0.14406954 | +0.20528402 | |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 11 | 691 | 0.0 | 0.4− | 2002 12 14 | 704 | 0.1+ | 0.1+ | 2004 04 15 | 704 | 0.5+ | 0.6+ | | |
| 1996 04 11 | 691 | 0.2+ | 0.3− | 2002 12 14 | 704 | 0.4− | 0.6− | 2004 04 15 | 704 | 1.2+ | 0.4− | | |
| 1996 04 11 | 691 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.5− | 0.4+ | 2006 09 22 | 704 | 0.7− | 0.4+ | | |
| 1996 04 15 | 691 | 1.7+ | 0.6− | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 09 22 | 704 | 0.4− | 0.8+ | | |
| 1996 04 15 | 691 | 0.2− | 0.7− | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 09 22 | 704 | 0.3− | 0.5− | | |
| 1996 04 15 | 691 | 0.2− | 0.9− | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 09 30 | 699 | 0.0 | 0.2+ | | |
| 1996 04 21 | 691 | 0.9− | 0.4− | 2004 03 12 | 644 | 0.4− | 0.6+ | 2006 09 30 | 699 | 1.6− | 0.0 | | |
| 1996 04 21 | 691 | 0.7− | 0.6− | 2004 03 12 | 644 | 0.3− | 0.5+ | 2006 09 30 | 699 | 0.1− | 0.2+ | | |
| 1996 04 21 | 691 | 0.6− | 0.3− | 2004 03 12 | 644 | 0.3− | 0.4+ | 2006 09 30 | 699 | 1.2+ | 0.9− | | |
| 2002 10 31 | 644 | 0.5− | 0.1+ | 2004 03 15 | 703 | 0.9− | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.3− | | |
| 2002 10 31 | 644 | 0.4− | 0.2− | 2004 03 15 | 703 | 1.5− | 0.3+ | 2006 10 16 | 703 | 0.0 | 1.1− | | |
| 2002 10 31 | 644 | 1.1− | 0.1+ | 2004 03 15 | 703 | (1.6− | 0.1+) | 2006 10 16 | 703 | 0.0 | 0.9− | | |
| 2002 11 05 | 704 | 0.9− | 0.0 | 2004 03 15 | 703 | (2.1− | 1.6+) | 2006 10 16 | 703 | 0.4− | 0.4− | | |
| 2002 11 05 | 704 | 0.0 | 0.2− | 2004 03 16 | 704 | 0.7+ | 1.2+ | 2006 10 22 | 703 | 0.2+ | 0.2+ | | |
| 2002 11 05 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 704 | 0.0 | 1.1+ | 2006 10 22 | 703 | 0.3− | 0.0 | | |
| 2002 11 05 | 704 | 0.2+ | 0.3− | 2004 03 16 | 704 | 1.3+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.2− | | |
| 2002 11 07 | 699 | 0.3+ | 0.5− | 2004 03 16 | 704 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.2+ | 0.4+ | | |
| 2002 11 07 | 699 | 0.0 | 0.4− | 2004 03 19 | 704 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.3− | 1.0− | | |
| 2002 11 07 | 699 | 0.4+ | 0.2+ | 2004 03 19 | 704 | 0.4− | 0.2− | 2006 11 13 | 703 | (0.5+ | 1.8−) | | |
| 2002 11 07 | 699 | 0.5− | 0.3− | 2004 03 19 | 704 | 0.6− | 0.2− | 2006 11 13 | 703 | (1.5− | 1.7−) | | |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.3+ | 1.3− | | |
| 2002 11 24 | 644 | 0.2− | 0.3− | 2004 03 19 | 704 | 0.5+ | 0.9+ | 2006 11 13 | 644 | 0.3+ | 0.4− | | |
| 2002 11 24 | 644 | 0.1+ | 0.7− | 2004 03 22 | 704 | 0.2+ | 1.5+ | 2006 11 13 | 644 | 0.0 | 0.1− | | |
| 2002 11 30 | 704 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1− | | |
| 2002 11 30 | 704 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.7− | 0.6+ | 2006 11 19 | 703 | 0.2+ | 0.0 | | |
| 2002 11 30 | 704 | 0.5− | 0.2+ | 2004 03 22 | 704 | (2.3− | 1.2−) | 2006 11 19 | 703 | 0.0 | 0.0 | | |
| 2002 11 30 | 704 | 1.3+ | 0.2+ | 2004 03 23 | 683 | 0.2− | 0.7+ | 2006 11 19 | 703 | 0.8− | 0.7+ | | |
| 2002 11 30 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 683 | (1.7+ | 0.3−) | 2006 11 19 | 703 | 0.2+ | 0.3+ | | |
| 2002 12 13 | 644 | 0.4+ | 0.7+ | 2004 03 23 | 683 | (2.1− | 1.8+) | 2006 11 21 | 704 | 0.5+ | 0.5+ | | |
| 2002 12 13 | 644 | 0.4+ | 0.7+ | 2004 03 28 | 704 | 1.0+ | 1.1− | 2006 11 21 | 704 | 0.0 | 0.1− | | |
| 2002 12 13 | 644 | 0.3+ | 0.1+ | 2004 03 28 | 704 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.8+ | 0.5− | | |
| 2002 12 14 | 704 | 1.0− | 0.8− | 2004 03 28 | 704 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 2.0+ | 0.6− | | |
| 2002 12 14 | 704 | 0.3− | 0.2− | 2004 03 28 | 704 | 1.2+ | 0.7+ | 2006 11 21 | 704 | 1.4+ | 0.3− | | |
| 2002 12 14 | 704 | 0.0 | 0.0 | 2004 04 15 | 704 | 1.1− | 0.7+ | | | | | | |

## (142882)∗ 2002 VB$_{41}$

Discovered 2002 Nov. 2 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.28895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24387032 | $\omega$ | 357.64637 | | +0.59565679 | −0.77340785 | |
| $a$ | 2.5372509 | $\Omega$ | 55.70925 | | +0.74117908 | +0.42515819 | |
| $e$ | 0.1591112 | $i$ | 15.21823 | | +0.30959096 | +0.47019231 | |
| $P$ | 4.04 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 699 | 0.1− | 0.1+ | 2002 10 23 | 644 | 0.7+ | 0.5+ | 2004 04 14 | 703 | 0.3+ | 0.5+ | | |
| 1998 09 27 | 699 | 0.4+ | 0.5− | 2002 10 28 | 704 | (1.7− | 0.1−) | 2004 04 14 | 703 | 0.0 | 0.8+ | | |
| 1998 09 27 | 699 | 0.5− | 0.6− | 2002 10 28 | 704 | 0.5+ | 0.0 | 2006 07 30 | E12 | 0.1− | 0.0 | | |
| 1998 10 18 | 699 | 0.4+ | 0.2+ | 2002 10 28 | 704 | 0.1− | 0.3+ | 2006 07 30 | E12 | 0.1+ | 0.3+ | | |
| 1998 10 18 | 699 | 0.0 | 0.5− | 2002 10 28 | 704 | 0.4− | 0.9+ | 2006 07 30 | E12 | 1.1− | 1.0+ | | |
| 1998 10 18 | 699 | 0.8+ | 0.4− | 2002 10 28 | 704 | 0.1− | 0.9+ | 2006 07 30 | E12 | 0.2− | 0.1− | | |
| 1998 11 15 | 699 | 0.5+ | 0.5+ | 2002 11 02 | 608 | 0.7− | 1.2− | 2006 09 14 | 644 | 0.1− | 0.2− | | |
| 1998 11 15 | 699 | 0.5+ | 0.1− | 2002 11 02 | 608 | 0.7− | 0.9− | 2006 09 14 | 644 | 0.2− | 0.1+ | | |
| 1998 11 15 | 699 | 0.5+ | 0.8− | 2002 11 02 | 608 | 0.8− | 0.7− | 2006 09 14 | 644 | 0.2− | 0.1− | | |
| 2000 03 04 | 704 | 0.5− | 0.2+ | 2002 11 05 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | (2.0+ | 0.4+) | | |
| 2000 03 04 | 704 | 0.2+ | 0.2+ | 2002 11 05 | 644 | 0.2+ | 0.6− | 2006 09 26 | 703 | 0.3+ | 0.1+ | | |
| 2000 03 04 | 704 | 0.0 | 0.3+ | 2002 11 05 | 644 | 0.4+ | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.2+ | | |
| 2000 03 04 | 704 | 0.3− | 0.9+ | 2003 01 02 | 704 | 0.1− | 1.4+ | 2006 09 26 | 703 | 0.4+ | 0.0 | | |
| 2002 08 14 | 704 | (2.5− | 1.5−) | 2003 01 02 | 704 | 0.6+ | 1.5+ | 2006 10 03 | E12 | 1.3− | 0.2+ | | |
| 2002 08 14 | 704 | 0.3+ | 0.7− | 2003 01 02 | 704 | 0.4+ | 0.6+ | 2006 10 03 | E12 | 0.3− | 0.2+ | | |
| 2002 08 14 | 704 | 0.4+ | 0.9− | 2003 12 19 | 704 | 0.2− | 0.6+ | 2006 10 03 | E12 | 0.3+ | 0.4− | | |
| 2002 09 13 | 704 | 0.5− | 1.1+ | 2003 12 19 | 704 | 0.7+ | 0.2− | 2006 10 03 | E12 | 0.0 | 0.6+ | | |
| 2002 09 13 | 704 | 0.4− | 1.5+ | 2003 12 19 | 704 | 0.9− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2002 09 13 | 704 | 0.4− | 1.1+ | 2003 12 19 | 704 | 1.2+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.4− | | |
| 2002 09 13 | 704 | 0.8− | 1.2+ | 2003 12 19 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.2− | | |
| 2002 09 27 | 704 | 0.6+ | 0.8− | 2004 01 30 | 704 | 1.4+ | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.3− | | |
| 2002 09 27 | 704 | (1.6+ | 1.2−) | 2004 01 30 | 704 | 0.2− | 1.4− | 2006 10 23 | 644 | 0.2+ | 0.2− | | |
| 2002 09 27 | 704 | (1.7+ | 0.9−) | 2004 01 30 | 704 | (0.4+ | 1.6−) | 2006 10 23 | 644 | 0.1+ | 0.2− | | |
| 2002 10 01 | 608 | 0.9− | 1.4+ | 2004 03 28 | 704 | 1.3− | 1.1− | 2006 11 09 | E12 | 1.0+ | 0.4− | | |
| 2002 10 01 | 608 | 1.2− | 1.5+ | 2004 03 28 | 704 | (2.5− | 0.6+) | 2006 11 09 | E12 | 0.2+ | 0.1− | | |
| 2002 10 01 | 608 | 1.0− | 0.6+ | 2004 03 28 | 704 | 0.9− | 0.5− | 2006 11 09 | E12 | 0.6− | 0.1+ | | |
| 2002 10 08 | 644 | 0.6− | 0.2− | 2004 03 28 | 704 | (1.6− | 0.7+) | 2006 11 09 | E12 | 0.2+ | 0.4− | | |
| 2002 10 08 | 644 | 0.6− | 0.2− | 2004 04 14 | 704 | 1.4+ | 1.4+ | 2006 11 13 | 644 | 0.3+ | 0.3− | | |
| 2002 10 08 | 644 | 0.6− | 0.1− | 2004 04 14 | 704 | (0.2− | 1.6+) | 2006 11 13 | 644 | 0.3+ | 0.3− | | |
| 2002 10 16 | 644 | 0.0 | 0.3− | 2004 04 14 | 704 | 1.4+ | 0.8+ | 2006 11 13 | 644 | 0.6+ | 0.3− | | |
| 2002 10 16 | 644 | 0.2− | 0.0 | 2004 04 14 | 704 | 0.1+ | 1.2+ | 2006 11 27 | 703 | 0.0 | 0.1+ | | |
| 2002 10 16 | 644 | 0.1− | 0.2− | 2004 04 14 | 704 | 0.5+ | 0.7+ | 2006 11 27 | 703 | 0.1− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 23 | 644 | 0.4+ | 0.6+ | 2004 04 14 | 703 | 0.1+ | 0.6+ | 2006 11 27 | 703 | 0.5+ | 1.1− |
| 2002 10 23 | 644 | 0.1− | 0.8+ | 2004 04 14 | 703 | 0.6− | 0.2− | 2006 11 27 | 703 | 0.6− | 0.3− |

**(142883)∗ 2002 VQ$_{41}$ = 2005 JG$_{95}$**

Discovered 2002 Nov. 5 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75784)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.39737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21524137 | $\omega$ | 100.33897 | | +0.77642436 | | +0.62796001 |
| $a$ | 2.7575214 | $\Omega$ | 220.78993 | | −0.60538754 | | +0.71971521 |
| $e$ | 0.0640256 | $i$ | 4.67201 | | −0.17513177 | | +0.29610175 |
| $P$ | 4.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | 0.3+ | 0.2+ | 2005 05 12 | 691 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 1.1− |
| 2002 11 03 | 608 | 0.3+ | 0.3+ | 2005 05 12 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 1.2− | 0.7− |
| 2002 11 03 | 608 | 0.4+ | 0.6+ | 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.1− | 0.2− |
| 2002 11 05 | 644 | 0.4− | 0.3+ | 2005 05 13 | G96 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.5− |
| 2002 11 05 | 644 | 0.2− | 0.4+ | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.1− |
| 2002 11 05 | 644 | 0.2− | 0.5+ | 2005 05 13 | G96 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 1.0− | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 09 01 | 704 | 0.4+ | 1.0− |
| 2002 11 06 | 704 | 0.1− | 0.5+ | 2005 05 14 | 704 | 0.3+ | 1.2+ | 2006 09 01 | 704 | 0.6− | 0.8+ |
| 2002 11 06 | 704 | 0.6− | 0.4− | 2005 05 14 | 704 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.2+ | 0.7+ |
| 2002 12 02 | 704 | 0.3+ | 0.7+ | 2005 05 14 | 704 | 1.3+ | 0.3− | 2006 09 01 | 704 | 0.8+ | 1.5− |
| 2002 12 02 | 704 | 0.3+ | 0.3+ | 2005 05 14 | 704 | 0.4+ | 0.5+ | 2006 09 11 | 703 | 0.4− | 0.2− |
| 2002 12 02 | 704 | 0.4+ | 0.4+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 09 11 | 703 | 1.2− | 0.5+ |
| 2002 12 10 | 644 | 0.2− | 0.7+ | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.1+ | 0.6− |
| 2002 12 10 | 644 | 0.2− | 0.7+ | 2005 05 19 | 644 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.0 | 0.9+ |
| 2002 12 10 | 644 | 0.2− | 0.9+ | 2005 06 12 | G96 | 0.7− | 0.0 | 2006 09 17 | 703 | (3.5− | 1.6+) |
| 2004 01 23 | 704 | 1.2+ | 0.0 | 2005 06 12 | G96 | 0.6− | 0.1+ | 2006 09 17 | 703 | (0.5+ | 4.9+) |
| 2004 01 23 | 704 | 0.1+ | 0.5+ | 2005 06 12 | G96 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.6+ |
| 2004 01 23 | 704 | 0.8− | 0.9+ | 2005 06 12 | G96 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.1− | 0.2+ |
| 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 08 15 | 644 | 0.6− | 0.3+ | 2006 09 30 | 699 | 1.2+ | 0.8+ |
| 2005 04 11 | G96 | 0.3− | 0.1− | 2006 08 15 | 644 | 0.4+ | 0.3+ | 2006 09 30 | 699 | 0.6− | 0.5+ |
| 2005 04 11 | G96 | 0.1+ | 0.2− | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 09 30 | 699 | 0.6− | 0.1+ |
| 2005 04 11 | G96 | 0.2+ | 0.1− | 2006 08 27 | 699 | 0.6+ | 0.1− | 2006 09 30 | 699 | 0.2− | 0.5− |
| 2005 05 07 | G96 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.5− | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.6+ |
| 2005 05 07 | G96 | 0.0 | 0.0 | 2006 08 27 | 699 | 0.5+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2005 05 07 | G96 | 0.3− | 0.0 | 2006 08 29 | 703 | (1.6+ | 1.0−) | 2006 10 10 | 644 | 0.4+ | 0.3+ |
| 2005 05 07 | G96 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.4+ | | | | |

**(142884)∗ 2002 VC$_{42}$**

Discovered 2002 Nov. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.69827 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29430618 | $\omega$ | 104.15101 | | −0.87219378 | | +0.47524566 |
| $a$ | 2.2383936 | $\Omega$ | 104.33504 | | −0.48212546 | | −0.79517635 |
| $e$ | 0.0374401 | $i$ | 6.86703 | | −0.08266226 | | −0.37661139 |
| $P$ | 3.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.2+ | 0.8− | 2004 03 28 | 683 | 0.4− | 0.9+ | 2005 09 03 | 703 | 0.6− | 1.0− |
| 1999 12 08 | 704 | 0.6− | 0.2− | 2004 03 28 | 683 | (1.8− | 1.9+) | 2005 09 03 | 703 | 1.0− | 1.1+ |
| 1999 12 08 | 704 | 0.1+ | 0.9− | 2004 03 28 | 683 | (0.1− | 2.1+) | 2005 09 03 | 703 | 0.8+ | 0.2− |
| 1999 12 08 | 704 | 0.6− | 0.5+ | 2004 03 29 | 683 | 0.7+ | 1.2+ | 2005 09 13 | 703 | 0.3− | 0.9+ |
| 2002 11 05 | 644 | 0.1+ | 0.4+ | 2004 03 29 | 703 | 0.6+ | 0.1− | 2005 09 13 | 703 | 0.6+ | 0.5+ |
| 2002 11 05 | 644 | 0.5− | 0.3− | 2004 03 29 | 683 | 0.6+ | 1.3+ | 2005 09 13 | 703 | 0.6− | 0.1+ |
| 2002 11 05 | 644 | 0.2+ | 0.5+ | 2004 03 29 | 703 | 0.5+ | 0.3+ | 2005 09 13 | 703 | 0.3− | 0.3+ |
| 2002 11 06 | 699 | 0.0 | 0.3− | 2004 03 29 | 683 | 1.0+ | 0.1+ | 2005 09 23 | 703 | 0.1− | 0.1+ |
| 2002 11 06 | 699 | 0.6− | 0.3− | 2004 03 29 | 703 | 0.6+ | 0.0 | 2005 09 23 | 703 | 0.8− | 0.2+ |
| 2002 11 06 | 699 | 0.3− | 0.2− | 2004 03 29 | 703 | 0.1− | 0.8+ | 2005 09 23 | 703 | 0.9− | 0.5− |
| 2002 11 06 | 699 | 0.1− | 0.3+ | 2004 04 09 | E12 | 0.5− | 0.3+ | 2005 09 23 | 703 | 0.1+ | 0.2+ |
| 2002 11 11 | 704 | 0.8+ | 0.6+ | 2004 04 09 | E12 | 0.8− | 0.6+ | 2005 09 27 | 704 | 0.8− | 1.0+ |
| 2002 11 11 | 704 | 0.4+ | 0.4+ | 2004 04 09 | E12 | 0.6− | 0.2+ | 2005 09 27 | 704 | (0.8+ | 1.7+) |
| 2002 11 11 | 704 | 0.4+ | 0.5+ | 2004 04 09 | E12 | 1.4− | 0.2− | 2005 09 27 | 704 | 0.4− | 0.0 |
| 2002 11 11 | 704 | 0.2+ | 0.4+ | 2004 04 15 | 644 | 0.1+ | 0.3+ | 2005 09 27 | 704 | (1.5− | 1.4+) |
| 2002 11 11 | 704 | 0.1− | 0.6+ | 2004 04 15 | 644 | 0.3+ | 0.3+ | 2005 10 05 | 703 | 0.8+ | 0.5+ |
| 2002 11 11 | 644 | 0.4+ | 0.6+ | 2004 04 15 | 644 | 0.3+ | 0.4+ | 2005 10 05 | 703 | 0.6− | 1.4+ |
| 2002 11 11 | 644 | 0.0 | 0.6+ | 2004 04 22 | 703 | 0.4+ | 0.1+ | 2005 10 05 | 703 | 0.6+ | 0.9+ |
| 2002 11 11 | 644 | 0.1+ | 0.6+ | 2004 04 22 | 703 | 0.4+ | 0.9+ | 2005 10 05 | 703 | 0.4+ | 0.1+ |
| 2002 11 22 | 644 | 0.2− | 0.3+ | 2004 04 22 | 703 | (1.6+ | 1.9+) | 2006 09 28 | G96 | 0.3+ | 0.5− |
| 2002 11 22 | 644 | 0.1+ | 0.6+ | 2004 04 22 | 703 | 0.7+ | 0.6− | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2002 11 22 | 644 | 0.2+ | 0.0 | 2004 04 25 | 699 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2002 12 01 | 704 | 0.0 | 0.5− | 2004 04 25 | 699 | 0.3+ | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 12 01 | 704 | 0.1− | 0.7+ | 2004 04 25 | 699 | 0.4− | 0.5+ | 2006 10 12 | 291 | 0.4− | 0.5+ |
| 2002 12 01 | 704 | 0.9− | 0.5+ | 2004 04 25 | 699 | 0.0 | 0.3+ | 2006 10 12 | 291 | 0.4+ | 0.0 |
| 2002 12 01 | 704 | 0.7− | 0.6− | 2004 05 09 | 703 | 0.2+ | 0.6+ | 2006 10 12 | 291 | 0.3− | 0.5+ |
| 2002 12 07 | 704 | 0.1+ | 0.5+ | 2004 05 09 | 703 | (0.5− | 1.7+) | 2006 10 12 | 291 | 0.2− | 0.5+ |
| 2002 12 07 | 704 | 0.2+ | 0.1− | 2004 05 09 | 703 | 0.4+ | 0.7+ | 2006 10 12 | 291 | 0.7− | 0.1+ |
| 2002 12 07 | 704 | 0.3+ | 0.0 | 2004 05 09 | 703 | 0.5− | 0.5+ | 2006 10 12 | 291 | 0.6− | 0.4+ |
| 2002 12 07 | 704 | 0.0 | 0.6− | 2004 06 09 | E12 | 0.7+ | 0.3+ | 2006 10 22 | 691 | 0.4+ | 0.5− |
| 2004 03 16 | 704 | 0.3+ | 0.1− | 2004 06 09 | E12 | 0.6+ | 1.4− | 2006 10 22 | 691 | 0.6+ | 0.3− |
| 2004 03 16 | 704 | 1.0+ | 1.3+ | 2004 06 09 | E12 | 0.8− | 0.6− | 2006 10 22 | 691 | 1.0+ | 0.3− |
| 2004 03 16 | 704 | 0.1+ | 0.4+ | 2004 06 09 | E12 | 1.2− | 0.1+ | | | | |
| 2004 03 16 | 704 | 1.0+ | 1.0− | 2005 09 03 | 703 | 0.8− | 0.6+ | | | | |

**(142885)∗ 2002 VT$_{42}$ = 1999 XM$_{228}$**

Discovered 2002 Nov. 3 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 41195)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.74963 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28327565 | $\omega$ | 102.04175 | | −0.97561567 | | +0.19663502 |
| $a$ | 2.2961304 | $\Omega$ | 89.35661 | | −0.21930662 | | −0.89128345 |
| $e$ | 0.0541925 | $i$ | 5.59632 | | +0.00886984 | | −0.40859330 |
| $P$ | 3.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 691 | 0.4− | 0.5− | 2004 03 16 | 704 | 0.6+ | 0.1+ | 2004 04 22 | 683 | 0.2+ | 0.8+ |
| 1999 12 14 | 691 | 0.2− | 0.5− | 2004 03 16 | 704 | (1.6− | 0.7+) | 2004 04 22 | 683 | (2.4+ | 1.2−) |
| 1999 12 14 | 691 | 0.4− | 0.8− | 2004 03 20 | 704 | 0.2+ | 1.0+ | 2004 04 22 | 683 | 1.1+ | 0.1− |
| 1999 12 18 | 691 | 0.2+ | 0.1− | 2004 03 20 | 704 | 0.1+ | 0.4+ | 2004 04 23 | 704 | 1.2+ | 0.4+ |
| 1999 12 18 | 691 | 0.0 | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.8+ | 2004 04 23 | 704 | 0.0 | 1.1+ |
| 1999 12 18 | 691 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.2− | 2004 04 23 | 704 | 0.1− | 0.3− |
| 2002 10 09 | 704 | (0.5− | 1.7+) | 2004 03 22 | 699 | 0.1+ | 0.3− | 2004 04 25 | 683 | 1.3+ | 1.3+ |
| 2002 10 09 | 704 | 0.2+ | 0.7+ | 2004 03 22 | 699 | 0.8− | 0.4− | 2004 04 25 | 683 | 0.2− | 0.7+ |
| 2002 10 09 | 704 | 0.4− | 1.2+ | 2004 03 22 | 704 | 0.2− | 0.4− | 2004 04 25 | 683 | 1.3+ | 1.4+ |
| 2002 10 30 | 644 | 0.1+ | 0.7+ | 2004 03 22 | 704 | 0.3− | 0.1− | 2004 04 25 | 699 | 0.3− | 0.3− |
| 2002 10 30 | 644 | 1.1+ | 1.1+ | 2004 03 22 | 699 | 0.2− | 0.6+ | 2004 04 25 | 699 | 0.2+ | 1.3+ |
| 2002 10 30 | 644 | 0.1− | 0.6+ | 2004 03 22 | 704 | 0.5+ | 0.2+ | 2004 04 25 | 699 | 0.9− | 0.2+ |
| 2002 11 03 | 608 | 0.4+ | 0.5+ | 2004 03 22 | 704 | 0.0 | 0.4+ | 2004 04 25 | 699 | 0.0 | 0.6− |
| 2002 11 03 | 608 | 0.2+ | 1.1+ | 2004 03 22 | 699 | 1.1− | 0.3+ | 2004 04 28 | 704 | 0.7+ | 0.0 |
| 2002 11 03 | 608 | 1.2− | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.0 | 2004 04 28 | 704 | 1.1+ | 0.2− |
| 2002 11 07 | 704 | 0.1− | 1.4+ | 2004 03 23 | 704 | 0.1+ | 0.3− | 2004 04 28 | 704 | (2.7+ | 0.9+) |
| 2002 11 07 | 704 | (1.1+ | 1.6+) | 2004 03 23 | 704 | 0.3+ | 0.1− | 2004 05 10 | 683 | 0.2+ | 1.1+ |
| 2002 11 07 | 704 | (0.1+ | 1.6+) | 2004 03 23 | 704 | 0.0 | 0.3+ | 2004 05 10 | 683 | 1.2+ | 1.1− |
| 2002 11 07 | 704 | (0.2+ | 1.6+) | 2004 03 23 | 704 | 0.1+ | 0.5− | 2004 05 10 | 683 | (1.7+ | 1.2+) |
| 2002 11 11 | 704 | 0.8− | 1.2+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2004 05 12 | 683 | 0.5+ | 0.6+ |
| 2002 11 11 | 704 | (0.9− | 1.6+) | 2004 03 29 | 703 | 0.7− | 0.2+ | 2004 05 12 | 683 | (0.4− | 1.9−) |
| 2002 11 11 | 704 | 0.4− | 1.4+ | 2004 03 29 | 703 | 0.4+ | 0.2+ | 2004 05 12 | 683 | (0.1+ | 2.2−) |
| 2002 11 11 | 704 | (0.8− | 1.7+) | 2004 03 29 | 703 | 0.6+ | 0.6− | 2004 05 13 | 683 | 0.3− | 1.2− |
| 2002 11 11 | 704 | 0.3− | 1.1+ | 2004 03 29 | 703 | 0.6− | 0.7+ | 2004 05 13 | 683 | 0.1+ | 1.2− |
| 2002 11 12 | 644 | 0.2− | 0.6+ | 2004 04 13 | 683 | 0.2+ | 0.1+ | 2004 05 13 | 683 | (0.8− | 3.3−) |
| 2002 11 12 | 644 | 0.3− | 0.6+ | 2004 04 13 | 683 | 1.0− | 0.9+ | 2004 05 24 | 699 | 0.8+ | 0.4+ |
| 2002 11 12 | 644 | 0.0 | 0.6+ | 2004 04 13 | 683 | 0.7− | 0.4+ | 2004 05 24 | 699 | 0.5+ | 0.8+ |
| 2002 11 22 | 644 | 0.0 | 1.0+ | 2004 04 16 | 683 | 0.9+ | 1.0− | 2004 05 24 | 699 | 1.1− | 0.1+ |
| 2002 11 22 | 644 | 0.3− | 0.8+ | 2004 04 16 | 683 | 0.0 | 0.1− | 2004 05 24 | 699 | 0.2− | 0.3+ |
| 2002 11 22 | 644 | 0.1+ | 0.7+ | 2004 04 16 | 683 | 1.4− | 1.4− | 2005 08 27 | 644 | 0.8− | 0.0 |
| 2002 12 01 | 608 | 0.0 | 0.4− | 2004 04 18 | 683 | 0.6+ | 1.2+ | 2005 08 27 | 644 | 0.6− | 0.2− |
| 2002 12 01 | 608 | 0.3− | 0.1+ | 2004 04 18 | 683 | 0.6+ | 0.3− | 2005 08 27 | 644 | 0.4− | 0.0 |
| 2002 12 01 | 608 | 0.3− | 0.1− | 2004 04 18 | 683 | 1.3− | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2002 12 11 | 704 | (1.3− | 1.7+) | 2004 04 19 | 683 | 1.0+ | 1.4− | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 1.3− | 0.6+ | 2004 04 19 | 683 | 0.6+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | (1.9− | 0.2−) | 2004 04 19 | 683 | 0.9− | 1.0+ | 2006 09 28 | G96 | 0.6+ | 0.1− | | |
| 2004 03 13 | 644 | 0.1− | 0.3+ | 2004 04 20 | 683 | (1.4+ | 1.7−) | 2006 11 16 | G96 | 0.4− | 0.0 | | |
| 2004 03 13 | 644 | 0.0 | 0.2+ | 2004 04 20 | 683 | (1.7+ | 0.0 ) | 2006 11 16 | G96 | 0.3+ | 0.6− | | |
| 2004 03 13 | 644 | 0.1− | 0.3+ | 2004 04 20 | 683 | (1.8+ | 1.1+) | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2004 03 16 | 704 | 0.1+ | 0.5− | 2004 04 21 | 683 | 0.2+ | 1.4+ | 2006 11 16 | G96 | 0.3− | 0.6− | | |
| 2004 03 16 | 704 | 0.5+ | 0.4+ | 2004 04 21 | 683 | (2.4− | 2.6+) | | | | | | |
| 2004 03 16 | 704 | 0.8+ | 0.1− | 2004 04 21 | 683 | 0.8− | 1.1+ | | | | | | |

**(142886)∗ 2002 VG$_{43}$**

Discovered 2002 Nov. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.30287 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23290624 | $\omega$ | 16.33338 | | −0.19747314 | −0.97212174 | |
| $a$ | 2.6162664 | $\Omega$ | 85.18824 | | +0.88462658 | −0.23228330 | |
| $e$ | 0.1181126 | $i$ | 7.28897 | | +0.42242179 | +0.03199658 | |
| $P$ | 4.23 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.3+ | 0.3− | 2004 03 15 | 704 | 0.6− | 0.1+ | 2004 05 27 | 291 | 0.4− | 0.3+ | | |
| 1998 12 17 | 704 | 1.4+ | 0.6− | 2004 03 15 | 704 | 0.4− | 0.4+ | 2004 05 27 | 291 | 0.4− | 0.3+ | | |
| 1998 12 17 | 704 | (0.1+ | 2.9−) | 2004 03 15 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.2+ | | |
| 1998 12 17 | 704 | 0.4+ | 1.9− | 2004 03 15 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 703 | 0.1− | 0.6+ | | |
| 1998 12 17 | 704 | (4.8− | 0.8−) | 2004 03 15 | 704 | 0.4+ | 1.0+ | 2006 09 18 | 703 | 0.7+ | 0.0 | | |
| 1998 12 17 | 704 | 0.3+ | 0.6− | 2004 03 23 | 704 | (0.4− | 2.2+) | 2006 09 18 | 703 | 0.2− | 0.5+ | | |
| 1998 12 17 | 704 | 0.4+ | 0.7− | 2004 03 23 | 704 | (0.1− | 1.8+) | 2006 09 21 | 699 | 0.1+ | 0.2− | | |
| 1998 12 17 | 704 | 0.1− | 1.8− | 2004 03 23 | 704 | (0.2− | 1.7+) | 2006 09 21 | 699 | (0.4+ | 1.5+) | | |
| 1998 12 17 | 704 | 1.3− | 1.5− | 2004 03 23 | 704 | (0.6− | 1.8+) | 2006 09 21 | 699 | 1.1+ | 0.1− | | |
| 2000 04 27 | 699 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.6− | 1.0+ | 2006 09 21 | 699 | 0.5− | 0.8+ | | |
| 2000 04 27 | 699 | 1.0− | 0.6− | 2004 03 25 | 704 | 1.1+ | 1.2+ | 2006 09 25 | 699 | (0.3+ | 1.6+) | | |
| 2000 04 27 | 699 | 0.3+ | 0.4+ | 2004 03 25 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 699 | 0.7− | 1.2+ | | |
| 2000 04 27 | 699 | 0.6+ | 0.2− | 2004 03 25 | 704 | 0.8+ | 1.3+ | 2006 09 25 | 699 | 0.1+ | 0.3+ | | |
| 2001 07 20 | 644 | 0.3− | 0.8+ | 2004 03 25 | 704 | 0.6+ | 0.2+ | 2006 09 25 | 699 | 1.0+ | 0.7+ | | |
| 2001 07 20 | 644 | 0.8− | 0.4+ | 2004 03 26 | 704 | 0.8+ | 0.5+ | 2006 09 29 | 699 | (1.1+ | 1.6+) | | |
| 2001 07 20 | 644 | 0.4− | 0.1+ | 2004 03 26 | 704 | 1.2+ | 0.9+ | 2006 09 29 | 699 | 0.5− | 0.9+ | | |
| 2002 11 04 | 644 | 0.0 | 0.5+ | 2004 03 26 | 704 | 1.3+ | 0.4+ | 2006 09 29 | 699 | 0.4− | 0.5+ | | |
| 2002 11 04 | 644 | 0.2− | 0.5+ | 2004 03 26 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 699 | 0.1− | 1.1+ | | |
| 2002 11 04 | 644 | 0.1− | 0.6+ | 2004 03 26 | 704 | 0.6+ | 1.3+ | 2006 10 16 | 703 | (0.4− | 1.6+) | | |
| 2002 11 07 | 704 | 0.3− | 0.5+ | 2004 03 28 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3− | | |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 0.8+ | 0.8+ | 2006 10 16 | 703 | 0.8+ | 0.5− | | |
| 2002 11 07 | 704 | 0.6− | 0.1+ | 2004 03 28 | 704 | 0.1+ | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.3+ | | |
| 2002 11 07 | 704 | 1.0+ | 0.2+ | 2004 03 28 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.9+ | | |
| 2002 11 07 | 704 | 0.6− | 0.8+ | 2004 03 28 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 2002 11 11 | 704 | 0.5− | 0.2+ | 2004 03 28 | 703 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.6+ | | |
| 2002 11 11 | 704 | 0.1− | 0.2+ | 2004 03 28 | 703 | 0.6+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.7+ | | |
| 2002 11 11 | 704 | 0.2+ | 0.5+ | 2004 03 28 | 703 | 1.0+ | 1.5+ | 2006 10 21 | 644 | 0.2− | 0.6+ | | |
| 2002 11 11 | 704 | 0.9− | 0.2− | 2004 03 28 | 703 | 0.4+ | 1.3+ | 2006 10 21 | 644 | 0.5− | 0.7+ | | |
| 2002 11 11 | 704 | 0.3− | 0.0 | 2004 03 29 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 703 | 0.9− | 0.8+ | | |
| 2002 11 11 | 644 | 0.3− | 1.1+ | 2004 03 29 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.3+ | | |
| 2002 11 11 | 644 | 0.5− | 0.7+ | 2004 03 29 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 703 | 0.2− | 0.2+ | | |
| 2002 11 11 | 644 | 0.1− | 0.7+ | 2004 03 29 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 1.9− | 0.9+ | | |
| 2002 11 22 | 644 | 0.0 | 0.6+ | 2004 03 29 | 704 | 1.1+ | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.6+ | | |
| 2002 11 22 | 644 | 0.0 | 0.4+ | 2004 03 30 | 704 | (1.0+ | 2.2+) | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 11 22 | 644 | 0.0 | 0.6+ | 2004 03 30 | 704 | 0.3− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.4+ | | |
| 2002 12 01 | 704 | 0.3− | 0.3+ | 2004 03 30 | 704 | 1.0− | 0.2+ | 2006 10 23 | 644 | 0.5− | 0.4+ | | |
| 2002 12 01 | 704 | 0.4− | 0.2− | 2004 03 30 | 704 | 0.6+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2002 12 01 | 704 | 0.8− | 0.3− | 2004 04 15 | 704 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.3− | 0.4+ | | |
| 2002 12 01 | 704 | 0.2+ | 0.2+ | 2004 04 15 | 704 | 0.4+ | 0.9+ | 2006 10 28 | 703 | 0.5− | 1.0+ | | |
| 2002 12 01 | 704 | 0.5+ | 0.3− | 2004 04 15 | 704 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.1+ | | |
| 2004 03 12 | 644 | 0.0 | 0.3+ | 2004 04 15 | 704 | 0.3+ | 0.9− | 2006 10 28 | 703 | 0.0 | 0.3+ | | |
| 2004 03 12 | 644 | 0.1− | 0.4+ | 2004 04 15 | 704 | 0.6+ | 0.2− | 2006 10 28 | 703 | 0.5− | 0.5+ | | |
| 2004 03 12 | 644 | 0.0 | 0.1+ | 2004 05 27 | 291 | 0.4− | 0.1+ | | | | | | |

**(142887)∗ 2002 VH$_{43}$**

Discovered 2002 Nov. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.82943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24141048 | $\omega$ | 247.31716 | | +0.68686851 | −0.72584933 | |
| $a$ | 2.5544572 | $\Omega$ | 159.16111 | | +0.69900156 | +0.64590017 | |
| $e$ | 0.0977714 | $i$ | 5.93801 | | +0.19901879 | +0.23654961 | |
| $P$ | 4.08 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.4− | 0.4− | 2004 03 15 | 704 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.5− | 0.0 | | |
| 1996 03 26 | 691 | 0.1− | 0.3− | 2004 03 15 | 703 | 0.8− | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.0 | | |
| 1996 03 26 | 691 | 0.0 | 0.5− | 2004 03 15 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.2− | | |
| 2000 02 12 | 645 | 0.1− | 0.3− | 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.1− | | |
| 2000 02 12 | 645 | 0.0 | 0.3− | 2004 03 15 | 704 | 0.1− | 0.9+ | 2006 09 30 | 703 | 0.8+ | 0.4+ | | |
| 2002 10 08 | 699 | 0.5− | 0.1+ | 2004 03 15 | 703 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.2+ | 1.3− | | |
| 2002 10 08 | 699 | 0.3− | 0.6+ | 2004 03 15 | 704 | 0.0 | 1.0− | 2006 10 16 | 703 | 0.3+ | 0.6− | | |
| 2002 10 08 | 699 | 0.0 | 0.3+ | 2004 03 18 | 704 | 1.0+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.6+ | | |
| 2002 10 08 | 699 | 0.5− | 0.7+ | 2004 03 18 | 704 | (1.2+ | 1.8+) | 2006 10 16 | 703 | 0.0 | 0.3− | | |
| 2002 11 04 | 644 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 10 22 | 704 | (0.8− | 1.7+) | | |
| 2002 11 04 | 644 | 0.3+ | 0.0 | 2004 03 18 | 704 | (1.5+ | 0.1+) | 2006 10 22 | 704 | 1.1− | 1.3+ | | |
| 2002 11 04 | 644 | 1.4+ | 0.6− | 2004 03 18 | 704 | 0.6+ | 0.3− | 2006 10 22 | 704 | (0.8− | 1.9+) | | |
| 2002 11 07 | 704 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.4− | 2006 10 22 | 703 | 1.4− | 0.5+ | | |
| 2002 11 07 | 704 | (2.4− | 0.6−) | 2004 03 18 | 704 | 0.6+ | 0.8− | 2006 10 22 | 703 | 0.5− | 0.2+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.6+ | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.2− | | |
| 2002 11 07 | 704 | 0.5+ | 1.0− | 2004 03 19 | 704 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.2+ | | |
| 2002 11 07 | 704 | (0.1+ | 1.6+) | 2004 03 19 | 704 | 0.3+ | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.5+ | | |
| 2002 11 11 | 704 | 0.2− | 1.0− | 2004 03 19 | 704 | (0.4+ | 1.6−) | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2002 11 11 | 704 | 0.7− | 1.0− | 2004 03 19 | 704 | (0.8− | 1.8+) | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2002 11 11 | 704 | 1.0− | 0.5− | 2004 03 22 | 704 | 0.0 | 0.7+ | 2006 11 13 | 703 | 0.0 | 0.6− | | |
| 2002 12 07 | 704 | 0.4+ | 0.1+ | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.2− | | |
| 2002 12 07 | 704 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.6+ | 0.4− | | |
| 2002 12 07 | 704 | 0.8+ | 0.7+ | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.9+ | 0.2+ | | |
| 2004 02 13 | 291 | 0.1− | 0.4+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.5+ | | |
| 2004 02 13 | 291 | 0.3− | 0.3+ | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.1− | 1.1− | | |
| 2004 02 13 | 291 | 0.4− | 0.3+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.8− | 0.9+ | | |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 703 | (0.4− | 2.2−) | | |
| 2004 03 15 | 703 | 0.2+ | 0.1− | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2004 03 15 | 704 | (1.6+ | 0.1+) | 2006 09 30 | 703 | (2.1+ | 0.8+) | 2006 11 24 | G96 | 0.3+ | 0.3− | | |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 1.1+ | 1.2+ | 2006 11 24 | G96 | 0.4+ | 0.2− | | |
| 2004 03 15 | 703 | 0.2+ | 0.6+ | 2006 09 30 | 703 | (1.1− | 3.0+) | 2006 11 24 | G96 | 0.4+ | 0.2− | | |

**(142888)∗ 2002 VO$_{43}$**

Discovered 2002 Nov. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.18123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22026913 | $\omega$ | 285.96907 | | +0.98842147 | −0.07410387 | |
| $a$ | 2.7153988 | $\Omega$ | 78.42276 | | +0.12356989 | +0.89953223 | |
| $e$ | 0.0966355 | $i$ | 7.76769 | | −0.08805386 | +0.43052339 | |
| $P$ | 4.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.0 | 0.1− | 2002 11 22 | 644 | 0.0 | 0.4+ | 2005 06 16 | G96 | 0.6+ | 0.4+ | | |
| 2002 10 09 | 704 | 0.9− | 0.4− | 2002 12 07 | 704 | 0.1− | 0.1+ | 2005 06 16 | G96 | 0.6− | 0.1− | | |
| 2002 10 09 | 704 | 0.1+ | 0.3+ | 2002 12 07 | 704 | 0.1− | 0.4+ | 2005 06 16 | G96 | 0.2− | 0.4+ | | |
| 2002 10 09 | 704 | 0.7− | 0.5− | 2002 12 07 | 704 | 0.7+ | 0.2+ | 2005 06 16 | G96 | 0.4− | 0.1− | | |
| 2002 10 09 | 704 | 1.0+ | 1.3− | 2002 12 07 | 704 | 0.8− | 1.2+ | 2006 08 15 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 30 | 644 | 0.3+ | 0.6− | 2002 12 07 | 704 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.0 | 0.1− | | |
| 2002 10 30 | 644 | 0.1+ | 0.2− | 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.1+ | | |
| 2002 10 30 | 644 | 0.3+ | 0.7− | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.3+ | | |
| 2002 11 04 | 644 | 0.0 | 0.3+ | 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.2+ | 0.4+ | | |
| 2002 11 04 | 644 | 0.0 | 0.3+ | 2004 03 23 | 704 | 1.6+ | 0.3+ | 2006 08 23 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 04 | 644 | 0.0 | 0.5+ | 2004 03 23 | 704 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.9− | 1.1+ | | |
| 2002 11 07 | 704 | 0.7− | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 08 30 | 699 | 0.0 | 0.4− | | |
| 2002 11 07 | 704 | 1.0− | 1.2+ | 2004 03 23 | 704 | 0.9+ | 0.7− | 2006 08 30 | 699 | 0.1+ | 0.6+ | | |
| 2002 11 07 | 704 | 0.1− | 1.5+ | 2005 05 14 | 644 | 0.3+ | 0.0 | 2006 08 30 | 699 | 0.9− | 0.5+ | | |
| 2002 11 07 | 704 | 0.5− | 0.8+ | 2005 05 14 | 644 | 0.3+ | 0.2+ | 2006 09 17 | 699 | 1.0+ | 0.5− | | |
| 2002 11 07 | 704 | 0.5− | 0.9+ | 2005 05 14 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 699 | 0.5+ | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.2− | 0.4+ | 2005 05 14 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 699 | 0.1+ | 1.0+ |
| 2002 11 11 | 704 | 0.3+ | 0.6+ | 2005 05 14 | 644 | 0.3+ | 0.0 | 2006 09 17 | 699 | 0.7+ | 1.1+ |
| 2002 11 11 | 704 | 0.5− | 0.2− | 2005 05 14 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.5+ | 0.1− |
| 2002 11 11 | 704 | 0.4− | 0.1+ | 2005 06 04 | 691 | 0.6+ | 0.7+ | 2006 09 20 | 703 | 0.5+ | 0.0 |
| 2002 11 11 | 704 | 0.0 | 0.0 | 2005 06 04 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 703 | 0.4− | 0.8− |
| 2002 11 14 | 644 | 0.2− | 0.7+ | 2005 06 04 | 691 | 0.2+ | 0.7+ | 2006 09 20 | 703 | 0.3− | 0.0 |
| 2002 11 14 | 644 | 0.1− | 0.7+ | 2005 06 04 | 703 | 0.3− | 0.2− | 2006 09 26 | 703 | 1.2− | 0.0 |
| 2002 11 14 | 644 | 0.0 | 0.6+ | 2005 06 04 | 703 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.2− |
| 2002 11 22 | 644 | 0.1+ | 0.4+ | 2005 06 04 | 703 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.1− |
| 2002 11 22 | 644 | 0.0 | 0.4+ | 2005 06 04 | 703 | 0.2− | 0.6− | 2006 09 26 | 703 | 0.2− | 1.3− |

**(142889)∗ 2002 VC$_{45}$ = 2004 EV$_{10}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. ?. Foglia (*MPO* 61564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.56638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22215055 | $\omega$ | 79.32946 | | −0.26691769 | −0.96291306 | |
| $a$ | 2.7000458 | $\Omega$ | 26.25429 | | +0.84571004 | −0.25364671 | |
| $e$ | 0.1120974 | $i$ | 5.11172 | | +0.46209250 | −0.09198799 | |
| $P$ | 4.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.5− | 0.6− | 2004 03 15 | 703 | 0.5− | 0.6+ | 2006 08 18 | 691 | 0.1− | 0.3+ |
| 1998 12 17 | 704 | 0.4+ | 0.4+ | 2004 03 15 | 703 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.3− | 0.4+ |
| 1998 12 17 | 704 | 1.0− | 1.1− | 2004 03 16 | 704 | 0.4− | 0.4− | 2006 08 27 | 691 | 0.5− | 0.6+ |
| 1998 12 17 | 704 | (0.7− | 2.0−) | 2004 03 16 | 704 | 1.0+ | 0.6− | 2006 08 27 | 691 | 0.4− | 0.4+ |
| 2002 11 05 | 704 | 0.3+ | 0.1− | 2004 03 16 | 704 | 1.2+ | 0.5+ | 2006 09 14 | 644 | 0.4+ | 0.3+ |
| 2002 11 05 | 704 | 0.2+ | 0.7− | 2004 03 16 | 333 | 0.3+ | 0.9+ | 2006 09 14 | 644 | 0.3+ | 0.4+ |
| 2002 11 05 | 704 | 0.2− | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.4+ | 0.1+ |
| 2002 11 05 | 704 | 0.4− | 0.5+ | 2004 03 16 | 704 | 0.3− | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.7+ |
| 2002 11 05 | 704 | 0.4− | 1.0+ | 2004 03 16 | 333 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.3− | 1.2+ |
| 2002 11 07 | 704 | 0.9− | 0.4− | 2004 03 16 | 333 | 0.4+ | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.9+ |
| 2002 11 07 | 704 | 0.0 | 0.6+ | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.9+ |
| 2002 11 07 | 704 | 0.4− | 0.1+ | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.6+ |
| 2002 11 07 | 704 | 0.6− | 0.2+ | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.6+ |
| 2002 11 12 | 704 | 0.7+ | 0.2− | 2004 03 19 | 704 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.5+ |
| 2002 11 12 | 704 | (0.4− | 2.1+) | 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 09 18 | 703 | 0.9− | 0.8− |
| 2002 11 12 | 704 | 0.8+ | 1.4+ | 2004 03 19 | 704 | 0.4− | 1.1+ | 2006 09 19 | 703 | 0.3+ | 0.6+ |
| 2002 11 12 | 704 | 1.4+ | 1.0− | 2004 03 19 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 1.3− | 0.4− |
| 2002 11 14 | 704 | 0.9+ | 0.3− | 2004 03 19 | 704 | 0.3+ | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.5+ |
| 2002 11 14 | 704 | 0.2+ | 0.1− | 2004 03 28 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.2+ | 0.2+ |
| 2002 11 14 | 704 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | (0.3− | 1.7+) |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2004 03 28 | 704 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.6− | 1.4− |
| 2002 12 06 | 704 | 0.4− | 0.8+ | 2004 03 28 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 0.5− | 0.6+ | 2004 03 28 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | (1.0+ | 2.1+) |
| 2002 12 06 | 704 | 0.7− | 1.1+ | 2004 03 29 | 691 | (0.0 | 2.4+) | 2006 10 20 | 644 | 0.5+ | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 1.0+ | 2004 03 29 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2004 02 23 | 704 | 0.5+ | 0.3+ | 2004 03 29 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.7+ |
| 2004 02 23 | 704 | 0.2+ | 0.4− | 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.2+ |
| 2004 02 23 | 704 | 0.4− | 0.4− | 2004 04 25 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | (0.6− | 1.7+) | 2004 04 25 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 0.2+ | 0.4+ | 2006 08 18 | 691 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.2+ |
| 2004 03 15 | 703 | 0.3− | 0.8+ | 2006 08 18 | 691 | 0.3− | 0.3+ | | | | |

**(142890)∗ 2002 VK$_{45}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.19712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22536390 | $\omega$ | 206.42714 | | +0.93240787 | −0.36128015 | |
| $a$ | 2.6743187 | $\Omega$ | 174.72404 | | +0.34731977 | +0.88839913 | |
| $e$ | 0.1151876 | $i$ | 5.99446 | | +0.09992268 | +0.28323776 | |
| $P$ | 4.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 809 | (2.6+ | 1.8−) | 2004 03 20 | 735 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.4− | 0.3+ |
| 1993 10 11 | 809 | (2.0+ | 1.9−) | 2004 03 22 | 735 | 0.7+ | 1.3− | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 1993 10 11 | 809 | (1.4+ | 2.0−) | 2004 03 22 | 735 | 0.5− | 0.7+ | 2006 09 30 | 704 | 1.3+ | 0.1+ |
| 1997 09 26 | 910 | 0.4− | 0.4− | 2004 03 22 | 735 | 1.0− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.3− |
| 1997 09 26 | 910 | 0.1− | 0.6− | 2004 03 23 | 735 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 1997 09 26 | 910 | 0.5− | 0.9− | 2004 03 23 | 735 | (2.0− | 0.3+) | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2000 04 05 | 704 | (0.6+ | 2.2+) | 2004 03 23 | 735 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.9+ | 1.0+ | 2004 03 23 | 735 | (1.8+ | 2.7+) | 2006 09 30 | 704 | 0.9+ | 0.1+ |
| 2000 04 05 | 704 | 0.8+ | 1.9+ | 2004 03 29 | 691 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2000 04 05 | 704 | 0.6+ | 1.8+ | 2004 03 29 | 691 | 0.6+ | 0.6− | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2002 09 08 | 599 | 0.4− | 0.1+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 704 | (0.2− | 1.6+) |
| 2002 09 08 | 599 | 0.2+ | 0.2− | 2005 06 04 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2002 09 08 | 599 | 0.1+ | 0.2+ | 2005 06 04 | 691 | 0.1+ | 0.0 | 2006 09 30 | 704 | (2.0+ | 0.7−) |
| 2002 11 05 | 704 | 0.4− | 0.9+ | 2005 06 04 | 691 | (1.4+ | 3.6−) | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 704 | (0.8+ | 2.9+) | 2005 06 11 | 691 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2002 11 05 | 704 | 0.2− | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2002 11 05 | 704 | (0.0 | 1.9+) | 2005 06 11 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | (3.1+ | 0.2+) |
| 2002 11 07 | 704 | 0.8+ | 1.0+ | 2006 08 28 | 703 | (0.4− | 1.6+) | 2006 10 16 | 703 | 0.3− | 1.2+ |
| 2002 11 07 | 704 | 1.2+ | 0.8+ | 2006 08 28 | 703 | 0.0 | 1.2+ | 2006 10 16 | 703 | 0.2+ | 1.0+ |
| 2002 11 07 | 704 | (1.5+ | 0.0 ) | 2006 08 28 | 703 | (1.5+ | 0.7+) | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 2002 11 11 | 704 | 0.6− | 0.3− | 2006 08 28 | 703 | (2.6+ | 2.7−) | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.3− | 0.1− | 2006 08 28 | 691 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 1.2+ | 1.0− | 2006 08 28 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 11 15 | 644 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2002 11 15 | 644 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2002 11 15 | 644 | 0.3− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2002 11 23 | 644 | 0.3− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2002 11 23 | 644 | 0.1− | 0.4+ | 2006 09 17 | 704 | 1.2− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 11 23 | 644 | 0.6− | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2004 02 17 | 291 | 0.2− | 0.5+ | 2006 09 17 | 704 | 1.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 02 17 | 291 | 0.2− | 0.7+ | 2006 09 17 | 704 | 0.9− | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2004 02 17 | 291 | 0.0 | 0.7+ | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2004 02 26 | 704 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.7− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2004 02 26 | 704 | 0.9− | 0.4− | 2006 09 20 | 704 | 1.2+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.2+ | 0.8+ | 2006 09 27 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2004 02 26 | 704 | 0.0 | 1.0+ | 2006 09 27 | 704 | 0.5− | 1.2+ | 2006 10 23 | 644 | 0.1+ | 0.6− |
| 2004 03 15 | 184 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.8+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2004 03 15 | 184 | 0.0 | 0.4− | 2006 09 27 | 704 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2004 03 15 | 184 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.1+ | 0.9+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2004 03 20 | 735 | 0.9+ | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2004 03 20 | 735 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.3+ | | | | |

**(142891)∗ 2002 VT$_{45}$**

Discovered 2002 Nov. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.50291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24400077 | $\omega$ | 59.34194 | | −0.43035792 | −0.88192381 | |
| $a$ | 2.5363465 | $\Omega$ | 57.37024 | | +0.73015806 | −0.46541357 | |
| $e$ | 0.0401590 | $i$ | 13.20345 | | +0.53071769 | −0.07483721 | |
| $P$ | 4.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.1+ | 0.4− | 2002 11 11 | 704 | (0.3− | 1.7+) | 2006 10 16 | 703 | 0.6− | 0.6− |
| 1998 11 15 | 691 | 0.4+ | 0.1− | 2002 11 11 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.1− |
| 1998 11 15 | 691 | 0.5+ | 0.1− | 2002 11 11 | 704 | (0.2+ | 2.3+) | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 1998 11 23 | 691 | 0.9− | 0.5− | 2002 11 11 | 704 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.8+ | 0.2+ |
| 1998 11 23 | 691 | 0.5− | 0.3− | 2002 11 11 | 704 | (0.1+ | 1.7+) | 2006 11 11 | 703 | 0.8− | 0.1− |
| 1998 11 23 | 691 | 1.1− | 0.1− | 2002 11 11 | 704 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 1998 12 09 | 691 | 0.1+ | 0.5− | 2002 11 11 | 704 | (0.2+ | 2.7+) | 2006 11 14 | 704 | 1.2− | 0.1− |
| 1998 12 09 | 691 | 0.1+ | 0.2+ | 2002 11 11 | 704 | 0.8+ | 0.5− | 2006 11 14 | 704 | 1.1− | 0.0 |
| 1998 12 09 | 691 | 1.9+ | 0.4− | 2002 11 11 | 704 | (0.2− | 2.6+) | 2006 11 14 | 704 | 0.6− | 0.7+ |
| 2000 04 03 | 704 | 0.2− | 0.3+ | 2002 11 12 | 644 | 0.3− | 0.6+ | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 2000 04 03 | 704 | 1.3+ | 0.9+ | 2002 11 12 | 644 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2000 04 03 | 704 | 0.4+ | 0.8+ | 2002 11 12 | 644 | 0.8− | 0.7+ | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2000 04 03 | 704 | 1.3− | 1.4+ | 2002 12 10 | 644 | 0.6− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2002 10 31 | 644 | 0.8+ | 1.4+ | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.5+ | 0.4+ | 2002 12 10 | 644 | 0.1+ | 0.7+ | 2006 11 17 | 704 | 0.7+ | 2.5− |
| 2002 10 31 | 644 | 0.1+ | 0.4+ | 2004 01 28 | 645 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2002 11 03 | 608 | 0.0 | 0.4+ | 2004 01 28 | 645 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.7− | 0.6+ |
| 2002 11 03 | 608 | 0.1+ | 0.3+ | 2004 03 25 | 704 | 1.0+ | 0.7+ | 2006 11 17 | 703 | 1.0− | 1.4− |
| 2002 11 03 | 608 | 0.2+ | 0.7+ | 2004 03 25 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 1.1− | 0.1− |
| 2002 11 05 | 644 | 0.3− | 0.9+ | 2004 03 25 | 704 | 0.5+ | 1.2+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 11 05 | 644 | 0.2− | 0.7+ | 2004 03 25 | 704 | 0.8+ | 0.5+ | 2006 11 17 | 703 | 0.6− | 0.6− |
| 2002 11 05 | 644 | 0.0 | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 1.7+ |
| 2002 11 07 | 704 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.6+ | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 1.0+ | 0.4+ |
| 2002 11 07 | 704 | 1.1+ | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 11 20 | 704 | 0.9− | 1.5+ |
| 2002 11 11 | 704 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.7− | | | | |

**(142892)∗ 2002 VZ$_{45}$ = 2000 EC$_{54}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38136)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 344.27972 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26846648 | $\omega$ | 299.69962 | | −0.18420744 | | −0.98286943 | |
| $a$ | 2.3798121 | $\Omega$ | 160.91258 | | +0.90794359 | | −0.17247411 | |
| $e$ | 0.1588393 | $i$ | 1.04115 | | +0.37643865 | | −0.06496437 | |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.2+ | 0.2− | 2002 11 05 | 704 | 0.1− | 0.4+ | 2002 12 10 | 644 | 0.5+ | 0.4+ |
| 1998 09 25 | 645 | 0.2+ | 0.2− | 2002 11 05 | 704 | 0.2+ | 0.3+ | 2002 12 10 | 644 | 0.1+ | 0.1+ |
| 1998 09 28 | 691 | 0.7− | 0.2+ | 2002 11 05 | 704 | (2.8− | 1.2−) | 2002 12 10 | 644 | 0.4+ | 0.3+ |
| 1998 09 28 | 691 | 0.5− | 0.4+ | 2002 11 05 | 704 | 0.3+ | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.5− |
| 1998 09 28 | 691 | 0.6− | 0.5+ | 2002 11 07 | 704 | 0.5− | 1.4+ | 2006 10 21 | G96 | 0.6+ | 0.6− |
| 2000 03 09 | 691 | 0.1+ | 0.1+ | 2002 11 07 | 704 | 1.0− | 0.3− | 2006 10 21 | G96 | 0.3− | 0.8− |
| 2000 03 09 | 691 | 0.1− | 0.0 | 2002 11 07 | 704 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2000 03 09 | 691 | 0.4+ | 0.0 | 2002 11 07 | 704 | 1.1− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2000 03 11 | 704 | 0.5+ | 1.0+ | 2002 11 07 | 704 | (1.8+ | 0.2−) | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2000 03 11 | 704 | 0.2− | 0.1+ | 2002 11 12 | 704 | (0.1− | 1.7+) | 2006 10 31 | G96 | 1.1− | 0.0 |
| 2000 03 11 | 691 | 0.2− | 0.1+ | 2002 11 12 | 704 | 0.9+ | 0.6+ | 2006 10 31 | G96 | 0.7− | 0.4− |
| 2000 03 11 | 704 | 0.3− | 0.1− | 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2000 03 11 | 691 | 0.2− | 0.3− | 2002 11 12 | 704 | 0.4− | 0.5+ | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2000 03 11 | 691 | 0.7− | 0.3− | 2002 11 13 | 644 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2000 04 05 | 704 | 1.6+ | 0.3− | 2002 11 13 | 644 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2000 04 05 | 704 | 0.6+ | 0.8+ | 2002 11 13 | 644 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2000 04 05 | 704 | 0.4+ | 0.1− | 2002 11 16 | 926 | 0.4+ | 1.4− | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2000 04 05 | 704 | 0.2− | 0.3+ | 2002 11 16 | 926 | 0.9− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2000 04 05 | 704 | 0.5+ | 0.3− | 2002 11 16 | 926 | 0.2− | 0.9+ | 2006 11 27 | G96 | 0.1+ | 0.0 |

**(142893)∗ 2002 VA$_{46}$ = 1999 AZ$_{18}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41196), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 327.22758 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22238598 | $\omega$ | 142.85906 | | +0.84021904 | | −0.54202991 | |
| $a$ | 2.6981398 | $\Omega$ | 249.96968 | | +0.49349643 | | +0.77610174 | |
| $e$ | 0.2136937 | $i$ | 0.93600 | | +0.22470699 | | +0.32228819 | |
| $P$ | 4.43 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 07 | 691 | 0.1− | 0.6+ | 2002 11 07 | 704 | 1.0− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.0 |
| 1997 07 07 | 691 | 0.2+ | 0.6+ | 2002 11 07 | 704 | 0.8− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 1997 07 07 | 691 | 0.4+ | 0.3+ | 2002 11 07 | 704 | 0.8− | 0.5− | 2006 08 28 | 703 | 0.5− | 0.4− |
| 1997 07 11 | 691 | 0.3− | 0.7− | 2002 11 07 | 695 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.6− |
| 1997 07 11 | 691 | 0.5− | 0.4− | 2002 11 14 | 704 | 0.6+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.5+ |
| 1997 07 11 | 691 | 0.2− | 0.0 | 2002 11 14 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 699 | 1.1− | 0.7+ |
| 1997 08 10 | 691 | 0.0 | 0.3+ | 2002 11 14 | 704 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.7− |
| 1997 08 10 | 691 | 0.0 | 0.3+ | 2002 11 14 | 704 | 1.0+ | 1.1− | 2006 08 28 | 699 | 0.9+ | 0.2− |
| 1997 08 10 | 691 | 0.0 | 0.1+ | 2002 11 14 | 704 | 0.1− | 0.7− | 2006 08 28 | 699 | (2.1− | 0.0 ) |
| 1999 01 13 | 691 | 0.6+ | 0.0 | 2002 11 27 | 699 | 0.7− | 0.7+ | 2006 08 28 | 699 | 0.5+ | 1.0− |
| 1999 01 13 | 691 | 0.6+ | 0.1− | 2002 11 27 | 699 | 1.1− | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.5+ |
| 1999 01 13 | 691 | 0.6+ | 0.2+ | 2002 11 27 | 699 | 0.3− | 0.5+ | 2006 09 14 | 703 | 1.1− | 0.8+ |
| 1999 01 14 | 691 | 0.4− | 0.5+ | 2002 11 28 | 699 | 1.1+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.9+ |
| 1999 01 14 | 691 | 0.5− | 0.3+ | 2002 11 28 | 699 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.4+ |
| 1999 01 14 | 691 | 0.7− | 0.0 | 2002 11 28 | 699 | (2.2+ | 0.2−) | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2002 10 30 | 608 | 0.2− | 0.3− | 2002 11 28 | 699 | 0.1− | 1.2− | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2002 10 30 | 608 | 0.3+ | 0.7− | 2002 12 02 | 608 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.0 | 0.5− |
| 2002 10 30 | 608 | 0.1− | 0.6− | 2002 12 02 | 608 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2002 12 02 | 608 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.6− |
| 2002 11 05 | 704 | 0.6+ | 0.1+ | 2006 08 21 | 704 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.7− |
| 2002 11 05 | 704 | 0.2+ | 0.3− | 2006 08 21 | 704 | 0.9+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.3+ | 0.9+ | 2006 08 21 | 704 | 0.0 | 0.7− | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2002 11 07 | 695 | 0.1− | 0.2+ | 2006 08 21 | 704 | 0.3− | 0.0 | | | | |
| 2002 11 07 | 704 | 0.5+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | | | | |

**(142894)∗ 2002 VN$_{46}$**

Discovered 2002 Nov. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 42.77382 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23519905 | $\omega$ | 265.19061 | | +0.80280968 | | +0.55930154 | |
| $a$ | 2.5992358 | $\Omega$ | 60.65785 | | −0.40835866 | | +0.76824503 | |
| $e$ | 0.1049156 | $i$ | 13.70904 | | −0.43444196 | | +0.31141830 | |
| $P$ | 4.19 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.2− | 0.1+ | 2005 06 04 | 704 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2002 10 31 | 644 | 0.5− | 0.1− | 2005 06 04 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.2− | 0.2− | 2005 06 26 | 644 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.4− | 0.3+ |
| 2002 11 05 | 644 | 0.4− | 0.5+ | 2005 06 26 | 644 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2002 11 05 | 644 | 0.1+ | 0.9+ | 2005 06 26 | 644 | 0.3+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 05 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.4− | 0.7+ | 2006 09 18 | 703 | 0.5− | 1.2+ | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 10 16 | 703 | 1.0− | 0.8+ |
| 2002 11 07 | 704 | 0.2− | 0.8+ | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 10 16 | 703 | 1.1− | 1.1− |
| 2002 11 07 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 699 | (2.3+ | 0.9+) | 2006 10 16 | 703 | 1.0+ | 0.4− |
| 2002 11 11 | 704 | (2.2+ | 1.5+) | 2006 09 25 | 699 | 0.8+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.6+ |
| 2002 11 11 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 1.3+ | 1.0+ | 2006 10 22 | 703 | 0.2+ | 0.6+ |
| 2002 11 11 | 704 | 0.1− | 0.8+ | 2006 09 25 | 699 | 1.4+ | 0.4+ | 2006 10 22 | 703 | (1.7+ | 0.4−) |
| 2002 11 22 | 644 | 0.4− | 0.8− | 2006 09 26 | 703 | (2.1− | 1.3+) | 2006 10 22 | 703 | 0.7− | 0.7− |
| 2002 11 22 | 644 | 0.1− | 0.8− | 2006 09 26 | 703 | (1.7− | 0.2−) | 2006 10 28 | 703 | 0.2+ | 1.1− |
| 2002 11 22 | 644 | 0.4− | 0.3− | 2006 09 26 | 703 | 0.2− | 1.3− | 2006 10 28 | 703 | 0.3+ | 0.6− |
| 2004 01 17 | 691 | 0.5+ | 0.2− | 2006 09 26 | 703 | 1.5− | 0.7− | 2006 10 28 | 703 | (0.1− | 2.0−) |
| 2004 01 17 | 691 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.3− | 0.7− | 2006 10 28 | 703 | 0.2+ | 1.4− |
| 2004 01 17 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.5+ | 0.7+ | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 09 29 | 699 | (1.8− | 0.1+) | 2006 11 16 | 703 | 0.2+ | 0.1− |
| 2005 05 07 | G96 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.9+ | 0.5+ | 2006 11 16 | 703 | 0.1+ | 0.1+ |
| 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.5+ | 0.1+ |
| 2005 05 07 | G96 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | | | |
| 2005 06 04 | 704 | (2.0+ | 0.3−) | 2006 10 10 | 644 | 0.3− | 0.3+ | | | | |

**(142895)∗ 2002 VQ$_{46}$ = 2001 KF$_{35}$ = 2001 LS$_{19}$**

Discovered 2002 Nov. 5 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75786)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 44.75838 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23170287 | $\omega$ | 217.72568 | | +0.64106527 | | +0.75857141 | |
| $a$ | 2.6253172 | $\Omega$ | 92.45841 | | −0.67268289 | | +0.62851950 | |
| $e$ | 0.1816962 | $i$ | 6.70439 | | −0.36950379 | | +0.17185067 | |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.4+ | 0.1+ | 2005 04 12 | 699 | (1.8+ | 1.5+) | 2006 09 26 | 703 | 0.0 | 0.3− |
| 2001 05 18 | 704 | 0.2+ | 0.3+ | 2005 04 12 | 699 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.3+ | 1.0+ | 2005 04 12 | 699 | 0.8+ | 0.6+ | 2006 09 29 | 699 | 0.1+ | 0.0 |
| 2001 05 18 | 704 | 0.0 | 1.3+ | 2005 04 18 | 703 | 0.1− | 0.9− | 2006 09 29 | 699 | 0.1+ | 0.6− |
| 2001 05 25 | 704 | 0.2+ | 0.6− | 2005 04 18 | 703 | 0.7− | 0.3− | 2006 09 29 | 699 | 0.7− | 0.1− |
| 2001 05 25 | 704 | 0.8+ | 0.7+ | 2005 04 18 | 703 | 0.4− | 0.1− | 2006 09 29 | 699 | 0.0 | 0.1− |
| 2001 05 25 | 704 | 0.2− | 1.2+ | 2005 04 18 | 703 | 0.1− | 0.5− | 2006 09 30 | 704 | 0.0 | 0.1+ |
| 2001 05 25 | 704 | 0.4− | 0.1− | 2005 04 28 | H06 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.1+ |
| 2001 05 25 | 704 | 0.8+ | 0.6+ | 2005 04 28 | H06 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.4− | 0.1− |
| 2001 06 15 | 704 | 0.7− | 1.2− | 2005 04 28 | H06 | 0.9+ | 0.3− | 2006 09 30 | 704 | 0.0 | 0.3+ |
| 2001 06 15 | 704 | 0.7− | 0.7− | 2005 04 30 | H06 | 0.6+ | 0.9+ | 2006 09 30 | 704 | 0.1− | 0.6+ |
| 2001 06 15 | 704 | 0.2− | 0.5+ | 2005 04 30 | H06 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.7+ | 0.1+ |
| 2001 06 15 | 704 | (2.8− | 2.3+) | 2005 04 30 | H06 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2002 11 03 | 608 | (0.6− | 1.9+) | 2005 05 01 | H06 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2002 11 03 | 608 | (0.7− | 1.8+) | 2005 05 01 | H06 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2002 11 03 | 608 | 0.2− | 1.0+ | 2005 05 01 | H06 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 644 | 0.1− | 0.5+ | 2005 05 03 | 704 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 05 | 644 | 0.3− | 0.8+ | 2005 05 03 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 11 05 | 699 | 0.7+ | 0.5+ | 2005 05 03 | 704 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 699 | 0.1− | 0.2+ | 2005 05 03 | 704 | 0.6+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 699 | (1.0− | 2.8+) | 2005 05 03 | 704 | 1.2+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 11 05 | 644 | 0.2+ | 0.4+ | 2005 05 08 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2002 11 05 | 699 | (2.3− | 1.3+) | 2005 05 08 | 704 | (1.6+ | 0.1+) | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2002 11 07 | 704 | 0.1− | 0.6+ | 2005 05 08 | 704 | 1.3+ | 0.7+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2005 06 03 | 703 | 1.2+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2002 11 07 | 704 | (0.3+ | 1.8+) | 2005 06 03 | 703 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 11 11 | 704 | 0.5− | 0.7+ | 2005 06 03 | 703 | 1.3− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2002 11 11 | 704 | 1.1− | 0.8+ | 2005 06 03 | 703 | (1.7− | 0.8−) | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 11 11 | 704 | 0.0 | 1.3+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 11 11 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.8+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 11 11 | 644 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.1+ | 1.0− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 11 11 | 644 | 0.9+ | 0.1− | 2006 09 21 | 699 | 0.7− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 11 11 | 644 | 0.1− | 0.4− | 2006 09 21 | 699 | 1.1+ | 1.0− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 12 01 | 608 | 0.6− | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.5+ | 2006 10 28 | 703 | (0.8+ | 2.6−) |
| 2002 12 01 | 608 | 0.7− | 0.3+ | 2006 09 21 | 699 | 0.3+ | 0.9+ | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2002 12 01 | 608 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.3− | 0.6+ | 2006 10 28 | 703 | 0.8+ | 0.9+ |
| 2005 04 05 | 703 | 0.1+ | 1.1+ | 2006 09 25 | 699 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2005 04 05 | 703 | 1.2− | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 11 16 | 703 | 1.0− | 1.1+ |
| 2005 04 05 | 703 | 0.2− | 1.1+ | 2006 09 25 | 699 | 0.4+ | 0.0 | 2006 11 16 | 703 | 1.2− | 0.3+ |
| 2005 04 05 | 703 | 0.6− | 0.8+ | 2006 09 26 | 703 | 0.3+ | 0.1− | 2006 11 16 | 703 | 0.9− | 0.4+ |
| 2005 04 12 | 699 | (1.7+ | 0.8+) | 2006 09 26 | 703 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.5− | 1.0− |

**(142896)∗ 2002 VG$_{47}$ = 2000 HR$_{103}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 41197)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.21623 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23063260 | $\omega$ | 72.35849 | | −0.65012357 | −0.68079682 | |
| $a$ | 2.6334329 | $\Omega$ | 63.14377 | | +0.47033410 | −0.70934506 | |
| $e$ | 0.0508349 | $i$ | 22.22332 | | +0.59676224 | −0.18260688 | |
| $P$ | 4.27 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.1+ | 0.2+ | 2002 12 10 | 704 | 0.1+ | 0.4− | 2004 03 17 | 704 | 0.1+ | 0.9− |
| 2000 04 27 | 699 | 0.5+ | 0.3+ | 2002 12 10 | 704 | 0.2+ | 0.2− | 2004 03 17 | 704 | 0.0 | 0.3+ |
| 2000 04 27 | 699 | 0.6+ | 0.2+ | 2002 12 31 | 704 | 0.5− | 0.9− | 2004 03 17 | 704 | 0.1+ | 0.4− |
| 2000 04 27 | 699 | 0.4+ | 0.5+ | 2002 12 31 | 704 | 0.7+ | 0.4− | 2004 03 18 | 704 | 0.8+ | 0.8+ |
| 2000 05 04 | 704 | 0.0 | 0.3+ | 2002 12 31 | 704 | 0.6+ | 0.2+ | 2004 03 18 | 704 | 0.3+ | 0.4− |
| 2000 05 04 | 704 | 0.3+ | 0.4− | 2002 12 31 | 704 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.2− |
| 2000 05 04 | 704 | 0.3+ | 0.4− | 2003 01 05 | 704 | 0.8− | 1.0− | 2004 03 18 | 704 | 0.9+ | 0.2− |
| 2000 05 04 | 704 | 0.0 | 0.4+ | 2003 01 05 | 704 | 0.3− | 0.5− | 2004 03 18 | 704 | 0.9+ | 0.3− |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.3− | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.0 |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.5+ | 0.4− | 2004 03 19 | 704 | 0.7+ | 0.9+ |
| 2002 11 05 | 699 | (1.6− | 1.0+) | 2004 03 09 | 644 | 0.3− | 0.0 | 2004 03 19 | 704 | 1.4+ | 0.2+ |
| 2002 11 05 | 699 | 0.2+ | 1.2+ | 2004 03 09 | 644 | 0.4− | 0.2− | 2004 03 19 | 704 | 0.7+ | 0.2+ |
| 2002 11 05 | 699 | 0.7− | 0.9+ | 2004 03 09 | 644 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.9+ | 0.0 |
| 2002 11 05 | 699 | 0.8− | 0.5+ | 2004 03 14 | 704 | 0.3+ | 0.2− | 2004 03 30 | 704 | 0.9− | 0.4+ |
| 2002 11 07 | 704 | 0.7+ | 0.0 | 2004 03 14 | 704 | 0.9− | 0.2− | 2004 03 30 | 704 | 0.5− | 0.4+ |
| 2002 11 07 | 704 | 0.7+ | 0.7+ | 2004 03 14 | 704 | 1.2+ | 0.4− | 2004 03 30 | 704 | 0.6− | 0.1+ |
| 2002 11 07 | 704 | 0.9+ | 0.0 | 2004 03 14 | 704 | 0.2− | 0.5+ | 2004 03 30 | 704 | 0.3+ | 0.5− |
| 2002 11 07 | 704 | 0.2+ | 0.7+ | 2004 03 15 | 704 | (2.0+ | 0.5+) | 2004 03 30 | 704 | 0.4− | 0.1− |
| 2002 11 11 | 704 | 0.4+ | 0.4− | 2004 03 15 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 703 | (0.3+ | 1.8+) |
| 2002 11 11 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 703 | 0.2− | 0.1+ |
| 2002 11 11 | 704 | 1.0+ | 0.0 | 2004 03 15 | 704 | 0.3− | 0.2− | 2006 10 20 | 703 | 0.5− | 0.9− |
| 2002 11 11 | 704 | 0.1+ | 0.6− | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 703 | 0.4− | 0.8+ |
| 2002 11 11 | 704 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.3− | 1.2+ | 2006 10 28 | 703 | 0.5− | 0.6+ |
| 2002 11 23 | 644 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 1.2− | 0.7+ | 2006 10 28 | 703 | (1.0− | 3.2+) |
| 2002 11 23 | 644 | 0.3+ | 0.1+ | 2004 03 15 | 704 | (0.3− | 1.9+) | 2006 10 28 | 703 | (2.3− | 1.4+) |
| 2002 11 23 | 644 | 0.6− | 0.4− | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 1.0− | 1.0− |
| 2002 12 03 | 644 | 0.2+ | 0.5− | 2004 03 15 | 704 | 0.1− | 0.6+ | 2006 11 16 | 703 | 0.3− | 0.3+ |
| 2002 12 03 | 644 | 0.3+ | 0.9− | 2004 03 16 | 704 | 0.4+ | 0.9− | 2006 11 16 | 703 | 0.8+ | 0.4+ |
| 2002 12 03 | 644 | 0.3+ | 0.8− | 2004 03 16 | 704 | 0.7− | 0.4− | 2006 11 16 | 703 | 0.2− | 0.7+ |
| 2002 12 10 | 704 | 0.0 | 0.5− | 2004 03 16 | 704 | 0.5− | 0.8+ | 2006 11 16 | 703 | 0.0 | 1.1+ |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2004 03 17 | 704 | 0.2+ | 0.3− | | | | |
| 2002 12 10 | 704 | 0.1+ | 0.8− | 2004 03 17 | 704 | 0.1− | 0.3− | | | | |

**(142897)∗ 2002 VT$_{47}$ = 2000 JV$_{82}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85733)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.54345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21981566 | $\omega$ | 189.00238 | | +0.60470806 | −0.79111847 | |
| $a$ | 2.7191320 | $\Omega$ | 223.85878 | | +0.73873984 | +0.60029852 | |
| $e$ | 0.0696118 | $i$ | 7.62824 | | +0.29764342 | +0.11735949 | |
| $P$ | 4.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.8− | 0.5+ | 2004 03 16 | 703 | 0.2− | 0.9+ | 2006 09 27 | 703 | 0.1+ | 0.3+ |
| 2000 05 07 | 704 | 0.9+ | 0.6− | 2004 03 16 | 703 | 0.8+ | 0.9− | 2006 09 27 | 703 | 0.0 | 0.9− |
| 2000 05 07 | 704 | 0.0 | 0.4+ | 2004 03 16 | 703 | 0.4− | 0.9+ | 2006 09 27 | 703 | 0.3− | 0.3+ |
| 2002 11 05 | 704 | 0.8− | 0.8+ | 2004 03 19 | 704 | 1.4+ | 0.1+ | 2006 09 27 | 703 | 0.8− | 0.8− |
| 2002 11 05 | 704 | 1.4+ | 0.7− | 2004 03 19 | 704 | 0.5+ | 0.9+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2002 11 05 | 704 | 0.2− | 0.6− | 2004 03 19 | 704 | 1.0− | 1.3+ | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2002 11 07 | 704 | 0.8+ | 1.1− | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 0.7− | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 703 | (1.7− | 1.3−) | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2006 09 16 | 703 | 1.1− | 0.7− | 2006 10 17 | 703 | 0.4+ | 0.5+ |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2002 11 24 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | (2.1− | 2.6+) | 2006 10 17 | 703 | 0.5− | 0.8− |
| 2002 11 28 | 608 | 0.6+ | 0.2+ | 2006 09 18 | 703 | (0.7− | 4.1+) | 2006 10 17 | 703 | 0.2+ | 0.3− |
| 2002 11 28 | 608 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 11 28 | 608 | 0.4+ | 0.8+ | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 12 10 | 644 | 0.4− | 0.2− | 2006 09 19 | 683 | 1.2− | 1.1− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 12 10 | 644 | 0.5− | 0.0 | 2006 09 19 | 683 | (0.5− | 3.4−) | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 12 10 | 644 | 0.6− | 0.3− | 2006 09 19 | 699 | 0.2− | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2004 02 17 | I03 | 1.0− | 0.4− | 2006 09 19 | 683 | 0.8+ | 1.0− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2004 02 17 | I03 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.6− | 0.8+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2004 02 17 | I03 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2004 02 18 | I03 | 0.8+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.7+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2004 02 18 | I03 | 0.3+ | 0.6− | 2006 09 25 | 704 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2004 02 18 | I03 | (14.4− | 0.2+) | 2006 09 25 | 704 | 0.1− | 1.0+ | | | | |
| 2004 03 16 | 703 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.1+ | | | | |

**(142898)∗ 2002 VV$_{47}$ = 1999 AY$_{37}$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38136)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.03510 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23120654 | $\omega$ | 348.23058 | | +0.48353445 | −0.84130855 | |
| $a$ | 2.6290729 | $\Omega$ | 72.43641 | | +0.82225840 | +0.34190650 | |
| $e$ | 0.1636098 | $i$ | 14.68266 | | +0.30014256 | +0.41868827 | |
| $P$ | 4.26 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 15 | 699 | 0.4+ | 1.0− | 2002 12 05 | 704 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.4− |
| 1999 01 15 | 699 | 0.5+ | 0.6− | 2002 12 05 | 704 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.6− | 0.1− |
| 1999 01 15 | 699 | 0.4+ | 0.0 | 2002 12 05 | 695 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.2− |
| 1999 01 19 | 704 | 0.5− | 1.1− | 2002 12 05 | 608 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.6+ | 0.1− |
| 1999 01 19 | 704 | 0.9− | 1.0− | 2002 12 05 | 608 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.3− | 0.0 |
| 1999 01 19 | 704 | 0.2+ | 0.4− | 2002 12 05 | 608 | 0.1+ | 0.7+ | 2006 09 30 | 704 | 0.8+ | 0.7+ |
| 1999 01 19 | 704 | 0.6− | 0.1+ | 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2002 12 10 | 704 | 0.4− | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.6− | 0.9− | 2002 12 10 | 704 | 0.1− | 0.5+ | 2006 10 02 | 703 | 0.6− | 0.1+ |
| 2002 10 11 | 704 | 0.6+ | 1.0− | 2002 12 10 | 704 | 0.2− | 0.8+ | 2006 10 02 | 703 | 0.3− | 0.2+ |
| 2002 10 11 | 704 | 0.3− | 1.0− | 2002 12 31 | 704 | 0.1+ | 0.5− | 2006 10 02 | 703 | 0.5− | 0.2+ |
| 2002 11 05 | 704 | 0.7− | 0.4− | 2002 12 31 | 704 | 0.6− | 0.1− | 2006 10 02 | 703 | 0.4− | 0.1− |
| 2002 11 05 | 704 | 0.4− | 0.1+ | 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.7− | 0.2+ | 2002 12 31 | 704 | 0.6+ | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.3− |
| 2002 11 05 | 704 | 0.6− | 0.3+ | 2003 01 05 | 704 | 1.0+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 1.4− | 0.0 | 2003 01 05 | 704 | 0.9+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.8− | 0.4− | 2003 01 05 | 704 | 1.3+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.6− | 0.5− | 2003 01 05 | 704 | 1.2+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.4− | 0.7− | 2003 01 05 | 704 | 1.4+ | 0.3+ | 2006 10 20 | 703 | 0.5− | 0.2+ |
| 2002 11 07 | 704 | 0.4− | 0.5− | 2004 03 13 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 703 | 0.5+ | 0.2+ |
| 2002 11 07 | 704 | 0.4− | 0.9− | 2004 03 13 | 644 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.3+ | 0.6+ |
| 2002 11 11 | 704 | 0.3+ | 0.3− | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 703 | 1.0− | 0.2− |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2004 03 15 | 704 | (1.6+ | 0.7+) | 2006 10 28 | 703 | 1.0+ | 0.4+ |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2004 03 15 | 704 | 1.0+ | 0.3+ | 2006 10 28 | 703 | 0.2+ | 0.2+ |
| 2002 11 11 | 704 | 0.2− | 0.5+ | 2004 03 15 | 704 | 0.3+ | 0.9+ | 2006 10 28 | 703 | 0.2+ | 0.6+ |
| 2002 11 11 | 704 | 0.6+ | 0.5− | 2004 03 15 | 704 | 0.8+ | 0.7− | 2006 10 28 | 703 | 0.6+ | 0.5+ |
| 2002 11 14 | 704 | 0.8+ | 0.8+ | 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.1− | 0.4+ |
| 2002 11 14 | 704 | 0.2+ | 0.6+ | 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | 0.7+ | 0.1− | 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.2− | 0.4+ |
| 2002 11 14 | 704 | 0.7+ | 0.1+ | 2004 04 12 | 703 | (0.2− | 1.6+) | 2006 11 10 | 704 | 0.1+ | 0.3− |
| 2002 11 14 | 704 | 0.1+ | 0.2− | 2004 04 12 | 703 | 0.4− | 0.2+ | 2006 11 10 | 704 | 0.4+ | 0.3+ |
| 2002 11 28 | 608 | 0.6− | 1.1+ | 2004 04 12 | 703 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.3+ |
| 2002 11 28 | 608 | 0.6− | 1.0+ | 2004 04 12 | 703 | (1.6+ | 2.9+) | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2002 11 28 | 608 | 0.4− | 0.9+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.2− |
| 2002 12 05 | 695 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 1.1− | | | | |
| 2002 12 05 | 704 | 0.8+ | 0.2− | 2006 09 19 | 703 | 0.2− | 0.2− | | | | |

## (142899)∗ 2002 VA$_{48}$ = 1999 CH$_{22}$

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41198)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.15553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22924634 | $\omega$ | 3.12322 | | +0.10169366 | −0.98559316 | |
| $a$ | 2.6440385 | $\Omega$ | 81.06922 | | +0.90973512 | +0.03716369 | |
| $e$ | 0.1989570 | $i$ | 7.86300 | | +0.40254242 | +0.16499992 | |
| $P$ | 4.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.6− | 0.9− | 2002 12 31 | 704 | 0.2− | 0.6+ | 2006 09 21 | 699 | 0.3+ | 0.9+ |
| 1999 02 10 | 704 | (2.5− | 1.0−) | 2003 01 04 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.1+ | 0.6+ |
| 1999 02 10 | 704 | 1.5− | 1.3+ | 2003 01 04 | 704 | 0.3+ | 0.3− | 2006 09 25 | 699 | 0.2− | 1.0+ |
| 1999 02 10 | 704 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.0 | 0.4− | 2006 09 25 | 699 | 0.1− | 0.0 |
| 1999 02 13 | 704 | (1.7− | 2.2−) | 2003 01 04 | 704 | 0.6− | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 1999 02 13 | 704 | 0.3+ | 1.1+ | 2003 01 04 | 704 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.1− | 0.3− |
| 1999 02 13 | 704 | 1.0+ | 0.6− | 2003 01 08 | 704 | 0.7+ | 0.8+ | 2006 09 29 | 699 | 0.6+ | 1.3+ |
| 2002 11 05 | 704 | 0.4− | 0.1− | 2003 01 08 | 704 | 1.1+ | 0.3+ | 2006 09 29 | 699 | (1.8− | 0.4+) |
| 2002 11 05 | 704 | 0.2− | 0.2− | 2003 01 08 | 704 | 0.6+ | 0.5+ | 2006 09 29 | 699 | 0.8− | 0.4+ |
| 2002 11 05 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.5+ | 0.1− | 2006 09 29 | 699 | 0.6− | 0.7+ |
| 2002 11 05 | 704 | 0.1− | 0.2− | 2003 01 08 | 704 | 0.0 | 0.6+ | 2006 09 30 | 704 | 1.2− | 1.4+ |
| 2002 11 05 | 704 | 0.3− | 0.1− | 2003 01 31 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 704 | 0.5+ | 0.5+ |
| 2002 11 07 | 704 | 0.6+ | 0.1+ | 2003 01 31 | 704 | 0.6+ | 0.1− | 2006 09 30 | 704 | 0.2− | 0.8+ |
| 2002 11 07 | 704 | (1.6− | 0.2−) | 2003 01 31 | 704 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2002 11 07 | 704 | 0.5+ | 0.6− | 2003 01 31 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.3+ | 0.1− | 2003 01 31 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.3+ | 0.4− | 2003 02 01 | 704 | 1.1− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.3− |
| 2002 11 11 | 704 | 0.8+ | 0.0 | 2003 02 01 | 704 | 0.2− | 0.9+ | 2006 10 22 | 703 | 0.3− | 1.1− |
| 2002 11 11 | 704 | 0.3− | 0.8+ | 2003 02 01 | 704 | 0.7− | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2002 11 11 | 704 | 0.3+ | 0.2− | 2003 02 01 | 704 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.3− |
| 2002 11 11 | 704 | 0.5+ | 0.2+ | 2003 02 01 | 704 | (0.4+ | 1.6+) | 2006 10 22 | 703 | 1.0− | 0.8− |
| 2002 11 11 | 704 | 0.7+ | 0.1− | 2003 02 04 | 704 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.3− | 0.4− | 2003 02 04 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.6− | 2003 02 04 | 704 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.2− | 0.7− | 2003 02 04 | 704 | 0.7− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.0 | 0.4− | 2003 02 04 | 704 | 0.7− | 1.2− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.5− | 2004 04 16 | 704 | (1.2+ | 2.0+) | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 11 28 | 599 | 0.1− | 0.3+ | 2004 04 16 | 704 | 1.1+ | 0.6+ | 2006 10 28 | 703 | 0.6+ | 0.3+ |
| 2002 11 28 | 599 | 0.2− | 0.3− | 2004 04 16 | 704 | 0.8+ | 1.0− | 2006 10 28 | 703 | 0.1+ | 0.1− |
| 2002 11 28 | 599 | 0.5− | 0.1+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.4− | 0.3− |
| 2002 11 28 | 599 | 0.4− | 0.2+ | 2004 04 20 | 704 | (0.2+ | 1.8+) | 2006 10 28 | 703 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.0 | 0.3− | 2004 04 20 | 704 | (2.4+ | 0.5+) | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 2002 12 10 | 704 | 0.2− | 0.2− | 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 11 10 | 704 | 0.4+ | 0.3− |
| 2002 12 10 | 704 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.1− | 1.0+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2004 04 20 | 704 | 0.2+ | 0.1− | 2006 11 10 | 704 | 0.5− | 0.6− |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.6+ | 2006 11 10 | 704 | (2.3+ | 0.3−) |
| 2002 12 31 | 704 | 0.8+ | 0.3+ | 2006 09 21 | 699 | 0.2− | 0.4− | 2006 11 10 | 704 | 0.5+ | 1.1+ |

## (142900)∗ 2002 VR$_{48}$

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.10314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23313391 | $\omega$ | 299.81455 | | +0.93959637 | −0.18756532 | |
| $a$ | 2.6145628 | $\Omega$ | 72.27655 | | +0.30712845 | +0.83125918 | |
| $e$ | 0.3239279 | $i$ | 17.49271 | | −0.15109857 | +0.52328522 | |
| $P$ | 4.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 291 | (3.2− | 1.1+) | 2002 12 05 | 704 | 0.2+ | 0.9+ | 2006 08 06 | E12 | 0.2+ | 0.2− |
| 2001 05 26 | 291 | 0.3+ | 0.9+ | 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.2− |
| 2001 05 26 | 291 | 0.5− | 0.1+ | 2002 12 11 | 704 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.1− |
| 2002 10 03 | 704 | (0.1+ | 1.9+) | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.8− |
| 2002 10 03 | 704 | 1.5+ | 0.9+ | 2002 12 11 | 704 | 0.5− | 0.2− | 2006 09 27 | 703 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.3− | 0.8+ | 2002 12 11 | 704 | 1.1− | 0.1+ | 2006 10 03 | E12 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2002 12 14 | 704 | 0.2− | 0.2+ | 2006 10 03 | E12 | 0.5+ | 0.1+ |
| 2002 10 03 | 704 | 1.0+ | 0.2+ | 2002 12 14 | 704 | 0.0 | 0.1+ | 2006 10 03 | E12 | 0.2+ | 0.1+ |
| 2002 10 11 | 704 | 0.2− | 0.4− | 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 10 03 | E12 | 0.2+ | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.1+ | 2002 12 14 | 704 | 0.2− | 0.2+ | 2006 10 25 | E12 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2002 12 14 | 704 | 0.0 | 0.2− | 2006 10 25 | E12 | 0.6− | 0.1+ |
| 2002 10 11 | 704 | 0.5− | 0.0 | 2002 12 30 | 704 | 1.1+ | 0.4+ | 2006 10 25 | E12 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.0 | 0.1− | 2002 12 30 | 704 | 0.5− | 0.5+ | 2006 11 01 | 703 | 0.6− | 0.5+ |
| 2002 11 05 | 704 | 0.5− | 0.8+ | 2002 12 30 | 704 | (0.4+ | 1.7+) | 2006 11 01 | 703 | 0.3− | 0.7+ |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2003 01 05 | 704 | 0.6+ | 0.3+ | 2006 11 01 | 703 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 1.4− | 0.8+ | 2003 01 05 | 704 | 0.3+ | 0.4+ | 2006 11 01 | 703 | 0.0 | 0.9+ |
| 2002 11 07 | 704 | 0.1− | 0.1− | 2003 01 05 | 704 | 1.0+ | 0.4+ | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.1− | 0.4+ | 2003 01 05 | 704 | 0.9+ | 0.3− | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.4+ | 2003 01 05 | 704 | 0.8+ | 0.2− | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.9− | 0.5+ | 2005 05 04 | 691 | 0.6+ | 0.4+ | 2006 11 18 | 703 | 0.1+ | 0.5+ |
| 2002 11 14 | 704 | 0.5− | 0.1− | 2005 05 04 | 691 | 0.4+ | 0.4+ | 2006 11 18 | 703 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | 0.7− | 0.3− | 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 703 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 0.8− | 2005 05 14 | 691 | 0.6+ | 0.2+ | 2006 11 18 | 703 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.1+ | 0.5− | 2005 05 14 | 691 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.1− |
| 2002 11 14 | 704 | 0.3− | 0.5− | 2005 05 14 | 691 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 08 06 | E12 | 0.5− | 0.5+ | 2006 11 23 | 703 | 0.9− | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 08 06 | E12 | 0.6+ | 0.5+ | 2006 11 23 | 703 | 1.0− | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2006 08 06 | E12 | 0.2+ | 0.6+ | | | | |

**(142901)∗ 2002 VG$_{49}$ = 2004 DL$_9$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61566)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.98109 | | (2000.0) | | | |
| $n$ | 0.21011553 | $\omega$ | 268.20096 | | +0.92781877 | −0.36554332 |
| $a$ | 2.8021881 | $\Omega$ | 113.23424 | | +0.36628227 | +0.85499456 |
| $e$ | 0.1064417 | $i$ | 4.64203 | | +0.07063728 | +0.36791627 |
| $P$ | 4.69 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.7− | 0.6+ | 2002 12 01 | 704 | 0.8− | 0.8+ | 2005 06 12 | 691 | 0.1+ | 0.4+ |
| 2002 10 30 | 608 | 0.2− | 0.7+ | 2004 02 17 | 704 | 0.0 | 0.7+ | 2005 06 27 | 644 | 0.2+ | 0.1+ |
| 2002 10 30 | 608 | 0.2− | 1.1+ | 2004 02 17 | 704 | 0.8+ | 0.5+ | 2005 06 27 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 699 | 0.5− | 0.3− | 2004 02 17 | 704 | 0.4+ | 1.4+ | 2005 06 27 | 644 | 0.1+ | 0.1+ |
| 2002 11 05 | 699 | 0.7− | 0.4− | 2004 02 17 | 704 | 0.7− | 0.2+ | 2006 08 15 | 644 | 0.5− | 0.2+ |
| 2002 11 05 | 699 | 1.4− | 1.3+ | 2004 02 18 | 608 | 0.0 | 0.7− | 2006 08 15 | 644 | 0.5− | 0.4+ |
| 2002 11 05 | 699 | 0.1+ | 0.1− | 2004 02 18 | 608 | 0.7− | 1.5− | 2006 08 15 | 644 | 0.4− | 0.2+ |
| 2002 11 07 | 704 | 0.1− | 0.6− | 2004 02 18 | 608 | 0.5− | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2004 02 23 | 704 | 1.0+ | 0.9+ | 2006 08 16 | 644 | 0.4− | 0.4+ |
| 2002 11 07 | 704 | 0.3− | 1.2+ | 2004 02 23 | 704 | 0.4− | 0.6+ | 2006 08 16 | 644 | 0.2− | 0.5+ |
| 2002 11 11 | 704 | 1.3+ | 0.3+ | 2004 02 23 | 704 | 0.6+ | 1.2+ | 2006 08 18 | 644 | 0.2− | 0.5+ |
| 2002 11 11 | 704 | 0.8+ | 0.5+ | 2004 02 23 | 704 | 0.3+ | 0.2− | 2006 08 18 | 644 | 0.4− | 0.4+ |
| 2002 11 11 | 704 | 0.7+ | 1.3+ | 2004 02 23 | 704 | 0.8+ | 0.4− | 2006 08 18 | 644 | 0.5− | 0.1+ |
| 2002 11 11 | 704 | 1.2+ | 1.5− | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 08 23 | 704 | 0.2+ | 0.3+ |
| 2002 11 13 | 704 | 0.8+ | 0.2+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 08 23 | 704 | 0.7+ | 0.4+ |
| 2002 11 13 | 704 | 0.0 | 0.5+ | 2005 05 14 | G96 | 0.5− | 0.3− | 2006 08 23 | 704 | 0.0 | 0.3+ |
| 2002 11 13 | 704 | 0.1+ | 0.8+ | 2005 05 14 | G96 | 0.4− | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 2002 11 13 | 704 | 0.9+ | 0.8+ | 2005 05 14 | 644 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 2002 11 13 | 704 | 0.1+ | 1.0+ | 2005 05 14 | 644 | 0.1− | 0.4+ | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 2002 11 16 | 644 | 0.5− | 0.4− | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 08 31 | 704 | 1.0+ | 0.1− |
| 2002 11 16 | 644 | 0.3− | 0.4− | 2005 06 03 | 691 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.4− | 1.0+ |
| 2002 11 16 | 644 | 0.2− | 0.4− | 2005 06 03 | 691 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.7+ | 0.3− |
| 2002 11 23 | 644 | 0.5− | 0.4+ | 2005 06 03 | 691 | 0.0 | 0.2+ | 2006 08 31 | 704 | 0.2+ | 2.0− |
| 2002 11 23 | 644 | 0.7− | 0.2+ | 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2002 11 23 | 644 | 0.5− | 0.5+ | 2005 06 08 | 691 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 0.8+ | 0.8− |
| 2002 12 01 | 704 | 0.2+ | 1.8+ | 2005 06 08 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 1.5+ | 0.0 |
| 2002 12 01 | 704 | (0.3+ | 2.6+) | 2005 06 12 | 691 | 0.2− | 0.4+ | 2006 09 25 | 699 | 1.5− | 0.3− |
| 2002 12 01 | 704 | 1.4− | 1.4+ | 2005 06 12 | 691 | 0.5+ | 0.0 | | | | |

**(142902)∗ 2002 VK$_{49}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.91930 | | (2000.0) | | | |
| $n$ | 0.23343515 | $\omega$ | 285.63030 | | +0.97644533 | +0.06628218 |
| $a$ | 2.6123130 | $\Omega$ | 70.91843 | | +0.03489711 | +0.89060218 |
| $e$ | 0.2747456 | $i$ | 12.54874 | | −0.21292419 | +0.44992713 |
| $P$ | 4.22 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 691 | 0.4+ | 0.5+ | 2002 12 10 | 704 | 0.3− | 0.4+ | 2006 09 12 | 704 | 0.0 | 0.3+ |
| 2001 05 25 | 691 | 0.1+ | 0.5+ | 2002 12 10 | 704 | 0.4+ | 0.2+ | 2006 09 12 | 704 | 0.4− | 0.5+ |
| 2001 05 25 | 691 | 0.2+ | 0.4+ | 2002 12 10 | 644 | 0.2+ | 1.2+ | 2006 09 12 | 704 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.2− | 1.0− | 2002 12 10 | 704 | 0.1− | 0.2+ | 2006 09 12 | 704 | 0.1+ | 0.4+ |
| 2002 10 11 | 704 | 0.3+ | 1.0− | 2002 12 10 | 704 | 0.1− | 0.5+ | 2006 09 22 | 703 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.7− | 2002 12 10 | 644 | 0.0 | 1.1+ | 2006 09 22 | 703 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 1.4− | 1.0− | 2002 12 10 | 644 | 0.4+ | 1.3+ | 2006 09 22 | 703 | 0.2− | 0.3− |
| 2002 11 05 | 699 | 0.5+ | 0.4− | 2002 12 27 | 644 | 0.3+ | 0.4+ | 2006 09 22 | 703 | 0.4− | 0.2− |
| 2002 11 05 | 699 | 0.3− | 0.1+ | 2002 12 27 | 644 | 0.5− | 0.6+ | 2006 09 24 | 699 | 0.2− | 0.5+ |
| 2002 11 05 | 699 | 0.1+ | 0.1+ | 2002 12 27 | 644 | 0.4+ | 0.4+ | 2006 09 24 | 699 | 0.1+ | 0.4+ |
| 2002 11 05 | 699 | 1.1− | 0.1− | 2002 12 27 | 644 | 0.4− | 0.8+ | 2006 09 24 | 699 | 0.5− | 0.6+ |
| 2002 11 07 | 704 | 0.6+ | 0.3− | 2002 12 27 | 644 | 0.5+ | 0.2+ | 2006 09 24 | 699 | 0.2− | 0.3+ |
| 2002 11 07 | 704 | 1.1+ | 0.7+ | 2002 12 27 | 644 | 0.5− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.5− | 2002 12 31 | 704 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.9+ | 0.4− | 2002 12 31 | 704 | 0.3+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.9+ | 0.2− | 2002 12 31 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 11 24 | 644 | 0.3− | 0.3+ | 2002 12 31 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2004 02 14 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 644 | 0.2− | 0.1+ |
| 2002 11 25 | 644 | 0.4− | 0.3+ | 2004 02 14 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.1+ |
| 2002 11 25 | 644 | 0.3− | 0.5+ | 2004 02 14 | 644 | 0.3+ | 0.4− | 2006 11 11 | 644 | 0.4− | 0.0 |
| 2002 11 25 | 644 | 0.2− | 0.3+ | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2002 12 02 | 704 | 1.3− | 0.1− | 2005 04 10 | 691 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.8+ | 0.4+ |
| 2002 12 02 | 704 | 0.0 | 0.3+ | 2005 04 10 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2002 12 02 | 704 | (2.3− | 0.0 ) | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.7− |
| 2002 12 02 | 704 | 1.4− | 0.9+ | 2005 04 14 | 691 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.6− | 0.5+ |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.5+ |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2005 05 15 | 644 | 0.1− | 0.6+ | 2006 11 23 | 703 | 0.4− | 0.4+ |
| 2002 12 05 | 704 | 0.4− | 0.3− | 2005 05 15 | 644 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.6+ | 0.1− |
| 2002 12 05 | 704 | 0.3− | 0.7+ | 2005 05 15 | 644 | 0.3+ | 0.1+ | | | | |
| 2002 12 10 | 704 | 0.3− | 0.0 | 2006 09 12 | 704 | 0.6+ | 1.1+ | | | | |

**(142903)∗ 2002 VY$_{49}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.23850 | | (2000.0) | | | |
| $n$ | 0.24742196 | $\omega$ | 256.37581 | | +0.95137522 | −0.30061096 |
| $a$ | 2.5129116 | $\Omega$ | 121.08111 | | +0.30415548 | +0.88223510 |
| $e$ | 0.1959356 | $i$ | 4.50152 | | +0.04873021 | +0.36234553 |
| $P$ | 3.98 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 1.0− | 0.8− | 2002 12 02 | 704 | 0.2+ | 0.2+ | 2006 11 05 | 644 | 0.0 | 0.0 |
| 1998 11 11 | 704 | 0.1+ | 2.0− | 2002 12 10 | 644 | 0.6+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 1998 11 11 | 704 | (4.4− | 1.0−) | 2002 12 10 | 644 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 10 30 | 608 | 0.3− | 0.4+ | 2002 12 10 | 644 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 10 30 | 608 | 0.0 | 0.3+ | 2002 12 27 | 644 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 10 30 | 608 | 0.2− | 0.4+ | 2002 12 27 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.2− |
| 2002 11 05 | 699 | 0.0 | 0.5+ | 2002 12 27 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.7+ | 0.2+ |
| 2002 11 05 | 699 | 1.3+ | 1.0− | 2004 03 16 | 184 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.5− |
| 2002 11 05 | 699 | 0.2− | 1.0+ | 2004 03 16 | 184 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2002 11 05 | 699 | 0.9− | 0.2− | 2004 03 16 | 184 | 0.3− | 0.8− | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 2002 11 07 | 704 | 1.1− | 1.1+ | 2004 04 13 | 291 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.7− | 1.1− |
| 2002 11 07 | 704 | 0.4− | 0.2+ | 2004 04 13 | 291 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.0− | 0.2− |
| 2002 11 07 | 704 | 0.8− | 0.8+ | 2004 04 13 | 291 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2002 11 07 | 704 | 0.3+ | 0.5+ | 2005 06 17 | G96 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2002 11 08 | 704 | 0.8+ | 0.3− | 2005 06 17 | G96 | 0.0 | 0.9+ | 2006 11 20 | 704 | 0.2− | 0.3− |
| 2002 11 08 | 704 | 0.2− | 0.6+ | 2005 06 17 | G96 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.8− | 0.6+ |
| 2002 11 08 | 704 | 0.9− | 0.6− | 2005 06 17 | G96 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.6+ |
| 2002 11 11 | 704 | 0.5− | 0.1+ | 2006 08 29 | 703 | (1.9+ | 1.8+) | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2002 11 11 | 704 | 0.0 | 0.1+ | 2006 08 29 | 703 | (1.5+ | 0.9+) | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2002 11 11 | 704 | 0.6+ | 1.4+ | 2006 08 29 | 703 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2002 11 11 | 704 | 0.1− | 0.5+ | 2006 08 29 | 703 | 1.0+ | 0.7− | 2006 11 22 | 683 | (0.1+ | 3.2−) |
| 2002 11 11 | 704 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.1− | 1.0− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2002 11 23 | 644 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.0 | 2006 11 22 | 683 | (0.5− | 3.2−) |
| 2002 11 23 | 644 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.6− | 2006 11 22 | 683 | 1.0− | 0.9− |
| 2002 11 23 | 644 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.7− | 1.1+ | 2006 11 23 | 683 | 1.5+ | 0.5+ |
| 2002 12 01 | 704 | 1.2+ | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 23 | 683 | 0.8+ | 0.5− |
| 2002 12 01 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 23 | 683 | (3.4− | 4.7−) |
| 2002 12 01 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2002 12 01 | 704 | 0.5− | 0.8+ | 2006 10 30 | 703 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 12 01 | 704 | 0.4− | 0.3+ | 2006 10 30 | 703 | 0.2− | 0.5− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2002 12 02 | 704 | 0.1+ | 0.5+ | 2006 10 30 | 703 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 02 | 704 | 0.3+ | 0.1+ | 2006 10 30 | 703 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.4− |
| 2002 12 02 | 704 | 0.1+ | 0.3− | 2006 11 05 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | (1.8+ | 0.4+) |
| 2002 12 02 | 704 | 0.1− | 0.9+ | 2006 11 05 | 644 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.2+ |

**(142904)∗ 2002 VD$_{50}$ = 1998 XS$_{57}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 38137)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 285.72550 | | (2000.0) | | | |
| $n$ | 0.23524810 | $\omega$ | 333.47184 | | −0.36989993 | −0.92762794 |
| $a$ | 2.5988744 | $\Omega$ | 138.18217 | | +0.86560759 | −0.36433930 |
| $e$ | 0.1377774 | $i$ | 4.45339 | | +0.33748710 | −0.08223914 |
| $P$ | 4.19 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.1+ | 1.0− | 2002 12 02 | 608 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.1+ | 0.6+ |
| 1998 12 15 | 704 | 1.5− | 1.3− | 2002 12 02 | 608 | 0.1+ | 0.1+ | 2004 04 22 | 704 | 0.9+ | 0.2− |
| 1998 12 15 | 704 | 1.8− | 1.5− | 2002 12 02 | 608 | 0.2+ | 0.3+ | 2004 04 22 | 704 | 0.2− | 0.3+ |
| 1998 12 15 | 704 | (2.4− | 1.9−) | 2002 12 07 | 704 | 0.0 | 0.9+ | 2004 04 22 | 704 | 0.3+ | 0.8− |
| 1998 12 16 | 704 | 0.4+ | 1.3+ | 2002 12 07 | 704 | 0.4− | 0.1+ | 2004 04 22 | 704 | 0.1− | 0.0 |
| 1998 12 16 | 704 | 0.3− | 0.2− | 2002 12 07 | 704 | 0.0 | 0.6+ | 2005 07 04 | G96 | 0.3+ | 0.7+ |
| 1998 12 16 | 704 | 0.8+ | 0.5+ | 2002 12 07 | 704 | 0.4− | 0.3+ | 2005 07 04 | G96 | 1.0− | 0.1+ |
| 1998 12 16 | 704 | 0.5+ | 0.3+ | 2002 12 07 | 704 | 0.5+ | 0.7+ | 2005 07 04 | G96 | 0.2− | 0.1+ |
| 1998 12 22 | 704 | 0.8− | 0.4− | 2003 01 27 | 644 | 0.0 | 0.4+ | 2005 07 04 | G96 | 0.3− | 0.6+ |
| 1998 12 22 | 704 | 0.9+ | 1.6− | 2003 01 27 | 644 | 0.0 | 0.1+ | 2005 07 06 | 691 | 0.0 | 0.0 |
| 1998 12 22 | 704 | 0.8+ | 0.7− | 2003 01 27 | 644 | 0.2+ | 0.4+ | 2005 07 06 | 691 | 0.2+ | 0.2+ |
| 1998 12 22 | 704 | 0.4+ | 0.6− | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2005 07 06 | 691 | 0.1− | 0.3+ |
| 1998 12 22 | 704 | (4.4− | 0.7−) | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 2002 10 30 | 644 | 0.6+ | 1.0+ | 2004 03 19 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.9+ | 0.1+ |
| 2002 10 30 | 608 | 0.8− | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.0 |
| 2002 10 30 | 644 | 0.9+ | 0.7+ | 2004 03 19 | 704 | 0.7+ | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.7− |
| 2002 10 30 | 608 | 0.8− | 0.1+ | 2004 03 20 | 699 | 0.9+ | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2002 10 30 | 644 | 0.2− | 0.1+ | 2004 03 20 | 699 | 0.7− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2002 10 30 | 608 | 0.9− | 0.6− | 2004 03 20 | 699 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2002 11 05 | 699 | 0.6+ | 0.7+ | 2004 03 20 | 699 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2002 11 05 | 699 | 1.0− | 0.9+ | 2004 03 22 | 704 | 0.7+ | 0.4− | 2006 10 16 | 703 | 1.0+ | 0.2− |
| 2002 11 05 | 699 | 1.0− | 0.4+ | 2004 03 22 | 704 | 1.4+ | 0.2− | 2006 10 16 | 703 | 1.2− | 0.6+ |
| 2002 11 05 | 699 | 1.4− | 0.9+ | 2004 03 22 | 704 | 0.8+ | 0.4− | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2002 11 07 | 704 | 0.0 | 0.0 | 2004 03 22 | 704 | 1.0+ | 0.9+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 11 07 | 704 | 0.2+ | 0.4+ | 2004 04 09 | E12 | 0.3+ | 0.5− | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 2002 11 07 | 704 | 0.5+ | 0.1+ | 2004 04 09 | E12 | 0.4− | 0.5− | 2006 10 19 | 644 | 0.3− | 0.6+ |
| 2002 11 07 | 704 | 0.2− | 0.4+ | 2004 04 09 | E12 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.7− | 0.5+ | 2004 04 09 | E12 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.6+ | 0.9+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.4+ | 0.5+ | 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.8+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.5+ |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2004 04 16 | 704 | 1.0+ | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.3+ |
| 2002 11 07 | 704 | 0.2+ | 0.4+ | 2004 04 16 | 704 | 1.1− | 0.7− | 2006 11 07 | 644 | 0.5− | 0.2− |
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2004 04 16 | 704 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.1+ | 1.3− |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2004 04 16 | 704 | 0.7+ | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.2+ |
| 2002 11 11 | 704 | 0.3− | 0.2+ | 2004 04 17 | 699 | 0.6− | 0.3− | 2006 11 13 | 703 | 0.5+ | 0.2+ |
| 2002 11 11 | 704 | 0.0 | 0.6− | 2004 04 17 | 699 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.9− |
| 2002 11 11 | 704 | 0.3− | 0.1+ | 2004 04 17 | 699 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2002 12 01 | 704 | 0.5− | 0.5− | 2004 04 17 | 699 | 0.8− | 0.2− | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2002 12 01 | 704 | 0.4+ | 1.0+ | 2004 04 20 | 704 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2002 12 01 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 1.1− | 0.8+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2002 12 01 | 704 | 0.1+ | 1.1+ | 2004 04 20 | 704 | 0.2+ | 0.3− | | | | |
| 2002 12 01 | 704 | 1.3+ | 0.1− | 2004 04 20 | 704 | 1.2− | 0.4+ | | | | |

**(142905)∗ 2002 VJ$_{50}$**

Discovered 2002 Nov. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.74566 | | (2000.0) | | | |
| $n$ | 0.27197479 | $\omega$ | 312.92057 | | +0.27744086 | −0.95968633 |
| $a$ | 2.3593024 | $\Omega$ | 120.92023 | | +0.89605169 | +0.24156285 |
| $e$ | 0.1971492 | $i$ | 3.00957 | | +0.34658036 | +0.14369943 |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 14 | 327 | 0.9+ | 0.2+ | 2002 12 01 | 608 | 0.2+ | 0.6− | 2005 07 05 | 691 | 0.1− | 0.4+ |
| 1996 01 14 | 327 | 0.4− | 0.2+ | 2002 12 01 | 608 | 0.3− | 1.1− | 2005 07 05 | 691 | 0.1+ | 0.5+ |
| 2000 03 11 | 699 | 0.8− | 0.7+ | 2002 12 07 | 704 | 0.0 | 0.4+ | 2005 07 05 | 691 | 0.2− | 0.4+ |
| 2000 03 11 | 699 | 1.5+ | 0.8+ | 2002 12 07 | 704 | 0.3− | 0.3+ | 2005 07 05 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 699 | 0.4− | 1.8+ | 2002 12 07 | 704 | 0.3− | 0.6+ | 2005 07 05 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 699 | 0.0 | 0.0 | 2002 12 07 | 704 | 0.1+ | 0.3+ | 2005 07 05 | 691 | 0.1+ | 0.3+ |
| 2002 09 16 | 608 | (0.6+ | 1.6−) | 2002 12 07 | 704 | 0.2− | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.1+ |
| 2002 09 16 | 608 | (0.4+ | 1.6−) | 2002 12 10 | 644 | 0.4− | 0.4+ | 2005 07 09 | 691 | 0.3+ | 0.5− |
| 2002 09 16 | 608 | 0.0 | 0.5− | 2002 12 10 | 644 | 0.5− | 0.4+ | 2005 07 09 | 691 | 0.5+ | 0.2+ |
| 2002 10 31 | 644 | 0.1+ | 0.3− | 2002 12 10 | 644 | 0.6− | 0.4+ | 2005 07 12 | G96 | 0.3− | 0.5− |
| 2002 10 31 | 644 | 0.0 | 0.5− | 2002 12 11 | 704 | 0.8+ | 1.0+ | 2005 07 12 | G96 | 0.4− | 0.5− |
| 2002 10 31 | 644 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.5− | 0.4+ | 2005 07 12 | G96 | 0.0 | 0.2− |
| 2002 11 05 | 699 | 0.9+ | 0.7− | 2002 12 11 | 704 | 0.4+ | 0.7+ | 2005 07 16 | 691 | 0.9− | 0.1+ |
| 2002 11 05 | 699 | 1.2+ | 0.1− | 2002 12 11 | 704 | 1.2+ | 0.1+ | 2005 07 16 | 691 | 0.1− | 0.1+ |
| 2002 11 05 | 699 | 0.7+ | 0.1+ | 2002 12 11 | 704 | 0.2+ | 0.2+ | 2005 07 16 | 691 | 0.4− | 0.1+ |
| 2002 11 05 | 699 | 0.1+ | 0.3+ | 2002 12 30 | 608 | 0.5− | 0.7− | 2005 07 30 | E12 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | 0.2+ | 0.3− | 2002 12 30 | 608 | 0.4+ | 1.1− | 2005 07 30 | E12 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.4− | 0.3− | 2002 12 30 | 608 | 0.6− | 0.9− | 2005 07 30 | E12 | 0.5+ | 0.2− |
| 2002 11 07 | 704 | 0.0 | 0.1+ | 2003 01 01 | 704 | 0.9− | 0.2− | 2005 07 30 | E12 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.2+ | 0.2+ | 2003 01 01 | 704 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.7− | 0.1+ |
| 2002 11 07 | 704 | 0.2− | 0.0 | 2003 01 01 | 704 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.4− | 0.2+ |
| 2002 11 11 | 704 | 0.1− | 0.3− | 2003 01 01 | 704 | 0.6− | 1.0+ | 2006 10 17 | G96 | 0.4− | 0.2− |
| 2002 11 11 | 704 | 0.2+ | 0.4− | 2003 01 07 | 704 | 0.5− | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.6+ |
| 2002 11 11 | 704 | 0.1− | 0.5− | 2003 01 07 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 11 11 | 704 | 0.0 | 0.3− | 2003 01 07 | 704 | 0.2+ | 0.5− | 2006 10 21 | G96 | 0.7− | 0.4− |
| 2002 11 11 | 704 | 0.1+ | 0.6− | 2003 01 07 | 704 | 0.7+ | 0.2− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2002 11 12 | 644 | 0.0 | 0.1− | 2003 01 07 | 704 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2002 11 12 | 644 | 0.1+ | 0.0 | 2003 01 08 | 704 | 1.0− | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.4− |
| 2002 11 12 | 644 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.7− | 0.1− |
| 2002 11 14 | 644 | 0.1− | 0.4+ | 2003 01 08 | 704 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.6− | 0.2+ |
| 2002 11 14 | 644 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.8− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 11 14 | 644 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.5− | 0.7+ | 2006 11 18 | 704 | 0.9+ | 0.2+ |
| 2002 11 22 | 644 | 0.2− | 0.2− | 2003 01 18 | 644 | 0.0 | 1.2+ | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2002 11 22 | 644 | 0.2− | 0.1− | 2003 01 18 | 644 | (0.1+ | 1.6+) | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2002 11 22 | 644 | 0.3− | 0.2− | 2003 01 18 | 644 | 0.0 | 1.2+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 12 01 | 704 | 0.2− | 0.1− | 2003 01 27 | 644 | 0.2− | 1.4+ | 2006 11 28 | 704 | 0.7+ | 0.8+ |
| 2002 12 01 | 704 | 0.3+ | 0.2+ | 2003 01 27 | 644 | 0.3+ | 1.1+ | 2006 11 28 | 704 | 0.5+ | 0.7+ |
| 2002 12 01 | 704 | 0.2− | 0.3+ | 2003 01 27 | 644 | 0.5+ | 1.4+ | 2006 11 28 | 704 | 2.2+ | 1.0+ |
| 2002 12 01 | 704 | 0.1− | 0.5+ | 2005 06 27 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 1.1+ | 1.0+ |
| 2002 12 01 | 704 | 0.2+ | 0.3+ | 2005 06 27 | 691 | 0.1+ | 0.5+ | | | | |
| 2002 12 01 | 608 | 0.2+ | 1.1− | 2005 06 27 | 691 | 0.1− | 0.4+ | | | | |

**(142906)∗ 2002 VE$_{51}$ = 2000 FE$_{53}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 41202), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.90373 | | (2000.0) | | | |
| $n$ | 0.23175217 | $\omega$ | 210.27611 | | +0.75649975 | −0.65344660 |
| $a$ | 2.6249448 | $\Omega$ | 190.65318 | | +0.62530376 | +0.73469017 |
| $e$ | 0.1663890 | $i$ | 8.32062 | | +0.19158118 | +0.18231261 |
| $P$ | 4.25 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.1− | 0.2+ | 2002 11 30 | 704 | 0.3− | 1.1+ | 2006 09 25 | 704 | 0.0 | 0.4+ |
| 2000 03 30 | 691 | 0.3− | 0.4+ | 2002 11 30 | 704 | 1.0− | 0.0 | 2006 09 25 | 704 | 1.1+ | 0.3+ |
| 2000 03 30 | 691 | 0.0 | 0.1+ | 2002 11 30 | 704 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.4− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 691 | 0.6+ | 0.2− | 2002 12 08 | 644 | 0.3− | 0.5− | 2006 09 28 | G96 | 0.2− | 0.3− | | |
| 2000 04 06 | 691 | 0.1− | 0.1− | 2002 12 08 | 644 | 0.1+ | 0.6− | 2006 09 28 | G96 | 1.2− | 0.2− | | |
| 2000 04 06 | 691 | 0.3+ | 0.2+ | 2002 12 08 | 644 | 0.0 | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.5− | | |
| 2002 10 11 | 704 | 0.5+ | 1.0+ | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 10 01 | 703 | 0.3− | 0.8+ | | |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2005 06 11 | 691 | 0.2− | 0.1+ | 2006 10 01 | 703 | 0.1+ | 0.5− | | |
| 2002 10 11 | 704 | 0.4− | 0.3+ | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 703 | (1.8− | 1.8+) | | |
| 2002 10 28 | 608 | 0.4+ | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 10 01 | 703 | (2.1− | 0.1−) | | |
| 2002 10 28 | 608 | 0.6+ | 0.1− | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 28 | 608 | 0.3+ | 0.5− | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 01 | 704 | 0.5− | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 01 | 704 | 0.6− | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 11 01 | 704 | 1.0+ | 1.2+ | 2006 09 06 | 644 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 11 06 | 699 | 0.1+ | 1.2+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− | | |
| 2002 11 06 | 699 | 0.2+ | 0.7− | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.6+ | | |
| 2002 11 06 | 699 | 0.7+ | 0.1− | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.2− | | |
| 2002 11 06 | 699 | 1.3+ | 1.1− | 2006 09 16 | 699 | 0.6− | 0.7− | 2006 10 16 | 703 | 0.2− | 0.1− | | |
| 2002 11 06 | 608 | 0.5− | 0.1+ | 2006 09 16 | 699 | 0.4− | 1.2− | 2006 10 16 | 703 | 0.6+ | 0.2+ | | |
| 2002 11 06 | 608 | 0.8− | 0.0 | 2006 09 16 | 699 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 06 | 608 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 11 07 | 704 | 0.1− | 0.7− | 2006 09 19 | 699 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.7− | 0.1− | | |
| 2002 11 07 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.6+ | 2006 10 24 | 644 | 0.2+ | 0.3+ | | |
| 2002 11 07 | 704 | 0.5− | 0.8+ | 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.1− | | |
| 2002 11 07 | 704 | 0.7− | 0.4+ | 2006 09 19 | 699 | 0.4+ | 0.0 | 2006 10 24 | 644 | 0.3+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.4− | 1.1+ | 2006 09 19 | 703 | 1.0+ | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.3− | | |
| 2002 11 13 | 644 | 0.3− | 0.2+ | 2006 09 19 | 703 | 1.4+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.1− | | |
| 2002 11 13 | 644 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.9+ | 2006 11 15 | G96 | 0.4+ | 0.7− | | |
| 2002 11 30 | 704 | (0.1− | 2.1−) | 2006 09 25 | 704 | 1.4− | 0.2− | | | | | | |

**(142907)∗ 2002 VA$_{52}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.00732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23976348 | $\omega$ | 205.00511 | | −0.01040586 | +0.97738743 | |
| $a$ | 2.5661421 | $\Omega$ | 65.00297 | | −0.87378907 | +0.09380747 | |
| $e$ | 0.0592175 | $i$ | 13.47541 | | −0.48619377 | −0.18950983 | |
| $P$ | 4.11 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 012 | 0.4− | 0.3− | 2002 11 21 | 644 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.0 | | |
| 2000 02 03 | 012 | (2.5− | 0.9+) | 2004 01 30 | 703 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.9− | 0.8+ | | |
| 2000 02 03 | 012 | 1.0+ | 0.4+ | 2004 01 30 | 703 | 1.1+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.0 | | |
| 2000 02 03 | 012 | (1.2+ | 2.6−) | 2004 01 30 | 703 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.6+ | 1.3− | | |
| 2000 02 03 | 012 | 0.3− | 0.6− | 2004 01 30 | 703 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.2− | | |
| 2000 02 03 | 012 | 1.2− | 0.5− | 2004 01 31 | 699 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.4+ | | |
| 2002 10 31 | 704 | 0.2− | 0.5− | 2004 01 31 | 699 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.0 | 0.7− | | |
| 2002 10 31 | 704 | 0.2+ | 0.0 | 2004 01 31 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 703 | (0.0 | 1.8−) | | |
| 2002 10 31 | 704 | 1.1− | 1.1− | 2004 01 31 | 699 | 0.5− | 0.1+ | 2006 10 22 | 703 | 1.0− | 0.8− | | |
| 2002 10 31 | 704 | 0.2+ | 0.3− | 2004 02 11 | 704 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.1− | | |
| 2002 10 31 | 704 | 0.0 | 0.1− | 2004 02 11 | 704 | 0.9− | 0.7− | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2002 11 06 | 699 | 0.9+ | 0.3− | 2004 02 11 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 06 | 699 | 0.4+ | 0.2+ | 2004 02 11 | 704 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2002 11 06 | 699 | 0.5− | 0.1− | 2004 02 11 | 704 | 0.1− | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2002 11 06 | 699 | 0.9− | 0.5+ | 2004 02 18 | 703 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.3+ | 0.1− | 2004 02 18 | 703 | 0.9+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2004 02 18 | 703 | 0.1− | 0.3− | 2006 10 28 | 703 | 0.4+ | 1.1+ | | |
| 2002 11 07 | 704 | 0.1+ | 0.0 | 2004 02 18 | 703 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.5+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.2+ | | |
| 2002 11 11 | 704 | 1.3+ | 0.7− | 2006 09 16 | 699 | 0.7+ | 0.8+ | 2006 10 28 | 703 | 0.6+ | 0.4+ | | |
| 2002 11 11 | 704 | 0.8+ | 0.1− | 2006 09 16 | 699 | 0.6+ | 0.7+ | 2006 11 16 | 703 | 0.2− | 0.3− | | |
| 2002 11 11 | 704 | 1.4+ | 0.4+ | 2006 09 16 | 699 | 0.8− | 0.2− | 2006 11 16 | 703 | 0.5− | 0.1− | | |
| 2002 11 21 | 644 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.4− | 2006 11 16 | 703 | 0.3− | 0.5− | | |
| 2002 11 21 | 644 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.7+ | 2006 11 16 | 703 | 0.5− | 0.1+ | | |

**(142908)∗ 2002 VC$_{52}$ = 2000 HA$_{76}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 38137)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.45435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22993922 | $\omega$ | 24.26178 | | −0.69826995 | −0.71036815 | |
| $a$ | 2.6387243 | $\Omega$ | 110.16362 | | +0.64043317 | −0.67505147 | |
| $e$ | 0.1642994 | $i$ | 5.39726 | | +0.31978810 | −0.19920495 | |
| $P$ | 4.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 704 | 0.3− | 0.0 | 2004 02 25 | 683 | 1.2− | 1.1− | 2004 04 15 | 704 | 1.0+ | 0.3− | | |
| 2000 04 27 | 704 | 0.6+ | 0.5+ | 2004 02 27 | 683 | (0.3+ | 2.4−) | 2004 04 15 | 704 | 0.0 | 0.3+ | | |
| 2000 04 27 | 704 | 0.1+ | 0.9+ | 2004 02 27 | 683 | 0.3− | 0.2− | 2004 04 23 | 704 | 0.9+ | 0.2+ | | |
| 2000 04 27 | 704 | 0.0 | 1.2+ | 2004 02 27 | 683 | 1.3+ | 0.5− | 2004 04 23 | 704 | 0.4− | 0.4+ | | |
| 2000 04 27 | 704 | 0.8− | 1.4+ | 2004 02 29 | 683 | 0.8+ | 0.2+ | 2004 04 23 | 704 | 0.1− | 0.4+ | | |
| 2000 04 30 | 699 | 1.5+ | 0.6− | 2004 02 29 | 683 | 0.4+ | 1.1+ | 2004 04 23 | 704 | 0.2+ | 0.2+ | | |
| 2000 04 30 | 699 | 0.4+ | 0.0 | 2004 02 29 | 683 | 0.7− | 0.7+ | 2004 04 23 | 704 | 0.2+ | 0.0 | | |
| 2000 04 30 | 699 | 0.5+ | 0.0 | 2004 03 12 | 644 | 0.1+ | 0.0 | 2004 04 25 | 699 | 0.5− | 0.0 | | |
| 2000 04 30 | 699 | 0.6− | 0.5− | 2004 03 12 | 644 | 0.0 | 0.0 | 2004 04 25 | 699 | 0.2− | 0.1+ | | |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2004 03 12 | 644 | 0.2+ | 0.1− | 2004 04 25 | 699 | 0.9− | 0.3+ | | |
| 2002 10 31 | 704 | 0.0 | 0.4+ | 2004 03 14 | 691 | 0.2− | 0.1− | 2004 04 25 | 699 | 0.9− | 1.1+ | | |
| 2002 10 31 | 704 | 0.2− | 1.2+ | 2004 03 14 | 691 | 0.1− | 0.1− | 2005 06 01 | 691 | 0.2− | 0.1+ | | |
| 2002 10 31 | 704 | 0.8− | 1.1− | 2004 03 14 | 691 | 0.1− | 0.0 | 2005 06 01 | 691 | 0.1− | 0.1+ | | |
| 2002 10 31 | 704 | 0.5− | 1.0+ | 2004 03 15 | 704 | 0.1− | 0.0 | 2005 06 01 | 691 | 0.1− | 0.3+ | | |
| 2002 11 06 | 699 | 0.9− | 1.3+ | 2004 03 15 | 704 | 0.1+ | 0.8+ | 2005 06 08 | 691 | 0.1− | 0.1− | | |
| 2002 11 06 | 699 | 0.3− | 0.9+ | 2004 03 15 | 704 | 0.4+ | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.0 | | |
| 2002 11 06 | 699 | (1.7− | 1.2+) | 2004 03 15 | 704 | 0.2+ | 0.4− | 2005 06 08 | 691 | 0.1− | 0.3+ | | |
| 2002 11 06 | 699 | 0.3− | 0.3+ | 2004 03 15 | 704 | 0.3+ | 0.2− | 2005 06 13 | G96 | 0.3+ | 0.4+ | | |
| 2002 11 07 | 704 | (0.8− | 2.1+) | 2004 03 20 | 704 | 0.4+ | 0.2− | 2005 06 13 | G96 | 0.1+ | 0.6+ | | |
| 2002 11 07 | 704 | 0.5− | 1.3+ | 2004 03 20 | 704 | 0.7+ | 0.4− | 2005 06 13 | G96 | 0.1− | 0.3+ | | |
| 2002 11 07 | 704 | 0.6− | 1.5+ | 2004 03 20 | 704 | 0.0 | 0.5+ | 2005 06 13 | G96 | 0.1+ | 0.6+ | | |
| 2002 11 11 | 704 | (0.1+ | 1.7+) | 2004 03 20 | 704 | 0.0 | 0.3− | 2006 09 18 | 703 | (2.1+ | 0.6−) | | |
| 2002 11 11 | 704 | 0.8+ | 0.7+ | 2004 03 20 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 1.4+ | 1.3+ | | |
| 2002 11 11 | 704 | 0.3− | 0.7+ | 2004 03 21 | 699 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.2+ | 1.4− | | |
| 2002 11 11 | 704 | 0.6− | 0.9+ | 2004 03 21 | 699 | 0.8− | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.6− | | |
| 2002 11 14 | 644 | 0.2+ | 0.1+ | 2004 03 21 | 699 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.7+ | | |
| 2002 11 14 | 644 | 0.1+ | 0.4+ | 2004 03 21 | 699 | 0.6+ | 0.3− | 2006 09 26 | 703 | 0.1+ | 0.2− | | |
| 2002 11 14 | 644 | 0.4− | 0.4+ | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.4+ | | |
| 2004 01 22 | 704 | 0.2+ | 0.2+ | 2004 03 22 | 704 | 0.2− | 0.3+ | 2006 09 26 | 703 | (0.8− | 1.7+) | | |
| 2004 01 22 | 704 | 0.1+ | 0.8+ | 2004 03 22 | 704 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2+ | | |
| 2004 01 22 | 704 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.3+ | | |
| 2004 02 19 | 704 | 0.4− | 0.1+ | 2004 03 22 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.2+ | | |
| 2004 02 19 | 704 | 1.0+ | 0.7− | 2004 03 30 | 703 | 0.9+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.3+ | | |
| 2004 02 19 | 704 | 0.8+ | 0.7+ | 2004 03 30 | 703 | 1.3+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.9+ | | |
| 2004 02 19 | 704 | 0.9− | 0.1+ | 2004 03 30 | 703 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2004 02 19 | 704 | 0.8+ | 0.4+ | 2004 03 30 | 703 | 0.6+ | 1.0+ | 2006 10 20 | 644 | 0.5− | 0.4+ | | |
| 2004 02 25 | 704 | 0.5− | 0.6+ | 2004 04 15 | 644 | 0.3+ | 0.5+ | 2006 10 28 | 703 | 1.4− | 0.4+ | | |
| 2004 02 25 | 704 | 0.8− | 0.0 | 2004 04 15 | 644 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.4+ | 0.9+ | | |
| 2004 02 25 | 704 | (1.0+ | 1.6+) | 2004 04 15 | 704 | 0.6+ | 0.8+ | 2006 10 28 | 703 | 0.4+ | 0.3+ | | |
| 2004 02 25 | 683 | 0.4− | 0.3+ | 2004 04 15 | 704 | 0.9+ | 1.3+ | 2006 10 28 | 703 | 0.4− | 1.4+ | | |
| 2004 02 25 | 683 | 0.1+ | 0.6+ | 2004 04 15 | 644 | 0.2+ | 0.3+ | | | | | | |

**(142909)∗ 2002 VL$_{52}$ = 2005 GN$_{176}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 75788)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.89358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22898543 | $\omega$ | 139.78796 | | +0.88311057 | +0.46624901 | |
| $a$ | 2.6460466 | $\Omega$ | 192.73102 | | −0.46777854 | +0.86647718 | |
| $e$ | 0.1118844 | $i$ | 13.70891 | | −0.03604108 | +0.17840731 | |
| $P$ | 4.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1+ | 0.1+ | 2006 08 25 | D35 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.2− | 0.1− |
| 2000 03 04 | 645 | 0.1+ | 0.1+ | 2006 08 25 | D35 | 0.2+ | 0.3− | 2006 10 01 | 703 | 0.2− | 0.2+ |
| 2001 06 21 | 704 | 0.6+ | 1.0+ | 2006 08 25 | D35 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.2− | 0.3+ |
| 2001 06 21 | 704 | 0.5− | 0.0 | 2006 09 01 | 704 | 1.0+ | 0.8+ | 2006 10 01 | 703 | 0.4− | 0.1+ |
| 2001 06 21 | 704 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.3+ | 0.5− | 2006 10 01 | 703 | (1.5− | 0.5−) |
| 2002 09 05 | 704 | (2.0− | 0.5−) | 2006 09 01 | 704 | 1.4+ | 0.6− | 2006 10 01 | 704 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.7+ | 0.6+ |
| 2002 09 05 | 704 | 0.6− | 0.1− | 2006 09 15 | 704 | 0.8+ | 0.1− | 2006 10 01 | 704 | 0.8+ | 0.1− |
| 2002 10 11 | 704 | 0.5− | 0.1+ | 2006 09 15 | 704 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.2+ |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 09 15 | 704 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.4− |
| 2002 10 11 | 704 | 0.5− | 0.6+ | 2006 09 18 | 704 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2002 10 11 | 704 | 1.0− | 1.0+ | 2006 09 18 | 704 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.9+ | 0.7− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 10 31 | 704 | (0.0 | 2.1+) | 2006 09 18 | 704 | 1.2+ | 0.8− | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 10 31 | 704 | 0.9+ | 0.1− | 2006 09 19 | 703 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 2002 10 31 | 704 | (0.3− | 2.9+) | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.7− |
| 2002 11 06 | 699 | (1.8− | 0.4−) | 2006 09 19 | 703 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 11 06 | 699 | 0.3− | 0.4+ | 2006 09 20 | 699 | 1.1− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 11 06 | 699 | (0.4− | 1.7+) | 2006 09 20 | 704 | 0.4+ | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 11 06 | 699 | 1.0− | 1.4+ | 2006 09 20 | 699 | 0.5− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.4− |
| 2002 11 07 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.5− | 2006 10 22 | 703 | 0.6+ | 0.8− |
| 2002 11 07 | 704 | 0.3− | 0.9+ | 2006 09 20 | 699 | 0.9− | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.6+ |
| 2002 11 07 | 704 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.5− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2005 04 14 | 691 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.5− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.3− | 0.4− | 2006 10 24 | 644 | 0.2− | 0.2+ |
| 2005 04 18 | 691 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.4− | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2005 04 18 | 691 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2005 05 06 | 703 | (0.0 | 2.5+) | 2006 09 25 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2005 05 06 | 703 | (2.1+ | 1.2+) | 2006 09 25 | 699 | 0.4− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2005 05 06 | 703 | 0.7− | 0.5− | 2006 09 25 | 704 | 0.2− | 0.9+ | 2006 11 11 | 703 | 2.2+ | 0.9+ |
| 2005 05 06 | 703 | 1.0+ | 1.0+ | 2006 09 25 | 704 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2005 05 11 | 703 | 0.8− | 0.5+ | 2006 09 25 | 699 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3− | 0.7− |
| 2005 05 11 | 703 | 1.3− | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2005 05 11 | 703 | 0.6− | 0.3− | 2006 09 25 | 699 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2005 05 11 | 703 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.3+ | 2006 11 18 | 703 | 0.1+ | 0.6− |
| 2006 07 24 | 704 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 703 | 0.9− | 1.5− |
| 2006 07 24 | 704 | 0.1+ | 1.2+ | 2006 09 29 | 704 | 0.7+ | 0.9+ | 2006 11 18 | 703 | 0.7− | 0.7+ |
| 2006 07 24 | 704 | 1.0+ | 0.3+ | 2006 09 29 | 704 | (0.1+ | 1.6+) | 2006 11 18 | 703 | 0.7− | 0.9− |
| 2006 07 24 | 704 | 0.6+ | 0.5− | 2006 09 29 | 704 | 0.8− | 0.8+ | | | | |

**(142910)∗ 2002 VC$_{53}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.98596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22158633 | $\omega$ | 328.14890 | | +0.82590923 | −0.56176159 | |
| $a$ | 2.7046272 | $\Omega$ | 66.10282 | | +0.52766183 | +0.74021620 | |
| $e$ | 0.0862879 | $i$ | 3.00544 | | +0.19861253 | +0.36946433 | |
| $P$ | 4.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 08 | 691 | 0.2+ | 0.4+ | 2002 11 25 | 291 | 0.0 | 0.4+ | 2005 06 13 | G96 | 0.1+ | 0.6+ |
| 1991 04 08 | 691 | 0.3+ | 0.3+ | 2002 12 01 | 704 | 0.0 | 0.5− | 2005 06 13 | G96 | 0.3+ | 0.6+ |
| 1991 04 08 | 691 | 0.0 | 0.2+ | 2002 12 01 | 704 | 0.7+ | 0.8+ | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 1998 12 17 | 704 | (0.1+ | 2.0−) | 2002 12 01 | 704 | 0.5+ | 0.2− | 2006 08 24 | 644 | 0.5− | 0.4+ |
| 1998 12 17 | 704 | 1.9− | 0.1+ | 2002 12 01 | 704 | 0.3− | 1.0− | 2006 08 24 | 644 | 0.4− | 0.4+ |
| 1998 12 17 | 704 | (1.2+ | 3.1−) | 2002 12 01 | 704 | 0.8+ | 0.0 | 2006 08 24 | 644 | 0.6− | 0.2+ |
| 1998 12 17 | 704 | (3.7− | 0.8−) | 2002 12 01 | 608 | 1.2− | 0.9− | 2006 08 24 | 644 | 0.1− | 0.2+ |
| 2000 04 06 | 704 | 0.2+ | 0.2+ | 2002 12 01 | 608 | 0.5− | 1.0− | 2006 08 24 | 644 | 0.1− | 0.6+ |
| 2000 04 06 | 704 | 0.7+ | 0.4− | 2002 12 01 | 608 | 0.6− | 1.1− | 2006 08 27 | 699 | 1.5+ | 0.3+ |
| 2000 04 06 | 704 | 0.5+ | 0.4+ | 2002 12 05 | 704 | 0.1+ | 0.4− | 2006 08 27 | 699 | 0.2− | 0.4− |
| 2000 04 06 | 704 | 0.2+ | 0.1+ | 2002 12 05 | 704 | 0.7+ | 0.5+ | 2006 08 27 | 699 | 0.8− | 1.0+ |
| 2002 10 09 | 704 | 0.8+ | 1.0− | 2002 12 05 | 704 | 0.9− | 0.1− | 2006 08 27 | 699 | 1.0− | 0.4+ |
| 2002 10 09 | 704 | 1.0+ | 0.2− | 2002 12 10 | 644 | 0.5− | 0.2+ | 2006 08 30 | 704 | 0.3− | 0.1− |
| 2002 10 09 | 704 | 0.3+ | 0.5− | 2002 12 10 | 644 | 0.5− | 0.2+ | 2006 08 30 | 704 | 0.9+ | 0.0 |
| 2002 10 31 | 644 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.7+ | 0.4+ | 2006 08 30 | 704 | 0.6− | 0.9+ |
| 2002 10 31 | 644 | 0.1+ | 0.5+ | 2002 12 10 | 704 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.6+ | 0.0 |
| 2002 10 31 | 644 | 0.1+ | 0.5+ | 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.2− |
| 2002 11 03 | 608 | 0.1− | 0.6+ | 2002 12 10 | 704 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.5+ |
| 2002 11 03 | 608 | 0.4− | 0.8+ | 2002 12 10 | 704 | 0.6+ | 0.8+ | 2006 09 14 | 703 | 0.5+ | 0.0 |
| 2002 11 03 | 608 | 0.2+ | 0.3+ | 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 2002 11 06 | 704 | 0.0 | 0.2− | 2002 12 11 | 704 | 0.9+ | 0.4− | 2006 09 14 | 703 | 0.2− | 0.2− |
| 2002 11 06 | 704 | 0.3− | 0.1+ | 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 09 19 | 699 | 1.1− | 0.3+ |
| 2002 11 06 | 704 | 0.0 | 0.4− | 2002 12 11 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.1− | 1.4+ |
| 2002 11 06 | 704 | 0.4− | 0.4+ | 2002 12 11 | 704 | 0.3− | 0.6+ | 2006 09 19 | 699 | 0.8− | 0.8+ |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2003 01 02 | 291 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.2− | 1.0+ |
| 2002 11 07 | 704 | 0.0 | 0.1− | 2003 01 02 | 291 | 0.6− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.7+ |
| 2002 11 07 | 704 | 1.0+ | 0.2− | 2003 01 02 | 291 | 1.4− | 0.3+ | 2006 09 25 | 699 | 1.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.5+ | 0.4+ | 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.7+ | 0.3+ |
| 2002 11 07 | 704 | 0.3+ | 1.1+ | 2004 02 17 | 704 | 1.0+ | 1.4+ | 2006 09 25 | 699 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.6+ | 0.1+ | 2004 02 17 | 704 | 0.8+ | 1.3+ | 2006 09 26 | 704 | 0.4− | 0.3− |
| 2002 11 10 | 704 | 0.6+ | 0.0 | 2004 02 17 | 704 | 0.0 | 1.5+ | 2006 09 26 | 704 | 0.6+ | 0.7+ |
| 2002 11 10 | 704 | (0.3+ | 1.7−) | 2004 02 23 | 704 | 0.7+ | 0.4+ | 2006 09 26 | 704 | 0.2+ | 0.3+ |
| 2002 11 10 | 704 | 0.2+ | 0.4− | 2004 02 23 | 704 | 1.1+ | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.7− |
| 2002 11 10 | 704 | 0.3− | 0.5− | 2004 02 23 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.8− |
| 2002 11 10 | 704 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.2− |
| 2002 11 10 | 704 | 0.9+ | 0.7− | 2005 05 29 | E12 | (0.6− | 2.2+) | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2002 11 12 | 644 | 0.2− | 0.4− | 2005 05 29 | E12 | 0.0 | 0.0 | 2006 09 30 | 703 | 1.2− | 0.3+ |
| 2002 11 12 | 644 | 0.2− | 0.6− | 2005 05 29 | E12 | 0.9− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 11 12 | 644 | 0.2− | 0.5− | 2005 05 29 | E12 | 0.9− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2002 11 25 | 291 | 0.2+ | 0.3+ | 2005 06 13 | G96 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 11 25 | 291 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.2+ | 0.5+ | | | | |

**(142911)∗ 2002 VJ$_{53}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.57701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25471597 | $\omega$ | 121.18215 | | +0.32733152 | −0.94143009 | |
| $a$ | 2.4647068 | $\Omega$ | 309.48961 | | +0.82728807 | +0.32695748 | |
| $e$ | 0.0973942 | $i$ | 6.02586 | | +0.45656163 | +0.08251180 | |
| $P$ | 3.87 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.9− | 0.0 | 2002 11 14 | 704 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.3− | 0.0 |
| 2000 03 09 | 704 | 0.8+ | 0.2+ | 2002 11 14 | 704 | 0.5− | 0.4+ | 2003 01 05 | 704 | 0.4+ | 0.3+ |
| 2000 03 09 | 704 | 0.7− | 0.7+ | 2002 11 24 | 644 | 0.2+ | 0.0 | 2003 01 20 | 644 | 0.4+ | 0.7− |
| 2000 03 09 | 704 | 0.3− | 0.7− | 2002 11 24 | 644 | 0.1+ | 0.2− | 2003 01 20 | 644 | 0.7+ | 0.0 |
| 2002 10 05 | 704 | 1.0+ | 0.9+ | 2002 11 24 | 644 | 0.1+ | 0.2+ | 2003 01 20 | 644 | 0.2+ | 0.2+ |
| 2002 10 05 | 704 | 0.1− | 0.4− | 2002 11 27 | 699 | 0.3+ | 0.4+ | 2003 02 04 | 704 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.2+ | 0.2− | 2002 11 27 | 699 | (1.8+ | 0.2+) | 2003 02 04 | 704 | 0.1+ | 1.2+ |
| 2002 10 05 | 704 | 0.4+ | 0.4− | 2002 11 27 | 699 | 0.9+ | 0.2+ | 2003 02 04 | 704 | 1.3+ | 1.3+ |
| 2002 10 05 | 704 | 0.3− | 0.8− | 2002 11 27 | 699 | (1.9+ | 0.3+) | 2004 03 17 | 703 | 0.3− | 0.3+ |
| 2002 11 06 | 704 | (1.8+ | 0.9+) | 2002 12 02 | 704 | 0.2+ | 0.5− | 2004 03 17 | 703 | (1.7− | 0.6−) |
| 2002 11 06 | 704 | (0.4+ | 1.7+) | 2002 12 02 | 704 | 0.7+ | 0.0 | 2004 03 17 | 703 | 0.3− | 0.4− |
| 2002 11 06 | 699 | 0.5− | 0.2− | 2002 12 02 | 704 | 0.6+ | 1.1+ | 2004 03 17 | 703 | (1.9− | 0.2−) |
| 2002 11 06 | 704 | 0.7+ | 1.3+ | 2002 12 02 | 704 | 0.6+ | 0.1+ | 2004 04 12 | 644 | 0.1− | 0.3+ |
| 2002 11 06 | 699 | 0.3− | 0.6− | 2002 12 02 | 704 | 0.7+ | 0.0 | 2004 04 12 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | (1.6+ | 1.8+) | 2002 12 05 | 704 | 0.6− | 0.1+ | 2004 04 12 | 644 | 0.0 | 0.1− |
| 2002 11 06 | 699 | 0.3− | 0.2+ | 2002 12 05 | 704 | 0.4− | 0.5− | 2004 04 14 | 291 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | (0.7+ | 1.7+) | 2002 12 05 | 704 | 1.2− | 0.6− | 2004 04 14 | 291 | 0.2+ | 0.1+ | | |
| 2002 11 06 | 699 | 1.4− | 0.1− | 2002 12 05 | 704 | 0.5− | 0.3− | 2004 04 14 | 291 | 0.4+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.7+ | 2002 12 05 | 704 | 0.9− | 0.3− | 2006 08 29 | 703 | 0.5− | 0.6+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.5+ | 2002 12 27 | 644 | 0.1+ | 0.9+ | 2006 08 29 | 703 | 0.0 | 0.7− | | |
| 2002 11 07 | 704 | 0.7− | 0.3+ | 2002 12 27 | 644 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 0.1− | 0.2− | | |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2002 12 27 | 644 | 0.3+ | 0.8+ | 2006 08 29 | 703 | 0.1− | 0.6− | | |
| 2002 11 07 | 704 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.9− | 0.6− | 2006 11 22 | 703 | 0.9− | 0.9− | | |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2002 12 31 | 704 | 0.8− | 0.6+ | 2006 11 22 | 703 | 0.1+ | 0.8− | | |
| 2002 11 07 | 704 | 0.0 | 0.3+ | 2002 12 31 | 704 | 0.2− | 0.2− | 2006 11 22 | 703 | 1.1+ | 1.1− | | |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.8− | | |
| 2002 11 14 | 704 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.3+ | 1.1− | | |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.8− | | |
| 2002 11 14 | 704 | 0.1+ | 0.3+ | 2003 01 05 | 704 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.6− | | |

**(142912)∗ 2002 VL$_{54}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.25470 | | (2000.0) | | | |
| $n$ | 0.22508269 | $\omega$ | 198.84293 | | −0.20974495 | −0.95258680 |
| $a$ | 2.6765456 | $\Omega$ | 263.73325 | | +0.92315215 | −0.11865157 |
| $e$ | 0.2073203 | $i$ | 12.81161 | | +0.32217566 | −0.28017887 |
| $P$ | 4.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.3− | 2.0− | 2002 11 14 | 644 | 0.5− | 0.0 | 2004 04 12 | E12 | 1.0+ | 0.6+ |
| 1998 12 15 | 704 | 0.0 | 0.2+ | 2002 11 14 | 644 | 0.5− | 0.1− | 2004 04 12 | E12 | 0.0 | 0.3+ |
| 1998 12 15 | 704 | 0.1+ | 1.4− | 2002 11 14 | 704 | 0.9− | 0.1+ | 2004 04 12 | E12 | 1.3+ | 0.6+ |
| 1998 12 15 | 704 | (0.4+ | 2.9−) | 2002 11 14 | 704 | 1.0− | 1.0− | 2004 04 12 | E12 | 0.4+ | 0.8+ |
| 2002 10 06 | 704 | 0.1+ | 0.4− | 2002 11 14 | 644 | 0.4− | 0.1+ | 2006 09 01 | 224 | 0.8+ | 0.5+ |
| 2002 10 06 | 704 | 0.4− | 1.0+ | 2002 11 14 | 704 | 1.1− | 0.0 | 2006 09 01 | 224 | 1.0+ | 0.4− |
| 2002 10 06 | 704 | 0.0 | 0.0 | 2002 11 14 | 704 | (1.9− | 0.4−) | 2006 09 01 | 224 | (1.0+ | 1.9+) |
| 2002 10 06 | 704 | 0.1− | 0.3− | 2002 11 14 | 704 | 0.9− | 0.1+ | 2006 09 16 | 703 | 0.8− | 0.4+ |
| 2002 11 06 | 699 | 0.7− | 1.1+ | 2002 11 24 | 644 | 0.2+ | 0.6+ | 2006 09 16 | 703 | 0.8− | 0.2− |
| 2002 11 06 | 699 | 0.0 | 0.4+ | 2002 11 24 | 644 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 0.6− | 0.1− |
| 2002 11 06 | 699 | 0.4− | 0.6+ | 2002 11 24 | 644 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 1.0+ | 0.4− |
| 2002 11 06 | 699 | 0.5− | 0.7+ | 2002 12 05 | 704 | 0.5− | 0.7− | 2006 09 27 | 703 | 0.3− | 0.6+ |
| 2002 11 07 | 704 | 0.2+ | 0.9+ | 2002 12 05 | 704 | 0.7+ | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 1.2+ | 0.8+ | 2002 12 05 | 704 | 0.4− | 0.4− | 2006 09 27 | 703 | 1.0+ | 1.0− |
| 2002 11 07 | 704 | 0.6+ | 0.5+ | 2002 12 31 | 704 | 0.1+ | 1.1− | 2006 09 27 | 703 | 0.8+ | 0.5− |
| 2002 11 07 | 704 | 1.1+ | 0.8+ | 2002 12 31 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2002 11 07 | 704 | 0.3+ | 0.7+ | 2002 12 31 | 704 | 0.7+ | 0.3+ | 2006 10 17 | 703 | 0.7+ | 0.3− |
| 2002 11 11 | 699 | 0.1− | 0.2+ | 2004 03 24 | E12 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 2002 11 11 | 699 | 0.1− | 0.1+ | 2004 03 24 | E12 | 1.5− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.6− |
| 2002 11 11 | 699 | 0.1− | 0.5− | 2004 03 24 | E12 | 0.3+ | 0.1+ | | | | |
| 2002 11 11 | 699 | 0.0 | 0.3− | 2004 03 24 | E12 | 0.7− | 0.2+ | | | | |

**(142913)∗ 2002 VN$_{55}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.77502 | | (2000.0) | | | |
| $n$ | 0.24667148 | $\omega$ | 252.73167 | | −0.16040271 | −0.98671772 |
| $a$ | 2.5180060 | $\Omega$ | 206.53952 | | +0.92602723 | −0.14143129 |
| $e$ | 0.1540693 | $i$ | 3.29392 | | +0.34167901 | −0.07990825 |
| $P$ | 4.00 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.2− | 0.8− | 2002 12 10 | 704 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1995 02 03 | 691 | 0.4− | 0.5− | 2002 12 27 | 644 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1995 02 03 | 691 | 0.6− | 0.6− | 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 1998 11 15 | 691 | 0.3+ | 0.1− | 2002 12 27 | 644 | 0.3+ | 0.6+ | 2006 11 10 | 691 | 0.3− | 0.3+ |
| 1998 11 15 | 691 | 0.3+ | 0.3− | 2003 01 27 | 704 | 1.1− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 1998 11 15 | 691 | 0.3+ | 0.2− | 2003 01 27 | 644 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 1998 11 18 | 704 | 0.2+ | 1.4− | 2003 01 27 | 704 | 0.1− | 0.9+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 1998 11 18 | 704 | 0.6− | 0.6− | 2003 01 27 | 644 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 1998 11 18 | 704 | 1.6+ | 0.0 | 2003 01 27 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 1998 11 18 | 704 | 1.2− | 0.7+ | 2003 01 27 | 704 | 0.2− | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 699 | 0.4− | 0.6+ | 2003 01 27 | 644 | 0.0 | 0.8+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2002 10 31 | 699 | 0.8− | 0.8+ | 2004 03 31 | 704 | 0.6− | 0.5− | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2002 10 31 | 699 | (0.1+ | 1.8+) | 2004 03 31 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.0 |
| 2002 10 31 | 699 | 0.7− | 1.1+ | 2004 03 31 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.8− |
| 2002 11 06 | 704 | 0.7− | 1.2− | 2004 04 20 | 291 | 0.8+ | 0.8+ | 2006 11 17 | 704 | 0.7+ | 0.1+ |
| 2002 11 06 | 704 | (1.7+ | 0.4+) | 2004 04 20 | 291 | 0.4+ | 1.2+ | 2006 11 17 | 704 | 1.4+ | 0.3+ |
| 2002 11 06 | 704 | 0.6+ | 0.2+ | 2004 04 20 | 291 | 0.3+ | 1.1+ | 2006 11 17 | 704 | 0.4− | 0.3− |
| 2002 11 06 | 704 | 0.7+ | 0.7+ | 2004 04 21 | 704 | 0.6+ | 0.0 | 2006 11 18 | 704 | 0.7− | 0.5+ |
| 2002 11 06 | 704 | 0.1+ | 0.4− | 2004 04 21 | 704 | 0.6+ | 0.4− | 2006 11 18 | 704 | 0.6− | 0.4+ |
| 2002 11 06 | 704 | 0.9+ | 1.0+ | 2004 04 21 | 704 | (1.6+ | 2.1+) | 2006 11 18 | 704 | 1.3− | 0.2+ |
| 2002 11 06 | 704 | 0.1+ | 0.4− | 2004 04 21 | 704 | (2.1− | 1.5+) | 2006 11 18 | 704 | 0.4− | 0.9− |
| 2002 11 06 | 704 | 0.9+ | 0.5+ | 2004 04 21 | 704 | 1.3+ | 0.5− | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.3+ | 2004 04 25 | 703 | 0.9− | 0.8+ | 2006 11 19 | 704 | 0.7− | 0.1+ |
| 2002 11 06 | 704 | 1.1+ | 0.9+ | 2004 04 25 | 703 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2004 04 25 | 703 | (2.1− | 2.1+) | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.7+ | 0.7− | 2004 04 25 | 703 | (0.2+ | 1.7+) | 2006 11 19 | 704 | 0.8+ | 0.3− |
| 2002 11 07 | 704 | 1.3− | 1.4− | 2004 05 13 | 691 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.3− | 0.8− | 2004 05 13 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.3+ |
| 2002 11 10 | 704 | 0.8+ | 0.2+ | 2004 05 13 | 691 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2002 11 10 | 704 | 0.7− | 0.5− | 2005 07 05 | 691 | 0.3− | 0.7+ | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2002 11 10 | 704 | 1.2− | 0.0 | 2005 07 05 | 691 | 0.2− | 0.9+ | 2006 11 20 | 704 | 0.7− | 0.9+ |
| 2002 12 01 | 704 | 1.5+ | 1.1+ | 2005 07 05 | 691 | 0.2− | 0.7+ | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2002 12 01 | 704 | 0.5+ | 1.3+ | 2005 07 11 | G96 | 0.5+ | 1.1− | 2006 11 21 | 691 | 0.3+ | 0.3+ |
| 2002 12 01 | 704 | 0.4+ | 1.0+ | 2005 07 11 | G96 | 0.2− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 12 01 | 704 | (2.2+ | 1.3+) | 2005 07 11 | G96 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2002 12 01 | 704 | 1.4+ | 0.6+ | 2005 07 11 | G96 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.8− | 0.9− |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.7− | 0.5+ |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.6+ |
| 2002 12 05 | 704 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.4− | 0.6+ |
| 2002 12 10 | 644 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.6− | 0.5+ |
| 2002 12 10 | 704 | 0.4+ | 0.9+ | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.6− | 0.2− |
| 2002 12 10 | 644 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.8+ | 0.3+ |
| 2002 12 10 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 2002 12 10 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.8+ |
| 2002 12 10 | 704 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 1.1+ | 0.8+ |
| 2002 12 10 | 704 | 1.3− | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.4+ | 1.0+ |

**(142914)∗ 2002 VW$_{55}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.87485 | | (2000.0) | | | |
| $n$ | 0.23759085 | $\omega$ | 18.51146 | | +0.48907687 | +0.84819853 |
| $a$ | 2.5817622 | $\Omega$ | 281.21399 | | −0.82416794 | +0.37304473 |
| $e$ | 0.2653599 | $i$ | 11.96638 | | −0.28557140 | +0.37602777 |
| $P$ | 4.15 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.6− | 0.4− | 2004 01 26 | 699 | 0.0 | 0.6+ | 2005 05 28 | E12 | 0.8+ | 0.3+ |
| 2002 10 31 | 704 | 0.0 | 0.7− | 2004 01 26 | 699 | 0.0 | 0.1− | 2005 06 04 | E12 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.3− | 2004 01 26 | 699 | 0.1+ | 0.6− | 2005 06 04 | E12 | 0.9− | 0.1+ |
| 2002 10 31 | 704 | 0.4+ | 1.5− | 2004 01 29 | 704 | 0.4+ | 0.1+ | 2005 06 04 | E12 | 0.1− | 0.4+ |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2004 01 29 | 704 | 0.4+ | 0.4− | 2005 06 26 | 644 | 0.5+ | 0.4+ |
| 2002 11 06 | 704 | 0.3− | 0.8− | 2004 01 29 | 704 | 0.4− | 0.5+ | 2005 06 26 | 644 | 0.5+ | 0.6+ |
| 2002 11 06 | 704 | 0.1− | 0.3− | 2004 01 29 | 704 | 0.2− | 0.2+ | 2005 06 26 | 644 | 0.2+ | 0.5+ |
| 2002 11 06 | 704 | 0.6− | 0.3− | 2004 02 02 | 608 | 0.3+ | 0.3− | 2005 07 28 | E12 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.2− | 0.6+ | 2004 02 02 | 608 | 0.1+ | 0.1+ | 2005 07 28 | E12 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.8+ | 0.5− | 2004 02 02 | 608 | 0.4+ | 0.5− | 2005 07 28 | E12 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.5− | 2004 02 11 | 644 | 0.0 | 0.2− | 2005 07 28 | E12 | 0.5+ | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.6− | 2004 02 11 | 644 | 0.2+ | 0.3− | 2006 10 02 | 704 | (1.7+ | 1.2+) |
| 2002 11 07 | 704 | 0.4+ | 0.2− | 2004 02 11 | 644 | 0.3+ | 0.0 | 2006 10 02 | 704 | 0.1+ | 0.7+ |
| 2002 11 07 | 704 | 0.3+ | 0.4+ | 2004 02 14 | 699 | 0.5− | 0.2− | 2006 10 02 | 704 | 0.3− | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.5− | 0.4+ | 2004 02 14 | 699 | 0.1− | 0.3− | 2006 10 23 | 703 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.5+ | 0.4− | 2004 02 14 | 699 | 0.4− | 0.1− | 2006 10 23 | 703 | 0.0 | 0.4+ |
| 2002 11 07 | 704 | 0.2− | 0.2+ | 2004 02 14 | 699 | 0.8+ | 0.7− | 2006 10 23 | 703 | 1.0+ | 0.3+ |
| 2002 11 08 | 704 | 1.4+ | 0.1− | 2004 02 18 | 704 | 0.6− | 0.2+ | 2006 10 23 | 703 | 0.0 | 0.3− |
| 2002 11 08 | 704 | 0.5+ | 0.3− | 2004 02 18 | 704 | 1.1− | 0.3− | 2006 10 29 | 703 | 1.0− | 0.5− |
| 2002 11 08 | 704 | 0.2+ | 0.1− | 2004 02 18 | 704 | 0.0 | 1.3+ | 2006 10 29 | 703 | 0.8− | 1.3+ |
| 2002 11 08 | 704 | 0.3− | 0.3− | 2004 02 18 | 704 | 1.0− | 0.7+ | 2006 10 29 | 703 | 0.1+ | 0.4+ |
| 2002 11 15 | 704 | 1.1− | 0.7− | 2005 03 06 | E12 | 0.3− | 0.3+ | 2006 10 29 | 703 | 0.7− | 0.3− |
| 2002 11 15 | 704 | 0.4− | 1.0− | 2005 03 06 | E12 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2002 11 15 | 704 | 0.1− | 0.8− | 2005 03 06 | E12 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.5− | 0.7+ | 2005 03 06 | E12 | 0.6− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.6− | 0.9+ | 2005 03 31 | E12 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2002 12 05 | 704 | 0.5− | 0.8+ | 2005 03 31 | E12 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.4+ |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2005 03 31 | E12 | 0.0 | 0.6− | 2006 11 13 | 644 | 0.1+ | 0.5+ |
| 2002 12 14 | 704 | 0.2+ | 0.3− | 2005 03 31 | E12 | 0.4− | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 2002 12 14 | 704 | 0.0 | 0.9+ | 2005 04 07 | E12 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.7+ |
| 2002 12 14 | 704 | 0.6+ | 0.1+ | 2005 04 07 | E12 | 0.3− | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.5+ |
| 2002 12 14 | 704 | 0.1− | 0.3− | 2005 04 07 | E12 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.1− |
| 2002 12 14 | 704 | 0.3+ | 0.5+ | 2005 04 07 | E12 | 0.3+ | 0.7+ | 2006 11 15 | 704 | 0.6+ | 0.3+ |
| 2003 01 05 | 704 | 0.3+ | 0.5− | 2005 04 16 | E12 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 0.2− | 0.2− | 2005 04 16 | E12 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.2− | 0.5+ |
| 2003 01 05 | 704 | 0.3− | 0.3− | 2005 04 16 | E12 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.8− | 1.1+ |
| 2003 01 05 | 704 | 0.3− | 0.2− | 2005 04 16 | E12 | 0.4+ | 0.3+ | 2006 11 15 | 704 | 0.4− | 0.3− |
| 2003 01 05 | 704 | 0.1+ | 0.3− | 2005 04 17 | E12 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.3− | 0.5+ |
| 2003 02 01 | 644 | 0.2+ | 0.4+ | 2005 04 17 | E12 | 0.5− | 0.1+ | 2006 11 21 | 703 | 0.1+ | 0.1+ |
| 2003 02 01 | 644 | 0.1+ | 0.5+ | 2005 04 17 | E12 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.4+ | 0.5− |
| 2003 02 01 | 644 | 0.5+ | 0.4+ | 2005 04 17 | E12 | 0.3− | 0.5+ | 2006 11 21 | 703 | 0.4+ | 0.6− |
| 2004 01 13 | 699 | 1.1− | 0.7+ | 2005 05 01 | E12 | 0.1− | 0.3+ | 2006 11 21 | 703 | 0.4+ | 0.4− |
| 2004 01 13 | 699 | (0.6+ | 1.6−) | 2005 05 01 | E12 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2004 01 13 | 699 | 1.2− | 0.0 | 2005 05 01 | E12 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.0 | 1.7+ |
| 2004 01 13 | 699 | 0.7+ | 0.0 | 2005 05 01 | E12 | 0.6+ | 1.4− | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2004 01 23 | 704 | 1.0+ | 0.6− | 2005 05 13 | E12 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2004 01 23 | 704 | 0.1− | 0.5− | 2005 05 13 | E12 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.6+ |
| 2004 01 23 | 704 | 0.4+ | 0.3− | 2005 05 13 | E12 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2004 01 23 | 704 | 0.0 | 0.4− | 2005 05 13 | E12 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2004 01 23 | 704 | 1.5+ | 0.5+ | 2005 05 14 | E12 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2004 01 25 | 608 | 0.1− | 0.6+ | 2005 05 14 | E12 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2004 01 25 | 608 | 0.1− | 0.4+ | 2005 05 28 | E12 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2004 01 25 | 608 | 0.3− | 0.3+ | 2005 05 28 | E12 | 0.2− | 0.2+ | | | | |
| 2004 01 26 | 699 | 0.2+ | 0.2− | 2005 05 28 | E12 | 0.5+ | 0.0 | | | | |

**(142915)∗ 2002 VD$_{56}$ = 2001 OT$_{112}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 85735)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.81045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21457839 | $\omega$ | 348.11308 | | −0.87546950 | −0.48230949 | |
| $a$ | 2.7631983 | $\Omega$ | 162.94867 | | +0.45148293 | −0.83876594 | |
| $e$ | 0.0349214 | $i$ | 5.97185 | | +0.17238419 | −0.25268411 | |
| $P$ | 4.59 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 09 | 691 | 0.0 | 0.1+ | 2004 01 18 | 608 | 0.5+ | 1.3− | 2004 03 18 | 691 | 0.2+ | 0.1+ |
| 1995 03 09 | 691 | 0.1+ | 0.2+ | 2004 01 18 | 608 | 0.0 | 0.8− | 2004 03 18 | 691 | 0.2+ | 0.2+ |
| 1995 03 09 | 691 | 0.1+ | 0.0 | 2004 01 24 | 704 | (0.2− | 1.9+) | 2004 03 18 | 691 | 0.2+ | 0.1+ |
| 2000 04 27 | 704 | 0.0 | 0.3+ | 2004 01 24 | 704 | (0.0 | 2.6+) | 2004 03 18 | 704 | 0.0 | 0.1+ |
| 2000 04 27 | 704 | 0.1− | 0.9+ | 2004 01 24 | 704 | (0.1− | 1.8+) | 2004 03 18 | 704 | 0.1+ | 1.1+ |
| 2000 04 27 | 704 | 0.2+ | 0.5+ | 2004 02 11 | 703 | 0.1+ | 0.6+ | 2004 03 18 | 704 | 0.4+ | 0.4+ |
| 2000 04 27 | 704 | 0.9− | 1.3+ | 2004 02 11 | 703 | 0.3− | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.3+ |
| 2001 07 25 | 608 | 0.3+ | 0.3+ | 2004 02 11 | 703 | 0.7− | 1.1+ | 2006 08 22 | 644 | 0.3− | 0.4+ |
| 2001 07 25 | 608 | 0.5+ | 0.3+ | 2004 02 11 | 644 | 0.1− | 0.3− | 2006 08 22 | 644 | 0.0 | 0.4+ |
| 2001 07 25 | 608 | 0.2+ | 0.4− | 2004 02 11 | 703 | 0.0 | 0.8+ | 2006 09 12 | 703 | 1.1− | 0.3+ |
| 2001 08 27 | 644 | 0.0 | 1.3− | 2004 02 11 | 644 | 0.0 | 0.1− | 2006 09 12 | 703 | 1.2− | 0.5+ |
| 2001 08 27 | 644 | 0.5+ | 1.3− | 2004 02 11 | 644 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.7+ | 0.9+ |
| 2001 08 27 | 644 | 0.2+ | 1.1− | 2004 02 11 | 644 | 0.1− | 0.3− | 2006 09 12 | 703 | (2.8− | 0.9+) |
| 2002 11 06 | 699 | 0.2+ | 1.4− | 2004 02 11 | 644 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.6− | 0.2+ |
| 2002 11 06 | 699 | 0.4− | 0.5+ | 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.4− |
| 2002 11 06 | 699 | 0.7− | 0.0 | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.6+ | 1.0+ |
| 2002 11 06 | 699 | 0.1+ | 0.4− | 2004 02 12 | 691 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.3− |
| 2002 11 07 | 704 | 0.7+ | 0.2+ | 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.6+ |
| 2002 11 07 | 704 | 0.5+ | 0.6+ | 2004 02 22 | 691 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.3− | 0.0 | 2004 02 22 | 691 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.6+ |
| 2002 11 11 | 704 | 0.3+ | 0.4+ | 2004 02 22 | 691 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.1− | 0.6+ |
| 2002 11 11 | 704 | 0.4− | 1.2+ | 2004 02 26 | 704 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.1+ |
| 2002 11 11 | 704 | 1.1+ | 0.9+ | 2004 02 26 | 704 | 0.1+ | 0.6− | 2006 09 30 | 703 | 0.9− | 0.2− |
| 2002 11 11 | 704 | 0.9+ | 0.5− | 2004 02 26 | 704 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.6− |
| 2002 11 11 | 704 | 0.8− | 0.9− | 2004 02 26 | 704 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2002 11 14 | 644 | 0.4− | 0.1− | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.2+ |
| 2002 11 14 | 644 | 0.8− | 0.2− | 2004 03 14 | 703 | (1.8− | 0.1−) | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2002 11 14 | 644 | 0.6− | 0.1− | 2004 03 14 | 703 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.3+ |
| 2002 12 01 | 704 | 0.9− | 0.2− | 2004 03 14 | 703 | 0.3+ | 0.7− | 2006 09 30 | 703 | (0.4+ | 1.5+) |
| 2002 12 01 | 704 | 0.4− | 0.4+ | 2004 03 14 | 703 | 0.7+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 12 01 | 704 | 0.2− | 0.7+ | 2004 03 15 | 704 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2002 12 01 | 704 | 1.0+ | 0.2− | 2004 03 15 | 704 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2004 01 18 | 608 | 0.3+ | 1.0− | 2004 03 15 | 704 | 0.4− | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.0 |

**(142916)∗ 2002 VH$_{56}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.58622 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22815512 | $\omega$ | 220.95067 | | +0.99328789 | +0.09398516 | |
| $a$ | 2.6524624 | $\Omega$ | 133.51985 | | −0.06595959 | +0.93907997 | |
| $e$ | 0.1214943 | $i$ | 5.33512 | | −0.09501846 | +0.33059884 | |
| $P$ | 4.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.7− | 0.6+ | 2005 05 08 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.1− |
| 2002 11 06 | 699 | (1.7− | 0.9+) | 2005 05 08 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.5+ | 1.3− |
| 2002 11 06 | 699 | 0.4+ | 0.4+ | 2005 05 08 | 691 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.2+ |
| 2002 11 06 | 699 | 1.0− | 1.1+ | 2005 06 08 | 691 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.6+ |
| 2002 11 07 | 704 | (0.1− | 1.9+) | 2005 06 08 | 691 | 0.2− | 0.8− | 2006 09 20 | 644 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | (0.1− | 1.7+) | 2005 06 08 | 691 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 2002 11 07 | 704 | 0.0 | 0.7+ | 2006 08 18 | 691 | 0.4− | 0.1+ | 2006 09 22 | 704 | (1.6+ | 0.6−) |
| 2002 11 07 | 704 | 0.0 | 0.3+ | 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 22 | 704 | (1.7+ | 0.4+) |
| 2002 11 11 | 704 | 0.3− | 0.9+ | 2006 08 18 | 691 | 0.3− | 0.0 | 2006 09 22 | 704 | 0.1+ | 0.4− |
| 2002 11 11 | 704 | 1.2− | 0.9+ | 2006 08 22 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 1.2+ | 0.2+ |
| 2002 11 11 | 704 | 0.7+ | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.8+ |
| 2002 11 11 | 704 | 0.2− | 0.3− | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.9+ |
| 2002 12 01 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 699 | 0.9− | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.2+ |
| 2002 12 01 | 704 | 0.0 | 0.9+ | 2006 08 28 | 699 | 1.4+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.1+ |
| 2002 12 01 | 704 | 0.0 | 0.9+ | 2006 08 28 | 699 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 1.1+ |
| 2002 12 01 | 704 | 0.0 | 0.2+ | 2006 08 28 | 699 | (0.3+ | 3.0+) | 2006 10 16 | 703 | 0.9+ | 0.1− |
| 2004 02 12 | 691 | 0.4+ | 0.1− | 2006 09 12 | 703 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.7+ | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 22 | 691 | 0.2+ | 0.7+ | 2006 09 12 | 703 | (1.7− | 0.2−) | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2004 02 22 | 691 | 0.3− | 0.5+ | 2006 09 12 | 703 | 0.8+ | 1.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 02 22 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 704 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.5− | 0.1− |
| 2005 05 03 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 704 | (1.8− | 0.0 ) | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2005 05 03 | 691 | 0.1− | 0.7+ | 2006 09 16 | 704 | 0.9− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2005 05 03 | 691 | 0.0 | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.5− | | | | |

**(142917)∗ 2002 VP$_{56}$ = 2004 CF$_{48}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61573)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.50402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21145967 | $\omega$ | 265.08240 | | +0.66823207 | −0.74135718 | |
| $a$ | 2.7903008 | $\Omega$ | 142.74140 | | +0.71674067 | +0.61917637 | |
| $e$ | 0.0687709 | $i$ | 5.88669 | | +0.19937079 | +0.25886320 | |
| $P$ | 4.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 28 | 691 | 0.6+ | 1.2+ | 2004 02 14 | 608 | 0.3+ | 0.2− | 2006 08 14 | 644 | 0.0 | 0.4+ |
| 2001 06 28 | 691 | 0.7− | 0.7+ | 2004 02 14 | 608 | 0.4+ | 0.4− | 2006 08 14 | 644 | 0.2+ | 0.5+ |
| 2001 06 28 | 691 | 0.3− | 0.6+ | 2004 02 14 | 608 | 0.2− | 0.6− | 2006 08 14 | 644 | 0.4+ | 0.2+ |
| 2002 11 06 | 699 | 0.6− | 0.1+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.4+ |
| 2002 11 06 | 699 | 0.8− | 0.9+ | 2004 02 16 | 691 | 0.1+ | 0.5+ | 2006 08 17 | 644 | 0.2− | 0.5+ |
| 2002 11 06 | 699 | 1.1− | 1.6+ | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2002 11 06 | 699 | 0.3+ | 0.1+ | 2004 02 18 | 704 | 0.2+ | 0.1− | 2006 08 25 | 704 | 0.2+ | 0.7+ |
| 2002 11 07 | 704 | 0.0 | 1.5− | 2004 02 18 | 704 | 1.0+ | 0.3− | 2006 08 25 | 704 | 0.2+ | 0.5+ |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2004 02 18 | 704 | 0.0 | 1.2+ | 2006 08 25 | 704 | 0.2− | 0.3+ |
| 2002 11 07 | 704 | 1.0+ | 0.4− | 2004 02 18 | 608 | 0.3+ | 0.6+ | 2006 08 25 | 704 | 0.6− | 0.7+ |
| 2002 11 07 | 704 | 0.1+ | 0.4− | 2004 02 18 | 608 | 0.2+ | 0.4+ | 2006 08 28 | 691 | 0.0 | 0.6+ |
| 2002 11 07 | 704 | 0.2− | 1.0− | 2004 02 18 | 608 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.6+ |
| 2002 11 11 | 704 | 0.5+ | 0.3+ | 2004 02 23 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2002 11 11 | 704 | 0.4+ | 0.7+ | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.5− |
| 2002 11 11 | 704 | 0.3− | 0.5+ | 2004 02 23 | 704 | 1.4+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.1− |
| 2002 11 11 | 704 | 0.4+ | 1.2+ | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.1+ | 1.0− |
| 2002 11 11 | 704 | 0.4+ | 0.9+ | 2004 03 14 | 691 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 0.2+ | 0.2+ |
| 2002 11 23 | 644 | 0.0 | 0.3+ | 2004 03 14 | 691 | 0.2− | 0.6+ | 2006 09 14 | 644 | 0.4+ | 0.2+ |
| 2002 11 23 | 644 | 0.3− | 0.3+ | 2004 03 14 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.9+ |
| 2002 11 23 | 644 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.2− | 1.2+ | 2006 09 14 | 703 | 0.7− | 0.2− |
| 2002 12 01 | 704 | 0.5+ | 0.3+ | 2004 03 19 | 704 | 0.4− | 0.8+ | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 2002 12 01 | 704 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.3− | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.8− |
| 2002 12 01 | 704 | 0.4− | 0.6+ | 2004 03 19 | 704 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.1+ | 1.0+ |
| 2002 12 01 | 704 | 1.2− | 0.6− | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.3+ | 0.1+ |
| 2002 12 01 | 704 | 0.6− | 1.1+ | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.3− |
| 2002 12 07 | 704 | 0.3− | 0.1+ | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.7+ |
| 2002 12 07 | 704 | 0.1+ | 0.8+ | 2005 05 16 | G96 | 0.3− | 0.7+ | 2006 09 18 | 699 | 1.6− | 0.9− |
| 2002 12 07 | 704 | 0.3− | 1.6+ | 2005 05 16 | G96 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.2+ |
| 2002 12 07 | 704 | (0.5+ | 2.4+) | 2005 05 16 | G96 | 0.2− | 0.3+ | | | | |
| 2002 12 07 | 704 | (1.1+ | 2.5+) | 2005 05 16 | G96 | 0.5− | 0.2+ | | | | |

**(142918)∗ 2002 VT$_{56}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.96527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23490217 | $\omega$ | 256.56910 | | −0.26541788 | −0.96350984 | |
| $a$ | 2.6014253 | $\Omega$ | 208.89470 | | +0.91001619 | −0.23847898 | |
| $e$ | 0.2183051 | $i$ | 4.11477 | | +0.31847115 | −0.12155889 | |
| $P$ | 4.20 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.8+ | 0.0 | 2002 12 31 | 704 | 0.6− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.3+ | 0.6− | 2003 01 07 | 704 | 1.2− | 0.7+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2002 11 06 | 704 | 0.2− | 0.9− | 2003 01 07 | 704 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 0.5+ | 0.5− | 2003 01 07 | 704 | 0.6− | 1.0+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.8+ | 1.2− | 2004 06 11 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2002 11 07 | 704 | 1.1+ | 0.3+ | 2004 06 11 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2002 11 07 | 704 | 0.1− | 0.1− | 2004 06 11 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.7+ | 0.2+ | 2005 07 01 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2002 11 07 | 704 | 0.2− | 0.2+ | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2002 11 07 | 704 | 0.2+ | 0.1− | 2005 07 01 | 691 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | 0.2+ | 0.7− | 2005 07 10 | 691 | 0.5+ | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2002 11 07 | 704 | 0.6+ | 0.3− | 2005 07 10 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2002 11 11 | 704 | 0.8+ | 1.0− | 2005 07 10 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2002 11 11 | 704 | 1.3+ | 0.7− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2002 11 11 | 704 | 1.1+ | 0.9− | 2006 09 25 | G96 | 0.5+ | 0.2− | 2006 11 17 | 703 | 0.5− | 0.9− |
| 2002 11 14 | 704 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | (0.5+ | 2.1+) |
| 2002 11 14 | 704 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.7+ | 1.2+ |
| 2002 11 14 | 704 | 0.7+ | 0.2− | 2006 10 12 | 691 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2002 11 14 | 704 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.6− | 0.2− |
| 2002 12 11 | 704 | 0.2− | 0.9+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.7+ |
| 2002 12 11 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.7+ |
| 2002 12 11 | 704 | 0.3− | 1.0+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2002 12 11 | 704 | 0.2− | 1.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 12 11 | 704 | 0.2− | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2002 12 12 | 704 | 0.2− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.1+ | 0.1− |
| 2002 12 12 | 704 | 0.5− | 0.4− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2002 12 12 | 704 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2002 12 12 | 704 | 0.9− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2002 12 12 | 704 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 23 | 850 | 0.3+ | 0.4− |
| 2002 12 12 | 704 | 0.4− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 23 | 850 | 0.3+ | 0.6+ |
| 2002 12 12 | 704 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 23 | 850 | 0.0 | 0.3+ |
| 2002 12 12 | 704 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 1.9+ | 2.2+ |
| 2002 12 31 | 704 | 0.4− | 0.6+ | 2006 11 02 | 703 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2006 11 02 | 703 | 1.0− | 0.7+ | 2006 11 28 | 704 | 1.6+ | 0.7− |
| 2002 12 31 | 704 | 0.7− | 0.6+ | 2006 11 02 | 703 | 0.6− | 0.2− | 2006 11 28 | 704 | 0.9− | 2.0+ |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.6− | 0.3− | 2006 11 28 | 704 | 0.3− | 0.2− |

**(142919)∗ 2002 VA$_{57}$ = 1999 BR$_{24}$**

Discovered 2002 Nov. 6 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 43235)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.73964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23223026 | $\omega$ | 277.82228 | | −0.16754257 | −0.98586333 | |
| $a$ | 2.6213409 | $\Omega$ | 181.82538 | | +0.92452688 | −0.15651029 | |
| $e$ | 0.1470570 | $i$ | 3.10650 | | +0.34231496 | −0.05981657 | |
| $P$ | 4.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 704 | 1.1− | 0.2+ | 2004 04 24 | 691 | 0.1+ | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 1999 01 18 | 704 | 0.5+ | 0.1+ | 2004 04 24 | 691 | 0.0 | 0.1− | 2006 10 27 | 704 | (2.3− | 0.6+) |
| 1999 01 18 | 704 | (2.3+ | 0.2−) | 2004 05 27 | 691 | 0.3+ | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.4+ |
| 1999 01 18 | 704 | 1.0+ | 0.2− | 2004 05 27 | 691 | 0.0 | 0.6+ | 2006 10 28 | 704 | 0.5+ | 0.5+ |
| 1999 01 20 | 704 | 0.3− | 1.0− | 2004 05 27 | 691 | 0.2+ | 0.7+ | 2006 10 28 | 704 | 0.3− | 1.2+ |
| 1999 01 20 | 704 | 0.6+ | 1.0+ | 2005 06 18 | G96 | 0.2− | 0.2+ | 2006 10 28 | 704 | 1.3− | 0.2+ |
| 1999 01 20 | 704 | 0.1+ | 0.5− | 2005 06 18 | G96 | 0.1− | 0.3+ | 2006 10 28 | 704 | 0.4+ | 0.2+ |
| 1999 01 20 | 704 | 0.9− | 1.8+ | 2005 06 18 | G96 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.4− | 0.4+ |
| 2002 11 06 | 291 | 0.0 | 0.0 | 2005 06 18 | G96 | 0.0 | 0.3+ | 2006 10 31 | 683 | 0.1+ | 0.3+ |
| 2002 11 06 | 291 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 31 | 683 | 0.5+ | 0.8− |
| 2002 11 06 | 291 | 0.9− | 1.3− | 2006 07 21 | G96 | 0.4− | 0.2− | 2006 10 31 | 683 | 0.9+ | 0.6+ |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 1.0+ | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.4+ | 0.4− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.4+ | 0.5+ |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2002 12 05 | 704 | 0.2+ | 0.6+ | 2006 10 03 | 704 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.4+ | 2006 10 03 | 704 | (1.0− | 1.7+) | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.4− | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.3+ |
| 2002 12 11 | 704 | 0.9+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.7− |
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | (1.3+ | 1.6−) |
| 2002 12 31 | 704 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.5− | 1.1+ |
| 2002 12 31 | 704 | 1.2+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.7+ |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.8+ | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2003 01 07 | 704 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.7+ |
| 2003 01 07 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.8+ | 2006 11 19 | 704 | 1.1+ | 1.3+ |
| 2003 01 07 | 704 | 0.4− | 1.1+ | 2006 10 16 | 703 | 0.7+ | 0.0 | 2006 11 19 | 704 | 1.1+ | 0.0 |
| 2003 01 07 | 704 | 0.6− | 0.8− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | (1.1− | 1.8−) |
| 2003 01 07 | 704 | 0.5+ | 1.3− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2004 04 19 | 704 | 1.4+ | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 704 | 0.7+ | 1.1+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.1− | 1.1+ |
| 2004 04 19 | 704 | 0.7+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.3+ |
| 2004 04 19 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.8− | 0.3− |
| 2004 04 22 | 704 | 0.1+ | 0.2− | 2006 10 27 | 704 | 0.7+ | 1.4+ | 2006 11 28 | 704 | 0.5− | 0.5+ |
| 2004 04 22 | 704 | 0.1− | 0.2+ | 2006 10 27 | 704 | 0.7+ | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.0 |
| 2004 04 22 | 704 | 0.2+ | 0.1− | 2006 10 27 | 704 | 0.1− | 1.0+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2004 04 22 | 704 | 1.4− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1− | 1.2+ |
| 2004 04 24 | 691 | 0.1+ | 0.6+ | 2006 10 27 | 704 | 0.8− | 0.1− | | | | |

**(142920)∗ 2002 VG$_{57}$**

Discovered 2002 Nov. 6 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.20118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23058991 | $\omega$ | 42.28218 | | −0.08847207 | −0.97734671 | |
| $a$ | 2.6337579 | $\Omega$ | 53.69479 | | +0.83809235 | −0.17735417 | |
| $e$ | 0.1209977 | $i$ | 13.80276 | | +0.53830651 | +0.11549420 | |
| $P$ | 4.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.7+ | 1.5− | 2002 11 11 | 704 | 0.3− | 0.4+ | 2004 03 25 | 704 | 0.4+ | 0.7+ |
| 1998 12 17 | 704 | (0.1+ | 2.4−) | 2002 11 11 | 704 | 0.3− | 0.9+ | 2004 03 25 | 704 | 0.3+ | 1.3+ |
| 1998 12 17 | 704 | 0.6− | 0.8− | 2002 11 22 | 644 | 0.3− | 0.4+ | 2004 03 25 | 704 | 0.5+ | 0.3+ |
| 1998 12 17 | 704 | (1.8+ | 3.5−) | 2002 11 22 | 644 | 0.4− | 0.2+ | 2004 03 30 | 703 | 1.1+ | 0.1+ |
| 1998 12 17 | 704 | (4.3− | 3.9−) | 2002 11 22 | 644 | 0.1− | 0.5+ | 2004 03 30 | 703 | (2.3+ | 0.5+) |
| 2000 04 27 | 699 | 0.0 | 0.7+ | 2002 12 01 | 704 | 0.2+ | 0.4− | 2004 03 30 | 703 | (2.2+ | 0.0 ) |
| 2000 04 27 | 699 | 0.8+ | 1.5+ | 2002 12 01 | 704 | 0.1− | 0.3+ | 2004 03 30 | 703 | 0.8+ | 0.9+ |
| 2000 04 27 | 699 | 0.7+ | 1.8+ | 2002 12 01 | 704 | 0.2+ | 0.4− | 2004 04 09 | 644 | 0.5+ | 0.2+ |
| 2000 04 27 | 699 | 0.2+ | 0.7+ | 2002 12 01 | 704 | 0.1− | 0.2− | 2004 04 09 | 644 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 0.3− | 1.3+ | 2002 12 01 | 704 | 0.2+ | 0.3− | 2004 04 09 | 644 | 0.6+ | 0.4+ |
| 2002 10 03 | 704 | 0.4+ | 0.5+ | 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 09 17 | 699 | 0.8− | 0.1− |
| 2002 10 03 | 704 | 0.4− | 1.0+ | 2002 12 05 | 704 | 0.1− | 0.3− | 2006 09 17 | 699 | 0.0 | 0.7+ |
| 2002 10 03 | 704 | (3.1− | 0.2−) | 2002 12 05 | 704 | 0.9− | 0.2− | 2006 09 17 | 699 | 1.0+ | 0.7+ |
| 2002 10 11 | 704 | (1.6+ | 0.3−) | 2002 12 05 | 704 | (0.7− | 1.7+) | 2006 09 17 | 699 | 0.9− | 0.2+ |
| 2002 10 11 | 704 | 0.9+ | 0.3+ | 2002 12 05 | 704 | 0.7− | 0.6+ | 2006 09 19 | 703 | 1.0− | 0.4+ |
| 2002 10 11 | 704 | 1.3+ | 0.3+ | 2002 12 11 | 704 | 0.7− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.5+ |
| 2002 10 11 | 704 | 0.5+ | 0.0 | 2002 12 11 | 704 | 1.3− | 0.4− | 2006 09 19 | 703 | 0.2+ | 0.2+ |
| 2002 10 16 | 644 | 0.3− | 0.2+ | 2002 12 11 | 704 | 0.4+ | 0.9− | 2006 09 19 | 703 | 0.5− | 0.7+ |
| 2002 10 16 | 644 | 0.4− | 0.1+ | 2004 02 17 | 704 | 0.9− | 0.8+ | 2006 09 25 | 703 | 0.1+ | 0.3+ |
| 2002 10 16 | 644 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.6+ | 1.1+ | 2006 09 25 | 703 | 0.2− | 0.6− |
| 2002 11 06 | 608 | 0.2− | 1.0+ | 2004 02 17 | 704 | (0.1+ | 2.2+) | 2006 09 25 | 703 | 0.1+ | 0.6+ |
| 2002 11 06 | 608 | 0.5+ | 0.0 | 2004 03 22 | 113 | 0.6+ | 0.1+ | 2006 09 25 | 703 | 0.7− | 0.7+ |
| 2002 11 06 | 608 | 0.0 | 0.1− | 2004 03 22 | 113 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.5+ | 0.2− | 2004 03 22 | 113 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.3− | 0.2+ | 2004 03 22 | 113 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.1− | 0.4+ | 2004 03 22 | 113 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.1+ | 1.6− |
| 2002 11 07 | 704 | 0.4+ | 0.3+ | 2004 03 24 | 703 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.8− | 0.6+ | 2004 03 24 | 703 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.1+ | 1.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2004 03 24 | 703 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 1.4− | 0.5− |
| 2002 11 11 | 704 | 0.5+ | 0.5+ | 2004 03 24 | 703 | 0.1+ | 0.7− | | | | |
| 2002 11 11 | 704 | 0.2− | 0.7+ | 2004 03 25 | 704 | 0.4− | 0.2+ | | | | |

**(142921)∗ 2002 VQ$_{57}$**

Discovered 2002 Nov. 6 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.59361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23911445 | $\omega$ | 156.09787 | | +0.60658632 | +0.79449137 | |
| $a$ | 2.5707835 | $\Omega$ | 151.21983 | | −0.73875448 | +0.57672754 | |
| $e$ | 0.2608429 | $i$ | 3.44402 | | −0.29375986 | +0.19018099 | |
| $P$ | 4.12 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 26 | 691 | 0.5+ | 0.7+ | 2002 11 11 | 704 | 0.2− | 0.5− | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 1993 04 26 | 691 | 0.5+ | 0.8+ | 2002 11 21 | 644 | 0.1− | 1.4+ | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 1993 04 26 | 691 | 0.6− | 0.8+ | 2002 11 21 | 644 | (0.3− | 1.7+) | 2006 09 20 | 644 | 0.1− | 0.5+ |
| 2001 04 17 | 699 | 0.0 | 0.5− | 2002 11 21 | 644 | 0.0 | 1.1+ | 2006 09 22 | 704 | 0.4+ | 0.2+ |
| 2001 04 17 | 699 | (1.1− | 3.0−) | 2002 11 22 | 644 | 0.0 | 0.4+ | 2006 09 22 | 704 | 0.9+ | 0.4+ |
| 2001 04 17 | 699 | 0.2− | 1.1+ | 2002 11 22 | 644 | 0.0 | 0.5+ | 2006 09 22 | 704 | 0.3+ | 0.4+ |
| 2001 04 17 | 699 | 0.0 | 0.3+ | 2002 11 22 | 644 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.4− |
| 2002 10 02 | 704 | 0.8+ | 0.1− | 2005 03 11 | 691 | 0.3+ | 0.0 | 2006 09 22 | 704 | 0.7+ | 0.7+ |
| 2002 10 02 | 704 | (0.3− | 1.6+) | 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.5+ | 0.0 |
| 2002 10 02 | 704 | (1.8− | 0.9+) | 2005 03 11 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.0 |
| 2002 10 02 | 704 | 0.5− | 0.9+ | 2005 04 04 | 703 | 0.1− | 0.8− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.3+ | 0.3+ | 2005 04 04 | 703 | 0.5− | 1.0+ | 2006 10 01 | 704 | 0.2+ | 0.6+ |
| 2002 10 09 | 704 | 0.4− | 0.9+ | 2005 04 04 | 703 | 0.2− | 1.0+ | 2006 10 01 | 704 | 0.1+ | 0.7+ |
| 2002 10 09 | 704 | (1.5+ | 1.5+) | 2005 04 04 | 703 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2002 10 09 | 704 | 0.6− | 0.6+ | 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.3+ |
| 2002 10 16 | 644 | 0.2− | 0.2+ | 2005 04 30 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 1.2− | 0.1− |
| 2002 10 16 | 644 | 0.1+ | 0.5+ | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2002 10 16 | 644 | 0.0 | 0.3+ | 2005 05 10 | 691 | 0.5+ | 0.7+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2002 11 01 | 704 | 0.4− | 0.1− | 2005 05 10 | 691 | 0.3+ | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2002 11 01 | 704 | 0.1+ | 0.7+ | 2005 05 10 | 691 | 0.4+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.1+ |
| 2002 11 01 | 704 | 0.4− | 0.5+ | 2005 05 11 | 291 | 0.1− | 0.5+ | 2006 10 15 | 703 | 0.4− | 0.2+ |
| 2002 11 01 | 704 | 0.3+ | 1.3+ | 2005 05 11 | 291 | 0.1+ | 0.4+ | 2006 10 15 | 703 | 0.4− | 0.3− |
| 2002 11 06 | 699 | 0.1+ | 1.1+ | 2005 05 11 | 291 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.5− | 0.1− |
| 2002 11 06 | 699 | 0.2− | 0.7+ | 2005 05 15 | 644 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 699 | 1.3− | 0.9+ | 2005 05 15 | 644 | 0.1+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 699 | 0.4− | 0.1+ | 2005 05 15 | 644 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 2002 11 06 | 608 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.5− | 0.8+ | 2006 10 21 | 703 | 0.3− | 1.1− |
| 2002 11 06 | 608 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.9− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2002 11 06 | 608 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.0 | 0.8− |
| 2002 11 07 | 704 | 0.4− | 1.2+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.6− |
| 2002 11 07 | 704 | 0.3− | 0.9+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2002 11 07 | 704 | 0.7− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 11 11 | 704 | 0.3− | 0.8+ | 2006 09 18 | 699 | 0.6+ | 0.6+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 11 11 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.7+ | 2006 10 27 | 704 | 0.5− | 1.6+ |
| 2002 11 11 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.5+ | 2006 10 27 | 704 | 0.2+ | 0.1− |
| 2002 11 11 | 704 | 0.3− | 0.6− | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 27 | 704 | 0.7− | 0.9+ |

**(142922)∗ 2002 VC$_{58}$ = 2000 GJ$_{171}$**

Discovered 2002 Nov. 6 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 41207)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.02076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21844358 | $\omega$ | 0.59074 | | −0.78308499 | −0.61962123 | |
| $a$ | 2.7305064 | $\Omega$ | 140.95532 | | +0.57024761 | −0.74962079 | |
| $e$ | 0.0449668 | $i$ | 4.85937 | | +0.24818453 | −0.23267617 | |
| $P$ | 4.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.0 | 0.3+ | 2002 12 01 | 704 | (1.8− | 0.3−) | 2004 03 14 | 703 | 0.3+ | 0.0 |
| 2000 04 05 | 699 | 0.2+ | 0.8+ | 2003 11 30 | 691 | 0.0 | 0.1− | 2004 03 14 | 703 | 0.3− | 1.4+ |
| 2000 04 05 | 699 | 0.5+ | 0.2+ | 2003 11 30 | 691 | 0.3− | 0.0 | 2004 03 18 | 691 | 0.1− | 0.1− |
| 2000 04 05 | 699 | 0.1− | 1.4+ | 2003 11 30 | 691 | 0.2− | 0.3− | 2004 03 18 | 691 | 0.2− | 0.1− |
| 2000 04 07 | 699 | 0.6+ | 1.1+ | 2004 01 24 | 704 | 0.4+ | 0.6+ | 2004 03 18 | 691 | 0.1− | 0.1− |
| 2000 04 07 | 699 | 1.4+ | 1.3+ | 2004 01 24 | 704 | 0.1+ | 0.4+ | 2005 06 27 | G96 | 0.1− | 0.2+ |
| 2000 04 07 | 699 | 0.4+ | 0.2+ | 2004 01 24 | 704 | 0.1− | 0.0 | 2005 06 27 | G96 | 0.1− | 0.2+ |
| 2000 04 07 | 699 | 0.6+ | 0.5+ | 2004 01 24 | 704 | 0.5+ | 0.8+ | 2005 06 27 | G96 | 0.2− | 0.2+ |
| 2000 04 27 | 699 | 0.5− | 0.2+ | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2005 06 27 | G96 | 0.2− | 0.3+ |
| 2000 04 27 | 699 | 0.9− | 0.8+ | 2004 02 11 | 644 | 0.3+ | 0.0 | 2005 06 27 | G96 | 0.7+ | 0.3+ |
| 2000 04 27 | 699 | 0.3+ | 0.3− | 2004 02 11 | 644 | 1.4+ | 0.3− | 2005 06 27 | G96 | 0.6− | 0.0 |
| 2000 04 27 | 699 | 0.1− | 0.4+ | 2004 02 12 | 691 | 0.2+ | 0.1− | 2005 06 27 | G96 | 0.3+ | 0.0 |
| 2002 11 01 | 704 | 0.6− | 0.1+ | 2004 02 12 | 291 | 0.3+ | 0.0 | 2005 06 27 | G96 | 0.0 | 0.5+ |
| 2002 11 01 | 704 | 0.7− | 0.7+ | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.6+ | 0.9− |
| 2002 11 01 | 704 | 1.1− | 0.1+ | 2004 02 12 | 291 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.4+ |
| 2002 11 06 | 608 | 0.8+ | 0.5+ | 2004 02 12 | 291 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.8− | 0.2+ |
| 2002 11 06 | 608 | 0.3+ | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.4− | 0.7+ |
| 2002 11 06 | 608 | 0.3+ | 0.9+ | 2004 02 17 | 704 | 1.0+ | 0.3− | 2006 09 19 | 699 | 0.5− | 0.8+ |
| 2002 11 07 | 704 | 0.3− | 0.7− | 2004 02 17 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.8+ |
| 2002 11 07 | 704 | 0.1− | 0.4+ | 2004 02 17 | 704 | (1.9+ | 0.1+) | 2006 09 19 | 699 | 0.3− | 0.0 |
| 2002 11 07 | 704 | 0.4+ | 0.2− | 2004 02 17 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.8− | 0.7+ |
| 2002 11 07 | 704 | 0.4− | 0.3− | 2004 02 25 | 704 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.6+ | 1.0+ |
| 2002 11 07 | 704 | 0.4+ | 0.2− | 2004 02 25 | 704 | 0.5− | 0.6+ | 2006 09 25 | 699 | 0.9+ | 0.7+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.6+ | 1.1+ | 2004 02 25 | 704 | 0.2+ | 0.0 | 2006 09 25 | 699 | (0.8+ | 2.0+) |
| 2002 11 11 | 704 | 0.6+ | 1.2+ | 2004 02 25 | 704 | 0.3+ | 0.4− | 2006 09 25 | 699 | 0.8− | 0.2+ |
| 2002 11 11 | 704 | 0.0 | 0.9+ | 2004 02 25 | 704 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.7− | 0.0 |
| 2002 11 11 | 704 | (0.3+ | 1.6+) | 2004 02 29 | 691 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.5+ |
| 2002 11 11 | 704 | (0.4− | 2.4+) | 2004 02 29 | 691 | 0.7− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2002 12 01 | 704 | 1.2− | 0.4+ | 2004 02 29 | 691 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2002 12 01 | 704 | 0.1− | 0.0 | 2004 03 14 | 703 | 0.4− | 0.1+ | | | | |
| 2002 12 01 | 704 | 0.9− | 0.3+ | 2004 03 14 | 703 | 0.2+ | 0.1+ | | | | |

**(142923)∗ 2002 VF$_{58}$**

Discovered 2002 Nov. 6 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.67499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21351304 | $\omega$ | 0.24735 | | −0.13976400 | | −0.98059382 |
| $a$ | 2.7723823 | $\Omega$ | 97.78923 | | +0.90823838 | | −0.18226262 |
| $e$ | 0.1756855 | $i$ | 7.97633 | | +0.39442246 | | +0.07222253 |
| $P$ | 4.62 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 07 23 | 599 | 0.0 | 1.4− | 2002 12 12 | 704 | 0.1− | 0.3+ | 2003 01 28 | 608 | 0.4− | 0.3+ |
| 1996 07 23 | 599 | (0.9− | 3.0−) | 2002 12 12 | 704 | 0.5− | 0.6+ | 2003 01 28 | 608 | 0.3− | 0.3+ |
| 2002 10 31 | 608 | 0.0 | 0.3− | 2002 12 12 | 704 | 0.7− | 0.0 | 2003 01 28 | 608 | 0.3− | 0.0 |
| 2002 10 31 | 608 | 0.3− | 0.4− | 2002 12 15 | 608 | 1.3+ | 0.7+ | 2004 03 13 | 644 | 0.1− | 0.9+ |
| 2002 10 31 | 608 | 0.2− | 0.4− | 2002 12 15 | 608 | 1.1+ | 0.8+ | 2004 03 13 | 644 | 0.1− | 0.6+ |
| 2002 11 06 | 608 | 0.9+ | 0.8− | 2002 12 15 | 608 | 0.9+ | 0.3+ | 2004 03 13 | 644 | 0.6+ | 0.6+ |
| 2002 11 06 | 608 | 0.8+ | 1.2− | 2002 12 27 | 644 | 0.2+ | 0.0 | 2004 04 14 | 683 | 1.1− | 1.4− |
| 2002 11 06 | 608 | 0.9+ | 0.7− | 2002 12 27 | 644 | 0.1− | 0.1+ | 2004 04 14 | 683 | 1.6+ | 0.4− |
| 2002 11 07 | 704 | 0.1− | 0.3− | 2002 12 27 | 644 | 0.7− | 0.0 | 2004 04 14 | 683 | 0.6+ | 0.3− |
| 2002 11 07 | 704 | 0.1− | 0.1+ | 2002 12 28 | 699 | 0.4+ | 0.4+ | 2004 04 21 | 703 | 1.0+ | 1.9+ |
| 2002 11 07 | 704 | 0.2+ | 0.8− | 2002 12 28 | 699 | 0.1− | 0.5− | 2004 04 21 | 703 | 0.2+ | 1.7+ |
| 2002 11 07 | 704 | 0.1− | 0.4− | 2002 12 28 | 699 | 0.1− | 0.1+ | 2004 04 21 | 703 | 1.5− | 0.5+ |
| 2002 11 07 | 704 | 0.2− | 0.9− | 2002 12 28 | 699 | 0.5− | 0.6− | 2004 04 21 | 703 | 0.2+ | 0.7− |
| 2002 11 11 | 704 | 0.1− | 0.2+ | 2002 12 31 | 699 | 0.5− | 0.2+ | 2004 04 23 | 704 | 0.7+ | 0.5− |
| 2002 11 11 | 704 | 0.2+ | 0.4− | 2002 12 31 | 704 | 0.3+ | 0.8+ | 2004 04 23 | 704 | 0.6+ | 0.0 |
| 2002 11 11 | 704 | 0.7+ | 0.2− | 2002 12 31 | 699 | 0.3+ | 0.8+ | 2004 04 23 | 704 | 0.7− | 0.8+ |
| 2002 11 11 | 704 | 0.6+ | 0.0 | 2002 12 31 | 704 | 0.3+ | 0.9+ | 2004 04 23 | 704 | 0.5+ | 1.6+ |
| 2002 11 11 | 704 | 0.3+ | 0.3− | 2002 12 31 | 699 | 0.5− | 0.1− | 2004 04 23 | 704 | 0.3− | 0.3+ |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.1− | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.7+ |
| 2002 11 24 | 644 | 0.3− | 0.3− | 2002 12 31 | 704 | 0.2+ | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.3+ |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2002 12 31 | 699 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.4+ |
| 2002 12 01 | 704 | 0.3− | 0.4+ | 2002 12 31 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.9− |
| 2002 12 01 | 704 | 0.6+ | 0.3− | 2003 01 07 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 703 | (3.0− | 0.1+) |
| 2002 12 01 | 704 | 0.3− | 0.5+ | 2003 01 07 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.7− | 1.1+ |
| 2002 12 01 | 704 | 0.2− | 0.3+ | 2003 01 07 | 704 | 0.4− | 0.8+ | 2006 09 14 | 703 | 0.4+ | 0.2+ |
| 2002 12 10 | 644 | 0.2− | 0.4− | 2003 01 07 | 704 | 0.4− | 1.4+ | 2006 09 20 | 703 | 0.3+ | 0.3− |
| 2002 12 10 | 644 | 0.1− | 0.4− | 2003 01 19 | 644 | 0.6+ | 0.1+ | 2006 09 20 | 703 | 0.8+ | 1.1+ |
| 2002 12 10 | 644 | 0.3− | 0.3− | 2003 01 19 | 644 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.6+ | 0.9+ |
| 2002 12 11 | 704 | 0.5− | 0.1− | 2003 01 19 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.0 | 1.1+ |
| 2002 12 11 | 704 | 1.0− | 0.2+ | 2003 01 27 | 704 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 2002 12 11 | 704 | 0.5− | 0.4+ | 2003 01 27 | 704 | 0.4+ | 0.6− | 2006 09 26 | 703 | 1.5− | 1.3+ |
| 2002 12 11 | 704 | 0.6− | 0.6− | 2003 01 27 | 704 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.8+ |
| 2002 12 11 | 704 | 0.3− | 0.3− | 2003 01 27 | 704 | 0.5+ | 0.5− | 2006 09 26 | 703 | 1.3− | 0.2+ |
| 2002 12 12 | 704 | 0.6− | 0.2+ | 2003 01 27 | 704 | 0.2+ | 0.4+ | | | | |

**(142924)∗ 2002 VR$_{58}$**

Discovered 2002 Nov. 6 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.08261 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23389121 | $\omega$ | 5.45307 | | +0.08167724 | | −0.98594391 |
| $a$ | 2.6089161 | $\Omega$ | 79.92121 | | +0.90872962 | | +0.01361179 |
| $e$ | 0.2441723 | $i$ | 8.51311 | | +0.40931567 | | +0.16652122 |
| $P$ | 4.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 21 | 704 | (1.6+ | 2.4−) | 2002 12 10 | 704 | 0.2− | 0.3+ | 2004 04 22 | 599 | 0.1+ | 0.7+ |
| 1998 12 21 | 704 | (2.0+ | 2.0−) | 2002 12 10 | 704 | 0.1− | 0.2+ | 2004 04 22 | 599 | 0.7+ | 0.9+ |
| 1998 12 21 | 704 | 0.2+ | 0.2− | 2002 12 10 | 704 | 0.5− | 0.2+ | 2004 04 23 | 599 | 0.2+ | 0.8+ |
| 1998 12 21 | 704 | 1.6− | 1.1− | 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.3− | 1.0+ |
| 1999 01 10 | 699 | 0.6+ | 0.3+ | 2002 12 11 | 704 | 0.7− | 0.2− | 2006 09 21 | 699 | 0.3+ | 0.2+ |
| 1999 01 10 | 699 | 0.8− | 0.3+ | 2002 12 11 | 704 | 0.6− | 0.2+ | 2006 09 21 | 699 | 0.5− | 0.9+ |
| 1999 01 10 | 699 | 0.3+ | 0.1+ | 2002 12 11 | 704 | 0.9− | 0.5+ | 2006 09 21 | 699 | 0.9+ | 0.5− |
| 1999 01 22 | 699 | 0.2+ | 1.1− | 2002 12 11 | 704 | 0.9− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.2− |
| 1999 01 22 | 699 | 0.4+ | 0.1− | 2002 12 11 | 704 | 0.8− | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.3− |
| 1999 01 22 | 699 | 0.8+ | 0.5− | 2002 12 27 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.1− |
| 1999 02 12 | 699 | 0.4+ | 0.5+ | 2002 12 27 | 644 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.2+ |
| 1999 02 12 | 699 | 0.5+ | 0.1+ | 2002 12 27 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.3− | 1.3− |
| 1999 02 12 | 699 | 0.3+ | 1.3+ | 2002 12 28 | 699 | 0.9+ | 0.1− | 2006 09 26 | 703 | 1.0+ | 0.1− |
| 2000 05 24 | 691 | 0.0 | 0.3+ | 2002 12 28 | 699 | 0.5+ | 1.1+ | 2006 09 26 | 703 | (1.5− | 0.1−) |
| 2000 05 24 | 691 | 0.3− | 0.4+ | 2002 12 28 | 699 | 1.3+ | 1.1− | 2006 09 26 | 703 | 0.2+ | 0.5− |
| 2000 05 24 | 691 | 0.1+ | 0.1− | 2002 12 28 | 699 | 0.3− | 1.0+ | 2006 09 30 | 704 | 1.0+ | 0.0 |
| 2002 11 06 | 608 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.3− | 0.6− |
| 2002 11 06 | 608 | 0.3+ | 0.2− | 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 09 30 | 704 | 0.3− | 1.3+ |
| 2002 11 06 | 608 | (1.5− | 1.5+) | 2002 12 31 | 704 | 1.0+ | 0.1+ | 2006 09 30 | 704 | 0.6+ | 0.7− |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2002 12 31 | 704 | 0.6+ | 0.3− | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.2− | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.2− | 2003 01 04 | 704 | 1.2− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.2− | 0.4+ | 2003 01 04 | 704 | 0.7− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.3+ | 0.4+ | 2003 01 04 | 704 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 11 11 | 704 | 0.1− | 0.2+ | 2003 01 04 | 704 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2002 11 11 | 704 | 0.1− | 0.2+ | 2003 01 04 | 704 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2002 11 11 | 704 | 0.2+ | 0.4− | 2003 01 08 | 704 | 0.7+ | 0.3− | 2006 10 22 | 703 | 0.7− | 0.2+ |
| 2002 11 11 | 704 | 0.3+ | 0.4− | 2003 01 08 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 11 11 | 704 | 0.0 | 0.2+ | 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2002 11 14 | 704 | 0.2+ | 0.1+ | 2003 01 08 | 704 | 0.5+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.7− | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | 0.6+ | 0.7− | 2003 01 18 | 608 | 0.4− | 1.2− | 2006 10 22 | 644 | 0.1− | 0.6+ |
| 2002 11 14 | 704 | 0.6+ | 0.2− | 2003 01 18 | 608 | 0.1− | 0.6− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | 0.3− | 0.7− | 2003 01 18 | 608 | 0.0 | 1.0− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 11 18 | 644 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.4+ | 1.0− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 11 18 | 644 | 0.5− | 0.2+ | 2003 02 01 | 704 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2002 11 18 | 644 | 0.3− | 0.1+ | 2003 02 01 | 704 | 0.4− | 0.3− | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2002 11 24 | 644 | 0.2− | 1.0+ | 2003 02 01 | 704 | 1.1− | 1.2− | 2006 10 28 | 703 | 0.4+ | 0.3− |
| 2002 11 24 | 644 | 0.4− | 0.9+ | 2003 02 04 | 704 | 0.6− | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.7− |
| 2002 11 24 | 644 | 0.4− | 1.1+ | 2003 02 04 | 704 | 0.1− | 0.2+ | 2006 11 10 | 704 | 0.3− | 1.3+ |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2003 02 04 | 704 | 0.6− | 0.9+ | 2006 11 10 | 704 | 0.4+ | 1.0+ |
| 2002 12 05 | 704 | 0.1− | 0.2− | 2003 02 04 | 704 | 0.4+ | 0.1+ | 2006 11 10 | 704 | 1.2− | 0.7+ |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 703 | 0.4− | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.5− | 0.0 |
| 2002 12 05 | 704 | 0.9+ | 0.3− | 2004 04 20 | 704 | 0.4+ | 0.7− | 2006 11 16 | 703 | 0.5+ | 0.7− |
| 2002 12 10 | 704 | 0.2+ | 0.2+ | 2004 04 22 | 599 | 0.0 | 0.6+ | 2006 11 16 | 703 | 0.2− | 0.0 |

**(142925)∗ 2002 VU$_{58}$**

Discovered 2002 Nov. 6 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.03366 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23664513 | $\omega$ | 211.11712 | | +0.80103514 | | +0.59466184 |
| $a$ | 2.5886361 | $\Omega$ | 112.23842 | | −0.53283413 | | +0.76060212 |
| $e$ | 0.1704625 | $i$ | 4.25659 | | −0.27281953 | | +0.26050282 |
| $P$ | 4.16 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 608 | 0.1+ | 0.2+ | 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 683 | 0.6+ | 0.8+ |
| 2002 11 06 | 608 | (0.5− | 1.6+) | 2004 02 14 | 691 | 0.5+ | 0.2+ | 2006 11 11 | 683 | 0.2+ | 0.4− |
| 2002 11 06 | 608 | 0.2− | 0.7+ | 2004 02 14 | 691 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2002 11 07 | 704 | 1.3+ | 0.1+ | 2004 03 17 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2002 11 07 | 704 | 1.4+ | 0.5+ | 2004 03 17 | 691 | 0.0 | 0.5+ | 2006 11 13 | 683 | 0.3+ | 0.4− |
| 2002 11 07 | 704 | (3.4+ | 2.2+) | 2005 05 04 | 644 | 0.2− | 0.4+ | 2006 11 13 | 683 | 0.0 | 1.1+ |
| 2002 11 07 | 704 | 0.8+ | 0.4+ | 2005 05 04 | 644 | 0.3+ | 0.5+ | 2006 11 14 | 704 | (1.0+ | 2.8+) |
| 2002 11 11 | 704 | 0.8− | 0.0 | 2005 05 04 | 644 | 0.0 | 0.7+ | 2006 11 14 | 683 | 0.3+ | 0.1− |
| 2002 11 11 | 704 | 1.1− | 0.1− | 2005 05 20 | G96 | 0.2+ | 0.4+ | 2006 11 14 | 704 | (0.8+ | 2.7+) |
| 2002 11 11 | 704 | 0.5− | 0.5+ | 2005 05 20 | G96 | 0.0 | 0.5+ | 2006 11 14 | 683 | 0.6+ | 0.9+ |
| 2002 11 11 | 704 | 0.8− | 0.7− | 2005 05 20 | G96 | 0.1+ | 0.5+ | 2006 11 14 | 704 | (1.1+ | 2.0+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.4+ | 1.0− | 2005 05 20 | G96 | 0.4+ | 0.2+ | 2006 11 14 | 704 | (1.6+ | 2.7+) |
| 2002 11 14 | 704 | 0.4− | 0.2+ | 2005 06 01 | 608 | 0.2− | 0.1− | 2006 11 14 | 683 | 0.2− | 0.1− |
| 2002 11 14 | 704 | 0.1− | 0.8− | 2005 06 01 | 608 | 0.0 | 0.4+ | 2006 11 14 | 704 | (1.1+ | 2.7+) |
| 2002 11 14 | 704 | 0.6− | 0.2− | 2005 06 01 | 608 | 0.3− | 0.2+ | 2006 11 15 | 683 | (2.0+ | 0.6−) |
| 2002 11 14 | 704 | 0.1+ | 0.1− | 2005 06 03 | 703 | 0.2− | 1.3− | 2006 11 15 | 683 | (1.6+ | 0.0 ) |
| 2002 11 18 | 644 | 0.1− | 0.1+ | 2005 06 03 | 703 | 0.3+ | 0.1+ | 2006 11 15 | 683 | 0.6+ | 0.7− |
| 2002 11 18 | 644 | 0.1+ | 0.5+ | 2005 06 03 | 703 | 0.4− | 0.5+ | 2006 11 17 | 704 | 0.5− | 0.6+ |
| 2002 11 18 | 644 | 0.2− | 0.7+ | 2005 06 03 | 703 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2002 11 24 | 644 | 0.5− | 0.1− | 2005 06 05 | 704 | 0.0 | 0.6+ | 2006 11 17 | 704 | 0.4− | 0.2+ |
| 2002 11 24 | 644 | 0.5− | 0.3− | 2005 06 05 | 704 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.7+ |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2005 06 05 | 704 | 0.4+ | 0.8+ | 2006 11 17 | 704 | 0.4− | 0.3− |
| 2002 11 28 | 608 | 0.5− | 0.0 | 2005 06 06 | 691 | 0.2+ | 0.6+ | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2002 11 28 | 608 | 0.4− | 0.1+ | 2005 06 06 | 691 | 0.2+ | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.6− |
| 2002 11 28 | 608 | 0.4− | 0.0 | 2005 06 06 | 691 | 0.2+ | 0.5+ | 2006 11 17 | G96 | (1.1+ | 1.6−) |
| 2002 12 03 | 644 | 0.1− | 0.7+ | 2005 06 16 | 691 | 0.2+ | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2002 12 03 | 644 | 0.2+ | 0.8+ | 2005 06 16 | 691 | 0.1+ | 0.8+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2002 12 03 | 644 | 0.4+ | 0.8+ | 2005 06 16 | 691 | 0.0 | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2002 12 10 | 644 | 0.0 | 1.2+ | 2005 06 27 | 691 | 0.3+ | 0.5+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2002 12 10 | 644 | 0.0 | 1.1+ | 2005 06 27 | 691 | 0.2+ | 0.6+ | 2006 11 17 | G96 | 0.3− | 0.5− |
| 2002 12 10 | 644 | 0.1− | 1.3+ | 2005 06 27 | 691 | (0.6+ | 1.6+) | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2002 12 11 | 704 | 0.3+ | 1.1+ | 2006 10 03 | G96 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.5+ | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.5+ | 0.9+ | 2006 10 03 | G96 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.1− |
| 2002 12 11 | 704 | (2.0+ | 0.3+) | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.2+ | 1.0+ |
| 2002 12 31 | 699 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2002 12 31 | 699 | (1.7− | 0.6+) | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2002 12 31 | 699 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 1.3+ |
| 2002 12 31 | 699 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2003 01 04 | 704 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 25 | 704 | 0.0 | 0.7− |
| 2003 01 04 | 704 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 25 | 704 | 1.1− | 0.7+ |
| 2003 01 04 | 704 | 0.4− | 0.4− | 2006 10 22 | 691 | 0.6− | 0.6+ | 2006 11 25 | 704 | 0.7− | 1.4+ |
| 2003 01 04 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.4+ | 2006 11 28 | 704 | 1.1+ | 0.4+ |
| 2003 01 04 | 704 | 0.2− | 0.5+ | 2006 11 10 | 683 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.3+ | 0.4+ |
| 2003 01 19 | 644 | 0.3− | 0.3+ | 2006 11 10 | 683 | 0.6− | 1.2+ | 2006 11 28 | 704 | 0.0 | 1.1+ |
| 2003 01 19 | 644 | 0.4− | 0.3− | 2006 11 10 | 683 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.5+ |
| 2003 01 19 | 644 | 0.3− | 0.5+ | 2006 11 11 | 683 | 0.2+ | 0.8− | 2006 11 28 | 704 | 0.1− | 2.0+ |

**(142926)∗ 2002 VD$_{60}$**

Discovered 2002 Nov. 3 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.15010 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24128272 | $\omega$ | 78.85339 | | +0.29882756 | | +0.94724263 |
| $a$ | 2.5553589 | $\Omega$ | 209.35440 | | −0.94157222 | | +0.27288197 |
| $e$ | 0.0822655 | $i$ | 13.67623 | | −0.15538290 | | +0.16812740 |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.7+ | 1.2+ | 2004 03 16 | 704 | 0.0 | 0.6− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 10 30 | 644 | 0.6− | 1.2+ | 2005 06 03 | 621 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 30 | 644 | 0.7+ | 1.1+ | 2005 06 03 | 621 | 0.3+ | 0.3+ | 2006 10 27 | 683 | 0.9− | 0.3+ |
| 2002 11 03 | 608 | 0.3+ | 1.0− | 2005 06 03 | 621 | 0.3− | 0.5− | 2006 10 27 | 683 | (1.3− | 1.8+) |
| 2002 11 03 | 608 | 0.4+ | 0.8− | 2005 06 03 | E12 | 0.0 | 0.3− | 2006 10 27 | 683 | (1.8− | 1.6+) |
| 2002 11 03 | 608 | 0.3− | 0.7− | 2005 06 03 | E12 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 11 05 | 644 | 0.4− | 0.2− | 2005 06 03 | E12 | 0.4− | 0.6− | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2002 11 05 | 644 | 0.2− | 0.2+ | 2005 06 03 | E12 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2002 11 05 | 644 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.6+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.7− | 0.3− | 2006 09 25 | G96 | 1.0+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.3+ | 1.1+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.6+ |
| 2002 11 07 | 704 | 0.0 | 1.3+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.2− | 0.2− |
| 2002 11 07 | 704 | 0.9− | 1.1+ | 2006 09 30 | 703 | 0.8− | 1.1− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.9+ | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2002 11 22 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.1+ |
| 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 1.2+ | 1.0+ | 2006 11 13 | 703 | 0.1+ | 0.6− |
| 2002 12 01 | 704 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.4− | 0.7− |
| 2002 12 01 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.4− |
| 2002 12 01 | 704 | 0.1− | 0.6− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.9+ |
| 2004 01 28 | 704 | 0.6+ | 0.9+ | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.3− |
| 2004 01 28 | 704 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.3+ | 0.0 |
| 2004 01 28 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.1− | 1.2− |
| 2004 01 28 | 704 | 1.2− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2004 02 17 | 703 | 0.6− | 0.4− | 2006 10 16 | 703 | 1.0− | 0.6− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 02 17 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.8− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2004 02 17 | 703 | (0.8+ | 1.8+) | 2006 10 16 | 703 | 1.4− | 1.2− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2004 02 17 | 703 | 0.9− | 1.0− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2004 03 16 | 704 | 1.0+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.4− | 0.5− |
| 2004 03 16 | 704 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.5− |

**(142927)∗ 2002 VF$_{60}$**

Discovered 2002 Nov. 3 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.41462 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28800589 | $\omega$ | 176.69043 | | +0.88530340 | | +0.46422554 |
| $a$ | 2.2709199 | $\Omega$ | 155.59214 | | −0.42813185 | | +0.83642187 |
| $e$ | 0.2064355 | $i$ | 3.75541 | | −0.18149658 | | +0.29136421 |
| $P$ | 3.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.5− | 0.0 | 2002 11 12 | 644 | 0.1− | 0.2+ | 2005 06 30 | 703 | (3.7+ | 0.1+) |
| 1995 10 24 | 691 | 0.1+ | 0.4+ | 2002 11 12 | 644 | 0.0 | 0.1+ | 2005 06 30 | 703 | 0.0 | 0.8− |
| 1995 10 24 | 691 | 0.2+ | 0.1+ | 2002 11 14 | 644 | 0.1− | 0.3+ | 2005 06 30 | 703 | 1.0− | 0.1+ |
| 2002 10 08 | 699 | 0.5− | 0.1+ | 2002 11 14 | 644 | 0.2+ | 0.5+ | 2005 06 30 | 703 | 0.5− | 0.2− |
| 2002 10 08 | 699 | 0.0 | 0.1+ | 2002 11 14 | 644 | 0.2+ | 0.3+ | 2005 07 04 | 704 | 0.4+ | 0.8− |
| 2002 10 08 | 699 | 0.1− | 0.0 | 2002 12 01 | 704 | 0.0 | 0.6− | 2005 07 04 | 704 | 0.6+ | 0.4− |
| 2002 10 08 | 699 | 0.3− | 0.5+ | 2002 12 01 | 704 | 0.4+ | 0.5+ | 2005 07 04 | 704 | 0.2− | 0.0 |
| 2002 10 30 | 644 | 0.6+ | 0.3+ | 2002 12 01 | 704 | 0.4+ | 0.2+ | 2005 07 04 | 704 | 0.3− | 1.1− |
| 2002 10 30 | 644 | 0.1+ | 0.1+ | 2002 12 01 | 704 | 0.1+ | 0.9+ | 2005 07 07 | 704 | 0.5− | 0.4+ |
| 2002 10 30 | 644 | 0.0 | 0.0 | 2002 12 07 | 704 | 0.4− | 0.7+ | 2005 07 07 | 704 | 0.5+ | 1.1+ |
| 2002 11 03 | 608 | 0.3− | 1.2− | 2002 12 07 | 704 | 0.2− | 0.6+ | 2005 07 07 | 704 | 0.9+ | 1.3+ |
| 2002 11 03 | 608 | 0.2+ | 1.0− | 2002 12 07 | 704 | 0.2− | 0.9+ | 2005 07 07 | 704 | (0.4+ | 2.3+) |
| 2002 11 03 | 608 | 0.3− | 0.4− | 2002 12 07 | 704 | 0.3− | 1.3+ | 2005 07 08 | 691 | 0.4− | 1.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.2− | 2002 12 07 | 704 | 0.7− | 0.5+ | 2005 07 08 | 691 | 0.1− | 0.5+ |
| 2002 11 07 | 704 | 0.7− | 0.5+ | 2004 02 16 | 691 | 0.5+ | 0.6+ | 2005 07 08 | 691 | 1.3+ | 1.0+ |
| 2002 11 07 | 704 | 0.0 | 0.7+ | 2004 02 16 | 691 | 0.5+ | 0.4+ | 2005 07 11 | G96 | 0.0 | 0.2− |
| 2002 11 08 | 704 | 0.3+ | 0.6− | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2005 07 11 | G96 | 0.2+ | 0.1+ |
| 2002 11 08 | 704 | 0.0 | 0.0 | 2004 02 29 | 291 | 0.1+ | 0.6+ | 2005 07 11 | G96 | 0.1+ | 0.1+ |
| 2002 11 08 | 704 | 0.2− | 0.5− | 2004 02 29 | 291 | 0.1+ | 0.5+ | 2005 08 01 | E12 | 0.3+ | 0.1+ |
| 2002 11 10 | 704 | 0.4− | 0.1+ | 2004 02 29 | 291 | 0.3− | 0.5+ | 2005 08 01 | E12 | 0.6− | 0.3− |
| 2002 11 10 | 704 | 0.1− | 0.7+ | 2005 05 15 | G96 | 0.2+ | 0.1+ | 2005 08 01 | E12 | 0.1− | 0.0 |
| 2002 11 10 | 704 | 0.1− | 0.6+ | 2005 05 15 | G96 | 0.1+ | 0.1+ | 2005 10 25 | G96 | 0.2+ | 0.6− |
| 2002 11 11 | 704 | 0.8− | 0.3+ | 2005 05 15 | G96 | 0.1+ | 0.1+ | 2005 10 25 | G96 | 0.1+ | 0.3− |
| 2002 11 11 | 704 | 1.5+ | 1.1− | 2005 05 15 | G96 | 0.1+ | 0.2+ | 2005 10 25 | G96 | 0.0 | 0.4− |
| 2002 11 11 | 704 | 0.4− | 0.1+ | 2005 06 28 | 691 | 0.6− | 0.3− | 2005 10 25 | G96 | 0.1− | 0.5− |
| 2002 11 11 | 704 | 0.8− | 0.2+ | 2005 06 28 | 691 | 0.5− | 0.1+ | | | | |
| 2002 11 12 | 644 | 0.3+ | 0.5+ | 2005 06 28 | 691 | 0.1− | 0.0 | | | | |

**(142928)∗ 2002 VK$_{60}$ = 2002 TV$_{225}$**

Discovered 2002 Nov. 3 by NEAT at Haleakala.

Id. G. V. Williams (d, *MPO* 41953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.97714 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23239301 | $\omega$ | 309.83863 | | +0.97045522 | | −0.13027607 |
| $a$ | 2.6201169 | $\Omega$ | 58.55582 | | +0.21721222 | | +0.83817816 |
| $e$ | 0.0525522 | $i$ | 13.77121 | | −0.10505008 | | +0.52960884 |
| $P$ | 4.24 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 704 | 0.3+ | 0.2+ | 2002 12 10 | 644 | 0.1+ | 0.9+ | 2006 09 19 | 703 | 0.9− | 0.6+ |
| 2000 04 03 | 704 | 1.3+ | 1.0− | 2002 12 10 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.2+ | 0.2+ |
| 2000 04 03 | 704 | (2.4− | 0.1+) | 2002 12 10 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 2000 04 03 | 704 | 0.2− | 1.1+ | 2002 12 11 | 704 | 0.1− | 0.7+ | 2006 09 19 | 703 | 1.0+ | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 704 | 1.5− | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 09 21 | 699 | 1.0− | 1.3+ |
| 2002 10 08 | 699 | 0.2− | 0.1− | 2002 12 11 | 704 | 0.0 | 0.1− | 2006 09 21 | 699 | (0.2+ | 1.6+) |
| 2002 10 08 | 699 | 0.3+ | 0.7− | 2002 12 11 | 704 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.0 | 0.4+ |
| 2002 10 08 | 699 | 1.2+ | 0.7+ | 2002 12 12 | 704 | 0.4− | 0.2+ | 2006 09 21 | 699 | 1.2− | 0.2+ |
| 2002 10 08 | 699 | 0.0 | 0.1+ | 2002 12 12 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.6+ |
| 2002 10 09 | 704 | 0.4− | 1.0− | 2002 12 12 | 704 | 0.4− | 0.6− | 2006 09 25 | 699 | 0.3+ | 0.4+ |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2002 12 12 | 704 | (2.2− | 0.4+) | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2002 10 09 | 704 | 0.7+ | 0.7+ | 2002 12 31 | 704 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.0 | 0.5+ |
| 2002 10 09 | 704 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 1.1− | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.3− |
| 2002 10 09 | 704 | 0.9− | 0.4+ | 2002 12 31 | 704 | 0.7− | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.7+ | 1.3− | 2004 02 15 | 704 | 0.7+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.4+ |
| 2002 10 11 | 704 | (1.2+ | 1.7−) | 2004 02 15 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 1.1− | 0.8− |
| 2002 10 11 | 704 | 0.3+ | 1.0− | 2004 02 15 | 704 | 0.5+ | 1.1− | 2006 09 29 | 699 | 0.5− | 0.0 |
| 2002 10 11 | 704 | 1.0+ | 0.6− | 2004 02 15 | 704 | 0.7+ | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.1+ |
| 2002 11 03 | 608 | (1.1+ | 1.6−) | 2004 03 01 | 704 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.0 |
| 2002 11 03 | 608 | (1.6+ | 1.0−) | 2004 03 01 | 704 | 0.6− | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.4+ |
| 2002 11 03 | 608 | (1.4+ | 2.0−) | 2004 03 01 | 704 | 0.0 | 0.9+ | 2006 09 30 | 704 | 0.3− | 1.0+ |
| 2002 11 06 | 704 | 0.2− | 0.5− | 2004 03 01 | 704 | (2.1+ | 0.2+) | 2006 09 30 | 704 | 0.0 | 1.0+ |
| 2002 11 06 | 704 | 0.1− | 0.3+ | 2004 03 14 | 704 | 0.5− | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.6+ |
| 2002 11 06 | 704 | 0.2+ | 0.2− | 2004 03 14 | 704 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.4− | 0.7+ |
| 2002 11 06 | 704 | 0.2− | 0.5− | 2004 03 14 | 704 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.7− | 0.7+ |
| 2002 11 06 | 704 | 0.5− | 0.6− | 2004 03 14 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.6− |
| 2002 11 10 | 704 | 1.0+ | 0.5− | 2004 03 14 | 704 | 1.3+ | 0.9+ | 2006 10 16 | 703 | 0.5+ | 0.5− |
| 2002 11 10 | 704 | 0.3+ | 0.5− | 2004 03 28 | 704 | 0.7− | 1.0− | 2006 10 16 | 703 | 0.8− | 0.4+ |
| 2002 11 10 | 704 | 0.7+ | 0.0 | 2004 03 28 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 1.1+ | 0.5− |
| 2002 11 12 | 644 | 0.4+ | 0.1− | 2004 03 28 | 704 | (0.2+ | 2.4−) | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 11 12 | 644 | 0.3+ | 0.2− | 2004 03 28 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2002 11 12 | 644 | 0.5+ | 0.1+ | 2004 03 28 | 704 | 0.4− | 0.3− | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2002 11 27 | 699 | 0.5− | 0.1− | 2004 03 30 | 703 | 0.1+ | 1.5+ | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2002 11 27 | 699 | 0.1+ | 0.2− | 2004 03 30 | 703 | (1.7+ | 0.0 ) | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 11 27 | 699 | 0.1− | 0.6+ | 2004 03 30 | 703 | 1.2+ | 1.3+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 11 27 | 699 | 0.4− | 0.6− | 2004 03 30 | 703 | 0.9+ | 1.2+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 12 01 | 704 | 0.5+ | 0.8+ | 2004 04 14 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 12 01 | 704 | 0.2− | 0.2+ | 2004 04 14 | 703 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 12 01 | 704 | 0.2− | 0.4− | 2004 04 14 | 704 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 12 01 | 704 | 0.3+ | 0.4− | 2004 04 14 | 703 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 12 01 | 704 | 1.2+ | 0.7− | 2004 04 14 | 644 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2002 12 01 | 608 | 0.5− | 0.7− | 2004 04 14 | 703 | 0.4+ | 1.0− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 12 01 | 608 | 0.6− | 0.8− | 2004 04 14 | 704 | 0.1+ | 0.5− | 2006 11 10 | 644 | 0.0 | 0.4− |
| 2002 12 01 | 608 | 0.5− | 0.6− | 2004 04 14 | 703 | 0.5+ | 0.8− | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 04 14 | 704 | 0.4− | 0.8+ | 2006 11 10 | 704 | 0.2+ | 0.7− |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2004 04 14 | 644 | 0.0 | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.4− |
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2004 04 14 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 704 | (1.5− | 0.3+) |
| 2002 12 05 | 704 | 0.0 | 0.4− | 2005 02 11 | 809 | 0.8− | 0.2− | 2006 11 10 | 704 | 0.6− | 1.3− |
| 2002 12 05 | 704 | 0.4− | 0.1− | 2005 02 11 | 809 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.6+ | 0.5+ |
| 2002 12 10 | 644 | 0.1+ | 1.0+ | 2005 02 11 | 809 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.3+ |
| 2002 12 10 | 704 | 0.2− | 1.0− | 2005 02 11 | 809 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.9− | 0.7+ |
| 2002 12 10 | 644 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.6+ | 0.5− | 2006 11 16 | 703 | 0.2+ | 0.8+ |
| 2002 12 10 | 704 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.7− | 0.3+ | | | | |
| 2002 12 10 | 704 | 0.4+ | 0.8− | 2006 09 19 | 703 | 0.3+ | 0.6+ | | | | |

**(142929)∗ 2002 VS$_{61}$ = 2000 EE$_9$**

Discovered 2002 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38138)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.58597 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24012566 | $\omega$ | 350.14981 | | +0.68210150 | +0.73085078 | |
| $a$ | 2.5635610 | $\Omega$ | 322.85167 | | −0.66813775 | +0.60932455 | |
| $e$ | 0.1127396 | $i$ | 2.31436 | | −0.29720278 | +0.30753981 | |
| $P$ | 4.10 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 26 | 691 | 0.0 | 0.1− | 2002 12 06 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 1996 01 26 | 691 | 0.3+ | 0.4− | 2002 12 06 | 704 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.3− | 0.3− |
| 1996 01 26 | 691 | 0.3− | 0.6− | 2002 12 06 | 704 | (0.4− | 1.6+) | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2000 01 10 | 691 | 0.2− | 0.1− | 2002 12 06 | 704 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2000 01 10 | 691 | 0.5− | 0.2− | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 01 10 | 691 | 0.3− | 0.1+ | 2002 12 10 | 644 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2000 03 03 | 704 | 1.0+ | 0.1+ | 2002 12 10 | 644 | 0.7− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2000 03 03 | 704 | 0.9+ | 1.2+ | 2004 01 24 | 704 | 1.2+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.2− |
| 2000 03 03 | 704 | 0.9+ | 0.5+ | 2004 01 24 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.3− |
| 2000 03 05 | 704 | 0.4− | 0.2− | 2004 01 24 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2000 03 05 | 704 | 0.5+ | 0.8− | 2004 02 11 | 644 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2000 03 05 | 704 | 0.4− | 0.1− | 2004 02 11 | 644 | 0.8− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 03 05 | 704 | 0.4− | 0.2+ | 2004 02 11 | 644 | 0.3− | 0.3+ | 2006 10 29 | 704 | 0.2− | 0.8+ |
| 2002 10 12 | 704 | 0.1− | 0.4− | 2004 02 12 | 691 | 0.4− | 0.2+ | 2006 10 29 | 704 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.0 | 1.2− | 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 10 29 | 704 | 0.2+ | 0.8+ |
| 2002 10 12 | 704 | 1.2+ | 0.2− | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.3+ | 0.0 |
| 2002 11 05 | 704 | 1.2− | 1.5+ | 2004 02 17 | 704 | (2.3+ | 0.3−) | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 11 05 | 704 | (0.8− | 1.7−) | 2004 02 17 | 704 | 0.8+ | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2002 11 05 | 704 | 0.4− | 0.6− | 2004 02 17 | 704 | 1.3+ | 0.7− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 11 05 | 704 | 0.6+ | 0.0 | 2004 02 17 | 704 | 0.7+ | 1.0+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 11 08 | 704 | 0.0 | 0.2+ | 2005 02 09 | 809 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 11 08 | 704 | 0.1+ | 0.2+ | 2005 02 09 | 809 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 11 08 | 704 | 0.7− | 1.0+ | 2005 02 09 | 809 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 2002 11 12 | 704 | 0.6− | 0.0 | 2005 02 09 | 809 | 0.0 | 0.4+ | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2002 11 12 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.9+ |
| 2002 11 12 | 704 | 1.2− | 1.0− | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 2002 11 14 | 704 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 2002 11 14 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2002 11 14 | 704 | 0.9+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.3− | 0.3− |
| 2002 11 14 | 704 | 0.4+ | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 11 14 | 704 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.4− | | | | |

**(142930)∗ 2002 VR$_{63}$ = 2001 NK$_8$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 38139)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.32062 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20921873 | $\omega$ | 92.62507 | | +0.96906924 | −0.22747538 | |
| $a$ | 2.8101900 | $\Omega$ | 280.53600 | | +0.16942269 | +0.89519334 | |
| $e$ | 0.0684548 | $i$ | 5.58647 | | +0.17944568 | +0.38325427 | |
| $P$ | 4.71 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.7− | 0.2− | 2002 11 14 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.4+ | 0.8− |
| 2001 07 14 | 644 | 0.5− | 0.1− | 2002 11 24 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | 1.0− | 0.3− |
| 2001 07 14 | 644 | 0.3− | 0.1+ | 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2001 07 17 | 644 | 0.3+ | 0.9+ | 2002 11 24 | 644 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 2001 07 17 | 644 | 0.5+ | 1.0+ | 2002 12 01 | 608 | 0.1+ | 0.7− | 2006 08 29 | 691 | 0.4− | 0.4+ |
| 2001 07 17 | 644 | 0.1+ | 0.7+ | 2002 12 01 | 608 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.8− | 0.6+ |
| 2001 07 23 | 608 | 0.2− | 0.4− | 2002 12 01 | 608 | 0.1+ | 0.6− | 2006 09 18 | 703 | 0.4+ | 0.2− |
| 2001 07 23 | 608 | 0.0 | 0.5− | 2002 12 02 | 704 | 1.5+ | 0.8+ | 2006 09 18 | 703 | 1.1− | 1.2− |
| 2001 07 23 | 608 | 0.3+ | 0.3− | 2002 12 02 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 1.6− | 0.8+ |
| 2002 11 06 | 699 | 0.2+ | 0.6− | 2002 12 02 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | (2.6+ | 1.0+) |
| 2002 11 06 | 699 | 0.0 | 0.8− | 2002 12 02 | 704 | 0.7+ | 0.3− | 2006 09 19 | 699 | 1.1+ | 1.6+ |
| 2002 11 06 | 699 | 1.2− | 0.4− | 2003 12 19 | 291 | 0.2− | 0.5+ | 2006 09 19 | 699 | (2.1+ | 0.2−) |
| 2002 11 06 | 699 | 0.9− | 0.3− | 2003 12 19 | 291 | 0.8− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2002 11 08 | 704 | 0.8+ | 0.2+ | 2003 12 19 | 291 | 0.7− | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.6+ |
| 2002 11 08 | 704 | 0.3− | 0.2+ | 2004 03 21 | 691 | 0.9+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2002 11 08 | 704 | 0.8− | 0.3+ | 2004 03 21 | 691 | 0.8+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.2+ | 0.1+ | 2004 03 21 | 691 | 0.6+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.3+ |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.9+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.3− | 0.7+ | 2006 08 24 | 704 | 0.0 | 0.7+ | 2006 09 25 | 691 | 0.5− | 0.1− |
| 2002 11 12 | 704 | 0.4− | 0.3+ | 2006 08 24 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 2002 11 12 | 704 | 0.3+ | 0.3+ | 2006 08 24 | 704 | 0.0 | 1.6− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.8+ | 0.7+ | 2006 08 27 | 699 | 0.8+ | 1.4+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.4− | 0.8+ | 2006 08 27 | 699 | 1.7− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.0 | 0.6− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2002 11 14 | 704 | 0.6− | 0.0 | 2006 08 27 | 699 | 0.5− | 0.6− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.4− | 0.1+ | | | | |
| 2002 11 14 | 704 | 0.2+ | 0.4− | 2006 08 28 | 703 | 0.2− | 0.4− | | | | |

**(142931)∗ 2002 VT$_{63}$**

Discovered 2002 Nov. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.16933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22782393 | $\omega$ | 131.58932 | | +0.57550580 | −0.81443671 | |
| $a$ | 2.6550324 | $\Omega$ | 283.12769 | | +0.72587075 | +0.55043383 | |
| $e$ | 0.0718986 | $i$ | 4.36182 | | +0.37670245 | +0.18361768 | |
| $P$ | 4.33 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.2− | 0.7− | 2002 12 11 | 644 | 0.1+ | 0.3− | 2006 09 16 | 703 | 1.0− | 0.9+ |
| 1995 02 01 | 691 | 0.3− | 0.6− | 2002 12 11 | 704 | 0.4− | 0.5− | 2006 09 16 | 703 | 0.5− | 0.5− |
| 1995 02 01 | 691 | 0.2− | 0.9− | 2002 12 11 | 644 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.6− | 0.1+ |
| 2002 11 01 | 644 | 0.4+ | 0.3+ | 2002 12 11 | 704 | 0.4− | 1.2− | 2006 09 16 | 703 | 0.2− | 0.3+ |
| 2002 11 01 | 644 | 1.3+ | 0.1− | 2002 12 11 | 644 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.1+ | 0.2+ |
| 2002 11 01 | 644 | 0.8+ | 0.1+ | 2002 12 11 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.7− | 0.4+ |
| 2002 11 06 | 699 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.4− | 0.4+ |
| 2002 11 06 | 699 | 0.3+ | 0.6− | 2002 12 11 | 704 | 0.2+ | 1.9+ | 2006 09 18 | 703 | 0.2− | 1.0+ |
| 2002 11 06 | 699 | 0.1− | 0.1+ | 2002 12 12 | 608 | 0.4− | 0.3+ | 2006 09 18 | 704 | 0.9+ | 0.3− |
| 2002 11 06 | 699 | 0.3− | 0.6− | 2002 12 12 | 608 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.3+ | 1.3+ |
| 2002 11 08 | 704 | 0.1− | 0.3− | 2002 12 12 | 608 | 0.5− | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.6+ |
| 2002 11 08 | 704 | 0.1− | 0.1− | 2002 12 31 | 704 | 1.0− | 1.4+ | 2006 09 18 | 704 | 0.5+ | 0.3+ |
| 2002 11 08 | 704 | 0.3− | 0.2− | 2002 12 31 | 704 | 0.3− | 0.4+ | 2006 09 18 | 704 | 1.3+ | 0.3+ |
| 2002 11 08 | 704 | 0.3+ | 0.2− | 2002 12 31 | 704 | 0.3+ | 0.9+ | 2006 09 25 | 704 | 0.1+ | 0.7+ |
| 2002 11 11 | 699 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.2− | 0.3− | 2006 09 25 | 704 | 0.3+ | 0.4+ |
| 2002 11 11 | 699 | 0.9− | 0.4+ | 2004 02 14 | 644 | 0.0 | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.9+ |
| 2002 11 11 | 699 | 0.1− | 0.5+ | 2004 02 14 | 644 | 0.4− | 0.5+ | 2006 09 25 | 704 | 0.0 | 0.9+ |
| 2002 11 11 | 699 | 0.7+ | 0.4+ | 2004 02 14 | 644 | 0.3− | 0.5+ | 2006 09 25 | 683 | 0.4+ | 0.6− |
| 2002 11 12 | 704 | 1.7− | 0.3− | 2004 02 26 | 704 | 1.3+ | 1.0+ | 2006 09 25 | 683 | 1.4+ | 0.8− |
| 2002 11 12 | 704 | 0.6− | 1.1+ | 2004 02 26 | 704 | 0.7+ | 1.1+ | 2006 09 25 | 683 | 0.9+ | 0.3+ |
| 2002 11 12 | 704 | 1.0− | 0.5+ | 2004 02 26 | 704 | 0.6+ | 1.9+ | 2006 09 26 | 683 | 0.6+ | 0.6+ |
| 2002 11 12 | 704 | 1.9− | 0.7+ | 2004 02 26 | 704 | 0.0 | 0.6− | 2006 09 26 | 683 | 0.7+ | 0.6− |
| 2002 11 12 | 704 | 1.5− | 1.5+ | 2004 02 26 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 683 | 0.3− | 0.0 |
| 2002 11 14 | 704 | (2.4+ | 0.6−) | 2004 03 16 | 704 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.7+ | 0.8+ |
| 2002 11 14 | 704 | 1.9+ | 0.4− | 2004 03 16 | 704 | 0.8+ | 0.8+ | 2006 09 27 | 699 | 0.7+ | 0.4+ |
| 2002 11 14 | 704 | (2.1+ | 0.8−) | 2004 03 16 | 704 | 0.1+ | 0.9− | 2006 09 27 | 699 | 0.1+ | 0.5+ |
| 2002 11 14 | 704 | 1.7+ | 0.7− | 2004 03 16 | 704 | 1.3− | 0.4+ | 2006 09 27 | 699 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | (2.0+ | 0.6−) | 2004 03 19 | 704 | (2.2+ | 0.4+) | 2006 09 27 | 703 | 0.3− | 0.1− |
| 2002 11 27 | 699 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.0 | 0.6− | 2006 09 27 | 703 | 0.5− | 0.5− |
| 2002 11 27 | 699 | 0.4− | 0.4+ | 2004 03 19 | 704 | 0.8+ | 0.9+ | 2006 09 27 | 683 | 1.4− | 0.2− |
| 2002 11 27 | 699 | 0.0 | 0.3− | 2004 03 19 | 704 | 1.6+ | 1.0+ | 2006 09 27 | 703 | 0.5− | 0.2− |
| 2002 11 27 | 699 | 0.3+ | 0.3− | 2004 03 20 | 704 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.4+ | 0.7+ |
| 2002 12 01 | 608 | 0.5+ | 0.2+ | 2004 03 20 | 704 | 0.4+ | 0.9+ | 2006 09 27 | 683 | 0.1− | 0.5− |
| 2002 12 01 | 608 | 0.5+ | 1.0+ | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 683 | 0.1− | 0.5− |
| 2002 12 01 | 608 | 0.6+ | 0.4+ | 2004 03 20 | 704 | 0.9+ | 1.3+ | 2006 10 04 | G96 | 0.3+ | 0.3− |
| 2002 12 02 | 704 | 1.0− | 0.4+ | 2004 03 20 | 704 | 0.4+ | 1.3+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2002 12 02 | 704 | 0.1− | 0.7− | 2004 04 12 | 703 | 1.0+ | 1.9+ | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2002 12 02 | 704 | 0.1+ | 1.3− | 2004 04 12 | 703 | 0.6− | 1.1+ | 2006 10 04 | G96 | 0.4− | 0.2− |
| 2002 12 02 | 704 | 0.6− | 0.5− | 2004 04 12 | 703 | 0.3+ | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2002 12 02 | 704 | (1.5+ | 2.2−) | 2004 04 12 | 703 | 0.6+ | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2002 12 05 | 695 | 0.5+ | 0.4− | 2006 08 29 | 699 | 0.7− | 0.5+ | 2006 10 17 | 703 | 0.4+ | 0.3− |
| 2002 12 05 | 695 | 0.6+ | 0.6− | 2006 08 29 | 699 | 0.5− | 1.4+ | 2006 10 17 | 703 | 1.6− | 0.2− |
| 2002 12 06 | 704 | 0.2+ | 0.1− | 2006 08 29 | 699 | 0.8− | 1.2− | 2006 10 29 | 704 | 0.5+ | 0.1− |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2006 08 29 | 699 | 1.1− | 0.7+ | 2006 10 29 | 704 | 0.1− | 0.6− |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2006 09 14 | 644 | 0.3− | 0.0 | 2006 10 29 | 704 | 0.0 | 0.3− |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.6− | 0.4+ | 2006 10 29 | 704 | 1.1+ | 0.5+ |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.2+ | | | | |

**(142932)∗ 2002 VH$_{64}$ = 1999 XU$_{237}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38140)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.88578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30964055 | $\omega$ | 216.78645 | | −0.63897120 | +0.76917791 | |
| $a$ | 2.1638683 | $\Omega$ | 13.50615 | | −0.69624927 | −0.57332978 | |
| $e$ | 0.1025360 | $i$ | 2.21053 | | −0.32703633 | −0.28223803 | |
| $P$ | 3.18 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 0.1− | 0.2+ | 2004 04 23 | 704 | 0.2+ | 1.2+ | 2005 10 06 | 703 | 0.2− | 0.9− |
| 1994 01 11 | 691 | 0.2− | 0.2+ | 2004 04 23 | 704 | 0.3+ | 1.0+ | 2005 10 09 | 691 | 0.1− | 0.2+ |
| 1994 01 11 | 691 | 0.3− | 0.2+ | 2004 04 23 | 704 | 0.2+ | 0.5+ | 2005 10 09 | 691 | 0.1− | 0.0 |
| 1999 12 05 | 703 | 0.0 | 0.7+ | 2004 04 23 | 704 | 0.4+ | 1.0+ | 2005 10 09 | 691 | 0.2− | 0.1+ |
| 1999 12 05 | 703 | 0.2− | 0.2+ | 2004 04 23 | 704 | 0.3+ | 0.7+ | 2005 10 12 | 704 | 0.6− | 0.1+ |
| 1999 12 05 | 703 | 0.6+ | 0.2+ | 2004 04 23 | 704 | 0.3+ | 0.9+ | 2005 10 12 | 704 | 0.1− | 0.3+ |
| 1999 12 05 | 703 | 0.5+ | 0.9+ | 2004 04 23 | 704 | 0.0 | 0.7+ | 2005 10 12 | 704 | 0.8− | 0.9− |
| 1999 12 07 | 704 | 1.2+ | 0.0 | 2004 04 23 | 704 | 0.2+ | 0.7+ | 2005 10 13 | 691 | 0.3− | 0.3+ |
| 1999 12 07 | 704 | 0.6+ | 0.9+ | 2004 04 25 | 704 | 0.1+ | 0.5+ | 2005 10 13 | 691 | 0.4− | 0.3+ |
| 1999 12 07 | 704 | 0.5+ | 0.4− | 2004 04 25 | 704 | 0.6+ | 0.3+ | 2005 10 13 | 691 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.6+ | 0.6− | 2004 04 25 | 704 | 0.2+ | 0.4+ | 2005 10 24 | 699 | 0.4+ | 1.1+ |
| 2002 10 30 | 608 | 0.1− | 0.3− | 2004 04 25 | 704 | 0.3+ | 0.4+ | 2005 10 24 | 699 | 0.6− | 0.4+ |
| 2002 10 30 | 608 | 0.2+ | 0.6− | 2004 04 25 | 704 | 0.2+ | 0.3+ | 2005 10 24 | 699 | 0.6− | 0.3+ |
| 2002 10 30 | 608 | 0.1+ | 0.1+ | 2004 04 29 | 608 | (0.7+ | 1.5−) | 2005 10 24 | 699 | 0.1− | 1.3+ |
| 2002 11 06 | 704 | 0.6− | 0.2+ | 2004 04 29 | 608 | 0.1− | 0.1+ | 2005 10 25 | 699 | 0.6− | 0.8+ |
| 2002 11 06 | 704 | (0.6+ | 1.7+) | 2004 04 29 | 608 | 0.1− | 0.3+ | 2005 10 25 | 699 | 0.6− | 0.8+ |
| 2002 11 06 | 704 | 0.2− | 1.0+ | 2004 05 11 | 699 | 0.3+ | 0.9+ | 2005 10 25 | 699 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 1.4+ | 1.1+ | 2004 05 11 | 699 | 0.9− | 0.5− | 2005 10 25 | 699 | 0.9− | 1.1+ |
| 2002 11 08 | 704 | 0.4− | 0.7− | 2004 05 11 | 699 | 0.2+ | 0.2+ | 2005 10 30 | 703 | 0.3− | 0.7+ |
| 2002 11 08 | 704 | 0.1+ | 1.3+ | 2004 05 11 | 699 | 0.2+ | 0.2+ | 2005 10 30 | 703 | 0.1+ | 0.3+ |
| 2002 11 08 | 704 | 0.6− | 1.5+ | 2004 05 12 | 699 | 0.3+ | 0.6+ | 2005 10 30 | 703 | 0.2− | 0.6+ |
| 2002 11 12 | 704 | (1.6− | 0.7+) | 2004 05 12 | 699 | 0.1− | 0.7+ | 2005 10 30 | 703 | 0.1+ | 0.7+ |
| 2002 11 12 | 704 | 0.8+ | 0.3− | 2004 05 12 | 699 | 0.5+ | 0.1+ | 2005 11 04 | 704 | 0.6+ | 0.3+ |
| 2002 11 12 | 704 | 0.2+ | 0.5+ | 2004 05 12 | 699 | 0.1+ | 0.2+ | 2005 11 04 | 704 | 1.5− | 0.2+ |
| 2002 11 12 | 704 | 0.6− | 0.9+ | 2004 05 15 | 704 | 0.5+ | 0.6+ | 2005 11 04 | 704 | (0.8− | 2.1+) |
| 2002 11 12 | 704 | (0.8− | 1.6+) | 2004 05 15 | 704 | 0.3+ | 0.7+ | 2005 11 04 | 704 | (0.1+ | 1.6+) |
| 2002 11 13 | 644 | 0.2+ | 0.8+ | 2004 05 15 | 704 | 0.1+ | 0.2+ | 2005 11 05 | 699 | 0.1− | 0.1+ |
| 2002 11 13 | 644 | 0.1+ | 0.9+ | 2004 05 15 | 704 | 0.2+ | 0.5+ | 2005 11 05 | 699 | 0.6+ | 0.9+ |
| 2002 11 13 | 644 | 0.0 | 1.0+ | 2004 05 15 | 704 | 0.2+ | 0.2+ | 2005 11 05 | 704 | 0.1− | 0.3+ |
| 2002 11 14 | 704 | 1.1+ | 0.2+ | 2004 05 16 | 704 | 0.4+ | 1.0+ | 2005 11 05 | 704 | 0.6+ | 0.1+ |
| 2002 11 14 | 704 | 0.9+ | 0.6− | 2004 05 16 | 704 | 0.7+ | 1.2+ | 2005 11 05 | 699 | 0.7− | 0.8+ |
| 2002 11 14 | 704 | 0.4+ | 0.4+ | 2004 05 16 | 704 | 0.3+ | 0.7+ | 2005 11 05 | 704 | (1.9+ | 2.3+) |
| 2002 11 24 | 644 | 0.2− | 0.4+ | 2004 05 16 | 704 | 0.3+ | 0.3+ | 2005 11 05 | 704 | 0.9+ | 0.6+ |
| 2002 11 24 | 644 | 0.2− | 0.9+ | 2004 05 16 | 704 | 0.4+ | 0.3+ | 2005 11 05 | 699 | 0.6+ | 0.3+ |
| 2002 11 24 | 644 | 0.1− | 0.4+ | 2004 05 17 | 608 | 0.5+ | 0.7+ | 2005 11 07 | 704 | 0.3+ | 0.6+ |
| 2002 12 02 | 704 | 0.4− | 0.7+ | 2004 05 17 | 608 | 0.2+ | 0.3+ | 2005 11 07 | 704 | 1.1+ | 0.2− |
| 2002 12 02 | 704 | 1.0− | 0.2− | 2004 05 17 | 608 | (0.2− | 1.7+) | 2005 11 07 | 704 | 0.4− | 0.5+ |
| 2002 12 02 | 704 | 0.9+ | 0.6+ | 2004 05 18 | 704 | 0.4+ | 0.6+ | 2005 11 07 | 704 | 0.4− | 0.3+ |
| 2002 12 02 | 704 | 0.2+ | 0.4− | 2004 05 18 | 704 | 0.5+ | 0.4+ | 2005 11 26 | G96 | 0.4− | 0.3+ |
| 2002 12 02 | 608 | 0.3− | 0.1+ | 2004 05 18 | 704 | 0.3+ | 0.5+ | 2005 11 26 | G96 | 0.1+ | 0.2+ |
| 2002 12 02 | 608 | 0.4− | 0.2+ | 2004 05 18 | 704 | 0.0 | 0.5+ | 2005 11 26 | G96 | 0.5− | 0.4+ |
| 2002 12 02 | 608 | 0.6− | 0.5+ | 2004 06 17 | G92 | 0.9+ | 1.0+ | 2005 11 26 | G96 | 0.4− | 0.3+ |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2004 06 17 | G92 | 0.4+ | 0.9+ | 2005 11 29 | 703 | 0.1+ | 0.3+ |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2004 06 17 | G92 | 1.1+ | 1.2+ | 2005 11 29 | 703 | 0.7+ | 0.1− |
| 2002 12 06 | 704 | 1.0− | 0.5+ | 2004 07 06 | E12 | 0.2+ | 0.4− | 2005 11 29 | 703 | (1.6− | 0.5+) |
| 2002 12 10 | 704 | 0.1− | 0.8+ | 2004 07 06 | E12 | 0.4+ | 0.1+ | 2005 11 29 | 703 | 0.5− | 0.5− |
| 2002 12 10 | 704 | 0.6+ | 0.1− | 2004 07 06 | E12 | 0.5− | 0.9− | 2005 12 04 | 704 | 0.2+ | 0.5+ |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2004 07 06 | E12 | 0.4− | 0.8− | 2005 12 04 | 704 | 0.1− | 0.6+ |
| 2004 04 12 | 644 | 0.3+ | 0.6+ | 2004 07 19 | E12 | 0.7− | 0.3+ | 2005 12 04 | 704 | 0.0 | 1.2− |
| 2004 04 12 | 644 | 0.3+ | 0.6+ | 2004 07 19 | E12 | 0.2− | 0.7+ | 2005 12 05 | G96 | 0.1− | 0.1− |
| 2004 04 12 | 699 | 0.6− | 0.4− | 2004 07 19 | E12 | 0.1+ | 0.0 | 2005 12 05 | G96 | 0.4− | 0.1− |
| 2004 04 12 | 644 | 0.3+ | 0.7+ | 2004 07 19 | E12 | (1.6− | 0.9−) | 2005 12 05 | G96 | 0.4− | 0.1− |
| 2004 04 12 | 699 | 1.1− | 0.2− | 2005 09 29 | 691 | 0.1− | 0.3+ | 2005 12 05 | G96 | 0.3− | 0.0 |
| 2004 04 12 | 699 | 0.4− | 0.5+ | 2005 09 29 | 691 | 0.1− | 0.4+ | 2005 12 28 | G96 | 0.4− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 699 | 0.6− | 0.8+ | 2005 09 29 | 691 | 0.2− | 0.4+ | 2005 12 28 | G96 | 0.3+ | 0.1+ |
| 2004 04 17 | 704 | 0.8+ | 0.8+ | 2005 09 30 | G96 | 0.1+ | 0.1+ | 2005 12 28 | G96 | 0.1− | 0.2+ |
| 2004 04 17 | 704 | 0.7+ | 1.1+ | 2005 09 30 | G96 | 0.3− | 0.1+ | 2005 12 28 | G96 | 0.0 | 0.1+ |
| 2004 04 17 | 704 | 0.4+ | 0.1− | 2005 09 30 | G96 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.6− | 0.5− |
| 2004 04 17 | 704 | 1.1+ | 0.5+ | 2005 09 30 | G96 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.2− | 1.0− |
| 2004 04 20 | 704 | 0.3+ | 0.6+ | 2005 10 01 | 699 | 0.3+ | 0.9+ | 2006 11 01 | G96 | 0.9− | 0.1− |
| 2004 04 20 | 704 | 1.0+ | 0.1+ | 2005 10 01 | 699 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2004 04 20 | 704 | 0.7− | 0.2+ | 2005 10 01 | 699 | (2.6+ | 0.1+) | 2006 11 24 | G96 | 1.0− | 0.0 |
| 2004 04 20 | 704 | 0.7+ | 0.0 | 2005 10 01 | 699 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.5− | 0.0 |
| 2004 04 20 | 704 | 0.5+ | 0.2+ | 2005 10 06 | 703 | 0.9− | 0.2+ | 2006 11 24 | G96 | 0.5− | 0.1+ |
| 2004 04 23 | 704 | (0.4+ | 1.6+) | 2005 10 06 | 703 | 0.4+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.5+ |
| 2004 04 23 | 704 | 0.2− | 1.4+ | 2005 10 06 | 703 | 1.0− | 0.2− | | | | |

**(142933)∗ 2002 VR$_{65}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.61375 | | (2000.0) | | | |
| $n$ | 0.22545622 | $\omega$ | 294.02172 | | +0.95545408 | −0.28458343 |
| $a$ | 2.6735885 | $\Omega$ | 82.58743 | | +0.29125355 | +0.86627747 |
| $e$ | 0.1113994 | $i$ | 4.52466 | | +0.04773743 | +0.41057961 |
| $P$ | 4.37 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 19 | 691 | 0.5+ | 0.2+ | 2002 11 30 | 608 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.5+ | 0.3+ |
| 1996 04 19 | 691 | 1.2+ | 0.5+ | 2002 11 30 | 608 | 0.3+ | 0.6− | 2006 08 30 | 699 | 0.1− | 0.2+ |
| 1996 04 19 | 691 | 1.0− | 1.4+ | 2002 11 30 | 608 | 0.6− | 0.5+ | 2006 08 30 | 699 | 0.1− | 0.6+ |
| 2002 11 07 | 704 | (1.9− | 3.0+) | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.7+ |
| 2002 11 07 | 704 | (1.0− | 2.0+) | 2004 02 16 | 691 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | (0.0 | 1.7+) | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.1− | 1.1+ | 2005 05 08 | G96 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.7− | 0.5− |
| 2002 11 08 | 704 | 0.5− | 1.3+ | 2005 05 08 | G96 | 0.1− | 0.2− | 2006 09 14 | 703 | 1.1− | 0.2− |
| 2002 11 08 | 704 | 0.9+ | 0.4+ | 2005 05 08 | G96 | 0.8− | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.5+ |
| 2002 11 08 | 704 | 0.1+ | 1.1+ | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 09 14 | 703 | (1.7+ | 0.6+) |
| 2002 11 08 | 704 | 0.9− | 1.0+ | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 2002 11 11 | 704 | 0.6− | 0.2+ | 2005 06 10 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.5− | 0.3+ | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.1− |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2005 06 14 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2002 11 11 | 704 | 0.3− | 0.4+ | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | (3.1− | 0.9−) |
| 2002 11 11 | 704 | 0.3− | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2002 11 22 | 644 | 0.1+ | 0.5+ | 2006 08 16 | 644 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2002 11 22 | 644 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2002 11 22 | 644 | 0.2+ | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.2− |

**(142934)∗ 2002 VX$_{65}$ = 2000 GE$_{175}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41216)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.88425 | | (2000.0) | | | |
| $n$ | 0.23080002 | $\omega$ | 2.59835 | | +0.92661877 | −0.36543574 |
| $a$ | 2.6321592 | $\Omega$ | 19.57003 | | +0.34003500 | +0.71396080 |
| $e$ | 0.0843324 | $i$ | 15.32225 | | +0.16048008 | +0.59725764 |
| $P$ | 4.27 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.2+ | 2004 03 17 | 691 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.7− | 1.0+ |
| 2000 03 03 | 645 | 0.0 | 0.2+ | 2004 03 17 | 691 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.8− | 0.7+ |
| 2000 04 05 | 699 | 1.2+ | 0.9− | 2004 03 17 | 691 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.6+ | 0.4+ |
| 2000 04 05 | 704 | 0.7− | 0.5− | 2004 03 23 | 704 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.8+ |
| 2000 04 05 | 699 | (0.9− | 2.1+) | 2004 03 23 | 704 | (1.8+ | 0.4−) | 2006 09 20 | 644 | 0.5− | 0.1+ |
| 2000 04 05 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | (1.8+ | 0.4−) | 2006 09 20 | 644 | 0.4− | 0.4+ |
| 2000 04 05 | 699 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 0.3+ | 0.8+ | 2004 03 25 | 704 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2000 04 05 | 699 | 0.6+ | 0.4+ | 2004 03 25 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.2+ | 0.5+ | 2004 03 25 | 704 | 0.4+ | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2000 04 05 | 704 | 1.5+ | 0.4+ | 2004 03 25 | 704 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2000 04 06 | 704 | 1.2+ | 0.1− | 2004 03 25 | 704 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2000 04 06 | 704 | 0.3+ | 0.8+ | 2006 09 06 | 644 | 0.5− | 0.1+ | 2006 10 13 | A50 | 0.4− | 0.4+ |
| 2000 04 06 | 704 | 0.3+ | 0.4+ | 2006 09 06 | 644 | 0.8− | 0.1+ | 2006 10 13 | A50 | 0.1− | 0.1− |
| 2000 04 06 | 704 | 0.8+ | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.5+ | 2006 10 13 | A50 | 0.1− | 0.4+ |
| 2002 10 05 | 704 | 0.3+ | 0.1− | 2006 09 14 | 850 | 0.6− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2002 10 05 | 704 | 1.3− | 0.4+ | 2006 09 14 | 850 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.5− | 0.2+ | 2006 09 14 | 850 | 0.0 | 0.7+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | (1.7+ | 1.4+) | 2006 09 14 | 703 | 0.4− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 10 31 | 704 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 10 31 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 1.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.8− |
| 2002 11 07 | 704 | 0.9− | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.9+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.4+ |
| 2002 11 07 | 704 | 0.7− | 0.6+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.0 | 1.0− |
| 2002 11 07 | 704 | 0.0 | 0.9+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 11 08 | 704 | 0.2+ | 0.3− | 2006 09 16 | 644 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 11 08 | 704 | 0.2− | 0.0 | 2006 09 16 | 644 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 08 | 704 | 0.4− | 0.5− | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2002 11 15 | 704 | 0.4+ | 1.3− | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3− | 0.2− |
| 2002 11 15 | 704 | 0.0 | 1.1− | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.3− | 0.3− |
| 2002 11 15 | 704 | 0.2− | 1.2− | 2006 09 17 | 704 | 0.6− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 11 15 | 704 | 0.1+ | 0.8− | 2006 09 17 | 704 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 12 03 | 644 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 12 03 | 644 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.5+ | 0.0 | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2002 12 03 | 644 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 1.1+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.7+ | 1.0+ | 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 1.4+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.4− |
| 2002 12 06 | 704 | 1.1+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2002 12 12 | 644 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2002 12 12 | 644 | 0.5+ | 0.0 | 2006 09 18 | 699 | 0.3+ | 1.1+ | | | | |
| 2002 12 12 | 644 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 1.4+ | | | | |

**(142935)∗ 2002 VX$_{66}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 231.62692 | | (2000.0) | | | |
| $n$ | 0.29392049 | $\omega$ | 140.35237 | | −0.60017158 | +0.79799352 |
| $a$ | 2.2403514 | $\Omega$ | 92.69672 | | −0.74708308 | −0.53478103 |
| $e$ | 0.0618509 | $i$ | 3.14350 | | −0.28576378 | −0.27787695 |
| $P$ | 3.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.9− | 0.3+ | 2004 03 22 | 704 | 0.8+ | 0.8+ | 2005 09 24 | 703 | 0.3+ | 0.4+ |
| 2000 01 04 | 704 | 1.4− | 0.3− | 2004 03 22 | 704 | 0.0 | 1.4+ | 2005 09 24 | 699 | 0.2+ | 0.6+ |
| 2000 01 04 | 704 | 0.0 | 0.6+ | 2004 03 26 | 691 | 0.0 | 0.4+ | 2005 09 24 | 644 | 0.2− | 0.0 |
| 2002 11 06 | 704 | 1.4− | 0.9+ | 2004 03 26 | 691 | 0.0 | 0.3+ | 2005 09 24 | 699 | 0.1− | 0.9+ |
| 2002 11 06 | 704 | 1.4− | 0.1− | 2004 03 26 | 691 | 0.0 | 0.4+ | 2005 09 24 | 699 | 0.3+ | 0.8+ |
| 2002 11 06 | 704 | 0.6− | 0.5+ | 2004 03 28 | 704 | 0.6+ | 0.5+ | 2005 09 24 | 644 | 0.4− | 0.3+ |
| 2002 11 06 | 704 | 0.6− | 1.4+ | 2004 03 28 | 704 | 0.4+ | 0.7+ | 2005 09 24 | 699 | 0.2− | 1.1+ |
| 2002 11 10 | 704 | 0.4+ | 1.2+ | 2004 03 28 | 704 | (1.8+ | 1.0+) | 2005 09 28 | 644 | 0.3− | 0.2+ |
| 2002 11 10 | 704 | (1.5+ | 0.8+) | 2004 03 28 | 704 | 0.5+ | 0.7+ | 2005 09 28 | 644 | 0.5− | 0.1+ |
| 2002 11 10 | 704 | 0.7+ | 1.4+ | 2004 03 28 | 704 | 0.1+ | 0.5+ | 2005 09 28 | 644 | 0.6− | 0.1+ |
| 2002 11 11 | 704 | 1.2+ | 0.3− | 2004 04 19 | 704 | 0.7+ | 0.3+ | 2005 09 30 | 699 | (0.2− | 1.6+) |
| 2002 11 11 | 704 | 1.2+ | 0.8+ | 2004 04 19 | 704 | 0.0 | 0.9+ | 2005 09 30 | 699 | 0.8− | 1.2+ |
| 2002 11 11 | 704 | 0.2+ | 1.2+ | 2004 04 19 | 704 | 0.5+ | 0.7+ | 2005 09 30 | 699 | 0.5− | 0.1+ |
| 2002 11 12 | 644 | 0.4− | 0.6+ | 2004 04 19 | 704 | 0.3+ | 0.9+ | 2005 10 01 | 704 | 0.3− | 0.4+ |
| 2002 11 12 | 644 | 0.1− | 0.4+ | 2004 04 19 | 704 | 0.9+ | 0.6+ | 2005 10 01 | 704 | 0.6− | 0.9+ |
| 2002 11 12 | 644 | 0.5− | 0.8+ | 2004 04 20 | 704 | 1.0+ | 0.2+ | 2005 10 01 | 704 | 0.6− | 1.1+ |
| 2002 11 22 | 644 | 0.3+ | 1.4+ | 2004 04 20 | 704 | 1.0+ | 0.4+ | 2005 10 01 | 704 | (0.2− | 1.6+) |
| 2002 11 22 | 644 | 0.1+ | 1.0+ | 2004 04 20 | 704 | 0.4+ | 0.1+ | 2005 10 01 | 704 | 0.4− | 0.7+ |
| 2002 11 22 | 644 | 0.4+ | 1.4+ | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2005 10 01 | 699 | 0.5− | 1.1+ |
| 2002 12 05 | 704 | 0.6+ | 0.6+ | 2004 04 20 | 704 | 0.5+ | 0.2+ | 2005 10 01 | 699 | 0.7− | 1.1+ |
| 2002 12 05 | 704 | 1.1+ | 0.7+ | 2004 04 22 | 704 | 0.8+ | 0.5+ | 2005 10 01 | 699 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.2− | 2004 04 22 | 704 | 0.3+ | 0.1− | 2005 10 01 | 699 | 0.2− | 0.4+ | | |
| 2002 12 05 | 704 | 0.4+ | 1.2− | 2004 04 22 | 704 | 0.8+ | 1.0+ | 2005 10 07 | 703 | (2.2− | 0.7+) | | |
| 2002 12 06 | 704 | 1.0− | 0.4+ | 2004 04 22 | 704 | 0.5+ | 1.3+ | 2005 10 07 | 703 | 1.0− | 0.1− | | |
| 2002 12 06 | 704 | 0.2− | 0.9+ | 2004 04 22 | 704 | 0.8+ | 0.7+ | 2005 10 07 | 703 | 0.3− | 0.3+ | | |
| 2002 12 06 | 704 | 1.0− | 0.6+ | 2004 04 26 | 691 | 0.1− | 0.3+ | 2005 10 07 | 703 | 0.3− | 0.2+ | | |
| 2002 12 06 | 704 | 0.4+ | 0.7+ | 2004 04 26 | 691 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.1− | | |
| 2002 12 10 | 644 | 0.3− | 0.4+ | 2004 04 26 | 691 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.5− | | |
| 2002 12 10 | 644 | 0.5+ | 0.7+ | 2004 05 23 | 699 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.4− | 0.6− | | |
| 2002 12 10 | 644 | 0.0 | 0.6+ | 2004 05 23 | 699 | 0.7− | 0.4+ | 2006 10 23 | G96 | 0.6− | 0.6− | | |
| 2004 03 14 | 703 | 0.8− | 0.8+ | 2004 05 23 | 699 | 1.0− | 1.2+ | 2006 10 27 | G96 | 0.6− | 0.2+ | | |
| 2004 03 14 | 703 | 0.4− | 1.0+ | 2004 05 23 | 699 | (0.3− | 2.0+) | 2006 10 27 | G96 | 0.2+ | 0.5− | | |
| 2004 03 14 | 703 | 0.4− | 0.7+ | 2005 08 27 | 644 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.8+ | 0.1− | | |
| 2004 03 14 | 703 | 0.3− | 1.3+ | 2005 08 27 | 644 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 16 | 704 | 0.1− | 0.8+ | 2005 08 27 | 644 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2004 03 16 | 704 | (1.6+ | 0.4+) | 2005 09 06 | 704 | 0.1− | 1.2+ | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2004 03 16 | 704 | 0.5+ | 0.4+ | 2005 09 06 | 704 | 0.5− | 1.3+ | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2004 03 16 | 704 | 0.2+ | 1.3− | 2005 09 06 | 704 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.3− | | |
| 2004 03 19 | 704 | 0.9+ | 0.0 | 2005 09 06 | 704 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.8− | 0.5− | | |
| 2004 03 19 | 704 | 0.5+ | 0.0 | 2005 09 22 | 644 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2004 03 19 | 704 | 0.6+ | 0.1− | 2005 09 22 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.9− | | |
| 2004 03 19 | 704 | 0.4+ | 0.2− | 2005 09 22 | 644 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.4+ | 0.5− | | |
| 2004 03 19 | 704 | 0.4+ | 0.0 | 2005 09 24 | 703 | (1.7− | 0.3+) | 2006 11 24 | G96 | 0.4− | 0.3− | | |
| 2004 03 22 | 704 | 0.7+ | 1.3+ | 2005 09 24 | 703 | 0.9− | 1.1+ | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2004 03 22 | 704 | 0.4+ | 0.9+ | 2005 09 24 | 703 | 0.6− | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2004 03 22 | 704 | 0.3+ | 0.9+ | 2005 09 24 | 644 | 0.2− | 0.1+ | | | | | | |

**(142936)∗ 2002 VZ$_{66}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.52480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24286054 | $\omega$ | 244.32906 | | +0.94632176 | −0.32252420 | |
| $a$ | 2.5442790 | $\Omega$ | 134.47826 | | +0.30622344 | +0.87351365 | |
| $e$ | 0.1183726 | $i$ | 1.70987 | | +0.10345209 | +0.36462590 | |
| $P$ | 4.06 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 15 | 691 | 0.3− | 0.6− | 2002 11 22 | 644 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.5+ | | |
| 2000 03 15 | 691 | 0.3− | 0.7− | 2002 11 22 | 644 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.2− | | |
| 2000 03 15 | 691 | 0.1− | 0.4− | 2002 11 22 | 644 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 1.2+ | 0.6− | 2004 02 18 | 291 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2004 02 18 | 291 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2004 02 18 | 291 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2004 03 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.5− | | |
| 2002 10 09 | 704 | 0.8+ | 0.2− | 2004 03 14 | 691 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.2+ | | |
| 2002 10 09 | 704 | 0.0 | 0.3+ | 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.3− | | |
| 2002 10 09 | 704 | 0.5+ | 0.8− | 2005 02 16 | 809 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 1.1− | | |
| 2002 10 09 | 704 | 0.8+ | 0.6+ | 2005 02 16 | 809 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.4+ | 0.8+ | 2005 02 16 | 809 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 10 15 | 644 | 0.0 | 0.2+ | 2005 02 18 | 809 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 10 15 | 644 | 0.1− | 0.2+ | 2005 02 18 | 809 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 10 15 | 644 | 0.0 | 0.2+ | 2005 02 18 | 809 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2002 10 31 | 608 | 1.2− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2002 10 31 | 608 | 1.2− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.7+ | 0.9− | | |
| 2002 10 31 | 608 | 0.9− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 1.3− | 0.4− | | |
| 2002 11 06 | 699 | 0.9− | 0.1+ | 2006 09 27 | 691 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.7− | 0.6− | | |
| 2002 11 06 | 699 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 1.5− | 0.1− | | |
| 2002 11 06 | 699 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.1+ | | |
| 2002 11 06 | 699 | 1.0− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.1+ | | |
| 2002 11 06 | 704 | (0.4+ | 1.8−) | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.3− | | |
| 2002 11 06 | 704 | (0.1+ | 1.8−) | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.3− | | |
| 2002 11 06 | 704 | (2.3+ | 2.0−) | 2006 10 15 | 703 | 0.4− | 0.6+ | 2006 11 20 | G96 | 0.0 | 0.7− | | |
| 2002 11 10 | 704 | 0.5+ | 0.9+ | 2006 10 15 | 703 | 0.2− | 0.5− | 2006 11 20 | G96 | 0.4− | 0.5− | | |
| 2002 11 10 | 704 | 0.4+ | 0.7+ | 2006 10 15 | 703 | 0.2+ | 0.7− | 2006 11 20 | G96 | 0.1− | 0.3− | | |
| 2002 11 10 | 704 | 0.4− | 1.2+ | 2006 10 15 | 703 | (1.7+ | 1.0+) | | | | | | |

**(142937)∗ 2002 VC$_{68}$**

Discovered 2002 Nov. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.53352 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23855189 | $\omega$ | 235.44568 | | −0.73003903 | −0.67428741 | |
| $a$ | 2.5748235 | $\Omega$ | 261.87884 | | +0.65805392 | −0.64964618 | |
| $e$ | 0.1367955 | $i$ | 6.45313 | | +0.18441275 | −0.35113577 | |
| $P$ | 4.13 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.2− | 0.5+ | 2002 12 11 | 704 | 0.8− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.4− | | |
| 2000 05 07 | 704 | 0.1+ | 1.0+ | 2002 12 11 | 644 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.3− | | |
| 2000 05 07 | 704 | 0.3+ | 0.9+ | 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.5− | | |
| 2000 05 07 | 704 | 0.2+ | 0.2+ | 2002 12 11 | 644 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2002 11 07 | 291 | 0.2+ | 0.2− | 2002 12 31 | 704 | (0.1+ | 1.5+) | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2002 11 07 | 291 | 0.1− | 0.2− | 2002 12 31 | 704 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− | | |
| 2002 11 07 | 291 | 0.3+ | 0.3− | 2002 12 31 | 704 | (0.8− | 2.2+) | 2006 10 22 | 644 | 0.1+ | 0.3− | | |
| 2002 11 08 | 704 | 0.1+ | 0.1+ | 2002 12 31 | 704 | 0.2+ | 1.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2002 11 08 | 704 | 1.3+ | 0.4+ | 2002 12 31 | 704 | 0.1− | 0.9+ | 2006 10 22 | 644 | 0.5− | 0.1− | | |
| 2002 11 08 | 704 | 0.6+ | 1.0− | 2004 04 17 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.6+ | | |
| 2002 11 08 | 704 | 0.2+ | 0.6− | 2004 04 17 | 704 | (1.6+ | 0.0 ) | 2006 10 27 | 703 | 0.2− | 0.2− | | |
| 2002 11 12 | 704 | 0.3− | 1.0+ | 2004 04 17 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.4− | | |
| 2002 11 12 | 704 | 0.6− | 1.2− | 2004 04 25 | 704 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.5− | 0.3− | | |
| 2002 11 12 | 704 | 1.3+ | 0.5− | 2004 04 25 | 704 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.6− | 0.1+ | | |
| 2002 11 12 | 704 | 0.3− | 0.4− | 2004 04 25 | 704 | 0.5− | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2002 11 13 | 704 | 0.7+ | 0.1− | 2004 04 25 | 704 | 0.1− | 0.5− | 2006 11 08 | 644 | 0.4− | 0.0 | | |
| 2002 11 13 | 704 | 0.4− | 0.0 | 2004 04 25 | 704 | 0.5− | 1.0+ | 2006 11 11 | 703 | 0.6+ | 0.2− | | |
| 2002 11 13 | 704 | 0.6+ | 0.4+ | 2004 04 25 | 704 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.1+ | | |
| 2002 11 13 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 704 | (2.1− | 0.4−) | 2006 11 11 | 703 | 0.9+ | 0.3+ | | |
| 2002 11 13 | 704 | 0.1− | 0.1− | 2004 04 25 | 704 | 0.8− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.5− | | |
| 2002 11 14 | 704 | 0.4+ | 0.1+ | 2004 04 26 | 704 | 0.5− | 1.2+ | 2006 11 16 | 704 | 0.9+ | 0.5+ | | |
| 2002 11 14 | 704 | 0.0 | 0.9+ | 2004 04 26 | 704 | 0.0 | 0.1+ | 2006 11 16 | 704 | (1.2− | 1.6+) | | |
| 2002 11 14 | 704 | 0.2− | 0.5− | 2004 04 26 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.4+ | 0.5+ | | |
| 2002 11 14 | 704 | 0.4+ | 0.6+ | 2004 04 26 | 704 | 0.5− | 0.2− | 2006 11 16 | 704 | 0.3− | 0.2+ | | |
| 2002 11 27 | 699 | 1.0− | 0.3− | 2004 04 26 | 704 | 0.4+ | 0.7+ | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2002 11 27 | 699 | 0.9− | 0.8+ | 2004 04 26 | 704 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.7− | | |
| 2002 11 27 | 699 | 0.4+ | 0.7+ | 2004 04 26 | 704 | 0.4+ | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.4− | | |
| 2002 11 27 | 699 | 0.0 | 0.6+ | 2004 05 14 | 699 | 0.5+ | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.3− | | |
| 2002 12 02 | 704 | 1.3− | 0.8+ | 2004 05 14 | 699 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.1− | | |
| 2002 12 02 | 704 | 0.0 | 0.2+ | 2004 05 14 | 699 | 0.4+ | 1.2+ | 2006 11 18 | G96 | 0.1+ | 0.1+ | | |
| 2002 12 02 | 704 | 0.5− | 0.4+ | 2004 05 14 | 699 | 0.0 | 0.6− | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2002 12 02 | 704 | 0.7− | 1.0+ | 2004 05 15 | 704 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2002 12 02 | 704 | 1.0− | 0.5+ | 2004 05 15 | 704 | 0.7+ | 0.9− | 2006 11 19 | 704 | 0.5+ | 0.1− | | |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2004 05 15 | 704 | 0.6+ | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.1+ | | |
| 2002 12 06 | 704 | 0.1− | 0.5+ | 2004 05 15 | 704 | 1.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2005 07 08 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.0 | | |
| 2002 12 06 | 704 | 0.2+ | 0.5+ | 2005 07 08 | 691 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.3+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2005 07 08 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.8− | 0.1− | | |
| 2002 12 11 | 704 | 0.5− | 0.5+ | 2005 08 29 | 691 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.1− | 0.2+ | | |
| 2002 12 11 | 704 | 0.5− | 0.2+ | 2005 08 29 | 691 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.6+ | | |
| 2002 12 11 | 704 | 0.0 | 0.1− | 2005 08 29 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.8− | 0.8+ | | |
| 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.7+ | | |

**(142938)∗ 2002 VN$_{68}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.21677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24029568 | $\omega$ | 138.01684 | | −0.48999270 | −0.87025769 | |
| $a$ | 2.5623517 | $\Omega$ | 341.14826 | | +0.75234809 | −0.39286815 | |
| $e$ | 0.1509991 | $i$ | 9.00656 | | +0.44031751 | −0.29716355 | |
| $P$ | 4.10 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | (0.7+ | 2.8+) | 2004 04 09 | E12 | 0.3− | 0.1− | 2006 09 25 | 152 | 0.4− | 0.4− |
| 2002 10 12 | 704 | (0.7+ | 2.2+) | 2004 04 14 | 699 | 0.7+ | 0.9− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | (1.2+ | 2.0+) | 2004 04 14 | 699 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 1.2− | 0.2+ | 2004 04 14 | 699 | 0.0 | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 0.5− | 0.0 | 2004 04 14 | 699 | 0.8+ | 1.3+ | 2006 10 19 | 703 | 0.3− | 0.6+ |
| 2002 11 07 | 704 | (2.0− | 0.2−) | 2004 04 17 | 704 | 1.5+ | 0.8+ | 2006 10 19 | 703 | 0.0 | 0.6+ |
| 2002 11 07 | 704 | 0.7− | 0.3+ | 2004 04 17 | 704 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.3+ |
| 2002 11 07 | 704 | 1.0− | 0.3+ | 2004 04 17 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 1.0− | 0.1− |
| 2002 11 11 | 699 | 0.3+ | 0.6+ | 2004 04 17 | 704 | 1.3+ | 0.0 | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2002 11 11 | 699 | 0.4− | 0.5+ | 2005 07 15 | G96 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 11 11 | 699 | 1.0+ | 0.4+ | 2005 07 15 | G96 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 11 11 | 699 | 1.0+ | 0.5+ | 2005 07 15 | G96 | 0.2+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 12 02 | 704 | 0.4+ | 0.9− | 2005 07 15 | G96 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 12 02 | 704 | 0.5+ | 0.4− | 2006 09 23 | 152 | (1.6+ | 1.7+) | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 12 02 | 704 | 0.5− | 0.4− | 2006 09 23 | 152 | (2.9− | 2.3+) | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2002 12 02 | 704 | 0.1− | 0.7+ | 2006 09 23 | 152 | 0.8+ | 0.3− | 2006 10 27 | 703 | 0.7+ | 0.7+ |
| 2002 12 06 | 704 | 0.2− | 0.7− | 2006 09 23 | 152 | 0.5+ | 1.1− | 2006 10 27 | 703 | 0.6+ | 1.2+ |
| 2002 12 06 | 704 | 0.5+ | 0.9− | 2006 09 23 | 152 | 0.3− | 0.6− | 2006 10 27 | 703 | 1.1+ | 0.6+ |
| 2002 12 06 | 704 | 0.3+ | 0.9+ | 2006 09 23 | 152 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.3− | 0.1− |
| 2002 12 06 | 704 | 0.6− | 0.9+ | 2006 09 23 | 152 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 1.0+ | 2006 09 23 | 152 | 0.8− | 0.5− | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2004 03 15 | 644 | 0.2+ | 0.2+ | 2006 09 24 | 152 | 0.7− | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2004 03 15 | 644 | 0.5+ | 0.5+ | 2006 09 24 | 152 | 0.2+ | 0.7+ | 2006 11 07 | 644 | 0.2− | 0.7− |
| 2004 03 15 | 644 | 0.4+ | 0.6+ | 2006 09 24 | 152 | 1.0− | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2004 03 26 | 704 | 0.7− | 0.5+ | 2006 09 24 | 152 | 0.3− | 0.7− | 2006 11 15 | 703 | 0.3− | 0.3+ |
| 2004 03 26 | 704 | 0.4− | 0.9+ | 2006 09 25 | 152 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.3− | 0.0 |
| 2004 03 26 | 704 | 1.2− | 1.2+ | 2006 09 25 | 152 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.7+ | 0.1+ |
| 2004 04 09 | E12 | 0.2+ | 0.3− | 2006 09 25 | 152 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.6− |
| 2004 04 09 | E12 | 0.7+ | 0.4+ | 2006 09 25 | 152 | 0.3+ | 0.2+ | | | | |
| 2004 04 09 | E12 | 0.1− | 0.3+ | 2006 09 25 | 152 | 1.2− | 0.8+ | | | | |

**(142939)∗ 2002 VP$_{68}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.75439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23154341 | $\omega$ | 102.57371 | | +0.97501173 | −0.09603782 | |
| $a$ | 2.6265224 | $\Omega$ | 263.19324 | | +0.01604865 | +0.92982164 | |
| $e$ | 0.1996054 | $i$ | 11.63895 | | +0.22157292 | +0.35525828 | |
| $P$ | 4.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 704 | 0.8+ | 0.7− | 2002 11 14 | 644 | 0.1− | 0.2− | 2006 08 25 | 704 | 0.1+ | 0.0 |
| 1998 12 16 | 704 | (2.4+ | 2.9−) | 2002 11 14 | 704 | 0.5+ | 0.2+ | 2006 09 01 | 704 | 0.8− | 0.6+ |
| 1998 12 16 | 704 | (2.7+ | 2.9−) | 2002 11 14 | 704 | 0.5+ | 0.0 | 2006 09 01 | 704 | 1.3− | 0.5+ |
| 1998 12 16 | 704 | (2.1+ | 2.7−) | 2002 11 14 | 644 | 0.1+ | 0.1− | 2006 09 01 | 704 | 1.2− | 0.2+ |
| 1998 12 16 | 704 | (3.1− | 2.0−) | 2002 11 21 | 644 | 0.2+ | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.9+ |
| 1998 12 22 | 704 | 0.3+ | 0.4+ | 2002 11 21 | 644 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.1+ |
| 1998 12 22 | 704 | (2.8− | 0.3−) | 2002 11 21 | 644 | 0.5+ | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.1+ |
| 1998 12 22 | 704 | 0.6− | 1.0− | 2002 11 24 | 644 | 0.4+ | 0.6+ | 2006 09 21 | 699 | 0.0 | 0.5+ |
| 1998 12 22 | 704 | (5.0− | 0.8+) | 2002 11 24 | 644 | 0.6+ | 0.6− | 2006 09 21 | 699 | 0.7− | 0.2+ |
| 2001 07 13 | 644 | 0.1− | 0.2− | 2002 11 24 | 644 | 0.2+ | 0.5+ | 2006 09 21 | 699 | 0.7− | 0.4+ |
| 2001 07 13 | 644 | 0.2− | 0.2− | 2002 11 24 | 644 | 0.7+ | 0.5− | 2006 09 21 | 699 | 0.2+ | 0.6+ |
| 2001 07 13 | 644 | 0.2+ | 0.2− | 2002 11 24 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 703 | 0.2+ | 0.1− |
| 2002 10 05 | 704 | 0.3+ | 0.8− | 2002 11 24 | 644 | 0.5+ | 0.3− | 2006 09 27 | 703 | 0.2+ | 0.5− |
| 2002 10 05 | 699 | 0.3− | 0.0 | 2002 12 03 | 644 | 0.5+ | 0.1+ | 2006 09 27 | 703 | 0.7+ | 0.8− |
| 2002 10 05 | 704 | 0.0 | 0.5− | 2002 12 03 | 644 | 0.5+ | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.1− |
| 2002 10 05 | 704 | 0.0 | 0.3− | 2002 12 03 | 644 | 0.6+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.2− |
| 2002 10 05 | 699 | 0.4+ | 0.1− | 2002 12 05 | 704 | 0.2− | 0.6+ | 2006 09 29 | 699 | 0.7+ | 0.0 |
| 2002 10 05 | 704 | 0.0 | 0.2− | 2002 12 05 | 704 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.5+ | 0.2+ |
| 2002 10 05 | 699 | 0.7+ | 0.9− | 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.2+ |
| 2002 10 05 | 704 | 0.3+ | 0.1+ | 2002 12 05 | 704 | 0.2− | 0.5− | 2006 10 03 | 704 | 1.0+ | 0.8+ |
| 2002 10 05 | 699 | 0.3− | 0.2− | 2002 12 05 | 704 | 0.1+ | 0.6+ | 2006 10 03 | 704 | 0.7+ | 0.1+ |
| 2002 10 15 | 704 | 0.8− | 0.4+ | 2002 12 31 | 704 | 0.2− | 0.7− | 2006 10 03 | 704 | 0.2+ | 0.1+ |
| 2002 10 15 | 704 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.9− | 0.6+ | 2006 10 03 | 704 | 1.3+ | 0.3− |
| 2002 10 15 | 704 | 1.3− | 0.7+ | 2002 12 31 | 704 | 0.6+ | 0.2+ | 2006 10 03 | 704 | 1.2+ | 0.4+ |
| 2002 10 15 | 704 | 0.6− | 0.2+ | 2002 12 31 | 704 | 0.8+ | 0.9+ | 2006 10 19 | 683 | (0.2− | 1.7−) |
| 2002 10 15 | 704 | 0.3− | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.1− | 2006 10 19 | 683 | (0.9− | 2.2−) |
| 2002 11 01 | 704 | 0.2− | 0.5− | 2003 01 05 | 704 | 0.2− | 0.2+ | 2006 10 19 | 683 | 0.7− | 0.0 |
| 2002 11 01 | 704 | 0.3− | 1.0− | 2003 01 05 | 704 | 0.4+ | 1.0+ | 2006 10 22 | 683 | 0.2+ | 0.9− |
| 2002 11 01 | 704 | (0.3− | 2.0−) | 2003 01 05 | 704 | 0.1− | 0.1+ | 2006 10 22 | 683 | 0.3− | 0.5+ |
| 2002 11 01 | 704 | 0.1+ | 0.5− | 2003 01 05 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 683 | 0.4+ | 1.1− |
| 2002 11 01 | 704 | 1.0− | 1.5− | 2003 01 05 | 704 | 0.0 | 1.0+ | 2006 10 23 | 683 | 0.2− | 0.7+ |
| 2002 11 07 | 704 | 0.4− | 0.2− | 2003 01 19 | 644 | 0.2− | 0.1+ | 2006 10 23 | 683 | (0.4+ | 1.7+) |
| 2002 11 07 | 704 | 1.2− | 0.5− | 2003 01 19 | 644 | 0.0 | 0.0 | 2006 10 26 | 703 | 0.0 | 0.4− |
| 2002 11 07 | 704 | 0.8− | 0.1+ | 2003 01 19 | 644 | 0.2+ | 0.3+ | 2006 10 26 | 703 | 0.7− | 0.9− |
| 2002 11 07 | 704 | 0.8− | 0.0 | 2003 01 27 | 704 | 0.6− | 0.1+ | 2006 10 26 | 703 | 0.0 | 0.6− |
| 2002 11 07 | 704 | 0.8− | 0.2+ | 2003 01 27 | 704 | 1.0− | 0.0 | 2006 10 26 | 703 | 0.1− | 0.3− |
| 2002 11 11 | 699 | 0.0 | 0.5+ | 2003 01 27 | 704 | (1.7− | 1.8+) | 2006 11 14 | 703 | 0.1+ | 0.7+ |
| 2002 11 11 | 699 | 0.2− | 0.5+ | 2006 06 21 | 703 | 0.9− | 0.1− | 2006 11 14 | 703 | 0.3+ | 1.3− |
| 2002 11 11 | 699 | 0.5+ | 0.3+ | 2006 06 21 | 703 | 0.7− | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.2+ |
| 2002 11 11 | 699 | 0.3+ | 0.1− | 2006 06 21 | 703 | 0.9− | 0.6+ | 2006 11 14 | 703 | 0.2+ | 0.4+ |
| 2002 11 14 | 704 | 0.3+ | 0.1+ | 2006 06 21 | 703 | 0.8+ | 0.4+ | 2006 11 25 | 703 | 0.1+ | 1.2− |
| 2002 11 14 | 704 | 0.8− | 0.7+ | 2006 08 25 | 704 | (0.4− | 1.5−) | 2006 11 25 | 703 | 0.2− | 0.6− |
| 2002 11 14 | 644 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.2− | 0.4− | 2006 11 25 | 703 | 0.6− | 0.5− |
| 2002 11 14 | 704 | 0.6+ | 0.0 | 2006 08 25 | 704 | 0.7− | 0.1+ | 2006 11 25 | 703 | 1.6+ | 0.1+ |

**(142940)∗ 2002 VX$_{68}$**

Discovered 2002 Nov. 7 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.47510 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21632844 | $\omega$ | 295.77898 | | +0.83981806 | −0.48061757 | |
| $a$ | 2.7482758 | $\Omega$ | 93.87318 | | +0.54271209 | +0.75444414 | |
| $e$ | 0.1864312 | $i$ | 14.65457 | | −0.01300776 | +0.44701318 | |
| $P$ | 4.56 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 699 | 0.5− | 1.1+ | 2002 12 15 | 704 | 0.5+ | 0.7+ | 2004 03 28 | 704 | 0.3− | 1.4− |
| 2002 08 17 | 699 | 0.3+ | 0.5+ | 2002 12 15 | 704 | 0.4− | 1.2+ | 2004 04 14 | 704 | 0.2− | 1.0+ |
| 2002 08 17 | 699 | 1.2− | 1.0+ | 2002 12 15 | 704 | 0.3− | 1.2+ | 2004 04 14 | 704 | 0.0 | 0.2− |
| 2002 08 17 | 699 | 0.2− | 0.6+ | 2003 01 01 | 704 | 0.1− | 0.2+ | 2004 04 14 | 704 | 0.0 | 0.3+ |
| 2002 09 16 | 699 | 0.8− | 0.2+ | 2003 01 01 | 704 | 0.2+ | 0.1+ | 2004 04 14 | 703 | 0.8+ | 0.7− |
| 2002 09 16 | 699 | 0.2+ | 0.5+ | 2003 01 01 | 704 | 0.0 | 0.1− | 2004 04 14 | 703 | 0.4+ | 1.2− |
| 2002 09 16 | 699 | 0.2− | 0.1+ | 2003 01 01 | 704 | 0.1− | 0.5+ | 2004 04 14 | 703 | 0.8+ | 0.6+ |
| 2002 09 16 | 699 | 0.0 | 0.2+ | 2003 01 01 | 704 | (1.2+ | 1.6+) | 2004 04 14 | 703 | 1.3+ | 0.8+ |
| 2002 10 22 | 608 | 0.7− | 0.8+ | 2003 01 05 | 699 | 0.6− | 0.2− | 2005 04 30 | 691 | 0.1− | 0.3+ |
| 2002 10 22 | 608 | 0.6− | 1.3+ | 2003 01 05 | 699 | 0.3− | 0.0 | 2005 04 30 | 691 | 0.8+ | 1.2+ |
| 2002 10 22 | 608 | 0.6− | 0.0 | 2003 01 05 | 699 | 1.4− | 0.7+ | 2005 04 30 | 691 | 0.0 | 0.2+ |
| 2002 10 30 | 608 | 0.3− | 0.8− | 2003 01 05 | 699 | 0.5− | 0.3− | 2005 06 03 | E12 | 0.9− | 0.5+ |
| 2002 10 30 | 608 | 0.6− | 1.0− | 2003 01 07 | 704 | 0.0 | 0.1− | 2005 06 03 | E12 | 0.3− | 0.3+ |
| 2002 10 30 | 608 | 0.6− | 0.8− | 2003 01 07 | 704 | 0.3+ | 0.6+ | 2005 06 03 | E12 | 0.5− | 0.1− |
| 2002 10 31 | 704 | 0.2+ | 0.6+ | 2003 01 07 | 704 | 0.2− | 0.1− | 2005 06 03 | E12 | 0.5− | 0.7+ |
| 2002 10 31 | 704 | 0.0 | 0.2+ | 2003 01 07 | 704 | 0.1+ | 0.0 | 2005 06 09 | 691 | 0.4+ | 0.5+ |
| 2002 10 31 | 704 | 0.2− | 0.8+ | 2003 01 07 | 704 | 0.1− | 0.2− | 2005 06 09 | 691 | 0.2+ | 0.6+ |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2003 01 08 | 704 | 0.2− | 0.2+ | 2005 06 09 | 691 | 0.2+ | 0.6+ |
| 2002 10 31 | 704 | 0.3− | 0.5+ | 2003 01 08 | 704 | 0.0 | 0.4+ | 2005 06 17 | 691 | 0.2+ | 0.5+ |
| 2002 11 07 | 699 | 0.2− | 0.3+ | 2003 01 08 | 704 | 0.8− | 1.0+ | 2005 06 17 | 691 | 0.5+ | 0.7+ |
| 2002 11 07 | 699 | 0.3− | 0.0 | 2003 01 08 | 704 | 0.4+ | 0.4− | 2005 06 17 | 691 | 0.4+ | 0.5+ |
| 2002 11 07 | 699 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.0 | 0.6+ | 2005 06 23 | 644 | 0.3+ | 0.5+ |
| 2002 11 07 | 699 | 0.1− | 0.3+ | 2003 01 18 | 644 | 0.3− | 0.3+ | 2005 06 23 | 644 | 0.3+ | 0.9+ |
| 2002 11 11 | 699 | 0.2− | 0.4+ | 2003 01 18 | 644 | 0.1+ | 0.3+ | 2005 06 23 | 644 | 0.4+ | 0.4+ |
| 2002 11 11 | 699 | 0.3− | 0.3+ | 2003 01 18 | 644 | 0.1− | 0.3+ | 2006 08 16 | E12 | 0.2+ | 0.6+ |
| 2002 11 11 | 699 | 0.4− | 0.2− | 2003 01 27 | 644 | 0.1+ | 1.4+ | 2006 08 16 | E12 | 0.9− | 0.8+ |
| 2002 11 11 | 699 | 0.6− | 0.3+ | 2003 01 27 | 644 | 0.0 | 1.5+ | 2006 08 16 | E12 | 0.7− | 0.1− |
| 2002 11 12 | 644 | 0.0 | 0.1− | 2003 01 27 | 704 | 0.0 | 0.3+ | 2006 08 16 | E12 | 0.5+ | 0.7+ |
| 2002 11 12 | 644 | 0.4+ | 0.0 | 2003 01 27 | 644 | 0.3+ | 1.3+ | 2006 08 25 | E12 | 0.0 | 0.3+ |
| 2002 11 12 | 644 | 0.3+ | 0.4+ | 2003 01 27 | 704 | 0.2+ | 0.1− | 2006 08 25 | E12 | 0.1− | 0.1+ |
| 2002 11 17 | 644 | 0.2+ | 0.1− | 2003 01 27 | 704 | 0.3+ | 0.2+ | 2006 08 25 | E12 | 0.2− | 0.2+ |
| 2002 11 17 | 644 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.3+ | 0.2+ | 2006 08 25 | E12 | 0.1+ | 0.0 |
| 2002 11 17 | 644 | 0.2− | 0.1+ | 2003 01 27 | 704 | 0.3+ | 0.5+ | 2006 09 12 | E12 | 0.2− | 0.0 |
| 2002 11 17 | 644 | 0.0 | 0.5+ | 2003 02 02 | 704 | (0.1+ | 2.1+) | 2006 09 12 | E12 | 0.1+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 17 | 644 | 0.5+ | 0.4+ | 2003 02 02 | 704 | (0.5+ | 1.8+) | 2006 09 12 | E12 | 0.1− | 0.1− |
| 2002 11 17 | 644 | 0.1− | 0.6+ | 2003 02 02 | 704 | 0.2+ | 0.1− | 2006 09 12 | E12 | 0.4− | 0.1+ |
| 2002 12 01 | 704 | 0.2+ | 0.1+ | 2003 02 02 | 704 | 0.5− | 0.1+ | 2006 09 27 | E12 | 0.0 | 0.3+ |
| 2002 12 01 | 704 | 0.0 | 0.3+ | 2003 02 02 | 704 | 0.6− | 0.7+ | 2006 09 27 | E12 | 0.3− | 0.5+ |
| 2002 12 01 | 704 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.6+ | 2006 09 27 | E12 | 0.2+ | 0.0 |
| 2002 12 01 | 704 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.1− | 1.3+ | 2006 09 27 | E12 | 0.1+ | 0.3+ |
| 2002 12 01 | 704 | 0.3+ | 0.0 | 2004 02 16 | 704 | 0.2− | 0.4+ | 2006 10 25 | E12 | 0.2− | 0.9− |
| 2002 12 13 | 608 | 0.4+ | 0.4− | 2004 02 16 | 704 | 0.6+ | 0.6+ | 2006 10 25 | E12 | 0.0 | 0.1+ |
| 2002 12 13 | 608 | 0.2+ | 0.6− | 2004 03 14 | 704 | 0.1− | 0.3+ | 2006 10 25 | E12 | 0.1+ | 1.0+ |
| 2002 12 13 | 608 | 0.3+ | 0.2− | 2004 03 14 | 704 | 0.3+ | 0.4+ | 2006 11 25 | E12 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.2− | 0.5+ | 2004 03 14 | 704 | 0.2+ | 0.3+ | 2006 11 25 | E12 | 0.8+ | 0.8+ |
| 2002 12 14 | 704 | 0.0 | 0.9+ | 2004 03 14 | 704 | 0.4+ | 0.3+ | 2006 11 25 | E12 | 0.3+ | 0.1+ |
| 2002 12 14 | 704 | 0.7− | 0.3− | 2004 03 14 | 704 | 0.2+ | 0.1+ | 2006 11 25 | E12 | 0.4+ | 0.1− |
| 2002 12 14 | 704 | 0.0 | 0.0 | 2004 03 28 | 704 | 0.8− | 0.4− | | | | |
| 2002 12 15 | 704 | (0.4− | 1.8+) | 2004 03 28 | 704 | 0.0 | 0.3+ | | | | |

**(142941)∗ 2002 VC$_{69}$**

Discovered 2002 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.30311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24514437 | $\omega$ | 202.71594 | | −0.40059729 | −0.90849273 | |
| $a$ | 2.5284523 | $\Omega$ | 271.07133 | | +0.85787192 | −0.32627257 | |
| $e$ | 0.0939435 | $i$ | 6.83602 | | +0.32183471 | −0.26112674 | |
| $P$ | 4.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 704 | 0.4+ | 0.0 | 2002 12 02 | 704 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.3− |
| 2002 11 08 | 704 | 0.5− | 0.0 | 2002 12 06 | 704 | 0.4− | 0.3− | 2006 10 20 | A50 | 0.0 | 0.7− |
| 2002 11 08 | 704 | 0.4+ | 0.2− | 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 10 20 | A50 | 0.2− | 1.0− |
| 2002 11 11 | 699 | 0.2− | 0.3+ | 2002 12 06 | 704 | 1.0− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 1.0− |
| 2002 11 11 | 699 | 0.0 | 1.1+ | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.3− |
| 2002 11 11 | 699 | 1.3− | 0.2+ | 2002 12 11 | 644 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.1− |
| 2002 11 11 | 699 | 0.7+ | 1.4+ | 2002 12 11 | 644 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.4− | 1.2− |
| 2002 11 12 | 704 | 0.2+ | 0.2− | 2002 12 11 | 644 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | 0.5+ | 0.7+ | 2004 01 29 | 291 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2002 11 12 | 704 | 0.6+ | 0.1+ | 2004 01 29 | 291 | 0.1− | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | 0.5+ | 0.1+ | 2004 01 29 | 291 | 0.3− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.7+ | 0.4+ | 2004 03 17 | 704 | 0.8+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.2+ | 0.3− | 2004 03 17 | 704 | 0.6+ | 1.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 704 | 0.6− | 1.4− | 2004 03 17 | 704 | 1.0+ | 0.3− | 2006 11 10 | 644 | 0.4− | 0.4+ |
| 2002 11 14 | 644 | 0.1+ | 0.3+ | 2004 03 17 | 704 | 0.6− | 1.3+ | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2002 11 14 | 704 | 1.1− | 0.2− | 2004 03 26 | 704 | (1.1+ | 1.6−) | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 1.0+ | 0.5− | 2004 03 26 | 704 | (1.9+ | 0.0 ) | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2002 11 14 | 644 | 0.2+ | 0.3+ | 2004 03 26 | 704 | 1.0+ | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.8+ |
| 2002 11 14 | 644 | 0.2+ | 0.4+ | 2004 03 26 | 704 | (1.7+ | 0.0 ) | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2002 11 23 | 644 | 0.0 | 0.8+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | (0.3+ | 2.4+) |
| 2002 11 23 | 644 | 0.1+ | 0.5+ | 2005 05 19 | G96 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.6+ | 0.1+ |
| 2002 11 23 | 644 | 0.4+ | 0.9+ | 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.9+ | 0.6+ |
| 2002 11 28 | 699 | 0.3− | 0.3− | 2005 05 19 | G96 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.2− | 0.9+ |
| 2002 11 28 | 699 | 1.0+ | 0.9+ | 2005 06 18 | G96 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.1+ | 1.1+ |
| 2002 11 28 | 699 | 0.1+ | 0.4+ | 2005 06 18 | G96 | 0.3− | 0.5+ | 2006 11 15 | 704 | (0.6+ | 3.3+) |
| 2002 11 28 | 699 | 0.4− | 0.1+ | 2005 06 18 | G96 | 0.0 | 0.2+ | 2006 11 15 | 704 | (1.1+ | 2.3+) |
| 2002 12 01 | 608 | 0.5− | 0.2− | 2005 06 18 | G96 | 0.2− | 0.6+ | 2006 11 15 | 704 | (0.3− | 2.6+) |
| 2002 12 01 | 608 | 0.5− | 0.4− | 2005 07 08 | 691 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 2002 12 01 | 608 | 0.7− | 0.4− | 2005 07 08 | 691 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.9+ | 0.5+ |
| 2002 12 02 | 704 | 0.3− | 0.1− | 2005 07 08 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.3− |
| 2002 12 02 | 704 | 0.3− | 0.9+ | 2006 10 19 | 703 | (1.8+ | 2.3−) | 2006 11 16 | 704 | 0.4+ | 0.1+ |
| 2002 12 02 | 704 | 0.2+ | 0.5− | 2006 10 19 | 703 | 0.7− | 0.3− | | | | |
| 2002 12 02 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.2− | 0.1+ | | | | |

**(142942)∗ 2002 VG$_{69}$ = 2000 FB$_{51}$**

Discovered 2002 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41220), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.96058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23251920 | $\omega$ | 25.03382 | | +0.82903228 | −0.55907821 | |
| $a$ | 2.6191689 | $\Omega$ | 8.98576 | | +0.49961505 | +0.73112919 | |
| $e$ | 0.1417229 | $i$ | 4.29840 | | +0.25117780 | +0.39100086 | |
| $P$ | 4.24 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.0 | 0.5+ | 2002 12 11 | 644 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.5+ |
| 2000 03 29 | 691 | 0.2+ | 0.3+ | 2002 12 11 | 704 | 0.9− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2000 03 29 | 691 | 0.1− | 0.1+ | 2002 12 11 | 704 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.3− | 0.3+ |
| 2000 04 05 | 691 | 0.1− | 0.1− | 2002 12 11 | 704 | 1.3− | 0.6− | 2006 09 20 | 704 | (0.6+ | 2.3+) |
| 2000 04 05 | 691 | 0.4− | 0.4− | 2002 12 27 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.5+ |
| 2000 04 05 | 704 | 0.8+ | 0.6+ | 2002 12 27 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.6+ |
| 2000 04 05 | 691 | 0.1− | 0.1− | 2002 12 27 | 644 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 1.3− | 0.5+ |
| 2000 04 05 | 704 | 0.1− | 1.4+ | 2004 02 23 | 704 | (1.7+ | 0.5−) | 2006 09 20 | 704 | 1.4+ | 1.3+ |
| 2000 04 05 | 704 | 1.2+ | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2000 04 05 | 704 | 1.7+ | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2002 09 12 | 049 | (3.7− | 0.3−) | 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.2− |
| 2002 09 12 | 049 | (2.9− | 0.2+) | 2004 03 15 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 09 12 | 049 | (3.9− | 0.5−) | 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2002 10 12 | 704 | 1.0+ | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2002 10 12 | 704 | 0.3− | 0.2− | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 2002 10 12 | 704 | (0.2− | 1.6+) | 2004 03 23 | 704 | 0.8+ | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.6+ | 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.1− |
| 2002 11 08 | 704 | 0.0 | 0.8− | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 2002 11 08 | 704 | 0.1− | 1.0+ | 2004 03 23 | 704 | 0.8+ | 0.3+ | 2006 09 29 | 704 | (2.2− | 0.7+) |
| 2002 11 08 | 704 | 0.1+ | 0.1− | 2004 03 30 | 691 | 1.2+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2002 11 08 | 704 | 0.6− | 1.2+ | 2004 03 30 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2002 11 11 | 699 | 0.4+ | 0.5+ | 2004 03 30 | 691 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2002 11 11 | 699 | 0.3+ | 0.4− | 2004 03 31 | 691 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 11 11 | 699 | 0.5− | 0.1− | 2004 03 31 | 691 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2002 11 11 | 699 | 0.5+ | 0.1− | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.1+ | 1.0− | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.5− | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.6− |
| 2002 11 12 | 704 | 0.0 | 0.5− | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.8− |
| 2002 11 12 | 704 | 0.2+ | 0.8− | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.8+ | 0.2− |
| 2002 11 12 | 704 | 0.2+ | 0.3− | 2006 09 06 | 644 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.8− |
| 2002 11 14 | 704 | 1.0+ | 0.1+ | 2006 09 06 | 644 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.0 |
| 2002 11 14 | 704 | 0.0 | 0.6− | 2006 09 14 | 703 | 1.4− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2002 11 14 | 704 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2002 11 14 | 704 | 0.3+ | 0.5− | 2006 09 14 | 703 | 0.9− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | 1.1+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2002 12 02 | 704 | 0.5+ | 0.4− | 2006 09 14 | 703 | 0.3+ | 0.8− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 12 02 | 704 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 12 02 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 1.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 12 02 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2006 09 17 | 704 | 1.1− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 1.1− | 1.2− | 2006 09 17 | 704 | 0.2− | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.5+ | 1.0− | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.5+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 12 11 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.2+ |
| 2002 12 11 | 704 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.8+ | 0.5+ |
| 2002 12 11 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 2002 12 11 | 704 | 0.3− | 0.5− | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 1.6+ |

**(142943)∗ 2002 VK$_{69}$ = 2000 GD$_{16}$**

Discovered 2002 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.32926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22871195 | $\omega$ | 3.55886 | | +0.96855783 | −0.24827459 | |
| $a$ | 2.6481555 | $\Omega$ | 10.85668 | | +0.22611262 | +0.85166372 | |
| $e$ | 0.1212104 | $i$ | 4.86771 | | +0.10377286 | +0.46155026 | |
| $P$ | 4.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.8+ | 1.6− | 2002 12 10 | 704 | 0.3− | 0.7+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | |
| 1998 12 17 | 704 | 0.2+ | 0.8− | 2002 12 10 | 704 | 0.9− | 0.6+ | 2006 09 20 | J75 | 0.6+ | 0.0 | |
| 1998 12 17 | 704 | 1.4− | 0.5− | 2002 12 10 | 704 | 0.4− | 0.8+ | 2006 09 20 | J75 | 0.5+ | 0.1− | |
| 1998 12 17 | 704 | (4.1− | 1.6−) | 2002 12 10 | 704 | 0.5− | 0.4− | 2006 09 20 | J75 | 0.3+ | 0.1+ | |
| 2000 04 05 | 704 | 0.9+ | 0.2+ | 2002 12 11 | 704 | 1.2− | 1.3+ | 2006 09 20 | 704 | 0.6− | 0.2+ | |
| 2000 04 05 | 704 | 0.2+ | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.9− | 2006 09 20 | 704 | 0.2− | 0.1− | |
| 2000 04 05 | 704 | 0.4+ | 0.6+ | 2002 12 11 | 704 | 1.2− | 0.7− | 2006 09 20 | 704 | 0.6− | 0.6− | |
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2002 12 11 | 704 | 1.1− | 0.7− | 2006 09 20 | 704 | 0.1+ | 0.4− | |
| 2000 04 05 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 644 | 0.6+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.1− | |
| 2000 04 06 | 704 | 0.7− | 0.3+ | 2002 12 11 | 704 | 0.9− | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.1− | |
| 2000 04 06 | 704 | 0.5− | 0.4+ | 2002 12 11 | 644 | 0.6+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.1− | |
| 2000 04 06 | 704 | 0.4+ | 0.5+ | 2002 12 11 | 704 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1− | |
| 2000 04 06 | 704 | 0.4− | 0.1+ | 2002 12 11 | 704 | 0.7− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− | |
| 2000 04 06 | 704 | 0.4+ | 0.4+ | 2002 12 11 | 644 | 0.2+ | 0.1− | 2006 09 27 | 699 | 0.2− | 0.3+ | |
| 2002 10 12 | 704 | 0.0 | 0.3− | 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.5− | 0.2− | |
| 2002 10 12 | 704 | 0.8− | 0.1+ | 2002 12 11 | 644 | 0.3+ | 0.2− | 2006 09 27 | 699 | 0.3− | 0.0 | |
| 2002 10 12 | 704 | 0.8+ | 0.5− | 2002 12 11 | 704 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.7+ | |
| 2002 11 08 | 704 | 0.1+ | 1.0− | 2002 12 11 | 644 | 0.2+ | 0.4− | 2006 09 27 | 704 | 0.2− | 0.3+ | |
| 2002 11 08 | 704 | 0.3− | 0.6− | 2002 12 11 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.3− | 0.2− | |
| 2002 11 08 | 704 | 1.1+ | 0.6− | 2002 12 27 | 644 | 0.3+ | 0.8+ | 2006 09 27 | 704 | 0.4+ | 0.1+ | |
| 2002 11 11 | 699 | 0.3+ | 0.2− | 2002 12 27 | 644 | 0.1+ | 0.7+ | 2006 09 27 | 704 | 0.3+ | 0.4+ | |
| 2002 11 11 | 699 | 0.2− | 0.4− | 2002 12 27 | 644 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | |
| 2002 11 11 | 699 | 0.7+ | 0.2+ | 2003 01 27 | 608 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.4+ | |
| 2002 11 11 | 699 | 0.2+ | 0.4− | 2003 01 27 | 608 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.5+ | |
| 2002 11 12 | 704 | 0.2+ | 0.4+ | 2003 01 27 | 608 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.2+ | 0.3− | |
| 2002 11 12 | 704 | 0.2− | 0.2+ | 2003 02 04 | 704 | 0.5+ | 0.4− | 2006 09 29 | 704 | 0.5− | 0.2− | |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.6− | 0.1+ | 2006 10 01 | 704 | (1.3− | 1.6+) | |
| 2002 11 12 | 704 | 0.0 | 0.3+ | 2003 02 04 | 704 | 1.1− | 1.0+ | 2006 10 01 | 704 | (0.9− | 1.9+) | |
| 2002 11 12 | 704 | 0.5− | 0.1− | 2004 02 15 | 703 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.4− | 0.3+ | |
| 2002 11 14 | 704 | 0.3− | 0.6− | 2004 02 15 | 703 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 0.9− | 1.0+ | |
| 2002 11 14 | 704 | 0.0 | 0.8− | 2004 02 15 | 703 | (1.8− | 1.4+) | 2006 10 01 | 704 | (1.6− | 0.5+) | |
| 2002 11 14 | 704 | 0.0 | 0.5− | 2004 02 15 | 703 | 0.3+ | 0.6− | 2006 10 17 | 703 | 0.6− | 0.4+ | |
| 2002 11 14 | 704 | 0.6− | 0.7− | 2004 02 18 | 704 | 0.3− | 0.6+ | 2006 10 17 | 703 | (1.6− | 1.9+) | |
| 2002 11 14 | 704 | 0.2− | 0.4− | 2004 02 18 | 704 | 0.9− | 0.1+ | 2006 10 17 | 703 | (0.5+ | 2.6+) | |
| 2002 11 24 | 644 | 0.2+ | 1.2+ | 2004 02 18 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 703 | (2.2+ | 3.5+) | |
| 2002 11 24 | 644 | 0.1+ | 0.9+ | 2004 02 18 | 704 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | |
| 2002 11 24 | 644 | 0.1− | 1.1+ | 2004 02 19 | 704 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1− | |
| 2002 11 27 | 699 | 0.7+ | 0.2+ | 2004 02 19 | 704 | 0.1+ | 0.9− | 2006 10 19 | 644 | 0.0 | 0.0 | |
| 2002 11 27 | 699 | 0.2+ | 0.5+ | 2004 02 19 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2002 11 27 | 699 | 0.3+ | 0.6− | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 2002 11 27 | 699 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 2002 12 02 | 704 | 0.1+ | 0.1− | 2004 02 23 | 704 | 1.1+ | 1.3+ | 2006 10 23 | 704 | 0.5+ | 0.1− | |
| 2002 12 02 | 704 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.6+ | 0.4+ | 2006 10 23 | 704 | 0.2+ | 0.5+ | |
| 2002 12 02 | 704 | 0.9− | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 704 | 0.5+ | 0.2+ | |
| 2002 12 02 | 704 | 0.3+ | 0.0 | 2005 01 21 | 809 | 0.0 | 0.8+ | 2006 10 23 | 704 | 1.1− | 1.0+ | |
| 2002 12 02 | 704 | (1.9− | 0.1+) | 2005 01 21 | 809 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.7− | 0.1+ | |
| 2002 12 05 | 699 | 0.4− | 0.2+ | 2005 01 21 | 809 | 0.0 | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.3+ | |
| 2002 12 05 | 699 | 0.3− | 0.9− | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.2+ | 0.4− | |
| 2002 12 05 | 699 | 1.2− | 0.9− | 2006 08 18 | 644 | 0.0 | 0.7+ | 2006 10 28 | 704 | 0.7− | 0.3+ | |
| 2002 12 05 | 699 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.6− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1+ | |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.1− | |
| 2002 12 06 | 704 | 0.1+ | 0.6− | 2006 08 18 | 644 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.2− | |
| 2002 12 06 | 704 | 0.0 | 0.4− | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.2− | |
| 2002 12 06 | 704 | 0.2+ | 0.4− | 2006 09 17 | 704 | 1.0+ | 0.9− | 2006 10 31 | J95 | 0.0 | 0.2− | |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.2− | 2006 10 31 | J95 | 0.2− | 0.1− | |
| 2002 12 07 | 704 | 0.7+ | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.3+ | 2006 10 31 | J95 | 0.5+ | 0.0 | |
| 2002 12 07 | 704 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.2− | 0.9+ | 2006 11 01 | G96 | 0.1+ | 0.1+ | |
| 2002 12 07 | 704 | 0.7+ | 0.8+ | 2006 09 17 | 704 | 0.6− | 1.0+ | 2006 11 01 | G96 | 0.3+ | 0.2− | |
| 2002 12 07 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.0 | |
| 2002 12 07 | 704 | 0.7+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.3+ | |
| 2002 12 07 | 704 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.4− | 0.0 | |
| 2002 12 07 | 704 | 1.3+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | |
| 2002 12 07 | 704 | 1.0+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.2− | |
| 2002 12 10 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 699 | 0.7+ | 0.3− | | | | | |

**(142944)∗ 2002 VT$_{69}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.07541 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28410324 | $\omega$ | 14.35645 | | +0.78513804 | −0.61343377 | |
| $a$ | 2.2916692 | $\Omega$ | 24.11562 | | +0.54566787 | +0.62012994 | |
| $e$ | 0.2992876 | $i$ | 12.03459 | | +0.29292463 | +0.48901725 | |
| $P$ | 3.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 703 | 0.7+ | 0.0 | 2003 01 02 | 704 | 0.3+ | 0.6+ | 2004 03 22 | 704 | 0.7+ | 0.6+ | |
| 1999 12 12 | 703 | 0.6− | 0.2+ | 2003 01 02 | 704 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.1− | 0.4+ | |
| 1999 12 12 | 703 | 0.3− | 1.0+ | 2003 01 02 | 704 | 0.2− | 1.0+ | 2004 03 22 | 704 | 0.3− | 0.0 | |
| 1999 12 12 | 703 | 0.1+ | 0.5+ | 2003 01 04 | 704 | 0.3− | 0.7+ | 2004 03 22 | 704 | 0.1− | 0.5+ | |
| 1999 12 12 | 704 | 0.2− | 0.3− | 2003 01 04 | 704 | 0.6− | 0.1+ | 2004 03 22 | 704 | 0.1− | 0.6+ | |
| 1999 12 12 | 704 | 0.2− | 0.6− | 2003 01 04 | 704 | 0.2− | 0.5+ | 2004 03 22 | 704 | 0.1− | 0.2+ | |
| 1999 12 12 | 704 | 0.2− | 0.3− | 2003 01 04 | 704 | 0.3+ | 0.8+ | 2004 03 22 | 704 | 0.1+ | 0.1− | |
| 1999 12 12 | 704 | 0.1− | 0.4− | 2003 01 04 | 704 | 0.6+ | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.1− | |
| 1999 12 12 | 704 | 0.4− | 0.1+ | 2003 01 30 | 699 | (1.7+ | 1.9+) | 2004 03 23 | 704 | 0.3+ | 0.5+ | |
| 1999 12 30 | 704 | 0.2− | 0.4− | 2003 01 30 | 699 | 0.3+ | 0.8+ | 2004 03 23 | 704 | 0.2+ | 0.0 | |
| 1999 12 30 | 704 | 1.0− | 0.4− | 2003 01 30 | 699 | 0.1− | 0.5+ | 2004 03 23 | 704 | 0.0 | 0.5+ | |
| 1999 12 30 | 704 | 0.0 | 0.1− | 2003 01 30 | 699 | 0.8+ | 1.0+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | |
| 1999 12 30 | 704 | 0.3− | 0.5− | 2003 12 28 | 704 | 0.4− | 0.0 | 2004 03 23 | 704 | 0.0 | 0.2+ | |
| 1999 12 30 | 704 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.1+ | 0.3− | 2004 03 24 | 699 | 0.1− | 0.2+ | |
| 2000 01 27 | 704 | 0.4+ | 0.1− | 2003 12 28 | 704 | 0.3+ | 0.8+ | 2004 03 24 | 699 | 0.8− | 0.3+ | |
| 2000 01 27 | 704 | 0.7+ | 0.4− | 2004 02 18 | 703 | 0.4+ | 0.4+ | 2004 03 24 | 699 | 0.6− | 0.3+ | |
| 2000 01 27 | 704 | 1.1+ | 0.2+ | 2004 02 18 | 703 | 0.4+ | 0.3+ | 2004 03 24 | 699 | 0.3+ | 0.0 | |
| 2000 03 27 | 704 | 0.5− | 0.7+ | 2004 02 18 | 703 | 0.8+ | 0.1− | 2004 03 28 | 704 | 0.6+ | 0.2− | |
| 2000 03 27 | 704 | 0.5− | 0.0 | 2004 02 18 | 703 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.8+ | 0.1− | |
| 2000 03 27 | 704 | 0.5− | 0.6+ | 2004 02 19 | 704 | 0.4+ | 0.4+ | 2004 03 28 | 704 | 0.7+ | 0.2+ | |
| 2000 03 27 | 704 | 0.8− | 1.2− | 2004 02 19 | 704 | 1.3+ | 1.2− | 2004 03 28 | 704 | 0.5+ | 0.2− | |
| 2000 03 27 | 704 | 1.0− | 0.1− | 2004 02 19 | 704 | 1.5+ | 0.4− | 2004 03 30 | 703 | 0.5− | 0.4− | |
| 2002 08 21 | 644 | 0.7− | 0.4+ | 2004 02 19 | 704 | (2.3+ | 2.3−) | 2004 03 30 | 703 | 1.1+ | 0.6+ | |
| 2002 08 21 | 644 | 0.8− | 0.2+ | 2004 02 25 | 704 | 1.1− | 0.6+ | 2004 03 30 | 703 | 0.7+ | 0.0 | |
| 2002 08 21 | 644 | 0.4− | 0.7+ | 2004 02 25 | 704 | 0.5− | 0.9+ | 2004 03 30 | 703 | 1.2− | 0.6− | |
| 2002 09 26 | 704 | 0.8− | 0.2+ | 2004 02 25 | 704 | 0.2+ | 0.6+ | 2004 04 15 | 704 | (3.0+ | 0.6+) | |
| 2002 09 26 | 704 | 0.9− | 0.3+ | 2004 02 25 | 704 | 0.2− | 0.1+ | 2004 04 15 | 704 | 1.4+ | 0.7+ | |
| 2002 09 26 | 704 | 0.7− | 0.3+ | 2004 02 25 | 704 | 0.2− | 0.2+ | 2004 04 15 | 704 | 1.1+ | 0.8+ | |
| 2002 09 26 | 704 | 0.7− | 0.5+ | 2004 03 15 | 683 | 0.8+ | 0.0 | 2004 04 16 | 691 | 0.2+ | 0.0 | |
| 2002 09 26 | 704 | 1.0− | 0.8+ | 2004 03 15 | 683 | 0.9+ | 0.1+ | 2004 04 16 | 691 | 0.2+ | 0.1+ | |
| 2002 11 07 | 704 | 0.2− | 0.0 | 2004 03 16 | 704 | (0.0 | 1.5+) | 2004 04 16 | 691 | 0.2+ | 0.1+ | |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.1+ | 1.2+ | 2004 04 19 | 704 | 1.0+ | 0.2− | |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2004 03 16 | 704 | 0.1+ | 0.7+ | 2004 04 19 | 704 | 0.3− | 0.6− | |
| 2002 11 11 | 704 | 0.1+ | 0.9+ | 2004 03 17 | 683 | 0.2+ | 1.5− | 2004 04 19 | 704 | 0.7+ | 0.1+ | |
| 2002 11 11 | 704 | 0.7+ | 0.6+ | 2004 03 17 | 683 | (0.5− | 1.6−) | 2004 04 19 | 704 | 0.2− | 0.3− | |
| 2002 11 11 | 704 | 0.5+ | 0.9+ | 2004 03 17 | 683 | 0.2− | 0.3− | 2004 04 19 | 704 | 0.5+ | 0.7+ | |
| 2002 11 16 | 644 | 0.7− | 0.5+ | 2004 03 17 | 704 | 0.1+ | 1.0+ | 2004 04 21 | 691 | 0.1− | 0.0 | |
| 2002 11 16 | 644 | 0.4− | 0.4+ | 2004 03 17 | 704 | 0.2+ | 0.8+ | 2004 04 21 | 691 | 0.1− | 0.1− | |
| 2002 11 16 | 644 | 0.4− | 0.6+ | 2004 03 17 | 704 | 0.9+ | 0.4+ | 2004 04 21 | 691 | 0.1− | 0.1− | |
| 2002 12 02 | 608 | 1.2− | 1.1+ | 2004 03 17 | 704 | 0.1+ | 0.5+ | 2004 04 22 | 704 | 0.3+ | 0.1+ | |
| 2002 12 02 | 608 | (1.5− | 0.7+) | 2004 03 17 | 704 | 1.1+ | 0.7+ | 2004 04 22 | 704 | 1.1+ | 1.0+ | |
| 2002 12 02 | 608 | 0.0 | 1.3+ | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2004 04 22 | 704 | (1.5+ | 0.9−) | |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2004 03 17 | 704 | 0.2+ | 1.0+ | 2004 04 22 | 704 | (1.8+ | 1.0+) | |
| 2002 12 05 | 704 | 0.9− | 0.8+ | 2004 03 17 | 704 | 0.3+ | 0.9+ | 2004 04 23 | 703 | 0.9+ | 0.9− | |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2004 03 17 | 704 | 0.5+ | 0.8+ | 2004 04 23 | 703 | 0.1+ | 0.1+ | |
| 2002 12 06 | 704 | 0.3− | 0.4+ | 2004 03 17 | 704 | 0.7+ | 0.3+ | 2004 04 23 | 703 | 0.3− | 1.0+ | |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2004 03 18 | 683 | (1.8− | 2.0+) | 2004 04 23 | 703 | (1.6− | 1.9−) | |
| 2002 12 06 | 704 | 0.5− | 0.4+ | 2004 03 18 | 683 | 0.0 | 0.3− | 2004 05 07 | 703 | 0.2+ | 0.3− | |
| 2002 12 06 | 704 | 0.4− | 0.8+ | 2004 03 18 | 683 | 0.4+ | 0.2+ | 2004 05 07 | 703 | (1.9+ | 0.2+) | |
| 2002 12 06 | 704 | 0.7− | 0.9+ | 2004 03 20 | 704 | 0.1+ | 1.0+ | 2004 05 07 | 703 | 0.3+ | 0.3− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.6− | 0.5+ | 2004 03 20 | 704 | 0.8− | 0.9− | 2004 05 07 | 703 | 1.1+ | 0.7+ |
| 2002 12 07 | 704 | 0.3− | 0.8+ | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2002 12 07 | 704 | 0.2− | 0.7+ | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 10 28 | 703 | (1.6− | 0.4+) |
| 2002 12 07 | 704 | 0.5− | 0.0 | 2004 03 20 | 704 | 0.5− | 0.5+ | 2006 10 28 | 703 | 1.4− | 0.3+ |
| 2002 12 07 | 704 | 0.4+ | 0.3+ | 2004 03 21 | 699 | (0.2− | 1.7+) | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2002 12 10 | 704 | 0.4− | 0.2+ | 2004 03 21 | 699 | 1.1− | 0.5− | 2006 11 21 | 703 | 0.4− | 0.0 |
| 2002 12 10 | 704 | 0.4− | 1.5+ | 2004 03 21 | 699 | 1.2− | 0.5+ | 2006 11 21 | 703 | 0.3− | 0.1+ |
| 2002 12 10 | 704 | 0.2− | 1.5+ | 2004 03 21 | 699 | 0.1− | 0.3+ | 2006 11 21 | 703 | 0.2− | 0.4− |
| 2002 12 10 | 704 | 0.3+ | 0.5+ | 2004 03 22 | 704 | 0.5+ | 0.5+ | 2006 11 21 | 703 | 0.1− | 0.1− |
| 2002 12 19 | 608 | 0.7− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.7+ | 2006 11 29 | 704 | 1.2− | 0.4+ |
| 2002 12 19 | 608 | 1.4− | 0.2+ | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.4− | 1.3+ |
| 2002 12 19 | 608 | 0.3+ | 0.5− | 2004 03 22 | 704 | 0.2− | 0.6+ | 2006 11 29 | 704 | (1.0+ | 1.6+) |
| 2003 01 02 | 704 | 0.0 | 0.9+ | 2004 03 22 | 704 | 0.1− | 0.3+ | 2006 11 29 | 704 | 1.4+ | 0.6+ |
| 2003 01 02 | 704 | 0.1+ | 0.9+ | 2004 03 22 | 704 | 0.7+ | 0.6+ | | | | |

**(142945)∗ 2002 VB$_{70}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.42829 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29430549 | $\omega$ | 347.02428 | | +0.21117738 | −0.97109849 | |
| $a$ | 2.2383972 | $\Omega$ | 90.70267 | | +0.90643322 | +0.15198019 | |
| $e$ | 0.0648065 | $i$ | 6.38663 | | +0.36576350 | +0.18403733 | |
| $P$ | 3.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.3− | 0.1+ | 2002 11 11 | 704 | 0.0 | 0.5− | 2004 04 25 | 704 | 0.4− | 1.4+ |
| 2000 01 03 | 704 | 0.2− | 0.1− | 2002 11 30 | 704 | 0.4+ | 0.5+ | 2004 04 25 | 704 | 0.9+ | 0.7− |
| 2000 01 03 | 704 | 0.0 | 0.5− | 2002 11 30 | 704 | 0.4− | 0.8+ | 2005 07 27 | 644 | 0.1+ | 0.3+ |
| 2002 10 16 | 644 | 0.2− | 0.6+ | 2002 11 30 | 704 | 0.5+ | 0.5+ | 2005 07 27 | 644 | 0.1− | 0.5+ |
| 2002 10 16 | 644 | 0.1− | 0.5+ | 2004 03 23 | 704 | 0.5+ | 0.8+ | 2005 07 27 | 644 | 0.1+ | 0.6+ |
| 2002 10 16 | 644 | 0.2− | 0.9+ | 2004 03 23 | 704 | 0.8+ | 0.2+ | 2005 08 28 | E12 | 0.6− | 0.3+ |
| 2002 10 31 | 683 | (2.5− | 1.1+) | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2005 08 28 | E12 | 0.2+ | 0.4+ |
| 2002 10 31 | 704 | 0.2+ | 1.0+ | 2004 04 23 | 704 | 0.2+ | 1.1+ | 2005 08 28 | E12 | 0.5− | 0.5+ |
| 2002 10 31 | 683 | 0.7− | 0.4+ | 2004 04 23 | 704 | 0.3+ | 0.6+ | 2005 08 28 | E12 | 0.8− | 0.2+ |
| 2002 10 31 | 683 | 1.4− | 0.1+ | 2004 04 23 | 704 | 0.1− | 0.5+ | 2005 08 31 | 644 | 0.2− | 0.0 |
| 2002 10 31 | 704 | 0.4− | 0.2+ | 2004 04 23 | 704 | 0.5− | 0.8+ | 2005 08 31 | 644 | 0.3− | 0.2+ |
| 2002 10 31 | 704 | 0.2+ | 0.1− | 2004 04 23 | 704 | 0.3− | 0.8+ | 2005 08 31 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.4− | 0.7+ | 2004 04 24 | 683 | 0.1+ | 1.4+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2002 10 31 | 704 | 0.3− | 1.1+ | 2004 04 24 | 683 | 0.1+ | 0.6− | 2006 10 22 | 691 | 0.4+ | 0.4+ |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2004 04 24 | 704 | 1.2+ | 0.9+ | 2006 10 22 | 691 | 0.3+ | 0.0 |
| 2002 11 07 | 704 | 0.5+ | 0.4+ | 2004 04 24 | 683 | (0.5− | 2.1+) | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2002 11 07 | 704 | (0.6+ | 1.8+) | 2004 04 24 | 704 | 1.3+ | 0.8+ | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2002 11 11 | 704 | 0.0 | 0.2+ | 2004 04 24 | 704 | 0.3+ | 1.3+ | 2006 11 27 | G96 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 0.3− | 0.6+ | 2004 04 25 | 704 | (3.9+ | 1.6+) | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2002 11 11 | 704 | 0.3+ | 0.4+ | 2004 04 25 | 704 | 0.1+ | 0.8+ | | | | |
| 2002 11 11 | 704 | 0.1− | 0.3− | 2004 04 25 | 704 | (1.6+ | 0.1−) | | | | |

**(142946)∗ 2002 VD$_{70}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.23870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26316774 | $\omega$ | 228.80071 | | +0.68407390 | +0.72593450 | |
| $a$ | 2.4116500 | $\Omega$ | 84.51277 | | −0.64600931 | +0.64825794 | |
| $e$ | 0.2002990 | $i$ | 4.09872 | | −0.33869584 | +0.22974060 | |
| $P$ | 3.75 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 23 | 704 | 1.9− | 0.2+ | 2005 05 08 | 704 | 0.4− | 1.4+ | 2005 06 23 | 644 | 0.1− | 0.1+ |
| 1998 08 23 | 704 | 0.4+ | 0.3+ | 2005 05 08 | 704 | 1.4− | 1.1− | 2005 06 23 | 644 | 0.3+ | 0.2− |
| 1998 08 23 | 704 | 1.4− | 1.7− | 2005 05 14 | 704 | 0.1+ | 0.1− | 2005 06 23 | 644 | 0.2− | 0.0 |
| 1998 08 23 | 704 | 1.2+ | 0.9+ | 2005 05 14 | 704 | 0.7+ | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 1999 12 17 | 691 | 0.1− | 0.3− | 2005 05 14 | 704 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 1999 12 17 | 691 | 0.1+ | 0.2− | 2005 05 14 | 704 | 1.1− | 1.0+ | 2006 10 21 | G96 | 0.5− | 0.2+ |
| 1999 12 17 | 691 | 0.3− | 0.4− | 2005 05 14 | 704 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 10 09 | 704 | 0.3− | 0.6+ | 2005 05 20 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.5− | 1.1+ | 2005 05 20 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.4+ | 0.3+ | 2005 05 20 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 1.2− | 0.4+ | 2005 05 20 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.3− | 1.5+ | 2005 05 21 | 644 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2002 10 15 | 644 | 0.6− | 0.4− | 2005 05 21 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2002 10 15 | 644 | 0.6− | 0.2− | 2005 05 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2002 10 15 | 644 | 0.4− | 0.1− | 2005 05 29 | E12 | 0.7+ | 0.2+ | 2006 11 19 | 691 | 0.5− | 0.3+ |
| 2002 10 26 | 608 | 0.3− | 0.8− | 2005 05 29 | E12 | 1.0+ | 0.1− | 2006 11 19 | 691 | 0.4− | 0.4+ |
| 2002 10 26 | 608 | 0.3+ | 0.2− | 2005 05 29 | E12 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2002 10 26 | 608 | 0.5− | 0.1− | 2005 05 29 | E12 | 0.8− | 1.2− | 2006 11 21 | 704 | 0.5− | 0.3− |
| 2002 11 07 | 704 | 1.2+ | 1.3+ | 2005 06 03 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 1.7− | 0.2+ |
| 2002 11 07 | 704 | 0.6+ | 0.9+ | 2005 06 03 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.6+ |
| 2002 11 07 | 704 | 0.6+ | 0.6+ | 2005 06 03 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.7− | 1.0+ |
| 2002 11 07 | 704 | 0.2+ | 1.8+ | 2005 06 03 | 703 | 0.2− | 0.9− | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2002 11 07 | 704 | 1.3+ | 1.6+ | 2005 06 03 | 703 | 0.5− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.2+ | 0.2− | 2005 06 03 | 703 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2005 06 03 | 703 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 11 11 | 704 | 0.1+ | 0.5+ | 2005 06 04 | 704 | 0.4− | 1.5+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 11 22 | 644 | 0.1+ | 0.9+ | 2005 06 04 | 704 | 0.0 | 0.7+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2002 11 22 | 644 | 0.2+ | 0.9+ | 2005 06 04 | 704 | 0.3− | 1.6+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 11 22 | 644 | 0.3− | 1.0+ | 2005 06 04 | 704 | 0.5− | 1.0+ | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2004 02 18 | 691 | 0.1+ | 0.3+ | 2005 06 04 | 704 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2004 02 18 | 691 | 0.2− | 0.2+ | 2005 06 10 | 691 | 0.3+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2004 02 18 | 691 | 0.0 | 0.2+ | 2005 06 10 | 691 | 0.3+ | 0.3+ | 2006 11 27 | 691 | 0.4+ | 0.8+ |
| 2004 03 18 | 645 | 0.1+ | 0.1+ | 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 2.5+ | 1.1− |
| 2004 03 18 | 645 | 0.0 | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.6+ | 2006 11 28 | 704 | 1.6+ | 2.1− |
| 2004 03 18 | 645 | 0.1+ | 0.1+ | 2005 06 14 | 691 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 2.0+ | 2.3− |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2005 06 14 | 691 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 1.0+ | 1.3− |
| 2005 05 03 | 704 | 0.5− | 0.4− | 2005 06 16 | G96 | 0.3− | 0.0 | 2006 11 28 | 704 | 1.1+ | 1.5− |
| 2005 05 03 | 704 | 1.1+ | 1.9− | 2005 06 16 | G96 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2005 05 03 | 704 | 0.7+ | 0.9+ | 2005 06 16 | G96 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2005 05 03 | 704 | 0.7+ | 0.7− | 2005 06 23 | 644 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.3− | 0.2+ |
| 2005 05 08 | 704 | 0.6+ | 1.7+ | 2005 06 23 | 644 | 0.1− | 0.0 | | | | |
| 2005 05 08 | 704 | 0.9− | 0.2+ | 2005 06 23 | 644 | 0.0 | 0.2− | | | | |

**(142947)∗ 2002 VK$_{72}$ = 2004 CA$_{100}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61586)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.18355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22604239 | $\omega$ | 356.19198 | | −0.04453818 | −0.99680357 | |
| $a$ | 2.6689645 | $\Omega$ | 96.35228 | | +0.91832559 | −0.06698911 | |
| $e$ | 0.0419893 | $i$ | 3.82646 | | +0.39331216 | +0.04353284 | |
| $P$ | 4.36 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 31 | 644 | 0.3− | 0.9+ | 2002 12 10 | 704 | 0.7+ | 0.6− | 2006 08 23 | 644 | 0.1− | 0.2+ |
| 2001 07 31 | 644 | 0.5− | 1.2+ | 2004 02 15 | 703 | 1.3+ | 1.0+ | 2006 08 23 | 644 | 0.5− | 0.0 |
| 2001 07 31 | 644 | 0.0 | 1.0+ | 2004 02 15 | 703 | (1.7+ | 1.2+) | 2006 08 23 | 644 | 0.4− | 0.0 |
| 2002 10 31 | 644 | 0.1+ | 0.1+ | 2004 02 15 | 703 | (1.6+ | 2.3+) | 2006 09 12 | 703 | (1.5− | 1.1+) |
| 2002 10 31 | 644 | 0.1+ | 0.0 | 2004 02 15 | 703 | 0.8+ | 0.5− | 2006 09 12 | 703 | 0.5− | 0.4+ |
| 2002 10 31 | 644 | 0.1− | 0.1+ | 2004 02 16 | 291 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 1.2− | 0.6+ |
| 2002 11 07 | 704 | 0.3− | 0.3− | 2004 02 16 | 291 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 1.3− | 0.5− |
| 2002 11 07 | 704 | 1.5+ | 0.1− | 2004 02 16 | 291 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 1.1+ |
| 2002 11 07 | 704 | 0.6+ | 0.7− | 2004 02 23 | 704 | 0.1+ | 1.0+ | 2006 09 18 | 703 | 0.2+ | 1.3+ |
| 2002 11 07 | 704 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 703 | 0.6+ | 0.5− |
| 2002 11 11 | 704 | 0.4− | 0.1− | 2004 02 23 | 704 | 0.8+ | 0.6+ | 2006 09 18 | 703 | (0.0 | 1.5+) |
| 2002 11 11 | 704 | 1.0− | 0.6+ | 2004 02 23 | 704 | 1.1− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2002 11 11 | 704 | 1.2− | 0.1− | 2004 02 23 | 704 | (1.7− | 0.2+) | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2002 11 11 | 704 | 0.1+ | 1.2+ | 2004 03 16 | 704 | 1.4− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2002 11 12 | 644 | 0.6− | 0.0 | 2004 03 16 | 704 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.3− | 0.6+ |
| 2002 11 12 | 644 | 0.3− | 0.0 | 2004 03 16 | 704 | 0.5+ | 0.1− | 2006 09 28 | 704 | 0.2− | 0.7+ |
| 2002 11 12 | 644 | 0.1− | 0.2+ | 2004 03 16 | 704 | 0.5+ | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 608 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.0 | 1.1+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | | |
| 2002 12 01 | 608 | 0.2+ | 0.7− | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.4+ | | |
| 2002 12 01 | 608 | 0.2− | 0.4− | 2004 03 20 | 704 | 0.1− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.4+ | | |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2002 12 10 | 644 | 0.7+ | 0.3+ | 2004 03 20 | 704 | 0.4+ | 1.1+ | 2006 10 20 | 644 | 0.7− | 0.3− | | |
| 2002 12 10 | 704 | 0.7+ | 0.6− | 2004 03 22 | 704 | 0.6+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2002 12 10 | 704 | 0.7+ | 0.5− | 2004 03 22 | 704 | (0.5+ | 1.6+) | | | | | | |
| 2002 12 10 | 644 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 0.5− | 1.1+ | | | | | | |

**(142948)∗ 2002 VQ$_{72}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 293.62787 | | (2000.0) | | | |
| $n$ | 0.24445834 | $\omega$ | 345.17794 | | −0.34683646 | −0.93625956 |
| $a$ | 2.5331805 | $\Omega$ | 125.08615 | | +0.86732956 | −0.34283738 |
| $e$ | 0.0935377 | $i$ | 3.91567 | | +0.35699286 | −0.07668489 |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.9+ | 0.1+ | 2004 03 28 | 704 | 0.6+ | 0.5− | 2005 07 15 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 09 | 599 | (4.6+ | 2.2−) | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.6+ | | |
| 2002 09 09 | 599 | (5.4+ | 2.9−) | 2004 03 28 | 691 | 0.0 | 0.3+ | 2005 07 15 | 691 | 0.0 | 0.1− | | |
| 2002 10 31 | 644 | 0.3− | 0.5+ | 2004 04 20 | 704 | 0.6+ | 0.7+ | 2005 07 15 | G96 | 0.4− | 0.8+ | | |
| 2002 10 31 | 644 | 0.2− | 0.6+ | 2004 04 20 | 704 | 0.6+ | 0.8− | 2005 07 15 | G96 | 0.0 | 0.0 | | |
| 2002 10 31 | 644 | 0.4− | 0.6+ | 2004 04 20 | 704 | 0.5+ | 0.2− | 2005 07 15 | 691 | 0.2− | 0.0 | | |
| 2002 11 07 | 704 | 1.0− | 0.6+ | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.3+ | 0.9+ | 2004 04 20 | E12 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.7− | 0.8+ | | |
| 2002 11 07 | 704 | 0.1− | 1.2+ | 2004 04 20 | E12 | 0.4+ | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.3+ | | |
| 2002 11 07 | 704 | 0.3+ | 1.2+ | 2004 04 20 | E12 | 1.1− | 0.2+ | 2006 10 16 | 703 | (1.9− | 0.4+) | | |
| 2002 11 11 | 704 | (0.1− | 2.7+) | 2004 04 20 | E12 | 1.0− | 0.7+ | 2006 11 01 | 703 | 0.3+ | 1.0+ | | |
| 2002 11 11 | 704 | 1.3− | 1.4+ | 2005 06 14 | G96 | 0.2− | 0.7+ | 2006 11 01 | 703 | 0.4− | 0.9+ | | |
| 2002 11 11 | 704 | 1.2− | 0.6+ | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 11 01 | 703 | (1.2− | 1.9+) | | |
| 2002 11 14 | 644 | 0.0 | 0.6− | 2005 06 14 | G96 | 0.8− | 0.1+ | 2006 11 01 | 703 | (1.6+ | 0.2−) | | |
| 2002 11 14 | 644 | 0.6+ | 0.5− | 2005 06 14 | G96 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2002 11 14 | 644 | 0.4+ | 0.4− | 2005 07 03 | G96 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.2+ | | |
| 2002 11 22 | 644 | 0.1− | 0.4+ | 2005 07 03 | G96 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 22 | 644 | 0.1− | 0.7+ | 2005 07 03 | G96 | 0.6+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2002 11 22 | 644 | 0.3+ | 0.5+ | 2005 07 03 | G96 | 0.5+ | 0.1+ | 2006 11 09 | 644 | 0.5− | 0.4+ | | |
| 2004 03 18 | 691 | 0.1− | 0.3+ | 2005 07 06 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.2+ | | |
| 2004 03 18 | 691 | 0.3− | 0.3+ | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 1.0+ | | |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2005 07 06 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.8+ | | |
| 2004 03 19 | 704 | 0.2+ | 0.5+ | 2005 07 07 | 568 | 0.6− | 1.0+ | 2006 11 11 | 703 | 0.4− | 0.8+ | | |
| 2004 03 19 | 704 | 1.3+ | 0.8+ | 2005 07 07 | 568 | 0.6− | 1.0+ | 2006 11 11 | 703 | 0.6+ | 0.5− | | |
| 2004 03 19 | 704 | 1.5+ | 0.9+ | 2005 07 07 | 568 | 0.6− | 1.0+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2004 03 19 | 704 | 0.4− | 0.3+ | 2005 07 08 | 568 | 0.2− | 0.7+ | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2004 03 28 | 704 | 1.3+ | 1.0+ | 2005 07 10 | 691 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2004 03 28 | 704 | 1.0+ | 0.1− | 2005 07 10 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.6+ | 0.1− | | |
| 2004 03 28 | 704 | 0.1+ | 1.2+ | 2005 07 10 | 691 | 0.2+ | 0.1− | | | | | | |
| 2004 03 28 | 691 | 0.1− | 0.3+ | 2005 07 15 | G96 | 0.1+ | 0.0 | | | | | | |

**(142949)∗ 2002 VB$_{73}$ = 2000 HX$_{60}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41223)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.41237 | | (2000.0) | | | |
| $n$ | 0.23555374 | $\omega$ | 279.41906 | | −0.63738568 | −0.76475056 |
| $a$ | 2.5966259 | $\Omega$ | 210.82339 | | +0.75928223 | −0.60249441 |
| $e$ | 0.1043201 | $i$ | 10.60723 | | +0.13126306 | −0.22837920 |
| $P$ | 4.18 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.6+ | 0.2− | 2004 03 17 | 704 | 0.6+ | 1.0− | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 2000 04 06 | 704 | 0.4+ | 0.4− | 2004 03 27 | 703 | (1.7− | 2.4+) | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2000 04 06 | 704 | 1.0− | 1.6+ | 2004 03 27 | 703 | 0.5− | 0.8+ | 2006 10 16 | 691 | 0.4− | 0.6+ | | |
| 2000 04 25 | 699 | 0.8+ | 0.6− | 2004 03 27 | 703 | 0.3− | 1.3+ | 2006 10 16 | 691 | 0.1− | 0.5+ | | |
| 2000 04 25 | 699 | 0.2+ | 0.9+ | 2004 03 27 | 703 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.4− | 0.3+ | | |
| 2000 04 25 | 699 | 0.2+ | 0.9+ | 2004 04 11 | 703 | 0.8− | 1.2+ | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2000 04 25 | 699 | 0.4+ | 0.7+ | 2004 04 11 | 703 | 0.4+ | 0.9+ | 2006 10 20 | 691 | 0.3− | 0.2+ | | |
| 2000 04 29 | 704 | 0.5+ | 1.2+ | 2004 04 11 | 703 | 0.6− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.0 | | |
| 2000 04 29 | 704 | 1.3− | 0.4+ | 2004 04 11 | 703 | 0.9+ | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2000 04 29 | 704 | 0.1− | 1.0+ | 2004 04 16 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2000 04 29 | 704 | 0.6+ | 1.1+ | 2004 04 16 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2002 10 30 | 608 | 0.2− | 0.5− | 2004 04 16 | 644 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 1.0+ | 0.2− | | |
| 2002 10 30 | 608 | 0.2− | 0.3− | 2004 04 20 | 704 | 1.3+ | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.3− | | |
| 2002 10 30 | 608 | 0.3− | 0.1+ | 2004 04 20 | 704 | 1.0+ | 0.4− | 2006 10 21 | 703 | 0.2− | 0.5+ | | |
| 2002 11 07 | 704 | 0.0 | 0.6+ | 2004 04 20 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 703 | 0.6+ | 0.6+ | | |
| 2002 11 07 | 704 | (0.4− | 1.7+) | 2004 04 20 | 704 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 11 07 | 704 | 0.0 | 0.7+ | 2004 04 22 | 703 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2004 04 22 | 703 | (0.5+ | 3.1+) | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2002 11 11 | 704 | 0.1+ | 0.3− | 2004 04 22 | 703 | 0.6− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2002 11 11 | 704 | 0.8+ | 1.0− | 2004 04 22 | 703 | 0.6− | 1.1+ | 2006 10 28 | 691 | 0.3− | 0.4+ | | |
| 2002 11 11 | 704 | 0.6− | 0.8+ | 2004 04 26 | 699 | 0.6+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.3+ | | |
| 2002 11 22 | 644 | 0.0 | 0.4− | 2004 04 26 | 699 | 0.5− | 0.9− | 2006 10 28 | 691 | 0.2− | 0.3+ | | |
| 2002 11 22 | 644 | 0.1− | 0.3− | 2004 04 26 | 699 | 0.9+ | 0.9− | 2006 11 14 | G96 | 0.2+ | 0.3− | | |
| 2002 11 22 | 644 | 0.1− | 0.3− | 2004 04 26 | 699 | 0.9+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.2− | | |
| 2002 12 01 | 704 | 0.3− | 0.6+ | 2006 09 20 | 699 | (0.5+ | 1.9+) | 2006 11 14 | G96 | 0.5+ | 0.3− | | |
| 2002 12 01 | 704 | 0.1− | 1.1− | 2006 09 20 | 699 | 0.3+ | 0.9+ | 2006 11 14 | G96 | 0.2− | 0.3− | | |
| 2002 12 01 | 704 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.3+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2002 12 01 | 704 | 0.1+ | 1.4− | 2006 09 20 | 699 | 0.2+ | 0.6+ | 2006 11 21 | 691 | 0.4+ | 0.1+ | | |
| 2002 12 07 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.1− | | |
| 2002 12 07 | 704 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.3+ | 2006 11 21 | 704 | 1.6+ | 0.7+ | | |
| 2002 12 07 | 704 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 1.4+ | 1.4+ | | |
| 2002 12 07 | 704 | (1.6+ | 1.3−) | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2004 03 17 | 704 | 0.6− | 1.0+ | 2006 10 11 | 644 | 0.6− | 0.5+ | 2006 11 21 | 704 | 1.4+ | 0.6+ | | |
| 2004 03 17 | 704 | 1.4− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | | | |
| 2004 03 17 | 704 | 0.2− | 1.1− | 2006 10 12 | 644 | 0.1− | 0.5+ | | | | | | |

**(142950)∗ 2002 VS$_{73}$ = 2005 GB$_{171}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85742)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.42166 | | (2000.0) | | | |
| $n$ | 0.22084260 | $\omega$ | 96.36360 | | +0.68096170 | +0.72319516 |
| $a$ | 2.7106960 | $\Omega$ | 217.41879 | | −0.72422818 | +0.64172112 |
| $e$ | 0.1651316 | $i$ | 10.93239 | | −0.10855734 | +0.25530917 |
| $P$ | 4.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 07 | 691 | 0.1+ | 0.6− | 2005 03 17 | G96 | 0.4− | 0.2− | 2006 08 31 | 704 | 0.3+ | 1.0+ | | |
| 1997 10 07 | 691 | 0.5− | 0.5− | 2005 03 17 | G96 | 0.5− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.1+ | | |
| 1997 10 07 | 691 | 0.5+ | 0.7+ | 2005 03 17 | G96 | 0.7− | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.0 | | |
| 2002 11 07 | 704 | 0.5+ | 0.1+ | 2005 03 17 | G96 | 1.0− | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.0 | | |
| 2002 11 07 | 704 | 0.6+ | 1.3+ | 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 09 16 | 644 | 0.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.1− | 1.1+ | 2005 04 12 | G96 | 0.4− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.0 | | |
| 2002 11 11 | 704 | 0.9− | 0.9+ | 2005 04 12 | G96 | 0.4− | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.0 | | |
| 2002 11 11 | 704 | 0.1+ | 1.0− | 2005 04 12 | G96 | 0.4− | 0.2+ | 2006 09 17 | 703 | (2.3− | 0.1−) | | |
| 2002 11 11 | 704 | 0.0 | 0.3− | 2005 04 17 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.9− | 0.6+ | | |
| 2002 11 11 | 704 | 1.0+ | 1.0− | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 703 | (0.4+ | 2.2+) | | |
| 2002 11 11 | 704 | 0.2− | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 0.0 | | |
| 2002 11 11 | 704 | 0.4+ | 1.1− | 2005 05 01 | 644 | 0.1− | 0.5+ | 2006 09 21 | 699 | 0.1− | 0.5+ | | |
| 2002 11 11 | 704 | 0.3− | 0.1− | 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 1.0− | 0.5+ | | |
| 2002 11 11 | 704 | 0.0 | 1.0+ | 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 09 21 | 699 | (1.5+ | 2.1−) | | |
| 2002 11 11 | 704 | 0.7− | 0.6+ | 2005 05 09 | 699 | 1.7+ | 0.8− | 2006 09 21 | 699 | 0.2− | 0.3+ | | |
| 2002 11 13 | 704 | 0.6− | 0.4− | 2005 05 09 | 699 | (2.1+ | 0.9+) | 2006 09 27 | 703 | 0.5− | 0.4− | | |
| 2002 11 13 | 704 | 0.8− | 0.8− | 2005 05 09 | 699 | (2.4+ | 0.5−) | 2006 09 27 | 703 | 0.2− | 0.1− | | |
| 2002 11 13 | 704 | 0.9− | 0.3+ | 2005 05 09 | 699 | 0.6+ | 1.8+ | 2006 09 27 | 703 | 0.1+ | 0.5− | | |
| 2002 11 13 | 704 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.1− | 1.1− | | |
| 2002 11 13 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 699 | 0.1− | 0.1+ | 2006 09 29 | 699 | 1.5− | 0.8+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 704 | 0.1+ | 0.5− | 2006 08 29 | 699 | 0.7+ | 0.9− | 2006 09 29 | 699 | 0.3− | 0.7+ |
| 2002 11 13 | 704 | 0.1+ | 0.7+ | 2006 08 29 | 699 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.3− | 0.3+ |
| 2002 11 13 | 704 | 1.0− | 0.1+ | 2006 08 31 | 704 | 0.9+ | 0.4+ | 2006 10 01 | 703 | 0.9+ | 0.1+ |
| 2002 11 23 | 644 | 0.7+ | 1.9+ | 2006 08 31 | 704 | 0.7+ | 0.3+ | 2006 10 01 | 703 | 0.9− | 0.5+ |
| 2002 11 23 | 644 | 0.8+ | 1.8+ | 2006 08 31 | 704 | 0.6+ | 0.7+ | 2006 10 01 | 703 | 0.7− | 0.3+ |
| 2002 11 23 | 644 | 0.5+ | 1.8+ | 2006 08 31 | 704 | 0.8+ | 0.2− | 2006 10 01 | 703 | 0.2+ | 1.0+ |

**(142951)∗ 2002 VU$_{73}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 313.76034 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23430459 | $\omega$ | 357.80718 | | +0.60315308 | | −0.76715923 | | |
| $a$ | 2.6058466 | $\Omega$ | 55.01529 | | +0.73580332 | | +0.42948381 | | |
| $e$ | 0.0482408 | $i$ | 15.45588 | | +0.30789584 | | +0.47645606 | | |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.1+ | 0.3− | 2002 11 11 | 704 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.2+ |
| 1998 11 16 | 691 | 0.0 | 0.3− | 2002 11 11 | 704 | 0.7− | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.3− |
| 1998 11 16 | 691 | 0.0 | 0.1− | 2004 01 17 | 644 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1998 11 19 | 699 | 0.1+ | 0.5+ | 2004 01 17 | 644 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1998 11 19 | 699 | 0.3+ | 1.0+ | 2004 01 17 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 1998 11 19 | 699 | 0.8+ | 0.7+ | 2004 02 14 | 704 | (0.1+ | 2.5+) | 2006 10 12 | 644 | 0.3− | 0.5− |
| 1998 11 25 | 691 | 0.0 | 0.6− | 2004 02 14 | 704 | (0.2− | 2.0+) | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 1998 11 25 | 691 | 0.1− | 0.4− | 2004 02 14 | 704 | 0.7− | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.5− |
| 1998 11 25 | 691 | 0.1+ | 0.2− | 2004 02 14 | 704 | (1.8− | 0.8−) | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.0 | 1.2+ | 2004 03 16 | 645 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.3+ |
| 2002 10 31 | 704 | 0.5+ | 0.2− | 2004 03 16 | 645 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2002 10 31 | 704 | 0.3+ | 0.2+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 10 31 | 704 | 0.7+ | 1.2+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 0.5+ | 2004 04 15 | 645 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.3− | 1.1+ | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.7+ |
| 2002 11 07 | 704 | 0.2− | 0.8+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 1.3− | 0.5− |
| 2002 11 07 | 704 | 1.2− | 0.9+ | 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.6+ | 0.2− |
| 2002 11 07 | 704 | 0.3+ | 0.9+ | 2006 09 27 | 703 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.8− | 0.5+ |
| 2002 11 11 | 704 | 0.7− | 0.1− | 2006 09 27 | 703 | 0.6− | 0.3− | | | | |

**(142952)∗ 2002 VF$_{75}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 328.05085 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23783541 | $\omega$ | 247.91672 | | +0.47257505 | | −0.88126840 | | |
| $a$ | 2.5799921 | $\Omega$ | 173.87073 | | +0.82855664 | | +0.44187722 | | |
| $e$ | 0.1525523 | $i$ | 3.34586 | | +0.30027773 | | +0.16766196 | | |
| $P$ | 4.14 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 691 | 0.1+ | 0.0 | 2002 12 07 | 704 | 0.5− | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2000 04 13 | 691 | 0.2− | 0.1+ | 2002 12 07 | 704 | 1.5− | 1.5− | 2006 10 21 | 703 | 0.2− | 0.7+ |
| 2000 04 13 | 691 | 0.0 | 0.2− | 2002 12 07 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 11 07 | 704 | 0.1+ | 0.7− | 2004 03 29 | 291 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.5− | 0.4− |
| 2002 11 07 | 704 | 0.4+ | 1.0− | 2004 03 29 | 291 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.5+ | 0.3− | 2004 03 29 | 291 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 11 07 | 704 | 0.3− | 0.1− | 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 0.5− | 0.6− | 2004 04 14 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2004 04 14 | 691 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.3− |
| 2002 11 11 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.7− | 1.1+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 11 11 | 704 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 11 11 | 704 | 0.4+ | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 11 11 | 704 | 0.0 | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.9− | 0.5+ |
| 2002 11 11 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2002 11 11 | 704 | 0.1+ | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2002 11 23 | 644 | 0.7+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 11 23 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.7+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2002 11 23 | 644 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2002 12 01 | 608 | 0.3− | 0.6− | 2006 10 19 | 644 | 0.3+ | 0.5+ | 2006 11 18 | G96 | 0.5+ | 0.2− |
| 2002 12 01 | 608 | 0.2+ | 0.6− | 2006 10 21 | 703 | 0.4− | 0.3+ | 2006 11 21 | 691 | 0.3− | 0.1− |
| 2002 12 01 | 608 | 0.2+ | 0.9− | 2006 10 21 | 703 | 0.5+ | 0.1+ | 2006 11 21 | 691 | 0.3− | 0.1+ |
| 2002 12 07 | 704 | (0.6− | 2.2+) | 2006 10 21 | G96 | 0.4− | 0.3− | 2006 11 21 | 691 | 0.2− | 0.1+ |

**(142953)∗ 2002 VQ$_{75}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 190.50227 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21517450 | $\omega$ | 72.32301 | | −0.99221622 | | −0.00235674 | | |
| $a$ | 2.7580926 | $\Omega$ | 107.40004 | | −0.04278006 | | −0.93251865 | | |
| $e$ | 0.1473565 | $i$ | 7.49706 | | +0.11694806 | | −0.36111414 | | |
| $P$ | 4.58 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 11 | 704 | 0.7− | 0.3+ | 2004 02 17 | 704 | 0.2+ | 0.2− | 2004 03 17 | 704 | 0.1+ | 0.3− |
| 2000 05 11 | 704 | 0.4+ | 1.2+ | 2004 02 17 | 703 | 0.0 | 0.6+ | 2004 03 17 | 704 | 0.5+ | 0.1+ |
| 2000 05 11 | 704 | 1.1+ | 1.6+ | 2004 02 17 | 703 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.0 | 0.3+ |
| 2002 11 07 | 704 | 0.3− | 1.1+ | 2004 02 17 | 703 | 0.3− | 0.9+ | 2004 03 23 | 704 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.1− | 1.1+ | 2004 02 17 | 703 | 0.5− | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.8− | 0.6+ | 2004 02 20 | 608 | 1.4+ | 0.9+ | 2004 03 23 | 704 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.9− | 1.3+ | 2004 02 20 | 608 | 1.2+ | 0.6+ | 2004 03 23 | 704 | 0.1+ | 0.2+ |
| 2002 11 11 | 704 | 1.1− | 0.6+ | 2004 02 20 | 608 | 1.3+ | 1.5+ | 2004 03 26 | 703 | 0.2− | 0.9+ |
| 2002 11 11 | 704 | 1.2− | 0.6+ | 2004 02 27 | 704 | 0.1− | 0.3+ | 2004 03 26 | 703 | 0.1+ | 0.2+ |
| 2002 11 11 | 704 | 0.2+ | 0.4− | 2004 02 27 | 704 | 0.4− | 0.8+ | 2004 03 26 | 703 | 0.4− | 0.2+ |
| 2002 11 23 | 644 | 0.7+ | 0.8+ | 2004 02 27 | 704 | 0.4− | 0.4− | 2004 03 26 | 703 | 0.2− | 0.0 |
| 2002 11 23 | 644 | 0.4+ | 0.8+ | 2004 02 27 | 704 | 0.1+ | 0.1− | 2004 04 13 | 703 | 0.5+ | 1.1+ |
| 2002 11 23 | 644 | 0.6+ | 0.6+ | 2004 02 27 | 704 | 0.1− | 0.0 | 2004 04 13 | 703 | 0.5+ | 0.3+ |
| 2002 12 07 | 704 | 0.4− | 0.5+ | 2004 03 14 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 703 | (0.3+ | 1.5+) |
| 2002 12 07 | 704 | 0.1+ | 0.5− | 2004 03 14 | 704 | 0.3+ | 0.1+ | 2004 04 13 | 703 | 0.0 | 0.2− |
| 2002 12 07 | 704 | 0.5+ | 0.0 | 2004 03 14 | 704 | 0.2+ | 0.0 | 2005 06 16 | 691 | 0.1+ | 0.2+ |
| 2002 12 07 | 704 | 0.6+ | 1.0+ | 2004 03 14 | 704 | 0.4+ | 0.3+ | 2005 06 16 | 691 | 0.0 | 0.4+ |
| 2002 12 10 | 621 | 0.5+ | 0.0 | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2005 06 16 | 691 | 0.1− | 0.2+ |
| 2002 12 10 | 621 | 1.1− | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.8+ | 2005 06 26 | G96 | 0.5+ | 1.2+ |
| 2003 12 22 | 704 | 0.7+ | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.1− | 2005 06 26 | G96 | 0.2− | 0.7+ |
| 2003 12 22 | 704 | 0.3− | 0.8− | 2004 03 15 | 704 | 0.8+ | 0.4+ | 2005 06 26 | G96 | 0.2− | 0.9+ |
| 2003 12 22 | 704 | 0.6− | 0.6+ | 2004 03 15 | 704 | 0.2− | 0.1+ | 2005 06 26 | G96 | 0.5− | 1.0+ |
| 2003 12 22 | 704 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.3+ | 0.2− | 2005 06 28 | G96 | 0.7− | 1.0+ |
| 2003 12 25 | 691 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.3− | 2005 06 28 | G96 | 0.7+ | 0.2− |
| 2003 12 25 | 691 | 0.3− | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.0 | 2005 06 28 | G96 | 0.7− | 0.4− |
| 2003 12 25 | 691 | 0.2− | 0.0 | 2004 03 15 | 704 | 0.2− | 0.4− | 2005 06 28 | G96 | 0.0 | 0.0 |
| 2003 12 28 | 704 | 0.2+ | 0.5+ | 2004 03 15 | 704 | (1.7+ | 0.2−) | 2006 09 18 | 703 | 0.2+ | 1.0+ |
| 2003 12 28 | 704 | 0.8+ | 0.4+ | 2004 03 15 | 106 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.6− | 0.2+ |
| 2003 12 28 | 704 | 0.3+ | 0.9+ | 2004 03 15 | 106 | 0.5− | 0.5− | 2006 09 18 | 703 | 0.9− | 1.2− |
| 2003 12 28 | 704 | 0.4+ | 0.9+ | 2004 03 15 | 106 | 0.5− | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.5+ |
| 2004 02 02 | 699 | 0.6− | 0.0 | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 0.4− | 1.5+ |
| 2004 02 02 | 699 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.6+ |
| 2004 02 02 | 699 | 1.2− | 0.6+ | 2004 03 16 | 704 | 0.1+ | 0.4+ | 2006 10 02 | 703 | 0.2+ | 0.8+ |
| 2004 02 02 | 699 | 0.8+ | 0.4− | 2004 03 16 | 704 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.0 | 0.1+ |
| 2004 02 17 | 704 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | (2.4− | 0.7+) |
| 2004 02 17 | 704 | 0.4+ | 0.3− | 2004 03 17 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 1.4+ |
| 2004 02 17 | 704 | 0.2− | 0.2− | 2004 03 17 | 704 | 0.1+ | 0.3− | 2006 10 17 | 703 | (1.6+ | 0.8+) |
| 2004 02 17 | 704 | 0.7− | 0.1+ | 2004 03 17 | 704 | 0.3+ | 0.1− | 2006 10 17 | 703 | 1.1− | 1.3+ |

**(142954)∗ 2002 VD$_{77}$ = 2004 FA$_{45}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61589)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 245.44338 | | (2000.0) | | | |
| $n$ | 0.29740059 | $\omega$ | 131.13344 | | −0.64899771 | +0.75751799 |
| $a$ | 2.2228398 | $\Omega$ | 98.25777 | | −0.71761314 | −0.57876357 |
| $e$ | 0.1107117 | $i$ | 4.08440 | | −0.25265263 | −0.30199211 |
| $P$ | 3.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.4− | 0.5+ | 2004 04 16 | 704 | 0.3− | 0.1+ | 2004 06 18 | 704 | 0.8+ | 0.7+ |
| 2002 11 07 | 704 | 0.4− | 0.2+ | 2004 04 16 | 704 | 0.4− | 0.5+ | 2005 09 03 | 644 | 0.3− | 1.0+ |
| 2002 11 07 | 704 | 0.4+ | 1.0+ | 2004 04 16 | 704 | 0.9− | 0.8+ | 2005 09 03 | 644 | 0.2− | 0.6+ |
| 2002 11 11 | 704 | 0.3− | 0.0 | 2004 04 16 | 704 | 0.5− | 0.5+ | 2005 09 03 | 644 | 0.1+ | 0.7+ |
| 2002 11 11 | 704 | 0.5− | 0.5+ | 2004 04 20 | 704 | 1.3+ | 0.4− | 2005 09 24 | 703 | 1.0+ | 1.2− |
| 2002 11 11 | 704 | 0.2+ | 1.3+ | 2004 04 20 | 704 | 1.0+ | 0.9− | 2005 09 24 | 703 | 0.5− | 0.1− |
| 2002 12 10 | 644 | 0.1− | 0.9+ | 2004 04 20 | 703 | 0.6+ | 0.4− | 2005 09 24 | 703 | 1.0− | 0.3+ |
| 2002 12 10 | 644 | 0.1+ | 0.4+ | 2004 04 20 | 704 | 1.2+ | 0.4− | 2005 10 08 | 703 | (1.7+ | 0.6−) |
| 2002 12 10 | 644 | 0.2− | 0.8+ | 2004 04 20 | 703 | 0.2+ | 0.4− | 2005 10 08 | 703 | 1.0− | 0.5− |
| 2004 02 16 | 703 | 0.5+ | 0.1+ | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2005 10 08 | 703 | (1.8+ | 0.5−) |
| 2004 02 16 | 703 | 0.5− | 1.5+ | 2004 04 20 | 703 | 0.2+ | 0.4− | 2005 10 08 | 703 | 0.2− | 0.2+ |
| 2004 02 16 | 703 | 0.1− | 0.6+ | 2004 04 20 | 704 | 1.0+ | 0.2− | 2005 10 22 | 703 | 0.9− | 0.0 |
| 2004 02 16 | 703 | (2.5− | 3.3+) | 2004 04 20 | 703 | 1.3+ | 0.4+ | 2005 10 22 | 703 | 0.3− | 1.1− |
| 2004 02 19 | 704 | 0.2− | 0.7+ | 2004 04 22 | 704 | 0.3+ | 0.7− | 2005 10 22 | 703 | 0.3+ | 0.1− |
| 2004 02 19 | 704 | 0.3+ | 0.6+ | 2004 04 22 | 704 | 0.1− | 0.4− | 2005 10 22 | 703 | (0.7− | 1.6+) |
| 2004 02 19 | 704 | 0.5+ | 0.5+ | 2004 04 22 | 704 | 0.5+ | 0.4+ | 2005 10 27 | 704 | 0.1− | 1.3+ |
| 2004 03 16 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 704 | 0.1+ | 0.0 | 2005 10 27 | 704 | (0.1+ | 1.6+) |
| 2004 03 16 | 704 | 0.7+ | 0.8+ | 2004 04 22 | 704 | 0.4+ | 0.2− | 2005 10 27 | 704 | 0.6+ | 0.4− |
| 2004 03 16 | 704 | 0.8− | 0.4− | 2004 05 08 | 703 | 0.1+ | 0.4− | 2005 10 27 | 704 | 0.8+ | 0.8+ |
| 2004 03 16 | 704 | 0.7− | 0.1− | 2004 05 08 | 703 | 0.4+ | 0.5− | 2005 10 28 | 703 | 0.5+ | 0.7+ |
| 2004 03 20 | 704 | 0.2− | 0.3+ | 2004 05 08 | 703 | 0.6− | 0.0 | 2005 10 28 | 703 | 0.2− | 0.2+ |
| 2004 03 20 | 704 | 0.2− | 0.9+ | 2004 05 08 | 703 | 0.1− | 0.3− | 2005 10 28 | 703 | 0.7− | 1.1+ |
| 2004 03 20 | 704 | 0.4− | 0.7+ | 2004 05 14 | 608 | 0.3+ | 0.9+ | 2005 10 28 | 703 | 0.1− | 1.0+ |
| 2004 03 20 | 704 | 0.2+ | 0.9+ | 2004 05 14 | 608 | 0.4+ | 0.8− | 2005 11 01 | 703 | 0.5− | 0.7+ |
| 2004 03 20 | 704 | 0.2− | 1.4+ | 2004 05 14 | 608 | 0.1+ | 0.4− | 2005 11 01 | 703 | (0.1+ | 1.6+) |
| 2004 03 22 | 704 | 0.2− | 0.4+ | 2004 05 17 | 185 | 0.7− | 0.1− | 2005 11 01 | 703 | 0.5− | 0.8+ |
| 2004 03 22 | 704 | 0.1+ | 0.5+ | 2004 05 17 | 185 | 0.7− | 0.2+ | 2005 11 01 | 703 | (0.2+ | 2.3+) |
| 2004 03 22 | 704 | 0.1− | 0.4+ | 2004 05 17 | 185 | 0.7− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.6− |
| 2004 03 22 | 699 | 0.1+ | 0.3− | 2004 06 11 | 699 | 0.1− | 0.8+ | 2006 10 22 | 691 | 0.8+ | 0.1+ |
| 2004 03 22 | 704 | 0.2− | 0.2+ | 2004 06 11 | 699 | 0.2− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.4− |
| 2004 03 22 | 704 | 0.2+ | 0.1+ | 2004 06 11 | 699 | 0.9− | 0.2− | 2006 10 27 | 691 | 0.3− | 0.3+ |
| 2004 03 22 | 699 | 0.2+ | 0.4− | 2004 06 11 | 699 | 0.5− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.4+ |
| 2004 03 22 | 699 | 0.9− | 0.7− | 2004 06 12 | 703 | 0.8+ | 0.3− | 2006 10 27 | 691 | 0.4− | 0.1− |
| 2004 03 22 | 699 | 1.1− | 0.1− | 2004 06 12 | 703 | 0.2+ | 1.2+ | 2006 11 24 | G96 | 0.2− | 1.1− |
| 2004 04 09 | E12 | 0.7− | 0.3− | 2004 06 12 | 703 | 0.6+ | 1.2+ | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2004 04 09 | E12 | 0.5− | 0.1− | 2004 06 12 | 703 | 1.4+ | 1.2+ | 2006 11 24 | G96 | 0.3− | 0.6− |
| 2004 04 09 | E12 | 0.2+ | 0.3+ | 2004 06 18 | 704 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.5− | 0.2− |
| 2004 04 09 | E12 | 0.6− | 0.2− | 2004 06 18 | 704 | 0.5+ | 0.6+ | | | | |
| 2004 04 16 | 704 | 0.1+ | 0.5+ | 2004 06 18 | 704 | (1.7+ | 2.1+) | | | | |

**(142955)∗ 2002 VQ$_{77}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.00902 | | (2000.0) | | | |
| $n$ | 0.23986369 | $\omega$ | 280.89561 | | +0.94870973 | −0.29962177 |
| $a$ | 2.5654273 | $\Omega$ | 96.59759 | | +0.31491989 | +0.86751850 |
| $e$ | 0.1579793 | $i$ | 5.82854 | | +0.02784440 | +0.39703707 |
| $P$ | 4.11 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.6− | 0.1− | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2002 10 30 | 608 | 0.6− | 0.0 | 2004 03 17 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 10 30 | 608 | 0.5− | 0.3+ | 2004 03 17 | 691 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2004 03 17 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 1.2+ | 2006 11 13 | 703 | 1.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.0 |
| 2002 11 07 | 704 | (1.6+ | 0.9+) | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.6+ | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.7+ | 2006 11 13 | 703 | 0.3− | 0.4+ |
| 2002 11 11 | 704 | 0.5+ | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 704 | 0.6+ | 1.2+ |
| 2002 11 11 | 704 | 0.2+ | 0.1+ | 2004 03 22 | 704 | 0.9− | 0.6− | 2006 11 14 | 704 | (2.3− | 1.2+) |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.4+ | 1.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.4− | 2004 03 22 | 704 | 0.5− | 0.1+ | 2006 11 14 | 704 | (2.2− | 1.2+) |
| 2002 11 11 | 704 | 0.6+ | 0.1− | 2004 03 25 | 704 | 0.9− | 0.3+ | 2006 11 14 | 704 | (2.9− | 0.5+) |
| 2002 11 23 | 644 | 0.2+ | 0.6− | 2004 03 25 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.8− | 1.3+ |
| 2002 11 23 | 644 | 0.3− | 0.7− | 2004 03 25 | 704 | (2.8+ | 0.5+) | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2002 11 23 | 644 | 0.1− | 0.8− | 2004 03 25 | 704 | 0.7+ | 1.2+ | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2002 12 01 | 704 | 0.1− | 0.3− | 2005 06 04 | 704 | 0.1− | 1.0+ | 2006 11 17 | 704 | 0.3− | 0.2+ |
| 2002 12 01 | 704 | 0.3− | 0.2− | 2005 06 04 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2002 12 01 | 704 | 0.4− | 0.7+ | 2005 06 04 | 704 | 0.3− | 0.4− | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2002 12 01 | 704 | 0.5− | 0.1− | 2005 06 04 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 2002 12 01 | 704 | 0.3− | 0.0 | 2006 08 31 | 704 | 0.7− | 1.2+ | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2002 12 10 | 644 | 0.2+ | 0.1+ | 2006 08 31 | 704 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.5− | 0.4+ |
| 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 08 31 | 704 | 0.4+ | 1.0+ | 2006 11 19 | 703 | 0.4− | 0.4+ |
| 2002 12 10 | 644 | 0.1+ | 0.3+ | 2006 08 31 | 704 | 0.2− | 0.7− | 2006 11 19 | 703 | 0.1− | 0.4+ |
| 2002 12 11 | 704 | 0.5− | 1.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 19 | 703 | 1.0− | 0.3+ |
| 2002 12 11 | 704 | 1.2− | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.9+ | 0.9− |
| 2002 12 11 | 704 | 1.2− | 1.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | (0.8+ | 2.5−) |
| 2003 01 07 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2003 01 07 | 704 | 1.0+ | 0.9− | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 20 | 704 | 1.0− | 0.4+ |
| 2003 01 07 | 704 | 0.8+ | 0.9− | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2003 01 27 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.1− | 2006 11 20 | 704 | (1.6+ | 0.7−) |
| 2003 01 27 | 704 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.1− | 0.5− | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2003 01 27 | 704 | 1.2+ | 1.1+ | 2006 10 22 | 703 | 0.6− | 0.8− | 2006 11 20 | 704 | 0.7− | 0.7− |
| 2003 01 27 | 704 | (0.7+ | 2.2+) | 2006 10 22 | 703 | 0.6− | 0.2− | 2006 11 20 | 704 | 1.2− | 0.3− |
| 2004 02 25 | 704 | 1.2+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.8− | 2006 11 20 | 704 | 1.1+ | 1.4− |
| 2004 02 25 | 704 | 0.4+ | 0.7− | 2006 10 31 | 704 | 0.5+ | 0.6− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2004 02 25 | 704 | 1.3+ | 0.6− | 2006 10 31 | 704 | 1.2+ | 0.4− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2004 02 25 | 704 | (4.6+ | 3.1+) | 2006 10 31 | 704 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2004 02 25 | 704 | 0.7+ | 0.2− | 2006 10 31 | 704 | 0.9+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2004 02 29 | 691 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2+ | | | | |
| 2004 02 29 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1− | | | | |

**(142956)∗ 2002 VT$_{77}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.28998 | | (2000.0) | | | |
| $n$ | 0.23289245 | $\omega$ | 250.93102 | | +0.91542353 | −0.39752647 |
| $a$ | 2.6163697 | $\Omega$ | 132.43762 | | +0.39388418 | +0.85258220 |
| $e$ | 0.1303452 | $i$ | 4.89912 | | +0.08279494 | +0.33922897 |
| $P$ | 4.23 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.5+ | 1.0+ | 2004 03 19 | 291 | 0.5+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 644 | 0.7+ | 0.5+ | 2004 03 19 | 291 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.4+ | 0.2− |
| 2002 10 31 | 644 | 0.6+ | 0.6+ | 2004 03 28 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | 0.5+ | 1.1− | 2004 03 28 | 691 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.4+ | 0.2− | 2004 03 28 | 691 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.5+ | 0.2+ | 2005 07 11 | G96 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2005 07 11 | G96 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.9− | 0.2+ | 2005 07 11 | G96 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 11 11 | 704 | 1.0+ | 0.7+ | 2005 07 11 | G96 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.8− |
| 2002 11 11 | 704 | 1.0+ | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 2002 11 11 | 704 | 0.1+ | 0.2− | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 1.3− | 0.2− |
| 2002 11 11 | 704 | 0.2+ | 0.4− | 2006 09 16 | 704 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2002 11 15 | 644 | 0.1− | 0.1− | 2006 09 16 | 704 | 0.9+ | 1.4+ | 2006 10 18 | 106 | 0.4+ | 0.1+ |
| 2002 11 15 | 644 | 0.2− | 0.0 | 2006 09 16 | 704 | 0.2− | 0.9+ | 2006 10 18 | 106 | 0.6+ | 0.6+ |
| 2002 11 15 | 644 | 0.1− | 0.0 | 2006 09 16 | 704 | 0.1− | 0.4+ | 2006 10 18 | 106 | 0.4− | 0.6− |
| 2002 11 23 | 644 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 18 | 106 | 0.3− | 0.1− |
| 2002 11 23 | 644 | 0.0 | 0.3− | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2002 11 23 | 644 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 12 01 | 704 | 0.0 | 0.8− | 2006 09 21 | 699 | 0.9− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 12 01 | 704 | 0.0 | 0.8− | 2006 09 21 | 699 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.6− | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 12 01 | 704 | 0.6− | 0.0 | 2006 09 21 | 699 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 01 | 704 | 1.1− | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.6+ | 0.1+ |
| 2002 12 02 | 704 | 0.6+ | 0.2− | 2006 09 25 | 699 | 0.7+ | 1.1+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 12 02 | 704 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.0 | 1.1− | 2006 10 22 | 703 | (0.1+ | 1.9+) |
| 2002 12 02 | 704 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.0 | 0.7+ |
| 2002 12 02 | 704 | 0.1− | 0.4− | 2006 09 26 | 704 | 1.1− | 0.8+ | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2002 12 02 | 704 | 1.0− | 0.6− | 2006 09 26 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.6+ | 0.0 |
| 2002 12 02 | 608 | 0.4− | 0.1− | 2006 09 26 | 704 | 1.3+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.7+ |
| 2002 12 02 | 608 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.6+ | 0.2+ |
| 2002 12 02 | 608 | 0.3− | 0.4− | 2006 09 29 | 699 | 1.1− | 0.0 | 2006 10 27 | 704 | (1.6+ | 1.7+) |
| 2002 12 11 | 704 | 1.3+ | 0.6− | 2006 09 29 | 699 | 0.2− | 0.4+ | 2006 10 27 | 704 | 0.2+ | 1.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.6− | 2006 09 29 | 699 | 0.4− | 0.5− | 2006 10 27 | 704 | 1.1− | 0.4+ |
| 2002 12 11 | 704 | 0.6+ | 1.0− | 2006 09 29 | 699 | 0.7− | 0.1+ | 2006 10 27 | 704 | 0.5+ | 1.2− |
| 2004 02 23 | 704 | 1.1+ | 1.1+ | 2006 09 30 | 703 | 0.4− | 0.8− | 2006 11 10 | 644 | 0.4+ | 0.2− |
| 2004 02 23 | 704 | (1.0+ | 2.0+) | 2006 09 30 | 703 | 0.0 | 0.3+ | 2006 11 10 | 704 | 0.3− | 0.2− |
| 2004 02 23 | 704 | 0.9+ | 0.7+ | 2006 09 30 | 703 | 0.9− | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.3− |
| 2004 02 23 | 704 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.9+ | 2006 11 10 | 704 | 0.5− | 0.0 |
| 2004 02 23 | 704 | (1.8+ | 0.3+) | 2006 10 01 | 704 | 0.7+ | 0.4+ | 2006 11 10 | 704 | 0.6− | 0.9− |
| 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2004 02 29 | 691 | 1.1− | 0.8+ | 2006 10 01 | 704 | 0.0 | 1.1+ | 2006 11 10 | 704 | 0.2− | 0.5+ |
| 2004 02 29 | 691 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.8+ | 2006 11 10 | 704 | (2.2− | 0.7+) |
| 2004 03 19 | 291 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− | | | | |

**(142957)∗ 2002 VX$_{77}$ = 2005 GU$_{176}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75793)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.79062 | | (2000.0) | | | |
| $n$ | 0.23394430 | $\omega$ | 202.01928 | | +0.87360323 | +0.48000993 |
| $a$ | 2.6085214 | $\Omega$ | 129.04392 | | −0.42970165 | +0.83809231 |
| $e$ | 0.2027886 | $i$ | 5.91587 | | −0.22841606 | +0.25921372 |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.8− | 1.4+ | 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 1.2+ | 0.8+ |
| 2002 11 07 | 704 | (1.6− | 0.2+) | 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.8+ |
| 2002 11 07 | 704 | 0.8− | 1.2+ | 2005 05 15 | 644 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.2− |
| 2002 11 07 | 704 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.6− | 0.2− | 2006 10 03 | 704 | 0.1− | 0.4+ |
| 2002 11 11 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.7− | 0.4+ | 2006 10 03 | 704 | 0.2+ | 0.2+ |
| 2002 11 11 | 704 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 10 03 | 704 | 0.5− | 0.6+ |
| 2002 11 11 | 704 | 0.0 | 1.1+ | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 10 03 | 704 | 0.1− | 0.5+ |
| 2002 11 11 | 704 | 0.2+ | 0.9+ | 2006 09 21 | 699 | 1.2− | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2002 11 11 | 704 | 0.3+ | 1.0+ | 2006 09 21 | 699 | 0.1− | 0.6− | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2002 11 24 | 644 | 0.4− | 0.4+ | 2006 09 25 | 699 | 1.1+ | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2004 01 30 | 691 | 0.1− | 0.2− | 2006 09 25 | 699 | (1.7+ | 0.2+) | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 26 | 704 | (2.1+ | 0.0 ) | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2005 04 02 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.6− | 1.1− | 2006 10 22 | 703 | (1.8− | 1.7+) |
| 2005 04 02 | 691 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.9+ | 0.3− | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2005 04 02 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.7+ | 2006 10 22 | 703 | 1.1− | 0.9+ |
| 2005 04 14 | 691 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.0 | 2006 10 28 | 703 | 1.1+ | 0.6+ |
| 2005 04 14 | 691 | 0.2− | 0.2+ | 2006 09 26 | 703 | (2.1− | 0.2+) | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2005 04 18 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.3− | 2006 10 28 | 703 | 0.3− | 0.5+ |
| 2005 04 18 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.7+ | 0.4+ | 2006 10 28 | 703 | (1.5+ | 1.6+) |
| 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 11 16 | 703 | 0.4+ | 0.3+ |
| 2005 05 15 | 644 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.0 | 0.5− | 2006 11 16 | 703 | 0.0 | 0.1− |
| 2005 05 15 | 644 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.5− |
| 2005 05 15 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.8+ | 0.0 | 2006 11 16 | 703 | 0.1− | 0.2− |

**(142958)∗ 2002 VA$_{78}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.21521 | | (2000.0) | | | |
| $n$ | 0.20852575 | $\omega$ | 230.63116 | | +0.63093566 | −0.77583501 |
| $a$ | 2.8164124 | $\Omega$ | 180.25112 | | +0.74094916 | +0.60274637 |
| $e$ | 0.1769072 | $i$ | 6.21422 | | +0.23003159 | +0.18648550 |
| $P$ | 4.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | (2.0+ | 0.2−) | 2004 02 26 | 704 | 1.3+ | 0.3− | 2005 06 04 | 691 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | 0.7+ | 0.6− | 2004 02 26 | 704 | 1.4− | 1.5+ | 2005 06 04 | 691 | 0.2− | 0.2+ |
| 2002 10 09 | 704 | 0.4+ | 0.8− | 2004 03 15 | 691 | 0.0 | 0.1− | 2005 06 09 | 691 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.3+ | 0.6+ | 2004 03 15 | 691 | 0.0 | 0.3− | 2005 06 09 | 691 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.7+ | 0.3− | 2004 03 15 | 691 | 0.1− | 0.2− | 2005 06 09 | 691 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 0.7− | 1.0+ | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 07 21 | 703 | (1.7− | 0.7−) |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 07 21 | 703 | 0.8− | 0.6+ |
| 2002 11 11 | 704 | 0.1− | 0.7+ | 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 07 21 | 703 | 1.5− | 0.7− |
| 2002 11 11 | 704 | 0.5− | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2006 07 21 | 703 | 0.0 | 0.8+ |
| 2002 11 11 | 704 | 0.1− | 0.6+ | 2004 03 23 | 704 | 1.0+ | 0.2+ | 2006 08 14 | 644 | 0.0 | 0.7+ |
| 2002 11 11 | 704 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.7− | 0.6+ | 2006 08 14 | 644 | 0.1− | 0.7+ |
| 2002 11 14 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 291 | 0.1− | 0.5+ | 2006 08 14 | 644 | 0.4− | 0.7+ |
| 2002 11 14 | 644 | 0.5+ | 0.6− | 2004 03 27 | 291 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.5+ | 0.8+ |
| 2002 11 14 | 644 | 0.1− | 0.1+ | 2004 03 27 | 291 | 0.3− | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.7+ |
| 2002 12 01 | 704 | 0.4+ | 0.5+ | 2004 04 24 | 691 | 0.5+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.5+ |
| 2002 12 01 | 704 | 0.1− | 0.8+ | 2004 04 24 | 691 | 0.0 | 0.6+ | 2006 08 30 | 704 | 0.2+ | 0.1+ |
| 2002 12 01 | 704 | 0.4+ | 0.1− | 2004 04 24 | 691 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.3− | 0.3+ |
| 2002 12 02 | 608 | (1.6− | 1.0+) | 2005 05 16 | G96 | 0.6− | 0.5− | 2006 08 30 | 704 | 0.8+ | 0.0 |
| 2002 12 02 | 608 | 1.3− | 1.4+ | 2005 05 16 | G96 | 0.5− | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2002 12 02 | 608 | 1.2− | 1.0+ | 2005 05 16 | G96 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.6+ |
| 2004 02 26 | 704 | 0.5+ | 0.8− | 2005 05 16 | G96 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2004 02 26 | 704 | (1.0+ | 1.9+) | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.0 |

**(142959)∗ 2002 VP$_{78}$ = 1998 YK$_{28}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41226)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.22848 | | (2000.0) | | | |
| $n$ | 0.23810096 | $\omega$ | 20.93885 | | −0.32124629 | −0.93952199 |
| $a$ | 2.5780734 | $\Omega$ | 87.95260 | | +0.85108751 | −0.34141696 |
| $e$ | 0.1295746 | $i$ | 6.82378 | | +0.41527205 | −0.02707200 |
| $P$ | 4.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 704 | (0.6+ | 3.0−) | 2002 12 27 | 644 | 0.1+ | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.5− |
| 1998 12 16 | 704 | (0.3+ | 2.7−) | 2004 03 14 | 644 | 0.1+ | 0.0 | 2004 04 19 | 704 | (0.6+ | 1.6−) |
| 1998 12 16 | 704 | (0.5+ | 3.2−) | 2004 03 14 | 644 | 0.1+ | 0.4− | 2004 04 19 | 704 | 0.5+ | 0.3− |
| 1998 12 16 | 704 | (0.9− | 3.2−) | 2004 03 14 | 644 | 0.1+ | 0.2+ | 2004 04 19 | 704 | (2.1+ | 0.8+) |
| 1998 12 22 | 704 | 0.8+ | 0.3− | 2004 03 15 | 691 | 0.2+ | 0.0 | 2004 04 19 | 704 | 1.0+ | 0.2− |
| 1998 12 22 | 704 | 0.4+ | 0.1+ | 2004 03 15 | 691 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.1− |
| 1998 12 22 | 704 | 0.5− | 0.2− | 2004 03 15 | 691 | 0.0 | 0.2− | 2004 04 19 | 704 | 0.2− | 0.6− |
| 2000 05 05 | 704 | 0.1+ | 0.0 | 2004 03 20 | 704 | 1.3+ | 0.4− | 2004 04 23 | 691 | 0.2− | 0.3+ |
| 2000 05 05 | 704 | 1.4− | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.0 | 2004 04 23 | 691 | 0.3− | 0.4+ |
| 2000 05 05 | 704 | 1.2+ | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.1− | 2004 04 23 | 691 | 0.3− | 0.3+ |
| 2000 05 05 | 704 | 0.1+ | 0.6+ | 2004 03 20 | 704 | 0.7+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2000 05 05 | 704 | 0.4+ | 0.0 | 2004 03 20 | 704 | (1.3+ | 2.4+) | 2006 09 30 | 703 | 0.4− | 0.4− |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2004 03 31 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 2002 11 07 | 704 | 0.9− | 0.3+ | 2004 03 31 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.8+ | 0.8− |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2004 03 31 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.7− | 0.1+ | 2004 04 15 | 704 | (1.8− | 1.1−) | 2006 10 22 | 703 | 0.4− | 0.7+ |
| 2002 11 07 | 704 | 0.6− | 0.0 | 2004 04 15 | 704 | 0.7− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2002 11 11 | 704 | (2.4+ | 0.9−) | 2004 04 15 | 704 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | (1.5+ | 0.9+) | 2004 04 15 | 704 | 1.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2002 11 11 | 704 | 0.7+ | 0.9+ | 2004 04 15 | 704 | 0.3− | 0.9− | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 11 | 704 | 1.0+ | 0.6− | 2004 04 15 | 704 | 0.9− | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 16 | 644 | 0.0 | 1.1+ | 2004 04 15 | 704 | 0.4− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.3+ | | |
| 2002 11 16 | 644 | 0.8− | 0.0 | 2004 04 15 | 704 | 0.5− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.0 | | |
| 2002 11 16 | 644 | 0.5+ | 1.1+ | 2004 04 15 | 704 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 23 | 644 | 0.7+ | 0.1− | 2004 04 16 | 704 | 0.6+ | 0.4− | 2006 11 13 | 703 | 1.0+ | 0.5− | | |
| 2002 11 23 | 644 | 0.6+ | 0.0 | 2004 04 16 | 704 | 0.5− | 1.0− | 2006 11 13 | 703 | 0.7− | 0.8− | | |
| 2002 11 23 | 644 | 1.1+ | 0.8− | 2004 04 16 | 704 | 0.1− | 0.3− | 2006 11 13 | 703 | 1.0− | 0.2+ | | |
| 2002 11 28 | 699 | 0.7− | 0.0 | 2004 04 16 | 704 | 0.9+ | 0.3+ | 2006 11 13 | 703 | 0.5+ | 0.4− | | |
| 2002 11 28 | 699 | 0.1+ | 0.5+ | 2004 04 16 | 704 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.0 | 1.3+ | | |
| 2002 11 28 | 699 | 0.6− | 0.6+ | 2004 04 16 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 704 | 0.9+ | 0.6+ | | |
| 2002 11 28 | 699 | 0.3− | 0.2+ | 2004 04 16 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 704 | (0.5+ | 1.7+) | | |
| 2002 12 01 | 704 | 0.4− | 0.5− | 2004 04 16 | 704 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.3+ | | |
| 2002 12 01 | 704 | 0.6− | 0.6− | 2004 04 16 | 704 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 1.0+ | | |
| 2002 12 01 | 704 | 0.5− | 1.0− | 2004 04 16 | 704 | 0.3− | 0.8+ | 2006 11 20 | 704 | 0.8+ | 0.0 | | |
| 2002 12 01 | 704 | 0.7− | 0.1− | 2004 04 17 | 699 | (2.1− | 1.0+) | 2006 11 20 | 704 | 0.9− | 1.1− | | |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2004 04 17 | 699 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.7− | | |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2004 04 17 | 699 | (1.7− | 0.7−) | 2006 11 23 | G96 | 0.3+ | 0.3− | | |
| 2002 12 10 | 644 | 0.0 | 0.3+ | 2004 04 17 | 699 | 0.4+ | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2002 12 27 | 644 | 0.2+ | 0.2− | 2004 04 19 | 704 | 0.6+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2002 12 27 | 644 | 0.1+ | 0.3− | 2004 04 19 | 704 | 1.4+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.3− | | |

**(142960)∗ 2002 VJ$_{79}$ = 2000 FG$_{72}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 38142)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.07639 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23321867 | $\omega$ | 191.68732 | | +0.99672110 | −0.08039168 | |
| $a$ | 2.6139293 | $\Omega$ | 172.90454 | | +0.07892837 | +0.94101514 | |
| $e$ | 0.2211512 | $i$ | 4.26105 | | +0.01781480 | +0.32867565 | |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.0 | | |
| 2000 03 25 | 691 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.2− | | |
| 2000 03 25 | 691 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.1+ | | |
| 2000 03 25 | 691 | 0.6− | 0.4− | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.2+ | 0.4− | | |
| 2000 04 03 | 691 | 0.4+ | 0.3+ | 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.5+ | | |
| 2000 04 03 | 691 | 0.8+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.2− | | |
| 2000 04 03 | 691 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.1− | 0.4− | 2006 09 27 | 704 | 0.1+ | 0.4+ | | |
| 2002 10 30 | 608 | 0.7− | 0.6− | 2006 07 22 | G96 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.3− | 0.6+ | | |
| 2002 10 30 | 608 | 0.3− | 0.1− | 2006 08 06 | 699 | 1.1− | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.9+ | | |
| 2002 10 30 | 608 | 0.2− | 0.5− | 2006 08 06 | 699 | 0.5+ | 0.2− | 2006 10 01 | 704 | 0.4− | 0.6+ | | |
| 2002 11 07 | 704 | 0.2− | 0.3− | 2006 08 06 | 699 | 0.3+ | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.7+ | | |
| 2002 11 07 | 704 | 0.2− | 0.3− | 2006 08 06 | 699 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.1− | | |
| 2002 11 07 | 704 | 0.7+ | 0.2− | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.1− | | |
| 2002 11 07 | 704 | 0.5+ | 0.6− | 2006 08 18 | 644 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.0 | | |
| 2002 11 07 | 704 | 0.5+ | 0.5− | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.3− | | |
| 2002 11 11 | 704 | 0.2− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 2002 11 11 | 704 | 0.4+ | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 11 | 704 | 0.3+ | 0.2− | 2006 09 14 | 691 | (2.1+ | 2.0−) | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2002 11 14 | 704 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 11 14 | 704 | 0.6− | 0.7+ | 2006 09 14 | 703 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.2− | 0.5+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 22 | 704 | 0.1− | 0.4+ | | |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.8− | 0.2+ | | |
| 2002 11 14 | 704 | 0.6− | 0.8+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 22 | 704 | 1.3− | 0.9+ | | |
| 2002 11 14 | 704 | 0.2− | 0.7+ | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 704 | 0.6− | 0.6+ | | |
| 2002 11 14 | 704 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.6− | 0.4+ | 2006 10 22 | 704 | 0.1+ | 0.5+ | | |
| 2002 11 28 | 699 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.6+ | | |
| 2002 11 28 | 699 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.1− | | |
| 2002 11 28 | 699 | 0.4− | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.4+ | 0.2− | | |
| 2002 11 28 | 699 | 0.3− | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2002 12 01 | 704 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.0 | 0.2− | | |
| 2002 12 01 | 704 | 0.3+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.0 | 0.2− | | |
| 2002 12 01 | 704 | 0.7+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2002 12 01 | 704 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3− | | |
| 2002 12 01 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 1.4− | 1.3+ | 2006 10 27 | 704 | 1.0+ | 1.4+ | | |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 09 20 | 704 | 1.1+ | 0.3+ | 2006 10 27 | 704 | 0.9+ | 0.8+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 27 | 704 | (0.6+ | 1.8+) | | |
| 2002 12 11 | 704 | 1.2+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 27 | 704 | 0.9− | 0.2+ | | |
| 2005 05 13 | 691 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.5+ | 0.1− | | |
| 2005 05 13 | 691 | 0.0 | 0.4+ | 2006 09 20 | 608 | (2.7+ | 3.7+) | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2005 05 13 | 691 | 0.1− | 0.5+ | 2006 09 20 | 608 | (2.0+ | 3.8+) | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2005 05 14 | 644 | 0.4− | 0.3+ | 2006 09 20 | 608 | (2.4+ | 3.7+) | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2005 05 14 | 644 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | | | |

**(142961)∗ 2002 VQ$_{79}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.42925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21940889 | $\omega$ | 111.05109 | | −0.96256168 | +0.00140730 | |
| $a$ | 2.7224918 | $\Omega$ | 69.85244 | | −0.13421211 | −0.87127988 | |
| $e$ | 0.2134640 | $i$ | 16.78174 | | +0.23550399 | −0.49078446 | |
| $P$ | 4.49 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 09 | 699 | 0.2− | 1.0− | 2004 01 29 | 704 | 0.6− | 0.2− | 2004 04 20 | 704 | 0.3+ | 0.1+ | | |
| 1999 01 09 | 699 | 0.9+ | 0.3+ | 2004 02 18 | 704 | 0.7+ | 0.1+ | 2004 04 20 | 704 | 0.6+ | 0.2+ | | |
| 1999 01 09 | 699 | 0.1+ | 0.8− | 2004 02 18 | 704 | 0.7+ | 0.3+ | 2004 04 21 | 608 | 0.2+ | 0.8− | | |
| 1999 01 14 | 704 | 0.1+ | 1.4− | 2004 02 18 | 704 | 0.6+ | 0.4+ | 2004 04 21 | 608 | 0.0 | 0.7− | | |
| 1999 01 14 | 704 | 1.2− | 0.6− | 2004 03 15 | 703 | 0.0 | 0.1− | 2004 04 21 | 608 | 0.3+ | 0.6− | | |
| 1999 01 14 | 704 | 0.4+ | 0.7+ | 2004 03 15 | 703 | 0.3− | 0.1+ | 2004 04 22 | 703 | (0.4− | 1.7−) | | |
| 1999 01 14 | 704 | 0.4− | 0.9− | 2004 03 15 | 703 | 0.2+ | 0.3− | 2004 04 22 | 703 | (3.4+ | 1.7−) | | |
| 1999 01 14 | 704 | (2.4− | 0.9−) | 2004 03 15 | 703 | 0.2+ | 0.4+ | 2004 04 22 | 703 | 0.2− | 0.1− | | |
| 1999 02 11 | 704 | 0.7− | 0.9− | 2004 03 28 | 704 | 0.0 | 0.9+ | 2004 04 22 | 703 | 0.4− | 0.2+ | | |
| 1999 02 11 | 704 | 0.6+ | 0.3− | 2004 03 28 | 704 | 0.4− | 0.4+ | 2004 04 24 | 704 | 0.8− | 0.2+ | | |
| 1999 02 11 | 704 | 0.1+ | 0.5+ | 2004 03 28 | 704 | 0.2+ | 0.9+ | 2004 04 24 | 704 | 0.1− | 0.0 | | |
| 1999 02 11 | 704 | 0.3− | 0.7− | 2004 03 28 | 704 | 0.0 | 1.3+ | 2004 04 24 | 704 | 0.2+ | 0.3+ | | |
| 1999 02 11 | 704 | 0.6− | 0.6− | 2004 03 28 | 704 | 0.1− | 0.6+ | 2004 05 11 | 703 | 0.3+ | 0.6+ | | |
| 2002 10 30 | 644 | (1.0+ | 2.6+) | 2004 04 09 | 644 | 0.0 | 0.2− | 2004 05 11 | 703 | 0.3+ | 0.7+ | | |
| 2002 10 30 | 644 | (1.5+ | 2.8+) | 2004 04 09 | 644 | 0.1− | 0.3− | 2004 05 11 | 703 | 0.3− | 1.0+ | | |
| 2002 10 30 | 644 | (0.7+ | 2.8+) | 2004 04 09 | 644 | 0.0 | 0.3− | 2004 05 11 | 703 | 0.2+ | 1.1+ | | |
| 2002 10 31 | 699 | 0.5− | 1.1+ | 2004 04 09 | 644 | 0.1− | 0.3− | 2004 05 13 | 704 | 0.4+ | 0.1+ | | |
| 2002 10 31 | 699 | 0.3+ | 0.4+ | 2004 04 09 | 644 | 0.2+ | 0.3− | 2004 05 13 | 704 | 0.3+ | 0.6+ | | |
| 2002 10 31 | 699 | 0.1+ | 0.8+ | 2004 04 09 | 644 | 0.0 | 0.3− | 2004 05 13 | 704 | 0.0 | 0.1+ | | |
| 2002 10 31 | 699 | 1.1− | 0.1+ | 2004 04 13 | 951 | 0.7+ | 0.2− | 2004 05 13 | 704 | 0.4+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.1− | 0.6+ | 2004 04 14 | 951 | 0.6− | 0.4− | 2004 05 13 | 704 | 0.3− | 0.1+ | | |
| 2002 11 07 | 704 | 0.2− | 1.1+ | 2004 04 14 | 951 | 0.9− | 0.7− | 2004 05 21 | 703 | 0.0 | 0.4− | | |
| 2002 11 07 | 704 | 0.1+ | 0.8+ | 2004 04 15 | 704 | 0.3− | 0.1+ | 2004 05 21 | 703 | 0.3+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.5+ | 1.2+ | 2004 04 15 | 704 | 0.2− | 0.4− | 2004 05 21 | 703 | 0.3− | 0.3+ | | |
| 2002 11 07 | 704 | 0.4− | 1.2+ | 2004 04 15 | 704 | 0.5− | 0.3+ | 2004 05 21 | 703 | (0.4+ | 1.9+) | | |
| 2002 11 11 | 704 | 1.2+ | 0.3+ | 2004 04 15 | 704 | 0.0 | 0.3− | 2004 05 23 | 704 | 0.5+ | 0.4+ | | |
| 2002 11 11 | 704 | (0.9− | 1.8+) | 2004 04 15 | 704 | 0.5− | 0.2− | 2004 05 23 | 704 | 1.1+ | 0.3− | | |
| 2002 11 11 | 704 | 0.6− | 1.4+ | 2004 04 16 | 704 | 0.2+ | 0.4− | 2004 05 23 | 704 | 0.8+ | 0.3− | | |
| 2002 11 11 | 704 | (1.6− | 2.3+) | 2004 04 16 | 704 | 0.1− | 0.2+ | 2004 05 23 | 704 | 0.8+ | 0.1+ | | |
| 2002 11 16 | 644 | 0.3− | 0.0 | 2004 04 16 | 704 | 0.4+ | 0.8− | 2004 05 23 | 704 | 0.8+ | 0.2+ | | |
| 2002 11 16 | 644 | 0.5+ | 0.1− | 2004 04 16 | 704 | 0.4− | 0.2+ | 2004 06 11 | 699 | 0.5− | 0.2+ | | |
| 2002 11 16 | 644 | 0.3+ | 0.0 | 2004 04 16 | 704 | 0.2− | 0.5− | 2004 06 11 | 699 | 1.4− | 0.1− | | |
| 2002 11 24 | 644 | 0.1+ | 0.5+ | 2004 04 16 | 704 | 0.3− | 0.2+ | 2004 06 11 | 699 | 0.6+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.5+ | 2004 04 16 | 704 | 0.3− | 0.7− | 2004 06 11 | 699 | 0.0 | 0.1+ | | |
| 2002 11 24 | 644 | 0.1+ | 0.4+ | 2004 04 16 | 704 | 0.0 | 0.5+ | 2004 06 13 | 704 | 0.1− | 0.0 | | |
| 2002 11 25 | 644 | 0.0 | 0.5+ | 2004 04 16 | 704 | 0.2+ | 0.2− | 2004 06 13 | 704 | 0.5+ | 0.3+ | | |
| 2002 11 25 | 644 | 0.1− | 0.5+ | 2004 04 16 | 704 | 0.2+ | 0.1+ | 2004 06 13 | 704 | 0.4+ | 1.2+ | | |
| 2002 11 25 | 644 | 0.1− | 0.5+ | 2004 04 17 | 704 | 0.2− | 0.1+ | 2004 06 13 | 704 | 0.3+ | 0.9+ | | |
| 2002 12 02 | 704 | 0.1+ | 1.1− | 2004 04 17 | 704 | 0.1− | 0.4− | 2004 06 13 | 704 | 0.4+ | 1.1+ | | |
| 2002 12 02 | 704 | 0.3− | 1.0− | 2004 04 17 | 704 | 0.1− | 0.2− | 2006 09 19 | 703 | 1.1− | 1.1+ | | |
| 2002 12 02 | 704 | 0.1− | 0.9− | 2004 04 17 | 704 | 1.1+ | 0.4− | 2006 09 19 | 703 | 0.8− | 0.0 | | |
| 2002 12 02 | 704 | 0.8+ | 1.4− | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.9− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.8+ | 2004 04 19 | 704 | 0.1− | 0.1+ | 2006 09 19 | 703 | 1.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.8− | 0.8+ | 2004 04 19 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 1.0− | 0.4+ |
| 2002 12 05 | 704 | 0.6− | 0.5+ | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 12 10 | 704 | 0.4− | 0.2− | 2004 04 19 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.6− | 0.7+ |
| 2002 12 10 | 644 | 0.1− | 0.8+ | 2004 04 19 | 704 | 0.6+ | 0.8+ | 2006 10 28 | 703 | (1.9− | 1.5+) |
| 2002 12 10 | 704 | 0.8− | 1.1+ | 2004 04 19 | 704 | 0.3− | 0.6+ | 2006 10 28 | 703 | 1.5+ | 1.1+ |
| 2002 12 10 | 704 | 0.2− | 0.4+ | 2004 04 19 | 704 | 0.6− | 0.2+ | 2006 10 28 | 703 | (1.8− | 2.0+) |
| 2002 12 10 | 644 | 0.0 | 1.0+ | 2004 04 19 | 704 | 0.4+ | 0.6+ | 2006 10 28 | 703 | 0.5− | 0.7+ |
| 2002 12 10 | 644 | 0.1− | 1.3+ | 2004 04 19 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 1.9+ | 1.6− |
| 2004 01 29 | 704 | 0.5+ | 0.3− | 2004 04 20 | 704 | 0.7+ | 0.2+ | 2006 11 16 | 703 | 0.8− | 0.1+ |
| 2004 01 29 | 704 | 0.4− | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.2+ | 2006 11 16 | 703 | 0.4− | 0.7− |
| 2004 01 29 | 704 | 0.8+ | 0.2− | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 703 | (3.1− | 1.8−) |

**(142962)∗ 2002 VY$_{79}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.79958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22396571 | $\omega$ | 167.36482 | | +0.96824943 | −0.23436726 | |
| $a$ | 2.6854374 | $\Omega$ | 206.67914 | | +0.20918344 | +0.95009510 | |
| $e$ | 0.1918595 | $i$ | 11.16971 | | +0.13687704 | +0.20589144 | |
| $P$ | 4.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.0 | 0.6+ | 2002 11 17 | 644 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.6− | 0.1− |
| 1996 05 11 | 691 | 0.0 | 0.2+ | 2002 11 23 | 644 | 0.5+ | 0.6+ | 2006 08 31 | 704 | (0.8− | 3.0−) |
| 1996 05 11 | 691 | 0.2+ | 1.1+ | 2002 11 23 | 644 | 0.1+ | 0.4+ | 2006 08 31 | 704 | (1.0− | 2.0−) |
| 1996 05 16 | 691 | 0.1+ | 0.1+ | 2002 11 23 | 644 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.0 |
| 1996 05 16 | 691 | 0.5− | 0.3− | 2002 11 25 | 644 | 0.0 | 1.3+ | 2006 09 14 | 703 | 0.8− | 0.2− |
| 1996 05 16 | 691 | 0.3+ | 0.3− | 2002 11 25 | 644 | 0.0 | 1.2+ | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2002 09 07 | 704 | 0.2− | 0.9+ | 2002 11 25 | 644 | 0.3+ | 1.3+ | 2006 09 14 | 703 | (0.0 | 2.2−) |
| 2002 09 07 | 704 | 0.6− | 1.4+ | 2002 11 28 | 699 | 0.5− | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.0 | 1.4+ | 2002 11 28 | 699 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.9+ | 0.1− |
| 2002 10 11 | 704 | 0.1+ | 0.1− | 2002 11 28 | 699 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.5− | 0.6+ |
| 2002 10 11 | 704 | 0.9+ | 0.7− | 2002 11 28 | 699 | 0.2− | 0.4+ | 2006 09 20 | 699 | 0.4+ | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 1.5− | 2002 12 01 | 704 | 0.0 | 0.6+ | 2006 09 22 | 703 | 1.1+ | 0.2− |
| 2002 10 11 | 704 | 1.3+ | 0.1− | 2002 12 01 | 704 | 0.3− | 0.1+ | 2006 09 22 | 703 | 0.1− | 0.6+ |
| 2002 10 30 | 608 | 0.1+ | 1.1− | 2002 12 01 | 704 | 0.6− | 0.5+ | 2006 09 22 | 703 | 0.6− | 0.4+ |
| 2002 10 30 | 608 | 0.0 | 1.4− | 2002 12 01 | 704 | 0.7− | 1.1+ | 2006 09 22 | 703 | 0.1− | 0.2− |
| 2002 10 30 | 608 | 0.1+ | 0.0 | 2002 12 01 | 704 | 0.7− | 0.5+ | 2006 09 29 | 699 | 0.4− | 0.2+ |
| 2002 11 07 | 704 | 0.4− | 0.0 | 2002 12 13 | 608 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.9+ |
| 2002 11 07 | 704 | 0.0 | 0.5+ | 2002 12 13 | 608 | 0.2+ | 0.3− | 2006 09 29 | 699 | 0.2− | 0.4− |
| 2002 11 07 | 704 | 0.4+ | 0.7+ | 2002 12 13 | 608 | 0.4− | 0.3+ | 2006 09 29 | 699 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2005 05 03 | 691 | 0.4+ | 0.3+ | 2006 10 01 | 703 | 0.0 | 0.8+ |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 703 | (3.4+ | 0.8+) |
| 2002 11 11 | 704 | 0.6− | 0.1+ | 2005 05 03 | 691 | 0.0 | 0.6+ | 2006 10 01 | 703 | 0.6− | 0.6− |
| 2002 11 11 | 704 | 0.4+ | 0.1+ | 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 703 | 0.8− | 0.4+ |
| 2002 11 11 | 704 | 0.5− | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.3− |
| 2002 11 11 | 704 | 0.2− | 0.0 | 2005 05 08 | 691 | 0.0 | 0.3+ | 2006 10 01 | 704 | 1.2+ | 0.4− |
| 2002 11 11 | 704 | 0.1+ | 0.2− | 2005 05 17 | G96 | 0.5− | 0.3+ | 2006 10 01 | 704 | 1.0+ | 0.2− |
| 2002 11 12 | 644 | (0.7+ | 1.6+) | 2005 05 17 | G96 | 0.5− | 0.3+ | 2006 10 01 | 704 | 0.5+ | 0.3+ |
| 2002 11 12 | 644 | 0.4+ | 1.4+ | 2005 05 17 | G96 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 2002 11 12 | 644 | 0.5+ | 1.2+ | 2005 05 17 | G96 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2002 11 17 | 644 | 0.3− | 0.0 | 2005 06 02 | 947 | 0.0 | 1.1− | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 11 17 | 644 | 0.1− | 0.0 | 2005 06 02 | 947 | 0.0 | 0.5− | 2006 10 16 | 703 | 1.2− | 0.3+ |

**(142963)∗ 2002 VH$_{80}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.37809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24056758 | $\omega$ | 274.36880 | | +0.99496891 | +0.00966028 | |
| $a$ | 2.5604206 | $\Omega$ | 85.09953 | | +0.03157399 | +0.91437996 | |
| $e$ | 0.1568404 | $i$ | 5.74396 | | −0.09507862 | +0.40474186 | |
| $P$ | 4.10 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.5+ | 0.7− | 2004 02 17 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 704 | (1.9− | 0.7+) |
| 2002 11 07 | 704 | 0.5− | 0.4− | 2004 02 17 | 704 | 0.6− | 1.0+ | 2006 10 27 | 704 | 0.6+ | 0.5− |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2004 03 15 | 704 | 0.6+ | 0.4− | 2006 10 27 | 704 | 0.7− | 1.0− |
| 2002 11 07 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.1+ | 1.0+ | 2006 10 27 | 704 | 0.1− | 0.9+ |
| 2002 11 07 | 704 | 0.1+ | 0.3− | 2004 03 15 | 704 | 0.1+ | 0.7+ | 2006 10 27 | 704 | (1.7− | 0.8+) |
| 2002 11 11 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.5+ | 0.6− | 2006 10 27 | 704 | 0.6− | 0.2+ |
| 2002 11 11 | 704 | 0.3+ | 0.2− | 2004 03 23 | 704 | 0.7− | 1.0− | 2006 11 02 | 703 | 0.5+ | 0.0 |
| 2002 11 11 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.5− | 0.3+ | 2006 11 02 | 703 | 0.0 | 0.3− |
| 2002 11 11 | 704 | 0.7+ | 0.4+ | 2004 03 23 | 704 | 0.7+ | 0.9+ | 2006 11 02 | 703 | 1.1+ | 0.3− |
| 2002 11 11 | 704 | 0.2+ | 0.5+ | 2004 03 23 | 704 | (1.8− | 1.4+) | 2006 11 02 | 703 | 0.0 | 0.7− |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2005 06 04 | 704 | 0.4+ | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.3+ | 0.6+ | 2005 06 04 | 704 | 0.4− | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | 0.2+ | 1.1+ | 2005 06 04 | 704 | 0.3+ | 1.4+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | 0.4− | 0.3+ | 2005 06 11 | 703 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 11 14 | 704 | 0.5+ | 0.7+ | 2005 06 11 | 703 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 11 24 | 644 | 0.5− | 0.2− | 2005 06 11 | 703 | 0.9− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2005 06 11 | 703 | 0.0 | 0.9− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2005 06 16 | G96 | 0.0 | 0.6+ | 2006 11 11 | 644 | 0.2− | 0.1− |
| 2002 12 02 | 704 | 0.2− | 0.4+ | 2005 06 16 | G96 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 12 02 | 704 | 0.3+ | 0.2− | 2005 06 16 | G96 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2002 12 02 | 704 | 0.2+ | 0.0 | 2005 06 16 | G96 | 0.2+ | 0.6+ | 2006 11 11 | 644 | 0.2− | 0.0 |
| 2002 12 02 | 704 | 0.6+ | 0.1− | 2005 06 23 | 644 | 0.4+ | 0.9+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 12 02 | 704 | 0.4− | 0.3+ | 2005 06 23 | 644 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.4+ | 0.8+ | 2005 06 23 | 644 | 0.5+ | 0.4+ | 2006 11 11 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2005 06 27 | G96 | 0.4+ | 0.5+ | 2006 11 14 | 704 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.1+ | 0.8− | 2005 06 27 | G96 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.4− |
| 2002 12 05 | 704 | 0.1− | 0.6+ | 2005 06 27 | G96 | 0.6− | 0.8+ | 2006 11 14 | 704 | 0.2− | 0.4− |
| 2002 12 10 | 704 | 0.8− | 0.3− | 2005 06 27 | G96 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 2002 12 10 | 704 | 0.6− | 0.1+ | 2005 08 04 | 644 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 0.3− | 0.5− |
| 2002 12 10 | 704 | 0.1− | 0.1− | 2005 08 04 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | 0.6− | 0.7+ | 2005 08 04 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.9+ |
| 2002 12 10 | 644 | 0.2+ | 0.9+ | 2006 08 29 | 683 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2002 12 10 | 704 | 0.9− | 0.3+ | 2006 08 29 | 683 | 0.1− | 1.0+ | 2006 11 17 | 704 | 0.1+ | 0.9+ |
| 2002 12 10 | 644 | 0.2+ | 1.1+ | 2006 08 29 | 683 | 1.3+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 12 10 | 644 | 0.8+ | 1.1+ | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 12 10 | 644 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.3− | 1.1+ |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 12 10 | 644 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 12 27 | 644 | 0.2− | 0.3− | 2006 10 17 | 683 | 0.6− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2002 12 27 | 644 | 0.2− | 0.2− | 2006 10 17 | 683 | (0.4+ | 1.6+) | 2006 11 19 | 704 | 1.2− | 0.1+ |
| 2002 12 27 | 644 | 0.3− | 0.1− | 2006 10 17 | 683 | 1.3− | 0.2− | 2006 11 19 | 704 | 0.4− | 0.5− |
| 2002 12 31 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 683 | 0.4+ | 0.2− | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 10 19 | 683 | 0.4− | 1.4+ | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2002 12 31 | 704 | 0.7− | 0.4+ | 2006 10 19 | 683 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.4− | 1.3+ |
| 2002 12 31 | 704 | 0.7+ | 0.3+ | 2006 10 20 | 683 | 1.4+ | 0.6− | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2002 12 31 | 704 | 0.7− | 0.4+ | 2006 10 20 | 683 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2003 01 04 | 704 | 0.1+ | 1.0− | 2006 10 20 | 683 | 1.0+ | 0.7+ | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2003 01 04 | 704 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.2− | 1.2+ |
| 2003 01 04 | 704 | 0.8− | 0.7− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 1.4+ | 0.5− |
| 2003 01 08 | 704 | 0.5− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 1.1+ | 1.4+ |
| 2003 01 08 | 704 | 0.3− | 1.1+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.6− |
| 2003 01 08 | 704 | (0.8+ | 2.4+) | 2006 10 22 | 704 | 0.4− | 1.1− | | | | |
| 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 704 | 0.6− | 0.2− | | | | |

**(142964)∗ 2002 VO$_{80}$ = 1987 SY$_{7}$ = 2000 EP$_{180}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41229, *MPO* 89371)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.76007 | | (2000.0) | | | |
| $n$ | 0.26771124 | $\omega$ | 278.67268 | | +0.96519291 | −0.22609875 |
| $a$ | 2.3842858 | $\Omega$ | 94.47203 | | +0.25988051 | +0.88562790 |
| $e$ | 0.1970612 | $i$ | 7.57723 | | −0.02940677 | +0.40563848 |
| $P$ | 3.68 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 09 18 | 010 | 0.6− | 1.4− | 2002 12 10 | 644 | 0.1− | 0.0 | 2003 01 19 | 644 | 0.1+ | 0.1− |
| 1987 09 18 | 010 | 0.3− | 1.4+ | 2002 12 11 | 704 | 0.4+ | 0.6+ | 2003 01 19 | 644 | 0.1− | 0.2− |
| 1998 09 22 | 699 | 0.0 | 0.5+ | 2002 12 11 | 704 | 0.2+ | 0.1+ | 2003 01 27 | 291 | 0.6+ | 0.2− |
| 1998 09 22 | 699 | 0.0 | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.9+ | 2003 01 27 | 704 | 0.8− | 0.4+ |
| 1998 09 22 | 699 | 0.5+ | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.0 | 2003 01 27 | 704 | 0.9− | 0.3+ |
| 1998 11 23 | 699 | 0.5− | 0.4+ | 2002 12 11 | 704 | 0.3+ | 0.5+ | 2003 01 27 | 704 | 0.1− | 0.4− |
| 1998 11 23 | 699 | 0.5− | 1.2− | 2002 12 11 | 704 | 0.1+ | 0.0 | 2003 01 27 | 291 | 1.1+ | 0.0 |
| 1998 11 23 | 699 | 0.5− | 0.3− | 2002 12 11 | 704 | 0.8+ | 0.6+ | 2003 01 27 | 704 | 0.4− | 0.4+ |
| 2000 03 04 | 704 | 0.3+ | 1.2+ | 2002 12 11 | 704 | 0.2− | 0.4+ | 2003 01 27 | 291 | 0.5+ | 0.3− |
| 2000 03 04 | 704 | 0.2− | 0.0 | 2002 12 11 | 704 | 0.7+ | 0.7+ | 2003 01 27 | 704 | 0.2+ | 0.3+ |
| 2000 03 04 | 704 | 0.8+ | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2003 01 31 | 704 | 0.3− | 0.3− |
| 2000 03 04 | 704 | 0.9+ | 0.3+ | 2002 12 15 | 608 | (1.9+ | 0.4+) | 2003 01 31 | 704 | 0.4− | 0.3− |
| 2000 03 12 | 704 | 0.4− | 0.2+ | 2002 12 15 | 608 | 1.1+ | 0.3+ | 2003 01 31 | 704 | 0.6− | 0.2+ |
| 2000 03 12 | 704 | 0.1+ | 0.6+ | 2002 12 15 | 608 | (1.7+ | 1.2+) | 2003 01 31 | 704 | 0.2− | 0.5− |
| 2000 03 12 | 704 | 1.6+ | 1.2+ | 2002 12 27 | 644 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.0 |
| 2000 03 12 | 704 | 0.1− | 0.5+ | 2002 12 27 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.4− | 0.3+ |
| 2000 03 12 | 704 | 0.4+ | 0.0 | 2002 12 27 | 644 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.4− |
| 2001 05 21 | 704 | 1.2+ | 1.2+ | 2002 12 28 | 699 | 0.5− | 0.5+ | 2004 03 23 | 704 | 0.1+ | 0.2+ |
| 2001 05 21 | 704 | 0.3+ | 0.1+ | 2002 12 28 | 699 | 1.0− | 0.3+ | 2004 03 23 | 704 | 0.2− | 0.5+ |
| 2001 05 21 | 704 | 0.3− | 0.8+ | 2002 12 28 | 699 | 0.3− | 0.5+ | 2004 03 28 | 113 | 0.1+ | 0.5− |
| 2001 05 21 | 704 | 0.7− | 0.2+ | 2002 12 28 | 699 | 0.1− | 0.1− | 2004 03 28 | 113 | 0.3+ | 0.2− |
| 2002 10 09 | 704 | 0.4+ | 0.3− | 2002 12 31 | 699 | 0.6− | 1.0+ | 2006 10 17 | G96 | 0.4− | 0.5− |
| 2002 10 09 | 704 | 0.6+ | 0.2− | 2002 12 31 | 704 | 0.5− | 0.9+ | 2006 10 17 | G96 | 0.3+ | 0.7− |
| 2002 10 09 | 704 | 1.2+ | 0.7+ | 2002 12 31 | 699 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.5− |
| 2002 10 31 | 608 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.5− | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.6− |
| 2002 10 31 | 608 | 0.2+ | 0.4+ | 2002 12 31 | 699 | 1.0− | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.8− |
| 2002 10 31 | 608 | 0.1− | 0.4+ | 2002 12 31 | 704 | 0.5− | 0.6+ | 2006 10 31 | G96 | 0.6− | 0.5− |
| 2002 11 07 | 704 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.2− | 1.0+ | 2006 10 31 | G96 | 0.5− | 0.6− |
| 2002 11 07 | 704 | 0.4− | 0.1+ | 2002 12 31 | 699 | (3.0− | 0.3+) | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2002 11 07 | 704 | 0.6− | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2002 11 07 | 704 | 0.6− | 0.3+ | 2003 01 04 | 704 | (1.5− | 0.5−) | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2002 11 07 | 704 | 1.1− | 0.2+ | 2003 01 04 | 704 | (1.9− | 0.7−) | 2006 11 15 | G96 | 0.3− | 0.7− |
| 2002 11 11 | 704 | 0.1− | 0.1+ | 2003 01 04 | 704 | (2.4− | 1.7−) | 2006 11 15 | G96 | 0.2− | 0.9− |
| 2002 11 11 | 704 | 0.0 | 0.5− | 2003 01 04 | 704 | 1.4− | 0.3+ | 2006 11 24 | 644 | 0.5− | 0.2− |
| 2002 11 11 | 704 | 0.2− | 0.4− | 2003 01 04 | 704 | 1.3− | 0.2− | 2006 11 24 | 644 | 0.6− | 0.2+ |
| 2002 11 11 | 704 | 0.1− | 0.4− | 2003 01 08 | 704 | 0.2+ | 0.6− | 2006 11 24 | 644 | 0.5− | 0.2− |
| 2002 11 11 | 704 | 0.1− | 1.0− | 2003 01 08 | 704 | 0.5+ | 0.4− | 2006 11 27 | G96 | 0.7− | 0.6− |
| 2002 12 01 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.7+ | 0.5+ | 2006 11 27 | G96 | 0.3− | 0.6− |
| 2002 12 01 | 704 | 0.3− | 0.2− | 2003 01 08 | 704 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.5− | 0.5− |
| 2002 12 01 | 704 | 0.6− | 0.2+ | 2003 01 08 | 704 | 0.4+ | 1.1+ | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2002 12 01 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.5+ | 0.5− | 2006 11 27 | G96 | 0.9− | 0.7− |
| 2002 12 03 | 608 | 0.7+ | 0.3− | 2003 01 08 | 704 | 0.2+ | 1.0+ | 2006 11 27 | G96 | 0.3− | 0.7− |
| 2002 12 03 | 608 | 0.6+ | 0.4− | 2003 01 08 | 704 | 0.5+ | 0.4+ | 2006 11 27 | G96 | 0.4− | 0.6− |
| 2002 12 03 | 608 | 0.9+ | 0.7− | 2003 01 08 | 704 | (0.0 | 1.8+) | 2006 11 27 | G96 | 0.4− | 0.7− |
| 2002 12 10 | 644 | 0.2− | 0.1+ | 2003 01 08 | 704 | 0.2− | 0.3+ | | | | |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2003 01 19 | 644 | 0.1+ | 0.0 | | | | |

**(142965)∗ 2002 VA$_{81}$ = 1999 CB$_{91}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41231)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 232.44785 | | (2000.0) | | | |
| $n$ | 0.21553935 | $\omega$ | 54.22872 | | −0.81465610 | −0.53566747 |
| $a$ | 2.7549793 | $\Omega$ | 92.38365 | | +0.43387505 | −0.81723106 |
| $e$ | 0.1113515 | $i$ | 12.85263 | | +0.38482187 | −0.21258824 |
| $P$ | 4.57 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 1.3+ | 0.9− | 2003 01 01 | 704 | 0.5+ | 0.5+ | 2004 04 24 | 703 | 0.1− | 0.6− |
| 1999 02 10 | 704 | 0.5+ | 1.3− | 2003 01 01 | 704 | (0.6+ | 1.6+) | 2004 04 24 | 704 | 0.5+ | 0.7+ |
| 1999 02 10 | 704 | 0.4+ | 0.8− | 2003 01 01 | 704 | 1.1− | 0.4+ | 2004 04 24 | 703 | 0.9− | 0.8− |
| 1999 02 10 | 704 | 1.1− | 0.3− | 2003 01 07 | 704 | 0.1+ | 1.0+ | 2004 04 24 | 704 | 0.4+ | 0.9+ |
| 1999 02 13 | 704 | 0.6− | 0.5+ | 2003 01 07 | 704 | 0.5− | 0.0 | 2004 04 24 | 703 | 0.8− | 0.6− |
| 1999 02 13 | 704 | 1.2− | 0.2− | 2003 01 07 | 704 | 0.9− | 0.3+ | 2004 04 24 | 704 | 0.5+ | 1.2+ |
| 1999 02 13 | 704 | 0.9+ | 0.2+ | 2003 01 07 | 704 | 0.6+ | 0.4− | 2004 04 24 | 704 | 0.0 | 0.1− |
| 1999 02 13 | 704 | 1.1− | 0.9− | 2003 01 28 | 608 | 0.5+ | 0.4+ | 2004 04 24 | 704 | 0.3+ | 1.0+ |
| 2002 10 31 | 608 | 0.0 | 0.4− | 2003 01 28 | 608 | 1.0+ | 0.1− | 2004 04 25 | 699 | 0.5− | 0.5+ |
| 2002 10 31 | 608 | 0.1+ | 0.8− | 2003 01 28 | 608 | 0.4+ | 1.0+ | 2004 04 25 | 699 | 0.3− | 0.1+ |
| 2002 10 31 | 608 | 0.3+ | 1.0− | 2004 01 29 | 704 | 0.3+ | 0.8− | 2004 04 25 | 699 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.1+ | 2004 01 29 | 704 | 1.5+ | 0.2+ | 2004 04 25 | 608 | 0.6+ | 0.9− |
| 2002 11 07 | 704 | 0.1− | 0.0 | 2004 01 29 | 704 | (2.1+ | 0.7+) | 2004 04 25 | 608 | 0.5+ | 0.9− |
| 2002 11 07 | 704 | 0.1− | 0.7− | 2004 01 29 | 704 | 1.5+ | 0.0 | 2004 04 25 | 699 | 0.6− | 0.2− |
| 2002 11 07 | 704 | 0.2− | 0.3− | 2004 02 18 | 704 | 0.5+ | 0.3− | 2004 04 25 | 608 | 0.4+ | 1.1− |
| 2002 11 07 | 704 | 0.3− | 0.4− | 2004 02 18 | 704 | 0.7+ | 0.2+ | 2004 05 12 | 703 | 0.3− | 1.1+ |
| 2002 11 11 | 704 | 0.8− | 1.1+ | 2004 02 18 | 704 | 0.3+ | 0.6− | 2004 05 12 | 703 | 0.6− | 0.1+ |
| 2002 11 11 | 704 | 0.5− | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.4− | 2004 05 12 | 703 | (1.4+ | 1.9+) |
| 2002 11 11 | 704 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.1+ | 0.2− | 2004 05 12 | 703 | 0.1+ | 0.4+ |
| 2002 11 11 | 704 | 0.5+ | 0.6+ | 2004 03 15 | 704 | 0.0 | 0.2+ | 2004 05 13 | 704 | 0.7+ | 1.0+ |
| 2002 11 28 | 699 | (1.1+ | 1.6+) | 2004 03 15 | 704 | 0.1− | 0.3+ | 2004 05 13 | 704 | 0.8+ | 0.5+ |
| 2002 11 28 | 699 | 0.3− | 1.3+ | 2004 03 22 | 699 | 0.9− | 0.2+ | 2004 05 13 | 704 | 1.2+ | 0.1− |
| 2002 11 28 | 699 | 0.4− | 0.3+ | 2004 03 22 | 699 | 0.2+ | 0.2− | 2004 05 13 | 704 | 0.3+ | 0.9+ |
| 2002 11 28 | 699 | 0.3+ | 0.4+ | 2004 03 22 | 699 | 0.7− | 0.1+ | 2004 06 10 | 704 | 0.3+ | 0.1+ |
| 2002 12 01 | 704 | 0.0 | 0.2+ | 2004 03 22 | 699 | 0.3− | 0.3+ | 2004 06 10 | 704 | 0.4+ | 0.9− |
| 2002 12 01 | 704 | 0.6+ | 0.3+ | 2004 03 28 | 704 | 0.2+ | 0.2+ | 2004 06 10 | 704 | 0.1+ | 0.6− |
| 2002 12 01 | 704 | 0.1+ | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.6+ | 2006 09 24 | 699 | 1.0+ | 0.5+ |
| 2002 12 01 | 704 | 0.1+ | 0.0 | 2004 03 28 | 704 | 0.1+ | 0.4+ | 2006 09 24 | 699 | 0.6− | 0.6+ |
| 2002 12 14 | 704 | 0.5− | 0.3+ | 2004 03 28 | 704 | 0.3+ | 0.6+ | 2006 09 24 | 699 | 0.8− | 0.4− |
| 2002 12 14 | 704 | 1.1− | 0.4− | 2004 03 28 | 704 | 0.2+ | 0.2+ | 2006 09 24 | 699 | 0.4− | 1.2+ |
| 2002 12 14 | 704 | 0.9+ | 0.5− | 2004 04 09 | 644 | 0.1− | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | (0.5+ | 1.6−) | 2004 04 09 | 644 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | (0.7− | 2.2+) | 2004 04 09 | 644 | 0.0 | 0.7+ | 2006 10 09 | 644 | 0.6− | 0.3+ |
| 2002 12 28 | 699 | 0.6+ | 0.2− | 2004 04 15 | 704 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2002 12 28 | 699 | 0.4− | 0.6+ | 2004 04 15 | 704 | 0.1− | 1.2+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2002 12 28 | 699 | 0.4− | 1.0+ | 2004 04 15 | 704 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 12 28 | 699 | (1.9− | 0.1−) | 2004 04 15 | 704 | 0.6− | 1.1+ | | | | |
| 2003 01 01 | 704 | 0.5+ | 0.2− | 2004 04 24 | 703 | 0.8− | 0.3− | | | | |

**(142966)∗ 2002 VE$_{81}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.72063 | | (2000.0) | | | |
| $n$ | 0.23111296 | $\omega$ | 306.27050 | | +0.86797549 | −0.44589900 |
| $a$ | 2.6297826 | $\Omega$ | 81.14154 | | +0.49617576 | +0.76032792 |
| $e$ | 0.1622422 | $i$ | 12.78272 | | +0.02069223 | +0.47230873 |
| $P$ | 4.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.5− | 1.0− | 2002 12 15 | 608 | 0.0 | 0.4− | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2002 10 09 | 704 | 0.3+ | 0.0 | 2002 12 15 | 608 | 0.1− | 0.8− | 2006 09 19 | 703 | 0.5+ | 0.2− |
| 2002 10 09 | 704 | 0.4− | 0.7+ | 2002 12 15 | 608 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.5− | 0.5− |
| 2002 10 09 | 704 | 0.7+ | 0.4+ | 2002 12 31 | 699 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.4− | 0.5− |
| 2002 11 07 | 704 | 0.1+ | 0.7+ | 2002 12 31 | 699 | 0.5+ | 0.6+ | 2006 09 24 | 699 | 0.1+ | 0.7+ |
| 2002 11 07 | 704 | (0.4− | 1.6+) | 2002 12 31 | 704 | 0.8− | 1.0− | 2006 09 24 | 699 | 0.6− | 0.3− |
| 2002 11 07 | 704 | 0.4+ | 1.5+ | 2002 12 31 | 704 | 0.1− | 0.7− | 2006 09 24 | 699 | 0.3+ | 0.5+ |
| 2002 11 07 | 704 | 0.4− | 1.0− | 2002 12 31 | 699 | 1.0+ | 0.8+ | 2006 09 24 | 699 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.3− | 1.1+ | 2002 12 31 | 704 | 0.1− | 0.4− | 2006 09 26 | 703 | 0.1+ | 0.4− |
| 2002 11 11 | 704 | 0.4− | 0.6− | 2002 12 31 | 699 | 0.9− | 0.6+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2002 11 11 | 704 | 0.7− | 0.4− | 2002 12 31 | 704 | 0.1− | 0.5− | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.3− | 2002 12 31 | 704 | 1.1+ | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 2002 11 11 | 704 | 0.5+ | 0.5− | 2003 01 01 | 704 | 0.8+ | 0.9− | 2006 10 04 | 703 | 0.0 | 0.5− |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2003 01 01 | 704 | 1.0+ | 0.4+ | 2006 10 04 | 703 | 0.7+ | 0.6− |
| 2002 11 24 | 644 | 0.3+ | 0.2− | 2003 01 01 | 704 | 0.2− | 0.0 | 2006 10 04 | 703 | 1.3+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1+ | 0.3− | 2003 01 01 | 704 | (1.6+ | 0.3+) | 2006 10 04 | 703 | 0.1− | 0.1+ | | |
| 2002 11 27 | 699 | 0.4− | 0.4− | 2003 01 01 | 704 | 0.2+ | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.1− | | |
| 2002 11 27 | 699 | 0.2+ | 0.2− | 2003 01 02 | 704 | 0.6+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 27 | 699 | 0.8− | 0.1+ | 2003 01 02 | 704 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 27 | 699 | 0.0 | 0.2+ | 2003 01 02 | 704 | (0.2− | 1.5+) | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 12 01 | 704 | 0.0 | 0.0 | 2003 01 02 | 704 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 12 01 | 704 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 12 01 | 704 | 0.1− | 0.2− | 2003 01 04 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.2+ | | |
| 2002 12 01 | 704 | 0.0 | 0.1− | 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2002 12 02 | 843 | 0.7+ | 0.2− | 2003 01 04 | 704 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2002 12 02 | 843 | 0.0 | 0.4− | 2003 01 04 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.3− | 0.3+ | | |
| 2002 12 02 | 843 | 0.1− | 0.3− | 2003 01 09 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.6+ | | |
| 2002 12 07 | 750 | 0.6− | 0.1− | 2003 01 09 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.3+ | | |
| 2002 12 07 | 750 | 0.3− | 0.3− | 2003 01 09 | 704 | 0.3− | 0.5− | 2006 10 21 | 703 | 0.4− | 0.3+ | | |
| 2002 12 07 | 750 | 0.3− | 0.0 | 2003 01 09 | 704 | 0.4+ | 0.9+ | 2006 10 31 | 703 | 0.3+ | 1.0+ | | |
| 2002 12 07 | 750 | 0.5− | 0.2+ | 2003 01 09 | 704 | 0.1+ | 0.8+ | 2006 10 31 | 703 | 0.4+ | 0.6+ | | |
| 2002 12 07 | 750 | 0.4− | 0.1+ | 2004 03 19 | 644 | 0.4+ | 0.7+ | 2006 10 31 | 703 | 0.2+ | 0.4+ | | |
| 2002 12 07 | 750 | 0.5− | 0.1+ | 2004 03 19 | 644 | 0.3+ | 0.8+ | 2006 10 31 | 703 | 0.8+ | 0.0 | | |
| 2002 12 07 | 750 | 0.3− | 0.2− | 2004 03 19 | 644 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.2− | | |
| 2002 12 07 | 750 | 0.6− | 0.2− | 2005 06 16 | G96 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 2.3− | 1.2+ | | |
| 2002 12 10 | 644 | 0.2− | 0.2− | 2005 06 16 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.8− | 0.5+ | | |
| 2002 12 10 | 644 | 0.0 | 0.4− | 2005 06 16 | G96 | 0.3+ | 0.4+ | 2006 11 23 | 703 | 0.4− | 0.3− | | |
| 2002 12 10 | 644 | 0.0 | 0.0 | 2005 06 16 | G96 | 0.3− | 0.4+ | 2006 11 23 | 703 | 0.4− | 0.4+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.0 | 2005 06 28 | G96 | 0.1− | 0.3− | 2006 11 23 | 703 | 0.3+ | 0.0 | | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2005 06 28 | G96 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.8− | 0.5− | | |
| 2002 12 11 | 704 | 0.7+ | 0.3+ | 2005 06 28 | G96 | 0.3+ | 0.2+ | | | | | | |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2005 06 28 | G96 | 0.1− | 0.2+ | | | | | | |

**(142967)∗ 2002 VT$_{81}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.61973 | | (2000.0) | | | |
| $n$ | 0.23391248 | $\omega$ | 202.82131 | | +0.74949135 | −0.66165326 |
| $a$ | 2.6087579 | $\Omega$ | 198.65744 | | +0.61743969 | +0.71055525 |
| $e$ | 0.2579731 | $i$ | 3.91744 | | +0.23881154 | +0.23942891 |
| $P$ | 4.21 | $H$ | 16.5 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.2− | 0.1− | 2006 09 16 | 644 | 0.0 | 0.4+ | 2006 10 13 | A50 | 0.1+ | 0.3+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 644 | 0.6+ | 0.0 | 2006 10 13 | A50 | 0.6− | 0.3+ | | |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.5+ | 0.3+ | 2006 10 15 | 703 | (0.5− | 1.8−) | | |
| 2002 11 07 | 704 | 0.5+ | 0.4− | 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 15 | 703 | 0.6+ | 1.0− | | |
| 2002 11 11 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.6+ | 0.8− | | |
| 2002 11 11 | 704 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.4− | 0.7+ | 2006 10 15 | 703 | 0.1+ | 0.1+ | | |
| 2002 11 11 | 704 | 0.9− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.3− | | |
| 2002 11 11 | 704 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 10 16 | G96 | 0.1− | 0.3− | | |
| 2002 11 11 | 704 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.3− | | |
| 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.7+ | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 12 01 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2002 12 01 | 704 | 0.3+ | 1.0+ | 2006 09 20 | 704 | 0.8− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2002 12 01 | 704 | 0.4+ | 1.3+ | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 12 01 | 704 | 0.0 | 0.8+ | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 12 03 | 644 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.8+ | 1.0− | | |
| 2002 12 03 | 644 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 23 | 704 | 1.5+ | 0.0 | | |
| 2002 12 03 | 644 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 23 | 704 | 0.2+ | 0.1+ | | |
| 2002 12 11 | 704 | 1.0− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 23 | 704 | 0.5+ | 0.3+ | | |
| 2002 12 11 | 704 | 0.7− | 1.1+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 23 | 704 | 0.0 | 0.2− | | |
| 2002 12 11 | 704 | 0.5− | 0.9+ | 2006 09 26 | G96 | 0.8− | 0.7− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 12 11 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 1.0− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 2002 12 31 | 704 | 1.0+ | 1.0− | 2006 09 27 | 704 | 0.6− | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2002 12 31 | 704 | 0.1+ | 1.3− | 2006 09 27 | 704 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2002 12 31 | 704 | 0.3+ | 0.7− | 2006 09 27 | 704 | 0.9− | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.3+ | | |
| 2004 03 29 | 691 | 0.4+ | 0.8+ | 2006 09 29 | 704 | 1.1+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.4+ | | |
| 2004 03 29 | 691 | 0.2+ | 0.6+ | 2006 09 29 | 704 | 1.0− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.2+ | | |
| 2004 03 29 | 691 | 0.2+ | 0.7+ | 2006 09 29 | 704 | 0.6− | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 2004 04 24 | 333 | (0.9− | 2.9+) | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.5+ | | |
| 2004 04 24 | 333 | 0.4− | 1.2+ | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.3− | | |
| 2005 06 17 | G96 | 0.1+ | 0.5+ | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.2− | 0.6+ | | |
| 2005 06 17 | G96 | 0.1+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.0 | | |
| 2005 06 17 | G96 | 0.1+ | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.3− | | |
| 2005 06 17 | G96 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.2− | | |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | | | |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | | | |

**(142968)∗ 2002 VX$_{81}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.69643 | | (2000.0) | | | |
| $n$ | 0.27412607 | $\omega$ | 276.75901 | | +0.96400408 | −0.24638457 |
| $a$ | 2.3469427 | $\Omega$ | 97.53981 | | +0.26581710 | +0.88441117 |
| $e$ | 0.1963515 | $i$ | 5.78671 | | +0.00611577 | +0.39637296 |
| $P$ | 3.60 | $H$ | 16.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 691 | 0.2− | 0.5+ | 2002 12 10 | 644 | 0.1− | 0.8− | 2004 03 21 | 691 | 0.3+ | 0.1− | | |
| 2001 05 21 | 691 | 0.3− | 0.4+ | 2002 12 10 | 644 | 0.2− | 0.9− | 2004 03 21 | 691 | 0.2+ | 0.3− | | |
| 2001 05 21 | 691 | 0.3− | 0.4+ | 2002 12 11 | 704 | 0.2+ | 0.9+ | 2005 06 16 | 691 | 0.2+ | 0.1− | | |
| 2001 06 27 | 691 | 0.4+ | 0.1+ | 2002 12 11 | 704 | 0.5+ | 0.6+ | 2005 06 16 | 691 | 0.4+ | 0.9+ | | |
| 2001 06 27 | 691 | 0.6+ | 0.5+ | 2002 12 11 | 704 | 0.6+ | 0.1− | 2005 06 16 | 691 | 0.1+ | 0.1− | | |
| 2001 06 27 | 691 | 0.2+ | 0.2+ | 2002 12 11 | 704 | 0.5+ | 0.8+ | 2005 06 29 | 703 | 0.6− | 0.9− | | |
| 2002 10 11 | 704 | 0.3+ | 0.7+ | 2002 12 11 | 704 | 0.0 | 0.9+ | 2005 06 29 | 703 | 0.2− | 0.9+ | | |
| 2002 10 11 | 704 | 0.2− | 0.6− | 2002 12 28 | 699 | 0.0 | 0.5+ | 2005 06 29 | 703 | 0.2− | 0.8− | | |
| 2002 10 11 | 704 | 0.2− | 0.5− | 2002 12 28 | 699 | 0.0 | 0.3+ | 2005 06 29 | 703 | 1.2− | 0.7− | | |
| 2002 11 07 | 704 | 0.2+ | 0.2+ | 2002 12 28 | 699 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.5− | 0.0 | | |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2002 12 28 | 699 | 1.0− | 1.1+ | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2002 11 07 | 704 | 0.4+ | 0.7+ | 2002 12 31 | 699 | 0.4− | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.0 | | |
| 2002 11 07 | 704 | 1.0+ | 0.4+ | 2002 12 31 | 699 | 0.7− | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.8− | | |
| 2002 11 07 | 704 | 0.8+ | 0.5+ | 2002 12 31 | 699 | 0.7+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2002 11 11 | 704 | 0.8− | 0.1− | 2002 12 31 | 699 | 0.2− | 0.9+ | 2006 10 23 | G96 | 0.1+ | 0.3+ | | |
| 2002 11 11 | 704 | (1.6− | 0.3+) | 2002 12 31 | 704 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.2− | | |
| 2002 11 11 | 704 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.8− | 0.7+ | 2006 10 23 | G96 | 0.4+ | 0.6− | | |
| 2002 11 11 | 704 | 0.4− | 0.9+ | 2002 12 31 | 704 | 0.6− | 0.4− | 2006 11 01 | 691 | 0.4+ | 0.0 | | |
| 2002 11 24 | 644 | 0.5− | 0.4+ | 2003 01 04 | 704 | (2.0+ | 0.2−) | 2006 11 01 | 691 | 0.6− | 0.2− | | |
| 2002 11 24 | 644 | 0.4− | 0.6+ | 2003 01 04 | 704 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.4+ | | |
| 2002 11 24 | 644 | 0.3− | 0.4+ | 2003 01 04 | 704 | 0.5− | 0.5+ | 2006 11 22 | G96 | 0.0 | 0.4− | | |
| 2002 12 05 | 608 | (1.7+ | 0.5+) | 2004 03 14 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 1.3− | 0.9− | | |
| 2002 12 05 | 608 | (1.8+ | 0.5+) | 2004 03 14 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.3− | | |
| 2002 12 05 | 608 | (1.9+ | 0.1+) | 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− | | |
| 2002 12 10 | 644 | 0.2− | 0.7− | 2004 03 21 | 691 | 0.1+ | 0.2+ | | | | | | |

**(142969)∗ 2002 VF$_{82}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.17067 | | (2000.0) | | | |
| $n$ | 0.23767417 | $\omega$ | 231.76277 | | +0.95203094 | −0.30228729 |
| $a$ | 2.5811588 | $\Omega$ | 145.75746 | | +0.30046481 | +0.89404000 |
| $e$ | 0.2285302 | $i$ | 4.84586 | | +0.05794818 | +0.33062800 |
| $P$ | 4.15 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 23 | 691 | 0.3+ | 0.8− | 2005 06 06 | 691 | 0.1+ | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | | |
| 1996 04 23 | 691 | 0.3+ | 0.5− | 2005 06 10 | 691 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | | |
| 1996 04 23 | 691 | 0.1− | 0.5− | 2005 06 10 | 691 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.4+ | | |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2005 06 10 | 691 | 0.7− | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.6− | 0.4+ | 2005 06 27 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.9+ | 2005 06 27 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2− | 0.2+ | 2005 06 27 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.8+ | | |
| 2002 11 11 | 704 | 0.0 | 0.9+ | 2005 06 30 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.7+ | 1.4+ | | |
| 2002 11 11 | 704 | (0.1− | 1.5+) | 2005 06 30 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | (0.4+ | 1.5+) | | |
| 2002 11 11 | 704 | 0.9− | 0.3+ | 2005 06 30 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 1.1+ | | |
| 2002 12 01 | 704 | 0.5− | 0.3+ | 2005 07 04 | 691 | 0.2− | 0.7+ | 2006 11 19 | 703 | 0.6− | 0.0 | | |
| 2002 12 01 | 704 | 0.8+ | 1.2− | 2005 07 04 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.3− | 1.0+ | | |
| 2002 12 01 | 704 | 1.0− | 0.9+ | 2005 07 04 | 691 | 0.3− | 0.6+ | 2006 11 19 | 703 | 0.0 | 0.2+ | | |
| 2002 12 01 | 704 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.6− | 0.7+ | | |
| 2002 12 10 | 644 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.9+ | | |
| 2002 12 10 | 644 | 0.7− | 0.1+ | 2006 09 18 | 703 | 0.8+ | 0.1− | 2006 11 20 | 704 | 0.4− | 0.3− | | |
| 2002 12 10 | 644 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.2− | 2006 11 20 | 704 | 0.2− | 0.9+ | | |
| 2002 12 11 | 704 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 20 | 704 | 0.7+ | 0.7+ | | |
| 2002 12 11 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.7+ | | |
| 2002 12 11 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.6+ | 2006 11 20 | 704 | 0.2+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.7+ | | |
| 2004 03 18 | 691 | 0.3+ | 0.7+ | 2006 10 27 | 704 | 1.2− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.5+ | | |
| 2004 03 18 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 704 | (1.6+ | 1.9−) | 2006 11 20 | 704 | 0.1+ | 0.8+ | | |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 10 27 | 704 | 0.3− | 0.7+ | 2006 11 23 | G96 | 0.5+ | 0.3+ | | |
| 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 704 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1+ | | |
| 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.3+ | 0.4− | 2006 11 23 | G96 | 0.2+ | 0.1+ | | |
| 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 11 01 | 703 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.1− | | |
| 2005 06 06 | 691 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.3− | 0.3− | | | | | | |
| 2005 06 06 | 691 | 1.4+ | 0.1− | 2006 11 01 | 703 | 0.0 | 0.0 | | | | | | |

**(142970)∗ 2002 VG$_{82}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.85806 | | (2000.0) | | | |
| $n$ | 0.21777487 | $\omega$ | 289.84124 | | +0.80954750 | −0.57170010 |
| $a$ | 2.7360931 | $\Omega$ | 105.24752 | | +0.57695939 | +0.73286189 |
| $e$ | 0.2244812 | $i$ | 7.94675 | | +0.10840070 | +0.36887999 |
| $P$ | 4.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.1− | 1.6+ | 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.4+ | | |
| 2002 10 11 | 704 | 0.3− | 0.7+ | 2002 12 31 | 704 | 0.4+ | 0.7+ | 2006 08 28 | E12 | 0.1− | 0.3+ | | |
| 2002 10 11 | 704 | 0.6+ | 1.5+ | 2002 12 31 | 704 | 0.2+ | 0.1+ | 2006 08 28 | E12 | 0.4− | 0.3+ | | |
| 2002 11 07 | 704 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.4+ | 0.2+ | 2006 08 28 | E12 | 0.3+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2003 01 07 | 704 | 0.2− | 1.3+ | 2006 08 28 | E12 | 0.1− | 0.2+ | | |
| 2002 11 07 | 704 | 0.8− | 0.4+ | 2003 01 07 | 704 | 0.5− | 0.2− | 2006 08 30 | 699 | 0.9− | 0.5+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.9− | 2003 01 07 | 704 | (1.3− | 3.5+) | 2006 08 30 | 699 | 0.3− | 0.1+ | | |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2003 01 07 | 704 | 0.7− | 0.4+ | 2006 08 30 | 699 | 0.6+ | 0.4+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.5+ | 2003 01 07 | 704 | 0.7− | 0.0 | 2006 08 30 | 699 | 0.2− | 1.7+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 704 | 0.1− | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.0 | | |
| 2002 11 11 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 704 | 0.3− | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 11 | 704 | 0.2+ | 0.3+ | 2003 01 31 | 704 | 1.0− | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.1− | | |
| 2002 12 01 | 704 | 0.7+ | 1.4− | 2003 01 31 | 704 | 0.5− | 0.7+ | 2006 09 17 | 699 | 0.1− | 0.4− | | |
| 2002 12 01 | 704 | 1.0+ | 1.4− | 2004 03 20 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 699 | 0.1+ | 0.1− | | |
| 2002 12 01 | 704 | 0.9+ | 1.3− | 2004 03 20 | 691 | 0.0 | 0.4+ | 2006 09 17 | 699 | 0.1+ | 0.3+ | | |
| 2002 12 01 | 704 | 1.1+ | 1.3− | 2004 03 20 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.7+ | 0.5− | | |
| 2002 12 10 | 644 | 0.3− | 0.1+ | 2004 03 30 | 691 | 0.3+ | 0.1− | 2006 09 17 | 699 | 0.6+ | 0.0 | | |
| 2002 12 10 | 644 | 0.4− | 0.0 | 2004 03 30 | 691 | 0.0 | 0.1− | 2006 09 17 | 699 | 0.2+ | 0.4− | | |
| 2002 12 10 | 644 | 0.4− | 0.1+ | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.1− | 0.2− | | |
| 2002 12 11 | 704 | 0.6− | 0.4− | 2005 05 16 | G96 | 0.4− | 0.4+ | 2006 09 17 | 699 | 0.2+ | 0.3+ | | |
| 2002 12 11 | 704 | 0.7− | 0.4+ | 2005 05 16 | G96 | 0.2− | 0.1+ | 2006 09 20 | 703 | 0.8− | 0.3+ | | |
| 2002 12 11 | 704 | 0.9− | 0.6+ | 2005 05 16 | G96 | 0.2− | 0.4+ | 2006 09 20 | 703 | 0.8+ | 0.3− | | |
| 2002 12 11 | 704 | 0.7− | 0.5+ | 2005 05 16 | G96 | 0.3− | 0.4+ | 2006 09 20 | 703 | 0.6− | 0.4+ | | |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.7+ | 2006 09 20 | 703 | 0.2+ | 0.3+ | | |
| 2002 12 16 | 608 | 0.0 | 1.2+ | 2005 06 14 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.8+ | | |
| 2002 12 16 | 608 | 0.1− | 1.0+ | 2005 06 14 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 1.1+ | | |
| 2002 12 16 | 608 | 0.4+ | 1.0+ | 2006 08 16 | 644 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.5− | | |
| 2002 12 31 | 704 | 0.7+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.3− | | |

**(142971)∗ 2002 VQ$_{82}$ = 1997 PZ$_4$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41234)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.59267 | | (2000.0) | | | |
| $n$ | 0.22735610 | $\omega$ | 174.03601 | | +0.75407425 | −0.64464038 |
| $a$ | 2.6586733 | $\Omega$ | 226.92050 | | +0.59525366 | +0.75169163 |
| $e$ | 0.1699794 | $i$ | 9.91297 | | +0.27757000 | +0.13927842 |
| $P$ | 4.34 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 327 | 0.7− | 0.3+ | 2003 01 18 | 644 | 0.3− | 0.3+ | 2006 10 26 | 704 | 0.5+ | 0.4+ | | |
| 1997 08 11 | 327 | 0.5− | 0.3+ | 2003 01 18 | 644 | 0.2− | 0.2+ | 2006 10 26 | 704 | 0.1− | 0.2+ | | |
| 1997 08 11 | 327 | 0.3− | 0.3+ | 2004 03 15 | 644 | 0.4+ | 0.3+ | 2006 10 29 | 704 | 0.1− | 0.2− | | |
| 1997 08 13 | 327 | 0.4− | 0.8+ | 2004 03 15 | 644 | 0.3+ | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.1− | | |
| 1997 08 13 | 327 | 0.5− | 0.7+ | 2004 03 15 | 644 | 0.6+ | 0.3+ | 2006 10 29 | 704 | 0.5− | 0.3− | | |
| 1997 08 13 | 327 | 1.3+ | 1.6+ | 2005 07 12 | G96 | 0.6− | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.4− | | |
| 1999 01 15 | 699 | 0.1+ | 1.4+ | 2005 07 12 | G96 | 0.6− | 0.5+ | 2006 10 29 | 704 | 0.3− | 0.2− | | |
| 1999 01 15 | 699 | 0.7+ | 0.9+ | 2005 07 12 | G96 | 0.8− | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.0 | | |
| 1999 01 15 | 699 | 0.5+ | 0.3+ | 2005 07 12 | G96 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.1− | | |
| 2000 05 10 | 704 | 0.5+ | 1.7+ | 2006 08 12 | 644 | 0.4− | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.1− | | |
| 2000 05 10 | 704 | 0.5+ | 0.3+ | 2006 08 12 | 644 | 0.3− | 0.3+ | 2006 11 10 | 683 | (1.8+ | 0.8−) | | |
| 2000 05 10 | 704 | 0.5+ | 0.4+ | 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 11 10 | 683 | 1.2+ | 1.0− | | |
| 2000 05 10 | 704 | 0.8+ | 0.8+ | 2006 08 24 | 704 | 0.2+ | 0.3+ | 2006 11 10 | 683 | (2.1+ | 0.2−) | | |
| 2002 09 07 | 704 | 0.3+ | 0.6+ | 2006 08 24 | 704 | 0.4− | 0.5+ | 2006 11 11 | 683 | 0.6+ | 1.0− | | |
| 2002 09 07 | 704 | 0.7+ | 0.4− | 2006 08 24 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 683 | 0.6+ | 0.2+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.1+ | 2006 08 24 | 704 | 0.9+ | 0.1+ | 2006 11 11 | 683 | 0.1+ | 0.8+ | | |
| 2002 10 03 | 704 | 1.4+ | 0.4+ | 2006 09 20 | 699 | 0.2+ | 0.3− | 2006 11 13 | 683 | 0.4+ | 0.1− | | |
| 2002 10 03 | 704 | 0.6+ | 0.2− | 2006 09 20 | 699 | 0.1− | 0.2+ | 2006 11 13 | 683 | (0.1− | 1.7+) | | |
| 2002 10 03 | 704 | 1.2+ | 0.4− | 2006 09 20 | 699 | 0.2+ | 0.1+ | 2006 11 13 | 683 | 0.2− | 0.4+ | | |
| 2002 10 11 | 704 | 0.8− | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.2+ | 2006 11 14 | 683 | 0.9+ | 0.1− | | |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2006 09 21 | 704 | 1.2+ | 0.5− | 2006 11 14 | 683 | 1.4+ | 1.4+ | | |
| 2002 10 11 | 704 | 1.0− | 0.1+ | 2006 09 21 | 704 | 0.2− | 0.6+ | 2006 11 14 | 683 | 0.3− | 0.7+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.3+ | 2006 09 21 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 703 | 0.3− | 0.6− | | |
| 2002 10 11 | 704 | 0.6− | 0.1− | 2006 09 21 | 704 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.6− | | |
| 2002 10 11 | 704 | 0.3− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.4− | | |
| 2002 10 11 | 704 | 0.6− | 0.5− | 2006 09 29 | 704 | 0.5− | 0.5+ | 2006 11 14 | 703 | 0.6+ | 0.9− | | |
| 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.3− | | |
| 2002 10 11 | 704 | (1.6− | 1.0−) | 2006 09 29 | 704 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.4− | 0.1+ | | |
| 2002 10 11 | 704 | 1.4− | 0.3− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1− | | |
| 2002 11 07 | 704 | (0.3+ | 1.7+) | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.4+ | | |
| 2002 11 07 | 704 | (0.4+ | 1.8+) | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.0 | | |
| 2002 11 07 | 704 | (0.8+ | 1.9+) | 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.4− | | |
| 2002 11 07 | 704 | (0.6+ | 2.2+) | 2006 10 17 | 703 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.3− | | |
| 2002 11 07 | 704 | (0.5+ | 2.0+) | 2006 10 17 | 703 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.2− | | |
| 2002 11 11 | 704 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2− | | |
| 2002 11 11 | 704 | 0.1+ | 0.8− | 2006 10 17 | 703 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.1+ | | |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2006 10 19 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.0 | | |
| 2002 11 11 | 704 | 0.6+ | 0.8− | 2006 10 19 | 704 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2002 12 01 | 704 | 0.5− | 0.1+ | 2006 10 19 | 704 | 0.3+ | 0.9+ | 2006 11 19 | 704 | 0.4− | 0.1+ | | |
| 2002 12 01 | 704 | 0.7− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.0 | 0.2− | | |
| 2002 12 01 | 704 | 0.6− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.3− | | |
| 2002 12 01 | 704 | 0.3− | 0.1− | 2006 10 19 | 704 | 0.0 | 1.1+ | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.2− | | |
| 2002 12 10 | 704 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.3− | 0.2− | | |
| 2002 12 10 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.4− | | |
| 2002 12 14 | 704 | 0.2− | 0.2+ | 2006 10 20 | 704 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2006 10 20 | 704 | 0.7+ | 1.1+ | 2006 11 22 | 704 | 0.3+ | 0.5− | | |
| 2002 12 14 | 704 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.0 | | |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 10 20 | 704 | 0.2+ | 1.1+ | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.5− | 0.4+ | 2006 10 20 | 704 | 0.1+ | 1.0+ | 2006 11 22 | 704 | 0.3− | 0.3− | | |
| 2003 01 01 | 704 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.2− | | |
| 2003 01 01 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 704 | 0.7+ | 0.1+ | 2006 11 28 | 704 | 1.0− | 0.7− | | |
| 2003 01 01 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.4− | | |
| 2003 01 01 | 704 | (1.6+ | 0.0 ) | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.5− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.9− | 1.3− |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 12 03 | 644 | 0.6+ | 0.2+ |
| 2003 01 05 | 704 | 0.1+ | 0.3+ | 2006 10 24 | 704 | 1.5− | 0.1+ | 2006 12 03 | 644 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.1+ | 0.3+ | 2006 10 24 | 704 | 0.9− | 0.6+ | 2006 12 03 | 644 | 0.5+ | 0.2− |
| 2003 01 05 | 704 | 0.2− | 0.6+ | 2006 10 24 | 704 | 1.2− | 0.3+ | | | | |
| 2003 01 18 | 644 | 0.3− | 0.1+ | 2006 10 26 | 704 | 0.5+ | 0.0 | | | | |

**(142972)∗ 2002 VY$_{82}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.02248 | | (2000.0) | | | |
| $n$ | 0.23594333 | $\omega$ | 196.21001 | | +0.99736662 | −0.07097010 |
| $a$ | 2.5937667 | $\Omega$ | 167.83048 | | +0.07188541 | +0.94010000 |
| $e$ | 0.1503513 | $i$ | 4.06289 | | +0.00960845 | +0.33342950 |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.5+ | 0.6− | 2004 03 17 | 735 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 1.2− | 0.7+ | 2004 03 17 | 735 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2002 11 07 | 704 | 0.7− | 0.2− | 2005 06 01 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2005 06 01 | 691 | 0.2− | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2002 11 11 | 704 | 0.8− | 0.1+ | 2005 06 01 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2002 11 11 | 704 | 0.1− | 0.5+ | 2005 06 10 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.6− |
| 2002 11 11 | 704 | 0.0 | 1.4+ | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2002 11 11 | 704 | 0.1− | 1.1+ | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 11 11 | 704 | 0.1+ | 0.0 | 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 11 13 | 704 | 0.1− | 0.9+ | 2005 06 16 | 691 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2002 11 13 | 704 | 0.0 | 0.5+ | 2005 06 16 | 691 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2002 11 13 | 704 | 1.1+ | 0.1+ | 2006 09 15 | 644 | 0.2− | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 11 13 | 704 | 1.3− | 0.1+ | 2006 09 15 | 644 | 0.6+ | 0.9+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 11 13 | 704 | 0.1− | 0.4+ | 2006 09 15 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 704 | 1.2− | 0.5+ |
| 2002 11 16 | 644 | 0.4− | 0.5− | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 704 | 1.4+ | 1.0− |
| 2002 11 16 | 644 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 22 | 704 | 0.7− | 0.9− |
| 2002 11 16 | 644 | 0.5− | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 704 | (0.2− | 2.1+) |
| 2002 11 23 | 644 | 0.3+ | 0.9+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 27 | 704 | (1.8+ | 2.0+) |
| 2002 11 23 | 644 | 0.0 | 0.9+ | 2006 09 23 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 704 | 0.8+ | 1.2− |
| 2002 11 23 | 644 | 0.2+ | 0.9+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.7− | 0.8− |
| 2002 11 28 | 699 | 0.4− | 1.0+ | 2006 09 27 | 704 | 0.3+ | 1.4+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 11 28 | 699 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.8− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 11 28 | 699 | 0.2− | 1.2+ | 2006 09 27 | 704 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 11 28 | 699 | 0.2+ | 1.0+ | 2006 09 27 | 704 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 12 01 | 704 | 1.1+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.5+ |
| 2002 12 01 | 704 | 0.5+ | 0.8− | 2006 09 30 | 703 | 1.1− | 0.4− | 2006 11 13 | 703 | 0.2− | 0.5+ |
| 2002 12 01 | 704 | 1.0− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.2+ |
| 2002 12 01 | 704 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.3− | 1.2+ |
| 2002 12 07 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 1.1− | 1.0+ |
| 2002 12 07 | 644 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2002 12 07 | 644 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 2002 12 10 | 644 | 0.0 | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 1.3+ | 0.5+ |
| 2002 12 10 | 644 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2002 12 10 | 644 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2004 02 13 | 291 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2004 02 13 | 291 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2004 02 13 | 291 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2004 02 26 | 704 | 1.2+ | 0.8+ | 2006 10 16 | 703 | 1.4− | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.2− |
| 2004 02 26 | 704 | 1.2+ | 0.6− | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 2004 02 26 | 704 | 0.8+ | 0.8+ | 2006 10 16 | 703 | 0.9− | 0.2+ | 2006 11 20 | 704 | 0.8+ | 0.3+ |
| 2004 02 26 | 704 | 0.5+ | 1.2+ | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2004 03 17 | 735 | 0.9− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | | | |

**(142973)∗ 2002 VK$_{83}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.50626 | | (2000.0) | | | |
| $n$ | 0.26459409 | $\omega$ | 316.87241 | | +0.70711802 | −0.69694574 |
| $a$ | 2.4029752 | $\Omega$ | 87.72887 | | +0.67689299 | +0.61838322 |
| $e$ | 0.1474463 | $i$ | 6.86153 | | +0.20445046 | +0.36313747 |
| $P$ | 3.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.1− | 0.1+ | 2002 12 13 | 704 | 0.4− | 0.6+ | 2003 01 19 | 644 | 0.4+ | 0.4+ |
| 1995 11 18 | 691 | 0.2+ | 0.5+ | 2002 12 13 | 704 | 0.6− | 0.0 | 2003 01 31 | 704 | 0.4− | 0.1− |
| 1995 11 18 | 691 | 0.3− | 0.1+ | 2002 12 13 | 704 | 0.8− | 0.1+ | 2003 01 31 | 704 | 0.4+ | 0.4+ |
| 1998 10 18 | 699 | 1.4+ | 0.1− | 2002 12 13 | 704 | 1.0− | 0.5+ | 2003 01 31 | 704 | 0.5+ | 0.4+ |
| 1998 10 18 | 699 | 0.2+ | 1.0+ | 2002 12 13 | 704 | 0.9− | 0.2+ | 2003 01 31 | 704 | (1.7+ | 1.0+) |
| 1998 10 18 | 699 | 0.4+ | 0.3+ | 2002 12 27 | 644 | 0.1+ | 0.5+ | 2005 07 10 | E12 | 0.4+ | 0.1− |
| 2000 03 05 | 704 | (1.3+ | 2.4+) | 2002 12 27 | 644 | 0.1+ | 0.6+ | 2005 07 10 | E12 | 0.5+ | 0.6+ |
| 2000 03 05 | 704 | 1.0+ | 1.3+ | 2002 12 27 | 644 | 0.1− | 0.5+ | 2005 07 10 | E12 | 0.4− | 0.1+ |
| 2000 03 05 | 704 | 1.0+ | 1.7+ | 2002 12 31 | 699 | 0.0 | 0.5+ | 2005 07 10 | E12 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.5+ | 0.2− | 2002 12 31 | 699 | 0.0 | 0.7− | 2005 07 29 | E12 | 0.9− | 1.4+ |
| 2002 10 11 | 704 | 0.4+ | 0.8− | 2002 12 31 | 704 | 0.1+ | 0.8− | 2005 07 29 | E12 | 1.1− | 0.7+ |
| 2002 10 11 | 704 | 0.9− | 0.5+ | 2002 12 31 | 704 | 0.3− | 0.5− | 2005 07 29 | E12 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2002 12 31 | 699 | 0.3− | 0.5− | 2005 07 29 | E12 | 0.6− | 0.9+ |
| 2002 11 07 | 704 | 0.6+ | 0.2+ | 2002 12 31 | 704 | 0.0 | 0.8− | 2006 09 26 | 691 | 0.7+ | 0.2− |
| 2002 11 07 | 704 | 0.0 | 0.1+ | 2002 12 31 | 699 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.3− |
| 2002 11 07 | 704 | 0.4− | 0.9− | 2002 12 31 | 704 | 0.8+ | 0.7− | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2002 11 11 | 704 | 0.3+ | 0.2+ | 2002 12 31 | 704 | 0.5+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.4− | 0.3− | 2003 01 01 | 704 | 0.1+ | 0.8+ | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2002 11 11 | 704 | 0.1+ | 0.5− | 2003 01 01 | 704 | 0.4− | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.8− |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2003 01 01 | 704 | 0.7− | 0.3− | 2006 10 17 | G96 | 0.5− | 0.7− |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2003 01 01 | 704 | 1.2− | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 11 24 | 644 | 0.3+ | 0.3− | 2003 01 01 | 704 | 0.9− | 0.4− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2003 01 02 | 704 | 0.2+ | 0.5− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 11 27 | 699 | 0.8+ | 0.5+ | 2003 01 02 | 704 | 0.3− | 0.7+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 11 27 | 699 | 0.6+ | 0.3+ | 2003 01 02 | 704 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.4− | 0.4− |
| 2002 11 27 | 699 | 0.6− | 0.5+ | 2003 01 02 | 704 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 11 27 | 699 | 0.7+ | 0.4+ | 2003 01 02 | 704 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 0.5− | 1.2+ | 2003 01 04 | 704 | 0.4+ | 0.9+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 12 11 | 704 | 0.0 | 0.6+ | 2003 01 04 | 704 | 0.1− | 0.8+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2002 12 11 | 704 | 0.0 | 0.4+ | 2003 01 04 | 704 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 12 11 | 704 | 0.4− | 1.1+ | 2003 01 09 | 704 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2003 01 09 | 704 | 0.4+ | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.6− |
| 2002 12 11 | 636 | 0.9− | 1.4− | 2003 01 09 | 704 | 0.4− | 0.6− | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2002 12 11 | 636 | 0.2+ | 0.1− | 2003 01 09 | 704 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.7− |
| 2002 12 11 | 636 | 0.5− | 1.1− | 2003 01 19 | 644 | 0.2+ | 0.5+ | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2002 12 11 | 636 | 0.6− | 0.3− | 2003 01 19 | 644 | 0.0 | 0.2+ | | | | |

**(142974)∗ 2002 VO$_{83}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.00141 | | (2000.0) | | | |
| $n$ | 0.27649925 | $\omega$ | 324.70652 | | +0.42229514 | −0.89716187 |
| $a$ | 2.3334943 | $\Omega$ | 100.00126 | | +0.85895203 | +0.35042019 |
| $e$ | 0.0929207 | $i$ | 7.55553 | | +0.28960011 | +0.26889826 |
| $P$ | 3.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.2− | 0.5+ | 2002 12 11 | 704 | 0.7− | 1.1+ | 2005 07 27 | 644 | 0.0 | 0.6+ |
| 2000 03 12 | 704 | 0.2+ | 0.3+ | 2002 12 11 | 704 | 0.2− | 0.8+ | 2005 08 04 | 644 | 0.0 | 0.3+ |
| 2000 03 12 | 704 | 0.8+ | 0.8+ | 2002 12 12 | 704 | 0.3+ | 0.6− | 2005 08 04 | 644 | 0.2+ | 0.3+ |
| 2000 03 12 | 704 | 0.4+ | 0.3+ | 2002 12 12 | 704 | 0.4− | 0.4− | 2005 08 04 | 644 | 0.0 | 0.6+ |
| 2002 10 31 | 608 | 0.6− | 0.8+ | 2002 12 12 | 704 | 0.1− | 0.3− | 2005 08 05 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 608 | 0.9− | 0.4+ | 2002 12 12 | 704 | (0.8− | 1.6−) | 2005 08 05 | 644 | 0.2+ | 0.1+ |
| 2002 10 31 | 608 | 0.3− | 0.2+ | 2002 12 15 | 608 | 0.0 | 0.6− | 2005 08 05 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.3− | 0.9+ | 2002 12 15 | 608 | 0.3+ | 1.2− | 2005 08 28 | 615 | 1.2− | 0.3+ |
| 2002 11 07 | 704 | 0.2− | 1.0+ | 2002 12 15 | 608 | 0.0 | 0.8− | 2005 08 28 | 615 | (1.6+ | 0.4−) |
| 2002 11 07 | 704 | 0.3+ | 0.5+ | 2002 12 28 | 699 | 0.5+ | 0.9+ | 2005 08 30 | 699 | 0.2+ | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.4− | 0.8− | 2002 12 28 | 699 | (0.1+ | 2.0+) | 2005 08 30 | 699 | 0.9− | 1.1+ | | |
| 2002 11 11 | 704 | 0.7+ | 0.2− | 2002 12 28 | 699 | 0.5− | 0.5− | 2005 08 30 | 699 | 0.1+ | 0.8− | | |
| 2002 11 11 | 704 | 0.2+ | 0.4+ | 2002 12 28 | 699 | 0.9− | 1.1+ | 2005 08 30 | 699 | 0.5+ | 0.3+ | | |
| 2002 11 11 | 704 | 0.4− | 0.4− | 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.5− | | |
| 2002 11 11 | 704 | 0.2− | 0.6− | 2002 12 31 | 704 | 0.4+ | 1.4− | 2006 09 28 | G96 | 0.1− | 0.4− | | |
| 2002 11 28 | 699 | 0.1+ | 1.1+ | 2002 12 31 | 704 | 0.1+ | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.4− | | |
| 2002 11 28 | 699 | 0.5− | 0.4− | 2002 12 31 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.4− | | |
| 2002 11 28 | 699 | 0.0 | 0.3+ | 2002 12 31 | 704 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.6+ | 0.2+ | | |
| 2002 11 28 | 699 | 0.7− | 0.7+ | 2004 05 10 | 599 | 0.2+ | 0.9+ | 2006 11 01 | 691 | 0.3+ | 0.2− | | |
| 2002 12 01 | 704 | 0.3+ | 0.2+ | 2004 05 10 | 599 | 0.3+ | 0.8+ | 2006 11 01 | 691 | 0.5+ | 0.2+ | | |
| 2002 12 01 | 704 | 0.5+ | 0.1+ | 2004 05 10 | 599 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.0 | | |
| 2002 12 01 | 704 | 1.1+ | 0.5+ | 2004 05 10 | 599 | 0.5+ | 0.5+ | 2006 11 24 | G96 | 0.4− | 0.2− | | |
| 2002 12 01 | 704 | 0.8+ | 0.1+ | 2004 05 14 | 599 | 0.2+ | 0.8+ | 2006 11 24 | G96 | 0.3− | 0.1− | | |
| 2002 12 10 | 644 | 0.1− | 0.2− | 2004 05 14 | 599 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2002 12 10 | 644 | 0.0 | 0.0 | 2004 05 14 | 599 | 0.4− | 0.4+ | 2006 11 27 | 291 | 0.3− | 0.1+ | | |
| 2002 12 10 | 644 | 0.1− | 0.1− | 2004 05 14 | 599 | 0.2+ | 1.0+ | 2006 11 27 | 291 | 0.2− | 0.4+ | | |
| 2002 12 11 | 704 | 0.4− | 0.0 | 2005 07 27 | 644 | 0.3− | 0.4+ | 2006 11 27 | 291 | 0.1− | 0.0 | | |
| 2002 12 11 | 704 | 0.2+ | 0.0 | 2005 07 27 | 644 | 0.2− | 0.6+ | | | | | | |

**(142975)∗ 2002 VM$_{84}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.08589 | | (2000.0) | | | |
| $n$ | 0.21753617 | $\omega$ | 186.16574 | | +0.41753330 | −0.89722557 |
| $a$ | 2.7380943 | $\Omega$ | 239.23724 | | +0.84066289 | +0.44145546 |
| $e$ | 0.2814386 | $i$ | 9.62743 | | +0.34489395 | +0.01016639 |
| $P$ | 4.53 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 26 | 566 | 0.5+ | 0.6− | 2003 01 28 | 704 | 0.2+ | 1.4+ | 2006 09 26 | 683 | 0.4− | 0.6− | | |
| 1997 11 26 | 566 | 0.0 | 1.8− | 2003 01 28 | 704 | 1.0− | 0.8+ | 2006 09 27 | 683 | 1.4− | 0.9− | | |
| 1997 11 26 | 566 | 0.6+ | 0.1− | 2003 02 01 | 704 | 0.3− | 0.8− | 2006 09 27 | 703 | 0.7− | 0.1− | | |
| 1997 11 26 | 566 | 0.7− | 1.7− | 2003 02 01 | 704 | 0.0 | 0.7− | 2006 09 27 | 683 | (0.6− | 1.8−) | | |
| 1997 11 26 | 566 | 1.0+ | 0.1− | 2003 02 01 | 704 | 0.0 | 0.6− | 2006 09 27 | 703 | 0.5− | 0.0 | | |
| 1997 11 26 | 566 | 0.1+ | 1.5− | 2003 02 01 | 704 | 0.1+ | 0.1− | 2006 09 27 | 683 | (0.3− | 1.7−) | | |
| 2001 07 13 | 608 | 0.4+ | 0.0 | 2003 02 01 | 704 | 0.6+ | 0.5− | 2006 09 27 | 703 | 0.3− | 0.4− | | |
| 2001 07 13 | 608 | 0.3+ | 0.0 | 2004 04 21 | 704 | 0.5− | 0.1− | 2006 09 27 | 703 | 0.6− | 0.1− | | |
| 2001 07 13 | 608 | 0.6+ | 0.2+ | 2004 04 21 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 683 | 0.6− | 0.6− | | |
| 2002 09 05 | 704 | 0.3− | 0.6+ | 2004 04 21 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 683 | 0.2+ | 0.2− | | |
| 2002 09 05 | 704 | 0.5− | 0.7− | 2004 04 21 | 704 | 0.4+ | 1.0− | 2006 09 28 | 683 | 0.4− | 0.6+ | | |
| 2002 09 05 | 704 | 0.3− | 0.4+ | 2004 04 22 | 704 | 0.2+ | 0.7+ | 2006 09 29 | 683 | 0.2+ | 0.5+ | | |
| 2002 09 05 | 704 | 0.2− | 0.8+ | 2004 04 22 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 699 | 0.3+ | 0.1− | | |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2004 04 22 | 704 | (0.1− | 2.5−) | 2006 09 29 | 683 | 1.0+ | 1.4+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.1+ | 2004 04 22 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 683 | 1.0− | 0.7+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2004 04 26 | 704 | 0.5− | 0.0 | 2006 09 29 | 699 | 0.3− | 0.3− | | |
| 2002 10 11 | 704 | 0.1− | 0.3+ | 2004 04 26 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.0 | 0.4+ | 2004 04 26 | 704 | 0.6− | 0.3− | 2006 09 30 | 683 | 0.1+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2004 04 26 | 704 | 0.9− | 1.4+ | 2006 09 30 | 683 | 0.6+ | 0.8+ | | |
| 2002 11 07 | 704 | 0.7− | 0.7+ | 2004 04 26 | 704 | 1.3+ | 0.1− | 2006 09 30 | 683 | (1.6− | 5.7+) | | |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2004 04 26 | 704 | 0.5− | 0.5− | 2006 10 03 | 704 | (0.3+ | 1.6+) | | |
| 2002 11 11 | 704 | 0.5+ | 0.5+ | 2004 04 26 | 704 | 1.2− | 1.1+ | 2006 10 03 | 704 | 0.5+ | 0.9+ | | |
| 2002 11 11 | 704 | 0.6+ | 0.4+ | 2006 08 10 | 644 | 0.2+ | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.9+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.5+ | 2006 08 10 | 644 | 0.4− | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.6+ | | |
| 2002 11 11 | 704 | 0.8+ | 0.4+ | 2006 08 10 | 644 | 0.2− | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.8+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.8+ | 2006 08 29 | 699 | 0.3− | 0.2+ | 2006 10 03 | 703 | 0.1− | 0.2− | | |
| 2002 12 14 | 704 | 0.2− | 0.0 | 2006 08 29 | 699 | 0.7− | 0.3− | 2006 10 03 | 703 | 0.6+ | 0.2− | | |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 08 29 | 699 | 1.2+ | 0.4+ | 2006 10 03 | 703 | 0.2− | 0.2− | | |
| 2002 12 14 | 704 | 0.6− | 0.1− | 2006 09 01 | 704 | (0.0 | 1.5+) | 2006 10 03 | 703 | 0.5− | 0.1− | | |
| 2002 12 14 | 704 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.0 | | |
| 2002 12 14 | 704 | 0.3− | 0.4− | 2006 09 01 | 704 | 1.0+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.3− | | |
| 2003 01 01 | 704 | 0.2+ | 0.0 | 2006 09 06 | 644 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.0 | | |
| 2003 01 01 | 704 | 0.4− | 0.0 | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.4− | | |
| 2003 01 01 | 704 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.5+ | 0.1− | | |
| 2003 01 01 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.5− | 0.0 | 2006 10 23 | 703 | 0.4+ | 0.7− | | |
| 2003 01 01 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.4+ | 2006 10 23 | 703 | 0.9+ | 1.1− | | |
| 2003 01 05 | 704 | 0.6+ | 0.4− | 2006 09 16 | 703 | 0.2− | 0.2− | 2006 10 23 | 703 | 0.9+ | 0.2+ | | |
| 2003 01 05 | 704 | 0.4+ | 0.2− | 2006 09 16 | 703 | 1.0+ | 0.3+ | 2006 11 20 | 704 | (0.0 | 1.7+) | | |
| 2003 01 05 | 704 | 0.7+ | 0.1− | 2006 09 16 | 703 | 0.0 | 0.2+ | 2006 11 20 | 704 | (0.2− | 1.6+) | | |
| 2003 01 05 | 704 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.9− | 1.3+ | | |
| 2003 01 05 | 704 | 0.6+ | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.0 | 2006 11 20 | 704 | 1.2+ | 1.0+ | | |
| 2003 01 09 | 704 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.7+ | | |
| 2003 01 09 | 704 | 0.5+ | 0.1− | 2006 09 21 | 699 | 0.1− | 0.1+ | 2006 11 27 | 704 | 0.4− | 0.8+ | | |
| 2003 01 09 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 11 27 | 704 | 0.1− | 0.8+ | | |
| 2003 01 09 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.4− | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.6− | | |
| 2003 01 28 | 704 | 0.4− | 0.0 | 2006 09 21 | 699 | 0.0 | 0.4+ | 2006 11 27 | 704 | 0.3− | 0.7+ | | |
| 2003 01 28 | 704 | 0.8− | 0.3− | 2006 09 26 | 683 | 1.2− | 0.5− | | | | | | |
| 2003 01 28 | 704 | 0.5− | 0.3+ | 2006 09 26 | 683 | 0.2− | 0.9− | | | | | | |

**(142976)∗ 2002 VN$_{84}$ = 2001 QT$_{167}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41237)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.22310 | | (2000.0) | | | |
| $n$ | 0.21327374 | $\omega$ | 337.40796 | | −0.08040328 | −0.98218247 |
| $a$ | 2.7744557 | $\Omega$ | 116.84354 | | +0.94113846 | −0.13093764 |
| $e$ | 0.2479198 | $i$ | 10.97471 | | +0.32831953 | +0.13480698 |
| $P$ | 4.62 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 608 | 0.0 | 0.4− | 2003 01 10 | 291 | 0.1− | 0.1+ | 2003 02 12 | 608 | 1.0+ | 0.0 | | |
| 2001 08 24 | 608 | 0.1− | 0.4+ | 2003 01 10 | 291 | 0.2− | 0.2+ | 2003 02 26 | 704 | 0.4+ | 1.3− | | |
| 2001 08 24 | 608 | 0.7− | 0.1+ | 2003 01 10 | 291 | 0.0 | 0.4+ | 2003 02 26 | 704 | 0.5− | 0.2− | | |
| 2001 08 27 | 644 | 0.2+ | 0.1+ | 2003 01 10 | 608 | 0.3+ | 0.1− | 2003 02 26 | 704 | 0.4− | 0.5− | | |
| 2001 08 27 | 644 | 0.3− | 0.5+ | 2003 01 10 | 608 | 0.0 | 0.1− | 2003 02 26 | 704 | 0.1+ | 0.1− | | |
| 2001 08 27 | 644 | 0.3− | 0.7+ | 2003 01 10 | 608 | 0.4+ | 0.3+ | 2003 03 06 | 704 | 0.1− | 0.5− | | |
| 2002 11 07 | 704 | 0.7+ | 0.1− | 2003 01 25 | 291 | 0.1+ | 0.1+ | 2003 03 06 | 704 | 0.6+ | 0.5− | | |
| 2002 11 07 | 704 | 1.0+ | 0.6+ | 2003 01 25 | 291 | 0.2− | 0.1+ | 2003 03 06 | 704 | 0.5+ | 0.0 | | |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2003 01 25 | 291 | 0.2− | 0.0 | 2003 03 06 | 704 | 0.2− | 0.3+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.0 | 2003 01 27 | 699 | 0.6− | 0.0 | 2003 03 06 | 704 | 0.5+ | 0.8+ | | |
| 2002 11 11 | 704 | 0.4+ | 0.2− | 2003 01 27 | 699 | 0.0 | 0.3+ | 2003 03 26 | 704 | 0.4− | 1.2− | | |
| 2002 11 11 | 704 | 0.2− | 1.4+ | 2003 01 27 | 699 | 0.5− | 0.3+ | 2003 03 26 | 704 | 0.1− | 0.2− | | |
| 2002 11 11 | 704 | 0.3+ | 0.1+ | 2003 01 27 | 699 | 0.2+ | 0.4− | 2003 03 26 | 704 | 0.0 | 1.2+ | | |
| 2002 11 11 | 704 | 0.4− | 0.3+ | 2003 01 30 | 608 | (4.3+ | 0.0 ) | 2004 05 14 | 691 | 0.2+ | 0.2+ | | |
| 2002 12 05 | 644 | 0.5+ | 0.1+ | 2003 01 30 | 608 | (3.7+ | 0.6+) | 2004 05 14 | 691 | 0.3+ | 0.2+ | | |
| 2002 12 05 | 644 | 0.4+ | 0.2+ | 2003 01 30 | 608 | (3.6+ | 0.1+) | 2004 05 14 | 691 | 0.4+ | 0.4+ | | |
| 2002 12 05 | 644 | 0.5+ | 0.1− | 2003 01 31 | 704 | 1.3− | 1.4+ | 2004 05 19 | 691 | 0.1+ | 0.4+ | | |
| 2002 12 11 | 704 | 1.3+ | 0.3+ | 2003 01 31 | 704 | 1.1− | 1.0+ | 2004 05 19 | 691 | 0.0 | 0.6+ | | |
| 2002 12 11 | 704 | 0.1− | 0.3+ | 2003 01 31 | 704 | 0.2+ | 1.0+ | 2004 05 19 | 691 | 0.0 | 0.5+ | | |
| 2002 12 11 | 704 | 0.9+ | 0.1+ | 2003 01 31 | 704 | 1.5− | 0.8+ | 2005 06 13 | G96 | 0.5− | 0.6+ | | |
| 2002 12 11 | 704 | 0.5+ | 0.6+ | 2003 01 31 | 704 | 0.8− | 1.0+ | 2005 06 13 | G96 | 0.2+ | 1.0+ | | |
| 2002 12 11 | 704 | 0.7+ | 0.7+ | 2003 02 03 | 704 | 0.6+ | 0.3− | 2005 06 13 | G96 | 0.4+ | 0.3+ | | |
| 2002 12 18 | 608 | 0.1+ | 0.7+ | 2003 02 03 | 704 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.4+ | | |
| 2002 12 18 | 608 | 0.1+ | 0.0 | 2003 02 03 | 704 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.1+ | | |
| 2002 12 18 | 608 | 0.6+ | 0.4− | 2003 02 03 | 704 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.7− | 0.9+ | | |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2003 02 03 | 704 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.1− | 0.5+ | | |
| 2002 12 31 | 704 | 0.3− | 0.7+ | 2003 02 05 | 608 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.7− | | |
| 2002 12 31 | 704 | 0.3− | 0.0 | 2003 02 05 | 608 | 0.0 | 0.3+ | 2006 09 25 | 703 | 0.2+ | 0.3+ | | |
| 2002 12 31 | 704 | 0.0 | 0.0 | 2003 02 05 | 608 | 0.2+ | 0.6+ | 2006 09 25 | 703 | 0.1− | 1.4+ | | |
| 2002 12 31 | 704 | 0.1− | 0.1+ | 2003 02 07 | 704 | 0.3− | 0.9− | 2006 09 25 | 703 | 0.2+ | 0.8+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.0 | 2003 02 07 | 704 | 0.5− | 0.6− | 2006 09 25 | 703 | (1.0+ | 1.6+) | | |
| 2003 01 04 | 704 | 0.3+ | 0.9− | 2003 02 07 | 704 | 0.4− | 0.4− | 2006 10 09 | 644 | 0.2− | 0.4+ | | |
| 2003 01 04 | 704 | 0.0 | 0.3− | 2003 02 07 | 704 | 0.6− | 0.3− | 2006 10 09 | 644 | 0.3− | 0.2+ | | |
| 2003 01 04 | 704 | 0.2+ | 0.2− | 2003 02 08 | 704 | 0.6− | 0.5− | 2006 10 09 | 644 | 0.2− | 0.6+ | | |
| 2003 01 04 | 704 | 0.1− | 0.2− | 2003 02 08 | 704 | 0.1+ | 0.6− | 2006 10 22 | 644 | 0.4− | 0.4+ | | |
| 2003 01 08 | 704 | 0.2+ | 0.1+ | 2003 02 08 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.5+ | | |
| 2003 01 08 | 704 | 0.1+ | 0.3+ | 2003 02 08 | 704 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2003 01 08 | 704 | 0.2+ | 0.5+ | 2003 02 12 | 608 | 0.8+ | 0.3− | | | | | | |
| 2003 01 08 | 704 | 0.3+ | 0.0 | 2003 02 12 | 608 | 0.7+ | 0.3− | | | | | | |

**(142977)∗ 2002 VT$_{84}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.15100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23956484 | $\omega$ | 264.69814 | | −0.11379899 | −0.99333100 | |
| $a$ | 2.5675604 | $\Omega$ | 191.88418 | | +0.94344510 | −0.10220098 | |
| $e$ | 0.2773872 | $i$ | 5.16217 | | +0.31138583 | −0.05337124 | |
| $P$ | 4.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 26 | 691 | 0.0 | 0.1+ | 2003 01 08 | 628 | 0.3+ | 0.2+ | 2006 11 05 | 644 | 0.2− | 0.2− |
| 1995 02 26 | 691 | 0.0 | 0.2− | 2003 01 08 | 628 | 0.1+ | 0.2+ | 2006 11 05 | 644 | 0.1− | 0.1+ |
| 1995 02 26 | 691 | 0.3+ | 0.2− | 2003 01 09 | 704 | 1.0− | 0.1− | 2006 11 05 | 644 | 0.3− | 0.1− |
| 1998 11 26 | 699 | 0.3− | 1.0+ | 2003 01 09 | 704 | 1.2− | 0.3− | 2006 11 14 | 704 | 0.7− | 1.0+ |
| 1998 11 26 | 699 | 0.1− | 1.7+ | 2003 01 09 | 704 | 1.4− | 0.3− | 2006 11 14 | 704 | 0.9− | 0.6+ |
| 1998 11 26 | 699 | 0.3− | 0.8+ | 2003 01 09 | 704 | 1.0− | 0.1− | 2006 11 14 | 704 | 0.9− | 1.1+ |
| 1999 01 15 | 699 | (2.5− | 0.2−) | 2003 03 07 | 704 | 1.1+ | 0.1+ | 2006 11 14 | 704 | 1.0− | 1.1+ |
| 1999 01 15 | 699 | 0.9+ | 0.2− | 2003 03 07 | 704 | 0.7+ | 0.9+ | 2006 11 17 | 704 | 0.9− | 1.3+ |
| 1999 01 15 | 699 | 0.8+ | 0.5+ | 2003 03 07 | 704 | 0.6+ | 0.2+ | 2006 11 17 | 704 | 1.6− | 1.5− |
| 1999 02 14 | 699 | 0.6+ | 0.8+ | 2003 04 05 | 704 | 0.5+ | 0.8+ | 2006 11 17 | 704 | 1.2− | 1.2+ |
| 1999 02 14 | 699 | 0.3+ | 1.0+ | 2003 04 05 | 704 | 0.4− | 0.7+ | 2006 11 17 | 704 | 1.4− | 0.9+ |
| 1999 02 14 | 699 | 0.2− | 0.4+ | 2003 04 05 | 704 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.4− |
| 2002 11 07 | 704 | 0.1+ | 0.6+ | 2003 04 05 | 704 | 0.6− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.1− | 2004 04 30 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2002 11 07 | 704 | 0.5+ | 0.7− | 2004 04 30 | 691 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.3− | 0.1− |
| 2002 11 11 | 704 | 0.3+ | 0.1− | 2004 04 30 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2002 11 11 | 704 | 0.2− | 0.2− | 2005 07 01 | 691 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.7− | 0.5+ |
| 2002 11 11 | 704 | 0.7+ | 1.1+ | 2005 07 01 | 691 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.2− | 0.1+ | 2005 07 01 | 691 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2003 01 01 | 704 | 1.4− | 0.1+ | 2006 09 16 | 703 | 0.5− | 0.7+ | 2006 11 20 | 704 | 0.2− | 0.2− |
| 2003 01 01 | 704 | 0.8− | 0.9− | 2006 09 16 | 703 | 0.6+ | 0.8+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2003 01 01 | 704 | 1.3− | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.6− | 0.3− |
| 2003 01 01 | 704 | 0.9− | 0.5+ | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 11 25 | 704 | 0.3− | 0.1+ |
| 2003 01 01 | 704 | 0.9− | 0.3+ | 2006 09 20 | 704 | 1.2− | 1.0+ | 2006 11 25 | 704 | 0.4− | 0.2+ |
| 2003 01 02 | 704 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.0 | 0.5+ | 2006 11 25 | 704 | 0.3− | 0.1+ |
| 2003 01 02 | 704 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.6+ | 0.7+ | 2006 11 25 | 704 | 0.6− | 0.1+ |
| 2003 01 02 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 25 | 704 | 0.8− | 0.1+ |
| 2003 01 02 | 704 | 0.5+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | (5.4+ | 1.4−) |
| 2003 01 05 | 704 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | (5.8+ | 1.1−) |
| 2003 01 05 | 704 | 0.4+ | 0.0 | 2006 11 02 | G96 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.6+ | 0.1− |
| 2003 01 05 | 704 | 0.5+ | 0.0 | 2006 11 02 | G96 | 0.1+ | 0.5− | 2006 11 28 | 704 | 1.0+ | 0.3+ |
| 2003 01 05 | 704 | 0.5+ | 0.1+ | 2006 11 02 | G96 | 0.3− | 0.4− | 2006 11 28 | 704 | (5.3+ | 0.9−) |
| 2003 01 05 | 704 | 0.4+ | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.3− | | | | |

**(142978)∗ 2002 VU$_{84}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.22314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23277069 | $\omega$ | 260.69778 | | +0.59972709 | −0.79907035 | |
| $a$ | 2.6172820 | $\Omega$ | 152.31352 | | +0.76545015 | +0.55735100 | |
| $e$ | 0.2374636 | $i$ | 5.25945 | | +0.23326696 | +0.22549154 | |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 11 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 683 | 0.1− | 0.6+ | 2006 10 03 | 704 | 0.1+ | 0.6+ |
| 1997 07 11 | 691 | 0.4+ | 0.5+ | 2006 09 17 | 683 | 0.9− | 0.8+ | 2006 10 03 | 704 | 0.1+ | 0.9− |
| 1997 07 11 | 691 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 31 | A50 | 0.8+ | 0.4+ |
| 1997 10 07 | 691 | 0.7− | 0.8+ | 2006 09 18 | 703 | 0.2− | 0.7+ | 2006 10 31 | A50 | 0.1− | 0.5− |
| 1997 10 07 | 691 | 0.3− | 0.1− | 2006 09 18 | 703 | 1.0+ | 0.1+ | 2006 11 01 | 703 | 0.3− | 0.3− |
| 1997 10 07 | 691 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 11 01 | 703 | 0.4− | 0.1− |
| 1999 02 06 | 120 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.2− | 1.1− | 2006 11 01 | 703 | (1.8− | 1.0−) |
| 1999 02 06 | 120 | 0.4− | 1.1+ | 2006 09 22 | 704 | 0.5+ | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.6− |
| 2002 11 07 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 1.1+ | 0.3+ | 2006 11 11 | 644 | 0.0 | 0.2− |
| 2002 11 07 | 704 | 0.3+ | 0.5+ | 2006 09 22 | 683 | 1.3+ | 0.2+ | 2006 11 11 | 644 | 0.2− | 0.3− |
| 2002 11 07 | 704 | 0.3− | 0.4− | 2006 09 22 | 683 | (1.9+ | 0.1−) | 2006 11 11 | 644 | 0.0 | 0.2− |
| 2002 11 11 | 704 | 0.6− | 0.7− | 2006 09 22 | 683 | 0.5+ | 0.8− | 2006 11 19 | 703 | 0.0 | 0.3− |
| 2002 11 11 | 704 | 0.2− | 0.3− | 2006 09 28 | 704 | (1.7− | 0.4+) | 2006 11 19 | 703 | 0.7− | 0.2− |
| 2002 11 11 | 704 | (0.2+ | 1.5−) | 2006 09 28 | 704 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.5− | 0.0 |
| 2002 12 31 | 704 | 0.5− | 0.7+ | 2006 09 28 | 704 | 0.0 | 0.6− | 2006 11 19 | 703 | 0.7− | 0.3− |
| 2002 12 31 | 704 | 0.5− | 0.8+ | 2006 09 30 | 699 | 0.1+ | 0.2− | 2006 11 20 | 704 | (0.9+ | 1.7+) |
| 2002 12 31 | 704 | 0.3− | 0.8+ | 2006 09 30 | 699 | 0.5+ | 0.7− | 2006 11 20 | 704 | (0.9− | 1.9+) |
| 2002 12 31 | 704 | 0.2− | 0.6+ | 2006 09 30 | 699 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.1+ |
| 2002 12 31 | 704 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.8− | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2003 01 07 | 704 | 0.6+ | 0.0 | 2006 09 30 | 699 | 0.2− | 0.6− | 2006 11 20 | 704 | 0.8− | 0.6+ |
| 2003 01 07 | 704 | 1.3+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.8− | 2006 11 25 | G96 | 0.1+ | 0.7− |
| 2003 01 07 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 25 | G96 | 0.1− | 0.6− |
| 2003 01 07 | 704 | 0.2+ | 1.2+ | 2006 09 30 | 703 | 0.4+ | 0.8− | 2006 11 25 | G96 | 0.4− | 1.6+ |
| 2003 01 07 | 704 | 1.0+ | 0.8+ | 2006 10 03 | 704 | 0.6− | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.8− |
| 2006 09 17 | 683 | 0.4+ | 0.3− | 2006 10 03 | 704 | 0.2+ | 1.4+ | | | | |

**(142979)∗ 2002 VX$_{84}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.93805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22270624 | $\omega$ | 130.78124 | | +0.88461648 | −0.42754499 | |
| $a$ | 2.6955525 | $\Omega$ | 255.28173 | | +0.34842770 | +0.87134870 | |
| $e$ | 0.2685503 | $i$ | 11.09786 | | +0.30992229 | +0.24074203 | |
| $P$ | 4.43 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | (0.9+ | 2.3+) | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2001 06 15 | 704 | (1.0+ | 1.8+) | 2005 06 13 | G96 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.4− |
| 2001 06 15 | 704 | 0.4+ | 0.6+ | 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.4− |
| 2002 10 04 | 644 | 0.5+ | 0.4+ | 2005 06 26 | G96 | (1.8+ | 1.0−) | 2006 11 16 | 704 | 0.0 | 0.4− |
| 2002 10 04 | 644 | 0.4+ | 0.3+ | 2005 06 26 | G96 | 0.0 | 0.8+ | 2006 11 16 | 704 | 1.4+ | 0.9− |
| 2002 10 04 | 644 | 0.6+ | 0.0 | 2005 06 26 | G96 | 0.2+ | 0.7+ | 2006 11 16 | 704 | 0.5+ | 0.8− |
| 2002 11 07 | 704 | 0.1+ | 0.7+ | 2005 06 26 | G96 | 0.1− | 0.7+ | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.7+ | 2006 08 23 | 704 | 1.2− | 0.4+ | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.5+ | 0.2+ | 2006 08 23 | 704 | 1.1− | 1.3+ | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2002 11 11 | 704 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.7− | 1.2+ | 2006 11 22 | 703 | 0.2− | 0.2− |
| 2002 11 11 | 704 | 0.2− | 1.0+ | 2006 08 23 | 704 | 1.0− | 0.9+ | 2006 11 22 | 703 | 0.0 | 0.4− |
| 2002 11 11 | 704 | 0.4+ | 0.3− | 2006 08 23 | 704 | 0.8− | 0.9+ | 2006 11 22 | 703 | 0.4− | 0.3− |
| 2002 11 11 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.3− |
| 2002 12 05 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 24 | H51 | 0.1− | 0.6− |
| 2002 12 05 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 24 | H51 | 0.1+ | 0.4− |
| 2002 12 05 | 644 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.1− | 2006 11 24 | H51 | (1.6+ | 0.7−) |
| 2002 12 14 | 699 | 0.2− | 0.7+ | 2006 10 19 | 703 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 12 14 | 699 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2002 12 14 | 699 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 12 14 | 699 | 0.7+ | 0.5− | 2006 10 20 | 704 | 0.3+ | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 10 20 | 704 | 0.0 | 0.4+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2003 01 05 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 704 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2003 01 05 | 704 | 0.4− | 0.0 | 2006 10 20 | 704 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 10 20 | 704 | 0.0 | 0.1+ | 2006 11 25 | 951 | 0.4− | 0.1+ |
| 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.1+ | 2006 11 25 | 951 | 0.0 | 0.1− |
| 2003 01 27 | 704 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.2+ | 2006 11 25 | 951 | 0.4+ | 0.2+ |
| 2003 01 27 | 704 | 0.6− | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.3+ | 1.1+ |
| 2003 01 27 | 704 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.8+ | 0.5+ |
| 2003 01 27 | 704 | 0.6+ | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.1− | 2006 12 01 | 704 | 0.6+ | 0.2+ |
| 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.1− | | | | |

**(142980)∗ 2002 VZ$_{84}$ = 2004 DV$_{35}$**

Discovered 2002 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61594)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.59508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26844190 | $\omega$ | 56.93892 | | −0.27443706 | +0.96105148 | |
| $a$ | 2.3799574 | $\Omega$ | 197.22262 | | −0.91491077 | −0.27140421 | |
| $e$ | 0.0828921 | $i$ | 6.32604 | | −0.29601110 | −0.05215177 | |
| $P$ | 3.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.2− | 0.7+ | 2004 02 19 | 704 | 0.5+ | 0.1+ | 2004 03 27 | 704 | 0.4− | 1.2+ |
| 1991 11 08 | 691 | 0.3+ | 0.2− | 2004 02 19 | 704 | 0.3− | 0.1+ | 2005 07 11 | 703 | 0.4− | 1.1+ |
| 1991 11 08 | 691 | 0.2− | 0.1+ | 2004 02 19 | 704 | 0.6+ | 0.4+ | 2005 07 11 | 703 | 0.1+ | 0.4+ |
| 1998 10 28 | 691 | 0.0 | 0.3+ | 2004 02 19 | 704 | 0.5− | 0.3− | 2005 07 11 | 703 | 1.2+ | 0.8− |
| 1998 10 28 | 691 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2005 07 11 | 703 | 0.1+ | 1.0− |
| 1998 10 28 | 691 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2005 07 29 | 699 | (0.3− | 1.6+) |
| 2001 06 15 | 704 | 0.2− | 1.0+ | 2004 02 23 | 704 | 0.4− | 0.6+ | 2005 07 29 | 699 | 1.0− | 1.1+ |
| 2001 06 15 | 704 | 0.5− | 0.6+ | 2004 02 26 | 683 | (1.2+ | 1.9−) | 2005 07 29 | 699 | 0.8− | 0.8+ |
| 2001 06 15 | 704 | 0.2+ | 1.3+ | 2004 02 26 | 683 | 0.1− | 0.4− | 2005 07 29 | 699 | 1.0+ | 1.4+ |
| 2001 06 15 | 704 | 0.8− | 0.3+ | 2004 02 26 | 704 | 0.0 | 0.3+ | 2005 07 30 | 644 | 0.1− | 0.8+ |
| 2002 11 06 | 644 | 0.1− | 0.7+ | 2004 02 26 | 683 | 0.2− | 0.3− | 2005 07 30 | 644 | 0.1− | 0.5+ |
| 2002 11 06 | 644 | 0.2+ | 0.8+ | 2004 02 26 | 704 | 1.2+ | 0.2+ | 2005 07 30 | 644 | 0.0 | 0.6+ |
| 2002 11 06 | 644 | 0.1+ | 0.7+ | 2004 02 26 | 704 | (1.7+ | 0.3+) | 2005 09 03 | 644 | 0.2− | 0.7+ |
| 2002 11 08 | 704 | (0.9− | 1.9+) | 2004 02 26 | 704 | 1.1+ | 0.6+ | 2005 09 03 | 644 | 0.2− | 0.6+ |
| 2002 11 08 | 704 | (0.9− | 2.1+) | 2004 03 15 | 704 | 1.0+ | 0.2+ | 2005 09 03 | 644 | 0.2− | 0.6+ |
| 2002 11 08 | 704 | (0.9+ | 1.9+) | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2002 11 11 | 704 | 1.1− | 0.8+ | 2004 03 15 | 704 | 0.7+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2002 11 11 | 704 | 0.6− | 0.2− | 2004 03 15 | 704 | 0.3+ | 1.4+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 11 11 | 704 | (1.1− | 2.4+) | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 11 11 | 704 | (1.1− | 1.7+) | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2004 02 15 | 703 | (1.6− | 0.4+) | 2004 03 18 | 704 | 0.0 | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2004 02 15 | 703 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2004 02 15 | 703 | 0.9+ | 0.4+ | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.6− | 0.8+ |
| 2004 02 15 | 703 | 0.6+ | 0.4+ | 2004 03 27 | 704 | 0.8− | 0.9+ | | | | |
| 2004 02 19 | 704 | 0.0 | 0.9+ | 2004 03 27 | 704 | 0.0 | 1.1+ | | | | |

**(142981)∗ 2002 VK$_{85}$**

Discovered 2002 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.47928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23749177 | $\omega$ | 225.72038 | | −0.98427976 | −0.06088992 | |
| $a$ | 2.5824802 | $\Omega$ | 310.06018 | | +0.13923026 | −0.84505155 | |
| $e$ | 0.2316383 | $i$ | 12.51013 | | −0.10866592 | −0.53120646 | |
| $P$ | 4.15 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 1.3+ | 0.3+ | 2003 12 22 | 704 | 1.4− | 1.3+ | 2004 04 23 | E12 | 0.2+ | 0.3+ |
| 2002 10 06 | 704 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.7+ | 0.1− | 2004 04 23 | E12 | 0.3− | 0.2+ |
| 2002 10 06 | 704 | 1.1+ | 0.4+ | 2003 12 22 | 704 | 0.5− | 0.8+ | 2004 04 24 | E12 | 0.0 | 0.2+ |
| 2002 10 13 | 644 | 0.2− | 0.0 | 2004 02 02 | 703 | 0.8− | 1.1− | 2004 04 24 | E12 | 0.1+ | 0.1+ |
| 2002 10 13 | 644 | 0.3− | 0.0 | 2004 02 02 | 703 | (0.3− | 2.0−) | 2004 04 24 | E12 | 0.2− | 0.2+ |
| 2002 10 13 | 644 | 0.2− | 0.1+ | 2004 02 02 | 703 | 0.3− | 0.2− | 2004 04 24 | E12 | 0.4+ | 0.6+ |
| 2002 10 31 | 704 | 0.5− | 1.3− | 2004 02 02 | 703 | 0.8− | 0.4− | 2004 05 13 | 703 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.3− | 0.2+ | 2004 02 02 | 703 | 0.2+ | 0.3− | 2004 05 13 | 703 | 0.0 | 0.6− |
| 2002 10 31 | 704 | 0.1− | 0.7− | 2004 02 02 | 703 | 0.1− | 0.3− | 2004 05 13 | 703 | 0.2+ | 0.0 |
| 2002 11 08 | 704 | (0.5+ | 1.8+) | 2004 02 02 | 703 | 1.0+ | 0.0 | 2004 05 13 | 703 | 0.1− | 0.6+ |
| 2002 11 08 | 704 | 0.1− | 0.4− | 2004 02 02 | 703 | 0.2+ | 0.4− | 2004 06 13 | 644 | 0.3+ | 0.5+ |
| 2002 11 08 | 704 | 0.6− | 0.5+ | 2004 03 26 | 704 | 0.4+ | 0.8+ | 2004 06 13 | 644 | 0.2+ | 0.7+ |
| 2002 11 08 | 704 | 0.3− | 0.1+ | 2004 03 26 | 704 | 0.5+ | 0.8+ | 2004 06 13 | 644 | 0.4+ | 0.8+ |
| 2002 11 12 | 699 | 0.4− | 1.0+ | 2004 03 26 | 704 | 0.2+ | 0.7+ | 2005 08 06 | 644 | 0.3− | 0.4+ |
| 2002 11 12 | 699 | 0.3+ | 0.3+ | 2004 03 26 | 704 | 0.2+ | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.6+ |
| 2002 11 12 | 699 | 0.9− | 0.3+ | 2004 03 26 | 704 | 0.2+ | 0.6+ | 2005 08 06 | 644 | 0.2− | 0.5+ |
| 2002 11 12 | 699 | 0.5− | 1.1− | 2004 03 28 | 699 | 0.6+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.5+ |
| 2002 11 15 | 704 | (1.7− | 1.1+) | 2004 03 28 | 699 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.0 | 0.6+ |
| 2002 11 15 | 704 | 0.8− | 1.4+ | 2004 03 28 | 699 | 0.2+ | 0.2+ | 2006 10 19 | 703 | (1.8− | 1.0+) |
| 2002 11 15 | 704 | 0.3+ | 0.8+ | 2004 03 28 | 699 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.4− | 1.4+ |
| 2002 11 25 | 644 | 0.7+ | 0.6+ | 2004 04 12 | 428 | 0.6− | 0.4+ | 2006 10 27 | 703 | 0.6− | 0.3− |
| 2002 11 25 | 644 | 0.1− | 0.6+ | 2004 04 12 | 428 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.4+ |
| 2002 11 25 | 644 | 0.6+ | 0.7+ | 2004 04 12 | E12 | 0.6+ | 0.5− | 2006 10 27 | 703 | 1.1− | 1.1+ |
| 2003 12 19 | 703 | 0.1− | 0.9+ | 2004 04 12 | E12 | 0.7+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2003 12 19 | 703 | (2.1+ | 0.1+) | 2004 04 12 | E12 | 0.5+ | 0.7− | 2006 11 15 | 703 | 0.9− | 0.1+ |
| 2003 12 19 | 703 | (2.1+ | 0.5+) | 2004 04 12 | E12 | 0.3+ | 0.4− | 2006 11 15 | 703 | 0.3− | 0.2+ |
| 2003 12 19 | 703 | 0.7− | 0.4− | 2004 04 23 | E12 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.9+ | 0.1+ |
| 2003 12 22 | 704 | 1.2− | 0.2− | 2004 04 23 | E12 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.6− |

**(142982)∗ 2002 VD$_{87}$ = 2004 DH$_{39}$**

Discovered 2002 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.96754 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21475722 | $\omega$ | 13.97990 | | +0.99804409 | +0.05654813 | |
| $a$ | 2.7616642 | $\Omega$ | 342.71171 | | −0.06241883 | +0.87791083 | |
| $e$ | 0.0876193 | $i$ | 5.14530 | | −0.00344785 | +0.47547332 | |
| $P$ | 4.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.2+ | 1.0+ | 2002 12 05 | 704 | 0.4− | 1.4+ | 2006 08 19 | 691 | 0.2− | 0.6+ |
| 2000 04 05 | 699 | 0.3+ | 0.5− | 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 699 | 1.2+ | 1.9+ | 2002 12 05 | 704 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2000 04 05 | 699 | 0.7+ | 0.3− | 2002 12 05 | 704 | 0.3+ | 0.4− | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2001 07 18 | 644 | 0.5− | 0.3+ | 2002 12 06 | 704 | (2.0− | 0.1−) | 2006 08 28 | 703 | 0.7− | 0.1+ |
| 2001 07 18 | 644 | 0.5− | 0.4+ | 2002 12 06 | 704 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.8− | 0.5+ |
| 2001 07 18 | 644 | 0.3− | 0.4+ | 2002 12 06 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.3− | 0.2+ |
| 2002 11 08 | 704 | (0.9+ | 1.7+) | 2002 12 06 | 704 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.5− |
| 2002 11 08 | 704 | 1.0+ | 0.4+ | 2002 12 06 | 704 | (0.5+ | 1.6−) | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2002 11 08 | 704 | 0.9+ | 0.7+ | 2002 12 11 | 704 | 0.9+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.5+ |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.6− | 0.8+ |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | 0.3+ | 0.3− | 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.0 | 1.4− | 2004 02 22 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 0.6− | 1.0− |
| 2002 11 14 | 704 | (1.6− | 0.7−) | 2004 02 22 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.6+ |
| 2002 11 14 | 704 | (0.1− | 1.7−) | 2004 02 22 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.3− |
| 2002 11 14 | 704 | 0.2− | 1.4− | 2004 02 23 | 704 | 1.1− | 1.2+ | 2006 09 17 | 704 | 0.4+ | 0.2+ |
| 2002 11 14 | 704 | 0.0 | 1.0− | 2004 02 23 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 699 | 0.1− | 0.0 |
| 2002 11 15 | 644 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.5+ | 1.0+ | 2006 09 20 | 699 | 0.1− | 1.4+ |
| 2002 11 15 | 644 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 09 20 | 699 | 0.5+ | 0.6+ |
| 2002 11 15 | 644 | 0.1− | 0.4− | 2004 02 25 | 704 | 0.4− | 0.3+ | 2006 09 20 | 699 | 1.0− | 0.3+ |
| 2002 11 24 | 644 | 0.0 | 0.8+ | 2004 02 25 | 704 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2002 11 24 | 644 | 0.3− | 0.8+ | 2004 02 25 | 704 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2002 11 24 | 644 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 1.0+ | 1.4+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2002 11 27 | 699 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2002 11 27 | 699 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.8+ |
| 2002 11 27 | 699 | 0.8− | 0.8− | 2004 03 18 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2002 11 27 | 699 | 0.1+ | 0.2+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.6+ |
| 2002 12 02 | 704 | 0.3− | 0.4− | 2004 03 18 | 691 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 1.2+ | 0.2+ |
| 2002 12 02 | 704 | 0.1− | 0.1− | 2004 03 27 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2002 12 02 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2002 12 02 | 704 | 0.6− | 0.5+ | 2004 03 27 | 691 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2002 12 02 | 704 | 0.3− | 0.9+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2002 12 05 | 704 | 0.6− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.5+ | | | | |

**(142983)∗ 2002 VO$_{87}$ = 2000 HN$_{95}$**

Discovered 2002 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41240)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.41331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23865030 | $\omega$ | 54.00245 | | −0.10830320 | −0.97648449 | |
| $a$ | 2.5741156 | $\Omega$ | 43.41774 | | +0.80230827 | −0.19657777 | |
| $e$ | 0.1008220 | $i$ | 15.73657 | | +0.58700243 | +0.08851679 | |
| $P$ | 4.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 0.1+ | 0.2+ | 2002 12 12 | 644 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.5+ | 0.1− |
| 2000 04 28 | 691 | 0.1− | 0.7+ | 2002 12 12 | 644 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.4− |
| 2000 04 28 | 691 | 0.3+ | 0.1+ | 2004 03 15 | 704 | 0.5+ | 1.0− | 2006 10 22 | 691 | 0.2− | 0.8+ |
| 2000 05 07 | 691 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.0 | 0.4− | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2000 05 07 | 691 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.9+ | 2006 10 22 | 691 | 0.7− | 0.2+ |
| 2000 05 07 | 691 | 0.1+ | 0.1+ | 2004 03 15 | 704 | 0.5+ | 1.5+ | 2006 10 23 | 683 | 0.0 | 1.5− |
| 2002 11 01 | 644 | 0.5+ | 0.4− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 10 23 | 683 | 0.0 | 0.6− |
| 2002 11 01 | 644 | 0.3+ | 0.5− | 2004 03 23 | 704 | 1.3+ | 1.3+ | 2006 10 23 | 683 | 0.8− | 0.7− |
| 2002 11 01 | 644 | 0.1+ | 0.4− | 2004 03 23 | 704 | 0.0 | 0.7+ | 2006 10 23 | 691 | 0.6− | 0.3+ |
| 2002 11 08 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2002 11 08 | 704 | 0.5+ | 0.0 | 2004 03 23 | 704 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2002 11 08 | 704 | 0.5− | 0.3− | 2004 04 15 | 644 | 0.5+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 11 12 | 704 | 0.8+ | 1.4− | 2004 04 15 | 644 | 0.4+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2002 11 12 | 704 | 0.7− | 0.6+ | 2004 04 15 | 644 | 0.4+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 0.0 | 0.2+ | 2004 04 26 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 11 12 | 704 | (1.5+ | 1.7−) | 2004 04 26 | 691 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2002 11 12 | 704 | 0.4+ | 1.1− | 2004 04 26 | 691 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.6+ | 0.3− | 2006 09 30 | 703 | 1.3− | 1.5− | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.7+ | 0.9− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2002 11 14 | 704 | 1.0+ | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.6− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 11 24 | 644 | 0.2− | 1.0− | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 11 24 | 644 | 0.1− | 1.1− | 2006 10 03 | G96 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 11 24 | 644 | 0.1− | 1.2− | 2006 10 03 | G96 | 0.2− | 0.0 | 2006 11 17 | 703 | 1.4+ | 0.3+ |
| 2002 12 02 | 704 | 0.3+ | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.0 | 2006 11 17 | 703 | 1.0− | 1.4+ |
| 2002 12 02 | 704 | 0.3− | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.7− | 1.3+ |
| 2002 12 02 | 704 | 0.9+ | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.5+ |
| 2002 12 02 | 704 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.4+ | 2.0+ |
| 2002 12 02 | 704 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2002 12 06 | 704 | 0.4+ | 0.8− | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 1.1− | 1.2+ |
| 2002 12 06 | 704 | 0.7+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.4− | 1.2+ |
| 2002 12 06 | 704 | 0.7+ | 0.6− | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.4− | 0.8+ | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.4− |
| 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.3+ | | | | |
| 2002 12 12 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.6+ | 0.2+ | | | | |

**(142984)∗ 2002 VA$_{88}$**

Discovered 2002 Nov. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.85856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27726326 | $\omega$ | 127.04863 | | +0.76998654 | −0.63569701 | |
| $a$ | 2.3292057 | $\Omega$ | 272.49052 | | +0.56659154 | +0.72075001 | |
| $e$ | 0.1855881 | $i$ | 3.14802 | | +0.29341908 | +0.27642130 | |
| $P$ | 3.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 12 | 691 | 0.0 | 0.0 | 2002 12 02 | 704 | 0.4− | 0.3+ | 2004 04 19 | 704 | 0.7+ | 0.6+ |
| 1991 09 12 | 691 | 0.1− | 0.1+ | 2002 12 02 | 704 | 0.4− | 0.6+ | 2004 04 19 | 704 | 0.9− | 0.9+ |
| 1991 09 12 | 691 | 0.1− | 0.2+ | 2002 12 02 | 704 | 0.6− | 0.9+ | 2004 04 19 | 704 | 0.7− | 0.3+ |
| 2002 09 06 | 704 | 0.9− | 0.0 | 2002 12 05 | 704 | 0.5− | 0.4+ | 2004 05 09 | 691 | 0.7+ | 0.9+ |
| 2002 09 06 | 704 | 0.7+ | 0.0 | 2002 12 05 | 704 | 0.7− | 0.5+ | 2004 05 09 | 691 | 0.3+ | 0.6+ |
| 2002 09 06 | 704 | 0.0 | 0.3+ | 2002 12 05 | 704 | 0.3− | 0.6+ | 2004 05 09 | 691 | 0.5+ | 0.3+ |
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2002 12 05 | 704 | 0.2− | 0.6+ | 2005 07 04 | G96 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.3− | 0.8+ | 2005 07 04 | G96 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.2+ | 0.5− | 2002 12 06 | 704 | 0.4− | 1.2+ | 2005 07 04 | G96 | 0.2− | 0.1− |
| 2002 10 04 | 704 | 0.4+ | 0.4− | 2002 12 06 | 704 | 0.7− | 0.6+ | 2005 07 04 | G96 | 0.4− | 0.2+ |
| 2002 10 04 | 704 | (0.1− | 1.7−) | 2002 12 06 | 704 | 0.1− | 0.4+ | 2005 07 05 | 691 | 0.1− | 0.5+ |
| 2002 11 07 | 291 | 0.2− | 0.7− | 2002 12 06 | 704 | 0.7− | 0.7+ | 2005 07 05 | 691 | 0.4− | 0.1+ |
| 2002 11 07 | 291 | 0.5+ | 0.1− | 2002 12 06 | 704 | 0.7− | 0.3+ | 2005 07 05 | 691 | 0.0 | 0.2+ |
| 2002 11 07 | 291 | 0.8+ | 0.0 | 2002 12 11 | 704 | 0.3− | 0.4+ | 2005 07 10 | 691 | 0.1+ | 0.2+ |
| 2002 11 08 | 704 | 0.1+ | 0.0 | 2002 12 11 | 704 | 0.3− | 0.2+ | 2005 07 10 | 691 | 0.0 | 0.4+ |
| 2002 11 08 | 704 | 1.1− | 0.3− | 2002 12 11 | 704 | 0.2− | 0.6+ | 2005 07 10 | 691 | 0.1+ | 0.4+ |
| 2002 11 08 | 704 | 0.1− | 0.2+ | 2002 12 11 | 704 | 0.6− | 0.6+ | 2005 07 15 | G96 | 0.6− | 0.2− |
| 2002 11 08 | 704 | 0.3+ | 1.1+ | 2002 12 11 | 704 | 0.5− | 0.9+ | 2005 07 15 | G96 | 0.2− | 0.2+ |
| 2002 11 12 | 704 | 0.7+ | 0.3+ | 2002 12 28 | 699 | 0.8+ | 0.5+ | 2005 07 15 | G96 | 0.3− | 0.1+ |
| 2002 11 12 | 704 | 0.6+ | 0.2+ | 2002 12 28 | 699 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.8+ | 0.2+ | 2002 12 28 | 699 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 2002 11 12 | 704 | 0.3+ | 0.0 | 2002 12 28 | 699 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.5+ | 0.1− | 2003 01 08 | 704 | 0.9− | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.5− |
| 2002 11 14 | 704 | 0.3+ | 0.3+ | 2003 01 08 | 704 | 1.3− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.6+ |
| 2002 11 14 | 704 | 0.3− | 0.1+ | 2003 01 08 | 704 | 0.9− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2002 11 14 | 704 | 0.0 | 0.1+ | 2003 01 19 | 644 | 0.2+ | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | 0.4+ | 1.1+ | 2003 01 19 | 644 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.2+ | 2003 01 19 | 644 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2002 11 18 | 644 | 0.0 | 0.8− | 2004 03 31 | 704 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 11 18 | 644 | 0.1− | 0.8− | 2004 03 31 | 704 | (0.0 | 1.7+) | 2006 11 21 | G96 | 0.3− | 0.3+ |
| 2002 11 18 | 644 | 0.2+ | 0.9− | 2004 03 31 | 704 | 0.0 | 0.7+ | 2006 11 21 | G96 | 0.2− | 0.1− |

**(142985)∗ 2002 VF$_{88}$**

Discovered 2002 Nov. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.04799 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26305909 | $\omega$ | 173.86046 | | +0.04943908 | −0.99685792 | |
| $a$ | 2.4123140 | $\Omega$ | 273.29395 | | +0.91370273 | +0.07016541 | |
| $e$ | 0.1133905 | $i$ | 3.55404 | | +0.40336473 | −0.03675728 | |
| $P$ | 3.75 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.3− | 0.8− | 2002 12 10 | 704 | 0.4− | 0.1− | 2005 07 31 | E12 | 0.4+ | 0.0 |
| 2002 11 01 | 644 | 0.0 | 0.3− | 2002 12 10 | 704 | 0.2+ | 0.3+ | 2005 07 31 | E12 | 0.3+ | 0.6+ |
| 2002 11 01 | 644 | 0.0 | 0.6− | 2002 12 10 | 704 | 0.3− | 0.0 | 2005 07 31 | E12 | 0.3− | 0.6+ |
| 2002 11 10 | 704 | 0.8+ | 0.0 | 2002 12 10 | 704 | 0.1− | 0.8+ | 2005 07 31 | E12 | 0.4+ | 0.7− |
| 2002 11 10 | 704 | 0.3+ | 0.7+ | 2003 01 19 | 644 | 0.9− | 0.2− | 2005 08 06 | 644 | 0.1+ | 0.2+ |
| 2002 11 10 | 704 | 1.1+ | 0.3− | 2003 01 19 | 644 | 0.5− | 0.3+ | 2005 08 06 | 644 | 0.2+ | 0.2+ |
| 2002 11 10 | 704 | 0.4+ | 0.3+ | 2003 01 19 | 644 | 0.6− | 0.3+ | 2005 08 06 | 644 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.3− | 0.6+ | 2003 01 31 | 704 | 0.0 | 0.7+ | 2005 09 01 | 691 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.5+ | 0.2+ | 2003 01 31 | 704 | 0.5+ | 0.0 | 2005 09 01 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.3+ | 0.2− | 2003 01 31 | 704 | 0.7− | 0.3+ | 2005 09 01 | 691 | 1.3− | 0.6− |
| 2002 11 14 | 704 | 0.2+ | 0.4+ | 2004 04 21 | 704 | 0.7+ | 1.1+ | 2005 09 14 | 691 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.5+ | 0.5+ | 2004 04 21 | 704 | 0.1− | 1.3+ | 2005 09 14 | 691 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.5+ | 0.4− | 2004 04 21 | 704 | 0.4+ | 0.5+ | 2005 09 14 | 691 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.5− | 0.3− | 2004 04 21 | 704 | 0.1+ | 0.9+ | 2005 10 27 | G96 | 0.0 | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2004 04 21 | 704 | 0.5+ | 0.7+ | 2005 10 27 | G96 | 0.3− | 0.5− |
| 2002 11 27 | 699 | 0.9+ | 0.4+ | 2005 06 29 | 644 | 0.1+ | 0.2+ | 2005 10 27 | G96 | 0.1+ | 0.1− |
| 2002 11 27 | 699 | 0.4+ | 0.5+ | 2005 06 29 | 644 | 0.2− | 0.4+ | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2002 11 27 | 699 | 0.0 | 0.5+ | 2005 06 29 | 644 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2002 11 27 | 699 | 0.6+ | 0.0 | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2002 12 02 | 704 | 0.0 | 0.8− | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2002 12 02 | 704 | 0.1− | 0.3+ | 2005 07 01 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2002 12 02 | 704 | 0.7− | 0.1− | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 12 02 | 608 | (1.0− | 1.6+) | 2005 07 05 | 644 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2002 12 02 | 608 | (1.1− | 1.5+) | 2005 07 05 | 644 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 12 02 | 608 | 0.6− | 1.2+ | 2005 07 05 | 644 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.5+ | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 644 | 0.0 | 0.5+ |
| 2002 12 06 | 704 | 0.7− | 0.2− | 2005 07 05 | 644 | 0.2− | 0.2+ | 2006 11 23 | 644 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 644 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | 0.8− | 0.4+ | 2005 07 18 | 644 | 0.1+ | 0.0 | | | | |
| 2002 12 06 | 704 | 1.0− | 1.0+ | 2005 07 18 | 644 | 0.0 | 0.3+ | | | | |

**(142986)∗ 2002 VP$_{89}$ = 1981 UP$_{21}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.21873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23767727 | $\omega$ | 33.73685 | | +0.28171731 | −0.89213032 | |
| $a$ | 2.5811364 | $\Omega$ | 43.13489 | | +0.72593228 | −0.04252242 | |
| $e$ | 0.2246972 | $i$ | 31.10202 | | +0.62742146 | +0.44977254 | |
| $P$ | 4.15 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 10 24 | 675 | 0.1+ | 0.8+ | 2002 11 17 | 704 | 0.0 | 0.0 | 2006 09 27 | 704 | (0.5− | 2.5+) |
| 1981 10 25 | 675 | 0.3− | 0.0 | 2002 11 17 | 704 | 1.1+ | 1.0+ | 2006 09 27 | 704 | (1.6− | 2.0+) |
| 1981 10 26 | 675 | 2.0− | 1.1+ | 2002 11 17 | 704 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 1999 01 13 | 704 | 1.2+ | 0.6− | 2002 11 17 | 704 | 1.4− | 1.0+ | 2006 09 27 | G96 | 0.4− | 0.1− |
| 1999 01 13 | 704 | 0.9− | 0.3+ | 2002 11 17 | 704 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.3− | 0.2− |
| 1999 01 13 | 704 | 1.0+ | 1.2+ | 2002 12 13 | 704 | 0.6− | 0.9− | 2006 09 27 | G96 | 0.2− | 0.1− |
| 1999 01 13 | 704 | (4.3− | 0.7+) | 2002 12 13 | 704 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.6+ | 0.1− |
| 1999 02 09 | 704 | 0.4+ | 1.0+ | 2002 12 13 | 704 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.0 | 0.8− |
| 1999 02 09 | 704 | 1.5− | 0.4− | 2002 12 13 | 704 | 0.4− | 0.0 | 2006 09 30 | 704 | 0.9+ | 0.9+ |
| 1999 02 09 | 704 | (2.2+ | 1.8−) | 2002 12 13 | 704 | 0.5− | 0.2+ | 2006 09 30 | 704 | 0.5+ | 0.4+ |
| 1999 02 09 | 704 | 1.9+ | 0.2+ | 2002 12 27 | 704 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 1999 02 09 | 704 | (2.4− | 1.7−) | 2002 12 27 | 704 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.1− |
| 2002 10 14 | 704 | 0.4+ | 0.2− | 2002 12 27 | 704 | 0.5+ | 0.2+ | 2006 10 04 | G96 | 0.4+ | 0.3− |
| 2002 10 14 | 704 | 0.5− | 0.5− | 2002 12 27 | 704 | 0.1+ | 1.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2002 10 14 | 704 | (0.6− | 2.3−) | 2002 12 27 | 704 | 0.2+ | 1.1+ | 2006 10 19 | 704 | 0.4− | 0.1− |
| 2002 11 11 | 704 | 1.5− | 0.1+ | 2002 12 28 | 704 | 0.4+ | 0.0 | 2006 10 19 | 704 | 1.2− | 1.1− |
| 2002 11 11 | 704 | 0.9− | 0.3+ | 2002 12 28 | 704 | 0.4+ | 0.7− | 2006 10 19 | 704 | 0.5− | 0.2− |
| 2002 11 11 | 704 | 0.8− | 0.0 | 2002 12 28 | 704 | 0.4+ | 0.9− | 2006 10 19 | 704 | 0.9+ | 1.0+ |
| 2002 11 12 | 704 | 0.1+ | 0.3− | 2002 12 28 | 704 | 0.1+ | 1.0− | 2006 10 19 | 704 | 0.0 | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2002 12 28 | 704 | 0.5+ | 0.5− | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.7− | 0.5− | 2003 01 23 | 704 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.5− | 0.0 |
| 2002 11 12 | 704 | 0.4+ | 0.3− | 2003 01 23 | 704 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2002 11 12 | 704 | 0.2− | 0.9− | 2003 01 23 | 704 | 0.0 | 1.0− | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2002 11 12 | 704 | 0.3+ | 0.3− | 2003 01 23 | 704 | (0.5− | 1.6−) | 2006 10 20 | 704 | 0.9+ | 0.4+ |
| 2002 11 12 | 704 | 0.5− | 0.3− | 2003 01 23 | 704 | (1.0− | 2.1−) | 2006 10 20 | 704 | 0.1+ | 0.7− |
| 2002 11 12 | 704 | 0.5+ | 0.3− | 2003 02 22 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 704 | 0.5− | 0.8+ |
| 2002 11 13 | 704 | 0.1+ | 0.3+ | 2003 02 22 | 704 | 0.8+ | 0.1+ | 2006 10 23 | 703 | (3.6+ | 0.6+) |
| 2002 11 13 | 704 | 0.7+ | 0.8+ | 2003 02 22 | 704 | 0.5+ | 0.1− | 2006 10 23 | 703 | 0.1+ | 0.7− |
| 2002 11 13 | 704 | 0.1+ | 0.5− | 2004 05 15 | 704 | 0.8+ | 1.2+ | 2006 10 23 | 703 | 0.3+ | 0.2− |
| 2002 11 13 | 704 | 0.0 | 0.3− | 2004 05 15 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 703 | (3.6− | 0.8−) |
| 2002 11 13 | 704 | 0.5+ | 0.3+ | 2004 05 15 | 704 | (0.9+ | 1.7+) | 2006 10 29 | 703 | 0.4− | 0.4− |
| 2002 11 14 | 704 | 0.1− | 0.4− | 2004 05 15 | 704 | (2.6+ | 2.2+) | 2006 10 29 | 703 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.3− | 0.4− | 2004 05 15 | 704 | 0.9+ | 0.9+ | 2006 10 29 | 703 | 0.2− | 0.1− |
| 2002 11 14 | 704 | 0.2− | 0.3− | 2006 09 16 | 703 | 0.6− | 1.1+ | 2006 10 29 | 703 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.8− | 1.0+ | 2006 11 13 | 704 | 1.2+ | 0.3− |
| 2002 11 15 | 704 | (0.4− | 1.6+) | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 11 13 | 704 | 0.7+ | 0.2+ |
| 2002 11 15 | 704 | (0.1+ | 1.6+) | 2006 09 16 | 703 | 0.6− | 0.1− | 2006 11 13 | 704 | 0.5+ | 0.0 |
| 2002 11 15 | 704 | 0.2+ | 1.0+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 703 | 0.2− | 0.3− |
| 2002 11 15 | 704 | 0.1+ | 1.0+ | 2006 09 20 | 704 | 0.2+ | 0.5− | 2006 11 20 | 703 | 0.6− | 0.0 |
| 2002 11 16 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.8+ | 2006 11 20 | 703 | 0.5− | 0.1− |
| 2002 11 16 | 704 | 0.1+ | 0.8+ | 2006 09 20 | 704 | 0.6+ | 0.6+ | 2006 11 20 | 703 | 0.1− | 1.0+ |
| 2002 11 16 | 704 | 0.3+ | 0.9+ | 2006 09 27 | 704 | 0.0 | 0.2+ | | | | |
| 2002 11 16 | 704 | (0.6− | 1.9+) | 2006 09 27 | 704 | (2.2− | 1.4+) | | | | |

**(142987)∗ 2002 VZ$_{89}$ = 1993 SU$_{9}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75796)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.83443 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22909543 | $\omega$ | 92.95207 | | +0.33300381 | +0.94268543 | |
| $a$ | 2.6451995 | $\Omega$ | 196.54742 | | −0.89208002 | +0.30765788 | |
| $e$ | 0.1248667 | $i$ | 4.28400 | | −0.30545327 | +0.12919290 | |
| $P$ | 4.30 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 22 | 809 | (6.1− | 3.8−) | 2005 06 02 | 703 | 0.5− | 0.5− | 2006 09 22 | 012 | 0.5+ | 0.9+ |
| 1993 09 22 | 809 | (3.9− | 4.0−) | 2005 06 02 | 703 | 1.3− | 0.9− | 2006 09 22 | 012 | 1.2+ | 0.8− |
| 1993 09 22 | 809 | (3.8− | 1.2−) | 2005 06 02 | E12 | 0.1+ | 0.5− | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 1993 09 24 | 809 | 0.1+ | 0.1+ | 2005 06 02 | E12 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.4− | 0.1+ |
| 1993 09 24 | 809 | 1.0− | 0.7− | 2005 06 02 | E12 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2− |
| 1993 09 24 | 809 | 1.0− | 0.1+ | 2005 06 02 | E12 | 0.9− | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2000 03 11 | 699 | 1.0+ | 0.7− | 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2000 03 11 | 699 | 0.7+ | 0.3+ | 2005 06 03 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2000 03 11 | 699 | (2.2+ | 0.9+) | 2005 06 03 | 691 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2000 03 11 | 699 | 1.4+ | 0.2+ | 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.2+ |
| 2002 11 11 | 704 | 0.5+ | 0.0 | 2005 06 04 | 691 | 0.5+ | 0.6+ | 2006 09 27 | 704 | 0.1+ | 0.5+ |
| 2002 11 11 | 704 | 0.6− | 0.9+ | 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.2+ |
| 2002 11 11 | 704 | 0.9− | 0.3+ | 2005 06 05 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 1.4− | 1.0− |
| 2002 11 11 | 704 | 0.2+ | 0.7+ | 2005 06 05 | 704 | 0.6+ | 1.1+ | 2006 09 29 | 691 | 0.3− | 0.1− |
| 2002 11 11 | 704 | 0.4+ | 0.5+ | 2005 06 05 | 704 | 0.6+ | 0.6+ | 2006 09 29 | 691 | 0.0 | 0.2+ |
| 2002 11 11 | 704 | 0.7+ | 0.9+ | 2005 06 05 | 704 | 0.7+ | 0.9+ | 2006 09 29 | 691 | 0.0 | 0.6− |
| 2002 11 11 | 704 | 0.0 | 1.1+ | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.2+ | 1.3+ | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 2002 11 12 | 644 | 0.1+ | 0.6+ | 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.3+ |
| 2002 11 12 | 644 | 1.2+ | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.5+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2002 11 12 | 644 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.7− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2002 12 07 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | (1.7− | 0.3−) | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2002 12 07 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2002 12 07 | 704 | 0.8+ | 1.3+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 12 10 | 644 | 0.0 | 0.9+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 12 10 | 644 | 0.3+ | 0.7+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 12 10 | 644 | 0.3+ | 0.8+ | 2006 09 16 | 644 | 0.5+ | 0.8+ | 2006 10 27 | G96 | 0.5− | 0.2− |
| 2003 12 25 | 291 | 0.3+ | 0.6+ | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2003 12 25 | 291 | 0.8− | 0.3+ | 2006 09 16 | 644 | (1.7− | 0.2−) | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2003 12 25 | 291 | 0.8− | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.3− | 2006 10 29 | 291 | 0.1+ | 0.2+ |
| 2005 05 08 | 704 | (0.6− | 2.8+) | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2005 05 08 | 704 | (1.0+ | 1.9+) | 2006 09 17 | 704 | 0.1+ | 1.3− | 2006 10 29 | 291 | 0.2+ | 0.2+ |
| 2005 05 08 | 704 | 0.9+ | 0.6+ | 2006 09 17 | 704 | (0.1− | 1.7−) | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2005 05 08 | 704 | 0.8− | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 20 | 012 | 0.5− | 0.9− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 09 20 | 012 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.9+ |
| 2005 05 12 | 704 | 0.4+ | 0.4− | 2006 09 20 | 012 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2005 05 12 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 012 | 0.4+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2005 05 12 | 704 | 0.1+ | 0.1− | 2006 09 20 | 012 | 0.0 | 1.0− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2005 05 12 | 704 | 0.0 | 0.2− | 2006 09 21 | 012 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.1+ |
| 2005 05 12 | 704 | 0.2− | 0.4− | 2006 09 21 | 012 | 0.7+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2005 05 14 | G96 | 0.0 | 0.0 | 2006 09 21 | 012 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2005 05 14 | G96 | 0.4− | 0.3− | 2006 09 21 | 012 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.5+ | 0.1− |
| 2005 05 14 | G96 | 0.0 | 0.2− | 2006 09 21 | 012 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2005 05 14 | G96 | 0.5− | 0.1+ | 2006 09 21 | 012 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2005 06 02 | 703 | 0.6− | 0.8− | 2006 09 22 | 012 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2005 06 02 | 703 | 0.2+ | 1.2− | 2006 09 22 | 012 | 0.1+ | 0.2− | | | | |

**(142988)∗ 2002 VD$_{90}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 282.95761 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.20368118 | | $\omega$ | 251.47644 | | +0.57352094 | | −0.81911751 | | | |
| $a$ | 2.8608963 | | $\Omega$ | 163.51338 | | +0.76541438 | | +0.53105370 | | | |
| $e$ | 0.0606628 | | $i$ | 2.21441 | | +0.29191534 | | +0.21686050 | | | |
| $P$ | 4.84 | | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | 0.4− | 0.9+ | 2004 03 17 | 691 | 0.1− | 0.0 | 2006 08 13 | 644 | 0.2+ | 0.1+ |
| 2002 11 03 | 608 | 0.8− | 1.1+ | 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 08 13 | 644 | 0.4− | 0.2+ |
| 2002 11 03 | 608 | 0.4− | 1.1+ | 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | (2.2− | 0.1−) | 2004 03 18 | 704 | 1.5+ | 1.2+ | 2006 08 13 | D35 | 0.1− | 0.6+ |
| 2002 11 11 | 704 | 0.7+ | 1.1+ | 2004 03 18 | 704 | (0.4+ | 1.6+) | 2006 08 13 | D35 | 0.2+ | 0.7+ |
| 2002 11 11 | 704 | 0.1− | 0.6+ | 2004 03 18 | 704 | (1.6+ | 1.5+) | 2006 08 13 | D35 | 0.4+ | 0.6+ |
| 2002 11 11 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.5+ | 0.5+ | 2006 08 15 | 644 | 0.1− | 0.2+ |
| 2002 11 12 | 644 | 0.1− | 0.2+ | 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 08 15 | 644 | 0.3+ | 0.3+ |
| 2002 11 12 | 644 | 0.1+ | 0.6+ | 2004 03 27 | 691 | 0.2− | 0.4+ | 2006 08 15 | 644 | 0.1− | 0.8+ |
| 2002 11 12 | 644 | 0.6− | 0.8+ | 2004 03 27 | 691 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2005 05 20 | G96 | 0.5− | 0.4− | 2006 08 16 | 644 | 0.2− | 0.6+ |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2005 05 20 | G96 | 1.3+ | 0.9− | 2006 08 16 | 644 | 0.4− | 0.2+ |
| 2002 12 05 | 704 | 0.3+ | 0.5+ | 2005 05 20 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | (0.2− | 2.1+) | 2005 05 20 | G96 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2005 06 10 | 691 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2004 02 11 | 644 | 0.3+ | 0.4+ | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2004 02 11 | 644 | 0.2+ | 1.0+ | 2005 06 10 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2004 02 22 | 691 | 0.0 | 0.1+ | 2005 06 14 | 691 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.8− | 0.1+ |
| 2004 02 22 | 691 | 0.2+ | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2004 02 22 | 691 | 0.0 | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.6− | 0.3− |

**(142989)∗ 2002 VK$_{90}$**

Discovered 2002 Nov. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 56.35097 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26904504 | | $\omega$ | 248.85115 | | +0.95989189 | | +0.19358497 | | | |
| $a$ | 2.3763991 | | $\Omega$ | 99.54226 | | −0.11132518 | | +0.92706332 | | | |
| $e$ | 0.3241979 | | $i$ | 11.86795 | | −0.25732131 | | +0.32105834 | | | |
| $P$ | 3.66 | | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 26 | 704 | 0.7+ | 0.2+ | 2002 12 08 | 636 | 0.0 | 0.7+ | 2005 05 20 | G96 | 0.2− | 0.1+ |
| 1998 06 26 | 704 | 1.1− | 1.4+ | 2002 12 08 | 636 | 0.1+ | 0.2+ | 2005 05 20 | G96 | 0.4− | 0.0 |
| 1998 06 26 | 704 | 0.8− | 0.3+ | 2002 12 08 | 636 | 0.2− | 0.6+ | 2005 05 20 | G96 | 0.1+ | 0.0 |
| 1998 06 26 | 704 | 1.4+ | 0.1+ | 2002 12 09 | 644 | 0.0 | 0.3+ | 2005 05 20 | G96 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.1− | 0.4− | 2002 12 09 | 644 | 0.2− | 0.2− | 2005 06 17 | 691 | 0.2+ | 0.3+ |
| 2002 10 31 | 704 | 0.1+ | 0.1− | 2002 12 09 | 644 | 0.2+ | 0.8+ | 2005 06 17 | 691 | 0.2+ | 0.4+ |
| 2002 10 31 | 704 | 0.5− | 0.8− | 2002 12 09 | 644 | 0.1− | 0.4+ | 2005 06 17 | 691 | 0.2+ | 0.5+ |
| 2002 10 31 | 704 | 0.6− | 0.7− | 2002 12 09 | 644 | 0.6+ | 0.3+ | 2005 06 29 | 644 | 0.5+ | 0.3+ |
| 2002 11 11 | 699 | 0.0 | 0.1+ | 2002 12 09 | 644 | 0.1− | 0.3+ | 2005 06 29 | 644 | 0.5+ | 0.2+ |
| 2002 11 11 | 699 | 1.0− | 0.4+ | 2002 12 14 | 704 | 0.2− | 0.3+ | 2005 06 29 | 644 | 0.8+ | 0.2+ |
| 2002 11 11 | 699 | 0.2− | 0.2− | 2002 12 14 | 704 | 0.7− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2002 11 11 | 699 | 0.7− | 0.1+ | 2002 12 14 | 704 | 0.7− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 11 12 | 644 | 0.1− | 0.6+ | 2002 12 14 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2002 11 12 | 644 | 0.0 | 0.6+ | 2002 12 14 | 704 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 11 12 | 644 | (1.7+ | 0.0 ) | 2003 01 01 | 704 | 0.1+ | 1.0+ | 2006 10 29 | G96 | 0.0 | 0.0 |
| 2002 11 15 | 644 | 0.1− | 0.3+ | 2003 01 01 | 704 | 0.1− | 1.0+ | 2006 10 29 | G96 | 0.3+ | 0.1+ |
| 2002 11 15 | 644 | 1.2+ | 0.5− | 2003 01 01 | 704 | 0.8− | 0.7− | 2006 10 29 | G96 | 0.6+ | 0.5+ |
| 2002 11 15 | 644 | 0.1+ | 0.3+ | 2003 01 01 | 704 | 0.7− | 0.4+ | 2006 10 29 | G96 | 1.2− | 0.3− |
| 2002 12 01 | 704 | 0.6+ | 0.3+ | 2005 05 12 | 703 | 0.5− | 0.5− | 2006 11 27 | G96 | 0.1+ | 0.3+ |
| 2002 12 01 | 704 | 0.3+ | 0.1+ | 2005 05 12 | 703 | 0.3− | 1.0+ | 2006 11 27 | G96 | 0.1+ | 0.4+ |
| 2002 12 01 | 704 | 0.3+ | 0.2+ | 2005 05 12 | 703 | 0.5− | 0.4− | 2006 11 27 | G96 | 0.4+ | 0.2+ |
| 2002 12 01 | 704 | (2.3+ | 1.4−) | 2005 05 12 | 703 | 0.4+ | 0.9+ | 2006 11 27 | G96 | 0.6+ | 0.4+ |

**(142990)∗ 2002 VZ$_{92}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 39.88135 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23847476 | | $\omega$ | 146.19536 | | +0.81327054 | | +0.58188205 | | | |
| $a$ | 2.5753787 | | $\Omega$ | 178.21756 | | −0.54754896 | | +0.76648210 | | | |
| $e$ | 0.2358359 | | $i$ | 3.82591 | | −0.19692933 | | +0.27187953 | | | |
| $P$ | 4.13 | | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 699 | 0.4+ | 0.3+ | 2004 02 12 | 691 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.6− |
| 2001 04 26 | 699 | 0.6+ | 0.5+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 04 26 | 699 | 0.7+ | 0.5+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.5+ | 0.3+ |
| 2001 04 26 | 699 | 0.2+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2001 05 16 | 691 | 0.3− | 0.6+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.8− | 0.5+ |
| 2001 05 16 | 691 | 0.0 | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2001 05 16 | 691 | 0.2+ | 0.5+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2001 05 28 | 608 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.5+ |
| 2001 05 28 | 608 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 05 28 | 608 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.5+ | 0.7− | 2006 11 08 | 644 | 0.7− | 0.5+ |
| 2002 11 11 | 704 | 0.7− | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 11 11 | 704 | 1.0− | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 11 11 | 704 | 0.6− | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2002 11 11 | 704 | (1.1− | 1.6+) | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.9− |
| 2002 11 11 | 704 | (1.0− | 1.6+) | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2002 11 13 | 704 | 0.2+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2002 11 13 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.2+ |
| 2002 11 13 | 704 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 11 13 | 704 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2002 11 13 | 704 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 11 23 | 644 | 0.2+ | 1.3+ | 2006 10 12 | 644 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 0.1+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.8− |
| 2002 11 23 | 644 | 0.0 | 1.0+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3− | 0.8− |
| 2002 12 01 | 704 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.3− | 0.5+ |
| 2002 12 01 | 704 | 0.5− | 1.3+ | 2006 10 16 | 703 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2002 12 01 | 704 | (1.8− | 1.3+) | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2002 12 02 | 608 | 0.8+ | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2002 12 02 | 608 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2002 12 02 | 608 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.2− |

**(142991)∗ 2002 VG$_{93}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 276.55197 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23611224 | | $\omega$ | 285.69414 | | −0.58854557 | | −0.80806883 | | | |
| $a$ | 2.5925296 | | $\Omega$ | 200.42230 | | +0.76672650 | | −0.54797296 | | | |
| $e$ | 0.1572010 | | $i$ | 4.15403 | | +0.25640706 | | −0.21621843 | | | |
| $P$ | 4.17 | | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.2+ | 1.0+ | 2004 04 14 | 291 | 0.3− | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.2+ | 0.6+ | 2004 04 21 | 704 | 0.2+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 11 11 | 704 | 0.5− | 0.9+ | 2004 04 21 | 704 | 1.1+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2002 11 13 | 704 | 0.2+ | 0.1− | 2004 04 21 | 704 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.5+ | 0.2+ |
| 2002 11 13 | 704 | 0.2+ | 0.0 | 2004 04 21 | 704 | 1.4+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.8+ |
| 2002 11 13 | 704 | 0.7+ | 0.5− | 2004 05 21 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.6+ |
| 2002 11 13 | 704 | 0.1+ | 0.3+ | 2004 05 21 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 11 13 | 704 | 0.3+ | 0.2+ | 2004 05 21 | 691 | 0.5+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 11 13 | 704 | 0.7− | 0.4− | 2005 07 06 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2002 11 13 | 704 | 0.8− | 0.9+ | 2005 07 06 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2002 11 13 | 704 | 0.1+ | 0.4+ | 2005 07 06 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2002 11 14 | 704 | 1.0− | 0.3− | 2005 07 12 | G96 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 11 14 | 704 | 0.1− | 0.4− | 2005 07 12 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 1.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.4− | 1.2− | 2005 07 12 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2002 11 14 | 704 | 1.1+ | 0.1− | 2005 07 12 | G96 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 11 15 | 704 | 1.2+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.8− | 0.2− |
| 2002 11 15 | 704 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 11 15 | 704 | 0.2− | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2002 11 15 | 704 | 0.8− | 0.7+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2002 12 07 | 704 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.5+ |
| 2002 12 07 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.8+ | 2006 11 11 | 703 | 0.5− | 1.2− |
| 2002 12 07 | 704 | (2.2+ | 1.0+) | 2006 09 30 | 703 | 0.9− | 1.4+ | 2006 11 11 | 703 | 1.0+ | 0.0 |
| 2002 12 07 | 704 | 0.3− | 1.0+ | 2006 09 30 | 703 | 0.4− | 1.2+ | 2006 11 11 | 703 | 1.3− | 0.7− |
| 2002 12 07 | 704 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.5+ |
| 2002 12 10 | 644 | 0.4− | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 12 10 | 644 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.6+ | 0.3− |
| 2002 12 10 | 644 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2004 04 14 | 291 | 0.0 | 1.0+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2004 04 14 | 291 | 0.3− | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | | | | |

**(142992)∗ 2002 VZ$_{93}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.99905 | | (2000.0) | | | |
| $n$ | 0.23956612 | $\omega$ | 179.69722 | | −0.44879257 | −0.89253092 |
| $a$ | 2.5675513 | $\Omega$ | 296.96865 | | +0.81979014 | −0.39140839 |
| $e$ | 0.0511733 | $i$ | 2.85726 | | +0.35570964 | −0.22402683 |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.4+ | 0.3− | 2002 12 11 | 644 | 0.5+ | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2002 11 07 | 695 | 0.5+ | 0.4− | 2002 12 27 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2− |
| 2002 11 12 | 704 | 0.2− | 0.1− | 2002 12 27 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.9− | 0.3− | 2002 12 27 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.4+ |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.9− | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2002 11 13 | 704 | 0.1− | 1.3− | 2004 03 18 | 704 | 1.0+ | 0.5+ | 2006 10 27 | 703 | 0.2− | 1.3+ |
| 2002 11 13 | 704 | 0.2+ | 0.5− | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.3+ |
| 2002 11 13 | 704 | 0.2− | 1.5− | 2004 03 18 | 704 | 0.6+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 11 13 | 704 | 0.2+ | 0.6− | 2004 03 20 | 704 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.4+ | 0.1+ |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2002 11 24 | 644 | 0.3+ | 0.1+ | 2004 03 20 | 704 | 0.8+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.4− | 0.0 | 2004 03 27 | 704 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.6+ | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 2002 12 06 | 704 | 0.1+ | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.1− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.8+ | 2004 03 27 | 704 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.8+ | 1.0− |
| 2002 12 07 | 704 | (0.8− | 1.8+) | 2004 04 11 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2002 12 07 | 704 | 0.7− | 0.9+ | 2004 04 11 | 644 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.5− | 1.2− |
| 2002 12 07 | 704 | 0.1+ | 0.0 | 2004 04 11 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2002 12 10 | 704 | 1.3− | 0.7+ | 2004 04 11 | 644 | 0.1− | 0.6+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2002 12 10 | 704 | 0.4+ | 0.0 | 2004 04 11 | 644 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 12 10 | 704 | 0.4− | 0.3+ | 2004 04 11 | 644 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2004 04 20 | 704 | 0.8− | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2002 12 11 | 704 | 0.4− | 0.3+ | 2004 04 20 | 704 | 0.9− | 0.7+ | 2006 11 19 | 704 | 0.8− | 1.1− |
| 2002 12 11 | 704 | 0.3− | 0.1+ | 2004 04 20 | 704 | 0.5− | 1.1− | 2006 11 19 | 704 | 1.4+ | 1.2+ |
| 2002 12 11 | 644 | 0.1− | 0.1− | 2005 06 17 | G96 | 0.2− | 1.0+ | 2006 11 19 | 704 | 0.8+ | 0.9+ |
| 2002 12 11 | 644 | 0.6+ | 0.8+ | 2005 06 17 | G96 | 0.5− | 1.3+ | 2006 11 19 | 704 | (0.7+ | 1.8+) |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2005 06 17 | G96 | 0.4− | 0.9+ | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2002 12 11 | 644 | 0.8− | 0.6− | 2005 06 17 | G96 | 0.1− | 1.0+ | 2006 11 22 | 704 | 0.1− | 1.2+ |
| 2002 12 11 | 644 | 0.7+ | 1.0+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 1.2+ | 0.4+ |
| 2002 12 11 | 704 | 0.4− | 1.4+ | 2006 10 13 | 691 | 0.0 | 0.0 | | | | |
| 2002 12 11 | 644 | 0.3− | 0.3− | 2006 10 13 | 691 | 0.0 | 0.0 | | | | |

**(142993)∗ 2002 VA$_{94}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.01382 | | (2000.0) | | | |
| $n$ | 0.23197548 | $\omega$ | 151.53550 | | +0.57377881 | −0.80981132 |
| $a$ | 2.6232600 | $\Omega$ | 263.19743 | | +0.72611995 | +0.57212309 |
| $e$ | 0.1582595 | $i$ | 7.08115 | | +0.37885050 | +0.12992614 |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.3− | 0.1− | 2002 12 10 | 704 | 0.5− | 0.3+ | 2006 10 14 | 850 | 0.1+ | 0.0 |
| 1998 11 14 | 691 | 0.2− | 1.2− | 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 10 14 | 850 | 0.3+ | 0.2− |
| 1998 11 14 | 691 | 0.5− | 0.6− | 2002 12 10 | 704 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.2− |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2002 12 10 | 704 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 2002 10 12 | 704 | 0.1− | 0.4− | 2002 12 16 | 608 | 0.3+ | 0.7− | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 0.6+ | 0.7− | 2002 12 16 | 608 | 0.2+ | 0.9− | 2006 10 19 | 703 | 0.2− | 0.2+ |
| 2002 10 12 | 704 | 0.4+ | 0.6− | 2002 12 16 | 608 | 0.4+ | 0.6− | 2006 10 21 | 704 | 0.4− | 0.1− |
| 2002 11 06 | 704 | 0.3− | 0.2− | 2002 12 31 | 704 | 0.1+ | 0.2− | 2006 10 21 | 704 | 0.5− | 0.7− |
| 2002 11 06 | 704 | 0.5+ | 0.2− | 2002 12 31 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 704 | 0.3+ | 0.8− |
| 2002 11 06 | 704 | 0.6+ | 0.7− | 2002 12 31 | 704 | 0.2− | 0.1+ | 2006 10 21 | 704 | 0.7+ | 0.1− |
| 2002 11 06 | 704 | 0.1− | 0.0 | 2002 12 31 | 704 | 0.0 | 0.3− | 2006 10 21 | 704 | 0.7+ | 0.1− |
| 2002 11 12 | 704 | 1.1+ | 0.6+ | 2002 12 31 | 704 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.6+ | 0.8+ | 2003 01 04 | 291 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.1+ | 2003 01 04 | 291 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2003 01 04 | 291 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.6− | 0.0 |
| 2002 11 12 | 704 | 0.7+ | 0.4− | 2003 01 04 | 704 | 0.6− | 0.0 | 2006 10 27 | 703 | 0.9+ | 0.9+ |
| 2002 11 12 | 704 | 0.3+ | 0.4− | 2003 01 04 | 704 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.7− |
| 2002 11 12 | 704 | 1.2+ | 0.2+ | 2003 01 04 | 704 | 0.2− | 0.1+ | 2006 10 27 | 703 | (1.7+ | 1.3−) |
| 2002 11 12 | 704 | 0.5+ | 0.7− | 2003 01 04 | 704 | 0.2+ | 0.5+ | 2006 10 29 | 104 | 0.3+ | 0.4+ |
| 2002 11 12 | 704 | 0.4+ | 0.1+ | 2003 01 04 | 704 | 0.2− | 0.8+ | 2006 10 29 | 104 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2003 01 08 | 704 | 0.2+ | 0.2+ | 2006 10 29 | 104 | 0.5+ | 0.2+ |
| 2002 11 13 | 704 | 1.4+ | 0.3+ | 2003 01 08 | 704 | 0.6+ | 0.1− | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2002 11 13 | 704 | 1.0+ | 0.4+ | 2003 01 08 | 704 | 0.7+ | 0.1− | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2002 11 13 | 704 | 0.7+ | 0.1− | 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.3+ |
| 2002 11 13 | 704 | 1.2+ | 0.0 | 2003 01 09 | 704 | 0.6− | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.2− |
| 2002 11 13 | 704 | 1.2+ | 0.3+ | 2003 01 09 | 704 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.0 |
| 2002 11 14 | 704 | 0.2− | 0.5+ | 2003 01 09 | 704 | 0.3− | 0.6+ | 2006 11 14 | 703 | 0.6− | 0.5− |
| 2002 11 14 | 704 | 0.1− | 0.7+ | 2003 01 09 | 704 | 0.2− | 0.8+ | 2006 11 14 | 703 | (1.7+ | 1.8−) |
| 2002 11 14 | 704 | 0.4− | 0.9+ | 2003 01 31 | 704 | 0.7− | 0.1− | 2006 11 17 | 704 | 0.7− | 1.0+ |
| 2002 11 14 | 704 | 0.7− | 0.0 | 2003 01 31 | 704 | 0.3− | 1.1− | 2006 11 17 | 704 | 0.7− | 0.8+ |
| 2002 11 14 | 704 | 0.6+ | 0.6+ | 2003 01 31 | 704 | 0.2− | 0.5− | 2006 11 17 | 704 | 1.0− | 0.4+ |
| 2002 11 14 | 704 | 0.1+ | 0.6+ | 2003 01 31 | 704 | 0.0 | 0.7− | 2006 11 17 | 704 | 0.7− | 0.5+ |
| 2002 11 14 | 704 | 1.3− | 0.1+ | 2003 01 31 | 704 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2002 11 14 | 704 | 0.4− | 0.3+ | 2004 03 17 | 704 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 11 14 | 704 | 0.7− | 0.8+ | 2004 03 17 | 704 | 0.6+ | 0.8+ | 2006 11 22 | 704 | 0.6+ | 0.5+ |
| 2002 11 14 | 704 | 0.6− | 0.9− | 2004 03 17 | 704 | 0.1− | 0.2− | 2006 11 22 | 704 | 1.1+ | 0.0 |
| 2002 11 14 | 704 | 0.1− | 0.2− | 2004 03 17 | 704 | 0.3+ | 1.0+ | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2002 11 14 | 704 | 1.1− | 0.5+ | 2004 03 26 | 704 | 0.1+ | 1.1+ | 2006 11 23 | 703 | 0.1− | 0.7− |
| 2002 11 14 | 704 | 0.5− | 0.0 | 2004 03 26 | 704 | 0.6+ | 0.4+ | 2006 11 23 | 703 | 1.1− | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.5+ | 2004 03 26 | 704 | 0.3− | 1.0+ | 2006 11 23 | 703 | 0.0 | 0.4− |
| 2002 11 14 | 704 | 1.1− | 1.0+ | 2004 03 26 | 704 | 0.7+ | 0.3+ | 2006 11 23 | 703 | 0.5− | 0.6− |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2004 03 26 | 704 | 0.6+ | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.3+ |
| 2002 12 05 | 704 | 0.8− | 1.0− | 2004 04 17 | 704 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.9− | 0.0 |
| 2002 12 05 | 704 | (1.7− | 0.3+) | 2004 04 17 | 704 | 0.3− | 0.1− | 2006 11 29 | 704 | 1.0+ | 0.5+ |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2004 04 17 | 704 | 0.2+ | 0.2− | 2006 11 29 | 704 | 1.4− | 1.3+ |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2006 10 14 | 850 | 0.6+ | 0.1− | 2006 11 29 | 704 | 1.0− | 0.0 |
| 2002 12 10 | 704 | 0.5− | 0.3+ | 2006 10 14 | 850 | 0.2+ | 0.2− | | | | |

**(142994)∗ 2002 VB$_{94}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 261.84469 | | (2000.0) | | | |
| $n$ | 0.23713172 | $\omega$ | 137.11678 | | −0.94836930 | −0.31419483 |
| $a$ | 2.5850936 | $\Omega$ | 24.67069 | | +0.25558879 | −0.83796410 |
| $e$ | 0.2242502 | $i$ | 5.95822 | | +0.18780322 | −0.44620374 |
| $P$ | 4.16 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | (0.9+ | 2.4−) | 2003 01 05 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 1998 12 14 | 704 | 0.1+ | 0.7+ | 2003 01 20 | 644 | 0.3− | 0.6+ | 2006 11 11 | 703 | 1.3+ | 0.4+ |
| 1998 12 14 | 704 | 0.2+ | 0.5− | 2003 01 20 | 644 | 0.1− | 0.6+ | 2006 11 11 | 703 | 1.0+ | 0.9− |
| 1998 12 14 | 704 | 0.5+ | 1.2− | 2003 01 20 | 644 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.3− | 0.7− | 2003 02 04 | 704 | 0.8− | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 1.0+ | 1.1+ | 2003 02 04 | 704 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2002 11 12 | 704 | 0.1+ | 0.1+ | 2003 02 04 | 704 | 0.5+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.6− |
| 2002 11 13 | 704 | 0.5− | 0.4+ | 2004 05 19 | 704 | (2.0− | 2.0+) | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2002 11 13 | 704 | 1.2− | 0.6+ | 2004 05 19 | 704 | 0.6+ | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.7− |
| 2002 11 13 | 704 | 0.6− | 0.6− | 2004 05 19 | 704 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2002 11 13 | 704 | 0.3− | 1.0+ | 2004 05 19 | 704 | 0.2− | 0.7+ | 2006 11 15 | 704 | 0.2+ | 0.3+ |
| 2002 11 15 | 704 | 0.5+ | 0.1− | 2005 07 28 | 644 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.3− |
| 2002 11 15 | 704 | 0.5+ | 0.5+ | 2005 07 28 | 644 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.4− | 0.0 |
| 2002 11 15 | 704 | 0.1− | 0.1− | 2005 07 28 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 704 | 0.4− | 0.3− |
| 2002 11 15 | 704 | 0.3+ | 0.2+ | 2005 07 29 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 1.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.4− | 2005 07 29 | 644 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.8+ | 0.4+ |
| 2002 12 06 | 704 | 0.0 | 0.6− | 2005 07 29 | 644 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2005 08 30 | 644 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.5+ | 0.6+ |
| 2002 12 06 | 704 | 0.2+ | 0.7− | 2005 08 30 | 644 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.4− |
| 2002 12 06 | 704 | 0.6− | 0.2− | 2005 08 30 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.6− |
| 2002 12 11 | 704 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.7+ | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2002 12 11 | 704 | 0.4+ | 1.1+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2002 12 14 | 704 | 0.5− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.4+ | 1.1+ |
| 2002 12 14 | 704 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.4+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2− | 1.9+ |
| 2002 12 14 | 704 | 0.4− | 0.2− | 2006 10 29 | 704 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2003 01 05 | 704 | 0.8− | 0.4+ | 2006 10 29 | 704 | 1.2− | 0.9− | 2006 11 22 | 704 | 0.1+ | 1.5+ |
| 2003 01 05 | 704 | 0.3− | 0.3+ | 2006 10 29 | 704 | (1.8− | 2.3−) | | | | |
| 2003 01 05 | 704 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.8+ | 0.1− | | | | |

**(142995)∗ 2002 VL$_{94}$ = 1993 QM = 1998 YU$_{23}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41246)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.53334 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24187194 | $\omega$ | 150.26240 | | −0.15158782 | −0.98771096 |
| $a$ | 2.5512072 | $\Omega$ | 308.42996 | | +0.89702492 | −0.12129485 |
| $e$ | 0.1288568 | $i$ | 2.78445 | | +0.41517157 | −0.09856274 |
| $P$ | 4.07 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 17 | 691 | 0.1+ | 0.3+ | 2002 12 06 | 704 | 0.3− | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 1993 08 17 | 691 | 0.0 | 0.2+ | 2002 12 09 | 333 | (2.1+ | 2.2−) | 2006 10 31 | 691 | 0.3+ | 0.3− |
| 1993 08 17 | 691 | 0.1− | 0.7+ | 2002 12 09 | 333 | (2.0− | 0.2+) | 2006 10 31 | 691 | 0.0 | 0.2− |
| 1993 08 18 | 691 | 0.1+ | 0.3+ | 2002 12 09 | 333 | 1.2− | 0.2+ | 2006 11 15 | 704 | 0.1− | 0.4+ |
| 1993 08 18 | 691 | 0.2− | 0.3− | 2002 12 11 | 333 | 0.6− | 0.1+ | 2006 11 15 | 704 | 0.4− | 0.6− |
| 1993 08 18 | 691 | 0.2− | 0.8− | 2002 12 11 | 704 | 0.2− | 0.6+ | 2006 11 15 | 704 | 0.4+ | 0.4+ |
| 1998 12 14 | 704 | 0.7− | 0.1− | 2002 12 11 | 333 | 0.3− | 0.1+ | 2006 11 15 | 704 | 1.2+ | 0.3+ |
| 1998 12 14 | 704 | 1.6− | 1.8− | 2002 12 11 | 704 | 0.3− | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.5− |
| 1998 12 14 | 704 | (2.4− | 0.3−) | 2002 12 11 | 704 | 0.9− | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.4+ |
| 1998 12 14 | 704 | (5.2− | 0.1+) | 2002 12 11 | 704 | 0.5− | 0.7+ | 2006 11 16 | 704 | 0.1− | 0.6− |
| 1998 12 16 | 704 | 0.6+ | 1.0+ | 2002 12 11 | 704 | 0.0 | 0.8+ | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 1998 12 16 | 704 | 1.6+ | 1.9− | 2002 12 27 | 644 | 0.5+ | 0.8+ | 2006 11 16 | 704 | 1.0+ | 0.2+ |
| 1998 12 16 | 704 | (3.4+ | 0.7−) | 2002 12 27 | 644 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.1− |
| 1998 12 17 | 704 | 0.1− | 1.1+ | 2002 12 27 | 644 | 0.5+ | 0.4+ | 2006 11 16 | 704 | 0.3− | 1.2− |
| 1998 12 17 | 704 | 0.5− | 1.1+ | 2002 12 31 | 704 | 0.1− | 0.8+ | 2006 11 16 | 704 | 0.1+ | 0.3− |
| 1998 12 17 | 704 | 0.9+ | 0.3+ | 2002 12 31 | 704 | 0.3+ | 0.4− | 2006 11 16 | 704 | (2.3− | 0.1−) |
| 1998 12 17 | 704 | 1.8+ | 0.3− | 2002 12 31 | 704 | (2.0+ | 0.2−) | 2006 11 19 | 704 | 0.6+ | 1.0+ |
| 1998 12 17 | 704 | 0.3− | 0.8− | 2002 12 31 | 704 | 0.5+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2002 11 12 | 704 | 0.3+ | 1.0+ | 2003 01 05 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.9+ | 0.9+ |
| 2002 11 12 | 704 | 0.7+ | 1.4+ | 2003 01 05 | 704 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2002 11 12 | 704 | 0.6+ | 0.8+ | 2003 01 05 | 704 | 0.8+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2002 11 13 | 704 | 0.3− | 0.3− | 2003 01 05 | 704 | 0.6+ | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2002 11 13 | 704 | 0.9− | 0.2− | 2003 01 05 | 704 | 0.6+ | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2002 11 13 | 704 | 0.1− | 0.1− | 2004 04 14 | 735 | 0.4+ | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2002 11 13 | 704 | 0.9− | 0.9− | 2004 04 14 | 735 | 0.9− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.5− |
| 2002 11 13 | 704 | 0.5− | 1.0− | 2004 04 14 | 735 | 0.7+ | 0.8+ | 2006 11 22 | 704 | 0.8− | 0.4+ |
| 2002 11 13 | 704 | 0.7− | 0.3− | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.1− | 0.0 |
| 2002 11 13 | 704 | 0.2− | 0.0 | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.3− | 0.0 |
| 2002 11 13 | 704 | 1.1− | 1.2− | 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.4− |
| 2002 11 13 | 704 | 0.4− | 0.2− | 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.4− | 0.4− |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2005 07 12 | G96 | 0.7+ | 0.6+ | 2006 11 24 | 703 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.4− | 0.7− | 2005 07 12 | G96 | 0.1+ | 0.1+ | 2006 11 24 | 703 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.6− | 0.0 | 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 11 24 | 703 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 11 24 | 703 | 0.2− | 0.3− |
| 2002 11 18 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.8+ | 0.7+ | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2002 11 18 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | (0.3+ | 1.6+) | 2006 11 28 | 704 | 0.5− | 0.3+ |
| 2002 11 18 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 11 28 | 704 | 0.9+ | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 1.1+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.4− | 0.0 |
| 2002 11 24 | 644 | 0.2+ | 1.1+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 12 01 | 704 | 1.0− | 0.4+ |
| 2002 11 24 | 644 | 0.2+ | 1.0+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 12 01 | 704 | 1.0− | 0.4+ |
| 2002 12 06 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 12 01 | 704 | 0.8− | 0.1+ |
| 2002 12 06 | 704 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2002 12 06 | 704 | 0.1− | 0.7− | 2006 10 27 | 691 | 0.2+ | 0.3− | | | | |

**(142996)∗ 2002 VZ$_{95}$**

Discovered 2002 Nov. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.93715 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24356319 | $\omega$ | 271.22495 | | +0.12782582 | +0.99168364 |
| $a$ | 2.5393834 | $\Omega$ | 6.17945 | | −0.84566005 | +0.11686531 |
| $e$ | 0.1739319 | $i$ | 7.99441 | | −0.51818880 | +0.05390787 |
| $P$ | 4.05 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 23 | 691 | 0.1− | 0.5− | 2003 12 29 | 704 | 1.4+ | 0.1− | 2006 08 29 | 703 | 1.0+ | 0.4+ |
| 1992 02 23 | 691 | 0.2− | 0.3− | 2003 12 29 | 704 | 0.4+ | 0.4+ | 2006 08 29 | 703 | 0.2− | 0.9+ |
| 1992 02 23 | 691 | 0.2− | 0.2+ | 2004 01 13 | 699 | 0.7− | 0.9+ | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2000 03 12 | 699 | 0.3+ | 0.6− | 2004 01 13 | 699 | 0.2+ | 0.3− | 2006 10 19 | 703 | 1.0− | 0.6− |
| 2000 03 12 | 699 | 0.3+ | 0.5+ | 2004 01 13 | 699 | 0.4− | 1.0+ | 2006 10 19 | 703 | 0.5− | 1.0− |
| 2000 03 12 | 699 | 0.8− | 1.1+ | 2004 01 13 | 699 | 0.2− | 1.3+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2000 03 12 | 699 | 0.5− | 0.6+ | 2004 01 28 | 703 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2− |
| 2002 10 10 | 704 | 0.0 | 0.7+ | 2004 01 28 | 703 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2002 10 10 | 704 | 0.6+ | 0.5− | 2004 01 28 | 703 | 0.6+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2002 10 10 | 704 | 0.3− | 0.0 | 2004 01 28 | 703 | 0.1+ | 0.3+ | 2006 10 27 | 703 | (2.9+ | 0.0 ) |
| 2002 11 06 | 704 | 0.3− | 0.9+ | 2004 01 30 | 704 | 0.1+ | 0.9+ | 2006 10 27 | 703 | 0.0 | 0.2+ |
| 2002 11 06 | 699 | 0.3− | 1.0+ | 2004 01 30 | 704 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.0 | 1.0− |
| 2002 11 06 | 699 | 0.0 | 0.7+ | 2004 01 30 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.4+ | 0.6− |
| 2002 11 06 | 704 | 1.0− | 1.2+ | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2006 10 29 | 704 | 0.3+ | 0.3− |
| 2002 11 06 | 699 | 0.0 | 0.6+ | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | (0.4− | 1.6+) | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.9+ | 0.5− |
| 2002 11 06 | 699 | 0.3+ | 0.6+ | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 704 | (0.1+ | 1.7+) |
| 2002 11 11 | 699 | 0.4− | 1.5+ | 2004 02 13 | 699 | 1.0+ | 0.2− | 2006 11 02 | 703 | 0.2− | 0.0 |
| 2002 11 11 | 699 | 0.1− | 1.0+ | 2004 02 13 | 699 | 0.1+ | 0.5+ | 2006 11 02 | 703 | 0.4− | 0.3− |
| 2002 11 11 | 699 | 1.2− | 0.0 | 2004 02 13 | 699 | 0.2+ | 0.1− | 2006 11 02 | 703 | 0.5+ | 0.8− |
| 2002 11 11 | 699 | 0.7+ | 0.8− | 2004 02 13 | 699 | 0.3− | 0.5− | 2006 11 02 | 703 | 0.5+ | 0.5+ |
| 2002 11 13 | 644 | 0.5+ | 0.5+ | 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 11 13 | 644 | 0.5+ | 0.6+ | 2004 02 15 | 704 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 11 13 | 644 | 0.5+ | 0.7+ | 2004 02 15 | 704 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 11 25 | 644 | 0.2+ | 0.2− | 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2002 11 25 | 644 | 0.4+ | 0.1+ | 2004 02 15 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.5− |
| 2002 11 25 | 644 | 0.3+ | 0.3− | 2004 02 22 | 703 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2002 12 02 | 704 | 0.2− | 0.4+ | 2004 02 22 | 703 | (1.1+ | 2.2+) | 2006 11 11 | 703 | 0.5− | 0.8− |
| 2002 12 02 | 704 | 0.4+ | 0.3− | 2004 02 22 | 703 | 1.2+ | 0.8+ | 2006 11 14 | 703 | 0.1− | 1.0− |
| 2002 12 02 | 704 | (2.7− | 1.7+) | 2004 02 22 | 703 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.7− |
| 2002 12 02 | 704 | 0.1− | 0.8− | 2004 03 14 | 704 | 1.2+ | 1.1+ | 2006 11 14 | 703 | 0.2− | 0.9+ |
| 2002 12 05 | 704 | 0.4− | 1.3− | 2004 03 14 | 704 | 0.7+ | 0.9+ | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | (2.0+ | 0.4−) | 2004 03 14 | 704 | 0.3+ | 1.1+ | 2006 11 22 | 703 | 0.3− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | (1.6+ | 1.6−) | 2004 03 18 | 645 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.3+ | 0.2− | | |
| 2002 12 05 | 704 | (0.7+ | 1.9−) | 2004 03 18 | 645 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.2+ | 0.5− | | |
| 2002 12 05 | 704 | (0.7+ | 2.0−) | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 11 22 | 703 | 0.4− | 0.7− | | |
| 2002 12 12 | 644 | 0.1+ | 0.5+ | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.4− | | |
| 2002 12 12 | 644 | 0.2+ | 0.2− | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.5+ | 0.6+ | | |
| 2002 12 12 | 644 | 0.2+ | 0.5+ | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2003 12 29 | 704 | 1.0+ | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.4− | | |
| 2003 12 29 | 704 | 0.9+ | 0.5+ | 2006 08 29 | 703 | 0.6+ | 0.0 | | | | | | |

**(142997)∗ 2002 VR$_{96}$ = 2001 OL$_{32}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41249)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.75702 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22827587 | $\omega$ | 262.37207 | | +0.07065294 | −0.99749721 | |
| $a$ | 2.6515270 | $\Omega$ | 183.57985 | | +0.93158796 | +0.06696401 | |
| $e$ | 0.0842144 | $i$ | 2.50994 | | +0.35658383 | +0.02269661 | |
| $P$ | 4.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 809 | (0.4− | 3.9−) | 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.0 | | |
| 1993 10 10 | 809 | (0.4− | 2.2−) | 2004 03 19 | 704 | 1.0+ | 1.4+ | 2006 10 15 | 703 | 0.0 | 0.1− | | |
| 1993 10 10 | 809 | (0.1− | 3.2−) | 2004 03 27 | 704 | 1.4+ | 0.2− | 2006 10 15 | 703 | 0.9− | 0.3+ | | |
| 2001 07 22 | 557 | 0.1+ | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 10 15 | 703 | 1.3− | 0.5+ | | |
| 2001 07 22 | 557 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.5− | 0.6+ | 2006 10 15 | 703 | 0.1− | 0.6+ | | |
| 2001 07 22 | 557 | 0.1+ | 1.0+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.2+ | | |
| 2001 07 25 | 557 | 0.1− | 0.8+ | 2004 03 27 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.3+ | | |
| 2001 07 25 | 557 | 0.5− | 0.7+ | 2004 03 29 | 291 | 0.4+ | 0.4+ | 2006 10 16 | 291 | 0.1− | 0.3+ | | |
| 2002 11 11 | 704 | 0.5+ | 0.1+ | 2004 03 29 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.3+ | | |
| 2002 11 11 | 704 | 0.2+ | 0.7+ | 2004 03 29 | 291 | 0.1− | 0.1+ | 2006 10 16 | 291 | 0.2− | 0.3+ | | |
| 2002 11 11 | 704 | 0.3− | 0.3− | 2004 04 12 | 691 | 0.0 | 0.6+ | 2006 10 16 | 291 | 0.2− | 0.3+ | | |
| 2002 11 13 | 644 | 0.1+ | 0.4− | 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 10 18 | 106 | 0.3− | 0.7− | | |
| 2002 11 13 | 644 | 0.3+ | 0.0 | 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 10 18 | 106 | 1.1− | 0.1+ | | |
| 2002 11 13 | 644 | 0.6+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.5+ | 2006 10 18 | 106 | (1.7− | 0.4−) | | |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 106 | 1.0− | 0.4+ | | |
| 2002 11 24 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.4− | 0.1− | | |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.3+ | | |
| 2002 11 25 | 644 | 0.0 | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.4− | 0.0 | | |
| 2002 11 25 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2002 11 25 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.5+ | 0.2+ | | |
| 2002 12 01 | 704 | 0.0 | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 12 01 | 704 | 0.9− | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.5+ | | |
| 2002 12 01 | 704 | 0.3− | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.8+ | | |
| 2002 12 01 | 704 | 0.1− | 0.9− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 1.3+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.1− | | |
| 2002 12 10 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.1− | | |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2006 09 29 | 691 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.2− | | |
| 2002 12 10 | 704 | 0.4− | 0.1− | 2006 09 29 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.4− | | |
| 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.7− | | |
| 2004 03 18 | 704 | (2.6− | 1.0+) | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.1− | 0.2− | | |
| 2004 03 18 | 704 | (0.5+ | 1.7+) | 2006 10 10 | 644 | 0.3− | 0.2− | 2006 11 20 | G96 | 0.2− | 0.1− | | |
| 2004 03 18 | 704 | 0.7− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.5+ | 2006 11 20 | G96 | 0.1+ | 0.4− | | |
| 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.5+ | | | | | | |
| 2004 03 19 | 704 | 0.2+ | 1.0+ | 2006 10 11 | 644 | 0.3− | 0.0 | | | | | | |

**(142998)∗ 2002 VP$_{97}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.77197 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21584097 | $\omega$ | 320.98555 | | +0.99568962 | −0.04984329 | |
| $a$ | 2.7524121 | $\Omega$ | 42.07563 | | +0.08115391 | +0.87648114 | |
| $e$ | 0.0749780 | $i$ | 6.70294 | | −0.04490230 | +0.47884910 | |
| $P$ | 4.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.2− | 0.6+ | 2002 12 11 | 644 | 0.3− | 0.3+ | 2006 08 27 | D35 | 0.1− | 0.5+ | | |
| 2001 07 19 | 644 | 0.1− | 0.4+ | 2002 12 27 | 644 | 0.1+ | 0.2− | 2006 08 27 | D35 | 0.0 | 0.2+ | | |
| 2001 07 19 | 644 | 0.2− | 0.6+ | 2002 12 27 | 644 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.0 | 1.2+ | | |
| 2002 11 12 | 704 | 0.5+ | 0.3− | 2002 12 27 | 644 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 0.5+ | 0.0 | | |
| 2002 11 12 | 704 | 0.2− | 0.1− | 2003 12 25 | 645 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.5− | | |
| 2002 11 12 | 704 | 0.1− | 0.1− | 2003 12 25 | 645 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.2+ | | |
| 2002 11 13 | 644 | 0.2+ | 0.7− | 2004 02 16 | 704 | (1.4+ | 2.7+) | 2006 09 14 | 703 | 1.3− | 1.4+ | | |
| 2002 11 13 | 644 | 0.2+ | 0.6− | 2004 02 16 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.5− | | |
| 2002 11 13 | 644 | 0.0 | 0.7− | 2004 02 16 | 704 | 1.5+ | 0.4+ | 2006 09 14 | 703 | 0.2+ | 1.1+ | | |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2004 02 16 | 704 | 0.1+ | 1.0+ | 2006 09 14 | 703 | 0.3− | 0.6+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2004 03 29 | 703 | (0.8+ | 2.5+) | 2006 09 26 | 704 | 0.2− | 0.1− | | |
| 2002 11 24 | 644 | 0.1+ | 0.2− | 2004 03 29 | 703 | 1.3+ | 1.3+ | 2006 09 26 | 704 | 0.9+ | 0.4+ | | |
| 2002 11 27 | 699 | 0.7+ | 0.3+ | 2004 03 29 | 703 | (0.1− | 3.1−) | 2006 09 26 | 704 | 0.2− | 0.0 | | |
| 2002 11 27 | 699 | 0.9− | 0.2+ | 2004 03 29 | 703 | 1.2+ | 0.6− | 2006 09 26 | 703 | 0.1+ | 1.0− | | |
| 2002 11 27 | 699 | 0.8− | 1.3+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.3− | | |
| 2002 11 27 | 699 | 0.3− | 0.8+ | 2006 08 16 | 644 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.4− | 0.4+ | | |
| 2002 12 11 | 644 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.5− | | |
| 2002 12 11 | 644 | 0.2+ | 0.0 | 2006 08 27 | D35 | 0.0 | 0.1+ | | | | | | |

**(142999)∗ 2002 VZ$_{98}$**

Discovered 2002 Nov. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.07281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23238190 | $\omega$ | 54.28083 | | +0.39946594 | −0.90929893 | |
| $a$ | 2.6202004 | $\Omega$ | 13.72095 | | +0.59836652 | +0.16223102 | |
| $e$ | 0.1908858 | $i$ | 29.45279 | | +0.69453904 | +0.38321868 | |
| $P$ | 4.24 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 704 | 0.2+ | 1.0+ | 2004 01 23 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 608 | 0.1− | 0.5+ | | |
| 1998 12 11 | 704 | 0.4+ | 0.7+ | 2004 01 23 | 704 | 0.7− | 1.3+ | 2006 09 20 | 608 | 0.1− | 0.3+ | | |
| 1998 12 11 | 704 | 0.8− | 0.1− | 2004 01 23 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.0 | | |
| 1998 12 11 | 704 | 0.2− | 0.8− | 2004 01 23 | 704 | 1.0+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.0 | | |
| 1998 12 11 | 704 | (2.8− | 1.4−) | 2004 01 23 | 699 | 0.2+ | 1.0+ | 2006 09 22 | 704 | 1.2− | 1.0+ | | |
| 1999 01 13 | 704 | 0.6− | 0.0 | 2004 01 23 | 699 | 1.1+ | 0.8+ | 2006 09 22 | 704 | 0.9− | 0.3+ | | |
| 1999 01 13 | 704 | 0.6− | 0.2+ | 2004 01 23 | 699 | 1.4− | 0.4− | 2006 09 22 | 704 | 1.0− | 1.0+ | | |
| 1999 01 13 | 704 | 0.0 | 1.1+ | 2004 01 23 | 699 | 0.9+ | 0.2− | 2006 09 22 | 704 | 0.9− | 1.2+ | | |
| 1999 01 13 | 704 | 1.3− | 0.4− | 2004 01 28 | 704 | 0.1− | 1.0+ | 2006 09 22 | 704 | 1.4− | 0.8+ | | |
| 1999 01 13 | 704 | (3.0− | 0.9+) | 2004 01 28 | 704 | 1.3+ | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.2+ | | |
| 1999 02 09 | 704 | 0.7+ | 0.1− | 2004 01 28 | 704 | 1.0+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.5+ | | |
| 1999 02 09 | 704 | 0.3+ | 0.7+ | 2004 02 17 | 703 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.3+ | | |
| 1999 02 09 | 704 | 1.5+ | 0.1+ | 2004 02 17 | 703 | 1.1− | 0.2− | 2006 09 26 | 704 | 0.3− | 0.1+ | | |
| 1999 02 09 | 704 | 1.7+ | 0.7+ | 2004 02 17 | 703 | 0.3+ | 1.1+ | 2006 09 26 | 704 | 0.3− | 0.0 | | |
| 1999 02 09 | 704 | 1.9+ | 1.3− | 2004 02 17 | 703 | 0.8− | 0.1+ | 2006 09 26 | 704 | (2.3− | 0.4+) | | |
| 2002 08 30 | 704 | 0.3− | 0.1+ | 2004 02 19 | 704 | 1.1+ | 0.5+ | 2006 09 26 | 704 | 0.7+ | 0.2− | | |
| 2002 08 30 | 704 | 0.3+ | 0.7− | 2004 02 19 | 704 | 0.7+ | 0.2+ | 2006 09 26 | 704 | (1.6− | 0.3+) | | |
| 2002 08 30 | 704 | 0.9+ | 0.4− | 2004 02 19 | 704 | 0.9+ | 0.6+ | 2006 09 26 | 704 | (6.1− | 0.9+) | | |
| 2002 09 07 | 704 | 0.6− | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 704 | (6.5− | 1.1−) | | |
| 2002 09 07 | 704 | 0.5− | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.3− | 0.7+ | | |
| 2002 09 07 | 704 | 0.2+ | 0.4− | 2004 02 23 | 704 | 1.3− | 0.2− | 2006 09 28 | 704 | 0.6− | 0.9+ | | |
| 2002 09 07 | 704 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.5− | 1.0+ | | |
| 2002 09 07 | 704 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.8+ | 0.4− | 2006 09 28 | 704 | 0.7− | 0.8+ | | |
| 2002 09 16 | 699 | 0.4+ | 1.1+ | 2004 03 16 | 704 | 0.9+ | 0.0 | 2006 09 28 | 704 | 0.7− | 0.8+ | | |
| 2002 09 16 | 699 | 0.2+ | 0.1− | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 1.2− | 0.3+ | | |
| 2002 09 16 | 699 | 0.2+ | 0.9+ | 2004 03 16 | 704 | 0.9+ | 0.1− | 2006 10 01 | 704 | 1.1− | 0.4+ | | |
| 2002 09 16 | 699 | 0.1− | 0.3+ | 2004 03 16 | 704 | 1.1+ | 0.1+ | 2006 10 01 | 704 | 0.8− | 0.3+ | | |
| 2002 10 01 | 704 | 0.1− | 0.4+ | 2004 03 16 | 704 | 0.4− | 1.2+ | 2006 10 01 | 704 | 1.0− | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 0.4− | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.1− | 2006 10 01 | 704 | 1.2− | 0.1+ | | |
| 2002 10 01 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.9+ | 0.5− | 2006 10 09 | 203 | 0.2− | 0.4− | | |
| 2002 10 01 | 704 | 0.2− | 0.5− | 2004 03 18 | 704 | 0.7+ | 0.2− | 2006 10 09 | 203 | 0.3− | 0.1− | | |
| 2002 10 06 | 704 | 0.2− | 0.2− | 2004 03 18 | 704 | 0.7+ | 0.3− | 2006 10 10 | 203 | 0.2+ | 0.3− | | |
| 2002 10 06 | 704 | (1.9+ | 1.2+) | 2004 03 18 | 704 | 0.1+ | 0.5− | 2006 10 10 | 203 | 0.3+ | 0.1+ | | |
| 2002 10 06 | 704 | 0.2− | 0.1+ | 2004 03 20 | 699 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.2− | | |
| 2002 10 06 | 704 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.7+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.5− | | |
| 2002 10 15 | 704 | 0.1+ | 0.9+ | 2004 03 20 | 699 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.1+ | | |
| 2002 10 15 | 704 | (0.2− | 2.0+) | 2004 03 20 | 699 | 1.4− | 0.7+ | 2006 10 17 | G96 | 0.3− | 0.1− | | |
| 2002 10 15 | 704 | 0.3− | 0.8+ | 2004 03 24 | 699 | 0.4+ | 0.4− | 2006 10 17 | 703 | 0.4− | 0.1+ | | |
| 2002 10 15 | 704 | 0.4− | 0.7+ | 2004 03 24 | 699 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.5− | | |
| 2002 10 29 | 704 | 1.5+ | 0.9+ | 2004 03 24 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.4+ | | |
| 2002 10 29 | 704 | (1.7+ | 1.2+) | 2004 03 24 | 699 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.5+ | 0.7+ | | |
| 2002 10 29 | 704 | 1.3+ | 1.4+ | 2004 03 27 | 704 | 1.1+ | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 2002 10 29 | 704 | (1.3+ | 1.6+) | 2004 03 27 | 704 | (1.6+ | 1.0+) | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2002 10 29 | 704 | 1.0+ | 1.3+ | 2004 03 27 | 704 | 1.1+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2002 11 13 | 704 | 0.4− | 0.5− | 2004 03 27 | 704 | 1.0+ | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 2002 11 13 | 704 | 0.4− | 0.3− | 2004 03 31 | 704 | 0.7+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2002 11 13 | 704 | 0.4− | 0.3− | 2004 03 31 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2002 11 13 | 704 | 0.7− | 1.1− | 2004 03 31 | 704 | 0.7+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2002 11 13 | 704 | 0.4− | 0.5− | 2004 03 31 | 704 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2002 11 14 | 704 | 0.3+ | 0.2+ | 2004 03 31 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2002 11 14 | 704 | 0.4+ | 0.2+ | 2004 04 02 | 608 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2002 11 14 | 704 | 0.7+ | 0.3− | 2004 04 02 | 608 | 0.6+ | 0.6+ | 2006 10 23 | 704 | 0.6+ | 0.7− | | |
| 2002 11 14 | 704 | 0.0 | 0.3+ | 2004 04 02 | 608 | 0.5+ | 0.6+ | 2006 10 23 | 704 | 0.7+ | 0.2+ | | |
| 2002 11 14 | 704 | 0.0 | 0.2+ | 2004 04 03 | 608 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.4+ | 0.0 | | |
| 2002 11 25 | 704 | 0.4− | 0.4− | 2004 04 03 | 608 | 0.3+ | 0.1− | 2006 10 23 | 704 | 0.7+ | 0.4− | | |
| 2002 11 25 | 704 | 0.3− | 1.4− | 2004 04 03 | 608 | 0.5+ | 0.4+ | 2006 10 24 | 704 | 1.3− | 0.0 | | |
| 2002 11 25 | 704 | 0.8− | 0.7− | 2004 04 11 | 644 | 0.9+ | 0.4+ | 2006 10 24 | 704 | 1.2− | 0.1+ | | |
| 2002 11 25 | 704 | 0.0 | 1.1− | 2004 04 11 | 644 | 0.6+ | 0.4+ | 2006 10 24 | 704 | 0.8− | 0.2− | | |
| 2002 11 30 | 704 | 0.5− | 1.3− | 2004 04 11 | 644 | 0.7+ | 0.4+ | 2006 10 24 | 704 | 0.6− | 0.2− | | |
| 2002 11 30 | 704 | 0.6− | 1.1− | 2004 04 11 | 703 | 0.1− | 0.6+ | 2006 10 29 | 704 | 0.3− | 1.2+ | | |
| 2002 11 30 | 704 | 0.1− | 0.0 | 2004 04 11 | 703 | 0.0 | 0.8+ | 2006 10 29 | 704 | 0.4− | 1.3+ | | |
| 2002 11 30 | 704 | 0.0 | 0.1− | 2004 04 11 | 703 | 0.3− | 0.8+ | 2006 10 29 | 704 | 0.0 | 0.5+ | | |
| 2002 11 30 | 704 | 0.9− | 0.2− | 2004 04 11 | 703 | 0.1+ | 0.7+ | 2006 10 29 | 704 | 0.2+ | 0.8+ | | |
| 2002 11 30 | 704 | 0.6+ | 0.7+ | 2004 04 16 | 704 | 1.0+ | 0.4− | 2006 10 29 | 704 | 0.1− | 0.6+ | | |
| 2002 11 30 | 704 | 0.8− | 0.9− | 2004 04 16 | 704 | 1.4+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2002 11 30 | 704 | 0.0 | 0.0 | 2004 04 16 | 704 | 0.8+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.0 | | |
| 2002 12 01 | 704 | 0.0 | 0.2− | 2004 04 16 | 704 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 | | |
| 2002 12 01 | 704 | 0.2+ | 0.1− | 2004 04 16 | 704 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2002 12 01 | 704 | 0.0 | 0.3− | 2004 04 20 | 691 | 0.8+ | 0.2+ | 2006 10 31 | 704 | 1.3− | 0.9+ | | |
| 2002 12 01 | 704 | 0.0 | 0.1− | 2004 04 20 | 691 | 1.0+ | 1.2+ | 2006 10 31 | 704 | 0.1+ | 1.0+ | | |
| 2002 12 01 | 704 | 0.2+ | 0.1− | 2004 04 20 | 691 | 0.1− | 0.5+ | 2006 10 31 | 704 | 0.5− | 0.5− | | |
| 2002 12 01 | 704 | 0.2+ | 0.0 | 2004 04 20 | 704 | (2.2+ | 1.5+) | 2006 10 31 | 704 | (1.1− | 1.6+) | | |
| 2002 12 01 | 704 | 0.1− | 0.2− | 2004 04 20 | 704 | (2.0+ | 3.6+) | 2006 11 06 | 644 | 0.1− | 0.2+ | | |
| 2002 12 01 | 704 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.7+ | 2006 11 06 | 644 | 0.1− | 0.3+ | | |
| 2002 12 01 | 704 | 0.1− | 0.2− | 2004 04 20 | 704 | 0.8+ | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.2+ | | |
| 2002 12 01 | 704 | 0.1− | 0.2+ | 2004 04 20 | 704 | 1.2+ | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.3+ | | |
| 2002 12 11 | 628 | 0.1− | 0.1+ | 2004 04 26 | 699 | 0.3− | 0.7+ | 2006 11 13 | 703 | 0.2− | 0.1+ | | |
| 2002 12 11 | 628 | 0.2− | 0.2+ | 2004 04 26 | 699 | 0.7+ | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.8+ | | |
| 2002 12 11 | 628 | 0.1− | 0.0 | 2004 04 26 | 699 | 0.6+ | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.6+ | | |
| 2002 12 12 | 704 | 0.1− | 0.1− | 2004 04 26 | 699 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.1− | 0.2− | | |
| 2002 12 12 | 704 | 0.2− | 0.3− | 2006 08 28 | 699 | (1.7− | 1.0−) | 2006 11 15 | 704 | 0.0 | 0.4− | | |
| 2002 12 12 | 704 | 0.3+ | 0.6− | 2006 08 28 | 699 | 1.5− | 0.1− | 2006 11 15 | 704 | 0.3− | 0.2− | | |
| 2002 12 12 | 704 | 0.0 | 0.6− | 2006 08 28 | 699 | 0.3− | 0.7+ | 2006 11 15 | 704 | 0.0 | 0.3− | | |
| 2002 12 12 | 704 | 0.0 | 0.4− | 2006 08 28 | 699 | 0.5+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.1− | | |
| 2003 01 14 | 704 | 0.6+ | 0.7+ | 2006 09 12 | 703 | 0.1− | 0.8+ | 2006 11 16 | 704 | 0.5+ | 0.3+ | | |
| 2003 01 14 | 704 | 0.1+ | 0.5+ | 2006 09 12 | 703 | 0.3+ | 0.7+ | 2006 11 16 | 704 | 0.1+ | 0.6+ | | |
| 2003 01 14 | 704 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.4+ | | |
| 2003 01 14 | 704 | 0.3+ | 0.9+ | 2006 09 12 | 703 | 0.0 | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.1+ | | |
| 2003 01 14 | 704 | 0.1− | 0.4+ | 2006 09 16 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.2− | | |
| 2003 01 21 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2003 01 21 | 704 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.8− | 0.2+ | | |
| 2003 01 21 | 704 | 0.1− | 0.2+ | 2006 09 16 | 704 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.3+ | | |
| 2003 01 21 | 704 | 0.5− | 0.4+ | 2006 09 16 | 704 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.1− | 0.1+ | | |
| 2003 02 23 | 704 | (3.3+ | 1.6−) | 2006 09 18 | 703 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.5− | 0.3+ | | |
| 2003 02 23 | 704 | 1.4+ | 0.2− | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 11 25 | 703 | 0.2− | 0.0 | | |
| 2003 02 23 | 704 | (1.7+ | 1.1−) | 2006 09 18 | 703 | (1.6− | 0.0 ) | 2006 11 25 | 703 | 0.3− | 0.1− | | |
| 2003 02 23 | 704 | (2.0+ | 0.9−) | 2006 09 18 | 703 | 0.7− | 0.2− | 2006 11 25 | 703 | 0.2− | 0.1+ | | |
| 2003 02 23 | 704 | 0.2+ | 0.9− | 2006 09 19 | 704 | 0.9− | 0.5+ | 2006 11 25 | 703 | 0.2− | 0.0 | | |
| 2003 12 28 | 704 | 0.4− | 0.0 | 2006 09 19 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.2− | 1.0+ | | |
| 2003 12 28 | 704 | 0.4+ | 0.7− | 2006 09 19 | 704 | 0.8− | 0.4+ | 2006 11 28 | 704 | 0.7− | 0.5+ | | |
| 2003 12 28 | 704 | 0.6+ | 0.2− | 2006 09 19 | 704 | 0.4− | 0.3− | 2006 11 28 | 704 | 0.4− | 0.8+ | | |
| 2003 12 28 | 704 | 0.9+ | 0.1+ | 2006 09 19 | 704 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.3+ | | |
| 2003 12 28 | 704 | 0.1+ | 0.7− | 2006 09 20 | 608 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.6+ | | |
| 2004 01 23 | 704 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.0 | | | | | | |

**(143000)∗ 2002 VL$_{101}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.02754 | | (2000.0) | | | |
| $n$ | 0.22498187 | $\omega$ | 237.90499 | | +0.68159317 | +0.67962175 |
| $a$ | 2.6773452 | $\Omega$ | 77.66621 | | −0.54218617 | +0.71795590 |
| $e$ | 0.1174892 | $i$ | 16.11695 | | −0.49139078 | +0.15051113 |
| $P$ | 4.38 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 704 | 0.2+ | 0.9+ | 2004 02 11 | 644 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 2000 05 02 | 704 | 0.0 | 1.1+ | 2004 02 11 | 644 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.4− | 0.0 | | |
| 2000 05 02 | 704 | 0.9+ | 1.0+ | 2004 03 09 | 644 | 0.1+ | 0.9+ | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 2000 05 02 | 704 | 1.8+ | 1.4+ | 2004 03 09 | 644 | 0.1+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2001 06 25 | 644 | 0.5− | 0.2+ | 2004 03 09 | 644 | 0.3+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.0 | | |
| 2001 06 25 | 644 | 0.3− | 0.2+ | 2004 03 16 | 645 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2001 06 25 | 644 | 0.5− | 0.5+ | 2004 03 16 | 645 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 11 11 | 704 | 0.4− | 1.0− | 2004 03 24 | 703 | (0.0 | 2.1+) | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 11 11 | 704 | 0.4− | 0.8+ | 2004 03 24 | 703 | 0.9+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2002 11 11 | 704 | 0.3− | 0.6− | 2004 03 24 | 703 | 1.4+ | 0.2+ | 2006 10 20 | 703 | 0.5+ | 0.6+ | | |
| 2002 11 11 | 704 | (1.7− | 0.8−) | 2004 03 24 | 703 | 0.6− | 0.3− | 2006 10 20 | 703 | 0.4+ | 0.2+ | | |
| 2002 11 14 | 704 | 0.1− | 0.7− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.3+ | | |
| 2002 11 14 | 704 | 0.9− | 0.7− | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.0 | | |
| 2002 11 14 | 704 | 0.2+ | 0.1− | 2005 06 04 | 704 | 1.1+ | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.4+ | | |
| 2002 11 14 | 704 | 0.4− | 0.0 | 2005 06 04 | 704 | (2.2+ | 0.5+) | 2006 10 28 | 703 | 0.3+ | 0.8+ | | |
| 2002 11 24 | 644 | 0.2+ | 0.0 | 2005 06 04 | 704 | (2.0− | 1.2+) | 2006 10 28 | 703 | 0.2+ | 0.5+ | | |
| 2002 11 24 | 644 | 0.4− | 0.1+ | 2005 06 04 | 704 | 0.7+ | 0.6+ | 2006 10 28 | 703 | 0.3− | 1.0+ | | |
| 2002 11 24 | 644 | 0.2− | 0.3+ | 2005 06 11 | 703 | 0.2+ | 1.0+ | 2006 11 07 | 644 | 0.4+ | 0.5+ | | |
| 2002 12 05 | 704 | 0.3− | 0.2− | 2005 06 11 | 703 | 0.3+ | 0.6− | 2006 11 07 | 644 | 0.1− | 0.2− | | |
| 2002 12 05 | 704 | 0.5− | 0.1− | 2005 06 11 | 703 | 0.4− | 0.5+ | 2006 11 07 | 644 | 0.4− | 0.1+ | | |
| 2002 12 05 | 704 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.2− | 0.7− | 2006 11 08 | 644 | 0.2− | 0.0 | | |
| 2002 12 05 | 704 | 0.1− | 0.2− | 2006 09 19 | 703 | 1.1− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.1− | | |
| 2002 12 05 | 704 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.7− | 2006 11 08 | 644 | 0.3− | 0.0 | | |
| 2002 12 05 | 608 | 1.1+ | 0.8+ | 2006 09 19 | 703 | 0.4+ | 0.5+ | 2006 11 10 | 704 | 0.1+ | 0.2+ | | |
| 2002 12 05 | 608 | (1.6+ | 0.4+) | 2006 09 22 | 703 | 0.1− | 0.2− | 2006 11 10 | 704 | 0.3− | 0.9+ | | |
| 2002 12 05 | 608 | 1.4+ | 0.1+ | 2006 09 22 | 703 | 0.3− | 0.4− | 2006 11 10 | 704 | 0.8+ | 0.0 | | |
| 2002 12 10 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 703 | 0.5− | 0.2− | 2006 11 10 | 704 | 0.4− | 0.4+ | | |
| 2002 12 10 | 704 | 0.2− | 0.2+ | 2006 09 22 | 703 | 0.1− | 0.4− | 2006 11 16 | 703 | 0.7+ | 0.1+ | | |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.7+ | 2006 11 16 | 703 | 0.3+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.2+ | 0.4− | 2006 09 26 | 703 | 0.3+ | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.3+ | | |
| 2002 12 31 | 704 | 1.4+ | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.3+ | | |
| 2002 12 31 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.4− | 2006 11 16 | 703 | 1.1− | 1.1− | | |
| 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.8− | 0.6− | 2006 11 16 | 703 | (5.5+ | 3.2−) | | |
| 2002 12 31 | 704 | 1.3+ | 0.0 | 2006 09 30 | 704 | 0.6+ | 0.2− | 2006 11 16 | 703 | 0.2+ | 0.1+ | | |
| 2002 12 31 | 704 | 1.1+ | 0.5− | 2006 09 30 | 704 | 0.4− | 0.3+ | 2006 11 16 | 703 | 0.9− | 0.4− | | |
| 2003 01 04 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.4− | 1.1+ | | |
| 2003 01 04 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.4+ | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.0 | | |
| 2003 01 04 | 704 | 0.3+ | 1.0− | 2006 10 02 | 703 | 0.8− | 0.9+ | 2006 11 22 | 704 | 1.0+ | 0.1− | | |
| 2003 01 04 | 704 | 0.5− | 0.5+ | 2006 10 02 | 703 | 0.9− | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.5+ | | |
| 2003 01 04 | 704 | 0.5− | 1.1+ | 2006 10 02 | 703 | 0.9− | 0.3+ | | | | | | |
| 2004 02 11 | 644 | 0.2+ | 0.6+ | 2006 10 02 | 703 | 0.4+ | 0.6+ | | | | | | |

**(143001)∗ 2002 VO$_{101}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.31553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23425175 | $\omega$ | 159.16154 | | +0.77951132 | −0.61263658 | |
| $a$ | 2.6062385 | $\Omega$ | 239.29718 | | +0.55107818 | +0.76980293 | |
| $e$ | 0.0902292 | $i$ | 8.73193 | | +0.29778340 | +0.17910853 | |
| $P$ | 4.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 608 | 0.3− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2001 07 17 | 608 | 0.1− | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2001 07 17 | 608 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.5− | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2002 11 06 | 704 | 1.1+ | 0.1− | 2006 10 19 | G96 | 1.3+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 11 06 | 704 | 0.6+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.8+ | 0.1+ | 2006 10 19 | 703 | (2.2+ | 0.7+) | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2002 11 11 | 704 | 1.2+ | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 11 11 | 704 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1− | 2006 11 17 | 704 | (0.6+ | 2.5+) |
| 2002 11 14 | 704 | 0.0 | 1.0− | 2006 10 20 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | 1.1+ | 1.1+ |
| 2002 11 14 | 704 | 0.6− | 0.5− | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.5− | 1.4− |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 17 | 704 | (0.7− | 2.5+) |
| 2002 12 11 | 704 | 0.4+ | 0.2− | 2006 10 20 | 291 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | 0.0 | 0.3− | 2006 10 20 | 291 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2002 12 11 | 704 | 0.8− | 0.2+ | 2006 10 20 | 291 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2002 12 11 | 704 | 0.8− | 0.3− | 2006 10 21 | 704 | 0.9+ | 1.2− | 2006 11 17 | 703 | 0.8− | 0.6− |
| 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 10 21 | 704 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.9− | 1.0+ |
| 2002 12 31 | 704 | 0.6+ | 0.0 | 2006 10 21 | 704 | 0.4+ | 0.3− | 2006 11 18 | 704 | (0.2+ | 1.7+) |
| 2002 12 31 | 704 | 0.3+ | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | (2.2− | 3.4+) |
| 2002 12 31 | 704 | 0.3+ | 0.3− | 2006 10 21 | 704 | 0.0 | 0.8− | 2006 11 18 | 704 | (1.0− | 2.4+) |
| 2002 12 31 | 704 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | (2.0− | 2.4+) |
| 2002 12 31 | 704 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.0 |
| 2003 01 07 | 704 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.8+ | 0.2+ |
| 2003 01 07 | 704 | 0.0 | 0.1+ | 2006 10 21 | 704 | 0.7− | 1.0− | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2003 01 07 | 704 | 0.3− | 0.4− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2003 01 07 | 704 | 1.5− | 0.4− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.4− |
| 2003 01 07 | 704 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2004 03 14 | 644 | 0.3− | 0.0 | 2006 10 26 | 106 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.3+ |
| 2004 03 14 | 644 | 0.4− | 0.1− | 2006 10 26 | 106 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.4− |
| 2004 03 14 | 644 | 0.2− | 0.1− | 2006 10 26 | 106 | 0.5+ | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2004 04 15 | 703 | 0.6− | 0.3+ | 2006 10 26 | 106 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.3+ |
| 2004 04 15 | 703 | 0.3+ | 0.1− | 2006 10 29 | 704 | 0.6+ | 1.0+ | 2006 11 29 | 704 | 0.4+ | 0.4+ |
| 2004 04 15 | 703 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.4− | 1.5+ | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2004 04 15 | 703 | 1.4+ | 0.1− | 2006 10 29 | 704 | 0.2+ | 0.7+ | 2006 11 29 | 704 | 0.1− | 0.6+ |
| 2006 08 29 | 703 | 0.5− | 0.5− | 2006 11 09 | 691 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2006 08 29 | 703 | 0.5+ | 1.3− | 2006 11 09 | 691 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2006 08 29 | 703 | 0.4+ | 0.6− | 2006 11 09 | 691 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2006 08 29 | 703 | 1.2− | 1.1− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2006 10 04 | G96 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ | | | | |

**(143002)∗ 2002 VQ$_{101}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.69432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23582348 | $\omega$ | 232.92309 | | +0.00308738 | −0.99916384 | |
| $a$ | 2.5946455 | $\Omega$ | 216.96327 | | +0.93765141 | +0.01706233 | |
| $e$ | 0.1247937 | $i$ | 3.88767 | | +0.34756338 | −0.03715501 | |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 691 | 0.5− | 0.2− | 2004 05 21 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 2000 05 07 | 691 | 0.2− | 0.2− | 2004 05 21 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2000 05 07 | 691 | 0.7− | 0.1− | 2005 06 28 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2005 06 28 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2002 11 11 | 704 | 0.5− | 1.4+ | 2005 06 28 | 691 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2002 11 11 | 704 | 0.7− | 0.3+ | 2005 06 29 | 691 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2002 11 14 | 704 | 0.5− | 0.2− | 2005 06 29 | 691 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 1.1+ | 0.0 | 2005 06 29 | 691 | 0.0 | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | 0.2− | 0.7+ | 2006 09 16 | 703 | (2.0− | 0.9+) | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 704 | 1.2− | 0.9+ | 2006 09 16 | 703 | 0.8+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 703 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 703 | 1.0+ | 0.5− | 2006 11 17 | 703 | 0.5− | 0.6+ |
| 2002 12 11 | 704 | 0.6+ | 0.4− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.2+ | 1.2+ |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.5+ |
| 2002 12 11 | 704 | 0.5+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 18 | 704 | (2.2− | 0.7+) |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.1− |
| 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2003 01 07 | 704 | 0.6+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.2− |
| 2003 01 07 | 704 | 0.6+ | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 2003 01 07 | 704 | 1.1+ | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.9+ | 0.3− |
| 2003 01 07 | 704 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2003 01 09 | 704 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2003 01 09 | 704 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2003 01 09 | 704 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2003 01 09 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.3− | 0.8+ |
| 2003 01 09 | 704 | 0.6− | 0.4+ | 2006 10 28 | 691 | 0.7− | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.2− |
| 2004 04 21 | 704 | 0.9+ | 1.0+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.8− | 0.0 |
| 2004 04 21 | 704 | 0.5+ | 0.9+ | 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.2− | 0.6+ |
| 2004 04 21 | 704 | 0.8+ | 1.3+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.6− | 0.4+ |
| 2004 05 21 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.8− | | | | |

**(143003)∗ 2002 VC$_{102}$**

Discovered 2002 Nov. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.43455 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25717222 | $\omega$ | 61.95319 | | −0.91566281 | −0.32238524 | |
| $a$ | 2.4489881 | $\Omega$ | 98.39592 | | +0.22688250 | −0.90754993 | |
| $e$ | 0.2170052 | $i$ | 14.04370 | | +0.33179204 | −0.26911127 | |
| $P$ | 3.83 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 1.5+ | 0.1− | 2003 01 09 | 628 | 0.3+ | 0.1− | 2005 10 05 | 703 | 0.6+ | 0.5+ |
| 1998 12 15 | 704 | 0.7− | 0.4− | 2003 01 09 | 628 | 0.1+ | 0.1− | 2005 10 05 | 703 | 0.5− | 1.2+ |
| 1998 12 15 | 704 | 1.0− | 0.2− | 2003 01 09 | 628 | 0.4+ | 0.0 | 2005 10 05 | 703 | 0.5− | 0.6+ |
| 1998 12 15 | 704 | 0.4− | 0.1− | 2003 01 09 | 628 | 0.1+ | 0.0 | 2005 10 05 | 703 | 0.4+ | 0.4+ |
| 1998 12 22 | 704 | (0.4+ | 2.4−) | 2003 02 01 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.3− |
| 1998 12 22 | 704 | 0.3− | 0.9− | 2003 02 01 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | (0.2− | 2.2−) |
| 1998 12 22 | 704 | 0.4+ | 0.1− | 2003 02 01 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.4− |
| 1998 12 22 | 704 | 0.8+ | 0.2− | 2003 02 01 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.6+ |
| 2002 11 11 | 704 | 0.2− | 0.3− | 2003 02 01 | 704 | 0.5− | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2002 11 11 | 704 | 0.1+ | 0.0 | 2003 02 02 | 106 | 0.6− | 0.5− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.4− | 0.3+ | 2003 02 02 | 106 | 0.7− | 1.0− | 2006 10 23 | G96 | 1.0− | 1.0+ |
| 2002 11 11 | 704 | 0.3− | 0.1+ | 2003 02 02 | 106 | 0.7− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2002 11 14 | 704 | 0.0 | 0.3− | 2003 02 04 | 704 | 0.6+ | 0.8+ | 2006 11 06 | 644 | 0.7− | 0.1− |
| 2002 11 14 | 704 | 0.1− | 0.6+ | 2003 02 04 | 704 | 0.2+ | 0.7+ | 2006 11 06 | 644 | 0.2− | 0.1− |
| 2002 11 14 | 704 | 0.5− | 0.2+ | 2003 02 04 | 704 | 0.1− | 0.4+ | 2006 11 06 | 644 | 0.4− | 0.1− |
| 2002 11 14 | 704 | 0.7+ | 0.0 | 2003 02 04 | 704 | 1.2− | 1.3+ | 2006 11 15 | 703 | 0.9− | 0.6+ |
| 2002 12 02 | 704 | 0.3+ | 1.2− | 2003 02 26 | 704 | 0.8− | 0.8+ | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 2002 12 02 | 704 | 0.3+ | 1.1+ | 2003 02 26 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 1.0− | 0.9+ |
| 2002 12 02 | 704 | 0.6+ | 0.2− | 2003 02 26 | 704 | 0.2+ | 0.5− | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2003 02 26 | 704 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2003 02 26 | 704 | 0.5+ | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2003 03 05 | 704 | 1.0+ | 1.4+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2003 03 05 | 704 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2003 03 05 | 704 | 0.4− | 0.1+ | 2006 11 19 | 704 | 1.1+ | 1.0+ |
| 2002 12 10 | 704 | (2.6+ | 3.1−) | 2003 03 05 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.8− | 0.2− |
| 2002 12 10 | 704 | (1.9+ | 2.0−) | 2003 03 05 | 704 | 0.7+ | 0.0 | 2006 11 22 | 704 | 0.6− | 0.2+ |
| 2002 12 10 | 704 | (1.7+ | 2.5−) | 2004 06 14 | 704 | 0.2− | 1.1+ | 2006 11 22 | 704 | 0.3− | 0.3− |
| 2002 12 10 | 704 | (1.4+ | 2.4−) | 2004 06 14 | 704 | 0.2− | 1.1+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 12 31 | 704 | 0.5+ | 0.5− | 2004 06 14 | 704 | (0.2− | 1.7+) | 2006 11 22 | 704 | 0.0 | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.4+ | 0.2− | 2004 06 14 | 704 | (0.0 | 1.7+) | 2006 11 24 | G96 | 0.6− | 0.8− |
| 2002 12 31 | 704 | 0.4+ | 0.1+ | 2004 06 14 | 704 | 0.1− | 1.0+ | 2006 11 24 | G96 | 0.5− | 0.6− |
| 2002 12 31 | 704 | 0.5+ | 0.2− | 2005 09 14 | E12 | 0.6− | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.6− |
| 2002 12 31 | 704 | 0.6+ | 0.4− | 2005 09 14 | E12 | 1.2+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2003 01 04 | 704 | 0.3− | 0.2− | 2005 09 14 | E12 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.9+ | 0.3− |
| 2003 01 04 | 704 | 0.3− | 0.2− | 2005 09 14 | E12 | 0.7+ | 0.1− | 2006 11 29 | 704 | 1.4+ | 1.0+ |
| 2003 01 04 | 704 | 0.3− | 0.2− | 2005 10 04 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.8+ | 0.6+ |
| 2003 01 04 | 704 | 0.5− | 0.1− | 2005 10 04 | 644 | 0.7− | 0.4+ | 2006 11 29 | 704 | 1.1+ | 0.7+ |
| 2003 01 04 | 704 | 0.4− | 0.2− | 2005 10 04 | 644 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.7+ | 0.2+ |

**(143004)∗ 2002 VD$_{103}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.52308 | | (2000.0) | | | |
| $n$ | 0.23358757 | $\omega$ | 57.59735 | | +0.85907872 | +0.50700035 |
| $a$ | 2.6111765 | $\Omega$ | 271.85034 | | −0.49004451 | +0.77508364 |
| $e$ | 0.0982307 | $i$ | 4.03018 | | −0.14778409 | +0.37708885 |
| $P$ | 4.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.7− | 1.0+ | 2004 02 18 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2002 10 10 | 704 | 0.0 | 0.2− | 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2002 10 10 | 704 | 1.0+ | 0.7+ | 2004 02 18 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.6− | 0.4− | 2004 02 19 | 704 | 0.3+ | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.3+ | 1.1− | 2004 02 19 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.9− |
| 2002 11 05 | 644 | 0.5− | 0.3− | 2004 02 19 | 704 | 0.2− | 0.7− | 2006 10 17 | 703 | 0.5− | 0.7− |
| 2002 11 05 | 704 | 1.0+ | 0.1− | 2004 02 19 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.6− |
| 2002 11 05 | 704 | 1.0− | 0.5+ | 2004 02 19 | 704 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.2− | 1.0− |
| 2002 11 05 | 644 | 0.4− | 0.3− | 2005 06 04 | 704 | 1.0− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.4− |
| 2002 11 05 | 644 | 0.2− | 0.3− | 2005 06 04 | 704 | 0.1+ | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | (2.5− | 0.0 ) | 2005 06 04 | 704 | 0.6+ | 0.4− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.6− | 2005 06 04 | 704 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 11 12 | 704 | 0.9− | 0.4− | 2005 07 01 | 703 | 0.5− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 11 12 | 704 | (0.6− | 1.6−) | 2005 07 01 | 703 | 0.2+ | 1.1− | 2006 10 20 | 644 | 0.1− | 0.5− |
| 2002 11 14 | 704 | 0.2+ | 0.0 | 2005 07 01 | 703 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2002 11 14 | 704 | 0.2+ | 0.6+ | 2005 07 01 | 703 | 0.9− | 1.4− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.7+ | 0.1− | 2006 09 20 | 699 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.6− |
| 2002 11 14 | 704 | 0.3+ | 0.0 | 2006 09 20 | 699 | 0.1− | 0.2− | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2002 11 23 | 644 | 0.3− | 0.2− | 2006 09 20 | 699 | 0.4− | 0.4− | 2006 11 06 | 644 | 0.3+ | 0.1− |
| 2002 11 23 | 644 | 0.3− | 0.4− | 2006 09 25 | 704 | 0.3+ | 0.1− | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 0.2− | 0.4− | 2006 09 25 | 704 | 0.6+ | 0.2− | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.5+ | 0.1− | 2006 09 25 | 704 | 0.1− | 0.3+ | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.6− | 0.1+ | 2006 11 10 | 683 | (3.1− | 2.6−) |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.7− | 0.6+ | 2006 11 10 | 683 | 0.5− | 0.2+ |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.4− | 0.4+ | 2006 11 11 | 683 | 0.8+ | 1.0− |
| 2002 12 06 | 704 | 0.6+ | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 683 | 0.2− | 1.0− |
| 2002 12 11 | 704 | 0.4+ | 0.5+ | 2006 09 29 | 704 | 0.2− | 1.2+ | 2006 11 11 | 683 | 0.4− | 0.5+ |
| 2002 12 11 | 704 | (0.9+ | 1.7+) | 2006 09 29 | 704 | 0.5+ | 1.3+ | 2006 11 14 | 703 | 0.5+ | 0.4+ |
| 2002 12 11 | 704 | 0.1+ | 1.5+ | 2006 09 29 | 704 | 0.6+ | 0.6+ | 2006 11 14 | 703 | 0.7+ | 0.1+ |
| 2002 12 28 | 291 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.6+ | 0.6+ | 2006 11 14 | 703 | 0.6− | 0.5− |
| 2002 12 28 | 291 | 0.1− | 0.0 | 2006 09 30 | 703 | 1.0+ | 1.0+ | 2006 11 14 | 703 | 0.8+ | 0.6− |
| 2002 12 28 | 291 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.2− | 1.4+ | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 09 30 | 703 | (0.2+ | 1.8+) | 2006 11 19 | 704 | 1.0+ | 0.0 |
| 2004 02 11 | 644 | 0.3+ | 0.8+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2004 02 11 | 644 | 0.5+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.6− |

**(143005)∗ 2002 VG$_{103}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.52952 | | (2000.0) | | | |
| $n$ | 0.22316914 | $\omega$ | 318.24481 | | +0.95923166 | +0.28072410 |
| $a$ | 2.6918237 | $\Omega$ | 25.50710 | | −0.23500862 | +0.85652840 |
| $e$ | 0.1159283 | $i$ | 4.35363 | | −0.15698907 | +0.43307398 |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.7+ | 0.4− | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.8+ |
| 2002 10 02 | 704 | 0.8+ | 1.1− | 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 2002 10 02 | 704 | 0.2+ | 0.0 | 2005 05 11 | 691 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.3− | 0.3− | 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.4+ |
| 2002 11 04 | 644 | 0.2− | 0.0 | 2005 05 11 | 644 | 0.1− | 0.5+ | 2006 09 22 | 704 | (0.1− | 1.8+) |
| 2002 11 04 | 644 | 0.3− | 0.4+ | 2005 05 11 | 644 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.9+ | 0.4+ |
| 2002 11 04 | 644 | 0.2+ | 0.2+ | 2005 05 11 | 644 | 0.2+ | 0.0 | 2006 09 22 | 704 | 1.0+ | 0.9+ |
| 2002 11 12 | 704 | 1.0+ | 1.0− | 2005 05 16 | 691 | 0.3− | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.8+ |
| 2002 11 12 | 704 | 0.6− | 0.5+ | 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.7+ |
| 2002 11 12 | 704 | 0.6+ | 0.5− | 2005 05 16 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.5− | 0.2+ |
| 2002 11 12 | 704 | 1.1+ | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.6+ |
| 2002 11 12 | 704 | 0.4+ | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.7+ | 0.3+ |
| 2002 11 14 | 704 | (1.8− | 0.1+) | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | 0.8− | 0.7+ | 2006 08 27 | 699 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.3+ |
| 2002 11 14 | 704 | 0.1− | 0.5− | 2006 08 27 | 699 | 0.1− | 0.8+ | 2006 09 26 | 704 | 0.4+ | 0.9− |
| 2002 11 14 | 704 | 0.3− | 0.5+ | 2006 08 27 | 699 | 0.0 | 0.8+ | 2006 09 26 | 704 | 0.1− | 0.3− |
| 2002 12 02 | 704 | 0.2− | 0.1− | 2006 08 27 | 699 | 0.4− | 0.7+ | 2006 09 26 | 704 | 0.7− | 0.4+ |
| 2002 12 02 | 704 | 0.8+ | 0.1+ | 2006 08 28 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.6+ |
| 2002 12 02 | 704 | 0.1+ | 0.9− | 2006 08 28 | 704 | 0.9− | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2006 08 28 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | (2.2− | 0.2+) | 2006 08 28 | 703 | (1.7+ | 0.3+) | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 1.5− | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.9− | 2006 10 02 | G96 | 0.5− | 0.1+ |
| 2002 12 06 | 704 | (0.9− | 1.6+) | 2006 08 28 | 703 | 0.4− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2002 12 11 | 644 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.6+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2002 12 11 | 644 | 0.8− | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 12 11 | 644 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2004 02 13 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.3− | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.5− |
| 2004 02 13 | 691 | 0.2+ | 0.4+ | 2006 09 16 | 704 | 0.4− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2004 02 16 | 291 | 0.3+ | 0.4+ | 2006 09 16 | 704 | 0.8− | 0.0 | 2006 10 21 | G96 | 1.0− | 0.2− |
| 2004 02 16 | 291 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2004 02 16 | 291 | 0.2+ | 0.5+ | 2006 09 16 | 704 | 0.0 | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2004 02 22 | 291 | 0.1− | 0.6+ | 2006 09 16 | 699 | 0.8− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2004 02 22 | 291 | 0.0 | 0.6+ | 2006 09 16 | 699 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2004 02 22 | 291 | 0.3+ | 0.7+ | 2006 09 16 | 699 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2005 05 11 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.6− |

**(143006)∗ 2002 VK$_{103}$ = 2004 CO$_{127}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65389)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.20521 | | (2000.0) | | | |
| $n$ | 0.22982099 | $\omega$ | 92.31121 | | −0.10008064 | −0.99497080 |
| $a$ | 2.6396292 | $\Omega$ | 3.44075 | | +0.88342083 | −0.09076370 |
| $e$ | 0.0572961 | $i$ | 3.93617 | | +0.45776796 | −0.04236812 |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 14 | 691 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 1993 10 14 | 691 | 0.1+ | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 1993 10 14 | 691 | 0.5+ | 0.0 | 2004 03 18 | 704 | 0.6− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2002 11 12 | 704 | 0.7− | 1.0− | 2004 04 13 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.5− | 0.4+ | 2004 04 13 | 691 | 0.3+ | 0.2− | 2006 10 03 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | (1.7− | 0.7−) | 2004 04 24 | 691 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.2− | 0.0 | 2004 04 24 | 691 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.5+ | 0.2− |
| 2002 11 14 | 704 | 0.2+ | 0.3+ | 2004 04 24 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.7+ | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.5+ | 2006 10 19 | G96 | 0.5− | 0.1+ |
| 2002 11 14 | 704 | 1.2+ | 0.2− | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.6+ | 0.3+ |
| 2002 11 14 | 704 | (1.0+ | 1.6−) | 2006 07 21 | G96 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2002 11 24 | 644 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.9+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.5+ | 0.1+ |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2004 02 13 | 291 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2004 02 13 | 291 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2004 02 13 | 291 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2004 02 26 | 704 | 0.7+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2004 02 26 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.5− | 2006 09 25 | 691 | 0.2− | 0.2+ | | | | |

**(143007)∗ 2002 VO$_{103}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.55116 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23463236 | $\omega$ | 301.87749 | | +0.88595439 | +0.44653410 |
| $a$ | 2.6034193 | $\Omega$ | 32.10623 | | −0.30422664 | +0.76343907 |
| $e$ | 0.1854588 | $i$ | 13.63243 | | −0.35004424 | +0.46665628 |
| $P$ | 4.20 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.3+ | 0.2+ | 2005 05 08 | E12 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | (0.6+ | 1.7+) | 2005 05 08 | E12 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.5+ | 0.5+ | 2005 05 08 | E12 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.6− | 0.0 | 2005 05 16 | 644 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 10 12 | 704 | 0.9− | 0.1+ | 2005 05 16 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 1.4+ | 0.7+ | 2005 05 16 | 644 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 10 12 | 704 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.7+ |
| 2002 10 12 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.7+ | 0.2− | 2006 10 21 | 703 | 0.4+ | 0.5+ |
| 2002 11 06 | 699 | 0.8− | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.2+ |
| 2002 11 06 | 699 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 10 21 | 703 | 0.1− | 0.7+ |
| 2002 11 06 | 699 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.8+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 699 | 1.3− | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 11 12 | 704 | 0.1− | 1.3+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.3− | 2006 10 23 | 704 | 1.1− | 0.9− |
| 2002 11 12 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 704 | 0.7− | 0.3+ | 2006 10 23 | 704 | (2.1+ | 1.4−) |
| 2002 11 12 | 704 | 1.4+ | 0.4+ | 2006 09 19 | 704 | 0.3+ | 0.7− | 2006 10 23 | 704 | 0.8+ | 0.8− |
| 2002 11 12 | 704 | 0.0 | 0.8+ | 2006 09 19 | 704 | 0.5− | 0.1+ | 2006 10 23 | 704 | 0.8+ | 0.3− |
| 2002 11 14 | 704 | 0.7− | 0.6− | 2006 09 19 | 704 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.7− | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 11 14 | 644 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 644 | 0.2+ | 0.0 | 2006 09 22 | 704 | 1.0+ | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2002 11 14 | 644 | 0.1+ | 0.0 | 2006 09 22 | 704 | 1.1+ | 0.3+ | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2002 11 24 | 644 | 0.1+ | 0.7+ | 2006 09 22 | 704 | 0.4+ | 0.1− | 2006 11 06 | 644 | 0.8− | 0.1− |
| 2002 11 24 | 644 | 0.2+ | 0.8+ | 2006 09 22 | 704 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2002 11 24 | 644 | 0.1+ | 0.8+ | 2006 09 26 | 704 | 0.8+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 11 27 | 699 | 0.7− | 0.3− | 2006 09 26 | 704 | 0.2+ | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 11 27 | 699 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.5− | 0.8− |
| 2002 11 27 | 699 | 0.5− | 0.5− | 2006 09 26 | 704 | 0.2− | 1.3− | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2002 11 27 | 699 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2002 12 02 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.4− |
| 2002 12 02 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2002 12 02 | 704 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.9+ | 1.1+ | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2002 12 02 | 704 | 0.2− | 0.6+ | 2006 10 01 | 704 | 0.7+ | 1.1+ | 2006 11 17 | 703 | 0.5+ | 0.1+ |
| 2002 12 05 | 699 | 0.4− | 0.4− | 2006 10 01 | 704 | (0.5+ | 2.2+) | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2002 12 05 | 699 | 0.7+ | 0.9+ | 2006 10 01 | 704 | 0.6+ | 1.0+ | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2002 12 05 | 699 | 0.5− | 1.3− | 2006 10 01 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.2− | 1.2+ |
| 2002 12 05 | 699 | 1.0+ | 0.8− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.4− | 0.2− |
| 2002 12 05 | 704 | 0.9− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.6− |
| 2002 12 05 | 704 | 1.3− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2002 12 12 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2002 12 12 | 644 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | (1.7+ | 0.4−) |
| 2002 12 12 | 644 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2002 12 13 | 644 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.5− |
| 2002 12 13 | 644 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.5− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2002 12 13 | 644 | 0.4+ | 0.2+ | 2006 10 15 | 703 | 1.5− | 0.7− | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2004 03 18 | 645 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.7− | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2005 05 08 | 699 | 0.6+ | 0.4− | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2005 05 08 | 699 | 0.5+ | 0.4+ | 2006 10 18 | 106 | 0.3− | 0.5− | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2005 05 08 | 699 | 1.2+ | 0.0 | 2006 10 18 | 106 | 0.9− | 1.1− | 2006 11 27 | G96 | 0.5+ | 0.2− |
| 2005 05 08 | 699 | 0.3− | 0.5+ | 2006 10 18 | 106 | 0.0 | 1.2− | | | | |
| 2005 05 08 | E12 | 0.5− | 1.1+ | 2006 10 18 | 106 | (0.3− | 3.3−) | | | | |

**(143008)∗ 2002 VQ$_{103}$ = 2004 DV$_{32}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61605)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.46595 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21966256 | $\omega$ | 43.34134 | | +0.58791853 | −0.80872821 |
| $a$ | 2.7203954 | $\Omega$ | 10.68999 | | +0.71382101 | +0.50843053 |
| $e$ | 0.0699192 | $i$ | 5.45091 | | +0.38054090 | +0.29573144 |
| $P$ | 4.49 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.5− | 0.3+ | 2002 12 11 | 704 | 0.3+ | 0.1− | 2006 09 16 | 699 | 0.3− | 0.2+ |
| 1997 10 21 | 691 | 0.2− | 0.0 | 2002 12 11 | 704 | 1.0− | 0.1− | 2006 09 19 | 703 | 0.2+ | 1.1− |
| 1997 10 21 | 691 | 0.0 | 0.1+ | 2002 12 27 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2001 07 18 | 644 | 0.2+ | 0.9+ | 2002 12 27 | 644 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.1− | 0.3− |
| 2001 07 18 | 644 | 0.5+ | 0.8+ | 2002 12 27 | 644 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2001 07 18 | 644 | 0.5+ | 0.6+ | 2004 02 18 | 704 | 0.7+ | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.4− |
| 2002 11 01 | 644 | 0.4+ | 0.8− | 2004 02 18 | 704 | 0.7+ | 0.1− | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 2002 11 01 | 644 | 0.6+ | 0.4+ | 2004 02 18 | 704 | 1.3+ | 1.5+ | 2006 09 19 | 699 | 1.2− | 0.3− |
| 2002 11 01 | 644 | 0.3+ | 0.7− | 2004 02 18 | 704 | 0.1+ | 1.4+ | 2006 09 20 | 704 | (0.2− | 2.0+) |
| 2002 11 01 | 644 | 0.4+ | 0.4+ | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.7+ |
| 2002 11 01 | 644 | 0.0 | 0.8− | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2002 11 01 | 644 | 0.8+ | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.3+ |
| 2002 11 12 | 704 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.8− | 0.9+ |
| 2002 11 12 | 704 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.2+ | 0.9+ | 2004 03 15 | 704 | 0.4− | 0.2+ | 2006 09 20 | 704 | 0.6− | 1.3+ |
| 2002 11 12 | 704 | 0.1− | 0.5− | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2002 11 12 | 704 | 0.2+ | 0.6− | 2004 03 15 | 704 | 0.1+ | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.6− | 0.2+ | 2004 03 15 | 704 | 0.1+ | 1.4+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.6− | 0.4+ | 2004 03 15 | 704 | 0.1− | 0.8+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2002 11 14 | 704 | (1.9− | 0.8+) | 2004 03 18 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.2+ |
| 2002 11 14 | 704 | (2.0− | 0.1−) | 2004 03 18 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.4+ |
| 2002 11 14 | 704 | (2.0− | 0.1+) | 2004 03 18 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.6− | 1.1+ |
| 2002 11 27 | 699 | 0.1− | 0.2− | 2004 03 19 | 704 | (0.2+ | 1.7+) | 2006 09 28 | 704 | 0.1+ | 0.1− |
| 2002 11 27 | 699 | 0.3− | 0.1− | 2004 03 19 | 704 | 0.7+ | 0.6+ | 2006 09 28 | 704 | 0.1− | 0.8− |
| 2002 11 27 | 699 | 0.6+ | 0.2+ | 2004 03 19 | 704 | 1.0− | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.7+ |
| 2002 11 27 | 699 | 0.5− | 1.4+ | 2005 01 21 | 809 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.3− | 1.5+ |
| 2002 12 02 | 704 | 0.1+ | 0.4− | 2005 01 21 | 809 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.3+ |
| 2002 12 02 | 704 | 0.1+ | 0.3− | 2005 01 21 | 809 | 0.2− | 0.2+ | 2006 09 30 | 704 | 0.8− | 0.4+ |
| 2002 12 02 | 704 | 0.0 | 0.8− | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.1− | 0.0 |
| 2002 12 02 | 704 | 0.4− | 0.4− | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 12 02 | 704 | 0.4+ | 1.1− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | (1.6+ | 0.2−) | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.1− | 0.8− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.6+ | 0.6− | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | (1.4+ | 2.5−) | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2002 12 11 | 644 | 0.4− | 1.0+ | 2006 08 24 | 644 | 0.5+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 644 | 0.3+ | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.5− | 0.3− | 2006 09 16 | 704 | 0.2− | 1.3+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 12 11 | 644 | 0.1+ | 1.1+ | 2006 09 16 | 704 | 0.4− | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 12 11 | 644 | 0.2+ | 0.2− | 2006 09 16 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 09 16 | 699 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 12 11 | 644 | 0.6− | 1.0+ | 2006 09 16 | 704 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 644 | 0.6+ | 1.1− | 2006 09 16 | 699 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 09 16 | 699 | 0.2+ | 0.8− | | | | |

**(143009)∗ 2002 VX$_{103}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.43681 | | (2000.0) | | | |
| $n$ | 0.22215231 | $\omega$ | 86.52403 | | +0.80797825 | −0.58497787 |
| $a$ | 2.7000315 | $\Omega$ | 309.26362 | | +0.49795885 | +0.74190947 |
| $e$ | 0.0384298 | $i$ | 5.22535 | | +0.31497322 | +0.32767551 |
| $P$ | 4.44 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.3− | 0.3+ | 2002 12 27 | 644 | 0.1+ | 0.9− | 2006 09 15 | 704 | 1.0+ | 0.2+ |
| 2001 08 25 | 691 | 0.0 | 0.2+ | 2004 02 19 | 704 | (1.8− | 0.8+) | 2006 09 15 | 704 | 0.3− | 0.1+ |
| 2001 08 25 | 691 | 0.0 | 0.6+ | 2004 02 19 | 704 | 0.2+ | 0.4+ | 2006 09 15 | 704 | 0.9+ | 0.7− |
| 2002 10 12 | 704 | 1.0− | 0.4− | 2004 02 19 | 704 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.2+ | 0.4+ |
| 2002 10 12 | 704 | 1.4− | 0.1+ | 2004 02 19 | 704 | 0.6− | 1.2+ | 2006 09 17 | 703 | 0.3− | 0.3− |
| 2002 10 12 | 704 | 0.1− | 0.1− | 2004 02 19 | 704 | 0.7+ | 0.8+ | 2006 09 17 | 703 | 0.8− | 0.2+ |
| 2002 11 12 | 704 | 1.0+ | 0.2+ | 2004 02 19 | 608 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.7− | 0.9+ |
| 2002 11 12 | 704 | 0.3− | 0.4+ | 2004 02 19 | 608 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.2− |
| 2002 11 12 | 704 | 0.4+ | 0.4+ | 2004 02 19 | 608 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.7− | 1.2+ |
| 2002 11 12 | 704 | 1.3+ | 0.2− | 2004 02 28 | 830 | (1.4+ | 5.3+) | 2006 09 19 | 699 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.7+ | 0.6+ | 2004 02 28 | 830 | (1.2+ | 1.8+) | 2006 09 25 | 704 | 0.8− | 0.3− |
| 2002 11 14 | 704 | 1.1− | 0.4− | 2004 02 28 | 830 | 1.0− | 1.0+ | 2006 09 25 | 704 | 0.7− | 0.3+ |
| 2002 11 14 | 704 | 0.1+ | 0.1− | 2004 03 10 | 644 | 0.3+ | 1.0+ | 2006 09 25 | 704 | 0.4− | 1.0+ |
| 2002 11 14 | 704 | 0.4+ | 1.0− | 2004 03 10 | 644 | 0.2+ | 1.1+ | 2006 09 25 | 704 | 0.7− | 0.5+ |
| 2002 11 14 | 704 | 0.1− | 0.1− | 2004 03 10 | 644 | 0.1+ | 1.1+ | 2006 09 25 | 704 | (1.6+ | 0.3+) |
| 2002 11 15 | 644 | 0.2+ | 0.1− | 2004 03 16 | 704 | (0.0 | 1.7+) | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2002 11 15 | 644 | 0.5− | 0.2− | 2004 03 16 | 704 | 1.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 11 15 | 644 | 0.9− | 0.2− | 2004 03 16 | 704 | 0.2− | 0.4− | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2002 12 02 | 704 | 0.2− | 0.4− | 2004 03 16 | 704 | 1.2+ | 0.5+ | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2002 12 02 | 704 | (1.7− | 0.2−) | 2004 03 16 | 704 | 1.0+ | 0.2+ | 2006 09 29 | 704 | 0.8+ | 0.3+ |
| 2002 12 02 | 704 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.2− |
| 2002 12 02 | 704 | 0.5+ | 0.8+ | 2004 03 18 | 704 | 0.5+ | 0.5− | 2006 09 29 | 704 | 0.0 | 0.2+ |
| 2002 12 05 | 699 | 0.0 | 1.3+ | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.0 | 0.2− |
| 2002 12 05 | 699 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 699 | 1.2− | 0.3− | 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2002 12 05 | 699 | (1.8+ | 0.7+) | 2004 03 20 | 704 | 0.0 | 0.8+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2002 12 05 | 704 | 0.7− | 1.2+ | 2004 03 20 | 704 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 1.3− | 0.4+ | 2004 03 20 | 704 | 0.0 | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.9− | 2004 03 20 | 704 | 0.4+ | 1.4+ | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 1.2+ | 0.2− | 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.8+ | 0.7+ | 2004 03 23 | 830 | 0.4+ | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.6+ | 0.4+ | 2004 03 23 | 830 | 0.6+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.4− | 2006 08 29 | 699 | 0.2− | 0.0 | 2006 11 06 | 644 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 1.4+ | 0.0 | 2006 08 29 | 699 | 1.3− | 1.2+ | 2006 11 06 | 644 | 0.1− | 0.4+ |
| 2002 12 11 | 704 | 0.4− | 0.4− | 2006 08 29 | 699 | 1.1+ | 0.4+ | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.3− | 2006 08 29 | 699 | 0.5− | 1.1+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.6+ |
| 2002 12 27 | 644 | 0.1− | 1.1− | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2002 12 27 | 644 | 0.4+ | 0.7− | 2006 09 06 | 644 | 0.1− | 0.0 | | | | |

**(143010)∗ 2002 VB$_{104}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.52609 | | (2000.0) | | | |
| $n$ | 0.21563753 | $\omega$ | 347.47425 | | +0.99942291 | +0.02635332 |
| $a$ | 2.7541430 | $\Omega$ | 11.08270 | | −0.01226909 | +0.86841614 |
| $e$ | 0.0567341 | $i$ | 6.40152 | | −0.03167506 | +0.49513524 |
| $P$ | 4.57 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.8− | 0.2+ | 2004 01 23 | 704 | (1.2+ | 1.7+) | 2006 09 16 | 699 | 0.5+ | 0.4− |
| 1995 03 23 | 691 | 0.0 | 0.3− | 2004 01 23 | 704 | (1.8+ | 0.6+) | 2006 09 16 | 699 | 0.2+ | 0.7+ |
| 1995 03 23 | 691 | 0.4− | 0.4− | 2004 02 17 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 699 | 0.5+ | 0.3+ |
| 1995 04 04 | 691 | (5.2+ | 5.2−) | 2004 02 17 | 704 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.8− | 0.0 |
| 1995 04 04 | 691 | (4.9+ | 5.1−) | 2004 02 17 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 1.0− | 0.6− |
| 2001 07 13 | 644 | 0.4+ | 0.8+ | 2004 02 17 | 704 | 1.3+ | 1.4+ | 2006 09 19 | 699 | 1.1− | 0.9+ |
| 2001 07 13 | 644 | 0.5+ | 0.6+ | 2004 03 10 | 644 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.2− | 1.2− |
| 2001 07 13 | 644 | 0.1+ | 1.1+ | 2004 03 10 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.6− | 1.0− |
| 2001 08 11 | 644 | (1.6+ | 1.7+) | 2004 03 10 | 644 | 0.4+ | 0.9+ | 2006 09 19 | 703 | 0.4− | 0.1− |
| 2001 08 11 | 644 | (1.4+ | 1.9+) | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.9− | 0.1− |
| 2001 08 11 | 644 | (1.4+ | 2.0+) | 2004 03 20 | 704 | 0.2− | 0.8+ | 2006 09 19 | 699 | 0.5− | 0.3+ |
| 2001 08 21 | 644 | 0.2+ | 0.9+ | 2004 03 20 | 704 | 0.3+ | 0.8+ | 2006 09 22 | 704 | 0.8− | 1.3+ |
| 2001 08 21 | 644 | 0.5+ | 0.9+ | 2004 03 20 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 704 | 1.1+ | 0.2+ |
| 2001 08 21 | 644 | 0.1+ | 1.0+ | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 704 | 0.6− | 0.2+ |
| 2002 11 12 | 704 | 0.2− | 1.1− | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 09 22 | 704 | (0.5+ | 1.8+) |
| 2002 11 12 | 704 | 0.9− | 0.3+ | 2004 03 26 | 691 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.3+ |
| 2002 11 12 | 704 | 0.0 | 0.4− | 2004 03 26 | 691 | 0.1+ | 0.8+ | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | 0.0 | 0.4− | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.1+ | 1.0− | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.3+ |
| 2002 11 14 | 704 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.3− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.5+ | 0.4+ | 2006 08 27 | 699 | 1.1− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.2+ | 0.8+ | 2006 08 27 | 699 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 12 02 | 704 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.3− | 0.9− | 2006 09 27 | 704 | 1.2− | 0.6+ |
| 2002 12 02 | 704 | 0.3− | 1.4+ | 2006 08 27 | 699 | (1.8− | 0.3+) | 2006 09 27 | 704 | 0.4− | 0.4+ |
| 2002 12 02 | 704 | (0.1+ | 1.8+) | 2006 08 28 | 703 | (1.1+ | 2.1−) | 2006 09 27 | 704 | 0.0 | 0.5+ |
| 2002 12 06 | 704 | 0.6+ | 0.2− | 2006 08 28 | 703 | (1.9+ | 1.8−) | 2006 09 27 | 704 | 0.6+ | 0.9+ |
| 2002 12 06 | 704 | 0.9+ | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2002 12 06 | 704 | 1.1+ | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.6− | 2006 09 30 | 703 | 0.1+ | 1.0+ |
| 2002 12 06 | 704 | 1.0+ | 0.5− | 2006 09 12 | 703 | 0.9− | 0.4− | 2006 09 30 | 703 | 0.4+ | 0.4− |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2006 09 12 | 703 | 0.8+ | 0.1− | 2006 09 30 | 703 | (0.7+ | 1.5−) |
| 2002 12 11 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2002 12 11 | 704 | 0.1+ | 0.5− | 2006 09 14 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.8+ | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.1− |
| 2002 12 11 | 644 | 0.0 | 0.2− | 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.6+ | 1.3+ | 2006 09 16 | 704 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2002 12 11 | 644 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2002 12 11 | 644 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.6− |
| 2004 01 23 | 704 | 0.5− | 0.1− | 2006 09 16 | 699 | 0.2+ | 0.1+ | | | | |
| 2004 01 23 | 704 | 0.7+ | 0.6+ | 2006 09 16 | 704 | 0.6− | 0.8+ | | | | |

**(143011)∗ 2002 VJ$_{104}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.56368 | | (2000.0) | | | |
| $n$ | 0.23451908 | $\omega$ | 8.62009 | | +0.99506367 | +0.09896817 |
| $a$ | 2.6042575 | $\Omega$ | 345.69398 | | −0.09272487 | +0.90092971 |
| $e$ | 0.1880373 | $i$ | 1.69783 | | −0.03536098 | +0.42252925 |
| $P$ | 4.20 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 691 | 0.1+ | 0.2+ | 2004 02 29 | 691 | 0.1+ | 0.1− | 2006 09 29 | 704 | 1.1+ | 0.9− |
| 2000 03 10 | 691 | 0.1+ | 0.2+ | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2000 03 10 | 691 | 0.0 | 0.2+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 10 31 | 699 | 0.2+ | 0.3+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 10 31 | 699 | 0.7+ | 0.7− | 2004 03 26 | 691 | 0.6+ | 0.1+ | 2006 10 03 | 704 | 0.7+ | 0.8− |
| 2002 10 31 | 699 | 0.7− | 0.1+ | 2004 03 26 | 691 | 0.3+ | 0.3− | 2006 10 03 | 704 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.1− | 0.7+ | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.4− | 0.0 | | |
| 2002 11 06 | 704 | (1.5+ | 0.1+) | 2005 05 12 | 644 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.4+ | 1.3− | | |
| 2002 11 06 | 704 | 1.2+ | 0.5+ | 2005 05 12 | 644 | 0.2+ | 0.2− | 2006 10 03 | 704 | 0.4+ | 0.2− | | |
| 2002 11 06 | 704 | 0.5+ | 0.4+ | 2005 05 12 | 644 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1− | | |
| 2002 11 06 | 704 | 0.5+ | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.0 | | |
| 2002 11 12 | 704 | 1.1− | 0.2− | 2006 07 21 | G96 | 0.4− | 0.4− | 2006 10 11 | 691 | 0.1− | 0.1− | | |
| 2002 11 12 | 704 | 0.8− | 0.1+ | 2006 07 21 | G96 | 0.5− | 0.1+ | 2006 10 18 | 106 | 0.4− | 0.1− | | |
| 2002 11 12 | 704 | 0.8− | 0.3− | 2006 07 21 | G96 | 0.6− | 0.2− | 2006 10 18 | 106 | 0.4− | 0.6− | | |
| 2002 11 12 | 704 | 0.6− | 0.8− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 18 | 106 | 0.3− | 0.1− | | |
| 2002 11 12 | 704 | 0.3− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 106 | 0.9− | 1.1− | | |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.2+ | | |
| 2002 11 14 | 704 | 0.2− | 0.1− | 2006 09 16 | 683 | 1.5+ | 0.4− | 2006 10 21 | 703 | 0.4− | 1.5− | | |
| 2002 11 14 | 704 | 0.3− | 0.4− | 2006 09 16 | 683 | 0.5+ | 0.6− | 2006 10 21 | 703 | (0.2+ | 1.7−) | | |
| 2002 11 14 | 704 | 0.5− | 0.5+ | 2006 09 16 | 683 | 1.1+ | 0.5− | 2006 10 21 | 703 | 0.1− | 0.6− | | |
| 2002 11 28 | 699 | 0.1− | 0.4− | 2006 09 18 | 683 | 0.8− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 11 28 | 699 | 0.3− | 0.0 | 2006 09 18 | 683 | 0.1+ | 1.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 11 28 | 699 | 1.2+ | 0.8− | 2006 09 18 | 683 | (2.1− | 2.2+) | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 11 28 | 699 | 0.7− | 0.0 | 2006 09 19 | 683 | 0.0 | 0.8+ | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 2002 12 02 | 704 | 0.4+ | 0.2− | 2006 09 19 | 683 | (0.6− | 2.5+) | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2002 12 02 | 704 | 1.0+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.3− | | |
| 2002 12 02 | 704 | 0.2+ | 1.1− | 2006 09 19 | 683 | (0.5− | 1.9+) | 2006 10 28 | 704 | 0.6− | 1.4+ | | |
| 2002 12 02 | 704 | 0.3+ | 0.5− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 28 | 704 | 0.2− | 1.4+ | | |
| 2002 12 02 | 704 | 1.1+ | 1.0− | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 28 | 704 | 0.6− | 0.7+ | | |
| 2002 12 06 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 10 28 | 704 | (1.5− | 0.7+) | | |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.9+ | 2006 10 28 | 704 | (1.8− | 1.3+) | | |
| 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.2− | 1.1+ | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2002 12 11 | 644 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.6− | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.3− | | |
| 2002 12 11 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 704 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2002 12 11 | 644 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.0 | | |
| 2002 12 11 | 644 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | (0.1− | 1.5−) | | |
| 2002 12 11 | 704 | 0.4− | 0.5+ | 2006 09 27 | 704 | 0.5+ | 1.3+ | 2006 11 11 | 703 | 0.6+ | 0.4− | | |
| 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 09 27 | 704 | 1.0+ | 1.0+ | 2006 11 11 | 703 | 0.4− | 0.1+ | | |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.8+ | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2004 02 17 | 691 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.6− | | |
| 2004 02 17 | 691 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.4− | | |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.2− | 1.1+ | 2006 11 17 | G96 | 0.3+ | 0.4− | | |
| 2004 02 29 | 691 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.6+ | | | | | | |
| 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.1− | 1.2+ | | | | | | |

**(143012)∗ 2002 VG$_{105}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 63.73159 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23534855 | $\omega$ | 290.59870 | | +0.64283219 | | +0.76570189 | | |
| $a$ | 2.5981349 | $\Omega$ | 19.45383 | | −0.67641279 | | +0.58066396 | | |
| $e$ | 0.1524908 | $i$ | 3.72188 | | −0.35948923 | | +0.27664054 | | |
| $P$ | 4.19 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 0.2− | 0.2+ | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.0 | | |
| 1992 03 25 | 691 | 0.3− | 0.2− | 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 10 29 | 704 | (0.9− | 1.8+) | | |
| 1996 03 27 | 691 | 0.1− | 0.2− | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.9− | 0.4+ | | |
| 1996 03 27 | 691 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.8− | 0.8+ | 2006 10 29 | 704 | 1.0− | 0.2+ | | |
| 1996 03 27 | 691 | 0.4− | 0.3− | 2004 02 16 | 704 | 0.8+ | 0.3+ | 2006 10 29 | 704 | 0.7− | 0.6+ | | |
| 2002 11 01 | 644 | 0.1− | 0.5− | 2004 02 16 | 704 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2002 11 01 | 644 | 0.2− | 0.4− | 2004 02 16 | 704 | 1.4+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2002 11 01 | 644 | 0.4+ | 0.2− | 2004 02 23 | 704 | 0.3− | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.1− | | |
| 2002 11 12 | 704 | 0.2+ | 1.1− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.2+ | | |
| 2002 11 12 | 704 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.1+ | 0.7+ | 2006 11 08 | 644 | 0.3+ | 0.1− | | |
| 2002 11 12 | 704 | 0.8+ | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.2+ | | |
| 2002 11 12 | 704 | (1.8− | 0.4+) | 2005 05 12 | 644 | 0.0 | 1.2+ | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2002 11 12 | 704 | 0.4− | 0.7− | 2005 05 12 | 644 | 0.4+ | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.3+ | | |
| 2002 11 14 | 704 | 1.4+ | 0.3+ | 2005 05 12 | 644 | 0.4+ | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2002 11 14 | 704 | 0.1+ | 1.0− | 2005 05 13 | E12 | 0.8− | 1.2− | 2006 11 13 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 14 | 704 | 1.3+ | 0.9+ | 2005 05 13 | E12 | (2.0+ | 1.6−) | 2006 11 13 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 14 | 704 | (1.9+ | 0.0 ) | 2005 05 13 | E12 | 0.7+ | 1.0+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2002 11 14 | 704 | 0.1− | 0.8+ | 2005 05 13 | E12 | 0.6+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2002 11 24 | 644 | 0.3+ | 0.2− | 2005 06 26 | 644 | 0.7+ | 1.0+ | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2005 06 26 | 644 | 0.6+ | 0.8+ | 2006 11 15 | G96 | 0.5+ | 0.2− | | |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2005 06 26 | 644 | 0.7+ | 1.0+ | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2002 11 27 | 699 | 0.4− | 0.1+ | 2005 06 26 | 644 | 0.4+ | 0.7+ | 2006 11 17 | 703 | 0.1− | 0.3+ | | |
| 2002 11 27 | 699 | 0.3+ | 0.0 | 2005 06 26 | 644 | 0.4+ | 0.8+ | 2006 11 17 | 703 | 0.1+ | 0.1+ | | |
| 2002 11 27 | 699 | 1.2+ | 0.3+ | 2005 06 26 | 644 | 0.7+ | 0.7+ | 2006 11 17 | 703 | 0.3+ | 0.4− | | |
| 2002 11 27 | 699 | 0.5+ | 0.7− | 2006 07 22 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.1− | 0.5+ | | |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2006 07 22 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.5− | 1.5+ | | |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2006 07 22 | G96 | 0.3− | 0.5− | 2006 11 18 | 704 | 0.1+ | 1.5+ | | |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 07 22 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.2+ | | |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.5− | 2006 11 19 | 704 | (1.6+ | 2.3+) | | |
| 2002 12 06 | 704 | 0.6+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.9− | 0.9+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.8+ | | |
| 2002 12 11 | 704 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.7− | 0.6+ | | |
| 2002 12 11 | 704 | 0.3+ | 0.4− | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.5+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 1.0− | | |
| 2002 12 31 | 704 | 1.1+ | 0.7+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.2− | | |
| 2002 12 31 | 704 | 0.6+ | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.1− | | |
| 2002 12 31 | 704 | 0.2− | 1.0+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.3− | | |
| 2004 01 18 | 644 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.0 | | |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | | | | | | |
| 2004 01 18 | 644 | 0.2− | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.0 | | | | | | |

**(143013)∗ 2002 VJ$_{106}$ = 1987 KL$_3$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 89375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 232.83840 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23084778 | $\omega$ | 288.02684 | | −0.96656636 | | −0.07390734 | | |
| $a$ | 2.6317962 | $\Omega$ | 248.32166 | | +0.14692128 | | −0.94441719 | | |
| $e$ | 0.2005366 | $i$ | 15.32075 | | −0.21015138 | | −0.32033400 | | |
| $P$ | 4.27 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 05 30 | 413 | 0.3+ | 1.8+ | 2002 12 27 | 644 | 0.1− | 0.4+ | 2004 05 13 | 644 | 0.2− | 0.0 | | |
| 1987 05 30 | 413 | 0.5− | 0.3− | 2002 12 27 | 644 | 1.1+ | 0.9+ | 2004 05 13 | 703 | 0.4− | 0.4− | | |
| 1998 12 22 | 704 | 0.1− | 0.6+ | 2002 12 27 | 644 | 0.0 | 0.5+ | 2004 05 13 | 703 | 0.0 | 0.1+ | | |
| 1998 12 22 | 704 | 1.0− | 0.4+ | 2002 12 27 | 644 | 0.8+ | 0.7+ | 2004 05 13 | 644 | 0.1+ | 0.2+ | | |
| 1998 12 22 | 704 | 1.2+ | 0.4+ | 2002 12 27 | 644 | 0.0 | 0.3+ | 2004 05 13 | 703 | 0.2− | 0.8− | | |
| 1998 12 22 | 704 | (3.6− | 1.7−) | 2003 01 04 | 704 | 0.3+ | 0.5+ | 2004 05 13 | 703 | 0.3− | 0.4− | | |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2003 01 04 | 704 | 0.0 | 0.3+ | 2004 05 22 | 704 | 0.7+ | 0.1+ | | |
| 2002 11 12 | 704 | 0.0 | 0.9+ | 2003 01 04 | 704 | 0.7+ | 0.5+ | 2004 05 22 | 704 | 0.5− | 0.5+ | | |
| 2002 11 12 | 704 | 0.2− | 0.3+ | 2003 01 04 | 704 | 0.8+ | 0.6+ | 2004 05 22 | 704 | 0.0 | 0.9+ | | |
| 2002 11 12 | 704 | 0.2+ | 0.3+ | 2003 01 19 | 644 | 0.0 | 0.3+ | 2004 05 22 | 704 | 0.2+ | 0.6+ | | |
| 2002 11 12 | 704 | 0.5− | 0.2− | 2003 01 19 | 644 | 0.0 | 0.3+ | 2004 05 22 | 704 | 0.2− | 0.7+ | | |
| 2002 11 14 | 704 | 0.5− | 0.3− | 2003 01 19 | 644 | 0.0 | 0.4+ | 2004 06 06 | 644 | 0.3+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.6− | 1.4− | 2003 01 27 | 704 | 0.3+ | 0.0 | 2004 06 06 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.6− | 0.1− | 2003 01 27 | 704 | 0.0 | 0.3+ | 2004 06 06 | 644 | 0.4+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.2− | 0.4− | 2003 01 27 | 704 | 0.4+ | 0.1− | 2004 06 15 | 704 | 0.4− | 0.3+ | | |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2003 01 28 | 608 | 0.2− | 0.3− | 2004 06 15 | 704 | 0.2+ | 0.0 | | |
| 2002 11 24 | 644 | 0.5+ | 0.8− | 2003 01 28 | 608 | 0.2+ | 0.8− | 2004 06 15 | 704 | 1.1+ | 1.1− | | |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2003 01 28 | 608 | 0.3+ | 0.0 | 2004 06 15 | 704 | 0.4+ | 0.8− | | |
| 2002 11 27 | 699 | 0.6− | 0.6+ | 2003 01 31 | 704 | 0.1− | 0.3− | 2004 06 15 | 704 | 0.9+ | 0.2− | | |
| 2002 11 27 | 699 | 0.2− | 0.6+ | 2003 01 31 | 704 | 0.3− | 0.0 | 2004 07 05 | 699 | 0.6− | 0.2+ | | |
| 2002 11 27 | 699 | 0.2− | 0.4+ | 2003 01 31 | 704 | 0.3− | 0.7− | 2004 07 05 | 699 | (0.8− | 2.1+) | | |
| 2002 11 27 | 699 | 0.3− | 0.0 | 2003 01 31 | 704 | 0.2− | 0.3+ | 2004 07 05 | 699 | 1.0+ | 0.2+ | | |
| 2002 11 28 | 699 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.5+ | 0.2+ | 2004 07 05 | 699 | 0.4− | 0.6+ | | |
| 2002 11 28 | 699 | 0.4− | 0.8+ | 2004 04 19 | 704 | 0.2+ | 0.1+ | 2004 07 06 | E12 | 1.1− | 1.4+ | | |
| 2002 11 28 | 699 | (2.0− | 0.7+) | 2004 04 19 | 704 | 0.3+ | 0.9+ | 2004 07 06 | E12 | 0.8− | 0.6+ | | |
| 2002 11 28 | 699 | 0.3− | 0.8+ | 2004 04 19 | 704 | 0.4+ | 0.8+ | 2004 07 06 | E12 | 0.5− | 0.5+ | | |
| 2002 12 03 | 608 | 0.3+ | 0.7− | 2004 04 19 | 704 | 0.3− | 0.5+ | 2004 07 06 | E12 | 0.4− | 0.1+ | | |
| 2002 12 03 | 608 | 0.3+ | 0.7− | 2004 04 19 | 704 | 0.3+ | 0.1− | 2005 08 29 | 644 | 0.0 | 0.6+ | | |
| 2002 12 03 | 608 | 0.8+ | 0.8− | 2004 04 19 | 704 | 0.4− | 0.1+ | 2005 08 29 | 644 | 0.3+ | 0.6+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 04 | 333 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.3− | 0.4− | 2005 08 29 | 644 | 0.1+ | 0.6+ |
| 2002 12 04 | 333 | 0.8− | 0.3+ | 2004 04 19 | 704 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.6+ |
| 2002 12 04 | 333 | 0.1− | 0.1− | 2004 04 19 | 704 | 0.5− | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.5− | 2004 04 19 | E12 | 0.7− | 0.2+ | 2006 09 28 | 703 | 0.5− | 0.9+ |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2004 04 19 | E12 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 0.4+ | 1.2− | 2004 04 19 | E12 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.6+ | 0.9+ |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2004 04 19 | E12 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.9− | 0.4+ |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.1− | 0.8+ |
| 2002 12 08 | 291 | 0.3− | 0.1+ | 2004 04 25 | 704 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 2002 12 08 | 291 | 0.2− | 0.1− | 2004 04 25 | 704 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 0.5− | 0.1− |
| 2002 12 08 | 291 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.8+ | 0.4− | 2006 10 27 | 703 | 0.8− | 0.1− |
| 2002 12 10 | 704 | 0.6+ | 0.3− | 2004 04 25 | 704 | 1.0− | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.8− |
| 2002 12 10 | 704 | 0.2+ | 0.4+ | 2004 05 12 | E12 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.7− | 0.6− |
| 2002 12 10 | 704 | (1.6+ | 0.4+) | 2004 05 12 | E12 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.4− | 0.2+ |
| 2002 12 10 | 704 | 0.3+ | 0.3− | 2004 05 12 | E12 | 0.6− | 0.0 | 2006 11 22 | 703 | 0.5+ | 0.0 |
| 2002 12 10 | 704 | 0.3+ | 0.4− | 2004 05 12 | E12 | 1.5+ | 0.8+ | 2006 11 22 | 703 | 0.7+ | 0.3+ |
| 2002 12 27 | 644 | 1.0+ | 1.1+ | 2004 05 13 | 644 | 0.1− | 0.0 | 2006 11 22 | 703 | 1.0− | 1.1+ |

**(143014)∗ 2002 VT$_{106}$ = 2000 HQ$_{100}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 94870)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.15508 | | (2000.0) | | | |
| $n$ | 0.21449168 | $\omega$ | 337.41933 | | +0.99193245 | +0.12451766 |
| $a$ | 2.7639430 | $\Omega$ | 15.48433 | | −0.09839120 | +0.87449821 |
| $e$ | 0.1746202 | $i$ | 5.10971 | | −0.07993243 | +0.46877311 |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.2+ | 0.3+ | 2002 11 14 | 704 | 0.2− | 0.6+ | 2005 03 11 | G96 | 0.2+ | 0.3− |
| 2000 04 25 | 691 | 0.0 | 0.1− | 2002 11 14 | 704 | 0.1− | 0.5− | 2005 03 11 | G96 | 0.3+ | 0.0 |
| 2000 04 25 | 691 | 1.0− | 0.1− | 2002 12 06 | 704 | 1.0− | 1.4− | 2005 04 12 | 691 | 0.2+ | 0.1+ |
| 2000 05 04 | 645 | 0.2+ | 0.1+ | 2002 12 06 | 704 | 0.1+ | 0.9+ | 2005 04 12 | 691 | 0.3+ | 0.2+ |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2002 12 06 | 704 | 0.2− | 0.7+ | 2005 04 12 | 691 | 0.5+ | 0.3+ |
| 2002 11 05 | 704 | 0.3+ | 1.1+ | 2002 12 06 | 704 | 0.2+ | 1.0+ | 2006 06 22 | 644 | 0.3− | 0.5+ |
| 2002 11 05 | 704 | 1.0+ | 0.2+ | 2002 12 06 | 704 | 0.3− | 1.5+ | 2006 06 22 | 644 | 0.5− | 0.8+ |
| 2002 11 05 | 704 | 1.1+ | 0.5+ | 2002 12 27 | 644 | 0.3− | 0.4+ | 2006 06 22 | 644 | 0.4− | 0.7+ |
| 2002 11 05 | 704 | 1.1+ | 0.8+ | 2002 12 27 | 644 | 0.5− | 0.2+ | 2006 08 14 | 644 | 0.4− | 0.5+ |
| 2002 11 05 | 704 | 0.1+ | 0.1+ | 2002 12 27 | 644 | 0.3− | 0.6+ | 2006 08 14 | 644 | 0.2− | 0.5+ |
| 2002 11 12 | 704 | 1.4− | 0.5+ | 2004 02 13 | 691 | 0.5+ | 0.2+ | 2006 08 14 | 644 | 0.3− | 0.5+ |
| 2002 11 12 | 704 | 0.9− | 0.5− | 2004 02 13 | 691 | 0.6− | 0.3+ | 2006 09 15 | 644 | 0.3− | 0.5+ |
| 2002 11 12 | 704 | 0.2− | 1.1− | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 09 15 | 644 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 09 15 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2005 03 11 | G96 | 0.8− | 0.7− | | | | |

**(143015)∗ 2002 VN$_{108}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.22149 | | (2000.0) | | | |
| $n$ | 0.23800464 | $\omega$ | 167.10908 | | −0.54113995 | −0.83992519 |
| $a$ | 2.5787690 | $\Omega$ | 315.63378 | | +0.76622419 | −0.47231167 |
| $e$ | 0.2218930 | $i$ | 3.37369 | | +0.34650837 | −0.26729640 |
| $P$ | 4.14 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 16 | 704 | 0.4− | 1.1− | 2002 12 14 | 704 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.5− | 0.5− |
| 1999 01 16 | 704 | 1.1− | 0.0 | 2002 12 31 | 699 | 0.2+ | 0.6− | 2006 10 19 | 703 | 0.1− | 0.4− |
| 1999 01 16 | 704 | (0.7− | 2.4−) | 2002 12 31 | 699 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.8− | 0.4− |
| 1999 01 16 | 704 | (2.8− | 3.1+) | 2002 12 31 | 699 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.7− |
| 1999 01 16 | 704 | 0.6− | 0.1+ | 2002 12 31 | 699 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 08 16 | 704 | 0.1+ | 0.3− | 2002 12 31 | 704 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2001 08 16 | 704 | 1.0− | 0.5+ | 2002 12 31 | 704 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 08 16 | 704 | 0.9− | 0.4− | 2002 12 31 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.5− | 0.5− |
| 2001 08 16 | 704 | 1.4− | 0.1− | 2002 12 31 | 704 | 0.3− | 0.0 | 2006 10 29 | 704 | 1.1− | 1.4+ |
| 2001 08 22 | 691 | 0.4+ | 0.3+ | 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 10 29 | 704 | 0.2− | 1.2+ |
| 2001 08 22 | 691 | 0.4+ | 0.4+ | 2003 01 05 | 704 | 0.1+ | 0.8+ | 2006 10 29 | 704 | (1.7+ | 0.0 ) |
| 2001 08 22 | 691 | 0.1− | 0.3+ | 2003 01 05 | 704 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.3− | 0.1− | 2003 01 05 | 704 | (1.7+ | 1.2−) | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.4+ | 0.3− | 2003 01 05 | 704 | 0.8+ | 0.3− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.2− | 0.5+ | 2003 01 05 | 704 | 0.0 | 0.7− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.4+ | 0.1+ | 2003 02 01 | 704 | 0.6+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.2− | 1.1+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | 0.3− | 1.0+ | 2003 02 01 | 704 | 0.5+ | 0.5− | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2002 11 14 | 704 | 0.4+ | 0.4− | 2003 02 01 | 704 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 11 14 | 704 | 0.2+ | 0.0 | 2003 02 01 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | 0.2+ | 0.6− | 2004 05 22 | 704 | (0.3− | 2.4+) | 2006 11 11 | 703 | 1.1− | 0.2− |
| 2002 11 14 | 704 | 0.1− | 0.5+ | 2004 05 22 | 704 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.7− |
| 2002 11 14 | 704 | 0.3+ | 0.3− | 2004 05 22 | 704 | 0.2+ | 0.7+ | 2006 11 16 | 704 | 0.1+ | 0.8− |
| 2002 11 14 | 704 | 0.3+ | 0.7+ | 2004 05 22 | 704 | 0.7+ | 0.7+ | 2006 11 16 | 704 | 0.8+ | 0.1+ |
| 2002 11 14 | 704 | 0.2+ | 0.9+ | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.0 |
| 2002 11 14 | 704 | (2.6− | 0.1−) | 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.9− |
| 2002 11 14 | 704 | 0.7− | 0.0 | 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.1− |
| 2002 11 17 | 704 | 0.5+ | 1.0+ | 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.9− |
| 2002 11 17 | 704 | 0.7− | 0.7+ | 2005 07 12 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2002 11 17 | 704 | 1.2− | 0.5+ | 2005 07 12 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.6+ |
| 2002 11 17 | 704 | 0.3− | 0.1− | 2005 07 12 | G96 | 0.2− | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.6+ |
| 2002 12 02 | 704 | 0.1− | 0.5+ | 2005 07 15 | G96 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2002 12 02 | 704 | 0.3− | 0.4− | 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | 0.2− | 0.1+ | 2005 07 15 | G96 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2002 12 06 | 704 | (0.8− | 2.7−) | 2005 07 15 | G96 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2002 12 06 | 704 | 0.7+ | 0.4− | 2005 07 18 | 644 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.6+ | 0.1+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2005 07 18 | 644 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.4+ | 0.0 | 2005 09 01 | 691 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2005 09 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 113 | 1.2+ | 0.1− |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2005 09 01 | 691 | 0.0 | 0.1− | 2006 11 18 | 113 | 0.1− | 0.6− |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 12 11 | 704 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2002 12 11 | 704 | 0.6+ | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2002 12 14 | 704 | 0.6− | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2002 12 14 | 704 | 0.2− | 0.4+ | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2002 12 14 | 704 | 0.3+ | 1.1+ | 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 27 | 185 | 0.0 | 0.3− |
| 2002 12 14 | 704 | 0.0 | 1.1+ | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 27 | 185 | 0.3− | 0.5− |

**(143016)∗ 2002 VQ$_{108}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.78787 | | (2000.0) | | | |
| $n$ | 0.22386740 | $\omega$ | 69.43640 | | −0.50613239 | −0.83747891 |
| $a$ | 2.6862235 | $\Omega$ | 52.67469 | | +0.66282884 | −0.53057728 |
| $e$ | 0.0824271 | $i$ | 15.01802 | | +0.55180425 | −0.13083132 |
| $P$ | 4.40 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 704 | 0.6− | 1.1− | 2002 12 14 | 704 | 0.2+ | 1.4− | 2006 09 26 | 703 | 0.5− | 0.0 |
| 1999 01 14 | 704 | 1.0− | 0.5+ | 2002 12 14 | 704 | 0.5− | 1.3− | 2006 09 26 | 703 | (1.9− | 0.1+) |
| 1999 01 14 | 704 | 0.2− | 0.2− | 2002 12 14 | 704 | 0.6+ | 1.2− | 2006 09 29 | 699 | 0.1− | 0.4− |
| 1999 01 14 | 704 | 1.1+ | 1.4− | 2004 03 13 | 644 | 0.1+ | 0.1− | 2006 09 29 | 699 | (1.7− | 1.0+) |
| 1999 02 11 | 704 | (1.2− | 3.1−) | 2004 03 13 | 644 | 0.2+ | 0.3− | 2006 09 29 | 699 | 0.7− | 0.2− |
| 1999 02 11 | 704 | (2.5− | 2.3−) | 2004 03 13 | 644 | 0.4+ | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.7+ |
| 1999 02 11 | 704 | 1.4− | 0.5+ | 2004 03 15 | 704 | (0.2+ | 1.9+) | 2006 10 10 | 644 | 0.5− | 0.2+ |
| 1999 02 11 | 704 | (2.5− | 0.2−) | 2004 03 15 | 704 | 0.1+ | 0.9+ | 2006 10 10 | 644 | 0.4− | 0.3+ |
| 2002 10 11 | 704 | 0.4+ | 1.4+ | 2004 03 15 | 704 | 0.8+ | 0.9+ | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2002 10 11 | 704 | 0.7− | 0.5+ | 2004 03 15 | 704 | (0.1− | 1.7+) | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2002 11 12 | 704 | 0.1+ | 0.2− | 2004 03 22 | 699 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2002 11 12 | 704 | 0.7+ | 0.4+ | 2004 03 22 | 699 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.2− |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2004 03 22 | 699 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 11 12 | 704 | 0.8− | 0.6+ | 2004 03 22 | 699 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 1.0+ | 0.8− | 2004 03 23 | 704 | 1.2+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.1− | | |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 1.4+ | 0.1− | 2006 10 28 | 703 | 0.1− | 0.9+ | | |
| 2002 11 14 | 704 | 0.7+ | 0.3− | 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 10 28 | 703 | 0.4+ | 1.0+ | | |
| 2002 11 14 | 704 | 0.5− | 1.1+ | 2004 03 23 | 704 | 0.8+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.3+ | | |
| 2002 11 14 | 704 | 1.0− | 0.8+ | 2004 04 12 | 703 | 0.9− | 0.2+ | 2006 10 28 | 703 | 0.5+ | 1.1+ | | |
| 2002 12 06 | 704 | 0.0 | 0.3+ | 2004 04 12 | 703 | 0.2− | 0.6+ | 2006 11 07 | 644 | 0.4− | 0.3+ | | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2004 04 12 | 703 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.5− | 0.0 | | |
| 2002 12 06 | 704 | 0.0 | 0.2+ | 2004 04 12 | 703 | (2.5− | 0.9+) | 2006 11 07 | 644 | 0.1− | 0.3+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 704 | 0.5+ | 0.6+ | 2006 11 14 | 704 | (0.5+ | 2.6+) | | |
| 2002 12 06 | 704 | 0.3+ | 0.8+ | 2004 04 15 | 704 | (1.6+ | 1.1+) | 2006 11 14 | 704 | 0.1+ | 0.5+ | | |
| 2002 12 11 | 704 | 0.5+ | 0.2+ | 2004 04 15 | 704 | 0.8+ | 0.3+ | 2006 11 14 | 704 | 1.4− | 0.6+ | | |
| 2002 12 11 | 704 | 0.3+ | 0.6+ | 2004 04 25 | 699 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.4+ | 0.4− | | |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 699 | 1.4− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2002 12 11 | 704 | 0.7+ | 0.2+ | 2004 04 25 | 699 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.2− | | |
| 2002 12 11 | 704 | 0.7+ | 0.7+ | 2004 04 25 | 699 | (1.5− | 1.8+) | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2002 12 14 | 704 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.3− | 0.6− | 2006 11 24 | G96 | 0.1− | 0.1+ | | |
| 2002 12 14 | 704 | 0.0 | 0.8− | 2006 09 26 | 703 | 0.9+ | 0.1− | | | | | | |

**(143017)∗ 2002 VW$_{108}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 357.39151 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.22236334 | $\omega$ | 312.15851 | | +0.97953919 | | −0.06967697 | | |
| $a$ | 2.6983229 | $\Omega$ | 52.71357 | | +0.15966743 | | +0.84015340 | | |
| $e$ | 0.1696560 | $i$ | 13.72777 | | −0.12251237 | | +0.53785442 | | |
| $P$ | 4.43 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.2+ | 0.6+ | 2002 12 11 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.3+ | | |
| 1996 04 18 | 691 | 0.2+ | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 09 20 | 703 | 0.2+ | 0.5− | | |
| 1996 04 18 | 691 | 0.2+ | 0.3+ | 2002 12 14 | 704 | 0.7− | 1.4− | 2006 09 20 | 703 | 0.2− | 0.0 | | |
| 2002 10 11 | 704 | 0.4+ | 0.2+ | 2002 12 14 | 704 | 0.7− | 0.6− | 2006 09 27 | 703 | 0.1− | 0.2− | | |
| 2002 10 11 | 704 | 0.6− | 0.4+ | 2002 12 14 | 704 | 0.6− | 0.9− | 2006 09 27 | 703 | 0.5+ | 0.1− | | |
| 2002 10 11 | 704 | 0.5+ | 0.6+ | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.4− | 0.3− | | |
| 2002 10 11 | 704 | 0.9+ | 1.0+ | 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.5− | | |
| 2002 11 12 | 704 | 0.5+ | 1.4+ | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.4− | 0.2− | | |
| 2002 11 12 | 704 | 0.4− | 0.7+ | 2005 05 04 | G96 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.8− | 0.2− | | |
| 2002 11 12 | 704 | 0.0 | 0.4+ | 2005 05 16 | 644 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.4− | 0.1− | | |
| 2002 11 12 | 704 | 0.0 | 0.6+ | 2005 05 16 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.1+ | 0.1+ | | |
| 2002 11 12 | 704 | 0.3− | 0.6+ | 2005 05 16 | 644 | 0.8+ | 0.3− | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2002 11 14 | 704 | 0.5+ | 0.5+ | 2005 05 18 | E12 | 0.4− | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 2002 11 14 | 704 | 0.7− | 0.1− | 2005 05 18 | E12 | 0.6+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2002 11 14 | 704 | (1.7+ | 0.5−) | 2005 05 18 | E12 | 0.2− | 0.3+ | 2006 10 28 | 703 | 0.4+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.3+ | 0.8+ | 2005 05 18 | E12 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.5+ | | |
| 2002 11 14 | 704 | 0.7+ | 0.6− | 2006 09 12 | 704 | 0.3− | 0.5+ | 2006 10 28 | 703 | 0.9− | 0.5− | | |
| 2002 12 06 | 704 | 0.6− | 0.3+ | 2006 09 12 | 704 | 0.1+ | 1.0+ | 2006 10 28 | 703 | 0.2+ | 0.3− | | |
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2006 09 12 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.0 | | |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2006 09 12 | 704 | 0.7+ | 1.4+ | 2006 11 11 | 644 | 0.1− | 0.1+ | | |
| 2002 12 06 | 704 | 0.4− | 0.6+ | 2006 09 17 | 699 | 0.1+ | 0.0 | 2006 11 11 | 644 | 0.1− | 0.0 | | |
| 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 09 17 | 699 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.9+ | 0.7− | | |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 699 | 0.1− | 0.4+ | 2006 11 23 | 703 | 0.6+ | 0.5+ | | |
| 2002 12 11 | 704 | (0.1− | 2.3+) | 2006 09 17 | 699 | (0.0 | 2.1−) | 2006 11 23 | 703 | 0.0 | 1.0− | | |
| 2002 12 11 | 704 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.7− | 0.1− | 2006 11 23 | 703 | 1.2+ | 0.5− | | |

**(143018)∗ 2002 VA$_{109}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 35.76258 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.23419087 | $\omega$ | 58.65991 | | +0.92771370 | | +0.36007144 | | |
| $a$ | 2.6066901 | $\Omega$ | 280.07774 | | −0.36737965 | | +0.83391894 | | |
| $e$ | 0.2036216 | $i$ | 5.73978 | | −0.06617759 | | +0.41824366 | | |
| $P$ | 4.21 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 17 | 691 | 0.2+ | 0.2− | 2003 01 05 | 704 | 0.0 | 0.4− | 2006 10 20 | 704 | 1.2− | 0.6− | | |
| 1993 11 17 | 691 | 0.1+ | 0.1− | 2003 01 05 | 704 | 0.6− | 0.2− | 2006 10 20 | 704 | 1.2− | 0.8+ | | |
| 1993 11 17 | 691 | 0.0 | 0.3− | 2003 01 05 | 704 | 1.0− | 0.5+ | 2006 10 27 | 703 | 0.6− | 0.1− | | |
| 1997 07 01 | 688 | 1.9− | 1.7+ | 2003 01 05 | 704 | 0.2+ | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.4− | | |
| 1997 07 01 | 688 | 0.6− | 1.0+ | 2005 05 12 | 703 | (0.3− | 1.8+) | 2006 10 27 | 703 | 0.0 | 0.9− | | |
| 1997 07 01 | 688 | 0.6+ | 1.2+ | 2005 05 12 | 703 | (0.6+ | 1.7+) | 2006 10 27 | 703 | 0.1− | 0.4− | | |
| 1997 07 01 | 688 | 0.2+ | 1.2+ | 2005 05 12 | 703 | (0.4+ | 2.2+) | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2002 11 12 | 704 | 0.4− | 0.1− | 2005 05 12 | 703 | (0.2+ | 2.8+) | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 2002 11 12 | 704 | 0.6+ | 0.7+ | 2005 05 30 | E12 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.2− | | |
| 2002 11 12 | 704 | 0.2+ | 1.3+ | 2005 05 30 | E12 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.2− | | |
| 2002 11 12 | 704 | 0.1− | 0.5+ | 2005 05 30 | E12 | 0.2+ | 1.0+ | 2006 11 14 | 703 | 0.9+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.8− | 2005 05 30 | E12 | 0.7− | 0.5+ | 2006 11 14 | 703 | 0.6+ | 0.2+ | | |
| 2002 11 14 | 704 | 1.3+ | 0.7− | 2005 06 26 | 644 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.4− | | |
| 2002 11 14 | 704 | 0.7+ | 0.3− | 2005 06 26 | 644 | 0.5+ | 0.7+ | 2006 11 14 | 703 | 0.3− | 0.3− | | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2005 06 26 | 644 | 0.3+ | 0.2+ | 2006 11 16 | 704 | (2.1− | 0.1−) | | |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.6+ | | |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.9+ | 2006 11 16 | 704 | 1.2− | 0.3+ | | |
| 2002 12 06 | 704 | 0.6− | 0.9+ | 2006 08 29 | 703 | 1.1− | 0.1+ | 2006 11 16 | 704 | 0.4− | 1.3+ | | |
| 2002 12 11 | 704 | 0.5+ | 0.6+ | 2006 08 29 | 703 | 1.0− | 0.1+ | 2006 11 16 | 704 | 1.7− | 0.4+ | | |
| 2002 12 11 | 704 | 1.4+ | 0.0 | 2006 08 30 | 704 | 0.7+ | 0.8+ | 2006 11 22 | 704 | 0.5− | 0.3+ | | |
| 2002 12 11 | 704 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.4+ | 0.3+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 1.2+ | 0.6− | 2006 11 22 | 704 | 0.6+ | 0.2− | | |
| 2002 12 11 | 704 | 0.5+ | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.6− | | |
| 2002 12 14 | 704 | 0.2− | 1.1+ | 2006 10 18 | H06 | 0.6+ | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.1− | 1.1+ | 2006 10 18 | H06 | 0.0 | 1.0− | 2006 11 22 | 703 | 0.1+ | 0.4+ | | |
| 2002 12 14 | 704 | 1.1− | 1.3+ | 2006 10 18 | H06 | 0.3+ | 0.2− | 2006 11 22 | 703 | 0.3+ | 0.1− | | |
| 2002 12 14 | 704 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.5− | 0.7− | | |
| 2002 12 31 | 704 | 0.8− | 0.9+ | 2006 10 19 | 703 | 0.3+ | 0.1+ | 2006 11 22 | 703 | 1.0+ | 0.4− | | |
| 2002 12 31 | 704 | 0.4− | 1.1− | 2006 10 19 | 703 | 0.2+ | 0.1− | 2006 12 01 | 704 | 0.7+ | 0.1+ | | |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.7+ | 0.1− | | |
| 2002 12 31 | 704 | 0.5− | 1.5+ | 2006 10 20 | 704 | 0.3− | 1.2− | 2006 12 01 | 704 | 0.9+ | 0.4+ | | |
| 2003 01 05 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 704 | (1.6+ | 0.4+) | | | | | | |

**(143019)∗ 2002 VC$_{109}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 2.47764 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.22311350 | $\omega$ | 97.78692 | | +0.98148940 | | −0.00173039 | | |
| $a$ | 2.6922713 | $\Omega$ | 262.45718 | | −0.06997751 | | +0.92757774 | | |
| $e$ | 0.2010454 | $i$ | 11.13844 | | +0.17827425 | | +0.37362621 | | |
| $P$ | 4.42 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 09 | 568 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 09 21 | 704 | 0.3+ | 0.2− | | |
| 1997 06 09 | 568 | 0.1+ | 0.6+ | 2002 12 31 | 704 | 0.2− | 0.9+ | 2006 09 21 | 704 | 0.3− | 0.2+ | | |
| 1997 06 09 | 568 | 0.3− | 0.7+ | 2003 01 04 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 699 | 0.1− | 0.1− | | |
| 2002 11 12 | 704 | 1.3− | 0.3+ | 2003 01 04 | 704 | 0.2− | 0.2+ | 2006 09 22 | 699 | 0.2− | 0.4− | | |
| 2002 11 12 | 704 | 1.3+ | 0.0 | 2003 01 04 | 704 | 0.3+ | 0.4− | 2006 09 22 | 699 | 0.0 | 0.1− | | |
| 2002 11 12 | 704 | 1.3+ | 1.2− | 2003 01 04 | 704 | 0.1− | 0.2− | 2006 09 22 | 699 | 0.1+ | 0.2+ | | |
| 2002 11 12 | 704 | 0.1+ | 0.4− | 2003 01 04 | 704 | 0.4− | 0.3− | 2006 09 28 | 703 | 0.2− | 0.4− | | |
| 2002 11 12 | 704 | 0.1− | 0.2− | 2003 01 08 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.1− | | |
| 2002 11 14 | 704 | 1.5+ | 0.5+ | 2003 01 08 | 704 | 0.1− | 0.9− | 2006 09 28 | 703 | 0.4− | 0.4− | | |
| 2002 11 14 | 704 | 0.6− | 0.4− | 2003 01 08 | 704 | 1.2+ | 1.1− | 2006 09 28 | 703 | 0.5+ | 0.6− | | |
| 2002 11 14 | 704 | 1.1+ | 0.8+ | 2003 01 09 | 704 | 0.8− | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.2− | | |
| 2002 11 14 | 704 | 0.7+ | 0.2+ | 2003 01 09 | 704 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.4− | | |
| 2002 11 14 | 704 | (2.2+ | 0.7+) | 2003 01 09 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.1− | | |
| 2002 11 14 | 704 | 0.4− | 0.9− | 2003 01 31 | 704 | 0.6− | 0.2− | 2006 10 20 | 703 | 0.1− | 0.2− | | |
| 2002 11 14 | 704 | 1.0+ | 0.0 | 2003 01 31 | 704 | 0.2− | 1.1+ | 2006 10 20 | 703 | 0.2− | 0.3− | | |
| 2002 11 14 | 704 | 1.3− | 0.2− | 2003 01 31 | 704 | 0.2− | 0.2+ | 2006 10 20 | 703 | 0.2+ | 0.9− | | |
| 2002 11 14 | 704 | (2.7+ | 0.3+) | 2005 05 19 | 644 | 0.0 | 0.8+ | 2006 10 20 | 703 | 0.5+ | 0.5− | | |
| 2002 11 15 | 704 | 0.1− | 1.0+ | 2005 05 19 | 644 | 0.3+ | 0.8+ | 2006 11 14 | 703 | 0.4+ | 0.6− | | |
| 2002 11 15 | 704 | 0.9− | 0.7+ | 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 0.6− | 0.4− | | |
| 2002 11 15 | 704 | 0.7− | 1.0+ | 2005 05 19 | 644 | 0.3+ | 0.8+ | 2006 11 14 | 703 | 0.0 | 0.2+ | | |
| 2002 11 15 | 704 | 0.0 | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 704 | 0.2− | 0.3+ | 2005 05 19 | 644 | 0.4+ | 1.0+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2005 06 26 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2002 12 05 | 704 | 1.0− | 0.2+ | 2005 06 26 | 644 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2005 06 26 | 644 | 0.1− | 0.4+ | 2006 11 18 | 704 | (0.5+ | 1.9+) |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 07 24 | 704 | 0.5− | 1.0+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 07 24 | 704 | 1.0− | 1.3+ | 2006 11 25 | 703 | 1.5− | 2.1+ |
| 2002 12 10 | 704 | 0.1+ | 0.4+ | 2006 07 24 | 704 | 0.9+ | 0.2− | 2006 11 25 | 703 | (2.1− | 3.1+) |
| 2002 12 10 | 704 | 0.1+ | 0.1+ | 2006 07 24 | 704 | 0.0 | 0.4− | 2006 11 25 | 703 | 0.3− | 0.1− |
| 2002 12 10 | 704 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.4− | 0.4− | 2006 11 25 | 703 | 0.3− | 0.2+ |
| 2002 12 10 | 704 | 1.1+ | 0.9− | 2006 08 24 | 704 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.4+ |
| 2002 12 10 | 704 | 0.2+ | 0.5− | 2006 08 24 | 704 | 1.3+ | 0.4+ | 2006 11 28 | 704 | 0.8+ | 0.8+ |
| 2002 12 31 | 704 | 0.5− | 0.2+ | 2006 08 24 | 704 | 0.6+ | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 2002 12 31 | 704 | 0.4− | 0.0 | 2006 09 21 | 704 | 0.1− | 0.8− | | | | |
| 2002 12 31 | 704 | 0.3− | 0.1+ | 2006 09 21 | 704 | 0.4+ | 0.7− | | | | |

**(143020)∗ 2002 VF$_{110}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.58812 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23548789 | $\omega$ | 356.03981 | | +0.64489847 | −0.75624323 | |
| $a$ | 2.5971099 | $\Omega$ | 53.76277 | | +0.70491107 | +0.53271941 | |
| $e$ | 0.3019719 | $i$ | 7.87159 | | +0.29530721 | +0.37987657 | |
| $P$ | 4.19 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 20 | 699 | 0.6− | 0.6+ | 2004 04 25 | 704 | 1.4+ | 1.1+ | 2006 10 23 | 704 | 1.1+ | 0.3− |
| 1999 02 20 | 699 | 0.1− | 0.8+ | 2004 04 25 | 704 | 1.1+ | 0.1+ | 2006 10 23 | 704 | 0.5+ | 0.5+ |
| 1999 02 20 | 699 | 1.2+ | 0.5− | 2004 04 25 | 704 | 0.5+ | 0.0 | 2006 10 25 | 704 | 0.9+ | 0.3− |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 704 | (1.6+ | 1.8+) | 2006 10 25 | 704 | 0.2− | 0.8+ |
| 2002 09 07 | 704 | 0.0 | 0.1− | 2004 05 28 | 691 | 0.2+ | 0.1+ | 2006 10 25 | 704 | 0.4+ | 0.2+ |
| 2002 09 07 | 704 | 0.3− | 0.3− | 2004 05 28 | 691 | 0.0 | 0.1+ | 2006 10 28 | 704 | 0.3+ | 0.1− |
| 2002 09 07 | 704 | 0.1− | 0.1− | 2004 05 28 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.0 | 0.2+ | 2006 08 23 | 704 | 0.2− | 0.6− | 2006 10 28 | 704 | 0.4+ | 1.1+ |
| 2002 10 03 | 704 | 0.6+ | 0.3+ | 2006 08 23 | 704 | 0.3+ | 0.3− | 2006 10 28 | 704 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.9+ | 0.2− | 2006 08 23 | 704 | 0.6+ | 0.5+ | 2006 10 28 | 704 | 0.3− | 0.3+ |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2006 08 31 | 704 | 0.8− | 0.7− | 2006 11 03 | 704 | 0.3− | 0.9+ |
| 2002 11 12 | 704 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.8− | 1.1− | 2006 11 03 | 704 | 0.8− | 0.5+ |
| 2002 11 12 | 704 | 0.2− | 0.2+ | 2006 08 31 | 704 | 0.3− | 0.3− | 2006 11 03 | 704 | 0.9− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.9− | 0.5− | 2006 11 03 | 704 | 0.5− | 0.1+ |
| 2002 11 12 | 704 | 0.2− | 0.3+ | 2006 09 16 | 704 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.4− |
| 2002 11 12 | 704 | 0.3+ | 0.1− | 2006 09 16 | 704 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.3− | 1.2− | 2006 09 16 | 704 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.8+ | 1.1− | 2006 09 16 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.6+ | 1.0− | 2006 09 16 | 704 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.4+ | 0.8− | 2006 09 16 | 703 | 0.6− | 0.5− | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.4+ | 0.3− | 2006 09 16 | 703 | 0.7− | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2002 12 14 | 704 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2002 12 14 | 704 | 0.5+ | 0.2− | 2006 09 16 | 703 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2002 12 14 | 704 | 0.8+ | 0.1− | 2006 09 17 | 699 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2002 12 14 | 704 | 0.3+ | 0.3− | 2006 09 17 | 699 | 1.0− | 0.8+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2002 12 15 | 704 | 0.2+ | 0.6− | 2006 09 17 | 699 | 0.0 | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2002 12 15 | 704 | 0.2− | 0.9− | 2006 09 19 | 704 | 0.6+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2002 12 15 | 704 | 0.0 | 0.6− | 2006 09 19 | 704 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.9+ | 0.6− |
| 2002 12 15 | 704 | 0.1− | 0.9− | 2006 09 19 | 704 | 0.1+ | 0.7− | 2006 11 17 | 704 | 0.6− | 0.7− |
| 2002 12 15 | 704 | 0.0 | 0.9− | 2006 09 19 | 704 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.8− | 0.0 |
| 2002 12 29 | 704 | 0.2− | 0.3+ | 2006 09 19 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2002 12 29 | 704 | 0.9+ | 0.3− | 2006 09 22 | 704 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2002 12 29 | 704 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2002 12 29 | 704 | 0.6+ | 0.0 | 2006 09 22 | 704 | 0.5− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2003 01 04 | 704 | (1.0+ | 1.8+) | 2006 09 22 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2003 01 04 | 704 | (1.4+ | 1.6+) | 2006 09 22 | 704 | 0.1− | 0.6+ | 2006 11 18 | 704 | 0.6+ | 0.3+ |
| 2003 01 04 | 704 | (1.0+ | 1.8+) | 2006 09 22 | 704 | 0.8+ | 0.8+ | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2003 01 04 | 704 | (1.4+ | 1.8+) | 2006 09 22 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2003 01 10 | 704 | 0.4− | 0.6− | 2006 09 22 | 704 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2003 01 10 | 704 | 0.6− | 0.6− | 2006 09 22 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2003 01 10 | 704 | 0.5− | 0.4− | 2006 09 26 | 704 | 0.1− | 0.5+ | 2006 11 20 | 703 | 0.2− | 0.1− |
| 2003 01 10 | 704 | 0.6− | 0.6− | 2006 09 26 | 704 | 0.0 | 1.1+ | 2006 11 20 | 703 | 0.0 | 0.3− |
| 2003 01 13 | 704 | 0.6− | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.6+ | 2006 11 20 | 703 | 0.1+ | 0.0 |
| 2003 01 13 | 704 | 0.7− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.1− | 2006 11 20 | 703 | 0.3+ | 0.2− |
| 2003 01 13 | 704 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2003 01 13 | 644 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.7+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2003 01 13 | 704 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2003 01 13 | 704 | 0.2− | 0.6+ | 2006 09 28 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2003 01 13 | 644 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2003 01 13 | 644 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.6+ | 0.3− |
| 2003 01 31 | 704 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2003 01 31 | 704 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2003 01 31 | 704 | 0.4− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 24 | H51 | 0.1+ | 0.1+ |
| 2003 01 31 | 704 | 0.2− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 24 | H51 | 0.1+ | 0.3+ |
| 2003 01 31 | 704 | 0.8− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 24 | H51 | 0.1+ | 0.0 |
| 2003 02 20 | 636 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 27 | 704 | 0.2+ | 0.2+ |
| 2003 02 20 | 636 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 27 | 704 | 0.0 | 0.2+ |
| 2003 02 20 | 636 | 0.8+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 27 | 704 | 0.7+ | 0.3+ |
| 2003 03 07 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.1+ | 0.1− |
| 2003 03 07 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.0 | 0.2+ |
| 2003 03 07 | 644 | 1.5− | 1.1− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 27 | 704 | 0.2− | 0.2+ |
| 2004 04 19 | 704 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 27 | 704 | 0.1− | 0.1+ |
| 2004 04 19 | 704 | 0.4+ | 0.7+ | 2006 10 19 | G96 | 0.4− | 0.2− | 2006 12 01 | 704 | 0.3− | 0.3+ |
| 2004 04 19 | 704 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.2− | 0.5+ |
| 2004 04 19 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.4+ |
| 2004 04 23 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.3− | 0.4+ |
| 2004 04 23 | 691 | 0.1− | 0.4+ | 2006 10 23 | 704 | 0.0 | 0.4− | 2006 12 01 | 704 | 0.5− | 0.5+ |
| 2004 04 23 | 691 | 0.2− | 0.4+ | 2006 10 23 | 704 | 0.3− | 0.3− | | | | |
| 2004 04 25 | 704 | 0.8+ | 1.4+ | 2006 10 23 | 704 | 0.9+ | 0.2− | | | | |

**(143021)∗ 2002 VG$_{110}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.89758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24567722 | $\omega$ | 296.21738 | | +0.97581782 | −0.14954633 | |
| $a$ | 2.5247950 | $\Omega$ | 72.72651 | | +0.20564624 | +0.87529894 | |
| $e$ | 0.2818461 | $i$ | 9.61066 | | −0.07408917 | +0.45987788 | |
| $P$ | 4.01 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.6− | 0.6− | 2003 01 09 | 704 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2002 10 10 | 704 | 0.5+ | 0.2+ | 2003 01 09 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.1+ | 0.3+ | 2003 01 09 | 704 | 0.0 | 0.6+ | 2006 11 17 | 644 | 0.2− | 0.2+ |
| 2002 10 10 | 704 | 0.1+ | 0.2− | 2003 01 09 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 1.2− | 0.1+ | 2004 03 28 | 113 | 1.3− | 0.5+ | 2006 11 19 | 704 | 0.8+ | 0.4− |
| 2002 11 12 | 704 | 0.4+ | 0.8+ | 2004 03 29 | 113 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.9− |
| 2002 11 12 | 704 | (0.7+ | 1.6+) | 2004 03 29 | 113 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2002 11 14 | 704 | 1.2− | 1.1+ | 2004 04 21 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.6+ | 0.5− | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.6− |
| 2002 11 14 | 704 | 0.0 | 0.8+ | 2004 04 21 | 691 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2002 11 14 | 704 | 0.2− | 0.3+ | 2005 07 26 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.9+ | 0.1− |
| 2002 12 14 | 704 | 0.5− | 0.3+ | 2005 07 26 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 12 14 | 704 | 0.4+ | 0.3− | 2005 07 26 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.4− | 0.2− |
| 2002 12 14 | 704 | 0.6+ | 0.4− | 2006 09 24 | 691 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.7− | 0.1− |
| 2003 01 05 | 704 | 0.2+ | 0.4− | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.4− | 0.1− |
| 2003 01 05 | 704 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2003 01 05 | 704 | 0.3+ | 0.8− | 2006 10 23 | G96 | 0.5− | 0.1− | | | | |
| 2003 01 09 | 704 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.3− | | | | |

**(143022)∗ 2002 VO$_{110}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.29180 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23796288 | $\omega$ | 325.97215 | | +0.85080854 | | −0.51958839 |
| $a$ | 2.5790706 | $\Omega$ | 65.52089 | | +0.49926428 | | +0.75275531 |
| $e$ | 0.2923791 | $i$ | 4.94426 | | +0.16389023 | | +0.40421200 |
| $P$ | 4.14 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 08 | 691 | 0.0 | 0.1+ | 2003 02 04 | 699 | 0.5− | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 1991 03 08 | 691 | 0.8− | 0.0 | 2003 02 04 | 699 | 0.8− | 0.3− | 2006 10 21 | 704 | 0.1− | 0.7+ |
| 1991 03 08 | 691 | 0.4+ | 0.1+ | 2003 02 04 | 699 | 0.6− | 0.5+ | 2006 10 21 | G96 | 0.5− | 0.0 |
| 1999 02 18 | 566 | 0.5+ | 1.1− | 2003 02 04 | 699 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.4− |
| 1999 02 18 | 566 | 0.5+ | 1.1− | 2003 02 04 | 704 | 0.6+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.4− |
| 1999 02 18 | 566 | 1.0+ | 1.2− | 2003 02 04 | 704 | 0.0 | 0.1+ | 2006 10 23 | 704 | (2.5+ | 0.1−) |
| 2002 11 12 | 704 | 0.7− | 0.5+ | 2003 02 04 | 704 | 0.1− | 0.1− | 2006 10 23 | 704 | 0.9+ | 1.3− |
| 2002 11 12 | 704 | 0.4− | 1.1+ | 2003 02 04 | 704 | 0.3− | 0.2+ | 2006 10 23 | 704 | 0.6+ | 0.2+ |
| 2002 11 12 | 704 | 0.1+ | 0.3+ | 2003 02 04 | 704 | 0.6+ | 0.2− | 2006 10 28 | 704 | 0.3− | 0.3+ |
| 2002 11 12 | 704 | 0.1+ | 0.1+ | 2003 02 07 | 704 | 0.4+ | 0.2− | 2006 10 28 | 704 | 0.4− | 0.6+ |
| 2002 11 14 | 704 | 0.5+ | 1.0+ | 2003 02 07 | 704 | 1.0+ | 0.5+ | 2006 10 28 | 704 | 0.8− | 0.5+ |
| 2002 11 14 | 704 | 0.1+ | 1.4+ | 2003 02 07 | 704 | 0.3+ | 0.3− | 2006 10 28 | 703 | 0.6− | 0.4− |
| 2002 11 14 | 704 | 0.3+ | 0.1+ | 2003 02 07 | 704 | (2.3+ | 0.0 ) | 2006 10 28 | 704 | 0.0 | 0.4+ |
| 2002 11 21 | 644 | 0.3+ | 0.2+ | 2003 02 23 | 185 | 0.1− | 0.3− | 2006 10 28 | 703 | 0.5− | 0.0 |
| 2002 11 21 | 644 | 0.5+ | 0.6+ | 2003 02 23 | 185 | 0.4− | 0.4− | 2006 10 28 | 704 | 0.5− | 0.8+ |
| 2002 11 21 | 644 | 0.4+ | 0.2+ | 2003 02 26 | 704 | 0.7− | 0.5− | 2006 10 28 | 703 | 0.5− | 0.0 |
| 2002 12 11 | 644 | 0.1+ | 0.1+ | 2003 02 26 | 704 | 0.1+ | 0.7− | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2002 12 11 | 644 | 0.2− | 0.2+ | 2003 02 26 | 704 | 0.2− | 0.9− | 2006 11 06 | 644 | 0.5− | 0.2+ |
| 2002 12 11 | 644 | 0.1+ | 0.3+ | 2003 02 26 | 704 | 0.2− | 0.7− | 2006 11 06 | 644 | 0.6− | 0.2+ |
| 2002 12 12 | 704 | 0.7+ | 0.5− | 2003 02 26 | 704 | 1.3− | 0.3− | 2006 11 06 | 644 | 0.5− | 0.1+ |
| 2002 12 12 | 704 | 0.2+ | 0.6+ | 2003 03 25 | 704 | 0.7− | 0.5− | 2006 11 15 | 704 | 0.2− | 0.4− |
| 2002 12 12 | 704 | 0.0 | 0.2− | 2003 03 25 | 704 | 0.7+ | 0.4+ | 2006 11 15 | 704 | 0.8+ | 0.3− |
| 2002 12 12 | 704 | 1.0+ | 1.0+ | 2003 03 25 | 704 | 0.0 | 0.3− | 2006 11 15 | 704 | 1.3+ | 0.2− |
| 2002 12 31 | 704 | 0.3− | 0.1+ | 2003 03 25 | 704 | 0.2+ | 1.3+ | 2006 11 15 | 704 | 1.1+ | 0.5+ |
| 2002 12 31 | 704 | 0.5+ | 0.6− | 2004 04 14 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.7− | 0.9− |
| 2002 12 31 | 704 | 0.1− | 0.6+ | 2004 04 14 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.8− |
| 2002 12 31 | 704 | 1.2+ | 0.7− | 2004 04 14 | 691 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.4− | 0.8+ |
| 2002 12 31 | 704 | 0.3− | 0.8− | 2004 04 19 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 1.2+ | 0.4− |
| 2003 01 05 | 704 | 0.0 | 0.2+ | 2004 04 19 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.1+ | 1.3+ |
| 2003 01 05 | 704 | 0.2+ | 0.3− | 2004 04 19 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.4− | 0.1− |
| 2003 01 05 | 704 | 0.3+ | 0.1− | 2004 05 24 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.5− | 0.1− |
| 2003 01 05 | 704 | 0.1− | 0.2+ | 2004 05 24 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 1.1− | 1.4− |
| 2003 01 05 | 704 | 0.3− | 0.1− | 2004 05 24 | 691 | 0.4+ | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.1+ |
| 2003 01 09 | 704 | 0.4− | 1.0+ | 2006 09 27 | 704 | 0.1− | 1.0+ | 2006 11 22 | 704 | 1.0+ | 0.9− |
| 2003 01 09 | 704 | 0.5− | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.0 | 2006 11 22 | G96 | 0.6− | 0.1− |
| 2003 01 09 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 1.4+ | 0.2+ | 2006 11 22 | 704 | (1.6+ | 0.1+) |
| 2003 01 09 | 704 | 1.0− | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.4− | 2006 11 27 | 704 | 0.5− | 0.2− |
| 2003 01 09 | 704 | 0.7− | 0.8+ | 2006 10 21 | 704 | 0.1− | 0.2+ | 2006 11 27 | 704 | 0.4− | 0.3+ |
| 2003 02 01 | 704 | 0.3+ | 0.0 | 2006 10 21 | 704 | 0.3+ | 0.4+ | 2006 11 27 | 704 | 1.3− | 1.8+ |
| 2003 02 01 | 704 | 0.1− | 0.3+ | 2006 10 21 | 704 | 0.4− | 0.2+ | 2006 11 28 | 704 | 1.3+ | 1.8− |
| 2003 02 01 | 704 | 0.0 | 0.5− | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 28 | 704 | 1.6+ | 0.2− |
| 2003 02 01 | 704 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.3− | 2006 11 28 | 704 | 1.1+ | 0.1+ |
| 2003 02 01 | 704 | 0.3+ | 0.7− | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.1− | 0.4+ |

**(143023)∗ 2002 VV$_{110}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.44820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23831343 | $\omega$ | 148.51739 | | +0.49451957 | | −0.84758797 |
| $a$ | 2.5765409 | $\Omega$ | 271.19863 | | +0.75210014 | | +0.52828471 |
| $e$ | 0.2739799 | $i$ | 11.09947 | | +0.43565557 | | +0.05009884 |
| $P$ | 4.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 1.3− | 1.6− | 2002 11 13 | 644 | 0.0 | 0.7− | 2006 09 16 | 703 | 0.8− | 0.3− |
| 1998 11 16 | 704 | (0.3− | 2.3−) | 2002 11 13 | 644 | 0.1− | 0.7− | 2006 09 16 | 703 | 0.3+ | 0.3+ |
| 1998 11 16 | 704 | (2.7+ | 1.1−) | 2002 11 13 | 644 | 0.1− | 0.5− | 2006 09 16 | 703 | 0.2− | 0.0 |
| 1998 11 16 | 704 | 1.0+ | 1.1− | 2002 11 14 | 704 | 0.2+ | 0.9+ | 2006 09 16 | 703 | 0.2− | 0.3− |
| 1998 11 16 | 704 | 0.1+ | 0.7− | 2002 11 14 | 704 | 0.0 | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.0 |
| 1998 12 14 | 704 | 0.2+ | 1.3− | 2002 11 14 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.5+ | 0.5− |
| 1998 12 14 | 704 | (0.9+ | 2.3−) | 2002 12 02 | 704 | 0.5− | 0.6− | 2006 09 27 | 703 | 0.1+ | 0.3− |
| 1998 12 14 | 704 | (2.2− | 1.3+) | 2002 12 02 | 704 | 1.1− | 0.3− | 2006 09 27 | 703 | 0.1+ | 0.4− |
| 1998 12 14 | 704 | 0.2+ | 0.4+ | 2002 12 02 | 704 | 0.9− | 0.5− | 2006 09 29 | 699 | 0.3+ | 1.0+ |
| 1998 12 14 | 704 | (4.3− | 0.6−) | 2002 12 06 | 704 | 0.3+ | 1.4+ | 2006 09 29 | 699 | 0.3+ | 0.9+ |
| 1999 01 05 | 699 | 0.7+ | 1.0− | 2002 12 06 | 704 | 1.1− | 1.0+ | 2006 09 29 | 699 | 0.2+ | 0.1− |
| 1999 01 05 | 699 | 0.1− | 0.8+ | 2002 12 06 | 704 | 0.7− | 0.8+ | 2006 09 29 | 699 | 0.1− | 0.3+ |
| 1999 01 05 | 699 | 1.0+ | 0.3+ | 2002 12 06 | 704 | 0.6− | 0.8+ | 2006 10 03 | 704 | 0.1− | 1.2+ |
| 2002 08 30 | 704 | 0.5− | 0.1− | 2002 12 20 | 644 | 0.1− | 0.6+ | 2006 10 03 | 704 | 0.6− | 0.4− |
| 2002 08 30 | 704 | 0.7+ | 0.5− | 2002 12 20 | 644 | 0.4− | 0.1+ | 2006 10 03 | 704 | 0.9+ | 0.4+ |
| 2002 08 30 | 704 | 0.3+ | 0.1− | 2002 12 20 | 644 | 0.0 | 0.5+ | 2006 10 03 | 704 | 0.4+ | 0.6+ |
| 2002 10 06 | 699 | 0.4+ | 0.4− | 2002 12 31 | 704 | 1.2+ | 0.9+ | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2002 10 06 | 699 | 0.1+ | 0.5+ | 2002 12 31 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2002 10 06 | 699 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.6+ | 1.1− | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2002 10 06 | 699 | 0.1+ | 0.2− | 2002 12 31 | 704 | 0.4+ | 0.7− | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2002 10 10 | 704 | 0.4+ | 0.2− | 2002 12 31 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 683 | 0.7+ | 0.1− |
| 2002 10 10 | 704 | 0.4− | 0.5− | 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 683 | 0.1+ | 1.3+ |
| 2002 10 10 | 704 | 0.6− | 0.3+ | 2003 01 05 | 704 | 0.5− | 0.2− | 2006 10 22 | 683 | 0.4+ | 0.4− |
| 2002 10 10 | 704 | 0.6− | 0.5+ | 2003 01 05 | 704 | 0.6+ | 0.0 | 2006 10 26 | 703 | 0.6− | 1.3− |
| 2002 10 10 | 704 | 0.0 | 0.5+ | 2003 01 05 | 704 | 0.3− | 0.3− | 2006 10 26 | 703 | 1.0− | 0.6− |
| 2002 10 15 | 704 | 0.4+ | 0.9+ | 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 10 26 | 703 | 0.4− | 0.6− |
| 2002 10 15 | 704 | 0.0 | 0.6+ | 2003 12 18 | 291 | 0.1− | 0.6+ | 2006 10 26 | 703 | 0.1− | 0.7− |
| 2002 10 15 | 704 | 0.2− | 0.5+ | 2003 12 18 | 291 | 0.1− | 0.7+ | 2006 11 14 | 703 | 0.4+ | 0.2− |
| 2002 10 15 | 704 | 0.2+ | 0.4+ | 2003 12 18 | 291 | 0.6+ | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.2− |
| 2002 10 15 | 704 | 0.7− | 0.3+ | 2006 09 01 | 224 | 0.5+ | 0.5+ | 2006 11 14 | 703 | 0.3+ | 0.4− |
| 2002 11 08 | 704 | 0.5− | 0.3+ | 2006 09 01 | 224 | 0.7+ | 0.2+ | 2006 11 14 | 703 | 0.5+ | 1.3+ |
| 2002 11 08 | 704 | 0.7− | 0.3+ | 2006 09 01 | 224 | 0.8+ | 0.4+ | 2006 11 25 | 703 | 0.3+ | 0.4− |
| 2002 11 08 | 704 | 0.3− | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 11 25 | 703 | 0.2− | 0.1+ |
| 2002 11 08 | 704 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 11 25 | 703 | 0.1− | 0.8− |
| 2002 11 08 | 704 | 0.8− | 0.1− | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 11 25 | 703 | 1.0− | 1.0− |

**(143024)∗ 2002 VO$_{112}$ = 2004 CB$_{52}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.86471 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22743693 | $\omega$ | 53.80587 | | −0.25437216 | | −0.91601619 |
| $a$ | 2.6580433 | $\Omega$ | 53.91169 | | +0.71734361 | | −0.39381710 |
| $e$ | 0.0102057 | $i$ | 22.57106 | | +0.64862389 | | +0.07630487 |
| $P$ | 4.33 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 03 | 704 | 0.5+ | 0.5+ | 2002 12 11 | 644 | 0.6+ | 0.2− | 2004 03 23 | 703 | 1.0− | 1.0− |
| 2000 05 03 | 704 | 0.7− | 0.2− | 2002 12 11 | 644 | 0.8+ | 0.1− | 2004 03 30 | 704 | 0.4− | 0.5+ |
| 2000 05 03 | 704 | 0.7− | 0.1+ | 2002 12 11 | 704 | 0.5+ | 1.2− | 2004 03 30 | 704 | 0.1+ | 1.4+ |
| 2000 05 03 | 704 | 0.2+ | 0.3+ | 2002 12 11 | 644 | 0.6+ | 0.0 | 2004 03 30 | 704 | 0.6− | 1.3+ |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2002 12 11 | 704 | 0.6+ | 0.0 | 2004 04 12 | 704 | 0.3+ | 0.4− |
| 2002 11 04 | 291 | 0.1+ | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.6− | 2004 04 12 | 704 | 0.6+ | 0.7+ |
| 2002 11 04 | 291 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.6− | 1.2− | 2004 04 12 | 704 | 0.1+ | 0.6+ |
| 2002 11 13 | 644 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 0.0 | 0.2+ | 2004 04 12 | 704 | 0.7+ | 0.4+ |
| 2002 11 13 | 644 | 0.2+ | 0.2− | 2002 12 31 | 704 | 0.8+ | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.4+ |
| 2002 11 13 | 644 | 0.2+ | 0.5+ | 2002 12 31 | 704 | 0.5− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.7− |
| 2002 11 14 | 704 | (0.4+ | 1.8−) | 2002 12 31 | 704 | 1.3+ | 0.2− | 2006 09 19 | 703 | 0.8− | 0.2+ |
| 2002 11 14 | 704 | 0.8− | 0.2− | 2004 02 14 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 1.0− | 0.3− |
| 2002 11 14 | 704 | 0.5+ | 0.4− | 2004 02 14 | 704 | 0.8+ | 0.8− | 2006 09 25 | 703 | 0.3− | 1.4+ |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2004 02 14 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 703 | (1.6+ | 1.3+) |
| 2002 11 15 | 704 | 0.7− | 0.3+ | 2004 02 14 | 704 | 1.0+ | 0.9+ | 2006 09 25 | 703 | 0.6− | 0.9+ |
| 2002 11 15 | 704 | 0.7− | 0.5− | 2004 02 19 | 704 | 0.0 | 0.2+ | 2006 09 25 | 703 | (0.2+ | 4.1+) |
| 2002 11 15 | 704 | 0.0 | 0.1− | 2004 02 19 | 704 | 1.1+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2002 11 24 | 644 | 0.3+ | 0.4+ | 2004 02 19 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.5− | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.5− | 0.3+ |
| 2002 11 24 | 644 | 0.2+ | 0.3− | 2004 02 19 | 704 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.8− | 0.2− |
| 2002 12 02 | 704 | (3.2+ | 0.1+) | 2004 02 19 | 704 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.5− | 1.0+ |
| 2002 12 02 | 704 | (3.4+ | 0.4−) | 2004 02 19 | 704 | 0.1− | 0.4+ | 2006 10 21 | 703 | 1.3− | 0.5+ |
| 2002 12 02 | 704 | (2.3+ | 1.0+) | 2004 02 19 | 704 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.6+ |
| 2002 12 02 | 704 | (2.0+ | 0.3−) | 2004 02 19 | 704 | 0.9+ | 1.0− | 2006 10 28 | 703 | (4.1+ | 3.3+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.5− | 2004 02 19 | 704 | 0.9− | 1.0+ | 2006 10 28 | 703 | 1.2− | 0.5+ | | |
| 2002 12 06 | 704 | 0.5− | 0.3− | 2004 03 23 | 703 | 1.4+ | 0.1− | 2006 10 28 | 703 | 1.5+ | 0.0 | | |
| 2002 12 06 | 704 | 0.1+ | 0.3− | 2004 03 23 | 703 | 0.7+ | 0.8− | 2006 10 28 | 703 | 0.1− | 0.6+ | | |
| 2002 12 06 | 704 | 0.2+ | 1.0+ | 2004 03 23 | 703 | 0.0 | 0.1− | | | | | | |

**(143025)∗ 2002 VA$_{113}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.27581 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26881197 | $\omega$ | 155.65547 | | +0.28288978 | −0.95872758 | |
| $a$ | 2.3777726 | $\Omega$ | 277.90164 | | +0.87521225 | +0.27019357 | |
| $e$ | 0.1520123 | $i$ | 1.65139 | | +0.39239890 | +0.08852604 | |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2002 11 14 | 704 | 0.1+ | 0.0 | 2004 05 21 | 691 | 0.1+ | 0.5+ | | |
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2002 11 27 | 699 | 0.4+ | 0.6− | 2004 05 21 | 691 | 0.2− | 0.3+ | | |
| 1998 09 25 | 645 | 0.1− | 0.1− | 2002 11 27 | 699 | 0.0 | 0.0 | 2005 07 03 | G96 | 0.2− | 0.1+ | | |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2002 11 27 | 699 | 0.5+ | 0.5+ | 2005 07 03 | G96 | 0.1+ | 0.5− | | |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 11 27 | 699 | 0.8+ | 0.7− | 2005 07 03 | G96 | 0.4+ | 0.1− | | |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 11 28 | 699 | 0.1− | 0.8− | 2005 07 03 | G96 | 0.2− | 0.3+ | | |
| 2000 03 11 | 704 | 0.1+ | 0.6+ | 2002 11 28 | 699 | 0.2− | 0.5− | 2005 07 27 | 644 | 0.2− | 0.0 | | |
| 2000 03 11 | 704 | 1.7+ | 0.5+ | 2002 11 28 | 699 | 0.4− | 0.2− | 2005 07 27 | 644 | 0.4− | 0.6+ | | |
| 2000 03 11 | 704 | 0.7− | 1.3− | 2002 12 02 | 704 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.0 | 0.3+ | | |
| 2000 03 11 | 704 | 0.2− | 0.1− | 2002 12 02 | 704 | 0.2− | 1.5+ | 2006 11 15 | G96 | 0.3+ | 0.5− | | |
| 2000 04 03 | 691 | 0.3− | 0.5− | 2002 12 02 | 704 | 0.7− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− | | |
| 2000 04 03 | 691 | 0.4− | 0.5− | 2002 12 02 | 704 | 0.3+ | 0.8+ | 2006 11 15 | G96 | 0.7− | 0.4− | | |
| 2000 04 03 | 691 | 0.4− | 0.6− | 2002 12 02 | 704 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.8− | | |
| 2002 11 13 | 644 | 0.5− | 1.2+ | 2002 12 05 | 704 | 0.3− | 0.5− | 2006 11 27 | G96 | 0.3− | 0.6− | | |
| 2002 11 13 | 644 | 0.6− | 1.2+ | 2002 12 05 | 704 | 0.0 | 1.0+ | 2006 11 27 | G96 | 0.3+ | 0.2− | | |
| 2002 11 13 | 644 | 0.8− | 1.5+ | 2002 12 05 | 704 | 0.3+ | 1.0+ | 2006 11 27 | G96 | 0.2− | 0.0 | | |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2002 12 05 | 704 | (0.1− | 1.6+) | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2002 11 14 | 704 | 0.7+ | 0.2− | 2002 12 05 | 704 | 0.3+ | 0.6+ | | | | | | |
| 2002 11 14 | 704 | 0.1− | 0.0 | 2004 05 21 | 691 | 0.8+ | 0.6+ | | | | | | |

**(143026)∗ 2002 VC$_{114}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.66830 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24148790 | $\omega$ | 278.30907 | | +0.93937843 | +0.26189430 | |
| $a$ | 2.5539112 | $\Omega$ | 66.74042 | | −0.13132352 | +0.87103515 | |
| $e$ | 0.1425638 | $i$ | 13.93917 | | −0.31673696 | +0.41558289 | |
| $P$ | 4.08 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.8+ | 1.1+ | 2002 12 27 | 644 | 0.3+ | 0.2− | 2006 11 11 | 644 | 0.0 | 0.0 | | |
| 2000 03 04 | 704 | 0.6+ | 0.1+ | 2002 12 28 | 699 | 0.4+ | 0.6− | 2006 11 11 | 644 | 0.1− | 0.2+ | | |
| 2000 03 04 | 704 | 0.7+ | 0.5− | 2002 12 28 | 699 | 0.9+ | 0.6+ | 2006 11 14 | 704 | 1.1− | 0.4+ | | |
| 2000 03 04 | 704 | 0.2− | 0.2+ | 2002 12 28 | 699 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.7− | 0.4+ | | |
| 2002 10 30 | 608 | 0.5− | 0.5+ | 2002 12 28 | 699 | 1.0− | 0.0 | 2006 11 14 | 704 | 1.5− | 0.2− | | |
| 2002 10 30 | 608 | 0.6− | 0.5+ | 2003 01 08 | 704 | 0.2− | 0.1− | 2006 11 14 | 704 | 1.1− | 0.3+ | | |
| 2002 10 30 | 608 | 0.1− | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.8− | 2006 11 14 | 704 | 1.1− | 0.4+ | | |
| 2002 11 13 | 644 | 0.5+ | 0.1− | 2003 01 08 | 704 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.2− | 0.8− | | |
| 2002 11 13 | 644 | 0.7+ | 0.1− | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.0 | | |
| 2002 11 13 | 644 | 0.7+ | 0.2− | 2003 02 01 | 704 | 0.7− | 0.7+ | 2006 11 17 | 704 | 0.1− | 0.0 | | |
| 2002 11 14 | 704 | 1.4+ | 0.4− | 2003 02 01 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.1+ | | |
| 2002 11 14 | 704 | 0.3+ | 0.3+ | 2003 02 01 | 704 | 1.0+ | 1.2+ | 2006 11 17 | 704 | 0.2− | 0.1+ | | |
| 2002 11 14 | 704 | 0.3+ | 0.2− | 2004 02 15 | 704 | 0.3+ | 0.5+ | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2002 11 14 | 704 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 0.5− | 0.6+ | 2006 11 17 | G96 | 0.5+ | 0.3− | | |
| 2002 11 14 | 704 | 1.0− | 0.3− | 2004 02 15 | 704 | 0.8− | 1.2+ | 2006 11 17 | G96 | 0.5+ | 0.1− | | |
| 2002 11 16 | 644 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.5+ | 0.2− | | |
| 2002 11 16 | 644 | 0.1− | 0.3+ | 2005 06 04 | 704 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2002 11 16 | 644 | 0.4+ | 0.2+ | 2005 06 04 | 704 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.9− | 0.0 | | |
| 2002 11 24 | 644 | 0.2− | 1.0+ | 2005 06 04 | 704 | 0.0 | 1.2+ | 2006 11 19 | 704 | 1.2− | 0.1− | | |
| 2002 11 24 | 644 | 0.2− | 1.0+ | 2005 06 04 | 704 | (2.0+ | 0.7+) | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.0 | 1.1+ | 2005 07 03 | E12 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.7− | | |
| 2002 11 27 | 699 | 0.2+ | 0.3+ | 2005 07 03 | E12 | 0.4+ | 0.4+ | 2006 11 20 | 704 | (3.1+ | 1.2+) | | |
| 2002 11 27 | 699 | 0.4− | 0.1+ | 2005 07 03 | E12 | 0.8+ | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.2+ | | |
| 2002 11 27 | 699 | 0.3− | 0.2− | 2005 07 10 | E12 | 0.5+ | 0.7+ | 2006 11 20 | 704 | (3.5+ | 1.2+) | | |
| 2002 11 27 | 699 | 0.7+ | 0.5− | 2005 07 10 | E12 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.1− | | |
| 2002 11 28 | 699 | 0.5+ | 0.4− | 2005 07 10 | E12 | 0.5− | 1.0+ | 2006 11 20 | 704 | (2.6+ | 1.3+) | | |
| 2002 11 28 | 699 | 0.2− | 0.3− | 2005 07 10 | E12 | 0.3− | 0.9+ | 2006 11 22 | 683 | 0.8+ | 0.4− | | |
| 2002 11 28 | 699 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.3+ | 0.4− | 2006 11 22 | 683 | 0.1+ | 1.2+ | | |
| 2002 11 28 | 699 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 22 | 683 | 0.7− | 0.6− | | |
| 2002 12 02 | 704 | 1.1− | 1.0− | 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 11 23 | 683 | 1.0+ | 0.9− | | |
| 2002 12 02 | 704 | 0.5− | 0.5− | 2006 10 16 | 703 | 0.9− | 0.0 | 2006 11 23 | 683 | (1.7+ | 0.3−) | | |
| 2002 12 02 | 704 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.4− | 0.0 | 2006 11 23 | 683 | 0.8+ | 0.5− | | |
| 2002 12 02 | 704 | 1.3− | 0.4− | 2006 10 22 | 703 | 0.2− | 0.4+ | 2006 11 25 | 683 | 1.0+ | 0.1− | | |
| 2002 12 02 | 704 | 0.9− | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.2− | 2006 11 25 | 683 | 0.2− | 0.7+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.2− | 2006 11 25 | 683 | 1.5− | 0.7+ | | |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 10 27 | 704 | 0.0 | 0.2+ | 2006 11 25 | 704 | 1.1+ | 0.8+ | | |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2006 10 27 | 704 | 0.5− | 0.9+ | 2006 11 25 | 704 | 0.9+ | 0.6+ | | |
| 2002 12 05 | 704 | 0.8− | 0.1− | 2006 10 27 | 704 | 0.1− | 0.1+ | 2006 11 25 | 704 | 0.8+ | 0.9+ | | |
| 2002 12 08 | 699 | 0.3− | 0.2− | 2006 10 27 | 704 | 0.7+ | 0.0 | 2006 11 25 | 704 | 1.1+ | 0.7+ | | |
| 2002 12 08 | 699 | 0.5+ | 0.0 | 2006 10 27 | 704 | 0.8− | 0.0 | 2006 11 28 | 683 | 1.3+ | 0.4− | | |
| 2002 12 08 | 699 | 1.4+ | 1.2− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 28 | 683 | 0.5− | 0.6+ | | |
| 2002 12 10 | 704 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 28 | 683 | 0.1− | 0.8+ | | |
| 2002 12 10 | 704 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.7− | | |
| 2002 12 10 | 704 | 0.7− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.3− | | |
| 2002 12 10 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.5− | | |
| 2002 12 10 | 704 | 0.3− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.5+ | | |
| 2002 12 27 | 644 | 0.3+ | 0.1− | 2006 11 11 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.6+ | | |
| 2002 12 27 | 644 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.2+ | | | | | | |

**(143027)∗ 2002 VN$_{114}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.57032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21732664 | $\omega$ | 231.48898 | | −0.48303368 | −0.85559377 | |
| $a$ | 2.7398539 | $\Omega$ | 248.36306 | | +0.85270425 | −0.41136210 | |
| $e$ | 0.1321853 | $i$ | 11.54982 | | +0.19893195 | −0.31423006 | |
| $P$ | 4.54 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.2− | 0.3+ | 2002 12 27 | 644 | 0.4+ | 0.5+ | 2004 04 16 | 699 | 0.7− | 0.2− | | |
| 2000 05 28 | 704 | 0.2− | 0.4+ | 2002 12 27 | 644 | 0.3+ | 0.1+ | 2004 04 16 | 699 | 0.5− | 0.4− | | |
| 2000 05 28 | 704 | 0.3− | 0.2+ | 2002 12 27 | 644 | 0.4+ | 0.6+ | 2004 04 16 | 699 | 0.0 | 0.4− | | |
| 2000 05 28 | 704 | 0.2− | 0.3+ | 2002 12 27 | 644 | 0.1+ | 0.2+ | 2004 04 16 | 699 | 0.5+ | 1.5− | | |
| 2000 05 28 | 704 | 0.8+ | 1.1+ | 2002 12 27 | 644 | 0.4+ | 0.5+ | 2004 04 17 | 704 | 0.4+ | 0.1+ | | |
| 2002 11 02 | 644 | (2.6+ | 1.1+) | 2002 12 28 | 699 | 1.0− | 1.0+ | 2004 04 17 | 704 | 0.2+ | 0.7− | | |
| 2002 11 02 | 644 | (2.3+ | 2.2+) | 2002 12 28 | 699 | 0.7+ | 0.4− | 2004 04 17 | 704 | 0.0 | 1.0+ | | |
| 2002 11 02 | 644 | (1.6+ | 1.7+) | 2002 12 28 | 699 | 0.4+ | 0.3− | 2004 04 17 | 699 | 0.3+ | 0.7+ | | |
| 2002 11 08 | 704 | 0.4− | 0.2− | 2002 12 28 | 699 | 0.5+ | 0.5+ | 2004 04 17 | 699 | 0.4+ | 0.9− | | |
| 2002 11 08 | 704 | 0.3− | 0.1− | 2002 12 31 | 699 | 0.2+ | 0.2+ | 2004 04 17 | 699 | 1.4− | 0.0 | | |
| 2002 11 08 | 704 | 0.3− | 0.4+ | 2002 12 31 | 704 | 0.3+ | 0.1− | 2004 04 17 | 699 | 0.5+ | 0.8+ | | |
| 2002 11 13 | 644 | 0.2− | 0.2− | 2002 12 31 | 699 | 0.4− | 0.6+ | 2004 04 17 | E12 | 0.3+ | 0.9+ | | |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2002 12 31 | 704 | 0.8+ | 0.7− | 2004 04 17 | E12 | 0.4− | 0.1+ | | |
| 2002 11 13 | 644 | 0.1+ | 0.3− | 2002 12 31 | 699 | 0.6+ | 0.1+ | 2004 04 17 | E12 | 0.1− | 0.1+ | | |
| 2002 11 14 | 704 | 0.9+ | 0.1+ | 2002 12 31 | 704 | 0.2+ | 0.1− | 2004 04 17 | E12 | 0.1+ | 0.2− | | |
| 2002 11 14 | 704 | 1.2+ | 0.3− | 2002 12 31 | 699 | 0.1+ | 0.6+ | 2006 09 16 | 703 | 0.8− | 0.0 | | |
| 2002 11 14 | 704 | 0.9+ | 0.2− | 2002 12 31 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | 1.1− | 0.4− | | |
| 2002 11 14 | 704 | 0.6+ | 0.5− | 2003 01 04 | 704 | 0.1− | 0.5+ | 2006 09 16 | 703 | 0.7− | 0.4+ | | |
| 2002 11 14 | 704 | 1.0+ | 0.0 | 2003 01 04 | 704 | 0.0 | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.7+ | | |
| 2002 11 27 | 699 | 0.6− | 0.5+ | 2003 01 04 | 704 | 0.4+ | 1.0+ | 2006 09 22 | 699 | (0.9− | 1.6+) | | |
| 2002 11 27 | 699 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 699 | 0.3+ | 0.0 | | |
| 2002 11 27 | 699 | 0.1+ | 0.6+ | 2003 01 08 | 704 | 1.1+ | 0.0 | 2006 09 22 | 699 | 0.7− | 0.3+ | | |
| 2002 11 27 | 699 | 0.1− | 0.4+ | 2003 01 08 | 704 | 0.0 | 0.2+ | 2006 09 22 | 699 | 0.4+ | 1.4+ | | |
| 2002 12 02 | 704 | 0.4− | 0.2+ | 2003 01 08 | 704 | 1.4− | 0.2+ | 2006 09 28 | 703 | 0.6− | 1.1+ | | |
| 2002 12 02 | 704 | 0.3− | 0.1+ | 2003 01 19 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.2+ | | |
| 2002 12 02 | 704 | 0.0 | 1.0− | 2003 01 19 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.9+ | | |
| 2002 12 02 | 704 | 0.3− | 0.1− | 2003 01 19 | 644 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.2− | | |
| 2002 12 02 | 704 | 0.3− | 0.3+ | 2003 01 27 | 704 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.7+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2003 01 27 | 704 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2003 01 27 | 704 | 0.8− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.5+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2003 01 27 | 704 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.4+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2003 01 27 | 704 | 0.1− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2002 12 08 | 291 | 0.3− | 0.1− | 2003 01 31 | 704 | 1.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.6+ | | |
| 2002 12 08 | 291 | 0.5− | 0.1− | 2003 01 31 | 704 | 0.8− | 0.5− | 2006 10 20 | 703 | 0.1+ | 0.8− | | |
| 2002 12 08 | 291 | 0.4− | 0.1− | 2003 01 31 | 704 | 0.2+ | 0.1− | 2006 10 20 | 703 | 0.8+ | 0.1− | | |
| 2002 12 10 | 704 | 0.2+ | 1.0− | 2003 01 31 | 704 | 0.3− | 0.2− | 2006 10 20 | 703 | 0.3+ | 0.9− | | |
| 2002 12 10 | 704 | 0.3+ | 0.6− | 2004 03 26 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 703 | 0.0 | 1.1− | | |
| 2002 12 10 | 704 | 0.3− | 0.1− | 2004 03 26 | 704 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.0 | | |
| 2002 12 10 | 704 | 0.1+ | 0.4− | 2004 03 26 | 704 | 0.2+ | 0.6+ | 2006 11 14 | 703 | 1.4+ | 1.0− | | |
| 2002 12 10 | 704 | 0.3+ | 0.7− | 2004 03 26 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 703 | 0.1− | 1.0− | | |
| 2002 12 27 | 644 | 0.6+ | 0.1+ | 2004 03 26 | 704 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.3− | | |

**(143028)∗ 2002 VK$_{115}$ = 2004 CY$_{78}$**

Discovered 2002 Nov. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61615)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 174.16125 | | (2000.0) | | | |
| $n$ | 0.21847742 | $\omega$ | 191.19937 | | −0.99108378 | +0.13294237 |
| $a$ | 2.7302244 | $\Omega$ | 356.40427 | | −0.10863231 | −0.84492641 |
| $e$ | 0.0389540 | $i$ | 8.16108 | | −0.07714894 | −0.51809815 |
| $P$ | 4.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | 0.3+ | 0.2+ | 2003 12 25 | 645 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1+ | | |
| 2000 04 26 | 699 | 0.2+ | 1.5+ | 2004 01 23 | 704 | 0.4+ | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | | |
| 2000 04 26 | 699 | 0.1− | 0.1− | 2004 01 23 | 704 | 0.2− | 1.1+ | 2006 09 15 | 691 | 0.1− | 0.3− | | |
| 2000 04 26 | 699 | 0.9− | 0.0 | 2004 01 23 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 691 | 0.3− | 0.2+ | | |
| 2001 07 20 | 644 | 0.4+ | 0.4+ | 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 09 16 | 691 | 0.3− | 0.4+ | | |
| 2001 07 20 | 644 | 0.9+ | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 691 | 0.3− | 0.2− | | |
| 2001 07 20 | 644 | 0.7+ | 0.2+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.4− | 1.2+ | | |
| 2001 08 26 | 608 | 0.4− | 1.1+ | 2004 02 17 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 0.2− | 0.2+ | | |
| 2001 08 26 | 608 | 0.7− | 0.6+ | 2004 02 17 | 704 | 0.9+ | 0.3− | 2006 09 20 | 704 | 0.2− | 1.0+ | | |
| 2001 08 26 | 608 | 0.8− | 0.8+ | 2004 02 17 | 704 | 1.1− | 0.0 | 2006 09 20 | 704 | 0.7− | 0.3+ | | |
| 2002 11 11 | 699 | 0.0 | 1.4+ | 2004 02 17 | 704 | 0.0 | 0.4+ | 2006 09 23 | 291 | 0.0 | 0.6+ | | |
| 2002 11 11 | 699 | 1.1− | 1.3− | 2004 02 17 | 704 | 0.0 | 0.2+ | 2006 09 23 | 291 | 0.0 | 0.5+ | | |
| 2002 11 11 | 699 | 1.2− | 0.2+ | 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 09 23 | 291 | (2.3− | 0.0 ) | | |
| 2002 11 11 | 699 | 0.7− | 0.4− | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2002 11 14 | 644 | 0.4+ | 0.2+ | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.1− | | |
| 2002 11 14 | 644 | 0.8+ | 0.2+ | 2004 03 19 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.5+ | 0.4− | | |
| 2002 11 14 | 644 | 0.3+ | 0.5+ | 2004 03 19 | 644 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | |
| 2002 11 25 | 644 | 0.3+ | 0.4− | 2004 03 19 | 644 | 0.5+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.6− | | |
| 2002 11 25 | 644 | 0.4+ | 0.1− | 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.6+ | 0.2− | | |
| 2002 11 25 | 644 | 0.5+ | 0.0 | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2003 12 25 | 645 | 0.0 | 0.1− | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.5− | | |

**(143029)∗ 2002 VZ$_{118}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.77795 | | (2000.0) | | | |
| $n$ | 0.27320935 | $\omega$ | 68.56588 | | +0.34892394 | −0.93715070 |
| $a$ | 2.3521897 | $\Omega$ | 1.01364 | | +0.84219559 | +0.31319496 |
| $e$ | 0.1430307 | $i$ | 2.59355 | | +0.41104583 | +0.15380986 |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1+ | 0.1− | 2002 12 06 | 704 | 0.3− | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.4+ | | |
| 2000 04 05 | 704 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.3+ | 2004 04 24 | 691 | 0.3+ | 0.3+ | | |
| 2000 04 05 | 704 | 0.5+ | 0.8+ | 2002 12 06 | 704 | 0.0 | 0.4+ | 2005 07 27 | 644 | 0.2− | 0.7+ | | |
| 2000 04 05 | 704 | 0.2+ | 1.1+ | 2002 12 06 | 704 | 0.0 | 0.7+ | 2005 07 27 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 12 | 704 | (1.7+ | 0.7+) | 2002 12 11 | 704 | 0.1+ | 0.7+ | 2005 07 27 | 644 | 0.1− | 0.2+ | | |
| 2002 11 12 | 704 | 0.6+ | 1.0+ | 2002 12 11 | 704 | 0.4− | 0.1+ | 2005 08 22 | 644 | 0.0 | 0.3+ | | |
| 2002 11 12 | 704 | 0.8+ | 1.1+ | 2002 12 11 | 704 | 0.0 | 0.0 | 2005 08 22 | 644 | 0.2− | 0.1+ | | |
| 2002 11 12 | 704 | 0.5+ | 1.4+ | 2002 12 11 | 704 | 0.1− | 0.6+ | 2005 08 22 | 644 | 0.2− | 0.9+ | | |
| 2002 11 12 | 704 | 0.8+ | 0.4− | 2002 12 14 | 704 | 0.2− | 1.5+ | 2005 08 26 | 699 | 0.9− | 0.8+ | | |
| 2002 11 15 | 704 | 1.0− | 0.1− | 2002 12 14 | 704 | 0.6− | 0.2+ | 2005 08 26 | 699 | 0.5− | 0.3− | | |
| 2002 11 15 | 704 | 0.4− | 0.2+ | 2002 12 14 | 704 | 0.9− | 1.1− | 2005 08 26 | 699 | 1.2− | 0.8+ | | |
| 2002 11 15 | 704 | 0.0 | 0.2+ | 2002 12 14 | 704 | (2.0− | 0.6−) | 2005 08 26 | 699 | 0.8+ | 0.9+ | | |
| 2002 11 15 | 704 | 0.2+ | 0.3+ | 2002 12 14 | 704 | 0.4− | 0.1+ | 2005 10 25 | G96 | 0.5− | 0.6− | | |
| 2002 11 15 | 704 | 0.1+ | 0.2− | 2002 12 27 | 644 | 0.2+ | 0.1− | 2005 10 25 | G96 | 0.2+ | 0.2− | | |
| 2002 11 15 | 704 | 0.4− | 0.0 | 2002 12 27 | 644 | 0.2+ | 0.5− | 2005 10 25 | G96 | 0.9+ | 0.1+ | | |
| 2002 11 15 | 704 | 0.2− | 0.4− | 2002 12 27 | 644 | 0.0 | 0.0 | 2005 10 25 | G96 | 0.7+ | 0.2− | | |
| 2002 11 15 | 704 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.1− | 0.8− | 2006 11 02 | G96 | 0.3+ | 0.3− | | |
| 2002 11 16 | 704 | 0.1− | 0.5+ | 2002 12 31 | 704 | 0.3− | 0.0 | 2006 11 02 | G96 | 0.3− | 0.5− | | |
| 2002 11 16 | 704 | 0.5+ | 0.4− | 2002 12 31 | 704 | 0.9− | 0.6− | 2006 11 02 | G96 | 0.5− | 0.4− | | |
| 2002 11 16 | 704 | 0.7+ | 0.1− | 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 11 02 | G96 | 0.1− | 0.5− | | |
| 2002 11 16 | 704 | 0.4+ | 0.1− | 2004 04 20 | 704 | 0.2− | 1.4+ | 2006 11 24 | G96 | 0.7+ | 0.1− | | |
| 2002 11 24 | 644 | 0.0 | 0.9+ | 2004 04 20 | 704 | (0.5− | 2.6+) | 2006 11 24 | G96 | 0.4− | 0.3− | | |
| 2002 11 24 | 644 | 0.0 | 1.0+ | 2004 04 20 | 704 | 0.5+ | 0.8+ | 2006 11 24 | G96 | 0.5− | 0.2− | | |
| 2002 11 24 | 644 | 0.2− | 0.9+ | 2004 04 20 | 704 | (0.6+ | 1.7+) | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2004 04 24 | 691 | 0.2+ | 0.6+ | | | | | | |

**(143030)∗ 2002 VD$_{119}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.77376 | | (2000.0) | | | |
| $n$ | 0.23516479 | $\omega$ | 67.71465 | | +0.04806195 | −0.99839350 |
| $a$ | 2.5994882 | $\Omega$ | 19.60191 | | +0.88034824 | +0.02814809 |
| $e$ | 0.2271568 | $i$ | 5.13175 | | +0.47188667 | +0.04917415 |
| $P$ | 4.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 03 15 | 691 | 0.4− | 0.3+ | 2002 12 30 | 704 | 0.2+ | 1.1− | 2006 10 29 | 691 | 0.0 | 0.2+ | | |
| 1991 03 15 | 691 | 0.9+ | 0.2− | 2003 02 01 | 704 | 0.5− | 0.2− | 2006 10 29 | 691 | 0.0 | 0.0 | | |
| 1991 03 15 | 691 | 0.1+ | 0.4+ | 2003 02 01 | 704 | 0.7− | 1.1+ | 2006 10 29 | 704 | 0.0 | 0.3− | | |
| 1998 11 24 | 699 | 0.9− | 0.2+ | 2003 02 01 | 704 | 0.7+ | 0.5+ | 2006 10 29 | 704 | 0.2+ | 0.0 | | |
| 1998 11 24 | 699 | 0.2− | 0.9+ | 2003 02 01 | 704 | 0.6+ | 0.5+ | 2006 10 29 | 704 | 0.1+ | 0.0 | | |
| 1998 11 24 | 699 | (2.2− | 1.2−) | 2003 02 04 | 704 | 0.5+ | 1.0+ | 2006 10 29 | 704 | 0.2+ | 0.6+ | | |
| 1998 12 14 | 699 | 0.0 | 0.1+ | 2003 02 04 | 704 | 1.1− | 0.4+ | 2006 10 29 | 704 | 0.9+ | 0.7+ | | |
| 1998 12 14 | 699 | 0.5+ | 0.6+ | 2003 02 04 | 704 | 0.2+ | 0.7+ | 2006 11 09 | A44 | 0.0 | 0.1+ | | |
| 1998 12 14 | 699 | 0.9− | 0.8− | 2004 05 14 | 691 | 0.4+ | 0.7+ | 2006 11 09 | A44 | 0.1+ | 0.1+ | | |
| 1999 01 09 | 699 | 0.1+ | 1.4− | 2004 05 14 | 691 | 0.2+ | 0.8+ | 2006 11 09 | A44 | 0.2− | 0.0 | | |
| 1999 01 09 | 699 | 0.2+ | 0.9− | 2004 05 14 | 691 | 0.1+ | 0.8+ | 2006 11 10 | A44 | 0.0 | 0.1− | | |
| 1999 01 09 | 699 | 0.7− | 0.6− | 2004 05 23 | 691 | 0.4+ | 0.8+ | 2006 11 10 | A44 | 0.2− | 0.0 | | |
| 2002 09 05 | 704 | 0.2− | 0.7+ | 2004 05 23 | 691 | 0.2+ | 0.6+ | 2006 11 10 | A44 | 0.3− | 0.0 | | |
| 2002 09 05 | 704 | (0.1− | 1.8+) | 2004 05 23 | 691 | 0.5+ | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.7+ | | |
| 2002 09 05 | 704 | (1.7+ | 1.7+) | 2006 08 31 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.3− | 1.2+ | | |
| 2002 10 04 | 704 | (1.7+ | 1.0−) | 2006 08 31 | 704 | 0.5− | 0.1− | 2006 11 16 | 704 | 0.6− | 0.3+ | | |
| 2002 10 04 | 704 | 0.0 | 0.3− | 2006 08 31 | 704 | 1.0− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.7+ | | |
| 2002 10 04 | 704 | 0.7− | 0.5− | 2006 08 31 | 704 | 0.7− | 0.1− | 2006 11 16 | 704 | 0.3+ | 1.0+ | | |
| 2002 10 04 | 704 | 0.7− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.2− | | |
| 2002 10 04 | 704 | 0.0 | 0.9+ | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 11 17 | 691 | 0.3+ | 0.2+ | | |
| 2002 10 10 | 704 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.4+ | 0.2− | | |
| 2002 10 10 | 704 | 0.0 | 1.1+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.1− | 1.0+ | | |
| 2002 10 10 | 704 | 0.6− | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.7− | | |
| 2002 10 10 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.6+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 1.1+ | | |
| 2002 10 10 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.3+ | 2006 11 18 | 704 | (2.6− | 2.3+) | | |
| 2002 11 12 | 704 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.6+ | 0.1− | 2006 11 18 | 704 | 1.4− | 0.0 | | |
| 2002 11 12 | 704 | 0.1+ | 0.2− | 2006 10 03 | 704 | 0.0 | 0.7− | 2006 11 19 | 704 | 0.8+ | 0.5+ | | |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2006 10 03 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.5+ | | |
| 2002 11 12 | 704 | (0.2− | 1.6−) | 2006 10 03 | 704 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.7+ | | |
| 2002 11 15 | 704 | 0.8− | 0.4− | 2006 10 03 | 704 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.1+ | | |
| 2002 11 15 | 704 | 0.6− | 0.3− | 2006 10 03 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.6− | 0.8+ | | |
| 2002 11 15 | 704 | 0.8− | 0.2+ | 2006 10 04 | 703 | 0.6− | 0.6− | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2002 11 15 | 704 | 1.3+ | 0.9− | 2006 10 04 | 703 | 1.0− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2002 11 15 | 704 | 0.1− | 0.4− | 2006 10 04 | 703 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2002 12 06 | 704 | 0.4− | 0.4+ | 2006 10 04 | 703 | 0.4− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.2+ | | |
| 2002 12 06 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.6− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.2− |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.2+ |
| 2002 12 11 | 704 | 1.0+ | 0.8+ | 2006 10 12 | 644 | 0.3− | 0.3− | 2006 11 22 | 704 | (1.8− | 0.1−) |
| 2002 12 11 | 704 | 0.2− | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.5+ | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 12 14 | 704 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2002 12 14 | 704 | 0.1− | 0.5+ | 2006 10 20 | A44 | 0.8+ | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.2+ |
| 2002 12 14 | 704 | 0.2− | 0.3+ | 2006 10 20 | A44 | 0.7+ | 0.1+ | 2006 11 28 | 704 | 0.3− | 1.6− |
| 2002 12 14 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.3− |
| 2002 12 14 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.8+ | 1.4+ |
| 2002 12 30 | 704 | 1.0+ | 0.8− | 2006 10 21 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 1.1− | 0.4− |
| 2002 12 30 | 704 | 0.4+ | 0.9− | 2006 10 29 | 691 | 0.1− | 0.1+ | | | | |

**(143031)∗ 2002 VH$_{119}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.74362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24394731 | $\omega$ | 111.69586 | | −0.65778069 | −0.75240536 | |
| $a$ | 2.5367170 | $\Omega$ | 19.56323 | | +0.64694768 | −0.58803633 | |
| $e$ | 0.1332787 | $i$ | 5.96469 | | +0.38572434 | −0.29681551 | |
| $P$ | 4.04 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.8− | 0.6− | 2002 12 15 | 704 | 1.1+ | 0.3+ | 2006 11 15 | 704 | (0.2− | 2.0+) |
| 1998 12 17 | 704 | (0.3+ | 2.8−) | 2002 12 30 | 704 | 1.1− | 0.2− | 2006 11 15 | 704 | 0.5+ | 0.2+ |
| 1998 12 17 | 704 | 0.6+ | 1.7− | 2002 12 30 | 704 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.2+ | 0.6+ |
| 1998 12 17 | 704 | 1.4+ | 0.7− | 2002 12 30 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 1.2+ | 0.6+ |
| 2001 08 23 | 608 | 0.1− | 0.6− | 2002 12 30 | 704 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.7+ |
| 2001 08 23 | 608 | 0.0 | 0.3+ | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.5+ |
| 2001 08 23 | 608 | 0.1+ | 0.4− | 2003 01 05 | 704 | 0.7− | 0.5− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2002 11 12 | 704 | 1.2− | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2002 11 12 | 704 | 0.5− | 0.1+ | 2003 01 05 | 704 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2002 11 12 | 704 | 0.3− | 0.2+ | 2003 01 05 | 704 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.0 | 0.5− | 2004 04 17 | 704 | 0.7+ | 1.3+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2002 11 12 | 704 | (0.1− | 1.7−) | 2004 04 17 | 704 | 0.2− | 0.8− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 11 15 | 704 | 0.8+ | 0.1− | 2004 04 17 | 704 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2002 11 15 | 704 | 0.2+ | 0.5+ | 2004 04 17 | 704 | 0.6+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 1.0+ |
| 2002 11 15 | 704 | 0.3+ | 0.0 | 2004 05 12 | E12 | 0.0 | 1.2+ | 2006 11 19 | 704 | 0.9+ | 0.5+ |
| 2002 12 06 | 704 | 0.1− | 0.7+ | 2004 05 12 | E12 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.5+ |
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2004 05 12 | E12 | 1.1+ | 0.5− | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 2002 12 06 | 704 | 0.1− | 0.7+ | 2004 05 12 | E12 | 0.7+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.7− | 0.5+ | 2004 05 13 | 644 | 0.3− | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.6− | 0.4− | 2004 05 13 | 644 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2002 12 07 | 704 | 0.2+ | 0.0 | 2004 05 13 | 644 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2002 12 07 | 704 | 0.1− | 0.2− | 2004 05 15 | 704 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 12 07 | 704 | 0.5− | 0.8+ | 2004 05 15 | 704 | 0.7− | 0.8+ | 2006 11 22 | 704 | 1.4+ | 0.1+ |
| 2002 12 07 | 704 | 0.3+ | 0.0 | 2004 05 15 | 704 | 1.3− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2002 12 07 | 704 | 0.1+ | 0.5− | 2004 05 15 | 704 | 0.9+ | 0.6− | 2006 11 22 | 704 | 0.8+ | 0.6+ |
| 2002 12 07 | 704 | 0.7+ | 0.0 | 2005 08 05 | 644 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.2− | 0.1+ |
| 2002 12 07 | 704 | 1.3+ | 0.9− | 2005 08 05 | 644 | 0.2+ | 0.2+ | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2002 12 07 | 704 | 0.4+ | 0.2+ | 2005 08 05 | 644 | 0.0 | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.3+ | 0.5− | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 27 | 704 | 0.3− | 0.8− |
| 2002 12 11 | 704 | 0.4− | 0.7− | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 27 | 704 | 0.1+ | 0.7− |
| 2002 12 11 | 704 | 0.6− | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 27 | 704 | 0.9− | 0.5− |
| 2002 12 11 | 704 | 0.3+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 27 | 704 | 0.1− | 1.0− |
| 2002 12 15 | 704 | 0.0 | 0.7+ | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 1.2− | 0.1− |
| 2002 12 15 | 704 | 0.4− | 0.5+ | 2006 11 13 | 691 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2002 12 15 | 704 | 0.2+ | 0.8+ | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 1.8+ | 0.1− |

**(143032)∗ 2002 VO$_{119}$**

Discovered 2002 Nov. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.16234 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23503538 | $\omega$ | 15.66029 | | +0.94918319 | −0.31470892 | |
| $a$ | 2.6004423 | $\Omega$ | 2.68888 | | +0.28121403 | +0.84366660 | |
| $e$ | 0.2492932 | $i$ | 3.77957 | | +0.14131503 | +0.43495397 | |
| $P$ | 4.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.1− | 1.5− | 2004 03 18 | 704 | (1.6+ | 0.0 ) | 2006 10 21 | 691 | 0.2− | 0.1− |
| 1998 12 17 | 704 | (2.2+ | 0.5−) | 2004 03 18 | 704 | 1.2+ | 1.2+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 1998 12 17 | 704 | 0.3− | 0.7+ | 2004 03 18 | 704 | (2.1+ | 0.5+) | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1998 12 17 | 704 | (2.5− | 0.4−) | 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.1− | 0.6+ |
| 2002 09 05 | 704 | 0.1− | 0.7+ | 2004 03 27 | 291 | 0.1+ | 1.2+ | 2006 10 29 | 704 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | 1.2+ | 0.2− | 2004 03 27 | 291 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | (0.0 | 2.2−) | 2004 03 27 | 291 | 0.2− | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.4+ |
| 2002 11 12 | 704 | (0.3− | 2.5−) | 2004 04 13 | 691 | 0.4− | 0.6+ | 2006 10 29 | 704 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | (0.4+ | 2.0−) | 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.6− | 0.8− | 2004 04 13 | 691 | 0.5+ | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2002 11 12 | 704 | 0.7− | 1.4− | 2004 04 21 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 11 15 | 704 | 0.4− | 0.8− | 2004 04 21 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2002 11 15 | 704 | 0.5+ | 0.2− | 2004 04 21 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 11 15 | 704 | 1.5+ | 0.3− | 2006 07 21 | 704 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.4+ | 0.6− | 2006 07 21 | 704 | 0.5+ | 0.9+ | 2006 11 02 | 704 | 0.1− | 1.3+ |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 07 21 | 704 | 0.2− | 0.4+ | 2006 11 02 | 704 | 0.0 | 0.4− |
| 2002 12 06 | 704 | 0.3+ | 0.2− | 2006 07 21 | 704 | 1.4− | 0.7+ | 2006 11 02 | 704 | 1.4− | 0.3− |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2006 08 21 | 704 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.7+ | 0.0 | 2006 08 21 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.3− | 2006 08 21 | 704 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.2− | 0.7− | 2006 08 21 | 704 | 0.3+ | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.3− | 0.1+ | 2006 08 21 | 704 | 0.4− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.7− | 0.1+ | 2006 08 25 | 704 | 0.1+ | 0.4− | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2002 12 13 | 704 | 0.1+ | 0.5− | 2006 08 25 | 704 | 0.0 | 0.7− | 2006 11 14 | 703 | 0.4− | 0.2+ |
| 2002 12 13 | 704 | 0.1− | 0.5− | 2006 08 25 | 704 | (2.7− | 1.2−) | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2002 12 13 | 704 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 0.5− | 0.2+ |
| 2002 12 13 | 704 | 0.1+ | 0.6− | 2006 08 30 | 699 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.1+ |
| 2002 12 13 | 704 | 0.2− | 0.4− | 2006 08 30 | 699 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2002 12 14 | 704 | 0.1− | 0.8− | 2006 08 30 | 699 | 0.4− | 0.6+ | 2006 11 15 | 691 | 0.2− | 0.5+ |
| 2002 12 14 | 704 | 0.3+ | 0.7− | 2006 09 01 | 704 | 0.4+ | 0.4+ | 2006 11 15 | 691 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 0.1− | 0.5− | 2006 09 01 | 704 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.5+ |
| 2002 12 14 | 704 | 0.5+ | 0.2− | 2006 09 01 | 704 | 0.4− | 0.2+ | 2006 11 16 | 704 | 1.0+ | 0.4+ |
| 2002 12 14 | 704 | 0.1+ | 0.5− | 2006 09 01 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2002 12 14 | 704 | 0.1− | 0.7− | 2006 09 17 | 704 | (0.0 | 2.1−) | 2006 11 16 | 704 | 0.7+ | 0.1− |
| 2002 12 14 | 704 | 0.3+ | 0.1− | 2006 09 17 | 704 | (1.6+ | 0.3+) | 2006 11 16 | 704 | 1.0− | 0.0 |
| 2002 12 14 | 704 | 0.0 | 0.3− | 2006 09 17 | 704 | 1.4+ | 0.5− | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2002 12 14 | 704 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.8− | 1.0+ |
| 2002 12 14 | 704 | 0.5+ | 0.7− | 2006 09 17 | 704 | 0.5+ | 1.2+ | 2006 11 18 | 704 | 0.5− | 0.9+ |
| 2002 12 30 | 704 | 0.9+ | 0.1− | 2006 09 29 | 704 | 1.3+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 1.4+ |
| 2002 12 30 | 704 | 0.6+ | 0.1+ | 2006 09 29 | 704 | (0.3+ | 2.3+) | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2002 12 30 | 704 | 0.1+ | 0.5− | 2006 09 29 | 704 | 0.1+ | 1.1+ | 2006 11 18 | 704 | 0.7− | 0.5+ |
| 2003 01 05 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.5− | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2003 01 05 | 704 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.5+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2003 01 05 | 704 | 0.6− | 0.3− | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2003 01 05 | 704 | 0.7− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2003 01 05 | 704 | 0.5− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2004 02 26 | 704 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.1+ |
| 2004 02 26 | 704 | 0.7+ | 1.0+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.8− | 0.1+ |
| 2004 02 26 | 704 | 1.1+ | 0.9+ | 2006 10 19 | 704 | 0.4+ | 0.3− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 03 15 | 703 | 0.3− | 0.4− | 2006 10 19 | 704 | (0.0 | 3.3−) | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2004 03 15 | 703 | (2.5+ | 1.2+) | 2006 10 19 | 704 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 703 | 0.8+ | 0.0 | 2006 10 19 | 704 | 0.1− | 0.9− | 2006 11 22 | 704 | 1.2+ | 0.6+ |
| 2004 03 15 | 703 | 1.0+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 1.1+ | 0.3− |
| 2004 03 17 | 683 | (0.0 | 2.9−) | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2004 03 17 | 683 | 0.1− | 1.0− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2004 03 17 | 683 | 0.6− | 0.6− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6− | 0.8+ |

**(143033)∗ 2002 VN$_{121}$**

Discovered 2002 Nov. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.02214 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24571702 | $\omega$ | 123.04889 | | +0.70728423 | −0.65758696 | |
| $a$ | 2.5245224 | $\Omega$ | 279.52468 | | +0.52850248 | +0.73563444 | |
| $e$ | 0.2495411 | $i$ | 15.25434 | | +0.46950414 | +0.16254651 | |
| $P$ | 4.01 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 29 | 704 | 0.4− | 0.7− | 2002 11 15 | 704 | 0.7+ | 0.4+ | 2003 02 04 | 704 | 0.5− | 0.2+ | |
| 1998 08 29 | 704 | 1.2+ | 0.4− | 2002 11 15 | 704 | 1.1+ | 0.7+ | 2003 02 04 | 704 | 0.6− | 0.3− | |
| 1998 08 29 | 704 | 1.5+ | 0.1− | 2002 11 25 | 644 | 0.2− | 0.0 | 2003 02 04 | 704 | 0.5− | 0.2+ | |
| 1998 08 29 | 704 | 0.1− | 0.4+ | 2002 11 25 | 644 | 0.2− | 0.8− | 2003 02 04 | 704 | 0.2− | 0.1+ | |
| 1998 08 29 | 704 | 1.3+ | 0.6+ | 2002 11 25 | 644 | 0.1− | 0.1− | 2003 02 04 | 704 | 0.5− | 0.3+ | |
| 1998 11 14 | 704 | 0.2+ | 0.3− | 2002 12 07 | 704 | 0.5+ | 0.3− | 2004 03 15 | 644 | 0.2− | 0.0 | |
| 1998 11 14 | 704 | 0.9− | 0.3− | 2002 12 07 | 704 | 0.8+ | 0.3− | 2004 03 15 | 644 | 0.1− | 0.1− | |
| 1998 11 14 | 704 | 0.0 | 1.3− | 2002 12 07 | 704 | 0.6+ | 0.1− | 2004 03 15 | 644 | 0.1− | 0.0 | |
| 1998 11 14 | 704 | 0.7− | 0.9− | 2002 12 07 | 704 | 0.6+ | 0.0 | 2004 04 13 | 644 | 0.3− | 0.5− | |
| 1998 11 14 | 704 | 0.9− | 0.2− | 2002 12 07 | 704 | 1.0+ | 0.1+ | 2004 04 13 | 644 | 0.1− | 0.4− | |
| 1998 11 16 | 704 | 0.2− | 0.8− | 2002 12 09 | 699 | 0.3− | 0.1− | 2004 04 13 | 644 | 0.2− | 0.5− | |
| 1998 11 16 | 704 | 0.5+ | 0.1− | 2002 12 09 | 699 | 0.1− | 0.8− | 2004 05 14 | 644 | 0.6+ | 0.4+ | |
| 1998 11 16 | 704 | 0.8− | 0.3− | 2002 12 09 | 699 | 0.5− | 0.3+ | 2004 05 14 | 644 | 0.5+ | 0.5+ | |
| 1998 11 16 | 704 | (2.0+ | 1.3−) | 2002 12 09 | 699 | 0.5− | 0.1− | 2004 05 14 | 644 | 0.2+ | 0.4+ | |
| 1998 11 16 | 704 | (3.5+ | 1.7−) | 2002 12 14 | 704 | 0.4+ | 0.1− | 2006 09 08 | 628 | 0.1+ | 0.3+ | |
| 1998 12 24 | 699 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 09 09 | 628 | 0.5+ | 0.2+ | |
| 1998 12 24 | 699 | 0.1− | 1.8+ | 2002 12 14 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 704 | 0.3− | 0.4+ | |
| 1998 12 24 | 699 | 0.6− | 1.9− | 2002 12 14 | 704 | 0.1+ | 0.3− | 2006 09 18 | 704 | 0.4+ | 0.2− | |
| 1999 01 08 | 704 | (2.1+ | 0.3+) | 2003 01 04 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 704 | 0.3+ | 0.4+ | |
| 1999 01 08 | 704 | 0.7− | 1.6+ | 2003 01 04 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 704 | 0.4+ | 0.0 | |
| 1999 01 08 | 704 | 0.2− | 1.6− | 2003 01 04 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.1+ | |
| 1999 01 08 | 699 | 0.6− | 0.7+ | 2003 01 04 | 704 | 1.0+ | 0.5+ | 2006 10 04 | 704 | 0.3+ | 0.2+ | |
| 1999 01 08 | 704 | 0.2+ | 1.0− | 2003 01 20 | 644 | 0.3− | 0.2+ | 2006 10 04 | 704 | 0.1+ | 0.1+ | |
| 1999 01 08 | 699 | 1.0− | 0.0 | 2003 01 20 | 644 | 0.3− | 0.2+ | 2006 10 04 | 704 | 0.3+ | 0.5+ | |
| 1999 01 08 | 699 | 1.1− | 0.3+ | 2003 01 20 | 644 | 0.4− | 0.4+ | 2006 10 04 | 704 | 0.4− | 0.0 | |
| 2002 08 15 | 704 | 0.6− | 0.1+ | 2003 01 31 | 699 | 0.1+ | 0.8+ | 2006 10 04 | 704 | 0.1− | 0.3+ | |
| 2002 08 15 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 699 | 0.5− | 0.1− | 2006 10 16 | 704 | 0.3− | 0.1+ | |
| 2002 08 15 | 704 | 0.1+ | 0.3+ | 2003 01 31 | 699 | 0.4− | 0.1+ | 2006 10 16 | 704 | 0.2− | 0.2− | |
| 2002 08 15 | 704 | 0.0 | 0.4+ | 2003 01 31 | 699 | 0.4+ | 0.0 | 2006 10 16 | 704 | 0.4− | 0.4− | |
| 2002 10 13 | 644 | 0.2− | 0.3+ | 2003 02 01 | 704 | 0.5− | 0.3+ | 2006 10 16 | 704 | 0.3− | 0.2− | |
| 2002 10 13 | 644 | 0.2− | 0.2+ | 2003 02 01 | 704 | 0.2+ | 0.5− | 2006 10 16 | 704 | 0.5− | 0.0 | |
| 2002 10 13 | 644 | 0.2− | 0.2+ | 2003 02 01 | 704 | 0.1− | 0.6− | 2006 10 30 | 106 | 0.1+ | 0.3− | |
| 2002 10 19 | 644 | 0.3− | 0.2+ | 2003 02 01 | 704 | 0.2− | 0.8− | 2006 10 30 | 106 | 0.0 | 0.2− | |
| 2002 10 19 | 644 | 0.2− | 0.0 | 2003 02 01 | 704 | 0.3− | 0.2− | 2006 10 30 | 106 | 0.1+ | 0.2− | |
| 2002 10 19 | 644 | 0.1− | 0.2+ | 2003 02 02 | 704 | 0.4+ | 0.1− | 2006 10 30 | 106 | 0.4− | 0.3− | |
| 2002 10 30 | 704 | 0.2+ | 0.4− | 2003 02 02 | 704 | 0.6+ | 0.6+ | 2006 11 14 | 704 | 0.5− | 0.3+ | |
| 2002 10 30 | 704 | 0.1+ | 0.1− | 2003 02 02 | 704 | 0.8+ | 0.1+ | 2006 11 14 | 704 | 0.3− | 0.5− | |
| 2002 10 30 | 704 | 0.1+ | 0.2− | 2003 02 02 | 704 | 0.7+ | 0.3+ | 2006 11 14 | 704 | 0.3− | 0.1− | |
| 2002 10 30 | 704 | 0.7− | 0.3− | 2003 02 02 | 704 | 0.6+ | 0.1+ | 2006 11 14 | 704 | 0.3− | 0.0 | |
| 2002 10 30 | 704 | 0.1+ | 0.1− | 2003 02 02 | 704 | 1.0+ | 0.3+ | 2006 11 14 | 704 | 0.5− | 0.0 | |
| 2002 11 13 | 704 | 0.2+ | 0.2− | 2003 02 02 | 704 | 0.4+ | 0.6− | 2006 11 21 | 703 | 0.8− | 0.4− | |
| 2002 11 13 | 704 | 0.2+ | 0.4+ | 2003 02 02 | 704 | 1.0+ | 1.1+ | 2006 11 21 | 703 | 0.2− | 0.4− | |
| 2002 11 13 | 704 | 0.0 | 0.6+ | 2003 02 02 | 704 | 0.4+ | 0.4+ | 2006 11 21 | 703 | 0.6− | 0.1− | |
| 2002 11 13 | 704 | 0.1− | 0.2+ | 2003 02 02 | 704 | (1.5+ | 1.4+) | 2006 11 21 | 703 | 0.3− | 0.2− | |
| 2002 11 13 | 704 | (0.1− | 1.9+) | 2003 02 02 | 704 | 0.7+ | 0.2+ | 2006 11 28 | 951 | 0.3+ | 0.3− | |
| 2002 11 15 | 704 | 0.2− | 0.4+ | 2003 02 02 | 704 | 0.9+ | 0.5+ | 2006 11 28 | 951 | 0.3+ | 0.1− | |
| 2002 11 15 | 704 | 0.4+ | 0.6+ | 2003 02 02 | 704 | 0.8+ | 0.9+ | | | | | |
| 2002 11 15 | 704 | 1.1+ | 0.9+ | 2003 02 02 | 704 | (1.8+ | 1.5+) | | | | | |

**(143034)∗ 2002 VQ$_{121}$ = 2004 FW$_{33}$**

Discovered 2002 Nov. 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69417)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.20579 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23037725 | $\omega$ | 259.16545 | | −0.98049476 | +0.17622603 | |
| $a$ | 2.6353784 | $\Omega$ | 290.94010 | | −0.12317567 | −0.89601258 | |
| $e$ | 0.0613638 | $i$ | 5.34690 | | −0.15315935 | −0.40756084 | |
| $P$ | 4.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.7+ | 0.7+ | 2004 03 19 | 704 | 0.7− | 0.3+ | 2006 10 19 | 703 | 0.7+ | 0.0 | |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | |
| 2001 09 20 | 704 | 0.6+ | 0.9+ | 2004 03 19 | 704 | 0.7+ | 0.7+ | 2006 10 20 | G96 | 0.2− | 0.2− | |
| 2001 09 20 | 704 | 0.7− | 1.1+ | 2004 03 19 | 704 | 0.4− | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.3+ | |
| 2002 11 13 | 704 | 0.5− | 0.0 | 2004 03 20 | 699 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.0 | |
| 2002 11 13 | 704 | 0.0 | 1.1+ | 2004 03 20 | 699 | 0.5+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.1− | |
| 2002 11 13 | 704 | 0.8− | 0.9+ | 2004 03 20 | 699 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.0 | |
| 2002 11 14 | 926 | 0.0 | 0.3+ | 2004 03 20 | 699 | 0.2− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.3+ | |
| 2002 11 14 | 926 | 0.4− | 0.5− | 2004 03 29 | 703 | (1.4− | 2.3+) | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2002 11 14 | 926 | 0.2+ | 0.2− | 2004 03 29 | 703 | 0.8− | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2002 11 15 | 704 | 0.8+ | 0.2+ | 2004 03 29 | 703 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2002 11 15 | 704 | 0.4− | 0.1− | 2004 03 29 | 703 | (1.6− | 0.9+) | 2006 10 27 | 703 | 1.3+ | 0.5− | |
| 2002 11 15 | 704 | (1.9− | 0.5−) | 2005 06 03 | 691 | 0.3− | 0.2+ | 2006 10 27 | 703 | (2.1− | 0.1−) | |
| 2002 11 27 | 699 | (0.2− | 1.9+) | 2005 06 03 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 1.0− | 0.5− | |
| 2002 11 27 | 699 | 0.6− | 0.2− | 2005 06 03 | 691 | 0.3− | 0.1+ | 2006 10 27 | 703 | (2.3− | 1.5−) | |
| 2002 11 27 | 699 | 0.5+ | 0.7+ | 2005 07 15 | G96 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.2+ | |
| 2002 11 27 | 699 | 0.9− | 0.6+ | 2005 07 15 | G96 | 0.1+ | 0.4+ | 2006 11 14 | 703 | (0.8+ | 2.1−) | |
| 2004 02 14 | 644 | 0.6+ | 0.5+ | 2005 07 15 | G96 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.7+ | 0.8+ | |
| 2004 02 14 | 644 | 0.5+ | 0.3+ | 2005 07 15 | G96 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.5− | |
| 2004 02 14 | 644 | 0.6+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− | |
| 2004 03 16 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 691 | 0.2+ | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.3− | |
| 2004 03 16 | 704 | 0.7+ | 0.9− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.2− | 0.0 | |
| 2004 03 16 | 704 | 0.0 | 1.1− | 2006 10 19 | 703 | (0.8+ | 1.9−) | 2006 11 25 | G96 | 0.0 | 0.1− | |
| 2004 03 16 | 704 | 0.8+ | 0.9+ | 2006 10 19 | 703 | 0.8− | 0.6− | | | | | |
| 2004 03 19 | 704 | 0.1− | 0.8+ | 2006 10 19 | 703 | 1.3− | 0.6− | | | | | |

**(143035)∗ 2002 VS$_{121}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.81860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23327015 | $\omega$ | 50.36374 | | +0.85898343 | +0.46307405 | |
| $a$ | 2.6135447 | $\Omega$ | 281.03085 | | −0.51082760 | +0.74621596 | |
| $e$ | 0.1268291 | $i$ | 12.85811 | | −0.03467891 | +0.47825116 | |
| $P$ | 4.23 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 703 | 0.0 | 0.3− | 2002 12 06 | 704 | 0.5− | 0.1+ | 2004 02 22 | 704 | 1.3+ | 0.4− | |
| 2000 03 03 | 703 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.0 | 0.6− | 2004 02 22 | 704 | 0.7+ | 0.1+ | |
| 2000 03 03 | 703 | 1.0− | 0.9+ | 2002 12 09 | 699 | (1.7+ | 0.4−) | 2004 02 22 | 704 | 1.1+ | 0.5+ | |
| 2000 03 03 | 703 | 0.3− | 0.3− | 2002 12 09 | 699 | 0.4+ | 0.7− | 2004 02 23 | 704 | 0.8+ | 0.2− | |
| 2002 10 06 | 704 | 0.2+ | 0.2− | 2002 12 09 | 699 | (2.1+ | 1.3+) | 2004 02 23 | 704 | 0.0 | 1.0− | |
| 2002 10 06 | 704 | 0.7+ | 0.2− | 2002 12 09 | 699 | 1.4− | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.0 | |
| 2002 10 06 | 704 | 0.2+ | 0.2− | 2002 12 11 | 644 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.3+ | 0.2− | |
| 2002 10 06 | 704 | 0.4+ | 0.2− | 2002 12 11 | 644 | 0.0 | 0.1+ | 2004 03 12 | 644 | 0.2− | 0.1+ | |
| 2002 10 06 | 704 | 0.5+ | 0.5− | 2002 12 11 | 644 | 0.1+ | 0.3+ | 2004 03 12 | 644 | 0.2− | 0.0 | |
| 2002 10 14 | 704 | 0.6+ | 0.5− | 2003 02 01 | 704 | 0.5− | 0.2+ | 2004 03 12 | 644 | 0.1− | 0.1+ | |
| 2002 10 14 | 704 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.0 | 0.7+ | 2005 05 13 | E12 | 0.4+ | 1.2+ | |
| 2002 10 14 | 704 | 1.0− | 0.9− | 2003 02 01 | 704 | 0.7− | 1.2+ | 2005 05 13 | E12 | 0.4+ | 0.4+ | |
| 2002 10 14 | 704 | 0.3− | 0.7− | 2003 02 04 | 704 | 0.8+ | 0.3− | 2005 05 13 | E12 | 0.5+ | 0.7+ | |
| 2002 10 14 | 704 | 0.7− | 0.8− | 2003 02 04 | 704 | 0.2− | 0.8+ | 2005 05 13 | E12 | 0.1+ | 0.6+ | |
| 2002 10 20 | 644 | 0.0 | 0.1+ | 2003 02 04 | 704 | 0.5− | 0.4+ | 2005 07 05 | E12 | 0.2− | 0.9+ | |
| 2002 10 20 | 644 | 0.1+ | 0.2+ | 2003 02 04 | 704 | 1.0+ | 0.7+ | 2005 07 05 | E12 | 0.6+ | 0.2− | |
| 2002 10 20 | 644 | 0.0 | 0.1+ | 2004 01 14 | 644 | 0.4− | 0.7+ | 2005 07 05 | E12 | 0.3+ | 1.0+ | |
| 2002 10 31 | 704 | 0.3+ | 0.4+ | 2004 01 14 | 644 | 0.5− | 0.6+ | 2005 07 05 | E12 | 0.5− | 0.7+ | |
| 2002 10 31 | 704 | 0.4+ | 0.0 | 2004 01 14 | 644 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.6− | 0.5+ | |
| 2002 10 31 | 704 | 0.6+ | 0.1− | 2004 01 22 | 644 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.9− | 0.4+ | |
| 2002 11 07 | 704 | 0.1− | 1.0+ | 2004 01 22 | 644 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.6− | 0.1+ | |
| 2002 11 07 | 704 | 0.3+ | 0.9+ | 2004 01 22 | 644 | 0.4− | 0.4+ | 2006 09 17 | 703 | 0.5− | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.0 | 0.9+ | 2004 01 29 | 699 | 0.9− | 0.9+ | 2006 10 19 | 703 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.2+ | 1.1+ | 2004 01 29 | 704 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.5− |
| 2002 11 07 | 704 | 0.3+ | 0.9+ | 2004 01 29 | 699 | 0.9+ | 0.5− | 2006 10 19 | 703 | 0.5− | 0.1+ |
| 2002 11 13 | 644 | 0.4+ | 0.7− | 2004 01 29 | 704 | 0.7− | 0.3− | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 2002 11 13 | 644 | 0.5+ | 1.0− | 2004 01 29 | 699 | 0.6− | 0.7− | 2006 10 21 | 704 | 0.1+ | 0.4+ |
| 2002 11 13 | 644 | 0.4+ | 1.1− | 2004 01 29 | 704 | 0.3− | 0.6+ | 2006 10 21 | 704 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | 0.4+ | 0.2− | 2004 01 29 | 704 | 0.5− | 0.8+ | 2006 10 21 | 704 | 0.5+ | 0.4+ |
| 2002 11 15 | 704 | 0.1− | 0.5− | 2004 01 29 | 699 | (1.7− | 0.0 ) | 2006 10 21 | 704 | 0.3− | 0.1+ |
| 2002 11 15 | 704 | 0.7+ | 0.4+ | 2004 02 11 | 644 | 0.4− | 0.3+ | 2006 10 21 | 704 | 0.0 | 0.4− |
| 2002 11 15 | 704 | (1.1+ | 2.0−) | 2004 02 11 | 644 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 11 15 | 704 | 0.1− | 0.1− | 2004 02 11 | 644 | 0.8− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 11 25 | 644 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 0.5+ | 0.5− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 11 25 | 644 | 0.1+ | 0.3+ | 2004 02 19 | 704 | 0.3− | 0.3− | 2006 11 29 | 704 | 0.8+ | 0.9+ |
| 2002 11 25 | 644 | 0.1+ | 0.4+ | 2004 02 19 | 704 | 0.5+ | 0.1− | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 1.3− | 0.1− | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 0.9− | 1.0+ |
| 2002 12 06 | 704 | 1.0− | 0.4− | 2004 02 19 | 704 | 0.1+ | 0.7− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2002 12 06 | 704 | 1.3− | 0.3− | 2004 02 22 | 704 | 0.9+ | 0.2+ | | | | |

**(143036)∗ 2002 VT$_{121}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.31460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23702224 | $\omega$ | 153.91285 | | −0.00580413 | −0.98950605 | |
| $a$ | 2.5858896 | $\Omega$ | 296.12532 | | +0.88704255 | +0.06155840 | |
| $e$ | 0.1188067 | $i$ | 9.25355 | | +0.46165119 | −0.13072238 | |
| $P$ | 4.16 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.4+ | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.5+ | 1.0+ |
| 1998 12 17 | 704 | 0.3+ | 1.0− | 2002 12 06 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.7+ | 0.5+ |
| 1998 12 17 | 704 | 1.2+ | 0.2+ | 2002 12 08 | 699 | 0.9− | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 1998 12 17 | 704 | (1.5− | 3.1−) | 2002 12 08 | 699 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.1− | 0.9+ |
| 1998 12 17 | 704 | (0.6− | 2.4−) | 2002 12 08 | 699 | 0.4− | 0.4− | 2006 10 19 | 703 | (4.2− | 3.4+) |
| 2000 05 03 | 645 | 0.0 | 0.1+ | 2002 12 08 | 699 | (1.5− | 0.5+) | 2006 10 19 | 703 | (0.4− | 4.7+) |
| 2000 05 03 | 645 | 0.1+ | 0.1+ | 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.3− |
| 2002 10 13 | 644 | 0.0 | 0.4+ | 2002 12 11 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 2002 10 13 | 644 | 0.0 | 0.2− | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.3+ |
| 2002 10 13 | 644 | 0.2− | 0.0 | 2004 03 17 | 704 | 0.8− | 0.3− | 2006 10 19 | 703 | 0.7+ | 0.1+ |
| 2002 10 20 | 644 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.5− |
| 2002 10 20 | 644 | 0.2+ | 0.1+ | 2004 03 17 | 704 | 0.2− | 1.3− | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2002 10 20 | 644 | 0.1− | 0.0 | 2004 03 17 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | 0.5− | 0.9+ | 2004 03 26 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.7− | 0.9+ | 2004 03 26 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 1.2+ | 2004 03 26 | 704 | 0.4− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | (0.6− | 2.2+) | 2006 09 17 | 703 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.5+ | 0.7− | 2006 10 27 | 703 | 0.3− | 0.6+ |
| 2002 11 13 | 644 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.3− | 0.3− |
| 2002 11 13 | 644 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.8− | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.6+ |
| 2002 11 15 | 704 | 0.7− | 1.4− | 2006 09 28 | 703 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 1.2− |
| 2002 11 15 | 704 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | 0.5+ | 0.4+ | 2006 09 28 | 703 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.4− | 0.7− |
| 2002 11 15 | 704 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.8− | 0.1− | 2006 11 15 | 703 | 0.4− | 0.6+ |
| 2002 11 15 | 704 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.8− | 0.1+ |
| 2002 11 25 | 644 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.1+ | 0.7+ |
| 2002 11 25 | 644 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.1− | 0.8− |
| 2002 11 25 | 644 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 23 | 703 | 0.8+ | 0.7− |
| 2002 12 06 | 704 | 0.7+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.3+ | 0.5− |
| 2002 12 06 | 704 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | | | |
| 2002 12 06 | 704 | (1.9− | 0.2−) | 2006 10 19 | 703 | 0.7+ | 0.5+ | | | | |

**(143037)∗ 2002 VU$_{121}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.61468 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24145709 | $\omega$ | 37.17368 | | +0.99577870 | −0.03608650 | |
| $a$ | 2.5541285 | $\Omega$ | 324.61195 | | −0.01126284 | +0.86448367 | |
| $e$ | 0.0730290 | $i$ | 8.37968 | | +0.09109293 | +0.50136389 | |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.0 | 2002 12 06 | 704 | 1.0+ | 0.5+ | 2006 09 17 | 703 | 0.1+ | 1.0− |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 2000 03 06 | 608 | (0.9+ | 4.7−) | 2002 12 06 | 704 | 0.2− | 0.5− | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 2000 03 06 | 608 | 0.2+ | 1.5− | 2002 12 09 | 699 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.9− |
| 2000 03 06 | 608 | 0.5+ | 1.3− | 2002 12 09 | 699 | (1.8− | 0.3+) | 2006 09 28 | 703 | 0.6− | 0.4+ |
| 2002 10 05 | 704 | 0.7+ | 0.2+ | 2002 12 09 | 699 | 0.7+ | 1.4+ | 2006 09 28 | 703 | 0.1+ | 0.0 |
| 2002 10 05 | 704 | 0.2+ | 0.7− | 2002 12 09 | 699 | 1.4− | 0.1− | 2006 09 28 | 703 | 1.1− | 0.7− |
| 2002 10 05 | 704 | 0.6− | 0.5+ | 2004 02 14 | 608 | 0.3− | 0.7− | 2006 09 28 | 703 | 0.8+ | 0.1+ |
| 2002 10 05 | 704 | 0.5− | 0.4+ | 2004 02 14 | 608 | 0.5+ | 0.7− | 2006 09 28 | 703 | 0.5− | 0.6+ |
| 2002 10 10 | 704 | 0.4− | 0.5+ | 2004 02 14 | 608 | 0.4+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 10 10 | 704 | 0.2+ | 0.2+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 10 10 | 704 | 1.1+ | 0.5+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 11 07 | 704 | 0.7+ | 0.3+ | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 11 07 | 699 | 1.1+ | 0.0 | 2004 02 18 | 704 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 0.2+ | 1.2+ | 2004 02 18 | 704 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 11 07 | 699 | 0.7+ | 0.9+ | 2004 02 18 | 704 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.2+ | 0.1+ | 2004 03 12 | 644 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.6+ |
| 2002 11 07 | 699 | 0.2+ | 0.1+ | 2004 03 12 | 644 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.4− | 1.1+ | 2004 03 12 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | (2.1+ | 2.8−) |
| 2002 11 07 | 699 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.7− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.0 | 1.0+ | 2004 03 15 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 11 13 | 644 | 0.1+ | 0.3− | 2004 03 15 | 704 | 0.2− | 1.0+ | 2006 10 27 | 703 | 0.6+ | 0.0 |
| 2002 11 13 | 644 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2002 11 15 | 704 | 0.2+ | 0.9− | 2004 03 18 | 704 | 0.2− | 1.0− | 2006 10 27 | 703 | 0.6+ | 0.5− |
| 2002 11 15 | 704 | 1.3− | 0.2− | 2004 03 18 | 704 | (0.9+ | 1.6+) | 2006 10 27 | 703 | 0.8+ | 0.3+ |
| 2002 11 15 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.1+ | 1.0− | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2002 11 15 | 704 | 0.8− | 0.8− | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.7− |
| 2002 11 15 | 704 | 0.7+ | 0.7− | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.3− |
| 2002 11 25 | 644 | 0.2− | 0.3− | 2004 03 20 | 704 | (1.9+ | 1.0+) | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2002 11 25 | 644 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2006 11 16 | 704 | 0.4− | 0.3− |
| 2002 11 25 | 644 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 1.0+ |
| 2002 12 05 | 699 | 0.4− | 0.4− | 2004 03 27 | 704 | 0.9+ | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.6− |
| 2002 12 05 | 699 | 0.1− | 0.5− | 2004 03 27 | 704 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2002 12 05 | 699 | 0.7− | 0.3− | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 1.0− | 0.3− |
| 2002 12 05 | 699 | 0.4− | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.6− | 2006 11 22 | 703 | 0.5+ | 0.6+ |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.6− | 0.5+ |
| 2002 12 06 | 704 | 0.4− | 0.4− | 2006 09 17 | 703 | 0.7− | 0.6− | 2006 11 22 | 703 | 0.7− | 0.3− |

**(143038)∗ 2002 VE$_{122}$ = 2000 EN$_{83}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 41274)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.88042 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23211087 | $\omega$ | 287.01621 | | +0.55165351 | +0.83046870 | |
| $a$ | 2.6222398 | $\Omega$ | 17.14737 | | −0.62977617 | +0.47562262 | |
| $e$ | 0.0897097 | $i$ | 15.23207 | | −0.54686414 | +0.29000839 | |
| $P$ | 4.25 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.7+ | 0.6+ | 2004 02 14 | 704 | 0.7+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2000 03 05 | 704 | 0.6+ | 0.2− | 2004 03 23 | 704 | 0.5+ | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2000 03 05 | 704 | 0.8+ | 1.6+ | 2004 03 23 | 704 | 1.0− | 0.9− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2000 03 05 | 704 | 0.7+ | 0.8+ | 2004 03 23 | 704 | 1.0− | 0.7− | 2006 10 17 | 691 | 0.8− | 1.1+ |
| 2000 03 12 | 704 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.6− | 0.9− | 2006 10 17 | 691 | 0.2− | 0.1− |
| 2000 03 12 | 704 | 0.3+ | 0.7+ | 2004 04 09 | 843 | 0.1− | 1.0− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2000 03 12 | 704 | 0.6+ | 0.6+ | 2004 04 09 | 843 | 0.8+ | 1.2+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2000 03 12 | 704 | 0.2− | 0.2+ | 2004 04 09 | 843 | 0.6− | 1.0− | 2006 10 17 | 703 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.8+ | 0.0 | 2004 04 09 | 843 | 0.9− | 0.4− | 2006 10 17 | 703 | 0.6+ | 0.2− |
| 2002 10 12 | 704 | 0.5+ | 0.1+ | 2005 01 20 | 809 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.3− |
| 2002 10 12 | 704 | 1.0+ | 0.8− | 2005 01 20 | 809 | 0.3− | 0.2+ | 2006 10 19 | 704 | 0.1+ | 0.6− |
| 2002 11 07 | 704 | 0.6+ | 0.8− | 2006 08 18 | G92 | 0.6+ | 0.4+ | 2006 10 19 | 704 | (0.3− | 1.6−) |
| 2002 11 07 | 704 | 0.0 | 0.5− | 2006 08 18 | G92 | 0.3+ | 0.3+ | 2006 10 19 | 704 | 0.8+ | 0.1− |
| 2002 11 07 | 704 | 0.2+ | 0.1+ | 2006 08 18 | G92 | 0.1+ | 0.4+ | 2006 10 19 | 704 | 0.2+ | 0.4− |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2006 08 27 | 683 | 0.1− | 0.9− | 2006 10 21 | 703 | 0.0 | 0.5− |
| 2002 11 13 | 644 | 0.2− | 0.8− | 2006 08 27 | 683 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2002 11 13 | 644 | 0.1− | 0.9− | 2006 08 27 | 683 | 0.5− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.2− |
| 2002 11 13 | 644 | 0.0 | 0.6− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.1− |
| 2002 11 15 | 704 | (1.8+ | 0.4+) | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 29 | 704 | (0.0 | 2.6+) |
| 2002 11 15 | 704 | 0.8− | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 29 | 704 | 0.9+ | 1.2+ |
| 2002 11 15 | 704 | 0.4+ | 0.4− | 2006 09 27 | 704 | 0.1− | 1.2+ | 2006 10 29 | 704 | 1.0+ | 1.4− |
| 2002 11 15 | 704 | 0.8+ | 1.0− | 2006 09 27 | 704 | 0.7+ | 0.6+ | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2002 12 06 | 704 | 1.1+ | 1.3+ | 2006 09 27 | 704 | 0.0 | 1.2+ | 2006 11 16 | 704 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 1.0− | 1.1− | 2006 09 27 | 704 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.0 | 0.6+ | 2006 11 16 | 704 | (1.6− | 0.6−) |
| 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 09 29 | 704 | (1.2+ | 2.2+) | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2006 09 29 | 704 | (1.5− | 1.8+) | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2004 01 17 | 644 | 0.5+ | 0.4+ | 2006 09 29 | 704 | (1.9− | 1.5+) | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2004 01 17 | 644 | 0.2+ | 0.0 | 2006 09 29 | 704 | (0.5− | 1.7+) | 2006 11 19 | 704 | 0.6− | 0.5− |
| 2004 01 17 | 691 | 0.3+ | 0.4− | 2006 10 03 | 704 | 0.2+ | 0.4+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2004 01 17 | 691 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2004 01 17 | 691 | 0.3− | 0.4− | 2006 10 03 | 704 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2004 02 14 | 704 | 0.6+ | 1.1+ | 2006 10 03 | 704 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2004 02 14 | 704 | 0.9+ | 1.3+ | 2006 10 03 | 704 | 0.5+ | 0.8− | | | | |

**(143039)∗ 2002 VF$_{122}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.46381 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22979279 | $\omega$ | 280.88475 | | +0.49664010 | +0.86450200 | |
| $a$ | 2.6398451 | $\Omega$ | 19.48457 | | −0.67783008 | +0.44197798 | |
| $e$ | 0.1814359 | $i$ | 13.41093 | | −0.54212082 | +0.23935696 | |
| $P$ | 4.29 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.4− | 0.0 | 2005 05 16 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 704 | 0.1− | 1.4− |
| 2002 10 04 | 704 | 1.1− | 0.1− | 2005 05 16 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 704 | (0.3− | 1.8−) |
| 2002 10 04 | 704 | 0.6− | 0.3+ | 2005 06 02 | 699 | 0.6− | 1.4+ | 2006 10 19 | 704 | 0.2− | 1.1− |
| 2002 10 12 | 704 | 0.0 | 0.1− | 2005 06 02 | 699 | 0.2+ | 0.1− | 2006 10 19 | 704 | 0.0 | 0.9− |
| 2002 10 12 | 704 | 0.0 | 0.7− | 2005 06 02 | 699 | 0.6+ | 0.5− | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2002 10 12 | 704 | 0.3+ | 0.7+ | 2005 06 02 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.8− | 0.4+ | 2005 06 26 | E12 | 0.1− | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 11 06 | 704 | (2.4− | 0.2−) | 2005 06 26 | E12 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2002 11 06 | 704 | 0.6− | 0.5+ | 2005 06 26 | E12 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2005 06 26 | E12 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2006 09 13 | 012 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 11 13 | 644 | 0.0 | 0.2+ | 2006 09 13 | 012 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 13 | 644 | 0.1+ | 0.0 | 2006 09 13 | 012 | 0.8− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2002 11 13 | 644 | 0.4+ | 0.5+ | 2006 09 13 | 012 | 0.3− | 0.5− | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2002 11 15 | 704 | 0.0 | 0.6− | 2006 09 13 | 012 | 0.2− | 0.5− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | 0.0 | 0.2+ | 2006 09 13 | 012 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2002 11 15 | 704 | 0.6− | 0.9− | 2006 09 13 | 012 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.2− | 0.5− |
| 2002 11 15 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.2− |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.4+ | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.9− | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 21 | 703 | 0.9− | 0.2+ |
| 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 09 15 | 704 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.6+ | 0.8+ | 2006 09 15 | 704 | 0.4− | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.6− | 0.3+ | 2006 09 15 | 704 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.6− | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.8+ | 2006 10 28 | 704 | (1.8− | 1.6−) |
| 2002 12 12 | 644 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 0.7− | 0.6− |
| 2002 12 12 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.3+ | 0.6+ | 2006 10 28 | 704 | 0.4− | 0.4+ |
| 2002 12 12 | 644 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.8− | 1.2+ | 2006 10 28 | 704 | 0.7− | 0.5− |
| 2003 01 20 | 644 | 0.6+ | 1.1+ | 2006 09 18 | 691 | 0.3− | 0.4+ | 2006 10 28 | 704 | 0.6− | 0.0 |
| 2003 01 20 | 644 | 0.0 | 0.5+ | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2003 01 20 | 644 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 1.0+ | 1.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 02 10 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 2004 02 10 | 644 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 2005 04 06 | 704 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.4+ |
| 2005 04 06 | 704 | 1.0− | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2005 04 06 | 704 | 0.7− | 1.2− | 2006 09 20 | 704 | 0.1+ | 1.4− | 2006 11 13 | 703 | 0.1+ | 0.7− |
| 2005 04 06 | 704 | 1.4− | 0.3+ | 2006 09 20 | 704 | 0.9− | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.6− |
| 2005 04 14 | 703 | 0.2− | 1.1+ | 2006 09 20 | 704 | 0.3+ | 0.6− | 2006 11 13 | 703 | 0.1+ | 0.6− |
| 2005 04 14 | 703 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.5+ | 0.1− | 2006 11 15 | 704 | (0.1− | 1.6+) |
| 2005 04 14 | 703 | (1.8− | 0.8+) | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 15 | 704 | 1.2+ | 0.4− |
| 2005 04 14 | 703 | 0.6− | 1.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 15 | 704 | 1.0− | 0.9+ |
| 2005 04 19 | 608 | 0.9+ | 0.7− | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 11 15 | 704 | 0.6− | 0.4− |
| 2005 04 19 | 608 | 0.2+ | 1.4− | 2006 09 27 | 704 | 0.4+ | 0.9+ | 2006 11 16 | 704 | 0.9+ | 0.2− |
| 2005 04 19 | 608 | 1.3+ | 1.1− | 2006 09 27 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 2005 05 08 | E12 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.9+ | 0.8+ |
| 2005 05 08 | E12 | 0.4+ | 0.5+ | 2006 09 27 | 704 | 0.0 | 0.8+ | 2006 11 16 | 704 | (0.6− | 1.6+) |
| 2005 05 08 | E12 | 0.4+ | 0.5+ | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2005 05 08 | E12 | 0.4+ | 0.4+ | 2006 10 03 | 691 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2005 05 10 | 699 | 0.7+ | 0.4+ | 2006 10 03 | 691 | 0.6+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2005 05 10 | 699 | 0.8+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 05 10 | 699 | 0.3+ | 0.5+ | 2006 10 15 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.6+ | 1.1− |
| 2005 05 10 | 699 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2005 05 16 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 0.1− | 1.5− | 2006 11 19 | 704 | 1.2− | 1.0+ |

**(143040)∗ 2002 VX$_{123}$ = 2004 CJ$_{26}$**

Discovered 2002 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61618)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.39589 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23092584 | $\omega$ | 280.36612 | | +0.99864439 | +0.05181145 | |
| $a$ | 2.6312030 | $\Omega$ | 76.66410 | | −0.04552224 | +0.91588190 | |
| $e$ | 0.1478698 | $i$ | 0.29418 | | −0.02524106 | +0.39809035 | |
| $P$ | 4.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 07 | 691 | 0.4+ | 0.3− | 2005 06 11 | 691 | 0.9+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1995 01 07 | 691 | 0.1+ | 0.0 | 2005 06 11 | 691 | 0.6+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 1995 01 07 | 691 | 0.1− | 0.1+ | 2005 06 11 | 691 | 0.6+ | 0.1+ | 2006 10 01 | 704 | 0.8− | 0.8+ |
| 1996 03 16 | 691 | (2.7+ | 5.7−) | 2006 09 12 | 703 | 0.7− | 0.1− | 2006 10 01 | 704 | 0.4− | 0.7+ |
| 1996 03 16 | 691 | 0.7− | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.5+ |
| 1996 03 16 | 691 | 0.6− | 0.1+ | 2006 09 12 | 703 | 1.4− | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.8+ |
| 2002 11 14 | 704 | 0.5+ | 0.8+ | 2006 09 12 | 703 | 1.1− | 0.7+ | 2006 10 02 | 691 | 0.2+ | 0.4+ |
| 2002 11 14 | 704 | (2.8+ | 2.1+) | 2006 09 17 | 691 | 0.6− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | 0.6+ | 0.7+ | 2006 09 17 | 691 | 0.5− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 691 | 0.5− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.3+ |
| 2002 11 15 | 704 | 0.7+ | 0.3− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.4+ |
| 2002 11 15 | 704 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.2+ |
| 2002 11 15 | 704 | 0.1− | 0.6− | 2006 09 19 | 691 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 15 | 704 | 0.4+ | 0.5− | 2006 09 19 | 703 | 1.0− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2002 11 15 | 704 | 0.2− | 0.4+ | 2006 09 19 | 703 | (1.4− | 1.6−) | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.8+ | 0.7− | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 2002 12 05 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 704 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.7+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 1.0+ |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 09 20 | 704 | 1.4+ | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.5+ |
| 2002 12 05 | 704 | 0.4+ | 1.3+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2− | 0.6− |
| 2002 12 10 | 644 | 0.1− | 0.8− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 17 | G96 | 1.2+ | 0.7− |
| 2002 12 10 | 644 | 0.0 | 0.5− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 2002 12 10 | 644 | 0.2− | 0.4− | 2006 09 21 | A50 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.5− |
| 2004 02 11 | 291 | 0.9− | 0.3+ | 2006 09 21 | A50 | 0.4− | 0.6− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 02 11 | 291 | 0.5+ | 0.5+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | (0.2+ | 1.7−) |
| 2004 02 11 | 291 | 0.3+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2004 02 14 | 691 | 0.1+ | 0.5+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2004 02 14 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.5− | 0.6− |
| 2004 02 14 | 691 | 0.1− | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− | | | | |
| 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− | | | | |

**(143041)∗ 2002 VB$_{127}$**

Discovered 2002 Nov. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.27451 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23319639 | $\omega$ | 125.27004 | | +0.90197723 | −0.42397061 | |
| $a$ | 2.6140958 | $\Omega$ | 259.93978 | | +0.36426951 | +0.84885037 | |
| $e$ | 0.0428575 | $i$ | 4.76360 | | +0.23182926 | +0.31575619 | |
| $P$ | 4.23 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 04 | 608 | 0.7− | 0.2− | 2002 11 24 | 644 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 1997 09 04 | 608 | 0.5− | 0.1+ | 2002 11 24 | 644 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 06 28 | 691 | 0.7− | 0.5+ | 2002 12 05 | 704 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 06 28 | 691 | 0.9+ | 0.4+ | 2002 12 05 | 704 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.4− | 0.2− |
| 2001 06 28 | 691 | (0.1+ | 2.1+) | 2002 12 05 | 704 | 0.2− | 0.3− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 07 13 | 644 | 0.0 | 0.4+ | 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 10 30 | 104 | 0.1+ | 0.4+ |
| 2001 07 13 | 644 | 0.5− | 0.2+ | 2002 12 05 | 704 | 0.5+ | 0.3+ | 2006 10 30 | 104 | 0.1− | 0.1− |
| 2001 07 13 | 644 | 0.4− | 0.4+ | 2002 12 10 | 704 | 1.2− | 0.8− | 2006 10 30 | 104 | 0.6+ | 0.1+ |
| 2001 07 21 | 608 | 0.1+ | 0.0 | 2002 12 10 | 704 | 0.8− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 07 21 | 608 | 0.3+ | 0.1− | 2002 12 10 | 704 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 07 21 | 608 | 0.1− | 0.2− | 2002 12 10 | 704 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 1.1− | 2002 12 10 | 704 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2002 11 06 | 704 | 1.0+ | 0.4− | 2004 02 14 | 644 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2002 11 06 | 704 | 1.0+ | 0.3− | 2004 02 14 | 644 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.5− | 0.1+ |
| 2002 11 06 | 704 | 0.5− | 0.5− | 2004 02 14 | 644 | 0.4+ | 0.8+ | 2006 11 14 | 703 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.2+ | 0.5− | 2004 03 19 | 704 | 0.4+ | 1.2+ | 2006 11 14 | 703 | (0.9− | 2.6−) |
| 2002 11 13 | 644 | 0.3+ | 0.4+ | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 11 14 | 703 | 0.0 | 0.5− |
| 2002 11 13 | 644 | 0.1− | 0.8+ | 2004 03 19 | 704 | 0.3+ | 1.4+ | 2006 11 14 | 703 | 0.1− | 0.5+ |
| 2002 11 13 | 644 | 0.5+ | 1.0+ | 2004 03 19 | 704 | 0.3− | 0.8+ | 2006 11 22 | 704 | 0.4+ | 0.7+ |
| 2002 11 16 | 644 | 0.4− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.3− |
| 2002 11 16 | 644 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 1.4+ |
| 2002 11 16 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.7+ | 1.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.7− | 1.3+ |

**(143042)∗ 2002 VW$_{127}$**

Discovered 2002 Nov. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.41806 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18668779 | $\omega$ | 9.10658 | | +0.12832022 | −0.95930500 | |
| $a$ | 3.0319737 | $\Omega$ | 73.82731 | | +0.89261388 | +0.00119369 | |
| $e$ | 0.1068144 | $i$ | 15.18254 | | +0.43217403 | +0.28236941 | |
| $P$ | 5.28 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | (2.7− | 2.2+) | 2003 01 07 | 704 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.7+ | 0.9+ |
| 2001 10 11 | 704 | (2.2+ | 1.2+) | 2003 01 10 | 704 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.6+ | 1.1+ |
| 2001 10 11 | 704 | 0.5− | 0.5+ | 2003 01 10 | 704 | 0.3+ | 0.5− | 2004 03 23 | 704 | 0.0 | 1.3+ |
| 2001 10 11 | 704 | 0.5− | 0.2+ | 2003 01 10 | 704 | 0.3− | 0.1+ | 2004 04 15 | 644 | 0.8+ | 1.0+ |
| 2001 10 11 | 704 | (1.6+ | 1.1+) | 2003 01 10 | 704 | 1.0− | 0.0 | 2004 04 15 | 644 | 0.8+ | 1.1+ |
| 2001 10 14 | 644 | 0.2+ | 0.8+ | 2003 01 13 | 704 | 0.4+ | 0.3− | 2004 04 15 | 644 | 0.6+ | 1.2+ |
| 2001 10 14 | 644 | 0.0 | 1.0+ | 2003 01 13 | 704 | 0.3+ | 0.4− | 2004 04 16 | 704 | (1.1− | 3.3+) |
| 2001 10 14 | 644 | 0.4+ | 1.2+ | 2003 01 13 | 704 | 0.1+ | 0.4− | 2004 04 16 | 704 | (0.2− | 2.5+) |
| 2001 10 23 | 644 | (1.8− | 0.5+) | 2003 01 13 | 704 | 0.1+ | 0.7− | 2004 04 16 | 704 | (0.3− | 2.1+) |
| 2001 10 23 | 644 | (1.7− | 0.3+) | 2003 01 13 | 704 | 0.0 | 0.2− | 2004 04 16 | 704 | (1.1− | 2.8+) |
| 2001 10 23 | 644 | 1.6− | 0.2+ | 2003 01 25 | 704 | 0.6+ | 0.1− | 2004 04 16 | 704 | (0.8− | 3.9+) |
| 2001 12 15 | 704 | 0.6− | 0.4− | 2003 01 25 | 704 | 0.3+ | 0.7+ | 2006 08 14 | 644 | 0.4− | 0.3+ |
| 2001 12 15 | 704 | 0.1− | 0.3+ | 2003 01 25 | 704 | 0.0 | 0.9+ | 2006 08 14 | 644 | 0.8− | 0.1+ |
| 2001 12 15 | 704 | (1.7− | 0.5−) | 2003 01 25 | 704 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.6− | 0.1+ |
| 2001 12 15 | 704 | 0.3− | 0.2+ | 2003 01 25 | 704 | 0.0 | 0.9+ | 2006 08 22 | 644 | 0.0 | 0.2+ |
| 2002 11 14 | 644 | 0.0 | 0.1− | 2003 02 06 | 699 | 0.3− | 0.2− | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2002 11 14 | 644 | 0.1+ | 0.1+ | 2003 02 06 | 699 | 0.1− | 0.7+ | 2006 08 22 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 644 | 0.1− | 0.3+ | 2003 02 06 | 699 | 0.8− | 0.2+ | 2006 08 23 | 644 | 0.3− | 0.3+ |
| 2002 11 16 | 699 | 0.8+ | 0.0 | 2003 02 06 | 699 | 0.4+ | 0.5+ | 2006 08 23 | 644 | 0.2+ | 0.4+ |
| 2002 11 16 | 699 | (0.9+ | 1.6+) | 2003 03 08 | 644 | 0.0 | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.2+ |
| 2002 11 16 | 699 | 0.4+ | 0.2+ | 2003 03 08 | 644 | 0.2− | 0.2+ | 2006 10 12 | E12 | 0.3− | 0.0 |
| 2002 11 16 | 699 | 1.5+ | 0.3− | 2003 03 08 | 644 | 0.1− | 0.1+ | 2006 10 12 | E12 | 0.1+ | 0.4+ |
| 2003 01 07 | 704 | 0.4− | 0.3+ | 2003 03 23 | 734 | 0.5− | 0.4− | 2006 10 12 | E12 | 1.0+ | 0.1− |
| 2003 01 07 | 704 | 0.6− | 0.5+ | 2003 03 23 | 734 | 0.1+ | 0.1+ | 2006 10 12 | E12 | 0.7− | 0.9+ |
| 2003 01 07 | 704 | 0.0 | 0.5+ | 2003 03 23 | 734 | 0.5+ | 0.1− | | | | |

**(143043)∗ 2002 VH$_{128}$**

Discovered 2002 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.19422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26949193 | $\omega$ | 124.17812 | | +0.63351001 | −0.77325432 | |
| $a$ | 2.3737713 | $\Omega$ | 286.48858 | | +0.70020595 | +0.58793875 | |
| $e$ | 0.1882826 | $i$ | 1.62878 | | +0.32920614 | +0.23749902 | |
| $P$ | 3.66 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2002 11 24 | 644 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.4+ | 0.3− |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2002 12 02 | 704 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.0 | 0.5− |
| 2000 03 03 | 645 | 0.2+ | 0.0 | 2002 12 02 | 704 | 0.2+ | 0.6+ | 2002 12 31 | 704 | 0.6− | 0.2− |
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2002 12 02 | 704 | 0.5− | 0.2+ | 2005 07 09 | 691 | 0.0 | 0.4+ |
| 2002 10 02 | 704 | 0.3− | 0.9+ | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2005 07 09 | 691 | 0.2− | 0.1+ |
| 2002 10 02 | 704 | 0.7− | 0.2− | 2002 12 05 | 704 | 0.3− | 0.1− | 2005 07 09 | 691 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | 0.2− | 0.2− | 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2002 12 05 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 1.5+ | 0.3+ |
| 2002 10 11 | 704 | 0.5+ | 0.8+ | 2002 12 05 | 704 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.2+ | 0.3− | 2002 12 08 | 333 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.2+ | 0.0 | 2002 12 08 | 333 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.6− | 0.3− |
| 2002 11 06 | 704 | 0.2+ | 0.8− | 2002 12 08 | 333 | 0.5− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.5− |
| 2002 11 06 | 704 | 0.2+ | 0.1+ | 2002 12 09 | 333 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.2− | 0.6− |
| 2002 11 06 | 704 | 0.0 | 0.4+ | 2002 12 09 | 333 | 0.2− | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.0 | 2002 12 09 | 333 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 11 14 | 704 | 1.3+ | 0.8− | 2002 12 10 | 704 | 0.3− | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.8− | 0.0 | 2002 12 10 | 704 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2002 11 14 | 704 | 0.8+ | 0.8+ | 2002 12 10 | 704 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2002 11 14 | 704 | 0.5+ | 0.3+ | 2002 12 10 | 704 | 0.5− | 0.1− | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2002 11 18 | 644 | 0.3− | 0.3+ | 2002 12 27 | 644 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2002 11 18 | 644 | 0.1− | 0.3+ | 2002 12 27 | 644 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.5− | 0.2+ |
| 2002 11 18 | 644 | 0.1− | 0.4+ | 2002 12 27 | 644 | 0.4+ | 1.4− | 2006 11 27 | G96 | 0.5− | 0.3+ |
| 2002 11 24 | 644 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.4− | 0.2− | | | | |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2002 12 31 | 704 | 0.3+ | 0.5− | | | | |

**(143044)∗ 2002 VO$_{128}$**

Discovered 2002 Nov. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.42548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24303253 | $\omega$ | 354.16221 | | +0.57110114 | −0.82006489 | |
| $a$ | 2.5430786 | $\Omega$ | 61.00531 | | +0.75482370 | +0.50711660 | |
| $e$ | 0.1000395 | $i$ | 2.39598 | | +0.32262155 | +0.26519110 | |
| $P$ | 4.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.2− | 0.3+ | 2002 12 10 | 333 | 0.3− | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1996 04 13 | 691 | 0.0 | 0.0 | 2002 12 10 | 333 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 1996 04 13 | 691 | 0.1− | 0.0 | 2002 12 11 | 333 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1996 04 19 | 691 | 0.1+ | 0.4+ | 2002 12 11 | 333 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1− |
| 1996 04 19 | 691 | 0.1− | 0.2− | 2002 12 11 | 333 | 0.0 | 0.2− | 2006 11 10 | 691 | 1.3− | 0.9− |
| 1996 04 19 | 691 | 0.4+ | 0.1− | 2002 12 31 | 704 | 0.4− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2000 04 05 | 704 | 0.5− | 0.1− | 2002 12 31 | 704 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 0.3− | 0.2+ | 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2000 04 05 | 704 | 0.9+ | 0.6− | 2002 12 31 | 704 | 0.6− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.4+ | 0.9+ | 2002 12 31 | 704 | 0.9− | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.6+ | 0.2+ | 2003 01 04 | 704 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2002 11 06 | 704 | 0.2+ | 1.1− | 2003 01 04 | 704 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.2+ | | |
| 2002 11 06 | 704 | 0.4− | 0.7− | 2003 01 04 | 704 | (1.7+ | 1.1+) | 2006 11 18 | 704 | 0.3+ | 0.5+ | | |
| 2002 11 14 | 704 | 1.2+ | 0.9− | 2003 01 04 | 704 | 0.6+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.8+ | | |
| 2002 11 14 | 704 | (0.1− | 1.7−) | 2004 03 23 | 704 | 0.4− | 0.4+ | 2006 11 18 | 704 | (1.9− | 0.1+) | | |
| 2002 11 14 | 704 | (0.1− | 1.8−) | 2004 03 23 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 1.4+ | | |
| 2002 11 18 | 644 | 0.6− | 0.9+ | 2004 03 23 | 704 | 0.2+ | 0.7− | 2006 11 21 | 704 | 0.1− | 1.4− | | |
| 2002 11 18 | 644 | 0.3− | 1.0+ | 2004 03 23 | 704 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1+ | | |
| 2002 11 18 | 644 | 0.6− | 1.1+ | 2004 04 11 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.9+ | 0.3+ | | |
| 2002 11 28 | 608 | 0.1− | 0.9+ | 2004 04 11 | 644 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.9− | | |
| 2002 11 28 | 608 | 0.4− | 1.1+ | 2004 04 11 | 644 | 0.1− | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 28 | 608 | 0.2− | 0.8+ | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2004 04 20 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 2002 12 05 | 704 | (2.5+ | 1.8−) | 2004 04 20 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.0 | | |
| 2002 12 05 | 704 | 1.2+ | 0.1+ | 2006 09 27 | G96 | 0.5+ | 0.3+ | 2006 11 27 | 703 | 0.3− | 0.8− | | |
| 2002 12 05 | 704 | 1.3+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.3− | 1.3− | | |
| 2002 12 05 | 608 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.2+ | 0.4− | | |
| 2002 12 05 | 608 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.0 | 0.1− | | |
| 2002 12 05 | 608 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.6+ | 0.0 | 2006 12 01 | 704 | 0.2+ | 1.3− | | |
| 2002 12 10 | 704 | 0.7− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 12 01 | 704 | 0.8− | 0.8− | | |
| 2002 12 10 | 704 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.4− | 0.3− | | |
| 2002 12 10 | 704 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 12 01 | 704 | 1.2+ | 2.1− | | |
| 2002 12 10 | 704 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− | | | | | | |

**(143045)∗ 2002 VJ$_{129}$**

Discovered 2002 Nov. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 221.08887 | | (2000.0) | | | |
| $n$ | 0.19367393 | $\omega$ | 248.66600 | | −0.52543486 | −0.84532086 |
| $a$ | 2.9586160 | $\Omega$ | 233.39890 | | +0.81843766 | −0.47109039 |
| $e$ | 0.0841838 | $i$ | 6.91820 | | +0.23254676 | −0.25200494 |
| $P$ | 5.09 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 1.1+ | 0.5+ | 2002 12 10 | 704 | 0.2+ | 0.3− | 2004 04 12 | 703 | 0.0 | 0.8+ | | |
| 2001 08 25 | 704 | 1.0+ | 1.1+ | 2002 12 10 | 704 | 0.6+ | 0.3+ | 2004 04 12 | 703 | 0.5− | 1.3− | | |
| 2001 08 25 | 704 | 0.8+ | 0.6+ | 2002 12 11 | 704 | 0.4− | 0.2+ | 2006 08 17 | 644 | 1.0− | 0.7+ | | |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.2− | 0.5+ | | |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2002 12 11 | 704 | 1.6− | 0.8+ | 2006 08 17 | 644 | 0.6− | 0.1+ | | |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2002 12 31 | 699 | 0.1+ | 0.0 | 2006 08 27 | 699 | (2.4− | 0.8+) | | |
| 2001 09 20 | 645 | 0.1+ | 0.1− | 2002 12 31 | 699 | 0.2− | 0.3+ | 2006 08 27 | 699 | 0.5+ | 0.6− | | |
| 2002 11 06 | 704 | 0.3+ | 0.6+ | 2002 12 31 | 699 | 0.3− | 0.4− | 2006 08 27 | 699 | 0.7− | 0.5+ | | |
| 2002 11 06 | 704 | 0.5+ | 1.0+ | 2002 12 31 | 699 | 1.0− | 1.5+ | 2006 08 27 | 699 | 0.7+ | 1.2− | | |
| 2002 11 06 | 704 | 0.4+ | 0.6+ | 2004 02 19 | 704 | 0.8+ | 1.2+ | 2006 08 29 | 703 | 1.2+ | 0.4− | | |
| 2002 11 06 | 704 | 0.1+ | 0.7+ | 2004 02 19 | 704 | 1.2+ | 1.2+ | 2006 08 29 | 703 | 0.9− | 0.3+ | | |
| 2002 11 07 | 695 | 0.3+ | 0.0 | 2004 02 19 | 704 | 1.1+ | 1.4+ | 2006 08 29 | 703 | 0.4+ | 0.8+ | | |
| 2002 11 07 | 695 | 0.1+ | 0.2+ | 2004 02 20 | 608 | 0.1+ | 0.2− | 2006 08 29 | 703 | 1.6− | 0.5+ | | |
| 2002 11 13 | 644 | 0.0 | 0.1− | 2004 02 20 | 608 | 0.4+ | 0.8− | 2006 09 17 | 691 | 0.1+ | 0.0 | | |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2004 02 20 | 608 | 0.1+ | 0.7+ | 2006 09 17 | 691 | 0.4− | 0.1− | | |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.8+ | 2006 09 17 | 691 | 0.3− | 0.1+ | | |
| 2002 12 03 | 608 | 0.6− | 1.5− | 2004 03 16 | 704 | 0.1− | 1.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2002 12 03 | 608 | 0.1− | 1.2− | 2004 03 16 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.3+ | | |
| 2002 12 03 | 608 | 0.3− | 1.0− | 2004 03 16 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2004 03 16 | 704 | 0.3+ | 1.2+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.8+ | 1.3− | 2004 03 29 | 703 | 0.4− | 0.8+ | 2006 09 27 | 691 | 0.3+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.8− | 2004 03 29 | 703 | 1.7− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.8− | 2004 03 29 | 703 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.3− | 0.1+ | | |
| 2002 12 10 | 704 | 0.0 | 0.5+ | 2004 03 29 | 703 | 0.3+ | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.4+ | | |
| 2002 12 10 | 704 | 0.5+ | 1.6+ | 2004 04 12 | 703 | 0.8+ | 0.1+ | 2006 09 30 | 691 | 0.4+ | 0.7+ | | |
| 2002 12 10 | 704 | 0.5− | 0.6+ | 2004 04 12 | 703 | 0.5− | 1.1− | | | | | | |

**(143046)∗ 2002 VR$_{131}$ = 2005 LS$_{28}$**

Discovered 2002 Nov. 5 at Nyukasa.

Id. A. Doppler (*MPO* 85759)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.07978 | | (2000.0) | | | |
| $n$ | 0.23440096 | $\omega$ | 100.71587 | | +0.83794411 | +0.54283892 |
| $a$ | 2.6051324 | $\Omega$ | 226.43486 | | −0.52618495 | +0.77617312 |
| $e$ | 0.1201633 | $i$ | 4.46046 | | −0.14484151 | +0.32075099 |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 408 | (1.6− | 0.7+) | 2005 06 10 | 691 | 0.0 | 0.5+ | 2006 09 27 | 683 | (1.7− | 0.8−) | | |
| 2002 11 05 | 408 | 1.4− | 0.4+ | 2005 06 13 | G96 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.2+ | 0.3+ | | |
| 2002 11 06 | 408 | 0.3+ | 0.7+ | 2005 06 13 | G96 | 0.3− | 1.2+ | 2006 09 27 | 683 | (1.9− | 1.2−) | | |
| 2002 11 06 | 408 | 0.2− | 0.7+ | 2005 06 13 | G96 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2002 11 10 | 408 | 1.0− | 0.5+ | 2005 06 13 | G96 | 0.0 | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2002 11 10 | 408 | 0.6− | 0.6+ | 2005 06 14 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2002 11 14 | 291 | 0.3− | 0.4+ | 2005 06 14 | 691 | 0.5+ | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.0 | | |
| 2002 11 14 | 291 | 0.3− | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.0 | | |
| 2002 11 14 | 291 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.2− | | |
| 2002 12 11 | 291 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.2+ | | |
| 2002 12 11 | 291 | 1.1+ | 0.2− | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.5− | | |
| 2002 12 11 | 291 | 0.6+ | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.2− | | |
| 2004 02 17 | 691 | 0.1+ | 0.9+ | 2006 09 18 | 703 | (0.1+ | 1.5−) | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 1.4+ | 1.4− | 2006 10 19 | 644 | (0.1− | 1.6+) | | |
| 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2005 04 11 | G96 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.8+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2005 04 11 | G96 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.9+ | | |
| 2005 04 11 | G96 | 1.0− | 0.0 | 2006 09 19 | 703 | (1.5− | 0.0 ) | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.7− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 09 22 | 224 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 09 22 | 224 | 0.2+ | 1.4+ | 2006 11 15 | G96 | 0.1− | 0.6− | | |
| 2005 05 19 | 644 | 0.4− | 0.4+ | 2006 09 22 | 224 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− | | |
| 2005 06 10 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 683 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.1+ | | |
| 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.0 | | |

**(143047)∗ 2002 VW$_{131}$ = 1997 WP$_{26}$ = 2004 DR$_{72}$**

Discovered 2002 Nov. 5 at Nyukasa.

Id. A. Doppler (*MPO* 69417)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.82074 | | (2000.0) | | | |
| $n$ | 0.20316932 | $\omega$ | 197.20505 | | +0.39302345 | −0.91939049 |
| $a$ | 2.8656994 | $\Omega$ | 229.65526 | | +0.84609064 | +0.36836367 |
| $e$ | 0.0519950 | $i$ | 1.19746 | | +0.36008775 | +0.13794684 |
| $P$ | 4.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 23 | 691 | 0.3+ | 0.1+ | 2002 11 06 | 408 | (1.2+ | 2.3+) | 2004 03 18 | 704 | 0.4+ | 0.3− | | |
| 1992 10 23 | 691 | 0.5+ | 0.4+ | 2002 11 06 | 408 | (0.9+ | 2.0+) | 2005 06 13 | G96 | 0.2+ | 0.0 | | |
| 1992 10 23 | 691 | 0.7− | 0.1− | 2002 11 10 | 408 | 1.1+ | 0.4− | 2005 06 13 | G96 | 0.5+ | 0.1+ | | |
| 1997 11 28 | 691 | 0.7+ | 0.4− | 2002 11 10 | 408 | 0.9+ | 1.1− | 2005 06 13 | G96 | 0.2+ | 0.0 | | |
| 1997 11 28 | 691 | 0.4+ | 0.1− | 2002 12 05 | 704 | 1.6− | 0.8+ | 2005 06 13 | G96 | 0.0 | 0.0 | | |
| 1997 11 28 | 691 | 0.6+ | 0.0 | 2002 12 05 | 704 | 1.2− | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.2+ | | |
| 1997 12 05 | 691 | 0.3− | 0.4− | 2002 12 05 | 704 | 0.2− | 0.8− | 2006 08 19 | 691 | 0.1+ | 0.0 | | |
| 1997 12 05 | 691 | (0.6− | 2.1−) | 2004 02 16 | 691 | 0.3− | 0.5+ | 2006 08 19 | 691 | 0.3− | 0.2+ | | |
| 1997 12 05 | 691 | 0.6− | 0.4− | 2004 02 16 | 691 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 1.1− | 0.0 | | |
| 1999 02 12 | 691 | 0.3− | 0.3− | 2004 02 16 | 691 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.1− | | |
| 1999 02 12 | 691 | 0.5− | 0.4− | 2004 02 26 | 704 | 0.4+ | 1.3+ | 2006 08 28 | 703 | 0.3+ | 0.6+ | | |
| 1999 02 12 | 691 | 0.4− | 0.3− | 2004 02 26 | 704 | 0.4+ | 0.8+ | 2006 08 28 | 703 | 0.3+ | 0.5+ | | |
| 2000 06 05 | 691 | 0.1+ | 0.9− | 2004 02 26 | 704 | 0.9+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.1− | | |
| 2000 06 05 | 691 | 0.2− | 0.6− | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.5− | | |
| 2000 06 05 | 691 | 0.6− | 0.4− | 2004 03 18 | 704 | 1.0+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.2− | | |
| 2002 11 05 | 408 | (1.5+ | 2.5+) | 2004 03 18 | 704 | 0.3− | 1.4+ | | | | | | |
| 2002 11 05 | 408 | (1.7+ | 2.7+) | 2004 03 18 | 704 | 0.6+ | 0.5− | | | | | | |

**(143048)∗ 2002 VR$_{132}$ = 2004 GR$_{10}$**

Discovered 2002 Nov. 2 at La Palma.

Id. A. Doppler (*MPO* 69418)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.94218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24466939 | $\omega$ | 226.35962 | | +0.26458406 | +0.96140722 | |
| $a$ | 2.5317236 | $\Omega$ | 59.12550 | | −0.85755595 | +0.27034378 | |
| $e$ | 0.1200858 | $i$ | 5.04265 | | −0.44112705 | +0.05109209 | |
| $P$ | 4.03 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 02 | 950 | 0.1+ | 0.2+ | 2004 04 14 | 291 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 11 02 | 950 | 0.1+ | 0.2+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 11 02 | 950 | 0.2+ | 0.0 | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.5+ | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.8+ | 2005 01 24 | 809 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.4+ | 0.3− |
| 2002 11 06 | 704 | (0.6− | 2.0+) | 2005 01 24 | 809 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2002 11 06 | 704 | 0.1+ | 1.4+ | 2005 01 24 | 809 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.4− |
| 2002 12 10 | 644 | 0.5− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 11 09 | 644 | 0.4+ | 0.2− |
| 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 12 10 | 644 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.6− | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2002 12 10 | 704 | 0.6− | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 10 | 644 | 0.4+ | 0.3− |
| 2002 12 10 | 704 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | (0.3− | 2.0+) | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.6− |
| 2002 12 11 | 291 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.7− |
| 2002 12 11 | 291 | 0.5− | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 11 11 | 703 | 1.0+ | 0.3− |
| 2002 12 11 | 291 | 0.5+ | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.4− | 2006 11 11 | 703 | 1.3− | 0.5+ |
| 2004 02 15 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2004 02 15 | 704 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2004 02 15 | 704 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2004 02 15 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2004 02 15 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1− | 1.4+ |
| 2004 03 17 | 645 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.8− | 0.7+ |
| 2004 03 17 | 645 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.8− | 0.3+ |
| 2004 04 13 | 291 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2004 04 13 | 291 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.9− | 1.1− |
| 2004 04 13 | 291 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.6+ | 0.8− |
| 2004 04 14 | 291 | 0.6+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.0 | 0.1+ |
| 2004 04 14 | 291 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 1.5+ | 0.4− |

**(143049)∗ 2002 VY$_{134}$ = 2000 AP$_{211}$**

Discovered 2002 Nov. 7 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47231)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.65861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24118133 | $\omega$ | 3.67958 | | +0.71383167 | +0.67974531 | |
| $a$ | 2.5560750 | $\Omega$ | 311.96962 | | −0.64817527 | +0.55017608 | |
| $e$ | 0.2123781 | $i$ | 13.09843 | | −0.26516630 | +0.48502844 | |
| $P$ | 4.09 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 0.5+ | 0.4− | 2002 11 07 | 699 | 1.1− | 0.5+ | 2006 09 17 | 703 | 0.3− | 0.2− |
| 1998 11 14 | 704 | 1.2− | 0.4+ | 2002 11 07 | 699 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 1998 11 14 | 704 | 1.3− | 0.3− | 2002 11 07 | 699 | 0.2+ | 1.3+ | 2006 09 17 | 703 | 0.2+ | 0.5− |
| 1998 11 14 | 704 | (5.7− | 0.6+) | 2002 11 12 | 699 | 0.9− | 0.2− | 2006 09 17 | 703 | 0.2− | 0.3− |
| 2000 01 05 | 691 | 0.1− | 0.2− | 2002 11 12 | 699 | 0.1+ | 0.1− | 2006 09 24 | 699 | 0.3+ | 0.4− |
| 2000 01 05 | 691 | 0.2− | 0.1+ | 2002 11 12 | 699 | 0.4+ | 1.1+ | 2006 09 24 | 699 | 0.2− | 0.1+ |
| 2000 01 05 | 691 | 0.2− | 0.1− | 2002 11 12 | 699 | 0.4+ | 0.2− | 2006 09 24 | 699 | 0.1− | 0.0 |
| 2000 01 11 | 691 | 0.1− | 0.3− | 2004 01 19 | 691 | 0.3+ | 0.1+ | 2006 09 24 | 699 | 0.3+ | 0.1+ |
| 2000 01 11 | 691 | 0.3− | 0.5− | 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.5+ |
| 2000 01 11 | 691 | 0.2− | 0.3− | 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.4− |
| 2002 09 16 | 699 | 0.6+ | 0.0 | 2004 01 22 | 704 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.4+ |
| 2002 09 16 | 699 | 0.9+ | 0.2− | 2004 01 22 | 704 | 0.2− | 0.8+ | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2002 09 16 | 699 | 0.2+ | 0.2− | 2004 01 22 | 704 | 0.5− | 0.3+ | 2006 10 20 | 704 | 0.0 | 0.0 |
| 2002 09 16 | 699 | 0.0 | 0.8+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 10 20 | 704 | 0.3− | 0.5− |
| 2002 10 06 | 704 | 0.0 | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 20 | 704 | 0.1− | 0.4− |
| 2002 10 06 | 704 | 0.1+ | 0.3+ | 2004 02 12 | 291 | 0.4− | 0.1− | 2006 10 20 | 704 | 0.1+ | 0.6− |
| 2002 10 06 | 704 | 0.3+ | 0.2+ | 2004 02 12 | 691 | 0.5+ | 0.1− | 2006 10 20 | 704 | 0.2+ | 0.7+ |
| 2002 10 06 | 704 | 0.0 | 0.6+ | 2004 02 12 | 291 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.4+ | 0.5+ | 2004 02 12 | 291 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2002 10 15 | 704 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 10 15 | 704 | (2.0+ | 0.0 ) | 2004 02 26 | 704 | 0.2+ | 1.4+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 10 15 | 704 | 0.5− | 0.4+ | 2004 02 26 | 704 | 1.3+ | 1.1+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 10 15 | 704 | 0.1+ | 0.2− | 2005 05 02 | E12 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2002 10 20 | 644 | 0.3+ | 0.1+ | 2005 05 02 | E12 | 0.8+ | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 10 20 | 644 | 0.3− | 0.3+ | 2005 05 02 | E12 | 0.4− | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.3+ |
| 2002 10 20 | 644 | 0.3− | 0.5+ | 2005 05 02 | E12 | 0.1+ | 0.8+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.2− | 0.5+ | 2005 05 11 | 644 | 0.5+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2002 10 31 | 704 | 0.2+ | 0.4+ | 2005 05 11 | 644 | 0.6+ | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.5+ | 2005 05 11 | 644 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.2− |
| 2002 10 31 | 704 | 0.9+ | 0.4+ | 2005 05 12 | 644 | 0.6+ | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.3+ |
| 2002 10 31 | 704 | 0.5+ | 0.7+ | 2005 05 12 | 644 | 0.8+ | 0.7+ | | | | |
| 2002 11 07 | 699 | 0.8− | 1.1− | 2005 05 12 | 644 | (1.7+ | 0.7+) | | | | |

**(143050)∗ 2002 VM$_{135}$ = 2005 GH$_{76}$**

Discovered 2002 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75807)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.28035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22411982 | $\omega$ | 227.83346 | | +0.34565857 | +0.91066196 | |
| $a$ | 2.6842061 | $\Omega$ | 63.70818 | | −0.76922145 | +0.41311460 | |
| $e$ | 0.1746714 | $i$ | 14.62077 | | −0.53741838 | −0.00557946 | |
| $P$ | 4.40 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.9+ | 1.0+ | 2004 01 18 | 703 | 0.5− | 0.1+ | 2006 09 24 | 699 | 0.2− | 0.5+ |
| 2002 11 07 | 704 | 0.2− | 0.7− | 2004 01 18 | 703 | 0.3+ | 0.6+ | 2006 09 24 | 699 | 0.9− | 1.1+ |
| 2002 11 07 | 704 | 0.8+ | 0.1+ | 2005 04 05 | 703 | 1.2− | 0.1− | 2006 09 24 | 699 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.5+ | 2005 04 05 | 703 | 0.3− | 1.0+ | 2006 09 24 | 699 | (0.4− | 1.6+) |
| 2002 11 13 | 704 | 0.0 | 0.5− | 2005 04 05 | 703 | 0.2+ | 1.2+ | 2006 09 25 | 703 | 1.3+ | 1.3+ |
| 2002 11 13 | 704 | 0.0 | 0.5− | 2005 04 05 | 703 | 0.4− | 1.2− | 2006 09 25 | 703 | 0.0 | 0.0 |
| 2002 11 13 | 704 | 1.2− | 0.5− | 2005 04 09 | 704 | 0.8+ | 1.0+ | 2006 09 25 | 703 | 0.1+ | 1.1+ |
| 2002 11 13 | 704 | 1.0− | 0.5− | 2005 04 09 | 704 | 0.8+ | 0.0 | 2006 09 25 | 703 | 0.4+ | 0.8+ |
| 2002 11 13 | 704 | 0.3+ | 0.1+ | 2005 04 09 | 704 | 0.7+ | 0.5− | 2006 10 04 | 703 | 1.2− | 0.5− |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2005 04 09 | 704 | 0.7− | 0.7+ | 2006 10 04 | 703 | (0.1− | 1.7+) |
| 2002 12 05 | 704 | 0.7− | 0.2− | 2005 04 09 | 704 | 0.8+ | 1.5+ | 2006 10 04 | 703 | 0.1− | 0.9− |
| 2002 12 05 | 704 | 0.8+ | 0.8− | 2005 04 18 | 703 | 1.1− | 0.4+ | 2006 10 04 | 703 | 0.5+ | 1.3− |
| 2002 12 10 | 644 | 0.0 | 0.6+ | 2005 04 18 | 703 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 12 10 | 644 | 0.0 | 0.5+ | 2005 04 18 | 703 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 2002 12 10 | 644 | 0.2− | 0.4+ | 2005 04 18 | 703 | 0.3− | 0.6+ | 2006 10 09 | 644 | 0.3+ | 0.4+ |
| 2002 12 10 | 704 | 0.0 | 0.0 | 2005 05 07 | 703 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.4− | 0.1+ |
| 2002 12 10 | 704 | 0.3+ | 0.5− | 2005 05 07 | 703 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 12 10 | 704 | 1.0+ | 0.4+ | 2005 05 07 | 703 | 0.8+ | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.1− |
| 2003 01 02 | 291 | 0.2+ | 0.1+ | 2005 05 07 | 703 | 0.7+ | 0.0 | 2006 10 12 | 644 | 0.9− | 0.1+ |
| 2003 01 02 | 291 | 0.4− | 0.0 | 2005 06 03 | 703 | 0.7+ | 0.3− | 2006 10 12 | 644 | 0.9− | 0.7+ |
| 2003 01 02 | 291 | 0.1− | 0.2+ | 2005 06 03 | 703 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.8− | 0.0 |
| 2003 12 29 | 703 | (0.9+ | 6.9−) | 2005 06 03 | 703 | 0.4− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2003 12 29 | 703 | 0.8+ | 0.8− | 2005 06 03 | 703 | 0.8− | 0.4− | 2006 10 21 | 703 | 1.0− | 0.3+ |
| 2003 12 29 | 703 | 1.3+ | 1.5+ | 2005 06 09 | 704 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 2003 12 29 | 703 | 0.5+ | 0.0 | 2005 06 09 | 704 | (2.4+ | 0.9−) | 2006 10 21 | 703 | 0.1− | 0.9+ |
| 2004 01 18 | 703 | 0.5− | 1.5+ | 2005 06 09 | 704 | 1.3+ | 0.0 | | | | |
| 2004 01 18 | 703 | (1.6− | 2.8+) | 2005 06 09 | 704 | 1.1+ | 0.3+ | | | | |

**(143051)∗ 2002 WO$_1$ = 2004 EU$_{68}$**

Discovered 2002 Nov. 23 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61622)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.74565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21720310 | $\omega$ | 335.89414 | | −0.93288247 | −0.36016164 | |
| $a$ | 2.7408927 | $\Omega$ | 183.00317 | | +0.34093745 | −0.87965773 | |
| $e$ | 0.0537184 | $i$ | 4.07832 | | +0.11615486 | −0.31062174 | |
| $P$ | 4.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.1+ | 0.4+ | 2004 03 15 | 704 | 1.2− | 1.0+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2001 05 23 | 807 | 0.0 | 0.5+ | 2004 03 15 | 704 | 0.4− | 1.1+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2001 07 26 | 691 | 0.2− | 0.6+ | 2004 03 15 | 704 | 0.0 | 1.0+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2001 07 26 | 691 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 703 | (1.2− | 1.6+) |
| 2001 07 26 | 691 | 0.1− | 0.4+ | 2004 03 15 | 704 | 0.1− | 0.8+ | 2006 10 16 | 703 | (0.8+ | 2.5+) |
| 2001 08 28 | 644 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.0 | 1.5+ |
| 2001 08 28 | 644 | 0.5− | 0.6+ | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.3+ | 1.4+ |
| 2001 08 28 | 644 | 0.4− | 1.1+ | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.2− | 0.0 |
| 2002 11 23 | 644 | 0.1+ | 0.9+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.3+ |
| 2002 11 23 | 644 | 0.3− | 0.8+ | 2004 03 18 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 11 23 | 644 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.8− |
| 2002 11 24 | 644 | 0.3− | 0.4− | 2004 03 27 | 704 | 0.4− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2004 03 27 | 704 | 0.7− | 0.3− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.7− | 0.1+ |
| 2002 12 03 | 644 | 0.2− | 0.7+ | 2004 03 27 | 704 | 0.9+ | 0.4+ | 2006 10 21 | G96 | 0.5− | 0.1+ |
| 2002 12 03 | 644 | 0.4+ | 0.5+ | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2002 12 03 | 644 | 0.1− | 0.4+ | 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2004 02 25 | 683 | 1.4− | 1.4+ | 2004 03 28 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2004 02 25 | 683 | (1.9+ | 0.0 ) | 2004 03 31 | 291 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2004 02 25 | 683 | 1.1+ | 0.3+ | 2004 03 31 | 291 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2004 02 25 | 097 | 0.1+ | 0.3+ | 2004 03 31 | 291 | 0.7+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2004 02 25 | 097 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2004 02 26 | 683 | (0.5+ | 2.5−) | 2006 09 23 | 691 | 0.5+ | 0.7+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 683 | (2.7− | 0.3+) | 2006 09 23 | 691 | 0.0 | 0.5+ | | | | |
| 2004 02 26 | 683 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3− | | | | |

**(143052)∗ 2002 WY$_2$ = 2001 MQ$_{22}$**

Discovered 2002 Nov. 24 by J. W. Young at Table Mountain Observatory, Wrightwood.

Id. A. Doppler (*MPO* 41283)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.26082 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27445517 | $\omega$ | 166.63809 | | −0.25875235 | +0.94755583 | |
| $a$ | 2.3450662 | $\Omega$ | 88.12228 | | −0.90259478 | −0.16801348 | |
| $e$ | 0.0921454 | $i$ | 10.81730 | | −0.34404924 | −0.27186286 | |
| $P$ | 3.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 03 | 691 | 0.1− | 0.9− | 2004 03 19 | 644 | 0.5+ | 0.3+ | 2004 04 25 | 699 | 0.1+ | 0.3− |
| 1997 06 03 | 691 | 0.2− | 0.5− | 2004 03 19 | 644 | 0.3+ | 0.3+ | 2004 04 25 | 699 | 0.3− | 0.0 |
| 1997 06 03 | 691 | 0.1− | 0.8− | 2004 03 19 | 644 | 0.4+ | 0.3+ | 2005 09 08 | 673 | 0.1+ | 1.3+ |
| 2001 06 25 | 644 | 0.1− | 0.7− | 2004 03 19 | 644 | 0.5+ | 0.3+ | 2005 09 08 | 673 | 0.4+ | 0.9+ |
| 2001 06 25 | 644 | 0.3− | 0.5− | 2004 03 19 | 644 | 0.5+ | 0.5+ | 2005 09 08 | 673 | 0.2+ | 1.2+ |
| 2001 06 25 | 644 | 0.0 | 0.8− | 2004 03 19 | 644 | 0.6+ | 0.4+ | 2005 09 08 | 673 | 0.7+ | 1.1+ |
| 2001 07 01 | 644 | 0.9− | 0.7+ | 2004 04 07 | 673 | 0.4− | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2001 07 01 | 644 | 0.5− | 0.7+ | 2004 04 07 | 673 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2001 07 01 | 644 | 0.7− | 0.7+ | 2004 04 07 | 673 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2001 07 18 | 644 | 0.3− | 0.1− | 2004 04 15 | 704 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.6− |
| 2001 07 18 | 644 | 0.4− | 0.2+ | 2004 04 15 | 704 | 0.5+ | 0.4+ | 2006 10 29 | G96 | 0.1− | 0.4− |
| 2001 07 18 | 644 | 0.2− | 0.1− | 2004 04 15 | 704 | 0.2+ | 0.5+ | 2006 10 29 | G96 | 0.1− | 0.5− |
| 2002 11 24 | 673 | 0.4− | 0.1+ | 2004 04 15 | 704 | 1.2+ | 1.2+ | 2006 10 29 | G96 | 0.7+ | 0.7− |
| 2002 11 24 | 673 | 1.1+ | 0.2+ | 2004 04 15 | 704 | 0.5− | 1.0+ | 2006 10 29 | G96 | 0.6+ | 0.9− |
| 2002 11 24 | 673 | 1.3− | 0.5+ | 2004 04 24 | 703 | 1.0− | 0.4+ | 2006 11 15 | G96 | 1.3− | 0.6− |
| 2002 11 25 | 673 | 0.2− | 0.2+ | 2004 04 24 | 703 | (1.7+ | 1.2+) | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2002 11 25 | 673 | 0.4− | 0.2+ | 2004 04 24 | 703 | 0.4− | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.8− |
| 2002 11 25 | 673 | 0.2+ | 0.3+ | 2004 04 24 | 704 | 0.3+ | 0.7+ | 2006 11 15 | G96 | 0.2+ | 0.9− |
| 2002 12 01 | 704 | (3.2+ | 2.4+) | 2004 04 24 | 703 | 0.5− | 1.4+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2002 12 01 | 704 | (2.7+ | 1.3+) | 2004 04 24 | 704 | 0.1+ | 0.6− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2002 12 01 | 704 | (2.9+ | 2.3+) | 2004 04 24 | 704 | 0.4+ | 0.6+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2002 12 10 | 644 | 0.6− | 0.2+ | 2004 04 24 | 704 | 0.4+ | 1.3+ | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2002 12 10 | 644 | 0.7− | 0.1+ | 2004 04 25 | 699 | 0.1− | 0.4+ | | | | |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2004 04 25 | 699 | 0.3+ | 0.2+ | | | | |

**(143053)∗ 2002 WG$_3$ = 2005 JV$_{148}$**

Discovered 2002 Nov. 24 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 75807)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.86219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20195259 | $\omega$ | 291.27700 | | +0.59431611 | +0.80257641 | |
| $a$ | 2.8771981 | $\Omega$ | 15.52064 | | −0.64780073 | +0.51573072 | |
| $e$ | 0.1434708 | $i$ | 11.11176 | | −0.47659477 | +0.29982149 | |
| $P$ | 4.88 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.7− | 0.4+ | 2002 12 05 | 704 | 0.0 | 0.4− | 2005 05 03 | 691 | 0.4+ | 0.5+ |
| 2000 04 05 | 704 | 0.0 | 0.5+ | 2002 12 05 | 704 | 0.3− | 0.6+ | 2005 05 03 | 691 | 0.4+ | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.9+ | 2002 12 05 | 704 | 0.7− | 0.2+ | 2005 05 12 | 691 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 0.4− | 0.2− | 2004 01 18 | 703 | 0.4− | 0.9− | 2005 05 12 | 691 | 0.0 | 0.3+ |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2004 01 18 | 703 | 0.8+ | 1.1− | 2005 05 12 | 691 | 0.1− | 0.3+ |
| 2000 05 05 | 645 | 0.0 | 0.2− | 2004 01 18 | 703 | 0.1− | 0.7+ | 2005 05 23 | 644 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.3− | 0.5+ | 2004 01 18 | 703 | 0.0 | 1.1+ | 2005 05 23 | 644 | 0.3− | 0.5+ |
| 2002 11 14 | 644 | 0.1− | 0.4+ | 2005 03 13 | 703 | 1.3+ | 0.7+ | 2005 05 23 | 644 | 0.5− | 0.4+ |
| 2002 11 14 | 704 | 0.6− | 0.4− | 2005 03 13 | 703 | 0.3+ | 0.1− | 2006 08 13 | E12 | 0.5− | 0.7+ |
| 2002 11 14 | 704 | 1.0− | 0.2+ | 2005 03 13 | 703 | 0.0 | 1.0+ | 2006 08 13 | E12 | 0.3− | 0.8+ |
| 2002 11 14 | 644 | 0.2− | 0.2+ | 2005 03 13 | 703 | 0.6− | 0.8+ | 2006 08 13 | E12 | 0.6− | 0.7+ |
| 2002 11 14 | 644 | 0.0 | 0.4+ | 2005 04 04 | 704 | 1.0+ | 1.6+ | 2006 08 13 | E12 | 0.1− | 0.8+ |
| 2002 11 24 | 644 | 0.0 | 1.4+ | 2005 04 04 | 704 | 1.1+ | 0.6+ | 2006 08 26 | E12 | 0.3+ | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 1.5+ | 2005 04 04 | 704 | 0.4+ | 0.3+ | 2006 08 26 | E12 | 0.1+ | 0.5+ |
| 2002 11 24 | 644 | 0.1− | 1.5+ | 2005 04 04 | 704 | 0.9+ | 0.6+ | 2006 08 26 | E12 | 0.1− | 0.4+ |
| 2002 11 25 | 644 | 0.0 | 0.8+ | 2005 04 12 | 704 | 0.8+ | 0.1+ | 2006 08 26 | E12 | 0.1+ | 0.4+ |
| 2002 11 25 | 644 | 0.3+ | 0.8+ | 2005 04 12 | 704 | 0.3− | 0.6+ | 2006 09 27 | E12 | 0.9− | 0.3+ |
| 2002 11 25 | 644 | 0.1+ | 0.6+ | 2005 04 12 | 704 | 0.1+ | 0.4− | 2006 09 27 | E12 | 0.3+ | 0.5+ |
| 2002 12 05 | 704 | 0.9− | 0.7+ | 2005 04 12 | 704 | 0.3+ | 0.1− | 2006 09 27 | E12 | 0.2+ | 0.7+ |
| 2002 12 05 | 704 | 1.3− | 0.8+ | 2005 05 03 | 691 | 0.2+ | 0.3+ | 2006 09 27 | E12 | 0.5− | 0.8+ |

**(143054)∗ 2002 WH$_5$ = 2004 DF$_{51}$**

Discovered 2002 Nov. 24 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61624)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.70586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20619802 | $\omega$ | 41.51609 | | +0.46513746 | −0.88515131 | |
| $a$ | 2.8375687 | $\Omega$ | 20.77412 | | +0.80267728 | +0.41579787 | |
| $e$ | 0.0690237 | $i$ | 2.00702 | | +0.37330460 | +0.20885230 | |
| $P$ | 4.78 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 291 | 0.0 | 0.3+ | 2002 12 11 | 704 | 0.9+ | 0.2+ | 2004 04 12 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 291 | 0.2− | 0.4+ | 2002 12 11 | 704 | 0.9− | 0.9− | 2004 04 12 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 291 | 0.2− | 0.6+ | 2002 12 11 | 704 | 0.1− | 0.1+ | 2004 04 12 | 691 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.3− | 0.8+ | 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 08 21 | 691 | 0.9− | 0.9+ |
| 2002 11 06 | 704 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 1.5+ | 1.1+ | 2006 08 21 | 691 | 0.0 | 0.4+ |
| 2002 11 06 | 704 | 0.9+ | 0.2+ | 2004 02 23 | 704 | 0.8+ | 1.0− | 2006 08 21 | 691 | 0.0 | 0.3+ |
| 2002 11 06 | 704 | 0.8+ | 0.8+ | 2004 02 26 | 704 | 0.3− | 1.1+ | 2006 08 23 | 807 | 0.0 | 0.6+ |
| 2002 11 24 | 644 | 0.6+ | 0.4+ | 2004 02 26 | 704 | 0.7+ | 1.3+ | 2006 08 23 | 807 | 0.1− | 0.3+ |
| 2002 11 24 | 644 | 0.5− | 0.6+ | 2004 02 26 | 704 | 1.2+ | 0.3+ | 2006 08 23 | 807 | 0.1− | 0.5+ |
| 2002 11 24 | 644 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.7− | 0.8+ | 2006 08 23 | 807 | 0.1− | 0.3+ |
| 2002 11 27 | 599 | 0.7− | 1.1− | 2004 03 14 | 691 | 0.1+ | 0.8+ | 2006 08 28 | 703 | (0.8+ | 1.6+) |
| 2002 11 28 | 599 | 0.3− | 0.2+ | 2004 03 14 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 691 | 0.2− | 0.5+ |
| 2002 11 28 | 599 | 0.2+ | 0.0 | 2004 03 14 | 691 | 0.4+ | 0.5+ | 2006 08 28 | 703 | 0.4+ | 1.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 704 | 0.5+ | 0.8+ | 2006 08 28 | 703 | 0.5− | 0.5+ |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2004 03 15 | 704 | 0.7+ | 0.6− | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2004 03 15 | 704 | (2.0+ | 0.2−) | 2006 08 28 | 703 | 1.2+ | 1.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.4+ | 0.5+ | 2004 03 15 | 704 | (2.0+ | 0.9+) | 2006 08 28 | 691 | 0.5− | 0.3+ |
| 2002 12 05 | 704 | 0.4+ | 0.5− | 2004 03 19 | 704 | 0.6− | 1.0+ | 2006 09 14 | 703 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.9− | 0.2+ | 2004 03 19 | 704 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.7+ |
| 2002 12 06 | 704 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.8+ | 0.9+ | 2006 09 14 | 703 | 0.1+ | 0.9− |
| 2002 12 06 | 704 | 0.5+ | 0.6− | 2004 03 19 | 704 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.9− |
| 2002 12 08 | 333 | 0.9− | 0.4+ | 2004 03 19 | 704 | 0.8− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2002 12 08 | 333 | 0.6− | 0.5+ | 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2002 12 08 | 333 | 0.7− | 0.1+ | 2004 03 21 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.6+ | 0.1+ | 2004 03 21 | 691 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.2− |

**(143055)∗ 2002 WQ$_5$ = 2000 KS$_{23}$ = 2002 VQ$_{130}$**

Discovered 2002 Nov. 23 by NEAT at Palomar.

Id. M. E. Sansaturio (*MPO* 43236)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.29313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21998958 | $\omega$ | 282.66166 | | −0.95143991 | | −0.26138293 |
| $a$ | 2.7176987 | $\Omega$ | 242.38191 | | +0.30096385 | | −0.90081751 |
| $e$ | 0.1502520 | $i$ | 10.57471 | | −0.06467495 | | −0.34670848 |
| $P$ | 4.48 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 03 | 691 | 0.2+ | 0.2+ | 2002 11 27 | 699 | 0.2− | 0.6− | 2004 03 31 | 704 | 0.7+ | 0.2− |
| 1997 11 03 | 691 | 0.6+ | 0.4+ | 2002 11 27 | 699 | 0.2+ | 0.2+ | 2004 03 31 | 704 | 0.0 | 0.6+ |
| 1997 11 03 | 691 | 0.6− | 0.7+ | 2002 11 27 | 699 | 1.3− | 0.4+ | 2004 03 31 | 704 | 1.1+ | 1.1+ |
| 2000 05 28 | 704 | 0.4− | 0.5+ | 2002 11 27 | 699 | 0.5− | 0.5+ | 2004 04 17 | 704 | 0.5+ | 0.5+ |
| 2000 05 28 | 704 | 0.5− | 0.3− | 2002 11 28 | 699 | 0.6− | 0.2− | 2004 04 17 | 704 | 1.0+ | 0.5+ |
| 2000 05 28 | 704 | 0.2− | 0.1− | 2002 11 28 | 699 | 1.4− | 1.5+ | 2004 04 17 | 704 | 0.4+ | 0.7+ |
| 2000 05 28 | 704 | 0.3− | 0.3− | 2002 11 28 | 699 | (2.2− | 0.2+) | 2004 04 17 | 704 | 0.8+ | 0.8+ |
| 2000 05 28 | 704 | 0.0 | 0.5+ | 2002 11 28 | 699 | 0.9− | 0.0 | 2004 04 24 | 703 | 0.7− | 0.5− |
| 2000 05 29 | 704 | 0.6+ | 0.5+ | 2002 12 05 | 704 | 0.1− | 0.6+ | 2004 04 24 | 703 | 0.4− | 0.6− |
| 2000 05 29 | 704 | 1.3− | 0.0 | 2002 12 05 | 704 | 0.1− | 0.1+ | 2004 04 24 | 703 | 0.0 | 0.9+ |
| 2000 05 29 | 704 | 0.3+ | 0.2+ | 2002 12 05 | 704 | 1.2+ | 0.7+ | 2004 04 24 | 703 | 1.0− | 0.2− |
| 2000 05 29 | 704 | 0.2− | 0.8+ | 2002 12 05 | 704 | 0.9− | 0.4+ | 2004 05 14 | 644 | 0.4+ | 0.7+ |
| 2002 11 12 | 704 | 0.3+ | 1.3+ | 2002 12 05 | 704 | 0.5− | 0.5+ | 2004 05 14 | 644 | 0.3+ | 0.1+ |
| 2002 11 12 | 704 | 0.0 | 1.2+ | 2004 03 15 | 644 | 0.3+ | 0.9+ | 2004 05 14 | 644 | 0.4+ | 0.3+ |
| 2002 11 12 | 704 | 0.9− | 0.5+ | 2004 03 15 | 644 | 0.3+ | 0.7+ | 2005 06 11 | 691 | 0.1− | 0.3+ |
| 2002 11 12 | 704 | 0.5− | 0.4+ | 2004 03 15 | 644 | 0.4+ | 0.7+ | 2005 06 11 | 691 | 0.4− | 0.4+ |
| 2002 11 12 | 704 | 1.2+ | 0.6+ | 2004 03 17 | 704 | 0.7+ | 0.2+ | 2005 06 11 | 691 | 0.4+ | 1.0+ |
| 2002 11 12 | 704 | (0.9− | 2.1+) | 2004 03 17 | 704 | 0.8+ | 0.1+ | 2006 09 16 | 703 | (1.0− | 1.6+) |
| 2002 11 12 | 704 | (1.8− | 0.4+) | 2004 03 17 | 704 | 0.8+ | 0.1− | 2006 09 16 | 703 | 0.6− | 1.1+ |
| 2002 11 12 | 704 | 0.2+ | 1.5+ | 2004 03 17 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 0.7− | 1.3+ |
| 2002 11 14 | 704 | 0.9+ | 0.9− | 2004 03 17 | 704 | 0.1− | 0.6+ | 2006 09 16 | 703 | 0.8− | 1.3− |
| 2002 11 14 | 704 | (1.9+ | 0.3+) | 2004 03 26 | 699 | 0.6− | 1.0+ | 2006 10 19 | 703 | 1.0+ | 0.4+ |
| 2002 11 14 | 704 | (1.5+ | 0.1+) | 2004 03 26 | 699 | 0.9− | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.4+ | 0.2− | 2004 03 26 | 699 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.1+ |
| 2002 11 23 | 644 | 0.1+ | 0.2+ | 2004 03 26 | 699 | 1.1− | 0.7− | 2006 10 19 | 703 | 0.5+ | 0.1− |
| 2002 11 23 | 644 | 0.2+ | 0.1+ | 2004 03 31 | 704 | 0.2+ | 0.1− | | | | |
| 2002 11 23 | 644 | 0.0 | 0.2− | 2004 03 31 | 704 | 0.6+ | 0.3+ | | | | |

**(143056)∗ 2002 WB$_6$**

Discovered 2002 Nov. 24 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.49637 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24067810 | $\omega$ | 264.40215 | | +0.25478818 | | +0.96350285 |
| $a$ | 2.5596367 | $\Omega$ | 20.92408 | | −0.77095301 | | +0.25366749 |
| $e$ | 0.1856312 | $i$ | 13.29533 | | −0.58370750 | | +0.08552814 |
| $P$ | 4.10 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.6− | 0.1− | 2004 01 19 | 704 | 0.0 | 0.3+ | 2005 08 24 | E12 | 0.3− | 0.3+ |
| 2002 10 04 | 704 | 0.2− | 0.4+ | 2004 02 02 | 704 | 0.2+ | 0.2− | 2005 08 24 | E12 | 0.5+ | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2004 02 02 | 704 | (1.7+ | 0.2+) | 2006 09 22 | 699 | 0.6+ | 0.5+ |
| 2002 11 06 | 704 | 0.1− | 0.9+ | 2004 02 02 | 704 | 1.0+ | 0.2− | 2006 09 22 | 699 | 0.4− | 0.2− |
| 2002 11 06 | 704 | 0.0 | 0.9− | 2004 02 02 | 704 | 1.1+ | 0.2− | 2006 09 22 | 699 | 0.6+ | 1.2+ |
| 2002 11 06 | 699 | 0.7+ | 0.6+ | 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 09 22 | 699 | 0.7+ | 0.4− |
| 2002 11 06 | 704 | 0.4− | 0.3− | 2004 02 10 | 644 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2002 11 06 | 699 | 0.1− | 1.0+ | 2004 02 10 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2002 11 06 | 704 | 0.6− | 0.3− | 2005 04 11 | E12 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 11 06 | 699 | 0.8+ | 1.1+ | 2005 04 11 | E12 | 0.7+ | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.2− |
| 2002 11 06 | 704 | 0.3+ | 0.0 | 2005 04 11 | E12 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 11 06 | 699 | 0.3+ | 0.1+ | 2005 04 11 | E12 | 0.7− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 11 11 | 699 | 0.4− | 0.3+ | 2005 04 17 | E12 | 0.2+ | 1.0− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2002 11 11 | 699 | 0.0 | 0.5+ | 2005 04 17 | E12 | 1.2+ | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 699 | 0.8− | 0.6− | 2005 04 17 | E12 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.1− |
| 2002 11 11 | 699 | 1.1− | 0.9+ | 2005 04 17 | E12 | 0.6− | 0.3− | 2006 10 13 | 691 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.3+ | 0.4− | 2005 04 30 | E12 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.0 | 0.3− | 2005 04 30 | E12 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.3− | 2005 04 30 | E12 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2002 11 27 | 699 | 0.4− | 0.3− | 2005 04 30 | E12 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2002 11 27 | 699 | 0.5+ | 0.3+ | 2005 05 18 | E12 | 0.2+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2002 11 27 | 699 | 0.2− | 1.1− | 2005 05 18 | E12 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2002 11 27 | 699 | 0.7− | 0.2+ | 2005 05 18 | E12 | 0.1+ | 0.2+ | 2006 11 14 | 703 | (0.7− | 2.8+) |
| 2002 12 02 | 704 | 0.3+ | 0.7+ | 2005 05 18 | E12 | 0.2− | 0.5+ | 2006 11 14 | 703 | 0.4+ | 0.0 |
| 2002 12 02 | 704 | 0.2+ | 0.3+ | 2005 05 29 | E12 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.9+ | 0.1− |
| 2002 12 02 | 704 | 0.0 | 0.1+ | 2005 05 29 | E12 | 0.6+ | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.1+ |
| 2002 12 02 | 704 | 0.6+ | 1.1+ | 2005 05 29 | E12 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2002 12 11 | 644 | 0.0 | 0.2+ | 2005 05 29 | E12 | 0.2− | 0.2+ | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2002 12 11 | 644 | 0.0 | 0.2− | 2005 06 09 | E12 | 0.2+ | 0.0 | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2002 12 11 | 644 | 0.2− | 0.1+ | 2005 06 09 | E12 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.6− | 0.3− |
| 2004 01 18 | 703 | 0.7+ | 0.4+ | 2005 06 09 | E12 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 1.2− | 0.1+ |
| 2004 01 18 | 703 | 0.2− | 0.3+ | 2005 06 09 | E12 | 0.8+ | 0.2− | 2006 11 23 | 703 | 0.6+ | 0.3− |
| 2004 01 18 | 703 | (1.1+ | 1.7+) | 2005 07 27 | E12 | 0.4+ | 0.3+ | 2006 11 23 | 703 | 1.0− | 0.2− |
| 2004 01 18 | 703 | 0.9− | 1.3+ | 2005 07 27 | E12 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.8+ | 0.3− |
| 2004 01 19 | 704 | 0.2− | 0.7+ | 2005 07 27 | E12 | 0.6+ | 0.0 | 2006 11 23 | 703 | 0.2+ | 1.5+ |
| 2004 01 19 | 704 | 0.3+ | 0.7+ | 2005 07 27 | E12 | 0.3+ | 0.7+ | 2006 11 23 | 703 | 0.5+ | 1.0− |
| 2004 01 19 | 704 | 0.9− | 0.1− | 2005 08 24 | E12 | 0.3+ | 0.8+ | 2006 11 23 | 703 | 0.3+ | 0.4− |

**(143057)∗ 2002 WO$_8$ = 1999 CA$_{116}$**

Discovered 2002 Nov. 24 by NEAT at Palomar.

Id. A. Doppler (*MPO* 41287), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.88530 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21246862 | $\omega$ | 265.84862 | | −0.24913822 | | −0.96813954 |
| $a$ | 2.7814602 | $\Omega$ | 198.63671 | | +0.91692095 | | −0.22741568 |
| $e$ | 0.1289560 | $i$ | 4.52621 | | +0.31174688 | | −0.10482338 |
| $P$ | 4.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | (2.4+ | 0.5−) | 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.3− |
| 1999 02 12 | 704 | 1.5+ | 1.4− | 2002 12 11 | 704 | 0.9− | 0.9+ | 2006 08 29 | 703 | 0.1− | 0.8− |
| 1999 02 12 | 704 | 0.8+ | 0.1− | 2003 01 27 | 704 | 0.7− | 0.3+ | 2006 08 29 | 703 | 1.2+ | 0.6+ |
| 1999 02 12 | 704 | 1.1− | 0.2+ | 2003 01 27 | 704 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.1− | 1.0+ |
| 1999 02 16 | 704 | 0.7+ | 1.3+ | 2003 01 27 | 704 | 0.5− | 0.7+ | 2006 09 19 | 703 | 0.4+ | 0.8− |
| 1999 02 16 | 704 | 1.0− | 0.5+ | 2003 01 27 | 704 | 1.1− | 1.2+ | 2006 09 19 | 703 | 0.6− | 0.3− |
| 1999 02 16 | 704 | (1.6+ | 2.1+) | 2004 03 20 | 699 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 1999 02 16 | 704 | 1.0− | 0.4− | 2004 03 20 | 699 | (1.9− | 1.5+) | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2002 11 06 | 608 | 0.6+ | 0.6− | 2004 03 20 | 699 | 1.2− | 0.7− | 2006 09 20 | 691 | 0.1− | 0.5+ |
| 2002 11 06 | 608 | 0.1− | 0.7− | 2004 03 20 | 699 | 0.2− | 1.3+ | 2006 09 20 | 691 | 0.0 | 0.4+ |
| 2002 11 06 | 608 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 1.0+ | 0.5+ | 2006 09 20 | 691 | 0.0 | 0.4+ |
| 2002 11 12 | 704 | 0.1− | 0.5− | 2004 03 27 | 704 | 0.2− | 0.7+ | 2006 09 20 | 704 | 0.5− | 1.3+ |
| 2002 11 12 | 704 | 0.1+ | 0.4− | 2004 03 27 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 704 | 0.1− | 1.1+ |
| 2002 11 12 | 704 | 1.0+ | 0.2− | 2004 03 31 | 704 | 0.4+ | 0.9+ | 2006 09 20 | 704 | 0.4− | 0.4+ |
| 2002 11 24 | 644 | 0.5+ | 0.3+ | 2004 03 31 | 704 | (0.9+ | 1.7+) | 2006 09 20 | 704 | (0.7− | 1.6+) |
| 2002 11 24 | 644 | 0.1+ | 0.2+ | 2004 03 31 | 704 | (0.3+ | 1.5+) | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2002 11 24 | 644 | 0.4+ | 0.2+ | 2004 03 31 | 704 | (1.6− | 1.5+) | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2002 11 27 | 699 | (1.2+ | 1.7+) | 2004 04 11 | 644 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2002 11 27 | 699 | 0.1+ | 0.3+ | 2004 04 11 | 644 | 0.6+ | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2002 11 27 | 699 | 0.3− | 0.1+ | 2004 04 11 | 644 | 0.4+ | 0.8+ | 2006 10 01 | 703 | 0.3− | 1.4+ |
| 2002 11 27 | 699 | 0.1− | 0.1− | 2004 04 11 | 703 | 0.1− | 1.0− | 2006 10 01 | 703 | (1.7+ | 1.1+) |
| 2002 12 10 | 644 | 0.0 | 0.6+ | 2004 04 11 | 703 | 0.8− | 1.1− | 2006 10 01 | 703 | 0.8− | 0.1− |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2004 04 11 | 703 | (0.5− | 2.2−) | 2006 10 01 | 703 | 1.4− | 1.2+ |
| 2002 12 10 | 644 | 0.1+ | 0.6+ | 2004 04 11 | 703 | 0.6+ | 1.0− | 2006 10 12 | 644 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | (0.1− | 1.7+) | 2004 04 20 | 691 | 0.3+ | 0.8+ | 2006 10 12 | 644 | 0.3− | 0.5+ | | |
| 2002 12 11 | 704 | 0.0 | 0.5+ | 2004 04 20 | 691 | 0.1+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2002 12 11 | 704 | (0.2+ | 1.8+) | 2004 04 20 | 691 | 0.4+ | 0.7+ | | | | | | |

**(143058)∗ 2002 WT$_8$**

Discovered 2002 Nov. 24 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.55046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23853572 | $\omega$ | 238.12273 | | +0.41157256 | −0.91078583 | |
| $a$ | 2.5749399 | $\Omega$ | 187.78880 | | +0.89640998 | +0.41105064 | |
| $e$ | 0.2836155 | $i$ | 14.01520 | | +0.16449067 | +0.03881414 | |
| $P$ | 4.13 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 22 | 704 | 0.9− | 0.4− | 2003 01 08 | 699 | 0.4+ | 0.5+ | 2006 09 26 | 704 | 0.2+ | 0.6− | | |
| 1999 01 22 | 704 | 0.2+ | 0.7− | 2003 01 08 | 699 | 0.5+ | 0.0 | 2006 09 29 | 699 | 0.3− | 0.1+ | | |
| 1999 01 22 | 704 | 1.5+ | 1.0− | 2003 01 08 | 699 | 0.8+ | 0.6+ | 2006 09 29 | 699 | 0.7+ | 0.6+ | | |
| 1999 01 22 | 704 | 1.5− | 0.8+ | 2003 01 25 | 644 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.2− | 0.3− | | |
| 1999 01 23 | 704 | 0.7− | 0.2− | 2003 01 25 | 644 | 0.1− | 0.6+ | 2006 09 29 | 699 | 0.3− | 0.1− | | |
| 1999 01 23 | 704 | 0.3+ | 1.3+ | 2003 01 25 | 644 | 0.9+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 1999 01 23 | 704 | (0.8− | 2.8+) | 2003 01 27 | 699 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2− | | |
| 1999 01 23 | 704 | (4.5− | 0.0 ) | 2003 01 27 | 699 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− | | |
| 2002 10 31 | 704 | 0.4− | 0.4+ | 2003 01 27 | 699 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.4− | | |
| 2002 10 31 | 704 | 0.0 | 0.0 | 2003 01 27 | 699 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 2002 10 31 | 704 | 0.4− | 0.3+ | 2003 01 28 | 704 | 0.5− | 0.9− | 2006 10 16 | 703 | 0.0 | 0.4− | | |
| 2002 10 31 | 704 | 0.4− | 0.3− | 2003 01 28 | 704 | 0.2+ | 1.2− | 2006 10 16 | 703 | 0.3− | 0.4− | | |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2003 01 28 | 704 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.1− | | |
| 2002 11 17 | 644 | 0.2− | 0.3− | 2003 01 28 | 704 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.6− | 0.2+ | | |
| 2002 11 17 | 644 | 0.1− | 0.1+ | 2003 01 28 | 704 | 0.8− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.1+ | | |
| 2002 11 17 | 644 | 0.0 | 0.1− | 2003 02 09 | 608 | 0.8− | 0.8− | 2006 10 22 | 703 | 0.3− | 0.3+ | | |
| 2002 11 24 | 644 | 0.7+ | 0.6+ | 2003 02 09 | 608 | 1.1− | 0.2− | 2006 10 31 | 704 | 0.3− | 0.1+ | | |
| 2002 11 24 | 644 | 0.6+ | 0.6+ | 2003 02 09 | 608 | 0.2+ | 0.4+ | 2006 10 31 | 704 | 0.8+ | 0.0 | | |
| 2002 11 24 | 644 | 0.4+ | 0.7+ | 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 704 | 0.3− | 0.2+ | | |
| 2002 11 27 | 699 | 0.0 | 0.8+ | 2004 04 13 | 691 | 0.4+ | 0.4+ | 2006 11 10 | 704 | 0.3+ | 0.2− | | |
| 2002 11 27 | 699 | 0.9− | 0.2− | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 704 | 0.4− | 1.0− | | |
| 2002 11 27 | 699 | 0.1− | 0.5+ | 2005 06 30 | 291 | 0.6− | 0.5+ | 2006 11 10 | 704 | 0.3+ | 0.1+ | | |
| 2002 11 27 | 699 | 0.0 | 0.2− | 2005 06 30 | 291 | 0.1+ | 1.0+ | 2006 11 10 | 704 | 0.4− | 0.8− | | |
| 2002 11 30 | 704 | 0.6+ | 1.0+ | 2005 06 30 | 291 | 0.2− | 0.8+ | 2006 11 10 | 704 | 0.5+ | 0.8− | | |
| 2002 11 30 | 704 | 0.9+ | 1.4+ | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 11 16 | 703 | 0.7− | 0.5− | | |
| 2002 11 30 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.7+ | 0.6− | 2006 11 16 | 703 | 0.2− | 0.4+ | | |
| 2002 11 30 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 703 | 1.5− | 0.2− | 2006 11 16 | 703 | 0.5− | 0.3+ | | |
| 2002 11 30 | 704 | (0.2+ | 1.6+) | 2006 08 28 | 703 | (1.6− | 0.3+) | 2006 11 16 | 703 | 0.1− | 0.0 | | |
| 2002 12 30 | 608 | 0.3− | 0.3− | 2006 09 14 | 703 | 0.8− | 0.5+ | 2006 11 21 | 568 | 0.1+ | 0.1+ | | |
| 2002 12 30 | 608 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.2− | 0.4+ | 2006 11 21 | 568 | 0.0 | 0.0 | | |
| 2002 12 30 | 608 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.0 | 0.9+ | 2006 11 21 | 568 | 0.1+ | 0.1+ | | |
| 2003 01 02 | 704 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.7+ | | |
| 2003 01 02 | 704 | 0.1− | 0.7− | 2006 09 16 | 704 | 0.5− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.2+ | | |
| 2003 01 02 | 704 | 0.3+ | 0.8+ | 2006 09 16 | 704 | (1.9− | 1.3+) | 2006 11 22 | 704 | 0.6+ | 1.4+ | | |
| 2003 01 02 | 704 | 0.6+ | 0.4+ | 2006 09 16 | 704 | (0.5− | 1.7+) | 2006 11 22 | 704 | 0.5+ | 0.2+ | | |
| 2003 01 02 | 704 | 0.6− | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.5+ | | |
| 2003 01 08 | 699 | 0.8− | 0.6+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 11 24 | 568 | 0.3+ | 0.4+ | | |
| 2003 01 08 | 699 | (1.9+ | 0.1−) | 2006 09 20 | 644 | 0.6+ | 0.0 | 2006 11 24 | 568 | 0.3+ | 0.4+ | | |
| 2003 01 08 | 699 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.6− | 2006 11 24 | 568 | 0.3+ | 0.4+ | | |
| 2003 01 08 | 699 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.0 | 1.1− | 2006 11 27 | 568 | 0.2+ | 0.1+ | | |
| 2003 01 08 | 699 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.5+ | 0.2− | 2006 11 27 | 568 | 0.1+ | 0.1+ | | |

**(143059)∗ 2002 WQ$_{10}$**

Discovered 2002 Nov. 24 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.83731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24522882 | $\omega$ | 40.79950 | | −0.91841536 | −0.38342832 | |
| $a$ | 2.5278718 | $\Omega$ | 116.40438 | | +0.32878601 | −0.87674431 | |
| $e$ | 0.1714079 | $i$ | 6.24598 | | +0.22002951 | −0.29034830 | |
| $P$ | 4.02 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.2− | 0.7+ | 2003 01 07 | 704 | 0.5− | 0.3− | 2004 06 17 | 644 | 0.2− | 0.6+ | | |
| 2000 05 27 | 704 | 0.3+ | 0.5+ | 2004 03 20 | 704 | 0.2+ | 0.6− | 2005 08 04 | 644 | 0.8− | 0.8+ | | |
| 2000 05 27 | 704 | 0.6− | 0.6+ | 2004 03 20 | 704 | 0.8+ | 0.1− | 2005 08 04 | 644 | 0.4− | 0.4+ | | |
| 2000 05 27 | 704 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.0 | 0.5+ | 2005 08 04 | 644 | 0.8− | 1.2+ | | |
| 2000 05 27 | 704 | 0.3+ | 0.1+ | 2004 04 17 | 704 | 0.2− | 0.3− | 2006 11 14 | 704 | 1.2− | 0.3+ | | |
| 2002 10 31 | 608 | 0.6− | 0.7+ | 2004 04 17 | 704 | 0.3− | 0.5− | 2006 11 14 | 704 | (0.2+ | 1.8+) | | |
| 2002 10 31 | 608 | 0.2− | 0.7+ | 2004 04 17 | 704 | 0.4+ | 1.1− | 2006 11 14 | 704 | (0.5+ | 2.0+) | | |
| 2002 10 31 | 608 | 0.2− | 0.7+ | 2004 04 17 | 704 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.4− | 1.1+ | | |
| 2002 11 13 | 644 | 0.3+ | 0.6+ | 2004 04 17 | 704 | (0.4− | 1.6+) | 2006 11 15 | 703 | 0.4+ | 0.8+ | | |
| 2002 11 13 | 644 | 0.6+ | 0.1+ | 2004 04 23 | 704 | 0.6+ | 0.2− | 2006 11 15 | 703 | 0.1+ | 0.5+ | | |
| 2002 11 13 | 644 | 0.4+ | 0.3+ | 2004 04 23 | 704 | 0.6+ | 0.1+ | 2006 11 15 | 703 | (3.0− | 2.5+) | | |
| 2002 11 18 | 644 | 0.1− | 0.0 | 2004 04 23 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 703 | (0.2− | 2.5+) | | |
| 2002 11 18 | 644 | 0.4− | 0.2+ | 2004 04 23 | 704 | 0.3+ | 0.8+ | 2006 11 16 | 691 | 0.2− | 0.0 | | |
| 2002 11 18 | 644 | 0.4− | 0.3+ | 2004 04 23 | 704 | 0.3+ | 0.6+ | 2006 11 16 | 691 | 0.2− | 0.0 | | |
| 2002 11 24 | 644 | 0.0 | 0.4+ | 2004 05 15 | 704 | 0.0 | 1.4+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2004 05 15 | 704 | 0.4+ | 0.7− | 2006 11 17 | 644 | 0.0 | 0.1+ | | |
| 2002 11 24 | 644 | 0.4+ | 0.3− | 2004 05 15 | 704 | 0.5− | 0.6+ | 2006 11 17 | 644 | 0.4+ | 0.1+ | | |
| 2002 11 28 | 699 | 0.7− | 0.3+ | 2004 05 15 | 704 | 0.5+ | 0.1− | 2006 11 17 | 644 | 0.0 | 0.1+ | | |
| 2002 11 28 | 699 | (2.8− | 1.1+) | 2004 05 15 | 704 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.9− | | |
| 2002 11 28 | 699 | 1.2− | 0.6+ | 2004 05 19 | 599 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.5− | | |
| 2002 11 28 | 699 | 0.3− | 0.9+ | 2004 05 19 | 599 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.2− | | |
| 2002 12 01 | 704 | 0.2+ | 1.3+ | 2004 05 19 | 599 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2002 12 01 | 704 | 0.4+ | 0.0 | 2004 05 19 | 599 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2002 12 01 | 704 | 1.1+ | 0.4+ | 2004 05 20 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.9− | 0.4+ | | |
| 2002 12 01 | 704 | 0.5+ | 0.3+ | 2004 05 20 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2002 12 05 | 608 | 0.1− | 0.3+ | 2004 05 20 | 691 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.4− | | |
| 2002 12 05 | 608 | 0.7− | 0.7+ | 2004 05 22 | 704 | 0.8+ | 1.1+ | 2006 11 20 | 704 | (0.2− | 1.8+) | | |
| 2002 12 05 | 608 | 0.1− | 0.5+ | 2004 05 22 | 704 | 0.1+ | 1.5+ | 2006 11 20 | 704 | 1.0+ | 0.0 | | |
| 2002 12 10 | 644 | 0.5− | 0.4+ | 2004 05 22 | 704 | 0.2+ | 1.2+ | 2006 11 20 | 704 | 0.1+ | 0.7+ | | |
| 2002 12 10 | 644 | 0.6− | 0.4+ | 2004 05 22 | 704 | 0.8+ | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.3− | | |
| 2002 12 10 | 644 | 0.4− | 0.3+ | 2004 05 22 | 704 | 1.4+ | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 05 23 | 704 | 0.7+ | 0.7+ | 2006 11 20 | 704 | 0.5+ | 0.7− | | |
| 2002 12 11 | 704 | 0.5+ | 0.7+ | 2004 05 23 | 704 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.2− | | |
| 2002 12 11 | 704 | 0.9+ | 0.4− | 2004 05 23 | 704 | (1.6+ | 0.6+) | 2006 11 20 | 704 | 0.7+ | 0.2− | | |
| 2002 12 11 | 704 | 0.3+ | 0.8+ | 2004 05 23 | 704 | 0.1+ | 0.7+ | 2006 11 24 | G96 | 0.0 | 0.3− | | |
| 2003 01 02 | 704 | 0.5+ | 0.5+ | 2004 05 23 | 704 | 0.0 | 0.9+ | 2006 11 24 | G96 | 0.2− | 0.2− | | |
| 2003 01 02 | 704 | 0.5− | 0.5+ | 2004 05 23 | 704 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2003 01 02 | 704 | 0.3− | 0.2+ | 2004 05 23 | 704 | 0.2+ | 0.8+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2003 01 02 | 704 | 1.1− | 0.5+ | 2004 05 23 | 704 | 0.3− | 0.4+ | 2006 11 28 | 704 | 3.0− | 1.1+ | | |
| 2003 01 02 | 704 | 0.8− | 0.3+ | 2004 05 23 | 704 | 0.3+ | 0.8+ | 2006 11 28 | 704 | 0.9− | 1.2+ | | |
| 2003 01 07 | 704 | (1.9+ | 0.1−) | 2004 05 23 | 704 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.5+ | 2.9+ | | |
| 2003 01 07 | 704 | 0.3+ | 0.8− | 2004 06 17 | 644 | 0.1− | 0.6+ | 2006 11 28 | 704 | 0.4+ | 0.0 | | |
| 2003 01 07 | 704 | 0.1+ | 0.7+ | 2004 06 17 | 644 | 0.4− | 0.7+ | | | | | | |

**(143060)∗ 2002 WF$_{11}$**

Discovered 2002 Nov. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.29934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22699920 | $\omega$ | 21.58548 | | +0.65460796 | −0.75493343 | |
| $a$ | 2.6614593 | $\Omega$ | 27.57176 | | +0.68048470 | +0.56565189 | |
| $e$ | 0.1191313 | $i$ | 4.90131 | | +0.32928558 | +0.33183347 | |
| $P$ | 4.34 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.2+ | 0.3+ | 2002 11 28 | 699 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.5+ | | |
| 2000 04 12 | 691 | 0.1+ | 0.3+ | 2002 12 02 | 704 | 0.0 | 0.5+ | 2006 09 22 | 704 | (1.9+ | 0.3+) | | |
| 2000 04 12 | 691 | 0.2+ | 0.5+ | 2002 12 02 | 704 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.1+ | 1.4+ | | |
| 2000 05 02 | 691 | 0.1− | 0.6− | 2002 12 02 | 704 | 0.8+ | 0.8− | 2006 09 22 | 704 | 0.7− | 0.5− | | |
| 2000 05 02 | 691 | 0.0 | 0.2− | 2002 12 02 | 704 | 0.6+ | 0.5− | 2006 09 22 | 704 | 1.2− | 0.3+ | | |
| 2000 05 02 | 691 | 0.1+ | 0.4+ | 2002 12 02 | 704 | 0.8+ | 0.9+ | 2006 09 26 | 704 | 1.2+ | 0.2− | | |
| 2002 11 04 | 644 | 0.5+ | 0.1− | 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 1.1+ | 0.7− | | |
| 2002 11 04 | 644 | 0.8+ | 0.1+ | 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.0 | | |
| 2002 11 04 | 644 | 1.3+ | 0.2− | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.1+ | 0.3+ | | |
| 2002 11 14 | 704 | 0.2+ | 0.2− | 2006 08 18 | 691 | 0.3− | 0.1− | 2006 09 30 | 703 | (1.7− | 4.6+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 1.3− | 0.5+ | 2006 08 18 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.2+ | | |
| 2002 11 14 | 704 | 0.8− | 0.2+ | 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.8− | 0.4− | | |
| 2002 11 14 | 704 | 0.9− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.0 | | |
| 2002 11 14 | 704 | 0.3− | 0.2− | 2006 08 27 | 691 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.1− | | |
| 2002 11 14 | 704 | (1.7− | 1.8+) | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 | | |
| 2002 11 14 | 704 | 0.1− | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.0 | | |
| 2002 11 14 | 704 | 0.9− | 0.6+ | 2006 09 18 | 703 | 0.7+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.0 | | |
| 2002 11 14 | 704 | 0.1− | 1.3− | 2006 09 18 | 703 | 0.4+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1− | | |
| 2002 11 14 | 704 | 1.2− | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.9+ | 2006 10 20 | G96 | 0.1+ | 0.4− | | |
| 2002 11 27 | 699 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.4− | | |
| 2002 11 27 | 699 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.7− | 1.0+ | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2002 11 27 | 699 | (0.6+ | 2.1+) | 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.5+ | 0.2− | | |
| 2002 11 27 | 699 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.2− | 1.0+ | 2006 11 15 | G96 | 0.2− | 0.3− | | |
| 2002 11 28 | 699 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.7+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 2002 11 28 | 699 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.6− | 2006 11 15 | G96 | 0.0 | 0.1+ | | |
| 2002 11 28 | 699 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.4+ | | | | | | |

**(143061)∗ 2002 WH$_{11}$**

Discovered 2002 Nov. 23 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.15841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21472000 | $\omega$ | 38.00517 | | +0.04681756 | −0.99811354 | |
| $a$ | 2.7619833 | $\Omega$ | 49.34814 | | +0.90317677 | +0.02531248 | |
| $e$ | 0.0379788 | $i$ | 3.00084 | | +0.42670815 | +0.05593426 | |
| $P$ | 4.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 13 | 691 | 0.2+ | 0.1+ | 2002 12 02 | 704 | 0.3− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.8+ | | |
| 2000 05 13 | 691 | 0.1+ | 0.0 | 2002 12 02 | 608 | 0.2+ | 1.5− | 2004 03 19 | 704 | 0.4+ | 0.0 | | |
| 2000 05 13 | 691 | 0.1+ | 0.3+ | 2002 12 02 | 608 | (0.0 | 1.6−) | 2004 03 19 | 704 | 0.2+ | 0.8+ | | |
| 2000 05 26 | 691 | 0.1− | 0.6− | 2002 12 02 | 608 | 0.2+ | 1.4− | 2004 03 19 | 704 | 1.2+ | 1.1+ | | |
| 2000 05 26 | 691 | 0.2− | 0.5− | 2002 12 10 | 704 | 0.7+ | 0.1− | 2006 08 29 | 691 | (2.0− | 1.4+) | | |
| 2000 05 26 | 691 | 0.6− | 0.4− | 2002 12 10 | 704 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.3+ | | |
| 2002 11 07 | 695 | 0.0 | 0.3− | 2002 12 10 | 704 | 0.8− | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.3+ | | |
| 2002 11 07 | 704 | 0.6+ | 0.1− | 2002 12 10 | 704 | 0.4− | 0.5− | 2006 09 19 | 703 | 0.7− | 0.4− | | |
| 2002 11 07 | 704 | 0.2− | 0.7+ | 2004 02 15 | 703 | 1.4− | 0.6− | 2006 09 19 | 703 | (1.6+ | 0.2−) | | |
| 2002 11 07 | 704 | 0.1+ | 0.2− | 2004 02 15 | 703 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.2− | | |
| 2002 11 07 | 704 | (0.5− | 2.4−) | 2004 02 15 | 703 | 0.9+ | 1.1+ | 2006 09 19 | 703 | 0.4− | 0.5+ | | |
| 2002 11 07 | 704 | (1.7− | 0.6−) | 2004 02 15 | 703 | 0.8+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.6+ | | |
| 2002 11 07 | 695 | 0.3+ | 0.4− | 2004 02 16 | 291 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.3+ | | |
| 2002 11 23 | 644 | 0.4+ | 0.7− | 2004 02 16 | 291 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.4+ | | |
| 2002 11 23 | 644 | 0.1+ | 0.8− | 2004 02 16 | 291 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.4+ | | |
| 2002 11 23 | 644 | 0.1+ | 0.8− | 2004 02 23 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | (2.0− | 0.5+) | | |
| 2002 11 27 | 699 | (2.6+ | 1.1+) | 2004 02 23 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | (0.3− | 1.5+) | | |
| 2002 11 27 | 699 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | (1.9− | 0.5−) | | |
| 2002 11 27 | 699 | 0.4− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | (0.4− | 1.7−) | | |
| 2002 11 27 | 699 | (0.8+ | 2.3+) | 2004 02 23 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.7+ | 0.3+ | | |
| 2002 11 28 | 699 | (1.5+ | 0.1−) | 2004 03 11 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3− | | |
| 2002 11 28 | 699 | (0.8+ | 1.5−) | 2004 03 11 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.8− | 0.8+ | | |
| 2002 11 28 | 699 | 0.3+ | 0.8− | 2004 03 11 | 644 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2002 12 02 | 704 | 0.3− | 0.1− | 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2002 12 02 | 704 | (0.3+ | 1.7+) | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2002 12 02 | 704 | 0.9+ | 1.3+ | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.3− | | |

**(143062)∗ 2002 WK$_{11}$**

Discovered 2002 Nov. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.96614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23560508 | $\omega$ | 101.49739 | | −0.96900880 | −0.14330971 | |
| $a$ | 2.5962487 | $\Omega$ | 70.51379 | | +0.03740619 | −0.89025020 | |
| $e$ | 0.1531743 | $i$ | 12.32356 | | +0.24417766 | −0.43233889 | |
| $P$ | 4.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.1− | 0.0 | 2002 12 11 | 333 | 0.0 | 0.0 | 2004 05 01 | 703 | (2.1+ | 1.2+) | | |
| 2000 05 28 | 704 | 0.4− | 0.5+ | 2002 12 11 | 333 | 0.0 | 0.1+ | 2004 05 13 | 699 | 0.0 | 0.4+ | | |
| 2000 05 28 | 704 | 0.1− | 0.3− | 2002 12 31 | 699 | 0.2− | 0.1+ | 2004 05 13 | 699 | 0.6− | 0.3− | | |
| 2000 05 28 | 704 | 0.2− | 0.6+ | 2002 12 31 | 699 | 1.4+ | 0.8+ | 2004 05 13 | 699 | 0.4+ | 0.2− | | |
| 2000 05 28 | 704 | 0.3+ | 0.7+ | 2002 12 31 | 699 | 0.1+ | 0.0 | 2004 05 13 | 699 | 0.1+ | 0.1+ | | |
| 2002 11 06 | 704 | (2.3− | 2.7+) | 2002 12 31 | 699 | 0.0 | 0.6+ | 2004 05 18 | 704 | (0.6− | 2.2+) | | |
| 2002 11 06 | 704 | 0.5− | 0.0 | 2002 12 31 | 704 | 0.0 | 1.3− | 2004 05 18 | 704 | 0.1− | 1.2+ | | |
| 2002 11 06 | 704 | 1.1− | 0.1+ | 2002 12 31 | 704 | 1.3+ | 0.3− | 2004 05 18 | 704 | 0.4+ | 0.8+ | | |
| 2002 11 06 | 704 | 0.5− | 0.6− | 2002 12 31 | 704 | 1.3+ | 0.0 | 2004 05 18 | 704 | 0.0 | 0.9+ | | |
| 2002 11 14 | 704 | 0.5− | 0.7− | 2002 12 31 | 704 | 0.6+ | 0.8− | 2004 05 18 | 704 | 0.2+ | 0.5+ | | |
| 2002 11 14 | 704 | (2.5− | 0.8−) | 2002 12 31 | 704 | (0.6+ | 2.5−) | 2004 06 08 | 703 | 0.7+ | 0.1+ | | |
| 2002 11 14 | 704 | 1.0− | 0.2+ | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2004 06 08 | 703 | 0.5+ | 0.6− | | |
| 2002 11 14 | 704 | 0.4− | 0.4− | 2003 01 05 | 704 | 0.1− | 0.9− | 2004 06 08 | 703 | 0.4− | 1.1− | | |
| 2002 11 26 | 291 | 0.4+ | 0.3+ | 2003 01 05 | 704 | 0.0 | 0.5− | 2004 06 08 | 703 | 0.7+ | 1.0− | | |
| 2002 11 26 | 291 | 0.1+ | 0.3+ | 2003 01 05 | 704 | 0.9+ | 0.9− | 2006 10 16 | 703 | 0.4+ | 0.1+ | | |
| 2002 11 26 | 291 | 0.3− | 0.4+ | 2004 04 11 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.5− | 0.3− | | |
| 2002 11 28 | 608 | 0.3+ | 0.4− | 2004 04 11 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 1.4+ | | |
| 2002 11 28 | 608 | 0.5+ | 0.6− | 2004 04 11 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 1.1− | | |
| 2002 11 28 | 608 | 0.6+ | 0.3− | 2004 04 16 | 704 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.1− | | |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2004 04 16 | 704 | 0.0 | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2004 04 16 | 704 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.7− | 0.1+ | | |
| 2002 12 05 | 704 | 0.5− | 0.1+ | 2004 04 16 | 704 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.2− | | |
| 2002 12 05 | 704 | 0.5− | 0.5+ | 2004 04 23 | 704 | 0.2− | 0.9+ | 2006 10 22 | 691 | 0.2− | 0.4+ | | |
| 2002 12 05 | 704 | 0.4− | 0.4+ | 2004 04 23 | 704 | (1.9− | 0.9+) | 2006 10 22 | 691 | 0.5− | 0.7+ | | |
| 2002 12 10 | 704 | 0.4+ | 0.7+ | 2004 04 23 | 704 | 0.3+ | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.4+ | | |
| 2002 12 10 | 704 | 0.1+ | 0.3+ | 2004 04 23 | 704 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.1+ | | |
| 2002 12 10 | 704 | 0.0 | 0.1− | 2004 04 23 | 704 | 0.8+ | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.3+ | | |
| 2002 12 10 | 704 | 0.2− | 0.2+ | 2004 05 01 | 703 | 1.0− | 0.7− | 2006 11 17 | G96 | 0.1− | 0.2+ | | |
| 2002 12 10 | 704 | 0.7− | 0.0 | 2004 05 01 | 703 | 0.7+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.2+ | | |
| 2002 12 11 | 333 | 0.4− | 0.1+ | 2004 05 01 | 703 | 0.0 | 0.8+ | | | | | | |

**(143063)∗ 2002 WZ$_{11}$**

Discovered 2002 Nov. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.73618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23140306 | $\omega$ | 250.71305 | | +0.14440598 | −0.98842315 | |
| $a$ | 2.6275843 | $\Omega$ | 191.29074 | | +0.97347329 | +0.15034384 | |
| $e$ | 0.1792824 | $i$ | 13.75319 | | +0.17747299 | −0.02040590 | |
| $P$ | 4.26 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 691 | 0.4+ | 0.3+ | 2003 02 04 | 644 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.5+ | 0.2+ | | |
| 2000 04 10 | 691 | 0.0 | 0.1+ | 2003 02 04 | 644 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.1− | 0.2+ | | |
| 2000 04 10 | 691 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 699 | 1.3+ | 0.1− | | |
| 2002 10 31 | 704 | 0.3+ | 0.6− | 2004 03 22 | 704 | 0.8+ | 0.9+ | 2006 09 20 | 699 | (0.3+ | 1.6+) | | |
| 2002 10 31 | 704 | 1.0+ | 0.6+ | 2004 03 22 | 704 | 0.1− | 0.2− | 2006 09 20 | 699 | 0.1+ | 0.7+ | | |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2004 03 28 | 704 | 0.5+ | 1.3+ | 2006 09 23 | 691 | 0.0 | 0.4+ | | |
| 2002 10 31 | 704 | 0.1− | 0.3− | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.4+ | | |
| 2002 10 31 | 704 | 0.9+ | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.9+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | | |
| 2002 11 27 | 699 | 0.4+ | 0.1+ | 2004 03 28 | 704 | 0.4− | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.1+ | | |
| 2002 11 27 | 699 | 0.1+ | 0.3− | 2004 03 28 | 704 | 1.3− | 0.5− | 2006 09 26 | 704 | 0.2+ | 0.2− | | |
| 2002 11 27 | 699 | 0.7− | 0.3− | 2004 04 20 | 704 | 0.1− | 1.2+ | 2006 09 26 | 704 | 0.3− | 0.1+ | | |
| 2002 11 27 | 699 | 0.1− | 0.1+ | 2004 04 20 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.2− | | |
| 2002 11 30 | 704 | 1.2− | 0.3− | 2004 04 20 | 704 | 0.9+ | 0.2+ | 2006 09 26 | 704 | 0.4+ | 1.0+ | | |
| 2002 11 30 | 704 | 1.2− | 1.0− | 2004 04 23 | 691 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 30 | 704 | 0.7− | 0.7− | 2004 04 23 | 691 | 0.0 | 0.6+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | | |
| 2002 12 15 | 608 | 0.6+ | 0.3+ | 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.4− | 0.1+ | | |
| 2002 12 15 | 608 | 0.5+ | 0.3+ | 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2002 12 15 | 608 | 0.5+ | 0.6+ | 2006 08 12 | 644 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.0 | | |
| 2003 01 02 | 704 | 0.2− | 0.2+ | 2006 08 12 | 644 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2003 01 02 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2003 01 02 | 704 | 0.2+ | 1.1+ | 2006 08 28 | 703 | 0.1+ | 0.7− | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2003 01 02 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2003 01 02 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2− | | |
| 2003 01 26 | 699 | 1.0− | 0.2− | 2006 09 15 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.3− | | |
| 2003 01 26 | 699 | 0.9− | 0.2+ | 2006 09 15 | 644 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.5− | | |
| 2003 01 26 | 699 | 0.0 | 0.2+ | 2006 09 15 | 644 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.6− | 0.1− | | |
| 2003 01 26 | 699 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 704 | 0.9+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2003 01 28 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2003 01 28 | 704 | 0.1− | 0.7+ | 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 11 13 | 703 | 0.5+ | 0.8− | | |
| 2003 01 28 | 704 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.8− | 0.7+ | 2006 11 13 | 703 | 0.4+ | 0.9− | | |
| 2003 01 28 | 704 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.5+ | 0.5− | | |
| 2003 02 04 | 644 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.5− | | |

**(143064)∗ 2002 WC$_{12}$**

Discovered 2002 Nov. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.28254 | | (2000.0) | | | |
| $n$ | 0.22419338 | $\omega$ | 287.97516 | | −0.54397224 | −0.83628991 |
| $a$ | 2.6836190 | $\Omega$ | 195.56145 | | +0.83358347 | −0.52921288 |
| $e$ | 0.0856946 | $i$ | 14.82769 | | +0.09608752 | −0.14336289 |
| $P$ | 4.40 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 30 | 644 | 0.1+ | 0.4+ | 2004 03 18 | 704 | 0.5+ | 0.0 | 2004 05 23 | 699 | (0.0 | 1.9+) | | |
| 2001 07 30 | 644 | 0.2− | 1.1+ | 2004 03 18 | 704 | 0.2− | 1.2− | 2004 05 23 | 699 | 1.0+ | 1.2+ | | |
| 2001 07 30 | 644 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.7+ | 2004 05 23 | 699 | 1.3+ | 0.5+ | | |
| 2001 07 30 | 644 | 0.0 | 1.3+ | 2004 03 20 | 704 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.7− | 0.5+ | | |
| 2001 07 30 | 644 | 0.1− | 0.3+ | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.5+ | | |
| 2001 07 30 | 644 | 0.1− | 1.4+ | 2004 03 20 | 704 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.1+ | | |
| 2001 09 20 | 645 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.1− | 1.1+ | | |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2004 03 27 | 699 | 0.6+ | 0.8+ | 2006 09 23 | 691 | 0.1+ | 0.0 | | |
| 2002 11 06 | 608 | 0.5+ | 0.2− | 2004 03 27 | 699 | 0.4+ | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.3+ | | |
| 2002 11 06 | 608 | 1.1+ | 0.5+ | 2004 03 27 | 699 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.2+ | | |
| 2002 11 06 | 608 | 0.6+ | 0.7+ | 2004 03 27 | 699 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.9+ | | |
| 2002 11 27 | 699 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.0 | 0.6+ | | |
| 2002 11 27 | 699 | 0.9− | 0.6+ | 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.5+ | 1.3+ | | |
| 2002 11 27 | 699 | 0.9− | 1.1− | 2004 03 27 | 704 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.5− | 0.5+ | | |
| 2002 11 27 | 699 | 0.3− | 0.6+ | 2004 03 27 | 704 | 0.1+ | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | | |
| 2002 11 30 | 704 | 0.5+ | 0.0 | 2004 03 27 | 704 | 0.1− | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | | |
| 2002 11 30 | 704 | 0.0 | 1.0+ | 2004 03 31 | 704 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.4+ | | |
| 2002 11 30 | 704 | 0.1− | 1.1+ | 2004 03 31 | 704 | 0.0 | 0.4+ | 2006 10 15 | 703 | 1.2+ | 1.3+ | | |
| 2002 11 30 | 704 | (2.7+ | 1.3+) | 2004 03 31 | 704 | 0.0 | 0.8+ | 2006 10 15 | 703 | 0.4+ | 0.2+ | | |
| 2002 12 08 | 644 | 0.0 | 0.2+ | 2004 03 31 | 704 | 0.4+ | 0.6+ | 2006 10 15 | 703 | 0.0 | 0.2+ | | |
| 2002 12 08 | 644 | 0.2− | 0.1+ | 2004 03 31 | 704 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.2− | 0.3+ | | |
| 2002 12 08 | 644 | 0.2− | 0.3− | 2004 04 12 | 699 | 0.8− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3+ | | |
| 2002 12 13 | 644 | 0.3− | 0.3+ | 2004 04 12 | 699 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2+ | | |
| 2002 12 13 | 644 | 0.3− | 0.2+ | 2004 04 12 | 699 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | | |
| 2002 12 13 | 608 | 0.7+ | 0.5− | 2004 04 12 | 699 | 0.4+ | 0.9+ | 2006 10 17 | G96 | 0.5− | 0.6+ | | |
| 2002 12 13 | 608 | 0.3+ | 0.3− | 2004 04 15 | 699 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.4− | | |
| 2002 12 13 | 644 | 0.2− | 0.0 | 2004 04 15 | 699 | 0.4− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.2− | | |
| 2002 12 13 | 608 | 0.9+ | 0.2+ | 2004 04 15 | 699 | 0.1− | 1.3+ | 2006 10 17 | G96 | 0.0 | 0.2− | | |
| 2002 12 14 | 704 | 0.1− | 0.2− | 2004 04 15 | 699 | 0.7− | 1.1+ | 2006 10 21 | 703 | 0.8− | 0.6+ | | |
| 2002 12 14 | 704 | 0.7+ | 0.5− | 2004 04 16 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.4+ | | |
| 2002 12 14 | 704 | 0.3− | 0.3+ | 2004 04 16 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.1+ | | |
| 2003 01 28 | 704 | 0.7− | 0.6+ | 2004 04 16 | 704 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.6− | | |
| 2003 01 28 | 704 | 0.8+ | 0.8+ | 2004 04 16 | 704 | 0.4− | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2003 01 28 | 704 | 0.2− | 0.4+ | 2004 04 16 | 704 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2003 02 04 | 644 | 0.1− | 0.9+ | 2004 04 21 | 704 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | |
| 2003 02 04 | 644 | 0.7− | 0.3+ | 2004 04 21 | 704 | 0.6+ | 0.3+ | 2006 11 20 | 704 | 0.7− | 0.6+ | | |
| 2003 02 04 | 644 | 0.5− | 0.8+ | 2004 04 21 | 704 | 0.8+ | 0.5+ | 2006 11 20 | 704 | 0.6− | 1.1+ | | |
| 2004 03 16 | 703 | 0.6− | 0.5− | 2004 04 21 | 704 | 1.0+ | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2004 03 16 | 703 | 0.4− | 0.2+ | 2004 04 21 | 704 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.6+ | | |
| 2004 03 16 | 703 | 0.3− | 0.4− | 2004 04 22 | 703 | 0.5− | 0.9+ | 2006 11 20 | 704 | 0.6− | 0.4− | | |
| 2004 03 16 | 703 | 0.2− | 0.2− | 2004 04 22 | 703 | 0.3+ | 0.8+ | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2004 03 17 | 704 | 1.0+ | 0.7− | 2004 04 22 | 703 | 0.4− | 1.0+ | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2004 03 17 | 704 | 0.8− | 0.8+ | 2004 04 22 | 703 | 0.8+ | 1.3+ | 2006 11 23 | G96 | 0.1+ | 0.4− | | |
| 2004 03 17 | 704 | 0.2− | 0.8+ | 2004 05 10 | 703 | 0.9+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.6− | | |
| 2004 03 17 | 704 | 0.9− | 0.0 | 2004 05 10 | 703 | (1.4+ | 3.6+) | 2006 11 24 | G96 | 0.2− | 0.4− | | |
| 2004 03 17 | 704 | 0.3+ | 0.0 | 2004 05 10 | 703 | 0.9+ | 1.0+ | 2006 11 24 | G96 | 0.2− | 0.2− | | |
| 2004 03 18 | 704 | 0.1+ | 0.3+ | 2004 05 10 | 703 | 0.0 | 1.1+ | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2004 03 18 | 704 | 0.2− | 1.4+ | 2004 05 23 | 699 | 0.6− | 0.8+ | 2006 11 24 | G96 | 0.0 | 0.2− | | |

**(143065)∗ 2002 WF$_{12}$ = 1998 XM$_{91}$**

Discovered 2002 Nov. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 41291)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.51534 | | (2000.0) | | | |
| $n$ | 0.24008710 | $\omega$ | 264.74078 | | +0.73430719 | −0.65940600 |
| $a$ | 2.5638355 | $\Omega$ | 136.38057 | | +0.67762497 | +0.69798957 |
| $e$ | 0.2197125 | $i$ | 13.51085 | | +0.04021634 | +0.27927457 |
| $P$ | 4.11 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 01 21 | 691 | 0.0 | 0.1− | 2003 01 02 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.7− | 0.4− | | |
| 1991 01 21 | 691 | 0.1+ | 0.1+ | 2003 01 02 | 704 | 0.3+ | 1.0− | 2006 09 28 | 703 | 0.5− | 0.1− | | |
| 1991 01 21 | 691 | 0.3− | 0.1− | 2003 01 02 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.1+ | | |
| 1998 12 15 | 704 | 1.8− | 0.8− | 2003 01 02 | 704 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.3+ | | |
| 1998 12 15 | 704 | 0.1+ | 0.6− | 2003 01 05 | 699 | 0.6+ | 0.3− | 2006 09 28 | 703 | 0.2− | 0.0 | | |
| 1998 12 15 | 704 | 0.4+ | 0.4− | 2003 01 05 | 699 | 0.7+ | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.6+ | | |
| 1998 12 15 | 704 | 0.8− | 0.2− | 2003 01 05 | 699 | (1.3+ | 1.9−) | 2006 09 30 | 704 | 1.1+ | 0.7+ | | |
| 1998 12 22 | 704 | 0.8− | 0.0 | 2003 01 05 | 699 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.0 | 0.1+ | | |
| 1998 12 22 | 704 | 0.5+ | 0.1− | 2003 01 26 | 699 | (1.7+ | 0.3+) | 2006 09 30 | 704 | 0.4+ | 0.7+ | | |
| 1998 12 22 | 704 | 0.2+ | 0.1+ | 2003 01 26 | 699 | 1.0+ | 0.6+ | 2006 09 30 | 704 | 0.4+ | 0.4− | | |
| 1998 12 22 | 704 | 0.1+ | 0.4+ | 2003 01 26 | 699 | (2.5+ | 0.6+) | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2000 04 03 | 704 | 0.2− | 1.2+ | 2003 01 26 | 699 | 0.4+ | 1.1+ | 2006 10 11 | 644 | 0.4− | 0.1− | | |
| 2000 04 03 | 704 | 1.5+ | 1.0+ | 2003 01 28 | 704 | 0.9+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2000 04 03 | 704 | (0.7+ | 2.4+) | 2003 01 28 | 704 | 0.5+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.0 | | |
| 2002 09 30 | 683 | 0.6− | 1.5+ | 2003 01 28 | 704 | 1.4+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2002 09 30 | 683 | 0.4− | 0.1+ | 2003 01 28 | 704 | (1.7+ | 0.5−) | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 2002 10 08 | 644 | 0.1− | 0.2− | 2003 02 04 | 644 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.6+ | 0.0 | | |
| 2002 10 08 | 644 | 0.1− | 0.3− | 2003 02 04 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 703 | 0.2− | 0.3+ | | |
| 2002 10 08 | 644 | 0.1+ | 0.3− | 2003 02 04 | 644 | 0.0 | 0.2+ | 2006 10 20 | 703 | 0.4− | 0.4+ | | |
| 2002 10 30 | 704 | 0.2+ | 0.2− | 2003 02 28 | 704 | 0.8+ | 1.0+ | 2006 10 20 | 703 | 0.1− | 0.3+ | | |
| 2002 10 30 | 704 | 0.2− | 0.2+ | 2003 02 28 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 703 | 0.7− | 0.2+ | | |
| 2002 10 30 | 704 | 0.2− | 0.1− | 2003 02 28 | 704 | 1.2+ | 0.3− | 2006 10 20 | 703 | 0.2− | 0.2+ | | |
| 2002 10 30 | 704 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.4− | 0.5+ | 2006 10 20 | 703 | 0.1− | 0.0 | | |
| 2002 10 30 | 704 | 0.2− | 0.3− | 2004 03 15 | 704 | (0.1− | 2.0+) | 2006 10 20 | 703 | 0.3− | 0.1+ | | |
| 2002 11 11 | 644 | 0.2+ | 0.1− | 2004 03 15 | 704 | 0.9+ | 1.1+ | 2006 10 21 | 703 | 0.1− | 0.1− | | |
| 2002 11 11 | 644 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.5− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.8− | | |
| 2002 11 11 | 644 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.2− | 0.9+ | 2006 10 21 | 703 | 0.5− | 0.1− | | |
| 2002 11 27 | 699 | 0.5− | 0.0 | 2004 03 23 | 704 | (0.6− | 1.7+) | 2006 10 21 | 703 | 0.4+ | 0.2+ | | |
| 2002 11 27 | 699 | 0.2+ | 1.0+ | 2004 03 23 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.2− | | |
| 2002 11 27 | 699 | 0.7− | 0.4− | 2004 03 23 | 704 | 0.8− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.0 | | |
| 2002 11 27 | 699 | 0.1+ | 0.4+ | 2005 07 04 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.2+ | | |
| 2002 11 27 | 699 | 0.1− | 0.4− | 2005 07 04 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.0 | | |
| 2002 11 27 | 699 | 0.2− | 0.3+ | 2005 07 04 | 644 | 0.3+ | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.1− | | |
| 2002 11 27 | 699 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.9+ | 0.5− | 2006 10 28 | 703 | 0.3− | 0.3− | | |
| 2002 11 27 | 699 | (0.4− | 1.9+) | 2006 09 18 | 703 | 0.4+ | 1.1+ | 2006 10 28 | 703 | 0.2+ | 0.1− | | |
| 2002 11 30 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.0 | 0.2− | | |
| 2002 11 30 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.0 | | |
| 2002 11 30 | 704 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.1− | 0.0 | | |
| 2002 11 30 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.1− | | |
| 2002 11 30 | 704 | 0.7− | 0.0 | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.2+ | | |
| 2002 12 14 | 608 | 1.3+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.1+ | | |
| 2002 12 14 | 608 | 0.7+ | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.6− | 0.0 | | |
| 2002 12 14 | 608 | 1.0+ | 0.7+ | 2006 09 26 | 703 | 0.6− | 0.6+ | 2006 11 17 | 703 | 0.3− | 0.2+ | | |
| 2003 01 02 | 704 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.4− | 0.0 | | | | | | |

**(143066)∗ 2002 WZ$_{13}$**

Discovered 2002 Nov. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.78495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23355675 | $\omega$ | 15.35718 | | −0.90281564 | −0.42536619 | |
| $a$ | 2.6114062 | $\Omega$ | 139.28181 | | +0.38364357 | −0.86304267 | |
| $e$ | 0.1817131 | $i$ | 5.55497 | | +0.19427181 | −0.27243521 | |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | 0.1− | 0.2− | 2004 04 23 | 704 | 0.7+ | 0.5+ | 2005 07 11 | G96 | 0.1− | 0.8− |
| 1995 01 31 | 691 | 0.2− | 0.3− | 2004 05 12 | 703 | 0.8− | 0.4+ | 2005 07 12 | G96 | 0.2− | 0.9− |
| 1995 01 31 | 691 | 0.2+ | 0.3− | 2004 05 12 | 699 | 0.1− | 0.4+ | 2005 07 12 | G96 | 0.4+ | 0.3− |
| 2002 11 07 | 704 | 0.1+ | 1.4− | 2004 05 12 | 703 | (1.6− | 0.8−) | 2005 07 12 | G96 | 0.2+ | 0.2− |
| 2002 11 07 | 704 | 1.2+ | 0.7− | 2004 05 12 | 699 | 0.1− | 0.2− | 2005 07 12 | G96 | 0.5− | 0.8− |
| 2002 11 07 | 704 | (0.1+ | 1.7+) | 2004 05 12 | 703 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 2002 11 07 | 704 | 0.7− | 1.0+ | 2004 05 12 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 2002 11 13 | 644 | 0.1− | 0.5+ | 2004 05 12 | 699 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.6− | 0.5+ |
| 2002 11 13 | 644 | 0.1+ | 0.4+ | 2004 05 12 | 699 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2002 11 13 | 644 | 0.2− | 0.4+ | 2004 05 13 | 699 | 0.3− | 1.2− | 2006 11 01 | 703 | 0.7− | 1.1− |
| 2002 11 28 | 699 | 0.8− | 0.3− | 2004 05 13 | 699 | 0.0 | 0.2− | 2006 11 01 | 703 | 1.1− | 0.2+ |
| 2002 11 28 | 699 | 0.2+ | 1.1+ | 2004 05 13 | 699 | 0.1+ | 0.0 | 2006 11 01 | 703 | 1.1+ | 1.1+ |
| 2002 11 28 | 699 | 0.3+ | 0.3+ | 2004 05 13 | 699 | 0.6+ | 0.4+ | 2006 11 01 | 703 | 0.9− | 0.4− |
| 2002 11 28 | 699 | 0.6− | 1.1+ | 2004 05 15 | 704 | 0.5+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 12 01 | 704 | 0.6− | 0.6+ | 2004 05 15 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2002 12 01 | 704 | 1.2− | 1.1− | 2004 05 15 | 704 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.4+ |
| 2002 12 01 | 704 | 0.3− | 1.0− | 2004 05 15 | 704 | 0.1− | 0.7+ | 2006 11 11 | 703 | 1.3− | 0.4+ |
| 2002 12 01 | 704 | 0.1− | 0.2+ | 2004 05 15 | 704 | 0.7+ | 0.4− | 2006 11 11 | 703 | (1.7+ | 0.5+) |
| 2002 12 10 | 644 | 0.4− | 0.4+ | 2004 05 23 | 704 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2002 12 10 | 644 | 0.1− | 0.5+ | 2004 05 23 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 1.0+ |
| 2002 12 10 | 644 | 0.3− | 0.4+ | 2004 05 23 | 704 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.8+ |
| 2004 04 12 | 644 | 0.0 | 0.3+ | 2004 05 23 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 1.4+ |
| 2004 04 12 | 644 | 0.5+ | 0.5+ | 2004 05 23 | 704 | 0.0 | 0.6+ | 2006 11 17 | 704 | 0.7+ | 0.2− |
| 2004 04 12 | 644 | 0.1+ | 0.4+ | 2004 06 16 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.8+ | 0.9+ |
| 2004 04 17 | 704 | 0.2+ | 0.1− | 2004 06 16 | 691 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.7+ | 0.0 |
| 2004 04 17 | 704 | 0.0 | 0.1− | 2004 06 16 | 691 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.9+ | 0.4+ |
| 2004 04 17 | 704 | 0.1+ | 1.0+ | 2004 06 16 | 704 | 0.8− | 0.0 | 2006 11 19 | 703 | 1.0+ | 0.4− |
| 2004 04 17 | 704 | 0.2− | 0.2− | 2004 06 16 | 704 | 0.2− | 0.8+ | 2006 11 19 | 703 | 0.2+ | 0.3− |
| 2004 04 23 | 704 | 0.8+ | 0.6+ | 2004 06 16 | 704 | 0.7− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 04 23 | 704 | 0.7+ | 0.9+ | 2005 07 11 | G96 | 0.7+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2004 04 23 | 704 | 0.3+ | 0.5+ | 2005 07 11 | G96 | 0.2+ | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2004 04 23 | 704 | 0.2− | 0.5− | 2005 07 11 | G96 | 0.7− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.0 |

**(143067)∗ 2002 WM$_{14}$ = 1998 XE$_{11}$**

Discovered 2002 Nov. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 41294)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.40818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21423956 | $\omega$ | 288.55600 | | +0.63372951 | −0.75876497 | |
| $a$ | 2.7661110 | $\Omega$ | 121.17451 | | +0.75937642 | +0.57313058 | |
| $e$ | 0.0905835 | $i$ | 10.13390 | | +0.14742578 | +0.30951100 | |
| $P$ | 4.60 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 910 | 0.2− | 1.1− | 2002 12 14 | 704 | 0.1− | 0.2− | 2004 03 25 | 704 | 0.6− | 1.1+ |
| 1998 12 15 | 910 | 0.2− | 0.8− | 2002 12 14 | 704 | 0.3+ | 0.1− | 2005 07 12 | G96 | 0.4− | 0.1+ |
| 1998 12 15 | 910 | 0.1− | 0.7− | 2002 12 14 | 704 | 0.6+ | 0.1+ | 2005 07 12 | G96 | 0.2+ | 0.4+ |
| 1998 12 16 | 910 | 0.4+ | 1.0− | 2002 12 14 | 704 | 0.2+ | 0.2− | 2005 07 12 | G96 | 0.1− | 0.0 |
| 1998 12 16 | 910 | 0.3+ | 0.7− | 2003 01 01 | 704 | 0.1− | 0.6+ | 2005 07 12 | G96 | 0.3− | 0.3+ |
| 1998 12 16 | 910 | 0.2+ | 0.7− | 2003 01 01 | 704 | 0.8− | 0.8+ | 2006 07 31 | E12 | 0.0 | 0.4− |
| 1998 12 16 | 910 | 0.1+ | 1.4− | 2003 01 01 | 704 | 0.5− | 0.6+ | 2006 07 31 | E12 | 0.4− | 0.5− |
| 1998 12 16 | 910 | 0.3− | 1.3− | 2003 01 01 | 704 | 0.0 | 0.8− | 2006 07 31 | E12 | 0.4− | 0.2− |
| 1998 12 16 | 910 | 0.4− | 0.7− | 2003 01 07 | 704 | 0.5+ | 0.3+ | 2006 07 31 | E12 | 0.8− | 0.3+ |
| 1999 02 24 | 699 | 0.2+ | 0.7+ | 2003 01 07 | 704 | 0.4− | 0.2− | 2006 09 18 | 703 | 1.4+ | 0.1+ |
| 1999 02 24 | 699 | 0.3+ | 0.4+ | 2003 01 07 | 704 | 0.9− | 0.8− | 2006 09 18 | 703 | 0.2− | 0.7+ |
| 1999 02 24 | 699 | 0.8+ | 0.0 | 2003 01 07 | 704 | (1.2− | 1.7−) | 2006 09 18 | 703 | 0.8+ | 1.0− |
| 2001 08 13 | 608 | 0.8+ | 0.1+ | 2003 01 07 | 704 | 0.6− | 0.4+ | 2006 09 18 | 703 | 0.3+ | 1.2+ |
| 2001 08 13 | 608 | 0.5+ | 0.5+ | 2003 01 08 | 608 | 0.2+ | 0.4+ | 2006 09 21 | 699 | 0.8+ | 0.9+ |
| 2001 08 13 | 608 | 0.3+ | 0.1+ | 2003 01 08 | 608 | 0.5+ | 0.5+ | 2006 09 21 | 699 | 0.4− | 0.8+ |
| 2001 08 25 | 644 | 0.4− | 0.3− | 2003 01 08 | 608 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.2− | 0.6+ |
| 2001 08 25 | 644 | 0.4− | 0.7− | 2003 01 27 | 704 | 0.2− | 0.2− | 2006 09 21 | 699 | 0.0 | 0.8+ |
| 2001 08 25 | 644 | 0.4− | 0.6− | 2003 01 27 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.8+ |
| 2001 09 11 | 704 | 0.4+ | 0.6− | 2003 01 27 | 704 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.4− | 0.4+ |
| 2001 09 11 | 704 | 1.0− | 0.4+ | 2003 01 27 | 704 | 0.3+ | 0.9− | 2006 09 26 | 703 | 0.0 | 0.6+ |
| 2001 09 11 | 704 | 0.2+ | 0.9− | 2003 01 27 | 704 | 0.5− | 0.3− | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 2001 09 11 | 704 | 0.7− | 0.5− | 2003 01 27 | 644 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2001 09 11 | 704 | (0.3− | 1.9−) | 2003 01 27 | 644 | 0.6− | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.5− |
| 2002 11 28 | 699 | (1.9+ | 0.1+) | 2003 01 27 | 644 | 0.8− | 0.5+ | 2006 09 26 | 703 | 0.2+ | 0.6+ |
| 2002 11 28 | 699 | 0.0 | 0.3− | 2004 03 15 | 704 | (2.1+ | 0.1−) | 2006 09 26 | 703 | 0.5− | 1.0− |
| 2002 11 28 | 699 | (2.2+ | 0.2+) | 2004 03 15 | 704 | 1.2+ | 1.0+ | 2006 10 02 | 703 | 0.8− | 0.4− |
| 2002 11 28 | 699 | 0.2− | 0.4+ | 2004 03 15 | 704 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.5+ | 0.0 |
| 2002 12 01 | 704 | 0.1− | 0.5− | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2006 10 02 | 703 | 0.2+ | 0.5+ |
| 2002 12 01 | 704 | 0.5− | 0.1+ | 2004 03 19 | 644 | 0.3− | 0.7+ | 2006 10 02 | 703 | 0.4+ | 0.1+ |
| 2002 12 01 | 704 | 0.3− | 0.3+ | 2004 03 19 | 644 | 0.1− | 0.9+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2002 12 05 | 608 | 0.2− | 0.7+ | 2004 03 19 | 644 | 0.0 | 0.8+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 12 05 | 608 | 0.2− | 0.8+ | 2004 03 25 | 704 | (1.9− | 0.3+) | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 12 05 | 608 | 0.1− | 0.3+ | 2004 03 25 | 704 | 0.1+ | 1.1+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2002 12 10 | 644 | 0.2+ | 0.3+ | 2004 03 25 | 704 | 0.6+ | 0.7+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2002 12 10 | 644 | 0.2+ | 0.2+ | 2004 03 25 | 704 | (1.7+ | 0.8+) | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2002 12 10 | 644 | 0.4+ | 0.3+ | 2004 03 25 | 704 | 0.8+ | 0.7+ | | | | |
| 2002 12 14 | 704 | 0.1− | 0.2− | 2004 03 25 | 704 | (0.3+ | 1.8+) | | | | |

**(143068)∗ 2002 WC$_{15}$**

Discovered 2002 Nov. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.26510 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22469603 | $\omega$ | 258.59489 | | +0.82270567 | +0.30690404 | |
| $a$ | 2.6796153 | $\Omega$ | 82.05873 | | −0.10009214 | +0.90679693 | |
| $e$ | 0.1302171 | $i$ | 28.89044 | | −0.55958641 | +0.28901425 | |
| $P$ | 4.39 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.0+ | 1.3− | 2004 01 31 | 703 | 0.8+ | 0.1− | 2006 09 26 | E12 | 0.1− | 0.0 |
| 1998 12 17 | 704 | 1.9− | 1.5− | 2004 01 31 | 703 | 1.5+ | 0.8+ | 2006 09 26 | E12 | 0.2+ | 0.1− |
| 1998 12 17 | 704 | 1.1+ | 0.7+ | 2004 01 31 | 703 | 1.2− | 0.5+ | 2006 09 26 | E12 | 0.5− | 0.3+ |
| 1998 12 17 | 704 | 0.9− | 0.8+ | 2004 01 31 | 703 | 0.9+ | 0.3− | 2006 10 02 | E12 | 0.4+ | 0.0 |
| 2002 10 31 | 704 | 0.6− | 0.6+ | 2005 05 06 | 691 | 0.5+ | 0.7+ | 2006 10 02 | E12 | 0.3+ | 0.2+ |
| 2002 10 31 | 704 | 0.5− | 0.0 | 2005 05 06 | 691 | 0.1− | 0.5+ | 2006 10 02 | E12 | 0.3+ | 0.4− |
| 2002 10 31 | 704 | 0.6− | 0.2+ | 2005 05 06 | 691 | 0.1− | 0.1+ | 2006 10 02 | E12 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | (0.8− | 1.8−) | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 10 12 | E12 | 0.0 | 0.3+ |
| 2002 11 11 | 699 | 1.2− | 0.2− | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 10 12 | E12 | 0.3− | 0.0 |
| 2002 11 11 | 699 | 0.9− | 1.0+ | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 10 12 | E12 | 0.2− | 0.0 |
| 2002 11 11 | 699 | 1.4− | 1.0+ | 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 10 12 | E12 | 0.0 | 0.4+ |
| 2002 11 11 | 699 | 0.8− | 0.6− | 2005 05 14 | 691 | 0.1+ | 0.0 | 2006 10 30 | E12 | 0.5− | 0.8+ |
| 2002 11 28 | 699 | 0.3+ | 0.5+ | 2005 05 14 | 691 | 0.8+ | 0.3− | 2006 10 30 | E12 | 0.7− | 0.6− |
| 2002 11 28 | 699 | 0.3+ | 0.5+ | 2005 06 02 | 703 | 0.6− | 0.0 | 2006 10 30 | E12 | 0.4− | 0.2− |
| 2002 11 28 | 699 | 0.5+ | 0.7+ | 2005 06 02 | 703 | 0.4− | 0.2− | 2006 10 30 | E12 | 0.2− | 0.0 |
| 2002 11 28 | 699 | 0.3+ | 0.8+ | 2005 06 02 | 703 | 0.2+ | 0.5− | 2006 11 14 | E12 | 0.6− | 0.4− |
| 2002 12 01 | 704 | 0.2+ | 0.0 | 2005 06 02 | 703 | (1.7− | 0.2+) | 2006 11 14 | E12 | 0.8− | 0.5+ |
| 2002 12 01 | 704 | 0.1− | 0.8− | 2005 06 03 | E12 | 0.0 | 0.3− | 2006 11 14 | E12 | 0.5− | 0.7+ |
| 2002 12 01 | 704 | 0.1+ | 0.6+ | 2005 06 03 | E12 | 0.1− | 0.6+ | 2006 11 14 | E12 | 0.7+ | 0.2− |
| 2002 12 15 | 608 | 0.2+ | 0.1+ | 2005 06 03 | E12 | 0.4− | 0.4− | 2006 11 18 | E12 | 0.4+ | 0.3+ |
| 2002 12 15 | 608 | 0.2+ | 0.4+ | 2005 06 03 | E12 | 0.1+ | 0.3− | 2006 11 18 | E12 | 0.1− | 0.4+ |
| 2002 12 15 | 608 | 0.3+ | 0.2+ | 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 11 18 | E12 | 0.1− | 0.0 |
| 2003 01 19 | 644 | 0.6+ | 0.9+ | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 11 18 | E12 | 0.4+ | 0.2− |
| 2003 01 19 | 644 | 0.2− | 0.6+ | 2005 06 05 | 691 | 0.0 | 0.1+ | | | | |
| 2003 01 19 | 644 | 0.5− | 0.7+ | 2006 09 26 | E12 | 0.2+ | 0.0 | | | | |

**(143069)∗ 2002 WM$_{15}$ = 2005 JP$_{136}$**

Discovered 2002 Nov. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 75809)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.27960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23839392 | $\omega$ | 254.17424 | | +0.91051432 | +0.33477180 | |
| $a$ | 2.5759609 | $\Omega$ | 85.76924 | | −0.21956447 | +0.88879317 | |
| $e$ | 0.2122197 | $i$ | 14.08368 | | −0.35036426 | +0.31300886 | |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 608 | 0.4− | 0.3− | 2002 12 10 | 644 | 0.1+ | 0.6+ | 2005 05 11 | 703 | 0.1− | 0.3+ |
| 2002 10 31 | 608 | 0.3+ | 0.5− | 2002 12 10 | 644 | 0.3+ | 0.3+ | 2005 05 15 | 644 | 0.2− | 0.6+ |
| 2002 10 31 | 608 | 0.2+ | 0.2− | 2002 12 11 | 704 | 0.7− | 0.5− | 2005 05 15 | 644 | 0.1− | 0.4+ |
| 2002 11 12 | 704 | 0.6− | 0.1− | 2002 12 11 | 704 | 0.1+ | 1.0+ | 2005 05 15 | 644 | 0.0 | 0.4+ |
| 2002 11 12 | 704 | 0.8− | 0.8+ | 2002 12 11 | 704 | (1.6+ | 0.7+) | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.9+ | 2002 12 27 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2002 11 12 | 704 | 1.1+ | 0.3− | 2002 12 27 | 644 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2002 11 12 | 644 | 0.0 | 0.7− | 2002 12 27 | 644 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.6+ |
| 2002 11 12 | 644 | 0.1− | 0.8− | 2004 01 19 | 691 | 0.3+ | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2002 11 12 | 644 | 0.1+ | 0.5− | 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.2+ |
| 2002 11 23 | 644 | 0.1− | 0.2+ | 2004 01 19 | 691 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.1− |
| 2002 11 23 | 644 | 0.4− | 0.7+ | 2004 02 11 | 644 | 0.0 | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.5− |
| 2002 11 23 | 644 | 0.4− | 0.1+ | 2004 02 11 | 644 | 0.1− | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.2+ |
| 2002 11 28 | 699 | 0.8− | 0.1− | 2004 02 11 | 644 | 0.6+ | 0.2− | 2006 10 28 | 703 | 1.0+ | 0.4+ |
| 2002 11 28 | 699 | 0.7− | 1.1− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2002 11 28 | 699 | 0.5+ | 0.2+ | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.2− | 0.4+ |
| 2002 11 28 | 699 | 0.4− | 0.6+ | 2004 05 14 | 645 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.6+ | 0.1− |
| 2002 12 01 | 704 | 0.3+ | 0.0 | 2004 05 14 | 645 | 0.0 | 0.1− | 2006 11 10 | 704 | 0.4− | 0.4+ |
| 2002 12 01 | 704 | 0.3− | 0.7+ | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 704 | 0.6− | 0.2− |
| 2002 12 01 | 704 | 0.5− | 0.4+ | 2005 04 16 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 704 | 0.1− | 1.3− |
| 2002 12 03 | 608 | 0.5+ | 0.0 | 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.4+ |
| 2002 12 03 | 608 | 0.5+ | 0.5+ | 2005 05 11 | 703 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.1+ | 0.1− |
| 2002 12 03 | 608 | 0.1+ | 0.7+ | 2005 05 11 | 703 | 0.9+ | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.2+ |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2005 05 11 | 703 | (2.5− | 0.5+) | | | | |

**(143070)∗ 2002 WB$_{16}$**

Discovered 2002 Nov. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.86032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21642810 | $\omega$ | 233.27486 | | +0.99610731 | −0.03645767 | |
| $a$ | 2.7474320 | $\Omega$ | 128.67268 | | +0.06151980 | +0.93958731 | |
| $e$ | 0.1284863 | $i$ | 5.90024 | | −0.06313116 | +0.34036236 | |
| $P$ | 4.55 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.4+ | 0.3+ | 2005 05 04 | 691 | 0.1− | 0.0 | 2006 08 28 | 704 | 0.5+ | 0.4+ |
| 2002 11 11 | 704 | 0.4− | 0.3+ | 2005 05 14 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 704 | 0.4+ | 0.7+ |
| 2002 11 11 | 704 | 0.1− | 0.7+ | 2005 05 14 | 691 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.1+ |
| 2002 11 11 | 704 | 0.8− | 0.4+ | 2005 05 14 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 0.6− | 1.1+ |
| 2002 11 11 | 704 | 0.0 | 1.2+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.6− | 0.1− |
| 2002 11 28 | 699 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 08 28 | 699 | 1.3− | 0.2+ |
| 2002 11 28 | 699 | 0.4+ | 0.1− | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.0 | 0.5− |
| 2002 11 28 | 699 | 0.5− | 0.4− | 2006 08 18 | 699 | 0.6+ | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.9+ |
| 2002 11 28 | 699 | 0.3− | 0.8− | 2006 08 18 | 699 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.9− |
| 2002 12 01 | 704 | 0.2+ | 0.3+ | 2006 08 18 | 699 | 0.7+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2002 12 01 | 704 | 1.4− | 1.0+ | 2006 08 18 | 699 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.6+ | 1.6+ |
| 2002 12 01 | 704 | 0.3+ | 0.5− | 2006 08 21 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 1.1− | 0.1+ |
| 2002 12 01 | 704 | 0.6+ | 1.6+ | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.9− | 0.1+ |
| 2004 02 17 | 704 | 0.1− | 1.5+ | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.0 | 0.4− |
| 2004 02 17 | 704 | (0.5+ | 2.1+) | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 09 18 | 699 | 1.0− | 0.5+ |
| 2004 02 17 | 704 | 0.9+ | 1.6+ | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.7− | 0.5+ |
| 2004 02 23 | 704 | 1.9+ | 0.4− | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.2− |
| 2004 02 23 | 704 | 1.1+ | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1− |
| 2004 02 23 | 704 | (0.9+ | 2.3+) | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 30 | 703 | 2.8+ | 2.2+ |
| 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2004 03 17 | 691 | 0.2− | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.5+ | 1.4− |
| 2004 03 17 | 691 | 0.2− | 0.7+ | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.6+ |
| 2005 05 04 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.1+ | 0.3+ | | | | |
| 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 704 | 0.5+ | 1.2+ | | | | |

**(143071)∗ 2002 WE$_{16}$ = 2000 KS$_{34}$**

Discovered 2002 Nov. 28 by NEAT at Haleakala.
Id. S. Nakano (*MPO* 41296)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.20248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22826153 | $\omega$ | 304.32019 | | −0.98373779 | −0.13239230 | |
| $a$ | 2.6516380 | $\Omega$ | 228.39504 | | +0.16299214 | −0.94192597 | |
| $e$ | 0.0992781 | $i$ | 9.34183 | | −0.07545538 | −0.30862235 | |
| $P$ | 4.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.1+ | 0.4+ | 2004 03 19 | 704 | (1.6− | 2.3−) | 2006 10 12 | 691 | 0.2+ | 0.3+ |
| 2000 05 27 | 704 | 0.6− | 0.2+ | 2004 03 19 | 704 | 1.3− | 1.3− | 2006 10 12 | 691 | 0.4+ | 0.4+ |
| 2000 05 27 | 704 | 0.9+ | 1.0+ | 2004 03 19 | 704 | (1.0− | 2.6−) | 2006 10 12 | 691 | 0.2+ | 0.0 |
| 2000 05 27 | 704 | 0.3− | 1.0+ | 2004 03 19 | 704 | 0.3− | 0.8− | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2000 05 30 | 704 | 0.6− | 0.6+ | 2004 03 20 | 699 | 0.7− | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2000 05 30 | 704 | 0.1+ | 0.9+ | 2004 03 20 | 699 | (1.6− | 0.8−) | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2000 05 30 | 704 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.8− | 1.2+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2000 05 30 | 704 | 0.8+ | 0.5+ | 2004 03 20 | 699 | 0.1+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2000 05 30 | 704 | 0.0 | 1.7+ | 2004 03 26 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.5− | 0.2+ |
| 2000 07 03 | 691 | 0.5− | 0.3+ | 2004 03 26 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 691 | 0.5− | 0.2+ |
| 2000 07 03 | 691 | 0.5− | 0.0 | 2004 03 26 | 704 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.4− | 0.1+ |
| 2000 07 03 | 691 | 0.5− | 0.1+ | 2004 03 26 | 704 | 0.2+ | 1.2+ | 2006 10 20 | 691 | 0.4− | 0.4+ |
| 2001 08 25 | 704 | 0.0 | 0.9+ | 2004 03 27 | 699 | 1.0− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 08 25 | 704 | 0.5+ | 0.5+ | 2004 03 27 | 699 | 0.4− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 08 25 | 704 | 0.7+ | 0.3+ | 2004 03 27 | 699 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 08 25 | 704 | 0.0 | 0.2− | 2004 03 27 | 699 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.6+ | 0.5− | 2004 03 29 | 704 | 1.0+ | 1.2+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 1.4− | 1.4+ | 2004 03 29 | 704 | 0.9+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2004 03 29 | 704 | 1.0+ | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2001 09 16 | 704 | (0.3+ | 1.7+) | 2004 04 08 | E12 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2001 09 16 | 704 | (1.4− | 2.4+) | 2004 04 08 | E12 | (1.4+ | 1.6+) | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2001 09 16 | 704 | (1.4− | 1.8+) | 2004 04 08 | E12 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.1+ | 0.9+ | 2004 04 08 | E12 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | 0.4− | 0.4− | 2004 04 09 | E12 | 1.0− | 1.1+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.5− | 0.2+ | 2004 04 09 | E12 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | 0.3+ | 0.2+ | 2004 04 09 | E12 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 04 09 | E12 | 0.6− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 04 17 | 704 | 0.8+ | 0.3+ | 2006 11 11 | 703 | (1.6+ | 0.2+) |
| 2002 11 07 | 704 | 1.0− | 0.0 | 2004 04 17 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 1.3+ | 0.4+ |
| 2002 11 07 | 704 | 0.4− | 0.1+ | 2004 04 17 | 704 | 1.0+ | 0.5+ | 2006 11 11 | 703 | 0.8+ | 0.4+ |
| 2002 11 07 | 704 | (0.2+ | 1.6+) | 2004 04 17 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2002 11 07 | 704 | 1.2+ | 0.1− | 2004 04 19 | 704 | 0.5+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2002 11 28 | 608 | 1.3− | 0.5+ | 2004 04 19 | 704 | (1.9+ | 0.5+) | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2002 11 28 | 608 | 1.3− | 0.5+ | 2004 04 19 | 704 | 1.3+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2002 11 28 | 608 | 0.8− | 0.4+ | 2004 04 19 | 704 | 1.3+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2002 12 01 | 704 | 0.2+ | 0.4+ | 2004 04 21 | 704 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 12 01 | 704 | 0.7+ | 0.2− | 2004 04 21 | 704 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 12 01 | 704 | 0.4+ | 0.7+ | 2004 04 21 | 704 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2002 12 01 | 704 | 0.8+ | 0.5+ | 2004 04 21 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2002 12 10 | 644 | 0.9+ | 0.1+ | 2004 04 21 | 704 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2002 12 10 | 644 | 0.6+ | 0.2+ | 2004 05 15 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 12 10 | 644 | 0.6+ | 0.3+ | 2004 05 15 | 704 | 0.1+ | 1.1+ | 2006 11 17 | 703 | 0.5+ | 0.9+ |
| 2004 03 15 | 644 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.7+ | 0.9+ | 2006 11 17 | 703 | 0.2− | 0.9+ |
| 2004 03 15 | 644 | 0.2− | 0.4+ | 2004 05 15 | 704 | 0.7+ | 0.0 | 2006 11 22 | 104 | 0.2+ | 0.3+ |
| 2004 03 15 | 644 | 0.1+ | 0.1− | 2004 05 16 | 704 | (0.3+ | 1.9+) | 2006 11 22 | 104 | 0.3+ | 0.0 |
| 2004 03 17 | 704 | 0.1− | 0.3+ | 2004 05 16 | 704 | (1.9+ | 0.5+) | 2006 11 22 | 104 | (4.3+ | 0.3−) |
| 2004 03 17 | 704 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2004 03 17 | 704 | 0.3+ | 0.4− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2004 03 17 | 704 | 0.6+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 03 17 | 704 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.3− |

**(143072)∗ 2002 WJ$_{16}$ = 2001 LX$_{15}$**

Discovered 2002 Nov. 28 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 41296)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 39.88644 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23780676 | | $\omega$ | 132.44187 | | +0.91929256 | | +0.38656484 | |
| $a$ | 2.5801993 | | $\Omega$ | 205.08938 | | −0.39243999 | | +0.88605641 | |
| $e$ | 0.2176084 | | $i$ | 10.04379 | | −0.02986705 | | +0.25587431 | |
| $P$ | 4.14 | | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1+ | 0.2− | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2000 03 04 | 645 | 0.2+ | 0.2− | 2005 06 01 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 05 05 | 645 | 0.3− | 0.2+ | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 05 05 | 645 | 0.2− | 0.2+ | 2005 06 01 | 691 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2001 06 12 | 608 | 0.1+ | 0.7− | 2005 06 05 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.5− | 0.2+ |
| 2001 06 12 | 608 | 0.1+ | 0.6− | 2005 06 05 | 691 | 0.4+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2001 06 12 | 608 | 0.2− | 0.7− | 2005 06 05 | 691 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.5+ | 0.7+ |
| 2001 06 15 | 704 | 0.3+ | 0.1+ | 2005 06 13 | 691 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.7− | 1.0+ |
| 2001 06 15 | 704 | 0.9− | 0.2+ | 2005 06 13 | 691 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.2− | 0.1+ |
| 2001 06 15 | 704 | 0.2− | 0.1+ | 2005 06 13 | 691 | 0.6+ | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.0 |
| 2002 11 28 | 608 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 1.0+ | 2006 11 14 | 704 | 0.7+ | 0.5+ |
| 2002 11 28 | 608 | 0.4− | 1.1− | 2006 10 16 | 703 | 0.6− | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.9+ |
| 2002 11 28 | 608 | 0.7+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.4− | 0.8+ |
| 2002 12 01 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.7+ | 1.0− | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 2002 12 01 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.2− | 2006 11 17 | 704 | 1.1+ | 0.1+ |
| 2002 12 01 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.8+ | 0.2− |
| 2002 12 10 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | 1.2− | 0.8+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 10 16 | 703 | 1.1− | 0.9+ | 2006 11 19 | 703 | 0.4− | 0.1− |
| 2002 12 10 | 644 | 0.0 | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.0 | 0.1+ |
| 2002 12 14 | 704 | 0.8+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.8− | 0.2+ |
| 2002 12 14 | 704 | 0.9− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 1.2+ | 1.2+ |
| 2002 12 14 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | (0.1+ | 3.0+) |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | (0.7− | 1.6+) |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.1− |

**(143073)∗ 2002 WD$_{17}$**

Discovered 2002 Nov. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 5.26626 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24231372 | | $\omega$ | 233.05749 | | +0.90609247 | | −0.41946398 | |
| $a$ | 2.5481053 | | $\Omega$ | 151.62134 | | +0.41563132 | | +0.85816144 | |
| $e$ | 0.2693918 | | $i$ | 6.66858 | | +0.07903826 | | +0.29598803 | |
| $P$ | 4.07 | | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.1− | 1.6− | 2003 02 02 | 704 | (1.6− | 0.8+) | 2006 09 19 | 704 | 0.7− | 0.2+ |
| 1998 12 15 | 704 | 0.7− | 1.2− | 2003 02 02 | 704 | 0.1− | 0.8+ | 2006 09 19 | 704 | 0.1− | 0.3+ |
| 1998 12 15 | 704 | 1.2− | 0.0 | 2003 02 02 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 704 | 0.5− | 0.0 |
| 1998 12 15 | 704 | 0.6+ | 1.5− | 2003 02 02 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 704 | 1.0− | 0.3− |
| 1998 12 15 | 704 | 0.6− | 1.1− | 2003 02 05 | 608 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.4− |
| 2002 10 04 | 704 | 0.9− | 0.6+ | 2003 02 05 | 608 | 0.1+ | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.1+ | 0.4+ | 2003 02 05 | 608 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.2− |
| 2002 10 04 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 704 | (0.4+ | 1.7+) | 2006 09 22 | 704 | (1.6+ | 0.7+) |
| 2002 10 04 | 704 | 0.1+ | 1.0+ | 2004 03 23 | 704 | 0.4− | 0.7+ | 2006 09 22 | 704 | 0.4− | 0.1+ |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2004 03 23 | 704 | 0.8+ | 0.5+ | 2006 09 22 | 704 | 1.0+ | 0.8− |
| 2002 10 09 | 704 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.9+ | 1.0+ | 2006 09 22 | 704 | 0.2+ | 0.4+ |
| 2002 10 09 | 704 | 0.3+ | 0.1− | 2005 06 01 | G96 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.5− | 0.4− |
| 2002 10 09 | 704 | 0.1+ | 0.0 | 2005 06 01 | G96 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 0.6+ | 0.2+ | 2005 06 01 | G96 | 0.5− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.3− | 1.0+ | 2005 06 01 | G96 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.3− |
| 2002 11 05 | 704 | (0.6+ | 2.2+) | 2005 06 28 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.4+ |
| 2002 11 05 | 704 | (0.7+ | 1.9+) | 2005 06 28 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.5+ |
| 2002 11 05 | 704 | (0.6− | 2.1+) | 2005 06 28 | 691 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.5+ | 0.6+ |
| 2002 11 05 | 704 | (0.6− | 2.2+) | 2005 07 01 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 0.7+ | 1.0− | 2005 07 01 | 691 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.5+ | 1.5+ |
| 2002 11 12 | 704 | 0.6+ | 1.0− | 2005 07 01 | 691 | (1.5+ | 2.0+) | 2006 10 03 | 704 | (3.9− | 0.1+) |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2005 07 11 | 691 | 0.2+ | 0.6+ | 2006 10 03 | 704 | (3.6− | 0.4+) |
| 2002 11 28 | 608 | 0.1− | 0.4+ | 2005 07 11 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 704 | (4.4− | 0.3−) |
| 2002 11 28 | 608 | 0.2− | 0.7+ | 2005 07 11 | 691 | 0.4+ | 0.6+ | 2006 10 03 | 704 | (4.2− | 0.6+) |
| 2002 11 28 | 608 | 0.1+ | 0.5+ | 2005 07 27 | 644 | 0.3+ | 0.3+ | 2006 10 03 | 704 | (3.7− | 0.5−) |
| 2002 12 01 | 704 | 0.2+ | 0.3+ | 2005 07 27 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 12 01 | 704 | 0.2+ | 0.9− | 2005 07 27 | 644 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 12 01 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 12 14 | 704 | 0.1− | 0.8+ | 2006 08 28 | 704 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.1+ | 0.0 | 2006 08 28 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.1+ | 0.1− | 2006 08 28 | 704 | (1.0+ | 2.2+) | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 09 15 | 683 | 1.1+ | 0.7− | 2006 10 30 | 703 | 1.1− | 0.7− |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 09 15 | 683 | (0.4+ | 1.7+) | 2006 10 30 | 703 | 0.5− | 0.7− |
| 2003 01 01 | 704 | 0.6+ | 0.9+ | 2006 09 15 | 683 | (2.5− | 2.2+) | 2006 10 30 | 703 | 0.2− | 0.9− |
| 2003 01 01 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 704 | (0.1+ | 1.8+) | 2006 10 30 | 703 | 0.7− | 1.0− |
| 2003 01 01 | 704 | 0.3− | 1.4+ | 2006 09 16 | 704 | 0.4− | 1.1+ | 2006 11 05 | 644 | 0.1− | 0.3+ |
| 2003 01 01 | 704 | 0.3− | 1.3+ | 2006 09 16 | 704 | 0.7− | 0.3+ | 2006 11 05 | 644 | 0.0 | 0.0 |
| 2003 01 01 | 704 | 0.8+ | 1.1+ | 2006 09 16 | 683 | 0.0 | 0.4+ | 2006 11 05 | 644 | 0.1+ | 0.1+ |
| 2003 01 05 | 704 | 0.3− | 0.7+ | 2006 09 16 | 683 | (1.7− | 1.9+) | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.4− | 0.8+ | 2006 09 16 | 683 | 0.9− | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 683 | (1.5+ | 0.3−) | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 683 | (1.5+ | 0.4−) | 2006 11 13 | 703 | 0.2− | 0.4+ |
| 2003 01 05 | 704 | 0.0 | 0.6+ | 2006 09 17 | 683 | 0.2− | 1.3− | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2003 01 08 | 699 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2003 01 08 | 699 | 0.1+ | 0.8− | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.0 | 0.3− |
| 2003 01 08 | 699 | 1.0− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2003 01 08 | 699 | 0.2− | 0.8+ | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2003 01 27 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 683 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.6+ | 0.9+ |
| 2003 01 27 | 704 | 0.1+ | 0.3− | 2006 09 18 | 683 | (1.2+ | 2.0+) | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2003 01 27 | 704 | 0.0 | 0.4+ | 2006 09 18 | 683 | (0.1+ | 2.0+) | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2003 01 27 | 704 | 0.3+ | 1.4+ | 2006 09 19 | 704 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.6+ |

**(143074)∗ 2002 WK$_{19}$**

Discovered 2002 Nov. 25 by S. F. Hoenig on NEAT images taken at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 21.61980 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22777629 | | $\omega$ | 183.49962 | | +0.96448963 | | +0.26385153 | |
| $a$ | 2.6554026 | | $\Omega$ | 161.18859 | | −0.24141948 | | +0.89900025 | |
| $e$ | 0.1241875 | | $i$ | 2.11874 | | −0.10712787 | | +0.34954387 | |
| $P$ | 4.33 | | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.3+ | 0.4+ | 2004 03 17 | 691 | 0.2− | 0.2− | 2006 10 15 | 703 | 0.7− | 1.4+ |
| 2002 11 13 | 644 | 0.9+ | 0.4+ | 2004 03 17 | 691 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.2− | 0.2+ |
| 2002 11 16 | 644 | 0.1− | 0.1+ | 2005 06 01 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2002 11 16 | 644 | 0.2− | 0.1− | 2005 06 01 | 691 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2002 11 24 | 644 | 1.0− | 0.0 | 2005 06 01 | 691 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.4+ |
| 2002 11 24 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2002 11 24 | 644 | 0.4− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2002 11 25 | 644 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2002 11 25 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2002 11 25 | 644 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2002 12 10 | 644 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.3− | 0.3+ |
| 2002 12 10 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | (2.0− | 2.5−) | 2006 10 31 | G96 | 0.4+ | 0.3+ |
| 2004 02 18 | 291 | 0.2+ | 0.4+ | 2006 09 26 | G96 | (0.2− | 1.6−) | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 02 18 | 291 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 02 18 | 291 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.2− | 0.7− | 2006 11 16 | G96 | 0.3+ | 0.1− |

**(143075)∗ 2002 WP$_{20}$ = 2005 HL$_{5}$**

Discovered 2002 Nov. 29 at Farpoint Observatory, Eskridge.

Id. G. V. Williams (*MPO* 75810)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.78265 | | (2000.0) | | | |
| $n$ | 0.21306946 | $\omega$ | 217.27890 | | +0.18352623 | +0.95501805 |
| $a$ | 2.7762287 | $\Omega$ | 64.37884 | | −0.82815792 | +0.27787273 |
| $e$ | 0.1562971 | $i$ | 14.97137 | | −0.52959662 | −0.10357249 |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.8+ | 0.3+ | 2005 05 08 | 699 | 0.5− | 0.2+ | 2005 06 13 | G96 | 0.4− | 0.3+ |
| 2000 03 29 | 704 | 1.4+ | 0.7− | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.6− | 0.2+ |
| 2000 03 29 | 704 | 0.1+ | 0.3+ | 2005 05 08 | 699 | (0.6+ | 2.3+) | 2005 06 14 | 699 | 0.0 | 0.1+ |
| 2000 03 29 | 704 | 0.3+ | 0.5+ | 2005 05 08 | 704 | 1.4+ | 0.6− | 2005 06 14 | 699 | 0.5+ | 0.3+ |
| 2000 04 10 | 608 | 0.5+ | 0.3+ | 2005 05 08 | 691 | 0.1+ | 0.2+ | 2005 06 14 | 699 | 0.3+ | 0.2− |
| 2000 04 10 | 608 | 0.2+ | 0.4+ | 2005 05 08 | 704 | 0.3+ | 0.5+ | 2005 06 14 | 699 | 0.5− | 0.1− |
| 2000 04 10 | 608 | 0.2− | 0.2+ | 2005 05 08 | 704 | 0.7+ | 1.0+ | 2005 06 27 | 644 | 0.1− | 0.1− |
| 2001 07 22 | 644 | 0.2− | 0.0 | 2005 05 08 | 704 | 0.9+ | 0.2+ | 2005 06 27 | 644 | 0.0 | 0.3− |
| 2001 07 22 | 644 | 0.3− | 0.2+ | 2005 05 09 | 699 | 0.2− | 0.0 | 2005 06 27 | 644 | 0.1− | 0.2− |
| 2001 07 22 | 644 | 0.6− | 0.3+ | 2005 05 09 | 699 | 0.7− | 0.7+ | 2006 09 25 | 703 | 0.3− | 0.9+ |
| 2002 11 24 | 644 | 0.7− | 0.5+ | 2005 05 09 | 699 | 0.1− | 0.4+ | 2006 09 25 | 703 | 0.3+ | 1.2+ |
| 2002 11 24 | 644 | 0.5− | 0.9+ | 2005 05 09 | 699 | 0.2− | 0.9+ | 2006 09 25 | 703 | 0.5− | 0.7− |
| 2002 11 24 | 644 | 0.7− | 0.7+ | 2005 05 12 | 704 | 0.2+ | 0.4− | 2006 09 25 | 703 | 1.1+ | 1.1− |
| 2002 11 29 | 734 | 1.1− | 0.1− | 2005 05 12 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 11 29 | 734 | 1.4− | 0.3− | 2005 05 12 | 704 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2002 11 29 | 734 | 0.2− | 0.1− | 2005 05 12 | 704 | 0.1− | 1.2+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2002 12 05 | 704 | 0.6− | 0.2+ | 2005 05 12 | 704 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.7+ | 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.6+ |
| 2002 12 05 | 704 | 0.9+ | 0.6− | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2002 12 08 | 291 | 0.4− | 0.4+ | 2005 05 13 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.7+ |
| 2002 12 08 | 291 | 0.1− | 0.4+ | 2005 05 14 | G96 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 12 08 | 291 | 0.3+ | 0.6+ | 2005 05 14 | G96 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2005 04 05 | 644 | 0.3+ | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.4− | 2006 10 21 | 703 | 0.9− | 0.5− |
| 2005 04 05 | 644 | 0.9+ | 0.5+ | 2005 05 14 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.4+ | 0.1− |
| 2005 04 05 | 644 | 0.6+ | 0.5+ | 2005 05 14 | 644 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.3+ |
| 2005 04 30 | 599 | 0.1+ | 0.0 | 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.8− | 1.0− |
| 2005 04 30 | 599 | 0.3− | 0.0 | 2005 05 14 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2005 05 01 | 599 | 0.1− | 0.1− | 2005 05 16 | 704 | 1.4+ | 0.7− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2005 05 01 | 599 | 0.2− | 0.1+ | 2005 05 16 | 704 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.4+ | 0.2+ |
| 2005 05 03 | 704 | 0.5− | 0.7+ | 2005 05 16 | 704 | 0.7+ | 0.5− | 2006 10 28 | 703 | 0.2− | 1.4− |
| 2005 05 03 | 704 | 0.0 | 0.1+ | 2005 05 16 | 704 | (0.4+ | 1.8+) | 2006 10 28 | 703 | 1.0+ | 0.4+ |
| 2005 05 03 | 704 | 0.5− | 0.5+ | 2005 05 30 | 699 | 0.8− | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.5+ |
| 2005 05 03 | 704 | 0.4− | 0.7+ | 2005 05 30 | 699 | 0.8+ | 0.6− | 2006 10 28 | 703 | 0.8− | 0.1− |
| 2005 05 03 | 704 | 0.0 | 0.4+ | 2005 05 30 | 699 | (0.3− | 1.6+) | 2006 11 19 | 703 | 1.8− | 0.2+ |
| 2005 05 08 | 699 | 0.3+ | 0.3− | 2005 05 30 | 699 | 0.8+ | 0.2− | 2006 11 19 | 703 | 0.8+ | 1.3+ |
| 2005 05 08 | 699 | 0.2− | 0.5+ | 2005 06 13 | G96 | 0.5− | 0.3+ | 2006 11 19 | 703 | 0.3− | 1.4+ |
| 2005 05 08 | 691 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.7− | 0.3+ | 2006 11 19 | 703 | 0.2+ | 1.6+ |

**(143076)∗ 2002 WE$_{21}$ = 1996 KC$_6$**

Discovered 2002 Nov. 24 by NEAT at Palomar.

Id. A. Doppler (*MPO* 94872)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 99.55626 | | (2000.0) | | | |
| $n$ | 0.22533315 | $\omega$ | 41.40396 | | −0.02769047 | +0.98458043 |
| $a$ | 2.6745619 | $\Omega$ | 227.78338 | | −0.96750128 | −0.06984516 |
| $e$ | 0.1503150 | $i$ | 13.48688 | | −0.25134541 | +0.16038401 |
| $P$ | 4.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 19 | 809 | 1.4+ | 1.7+ | 2002 11 24 | 644 | 0.6+ | 0.1− | 2006 09 28 | 703 | 0.9+ | 0.6+ |
| 1996 05 19 | 809 | (0.2+ | 2.8+) | 2002 12 10 | 644 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.8− | 1.2− |
| 1996 05 19 | 809 | 0.2+ | 0.7+ | 2002 12 10 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1996 05 21 | 566 | 0.2− | 0.6+ | 2002 12 10 | 644 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 1996 05 21 | 566 | 0.2− | 0.8+ | 2002 12 27 | 644 | 0.5+ | 0.4− | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 1996 06 13 | 566 | 0.1+ | 0.0 | 2002 12 27 | 644 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1996 06 13 | 566 | 0.0 | 0.2+ | 2002 12 27 | 644 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 1996 06 13 | 566 | 0.4− | 0.4+ | 2004 01 28 | 704 | 1.0− | 1.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 07 14 | 644 | 0.0 | 0.2+ | 2004 01 28 | 704 | 0.4+ | 1.1+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 07 14 | 644 | 0.0 | 0.3+ | 2004 01 28 | 704 | 0.5− | 0.0 | 2006 10 21 | 691 | 0.4− | 0.0 |
| 2001 07 14 | 644 | 0.1− | 0.5+ | 2004 01 28 | 704 | 0.5+ | 0.3− | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2001 08 18 | 644 | 0.4+ | 0.3+ | 2005 01 18 | 809 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2001 08 18 | 644 | 0.3+ | 0.3+ | 2005 01 18 | 809 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2001 08 18 | 644 | 0.2+ | 0.2+ | 2005 01 18 | 809 | 0.5+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2001 09 22 | 644 | 0.5+ | 0.3+ | 2005 02 10 | 809 | 0.4+ | 0.4+ | 2006 11 07 | 644 | 0.4− | 0.6+ |
| 2001 09 22 | 644 | 0.3+ | 0.1+ | 2005 02 10 | 809 | 0.3+ | 0.4+ | 2006 11 07 | 644 | 0.4− | 0.7+ |
| 2001 09 22 | 644 | 0.3+ | 0.1− | 2005 02 10 | 809 | 0.0 | 1.2+ | 2006 11 07 | 644 | 0.3+ | 0.2+ |
| 2001 10 15 | 645 | 0.1− | 0.1− | 2005 07 02 | 703 | 0.5− | 0.6− | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2005 07 02 | 703 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2002 10 30 | 608 | 0.2− | 0.0 | 2005 07 02 | 703 | 0.5+ | 0.4− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 10 30 | 608 | 0.3− | 0.2− | 2005 07 02 | 703 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 11 16 | 644 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.4− | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2002 11 16 | 644 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2002 11 16 | 644 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.4− | 2006 11 20 | 691 | 0.4+ | 0.4+ |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.8− | 0.2+ | 2006 11 20 | 691 | 0.4+ | 0.5+ |
| 2002 11 24 | 644 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.0 | 1.0+ | 2006 11 20 | 691 | 0.5+ | 0.1+ |

**(143077)∗ 2002 XX$_1$**

Discovered 2002 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 262.75176 | | (2000.0) | | | |
| $n$ | 0.22585310 | $\omega$ | 8.04745 | | −0.70519431 | −0.70414825 |
| $a$ | 2.6704555 | $\Omega$ | 126.84655 | | +0.64460123 | −0.68543642 |
| $e$ | 0.1755212 | $i$ | 5.94779 | | +0.29527993 | −0.18534336 |
| $P$ | 4.36 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.2− | 0.1− | 2004 04 23 | 704 | 1.0+ | 1.1+ | 2005 07 09 | 691 | 0.3+ | 0.6− |
| 1995 02 25 | 691 | 0.2+ | 0.1− | 2004 04 23 | 704 | 0.7+ | 0.9+ | 2005 07 09 | 691 | 0.1− | 0.5− |
| 1995 02 25 | 691 | 0.2− | 0.6− | 2004 04 23 | 704 | 0.2+ | 1.0+ | 2005 07 09 | 691 | 0.0 | 0.5+ |
| 2002 11 11 | 704 | 0.0 | 0.2+ | 2004 04 23 | 704 | 0.2+ | 1.1+ | 2006 10 04 | G96 | 0.0 | 0.2+ |
| 2002 11 11 | 704 | 0.2− | 1.0+ | 2004 04 23 | 704 | 0.4+ | 0.9+ | 2006 10 04 | G96 | 0.2+ | 0.1+ |
| 2002 11 11 | 704 | 1.0− | 0.5+ | 2004 04 24 | 704 | 0.4− | 0.8+ | 2006 10 04 | G96 | 0.5+ | 0.1+ |
| 2002 11 11 | 704 | (0.1+ | 1.5+) | 2004 04 24 | 704 | 0.4− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2002 12 01 | 704 | 0.3+ | 0.6+ | 2004 04 24 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 2002 12 01 | 704 | (0.4− | 1.9+) | 2004 04 24 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 1.4− |
| 2002 12 01 | 704 | (1.3− | 2.0+) | 2004 04 25 | 704 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2002 12 01 | 704 | 1.1− | 1.3+ | 2004 04 25 | 704 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2002 12 03 | 608 | 0.5− | 0.6− | 2004 04 25 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2002 12 03 | 608 | 0.5− | 0.0 | 2004 04 25 | 704 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2002 12 03 | 608 | 0.3− | 0.3+ | 2004 04 25 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2002 12 11 | 704 | 0.6− | 1.5− | 2004 05 23 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.5+ | 0.0 | 2004 05 23 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 12 11 | 704 | 0.3− | 0.6− | 2004 05 23 | 704 | 0.2+ | 0.7− | 2006 10 22 | 644 | 0.5+ | 0.4+ |
| 2002 12 11 | 704 | 1.2+ | 1.1− | 2004 05 23 | 704 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.6+ |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2005 06 15 | G96 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.7+ | 1.8+ |
| 2002 12 27 | 644 | 0.4+ | 0.7+ | 2005 06 15 | G96 | 0.4− | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.4+ |
| 2002 12 27 | 644 | 0.4+ | 0.8+ | 2005 06 15 | G96 | 0.3− | 0.2+ | 2006 10 28 | 703 | 1.0− | 0.3+ |
| 2002 12 27 | 644 | 0.2+ | 0.9+ | 2005 06 15 | G96 | 0.4− | 0.2+ | 2006 10 28 | 703 | 0.3− | 0.6+ |

**(143078)∗ 2002 XM$_2$ = 2004 HG$_{47}$**

Discovered 2002 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61634)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 257.70841 | | (2000.0) | | | |
| $n$ | 0.23390798 | $\omega$ | 291.61940 | | −0.89797303 | −0.42757328 |
| $a$ | 2.6087915 | $\Omega$ | 223.25235 | | +0.43855262 | −0.85005006 |
| $e$ | 0.1454660 | $i$ | 8.73383 | | +0.03627724 | −0.30756461 |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.9+ | 1.1+ | 2004 04 22 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.0 | |
| 2000 05 27 | 704 | 1.1+ | 0.2+ | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | |
| 2000 05 27 | 704 | 0.1+ | 0.9+ | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | |
| 2000 05 27 | 704 | 0.5+ | 0.9+ | 2004 04 25 | 704 | 0.5− | 0.4− | 2006 10 20 | 691 | 0.0 | 0.2+ | |
| 2001 08 25 | 704 | 0.5+ | 0.1− | 2004 04 25 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 2001 08 25 | 704 | 0.7+ | 0.7− | 2004 04 25 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.1+ | |
| 2001 08 25 | 704 | 0.2− | 0.1− | 2004 05 09 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.3− | 0.1− | |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2004 05 09 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2004 05 09 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 | |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2004 05 11 | 699 | (1.9− | 0.9−) | 2006 10 27 | G96 | 0.2+ | 0.1− | |
| 2001 09 20 | 645 | 0.1− | 0.1+ | 2004 05 11 | 699 | 0.5− | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.1+ | |
| 2002 12 01 | 704 | 0.8+ | 0.3+ | 2004 05 11 | 699 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.0 | 0.2+ | |
| 2002 12 01 | 704 | 0.5− | 0.4+ | 2004 05 11 | 699 | 0.8− | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.4+ | |
| 2002 12 01 | 704 | 0.2+ | 0.4+ | 2004 05 16 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 1.1− | |
| 2002 12 01 | 704 | 0.1− | 0.3+ | 2004 05 16 | 704 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.5+ | 0.6− | |
| 2002 12 03 | 644 | 0.2− | 0.2+ | 2004 05 16 | 704 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.4− | |
| 2002 12 03 | 644 | 0.2+ | 0.3+ | 2004 05 16 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.5+ | 0.4− | |
| 2002 12 03 | 644 | 0.3+ | 0.2+ | 2004 05 16 | 704 | 0.2+ | 1.1+ | 2006 11 17 | 703 | 0.8− | 0.5− | |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2004 05 16 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.2+ | 0.1+ | |
| 2002 12 05 | 704 | 0.9− | 0.1− | 2004 05 16 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.6+ | |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.1+ | |
| 2002 12 10 | 644 | 0.3− | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.2− | 1.1+ | |
| 2002 12 10 | 644 | 0.6− | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.8+ | |
| 2002 12 10 | 644 | 0.4− | 1.0+ | 2006 09 27 | G96 | 0.6− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 1.4+ | |

**(143079)∗ 2002 XC$_3$**

Discovered 2002 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.59768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22856026 | $\omega$ | 22.91501 | | −0.72103476 | −0.67460908 | |
| $a$ | 2.6493270 | $\Omega$ | 113.66972 | | +0.60597817 | −0.72462120 | |
| $e$ | 0.0632631 | $i$ | 9.94348 | | +0.33600497 | −0.14080734 | |
| $P$ | 4.31 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 05 | 699 | 0.3+ | 0.4+ | 2004 03 12 | 644 | 0.1− | 0.3+ | 2005 06 28 | G96 | 0.4− | 0.7+ | |
| 2000 06 05 | 699 | 0.2− | 0.5+ | 2004 03 15 | 704 | 0.4− | 0.6+ | 2005 06 28 | G96 | 0.4− | 0.0 | |
| 2000 06 05 | 699 | 0.2+ | 0.6− | 2004 03 15 | 704 | (1.8+ | 1.7+) | 2005 06 28 | G96 | 0.4− | 0.6+ | |
| 2000 06 05 | 699 | 0.1− | 1.1+ | 2004 03 15 | 704 | 0.7+ | 1.4+ | 2005 07 07 | 691 | 0.3+ | 0.2+ | |
| 2002 12 01 | 704 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.0 | 0.5+ | 2005 07 07 | 691 | 0.4− | 0.0 | |
| 2002 12 01 | 704 | 0.4− | 0.1+ | 2004 03 15 | 704 | (1.8+ | 1.2+) | 2005 07 07 | 691 | 0.2+ | 0.3+ | |
| 2002 12 01 | 704 | 0.4− | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 10 12 | 644 | 0.4− | 0.4+ | |
| 2002 12 03 | 644 | 0.0 | 0.9+ | 2004 03 23 | 704 | 0.2+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.8+ | |
| 2002 12 03 | 644 | 0.1− | 0.9+ | 2004 03 23 | 704 | 0.7+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.5+ | |
| 2002 12 03 | 644 | 0.1− | 0.8+ | 2004 03 23 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.1+ | 1.2+ | |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2004 03 28 | 703 | 0.2+ | 0.0 | 2006 10 17 | 703 | (0.4− | 1.5+) | |
| 2002 12 14 | 704 | 0.4− | 0.3− | 2004 03 28 | 703 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.4− | 1.1+ | |
| 2002 12 14 | 704 | 0.2− | 0.8+ | 2004 03 28 | 703 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.6+ | |
| 2002 12 14 | 704 | 1.2+ | 0.1− | 2004 03 28 | 703 | 0.8− | 0.9+ | 2006 10 28 | 703 | 1.3− | 1.1+ | |
| 2002 12 14 | 704 | 0.1+ | 0.5− | 2004 04 24 | 704 | 1.3+ | 0.2+ | 2006 10 28 | 703 | (0.6− | 1.6−) | |
| 2003 01 25 | 699 | 0.1− | 0.4+ | 2004 04 24 | 704 | 0.3− | 0.3− | 2006 10 28 | 703 | 0.5− | 0.4− | |
| 2003 01 25 | 699 | (2.1− | 0.1+) | 2004 04 24 | 704 | 0.8+ | 0.0 | 2006 10 28 | 703 | 1.3+ | 0.1+ | |
| 2003 01 25 | 699 | (1.9− | 0.1+) | 2004 04 24 | 704 | 0.3+ | 0.0 | 2006 11 16 | 703 | 1.3− | 0.7+ | |
| 2003 01 25 | 699 | 1.2− | 0.6− | 2004 04 24 | 704 | 0.7+ | 0.4+ | 2006 11 16 | 703 | 0.7+ | 0.1+ | |
| 2003 01 27 | 644 | 0.7+ | 0.0 | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 11 16 | 703 | 0.2+ | 0.1+ | |
| 2003 01 27 | 644 | 0.0 | 0.5+ | 2005 06 14 | G96 | 0.2− | 0.5+ | 2006 11 16 | 703 | 0.5− | 0.3+ | |
| 2003 01 27 | 644 | 0.1+ | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.6+ | 2006 11 17 | 644 | 0.3− | 0.2+ | |
| 2004 03 12 | 644 | 0.1− | 0.3+ | 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.2− | |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2005 06 28 | G96 | (0.7+ | 1.6+) | 2006 11 17 | 644 | 0.0 | 0.3+ | |

**(143080)∗ 2002 XQ$_3$ = 1211 T-3**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41301)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.50049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23743437 | $\omega$ | 11.49554 | | +0.99831925 | +0.05085495 | |
| $a$ | 2.5828964 | $\Omega$ | 345.50242 | | −0.05794530 | +0.86756615 | |
| $e$ | 0.2893448 | $i$ | 6.37418 | | −0.00100684 | +0.49471482 | |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 0.4+ | 1.7− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 24 | 106 | 0.5+ | 0.6− | |
| 1977 10 16 | 675 | 0.8+ | 0.1+ | 2006 08 21 | 704 | 0.7+ | 0.2− | 2006 09 24 | 106 | 0.1− | 0.6− | |
| 1977 10 17 | 675 | 1.5+ | 0.2+ | 2006 08 21 | 704 | 0.8+ | 0.7+ | 2006 09 24 | 106 | 0.0 | 0.3− | |
| 1977 10 17 | 675 | 0.6− | 0.5+ | 2006 08 21 | 704 | 0.4+ | 0.7+ | 2006 09 24 | 106 | 0.2+ | 0.5− | |
| 1977 10 22 | 675 | 0.5+ | 1.3− | 2006 08 21 | 704 | 0.6+ | 0.8+ | 2006 09 25 | 704 | (0.3+ | 2.0+) | |
| 1977 10 22 | 675 | 1.0− | 2.2− | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 25 | 704 | 1.1+ | 1.4+ | |
| 1996 03 11 | 691 | 0.7+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | (0.4− | 1.9+) | |
| 1996 03 11 | 691 | 0.5+ | 0.7+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | (1.8+ | 1.9+) | |
| 1996 03 11 | 691 | 0.6+ | 0.2+ | 2006 08 25 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.5+ | |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.9+ | 0.4+ | 2006 09 25 | 704 | (0.4+ | 1.8+) | |
| 2002 09 06 | 704 | 0.3− | 0.8+ | 2006 08 25 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 704 | 1.2+ | 1.3+ | |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2006 08 25 | 704 | 1.0+ | 0.7+ | 2006 09 25 | 704 | (0.5+ | 2.2+) | |
| 2002 10 04 | 704 | 0.1− | 0.4− | 2006 08 25 | 704 | 0.7− | 0.4+ | 2006 09 25 | 704 | (1.1+ | 1.5+) | |
| 2002 10 04 | 704 | 0.7− | 0.0 | 2006 08 28 | 704 | 0.8− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.4+ | |
| 2002 10 04 | 704 | 0.3− | 0.1− | 2006 08 28 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 704 | (0.2+ | 2.2+) | |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 0.3− | 0.9+ | 2006 09 25 | 704 | (1.2+ | 1.8+) | |
| 2002 10 04 | 704 | 0.4− | 0.5− | 2006 08 28 | 704 | 0.4− | 0.7− | 2006 09 25 | 699 | 0.0 | 0.1+ | |
| 2002 10 10 | 704 | 0.1+ | 0.6− | 2006 08 28 | 703 | 1.1− | 1.0+ | 2006 09 25 | 699 | 0.3+ | 0.0 | |
| 2002 10 10 | 704 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.7− | 0.4+ | 2006 09 29 | 704 | 0.7+ | 0.9+ | |
| 2002 10 10 | 704 | 0.3+ | 0.6− | 2006 08 28 | 703 | 0.9− | 0.9+ | 2006 09 29 | 704 | 0.0 | 1.0+ | |
| 2002 10 10 | 704 | 0.7+ | 0.1− | 2006 08 28 | 703 | 0.8− | 0.8+ | 2006 09 29 | 704 | 0.0 | 0.3+ | |
| 2002 10 10 | 704 | 1.1+ | 0.4− | 2006 08 28 | 703 | 1.2− | 0.9+ | 2006 09 29 | 704 | 0.0 | 0.1+ | |
| 2002 11 06 | 704 | 0.2− | 0.4+ | 2006 08 28 | 691 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.3+ | |
| 2002 11 06 | 704 | 0.1+ | 1.3+ | 2006 08 28 | 691 | 0.2− | 0.0 | 2006 10 01 | 703 | 0.3+ | 0.4− | |
| 2002 11 06 | 699 | 0.3− | 0.5+ | 2006 08 28 | 691 | (3.8− | 1.8+) | 2006 10 01 | 703 | 0.1− | 0.3+ | |
| 2002 11 06 | 704 | 0.3− | 0.8+ | 2006 09 01 | 704 | 0.1− | 0.4+ | 2006 10 01 | 703 | 0.5+ | 0.0 | |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2006 09 01 | 704 | 0.1− | 0.2+ | 2006 10 01 | 703 | 0.3− | 0.3− | |
| 2002 11 06 | 699 | 0.0 | 0.5− | 2006 09 01 | 704 | 0.3− | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.2+ | |
| 2002 11 06 | 704 | 0.3− | 0.5+ | 2006 09 01 | 704 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.4+ | 0.2+ | |
| 2002 11 06 | 699 | 0.0 | 0.0 | 2006 09 01 | 704 | 0.3− | 0.7− | 2006 10 01 | 704 | 0.1− | 0.2+ | |
| 2002 11 06 | 699 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.6− | 2006 10 01 | 704 | 0.3+ | 0.1+ | |
| 2002 11 14 | 704 | 1.0+ | 0.1− | 2006 09 12 | 703 | 0.0 | 0.4− | 2006 10 01 | 704 | 0.0 | 0.0 | |
| 2002 11 14 | 704 | 0.3− | 0.3+ | 2006 09 12 | 703 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1− | |
| 2002 11 14 | 704 | 0.6+ | 0.0 | 2006 09 12 | 703 | 0.4− | 0.7− | 2006 10 11 | 691 | 0.1− | 0.2− | |
| 2002 11 14 | 704 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.3− | 0.3− | 2006 10 11 | 691 | 0.1+ | 0.2− | |
| 2002 11 24 | 644 | 0.2− | 0.3− | 2006 09 13 | 644 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3− | |
| 2002 11 24 | 644 | 0.2− | 0.7− | 2006 09 13 | 644 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.2− | |
| 2002 11 24 | 644 | 0.1− | 0.5− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− | |
| 2002 12 02 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.5− | 0.3− | |
| 2002 12 02 | 704 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2002 12 02 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2− | |
| 2002 12 02 | 704 | 0.5+ | 0.8+ | 2006 09 17 | 704 | 0.1+ | 0.0 | 2006 11 06 | 644 | 0.1− | 0.3− | |
| 2002 12 02 | 704 | 0.3− | 0.6+ | 2006 09 17 | 704 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.6− | 0.0 | |
| 2002 12 03 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 11 06 | 644 | 0.2− | 0.2− | |
| 2002 12 03 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.1− | 0.4− | |
| 2002 12 03 | 644 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.6− | 0.5− | 2006 11 13 | 703 | 1.3− | 1.0− | |
| 2002 12 11 | 644 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.9− | 0.2− | 2006 11 13 | 703 | 0.4− | 0.4− | |
| 2002 12 11 | 644 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.6− | 0.2− | 2006 11 13 | 703 | 1.0− | 0.7+ | |
| 2002 12 11 | 644 | 0.1− | 0.4+ | 2006 09 18 | 704 | 1.1+ | 0.4− | 2006 11 16 | 704 | 0.3− | 0.9− | |
| 2004 02 22 | 691 | 0.3− | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.4+ | |
| 2004 02 22 | 691 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.2+ | 0.4− | 2006 11 16 | 704 | (0.1− | 2.7+) | |
| 2004 02 22 | 691 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.8− | 0.3− | |
| 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.7+ | |
| 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.9+ | 1.0+ | |
| 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.9+ | 1.1+ | |
| 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.3− | |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 11 22 | 704 | (0.3− | 1.6+) | |

**(143081)∗ 2002 XC$_5$**

Discovered 2002 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.92552 | | (2000.0) | | | |
| $n$ | 0.27734982 | $\omega$ | 240.54610 | | +0.98988220 | +0.02495408 |
| $a$ | 2.3287210 | $\Omega$ | 117.71146 | | +0.02209778 | +0.94529072 |
| $e$ | 0.3486394 | $i$ | 9.07789 | | −0.14016035 | +0.32527333 |
| $P$ | 3.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3− | 0.8− | 2002 12 10 | 704 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.4+ |
| 2002 10 04 | 704 | (1.6+ | 1.2−) | 2002 12 10 | 704 | 0.1− | 0.5+ | 2004 03 23 | 704 | 1.4+ | 0.2+ |
| 2002 10 04 | 704 | (1.0− | 1.6−) | 2002 12 10 | 704 | 0.6− | 0.8+ | 2005 06 02 | E12 | 0.2− | 0.9− |
| 2002 10 04 | 704 | 0.8− | 1.0− | 2002 12 10 | 704 | 0.1+ | 0.1+ | 2005 06 02 | E12 | 0.2− | 0.1+ |
| 2002 10 09 | 704 | 0.6− | 0.7− | 2002 12 10 | 704 | 0.4− | 0.7+ | 2005 06 02 | E12 | 0.3+ | 0.6+ |
| 2002 10 09 | 704 | 0.6− | 1.2− | 2002 12 10 | 704 | 0.5− | 0.2− | 2005 06 02 | E12 | 0.2− | 0.4+ |
| 2002 10 09 | 704 | 0.6− | 1.4− | 2002 12 10 | 704 | 0.3− | 0.6+ | 2005 06 10 | 691 | 0.3+ | 0.2+ |
| 2002 10 09 | 704 | 0.5− | 0.8− | 2002 12 14 | 704 | 0.5+ | 0.5+ | 2005 06 10 | 691 | 0.5+ | 0.3+ |
| 2002 10 09 | 704 | 0.4+ | 0.4+ | 2002 12 14 | 704 | 0.1− | 0.3+ | 2005 06 10 | 691 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | (2.9− | 1.2−) | 2002 12 14 | 704 | 0.1− | 0.1− | 2005 06 11 | 703 | 0.4− | 0.8+ |
| 2002 11 05 | 704 | (3.3− | 0.7−) | 2002 12 14 | 704 | 0.2− | 0.1+ | 2005 06 11 | 703 | 0.9− | 1.0+ |
| 2002 11 05 | 704 | (3.1− | 1.4−) | 2002 12 14 | 704 | 0.2+ | 0.4− | 2005 06 11 | 703 | (2.6− | 4.2+) |
| 2002 11 05 | 704 | (3.4− | 1.1−) | 2002 12 31 | 704 | 0.4+ | 0.0 | 2005 06 11 | 703 | (3.8+ | 5.0+) |
| 2002 12 01 | 704 | 0.3+ | 0.3+ | 2002 12 31 | 704 | 0.0 | 0.5+ | 2005 07 04 | 703 | 1.2− | 0.5+ |
| 2002 12 01 | 704 | 0.1− | 0.1− | 2002 12 31 | 704 | 0.1− | 0.7+ | 2005 07 04 | 703 | 0.1− | 0.4− |
| 2002 12 01 | 704 | 0.0 | 0.3+ | 2002 12 31 | 704 | 0.7+ | 0.2− | 2005 07 04 | 703 | 0.5− | 1.1− |
| 2002 12 05 | 704 | 0.6+ | 0.1+ | 2002 12 31 | 704 | 0.0 | 0.2+ | 2005 07 04 | 703 | 0.9− | 0.9+ |
| 2002 12 05 | 704 | 0.8− | 0.3+ | 2003 01 07 | 704 | 0.1+ | 0.9+ | 2005 07 27 | 644 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2003 01 07 | 704 | 0.1− | 0.3+ | 2005 07 27 | 644 | 0.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2003 01 07 | 704 | 0.3+ | 0.0 | 2005 07 27 | 644 | 0.4+ | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2003 01 07 | 704 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.5+ |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2003 01 07 | 704 | 0.4+ | 0.7− | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.1− | 2003 01 08 | 704 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.4+ |
| 2002 12 06 | 704 | 0.0 | 0.3+ | 2003 01 08 | 704 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2003 01 08 | 704 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.8− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.5− |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2003 02 02 | 704 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2002 12 06 | 704 | (0.2+ | 2.0+) | 2003 02 02 | 704 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.6+ | 0.7+ | 2003 02 02 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 691 | 0.5− | 0.2+ |
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2003 02 02 | 704 | 0.4+ | 0.2+ | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.5+ | 2004 03 15 | 691 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2004 03 15 | 691 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 12 10 | 704 | 0.1− | 0.0 | 2004 03 15 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.7− |

**(143082)∗ 2002 XJ$_6$ = 1997 NH$_{10}$**

Discovered 2002 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41303)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.39217 | | (2000.0) | | | |
| $n$ | 0.23819716 | $\omega$ | 286.57461 | | +0.17154008 | −0.98437497 |
| $a$ | 2.5773793 | $\Omega$ | 153.44930 | | +0.93439577 | +0.14977928 |
| $e$ | 0.1851867 | $i$ | 5.10171 | | +0.31221555 | +0.09258552 |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 11 | 691 | 0.1− | 0.1− | 2003 01 27 | 704 | 0.5+ | 0.3− | 2006 11 13 | 703 | 0.3− | 0.0 |
| 1997 07 11 | 691 | 0.2− | 0.0 | 2005 05 15 | G96 | 0.4+ | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 1997 07 11 | 691 | 0.1− | 0.0 | 2005 05 15 | G96 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.9− | 0.7− |
| 1997 07 14 | 691 | 0.3− | 0.3+ | 2005 05 15 | G96 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.3− |
| 1997 07 14 | 691 | 0.7− | 0.1− | 2005 05 15 | G96 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 1997 07 14 | 691 | 0.4− | 0.1+ | 2005 06 05 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.2+ |
| 1997 08 10 | 691 | 0.4+ | 0.1+ | 2005 06 05 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 1997 08 10 | 691 | 0.4+ | 0.0 | 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 1997 08 10 | 691 | 0.7+ | 0.3− | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.6− |
| 2002 12 01 | 704 | 0.3− | 1.0+ | 2006 09 18 | 703 | 0.1+ | 1.1− | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2002 12 01 | 704 | 0.5− | 0.7+ | 2006 09 18 | 703 | (0.3− | 1.9−) | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2002 12 01 | 704 | 0.4− | 0.8+ | 2006 09 18 | 703 | 0.8− | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2002 12 05 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.8+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 1.1+ | 0.7− | 2006 11 19 | 703 | 0.3− | 0.3− |
| 2002 12 05 | 704 | 0.5+ | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 19 | 703 | 0.4− | 0.2+ |
| 2002 12 06 | 704 | 1.0+ | 0.5− | 2006 10 03 | G96 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 12 06 | 704 | 0.3+ | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.4− |
| 2002 12 06 | 704 | (1.8+ | 0.8+) | 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.9− | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.5− | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.4+ | 0.6− | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 0.6− | 0.0 | 2006 10 16 | 703 | 1.1− | 0.9+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.2+ | 0.7− | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.4+ | 2006 11 20 | G96 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.5+ | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.8+ | 2006 11 20 | G96 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.1− | 2006 11 20 | G96 | 0.2− | 0.3+ |
| 2003 01 07 | 704 | 0.6− | 0.6− | 2006 10 16 | 703 | 0.6+ | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.1+ |
| 2003 01 07 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.4+ | 0.2− |
| 2003 01 07 | 704 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2003 01 07 | 704 | (0.2− | 1.8+) | 2006 10 20 | 644 | 0.5+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2003 01 07 | 704 | 0.3− | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2003 01 09 | 704 | 0.1+ | 0.7+ | 2006 11 01 | 703 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2003 01 09 | 704 | 0.5− | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.7+ | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2003 01 09 | 704 | (1.6+ | 0.9+) | 2006 11 01 | 703 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2003 01 27 | 704 | 1.3− | 0.2− | 2006 11 13 | 703 | 0.4− | 0.4− | | | | |
| 2003 01 27 | 704 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | | | |

**(143083)∗ 2002 XV$_6$**

Discovered 2002 Dec. 1 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.89680 | | (2000.0) | | | |
| $n$ | 0.22494366 | $\omega$ | 271.82566 | | +0.94329234 | −0.18084596 |
| $a$ | 2.6776484 | $\Omega$ | 98.66764 | | +0.27345472 | +0.89874806 |
| $e$ | 0.3688637 | $i$ | 16.35536 | | −0.18820754 | +0.39943294 |
| $P$ | 4.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 22 | 704 | 0.6− | 0.4− | 2003 01 05 | 704 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.2− | 0.3+ |
| 2001 06 22 | 704 | (0.9+ | 1.6+) | 2003 01 09 | 704 | 0.5+ | 0.6− | 2006 09 27 | 703 | 0.2− | 0.2+ |
| 2001 06 22 | 704 | (0.7+ | 2.0+) | 2003 01 09 | 704 | 0.9+ | 1.2− | 2006 09 27 | 703 | 0.0 | 0.4+ |
| 2002 10 04 | 644 | 0.4− | 0.6− | 2003 01 09 | 704 | 0.1+ | 0.0 | 2006 10 03 | E12 | 0.3− | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.1− | 2003 01 09 | 704 | 1.1+ | 0.4− | 2006 10 03 | E12 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.5+ | 0.2− | 2003 01 09 | 704 | 0.6+ | 0.0 | 2006 10 03 | E12 | 0.3− | 0.2+ |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2003 02 01 | 704 | 0.4+ | 0.1− | 2006 10 03 | E12 | 0.5+ | 0.1+ |
| 2002 11 06 | 704 | 1.3− | 0.1− | 2003 02 01 | 704 | 0.2+ | 0.4− | 2006 10 11 | E12 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 0.1− | 2003 02 01 | 704 | 0.1+ | 0.1+ | 2006 10 11 | E12 | 0.4+ | 0.1+ |
| 2002 12 01 | 608 | 1.0− | 0.8+ | 2003 02 01 | 704 | 0.2+ | 0.3+ | 2006 10 11 | E12 | 0.2− | 0.3− |
| 2002 12 01 | 608 | 0.5− | 0.8+ | 2003 02 01 | 704 | 0.0 | 0.6+ | 2006 10 11 | E12 | 0.3− | 0.1+ |
| 2002 12 01 | 608 | 1.1− | 0.7+ | 2003 02 04 | 704 | 0.8+ | 0.0 | 2006 10 25 | E12 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2003 02 04 | 704 | 0.6+ | 0.2− | 2006 10 25 | E12 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 1.1+ | 0.6+ | 2003 02 04 | 704 | 0.4− | 0.4− | 2006 10 25 | E12 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.4− | 0.6+ | 2003 02 04 | 704 | 0.6+ | 0.9+ | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 1.1− | 0.7+ | 2003 03 07 | 644 | 1.0− | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.7+ | 0.3+ | 2003 03 07 | 644 | 0.2− | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.3− |
| 2002 12 10 | 704 | 0.1+ | 0.6− | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 11 18 | 703 | 0.7− | 0.0 |
| 2002 12 10 | 704 | 0.1+ | 0.0 | 2004 01 28 | 645 | 0.0 | 0.1+ | 2006 11 18 | 703 | 0.3− | 0.5− |
| 2002 12 10 | 704 | 0.0 | 0.6− | 2006 06 02 | E12 | 0.1− | 1.0+ | 2006 11 18 | 703 | 0.6− | 0.5− |
| 2002 12 27 | 699 | 0.3− | 0.8+ | 2006 06 02 | E12 | 0.4+ | 0.6+ | 2006 11 18 | 703 | 0.2− | 0.5− |
| 2002 12 27 | 699 | 0.7− | 0.1− | 2006 06 02 | E12 | 0.8− | 0.1+ | 2006 11 18 | 703 | 0.1+ | 0.0 |
| 2002 12 27 | 699 | 0.5− | 0.3+ | 2006 06 02 | E12 | 0.3− | 0.5+ | 2006 11 18 | 703 | 0.9+ | 0.7− |
| 2002 12 27 | 699 | 0.7− | 0.1+ | 2006 08 05 | E12 | 0.2+ | 0.3− | 2006 11 18 | 703 | 0.4− | 0.0 |
| 2003 01 05 | 704 | 0.1− | 0.5− | 2006 08 05 | E12 | 0.1− | 0.3+ | 2006 11 24 | 703 | 0.3− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.2+ | 0.8− | 2006 08 05 | E12 | 0.1+ | 0.5+ | 2006 11 24 | 703 | 0.3+ | 0.4+ | | |
| 2003 01 05 | 704 | 0.3+ | 0.6− | 2006 08 05 | E12 | 0.4+ | 0.0 | 2006 11 24 | 703 | 0.5+ | 0.5+ | | |
| 2003 01 05 | 704 | 0.6+ | 0.4− | 2006 09 27 | 703 | 0.2− | 0.2+ | 2006 11 24 | 703 | 0.3− | 0.5+ | | |

**(143084)∗ 2002 XX$_6$**

Discovered 2002 Dec. 1 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.99891 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22784360 | $\omega$ | 191.23394 | | −0.23618451 | | −0.96746784 |
| $a$ | 2.6548796 | $\Omega$ | 272.47489 | | +0.89841088 | | −0.18185939 |
| $e$ | 0.2355090 | $i$ | 5.20760 | | +0.37023610 | | −0.17587820 |
| $P$ | 4.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 09 | 691 | 0.2+ | 0.2+ | 2003 01 08 | 704 | 0.1− | 0.2− | 2006 10 29 | 704 | 0.9− | 0.0 | | |
| 1993 11 09 | 691 | 0.1+ | 0.0 | 2003 01 26 | 608 | 1.3− | 0.4+ | 2006 10 29 | 704 | 0.1+ | 0.2− | | |
| 1993 11 09 | 691 | 0.3− | 0.1− | 2003 01 26 | 608 | 0.2− | 0.5+ | 2006 10 29 | 704 | 0.2− | 0.8− | | |
| 2002 11 06 | 704 | 0.1+ | 0.1− | 2003 01 26 | 608 | 0.8− | 0.4+ | 2006 10 29 | 704 | 0.2− | 0.7− | | |
| 2002 11 06 | 704 | 0.8− | 0.1+ | 2003 01 27 | 704 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.1− | 0.1− | | |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2003 01 27 | 704 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.2− | 0.3− | | |
| 2002 11 06 | 704 | 0.0 | 0.3− | 2003 01 27 | 704 | 0.3− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.2− | | |
| 2002 11 11 | 704 | 0.5+ | 0.3− | 2003 01 27 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 11 11 | 704 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.5− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 2002 11 11 | 704 | 0.4+ | 0.9+ | 2003 01 28 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3− | | |
| 2002 11 11 | 704 | 0.1− | 0.1+ | 2003 01 28 | 704 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2002 12 01 | 608 | 0.6+ | 0.2− | 2003 01 28 | 704 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2002 12 01 | 608 | 0.7+ | 0.3+ | 2003 01 28 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2002 12 01 | 608 | 0.4+ | 0.3− | 2003 01 28 | 704 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2003 02 02 | 704 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.7+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2003 02 02 | 704 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2− | | |
| 2002 12 05 | 704 | 0.3+ | 0.7+ | 2003 02 02 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.4+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.9+ | 2003 02 02 | 704 | 0.6− | 0.8+ | 2006 11 14 | 703 | 0.1+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.6+ | 2003 02 02 | 704 | 0.2− | 0.4+ | 2006 11 14 | 703 | (3.1− | 2.1−) | | |
| 2002 12 10 | 704 | 0.7+ | 0.3+ | 2003 02 04 | 644 | 0.1− | 1.0+ | 2006 11 14 | 703 | (2.2+ | 0.1+) | | |
| 2002 12 10 | 704 | 0.1+ | 0.3+ | 2003 02 04 | 644 | 0.1+ | 1.0+ | 2006 11 14 | 703 | 1.0+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.1− | 0.3− | 2003 02 04 | 644 | 0.1− | 1.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− | | |
| 2002 12 10 | 644 | 0.1+ | 0.5− | 2003 03 06 | 704 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2002 12 10 | 644 | 0.1− | 0.6− | 2003 03 06 | 704 | 0.6− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2002 12 10 | 644 | 0.1+ | 0.7− | 2003 03 06 | 704 | 0.0 | 1.0− | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 12 18 | 608 | 0.5− | 0.5− | 2003 03 06 | 704 | 1.1+ | 0.7+ | 2006 11 15 | 704 | 0.6+ | 0.0 | | |
| 2002 12 18 | 608 | 0.1+ | 0.4− | 2003 03 06 | 704 | 0.5+ | 0.6+ | 2006 11 15 | 704 | 0.8+ | 1.3+ | | |
| 2002 12 18 | 608 | 0.0 | 0.2− | 2003 03 06 | 704 | 0.8+ | 0.3+ | 2006 11 15 | 704 | 0.1− | 1.0+ | | |
| 2002 12 27 | 699 | 0.0 | 0.4− | 2003 03 06 | 704 | 1.3+ | 0.2+ | 2006 11 15 | 704 | 0.5+ | 0.1+ | | |
| 2002 12 27 | 699 | 0.3− | 0.4− | 2003 03 06 | 704 | 1.1+ | 0.5− | 2006 11 16 | 704 | 0.2− | 0.2+ | | |
| 2002 12 27 | 699 | 0.4+ | 0.3+ | 2003 03 06 | 704 | (1.7+ | 0.3+) | 2006 11 16 | 704 | 0.6+ | 0.1− | | |
| 2002 12 27 | 699 | 0.0 | 0.3− | 2005 07 05 | 644 | 0.1+ | 0.6+ | 2006 11 16 | 704 | (1.0+ | 2.0+) | | |
| 2002 12 31 | 704 | 0.2− | 0.9− | 2005 07 05 | 644 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.8+ | | |
| 2002 12 31 | 704 | 0.3− | 0.6− | 2005 07 05 | 644 | 0.0 | 0.8+ | 2006 11 16 | 704 | 0.1+ | 0.2− | | |
| 2002 12 31 | 704 | 0.1+ | 1.0− | 2005 07 11 | G96 | 0.5+ | 0.9+ | 2006 11 16 | 704 | 1.2− | 1.2+ | | |
| 2002 12 31 | 704 | 0.4− | 1.0− | 2005 07 11 | G96 | 0.4− | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.0 | | |
| 2002 12 31 | 704 | 0.1− | 1.1− | 2005 07 11 | G96 | 0.6− | 0.7+ | 2006 11 16 | 704 | 0.1− | 0.4− | | |
| 2003 01 04 | 704 | 0.0 | 0.7+ | 2005 07 11 | G96 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.3+ | | |
| 2003 01 04 | 704 | 0.2− | 0.5+ | 2005 08 05 | 644 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.3− | | |
| 2003 01 04 | 704 | 0.8− | 0.2+ | 2005 08 05 | 644 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.1− | | |
| 2003 01 04 | 704 | 0.2− | 0.4+ | 2005 08 05 | 644 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2003 01 04 | 704 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.5− | | |
| 2003 01 07 | 704 | 0.1− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.6− | | |
| 2003 01 07 | 704 | 0.5− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.2+ | | |
| 2003 01 07 | 704 | 0.7− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.7− | 2006 11 22 | 704 | 0.2+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.0 | 0.4+ | | |
| 2003 01 07 | 704 | 0.5− | 0.3− | 2006 10 27 | 703 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2003 01 08 | 704 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6− | 0.2− | | |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.4+ | 0.2+ | | |
| 2003 01 08 | 704 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.5+ | 0.4+ | | |
| 2003 01 08 | 704 | 0.1− | 1.1+ | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.3+ | | |

**(143085)∗ 2002 XQ$_7$ = 2004 EP$_{34}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61637)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.03980 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23079699 | $\omega$ | 210.50141 | | +0.19111970 | | −0.98146924 |
| $a$ | 2.6321822 | $\Omega$ | 228.48424 | | +0.90425894 | | +0.18153216 |
| $e$ | 0.0669462 | $i$ | 1.05864 | | +0.38182329 | | +0.06135309 |
| $P$ | 4.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 29 | 691 | 0.1− | 0.5+ | 2004 03 20 | 699 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2001 06 29 | 691 | 0.2− | 0.7+ | 2004 03 20 | 699 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.5− | 0.4+ | | |
| 2001 06 29 | 691 | 0.0 | 0.3+ | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.3− | | |
| 2002 10 30 | 608 | 0.2− | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2− | | |
| 2002 10 30 | 608 | 0.8− | 0.0 | 2004 03 23 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.0 | | |
| 2002 10 30 | 608 | 0.2+ | 0.4− | 2004 03 27 | 704 | (0.7+ | 1.9−) | 2006 10 20 | G96 | 0.2+ | 0.2− | | |
| 2002 11 04 | 291 | 0.2− | 0.1+ | 2004 03 27 | 704 | 1.1+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.2− | | |
| 2002 11 04 | 291 | 0.1− | 0.0 | 2004 03 27 | 704 | 1.0+ | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1− | | |
| 2002 11 04 | 291 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.2− | | |
| 2002 11 13 | 644 | 0.0 | 0.4+ | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1− | | |
| 2002 11 13 | 644 | 0.2+ | 0.4+ | 2004 03 31 | 691 | 0.8− | 0.9+ | 2006 10 21 | 703 | 0.3+ | 0.2− | | |
| 2002 11 13 | 644 | 0.1− | 0.4+ | 2004 03 31 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.9+ | 1.1− | | |
| 2002 11 27 | 699 | 0.7− | 0.9− | 2006 07 22 | G96 | 0.6− | 0.3+ | 2006 10 21 | 703 | 0.9+ | 0.1+ | | |
| 2002 11 27 | 699 | 0.3− | 0.6− | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.0 | | |
| 2002 11 27 | 699 | 0.6− | 1.0− | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 2002 11 27 | 699 | 0.9+ | 0.3− | 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.7− | | |
| 2002 12 02 | 704 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.1+ | | |
| 2002 12 02 | 704 | 1.4+ | 0.8+ | 2006 09 15 | 691 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.4+ | | |
| 2002 12 02 | 704 | 1.1+ | 1.4− | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.4+ | | |
| 2002 12 02 | 704 | (2.3+ | 1.5+) | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2002 12 05 | 704 | 1.0− | 1.2+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.1− | | |
| 2002 12 05 | 704 | 0.3− | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.1+ | | |
| 2002 12 05 | 704 | (0.8+ | 2.9+) | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.0 | | |
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.0 | | |
| 2002 12 05 | 704 | (0.4+ | 1.6+) | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.7− | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.6+ | | |
| 2002 12 10 | 644 | 0.2+ | 0.7− | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.2+ | | |
| 2002 12 10 | 644 | 0.3+ | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2+ | | |
| 2004 03 12 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2004 03 12 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.2− | 0.4+ | | |
| 2004 03 16 | 704 | (1.6+ | 0.6+) | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 2.3− | 0.1− | | |
| 2004 03 16 | 704 | (2.6+ | 0.4+) | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2− | 1.0− | | |
| 2004 03 16 | 704 | 0.8+ | 0.6+ | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.4− | | |
| 2004 03 16 | 704 | 0.1− | 1.3+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.0 | 0.1+ | | |
| 2004 03 18 | 704 | 1.2+ | 0.7+ | 2006 10 15 | 691 | 0.5− | 0.1− | 2006 11 13 | 691 | 0.4− | 0.2+ | | |
| 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.2+ | | |
| 2004 03 18 | 704 | 1.0+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.3− | | |
| 2004 03 18 | 704 | 1.0+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.2− | | |
| 2004 03 20 | 699 | 1.0+ | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.1− | | |
| 2004 03 20 | 699 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1− | 0.5− | | |

**(143086)∗ 2002 XN$_8$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.25769 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22498407 | $\omega$ | 300.56293 | | +0.95093407 | | −0.27160675 |
| $a$ | 2.6773278 | $\Omega$ | 75.54247 | | +0.30924671 | | +0.84915275 |
| $e$ | 0.1724314 | $i$ | 8.80168 | | −0.00953200 | | +0.45295626 |
| $P$ | 4.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.2− | 1.2− | 2002 12 05 | 704 | 0.4− | 0.4+ | 2006 09 17 | 699 | 0.3− | 0.5+ |
| 2002 10 30 | 608 | 0.2− | 1.1− | 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 17 | 699 | 0.0 | 0.1+ |
| 2002 10 30 | 608 | 0.5− | 0.7− | 2002 12 10 | 704 | 0.4− | 0.0 | 2006 09 17 | 699 | 0.1+ | 0.5+ |
| 2002 11 07 | 704 | 0.3− | 0.6+ | 2002 12 10 | 704 | 0.3+ | 0.4− | 2006 09 17 | 699 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.1+ | 0.4+ | 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 09 20 | 703 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.3− | 0.2+ | 2002 12 10 | 704 | 0.3− | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.3− | 0.5+ | 2002 12 10 | 644 | 0.1+ | 0.5− | 2006 09 20 | 703 | 0.2− | 0.8+ |
| 2002 11 07 | 704 | (2.1− | 0.6+) | 2002 12 10 | 704 | 0.3− | 0.1− | 2006 09 20 | 703 | 0.5− | 0.4+ |
| 2002 11 11 | 704 | 0.3+ | 0.1− | 2002 12 10 | 644 | 0.0 | 0.5− | 2006 09 26 | 703 | 1.4+ | 0.3+ |
| 2002 11 11 | 704 | 0.1− | 0.0 | 2002 12 10 | 644 | 0.5+ | 0.4− | 2006 09 26 | 703 | 0.5+ | 0.4+ |
| 2002 11 11 | 704 | 0.2+ | 0.2+ | 2004 01 28 | 645 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.5− | 1.0− |
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2004 01 28 | 645 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 11 11 | 704 | (1.6+ | 0.5+) | 2004 03 23 | 704 | 1.1+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 12 02 | 704 | 1.1+ | 0.8+ | 2005 05 14 | G96 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 12 02 | 704 | 0.3+ | 0.8+ | 2005 05 14 | G96 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.9− | 0.1− |
| 2002 12 02 | 704 | 0.8+ | 0.6+ | 2005 05 14 | G96 | 0.7+ | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.7+ |
| 2002 12 02 | 704 | 0.6+ | 0.3− | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.4− | 1.4+ |
| 2002 12 02 | 704 | 1.0+ | 0.1+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 1.1− | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2005 06 14 | 691 | 0.1− | 0.2+ | | | | |
| 2002 12 05 | 704 | 0.5− | 0.4+ | 2005 06 14 | 691 | 0.0 | 0.1+ | | | | |

**(143087)∗ 2002 XP$_9$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.93699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23944644 | $\omega$ | 187.97608 | | −0.06708017 | −0.99086334 | |
| $a$ | 2.5684067 | $\Omega$ | 265.92509 | | +0.92176819 | −0.01665890 | |
| $e$ | 0.1551001 | $i$ | 6.73637 | | +0.38189482 | −0.13383694 | |
| $P$ | 4.12 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.9+ | 0.1+ | 2002 12 31 | 704 | 0.1− | 0.7+ | 2006 11 02 | 703 | 0.1− | 0.4− |
| 1998 12 15 | 704 | 0.2+ | 0.6− | 2002 12 31 | 704 | 0.6− | 0.5+ | 2006 11 02 | 703 | 0.4− | 0.5− |
| 1998 12 15 | 704 | 0.7− | 0.7+ | 2003 01 04 | 704 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1998 12 15 | 704 | 1.4− | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1998 12 15 | 704 | (2.7− | 0.6−) | 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 1998 12 22 | 704 | 0.7+ | 1.4− | 2003 01 04 | 704 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 1998 12 22 | 704 | 0.2+ | 0.4− | 2003 01 04 | 704 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1998 12 22 | 704 | 0.6− | 0.2+ | 2003 01 08 | 704 | 0.5− | 1.5− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 1998 12 22 | 704 | 0.2+ | 1.5− | 2003 01 08 | 704 | (1.9− | 1.0−) | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2002 11 12 | 704 | 0.4+ | 0.4+ | 2003 01 08 | 704 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 2002 11 12 | 704 | 1.2+ | 0.6− | 2003 01 08 | 704 | 1.2− | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.5+ |
| 2002 11 12 | 704 | 0.7− | 0.9+ | 2003 01 19 | 644 | 0.2+ | 1.4+ | 2006 11 11 | 703 | 0.4+ | 0.3+ |
| 2002 11 12 | 704 | (2.0+ | 0.6−) | 2003 01 19 | 644 | 0.1+ | 1.3+ | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2003 01 19 | 644 | 0.1+ | 1.3+ | 2006 11 14 | 703 | 0.3− | 0.2+ |
| 2002 11 14 | 704 | 0.1− | 0.1− | 2004 04 13 | 644 | 0.4− | 0.8+ | 2006 11 14 | 703 | 0.5+ | 0.1+ |
| 2002 11 14 | 704 | 0.6− | 0.5− | 2004 04 13 | 644 | 0.3− | 0.6+ | 2006 11 14 | 703 | 0.3+ | 0.4+ |
| 2002 11 14 | 704 | 0.0 | 0.3+ | 2004 04 13 | 644 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 11 14 | 704 | 0.3− | 0.0 | 2004 05 27 | 291 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 12 02 | 704 | 0.4+ | 0.3+ | 2004 05 27 | 291 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2002 12 02 | 704 | 0.4+ | 0.5+ | 2004 05 27 | 291 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2002 12 02 | 704 | (0.2− | 1.7+) | 2004 05 28 | 291 | 0.4+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 05 28 | 291 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.2− | 0.0 | 2004 05 28 | 291 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 12 05 | 704 | 0.5+ | 0.3+ | 2005 06 18 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2005 06 18 | G96 | 0.1− | 0.6+ | 2006 11 15 | 704 | (0.7− | 1.5+) |
| 2002 12 05 | 704 | 0.6+ | 0.5+ | 2005 06 18 | G96 | 0.3− | 0.6+ | 2006 11 15 | 704 | 0.9− | 1.4+ |
| 2002 12 06 | 704 | 0.6− | 0.1− | 2005 06 18 | G96 | 0.1+ | 0.7+ | 2006 11 15 | 704 | (0.8− | 1.5+) |
| 2002 12 06 | 704 | 0.8− | 0.2+ | 2005 07 11 | G96 | 0.4− | 0.3+ | 2006 11 15 | 704 | 0.9− | 1.3+ |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2005 07 11 | G96 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 1.2+ |
| 2002 12 06 | 704 | 0.7− | 0.3− | 2005 07 11 | G96 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.5+ |
| 2002 12 06 | 704 | 0.3− | 0.5− | 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.3− | 1.3+ |
| 2002 12 08 | 636 | 0.3− | 0.7− | 2006 10 19 | 703 | (2.0+ | 1.0−) | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2002 12 08 | 636 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.5+ | 0.6− | 2006 11 16 | 704 | 0.2− | 0.9+ |
| 2002 12 08 | 636 | 0.1− | 0.7− | 2006 10 19 | 703 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.4− | 1.4+ |
| 2002 12 11 | 704 | 0.5+ | 0.4− | 2006 10 19 | 703 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.0 |
| 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.8− | 1.5− |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.6+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2002 12 11 | 704 | 0.1− | 0.9− | 2006 10 27 | 703 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2002 12 11 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 12 11 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 1.5− | 1.2− | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 10 29 | 704 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2002 12 27 | 644 | 0.2+ | 0.2+ | 2006 10 29 | 704 | 0.8− | 0.1− | 2006 11 22 | 704 | 0.0 | 1.2+ |
| 2002 12 27 | 644 | 0.1+ | 0.6+ | 2006 10 29 | 704 | 0.3− | 0.1+ | 2006 11 22 | 704 | 1.0− | 0.5+ |
| 2002 12 27 | 644 | 0.4+ | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.7− | 2006 11 22 | 704 | 0.5− | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.5+ | 2006 10 29 | 704 | 0.3− | 0.6− | 2006 12 01 | 704 | 0.6+ | 0.7+ |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2006 11 02 | 703 | 0.1− | 0.4− | 2006 12 01 | 704 | 0.3+ | 0.8+ |
| 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.2+ | 0.7+ |

**(143088)∗ 2002 XT$_9$ = 2001 QL$_{33}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41305)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.28940 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22843122 | $\omega$ | 154.01993 | | +0.49628632 | −0.84648186 | |
| $a$ | 2.6503247 | $\Omega$ | 265.68003 | | +0.75903135 | +0.53085806 | |
| $e$ | 0.1404929 | $i$ | 11.14778 | | +0.42139209 | +0.04072088 | |
| $P$ | 4.31 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | (1.7− | 1.6−) | 2002 12 11 | 704 | 0.9− | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2001 08 16 | 644 | (1.4− | 1.5−) | 2002 12 11 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 704 | 0.5+ | 1.3+ |
| 2001 08 16 | 644 | (0.9− | 1.8−) | 2002 12 11 | 704 | 0.8− | 1.3+ | 2006 10 20 | 704 | 0.0 | 1.2+ |
| 2001 08 16 | 649 | 0.9− | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 704 | 0.4+ | 0.7+ |
| 2001 08 16 | 649 | 0.1− | 0.1+ | 2002 12 11 | 704 | (1.1− | 1.8+) | 2006 10 20 | 704 | 0.8+ | 0.4+ |
| 2001 08 16 | 649 | 0.6− | 0.3+ | 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 10 20 | 704 | 0.6+ | 0.3+ |
| 2001 08 17 | 649 | 0.1+ | 0.3+ | 2002 12 31 | 704 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3− | 0.2− |
| 2001 08 17 | 649 | 0.3+ | 0.4+ | 2002 12 31 | 704 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.5− |
| 2001 08 17 | 649 | 0.4− | 0.3+ | 2003 01 07 | 704 | 0.5+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.1+ |
| 2001 08 25 | 704 | 0.3+ | 0.3+ | 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.4− |
| 2001 08 25 | 704 | 0.3+ | 0.3+ | 2003 01 07 | 704 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2001 08 25 | 704 | 0.2− | 0.6− | 2003 01 07 | 704 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.2− |
| 2001 08 25 | 704 | 0.4− | 0.8+ | 2003 01 07 | 704 | 0.1− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.3− |
| 2001 08 25 | 704 | 0.0 | 0.9+ | 2003 01 08 | 704 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.3− |
| 2002 10 10 | 704 | 0.4+ | 0.4− | 2003 01 08 | 704 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 10 10 | 704 | 0.1+ | 1.0+ | 2003 01 08 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 10 10 | 704 | 1.0+ | 0.3+ | 2003 01 08 | 704 | 0.7− | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | 0.4− | 0.1+ | 2003 01 27 | 704 | 0.9+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.3− |
| 2002 12 02 | 704 | 0.2− | 0.0 | 2003 01 27 | 704 | 1.1+ | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.0 |
| 2002 12 02 | 704 | 0.2− | 0.3+ | 2003 01 27 | 704 | 1.4+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.6− |
| 2002 12 02 | 704 | 0.4− | 0.8+ | 2003 01 27 | 704 | 0.8+ | 0.5+ | 2006 11 16 | 704 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.4+ | 2003 01 27 | 704 | 0.7+ | 0.1− | 2006 11 16 | 704 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2004 03 26 | 704 | (1.0+ | 2.0+) | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2004 03 26 | 704 | 1.0− | 1.0+ | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 0.2− | 2004 03 26 | 704 | 0.4+ | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2002 12 10 | 704 | 0.2+ | 1.4− | 2004 04 16 | E12 | (0.5− | 1.8−) | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.9− | 0.1+ | 2004 04 16 | E12 | (0.2+ | 1.6−) | 2006 11 17 | 644 | 0.1− | 0.2− |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2004 04 16 | E12 | (0.0 | 1.9−) | 2006 11 17 | 644 | 0.0 | 0.2− |
| 2002 12 11 | 704 | (0.8− | 1.9+) | 2004 04 16 | E12 | 1.1+ | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.5− |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.1− | 2006 11 22 | 703 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 1.0− | 1.3+ | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2002 12 11 | 704 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.4− | 0.6− | 2006 11 22 | 703 | 0.1− | 0.4− |

**(143089)∗ 2002 XZ$_9$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.09190 | | | (2000.0) | | |
| $n$ | 0.23732424 | $\omega$ | 314.52647 | | +0.95681520 | −0.28566305 |
| $a$ | 2.5836954 | $\Omega$ | 62.14089 | | +0.28099259 | +0.86138237 |
| $e$ | 0.2345099 | $i$ | 3.49290 | | +0.07448376 | +0.42002027 |
| $P$ | 4.15 | $H$ | 14.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 25 | 691 | 0.8+ | 0.3+ | 2002 12 30 | 704 | 0.1− | 0.3− | 2004 03 28 | 704 | 0.4+ | 0.5− |
| 1992 04 25 | 691 | 0.5+ | 0.2− | 2003 01 05 | 704 | 0.3+ | 0.6− | 2004 03 28 | 704 | 0.7− | 0.0 |
| 1992 04 25 | 691 | 1.9+ | 0.3− | 2003 01 05 | 704 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.0 | 0.1− |
| 1996 04 20 | 691 | 1.4− | 0.6+ | 2003 01 05 | 704 | 0.1+ | 0.8− | 2004 07 15 | 807 | 0.0 | 0.6− |
| 1996 04 20 | 691 | 1.3− | 0.6+ | 2003 01 05 | 704 | 0.2− | 0.6− | 2004 07 16 | 807 | 0.3− | 0.4− |
| 1996 04 20 | 691 | 1.7− | 0.9+ | 2003 01 05 | 704 | 0.5− | 0.9+ | 2006 09 20 | 704 | 0.2+ | 1.3+ |
| 2002 10 04 | 644 | 0.2+ | 0.1+ | 2003 01 09 | 704 | 0.3− | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.9+ |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2003 01 09 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.6− | 0.7+ |
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2003 01 09 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.5− | 1.0+ |
| 2002 10 10 | 704 | 0.1− | 0.2− | 2003 01 09 | 704 | (2.1+ | 0.2−) | 2006 09 20 | 704 | 0.9− | 0.3+ |
| 2002 10 10 | 704 | 0.5− | 0.9− | 2003 01 09 | 704 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2002 10 10 | 704 | 1.3+ | 0.1− | 2003 02 01 | 704 | 0.6− | 0.8− | 2006 11 16 | 704 | 0.3+ | 0.3− |
| 2002 11 05 | 704 | 0.2+ | 1.0+ | 2003 02 01 | 704 | 0.6− | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2002 11 05 | 704 | 0.2+ | 0.4+ | 2003 02 01 | 704 | 1.0− | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.1− |
| 2002 11 05 | 704 | 1.3+ | 1.4+ | 2003 02 01 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.1− |
| 2002 12 02 | 704 | 0.0 | 0.4− | 2004 03 12 | 644 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2002 12 02 | 704 | 0.0 | 0.1− | 2004 03 12 | 644 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.6+ | 0.3+ |
| 2002 12 02 | 704 | 0.0 | 0.0 | 2004 03 12 | 644 | 0.1+ | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 12 02 | 704 | 0.5− | 0.3− | 2004 03 17 | 704 | 0.9+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2004 03 17 | 704 | (1.6+ | 1.3+) | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2004 03 17 | 704 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.6− |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2004 03 17 | 704 | 0.6+ | 0.9− | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 2002 12 05 | 704 | 0.5− | 0.8+ | 2004 03 17 | 704 | 0.6+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.2− |
| 2002 12 05 | 704 | 0.3− | 1.0− | 2004 03 18 | 704 | 0.7+ | 0.6− | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2002 12 09 | 333 | 0.5− | 0.4− | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2002 12 09 | 333 | 0.7− | 0.3− | 2004 03 18 | 704 | 0.1− | 1.1+ | 2006 11 21 | 704 | (2.9+ | 0.6+) |
| 2002 12 09 | 333 | (2.7− | 0.8+) | 2004 03 18 | 704 | 0.3+ | 0.9− | 2006 11 21 | 704 | (1.7− | 0.1+) |
| 2002 12 10 | 704 | 0.0 | 1.1− | 2004 03 19 | 704 | 1.1+ | 0.7− | 2006 11 28 | 704 | 0.3+ | 0.3− |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2004 03 19 | 704 | 1.0+ | 0.3− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2002 12 10 | 704 | 1.0+ | 0.2+ | 2004 03 19 | 704 | 0.6+ | 0.7− | 2006 11 28 | 704 | 0.6− | 0.0 |
| 2002 12 14 | 704 | 0.9+ | 0.4− | 2004 03 19 | 704 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.1− | 0.5+ |
| 2002 12 14 | 704 | 1.1+ | 0.2+ | 2004 03 22 | 704 | 1.2+ | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 1.1+ | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2002 12 14 | 704 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.5+ | 0.8+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 12 14 | 704 | 1.0+ | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.7− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2002 12 30 | 704 | 0.2− | 0.4+ | 2004 03 28 | 704 | 1.4− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 12 30 | 704 | 0.2− | 0.7+ | 2004 03 28 | 704 | 0.5+ | 0.2− | | | | |

**(143090)∗ 2002 XC$_{10}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.54749 | | | (2000.0) | | |
| $n$ | 0.22367653 | $\omega$ | 353.83313 | | +0.48081096 | −0.87540480 |
| $a$ | 2.6877515 | $\Omega$ | 67.41903 | | +0.80676097 | +0.41939612 |
| $e$ | 0.1611002 | $i$ | 3.09623 | | +0.34344950 | +0.24036083 |
| $P$ | 4.41 | $H$ | 15.1 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 0.7+ | 0.7+ | 2004 04 20 | 704 | (3.0+ | 1.2+) | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1999 02 23 | 699 | 0.6− | 0.5+ | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 1999 02 23 | 699 | 0.5+ | 1.2+ | 2004 04 20 | 703 | (3.1+ | 0.9−) | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 1.3− | 0.4− | 2004 04 20 | 704 | 0.8+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2004 04 20 | 704 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.6− | 0.5− | 2004 04 20 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | 0.1− | 0.4− | 2004 04 20 | 704 | (0.2− | 2.3+) | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2002 12 02 | 704 | 0.4− | 0.7− | 2004 04 20 | 703 | 1.1− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 2002 12 02 | 704 | 0.1− | 0.2+ | 2004 04 20 | 703 | 0.8− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.6− |
| 2002 12 04 | 695 | 0.6+ | 0.3− | 2004 04 20 | 703 | 0.8− | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2002 12 04 | 695 | 0.5+ | 0.3− | 2004 04 22 | 599 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2004 04 22 | 599 | 0.3+ | 0.7+ | 2006 10 22 | 691 | 0.7− | 0.7+ |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2004 04 22 | 599 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 704 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2004 04 25 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2002 12 15 | 704 | 0.4+ | 0.2− | 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.8+ | 0.9+ |
| 2002 12 15 | 704 | 0.2+ | 0.8− | 2004 05 19 | 691 | 0.1− | 0.3+ | 2006 10 23 | 704 | 0.6− | 1.2+ |
| 2002 12 15 | 704 | 0.3+ | 0.6+ | 2004 05 19 | 691 | (0.3− | 1.9+) | 2006 10 23 | 704 | 0.0 | 0.6+ |
| 2002 12 15 | 704 | (0.2+ | 1.5+) | 2004 05 28 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 704 | 0.4+ | 0.4− |
| 2003 01 04 | 704 | 0.2+ | 0.2− | 2004 05 28 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 0.7− | 0.4− |
| 2003 01 04 | 704 | 0.3− | 0.4− | 2004 05 28 | 691 | 0.1+ | 0.6+ | 2006 10 28 | 704 | 0.2− | 0.0 |
| 2003 01 04 | 704 | 0.2+ | 0.1− | 2006 08 25 | 704 | 0.2− | 0.8+ | 2006 10 28 | 704 | 0.2− | 0.8+ |
| 2003 01 04 | 704 | 0.2− | 0.3+ | 2006 08 25 | 704 | 0.3+ | 0.9− | 2006 10 28 | 704 | 0.5− | 0.2+ |
| 2003 01 04 | 704 | 0.1+ | 0.1+ | 2006 08 25 | 704 | (1.8− | 0.5+) | 2006 10 28 | 704 | 0.5− | 0.0 |
| 2003 01 08 | 704 | 0.3− | 0.2− | 2006 08 25 | 704 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2006 08 25 | 704 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2003 01 08 | 704 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 09 20 | 699 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2004 03 14 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.8+ |
| 2004 03 14 | 644 | 0.5+ | 0.7+ | 2006 09 20 | 699 | 1.1− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2004 03 14 | 644 | 0.7+ | 0.6+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2004 03 28 | 704 | 1.2+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2004 03 28 | 704 | (0.7+ | 1.7+) | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2004 03 28 | 704 | 0.2− | 0.8+ | 2006 09 27 | 704 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2004 03 28 | 704 | (1.2+ | 1.6+) | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2004 04 10 | 703 | (1.5+ | 1.9−) | 2006 09 27 | 704 | 0.3− | 1.0+ | 2006 11 16 | G96 | 0.7+ | 0.1− |
| 2004 04 10 | 703 | 0.9+ | 1.3+ | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2004 04 10 | 703 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.6− | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 04 10 | 703 | 1.1− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 1.3+ | 0.4− |
| 2004 04 16 | 644 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.2+ |
| 2004 04 16 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2004 04 20 | 704 | (2.1+ | 3.5−) | 2006 09 30 | 703 | 0.8− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2004 04 20 | 704 | (2.6+ | 2.1−) | 2006 09 30 | 703 | 1.1− | 0.2− | 2006 11 18 | 704 | 1.2+ | 0.8+ |
| 2004 04 20 | 704 | (1.3+ | 2.5+) | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.3+ | 1.4+ |
| 2004 04 20 | 704 | 0.8+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.1− |
| 2004 04 20 | 704 | 1.5− | 0.9− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2− |
| 2004 04 20 | 704 | 0.7− | 1.4− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2004 04 20 | 704 | (3.0+ | 1.6−) | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.6+ | 1.1+ |
| 2004 04 20 | 704 | 0.0 | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | (0.3+ | 1.5+) |
| 2004 04 20 | 704 | (2.2+ | 0.7−) | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2004 04 20 | 704 | (0.4+ | 2.9+) | 2006 10 17 | G96 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 1.3+ |
| 2004 04 20 | 704 | (2.5+ | 0.7−) | 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 26 | 704 | 0.5+ | 0.6+ |
| 2004 04 20 | 704 | (3.4+ | 3.3+) | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 26 | 704 | 0.2− | 0.6+ |
| 2004 04 20 | 704 | 1.4+ | 0.9− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 26 | 704 | 0.3− | 1.2+ |
| 2004 04 20 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | | | |

**(143091)∗ 2002 XB$_{13}$ = 2000 EV$_{167}$**

Discovered 2002 Dec. 3 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 41308)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.29028 | | | (2000.0) | | |
| $n$ | 0.27259873 | $\omega$ | 47.39500 | | −0.61353140 | −0.77868205 |
| $a$ | 2.3557010 | $\Omega$ | 80.91987 | | +0.68000186 | −0.60549065 |
| $e$ | 0.0543030 | $i$ | 7.63965 | | +0.40146817 | −0.16442428 |
| $P$ | 3.62 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.7+ | 0.0 | 2002 12 05 | 704 | 0.5+ | 0.7+ | 2004 04 22 | 704 | (0.0 | 1.5+) |
| 2000 03 04 | 704 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.2− | 0.3− | 2004 04 22 | 704 | 0.3+ | 0.3− |
| 2000 03 04 | 704 | 0.5− | 0.6+ | 2002 12 05 | 704 | 0.7+ | 0.0 | 2004 04 22 | 704 | (0.7+ | 2.0+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.0 | 0.2− | 2002 12 10 | 704 | 0.4+ | 1.4+ | 2005 07 30 | 644 | 0.1− | 0.6+ |
| 2000 03 12 | 704 | 0.5− | 1.0− | 2002 12 10 | 704 | 0.6− | 0.9+ | 2005 07 30 | 644 | 0.2− | 0.7+ |
| 2000 03 12 | 704 | 0.7+ | 1.9+ | 2002 12 10 | 704 | (0.9− | 1.7+) | 2005 07 30 | 644 | 0.3− | 0.7+ |
| 2000 03 12 | 704 | 0.3+ | 1.5+ | 2002 12 10 | 704 | 0.8− | 1.3+ | 2005 08 31 | 644 | 0.1− | 0.3+ |
| 2000 03 12 | 704 | 0.2+ | 0.4+ | 2002 12 10 | 644 | 0.2+ | 0.2+ | 2005 08 31 | 644 | 0.4− | 0.5+ |
| 2001 07 24 | 644 | 0.5− | 0.1+ | 2002 12 10 | 704 | 1.0+ | 0.2+ | 2005 08 31 | 644 | 0.0 | 0.5+ |
| 2001 07 24 | 644 | 0.6− | 0.3− | 2002 12 10 | 644 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2001 07 24 | 644 | 0.5− | 0.3+ | 2002 12 10 | 644 | 0.4+ | 0.1− | 2006 09 28 | G96 | 0.5− | 0.3− |
| 2002 11 24 | 644 | 0.3− | 0.3+ | 2004 04 16 | 704 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2002 11 24 | 644 | 0.6− | 0.0 | 2004 04 16 | 704 | 0.9+ | 0.1− | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2002 11 24 | 644 | 0.5− | 0.1+ | 2004 04 16 | 704 | 0.3+ | 0.8− | 2006 10 31 | G96 | 0.0 | 0.6− |
| 2002 12 03 | 608 | 0.3+ | 1.0− | 2004 04 16 | 704 | 0.4− | 0.5+ | 2006 10 31 | G96 | 1.0− | 1.0− |
| 2002 12 03 | 608 | 0.1− | 0.6− | 2004 04 20 | 704 | 1.1+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2002 12 03 | 608 | 0.9− | 1.2− | 2004 04 20 | 704 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.8+ | 2004 04 20 | 704 | 0.0 | 0.8+ | | | | |
| 2002 12 05 | 704 | 0.5+ | 1.0+ | 2004 04 22 | 704 | 1.0− | 0.1+ | | | | |

**(143092)∗ 2002 XD$_{13}$**

Discovered 2002 Dec. 3 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.54105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22048860 | $\omega$ | 142.52367 | | +0.89563697 | +0.44473545 | |
| $a$ | 2.7135966 | $\Omega$ | 191.07583 | | −0.41605167 | +0.83236086 | |
| $e$ | 0.1849756 | $i$ | 1.99668 | | −0.15727503 | +0.33073521 | |
| $P$ | 4.47 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 08 | 691 | 0.2+ | 0.2+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 30 | 704 | (0.2+ | 1.7−) |
| 1995 02 08 | 691 | 0.7+ | 0.9− | 2006 08 22 | 644 | 0.4+ | 0.2− | 2006 09 30 | 704 | 0.6− | 0.7− |
| 1995 02 08 | 691 | 0.5+ | 0.8− | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.4+ | 0.2− |
| 1997 09 28 | 691 | 0.5− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.9− |
| 1997 09 28 | 691 | 0.3− | 0.1− | 2006 08 24 | 644 | 0.6+ | 0.4− | 2006 10 01 | 703 | 0.3− | 0.0 |
| 1997 09 28 | 691 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 01 | 703 | 0.5− | 0.3+ |
| 2002 11 13 | 644 | 0.4− | 0.2+ | 2006 09 01 | 704 | 0.4+ | 0.4− | 2006 10 01 | 703 | 0.5+ | 1.3+ |
| 2002 11 13 | 644 | 0.1+ | 0.4+ | 2006 09 01 | 704 | 0.2+ | 0.5− | 2006 10 01 | 703 | 0.8+ | 0.4− |
| 2002 11 13 | 644 | 0.2− | 0.4+ | 2006 09 01 | 704 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.4+ | 0.5+ |
| 2002 11 24 | 644 | 0.2− | 0.4+ | 2006 09 16 | 699 | 0.7+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 09 16 | 699 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 12 03 | 608 | 0.9− | 0.7− | 2006 09 16 | 699 | 0.7− | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2002 12 03 | 608 | 0.7− | 0.3+ | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 12 03 | 608 | 0.8− | 0.8+ | 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2002 12 05 | 704 | 1.0+ | 0.7+ | 2006 09 17 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 12 05 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.9+ | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2003 01 03 | 291 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.8+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2003 01 03 | 291 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2003 01 03 | 291 | 0.6− | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2004 01 30 | 691 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2004 01 30 | 691 | 0.5− | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2005 04 02 | G96 | 0.5− | 0.1+ | 2006 09 24 | 106 | 0.6+ | 0.5− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.9− | 0.1+ | 2006 09 24 | 106 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2005 04 02 | G96 | 0.8− | 0.4+ | 2006 09 24 | 106 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2005 04 16 | 691 | 0.5+ | 0.4+ | 2006 09 24 | 106 | 0.8− | 1.1− | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2005 04 16 | 691 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.5+ | 0.4+ | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2005 05 01 | 644 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2005 05 01 | 644 | 0.6+ | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2005 05 01 | 644 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 1.1− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2005 05 11 | G96 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.7+ | 0.8− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2005 05 11 | G96 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.9+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2005 05 11 | G96 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2005 05 11 | G96 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 08 21 | 704 | 0.4+ | 0.1− | 2006 09 27 | 704 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2006 08 21 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 0.0 | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2006 08 21 | 704 | 0.5− | 1.2+ | 2006 09 29 | 704 | 0.3+ | 0.1+ | | | | |
| 2006 08 21 | 704 | 0.8− | 1.1+ | 2006 09 29 | 704 | 0.1+ | 0.2− | | | | |

**(143093)∗ 2002 XD$_{14}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.04131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22629556 | $\omega$ | 161.08358 | | +0.44230223 | −0.89376106 | |
| $a$ | 2.6669735 | $\Omega$ | 262.60740 | | +0.81285847 | +0.43461668 | |
| $e$ | 0.0458241 | $i$ | 4.31213 | | +0.37898527 | +0.11090314 | |
| $P$ | 4.36 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 20 | 691 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.2− | 0.2− | 2006 09 20 | 699 | 0.4+ | 0.9+ |
| 1993 10 20 | 691 | 0.4− | 0.6+ | 2002 12 31 | 704 | 0.6− | 0.3+ | 2006 09 20 | 699 | (0.7− | 1.8+) |
| 2001 07 19 | 608 | 0.7+ | 0.7+ | 2002 12 31 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.9+ |
| 2001 07 19 | 608 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.7− | 0.3− | 2006 09 20 | 699 | 0.3− | 0.7+ |
| 2001 07 19 | 608 | 0.4+ | 1.2− | 2002 12 31 | 704 | 0.7− | 0.2− | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2002 11 14 | 704 | 0.5− | 0.4+ | 2003 02 07 | 291 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2002 11 14 | 704 | 1.3+ | 0.5− | 2003 02 07 | 291 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.7− |
| 2002 11 14 | 704 | 0.3− | 0.6− | 2003 02 07 | 291 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | 0.4+ | 1.0− | 2004 02 17 | 608 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2002 11 14 | 704 | 0.2− | 0.7+ | 2004 02 17 | 608 | 0.8+ | 0.2+ | 2006 10 17 | 703 | (0.3− | 1.7+) |
| 2002 11 27 | 699 | 0.2− | 0.7+ | 2004 02 17 | 608 | 0.8+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2002 11 27 | 699 | 0.3+ | 0.4− | 2004 03 16 | 703 | (1.8− | 0.8+) | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2002 11 27 | 699 | 0.5− | 0.4− | 2004 03 16 | 703 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 11 27 | 699 | 0.5− | 0.6+ | 2004 03 16 | 703 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.4− | 0.5+ | 2004 03 16 | 703 | 0.3+ | 0.6− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.4− | 0.7+ | 2004 03 19 | 704 | 0.5− | 1.3+ | 2006 11 14 | 703 | 0.4− | 0.1− |
| 2002 12 06 | 291 | 0.3+ | 0.2− | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 11 14 | 703 | 1.1− | 0.5+ |
| 2002 12 06 | 291 | 0.4+ | 0.1− | 2004 03 19 | 704 | 0.5+ | 1.2+ | 2006 11 14 | 703 | 0.3+ | 0.3+ |
| 2002 12 06 | 291 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.7− | 1.1+ | 2006 11 14 | 703 | 0.8+ | 0.5+ |
| 2002 12 06 | 291 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.0 | 1.1+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 12 06 | 291 | 0.1− | 0.1− | 2004 03 26 | 699 | (1.8− | 0.2+) | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 12 06 | 291 | 0.2− | 0.2− | 2004 03 26 | 699 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2002 12 08 | 333 | 0.2+ | 0.7− | 2004 03 26 | 699 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 12 08 | 333 | 0.6+ | 0.6− | 2004 03 26 | 699 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2002 12 08 | 333 | 0.6− | 1.0− | 2004 04 19 | 704 | 0.2+ | 1.3− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 12 27 | 644 | 0.2− | 0.3− | 2004 04 19 | 704 | 0.7+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2002 12 27 | 644 | 0.4− | 0.2− | 2004 04 19 | 704 | 0.0 | 0.2− | | | | |
| 2002 12 27 | 644 | 0.2− | 0.2− | 2004 04 19 | 704 | 0.6+ | 0.3− | | | | |

**(143094)∗ 2002 XA$_{15}$**

Discovered 2002 Dec. 7 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.52736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23777129 | $\omega$ | 254.13598 | | +0.93864741 | +0.33653801 | |
| $a$ | 2.5804559 | $\Omega$ | 86.15048 | | −0.28040318 | +0.87197309 | |
| $e$ | 0.2610971 | $i$ | 4.33325 | | −0.20078617 | +0.35553496 | |
| $P$ | 4.15 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 704 | 0.1− | 0.5+ | 2002 12 31 | 704 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.1+ | 1.2+ |
| 2001 05 21 | 704 | 0.5+ | 0.6+ | 2002 12 31 | 704 | 0.3+ | 0.7− | 2006 11 14 | 704 | (0.4− | 1.6+) |
| 2001 05 21 | 704 | 0.3− | 1.0+ | 2003 01 01 | 333 | 0.4+ | 0.1+ | 2006 11 14 | 704 | (0.3− | 1.5+) |
| 2001 05 21 | 704 | 0.6− | 0.3+ | 2003 01 01 | 333 | 0.2+ | 0.0 | 2006 11 14 | 704 | (1.7− | 2.7+) |
| 2001 06 15 | 608 | 0.3+ | 1.0− | 2003 01 01 | 333 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.9+ |
| 2001 06 15 | 608 | 0.2+ | 0.6− | 2004 02 17 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.9+ | 1.0+ |
| 2001 06 15 | 608 | 0.0 | 0.4− | 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.7+ |
| 2002 11 05 | 704 | 0.4+ | 0.8− | 2004 02 17 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.8+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.5+ | 0.6− | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.9− | 0.0 |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 09 16 | 703 | 0.9+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 09 16 | 703 | 1.4− | 1.0+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2006 09 16 | 703 | 0.9− | 0.1− | 2006 11 18 | 704 | 0.8− | 0.7− |
| 2002 12 07 | 333 | 0.0 | 0.1+ | 2006 09 16 | 703 | (1.5− | 1.2−) | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2002 12 07 | 333 | 0.6− | 0.4− | 2006 09 16 | 703 | 1.0− | 0.3− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 12 07 | 333 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2002 12 08 | 333 | 1.0− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2002 12 08 | 333 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.7− | 0.7− |
| 2002 12 08 | 333 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.7+ |
| 2002 12 10 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | (1.2− | 1.8+) |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.8− | 0.3− | 2006 11 23 | 691 | 0.5− | 0.1− |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.6− | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2002 12 10 | 704 | 0.2− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.5− | 2006 11 25 | 704 | 0.3+ | 0.8− |
| 2002 12 10 | 704 | 0.2+ | 0.4− | 2006 10 27 | 704 | 0.5+ | 0.4+ | 2006 11 25 | 704 | 1.4+ | 1.1+ |
| 2002 12 10 | 704 | 1.0− | 0.4− | 2006 10 27 | 704 | 0.4− | 0.7− | 2006 11 25 | 704 | 0.4− | 0.1− |
| 2002 12 10 | 704 | 0.5+ | 0.3− | 2006 10 27 | 704 | 0.8− | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.5+ | 0.3− | 2006 11 02 | 703 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2002 12 11 | 704 | 0.5+ | 0.3+ | 2006 11 02 | 703 | 0.5− | 0.8− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.5− | 0.5− | 2006 11 02 | 703 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 11 02 | 703 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.7+ |
| 2002 12 11 | 704 | 0.5+ | 0.7− | 2006 11 11 | 691 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.3− | 0.3+ |
| 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.2− |
| 2002 12 13 | 704 | 0.7+ | 0.6+ | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.1− | 0.4− |
| 2002 12 13 | 704 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.1+ | 1.2+ | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2002 12 13 | 704 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1− | 1.0− | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2006 11 14 | 704 | (0.1+ | 3.4+) | 2006 12 01 | 691 | 0.0 | 0.1− |

**(143095)∗ 2002 XB$_{15}$**

Discovered 2002 Dec. 7 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.42680 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21643323 | $\omega$ | 263.71209 | | −0.87119836 | −0.48566367 |
| $a$ | 2.7473886 | $\Omega$ | 247.21189 | | +0.47555716 | −0.79858567 |
| $e$ | 0.1210138 | $i$ | 4.46188 | | +0.12189672 | −0.35551615 |
| $P$ | 4.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 29 | 291 | 0.2− | 0.2− | 2003 01 01 | 333 | 0.3+ | 0.7− | 2004 05 15 | 704 | 0.0 | 0.2− |
| 2002 10 29 | 291 | 0.4− | 0.3+ | 2003 01 01 | 333 | 0.3+ | 0.2+ | 2004 05 15 | 704 | (0.6− | 1.7−) |
| 2002 10 29 | 291 | 0.3+ | 0.4− | 2003 01 01 | 333 | 0.5+ | 0.1+ | 2004 05 23 | 691 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 1.2+ | 2003 01 02 | 333 | 0.3− | 0.4+ | 2004 05 23 | 691 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2003 01 02 | 333 | 0.4+ | 0.0 | 2004 05 23 | 691 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2003 01 02 | 333 | 0.2+ | 0.0 | 2005 07 06 | 691 | 0.2− | 0.5+ |
| 2002 12 05 | 704 | 0.2+ | 0.8+ | 2003 01 08 | 704 | 0.0 | 0.1− | 2005 07 06 | 691 | 0.0 | 0.5+ |
| 2002 12 05 | 704 | 0.7+ | 1.3+ | 2003 01 08 | 704 | 0.0 | 0.1− | 2005 07 06 | 691 | 0.0 | 0.4+ |
| 2002 12 06 | 704 | 0.6− | 0.3+ | 2003 01 08 | 704 | 0.6− | 0.8− | 2005 07 12 | G96 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.6− | 0.6+ | 2003 01 08 | 704 | 0.9− | 1.2− | 2005 07 12 | G96 | 0.0 | 0.2− |
| 2002 12 06 | 704 | (1.0+ | 1.9+) | 2004 04 14 | 699 | 0.4+ | 0.4+ | 2005 07 12 | G96 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.7+ | 2004 04 14 | 699 | 0.5+ | 1.2+ | 2005 07 12 | G96 | 0.4− | 0.2− |
| 2002 12 07 | 333 | 0.5+ | 0.7+ | 2004 04 14 | 699 | 0.8− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 12 07 | 333 | 0.4+ | 0.0 | 2004 04 14 | 699 | 0.6− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2002 12 07 | 333 | 0.0 | 0.2− | 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2002 12 08 | 333 | 0.6− | 0.3+ | 2004 04 16 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2002 12 08 | 333 | (2.4− | 2.4+) | 2004 04 16 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2002 12 08 | 333 | 0.2+ | 0.7+ | 2004 04 19 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2002 12 10 | 704 | 0.2− | 1.3+ | 2004 04 19 | 704 | 0.9+ | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.4+ |
| 2002 12 10 | 704 | 0.5+ | 0.7+ | 2004 04 19 | 704 | 0.7+ | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.1+ |
| 2002 12 10 | 704 | 0.4+ | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 691 | 0.3+ | 0.7+ |
| 2002 12 10 | 704 | 0.3− | 1.3+ | 2004 04 19 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2002 12 10 | 704 | 0.5− | 0.0 | 2004 04 20 | 704 | 0.8+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.9+ |
| 2002 12 10 | 704 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.5+ | 2006 10 17 | 703 | 1.4− | 0.1− |
| 2002 12 10 | 704 | 0.3− | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.6+ |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2004 04 22 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.5− | 0.2+ |
| 2002 12 11 | 704 | (1.6+ | 0.3+) | 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2002 12 11 | 704 | 0.9+ | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 1.0+ | 0.3+ | 2004 05 15 | 704 | 0.4− | 0.2− | 2006 11 17 | G96 | 0.5− | 0.2− |

**(143096)∗ 2002 XJ$_{15}$ = 2004 DN$_{23}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61641)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.83382 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23302907 | $\omega$ | 105.03850 | | −0.43874318 | −0.89732010 |
| $a$ | 2.6153470 | $\Omega$ | 11.35438 | | +0.70143272 | −0.37549017 |
| $e$ | 0.1330009 | $i$ | 14.16459 | | +0.56169081 | −0.23199949 |
| $P$ | 4.23 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 704 | 0.0 | 1.5− | 2004 03 16 | 704 | 0.5+ | 1.2+ | 2004 04 23 | 291 | 0.7+ | 0.1+ |
| 1998 11 16 | 704 | 0.1− | 1.6− | 2004 03 16 | 704 | (2.0− | 0.4−) | 2004 04 23 | 291 | 1.1+ | 0.6+ |
| 1998 11 16 | 704 | 0.7− | 0.4+ | 2004 03 16 | 704 | 0.9+ | 0.8+ | 2004 04 28 | 691 | 0.4+ | 0.3+ |
| 1998 11 16 | 704 | 0.8− | 1.2− | 2004 03 18 | 704 | 0.1− | 0.2+ | 2004 04 28 | 691 | 0.1+ | 0.2+ |
| 1998 12 12 | 704 | 1.0+ | 0.3− | 2004 03 18 | 704 | 0.3+ | 0.1− | 2004 04 28 | 691 | 0.4+ | 0.2+ |
| 1998 12 12 | 704 | 0.4− | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.4+ |
| 1998 12 12 | 704 | (0.3+ | 2.7−) | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 1998 12 12 | 704 | 1.0+ | 1.7− | 2004 03 18 | 704 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.4− | 0.3+ |
| 1998 12 12 | 704 | 0.9− | 0.6− | 2004 03 19 | 291 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.4+ |
| 2000 05 09 | 704 | 0.2− | 0.2− | 2004 03 19 | 291 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.4+ |
| 2000 05 09 | 704 | 0.8− | 0.6− | 2004 03 19 | 291 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.0 |
| 2000 05 09 | 704 | 1.1+ | 0.8+ | 2004 03 20 | 704 | 1.2+ | 0.9+ | 2006 09 14 | 703 | 0.4− | 0.2+ |
| 2000 05 09 | 704 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.9+ | 2006 09 14 | 691 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.6− | 0.0 |
| 2002 09 06 | 704 | 0.8+ | 1.0+ | 2004 03 20 | 704 | 0.0 | 1.0+ | 2006 09 14 | 703 | 1.1− | 0.2− |
| 2002 09 06 | 704 | 0.5+ | 0.6+ | 2004 03 21 | 699 | 1.0− | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2002 09 06 | 704 | (2.7+ | 1.9+) | 2004 03 21 | 699 | 0.9+ | 0.2− | 2006 09 14 | 703 | 1.4− | 0.5+ |
| 2002 10 04 | 704 | 0.1− | 0.4+ | 2004 03 21 | 699 | 0.3− | 0.5− | 2006 09 14 | 703 | 0.7+ | 0.4+ |
| 2002 10 04 | 704 | 0.7− | 0.6+ | 2004 03 21 | 699 | 0.7− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.9+ |
| 2002 10 04 | 704 | 0.1+ | 0.7+ | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.2+ | 1.2+ |
| 2002 10 04 | 704 | 0.3+ | 0.1+ | 2004 03 23 | 704 | 1.3+ | 0.1− | 2006 09 17 | 704 | 1.1+ | 1.0+ |
| 2002 10 04 | 704 | 0.2+ | 0.7+ | 2004 03 23 | 704 | 1.3+ | 1.1+ | 2006 09 17 | 704 | 1.2− | 0.5+ |
| 2002 10 10 | 704 | 0.2+ | 0.7+ | 2004 03 23 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.1+ | 1.3+ |
| 2002 10 10 | 704 | 0.4− | 0.9+ | 2004 03 23 | 704 | 1.3+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.3+ |
| 2002 10 10 | 704 | 0.3+ | 0.1+ | 2004 03 27 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 2002 10 10 | 704 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.6+ |
| 2002 11 06 | 704 | 0.5− | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | (0.4− | 1.7+) |
| 2002 11 06 | 704 | (0.9− | 1.6+) | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 1.3+ |
| 2002 11 06 | 704 | 0.2+ | 0.7+ | 2004 03 30 | 333 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.0 | 1.1+ |
| 2002 11 06 | 704 | 0.2− | 0.5+ | 2004 03 30 | 333 | 0.8− | 0.2− | 2006 09 20 | 704 | (0.7+ | 2.3+) |
| 2002 11 06 | 704 | 0.2− | 0.7+ | 2004 03 30 | 333 | 0.3− | 0.1+ | 2006 09 20 | 704 | (0.0 | 1.6+) |
| 2002 11 14 | 644 | 0.4− | 0.3+ | 2004 04 02 | 608 | 0.3+ | 0.9− | 2006 09 20 | 704 | (2.2+ | 0.5+) |
| 2002 11 14 | 704 | 0.3− | 0.1+ | 2004 04 02 | 608 | 0.3+ | 1.0− | 2006 09 20 | 704 | (0.8− | 1.6+) |
| 2002 11 14 | 644 | 0.1− | 0.3+ | 2004 04 02 | 608 | 0.6+ | 0.7− | 2006 09 20 | 704 | 0.9− | 1.4+ |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2004 04 11 | 644 | 0.6+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2002 11 14 | 644 | 0.2− | 0.3+ | 2004 04 11 | 644 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.1− |
| 2002 11 14 | 704 | 0.0 | 0.3+ | 2004 04 11 | 644 | 0.7+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.2+ |
| 2002 11 14 | 704 | 0.0 | 0.7+ | 2004 04 12 | 699 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.2+ |
| 2002 11 14 | 704 | 0.3− | 0.5+ | 2004 04 12 | 699 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2002 11 24 | 644 | 0.0 | 0.6− | 2004 04 12 | 699 | 0.6+ | 0.1− | 2006 09 26 | 691 | 0.4− | 1.1+ |
| 2002 11 24 | 644 | 0.0 | 0.5− | 2004 04 12 | 699 | 0.9− | 0.4− | 2006 09 29 | 704 | (0.4+ | 2.9+) |
| 2002 11 24 | 644 | 0.0 | 0.6− | 2004 04 14 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.6− | 1.2+ |
| 2002 12 02 | 704 | 0.2− | 0.2+ | 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 09 29 | 704 | 1.4− | 1.4+ |
| 2002 12 02 | 704 | 0.1− | 0.3+ | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 1.5− | 0.7+ |
| 2002 12 02 | 704 | 0.0 | 0.3+ | 2004 04 14 | 185 | 0.7+ | 0.4+ | 2006 09 30 | 691 | 0.5− | 0.3+ |
| 2002 12 02 | 704 | 0.2+ | 0.4+ | 2004 04 14 | 185 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2002 12 02 | 704 | 0.5+ | 0.2− | 2004 04 14 | 185 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.4− | 0.2+ |
| 2002 12 05 | 699 | 0.3− | 0.4+ | 2004 04 15 | 699 | 0.2− | 0.0 | 2006 10 15 | 106 | 0.6− | 0.7− |
| 2002 12 05 | 699 | 0.1+ | 0.0 | 2004 04 15 | 699 | 1.1− | 0.3+ | 2006 10 15 | 106 | 0.2− | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 699 | 0.6− | 0.9+ | 2004 04 15 | 699 | 0.1+ | 0.3+ | 2006 10 15 | 106 | 0.5− | 0.0 | |
| 2002 12 05 | 699 | 0.4− | 0.4+ | 2004 04 15 | 699 | 0.1− | 0.2− | 2006 10 16 | 106 | 0.0 | 0.2− | |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2004 04 16 | 704 | (0.8+ | 1.9+) | 2006 10 16 | 621 | 0.4− | 0.1+ | |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 704 | 0.0 | 1.2+ | 2006 10 16 | 621 | 0.4− | 0.1+ | |
| 2002 12 06 | 704 | 0.7− | 0.5+ | 2004 04 16 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 621 | 0.0 | 0.1− | |
| 2002 12 06 | 704 | 0.4− | 0.4− | 2004 04 16 | 704 | 1.3+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.0 | |
| 2002 12 06 | 704 | 0.1− | 0.5− | 2004 04 16 | 704 | (1.3+ | 1.9+) | 2006 10 17 | 703 | 0.4− | 0.2− | |
| 2002 12 31 | 704 | (1.9+ | 1.2−) | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.0 | |
| 2002 12 31 | 704 | 0.4+ | 1.1− | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.4+ | |
| 2002 12 31 | 704 | 0.3+ | 1.0+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.2+ | |
| 2004 02 18 | 703 | 0.3+ | 0.2+ | 2004 04 21 | 704 | 1.1+ | 1.1+ | 2006 10 19 | 644 | 0.3− | 0.2+ | |
| 2004 02 18 | 703 | 0.4+ | 0.3+ | 2004 04 21 | 704 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.0 | |
| 2004 02 18 | 703 | 0.2+ | 1.4+ | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.1− | |
| 2004 02 18 | 703 | 0.5+ | 0.1+ | 2004 04 21 | 704 | 1.4+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.2− | |
| 2004 02 19 | 704 | 0.0 | 0.8+ | 2004 04 21 | 704 | (0.1− | 2.4+) | 2006 10 19 | 644 | 0.3− | 0.3+ | |
| 2004 02 19 | 704 | 0.6− | 0.0 | 2004 04 22 | 703 | (1.5− | 3.4+) | 2006 10 19 | G96 | (0.1+ | 2.4−) | |
| 2004 02 19 | 704 | 0.6− | 0.1+ | 2004 04 22 | 703 | (0.2− | 1.8+) | 2006 11 20 | G96 | 0.3− | 0.3− | |
| 2004 02 19 | 704 | 1.2− | 0.6+ | 2004 04 22 | 703 | 0.5− | 1.2+ | 2006 11 20 | G96 | 0.1− | 0.4− | |
| 2004 02 19 | 704 | 0.2− | 0.1− | 2004 04 22 | 703 | 0.4+ | 1.3+ | 2006 11 20 | G96 | 0.1+ | 0.2− | |
| 2004 03 16 | 704 | 0.8− | 0.1− | 2004 04 23 | 291 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 0.3− | 0.0 | |

**(143097)∗ 2002 XN$_{17}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.22872 | | (2000.0) | | | |
| $n$ | 0.24103334 | $\omega$ | 316.08603 | | +0.89320808 | +0.44597980 |
| $a$ | 2.5571211 | $\Omega$ | 17.67904 | | −0.34265163 | +0.75761586 |
| $e$ | 0.0863412 | $i$ | 10.87266 | | −0.29115149 | +0.47657131 |
| $P$ | 4.09 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.5− | 0.5− | 2002 12 06 | 704 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.0 | 0.7− | |
| 2000 03 12 | 704 | 0.2− | 1.0+ | 2002 12 06 | 704 | 0.2+ | 0.9− | 2006 10 19 | 703 | 0.6− | 0.8+ | |
| 2000 03 12 | 704 | 0.3+ | 1.2+ | 2002 12 06 | 704 | 0.0 | 1.0− | 2006 10 19 | 703 | 0.4+ | 0.1+ | |
| 2002 10 12 | 704 | 0.4− | 0.7− | 2003 01 04 | 704 | 1.1− | 1.1+ | 2006 10 27 | 703 | 0.1− | 0.2+ | |
| 2002 10 12 | 704 | 0.9− | 0.1+ | 2003 01 04 | 704 | 0.9− | 1.1− | 2006 10 27 | 703 | 0.6− | 0.2+ | |
| 2002 10 12 | 704 | 0.3− | 0.6− | 2003 01 04 | 704 | (1.5− | 0.6−) | 2006 10 27 | 703 | 0.2+ | 0.4+ | |
| 2002 10 12 | 704 | 0.3− | 1.2− | 2004 02 29 | 691 | 0.1− | 0.2− | 2006 11 02 | 703 | 0.2− | 0.6+ | |
| 2002 10 12 | 704 | 1.0+ | 0.1− | 2004 02 29 | 691 | 0.1− | 0.3− | 2006 11 02 | 703 | 0.0 | 0.4+ | |
| 2002 10 31 | 704 | 0.3+ | 0.9+ | 2004 02 29 | 691 | 0.1− | 0.4− | 2006 11 02 | 703 | 0.1− | 0.3+ | |
| 2002 10 31 | 704 | 0.7+ | 0.5+ | 2004 03 14 | 703 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.4− | 0.2+ | |
| 2002 10 31 | 704 | 0.5+ | 1.3+ | 2004 03 14 | 703 | 0.9+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.5− | |
| 2002 10 31 | 704 | 0.2+ | 1.2+ | 2004 03 14 | 703 | 0.0 | 0.8+ | 2006 11 15 | 704 | 0.6− | 0.5+ | |
| 2002 11 06 | 704 | 1.4+ | 0.2+ | 2004 03 14 | 703 | 0.1+ | 0.8+ | 2006 11 15 | 704 | 0.5+ | 0.6− | |
| 2002 11 06 | 704 | 0.8+ | 0.6+ | 2004 03 20 | 704 | (1.3− | 1.8−) | 2006 11 15 | 704 | 0.0 | 0.2+ | |
| 2002 11 06 | 704 | 0.5+ | 0.2+ | 2004 03 20 | 704 | 0.0 | 1.4+ | 2006 11 15 | 704 | 0.0 | 0.3+ | |
| 2002 11 06 | 704 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 1.4+ | 0.4+ | 2006 11 21 | 703 | 0.3+ | 0.2− | |
| 2002 11 15 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 11 21 | 703 | 0.5− | 0.3− | |
| 2002 11 15 | 704 | 0.1− | 0.1− | 2005 05 30 | E12 | 0.1− | 1.2+ | 2006 11 21 | 703 | 0.3− | 1.3− | |
| 2002 11 15 | 704 | (0.7+ | 1.9+) | 2005 05 30 | E12 | 0.0 | 1.4+ | 2006 11 21 | 703 | 0.7− | 0.0 | |
| 2002 11 15 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.9− | |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.7+ | 0.4+ | 2006 11 29 | 704 | 0.8− | 1.7+ | |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.4− | |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.2+ | |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.7− | 2006 11 29 | 704 | 1.2+ | 0.1− | |

**(143098)∗ 2002 XF$_{18}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.53107 | | (2000.0) | | | |
| $n$ | 0.21296648 | $\omega$ | 352.90258 | | +0.31356868 | −0.94620351 |
| $a$ | 2.7771237 | $\Omega$ | 78.79873 | | +0.87516041 | +0.25535075 |
| $e$ | 0.0753149 | $i$ | 4.66819 | | +0.36846838 | +0.19873327 |
| $P$ | 4.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.8− | 0.9− | 2004 03 19 | 704 | 0.4+ | 0.0 | 2006 09 20 | 644 | 0.3− | 0.2+ | |
| 2001 08 19 | 704 | 1.1+ | 0.1− | 2004 03 20 | 704 | 0.4− | 0.6− | 2006 09 22 | 704 | (0.7− | 1.7+) | |
| 2001 08 19 | 704 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.0 | 0.0 | 2006 09 22 | 704 | 1.2+ | 0.7− | |
| 2002 12 05 | 704 | 0.8+ | 0.1− | 2004 03 20 | 704 | 0.3− | 1.2− | 2006 09 22 | 704 | 0.7− | 0.1− | |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 0.7+ | 0.3+ | |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2004 03 20 | 704 | (0.2− | 1.6−) | 2006 09 26 | 704 | 0.6− | 1.3+ | |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | 1.1− | 0.0 | 2006 09 26 | 704 | 1.3+ | 0.5+ | |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.5+ | 0.7− | 2006 09 26 | 704 | (1.0− | 1.9+) | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.5− | 0.1− | 2006 09 26 | 704 | 0.4− | 0.6− | |
| 2002 12 06 | 704 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 1.0− | 0.9− | 2006 09 26 | 704 | 0.2+ | 0.2+ | |
| 2002 12 06 | 704 | 0.3+ | 1.3+ | 2004 03 20 | 704 | 0.4+ | 0.2− | 2006 09 28 | 704 | 1.1+ | 0.6+ | |
| 2002 12 06 | 704 | 0.5+ | 0.5+ | 2004 03 22 | 704 | 0.3+ | 1.1+ | 2006 09 28 | 704 | 1.1+ | 0.4+ | |
| 2002 12 06 | 704 | (0.7+ | 1.6+) | 2004 03 22 | 704 | 0.4− | 0.8+ | 2006 09 28 | 704 | 0.8− | 0.3+ | |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.3+ | 1.3+ | |
| 2002 12 06 | 704 | 0.8+ | 0.5+ | 2004 03 22 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.5− | 0.3+ | |
| 2002 12 06 | 704 | 0.5− | 0.4+ | 2004 03 22 | 704 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.1− | |
| 2002 12 06 | 704 | 1.0+ | 0.6+ | 2004 03 30 | 703 | 0.0 | 0.9− | 2006 09 30 | 703 | 0.4− | 0.1− | |
| 2002 12 10 | 704 | 0.5− | 1.0+ | 2004 03 30 | 703 | 0.9+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.4− | |
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2004 03 30 | 703 | 1.0+ | 1.0+ | 2006 09 30 | 704 | 0.8+ | 0.8+ | |
| 2002 12 10 | 704 | 0.7+ | 0.2+ | 2004 03 30 | 703 | 0.2+ | 0.3− | 2006 09 30 | 704 | 1.0− | 0.0 | |
| 2002 12 10 | 704 | 0.4+ | 0.2+ | 2004 04 20 | 704 | 0.5+ | 1.3+ | 2006 09 30 | 704 | 0.4+ | 0.3− | |
| 2002 12 10 | 704 | 0.4− | 0.3+ | 2004 04 20 | 704 | 0.9+ | 1.0+ | 2006 09 30 | 703 | 0.5+ | 1.0+ | |
| 2002 12 10 | 704 | 0.0 | 0.3− | 2004 04 20 | 704 | 1.2+ | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.2+ | |
| 2002 12 10 | 704 | 0.3− | 0.2− | 2004 04 20 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.6+ | 0.4+ | |
| 2002 12 11 | 291 | 0.3+ | 0.1+ | 2004 04 21 | 691 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.0 | |
| 2002 12 11 | 704 | 0.2+ | 0.6− | 2004 04 21 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | |
| 2002 12 11 | 291 | 0.8− | 0.5− | 2004 04 21 | 691 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.1+ | |
| 2002 12 11 | 704 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.4− | 0.7− | 2006 10 10 | 644 | 0.3− | 0.1− | |
| 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 08 28 | 699 | (1.7− | 0.5+) | 2006 10 10 | 644 | 0.5− | 0.5+ | |
| 2002 12 11 | 291 | 0.5− | 0.2+ | 2006 08 28 | 699 | 1.2− | 0.5− | 2006 10 12 | 644 | 0.0 | 0.3+ | |
| 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 08 28 | 699 | 0.9− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.2+ | |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.9− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2002 12 31 | 704 | 1.1− | 0.7+ | 2006 09 12 | 703 | 0.4+ | 0.9+ | 2006 10 16 | 703 | 1.2− | 0.1− | |
| 2002 12 31 | 704 | 1.2+ | 0.5+ | 2006 09 12 | 703 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.3− | 1.0+ | |
| 2002 12 31 | 704 | (1.7+ | 0.9+) | 2006 09 12 | 703 | 0.3+ | 1.0+ | 2006 10 16 | 703 | 0.8− | 1.2− | |
| 2002 12 31 | 704 | 1.2+ | 0.3− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.3+ | |
| 2003 01 04 | 704 | 0.4− | 0.3− | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 2003 01 04 | 704 | 0.4− | 0.5− | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 | |
| 2003 01 04 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | (2.0− | 3.3−) | 2006 10 20 | 644 | 0.5− | 0.3+ | |
| 2003 01 04 | 704 | 0.4+ | 0.7− | 2006 09 18 | 703 | (0.4+ | 2.2−) | 2006 10 21 | 644 | 0.3− | 0.1+ | |
| 2003 01 04 | 704 | 0.1+ | 0.3− | 2006 09 18 | 703 | (2.1+ | 1.2−) | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2003 01 05 | 291 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− | |
| 2003 01 05 | 291 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.3− | |
| 2003 01 05 | 291 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.1− | |
| 2004 03 19 | 704 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.1− | |
| 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.1− | 0.0 | |
| 2004 03 19 | 704 | 1.1− | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.1+ | | | | | |
| 2004 03 19 | 704 | 0.8+ | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.4+ | | | | | |

**(143099)∗ 2002 XW$_{18}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.29671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21559148 | $\omega$ | 103.88063 | | −0.98294098 | +0.06173285 | |
| $a$ | 2.7545351 | $\Omega$ | 79.87029 | | −0.13042836 | −0.89811786 | |
| $e$ | 0.0734571 | $i$ | 10.13656 | | +0.12967446 | −0.43540024 | |
| $P$ | 4.57 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 1.1− | 1.2+ | 2002 12 31 | 704 | 0.5+ | 0.8− | 2004 04 24 | 704 | 0.8+ | 0.4+ |
| 2001 10 15 | 644 | 0.3− | 0.8+ | 2002 12 31 | 704 | 1.1− | 1.0+ | 2004 04 24 | 704 | 0.3+ | 0.1− |
| 2001 10 15 | 644 | 0.1+ | 0.5+ | 2002 12 31 | 704 | 1.0− | 0.6+ | 2004 04 24 | 704 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2003 01 04 | 704 | 1.1+ | 0.3− | 2004 04 24 | 704 | 0.0 | 0.4+ |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2003 01 04 | 704 | 0.7+ | 0.7− | 2004 04 25 | 699 | 0.6+ | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2003 01 04 | 704 | 0.6+ | 0.4+ | 2004 04 25 | 699 | 0.8− | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.7+ | 2004 03 12 | 644 | 0.0 | 0.3+ | 2004 04 25 | 699 | 0.4− | 0.4− |
| 2002 12 06 | 704 | 0.1+ | 0.5− | 2004 03 12 | 644 | 0.2+ | 0.3+ | 2004 04 25 | 699 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2004 03 12 | 644 | 0.1+ | 0.4+ | 2004 05 12 | 644 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2004 03 15 | 704 | 0.0 | 1.2+ | 2004 05 12 | 644 | 0.4+ | 0.2+ |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2004 03 15 | 704 | 0.0 | 0.5+ | 2004 05 12 | 644 | 0.8+ | 0.3+ |
| 2002 12 06 | 704 | 0.5+ | 1.0+ | 2004 03 15 | 704 | 0.1+ | 0.8+ | 2004 05 16 | 621 | 0.9− | 1.0+ |
| 2002 12 06 | 704 | 0.3− | 0.2− | 2004 03 15 | 704 | 0.1− | 0.6+ | 2004 05 16 | 621 | 0.5− | 0.3+ |
| 2002 12 06 | 704 | 0.8− | 0.3− | 2004 03 15 | 704 | 0.2+ | 1.0+ | 2004 05 16 | 621 | 0.2+ | 0.7− |
| 2002 12 06 | 704 | 0.4− | 0.4+ | 2004 03 22 | 699 | 0.3− | 0.5+ | 2004 05 17 | 621 | 0.3− | 0.1+ |
| 2002 12 06 | 704 | (1.6+ | 1.1−) | 2004 03 22 | 699 | 0.1+ | 0.5+ | 2004 05 17 | 621 | 0.1+ | 0.2+ |
| 2002 12 06 | 704 | 0.3+ | 0.2− | 2004 03 22 | 699 | 0.1− | 0.1+ | 2004 05 17 | 621 | 0.2− | 0.5− |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2004 03 22 | 699 | 0.7+ | 0.1+ | 2005 07 29 | E12 | 0.4− | 1.0+ |
| 2002 12 06 | 704 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.3− | 0.1− | 2005 07 29 | E12 | 0.2− | 0.3+ |
| 2002 12 06 | 704 | 0.1− | 0.7− | 2004 03 23 | 704 | 0.3+ | 0.2− | 2005 07 29 | E12 | 0.5+ | 1.0+ |
| 2002 12 07 | 704 | (2.7− | 0.6−) | 2004 03 23 | 704 | 0.8+ | 0.0 | 2005 07 29 | E12 | 0.7− | 0.1− |
| 2002 12 07 | 704 | 0.5− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2005 08 24 | E12 | 0.2− | 0.2+ |
| 2002 12 07 | 704 | 0.4− | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.8− | 2005 08 24 | E12 | 0.4+ | 0.9+ |
| 2002 12 10 | 704 | 0.2− | 1.1+ | 2004 03 28 | 703 | 0.0 | 1.0+ | 2005 08 24 | E12 | 0.2− | 0.8+ |
| 2002 12 10 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 703 | 0.0 | 0.0 | 2005 08 24 | E12 | 0.1− | 0.3+ |
| 2002 12 10 | 704 | 0.1+ | 0.0 | 2004 03 28 | 703 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.7+ | 1.3+ |
| 2002 12 10 | 704 | 0.5− | 1.3+ | 2004 03 28 | 703 | 0.1− | 0.6− | 2006 10 22 | 703 | (0.5− | 1.5+) |
| 2002 12 10 | 704 | 0.0 | 0.2− | 2004 04 15 | 704 | 0.7− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 1.0+ |
| 2002 12 10 | 704 | 0.2− | 0.7+ | 2004 04 15 | 704 | 0.1− | 0.9+ | 2006 10 22 | 703 | (0.0 | 1.8+) |
| 2002 12 10 | 704 | 0.7− | 0.3− | 2004 04 15 | 704 | 1.1− | 1.3+ | 2006 10 28 | 703 | 0.5− | 0.6+ |
| 2002 12 10 | 704 | 0.3+ | 0.4− | 2004 04 15 | 704 | 0.6+ | 0.3+ | 2006 10 28 | 703 | 1.2− | 0.2+ |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2004 04 15 | 704 | 0.9− | 0.7+ | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2002 12 13 | 704 | (3.3− | 1.3+) | 2004 04 21 | 703 | 1.3+ | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.4− |
| 2002 12 13 | 704 | (2.2− | 0.7+) | 2004 04 21 | 703 | 1.0+ | 0.6+ | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2002 12 13 | 704 | (4.0− | 0.7+) | 2004 04 21 | 703 | (1.9+ | 0.4+) | 2006 11 16 | 703 | 1.1− | 1.9+ |
| 2002 12 31 | 704 | 0.1+ | 0.7− | 2004 04 21 | 703 | 1.5+ | 0.4− | 2006 11 16 | 703 | 0.6− | 1.6+ |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2004 04 24 | 704 | 0.9+ | 0.1+ | 2006 11 16 | 703 | 0.1− | 1.6+ |

**(143100)∗ 2002 XQ$_{19}$ = 2004 FN$_{101}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69420)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.44381 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22178362 | $\omega$ | 124.85375 | | −0.94385111 | −0.30891571 | |
| $a$ | 2.7030230 | $\Omega$ | 37.54304 | | +0.20360158 | −0.82307844 | |
| $e$ | 0.0625358 | $i$ | 11.08097 | | +0.26017584 | −0.47656371 | |
| $P$ | 4.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 644 | 0.3− | 0.0 | 2004 03 15 | 704 | 0.9+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 2001 07 22 | 644 | 0.4− | 0.0 | 2004 03 23 | 704 | 0.7+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.5+ |
| 2001 07 22 | 644 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.5− | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.5+ |
| 2001 08 27 | 644 | 0.4− | 1.0+ | 2004 03 23 | 704 | 0.5+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.5+ |
| 2001 08 27 | 644 | 0.2− | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.4+ |
| 2001 08 27 | 644 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2002 11 12 | 704 | 0.4− | 0.4+ | 2004 03 26 | 691 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.6− | 0.1− | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.5+ |
| 2002 11 12 | 704 | 0.1− | 0.9− | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2002 12 02 | 704 | 0.1− | 0.0 | 2004 03 26 | 703 | 0.9+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 12 02 | 704 | 0.5+ | 0.4− | 2004 03 26 | 703 | (2.2+ | 0.5+) | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 12 02 | 704 | 0.7+ | 0.2− | 2004 03 26 | 703 | (1.1− | 2.0+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 12 02 | 704 | 0.1+ | 0.1− | 2004 03 26 | 703 | 0.5+ | 0.9+ | 2006 10 22 | 703 | 0.3+ | 1.4− |
| 2002 12 06 | 704 | 0.3+ | 1.0+ | 2004 04 13 | 703 | (2.1+ | 0.5+) | 2006 10 22 | 703 | 0.9− | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.0 | 2004 04 13 | 703 | 1.0+ | 1.1+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2002 12 06 | 704 | 0.9+ | 0.1− | 2004 04 13 | 703 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.5− |
| 2002 12 06 | 704 | (1.7+ | 1.0−) | 2004 04 13 | 703 | 0.8+ | 0.0 | 2006 11 11 | 703 | (0.2− | 4.7−) |
| 2004 02 27 | 704 | 0.9+ | 0.3+ | 2004 04 25 | 699 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 2004 02 27 | 704 | 0.0 | 0.0 | 2004 04 25 | 699 | 1.4− | 0.7+ | 2006 11 11 | 703 | 0.1− | 1.8− |
| 2004 02 27 | 704 | 0.2+ | 0.2− | 2004 04 25 | 699 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.4− | 2.1+ |
| 2004 03 15 | 704 | 0.6+ | 0.6− | 2004 04 25 | 699 | (1.0+ | 1.5+) | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2004 03 15 | 704 | 1.3+ | 1.2+ | 2006 09 14 | 291 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 704 | 0.4− | 0.5+ | 2006 09 14 | 291 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 704 | (0.7+ | 1.9+) | 2006 09 14 | 291 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.1− |

**(143101)∗ 2002 XB$_{20}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.00984 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23303135 | $\omega$ | 240.63261 | | −0.79704440 | −0.56101520 | |
| $a$ | 2.6153299 | $\Omega$ | 264.37345 | | +0.60203974 | −0.70891752 | |
| $e$ | 0.0840223 | $i$ | 12.98226 | | +0.04762749 | −0.42743176 | |
| $P$ | 4.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 645 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.3+ | 1.1+ | 2004 04 17 | 704 | 0.5− | 0.3+ |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.1− | 0.2− | 2004 05 12 | E12 | 0.6− | 0.3− |
| 2002 11 06 | 704 | 0.4+ | 0.9− | 2002 12 11 | 704 | 0.4− | 0.0 | 2004 05 12 | E12 | 0.8− | 1.1− |
| 2002 11 06 | 704 | 1.2− | 1.0− | 2002 12 11 | 704 | 0.2+ | 0.5− | 2004 05 12 | E12 | 0.9+ | 0.8+ |
| 2002 11 06 | 704 | 0.2+ | 0.6− | 2002 12 11 | 704 | 0.9− | 0.0 | 2004 05 12 | E12 | 0.6+ | 0.1+ |
| 2002 11 06 | 704 | 0.8− | 0.2− | 2002 12 14 | 704 | 0.7− | 0.5− | 2004 05 14 | 699 | 0.2+ | 0.4+ |
| 2002 11 15 | 704 | 1.4+ | 0.2− | 2002 12 14 | 704 | 0.7− | 0.5+ | 2004 05 14 | 699 | 0.7+ | 0.1+ |
| 2002 11 15 | 704 | 1.0+ | 0.6− | 2002 12 14 | 704 | (3.2− | 0.5−) | 2004 05 14 | 699 | 1.4+ | 0.2+ |
| 2002 11 15 | 704 | 0.7+ | 0.4− | 2002 12 27 | 644 | 0.2+ | 1.3+ | 2004 05 14 | 699 | 0.5− | 0.3+ |
| 2002 11 15 | 704 | (1.6+ | 0.5−) | 2002 12 27 | 644 | 0.5+ | 1.0+ | 2005 06 06 | 691 | 0.2+ | 0.5+ |
| 2002 11 15 | 704 | 0.7+ | 0.4− | 2002 12 27 | 644 | 0.2+ | 0.9+ | 2005 06 06 | 691 | 0.0 | 0.3+ |
| 2002 12 02 | 704 | 0.1− | 0.5+ | 2002 12 31 | 704 | (0.7+ | 1.6+) | 2005 06 06 | 691 | 0.0 | 0.7+ |
| 2002 12 02 | 704 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.6+ | 0.3− | 2005 06 11 | 691 | 0.1− | 0.3+ |
| 2002 12 02 | 704 | 0.1+ | 0.2− | 2002 12 31 | 704 | 0.3+ | 0.0 | 2005 06 11 | 691 | 0.0 | 0.2+ |
| 2002 12 02 | 704 | 0.1− | 0.1+ | 2002 12 31 | 704 | (1.8+ | 2.0−) | 2005 06 11 | 691 | 0.1− | 0.4+ |
| 2002 12 06 | 704 | 1.0− | 0.6+ | 2002 12 31 | 704 | 0.5+ | 0.5− | 2006 09 28 | 703 | 0.0 | 0.5− |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2003 01 05 | 704 | 0.1− | 0.5− | 2006 09 28 | 703 | 0.2− | 0.4+ |
| 2002 12 06 | 704 | 0.4− | 0.7+ | 2003 01 05 | 704 | 0.5+ | 0.5− | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2002 12 06 | 704 | 0.0 | 1.0+ | 2003 01 05 | 704 | 0.8− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2002 12 06 | 704 | 1.2− | 0.6+ | 2003 01 05 | 704 | 0.7+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 12 07 | 704 | 0.6+ | 0.6+ | 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 12 07 | 704 | 0.9+ | 1.1+ | 2004 03 26 | 704 | 0.3+ | 0.8− | 2006 10 22 | 644 | 0.3− | 0.5− |
| 2002 12 07 | 704 | 0.8+ | 0.6− | 2004 03 26 | 704 | 0.4+ | 0.8+ | 2006 10 27 | 703 | 0.2+ | 1.1+ |
| 2002 12 07 | 704 | 0.8+ | 1.0+ | 2004 03 26 | 704 | 1.1− | 0.7+ | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 2002 12 10 | 704 | 0.4− | 0.5+ | 2004 03 26 | 704 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2002 12 10 | 704 | 0.3− | 0.9+ | 2004 04 08 | 608 | 0.5+ | 0.8− | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 12 10 | 704 | 0.3+ | 0.6+ | 2004 04 08 | 608 | 0.2+ | 0.6− | 2006 11 15 | 703 | 0.2+ | 0.8+ |
| 2002 12 10 | 704 | 0.7− | 0.3+ | 2004 04 08 | 608 | 0.4− | 0.9− | 2006 11 15 | 703 | 0.5− | 1.0+ |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2004 04 17 | 644 | 0.1+ | 0.8+ | 2006 11 15 | 703 | 0.3− | 0.7+ |
| 2002 12 11 | 704 | (0.3− | 1.8−) | 2004 04 17 | 644 | 0.1+ | 0.9+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.9− | 2004 04 17 | 704 | 0.4− | 0.3+ | 2006 11 22 | 703 | 0.7− | 0.2+ |
| 2002 12 11 | 704 | 0.3− | 0.7− | 2004 04 17 | 644 | 0.1+ | 0.8+ | 2006 11 22 | 703 | 0.5− | 0.5+ |
| 2002 12 11 | 704 | 0.1+ | 0.7− | 2004 04 17 | 704 | 0.6− | 1.0+ | 2006 11 22 | 703 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 0.2+ | 0.7− | 2004 04 17 | 704 | 0.1− | 0.5+ | 2006 11 22 | 703 | 0.1− | 0.1− |

**(143102)∗ 2002 XS$_{20}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 262.99590 | | | (2000.0) | | |
| $n$ | 0.23109281 | $\omega$ | 100.12686 | | −0.66891070 | −0.74168730 |
| $a$ | 2.6299355 | $\Omega$ | 32.03267 | | +0.64015200 | −0.60867436 |
| $e$ | 0.0960479 | $i$ | 5.36390 | | +0.37784110 | −0.28180752 |
| $P$ | 4.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 09 | 704 | 0.0 | 0.3− | 2004 03 28 | 704 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2000 05 09 | 704 | 0.5+ | 0.7− | 2004 03 28 | 704 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.7+ |
| 2000 05 09 | 704 | 0.9− | 0.3+ | 2004 03 31 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 11 01 | 644 | 0.1− | 0.3− | 2004 03 31 | 704 | 0.3− | 0.4+ | 2006 10 22 | 683 | 0.1− | 0.6− |
| 2002 11 01 | 644 | 0.1+ | 0.5− | 2004 03 31 | 704 | 0.0 | 0.1+ | 2006 10 22 | 683 | (2.8− | 0.5+) |
| 2002 11 01 | 644 | 0.0 | 0.2− | 2004 03 31 | 704 | 0.8+ | 1.1+ | 2006 10 27 | 683 | 0.9+ | 0.9− |
| 2002 11 12 | 704 | (0.6+ | 1.6−) | 2004 03 31 | 704 | 0.6+ | 1.4+ | 2006 10 27 | 683 | (0.4+ | 2.0+) |
| 2002 11 12 | 704 | 0.3+ | 0.0 | 2004 04 11 | 644 | 0.1+ | 0.4+ | 2006 10 27 | 683 | 1.0− | 0.7+ |
| 2002 11 12 | 704 | 0.4+ | 0.3− | 2004 04 11 | 644 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2004 04 11 | 644 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.0 | 0.1+ | 2004 04 12 | 699 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 2002 11 27 | 699 | 0.2+ | 0.3− | 2004 04 12 | 699 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2002 11 27 | 699 | 0.2− | 0.0 | 2004 04 12 | 699 | 0.9− | 0.8− | 2006 10 29 | 691 | 0.1+ | 0.7+ |
| 2002 11 27 | 699 | 0.6− | 0.4+ | 2004 04 12 | 699 | 1.0− | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.5+ |
| 2002 11 27 | 699 | 0.5− | 0.3− | 2004 04 16 | 704 | 0.5+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.5+ |
| 2002 12 02 | 704 | 0.0 | 0.3+ | 2004 04 16 | 704 | 0.5+ | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.5+ |
| 2002 12 02 | 704 | 0.1− | 0.2+ | 2004 04 16 | 704 | 0.3+ | 0.8+ | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2002 12 02 | 704 | 0.2− | 0.3− | 2004 04 16 | 704 | 0.1− | 0.6+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.4+ | 0.0 | 2004 04 16 | 704 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.7− | 0.3− |
| 2002 12 06 | 704 | 0.6+ | 0.2− | 2004 04 21 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2+ | 1.1− |
| 2002 12 06 | 704 | 0.1+ | 0.5+ | 2004 04 21 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.2− | 2004 04 21 | 704 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.9− |
| 2002 12 06 | 704 | 0.2+ | 0.7− | 2004 04 21 | 704 | (0.2+ | 1.6+) | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2002 12 11 | 644 | 0.4+ | 0.8− | 2004 04 22 | 704 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2002 12 11 | 644 | 0.1+ | 0.6− | 2004 04 22 | 704 | 0.5+ | 0.7+ | 2006 11 13 | G96 | 0.1− | 0.2+ |
| 2002 12 11 | 644 | 0.5+ | 0.8− | 2004 04 22 | 704 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.2− | 0.4− | 2004 04 22 | 704 | 0.4− | 0.8+ | 2006 11 17 | 703 | (0.8+ | 1.7+) |
| 2002 12 31 | 704 | 0.1− | 0.3− | 2004 04 22 | 704 | 0.8− | 0.7+ | 2006 11 17 | 703 | 0.0 | 0.9+ |
| 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.2− | 1.0+ |
| 2004 03 16 | 704 | 0.9+ | 1.5+ | 2006 09 26 | G96 | 0.4− | 0.2+ | 2006 11 17 | 703 | (0.3− | 1.6+) |
| 2004 03 16 | 704 | 0.7+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2004 03 16 | 704 | 0.3− | 1.1− | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.1+ | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2004 03 19 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 03 19 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | (1.8− | 1.6+) | 2006 11 20 | G96 | 0.7+ | 0.1+ |
| 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | (0.8− | 1.6+) | 2006 11 20 | G96 | 0.6+ | 0.2− |
| 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.1+ |
| 2004 03 22 | 704 | 0.3+ | 0.6− | 2006 10 04 | G96 | 0.8− | 0.5− | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 10 04 | G96 | 0.6− | 0.2− | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2004 03 22 | 704 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.3− |
| 2004 03 22 | 704 | 0.5+ | 0.7+ | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2004 03 25 | 699 | 0.5− | 1.0− | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.0− | 0.2+ |
| 2004 03 25 | 699 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2004 03 25 | 699 | 1.0− | 0.6− | 2006 10 11 | 644 | 0.2− | 0.6+ | 2006 11 21 | 704 | 1.4− | 0.9− |
| 2004 03 25 | 699 | 0.3+ | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 03 28 | 704 | (0.5+ | 1.6−) | 2006 10 19 | 683 | 1.4− | 1.4− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2004 03 28 | 704 | 0.0 | 0.5− | 2006 10 19 | 683 | 0.7+ | 0.8− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2004 03 28 | 704 | (0.7+ | 1.9+) | 2006 10 19 | 683 | 0.7+ | 0.5+ | 2006 11 27 | 703 | 0.1+ | 0.5+ |
| 2004 03 28 | 704 | 0.7+ | 0.2− | 2006 10 21 | 703 | 1.1− | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.3+ |
| 2004 03 28 | 704 | 0.9− | 0.7− | 2006 10 21 | 703 | 1.0− | 0.7+ | 2006 11 27 | 703 | 1.2− | 0.9+ |
| 2004 03 28 | 704 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.5+ | 0.5− | 2006 11 27 | 703 | 1.1− | 0.5− |
| 2004 03 28 | 704 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.4− | 0.1+ | | | | |

**(143103)∗ 2002 XK$_{21}$ = 1969 TC$_{7}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61646)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.87281 | | | (2000.0) | | |
| $n$ | 0.24162052 | $\omega$ | 45.33083 | | +0.98164721 | +0.18029099 |
| $a$ | 2.5529766 | $\Omega$ | 304.18667 | | −0.18921650 | +0.88013154 |
| $e$ | 0.1358637 | $i$ | 4.30952 | | −0.02378789 | +0.43916242 |
| $P$ | 4.08 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1969 10 08 | 033 | 0.1− | 0.7+ | 2003 02 04 | 704 | 1.0+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 1969 10 08 | 033 | 1.1− | 0.5+ | 2003 02 04 | 704 | 0.8+ | 1.1+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 1997 06 29 | 704 | 1.0+ | 0.8+ | 2003 02 04 | 704 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2− |
| 1997 06 29 | 704 | 0.4+ | 0.2+ | 2004 02 19 | 704 | 0.0 | 1.0+ | 2006 11 15 | 704 | 0.5+ | 0.1+ |
| 1997 06 29 | 704 | 1.1+ | 0.5− | 2004 02 19 | 704 | 0.5+ | 0.7+ | 2006 11 15 | 704 | 0.1+ | 0.4+ |
| 1997 06 29 | 704 | 1.6− | 0.3+ | 2004 02 19 | 704 | 0.3+ | 1.4+ | 2006 11 15 | 704 | 0.2+ | 0.7+ |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2004 02 19 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 704 | 0.1+ | 0.1− |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2004 02 19 | 704 | (0.4+ | 1.9+) | 2006 11 16 | 704 | 0.3− | 1.0+ |
| 2002 09 06 | 704 | 0.0 | 0.9+ | 2004 03 16 | 704 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.7+ |
| 2002 09 06 | 704 | 0.6− | 1.3+ | 2004 03 16 | 704 | 0.9+ | 0.8+ | 2006 11 16 | 704 | 0.3− | 1.5+ |
| 2002 09 06 | 704 | 0.3+ | 0.4− | 2004 03 16 | 704 | (1.1+ | 1.6+) | 2006 11 16 | 704 | 0.3− | 0.2− |
| 2002 11 12 | 704 | 0.1+ | 1.2+ | 2004 03 16 | 704 | (1.7+ | 0.3−) | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2002 11 12 | 704 | 0.4+ | 0.2+ | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.4− |
| 2002 11 12 | 704 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.5− | 0.9+ |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.9+ | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.1+ |
| 2002 11 12 | 704 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.7+ | 2006 11 16 | 704 | 0.6− | 1.4− |
| 2002 12 02 | 704 | 0.2+ | 0.6+ | 2006 10 18 | A50 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.9+ | 0.3+ |
| 2002 12 02 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 704 | 1.3+ | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.4− |
| 2002 12 02 | 704 | 0.3+ | 1.3+ | 2006 10 19 | 704 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.7+ |
| 2002 12 06 | 704 | 0.1+ | 1.3− | 2006 10 19 | 704 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 0.5+ | 1.0− | 2006 10 19 | 703 | 0.8− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 10 19 | 703 | 1.5− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2002 12 06 | 704 | 0.6− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.5− | 0.3− |
| 2002 12 07 | 704 | 0.1− | 0.8+ | 2006 10 19 | 703 | 0.9+ | 0.7+ | 2006 11 22 | 704 | 0.7− | 0.3− |
| 2002 12 07 | 704 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2002 12 07 | 704 | 0.5+ | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2002 12 11 | 704 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 1.0− | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.6+ | 0.4− |
| 2002 12 11 | 704 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.1− | 2006 11 22 | 703 | 0.0 | 0.4− |
| 2002 12 11 | 704 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 1.2+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.1− | 2006 11 23 | 703 | 0.8+ | 0.2+ |
| 2002 12 14 | 704 | 0.2+ | 0.9− | 2006 10 27 | 703 | 1.2− | 1.3− | 2006 11 23 | 703 | 0.2− | 0.2− |
| 2002 12 14 | 704 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.1− | 0.5− | 2006 11 23 | 703 | 0.3+ | 0.5− |
| 2002 12 14 | 704 | 1.0+ | 0.7+ | 2006 10 29 | 704 | 0.4+ | 0.0 | 2006 11 23 | 703 | 0.3+ | 0.5− |
| 2002 12 27 | 644 | 0.6+ | 0.4+ | 2006 10 29 | 704 | 0.3+ | 0.6+ | 2006 11 30 | 291 | 0.4− | 0.1+ |
| 2002 12 27 | 644 | 0.5+ | 0.1+ | 2006 10 29 | 704 | 0.6+ | 0.4+ | 2006 11 30 | 291 | 0.4− | 0.0 |
| 2002 12 27 | 644 | 0.5+ | 0.2− | 2006 10 29 | 704 | 0.6− | 0.5+ | 2006 11 30 | 291 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.7− | 0.1+ | 2006 11 01 | H07 | 0.5− | 1.2− | 2006 12 01 | 691 | 0.1+ | 0.4− |
| 2003 01 05 | 704 | 0.8− | 0.5+ | 2006 11 01 | H07 | 0.3− | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.4− |
| 2003 01 05 | 704 | 0.3+ | 0.6− | 2006 11 01 | H07 | 0.1+ | 0.3+ | 2006 12 01 | 691 | 0.2+ | 0.2− |
| 2003 01 05 | 704 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2003 01 05 | 704 | 0.7− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2003 02 01 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2003 02 01 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 644 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2003 02 01 | 644 | 0.0 | 0.6+ | 2006 11 11 | 644 | 0.0 | 0.3− | | | | |
| 2003 02 04 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 644 | 0.3+ | 0.6− | | | | |

**(143104)∗ 2002 XL$_{21}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.39790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23481166 | $\omega$ | 49.64719 | | +0.99841341 | −0.02185198 | |
| $a$ | 2.6020938 | $\Omega$ | 311.53810 | | −0.00315369 | +0.89848094 | |
| $e$ | 0.1972040 | $i$ | 3.97559 | | +0.05622034 | +0.43846835 | |
| $P$ | 4.20 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.3+ | 0.1+ | 2006 08 25 | 704 | (1.6+ | 1.0+) | 2006 10 21 | 644 | 0.3− | 0.1− | |
| 2002 09 06 | 704 | 0.4+ | 0.4− | 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2− | |
| 2002 09 06 | 704 | 0.3− | 0.7− | 2006 08 30 | 704 | 0.5− | 0.3− | 2006 10 29 | 691 | 0.1+ | 1.0− | |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.0 | 0.1− | |
| 2002 10 04 | 704 | 0.6+ | 0.1− | 2006 08 30 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.1− | 0.4+ | |
| 2002 10 04 | 704 | 0.5+ | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.6+ | 2006 10 29 | 704 | 0.1− | 0.7+ | |
| 2002 10 04 | 704 | 0.5+ | 0.6+ | 2006 09 01 | 704 | 0.0 | 0.6− | 2006 10 29 | 704 | 0.1− | 0.6+ | |
| 2002 11 12 | 704 | 0.1+ | 0.6− | 2006 09 01 | 704 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.2+ | 0.3+ | |
| 2002 11 12 | 704 | 0.3+ | 0.6− | 2006 09 01 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.3− | 0.9+ | |
| 2002 11 12 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.3+ | 0.2− | 2006 10 31 | 703 | 0.2− | 0.2− | |
| 2002 11 12 | 704 | 0.6− | 0.2− | 2006 09 20 | 699 | 0.0 | 0.3− | 2006 10 31 | 703 | 0.4− | 0.4− | |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2006 09 20 | 699 | 0.1− | 0.5+ | 2006 10 31 | 703 | 0.0 | 0.7− | |
| 2002 12 02 | 704 | 0.6− | 0.2− | 2006 09 20 | 699 | 0.2+ | 0.5+ | 2006 10 31 | 703 | 0.1− | 0.3− | |
| 2002 12 02 | 704 | 0.5− | 0.4− | 2006 09 25 | 704 | 0.4+ | 0.3+ | 2006 11 02 | 704 | 0.1− | 0.3+ | |
| 2002 12 02 | 704 | 0.8− | 0.0 | 2006 09 25 | 704 | 0.1− | 1.0+ | 2006 11 02 | 704 | 1.1− | 0.7+ | |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.9+ | 2006 11 02 | 704 | (0.5+ | 1.9−) | |
| 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.5+ | 0.6+ | 2006 11 02 | 704 | 0.2+ | 0.1+ | |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.1− | 1.3+ | 2006 11 14 | 703 | 0.2+ | 0.9− | |
| 2002 12 06 | 704 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.4− | |
| 2002 12 06 | 704 | (0.8− | 1.5−) | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.3− | |
| 2002 12 11 | 704 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.6+ | 0.2− | |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.5+ | 0.2− | 2006 11 14 | 703 | 0.1− | 0.1+ | |
| 2002 12 11 | 704 | 0.2+ | 0.6− | 2006 09 28 | 703 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.1− | 0.1− | |
| 2002 12 11 | 704 | 0.9+ | 0.9− | 2006 09 28 | 703 | 0.3+ | 0.3− | 2006 11 14 | 703 | 0.2− | 0.4− | |
| 2002 12 14 | 704 | 0.5+ | 0.5− | 2006 09 28 | 703 | 0.0 | 0.7− | 2006 11 14 | 703 | 0.2− | 0.3− | |
| 2002 12 14 | 704 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 704 | 0.2+ | 0.1+ | |
| 2002 12 14 | 704 | (0.5+ | 1.6−) | 2006 09 30 | 704 | 0.7+ | 0.7+ | 2006 11 16 | 704 | 0.1− | 0.3+ | |
| 2002 12 14 | 704 | 0.6− | 0.9− | 2006 09 30 | 704 | 1.0+ | 1.0+ | 2006 11 16 | 704 | 0.3+ | 0.5+ | |
| 2002 12 14 | 704 | 0.1− | 0.9− | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.8+ | |
| 2002 12 31 | 704 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 1.0− | 0.4+ | |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.3+ | |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.8+ | |
| 2002 12 31 | 704 | 0.3+ | 0.8− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | (0.0 | 1.7+) | |
| 2003 02 01 | 644 | 0.3+ | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (1.6− | 0.2−) | |
| 2003 02 01 | 644 | 0.5+ | 0.4+ | 2006 10 19 | 704 | 0.7− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.2+ | |
| 2003 02 01 | 644 | 0.5+ | 0.0 | 2006 10 19 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.2+ | |
| 2004 02 17 | 291 | 0.2+ | 0.4+ | 2006 10 19 | 704 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.1+ | |
| 2004 02 17 | 291 | 0.2− | 0.3+ | 2006 10 19 | 704 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.7+ | |
| 2004 02 17 | 291 | 0.3− | 0.3+ | 2006 10 19 | 704 | 0.6− | 0.9+ | 2006 11 19 | 704 | 0.1− | 0.3+ | |
| 2004 03 29 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.4− | 0.0 | |
| 2004 03 29 | 691 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3+ | 1.2+ | |
| 2004 03 29 | 691 | 0.6+ | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.9+ | |
| 2005 06 26 | 644 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.2− | |
| 2005 06 26 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.4+ | |
| 2005 06 26 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.2+ | |
| 2006 08 12 | 644 | 0.5− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.6− | |
| 2006 08 12 | 644 | 0.4− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.6− | |
| 2006 08 12 | 644 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.6− | |
| 2006 08 25 | 704 | 0.3− | 1.3+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.7− | |
| 2006 08 25 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1− | | | | | |

**(143105)∗ 2002 XS$_{21}$**

Discovered 2002 Dec. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.73959 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21746438 | $\omega$ | 104.59820 | | +0.89255921 | −0.38731399 | |
| $a$ | 2.7386969 | $\Omega$ | 278.61828 | | +0.26809117 | +0.86756039 | |
| $e$ | 0.2564201 | $i$ | 13.50683 | | +0.36258127 | +0.31197250 | |
| $P$ | 4.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.4+ | 0.2+ | |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.6− | 0.4+ | 2006 09 22 | 704 | 0.3+ | 0.2+ | |
| 2002 10 04 | 704 | 0.6− | 0.1+ | 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 09 22 | 704 | 0.4+ | 0.3+ | |
| 2002 10 04 | 704 | 0.7− | 0.9− | 2003 01 31 | 704 | 1.2− | 1.2+ | 2006 09 22 | 704 | 0.5+ | 0.1+ | |
| 2002 10 04 | 704 | 0.2− | 0.4− | 2003 01 31 | 704 | 0.7+ | 0.3− | 2006 09 27 | 703 | 0.6− | 0.0 | |
| 2002 10 04 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.1− | 0.9− | 2006 09 27 | 703 | 0.1− | 0.4+ | |
| 2002 10 12 | 704 | 0.1+ | 0.6− | 2003 01 31 | 704 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.2+ | 0.0 | |
| 2002 10 12 | 704 | 0.8− | 0.5− | 2003 01 31 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.5− | 0.0 | |
| 2002 10 12 | 704 | 0.2− | 0.6− | 2004 03 17 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 704 | (1.9+ | 0.2−) | |
| 2002 11 12 | 704 | 0.4+ | 0.2+ | 2004 03 17 | 704 | 0.6+ | 1.0− | 2006 09 29 | 704 | (2.7+ | 0.0 ) | |
| 2002 11 12 | 704 | 1.0+ | 0.2+ | 2004 03 17 | 704 | 0.3− | 0.4+ | 2006 09 29 | 704 | 1.4+ | 0.8+ | |
| 2002 11 12 | 704 | 1.0+ | 0.4− | 2004 03 17 | 704 | 0.3− | 0.3+ | 2006 09 29 | 704 | (2.0+ | 0.1+) | |
| 2002 11 12 | 704 | 1.1+ | 0.5− | 2006 06 21 | 703 | 0.2+ | 0.3− | 2006 10 03 | 704 | 0.1+ | 0.5+ | |
| 2002 11 12 | 704 | 0.7+ | 0.3− | 2006 06 21 | 703 | 0.7− | 0.1+ | 2006 10 03 | 704 | 0.4− | 0.6+ | |
| 2002 12 02 | 704 | 0.2+ | 0.5− | 2006 06 21 | 703 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.3− | 0.0 | |
| 2002 12 02 | 704 | 0.0 | 0.6− | 2006 08 10 | 644 | 0.2− | 0.0 | 2006 10 03 | 704 | 0.1− | 0.1+ | |
| 2002 12 02 | 704 | 0.1− | 0.2− | 2006 08 10 | 644 | 0.3− | 0.2+ | 2006 10 03 | 704 | 0.5− | 0.3+ | |
| 2002 12 02 | 704 | 0.1+ | 0.4− | 2006 08 10 | 644 | 0.2− | 0.2+ | 2006 10 26 | 703 | 0.1− | 0.3+ | |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 08 21 | H51 | 0.3− | 0.3− | 2006 10 26 | 703 | 0.0 | 0.1+ | |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 08 21 | H51 | 0.1− | 0.2− | 2006 10 26 | 703 | 0.3− | 0.2− | |
| 2002 12 06 | 704 | 0.1+ | 0.4+ | 2006 08 21 | H51 | 0.0 | 0.2− | 2006 10 26 | 703 | 0.8− | 0.8− | |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 08 23 | 106 | 0.2− | 0.2+ | 2006 10 28 | 683 | 0.4+ | 0.8− | |
| 2002 12 11 | 704 | 0.9− | 0.1+ | 2006 08 23 | 106 | 0.0 | 0.3− | 2006 10 28 | 683 | 0.6+ | 0.3− | |
| 2002 12 11 | 704 | 0.9− | 0.3+ | 2006 08 23 | 106 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.1− | 0.6− | |
| 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 08 23 | 106 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.2− | 0.6− | |
| 2002 12 14 | 704 | 0.3− | 0.7+ | 2006 08 25 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.2− | |
| 2002 12 14 | 704 | 0.9− | 0.9+ | 2006 08 25 | 704 | 0.4− | 0.7+ | 2006 11 14 | 703 | 0.2+ | 0.2+ | |
| 2002 12 14 | 704 | 0.2− | 0.4+ | 2006 08 25 | 704 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.8+ | 0.5+ | |
| 2002 12 14 | 704 | 0.5− | 0.5+ | 2006 08 25 | 704 | (1.9− | 0.6+) | 2006 11 19 | 704 | 1.5+ | 0.5+ | |
| 2002 12 14 | 704 | 0.3− | 0.5+ | 2006 09 01 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.8− | |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 09 01 | 704 | 0.5− | 0.5+ | 2006 11 19 | 704 | 0.5− | 0.5+ | |
| 2002 12 31 | 704 | 0.3− | 0.7+ | 2006 09 01 | 704 | 0.0 | 0.1+ | 2006 11 25 | 703 | 1.0− | 0.2− | |
| 2002 12 31 | 704 | 0.5+ | 0.3− | 2006 09 01 | 704 | 0.1+ | 0.4+ | 2006 11 25 | 703 | 0.4− | 0.4− | |
| 2002 12 31 | 704 | 0.2+ | 0.6− | 2006 09 16 | 703 | 0.4− | 0.1− | 2006 11 25 | 703 | 0.5− | 0.8− | |
| 2002 12 31 | 704 | 0.4+ | 0.8− | 2006 09 16 | 703 | 0.5− | 0.1+ | 2006 11 25 | 703 | 0.1− | 0.2+ | |
| 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.0+ | 0.6+ | |
| 2003 01 04 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.7− | |
| 2003 01 04 | 704 | 0.6+ | 0.6− | 2006 09 21 | 699 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.3− | 1.1+ | |
| 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.6+ | 1.0+ | |
| 2003 01 04 | 704 | 0.7+ | 0.0 | 2006 09 21 | 699 | (0.9− | 2.2−) | 2006 11 28 | 704 | 1.5− | 0.2− | |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.5+ | 0.2+ | | | | | |

**(143106)∗ 2002 XN$_{22}$ = 2004 DC$_{33}$**

Discovered 2002 Dec. 3 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61647)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.96980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22165677 | $\omega$ | 319.47694 | | +0.82941486 | +0.55853757 | |
| $a$ | 2.7040542 | $\Omega$ | 6.59280 | | −0.48645824 | +0.73122565 | |
| $e$ | 0.0484910 | $i$ | 5.16371 | | −0.27464410 | +0.39159269 | |
| $P$ | 4.45 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | (0.8− | 1.6+) | 2004 03 17 | 704 | (1.7+ | 0.4+) | 2006 10 11 | 691 | 0.0 | 0.3+ | |
| 2001 07 27 | 699 | 0.1− | 0.8− | 2004 03 17 | 704 | (0.1− | 2.1+) | 2006 10 11 | 644 | 0.4− | 0.2+ | |
| 2001 07 27 | 699 | 0.5− | 0.6− | 2004 03 17 | 704 | 0.1− | 0.8+ | 2006 10 11 | 644 | 0.4− | 0.0 | |
| 2001 07 27 | 699 | 0.7− | 0.4+ | 2004 03 17 | 704 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.2− | |
| 2001 08 19 | 704 | 0.1+ | 0.5+ | 2004 03 17 | 704 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.5+ | 0.2− | 2004 03 17 | 704 | (0.9+ | 1.8+) | 2006 10 12 | 644 | 0.4− | 0.1+ | | |
| 2001 08 19 | 704 | 0.4− | 1.4+ | 2004 03 17 | 704 | 0.7+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2001 08 27 | 608 | 0.1+ | 0.9+ | 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 10 16 | 683 | (1.3+ | 2.2−) | | |
| 2001 08 27 | 608 | 0.1− | 1.1+ | 2004 03 18 | 704 | 0.0 | 1.0+ | 2006 10 16 | 683 | 0.4− | 0.3− | | |
| 2001 08 27 | 608 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.1− | 0.6+ | 2006 10 16 | 683 | 1.2+ | 0.5+ | | |
| 2002 12 03 | 644 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 683 | 1.3− | 1.0− | | |
| 2002 12 03 | 644 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 683 | 0.6− | 0.9− | | |
| 2002 12 03 | 644 | 0.6+ | 0.0 | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 17 | 683 | (2.2− | 1.9+) | | |
| 2002 12 06 | 704 | 0.4− | 0.7− | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2− | | |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.2+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.4+ | 2004 03 19 | 704 | 0.3− | 0.5+ | 2006 10 17 | 703 | 1.1− | 0.3− | | |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.9− | 2004 03 19 | 704 | 0.8− | 0.9− | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.5− | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2002 12 11 | 704 | 0.7− | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 12 14 | 704 | 0.7+ | 0.5− | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 12 14 | 704 | 0.6+ | 0.5− | 2004 03 19 | 704 | 0.1− | 1.5+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 12 14 | 704 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 683 | (0.5+ | 1.6−) | | |
| 2002 12 14 | 704 | 0.4− | 0.7− | 2004 03 28 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 683 | (0.2+ | 2.4−) | | |
| 2004 02 18 | 704 | 0.7+ | 1.1+ | 2004 03 28 | 691 | 0.1+ | 0.1− | 2006 10 22 | 683 | (0.5− | 1.8−) | | |
| 2004 02 18 | 704 | (2.5+ | 0.5−) | 2004 03 28 | 691 | 0.3+ | 0.1− | 2006 10 23 | 683 | 0.9− | 0.5− | | |
| 2004 02 18 | 704 | 0.2+ | 0.1− | 2006 07 21 | G96 | 0.5− | 0.3+ | 2006 10 23 | 683 | 0.3+ | 1.4+ | | |
| 2004 02 18 | 704 | (1.9+ | 0.9+) | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 23 | 683 | 1.3+ | 0.6+ | | |
| 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.2− | | |
| 2004 02 23 | 704 | 0.4+ | 0.2− | 2006 07 21 | G96 | 0.4− | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.1− | | |
| 2004 02 23 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.1+ | | |
| 2004 02 23 | 704 | 0.2− | 1.2+ | 2006 09 18 | 699 | 1.1+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.5− | | |
| 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.3+ | | |
| 2004 02 26 | 695 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.2− | 0.7+ | 2006 11 11 | 703 | (1.7− | 0.2+) | | |
| 2004 02 26 | 695 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.1− | | |
| 2004 03 15 | 704 | 0.2− | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2004 03 15 | 704 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 15 | 704 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 1.6+ | 0.2+ | | |
| 2004 03 15 | 704 | 0.1+ | 1.0− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 1.1+ | 0.4+ | | |
| 2004 03 16 | 704 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 1.2+ | 1.4+ | | |
| 2004 03 16 | 704 | 0.3− | 0.4− | 2006 10 10 | 644 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.3− | | |
| 2004 03 16 | 704 | 0.5+ | 1.0− | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 1.3− | 0.6− | | |
| 2004 03 16 | 704 | (1.5+ | 0.0 ) | 2006 10 10 | 644 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.8− | | |
| 2004 03 16 | 704 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 1.0− | 1.4+ | | |
| 2004 03 17 | 704 | 0.7+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.5+ | 1.2− | | |
| 2004 03 17 | 704 | (0.5+ | 1.7+) | 2006 10 11 | 691 | 0.0 | 0.0 | | | | | | |
| 2004 03 17 | 704 | (0.8+ | 1.7+) | 2006 10 11 | 691 | 0.0 | 0.2+ | | | | | | |

**(143107)∗ 2002 XU$_{23}$ = 2001 RY$_{51}$**

Discovered 2002 Dec. 5 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41313)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.84055 | | (2000.0) | | −0.48968014 | −0.84691605 |
| $n$ | 0.21041514 | $\omega$ | 188.33545 | | +0.81222632 | −0.35667226 |
| $a$ | 2.7995274 | $\Omega$ | 291.20655 | | +0.31702012 | −0.39435784 |
| $e$ | 0.1373486 | $i$ | 12.84348 | | | |
| $P$ | 4.68 | $H$ | 15.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2+ | 0.2+ | 2003 01 05 | 704 | 0.6+ | 0.4+ | 2005 06 28 | G96 | 0.0 | 0.2+ | | |
| 2001 09 12 | 704 | 1.1+ | 0.1+ | 2003 01 05 | 704 | 0.7+ | 0.4+ | 2005 06 28 | G96 | 0.4− | 0.8+ | | |
| 2001 09 12 | 704 | 0.8− | 0.5+ | 2003 01 05 | 704 | 0.1+ | 0.5+ | 2005 07 06 | 691 | 0.2− | 0.1− | | |
| 2001 09 12 | 704 | 0.8+ | 0.4+ | 2003 01 05 | 704 | 0.1+ | 1.2+ | 2005 07 06 | 691 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.7+ | 0.3+ | 2003 01 05 | 704 | 0.0 | 0.1− | 2005 07 06 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.4− | 0.7+ | 2003 01 07 | 704 | 0.1+ | 1.0+ | 2005 07 07 | 568 | 0.3− | 0.7+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.5+ | 2003 01 07 | 704 | 0.3+ | 0.2+ | 2005 07 07 | 568 | 0.4− | 0.8+ | | |
| 2001 09 16 | 704 | 0.0 | 0.3− | 2003 01 07 | 704 | 0.4+ | 0.3+ | 2005 07 07 | 568 | 0.3− | 0.8+ | | |
| 2001 09 16 | 704 | 0.5+ | 0.2+ | 2003 01 08 | 704 | 0.2− | 0.2+ | 2005 07 08 | 568 | 0.2− | 0.9+ | | |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2003 01 08 | 704 | 0.2− | 0.4+ | 2005 07 15 | G96 | 0.1− | 0.2+ | | |
| 2001 10 13 | 644 | 0.3− | 0.6− | 2003 01 08 | 704 | 0.3+ | 0.8+ | 2005 07 15 | G96 | 0.5− | 0.5+ | | |
| 2001 10 13 | 644 | 0.7− | 1.0− | 2003 01 10 | 704 | 0.6− | 0.0 | 2005 07 15 | G96 | 0.6− | 0.3− | | |
| 2001 10 13 | 644 | 0.8− | 0.2+ | 2003 01 10 | 704 | 0.8− | 0.1+ | 2005 07 15 | G96 | 0.2− | 0.2+ | | |
| 2002 12 05 | 644 | 0.5− | 0.1+ | 2003 01 10 | 704 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.8+ | 0.0 | | |
| 2002 12 05 | 644 | 0.1− | 0.5+ | 2003 01 10 | 704 | 0.4− | 1.1+ | 2006 09 17 | 703 | 1.0− | 0.7+ | | |
| 2002 12 05 | 644 | 0.3− | 0.2+ | 2004 04 13 | E12 | (0.4− | 2.6+) | 2006 09 17 | 703 | 0.1+ | 1.0− | | |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2004 04 13 | E12 | 0.5+ | 1.3+ | 2006 09 17 | 703 | 0.7+ | 0.3+ | | |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2004 04 13 | E12 | 0.6+ | 1.2+ | 2006 09 22 | 699 | 1.0− | 0.2− | | |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2004 04 13 | E12 | 0.5− | 0.5+ | 2006 09 22 | 699 | 0.2− | 0.0 | | |
| 2002 12 11 | 704 | 0.2− | 0.3+ | 2004 04 21 | E12 | 0.2+ | 0.1+ | 2006 09 22 | 699 | 0.1− | 1.0− | | |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 04 21 | E12 | (0.8− | 2.5+) | 2006 09 22 | 699 | 2.6+ | 1.9+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2004 04 21 | E12 | (1.4+ | 3.2+) | 2006 09 28 | 703 | 0.2+ | 0.3− | | |
| 2002 12 15 | 704 | 0.4+ | 0.4− | 2004 04 21 | E12 | 0.8+ | 0.1+ | 2006 09 28 | 703 | 1.3− | 0.3− | | |
| 2002 12 15 | 704 | 0.8+ | 0.4+ | 2005 06 28 | G96 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.2+ | 0.3− | | |
| 2002 12 15 | 704 | 0.6+ | 0.1− | 2005 06 28 | G96 | 0.1− | 1.1+ | 2006 09 28 | 703 | 0.4− | 0.0 | | |

**(143108)∗ 2002 XV$_{23}$ = 1999 CZ$_{93}$ = 2004 ER$_{63}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61647)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.83643 | | (2000.0) | | −0.79009567 | −0.61295590 |
| $n$ | 0.21154747 | $\omega$ | 144.49964 | | +0.52408810 | −0.67055910 |
| $a$ | 2.7895286 | $\Omega$ | 357.67206 | | +0.31793157 | −0.41789419 |
| $e$ | 0.1090314 | $i$ | 8.23992 | | | |
| $P$ | 4.66 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.6+ | 1.4− | 2004 03 15 | 703 | 0.3− | 0.5− | 2004 03 30 | 704 | 0.0 | 0.1+ | | |
| 1999 02 10 | 704 | 0.6+ | 0.2− | 2004 03 15 | 703 | 0.3− | 0.1− | 2004 03 30 | 704 | 0.3+ | 0.1− | | |
| 1999 02 10 | 704 | 0.4+ | 1.4− | 2004 03 18 | 704 | 0.1+ | 0.0 | 2004 03 30 | 704 | 0.1+ | 0.7+ | | |
| 1999 02 10 | 704 | 1.7− | 0.1− | 2004 03 18 | 704 | 0.6+ | 0.4+ | 2004 04 12 | 691 | 0.3+ | 0.1− | | |
| 1999 02 13 | 704 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.6+ | 0.4+ | 2004 04 12 | 691 | 0.2+ | 0.2+ | | |
| 1999 02 13 | 704 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2004 04 12 | 691 | 0.0 | 0.2+ | | |
| 1999 02 13 | 704 | 0.3+ | 0.5+ | 2004 03 18 | 704 | 0.9+ | 0.4+ | 2004 04 15 | 691 | 0.2+ | 0.2+ | | |
| 1999 02 13 | 704 | 0.4+ | 0.6+ | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2004 04 15 | 691 | 0.0 | 0.0 | | |
| 1999 02 13 | 704 | 1.4− | 0.3− | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2004 04 15 | 699 | 0.3− | 0.2− | | |
| 2002 12 05 | 704 | 0.6− | 1.1+ | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2004 04 15 | 691 | 0.1− | 0.2+ | | |
| 2002 12 05 | 704 | 0.4− | 0.7+ | 2004 03 27 | 704 | 1.2+ | 0.1+ | 2004 04 15 | 699 | 0.4+ | 0.0 | | |
| 2002 12 05 | 704 | 0.4− | 0.7+ | 2004 03 27 | 704 | 0.8+ | 0.2+ | 2004 04 15 | 699 | 0.9− | 0.8+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.7+ | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2004 04 15 | 699 | 0.9− | 0.4+ | | |
| 2002 12 06 | 704 | 0.1+ | 0.5− | 2004 03 27 | 704 | 0.6+ | 0.1+ | 2004 04 22 | 691 | 0.1− | 0.0 | | |
| 2002 12 06 | 704 | 0.8− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.0 | 2004 04 22 | 691 | 0.0 | 0.0 | | |
| 2002 12 06 | 704 | 0.8− | 0.4+ | 2004 03 28 | 704 | 0.8+ | 0.6+ | 2004 04 22 | 691 | 0.2− | 0.1+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.3+ | 2004 03 28 | 704 | 0.1+ | 0.2− | 2004 04 22 | 703 | 0.2+ | 1.3+ | | |
| 2002 12 06 | 704 | 0.5− | 0.1+ | 2004 03 28 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 703 | (0.6+ | 2.3+) | | |
| 2002 12 12 | 644 | 0.4+ | 0.1+ | 2004 03 28 | 333 | 0.3+ | 0.2− | 2004 04 22 | 703 | (1.8− | 0.6+) | | |
| 2002 12 12 | 644 | 0.5+ | 0.2+ | 2004 03 28 | 704 | (0.4− | 1.7+) | 2004 04 22 | 703 | (1.4+ | 2.1+) | | |
| 2002 12 12 | 644 | 0.5+ | 0.3+ | 2004 03 28 | 333 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.5− | 0.2+ | | |
| 2004 02 18 | 703 | 1.0− | 0.4+ | 2004 03 28 | 704 | 0.2+ | 0.1+ | 2006 08 19 | 691 | 0.3− | 0.6+ | | |
| 2004 02 18 | 703 | 0.3− | 0.3− | 2004 03 28 | 333 | 0.1− | 0.6− | 2006 08 19 | 691 | 0.4− | 0.8+ | | |
| 2004 02 18 | 703 | 0.5− | 0.4+ | 2004 03 29 | 333 | 0.3− | 0.8− | 2006 09 16 | 691 | 0.0 | 0.5+ | | |
| 2004 02 18 | 703 | 0.5− | 0.3+ | 2004 03 29 | 333 | 0.1+ | 0.2+ | 2006 09 16 | 691 | 0.4− | 0.4+ | | |
| 2004 02 26 | 704 | 0.1+ | 1.0+ | 2004 03 29 | 333 | 0.5− | 0.1− | 2006 09 16 | 691 | 0.0 | 0.6+ | | |
| 2004 02 26 | 704 | 0.5+ | 0.3− | 2004 03 29 | 704 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.3− | 0.1+ | | |
| 2004 02 26 | 704 | 0.9+ | 0.3− | 2004 03 29 | 333 | 0.1+ | 0.5− | 2006 09 28 | G96 | 0.1− | 0.0 | | |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2004 03 29 | 704 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.2+ | | |
| 2004 02 26 | 704 | 0.0 | 0.0 | 2004 03 29 | 333 | 0.4− | 0.8− | 2006 09 28 | G96 | 0.3− | 0.1+ | | |
| 2004 03 13 | 644 | 0.2+ | 0.5+ | 2004 03 29 | 704 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.2− | | |
| 2004 03 13 | 644 | 0.4+ | 0.6+ | 2004 03 29 | 704 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.2+ | | |
| 2004 03 13 | 644 | 0.2+ | 0.7+ | 2004 03 29 | 704 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.5− | 0.3− | | |
| 2004 03 15 | 703 | 0.5− | 1.0+ | 2004 03 30 | 704 | 0.9+ | 1.1+ | 2006 10 20 | G96 | 0.2− | 0.4+ | | |
| 2004 03 15 | 703 | 0.2+ | 0.5+ | 2004 03 30 | 704 | 0.4− | 0.8+ | | | | | | |

**(143109)∗ 2002 XL$_{24}$ = 1998 XU$_{43}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41314)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 348.43214 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24355606 | $\omega$ | 344.63894 | | | +0.44142510 | | −0.89502469 | |
| $a$ | 2.5394330 | $\Omega$ | 79.13108 | | | +0.82995240 | | +0.38022000 | |
| $e$ | 0.0923451 | $i$ | 3.72681 | | | +0.34106143 | | +0.23315994 | |
| $P$ | 4.05 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.3− | 1.0− | 2002 12 11 | 704 | 0.6− | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.9− |
| 1998 12 14 | 704 | 0.2+ | 1.0+ | 2002 12 11 | 704 | 0.7− | 1.1+ | 2006 11 15 | 703 | 1.4+ | 1.3− |
| 1998 12 14 | 704 | 0.8− | 0.3− | 2002 12 31 | 704 | 0.5+ | 0.5+ | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 1998 12 14 | 704 | 1.0+ | 0.5+ | 2002 12 31 | 704 | 1.4+ | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.4+ |
| 1998 12 17 | 704 | 1.3+ | 0.3+ | 2002 12 31 | 704 | 0.4+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 1998 12 17 | 704 | 1.0+ | 1.2− | 2002 12 31 | 704 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 1998 12 17 | 704 | (0.1− | 2.7−) | 2003 01 04 | 704 | 0.2+ | 0.4− | 2006 11 18 | 704 | (0.8− | 2.7+) |
| 1998 12 17 | 704 | 1.0+ | 2.0− | 2003 01 04 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | (1.5− | 1.8+) |
| 2001 07 26 | 644 | 0.2+ | 0.0 | 2003 01 04 | 704 | 0.4− | 0.9+ | 2006 11 18 | 704 | (1.9+ | 0.4+) |
| 2001 07 26 | 644 | 0.2+ | 0.1+ | 2003 01 04 | 704 | 0.4− | 0.8− | 2006 11 18 | 704 | (0.5− | 2.1+) |
| 2001 07 26 | 644 | 0.0 | 0.2+ | 2003 01 04 | 704 | 0.6+ | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2001 08 11 | 644 | 0.2+ | 0.1+ | 2003 01 05 | 291 | 0.4− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2001 08 11 | 644 | 0.1− | 0.4+ | 2003 01 05 | 291 | 1.0− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2001 08 11 | 644 | 0.4+ | 0.1+ | 2003 01 05 | 291 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.9+ |
| 2002 11 14 | 704 | 0.9− | 1.4+ | 2003 01 08 | 704 | 1.1+ | 1.2+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2002 11 14 | 704 | 1.2− | 0.4+ | 2003 01 08 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2002 11 14 | 704 | 0.4− | 0.5− | 2003 01 08 | 704 | 0.5+ | 1.3+ | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2002 12 05 | 704 | 0.2− | 0.9+ | 2003 01 08 | 704 | (0.2+ | 1.7+) | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.4− | 0.6+ | 2003 01 08 | 704 | 1.2+ | 0.9+ | 2006 11 23 | 691 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2004 04 20 | 704 | 0.3+ | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2002 12 05 | 704 | 0.6− | 0.5+ | 2004 04 20 | 704 | 0.2− | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 0.7+ | 0.7− | 2004 04 20 | 704 | 0.9+ | 1.3+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.3+ | 0.2+ | 2005 07 02 | 691 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2005 07 02 | 691 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2002 12 06 | 704 | 1.5+ | 0.0 | 2005 07 02 | 691 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 1.1− | 1.3+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.6− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.8− | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 12 01 | 704 | 0.6+ | 0.2+ |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.1− | 0.3− |
| 2002 12 10 | 704 | 0.6− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.4− | 0.0 |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 12 01 | 704 | 1.8+ | 0.1+ |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.9− | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.4+ | 0.0 |
| 2002 12 11 | 704 | 0.3− | 0.5+ | 2006 11 15 | 703 | (2.0− | 1.0−) | 2006 12 01 | 691 | 0.3− | 0.0 |

**(143110)∗ 2002 XP$_{24}$ = 1999 BM$_{31}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41314)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 358.18596 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22373300 | $\omega$ | 349.98721 | | | +0.92565935 | | −0.37809550 | |
| $a$ | 2.6872991 | $\Omega$ | 32.23990 | | | +0.34893790 | | +0.83869206 | |
| $e$ | 0.0823334 | $i$ | 1.51359 | | | +0.14627749 | | +0.39196866 | |
| $P$ | 4.41 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 691 | 0.2− | 0.2− | 2004 03 17 | 691 | 0.2− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 1999 01 19 | 691 | 0.4− | 0.4− | 2004 03 17 | 691 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 1999 01 19 | 691 | 0.6− | 0.5− | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.4+ |
| 1999 01 23 | 691 | 1.0+ | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.7− | 0.4+ |
| 1999 01 23 | 691 | 0.4+ | 0.2− | 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.6+ |
| 1999 01 23 | 691 | 0.4+ | 0.3− | 2004 04 25 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.8− |
| 2001 08 16 | 704 | 0.8− | 0.8+ | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 08 16 | 704 | 0.5− | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2001 08 16 | 704 | (0.9− | 1.5+) | 2006 07 21 | G96 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2002 11 14 | 291 | 1.0− | 0.7+ | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2002 11 14 | 291 | 0.3− | 0.1− | 2006 09 18 | 699 | (2.3+ | 0.5−) | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 2002 11 14 | 291 | (2.2+ | 1.0−) | 2006 09 18 | 699 | (1.6+ | 0.3−) | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.6− | 0.3− | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.0 | 0.5− | 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.4− |
| 2002 12 06 | 704 | (1.4− | 1.6+) | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2002 12 10 | 704 | 0.7+ | 0.5− | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2002 12 10 | 704 | 0.1+ | 0.4− | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2002 12 10 | 704 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2002 12 10 | 704 | 1.3+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2002 12 31 | 704 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.6+ | 0.5− |
| 2002 12 31 | 704 | 0.8− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2002 12 31 | 704 | 1.2− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2003 01 04 | 704 | 0.0 | 1.1+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.5− |
| 2003 01 04 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2003 01 04 | 704 | 0.1+ | 1.0+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2004 02 17 | 291 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.3+ |
| 2004 02 17 | 291 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | (1.7+ | 0.2−) |
| 2004 02 17 | 291 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2004 03 16 | 599 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2004 03 16 | 599 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2004 03 16 | 599 | 0.3+ | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.2− | | | | |
| 2004 03 16 | 599 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.1− | | | | |

**(143111)∗ 2002 XS$_{24}$ = 2000 FN$_{72}$ = 2004 FY$_{112}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 41315, *MPO* 75812)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 38.56204 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23942966 | $\omega$ | 307.53428 | | | +0.98814843 | | +0.15323978 | |
| $a$ | 2.5685267 | $\Omega$ | 43.65305 | | | −0.13642433 | | +0.90347167 | |
| $e$ | 0.1763029 | $i$ | 0.74359 | | | −0.07036395 | | +0.40032050 | |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.6− | 0.0 | 2004 03 21 | 691 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.1− | 0.3− |
| 2000 03 25 | 691 | 0.6− | 0.5− | 2004 03 21 | 691 | 0.4+ | 0.2− | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2000 03 25 | 691 | 0.7− | 0.3− | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 11 17 | 644 | 0.1− | 0.2− |
| 2000 04 03 | 691 | 0.0 | 0.1− | 2004 03 28 | 691 | 0.2− | 0.5+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2000 04 03 | 691 | 0.2+ | 0.5− | 2004 03 28 | 691 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2000 04 03 | 691 | 0.2− | 0.1− | 2004 03 28 | 691 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.6+ | 1.0+ |
| 2000 04 27 | 691 | 0.6+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2000 04 27 | 691 | 0.7+ | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.6− | 0.3− |
| 2000 04 27 | 691 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.1− | 0.7− | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.3− | 1.1− |
| 2002 12 05 | 704 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.3− | 0.6− | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | (1.8− | 1.2+) |
| 2002 12 05 | 704 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2002 12 05 | 704 | 0.5− | 0.7+ | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.4− | 2006 11 27 | 703 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 1.3+ | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.3− | 2006 11 27 | 703 | 0.3+ | 0.1− |
| 2002 12 09 | 333 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.4+ |
| 2002 12 09 | 333 | 0.3− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2002 12 09 | 333 | 0.0 | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.6− |
| 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.0 | 0.5− |
| 2004 03 14 | 691 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.2− |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.4− |

**(143112)∗ 2002 XW$_{24}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.70670 | | | (2000.0) | | |
| $n$ | 0.22234048 | $\omega$ | 221.71359 | | −0.81076705 | −0.55221463 |
| $a$ | 2.6985079 | $\Omega$ | 283.75520 | | +0.57593128 | −0.69318093 |
| $e$ | 0.1257006 | $i$ | 11.53343 | | +0.10468973 | −0.46320536 |
| $P$ | 4.43 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.1− | 0.6− | 2004 04 14 | E12 | 0.5+ | 0.3+ | 2005 07 30 | E12 | 0.3− | 0.3+ |
| 2001 08 25 | 704 | 1.1+ | 0.1+ | 2004 04 15 | E12 | 0.1+ | 0.2+ | 2005 07 30 | E12 | 0.4+ | 0.4− |
| 2001 08 25 | 704 | 0.5+ | 0.7+ | 2004 04 15 | E12 | 0.5+ | 0.4+ | 2005 07 30 | E12 | 0.7− | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.0 | 2004 04 15 | E12 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.3+ | 1.2− |
| 2002 12 05 | 704 | 0.7− | 1.0+ | 2004 04 15 | E12 | 0.1− | 0.7+ | 2006 09 17 | 703 | 1.5+ | 0.2− |
| 2002 12 05 | 704 | 0.1− | 1.1+ | 2004 04 25 | 704 | 0.9− | 0.4+ | 2006 09 17 | 703 | 0.6− | 1.1− |
| 2002 12 05 | 704 | 0.1− | 1.4+ | 2004 04 25 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 703 | 0.5+ | 0.6+ |
| 2002 12 05 | 704 | 0.2+ | 0.9+ | 2004 04 25 | 704 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.5+ | 2004 05 14 | 699 | (1.6+ | 0.2−) | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.6− | 0.9+ | 2004 05 14 | 699 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.2− | 0.4+ | 2004 05 14 | 699 | 0.3− | 1.0+ | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.3− | 0.5+ | 2004 05 14 | 703 | (1.3− | 2.3−) | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.8+ | 0.1+ | 2004 05 14 | 703 | 1.1+ | 0.2+ | 2006 10 19 | 703 | 0.2+ | 1.1− |
| 2002 12 11 | 704 | 0.7+ | 1.1+ | 2004 05 14 | 699 | 1.4+ | 0.7+ | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.2+ | 0.5+ | 2004 05 14 | 703 | 0.8+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.7+ | 2004 05 14 | 703 | (1.6− | 0.7−) | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | (1.7− | 0.7−) | 2005 07 01 | 691 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 1.4− | 1.0+ | 2005 07 01 | 691 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2003 01 05 | 704 | (1.9− | 0.0 ) | 2005 07 01 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2003 01 05 | 704 | (2.0− | 0.0 ) | 2005 07 05 | 644 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | (0.7− | 2.2−) | 2005 07 05 | 644 | 0.4− | 0.3+ | 2006 10 27 | 703 | (1.2+ | 1.8−) |
| 2004 03 25 | E12 | (1.9+ | 1.3+) | 2005 07 05 | 644 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2004 03 25 | E12 | 0.3+ | 0.1+ | 2005 07 05 | 644 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.5+ | 0.4+ |
| 2004 03 25 | E12 | 0.4− | 1.1+ | 2005 07 05 | 644 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.2− |
| 2004 03 25 | E12 | 0.6− | 1.0+ | 2005 07 05 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | (1.0− | 1.6+) |
| 2004 04 13 | E12 | 0.5− | 0.1+ | 2005 07 10 | 691 | 0.1− | 0.4+ | 2006 11 15 | 703 | 1.1− | 0.8+ |
| 2004 04 13 | E12 | 0.8+ | 0.3+ | 2005 07 10 | 691 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.9+ |
| 2004 04 13 | E12 | 0.5+ | 0.6− | 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 1.1+ |
| 2004 04 13 | E12 | 0.2+ | 0.4+ | 2005 07 15 | 691 | 0.1− | 0.1+ | 2006 11 22 | 703 | 1.4− | 0.6− |
| 2004 04 14 | E12 | 0.1+ | 0.5+ | 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.7+ | 0.6+ |
| 2004 04 14 | E12 | 0.6− | 0.1+ | 2005 07 15 | 691 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.5− | 0.2− |
| 2004 04 14 | E12 | 0.6− | 0.3+ | 2005 07 30 | E12 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.6+ | 1.0+ |

**(143113)∗ 2002 XJ$_{25}$ = 2001 SE$_{208}$ = 2004 DW$_{36}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61648)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 175.40630 | | | (2000.0) | | |
| $n$ | 0.18898696 | $\omega$ | 88.88455 | | −0.99074457 | −0.13254679 |
| $a$ | 3.0073328 | $\Omega$ | 83.49817 | | +0.10985710 | −0.90961483 |
| $e$ | 0.0637469 | $i$ | 1.68797 | | +0.07972842 | −0.39374129 |
| $P$ | 5.22 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4+ | 0.4+ | 2004 03 17 | 704 | 0.2− | 0.7− | 2004 03 28 | 704 | 0.1− | 0.8+ |
| 2001 09 19 | 704 | 0.6+ | 1.0+ | 2004 03 17 | 704 | 0.4+ | 0.9− | 2004 03 28 | 703 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2004 03 17 | 704 | 0.1− | 0.4− | 2004 03 28 | 704 | 0.2+ | 1.0+ |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2004 03 17 | 704 | (0.6− | 2.1−) | 2004 03 28 | 703 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2004 03 17 | 704 | 0.2− | 0.0 | 2004 04 13 | 691 | 0.0 | 0.5+ |
| 2001 09 21 | 704 | 0.7− | 0.6+ | 2004 03 17 | 704 | 0.3− | 0.0 | 2004 04 13 | 691 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.8− | 0.7+ | 2004 03 18 | 704 | 0.4+ | 0.6+ | 2004 04 13 | 691 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | (2.1− | 0.8+) | 2004 03 18 | 704 | 0.2+ | 0.0 | 2004 04 15 | 644 | 0.4+ | 0.5+ |
| 2001 09 21 | 704 | 0.9− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2004 04 15 | 644 | 0.2+ | 0.5+ |
| 2002 12 05 | 704 | (1.2− | 1.9+) | 2004 03 18 | 704 | 0.5+ | 0.1− | 2004 04 15 | 644 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.7+ | 0.9+ | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2004 04 19 | 704 | 0.8+ | 0.7+ |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2004 03 18 | 704 | 0.3+ | 0.1− | 2004 04 19 | 704 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.5− | 2004 03 18 | 704 | 1.2+ | 0.3+ | 2004 04 19 | 704 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.7− | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.3+ | 2004 04 21 | 691 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.1+ | 2004 04 21 | 691 | 0.4− | 0.5+ |
| 2002 12 06 | 704 | 0.5− | 0.6+ | 2004 03 19 | 704 | 0.4+ | 0.5− | 2004 04 21 | 691 | 0.2+ | 0.1+ |
| 2002 12 13 | 704 | 0.1+ | 0.6+ | 2004 03 19 | 704 | 0.2+ | 0.0 | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 2002 12 13 | 704 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 08 18 | 691 | 0.4− | 0.7+ |
| 2002 12 13 | 704 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.8+ | 0.1− | 2006 08 18 | 691 | 0.3− | 0.7+ |
| 2003 01 05 | 291 | 0.2+ | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.5+ | 0.8+ |
| 2003 01 05 | 291 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 08 27 | 699 | 0.1+ | 0.3− |
| 2003 01 05 | 291 | 0.2− | 0.0 | 2004 03 19 | 704 | (1.6+ | 0.2+) | 2006 08 27 | 699 | (1.6+ | 1.6+) |
| 2004 02 19 | 704 | 0.5+ | 0.4− | 2004 03 19 | 704 | 0.1+ | 1.1− | 2006 08 27 | 699 | 0.0 | 1.0+ |
| 2004 02 19 | 704 | 1.2− | 0.1− | 2004 03 19 | 704 | 1.1+ | 0.0 | 2006 09 14 | 703 | 0.2+ | 1.1+ |
| 2004 02 19 | 704 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.7+ |
| 2004 02 19 | 704 | 0.4+ | 0.3− | 2004 03 20 | 699 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.5+ |
| 2004 02 23 | 704 | (1.8+ | 2.8−) | 2004 03 20 | 704 | 0.7+ | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.9+ |
| 2004 02 23 | 704 | 0.0 | 1.0− | 2004 03 20 | 699 | 0.9− | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.8+ |
| 2004 02 23 | 704 | 0.3− | 0.9− | 2004 03 20 | 704 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.6− | 0.3− |
| 2004 02 23 | 704 | 0.4− | 0.1− | 2004 03 20 | 704 | 1.0− | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2004 02 23 | 704 | 0.5+ | 1.0− | 2004 03 20 | 699 | 0.6− | 0.7+ | 2006 09 14 | 703 | (1.1− | 3.6−) |
| 2004 03 15 | 703 | 1.4− | 0.7+ | 2004 03 20 | 704 | 0.5+ | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2004 03 15 | 704 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 703 | 0.2+ | 0.8+ | 2004 03 20 | 699 | 0.5− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.2+ |
| 2004 03 15 | 704 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2004 03 15 | 703 | 0.6+ | 1.2+ | 2004 03 22 | 704 | 0.8+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.5+ |
| 2004 03 15 | 704 | 0.2− | 0.8− | 2004 03 22 | 704 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2004 03 15 | 704 | 0.5+ | 0.3+ | 2004 03 22 | 704 | 0.6− | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 2004 03 15 | 703 | 0.0 | 0.4− | 2004 03 22 | 704 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2004 03 15 | 704 | 0.1+ | 0.1+ | 2004 03 28 | 703 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.6− | 0.2+ |
| 2004 03 17 | 704 | 0.5+ | 0.1+ | 2004 03 28 | 704 | 0.3− | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2004 03 17 | 704 | 0.5+ | 0.6− | 2004 03 28 | 703 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.4+ |
| 2004 03 17 | 704 | 0.2− | 0.1+ | 2004 03 28 | 704 | 0.9+ | 1.0+ | 2006 11 17 | G96 | 0.3− | 0.7+ |

**(143114)∗ 2002 XK$_{26}$**

Discovered 2002 Dec. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.14419 | | | (2000.0) | | |
| $n$ | 0.23535038 | $\omega$ | 0.23631 | | +0.67035532 | +0.71795333 |
| $a$ | 2.5981214 | $\Omega$ | 311.86582 | | −0.68122109 | +0.49523366 |
| $e$ | 0.2595090 | $i$ | 14.58486 | | −0.29421349 | +0.48916934 |
| $P$ | 4.19 | $H$ | 15.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 0.6+ | 0.1− | 2002 12 12 | 644 | 0.4− | 0.0 | 2006 09 19 | 704 | 0.1+ | 0.5+ |
| 2002 10 01 | 704 | 0.3+ | 0.1+ | 2004 01 19 | 691 | 0.3− | 0.0 | 2006 09 19 | 704 | (2.9− | 2.3−) |
| 2002 10 01 | 704 | 0.4+ | 0.4− | 2004 01 19 | 691 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.7+ |
| 2002 10 15 | 704 | 0.9+ | 0.0 | 2004 01 19 | 691 | 0.3+ | 0.5− | 2006 09 28 | 703 | (1.8− | 1.5−) |
| 2002 10 15 | 704 | 0.0 | 0.9− | 2004 01 22 | 704 | 0.6+ | 0.5+ | 2006 09 28 | 703 | (1.0+ | 1.5−) |
| 2002 10 15 | 704 | 0.7+ | 0.2− | 2004 01 22 | 704 | 0.0 | 0.0 | 2006 10 02 | 704 | 1.2− | 0.9− |
| 2002 10 30 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.0 | 1.1+ | 2006 10 02 | 704 | 1.3− | 0.2− |
| 2002 10 30 | 704 | 0.8− | 0.3− | 2004 01 22 | 704 | 0.3− | 0.0 | 2006 10 02 | 704 | 0.8− | 0.6− |
| 2002 10 30 | 704 | 0.5− | 0.2− | 2005 03 19 | E12 | 0.2+ | 0.2+ | 2006 10 02 | 704 | 1.0+ | 0.0 |
| 2002 10 30 | 704 | 0.3− | 0.2− | 2005 03 19 | E12 | 0.4− | 0.0 | 2006 10 02 | 704 | 0.6− | 0.3+ |
| 2002 10 30 | 704 | 1.1− | 0.2+ | 2005 03 19 | E12 | 1.0− | 0.2− | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2002 11 15 | 644 | 0.2− | 0.6+ | 2005 03 19 | E12 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2002 11 15 | 644 | 0.0 | 0.2+ | 2005 04 02 | 644 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.1+ |
| 2002 11 15 | 644 | 0.1+ | 0.6+ | 2005 04 02 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.2+ |
| 2002 11 15 | 704 | 0.4− | 0.2+ | 2005 04 02 | 644 | 0.2− | 0.1+ | 2006 10 20 | 704 | 0.6+ | 0.5+ |
| 2002 11 15 | 704 | 0.2+ | 0.2+ | 2005 04 06 | 699 | 0.6+ | 0.5+ | 2006 10 20 | 704 | 0.3+ | 0.7+ |
| 2002 11 15 | 704 | 0.1+ | 1.2− | 2005 04 06 | 699 | 1.2+ | 0.8+ | 2006 10 20 | 704 | 1.1− | 1.2+ |
| 2002 11 15 | 704 | 0.1+ | 0.5− | 2005 04 06 | 699 | 0.5+ | 0.6− | 2006 10 20 | 704 | 0.4+ | 0.8+ |
| 2002 11 25 | 644 | 0.2+ | 0.8+ | 2005 04 06 | 699 | 0.3+ | 0.3− | 2006 10 20 | 704 | 0.0 | 0.2+ |
| 2002 11 25 | 644 | 0.2+ | 0.8+ | 2006 08 23 | 704 | 0.8+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 11 25 | 644 | 0.0 | 0.9+ | 2006 08 23 | 704 | 1.1+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.1+ | 0.1− | 2006 08 23 | 704 | (2.0+ | 0.2+) | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 12 03 | 644 | 0.5+ | 0.0 | 2006 08 23 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 12 03 | 644 | 0.1+ | 0.1− | 2006 08 23 | 704 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 12 07 | 704 | 0.4+ | 0.6− | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.4− |
| 2002 12 07 | 704 | 0.7− | 0.4+ | 2006 09 17 | 703 | 0.2+ | 0.5+ | 2006 10 27 | 703 | 0.0 | 1.1− |
| 2002 12 12 | 644 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.4− |
| 2002 12 12 | 644 | 0.3− | 0.1− | 2006 09 19 | 704 | (0.5− | 5.6+) | 2006 10 27 | 703 | 0.7+ | 0.7− |

**(143115)∗ 2002 XG$_{27}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.86278 | | (2000.0) | | | |
| $n$ | 0.23736856 | $\omega$ | 245.05480 | | −0.51502853 | −0.85548671 |
| $a$ | 2.5833738 | $\Omega$ | 236.05024 | | +0.80795805 | −0.46356455 |
| $e$ | 0.1653360 | $i$ | 3.71452 | | +0.28626807 | −0.23076048 |
| $P$ | 4.15 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 704 | 0.1− | 0.5+ | 2002 12 27 | 644 | 0.5+ | 0.8+ | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 1998 12 16 | 704 | 1.9+ | 0.9− | 2002 12 27 | 644 | 0.4+ | 0.7+ | 2006 10 15 | 691 | 0.2− | 0.1+ |
| 1998 12 16 | 704 | 0.6+ | 0.9− | 2003 01 03 | 291 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 1998 12 16 | 704 | 1.3+ | 1.2+ | 2003 01 03 | 291 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.4+ |
| 1998 12 16 | 704 | (5.7− | 0.6+) | 2003 01 03 | 291 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2000 06 04 | 691 | 0.1− | 0.3+ | 2004 05 14 | 691 | 0.3+ | 0.6+ | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 2000 06 04 | 691 | 0.8− | 0.2+ | 2004 05 14 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2000 06 04 | 691 | 0.4− | 0.1+ | 2004 05 14 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2002 11 13 | 644 | 0.2− | 0.2+ | 2004 05 23 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2004 05 23 | 691 | 0.5+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2002 11 13 | 644 | 0.0 | 0.1− | 2004 05 23 | 691 | 0.4+ | 0.7+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2002 11 27 | 699 | 1.4− | 0.8+ | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2002 11 27 | 699 | 0.3− | 1.1+ | 2005 07 01 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2002 11 27 | 699 | 0.9− | 1.3+ | 2005 07 01 | 691 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 11 27 | 699 | 0.8− | 0.5− | 2005 07 12 | G96 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2002 11 28 | 699 | (1.8+ | 1.1−) | 2005 07 12 | G96 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 11 28 | 699 | 0.9− | 1.1+ | 2005 07 12 | G96 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.9+ | 0.2+ |
| 2002 11 28 | 699 | 0.3+ | 0.5+ | 2005 07 12 | G96 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.7− |
| 2002 11 28 | 699 | 0.9− | 0.5− | 2005 07 15 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2002 12 05 | 704 | 0.7− | 0.7+ | 2005 07 15 | 691 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.6− | 0.3− | 2005 07 15 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2005 07 18 | 644 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.4− | 0.3− | 2005 07 18 | 644 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.5− | 2005 07 18 | 644 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.1− |
| 2002 12 07 | 644 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2002 12 07 | 644 | 0.7− | 0.2+ | 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2002 12 07 | 644 | 0.9− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2002 12 10 | 704 | (1.9+ | 1.3+) | 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.7− |
| 2002 12 10 | 704 | 1.1+ | 1.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2002 12 10 | 644 | 0.3− | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | (0.1+ | 1.7+) | 2006 10 02 | G96 | 0.6+ | 0.5− | 2006 11 21 | 704 | 1.5+ | 0.6− |
| 2002 12 10 | 644 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 10 11 | 691 | 0.4− | 0.5+ | | | | |
| 2002 12 27 | 644 | 0.6+ | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.3+ | | | | |

**(143116)∗ 2002 XT$_{27}$ = 2001 LL$_1$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41316)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.60062 | | (2000.0) | | | |
| $n$ | 0.24019187 | $\omega$ | 66.70761 | | +0.73540596 | +0.65173744 |
| $a$ | 2.5630900 | $\Omega$ | 252.07190 | | −0.67084275 | +0.66158530 |
| $e$ | 0.1681805 | $i$ | 11.24380 | | −0.09564556 | +0.37086816 |
| $P$ | 4.10 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 11 | 691 | 0.3+ | 0.5+ | 2002 12 31 | 699 | 0.9− | 0.0 | 2006 10 27 | 703 | 0.7− | 0.7− |
| 1993 06 11 | 691 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 1993 06 11 | 691 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2001 06 13 | 704 | 0.0 | 0.3+ | 2002 12 31 | 704 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2001 06 13 | 704 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2001 06 13 | 704 | 0.6+ | 0.4− | 2002 12 31 | 704 | 0.2+ | 1.2+ | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2001 06 13 | 704 | 0.2+ | 0.9+ | 2003 01 03 | 704 | 0.3− | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.9+ |
| 2001 06 15 | 704 | 0.1− | 0.1− | 2003 01 03 | 704 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2001 06 15 | 704 | 0.5− | 0.2+ | 2003 01 03 | 704 | 0.3− | 0.6− | 2006 11 22 | 704 | 0.3− | 0.6+ |
| 2001 06 15 | 704 | 0.4− | 0.1− | 2003 01 03 | 704 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2003 01 03 | 704 | (3.1+ | 1.8−) | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 0.8− | 0.1+ | 2006 11 23 | 703 | 0.8− | 1.0− |
| 2002 11 06 | 704 | 0.8− | 0.3− | 2003 01 04 | 704 | 0.3− | 1.3+ | 2006 11 23 | 703 | 0.2− | 0.5− |
| 2002 11 14 | 704 | (1.8+ | 0.8+) | 2003 01 04 | 704 | 1.0− | 1.2+ | 2006 11 23 | 703 | 0.1− | 0.7− |
| 2002 11 14 | 704 | (6.9+ | 2.6+) | 2005 06 04 | 704 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.5− |
| 2002 11 14 | 704 | (1.4+ | 1.8+) | 2005 06 04 | 704 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2002 11 14 | 704 | (2.3+ | 1.4+) | 2005 06 04 | 704 | 1.1− | 0.6− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2002 11 14 | 704 | (2.0+ | 2.3+) | 2005 06 04 | 704 | 0.3+ | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2005 06 04 | 704 | 0.5+ | 0.4+ | 2006 11 24 | 703 | 0.7− | 0.6− |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2005 06 16 | G96 | (0.9− | 1.7+) | 2006 11 24 | 703 | 0.1− | 0.2− |
| 2002 11 24 | 644 | 0.3+ | 0.5+ | 2005 06 16 | G96 | 0.8− | 0.5+ | 2006 11 24 | 703 | 0.5− | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.5− | 2005 06 16 | G96 | 0.8+ | 1.2− | 2006 11 24 | 703 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2005 06 16 | G96 | 0.4+ | 1.1− | 2006 11 24 | 291 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2005 07 04 | 644 | 0.1+ | 0.0 | 2006 11 24 | 291 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2005 07 04 | 644 | 0.1+ | 0.1+ | 2006 11 24 | 291 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2005 07 04 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.5+ | 1.7− |
| 2002 12 07 | 333 | 0.6− | 1.1+ | 2005 08 05 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.5− |
| 2002 12 07 | 333 | 0.2− | 0.1− | 2005 08 05 | 644 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.5+ | 0.7− |
| 2002 12 07 | 333 | 0.5+ | 0.0 | 2005 08 05 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2002 12 10 | 704 | 0.3+ | 0.4− | 2006 08 29 | 703 | 1.3+ | 0.6− | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | 1.3+ | 0.4+ | 2006 08 29 | 703 | 0.3+ | 0.4+ | 2006 12 01 | 704 | 0.8− | 0.6− |
| 2002 12 10 | 704 | 1.1+ | 0.1+ | 2006 08 29 | 703 | 0.6+ | 0.3+ | 2006 12 01 | 704 | 0.5+ | 0.3+ |
| 2002 12 10 | 704 | 0.6+ | 0.8+ | 2006 08 29 | 703 | 0.9− | 0.7+ | 2006 12 01 | 704 | 1.1+ | 1.2− |
| 2002 12 31 | 699 | 0.4− | 0.4− | 2006 10 27 | 703 | 0.6− | 0.8− | 2006 12 01 | 704 | 0.6− | 0.2− |
| 2002 12 31 | 699 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.3− | 0.7− | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2002 12 31 | 699 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.6− | 0.1− | | | | |

**(143117)∗ 2002 XZ$_{27}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 296.75847 | | (2000.0) | | | |
| $n$ | 0.24289608 | $\omega$ | 246.43049 | | −0.60119845 | −0.79613678 |
| $a$ | 2.5440309 | $\Omega$ | 240.70387 | | +0.75889834 | −0.54189104 |
| $e$ | 0.1854435 | $i$ | 4.52150 | | +0.25026732 | −0.26929600 |
| $P$ | 4.06 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.5+ | 0.6+ | 2003 01 31 | 704 | 0.1+ | 0.6+ | 2006 10 28 | G96 | (0.7− | 2.0−) |
| 2002 11 24 | 644 | 0.4+ | 0.5+ | 2003 01 31 | 704 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2002 11 24 | 644 | 0.7+ | 0.6+ | 2004 05 16 | E12 | 0.9+ | 1.4+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 12 05 | 695 | 0.4+ | 0.4+ | 2004 05 16 | E12 | 0.0 | 1.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2004 05 16 | E12 | 0.7− | 0.3+ | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.6+ | 2004 05 16 | E12 | 0.7− | 0.2+ | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.6+ | 0.1+ | 2004 06 11 | 691 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 1.5− | 0.5− | 2004 06 11 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 12 05 | 695 | 0.1+ | 0.2+ | 2004 06 11 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 12 05 | 608 | 0.4− | 0.8+ | 2004 06 17 | 691 | 0.1− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 608 | 0.4− | 0.9+ | 2004 06 17 | 691 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.7+ | 1.5− |
| 2002 12 05 | 608 | 0.3− | 0.6+ | 2004 06 17 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.5− |
| 2002 12 07 | 704 | 1.4− | 0.7+ | 2005 08 06 | 644 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2002 12 07 | 704 | 0.4− | 0.8+ | 2005 08 06 | 644 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.7− | 0.1+ |
| 2002 12 07 | 704 | 0.6− | 0.1+ | 2005 08 06 | 644 | 0.4− | 1.0+ | 2006 11 18 | 704 | 0.9− | 0.6− |
| 2002 12 07 | 704 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1− | 1.2− |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.1− | 0.8− |
| 2002 12 10 | 704 | 0.7+ | 0.6+ | 2006 09 30 | G96 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.8− |
| 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.6− | 0.8− |
| 2002 12 10 | 704 | 0.4− | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2002 12 31 | 704 | 1.4+ | 0.1− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 12 31 | 704 | (1.9+ | 1.8−) | 2006 10 21 | 850 | 0.1− | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2003 01 04 | 704 | 0.2− | 0.7− | 2006 10 21 | 850 | 0.9+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2003 01 04 | 704 | 0.1+ | 1.1− | 2006 10 21 | 850 | 1.1+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2003 01 04 | 704 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.1− | | | | |
| 2003 01 31 | 704 | 0.7− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1− | | | | |

**(143118)∗ 2002 XJ$_{28}$ = 2004 FW$_{74}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61650)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 257.66497 | | (2000.0) | | | |
| $n$ | 0.21757181 | $\omega$ | 240.69839 | | −0.50748537 | −0.86133346 |
| $a$ | 2.7377952 | $\Omega$ | 239.81698 | | +0.79977653 | −0.46060966 |
| $e$ | 0.0260696 | $i$ | 1.57328 | | +0.32064949 | −0.21434413 |
| $P$ | 4.53 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 06 | 691 | 0.1− | 0.6− | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.5− | 0.5+ |
| 1995 04 06 | 691 | 0.2− | 0.3− | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2− |
| 1995 04 06 | 691 | 0.0 | 0.1− | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 1.2+ | 0.5+ | 2004 03 20 | 699 | (1.1+ | 2.5+) | 2006 09 19 | 691 | 0.3− | 0.7+ |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2004 03 20 | 699 | 1.0+ | 1.2+ | 2006 09 19 | 691 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | (1.1+ | 1.7−) | 2004 03 20 | 699 | 0.7+ | 0.3− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2002 12 07 | 704 | 0.3− | 1.0+ | 2004 03 20 | 699 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2002 12 07 | 704 | 0.5+ | 0.3+ | 2004 03 23 | 291 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2002 12 07 | 704 | (1.7+ | 0.0 ) | 2004 03 23 | 291 | 0.1− | 0.0 | 2006 09 29 | A55 | 0.1+ | 0.1− |
| 2002 12 07 | 704 | 0.1+ | 0.5− | 2004 03 23 | 291 | 0.1− | 0.1+ | 2006 09 29 | A55 | 0.5+ | 0.3+ |
| 2002 12 11 | 704 | 0.5− | 0.2+ | 2004 04 15 | 691 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.4− |
| 2002 12 11 | 704 | 0.6+ | 0.6− | 2004 04 15 | 691 | 0.6− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.6− |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 691 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 1.0− | 0.1− | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2003 01 06 | 291 | 0.0 | 0.0 | 2004 04 25 | 691 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2003 01 06 | 291 | 0.1− | 0.3− | 2004 04 25 | 691 | 0.5+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.5+ |
| 2003 01 06 | 291 | 0.2− | 0.3− | 2006 09 15 | 691 | 0.3− | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.5− |

**(143119)∗ 2002 XL$_{28}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.68133 | | (2000.0) | | | |
| $n$ | 0.19332370 | $\omega$ | 159.60818 | | +0.70872400 | −0.70426003 |
| $a$ | 2.9621883 | $\Omega$ | 245.23368 | | +0.64075983 | +0.66723764 |
| $e$ | 0.1028712 | $i$ | 2.62398 | | +0.29518998 | +0.24251133 |
| $P$ | 5.10 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.3− | 1.1+ | 2002 12 07 | 333 | 0.2− | 0.1− | 2004 01 29 | 291 | 0.0 | 0.3+ |
| 2001 08 16 | 644 | 0.7− | 0.8+ | 2002 12 07 | 333 | 0.7− | 0.3− | 2004 01 29 | 291 | 0.1− | 0.1+ |
| 2001 08 16 | 644 | 0.8− | 1.5+ | 2002 12 10 | 704 | 0.0 | 0.4+ | 2004 01 29 | 291 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 1.1− | 1.0+ | 2002 12 10 | 704 | (1.7+ | 0.1+) | 2004 01 30 | 291 | 0.0 | 0.7+ |
| 2001 09 20 | 704 | 0.3+ | 0.3− | 2002 12 10 | 704 | 0.2− | 0.2+ | 2004 01 30 | 291 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.5+ | 2002 12 10 | 704 | 0.1− | 0.3− | 2004 01 30 | 291 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.4+ | 0.1+ | 2002 12 10 | 704 | 0.5− | 0.8+ | 2004 03 28 | 691 | 0.4+ | 0.4− |
| 2001 09 20 | 704 | 0.5+ | 0.8+ | 2002 12 10 | 291 | 0.5− | 0.3− | 2004 03 28 | 691 | 0.3+ | 0.1+ |
| 2002 10 29 | 291 | 0.1+ | 0.3+ | 2002 12 10 | 291 | (0.5+ | 1.8−) | 2004 03 28 | 691 | 0.5+ | 0.0 |
| 2002 10 29 | 291 | 0.0 | 0.2+ | 2002 12 11 | 333 | 0.2+ | 0.2− | 2005 06 10 | 691 | 0.2+ | 0.0 |
| 2002 10 29 | 291 | 0.0 | 0.1+ | 2002 12 11 | 333 | 0.2− | 0.5− | 2005 06 10 | 691 | 0.4− | 0.2+ |
| 2002 11 06 | 704 | 1.4+ | 0.9+ | 2002 12 11 | 333 | 0.1− | 0.6− | 2005 06 10 | 691 | 0.3− | 0.3+ |
| 2002 11 06 | 704 | 0.6+ | 0.7+ | 2002 12 31 | 704 | 0.2+ | 0.5+ | 2005 06 13 | G96 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.2+ | 0.6+ | 2002 12 31 | 704 | 0.1− | 0.0 | 2005 06 13 | G96 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.2− | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.6+ | 2005 06 13 | G96 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.4+ | 0.3− | 2002 12 31 | 704 | 0.6+ | 1.1+ | 2005 06 13 | G96 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | (0.7+ | 1.6+) | 2003 01 06 | 291 | 0.1− | 0.1+ | 2006 08 14 | E12 | 0.5+ | 0.5+ |
| 2002 12 05 | 704 | (0.2+ | 1.6+) | 2003 01 06 | 291 | 0.3− | 0.0 | 2006 08 14 | E12 | 0.7− | 0.7+ |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2003 01 06 | 291 | 0.6− | 0.2+ | 2006 08 14 | E12 | 0.0 | 0.7+ |
| 2002 12 05 | 704 | 0.6+ | 0.5− | 2003 01 08 | 704 | (1.5+ | 1.6+) | 2006 08 14 | E12 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 1.3+ | 0.6− | 2003 01 08 | 704 | 0.5+ | 0.3+ | 2006 08 14 | E12 | 0.0 | 0.6+ |
| 2002 12 05 | 644 | 0.0 | 0.3+ | 2003 01 08 | 704 | 0.2− | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.2+ |
| 2002 12 05 | 644 | 0.1+ | 0.3+ | 2003 01 11 | 291 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.4+ |
| 2002 12 05 | 644 | 0.1− | 0.2+ | 2003 01 11 | 291 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2002 12 07 | 333 | 0.3+ | 0.2− | 2003 01 11 | 291 | 0.0 | 0.7− | 2006 10 22 | G96 | 0.1− | 0.1+ |

**(143120)∗ 2002 XQ$_{28}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.72236 | | (2000.0) | | | |
| $n$ | 0.25630988 | $\omega$ | 181.66390 | | +0.10070185 | −0.99045575 |
| $a$ | 2.4544781 | $\Omega$ | 262.56400 | | +0.91391086 | +0.12947322 |
| $e$ | 0.0830054 | $i$ | 5.44599 | | +0.39322523 | −0.04726620 |
| $P$ | 3.85 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 11 | 691 | 0.2− | 0.5− | 2002 12 12 | 704 | 0.4− | 0.3+ | 2003 01 05 | 704 | 0.3+ | 0.3− |
| 1990 10 11 | 691 | 0.2− | 0.2− | 2002 12 12 | 704 | 0.4− | 0.1+ | 2003 01 05 | 704 | 0.3− | 0.5+ |
| 1990 10 11 | 691 | 0.0 | 0.1− | 2002 12 12 | 704 | 0.1+ | 0.7+ | 2003 01 05 | 704 | 0.2+ | 0.1− |
| 1998 12 11 | 699 | 0.6+ | 0.6+ | 2002 12 12 | 704 | 1.3− | 1.3+ | 2003 01 08 | 704 | 0.2+ | 0.5+ |
| 1998 12 11 | 699 | 1.1+ | 0.1− | 2002 12 13 | 704 | 0.5+ | 0.1− | 2003 01 08 | 704 | 0.0 | 0.1− |
| 1998 12 11 | 699 | 1.0+ | 0.2+ | 2002 12 13 | 704 | 0.3+ | 1.0− | 2003 01 08 | 704 | 0.1+ | 1.5+ |
| 1999 01 24 | 691 | 0.0 | 0.7− | 2002 12 13 | 704 | 0.3− | 0.5+ | 2003 01 08 | 704 | 0.0 | 0.1− |
| 1999 01 24 | 691 | 0.1+ | 0.0 | 2002 12 13 | 704 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.7+ | 0.4− |
| 1999 01 24 | 691 | 1.0+ | 0.6− | 2002 12 13 | 704 | 0.7+ | 0.1− | 2004 04 13 | 644 | 0.2+ | 0.4+ |
| 2001 06 16 | 691 | 0.1+ | 0.5+ | 2002 12 31 | 704 | 0.4− | 0.5− | 2004 04 13 | 644 | 0.4+ | 0.5+ |
| 2001 06 16 | 691 | 0.4+ | 0.5+ | 2002 12 31 | 704 | 0.4− | 0.4− | 2004 04 13 | 644 | 0.1− | 0.9+ |
| 2001 06 16 | 691 | 0.2− | 0.3+ | 2002 12 31 | 704 | 0.1− | 0.3+ | 2005 08 24 | 644 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.9+ | 2002 12 31 | 704 | 0.4− | 0.2− | 2005 08 24 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.4+ | 0.1− | 2002 12 31 | 704 | 0.7− | 0.4+ | 2005 08 24 | 644 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 0.7− | 0.2− | 2003 01 02 | 704 | 0.1− | 0.2+ | 2005 08 29 | 699 | 0.9− | 0.8+ |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2003 01 02 | 704 | (0.9− | 1.6+) | 2005 08 29 | 699 | 0.8+ | 0.3+ |
| 2002 12 08 | 291 | 0.6− | 0.1− | 2003 01 02 | 704 | 0.1+ | 0.5+ | 2005 08 29 | 699 | 0.2+ | 0.1− |
| 2002 12 08 | 291 | 0.3− | 0.0 | 2003 01 02 | 704 | 0.1+ | 0.4+ | 2005 08 29 | 699 | 1.2− | 0.3+ |
| 2002 12 08 | 291 | 0.7+ | 1.0+ | 2003 01 02 | 704 | 0.1+ | 0.2+ | 2005 09 27 | 644 | 0.1− | 0.2+ |
| 2002 12 10 | 704 | 0.7+ | 0.5+ | 2003 01 04 | 704 | 0.1− | 0.1+ | 2005 09 27 | 644 | 0.4− | 0.2+ |
| 2002 12 10 | 704 | 0.3− | 0.4+ | 2003 01 04 | 704 | 0.4− | 0.1+ | 2005 09 27 | 644 | 0.5− | 0.2− |
| 2002 12 10 | 704 | 0.3− | 0.6+ | 2003 01 04 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.5+ | 0.2+ |
| 2002 12 10 | 704 | 0.1− | 0.0 | 2003 01 04 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.3+ | 0.2− |
| 2002 12 10 | 704 | 0.2− | 0.4+ | 2003 01 04 | 704 | 0.7− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.4+ | 0.3+ | 2003 01 04 | 704 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.6− | 0.3− |
| 2002 12 11 | 704 | 0.3− | 0.0 | 2003 01 04 | 704 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2002 12 11 | 704 | (1.3+ | 2.0−) | 2003 01 04 | 704 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.7− | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 01 04 | 704 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.6− | 0.3− |
| 2002 12 11 | 704 | 1.4+ | 1.3− | 2003 01 04 | 704 | 0.5− | 0.0 | 2006 11 14 | G96 | 0.5− | 0.5− |
| 2002 12 11 | 704 | 0.2− | 0.6+ | 2003 01 04 | 704 | 0.4− | 0.3− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 1.0+ | 1.0− | 2003 01 04 | 704 | 0.5+ | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 01 04 | 704 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2002 12 11 | 704 | (0.7+ | 1.7−) | 2003 01 04 | 704 | 0.2− | 0.2− | | | | |
| 2002 12 11 | 704 | 0.4− | 1.1+ | 2003 01 04 | 704 | 0.4+ | 0.3+ | | | | |

**(143121)∗ 2002 XF$_{29}$**

Discovered 2002 Dec. 5 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.36821 | | (2000.0) | | +0.07570890 | −0.98592942 |
| $n$ | 0.21266858 | $\omega$ | 327.14120 | | +0.94744355 | +0.02453594 |
| $a$ | 2.7797165 | $\Omega$ | 118.12132 | | +0.31083578 | +0.16535166 |
| $e$ | 0.1260994 | $i$ | 9.72869 | | | |
| $P$ | 4.63 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | (0.1+ | 2.0+) | 2003 01 31 | 704 | 0.7+ | 0.9+ | 2005 07 06 | 691 | 0.4+ | 0.1− |
| 2001 09 12 | 704 | 0.2− | 1.3+ | 2003 01 31 | 704 | 1.2+ | 0.4− | 2005 07 06 | 291 | 0.5− | 0.0 |
| 2001 09 12 | 704 | 0.1− | 1.4+ | 2003 01 31 | 704 | 0.4+ | 1.3+ | 2005 07 06 | 691 | 0.4+ | 0.1+ |
| 2002 12 05 | 291 | 0.2− | 0.2+ | 2003 02 03 | 704 | 0.7+ | 0.5+ | 2005 07 06 | 291 | 0.1− | 0.0 |
| 2002 12 05 | 291 | 0.1+ | 0.4+ | 2003 02 03 | 704 | (1.6+ | 0.5+) | 2005 07 07 | 568 | 0.8− | 0.4+ |
| 2002 12 05 | 291 | 0.2+ | 0.0 | 2003 02 03 | 704 | 1.2+ | 0.9+ | 2005 07 07 | 568 | 0.7− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.7+ | 2003 02 03 | 704 | 0.5+ | 0.0 | 2005 07 07 | 568 | 0.7− | 0.4+ |
| 2002 12 05 | 704 | 0.1− | 0.5+ | 2003 02 03 | 704 | (0.6+ | 1.6+) | 2005 07 08 | 568 | 0.5− | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 0.2− | 2003 02 04 | 644 | 0.3+ | 0.6− | 2005 07 15 | G96 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | (2.0+ | 2.1+) | 2003 02 04 | 644 | 0.4+ | 0.6− | 2005 07 15 | 691 | 0.2+ | 0.1+ |
| 2002 12 07 | 291 | 0.5− | 1.3− | 2003 02 04 | 644 | 0.3+ | 0.7− | 2005 07 15 | G96 | 0.0 | 0.0 |
| 2002 12 07 | 291 | 0.8− | 0.3+ | 2003 02 08 | 704 | 0.3+ | 0.1− | 2005 07 15 | 691 | 0.1+ | 0.1+ |
| 2002 12 07 | 291 | 1.0− | 0.3+ | 2003 02 08 | 704 | 0.3+ | 0.2− | 2005 07 15 | G96 | 0.2+ | 0.0 |
| 2003 01 04 | 291 | 0.2− | 0.4+ | 2003 02 08 | 704 | 0.8− | 0.5+ | 2005 07 15 | G96 | 0.1+ | 0.3+ |
| 2003 01 04 | 704 | 1.0+ | 0.2+ | 2003 02 08 | 704 | 0.4+ | 0.7+ | 2005 07 15 | 691 | 0.3+ | 0.3− |
| 2003 01 04 | 291 | 0.1− | 0.2+ | 2004 04 23 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 699 | (2.1+ | 0.7+) |
| 2003 01 04 | 704 | 0.8+ | 0.1+ | 2004 04 23 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.8+ | 0.1+ |
| 2003 01 04 | 704 | (1.9+ | 0.7−) | 2004 04 23 | 691 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 1.4+ |
| 2003 01 04 | 291 | 0.8− | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 09 29 | 699 | 1.5+ | 0.5− |
| 2003 01 04 | 704 | 1.1+ | 0.2+ | 2005 06 14 | G96 | 0.4− | 0.5+ | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2003 01 04 | 704 | 0.9+ | 0.7+ | 2005 06 14 | G96 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 1.0− | 0.1+ |
| 2003 01 08 | 704 | 0.2+ | 0.4− | 2005 06 28 | G96 | 0.5− | 0.4+ | 2006 10 28 | 703 | 0.4− | 0.5− |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2005 06 28 | G96 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.6− | 1.1+ |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2005 06 28 | G96 | 0.6− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2003 01 08 | 704 | 0.6+ | 0.2+ | 2005 06 28 | G96 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.6+ |
| 2003 01 08 | 704 | 0.8+ | 0.1+ | 2005 07 03 | G96 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2003 01 11 | 291 | 0.1+ | 0.1+ | 2005 07 03 | G96 | 0.5+ | 0.5+ | 2006 11 16 | 703 | 0.2+ | 0.2− |
| 2003 01 11 | 291 | 0.2− | 0.1+ | 2005 07 03 | G96 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.0 | 0.1+ |
| 2003 01 11 | 291 | 0.2− | 0.1+ | 2005 07 03 | G96 | 0.9+ | 0.4+ | 2006 11 16 | 703 | 0.3+ | 0.8− |
| 2003 01 31 | 704 | 0.8+ | 0.9+ | 2005 07 06 | 691 | 0.3+ | 0.1− | 2006 11 16 | 703 | 0.4− | 0.3− |
| 2003 01 31 | 704 | 0.7+ | 1.0+ | 2005 07 06 | 291 | 0.9− | 0.8+ | | | | |

**(143122)∗ 2002 XH$_{31}$ = 2001 SG$_{180}$ = 2004 DJ$_{65}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61652), A. Doppler (*MPO* 75815)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.18968 | | (2000.0) | | +0.98502416 | −0.17241615 |
| $n$ | 0.20394462 | $\omega$ | 10.26473 | | +0.15483615 | +0.88525969 |
| $a$ | 2.8584321 | $\Omega$ | 359.66326 | | +0.07584963 | +0.43195828 |
| $e$ | 0.0506664 | $i$ | 2.57324 | | | |
| $P$ | 4.83 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.4− | 0.0 | 2004 03 15 | 703 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.5− |
| 1999 02 07 | 691 | 0.4− | 0.5− | 2004 03 15 | 703 | 1.4+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.5+ |
| 1999 02 07 | 691 | 0.2− | 0.2− | 2004 03 15 | 703 | 1.2+ | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.2− |
| 2001 08 15 | 608 | 0.3− | 0.0 | 2004 03 15 | 703 | 0.8+ | 0.3− | 2006 08 28 | 703 | 0.2− | 1.5+ |
| 2001 08 15 | 608 | 0.3+ | 0.7− | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 09 14 | 703 | 0.4− | 0.8− |
| 2001 08 15 | 608 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.1+ | 2006 09 14 | 703 | 0.6+ | 0.3− |
| 2001 08 15 | 608 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 09 14 | 703 | 1.0− | 0.4+ |
| 2001 08 15 | 608 | 0.5− | 0.1+ | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 09 14 | 703 | 1.2− | 0.9+ |
| 2001 08 15 | 608 | 0.7− | 0.3− | 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.4+ |
| 2001 08 20 | 807 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.4− | 0.5+ |
| 2001 08 20 | 807 | 0.2+ | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.0 | 2006 09 17 | 704 | 0.8− | 0.4− |
| 2001 09 19 | 704 | 0.8+ | 0.1+ | 2004 03 22 | 704 | 0.6+ | 1.2+ | 2006 09 18 | 699 | 0.4− | 0.5+ |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 699 | (0.3+ | 1.6+) |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 1.2+ | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.4− | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.4+ |
| 2001 09 21 | 704 | 1.1+ | 0.9+ | 2006 08 14 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.9+ | 1.3+ | 2006 08 14 | 644 | 0.5− | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.5− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.9+ | 1.4+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.1+ |
| 2002 12 06 | 704 | 1.2+ | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2002 12 07 | 704 | (2.1− | 0.3+) | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.4− |
| 2002 12 07 | 704 | (2.5− | 0.1+) | 2006 08 17 | 644 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.6+ |
| 2002 12 07 | 704 | 1.2− | 0.1+ | 2006 08 18 | 644 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.9− | 0.8+ |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.8− | 0.0 | 2006 08 18 | 644 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.5− | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.3− | 2006 08 21 | 704 | 0.4+ | 0.7+ | 2006 11 11 | G96 | 0.7− | 0.5− |
| 2004 02 22 | 695 | 0.2+ | 0.1+ | 2006 08 21 | 704 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2004 02 22 | 695 | 0.0 | 0.1+ | 2006 08 21 | 704 | 0.7+ | 0.4+ | 2006 11 11 | G96 | 0.5− | 0.1+ |
| 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 08 21 | 704 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2004 02 26 | 704 | 0.1+ | 0.8+ | 2006 08 27 | 699 | 0.5− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.2+ | 0.8+ | 2006 08 27 | 699 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 02 26 | 704 | 0.0 | 0.7+ | 2006 08 27 | 699 | 0.8+ | 0.5+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2004 02 26 | 704 | 0.2− | 0.5+ | 2006 08 27 | 699 | 0.7− | 0.4+ | | | | |

**(143123)∗ 2002 XS$_{31}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.28620 | | (2000.0) | | +0.75639399 | −0.65388104 |
| $n$ | 0.22306386 | $\omega$ | 51.01913 | | +0.56543289 | +0.66709197 |
| $a$ | 2.6926706 | $\Omega$ | 349.77435 | | +0.32886743 | +0.35697044 |
| $e$ | 0.0336210 | $i$ | 5.67088 | | | |
| $P$ | 4.42 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 11 | 691 | 0.4+ | 0.1+ | 2004 02 26 | 704 | 1.3+ | 0.7+ | 2006 09 28 | 691 | (0.8+ | 1.6+) |
| 1993 11 11 | 691 | 0.3+ | 0.3− | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.5+ |
| 1993 11 11 | 691 | 0.3− | 1.2− | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2001 08 19 | 807 | 0.5+ | 0.1+ | 2004 03 15 | 703 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.3+ |
| 2001 08 19 | 807 | 0.4+ | 0.1+ | 2004 03 15 | 703 | 0.7− | 1.4+ | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 2001 09 20 | 291 | 0.0 | 0.6+ | 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 291 | 0.4− | 0.4+ | 2004 03 15 | 703 | 1.1− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2001 09 20 | 291 | 0.4− | 0.7+ | 2004 03 15 | 703 | 1.5+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2002 12 06 | 704 | 0.9+ | 0.7+ | 2004 03 15 | 691 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.8+ |
| 2002 12 06 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | (0.3+ | 3.0+) |
| 2002 12 06 | 704 | 0.5+ | 1.1+ | 2004 03 18 | 704 | 0.9+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.6+ |
| 2002 12 07 | 704 | 0.1− | 0.7+ | 2004 03 18 | 704 | 0.6− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 12 07 | 704 | 0.1− | 0.5+ | 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 2002 12 07 | 704 | 0.0 | 0.8+ | 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 12 10 | 704 | 1.2+ | 1.2− | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2002 12 10 | 704 | 1.0− | 1.3− | 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2002 12 10 | 704 | 0.9− | 0.2+ | 2004 03 27 | 704 | 0.8+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 12 10 | 704 | 0.4+ | 1.1+ | 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | 0.6− | 0.5− | 2004 03 27 | 704 | 0.5+ | 0.2− | 2006 11 14 | 703 | 0.7− | 1.2+ |
| 2003 01 05 | 704 | 0.6− | 0.3− | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.8− | 0.4+ |
| 2003 01 05 | 704 | 0.5+ | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.3− |
| 2004 02 26 | 704 | 0.5+ | 0.4+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 1.3− | 1.2− |

**(143124)∗ 2002 XU$_{31}$ = 2004 CD$_{42}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61653)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.44988 | | (2000.0) | | | |
| $n$ | 0.23995846 | $\omega$ | 296.42006 | | +0.52532442 | +0.85086694 |
| $a$ | 2.5647518 | $\Omega$ | 5.28959 | | −0.74778760 | +0.46597810 |
| $e$ | 0.2336631 | $i$ | 4.80772 | | −0.40601472 | +0.24267234 |
| $P$ | 4.11 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2004 02 16 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.2− | 1.0+ |
| 2002 12 06 | 704 | 0.2+ | 0.5+ | 2004 02 16 | 704 | 0.0 | 0.2− | 2006 11 15 | 704 | (0.3+ | 1.6+) |
| 2002 12 06 | 704 | 0.0 | 0.2+ | 2004 02 16 | 704 | 0.5− | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2004 02 18 | 704 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.3− |
| 2002 12 06 | 704 | (2.1+ | 0.8+) | 2004 02 18 | 704 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.4+ |
| 2002 12 07 | 704 | 0.8− | 0.3− | 2004 02 18 | 704 | 0.1− | 0.8− | 2006 11 17 | 704 | 0.2+ | 0.7+ |
| 2002 12 07 | 704 | 0.3− | 0.1− | 2004 02 18 | 704 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.9− | 0.1− |
| 2002 12 07 | 704 | 0.3+ | 0.3+ | 2004 02 18 | 704 | (0.9+ | 1.7+) | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 12 07 | 704 | 0.8+ | 0.3+ | 2004 02 23 | 704 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 1.2− | 0.3− | 2004 02 23 | 704 | 0.9− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.5+ | 0.9+ | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2002 12 11 | 704 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 12 11 | 704 | 0.1+ | 0.7+ | 2005 05 30 | E12 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2002 12 11 | 704 | 0.0 | 0.6+ | 2005 05 30 | E12 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2002 12 14 | 704 | (2.5− | 1.0+) | 2005 05 30 | E12 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2002 12 14 | 704 | 0.2+ | 0.3+ | 2005 05 30 | E12 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.5+ | 0.5− |
| 2002 12 14 | 704 | 0.2+ | 0.7− | 2005 07 27 | E12 | 0.2+ | 0.7+ | 2006 11 22 | 704 | 0.2+ | 0.6+ |
| 2002 12 14 | 704 | 0.4− | 0.2− | 2005 07 27 | E12 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.5− |
| 2004 01 23 | 704 | 0.2− | 0.1+ | 2005 07 27 | E12 | 0.6− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2004 01 23 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.4− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2004 01 23 | 704 | 0.1+ | 1.2+ | 2006 10 19 | 703 | 0.4+ | 0.6− | 2006 11 22 | 704 | (2.5+ | 2.0+) |
| 2004 02 10 | 644 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.3+ | 2.2+ |
| 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 1.1− | 2006 11 27 | 704 | 0.7+ | 0.2− |
| 2004 02 10 | 644 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.8− | 0.4+ | 2006 11 27 | 704 | 0.5+ | 0.7− |
| 2004 02 16 | 291 | 0.2− | 0.1− | 2006 10 27 | 703 | 1.1− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 1.0+ |
| 2004 02 16 | 291 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.5− | 0.0 | 2006 11 28 | 704 | 2.3+ | 1.2− |
| 2004 02 16 | 704 | (2.7+ | 1.1+) | 2006 10 27 | 703 | 0.8− | 0.6+ | 2006 11 28 | 704 | 0.0 | 1.6− |
| 2004 02 16 | 291 | 0.3+ | 0.1− | 2006 11 15 | 704 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.3− |
| 2004 02 16 | 704 | 1.0+ | 0.4− | 2006 11 15 | 704 | 0.5− | 0.1+ | | | | |

**(143125)∗ 2002 XY$_{31}$ = 2000 FH$_{54}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41321)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.84764 | | (2000.0) | | | |
| $n$ | 0.23912241 | $\omega$ | 11.50679 | | +0.96764600 | −0.25228588 |
| $a$ | 2.5707264 | $\Omega$ | 3.11300 | | +0.22589326 | +0.85986177 |
| $e$ | 0.0975272 | $i$ | 3.81380 | | +0.11239861 | +0.44383507 |
| $P$ | 4.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.4− | 0.4− | 2004 03 18 | 704 | 1.4+ | 0.7− | 2006 11 14 | 703 | 0.6− | 0.1− |
| 2000 03 30 | 691 | 0.5− | 0.4− | 2004 03 18 | 704 | (1.3− | 2.5+) | 2006 11 14 | 703 | 0.1− | 0.4− |
| 2000 03 30 | 691 | 0.3− | 0.4− | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.3+ |
| 2000 04 05 | 704 | 0.9+ | 0.8− | 2004 03 18 | 704 | 0.0 | 0.8+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.3− | 0.5+ | 2004 03 18 | 704 | 1.1+ | 0.8− | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 1.0+ | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.6+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 704 | 0.6− | 0.0 |
| 2000 04 05 | 704 | 0.8+ | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.1+ | 0.7+ |
| 2002 12 06 | 704 | 0.9+ | 0.8+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 704 | 0.3+ | 0.3− |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.5− | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 704 | (0.8+ | 1.9−) |
| 2002 12 06 | 704 | 0.2− | 0.5+ | 2004 03 22 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 704 | 0.9− | 0.6− |
| 2002 12 06 | 704 | 0.3+ | 0.1− | 2004 03 22 | 704 | 0.4− | 0.6+ | 2006 11 16 | 704 | (0.1− | 1.8+) |
| 2002 12 07 | 704 | 0.4+ | 0.7− | 2004 03 22 | 704 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.3− | 0.6+ |
| 2002 12 07 | 704 | 0.6+ | 0.3+ | 2004 03 26 | 699 | 1.2− | 0.7− | 2006 11 16 | 704 | 0.8− | 1.1+ |
| 2002 12 07 | 704 | 0.6+ | 0.6− | 2004 03 26 | 699 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2002 12 07 | 704 | 0.7− | 1.0− | 2004 03 26 | 699 | 0.9+ | 0.4− | 2006 11 16 | 704 | 0.2− | 1.2+ |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2004 03 26 | 699 | 0.1+ | 0.5+ | 2006 11 16 | 704 | 1.1− | 1.0− |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.3− | 0.5+ | 2006 11 16 | 704 | 1.0+ | 0.3+ |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.8+ | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.4+ | 2004 03 27 | 704 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.6+ | 0.3− |
| 2002 12 14 | 704 | 0.1+ | 0.4− | 2004 03 31 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2002 12 14 | 704 | 0.9+ | 0.8+ | 2004 03 31 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 0.4− | 1.2− | 2004 03 31 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | (1.6− | 1.1+) |
| 2002 12 14 | 704 | 0.5− | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | (1.2+ | 1.7+) |
| 2003 01 05 | 704 | 0.9− | 0.6− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2003 01 05 | 704 | 0.3+ | 1.1− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 2003 01 05 | 704 | 0.3− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 22 | 704 | 1.0+ | 0.3− |
| 2003 01 05 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.9+ | 2006 11 28 | 704 | 0.4− | 0.6+ |
| 2004 02 26 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.3− |
| 2004 02 26 | 704 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.7− | 0.8+ | 2006 11 28 | 704 | 0.1− | 0.2− |
| 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | (2.3− | 1.7+) | 2006 11 28 | 704 | 0.9− | 1.1+ |
| 2004 02 26 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.3+ | 0.2− |
| 2004 03 15 | 703 | 0.9− | 0.6− | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.3− |
| 2004 03 15 | 703 | 0.6+ | 0.8− | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.3− | 0.2− |
| 2004 03 15 | 703 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.1− |
| 2004 03 15 | 703 | 0.0 | 0.7− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.0 |
| 2004 03 16 | 599 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.5+ |
| 2004 03 16 | 599 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.3− | 0.1− |
| 2004 03 16 | 599 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 | | | | |
| 2004 03 16 | 599 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.8+ | | | | |

**(143126)∗ 2002 XV$_{32}$ = 2005 JX$_{76}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75815)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.23929 | | (2000.0) | | | |
| $n$ | 0.22085522 | $\omega$ | 295.07538 | | +0.98031640 | +0.13727506 |
| $a$ | 2.7105927 | $\Omega$ | 57.32962 | | −0.05411131 | +0.87801188 |
| $e$ | 0.1835426 | $i$ | 9.70458 | | −0.18987291 | +0.45853101 |
| $P$ | 4.46 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 644 | 0.0 | 0.5− | 2005 05 11 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.2− |
| 2001 05 25 | 644 | 0.0 | 0.7− | 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.6− |
| 2001 05 25 | 644 | 0.2− | 0.5− | 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.5+ |
| 2002 12 06 | 704 | 0.2− | 0.4+ | 2005 05 13 | G96 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.3+ |
| 2002 12 06 | 704 | 0.0 | 0.2+ | 2005 05 13 | G96 | 1.0+ | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.3+ |
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2005 05 18 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.5+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2005 05 18 | 644 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.8− |
| 2002 12 06 | 704 | 0.2− | 0.5+ | 2005 05 18 | 644 | 0.4+ | 1.0+ | 2006 09 30 | 704 | 0.2− | 0.6− |
| 2002 12 07 | 704 | 0.7+ | 0.4− | 2005 05 18 | E12 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.3− | 0.8− |
| 2002 12 07 | 704 | 0.3− | 0.2− | 2005 05 18 | E12 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.1+ | 0.7− |
| 2002 12 07 | 704 | 0.3+ | 0.4− | 2005 05 18 | E12 | 0.7− | 0.7− | 2006 09 30 | 704 | 0.4− | 0.7− |
| 2002 12 07 | 704 | 0.6− | 0.3+ | 2005 05 18 | E12 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2002 12 07 | 704 | 0.3+ | 0.5− | 2005 05 29 | E12 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2002 12 07 | 704 | 0.5− | 0.2− | 2005 05 29 | E12 | 1.2+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2002 12 07 | 704 | 0.5+ | 0.5− | 2005 05 29 | E12 | 0.7− | 1.1+ | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2002 12 07 | 704 | 0.3+ | 0.2− | 2005 05 29 | E12 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2002 12 07 | 704 | 0.2+ | 1.2− | 2005 06 06 | 691 | 0.8+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2002 12 07 | 704 | 0.3− | 0.2− | 2005 06 06 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 1.2+ | 0.3+ | 2005 06 06 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.5+ | 0.2− | 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 12 10 | 704 | 0.1+ | 0.7+ | 2005 06 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 12 10 | 704 | 0.2− | 0.5+ | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.6+ | 1.4− | 2005 06 11 | 703 | 0.6− | 1.0− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 11 | 704 | (1.9− | 1.2−) | 2005 06 11 | 703 | 1.0− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2005 06 11 | 703 | (0.2− | 1.7−) | 2006 10 22 | 703 | 0.4+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.3− | 0.9− | 2005 06 11 | 703 | (1.5− | 1.0+) | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 0.0 | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.6+ | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.3− | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | (0.4+ | 1.5−) | 2005 06 14 | G96 | 1.2− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.3+ | 0.0 | 2005 06 14 | G96 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 0.7− | 0.8+ | 2005 07 01 | 703 | 0.5+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 12 14 | 704 | 0.1+ | 0.2− | 2005 07 01 | 703 | 1.4− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 0.9− | 0.8+ | 2005 07 01 | 703 | 0.3− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.2− | 0.3+ | 2005 07 01 | 703 | 0.2+ | 0.6− | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2002 12 14 | 704 | 0.9− | 0.5+ | 2005 07 04 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 704 | 0.3+ | 0.6+ |
| 2002 12 14 | 704 | 0.1+ | 0.6+ | 2005 07 04 | 644 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.2− | 0.1− | 2005 07 04 | 644 | 0.7− | 0.1− | 2006 11 10 | 704 | 0.5+ | 0.7+ |
| 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.7− | 0.3− | 2006 11 10 | 704 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.4− | 0.4− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 11 10 | 704 | 0.3− | 1.1+ |
| 2003 01 05 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 11 10 | 704 | 0.4+ | 1.0+ |
| 2003 01 05 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.6+ | 0.6+ | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 2004 03 23 | 704 | 0.3+ | 0.6+ | 2006 09 21 | 699 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 2004 03 23 | 704 | 1.0− | 1.1− | 2006 09 21 | 699 | 0.5+ | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2004 03 23 | 704 | 0.8+ | 0.2− | 2006 09 21 | 699 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 1.0− | 1.1+ |
| 2004 03 23 | 704 | 1.0− | 1.4+ | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 11 14 | 704 | 1.5− | 0.1+ |
| 2005 05 09 | 704 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.6+ | 2006 11 17 | 704 | 0.3− | 0.1− |
| 2005 05 09 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6− | 0.7+ |
| 2005 05 09 | 704 | 0.4− | 0.1+ | 2006 09 26 | 704 | 1.2+ | 0.6+ | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.5− | 0.0 |
| 2005 05 11 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.6− | 0.8+ |

**(143127)∗ 2002 XW$_{32}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.16770 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23008721 | $\omega$ | 112.65754 | | −0.97374323 | −0.04082205 | |
| $a$ | 2.6375927 | $\Omega$ | 65.62046 | | −0.07341808 | −0.87491127 | |
| $e$ | 0.1949820 | $i$ | 14.23410 | | +0.21548527 | −0.48255967 | |
| $P$ | 4.28 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 699 | 1.2+ | 0.4+ | 2003 01 05 | 704 | 0.6− | 1.2+ | 2004 06 14 | 704 | 0.2− | 0.4− |
| 1998 12 17 | 699 | 0.6+ | 0.4+ | 2003 01 05 | 704 | 0.6− | 0.7+ | 2004 06 14 | 704 | 1.0+ | 1.0+ |
| 1998 12 17 | 699 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.1− | 1.1+ | 2004 06 14 | 704 | 1.0− | 0.4− |
| 1998 12 21 | 704 | 1.7+ | 1.2− | 2004 03 19 | 704 | 0.7+ | 0.1+ | 2004 06 14 | 704 | 0.2− | 0.3− |
| 1998 12 21 | 704 | 0.3− | 1.0+ | 2004 03 19 | 704 | 1.0+ | 0.2− | 2004 06 14 | 704 | 0.0 | 0.3− |
| 1998 12 21 | 704 | (1.2− | 2.6−) | 2004 03 19 | 704 | 1.1+ | 0.5+ | 2004 06 16 | 704 | 0.0 | 0.4+ |
| 1998 12 21 | 704 | (3.8− | 0.0 ) | 2004 03 19 | 704 | 0.9+ | 0.1− | 2004 06 16 | 704 | 0.2− | 0.2+ |
| 1999 01 14 | 704 | 0.8+ | 0.6− | 2004 03 28 | 704 | 1.5+ | 0.0 | 2004 06 16 | 704 | 0.6+ | 0.1+ |
| 1999 01 14 | 704 | 1.0+ | 0.5− | 2004 03 28 | 704 | 0.8+ | 0.5+ | 2004 06 16 | 704 | 0.6+ | 0.3− |
| 1999 01 14 | 704 | 0.8− | 1.0− | 2004 03 28 | 704 | 0.2− | 0.6+ | 2004 06 16 | 704 | 0.2− | 0.4+ |
| 1999 01 14 | 704 | 1.0+ | 0.5− | 2004 03 28 | 704 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 1999 01 14 | 704 | 0.4− | 0.8− | 2004 03 28 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 1.5− |
| 1999 02 11 | 704 | 0.1− | 1.5− | 2004 04 19 | 704 | 0.6+ | 0.8− | 2006 10 16 | 703 | 0.4− | 0.3− |
| 1999 02 11 | 704 | 1.0− | 1.4+ | 2004 04 19 | 704 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.3+ | 0.8− |
| 1999 02 11 | 704 | 1.2− | 1.3+ | 2004 04 19 | 704 | 0.3− | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 1999 02 11 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 704 | 0.5+ | 0.6− | 2006 10 18 | 691 | 0.3+ | 0.1+ |
| 1999 02 11 | 704 | 0.6− | 0.4− | 2004 04 22 | 704 | 0.1− | 0.7− | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2004 04 22 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 703 | 1.0+ | 0.1+ |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.8− | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2004 04 25 | 704 | 0.3+ | 0.5− | 2006 10 20 | 703 | 0.2− | 0.4+ |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2004 04 25 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 703 | 0.5− | 0.5− |
| 2002 12 07 | 704 | 0.3− | 0.2− | 2004 04 25 | 704 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 12 07 | 704 | 1.3− | 0.6− | 2004 04 25 | 704 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.4− | 0.5+ |
| 2002 12 07 | 704 | 0.4− | 0.8− | 2004 04 25 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 12 07 | 704 | 0.3− | 0.0 | 2004 05 10 | 644 | 0.5− | 0.5+ | 2006 11 02 | 703 | 0.7+ | 0.1− |
| 2002 12 07 | 704 | 0.1+ | 0.2+ | 2004 05 10 | 644 | 0.4− | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.1− |
| 2002 12 07 | 704 | 0.4− | 0.9− | 2004 05 10 | 644 | 0.3− | 0.4+ | 2006 11 02 | 703 | (0.6+ | 1.7−) |
| 2002 12 07 | 704 | (1.9− | 1.4−) | 2004 05 15 | 704 | 0.0 | 0.2+ | 2006 11 02 | 703 | 1.2− | 0.7+ |
| 2002 12 07 | 704 | 0.5− | 0.1− | 2004 05 15 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2002 12 07 | 704 | 0.0 | 0.5+ | 2004 05 15 | 704 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.4+ | 0.2− | 2004 05 15 | 704 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 12 10 | 704 | 0.1+ | 0.4− | 2004 05 15 | 704 | 0.4+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 12 10 | 704 | 0.5− | 0.5+ | 2004 05 16 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.7+ | 1.5− | 2004 05 16 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 1.1+ | 2004 05 16 | 704 | 0.0 | 0.7+ | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2002 12 11 | 704 | 0.5+ | 0.3− | 2004 05 19 | 704 | 1.1− | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.5− |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2004 05 19 | 704 | 1.0− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 0.5− | 0.1+ | 2004 05 19 | 704 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.4− | 0.2+ | 2004 05 19 | 704 | 0.9− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2002 12 14 | 704 | 0.5− | 0.5+ | 2004 05 19 | 704 | (0.4+ | 2.0+) | 2006 11 20 | 704 | 0.6+ | 0.7− |
| 2002 12 14 | 704 | 0.2+ | 0.1+ | 2004 05 19 | 704 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.1+ |
| 2002 12 14 | 704 | 1.2− | 0.4− | 2004 05 19 | 704 | 0.6− | 0.3− | 2006 11 20 | 704 | 0.9+ | 0.4+ |
| 2002 12 14 | 704 | 0.0 | 0.4− | 2004 05 19 | 704 | 0.3+ | 0.8+ | 2006 11 29 | 704 | 0.0 | 0.9+ |
| 2002 12 14 | 704 | 0.0 | 0.3− | 2004 05 19 | 704 | 0.4− | 0.5− | 2006 11 29 | 704 | 0.6+ | 0.5+ |
| 2002 12 14 | 704 | 0.5+ | 0.2+ | 2004 05 22 | 704 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.4+ | 1.9+ |
| 2002 12 14 | 704 | 1.0− | 0.0 | 2004 05 22 | 704 | 0.1− | 1.0− | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2003 01 05 | 704 | 0.4− | 0.8+ | 2004 05 22 | 704 | 0.2− | 0.0 | | | | |
| 2003 01 05 | 704 | 1.3+ | 0.1− | 2004 05 22 | 704 | 0.4− | 0.3+ | | | | |

**(143128)∗ 2002 XU$_{33}$ = 2004 FG$_{23}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61653)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.72170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23281631 | $\omega$ | 145.02774 | | +0.82997445 | −0.55776322 | |
| $a$ | 2.6169401 | $\Omega$ | 248.87480 | | +0.51016399 | +0.76377310 | |
| $e$ | 0.0719269 | $i$ | 0.40097 | | +0.22555513 | +0.32488590 | |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.3+ | 0.2+ | 2002 12 10 | 704 | 0.8+ | 0.4+ | 2006 10 17 | 104 | 0.6− | 0.7+ |
| 2000 04 05 | 704 | 0.2+ | 0.1− | 2002 12 10 | 704 | 1.2+ | 0.1+ | 2006 10 17 | 104 | 0.0 | 0.6+ |
| 2000 04 05 | 704 | 1.8+ | 1.9+ | 2002 12 10 | 704 | 0.9+ | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2000 04 05 | 704 | 0.9+ | 0.9+ | 2002 12 10 | 704 | 0.6+ | 0.4− | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2000 04 26 | 691 | 0.1+ | 0.1+ | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2000 04 26 | 691 | 0.2− | 0.2+ | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2000 04 26 | 691 | 0.0 | 0.2− | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2000 05 02 | 691 | 0.6− | 0.2− | 2004 03 18 | 704 | 0.6+ | 0.6− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2000 05 02 | 691 | 1.1− | 0.5− | 2004 03 18 | 704 | 0.3+ | 0.6− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2000 05 02 | 691 | 0.6− | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 2001 07 13 | 644 | 0.7+ | 0.4+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2001 07 13 | 644 | 0.7+ | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2001 07 13 | 644 | 0.6+ | 0.7+ | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.4+ | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 11 24 | 644 | 0.4+ | 0.1− | 2004 03 27 | 704 | 0.9+ | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.2+ |
| 2002 11 24 | 644 | 0.5+ | 0.1− | 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.4− | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2004 03 27 | 704 | 1.3+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.7+ |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 2002 12 08 | 049 | 0.2− | 1.2− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2002 12 08 | 049 | 0.2− | 1.1− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.3− | 0.1+ |
| 2002 12 08 | 049 | (0.3− | 2.6−) | 2006 10 12 | 691 | 0.3− | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2002 12 09 | 291 | 0.2+ | 0.3− | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2002 12 09 | 291 | 0.6− | 0.8− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.9+ |
| 2002 12 09 | 291 | 0.5− | 0.3− | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.5+ |
| 2002 12 10 | 704 | 0.7+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 1.5+ | 0.4− |
| 2002 12 10 | 704 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2002 12 10 | 704 | 0.3− | 0.6− | 2006 10 17 | 104 | 0.1+ | 0.8+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2002 12 10 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 104 | 0.4+ | 0.4+ | 2006 11 22 | G96 | 0.3+ | 0.6− |
| 2002 12 10 | 704 | (1.9+ | 0.3−) | 2006 10 17 | 104 | (2.9+ | 1.0+) | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 12 10 | 704 | 0.7+ | 1.0+ | 2006 10 17 | 104 | 0.2− | 0.6+ | | | | |

**(143129)∗ 2002 XA$_{34}$ = 2000 FG$_1$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41323)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.12240 | | (2000.0) | | | |
| $n$ | 0.23720093 | $\omega$ | 267.20215 | | +0.52978210 | +0.83583880 |
| $a$ | 2.5845908 | $\Omega$ | 36.00335 | | −0.64786288 | +0.50830813 |
| $e$ | 0.0753358 | $i$ | 14.16890 | | −0.54736150 | +0.20735559 |
| $P$ | 4.16 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 0.5+ | 0.6− | 2002 12 11 | 644 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.2− |
| 1992 03 25 | 691 | 0.4+ | 0.4− | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1992 04 23 | 691 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.5− | 0.0 | 2006 11 14 | 703 | 0.9+ | 0.2+ |
| 1992 04 23 | 691 | 0.4− | 0.3+ | 2004 01 30 | 704 | 1.2− | 1.4− | 2006 11 14 | 703 | 0.1+ | 1.2− |
| 1992 04 23 | 691 | 0.4− | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.0 |
| 2000 03 26 | 699 | 1.0+ | 0.7− | 2004 02 15 | 704 | 0.6+ | 0.6− | 2006 11 14 | 703 | 0.2+ | 0.5+ |
| 2000 03 26 | 699 | 0.2− | 0.8+ | 2004 02 15 | 704 | 0.3− | 0.6− | 2006 11 16 | 704 | (0.2− | 2.3+) |
| 2000 03 26 | 704 | 0.4+ | 0.9+ | 2004 02 15 | 704 | 0.3− | 0.1− | 2006 11 16 | 704 | (0.5− | 2.1+) |
| 2000 03 26 | 704 | 0.1− | 0.1+ | 2004 03 25 | 704 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 2000 03 26 | 699 | 0.0 | 0.6− | 2004 03 25 | 704 | 0.1− | 0.7+ | 2006 11 16 | 704 | (0.3+ | 2.1+) |
| 2000 03 26 | 699 | 1.0+ | 1.5+ | 2004 03 25 | 704 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2000 03 26 | 704 | 0.5+ | 0.2+ | 2004 03 25 | 704 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2000 03 27 | 704 | 0.2+ | 0.2+ | 2004 03 25 | 704 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2000 03 27 | 704 | 0.5− | 0.4− | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2000 03 27 | 704 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2002 10 04 | 704 | 0.2− | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.8+ |
| 2002 10 04 | 704 | 0.5− | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2002 10 04 | 704 | 0.7+ | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2002 11 08 | 704 | (0.9− | 1.8−) | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 1.2+ |
| 2002 11 08 | 704 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2002 11 08 | 704 | 1.0− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.1− |
| 2002 11 15 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3− | 0.2− |
| 2002 11 15 | 644 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.8− | 0.1+ |
| 2002 11 15 | 644 | 1.3+ | 0.8− | 2006 10 20 | 695 | 0.0 | 0.1− | 2006 11 20 | 704 | (0.6− | 2.0−) |
| 2002 12 05 | 704 | 1.0+ | 0.1+ | 2006 10 20 | 695 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.7+ | 1.1+ |
| 2002 12 05 | 704 | 1.0− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2002 12 05 | 704 | 1.2− | 0.5+ | 2006 10 20 | 695 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2002 12 05 | 704 | 0.4− | 0.9+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.1+ | 1.2+ |
| 2002 12 09 | 699 | 0.1− | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2002 12 09 | 699 | 0.6− | 0.6− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 1.0− |
| 2002 12 09 | 699 | 0.5− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.5− | 1.0− |
| 2002 12 09 | 699 | 1.2+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.8+ | 0.5− |
| 2002 12 11 | 644 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.1− | 0.1− |
| 2002 12 11 | 644 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.4− |

**(143130)∗ 2002 XF$_{34}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.28674 | | (2000.0) | | | |
| $n$ | 0.22031081 | $\omega$ | 337.15512 | | +0.79700891 | −0.60237198 |
| $a$ | 2.7150563 | $\Omega$ | 59.95847 | | +0.56166199 | +0.71251535 |
| $e$ | 0.0814644 | $i$ | 2.90504 | | +0.22206442 | +0.35981923 |
| $P$ | 4.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.6− | 0.1− | 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1995 02 25 | 691 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.1− | 1.4+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2000 04 10 | 695 | 0.0 | 0.3+ | 2004 03 12 | 644 | 0.5+ | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 2000 04 10 | 695 | 0.2− | 0.4+ | 2004 03 12 | 644 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.7+ | 0.4− |
| 2000 04 27 | 691 | 0.1− | 0.1+ | 2004 03 12 | 644 | 0.2+ | 0.6+ | 2006 10 15 | 703 | 0.2− | 0.4− |
| 2000 04 27 | 691 | 0.3+ | 0.3− | 2004 03 20 | 691 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.1+ |
| 2000 04 27 | 691 | 0.3+ | 0.1+ | 2004 03 20 | 691 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 03 20 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 1.3− | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | (0.7− | 1.6−) |
| 2002 12 05 | 704 | (0.1+ | 1.7−) | 2004 03 29 | 691 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 0.9+ | 1.2− | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.4− |
| 2002 12 06 | 695 | 0.3− | 0.1+ | 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 12 06 | 695 | 0.2− | 0.1+ | 2004 04 25 | 691 | 0.4− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 2002 12 09 | 333 | 0.9− | 0.1− | 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2002 12 09 | 333 | 0.1− | 0.3− | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 12 10 | 704 | 0.4+ | 0.1+ | 2006 09 06 | 644 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.9− | 0.2+ |
| 2002 12 10 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.3− | 0.2− |
| 2002 12 10 | 704 | 1.0− | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2002 12 11 | 704 | 1.1+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.7+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 0.2− | 1.1− | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2002 12 31 | 704 | 0.5− | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− |

**(143131)∗ 2002 XE$_{35}$**

Discovered 2002 Dec. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.75535 | | (2000.0) | | | |
| $n$ | 0.18603657 | $\omega$ | 193.40261 | | +0.69620815 | +0.69973775 |
| $a$ | 3.0390453 | $\Omega$ | 121.00102 | | −0.64017373 | +0.70618584 |
| $e$ | 0.0482083 | $i$ | 10.77115 | | −0.32476424 | +0.10802144 |
| $P$ | 5.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.0 | 0.5+ | 2003 01 29 | 644 | 0.5− | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.8+ |
| 2001 10 23 | 644 | 0.1− | 0.7+ | 2003 01 31 | 291 | 0.2− | 0.2+ | 2006 09 26 | 703 | (1.7− | 0.6+) |
| 2001 10 23 | 644 | 0.0 | 1.0+ | 2003 01 31 | 291 | 0.1− | 0.5+ | 2006 09 26 | 703 | 1.1+ | 1.5+ |
| 2001 11 04 | 209 | 0.0 | 0.2+ | 2003 01 31 | 291 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.9+ |
| 2001 11 04 | 209 | 0.5+ | 0.8+ | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.4+ | 0.2+ |
| 2001 11 04 | 209 | 0.4+ | 0.8+ | 2003 02 01 | 645 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.6+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 03 22 | 699 | 0.2+ | 0.7− | 2006 10 10 | 644 | 0.7− | 0.4+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 03 22 | 699 | 1.4− | 1.0− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2004 03 22 | 699 | 1.5− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2004 03 22 | 699 | 1.2+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 12 07 | 291 | 1.0− | 0.0 | 2004 03 23 | 704 | 1.2+ | 0.8+ | 2006 10 21 | 703 | 0.4− | 0.6+ |
| 2002 12 07 | 291 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.7+ | 0.2− | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2002 12 07 | 291 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 703 | 0.5+ | 0.7+ |
| 2002 12 09 | 291 | 0.1+ | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.6− |
| 2002 12 09 | 291 | 0.5+ | 0.7+ | 2004 04 15 | 644 | 0.1− | 0.4+ | 2006 10 28 | 703 | 1.7− | 0.4+ |
| 2002 12 09 | 291 | 0.2+ | 0.2+ | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.8+ | 0.2− |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2004 04 15 | 644 | 0.0 | 0.3+ | 2006 10 28 | 703 | 1.2− | 0.0 |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2004 04 24 | 291 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.8+ |
| 2003 01 29 | 644 | 0.2+ | 0.3+ | 2004 04 24 | 291 | 0.2+ | 0.4+ | | | | |
| 2003 01 29 | 644 | 0.2− | 0.1+ | 2004 04 24 | 291 | 0.0 | 0.6+ | | | | |

**(143132)∗ 2002 XN$_{35}$ = 2005 MY$_{22}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85778)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 102.54762 | | (2000.0) | | | |
| $n$ | 0.26611121 | $\omega$ | 48.21697 | | +0.90135302 | +0.42810805 |
| $a$ | 2.3938335 | $\Omega$ | 286.34098 | | −0.41483329 | +0.81002147 |
| $e$ | 0.2161888 | $i$ | 3.91206 | | −0.12440287 | +0.40073521 |
| $P$ | 3.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 28 | 691 | 0.5− | 0.2+ | 2005 07 07 | 699 | 0.7+ | 0.1+ | 2005 11 01 | 704 | 0.2− | 0.5− |
| 1995 11 28 | 691 | 0.0 | 0.4− | 2005 07 07 | 699 | 0.5+ | 0.9+ | 2005 11 01 | 704 | 0.2− | 0.0 |
| 1995 11 28 | 691 | 0.1+ | 0.2− | 2005 07 27 | 608 | 0.3+ | 1.0+ | 2005 11 01 | 704 | 0.4− | 0.3+ |
| 1998 11 20 | 699 | 0.1− | 0.2+ | 2005 07 27 | 608 | 0.1+ | 1.0+ | 2005 11 01 | 704 | 0.6+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 20 | 699 | 0.4− | 1.5+ | 2005 07 27 | 608 | 0.3+ | 0.7+ | 2005 11 01 | 703 | 0.3+ | 1.1+ | | |
| 1998 11 20 | 699 | 0.4+ | 0.4− | 2005 07 30 | 644 | 0.0 | 0.3− | 2005 11 01 | 703 | 0.9− | 0.4+ | | |
| 1998 12 11 | 699 | 0.2+ | 1.1+ | 2005 07 30 | 644 | 0.0 | 0.1− | 2005 11 01 | 703 | 1.1+ | 0.1+ | | |
| 1998 12 11 | 699 | 0.1+ | 0.7+ | 2005 07 30 | 644 | 0.1+ | 0.2− | 2005 11 01 | 703 | 0.8+ | 0.7+ | | |
| 1998 12 11 | 699 | 0.4− | 1.1+ | 2005 07 30 | A50 | 0.2− | 0.1− | 2005 11 13 | 703 | 0.3+ | 0.6− | | |
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2005 07 30 | A50 | 0.4− | 0.6+ | 2005 11 13 | 703 | 0.6− | 0.2+ | | |
| 2002 12 05 | 704 | 0.4− | 0.6+ | 2005 07 30 | A50 | 0.1+ | 1.1+ | 2005 11 13 | 703 | 0.9− | 0.8− | | |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2005 07 30 | A50 | 0.1− | 0.7+ | 2005 11 13 | 703 | 1.0+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.3− | 0.9+ | 2005 08 06 | 644 | 0.0 | 0.3− | 2005 11 13 | 703 | 0.0 | 0.6+ | | |
| 2002 12 05 | 704 | 0.9− | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.4− | 2005 11 13 | 703 | 0.1+ | 0.0 | | |
| 2002 12 06 | 213 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.3− | 2005 11 13 | 703 | (1.7− | 0.2−) | | |
| 2002 12 07 | 213 | 1.0− | 0.4+ | 2005 08 16 | E12 | 0.0 | 0.5− | 2005 11 13 | 703 | 0.5− | 0.2+ | | |
| 2002 12 07 | 213 | 0.1− | 0.2+ | 2005 08 16 | E12 | 0.0 | 0.6− | 2005 12 02 | 704 | (0.8− | 2.4+) | | |
| 2002 12 07 | 213 | 0.2+ | 0.2+ | 2005 08 16 | E12 | 0.2− | 0.3− | 2005 12 02 | 704 | (0.1+ | 1.5+) | | |
| 2002 12 07 | 213 | 0.3− | 0.4+ | 2005 08 16 | E12 | 0.1− | 0.3− | 2005 12 02 | 704 | 1.1− | 0.9+ | | |
| 2002 12 10 | 704 | 0.4+ | 0.2+ | 2005 08 24 | 644 | 0.2− | 0.1− | 2005 12 02 | 704 | (2.0+ | 2.2+) | | |
| 2002 12 10 | 704 | 0.8+ | 0.1+ | 2005 08 24 | 644 | 0.1− | 0.2− | 2005 12 21 | 703 | 1.3+ | 0.0 | | |
| 2002 12 10 | 704 | 1.1+ | 0.2− | 2005 08 24 | 644 | 0.1− | 0.0 | 2005 12 21 | 703 | 1.4− | 0.3− | | |
| 2004 03 28 | 691 | 0.4+ | 0.8+ | 2005 08 24 | 644 | 0.2− | 0.2− | 2005 12 21 | 703 | 0.5− | 0.4+ | | |
| 2004 03 28 | 691 | 0.2+ | 0.8+ | 2005 08 24 | 644 | 0.1− | 0.1− | 2005 12 21 | 703 | 0.1+ | 0.1− | | |
| 2004 03 28 | 691 | 0.6+ | 0.6+ | 2005 08 24 | 644 | 0.1− | 0.2− | 2005 12 25 | 703 | 0.3+ | 0.2− | | |
| 2005 05 13 | 703 | 0.3+ | 0.0 | 2005 08 27 | 699 | 0.0 | 0.2+ | 2005 12 25 | 703 | 0.6+ | 0.5− | | |
| 2005 05 13 | 703 | 0.4− | 0.4− | 2005 08 27 | 699 | 0.1+ | 0.2+ | 2005 12 25 | 703 | 0.4+ | 1.0− | | |
| 2005 05 13 | 703 | 1.0− | 0.5− | 2005 08 27 | 699 | 0.1+ | 0.2+ | 2005 12 25 | 703 | (0.0 | 1.6+) | | |
| 2005 05 13 | 703 | (0.3− | 1.9+) | 2005 08 27 | 699 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2005 06 23 | 644 | 0.1+ | 0.4− | 2005 08 29 | 446 | 0.0 | 0.5− | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 2005 06 23 | 644 | 0.3− | 0.2+ | 2005 08 29 | 446 | 0.3− | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.2− | | |
| 2005 06 23 | 644 | 0.1− | 0.0 | 2005 08 29 | 446 | 0.9− | 0.6− | 2006 09 28 | G96 | 0.4+ | 0.0 | | |
| 2005 06 30 | 703 | 0.6− | 0.1+ | 2005 09 01 | 608 | 0.4− | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.2+ | | |
| 2005 06 30 | 703 | 1.0− | 0.1+ | 2005 09 01 | 608 | 0.5− | 0.7− | 2006 10 04 | G96 | 0.2− | 0.0 | | |
| 2005 06 30 | 703 | 1.0− | 0.1+ | 2005 09 01 | 608 | 0.5− | 0.5− | 2006 10 04 | G96 | 0.0 | 0.6+ | | |
| 2005 06 30 | 703 | (1.8− | 0.7−) | 2005 09 17 | 644 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.3− | | |
| 2005 07 01 | 699 | 0.5− | 1.3+ | 2005 09 17 | 644 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.1− | | |
| 2005 07 01 | 699 | 0.0 | 0.2+ | 2005 09 17 | 644 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.3− | | |
| 2005 07 01 | 699 | 0.1+ | 0.7+ | 2005 10 08 | 704 | (0.4− | 2.0+) | 2006 11 01 | G96 | 0.4+ | 0.3− | | |
| 2005 07 01 | 699 | 0.3− | 0.6+ | 2005 10 08 | 704 | 0.7+ | 0.1− | 2006 11 01 | G96 | 0.5− | 0.1− | | |
| 2005 07 03 | 704 | 0.7+ | 0.9+ | 2005 10 08 | 704 | 1.4+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2005 07 03 | 704 | 0.5+ | 0.9+ | 2005 10 26 | 704 | 0.4− | 0.7+ | 2006 11 15 | G96 | 0.5− | 0.2+ | | |
| 2005 07 03 | 704 | 1.0+ | 0.0 | 2005 10 26 | 704 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.0 | | |
| 2005 07 03 | 704 | 0.8+ | 0.8+ | 2005 10 26 | 704 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.0 | | |
| 2005 07 07 | 699 | 0.2− | 0.3+ | 2005 10 26 | 704 | 0.3− | 0.7+ | | | | | | |
| 2005 07 07 | 699 | 0.1− | 0.3+ | 2005 10 26 | 704 | 0.3− | 0.9+ | | | | | | |

**(143133)∗ 2002 XB$_{36}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.48516 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23722565 | $\omega$ | 337.68751 | | +0.00130385 | −0.99917994 | |
| $a$ | 2.5844112 | $\Omega$ | 112.21853 | | +0.92395671 | −0.01427552 | |
| $e$ | 0.1214381 | $i$ | 2.50548 | | +0.38249482 | +0.03789004 | |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 688 | 0.0 | 0.2+ | 2003 01 08 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 2000 05 01 | 688 | 0.1− | 0.1+ | 2003 01 08 | 704 | 0.5− | 0.4+ | 2006 11 12 | G96 | 0.5+ | 0.3− | | |
| 2000 05 01 | 688 | 0.2+ | 0.0 | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 2002 10 29 | 291 | 0.3− | 0.0 | 2004 03 31 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.0 | | |
| 2002 10 29 | 291 | 0.3− | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.1− | | |
| 2002 10 29 | 291 | 0.2+ | 0.0 | 2004 04 16 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.1− | | |
| 2002 11 14 | 704 | 0.2+ | 0.0 | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.6+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.3− | 0.7+ | 2004 04 16 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.9+ | | |
| 2002 11 14 | 704 | 0.5+ | 0.8+ | 2004 04 19 | 704 | 0.5+ | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.7+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2004 04 19 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 1.2− | | |
| 2002 12 05 | 704 | 0.3+ | 0.3− | 2004 04 19 | 704 | 0.7− | 0.4− | 2006 11 17 | 703 | 1.2− | 0.6− | | |
| 2002 12 05 | 704 | 0.7+ | 0.5− | 2004 04 19 | 704 | 0.8+ | 0.6+ | 2006 11 17 | 703 | 0.1+ | 1.0− | | |
| 2002 12 05 | 704 | 0.6− | 0.1− | 2004 05 23 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.4− | | |
| 2002 12 05 | 704 | 0.3− | 0.3− | 2004 05 23 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.6+ | 1.1+ | | |
| 2002 12 07 | 132 | (4.9− | 0.9−) | 2004 05 23 | 691 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.1− | 0.1+ | | |
| 2002 12 07 | 132 | (3.2− | 1.1−) | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.8− | 0.3+ | | |
| 2002 12 07 | 132 | (4.1− | 0.0 ) | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.5− | 0.1− | | |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3− | 1.1+ | | |
| 2002 12 31 | 704 | 0.5− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 28 | 704 | 1.0− | 0.5+ | | |
| 2002 12 31 | 704 | (1.0+ | 1.6−) | 2006 11 02 | 703 | 0.6+ | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.2+ | | |
| 2003 01 04 | 704 | 0.3+ | 1.0− | 2006 11 02 | 703 | 0.4− | 0.6− | 2006 11 28 | 704 | 0.3+ | 0.3− | | |
| 2003 01 04 | 704 | 0.1+ | 0.8− | 2006 11 02 | 703 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 0.5+ | 1.0− | | |
| 2003 01 04 | 704 | 0.4+ | 0.2− | 2006 11 02 | 703 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.6− | 1.9+ | | |
| 2003 01 04 | 704 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | | | | | | |
| 2003 01 08 | 704 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1− | | | | | | |

**(143134)∗ 2002 XS$_{37}$**

Discovered 2002 Dec. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.39288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23948913 | $\omega$ | 118.06158 | | +0.90310893 | +0.24848375 | |
| $a$ | 2.5681015 | $\Omega$ | 229.90077 | | −0.29418635 | +0.95213094 | |
| $e$ | 0.1996073 | $i$ | 27.24771 | | +0.31280770 | +0.17805198 | |
| $P$ | 4.12 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 704 | (2.5− | 0.0 ) | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.1− | | |
| 2001 05 29 | 704 | 1.2− | 1.0+ | 2005 06 05 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.7− | 0.0 | | |
| 2001 05 29 | 704 | 1.1− | 0.5+ | 2005 06 05 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | |
| 2001 07 17 | 644 | 0.7− | 0.2+ | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.2+ | | |
| 2001 07 17 | 644 | 0.4− | 0.1+ | 2005 06 11 | 691 | 0.2+ | 0.0 | 2006 11 16 | H07 | 0.3− | 0.5− | | |
| 2001 07 17 | 644 | 0.6− | 0.1+ | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 11 16 | H07 | 0.0 | 0.2− | | |
| 2002 10 02 | 704 | (2.8− | 2.1+) | 2005 06 15 | 691 | 0.1+ | 0.2+ | 2006 11 16 | H07 | 0.2− | 0.1+ | | |
| 2002 10 02 | 704 | (2.4− | 3.4+) | 2005 06 15 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 02 | 704 | (2.8− | 2.9+) | 2005 06 15 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.2+ | | |
| 2002 10 02 | 704 | (2.0− | 3.2+) | 2005 06 29 | 644 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.5+ | | |
| 2002 11 17 | 644 | 0.0 | 1.1− | 2005 06 29 | 644 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.6− | | |
| 2002 11 17 | 644 | 0.3+ | 0.9+ | 2005 06 29 | 644 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.6− | | |
| 2002 11 17 | 644 | 0.5+ | 0.2− | 2005 06 29 | 644 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.2− | | |
| 2002 12 03 | 608 | 0.8+ | 0.1+ | 2005 06 29 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1+ | | |
| 2002 12 03 | 608 | 0.3+ | 0.6− | 2005 06 29 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1− | | |
| 2002 12 08 | 644 | 0.1− | 0.5+ | 2006 10 21 | 691 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.1− | | |
| 2002 12 08 | 644 | 0.0 | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 18 | 704 | 1.2− | 0.8+ | | |
| 2002 12 08 | 644 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.7− | 0.2+ | | |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.6− | 0.6+ | | |
| 2002 12 10 | 644 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.2+ | | |
| 2002 12 13 | 644 | 0.6+ | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.3+ | 1.3+ | | |
| 2002 12 13 | 644 | 0.6+ | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.1− | | |
| 2002 12 13 | 644 | 0.7+ | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 1.2+ | 0.5+ | | |
| 2005 05 16 | G96 | 0.5− | 0.0 | 2006 11 10 | 644 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.4+ | 1.3+ | | |
| 2005 05 16 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.4+ | | |
| 2005 05 16 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.7+ | 2006 11 28 | 704 | 0.4− | 0.3+ | | |
| 2005 05 16 | G96 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.1+ | | |
| 2005 05 28 | 599 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.5+ | 2006 11 28 | 704 | 1.2− | 2.8+ | | |
| 2005 05 28 | 599 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.2− | | |
| 2005 05 28 | 599 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.2− | | | | | | |

**(143135)∗ 2002 XY$_{37}$ = 2001 QR$_{270}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41326)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.80069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19734615 | $\omega$ | 72.40365 | | +0.87249864 | −0.47289218 | |
| $a$ | 2.9217986 | $\Omega$ | 315.60468 | | +0.35448173 | +0.78580598 | |
| $e$ | 0.1090031 | $i$ | 10.12266 | | +0.33628683 | +0.39859998 | |
| $P$ | 4.99 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.2− | 0.3+ | 2002 12 06 | 704 | 0.3+ | 0.8− | 2006 08 13 | 644 | 0.3− | 0.2+ | |
| 2001 08 19 | 704 | 0.4+ | 0.6+ | 2002 12 06 | 704 | 0.8− | 0.5+ | 2006 08 13 | 644 | 0.0 | 0.3− | |
| 2001 08 19 | 704 | 0.2+ | 1.0+ | 2002 12 06 | 704 | 0.5+ | 0.5− | 2006 08 14 | 644 | 0.3− | 0.1− | |
| 2001 08 24 | 608 | 0.8− | 0.8+ | 2002 12 10 | 704 | 0.8+ | 0.2− | 2006 08 14 | 644 | 0.1+ | 0.1− | |
| 2001 08 24 | 608 | 0.7− | 0.3+ | 2002 12 10 | 704 | 0.6− | 0.8+ | 2006 08 14 | 644 | 0.1− | 0.2+ | |
| 2001 08 24 | 608 | 0.5− | 1.0+ | 2002 12 10 | 704 | 0.8− | 0.3+ | 2006 08 15 | 644 | 0.4+ | 0.4+ | |
| 2002 10 31 | 704 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.6− | 0.2− | 2006 08 15 | 644 | 0.3+ | 0.1− | |
| 2002 10 31 | 704 | 0.6− | 0.5+ | 2002 12 10 | 704 | 0.1− | 0.1− | 2006 08 15 | 644 | 0.2− | 0.1+ | |
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2002 12 12 | 644 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 | |
| 2002 10 31 | 704 | 0.1+ | 0.1− | 2002 12 12 | 644 | 0.4+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 | |
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2002 12 12 | 644 | 0.6+ | 0.1− | 2006 08 17 | 644 | 0.1− | 0.1+ | |
| 2002 11 07 | 704 | 0.5+ | 0.5+ | 2004 02 22 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− | |
| 2002 11 07 | 704 | 0.1− | 0.5+ | 2004 02 22 | 691 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2+ | |
| 2002 11 07 | 704 | (0.2− | 2.3+) | 2004 02 22 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.4+ | |
| 2002 11 15 | 704 | 0.4+ | 0.4+ | 2004 03 12 | 644 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.1+ | |
| 2002 11 15 | 704 | 0.2− | 0.6+ | 2004 03 12 | 644 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | |
| 2002 11 15 | 704 | 0.2− | 0.1− | 2004 03 12 | 644 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.1+ | |
| 2002 11 15 | 704 | 0.3+ | 0.3− | 2004 03 21 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.5+ | |
| 2002 11 15 | 704 | 0.6− | 0.8− | 2004 03 21 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− | |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2004 03 21 | 691 | 0.1− | 0.0 | | | | | |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2006 08 13 | 644 | 0.2+ | 0.3− | | | | | |

**(143136)∗ 2002 XC$_{38}$ = 2000 GF$_{160}$ = 2004 DG$_{37}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61655)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.85147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23598524 | $\omega$ | 74.65311 | | +0.08673621 | −0.99549494 | |
| $a$ | 2.5934596 | $\Omega$ | 10.59464 | | +0.81535256 | +0.04884721 | |
| $e$ | 0.0040017 | $i$ | 12.02239 | | +0.57243082 | +0.08126355 | |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.3+ | 0.5+ | 2004 02 23 | 704 | 0.1− | 0.8− | 2004 04 15 | 644 | 0.3+ | 0.3+ | |
| 2000 04 07 | 704 | 0.8+ | 0.3+ | 2004 03 15 | 333 | 0.3+ | 0.3+ | 2004 04 15 | 644 | 0.4+ | 0.3+ | |
| 2000 04 07 | 704 | 0.5+ | 1.2+ | 2004 03 15 | 333 | 0.2− | 0.4+ | 2004 04 15 | 699 | 0.3+ | 0.6− | |
| 2000 04 07 | 704 | 0.3+ | 0.5+ | 2004 03 15 | 333 | 0.2− | 0.4+ | 2004 04 15 | 699 | 1.0− | 0.6− | |
| 2000 04 12 | 608 | 0.1+ | 0.8− | 2004 03 16 | 333 | 0.4− | 0.6+ | 2004 04 15 | 699 | 1.3− | 0.1− | |
| 2000 04 12 | 608 | 0.0 | 1.0− | 2004 03 16 | 704 | (1.6+ | 0.1−) | 2004 04 15 | 699 | (0.7− | 1.5−) | |
| 2000 04 12 | 608 | 0.2+ | 1.3− | 2004 03 16 | 333 | 0.8− | 0.3− | 2004 04 16 | 704 | 0.7+ | 0.3+ | |
| 2001 07 20 | 644 | 1.1− | 0.5+ | 2004 03 16 | 333 | 0.3− | 0.5+ | 2004 04 16 | 704 | (0.6+ | 1.6+) | |
| 2001 07 20 | 644 | 0.2− | 0.8+ | 2004 03 16 | 704 | 0.5− | 0.4+ | 2004 04 16 | 704 | 0.1+ | 0.8+ | |
| 2001 07 20 | 644 | 0.6− | 1.0+ | 2004 03 16 | 704 | 0.1+ | 0.4+ | 2004 04 25 | 691 | 0.1+ | 0.0 | |
| 2001 08 27 | 644 | 0.7− | 0.2+ | 2004 03 16 | 704 | 0.5+ | 1.0+ | 2004 04 25 | 691 | 0.1+ | 0.1+ | |
| 2001 08 27 | 644 | 0.1− | 0.7+ | 2004 03 17 | 333 | 0.6− | 0.5− | 2004 04 25 | 691 | 0.3− | 0.2+ | |
| 2001 08 27 | 644 | 0.2− | 0.7+ | 2004 03 17 | 333 | 0.6+ | 0.1− | 2005 07 04 | E12 | 0.5+ | 1.2+ | |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2004 03 17 | 333 | 0.3+ | 0.0 | 2005 07 04 | E12 | 0.2− | 0.5+ | |
| 2002 12 06 | 704 | 0.6− | 0.4− | 2004 03 19 | 704 | 0.8+ | 0.0 | 2005 07 04 | E12 | 0.8− | 0.6+ | |
| 2002 12 06 | 704 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.7+ | 0.5− | 2005 07 04 | E12 | (0.6− | 1.6+) | |
| 2002 12 06 | 704 | 0.3+ | 0.6− | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 09 18 | 703 | (2.6− | 0.2−) | |
| 2002 12 10 | 704 | 0.3+ | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 1.3+ | |
| 2002 12 10 | 704 | 0.5− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.9− | 0.5+ | |
| 2002 12 10 | 704 | 0.5+ | 0.2+ | 2004 03 22 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | (0.1− | 1.6+) | |
| 2002 12 10 | 704 | 0.7− | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.5− | 2006 10 20 | A50 | 0.1+ | 0.3− | |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.1− | 0.7+ | 2006 10 20 | A50 | 0.0 | 0.2− | |
| 2002 12 11 | 704 | (1.8− | 1.3+) | 2004 03 22 | 704 | 0.6+ | 0.0 | 2006 10 26 | 240 | 0.6+ | 0.7+ | |
| 2002 12 11 | 704 | 0.1− | 0.7− | 2004 03 22 | 704 | 0.9+ | 0.2+ | 2006 10 26 | 240 | 0.9+ | 0.2+ | |
| 2002 12 11 | 704 | 0.8− | 0.6+ | 2004 03 28 | 704 | 0.9− | 0.9− | 2006 10 26 | 240 | 0.9+ | 1.2+ | |
| 2002 12 11 | 704 | 0.1− | 0.7− | 2004 03 28 | 704 | 0.9− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.2+ | |
| 2002 12 12 | 644 | 0.2− | 1.2+ | 2004 03 28 | 704 | 0.5− | 0.5+ | 2006 11 08 | 644 | 0.6− | 0.1+ | |
| 2002 12 12 | 644 | 0.2− | 0.9+ | 2004 03 28 | 704 | 0.5− | 1.0+ | 2006 11 08 | 644 | 0.2− | 0.0 | |
| 2002 12 12 | 644 | 0.0 | 1.0+ | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 11 17 | 644 | 0.3− | 0.2− | |
| 2004 02 19 | 704 | 0.5− | 0.5− | 2004 03 29 | 691 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.4− | 0.2+ | |
| 2004 02 19 | 704 | (0.1+ | 1.6−) | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 11 17 | 644 | 0.2− | 0.0 | |
| 2004 02 19 | 704 | 0.2− | 0.2− | 2004 04 12 | 699 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.9− | 0.5− | |
| 2004 02 19 | 704 | 0.6+ | 0.4− | 2004 04 12 | 699 | 0.9+ | 0.0 | 2006 11 22 | 703 | 0.9+ | 0.4+ | |
| 2004 02 23 | 704 | 0.7+ | 1.1+ | 2004 04 12 | 699 | 0.8+ | 0.4+ | 2006 11 22 | 703 | 0.8− | 0.8+ | |
| 2004 02 23 | 704 | 0.7+ | 0.1− | 2004 04 12 | 699 | (1.7+ | 0.6+) | 2006 11 22 | 703 | 0.9+ | 0.4+ | |
| 2004 02 23 | 704 | 1.4+ | 0.1+ | 2004 04 15 | 644 | 0.3+ | 0.4+ | | | | | |

**(143137)∗ 2002 XK$_{38}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.84847 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23917348 | $\omega$ | 14.14564 | | +0.73263145 | −0.68025248 | |
| $a$ | 2.5703605 | $\Omega$ | 28.75777 | | +0.61982054 | +0.65313706 | |
| $e$ | 0.1068980 | $i$ | 2.68442 | | +0.28120037 | +0.33266882 | |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.3+ | 0.5− | 2004 03 30 | 291 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.5− | |
| 2000 04 26 | 691 | 0.0 | 0.5− | 2004 04 23 | 691 | 0.2− | 0.5− | 2006 11 11 | 703 | 1.2− | 0.5− | |
| 2000 04 26 | 691 | 0.1− | 0.2− | 2004 04 23 | 691 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.3+ | |
| 2000 05 02 | 691 | 0.1− | 0.3+ | 2004 04 23 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.1− | |
| 2000 05 02 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.7+ | 0.2+ | |
| 2000 05 02 | 691 | 0.2− | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.6+ | 0.6+ | |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 15 | 704 | 0.4+ | 1.4+ | |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.4− | 0.2+ | |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.2+ | |
| 2002 12 06 | 704 | 0.0 | 0.8+ | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.2+ | |
| 2002 12 06 | 704 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.9+ | 0.9− | |
| 2002 12 10 | 704 | 0.3+ | 1.4− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.8− | 1.2+ | |
| 2002 12 10 | 704 | (0.3+ | 1.8+) | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.5− | |
| 2002 12 10 | 704 | 0.7− | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.8+ | 0.6+ | |
| 2002 12 10 | 704 | 0.5− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1− | |
| 2002 12 11 | 704 | 0.9− | 0.8+ | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 | |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.0 | |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.5+ | 0.1− | 2006 11 20 | 703 | 1.2− | 0.3+ | |
| 2002 12 11 | 704 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 20 | 703 | 0.4+ | 1.2− | |
| 2002 12 14 | 704 | (2.1+ | 1.2−) | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 20 | 703 | 0.2+ | 0.4+ | |
| 2002 12 14 | 704 | (2.5+ | 0.4+) | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 20 | 703 | 0.1− | 0.4− | |
| 2002 12 14 | 704 | 0.8+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | (1.5− | 1.6−) | |
| 2002 12 14 | 704 | (1.7+ | 0.6−) | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | (1.0− | 1.8−) | |
| 2002 12 14 | 704 | 1.4+ | 0.5+ | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | (1.6− | 0.4−) | |
| 2004 03 29 | 691 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | 1.3− | 0.1− | |
| 2004 03 29 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.7− | |
| 2004 03 29 | 691 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.7− | |
| 2004 03 30 | 291 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.6− | 0.8− | |
| 2004 03 30 | 291 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.1− | 0.4+ | 2006 12 01 | G96 | 0.2− | 0.5− | |

**(143138)∗ 2002 XU$_{38}$ = 2004 GY$_{28}$**

Discovered 2002 Dec. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61655)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 191.43464 | | (2000.0) | | | |
| $n$ | 0.22686898 | $\omega$ | 163.35061 | | −0.68995793 | +0.58257090 |
| $a$ | 2.6624776 | $\Omega$ | 60.38845 | | −0.70760930 | −0.41781905 |
| $e$ | 0.0940499 | $i$ | 29.61398 | | −0.15247012 | −0.69716454 |
| $P$ | 4.34 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 704 | (0.1− | 2.6−) | 2004 04 24 | 608 | 0.1+ | 0.4− | 2004 06 16 | 704 | 0.6+ | 0.4+ |
| 1999 02 09 | 704 | 0.3− | 0.7− | 2004 04 24 | 608 | 0.6+ | 0.2− | 2005 09 05 | E12 | 0.2− | 0.8+ |
| 1999 02 09 | 704 | 0.7+ | 1.3− | 2004 04 26 | 699 | 0.9− | 0.5+ | 2005 09 05 | E12 | 0.2− | 0.6+ |
| 1999 02 09 | 704 | (2.7+ | 3.2−) | 2004 04 26 | 699 | 0.3− | 0.1+ | 2005 09 05 | E12 | 0.4− | 0.0 |
| 2002 12 07 | 704 | 0.0 | 0.5+ | 2004 04 26 | 699 | 0.3− | 0.3− | 2005 09 05 | E12 | 0.5− | 0.3+ |
| 2002 12 07 | 704 | 0.1− | 0.0 | 2004 04 26 | 699 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2002 12 07 | 704 | 0.4+ | 0.1+ | 2004 04 26 | 704 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 12 07 | 704 | 0.4+ | 0.8+ | 2004 04 26 | 704 | 0.7+ | 0.6− | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2002 12 07 | 704 | 0.4− | 0.2− | 2004 04 26 | 704 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 12 10 | 704 | 0.3− | 1.2− | 2004 04 26 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2002 12 10 | 704 | 0.2− | 0.5+ | 2004 05 08 | 703 | (1.7+ | 1.3+) | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2002 12 10 | 704 | 0.4+ | 0.2− | 2004 05 08 | 703 | 0.5+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2002 12 10 | 704 | 0.6− | 0.1+ | 2004 05 08 | 703 | 1.5+ | 1.3+ | 2006 11 15 | 703 | 0.5+ | 0.3− |
| 2002 12 11 | 704 | (1.8+ | 0.2+) | 2004 05 08 | 703 | 0.6+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.6− | 2004 05 13 | 704 | 0.5+ | 0.5+ | 2006 11 15 | 703 | 0.3− | 1.2+ |
| 2002 12 11 | 704 | 1.2− | 0.4− | 2004 05 13 | 704 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 1.0+ |
| 2003 01 11 | 704 | (2.1+ | 1.6−) | 2004 05 13 | 704 | 0.0 | 0.5+ | 2006 11 16 | 704 | (1.9− | 0.3−) |
| 2003 01 11 | 704 | 0.3− | 0.1− | 2004 05 13 | 704 | 0.8+ | 0.4+ | 2006 11 16 | 704 | 1.1− | 0.5+ |
| 2003 01 11 | 704 | 0.8− | 1.0+ | 2004 05 13 | 704 | 0.1− | 1.1+ | 2006 11 16 | 704 | 0.3− | 0.2− |
| 2004 03 29 | 704 | 0.2+ | 0.3− | 2004 05 21 | 683 | (0.4+ | 2.3−) | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2004 03 29 | 704 | 0.8+ | 0.1− | 2004 05 21 | 683 | (0.5+ | 1.6−) | 2006 11 16 | 704 | 0.5+ | 0.4− |
| 2004 03 29 | 704 | 0.2− | 0.5− | 2004 05 21 | 683 | 0.1− | 0.7− | 2006 11 16 | 704 | 0.7− | 0.1+ |
| 2004 03 29 | 704 | 0.0 | 0.5− | 2004 05 23 | 704 | 0.4+ | 1.4+ | 2006 11 16 | 704 | 0.5− | 0.1− |
| 2004 03 29 | 704 | 0.2− | 0.1+ | 2004 05 23 | 704 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.2+ |
| 2004 04 15 | 704 | 0.5+ | 1.1− | 2004 05 23 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.3+ |
| 2004 04 15 | 704 | 0.8− | 0.1+ | 2004 05 23 | 704 | 0.4− | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2004 04 15 | 704 | 0.7+ | 0.6+ | 2004 05 23 | 704 | 0.6+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2004 04 15 | 704 | 0.6+ | 0.7+ | 2004 05 24 | 683 | 0.6+ | 0.7− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2004 04 15 | 704 | 0.1− | 0.2+ | 2004 05 24 | 683 | 0.1− | 0.7+ | 2006 11 18 | 691 | 0.6+ | 0.6+ |
| 2004 04 15 | 644 | 0.2− | 0.2− | 2004 05 24 | 683 | (1.1− | 2.4+) | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2004 04 15 | 644 | 0.1+ | 0.1− | 2004 06 07 | 703 | 0.7− | 0.6− | 2006 11 22 | 691 | 0.3− | 0.1+ |
| 2004 04 15 | 644 | 0.2− | 0.0 | 2004 06 07 | 703 | 0.9− | 0.8+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2004 04 16 | 699 | 0.4− | 0.2+ | 2004 06 07 | 703 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.2+ | 1.0− |
| 2004 04 16 | 699 | 1.0− | 0.7− | 2004 06 07 | 703 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.6− | 1.0− |
| 2004 04 16 | 699 | 1.4− | 0.7+ | 2004 06 09 | 699 | 0.4+ | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2004 04 16 | 699 | 0.0 | 0.1− | 2004 06 09 | 699 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2004 04 21 | 703 | 0.2+ | 0.9− | 2004 06 09 | 699 | 0.5+ | 0.9+ | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2004 04 21 | 703 | 0.7− | 0.2− | 2004 06 09 | 699 | 0.4+ | 0.4− | 2006 11 27 | 704 | 0.9+ | 0.4+ |
| 2004 04 21 | 703 | 0.1+ | 0.4+ | 2004 06 16 | 704 | 0.5+ | 0.3− | 2006 11 27 | 704 | 0.2+ | 0.0 |
| 2004 04 21 | 703 | 0.4+ | 0.2+ | 2004 06 16 | 704 | 1.3+ | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.2− |
| 2004 04 24 | 608 | 0.3+ | 0.5− | 2004 06 16 | 704 | 0.5+ | 0.3+ | | | | |

**(143139)∗ 2002 XC$_{39}$ = 2004 FC$_{44}$**

Discovered 2002 Dec. 7 by P. Pravec and P. Kušnirák at Ondřejov.

Id. G. V. Williams (*MPO* 65396)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.11766 | | (2000.0) | | | |
| $n$ | 0.21470558 | $\omega$ | 73.21317 | | +0.95269861 | +0.29660880 |
| $a$ | 2.7621070 | $\Omega$ | 269.49473 | | −0.29792765 | +0.86840779 |
| $e$ | 0.0393045 | $i$ | 3.79856 | | −0.06003722 | +0.39735516 |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 02 | 691 | 0.1− | 0.7+ | 2004 02 14 | 644 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 1992 10 02 | 691 | 0.2− | 0.5+ | 2004 02 14 | 644 | 0.3+ | 1.0+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 1992 10 02 | 691 | 0.2+ | 0.1− | 2004 02 14 | 644 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 07 25 | 608 | 0.3− | 0.4− | 2004 02 23 | 704 | 0.7+ | 1.0+ | 2006 10 17 | 703 | (1.4− | 3.0−) |
| 2001 07 25 | 608 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2001 07 25 | 608 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.4+ | 0.9+ | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2001 08 27 | 699 | 0.2+ | 0.0 | 2004 03 16 | 704 | 0.6− | 1.1+ | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2001 08 27 | 699 | 0.8− | 0.9− | 2004 03 16 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2001 08 27 | 699 | 0.5− | 0.4+ | 2004 03 16 | 704 | 1.1+ | 0.5+ | 2006 10 19 | 644 | 0.4+ | 0.3+ |
| 2001 08 27 | 699 | 0.1+ | 0.2− | 2004 03 20 | 704 | (0.4− | 2.5+) | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 09 12 | 704 | (1.7− | 1.8+) | 2004 03 20 | 704 | 0.7+ | 1.0+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 1.0− | 0.7+ | 2004 03 20 | 704 | 0.4+ | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.4− | 0.0 | 2004 03 20 | 704 | 1.4+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | (0.2+ | 1.9+) | 2004 03 20 | 704 | 1.1+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.8+ | 1.0+ | 2006 09 14 | 703 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.6− | 0.9+ | 2006 09 14 | 703 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.3+ |
| 2001 09 20 | 704 | 0.3+ | 1.5+ | 2006 09 14 | 703 | 0.8− | 1.2+ | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2001 09 20 | 704 | 0.9− | 0.7+ | 2006 09 14 | 703 | 0.1− | 1.2+ | 2006 10 20 | 644 | 0.6+ | 0.4+ |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 12 06 | 704 | 0.3− | 0.6− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2002 12 06 | 704 | 0.9− | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.5− | 2006 11 20 | G96 | 0.6+ | 0.5− |
| 2002 12 07 | 557 | 0.5− | 0.9+ | 2006 09 18 | 699 | 0.9− | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2002 12 07 | 557 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 1.2− | 0.2+ | 2006 11 20 | G96 | 0.3− | 0.9− |
| 2002 12 07 | 557 | 0.8− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.8+ | 0.8− |
| 2002 12 11 | 557 | 0.6+ | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.4+ | | | | |
| 2002 12 11 | 557 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ | | | | |

**(143140)∗ 2002 XT$_{39}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.13901 | | (2000.0) | | | |
| $n$ | 0.27192365 | $\omega$ | 44.90358 | | +0.55632764 | +0.82429885 |
| $a$ | 2.3595982 | $\Omega$ | 259.17318 | | −0.78926771 | +0.48464051 |
| $e$ | 0.1196686 | $i$ | 6.13848 | | −0.25991545 | +0.29266874 |
| $P$ | 3.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.0 | 0.2+ | 2003 01 04 | 704 | 0.1− | 0.3− | 2005 09 11 | 699 | 0.8− | 0.8+ |
| 1998 10 12 | 699 | 1.0+ | 0.8− | 2004 02 14 | 644 | 0.4+ | 0.6+ | 2005 09 11 | 699 | 0.0 | 0.0 |
| 1998 10 12 | 699 | 0.2− | 0.1− | 2004 02 14 | 644 | 0.5+ | 0.5+ | 2005 09 11 | 699 | 0.5− | 0.3+ |
| 2001 06 16 | 704 | 0.4+ | 0.0 | 2004 02 14 | 644 | 0.6+ | 0.4+ | 2005 09 23 | 644 | 0.2+ | 0.2− |
| 2001 06 16 | 704 | 0.1− | 0.6− | 2005 07 08 | 699 | 0.2+ | 0.4+ | 2005 09 23 | 644 | 0.2+ | 0.0 |
| 2001 06 16 | 704 | 0.8− | 0.9+ | 2005 07 08 | 699 | 0.8+ | 0.5+ | 2005 09 23 | 644 | 0.0 | 0.2− |
| 2001 06 16 | 704 | 0.2− | 0.1− | 2005 07 08 | 699 | 0.4− | 0.8+ | 2005 09 30 | 699 | 0.4+ | 0.7+ |
| 2002 11 24 | 644 | 0.2− | 0.3+ | 2005 07 08 | 699 | 0.1+ | 0.2+ | 2005 09 30 | 699 | 0.3+ | 0.0 |
| 2002 11 24 | 644 | 0.3− | 0.3+ | 2005 08 13 | 608 | 0.2− | 0.8− | 2005 09 30 | 699 | (1.7− | 0.1−) |
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2005 08 13 | 608 | 0.1+ | 0.6− | 2005 09 30 | 699 | 0.7− | 0.7+ |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2005 08 13 | 608 | 0.1− | 0.6− | 2005 10 30 | 699 | 0.9+ | 0.9− |
| 2002 12 05 | 704 | 0.5− | 0.8+ | 2005 08 25 | 599 | 0.2+ | 0.1+ | 2005 10 30 | 699 | 0.8+ | 0.7+ |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2005 08 25 | 599 | 0.2+ | 0.1+ | 2005 10 30 | 699 | 1.5− | 0.6+ |
| 2002 12 05 | 704 | 0.7− | 0.9+ | 2005 08 25 | 599 | 0.1+ | 0.2+ | 2005 10 30 | 704 | 0.8− | 0.7+ |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2005 08 25 | 599 | 0.3+ | 0.1+ | 2005 10 30 | 704 | 0.1− | 0.9+ |
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2005 08 26 | 644 | 0.0 | 0.1− | 2005 10 30 | 699 | 0.1+ | 0.1+ |
| 2002 12 10 | 704 | 0.5− | 0.6+ | 2005 08 26 | 644 | 0.1+ | 0.1− | 2005 10 30 | 704 | 0.2+ | 0.5+ |
| 2002 12 10 | 704 | 0.2− | 0.7+ | 2005 08 26 | 644 | 0.1+ | 0.0 | 2005 10 30 | 704 | 0.6− | 0.2− |
| 2002 12 10 | 704 | 0.2+ | 0.3− | 2005 08 27 | 699 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.3− |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2005 08 27 | 699 | 0.6+ | 0.0 | 2006 10 29 | G96 | 0.2− | 0.4− |
| 2002 12 11 | 333 | 0.1− | 0.1+ | 2005 08 27 | 699 | 0.8− | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.6− |
| 2002 12 11 | 333 | 0.1− | 0.0 | 2005 08 27 | 699 | 0.4− | 0.7+ | 2006 10 29 | G96 | 0.6+ | 0.3− |
| 2002 12 11 | 333 | 0.6− | 0.2+ | 2005 08 30 | 644 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.9− | 0.1− |
| 2002 12 31 | 704 | 0.5+ | 0.1− | 2005 08 30 | 644 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.2− | 2005 08 30 | 644 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2002 12 31 | 704 | 0.7+ | 0.1− | 2005 08 31 | 704 | 0.7+ | 0.9− | 2006 11 01 | G96 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.8− | 2005 08 31 | 704 | 0.8+ | 1.2− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 1.2+ | 0.6− | 2005 08 31 | 704 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2003 01 04 | 704 | 0.9+ | 0.4+ | 2005 09 06 | 704 | 0.4− | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2003 01 04 | 704 | 0.3− | 0.4+ | 2005 09 06 | 704 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.7− |
| 2003 01 04 | 704 | 0.4+ | 0.8− | 2005 09 06 | 704 | 0.3− | 0.3− | | | | |
| 2003 01 04 | 704 | 0.3− | 0.6+ | 2005 09 11 | 699 | 0.2− | 0.3− | | | | |

**(143141)∗ 2002 XY$_{40}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.66858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23268090 | $\omega$ | 347.49831 | | +0.98003484 | −0.17586339 | |
| $a$ | 2.6179553 | $\Omega$ | 23.25903 | | +0.19657883 | +0.78711440 | |
| $e$ | 0.1738679 | $i$ | 13.58531 | | +0.02980731 | +0.59120470 | |
| $P$ | 4.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.6+ | 1.3− | 2006 10 19 | 704 | 0.1+ | 0.5− | |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 704 | 0.9+ | 0.1− | |
| 2002 10 31 | 704 | 0.8− | 0.3+ | 2006 09 15 | 683 | 0.0 | 0.0 | 2006 10 19 | 704 | 0.5+ | 0.1+ | |
| 2002 10 31 | 704 | 0.9− | 0.9− | 2006 09 15 | 683 | 0.2− | 0.5+ | 2006 10 19 | 704 | 0.2+ | 0.1− | |
| 2002 10 31 | 704 | 0.5− | 0.9− | 2006 09 15 | 683 | 0.1+ | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.2− | |
| 2002 10 31 | 704 | 0.8− | 0.9− | 2006 09 15 | 644 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1− | |
| 2002 10 31 | 704 | 0.4− | 1.0− | 2006 09 15 | 644 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− | |
| 2002 11 07 | 704 | 0.5+ | 1.1+ | 2006 09 15 | 644 | 0.5− | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.0 | |
| 2002 11 07 | 704 | 0.3− | 0.7+ | 2006 09 16 | 683 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.2+ | 0.2+ | |
| 2002 11 07 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 683 | 0.3− | 0.5− | 2006 10 29 | 704 | 0.1− | 0.1− | |
| 2002 11 07 | 704 | 0.8− | 0.8+ | 2006 09 16 | 683 | (1.6− | 0.1−) | 2006 10 29 | 704 | 0.4− | 0.4+ | |
| 2002 11 15 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.5+ | 0.4+ | 2006 10 29 | 704 | 0.0 | 0.2+ | |
| 2002 11 15 | 704 | 0.4+ | 0.6− | 2006 09 17 | 704 | 0.5+ | 0.9+ | 2006 11 07 | 644 | 0.4− | 0.2− | |
| 2002 11 15 | 704 | 0.8+ | 1.0− | 2006 09 17 | 704 | 0.2− | 1.4+ | 2006 11 07 | 644 | 0.2− | 0.2− | |
| 2002 11 15 | 704 | 0.1− | 1.2− | 2006 09 17 | 704 | 0.7+ | 0.9+ | 2006 11 07 | 644 | 0.4− | 0.1− | |
| 2002 12 06 | 704 | 0.6− | 0.3+ | 2006 09 17 | 704 | 1.1− | 0.9+ | 2006 11 12 | 106 | 0.0 | 0.0 | |
| 2002 12 06 | 704 | 0.5− | 0.2− | 2006 09 17 | 683 | 0.2− | 0.1− | 2006 11 12 | 106 | 0.8− | 0.8− | |
| 2002 12 06 | 704 | 0.3− | 0.2− | 2006 09 17 | 683 | 0.3− | 0.4− | 2006 11 12 | 106 | 0.2− | 0.7− | |
| 2002 12 06 | 704 | 0.4− | 0.2− | 2006 09 17 | 683 | 0.4− | 1.0+ | 2006 11 12 | 106 | 0.3− | 0.2− | |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 683 | 0.6− | 0.0 | 2006 11 14 | 703 | 0.9+ | 0.9− | |
| 2002 12 10 | 704 | 0.7+ | 0.4− | 2006 09 18 | 683 | 0.5− | 1.2− | 2006 11 14 | 703 | 0.4+ | 0.2− | |
| 2002 12 10 | 704 | 0.1+ | 0.4− | 2006 09 18 | 683 | 0.7− | 0.0 | 2006 11 14 | 703 | 0.0 | 0.3− | |
| 2002 12 10 | 704 | 0.7+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.1− | 0.3− | |
| 2002 12 10 | 704 | 0.5+ | 0.4− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.3− | 1.0− | |
| 2002 12 10 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.1+ | 1.0− | |
| 2002 12 11 | 704 | 1.2+ | 0.1+ | 2006 09 20 | 704 | 1.0+ | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.4− | |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.6+ | 1.1+ | 2006 11 16 | 704 | (1.2+ | 2.4+) | |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.3− | 0.3+ | 2006 11 16 | 704 | (0.6− | 3.7+) | |
| 2002 12 11 | 704 | 0.4+ | 0.2− | 2006 09 20 | 704 | 1.2+ | 1.2+ | 2006 11 16 | 704 | (1.1− | 3.9+) | |
| 2002 12 11 | 704 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.7− | 1.4+ | |
| 2002 12 15 | 704 | 0.9+ | 0.8+ | 2006 09 20 | 699 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 1.1− | 0.5+ | |
| 2002 12 15 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.2− | 1.0+ | |
| 2002 12 15 | 704 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.4− | 0.3+ | 2006 11 18 | 704 | (1.7− | 1.1+) | |
| 2004 03 15 | 704 | (1.7+ | 1.3+) | 2006 09 20 | 699 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 1.4+ | |
| 2004 03 15 | 704 | (2.1+ | 0.5+) | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.1− | 0.2+ | |
| 2004 03 15 | 704 | 1.1+ | 0.8+ | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 11 19 | 704 | 1.0− | 0.1+ | |
| 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.1− | 1.0+ | |
| 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.7− | 0.5+ | |
| 2004 03 17 | 691 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.2+ | |
| 2004 03 23 | 704 | 0.3− | 0.9+ | 2006 09 27 | 704 | 0.7+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.9+ | |
| 2004 03 23 | 704 | 0.9+ | 1.1+ | 2006 09 27 | 704 | 1.1+ | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.6+ | |
| 2004 03 23 | 704 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.8+ | 2006 11 22 | 704 | 0.8− | 0.1− | |
| 2004 03 23 | 704 | 0.6− | 0.6+ | 2006 09 27 | 704 | 0.0 | 1.0+ | 2006 11 22 | 704 | 0.5+ | 0.7+ | |
| 2004 03 23 | 704 | (0.9− | 1.6+) | 2006 09 29 | 704 | (0.1+ | 1.7−) | 2006 11 22 | 704 | 0.3+ | 0.2+ | |
| 2004 03 27 | 691 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.1− | |
| 2004 03 27 | 691 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.8+ | 0.5− | 2006 11 25 | G96 | 0.2+ | 0.6− | |
| 2004 03 27 | 691 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.1− | 0.6− | 2006 11 25 | G96 | 0.1+ | 0.6− | |
| 2006 08 25 | 704 | 1.0− | 0.1− | 2006 09 29 | 704 | 0.7− | 0.3− | 2006 11 25 | G96 | 0.0 | 0.6− | |
| 2006 08 25 | 704 | (0.2− | 1.9+) | 2006 10 03 | 704 | 0.3+ | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.7− | |
| 2006 08 25 | 704 | (0.1+ | 2.7+) | 2006 10 03 | 704 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.1− | |
| 2006 08 28 | 703 | 0.6− | 0.2− | 2006 10 03 | 704 | 0.4− | 1.0+ | 2006 11 29 | 704 | 0.4+ | 0.2+ | |
| 2006 08 28 | 703 | 0.1− | 0.0 | 2006 10 03 | 704 | 0.6− | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.2+ | |
| 2006 08 28 | 703 | 0.7− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.0 | 0.7− | |
| 2006 08 28 | 703 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.0 | |
| 2006 08 30 | 699 | 0.1+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.1− | | | | | |
| 2006 08 30 | 699 | 0.9+ | 0.2+ | 2006 10 19 | 704 | 0.5+ | 0.2+ | | | | | |

**(143142)∗ 2002 XF$_{41}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.89046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22990195 | $\omega$ | 26.54991 | | +0.98949546 | +0.10124993 | |
| $a$ | 2.6390095 | $\Omega$ | 327.12873 | | −0.14110283 | +0.83168351 | |
| $e$ | 0.1798875 | $i$ | 10.95946 | | +0.03144400 | +0.54594047 | |
| $P$ | 4.29 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 699 | 1.0+ | 1.6− | 2004 02 18 | 704 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.5+ | 0.7+ | |
| 1998 12 17 | 699 | 0.4+ | 1.1− | 2004 02 18 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.8+ | 0.6+ | |
| 1998 12 17 | 699 | 0.7+ | 1.0− | 2004 02 18 | 704 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.9+ | 0.5+ | |
| 1998 12 17 | 704 | 0.6− | 0.3− | 2004 02 18 | 704 | 0.5− | 0.3+ | 2006 09 30 | 704 | 0.8+ | 0.8+ | |
| 1998 12 17 | 704 | 0.6− | 1.4− | 2004 02 18 | 704 | 0.6+ | 1.1+ | 2006 09 30 | 704 | 0.2+ | 1.0+ | |
| 1998 12 17 | 704 | 1.4− | 1.0+ | 2004 02 23 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.0 | |
| 1998 12 17 | 704 | (0.9− | 3.2−) | 2004 02 23 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.2+ | |
| 1998 12 17 | 704 | (6.0− | 1.3−) | 2004 02 23 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.3+ | |
| 2002 10 30 | 704 | 0.6− | 0.0 | 2004 03 15 | 704 | (0.5+ | 2.6+) | 2006 10 19 | 703 | 0.4− | 0.4+ | |
| 2002 10 30 | 704 | 0.5− | 0.4− | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.6+ | |
| 2002 10 30 | 704 | 1.3− | 0.8− | 2004 03 15 | 704 | 0.2+ | 0.9− | 2006 10 19 | 703 | 0.5− | 0.5+ | |
| 2002 10 30 | 704 | 1.1− | 1.0− | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.5− | 0.1− | |
| 2002 12 06 | 704 | 0.3+ | 0.4− | 2004 03 16 | 704 | 1.4+ | 1.2+ | 2006 10 19 | 703 | 0.8− | 0.4+ | |
| 2002 12 06 | 704 | 0.0 | 0.5+ | 2004 03 16 | 704 | 1.1+ | 0.8+ | 2006 10 19 | 703 | 0.5− | 0.3+ | |
| 2002 12 06 | 704 | 0.1+ | 0.3− | 2004 03 16 | 704 | 0.8− | 0.1− | 2006 10 19 | 703 | 0.6− | 0.4− | |
| 2002 12 06 | 704 | 0.1− | 0.6− | 2004 03 16 | 704 | 1.0+ | 0.5+ | 2006 10 19 | 703 | 0.8− | 0.6− | |
| 2002 12 06 | 704 | 0.4+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 703 | 1.3+ | 0.2− | |
| 2002 12 10 | 704 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.0 | |
| 2002 12 10 | 704 | 0.4− | 0.3− | 2004 03 18 | 704 | (2.5+ | 0.8+) | 2006 10 19 | 703 | 0.9− | 0.2− | |
| 2002 12 10 | 704 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 10 19 | 703 | 0.3− | 0.4− | |
| 2002 12 10 | 704 | (1.2+ | 1.7−) | 2004 03 18 | 704 | 0.7+ | 0.2− | 2006 10 21 | 704 | 0.0 | 0.6+ | |
| 2002 12 11 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.1+ | 0.7− | 2006 10 21 | 704 | 0.0 | 0.5+ | |
| 2002 12 11 | 704 | 0.1− | 0.2− | 2004 03 20 | 704 | 1.1+ | 1.3+ | 2006 10 21 | 704 | 0.4+ | 0.6+ | |
| 2002 12 11 | 704 | 0.4+ | 0.3+ | 2004 03 20 | 704 | 1.0+ | 0.4+ | 2006 10 21 | 704 | 0.0 | 0.5+ | |
| 2002 12 11 | 704 | 0.8+ | 0.4− | 2004 03 20 | 704 | 0.4− | 0.7+ | 2006 10 21 | 704 | 0.1+ | 0.3+ | |
| 2002 12 15 | 704 | 0.0 | 0.4− | 2005 06 09 | E12 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.1− | |
| 2002 12 15 | 704 | 0.2− | 0.1− | 2005 06 09 | E12 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.0 | |
| 2002 12 15 | 704 | 0.5− | 0.2− | 2005 06 09 | E12 | 0.4+ | 0.4− | 2006 10 22 | 644 | 0.4− | 0.0 | |
| 2002 12 15 | 704 | 0.3− | 0.4− | 2005 06 09 | E12 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.1+ | |
| 2003 01 29 | 644 | 0.6+ | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.3− | 0.1+ | |
| 2003 01 29 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2003 01 29 | 644 | 0.8+ | 0.5+ | 2006 09 17 | 703 | 0.6− | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.2+ | |
| 2003 02 19 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.5+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.0 | |
| 2003 02 19 | 644 | 0.3− | 0.0 | 2006 09 21 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1+ | |
| 2003 02 19 | 644 | 0.1− | 0.3+ | 2006 09 21 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.2− | |
| 2003 11 30 | 691 | 0.0 | 0.6+ | 2006 09 21 | 704 | 0.1− | 1.0+ | 2006 10 27 | 703 | 0.0 | 0.0 | |
| 2003 11 30 | 691 | 0.2+ | 0.2+ | 2006 09 23 | 699 | 1.5+ | 0.0 | 2006 10 27 | 703 | 0.1− | 0.1− | |
| 2003 11 30 | 691 | 0.1+ | 0.5+ | 2006 09 23 | 699 | (3.0+ | 1.6+) | 2006 10 27 | 703 | 0.1− | 0.2+ | |
| 2004 02 12 | 644 | 0.1+ | 0.2− | 2006 09 23 | 699 | 0.7− | 0.4+ | 2006 11 10 | 106 | 0.1+ | 0.6− | |
| 2004 02 12 | 644 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.6+ | 2006 11 10 | 106 | 0.4+ | 0.5− | |
| 2004 02 12 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.3+ | 0.3− | 2006 11 10 | 106 | 0.2+ | 0.7− | |
| 2004 02 14 | 608 | (0.5− | 1.5−) | 2006 09 28 | 703 | 0.3+ | 0.4+ | 2006 11 10 | 106 | 0.6− | 0.4− | |
| 2004 02 14 | 608 | 0.2− | 0.4− | 2006 09 28 | 703 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.1− | 0.0 | |
| 2004 02 14 | 608 | 0.0 | 1.3− | 2006 09 28 | 703 | 0.2+ | 1.3+ | 2006 11 15 | 703 | 0.3+ | 0.7− | |
| 2004 02 16 | 691 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.6+ | 2006 11 15 | 703 | 0.3− | 0.3− | |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.5− | 1.0+ | 2006 11 15 | 703 | 0.5− | 0.4+ | |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.1+ | | | | | |

**(143143)∗ 2002 XH$_{41}$ = 1993 TK$_{24}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. S. Nakano (*MPO* 41327)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.43698 | | (2000.0) | | | |
| $n$ | 0.23137894 | $\omega$ | 284.15486 | | +0.65318420 | +0.74899600 |
| $a$ | 2.6277669 | $\Omega$ | 27.62675 | | −0.56872205 | +0.58219918 |
| $e$ | 0.1659028 | $i$ | 13.86929 | | −0.49990561 | +0.31630539 |
| $P$ | 4.26 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 1.4− | 0.4+ | 2002 12 15 | 704 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 1993 10 09 | 809 | 0.3− | 0.5+ | 2004 01 28 | 703 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1993 10 09 | 809 | 0.3+ | 0.1+ | 2004 01 28 | 703 | 0.1− | 1.4+ | 2006 10 23 | 691 | 0.1+ | 0.7− |
| 1993 10 11 | 809 | 1.2− | 0.9+ | 2004 01 28 | 703 | 1.3− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 1993 10 11 | 809 | (2.3− | 0.4+) | 2004 01 28 | 703 | 1.2+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1993 10 11 | 809 | 1.7− | 0.2− | 2004 02 11 | 644 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1993 10 20 | 809 | 0.1− | 1.4+ | 2004 02 11 | 644 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 1993 10 20 | 809 | 0.3+ | 1.5+ | 2004 02 11 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1993 10 20 | 809 | 0.1− | 0.9+ | 2004 02 15 | 704 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1993 10 22 | 809 | (0.1+ | 5.2−) | 2004 02 15 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 1993 10 22 | 809 | (3.8− | 2.7−) | 2004 02 15 | 644 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 1993 10 22 | 809 | (12.1− | 0.9+) | 2004 02 15 | 704 | 0.9+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2002 10 31 | 704 | (0.5+ | 1.9+) | 2004 02 15 | 644 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 1.3− | 1.1+ | 2004 02 15 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.2− |
| 2002 10 31 | 704 | 1.1− | 0.4− | 2004 03 23 | 704 | 0.2− | 1.2+ | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 1.1− | 0.3+ | 2004 03 23 | 704 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2002 12 06 | 704 | 0.4+ | 0.7+ | 2004 03 23 | 704 | 0.8+ | 1.3+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2002 12 06 | 704 | 0.4− | 0.2− | 2004 03 23 | 704 | 0.5− | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.3− | 2004 03 25 | 704 | 0.5+ | 0.6+ | 2006 11 13 | 644 | 0.3+ | 0.1+ |
| 2002 12 06 | 704 | 0.5− | 0.3+ | 2004 03 25 | 704 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.4− | 0.1− | 2004 03 25 | 704 | 0.7+ | 0.2− | 2006 11 14 | 703 | 0.4+ | 0.8+ |
| 2002 12 10 | 704 | 0.6− | 0.3− | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 11 14 | 703 | 1.1+ | 0.9+ |
| 2002 12 10 | 704 | 0.2− | 0.6− | 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.4+ |
| 2002 12 10 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.7+ | 0.2+ |
| 2002 12 10 | 704 | 0.8+ | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.8+ | 2006 11 16 | 704 | 1.0+ | 0.6+ |
| 2002 12 12 | 704 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.8− |
| 2002 12 12 | 704 | 0.3+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.7+ | 0.1+ |
| 2002 12 12 | 704 | 1.0+ | 0.9+ | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.1− | 0.3+ |
| 2002 12 12 | 704 | 0.9+ | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2002 12 13 | 704 | 0.7+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 22 | 703 | 1.1− | 0.6+ |
| 2002 12 13 | 704 | 0.3− | 0.9− | 2006 10 19 | 703 | 0.4− | 0.5+ | 2006 11 22 | 703 | 0.9− | 0.6+ |
| 2002 12 13 | 704 | (0.1+ | 2.1−) | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 22 | 703 | 0.2+ | 0.4+ |
| 2002 12 13 | 704 | 0.0 | 0.9− | 2006 10 19 | 703 | 0.9− | 0.7− | 2006 11 22 | 703 | 0.5+ | 0.1− |
| 2002 12 13 | 704 | (0.4+ | 1.5−) | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.6− |
| 2002 12 13 | 704 | (2.6+ | 0.7+) | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2002 12 13 | 704 | 0.5+ | 1.2− | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.5− |
| 2002 12 13 | 704 | 0.7+ | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.6− | 2006 11 25 | G96 | 0.5+ | 0.4− |
| 2002 12 15 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.0 | | | | |
| 2002 12 15 | 704 | 0.5+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.0 | | | | |

**(143144)∗ 2002 XU$_{41}$ = 2001 QK$_{34}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 43238)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.05093 | | (2000.0) | | | |
| $n$ | 0.22858826 | $\omega$ | 50.06060 | | +0.96482350 | +0.22906125 |
| $a$ | 2.6491107 | $\Omega$ | 296.34453 | | −0.26282130 | +0.85228702 |
| $e$ | 0.1008999 | $i$ | 8.27790 | | +0.00636999 | +0.47025290 |
| $P$ | 4.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.6+ | 0.5+ | 2002 12 06 | 704 | 0.5+ | 1.1+ | 2006 09 28 | 703 | 0.1− | 0.3+ |
| 1998 12 17 | 704 | 1.0+ | 0.2− | 2002 12 10 | 704 | 0.5− | 0.6+ | 2006 10 19 | 703 | 0.7+ | 0.7− |
| 1998 12 17 | 704 | (0.9+ | 2.1−) | 2002 12 10 | 704 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.4− |
| 1998 12 17 | 704 | 0.5− | 1.5− | 2002 12 10 | 704 | 0.9− | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2001 06 26 | 644 | 0.1+ | 0.4+ | 2002 12 10 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2001 06 26 | 644 | 0.0 | 0.4+ | 2002 12 10 | 704 | 0.1+ | 1.0+ | 2006 10 27 | 703 | 0.5− | 0.1+ |
| 2001 06 26 | 644 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.3− | 0.2− |
| 2001 07 21 | 608 | 0.9− | 0.6+ | 2002 12 11 | 704 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2001 07 21 | 608 | 0.8− | 1.0+ | 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 11 15 | 703 | 1.1+ | 0.9+ |
| 2001 07 21 | 608 | 0.6− | 0.8+ | 2003 01 05 | 704 | 0.6− | 0.6+ | 2006 11 15 | 703 | 0.8+ | 0.1+ |
| 2001 07 22 | 704 | 0.8+ | 0.4− | 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.5+ | 0.9+ |
| 2001 07 22 | 704 | 0.6+ | 0.7+ | 2003 01 05 | 704 | 0.8− | 0.7+ | 2006 11 15 | 703 | 0.7+ | 0.1+ |
| 2001 07 22 | 704 | (2.3− | 2.0+) | 2003 01 05 | 704 | 0.3− | 0.4− | 2006 11 15 | 703 | 0.6− | 1.1+ |
| 2001 08 16 | 704 | 0.7− | 0.6− | 2003 01 05 | 704 | 0.0 | 1.0+ | 2006 11 15 | 703 | 0.2+ | 0.4+ |
| 2001 08 16 | 704 | 0.8− | 0.1+ | 2004 03 17 | 704 | 0.0 | 1.3+ | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2001 08 16 | 704 | 0.7− | 0.4+ | 2004 03 17 | 704 | 0.4− | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 2001 08 19 | 704 | 0.2+ | 0.8− | 2004 03 17 | 704 | 1.2+ | 0.7+ | 2006 11 15 | 703 | 0.1− | 0.4− |
| 2001 08 19 | 704 | 0.2+ | 0.7+ | 2004 03 17 | 704 | 0.2− | 0.7+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2001 08 19 | 704 | 0.0 | 0.8+ | 2004 03 17 | 704 | 1.0+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2001 08 19 | 704 | 0.5+ | 0.4+ | 2004 03 17 | 704 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.1− | 0.7− |
| 2002 12 06 | 704 | 0.1+ | 0.1− | 2004 03 17 | 704 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.2+ | 1.0− |
| 2002 12 06 | 704 | 0.9− | 0.6+ | 2006 09 28 | 703 | 0.7+ | 0.1− | 2006 11 22 | 703 | 0.7− | 0.8− |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.4+ | 2006 11 22 | 703 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.3− | 0.4+ | 2006 11 22 | 703 | 0.2+ | 0.2− |

**(143145)∗ 2002 XC$_{42}$ = 1998 QO$_{90}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41327)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.18058 | | (2000.0) | | | |
| $n$ | 0.27237169 | $\omega$ | 92.39911 | | +0.88339611 | −0.45872886 |
| $a$ | 2.3570099 | $\Omega$ | 294.91971 | | +0.37692338 | +0.81700178 |
| $e$ | 0.1299722 | $i$ | 6.06423 | | +0.27846018 | +0.34939365 |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 704 | 0.7− | 0.6− | 2002 12 10 | 704 | 1.1− | 1.1+ | 2005 07 06 | 691 | 0.1+ | 0.1+ |
| 1998 08 24 | 704 | 0.2+ | 0.5− | 2002 12 11 | 704 | 0.2− | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.1+ |
| 1998 08 24 | 704 | 1.0− | 1.4− | 2002 12 11 | 704 | 0.4− | 0.4+ | 2005 07 09 | 691 | 0.1+ | 0.0 |
| 1998 08 24 | 704 | (2.3− | 0.0 ) | 2002 12 11 | 704 | 0.2− | 0.1+ | 2005 07 09 | 691 | 1.2− | 1.0− |
| 1998 08 27 | 704 | 1.4+ | 1.2+ | 2002 12 11 | 704 | 0.2− | 0.4+ | 2005 07 18 | 644 | 0.1− | 0.2− |
| 1998 08 27 | 704 | 1.8+ | 0.4− | 2002 12 11 | 704 | 0.2− | 0.4+ | 2005 07 18 | 644 | 0.3− | 0.2− |
| 1998 08 27 | 704 | 1.1− | 1.1+ | 2002 12 14 | 704 | 1.3+ | 0.0 | 2005 07 18 | 644 | 0.1− | 0.2− |
| 1998 08 27 | 704 | 0.1− | 1.7− | 2002 12 14 | 704 | 0.7+ | 1.2− | 2005 07 28 | 644 | 0.2+ | 0.1− |
| 1998 08 27 | 704 | 1.4− | 1.7− | 2002 12 14 | 704 | 1.1+ | 0.6− | 2005 07 28 | 644 | 0.1+ | 0.1− |
| 1998 08 27 | 704 | 1.3+ | 0.4+ | 2003 01 05 | 704 | 0.4− | 1.1− | 2005 07 28 | 644 | 0.0 | 0.2− |
| 1998 08 27 | 704 | 0.3− | 1.9+ | 2003 01 05 | 704 | 0.3+ | 0.8− | 2005 09 01 | 691 | 0.0 | 0.1− |
| 1998 08 27 | 704 | (3.2− | 0.4−) | 2003 01 05 | 704 | 0.5− | 0.8− | 2005 09 01 | 691 | 0.2+ | 0.1+ |
| 1998 08 27 | 704 | 2.0− | 1.1+ | 2003 01 05 | 704 | 0.1− | 0.3− | 2005 09 01 | 691 | 0.2+ | 0.2+ |
| 1998 09 18 | 699 | 0.5+ | 0.5+ | 2003 01 05 | 704 | 1.1− | 0.7− | 2005 09 14 | 691 | 0.4+ | 0.1− |
| 1998 09 18 | 699 | 0.3+ | 1.0+ | 2005 06 13 | G96 | 0.7− | 0.5+ | 2005 09 14 | 691 | 0.2+ | 0.0 |
| 1998 09 18 | 699 | 0.6+ | 0.0 | 2005 06 13 | G96 | 0.4− | 0.2+ | 2005 09 14 | 691 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | (0.3− | 1.8+) | 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2002 11 12 | 704 | 0.1+ | 0.2− | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.7+ | 0.4+ | 2005 06 21 | 644 | 0.5− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2002 11 12 | 704 | 0.4+ | 0.3+ | 2005 06 21 | 644 | 0.6+ | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | 1.1+ | 0.2+ | 2005 06 21 | 644 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.8− | 0.3− |
| 2002 11 28 | 599 | 0.9− | 0.1+ | 2005 06 21 | 644 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.5− | 0.3− |
| 2002 11 28 | 599 | 0.1− | 0.3+ | 2005 06 21 | 644 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.4− | 0.1− |
| 2002 11 28 | 599 | 0.2+ | 0.8− | 2005 06 21 | 644 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.9− | 0.0 |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2005 06 29 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.3+ | 2005 06 29 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2005 06 29 | 644 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3+ |
| 2002 12 06 | 704 | 0.4− | 0.4+ | 2005 07 05 | 644 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2002 12 10 | 704 | 0.4+ | 0.0 | 2005 07 05 | 644 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.0 |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2002 12 10 | 704 | 0.0 | 0.8+ | 2005 07 06 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.3− | 0.7+ | 2005 07 06 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.5− |

**(143146)∗ 2002 XL$_{42}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 226.79898 | | (2000.0) | | | |
| $n$ | 0.21403739 | $\omega$ | 117.63854 | | −0.97795143 | −0.10099125 |
| $a$ | 2.7678525 | $\Omega$ | 57.10295 | | −0.00321456 | −0.86790586 |
| $e$ | 0.1686478 | $i$ | 12.57381 | | +0.20880773 | −0.48635398 |
| $P$ | 4.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 0.8+ | 1.1+ | 2004 04 21 | 691 | 0.1+ | 0.0 | 2004 05 19 | 704 | 0.5+ | 0.2+ |
| 1999 02 18 | 704 | 0.6+ | 1.0+ | 2004 04 22 | 704 | 0.0 | 0.1− | 2004 05 19 | 704 | 1.2+ | 0.2+ |
| 1999 02 18 | 704 | (0.4+ | 2.4+) | 2004 04 22 | 704 | 0.5+ | 0.3+ | 2004 05 19 | 704 | 0.8+ | 0.2+ |
| 1999 02 18 | 704 | 0.1+ | 1.0+ | 2004 04 22 | 704 | 0.3− | 0.0 | 2004 05 19 | 704 | 0.4+ | 0.3+ |
| 1999 02 18 | 704 | 0.2− | 1.3+ | 2004 04 22 | 704 | 0.1− | 0.1− | 2004 05 25 | A16 | 0.4+ | 0.4+ |
| 1999 03 21 | 699 | 0.8+ | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.3+ | 2004 05 25 | A16 | 0.6+ | 0.2+ |
| 1999 03 21 | 699 | 0.5+ | 0.4+ | 2004 04 25 | 704 | 0.0 | 1.2+ | 2004 05 25 | A16 | 0.0 | 1.0+ |
| 1999 03 21 | 699 | 0.3− | 0.1− | 2004 04 25 | 704 | 0.5+ | 0.5+ | 2004 06 11 | 704 | 0.5− | 0.1− |
| 2001 10 15 | 644 | 0.5− | 1.3+ | 2004 04 25 | 704 | 0.4+ | 0.5+ | 2004 06 11 | 704 | 0.3+ | 0.7− |
| 2001 10 15 | 644 | (0.8− | 1.7+) | 2004 04 25 | 704 | 0.3− | 0.8+ | 2004 06 11 | 704 | 0.0 | 0.8− |
| 2001 10 15 | 644 | 1.3− | 1.1+ | 2004 04 25 | 704 | 1.2− | 1.1+ | 2004 06 11 | 704 | 0.4− | 0.4− |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2004 04 26 | 699 | 0.1+ | 0.2+ | 2004 06 11 | 704 | 0.8− | 0.1− |
| 2002 12 06 | 704 | 0.7+ | 0.4+ | 2004 04 26 | 699 | 0.9− | 0.3+ | 2004 06 14 | 704 | 0.4+ | 0.7+ |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2004 04 26 | 699 | 0.2+ | 0.8+ | 2004 06 14 | 704 | 0.2+ | 1.1+ |
| 2002 12 10 | 704 | 0.3− | 1.0+ | 2004 04 26 | 699 | 0.6+ | 0.4+ | 2004 06 14 | 704 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.4+ | 0.7+ | 2004 04 28 | 608 | 0.2− | 0.8− | 2004 06 14 | 704 | 0.4+ | 0.0 |
| 2002 12 10 | 704 | (0.5+ | 1.6+) | 2004 04 28 | 608 | 0.3+ | 0.8− | 2004 06 14 | 704 | 0.4− | 0.1+ |
| 2002 12 15 | 704 | 0.1− | 0.1− | 2004 04 28 | 608 | 0.1+ | 0.5− | 2004 06 23 | E12 | 0.2− | 0.4− |
| 2002 12 15 | 704 | 0.1+ | 0.1+ | 2004 04 29 | 704 | 0.4+ | 0.3+ | 2004 06 23 | E12 | 0.1− | 0.2+ |
| 2002 12 15 | 704 | 0.1+ | 0.5− | 2004 04 29 | 704 | 0.3− | 0.3+ | 2004 06 23 | E12 | 0.3− | 0.4+ |
| 2002 12 15 | 704 | 0.3− | 0.6− | 2004 04 29 | 704 | 0.2− | 0.2− | 2004 06 23 | E12 | 0.6− | 0.2− |
| 2003 01 04 | 704 | 0.2+ | 0.1− | 2004 04 29 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | (0.3+ | 2.2+) |
| 2003 01 04 | 704 | 0.7+ | 0.2− | 2004 04 29 | 704 | 0.3− | 0.7+ | 2006 09 30 | 703 | (0.6+ | 2.5+) |
| 2003 01 04 | 704 | 0.3+ | 0.4− | 2004 05 12 | 699 | 0.1+ | 0.4− | 2006 09 30 | 703 | 1.4− | 0.7− |
| 2004 01 23 | 704 | 0.0 | 0.6+ | 2004 05 12 | 699 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.8+ |
| 2004 01 23 | 704 | 1.0− | 1.2+ | 2004 05 12 | 699 | 0.1− | 0.0 | 2006 10 16 | 703 | 1.0− | 1.2+ |
| 2004 01 23 | 704 | 0.3+ | 1.4+ | 2004 05 12 | 699 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2004 03 15 | 291 | 0.1− | 0.1+ | 2004 05 15 | 704 | (0.3− | 2.2+) | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 2004 03 15 | 291 | 0.5+ | 0.4− | 2004 05 15 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | (1.6− | 1.1+) |
| 2004 03 15 | 291 | 0.0 | 0.1− | 2004 05 15 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2004 04 15 | 703 | 0.9− | 0.9+ | 2004 05 15 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2004 04 15 | 703 | 0.6− | 0.8+ | 2004 05 15 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2004 04 15 | 703 | 0.2+ | 0.7+ | 2004 05 15 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2004 04 15 | 703 | 0.4− | 0.1− | 2004 05 15 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.6− | 1.0+ |
| 2004 04 17 | 704 | (1.8+ | 4.9−) | 2004 05 15 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 1.1+ |
| 2004 04 17 | 704 | (1.9+ | 2.6−) | 2004 05 15 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.9+ |
| 2004 04 17 | 704 | 0.7+ | 0.5− | 2004 05 15 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.9− | 0.5+ |
| 2004 04 17 | 704 | (1.3+ | 2.9−) | 2004 05 16 | 704 | (1.5+ | 0.9+) | 2006 10 22 | 703 | 0.9− | 0.5− |
| 2004 04 17 | 704 | 0.3− | 0.1+ | 2004 05 16 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.8− | 0.3+ |
| 2004 04 19 | 704 | 0.2+ | 0.2− | 2004 05 16 | 704 | 0.2+ | 0.1− | 2006 11 13 | 703 | 1.3+ | 0.0 |
| 2004 04 19 | 704 | 0.2+ | 0.1+ | 2004 05 16 | 704 | 0.8+ | 0.2+ | 2006 11 13 | 703 | 0.2− | 1.1+ |
| 2004 04 19 | 704 | 0.4+ | 0.1− | 2004 05 16 | E12 | 0.1− | 0.9+ | 2006 11 13 | 703 | 0.5− | 0.2− |
| 2004 04 19 | 704 | 0.2− | 0.7− | 2004 05 16 | E12 | 0.4− | 1.0+ | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2004 04 19 | 704 | 0.4+ | 0.5− | 2004 05 16 | E12 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.4− | 0.5+ |
| 2004 04 21 | 691 | 0.2+ | 0.1− | 2004 05 16 | E12 | 0.6− | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2004 04 21 | 691 | 0.1+ | 0.0 | 2004 05 19 | 704 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.2− | 1.9+ |

**(143147)∗ 2002 XT$_{42}$ = 2005 ML$_{6}$**

Discovered 2002 Dec. 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 85781)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 44.68174 | | (2000.0) | | | |
| $n$ | 0.24286268 | $\omega$ | 263.18248 | | +0.95351818 | +0.29774959 |
| $a$ | 2.5442641 | $\Omega$ | 79.48724 | | −0.25449530 | +0.87807964 |
| $e$ | 0.1675197 | $i$ | 2.70196 | | −0.16135433 | +0.37459487 |
| $P$ | 4.06 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 608 | 0.2+ | 1.2+ | 2005 06 26 | G96 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2002 10 31 | 608 | 0.1− | 0.8+ | 2005 06 26 | G96 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.5− | 0.8+ |
| 2002 10 31 | 608 | 0.1− | 0.4+ | 2005 06 26 | G96 | 0.5+ | 0.6+ | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2002 11 14 | 704 | 0.1− | 0.3− | 2005 06 26 | G96 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.4− | 0.0 | 2005 06 28 | G96 | 0.0 | 0.8+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.6− | 2005 06 28 | G96 | 0.1− | 0.5+ | 2006 11 19 | 691 | 1.2− | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2005 06 28 | G96 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.5+ | 0.1− | 2005 06 28 | G96 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2002 12 05 | 704 | 0.2+ | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2002 12 05 | 704 | 0.5+ | 0.2− | 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.7− | 0.2+ |
| 2002 12 08 | 291 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.2− | 1.3+ |
| 2002 12 08 | 291 | 0.2+ | 0.5− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 12 08 | 291 | 0.5− | 0.3− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.3− | 0.9− | 2006 09 28 | G96 | 1.3+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.1+ | 0.7+ | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 1.2+ | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.2− | 0.8+ | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.4+ |
| 2002 12 10 | 704 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.6− | 0.1− |
| 2002 12 10 | 704 | 0.9+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.2− | 0.6− |
| 2002 12 10 | 704 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.7− | 0.7− | 2006 11 27 | 703 | 0.2− | 0.1+ |
| 2002 12 10 | 704 | 0.3− | 1.5− | 2006 11 01 | G96 | 0.5+ | 0.5− | 2006 11 27 | 703 | 0.3− | 0.3− |
| 2002 12 10 | 704 | 0.3− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.3+ |
| 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 1.0+ | 0.0 |
| 2004 02 23 | 704 | 0.8+ | 1.0+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.6+ | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.9+ | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2005 06 11 | 703 | 1.3− | 0.8+ | 2006 11 17 | 704 | 0.2+ | 0.5+ | 2006 12 01 | 691 | 0.2− | 0.2− |
| 2005 06 11 | 703 | 0.1+ | 0.5− | 2006 11 17 | 704 | 1.1+ | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2005 06 11 | 703 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.2+ | | | | |
| 2005 06 11 | 703 | 0.6+ | 0.9− | 2006 11 18 | 704 | 0.2+ | 0.7+ | | | | |

**(143148)∗ 2002 XO$_{43}$ = 2005 JK$_{133}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75816)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.59860 | | (2000.0) | | | |
| $n$ | 0.23548969 | $\omega$ | 257.28432 | | +0.85066696 | +0.45748875 |
| $a$ | 2.5970967 | $\Omega$ | 74.98775 | | −0.31435152 | +0.83751657 |
| $e$ | 0.1660088 | $i$ | 15.55299 | | −0.42136546 | +0.29878093 |
| $P$ | 4.19 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.5− | 0.4− | 2004 01 19 | 691 | 0.1+ | 0.2+ | 2005 06 27 | 644 | 0.0 | 0.1+ |
| 2002 11 11 | 704 | 0.6+ | 0.2+ | 2004 01 19 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2002 11 11 | 704 | 0.3− | 0.5− | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2002 11 24 | 644 | 0.6+ | 0.7+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2002 11 24 | 644 | 0.0 | 0.7+ | 2005 05 14 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 1.2− |
| 2002 11 24 | 644 | 0.2+ | 0.5+ | 2005 05 14 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 1.3+ | 0.8− |
| 2002 12 06 | 704 | 0.1− | 0.8+ | 2005 05 14 | 691 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2002 12 06 | 704 | 0.4− | 1.1+ | 2005 05 16 | G96 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 1.0+ |
| 2002 12 06 | 704 | 1.3− | 0.3+ | 2005 05 16 | G96 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2002 12 10 | 644 | 0.2− | 0.1− | 2005 05 16 | G96 | 0.4− | 0.0 | 2006 10 22 | 703 | (0.3+ | 1.7−) |
| 2002 12 10 | 644 | 0.3+ | 0.1− | 2005 05 16 | G96 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.6− |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2005 06 16 | G96 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.7+ |
| 2002 12 11 | 704 | 1.2− | 0.5+ | 2005 06 16 | G96 | 0.4− | 0.2+ | 2006 11 19 | 703 | 0.5− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.8− | 1.2+ | 2005 06 16 | G96 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.0 | 0.2+ | | |
| 2002 12 11 | 704 | (2.3+ | 0.9+) | 2005 06 16 | G96 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.4+ | 0.5+ | | |
| 2002 12 11 | 704 | 0.6+ | 0.3+ | 2005 06 27 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.8− | 0.4+ | | |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2005 06 27 | 644 | 0.1− | 0.1+ | | | | | | |

**(143149)∗ 2002 XC$_{44}$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.45467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21710195 | $\omega$ | 75.06940 | | +0.31140814 | −0.95026180 | |
| $a$ | 2.7417440 | $\Omega$ | 356.77224 | | +0.83215925 | +0.27536053 | |
| $e$ | 0.0537589 | $i$ | 5.34248 | | +0.45884197 | +0.14553038 | |
| $P$ | 4.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 608 | 0.0 | 0.5+ | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 1.5+ | 0.3+ |
| 2001 08 23 | 608 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.7+ | 2006 09 20 | 704 | (0.9+ | 1.8+) |
| 2001 08 23 | 608 | 0.4− | 0.8+ | 2004 03 18 | 704 | 0.4− | 0.6− | 2006 09 20 | 704 | 0.4− | 0.5+ |
| 2002 12 06 | 704 | 0.5− | 0.4− | 2004 03 18 | 704 | 0.1+ | 1.0+ | 2006 09 20 | 704 | 0.3+ | 0.5+ |
| 2002 12 06 | 704 | 0.2+ | 0.6− | 2004 03 18 | 704 | 0.5− | 0.2+ | 2006 09 22 | A50 | 0.3− | 0.2− |
| 2002 12 06 | 704 | 0.5+ | 0.1+ | 2004 03 18 | 704 | 0.4− | 0.4− | 2006 09 22 | A50 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.1+ | 0.4+ | 2004 03 24 | 699 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 644 | 0.2− | 0.6+ | 2004 03 24 | 699 | 0.2− | 0.7− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2002 12 10 | 644 | 0.2− | 0.6+ | 2004 03 24 | 699 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2002 12 10 | 644 | 0.4+ | 0.6+ | 2004 03 24 | 699 | 0.5− | 0.6+ | 2006 09 27 | 699 | 0.9+ | 0.3− |
| 2002 12 11 | 704 | (3.1− | 1.4−) | 2004 03 27 | 704 | 0.9+ | 0.4+ | 2006 09 27 | 699 | 1.1− | 0.3− |
| 2002 12 11 | 704 | 0.2− | 0.3− | 2004 03 27 | 704 | 0.4+ | 0.9+ | 2006 09 27 | 699 | 0.5− | 0.6− |
| 2002 12 11 | 704 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.8+ |
| 2002 12 11 | 704 | 0.8+ | 0.7+ | 2004 03 27 | 704 | 0.9+ | 0.2+ | 2006 09 27 | 704 | 1.1+ | 1.3+ |
| 2002 12 11 | 704 | 0.1− | 0.3+ | 2004 03 27 | 704 | (1.7+ | 0.6+) | 2006 09 27 | 699 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.3+ |
| 2002 12 11 | 704 | 0.6− | 0.0 | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.3+ |
| 2002 12 11 | 704 | 0.1− | 0.0 | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.0 |
| 2003 01 05 | 704 | 0.1+ | 0.8− | 2004 04 22 | 691 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.5− | 0.2− |
| 2003 01 05 | 704 | 0.9+ | 0.7− | 2004 04 22 | 691 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.2− |
| 2003 01 05 | 704 | 0.3− | 0.3− | 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2003 01 05 | 704 | 0.2− | 0.5− | 2006 07 22 | G96 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.3− | 0.1− |
| 2004 02 26 | 704 | 0.9+ | 0.0 | 2006 07 22 | G96 | 1.1− | 0.2− | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2004 02 26 | 704 | 0.9+ | 0.0 | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.9− | 0.1− |
| 2004 02 26 | 704 | 0.9+ | 1.0+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2004 02 26 | 704 | 0.7+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.7− |
| 2004 03 14 | 012 | 0.6− | 0.6− | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2004 03 14 | 012 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.6+ |
| 2004 03 14 | 012 | 1.0− | 0.6− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2004 03 14 | 012 | (2.2− | 0.7−) | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2004 03 14 | 012 | 0.3− | 0.9+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 03 16 | 704 | 0.4− | 0.8− | 2006 09 18 | 699 | 0.9+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 03 16 | 704 | 0.3− | 0.9+ | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 03 16 | 704 | 0.4+ | 0.3− | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2004 03 16 | 704 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− |

**(143150)∗ 2002 XJ$_{45}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.47097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23499731 | $\omega$ | 144.27140 | | −0.40941697 | −0.90382534 | |
| $a$ | 2.6007232 | $\Omega$ | 329.33311 | | +0.77014155 | −0.26926577 | |
| $e$ | 0.2196689 | $i$ | 14.11781 | | +0.48914184 | −0.33255932 | |
| $P$ | 4.19 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 1.1+ | 1.4− | 2002 11 15 | 704 | 0.7− | 0.4− | 2004 05 11 | E12 | 0.1+ | 0.5+ |
| 1998 12 12 | 704 | 0.3+ | 1.6− | 2002 11 15 | 704 | 0.4+ | 0.6− | 2004 05 11 | E12 | 0.9− | 0.9+ |
| 1998 12 12 | 704 | 1.4+ | 0.9− | 2002 11 15 | 704 | 1.1− | 0.6− | 2004 05 11 | E12 | 1.1− | 0.8+ |
| 1998 12 12 | 704 | 0.2− | 0.9− | 2002 11 15 | 704 | 1.2− | 1.2− | 2004 05 11 | E12 | 0.8− | 0.3− |
| 1998 12 12 | 704 | (5.4− | 0.7−) | 2002 12 10 | 704 | (1.5− | 1.2+) | 2006 09 16 | 703 | 0.3+ | 0.4− |
| 2002 10 06 | 704 | 0.3− | 0.2+ | 2002 12 10 | 704 | 1.4− | 0.9+ | 2006 09 16 | 703 | 0.4+ | 0.3+ |
| 2002 10 06 | 704 | 0.7− | 0.4+ | 2002 12 10 | 704 | 1.5− | 1.2+ | 2006 09 16 | 703 | 1.0+ | 0.8− |
| 2002 10 06 | 704 | 0.6− | 0.1− | 2002 12 10 | 704 | 1.4− | 1.0+ | 2006 09 16 | 703 | 0.6+ | 0.9− |
| 2002 10 06 | 704 | 0.5− | 0.6+ | 2002 12 10 | 704 | (2.7− | 0.6+) | 2006 09 22 | 699 | 1.4− | 0.3+ |
| 2002 10 06 | 704 | 0.2+ | 0.8+ | 2002 12 11 | 699 | 0.5− | 1.1+ | 2006 09 22 | 699 | 0.2+ | 1.0+ |
| 2002 10 15 | 704 | 0.7− | 0.7+ | 2002 12 11 | 699 | 0.2− | 1.0+ | 2006 09 22 | 699 | 0.5+ | 0.1+ |
| 2002 10 15 | 704 | 0.3+ | 0.2− | 2002 12 11 | 699 | 0.4− | 1.3+ | 2006 09 22 | 699 | 0.2− | 0.1+ |
| 2002 10 15 | 704 | 0.1− | 0.3+ | 2002 12 11 | 699 | 0.6+ | 1.0+ | 2006 09 28 | 703 | 0.0 | 0.2+ |
| 2002 10 15 | 704 | 0.8+ | 1.4+ | 2004 03 16 | 644 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.1− | 0.4− |
| 2002 10 20 | 644 | 0.0 | 0.1− | 2004 03 16 | 644 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.8+ | 0.4+ |
| 2002 10 20 | 644 | 0.1+ | 0.2− | 2004 03 16 | 644 | 0.3− | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.1+ |
| 2002 10 20 | 644 | 0.2− | 0.2− | 2004 03 16 | 644 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.7+ | 0.6− |
| 2002 10 31 | 704 | 0.2− | 0.4− | 2004 03 16 | 644 | 0.3− | 0.3− | 2006 10 19 | 703 | 0.6+ | 0.1− |
| 2002 10 31 | 704 | 0.4+ | 0.1+ | 2004 03 16 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.7− |
| 2002 10 31 | 704 | 0.1− | 0.6− | 2004 04 13 | E12 | 1.5+ | 0.9− | 2006 10 19 | 703 | 0.1− | 0.7− |
| 2002 10 31 | 704 | 0.2− | 0.4− | 2004 04 13 | E12 | 1.0+ | 0.2+ | 2006 10 22 | 644 | 0.5+ | 0.2− |
| 2002 10 31 | 704 | 0.0 | 0.7− | 2004 04 13 | E12 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.7+ | 0.0 |
| 2002 11 15 | 704 | 0.3− | 0.3+ | 2004 04 13 | E12 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.6+ | 0.1+ |

**(143151)∗ 2002 XC$_{46}$**

Discovered 2002 Dec. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.00793 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23926263 | $\omega$ | 314.04302 | | −0.85169914 | +0.26927473 | |
| $a$ | 2.5697220 | $\Omega$ | 246.51305 | | −0.21573788 | −0.96198040 | |
| $e$ | 0.1633717 | $i$ | 29.35141 | | −0.47756229 | −0.04565991 | |
| $P$ | 4.12 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.3− | 0.5− | 2003 01 01 | 704 | (1.4+ | 2.0+) | 2005 07 31 | 704 | 0.6+ | 0.6+ |
| 2001 08 24 | 644 | 0.4− | 0.5− | 2003 01 01 | 704 | 1.0+ | 0.3+ | 2006 11 02 | 703 | 1.0+ | 0.0 |
| 2001 08 24 | 644 | 0.3− | 0.6− | 2003 01 02 | 704 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.7+ | 0.2+ |
| 2001 10 18 | 704 | 0.6− | 1.2+ | 2003 01 02 | 704 | 1.5− | 0.2+ | 2006 11 02 | 703 | 0.5− | 0.5− |
| 2001 10 18 | 704 | 0.4− | 0.7+ | 2003 01 02 | 704 | (2.2− | 1.3+) | 2006 11 02 | 703 | 0.7− | 1.5− |
| 2001 10 18 | 704 | (0.2+ | 1.6+) | 2003 01 02 | 704 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.2− | 0.1+ |
| 2001 10 18 | 704 | 0.4− | 1.3+ | 2003 01 07 | 704 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2003 01 07 | 704 | 0.9+ | 1.3+ | 2006 11 15 | 704 | 0.3− | 0.2− |
| 2002 11 06 | 704 | 0.5+ | 0.5+ | 2003 01 07 | 704 | 0.4+ | 0.3− | 2006 11 15 | 704 | 0.3− | 0.3+ |
| 2002 11 06 | 704 | 1.1+ | 0.3+ | 2003 01 07 | 704 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 0.3+ | 2003 01 07 | 704 | 0.7+ | 0.9− | 2006 11 16 | 704 | 0.3− | 0.8+ |
| 2002 11 06 | 704 | 0.0 | 0.3− | 2003 01 18 | 644 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.5+ |
| 2002 11 24 | 644 | 0.3+ | 0.3+ | 2003 01 18 | 644 | 0.8− | 0.8+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2003 01 18 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2003 01 27 | 644 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.5+ | 0.6+ | 2003 01 27 | 644 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2003 01 27 | 644 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.3+ |
| 2002 12 05 | 704 | 0.4+ | 0.2− | 2004 05 11 | E12 | 0.6+ | 0.8+ | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2004 05 11 | E12 | 0.1− | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2004 05 11 | E12 | 0.4+ | 0.8+ | 2006 11 22 | 704 | 0.7+ | 0.0 |
| 2002 12 10 | 644 | 0.2− | 0.0 | 2004 05 11 | E12 | 0.1+ | 1.1+ | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2002 12 10 | 644 | 0.2− | 0.0 | 2004 05 19 | E12 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.3− |
| 2002 12 10 | 644 | 0.4− | 0.1− | 2004 05 19 | E12 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.1+ | 0.3− | 2004 05 19 | E12 | 0.4+ | 0.3− | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2002 12 11 | 704 | 0.4+ | 1.3− | 2004 05 19 | E12 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.3+ |
| 2002 12 11 | 704 | 0.4+ | 0.7− | 2004 06 03 | 644 | 0.7− | 0.4+ | 2006 11 28 | 704 | 0.6+ | 0.2+ |
| 2002 12 11 | 704 | 0.6− | 0.5− | 2004 06 03 | 644 | 0.0 | 0.5+ | 2006 11 28 | 704 | 0.5+ | 1.6− |
| 2002 12 11 | 704 | 0.2− | 0.5− | 2004 06 03 | 644 | 0.5− | 0.1+ | 2006 11 28 | 704 | 0.1− | 1.0+ |
| 2002 12 13 | 704 | 0.2+ | 0.2− | 2004 06 15 | 703 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2002 12 13 | 704 | 0.5− | 0.0 | 2004 06 15 | 703 | 0.7+ | 0.7+ | 2006 11 28 | 704 | 0.4− | 0.9+ |
| 2002 12 13 | 704 | 0.3− | 0.9+ | 2004 06 15 | 703 | 0.1− | 0.9+ | 2006 11 28 | 704 | 0.6+ | 1.1+ |
| 2002 12 13 | 704 | 0.1+ | 0.0 | 2004 06 15 | 703 | 0.1+ | 0.9+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 704 | 0.2− | 0.1+ | 2004 06 22 | E12 | 0.7− | 0.5+ | 2006 12 01 | 704 | 0.3− | 0.9+ | | |
| 2002 12 27 | 644 | 0.0 | 0.4+ | 2004 06 22 | E12 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.4− | 0.4+ | | |
| 2002 12 27 | 644 | 0.2+ | 0.5+ | 2004 06 22 | E12 | 0.4− | 0.3+ | 2006 12 01 | 704 | 0.3− | 0.7+ | | |
| 2002 12 27 | 644 | 0.1+ | 0.1− | 2004 06 22 | E12 | 0.2+ | 0.5+ | 2006 12 01 | 704 | 0.5− | 0.2− | | |
| 2003 01 01 | 704 | 0.1+ | 0.6− | 2005 07 31 | 704 | 0.1+ | 1.1+ | 2006 12 01 | 704 | 0.6− | 0.6+ | | |
| 2003 01 01 | 704 | 0.9+ | 0.5+ | 2005 07 31 | 704 | 0.4+ | 0.1+ | | | | | | |

**(143152)∗ 2002 XE$_{48}$ = 1998 SV$_{86}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41333)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.04445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26637370 | $\omega$ | 147.78082 | | +0.69905869 | −0.71404933 | |
| $a$ | 2.3922606 | $\Omega$ | 257.83593 | | +0.64751917 | +0.65472379 | |
| $e$ | 0.1886063 | $i$ | 2.23282 | | +0.30337415 | +0.24793210 | |
| $P$ | 3.70 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 699 | (0.1− | 2.3+) | 2002 12 10 | 704 | 0.2− | 0.2+ | 2004 04 12 | 691 | 0.3− | 0.3+ | | |
| 1998 09 15 | 699 | 0.8+ | 1.0+ | 2002 12 10 | 704 | 0.3+ | 0.1− | 2005 06 15 | G96 | 0.2− | 0.6+ | | |
| 1998 09 15 | 699 | 1.6+ | 0.6+ | 2002 12 11 | 704 | 0.4− | 0.3+ | 2005 06 15 | G96 | 0.5− | 0.5+ | | |
| 1998 09 26 | 704 | 1.0− | 0.8+ | 2002 12 11 | 704 | 0.1− | 0.6+ | 2005 06 15 | G96 | 0.0 | 0.9+ | | |
| 1998 09 26 | 704 | 2.0− | 0.5− | 2002 12 11 | 704 | 0.3− | 0.3+ | 2005 06 15 | G96 | 0.6− | 0.4+ | | |
| 1998 09 26 | 704 | 1.3+ | 0.6− | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2005 07 04 | 691 | 0.1− | 0.2+ | | |
| 1998 09 26 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.3− | 0.1+ | 2005 07 04 | 691 | 0.0 | 0.4+ | | |
| 1998 09 27 | 704 | 0.8− | 1.1− | 2002 12 31 | 704 | 0.6− | 0.0 | 2005 07 04 | 691 | 0.4− | 1.1+ | | |
| 1998 09 27 | 704 | 0.5− | 1.5− | 2002 12 31 | 704 | 0.8− | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.2+ | | |
| 1998 09 27 | 704 | 0.3− | 0.3+ | 2002 12 31 | 704 | 0.3+ | 1.1+ | 2005 07 09 | 691 | 0.0 | 0.3+ | | |
| 1998 09 27 | 704 | 0.1− | 0.8− | 2002 12 31 | 704 | 0.2− | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.5+ | | |
| 2002 12 05 | 704 | 0.1− | 0.4− | 2002 12 31 | 704 | 0.3− | 1.0+ | 2006 09 25 | G96 | 0.2− | 0.2− | | |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2003 01 04 | 291 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.6− | | |
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2003 01 04 | 291 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.5− | | |
| 2002 12 05 | 704 | 0.7+ | 0.1+ | 2003 01 04 | 291 | (1.6+ | 1.8−) | 2006 09 25 | G96 | 0.7+ | 0.4− | | |
| 2002 12 10 | 704 | 0.4− | 0.2− | 2003 01 04 | 704 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.3− | | |
| 2002 12 10 | 704 | 1.0+ | 0.8− | 2003 01 04 | 704 | 0.2− | 0.7+ | 2006 11 01 | G96 | 0.4− | 0.7− | | |
| 2002 12 10 | 704 | 0.2+ | 0.9− | 2003 01 04 | 704 | 0.2− | 1.2+ | 2006 11 01 | G96 | 0.3− | 0.3− | | |
| 2002 12 10 | 704 | 0.7+ | 0.2+ | 2003 01 04 | 704 | 1.2+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.0 | | |
| 2002 12 10 | 704 | 0.9+ | 0.3− | 2003 01 04 | 704 | 0.2+ | 0.9+ | 2006 11 24 | 291 | 0.0 | 0.8+ | | |
| 2002 12 10 | 704 | 0.4+ | 0.1+ | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 11 24 | 291 | 0.1+ | 1.1+ | | |
| 2002 12 10 | 704 | 0.0 | 0.3+ | 2004 04 12 | 691 | 0.6+ | 0.0 | 2006 11 24 | 291 | 0.2− | 0.9+ | | |

**(143153)∗ 2002 XV$_{48}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.62739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24435813 | $\omega$ | 114.77232 | | +0.97870453 | +0.20405199 | |
| $a$ | 2.5338731 | $\Omega$ | 233.46131 | | −0.19695619 | +0.90275426 | |
| $e$ | 0.2549388 | $i$ | 1.59516 | | −0.05784209 | +0.37867866 | |
| $P$ | 4.03 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.5+ | 0.7+ | 2002 12 31 | 704 | (1.8+ | 1.8−) | 2006 11 11 | 691 | 0.3+ | 0.2− | | |
| 2001 05 17 | 704 | 0.9+ | 0.4− | 2003 01 04 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.5− | | |
| 2001 05 17 | 704 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.4− | 0.7− | 2006 11 11 | 703 | 0.1+ | 0.5− | | |
| 2002 09 07 | 704 | 0.5− | 1.5+ | 2003 01 04 | 704 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 1.1− | | |
| 2002 09 07 | 704 | (0.8+ | 1.9+) | 2003 01 04 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.6− | | |
| 2002 09 07 | 704 | (0.4+ | 1.6+) | 2003 01 04 | 704 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.5− | | |
| 2002 10 11 | 704 | 0.1+ | 1.0+ | 2004 02 16 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.5− | | |
| 2002 10 11 | 704 | 0.9+ | 0.1+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.5− | | |
| 2002 10 11 | 704 | 0.7+ | 1.3+ | 2004 02 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2002 11 05 | 704 | 0.3− | 0.1+ | 2005 01 17 | 809 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.7− | 0.6+ | | |
| 2002 11 05 | 704 | 0.2− | 0.4+ | 2005 01 17 | 809 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.5+ | | |
| 2002 11 05 | 704 | 0.9− | 0.1+ | 2005 01 17 | 809 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.6− | 0.6− | | |
| 2002 11 05 | 704 | 0.1+ | 0.8+ | 2005 04 11 | G96 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.1+ | | |
| 2002 11 14 | 704 | 0.2− | 0.7+ | 2005 04 11 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.8− | 0.7+ | | |
| 2002 11 14 | 704 | 0.1− | 0.7+ | 2005 04 11 | G96 | 0.5− | 0.9− | 2006 11 17 | 644 | 0.1− | 0.1− | | |
| 2002 11 14 | 704 | 0.6− | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.6+ | 1.0+ | 2005 05 09 | G96 | 0.2+ | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.0 | | |
| 2002 11 14 | 704 | 1.2− | 1.1+ | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.8+ | | |
| 2002 11 28 | 608 | 0.2− | 0.2− | 2005 05 09 | G96 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.1+ | | |
| 2002 11 28 | 608 | 0.1− | 0.5− | 2005 05 09 | G96 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.5+ | | |
| 2002 11 28 | 608 | 0.0 | 0.3− | 2005 05 13 | G96 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.7+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2005 05 13 | G96 | 0.1− | 0.3+ | 2006 11 21 | 704 | (0.6− | 1.5+) | | |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 11 21 | 704 | (0.1− | 1.6+) | | |
| 2002 12 05 | 704 | 0.6+ | 0.1+ | 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.7+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.4− | | |
| 2002 12 10 | 704 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2002 12 10 | 704 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 | | |
| 2002 12 10 | 704 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.2− | 2006 11 23 | 644 | 0.3− | 0.2− | | |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 23 | 644 | 0.2+ | 0.1− | | |
| 2002 12 11 | 704 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 23 | 644 | 0.1+ | 0.0 | | |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 10 28 | 704 | 0.9+ | 0.6− | 2006 11 27 | 703 | 0.4− | 0.7− | | |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 10 28 | 704 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.1− | | |
| 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.0 | 0.8− | | |
| 2002 12 13 | 704 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.2− | 0.1+ | | |
| 2002 12 13 | 704 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1− | | |
| 2002 12 13 | 704 | 0.4− | 0.2+ | 2006 10 28 | 704 | 0.1+ | 1.1+ | 2006 11 27 | 703 | 0.2− | 0.3− | | |
| 2002 12 13 | 704 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2− | | |
| 2002 12 13 | 704 | 0.5− | 0.0 | 2006 10 28 | 704 | 0.9+ | 0.1− | 2006 11 27 | 704 | 0.6− | 0.3− | | |
| 2002 12 28 | 699 | 0.3+ | 0.7− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 27 | 704 | 0.5+ | 0.6+ | | |
| 2002 12 28 | 699 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 27 | 704 | 0.4− | 0.4− | | |
| 2002 12 28 | 699 | 0.3+ | 0.6− | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.1+ | | |
| 2002 12 28 | 699 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 12 01 | 691 | 0.4+ | 0.0 | | |
| 2002 12 29 | 448 | 0.7+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.2− | 0.0 | | |
| 2002 12 29 | 448 | 0.0 | 0.8+ | 2006 11 10 | 644 | 0.6+ | 0.8+ | 2006 12 01 | 704 | 0.0 | 0.2+ | | |
| 2002 12 29 | 448 | 0.3− | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.2− | | |
| 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.6− | 0.1− | 2006 12 01 | 704 | 0.1− | 0.3+ | | |
| 2002 12 31 | 704 | 0.4+ | 0.0 | 2006 11 11 | 691 | 1.1− | 0.5− | 2006 12 01 | 704 | 0.1− | 0.8+ | | |
| 2002 12 31 | 704 | 0.1+ | 0.5− | 2006 11 11 | 691 | 0.3+ | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.3+ | | |

**(143154)∗ 2002 XA$_{50}$ = 2000 KV$_{16}$ = 2004 GM$_{59}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61660)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.21390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23873208 | $\omega$ | 126.33072 | | −0.98189258 | +0.17108416 | |
| $a$ | 2.5735278 | $\Omega$ | 63.64764 | | −0.18942317 | −0.88121405 | |
| $e$ | 0.1316712 | $i$ | 5.20847 | | −0.00241428 | −0.44067222 | |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.3− | 0.4− | 2004 04 19 | 704 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.5+ | 0.1− | | |
| 2000 05 28 | 704 | 0.4− | 0.3+ | 2004 04 19 | 704 | 0.6+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.0 | | |
| 2000 05 28 | 704 | 0.4− | 0.4+ | 2004 04 19 | 704 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.6+ | 0.3+ | | |
| 2000 05 28 | 704 | 0.4− | 0.4− | 2004 04 22 | 691 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.6− | | |
| 2000 05 28 | 704 | 0.3− | 0.0 | 2004 04 22 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.3− | | |
| 2000 05 29 | 704 | 0.4+ | 0.6− | 2004 04 22 | 704 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2000 05 29 | 704 | 0.5+ | 0.9+ | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.4− | | |
| 2000 05 29 | 704 | 1.3+ | 0.6+ | 2004 04 22 | 704 | 1.3+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2000 05 29 | 704 | 0.4+ | 0.9+ | 2004 04 22 | 704 | 0.5+ | 0.4− | 2006 10 28 | G96 | 0.4+ | 0.0 | | |
| 2000 05 29 | 704 | 0.2+ | 0.9+ | 2004 04 22 | 704 | 0.7+ | 0.5− | 2006 11 11 | 691 | 0.2+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.4− | 0.1− | 2004 04 22 | 704 | 0.6+ | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.7+ | 0.2− | 2004 04 22 | 599 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2002 12 05 | 704 | 0.4− | 0.1+ | 2004 04 22 | 599 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.3− | 0.6− | | |
| 2002 12 05 | 704 | 0.9+ | 0.4− | 2004 04 23 | 599 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2002 12 10 | 704 | 0.3+ | 0.4+ | 2004 04 23 | 599 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.7− | 0.4+ | 2004 05 15 | 704 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2002 12 10 | 704 | 0.3− | 0.4+ | 2004 05 15 | 704 | 0.4+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2002 12 10 | 704 | 0.3− | 0.4− | 2004 05 15 | 704 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2004 05 15 | 704 | 0.4− | 0.7+ | 2006 11 15 | 691 | 0.3+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.0 | 0.3+ | 2004 05 15 | 704 | 0.8+ | 0.5+ | 2006 11 18 | 704 | (1.0− | 1.9+) | | |
| 2002 12 11 | 704 | (1.9+ | 1.0+) | 2004 05 16 | 704 | 0.7− | 1.0+ | 2006 11 18 | 704 | 1.4− | 0.7+ | | |
| 2004 04 01 | 291 | 0.6+ | 0.4− | 2004 05 16 | 704 | 0.7+ | 0.4− | 2006 11 18 | 704 | 0.5− | 0.9+ | | |
| 2004 04 01 | 291 | 0.4− | 0.4+ | 2004 05 16 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.7+ | | |
| 2004 04 01 | 291 | 0.3− | 0.0 | 2004 05 16 | 704 | 1.2+ | 0.7+ | 2006 11 19 | 691 | 0.2+ | 0.4+ | | |
| 2004 04 12 | 699 | 0.5− | 0.5+ | 2004 05 19 | 704 | 0.7+ | 0.5− | 2006 11 19 | 691 | 0.1− | 0.4+ | | |
| 2004 04 12 | 699 | 0.1− | 0.1− | 2004 05 19 | 704 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.4− | 0.2− | | |
| 2004 04 12 | 699 | 0.2+ | 1.0+ | 2004 05 19 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.9+ | 0.5+ | | |
| 2004 04 12 | 644 | 0.1− | 0.1+ | 2005 07 29 | 644 | 0.5− | 1.0+ | 2006 11 21 | 704 | 0.8− | 0.8+ | | |
| 2004 04 12 | 699 | 0.7− | 0.1− | 2005 07 29 | 644 | 0.6− | 0.6+ | 2006 11 21 | 704 | 1.1− | 0.9+ | | |
| 2004 04 12 | 644 | 0.2+ | 0.4+ | 2005 07 29 | 644 | 0.5− | 1.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2004 04 12 | 644 | 0.2+ | 0.3+ | 2005 11 25 | G96 | 0.7− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2004 04 15 | 699 | (1.7− | 3.1+) | 2005 11 25 | G96 | 0.5− | 0.7+ | 2006 11 23 | 691 | 0.3− | 0.3+ | | |
| 2004 04 15 | 699 | 0.1− | 0.9+ | 2005 11 25 | G96 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 1.1− | 0.3− | | |
| 2004 04 15 | 699 | 0.8− | 0.1− | 2005 11 25 | G96 | 0.1+ | 1.3+ | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2004 04 15 | 699 | 1.0− | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2004 04 19 | 704 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.2− | | | | | | |
| 2004 04 19 | 704 | 0.9+ | 0.4+ | 2006 09 28 | G96 | 0.6− | 0.2− | | | | | | |

**(143155)∗ 2002 XS$_{50}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.77805 | | (2000.0) | | | |
| $n$ | 0.20305601 | $\omega$ | 206.11951 | | +0.47724353 | −0.87867598 |
| $a$ | 2.8667654 | $\Omega$ | 215.37910 | | +0.81011640 | +0.44561134 |
| $e$ | 0.0575357 | $i$ | 1.27943 | | +0.34051435 | +0.17134482 |
| $P$ | 4.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.2− | 0.4+ | 2004 02 26 | 704 | (0.6+ | 1.6+) | 2006 08 19 | 691 | 0.5− | 0.4+ | | |
| 2001 08 23 | 691 | 0.3− | 0.5+ | 2004 03 15 | 703 | 0.9− | 0.4− | 2006 08 19 | 691 | 0.5− | 0.4+ | | |
| 2001 08 23 | 691 | 0.0 | 0.4+ | 2004 03 15 | 703 | 0.6+ | 0.5+ | 2006 08 28 | 691 | 0.0 | 0.3+ | | |
| 2002 12 05 | 704 | 0.8+ | 0.4+ | 2004 03 15 | 703 | 0.3− | 0.7+ | 2006 08 28 | 691 | 0.2+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.8− | 0.5+ | 2004 03 15 | 703 | (2.1− | 2.6−) | 2006 08 28 | 691 | 0.1+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2004 03 18 | 704 | (2.2+ | 1.5+) | 2006 09 19 | 703 | 1.2− | 0.6+ | | |
| 2002 12 10 | 704 | 0.7+ | 0.9− | 2004 03 18 | 704 | 1.1+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.6+ | | |
| 2002 12 10 | 704 | 0.5− | 0.7+ | 2004 03 18 | 704 | (0.9+ | 1.8+) | 2006 09 19 | 703 | 0.1+ | 0.6+ | | |
| 2002 12 10 | 704 | 1.1− | 1.1+ | 2004 03 18 | 704 | 0.2− | 1.1+ | 2006 09 19 | 703 | (0.1− | 1.6−) | | |
| 2002 12 11 | 704 | 0.9− | 0.6− | 2004 03 18 | 704 | (0.7+ | 1.9+) | 2006 09 27 | G96 | 0.7+ | 0.4− | | |
| 2002 12 11 | 704 | 0.4+ | 1.0− | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.1+ | | |
| 2002 12 11 | 704 | 1.2+ | 1.5+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.1− | | |
| 2003 01 11 | 291 | 0.1− | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.1− | | |
| 2003 01 11 | 291 | 0.1+ | 0.1+ | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1− | | |
| 2003 01 11 | 291 | 0.1− | 0.0 | 2004 04 13 | 691 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.0 | | |
| 2004 02 26 | 704 | 0.5+ | 0.8+ | 2004 04 13 | 691 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.1− | | |
| 2004 02 26 | 704 | 0.9+ | 0.5+ | 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.7+ | 0.2+ | | |

**(143156)∗ 2002 XC$_{51}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.57153 | | (2000.0) | | | |
| $n$ | 0.23974552 | $\omega$ | 353.71904 | | +0.99973734 | −0.02287783 |
| $a$ | 2.5662702 | $\Omega$ | 7.59227 | | +0.02144990 | +0.91312135 |
| $e$ | 0.2262875 | $i$ | 0.59015 | | +0.00807147 | +0.40704546 |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 691 | 0.6+ | 0.0 | 2004 03 18 | 704 | 1.4+ | 0.7− | 2006 11 11 | 703 | 1.1+ | 0.7− | | |
| 2000 04 02 | 691 | 0.1+ | 0.6− | 2004 03 18 | 704 | 0.5− | 1.0+ | 2006 11 11 | 703 | 0.3+ | 0.4− | | |
| 2000 04 02 | 691 | 0.2+ | 0.5− | 2004 03 29 | 291 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.1− | | |
| 2000 04 24 | 691 | 0.0 | 0.1− | 2004 03 29 | 291 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.0 | | |
| 2000 04 24 | 691 | 0.1− | 0.4− | 2004 03 29 | 291 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.4− | 0.2+ | | |
| 2000 04 24 | 691 | 0.1− | 0.4+ | 2004 03 30 | 691 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.6− | 0.4+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2004 03 30 | 691 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.4+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2− | | |
| 2002 12 05 | 704 | 0.5− | 0.3− | 2004 04 24 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2004 04 24 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 1.2+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.9− | 0.2+ | 2004 04 24 | 691 | 0.5− | 0.5− | 2006 11 17 | 704 | 0.2− | 0.7− | | |
| 2002 12 10 | 704 | 0.1− | 0.1− | 2005 06 04 | 704 | 0.2− | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.3− | 0.7− | 2005 06 04 | 704 | 0.7+ | 0.8+ | 2006 11 17 | 704 | 0.7+ | 0.6+ | | |
| 2002 12 10 | 704 | 0.3− | 0.1− | 2005 06 04 | 704 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.7− | 0.5+ | | |
| 2002 12 10 | 704 | 0.2− | 0.4− | 2005 06 04 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.5+ | | |
| 2002 12 10 | 704 | 0.3− | 0.2+ | 2005 06 04 | 704 | 0.3− | 0.3+ | 2006 11 18 | 704 | (0.5− | 1.5+) | | |
| 2002 12 10 | 704 | 0.4− | 0.2− | 2005 06 14 | G96 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.2+ | | |
| 2002 12 10 | 704 | (0.1− | 1.8−) | 2005 06 14 | G96 | 0.7+ | 1.1+ | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 2002 12 11 | 704 | 1.1+ | 0.4− | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.1+ | | |
| 2002 12 11 | 704 | 0.8+ | 1.1− | 2005 06 14 | G96 | 0.3− | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2002 12 11 | 704 | 0.1− | 0.2− | 2006 09 16 | 703 | (0.4+ | 1.5+) | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.4− | 0.5+ | 2006 09 16 | 703 | 1.3− | 1.2+ | 2006 11 21 | 704 | 0.1+ | 0.8+ | | |
| 2002 12 11 | 704 | 0.0 | 0.9+ | 2006 09 16 | 703 | (3.1− | 1.0+) | 2006 11 21 | 704 | 0.1− | 0.8+ | | |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.9− | 2006 11 21 | 704 | 0.1+ | 0.3+ | | |
| 2002 12 31 | 704 | 0.5− | 0.3+ | 2006 09 20 | 704 | 1.3+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.6+ | | |
| 2002 12 31 | 704 | 1.1− | 0.7+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2002 12 31 | 704 | 0.4− | 0.5+ | 2006 09 20 | 704 | 0.3+ | 1.2− | 2006 11 22 | H07 | 0.4+ | 0.1− | | |
| 2003 01 04 | 704 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 22 | H07 | 0.1− | 0.2− | | |
| 2003 01 04 | 704 | 0.8+ | 0.9− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 22 | H07 | 0.1− | 0.1+ | | |
| 2003 01 04 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 22 | H07 | 0.2+ | 0.0 | | |
| 2003 01 04 | 704 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 23 | H07 | 0.1+ | 0.1− | | |
| 2003 01 04 | 704 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 23 | H07 | 0.3+ | 0.1− | | |
| 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 23 | H07 | 0.1+ | 0.2− | | |
| 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 23 | H07 | 0.1− | 0.1+ | | |
| 2003 01 08 | 704 | 0.6+ | 1.1+ | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2004 01 22 | 568 | 0.4− | 0.2+ | 2006 10 28 | 704 | 0.3+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2004 01 22 | 568 | 0.2− | 0.3+ | 2006 10 28 | 704 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2004 01 22 | 568 | 0.2− | 0.3+ | 2006 10 28 | 704 | 0.7− | 0.2+ | 2006 11 27 | 704 | 0.3+ | 0.5− | | |
| 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 10 28 | 704 | 0.0 | 0.2+ | 2006 11 27 | 704 | 0.5− | 0.5+ | | |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.7− | 0.5− | 2006 11 27 | 704 | 1.5− | 0.8+ | | |
| 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 12 01 | 691 | 0.3+ | 0.0 | | |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.3− | 0.3− | 2006 12 01 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.1+ | 0.6+ | | |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.0 | | |
| 2004 03 16 | 291 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.2− | | |
| 2004 03 16 | 291 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.0 | 0.1+ | | |
| 2004 03 16 | 291 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.1− | | |
| 2004 03 18 | 704 | (1.8+ | 0.9+) | 2006 11 11 | 703 | (1.6+ | 3.3−) | 2006 12 01 | 704 | 0.3+ | 0.0 | | |
| 2004 03 18 | 704 | 1.4+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.1+ | | | | | | |

**(143157)∗ 2002 XN$_{51}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.75422 | | (2000.0) | | | |
| $n$ | 0.21864947 | $\omega$ | 111.57900 | | +0.90420957 | −0.40439270 |
| $a$ | 2.7287920 | $\Omega$ | 272.49291 | | +0.32301035 | +0.85794825 |
| $e$ | 0.1107321 | $i$ | 7.90344 | | +0.27940895 | +0.31684594 |
| $P$ | 4.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 691 | 0.2− | 0.4+ | 2003 01 08 | 704 | 0.8− | 0.5− | 2006 09 22 | 699 | 0.3+ | 0.0 | | |
| 2001 06 16 | 691 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.1− | 0.4− | 2006 09 22 | 699 | 0.4− | 0.5+ | | |
| 2001 06 16 | 691 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.5− | 1.2− | | |
| 2001 08 07 | 608 | 0.7− | 0.2− | 2003 01 10 | 291 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.3+ | 0.6− | | |
| 2001 08 07 | 608 | 0.4− | 0.1+ | 2003 01 10 | 291 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 0.5− | 0.7− | | |
| 2001 08 07 | 608 | 0.6− | 0.1− | 2003 01 10 | 291 | 0.3+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.8+ | 2004 03 17 | 703 | (1.2+ | 2.4+) | 2006 10 09 | 644 | 0.2− | 0.1+ | | |
| 2001 08 25 | 704 | 1.3+ | 0.7+ | 2004 03 17 | 703 | 0.7+ | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.0 | 0.2+ | 2004 03 17 | 703 | 0.4+ | 1.3+ | 2006 10 09 | 644 | 0.4− | 0.3+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2004 03 17 | 703 | 1.1+ | 1.4+ | 2006 10 09 | 644 | 0.0 | 0.2+ | | |
| 2001 08 25 | 704 | 0.4+ | 0.5+ | 2004 03 17 | 704 | (1.6− | 1.8+) | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2002 12 05 | 704 | 0.3− | 1.1+ | 2004 03 17 | 704 | 1.0− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2004 03 17 | 704 | 0.9+ | 1.0− | 2006 10 09 | 644 | 0.1− | 0.3+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2005 07 03 | 644 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.5− | 2005 07 03 | 644 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2005 07 03 | 644 | 0.3− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2006 08 29 | 699 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2002 12 10 | 704 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 12 10 | 704 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2002 12 10 | 704 | 0.4+ | 0.3+ | 2006 08 29 | 699 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 12 10 | 704 | 0.1− | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 13 | A24 | 0.2+ | 0.1− | | |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 13 | A24 | 0.6+ | 0.0 | | |
| 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 13 | A24 | 0.9− | 1.2+ | | |
| 2002 12 11 | 704 | 0.2− | 0.9+ | 2006 09 16 | 703 | 0.1− | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.3− | | |
| 2002 12 11 | 704 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.1− | | |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 10 19 | 703 | 0.2+ | 0.8− | | |
| 2002 12 31 | 704 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.2− | 1.0− | | |
| 2002 12 31 | 704 | 0.2− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2002 12 31 | 704 | 0.0 | 0.4− | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2− | | |
| 2002 12 31 | 704 | 1.3− | 0.7− | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2003 01 04 | 704 | 0.3− | 0.3− | 2006 09 22 | 106 | 0.4− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.3+ | | |
| 2003 01 04 | 704 | 0.3− | 0.0 | 2006 09 22 | 106 | 0.8+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2003 01 04 | 704 | 0.1+ | 1.0− | 2006 09 22 | 106 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2003 01 04 | 704 | 0.3+ | 0.2− | 2006 09 22 | 106 | 0.1+ | 0.4− | 2006 11 15 | 224 | 0.8+ | 0.4+ | | |
| 2003 01 04 | 704 | (0.8+ | 2.0−) | 2006 09 22 | 699 | 0.0 | 0.5+ | 2006 11 15 | 224 | 0.4+ | 0.0 | | |
| 2003 01 08 | 704 | 0.7− | 0.2− | 2006 09 22 | 699 | 0.1+ | 0.0 | 2006 11 15 | 224 | 0.8+ | 0.4+ | | |

**(143158)∗ 2002 XO$_{54}$**

Discovered 2002 Dec. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.04302 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23237292 | $\omega$ | 281.11903 | | +0.96561510 | −0.21964614 | |
| $a$ | 2.6202680 | $\Omega$ | 91.67936 | | +0.25729251 | +0.88406474 | |
| $e$ | 0.1959637 | $i$ | 7.99803 | | −0.03725648 | +0.41253498 | |
| $P$ | 4.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2− | 1.1+ | 2004 03 15 | 691 | 0.4+ | 0.2− | 2006 10 01 | 704 | 0.8− | 0.5+ | | |
| 2002 11 07 | 704 | 1.5+ | 1.0+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.3+ | | |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.1− | | |
| 2002 11 07 | 704 | 1.3+ | 0.1+ | 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.2− | | |
| 2002 11 14 | 704 | 1.2− | 0.3+ | 2004 03 17 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.2− | 0.3− | | |
| 2002 11 14 | 704 | 0.3− | 0.1+ | 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 1.0− | 0.0 | 2004 03 27 | 691 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2− | | |
| 2002 11 14 | 704 | 1.0− | 0.6− | 2004 03 27 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.2− | | |
| 2002 12 05 | 608 | 0.7− | 0.6− | 2004 03 27 | 691 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.9+ | 0.1+ | | |
| 2002 12 05 | 608 | 0.0 | 0.8+ | 2005 06 06 | 691 | 0.0 | 0.9+ | 2006 10 28 | 703 | 0.6− | 0.2− | | |
| 2002 12 05 | 608 | 0.1− | 1.1+ | 2005 06 06 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 1.1− | 0.2+ | | |
| 2002 12 10 | 644 | 0.0 | 0.2− | 2005 06 06 | 691 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 1.0− | 0.4+ | | |
| 2002 12 10 | 644 | 0.4− | 0.0 | 2005 06 13 | 691 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.1− | 0.1+ | | |
| 2002 12 10 | 644 | 0.0 | 0.0 | 2005 06 13 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 704 | 1.2− | 0.4+ | | |
| 2002 12 11 | 704 | 0.7+ | 0.3+ | 2005 06 13 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 704 | 0.6− | 1.3+ | | |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 09 29 | 699 | 0.0 | 1.4+ | 2006 11 10 | 704 | 0.1− | 0.2+ | | |
| 2002 12 11 | 704 | 0.5+ | 0.7+ | 2006 09 29 | 699 | 0.9+ | 0.7+ | 2006 11 10 | 704 | 0.3− | 0.3+ | | |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.3+ | | |
| 2003 01 04 | 704 | 0.4− | 0.5− | 2006 09 29 | 699 | 0.5+ | 0.8− | 2006 11 16 | 703 | 0.2− | 1.3+ | | |
| 2003 01 04 | 704 | 0.5− | 0.3+ | 2006 10 01 | 704 | 0.8+ | 0.4+ | 2006 11 16 | 703 | 0.4+ | 0.6+ | | |
| 2003 01 04 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.2+ | 2006 11 16 | 703 | 0.4+ | 0.1+ | | |
| 2003 01 04 | 704 | 0.3+ | 0.4− | 2006 10 01 | 704 | 1.2+ | 0.1+ | | | | | | |
| 2003 01 04 | 704 | 0.2+ | 1.1+ | 2006 10 01 | 704 | 0.2− | 0.6+ | | | | | | |

**(143159)∗ 2002 XR$_{54}$**

Discovered 2002 Dec. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.63939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21882994 | $\omega$ | 246.94566 | | +0.77322038 | −0.63293247 | |
| $a$ | 2.7272915 | $\Omega$ | 152.27353 | | +0.60821230 | +0.72276206 | |
| $e$ | 0.1170650 | $i$ | 4.81758 | | +0.17946599 | +0.27750945 | |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.4+ | 0.1− | 2005 06 27 | G96 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.6+ | 1.0+ | | |
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2005 06 27 | G96 | 0.4− | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2005 06 27 | G96 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.2− | | |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2005 07 12 | G96 | 0.3+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.2− | | |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2005 07 12 | G96 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.4− | | |
| 2002 12 05 | 608 | 0.5− | 0.6+ | 2005 07 12 | G96 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2002 12 05 | 608 | 0.7− | 0.3+ | 2005 07 12 | G96 | 0.4+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2002 12 05 | 608 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2− | | |
| 2002 12 10 | 644 | 0.2+ | 0.1− | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.3+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.8− | 0.2− | 2006 10 16 | 703 | 0.9− | 0.7− | | |
| 2002 12 11 | 704 | 0.2+ | 1.0− | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.3+ | | |
| 2002 12 11 | 704 | 0.9− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.0 | | |
| 2002 12 11 | 704 | 0.3− | 0.8+ | 2006 08 28 | 703 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.5− | | |
| 2002 12 31 | 291 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 1.5+ | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2002 12 31 | 291 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.3+ | 0.1− | | |
| 2002 12 31 | 291 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2004 03 16 | 599 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1+ | | |
| 2004 03 16 | 599 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.7− | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.1− | | |
| 2004 03 16 | 599 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.7− | 2006 11 23 | G96 | 0.4+ | 0.3− | | |
| 2004 03 16 | 599 | 0.2− | 0.6+ | 2006 09 22 | 704 | 0.5− | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2004 03 19 | 704 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.6− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.0 | | |
| 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.1− | | |
| 2004 03 19 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.4− | 0.9+ | 2006 11 25 | G96 | 0.1+ | 0.2− | | |
| 2004 03 19 | 704 | 0.6+ | 1.2+ | 2006 09 26 | 704 | 1.4− | 0.9+ | 2006 11 25 | G96 | 0.0 | 0.6− | | |
| 2004 03 19 | 704 | (0.7+ | 1.5+) | 2006 09 26 | 704 | 0.6− | 0.4+ | | | | | | |
| 2005 06 27 | G96 | 0.2− | 0.6+ | 2006 09 26 | 704 | 0.5+ | 0.6+ | | | | | | |

**(143160)∗ 2002 XP$_{55}$ = 2001 QB$_{289}$**

Discovered 2002 Dec. 10 by NEAT at Palomar.

Id. M. E. Sansaturio (*MPO* 61662)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.61377 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22198217 | $\omega$ | 192.80345 | | +0.96323014 | +0.26600591 | |
| $a$ | 2.7014110 | $\Omega$ | 151.68238 | | −0.23895036 | +0.91245515 | |
| $e$ | 0.1120434 | $i$ | 4.57008 | | −0.12284308 | +0.31091231 | |
| $P$ | 4.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 699 | (2.3+ | 1.7−) | 2005 06 03 | 703 | 0.3− | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2001 06 27 | 699 | 0.3+ | 0.9− | 2005 06 03 | 703 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.4+ | | |
| 2001 06 27 | 699 | 0.7+ | 0.1+ | 2005 06 27 | 644 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.0 | | |
| 2001 06 27 | 699 | 0.9− | 0.2+ | 2005 06 27 | 644 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 08 16 | 704 | 0.5− | 0.4+ | 2005 06 27 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2+ | | |
| 2001 08 16 | 704 | 0.1− | 0.4+ | 2005 07 11 | G96 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 16 | 704 | (1.8− | 0.4−) | 2005 07 11 | G96 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2001 08 16 | 704 | 0.1− | 0.0 | 2005 07 11 | G96 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.0 | 0.0 | | |
| 2001 08 16 | 704 | 0.0 | 0.3− | 2005 07 11 | G96 | 0.6− | 0.3− | 2006 10 15 | 703 | 1.1− | 0.0 | | |
| 2001 08 19 | 704 | 0.5+ | 0.3− | 2005 08 05 | 644 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.6+ | 0.3+ | | |
| 2001 08 19 | 704 | 0.2+ | 0.4+ | 2005 08 05 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2001 08 19 | 704 | 0.1− | 0.2− | 2005 08 05 | 644 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 12 10 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.8− | 1.2− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.8− | 2006 10 21 | 703 | 0.4+ | 0.1+ | | |
| 2002 12 10 | 644 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.7− | 1.5− | 2006 10 21 | 703 | 0.5+ | 0.3− | | |
| 2002 12 11 | 704 | 0.5− | 1.3− | 2006 09 30 | 703 | 1.4− | 1.0− | 2006 10 21 | 703 | 0.6+ | 0.3+ | | |
| 2002 12 11 | 704 | (0.8− | 1.9−) | 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.2+ | 0.0 | | |
| 2002 12 11 | 704 | 0.1+ | 1.0− | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 12 11 | 704 | 0.9− | 1.3− | 2006 09 30 | 703 | 0.2− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2+ | 1.4− | 2006 09 30 | 703 | 0.1+ | 1.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 12 12 | 644 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.3− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 12 12 | 644 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.9+ | 0.8+ | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2002 12 12 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.7+ | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 12 13 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2002 12 13 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 27 | 704 | 2.2+ | 0.8− |
| 2002 12 13 | 704 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 27 | 704 | 0.3− | 0.9+ |
| 2002 12 13 | 704 | 0.4+ | 0.6+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 27 | 704 | 0.1+ | 0.3+ |
| 2002 12 13 | 704 | 0.2+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 27 | 704 | 1.3− | 0.0 |
| 2005 06 03 | 703 | 0.1+ | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 1.4− | 1.6− |
| 2005 06 03 | 703 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | | | | |

**(143161)∗ 2002 XA$_{56}$**

Discovered 2002 Dec. 8 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.12893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23399183 | $\omega$ | 248.14055 | | +0.94111929 | −0.31962167 | |
| $a$ | 2.6081682 | $\Omega$ | 130.31946 | | +0.33807441 | +0.88935299 | |
| $e$ | 0.2050425 | $i$ | 8.30770 | | +0.00041180 | +0.32694533 | |
| $P$ | 4.21 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.7− | 0.2+ | 2003 01 27 | 704 | 0.0 | 0.9+ | 2006 09 18 | 703 | 0.9+ | 0.3− |
| 2002 10 09 | 704 | 0.2− | 0.5+ | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 09 29 | 699 | 0.6− | 0.6+ |
| 2002 10 09 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2006 09 29 | 699 | 0.2− | 0.5+ |
| 2002 10 09 | 704 | 0.3− | 0.2− | 2004 03 20 | 704 | (1.7+ | 1.2+) | 2006 09 29 | 699 | 0.7+ | 0.3+ |
| 2002 12 01 | 704 | 0.4+ | 0.5+ | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 704 | (1.6+ | 1.0+) |
| 2002 12 01 | 704 | 0.2+ | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 10 01 | 704 | (1.1+ | 2.0+) |
| 2002 12 01 | 704 | 0.4+ | 0.5+ | 2004 03 23 | 704 | 0.4+ | 0.5+ | 2006 10 01 | 704 | 0.9+ | 1.1+ |
| 2002 12 08 | 608 | 0.8+ | 0.7+ | 2004 03 23 | 704 | 0.4− | 1.4+ | 2006 10 01 | 704 | 0.5− | 0.1+ |
| 2002 12 08 | 608 | 0.6+ | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2002 12 08 | 608 | (0.5+ | 2.2+) | 2004 03 28 | 703 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 12 12 | 644 | 0.3+ | 1.0+ | 2004 03 28 | 703 | 0.5+ | 1.0+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 12 12 | 644 | 0.4+ | 0.8+ | 2004 03 28 | 703 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.5− |
| 2002 12 12 | 644 | 0.5+ | 0.6+ | 2004 03 28 | 703 | 1.5+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2002 12 14 | 704 | 0.0 | 0.3+ | 2005 06 01 | 691 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2002 12 14 | 704 | 0.1− | 0.3+ | 2005 06 01 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.5− |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.6+ |
| 2002 12 14 | 704 | 0.4+ | 0.3+ | 2005 06 11 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.5− | 0.1+ |
| 2002 12 14 | 704 | 0.2− | 0.4+ | 2005 06 11 | 691 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2002 12 16 | 608 | 0.9+ | 0.9− | 2005 06 11 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2002 12 16 | 608 | 1.3+ | 1.1− | 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 11 10 | 704 | 0.2+ | 0.7+ |
| 2002 12 16 | 608 | 0.9+ | 1.3− | 2005 06 14 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 704 | 0.4+ | 0.2− |
| 2003 01 01 | 704 | 0.8− | 0.8+ | 2005 06 14 | 691 | 0.2+ | 0.5+ | 2006 11 10 | 704 | 0.2− | 0.1+ |
| 2003 01 01 | 704 | 0.8− | 0.4+ | 2005 06 15 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 704 | 0.4+ | 0.0 |
| 2003 01 01 | 704 | 0.8− | 0.7+ | 2005 06 15 | 691 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.3+ | 0.9+ |
| 2003 01 01 | 704 | 1.1− | 0.4− | 2005 06 15 | 691 | 0.0 | 0.4+ | 2006 11 14 | 644 | 0.2− | 0.2+ |
| 2003 01 01 | 704 | 0.6− | 0.0 | 2005 06 24 | 644 | 0.0 | 0.2+ | 2006 11 14 | 644 | 0.1+ | 0.2+ |
| 2003 01 07 | 704 | 1.4− | 0.2− | 2005 06 24 | 644 | 0.2+ | 0.4+ | 2006 11 14 | 644 | 0.1− | 0.0 |
| 2003 01 07 | 704 | 1.0− | 0.4− | 2005 06 24 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.5− | 0.5+ |
| 2003 01 07 | 704 | 0.4− | 0.3− | 2005 07 27 | 644 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.2+ | 0.2+ |
| 2003 01 07 | 704 | 0.5− | 0.2+ | 2005 07 27 | 644 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.4+ |
| 2003 01 07 | 704 | 0.8− | 0.4− | 2005 07 27 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.2+ |
| 2003 01 25 | 699 | 1.2− | 0.0 | 2006 08 23 | 704 | 0.0 | 0.4+ | 2006 11 17 | 644 | 0.1− | 0.3+ |
| 2003 01 25 | 699 | 0.1+ | 0.9+ | 2006 08 23 | 704 | (0.9− | 1.6+) | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2003 01 25 | 699 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.6+ | 1.3+ | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2003 01 25 | 699 | 0.5− | 0.7+ | 2006 08 23 | 704 | 0.8− | 0.0 | 2006 11 22 | 704 | 0.1+ | 1.2− |
| 2003 01 27 | 704 | 0.1+ | 0.1− | 2006 08 23 | 704 | 0.6+ | 0.3+ | 2006 11 22 | 704 | (1.6− | 0.7−) |
| 2003 01 27 | 704 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.5− | 0.5+ | 2006 11 22 | 704 | 0.5− | 0.5− |
| 2003 01 27 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 1.2+ | 2006 11 22 | 704 | 1.2− | 1.4+ |
| 2003 01 27 | 704 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.4+ | | | | |

**(143162)∗ 2002 XQ$_{57}$**

Discovered 2002 Dec. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.27959 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17551321 | $\omega$ | 249.97046 | | −0.92988919 | −0.12081330 | |
| $a$ | 3.1593386 | $\Omega$ | 281.82864 | | +0.27504002 | −0.85554346 | |
| $e$ | 0.0371626 | $i$ | 20.79170 | | −0.24425209 | −0.50343771 | |
| $P$ | 5.62 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.5+ | 0.5− | 2003 01 26 | 644 | 0.2− | 0.3− | 2006 08 12 | 644 | 0.1− | 0.8+ |
| 2000 09 01 | 704 | 1.0+ | 0.2− | 2003 01 26 | 608 | 0.6+ | 1.5+ | 2006 08 12 | 644 | 0.2− | 0.2+ |
| 2000 09 01 | 704 | 0.7+ | 0.5− | 2003 01 26 | 608 | 0.5+ | 1.0+ | 2006 09 15 | 703 | 0.1− | 0.5+ |
| 2000 09 01 | 704 | 0.8+ | 0.6+ | 2003 01 26 | 608 | (0.2+ | 1.8+) | 2006 09 15 | 703 | 0.2− | 0.7+ |
| 2001 12 22 | 704 | 0.4− | 0.0 | 2003 01 28 | 704 | 0.6− | 0.0 | 2006 09 15 | 703 | 0.3− | 0.7+ |
| 2001 12 22 | 704 | 0.4− | 0.3− | 2003 01 28 | 704 | 0.6− | 0.4− | 2006 09 15 | 703 | 0.4− | 0.7+ |
| 2001 12 22 | 704 | 0.5− | 0.6− | 2003 01 28 | 704 | 0.4− | 0.8+ | 2006 09 16 | 703 | 0.5+ | 0.7+ |
| 2001 12 22 | 704 | 1.0− | 0.1− | 2003 02 06 | 608 | 1.4+ | 1.3+ | 2006 09 16 | 703 | 0.6− | 0.0 |
| 2002 12 06 | 644 | 0.3− | 0.3+ | 2003 02 06 | 608 | 1.2+ | 1.2+ | 2006 09 16 | 703 | 0.0 | 0.1− |
| 2002 12 06 | 644 | 0.1+ | 0.2+ | 2003 02 06 | 608 | (1.0+ | 2.2+) | 2006 09 16 | 703 | 0.2+ | 0.6− |
| 2002 12 06 | 644 | 0.2+ | 0.1− | 2003 02 12 | 608 | 0.3+ | 0.7− | 2006 09 16 | 703 | 0.7− | 0.1+ |
| 2002 12 10 | 644 | 0.0 | 0.7+ | 2003 02 12 | 608 | 0.3+ | 1.2− | 2006 09 16 | 703 | 0.3+ | 0.0 |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2003 02 12 | 608 | 0.2+ | 0.3− | 2006 09 16 | 703 | 0.6− | 0.4+ |
| 2002 12 10 | 644 | 0.0 | 0.6+ | 2004 04 18 | E12 | (2.2+ | 0.0 ) | 2006 09 16 | 703 | 0.1− | 0.2+ |
| 2002 12 12 | 608 | 0.6+ | 1.0− | 2004 04 18 | E12 | 0.5+ | 1.1+ | 2006 09 17 | 703 | 0.5− | 0.9+ |
| 2002 12 12 | 608 | 0.7+ | 0.5− | 2004 04 18 | E12 | (0.4+ | 1.7+) | 2006 09 17 | 703 | 0.3− | 1.3+ |
| 2002 12 12 | 608 | 0.9+ | 0.1− | 2004 04 18 | E12 | 0.8− | 0.2+ | 2006 09 17 | 703 | (0.8+ | 1.9+) |
| 2003 01 01 | 704 | 0.3+ | 0.6+ | 2004 05 11 | E12 | 0.4+ | 0.9+ | 2006 09 17 | 703 | 0.5+ | 0.6+ |
| 2003 01 01 | 704 | 0.3+ | 0.5+ | 2004 05 11 | E12 | 1.0+ | 1.5+ | 2006 09 18 | 703 | 1.5+ | 0.2+ |
| 2003 01 01 | 704 | 0.4+ | 0.9+ | 2004 05 11 | E12 | 0.1+ | 1.5+ | 2006 09 18 | 703 | 0.5+ | 0.2+ |
| 2003 01 01 | 704 | 0.0 | 0.5+ | 2004 05 11 | E12 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.6+ |
| 2003 01 01 | 704 | 0.7+ | 1.2+ | 2004 05 19 | E12 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.7+ |
| 2003 01 07 | 704 | 0.3− | 0.7+ | 2004 05 19 | E12 | 0.1+ | 0.4− | 2006 10 20 | 703 | 0.4− | 0.8+ |
| 2003 01 07 | 704 | 0.3− | 0.3+ | 2004 05 19 | E12 | 1.1+ | 0.8+ | 2006 10 20 | 703 | 0.6+ | 0.2+ |
| 2003 01 07 | 704 | 0.2− | 0.1− | 2004 05 19 | E12 | 1.3+ | 0.0 | 2006 10 20 | 703 | 0.3+ | 0.7+ |
| 2003 01 07 | 704 | 0.5− | 0.3+ | 2005 06 03 | 691 | 0.3− | 0.0 | 2006 10 20 | 703 | 1.2− | 0.0 |
| 2003 01 07 | 704 | 0.0 | 0.7+ | 2005 06 03 | 691 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.2− | 0.7+ |
| 2003 01 09 | 704 | 0.8− | 0.1+ | 2005 06 03 | 691 | 0.4− | 1.0+ | 2006 10 27 | 703 | 0.7− | 0.1+ |
| 2003 01 09 | 704 | 0.5− | 0.3+ | 2005 06 26 | 644 | 0.4− | 0.1+ | 2006 10 27 | 703 | 1.1− | 0.1+ |
| 2003 01 09 | 704 | 0.1+ | 1.3+ | 2005 06 26 | 644 | 0.7− | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.1+ |
| 2003 01 26 | 644 | 0.1+ | 0.7− | 2005 06 26 | 644 | 0.3− | 0.0 | | | | |
| 2003 01 26 | 644 | 0.7+ | 1.2− | 2006 08 12 | 644 | 0.0 | 0.5+ | | | | |

**(143163)∗ 2002 XY$_{57}$ = 2005 NK$_{64}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.20593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23659655 | $\omega$ | 252.31373 | | −0.40913431 | −0.91132997 | |
| $a$ | 2.5889905 | $\Omega$ | 221.93029 | | +0.86095104 | −0.36896363 | |
| $e$ | 0.1571813 | $i$ | 3.91994 | | +0.30227872 | −0.18260212 | |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 691 | 0.4− | 0.5+ | 2005 07 10 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.0 | 0.6+ |
| 2001 07 18 | 691 | 0.1+ | 0.3− | 2005 07 10 | 691 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2001 07 18 | 691 | 0.6− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.9+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2002 12 05 | 644 | 1.1+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2002 12 05 | 644 | (1.7+ | 0.3+) | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2002 12 05 | 644 | 0.2+ | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.9+ |
| 2002 12 11 | 704 | 0.5− | 0.6− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.8− | 0.4− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 1.0− | 1.1− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.6− |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.1− |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2002 12 12 | 644 | 0.0 | 1.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.6− | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.7+ | 1.3+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.1+ | |
| 2002 12 12 | 644 | 0.6+ | 1.1+ | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.4+ | |
| 2003 01 07 | 704 | 0.5+ | 1.1+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.0 | |
| 2003 01 07 | 704 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.4+ | |
| 2003 01 07 | 704 | 1.3+ | 0.9+ | 2006 11 11 | 703 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.9+ | 0.4+ | |
| 2003 01 07 | 704 | 0.2− | 0.9+ | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 21 | G96 | 0.2− | 0.2− | |
| 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.7− | 2006 11 21 | G96 | 0.1+ | 0.3− | |
| 2004 04 25 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.9− | 2006 11 21 | G96 | 0.2+ | 0.2− | |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.3− | |
| 2004 04 26 | 291 | 0.1+ | 1.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | (1.9− | 0.3−) | |
| 2004 04 26 | 291 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.7− | 2006 11 21 | 704 | 0.1− | 0.4+ | |
| 2004 04 26 | 291 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 1.1+ | |
| 2004 05 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.1− | 0.4+ | |
| 2004 05 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.4+ | |
| 2004 05 16 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.2− | 0.7+ | |
| 2005 07 01 | 691 | 0.0 | 0.6+ | 2006 11 12 | 703 | 0.2− | 0.1− | 2006 11 29 | 704 | 1.4+ | 1.1+ | |
| 2005 07 01 | 691 | 0.2+ | 0.2+ | 2006 11 12 | 703 | (0.1− | 1.6−) | 2006 11 29 | 704 | 1.6+ | 0.4− | |
| 2005 07 01 | 691 | 0.2+ | 0.2+ | 2006 11 12 | 703 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.5− | 0.8+ | |
| 2005 07 10 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.5+ | | | | | |

**(143164)∗ 2002 XF$_{58}$ = 1977 XE$_2$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85788)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.87540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23732314 | $\omega$ | 203.76818 | | −0.02776409 | | −0.99279913 |
| $a$ | 2.5837034 | $\Omega$ | 247.99264 | | +0.93610004 | | +0.01506816 |
| $e$ | 0.1924747 | $i$ | 7.22045 | | +0.35063638 | | −0.11883954 |
| $P$ | 4.15 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 12 07 | 675 | 0.1− | 1.0− | 2003 01 08 | 704 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.6− | |
| 1977 12 08 | 675 | 0.0 | 1.1− | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.1− | 1.0− | |
| 1998 12 16 | 699 | 0.7+ | 0.2− | 2003 01 08 | 704 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.6− | 0.4+ | |
| 1998 12 16 | 699 | 0.3− | 0.4+ | 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 11 15 | 704 | 0.4+ | 0.2+ | |
| 1998 12 16 | 699 | 0.8+ | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.1− | 2006 11 15 | 704 | (1.3− | 1.5−) | |
| 1999 01 18 | 704 | 0.5− | 0.9+ | 2003 01 08 | 704 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.6+ | |
| 1999 01 18 | 704 | (1.0− | 2.3+) | 2003 01 08 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.0 | |
| 1999 01 18 | 704 | (2.7− | 0.7−) | 2003 01 08 | 704 | 0.9+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.4+ | |
| 1999 01 18 | 704 | 0.9+ | 1.3− | 2004 05 10 | 608 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.5− | 0.3+ | |
| 2002 11 14 | 704 | (0.3+ | 1.5−) | 2004 05 10 | 608 | 1.2− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.0 | |
| 2002 11 14 | 704 | (0.2− | 1.8−) | 2004 05 10 | 608 | 0.9+ | 0.4+ | 2006 11 17 | 704 | 0.7− | 0.6+ | |
| 2002 11 14 | 704 | (0.7− | 1.9−) | 2006 09 25 | 704 | 0.3+ | 1.0+ | 2006 11 17 | 704 | 0.2+ | 0.3+ | |
| 2002 11 14 | 704 | 0.3+ | 1.5− | 2006 09 25 | 704 | (0.1+ | 2.7+) | 2006 11 17 | 704 | 0.3− | 0.2− | |
| 2002 11 14 | 704 | (0.2− | 2.6−) | 2006 09 25 | 704 | 0.3− | 1.1+ | 2006 11 17 | 704 | 0.6− | 0.7+ | |
| 2002 12 11 | 704 | (2.1+ | 0.1+) | 2006 09 25 | 704 | 0.2− | 1.5+ | 2006 11 18 | 691 | 0.1− | 0.0 | |
| 2002 12 11 | 704 | 1.0+ | 0.8− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.0 | |
| 2002 12 11 | 704 | (2.1+ | 0.9−) | 2006 10 19 | 691 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.0 | |
| 2002 12 11 | 704 | (1.7+ | 0.7−) | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.0 | |
| 2002 12 11 | 704 | (1.7+ | 1.0−) | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.5+ | |
| 2002 12 12 | 704 | 0.7+ | 0.6− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.0 | |
| 2002 12 12 | 704 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.7+ | |
| 2002 12 12 | 704 | 0.5+ | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.2+ | |
| 2002 12 12 | 704 | 0.2+ | 0.4− | 2006 10 29 | 704 | 0.4+ | 0.6+ | 2006 11 20 | 691 | 0.0 | 0.1− | |
| 2002 12 12 | 704 | 0.2+ | 0.2+ | 2006 10 29 | 704 | 0.5+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 | |
| 2002 12 12 | 704 | 0.3+ | 0.3− | 2006 10 29 | 704 | 1.3+ | 0.2− | 2006 11 20 | 691 | 0.2− | 0.1− | |
| 2002 12 12 | 704 | 0.7− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 20 | 703 | 0.0 | 0.1− | |
| 2002 12 31 | 704 | 0.9− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 703 | 0.3+ | 0.1− | |
| 2002 12 31 | 704 | 0.5− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.0 | 0.0 | |
| 2002 12 31 | 704 | 0.9− | 0.5+ | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 20 | 703 | 0.2+ | 0.2+ | |
| 2002 12 31 | 704 | 1.0− | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.2− | 1.0− | |
| 2002 12 31 | 704 | 1.1− | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.4− | |
| 2003 01 07 | 704 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.2− | 1.3− | |
| 2003 01 07 | 704 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 1.2− | 0.7− | |
| 2003 01 07 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.7+ | 0.3+ | |
| 2003 01 07 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.2− | |
| 2003 01 07 | 704 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.2− | |
| 2003 01 08 | 704 | 0.0 | 0.7+ | 2006 11 13 | 691 | 0.4+ | 0.4− | 2006 12 01 | G96 | 0.5+ | 0.3− | |
| 2003 01 08 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.6− | 0.0 | |
| 2003 01 08 | 704 | 0.3− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.3+ | 2006 12 01 | 704 | 1.1+ | 0.5− | |
| 2003 01 08 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.4− | 0.6− | |
| 2003 01 08 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.8− | 0.2+ | 2006 12 01 | 704 | 0.9− | 0.5− | |
| 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 11 14 | 703 | 1.1+ | 1.3+ | | | | | |

**(143165)∗ 2002 XO$_{58}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.13129 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23322160 | $\omega$ | 352.95300 | | +0.77778858 | | −0.62621825 |
| $a$ | 2.6139074 | $\Omega$ | 45.96590 | | +0.58025246 | | +0.68251031 |
| $e$ | 0.1296595 | $i$ | 4.29255 | | +0.24156159 | | +0.37686918 |
| $P$ | 4.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 22 | 691 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.6− | 1.1− | 2006 11 13 | 691 | 0.1+ | 0.1+ | |
| 1991 02 22 | 691 | 0.2+ | 0.3− | 2006 09 16 | 703 | 0.0 | 0.8− | 2006 11 13 | 691 | 0.3+ | 0.1+ | |
| 1991 02 22 | 691 | 0.2+ | 0.3− | 2006 09 16 | 703 | 1.2− | 1.1− | 2006 11 13 | 691 | 0.2+ | 0.0 | |
| 1991 03 09 | 691 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.0 | |
| 1991 03 09 | 691 | 0.7+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.1− | 0.1+ | |
| 1991 03 09 | 691 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 13 | 644 | 0.1− | 0.3− | |
| 2001 07 13 | 644 | 0.3− | 0.8+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.5− | 0.7+ | |
| 2001 07 13 | 644 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.4+ | |
| 2001 07 13 | 644 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 17 | 704 | 0.2− | 0.2+ | |
| 2001 08 11 | 644 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.2+ | |
| 2001 08 11 | 644 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.4+ | 1.2− | 2006 11 17 | 704 | 0.6− | 0.1− | |
| 2001 08 11 | 644 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ | |
| 2002 11 12 | 704 | (1.8− | 0.4+) | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.2+ | |
| 2002 11 12 | 704 | 1.2− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.3+ | 0.2+ | |
| 2002 11 12 | 704 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.5− | 0.5+ | |
| 2002 12 06 | 704 | (0.3− | 1.6+) | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.5− | 0.5+ | |
| 2002 12 06 | 704 | 0.9− | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.7+ | |
| 2002 12 06 | 704 | 0.6− | 0.7− | 2006 10 17 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.8+ | |
| 2002 12 06 | 704 | 1.1+ | 0.9− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.7+ | |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.3+ | 0.3+ | |
| 2002 12 11 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.4+ | 0.2+ | |
| 2002 12 11 | 704 | 0.8+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.2+ | |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | 1.0+ | 0.7+ | |
| 2002 12 11 | 704 | 0.9− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.7+ | |
| 2002 12 11 | 704 | 0.7− | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.7+ | |
| 2002 12 12 | 704 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.3+ | |
| 2002 12 12 | 704 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.0 | |
| 2002 12 12 | 704 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2− | |
| 2003 01 05 | 704 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.3− | |
| 2003 01 05 | 704 | 0.1+ | 0.3− | 2006 10 28 | 704 | 1.0− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.3− | |
| 2003 01 05 | 704 | (0.7− | 2.0−) | 2006 10 28 | 704 | 0.7− | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.3− | |
| 2003 01 05 | 704 | 0.8− | 0.2− | 2006 10 28 | 704 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.5− | |
| 2003 01 05 | 704 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.2− | |
| 2004 03 28 | 704 | 0.8− | 0.9− | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.3− | |
| 2004 03 28 | 704 | 0.3+ | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.4+ | 0.3− | |
| 2004 03 28 | 704 | 0.3+ | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.2− | 0.6− | |
| 2004 04 19 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.0 | 0.3+ | |
| 2004 04 19 | 704 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.1+ | 2006 12 01 | 704 | 0.5− | 0.2− | |
| 2004 04 19 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.5− | 2006 12 01 | 704 | 0.0 | 0.2+ | |

**(143166)∗ 2002 XZ$_{59}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.81078 | | (2000.0) | | | |
| $n$ | 0.20280093 | $\omega$ | 66.71876 | | −0.72560197 | −0.68522663 |
| $a$ | 2.8691687 | $\Omega$ | 69.96206 | | +0.60430566 | −0.67832670 |
| $e$ | 0.0756950 | $i$ | 3.84377 | | +0.32911465 | −0.26521191 |
| $P$ | 4.86 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 12 | 809 | 0.5+ | 1.2+ | 2004 02 23 | 704 | 0.1+ | 1.9+ | 2004 03 28 | 704 | 0.3+ | 0.0 |
| 1994 02 12 | 809 | 0.2− | 0.6+ | 2004 02 23 | 704 | 0.3+ | 1.0+ | 2004 03 28 | 704 | 0.1+ | 0.1+ |
| 1994 02 12 | 809 | 0.1+ | 0.5− | 2004 03 15 | 703 | 0.6− | 0.5+ | 2004 03 28 | 704 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.8− | 2004 03 15 | 703 | 0.1− | 0.0 | 2004 04 12 | 699 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.8− | 0.3− | 2004 03 15 | 703 | 0.1− | 0.1− | 2004 04 12 | 699 | 0.9− | 0.1+ |
| 2002 12 05 | 704 | 0.5− | 0.1− | 2004 03 15 | 703 | 0.0 | 0.6+ | 2004 04 12 | 699 | 1.2− | 1.3− |
| 2002 12 05 | 704 | 0.3+ | 0.5+ | 2004 03 16 | 704 | 0.2+ | 1.0+ | 2004 04 12 | 699 | 1.8− | 1.9− |
| 2002 12 10 | 704 | 0.3− | 0.3− | 2004 03 16 | 704 | 0.2+ | 0.7+ | 2004 04 21 | 691 | 0.1+ | 0.4+ |
| 2002 12 10 | 704 | 1.5+ | 0.8+ | 2004 03 16 | 704 | 0.1− | 0.3+ | 2004 04 21 | 691 | 0.2+ | 0.5+ |
| 2002 12 10 | 704 | 1.2+ | 0.9+ | 2004 03 16 | 704 | 1.0− | 0.5+ | 2004 04 21 | 691 | 0.1+ | 0.5+ |
| 2002 12 10 | 704 | 0.2− | 0.4+ | 2004 03 16 | 704 | 1.0− | 0.5+ | 2006 08 20 | 691 | 0.4− | 0.3+ |
| 2002 12 10 | 704 | 0.3− | 0.4+ | 2004 03 18 | 683 | 0.7+ | 0.8− | 2006 08 20 | 691 | 0.3− | 0.3+ |
| 2002 12 10 | 704 | 0.8+ | 0.6+ | 2004 03 18 | 683 | 0.0 | 1.7+ | 2006 08 20 | 691 | 0.6+ | 0.4+ |
| 2002 12 10 | 704 | 0.1− | 1.9− | 2004 03 18 | 683 | 0.3+ | 1.2+ | 2006 08 29 | 691 | 0.4− | 0.2+ |
| 2002 12 10 | 704 | 0.7+ | 0.5+ | 2004 03 22 | 704 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.4− | 0.7+ |
| 2002 12 13 | 704 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.5+ | 0.5− | 2006 08 29 | 691 | 0.5− | 0.6+ |
| 2002 12 13 | 704 | 0.3− | 0.6− | 2004 03 22 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 703 | 0.4+ | 0.1+ |
| 2002 12 13 | 704 | 0.5+ | 1.2− | 2004 03 22 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 0.5+ | 1.7+ |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.5− | 2006 09 18 | 703 | 0.6+ | 0.6+ |
| 2002 12 31 | 704 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 703 | 0.3− | 0.6− |
| 2002 12 31 | 704 | 0.7− | 0.0 | 2004 03 23 | 704 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.9+ | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 1.4− | 0.3+ |
| 2003 01 04 | 704 | 0.7− | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.0 |
| 2003 01 04 | 704 | 0.4− | 0.2− | 2004 03 27 | 683 | 0.9+ | 0.6− | 2006 09 18 | 699 | 0.3+ | 1.1+ |
| 2003 01 04 | 704 | 0.4− | 0.7+ | 2004 03 27 | 683 | 1.4+ | 1.9− | 2006 09 30 | 703 | 0.0 | 1.3+ |
| 2003 01 04 | 704 | 0.5− | 0.6+ | 2004 03 27 | 683 | 1.1+ | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.3− |
| 2004 02 23 | 704 | 0.2− | 0.2+ | 2004 03 28 | 704 | 1.4+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.8+ |
| 2004 02 23 | 704 | 0.3+ | 0.8+ | 2004 03 28 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 703 | 1.1− | 0.5− |

**(143167)∗ 2002 XC$_{60}$ = 2004 FX$_{16}$**

Discovered 2002 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 65399)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.77285 | | (2000.0) | | | |
| $n$ | 0.23023900 | $\omega$ | 89.37334 | | +0.92912699 | +0.35396720 |
| $a$ | 2.6364333 | $\Omega$ | 249.89241 | | −0.36805398 | +0.85758622 |
| $e$ | 0.1970043 | $i$ | 6.53740 | | −0.03548675 | +0.37316632 |
| $P$ | 4.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.4− | 0.2+ | 2005 05 14 | 704 | 0.4+ | 0.6+ | 2006 10 29 | 704 | 1.0− | 0.1+ |
| 2002 11 05 | 704 | 0.0 | 0.8+ | 2005 05 16 | 644 | 0.1− | 0.3+ | 2006 10 29 | 704 | (1.6− | 0.5+) |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2005 05 16 | 644 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | 0.3− | 0.4− | 2005 05 16 | 644 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.7+ | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 1.4+ | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.7+ | 0.8+ | 2005 06 06 | 691 | 0.0 | 0.7+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 1.0+ | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.4− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.7+ | 1.3+ | 2006 09 29 | 704 | 1.1+ | 1.0+ | 2006 11 14 | 703 | 0.2− | 0.5− |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.5− | 2006 11 14 | 703 | 0.7+ | 0.5− |
| 2002 12 10 | 704 | 0.6− | 1.0+ | 2006 09 29 | 704 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.4− |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 15 | 185 | (1.6+ | 0.5+) |
| 2002 12 10 | 704 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 15 | 185 | 1.3+ | 0.5+ |
| 2002 12 10 | 704 | 0.5− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 15 | 185 | (2.0+ | 0.3+) |
| 2002 12 10 | 704 | 0.5− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2002 12 10 | 704 | (1.6+ | 1.3−) | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.6− | 0.3+ |
| 2002 12 10 | 704 | 0.7− | 0.6− | 2006 10 17 | 691 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2002 12 13 | 704 | 0.4− | 0.6− | 2006 10 19 | 704 | (2.1+ | 1.5−) | 2006 11 16 | 704 | 0.4+ | 1.3+ |
| 2002 12 13 | 704 | 0.3− | 0.3− | 2006 10 19 | 704 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.4− | 0.3+ |
| 2002 12 13 | 704 | 0.3+ | 0.7− | 2006 10 19 | 704 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2002 12 13 | 704 | 0.6− | 0.2− | 2006 10 19 | 704 | 1.1+ | 1.1+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2002 12 13 | 704 | 0.4+ | 0.3− | 2006 10 21 | 704 | 1.0− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 12 31 | 704 | 1.2+ | 0.2+ | 2006 10 21 | 704 | 0.0 | 0.9+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 12 31 | 704 | 0.3− | 0.6− | 2006 10 21 | 691 | 0.2− | 0.7+ | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 10 21 | 704 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.3− | 0.9+ |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2006 10 21 | 704 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2004 02 19 | 704 | 0.1− | 0.4− | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2004 02 19 | 704 | 0.5− | 0.7− | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2004 02 19 | 704 | 0.6− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6+ | 1.0− |
| 2004 03 16 | 568 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2004 03 16 | 568 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.8+ | 1.1+ |
| 2004 03 16 | 568 | 0.7− | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2004 03 17 | 568 | 0.5+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2004 03 17 | 568 | 0.6+ | 0.2− | 2006 10 23 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.5− |
| 2004 03 17 | 568 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.4+ | 0.6− | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2005 05 14 | 704 | 0.8+ | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.6+ |
| 2005 05 14 | 704 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.5− | 0.2+ |
| 2005 05 14 | 704 | 0.2+ | 1.3+ | 2006 10 29 | 704 | 1.2− | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.7+ |
| 2005 05 14 | 704 | 0.9+ | 0.2+ | 2006 10 29 | 704 | 0.8− | 0.3+ | | | | |

**(143168)∗ 2002 XO$_{62}$ = 1996 JH$_{16}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41343)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.95618 | | (2000.0) | | | |
| $n$ | 0.22673523 | $\omega$ | 312.98571 | | +0.68504553 | −0.68758108 |
| $a$ | 2.6635246 | $\Omega$ | 92.05776 | | +0.71863022 | +0.58359946 |
| $e$ | 0.2555907 | $i$ | 13.93806 | | +0.11951246 | +0.43202306 |
| $P$ | 4.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 15 | 691 | 0.6− | 0.5+ | 2002 11 19 | 644 | 0.5+ | 0.1+ | 2003 01 31 | 704 | 0.4+ | 0.8+ |
| 1996 05 15 | 691 | 0.5− | 0.1− | 2002 12 01 | 704 | (1.8− | 0.9−) | 2003 01 31 | 704 | 0.5+ | 0.5+ |
| 1996 05 15 | 691 | 0.4− | 0.1− | 2002 12 01 | 704 | (2.2− | 0.6−) | 2003 01 31 | 704 | 1.1+ | 0.8+ |
| 1996 05 24 | 691 | 1.1+ | 0.3+ | 2002 12 01 | 704 | (2.0− | 1.1−) | 2003 01 31 | 704 | 0.7+ | 0.7− |
| 1996 05 24 | 691 | 0.4+ | 0.5+ | 2002 12 01 | 704 | 1.0− | 0.9− | 2006 07 30 | E12 | 0.3+ | 0.3− |
| 1996 05 24 | 691 | 0.2+ | 0.2+ | 2002 12 11 | 704 | 0.4− | 0.5+ | 2006 07 30 | E12 | 0.2+ | 0.6− |
| 1996 06 16 | 691 | 0.2− | 0.3− | 2002 12 11 | 704 | 0.6− | 0.7+ | 2006 07 30 | E12 | 0.0 | 1.1+ |
| 1996 06 16 | 691 | 0.0 | 0.2− | 2002 12 11 | 704 | 0.1− | 0.5+ | 2006 07 30 | E12 | 0.4+ | 0.8+ |
| 1996 06 16 | 691 | 0.0 | 0.5− | 2002 12 11 | 704 | 0.3− | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 1996 06 22 | 691 | 0.4+ | 0.5+ | 2002 12 11 | 704 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 1996 06 22 | 691 | 0.1+ | 0.2+ | 2002 12 13 | 704 | 0.7− | 0.3− | 2006 08 20 | 644 | 0.1+ | 0.5+ |
| 1996 06 22 | 691 | 0.2+ | 0.1+ | 2002 12 13 | 704 | 0.8− | 0.0 | 2006 09 22 | E12 | 0.2+ | 0.4+ |
| 2000 05 04 | 645 | 0.0 | 0.2+ | 2002 12 13 | 704 | 0.8− | 0.1+ | 2006 09 22 | E12 | 0.4+ | 0.4− |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2002 12 13 | 704 | 0.8− | 0.3+ | 2006 09 22 | E12 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 1.1− | 0.2+ | 2002 12 13 | 704 | 0.8− | 0.3+ | 2006 09 22 | E12 | 0.4− | 0.6+ |
| 2002 10 04 | 704 | 0.6− | 0.1− | 2002 12 16 | 608 | 1.5+ | 0.7+ | 2006 10 03 | E12 | 0.3+ | 0.3+ |
| 2002 10 04 | 704 | 0.7− | 0.3+ | 2002 12 16 | 608 | 1.2+ | 0.9+ | 2006 10 03 | E12 | 0.4− | 0.2+ |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2002 12 16 | 608 | 1.1+ | 0.8+ | 2006 10 03 | E12 | 0.6+ | 0.3+ |
| 2002 10 04 | 704 | 0.3− | 0.3− | 2002 12 31 | 704 | 0.5− | 0.0 | 2006 10 03 | E12 | 0.4− | 0.4+ |
| 2002 10 09 | 704 | 0.2+ | 1.0− | 2002 12 31 | 704 | 0.5− | 0.4+ | 2006 10 12 | E12 | 0.1− | 0.1− |
| 2002 10 09 | 704 | (0.4− | 1.6−) | 2002 12 31 | 704 | 1.1− | 0.2+ | 2006 10 12 | E12 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.7+ | 1.4− | 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 10 12 | E12 | 0.1− | 0.2− |
| 2002 10 09 | 704 | 0.2− | 1.2− | 2003 01 04 | 704 | 0.2− | 0.0 | 2006 10 12 | E12 | 0.2− | 0.5+ |
| 2002 10 09 | 704 | 0.1+ | 0.9− | 2003 01 04 | 704 | 0.2+ | 0.0 | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.6− | 0.6+ | 2003 01 04 | 704 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.3+ | 0.0 |
| 2002 11 05 | 704 | 0.6− | 0.7+ | 2003 01 04 | 704 | 0.3− | 0.5− | 2006 11 17 | 644 | 0.2+ | 0.3+ |
| 2002 11 05 | 704 | 0.1− | 0.0 | 2003 01 04 | 704 | (1.7+ | 0.1+) | 2006 11 18 | 703 | 0.5− | 0.6+ |
| 2002 11 05 | 704 | 0.6− | 0.4+ | 2003 01 08 | 704 | 0.5− | 0.2+ | 2006 11 18 | 703 | 0.4− | 0.5+ |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2003 01 08 | 704 | 0.3− | 0.1+ | 2006 11 18 | 703 | 0.3− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.2− | 0.4+ | 2003 01 08 | 704 | 0.0 | 0.2+ | 2006 11 18 | 703 | 0.3− | 0.0 |
| 2002 11 12 | 704 | 0.5+ | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.5− | 0.1− |
| 2002 11 12 | 704 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.2− | 0.5− | 2006 11 27 | 703 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.0 | 0.3− | 2003 01 11 | 291 | 0.6+ | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.5− |
| 2002 11 12 | 704 | 0.4− | 0.3+ | 2003 01 11 | 291 | 0.1+ | 0.0 | 2006 11 27 | 703 | 1.2− | 1.0+ |
| 2002 11 19 | 644 | 0.6+ | 0.2+ | 2003 01 11 | 291 | 0.3+ | 0.1+ | | | | |
| 2002 11 19 | 644 | 0.3+ | 0.3− | 2003 01 31 | 704 | 1.0+ | 0.3+ | | | | |

**(143169)∗ 2002 XZ$_{62}$ = 2005 NS$_{90}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85789)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.45019 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21886109 | $\omega$ | 321.44328 | | −0.57250762 | | −0.81967284 |
| $a$ | 2.7270327 | $\Omega$ | 163.45356 | | +0.76802552 | | −0.54436627 |
| $e$ | 0.1569590 | $i$ | 3.88046 | | +0.28700492 | | −0.17833060 |
| $P$ | 4.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.2+ | 0.1− | 2005 06 18 | G96 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.8− |
| 2001 09 21 | 704 | 0.6+ | 0.7− | 2005 06 18 | G96 | 0.0 | 0.3− | 2006 10 15 | 703 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.3− | 2005 06 18 | G96 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.4+ | 0.7+ |
| 2002 12 01 | 704 | 0.7+ | 0.8+ | 2005 07 05 | 691 | 0.2− | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.4+ |
| 2002 12 01 | 704 | 0.4+ | 1.2+ | 2005 07 05 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.9− | 0.3− |
| 2002 12 01 | 704 | (1.0+ | 1.7+) | 2005 07 05 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 1.3− | 1.3− |
| 2002 12 11 | 704 | 0.4+ | 0.6+ | 2005 07 10 | 691 | 0.4− | 0.1+ | 2006 10 21 | 703 | 1.0+ | 0.2− |
| 2002 12 11 | 704 | 0.7− | 0.6− | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 1.0− | 1.4− |
| 2002 12 11 | 704 | 0.0 | 0.8− | 2005 07 10 | 691 | 0.1− | 0.5− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.0 | 0.9− | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 12 13 | 704 | 1.1− | 1.2+ | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 12 13 | 704 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.6− |
| 2002 12 13 | 704 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2002 12 13 | 704 | 0.2− | 0.4− | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2003 01 07 | 704 | 0.7− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2003 01 07 | 704 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2003 01 07 | 704 | 0.6+ | 0.6+ | 2006 09 27 | 691 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2003 01 07 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2003 01 07 | 704 | 0.9+ | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2005 06 18 | G96 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.3+ | 0.0 | | | | |

**(143170)∗ 2002 XJ$_{64}$ = 2000 GP$_{14}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41344)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.19304 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23627655 | $\omega$ | 325.80650 | | +0.97874036 | | +0.20238714 |
| $a$ | 2.5913275 | $\Omega$ | 22.58676 | | −0.16343896 | | +0.86758898 |
| $e$ | 0.1008278 | $i$ | 4.96901 | | −0.12391538 | | +0.45423431 |
| $P$ | 4.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 1.6+ | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2000 04 05 | 704 | 0.5+ | 0.9+ | 2004 03 17 | 704 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 1.2+ | 0.9+ | 2004 03 17 | 704 | 1.0+ | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 0.9+ | 0.2+ | 2004 03 17 | 704 | 0.6− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 704 | 0.2+ | 0.1+ | 2004 03 17 | 704 | 0.2+ | 1.4+ | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2000 04 06 | 704 | 0.8− | 0.3− | 2004 03 22 | 704 | 0.6+ | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.2− |
| 2000 04 06 | 704 | 1.3− | 0.3− | 2004 03 22 | 704 | 0.9+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2000 04 06 | 704 | 0.6− | 1.4+ | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 1.3+ | 0.2+ |
| 2002 12 06 | 704 | 0.3+ | 0.5+ | 2004 03 22 | 704 | 0.7+ | 0.7− | 2006 11 15 | 704 | (2.0+ | 0.1+) |
| 2002 12 06 | 704 | 0.4− | 0.8− | 2004 03 23 | 691 | 0.6− | 0.2+ | 2006 11 15 | 704 | 0.9+ | 0.2− |
| 2002 12 06 | 704 | 0.9− | 0.7− | 2004 03 23 | 691 | 0.4− | 0.1− | 2006 11 15 | 704 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 0.8− | 0.9− | 2004 03 23 | 691 | 0.3− | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.4+ |
| 2002 12 06 | 704 | 1.3− | 0.7− | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | (0.2+ | 2.5+) |
| 2002 12 11 | 704 | 0.6+ | 0.9− | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2002 12 11 | 704 | 0.5+ | 0.4− | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | (0.5− | 1.7+) |
| 2002 12 11 | 704 | 0.5+ | 0.4− | 2004 04 24 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2002 12 13 | 704 | 1.0+ | 0.6+ | 2004 04 24 | 691 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.3+ | 1.0+ |
| 2002 12 13 | 704 | 1.1+ | 0.8− | 2004 04 24 | 691 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.3− |
| 2002 12 13 | 704 | (0.7+ | 2.1−) | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 11 16 | 704 | (0.3+ | 1.7+) |
| 2002 12 13 | 704 | 0.5+ | 1.0− | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2002 12 13 | 704 | 0.1− | 1.2− | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 2003 01 05 | 704 | 0.5− | 0.6− | 2006 09 30 | G96 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.6− | 1.0+ |
| 2003 01 05 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.9+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2003 01 05 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.9− | 0.7− | 2006 11 19 | 704 | 0.3− | 0.3− |
| 2003 01 05 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2004 03 15 | 691 | 0.3− | 0.2− | 2006 10 19 | 695 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2004 03 15 | 704 | 1.4+ | 0.1+ | 2006 10 19 | 695 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.1+ | 1.1+ |
| 2004 03 15 | 691 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.9+ |
| 2004 03 15 | 704 | (1.6+ | 0.2−) | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2004 03 15 | 704 | 1.1+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.9− | 0.3− |
| 2004 03 15 | 691 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 | | | | |
| 2004 03 15 | 704 | 1.1+ | 0.7− | 2006 10 27 | 691 | 0.1− | 0.1+ | | | | |

**(143171)∗ 2002 XH$_{65}$**

Discovered 2002 Dec. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.92260 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22060685 | $\omega$ | 305.39717 | | +0.87511868 | | +0.37055105 |
| $a$ | 2.7126268 | $\Omega$ | 36.00540 | | −0.02919525 | | +0.68240087 |
| $e$ | 0.1438188 | $i$ | 31.96587 | | −0.48302684 | | +0.63009601 |
| $P$ | 4.47 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.8+ | 1.3+ | 2004 03 17 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2000 03 29 | 704 | 0.3+ | 0.6− | 2005 02 09 | 809 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.5− |
| 2000 03 29 | 704 | 0.3+ | 0.7+ | 2005 02 09 | 809 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2000 03 29 | 704 | 0.6+ | 0.2+ | 2005 02 09 | 809 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2000 04 08 | 704 | 0.9+ | 0.5− | 2005 02 09 | 809 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2000 04 08 | 704 | 0.8+ | 0.3+ | 2005 06 09 | E12 | 0.1− | 0.4+ | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2000 04 08 | 704 | 0.3+ | 1.5+ | 2005 06 09 | E12 | 0.1− | 0.6+ | 2006 11 10 | 704 | 0.1− | 0.0 |
| 2000 05 09 | 704 | 1.2+ | 0.6− | 2005 06 09 | E12 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.5+ |
| 2000 05 09 | 704 | 0.8+ | 0.1+ | 2005 06 09 | E12 | 0.3− | 0.3+ | 2006 11 10 | 704 | 0.5− | 0.6− |
| 2000 05 09 | 704 | 1.1+ | 0.4+ | 2006 08 05 | E12 | 0.6+ | 0.9+ | 2006 11 10 | 704 | 0.9− | 0.2+ |
| 2002 10 29 | 704 | 1.0− | 0.2+ | 2006 08 05 | E12 | 0.7+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2002 10 29 | 704 | 0.6− | 0.1+ | 2006 08 05 | E12 | 1.3− | 0.2+ | 2006 11 10 | 704 | 0.8− | 0.3− |
| 2002 10 29 | 704 | (2.9− | 0.1−) | 2006 08 05 | E12 | 0.2− | 0.4− | 2006 11 10 | 704 | 0.6− | 0.5− |
| 2002 10 29 | 704 | (1.6− | 0.5−) | 2006 09 12 | 704 | 0.5+ | 0.7− | 2006 11 14 | 704 | 0.3− | 1.1+ |
| 2002 10 29 | 704 | 1.4− | 1.0− | 2006 09 12 | 704 | 0.5− | 1.0− | 2006 11 14 | 704 | 0.7− | 0.5+ |
| 2002 11 16 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 704 | 1.1− | 0.6+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2002 11 16 | 704 | 0.6+ | 0.1− | 2006 09 24 | 699 | 0.4− | 0.2− | 2006 11 14 | 704 | 0.3− | 0.9+ |
| 2002 11 16 | 704 | 0.7+ | 0.2− | 2006 09 24 | 699 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.1+ | 1.2+ |
| 2002 11 16 | 704 | 0.1+ | 0.0 | 2006 09 24 | 699 | 0.3− | 0.5+ | 2006 11 17 | 704 | 0.6+ | 0.5+ |
| 2002 11 16 | 704 | 0.5+ | 0.0 | 2006 09 24 | 699 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.3− |
| 2002 11 24 | 704 | 0.7− | 0.2− | 2006 09 26 | 703 | 0.4− | 0.7− | 2006 11 17 | 704 | 0.4− | 1.0+ |
| 2002 11 24 | 704 | 0.1− | 0.6− | 2006 09 26 | 703 | 0.0 | 1.0− | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2002 11 24 | 704 | 1.0− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.3+ |
| 2002 11 24 | 704 | 0.5− | 0.7+ | 2006 09 26 | 703 | 1.1− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2002 12 12 | 704 | 0.3− | 0.8− | 2006 10 02 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.1+ |
| 2002 12 12 | 704 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2002 12 12 | 704 | 0.4+ | 0.0 | 2006 10 02 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2002 12 12 | 704 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2002 12 12 | 704 | 0.2− | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2002 12 13 | 704 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.3+ | 0.2+ |
| 2002 12 13 | 704 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2002 12 13 | 704 | 0.6+ | 0.6− | 2006 10 17 | 703 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 12 13 | 704 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2004 03 17 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 1.3+ | 1.3− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2004 03 17 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.1− | | | | |

**(143172)∗ 2002 XA$_{67}$**

Discovered 2002 Dec. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.52522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22916112 | $\omega$ | 281.66346 | | +0.99315825 | −0.03019806 | |
| $a$ | 2.6446940 | $\Omega$ | 80.14211 | | +0.07452250 | +0.90761054 | |
| $e$ | 0.1337968 | $i$ | 6.57447 | | −0.08990601 | +0.41872566 | |
| $P$ | 4.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.7− | 1.2+ |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2004 02 29 | 691 | 0.4+ | 0.3+ | 2006 10 22 | 703 | 0.7+ | 0.9+ |
| 2002 12 05 | 704 | 0.2+ | 1.0+ | 2004 03 17 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2002 12 05 | 704 | 0.7+ | 0.8+ | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.2+ | 0.7+ | 2004 03 17 | 691 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 12 10 | 291 | 0.2− | 0.3− | 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 10 27 | 704 | 1.0− | 0.2+ |
| 2002 12 10 | 291 | 0.3− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2006 10 27 | 704 | 0.9− | 0.2+ |
| 2002 12 10 | 291 | 0.5− | 0.3− | 2004 03 23 | 704 | 1.2− | 0.2+ | 2006 10 27 | 704 | 1.3− | 0.5+ |
| 2002 12 14 | 291 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.0 | 0.4− | 2006 10 27 | 704 | 0.9+ | 0.2− |
| 2002 12 14 | 291 | 0.0 | 0.3+ | 2005 06 17 | G96 | 0.5+ | 1.4+ | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2002 12 14 | 291 | 0.3− | 0.1+ | 2005 06 17 | G96 | 0.1+ | 1.3+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.2+ | 0.1− | 2005 06 17 | G96 | 0.2+ | 1.3+ | 2006 11 13 | 703 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | 0.1− | 0.6+ | 2005 06 17 | G96 | (0.4+ | 1.5+) | 2006 11 13 | 703 | 0.7+ | 1.1+ |
| 2002 12 31 | 704 | (2.3− | 0.1+) | 2006 09 29 | 699 | 1.3+ | 1.0+ | 2006 11 13 | 644 | 0.1+ | 0.5− |
| 2002 12 31 | 704 | 0.4− | 1.0+ | 2006 09 29 | 699 | 0.7+ | 0.4− | 2006 11 13 | 703 | 0.2− | 1.1+ |
| 2003 01 04 | 704 | 0.8+ | 0.6− | 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.4− | 0.6+ |
| 2003 01 04 | 704 | 1.0+ | 1.2− | 2006 10 12 | 644 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2003 01 04 | 704 | 1.0+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.2− | 0.5− |
| 2003 01 08 | 704 | 0.6+ | 1.2− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 1.3− | 0.8+ |
| 2003 01 08 | 704 | (1.7+ | 0.2−) | 2006 10 16 | 703 | 0.4− | 1.3− | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2003 01 08 | 704 | (2.0+ | 0.2−) | 2006 10 16 | 703 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.5− |
| 2004 02 13 | 691 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2004 02 13 | 691 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 22 | G96 | 0.5+ | 0.5− |
| 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.5+ | 1.4+ | | | | |
| 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.7+ | | | | |

**(143173)∗ 2002 XF$_{67}$**

Discovered 2002 Dec. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.65574 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23129865 | $\omega$ | 298.98004 | | +0.57559860 | −0.78533981 | |
| $a$ | 2.6283749 | $\Omega$ | 114.08716 | | +0.80986965 | +0.50893109 | |
| $e$ | 0.1581862 | $i$ | 14.45450 | | +0.11312561 | +0.35246351 | |
| $P$ | 4.26 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 18 | 691 | 0.0 | 0.1− | 2002 12 14 | 608 | (1.1− | 1.9+) | 2004 04 13 | 703 | 0.6− | 0.5+ |
| 2001 06 18 | 691 | 0.4− | 0.4− | 2003 01 05 | 704 | 0.3+ | 0.2− | 2004 04 13 | 703 | (2.1− | 0.4−) |
| 2001 06 18 | 691 | 0.1+ | 0.1− | 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.7+ |
| 2002 10 31 | 704 | 0.4+ | 0.1+ | 2003 01 05 | 704 | 0.4+ | 0.6− | 2006 09 25 | 703 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 0.6− | 2003 01 05 | 704 | 0.1+ | 0.5− | 2006 09 25 | 703 | 0.6+ | 0.3+ |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2003 01 05 | 704 | 0.7+ | 0.4− | 2006 09 25 | 703 | 0.4− | 0.2+ |
| 2002 10 31 | 704 | 1.3+ | 0.8− | 2003 01 08 | 608 | 0.2− | 0.9− | 2006 10 04 | 703 | 1.0− | 0.4+ |
| 2002 11 07 | 699 | 0.9+ | 0.9+ | 2003 01 08 | 608 | 0.5− | 0.6− | 2006 10 04 | 703 | 0.1− | 0.3+ |
| 2002 11 07 | 699 | (2.4+ | 1.0+) | 2003 01 08 | 608 | 0.2− | 0.6− | 2006 10 04 | 703 | 0.2+ | 0.6+ |
| 2002 11 07 | 699 | 1.0+ | 0.9+ | 2003 01 18 | 644 | 0.4− | 0.0 | 2006 10 04 | 703 | 0.6− | 0.4+ |
| 2002 11 07 | 699 | 0.7− | 1.2+ | 2003 01 18 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | (0.2+ | 1.7+) |
| 2002 11 11 | 644 | 0.7+ | 0.1− | 2003 01 18 | 644 | 0.5− | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.3+ |
| 2002 11 11 | 644 | 0.2+ | 0.3− | 2003 01 27 | 644 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.6− |
| 2002 11 11 | 644 | 0.8− | 0.2+ | 2003 01 27 | 644 | 0.5− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2002 11 30 | 704 | 0.3− | 0.5− | 2003 01 27 | 644 | 0.4− | 0.3− | 2006 10 31 | 703 | 0.4− | 0.8+ |
| 2002 11 30 | 704 | 0.1+ | 0.6− | 2004 03 19 | 644 | 0.3+ | 0.5+ | 2006 10 31 | 703 | 0.6− | 0.8+ |
| 2002 11 30 | 704 | 0.1+ | 0.7− | 2004 03 19 | 644 | 0.4+ | 0.6+ | 2006 10 31 | 703 | 0.7− | 0.5+ |
| 2002 11 30 | 704 | 0.4− | 0.4− | 2004 03 19 | 644 | 0.4+ | 0.5+ | 2006 10 31 | 703 | 0.4− | 0.5+ |
| 2002 11 30 | 704 | 0.4+ | 1.0− | 2004 03 22 | 699 | 0.3+ | 1.2+ | 2006 11 06 | 644 | 0.2+ | 0.4+ |
| 2002 12 10 | 644 | 0.1− | 0.1+ | 2004 03 22 | 699 | 0.3+ | 0.7+ | 2006 11 06 | 644 | 0.5+ | 0.3+ |
| 2002 12 10 | 644 | 0.1− | 0.0 | 2004 03 22 | 699 | 0.0 | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.6+ |
| 2002 12 10 | 644 | 0.2− | 0.2− | 2004 03 22 | 699 | 0.6+ | 0.7+ | 2006 11 19 | 703 | 0.7+ | 0.2− |
| 2002 12 14 | 704 | 0.1− | 0.2− | 2004 03 28 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.8− | 0.4+ |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2004 03 28 | 704 | 0.6+ | 0.0 | 2006 11 19 | 703 | 0.6− | 0.4+ |
| 2002 12 14 | 704 | 0.4+ | 0.1+ | 2004 03 28 | 704 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.5+ | 0.2+ |
| 2002 12 14 | 704 | 0.0 | 0.5+ | 2004 03 28 | 704 | 0.2+ | 0.2− | 2006 11 24 | 703 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.1− | 2006 11 24 | 703 | 0.0 | 0.1+ |
| 2002 12 14 | 608 | 0.2+ | 0.2+ | 2004 04 13 | 703 | 0.5− | 0.5+ | 2006 11 24 | 703 | 0.2+ | 0.0 |
| 2002 12 14 | 608 | 0.3+ | 0.4+ | 2004 04 13 | 703 | (1.8− | 0.4−) | 2006 11 24 | 703 | 0.1− | 0.1+ |

**(143174)∗ 2002 XD$_{68}$**

Discovered 2002 Dec. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.12392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23858349 | $\omega$ | 192.05062 | | +0.99896219 | −0.04178056 | |
| $a$ | 2.5745962 | $\Omega$ | 170.28909 | | +0.04529015 | +0.95341662 | |
| $e$ | 0.2901010 | $i$ | 6.17235 | | −0.00483073 | +0.29874928 | |
| $P$ | 4.13 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.8+ | 0.6− | 2004 03 15 | 291 | 0.0 | 0.1+ | 2006 09 30 | 683 | 0.6+ | 0.2− |
| 2002 10 09 | 704 | 0.2+ | 0.2− | 2004 03 15 | 291 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.8− | 0.1− |
| 2002 10 09 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.6+ |
| 2002 10 09 | 704 | 0.6− | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2002 11 12 | 704 | 0.7− | 0.6− | 2004 03 18 | 704 | 0.9+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2002 11 12 | 704 | 0.4− | 0.6− | 2005 05 08 | 691 | 0.3+ | 0.5+ | 2006 10 01 | 683 | 0.2− | 0.6+ |
| 2002 11 12 | 704 | 1.2− | 0.4− | 2005 05 08 | 691 | 0.6+ | 0.4+ | 2006 10 01 | 683 | 0.1− | 0.8− |
| 2002 12 01 | 704 | 0.3+ | 0.3− | 2005 05 08 | 691 | 1.4− | 1.0+ | 2006 10 01 | 683 | 0.2− | 0.3− |
| 2002 12 01 | 704 | 0.0 | 0.8− | 2005 05 14 | 644 | 1.2+ | 0.5+ | 2006 10 03 | 704 | 0.1+ | 0.5+ |
| 2002 12 01 | 704 | 0.8+ | 0.6− | 2005 05 14 | 644 | 0.8+ | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.9+ |
| 2002 12 01 | 704 | 0.0 | 0.4− | 2005 05 14 | 644 | 0.5+ | 0.5+ | 2006 10 03 | 704 | 0.6+ | 0.9+ |
| 2002 12 01 | 704 | 1.1+ | 0.5− | 2006 07 25 | 704 | 0.6+ | 0.8+ | 2006 10 03 | 704 | 0.7+ | 0.7+ |
| 2002 12 01 | 704 | 0.4+ | 0.2+ | 2006 07 25 | 704 | 0.9+ | 0.6+ | 2006 10 03 | 704 | 0.4+ | 0.0 |
| 2002 12 01 | 704 | 0.8+ | 0.7− | 2006 07 25 | 704 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2002 12 06 | 644 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2002 12 06 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2002 12 06 | 644 | 0.3− | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2002 12 11 | 644 | 0.7+ | 0.9+ | 2006 08 28 | 703 | 1.1+ | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2002 12 11 | 644 | 0.8+ | 0.9+ | 2006 09 16 | 704 | 0.7+ | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.2+ |
| 2002 12 11 | 644 | 0.4+ | 0.7+ | 2006 09 16 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2002 12 13 | 644 | 0.1+ | 0.8− | 2006 09 16 | G92 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2002 12 13 | 644 | 0.4+ | 1.2− | 2006 09 16 | 704 | 0.1− | 0.1− | 2006 10 27 | 704 | 0.3+ | 0.3− |
| 2002 12 13 | 644 | 0.2+ | 0.7− | 2006 09 16 | 704 | 0.4− | 0.4+ | 2006 10 27 | 704 | 0.3+ | 0.2− |
| 2002 12 14 | 704 | 0.7− | 0.3− | 2006 09 16 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 704 | 0.3+ | 0.1− |
| 2002 12 14 | 704 | 0.7− | 0.3+ | 2006 09 16 | G92 | 0.1+ | 0.5+ | 2006 10 27 | 704 | 0.4+ | 0.5− |
| 2002 12 14 | 704 | 0.7+ | 0.3− | 2006 09 16 | G92 | 0.6+ | 0.7+ | 2006 10 27 | 704 | 0.1− | 0.2− |
| 2002 12 14 | 704 | 0.8− | 0.1− | 2006 09 17 | 699 | 0.3− | 0.8+ | 2006 11 01 | 703 | 1.0− | 0.4− |
| 2002 12 14 | 704 | (2.0+ | 0.3−) | 2006 09 17 | 699 | 0.4− | 0.2+ | 2006 11 01 | 703 | 0.4− | 0.0 |
| 2002 12 14 | 704 | 1.2+ | 0.7− | 2006 09 17 | 699 | 0.1+ | 0.0 | 2006 11 01 | 703 | 0.0 | 0.9+ |
| 2002 12 16 | 608 | 0.0 | 0.1− | 2006 09 17 | 699 | 0.6− | 0.5+ | 2006 11 01 | 703 | 0.4− | 0.1− |
| 2002 12 16 | 608 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.8+ | 2006 11 09 | 644 | 0.6− | 0.1+ |
| 2002 12 16 | 608 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.9− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2003 01 01 | 704 | 1.1− | 0.5+ | 2006 09 18 | 703 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2003 01 01 | 704 | 0.5− | 0.5− | 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.1+ |
| 2003 01 01 | 704 | 0.7− | 0.3+ | 2006 09 19 | 704 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2003 01 01 | 704 | 0.5+ | 1.2+ | 2006 09 19 | 704 | 0.5− | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.2+ |
| 2003 01 07 | 704 | 0.4− | 0.4− | 2006 09 19 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 703 | 0.3+ | 0.2+ |
| 2003 01 07 | 704 | 0.5− | 0.1− | 2006 09 19 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2003 01 07 | 704 | 0.4− | 0.5− | 2006 09 19 | 704 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.2− | 0.1− |
| 2003 01 07 | 704 | 0.2− | 0.8+ | 2006 09 26 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.1− | 0.5+ |
| 2003 01 07 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.7+ | 0.9− | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2003 01 27 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.5+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 704 | 0.8− | 0.9+ | 2006 09 26 | 704 | 0.5+ | 0.2− | 2006 11 20 | 704 | 1.1+ | 1.0+ | | |
| 2003 01 27 | 704 | 0.5+ | 1.4+ | 2006 09 26 | 704 | 0.1− | 0.3− | 2006 11 20 | 704 | (0.6− | 2.3+) | | |
| 2003 01 27 | 704 | (0.7− | 2.1+) | 2006 09 30 | 699 | 0.6− | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.7+ | | |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 699 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.5+ | 0.8+ | | |
| 2004 02 26 | 704 | (1.7+ | 0.8+) | 2006 09 30 | 699 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.4− | | |
| 2004 02 26 | 704 | (1.7+ | 1.1+) | 2006 09 30 | 699 | 0.5+ | 0.3− | 2006 11 25 | G96 | 0.0 | 0.4− | | |
| 2004 02 26 | 704 | 1.2+ | 0.8+ | 2006 09 30 | 683 | 0.5− | 0.4− | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2004 03 15 | 291 | 0.2− | 0.1+ | 2006 09 30 | 683 | (1.1− | 1.6−) | 2006 11 25 | G96 | 0.1− | 0.4− | | |

**(143175)∗ 2002 XJ$_{68}$ = 1999 CD$_{44}$**

Discovered 2002 Dec. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 41345)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.73763 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22023081 | $\omega$ | 131.79402 | | −0.66796519 | | −0.74419237 |
| $a$ | 2.7157138 | $\Omega$ | 0.11929 | | +0.59800860 | | −0.53713114 |
| $e$ | 0.2289854 | $i$ | 13.06444 | | +0.44295396 | | −0.39707413 |
| $P$ | 4.48 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 704 | 0.6− | 0.2− | 2002 12 13 | 644 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.2+ | | |
| 1998 11 25 | 704 | 1.8+ | 0.6+ | 2002 12 15 | 704 | 0.2+ | 0.1− | 2006 09 14 | A50 | 0.2+ | 0.2+ | | |
| 1998 11 25 | 704 | (2.3+ | 0.7−) | 2002 12 15 | 704 | 0.2+ | 0.1+ | 2006 09 14 | A50 | 0.2− | 0.4+ | | |
| 1998 11 25 | 704 | 1.3− | 0.9− | 2002 12 15 | 704 | (1.6+ | 0.8−) | 2006 09 16 | 644 | 0.1− | 0.2+ | | |
| 1998 12 21 | 704 | 0.5− | 0.2+ | 2002 12 15 | 704 | 0.1+ | 0.1− | 2006 09 16 | 644 | 0.2+ | 0.0 | | |
| 1998 12 21 | 704 | 1.1− | 0.8+ | 2003 01 07 | 704 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.1− | | |
| 1998 12 21 | 704 | 0.9+ | 1.1− | 2003 01 07 | 704 | 0.5− | 0.5+ | 2006 09 17 | 691 | 0.4− | 0.2+ | | |
| 1998 12 21 | 704 | 1.6+ | 0.3+ | 2003 01 07 | 704 | 0.8− | 0.1− | 2006 09 17 | 691 | 0.3− | 0.1+ | | |
| 1999 02 10 | 704 | 0.1+ | 0.7− | 2003 01 07 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.1+ | | |
| 1999 02 10 | 704 | 0.3− | 0.3− | 2003 01 07 | 704 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.8+ | 0.4+ | | |
| 1999 02 10 | 704 | 0.5− | 0.4+ | 2003 01 22 | 644 | 0.2+ | 1.0− | 2006 09 17 | 703 | 0.8− | 0.7+ | | |
| 1999 02 10 | 704 | 0.0 | 0.2+ | 2003 01 22 | 644 | 0.1+ | 1.0− | 2006 09 17 | 703 | 0.7+ | 0.7+ | | |
| 1999 02 10 | 704 | 0.2− | 0.2− | 2003 01 22 | 644 | 0.1+ | 0.9− | 2006 09 17 | 703 | 0.6+ | 0.4− | | |
| 1999 02 13 | 699 | 1.5+ | 0.8+ | 2003 01 29 | 644 | 0.3+ | 1.2+ | 2006 09 19 | 699 | 0.5− | 0.1− | | |
| 1999 02 13 | 699 | 1.3+ | 0.4+ | 2003 01 29 | 644 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.8+ | 0.4+ | | |
| 1999 02 13 | 699 | 1.5+ | 0.5+ | 2003 01 29 | 644 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.3− | 0.0 | | |
| 1999 02 13 | 704 | 0.5− | 1.1− | 2003 01 29 | 644 | 0.1− | 1.5+ | 2006 09 19 | 699 | 0.9+ | 0.1+ | | |
| 1999 02 13 | 704 | 0.9− | 1.3− | 2003 01 29 | 644 | 0.4+ | 1.0+ | 2006 09 21 | A50 | 0.5+ | 0.6− | | |
| 1999 02 13 | 704 | 0.9− | 0.8− | 2003 01 29 | 644 | 0.7− | 0.4+ | 2006 09 29 | 704 | 0.4+ | 0.7+ | | |
| 1999 02 13 | 704 | 1.3− | 1.5− | 2003 01 29 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.2− | 1.2+ | | |
| 1999 02 13 | 704 | 1.9− | 1.7− | 2003 01 29 | 644 | 0.1− | 1.3+ | 2006 09 29 | 704 | 0.2+ | 0.9− | | |
| 1999 03 20 | 699 | 0.6+ | 0.8+ | 2003 01 29 | 644 | 0.5+ | 0.9+ | 2006 09 29 | 704 | 1.3+ | 0.8− | | |
| 1999 03 20 | 699 | 0.5+ | 0.5+ | 2003 01 29 | 644 | 0.7− | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.0 | | |
| 1999 03 20 | 699 | 0.6+ | 0.9+ | 2003 01 29 | 644 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 1999 04 06 | 704 | 0.4+ | 0.7+ | 2003 01 29 | 644 | 0.1− | 1.5+ | 2006 09 30 | 691 | 1.1+ | 0.0 | | |
| 1999 04 06 | 704 | (0.6− | 2.7+) | 2003 01 31 | 699 | 0.1+ | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.1− | | |
| 1999 04 06 | 704 | 1.6− | 0.6+ | 2003 01 31 | 699 | 0.9− | 0.7+ | 2006 10 09 | 644 | 0.3− | 0.3+ | | |
| 1999 04 06 | 704 | (3.6− | 1.4−) | 2003 01 31 | 699 | 1.0− | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2003 01 31 | 699 | 0.2− | 0.7+ | 2006 10 09 | 644 | 0.3− | 0.3+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.9+ | 2004 04 25 | 704 | 1.0+ | 0.3+ | 2006 10 17 | 703 | 1.1− | 0.1− | | |
| 2002 10 05 | 704 | 0.2+ | 0.8+ | 2004 04 25 | 704 | 0.6+ | 0.5− | 2006 10 17 | 703 | 0.3+ | 0.3− | | |
| 2002 10 05 | 704 | 0.4− | 0.2+ | 2004 04 25 | 704 | 0.7+ | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.0 | | |
| 2002 10 05 | 704 | 0.3− | 1.0+ | 2004 04 25 | 704 | 0.8+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.2+ | | |
| 2002 10 31 | 704 | 0.6− | 0.5− | 2004 04 25 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 10 31 | 704 | 0.4− | 0.2− | 2004 05 14 | 703 | 0.8+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 10 31 | 704 | 0.5− | 0.3− | 2004 05 14 | 703 | 0.2+ | 1.4+ | 2006 10 20 | 644 | 0.1− | 0.3− | | |
| 2002 10 31 | 704 | 0.7− | 0.2− | 2004 05 14 | 703 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 10 31 | 704 | 0.0 | 0.2+ | 2004 05 14 | 703 | 0.1− | 0.9− | 2006 10 20 | 644 | 0.5− | 0.2− | | |
| 2002 11 15 | 704 | 0.1− | 0.1− | 2004 05 22 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2002 11 15 | 704 | 0.1+ | 0.2+ | 2004 05 22 | 704 | 0.8− | 1.2+ | 2006 10 22 | G96 | 0.5− | 0.7− | | |
| 2002 11 15 | 704 | 0.1− | 0.5+ | 2004 05 22 | 704 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.8+ | 0.5− | | |
| 2002 11 15 | 704 | 0.1+ | 0.2+ | 2004 05 22 | 704 | 0.1− | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.2− | | |
| 2002 11 15 | 704 | 0.3− | 0.1+ | 2004 05 22 | 704 | 0.5− | 1.1+ | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2002 12 07 | 704 | 0.3− | 0.1− | 2004 06 12 | 644 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2002 12 07 | 704 | 0.3− | 0.1− | 2004 06 12 | 644 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2002 12 07 | 704 | 0.1+ | 0.0 | 2004 06 12 | 644 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2002 12 07 | 704 | 0.6− | 0.0 | 2006 07 21 | G96 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2002 12 12 | 644 | 0.0 | 1.1− | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.0 | 0.0 | | |
| 2002 12 12 | 644 | 0.2+ | 0.8− | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 11 06 | 644 | 0.1− | 0.0 | | |
| 2002 12 12 | 644 | 0.0 | 0.8− | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.3− | | |
| 2002 12 13 | 644 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.0 | | | | | | |
| 2002 12 13 | 644 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.1− | 0.3+ | | | | | | |

**(143176)∗ 2002 XB$_{73}$ = 2004 CE$_{58}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.09234 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23110001 | $\omega$ | 238.70485 | | +0.48526264 | | +0.84754038 |
| $a$ | 2.6298808 | $\Omega$ | 61.82556 | | −0.69623547 | | +0.52324719 |
| $e$ | 0.1508955 | $i$ | 14.11215 | | −0.52893889 | | +0.08881258 |
| $P$ | 4.26 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.4+ | 1.5+ | 2004 03 09 | 644 | 0.6+ | 0.1+ | 2006 10 22 | 691 | 0.7− | 0.0 | | |
| 2000 03 29 | 704 | 1.2+ | 1.9+ | 2004 03 09 | 644 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.0 | | |
| 2000 03 29 | 704 | 0.3+ | 1.1+ | 2004 03 09 | 644 | 0.6+ | 0.0 | 2006 11 02 | 703 | 0.2− | 0.9− | | |
| 2000 03 29 | 704 | 1.4+ | 1.3− | 2004 03 17 | 644 | 0.3+ | 0.1+ | 2006 11 02 | 703 | 0.6+ | 0.5− | | |
| 2000 04 08 | 704 | 0.7− | 0.3+ | 2004 03 17 | 644 | 0.3+ | 0.0 | 2006 11 02 | 703 | 0.0 | 0.2+ | | |
| 2000 04 08 | 704 | 0.2+ | 0.3+ | 2004 03 17 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2+ | | |
| 2000 04 08 | 704 | 0.4− | 1.2+ | 2004 03 24 | 703 | (2.2+ | 0.6−) | 2006 11 11 | 703 | 0.1− | 0.4− | | |
| 2002 11 12 | 704 | (1.5− | 0.4−) | 2004 03 24 | 703 | (2.5+ | 1.1−) | 2006 11 11 | 703 | 0.8+ | 0.0 | | |
| 2002 11 12 | 704 | 0.5− | 0.1− | 2004 03 24 | 703 | (0.7+ | 1.5−) | 2006 11 11 | 703 | 0.0 | 0.3+ | | |
| 2002 11 12 | 704 | 0.5− | 0.6− | 2004 03 24 | 703 | (0.5+ | 1.8−) | 2006 11 14 | 704 | 0.5+ | 1.5+ | | |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2004 03 28 | 704 | 1.3− | 0.0 | 2006 11 14 | 704 | 0.4− | 0.9+ | | |
| 2002 12 06 | 704 | 0.1+ | 0.3− | 2004 03 28 | 704 | 1.1− | 0.8+ | 2006 11 14 | 704 | 0.5+ | 0.9+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.6− | 2004 03 28 | 704 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.5+ | 0.8+ | | |
| 2002 12 06 | 704 | 0.6+ | 0.9− | 2004 03 28 | 704 | 0.3+ | 0.3− | 2006 11 14 | 704 | 0.3+ | 0.9+ | | |
| 2002 12 06 | 704 | 0.3− | 1.4− | 2004 04 15 | 645 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.2− | | |
| 2002 12 11 | 704 | 1.3+ | 0.7+ | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.3+ | | |
| 2002 12 11 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 699 | 0.5− | 0.9+ | 2006 11 17 | 704 | 0.4+ | 0.8− | | |
| 2002 12 11 | 704 | 1.0+ | 0.2+ | 2006 09 30 | 699 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.2− | 0.5− | | |
| 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 09 30 | 699 | 0.1+ | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.4+ | | |
| 2002 12 14 | 704 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.7+ | 1.2− | 2006 11 19 | 704 | 1.1− | 1.2+ | | |
| 2002 12 14 | 704 | 0.4+ | 0.1− | 2006 09 30 | 699 | 0.7− | 0.4+ | 2006 11 19 | 704 | 0.5− | 1.1+ | | |
| 2002 12 14 | 704 | 0.7− | 0.7− | 2006 09 30 | 703 | 0.6+ | 1.0− | 2006 11 19 | 704 | 0.8− | 1.1+ | | |
| 2002 12 14 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.3+ | 1.1− | 2006 11 19 | 704 | 0.8− | 0.8+ | | |
| 2004 02 14 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 11 19 | 704 | 1.1− | 0.1+ | | |
| 2004 02 14 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.8+ | 0.3− | 2006 11 20 | 704 | 1.3+ | 0.1− | | |
| 2004 02 14 | 704 | 0.3− | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.6+ | 0.2− | | |
| 2004 02 14 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.7− | 2006 11 20 | 704 | 0.4+ | 0.5+ | | |
| 2004 02 14 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.4+ | 0.6− | | |
| 2004 02 15 | 644 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.5+ | | |
| 2004 02 15 | 644 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | (2.2+ | 0.3+) | | |
| 2004 02 15 | 644 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.6+ | | |
| 2004 02 17 | 644 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.9− | 0.1− | | |
| 2004 02 17 | 644 | 0.6+ | 0.4− | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.8− | 0.6+ | | |
| 2004 02 17 | 644 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | | | | | | |

**(143177)∗ 2002 XF$_{73}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.39117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23663662 | $\omega$ | 339.19146 | | +0.98876220 | | −0.14442203 |
| $a$ | 2.5886982 | $\Omega$ | 29.19525 | | +0.14589947 | | +0.87588016 |
| $e$ | 0.1974901 | $i$ | 4.54121 | | +0.03259842 | | +0.46040875 |
| $P$ | 4.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.2− | 2004 03 11 | 644 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2000 02 12 | 645 | 0.0 | 0.2− | 2004 03 11 | 644 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2000 04 05 | 704 | 0.4+ | 0.4− | 2004 03 11 | 644 | 0.4− | 0.9+ | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 2000 04 05 | 704 | 0.4+ | 0.8+ | 2004 03 30 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 2000 04 05 | 704 | 0.1− | 1.3+ | 2004 03 30 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2000 04 05 | 704 | 0.2+ | 1.4+ | 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.8− |
| 2000 04 05 | 704 | 0.6− | 1.3+ | 2006 08 28 | 703 | 0.9− | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2000 05 04 | 645 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.7− |
| 2000 05 04 | 645 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.2+ |
| 2000 05 05 | 691 | 0.6+ | 0.9+ | 2006 08 28 | 703 | 0.8− | 0.6+ | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2000 05 05 | 691 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2000 05 05 | 691 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2002 11 14 | 704 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 0.6+ | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.4− | 0.2+ |
| 2002 11 14 | 704 | 0.6+ | 0.5− | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.7+ |
| 2002 11 14 | 704 | 0.0 | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.7− |
| 2002 11 28 | 599 | 0.0 | 1.0− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2002 11 28 | 599 | 0.3+ | 1.1− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.4− |
| 2002 11 28 | 599 | 0.4+ | 1.1− | 2006 10 22 | 644 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.6− |
| 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.5+ | 2006 10 23 | 704 | (1.3− | 5.0+) | 2006 11 18 | G96 | 0.6+ | 0.4+ |
| 2002 12 06 | 704 | 0.8+ | 1.0+ | 2006 10 23 | 704 | (1.6− | 1.9+) | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 10 23 | 704 | (3.7− | 3.9+) | 2006 11 18 | G96 | 0.6+ | 0.1+ |
| 2002 12 11 | 704 | 0.0 | 0.6− | 2006 10 23 | 704 | (4.0− | 5.3+) | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2002 12 11 | 704 | 0.6+ | 0.8− | 2006 10 29 | 704 | 1.0− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 12 11 | 704 | 0.0 | 0.5− | 2006 10 29 | 704 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2002 12 11 | 704 | 0.2− | 0.6− | 2006 10 29 | 704 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.9− | 0.3+ |
| 2002 12 14 | 704 | 0.8− | 1.0+ | 2006 10 29 | 704 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2002 12 14 | 704 | 0.1− | 0.7+ | 2006 10 29 | 704 | 1.2− | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.5− | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2002 12 14 | 704 | 1.0− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.7− | 0.5+ |
| 2002 12 14 | 704 | 0.6− | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.5− |
| 2002 12 15 | 704 | 0.7+ | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.8+ |
| 2002 12 15 | 704 | 0.5− | 1.3+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2002 12 15 | 704 | (0.8+ | 1.8+) | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.0 |
| 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.3+ |
| 2004 02 23 | 704 | 0.9+ | 0.6+ | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2004 02 23 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.1− |

**(143178)∗ 2002 XN$_{73}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.73994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22445240 | $\omega$ | 323.25983 | | +0.93121347 | −0.34287725 | |
| $a$ | 2.6815540 | $\Omega$ | 57.23946 | | +0.35949611 | +0.80821260 | |
| $e$ | 0.1765080 | $i$ | 8.45178 | | +0.06003342 | +0.47877718 | |
| $P$ | 4.39 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2003 01 05 | 704 | 0.4− | 0.6− | 2006 09 30 | 704 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.3+ | 0.7− | 2003 01 05 | 704 | 0.7+ | 0.4− | 2006 09 30 | 704 | 0.1− | 0.4+ |
| 2002 11 06 | 704 | 0.8− | 0.8+ | 2003 01 05 | 704 | 0.6− | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.9+ | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.7+ |
| 2002 11 14 | 704 | 0.2+ | 0.9− | 2004 03 23 | 704 | (1.6+ | 1.6−) | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2002 11 14 | 704 | 0.7+ | 0.5− | 2004 03 23 | 704 | 1.0+ | 0.2− | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2002 11 14 | 704 | 0.5− | 0.0 | 2004 03 23 | 704 | 0.6− | 0.4− | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2002 11 14 | 704 | 0.3+ | 0.1− | 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.2+ | 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.5− | 0.3+ | 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.6+ | 2004 04 09 | 644 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2004 04 09 | 644 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 1.1− | 2004 04 09 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.7− | 1.3− |
| 2002 12 11 | 704 | 0.4− | 0.2− | 2005 05 11 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2005 05 11 | 644 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.8− | 0.6− |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2005 05 11 | 644 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.5+ |
| 2002 12 11 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2002 12 14 | 704 | 0.3+ | 0.4− | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 11 10 | 704 | 0.6− | 0.9+ |
| 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.1− | 2006 11 10 | 704 | 0.2− | 0.2+ |
| 2002 12 14 | 704 | 0.5− | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | 0.5− | 0.9− | 2006 09 21 | 699 | 0.2+ | 0.2− | 2006 11 10 | 704 | 0.8+ | 0.2+ |
| 2002 12 14 | 704 | 0.7− | 0.9− | 2006 09 21 | 699 | 0.3+ | 0.7+ | 2006 11 10 | 704 | 0.2+ | 0.7+ |
| 2002 12 30 | 704 | (0.2− | 1.7+) | 2006 09 21 | 699 | 0.2+ | 0.9+ | 2006 11 17 | 704 | 0.4+ | 0.8+ |
| 2002 12 30 | 704 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 0.3− | 1.1+ | 2006 11 17 | 704 | 0.4+ | 1.3− |
| 2002 12 30 | 704 | 0.4+ | 1.0+ | 2006 09 26 | 703 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 0.1+ | 0.4− |
| 2003 01 05 | 704 | 0.4− | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.2+ |
| 2003 01 05 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.8− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2003 01 05 | 704 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.5+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.6+ | 0.2+ |
| 2003 01 05 | 704 | 0.7+ | 0.2+ | 2006 09 30 | 704 | 0.7− | 0.1+ | | | | |

**(143179)∗ 2002 XB$_{74}$ = 2004 FT$_{25}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61670)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.34000 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21941099 | $\omega$ | 223.35633 | | −0.96275198 | +0.26962555 | |
| $a$ | 2.7224744 | $\Omega$ | 332.26656 | | −0.23466070 | −0.87043042 | |
| $e$ | 0.1177118 | $i$ | 2.49592 | | −0.13432417 | −0.41188948 | |
| $P$ | 4.49 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2004 03 27 | 704 | 0.1− | 0.6+ | 2005 10 25 | G96 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.6− | 1.3+ | 2004 03 27 | 704 | 0.2+ | 0.3+ | 2005 10 25 | G96 | 0.4− | 0.2+ |
| 2001 09 20 | 704 | 0.8− | 0.9+ | 2004 03 30 | 704 | 0.2+ | 0.4+ | 2005 10 25 | G96 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 1.4+ | 2004 03 30 | 704 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.3− | 1.0+ | 2004 03 30 | 704 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2004 03 30 | 704 | 0.5+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2002 12 05 | 704 | 0.5− | 0.3− | 2004 03 30 | 704 | 0.2+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2004 03 31 | 704 | 0.3+ | 0.8+ | 2006 10 15 | 691 | 0.6− | 0.1+ |
| 2002 12 05 | 704 | 0.7+ | 0.2− | 2004 03 31 | 704 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.4− | 0.3+ |
| 2002 12 05 | 704 | 0.1+ | 0.8+ | 2004 03 31 | 704 | 0.4+ | 1.2+ | 2006 10 15 | 691 | 0.5− | 0.4+ |
| 2002 12 11 | 704 | (1.0+ | 1.6+) | 2004 03 31 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.2+ |
| 2002 12 11 | 704 | 0.5− | 0.8+ | 2004 03 31 | 704 | 0.7+ | 1.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2004 04 16 | 644 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2002 12 11 | 704 | 0.3− | 0.3+ | 2004 04 16 | 644 | 0.5+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.6+ |
| 2002 12 11 | 704 | 0.6+ | 0.6+ | 2004 04 16 | 644 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.4+ |
| 2002 12 14 | 704 | 0.3+ | 0.7− | 2004 04 17 | 704 | (0.0 | 1.5+) | 2006 10 23 | 691 | 0.6− | 0.6+ |
| 2002 12 14 | 704 | 0.9− | 1.2− | 2004 04 17 | 704 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2002 12 14 | 704 | (1.8− | 1.9−) | 2004 04 17 | 704 | 0.2+ | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 03 17 | 704 | 0.5− | 0.5− | 2004 04 17 | 704 | 0.4− | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 03 17 | 704 | 0.7− | 1.1+ | 2004 04 20 | 704 | 1.3+ | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2004 03 17 | 704 | 0.8+ | 0.6+ | 2004 04 20 | 704 | 0.3+ | 0.5+ | 2006 11 09 | 691 | 0.2− | 0.4+ |
| 2004 03 17 | 704 | 0.4− | 1.2+ | 2004 04 20 | 704 | 0.2+ | 1.0+ | 2006 11 09 | 691 | 0.4+ | 0.1+ |
| 2004 03 18 | 704 | 0.9− | 1.1+ | 2004 04 20 | 704 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.6+ | 0.6+ | 2004 04 20 | 704 | (2.9+ | 0.3+) | 2006 11 09 | 691 | 0.1+ | 0.3− |
| 2004 03 18 | 704 | 1.1+ | 1.0+ | 2004 04 20 | 704 | 0.7+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2004 03 18 | 704 | 0.3− | 0.4+ | 2004 04 20 | 704 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.4+ | 0.0 |
| 2004 03 20 | 699 | 0.2− | 0.5+ | 2004 04 20 | 704 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2004 03 20 | 699 | 0.4− | 0.8− | 2004 04 22 | 703 | 1.0+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2− |
| 2004 03 20 | 704 | 0.9+ | 0.7+ | 2004 04 22 | 703 | 0.6+ | 0.8− | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 2004 03 20 | 699 | 0.4− | 0.3− | 2004 04 22 | 703 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2004 03 20 | 704 | 0.5+ | 0.7+ | 2004 04 22 | 703 | 0.9+ | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 2004 03 20 | 704 | 0.1− | 0.0 | 2005 07 18 | 644 | 0.3− | 1.0+ | 2006 11 23 | 691 | 0.3− | 0.1+ |
| 2004 03 20 | 699 | 0.6− | 0.1− | 2005 07 18 | 644 | 0.3− | 0.8+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 0.5+ | 0.3+ | 2005 07 18 | 644 | 0.0 | 0.9+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.5+ | 0.6+ | 2005 07 27 | 644 | 0.6− | 0.9+ | 2006 11 27 | 691 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.1+ | 0.4+ | 2005 07 27 | 644 | 0.2− | 0.9+ | 2006 11 27 | 691 | 0.0 | 0.4+ | | |
| 2004 03 27 | 704 | 0.0 | 0.8+ | 2005 07 27 | 644 | 0.2− | 1.0+ | 2006 11 27 | 691 | 0.2+ | 0.0 | | |
| 2004 03 27 | 704 | 0.0 | 0.5+ | 2005 10 25 | G96 | 0.5− | 0.6+ | | | | | | |

**(143180)∗ 2002 XE$_{75}$ = 1995 BZ$_{14}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41351)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.45223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23627031 | $\omega$ | 150.01940 | | −0.08058926 | −0.99548323 | |
| $a$ | 2.5913731 | $\Omega$ | 304.55907 | | +0.90195830 | −0.05140350 | |
| $e$ | 0.1206892 | $i$ | 3.49364 | | +0.42423649 | −0.07981738 | |
| $P$ | 4.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | 0.2− | 0.2− | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.4− | | |
| 1995 01 31 | 691 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.8− | 0.0 | 2006 11 16 | 704 | 0.8+ | 1.1+ | | |
| 1995 01 31 | 691 | 0.3− | 0.3− | 2003 01 08 | 704 | 0.4− | 0.6+ | 2006 11 16 | 704 | 0.3+ | 0.1+ | | |
| 1995 02 07 | 691 | 0.3+ | 0.5− | 2003 01 08 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.5− | | |
| 1995 02 07 | 691 | 0.4+ | 0.6− | 2003 01 08 | 704 | 0.3+ | 0.1− | 2006 11 16 | 704 | 1.3+ | 1.5− | | |
| 1995 02 07 | 691 | 0.4+ | 0.3− | 2005 07 12 | G96 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4− | 0.2− | | |
| 1995 02 21 | 691 | 1.2− | 0.2+ | 2005 07 12 | G96 | 0.3− | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.2− | | |
| 1995 02 21 | 691 | 0.6− | 0.1+ | 2005 07 12 | G96 | 0.1− | 0.2+ | 2006 11 17 | 691 | 1.1− | 0.3− | | |
| 1999 01 16 | 704 | 0.3+ | 0.5+ | 2005 07 12 | G96 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.1+ | | |
| 1999 01 16 | 704 | 1.6+ | 0.9− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 1999 01 16 | 704 | 1.2+ | 0.1+ | 2006 10 19 | 691 | 0.5+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 1999 01 16 | 704 | (5.9− | 2.9+) | 2006 10 19 | 703 | 0.1− | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2001 08 14 | 608 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2001 08 14 | 608 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.7+ | | |
| 2001 08 14 | 608 | 0.7+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.8+ | | |
| 2001 08 24 | 691 | 0.2− | 0.8− | 2006 10 19 | 703 | 0.9− | 0.3− | 2006 11 19 | 704 | 0.5− | 0.8+ | | |
| 2001 08 24 | 691 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.2− | 0.2+ | | |
| 2001 08 24 | 691 | (1.0− | 1.8+) | 2006 10 19 | 703 | 0.5− | 0.5− | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.7− | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1− | 0.7+ | | |
| 2002 12 14 | 704 | 1.2− | 1.0+ | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.3+ | | |
| 2002 12 14 | 704 | 0.5− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.5+ | 0.3+ | | |
| 2002 12 14 | 704 | 0.7− | 0.7+ | 2006 10 27 | 691 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.4− | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 24 | 703 | 1.5− | 0.1+ | | |
| 2002 12 14 | 704 | 0.1+ | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 24 | 703 | 0.8− | 0.3+ | | |
| 2003 01 04 | 704 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 24 | 703 | 0.2+ | 0.7+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.0 | 2006 11 14 | 703 | 0.8+ | 0.5+ | 2006 11 24 | 703 | 0.9+ | 1.1+ | | |
| 2003 01 04 | 704 | 0.6− | 1.1+ | 2006 11 14 | 703 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.3− | | |
| 2003 01 04 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.5− | 0.7− | 2006 12 01 | G96 | 0.3+ | 0.3− | | |
| 2003 01 04 | 704 | 0.3+ | 0.6+ | 2006 11 14 | 703 | (0.5− | 1.7−) | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| | | | | 2006 11 16 | 704 | 0.0 | 1.0− | 2006 12 01 | G96 | 0.0 | 0.5− | | |

**(143181)∗ 2002 XU$_{75}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.16949 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22738070 | $\omega$ | 115.67238 | | +0.77027487 | −0.60346784 | |
| $a$ | 2.6584815 | $\Omega$ | 282.13378 | | +0.48290004 | +0.76311055 | |
| $e$ | 0.1390337 | $i$ | 12.17358 | | +0.41651432 | +0.23127656 | |
| $P$ | 4.33 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 07 | 608 | 0.5+ | 0.9− | 2003 01 01 | 704 | (0.1− | 1.6+) | 2004 03 16 | E12 | 1.1+ | 1.0+ | | |
| 2001 08 07 | 608 | 0.3+ | 0.3+ | 2003 01 01 | 704 | 1.3+ | 0.9+ | 2004 03 16 | E12 | 1.1+ | 0.1+ | | |
| 2001 08 07 | 608 | 0.2+ | 0.1− | 2003 01 01 | 704 | 0.4− | 0.0 | 2004 03 16 | E12 | 0.0 | 0.5+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.3− | 2003 01 01 | 704 | 1.3+ | 0.8+ | 2004 03 16 | E12 | 0.6− | 0.7+ | | |
| 2001 08 25 | 704 | 0.5− | 1.3+ | 2003 01 01 | 704 | 0.8− | 0.9+ | 2004 05 12 | E12 | (1.8+ | 0.2−) | | |
| 2001 08 25 | 704 | 0.8− | 0.2− | 2003 01 01 | 704 | 0.1− | 0.5− | 2004 05 12 | E12 | (0.0 | 2.3−) | | |
| 2002 10 12 | 704 | 0.1− | 0.2− | 2003 01 01 | 704 | 0.4+ | 0.9− | 2004 05 12 | E12 | 0.4− | 0.0 | | |
| 2002 10 12 | 704 | 1.3+ | 0.2− | 2003 01 01 | 704 | 0.8− | 0.5+ | 2004 05 12 | E12 | (2.2+ | 0.9−) | | |
| 2002 10 12 | 704 | 0.6+ | 0.7− | 2003 01 01 | 704 | (1.8+ | 0.2−) | 2006 09 19 | 703 | 0.5+ | 0.2+ | | |
| 2002 11 12 | 704 | 0.8+ | 1.1− | 2003 01 01 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.9+ | | |
| 2002 11 12 | 704 | 0.5+ | 0.4+ | 2003 01 01 | 704 | 0.2+ | 0.9− | 2006 09 19 | 703 | 0.3+ | 0.9+ | | |
| 2002 11 12 | 704 | (0.3− | 1.6+) | 2003 01 01 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 703 | 0.1+ | 0.3+ | | |
| 2002 11 15 | 704 | 1.1− | 0.6+ | 2003 01 01 | 704 | 1.0+ | 0.7− | 2006 10 02 | 704 | 0.7+ | 0.6+ | | |
| 2002 11 15 | 704 | 0.1+ | 0.3+ | 2003 01 01 | 704 | 0.7− | 0.3+ | 2006 10 02 | 704 | 1.0+ | 0.5+ | | |
| 2002 11 15 | 704 | 0.1− | 0.0 | 2003 01 01 | 704 | 0.1− | 0.0 | 2006 10 02 | 704 | 0.7+ | 0.3+ | | |
| 2002 11 15 | 704 | 1.2− | 0.5+ | 2003 01 01 | 704 | 0.5− | 1.3+ | 2006 10 02 | 704 | 1.0+ | 0.0 | | |
| 2002 12 06 | 704 | 0.2+ | 0.3− | 2003 01 01 | 704 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.6− | 0.5− | | |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2003 01 01 | 704 | 0.2− | 0.3+ | 2006 10 23 | 703 | 1.0− | 0.8− | | |
| 2002 12 06 | 704 | 0.6+ | 0.3+ | 2003 01 01 | 704 | 0.4+ | 0.8− | 2006 10 23 | 703 | 0.5− | 0.2− | | |
| 2002 12 11 | 704 | 0.8+ | 0.2+ | 2003 01 04 | 704 | 0.3− | 0.4+ | 2006 10 23 | 703 | 0.3− | 0.5− | | |
| 2002 12 11 | 704 | 0.1− | 0.0 | 2003 01 04 | 704 | 0.5− | 0.0 | 2006 10 29 | 703 | 0.4+ | 0.3+ | | |
| 2002 12 11 | 704 | 1.3− | 1.1+ | 2003 01 04 | 704 | 0.4− | 0.2− | 2006 10 29 | 703 | 0.5− | 0.2− | | |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2003 01 04 | 704 | 0.1− | 0.0 | 2006 10 29 | 703 | 0.4− | 0.2+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.5+ | 2003 01 04 | 704 | 0.1− | 0.1+ | 2006 10 29 | 703 | 0.0 | 0.4+ | | |
| 2002 12 14 | 704 | 0.0 | 0.3− | 2003 01 08 | 704 | 0.2− | 0.2+ | 2006 10 29 | 703 | 0.0 | 0.4+ | | |
| 2002 12 14 | 704 | 0.1+ | 0.3− | 2003 01 08 | 704 | 1.0− | 0.5− | 2006 10 29 | 703 | 0.1+ | 0.0 | | |
| 2002 12 14 | 704 | 0.0 | 0.4− | 2003 01 08 | 704 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.8− | 0.3+ | | |
| 2002 12 14 | 704 | 0.7− | 0.8− | 2003 01 08 | 704 | 0.4+ | 0.5− | 2006 10 29 | 703 | 0.0 | 0.3+ | | |
| 2002 12 14 | 704 | 0.3+ | 0.2− | 2003 01 08 | 704 | 0.4− | 0.8− | 2006 11 15 | 703 | 0.3+ | 0.3+ | | |
| 2002 12 15 | 704 | 0.4− | 0.2− | 2003 01 28 | 704 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.5− | 0.1− | | |
| 2002 12 15 | 704 | 0.1− | 0.6− | 2003 01 28 | 704 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.5− | | |
| 2002 12 15 | 704 | 0.9+ | 0.6− | 2003 01 28 | 704 | 0.2− | 0.1+ | 2006 11 15 | 703 | 1.3− | 0.8+ | | |
| 2002 12 15 | 704 | (1.9− | 0.3+) | 2003 01 28 | 704 | 0.4+ | 0.8− | 2006 11 21 | 703 | 0.4+ | 0.0 | | |
| 2002 12 15 | 704 | 0.0 | 0.0 | 2003 01 28 | 704 | 0.4− | 0.1− | 2006 11 21 | 703 | 0.4− | 0.0 | | |
| 2002 12 30 | 704 | (0.5+ | 1.8+) | 2003 01 31 | 704 | (0.2+ | 1.6+) | 2006 11 21 | 703 | 0.3+ | 0.3− | | |
| 2002 12 30 | 704 | (1.5+ | 1.7+) | 2003 01 31 | 704 | 0.2+ | 0.5+ | 2006 11 21 | 703 | 0.6+ | 0.8− | | |
| 2002 12 30 | 704 | (1.9+ | 0.1−) | 2003 01 31 | 704 | 0.0 | 0.4+ | | | | | | |

**(143182)∗ 2002 XL$_{76}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.61615 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26410290 | $\omega$ | 51.81358 | | +0.34222708 | −0.93951823 | |
| $a$ | 2.4059537 | $\Omega$ | 18.18810 | | +0.84784024 | +0.30250880 | |
| $e$ | 0.1654083 | $i$ | 2.50506 | | +0.40502785 | +0.16060487 | |
| $P$ | 3.73 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.4+ | 0.0 | 2002 12 06 | 704 | 0.8+ | 1.4+ | 2002 12 15 | 704 | 0.7− | 0.5+ | | |
| 1992 01 31 | 691 | 0.2− | 0.5− | 2002 12 06 | 704 | 0.5+ | 0.0 | 2002 12 15 | 704 | 0.5+ | 0.1− | | |
| 1992 01 31 | 691 | 0.0 | 0.2− | 2002 12 06 | 704 | 0.2+ | 0.8+ | 2002 12 15 | 704 | 0.4− | 0.0 | | |
| 1996 03 11 | 691 | 0.2− | 0.0 | 2002 12 11 | 704 | 0.7+ | 0.2+ | 2003 01 05 | 704 | 0.0 | 0.1+ | | |
| 1996 03 11 | 691 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.1− | 0.2+ | 2003 01 05 | 704 | 0.0 | 0.5− | | |
| 1996 03 11 | 691 | 0.2− | 0.0 | 2002 12 11 | 704 | 0.3− | 0.0 | 2003 01 05 | 704 | 0.7− | 0.1+ | | |
| 1998 08 31 | 910 | 0.6− | 0.5− | 2002 12 11 | 704 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.5− | 0.0 | | |
| 1998 08 31 | 910 | 0.2− | 0.5− | 2002 12 11 | 704 | 0.1+ | 0.6+ | 2003 01 05 | 704 | 0.1− | 1.4+ | | |
| 1998 08 31 | 910 | 0.3− | 0.6− | 2002 12 14 | 704 | 1.2− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 1998 10 19 | 699 | 0.2+ | 0.4+ | 2002 12 14 | 704 | 1.2− | 0.8− | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 1998 10 19 | 699 | 1.2+ | 0.2+ | 2002 12 14 | 704 | 0.9− | 0.6− | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 1998 10 19 | 699 | 0.6+ | 0.4+ | 2002 12 14 | 704 | (2.3− | 1.6+) | 2006 11 02 | 691 | 0.9+ | 0.3+ | | |
| 2000 04 26 | 691 | 0.4+ | 0.0 | 2002 12 14 | 704 | (1.7− | 0.3+) | 2006 11 02 | 691 | 0.4− | 0.0 | | |
| 2000 04 26 | 691 | 0.4+ | 0.3+ | 2002 12 15 | 704 | 0.1− | 0.7+ | 2006 11 02 | 691 | 0.7+ | 0.5− | | |
| 2000 04 26 | 691 | 0.0 | 0.0 | 2002 12 15 | 704 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.3− | 0.5− | | |
| 2000 05 02 | 691 | 0.3− | 0.0 | 2002 12 15 | 704 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.4− | 0.4− | | |
| 2000 05 02 | 691 | 0.1− | 0.2+ | 2002 12 15 | 704 | 1.1+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.6− | | |
| 2000 05 02 | 691 | 0.0 | 0.2+ | 2002 12 15 | 704 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.7− | | |

**(143183)∗ 2002 XE$_{77}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 60.95437 | | (2000.0) | | | |
| $n$ | 0.22933010 | $\omega$ | 251.74057 | | +0.66503631 | +0.71016995 |
| $a$ | 2.6433947 | $\Omega$ | 62.22233 | | −0.54765590 | +0.67410507 |
| $e$ | 0.2148916 | $i$ | 15.13810 | | −0.50773982 | +0.20307877 |
| $P$ | 4.30 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 02 | 691 | 0.4− | 0.3− | 2005 05 09 | 704 | 0.1+ | 1.5+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 1992 05 02 | 691 | 0.9+ | 0.2− | 2005 05 29 | E12 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 1992 05 02 | 691 | 0.3− | 0.1+ | 2005 05 29 | E12 | (2.1− | 1.2−) | 2006 11 11 | 703 | 1.0− | 1.0− |
| 1994 02 11 | 691 | 0.3− | 0.2− | 2005 05 29 | E12 | 0.3− | 0.1− | 2006 11 11 | 644 | 0.3− | 0.0 |
| 1994 02 11 | 691 | 0.2− | 0.8− | 2005 05 29 | E12 | 0.4+ | 0.4− | 2006 11 11 | 644 | 0.4− | 0.0 |
| 1994 02 11 | 691 | 0.3+ | 0.7− | 2005 06 04 | 704 | 0.2− | 0.3+ | 2006 11 11 | 644 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.5− | 2005 06 04 | 704 | 0.3+ | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.3+ | 2005 06 04 | 704 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.3− | 0.1− |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2005 06 04 | 704 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.8+ | 1.0− | 2005 06 04 | 704 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2005 06 11 | 704 | 0.2− | 0.8+ | 2006 11 14 | 704 | 0.8+ | 1.2+ |
| 2002 12 11 | 704 | 0.4+ | 0.1+ | 2005 06 11 | 704 | 0.3+ | 0.2− | 2006 11 14 | 704 | (0.6+ | 1.9+) |
| 2002 12 11 | 704 | 0.9+ | 0.0 | 2005 06 11 | 704 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.4+ |
| 2002 12 14 | 704 | 0.4+ | 1.1+ | 2005 06 28 | 608 | 0.2− | 0.5− | 2006 11 14 | 704 | 1.1− | 0.5− |
| 2002 12 14 | 704 | 0.3− | 0.5+ | 2005 06 28 | 608 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.3− | 0.5+ |
| 2002 12 14 | 704 | 0.5+ | 1.3+ | 2005 06 28 | 608 | 0.2− | 0.6− | 2006 11 17 | 704 | 0.0 | 0.5+ |
| 2002 12 14 | 704 | 0.0 | 0.1+ | 2005 07 03 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2003 01 05 | 704 | 0.6+ | 0.1− | 2005 07 03 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2003 01 05 | 704 | 0.3+ | 0.6+ | 2005 07 03 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.5− | 1.0+ |
| 2003 01 05 | 704 | 0.3+ | 0.3− | 2005 07 28 | E12 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.9− | 0.1+ |
| 2003 01 05 | 704 | 0.4+ | 0.6− | 2005 07 28 | E12 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2003 01 05 | 704 | 0.1+ | 0.2− | 2005 07 28 | E12 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2005 07 28 | E12 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2004 01 19 | 691 | 0.1− | 0.5+ | 2005 08 25 | E12 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2004 01 19 | 691 | 0.1+ | 0.4+ | 2005 08 25 | E12 | 0.9− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2005 05 03 | 703 | 0.7− | 0.7+ | 2005 08 25 | E12 | 0.9+ | 0.6+ | 2006 11 18 | 704 | 0.3+ | 1.3+ |
| 2005 05 03 | 703 | 0.3− | 1.2+ | 2005 08 25 | E12 | (0.7− | 1.8+) | 2006 11 18 | 704 | 0.3+ | 1.1+ |
| 2005 05 03 | 703 | 0.5+ | 1.3+ | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 11 18 | 704 | (2.4+ | 0.4+) |
| 2005 05 03 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.6− | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2005 05 04 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2005 05 04 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.6− | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2005 05 04 | 704 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2005 05 04 | 704 | 0.8+ | 0.2+ | 2006 10 18 | 691 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2005 05 04 | 704 | 0.3+ | 0.6− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2005 05 04 | 644 | 0.5+ | 0.2− | 2006 10 22 | 704 | (1.6+ | 0.7+) | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2005 05 04 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 704 | 0.2− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 05 04 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 704 | 0.8− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2005 05 06 | 704 | 0.1− | 0.8+ | 2006 10 22 | 704 | 1.4− | 0.1− | 2006 11 26 | 704 | 0.6+ | 0.6− |
| 2005 05 06 | 704 | 0.1− | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 26 | 704 | 0.1− | 0.5+ |
| 2005 05 06 | 704 | 0.6− | 0.7+ | 2006 10 22 | 691 | 0.7− | 0.2+ | 2006 11 26 | 704 | 0.7+ | 0.6− |
| 2005 05 06 | 704 | 0.3− | 1.1+ | 2006 10 22 | 691 | 0.6+ | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.8+ |
| 2005 05 06 | 704 | 0.5− | 0.4+ | 2006 11 02 | 703 | 0.6− | 0.4+ | 2006 11 29 | 704 | 1.0− | 0.4+ |
| 2005 05 09 | 704 | 0.8+ | 0.8+ | 2006 11 02 | 703 | 0.6− | 0.6− | 2006 11 29 | 704 | 0.6+ | 0.4+ |
| 2005 05 09 | 704 | 0.5+ | 0.6+ | 2006 11 02 | 703 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.8+ |
| 2005 05 09 | 704 | 0.5+ | 0.3+ | 2006 11 02 | 703 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.7+ |

**(143184)∗ 2002 XK$_{77}$ = 2004 FV$_{11}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69424)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.13294 | | (2000.0) | | | |
| $n$ | 0.22001146 | $\omega$ | 71.46109 | | +0.94751709 | −0.29728399 |
| $a$ | 2.7175185 | $\Omega$ | 305.67022 | | +0.21031045 | +0.85667265 |
| $e$ | 0.0301685 | $i$ | 8.32446 | | +0.24079218 | +0.42158535 |
| $P$ | 4.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 15 | 608 | 1.4− | 0.4+ | 2003 01 05 | 704 | 0.1− | 1.5+ | 2006 10 17 | A50 | 0.5− | 0.1− |
| 2001 08 15 | 608 | 0.9− | 0.4− | 2004 02 17 | I03 | 0.6+ | 0.8+ | 2006 10 17 | A50 | 0.4− | 0.2+ |
| 2001 08 15 | 608 | 0.6− | 0.3− | 2004 02 17 | I03 | 0.2+ | 0.5+ | 2006 10 17 | A50 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.1+ | 1.1+ | 2004 02 17 | I03 | 0.5+ | 0.8+ | 2006 10 17 | A50 | 0.2− | 0.6+ |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2004 03 16 | 703 | 0.1− | 1.0+ | 2006 10 17 | A50 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 1.3+ | 2004 03 16 | 703 | (0.7+ | 1.7+) | 2006 10 17 | A50 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.3+ | 0.7+ | 2004 03 16 | 703 | 0.4+ | 0.8+ | 2006 10 18 | A50 | 0.2+ | 0.7+ |
| 2001 09 18 | 644 | 0.2+ | 0.6+ | 2004 03 16 | 703 | 0.2− | 0.5− | 2006 10 18 | A50 | 0.6+ | 0.6− |
| 2001 09 18 | 644 | 0.0 | 0.9+ | 2004 03 17 | 704 | 0.8+ | 1.5+ | 2006 10 27 | 703 | 0.4− | 1.0+ |
| 2001 09 18 | 644 | 0.2− | 1.2+ | 2004 03 17 | 704 | (2.1− | 3.7+) | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2002 12 11 | 704 | (2.0+ | 0.2+) | 2004 03 17 | 704 | 0.7+ | 0.7+ | 2006 10 27 | 703 | 0.3+ | 0.5− |
| 2002 12 11 | 704 | (1.8+ | 0.3+) | 2004 03 17 | 704 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.4− | 0.7− |
| 2002 12 11 | 704 | 0.2+ | 0.7+ | 2004 03 17 | 704 | 0.7+ | 1.3+ | 2006 11 15 | 703 | 0.6− | 0.3− |
| 2002 12 14 | 704 | 0.6− | 0.1− | 2006 09 17 | 703 | 1.0− | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.6− |
| 2002 12 14 | 704 | 1.0+ | 0.1− | 2006 09 17 | 703 | 0.8− | 1.2− | 2006 11 15 | 703 | 0.5− | 0.4+ |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.9− | 0.4− |
| 2002 12 14 | 704 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.5+ | 2006 11 23 | 703 | 0.5+ | 0.5+ |
| 2002 12 14 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.8+ | 1.0+ |
| 2003 01 05 | 704 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 1.1+ | 1.4+ |
| 2003 01 05 | 704 | 0.5− | 1.3− | 2006 09 28 | 703 | 0.4+ | 0.2+ | 2006 11 23 | 703 | 1.0+ | 0.4+ |
| 2003 01 05 | 704 | 0.1− | 0.6+ | 2006 09 28 | 703 | 0.1+ | 0.1− | | | | |

**(143185)∗ 2002 XS$_{77}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 238.00733 | | (2000.0) | | | |
| $n$ | 0.21450830 | $\omega$ | 238.35520 | | −0.87026948 | −0.42947132 |
| $a$ | 2.7638003 | $\Omega$ | 275.21954 | | +0.49244740 | −0.76976533 |
| $e$ | 0.1139178 | $i$ | 14.01766 | | −0.01125082 | −0.47224539 |
| $P$ | 4.59 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.4+ | 0.7+ | 2004 04 16 | E12 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 1.1− | 0.1+ |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2004 04 16 | E12 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.9+ | 0.2+ |
| 2002 12 11 | 704 | 0.8− | 0.6+ | 2004 04 16 | E12 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.7+ | 0.4− |
| 2002 12 11 | 704 | 0.3− | 0.8+ | 2004 04 16 | E12 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.9− |
| 2002 12 14 | 704 | 0.5− | 0.6+ | 2004 04 21 | E12 | 1.2+ | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2002 12 14 | 704 | 0.8− | 0.3− | 2004 04 21 | E12 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.4+ | 0.7− |
| 2002 12 14 | 704 | 0.2+ | 1.3+ | 2004 04 21 | E12 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.7− |
| 2002 12 14 | 704 | 0.5+ | 1.5+ | 2004 04 21 | E12 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.4+ | 0.6+ |
| 2003 01 04 | 704 | 0.6− | 0.1− | 2004 04 25 | 704 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.9+ | 0.8+ |
| 2003 01 04 | 704 | 1.2+ | 0.0 | 2004 04 25 | 704 | 0.7+ | 0.7− | 2006 10 27 | 703 | 0.5+ | 0.3− |
| 2003 01 04 | 704 | 0.7− | 0.3+ | 2004 04 25 | 704 | 0.6+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2003 01 04 | 704 | 0.4+ | 0.3+ | 2004 04 25 | 704 | 0.2− | 0.2+ | 2006 11 15 | 703 | 1.2− | 0.2+ |
| 2003 01 04 | 704 | 0.1− | 0.2+ | 2004 04 25 | 704 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 0.4+ | 0.4− | 2004 06 08 | 926 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.8+ |
| 2003 01 08 | 704 | 0.6+ | 0.3− | 2004 06 08 | 926 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.1+ | 0.3− |
| 2003 01 08 | 704 | 0.8+ | 0.0 | 2005 06 29 | 691 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.5+ | 0.0 |
| 2003 01 08 | 704 | 0.7+ | 0.5+ | 2005 06 29 | 691 | 0.3− | 0.0 | 2006 11 22 | 703 | 0.9− | 0.3− |
| 2004 04 13 | E12 | 0.2− | 1.1+ | 2005 06 29 | 691 | 0.2+ | 0.1− | 2006 11 22 | 703 | 0.1− | 1.1+ |
| 2004 04 13 | E12 | 0.2− | 0.6+ | 2005 07 04 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.4− | 1.0− |
| 2004 04 13 | E12 | 0.7− | 1.3+ | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.6+ |
| 2004 04 13 | E12 | 0.3− | 0.7+ | 2005 07 04 | 691 | 0.8− | 0.0 | 2006 11 22 | 703 | 0.2+ | 0.9+ |
| 2004 04 16 | E12 | 0.4− | 0.8+ | 2005 07 08 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.8− | 0.2+ |
| 2004 04 16 | E12 | 0.1+ | 0.6+ | 2005 07 08 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.4− | 0.8+ |
| 2004 04 16 | E12 | 0.1− | 0.0 | 2005 07 08 | 691 | 0.0 | 0.2+ | | | | |
| 2004 04 16 | E12 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.2+ | 0.5+ | | | | |

**(143186)∗ 2002 XP$_{78}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.72209 | | (2000.0) | | | |
| $n$ | 0.23758040 | $\omega$ | 39.08702 | | +0.86956662 | −0.49370506 |
| $a$ | 2.5818379 | $\Omega$ | 350.48048 | | +0.43574336 | +0.77709097 |
| $e$ | 0.2604149 | $i$ | 3.62268 | | +0.23233943 | +0.39036512 |
| $P$ | 4.15 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.3− |
| 1995 01 31 | 691 | 0.1+ | 0.5− | 2006 08 29 | 703 | 0.7+ | 0.6− | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 1995 01 31 | 691 | 0.1− | 0.8− | 2006 08 29 | 703 | 0.2− | 1.0− | 2006 11 17 | 691 | 0.1+ | 0.3− |
| 1995 02 05 | 691 | 0.4− | 0.5− | 2006 09 25 | 704 | (1.7+ | 0.0 ) | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 1995 02 05 | 691 | 0.3− | 0.7− | 2006 09 25 | 704 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 1995 02 05 | 691 | 0.2− | 0.6− | 2006 09 25 | 704 | (0.3+ | 2.1−) | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.9+ | 1.2+ | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.8+ | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.4+ | 1.5− | 2006 10 01 | 704 | 0.9+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 10 01 | 704 | 1.0+ | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.8+ | 0.6− | 2006 10 29 | 704 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2002 12 11 | 704 | 0.9+ | 0.0 | 2006 10 29 | 704 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 0.3− | 0.9− | 2006 10 29 | 704 | 0.4+ | 0.8+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.1+ | 0.4− | 2006 10 29 | 704 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2002 12 14 | 704 | 0.1+ | 0.4− | 2006 10 29 | 704 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2002 12 14 | 704 | 0.7− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.3− | 2006 11 27 | 704 | 0.3− | 1.0+ |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.0 | 0.3− | 2006 11 27 | 704 | 0.6− | 0.6+ |
| 2002 12 30 | 704 | 0.4− | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.1− | 2006 11 27 | 704 | 0.3− | 1.0+ |
| 2002 12 30 | 704 | 0.8− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.4− | 2006 11 27 | 704 | 0.3− | 0.9+ |
| 2002 12 30 | 704 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.6+ | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2003 01 05 | 704 | 0.2− | 0.5+ | 2006 11 14 | 703 | 0.6− | 0.4− | 2006 11 28 | 704 | 0.4+ | 0.6− |
| 2003 01 05 | 704 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.4− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 11 15 | 704 | 0.0 | 0.5− | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2003 01 05 | 704 | 0.3− | 1.0+ | 2006 11 15 | 704 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2003 01 09 | 704 | 0.5+ | 0.2+ | 2006 11 15 | 704 | 1.4− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 1.2+ |
| 2003 01 09 | 704 | 0.5− | 0.0 | 2006 11 15 | 704 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 1.7+ |
| 2003 01 09 | 704 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.3− | 0.6+ | 2006 11 29 | 704 | 0.0 | 1.0+ |
| 2003 01 09 | 704 | 0.3+ | 0.1− | 2006 11 15 | 704 | 1.2− | 0.6− | 2006 11 29 | 704 | 0.1− | 0.8+ |
| 2003 01 09 | 704 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.9+ | 2.6+ |
| 2004 03 29 | 691 | 0.4+ | 0.3+ | 2006 11 15 | 704 | 0.1+ | 0.9+ | 2006 11 29 | 704 | 0.2− | 1.6+ |
| 2004 03 29 | 691 | 0.3+ | 0.7+ | 2006 11 15 | 704 | 0.2− | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.8+ |
| 2004 03 29 | 691 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 1.1− | 0.2+ | 2006 11 29 | 704 | 0.2− | 1.3+ |
| 2004 04 14 | 691 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.2− | 1.0+ |
| 2004 04 14 | 691 | 0.1+ | 0.9+ | 2006 11 16 | 704 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 1.1+ |
| 2004 04 14 | 691 | 0.1+ | 0.7+ | 2006 11 16 | 704 | 0.5+ | 0.2− | | | | |
| 2006 08 29 | 703 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.4− | | | | |

**(143187)∗ 2002 XT$_{78}$ = 1995 FZ$_{9}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41354)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.03684 | | (2000.0) | | | |
| $n$ | 0.22784265 | $\omega$ | 35.04304 | | −0.00116496 | −0.99735186 |
| $a$ | 2.6548870 | $\Omega$ | 55.12994 | | +0.89604903 | −0.03332456 |
| $e$ | 0.1721886 | $i$ | 5.08490 | | +0.44395358 | +0.06464317 |
| $P$ | 4.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.2− | 0.2− | 2003 01 10 | 704 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.5− |
| 1995 03 26 | 691 | 0.1− | 0.4− | 2003 01 10 | 704 | 1.1+ | 0.7+ | 2006 11 10 | 644 | 0.2+ | 0.4− |
| 1995 03 26 | 691 | 0.1− | 0.4− | 2004 05 09 | 691 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.2− |
| 1995 04 04 | 691 | 0.1+ | 0.5− | 2004 05 09 | 691 | 0.1+ | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.3− |
| 1995 04 04 | 691 | 0.9− | 1.1− | 2004 05 09 | 691 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.6− |
| 1995 04 04 | 691 | 0.3− | 0.6− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.6+ | 1.1− |
| 2002 12 06 | 704 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2002 12 06 | 704 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 0.5− | 1.3+ | 2006 09 30 | G96 | 0.1+ | 0.6− | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2002 12 11 | 704 | 0.4− | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2002 12 11 | 704 | 0.4− | 1.2+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.7+ | 0.3− | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2002 12 11 | 704 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2002 12 14 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 2002 12 14 | 704 | 1.4+ | 0.5+ | 2006 10 23 | 691 | 0.4+ | 0.7− | 2006 11 17 | 703 | 0.5− | 0.6− |
| 2002 12 14 | 704 | 1.2+ | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 1.0+ |
| 2002 12 14 | 704 | 0.8+ | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.8− | 0.8+ |
| 2003 01 05 | 704 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 2003 01 05 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 2003 01 05 | 704 | 0.6− | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | (0.3− | 1.6+) |
| 2003 01 05 | 704 | 0.9− | 1.0+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2003 01 09 | 704 | 0.4− | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 1.1+ | 0.7+ |
| 2003 01 09 | 704 | 0.3− | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2003 01 09 | 704 | 0.4− | 0.5− | 2006 11 08 | 644 | 0.0 | 0.3− | 2006 11 21 | 704 | (2.6+ | 0.8−) |
| 2003 01 09 | 704 | 0.2− | 0.8− | 2006 11 08 | 644 | 0.2+ | 0.4− | 2006 11 21 | 704 | (2.1+ | 0.5−) |
| 2003 01 09 | 704 | 1.0− | 0.7− | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 1.3+ |
| 2003 01 10 | 704 | 0.7− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2003 01 10 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.4− | | | | |

**(143188)∗ 2002 XW$_{78}$ = 2001 QN$_{166}$ = 2001 QF$_{332}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61672)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.84009 | | (2000.0) | | | |
| $n$ | 0.21916678 | $\omega$ | 17.97065 | | +0.62120613 | −0.78306794 |
| $a$ | 2.7244964 | $\Omega$ | 33.64358 | | +0.71214415 | +0.54806434 |
| $e$ | 0.1100384 | $i$ | 3.11704 | | +0.32703768 | +0.29398993 |
| $P$ | 4.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 608 | 0.0 | 0.3− | 2006 09 27 | 704 | 1.0− | 0.7+ | 2006 10 28 | 704 | 0.2− | 1.1+ |
| 2001 08 24 | 608 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.7− | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2001 08 24 | 608 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.8+ | 1.1+ | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2001 08 25 | 704 | 1.3− | 0.3+ | 2006 09 30 | 703 | 0.8− | 1.0+ | 2006 10 29 | 691 | 0.3+ | 0.5+ |
| 2001 08 25 | 704 | 0.2− | 1.4+ | 2006 09 30 | 703 | 0.2+ | 1.1+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | (1.3+ | 2.7+) | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.1− | 0.4+ |
| 2001 08 27 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 08 27 | 644 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2001 08 27 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.5+ | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2002 12 06 | 704 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.5+ | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 683 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.9− | 0.4− | 2006 10 16 | 683 | 1.1+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 12 14 | 704 | 0.0 | 1.0− | 2006 10 16 | 683 | 0.6− | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2002 12 14 | 704 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 12 14 | 704 | 0.7+ | 1.0− | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2003 01 05 | 704 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.0 | 0.3− | 2006 10 20 | 683 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2003 01 05 | 704 | 0.2− | 0.2− | 2006 10 20 | 683 | 0.2+ | 0.7+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2003 01 05 | 704 | 0.3− | 0.3− | 2006 10 20 | 683 | 0.3− | 0.9+ | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2003 01 05 | 704 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2003 01 09 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.0 | 0.2− | 2006 11 17 | 703 | (0.4+ | 1.7+) |
| 2003 01 09 | 704 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.4− | 2006 11 17 | 703 | (0.7+ | 1.9+) |
| 2003 01 09 | 704 | 0.6− | 0.6− | 2006 10 21 | 703 | 0.4+ | 0.0 | 2006 11 17 | 703 | (0.0 | 1.7+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 09 | 704 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.9+ |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2004 03 16 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.6+ | 1.1+ |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 10 22 | 683 | 1.3+ | 1.0− | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 683 | 0.5+ | 0.3− | 2006 11 18 | 704 | 1.2+ | 0.1− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 683 | 0.8+ | 1.1− | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2004 03 23 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 704 | 0.1− | 1.4+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2004 03 27 | 291 | 0.2+ | 0.7+ | 2006 10 23 | 683 | 0.7− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2004 03 27 | 291 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.4− | 1.1− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2004 03 27 | 291 | 0.2+ | 0.7+ | 2006 10 23 | 683 | 0.5− | 0.8+ | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 10 23 | 704 | 0.9− | 0.9+ | 2006 11 21 | 704 | 1.1− | 0.0 |
| 2004 04 20 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 683 | (1.7− | 1.7+) | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2004 04 20 | 691 | 0.2+ | 0.6+ | 2006 10 23 | 704 | 0.9+ | 1.0+ | 2006 11 21 | 704 | 1.0− | 0.3+ |
| 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.3− | 0.4− |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.4− | 0.2− |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.3− | 0.1− |
| 2006 09 25 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.3− | 0.2− |
| 2006 09 27 | 704 | 0.1+ | 0.7+ | 2006 10 28 | 704 | (0.1− | 1.8+) | 2006 11 27 | 703 | 0.6− | 0.2+ |
| 2006 09 27 | 704 | (1.5− | 1.7+) | 2006 10 28 | 704 | 0.5+ | 1.1+ | 2006 11 27 | 703 | 0.2+ | 0.4− |
| 2006 09 27 | 704 | 1.2− | 1.3+ | 2006 10 28 | 704 | 0.6− | 1.1+ | 2006 11 27 | 703 | 0.1− | 0.0 |

**(143189)∗ 2002 XB$_{79}$ = 2001 OZ$_{90}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41355)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.23753 | | (2000.0) | | | |
| $n$ | 0.26786561 | $\omega$ | 148.37177 | | +0.15585490 | −0.98261733 |
| $a$ | 2.3833697 | $\Omega$ | 292.49386 | | +0.88197603 | +0.18440995 |
| $e$ | 0.0894791 | $i$ | 6.26710 | | +0.44477807 | −0.02135768 |
| $P$ | 3.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 1.5− | 1.3+ | 2003 01 04 | 704 | 0.2+ | 0.2+ | 2005 10 01 | 703 | 0.9− | 0.5+ |
| 1998 11 14 | 704 | (1.0+ | 2.7−) | 2003 01 04 | 704 | 0.3− | 0.3− | 2005 10 01 | 703 | 1.3− | 0.2− |
| 1998 11 14 | 704 | (0.7+ | 2.5−) | 2003 01 31 | 704 | 1.3− | 0.2+ | 2005 10 01 | 703 | 0.6− | 0.1+ |
| 1998 11 14 | 704 | 1.0+ | 0.6− | 2003 01 31 | 704 | 0.4− | 0.4+ | 2005 10 01 | 703 | 0.9− | 0.7− |
| 2001 07 25 | 608 | 0.4+ | 0.6− | 2003 01 31 | 704 | 0.1− | 0.7+ | 2005 10 01 | 699 | 0.6− | 0.7+ |
| 2001 07 25 | 608 | 0.4+ | 0.6− | 2003 01 31 | 704 | 0.4+ | 1.3+ | 2005 10 01 | 699 | 0.3− | 0.1− |
| 2001 07 25 | 608 | 0.1+ | 0.8− | 2003 01 31 | 704 | 0.1+ | 0.9+ | 2005 10 01 | 699 | 0.0 | 0.4+ |
| 2001 07 27 | 699 | 0.2+ | 0.5+ | 2004 05 09 | 644 | 0.2− | 1.0+ | 2005 10 01 | 699 | 0.5+ | 0.1+ |
| 2001 07 27 | 699 | 0.8+ | 0.1+ | 2004 05 09 | 644 | 0.2+ | 0.8+ | 2005 10 08 | 704 | (1.8− | 1.3−) |
| 2001 07 27 | 699 | 0.1+ | 0.6− | 2004 05 09 | 644 | 0.0 | 1.4+ | 2005 10 08 | 704 | 0.1+ | 0.2+ |
| 2001 07 27 | 699 | 0.6+ | 0.0 | 2005 08 29 | 461 | 0.1− | 0.0 | 2005 10 08 | 704 | 0.6− | 0.9+ |
| 2002 12 06 | 704 | 0.5− | 0.1− | 2005 08 30 | 461 | 0.4− | 0.0 | 2005 11 25 | 291 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2005 08 30 | 461 | 0.2+ | 0.1+ | 2005 11 25 | 291 | 0.2+ | 0.2+ |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2005 09 09 | 704 | 0.9+ | 0.1− | 2005 11 25 | 291 | 0.4+ | 0.6+ |
| 2002 12 11 | 704 | 0.4+ | 1.1− | 2005 09 09 | 704 | 0.7− | 0.2− | 2006 10 23 | 691 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.0 | 2005 09 09 | 704 | 1.0+ | 0.8− | 2006 10 23 | 691 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.5− | 0.2+ | 2005 09 09 | 704 | (1.7− | 0.5−) | 2006 10 23 | 691 | 0.2+ | 0.1+ |
| 2002 12 11 | 704 | 0.5− | 0.6− | 2005 09 23 | A50 | (2.8− | 0.5+) | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2005 09 23 | A50 | (1.5− | 0.2−) | 2006 11 15 | G96 | 0.7− | 0.0 |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2005 09 24 | 703 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.6− | 0.0 |
| 2002 12 14 | 704 | 0.6+ | 0.4− | 2005 09 24 | 703 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2002 12 14 | 704 | 0.9+ | 0.4− | 2005 09 24 | 703 | 0.5− | 0.7− | | | | |
| 2003 01 04 | 704 | 0.6+ | 0.4− | 2005 09 24 | 703 | 0.1− | 0.1− | | | | |

**(143190)∗ 2002 XQ$_{80}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.03869 | | (2000.0) | | | |
| $n$ | 0.21524451 | $\omega$ | 13.97905 | | +0.72553640 | −0.68678626 |
| $a$ | 2.7574946 | $\Omega$ | 29.54671 | | +0.62254720 | +0.62785571 |
| $e$ | 0.2274390 | $i$ | 5.09988 | | +0.29331198 | +0.36622648 |
| $P$ | 4.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 03 | 704 | (0.3− | 2.2+) | 2006 09 12 | 703 | 0.4− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1997 11 03 | 704 | 0.3− | 0.2− | 2006 09 12 | 703 | 0.6+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1997 11 03 | 704 | 0.3+ | 0.7− | 2006 09 12 | 703 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.0 |
| 1997 11 03 | 704 | 1.2+ | 0.8− | 2006 09 16 | 704 | 1.0− | 0.3− | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 1997 11 03 | 704 | 0.3+ | 1.0− | 2006 09 16 | 704 | (1.7− | 2.7+) | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 08 12 | 644 | 0.1− | 0.4+ | 2006 09 16 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 08 12 | 644 | 0.6− | 0.1− | 2006 09 16 | 704 | 1.0− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 08 12 | 644 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 12 11 | 704 | 0.9− | 0.9+ | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 10 11 | 104 | 0.2+ | 0.5+ |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.9− | 2006 10 11 | 104 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.6+ | 0.6− | 2006 09 18 | 699 | 1.0− | 0.1+ | 2006 10 11 | 104 | 0.1− | 0.5+ |
| 2002 12 11 | 704 | 0.8+ | 0.2− | 2006 09 19 | 704 | 0.1+ | 0.5− | 2006 10 12 | 104 | 0.3− | 0.3+ |
| 2002 12 14 | 704 | 0.5− | 0.1− | 2006 09 19 | 704 | 0.5+ | 0.4+ | 2006 10 12 | 104 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 704 | 1.0+ | 0.4+ | 2006 10 12 | 104 | 0.1+ | 0.5+ |
| 2002 12 14 | 704 | 0.7+ | 0.7+ | 2006 09 19 | 704 | 1.0+ | 1.0+ | 2006 10 12 | 104 | 0.1+ | 0.3+ |
| 2002 12 14 | 704 | 0.3− | 0.9+ | 2006 09 19 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 104 | 0.2− | 0.5+ |
| 2002 12 14 | 704 | 0.1− | 0.7+ | 2006 09 20 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 104 | 0.6− | 0.0 |
| 2002 12 27 | 699 | 0.5+ | 0.0 | 2006 09 20 | 691 | 0.0 | 0.1− | 2006 10 16 | 104 | (0.4− | 1.5+) |
| 2002 12 27 | 699 | 1.1+ | 0.5+ | 2006 09 20 | 691 | (0.9+ | 2.5−) | 2006 10 16 | 104 | 0.3− | 0.5+ |
| 2002 12 27 | 699 | 0.9− | 0.8+ | 2006 09 22 | 704 | 0.5− | 0.0 | 2006 10 16 | 104 | 0.9+ | 0.2− |
| 2002 12 27 | 699 | (0.3+ | 1.7+) | 2006 09 22 | 704 | 0.1+ | 0.8− | 2006 10 17 | 104 | 0.1+ | 0.3+ |
| 2002 12 30 | 704 | 0.4+ | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.1+ | 2006 10 17 | 104 | 0.2+ | 0.3+ |
| 2002 12 30 | 704 | 0.9− | 0.6− | 2006 09 22 | 704 | 0.3− | 0.1− | 2006 10 17 | 104 | 0.1+ | 0.2+ |
| 2002 12 30 | 704 | (2.2− | 0.6+) | 2006 09 22 | 704 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 12 30 | 704 | 0.5− | 0.3− | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | 0.5− | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 1.2− | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.4− | 1.2+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 24 | 644 | 0.4− | 0.1+ |
| 2003 01 09 | 704 | (1.7+ | 0.2−) | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2003 01 09 | 704 | 1.3+ | 0.3− | 2006 09 26 | 704 | 0.6− | 0.3+ | 2006 10 24 | 644 | 0.4− | 0.1+ |
| 2003 01 09 | 704 | 0.7+ | 0.2− | 2006 09 28 | 704 | 0.6− | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2003 01 09 | 704 | 1.2+ | 0.7− | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2003 01 09 | 704 | 1.0+ | 0.4− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 2003 02 01 | 704 | 0.6+ | 1.3− | 2006 09 28 | 704 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.7− |
| 2003 02 01 | 704 | (2.3+ | 1.5−) | 2006 09 28 | 704 | 0.7− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 02 01 | 704 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2003 02 01 | 704 | 0.1+ | 0.8− | 2006 09 28 | 704 | 0.5− | 0.7+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2003 02 04 | 704 | 0.7− | 1.0+ | 2006 09 28 | 704 | 0.8− | 0.5+ | 2006 11 18 | 704 | 0.4+ | 1.1+ |
| 2003 02 04 | 704 | 0.9− | 0.8+ | 2006 09 30 | 704 | 0.8− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2003 02 04 | 704 | 1.0− | 0.1+ | 2006 09 30 | 704 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2004 04 13 | 691 | 0.5+ | 0.9+ | 2006 10 09 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2004 04 13 | 691 | 0.6+ | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2004 04 13 | 691 | 0.4+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.3+ | | | | |
| 2006 09 12 | 703 | 0.7− | 0.4− | 2006 10 09 | 644 | 0.2+ | 0.1− | | | | |

**(143191)∗ 2002 XO$_{81}$ = 1993 RS$_{9}$ = 2001 MR$_{22}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41358)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.10045 | | (2000.0) | | | |
| $n$ | 0.23733344 | $\omega$ | 343.79279 | | +0.97377490 | +0.22749770 |
| $a$ | 2.5836286 | $\Omega$ | 3.06125 | | −0.20274551 | +0.87307195 |
| $e$ | 0.1938429 | $i$ | 2.88854 | | −0.10323132 | +0.43126576 |
| $P$ | 4.15 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 809 | (2.2+ | 5.9+) | 2002 12 11 | 704 | 0.3+ | 0.4− | 2004 03 23 | 691 | 0.4+ | 0.4+ |
| 1993 09 14 | 809 | (1.3+ | 4.1+) | 2002 12 11 | 704 | 0.1− | 0.5+ | 2004 03 23 | 691 | 0.3+ | 0.5+ |
| 1993 09 14 | 809 | (1.3+ | 4.4+) | 2002 12 11 | 704 | 0.6+ | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.5+ |
| 1993 09 14 | 691 | 0.5− | 0.5− | 2002 12 14 | 704 | 0.1− | 1.0− | 2004 04 13 | 691 | 0.5+ | 0.6+ |
| 1993 09 14 | 691 | 0.5− | 1.7+ | 2002 12 14 | 704 | 0.7− | 1.5− | 2004 04 13 | 691 | 0.5+ | 0.4+ |
| 1993 09 14 | 691 | 0.1+ | 1.4+ | 2002 12 14 | 704 | 0.1+ | 0.8− | 2004 04 13 | 691 | 0.3+ | 0.6+ |
| 1993 09 19 | 809 | (1.9+ | 3.2+) | 2002 12 28 | 460 | 0.6− | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.3− |
| 1993 09 19 | 809 | (1.3+ | 3.0+) | 2002 12 28 | 460 | 1.3− | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.4− |
| 1993 09 19 | 809 | 0.7− | 0.2+ | 2002 12 29 | 460 | 0.5+ | 0.3− | 2006 11 16 | 704 | 1.1+ | 1.0− |
| 2001 06 25 | 644 | 0.3− | 0.3− | 2002 12 29 | 460 | 1.3− | 0.7− | 2006 11 17 | 691 | 0.1− | 0.4− |
| 2001 06 25 | 644 | 0.5− | 0.2− | 2003 01 07 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 06 25 | 644 | 0.7− | 0.1− | 2003 01 07 | 704 | 0.8− | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2001 07 01 | 644 | 0.1− | 0.1− | 2003 01 07 | 704 | 0.9− | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2001 07 01 | 644 | 0.0 | 0.2+ | 2003 01 07 | 704 | 0.4− | 0.6+ | 2006 11 22 | 704 | 0.4+ | 1.1+ |
| 2001 07 01 | 644 | 0.0 | 0.2− | 2003 01 09 | 704 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2002 12 06 | 704 | 0.5+ | 0.2− | 2003 01 09 | 704 | 0.4+ | 0.9+ | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2003 01 09 | 704 | 0.5− | 0.4+ | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.1− | 0.6+ | 2003 01 09 | 460 | 0.2+ | 0.0 | 2006 11 25 | 691 | 0.1− | 0.3+ |
| 2002 12 06 | 704 | 0.2− | 0.7+ | 2003 01 09 | 460 | 1.2− | 0.4+ | 2006 11 25 | 691 | 0.1+ | 0.2+ |

**(143192)∗ 2002 XB$_{83}$**

Discovered 2002 Dec. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.00479 | | (2000.0) | | | |
| $n$ | 0.21667099 | $\omega$ | 281.11796 | | +0.19590386 | −0.97896892 |
| $a$ | 2.7453784 | $\Omega$ | 157.34187 | | +0.94749676 | +0.17400355 |
| $e$ | 0.1750811 | $i$ | 8.49903 | | +0.25272826 | +0.10650172 |
| $P$ | 4.55 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 25 | 691 | 0.1+ | 0.7+ | 2004 03 20 | 699 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.0 | 0.9− |
| 2000 06 25 | 691 | 0.2+ | 0.3+ | 2004 03 22 | 704 | 0.5− | 1.2+ | 2006 09 18 | 703 | 0.7+ | 0.5+ |
| 2000 06 25 | 691 | 0.1+ | 0.7+ | 2004 03 22 | 704 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.7− | 0.4− |
| 2000 07 05 | 691 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.4+ | 1.2+ | 2006 09 18 | 699 | 0.2− | 0.3− |
| 2000 07 05 | 691 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.5+ |
| 2000 07 05 | 691 | 0.2+ | 0.1+ | 2004 03 22 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.5+ |
| 2002 10 09 | 704 | 0.7− | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.1− | 0.2− |
| 2002 10 09 | 704 | 0.4+ | 0.4+ | 2004 04 20 | 704 | 0.1+ | 1.1+ | 2006 09 19 | 704 | 0.6− | 0.0 |
| 2002 10 09 | 704 | (1.7+ | 0.7−) | 2004 04 20 | 704 | 0.2− | 1.2+ | 2006 09 19 | 704 | 1.2− | 0.1− |
| 2002 10 09 | 704 | 0.7+ | 0.3− | 2004 04 20 | 704 | 0.5− | 1.0+ | 2006 09 19 | 704 | 0.5− | 1.1+ |
| 2002 11 12 | 704 | 0.7− | 0.9+ | 2004 04 20 | E12 | 1.3+ | 0.8− | 2006 09 19 | 704 | 0.6− | 0.5+ |
| 2002 11 12 | 704 | 1.4− | 0.4− | 2004 04 20 | E12 | (1.6+ | 1.0−) | 2006 09 19 | 704 | 0.2+ | 0.1− |
| 2002 11 12 | 704 | 0.8− | 0.2+ | 2004 04 20 | E12 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.1+ | 0.4+ |
| 2002 12 01 | 704 | 0.1+ | 0.1− | 2004 04 20 | E12 | 0.9+ | 0.7− | 2006 09 22 | 704 | 0.1+ | 0.1+ |
| 2002 12 01 | 704 | 0.8+ | 0.4− | 2004 04 25 | 704 | (0.1− | 1.6+) | 2006 09 22 | 704 | 0.9− | 0.5+ |
| 2002 12 01 | 704 | 0.6+ | 0.6− | 2004 04 25 | 704 | 0.7+ | 0.6+ | 2006 09 22 | 704 | 0.3− | 0.4+ |
| 2002 12 13 | 644 | 0.4+ | 0.0 | 2004 04 25 | 704 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.3+ |
| 2002 12 13 | 644 | 0.5+ | 0.1+ | 2006 08 18 | 699 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 2002 12 13 | 644 | 0.2+ | 0.0 | 2006 08 18 | 699 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 2002 12 14 | 704 | 0.1− | 0.1+ | 2006 08 18 | 699 | 0.7+ | 1.1+ | 2006 09 25 | 699 | 0.4− | 0.7+ |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 08 18 | 699 | 1.1− | 0.6+ | 2006 09 26 | 704 | 0.2− | 0.1+ |
| 2002 12 14 | 704 | 0.3+ | 0.4+ | 2006 08 27 | 691 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.3+ |
| 2002 12 14 | 704 | 0.5+ | 0.6+ | 2006 08 27 | 691 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.3− |
| 2003 01 01 | 704 | 0.6+ | 0.5+ | 2006 08 28 | 704 | 0.7+ | 0.5+ | 2006 09 26 | 704 | 0.6+ | 0.0 |
| 2003 01 01 | 704 | 0.0 | 0.3+ | 2006 08 28 | 704 | 0.1− | 0.5− | 2006 09 28 | 704 | 0.4− | 0.4− |
| 2003 01 01 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 704 | 0.6− | 0.4+ | 2006 09 28 | 704 | 0.3− | 0.3+ |
| 2003 01 01 | 704 | 0.6− | 0.5+ | 2006 08 28 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 704 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.0 | 0.5+ | 2006 08 28 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.3− | 0.3+ | 2006 09 12 | 703 | 0.7+ | 1.3− | 2006 09 30 | 703 | 0.3− | 0.5− |
| 2003 01 05 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.5− | 0.7− | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2003 01 05 | 704 | 0.4− | 0.0 | 2006 09 12 | 703 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 2003 01 27 | 704 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.1+ |
| 2003 01 27 | 704 | 0.4− | 0.9+ | 2006 09 14 | 644 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.1+ |
| 2003 01 27 | 704 | 0.7+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2003 01 27 | 704 | 0.6− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2003 01 27 | 644 | 0.4+ | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2003 01 27 | 644 | 0.3− | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.4+ | 0.1− |
| 2003 01 27 | 644 | 0.3+ | 0.6+ | 2006 09 16 | 704 | (2.0+ | 0.1−) | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2003 02 01 | 704 | (0.5+ | 2.1+) | 2006 09 16 | 704 | 0.7+ | 1.2+ | 2006 10 16 | 703 | 0.2+ | 0.9− |
| 2003 02 01 | 704 | 0.4− | 0.9+ | 2006 09 16 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2003 02 01 | 704 | 0.4− | 0.7+ | 2006 09 16 | 704 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2003 02 01 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 704 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2003 02 03 | 644 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.4− | 1.1+ | 2006 10 22 | 644 | 0.4+ | 0.2− |
| 2003 02 03 | 644 | 0.2− | 0.9+ | 2006 09 16 | 704 | 0.0 | 0.7− | 2006 10 22 | 644 | 0.5+ | 0.1− |
| 2003 02 03 | 644 | 0.3− | 0.7+ | 2006 09 16 | 704 | 0.3+ | 1.1+ | 2006 10 22 | 644 | 0.6+ | 0.4− |
| 2004 03 20 | 699 | 0.8+ | 0.6+ | 2006 09 16 | 704 | 1.1+ | 0.7+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2004 03 20 | 699 | 0.7+ | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.9+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2004 03 20 | 704 | 0.5+ | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.3− |
| 2004 03 20 | 704 | 0.8+ | 1.1+ | 2006 09 18 | 703 | 0.4− | 0.4− | 2006 10 24 | 644 | 0.0 | 0.3− |
| 2004 03 20 | 699 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.2− |
| 2004 03 20 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 24 | 644 | 0.2+ | 0.1− |
| 2004 03 20 | 704 | 0.0 | 1.0+ | 2006 09 18 | 703 | 0.1− | 0.5− | | | | |

**(143193)∗ 2002 XV$_{83}$**

Discovered 2002 Dec. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.30625 | | (2000.0) | | | |
| $n$ | 0.24594100 | $\omega$ | 317.43559 | | +0.19570053 | −0.96550642 |
| $a$ | 2.5229894 | $\Omega$ | 120.59389 | | +0.94486522 | +0.13875354 |
| $e$ | 0.2033316 | $i$ | 11.50928 | | +0.26254717 | +0.22032887 |
| $P$ | 4.01 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 699 | 0.1+ | 0.6− | 2002 12 14 | 704 | 0.2+ | 0.8+ | 2003 01 27 | 704 | (1.0− | 4.6+) |
| 1998 12 17 | 699 | 0.1− | 0.2− | 2002 12 14 | 704 | 0.1+ | 0.4− | 2003 01 27 | 704 | (0.9− | 5.1+) |
| 1998 12 17 | 699 | 0.3+ | 0.4− | 2002 12 14 | 704 | 0.9+ | 0.4+ | 2003 01 27 | 644 | 0.2+ | 0.1− |
| 1999 01 15 | 699 | 0.2− | 0.5− | 2002 12 15 | 608 | 0.0 | 0.3+ | 2003 02 22 | 699 | 0.3− | 0.1+ |
| 1999 01 15 | 699 | 0.6− | 0.1+ | 2002 12 15 | 608 | 0.6− | 0.3+ | 2003 02 22 | 699 | (0.8+ | 1.9+) |
| 1999 01 15 | 699 | 0.8− | 1.0− | 2002 12 15 | 608 | 0.0 | 0.4+ | 2003 02 22 | 699 | 0.5+ | 0.3− |
| 2000 05 10 | 645 | 0.0 | 0.0 | 2003 01 01 | 704 | (0.9+ | 3.4+) | 2003 02 22 | 699 | (2.0+ | 1.1+) |
| 2000 05 10 | 645 | 0.0 | 0.0 | 2003 01 01 | 704 | (1.6+ | 2.0+) | 2006 09 19 | 703 | 1.5− | 0.1+ |
| 2002 10 31 | 704 | (2.7+ | 1.6+) | 2003 01 01 | 704 | (1.4+ | 2.6+) | 2006 09 19 | 703 | 0.7− | 0.3+ |
| 2002 10 31 | 704 | 0.5− | 1.3+ | 2003 01 01 | 704 | (4.1+ | 1.6+) | 2006 09 19 | 703 | (2.0− | 0.8−) |
| 2002 10 31 | 704 | 0.1+ | 0.2− | 2003 01 01 | 704 | (3.0+ | 3.1+) | 2006 09 19 | 703 | 0.7− | 0.7− |
| 2002 10 31 | 704 | 0.7+ | 1.3+ | 2003 01 05 | 704 | 0.8− | 0.7− | 2006 09 30 | 703 | 0.8+ | 0.1+ |
| 2002 11 30 | 704 | 0.2− | 0.5+ | 2003 01 05 | 704 | 1.2− | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.5+ |
| 2002 11 30 | 704 | 0.2+ | 0.4+ | 2003 01 05 | 704 | 0.8− | 0.8− | 2006 09 30 | 703 | 0.9− | 0.8+ |
| 2002 11 30 | 704 | 0.7+ | 0.0 | 2003 01 05 | 704 | 0.9− | 0.8− | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2002 11 30 | 704 | 0.3− | 0.3+ | 2003 01 18 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2002 11 30 | 704 | 0.6+ | 0.1+ | 2003 01 18 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.7+ | 0.4− |
| 2002 12 09 | 644 | 0.1+ | 0.0 | 2003 01 18 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.4+ | 0.8− |
| 2002 12 09 | 644 | 0.0 | 0.3+ | 2003 01 25 | 699 | (1.5+ | 0.1+) | 2006 11 19 | 703 | 0.7+ | 0.5− |
| 2002 12 09 | 644 | 0.0 | 0.5+ | 2003 01 25 | 699 | 0.7+ | 1.0+ | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2002 12 13 | 644 | 0.1+ | 0.1− | 2003 01 25 | 699 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2002 12 13 | 644 | 0.0 | 0.5− | 2003 01 25 | 699 | 0.0 | 0.4+ | 2006 11 21 | 704 | (3.0− | 0.5+) |
| 2002 12 13 | 644 | 0.0 | 0.3− | 2003 01 27 | 644 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.8− | 0.3− |
| 2002 12 14 | 704 | 0.5+ | 0.3+ | 2003 01 27 | 704 | (1.4− | 4.8+) | 2006 11 21 | 704 | 0.3− | 0.7− |
| 2002 12 14 | 704 | 0.4+ | 0.4+ | 2003 01 27 | 644 | 0.1+ | 0.4+ | | | | |

**(143194)∗ 2002 XT$_{84}$**

Discovered 2002 Dec. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.83978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17318049 | $\omega$ | 12.26129 | | −0.52066473 | −0.82573803 | |
| $a$ | 3.1876459 | $\Omega$ | 109.47684 | | +0.76258736 | −0.56405356 | |
| $e$ | 0.0457477 | $i$ | 13.30369 | | +0.38388638 | +0.00054040 | |
| $P$ | 5.69 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | 0.4+ | 0.3+ | 2003 01 09 | 704 | 0.0 | 0.3+ | 2004 03 30 | 049 | 1.0− | 0.3− |
| 2001 08 25 | 644 | 0.4+ | 0.4+ | 2003 01 16 | 644 | 0.4− | 0.5+ | 2004 04 10 | 644 | 0.1− | 0.4+ |
| 2001 08 25 | 644 | 0.5+ | 0.1+ | 2003 01 16 | 644 | 0.1+ | 0.5+ | 2004 04 10 | 644 | 0.1+ | 0.4+ |
| 2001 09 19 | 645 | 0.0 | 0.2+ | 2003 01 16 | 644 | 0.3− | 0.4+ | 2004 04 10 | 644 | 0.2− | 0.3+ |
| 2001 09 19 | 645 | 0.0 | 0.2+ | 2003 01 16 | 644 | 0.1+ | 0.3+ | 2004 04 10 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 645 | 0.0 | 0.1+ | 2003 01 16 | 644 | 0.2− | 0.6+ | 2004 04 10 | 644 | 0.2− | 0.5+ |
| 2001 09 21 | 645 | 0.0 | 0.2+ | 2003 01 16 | 644 | 0.4+ | 0.3+ | 2004 04 10 | 644 | 0.1+ | 0.3+ |
| 2001 10 15 | 644 | 0.7− | 0.8+ | 2003 01 25 | 645 | 0.1− | 0.3− | 2004 04 10 | 049 | 0.8+ | 1.3+ |
| 2001 10 15 | 644 | 0.6− | 0.8+ | 2003 01 25 | 645 | 0.1− | 0.3− | 2004 04 11 | 049 | 0.4+ | 0.9+ |
| 2001 10 15 | 644 | 0.7− | 0.9+ | 2003 01 26 | 644 | 0.3+ | 0.3+ | 2004 04 11 | 049 | 0.3− | 0.9+ |
| 2001 11 12 | 608 | 0.9− | 1.2− | 2003 01 26 | 644 | 0.5+ | 0.2+ | 2004 04 15 | 704 | 0.1+ | 0.4+ |
| 2001 11 12 | 608 | 0.8− | 0.6− | 2003 01 26 | 608 | 0.1+ | 0.2+ | 2004 04 15 | 704 | 0.3+ | 0.2− |
| 2001 11 12 | 608 | 0.3− | 0.1− | 2003 01 26 | 608 | 0.1+ | 0.3+ | 2004 04 15 | 704 | 0.9+ | 0.0 |
| 2001 11 20 | 699 | 0.5+ | 0.2+ | 2003 01 26 | 608 | 0.0 | 0.7+ | 2004 04 15 | 704 | 0.1+ | 0.7+ |
| 2001 11 20 | 699 | 0.6− | 0.3+ | 2003 01 26 | 644 | 0.4+ | 0.4+ | 2004 04 15 | 704 | 0.6+ | 0.4+ |
| 2001 11 20 | 699 | 0.5− | 1.3+ | 2003 02 01 | 704 | 0.5+ | 0.1+ | 2004 04 21 | 106 | 0.1+ | 0.1+ |
| 2001 11 20 | 699 | 1.0− | 0.6+ | 2003 02 01 | 704 | 0.1+ | 0.1+ | 2004 04 21 | 106 | 0.5− | 0.5+ |
| 2001 12 07 | 704 | (1.6− | 0.3+) | 2003 02 01 | 704 | 0.6+ | 0.2+ | 2004 04 21 | 106 | 0.4− | 0.3+ |
| 2001 12 07 | 704 | 0.6− | 0.6+ | 2003 02 01 | 704 | 0.2+ | 0.1− | 2004 04 23 | 703 | 0.0 | 0.8+ |
| 2001 12 07 | 704 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.4+ | 0.2− | 2004 04 23 | 703 | 0.7+ | 1.4+ |
| 2002 01 09 | 645 | 0.0 | 0.1− | 2003 02 02 | 704 | 0.2+ | 0.4− | 2004 04 23 | 703 | (0.6+ | 1.6+) |
| 2002 01 09 | 645 | 0.1− | 0.0 | 2003 02 02 | 704 | 0.3+ | 0.2− | 2004 04 23 | 703 | (1.9+ | 1.6+) |
| 2002 01 13 | 645 | 0.0 | 0.1− | 2003 02 02 | 704 | 0.1− | 0.6− | 2004 04 25 | 699 | 0.4− | 0.8+ |
| 2002 01 13 | 645 | 0.1+ | 0.0 | 2003 02 02 | 704 | 0.7− | 0.2− | 2004 04 25 | 699 | 0.7− | 0.4− |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 0.5+ | 0.0 | 2004 04 25 | 699 | 0.3+ | 0.0 |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2003 02 04 | 699 | 0.2+ | 0.4+ | 2004 04 25 | 699 | 1.5+ | 0.4+ |
| 2002 11 21 | 644 | 0.2+ | 0.9+ | 2003 02 04 | 699 | 0.1+ | 0.8+ | 2004 05 13 | 704 | 0.2+ | 0.1− |
| 2002 11 21 | 644 | 0.2+ | 0.5+ | 2003 02 04 | 704 | 0.2+ | 0.5− | 2004 05 13 | 704 | 0.4+ | 0.0 |
| 2002 11 21 | 644 | 0.6+ | 0.6+ | 2003 02 04 | 699 | 0.3+ | 0.1+ | 2004 05 13 | 704 | 0.7− | 0.8+ |
| 2002 12 11 | 644 | 1.2+ | 1.0+ | 2003 02 04 | 704 | 0.1− | 0.7+ | 2004 05 13 | 704 | 0.1+ | 0.0 |
| 2002 12 11 | 644 | 0.8+ | 0.2+ | 2003 02 04 | 704 | 0.0 | 0.1− | 2004 05 13 | 704 | (0.6− | 2.1+) |
| 2002 12 11 | 644 | 0.7+ | 0.6+ | 2003 02 04 | 704 | 0.1− | 1.0+ | 2004 06 19 | 704 | 1.2+ | 0.3− |
| 2002 12 15 | 608 | 0.1+ | 0.7− | 2003 02 04 | 704 | 0.1+ | 0.5+ | 2004 06 19 | 704 | 0.7+ | 0.7+ |
| 2002 12 15 | 608 | 0.2+ | 1.1− | 2003 02 07 | 704 | 0.3− | 0.7− | 2004 06 19 | 704 | 0.9+ | 0.7− |
| 2002 12 15 | 608 | 0.4+ | 0.3− | 2003 02 07 | 704 | 0.4− | 0.1− | 2004 06 19 | 704 | 0.0 | 0.7+ |
| 2002 12 27 | 699 | 0.4− | 0.5+ | 2003 02 07 | 704 | 0.2+ | 0.7− | 2006 08 28 | E12 | (0.8+ | 2.5+) |
| 2002 12 27 | 699 | 0.1+ | 0.1+ | 2003 02 23 | 699 | 0.7− | 0.7− | 2006 08 28 | E12 | 0.1+ | 0.2+ |
| 2002 12 27 | 699 | 1.1− | 0.2− | 2003 02 23 | 699 | 0.3− | 0.2+ | 2006 08 28 | E12 | 0.3+ | 0.3+ |
| 2002 12 27 | 699 | 0.3+ | 0.3+ | 2003 02 23 | 699 | 0.4− | 0.8+ | 2006 09 20 | 703 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2003 02 23 | 699 | 0.4− | 1.1+ | 2006 09 20 | 703 | (2.0− | 0.1+) |
| 2002 12 31 | 704 | 1.0+ | 0.4+ | 2004 03 13 | 644 | 0.0 | 0.2+ | 2006 09 20 | 703 | 0.5− | 0.2+ |
| 2002 12 31 | 704 | 0.7+ | 0.3− | 2004 03 13 | 644 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.9− | 0.9+ |
| 2002 12 31 | 704 | 0.2− | 0.3+ | 2004 03 13 | 644 | 0.0 | 0.2+ | 2006 09 21 | 699 | (1.9− | 0.1−) |
| 2002 12 31 | 704 | 0.2− | 0.9+ | 2004 03 15 | 704 | 0.5+ | 1.0+ | 2006 09 21 | 699 | (0.5+ | 1.6+) |
| 2003 01 05 | 704 | 0.5− | 0.4− | 2004 03 15 | 704 | 0.5+ | 1.2+ | 2006 09 21 | 699 | 0.7− | 0.8− |
| 2003 01 05 | 704 | 0.5− | 0.0 | 2004 03 15 | 704 | (1.4+ | 1.8+) | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 2003 01 05 | 704 | 0.1− | 0.1− | 2004 03 15 | 704 | 1.0+ | 1.0+ | 2006 09 26 | 703 | 0.2− | 0.4+ |
| 2003 01 05 | 704 | (1.6− | 0.4−) | 2004 03 15 | 704 | 0.5+ | 1.3+ | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.9− | 0.3+ | 2004 03 30 | 049 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.8+ | 0.6− |
| 2003 01 09 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 049 | 0.5− | 0.2− | 2006 10 12 | E12 | 0.1− | 0.2+ |
| 2003 01 09 | 704 | 0.7+ | 0.5+ | 2004 03 30 | 049 | 0.5+ | 0.0 | 2006 10 12 | E12 | 0.6+ | 0.1+ |
| 2003 01 09 | 704 | 0.1− | 0.0 | 2004 03 30 | 049 | 0.8− | 0.7− | 2006 10 12 | E12 | 0.0 | 0.3− |
| 2003 01 09 | 704 | 0.1+ | 0.1+ | 2004 03 30 | 049 | 0.6− | 0.1+ | 2006 10 12 | E12 | 0.2+ | 0.2+ |

**(143195)∗ 2002 XW$_{84}$ = 2000 FS$_{70}$**

Discovered 2002 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41363)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.26628 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22417617 | $\omega$ | 173.78706 | | +0.99150255 | −0.12091406 | |
| $a$ | 2.6837564 | $\Omega$ | 193.44508 | | +0.10869641 | +0.97269468 | |
| $e$ | 0.2058627 | $i$ | 11.90981 | | +0.07146875 | +0.19810314 | |
| $P$ | 4.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.2+ | 0.1− | 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 2000 03 29 | 691 | 0.2+ | 0.1− | 2006 08 31 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.2+ | 0.3− |
| 2000 03 29 | 691 | 0.2+ | 0.1+ | 2006 08 31 | 704 | 0.9− | 0.6+ | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 0.1+ | 1.5+ | 2006 08 31 | 704 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.5+ |
| 2000 04 05 | 704 | 0.2+ | 1.0+ | 2006 08 31 | 704 | 0.6+ | 0.1− | 2006 10 01 | 704 | 0.0 | 0.2− |
| 2000 04 05 | 704 | 0.1+ | 0.9+ | 2006 08 31 | 704 | 0.2+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2000 04 05 | 691 | 0.1− | 0.1+ | 2006 09 01 | 704 | 1.0+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2000 04 05 | 704 | 0.3+ | 0.1+ | 2006 09 01 | 704 | 0.2+ | 0.5− | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2000 04 05 | 691 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.2+ | 0.4− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2000 04 05 | 691 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.6+ | 0.0 | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2001 06 21 | 704 | 0.6− | 0.8− | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2001 06 21 | 704 | 0.3− | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2001 06 21 | 704 | 0.4+ | 0.9+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2002 11 06 | 608 | 0.4+ | 0.2+ | 2006 09 15 | 704 | 0.2− | 0.8+ | 2006 10 17 | G96 | 0.6+ | 0.4− |
| 2002 11 06 | 608 | 0.5+ | 0.0 | 2006 09 15 | 704 | 0.6− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.5− |
| 2002 11 06 | 608 | 0.6+ | 0.2+ | 2006 09 15 | 704 | 0.7− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 11 30 | 704 | 0.2+ | 0.2+ | 2006 09 15 | 704 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 30 | 704 | 0.8+ | 0.8+ | 2006 09 17 | 703 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 11 30 | 704 | 0.0 | 0.5− | 2006 09 17 | 703 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 11 30 | 704 | 0.3+ | 0.5− | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.8− | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.4− | 0.5+ | 2006 09 18 | 704 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 12 14 | 704 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 12 14 | 704 | 0.5+ | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 12 15 | 608 | 0.1− | 0.6+ | 2006 09 18 | 704 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 12 15 | 608 | 0.4− | 1.4+ | 2006 09 18 | 704 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 12 15 | 608 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2002 12 16 | 608 | 0.2− | 1.4− | 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2002 12 16 | 608 | 0.2+ | 1.1− | 2006 09 19 | 699 | 0.7− | 0.4+ | 2006 10 23 | 704 | 0.9+ | 0.8+ |
| 2002 12 16 | 608 | 0.1− | 0.4− | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 23 | 704 | (0.2− | 2.0+) |
| 2003 01 26 | 644 | 0.5− | 0.1− | 2006 09 21 | 704 | 0.2− | 0.5+ | 2006 10 23 | 704 | 0.1+ | 0.0 |
| 2003 01 26 | 644 | 0.0 | 0.1+ | 2006 09 21 | 704 | 0.2− | 0.1− | 2006 10 23 | 704 | 0.1− | 0.9− |
| 2003 01 26 | 644 | 0.0 | 0.1+ | 2006 09 21 | 704 | 0.0 | 0.4+ | 2006 11 10 | 704 | 0.1− | 0.6+ |
| 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.4− | 0.7+ | 2006 11 10 | 704 | 0.5+ | 0.3+ |
| 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 704 | 1.3+ | 0.3+ |
| 2004 03 16 | 691 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.6+ | 0.6+ | 2006 11 10 | 704 | 0.4+ | 0.8− |
| 2004 03 27 | 691 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.8− | 0.9+ | 2006 11 17 | 704 | 0.9− | 0.5+ |
| 2004 03 27 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2004 03 27 | 691 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2005 04 30 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 0.4− | 0.7+ | 2006 11 17 | 704 | 0.2− | 0.6− |
| 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 08 29 | 699 | 0.6− | 0.1− | 2006 09 27 | 699 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 08 29 | 699 | 0.6+ | 0.5+ | 2006 09 27 | 699 | 0.5− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2006 08 29 | 699 | 0.3− | 0.4− | 2006 09 27 | 699 | 0.2+ | 0.1− | 2006 11 20 | 704 | 1.3+ | 1.5+ |
| 2006 08 29 | 699 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.1− | 2006 11 20 | 704 | 0.3+ | 2.7+ |
| 2006 08 30 | 704 | 0.6− | 0.1− | 2006 09 29 | 704 | 0.5− | 0.2+ | 2006 11 20 | 704 | 1.0+ | 1.0+ |
| 2006 08 30 | 704 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.3+ | 1.3+ |
| 2006 08 30 | 704 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.5− | 0.2+ | | | | |
| 2006 08 30 | 704 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.4− | 0.1− | | | | |

**(143196)∗ 2002 XE$_{85}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.77522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22367045 | $\omega$ | 73.01625 | | −0.32078989 | | −0.94435695 |
| $a$ | 2.6878002 | $\Omega$ | 35.95597 | | +0.81508072 | | −0.31433533 |
| $e$ | 0.0798194 | $i$ | 7.11136 | | +0.48242851 | | −0.09686719 |
| $P$ | 4.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.4− | 0.6+ | 2004 04 12 | 699 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 2001 08 19 | 704 | 0.1+ | 1.1+ | 2004 04 12 | 699 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2001 08 19 | 704 | 0.4− | 1.1+ | 2004 04 12 | 699 | 0.0 | 0.3+ | 2006 10 21 | 703 | 1.1− | 0.2+ |
| 2001 08 27 | 644 | 0.1− | 0.1− | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2001 08 27 | 644 | 0.6− | 0.1− | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2001 08 27 | 644 | 0.2− | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2004 04 15 | 699 | 0.2+ | 0.7− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 0.3− | 0.1+ | 2004 04 15 | 699 | 0.3− | 0.6− | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2004 04 15 | 699 | 0.7+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.4− | 0.5+ | 2004 04 15 | 699 | 0.5+ | 0.3− | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.7+ | 0.4− | 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.1− | 2004 04 20 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.6− | 0.0 | 2004 05 09 | 691 | 0.5+ | 0.6+ | 2006 11 07 | 644 | 0.1+ | 0.5+ |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 05 09 | 691 | 0.3+ | 0.6+ | 2006 11 07 | 644 | 0.2− | 0.7+ |
| 2002 12 15 | 704 | 0.7+ | 0.3+ | 2004 05 09 | 691 | 0.2+ | 0.6+ | 2006 11 07 | 644 | 0.3+ | 0.2+ |
| 2002 12 15 | 704 | 0.7+ | 0.1+ | 2004 05 24 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.8+ |
| 2002 12 15 | 704 | 0.4+ | 0.0 | 2004 05 24 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | (2.5− | 0.1+) |
| 2002 12 15 | 704 | 0.0 | 0.0 | 2004 05 24 | 691 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | 0.5− | 0.5− | 2006 09 20 | 699 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2003 01 05 | 704 | 0.1+ | 0.4− | 2006 09 20 | 699 | 0.8+ | 0.2+ | 2006 11 11 | G96 | 0.5− | 0.8+ |
| 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.5− | 0.9+ | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2003 01 05 | 704 | 0.5− | 0.4− | 2006 09 20 | 699 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.6− | 0.4+ |
| 2003 01 05 | 704 | 0.7− | 0.3− | 2006 09 24 | 691 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2004 03 14 | 644 | 0.7+ | 0.5+ | 2006 09 24 | 691 | 0.3− | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2004 03 14 | 644 | 0.5+ | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2004 03 14 | 644 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.9+ |
| 2004 03 19 | 704 | (0.5+ | 1.5+) | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.5+ | 1.1+ |
| 2004 03 19 | 704 | 0.8− | 1.4+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.7− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2004 03 19 | 704 | 1.0+ | 1.1+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2004 03 22 | 704 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.4− | 0.1− |
| 2004 03 22 | 704 | 0.6+ | 1.1+ | 2006 10 02 | 691 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.3− | 0.2− |
| 2004 03 22 | 704 | 0.8+ | 1.2+ | 2006 10 02 | 691 | 0.4− | 0.1+ | 2006 11 21 | 701 | 0.5− | 0.1− |
| 2004 03 22 | 704 | 0.0 | 1.2+ | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 1.1+ | 0.4+ |
| 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 1.4+ | 0.2+ |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 701 | 0.1+ | 0.1+ |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | (1.8+ | 0.0 ) |
| 2004 03 28 | 704 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.3+ | 0.2+ |
| 2004 03 28 | 704 | 1.3+ | 0.5− | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 21 | 701 | 0.0 | 0.2+ |
| 2004 03 28 | 704 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.1+ | 0.2− |
| 2004 03 28 | 704 | 0.6+ | 1.4− | 2006 10 19 | 644 | 0.3+ | 0.5− | 2006 11 21 | 701 | 0.2+ | 0.5+ |
| 2004 03 28 | 704 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.5+ | 2006 11 27 | 703 | 0.0 | 0.6− |
| 2004 04 11 | 644 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.6+ | 2006 11 27 | 703 | 0.7+ | 1.0− |
| 2004 04 11 | 644 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.8− | 0.4+ |
| 2004 04 11 | 644 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.6− | 1.1+ |
| 2004 04 12 | 699 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.5+ | | | | |

**(143197)∗ 2002 XL$_{86}$ = 1996 JV$_{14}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47235)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.65205 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22492352 | $\omega$ | 302.27932 | | +0.97268048 | | −0.09692616 |
| $a$ | 2.6778082 | $\Omega$ | 64.05484 | | +0.18958614 | | +0.85606491 |
| $e$ | 0.1885414 | $i$ | 13.56739 | | −0.13397677 | | +0.50769891 |
| $P$ | 4.38 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 12 | 691 | 0.2+ | 0.4+ | 2004 03 26 | 704 | 1.1+ | 1.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1996 05 12 | 691 | 0.4+ | 0.7+ | 2005 05 30 | E12 | 0.8− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1996 05 12 | 691 | 0.1+ | 0.7+ | 2005 05 30 | E12 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 1996 05 20 | 691 | 0.6+ | 0.4+ | 2005 05 30 | E12 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1996 05 20 | 691 | 0.3+ | 0.4+ | 2005 05 30 | E12 | 0.6− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1996 05 20 | 691 | 0.1+ | 0.6+ | 2005 06 04 | 704 | 0.4+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 05 04 | 645 | 0.0 | 0.2+ | 2005 06 04 | 704 | 1.2+ | 1.4+ | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2005 06 04 | 704 | 1.4+ | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.4+ |
| 2002 10 11 | 704 | 0.8+ | 0.6− | 2005 06 04 | 704 | 1.2+ | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.1+ | 0.3+ | 2005 06 04 | 704 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.5− | 0.2+ |
| 2002 10 11 | 704 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.5− | 2006 11 14 | 704 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.5+ | 1.3+ | 2006 09 30 | 699 | 0.7+ | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 2002 11 12 | 704 | (1.9+ | 1.1−) | 2006 09 30 | 703 | 0.1− | 0.4− | 2006 11 14 | 704 | 0.2+ | 0.2+ |
| 2002 11 12 | 704 | 0.7+ | 0.0 | 2006 09 30 | 699 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 17 | 704 | 0.2+ | 1.1+ |
| 2002 12 06 | 704 | (1.6+ | 0.2+) | 2006 09 30 | 699 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.8+ |
| 2002 12 06 | 704 | 0.7+ | 0.5− | 2006 09 30 | 699 | 0.4− | 0.7+ | 2006 11 17 | 704 | 1.1− | 1.0+ |
| 2002 12 06 | 704 | 0.5+ | 0.1− | 2006 10 01 | 704 | 1.4− | 1.4+ | 2006 11 17 | 704 | 0.4− | 0.7+ |
| 2002 12 11 | 704 | 0.7− | 0.0 | 2006 10 01 | 704 | 1.0− | 0.9+ | 2006 11 17 | 704 | 1.2− | 0.7+ |
| 2002 12 11 | 704 | 1.0− | 0.4+ | 2006 10 01 | 704 | 0.3− | 0.7+ | 2006 11 19 | 703 | 0.1− | 0.6+ |
| 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.1− | 0.7+ |
| 2002 12 11 | 704 | 1.0− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.2+ |
| 2002 12 15 | 704 | 0.9+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2002 12 15 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2002 12 15 | 704 | 1.4+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2002 12 15 | 704 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 20 | 704 | (0.1+ | 2.7+) |
| 2002 12 15 | 704 | (1.6+ | 1.3+) | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 20 | 704 | (1.8− | 1.5+) |
| 2003 01 04 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.2+ | 2006 11 20 | 704 | 1.0− | 1.2+ |
| 2003 01 04 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.1+ | 2006 11 20 | 704 | (1.8− | 1.4+) |
| 2003 01 04 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.6+ |
| 2003 01 04 | 704 | 0.8− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.1− | 2006 11 20 | 704 | (1.1+ | 1.9+) |
| 2003 01 04 | 704 | 0.4− | 0.4+ | 2006 10 31 | 704 | 1.0− | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 03 26 | 704 | (1.6+ | 1.5+) | 2006 10 31 | 704 | 0.2− | 0.7+ | 2006 11 23 | G96 | 0.3− | 0.1+ |
| 2004 03 26 | 704 | (0.0 | 1.7+) | 2006 10 31 | 704 | 0.8− | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 03 26 | 704 | (0.4+ | 1.8+) | 2006 10 31 | 704 | 0.2+ | 1.3+ | | | | |

**(143198)∗ 2002 XH$_{87}$ = 1996 KE$_{2}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41365)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.51113 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23214202 | $\omega$ | 308.01726 | | +0.90196384 | | −0.41726946 |
| $a$ | 2.6220052 | $\Omega$ | 76.89225 | | +0.42325520 | | +0.80334434 |
| $e$ | 0.2081806 | $i$ | 6.55123 | | +0.08553519 | | +0.42488124 |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 17 | 691 | 0.6+ | 0.6+ | 2006 10 17 | G96 | 0.9+ | 0.5− | 2006 11 14 | 704 | 0.7+ | 0.4− |
| 1996 05 17 | 691 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 14 | 704 | 0.1− | 0.0 |
| 1996 05 17 | 691 | 0.3+ | 0.8+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 1996 05 23 | 691 | 0.1+ | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.0 |
| 1996 05 23 | 691 | 0.5+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 1996 05 23 | 691 | 0.4− | 1.1+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.9− | 0.3− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 10 18 | 291 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.5− | 2006 10 18 | 291 | 0.5− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 10 18 | 291 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2002 12 11 | 704 | (0.0 | 1.7+) | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 12 11 | 704 | 0.7− | 1.5+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2002 12 15 | 704 | 0.5+ | 0.6− | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 12 15 | 704 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2002 12 15 | 704 | 0.1+ | 1.4− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.5− |
| 2002 12 15 | 704 | 1.0+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.6− |
| 2003 01 05 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 691 | 0.5+ | 1.0+ | 2006 11 18 | 704 | 0.3+ | 0.5− |
| 2003 01 05 | 704 | 1.0+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 0.4+ | 0.1− | 2006 10 27 | 704 | 0.9− | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2003 01 05 | 704 | 0.7+ | 0.3− | 2006 10 27 | 704 | 1.0+ | 0.5− | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2003 01 09 | 704 | 0.0 | 0.3+ | 2006 10 27 | 704 | 0.8− | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.2− |
| 2003 01 09 | 704 | 0.4− | 0.0 | 2006 10 27 | 704 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2003 01 09 | 704 | 0.3− | 0.4+ | 2006 11 02 | 703 | 0.0 | 1.4− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2003 01 09 | 704 | 0.4− | 0.3+ | 2006 11 02 | 703 | 0.5+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2003 01 09 | 704 | 0.4− | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.5− | 2006 11 23 | G96 | 1.0− | 0.1− |
| 2004 03 14 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 25 | 704 | (0.6+ | 1.6+) |
| 2004 03 14 | 691 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 25 | 704 | (1.8+ | 1.2+) |
| 2006 09 18 | 703 | 0.9+ | 1.5+ | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 25 | 704 | 0.4+ | 1.4+ |
| 2006 09 18 | 703 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 25 | 704 | (0.7+ | 1.9+) |
| 2006 09 18 | 703 | 0.8+ | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 27 | 224 | 0.3− | 0.1+ |
| 2006 09 18 | 703 | 0.6+ | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 27 | 224 | 0.2− | 0.6+ |
| 2006 09 19 | 699 | 1.3− | 0.6+ | 2006 11 13 | 703 | 0.3− | 0.2− | 2006 11 27 | 224 | 0.3+ | 0.6+ |
| 2006 09 19 | 699 | 0.9− | 1.2+ | 2006 11 13 | 703 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2006 09 19 | 699 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2006 09 19 | 699 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.9− | 1.0− | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2006 10 17 | G96 | 0.7− | 0.2− | 2006 11 14 | 704 | 0.5+ | 0.4+ | 2006 11 29 | 704 | (1.6+ | 0.2+) |
| 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.7+ | 1.1+ | 2006 11 29 | 704 | 0.9− | 0.3+ |
| 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 14 | 704 | 0.2+ | 0.3− | | | | |

**(143199)∗ 2002 XJ$_{87}$**

Discovered 2002 Dec. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.44942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22254420 | $\omega$ | 153.53930 | | +0.15115136 | −0.92872632 | |
| $a$ | 2.6968608 | $\Omega$ | 286.17122 | | +0.83293952 | +0.30409485 | |
| $e$ | 0.1188670 | $i$ | 20.64055 | | +0.53232042 | −0.21211730 | |
| $P$ | 4.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 30 | 644 | 0.4− | 0.4+ | 2002 12 30 | 704 | 0.5− | 0.2− | 2003 01 31 | 704 | 1.4+ | 1.3− |
| 2001 07 30 | 644 | 0.5− | 0.1+ | 2002 12 30 | 704 | 0.5− | 0.1+ | 2003 01 31 | 704 | 0.1+ | 0.5− |
| 2001 07 30 | 644 | 0.1− | 0.4+ | 2002 12 30 | 704 | 0.4− | 0.5+ | 2005 06 08 | 691 | 0.1+ | 0.1+ |
| 2001 08 20 | 644 | 0.1+ | 0.1+ | 2003 01 05 | 704 | (1.2− | 1.8−) | 2005 06 08 | 691 | 0.0 | 0.1+ |
| 2001 08 20 | 644 | 0.1+ | 0.4+ | 2003 01 05 | 704 | 0.1− | 0.0 | 2005 06 08 | 691 | 0.1− | 0.1− |
| 2001 08 20 | 644 | 0.0 | 0.0 | 2003 01 05 | 704 | 0.4− | 0.0 | 2005 06 12 | 691 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.5+ | 0.3− | 2003 01 05 | 704 | 0.3− | 0.1+ | 2005 06 12 | 691 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.7+ | 0.3+ | 2003 01 07 | 704 | 0.2− | 0.1+ | 2005 06 12 | 691 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.7+ | 0.4+ | 2003 01 07 | 704 | 0.4− | 0.3− | 2006 11 01 | 703 | 0.2− | 1.1− |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2003 01 07 | 704 | 0.0 | 0.3+ | 2006 11 01 | 703 | 0.5− | 1.1− |
| 2002 12 05 | 704 | 1.1+ | 1.2+ | 2003 01 07 | 704 | 0.4− | 0.1+ | 2006 11 01 | 703 | 0.3− | 0.2+ |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2003 01 07 | 704 | 0.1− | 0.2+ | 2006 11 01 | 703 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 0.0 | 0.2− | 2003 01 08 | 704 | (0.1+ | 1.6+) | 2006 11 13 | 704 | 0.8+ | 0.7+ |
| 2002 12 11 | 704 | 0.2− | 0.4+ | 2003 01 08 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 704 | 0.6+ | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2003 01 08 | 704 | 0.3+ | 0.2− | 2006 11 13 | 704 | 0.6+ | 0.4− |
| 2002 12 11 | 704 | 0.2+ | 0.1− | 2003 01 08 | 704 | 0.6+ | 0.2+ | 2006 11 13 | 704 | 0.0 | 0.1− |
| 2002 12 15 | 704 | (0.1+ | 2.0+) | 2003 01 09 | 704 | 0.2− | 0.4+ | 2006 11 13 | 704 | 0.0 | 0.6+ |
| 2002 12 15 | 704 | (0.3− | 2.0+) | 2003 01 09 | 704 | 0.4− | 0.2− | 2006 11 20 | 703 | 0.1+ | 0.3− |
| 2002 12 15 | 704 | (0.0 | 2.0+) | 2003 01 09 | 704 | 0.5− | 0.1+ | 2006 11 20 | 703 | 0.0 | 0.8− |
| 2002 12 15 | 704 | 0.2+ | 1.4+ | 2003 01 31 | 704 | 0.2+ | 0.7− | 2006 11 20 | 703 | 0.2+ | 0.5+ |
| 2002 12 30 | 704 | 0.8− | 0.5+ | 2003 01 31 | 704 | 0.8+ | 0.5− | 2006 11 20 | 703 | 0.0 | 0.6− |

**(143200)∗ 2002 XV$_{87}$**

Discovered 2002 Dec. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.34140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22559307 | $\omega$ | 63.68741 | | +0.67339654 | −0.73746167 | |
| $a$ | 2.6725072 | $\Omega$ | 343.64752 | | +0.59550497 | +0.58265051 | |
| $e$ | 0.1171079 | $i$ | 10.61021 | | +0.43807640 | +0.34156795 | |
| $P$ | 4.37 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 09 | 699 | 0.8+ | 0.5+ | 2003 02 19 | 644 | 0.3− | 0.5+ | 2006 08 30 | 704 | 0.0 | 0.2+ |
| 1999 01 09 | 699 | 1.0+ | 1.1+ | 2003 02 19 | 644 | 0.1+ | 0.1+ | 2006 09 05 | A13 | 0.6− | 0.2+ |
| 1999 01 09 | 699 | 0.1+ | 0.8− | 2004 03 13 | 644 | 0.2+ | 0.4+ | 2006 09 05 | A13 | 0.6− | 0.0 |
| 2000 05 03 | 645 | 0.0 | 0.1+ | 2004 03 13 | 644 | 0.1− | 0.6+ | 2006 09 05 | A13 | 0.2− | 0.1+ |
| 2000 05 03 | 645 | 0.1+ | 0.2+ | 2004 03 13 | 644 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.3− | 0.4+ |
| 2001 07 19 | 644 | 0.0 | 0.9+ | 2004 03 16 | 703 | 1.0+ | 0.7+ | 2006 09 06 | 644 | 0.2− | 0.4+ |
| 2001 07 19 | 644 | 0.2− | 0.7+ | 2004 03 16 | 703 | 0.8+ | 0.6+ | 2006 09 06 | 644 | 0.2− | 0.3+ |
| 2001 07 19 | 644 | 0.1− | 0.8+ | 2004 03 16 | 703 | 1.4+ | 0.8+ | 2006 09 06 | 644 | 0.1+ | 0.4+ |
| 2002 10 01 | 704 | 0.1+ | 0.0 | 2004 03 16 | 703 | 0.5+ | 1.2+ | 2006 09 06 | 644 | 0.4− | 0.2+ |
| 2002 10 01 | 704 | 0.6− | 0.2− | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.4+ |
| 2002 10 01 | 704 | 0.2− | 0.2− | 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 09 15 | 704 | 0.1− | 1.1+ |
| 2002 10 01 | 704 | 0.4− | 0.2− | 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 704 | (1.0+ | 1.9+) |
| 2002 10 05 | 704 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.9+ | 1.2+ | 2006 09 15 | 704 | (0.1− | 2.3+) |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.4− | 1.3+ | 2006 09 15 | 704 | (0.5+ | 1.7+) |
| 2002 10 05 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.0 | 1.0+ | 2006 09 17 | 703 | 0.9− | 0.6+ |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.4+ | 0.0 | 2004 03 20 | 704 | (1.6+ | 1.5+) | 2006 09 17 | 703 | 0.3− | 0.3+ |
| 2002 10 12 | 704 | 0.1+ | 0.7+ | 2004 03 20 | 704 | (1.4+ | 1.8+) | 2006 09 17 | 703 | 0.9− | 0.7+ |
| 2002 10 12 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.9+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2004 03 20 | 704 | (1.2+ | 1.8+) | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.3− | 0.5− | 2004 03 20 | 704 | 1.3+ | 1.3+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 0.1− | 0.9− | 2004 03 20 | 704 | 0.9+ | 1.5+ | 2006 09 18 | 704 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.5− | 2004 03 20 | 704 | (1.8+ | 1.3+) | 2006 09 18 | 704 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 0.2− | 0.6− | 2004 03 20 | 704 | (1.7+ | 1.5+) | 2006 09 18 | 704 | 0.7+ | 0.4+ |
| 2002 11 07 | 704 | 0.6− | 0.3− | 2004 03 20 | 704 | 0.7+ | 1.5+ | 2006 09 18 | 704 | 0.0 | 0.7+ |
| 2002 11 15 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 704 | (1.6+ | 1.2+) | 2006 09 18 | 704 | 0.6+ | 0.2+ |
| 2002 11 15 | 704 | 0.1+ | 0.6+ | 2004 03 27 | 704 | 0.4+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.7+ |
| 2002 11 15 | 704 | 0.5+ | 1.3+ | 2004 03 27 | 704 | 0.5+ | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.5+ |
| 2002 11 15 | 704 | 0.6+ | 0.6− | 2004 03 27 | 704 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.2+ |
| 2002 11 15 | 704 | 0.3− | 0.4+ | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 09 21 | A13 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 07 22 | G96 | 0.2− | 0.2− | 2006 09 21 | A13 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 07 22 | G96 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.5− | 0.0 |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.2− | 0.3+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2006 07 22 | G96 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.6− | 0.3+ |
| 2002 12 12 | 644 | 0.1− | 1.1+ | 2006 08 18 | 699 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.5− | 0.2+ |
| 2002 12 12 | 644 | 0.1− | 1.0+ | 2006 08 18 | 699 | 0.5− | 0.6+ | 2006 09 25 | 704 | 0.3− | 0.7+ |
| 2002 12 12 | 644 | 0.1− | 1.0+ | 2006 08 18 | 699 | 0.4+ | 0.2− | 2006 09 27 | 699 | 0.1− | 0.4+ |
| 2002 12 15 | 704 | 0.5− | 0.3+ | 2006 08 18 | 699 | 0.5− | 1.4+ | 2006 09 27 | 699 | 0.3− | 0.5+ |
| 2002 12 15 | 704 | 0.2− | 1.2− | 2006 08 24 | 644 | 0.4− | 0.3+ | 2006 09 27 | 699 | 0.2+ | 0.9+ |
| 2002 12 15 | 704 | 0.5− | 0.7− | 2006 08 24 | 644 | 0.8− | 0.0 | 2006 09 27 | 699 | 0.1+ | 1.2+ |
| 2002 12 15 | 704 | 1.0− | 1.4− | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 09 27 | A13 | 0.3− | 0.0 |
| 2002 12 15 | 704 | (0.2− | 2.6−) | 2006 08 29 | 699 | (1.6− | 0.8+) | 2006 09 27 | A13 | 0.5− | 0.2− |
| 2003 01 07 | 704 | 0.3− | 0.1− | 2006 08 29 | 699 | 1.0− | 0.7+ | 2006 09 27 | A13 | 0.3− | 0.2− |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 699 | 1.0− | 0.3− | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2003 01 07 | 704 | 0.7+ | 0.5− | 2006 08 29 | 699 | 0.7− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2003 01 22 | 644 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.7+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2003 01 22 | 644 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 01 22 | 644 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.7− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2003 02 19 | 644 | 0.2− | 0.5+ | 2006 08 30 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.2+ |

**(143201)∗ 2002 XC$_{88}$**

Discovered 2002 Dec. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 207.50337 | | | (2000.0) | | | **P** | | **Q** | | |
| $n$ | 0.18318206 | | $\omega$ | 161.40017 | | | −0.82762231 | | −0.55913915 | | |
| $a$ | 3.0705353 | | $\Omega$ | 344.30940 | | | +0.48922289 | | −0.67577970 | | |
| $e$ | 0.0780013 | | $i$ | 10.44694 | | | +0.27514046 | | −0.48029700 | | |
| $P$ | 5.38 | | $H$ | 14.7 | | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.9− | 0.9− | | 2004 03 17 | 704 | 0.2− | 0.8+ | | 2006 07 25 | G96 | 0.0 | 0.3+ | |
| 2001 09 10 | 704 | (1.7− | 1.2−) | | 2004 03 17 | 703 | 0.3+ | 0.1+ | | 2006 08 18 | 691 | 0.1+ | 0.4+ | |
| 2001 09 10 | 704 | 0.4+ | 1.1+ | | 2004 03 17 | 704 | 0.6− | 0.3+ | | 2006 08 18 | 691 | 0.3− | 0.3+ | |
| 2001 09 10 | 704 | 1.0− | 1.2+ | | 2004 03 17 | 704 | 0.9+ | 0.6+ | | 2006 08 18 | 691 | 0.1− | 0.1+ | |
| 2001 09 10 | 704 | 0.2− | 0.1− | | 2004 03 19 | 704 | 0.1− | 1.2+ | | 2006 09 12 | 703 | 0.4− | 0.9+ | |
| 2001 09 28 | 644 | 0.1− | 0.8+ | | 2004 03 19 | 704 | 0.4+ | 0.3+ | | 2006 09 12 | 703 | 0.1− | 0.1− | |
| 2001 09 28 | 644 | 0.3− | 0.6+ | | 2004 03 19 | 704 | 0.0 | 0.4− | | 2006 09 12 | 703 | 0.9− | 0.7+ | |
| 2001 09 28 | 644 | 0.1− | 0.7+ | | 2004 03 19 | 704 | 1.0+ | 0.0 | | 2006 09 12 | 703 | (1.6− | 0.6+) | |
| 2001 10 14 | 704 | 0.5+ | 0.5+ | | 2004 03 19 | 704 | 0.5+ | 0.4− | | 2006 09 13 | 644 | 0.0 | 0.5+ | |
| 2001 10 14 | 704 | 0.7− | 0.3+ | | 2004 03 27 | 703 | (1.9+ | 1.0−) | | 2006 09 13 | 644 | 0.0 | 0.1+ | |
| 2001 10 14 | 704 | 0.1+ | 0.3+ | | 2004 03 27 | 703 | 0.1+ | 0.4+ | | 2006 09 13 | 644 | 0.3− | 0.4+ | |
| 2001 10 14 | 704 | 0.9− | 1.1+ | | 2004 03 27 | 703 | 0.2+ | 0.2+ | | 2006 09 17 | 704 | 0.4− | 0.7+ | |
| 2002 12 12 | 644 | 0.2− | 0.4+ | | 2004 03 27 | 703 | (1.8− | 0.1+) | | 2006 09 17 | 704 | 0.6− | 0.4+ | |
| 2002 12 12 | 644 | 0.1− | 0.5+ | | 2004 03 31 | 704 | (1.7− | 0.8−) | | 2006 09 17 | 704 | 0.1− | 0.0 | |
| 2002 12 12 | 644 | 0.3+ | 0.5+ | | 2004 03 31 | 704 | 0.2− | 0.5+ | | 2006 09 19 | 699 | (0.9+ | 1.8+) | |
| 2002 12 15 | 704 | 0.5− | 0.1+ | | 2004 03 31 | 704 | 0.6+ | 0.7+ | | 2006 09 19 | 703 | 0.0 | 1.0− | |
| 2002 12 15 | 704 | 0.2− | 0.3+ | | 2004 03 31 | 704 | 0.7− | 0.7+ | | 2006 09 19 | 703 | 0.5− | 0.3− | |
| 2002 12 15 | 704 | 0.1+ | 1.0+ | | 2004 03 31 | 704 | 0.4+ | 0.2+ | | 2006 09 19 | 699 | 0.6− | 1.2+ | |
| 2002 12 15 | 704 | 1.3− | 1.0− | | 2004 04 15 | 703 | 0.6+ | 0.8+ | | 2006 09 19 | 703 | 0.8− | 0.2+ | |
| 2003 01 04 | 704 | 0.1− | 0.2+ | | 2004 04 15 | 703 | 1.1+ | 1.5+ | | 2006 09 19 | 703 | 0.2− | 1.0+ | |
| 2003 01 04 | 704 | 0.3+ | 0.5+ | | 2004 04 15 | 703 | 1.4+ | 1.0+ | | 2006 09 19 | 699 | 0.2+ | 0.5+ | |
| 2003 01 04 | 704 | 0.0 | 0.2− | | 2004 04 15 | 703 | 0.0 | 0.7+ | | 2006 09 19 | 699 | 1.3+ | 0.2− | |
| 2003 01 04 | 704 | 0.7+ | 0.2+ | | 2004 04 16 | 644 | 0.1+ | 0.4+ | | 2006 09 27 | G96 | 0.1− | 0.2+ | |
| 2003 01 10 | 704 | 0.6+ | 0.3+ | | 2004 04 16 | 644 | 0.2+ | 0.5+ | | 2006 09 27 | G96 | 0.3+ | 0.2+ | |
| 2003 01 10 | 704 | 0.3+ | 1.2+ | | 2004 04 16 | 644 | 0.2+ | 0.5+ | | 2006 09 27 | G96 | 0.3− | 0.2+ | |
| 2003 01 10 | 704 | (2.2+ | 1.8+) | | 2004 04 17 | 704 | 0.8+ | 1.0+ | | 2006 09 27 | G96 | 0.3− | 0.3+ | |
| 2003 01 10 | 704 | 0.1+ | 0.8+ | | 2004 04 17 | 704 | 0.2− | 1.0+ | | 2006 10 21 | G96 | 0.2− | 0.2+ | |
| 2003 01 31 | 704 | 0.5+ | 1.2+ | | 2004 04 17 | 704 | 0.6+ | 1.0+ | | 2006 10 21 | G96 | 0.0 | 0.5+ | |
| 2003 01 31 | 704 | 0.4− | 0.2− | | 2004 04 17 | 704 | 0.2+ | 1.2+ | | 2006 10 21 | G96 | 0.0 | 0.2+ | |
| 2003 01 31 | 704 | 0.6− | 0.1+ | | 2004 04 17 | 699 | 0.6− | 1.0+ | | 2006 10 21 | G96 | 0.2+ | 0.2+ | |
| 2003 01 31 | 704 | 0.4+ | 0.6− | | 2004 04 17 | 699 | (1.7− | 1.2+) | | 2006 11 16 | G96 | 0.3− | 0.1− | |
| 2003 01 31 | 704 | 0.2+ | 0.6+ | | 2004 04 17 | 699 | (0.7− | 1.6+) | | 2006 11 16 | G96 | 0.3− | 0.1− | |
| 2004 03 17 | 703 | 0.1+ | 0.4+ | | 2004 04 17 | 699 | 0.1− | 1.5− | | 2006 11 16 | G96 | 0.3− | 0.2− | |
| 2004 03 17 | 703 | 0.2+ | 0.1− | | 2006 07 25 | G96 | 0.4− | 0.1+ | | 2006 11 16 | G96 | 0.3− | 0.2− | |
| 2004 03 17 | 704 | 1.0+ | 0.1− | | 2006 07 25 | G96 | 0.2− | 0.0 | | | | | | |
| 2004 03 17 | 703 | 0.7+ | 0.7− | | 2006 07 25 | G96 | 0.3− | 0.2+ | | | | | | |

**(143202)∗ 2002 XS$_{89}$**

Discovered 2002 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 331.84209 | | | (2000.0) | | | **P** | | **Q** | | |
| $n$ | 0.21994614 | | $\omega$ | 220.40860 | | | +0.86544084 | | −0.50060154 | | |
| $a$ | 2.7180566 | | $\Omega$ | 169.57392 | | | +0.48368333 | | +0.82428571 | | |
| $e$ | 0.2354458 | | $i$ | 6.42626 | | | +0.13062382 | | +0.26448283 | | |
| $P$ | 4.48 | | $H$ | 15.1 | | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.6+ | 0.9− | | 2003 02 03 | 644 | 0.3− | 0.0 | | 2006 08 24 | 941 | 0.2− | 0.2+ | |
| 2002 10 03 | 704 | 1.0+ | 1.3− | | 2003 02 03 | 644 | 0.0 | 0.1+ | | 2006 08 24 | 941 | 0.0 | 0.2+ | |
| 2002 10 03 | 704 | (1.7+ | 1.3−) | | 2003 02 03 | 644 | 0.0 | 0.7+ | | 2006 08 24 | 941 | 0.0 | 0.2+ | |
| 2002 10 03 | 704 | 0.1− | 0.4− | | 2004 03 15 | 691 | 0.3+ | 0.3+ | | 2006 08 25 | 704 | 0.5− | 0.3+ | |
| 2002 10 03 | 704 | (1.6+ | 0.4−) | | 2004 03 15 | 703 | 1.0− | 1.1+ | | 2006 08 25 | 704 | 0.6− | 0.4+ | |
| 2002 10 09 | 704 | 0.0 | 0.3+ | | 2004 03 15 | 703 | 0.6− | 0.3+ | | 2006 08 25 | 704 | 0.6− | 0.1+ | |
| 2002 10 09 | 704 | 0.3+ | 1.4− | | 2004 03 15 | 691 | 0.3+ | 0.3+ | | 2006 08 25 | 704 | 0.8− | 0.8+ | |
| 2002 10 09 | 704 | 0.0 | 0.4− | | 2004 03 15 | 703 | 1.1+ | 0.8+ | | 2006 08 25 | 704 | 0.8− | 0.4+ | |
| 2002 10 09 | 704 | 0.5+ | 0.6− | | 2004 03 15 | 703 | 1.0− | 0.4+ | | 2006 08 28 | 703 | 0.7+ | 0.5+ | |
| 2002 11 05 | 704 | 0.1− | 1.1+ | | 2004 03 15 | 691 | 0.2+ | 0.3+ | | 2006 08 28 | 703 | 0.2+ | 0.6+ | |
| 2002 11 05 | 704 | 0.1+ | 1.1+ | | 2004 03 19 | 704 | 0.2+ | 0.2+ | | 2006 08 28 | 699 | 0.2+ | 0.2+ | |
| 2002 11 05 | 704 | 0.3+ | 0.2+ | | 2004 03 19 | 704 | 0.8+ | 0.5+ | | 2006 08 28 | 703 | 0.1− | 0.5+ | |
| 2002 11 05 | 704 | 0.9+ | 0.4+ | | 2004 03 19 | 704 | 1.4+ | 0.7+ | | 2006 08 28 | 703 | 0.0 | 0.5+ | |
| 2002 11 05 | 704 | 0.3+ | 0.1− | | 2004 03 19 | 704 | (0.1+ | 1.6+) | | 2006 08 28 | 699 | 0.4− | 0.1− | |
| 2002 11 12 | 704 | 0.5+ | 0.0 | | 2004 03 19 | 704 | 1.2+ | 1.4+ | | 2006 08 28 | 699 | 0.7− | 0.3+ | |
| 2002 11 12 | 704 | 0.2+ | 0.0 | | 2004 03 19 | 704 | 0.1− | 0.9+ | | 2006 08 28 | 699 | 0.2− | 0.3+ | |
| 2002 11 12 | 704 | 0.5− | 0.1− | | 2004 03 19 | 704 | (2.0− | 0.2−) | | 2006 08 30 | 704 | 0.3− | 0.4+ | |
| 2002 11 12 | 704 | 1.4− | 1.2+ | | 2004 03 19 | 704 | (1.7+ | 0.2−) | | 2006 08 30 | 704 | 0.3− | 0.5+ | |
| 2002 11 12 | 704 | 0.1+ | 0.1− | | 2004 03 19 | 704 | 1.5+ | 0.5+ | | 2006 08 30 | 704 | 0.6− | 0.6+ | |
| 2002 11 19 | 644 | 0.2+ | 0.9+ | | 2004 03 20 | 699 | 0.6− | 0.1+ | | 2006 08 30 | 704 | 0.2+ | 0.4+ | |
| 2002 11 19 | 644 | 0.0 | 0.5+ | | 2004 03 20 | 699 | 0.9− | 0.5+ | | 2006 08 30 | 704 | 0.0 | 0.5+ | |
| 2002 11 19 | 644 | 0.2+ | 1.0+ | | 2004 03 20 | 699 | (0.7+ | 1.6+) | | 2006 08 30 | 958 | (2.1− | 3.7+) | |
| 2002 11 28 | 608 | 0.2+ | 0.2− | | 2004 03 20 | 699 | 0.0 | 0.3− | | 2006 08 31 | 958 | 0.7− | 0.9+ | |
| 2002 11 28 | 608 | 0.0 | 0.1+ | | 2004 03 23 | 691 | 0.4+ | 0.2+ | | 2006 08 31 | 958 | 1.1− | 1.1+ | |
| 2002 11 28 | 608 | 0.1+ | 0.0 | | 2004 03 23 | 691 | 0.2+ | 0.4+ | | 2006 09 01 | 704 | 0.1+ | 0.3− | |
| 2002 11 28 | 608 | 0.2+ | 0.2+ | | 2004 03 23 | 691 | 0.0 | 0.3+ | | 2006 09 01 | 704 | 0.2+ | 0.3+ | |
| 2002 11 28 | 608 | 0.2+ | 0.0 | | 2004 03 27 | 704 | 0.2+ | 0.3+ | | 2006 09 01 | 704 | 0.2+ | 0.3+ | |
| 2002 11 28 | 608 | 0.1− | 0.1+ | | 2004 03 27 | 704 | 0.6− | 0.6− | | 2006 09 14 | 703 | 0.5− | 0.4+ | |
| 2002 12 05 | 608 | 0.1− | 0.3− | | 2004 03 27 | 704 | 0.0 | 0.4− | | 2006 09 14 | 703 | (0.9+ | 1.9−) | |
| 2002 12 05 | 608 | 0.1− | 0.3− | | 2004 03 27 | 704 | 0.2− | 0.2− | | 2006 09 14 | 703 | 1.1+ | 1.5− | |
| 2002 12 05 | 608 | 0.3− | 0.3− | | 2004 03 27 | 704 | 0.5− | 0.8+ | | 2006 09 14 | 703 | (2.0+ | 0.3−) | |
| 2002 12 14 | 704 | 0.1− | 0.4+ | | 2004 03 31 | 691 | 0.4+ | 0.3+ | | 2006 09 17 | 704 | 0.5+ | 0.5− | |
| 2002 12 14 | 704 | 0.1− | 0.5+ | | 2004 03 31 | 691 | 0.1+ | 0.1− | | 2006 09 17 | 704 | 0.5− | 0.5+ | |
| 2002 12 14 | 704 | 0.1+ | 0.6+ | | 2004 03 31 | 691 | 0.1+ | 0.3+ | | 2006 09 17 | 704 | 0.4− | 0.5+ | |
| 2002 12 14 | 704 | 0.1− | 0.3+ | | 2004 04 13 | 691 | 0.1+ | 0.4+ | | 2006 09 17 | 704 | 0.0 | 0.6+ | |
| 2002 12 14 | 704 | 0.3+ | 0.2− | | 2004 04 13 | 691 | 0.2− | 0.5+ | | 2006 09 17 | 704 | 0.3+ | 0.5− | |
| 2002 12 16 | 608 | 0.3+ | 0.4− | | 2004 04 13 | 691 | 0.2− | 0.5+ | | 2006 09 18 | 699 | 0.9− | 0.6+ | |
| 2002 12 16 | 608 | 0.1+ | 0.0 | | 2005 05 14 | 644 | 0.1− | 0.1+ | | 2006 09 18 | 699 | 0.7+ | 0.4+ | |
| 2002 12 16 | 608 | 0.2+ | 0.6− | | 2005 05 14 | 644 | 0.2− | 0.7+ | | 2006 09 18 | 699 | 0.2− | 0.1+ | |
| 2002 12 21 | 608 | 0.3− | 0.2+ | | 2005 05 14 | 644 | 0.1− | 0.5+ | | 2006 09 18 | 699 | 0.1− | 0.5+ | |
| 2002 12 21 | 608 | 0.1− | 0.1+ | | 2006 08 18 | 704 | 0.5− | 0.5+ | | 2006 09 20 | 704 | 0.1− | 0.1− | |
| 2002 12 21 | 608 | 0.4− | 0.5+ | | 2006 08 18 | 699 | 0.0 | 1.2− | | 2006 09 20 | 704 | 0.2− | 0.2+ | |
| 2003 01 01 | 704 | 0.2− | 0.4+ | | 2006 08 18 | 704 | 0.0 | 0.3+ | | 2006 09 20 | 704 | 0.1− | 0.2+ | |
| 2003 01 01 | 704 | 0.2− | 0.5+ | | 2006 08 18 | 699 | 0.3+ | 0.7+ | | 2006 09 20 | 704 | 0.1+ | 0.1+ | |
| 2003 01 01 | 704 | 0.2− | 0.7+ | | 2006 08 18 | 704 | 0.1− | 0.9+ | | 2006 09 20 | 704 | 0.3+ | 0.2− | |
| 2003 01 05 | 704 | 0.2− | 0.6− | | 2006 08 18 | 704 | 0.1+ | 0.1+ | | 2006 09 25 | 699 | 0.0 | 0.4+ | |
| 2003 01 05 | 704 | 0.2+ | 0.5− | | 2006 08 18 | 699 | 0.5− | 0.1+ | | 2006 09 25 | 699 | 0.2− | 0.4+ | |
| 2003 01 05 | 704 | 0.4+ | 0.1− | | 2006 08 18 | 704 | 1.2+ | 1.0− | | 2006 09 25 | 699 | 0.3+ | 0.5− | |
| 2003 01 05 | 704 | 0.1+ | 0.9+ | | 2006 08 18 | 699 | 0.5+ | 0.0 | | 2006 09 25 | 699 | 0.6− | 0.1+ | |
| 2003 01 05 | 704 | 0.3− | 0.1− | | 2006 08 19 | 941 | 0.1− | 0.3− | | 2006 09 25 | G96 | 0.4− | 0.1− | |
| 2003 01 08 | 699 | 0.3− | 0.0 | | 2006 08 19 | 941 | 0.2− | 0.3− | | 2006 09 25 | G96 | 0.2− | 0.1+ | |
| 2003 01 08 | 699 | 0.4− | 0.5+ | | 2006 08 19 | 941 | 0.1− | 0.3− | | 2006 09 25 | G96 | 0.4− | 0.0 | |
| 2003 01 08 | 699 | 0.0 | 0.1+ | | 2006 08 19 | 941 | 0.1− | 0.2− | | 2006 09 25 | G96 | 0.1− | 0.0 | |
| 2003 01 08 | 699 | 0.2− | 0.8+ | | 2006 08 21 | 291 | 0.2+ | 0.2+ | | 2006 09 27 | 704 | 0.6+ | 0.0 | |
| 2003 01 18 | 644 | 0.0 | 0.3+ | | 2006 08 21 | 291 | 0.2+ | 0.2+ | | 2006 09 27 | 704 | 0.5+ | 0.6− | |
| 2003 01 18 | 644 | 0.3+ | 0.4+ | | 2006 08 21 | 291 | 0.3+ | 0.2+ | | 2006 09 27 | 704 | 1.5− | 1.0+ | |
| 2003 01 18 | 644 | 0.1+ | 0.3+ | | 2006 08 21 | 704 | 0.1+ | 0.5+ | | 2006 09 27 | 704 | 0.4− | 0.4+ | |
| 2003 01 27 | 704 | 0.2− | 0.6− | | 2006 08 21 | 704 | 0.4+ | 0.1+ | | 2006 10 28 | G96 | 0.2− | 0.2+ | |
| 2003 01 27 | 704 | 0.7− | 0.3+ | | 2006 08 21 | 704 | 0.1− | 0.6+ | | 2006 10 28 | G96 | 0.2+ | 0.3+ | |
| 2003 01 27 | 704 | 1.0− | 0.8− | | 2006 08 21 | 704 | 0.1− | 0.7+ | | 2006 10 28 | G96 | 0.2+ | 0.2− | |
| 2003 01 27 | 704 | 1.0− | 1.4− | | 2006 08 21 | 704 | 0.0 | 0.9+ | | 2006 11 11 | 703 | 1.2− | 1.3− | |
| 2003 01 27 | 644 | 0.3− | 0.5+ | | 2006 08 21 | 941 | 0.1− | 0.1− | | 2006 11 11 | 703 | 0.8+ | 0.1+ | |
| 2003 01 27 | 644 | 0.2− | 0.3+ | | 2006 08 21 | 941 | 0.2− | 0.1− | | 2006 11 11 | 703 | 1.0− | 0.1+ | |
| 2003 01 27 | 644 | 0.1+ | 0.7+ | | 2006 08 21 | 941 | 0.2− | 0.0 | | 2006 11 11 | 703 | 1.1− | 0.7− | |
| 2003 02 02 | 704 | 0.2− | 0.7+ | | 2006 08 21 | 941 | 0.0 | 0.1+ | | 2006 11 14 | 704 | 1.2+ | 0.7+ | |
| 2003 02 02 | 704 | 0.1− | 0.4+ | | 2006 08 22 | 644 | 0.1− | 0.1+ | | 2006 11 14 | 704 | 1.5+ | 1.2+ | |
| 2003 02 02 | 704 | 0.3+ | 0.1+ | | 2006 08 22 | 644 | 0.2− | 0.1+ | | 2006 11 14 | 704 | 0.0 | 0.9+ | |
| 2003 02 02 | 704 | (1.3− | 2.6+) | | 2006 08 22 | 644 | 0.2− | 0.2+ | | 2006 11 14 | 704 | 0.1− | 0.2+ | |

**(143203)∗ 2002 XX$_{89}$**

Discovered 2002 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.37856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21696551 | $\omega$ | 243.43185 | | +0.97996064 | +0.01811822 | |
| $a$ | 2.7428933 | $\Omega$ | 114.96687 | | +0.04381607 | +0.95185556 | |
| $e$ | 0.1612240 | $i$ | 12.63933 | | −0.19431235 | +0.30601099 | |
| $P$ | 4.54 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.4+ | 0.2+ | 2003 01 25 | 699 | 0.1+ | 0.9+ | 2005 05 13 | 703 | 0.0 | 0.9− |
| 2001 06 15 | 704 | 0.2− | 0.6+ | 2003 01 25 | 699 | 0.4+ | 0.1+ | 2005 05 15 | 644 | 0.2− | 0.6+ |
| 2001 06 15 | 704 | 0.5+ | 0.2− | 2003 01 25 | 699 | 0.5− | 0.4+ | 2005 05 15 | 644 | 0.1− | 0.6+ |
| 2002 11 06 | 608 | 0.1+ | 0.5− | 2003 01 27 | 704 | 0.8+ | 0.0 | 2005 05 15 | 644 | 0.1+ | 0.6+ |
| 2002 11 06 | 608 | 0.1+ | 0.3− | 2003 01 27 | 704 | 1.0+ | 0.1− | 2005 06 07 | 699 | 0.4+ | 0.7+ |
| 2002 11 06 | 608 | 0.1+ | 0.2− | 2003 01 27 | 704 | 0.5+ | 0.6− | 2005 06 07 | 699 | 1.0+ | 1.1+ |
| 2002 11 12 | 704 | 0.3− | 0.2+ | 2003 01 27 | 704 | (2.0+ | 1.5+) | 2005 06 07 | 699 | (2.1+ | 0.8+) |
| 2002 11 12 | 704 | 0.5+ | 0.3+ | 2003 01 27 | 644 | 0.1− | 1.0+ | 2005 06 07 | 703 | 1.2+ | 0.6− |
| 2002 11 12 | 704 | 0.0 | 0.3− | 2003 01 27 | 644 | 0.4− | 1.0+ | 2005 06 07 | 699 | 0.7+ | 1.0+ |
| 2002 11 12 | 704 | 0.3− | 0.3+ | 2003 01 27 | 644 | 0.6− | 1.5+ | 2005 06 07 | 703 | (2.5− | 0.4−) |
| 2002 11 12 | 704 | 0.2+ | 1.1− | 2003 02 02 | 704 | 0.9+ | 0.5+ | 2005 06 07 | 703 | 0.7− | 1.0− |
| 2002 12 01 | 704 | 0.1− | 0.1− | 2003 02 02 | 704 | 0.0 | 0.6+ | 2005 06 07 | 703 | 0.4+ | 0.2− |
| 2002 12 01 | 704 | 0.0 | 0.0 | 2003 02 02 | 704 | 0.1+ | 0.2− | 2006 07 31 | E12 | 0.8+ | 0.5+ |
| 2002 12 01 | 704 | 0.1+ | 0.2− | 2003 02 02 | 704 | 0.5+ | 0.1+ | 2006 07 31 | E12 | 0.3− | 0.1+ |
| 2002 12 14 | 704 | 0.5− | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.2− | 2006 07 31 | E12 | 0.2+ | 0.2+ |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | (0.8+ | 1.8+) | 2006 07 31 | E12 | 0.3− | 0.5− |
| 2002 12 14 | 704 | 0.4− | 0.1+ | 2004 03 23 | 704 | 1.1+ | 0.0 | 2006 09 21 | 699 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.8+ | 0.4+ | 2006 09 21 | 699 | 0.4− | 0.2− |
| 2002 12 14 | 704 | 0.3+ | 0.5+ | 2005 04 15 | 703 | 1.1− | 0.7+ | 2006 09 21 | 699 | 0.2+ | 0.5+ |
| 2002 12 16 | 608 | 0.3− | 0.7+ | 2005 04 15 | 703 | (0.5+ | 1.7+) | 2006 09 21 | 699 | 0.8+ | 0.8− |
| 2002 12 16 | 608 | 0.0 | 0.3+ | 2005 04 15 | 703 | 0.5− | 0.4− | 2006 09 26 | 703 | 0.7− | 0.6+ |
| 2002 12 16 | 608 | 0.3− | 0.4+ | 2005 04 15 | 703 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2003 01 01 | 704 | 0.6− | 0.7− | 2005 05 04 | 703 | 1.0+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.7+ |
| 2003 01 01 | 704 | 0.0 | 0.8− | 2005 05 04 | 703 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.9+ |
| 2003 01 01 | 704 | 0.4− | 0.7− | 2005 05 04 | 703 | 0.4− | 0.8+ | 2006 10 12 | E12 | 0.6+ | 0.1− |
| 2003 01 05 | 704 | 0.6− | 0.1− | 2005 05 04 | 703 | 0.4− | 0.6− | 2006 10 12 | E12 | 0.9+ | 0.2+ |
| 2003 01 05 | 704 | 0.6− | 0.0 | 2005 05 08 | 699 | 0.1− | 0.4+ | 2006 10 12 | E12 | 0.3− | 0.3− |
| 2003 01 05 | 704 | 0.4− | 0.3+ | 2005 05 08 | 699 | 0.7− | 0.0 | 2006 10 12 | E12 | 0.4+ | 0.3− |
| 2003 01 05 | 704 | 0.1− | 0.3− | 2005 05 08 | 699 | 0.3+ | 0.1− | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2003 01 18 | 644 | 0.4− | 0.3+ | 2005 05 08 | 699 | 0.4− | 1.2+ | 2006 11 17 | 644 | 0.1+ | 0.3+ |
| 2003 01 18 | 644 | 0.4− | 0.4+ | 2005 05 13 | 703 | (0.2− | 1.7+) | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2003 01 18 | 644 | 0.0 | 0.1+ | 2005 05 13 | 703 | 0.9− | 0.2+ | | | | |
| 2003 01 25 | 699 | 0.2− | 0.1− | 2005 05 13 | 703 | (1.9− | 1.2+) | | | | |

**(143204)∗ 2002 XF$_{90}$**

Discovered 2002 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.29854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26100449 | $\omega$ | 323.50805 | | +0.22042012 | −0.95770130 | |
| $a$ | 2.4249571 | $\Omega$ | 113.10079 | | +0.93574052 | +0.15408380 | |
| $e$ | 0.2278265 | $i$ | 11.60257 | | +0.27532643 | +0.24303581 | |
| $P$ | 3.78 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 699 | 0.8− | 0.6+ | 2003 01 09 | 704 | 0.1− | 0.3− | 2004 04 24 | 704 | 0.7+ | 0.8− |
| 1998 10 18 | 699 | 0.6− | 0.6+ | 2003 01 09 | 704 | 0.1+ | 0.1+ | 2004 04 24 | 704 | 0.1+ | 0.7− |
| 1998 10 18 | 699 | 0.0 | 1.0+ | 2003 01 09 | 704 | 0.5− | 0.2+ | 2004 05 02 | 703 | 0.9− | 0.9− |
| 2000 04 13 | 704 | 0.2+ | 1.9+ | 2003 01 09 | 704 | 0.4+ | 0.3− | 2004 05 02 | 703 | (1.6− | 2.7+) |
| 2000 04 13 | 704 | 0.3− | 0.2− | 2003 01 27 | 704 | 0.0 | 0.0 | 2004 05 02 | 703 | (1.2− | 1.5−) |
| 2000 04 13 | 704 | 0.9− | 0.6− | 2003 01 27 | 704 | 0.5+ | 0.0 | 2004 05 02 | 703 | 0.8− | 1.2− |
| 2000 05 03 | 704 | 0.1− | 1.1+ | 2003 01 27 | 704 | 0.0 | 0.1− | 2005 06 30 | 691 | 0.1− | 0.5+ |
| 2000 05 03 | 704 | 0.5+ | 1.1+ | 2003 01 27 | 704 | 0.0 | 0.5− | 2005 06 30 | 691 | 0.0 | 0.4+ |
| 2000 05 03 | 704 | 0.1+ | 0.2+ | 2003 01 27 | 704 | 0.2− | 0.1+ | 2005 06 30 | 691 | 0.2− | 0.3+ |
| 2000 05 03 | 704 | 0.8+ | 1.5+ | 2003 02 02 | 704 | 0.7+ | 0.3+ | 2006 11 14 | 703 | 0.5− | 0.6+ |
| 2002 12 01 | 704 | 0.2+ | 0.8+ | 2003 02 02 | 704 | 0.7+ | 1.1+ | 2006 11 14 | 703 | 0.8− | 0.3− |
| 2002 12 01 | 704 | 0.0 | 0.0 | 2003 02 02 | 704 | 1.3− | 0.6+ | 2006 11 14 | 703 | 0.5+ | 0.8− |
| 2002 12 01 | 704 | 0.3− | 0.0 | 2003 02 02 | 704 | 0.8+ | 0.0 | 2006 11 14 | 703 | (0.8+ | 2.2−) |
| 2002 12 14 | 704 | 0.5− | 0.1− | 2003 02 07 | 704 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2003 02 07 | 704 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | 0.2− | 0.4− | 2003 02 07 | 704 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2002 12 14 | 704 | 0.3− | 0.6− | 2003 02 07 | 704 | 1.4+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.2− | 0.6− | 2003 02 08 | 704 | 1.3+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2002 12 16 | 608 | 0.7− | 0.5− | 2003 02 08 | 704 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2002 12 16 | 608 | 0.4− | 0.4− | 2003 02 08 | 704 | 0.3+ | 0.0 | 2006 11 21 | 704 | 1.0+ | 0.6+ |
| 2002 12 16 | 608 | 0.5− | 0.7− | 2003 02 08 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2003 01 01 | 704 | 0.2− | 0.1+ | 2004 04 16 | 704 | (1.6− | 0.5−) | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 2003 01 01 | 704 | 0.1− | 0.9+ | 2004 04 16 | 704 | 0.7+ | 0.3+ | 2006 11 21 | 704 | 0.3+ | 1.0+ |
| 2003 01 01 | 704 | 0.7+ | 0.0 | 2004 04 16 | 704 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 1.1− | 0.8− |
| 2003 01 01 | 704 | 0.2+ | 0.7+ | 2004 04 16 | 704 | 0.6+ | 0.2− | 2006 11 27 | 703 | 0.8− | 0.9− |
| 2003 01 01 | 704 | 0.0 | 0.4+ | 2004 04 16 | 704 | 1.3− | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.7− |
| 2003 01 07 | 704 | 0.4− | 0.1+ | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 11 27 | 703 | 1.1− | 0.8− |
| 2003 01 07 | 704 | 0.2+ | 0.2+ | 2004 04 21 | 691 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.8− | 0.3+ |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 691 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.0 | 1.0+ |
| 2003 01 07 | 704 | 1.5+ | 0.2+ | 2004 04 24 | 704 | 0.3+ | 1.4− | 2006 11 28 | 704 | 0.8+ | 1.0+ |
| 2003 01 07 | 704 | 0.5+ | 0.6+ | 2004 04 24 | 704 | 0.9+ | 0.8− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2003 01 09 | 704 | 0.9− | 0.3+ | 2004 04 24 | 704 | 0.7− | 0.3− | 2006 11 28 | 704 | 0.5+ | 0.4+ |

**(143205)∗ 2002 XQ$_{92}$ = 2002 XB$_{114}$**

Discovered 2002 Dec. 5 by M. W. Buie at Kitt Peak.

Id. A. Doppler (d, *MPO* 43525)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.04310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28565194 | $\omega$ | 302.01182 | | −0.65305420 | +0.75517936 | |
| $a$ | 2.2833786 | $\Omega$ | 287.10751 | | −0.67324124 | −0.61325926 | |
| $e$ | 0.0625064 | $i$ | 3.40606 | | −0.34679452 | −0.23155390 | |
| $P$ | 3.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2004 04 14 | 699 | (1.7− | 1.3+) | 2005 09 01 | 691 | 0.1− | 0.3+ |
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2004 04 14 | 699 | 1.4− | 0.7+ | 2005 09 01 | 691 | 0.3− | 0.7+ |
| 2000 01 16 | 691 | 0.1+ | 0.1+ | 2004 04 14 | 699 | (0.3− | 2.4+) | 2005 09 01 | 691 | 0.1− | 0.2+ |
| 2000 01 16 | 691 | 0.0 | 0.0 | 2004 04 17 | 704 | 0.1+ | 0.6+ | 2005 09 09 | A50 | 0.1+ | 0.2+ |
| 2000 01 16 | 691 | 0.1− | 0.1+ | 2004 04 17 | 704 | 0.6+ | 0.6+ | 2005 09 09 | A50 | 0.1− | 0.3− |
| 2002 11 07 | 291 | 0.0 | 0.1+ | 2004 04 17 | 704 | 0.2+ | 0.5+ | 2005 09 12 | 291 | 0.3− | 0.4+ |
| 2002 11 07 | 291 | 0.1− | 0.2+ | 2004 04 17 | 704 | 0.3+ | 0.6+ | 2005 09 12 | 291 | 0.3− | 0.3+ |
| 2002 11 07 | 291 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.3+ | 2005 09 12 | 291 | 0.4− | 0.9+ |
| 2002 12 02 | 704 | 0.8− | 0.2+ | 2004 04 19 | 704 | 0.2+ | 0.1+ | 2005 10 01 | 703 | 0.0 | 0.9+ |
| 2002 12 02 | 704 | 0.8− | 0.0 | 2004 04 19 | 704 | (0.6− | 1.7+) | 2005 10 01 | 703 | 0.4+ | 0.7− |
| 2002 12 02 | 704 | 0.0 | 0.7+ | 2004 04 19 | 704 | 0.3− | 0.9+ | 2005 10 01 | 703 | 0.9− | 0.2− |
| 2002 12 05 | 695 | 0.2− | 0.0 | 2004 04 19 | 704 | 0.9− | 0.8+ | 2005 10 01 | 703 | 0.5+ | 0.1− |
| 2002 12 05 | 695 | 0.0 | 0.2+ | 2004 04 20 | 704 | 0.2+ | 0.4+ | 2005 11 03 | G96 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 1.3+ | 0.5− | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2005 11 03 | G96 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.1+ | 2004 04 20 | 704 | 0.2− | 0.1+ | 2005 11 03 | G96 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.3− | 0.5+ | 2004 04 20 | 704 | 1.2+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2004 04 20 | 704 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2004 03 15 | 644 | 0.3+ | 0.5+ | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2004 03 15 | 644 | 0.3+ | 0.8+ | 2004 04 21 | 704 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.9+ |
| 2004 03 15 | 644 | 0.0 | 0.6+ | 2004 04 21 | 704 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2004 04 09 | E12 | (2.3+ | 1.9−) | 2004 04 21 | 704 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2004 04 09 | E12 | 1.4+ | 0.9− | 2004 04 21 | 704 | 0.1− | 0.7− | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2004 04 09 | E12 | 0.9+ | 0.5− | 2005 08 18 | 216 | (4.3− | 2.3−) | 2006 11 27 | G96 | 0.6− | 0.5− |
| 2004 04 09 | E12 | 0.1+ | 1.3− | 2005 08 18 | 216 | 0.5+ | 0.5+ | 2006 11 27 | G96 | 0.5− | 0.2− |
| 2004 04 13 | 644 | 0.0 | 0.8+ | 2005 08 18 | 216 | 0.0 | 0.7+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2004 04 13 | 644 | 0.1− | 0.8+ | 2005 08 18 | 216 | (5.3− | 2.7−) | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2004 04 13 | 644 | 0.0 | 0.9+ | 2005 08 18 | 216 | 0.0 | 0.4+ | 2006 11 27 | G96 | 1.6+ | 0.6+ |
| 2004 04 14 | 699 | 0.9− | 0.1+ | 2005 08 18 | 216 | (7.3− | 3.4−) | | | | |

**(143206)∗ 2002 XS$_{92}$**

Discovered 2002 Dec. 5 by M. W. Buie at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 355.49618 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21972569 | $\omega$ | 308.53602 | | | +0.99275257 | | +0.06627379 | |
| $a$ | 2.7198742 | $\Omega$ | 47.90732 | | | −0.01047097 | | +0.87872282 | |
| $e$ | 0.1814762 | $i$ | 7.76423 | | | −0.11971927 | | +0.47270920 | |
| $P$ | 4.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.2− | 0.2− | 2004 02 17 | 691 | 0.7+ | 0.2+ | 2006 08 23 | 644 | 0.4− | 0.0 |
| 2002 11 06 | 704 | 0.9+ | 0.0 | 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.4− | 0.0 |
| 2002 11 06 | 704 | 0.5+ | 0.4− | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.2+ |
| 2002 11 24 | 644 | 0.1+ | 0.5− | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.1+ | 0.6+ |
| 2002 11 24 | 644 | 0.0 | 0.3− | 2005 05 04 | G96 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.3− | 0.9+ |
| 2002 11 24 | 644 | 0.1+ | 0.5− | 2005 05 04 | G96 | 0.1− | 0.5+ | 2006 09 20 | 703 | 0.3− | 0.1+ |
| 2002 12 05 | 695 | 1.1− | 0.2+ | 2005 05 04 | G96 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.7− | 0.0 |
| 2002 12 05 | 695 | 0.4− | 0.2+ | 2005 05 04 | G96 | 0.1− | 0.1+ | 2006 09 20 | 703 | 1.0− | 0.3+ |
| 2002 12 06 | 704 | 0.7+ | 0.5− | 2005 05 13 | G96 | 0.0 | 0.3− | 2006 09 20 | 703 | 0.0 | 0.4+ |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2005 05 13 | G96 | 0.2+ | 0.3− | 2006 09 21 | 699 | 0.9+ | 0.3− |
| 2002 12 06 | 704 | 0.2+ | 1.3+ | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 09 21 | 699 | 0.5− | 0.1− |
| 2002 12 11 | 704 | 1.0− | 0.2− | 2005 05 13 | G96 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.9+ |
| 2002 12 11 | 704 | 0.1− | 0.1+ | 2005 06 01 | G96 | 0.2+ | 0.0 | 2006 09 21 | 699 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2005 06 01 | G96 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.6+ | 0.1+ |
| 2002 12 11 | 704 | 0.0 | 0.8+ | 2005 06 01 | G96 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.9+ |
| 2004 02 17 | 691 | 0.1+ | 0.6+ | 2005 06 01 | G96 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.8+ |

**(143207)∗ 2002 XD$_{101}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 25.09752 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23594830 | $\omega$ | 267.32555 | | | +0.97141057 | | −0.23244984 | |
| $a$ | 2.5937303 | $\Omega$ | 106.11246 | | | +0.23285350 | | +0.89328042 | |
| $e$ | 0.0263136 | $i$ | 2.87908 | | | +0.04626820 | | +0.38472997 | |
| $P$ | 4.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 07 | 691 | 0.2+ | 0.3− | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 1995 01 07 | 691 | 0.2− | 0.0 | 2004 03 22 | 704 | 0.5− | 1.1+ | 2006 10 28 | 691 | 0.3− | 0.0 |
| 1995 01 07 | 691 | 0.2− | 0.2− | 2004 03 22 | 704 | 1.3− | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2000 05 02 | 711 | (0.3− | 2.6−) | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2000 05 02 | 711 | 0.6− | 1.8− | 2004 03 22 | 704 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2000 05 02 | 711 | 0.1− | 0.5− | 2004 03 22 | 704 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 05 02 | 711 | 0.1− | 1.6− | 2004 03 22 | 704 | (0.2+ | 2.0+) | 2006 11 02 | 703 | 0.4− | 0.2+ |
| 2001 08 19 | 704 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 11 02 | 703 | 0.3− | 0.0 |
| 2001 08 19 | 704 | 1.0− | 0.9+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 11 02 | 703 | 0.3− | 0.1− |
| 2001 08 19 | 704 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | (2.2− | 0.5+) |
| 2002 10 29 | 291 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.3− | 1.1+ | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2002 10 29 | 291 | 0.0 | 0.2− | 2004 03 24 | 699 | 0.3− | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.5+ |
| 2002 10 29 | 291 | 0.2− | 0.0 | 2004 03 24 | 699 | 0.5− | 1.2+ | 2006 11 11 | 703 | 0.5+ | 0.3− |
| 2002 11 14 | 704 | 0.9− | 1.0− | 2004 03 24 | 699 | 0.8− | 0.8− | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2002 11 14 | 704 | 0.4+ | 0.3+ | 2004 03 24 | 699 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.3− | 1.0+ |
| 2002 11 14 | 704 | 0.6+ | 0.4+ | 2004 03 28 | 704 | 1.2+ | 0.9+ | 2006 11 14 | 704 | 0.4− | 0.4+ |
| 2002 11 28 | 599 | 0.5+ | 0.9+ | 2004 03 28 | 704 | 1.0+ | 1.2+ | 2006 11 14 | 704 | 0.4− | 0.6+ |
| 2002 11 28 | 599 | 0.5+ | 0.6+ | 2004 03 28 | 704 | 0.8+ | 0.7+ | 2006 11 14 | 704 | (0.8− | 1.9+) |
| 2002 11 28 | 599 | 0.6− | 0.8− | 2004 03 28 | 704 | 0.7+ | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2002 11 28 | 599 | 0.4+ | 0.8− | 2004 03 28 | 704 | 0.7+ | 1.1+ | 2006 11 17 | 704 | 0.7+ | 1.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.4+ |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.7− | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2005 06 12 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2005 06 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.8− |
| 2002 12 10 | 704 | 0.2+ | 0.1− | 2005 06 12 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2002 12 10 | 704 | 0.5+ | 0.4− | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 2002 12 10 | 704 | 0.3+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2005 06 13 | G96 | 0.4+ | 0.5+ | 2006 11 21 | 704 | 0.8+ | 0.4+ |
| 2002 12 10 | 704 | 0.2+ | 0.5− | 2005 06 13 | G96 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.2+ | 0.8+ |
| 2004 03 15 | 703 | 0.9+ | 0.6+ | 2005 06 16 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2004 03 15 | 703 | 0.1+ | 0.4+ | 2005 06 16 | 691 | 0.4+ | 0.7− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2004 03 15 | 703 | 0.7− | 0.4+ | 2005 06 16 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2004 03 15 | 703 | 0.0 | 0.2− | 2005 06 26 | G96 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2004 03 19 | 704 | 0.4+ | 0.0 | 2005 06 26 | G96 | 0.1+ | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.7+ |
| 2004 03 19 | 704 | 0.0 | 0.2+ | 2005 06 26 | G96 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2004 03 19 | 704 | (1.5+ | 1.3+) | 2005 06 26 | G96 | 0.4− | 0.5+ | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2004 03 19 | 704 | 0.5+ | 0.7+ | 2005 06 28 | G96 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.8+ |
| 2004 03 19 | 704 | 1.1+ | 0.4− | 2005 06 28 | G96 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2004 03 22 | 704 | 0.5+ | 0.1− | 2005 06 28 | G96 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.7+ | 0.4+ |
| 2004 03 22 | 704 | 0.3− | 0.5+ | 2005 06 28 | G96 | 0.3− | 0.8+ | 2006 11 28 | 704 | 0.6− | 0.1− |

**(143208)∗ 2002 XG$_{101}$ = 2005 LW$_1$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85802)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 41.23787 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22594607 | $\omega$ | 250.98100 | | | +0.81615705 | | +0.51655706 | |
| $a$ | 2.6697229 | $\Omega$ | 77.15067 | | | −0.37758979 | | +0.81600223 | |
| $e$ | 0.1557957 | $i$ | 15.40284 | | | −0.43739413 | | +0.25944010 | |
| $P$ | 4.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 291 | 0.5− | 0.0 | 2003 01 04 | 704 | 0.8+ | 0.5+ | 2005 06 05 | 704 | 0.6+ | 0.2− |
| 2002 11 05 | 291 | 0.2− | 0.2+ | 2003 01 04 | 704 | 1.3+ | 0.1+ | 2005 06 05 | 704 | 0.1− | 0.8+ |
| 2002 11 05 | 291 | 0.3− | 0.2+ | 2003 01 05 | 291 | 0.0 | 0.2+ | 2005 06 05 | 704 | (1.6+ | 1.5+) |
| 2002 11 14 | 704 | 0.7− | 0.2− | 2003 01 05 | 291 | 0.1+ | 0.1+ | 2005 07 05 | 644 | 0.3− | 0.3+ |
| 2002 11 14 | 704 | 0.1− | 0.3+ | 2003 01 05 | 291 | 0.4+ | 0.2+ | 2005 07 05 | 644 | 0.2− | 0.3+ |
| 2002 11 14 | 704 | 0.2− | 0.5− | 2004 03 17 | 644 | 0.2+ | 0.3+ | 2005 07 05 | 644 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.8− | 0.0 | 2004 03 17 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.5+ |
| 2002 11 14 | 704 | 0.2− | 0.5− | 2004 03 17 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.7+ |
| 2002 11 28 | 599 | 0.3− | 0.3+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.3− | 0.7+ |
| 2002 11 28 | 599 | 0.1+ | 0.5+ | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.3+ |
| 2002 11 28 | 599 | 0.2+ | 0.6+ | 2005 05 03 | 703 | 1.0− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 11 28 | 599 | 0.8− | 1.0− | 2005 05 03 | 703 | 0.4− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.6− | 0.9+ | 2005 05 03 | 703 | 0.9+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2005 05 03 | 703 | 1.0− | 0.6− | 2006 10 28 | 703 | 0.9− | 0.4− |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2005 05 12 | 704 | 0.0 | 0.8+ | 2006 10 28 | 703 | 0.6− | 0.4− |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2005 05 12 | 704 | 0.5− | 1.4− | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2005 05 12 | 704 | 1.5+ | 1.1− | 2006 10 28 | 703 | 0.1+ | 0.5− |
| 2002 12 10 | 704 | 0.1+ | 0.0 | 2005 05 12 | 704 | 0.4+ | 1.2− | 2006 11 10 | 704 | (1.9− | 2.4+) |
| 2002 12 10 | 704 | 0.4+ | 0.3+ | 2005 06 01 | 691 | 0.3+ | 0.7+ | 2006 11 10 | 704 | 0.2− | 1.4+ |
| 2002 12 10 | 704 | 0.1− | 0.1− | 2005 06 01 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 704 | 0.5+ | 0.2+ |
| 2002 12 10 | 704 | 0.1+ | 0.3− | 2005 06 01 | 691 | 0.1+ | 0.8+ | 2006 11 16 | 703 | 0.6+ | 1.2+ |
| 2002 12 10 | 704 | 1.0+ | 0.0 | 2005 06 03 | 703 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.9− | 0.5+ |
| 2002 12 10 | 291 | 0.2+ | 0.0 | 2005 06 03 | 703 | 0.4− | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.3− |
| 2002 12 10 | 291 | 0.1− | 0.1+ | 2005 06 03 | 703 | 0.4+ | 0.6+ | 2006 11 16 | 703 | 0.5− | 1.0+ |
| 2002 12 10 | 291 | 0.2+ | 0.1− | 2005 06 03 | 703 | 0.1+ | 1.1+ | 2006 11 17 | 644 | 0.5− | 0.1− |
| 2003 01 04 | 704 | 1.0− | 0.3− | 2005 06 05 | 704 | 1.4+ | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.1− |
| 2003 01 04 | 704 | 1.0− | 0.3+ | 2005 06 05 | 704 | 0.8+ | 0.9+ | 2006 11 17 | 644 | 0.3− | 0.2+ |

**(143209)∗ 2002 XR$_{105}$**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 340.15260 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22954536 | $\omega$ | 158.95167 | | | +0.39163693 | | −0.90021478 | |
| $a$ | 2.6417418 | $\Omega$ | 267.58202 | | | +0.81463717 | | +0.43541716 | |
| $e$ | 0.1350439 | $i$ | 10.98323 | | | +0.42776956 | | −0.00502525 | |
| $P$ | 4.29 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.4− | 0.4+ | 2003 01 07 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.1+ | 1.1− |
| 2001 08 18 | 644 | 0.2− | 0.4+ | 2003 01 07 | 704 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2001 08 18 | 644 | 0.2− | 0.4+ | 2003 01 07 | 704 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2001 09 09 | 699 | (2.2+ | 0.5−) | 2003 01 07 | 704 | 1.0− | 1.1− | 2006 11 15 | 704 | 0.4+ | 0.3+ |
| 2001 09 09 | 699 | 0.1− | 0.5+ | 2005 06 05 | 691 | 0.3− | 0.4+ | 2006 11 15 | 704 | (0.1− | 1.8+) |
| 2001 09 09 | 699 | 0.2+ | 1.0− | 2005 06 05 | 691 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.9+ | 0.6+ |
| 2001 09 09 | 699 | 0.3+ | 0.3+ | 2005 06 05 | 691 | (2.0− | 1.2+) | 2006 11 15 | 704 | 0.8+ | 1.2+ |
| 2002 11 14 | 704 | 0.5− | 0.9+ | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 1.1− | 0.4+ |
| 2002 11 14 | 704 | 0.1+ | 1.1+ | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.9+ | 0.1+ | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.1− | 0.5+ | 2005 06 28 | 691 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2005 06 28 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.5− | 0.7+ | 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2002 12 05 | 704 | 0.4− | 1.1+ | 2006 10 23 | 703 | (0.3+ | 3.4+) | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.8+ | 2006 10 23 | 703 | (2.4+ | 4.2+) | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.9+ | 0.8+ | 2006 10 23 | 703 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2002 12 10 | 704 | 0.6+ | 0.2− | 2006 10 23 | 703 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.5+ | 0.4+ | 2006 10 29 | 703 | 0.3− | 1.2− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.3+ | 0.6+ | 2006 10 29 | 703 | 0.6− | 0.7− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 10 29 | 703 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 12 31 | 704 | 0.4+ | 0.4+ | 2006 10 29 | 703 | 0.1− | 0.6− | | | | |
| 2003 01 07 | 704 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.2− | | | | |

**(143210)∗ 2002 XE$_{107}$ = 1979 UK**

Discovered 2002 Dec. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85803)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.28526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25959926 | $\omega$ | 153.85465 | | +0.55094067 | −0.82913666 | |
| $a$ | 2.4337002 | $\Omega$ | 262.57612 | | +0.74793620 | +0.54098395 | |
| $e$ | 0.1096095 | $i$ | 5.48892 | | +0.37021051 | +0.14095662 | |
| $P$ | 3.80 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 10 31 | 801 | 0.6+ | 0.5+ | 2002 12 31 | 704 | 0.4+ | 0.7+ | 2006 09 28 | G96 | 0.5+ | 0.2− |
| 1999 02 10 | 691 | 0.3− | 0.2− | 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 1999 02 10 | 691 | 0.4− | 0.0 | 2002 12 31 | 704 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 1999 02 10 | 691 | 0.7− | 0.4− | 2004 04 21 | 704 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 1999 02 14 | 691 | (4.9+ | 5.2−) | 2004 04 21 | 704 | (0.5+ | 2.3+) | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 1999 02 14 | 691 | 0.2+ | 0.1− | 2004 04 21 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.5− | 0.2− |
| 1999 02 14 | 691 | 0.0 | 0.8− | 2004 04 21 | 704 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2000 04 05 | 699 | 0.2− | 0.4+ | 2005 07 29 | 644 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2000 04 05 | 699 | (0.2+ | 2.3+) | 2005 07 29 | 644 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2000 04 05 | 699 | (1.0+ | 2.4+) | 2005 07 29 | 644 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2000 04 05 | 699 | 0.2− | 1.1+ | 2005 08 26 | 699 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.4+ | 2005 08 26 | 699 | 0.6− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2005 08 26 | 699 | 0.1− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.7+ | 2005 08 26 | 699 | 0.6+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.8+ | 0.1− | 2005 08 29 | 699 | 0.8+ | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.4+ | 0.5+ | 2005 08 29 | 699 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.0 | 1.1+ | 2005 08 29 | 699 | (1.7− | 2.2−) | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2005 08 29 | 699 | 0.7+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2005 09 27 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.3− | 0.5+ | 2005 09 27 | 644 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 0.2+ | 2005 09 27 | 644 | 0.2− | 0.2+ | | | | |

**(143211)∗ 2002 XO$_{109}$ = 1997 RN$_5$**

Discovered 2002 Dec. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47239)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.39637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22384788 | $\omega$ | 102.14548 | | +0.32696674 | −0.94463014 | |
| $a$ | 2.6863797 | $\Omega$ | 328.72594 | | +0.84499154 | +0.30534747 | |
| $e$ | 0.0774247 | $i$ | 3.05740 | | +0.42318087 | +0.12015337 | |
| $P$ | 4.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 122 | 0.8− | 0.2− | 2004 03 15 | 703 | (0.2− | 4.8+) | 2006 09 15 | 691 | 0.2− | 0.1− |
| 1997 09 08 | 122 | 0.3− | 0.9+ | 2004 03 15 | 703 | 0.8− | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.8+ |
| 1997 09 08 | 122 | 0.5− | 0.6+ | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.0 |
| 1997 09 09 | 122 | 0.8+ | 0.1− | 2004 03 18 | 704 | 1.3+ | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.8+ |
| 1997 09 09 | 122 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.8− |
| 1997 09 09 | 122 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.7− | 0.1− |
| 2002 11 14 | 704 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.6− | 0.3+ |
| 2002 11 14 | 704 | 0.3+ | 0.4+ | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.9+ |
| 2002 11 14 | 704 | 0.4+ | 0.3− | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.4+ | 0.3− | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | 0.4+ | 1.0− | 2004 04 15 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2004 04 15 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.2− | 2004 04 15 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2002 12 06 | 704 | 0.2− | 0.4+ | 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.5− | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.3+ | 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.1− | 0.1− | 2006 09 06 | 644 | 0.3− | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.6− | 0.2− | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 0.4− | 0.9+ | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2002 12 31 | 704 | 0.9− | 0.1− | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.6+ |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.9+ | 2006 11 06 | 644 | 0.0 | 0.3+ |
| 2002 12 31 | 704 | 1.0+ | 0.4− | 2006 09 14 | 703 | 0.7− | 1.1+ | 2006 11 06 | 644 | 0.0 | 0.5+ |
| 2004 03 15 | 703 | 1.3− | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2004 03 15 | 703 | (0.1− | 1.9+) | 2006 09 15 | 691 | 0.2− | 0.3− | | | | |

**(143212)∗ 2002 YG**

Discovered 2002 Dec. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.82220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22505203 | $\omega$ | 58.84652 | | −0.47148959 | −0.87891064 | |
| $a$ | 2.6767887 | $\Omega$ | 59.45324 | | +0.77787832 | −0.45306659 | |
| $e$ | 0.1259764 | $i$ | 4.80941 | | +0.41545504 | −0.14915342 | |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 06 | 910 | 0.0 | 0.2− | 2003 02 04 | 704 | (2.5+ | 0.4−) | 2006 11 11 | 703 | (1.5− | 0.3−) |
| 1997 12 06 | 910 | 0.3+ | 0.1− | 2003 02 04 | 704 | (2.1+ | 0.2+) | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 1997 12 06 | 910 | 0.0 | 0.1+ | 2003 03 07 | 644 | 0.9+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2002 12 06 | 645 | 0.1− | 0.2− | 2003 03 07 | 644 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2002 12 06 | 645 | 0.1− | 0.2− | 2003 03 07 | 644 | 0.4+ | 0.2− | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 1.2+ | 0.9+ | 2003 03 07 | 644 | 0.7+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.2+ |
| 2002 12 11 | 704 | (1.5+ | 0.8−) | 2003 03 07 | 644 | 1.1− | 0.8+ | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2002 12 11 | 704 | 0.0 | 0.9− | 2003 03 07 | 644 | 0.9+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 12 11 | 704 | 0.2+ | 0.5− | 2004 05 15 | 704 | 0.3− | 0.7− | 2006 11 18 | 704 | 0.6− | 0.2− |
| 2002 12 27 | 699 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.7+ | 0.3+ | 2006 11 18 | 704 | 1.5+ | 0.4− |
| 2002 12 27 | 699 | 0.3+ | 0.6+ | 2004 05 15 | 704 | 0.2+ | 1.1+ | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 2002 12 27 | 699 | 0.3+ | 0.3+ | 2004 05 19 | 704 | 0.1− | 1.2+ | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2002 12 27 | 699 | 0.5+ | 0.3+ | 2004 05 19 | 704 | 1.0+ | 0.5+ | 2006 11 18 | 704 | 0.9− | 1.1− |
| 2002 12 28 | 699 | 0.2− | 1.2+ | 2004 05 19 | 704 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2002 12 28 | 699 | 0.8− | 0.4+ | 2004 06 11 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 1.0+ | 0.7+ |
| 2002 12 28 | 699 | 0.3+ | 0.3− | 2004 06 11 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.8+ | 1.1+ |
| 2002 12 28 | 699 | 0.1− | 0.7+ | 2004 06 11 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2003 01 05 | 704 | 0.4− | 1.3+ | 2004 06 14 | 704 | 0.0 | 0.9+ | 2006 11 19 | 704 | 1.0+ | 0.2+ |
| 2003 01 05 | 704 | 0.9− | 0.4+ | 2004 06 14 | 704 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2003 01 05 | 704 | 0.7− | 0.4+ | 2004 06 14 | 704 | (2.0+ | 1.2+) | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.4+ | 2004 06 14 | 704 | 0.6+ | 0.6+ | 2006 11 21 | 704 | 0.8+ | 1.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.4− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2003 01 09 | 704 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2003 01 09 | 704 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2003 01 09 | 704 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2003 01 09 | 704 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.5− | 0.1− | 2006 11 27 | 703 | 0.3− | 0.3− |
| 2003 01 09 | 704 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2003 02 01 | 704 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.8+ |
| 2003 02 01 | 704 | 0.3+ | 0.7− | 2006 10 27 | G96 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.4+ |
| 2003 02 01 | 704 | 0.8+ | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.2+ | 0.2+ |
| 2003 02 01 | 704 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.6− | 0.3+ |
| 2003 02 01 | 704 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.9− | 0.5+ |
| 2003 02 04 | 704 | (1.7+ | 0.4−) | 2006 11 11 | 703 | 0.2− | 0.8− | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2003 02 04 | 704 | (2.0+ | 0.8−) | 2006 11 11 | 703 | 0.4− | 0.1− | 2006 11 29 | 704 | 1.4− | 0.6− |
| 2003 02 04 | 704 | (2.1+ | 0.8−) | 2006 11 11 | 703 | 1.2− | 0.1− | 2006 11 29 | 704 | 0.1− | 1.7+ |

**(143213)∗ 2002 YS**

Discovered 2002 Dec. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.70779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19183443 | $\omega$ | 324.03279 | | +0.37623959 | −0.88860447 | |
| $a$ | 2.9774994 | $\Omega$ | 102.55557 | | +0.90043094 | +0.28395722 | |
| $e$ | 0.1515368 | $i$ | 15.59135 | | +0.21832979 | +0.36020883 | |
| $P$ | 5.14 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.4− | 1.5+ | 2002 12 31 | 704 | 0.3− | 0.3+ | 2004 03 13 | 644 | 0.7+ | 0.3+ |
| 2001 08 19 | 704 | 0.5+ | 0.8+ | 2002 12 31 | 704 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.1− | 1.1+ |
| 2001 08 19 | 704 | 0.5− | 0.5+ | 2003 01 05 | 704 | 0.4− | 0.1+ | 2004 03 15 | 704 | 0.5+ | 0.1− |
| 2001 09 11 | 704 | 0.5− | 0.5+ | 2003 01 05 | 704 | 0.6− | 0.4− | 2004 03 15 | 704 | 0.4+ | 0.4+ |
| 2001 09 11 | 704 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.1− | 0.7− | 2004 03 15 | 704 | 1.1+ | 0.4+ |
| 2001 09 11 | 704 | 0.7− | 0.1+ | 2003 01 05 | 704 | 0.1− | 0.6− | 2004 03 15 | 704 | 0.9+ | 0.5+ |
| 2001 09 11 | 704 | 0.4− | 0.0 | 2003 01 05 | 704 | 0.3− | 0.5− | 2004 03 15 | 703 | 1.3− | 0.5+ |
| 2001 09 11 | 704 | 0.8− | 0.3+ | 2003 01 07 | 704 | 0.5− | 0.2+ | 2004 03 15 | 703 | 0.2− | 0.1− |
| 2001 10 18 | 699 | 0.5− | 1.0+ | 2003 01 07 | 704 | 0.3− | 0.1− | 2004 03 15 | 703 | 0.1+ | 0.3+ |
| 2001 10 18 | 699 | 0.5+ | 1.0+ | 2003 01 07 | 704 | 0.5− | 0.3+ | 2004 03 15 | 703 | 1.2− | 0.1− |
| 2001 10 18 | 699 | 0.3− | 1.0− | 2003 01 07 | 704 | 0.1+ | 0.4+ | 2004 03 28 | 704 | 1.0+ | 0.9+ |
| 2001 10 18 | 699 | 0.8+ | 1.2+ | 2003 01 07 | 704 | 0.1− | 0.3+ | 2004 03 28 | 704 | 0.3+ | 1.2+ |
| 2002 10 04 | 644 | 0.1+ | 0.3+ | 2003 01 09 | 704 | 0.3− | 0.4+ | 2004 03 28 | 704 | 0.1+ | 0.4− |
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2003 01 09 | 704 | 0.1− | 0.4+ | 2004 03 28 | 704 | 0.7+ | 0.3+ |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2003 01 09 | 704 | 0.5+ | 0.4+ | 2004 03 28 | 704 | 0.9+ | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 1.3− | 2003 01 09 | 704 | 0.1− | 0.3+ | 2004 04 15 | 704 | 0.2− | 0.5+ |
| 2002 11 06 | 704 | 0.3− | 1.1− | 2003 01 09 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 704 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.0 | 0.5− | 2003 01 10 | 704 | 0.1− | 0.2− | 2004 04 15 | 704 | 0.3+ | 0.3+ |
| 2002 11 06 | 704 | 0.1− | 0.3− | 2003 01 10 | 704 | 0.6+ | 0.1− | 2004 04 15 | 704 | 0.5− | 0.1+ |
| 2002 11 14 | 704 | 1.2+ | 0.0 | 2003 01 10 | 704 | 0.6+ | 0.1+ | 2004 04 15 | 704 | 1.0− | 1.1+ |
| 2002 11 14 | 704 | 1.4+ | 0.1+ | 2003 01 10 | 704 | 0.6+ | 0.4+ | 2004 04 25 | 699 | 0.3− | 0.2− |
| 2002 11 14 | 704 | 1.6+ | 0.1+ | 2003 01 10 | 704 | 0.8+ | 0.5+ | 2004 04 25 | 699 | 0.1− | 1.2− |
| 2002 11 14 | 704 | 0.6+ | 0.8+ | 2003 01 13 | 599 | 1.4− | 0.2+ | 2004 04 25 | 699 | 0.3+ | 0.9+ |
| 2002 12 05 | 704 | 1.2+ | 0.5+ | 2003 01 13 | 599 | 0.5− | 0.2+ | 2004 04 25 | 699 | 0.3− | 1.3− |
| 2002 12 05 | 704 | 1.3+ | 0.3+ | 2003 01 13 | 599 | 0.7− | 0.1+ | 2004 04 26 | 704 | 0.4+ | 1.6+ |
| 2002 12 05 | 704 | (3.0+ | 0.8+) | 2003 01 13 | 599 | 1.0+ | 0.5+ | 2004 04 26 | 704 | 0.5+ | 0.9+ |
| 2002 12 05 | 704 | (2.5+ | 0.2+) | 2003 01 14 | 704 | 0.5− | 0.6− | 2004 04 26 | 704 | 0.8+ | 0.9+ |
| 2002 12 05 | 704 | (2.2+ | 0.6+) | 2003 01 14 | 704 | 0.0 | 0.0 | 2004 04 26 | 704 | 0.1+ | 0.4+ |
| 2002 12 10 | 704 | 0.4− | 0.2+ | 2003 01 14 | 704 | 0.4− | 0.7− | 2004 04 26 | 704 | 0.3+ | 0.3+ |
| 2002 12 10 | 704 | (0.2− | 2.1+) | 2003 01 14 | 704 | 0.5+ | 1.6− | 2006 08 16 | E12 | 0.7− | 0.3− |
| 2002 12 10 | 704 | 0.6− | 0.5+ | 2003 01 14 | 704 | 0.3− | 0.0 | 2006 08 16 | E12 | 0.3+ | 0.6+ |
| 2002 12 27 | 699 | 0.5+ | 0.3+ | 2003 02 01 | 704 | 0.4− | 0.1+ | 2006 08 16 | E12 | 0.6− | 1.0+ |
| 2002 12 27 | 699 | 0.7+ | 0.7+ | 2003 02 01 | 704 | 0.0 | 0.0 | 2006 08 16 | E12 | 0.5− | 0.9+ |
| 2002 12 27 | 699 | 0.7− | 0.6+ | 2003 02 01 | 704 | 0.2− | 0.0 | 2006 08 28 | E12 | 0.2− | 0.5+ |
| 2002 12 27 | 699 | 0.0 | 1.5+ | 2003 02 01 | 704 | 0.2− | 0.1− | 2006 08 28 | E12 | 0.3+ | 0.1+ |
| 2002 12 28 | 699 | 0.3− | 1.4+ | 2003 02 01 | 704 | 0.3− | 0.3− | 2006 08 28 | E12 | 0.4− | 0.6+ |
| 2002 12 28 | 699 | 0.1+ | 0.2+ | 2003 02 04 | 704 | 0.0 | 0.3+ | 2006 08 28 | E12 | 0.5+ | 0.1+ |
| 2002 12 28 | 699 | 0.3− | 0.1+ | 2003 02 04 | 704 | 1.3+ | 0.5− | 2006 09 27 | E12 | 0.2+ | 0.6+ |
| 2002 12 28 | 699 | 0.1− | 0.5+ | 2003 02 04 | 704 | 0.2− | 0.3− | 2006 09 27 | E12 | 0.0 | 0.4+ |
| 2002 12 31 | 704 | 0.3− | 0.5+ | 2003 02 04 | 704 | 0.1− | 0.2+ | 2006 09 27 | E12 | 0.2+ | 0.6+ |
| 2002 12 31 | 704 | 0.5− | 0.3+ | 2004 03 13 | 644 | 0.1− | 0.1+ | 2006 09 27 | E12 | 0.4− | 0.5+ |
| 2002 12 31 | 704 | 0.7− | 1.0+ | 2004 03 13 | 644 | 0.1+ | 0.5+ | | | | |

**(143214)∗ 2002 YY**

Discovered 2002 Dec. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.69476 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26898210 | $\omega$ | 338.24979 | | +0.12125480 | −0.99111546 | |
| $a$ | 2.3767698 | $\Omega$ | 104.75261 | | +0.91884075 | +0.09123957 | |
| $e$ | 0.1913307 | $i$ | 3.24011 | | +0.37553822 | +0.09677543 | |
| $P$ | 3.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.5+ | 0.8− | 2003 01 08 | 704 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.2− | 0.2− |
| 1998 10 12 | 699 | 0.4+ | 0.3− | 2003 01 08 | 704 | 0.2− | 0.1+ | 2005 08 27 | 644 | 0.1− | 0.3− |
| 1998 10 12 | 699 | 0.6+ | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.0 | 2005 08 29 | 704 | 0.2+ | 0.5+ |
| 1998 11 10 | 704 | 1.4− | 0.8− | 2003 01 09 | 704 | 0.0 | 0.5− | 2005 08 29 | 704 | 0.4+ | 0.3+ |
| 1998 11 10 | 704 | (0.1+ | 2.2−) | 2003 01 09 | 704 | 0.8− | 0.3− | 2005 08 29 | 704 | (1.5− | 0.9+) |
| 1998 11 10 | 704 | (1.0− | 3.5−) | 2003 01 09 | 704 | 0.6− | 0.3− | 2005 08 29 | 704 | (0.8− | 3.2−) |
| 1998 11 10 | 704 | 1.5+ | 1.3− | 2003 01 09 | 704 | 0.5− | 0.4− | 2005 08 31 | 691 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | 1.3+ | 0.2+ | 2003 01 09 | 704 | 0.6− | 0.1− | 2005 08 31 | 691 | 0.4− | 0.1+ |
| 2002 11 06 | 704 | 0.6+ | 0.4+ | 2003 01 09 | 608 | 0.6+ | 0.6− | 2005 08 31 | 691 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 1.3+ | 0.6− | 2003 01 09 | 608 | 0.8+ | 0.1+ | 2005 09 14 | 691 | 0.2− | 0.1+ |
| 2002 12 10 | 704 | 0.1+ | 0.3+ | 2003 01 09 | 608 | 1.0+ | 1.0− | 2005 09 14 | 691 | 0.2− | 0.2+ |
| 2002 12 10 | 704 | 0.5+ | 0.1− | 2003 01 10 | 704 | 0.2+ | 0.6+ | 2005 09 14 | 691 | 0.2− | 0.1− |
| 2002 12 10 | 704 | 0.6− | 0.0 | 2003 01 10 | 704 | 0.3− | 0.5+ | 2005 09 23 | 699 | 0.1− | 0.0 |
| 2002 12 27 | 699 | 0.4− | 0.3+ | 2003 01 10 | 704 | 0.0 | 0.8+ | 2005 09 23 | 699 | (1.5− | 0.4−) |
| 2002 12 27 | 699 | 0.6− | 0.1− | 2003 01 10 | 704 | 0.5− | 0.0 | 2005 09 23 | 699 | 1.4+ | 0.8+ |
| 2002 12 27 | 699 | 0.5− | 0.3+ | 2003 01 10 | 704 | 0.2− | 0.5− | 2005 09 23 | 699 | (1.6− | 1.9−) |
| 2002 12 27 | 699 | 0.2− | 0.7+ | 2003 02 03 | 704 | 0.7+ | 0.4− | 2005 09 26 | 703 | 0.3− | 1.5+ |
| 2002 12 28 | 699 | 0.5+ | 0.1− | 2003 02 03 | 704 | 0.4+ | 0.2+ | 2005 09 26 | 703 | 0.8+ | 1.3+ |
| 2002 12 28 | 699 | 0.0 | 0.3+ | 2003 02 03 | 704 | 0.1+ | 0.4+ | 2005 09 26 | 703 | 0.2− | 0.6+ |
| 2002 12 28 | 699 | 0.8− | 0.5+ | 2003 02 03 | 704 | 0.3− | 0.3+ | 2005 09 26 | 703 | 1.0+ | 0.5+ |
| 2002 12 28 | 699 | 0.9− | 0.5+ | 2003 02 03 | 704 | 0.6+ | 0.4+ | 2006 10 30 | G96 | 0.0 | 0.3− |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2003 02 08 | 704 | 0.8+ | 0.4+ | 2006 10 30 | G96 | 0.0 | 0.4− |
| 2002 12 31 | 704 | 0.5− | 0.2+ | 2003 02 08 | 704 | 0.5+ | 0.1+ | 2006 10 30 | G96 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.3− | 0.1− | 2003 02 08 | 704 | 1.1+ | 0.4+ | 2006 10 30 | G96 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2005 07 30 | 644 | 0.4− | 0.0 | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2003 01 04 | 704 | 1.0− | 0.5− | 2005 07 30 | 644 | 0.3− | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2003 01 04 | 704 | 0.2− | 0.5− | 2005 07 30 | 644 | 0.7− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.4+ |
| 2003 01 04 | 704 | 0.1+ | 0.2− | 2005 08 06 | 644 | 0.1+ | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.4+ |
| 2003 01 04 | 704 | 0.4− | 0.1+ | 2005 08 06 | 644 | 0.2+ | 0.2+ | 2006 11 25 | 691 | 0.2+ | 0.4+ |
| 2003 01 08 | 704 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 11 25 | 691 | 0.7+ | 0.7+ |
| 2003 01 08 | 704 | 0.0 | 0.1+ | 2005 08 27 | 644 | 0.1− | 0.1− | | | | |

**(143215)∗ 2002 YE$_1$**

Discovered 2002 Dec. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.88560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21009936 | $\omega$ | 10.43229 | | −0.26030389 | −0.93620240 | |
| $a$ | 2.8023319 | $\Omega$ | 94.96111 | | +0.86790462 | −0.33404702 | |
| $e$ | 0.1371507 | $i$ | 13.71180 | | +0.42306437 | +0.10925954 | |
| $P$ | 4.69 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 10 | 704 | 0.8− | 0.9− | 2003 01 31 | 704 | 0.0 | 0.5− | 2004 06 09 | 699 | 0.6− | 0.4+ |
| 1999 04 10 | 704 | 0.1− | 0.5+ | 2003 02 06 | 699 | 1.0+ | 0.9+ | 2004 06 16 | 691 | 0.4+ | 0.6+ |
| 1999 04 10 | 704 | 0.7− | 0.8− | 2003 02 06 | 699 | 0.6+ | 0.1+ | 2004 06 16 | 691 | 0.1+ | 0.4+ |
| 1999 04 10 | 704 | 0.1− | 0.3− | 2003 02 06 | 699 | (1.8+ | 1.3+) | 2004 06 16 | 691 | 0.0 | 0.7+ |
| 1999 04 10 | 704 | (3.3− | 0.4−) | 2003 02 06 | 699 | 0.3− | 1.1+ | 2006 09 19 | 703 | 1.2− | 0.9+ |
| 2002 12 11 | 704 | 0.3− | 0.7− | 2004 04 16 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.9− | 0.6+ |
| 2002 12 11 | 704 | 0.0 | 1.0− | 2004 04 16 | 704 | 0.3+ | 1.3+ | 2006 09 19 | 703 | (1.6− | 0.7+) |
| 2002 12 11 | 704 | 0.3+ | 0.2+ | 2004 04 16 | 704 | 0.3− | 0.0 | 2006 09 19 | 703 | 1.0− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2− | 0.1− | 2004 05 12 | 699 | 0.5+ | 0.6+ | 2006 09 26 | 703 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.6− | 0.5+ | 2004 05 12 | 703 | 1.0− | 1.4− | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2002 12 11 | 644 | (0.3+ | 1.6+) | 2004 05 12 | 703 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.5+ |
| 2002 12 11 | 644 | 0.6+ | 1.4+ | 2004 05 12 | 699 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.3+ |
| 2002 12 11 | 644 | (0.4+ | 1.7+) | 2004 05 12 | 703 | 0.4− | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.5+ |
| 2002 12 27 | 699 | 0.4− | 0.8+ | 2004 05 12 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.9+ |
| 2002 12 27 | 699 | 0.4− | 0.3+ | 2004 05 12 | 703 | 0.1+ | 0.7+ | 2006 09 30 | 704 | 1.4+ | 0.4+ |
| 2002 12 27 | 699 | 0.2− | 0.4+ | 2004 05 12 | 699 | 0.7+ | 0.9+ | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 2002 12 27 | 699 | 0.0 | 0.2− | 2004 05 13 | 699 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2002 12 28 | 699 | 0.2− | 0.2+ | 2004 05 13 | 699 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2002 12 28 | 699 | 0.3− | 0.3− | 2004 05 13 | 699 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.4− | 1.0+ |
| 2002 12 28 | 699 | 0.1− | 0.2− | 2004 05 13 | 699 | 0.6− | 0.3− | 2006 10 17 | 703 | 0.6− | 0.3+ |
| 2002 12 28 | 699 | 0.9+ | 0.3+ | 2004 05 14 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.8+ |
| 2003 01 09 | 704 | 0.2− | 0.9+ | 2004 05 14 | 691 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.3+ | 1.0+ |
| 2003 01 09 | 704 | 0.2+ | 1.0+ | 2004 05 14 | 691 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.6+ | 0.5+ |
| 2003 01 09 | 704 | 0.4+ | 0.5+ | 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.2+ | 1.4+ |
| 2003 01 09 | 704 | 0.2− | 0.0 | 2004 05 19 | 691 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.8− | 0.3+ |
| 2003 01 09 | 704 | 0.1+ | 0.2+ | 2004 05 19 | 691 | 0.5+ | 0.2− | 2006 11 07 | 644 | 0.4− | 0.1+ |
| 2003 01 10 | 704 | 0.7+ | 0.9+ | 2004 05 23 | 704 | 0.4− | 0.3− | 2006 11 07 | 644 | 0.3− | 0.6+ |
| 2003 01 10 | 704 | 0.6+ | 0.6+ | 2004 05 23 | 704 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.7− | 0.3+ |
| 2003 01 10 | 704 | 0.4+ | 0.5+ | 2004 05 23 | 704 | 0.9− | 0.2+ | 2006 11 08 | 644 | 0.5− | 0.3+ |
| 2003 01 10 | 704 | 0.5+ | 0.3+ | 2004 06 09 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.5− | 0.2+ |
| 2003 01 10 | 704 | 0.2− | 0.1+ | 2004 06 09 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2003 01 31 | 704 | 0.6− | 0.5− | 2004 06 09 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.6+ |
| 2003 01 31 | 704 | (1.6− | 0.3−) | 2004 06 09 | 699 | 0.2− | 0.8+ | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2003 01 31 | 704 | 0.4− | 0.4− | 2004 06 09 | 699 | 1.1+ | 0.4+ | | | | |
| 2003 01 31 | 704 | 0.2− | 0.2− | 2004 06 09 | 699 | 0.1− | 0.4+ | | | | |

**(143216)∗ 2002 YP$_1$ = 1987 DC$_4$ = 2001 SS$_{257}$**

Discovered 2002 Dec. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 41373), A. Doppler (*MPO* 89387)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.83280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24415855 | $\omega$ | 228.81376 | | −0.18586480 | −0.98124232 | |
| $a$ | 2.5352537 | $\Omega$ | 231.97081 | | +0.91982339 | −0.15544809 | |
| $e$ | 0.2239528 | $i$ | 3.72422 | | +0.34551297 | −0.11401489 | |
| $P$ | 4.04 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 02 23 | 010 | (1.0+ | 5.7−) | 2003 01 07 | 704 | 0.2− | 0.2+ | 2004 06 14 | 704 | 0.6+ | 0.8+ |
| 1987 02 24 | 010 | 0.6− | 0.5+ | 2003 01 08 | 704 | 0.9+ | 0.2+ | 2004 06 14 | 704 | 1.0+ | 0.1− |
| 1987 02 24 | 010 | 1.8+ | 1.2− | 2003 01 08 | 704 | 0.9+ | 0.7+ | 2004 06 14 | 704 | 1.0− | 0.3− |
| 1999 01 18 | 704 | 0.6− | 0.2+ | 2003 01 08 | 704 | 1.0+ | 0.3+ | 2005 08 24 | 644 | 0.3− | 0.5+ |
| 1999 01 18 | 704 | 1.3− | 0.3+ | 2003 01 08 | 704 | 1.0+ | 0.4+ | 2005 08 24 | 644 | 0.0 | 0.3+ |
| 1999 01 18 | 704 | 0.0 | 1.6− | 2003 01 08 | 704 | 1.1+ | 0.5+ | 2005 08 24 | 644 | 0.2+ | 0.2+ |
| 1999 01 18 | 704 | (2.9− | 1.2−) | 2003 01 26 | 699 | 0.1− | 0.1+ | 2005 10 03 | 644 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.5+ | 0.6+ | 2003 01 26 | 699 | 0.0 | 0.2+ | 2005 10 03 | 644 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 0.9+ | 2003 01 26 | 699 | 0.3− | 0.1− | 2005 10 03 | 644 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2003 01 26 | 699 | 0.0 | 0.2− | 2005 10 30 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | (0.1− | 1.5+) | 2003 01 26 | 644 | 0.3− | 0.2− | 2005 10 30 | G96 | 0.5− | 0.1− |
| 2001 09 21 | 704 | 0.7− | 0.4− | 2003 01 26 | 644 | 0.6− | 0.0 | 2005 10 30 | G96 | 0.3− | 0.5− |
| 2001 09 21 | 704 | 0.5+ | 0.6− | 2003 01 26 | 644 | 0.2+ | 0.3+ | 2005 10 30 | G96 | 0.4+ | 0.1− |
| 2001 09 21 | 704 | 0.5− | 0.6− | 2003 01 27 | 704 | 1.1− | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.2− |
| 2002 10 04 | 644 | 0.2+ | 0.4+ | 2003 01 27 | 704 | 1.3− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.4− |
| 2002 10 04 | 644 | 0.2+ | 0.3+ | 2003 01 27 | 704 | 1.1− | 0.2+ | 2006 10 01 | 691 | 0.5− | 0.3− |
| 2002 10 04 | 644 | 0.1+ | 0.0 | 2003 01 27 | 704 | 1.2− | 0.0 | 2006 11 18 | 704 | 1.0+ | 0.5− |
| 2002 11 06 | 704 | 0.4− | 0.7− | 2003 01 27 | 704 | 1.3− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2003 01 27 | 699 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.2+ |
| 2002 11 06 | 704 | 0.2+ | 0.6+ | 2003 01 27 | 699 | 0.9− | 0.5− | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2002 12 11 | 704 | 0.1− | 0.3+ | 2003 01 27 | 699 | 0.7− | 0.8− | 2006 11 18 | 704 | 0.9+ | 0.0 |
| 2002 12 11 | 704 | 0.7+ | 0.6+ | 2003 01 27 | 699 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.2+ |
| 2002 12 11 | 704 | 0.7+ | 0.5− | 2003 02 02 | 704 | 0.9+ | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2002 12 27 | 699 | 0.6− | 0.6+ | 2003 02 02 | 704 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2002 12 27 | 699 | 0.6+ | 0.5+ | 2003 02 02 | 704 | 0.2− | 0.3+ | 2006 11 18 | 704 | 1.0+ | 0.1− |
| 2002 12 27 | 699 | 0.3+ | 0.1− | 2003 02 02 | 704 | 0.3− | 0.7− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2002 12 27 | 699 | 0.1− | 0.1− | 2003 02 02 | 704 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 12 28 | 699 | 0.2− | 0.2− | 2003 02 06 | 608 | 1.1+ | 1.3+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 12 28 | 699 | 0.5+ | 0.1− | 2003 02 06 | 608 | 0.7+ | 0.9+ | 2006 11 21 | 704 | 0.6+ | 0.3− |
| 2002 12 28 | 699 | 0.2+ | 0.4− | 2003 02 06 | 608 | 0.9+ | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.1− |
| 2002 12 28 | 699 | 0.1+ | 0.0 | 2003 03 06 | 704 | 0.7− | 1.1− | 2006 11 21 | 704 | 1.2+ | 0.1− |
| 2003 01 01 | 704 | 0.3− | 0.1− | 2003 03 06 | 704 | 0.9+ | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2003 01 01 | 704 | 0.4− | 0.2+ | 2003 03 06 | 704 | 0.4+ | 0.6+ | 2006 11 21 | 704 | 0.5+ | 0.2− |
| 2003 01 01 | 704 | 0.1− | 0.1+ | 2003 03 06 | 704 | 1.0+ | 0.3+ | 2006 11 29 | 704 | 0.4− | 0.7+ |
| 2003 01 01 | 704 | 0.6− | 0.1− | 2003 03 07 | 704 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2003 01 01 | 704 | 0.3− | 0.4+ | 2003 03 07 | 704 | (0.3+ | 1.6−) | 2006 11 29 | 704 | 0.3+ | 0.6+ |
| 2003 01 07 | 704 | 0.4− | 0.2+ | 2003 03 07 | 704 | 0.4+ | 0.8− | 2006 11 29 | 704 | 0.2− | 0.9+ |
| 2003 01 07 | 704 | 0.4− | 0.0 | 2003 03 07 | 704 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2003 01 07 | 704 | 1.2− | 0.1+ | 2003 03 07 | 704 | 1.2+ | 0.9− | | | | |
| 2003 01 07 | 704 | 0.4− | 0.1+ | 2004 06 14 | 704 | 0.6− | 0.2+ | | | | |

**(143217)∗ 2002 YA$_3$**

Discovered 2002 Dec. 28 at Ametlla de Mar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.64930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21284199 | $\omega$ | 291.52286 | | +0.66694653 | −0.72644085 | |
| $a$ | 2.7782064 | $\Omega$ | 115.53756 | | +0.73337014 | +0.60067789 | |
| $e$ | 0.1658147 | $i$ | 10.58378 | | +0.13172150 | +0.33387087 | |
| $P$ | 4.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.3+ | 0.4+ | 2003 01 04 | 704 | 0.1− | 0.3− | 2006 09 24 | 699 | 0.1+ | 0.6+ |
| 2001 07 16 | 608 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.5− | 0.0 | 2006 09 24 | 699 | 0.4+ | 0.8+ |
| 2001 07 16 | 608 | 0.3+ | 0.6+ | 2003 01 08 | 704 | 0.1− | 0.2+ | 2006 09 24 | 699 | 0.4+ | 1.4+ |
| 2001 08 27 | 644 | 0.1+ | 0.2− | 2003 01 08 | 704 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.0 | 0.1− |
| 2001 08 27 | 644 | 0.5+ | 0.3+ | 2003 01 08 | 704 | 0.5− | 0.0 | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2001 08 27 | 644 | 0.2+ | 0.2+ | 2003 01 08 | 704 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.9− | 0.2+ |
| 2001 09 11 | 704 | 0.9− | 0.2− | 2003 01 14 | 704 | 0.1− | 0.4− | 2006 09 26 | 703 | 0.0 | 0.3− |
| 2001 09 11 | 704 | 0.0 | 0.3− | 2003 01 14 | 704 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 09 11 | 704 | 0.5− | 0.5− | 2003 01 14 | 704 | 0.2− | 1.0− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 09 11 | 704 | 0.4+ | 0.8− | 2003 01 14 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 12 08 | 608 | 0.2+ | 0.3− | 2003 01 14 | 704 | 0.1+ | 0.9− | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2002 12 08 | 608 | 0.4− | 0.3+ | 2003 01 14 | 704 | 0.6+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 12 08 | 608 | 0.3+ | 0.4− | 2003 01 14 | 704 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 12 28 | 946 | (2.0− | 0.8−) | 2003 01 31 | 704 | 0.1− | 0.6+ | 2006 10 21 | 703 | 0.9− | 0.5− |
| 2002 12 29 | 946 | (1.3− | 2.1+) | 2003 01 31 | 704 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2002 12 29 | 946 | 0.9+ | 0.1− | 2003 01 31 | 704 | 0.2− | 1.2+ | 2006 10 21 | 703 | 0.3− | 0.7− |
| 2002 12 29 | 946 | 0.8− | 0.3+ | 2003 01 31 | 704 | 1.0− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.4− |
| 2002 12 29 | 946 | (1.7+ | 0.0 ) | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 12 29 | 946 | 0.3+ | 1.5− | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 1.0+ | 0.2− | 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 12 31 | 704 | 0.7+ | 0.7− | 2006 08 28 | 699 | 0.0 | 1.1+ | 2006 10 28 | 703 | 0.3+ | 0.5+ |
| 2002 12 31 | 704 | 0.9+ | 0.3− | 2006 08 28 | 699 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.8+ |
| 2003 01 04 | 704 | 0.3− | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.6− | 0.7− |
| 2003 01 04 | 704 | 0.3− | 0.1− | 2006 08 28 | 699 | 1.1− | 0.4+ | 2006 10 28 | 703 | 0.6+ | 0.1− |
| 2003 01 04 | 704 | 0.6− | 0.7+ | 2006 09 24 | 699 | 0.9+ | 0.8− | | | | |

**(143218)∗ 2002 YL$_3$ = 1996 JD$_7$**

Discovered 2002 Dec. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 41375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.26385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24289244 | $\omega$ | 338.02493 | | +0.71660593 | −0.68533739 | |
| $a$ | 2.5440563 | $\Omega$ | 65.91530 | | +0.65919164 | +0.60477774 | |
| $e$ | 0.2602403 | $i$ | 8.15934 | | +0.22790858 | +0.40565570 | |
| $P$ | 4.06 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.9+ | 0.0 | 2003 01 10 | 704 | 0.2+ | 0.3− | 2004 04 13 | 691 | 0.1+ | 0.0 |
| 1996 05 11 | 691 | 0.7+ | 0.6+ | 2003 01 10 | 704 | 0.0 | 0.3− | 2004 04 20 | 691 | 0.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 17 | 691 | 0.4− | 0.1+ | 2003 01 10 | 704 | 0.2+ | 0.5− | 2004 04 20 | 691 | 0.0 | 0.1+ |
| 1996 05 17 | 691 | 0.5− | 0.3− | 2003 01 10 | 704 | 0.2+ | 0.5− | 2004 04 20 | 691 | 0.4+ | 0.2+ |
| 1996 05 17 | 691 | 0.5− | 0.0 | 2003 01 10 | 704 | 0.2+ | 0.6− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2002 11 14 | 704 | 0.2+ | 0.5− | 2003 01 12 | 106 | 1.0+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2002 11 14 | 704 | 0.7− | 0.1+ | 2003 01 13 | 106 | 0.6− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2002 11 14 | 704 | (1.7+ | 0.4+) | 2003 01 13 | 106 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | 1.4+ | 1.2+ | 2003 01 31 | 704 | 0.5− | 0.7+ | 2006 10 28 | 703 | 1.2+ | 1.0+ |
| 2002 11 21 | 644 | 0.0 | 0.4− | 2003 01 31 | 704 | 1.1− | 0.6+ | 2006 10 28 | 703 | 0.0 | 0.7− |
| 2002 11 21 | 644 | 0.3+ | 0.2+ | 2003 01 31 | 699 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.9+ | 1.4+ |
| 2002 11 21 | 644 | 0.2− | 0.5− | 2003 01 31 | 704 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2002 12 14 | 704 | 0.7+ | 0.3+ | 2003 01 31 | 699 | 0.7− | 0.4+ | 2006 11 02 | G96 | 0.4− | 0.8− |
| 2002 12 14 | 704 | (1.5− | 0.4+) | 2003 01 31 | 699 | 1.0− | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.3− |
| 2002 12 14 | 704 | 1.1+ | 0.3+ | 2003 01 31 | 699 | 0.3− | 0.7− | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2002 12 14 | 704 | 0.3− | 1.0+ | 2003 03 07 | 644 | 0.5+ | 0.2− | 2006 11 15 | 704 | 0.2+ | 0.4+ |
| 2002 12 27 | 699 | 0.6+ | 0.2+ | 2003 03 07 | 644 | 0.8− | 0.4− | 2006 11 15 | 704 | 0.3− | 0.6+ |
| 2002 12 27 | 699 | 0.1+ | 0.6− | 2003 03 07 | 644 | 0.1− | 0.6− | 2006 11 15 | 704 | 0.7+ | 0.2− |
| 2002 12 27 | 699 | 0.7− | 0.7+ | 2004 04 13 | 691 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.4+ | 0.2− |
| 2002 12 27 | 699 | 0.7+ | 1.0− | 2004 04 13 | 691 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.1+ | 0.8+ |
| 2002 12 30 | 704 | 0.3+ | 0.3− | 2004 04 13 | 691 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.3− | 0.4− |
| 2002 12 30 | 704 | 0.1− | 0.1− | 2004 04 13 | 691 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2002 12 30 | 704 | 0.7− | 0.2− | 2004 04 13 | 691 | 0.5− | 0.2− | 2006 11 15 | 703 | 0.4− | 0.0 |

**(143219)∗ 2002 YY$_3$**

Discovered 2002 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.68139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35197257 | $\omega$ | 120.94376 | | −0.13214264 | −0.86651363 | |
| $a$ | 1.9866903 | $\Omega$ | 324.20669 | | +0.35770586 | +0.41119448 | |
| $e$ | 0.0526177 | $i$ | 55.38663 | | +0.92443758 | −0.28297214 | |
| $P$ | 2.80 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 28 | 704 | 0.4+ | 0.2+ | 2003 01 15 | 704 | 0.1− | 0.5+ | 2004 07 16 | E12 | 0.4− | 0.5+ |
| 2002 12 28 | 704 | 0.2+ | 0.8+ | 2003 01 15 | 704 | 0.4− | 0.3+ | 2004 07 16 | E12 | 0.4− | 0.3+ |
| 2002 12 28 | 704 | 0.4+ | 0.7+ | 2003 01 15 | 704 | 0.4+ | 1.0− | 2004 07 16 | E12 | 0.2− | 0.4+ |
| 2002 12 28 | 704 | 0.2+ | 0.5+ | 2003 01 16 | 118 | 0.2+ | 0.6+ | 2004 08 12 | E12 | 0.9+ | 0.3− |
| 2002 12 28 | 704 | 0.5− | 0.2− | 2003 01 16 | 118 | 0.4− | 0.3+ | 2004 08 12 | E12 | 0.1− | 0.2− |
| 2002 12 29 | 850 | 0.1− | 0.1− | 2003 01 16 | 118 | 0.1+ | 0.1− | 2004 08 12 | E12 | 0.3− | 0.1+ |
| 2002 12 29 | 850 | (1.6− | 1.8+) | 2003 01 16 | 118 | 0.0 | 1.3− | 2004 08 12 | E12 | 0.1− | 0.2+ |
| 2002 12 29 | 850 | 0.6+ | 0.6− | 2003 01 26 | 941 | 0.1+ | 0.1− | 2004 08 16 | E12 | 0.7− | 0.0 |
| 2002 12 29 | 850 | 0.1+ | 1.0− | 2003 01 26 | 941 | 0.6− | 0.0 | 2004 08 16 | E12 | 0.4− | 0.0 |
| 2002 12 30 | 097 | 0.4− | 0.4+ | 2003 01 26 | 941 | 0.2− | 0.0 | 2004 08 16 | E12 | 0.4− | 0.2+ |
| 2002 12 30 | 097 | 0.1− | 0.4+ | 2003 01 26 | 941 | 0.2− | 0.2− | 2004 08 16 | E12 | 0.6− | 0.4+ |
| 2002 12 30 | 926 | 0.3− | 0.1+ | 2003 01 26 | 118 | 0.9+ | 0.5− | 2004 09 07 | 704 | 1.0− | 0.8− |
| 2002 12 30 | 926 | 1.0− | 0.0 | 2003 01 26 | 118 | 0.0 | 0.4+ | 2004 09 07 | 704 | 0.3− | 0.9+ |
| 2002 12 30 | 926 | 0.2− | 0.3− | 2003 02 07 | 699 | 0.2+ | 0.0 | 2004 09 07 | 704 | 0.3+ | 1.1− |
| 2002 12 31 | 734 | 0.5− | 0.3+ | 2003 02 07 | 699 | 0.3+ | 0.1− | 2004 09 07 | 704 | 0.5− | 0.0 |
| 2002 12 31 | 734 | 0.3− | 0.2+ | 2003 02 07 | 699 | 0.3+ | 0.1+ | 2004 09 08 | 859 | 0.1+ | 0.7− |
| 2002 12 31 | 734 | 0.1− | 0.5+ | 2003 02 07 | 699 | 0.5+ | 0.1− | 2004 09 09 | 704 | 0.6+ | 0.0 |
| 2002 12 31 | 734 | 0.5+ | 0.3+ | 2003 02 08 | 118 | 0.1− | 0.9+ | 2004 09 09 | 704 | 0.3+ | 0.3− |
| 2002 12 31 | 926 | 0.2+ | 1.0+ | 2003 02 08 | 118 | 0.1− | 0.8+ | 2004 09 09 | 704 | 0.5+ | 0.2+ |
| 2002 12 31 | 926 | 0.2+ | 0.6+ | 2003 02 08 | 118 | 0.1+ | 0.8+ | 2004 09 09 | 704 | 0.1+ | 0.1+ |
| 2002 12 31 | 926 | 0.2− | 1.0+ | 2003 02 08 | 118 | 0.1+ | 0.9+ | 2004 09 09 | 704 | 1.0+ | 0.3− |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2003 02 14 | 118 | 1.3− | 0.1+ | 2004 09 17 | 704 | 0.4− | 0.5− |
| 2002 12 31 | 704 | 0.0 | 0.2− | 2003 02 14 | 118 | 1.0+ | 0.2− | 2004 09 17 | 704 | 0.5− | 0.3− |
| 2002 12 31 | 704 | 0.3− | 0.4+ | 2003 02 14 | 118 | 0.7+ | 0.0 | 2004 09 17 | 704 | 0.8− | 0.5+ |
| 2002 12 31 | 704 | 0.1− | 0.4+ | 2003 02 14 | 118 | 0.5− | 0.0 | 2004 09 17 | 704 | 0.3− | 0.2− |
| 2002 12 31 | 704 | 0.2+ | 0.4+ | 2003 02 24 | A31 | 0.1+ | 1.2− | 2004 09 17 | 704 | 0.5− | 0.2− |
| 2003 01 01 | 704 | 0.1+ | 0.2− | 2003 02 24 | A31 | 0.3+ | 0.8− | 2004 09 21 | 704 | 0.2+ | 0.4+ |
| 2003 01 01 | 704 | 0.2+ | 0.1− | 2003 02 24 | A31 | 1.2+ | 0.1+ | 2004 09 21 | 704 | 0.3− | 0.4+ |
| 2003 01 01 | 704 | 0.2+ | 0.4− | 2003 02 26 | 704 | 0.3− | 0.1+ | 2004 09 21 | 704 | 0.2− | 0.6+ |
| 2003 01 01 | 704 | 0.4− | 0.0 | 2003 02 26 | 704 | 0.0 | 0.0 | 2004 09 21 | 704 | 0.1− | 0.5+ |
| 2003 01 01 | 704 | 0.1+ | 0.2− | 2003 02 26 | 704 | 0.4− | 0.2+ | 2004 10 10 | 704 | 0.6+ | 0.0 |
| 2003 01 03 | 704 | 0.5+ | 0.1+ | 2003 02 26 | 704 | 1.3− | 0.6− | 2004 10 10 | 704 | 1.1+ | 0.3+ |
| 2003 01 03 | 704 | 0.0 | 0.5− | 2003 02 26 | 704 | 1.0− | 0.2+ | 2004 10 10 | 704 | 0.4+ | 1.2+ |
| 2003 01 03 | 704 | 0.1+ | 0.1+ | 2003 03 04 | J87 | (2.1− | 1.0+) | 2004 10 10 | 704 | 0.5+ | 0.3− |
| 2003 01 03 | 704 | 0.1− | 0.0 | 2003 03 04 | J87 | 0.9− | 0.4− | 2004 10 15 | 704 | 0.4− | 0.8+ |
| 2003 01 03 | 704 | 0.1+ | 0.4+ | 2003 03 04 | J87 | 0.8+ | 0.4− | 2004 10 15 | 704 | (2.0− | 0.2+) |
| 2003 01 12 | 118 | 0.4+ | 0.3+ | 2003 03 05 | 704 | 0.4− | 0.1− | 2004 10 15 | 704 | 0.3− | 0.3− |
| 2003 01 12 | 118 | 0.7+ | 0.1+ | 2003 03 05 | 704 | 0.2+ | 0.1+ | 2004 10 15 | 704 | 0.4− | 0.6+ |
| 2003 01 12 | 118 | 0.7+ | 0.8+ | 2003 03 05 | 704 | 0.1− | 0.1+ | 2005 12 06 | 448 | 0.4+ | 0.1− |
| 2003 01 12 | 118 | 0.9+ | 0.1− | 2003 03 05 | 704 | 0.2− | 0.2+ | 2005 12 06 | 448 | 0.4+ | 0.1+ |
| 2003 01 12 | 704 | 1.2+ | 0.1+ | 2003 03 05 | 704 | 0.5− | 0.5+ | 2005 12 06 | 448 | 0.2+ | 0.6− |
| 2003 01 12 | 704 | 0.6− | 0.1− | 2003 03 06 | 704 | 0.8+ | 0.0 | 2005 12 25 | 703 | 0.5− | 0.2+ |
| 2003 01 12 | 704 | 0.3− | 0.6− | 2003 03 06 | 704 | 0.2+ | 0.1+ | 2005 12 25 | 703 | 0.4− | 0.4− |
| 2003 01 12 | 704 | 0.1− | 0.1− | 2003 03 06 | 704 | 0.8− | 0.0 | 2005 12 25 | 703 | 1.0− | 0.4+ |
| 2003 01 12 | 198 | 0.2− | 0.2+ | 2003 03 06 | 704 | 0.6− | 0.5− | 2005 12 25 | 703 | 0.3− | 0.1− |
| 2003 01 13 | 704 | 0.2− | 0.4− | 2003 03 06 | 704 | 0.4− | 0.1− | 2005 12 29 | 704 | 1.0+ | 1.0+ |
| 2003 01 13 | 704 | 0.5− | 0.3− | 2003 03 06 | 704 | 0.1+ | 0.6+ | 2005 12 29 | 704 | 1.1+ | 0.3+ |
| 2003 01 13 | 704 | 1.0− | 0.4− | 2003 03 06 | 704 | 0.7− | 0.7+ | 2005 12 29 | 704 | 1.1+ | 1.3+ |
| 2003 01 13 | 704 | 0.5− | 0.4− | 2003 03 06 | 704 | 0.1+ | 0.7+ | 2006 01 07 | 703 | 0.3− | 0.1− |
| 2003 01 13 | 704 | 0.6− | 0.6− | 2003 03 06 | 704 | 0.1− | 0.4+ | 2006 01 07 | 703 | 1.5− | 0.9− |
| 2003 01 13 | 938 | 0.2+ | 0.7+ | 2003 03 06 | 704 | 0.1+ | 0.7+ | 2006 01 07 | 703 | 0.4− | 0.5− |
| 2003 01 13 | 599 | 0.4+ | 0.1+ | 2003 03 11 | 704 | 0.0 | 0.4− | 2006 01 07 | 703 | 0.5− | 1.1− |
| 2003 01 13 | 599 | 1.0− | 0.6− | 2003 03 11 | 704 | 0.7+ | 1.5− | 2006 01 07 | 699 | 0.4+ | 0.1− |
| 2003 01 13 | 599 | 0.9+ | 0.9− | 2003 03 11 | 704 | 0.4+ | 0.2− | 2006 01 07 | 699 | 0.0 | 0.4+ |
| 2003 01 13 | 938 | 1.1+ | 0.0 | 2003 03 11 | 704 | 0.2− | 0.1+ | 2006 01 07 | 699 | 0.4+ | 0.6− |
| 2003 01 13 | 938 | 0.6− | 0.5+ | 2003 03 11 | 704 | 0.4+ | 1.2− | 2006 01 07 | 699 | 0.3− | 0.5+ |
| 2003 01 14 | 649 | 0.2+ | 0.1− | 2003 03 11 | 704 | 0.5+ | 0.2− | 2006 01 11 | 704 | 0.2+ | 0.8+ |
| 2003 01 14 | 649 | 0.1− | 0.3− | 2003 03 11 | 704 | 1.2+ | 1.4− | 2006 01 11 | 704 | 0.0 | 0.1− |
| 2003 01 14 | 649 | 0.6− | 0.1+ | 2003 03 11 | 704 | 0.1+ | 0.3+ | 2006 01 11 | 704 | 0.0 | 0.2+ |
| 2003 01 14 | 704 | 0.9+ | 0.8− | 2003 03 26 | 704 | (1.6− | 0.4+) | 2006 01 11 | 704 | 0.4+ | 0.1+ |
| 2003 01 14 | 704 | 0.0 | 0.1− | 2003 03 26 | 704 | 0.2− | 0.6+ | 2006 01 23 | 703 | 0.6− | 0.1− |
| 2003 01 14 | 704 | 0.0 | 0.2− | 2003 03 26 | 704 | 0.0 | 0.6+ | 2006 01 23 | 703 | 0.9− | 0.1+ |
| 2003 01 14 | 704 | 0.7+ | 1.0− | 2003 03 26 | 704 | 0.2+ | 0.6+ | 2006 01 23 | 703 | 0.0 | 0.5+ |
| 2003 01 14 | 704 | 0.2− | 0.1− | 2003 03 31 | 704 | (1.5+ | 0.3+) | 2006 01 23 | 704 | 0.8+ | 0.3− |
| 2003 01 14 | 704 | 0.2+ | 0.3+ | 2003 03 31 | 704 | (1.5+ | 0.0 ) | 2006 01 23 | 704 | 0.1+ | 0.0 |
| 2003 01 14 | 704 | 1.2+ | 0.6− | 2003 03 31 | 704 | 0.4+ | 0.7+ | 2006 01 23 | 704 | 0.3+ | 0.4− |
| 2003 01 14 | 704 | 0.1+ | 0.1− | 2003 03 31 | 704 | 0.9+ | 0.0 | 2006 01 23 | 704 | 0.4+ | 0.2+ |
| 2003 01 14 | 704 | 0.2+ | 0.0 | 2003 03 31 | 704 | 0.2− | 1.4+ | 2006 01 23 | 704 | 0.3+ | 0.7+ |
| 2003 01 14 | 711 | 0.2− | 0.3+ | 2003 04 05 | 704 | 0.6+ | 0.1+ | 2006 01 28 | 703 | 0.3− | 0.3− |
| 2003 01 14 | 704 | 0.9+ | 0.9− | 2003 04 05 | 704 | 0.4+ | 0.3+ | 2006 01 28 | 703 | 0.1+ | 1.2+ |
| 2003 01 14 | 704 | 0.1− | 0.0 | 2003 04 05 | 704 | 0.3+ | 0.4+ | 2006 01 28 | 703 | (2.0− | 0.2−) |
| 2003 01 14 | 711 | 0.7− | 0.5+ | 2003 04 05 | 704 | 1.1+ | 0.2+ | 2006 03 09 | 808 | 0.1+ | 0.4− |
| 2003 01 14 | 704 | 0.5− | 0.2− | 2003 04 05 | 704 | 0.8+ | 0.7− | 2006 03 09 | 808 | 0.4− | 0.7− |
| 2003 01 14 | 711 | 0.3− | 0.0 | 2004 06 29 | E12 | 0.0 | 0.4− | 2006 03 09 | 808 | 1.4− | 0.4− |
| 2003 01 14 | 711 | 0.1− | 0.0 | 2004 06 29 | E12 | 0.1− | 0.1+ | 2006 03 10 | 808 | 0.6− | 0.5− |
| 2003 01 14 | 704 | (1.8+ | 0.0 ) | 2004 06 29 | E12 | 0.6− | 0.0 | 2006 03 10 | 808 | 1.2+ | 0.2− |
| 2003 01 14 | 704 | 0.2− | 0.0 | 2004 06 29 | E12 | 0.6− | 1.1− | 2006 03 10 | 808 | (2.3+ | 0.1+) |
| 2003 01 14 | 704 | 0.3+ | 0.2− | 2004 07 16 | E12 | 0.0 | 0.4− | | | | |

**(143220)∗ 2002 YY$_4$**

Discovered 2002 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.50034 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24074897 | $\omega$ | 346.59746 | | +0.38069146 | −0.78015971 | |
| $a$ | 2.5591344 | $\Omega$ | 79.07701 | | +0.88817155 | +0.15909621 | |
| $e$ | 0.1430491 | $i$ | 30.36930 | | +0.25734279 | +0.60501175 | |
| $P$ | 4.09 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 704 | 1.1+ | 0.9− | 2002 12 28 | 704 | 0.1+ | 0.4+ | 2004 05 24 | 704 | 0.1+ | 0.2− |
| 1999 02 09 | 704 | 0.2+ | 0.9+ | 2002 12 28 | 704 | 0.2+ | 0.5+ | 2004 06 12 | 704 | 0.4+ | 0.4+ |
| 1999 02 09 | 704 | 0.4− | 0.2− | 2002 12 28 | 704 | 0.0 | 0.1+ | 2004 06 12 | 704 | 0.6+ | 1.0+ |
| 1999 02 09 | 704 | 1.2− | 1.0− | 2002 12 28 | 704 | 0.4− | 0.8+ | 2004 06 12 | 704 | 0.9+ | 0.8+ |
| 1999 02 09 | 704 | (3.6− | 0.3+) | 2002 12 31 | 704 | 0.4+ | 0.4+ | 2004 06 12 | 704 | (1.8+ | 1.1+) |
| 2000 05 27 | 704 | 0.9+ | 0.4+ | 2002 12 31 | 704 | 0.5+ | 0.3+ | 2005 08 28 | E12 | 0.2− | 0.4+ |
| 2000 05 27 | 704 | 0.5+ | 0.5+ | 2002 12 31 | 704 | 0.1+ | 0.1− | 2005 08 28 | E12 | 1.4+ | 0.8+ |
| 2000 05 27 | 704 | 0.2+ | 0.1− | 2002 12 31 | 704 | 1.1+ | 0.2− | 2005 08 28 | E12 | 0.0 | 1.2+ |
| 2000 05 27 | 704 | 0.1+ | 1.5− | 2002 12 31 | 704 | 0.3+ | 0.0 | 2005 08 28 | E12 | 0.5− | 0.1+ |
| 2000 07 06 | 691 | 0.4+ | 1.1+ | 2003 02 10 | 699 | 0.0 | 0.2+ | 2005 09 01 | E12 | 0.5− | 1.0+ |
| 2000 07 06 | 691 | 0.4− | 0.1+ | 2003 02 10 | 699 | 0.4− | 0.8+ | 2005 09 01 | E12 | 0.4+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 06 | 691 | 0.9− | 0.3− | 2003 02 10 | 699 | 0.2+ | 0.2+ | 2005 09 01 | E12 | 0.1− | 0.7+ |
| 2002 11 16 | 699 | 0.7+ | 0.1− | 2003 02 10 | 699 | 0.6− | 0.3− | 2005 09 01 | E12 | 0.4− | 0.4+ |
| 2002 11 16 | 699 | 1.0+ | 0.0 | 2004 04 25 | 291 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2002 11 16 | 699 | (0.1− | 1.7+) | 2004 04 25 | 291 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.4− | 0.2+ |
| 2002 11 16 | 699 | 0.6− | 1.0+ | 2004 04 25 | 291 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | (0.5+ | 1.6+) | 2004 05 24 | 704 | 0.0 | 0.5− | 2006 11 15 | 703 | 0.3− | 0.3+ |
| 2002 12 10 | 704 | 0.6− | 0.4+ | 2004 05 24 | 704 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.5− | 0.8+ |
| 2002 12 10 | 704 | 0.2+ | 0.9− | 2004 05 24 | 704 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2002 12 28 | 704 | 0.1+ | 0.2+ | 2004 05 24 | 704 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.0 |

**(143221)∗ 2002 YL$_6$**

Discovered 2002 Dec. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.09808 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22843379 | $\omega$ | 292.65793 | | +0.99434774 | −0.05594366 | |
| $a$ | 2.6503047 | $\Omega$ | 70.64471 | | +0.08925097 | +0.90076534 | |
| $e$ | 0.3498648 | $i$ | 5.48836 | | −0.05750503 | +0.43068795 | |
| $P$ | 4.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 09 | 691 | 0.1− | 0.2− | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 1996 04 09 | 691 | 0.6− | 0.2− | 2004 03 30 | 691 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.0 |
| 1996 04 09 | 691 | 0.6− | 0.0 | 2004 03 30 | 691 | 0.0 | 0.5+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.9− | 0.1− |
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.1+ |
| 2000 05 04 | 645 | 0.1− | 0.0 | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.8− | 0.0 |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2002 11 21 | 644 | 0.4+ | 0.5+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.1− |
| 2002 11 21 | 644 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2002 11 21 | 644 | 0.0 | 0.3− | 2005 05 19 | 644 | 0.7+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2002 12 02 | 608 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2002 12 02 | 608 | 0.5− | 0.0 | 2006 08 29 | 703 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2002 12 02 | 608 | 0.4+ | 0.5+ | 2006 08 29 | 703 | 0.7− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.2− |
| 2002 12 11 | 644 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2002 12 11 | 644 | 0.5− | 0.2− | 2006 09 01 | 704 | 1.0+ | 0.5− | 2006 11 19 | 691 | (3.5+ | 1.9−) |
| 2002 12 28 | 699 | 0.6+ | 0.9+ | 2006 09 01 | 704 | 1.5+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 12 28 | 699 | 1.0+ | 1.4+ | 2006 09 01 | 704 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 12 28 | 699 | 0.3− | 0.1− | 2006 09 01 | 704 | 0.6+ | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2002 12 28 | 699 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.6+ | 2006 11 21 | 704 | 0.3+ | 0.3− |
| 2002 12 31 | 645 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.0 | 1.5+ | 2006 11 21 | 704 | 0.1+ | 0.4− |
| 2002 12 31 | 645 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 704 | 1.7+ | 1.6+ | 2006 11 21 | 704 | 0.1+ | 0.4− |
| 2002 12 31 | 704 | 0.4+ | 1.6+ | 2006 09 20 | 704 | 0.6+ | 1.4− | 2006 11 28 | 704 | 0.3+ | 0.3+ |
| 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 704 | (0.5+ | 2.5−) | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2002 12 31 | 704 | 1.1+ | 2.0+ | 2006 09 20 | 704 | 1.0+ | 0.5+ | 2006 11 28 | 704 | 0.1+ | 0.7+ |
| 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.6− | 2006 11 28 | 704 | (0.4− | 2.0+) |
| 2003 01 05 | 704 | 0.8+ | 0.4− | 2006 09 20 | 704 | 0.3− | 0.5− | 2006 11 28 | 704 | 0.2− | 0.1+ |
| 2003 01 05 | 704 | 0.1− | 0.6− | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.3+ |
| 2003 01 05 | 704 | 0.1− | 0.5− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.4+ | 0.3+ |
| 2003 03 07 | 644 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 12 01 | 704 | 0.8+ | 0.1+ |
| 2003 03 07 | 644 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 12 01 | 704 | (0.2+ | 2.3−) |
| 2003 03 07 | 644 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.2− | | | | |

**(143222)∗ 2002 YB$_{10}$ = 2004 JQ$_2$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65407)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.98753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22016135 | $\omega$ | 270.46543 | | −0.92233632 | +0.38105165 | |
| $a$ | 2.7162849 | $\Omega$ | 291.93453 | | −0.32136663 | −0.84848424 | |
| $e$ | 0.0747034 | $i$ | 3.95592 | | −0.21452087 | −0.36725213 | |
| $P$ | 4.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 25 | 691 | 0.2+ | 0.4− | 2003 01 08 | 704 | 0.8+ | 0.4+ | 2004 05 16 | 704 | 0.2+ | 0.2+ |
| 1997 11 25 | 691 | 0.1+ | 0.5− | 2003 01 08 | 704 | (0.2+ | 1.6+) | 2004 05 19 | 704 | 0.2+ | 0.0 |
| 1997 11 25 | 691 | 0.1+ | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.2− | 2004 05 19 | 704 | 0.1− | 0.0 |
| 2001 09 28 | 644 | 0.3− | 0.4+ | 2003 01 08 | 704 | 0.3− | 0.4+ | 2004 05 19 | 704 | 0.4− | 0.2+ |
| 2001 09 28 | 644 | 0.4− | 0.3+ | 2004 04 16 | E12 | 0.6+ | 0.7+ | 2005 08 06 | 644 | 0.0 | 0.7+ |
| 2001 09 28 | 644 | 0.0 | 0.6+ | 2004 04 16 | E12 | 0.9+ | 1.0+ | 2005 08 06 | 644 | 0.3− | 0.4+ |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2004 04 16 | E12 | 0.9+ | 0.4+ | 2005 08 06 | 644 | 0.1− | 0.5+ |
| 2002 12 31 | 704 | 0.4+ | 0.4− | 2004 04 16 | E12 | 0.7+ | 0.0 | 2005 08 24 | 644 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | 0.5+ | 0.2− | 2004 05 08 | 644 | 0.3+ | 0.0 | 2005 08 24 | 644 | 0.3− | 0.3+ |
| 2003 01 01 | 704 | 0.3− | 0.1+ | 2004 05 08 | 644 | 0.1+ | 0.3+ | 2005 08 24 | 644 | 0.4− | 0.1+ |
| 2003 01 01 | 704 | 0.7− | 0.2+ | 2004 05 08 | 644 | 0.8+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2003 01 01 | 704 | 0.3− | 0.5− | 2004 05 12 | E12 | 0.5− | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.6+ |
| 2003 01 08 | 704 | 0.1− | 0.2− | 2004 05 12 | E12 | 0.3− | 0.7+ | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2003 01 08 | 704 | 0.4− | 0.2+ | 2004 05 12 | E12 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.4+ |
| 2003 01 08 | 704 | 0.5+ | 0.1+ | 2004 05 12 | E12 | (1.0− | 1.9+) | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2003 01 08 | 704 | 0.4− | 0.4− | 2004 05 13 | 699 | 0.6− | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2003 01 08 | 704 | 0.1− | 0.5+ | 2004 05 13 | 699 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2003 01 08 | 704 | 0.0 | 0.8+ | 2004 05 13 | 699 | 0.8− | 0.8+ | 2006 10 27 | 691 | 0.1+ | 0.6+ |
| 2003 01 08 | 704 | 0.5+ | 0.6− | 2004 05 13 | 699 | (0.2− | 3.1+) | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2003 01 08 | 704 | 0.1− | 0.1+ | 2004 05 15 | 704 | 0.5− | 0.5+ | 2006 11 24 | 703 | 0.2− | 0.1+ |
| 2003 01 08 | 704 | 0.4− | 0.5+ | 2004 05 15 | 704 | 0.0 | 0.0 | 2006 11 24 | 703 | 0.1− | 0.4+ |
| 2003 01 08 | 704 | 0.4− | 0.3+ | 2004 05 15 | 704 | 0.6+ | 0.3+ | 2006 11 24 | 703 | 0.2− | 0.4+ |
| 2003 01 08 | 704 | 0.2+ | 0.2+ | 2004 05 16 | 704 | 0.5+ | 0.2− | 2006 11 24 | 703 | 0.3+ | 0.9+ |
| 2003 01 08 | 704 | 0.3+ | 0.3+ | 2004 05 16 | 704 | 0.9+ | 0.7− | | | | |
| 2003 01 08 | 704 | 0.3− | 0.4+ | 2004 05 16 | 704 | 0.7− | 0.1+ | | | | |

**(143223)∗ 2002 YN$_{11}$**

Discovered 2002 Dec. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.51374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18005211 | $\omega$ | 178.91123 | | −0.90872227 | +0.38151098 | |
| $a$ | 3.1060176 | $\Omega$ | 25.66934 | | −0.38585216 | −0.61308465 | |
| $e$ | 0.0839246 | $i$ | 23.01092 | | −0.15919155 | −0.69179230 | |
| $P$ | 5.47 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | (0.4− | 1.8+) | 2004 03 31 | 704 | 0.4+ | 0.7+ | 2005 07 03 | E12 | 0.4− | 0.5+ |
| 2001 10 14 | 704 | 0.4− | 0.6+ | 2004 03 31 | 704 | 0.3+ | 0.4+ | 2005 07 03 | E12 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 0.8− | 0.1+ | 2004 03 31 | 704 | 0.2+ | 0.8+ | 2005 07 27 | E12 | 0.4+ | 0.6+ |
| 2001 10 14 | 704 | (1.1− | 1.7+) | 2004 03 31 | 704 | 0.1+ | 0.6+ | 2005 07 27 | E12 | 0.3− | 0.3+ |
| 2001 10 14 | 704 | 0.2− | 0.4+ | 2004 03 31 | 704 | 0.3+ | 0.9+ | 2005 07 27 | E12 | 0.4+ | 0.2+ |
| 2002 12 30 | 704 | 0.3+ | 1.0+ | 2004 04 11 | 703 | 0.7+ | 0.5+ | 2005 07 27 | E12 | 0.3− | 0.9+ |
| 2002 12 30 | 704 | (2.0− | 1.7+) | 2004 04 11 | 703 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.2+ | 0.9+ |
| 2002 12 30 | 704 | 0.7+ | 0.3+ | 2004 04 11 | 703 | 0.9+ | 0.2− | 2006 09 18 | 703 | 1.1− | 0.8+ |
| 2002 12 30 | 704 | 0.6− | 0.9+ | 2004 04 11 | 703 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.9+ |
| 2003 01 01 | 704 | (0.5+ | 1.7+) | 2004 04 16 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.3+ |
| 2003 01 01 | 704 | 0.5− | 0.8+ | 2004 04 16 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.6+ | 0.4+ |
| 2003 01 01 | 704 | 1.0+ | 0.1+ | 2004 04 16 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.0 | 1.1+ |
| 2003 01 01 | 704 | 0.9− | 0.3+ | 2004 04 17 | 704 | 0.7+ | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.4+ |
| 2003 01 01 | 704 | 0.2+ | 0.8+ | 2004 04 17 | 704 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.7+ |
| 2003 01 01 | 704 | 0.6− | 0.2− | 2004 04 17 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.7− | 0.7− |
| 2003 01 01 | 704 | 0.7+ | 0.6+ | 2004 04 17 | 704 | 1.0+ | 0.1− | 2006 09 30 | 704 | 0.0 | 0.6+ |
| 2003 01 01 | 704 | 0.7+ | 1.2+ | 2004 04 20 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2003 01 05 | 704 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 704 | 1.0− | 1.3+ |
| 2003 01 05 | 704 | 0.1+ | 0.4+ | 2004 04 20 | 704 | 0.1+ | 0.4− | 2006 09 30 | 703 | (1.3− | 2.3+) |
| 2003 01 05 | 704 | 0.0 | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.2− | 2006 09 30 | 704 | 0.1− | 0.3+ |
| 2003 01 05 | 704 | 0.3− | 0.3+ | 2004 04 26 | 704 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.7− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.8+ | 0.6+ | 2004 04 26 | 704 | 0.7+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.4+ | | |
| 2003 02 07 | 699 | 1.0+ | 0.7− | 2004 04 26 | 704 | 0.4+ | 0.6− | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2003 02 07 | 699 | 0.4+ | 0.1+ | 2004 04 26 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.7− | | |
| 2003 02 07 | 699 | 0.6+ | 0.3+ | 2004 04 26 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.9+ | | |
| 2003 02 07 | 699 | 0.2+ | 0.2− | 2004 04 26 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.3+ | | |
| 2004 03 16 | 703 | 0.5− | 1.0+ | 2004 04 26 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.4+ | | |
| 2004 03 16 | 703 | 0.0 | 0.4+ | 2004 04 26 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.5+ | | |
| 2004 03 16 | 703 | 0.7+ | 1.1+ | 2004 04 26 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.2+ | | |
| 2004 03 16 | 703 | 1.2− | 0.2− | 2004 04 26 | 704 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.5− | 0.3+ | | |
| 2004 03 17 | 704 | 1.4− | 1.5+ | 2004 04 30 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.6− | 0.3+ | | |
| 2004 03 17 | 704 | 1.2+ | 0.1+ | 2004 04 30 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2004 03 17 | 704 | 0.2− | 0.1+ | 2004 04 30 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.6− | 0.2+ | | |
| 2004 03 17 | 704 | 0.5+ | 0.0 | 2004 05 09 | 703 | 0.4− | 1.0− | 2006 10 22 | 703 | (0.5− | 1.7+) | | |
| 2004 03 18 | 704 | 0.0 | 0.4+ | 2004 05 09 | 703 | 0.2− | 0.1+ | 2006 10 22 | 703 | 1.4− | 0.6+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.4+ | 2004 05 09 | 703 | 0.2+ | 1.4− | 2006 10 22 | 703 | 1.1− | 0.2+ | | |
| 2004 03 18 | 704 | 0.4− | 0.2+ | 2004 05 09 | 703 | 0.6− | 0.3+ | 2006 10 22 | 703 | 0.3− | 1.0+ | | |
| 2004 03 18 | 704 | 1.1− | 0.3− | 2004 05 15 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2004 03 18 | 704 | 0.2− | 0.8− | 2004 05 15 | 704 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2004 03 25 | 699 | 0.4− | 0.1− | 2004 05 15 | 704 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.2− | 0.3+ | | |
| 2004 03 25 | 699 | 0.5− | 0.6+ | 2004 05 15 | 704 | 0.5+ | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2004 03 25 | 699 | (0.4− | 1.9+) | 2004 05 15 | 704 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.2+ | | |
| 2004 03 25 | 699 | 0.2+ | 1.4− | 2004 07 21 | E12 | (0.7− | 3.5−) | 2006 11 21 | 704 | 0.3− | 0.4− | | |
| 2004 03 27 | 704 | 1.2+ | 0.1− | 2004 07 21 | E12 | 1.1− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 0.3− | | |
| 2004 03 27 | 704 | (0.1+ | 2.3+) | 2004 07 21 | E12 | 0.3− | 0.7+ | 2006 11 21 | 704 | 0.5− | 0.3− | | |
| 2004 03 27 | 704 | (0.1− | 2.7+) | 2004 07 21 | E12 | 0.6+ | 0.5+ | 2006 11 21 | 704 | 0.4− | 1.2+ | | |
| 2004 03 27 | 704 | 0.5+ | 0.2+ | 2005 07 03 | E12 | 0.1+ | 0.2+ | | | | | | |
| 2004 03 27 | 704 | 0.8+ | 0.1+ | 2005 07 03 | E12 | 0.3− | 0.1+ | | | | | | |

**(143224)∗ 2002 YX$_{12}$ = 1995 DT**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47241)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.47671 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23796974 | $\omega$ | 266.31358 | | −0.76352192 | | −0.64307193 |
| $a$ | 2.5790211 | $\Omega$ | 233.65471 | | +0.61779842 | | −0.70072317 |
| $e$ | 0.1498625 | $i$ | 4.20779 | | +0.18804093 | | −0.30894260 |
| $P$ | 4.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 20 | 104 | 0.5− | 0.7− | 2004 05 16 | E12 | (1.8+ | 0.3+) | 2006 11 11 | 703 | 0.8− | 0.4+ | | |
| 1995 02 20 | 104 | 0.0 | 0.3− | 2004 05 16 | E12 | 0.9− | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.1+ | | |
| 1995 02 20 | 104 | 0.5+ | 0.1− | 2004 05 16 | E12 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.7− | | |
| 1995 02 20 | 104 | 0.1+ | 0.3+ | 2004 05 16 | E12 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.4− | | |
| 1995 02 21 | 104 | 0.2− | 0.5− | 2004 06 09 | E12 | 1.1+ | 0.8+ | 2006 11 18 | 704 | 0.0 | 0.1− | | |
| 1995 02 21 | 104 | 0.7− | 0.9+ | 2004 06 09 | E12 | 1.1+ | 0.5+ | 2006 11 18 | 704 | 0.7− | 0.9+ | | |
| 2001 09 11 | 704 | 0.8− | 0.1+ | 2004 06 09 | E12 | 0.3+ | 0.6− | 2006 11 21 | 704 | 0.6+ | 0.5+ | | |
| 2001 09 11 | 704 | 0.2+ | 0.3+ | 2004 06 09 | E12 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.1+ | | |
| 2001 09 11 | 704 | 0.8+ | 0.2+ | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.6+ | | |
| 2001 09 11 | 704 | 0.5+ | 0.1− | 2005 07 30 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.4+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.5+ | 2005 07 30 | 644 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.4− | 2005 07 31 | 644 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2002 12 11 | 704 | 0.7+ | 0.2+ | 2005 07 31 | 644 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.2− | 0.1− | | |
| 2002 12 31 | 704 | 0.9+ | 0.1+ | 2005 07 31 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.4− | 0.2− | | |
| 2002 12 31 | 704 | 0.5+ | 0.8+ | 2006 09 27 | G96 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.1− | | |
| 2002 12 31 | 704 | 0.4+ | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.2− | 0.0 | | |
| 2003 01 02 | 704 | (2.1− | 0.0 ) | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2003 01 02 | 704 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.0 | 0.0 | | |
| 2003 01 02 | 704 | 0.9− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2003 01 02 | 704 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2003 01 02 | 704 | 0.3− | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2004 05 15 | 704 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2004 05 15 | 704 | 0.5+ | 1.2+ | 2006 10 27 | G96 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.0 | | |
| 2004 05 15 | 704 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.6+ | | |
| 2004 05 15 | 704 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 1.7+ | 0.6+ | | |
| 2004 05 16 | 704 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.5+ | | |
| 2004 05 16 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.5− | 0.5− | 2006 11 29 | 704 | 0.1− | 0.1+ | | |
| 2004 05 16 | 704 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.2− | 2006 11 29 | 704 | 0.4− | 0.6+ | | |
| 2004 05 16 | 704 | 0.7− | 0.3− | 2006 11 11 | 703 | 1.2− | 0.1− | | | | | | |

**(143225)∗ 2002 YF$_{13}$ = 2004 HT$_{40}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61683)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.70124 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21815930 | $\omega$ | 172.08400 | | +0.38665032 | | −0.92076748 |
| $a$ | 2.7328779 | $\Omega$ | 255.15786 | | +0.84316033 | | +0.37572014 |
| $e$ | 0.0858573 | $i$ | 3.07500 | | +0.37360700 | | +0.10498393 |
| $P$ | 4.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 910 | 1.0+ | 0.6+ | 2002 12 05 | 704 | 0.2− | 0.1− | 2006 10 29 | 704 | 0.3+ | 0.2+ | | |
| 1997 10 05 | 910 | 0.9+ | 0.4+ | 2002 12 31 | 704 | 0.2− | 0.1+ | 2006 10 29 | 704 | 0.4− | 0.8− | | |
| 1997 10 05 | 910 | 0.4+ | 0.5+ | 2002 12 31 | 704 | 0.6− | 0.1− | 2006 10 29 | 704 | 0.4− | 0.1+ | | |
| 1997 11 06 | 704 | 0.8− | 0.5− | 2002 12 31 | 704 | 0.3− | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 1997 11 06 | 704 | (1.6− | 2.7−) | 2002 12 31 | 704 | 0.6+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 1997 11 06 | 704 | 0.5− | 0.0 | 2003 01 02 | 704 | (1.6+ | 0.9+) | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 1997 11 06 | 704 | 0.9− | 1.6+ | 2003 01 02 | 704 | 0.1+ | 1.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 1997 12 05 | 691 | 0.1− | 0.2− | 2003 01 02 | 704 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 1997 12 05 | 691 | 0.4− | 0.6− | 2003 01 02 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− | | |
| 1997 12 05 | 691 | 0.1+ | 0.6− | 2003 01 02 | 704 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2000 05 28 | 704 | 0.6+ | 0.5+ | 2003 01 04 | 704 | 1.0+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2000 05 28 | 704 | 0.5− | 0.4+ | 2003 01 04 | 704 | 0.2+ | 1.0− | 2006 11 10 | 691 | (1.6+ | 3.2+) | | |
| 2000 05 28 | 704 | 0.8− | 0.4− | 2003 01 04 | 704 | (0.1− | 1.6−) | 2006 11 14 | 703 | 0.9+ | 0.2− | | |
| 2001 08 23 | 699 | (2.5− | 0.0 ) | 2003 01 04 | 704 | 0.6+ | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.7+ | | |
| 2001 08 23 | 699 | 0.3− | 0.7− | 2003 01 04 | 704 | 1.2+ | 1.1− | 2006 11 14 | 703 | 0.2+ | 1.4− | | |
| 2001 08 23 | 699 | (0.2+ | 2.1+) | 2003 01 04 | 704 | 0.4− | 0.8− | 2006 11 14 | 703 | 0.4− | 1.1− | | |
| 2001 08 23 | 699 | (2.0+ | 0.3+) | 2003 01 04 | 704 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.3− | 0.2+ | | |
| 2001 09 12 | 704 | 0.5+ | 0.0 | 2003 01 04 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.5− | 0.3+ | | |
| 2001 09 12 | 704 | 0.5+ | 0.4+ | 2003 01 04 | 704 | 0.1− | 0.6− | 2006 11 15 | 691 | 0.1+ | 0.9+ | | |
| 2001 09 12 | 704 | (1.5+ | 1.8+) | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.3+ | | |
| 2001 09 12 | 704 | 0.6+ | 0.3+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 20 | 704 | (1.2+ | 1.9+) | 2004 04 25 | 691 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2001 09 20 | 704 | (0.5+ | 1.8+) | 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.5− | 0.1+ | | |
| 2001 09 20 | 704 | (0.8+ | 2.8+) | 2004 04 25 | 691 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 1.1+ | | |
| 2001 09 20 | 704 | (1.8+ | 1.0+) | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.2+ | | |
| 2001 09 20 | 704 | 1.3+ | 0.7+ | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.3− | 1.1+ | | |
| 2001 10 11 | 644 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.9+ | 0.0 | | |
| 2001 10 11 | 644 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.6− | | |
| 2001 10 11 | 644 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.6− | 1.2+ | | |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.3− | | | | | | |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 10 29 | 704 | 0.1− | 0.0 | | | | | | |

**(143226)∗ 2002 YA$_{16}$ = 1995 YC$_{25}$ = 2000 GU$_{35}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43245)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.20812 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27193826 | $\omega$ | 215.73747 | | −0.73195539 | | −0.68104329 |
| $a$ | 2.3595137 | $\Omega$ | 281.32366 | | +0.62989177 | | −0.66487984 |
| $e$ | 0.1688975 | $i$ | 1.19954 | | +0.25976463 | | −0.30678142 |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 25 | 566 | 1.2+ | 0.1+ | 2002 11 14 | 704 | 0.1+ | 0.4− | 2003 01 04 | 704 | 0.1+ | 0.8+ | | |
| 1995 12 25 | 566 | 0.0 | 0.4+ | 2002 11 14 | 704 | (1.7− | 0.3+) | 2005 10 27 | G96 | 0.3− | 0.1+ | | |
| 1995 12 25 | 566 | 0.8+ | 0.1+ | 2002 11 28 | 608 | 0.1− | 0.0 | 2005 10 27 | G96 | 0.4− | 0.3+ | | |
| 1995 12 27 | 566 | 0.7− | 0.1− | 2002 11 28 | 608 | 0.5− | 0.3− | 2005 10 27 | G96 | 0.0 | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 566 | 1.0− | 0.5− | 2002 11 28 | 608 | 0.2− | 0.2− | 2005 10 27 | G96 | 0.6− | 0.3+ |
| 1995 12 27 | 566 | 1.1− | 0.2− | 2002 12 05 | 704 | 0.0 | 1.0+ | 2006 09 28 | G96 | 0.1− | 0.6− |
| 2000 04 05 | 704 | 0.3+ | 0.1+ | 2002 12 05 | 704 | 0.6− | 1.1+ | 2006 09 28 | G96 | 0.5− | 0.0 |
| 2000 04 05 | 704 | 0.3+ | 0.2+ | 2002 12 05 | 704 | 1.1+ | 1.2+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2000 04 05 | 704 | 0.2+ | 0.0 | 2002 12 05 | 704 | 0.6+ | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 2000 04 05 | 704 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.8+ | 0.6+ | 2006 10 20 | 695 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.4− | 0.3− | 2002 12 05 | 608 | 0.5+ | 0.3− | 2006 10 20 | 695 | 0.2+ | 0.2− |
| 2000 04 06 | 704 | 0.1+ | 0.3+ | 2002 12 05 | 608 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2000 04 06 | 704 | 0.1− | 0.3+ | 2002 12 05 | 608 | 0.5+ | 1.0− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2000 04 06 | 704 | 0.0 | 0.4+ | 2002 12 10 | 704 | 0.4+ | 1.0+ | 2006 10 21 | G96 | 0.3− | 0.4− |
| 2000 04 06 | 704 | 0.4− | 0.4+ | 2002 12 10 | 704 | 0.5− | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2000 04 06 | 704 | 0.0 | 1.0+ | 2002 12 10 | 704 | 0.1+ | 0.9− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2000 04 07 | 704 | 0.6+ | 0.8− | 2002 12 10 | 704 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2000 04 07 | 704 | 0.5− | 0.1− | 2002 12 10 | 704 | 0.6− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2000 04 07 | 704 | 0.3− | 0.2+ | 2002 12 10 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.5− |
| 2000 04 07 | 704 | 0.2− | 0.5+ | 2002 12 10 | 704 | 0.5+ | 1.1+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 04 07 | 704 | 0.4+ | 0.5+ | 2002 12 10 | 704 | (1.1+ | 1.7−) | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2000 04 07 | 704 | 0.0 | 0.5+ | 2002 12 10 | 333 | 0.5− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2000 04 07 | 704 | 1.0+ | 0.3+ | 2002 12 10 | 333 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.5− | 1.0− |
| 2000 04 07 | 704 | 1.6+ | 1.3+ | 2002 12 31 | 704 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2000 05 04 | 699 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.8− | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2000 05 04 | 699 | 0.7+ | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.4− | 2006 11 15 | G96 | 1.4− | 0.4− |
| 2000 05 04 | 699 | 0.5− | 0.8− | 2002 12 31 | 704 | 0.6− | 0.8+ | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2000 05 04 | 699 | 0.2− | 0.1− | 2003 01 04 | 704 | 0.4− | 0.7− | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2002 11 14 | 704 | (2.4− | 0.6+) | 2003 01 04 | 704 | 0.6+ | 0.3− | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2002 11 14 | 704 | 1.0− | 1.1+ | 2003 01 04 | 704 | 1.3+ | 1.3+ | 2006 12 01 | G96 | 0.1+ | 0.5− |

**(143227)∗ 2002 YK$_{17}$ = 2000 KC$_{78}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41385)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 261.94134 | | (2000.0) | | | |
| $n$ | 0.24433146 | $\omega$ | 73.19174 | | −0.98833931 | −0.10375937 |
| $a$ | 2.5340575 | $\Omega$ | 100.74693 | | +0.05474376 | −0.92508104 |
| $e$ | 0.1557730 | $i$ | 6.51319 | | +0.14208634 | −0.36532051 |
| $P$ | 4.03 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.6+ | 1.9+ | 2003 01 08 | 704 | 0.8− | 0.5+ | 2004 06 15 | 704 | (1.7+ | 1.2−) |
| 2000 05 27 | 704 | 0.2− | 1.1+ | 2003 01 08 | 704 | 0.4− | 0.3+ | 2004 06 15 | 704 | (1.9+ | 0.1+) |
| 2000 05 27 | 704 | 0.1+ | 2.0+ | 2003 01 08 | 704 | 0.0 | 1.3+ | 2004 06 15 | 704 | (0.8+ | 1.8+) |
| 2000 05 27 | 704 | 0.0 | 1.0+ | 2003 01 08 | 704 | 0.8+ | 0.8− | 2004 06 18 | 704 | 0.8− | 0.7+ |
| 2000 05 27 | 704 | 0.5− | 1.2+ | 2004 03 20 | 704 | 1.0− | 0.2+ | 2004 06 18 | 704 | 0.2− | 0.3+ |
| 2000 06 01 | 608 | 0.5+ | 1.6− | 2004 03 20 | 704 | (1.8− | 1.5+) | 2004 06 18 | 704 | 0.0 | 0.4+ |
| 2000 06 01 | 608 | 0.2+ | 0.6− | 2004 03 20 | 704 | 0.0 | 1.5+ | 2004 06 18 | 704 | 0.4− | 0.1− |
| 2000 06 01 | 608 | 0.1− | 1.0− | 2004 04 20 | 704 | 0.8+ | 0.2− | 2004 06 18 | 704 | 0.2+ | 0.8+ |
| 2002 11 14 | 704 | 0.8− | 0.2− | 2004 04 20 | 704 | 1.0+ | 0.2− | 2005 07 30 | 644 | 0.2− | 0.0 |
| 2002 11 14 | 704 | 1.1− | 0.6+ | 2004 04 20 | 704 | 0.7− | 0.1− | 2005 07 30 | 644 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.9+ | 0.5− | 2004 05 15 | 704 | 1.1+ | 0.4− | 2005 07 30 | 644 | 0.2− | 0.3+ |
| 2002 12 11 | 704 | (2.6− | 1.5−) | 2004 05 15 | 704 | 0.7+ | 0.6− | 2005 08 27 | 644 | 0.3− | 0.5+ |
| 2002 12 11 | 704 | (0.6− | 2.4−) | 2004 05 15 | 704 | 0.2+ | 0.0 | 2005 08 27 | 644 | 0.2− | 0.4+ |
| 2002 12 11 | 704 | (0.0 | 2.8−) | 2004 05 15 | 704 | 0.8+ | 0.6− | 2005 08 27 | 644 | 0.2− | 0.4+ |
| 2002 12 31 | 704 | 0.5− | 0.4+ | 2004 05 18 | 704 | 0.5+ | 0.9+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.2+ | 0.6− | 2004 05 18 | 704 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.5− | 0.1− |
| 2002 12 31 | 704 | (2.2− | 0.5−) | 2004 05 18 | 704 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.5− | 0.1− |
| 2002 12 31 | 704 | 0.5− | 0.4+ | 2004 05 18 | 704 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2002 12 31 | 704 | 0.6− | 0.2+ | 2004 05 18 | 704 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2003 01 04 | 704 | 0.9+ | 0.3+ | 2004 05 22 | 704 | 0.5− | 0.2+ | 2006 11 22 | 691 | 0.3+ | 1.0+ |
| 2003 01 04 | 704 | 1.1+ | 0.9+ | 2004 05 22 | 704 | 0.8− | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 2003 01 04 | 704 | (2.4+ | 0.6−) | 2004 05 22 | 704 | 0.0 | 0.1+ | | | | |
| 2003 01 04 | 704 | 1.0+ | 0.2+ | 2004 06 15 | 704 | 0.2+ | 0.3− | | | | |

**(143228)∗ 2002 YV$_{17}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.91456 | | (2000.0) | | | |
| $n$ | 0.23896930 | $\omega$ | 274.24828 | | +0.97875359 | −0.18937335 |
| $a$ | 2.5718244 | $\Omega$ | 96.68141 | | +0.20502006 | +0.89853216 |
| $e$ | 0.2491885 | $i$ | 4.53942 | | +0.00286078 | +0.39595162 |
| $P$ | 4.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 11 14 | 704 | 0.5+ | 1.0+ |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.4− | 0.5+ |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.5− | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2002 12 10 | 704 | 0.4+ | 0.4− | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2002 12 10 | 704 | 0.4− | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2002 12 10 | 704 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2002 12 31 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 2002 12 31 | 704 | 1.0+ | 1.1+ | 2006 10 19 | 703 | 1.1+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2003 01 04 | 704 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.6− |
| 2003 01 04 | 704 | 0.8− | 1.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2003 01 04 | 704 | 0.5+ | 1.3− | 2006 10 23 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2003 01 04 | 704 | 0.4− | 0.8− | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.0 |
| 2005 06 06 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 704 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2005 06 06 | 691 | 0.3+ | 0.7+ | 2006 10 27 | 704 | 0.7+ | 0.8+ | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2005 06 06 | 691 | 0.3+ | 0.6+ | 2006 10 27 | 704 | 1.4− | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.9+ |
| 2005 06 10 | 691 | 0.2+ | 0.5+ | 2006 11 02 | 703 | 0.5− | 0.9− | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2005 06 10 | 691 | 0.0 | 0.7+ | 2006 11 02 | 703 | 0.3− | 0.2− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2005 06 10 | 691 | 0.2+ | 0.7+ | 2006 11 02 | 703 | 0.2− | 0.4− | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2006 08 29 | 703 | 0.9− | 0.1+ | 2006 11 02 | 703 | 0.5− | 0.6+ | 2006 11 24 | 691 | 0.3− | 0.1− |
| 2006 08 29 | 703 | 0.2− | 0.6− | 2006 11 13 | 703 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.2+ | 1.4+ |
| 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2006 08 29 | 703 | 0.7+ | 0.2− | 2006 11 13 | 703 | 0.5− | 0.4− | 2006 11 29 | 704 | 0.0 | 0.8+ |
| 2006 09 19 | 699 | 0.5+ | 0.5− | 2006 11 13 | 703 | 0.3− | 0.6− | 2006 11 29 | 704 | 0.3− | 1.5+ |
| 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2006 09 19 | 699 | 1.4− | 0.1+ | 2006 11 14 | 704 | 1.0+ | 1.0+ | | | | |

**(143229)∗ 2002 YY$_{17}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.90740 | | (2000.0) | | | |
| $n$ | 0.25764766 | $\omega$ | 266.07231 | | −0.21070382 | −0.97752543 |
| $a$ | 2.4459745 | $\Omega$ | 196.09635 | | +0.90650231 | −0.19273459 |
| $e$ | 0.1391349 | $i$ | 1.43080 | | +0.36586536 | −0.08542486 |
| $P$ | 3.83 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 1.3+ | 0.9+ | 2003 01 08 | 704 | 1.0− | 0.2+ | 2005 09 30 | G96 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.5+ | 0.1− | 2003 01 08 | 704 | 1.1− | 0.5+ | 2005 09 30 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.8+ | 0.4+ | 2003 01 08 | 704 | 0.2− | 0.3− | 2005 09 30 | G96 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.7+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.5− |
| 2002 12 10 | 704 | 0.1+ | 0.1+ | 2004 05 21 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.6− | 0.5− |
| 2002 12 10 | 704 | 0.6+ | 0.9+ | 2004 05 21 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.6− |
| 2002 12 10 | 704 | 0.1+ | 0.6+ | 2004 05 21 | 691 | 0.4− | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2002 12 10 | 704 | (1.6+ | 1.7+) | 2004 06 13 | 691 | 0.3+ | 0.5+ | 2006 10 29 | G96 | 0.2− | 0.4− |
| 2002 12 31 | 704 | 0.3− | 0.4+ | 2004 06 13 | 691 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.5− | 0.3+ | 2004 06 13 | 691 | 0.1− | 0.4+ | 2006 10 29 | G96 | 0.6− | 0.4− |
| 2002 12 31 | 704 | 0.2+ | 0.9+ | 2005 07 31 | 644 | 0.3− | 0.3+ | 2006 10 29 | G96 | 0.5+ | 0.0 |
| 2002 12 31 | 704 | (0.2+ | 2.3+) | 2005 07 31 | 644 | 0.1− | 0.7+ | 2006 11 18 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2005 07 31 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 2003 01 04 | 704 | (2.0− | 0.1+) | 2005 08 27 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.6+ | 0.2− |
| 2003 01 04 | 704 | (1.3− | 1.8+) | 2005 08 27 | 644 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.7− | 0.1+ | 2005 08 27 | 644 | 0.4− | 0.3+ | | | | |
| 2003 01 04 | 704 | 1.3− | 1.2+ | 2005 09 30 | G96 | 0.1+ | 0.0 | | | | |

**(143230)∗ 2002 YK$_{18}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.72170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23645271 | $\omega$ | 144.09680 | | +0.49448817 | −0.86641551 | |
| $a$ | 2.5900403 | $\Omega$ | 276.17361 | | +0.78031343 | +0.47764665 | |
| $e$ | 0.0958888 | $i$ | 3.99830 | | +0.38287388 | +0.14552606 | |
| $P$ | 4.17 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2005 06 14 | G96 | 0.1− | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2005 06 26 | 644 | 0.1− | 0.6+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2005 06 26 | 644 | 0.3+ | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2005 06 26 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.7− | 0.0 |
| 2002 12 10 | 704 | 0.3− | 0.2− | 2005 07 03 | G96 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 1.1+ |
| 2002 12 10 | 704 | 0.7− | 0.3− | 2005 07 03 | G96 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2002 12 10 | 704 | 0.1− | 0.0 | 2005 07 03 | G96 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2002 12 10 | 704 | 0.3+ | 0.1+ | 2005 07 03 | G96 | 0.5+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.5− |
| 2002 12 31 | 704 | 0.7− | 0.0 | 2006 10 19 | 703 | (1.6− | 0.9−) | 2006 11 23 | 703 | 0.4+ | 0.1+ |
| 2002 12 31 | 704 | 0.6− | 0.3− | 2006 10 19 | 703 | 0.8− | 0.7+ | 2006 11 23 | 703 | 0.0 | 0.5− |
| 2002 12 31 | 704 | (1.6− | 0.2+) | 2006 10 19 | 703 | 0.4+ | 0.1+ | 2006 11 23 | 703 | 0.5+ | 1.4− |
| 2002 12 31 | 704 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.2− | 0.3− | 2006 11 23 | 703 | 1.1+ | 1.1− |
| 2002 12 31 | 704 | 0.5− | 0.3− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 24 | 703 | 0.2− | 0.2− |
| 2003 01 04 | 704 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 24 | 703 | 0.1− | 0.9− |
| 2003 01 04 | 704 | 0.5− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 24 | 703 | 0.1− | 0.9− |
| 2003 01 04 | 704 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.6+ | 1.1+ | 2006 11 24 | 703 | 0.0 | 0.6− |
| 2003 01 04 | 704 | 0.1+ | 1.4+ | 2006 10 27 | 703 | (1.5+ | 1.7+) | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.1− | 1.1+ | 2006 10 27 | 703 | 0.5+ | 0.7− | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2003 01 05 | 291 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.0 | 0.8− | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2003 01 05 | 291 | 1.3+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.4+ |
| 2003 01 05 | 291 | 0.4+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.4+ |
| 2003 01 08 | 704 | 0.8− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.6+ | 0.2− |
| 2003 01 08 | 704 | 0.8− | 0.2− | 2006 10 29 | 704 | 1.1+ | 0.2− | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2003 01 08 | 704 | 0.8− | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2003 01 08 | 704 | 0.6− | 0.2− | 2006 10 29 | 704 | 0.5+ | 0.6− | 2006 11 28 | 704 | 0.7− | 0.2+ |
| 2003 01 08 | 704 | 0.9− | 0.3− | 2006 10 31 | 691 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.5+ |
| 2004 03 31 | 704 | (0.3− | 3.1+) | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.8+ | 0.7+ |
| 2004 03 31 | 704 | 0.4− | 0.8+ | 2006 10 31 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.7− | 0.3− |
| 2004 03 31 | 704 | 0.6− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.2+ |
| 2004 03 31 | 704 | (1.3− | 2.0+) | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 1.4+ | 1.2+ |
| 2004 04 09 | E12 | 0.8+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.3+ |
| 2004 04 09 | E12 | 0.6+ | 0.2− | 2006 11 16 | 704 | 0.4− | 0.1+ | 2006 11 28 | 704 | 1.0+ | 0.3+ |
| 2004 04 09 | E12 | 0.9+ | 0.5− | 2006 11 16 | 704 | 0.2− | 0.7+ | 2006 11 28 | 704 | 0.2+ | 1.5− |
| 2004 04 09 | E12 | 0.3− | 0.7− | 2006 11 16 | 704 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.1− |
| 2004 04 14 | 699 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.2− | 0.3+ | 2006 11 28 | 704 | 1.0+ | 0.2+ |
| 2004 04 14 | 699 | (1.8− | 1.6+) | 2006 11 16 | 704 | 0.3− | 0.2− | 2006 11 28 | 704 | 1.9+ | 0.2+ |
| 2004 04 14 | 699 | (1.3− | 2.2+) | 2006 11 16 | 704 | 0.6− | 0.4+ | 2006 11 28 | 704 | 1.1− | 1.0+ |
| 2004 04 14 | 699 | 0.9− | 1.3+ | 2006 11 16 | 704 | 0.9− | 0.7+ | 2006 11 28 | 704 | 0.2− | 0.9+ |
| 2005 06 08 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.2− | 0.3+ | 2006 12 01 | 704 | 0.7− | 0.2+ |
| 2005 06 08 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.7− | 0.4+ | 2006 12 01 | 704 | 0.5− | 0.4− |
| 2005 06 08 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.6− | 0.6+ | 2006 12 01 | 704 | 0.9− | 0.4+ |
| 2005 06 14 | G96 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.6+ | 1.0− | 2006 12 01 | 704 | 0.2− | 0.3+ |
| 2005 06 14 | G96 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.3− | 0.5+ |

**(143231)∗ 2002 YO$_{18}$ = 2005 GM$_{87}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75824)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.83535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22479950 | $\omega$ | 283.25741 | | +0.99045612 | −0.02841779 | |
| $a$ | 2.6787930 | $\Omega$ | 78.49361 | | +0.08301848 | +0.90409922 | |
| $e$ | 0.2812864 | $i$ | 7.91091 | | −0.11002096 | +0.42637662 | |
| $P$ | 4.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 21 | 691 | 0.2+ | 0.1+ | 2005 04 04 | G96 | (0.3+ | 1.5+) | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 1996 04 21 | 691 | 0.2+ | 0.4+ | 2005 04 11 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.1− | 0.0 |
| 1996 04 21 | 691 | 0.5− | 0.4− | 2005 04 11 | 691 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.4− | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2005 04 11 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.4+ | 2005 05 04 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2005 05 04 | 691 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.6+ | 0.5+ | 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 0.7+ | 1.1+ | 2005 05 11 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 2002 12 11 | 704 | 0.9− | 0.6− | 2005 05 11 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2005 05 11 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2002 12 11 | 704 | 1.1− | 0.2− | 2006 08 10 | 644 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.2− | 0.4− | 2006 08 10 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 12 31 | 704 | (1.2− | 3.6+) | 2006 08 10 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | (1.3− | 2.2+) | 2006 09 12 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | (1.7− | 0.6+) | 2006 09 12 | 704 | 0.9− | 1.1+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2002 12 31 | 704 | (0.3+ | 1.7+) | 2006 09 12 | 704 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | (0.2+ | 2.7+) | 2006 09 12 | 704 | 0.9− | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.5+ |
| 2003 01 04 | 704 | 0.3− | 0.1+ | 2006 09 17 | 699 | 0.2− | 0.7+ | 2006 10 28 | 703 | 0.0 | 1.0− |
| 2003 01 04 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 699 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.2− | 0.3− |
| 2003 01 04 | 704 | (0.4− | 1.6+) | 2006 09 17 | 699 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.0 | 0.4+ |
| 2003 01 04 | 704 | 0.4− | 1.4+ | 2006 09 17 | 699 | 0.2− | 0.6+ | 2006 11 17 | 703 | 0.1+ | 1.2+ |
| 2003 01 04 | 704 | 0.5+ | 1.2+ | 2006 09 25 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2003 01 08 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 0.4− | 0.1+ | 2006 11 17 | 703 | 1.1+ | 1.4− |
| 2003 01 08 | 704 | (0.5− | 1.8+) | 2006 09 25 | 703 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.8+ | 1.0− |
| 2003 01 08 | 704 | 0.2+ | 1.2+ | 2006 09 25 | 703 | 0.3+ | 0.1− | 2006 11 23 | 703 | 0.6+ | 0.3− |
| 2003 01 08 | 704 | 0.8− | 0.9+ | 2006 10 04 | 703 | 0.4− | 0.4+ | 2006 11 23 | 703 | 0.1+ | 0.1− |
| 2005 04 04 | G96 | 0.6− | 0.4+ | 2006 10 04 | 703 | 0.5+ | 0.5+ | 2006 11 23 | 703 | 0.4− | 0.1− |
| 2005 04 04 | G96 | 0.5− | 0.1+ | 2006 10 04 | 703 | 0.7− | 0.5+ | 2006 11 23 | 703 | 0.3− | 0.2− |
| 2005 04 04 | G96 | 0.7− | 0.3+ | 2006 10 04 | 703 | 0.1+ | 0.4+ | | | | |

**(143232)∗ 2002 YU$_{19}$ = 1992 EY$_{22}$ = 1999 CC$_{149}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41388)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.01898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25929742 | $\omega$ | 6.79335 | | −0.07480362 | −0.99417228 | |
| $a$ | 2.4355885 | $\Omega$ | 87.51712 | | +0.91121671 | −0.09976822 | |
| $e$ | 0.1462263 | $i$ | 4.45635 | | +0.40507841 | +0.04083847 | |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.9− | 0.4+ | 1999 02 14 | 691 | 0.5− | 0.4− | 2004 06 11 | 691 | 0.2− | 0.0 |
| 1992 03 04 | 809 | 0.8+ | 1.3− | 2002 12 05 | 704 | 0.6+ | 0.6+ | 2004 06 11 | 691 | 0.0 | 0.1+ |
| 1998 11 11 | 699 | 0.1+ | 0.7+ | 2002 12 05 | 704 | 0.4+ | 0.2+ | 2005 08 04 | 644 | 0.4− | 0.5+ |
| 1998 11 11 | 704 | 0.4+ | 1.3+ | 2002 12 05 | 704 | 0.4+ | 0.5+ | 2005 08 04 | 644 | 0.7− | 0.2+ |
| 1998 11 11 | 704 | 0.5− | 0.7− | 2002 12 05 | 704 | 0.5+ | 0.7+ | 2005 08 04 | 644 | 0.5− | 0.3+ |
| 1998 11 11 | 699 | 1.3+ | 0.9− | 2002 12 05 | 704 | 0.5+ | 1.1+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 1998 11 11 | 704 | 0.9+ | 0.5− | 2002 12 11 | 291 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.4− | 0.1− |
| 1998 11 11 | 699 | 0.8+ | 0.7− | 2002 12 11 | 291 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 1998 11 18 | 704 | 1.3+ | 0.5− | 2002 12 11 | 291 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.6+ | 0.1− |
| 1998 11 18 | 704 | 1.0+ | 0.9− | 2002 12 31 | 704 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.7− | 0.3− |
| 1998 11 18 | 704 | 0.2− | 0.9− | 2002 12 31 | 704 | 1.3− | 0.4− | 2006 10 17 | G96 | 0.7− | 0.1+ |
| 1998 11 18 | 704 | 0.8+ | 1.3− | 2002 12 31 | 704 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.7+ | 0.3+ |
| 1998 11 18 | 704 | (4.4− | 1.0+) | 2002 12 31 | 704 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 1998 11 24 | 699 | 0.4− | 0.1+ | 2003 01 04 | 704 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 1998 11 24 | 699 | 1.6+ | 1.6+ | 2003 01 04 | 704 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 699 | 0.4− | 1.5+ | 2003 01 04 | 704 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2+ | | |
| 1999 02 12 | 691 | 0.8− | 1.6− | 2003 01 04 | 704 | 0.1− | 1.0+ | 2006 11 16 | G96 | 0.5− | 0.3− | | |
| 1999 02 12 | 691 | 0.9+ | 0.2− | 2003 01 08 | 704 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.3− | 0.4− | | |
| 1999 02 12 | 691 | 0.3+ | 0.6− | 2003 01 08 | 704 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 1999 02 13 | 691 | 0.5− | 0.0 | 2003 01 08 | 704 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.3− | | |
| 1999 02 13 | 691 | 0.7− | 0.2+ | 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 11 21 | G96 | 1.7+ | 0.3+ | | |
| 1999 02 14 | 691 | 0.4− | 0.2− | 2003 01 08 | 704 | 0.2− | 0.3− | | | | | | |
| 1999 02 14 | 691 | 0.5− | 0.0 | 2004 06 11 | 691 | 0.1+ | 0.3− | | | | | | |

**(143233)∗ 2002 YK$_{20}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.60465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22710261 | $\omega$ | 123.40560 | | +0.79203161 | −0.60300631 | |
| $a$ | 2.6606513 | $\Omega$ | 273.86026 | | +0.52361795 | +0.75122261 | |
| $e$ | 0.0701967 | $i$ | 5.47719 | | +0.31386330 | +0.26841754 | |
| $P$ | 4.34 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.6+ | 0.1+ | 2003 01 04 | 704 | 0.0 | 0.9− | 2006 11 13 | 644 | 0.1− | 0.2− | | |
| 1993 12 14 | 691 | 0.7− | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.6− | 2006 11 14 | 703 | 0.1− | 1.1− | | |
| 1993 12 14 | 691 | 0.0 | 0.1+ | 2003 01 08 | 704 | 0.9− | 0.0 | 2006 11 14 | 703 | 0.1− | 0.6− | | |
| 2001 07 29 | 704 | 0.7− | 0.8− | 2003 01 08 | 704 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.5− | | |
| 2001 07 29 | 704 | 0.3+ | 1.0+ | 2003 01 08 | 704 | 0.6− | 0.3− | 2006 11 14 | 703 | 0.6− | 0.0 | | |
| 2001 07 29 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 703 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2001 08 15 | 608 | 0.0 | 1.2− | 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.5− | | |
| 2001 08 15 | 608 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.7− | | |
| 2001 08 15 | 608 | 0.5+ | 0.9+ | 2006 10 19 | 703 | 0.6− | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.4− | | |
| 2001 08 24 | 699 | 0.7− | 0.1+ | 2006 10 20 | A50 | 0.4+ | 0.7− | 2006 11 15 | 704 | (1.7+ | 0.6−) | | |
| 2001 08 24 | 699 | 0.3+ | 0.3− | 2006 10 27 | 703 | 0.3+ | 0.5+ | 2006 11 15 | 704 | (0.2+ | 1.7+) | | |
| 2001 08 24 | 699 | 1.1− | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.6+ | 2006 11 15 | 704 | (0.7+ | 2.1+) | | |
| 2001 08 24 | 699 | 0.1+ | 0.1− | 2006 10 27 | 703 | 1.2+ | 0.6+ | 2006 11 16 | 704 | (1.8+ | 1.1−) | | |
| 2001 09 08 | 704 | 0.5+ | 0.2− | 2006 10 27 | 703 | 0.4+ | 0.2+ | 2006 11 16 | 704 | (1.8− | 1.4+) | | |
| 2001 09 08 | 704 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.6− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.6+ | | |
| 2001 09 08 | 704 | 0.4+ | 0.3− | 2006 10 27 | 691 | 0.4+ | 0.1− | 2006 11 16 | 704 | (0.3+ | 2.6+) | | |
| 2001 09 08 | 704 | 0.1+ | 0.9− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.8+ | | |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.3+ | | |
| 2002 12 05 | 704 | 0.5− | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.4+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.9− | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.4− | 0.5+ | | |
| 2002 12 05 | 704 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2+ | | |
| 2002 12 10 | 704 | 1.2+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.7+ | | |
| 2002 12 10 | 704 | 1.0+ | 0.6− | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.2+ | | |
| 2002 12 10 | 704 | 1.1+ | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.8+ | | |
| 2002 12 31 | 704 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.0 | | |
| 2002 12 31 | 704 | 0.7− | 0.6− | 2006 11 11 | 703 | 0.4− | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.1− | | |
| 2002 12 31 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.2+ | 0.5− | | |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.5− | 2006 11 22 | 703 | 0.2+ | 0.2+ | | |
| 2003 01 04 | 704 | 0.8− | 0.7− | 2006 11 11 | 703 | 0.2− | 0.4+ | 2006 11 22 | 703 | 0.3+ | 0.3− | | |
| 2003 01 04 | 704 | 0.0 | 0.8+ | 2006 11 13 | 644 | 0.2− | 0.2− | | | | | | |
| 2003 01 04 | 704 | 0.7− | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.1− | | | | | | |

**(143234)∗ 2002 YT$_{20}$ = 2001 KE$_{78}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65409)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.84937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24255975 | $\omega$ | 219.85993 | | −0.20945816 | −0.97772279 | |
| $a$ | 2.5463821 | $\Omega$ | 242.23460 | | +0.90100777 | −0.18757569 | |
| $e$ | 0.1377209 | $i$ | 0.88176 | | +0.37988456 | −0.09419930 | |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.3+ | 0.9+ | 2003 01 08 | 704 | 0.7+ | 1.0− | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2001 05 24 | 807 | 0.2+ | 0.4+ | 2003 01 08 | 704 | 0.3− | 1.0− | 2006 11 17 | 691 | 0.0 | 0.2+ | | |
| 2002 12 05 | 704 | 0.7− | 0.3+ | 2004 04 21 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.3− | 0.1+ | | |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.3− | 0.0 | | |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2004 04 21 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | (0.0 | 1.5+) | | |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2004 04 28 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 0.2+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | (0.0 | 3.0+) | | |
| 2002 12 05 | 704 | 0.7+ | 0.3+ | 2004 04 28 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | (0.4+ | 1.7+) | | |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2− | | |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2004 05 13 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.6+ | | |
| 2002 12 10 | 704 | 0.5+ | 0.2+ | 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 2002 12 10 | 704 | 0.5− | 0.2+ | 2004 05 16 | 704 | 0.9+ | 0.2− | 2006 11 21 | 704 | 0.3+ | 1.1− | | |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2004 05 16 | 704 | 0.6+ | 0.8+ | 2006 11 21 | 704 | 0.3− | 0.0 | | |
| 2002 12 10 | 704 | 0.3− | 0.2+ | 2004 05 16 | 704 | 0.5+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.0 | | |
| 2002 12 10 | 704 | 0.0 | 0.1+ | 2004 06 08 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1+ | | |
| 2002 12 31 | 704 | 0.9+ | 0.3+ | 2004 06 08 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2002 12 31 | 704 | 0.2− | 0.7+ | 2004 06 08 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 691 | 0.1− | 0.2− | | |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2005 08 06 | 644 | 0.1− | 0.6+ | 2006 11 25 | 691 | 0.9+ | 0.7− | | |
| 2003 01 04 | 704 | 0.0 | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.4+ | 2006 11 25 | 691 | 0.1+ | 0.0 | | |
| 2003 01 04 | 704 | 0.1− | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.4+ | 2006 12 01 | 704 | 0.3+ | 0.5+ | | |
| 2003 01 04 | 704 | 0.3− | 0.1− | 2005 08 12 | 735 | 0.2− | 0.6+ | 2006 12 01 | 704 | 0.3+ | 0.4− | | |
| 2003 01 04 | 704 | 0.2− | 0.2+ | 2005 08 12 | 735 | 0.6− | 0.7− | 2006 12 01 | 704 | 0.1+ | 0.3+ | | |
| 2003 01 08 | 704 | 1.4− | 0.8+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.2− | 0.0 | | |
| 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.5+ | 2006 12 01 | 704 | 0.0 | 0.4− | | |

**(143235)∗ 2002 YZ$_{20}$ = 2000 GY$_{29}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41389)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.89615 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26963969 | $\omega$ | 142.46380 | | −0.45414527 | −0.89090865 | |
| $a$ | 2.3729040 | $\Omega$ | 334.54461 | | +0.81409449 | −0.41231813 | |
| $e$ | 0.1368577 | $i$ | 0.77562 | | +0.36194232 | −0.19046137 | |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 566 | 0.7+ | 0.9+ | 2002 12 05 | 644 | 0.6− | 0.1− | 2005 09 13 | 691 | 0.3− | 0.5+ | | |
| 1996 02 15 | 566 | 1.1+ | 0.9+ | 2002 12 05 | 644 | 0.5− | 0.2− | 2005 09 13 | 691 | 0.2− | 0.0 | | |
| 1996 02 15 | 566 | 0.5+ | 0.9+ | 2002 12 10 | 704 | 0.8− | 0.2+ | 2005 09 13 | 691 | 0.3− | 0.2+ | | |
| 2000 04 05 | 704 | 0.2+ | 0.7+ | 2002 12 10 | 704 | 0.1+ | 1.2+ | 2005 09 29 | G96 | 0.5+ | 0.1+ | | |
| 2000 04 05 | 704 | 0.8+ | 1.0+ | 2002 12 10 | 704 | 0.6+ | 1.0+ | 2005 09 29 | G96 | 0.4+ | 0.2− | | |
| 2000 04 05 | 704 | 0.6+ | 0.6+ | 2002 12 10 | 704 | 1.5− | 0.1+ | 2005 09 29 | G96 | 0.2+ | 0.1− | | |
| 2000 04 05 | 704 | 0.2+ | 0.7+ | 2002 12 10 | 704 | 0.3− | 1.4+ | 2005 09 29 | G96 | 0.0 | 0.1+ | | |
| 2000 04 05 | 704 | 0.4+ | 0.7+ | 2002 12 10 | 704 | 0.1+ | 0.6+ | 2005 11 25 | G96 | 0.3− | 0.7− | | |
| 2000 04 06 | 699 | 0.1+ | 0.1− | 2002 12 10 | 704 | 0.4− | 1.0+ | 2005 11 25 | G96 | 0.4+ | 0.3+ | | |
| 2000 04 06 | 704 | 0.2+ | 0.2+ | 2002 12 10 | 704 | 0.4+ | 0.3+ | 2005 11 25 | G96 | 0.5+ | 0.6− | | |
| 2000 04 06 | 704 | 0.7+ | 0.8+ | 2002 12 31 | 704 | 0.5− | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.4− | | |
| 2000 04 06 | 699 | 1.3+ | 0.0 | 2002 12 31 | 704 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.4− | | |
| 2000 04 06 | 704 | 0.5+ | 0.0 | 2002 12 31 | 704 | 0.2+ | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.4− | | |
| 2000 04 06 | 699 | 0.3− | 0.7+ | 2002 12 31 | 704 | 0.8− | 0.3− | 2006 09 28 | G96 | 0.4+ | 0.3− | | |
| 2000 04 06 | 704 | 0.3+ | 0.9+ | 2003 01 04 | 704 | 0.5+ | 0.7− | 2006 09 28 | G96 | 0.1+ | 0.3− | | |
| 2000 04 06 | 699 | 1.0+ | 0.1+ | 2003 01 04 | 704 | 0.1+ | 0.7− | 2006 10 04 | G96 | 0.0 | 0.3− | | |
| 2000 04 06 | 704 | 0.5+ | 0.7+ | 2003 01 04 | 704 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.7− | 0.2− | | |
| 2000 04 12 | 691 | 0.5− | 0.1− | 2003 01 04 | 704 | (0.2− | 1.6−) | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 2000 04 12 | 691 | 0.4− | 0.0 | 2003 01 04 | 704 | 1.4+ | 0.3− | 2006 10 04 | G96 | 0.4+ | 0.5− | | |
| 2000 04 12 | 691 | 0.5− | 0.1+ | 2005 08 25 | 644 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2002 11 06 | 704 | 0.7+ | 0.1− | 2005 08 25 | 644 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2002 11 06 | 704 | 0.8− | 0.3+ | 2005 08 25 | 644 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2002 11 06 | 704 | 0.5− | 0.5+ | 2005 09 01 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.0 | | |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2005 09 01 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.4− | | |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2005 09 01 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2005 09 11 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2002 12 05 | 644 | 0.6− | 0.0 | 2005 09 11 | 691 | 0.2− | 0.3+ | | | | | | |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2005 09 11 | 691 | 0.1+ | 0.5+ | | | | | | |

**(143236)∗ 2002 YA$_{21}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.88631 | | $\omega$ | (2000.0) | −0.05091808 | −0.99228096 |
| $n$ | 0.20394772 | | $\Omega$ | 348.88743 | +0.92499304 | −0.08954647 |
| $a$ | 2.8584032 | | $i$ | 103.95813 | +0.37655706 | +0.08578998 |
| $e$ | 0.1685704 | | | 6.69101 | | |
| $P$ | 4.83 | | $H$ | 15.0 $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 22 | 691 | 0.1+ | 0.3+ | 2003 01 04 | 704 | 0.5+ | 0.5+ | 2004 04 14 | 691 | 0.1− | 0.3+ |
| 1998 01 22 | 691 | 0.3− | 0.3− | 2003 01 04 | 704 | 0.1− | 0.0 | 2004 04 14 | 691 | 0.0 | 0.3+ |
| 1998 01 22 | 691 | 0.4+ | 1.4− | 2003 01 08 | 704 | 0.6− | 0.7− | 2004 04 14 | 691 | 0.0 | 0.3+ |
| 1999 03 23 | 699 | 0.5− | 0.5− | 2003 01 08 | 704 | 0.1+ | 0.2− | 2004 04 17 | 704 | 1.0+ | 0.4+ |
| 1999 03 23 | 699 | 0.3− | 1.1+ | 2003 01 08 | 704 | 0.1+ | 0.4− | 2004 04 17 | 704 | 0.5+ | 0.3+ |
| 1999 03 23 | 699 | 1.5+ | 0.2− | 2003 01 08 | 704 | 0.3+ | 0.3− | 2004 04 17 | 704 | 0.9+ | 0.1+ |
| 2001 08 19 | 704 | 0.6+ | 0.7+ | 2003 01 08 | 704 | 0.1+ | 0.3− | 2004 04 17 | 704 | 0.6+ | 0.2+ |
| 2001 08 19 | 704 | 0.0 | 0.6+ | 2003 02 02 | 704 | 1.0− | 0.5+ | 2006 08 16 | 644 | 0.3+ | 0.5+ |
| 2001 08 19 | 704 | 0.1+ | 0.7− | 2003 02 02 | 704 | (1.6− | 0.1−) | 2006 08 16 | 644 | 0.0 | 0.5+ |
| 2002 11 14 | 704 | 0.3+ | 0.1+ | 2003 02 02 | 704 | 0.4− | 0.7− | 2006 08 16 | 644 | 0.2− | 0.8+ |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2003 02 02 | 704 | 1.5− | 0.9+ | 2006 08 29 | 703 | 0.6− | 0.6+ |
| 2002 11 14 | 704 | 0.6− | 0.0 | 2003 02 02 | 704 | (2.0− | 0.0 ) | 2006 08 29 | 703 | 0.9− | 0.2− |
| 2002 11 14 | 704 | 0.2+ | 0.5+ | 2003 02 04 | 704 | 0.1− | 0.9− | 2006 08 29 | 703 | 0.2− | 0.4− |
| 2002 12 11 | 704 | 0.6− | 1.4+ | 2003 02 04 | 704 | 1.0− | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.6+ |
| 2002 12 11 | 704 | 0.0 | 1.2+ | 2003 02 04 | 704 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.5+ |
| 2002 12 11 | 704 | 0.6− | 1.2+ | 2004 03 16 | 704 | 1.2+ | 0.4+ | 2006 08 29 | 703 | 1.2− | 0.9+ |
| 2002 12 11 | 704 | 0.5− | 1.2+ | 2004 03 16 | 704 | 0.8− | 0.5− | 2006 08 29 | 703 | 0.0 | 1.4+ |
| 2002 12 11 | 704 | 0.2− | 1.2+ | 2004 03 16 | 704 | 0.8− | 0.6− | 2006 08 29 | 703 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 1.0+ | 0.4+ | 2004 03 23 | 704 | 0.9+ | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.6+ |
| 2002 12 31 | 704 | 0.7+ | 1.0+ | 2004 03 23 | 704 | 0.9+ | 0.8+ | 2006 09 14 | 703 | 0.5+ | 0.1+ |
| 2002 12 31 | 704 | 0.2− | 0.8+ | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.3+ | 0.8+ |
| 2002 12 31 | 704 | 0.9+ | 0.3+ | 2004 03 28 | 699 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.8− |
| 2003 01 04 | 704 | 0.9+ | 0.3+ | 2004 03 28 | 699 | 1.0− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.8+ | 0.6+ | 2004 03 28 | 699 | (1.5− | 2.1−) | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2003 01 04 | 704 | 0.6+ | 0.1− | 2004 03 28 | 699 | 0.9− | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.2− |

**(143237)∗ 2002 YB$_{21}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 276.63962 | | $\omega$ | (2000.0) | −0.83792753 | −0.53134414 |
| $n$ | 0.24440523 | | $\Omega$ | 232.87215 | +0.53199139 | −0.74411324 |
| $a$ | 2.5335475 | | $i$ | 274.71122 | +0.12191232 | −0.40493071 |
| $e$ | 0.0724983 | | | 7.18802 | | |
| $P$ | 4.03 | | $H$ | 15.6 $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.6+ | 0.0 | 2004 04 14 | E12 | 0.2− | 0.7+ | 2005 08 06 | 644 | 0.1+ | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.1+ | 2004 04 14 | E12 | 0.1− | 0.3+ | 2005 08 06 | 644 | 0.3+ | 0.1+ |
| 2001 08 25 | 704 | 0.4− | 0.0 | 2004 04 14 | E12 | (1.0+ | 1.8+) | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2001 08 25 | 704 | 0.0 | 0.0 | 2004 04 17 | 644 | 0.2− | 0.6+ | 2006 11 12 | G96 | 0.5− | 0.4− |
| 2001 08 25 | 704 | 0.6− | 0.1+ | 2004 04 17 | 644 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.3− | 0.5− |
| 2001 09 12 | 704 | 1.0− | 0.2− | 2004 04 17 | 644 | 0.0 | 0.6+ | 2006 11 12 | G96 | 0.2− | 0.4− |
| 2001 09 12 | 704 | 0.4− | 1.0+ | 2004 04 29 | 608 | 0.2− | 0.5+ | 2006 11 15 | 704 | 0.7+ | 1.2+ |
| 2001 09 12 | 704 | 0.5− | 0.8+ | 2004 04 29 | 608 | 0.2− | 0.9+ | 2006 11 15 | 704 | 0.6+ | 0.9− |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2004 04 29 | 608 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 1.4− | 0.1− |
| 2002 12 05 | 704 | 1.0+ | 0.2− | 2004 05 13 | 644 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 0.8− | 0.4+ |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2004 05 13 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 1.4+ | 0.1+ |
| 2002 12 05 | 704 | 0.9+ | 0.4+ | 2004 05 13 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 1.3− | 0.0 |
| 2002 12 31 | 704 | 1.0− | 0.3+ | 2004 05 15 | 704 | 0.8+ | 0.0 | 2006 11 19 | 704 | 0.8+ | 0.2− |
| 2002 12 31 | 704 | 0.8− | 0.0 | 2004 05 15 | 704 | 0.1− | 0.8+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 12 31 | 704 | 0.3− | 0.2− | 2004 05 15 | 704 | 0.9− | 0.8− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2003 01 04 | 704 | (1.1+ | 1.6+) | 2004 05 15 | 704 | 0.6+ | 0.5− | 2006 11 22 | 704 | 1.0+ | 0.6+ |
| 2003 01 04 | 704 | 0.5+ | 0.5+ | 2004 05 15 | 704 | 1.0+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.7+ |
| 2003 01 04 | 704 | 0.5− | 0.9+ | 2005 07 30 | 644 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.8+ | 0.7+ |
| 2003 01 04 | 704 | 0.1+ | 1.1+ | 2005 07 30 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | (1.8+ | 0.2+) |
| 2003 01 04 | 704 | (1.0+ | 2.2+) | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 11 27 | 704 | 0.7− | 0.4− |
| 2003 01 08 | 704 | 0.4− | 0.0 | 2005 08 06 | 644 | 0.7+ | 0.0 | 2006 11 27 | 704 | 0.6− | 0.1− |
| 2003 01 08 | 704 | 0.4+ | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.6− | 0.5+ |
| 2003 01 08 | 704 | 0.3+ | 0.6+ | 2005 08 06 | 644 | 0.1+ | 0.4+ | | | | |
| 2004 04 14 | E12 | 0.1− | 0.7+ | 2005 08 06 | 644 | 0.1+ | 0.4+ | | | | |

**(143238)∗ 2002 YF$_{21}$ = 2000 JC$_{81}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41389)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.24491 | | $\omega$ | (2000.0) | −0.68063323 | −0.73010721 |
| $n$ | 0.26570325 | | $\Omega$ | 57.67773 | +0.64932550 | −0.63952950 |
| $a$ | 2.3962832 | | $i$ | 75.34143 | +0.33928572 | −0.24071870 |
| $e$ | 0.1404311 | | | 3.59595 | | |
| $P$ | 3.71 | | $H$ | 16.4 $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.8+ | 0.0 | 2002 12 10 | 704 | 1.1+ | 0.6− | 2005 08 26 | 644 | 0.2− | 0.0 |
| 2000 04 10 | 695 | 0.2− | 0.3+ | 2002 12 10 | 704 | 0.7+ | 0.5+ | 2005 08 26 | 644 | 0.2− | 0.1− |
| 2000 04 26 | 699 | 0.7− | 0.0 | 2002 12 10 | 704 | 1.2+ | 0.1− | 2005 08 26 | 644 | 0.3+ | 0.3+ |
| 2000 04 26 | 699 | 0.7− | 0.7+ | 2002 12 31 | 704 | 0.3− | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2000 04 26 | 699 | 0.9− | 0.4− | 2002 12 31 | 704 | 0.8− | 0.5+ | 2006 10 04 | G96 | 0.9− | 0.7− |
| 2000 04 26 | 699 | 1.1− | 0.4− | 2002 12 31 | 704 | 0.5− | 1.2+ | 2006 10 04 | G96 | 0.4+ | 0.4− |
| 2000 05 05 | 704 | 0.9+ | 0.1− | 2002 12 31 | 704 | 0.6− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2000 05 05 | 704 | 1.1+ | 0.3+ | 2003 01 04 | 704 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2000 05 05 | 704 | 0.2− | 0.2− | 2003 01 04 | 704 | 0.6− | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2000 05 05 | 704 | 1.5+ | 1.1+ | 2003 01 04 | 704 | 0.5− | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 1.1+ | 2003 01 04 | 704 | 0.1+ | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.3+ | 0.5+ | 2003 01 04 | 704 | 0.3− | 0.3− | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.4+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2003 01 08 | 704 | 0.1+ | 0.5− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.5− | 0.5+ | 2003 01 08 | 704 | 1.0− | 0.5− | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2002 12 10 | 704 | 0.8+ | 0.4− | 2003 01 08 | 704 | 0.1− | 0.2+ | | | | |
| 2002 12 10 | 704 | 0.2+ | 0.3− | 2003 01 08 | 704 | 0.3− | 0.4+ | | | | |

**(143239)∗ 2002 YC$_{22}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 296.47883 | | $\omega$ | (2000.0) | −0.18647231 | −0.95808722 |
| $n$ | 0.21995176 | | $\Omega$ | 183.03894 | +0.90595523 | −0.08204506 |
| $a$ | 2.7180103 | | $i$ | 277.78276 | +0.38009631 | −0.27447674 |
| $e$ | 0.1695040 | | | 12.67970 | | |
| $P$ | 4.48 | | $H$ | 15.7 $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2005 05 20 | G96 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.7+ | 1.3+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2005 05 20 | G96 | 0.2− | 0.2− | 2006 10 19 | 703 | 1.3+ | 1.2+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 05 20 | G96 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.7+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2005 06 28 | 691 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2002 12 14 | 704 | 0.5+ | 0.4+ | 2005 06 28 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.4− |
| 2002 12 14 | 704 | 0.8+ | 0.2− | 2005 06 28 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.5+ | 0.6+ | 2005 07 05 | G96 | 0.8− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 12 14 | 704 | 0.7+ | 0.2+ | 2005 07 05 | G96 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 0.3− | 0.0 | 2005 07 05 | G96 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2005 07 05 | G96 | 0.5− | 0.4+ | 2006 10 27 | 703 | 0.6− | 0.2+ |
| 2002 12 31 | 704 | 0.2+ | 0.2+ | 2005 07 08 | 691 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.6+ |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2005 07 08 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.2− |
| 2002 12 31 | 704 | 0.1− | 0.4+ | 2005 07 08 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.5+ |
| 2003 01 04 | 704 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2003 01 04 | 704 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.7+ | 0.3+ |
| 2003 01 04 | 704 | 0.3− | 1.3− | 2006 09 17 | 703 | (1.6− | 1.1−) | 2006 11 15 | 703 | 0.6− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.9− | 2006 11 15 | 703 | 0.5− | 0.2+ | | |
| 2003 01 04 | 704 | 0.2− | 0.5+ | 2006 09 28 | 703 | 0.3+ | 0.3− | 2006 11 22 | 703 | 0.8− | 0.8− | | |
| 2003 01 08 | 704 | 0.4− | 0.6− | 2006 09 28 | 703 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.2− | | |
| 2003 01 08 | 704 | 0.4− | 0.1− | 2006 09 28 | 703 | 1.3− | 0.3− | 2006 11 22 | 703 | 0.0 | 0.5− | | |
| 2003 01 08 | 704 | 0.7− | 0.4− | 2006 09 28 | 703 | 0.5− | 1.0+ | 2006 11 22 | 703 | 0.1− | 0.1− | | |
| 2003 01 08 | 704 | (0.7− | 1.7−) | 2006 10 19 | 703 | 0.3+ | 1.1+ | | | | | | |
| 2005 05 20 | G96 | 1.0− | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.2+ | | | | | | |

**(143240)∗ 2002 YC$_{24}$ = 2004 FX$_{13}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69425)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.57049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18051215 | $\omega$ | 310.81834 | | −0.50877514 | +0.85021408 | |
| $a$ | 3.1007381 | $\Omega$ | 288.11122 | | −0.74083184 | −0.51239200 | |
| $e$ | 0.0837607 | $i$ | 8.17902 | | −0.43853852 | −0.12079095 | |
| $P$ | 5.46 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 06 | 327 | 0.4− | 0.8− | 2003 01 04 | 704 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.1− | 0.1− | | |
| 1998 02 06 | 327 | 0.2− | 0.3− | 2003 01 04 | 704 | 0.3− | 0.4− | 2006 09 16 | 703 | 0.4− | 0.0 | | |
| 1998 02 06 | 327 | 1.2− | 0.8− | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.3+ | 0.6+ | | |
| 2000 08 29 | 704 | 0.5+ | 0.3+ | 2003 01 08 | 704 | 0.7− | 0.7− | 2006 09 27 | 703 | 0.4− | 0.6+ | | |
| 2000 08 29 | 704 | 0.2− | 0.4− | 2003 01 08 | 704 | 0.9− | 0.2− | 2006 09 27 | 703 | 0.0 | 0.2+ | | |
| 2000 08 29 | 704 | 0.4+ | 0.7+ | 2003 01 08 | 704 | 0.6+ | 1.4− | 2006 09 27 | 703 | 0.6− | 0.9+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.1+ | 2004 02 21 | 608 | 0.6+ | 1.5+ | 2006 09 27 | 703 | 0.3+ | 0.1+ | | |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2004 02 21 | 608 | (0.3+ | 2.1+) | 2006 10 03 | 703 | 0.6− | 0.0 | | |
| 2001 09 25 | 704 | 1.1− | 0.9+ | 2004 02 21 | 608 | 0.6+ | 1.1+ | 2006 10 03 | 703 | 0.9− | 0.6+ | | |
| 2001 09 25 | 704 | 0.3+ | 1.2− | 2004 03 16 | 703 | 0.6− | 0.9+ | 2006 10 03 | 703 | 0.4+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2004 03 16 | 703 | 0.8+ | 0.3+ | 2006 10 03 | 703 | (2.2− | 0.4+) | | |
| 2001 10 18 | 704 | 1.3+ | 0.0 | 2004 03 16 | 703 | 0.2+ | 0.2− | 2006 10 09 | 644 | 0.2+ | 0.4+ | | |
| 2001 10 18 | 704 | 0.6+ | 0.1+ | 2004 03 16 | 703 | 0.4+ | 0.7+ | 2006 10 09 | 644 | 0.4+ | 0.3+ | | |
| 2001 10 18 | 704 | 0.2− | 0.2− | 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 11 | 699 | 0.3− | 0.1+ | 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2001 11 11 | 699 | 0.5+ | 1.4+ | 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2001 11 11 | 699 | 0.3− | 1.3+ | 2004 03 17 | 704 | 0.9+ | 1.1+ | 2006 10 21 | 691 | 0.1− | 0.3+ | | |
| 2001 11 11 | 699 | 1.0− | 0.4+ | 2004 03 17 | 704 | 1.2+ | 1.1+ | 2006 10 23 | 691 | 0.0 | 0.1+ | | |
| 2001 11 12 | 704 | 0.1− | 0.7+ | 2004 03 17 | 704 | 1.1+ | 0.9+ | 2006 10 23 | 691 | 0.1− | 0.1− | | |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2004 03 17 | 704 | 0.2− | 1.2+ | 2006 10 23 | 691 | 0.2− | 0.5+ | | |
| 2001 11 12 | 704 | 0.5− | 0.2+ | 2004 03 17 | 704 | 0.5+ | 0.8+ | 2006 10 23 | 703 | 0.1+ | 0.2+ | | |
| 2001 11 12 | 704 | 0.8− | 0.3+ | 2006 08 29 | 699 | 0.7+ | 0.4+ | 2006 10 23 | 703 | 0.9− | 0.2− | | |
| 2001 11 12 | 704 | 0.8− | 0.6+ | 2006 08 29 | 699 | 0.2+ | 1.0+ | 2006 10 23 | 703 | 0.2− | 1.1− | | |
| 2002 12 31 | 704 | 0.1− | 0.5+ | 2006 08 29 | 699 | (2.2− | 1.0−) | 2006 10 23 | 703 | 0.4+ | 0.7− | | |
| 2002 12 31 | 704 | 0.3− | 0.1− | 2006 08 29 | 699 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.4+ | 0.2− | | |
| 2002 12 31 | 704 | 0.3+ | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.4+ | | |
| 2002 12 31 | 704 | 0.0 | 0.7− | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 24 | 644 | 0.3+ | 0.3+ | | |
| 2003 01 04 | 704 | 0.5+ | 0.3− | 2006 09 06 | 644 | 0.1− | 0.3+ | | | | | | |
| 2003 01 04 | 704 | 0.5+ | 0.0 | 2006 09 16 | 703 | 1.4− | 0.0 | | | | | | |

**(143241)∗ 2002 YV$_{24}$ = 2005 TJ$_{134}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 94883)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.90633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25342334 | $\omega$ | 304.18287 | | −0.65480804 | +0.72427949 | |
| $a$ | 2.4730808 | $\Omega$ | 283.37152 | | −0.59959765 | −0.67178645 | |
| $e$ | 0.1983789 | $i$ | 12.82618 | | −0.46011855 | −0.15531315 | |
| $P$ | 3.89 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | (2.2+ | 0.6+) | 2005 08 09 | 704 | 0.0 | 0.5− | 2005 11 28 | 703 | 0.4+ | 0.1− | | |
| 2001 09 22 | 699 | 0.8+ | 0.5+ | 2005 08 09 | 704 | 0.1+ | 0.4− | 2005 11 28 | 703 | 0.6+ | 0.2− | | |
| 2001 09 22 | 699 | 0.5+ | 0.5+ | 2005 08 09 | 704 | 0.4− | 0.5− | 2005 11 28 | 703 | 0.6− | 0.7− | | |
| 2001 09 22 | 699 | 1.3− | 0.1+ | 2005 09 29 | 703 | 0.6+ | 0.6− | 2005 11 28 | 703 | 0.0 | 1.2− | | |
| 2001 09 29 | 644 | 0.4− | 0.0 | 2005 09 29 | 703 | 0.3+ | 0.1+ | 2005 11 29 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 29 | 644 | 0.6− | 0.1+ | 2005 09 29 | 703 | 0.1+ | 0.7+ | 2005 11 29 | 644 | 0.5+ | 0.1+ | | |
| 2001 09 29 | 644 | 0.2− | 0.1+ | 2005 09 29 | 703 | 0.2+ | 0.2− | 2005 11 29 | 644 | 0.3+ | 0.2− | | |
| 2001 10 18 | 704 | 0.3+ | 0.8+ | 2005 10 10 | 703 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.2− | | |
| 2001 10 18 | 704 | 0.1+ | 0.4− | 2005 10 10 | 703 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.3− | 0.3− | | |
| 2001 10 18 | 704 | 0.6+ | 0.4− | 2005 10 10 | 703 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.4− | | |
| 2001 10 18 | 704 | 0.1+ | 0.4+ | 2005 10 10 | 703 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2001 10 18 | 704 | 0.7+ | 0.3− | 2005 10 11 | 699 | 1.1− | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.3− | | |
| 2002 12 31 | 704 | 0.1− | 0.5+ | 2005 10 11 | 699 | (1.9+ | 0.2+) | 2006 10 31 | G96 | 0.0 | 0.1+ | | |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2005 10 11 | 699 | 1.0− | 1.2+ | 2006 10 31 | G96 | 0.4− | 0.2+ | | |
| 2002 12 31 | 704 | 0.5+ | 1.0+ | 2005 10 11 | 699 | 0.5− | 0.6− | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2002 12 31 | 704 | 0.3+ | 0.3+ | 2005 10 29 | 703 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− | | |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2005 10 29 | 703 | 1.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2003 01 04 | 704 | (2.2− | 1.4−) | 2005 10 29 | 703 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2003 01 04 | 704 | 0.4− | 0.1− | 2005 10 29 | 703 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.6− | | |
| 2003 01 04 | 704 | 0.9− | 0.1− | 2005 10 29 | 644 | 0.5+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.3− | | |
| 2003 01 04 | 704 | (4.4− | 1.0+) | 2005 10 29 | 644 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.1+ | | |
| 2003 01 08 | 704 | 0.2− | 0.0 | 2005 10 29 | 644 | 0.5+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.0 | | |
| 2003 01 08 | 704 | 0.1+ | 0.3+ | 2005 11 08 | 704 | 0.8− | 0.3− | 2006 11 27 | G96 | 0.4− | 0.2− | | |
| 2003 01 08 | 704 | 0.3+ | 0.4+ | 2005 11 08 | 704 | 0.5+ | 0.6− | | | | | | |
| 2003 01 08 | 704 | 0.3+ | 0.3+ | 2005 11 08 | 704 | 0.2+ | 1.1+ | | | | | | |

**(143242)∗ 2002 YM$_{25}$ = 2004 JE$_{29}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65409)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.86542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23331317 | $\omega$ | 85.27625 | | −0.99614800 | +0.02951370 | |
| $a$ | 2.6132234 | $\Omega$ | 96.39879 | | −0.05940507 | −0.91978271 | |
| $e$ | 0.0680855 | $i$ | 4.76617 | | +0.06449954 | −0.39131664 | |
| $P$ | 4.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1+ | 1.0+ | 2004 04 19 | 704 | 0.3− | 0.9+ | 2004 05 21 | 704 | 0.2+ | 1.0+ | | |
| 2001 09 12 | 704 | 0.6+ | 0.6+ | 2004 04 19 | 704 | 0.1+ | 0.1+ | 2004 06 15 | 735 | 0.6+ | 0.8+ | | |
| 2001 09 12 | 704 | 0.1− | 0.0 | 2004 04 19 | 704 | 0.0 | 0.4+ | 2004 06 15 | 735 | 0.0 | 0.4+ | | |
| 2001 09 12 | 704 | 0.8− | 0.4+ | 2004 04 23 | 599 | 0.2+ | 0.2+ | 2004 06 15 | 735 | 0.1− | 0.5+ | | |
| 2001 09 25 | 704 | 0.2+ | 1.1+ | 2004 04 23 | 599 | 0.1+ | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.4+ | | |
| 2001 09 25 | 704 | 0.8− | 0.9+ | 2004 04 23 | 599 | 0.3+ | 0.2+ | 2005 07 30 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.6− | 0.2− | 2004 04 23 | 599 | 1.3− | 0.0 | 2005 07 30 | 644 | 0.1+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.9− | 0.0 | 2004 05 12 | 699 | 0.7− | 0.0 | 2005 07 30 | 644 | 0.2− | 0.3+ | | |
| 2001 09 25 | 704 | 0.3− | 0.1− | 2004 05 12 | 699 | 0.5+ | 0.4+ | 2005 07 30 | 644 | 0.2− | 0.3+ | | |
| 2002 12 07 | 333 | 0.1+ | 0.4− | 2004 05 12 | 699 | 0.9+ | 0.5− | 2005 07 30 | 644 | 0.3+ | 0.5+ | | |
| 2002 12 07 | 333 | 0.1− | 0.4+ | 2004 05 12 | 699 | 0.2+ | 0.1+ | 2005 08 27 | 644 | 0.1− | 0.1+ | | |
| 2002 12 31 | 704 | 0.5+ | 0.1− | 2004 05 15 | 704 | 0.1− | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.3+ | | |
| 2002 12 31 | 704 | 0.4+ | 0.0 | 2004 05 15 | 704 | 0.1+ | 0.9+ | 2005 08 27 | 644 | 0.1+ | 0.4+ | | |
| 2002 12 31 | 704 | 0.0 | 0.2− | 2004 05 15 | 704 | 0.1+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.2+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.2+ | 2004 05 15 | 704 | 0.7+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.2+ | | |
| 2003 01 04 | 704 | 0.3− | 0.4+ | 2004 05 15 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2003 01 04 | 704 | 0.5− | 0.9+ | 2004 05 17 | 704 | 0.4+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2003 01 04 | 704 | 1.1+ | 0.8+ | 2004 05 17 | 704 | 0.4+ | 1.0+ | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2003 01 08 | 704 | 0.6− | 1.4+ | 2004 05 17 | 704 | 0.5+ | 0.5+ | 2006 11 27 | 691 | 0.3− | 0.2+ | | |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2004 05 17 | 704 | 0.9+ | 0.6+ | 2006 12 01 | 691 | 0.2+ | 0.3+ | | |
| 2003 01 08 | 704 | 0.2+ | 1.0+ | 2004 05 21 | 704 | 0.3− | 1.0+ | 2006 12 01 | 691 | 0.1− | 0.3+ | | |
| 2004 04 19 | 704 | 0.6− | 0.5+ | 2004 05 21 | 704 | 0.0 | 0.8+ | 2006 12 01 | 691 | 0.0 | 0.1+ | | |

**(143243)∗ 2002 YA$_{26}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.77395 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16639178 | $\omega$ | 232.47727 | | +0.90018518 | | +0.30262148 |
| $a$ | 3.2737698 | $\Omega$ | 107.95492 | | −0.21592679 | | +0.93465293 |
| $e$ | 0.4539235 | $i$ | 19.22153 | | −0.37820928 | | +0.18666587 |
| $P$ | 5.92 | $H$ | 13.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 699 | 0.8− | 0.9+ | 2002 12 31 | 704 | 0.0 | 0.8+ | 2006 04 02 | 703 | 0.4+ | 0.8− |
| 2000 04 28 | 699 | 0.3+ | 0.5− | 2002 12 31 | 704 | 0.3− | 0.5+ | 2006 04 02 | 703 | 0.0 | 1.3− |
| 2000 04 28 | 699 | 0.9+ | 1.1+ | 2002 12 31 | 704 | 0.2− | 0.2+ | 2006 04 02 | 703 | 0.2+ | 0.3− |
| 2000 04 28 | 699 | 0.3+ | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 04 07 | 699 | 0.6+ | 1.3+ |
| 2001 06 15 | 704 | 0.0 | 0.2− | 2003 01 04 | 704 | 0.4− | 1.4+ | 2006 04 07 | 699 | 0.5+ | 0.7+ |
| 2001 06 15 | 704 | 0.1+ | 0.3− | 2003 01 04 | 704 | 0.1+ | 0.9+ | 2006 04 07 | 699 | 0.9+ | 1.4− |
| 2001 06 15 | 704 | 0.0 | 0.0 | 2003 01 04 | 704 | 0.2− | 0.5+ | 2006 04 07 | 699 | (2.0+ | 1.9+) |
| 2001 06 24 | 704 | 0.2+ | 0.3+ | 2003 01 04 | 704 | 0.2− | 0.4+ | 2006 04 25 | 703 | 0.1− | 0.3− |
| 2001 06 24 | 704 | 0.3+ | 1.1+ | 2003 01 08 | 704 | 0.4+ | 0.1+ | 2006 04 25 | 703 | 1.4− | 0.6+ |
| 2001 06 24 | 704 | 0.1+ | 0.8+ | 2003 01 08 | 704 | 0.1+ | 0.1+ | 2006 04 25 | 703 | 0.1− | 0.1+ |
| 2001 06 24 | 704 | 0.4+ | 1.1+ | 2003 01 08 | 704 | 0.2+ | 0.6+ | 2006 04 25 | 703 | 0.5− | 0.7− |
| 2001 06 24 | 704 | 0.2+ | 1.0+ | 2003 01 08 | 704 | 0.5+ | 0.8+ | 2006 05 04 | 703 | 1.2+ | 0.8− |
| 2001 07 10 | 704 | 0.6+ | 1.0− | 2003 01 31 | 704 | 0.2+ | 0.7+ | 2006 05 04 | 703 | 0.7− | 0.4− |
| 2001 07 10 | 704 | 0.3+ | 0.1− | 2003 01 31 | 704 | 0.5− | 0.4+ | 2006 05 04 | 703 | 0.1− | 0.1+ |
| 2001 07 10 | 704 | 0.7− | 0.1+ | 2003 01 31 | 704 | 0.3− | 0.4+ | 2006 05 04 | 703 | 0.5− | 0.2− |
| 2001 07 10 | 704 | 0.0 | 0.3+ | 2003 01 31 | 704 | 0.4+ | 0.2+ | 2006 05 23 | 703 | 0.2− | 0.4− |
| 2001 07 22 | 704 | 0.4+ | 0.7+ | 2003 01 31 | 704 | 0.6− | 0.0 | 2006 05 23 | 703 | 0.3− | 0.3+ |
| 2001 07 22 | 704 | 0.0 | 1.0+ | 2003 02 03 | 704 | 1.0− | 0.6− | 2006 05 23 | 703 | 0.7− | 0.5+ |
| 2001 07 22 | 704 | 0.7− | 0.2+ | 2003 02 03 | 704 | 0.1− | 0.2− | 2006 05 23 | 703 | 0.8+ | 0.3+ |
| 2001 07 22 | 704 | 0.3+ | 1.2+ | 2003 02 03 | 704 | 0.4− | 0.1+ | | | | |
| 2002 12 31 | 704 | 0.0 | 0.4+ | 2006 04 02 | 703 | 0.8− | 1.0+ | | | | |

**(143244)∗ 2002 YJ$_{26}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.07612 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21374097 | $\omega$ | 8.18002 | | −0.50288898 | | −0.84817192 |
| $a$ | 2.7704109 | $\Omega$ | 112.15363 | | +0.78250764 | | −0.52854628 |
| $e$ | 0.1069164 | $i$ | 10.35358 | | +0.36713004 | | −0.03525946 |
| $P$ | 4.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.1− | 0.9+ | 2003 01 08 | 704 | (1.6+ | 0.6+) | 2004 05 12 | 703 | 0.0 | 0.9+ |
| 2001 08 01 | 644 | 0.1− | 0.9+ | 2003 01 08 | 704 | 0.9− | 0.5+ | 2005 06 30 | 691 | 0.4+ | 0.0 |
| 2001 08 01 | 644 | 0.4− | 1.1+ | 2003 01 08 | 704 | 0.0 | 0.1+ | 2005 06 30 | 691 | 0.2+ | 0.3+ |
| 2001 08 26 | 644 | 0.2− | 0.8− | 2003 01 09 | 704 | 0.1+ | 0.2+ | 2005 06 30 | 691 | 0.3− | 0.3+ |
| 2001 08 26 | 644 | 0.4− | 0.9− | 2003 01 09 | 704 | 0.0 | 0.3+ | 2005 07 05 | 691 | 0.2+ | 0.0 |
| 2001 08 26 | 644 | 0.3− | 1.2− | 2003 01 09 | 704 | 0.4+ | 0.1− | 2005 07 05 | 691 | 0.0 | 0.1+ |
| 2001 10 15 | 644 | 0.1+ | 0.6+ | 2003 01 09 | 704 | 1.2+ | 0.7− | 2005 07 05 | 691 | 0.1+ | 0.1+ |
| 2001 10 15 | 644 | 0.4− | 0.4+ | 2003 01 09 | 704 | 0.5− | 0.0 | 2006 09 26 | 703 | 1.4− | 1.3− |
| 2001 10 15 | 644 | 0.0 | 0.7+ | 2003 01 09 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.0 |
| 2001 10 23 | 644 | 0.2− | 0.7+ | 2003 01 09 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 644 | 0.1− | 0.4+ | 2003 01 09 | 704 | 0.6− | 0.2+ | 2006 09 26 | 703 | (1.7− | 2.0−) |
| 2001 10 23 | 644 | 0.3− | 0.4+ | 2003 01 09 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2002 12 11 | 704 | (1.5+ | 3.0+) | 2003 01 09 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2002 12 11 | 704 | (0.1+ | 3.3+) | 2003 01 09 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.7+ |
| 2002 12 11 | 704 | (1.2+ | 3.2+) | 2003 01 09 | 704 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.9+ | 1.5− |
| 2002 12 31 | 704 | 0.5+ | 0.2− | 2003 01 09 | 704 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.6+ |
| 2002 12 31 | 704 | 0.6+ | 0.1+ | 2003 01 31 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.6− | 0.3+ | 2003 01 31 | 704 | 0.7+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.6+ |
| 2002 12 31 | 704 | 0.1+ | 0.8+ | 2003 01 31 | 704 | 0.0 | 0.7+ | 2006 10 28 | 703 | 0.2+ | 1.2+ |
| 2002 12 31 | 704 | 0.4+ | 1.2+ | 2004 03 27 | 291 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.3+ |
| 2003 01 04 | 704 | 0.6− | 0.4+ | 2004 03 27 | 291 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.3− |
| 2003 01 04 | 704 | 0.2− | 0.2− | 2004 03 27 | 291 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.5− | 0.1+ |
| 2003 01 04 | 704 | 0.5− | 0.1− | 2004 05 12 | 703 | (2.0− | 1.2−) | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2003 01 08 | 704 | 0.5+ | 0.6+ | 2004 05 12 | 703 | 0.6− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 0.5+ | 0.0 | 2004 05 12 | 703 | 0.2− | 0.8+ | 2006 11 08 | 644 | 0.3− | 0.2+ |

**(143245)∗ 2002 YG$_{27}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.95105 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25870444 | $\omega$ | 10.71411 | | −0.59456497 | | −0.80206860 |
| $a$ | 2.4393088 | $\Omega$ | 115.79093 | | +0.73299152 | | −0.56950704 |
| $e$ | 0.1309340 | $i$ | 3.58993 | | +0.33047835 | | −0.17985464 |
| $P$ | 3.81 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 09 | 691 | 0.1− | 0.3+ | 2003 01 31 | 704 | 0.6+ | 0.8− | 2005 10 01 | 704 | 0.4+ | 0.7+ |
| 1996 04 09 | 691 | 0.7+ | 0.4+ | 2003 02 03 | 704 | 0.2− | 0.1+ | 2005 10 01 | 704 | 0.4− | 0.9+ |
| 1996 04 09 | 691 | 0.2− | 0.5+ | 2003 02 03 | 704 | 0.1+ | 0.3− | 2005 10 07 | 699 | (1.7+ | 0.9+) |
| 2001 09 12 | 704 | 0.9− | 0.5+ | 2003 02 03 | 704 | 0.2− | 0.1− | 2005 10 07 | 699 | 0.8+ | 0.4− |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2003 02 03 | 704 | 0.5+ | 1.1− | 2005 10 07 | 699 | 1.0+ | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 0.8− | 2003 02 03 | 704 | 0.5− | 0.1− | 2005 10 07 | 699 | 0.3+ | 0.1− |
| 2002 11 07 | 645 | 0.1− | 0.1− | 2003 02 07 | 704 | 1.0− | 1.3+ | 2005 10 12 | 691 | 0.2− | 0.0 |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2003 02 07 | 704 | 0.9+ | 1.5+ | 2005 10 12 | 691 | 0.3− | 0.0 |
| 2002 11 14 | 704 | 1.0+ | 0.0 | 2003 02 07 | 704 | 0.3− | 1.2+ | 2005 10 12 | 691 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.2+ | 0.7+ | 2003 02 07 | 704 | (1.2+ | 1.9+) | 2006 09 28 | G96 | (2.5− | 0.2−) |
| 2002 11 14 | 704 | 0.5+ | 0.2+ | 2003 02 07 | 704 | 0.6− | 0.8+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2002 11 14 | 704 | 0.8+ | 1.3+ | 2003 02 07 | 704 | 1.0+ | 1.5+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2002 12 31 | 704 | 0.3− | 0.1+ | 2003 02 07 | 704 | 0.5− | 1.4+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.2+ | 0.2+ | 2003 02 07 | 704 | 0.9+ | 1.5+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.5− | 0.3− | 2005 08 25 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 12 31 | 704 | 0.2+ | 0.2− | 2005 08 25 | 644 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2002 12 31 | 704 | 0.1+ | 0.6+ | 2005 08 25 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2003 01 04 | 704 | 0.4− | 0.2+ | 2005 09 13 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.3− | 0.1+ | 2005 09 13 | 691 | 0.2− | 1.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2003 01 04 | 704 | 0.2+ | 0.3+ | 2005 09 13 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2003 01 04 | 704 | 0.9− | 0.4+ | 2005 09 23 | 703 | (2.0− | 3.7+) | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2003 01 04 | 704 | 0.3− | 0.4− | 2005 09 23 | 703 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 0.0 | 0.3+ | 2005 09 23 | 703 | 0.7− | 0.9− | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2003 01 08 | 704 | 0.1+ | 0.8− | 2005 09 23 | 703 | 0.0 | 0.6− | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2003 01 08 | 704 | 0.3+ | 0.2+ | 2005 09 24 | 644 | 0.6− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.4− |
| 2003 01 08 | 704 | 0.2+ | 0.5+ | 2005 09 24 | 644 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 01 08 | 704 | 0.2+ | 0.5+ | 2005 09 24 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2003 01 31 | 704 | 0.3+ | 0.3+ | 2005 10 01 | 704 | 0.7+ | 0.9+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2003 01 31 | 704 | 0.1− | 0.7+ | 2005 10 01 | 704 | 0.3− | 1.3+ | 2006 11 16 | G96 | 0.2− | 0.2− |

**(143246)∗ 2002 YK$_{27}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.19427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18272665 | $\omega$ | 219.25778 | | −0.85695267 | | −0.48730804 |
| $a$ | 3.0756350 | $\Omega$ | 290.80390 | | +0.50642462 | | −0.73566359 |
| $e$ | 0.0552012 | $i$ | 10.34198 | | +0.09574042 | | −0.47045719 |
| $P$ | 5.39 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | (5.1− | 2.5+) | 2003 01 09 | 704 | 0.5− | 0.8+ | 2004 04 17 | 704 | (2.1+ | 0.4+) |
| 1998 03 03 | 704 | 0.3+ | 0.2− | 2003 01 09 | 704 | 0.1+ | 0.8+ | 2004 04 17 | 704 | 0.6+ | 0.0 |
| 1998 03 03 | 704 | 1.3− | 1.3+ | 2003 01 09 | 704 | 0.2+ | 1.1+ | 2004 04 17 | 704 | 1.0− | 0.7− |
| 1998 03 03 | 704 | 1.0− | 0.8− | 2003 01 09 | 704 | 0.2− | 1.4+ | 2006 08 29 | 699 | 1.3− | 0.7− |
| 1998 03 03 | 704 | (3.2− | 0.9−) | 2003 01 09 | 704 | 0.0 | 0.9+ | 2006 08 29 | 699 | 1.3+ | 0.7− |
| 1998 03 04 | 704 | 0.4− | 0.6− | 2003 01 09 | 608 | 0.7+ | 0.4+ | 2006 08 29 | 699 | (1.9+ | 0.5+) |
| 1998 03 04 | 704 | 1.4+ | 1.2+ | 2003 01 09 | 608 | 0.7+ | 0.3+ | 2006 08 29 | 699 | 1.3− | 0.3+ |
| 1998 03 04 | 704 | 0.8+ | 1.0− | 2003 01 09 | 608 | 1.1+ | 0.1− | 2006 09 16 | 703 | (0.6+ | 1.6−) |
| 1998 03 04 | 704 | (6.6− | 1.2+) | 2003 01 25 | 291 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.5− | 0.5+ |
| 2001 10 13 | 699 | 0.2− | 0.4+ | 2003 01 25 | 291 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.4+ | 1.3− |
| 2001 10 13 | 699 | 0.3+ | 0.0 | 2003 01 25 | 291 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.2− | 0.9− |
| 2001 10 13 | 699 | (1.0+ | 3.0−) | 2003 01 31 | 704 | 0.7+ | 0.1+ | 2006 09 17 | G92 | 0.3+ | 0.0 |
| 2001 10 13 | 699 | 0.5+ | 0.2+ | 2003 01 31 | 704 | 0.5+ | 0.1− | 2006 09 17 | G92 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.5− | 0.8+ | 2003 01 31 | 704 | 0.1− | 1.0+ | 2006 09 17 | G92 | 0.4+ | 0.0 |
| 2001 10 13 | 644 | 0.4− | 0.6+ | 2003 01 31 | 704 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.1+ |
| 2001 10 13 | 644 | 0.3− | 0.6+ | 2003 01 31 | 704 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.9+ |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2003 02 03 | 704 | (1.6+ | 0.8+) | 2006 09 17 | 703 | 0.8+ | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.1+ | 2003 02 03 | 704 | 0.7+ | 0.7+ | 2006 09 17 | 703 | 0.2− | 0.4− |
| 2002 12 05 | 704 | 0.5+ | 0.3+ | 2003 02 03 | 704 | 0.1+ | 1.0+ | 2006 09 21 | 699 | 0.6+ | 0.5+ |
| 2002 12 05 | 704 | 0.6− | 0.1− | 2003 02 07 | 704 | 0.6− | 0.6+ | 2006 09 21 | 699 | 0.4− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2003 02 07 | 704 | 0.8− | 0.2− | 2006 09 21 | 699 | 0.8+ | 0.2+ |
| 2002 12 06 | 645 | 0.0 | 0.2− | 2003 02 07 | 704 | 0.4− | 0.7+ | 2006 09 21 | 699 | 0.2+ | 0.4+ |
| 2002 12 06 | 645 | 0.0 | 0.2− | 2003 02 07 | 704 | 0.2+ | 0.4+ | 2006 09 22 | 703 | 1.2− | 0.4+ |
| 2002 12 31 | 704 | 0.5+ | 0.6+ | 2003 02 08 | 704 | 0.9− | 0.6− | 2006 09 22 | 703 | 0.4− | 0.5+ |
| 2002 12 31 | 704 | (2.0+ | 1.1+) | 2003 02 08 | 704 | 0.8− | 1.2+ | 2006 09 22 | 703 | 0.4− | 0.5− |
| 2002 12 31 | 704 | 0.6− | 0.0 | 2003 02 08 | 704 | 0.2− | 0.2− | 2006 09 22 | 703 | 0.4+ | 1.4+ |
| 2002 12 31 | 704 | 0.2+ | 0.4+ | 2003 02 08 | 704 | 0.5− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.4+ |
| 2003 01 04 | 704 | 0.6− | 0.7− | 2004 03 26 | 704 | 0.3− | 0.5+ | 2006 09 29 | 699 | 0.3− | 0.3+ |
| 2003 01 04 | 704 | 0.3− | 0.7− | 2004 03 26 | 704 | 0.1− | 0.9+ | 2006 09 29 | 699 | 0.5− | 0.8+ |
| 2003 01 04 | 704 | 0.9− | 0.4− | 2004 03 26 | 704 | 1.2+ | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.4− |
| 2003 01 08 | 704 | 0.7+ | 0.0 | 2004 04 16 | E12 | (2.0+ | 0.8+) | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2003 01 08 | 704 | 0.3+ | 0.3+ | 2004 04 16 | E12 | (3.3+ | 0.4+) | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2004 04 16 | E12 | 1.4+ | 1.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2003 01 08 | 704 | 0.2+ | 0.2− | 2004 04 16 | E12 | (2.3+ | 0.8+) | | | | |
| 2003 01 08 | 704 | 0.3− | 0.1+ | 2004 04 17 | 704 | 0.0 | 1.2+ | | | | |

**(143247)∗ 2002 YJ$_{28}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.82368 | | (2000.0) | | | |
| $n$ | 0.24438789 | $\omega$ | 72.22714 | | +0.98714548 | +0.09137474 |
| $a$ | 2.5336673 | $\Omega$ | 282.37486 | | −0.13885746 | +0.89656984 |
| $e$ | 0.3405615 | $i$ | 7.71506 | | +0.07913542 | +0.43337418 |
| $P$ | 4.03 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 21 | 691 | 0.1− | 0.4− | 2003 01 04 | 704 | (0.6+ | 1.6+) | 2005 07 01 | 703 | 0.4− | 0.0 |
| 1998 11 21 | 691 | 0.1+ | 0.6− | 2003 01 08 | 704 | 0.6+ | 0.2+ | 2005 07 01 | 703 | 0.0 | 0.5− |
| 1998 11 21 | 691 | 0.1− | 0.5− | 2003 01 08 | 704 | 0.1− | 0.3+ | 2005 07 01 | 703 | 0.9+ | 0.4+ |
| 1998 12 14 | 691 | 0.2+ | 0.3− | 2003 01 08 | 704 | 0.1− | 0.4+ | 2005 07 01 | 703 | 0.2− | 0.8− |
| 1998 12 14 | 691 | 0.3− | 0.5− | 2003 01 08 | 704 | 0.4+ | 1.0+ | 2006 10 23 | G96 | 0.7− | 0.1− |
| 1998 12 14 | 691 | 0.1− | 0.3− | 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 1998 12 23 | 691 | 0.3− | 1.4+ | 2003 01 09 | 704 | 0.4+ | 1.4+ | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 1998 12 23 | 691 | 0.6− | 0.9− | 2003 01 09 | 704 | 0.4+ | 0.6− | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 1998 12 23 | 691 | 0.6− | 0.8− | 2003 01 09 | 704 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2001 05 24 | 704 | 0.1− | 1.0− | 2003 01 09 | 704 | 0.3+ | 0.8+ | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2001 05 24 | 704 | 0.0 | 0.5+ | 2003 01 09 | 704 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.3+ |
| 2001 05 24 | 704 | 0.9− | 0.3+ | 2003 01 31 | 704 | 0.6+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2001 06 16 | 704 | 0.2+ | 0.2− | 2003 01 31 | 704 | 0.8+ | 0.5+ | 2006 12 01 | G96 | 0.7− | 0.3− |
| 2001 06 16 | 704 | 0.8− | 0.3+ | 2003 01 31 | 704 | 1.3+ | 0.2− | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2001 06 16 | 704 | 0.5+ | 0.1− | 2003 01 31 | 704 | 0.5+ | 0.8− | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2002 12 31 | 704 | 0.5+ | 0.9+ | 2003 02 03 | 704 | 0.1+ | 0.5− | 2006 12 01 | G96 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 0.7+ | 0.6+ | 2003 02 03 | 704 | 0.4+ | 0.4− | 2006 12 01 | 704 | 0.0 | 1.1+ |
| 2002 12 31 | 704 | 0.8+ | 1.2+ | 2003 02 03 | 704 | 0.5− | 0.0 | 2006 12 01 | 704 | 0.6+ | 1.2+ |
| 2002 12 31 | 704 | 0.8+ | 0.8+ | 2003 02 03 | 704 | 0.8− | 0.7− | 2006 12 01 | 704 | 0.5− | 0.1+ |
| 2003 01 04 | 704 | 1.0+ | 1.1+ | 2005 06 26 | 644 | 0.4+ | 0.4+ | 2006 12 01 | 704 | 0.3+ | 1.5+ |
| 2003 01 04 | 704 | (0.9+ | 1.6+) | 2005 06 26 | 644 | 0.3+ | 0.3+ | | | | |
| 2003 01 04 | 704 | (0.6+ | 2.9+) | 2005 06 26 | 644 | 0.3+ | 0.4+ | | | | |

**(143248)∗ 2002 YS$_{28}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.27778 | | (2000.0) | | | |
| $n$ | 0.20418725 | $\omega$ | 336.88835 | | +0.36294206 | −0.92983061 |
| $a$ | 2.8561673 | $\Omega$ | 91.78608 | | +0.86412723 | +0.31147756 |
| $e$ | 0.1934856 | $i$ | 3.48339 | | +0.34865053 | +0.19595093 |
| $P$ | 4.83 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.1+ | 0.3− | 2003 02 03 | 704 | (1.8− | 0.0 ) | 2006 09 16 | 704 | (1.8+ | 0.8+) |
| 1994 03 05 | 691 | 0.3− | 0.3− | 2003 02 04 | 704 | (0.1+ | 1.7+) | 2006 09 16 | 704 | 1.4+ | 1.2+ |
| 1994 03 05 | 691 | 0.0 | 0.1+ | 2003 02 04 | 704 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.1+ |
| 2002 12 31 | 704 | 0.2− | 0.5+ | 2003 02 04 | 704 | 0.7− | 0.7+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2002 12 31 | 704 | 0.3− | 0.2+ | 2003 02 07 | 704 | (2.2− | 0.4+) | 2006 09 19 | 699 | 1.3+ | 0.3− |
| 2002 12 31 | 704 | 0.7+ | 0.2+ | 2003 02 07 | 704 | (1.2+ | 2.4+) | 2006 09 19 | 699 | 1.0+ | 0.2− |
| 2002 12 31 | 704 | 1.1− | 1.1+ | 2003 02 07 | 704 | (2.2+ | 2.2+) | 2006 09 26 | 704 | 0.4− | 0.7− |
| 2002 12 31 | 704 | 0.3− | 1.1+ | 2003 02 08 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.6− | 0.3− |
| 2003 01 04 | 704 | 0.3− | 0.9+ | 2003 02 08 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.4+ |
| 2003 01 04 | 704 | 0.0 | 0.5+ | 2003 02 08 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 704 | 0.1− | 0.4− |
| 2003 01 04 | 704 | 0.3+ | 0.1+ | 2003 02 08 | 704 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.7− | 0.3+ |
| 2003 01 04 | 704 | 0.0 | 0.4+ | 2004 03 31 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2003 01 08 | 704 | 0.5− | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 1.3− | 0.8+ |
| 2003 01 08 | 704 | 0.2− | 0.4− | 2004 03 31 | 691 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.0 | 1.1+ |
| 2003 01 08 | 704 | 0.3− | 0.2− | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 2003 01 08 | 704 | 0.4− | 0.2− | 2004 04 14 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.9+ | 0.3+ |
| 2003 01 08 | 704 | 0.1− | 0.9− | 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | (0.2− | 1.9+) |
| 2003 01 09 | 704 | 1.3+ | 1.3− | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 1.1− |
| 2003 01 09 | 704 | 1.2+ | 0.3− | 2004 04 23 | 691 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.4+ |
| 2003 01 09 | 704 | (1.8+ | 0.8−) | 2004 04 23 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 291 | 0.4+ | 0.5+ |
| 2003 01 09 | 704 | (2.4+ | 0.8−) | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 10 11 | 291 | 0.4+ | 0.7+ |
| 2003 01 09 | 704 | 0.9+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 10 11 | 291 | 0.3+ | 0.6+ |
| 2003 01 30 | 608 | (0.1− | 2.4+) | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 10 19 | 703 | 1.6− | 0.2− |
| 2003 01 30 | 608 | (0.2− | 2.5+) | 2006 09 14 | 703 | 0.1− | 1.0− | 2006 10 19 | 703 | 1.3− | 0.0 |
| 2003 01 30 | 608 | (0.1− | 1.9+) | 2006 09 14 | 703 | 0.7− | 0.8− | 2006 10 19 | 703 | 1.0− | 0.7− |
| 2003 02 03 | 704 | 0.8+ | 0.9+ | 2006 09 14 | 703 | 1.3− | 0.2+ | 2006 10 19 | 703 | 1.8− | 0.0 |
| 2003 02 03 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 1.3− | 0.3− | | | | |
| 2003 02 03 | 704 | 0.3+ | 1.0+ | 2006 09 16 | 704 | 1.3+ | 1.4+ | | | | |

**(143249)∗ 2002 YP$_{29}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.54965 | | (2000.0) | | | |
| $n$ | 0.26908635 | $\omega$ | 140.72868 | | −0.51374750 | −0.85784972 |
| $a$ | 2.3761559 | $\Omega$ | 340.17528 | | +0.77753920 | −0.45937158 |
| $e$ | 0.1324547 | $i$ | 2.11980 | | +0.36262419 | −0.23037279 |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 27 | 691 | 0.1− | 0.7− | 2003 02 03 | 704 | 0.7+ | 0.3+ | 2005 10 06 | 699 | 0.3− | 0.2+ |
| 1991 12 27 | 691 | 0.4− | 0.6− | 2003 02 07 | 704 | 0.6+ | 0.3− | 2005 10 06 | 699 | 0.5− | 0.1− |
| 1991 12 27 | 691 | 0.0 | 0.5− | 2003 02 07 | 704 | 0.4+ | 1.2− | 2005 10 07 | 704 | 0.6− | 1.1− |
| 2002 12 27 | 699 | 0.3− | 0.4+ | 2003 02 07 | 704 | 0.1+ | 1.1− | 2005 10 07 | 704 | 0.5− | 0.2− |
| 2002 12 27 | 699 | 0.9+ | 1.3+ | 2003 02 08 | 704 | 0.6+ | 0.7+ | 2005 10 07 | 703 | 0.8− | 0.3+ |
| 2002 12 27 | 699 | 0.9+ | 1.1+ | 2003 02 08 | 704 | 0.5+ | 0.4− | 2005 10 07 | 704 | 0.6− | 0.1− |
| 2002 12 27 | 699 | 0.5− | 0.7+ | 2003 02 08 | 704 | 0.6+ | 0.5+ | 2005 10 07 | 703 | 0.1+ | 0.7+ |
| 2002 12 31 | 704 | 0.9+ | 0.3+ | 2003 02 08 | 704 | 0.4− | 0.3− | 2005 10 07 | 703 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.2+ | 0.5+ | 2005 09 09 | 704 | 0.3− | 0.4+ | 2005 10 07 | 703 | (2.1− | 1.5+) |
| 2002 12 31 | 704 | 0.5+ | 0.1− | 2005 09 09 | 704 | 0.6− | 0.1+ | 2005 10 10 | 691 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | 1.0+ | 0.1− | 2005 09 09 | 704 | 1.2− | 0.6+ | 2005 10 10 | 691 | 0.4+ | 0.1+ |
| 2003 01 04 | 704 | 0.2− | 0.2− | 2005 09 27 | 691 | 0.1+ | 0.1− | 2005 10 10 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.2− | 0.9+ | 2005 09 27 | 691 | 0.9+ | 0.2+ | 2005 10 24 | 691 | 0.0 | 0.4+ |
| 2003 01 04 | 704 | 0.4− | 1.4+ | 2005 09 27 | 691 | 0.0 | 0.3− | 2005 10 24 | 691 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 1.1+ | 0.1+ | 2005 10 01 | 691 | 0.1− | 0.2− | 2005 10 24 | 691 | 0.4− | 0.3+ |
| 2003 01 04 | 704 | 0.2+ | 0.2+ | 2005 10 01 | 691 | 0.1+ | 0.2− | 2005 11 28 | G96 | 0.0 | 0.3− |
| 2003 01 09 | 704 | 0.7− | 1.1− | 2005 10 01 | 691 | 0.1+ | 0.2− | 2005 11 28 | G96 | 0.3− | 0.1+ |
| 2003 01 09 | 704 | 1.4− | 0.0 | 2005 10 01 | 703 | 0.7− | 1.0+ | 2005 11 28 | G96 | 0.5+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 09 | 704 | 1.1− | 0.5− | 2005 10 01 | 703 | 1.4+ | 0.1− | 2005 11 28 | G96 | 0.2+ | 0.4− |
| 2003 01 09 | 704 | 1.0− | 0.1+ | 2005 10 01 | 703 | 0.9+ | 0.5+ | 2006 10 30 | G96 | 0.7− | 0.1− |
| 2003 01 09 | 704 | 0.6− | 0.8+ | 2005 10 01 | 703 | 0.3− | 0.7+ | 2006 10 30 | G96 | 0.2− | 0.2− |
| 2003 01 10 | 608 | 0.5− | 0.9+ | 2005 10 02 | 644 | 0.1+ | 0.1− | 2006 10 30 | G96 | 0.1− | 0.6− |
| 2003 01 10 | 608 | 0.5− | 0.3+ | 2005 10 02 | 644 | 0.3− | 0.3− | 2006 10 30 | G96 | 0.0 | 0.8− |
| 2003 01 10 | 608 | 0.3− | 0.5− | 2005 10 02 | 644 | 0.0 | 0.0 | 2006 11 01 | G96 | (2.2− | 0.4+) |
| 2003 01 27 | 699 | 1.0− | 0.2+ | 2005 10 02 | 644 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.5− | 0.2− |
| 2003 01 27 | 699 | 0.4− | 1.0+ | 2005 10 02 | G96 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2003 01 27 | 699 | 0.2− | 0.2+ | 2005 10 02 | G96 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2003 01 27 | 699 | 0.2+ | 0.2+ | 2005 10 02 | G96 | 0.5− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2003 01 31 | 704 | 0.2+ | 0.2+ | 2005 10 02 | 644 | 0.2− | 0.5− | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 2003 01 31 | 704 | 0.4+ | 0.3+ | 2005 10 02 | 644 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.5+ |
| 2003 01 31 | 704 | 0.5+ | 0.2+ | 2005 10 02 | 644 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2003 01 31 | 704 | 0.0 | 0.2+ | 2005 10 02 | 644 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2003 02 03 | 704 | (4.5+ | 2.5−) | 2005 10 02 | 644 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2003 02 03 | 704 | 0.6+ | 0.2+ | 2005 10 06 | 699 | 0.8− | 0.4− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2003 02 03 | 704 | (3.9+ | 3.0−) | 2005 10 06 | G96 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 02 03 | 704 | 0.6+ | 0.3+ | 2005 10 06 | G96 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2003 02 03 | 704 | (3.6+ | 1.9−) | 2005 10 06 | G96 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2003 02 03 | 704 | 0.5+ | 0.3+ | 2005 10 06 | G96 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2003 02 03 | 704 | (3.2+ | 2.7−) | 2005 10 06 | 699 | 1.2+ | 0.3+ | | | | |

**(143250)∗ 2002 YU$_{30}$ = 2001 TW$_{213}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47243)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.91595 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18738511 | $\omega$ | 29.02834 | | +0.78019963 | | +0.60906572 |
| $a$ | 3.0244472 | $\Omega$ | 292.74599 | | −0.59961130 | | +0.66325577 |
| $e$ | 0.0477703 | $i$ | 8.89348 | | −0.17819885 | | +0.43489164 |
| $P$ | 5.26 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 30 | 910 | 0.1+ | 0.2− | 2003 02 11 | 735 | 0.1+ | 0.8+ | 2006 09 27 | 703 | (2.9+ | 0.1+) |
| 1998 01 30 | 910 | 0.4+ | 0.4− | 2004 03 16 | 703 | 1.0− | 1.2+ | 2006 09 27 | 683 | (0.4+ | 1.9+) |
| 1998 01 30 | 910 | 0.2+ | 0.2+ | 2004 03 16 | 703 | (2.5+ | 2.6+) | 2006 09 29 | 699 | 0.4+ | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2004 03 16 | 703 | 0.5+ | 0.6− | 2006 09 29 | 699 | 0.1+ | 0.4+ |
| 2001 09 25 | 704 | 0.6− | 0.4− | 2004 03 16 | 703 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.3+ | 0.3− |
| 2001 09 25 | 704 | 0.8− | 0.3− | 2004 03 17 | 704 | 0.2+ | 0.9+ | 2006 09 29 | 699 | 1.1+ | 0.8+ |
| 2001 09 25 | 704 | 0.4− | 0.5− | 2004 03 17 | 704 | 0.5− | 0.6+ | 2006 10 03 | 704 | 0.1− | 1.3+ |
| 2001 10 13 | 644 | 0.4− | 0.4+ | 2004 03 17 | 704 | 0.9+ | 0.3− | 2006 10 03 | 704 | 0.3+ | 0.8+ |
| 2001 10 13 | 644 | 0.4− | 0.3+ | 2004 03 17 | 704 | 1.1+ | 0.6+ | 2006 10 03 | 704 | 0.6+ | 0.2+ |
| 2001 10 13 | 644 | 0.4− | 0.0 | 2006 08 29 | 699 | (1.5+ | 0.1−) | 2006 10 03 | 704 | 0.1+ | 0.4+ |
| 2001 10 18 | 704 | 0.7− | 1.0+ | 2006 08 29 | 699 | 0.3+ | 0.0 | 2006 10 03 | 703 | 0.3+ | 1.3− |
| 2001 10 18 | 704 | 0.1+ | 0.8+ | 2006 08 29 | 699 | 0.4− | 1.5+ | 2006 10 03 | 703 | 0.2+ | 0.2− |
| 2001 10 18 | 704 | 1.0+ | 0.2+ | 2006 08 29 | 699 | 0.6+ | 0.3+ | 2006 10 03 | 703 | 0.6+ | 1.0− |
| 2001 10 18 | 704 | 1.0+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 03 | 703 | (1.8− | 1.4−) |
| 2002 12 05 | 704 | 0.0 | 0.4− | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 1.0− | 0.4− | 2006 09 15 | 683 | (2.4+ | 1.2+) | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.7+ | 0.4− | 2006 09 15 | 683 | 0.5+ | 1.0− | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2002 12 31 | 704 | 0.2+ | 0.4− | 2006 09 15 | 683 | 1.3+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 09 17 | 683 | (2.1− | 1.3−) | 2006 10 17 | 703 | 0.9− | 0.7+ |
| 2002 12 31 | 704 | 0.5− | 0.3− | 2006 09 17 | 683 | (1.6− | 1.5−) | 2006 10 17 | 703 | 1.3− | 0.3+ |
| 2002 12 31 | 704 | 0.4− | 0.1+ | 2006 09 17 | 683 | 0.3− | 1.3+ | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2003 01 04 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 683 | 0.5+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 1.3+ | 0.0 | 2006 09 19 | 683 | 1.1− | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2003 01 04 | 704 | 1.1− | 0.1− | 2006 09 19 | 683 | 1.4− | 0.9+ | 2006 10 21 | 691 | 0.3+ | 0.2+ |
| 2003 01 04 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 683 | 0.1+ | 0.8− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2003 01 08 | 704 | 0.0 | 0.1+ | 2006 09 22 | 683 | 1.2+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2003 01 08 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 683 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2003 01 08 | 704 | 0.4− | 0.3− | 2006 09 27 | 683 | 1.5− | 0.9− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2003 01 08 | 704 | 0.4− | 0.3− | 2006 09 27 | 703 | 0.9− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.3− |
| 2003 01 08 | 704 | 0.6− | 0.8− | 2006 09 27 | 703 | 0.7− | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2003 02 11 | 735 | 0.7+ | 0.6+ | 2006 09 27 | 683 | (1.8− | 0.8−) | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2003 02 11 | 735 | 0.6− | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.9− | 2006 10 24 | 644 | 0.4+ | 0.1+ |

**(143251)∗ 2002 YY$_{30}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.23888 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20152691 | $\omega$ | 4.15664 | | −0.01484530 | | −0.99836251 |
| $a$ | 2.8812483 | $\Omega$ | 86.70032 | | +0.91577812 | | −0.03575620 |
| $e$ | 0.0407733 | $i$ | 3.17214 | | +0.40141009 | | +0.04465199 |
| $P$ | 4.89 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 05 | 691 | 0.8− | 0.8− | 2003 01 09 | 704 | 0.8+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 1994 04 05 | 691 | 0.4− | 0.2− | 2003 02 01 | 704 | 0.6+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 1994 04 05 | 691 | 0.1+ | 0.8− | 2003 02 01 | 704 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 0.3+ | 1.5+ | 2003 02 01 | 704 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.9+ | 2003 02 01 | 704 | 0.7+ | 1.5− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2001 10 20 | 704 | (0.7− | 1.7+) | 2004 04 19 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.2+ | 1.0+ | 2004 04 19 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 703 | 0.9− | 1.3+ |
| 2001 10 20 | 704 | (1.2− | 2.3+) | 2004 04 19 | 704 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2004 04 19 | 704 | 1.2+ | 0.8+ | 2006 10 21 | 703 | 0.7− | 1.0− |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2004 04 19 | 704 | 1.0+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 12 31 | 645 | 0.1+ | 0.0 | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | (0.6− | 1.6+) |
| 2002 12 31 | 704 | 0.3+ | 0.9+ | 2004 04 23 | 691 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 12 31 | 704 | 0.3− | 0.4+ | 2004 04 25 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.6− |
| 2002 12 31 | 704 | 0.4− | 0.0 | 2004 04 25 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2003 01 04 | 704 | 0.7− | 0.1+ | 2004 04 25 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2003 01 04 | 704 | 0.5− | 0.7+ | 2004 04 30 | 691 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2003 01 04 | 704 | 0.7− | 0.4− | 2004 04 30 | 691 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.6+ |
| 2003 01 08 | 704 | (1.7+ | 1.0−) | 2004 04 30 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2005 06 26 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.7+ |
| 2003 01 08 | 704 | 0.3+ | 0.3− | 2005 06 26 | 644 | 0.5+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2003 01 08 | 704 | 0.3− | 0.9+ | 2005 06 26 | 644 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2003 01 08 | 704 | 1.0+ | 0.3+ | 2006 09 30 | 703 | (0.2− | 3.4+) | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2003 01 09 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2003 01 09 | 704 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2003 01 09 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2003 01 09 | 704 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.3+ |

**(143252)∗ 2002 YG$_{31}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.58296 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21087897 | $\omega$ | 230.10375 | | −0.98905470 | | −0.08829911 |
| $a$ | 2.7954209 | $\Omega$ | 304.51593 | | +0.13393773 | | −0.87338717 |
| $e$ | 0.0998029 | $i$ | 8.24849 | | −0.06189899 | | −0.47895524 |
| $P$ | 4.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 691 | 0.1− | 0.7+ | 2003 01 27 | 699 | 0.8+ | 0.3+ | 2003 02 12 | 608 | (0.0 | 1.7+) |
| 2000 08 01 | 691 | 0.3− | 0.5+ | 2003 01 27 | 699 | 0.1+ | 0.0 | 2003 02 12 | 608 | (0.2+ | 1.8+) |
| 2000 08 01 | 691 | 0.3− | 0.8+ | 2003 01 27 | 699 | 0.6+ | 1.0+ | 2003 02 12 | 608 | 0.0 | 1.0+ |
| 2001 09 25 | 704 | 0.2− | 0.0 | 2003 01 29 | 645 | 0.1− | 0.0 | 2004 06 11 | 704 | 0.2− | 0.9− |
| 2001 09 25 | 704 | 0.3+ | 0.2+ | 2003 01 29 | 645 | 0.1− | 0.0 | 2004 06 11 | 704 | 0.6− | 1.0− |
| 2001 09 25 | 704 | 0.4− | 0.1+ | 2003 01 29 | 644 | 0.2+ | 0.3+ | 2004 06 11 | 704 | 1.1+ | 0.5+ |
| 2001 09 25 | 704 | 0.9− | 0.8+ | 2003 01 29 | 644 | 0.4+ | 0.4+ | 2004 06 13 | 644 | 0.3− | 1.0+ |
| 2001 09 25 | 704 | 1.0− | 0.1+ | 2003 01 29 | 644 | 0.1+ | 0.5+ | 2004 06 13 | 644 | 0.4− | 0.7+ |
| 2001 10 13 | 644 | 0.0 | 0.3+ | 2003 01 30 | 699 | 1.1+ | 0.4− | 2004 06 13 | 644 | 0.1− | 0.7+ |
| 2001 10 13 | 644 | 0.1+ | 0.0 | 2003 01 30 | 699 | 0.8+ | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.2+ |
| 2001 10 13 | 644 | 0.1+ | 0.1+ | 2003 01 30 | 699 | 0.3+ | 0.1− | 2005 08 24 | 644 | 0.1− | 0.4+ |
| 2002 12 11 | 644 | 0.2− | 0.7+ | 2003 01 30 | 699 | (2.3+ | 0.0 ) | 2005 08 24 | 644 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 644 | 0.2+ | 0.4+ | 2003 01 31 | 704 | 0.0 | 0.2− | 2006 11 02 | G96 | 0.1− | 0.6− |
| 2002 12 11 | 644 | 0.4− | 0.7+ | 2003 01 31 | 704 | 0.7− | 0.2− | 2006 11 02 | G96 | 0.2− | 0.6− |
| 2002 12 31 | 704 | 0.4+ | 0.5+ | 2003 01 31 | 704 | 0.7+ | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.6− |
| 2002 12 31 | 704 | 0.3+ | 0.5+ | 2003 01 31 | 704 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.4− | 0.7− |
| 2002 12 31 | 704 | 1.2+ | 1.1+ | 2003 01 31 | 704 | 0.6+ | 0.5− | 2006 11 02 | 703 | 0.9+ | 0.8+ |
| 2003 01 04 | 704 | 0.1+ | 0.8+ | 2003 02 03 | 704 | 0.1+ | 0.4− | 2006 11 02 | 703 | 0.2− | 0.5+ |
| 2003 01 04 | 704 | 0.2− | 0.7+ | 2003 02 03 | 704 | 1.2+ | 0.6+ | 2006 11 02 | 703 | 0.4− | 0.4+ |
| 2003 01 04 | 704 | 0.5+ | 0.4+ | 2003 02 03 | 704 | 0.4+ | 0.7− | 2006 11 02 | 703 | 0.0 | 0.4+ |
| 2003 01 04 | 704 | 0.4+ | 1.0+ | 2003 02 03 | 704 | 0.8+ | 0.5+ | 2006 11 15 | 703 | 0.6+ | 0.3− |
| 2003 01 04 | 704 | 0.2− | 0.8+ | 2003 02 03 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.1− |
| 2003 01 08 | 704 | 1.0+ | 0.9− | 2003 02 06 | 608 | 0.5− | 0.4− | 2006 11 15 | 703 | 0.3+ | 0.8− |
| 2003 01 08 | 704 | 1.2+ | 0.2+ | 2003 02 06 | 608 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.8− |
| 2003 01 08 | 704 | 0.7+ | 0.5+ | 2003 02 06 | 608 | 0.1+ | 0.6− | 2006 11 21 | 703 | 1.1− | 1.2+ |
| 2003 01 08 | 704 | 0.5+ | 1.0− | 2003 02 10 | 291 | 0.1+ | 0.3+ | 2006 11 21 | 703 | 0.6+ | 0.4− |
| 2003 01 08 | 704 | 0.7+ | 1.3− | 2003 02 10 | 291 | 0.6− | 0.3+ | 2006 11 21 | 703 | 0.0 | 1.0− |
| 2003 01 27 | 699 | 0.6+ | 0.9+ | 2003 02 10 | 291 | 0.8− | 0.3+ | 2006 11 21 | 703 | 0.8+ | 1.1− |

**(143253)∗ 2002 YL$_{31}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.21510 | | (2000.0) | | | |
| $n$ | 0.26559030 | $\omega$ | 204.25920 | | +0.89369854 | −0.44866601 |
| $a$ | 2.3969625 | $\Omega$ | 182.40014 | | +0.41661383 | +0.83093621 |
| $e$ | 0.2213588 | $i$ | 1.80219 | | +0.16654079 | +0.32900431 |
| $P$ | 3.71 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 08 | 699 | 0.1+ | 0.2− | 2003 01 31 | 704 | 0.0 | 0.0 | 2005 08 30 | 704 | (0.4+ | 1.6+) |
| 1998 12 08 | 699 | 0.3+ | 0.1+ | 2003 01 31 | 704 | 0.2+ | 0.7+ | 2005 08 30 | 704 | 0.3+ | 1.1+ |
| 1998 12 08 | 699 | 0.6− | 0.7+ | 2003 01 31 | 704 | 0.2+ | 0.9+ | 2005 08 30 | 704 | 0.8− | 0.4+ |
| 2000 04 05 | 704 | 0.1− | 0.5+ | 2003 02 08 | 704 | 0.4+ | 0.1+ | 2005 08 30 | 704 | (0.2+ | 1.5+) |
| 2000 04 05 | 704 | 0.1− | 0.3+ | 2003 02 08 | 704 | 1.0+ | 0.8+ | 2005 09 05 | 703 | 0.8− | 0.0 |
| 2000 04 05 | 704 | 0.3+ | 0.2+ | 2003 02 08 | 704 | 0.6+ | 0.8− | 2005 09 05 | 703 | 0.2+ | 0.3− |
| 2000 04 05 | 704 | 0.1− | 0.4+ | 2003 02 08 | 704 | 0.1− | 0.2+ | 2005 09 05 | 703 | 0.2− | 0.5− |
| 2002 11 06 | 704 | 0.8+ | 0.2− | 2004 05 21 | 691 | 0.1+ | 0.4+ | 2005 09 05 | 703 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.5+ | 0.7+ | 2004 05 21 | 691 | 0.2+ | 0.4+ | 2005 09 17 | 644 | 0.1+ | 0.6+ |
| 2002 11 06 | 704 | 1.2+ | 0.3+ | 2004 05 21 | 691 | 0.2+ | 0.4+ | 2005 09 17 | 644 | 0.2+ | 0.2+ |
| 2002 12 05 | 291 | 0.6− | 0.4+ | 2005 05 19 | G96 | 0.3− | 0.3+ | 2005 09 17 | 644 | 0.4+ | 0.1+ |
| 2002 12 05 | 291 | 1.0− | 0.4+ | 2005 05 19 | G96 | 0.4− | 0.1+ | 2005 09 28 | 644 | 0.1+ | 0.4+ |
| 2002 12 05 | 291 | 1.0− | 0.4+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2005 09 28 | 644 | 0.3+ | 0.2+ |
| 2002 12 31 | 704 | 0.7+ | 1.0+ | 2005 05 19 | G96 | 0.2− | 0.0 | 2005 09 28 | 644 | 0.3+ | 0.6+ |
| 2002 12 31 | 704 | 0.7+ | 0.0 | 2005 06 23 | 644 | 0.3− | 0.4+ | 2005 09 28 | 644 | 0.2− | 0.6+ |
| 2002 12 31 | 704 | 0.9+ | 0.2+ | 2005 06 23 | 644 | 0.5− | 0.3+ | 2005 09 28 | 644 | 0.0 | 0.4+ |
| 2003 01 04 | 704 | 0.3+ | 1.2+ | 2005 06 23 | 644 | 0.4− | 0.4+ | 2005 09 28 | 644 | 0.1+ | 0.5+ |
| 2003 01 04 | 704 | 0.2+ | 0.7− | 2005 07 29 | 644 | 0.2− | 0.2+ | 2005 10 31 | 703 | 0.7− | 0.7− |
| 2003 01 04 | 704 | (0.1+ | 3.2−) | 2005 07 29 | 644 | 0.1− | 0.4+ | 2005 10 31 | 703 | 0.8− | 0.3− |
| 2003 01 08 | 704 | 0.6+ | 0.8+ | 2005 07 29 | 644 | 0.2− | 0.4+ | 2005 10 31 | 703 | 0.9− | 1.4− |
| 2003 01 08 | 704 | 0.3+ | 0.4+ | 2005 08 02 | 704 | 0.0 | 0.7+ | 2005 10 31 | 703 | 0.1+ | 1.2− |
| 2003 01 08 | 704 | 0.1− | 0.7+ | 2005 08 02 | 704 | 0.0 | 0.6+ | 2005 11 25 | G96 | 0.0 | 0.1− |
| 2003 01 08 | 704 | 0.8+ | 0.3+ | 2005 08 02 | 704 | 0.1+ | 0.8+ | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2003 01 08 | 704 | 0.5+ | 0.6+ | 2005 08 02 | 704 | 0.3− | 0.8+ | 2005 11 25 | G96 | 0.1+ | 0.1+ |
| 2003 01 26 | 608 | 0.3+ | 1.0− | 2005 08 06 | 644 | 0.1− | 0.4+ | 2005 11 25 | G96 | 0.1+ | 0.1− |
| 2003 01 26 | 608 | 0.3+ | 0.6− | 2005 08 06 | 644 | 0.1− | 0.4+ | 2005 12 25 | 703 | (2.0− | 0.9+) |
| 2003 01 26 | 608 | 0.7+ | 0.7− | 2005 08 06 | 644 | 0.2− | 0.3+ | 2005 12 25 | 703 | (0.8− | 2.0+) |
| 2003 01 27 | 704 | 0.3+ | 0.8+ | 2005 08 23 | 608 | 0.0 | 0.6+ | 2005 12 25 | 703 | 0.8− | 0.3− |
| 2003 01 27 | 704 | 0.1+ | 0.0 | 2005 08 23 | 608 | 0.0 | 0.4+ | 2005 12 25 | 703 | (1.7− | 0.1−) |
| 2003 01 27 | 704 | 0.1− | 0.3+ | 2005 08 23 | 608 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2003 01 27 | 704 | 1.0+ | 0.2+ | 2005 08 27 | 644 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2003 01 27 | 704 | 0.8+ | 0.2− | 2005 08 27 | 644 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.6− | 0.3− |
| 2003 01 30 | 699 | 0.0 | 1.0+ | 2005 08 27 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2003 01 30 | 699 | 0.1+ | 0.8+ | 2005 08 27 | E12 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.5− | 0.1+ |
| 2003 01 30 | 699 | 0.4− | 0.1+ | 2005 08 27 | E12 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2003 01 30 | 699 | 0.4− | 0.9+ | 2005 08 27 | E12 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2003 01 31 | 704 | 0.0 | 0.3− | 2005 08 27 | E12 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.3− |

**(143254)∗ 2002 YL$_{35}$ = 1999 CT$_{61}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.63266 | | (2000.0) | | | |
| $n$ | 0.23036880 | $\omega$ | 244.89350 | | +0.10807439 | −0.99391574 |
| $a$ | 2.6354429 | $\Omega$ | 198.93851 | | +0.93406514 | +0.10883696 |
| $e$ | 0.1589745 | $i$ | 3.75351 | | +0.34035605 | +0.01691177 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 809 | 1.1+ | 0.6− | 2004 05 27 | 691 | 0.2− | 0.2+ | 2006 11 14 | 704 | 1.0+ | 0.8+ |
| 1993 10 12 | 809 | 0.3+ | 1.2− | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 1993 10 12 | 809 | 0.3− | 1.0− | 2006 10 16 | 703 | 0.3+ | 0.5+ | 2006 11 14 | 704 | 0.3+ | 1.2+ |
| 1993 10 22 | 809 | (3.4+ | 3.5−) | 2006 10 16 | 703 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.5+ | 0.6+ |
| 1993 10 22 | 809 | (3.6− | 3.1−) | 2006 10 16 | 703 | (1.6− | 1.6−) | 2006 11 14 | 704 | 0.8+ | 0.7+ |
| 1993 10 22 | 809 | (8.5− | 0.2+) | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 1997 09 08 | 910 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 1997 09 08 | 910 | 0.2− | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 1997 09 08 | 910 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 1999 02 12 | 704 | 1.0− | 0.6− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 1.2+ | 0.2− |
| 1999 02 12 | 704 | 0.4− | 2.0− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 1999 02 12 | 704 | 0.0 | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.7+ | 0.6+ |
| 1999 02 12 | 704 | 0.5− | 0.4− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 17 | 704 | 1.2+ | 0.9+ |
| 1999 02 12 | 704 | 0.3− | 1.4− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.8+ | 0.7+ |
| 1999 02 16 | 704 | (0.9− | 2.3+) | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.0 | 1.3+ |
| 1999 02 16 | 704 | 1.5+ | 0.0 | 2006 10 24 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.7+ |
| 1999 02 16 | 704 | 0.3− | 1.7− | 2006 10 24 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 0.1− |
| 1999 02 16 | 704 | 1.1+ | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.3− |
| 1999 02 16 | 704 | 0.1+ | 2.0− | 2006 10 28 | 704 | 1.2− | 0.6− | 2006 11 19 | 704 | 0.4− | 1.4+ |
| 2002 12 11 | 704 | 0.9− | 1.1+ | 2006 10 28 | 704 | 0.7− | 1.0+ | 2006 11 19 | 704 | 1.4− | 0.3− |
| 2002 12 11 | 704 | 0.9− | 1.1+ | 2006 10 28 | 704 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2002 12 11 | 704 | (2.1− | 0.6+) | 2006 10 28 | 704 | 0.4− | 0.2+ | 2006 11 19 | 704 | 1.4− | 0.5− |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.2− | 2006 11 19 | 704 | 1.3− | 0.3− |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2002 12 31 | 704 | 0.4+ | 0.2− | 2006 11 02 | 703 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.8+ |
| 2003 01 07 | 704 | 0.6− | 1.3+ | 2006 11 08 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2003 01 07 | 704 | (1.3− | 1.9+) | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2003 01 07 | 704 | 1.4− | 1.3+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 22 | 683 | 0.7− | 0.4− |
| 2003 01 07 | 704 | (0.8− | 2.3+) | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 22 | 683 | (0.5+ | 2.0−) |
| 2003 01 27 | 704 | 1.0+ | 0.5− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 22 | 683 | 1.0− | 0.6− |
| 2003 01 27 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 683 | 1.0+ | 0.0 |
| 2003 01 27 | 704 | 0.0 | 0.6− | 2006 11 10 | 644 | 0.3+ | 0.3+ | 2006 11 23 | 683 | 1.0+ | 0.3− |
| 2003 01 27 | 704 | 0.2− | 0.9+ | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 23 | 683 | 0.7+ | 0.6+ |
| 2004 04 24 | 691 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 28 | 683 | 0.8+ | 0.2+ |
| 2004 04 24 | 691 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.8+ |
| 2004 04 24 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | 2006 11 28 | 683 | 2.0− | 1.7+ |
| 2004 05 14 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.4− |
| 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.6− | 0.0 | 2006 11 28 | 683 | 1.7− | 0.3+ |
| 2004 05 14 | 691 | 0.3+ | 0.9+ | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2004 05 27 | 691 | 0.6+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.8+ | 0.4− |
| 2004 05 27 | 691 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.7− |

**(143255)∗ 2002 YV$_{35}$ = 1981 RK$_{1}$ = 2005 JS$_{59}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85818), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.37518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23960209 | $\omega$ | 238.51168 | | +0.99609128 | −0.04306058 | |
| $a$ | 2.5672942 | $\Omega$ | 123.84878 | | +0.06740359 | +0.93484400 | |
| $e$ | 0.3226285 | $i$ | 5.32828 | | −0.05708685 | +0.35243791 | |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 09 04 | 809 | 0.2+ | 0.6+ | 2005 06 01 | 691 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 1981 09 04 | 809 | 0.4− | 0.6+ | 2005 06 01 | 691 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.1− | 1.1+ |
| 1981 09 04 | 809 | 0.2− | 0.2− | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.3− |
| 1995 02 02 | 691 | 0.2− | 0.2− | 2006 09 19 | 704 | 0.8+ | 0.1− | 2006 11 17 | 704 | 0.2− | 0.5+ |
| 1995 02 02 | 691 | 0.0 | 0.5− | 2006 09 19 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 1995 02 02 | 691 | 0.2− | 0.0 | 2006 09 19 | 704 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2002 12 11 | 704 | 0.0 | 0.7+ | 2006 09 29 | 461 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2002 12 11 | 704 | 0.9+ | 0.6+ | 2006 09 29 | 461 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 461 | 0.5− | 0.2+ | 2006 11 18 | 704 | 1.1− | 1.0+ |
| 2002 12 11 | 704 | 0.9+ | 0.8+ | 2006 10 01 | 703 | 0.8− | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.7− |
| 2002 12 11 | 704 | 0.9+ | 0.6+ | 2006 10 01 | 703 | (2.3− | 0.5+) | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2002 12 31 | 704 | 0.3− | 0.9+ | 2006 10 01 | 703 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.5− |
| 2002 12 31 | 704 | 0.6− | 0.5+ | 2006 10 01 | 703 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2002 12 31 | 704 | 0.5− | 0.1+ | 2006 10 03 | 704 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.4− |
| 2003 01 07 | 704 | 0.6− | 0.8− | 2006 10 03 | 704 | 0.7− | 0.6+ | 2006 11 25 | 704 | 0.2− | 0.0 |
| 2003 01 07 | 704 | 0.6+ | 0.1− | 2006 10 03 | 704 | 0.4− | 0.6+ | 2006 11 25 | 704 | 0.1− | 0.3+ |
| 2003 01 07 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 25 | 704 | 0.5+ | 0.3+ |
| 2003 01 07 | 704 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 25 | 704 | 0.5− | 0.1+ |
| 2003 01 07 | 704 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 25 | 704 | 0.4− | 0.6+ |
| 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2005 05 08 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.3− |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.5+ | 0.6+ |
| 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.1+ | | | | |

**(143256)∗ 2002 YZ$_{35}$ = 2003 BX$_{87}$**

Discovered 2002 Dec. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (d, *MPO* 47244)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.88190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22250239 | $\omega$ | 298.64479 | | −0.89212059 | −0.45085914 | |
| $a$ | 2.6971986 | $\Omega$ | 214.57936 | | +0.43035468 | −0.82840696 | |
| $e$ | 0.1542447 | $i$ | 2.93917 | | +0.13753436 | −0.33236720 | |
| $P$ | 4.43 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 06 13 | 926 | 0.3− | 0.2+ | 2006 11 18 | 176 | 0.3+ | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 06 13 | 926 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.3− |
| 1999 03 23 | 699 | 0.9+ | 0.3+ | 2004 06 22 | 599 | 0.1− | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 1999 03 23 | 699 | 1.2+ | 0.4− | 2004 06 22 | 599 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.6− |
| 1999 03 23 | 699 | 0.6+ | 0.1− | 2004 06 22 | 599 | 0.6+ | 0.7− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2001 09 20 | 704 | 1.2+ | 1.0− | 2004 06 22 | 599 | 0.9+ | 0.5+ | 2006 11 18 | 704 | 0.9+ | 0.6− |
| 2001 09 20 | 704 | 0.5+ | 0.2− | 2006 10 12 | 691 | 0.4− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.4− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.4+ |
| 2001 09 20 | 704 | 0.2− | 0.4− | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 11 18 | 711 | 0.3− | 0.3+ |
| 2001 10 21 | 704 | 0.1+ | 1.0+ | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 18 | 711 | 0.5− | 0.3+ |
| 2001 10 21 | 704 | 1.2− | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.6− | 2006 11 18 | 711 | 0.4− | 0.1+ |
| 2001 10 21 | 704 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2001 12 10 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.4+ |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2002 12 31 | 704 | 0.8+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2003 01 07 | 704 | 0.1− | 1.4− | 2006 11 14 | 691 | 0.1+ | 0.7+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2003 01 07 | 704 | 0.1− | 0.9− | 2006 11 14 | 691 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2003 01 07 | 704 | 0.0 | 0.6− | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2003 01 07 | 704 | 1.3− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.7− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2003 01 07 | 704 | (1.1− | 1.5−) | 2006 11 17 | 703 | 0.3+ | 1.0+ | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2003 01 27 | 704 | (0.2− | 1.6−) | 2006 11 17 | 703 | 0.0 | 0.3− | 2006 11 27 | 703 | 1.2− | 1.1− |
| 2003 01 27 | 704 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.2+ | 0.9− | 2006 11 27 | 703 | 0.1− | 0.7− |
| 2003 01 27 | 704 | 0.6− | 0.2− | 2006 11 17 | 703 | 1.0+ | 0.9+ | 2006 11 27 | 703 | 0.1− | 0.4+ |
| 2003 01 27 | 704 | 0.5− | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.2+ | 2006 11 29 | 704 | 1.3+ | 1.6+ |
| 2003 02 02 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.5− | 0.1− | 2006 11 29 | 704 | 0.8+ | 0.1+ |
| 2003 02 02 | 704 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.5+ | 2006 11 29 | 704 | 0.2+ | 0.1+ |
| 2003 02 02 | 704 | 0.0 | 0.5− | 2006 11 17 | 176 | 0.6+ | 0.1− | 2006 11 29 | 704 | 1.6+ | 1.6+ |
| 2004 06 13 | 926 | 0.2− | 0.5+ | 2006 11 18 | 176 | 0.6+ | 0.4+ | | | | |

**(143257)∗ 2003 AE**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.24323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27156440 | $\omega$ | 265.82572 | | +0.87443507 | −0.34430860 | |
| $a$ | 2.3616788 | $\Omega$ | 114.01939 | | +0.43285434 | +0.87185573 | |
| $e$ | 0.3508895 | $i$ | 21.97385 | | −0.21908999 | +0.34830902 | |
| $P$ | 3.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.6+ | 0.0 | 2003 01 01 | 704 | 0.8− | 0.1− | 2003 02 04 | 673 | 0.1− | 0.4+ |
| 1995 11 19 | 691 | 0.9+ | 0.1+ | 2003 01 01 | 704 | 0.5+ | 1.0− | 2003 02 04 | 673 | 0.2− | 0.1+ |
| 1995 11 19 | 691 | 0.6+ | 0.2− | 2003 01 01 | 704 | 0.9− | 1.1+ | 2003 02 04 | 673 | 0.0 | 0.0 |
| 1995 12 22 | 691 | 0.1+ | 0.0 | 2003 01 01 | 704 | 0.3+ | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.3+ |
| 1995 12 22 | 691 | 0.0 | 0.1− | 2003 01 02 | 704 | 0.3− | 0.5− | 2005 07 11 | 691 | 0.3+ | 0.5+ |
| 1995 12 22 | 691 | 0.3+ | 0.0 | 2003 01 02 | 704 | 0.4+ | 0.2− | 2005 07 11 | 691 | 0.1+ | 0.4+ |
| 1995 12 26 | 691 | 0.3− | 0.1+ | 2003 01 02 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.7+ | 0.3+ |
| 1995 12 26 | 691 | 0.9− | 0.2− | 2003 01 02 | 704 | 0.1+ | 0.5− | 2006 10 23 | 691 | 0.7+ | 0.1+ |
| 1995 12 26 | 691 | 0.5− | 0.0 | 2003 01 02 | 704 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.4+ | 0.4+ |
| 2002 11 30 | 704 | 0.2+ | 0.1− | 2003 01 27 | 644 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.6− | 0.0 |
| 2002 11 30 | 704 | 0.4+ | 1.0+ | 2003 01 27 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.4+ |
| 2002 11 30 | 704 | 0.0 | 1.1+ | 2003 01 27 | 644 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.2+ |
| 2002 11 30 | 704 | 0.6− | 0.6+ | 2003 02 02 | 704 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 1.1− | 0.4− |
| 2002 12 05 | 704 | 0.5− | 0.2+ | 2003 02 02 | 704 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.4− | 0.1− | 2003 02 02 | 704 | 0.4+ | 0.8− | 2006 11 27 | G96 | 0.7− | 0.2+ |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2003 02 03 | 644 | 0.6+ | 0.3+ | 2006 11 27 | G96 | 0.7− | 0.2− |
| 2002 12 05 | 704 | 0.7− | 0.2− | 2003 02 03 | 644 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 1.1− | 0.2− |
| 2002 12 05 | 704 | 0.6− | 0.2+ | 2003 02 03 | 644 | 0.2+ | 0.4+ | | | | |

**(143258)∗ 2003 AU$_1$**

Discovered 2003 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.58473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23029808 | $\omega$ | 264.85164 | | +0.92427881 | −0.28576432 | |
| $a$ | 2.6359824 | $\Omega$ | 111.56469 | | +0.35442743 | +0.88865083 | |
| $e$ | 0.0921435 | $i$ | 15.79068 | | −0.14173879 | +0.35866204 | |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.5− | 0.0 | 2004 02 15 | 704 | 0.5+ | 0.3+ | 2005 06 11 | 691 | 0.1− | 0.2+ |
| 2002 10 30 | 704 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.8+ | 0.6+ | 2005 06 11 | 691 | 0.2+ | 0.3+ |
| 2002 10 30 | 704 | 0.8+ | 1.0+ | 2004 02 15 | 704 | 0.6+ | 0.6+ | 2005 06 11 | 691 | 0.1− | 0.2+ |
| 2002 10 30 | 704 | 0.8− | 0.5+ | 2004 03 14 | 704 | 0.8+ | 1.4+ | 2005 06 11 | 691 | 0.5+ | 0.0 |
| 2002 10 30 | 704 | 0.2− | 0.3− | 2004 03 14 | 704 | 1.0+ | 0.6+ | 2005 06 24 | 644 | 0.1+ | 0.2+ |
| 2002 11 06 | 644 | 0.3− | 0.0 | 2004 03 14 | 704 | 0.2+ | 1.0+ | 2005 06 24 | 644 | 0.2+ | 0.1− |
| 2002 11 06 | 644 | 0.1− | 0.1+ | 2004 03 14 | 704 | 0.2+ | 1.0+ | 2005 06 24 | 644 | 0.3+ | 0.1+ |
| 2002 11 06 | 644 | 0.2− | 0.0 | 2004 03 14 | 704 | 0.6+ | 0.6+ | 2005 06 27 | 691 | 0.1+ | 0.3+ |
| 2002 11 16 | 644 | 0.0 | 1.1+ | 2004 03 18 | 644 | 0.0 | 0.2+ | 2005 06 27 | 691 | 0.4+ | 0.1+ |
| 2002 11 16 | 644 | 0.1+ | 1.2+ | 2004 03 18 | 644 | 0.1+ | 0.2+ | 2005 06 27 | 691 | 0.5+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.8+ | 1.4+ | 2004 03 18 | 644 | 0.1+ | 0.2+ | 2005 06 30 | 691 | 0.3− | 0.9+ | | |
| 2002 11 30 | 704 | 1.2− | 0.4+ | 2004 04 14 | 703 | 0.5+ | 0.4+ | 2005 06 30 | 691 | 0.1− | 0.8+ | | |
| 2002 11 30 | 704 | 0.4+ | 0.0 | 2004 04 14 | 703 | 0.9+ | 1.0+ | 2005 06 30 | 691 | 0.5+ | 0.1+ | | |
| 2002 11 30 | 704 | 0.8− | 0.1+ | 2004 04 14 | 703 | 0.4+ | 0.4+ | 2005 07 05 | 644 | 0.5+ | 0.1+ | | |
| 2002 11 30 | 704 | 0.3− | 0.1+ | 2004 04 14 | 703 | (2.0+ | 1.2−) | 2005 07 05 | 644 | 0.3+ | 0.1+ | | |
| 2003 01 02 | 704 | 0.0 | 0.4+ | 2005 05 09 | 703 | 0.2− | 0.3− | 2005 07 05 | 644 | 0.5+ | 0.1+ | | |
| 2003 01 02 | 704 | 0.5− | 0.4+ | 2005 05 09 | 703 | 1.0− | 0.5− | 2006 08 05 | E12 | 0.1− | 0.2+ | | |
| 2003 01 02 | 704 | 0.0 | 1.3+ | 2005 05 09 | 703 | 1.2− | 1.5+ | 2006 08 05 | E12 | 0.8− | 0.8+ | | |
| 2003 01 02 | 704 | 0.2− | 0.5+ | 2005 05 09 | 703 | 0.1+ | 0.2+ | 2006 08 05 | E12 | 0.3− | 0.8+ | | |
| 2003 01 02 | 704 | 0.1− | 0.5+ | 2005 05 27 | 599 | 0.2+ | 0.3+ | 2006 08 05 | E12 | 0.3− | 1.0+ | | |
| 2003 01 03 | 704 | 0.7− | 0.3+ | 2005 05 28 | 599 | 1.3+ | 0.3− | 2006 09 22 | 703 | 0.1+ | 0.4+ | | |
| 2003 01 03 | 704 | 0.1+ | 1.2+ | 2005 05 28 | 599 | 0.9− | 0.2− | 2006 09 22 | 703 | 0.8− | 0.4+ | | |
| 2003 01 03 | 704 | 0.4+ | 0.7+ | 2005 06 02 | 703 | (0.9+ | 1.8+) | 2006 09 22 | 703 | 0.1− | 0.2− | | |
| 2003 01 03 | 704 | 0.0 | 0.4+ | 2005 06 02 | 703 | 0.1− | 0.5+ | 2006 09 22 | 703 | 1.0− | 1.4+ | | |
| 2003 01 04 | 704 | 0.3− | 0.8+ | 2005 06 02 | 703 | 0.0 | 0.8+ | 2006 09 24 | 699 | 0.2+ | 0.4+ | | |
| 2003 01 04 | 704 | 0.8− | 1.3+ | 2005 06 02 | 703 | 0.9− | 0.2+ | 2006 09 24 | 699 | 0.4− | 0.8+ | | |
| 2003 01 04 | 704 | 0.7− | 1.0+ | 2005 06 03 | E12 | 0.6− | 0.4+ | 2006 09 24 | 699 | 0.1+ | 0.2− | | |
| 2003 01 04 | 704 | 0.6− | 0.8+ | 2005 06 03 | E12 | 0.1− | 0.7− | 2006 09 24 | 699 | 0.1+ | 0.4+ | | |
| 2003 01 04 | 704 | 0.4− | 0.6+ | 2005 06 03 | E12 | 0.1− | 0.5+ | 2006 09 27 | 703 | 0.0 | 0.2+ | | |
| 2003 01 26 | 699 | 0.6− | 0.3− | 2005 06 03 | E12 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.3+ | | |
| 2003 01 26 | 699 | 0.9− | 1.0+ | 2005 06 09 | 703 | 0.5− | 1.2+ | 2006 09 27 | 703 | 0.1− | 0.1+ | | |
| 2003 01 26 | 699 | (1.7− | 0.0 ) | 2005 06 09 | 703 | 0.3− | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.2− | | |
| 2003 01 26 | 699 | (2.0− | 0.3+) | 2005 06 09 | 703 | 0.6+ | 0.1+ | 2006 11 18 | 703 | 0.5+ | 0.8− | | |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2005 06 09 | 703 | 0.3+ | 0.4− | 2006 11 18 | 703 | 0.2− | 0.2− | | |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 703 | 0.9+ | 0.2+ | | |
| 2004 02 15 | 704 | 0.7+ | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 703 | 0.2− | 0.9− | | |

**(143259)∗ 2003 AO$_2$**

Discovered 2003 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.60646 | | (2000.0) | | +0.89152793 | −0.25989746 |
| $n$ | 0.28156959 | $\omega$ | 283.09689 | | +0.39395934 | +0.84909850 |
| $a$ | 2.3053961 | $\Omega$ | 92.93013 | | −0.22354864 | +0.45987505 |
| $e$ | 0.2789243 | $i$ | 21.80646 | | | |
| $P$ | 3.50 | $H$ | 15.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 02 | 704 | 0.5+ | 0.3− | 2003 01 24 | 673 | (1.8− | 1.7−) | 2004 04 25 | 645 | 0.0 | 0.1+ | | |
| 2000 01 02 | 704 | 1.0− | 0.6− | 2003 01 24 | 673 | 0.0 | 0.5+ | 2004 04 25 | 645 | 0.0 | 0.1+ | | |
| 2000 01 02 | 704 | 0.5+ | 0.7− | 2003 01 24 | 673 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.5− | 0.2− | | |
| 2000 01 02 | 704 | 0.3− | 0.9− | 2003 01 24 | 673 | 0.6+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.7− | | |
| 2002 11 27 | 699 | 0.0 | 0.1+ | 2003 01 24 | 673 | 0.1+ | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.6− | | |
| 2002 11 27 | 699 | 0.3+ | 0.2− | 2003 01 28 | 704 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.4− | | |
| 2002 11 27 | 699 | 0.3+ | 0.2− | 2003 01 28 | 704 | 0.4+ | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.7− | | |
| 2002 11 27 | 699 | 0.5− | 0.2− | 2003 01 28 | 704 | (1.9+ | 0.5−) | 2006 10 04 | G96 | 0.2− | 0.5− | | |
| 2003 01 02 | 704 | 0.3− | 0.5+ | 2003 01 28 | 704 | (3.9+ | 0.1+) | 2006 10 04 | G96 | 0.7+ | 0.3− | | |
| 2003 01 02 | 704 | 0.1− | 0.7− | 2003 01 30 | 704 | 1.1− | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.4− | | |
| 2003 01 02 | 704 | 0.8+ | 0.2− | 2003 01 30 | 704 | 1.2− | 0.1− | 2006 10 20 | 703 | 1.1+ | 1.0− | | |
| 2003 01 02 | 704 | 1.0+ | 0.3− | 2003 01 30 | 704 | 1.5− | 0.1+ | 2006 10 20 | 703 | 0.5− | 1.0+ | | |
| 2003 01 03 | 704 | 0.0 | 1.0+ | 2003 01 30 | 704 | 1.5− | 0.7− | 2006 10 20 | 703 | 0.7+ | 0.2− | | |
| 2003 01 03 | 704 | 1.1− | 0.7+ | 2003 02 02 | 704 | (2.5+ | 1.3−) | 2006 10 20 | 703 | 0.2+ | 0.2− | | |
| 2003 01 03 | 704 | 0.4− | 1.0+ | 2003 02 02 | 704 | 1.2+ | 0.8+ | 2006 11 23 | 703 | 0.0 | 0.8− | | |
| 2003 01 03 | 704 | 0.1+ | 1.1+ | 2003 02 02 | 704 | 0.8+ | 0.1− | 2006 11 23 | 703 | 0.6+ | 0.0 | | |
| 2003 01 03 | 704 | 0.2− | 1.2+ | 2003 02 02 | 704 | 1.0− | 0.8− | 2006 11 23 | 703 | 0.8− | 0.8− | | |
| 2003 01 22 | 608 | 0.6− | 0.5+ | 2004 03 17 | 644 | 0.5+ | 0.8+ | 2006 11 23 | 703 | 0.4+ | 1.0− | | |
| 2003 01 22 | 608 | 0.6− | 0.3+ | 2004 03 17 | 644 | 0.7+ | 0.8+ | | | | | | |
| 2003 01 22 | 608 | 0.7− | 0.2+ | 2004 03 17 | 644 | 0.5+ | 0.7+ | | | | | | |

**(143260)∗ 2003 AA$_6$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.54691 | | (2000.0) | | −0.48653461 | −0.85290548 |
| $n$ | 0.21827928 | $\omega$ | 345.49253 | | +0.82522386 | −0.51978791 |
| $a$ | 2.7318763 | $\Omega$ | 133.21041 | | +0.28686174 | +0.04871108 |
| $e$ | 0.1463382 | $i$ | 15.05421 | | | |
| $P$ | 4.52 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 14 | 704 | 0.9− | 0.3− | 2003 01 29 | 608 | 0.1+ | 1.0− | 2003 03 08 | 704 | 0.5− | 0.3+ | | |
| 1999 05 14 | 704 | 1.2− | 0.3+ | 2003 01 29 | 608 | 0.1+ | 1.4− | 2003 03 08 | 704 | (1.7− | 0.2−) | | |
| 1999 05 14 | 704 | 0.2+ | 0.6+ | 2003 01 29 | 608 | 0.5+ | 0.6− | 2003 03 08 | 704 | 0.6− | 0.6+ | | |
| 1999 05 14 | 704 | 0.5+ | 1.0− | 2003 01 30 | 699 | 0.6+ | 0.0 | 2003 03 08 | 704 | (1.6− | 0.7+) | | |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2003 01 30 | 699 | 1.0+ | 0.6+ | 2003 03 08 | 704 | 0.4− | 0.2+ | | |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2003 01 30 | 699 | 1.1+ | 0.0 | 2003 03 08 | 704 | (1.5− | 1.5+) | | |
| 2003 01 01 | 704 | 0.2− | 0.5− | 2003 01 30 | 699 | 0.8+ | 0.1+ | 2003 03 13 | 644 | 0.1− | 0.5+ | | |
| 2003 01 01 | 704 | 1.2+ | 1.3+ | 2003 02 04 | 699 | 0.0 | 0.5+ | 2003 03 13 | 644 | 0.2+ | 0.3+ | | |
| 2003 01 01 | 704 | 0.0 | 0.1− | 2003 02 04 | 699 | 0.8− | 0.4+ | 2003 03 13 | 644 | 0.3+ | 0.4+ | | |
| 2003 01 01 | 704 | 0.1+ | 1.2+ | 2003 02 04 | 699 | (1.8+ | 1.2+) | 2004 06 11 | 691 | 0.0 | 0.3+ | | |
| 2003 01 04 | 704 | 1.2+ | 0.9− | 2003 02 04 | 704 | 0.1+ | 0.1− | 2004 06 11 | 691 | 0.1− | 0.3+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.7− | 2003 02 04 | 699 | 0.5− | 0.1+ | 2004 06 11 | 691 | 0.0 | 0.3+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.2+ | 2003 02 04 | 704 | 0.4− | 1.3+ | 2004 06 12 | 704 | (1.0+ | 2.5+) | | |
| 2003 01 04 | 704 | 0.4+ | 0.1− | 2003 02 04 | 704 | 0.5− | 0.4− | 2004 06 12 | 704 | 0.3+ | 0.3− | | |
| 2003 01 04 | 704 | 0.6− | 0.2− | 2003 02 04 | 704 | 0.5+ | 1.0+ | 2004 06 12 | 704 | (0.7+ | 2.3+) | | |
| 2003 01 08 | 704 | 1.0+ | 0.1+ | 2003 02 04 | 704 | 0.5+ | 0.4+ | 2005 07 28 | 644 | 0.1+ | 0.4+ | | |
| 2003 01 08 | 704 | 0.6+ | 0.5− | 2003 02 19 | 644 | 0.6+ | 0.8+ | 2005 07 28 | 644 | 0.0 | 0.5+ | | |
| 2003 01 08 | 704 | 0.1− | 0.5+ | 2003 02 19 | 644 | 0.5+ | 1.1+ | 2005 07 28 | 644 | 0.1+ | 0.5+ | | |
| 2003 01 08 | 704 | 0.1− | 0.5+ | 2003 02 19 | 644 | 0.7+ | 0.6− | 2005 08 04 | 644 | 0.1+ | 0.5+ | | |
| 2003 01 17 | 644 | 0.5+ | 0.2+ | 2003 02 24 | 608 | 0.3+ | 1.3− | 2005 08 04 | 644 | 0.1+ | 0.4+ | | |
| 2003 01 17 | 644 | 0.2− | 0.2+ | 2003 02 24 | 608 | (0.2+ | 1.5−) | 2005 08 04 | 644 | 0.2− | 0.6+ | | |
| 2003 01 17 | 644 | 0.1− | 0.4+ | 2003 02 24 | 608 | 0.4+ | 1.2− | 2005 08 28 | E12 | 0.4− | 1.2+ | | |
| 2003 01 26 | 699 | 0.5− | 0.5+ | 2003 03 03 | 608 | 0.6+ | 0.7− | 2005 08 28 | E12 | 0.2+ | 0.6+ | | |
| 2003 01 26 | 699 | 0.2+ | 0.6+ | 2003 03 03 | 608 | 0.6+ | 0.4− | 2005 08 28 | E12 | 0.5+ | 0.4+ | | |
| 2003 01 26 | 699 | 0.3+ | 0.3+ | 2003 03 03 | 608 | 0.6+ | 0.2− | 2005 08 28 | E12 | (0.3+ | 1.6+) | | |
| 2003 01 26 | 699 | 0.5− | 0.6− | 2003 03 06 | 704 | 0.2− | 0.1− | 2006 11 22 | 703 | 0.4− | 0.4+ | | |
| 2003 01 27 | 704 | 0.3+ | 0.1+ | 2003 03 06 | 704 | 0.5− | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.1+ | | |
| 2003 01 27 | 704 | 0.0 | 0.5+ | 2003 03 06 | 704 | 0.4− | 0.1− | 2006 11 22 | 703 | 0.2− | 0.0 | | |
| 2003 01 27 | 704 | 0.8+ | 0.6+ | 2003 03 06 | 704 | 0.7− | 1.1+ | 2006 11 22 | 703 | 0.2− | 0.4+ | | |
| 2003 01 27 | 704 | 0.2− | 0.1+ | 2003 03 06 | 704 | 0.4− | 0.5+ | 2006 12 01 | 703 | 0.0 | 0.8− | | |
| 2003 01 27 | 704 | 0.6− | 0.1+ | 2003 03 08 | 704 | 0.2− | 0.1+ | 2006 12 01 | 703 | 0.0 | 0.7+ | | |
| 2003 01 27 | 644 | 0.1+ | 0.4− | 2003 03 08 | 704 | 1.4− | 0.3− | 2006 12 01 | 703 | 0.5− | 0.2− | | |
| 2003 01 27 | 644 | 0.0 | 0.4− | 2003 03 08 | 704 | 1.2− | 0.3+ | 2006 12 01 | 703 | 0.1+ | 1.0+ | | |
| 2003 01 27 | 644 | 0.2+ | 0.5− | 2003 03 08 | 704 | 1.3− | 0.9+ | | | | | | |

**(143261)∗ 2003 AB$_7$**

Discovered 2003 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.46097 | | (2000.0) | | +0.83850987 | −0.54488616 |
| $n$ | 0.23349426 | $\omega$ | 32.79529 | | +0.46720304 | +0.71847902 |
| $a$ | 2.6118721 | $\Omega$ | 0.22355 | | +0.28039707 | +0.43230425 |
| $e$ | 0.1939727 | $i$ | 7.57667 | | | |
| $P$ | 4.22 | $H$ | 14.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 10 | 644 | 0.5− | 0.9+ | 2003 01 13 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.6− | 0.6− | | |
| 2001 07 10 | 644 | 0.2− | 0.7+ | 2003 01 13 | 704 | 0.2− | 0.8− | 2006 10 19 | 703 | 0.7− | 0.9− | | |
| 2001 07 10 | 644 | 0.5− | 1.2+ | 2003 01 13 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.3− | 0.3− | | |
| 2002 10 04 | 704 | 1.3+ | 0.4− | 2003 01 13 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.3− | | |
| 2002 10 04 | 704 | 0.4+ | 0.6− | 2003 01 31 | 704 | 0.5− | 0.3− | 2006 10 20 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 04 | 704 | 0.6+ | 0.5− | 2003 01 31 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 704 | 0.0 | 0.3+ | | |
| 2002 10 04 | 704 | 0.0 | 0.6− | 2003 01 31 | 704 | 0.6− | 0.1− | 2006 10 20 | 704 | 0.5+ | 0.6+ | | |
| 2002 10 04 | 704 | 0.4− | 1.2− | 2004 03 20 | 704 | 0.7+ | 0.0 | 2006 10 20 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 31 | 704 | 0.8+ | 0.1− | 2004 03 20 | 704 | (0.8+ | 2.6+) | 2006 10 20 | 704 | 0.3− | 1.0+ | | |
| 2002 10 31 | 704 | 0.9− | 0.3− | 2004 03 20 | 704 | 1.4+ | 0.4+ | 2006 10 21 | 704 | 0.8− | 0.6+ | | |
| 2002 10 31 | 704 | 0.8+ | 0.7+ | 2004 03 20 | 704 | (1.7+ | 0.4+) | 2006 10 21 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 31 | 704 | 0.5+ | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.9+ | 2006 10 21 | 704 | 0.4− | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | (0.2− | 2.1+) | 2004 03 27 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 704 | 0.2− | 0.5− |
| 2002 11 06 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.3− | 0.9+ | 2006 10 21 | 704 | 0.8− | 0.7+ |
| 2002 11 06 | 704 | 0.4+ | 0.2− | 2004 03 27 | 704 | 0.1+ | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.4+ | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.6+ | 0.2− | 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2002 11 15 | 644 | 0.0 | 0.1+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 11 15 | 644 | 0.1− | 0.4+ | 2006 08 30 | 704 | 1.3+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 11 15 | 644 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.7+ | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.2+ |
| 2002 11 15 | 704 | 0.2− | 0.8− | 2006 08 30 | 704 | 0.7+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 11 15 | 704 | 0.3+ | 0.5− | 2006 08 30 | 704 | 1.1+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2002 11 15 | 704 | 0.3+ | 0.6− | 2006 08 30 | 704 | 0.6+ | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2006 09 18 | 704 | 0.3− | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.2+ | 0.3− | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 18 | 704 | 0.8− | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 0.8− | 0.2− | 2006 11 02 | 703 | 0.3+ | 0.3− |
| 2002 12 15 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 704 | 0.1− | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.2− |
| 2002 12 15 | 704 | 0.7− | 1.1− | 2006 09 21 | 704 | 0.5− | 0.6+ | 2006 11 02 | 703 | 0.5− | 0.4− |
| 2002 12 15 | 704 | 0.0 | 0.0 | 2006 09 21 | 704 | 1.3+ | 0.9+ | 2006 11 02 | 703 | 0.1+ | 0.0 |
| 2002 12 15 | 704 | 0.1+ | 0.3+ | 2006 09 21 | 704 | 0.3− | 1.1+ | 2006 11 15 | 703 | 0.2− | 0.4− |
| 2002 12 15 | 704 | 0.4+ | 0.7+ | 2006 09 25 | 704 | 1.1− | 1.0+ | 2006 11 15 | 703 | 0.4+ | 0.4− |
| 2003 01 02 | 704 | 0.0 | 0.0 | 2006 09 25 | 704 | 1.0+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.5− |
| 2003 01 02 | 704 | 0.6− | 0.4+ | 2006 09 25 | 704 | 0.3− | 0.9+ | 2006 11 15 | 703 | 0.3− | 0.5− |
| 2003 01 02 | 704 | 0.5− | 0.3− | 2006 09 25 | 704 | 1.0− | 1.4+ | 2006 11 15 | 704 | 0.3− | 0.7+ |
| 2003 01 02 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.5+ | 0.7+ | 2006 11 15 | 704 | 0.7− | 0.6+ |
| 2003 01 02 | 704 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.6− | 1.0+ | 2006 11 15 | 704 | 0.5+ | 0.5− |
| 2003 01 02 | 704 | 0.3− | 0.1+ | 2006 09 29 | 704 | (2.4+ | 0.6+) | 2006 11 15 | 704 | 0.4− | 0.7+ |
| 2003 01 02 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.3+ | 1.0+ | 2006 11 15 | 704 | 0.1− | 0.4+ |
| 2003 01 02 | 704 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.8+ | 0.9+ | 2006 11 21 | 703 | 0.1+ | 0.1− |
| 2003 01 02 | 704 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.9+ | 2006 11 21 | 703 | 0.4− | 0.3− |
| 2003 01 02 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.9− | 0.3+ | 2006 11 21 | 703 | 0.2+ | 0.3− |
| 2003 01 04 | 704 | 0.4+ | 1.2+ | 2006 10 01 | 704 | 0.9+ | 0.4+ | 2006 11 21 | 703 | 0.3− | 0.1− |
| 2003 01 04 | 704 | 0.3+ | 1.1+ | 2006 10 01 | 704 | 0.6+ | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.5− |
| 2003 01 04 | 704 | 0.3− | 1.5+ | 2006 10 19 | 703 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2003 01 04 | 704 | (0.0 | 1.7+) | 2006 10 19 | 703 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2003 01 04 | 704 | (0.3+ | 1.7+) | 2006 10 19 | 703 | 0.5− | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.6− |
| 2003 01 13 | 704 | 0.1− | 0.7− | 2006 10 19 | 703 | 0.0 | 1.3+ | 2006 11 29 | 704 | 0.1− | 0.4− |

**(143262)∗ 2003 AF$_7$ = 1999 CO$_{123}$**

Discovered 2003 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47246)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.96908 | | (2000.0) | | | |
| $n$ | 0.22608304 | $\omega$ | 357.06983 | | +0.41159163 | −0.87624620 |
| $a$ | 2.6686445 | $\Omega$ | 68.51480 | | +0.84154429 | +0.25986978 |
| $e$ | 0.0689100 | $i$ | 15.62148 | | +0.34985074 | +0.40578355 |
| $P$ | 4.36 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 21 | 691 | 0.1− | 0.1− | 2003 01 04 | 704 | (0.4+ | 1.6+) | 2006 11 09 | 644 | 0.1− | 0.1− |
| 1993 11 21 | 691 | 0.5+ | 0.2+ | 2003 01 04 | 704 | (0.6+ | 1.6+) | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1993 11 21 | 691 | 0.1− | 0.5− | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.3− |
| 1999 02 11 | 704 | 0.4− | 0.9+ | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 1999 02 11 | 704 | 0.6+ | 0.4− | 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.2− |
| 1999 02 11 | 704 | 0.0 | 1.4− | 2004 04 15 | 704 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.9+ |
| 1999 02 11 | 704 | (4.0− | 2.7−) | 2004 04 15 | 704 | 0.2+ | 0.9− | 2006 11 14 | 704 | 0.1+ | 0.9+ |
| 1999 02 18 | 704 | 0.4+ | 1.0+ | 2004 04 15 | 704 | 0.8+ | 0.4+ | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 1999 02 18 | 704 | 1.4− | 1.5+ | 2004 04 15 | 704 | 0.9− | 0.5− | 2006 11 14 | 704 | 0.8− | 0.7+ |
| 1999 02 18 | 704 | 0.6+ | 1.9+ | 2004 04 22 | 703 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.1− | 1.4+ |
| 1999 02 18 | 704 | (0.5− | 2.5+) | 2004 04 22 | 703 | (1.8− | 1.2+) | 2006 11 14 | 704 | 0.2+ | 0.9+ |
| 1999 02 18 | 704 | (2.6− | 0.9+) | 2004 04 22 | 703 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.4− |
| 2001 08 17 | 644 | 0.6− | 0.5+ | 2004 04 22 | 703 | 0.6− | 1.4+ | 2006 11 17 | 704 | 0.6+ | 0.2− |
| 2001 08 17 | 644 | 0.2− | 0.6+ | 2004 04 23 | 703 | (2.1− | 1.1−) | 2006 11 17 | 704 | 0.3− | 0.3− |
| 2001 08 17 | 644 | 0.3− | 1.2+ | 2004 04 23 | 703 | 1.1+ | 1.4+ | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2002 11 12 | 704 | (1.6+ | 0.5−) | 2004 04 23 | 703 | (1.3− | 1.8+) | 2006 11 17 | 704 | 1.0+ | 0.3+ |
| 2002 11 12 | 704 | 0.3+ | 0.1+ | 2004 04 23 | 703 | 0.9+ | 1.3+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2005 07 05 | E12 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.2− | 2005 07 05 | E12 | 0.2− | 0.7+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2005 07 05 | E12 | (1.6+ | 0.7+) | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2005 07 05 | E12 | 0.1− | 0.2+ | 2006 11 19 | 704 | 1.3+ | 0.6+ |
| 2002 12 06 | 704 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.6− | 0.7+ |
| 2002 12 15 | 704 | 0.3+ | 0.9− | 2006 10 16 | 703 | 0.7− | 0.1− | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2002 12 15 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.9− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2002 12 15 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 1.0− | 0.2+ | 2006 11 20 | 704 | 0.8− | 1.3+ |
| 2002 12 15 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.5+ | 0.3− | 2006 11 20 | 704 | 0.7+ | 0.2+ |
| 2002 12 15 | 704 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.1+ | 0.6− | 2006 11 20 | 704 | (0.7− | 1.9+) |
| 2003 01 02 | 704 | 0.2+ | 0.8− | 2006 10 22 | 703 | 1.3+ | 0.8− | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2003 01 02 | 704 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.8− | 0.4+ |
| 2003 01 02 | 704 | 0.1+ | 0.1+ | 2006 10 31 | A50 | 0.0 | 0.5− | 2006 11 28 | 704 | (0.2+ | 2.2+) |
| 2003 01 02 | 704 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | (0.0 | 3.0+) |
| 2003 01 04 | 704 | (0.4+ | 1.7+) | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | (0.4+ | 2.7+) |
| 2003 01 04 | 704 | (0.2+ | 2.2+) | 2006 11 08 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 1.2− | 1.1+ |
| 2003 01 04 | 704 | (0.3+ | 2.3+) | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4− | 1.4+ |

**(143263)∗ 2003 AQ$_7$ = 2004 GK$_{75}$**

Discovered 2003 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61689)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 215.43768 | | (2000.0) | | | |
| $n$ | 0.18146009 | $\omega$ | 339.53692 | | −0.83519745 | −0.54558645 |
| $a$ | 3.0899300 | $\Omega$ | 166.71364 | | +0.53709370 | −0.83622634 |
| $e$ | 0.0678611 | $i$ | 17.50903 | | +0.11821834 | −0.05532575 |
| $P$ | 5.43 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 809 | (0.7− | 3.3−) | 2003 01 02 | 704 | 0.5− | 0.1− | 2004 04 24 | 704 | 0.1− | 0.1− |
| 1998 03 03 | 704 | 1.0+ | 1.1− | 2003 01 04 | 704 | 0.0 | 0.3+ | 2004 04 24 | 704 | 0.6− | 0.2+ |
| 1998 03 03 | 704 | 0.5+ | 0.2− | 2003 01 04 | 704 | 0.3− | 0.7+ | 2004 04 24 | 704 | 0.1+ | 0.1+ |
| 1998 03 03 | 704 | 0.8+ | 0.6+ | 2003 01 04 | 704 | 0.0 | 0.6+ | 2004 04 25 | 699 | 0.2+ | 0.5+ |
| 1998 03 03 | 704 | 0.2+ | 1.0+ | 2003 01 28 | 704 | (1.5+ | 0.0 ) | 2004 04 25 | 699 | 0.0 | 0.4+ |
| 1998 03 03 | 704 | 0.9− | 1.9− | 2003 01 28 | 704 | 0.0 | 0.5− | 2004 04 25 | 699 | 0.0 | 0.6+ |
| 1998 03 04 | 704 | 1.6− | 0.0 | 2003 01 28 | 704 | 0.0 | 0.3− | 2004 04 25 | 699 | 0.1− | 1.0+ |
| 1998 03 04 | 704 | 0.5− | 0.9− | 2003 01 28 | 704 | 0.8+ | 0.1+ | 2006 08 21 | 807 | 0.4− | 0.1+ |
| 1998 03 04 | 704 | (2.9− | 0.5+) | 2004 03 23 | 704 | 0.8+ | 1.3+ | 2006 08 21 | 807 | 0.4− | 0.0 |
| 1998 03 04 | 704 | 1.3− | 0.1+ | 2004 03 23 | 704 | 0.8+ | 0.4+ | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 1999 04 09 | 691 | 0.1− | 0.2− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.5+ |
| 1999 04 09 | 691 | 0.5− | 0.3− | 2004 03 23 | 704 | 0.3+ | 1.1+ | 2006 08 24 | 644 | 0.7− | 0.5+ |
| 1999 04 09 | 691 | 1.2− | 0.3− | 2004 03 23 | 704 | (1.6+ | 0.6+) | 2006 09 16 | 699 | (2.4+ | 1.2+) |
| 2000 08 26 | 691 | 0.7+ | 0.3− | 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | (0.6− | 2.4+) |
| 2000 08 26 | 691 | 0.5+ | 0.4+ | 2004 03 30 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.2− | 0.8+ |
| 2000 08 26 | 691 | 0.5+ | 0.0 | 2004 03 30 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.8− | 0.4+ |
| 2000 09 03 | 645 | 0.1− | 0.1− | 2004 04 15 | 704 | (1.0+ | 1.9+) | 2006 09 19 | 703 | 0.6− | 0.5− |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2004 04 15 | 704 | 0.9+ | 0.9+ | 2006 09 19 | 703 | 0.4+ | 0.3− |
| 2001 09 18 | 645 | 0.1+ | 0.0 | 2004 04 15 | 704 | (0.3+ | 2.5+) | 2006 09 19 | 703 | 0.8− | 0.2+ |
| 2001 09 18 | 645 | 0.1+ | 0.0 | 2004 04 15 | 704 | 0.7+ | 1.2+ | 2006 09 19 | 703 | 0.2+ | 0.1+ |
| 2001 09 21 | 645 | 0.1+ | 0.1+ | 2004 04 15 | 704 | (1.8+ | 1.1+) | 2006 10 03 | G96 | 0.9− | 0.2− |
| 2001 09 21 | 645 | 0.1− | 0.1+ | 2004 04 15 | 644 | 0.1− | 0.9+ | 2006 10 03 | G96 | 0.6− | 0.2+ |
| 2001 10 23 | 699 | (0.3+ | 1.6+) | 2004 04 15 | 644 | 0.2+ | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.1+ |
| 2001 10 23 | 699 | 0.2+ | 0.2+ | 2004 04 15 | 644 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.5− | 0.1− |
| 2001 10 23 | 699 | (2.1+ | 0.2+) | 2004 04 21 | 608 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 10 23 | 699 | (0.5+ | 1.7−) | 2004 04 21 | 608 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.8− | 0.2+ |
| 2003 01 02 | 704 | 0.1− | 0.7− | 2004 04 21 | 608 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2003 01 02 | 704 | 0.1− | 0.1+ | 2004 04 24 | 704 | 1.0+ | 0.3− | | | | |

**(143264)∗ 2003 AW$_9$**

Discovered 2003 Jan. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.15810 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17560021 | $\omega$ | 198.38144 | | −0.88087275 | −0.46958555 | |
| $a$ | 3.1582950 | $\Omega$ | 313.46009 | | +0.44394293 | −0.77587451 | |
| $e$ | 0.1458905 | $i$ | 4.71017 | | +0.16424946 | −0.42131717 | |
| $P$ | 5.61 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.3+ | 0.4− | 2003 01 27 | 704 | 1.1+ | 0.4− | 2003 02 22 | 699 | 1.2+ | 0.3+ | |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2003 01 27 | 704 | 0.5+ | 0.8+ | 2003 02 22 | 644 | 0.4+ | 0.4+ | |
| 2001 11 12 | 704 | 0.3+ | 0.4+ | 2003 01 27 | 291 | 0.7− | 0.6− | 2003 03 05 | 704 | 0.0 | 0.8+ | |
| 2001 11 12 | 704 | 0.0 | 0.6+ | 2003 01 27 | 291 | 0.2+ | 0.7− | 2003 03 05 | 704 | (0.4+ | 2.8+) | |
| 2001 11 12 | 704 | 0.1+ | 0.4+ | 2003 01 27 | 291 | 0.4+ | 0.2− | 2003 03 05 | 704 | 1.1+ | 0.0 | |
| 2001 12 10 | 704 | 0.2− | 1.3+ | 2003 01 30 | 699 | 1.0− | 1.5+ | 2003 03 05 | 704 | 1.1+ | 1.0+ | |
| 2001 12 10 | 704 | 0.1− | 0.6+ | 2003 01 30 | 699 | 0.7+ | 0.8+ | 2003 03 06 | 644 | 0.7+ | 0.1+ | |
| 2001 12 10 | 704 | (0.1+ | 1.8+) | 2003 01 30 | 699 | 0.4+ | 1.1+ | 2003 03 06 | 644 | 0.4+ | 0.3+ | |
| 2001 12 10 | 704 | 0.2− | 1.2− | 2003 01 30 | 699 | 0.3− | 0.6− | 2003 03 06 | 644 | 0.8+ | 0.0 | |
| 2001 12 20 | 644 | 0.3− | 0.3+ | 2003 01 31 | 704 | 0.3+ | 0.3+ | 2003 03 12 | 644 | 0.3+ | 0.4+ | |
| 2001 12 20 | 644 | 0.5− | 0.5+ | 2003 01 31 | 704 | 0.7− | 0.1− | 2003 03 12 | 644 | 0.1+ | 0.4+ | |
| 2001 12 20 | 644 | 0.6− | 0.3+ | 2003 01 31 | 704 | 0.7+ | 0.0 | 2003 03 12 | 644 | 0.5+ | 0.2+ | |
| 2003 01 04 | 291 | 0.3− | 0.1+ | 2003 01 31 | 704 | 0.2+ | 0.3+ | 2005 06 30 | 691 | 0.1− | 0.3+ | |
| 2003 01 04 | 291 | 0.1− | 0.1+ | 2003 01 31 | 704 | 0.7+ | 0.2+ | 2005 06 30 | 691 | 0.2− | 0.6+ | |
| 2003 01 04 | 291 | 0.3+ | 0.1+ | 2003 02 03 | 699 | 0.1+ | 0.1− | 2005 06 30 | 691 | 0.3− | 0.6+ | |
| 2003 01 05 | 291 | 0.3− | 0.1+ | 2003 02 03 | 704 | (1.1+ | 2.0+) | 2005 07 11 | 691 | 0.1− | 0.5+ | |
| 2003 01 05 | 291 | 0.5− | 0.0 | 2003 02 03 | 699 | 0.7− | 0.4− | 2005 07 11 | 691 | 0.2− | 0.6+ | |
| 2003 01 05 | 291 | 1.3− | 0.0 | 2003 02 03 | 704 | 1.0+ | 0.8+ | 2005 07 11 | 691 | 0.2− | 0.9+ | |
| 2003 01 15 | 599 | 0.5+ | 0.1+ | 2003 02 03 | 699 | 0.4+ | 0.9+ | 2005 07 15 | G96 | 0.2+ | 0.1+ | |
| 2003 01 15 | 599 | 0.0 | 0.3+ | 2003 02 03 | 704 | 1.1+ | 0.3+ | 2005 07 15 | G96 | 0.0 | 0.4+ | |
| 2003 01 15 | 599 | 0.2+ | 0.3+ | 2003 02 03 | 699 | 0.6+ | 0.1+ | 2005 07 15 | G96 | 0.6− | 0.4+ | |
| 2003 01 15 | 599 | 1.2+ | 0.1+ | 2003 02 03 | 704 | 0.1+ | 0.6+ | 2005 07 15 | G96 | 0.2− | 0.3+ | |
| 2003 01 15 | 599 | 0.4+ | 0.9+ | 2003 02 08 | 704 | 1.1− | 0.9+ | 2005 09 01 | 691 | 0.2− | 0.2+ | |
| 2003 01 16 | 599 | 0.3+ | 0.6+ | 2003 02 08 | 704 | (2.0− | 0.8+) | 2005 09 01 | 691 | 0.3− | 0.2+ | |
| 2003 01 16 | 599 | 0.2− | 0.7+ | 2003 02 08 | 704 | 1.3− | 0.9+ | 2005 09 01 | 691 | 0.1− | 0.3+ | |
| 2003 01 26 | 699 | (0.1+ | 2.0+) | 2003 02 19 | 608 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.1+ | |
| 2003 01 26 | 699 | 0.4− | 1.1+ | 2003 02 19 | 608 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.3+ | |
| 2003 01 26 | 699 | 0.2+ | 1.5+ | 2003 02 19 | 608 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.1− | |
| 2003 01 26 | 699 | 1.0− | 0.1+ | 2003 02 22 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.4− | |
| 2003 01 27 | 704 | 1.3+ | 0.9− | 2003 02 22 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.3+ | |
| 2003 01 27 | 704 | 0.9+ | 0.1+ | 2003 02 22 | 644 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.3+ | |
| 2003 01 27 | 704 | 0.0 | 0.6+ | 2003 02 22 | 644 | 0.2+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.3+ | |
| 2003 01 27 | 704 | 0.9+ | 0.1− | 2003 02 22 | 699 | (2.2+ | 0.3+) | 2006 10 23 | G96 | 0.1+ | 0.2+ | |
| 2003 01 27 | 704 | 1.0+ | 0.6+ | 2003 02 22 | 699 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.1− | 0.0 | |
| 2003 01 27 | 704 | (1.6+ | 0.4−) | 2003 02 22 | 699 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.1− | |
| 2003 01 27 | 704 | 0.0 | 0.5+ | 2003 02 22 | 644 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.0 | |

**(143265)∗ 2003 AN$_{10}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.55210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18751868 | $\omega$ | 285.18039 | | +0.51547078 | −0.84514163 | |
| $a$ | 3.0230108 | $\Omega$ | 132.89609 | | +0.84152167 | +0.46811195 | |
| $e$ | 0.1765525 | $i$ | 11.13762 | | +0.16165135 | +0.25808299 | |
| $P$ | 5.26 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 17 | 910 | 0.5+ | 0.2− | 2003 01 01 | 704 | 0.2+ | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.1+ | |
| 1998 01 17 | 910 | 0.6+ | 0.3− | 2003 01 01 | 704 | 0.8− | 0.6+ | 2004 03 23 | 704 | 0.1+ | 1.6+ | |
| 1998 01 17 | 910 | 0.6+ | 0.1− | 2003 01 05 | 704 | 0.1− | 0.8+ | 2004 03 23 | 704 | 0.6− | 1.3+ | |
| 2001 08 11 | 608 | 1.1− | 1.4+ | 2003 01 05 | 704 | 0.2+ | 0.7+ | 2005 05 13 | 691 | 0.0 | 0.2+ | |
| 2001 08 11 | 608 | 1.3− | 1.5+ | 2003 01 05 | 704 | 0.1− | 0.3+ | 2005 05 13 | 691 | 0.2+ | 0.0 | |
| 2001 08 11 | 608 | 1.1− | 0.8+ | 2003 01 05 | 704 | 1.1− | 0.8+ | 2005 05 13 | 691 | 0.3+ | 0.0 | |
| 2001 08 24 | 644 | 0.1+ | 0.6+ | 2003 01 27 | 704 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.5− | 0.3− | |
| 2001 08 24 | 644 | 0.0 | 0.5+ | 2003 01 27 | 704 | 0.7− | 0.3+ | 2005 05 14 | G96 | 0.7− | 0.2− | |
| 2001 08 24 | 644 | 0.1− | 0.3+ | 2003 01 27 | 704 | 0.3+ | 0.9− | 2005 05 14 | G96 | 0.8− | 0.2+ | |
| 2002 12 01 | 704 | 0.5+ | 0.3+ | 2003 01 27 | 704 | 0.3− | 0.8+ | 2005 05 14 | G96 | 0.8+ | 0.1− | |
| 2002 12 01 | 704 | 0.3− | 0.2− | 2003 02 06 | 938 | (1.5− | 2.3+) | 2005 06 29 | 644 | 0.1+ | 0.0 | |
| 2002 12 01 | 704 | 0.3+ | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.5+ | 2005 06 29 | 644 | 0.1+ | 0.3+ | |
| 2002 12 14 | 704 | 0.1− | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2005 06 29 | 644 | 0.2+ | 0.1+ | |
| 2002 12 14 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 704 | (0.3+ | 2.0+) | 2006 06 22 | 691 | 0.1− | 0.3+ | |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.1+ | 0.0 | 2006 06 22 | 691 | 0.3+ | 0.2+ | |
| 2002 12 14 | 704 | 0.2+ | 0.3+ | 2004 03 20 | 691 | 0.2− | 0.3+ | 2006 06 22 | 691 | 0.4+ | 0.1+ | |
| 2002 12 14 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 691 | 0.2− | 0.1+ | 2006 08 21 | 807 | 0.0 | 0.0 | |
| 2003 01 01 | 704 | 0.1− | 0.4+ | 2004 03 20 | 691 | 0.0 | 0.2+ | 2006 08 21 | 807 | 0.0 | 0.1− | |
| 2003 01 01 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.7+ | 0.3− | | | | | |

**(143266)∗ 2003 AF$_{11}$ = 2004 FH$_{14}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.64559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22581903 | $\omega$ | 239.28339 | | +0.97722493 | −0.13038505 | |
| $a$ | 2.6707241 | $\Omega$ | 127.68004 | | +0.17266264 | +0.94721355 | |
| $e$ | 0.1961154 | $i$ | 12.21296 | | −0.12336550 | +0.29289287 | |
| $P$ | 4.36 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 691 | 0.1− | 0.1− | 2004 03 23 | 704 | (1.7+ | 0.8+) | 2006 09 30 | 704 | 0.7− | 1.0+ | |
| 1999 01 17 | 691 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.6+ | 1.1+ | 2006 09 30 | 704 | 0.2− | 0.7+ | |
| 2001 06 15 | 704 | 1.2− | 1.5+ | 2004 03 23 | 704 | 1.4+ | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.6+ | |
| 2001 06 15 | 704 | 0.7− | 0.1+ | 2005 05 03 | 703 | 0.2− | 0.3+ | 2006 09 30 | 704 | 0.3+ | 0.2+ | |
| 2001 06 15 | 704 | 0.7+ | 0.8+ | 2005 05 03 | 703 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | |
| 2001 06 15 | 704 | 0.2− | 0.5+ | 2005 05 03 | 703 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.6+ | |
| 2001 06 15 | 704 | 0.4− | 0.8+ | 2005 05 03 | 703 | 0.6− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.4+ | |
| 2002 12 14 | 704 | 0.3− | 0.6+ | 2005 06 02 | 703 | 0.1− | 0.2− | 2006 10 20 | 703 | 0.5+ | 1.3+ | |
| 2002 12 14 | 704 | 0.0 | 0.5+ | 2005 06 02 | 703 | 0.0 | 0.5+ | 2006 10 20 | 703 | 1.1− | 1.2− | |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2005 06 02 | 703 | 0.4− | 0.6+ | 2006 10 20 | 703 | 0.0 | 0.3− | |
| 2002 12 14 | 704 | 0.4− | 0.2+ | 2005 06 02 | 703 | 0.4+ | 0.2+ | 2006 10 20 | 703 | (1.6+ | 0.0 ) | |
| 2002 12 14 | 704 | 0.1− | 0.4+ | 2005 06 03 | E12 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.6+ | |
| 2003 01 01 | 704 | 0.4− | 0.2− | 2005 06 03 | E12 | 0.1− | 0.9+ | 2006 10 21 | 703 | 0.2+ | 0.6+ | |
| 2003 01 01 | 704 | 0.6+ | 0.4+ | 2005 06 03 | E12 | 0.6− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.8+ | |
| 2003 01 01 | 704 | 0.1− | 0.4− | 2005 06 03 | E12 | 0.4+ | 0.8− | 2006 10 21 | 703 | 0.7− | 0.3+ | |
| 2003 01 05 | 704 | 0.4+ | 0.9+ | 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.6+ | |
| 2003 01 05 | 704 | 1.0+ | 1.4+ | 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.8+ | |
| 2003 01 05 | 704 | (0.4+ | 1.8+) | 2005 06 04 | 691 | 0.6+ | 0.7+ | 2006 10 28 | 703 | 0.2− | 0.3+ | |
| 2003 01 05 | 704 | 1.0+ | 0.9+ | 2005 06 09 | 704 | 0.7− | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.7+ | |
| 2004 02 17 | 704 | 0.2− | 0.4− | 2005 06 09 | 704 | 0.0 | 1.1+ | 2006 11 17 | 703 | 0.1− | 0.1− | |
| 2004 02 17 | 704 | 0.4+ | 0.4+ | 2005 06 09 | 704 | 0.6+ | 0.7− | 2006 11 17 | 703 | 0.0 | 0.0 | |
| 2004 02 17 | 704 | 0.5+ | 1.0+ | 2005 06 09 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.0 | |
| 2004 03 16 | 704 | 0.6+ | 0.5+ | 2005 06 09 | 703 | 0.9− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.4+ | |
| 2004 03 16 | 704 | 0.1+ | 0.9+ | 2005 06 09 | 703 | 0.9− | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.5+ | |
| 2004 03 16 | 704 | 0.4+ | 0.9+ | 2005 06 09 | 703 | (1.9− | 0.0 ) | 2006 11 19 | 703 | 0.1− | 0.3+ | |
| 2004 03 16 | 704 | 0.7− | 0.6+ | 2005 06 09 | 703 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.4− | 0.6+ | |
| 2004 03 17 | 704 | 1.0− | 1.1+ | 2005 06 14 | 691 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.0 | 0.5+ | |
| 2004 03 17 | 704 | 0.1+ | 0.8+ | 2005 06 14 | 691 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.9− | 1.6+ | |
| 2004 03 17 | 704 | 0.3+ | 1.3+ | 2005 06 14 | 691 | 0.9+ | 1.1+ | 2006 11 20 | 704 | 0.7− | 1.2+ | |
| 2004 03 17 | 704 | 0.7− | 0.4+ | 2005 06 24 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.8+ | |
| 2004 03 17 | 704 | 0.5− | 0.0 | 2005 06 24 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.9− | 2.1+ | |
| 2004 03 17 | 704 | 0.4+ | 0.4+ | 2005 06 24 | 644 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.7− | 0.5+ | |
| 2004 03 17 | 704 | 0.5− | 0.5+ | 2006 09 18 | 703 | 0.5+ | 0.4+ | 2006 11 23 | 703 | 0.2+ | 0.1− | |
| 2004 03 17 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.1+ | |
| 2004 03 17 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.0 | 0.2+ | |
| 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 11 23 | 703 | 0.2− | 0.0 | |
| 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 704 | 0.2− | 0.4+ | | | | | |

**(143267)∗ 2003 AJ$_{11}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.63293 | | (2000.0) | | | |
| $n$ | 0.21659376 | $\omega$ | 277.58111 | | +0.40514918 | −0.90801766 |
| $a$ | 2.7460309 | $\Omega$ | 147.84695 | | +0.89775948 | +0.37308809 |
| $e$ | 0.2480988 | $i$ | 11.55209 | | +0.17286425 | +0.19054977 |
| $P$ | 4.55 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 24 | 608 | 0.3+ | 1.3− | 2004 03 23 | 704 | 0.1− | 1.3+ | 2006 08 28 | 699 | 0.1− | 0.5+ |
| 2001 07 24 | 608 | 0.7+ | 1.1− | 2004 03 23 | 704 | 0.7− | 0.9+ | 2006 08 28 | 699 | 0.2− | 0.0 |
| 2001 07 24 | 608 | 0.0 | 0.6− | 2004 03 23 | 704 | 0.4+ | 0.9+ | 2006 08 30 | 704 | 0.4− | 0.8+ |
| 2001 08 07 | 608 | 0.8− | 1.0− | 2004 03 28 | 704 | 0.4+ | 0.7+ | 2006 08 30 | 704 | 0.1− | 0.9+ |
| 2001 08 07 | 608 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.0 | 1.0+ | 2006 08 30 | 704 | 0.9+ | 0.6+ |
| 2001 08 07 | 608 | 0.2− | 0.6− | 2004 03 28 | 704 | 0.7+ | 1.1+ | 2006 08 31 | 704 | (0.5− | 2.8+) |
| 2002 10 04 | 704 | 0.7+ | 1.4− | 2004 03 28 | 704 | 1.0+ | 0.8+ | 2006 08 31 | 704 | 0.1− | 0.9+ |
| 2002 10 04 | 704 | (0.1+ | 1.8−) | 2004 03 28 | 704 | 0.9− | 0.9+ | 2006 08 31 | 704 | 0.5+ | 0.3+ |
| 2002 10 04 | 704 | (0.2− | 1.7−) | 2004 03 28 | 704 | 0.8+ | 0.4+ | 2006 09 12 | 704 | 0.4+ | 0.1+ |
| 2002 12 14 | 704 | 0.1− | 0.5+ | 2004 03 28 | 704 | (0.0 | 1.7+) | 2006 09 12 | 704 | 0.6+ | 0.5+ |
| 2002 12 14 | 704 | 0.1+ | 0.7+ | 2004 03 28 | 703 | (1.7− | 0.7+) | 2006 09 12 | 704 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 0.0 | 0.8+ | 2004 03 28 | 704 | 0.0 | 1.2+ | 2006 09 12 | 704 | 1.3+ | 0.7+ |
| 2002 12 14 | 704 | 0.0 | 0.9+ | 2004 03 28 | 703 | (2.5− | 1.2+) | 2006 09 12 | 704 | 0.7+ | 0.0 |
| 2002 12 14 | 704 | 0.2− | 1.1+ | 2004 03 28 | 703 | 1.3+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.2+ |
| 2003 01 01 | 704 | 0.6− | 0.5− | 2004 03 28 | 703 | (0.3− | 2.2+) | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2003 01 01 | 704 | 0.4− | 0.6− | 2004 03 29 | 704 | 0.8− | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.1+ |
| 2003 01 01 | 704 | 0.4− | 0.7− | 2004 03 29 | 704 | 0.7+ | 1.1+ | 2006 09 14 | 703 | 0.1+ | 0.1+ |
| 2003 01 01 | 704 | 0.7− | 0.8− | 2004 03 29 | 704 | (0.3+ | 1.5+) | 2006 09 16 | 704 | 0.0 | 1.0+ |
| 2003 01 05 | 704 | (1.2+ | 1.6+) | 2004 03 29 | 704 | 0.5− | 0.3+ | 2006 09 16 | 704 | 0.2+ | 0.6+ |
| 2003 01 05 | 704 | (2.1+ | 1.5+) | 2004 03 29 | 704 | 0.3+ | 0.7+ | 2006 09 16 | 704 | 0.1+ | 0.8+ |
| 2003 01 05 | 704 | 1.3+ | 1.3+ | 2004 03 29 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 704 | 0.0 | 1.0+ |
| 2003 01 05 | 704 | 1.4+ | 1.2+ | 2004 03 29 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.1+ |
| 2003 01 09 | 704 | 0.4+ | 0.6+ | 2004 03 29 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.3+ |
| 2003 01 09 | 704 | 0.4+ | 0.6+ | 2004 03 29 | 704 | 0.0 | 1.0+ | 2006 09 18 | 703 | 0.1− | 0.0 |
| 2003 01 09 | 704 | 0.7+ | 1.0− | 2004 04 10 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.1+ |
| 2003 01 27 | 704 | 0.3− | 0.8− | 2004 04 10 | 644 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.2+ | 0.9+ |
| 2003 01 27 | 704 | 0.0 | 0.5− | 2004 04 10 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.0 | 0.6+ |
| 2003 01 27 | 704 | 0.6− | 0.7− | 2004 04 13 | 683 | (1.7+ | 0.2+) | 2006 09 21 | 699 | 0.1+ | 1.0+ |
| 2003 01 27 | 704 | 0.5− | 0.7− | 2004 04 13 | 683 | (0.9− | 1.6+) | 2006 09 21 | 699 | 0.3− | 0.3+ |
| 2003 02 18 | 185 | 1.2− | 0.1+ | 2004 04 13 | 683 | 1.2− | 0.3− | 2006 09 29 | 608 | 0.1+ | 1.4− |
| 2003 02 18 | 185 | 0.5+ | 0.2+ | 2004 04 16 | 683 | 1.4+ | 0.5− | 2006 09 29 | 608 | 0.1− | 1.4− |
| 2003 02 18 | 185 | 0.3− | 0.1+ | 2004 04 16 | 683 | 1.1+ | 0.4+ | 2006 09 29 | 608 | (0.8+ | 1.5−) |
| 2003 02 18 | 185 | 1.1+ | 0.3− | 2004 04 16 | 683 | (1.7+ | 2.3+) | 2006 10 02 | 703 | 0.5− | 0.1− |
| 2003 02 18 | 185 | 1.1+ | 0.0 | 2006 08 18 | 704 | 1.1− | 0.1− | 2006 10 02 | 703 | 0.2+ | 0.1+ |
| 2003 02 24 | 012 | 0.5− | 0.0 | 2006 08 18 | 704 | 0.9− | 0.6− | 2006 10 02 | 703 | 0.3− | 0.5+ |
| 2003 02 24 | 012 | 1.0− | 0.5− | 2006 08 18 | 704 | 0.6− | 0.6− | 2006 10 02 | 703 | 0.3− | 0.1− |
| 2003 02 24 | 012 | 0.2+ | 0.4+ | 2006 08 20 | 691 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.1− | 0.1+ |
| 2003 02 24 | 012 | 0.5+ | 0.7+ | 2006 08 20 | 691 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.0 | 0.3− |
| 2003 02 28 | 704 | 0.8+ | 1.1+ | 2006 08 20 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 0.3− | 0.0 |
| 2003 02 28 | 704 | 0.9+ | 1.5+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.0 | 0.2+ |
| 2003 02 28 | 704 | (0.4+ | 1.6+) | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2003 02 28 | 704 | (0.0 | 1.6+) | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2003 03 07 | 704 | 0.7− | 0.4+ | 2006 08 23 | 704 | 0.7+ | 1.0+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2003 03 07 | 704 | 0.3− | 0.1+ | 2006 08 23 | 704 | 0.9− | 1.1+ | 2006 10 24 | 644 | 0.3− | 0.2+ |
| 2003 03 07 | 704 | 0.5− | 0.0 | 2006 08 23 | 704 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2003 03 07 | 704 | 0.2− | 0.4+ | 2006 08 28 | 704 | 0.5− | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2003 03 31 | 704 | 0.4− | 0.1− | 2006 08 28 | 704 | 0.6+ | 0.9+ | 2006 11 27 | 703 | 0.2− | 0.2− |
| 2003 03 31 | 704 | 1.0− | 0.9+ | 2006 08 28 | 704 | 0.1− | 1.2+ | 2006 11 27 | 703 | 1.1− | 0.1+ |
| 2003 03 31 | 704 | 0.1− | 0.8+ | 2006 08 28 | 704 | 1.0− | 0.2− | 2006 11 27 | 703 | 0.6− | 0.8− |
| 2003 03 31 | 704 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 0.5− | 0.9− |
| 2003 03 31 | 704 | 0.4− | 0.0 | 2006 08 28 | 699 | 0.3− | 0.1+ | | | | |

**(143268)**∗ **2003 AA$_{12}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.20070 | | (2000.0) | | | |
| $n$ | 0.22930273 | $\omega$ | 297.58394 | | +0.17490916 | −0.97332141 |
| $a$ | 2.6436050 | $\Omega$ | 141.41612 | | +0.96629138 | +0.14075697 |
| $e$ | 0.2447601 | $i$ | 13.77504 | | +0.18891202 | +0.18119852 |
| $P$ | 4.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.8+ | 1.5+ | 2003 01 14 | 608 | 0.8− | 0.3+ | 2003 03 26 | 704 | 0.3− | 0.7+ |
| 2001 08 16 | 704 | 0.7− | 1.1+ | 2003 01 14 | 608 | 0.7− | 0.1+ | 2004 05 19 | 691 | 0.0 | 0.1− |
| 2001 08 16 | 704 | 0.4+ | 1.1+ | 2003 01 26 | 699 | 0.2− | 0.1− | 2004 05 19 | 691 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2003 01 26 | 699 | 0.5− | 0.1+ | 2004 05 19 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2003 01 26 | 699 | 0.4− | 0.0 | 2005 06 15 | 691 | 0.0 | 0.5+ |
| 2001 09 21 | 704 | 0.8− | 1.1− | 2003 01 26 | 699 | 0.1− | 0.0 | 2005 06 15 | 691 | 0.2− | 0.5+ |
| 2002 11 13 | 645 | 0.2− | 0.0 | 2003 01 26 | 608 | 0.7− | 0.4− | 2005 06 15 | 691 | 0.3+ | 0.5+ |
| 2002 11 13 | 645 | 0.2− | 0.0 | 2003 01 26 | 608 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.3− | 0.8+ |
| 2002 12 02 | 608 | 1.0+ | 0.8+ | 2003 01 26 | 608 | 0.6− | 0.3− | 2006 09 19 | 703 | 0.8− | 0.6+ |
| 2002 12 02 | 608 | 1.0+ | 0.3+ | 2003 01 27 | 704 | (2.2+ | 2.7−) | 2006 09 19 | 703 | 0.1− | 0.7+ |
| 2002 12 02 | 608 | 0.6+ | 0.4+ | 2003 01 27 | 704 | (1.1+ | 3.6−) | 2006 09 19 | 703 | 0.4− | 0.5− |
| 2003 01 01 | 704 | 0.2− | 0.0 | 2003 01 27 | 704 | (1.0+ | 3.7−) | 2006 09 30 | 703 | 0.3+ | 0.8+ |
| 2003 01 01 | 704 | 0.4+ | 0.2+ | 2003 01 27 | 704 | (0.5+ | 3.7−) | 2006 09 30 | 703 | 0.6+ | 0.2− |
| 2003 01 01 | 704 | 0.5+ | 0.5− | 2003 01 27 | 699 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.3+ | 1.0+ |
| 2003 01 01 | 704 | 0.2+ | 0.3− | 2003 01 27 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.6− |
| 2003 01 05 | 704 | 0.7+ | 0.4+ | 2003 01 27 | 699 | 0.2+ | 0.6+ | 2006 10 20 | 703 | 0.2− | 0.8+ |
| 2003 01 05 | 704 | 0.5+ | 0.2− | 2003 01 27 | 699 | 0.2+ | 0.5+ | 2006 10 20 | 703 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.4+ | 0.1+ | 2003 02 02 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 703 | 0.4+ | 0.8− |
| 2003 01 05 | 704 | 0.6+ | 0.2+ | 2003 02 02 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 703 | 0.3+ | 0.1+ |
| 2003 01 07 | 704 | (0.2− | 1.9+) | 2003 02 02 | 704 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.2+ |
| 2003 01 07 | 704 | (0.0 | 2.8+) | 2003 02 02 | 704 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2003 01 07 | 704 | (1.5+ | 2.3+) | 2003 02 02 | 704 | 0.2+ | 0.7+ | 2006 10 28 | G96 | 0.1− | 0.3+ |
| 2003 01 09 | 704 | 0.5+ | 0.3− | 2003 02 03 | 704 | 0.5+ | 0.8− | 2006 10 28 | G96 | 0.3− | 0.3+ |
| 2003 01 09 | 704 | 0.3+ | 0.8+ | 2003 02 03 | 644 | 0.4− | 0.9+ | 2006 11 10 | 704 | 0.9− | 0.5+ |
| 2003 01 09 | 704 | 0.3− | 0.2− | 2003 02 03 | 704 | 0.6+ | 0.4+ | 2006 11 10 | 704 | 0.6− | 0.1+ |
| 2003 01 11 | 704 | 0.0 | 0.4− | 2003 02 03 | 704 | 0.5+ | 0.1+ | 2006 11 10 | 704 | 0.3+ | 0.5+ |
| 2003 01 11 | 704 | 0.3− | 0.7− | 2003 02 03 | 644 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2003 01 11 | 704 | 0.3− | 0.7− | 2003 02 03 | 704 | 0.0 | 0.1+ | 2006 11 22 | 704 | 1.2+ | 0.6− |
| 2003 01 11 | 704 | 0.5+ | 0.0 | 2003 02 03 | 644 | 0.3− | 0.9+ | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2003 01 11 | 704 | 0.0 | 0.1− | 2003 03 05 | 704 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2003 01 12 | 704 | 0.6− | 0.3+ | 2003 03 05 | 704 | 0.5+ | 0.7− | 2006 11 22 | 704 | 1.0+ | 0.1− |
| 2003 01 12 | 704 | 0.5+ | 0.6+ | 2003 03 05 | 704 | 0.6− | 0.3− | 2006 11 22 | 703 | 1.1− | 1.1− |
| 2003 01 12 | 704 | 0.1− | 0.8+ | 2003 03 05 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 703 | 0.3+ | 1.0− |
| 2003 01 12 | 704 | 0.4+ | 0.5+ | 2003 03 05 | 704 | 0.0 | 0.3− | 2006 11 22 | 703 | 1.1+ | 1.2− |
| 2003 01 12 | 704 | 0.2+ | 1.0+ | 2003 03 26 | 704 | 0.2− | 0.7+ | 2006 11 22 | 703 | 0.4− | 0.2− |
| 2003 01 14 | 608 | 0.4− | 0.2+ | 2003 03 26 | 704 | 0.0 | 0.4+ | | | | |

**(143269)**∗ **2003 AK$_{12}$ = 2005 NQ$_{32}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85825)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.86422 | | (2000.0) | | | |
| $n$ | 0.23667203 | $\omega$ | 257.60502 | | +0.10350546 | −0.99451809 |
| $a$ | 2.5884400 | $\Omega$ | 186.50884 | | +0.95585670 | +0.10358631 |
| $e$ | 0.1696361 | $i$ | 7.52528 | | +0.27499926 | +0.01427052 |
| $P$ | 4.16 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.1− | 0.4− | 2003 01 05 | 704 | (2.0+ | 0.7−) | 2006 11 15 | 703 | 0.7− | 0.6+ |
| 1995 02 25 | 691 | 0.1+ | 0.2+ | 2003 02 28 | 704 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.5+ |
| 1995 02 25 | 691 | 0.1− | 0.1+ | 2003 02 28 | 704 | 0.6− | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.0 |
| 1999 01 14 | 699 | 0.1− | 0.4− | 2003 02 28 | 704 | 0.2+ | 0.4− | 2006 11 15 | 703 | 0.2− | 0.4+ |
| 1999 01 14 | 699 | 0.6− | 0.6+ | 2003 02 28 | 704 | 0.7− | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.0 |
| 1999 01 14 | 699 | 0.2− | 0.6+ | 2004 04 20 | 704 | 0.5+ | 0.2− | 2006 11 19 | 704 | 1.0+ | 0.8+ |
| 2001 08 25 | 704 | 0.3− | 0.7+ | 2004 04 20 | 704 | 0.1+ | 1.0− | 2006 11 19 | 704 | 0.6− | 0.6+ |
| 2001 08 25 | 704 | 0.9+ | 1.1− | 2004 04 20 | 704 | 0.5+ | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | (1.4− | 4.1−) | 2004 04 20 | 704 | 1.4+ | 0.2− | 2006 11 25 | 704 | 0.3− | 1.1+ | | |
| 2002 10 11 | 704 | 0.2− | 0.1+ | 2004 05 14 | 704 | 1.1− | 0.8− | 2006 11 25 | 704 | 0.0 | 0.1+ | | |
| 2002 10 11 | 704 | 0.3− | 1.1− | 2004 05 14 | 704 | (0.7− | 2.9−) | 2006 11 25 | 704 | 0.4− | 0.0 | | |
| 2002 10 11 | 704 | 0.4− | 0.6− | 2004 05 14 | 704 | (0.3− | 2.1−) | 2006 11 25 | 704 | 0.3− | 1.0+ | | |
| 2002 10 11 | 704 | (0.3− | 2.0−) | 2004 05 14 | 704 | 0.5− | 1.0+ | 2006 11 25 | 704 | 0.1− | 0.1+ | | |
| 2002 11 12 | 704 | 0.3− | 0.4+ | 2004 06 17 | 644 | 0.3+ | 0.8+ | 2006 11 25 | G96 | 0.2+ | 0.1− | | |
| 2002 11 12 | 704 | 0.5+ | 0.1− | 2004 06 17 | 644 | 0.1+ | 0.7+ | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2002 11 12 | 704 | 0.4− | 0.2− | 2004 06 17 | 644 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2002 12 14 | 704 | 0.2+ | 0.3+ | 2005 07 05 | 691 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.0 | | |
| 2002 12 14 | 704 | 0.5− | 0.1+ | 2005 07 05 | 691 | 0.0 | 0.1− | 2006 11 25 | 703 | 0.1+ | 0.4− | | |
| 2002 12 14 | 704 | 0.1− | 0.1− | 2005 07 05 | 691 | 0.2− | 0.2+ | 2006 11 25 | 703 | 0.1− | 0.1− | | |
| 2002 12 14 | 704 | 0.3+ | 0.5− | 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.1− | 0.1+ | | |
| 2002 12 14 | 704 | 0.7+ | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.5+ | | |
| 2003 01 01 | 704 | 0.0 | 0.4+ | 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.1+ | | |
| 2003 01 01 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 703 | 0.3+ | 0.9− | 2006 11 28 | 704 | 0.5+ | 0.3− | | |
| 2003 01 01 | 704 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 1.2− | 2006 11 28 | 704 | 0.1− | 0.5+ | | |
| 2003 01 05 | 704 | 1.3+ | 0.6− | 2006 09 16 | 703 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.3− | 0.3+ | | |
| 2003 01 05 | 704 | 0.7+ | 0.9− | 2006 09 16 | 703 | 0.9+ | 1.0− | | | | | | |

**(143270)∗ 2003 AG$_{13}$ = 2001 QO$_{182}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41411)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 338.72652 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.22351598 | $\omega$ | 302.58398 | | +0.38670504 | −0.83489152 | |
| *a* | 2.6890384 | $\Omega$ | 119.68477 | | +0.92209290 | +0.35662715 | |
| *e* | 0.1111713 | *i* | 26.79830 | | −0.01427920 | +0.41925318 | |
| *P* | 4.41 | *H* | 14.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.3+ | 0.1+ | 2003 01 09 | 704 | 1.3− | 0.3+ | 2005 06 28 | 691 | 0.4+ | 0.1+ | | |
| 2001 08 17 | 644 | 0.4− | 0.0 | 2003 01 27 | 704 | 0.7+ | 0.2+ | 2005 06 28 | 691 | 0.3+ | 0.3− | | |
| 2001 08 17 | 644 | 0.4− | 0.1− | 2003 01 27 | 704 | 0.4+ | 0.6+ | 2005 06 28 | 691 | (2.3− | 0.1−) | | |
| 2001 08 23 | 644 | 0.1− | 0.7+ | 2003 01 27 | 704 | 0.2+ | 0.1− | 2005 06 29 | 703 | 0.4− | 0.1− | | |
| 2001 08 23 | 644 | 0.5+ | 0.5+ | 2003 01 27 | 704 | 0.1+ | 0.2+ | 2005 06 29 | 703 | 0.2− | 0.1+ | | |
| 2001 08 23 | 644 | 0.0 | 0.7+ | 2003 01 27 | 704 | 0.4+ | 0.6+ | 2005 06 29 | 703 | 0.5− | 0.4+ | | |
| 2002 12 14 | 704 | 0.0 | 0.1+ | 2003 02 02 | 704 | 0.0 | 0.4− | 2005 06 29 | 703 | (1.8− | 1.3−) | | |
| 2002 12 14 | 704 | 0.9+ | 0.1− | 2003 02 02 | 704 | 0.4− | 0.2− | 2005 07 07 | 704 | (1.7+ | 0.8+) | | |
| 2002 12 14 | 704 | 0.3+ | 0.4− | 2003 02 02 | 704 | 0.5+ | 0.3− | 2005 07 07 | 704 | 0.1− | 1.0+ | | |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2003 02 02 | 704 | 0.7− | 0.5− | 2005 07 07 | 704 | 1.3+ | 0.6+ | | |
| 2002 12 14 | 704 | 0.3− | 0.4+ | 2003 02 07 | 704 | (0.5+ | 1.9−) | 2005 07 07 | 704 | 0.2− | 0.4+ | | |
| 2003 01 01 | 704 | 0.4+ | 0.2− | 2003 02 07 | 704 | 0.2− | 0.5− | 2005 08 06 | 704 | 0.4− | 0.7− | | |
| 2003 01 01 | 704 | 0.2− | 0.3+ | 2003 02 07 | 704 | 1.0− | 0.3− | 2005 08 06 | 704 | 0.8− | 0.1− | | |
| 2003 01 01 | 704 | 0.5+ | 0.2+ | 2003 02 07 | 704 | (2.0− | 1.3−) | 2005 08 06 | 704 | 0.4+ | 0.1+ | | |
| 2003 01 01 | 704 | 1.2− | 0.6+ | 2003 02 08 | 704 | 0.5− | 0.5− | 2006 10 22 | E12 | 0.1− | 0.0 | | |
| 2003 01 01 | 704 | 0.0 | 0.8+ | 2003 02 08 | 704 | 0.5− | 0.4+ | 2006 10 22 | E12 | 0.4− | 0.4− | | |
| 2003 01 05 | 704 | 0.1+ | 0.7+ | 2003 02 08 | 704 | 0.6− | 0.4+ | 2006 10 22 | E12 | 0.3− | 0.3+ | | |
| 2003 01 05 | 704 | 0.5+ | 0.5+ | 2003 02 08 | 704 | 0.2+ | 0.8+ | 2006 10 22 | E12 | 0.6− | 1.3− | | |
| 2003 01 05 | 704 | 0.3− | 0.8+ | 2003 03 05 | 704 | 0.9+ | 0.9+ | 2006 11 20 | E12 | 0.2− | 0.0 | | |
| 2003 01 05 | 704 | 0.3− | 0.5+ | 2003 03 05 | 704 | 0.4+ | 0.1− | 2006 11 20 | E12 | 0.2− | 0.3+ | | |
| 2003 01 07 | 704 | 1.0+ | 0.3+ | 2003 03 05 | 704 | 0.3+ | 0.5− | 2006 11 20 | E12 | 0.1+ | 0.7− | | |
| 2003 01 07 | 704 | 0.2− | 0.0 | 2003 03 05 | 704 | (1.6+ | 0.8+) | 2006 11 20 | E12 | 0.0 | 0.3+ | | |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2004 04 14 | 704 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 0.1− | 0.6+ | | |
| 2003 01 07 | 704 | 0.2+ | 0.2+ | 2004 04 14 | 704 | 0.4+ | 0.8+ | 2006 11 25 | 703 | 0.4− | 0.8+ | | |
| 2003 01 07 | 704 | 0.1+ | 0.3+ | 2004 04 14 | 704 | 0.6+ | 0.7+ | 2006 11 25 | 703 | 0.2+ | 0.8+ | | |
| 2003 01 09 | 704 | 1.2− | 0.1+ | 2005 06 09 | 691 | 0.0 | 0.6+ | 2006 11 25 | 703 | 1.8+ | 0.5− | | |
| 2003 01 09 | 704 | (1.6− | 0.0 ) | 2005 06 09 | 691 | 0.0 | 0.5+ | | | | | | |
| 2003 01 09 | 704 | 1.0− | 0.0 | 2005 06 09 | 691 | (0.5− | 1.6+) | | | | | | |

**(143271)∗ 2003 AF$_{14}$ = 2002 PZ$_{92}$**

Discovered 2003 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 41953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 357.97374 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.25782942 | $\omega$ | 310.25004 | | +0.75072106 | −0.60369380 | |
| *a* | 2.4448247 | $\Omega$ | 88.60753 | | +0.65771151 | +0.64495144 | |
| *e* | 0.2357252 | *i* | 15.56638 | | +0.06191485 | +0.46860585 | |
| *P* | 3.82 | *H* | 15.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.3− | 0.6+ | 2002 12 19 | 608 | (0.0 | 1.5−) | 2005 07 04 | 644 | 0.1+ | 0.4+ | | |
| 2000 03 04 | 704 | 1.4+ | 0.2+ | 2002 12 19 | 608 | 0.0 | 0.4− | 2005 07 04 | 644 | 0.0 | 0.2+ | | |
| 2000 03 04 | 704 | 0.1− | 0.3+ | 2003 01 02 | 704 | 0.4+ | 0.7+ | 2005 07 04 | 644 | 0.1+ | 0.3+ | | |
| 2000 03 04 | 704 | 0.4+ | 0.2+ | 2003 01 02 | 704 | 0.4− | 0.6+ | 2006 08 28 | 704 | (0.2+ | 1.9+) | | |
| 2000 03 04 | 704 | 0.5+ | 0.1+ | 2003 01 02 | 704 | 1.2− | 0.4− | 2006 08 28 | 704 | 0.3− | 0.4+ | | |
| 2001 05 24 | 691 | 0.2+ | 0.4+ | 2003 01 05 | 704 | 1.1+ | 0.7+ | 2006 08 28 | 704 | 0.8− | 0.3− | | |
| 2001 05 24 | 691 | 0.2+ | 0.4+ | 2003 01 05 | 704 | (2.1− | 0.8+) | 2006 09 19 | 703 | 0.7− | 0.2+ | | |
| 2001 05 24 | 691 | 0.5+ | 0.4+ | 2003 01 05 | 704 | 0.8− | 0.8+ | 2006 09 19 | 703 | 0.6− | 0.3− | | |
| 2002 08 14 | 704 | (1.6+ | 1.4+) | 2003 01 05 | 704 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.4− | | |
| 2002 08 14 | 704 | (3.3+ | 0.8+) | 2003 01 08 | 608 | 1.0− | 1.0+ | 2006 09 19 | 703 | 0.1− | 0.3− | | |
| 2002 08 14 | 704 | (3.3+ | 0.3+) | 2003 01 08 | 608 | 0.3− | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.1− | | |
| 2002 08 14 | 704 | (3.6+ | 1.8+) | 2003 01 08 | 608 | 0.9− | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.1− | | |
| 2002 08 14 | 704 | (3.2+ | 0.6+) | 2003 02 02 | 704 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.5− | 0.6+ | | |
| 2002 08 15 | 704 | 0.5− | 0.1+ | 2003 02 02 | 704 | 0.8+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.1− | | |
| 2002 08 15 | 704 | 1.1− | 0.7+ | 2003 02 02 | 704 | 0.1− | 0.6+ | 2006 10 01 | 704 | 0.1+ | 0.2+ | | |
| 2002 08 15 | 704 | 1.1− | 0.2+ | 2003 02 02 | 704 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.4+ | 0.2+ | | |
| 2002 08 15 | 704 | 0.8− | 1.1+ | 2003 02 02 | 704 | (0.9− | 1.6−) | 2006 10 28 | 703 | 0.5+ | 0.5− | | |
| 2002 08 15 | 704 | 1.0− | 0.6+ | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | (1.5+ | 0.9−) | | |
| 2002 08 16 | 704 | (1.7+ | 0.9+) | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1− | 0.0 | | |
| 2002 08 16 | 704 | 0.4− | 0.7+ | 2004 02 25 | 113 | 0.7+ | 0.2+ | 2006 10 31 | 704 | 1.0− | 0.0 | | |
| 2002 08 16 | 704 | 0.1− | 0.4+ | 2004 02 25 | 113 | 0.3+ | 0.2+ | 2006 10 31 | 704 | 0.7+ | 0.2− | | |
| 2002 08 16 | 704 | 0.4− | 0.7+ | 2004 02 25 | 113 | 0.0 | 0.0 | 2006 10 31 | 704 | 0.6+ | 0.7− | | |
| 2002 09 27 | 704 | 0.0 | 0.1− | 2004 03 11 | 644 | 0.3− | 0.9+ | 2006 10 31 | 704 | 0.3+ | 0.9+ | | |
| 2002 09 27 | 704 | 0.9− | 0.1+ | 2004 03 11 | 644 | 0.2− | 0.8+ | 2006 10 31 | 704 | 0.3− | 1.0+ | | |
| 2002 09 27 | 704 | 0.1− | 0.0 | 2004 03 11 | 644 | 0.4− | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.7− | | |
| 2002 10 08 | 644 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.6+ | 0.7− | 2006 11 13 | 703 | 0.7− | 0.6− | | |
| 2002 10 08 | 644 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.5− | 0.2− | 2006 11 13 | 703 | 0.7− | 0.7− | | |
| 2002 10 08 | 644 | 0.0 | 0.1+ | 2004 03 14 | 704 | (1.9+ | 0.3−) | 2006 11 13 | 703 | 0.5+ | 0.7− | | |
| 2002 10 22 | 644 | 0.2+ | 0.9− | 2004 03 14 | 704 | 0.7+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.3+ | | |
| 2002 10 22 | 644 | 0.3+ | 0.9− | 2004 03 18 | 703 | 0.1− | 0.4− | 2006 11 13 | 703 | 0.3+ | 0.1+ | | |
| 2002 10 22 | 644 | 0.3+ | 0.9− | 2004 03 18 | 703 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.6+ | 0.4+ | | |
| 2002 10 28 | 704 | 0.4+ | 0.6+ | 2004 03 18 | 703 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.2+ | 0.6+ | | |
| 2002 10 28 | 704 | 0.4+ | 0.1+ | 2004 03 18 | 703 | 0.6+ | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.1− | | |
| 2002 10 28 | 704 | 0.2+ | 0.3− | 2004 03 23 | 113 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.5+ | 0.1− | | |
| 2002 10 28 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 113 | 0.1− | 0.6+ | 2006 11 19 | 703 | 0.2+ | 0.2− | | |
| 2002 10 28 | 704 | 0.1+ | 0.3+ | 2004 03 23 | 113 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.0 | 0.2− | | |
| 2002 11 04 | 644 | 0.1+ | 0.3+ | 2004 03 29 | 704 | 1.2− | 1.2+ | 2006 11 20 | 704 | 0.3+ | 0.6+ | | |
| 2002 11 04 | 644 | 0.1+ | 0.3+ | 2004 03 29 | 704 | 0.4+ | 0.2− | 2006 11 20 | 704 | 0.4− | 1.1+ | | |
| 2002 11 04 | 644 | 0.0 | 0.7+ | 2004 03 29 | 704 | 0.2+ | 1.5+ | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2002 11 24 | 699 | 0.7− | 0.1+ | 2004 03 29 | 704 | 0.8− | 0.2+ | 2006 11 20 | 704 | 0.5− | 1.2+ | | |
| 2002 11 24 | 699 | 0.2+ | 0.5+ | 2004 04 14 | 704 | 0.3− | 0.5+ | 2006 12 01 | G96 | 0.6+ | 0.0 | | |
| 2002 11 24 | 699 | 0.5− | 0.7+ | 2004 04 14 | 704 | 0.5+ | 0.3− | 2006 12 01 | G96 | 0.1+ | 0.1− | | |
| 2002 11 24 | 699 | 0.2− | 1.1+ | 2004 04 14 | 704 | 0.5+ | 0.3− | 2006 12 01 | G96 | 0.1+ | 0.1− | | |
| 2002 12 19 | 608 | 0.1− | 0.7− | 2004 04 14 | 704 | 0.5+ | 0.7+ | 2006 12 01 | G96 | 0.1+ | 0.1− | | |

**(143272)∗ 2003 AN$_{14}$**

Discovered 2003 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 41.97154 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24486680 | $\omega$ | 235.55467 | | +0.94621088 | +0.20967294 | |
| *a* | 2.5303627 | $\Omega$ | 111.24060 | | −0.13260955 | +0.94601716 | |
| *e* | 0.0829276 | *i* | 15.33004 | | −0.29512655 | +0.24716146 | |
| *P* | 4.03 | *H* | 14.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 566 | 0.9+ | 0.7− | 2002 11 30 | 704 | (2.1+ | 0.4−) | 2004 03 25 | 704 | 0.7+ | 0.9+ | | |
| 1998 11 16 | 566 | 0.7+ | 0.6− | 2002 11 30 | 704 | (1.1+ | 2.1−) | 2004 03 25 | 704 | 0.0 | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 566 | 1.0+ | 0.3− | 2002 12 13 | 644 | 0.3+ | 0.2+ | 2005 06 03 | E12 | 0.4+ | 1.3+ |
| 2000 02 03 | 704 | 0.4+ | 1.0+ | 2002 12 13 | 644 | 0.2− | 0.1− | 2005 06 03 | E12 | 0.4+ | 1.0+ |
| 2000 02 03 | 704 | 1.6+ | 1.2+ | 2002 12 13 | 644 | 0.4+ | 0.3+ | 2005 06 03 | E12 | 0.0 | 1.3+ |
| 2000 02 03 | 704 | 0.6+ | 1.2+ | 2003 01 02 | 704 | 0.0 | 0.4− | 2005 06 03 | E12 | 0.1+ | 1.1+ |
| 2000 02 03 | 704 | 0.1− | 1.2+ | 2003 01 02 | 704 | 0.2+ | 0.2− | 2006 09 19 | 703 | 1.1− | 0.6+ |
| 2000 02 03 | 704 | 0.2− | 0.5+ | 2003 01 02 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 2000 03 04 | 704 | 0.9− | 0.1+ | 2003 01 02 | 704 | 0.6− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.2− |
| 2000 03 04 | 704 | 0.5− | 0.0 | 2003 01 02 | 704 | 0.4− | 0.8− | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2000 03 04 | 704 | 1.0− | 0.4− | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 703 | 0.9− | 0.5− |
| 2000 03 04 | 704 | 1.1− | 0.2+ | 2003 01 05 | 704 | 0.6+ | 0.2− | 2006 10 20 | 703 | 0.6− | 0.6− |
| 2000 03 04 | 704 | 0.5− | 0.2− | 2003 01 05 | 704 | 0.0 | 0.7− | 2006 10 20 | 703 | 0.8− | 0.2− |
| 2002 10 09 | 699 | (2.0+ | 0.5+) | 2003 01 05 | 704 | 1.0− | 0.7+ | 2006 10 20 | 703 | 1.5− | 0.4− |
| 2002 10 09 | 699 | 0.1− | 0.4+ | 2004 02 13 | 644 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.2− | 1.2+ |
| 2002 10 09 | 699 | 0.1+ | 0.7+ | 2004 02 13 | 644 | 0.7− | 0.4− | 2006 10 28 | 703 | 0.2− | 0.9+ |
| 2002 10 09 | 699 | 0.5+ | 0.4+ | 2004 02 13 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.3+ | 1.0+ |
| 2002 10 30 | 704 | 0.9− | 0.2+ | 2004 02 15 | 704 | 0.6+ | 0.2− | 2006 10 28 | 703 | 0.7+ | 1.0+ |
| 2002 10 30 | 704 | 0.9− | 0.0 | 2004 02 15 | 704 | 0.8+ | 0.1+ | 2006 11 10 | 704 | 0.8+ | 0.3+ |
| 2002 10 30 | 704 | 1.0− | 0.5+ | 2004 02 15 | 704 | 1.1+ | 0.0 | 2006 11 10 | 704 | 0.5− | 0.3+ |
| 2002 10 30 | 704 | 0.5− | 0.1− | 2004 02 15 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 704 | 0.0 | 0.8+ |
| 2002 10 30 | 704 | 0.4− | 0.0 | 2004 03 14 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.0 | 0.3− |
| 2002 11 06 | 644 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 704 | 0.2+ | 0.5− |
| 2002 11 06 | 644 | 0.2+ | 0.0 | 2004 03 14 | 704 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2002 11 06 | 644 | 0.1+ | 0.2− | 2004 03 14 | 704 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.9+ | 0.6+ |
| 2002 11 16 | 699 | (1.7+ | 0.5−) | 2004 03 14 | 704 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2002 11 16 | 699 | 0.2− | 0.3− | 2004 03 18 | 644 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2002 11 16 | 699 | 1.1+ | 0.7− | 2004 03 18 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.4− | 0.1− |
| 2002 11 16 | 699 | 0.3+ | 0.5+ | 2004 03 18 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 11 30 | 704 | (1.9+ | 0.6−) | 2004 03 25 | 704 | 0.4+ | 1.3− | 2006 11 22 | 704 | 0.1− | 1.3+ |
| 2002 11 30 | 704 | (2.1+ | 1.5−) | 2004 03 25 | 704 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.2+ |

**(143273)∗ 2003 AB$_{15}$**

Discovered 2003 Jan. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.00476 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22934989 | $\omega$ | 67.04616 | | −0.99085985 | +0.10369816 |
| $a$ | 2.6432426 | $\Omega$ | 118.81036 | | −0.12770453 | −0.92712989 |
| $e$ | 0.3047184 | $i$ | 5.65069 | | +0.04345473 | −0.36010673 |
| $P$ | 4.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 0.5+ | 0.2− | 2003 03 05 | 704 | 0.0 | 0.0 | 2003 04 08 | 608 | 0.5+ | 0.1− |
| 1999 06 15 | 704 | 0.0 | 0.2− | 2003 03 05 | 704 | 0.2+ | 0.1+ | 2003 04 09 | 704 | 0.2+ | 0.1− |
| 1999 06 15 | 704 | 0.8− | 0.1+ | 2003 03 09 | 704 | 0.5+ | 0.3− | 2003 04 09 | 704 | 0.1+ | 0.2+ |
| 1999 06 15 | 704 | 0.0 | 0.4+ | 2003 03 09 | 704 | 0.2+ | 0.3+ | 2003 04 09 | 704 | 0.0 | 0.2+ |
| 1999 06 15 | 704 | 0.2− | 0.6− | 2003 03 09 | 704 | 0.2+ | 0.1+ | 2003 04 09 | 704 | 0.2+ | 0.2+ |
| 2000 09 05 | 645 | 0.2− | 0.3+ | 2003 03 09 | 704 | 0.1+ | 0.1− | 2003 04 09 | 704 | 0.4− | 0.1+ |
| 2000 09 05 | 645 | 0.2− | 0.2+ | 2003 03 09 | 704 | 0.1− | 0.1− | 2003 04 26 | 704 | 1.4+ | 0.4+ |
| 2000 09 23 | 691 | 0.2+ | 0.4+ | 2003 03 15 | 608 | 0.0 | 0.6+ | 2003 04 26 | 704 | 0.3+ | 0.2+ |
| 2000 09 23 | 691 | 0.1+ | 0.5+ | 2003 03 15 | 608 | 0.6+ | 0.4+ | 2003 04 26 | 704 | (0.4− | 1.8−) |
| 2000 09 23 | 691 | 0.1+ | 0.6+ | 2003 03 15 | 608 | 0.0 | 0.7+ | 2003 05 02 | 704 | 1.1+ | 1.4+ |
| 2002 12 05 | 704 | (1.7+ | 0.8+) | 2003 03 15 | 608 | 0.5+ | 0.2+ | 2003 05 02 | 704 | (1.9+ | 0.3+) |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2003 03 15 | 608 | 0.1+ | 0.9+ | 2003 05 02 | 704 | 0.2+ | 0.5− |
| 2002 12 05 | 704 | 0.5+ | 0.3+ | 2003 03 15 | 608 | 0.6+ | 0.3+ | 2003 05 05 | 704 | (0.4+ | 1.9+) |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2003 03 25 | 608 | 0.2− | 0.5+ | 2003 05 05 | 704 | (0.5− | 2.1+) |
| 2002 12 05 | 704 | 0.1+ | 0.8+ | 2003 03 25 | 608 | 0.5− | 0.7+ | 2003 05 05 | 704 | 0.4− | 1.2+ |
| 2003 01 02 | 699 | 0.6+ | 0.6− | 2003 03 25 | 608 | 0.6− | 1.1+ | 2003 05 05 | 704 | 1.1+ | 0.8+ |
| 2003 01 02 | 699 | 0.7+ | 0.9+ | 2003 03 26 | 644 | 0.0 | 0.2− | 2003 05 05 | 704 | 0.8+ | 0.3− |
| 2003 01 02 | 699 | 0.1+ | 0.1− | 2003 03 26 | 644 | 0.1+ | 0.3− | 2003 05 09 | 704 | 0.3+ | 1.0+ |
| 2003 01 02 | 699 | 0.5+ | 0.5+ | 2003 03 26 | 644 | 0.1+ | 0.1− | 2003 05 09 | 704 | 0.8+ | 0.4+ |
| 2003 01 02 | 704 | 0.4+ | 0.7+ | 2003 03 26 | 691 | 0.4− | 0.2+ | 2003 05 09 | 704 | 0.4+ | 0.6+ |
| 2003 01 02 | 704 | 0.2− | 0.2+ | 2003 03 26 | 691 | 0.5− | 0.2+ | 2003 05 09 | 704 | 0.4+ | 0.7+ |
| 2003 01 02 | 704 | 1.0− | 0.3+ | 2003 03 26 | 691 | 0.7− | 0.2+ | 2003 05 09 | 704 | 1.0+ | 0.3+ |
| 2003 01 02 | 704 | 0.5− | 0.3+ | 2003 03 27 | 704 | 0.8+ | 0.3− | 2003 05 10 | 703 | (1.1+ | 1.9+) |
| 2003 01 02 | 704 | 0.8− | 0.1− | 2003 03 27 | 704 | 0.3+ | 0.1− | 2003 05 10 | 703 | (0.4+ | 1.5+) |
| 2003 01 05 | 704 | 0.2+ | 0.4+ | 2003 03 27 | 704 | 0.6+ | 0.4+ | 2003 05 10 | 703 | (0.8− | 1.7+) |
| 2003 01 05 | 704 | 0.4+ | 0.1− | 2003 03 27 | 704 | 0.7+ | 0.1− | 2003 05 10 | 703 | (0.5+ | 2.0+) |
| 2003 01 05 | 704 | 1.4+ | 0.0 | 2003 03 27 | 704 | 0.2− | 0.3+ | 2003 05 30 | 704 | 0.3+ | 0.1+ |
| 2003 01 09 | 704 | 1.3+ | 0.3− | 2003 03 31 | 699 | 0.0 | 0.1− | 2003 05 30 | 704 | 0.3+ | 0.3− |
| 2003 01 09 | 704 | 1.3+ | 0.2+ | 2003 03 31 | 699 | 0.3− | 0.1+ | 2003 05 30 | 704 | 0.2+ | 0.0 |
| 2003 01 09 | 704 | 1.2+ | 0.4+ | 2003 03 31 | 699 | 0.1+ | 0.3− | 2003 05 30 | 704 | 0.6+ | 0.2− |
| 2003 01 09 | 704 | 0.9+ | 0.2+ | 2003 03 31 | 699 | 0.2− | 0.1− | 2003 06 20 | 699 | 0.1− | 0.6+ |
| 2003 01 09 | 704 | 1.0+ | 0.5+ | 2003 03 31 | 704 | 0.1− | 0.6− | 2003 06 20 | 699 | 0.1+ | 0.5+ |
| 2003 01 28 | 704 | 0.1− | 1.1+ | 2003 03 31 | 704 | 0.0 | 0.9− | 2003 06 20 | 699 | 0.4+ | 0.4+ |
| 2003 01 28 | 704 | 0.2+ | 0.9+ | 2003 03 31 | 704 | 0.1+ | 0.6− | 2003 06 20 | 699 | 0.8+ | 0.2− |
| 2003 01 28 | 704 | 0.4− | 1.1+ | 2003 03 31 | 704 | 0.1− | 0.4− | 2004 08 10 | 704 | 0.0 | 0.6+ |
| 2003 01 28 | 704 | 0.3− | 0.1+ | 2003 03 31 | 704 | 0.1+ | 0.8− | 2004 08 10 | 704 | (1.9+ | 0.1+) |
| 2003 01 28 | 704 | 0.3+ | 0.2+ | 2003 04 01 | 645 | 0.2− | 0.1− | 2004 08 10 | 704 | (2.2+ | 1.2+) |
| 2003 02 01 | 704 | 0.8+ | 0.1+ | 2003 04 01 | 645 | 0.2− | 0.1− | 2005 09 29 | 691 | 0.2− | 0.1+ |
| 2003 02 01 | 704 | 1.2+ | 0.1+ | 2003 04 03 | 704 | 0.2− | 0.4+ | 2005 09 29 | 691 | 0.3− | 0.3+ |
| 2003 02 01 | 704 | 0.6+ | 0.4− | 2003 04 03 | 704 | 0.4− | 1.2+ | 2005 09 29 | 691 | 0.2− | 0.3+ |
| 2003 02 01 | 704 | 1.1+ | 0.0 | 2003 04 03 | 704 | 0.0 | 0.1+ | 2005 10 08 | 691 | 0.0 | 0.1− |
| 2003 02 01 | 704 | 1.1+ | 0.3+ | 2003 04 03 | 704 | 0.4+ | 0.4+ | 2005 10 08 | 691 | 0.1+ | 0.4+ |
| 2003 02 04 | 704 | 0.2− | 0.7+ | 2003 04 03 | 704 | 0.2− | 0.1− | 2005 10 08 | 691 | 0.2+ | 0.5+ |
| 2003 02 04 | 704 | 0.2+ | 0.0 | 2003 04 03 | 704 | 0.0 | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2003 02 04 | 704 | 0.3− | 0.2+ | 2003 04 03 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2003 02 04 | 704 | 1.4− | 0.4− | 2003 04 03 | 704 | 0.3+ | 0.9+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2003 02 04 | 704 | 0.1+ | 0.5+ | 2003 04 03 | 704 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.0 |
| 2003 03 05 | 704 | 0.4+ | 0.2− | 2003 04 03 | 704 | 0.0 | 0.9+ | 2006 11 18 | G96 | 0.2+ | 0.2+ |
| 2003 03 05 | 704 | 0.0 | 0.3+ | 2003 04 03 | 608 | 1.0+ | 0.4− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2003 03 05 | 704 | 0.2+ | 0.4+ | 2003 04 03 | 608 | 0.8+ | 0.6− | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2003 03 05 | 704 | 0.2+ | 0.4+ | 2003 04 03 | 608 | 0.2− | 0.9− | 2006 11 18 | G96 | 0.1− | 0.4+ |
| 2003 03 05 | 704 | 0.2− | 0.0 | 2003 04 08 | 608 | 0.3+ | 0.2− | | | | |
| 2003 03 05 | 704 | 0.0 | 0.6+ | 2003 04 08 | 608 | 0.5+ | 0.1− | | | | |

**(143274)∗ 2003 AU$_{15}$ = 1999 CW$_{97}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41412)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.32328 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22892083 | $\omega$ | 32.30766 | | +0.01102564 | −0.99072881 |
| $a$ | 2.6465444 | $\Omega$ | 57.39604 | | +0.87986212 | −0.05472721 |
| $e$ | 0.1669137 | $i$ | 9.24961 | | +0.47510112 | +0.12434368 |
| $P$ | 4.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | (1.3− | 2.8−) | 2003 01 13 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 1999 02 10 | 704 | 1.4+ | 1.5− | 2003 03 05 | 704 | (1.1− | 1.7+) | 2006 11 12 | G96 | 0.2− | 0.3− |
| 1999 02 10 | 704 | 0.3− | 0.1− | 2003 03 05 | 704 | 1.3− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 1999 02 10 | 704 | 1.6− | 1.1+ | 2003 03 05 | 704 | (1.2− | 1.7+) | 2006 11 12 | G96 | 0.0 | 0.3− |
| 1999 02 10 | 704 | 0.8+ | 0.6− | 2003 03 05 | 704 | 0.4− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.3− |
| 1999 02 13 | 704 | 0.5+ | 0.6+ | 2004 04 19 | 704 | (1.6+ | 0.4+) | 2006 11 17 | 703 | 0.4− | 0.2− |
| 1999 02 13 | 704 | 0.4+ | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.5− |
| 1999 02 13 | 704 | 1.9− | 0.4+ | 2004 04 19 | 704 | (0.9+ | 1.6−) | 2006 11 17 | 703 | 0.4− | 0.2− |
| 1999 02 13 | 704 | 0.2− | 0.9− | 2004 05 19 | 691 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.6+ | 0.4− |
| 2002 11 12 | 704 | 0.2− | 0.8− | 2004 05 19 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.5+ | 0.7+ | 2004 05 19 | 691 | 0.3+ | 0.7+ | 2006 11 18 | 704 | (1.2+ | 2.4−) |
| 2002 11 12 | 704 | 0.5− | 0.2− | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 11 12 | 704 | 0.1− | 0.8− | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.6− |
| 2002 11 12 | 704 | 0.4− | 0.6− | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 12 06 | 704 | 0.5+ | 1.1+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | (1.8+ | 0.4+) | 2006 10 18 | 691 | 0.6− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.7+ | 2006 10 18 | 691 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.5+ | 0.1− |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.2+ |
| 2002 12 15 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2002 12 15 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.8− | 0.5− |
| 2002 12 15 | 704 | 1.2+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | (0.3+ | 1.6−) |
| 2002 12 15 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 704 | 1.0− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.2− |
| 2002 12 15 | 704 | (2.4+ | 0.9+) | 2006 10 27 | 704 | (0.6− | 1.8+) | 2006 11 21 | 704 | 1.0− | 0.3+ |
| 2003 01 04 | 704 | 0.2+ | 0.3− | 2006 10 27 | 704 | (1.6+ | 0.2+) | 2006 11 26 | 704 | 0.2− | 0.2+ |
| 2003 01 04 | 704 | 0.1− | 0.5− | 2006 10 27 | 704 | 0.2− | 0.3+ | 2006 11 26 | 704 | 0.6+ | 1.3+ |
| 2003 01 04 | 704 | 1.0− | 1.0− | 2006 11 08 | 644 | 0.4+ | 0.7+ | 2006 11 26 | 704 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.9+ | 0.4+ |
| 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.4− |
| 2003 01 05 | 704 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.5− |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.4+ |
| 2003 01 10 | 704 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.1+ |
| 2003 01 10 | 704 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.7+ | 1.0+ |
| 2003 01 10 | 704 | 0.3− | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.8+ |
| 2003 01 13 | 704 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.7+ | 0.5− |
| 2003 01 13 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2− | 0.0 | | | | |
| 2003 01 13 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.4− | | | | |

**(143275)∗ 2003 AJ$_{16}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 323.06103 | | (2000.0) | | +0.48382256 | | −0.83544987 |
| $n$ | 0.23158404 | $\omega$ | 316.33546 | | +0.85834902 | | +0.39488517 |
| $a$ | 2.6262151 | $\Omega$ | 103.11046 | | +0.17074159 | | +0.38221618 |
| $e$ | 0.1473114 | $i$ | 15.52313 | | | | |
| $P$ | 4.26 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | (0.8− | 2.5−) | 2003 01 05 | 699 | 1.1− | 0.1+ | 2004 04 26 | 704 | 0.7− | 0.5+ |
| 1998 12 15 | 704 | (2.9− | 1.7−) | 2003 01 05 | 699 | 0.2− | 0.4− | 2004 04 26 | 704 | 0.2+ | 1.3+ |
| 1998 12 15 | 704 | 0.5− | 0.0 | 2003 01 18 | 644 | 0.4− | 0.3+ | 2006 09 22 | 703 | 0.2− | 0.3+ |
| 1998 12 15 | 704 | (1.8+ | 2.7−) | 2003 01 18 | 644 | 0.4− | 0.3+ | 2006 09 22 | 703 | 0.5− | 0.0 |
| 1998 12 15 | 704 | 0.4− | 1.2− | 2003 01 18 | 644 | 0.4− | 0.3+ | 2006 09 22 | 703 | 0.1+ | 0.2− |
| 2002 10 31 | 704 | 0.0 | 0.0 | 2003 01 26 | 699 | 0.4+ | 0.3− | 2006 09 24 | 699 | 0.5− | 0.4+ |
| 2002 10 31 | 704 | 1.4+ | 0.3+ | 2003 01 26 | 699 | 0.3+ | 0.1+ | 2006 09 24 | 699 | 0.1+ | 1.1+ |
| 2002 10 31 | 704 | 0.8− | 0.0 | 2003 01 26 | 699 | 0.8+ | 0.5− | 2006 09 24 | 699 | 0.2− | 0.8+ |
| 2002 10 31 | 704 | 1.1+ | 0.4− | 2003 01 26 | 699 | 0.9+ | 1.2+ | 2006 09 24 | 699 | 0.0 | 0.6+ |
| 2002 10 31 | 704 | 1.2+ | 0.4− | 2003 02 02 | 704 | 0.8+ | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.1− |
| 2002 11 30 | 704 | 0.2− | 0.3− | 2003 02 02 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.5− | 0.1+ |
| 2002 11 30 | 704 | 0.5− | 0.3+ | 2003 02 02 | 704 | 0.0 | 0.9+ | 2006 09 27 | 703 | 0.5+ | 1.0+ |
| 2002 11 30 | 704 | 0.7− | 0.8− | 2003 02 02 | 704 | 0.9+ | 0.3+ | 2006 09 27 | 703 | 0.5− | 0.3+ |
| 2002 11 30 | 704 | 0.1− | 0.7+ | 2003 02 02 | 704 | 0.4+ | 0.0 | 2006 10 25 | E12 | 0.4− | 0.9+ |
| 2002 11 30 | 704 | 0.5− | 0.1− | 2004 03 11 | 644 | 0.1− | 0.1+ | 2006 10 25 | E12 | 0.1+ | 0.3− |
| 2002 12 15 | 704 | 0.4+ | 0.3− | 2004 03 11 | 644 | 0.2− | 0.0 | 2006 10 25 | E12 | 0.1+ | 0.0 |
| 2002 12 15 | 704 | 0.5− | 0.6− | 2004 03 11 | 644 | 0.3+ | 0.6+ | 2006 10 25 | E12 | 0.2− | 0.2+ |
| 2002 12 15 | 704 | 1.0− | 0.6− | 2004 03 26 | 703 | 0.8+ | 0.5+ | 2006 11 01 | 703 | 0.0 | 0.4− |
| 2002 12 15 | 704 | 0.5− | 0.5− | 2004 03 26 | 703 | 0.4+ | 0.3− | 2006 11 01 | 703 | 0.2− | 0.2− |
| 2002 12 15 | 704 | 0.2− | 0.5− | 2004 03 26 | 703 | 1.2+ | 1.5+ | 2006 11 01 | 703 | 0.5− | 0.3+ |
| 2003 01 01 | 704 | 1.3+ | 0.6+ | 2004 03 26 | 703 | (3.7− | 4.6+) | 2006 11 01 | 703 | 0.2− | 0.5+ |
| 2003 01 01 | 704 | 0.4+ | 0.6+ | 2004 03 29 | 704 | 0.9− | 0.2− | 2006 11 19 | 703 | 0.1+ | 0.3+ |
| 2003 01 01 | 704 | (0.5+ | 1.7+) | 2004 03 29 | 704 | 1.2+ | 0.6+ | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2003 01 01 | 704 | 0.7+ | 0.6+ | 2004 03 29 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 703 | 0.6+ | 0.6− |
| 2003 01 05 | 699 | (2.0− | 1.5−) | 2004 03 29 | 704 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.9− | 0.4+ |
| 2003 01 05 | 699 | 0.2− | 0.6+ | 2004 04 26 | 704 | 0.8− | 0.1+ | | | | |

**(143276)∗ 2003 AA$_{18}$**

Discovered 2003 Jan. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 333.27347 | | (2000.0) | | −0.16199768 | | −0.95617047 |
| $n$ | 0.23541219 | $\omega$ | 21.05911 | | +0.86611955 | | −0.25622089 |
| $a$ | 2.5976667 | $\Omega$ | 78.90690 | | +0.47285693 | | +0.14173530 |
| $e$ | 0.1292906 | $i$ | 14.39230 | | | | |
| $P$ | 4.19 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 0.1+ | 0.3− | 2003 01 10 | 704 | 0.1+ | 0.5+ | 2004 05 16 | 599 | 0.5+ | 0.4+ |
| 1999 02 18 | 704 | (3.8+ | 1.4−) | 2003 01 10 | 704 | 0.1− | 0.5+ | 2004 05 16 | 599 | 0.4− | 0.8+ |
| 1999 02 18 | 704 | (1.7+ | 2.1−) | 2003 01 10 | 704 | 0.2+ | 0.1− | 2004 05 16 | 599 | 0.2+ | 0.6+ |
| 1999 02 18 | 704 | 1.7+ | 0.6− | 2003 01 12 | 704 | 0.6− | 0.3+ | 2004 05 16 | 599 | 0.4+ | 0.4+ |
| 1999 02 18 | 704 | 0.0 | 0.5+ | 2003 01 12 | 704 | 0.9− | 0.3+ | 2004 05 16 | 599 | 0.1− | 0.8+ |
| 1999 02 18 | 566 | 0.3+ | 1.1− | 2003 01 12 | 704 | 0.3− | 0.7+ | 2004 05 16 | 599 | 0.0 | 0.7+ |
| 1999 02 18 | 566 | 0.6+ | 0.8− | 2003 01 12 | 704 | 0.4− | 0.6+ | 2004 05 16 | 599 | 0.0 | 0.2+ |
| 1999 02 18 | 566 | 0.5+ | 1.3− | 2003 01 12 | 704 | 0.7− | 1.3+ | 2004 05 16 | 599 | 0.4+ | 0.5− |
| 2001 09 11 | 704 | 0.1− | 0.9+ | 2003 01 13 | 704 | 0.5− | 0.3+ | 2004 05 18 | 704 | 0.1+ | 0.8+ |
| 2001 09 11 | 704 | 0.9− | 0.1− | 2003 01 13 | 704 | 0.5− | 0.5+ | 2004 05 18 | 704 | 0.5+ | 0.6+ |
| 2001 09 11 | 704 | 0.8− | 0.5+ | 2003 01 13 | 704 | 0.6− | 0.1+ | 2004 05 18 | 704 | 0.9+ | 1.3+ |
| 2001 09 11 | 704 | 0.6+ | 0.2− | 2003 01 13 | 704 | 0.6− | 0.3+ | 2005 08 10 | E12 | 0.7− | 0.3+ |
| 2002 11 14 | 704 | 0.7− | 0.8+ | 2003 01 13 | 704 | 0.3− | 0.6+ | 2005 08 10 | E12 | 0.6− | 0.2− |
| 2002 11 14 | 704 | 1.3+ | 0.0 | 2003 01 13 | 704 | 0.5− | 0.8+ | 2005 08 10 | E12 | 0.4+ | 0.8+ |
| 2002 11 14 | 704 | 0.6+ | 1.0− | 2003 01 13 | 704 | 0.5− | 0.4+ | 2005 08 10 | E12 | 1.0+ | 0.6+ |
| 2002 11 14 | 704 | 0.9+ | 0.6+ | 2003 01 13 | 704 | 0.7− | 0.9+ | 2005 08 28 | E12 | 0.4− | 0.8+ |
| 2002 12 05 | 704 | 0.7+ | 0.0 | 2003 01 13 | 704 | 1.3− | 0.5− | 2005 08 28 | E12 | 0.3− | 0.9+ |
| 2002 12 05 | 704 | 0.8+ | 0.4+ | 2003 01 13 | 704 | 1.1− | 0.2+ | 2005 08 28 | E12 | 0.6− | 0.5+ |
| 2002 12 05 | 704 | 0.3+ | 0.1− | 2003 01 25 | 704 | 0.8− | 0.2− | 2005 08 28 | E12 | 0.0 | 0.5+ |
| 2002 12 05 | 704 | 1.4+ | 0.9+ | 2003 01 25 | 704 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 1.3+ | 0.7− |
| 2002 12 14 | 704 | (0.3+ | 2.5+) | 2003 01 25 | 704 | 0.7− | 0.7− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2002 12 14 | 704 | (0.5+ | 2.1+) | 2003 01 25 | 704 | 0.9− | 0.8− | 2006 11 18 | 704 | 0.3− | 0.2− |
| 2002 12 14 | 704 | (0.9+ | 2.4+) | 2003 02 06 | 699 | 0.5+ | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2002 12 14 | 704 | (1.1+ | 2.1+) | 2003 02 06 | 699 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 1.0+ |
| 2002 12 14 | 704 | (1.0+ | 1.6+) | 2003 02 06 | 699 | 0.2+ | 0.9+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2003 01 05 | 699 | 0.0 | 1.0− | 2003 02 06 | 699 | 0.5+ | 1.0+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2003 01 05 | 699 | 0.1− | 0.0 | 2003 03 24 | 704 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2003 01 05 | 699 | 0.2+ | 0.1− | 2003 03 24 | 704 | 0.4+ | 0.6+ | 2006 11 21 | 704 | 0.1+ | 1.0− |
| 2003 01 05 | 699 | 0.1− | 0.0 | 2003 03 24 | 704 | 0.3− | 0.2+ | 2006 11 27 | 704 | 0.5+ | 0.1+ |
| 2003 01 07 | 704 | 0.0 | 0.2− | 2003 03 24 | 704 | 0.2+ | 0.5+ | 2006 11 27 | 704 | 0.1+ | 0.3+ |
| 2003 01 07 | 704 | 0.1+ | 0.2+ | 2003 03 24 | 704 | 0.0 | 0.2+ | 2006 11 27 | 704 | 0.0 | 0.3+ |
| 2003 01 07 | 704 | 0.1+ | 0.3− | 2003 04 04 | 704 | 0.3− | 0.9− | 2006 11 27 | 704 | 0.6+ | 0.4+ |
| 2003 01 07 | 704 | 0.4+ | 0.4+ | 2003 04 04 | 704 | (1.4− | 1.6−) | 2006 11 28 | 704 | 0.3− | 0.5− |
| 2003 01 07 | 704 | 0.0 | 0.6− | 2003 04 04 | 704 | 0.1− | 1.0− | 2006 11 28 | 704 | 0.8+ | 0.8+ |
| 2003 01 10 | 704 | 0.4+ | 0.1+ | 2003 04 04 | 704 | 1.1− | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.1+ |
| 2003 01 10 | 704 | 0.4+ | 0.7+ | 2003 04 04 | 704 | 1.0− | 1.2− | 2006 11 28 | 704 | 0.6− | 0.6+ |

**(143277)∗ 2003 AG$_{19}$ = 1999 CF$_{133}$**

Discovered 2003 Jan. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. Kretlow (*MPO* 43250)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 6.06809 | | (2000.0) | | +0.88026219 | | −0.47079868 |
| $n$ | 0.23069856 | $\omega$ | 245.17782 | | +0.46294410 | | +0.82488504 |
| $a$ | 2.6329309 | $\Omega$ | 142.82949 | | +0.10402516 | | +0.31291096 |
| $e$ | 0.2923787 | $i$ | 5.60886 | | | | |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 1.0+ | 0.0 | 2003 02 05 | 608 | 0.3+ | 0.2− | 2006 11 15 | 703 | 0.5− | 0.4− |
| 1995 02 05 | 691 | 1.1− | 0.4− | 2003 02 05 | 608 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.6− |
| 1995 02 05 | 691 | 0.1+ | 0.2+ | 2003 02 05 | 608 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 1995 03 23 | 691 | 1.1+ | 1.8+ | 2003 02 08 | 704 | (2.4+ | 0.3−) | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 1995 03 23 | 691 | 0.6+ | 0.9+ | 2003 02 08 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 1995 03 23 | 691 | 0.2+ | 0.4+ | 2003 02 08 | 704 | 0.9+ | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 1997 07 12 | 691 | 0.5− | 0.2+ | 2005 07 11 | G96 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 1997 07 12 | 691 | 0.2+ | 0.2+ | 2005 07 11 | G96 | 0.4+ | 0.4+ | 2006 11 25 | 704 | 1.0− | 0.1+ |
| 1997 07 12 | 691 | 0.1+ | 0.2+ | 2005 07 11 | G96 | 0.0 | 0.4+ | 2006 11 25 | 704 | 0.2− | 0.7+ |
| 1999 02 07 | 691 | 0.1− | 0.6− | 2005 07 11 | G96 | 0.3+ | 0.0 | 2006 11 25 | 704 | 0.7− | 0.4+ |
| 1999 02 07 | 691 | 0.5− | 0.3− | 2006 09 16 | 703 | 0.3− | 0.5− | 2006 11 25 | 704 | 0.7− | 0.9+ |
| 1999 02 07 | 691 | 0.2− | 0.3− | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 11 25 | 704 | 0.3+ | 0.2+ |
| 1999 02 11 | 691 | 0.8− | 0.8− | 2006 09 16 | 703 | 0.6− | 0.9− | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 1999 02 11 | 691 | 0.5− | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.6− | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 1999 02 11 | 691 | 0.8− | 0.7− | 2006 09 19 | 704 | 0.0 | 0.5+ | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2002 10 04 | 644 | 0.8+ | 0.8+ | 2006 09 19 | 704 | 0.8+ | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2002 10 04 | 644 | 0.3+ | 0.5+ | 2006 09 19 | 704 | 0.0 | 0.5− | 2006 11 25 | 703 | 0.3+ | 0.4+ |
| 2002 10 04 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 704 | 0.8− | 1.4+ | 2006 11 25 | 703 | 0.3− | 0.2+ |
| 2002 12 05 | 644 | 0.2+ | 0.2− | 2006 09 19 | 704 | 0.9− | 0.3+ | 2006 11 25 | 703 | 0.3+ | 0.5+ |
| 2002 12 05 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.8− | 1.0+ | 2006 11 25 | 703 | 0.3+ | 0.3+ |
| 2002 12 05 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.8+ | 2006 11 27 | 704 | 0.1− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.9− | 0.2− | 2006 11 27 | 704 | 0.5− | 0.6+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.6+ | 0.2− | 2006 11 27 | 704 | 0.4+ | 1.2− | | |
| 2002 12 10 | 644 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.2− | 0.6+ | 2006 11 27 | 704 | 0.4− | 0.3− | | |
| 2002 12 18 | 608 | 0.4+ | 1.2− | 2006 09 22 | 704 | 1.0+ | 0.5+ | 2006 11 27 | 704 | 0.4− | 0.5+ | | |
| 2002 12 18 | 608 | 0.4+ | 0.9− | 2006 09 22 | 704 | 0.8+ | 0.0 | 2006 11 27 | 704 | 0.4− | 0.3+ | | |
| 2002 12 18 | 608 | 0.0 | 0.4− | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.1+ | 0.3+ | | |
| 2003 01 04 | 699 | 0.4− | 1.1+ | 2006 09 26 | 704 | 1.4+ | 0.4− | 2006 11 28 | 704 | 0.2− | 1.3+ | | |
| 2003 01 04 | 699 | (22.7− | 5.9−) | 2006 09 26 | 704 | 0.8+ | 0.0 | 2006 11 28 | 704 | 0.0 | 0.2− | | |
| 2003 01 04 | 699 | (1.6+ | 0.6+) | 2006 09 26 | 704 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.0 | 0.1− | | |
| 2003 01 07 | 704 | 0.0 | 0.8+ | 2006 10 03 | 704 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.1− | | |
| 2003 01 07 | 704 | 0.2+ | 0.5+ | 2006 10 03 | 704 | 0.7− | 0.6+ | 2006 11 28 | 704 | 0.2+ | 0.1+ | | |
| 2003 01 07 | 704 | 0.1+ | 0.4+ | 2006 10 03 | 704 | 0.8+ | 0.6+ | 2006 11 30 | 291 | 0.1+ | 0.0 | | |
| 2003 01 07 | 704 | 0.6+ | 0.6+ | 2006 10 03 | 704 | 1.1+ | 0.2− | 2006 11 30 | 291 | 0.1− | 0.0 | | |
| 2003 01 27 | 704 | 0.9+ | 0.5+ | 2006 11 05 | 644 | 0.1− | 0.1− | 2006 11 30 | 291 | 0.1− | 0.1− | | |
| 2003 01 27 | 704 | 0.6+ | 0.0 | 2006 11 05 | 644 | 0.2− | 0.5− | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| 2003 01 27 | 704 | 0.0 | 0.1− | 2006 11 05 | 644 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.3− | | |
| 2003 01 27 | 704 | 0.7+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.7− | 2006 12 01 | G96 | 0.1+ | 0.4− | | |
| 2003 01 27 | 704 | 0.7+ | 0.1− | 2006 11 15 | 703 | 0.2− | 1.0− | 2006 12 01 | G96 | 0.1− | 0.4− | | |

**(143278)∗ 2003 AK$_{21}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.23473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19061787 | $\omega$ | 43.80874 | | −0.56522283 | −0.82005990 | |
| $a$ | 2.9901546 | $\Omega$ | 80.80509 | | +0.72967972 | −0.54765519 | |
| $e$ | 0.1211341 | $i$ | 5.20664 | | +0.38482549 | −0.16605889 | |
| $P$ | 5.17 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 02 | 691 | 0.2+ | 0.1+ | 2003 01 07 | 704 | 0.3− | 0.2− | 2004 04 20 | 691 | 0.2+ | 0.3+ | | |
| 1991 11 02 | 691 | 0.1− | 0.2+ | 2003 01 07 | 704 | 0.3− | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.3+ | | |
| 1991 11 02 | 691 | 0.4− | 0.1+ | 2003 01 07 | 704 | 0.4− | 0.3− | 2004 04 20 | 691 | 0.3+ | 0.2+ | | |
| 1998 03 01 | 327 | 0.1+ | 0.1− | 2003 01 07 | 704 | 0.1− | 0.4+ | 2004 05 21 | 704 | 0.1+ | 0.9+ | | |
| 1998 03 01 | 327 | 0.3+ | 0.2+ | 2003 01 07 | 704 | 0.0 | 0.2+ | 2004 05 21 | 704 | 0.4− | 0.7− | | |
| 1998 03 01 | 327 | 0.2+ | 0.8+ | 2003 01 08 | 704 | 0.3+ | 0.3+ | 2004 05 21 | 704 | 0.2− | 0.7− | | |
| 2001 10 08 | 644 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.6+ | 0.0 | 2006 09 14 | 703 | 1.5− | 0.5− | | |
| 2001 10 08 | 644 | 0.0 | 1.0+ | 2003 01 08 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 1.2+ | 0.5− | | |
| 2001 10 08 | 644 | 0.3+ | 0.7+ | 2003 01 09 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | (2.1+ | 0.1+) | | |
| 2001 10 24 | 644 | 0.1+ | 0.7+ | 2003 01 09 | 704 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.2− | 0.5− | | |
| 2001 10 24 | 644 | 0.2− | 0.9+ | 2003 01 09 | 704 | 0.7− | 0.5+ | 2006 10 02 | 703 | 1.4− | 1.1− | | |
| 2001 10 24 | 644 | 0.4− | 1.3+ | 2003 02 01 | 704 | 0.4+ | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.3− | | |
| 2002 12 31 | 704 | 0.2+ | 0.3+ | 2003 02 01 | 704 | 0.1− | 0.8− | 2006 10 02 | 703 | 0.6− | 1.2+ | | |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2003 02 01 | 704 | 0.9− | 1.0− | 2006 10 02 | 703 | 0.3+ | 0.1− | | |
| 2002 12 31 | 704 | 1.5+ | 0.9− | 2003 02 01 | 704 | 0.7− | 1.8− | 2006 10 03 | G96 | 0.1+ | 0.5+ | | |
| 2002 12 31 | 704 | 1.0+ | 0.6+ | 2004 04 19 | 704 | 0.4+ | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.3+ | | |
| 2003 01 05 | 704 | 0.2− | 0.7+ | 2004 04 19 | 704 | 1.6+ | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.5+ | | |
| 2003 01 05 | 704 | 0.1− | 0.2− | 2004 04 19 | 704 | 0.3− | 1.7+ | 2006 10 03 | G96 | 0.1+ | 0.5+ | | |
| 2003 01 05 | 704 | 0.4− | 0.9+ | 2004 04 19 | 704 | 0.8− | 0.9+ | | | | | | |
| 2003 01 05 | 704 | 0.2− | 0.1+ | 2004 04 19 | 704 | 0.1+ | 0.6+ | | | | | | |

**(143279)∗ 2003 AW$_{24}$ = 1997 RD$_6$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41417)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.72342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23149625 | $\omega$ | 54.91257 | | +0.11399769 | −0.99245001 | |
| $a$ | 2.6268790 | $\Omega$ | 28.64262 | | +0.87801590 | +0.07933255 | |
| $e$ | 0.2239330 | $i$ | 5.41669 | | +0.46485763 | +0.09353782 | |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.0 | 0.1+ | 2004 05 16 | 691 | 0.5− | 0.6+ | 2006 11 11 | 703 | 1.1+ | 0.4+ | | |
| 1993 09 15 | 691 | 0.3− | 0.0 | 2006 08 28 | 703 | (1.8+ | 0.7−) | 2006 11 12 | G96 | 0.2+ | 0.4− | | |
| 1993 09 15 | 691 | (1.9− | 4.5−) | 2006 08 28 | 703 | (1.5+ | 1.3+) | 2006 11 12 | G96 | 0.6+ | 0.5− | | |
| 1995 03 01 | 691 | 0.4+ | 0.8− | 2006 08 28 | 703 | 0.4+ | 1.0+ | 2006 11 12 | G96 | 0.6+ | 0.4− | | |
| 1995 03 01 | 691 | 0.2+ | 0.6− | 2006 08 28 | 703 | 0.3− | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 1995 03 01 | 691 | 0.2+ | 0.4− | 2006 09 24 | 701 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.6+ | | |
| 1997 09 05 | 608 | 0.6− | 0.3+ | 2006 09 24 | 701 | 0.5+ | 0.3− | 2006 11 16 | 704 | 0.9+ | 1.3+ | | |
| 1997 09 05 | 608 | 0.6− | 0.4+ | 2006 09 24 | 701 | 0.4+ | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.1+ | | |
| 1997 09 06 | 608 | 0.6− | 0.6+ | 2006 09 24 | 701 | 0.5+ | 0.2− | 2006 11 16 | 704 | 0.3− | 0.0 | | |
| 1997 09 06 | 608 | 0.5− | 0.6+ | 2006 09 24 | 701 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.2− | 0.3− | | |
| 1999 01 22 | 699 | 1.6+ | 1.3+ | 2006 09 24 | 701 | 0.5+ | 0.1− | 2006 11 17 | 704 | 1.4+ | 0.9− | | |
| 1999 01 22 | 699 | (0.6− | 2.5+) | 2006 09 24 | 701 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 1999 01 22 | 699 | (0.7− | 3.3+) | 2006 09 24 | 701 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2002 12 06 | 704 | 0.2− | 1.3+ | 2006 10 12 | 691 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.4+ | | |
| 2002 12 15 | 704 | 0.5− | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.3− | 2006 11 17 | 704 | (1.7+ | 2.0+) | | |
| 2002 12 15 | 704 | 0.7− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.9− | 0.7+ | | |
| 2002 12 15 | 704 | 0.4− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2003 01 04 | 704 | 0.4− | 1.1+ | 2006 10 23 | 704 | 0.2− | 0.5+ | 2006 11 17 | G96 | 0.4+ | 0.2− | | |
| 2003 01 04 | 704 | 0.3− | 0.3+ | 2006 10 23 | 704 | 1.0+ | 1.2+ | 2006 11 17 | G96 | 0.4+ | 0.2− | | |
| 2003 01 04 | 704 | 0.5− | 0.4+ | 2006 10 23 | 704 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.8+ | 0.3+ | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2003 01 04 | 704 | 0.9− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.1− | | |
| 2003 01 08 | 704 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 2003 01 08 | 704 | 0.4− | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2003 01 08 | 704 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.6+ | | |
| 2003 01 08 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2003 01 10 | 704 | 1.0− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.5+ | | |
| 2003 01 10 | 704 | 0.8− | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.6− | 0.4+ | | |
| 2003 01 10 | 704 | 0.5− | 0.6− | 2006 11 10 | 644 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.9+ | 0.5+ | | |
| 2003 01 10 | 704 | 1.1− | 0.5− | 2006 11 10 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.5+ | | |
| 2003 01 13 | 704 | 0.7− | 0.0 | 2006 11 10 | 644 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.5+ | | |
| 2003 01 13 | 704 | 0.5+ | 0.6+ | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.5+ | | |
| 2003 01 13 | 704 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.1+ | | |
| 2003 01 13 | 704 | 0.6+ | 0.1− | 2006 11 10 | 644 | 0.4− | 0.3− | 2006 11 29 | 704 | 0.3− | 0.1+ | | |
| 2003 02 01 | 704 | (0.3+ | 2.7+) | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.4− | | |
| 2003 02 01 | 704 | 0.8+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.0 | | |
| 2003 02 01 | 704 | 0.8+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.4− | 0.1− | | |
| 2004 05 16 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.1− | 0.4+ | | |
| 2004 05 16 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.6− | | | | | | |

**(143280)∗ 2003 AB$_{25}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.47656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23681941 | $\omega$ | 166.68321 | | +0.23121006 | −0.96639786 | |
| $a$ | 2.5873659 | $\Omega$ | 269.86261 | | +0.88201461 | +0.25693429 | |
| $e$ | 0.1135024 | $i$ | 6.44942 | | +0.41059973 | −0.00774206 | |
| $P$ | 4.16 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 24 | 691 | 0.4− | 0.2− | 2003 01 08 | 704 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.3− | 0.4+ | | |
| 1998 10 24 | 691 | 0.3− | 0.4− | 2003 01 08 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.6− | 0.2+ | | |
| 1998 10 24 | 691 | 0.5− | 0.2− | 2003 01 08 | 704 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.1− | | |
| 2001 07 27 | 608 | 0.3− | 0.5− | 2005 06 18 | G96 | 0.5− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.4+ | | |
| 2001 07 27 | 608 | 0.1− | 0.3− | 2005 06 18 | G96 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.4+ | | |
| 2001 07 27 | 608 | 0.6− | 0.4− | 2005 06 18 | G96 | 0.4− | 0.1− | 2006 11 16 | 704 | (1.3+ | 2.0+) | | |
| 2001 08 25 | 704 | 0.6+ | 0.3− | 2005 06 18 | G96 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.1− | 1.1+ | | |
| 2001 08 25 | 704 | 1.2+ | 0.7− | 2005 06 28 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.3+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.9− | 2005 06 28 | 691 | 0.1− | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2001 08 25 | 704 | 1.0+ | 0.3− | 2005 06 28 | 691 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.0 | | |
| 2002 12 05 | 704 | 0.5+ | 0.4+ | 2005 07 05 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.9+ | 0.4+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2005 07 05 | 644 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.0 | | |
| 2002 12 05 | 704 | 0.0 | 0.4+ | 2005 07 05 | 644 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2005 07 10 | 691 | (0.1− | 1.5+) | 2006 11 19 | 704 | 0.6+ | 0.8+ | | |
| 2002 12 10 | 704 | 0.0 | 0.3− | 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.7− | | |
| 2002 12 10 | 704 | 0.3+ | 0.2− | 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.4+ | 0.9+ | 2005 07 11 | G96 | 0.5− | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2002 12 10 | 704 | 0.9+ | 0.3+ | 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.5− |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2005 07 11 | G96 | 0.7− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.6− |
| 2002 12 31 | 704 | 0.3− | 0.2+ | 2005 07 11 | G96 | 0.2− | 0.0 | 2006 11 27 | 704 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.7− | 0.5+ | 2005 07 30 | E12 | 0.3+ | 0.1+ | 2006 11 27 | 704 | 0.3+ | 0.4+ |
| 2002 12 31 | 704 | 0.5− | 0.8+ | 2005 07 30 | E12 | 0.0 | 0.8− | 2006 11 27 | 704 | 0.7− | 0.1− |
| 2003 01 04 | 704 | 0.3+ | 0.3+ | 2005 07 30 | E12 | 0.8+ | 0.6− | 2006 11 28 | 704 | 0.1− | 0.4+ |
| 2003 01 04 | 704 | 0.3+ | 0.4− | 2005 07 30 | E12 | 0.6− | 0.2− | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2003 01 04 | 704 | 0.4+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.8− | 2006 11 28 | 704 | 1.4− | 0.6+ |
| 2003 01 04 | 704 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.7− | 2006 11 28 | 704 | 0.3− | 1.3− |
| 2003 01 04 | 704 | 1.0+ | 0.8+ | 2006 11 13 | G96 | 0.2+ | 0.6− | 2006 11 30 | 691 | 0.3− | 0.3− |
| 2003 01 08 | 704 | 0.5+ | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.5− | 2006 11 30 | 691 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.4− | 0.6− | 2006 11 30 | 691 | 0.3− | 0.3− |

**(143281)∗ 2003 AJ$_{25}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.25434 | | (2000.0) | | +0.48305830 | −0.87122849 |
| $n$ | 0.25864464 | $\omega$ | 149.67262 | | +0.78478538 | +0.47500518 |
| $a$ | 2.4396848 | $\Omega$ | 271.31587 | | +0.38828673 | +0.12381838 |
| $e$ | 0.1134882 | $i$ | 5.00774 | | | |
| $P$ | 3.81 | $H$ | 16.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 704 | 0.6− | 1.0− | 2003 01 04 | 704 | 0.1+ | 0.0 | 2005 08 29 | 699 | 1.1+ | 0.7+ |
| 1998 11 24 | 704 | 1.4+ | 0.5+ | 2003 01 04 | 704 | 0.0 | 0.0 | 2005 09 07 | 699 | (0.0 | 4.6+) |
| 1998 11 24 | 704 | 0.9+ | 1.4− | 2003 01 04 | 704 | 0.1+ | 0.2+ | 2005 09 07 | 699 | (1.7+ | 0.4+) |
| 1998 11 24 | 704 | 0.9− | 0.1+ | 2003 01 08 | 704 | 0.2+ | 0.6+ | 2005 09 07 | 699 | 0.3− | 1.0− |
| 1998 12 11 | 699 | 0.1− | 0.5+ | 2003 01 08 | 704 | 0.1− | 0.2+ | 2005 09 07 | 699 | 0.7+ | 0.6− |
| 1998 12 11 | 699 | 0.6− | 0.4+ | 2003 01 08 | 704 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.5− | 0.4− |
| 1998 12 11 | 699 | 1.1+ | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.5− |
| 2001 07 13 | 608 | 0.1+ | 0.4− | 2003 01 08 | 704 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.1− |
| 2001 07 13 | 608 | 0.0 | 0.2− | 2004 04 16 | E12 | 0.5+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2001 07 13 | 608 | 0.0 | 0.4− | 2004 04 16 | E12 | 0.3+ | 1.3+ | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2004 04 16 | E12 | 0.5+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2002 12 05 | 704 | 0.8− | 0.9+ | 2004 04 16 | E12 | 0.7− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.1+ | 0.9+ | 2005 07 30 | 644 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | (1.7− | 0.3+) | 2005 07 30 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2002 12 10 | 704 | 0.9− | 1.3+ | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 12 10 | 704 | 0.9− | 0.5+ | 2005 08 24 | 644 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 12 10 | 704 | 1.2− | 0.4+ | 2005 08 24 | 644 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2002 12 31 | 704 | 0.4+ | 0.3− | 2005 08 24 | 644 | 0.4− | 0.5+ | 2006 11 27 | 703 | 0.1− | 0.9− |
| 2002 12 31 | 704 | 0.4− | 0.5− | 2005 08 29 | 699 | 0.2+ | 1.5+ | 2006 11 27 | 703 | 0.2− | 0.2− |
| 2002 12 31 | 704 | 0.4+ | 0.5− | 2005 08 29 | 699 | 1.1− | 0.2− | 2006 11 27 | 703 | 0.1+ | 0.2+ |
| 2003 01 04 | 704 | 0.8+ | 0.5+ | 2005 08 29 | 699 | (1.3+ | 1.7+) | 2006 11 27 | 703 | 0.0 | 0.6+ |

**(143282)∗ 2003 AL$_{25}$ = 2000 KX$_{19}$ = 2001 SW$_{192}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47248)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.10176 | | (2000.0) | | −0.99273878 | −0.11548194 |
| $n$ | 0.26234969 | $\omega$ | 120.52616 | | +0.09072387 | −0.90259789 |
| $a$ | 2.4166607 | $\Omega$ | 52.86325 | | +0.07898664 | −0.41470589 |
| $e$ | 0.1729297 | $i$ | 2.42060 | | | |
| $P$ | 3.76 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 26 | 691 | 0.3+ | 0.6− | 2002 12 05 | 704 | 0.3+ | 0.8+ | 2005 10 07 | 703 | 0.8+ | 0.6+ |
| 1994 10 26 | 691 | 0.0 | 0.5− | 2002 12 05 | 704 | 0.2− | 0.6+ | 2005 10 07 | 703 | 0.4+ | 0.9− |
| 1994 10 26 | 691 | 0.3+ | 0.8− | 2002 12 05 | 704 | 0.0 | 0.9+ | 2005 10 07 | 703 | 0.5+ | 0.3− |
| 1994 11 01 | 691 | 0.5− | 0.3+ | 2002 12 14 | 704 | 0.1+ | 0.3+ | 2005 10 07 | 703 | 0.1+ | 0.5+ |
| 1994 11 01 | 691 | (4.4+ | 2.5+) | 2002 12 14 | 704 | 1.0+ | 0.3− | 2005 10 28 | G96 | 0.2+ | 0.3− |
| 1994 11 01 | 691 | 0.3+ | 0.5− | 2002 12 14 | 704 | 0.3+ | 0.2− | 2005 10 28 | G96 | 0.2+ | 0.0 |
| 2000 05 28 | 704 | 0.5− | 0.3− | 2002 12 14 | 704 | 0.4+ | 0.3+ | 2005 10 28 | G96 | 0.3+ | 0.0 |
| 2000 05 28 | 704 | 0.9− | 1.4− | 2002 12 14 | 704 | 0.0 | 0.9− | 2005 10 28 | G96 | 0.2+ | 0.2− |
| 2000 05 28 | 704 | 0.6− | 0.0 | 2003 01 04 | 704 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.5− |
| 2000 05 28 | 704 | 0.6− | 0.4− | 2003 01 04 | 704 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2000 05 29 | 704 | 0.1− | 0.3− | 2003 01 04 | 704 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2000 05 29 | 704 | 0.1− | 0.5− | 2003 01 04 | 704 | 0.1+ | 1.0+ | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2000 05 29 | 704 | 0.5+ | 0.2− | 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2000 05 29 | 704 | 0.7+ | 0.8− | 2003 01 08 | 704 | 0.3− | 0.3− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2000 05 29 | 704 | 0.1+ | 0.6− | 2003 01 08 | 704 | 0.5+ | 0.2− | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2001 09 19 | 704 | 0.3+ | 0.7+ | 2005 09 30 | G96 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.7+ | 0.5+ | 2005 09 30 | G96 | 0.3+ | 0.0 | 2006 11 02 | G96 | 0.6− | 0.1− |
| 2001 09 19 | 704 | 0.6+ | 0.6+ | 2005 09 30 | G96 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.2− | 0.4− |
| 2001 09 19 | 704 | 0.6+ | 1.3+ | 2005 09 30 | G96 | 0.9− | 0.4+ | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2005 10 01 | 691 | 0.3− | 0.0 | 2006 11 02 | G96 | 0.1− | 0.5− |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2005 10 01 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.4− | 2005 10 01 | 691 | 0.4− | 0.0 | 2006 11 24 | G96 | 0.6− | 0.4− |
| 2001 09 21 | 704 | 0.2− | 0.2− | 2005 10 06 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2005 10 06 | 691 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.8+ | 0.5+ | 2005 10 06 | 691 | 0.0 | 0.1+ | | | | |

**(143283)∗ 2003 AX$_{25}$ = 2004 HG$_{34}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 65417)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 122.29876 | | (2000.0) | | −0.86262235 | +0.41054708 |
| $n$ | 0.15496970 | $\omega$ | 281.83688 | | −0.25771926 | −0.85939366 |
| $a$ | 3.4327185 | $\Omega$ | 282.99527 | | −0.43527401 | −0.30478456 |
| $e$ | 0.1094908 | $i$ | 17.65535 | | | |
| $P$ | 6.36 | $H$ | 13.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.4− | 0.5− | 2003 01 08 | 704 | 1.4− | 1.0+ | 2004 03 26 | 704 | 0.4− | 0.1+ |
| 2000 09 30 | 704 | 0.6− | 0.3+ | 2003 01 10 | 704 | 1.0− | 0.4+ | 2004 03 26 | 704 | 0.1+ | 0.6+ |
| 2000 09 30 | 704 | 0.3+ | 0.4+ | 2003 01 10 | 704 | 1.9− | 0.6− | 2004 03 26 | 704 | 0.0 | 0.2+ |
| 2000 09 30 | 704 | 0.2− | 0.5+ | 2003 01 10 | 704 | 0.8− | 0.4+ | 2004 03 26 | 704 | 0.2− | 0.6+ |
| 2000 09 30 | 704 | 0.4+ | 0.9+ | 2003 01 10 | 704 | 1.9− | 0.7− | 2004 04 17 | 704 | 1.1+ | 1.8+ |
| 2000 10 04 | 704 | 0.2− | 0.3+ | 2003 01 10 | 704 | 0.3− | 0.4+ | 2004 04 17 | 704 | 0.7+ | 0.2+ |
| 2000 10 04 | 704 | 1.1− | 0.8− | 2003 01 10 | 704 | (2.4− | 0.7−) | 2004 04 17 | 704 | 0.7+ | 0.4+ |
| 2000 10 04 | 704 | 0.2− | 0.8+ | 2003 01 24 | 735 | 1.0+ | 0.8+ | 2004 04 17 | 704 | 0.7+ | 0.6+ |
| 2000 10 04 | 704 | 0.0 | 0.1+ | 2003 01 24 | 735 | 0.1+ | 0.1+ | 2004 04 17 | 704 | 0.6− | 0.3+ |
| 2001 12 22 | 704 | 0.8− | 0.6+ | 2003 01 24 | 735 | 0.5+ | 0.3− | 2004 04 23 | 608 | 0.3+ | 0.4+ |
| 2001 12 22 | 704 | 0.6+ | 1.1− | 2004 01 27 | 704 | 0.6+ | 0.4+ | 2004 04 23 | 608 | 0.1+ | 0.9− |
| 2001 12 22 | 704 | 0.9+ | 0.9+ | 2004 01 27 | 704 | 1.0− | 0.1− | 2004 04 23 | 608 | 0.1− | 0.7− |
| 2001 12 22 | 704 | 0.4+ | 0.1+ | 2004 01 27 | 704 | 0.1+ | 0.1− | 2006 06 21 | 703 | 0.6− | 0.4+ |
| 2001 12 22 | 704 | 1.1+ | 0.5+ | 2004 01 27 | 704 | 0.1− | 0.4− | 2006 06 21 | 703 | 1.1− | 0.9− |
| 2003 01 04 | 704 | 1.3+ | 0.2− | 2004 01 27 | 704 | 0.3− | 0.7− | 2006 06 21 | 703 | 1.4− | 0.8+ |
| 2003 01 04 | 704 | 0.9+ | 0.0 | 2004 03 17 | 704 | 0.1+ | 0.1+ | 2006 06 21 | 703 | 1.3− | 0.5− |
| 2003 01 04 | 704 | 1.2+ | 0.1+ | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.7+ | 0.2+ |
| 2003 01 04 | 704 | 0.4+ | 0.1− | 2004 03 17 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.8+ |
| 2003 01 08 | 704 | 0.1+ | 0.3+ | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.9+ | 0.5+ |
| 2003 01 08 | 704 | 0.5+ | 0.7+ | 2004 03 17 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | 0.6+ | 0.6+ |

**(143284)∗ 2003 AA$_{26}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.28702 | | (2000.0) | | −0.12487506 | −0.99185149 |
| $n$ | 0.25940923 | $\omega$ | 327.97143 | | +0.91703130 | −0.12509015 |
| $a$ | 2.4348886 | $\Omega$ | 129.18953 | | +0.37876089 | −0.02414699 |
| $e$ | 0.1546563 | $i$ | 1.86586 | | | |
| $P$ | 3.80 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.1+ | 0.8+ | 2003 01 09 | 704 | 0.5+ | 0.4+ | 2005 09 14 | 691 | 0.2− | 0.0 |
| 2000 05 07 | 704 | 1.2+ | 0.8+ | 2003 01 09 | 704 | 0.1+ | 1.4+ | 2005 09 14 | 691 | 0.1− | 0.1+ |
| 2000 05 07 | 704 | 0.9+ | 1.2+ | 2003 01 09 | 704 | 0.0 | 0.6+ | 2005 09 14 | 691 | 0.3− | 0.1+ |
| 2000 05 07 | 704 | 0.7− | 2.0+ | 2003 01 09 | 704 | 0.0 | 0.3+ | 2005 10 29 | G96 | 0.7+ | 0.2+ |
| 2000 05 07 | 704 | 0.2+ | 0.7+ | 2003 01 31 | 704 | 0.1− | 1.1+ | 2005 10 29 | G96 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2003 01 31 | 704 | 0.0 | 1.1+ | 2005 10 29 | G96 | 0.4+ | 0.1+ |
| 2002 12 05 | 704 | 0.6+ | 0.1+ | 2003 01 31 | 704 | 0.1+ | 0.2− | 2005 10 29 | G96 | 0.8+ | 0.4+ |
| 2002 12 05 | 704 | 1.1− | 0.9− | 2005 08 08 | 807 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.7+ | 2005 08 08 | 807 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2003 01 04 | 704 | 0.1− | 0.0 | 2005 08 09 | 807 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2003 01 04 | 704 | 0.7+ | 0.2+ | 2005 08 25 | 599 | 0.6+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2003 01 04 | 704 | 0.7+ | 0.2+ | 2005 08 26 | 599 | 1.5+ | 0.8+ | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2003 01 04 | 704 | 0.7+ | 0.4+ | 2005 08 26 | 599 | 1.1+ | 0.7+ | 2006 10 27 | 691 | 0.7− | 0.1− |
| 2003 01 08 | 704 | 0.8− | 0.2− | 2005 08 29 | 704 | 1.1− | 1.0+ | 2006 10 27 | 691 | 0.8+ | 0.1+ |
| 2003 01 08 | 704 | 0.1− | 0.1+ | 2005 08 29 | 704 | 0.9− | 1.2+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2003 01 08 | 704 | 0.3− | 0.1+ | 2005 08 29 | 704 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.6− | 0.5− |
| 2003 01 08 | 704 | 0.2− | 0.5+ | 2005 08 31 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2003 01 08 | 704 | 0.5− | 0.8+ | 2005 08 31 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 01 09 | 704 | 0.1+ | 0.3− | 2005 08 31 | 691 | 0.1− | 0.1+ | | | | |

**(143285)∗ 2003 AS$_{26}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.12211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23246089 | $\omega$ | 127.08120 | | +0.98872038 | −0.14322910 | |
| $a$ | 2.6196068 | $\Omega$ | 241.19176 | | +0.11659794 | +0.91958703 | |
| $e$ | 0.2739431 | $i$ | 2.86446 | | +0.09400496 | +0.36584851 | |
| $P$ | 4.24 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 22 | 809 | 1.3+ | 1.9− | 2004 04 15 | 691 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.2+ | 0.6+ |
| 1993 10 22 | 809 | (2.1+ | 2.2−) | 2004 04 22 | 691 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 1993 10 22 | 809 | (4.5+ | 4.0−) | 2004 04 22 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2002 12 05 | 704 | 0.4− | 0.3− | 2004 04 22 | 691 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.4− |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2005 06 13 | G96 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2002 12 05 | 704 | 0.5− | 0.1− | 2005 06 13 | G96 | 0.3− | 0.6+ | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.4+ | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2005 06 13 | G96 | 0.4− | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.6− | 0.3− | 2005 06 27 | G96 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 1.2− | 0.0 |
| 2003 01 04 | 704 | 0.3− | 0.2+ | 2005 06 27 | G96 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.5− |
| 2003 01 04 | 704 | 0.1− | 0.1+ | 2005 06 27 | G96 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2003 01 04 | 704 | 0.4− | 0.5+ | 2005 06 27 | G96 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2003 01 08 | 704 | 0.4+ | 0.5+ | 2005 06 28 | G96 | 0.1− | 0.4+ | 2006 11 23 | 691 | 1.2− | 0.4− |
| 2003 01 08 | 704 | 0.1− | 0.0 | 2005 06 28 | G96 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 0.6− | 1.1+ | 2005 06 28 | G96 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 0.1+ | 0.3+ | 2005 06 28 | G96 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2003 01 08 | 704 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.4− | 0.1− |
| 2003 02 02 | 704 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.7+ | 0.3+ |
| 2003 02 02 | 704 | 1.2− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.1− |
| 2003 02 02 | 704 | 1.3− | 1.4− | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 12 01 | 704 | 0.5+ | 0.7+ |
| 2004 03 29 | 691 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− | 2006 12 01 | 704 | 0.2+ | 1.3+ |
| 2004 03 29 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.9+ | 0.3+ |
| 2004 03 29 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2004 04 15 | 691 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2004 04 15 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.0 | 0.0 |

**(143286)∗ 2003 AT$_{29}$ = 1997 WF$_{53}$ = 2001 QP$_{309}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41421)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.14890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21115262 | $\omega$ | 343.29587 | | +0.13311382 | −0.98954119 | |
| $a$ | 2.7930052 | $\Omega$ | 99.02856 | | +0.91563019 | +0.10132034 | |
| $e$ | 0.1730496 | $i$ | 3.22605 | | +0.37934426 | +0.10267626 | |
| $P$ | 4.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | (0.7− | 2.3−) | 2003 01 27 | 608 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 1997 11 29 | 704 | (4.4− | 1.6−) | 2003 01 27 | 608 | 0.3+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 1997 11 29 | 704 | (3.3− | 1.0−) | 2003 01 30 | 644 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.2− | 0.8− |
| 1997 11 29 | 704 | 1.4− | 0.4− | 2003 01 30 | 699 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.7− | 1.2− |
| 1997 12 04 | 704 | 1.9+ | 0.2+ | 2003 01 30 | 699 | 0.4− | 0.2+ | 2006 09 30 | 703 | 1.1− | 0.0 |
| 1997 12 04 | 704 | 1.5+ | 0.7+ | 2003 01 30 | 699 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.9− |
| 1997 12 04 | 704 | 0.1− | 0.6− | 2003 01 30 | 699 | 0.0 | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 1997 12 04 | 704 | (3.6+ | 1.2+) | 2003 01 30 | 644 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.9+ |
| 2001 08 16 | 644 | 1.1− | 0.7+ | 2003 01 30 | 644 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2001 08 16 | 644 | 0.3− | 1.4+ | 2003 02 01 | 333 | 0.3+ | 0.2− | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2001 08 16 | 644 | 0.0 | 1.4+ | 2003 02 01 | 333 | 0.8− | 0.5− | 2006 10 01 | 704 | 0.1− | 0.2− |
| 2001 08 19 | 807 | 0.3− | 0.6+ | 2003 02 01 | 333 | 1.0− | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2001 08 19 | 807 | 0.2− | 0.4+ | 2003 02 01 | 333 | 1.0− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 08 20 | 807 | (1.8− | 0.4−) | 2003 02 01 | 704 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 08 20 | 807 | 1.2− | 0.4− | 2003 02 01 | 704 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.8+ | 1.2+ | 2003 02 01 | 704 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2003 02 01 | 704 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2001 09 12 | 704 | 0.3− | 0.5+ | 2003 02 01 | 704 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.5+ | 0.9+ | 2003 02 04 | 704 | (1.9− | 0.3−) | 2006 10 15 | 703 | 1.1+ | 0.5+ |
| 2001 09 19 | 645 | 0.1− | 0.1+ | 2003 02 04 | 704 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.1+ | 0.7+ |
| 2001 09 19 | 645 | 0.1− | 0.1+ | 2003 02 04 | 704 | 0.2+ | 0.5+ | 2006 10 15 | 703 | 0.3+ | 0.1+ |
| 2002 12 11 | 644 | 0.3− | 0.4+ | 2003 02 04 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.4− |
| 2002 12 11 | 644 | 0.4− | 0.5+ | 2003 02 06 | 608 | 1.1+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 12 11 | 644 | 0.6− | 0.4+ | 2003 02 06 | 608 | 0.8+ | 1.2+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 12 31 | 704 | 0.0 | 0.2− | 2003 02 06 | 608 | 1.1+ | 1.5+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2003 02 07 | 704 | 0.9− | 1.0− | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2003 02 07 | 704 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2003 02 07 | 704 | 0.7− | 1.3+ | 2006 10 21 | 703 | 0.3+ | 0.6− |
| 2002 12 31 | 704 | 0.3− | 0.7− | 2003 02 07 | 704 | 0.6− | 1.2+ | 2006 10 21 | 703 | 0.3− | 0.3− |
| 2003 01 04 | 704 | 0.2− | 1.4− | 2003 02 08 | 704 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2003 01 04 | 704 | 0.5− | 0.5− | 2003 02 08 | 704 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 2003 01 04 | 704 | 0.2− | 0.0 | 2003 02 08 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2003 01 04 | 704 | 0.0 | 0.4− | 2003 02 08 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.1− | 2003 02 23 | 699 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 01 08 | 704 | 1.3+ | 0.3+ | 2003 02 23 | 699 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 01 08 | 704 | 0.8+ | 1.3+ | 2003 02 23 | 699 | 0.3+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2003 01 08 | 704 | (1.5+ | 0.6+) | 2003 02 23 | 699 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2003 01 08 | 704 | 1.3+ | 0.5+ | 2004 05 19 | 691 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 01 08 | 704 | (1.0+ | 1.7+) | 2004 05 19 | 691 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.6+ | 0.3− |
| 2003 01 14 | 608 | 0.2− | 1.0+ | 2004 05 19 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2003 01 14 | 608 | 0.1− | 0.8+ | 2005 06 12 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2003 01 14 | 608 | 0.2− | 1.0+ | 2005 06 12 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2003 01 25 | 699 | 0.1− | 0.5+ | 2005 06 12 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.6− |
| 2003 01 25 | 699 | 0.3− | 0.2− | 2005 06 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.9− |
| 2003 01 25 | 699 | 0.8− | 0.2− | 2005 06 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.4− |
| 2003 01 25 | 699 | 0.3− | 0.8− | 2005 06 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.3+ |
| 2003 01 27 | 699 | 0.1+ | 0.3+ | 2006 09 18 | 699 | (0.9+ | 1.7+) | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2003 01 27 | 699 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.6+ | 0.1− |
| 2003 01 27 | 699 | 0.2− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2003 01 27 | 699 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.8− | 1.3+ | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2003 01 27 | 608 | 0.4+ | 1.0+ | 2006 09 30 | 703 | 1.0+ | 0.0 | | | | |

**(143287)∗ 2003 AL$_{30}$**

Discovered 2003 Jan. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.45920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19882130 | $\omega$ | 281.58914 | | +0.54552625 | −0.82945741 | |
| $a$ | 2.9073285 | $\Omega$ | 134.66461 | | +0.81958186 | +0.49805017 | |
| $e$ | 0.0420104 | $i$ | 9.71397 | | +0.17517618 | +0.25287631 | |
| $P$ | 4.96 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 17 | 910 | 1.2+ | 0.5− | 2003 01 08 | 704 | 1.0− | 0.8+ | 2004 04 15 | 644 | 0.2+ | 0.6+ |
| 1998 01 17 | 910 | 1.2+ | 0.6− | 2003 01 08 | 704 | 1.1− | 0.5+ | 2004 04 15 | 644 | 0.3+ | 0.6+ |
| 1998 01 18 | 910 | 1.3+ | 0.4− | 2003 01 08 | 704 | 0.9+ | 1.1+ | 2005 06 28 | 691 | 0.2+ | 0.6+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.3+ | 1.3+ | 2005 06 28 | 691 | 0.3+ | 0.7+ |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.4− | 0.2+ | 2005 06 28 | 691 | 0.4+ | 0.3+ |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.5+ |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 08 27 | 644 | 0.6− | 0.4+ | 2003 01 27 | 704 | 1.2+ | 0.5+ | 2006 10 17 | 703 | 1.4− | 0.6+ |
| 2001 08 27 | 644 | 0.8− | 0.5+ | 2003 01 27 | 704 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.8− |
| 2001 08 27 | 644 | 0.9− | 0.3+ | 2003 01 27 | 704 | 0.1+ | 0.8− | 2006 10 28 | 703 | 0.2+ | 0.7+ |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2003 01 30 | 699 | 0.8− | 0.5+ | 2006 10 28 | 703 | 1.1+ | 0.3+ |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2003 01 30 | 699 | 0.6+ | 0.4− | 2006 10 28 | 703 | 0.5+ | 0.3− |
| 2001 10 17 | 704 | 0.0 | 0.1− | 2003 01 30 | 699 | 1.1+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2001 10 17 | 704 | 0.4− | 0.2+ | 2003 01 30 | 699 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.4− | 0.2+ |
| 2001 10 17 | 704 | 0.1− | 0.5+ | 2003 01 31 | 704 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 0.7+ | 2003 01 31 | 704 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2001 10 23 | 644 | 0.3− | 0.2+ | 2003 01 31 | 704 | 0.5+ | 0.2− | 2006 11 16 | 703 | 0.4− | 0.5+ |
| 2001 10 23 | 644 | 0.2− | 0.1− | 2003 01 31 | 704 | 0.6− | 0.5− | 2006 11 16 | 703 | (3.1− | 0.3+) |
| 2001 10 23 | 644 | 0.6− | 0.2+ | 2003 01 31 | 704 | 0.3− | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.3− |
| 2002 01 08 | 645 | 0.0 | 0.0 | 2003 02 03 | 704 | 0.7− | 0.6+ | 2006 11 16 | 703 | 0.3+ | 0.4− |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2003 02 03 | 704 | 0.3− | 0.5+ | 2006 11 16 | 703 | (1.7+ | 1.7+) |
| 2003 01 04 | 704 | (0.1+ | 2.0+) | 2003 02 03 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 703 | 1.1− | 0.4− |
| 2003 01 04 | 704 | (0.3+ | 2.2+) | 2003 02 03 | 704 | 0.5+ | 0.9+ | 2006 11 16 | 703 | (0.8− | 2.3+) |
| 2003 01 04 | 704 | (0.1+ | 2.9+) | 2004 04 15 | 644 | 0.2+ | 0.5+ | 2006 11 16 | 703 | (1.8+ | 0.9+) |

**(143288)∗ 2003 AK$_{33}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.26915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18314939 | $\omega$ | 261.83440 | | +0.96156774 | −0.20748826 | |
| $a$ | 3.0709004 | $\Omega$ | 109.99637 | | +0.25771099 | +0.90798028 | |
| $e$ | 0.0435983 | $i$ | 11.03208 | | −0.09472338 | +0.36403355 | |
| $P$ | 5.38 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 07 | 691 | 0.1− | 1.0− | 2003 01 14 | 599 | 0.3+ | 0.3+ | 2004 04 15 | 704 | 1.2− | 0.5+ |
| 1991 12 07 | 691 | 0.4− | 0.3− | 2003 01 14 | 599 | 0.1+ | 0.1− | 2004 04 15 | 704 | 0.3+ | 0.8+ |
| 1991 12 07 | 691 | 0.2− | 0.5− | 2003 01 14 | 599 | 0.6+ | 0.2− | 2004 04 15 | 704 | 0.3− | 1.5+ |
| 2000 07 29 | 807 | 0.0 | 0.1+ | 2003 01 16 | 644 | 0.3+ | 0.6+ | 2004 04 15 | 704 | 0.4+ | 0.5+ |
| 2000 07 29 | 807 | 0.1− | 0.1− | 2003 01 16 | 644 | 0.5+ | 0.4+ | 2004 04 24 | 704 | 0.8+ | 0.9+ |
| 2001 10 15 | 644 | 0.5− | 0.8+ | 2003 01 16 | 644 | 0.8+ | 0.4+ | 2004 04 24 | 704 | 0.4− | 0.5− |
| 2001 10 15 | 644 | 0.7− | 1.2+ | 2003 01 26 | 608 | 0.6+ | 0.5+ | 2004 04 24 | 704 | 0.2+ | 0.1+ |
| 2001 10 15 | 644 | 0.7− | 1.1+ | 2003 01 26 | 608 | 0.9+ | 0.5+ | 2004 04 24 | 704 | 0.8+ | 0.4− |
| 2001 10 23 | 644 | 0.1+ | 0.8+ | 2003 01 26 | 608 | 0.5+ | 0.3+ | 2004 04 25 | 699 | 0.3+ | 0.6+ |
| 2001 10 23 | 644 | 0.1+ | 0.8+ | 2003 01 29 | 645 | 0.1− | 0.0 | 2004 04 25 | 699 | 0.1− | 0.2− |
| 2001 10 23 | 644 | 0.2+ | 0.6+ | 2003 01 29 | 645 | 0.1− | 0.1− | 2004 04 25 | 699 | 1.0− | 0.8− |
| 2001 11 12 | 645 | 0.1+ | 0.1+ | 2003 02 01 | 704 | 0.7− | 1.4+ | 2004 04 25 | 699 | 0.2+ | 0.7+ |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2003 02 01 | 704 | 1.0+ | 0.3− | 2006 09 14 | 644 | 0.3− | 0.0 |
| 2001 11 18 | 608 | 0.0 | 0.0 | 2003 02 01 | 704 | (2.0+ | 0.2+) | 2006 09 14 | 644 | 0.3− | 0.4+ |
| 2001 11 18 | 608 | 0.7− | 0.6− | 2004 03 13 | 644 | 0.6+ | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.5+ |
| 2001 11 18 | 608 | 0.6− | 0.2− | 2004 03 13 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 699 | 0.3− | 0.1+ |
| 2001 12 07 | 704 | 0.1− | 1.3+ | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 09 17 | 699 | 0.3− | 0.5+ |
| 2001 12 07 | 704 | 0.5+ | 0.7+ | 2004 03 13 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 1.2− | 0.0 |
| 2001 12 07 | 704 | 0.3+ | 0.8+ | 2004 03 13 | 644 | 0.5+ | 0.2+ | 2006 09 17 | 699 | 0.3+ | 0.2− |
| 2001 12 07 | 704 | 0.2+ | 0.1+ | 2004 03 13 | 644 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.8+ |
| 2001 12 07 | 704 | 0.7− | 0.9+ | 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.1− | 1.0+ |
| 2001 12 18 | 645 | 0.1+ | 0.0 | 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 2001 12 18 | 645 | 0.1+ | 0.1+ | 2004 03 21 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.9− | 0.2+ |
| 2003 01 05 | 704 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.6− | 0.9+ | 2006 09 25 | 703 | 0.9− | 0.4− |
| 2003 01 05 | 704 | 0.5− | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.7− | 2006 09 25 | 703 | 0.9− | 0.6+ |
| 2003 01 05 | 704 | 0.7− | 0.5+ | 2004 03 23 | 704 | 0.2− | 1.0+ | 2006 09 25 | 703 | 0.8− | 0.4− |
| 2003 01 08 | 704 | 0.4− | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.5+ | 1.2− |
| 2003 01 08 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | 0.3+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2003 01 08 | 704 | 0.8+ | 0.3− | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2003 01 08 | 704 | 1.1− | 0.5+ | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2003 01 08 | 704 | (0.3+ | 1.8+) | 2004 03 29 | 691 | 0.1+ | 0.2+ | | | | |
| 2003 01 14 | 599 | 0.3+ | 0.5+ | 2004 04 15 | 704 | 0.2+ | 1.1+ | | | | |

**(143289)∗ 2003 AL$_{33}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.67350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24269982 | $\omega$ | 343.70782 | | +0.50730875 | −0.86081901 | |
| $a$ | 2.5454022 | $\Omega$ | 75.79177 | | +0.79522600 | +0.44958202 | |
| $e$ | 0.1553620 | $i$ | 2.38577 | | +0.33204433 | +0.23846726 | |
| $P$ | 4.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 02 14 | 691 | 0.1+ | 0.0 | 2003 01 27 | 699 | 0.6− | 0.2+ | 2004 05 16 | 691 | 0.2+ | 0.1− |
| 1991 02 14 | 691 | 0.5+ | 0.1− | 2003 01 29 | 644 | (0.6+ | 1.9+) | 2004 05 16 | 691 | 0.1+ | 0.3+ |
| 1991 02 14 | 691 | 0.6+ | 0.0 | 2003 01 29 | 644 | 0.2+ | 1.1+ | 2004 05 19 | 691 | 0.2+ | 0.3+ |
| 1999 01 23 | 691 | 0.8− | 0.6− | 2003 01 29 | 644 | 0.2+ | 0.8+ | 2004 05 19 | 691 | 0.4+ | 0.1− |
| 1999 01 23 | 691 | 1.0− | 0.7− | 2003 01 30 | 699 | 0.1− | 1.0+ | 2004 05 19 | 691 | 0.1− | 0.0 |
| 1999 01 23 | 691 | 0.9− | 0.6− | 2003 01 30 | 699 | 0.0 | 1.1+ | 2005 07 18 | 644 | 0.2+ | 0.4+ |
| 2001 08 14 | 608 | 1.1− | 0.3+ | 2003 01 30 | 699 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.5+ |
| 2001 08 14 | 608 | 0.9− | 0.2+ | 2003 01 30 | 699 | 0.1+ | 0.7+ | 2005 07 18 | 644 | 0.2− | 0.5+ |
| 2001 08 14 | 608 | 1.0− | 0.5+ | 2003 02 01 | 704 | 0.7+ | 0.5− | 2005 08 01 | E12 | 0.0 | 0.3− |
| 2001 08 22 | 608 | 0.6+ | 0.6− | 2003 02 01 | 704 | 0.1+ | 0.4+ | 2005 08 01 | E12 | 0.3+ | 0.2− |
| 2001 08 22 | 608 | 0.1+ | 0.0 | 2003 02 01 | 704 | 0.4+ | 1.4+ | 2005 08 01 | E12 | 0.3− | 1.0− |
| 2001 08 22 | 608 | 0.4+ | 0.5− | 2003 02 01 | 704 | 0.2+ | 0.1− | 2005 08 01 | E12 | 1.0+ | 0.9+ |
| 2003 01 05 | 704 | 0.2+ | 0.2+ | 2003 02 01 | 704 | 1.1+ | 0.2+ | 2006 09 24 | 691 | 0.3+ | 0.1+ |
| 2003 01 05 | 704 | 0.7− | 0.3+ | 2003 02 01 | 704 | 0.6+ | 0.0 | 2006 09 24 | 691 | 0.5+ | 0.2+ |
| 2003 01 05 | 704 | 0.7− | 0.6+ | 2003 02 01 | 704 | 0.9+ | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.6− | 0.6− | 2003 02 01 | 704 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2003 01 08 | 704 | 0.1− | 0.3+ | 2003 02 01 | 704 | 0.2+ | 0.8+ | 2006 10 22 | G96 | 0.3− | 0.8− |
| 2003 01 08 | 704 | 0.4− | 0.2− | 2003 02 01 | 704 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2003 01 08 | 704 | 0.1+ | 0.2+ | 2003 02 02 | 704 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2003 01 08 | 704 | 0.1− | 0.9+ | 2003 02 02 | 704 | 0.9− | 0.3− | 2006 10 28 | G96 | 0.8+ | 0.2+ |
| 2003 01 08 | 704 | 0.1− | 0.4+ | 2003 02 02 | 704 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.8+ | 0.3+ |
| 2003 01 14 | 599 | 1.1+ | 0.7− | 2003 02 02 | 704 | 1.1− | 0.6+ | 2006 10 28 | G96 | 1.0+ | 0.2+ |
| 2003 01 14 | 599 | 0.4+ | 0.3+ | 2003 02 03 | 704 | 0.7+ | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.1+ |
| 2003 01 14 | 599 | 0.6− | 0.9− | 2003 02 03 | 704 | 0.6+ | 0.3− | 2006 10 29 | G96 | 0.0 | 0.3− |
| 2003 01 14 | 599 | 0.2+ | 0.4+ | 2003 02 03 | 704 | 0.3− | 0.5+ | 2006 10 29 | G96 | 0.2− | 0.2− |
| 2003 01 26 | 608 | 0.4+ | 0.3− | 2003 02 03 | 704 | 0.6+ | 0.6− | 2006 10 29 | G96 | 0.1− | 0.5− |
| 2003 01 26 | 608 | 0.4+ | 0.2− | 2003 02 03 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2003 01 26 | 608 | 0.2+ | 0.4− | 2004 04 25 | 691 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2003 01 27 | 699 | 0.1− | 0.8+ | 2004 04 25 | 691 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.5− | 0.4− |
| 2003 01 27 | 699 | 0.2− | 0.5− | 2004 04 25 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2003 01 27 | 699 | 0.6− | 0.6− | 2004 05 16 | 691 | 0.3− | 0.2+ | | | | |

**(143290)∗ 2003 AW$_{33}$**

Discovered 2003 Jan. 5 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.45804 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18182873 | $\omega$ | 170.57647 | | +0.12105432 | +0.97651760 | |
| $a$ | 3.0857522 | $\Omega$ | 106.21884 | | −0.92239562 | +0.17699710 | |
| $e$ | 0.0394593 | $i$ | 10.69598 | | −0.36678626 | −0.12282267 | |
| $P$ | 5.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 699 | 0.8+ | 1.9+ | 2003 01 26 | 608 | 0.4+ | 0.3− | 2004 04 12 | 703 | 0.7− | 0.4− |
| 1999 05 17 | 699 | 0.6− | 1.2+ | 2003 01 26 | 608 | 0.0 | 0.3− | 2004 04 12 | 703 | 0.9+ | 0.1+ |
| 1999 05 17 | 699 | 0.1+ | 1.8+ | 2003 01 26 | 644 | 0.4+ | 0.2+ | 2004 04 15 | 704 | 1.3+ | 0.6+ |
| 2000 07 05 | 699 | 1.1+ | 0.2− | 2003 01 26 | 608 | 0.4+ | 0.2− | 2004 04 15 | 704 | 0.2+ | 0.0 |
| 2000 07 05 | 699 | 1.3+ | 0.7+ | 2003 02 01 | 704 | 0.7+ | 0.7+ | 2004 04 15 | 704 | 0.8+ | 0.8+ |
| 2000 07 05 | 699 | 0.1− | 2.0− | 2003 02 01 | 704 | 0.8+ | 0.4+ | 2004 04 15 | 644 | 0.5+ | 0.2− |
| 2000 07 05 | 699 | 0.1− | 1.1− | 2003 02 01 | 704 | 0.4+ | 0.2+ | 2004 04 15 | 704 | 0.9+ | 0.9+ |
| 2001 10 23 | 644 | 0.3− | 1.2+ | 2003 02 01 | 704 | 0.0 | 0.0 | 2004 04 15 | 644 | 0.2+ | 0.1− |
| 2001 10 23 | 644 | 0.1− | 1.1+ | 2003 02 04 | 699 | 0.3− | 0.8+ | 2004 04 15 | 644 | 0.2− | 0.2+ |
| 2001 10 23 | 644 | 0.4− | 1.1+ | 2003 02 04 | 699 | 0.5+ | 1.3+ | 2006 09 20 | 703 | 1.1− | 1.1+ |
| 2001 11 19 | 608 | 0.0 | 1.0− | 2003 02 04 | 699 | 0.5− | 0.5+ | 2006 09 20 | 703 | 0.3− | 1.4+ |
| 2001 11 19 | 608 | 0.2− | 0.6− | 2003 02 04 | 699 | 0.6+ | 0.4+ | 2006 09 20 | 703 | 0.1+ | 1.4+ |
| 2001 11 19 | 608 | 0.1− | 1.0− | 2004 03 15 | 704 | (1.8+ | 1.9+) | 2006 09 20 | 703 | 0.7− | 0.8+ |
| 2002 12 28 | 291 | 0.0 | 0.2− | 2004 03 15 | 704 | 0.6+ | 0.3+ | 2006 09 24 | 699 | 0.0 | 0.2+ |
| 2002 12 28 | 291 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.5− | 0.5+ | 2006 09 24 | 699 | 0.1− | 0.5+ |
| 2002 12 28 | 291 | 0.1+ | 0.3− | 2004 03 23 | 704 | 0.6− | 0.4+ | 2006 09 24 | 699 | 0.2+ | 0.8+ |
| 2003 01 05 | 291 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.4− | 0.8+ | 2006 09 24 | 699 | 0.6− | 0.6+ |
| 2003 01 05 | 291 | 0.3− | 0.2− | 2004 03 23 | 704 | 0.8− | 1.3+ | 2006 09 25 | 703 | 0.5− | 0.3− |
| 2003 01 05 | 291 | 0.3− | 0.2− | 2004 03 23 | 704 | 0.4− | 1.1+ | 2006 09 25 | 703 | 0.6− | 1.0+ |
| 2003 01 08 | 704 | 0.5+ | 0.3− | 2004 03 23 | 704 | 0.5− | 0.5+ | 2006 09 25 | 703 | 0.3+ | 0.9+ |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2004 03 28 | 703 | 0.1− | 0.8− | 2006 09 25 | 703 | 1.0− | 0.9+ |
| 2003 01 08 | 704 | 0.3− | 0.0 | 2004 03 28 | 703 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2003 01 08 | 704 | 0.3− | 0.3+ | 2004 03 28 | 703 | 0.9− | 0.0 | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2003 01 08 | 704 | 1.0− | 0.5+ | 2004 03 28 | 703 | 0.8+ | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2003 01 26 | 644 | 0.6+ | 0.0 | 2004 04 12 | 703 | 1.0+ | 0.0 | | | | |
| 2003 01 26 | 644 | 0.4+ | 0.2− | 2004 04 12 | 703 | 0.5+ | 0.7− | | | | |

**(143291)∗ 2003 AZ$_{33}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 285.49363 | | (2000.0) | | | |
| $n$ | 0.26503833 | $\omega$ | 255.97868 | | −0.77813813 | +0.62595956 |
| $a$ | 2.4002893 | $\Omega$ | 322.73458 | | −0.53825636 | −0.70701838 |
| $e$ | 0.1934600 | $i$ | 4.90060 | | −0.32369915 | −0.32908910 |
| $P$ | 3.72 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 699 | (1.8+ | 1.5+) | 2003 02 03 | 704 | 0.5− | 0.7− | 2004 08 09 | 699 | 0.1− | 1.0+ |
| 2003 01 05 | 699 | (1.6+ | 0.2−) | 2003 02 03 | 704 | 0.1− | 0.0 | 2004 08 09 | 699 | 0.6− | 0.6+ |
| 2003 01 05 | 699 | (1.9+ | 0.3+) | 2003 02 07 | 704 | 0.7+ | 0.4− | 2004 09 13 | 699 | 0.0 | 0.9− |
| 2003 01 05 | 699 | 0.8+ | 0.0 | 2003 02 07 | 704 | 0.8+ | 0.5+ | 2004 09 13 | 699 | 0.4+ | 0.9− |
| 2003 01 05 | 704 | 0.0 | 0.3− | 2003 02 07 | 704 | 0.8− | 0.2− | 2004 09 13 | 699 | 1.3− | 0.2+ |
| 2003 01 05 | 704 | 0.3− | 0.2− | 2003 02 07 | 704 | 0.2+ | 0.3+ | 2004 09 13 | 699 | 0.6− | 0.0 |
| 2003 01 05 | 704 | 0.8− | 0.8+ | 2003 02 08 | 704 | 0.1− | 0.2+ | 2005 11 12 | 691 | 0.2+ | 0.2− |
| 2003 01 05 | 704 | 0.4− | 0.4+ | 2003 02 08 | 704 | 0.4+ | 0.0 | 2005 11 12 | 691 | 0.3+ | 0.2− |
| 2003 01 05 | 704 | 0.3+ | 1.3+ | 2003 02 08 | 704 | 0.0 | 1.0− | 2005 11 12 | 691 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 0.2+ | 0.3+ | 2003 02 28 | 608 | 0.2+ | 0.0 | 2005 11 28 | 703 | 0.9− | 0.4+ |
| 2003 01 08 | 704 | (1.5+ | 0.7−) | 2003 02 28 | 608 | 0.1+ | 0.2+ | 2005 11 28 | 703 | 1.3− | 0.2+ |
| 2003 01 08 | 704 | 1.3+ | 0.2− | 2003 02 28 | 608 | 0.2− | 0.5+ | 2005 11 28 | 703 | 0.2+ | 0.9+ |
| 2003 01 27 | 699 | 0.2− | 0.1+ | 2003 03 05 | 704 | 0.9− | 0.5+ | 2005 11 28 | 703 | (2.0− | 1.4−) |
| 2003 01 27 | 699 | 0.2− | 1.2+ | 2003 03 05 | 704 | 0.1− | 0.9+ | 2006 10 30 | G96 | 0.1− | 0.1− |
| 2003 01 27 | 699 | 0.4− | 1.0+ | 2003 03 05 | 704 | 0.1+ | 0.6+ | 2006 10 30 | G96 | 0.5− | 0.1− |
| 2003 01 27 | 699 | 0.3+ | 0.3− | 2003 03 05 | 704 | 0.6− | 1.3+ | 2006 10 30 | G96 | 0.3− | 0.4− |
| 2003 01 27 | 608 | 0.1− | 0.3+ | 2003 03 06 | 644 | 0.1− | 0.6+ | 2006 10 30 | G96 | 0.3− | 0.2− |
| 2003 01 27 | 608 | 0.4+ | 0.3− | 2003 03 06 | 644 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.4− | 0.0 |
| 2003 01 27 | 608 | 0.1+ | 0.1− | 2003 03 06 | 644 | 0.2− | 0.5+ | 2006 11 01 | G96 | 0.6− | 0.2− |
| 2003 01 30 | 699 | 0.4+ | 0.1− | 2004 07 16 | 704 | 0.3+ | 0.9+ | 2006 11 01 | G96 | 0.8− | 0.0 |
| 2003 01 30 | 699 | 0.7+ | 0.1+ | 2004 07 16 | 704 | 0.6− | 1.1+ | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2003 01 30 | 699 | 0.9+ | 0.1+ | 2004 07 16 | 704 | 0.8− | 0.2− | 2006 11 16 | 691 | 0.4+ | 0.1+ |
| 2003 01 30 | 699 | 0.0 | 0.6+ | 2004 08 08 | 704 | 0.3− | 1.1+ | 2006 11 16 | 691 | 0.7+ | 0.2+ |
| 2003 01 31 | 644 | 0.2+ | 0.8− | 2004 08 08 | 704 | 0.1− | 1.3+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2003 01 31 | 644 | 0.3+ | 0.7− | 2004 08 08 | 704 | 0.1− | 1.0+ | 2006 11 21 | 691 | 0.1− | 0.3+ |
| 2003 01 31 | 644 | 0.4+ | 0.8− | 2004 08 08 | 704 | 0.4− | 0.7+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2003 02 03 | 704 | 0.4− | 0.2+ | 2004 08 08 | 704 | 0.4− | 1.0+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2003 02 03 | 704 | 0.2− | 0.6− | 2004 08 09 | 699 | (1.2− | 1.6+) | | | | |
| 2003 02 03 | 704 | 0.1− | 0.9+ | 2004 08 09 | 699 | 0.6+ | 0.9+ | | | | |

**(143292)∗ 2003 AO$_{34}$ = 2004 JN$_{36}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69428)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.00820 | | (2000.0) | | | |
| $n$ | 0.27726389 | $\omega$ | 309.77121 | | +0.06395168 | −0.99503148 |
| $a$ | 2.3292021 | $\Omega$ | 136.37533 | | +0.94608992 | +0.03612203 |
| $e$ | 0.1170835 | $i$ | 6.34983 | | +0.31752802 | +0.09277685 |
| $P$ | 3.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 910 | 0.5+ | 0.1+ | 2004 05 09 | 691 | 0.1+ | 0.4+ | 2005 09 27 | 704 | 0.0 | 0.6+ |
| 1998 09 21 | 910 | 0.6+ | 0.2+ | 2004 05 15 | 704 | 0.0 | 0.1− | 2005 09 27 | 704 | 0.2+ | 0.2+ |
| 1998 09 21 | 910 | 0.5+ | 0.1+ | 2004 05 15 | 704 | 0.3+ | 0.4+ | 2005 09 27 | 704 | 0.3− | 0.8+ |
| 2002 12 01 | 704 | 1.2− | 0.9+ | 2004 05 15 | 704 | 0.8− | 1.0+ | 2005 09 27 | 704 | 0.6− | 0.0 |
| 2002 12 01 | 704 | 0.4+ | 1.1+ | 2004 05 15 | 704 | 0.3+ | 1.4+ | 2005 09 27 | 704 | 0.8− | 0.1+ |
| 2002 12 01 | 704 | 0.6− | 0.3+ | 2004 05 19 | 599 | 0.2− | 0.0 | 2005 10 10 | 703 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.2− | 0.4− | 2004 05 19 | 599 | 0.4+ | 0.2+ | 2005 10 10 | 703 | 0.4+ | 0.9+ |
| 2002 12 31 | 704 | 0.4+ | 0.6+ | 2004 05 19 | 599 | 0.1+ | 0.4+ | 2005 10 10 | 703 | 1.5+ | 0.2+ |
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2005 08 26 | 699 | 0.1− | 0.7− | 2005 10 10 | 703 | 0.7− | 0.2− |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2005 08 26 | 699 | 0.4− | 1.0− | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2003 01 07 | 704 | 0.5+ | 0.1− | 2005 08 26 | 699 | (1.7− | 0.8+) | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2003 01 07 | 704 | 0.4+ | 0.1− | 2005 08 26 | 699 | 0.9− | 0.9+ | 2006 10 22 | G96 | 0.6− | 0.1+ |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2005 08 28 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2003 01 07 | 704 | 0.4+ | 0.1− | 2005 08 28 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4+ |
| 2003 01 08 | 704 | 1.5− | 0.4+ | 2005 08 28 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2003 01 08 | 704 | 1.0− | 1.2+ | 2005 09 11 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2003 01 08 | 704 | (1.6− | 0.1+) | 2005 09 11 | 691 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2003 01 11 | 644 | 0.2− | 0.4+ | 2005 09 11 | 691 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2003 01 11 | 644 | 0.0 | 0.4+ | 2005 09 23 | 703 | 0.5+ | 0.7− | 2006 11 20 | G96 | 0.2− | 0.6− |
| 2003 01 11 | 644 | 0.1− | 0.5+ | 2005 09 23 | 703 | 0.7− | 0.8− | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2003 01 27 | 704 | 1.0− | 0.4+ | 2005 09 23 | 703 | 0.1+ | 1.0+ | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2003 01 27 | 704 | 0.9− | 0.7+ | 2005 09 23 | 703 | 1.2− | 1.3− | 2006 11 25 | 691 | 0.3+ | 0.2+ |
| 2003 01 27 | 704 | 0.8+ | 0.1− | 2005 09 25 | 703 | (2.5+ | 0.8−) | 2006 11 25 | 691 | 0.8+ | 0.4+ |
| 2003 01 27 | 704 | (0.0 | 2.1+) | 2005 09 25 | 703 | 0.0 | 1.1+ | 2006 11 25 | 691 | 0.2+ | 0.5+ |
| 2004 05 09 | 691 | 0.1− | 0.5+ | 2005 09 25 | 703 | (2.0− | 0.6+) | | | | |
| 2004 05 09 | 691 | 0.2+ | 0.7+ | 2005 09 25 | 703 | 1.2− | 0.9+ | | | | |

**(143293)∗ 2003 AS$_{34}$ = 2000 JW$_{89}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 72741)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.15594 | | (2000.0) | | | |
| $n$ | 0.24286757 | $\omega$ | 166.32535 | | +0.99024277 | −0.13803478 |
| $a$ | 2.5442299 | $\Omega$ | 201.63669 | | +0.12248120 | +0.92756675 |
| $e$ | 0.2641121 | $i$ | 2.97273 | | +0.06646509 | +0.34722662 |
| $P$ | 4.06 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 1.0+ | 0.7− | 2002 12 12 | 704 | 0.8+ | 1.0+ | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 1998 12 15 | 704 | 0.9+ | 0.5− | 2002 12 12 | 704 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 0.8+ | 0.5− |
| 1998 12 15 | 704 | 1.5− | 0.3− | 2002 12 12 | 704 | 0.6− | 1.1− | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 1998 12 15 | 704 | 0.6+ | 0.1− | 2002 12 12 | 704 | 0.7− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.2− |
| 1998 12 15 | 704 | 0.2− | 0.2+ | 2002 12 12 | 704 | (1.5+ | 0.1+) | 2006 11 17 | 704 | 0.6+ | 0.5− |
| 2000 03 03 | 645 | 0.2+ | 0.2− | 2002 12 12 | 704 | (0.8− | 3.1−) | 2006 11 17 | 704 | 0.4+ | 0.5− |
| 2000 03 03 | 645 | 0.2+ | 0.3− | 2003 01 07 | 704 | 0.2− | 1.0+ | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2000 05 04 | 645 | 0.2− | 0.1+ | 2003 01 07 | 704 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 1.4+ | 0.7− |
| 2000 05 04 | 645 | 0.2− | 0.1+ | 2003 01 07 | 704 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2003 01 07 | 704 | 0.6− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2003 01 07 | 704 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.6− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.8+ | 0.0 | 2003 01 08 | 704 | 0.3− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.6− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2002 09 05 | 704 | 0.0 | 0.4− | 2003 01 08 | 704 | 0.8− | 0.9− | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2002 11 14 | 704 | 0.1− | 0.5− | 2003 01 08 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.0 | | |
| 2002 11 14 | 704 | 0.4+ | 0.7− | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.5+ | 0.8+ | | |
| 2002 11 14 | 704 | 0.0 | 0.5− | 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.4− | 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.5+ | | |
| 2002 11 14 | 704 | 0.4− | 0.8− | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.7+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2002 12 11 | 704 | 0.1− | 0.7+ | 2004 04 13 | 691 | 0.2− | 0.0 | 2006 11 27 | 704 | 0.1− | 0.1− | | |
| 2002 12 11 | 704 | 0.3− | 0.4+ | 2005 05 22 | 644 | 0.1+ | 0.3+ | 2006 11 27 | 704 | 0.2− | 0.4+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.6+ | 2005 05 22 | 644 | 0.0 | 0.7+ | 2006 11 27 | 704 | 0.6− | 1.2− | | |
| 2002 12 12 | 704 | 0.1− | 0.3+ | 2005 05 22 | 644 | 0.3− | 0.4+ | 2006 11 29 | 704 | 1.2+ | 1.3+ | | |
| 2002 12 12 | 704 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.7+ | 2006 11 29 | 704 | 0.2− | 0.7+ | | |
| 2002 12 12 | 704 | (1.8+ | 0.2+) | 2006 11 14 | 704 | 0.5+ | 0.4− | 2006 11 29 | 704 | 0.8− | 0.3+ | | |
| 2002 12 12 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 704 | 0.1− | 0.6+ | 2006 11 29 | 704 | 0.1+ | 0.1− | | |
| 2002 12 12 | 704 | 0.2− | 1.1− | 2006 11 14 | 704 | 0.4− | 1.0+ | | | | | | |
| 2002 12 12 | 704 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.9− | | | | | | |

**(143294)∗ 2003 AV$_{34}$ = 2001 SS$_{334}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41425)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.52917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23985614 | $\omega$ | 256.04969 | | −0.42896641 | −0.90267395 | |
| $a$ | 2.5654811 | $\Omega$ | 219.40896 | | +0.84817155 | −0.38947467 | |
| $e$ | 0.1340998 | $i$ | 3.08532 | | +0.31079389 | −0.18300061 | |
| $P$ | 4.11 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.1+ | 0.4+ | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.3+ | | |
| 1993 09 15 | 691 | 0.1− | 0.0 | 2004 05 13 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 1993 09 15 | 691 | 0.4− | 0.4+ | 2004 05 15 | 704 | 1.1+ | 1.0+ | 2006 11 11 | 691 | 0.3+ | 0.3+ | | |
| 1999 01 20 | 704 | 0.7+ | 0.8− | 2004 05 15 | 704 | 0.1− | 0.9+ | 2006 11 15 | 703 | 0.4− | 0.5− | | |
| 1999 01 20 | 704 | 1.2+ | 0.9− | 2004 05 15 | 704 | 0.5− | 1.2+ | 2006 11 15 | 703 | 0.2− | 0.2− | | |
| 1999 01 20 | 704 | 0.8− | 0.2+ | 2004 05 15 | 704 | 1.1+ | 1.0+ | 2006 11 15 | 703 | 0.8− | 0.4− | | |
| 1999 01 20 | 704 | 0.2− | 1.5− | 2004 05 15 | 704 | 0.4+ | 1.3+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | | |
| 2000 05 28 | 704 | 0.5− | 0.7+ | 2004 05 15 | 704 | 0.5+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.4+ | | |
| 2000 05 28 | 704 | 0.2− | 0.1− | 2004 05 15 | 704 | 0.1+ | 1.2+ | 2006 11 15 | 691 | 0.3− | 0.6+ | | |
| 2000 05 28 | 704 | 0.1+ | 0.2+ | 2004 05 15 | 704 | 0.6+ | 1.3+ | 2006 11 17 | 704 | 0.5+ | 0.9+ | | |
| 2000 05 28 | 704 | 1.0− | 0.7+ | 2004 05 15 | 704 | 0.8+ | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.5+ | | |
| 2000 05 28 | 704 | 0.1− | 0.8+ | 2004 05 16 | 704 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 20 | 704 | 0.8− | 0.1+ | 2004 05 16 | 704 | 0.4− | 0.6+ | 2006 11 17 | 704 | 0.1− | 0.4− | | |
| 2001 09 20 | 704 | 0.6− | 0.6+ | 2004 05 16 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 1.0+ | | |
| 2001 09 20 | 704 | 0.5− | 1.4+ | 2004 05 16 | 704 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.5+ | 0.8+ | | |
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2004 05 16 | 704 | 0.7− | 1.2+ | 2006 11 18 | 704 | 0.2− | 0.6+ | | |
| 2001 09 22 | 704 | 1.1+ | 0.5− | 2004 05 16 | E12 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.2+ | | |
| 2001 09 22 | 704 | 0.0 | 0.3+ | 2004 05 16 | E12 | 0.4+ | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.8+ | | |
| 2001 09 22 | 704 | 0.6+ | 0.5+ | 2004 05 16 | E12 | 0.8− | 0.5− | 2006 11 18 | 704 | 0.2− | 0.7+ | | |
| 2001 09 22 | 704 | (0.1− | 2.0+) | 2004 05 16 | E12 | 1.1+ | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.3+ | | |
| 2002 12 11 | 704 | 0.4− | 0.8+ | 2004 05 21 | 691 | 0.0 | 0.5+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.1− | 0.8+ | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.6− | 0.1+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.8+ | 2004 05 21 | 691 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.3− | 1.0+ | | |
| 2002 12 11 | 704 | 0.6− | 0.5+ | 2005 07 29 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.3+ | 0.4+ | | |
| 2002 12 11 | 704 | 0.3− | 0.8+ | 2005 07 29 | 644 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.5− | 1.1+ | | |
| 2002 12 31 | 704 | 0.3− | 0.4+ | 2005 07 29 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.1− | 1.3+ | | |
| 2002 12 31 | 704 | 0.0 | 0.9+ | 2005 07 29 | 644 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.4− | 1.3+ | | |
| 2002 12 31 | 704 | 0.1− | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.5− | 0.4− | | |
| 2002 12 31 | 704 | 0.1+ | 0.5+ | 2005 07 29 | 644 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2003 01 07 | 704 | 0.7+ | 0.4+ | 2005 10 27 | G96 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2003 01 07 | 704 | 0.4− | 0.8+ | 2005 10 27 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2003 01 07 | 704 | 0.6− | 0.6+ | 2005 10 27 | G96 | 0.3+ | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.0 | | |
| 2003 01 08 | 704 | 0.1+ | 1.0+ | 2006 09 27 | G96 | 0.4+ | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2003 01 08 | 704 | 0.6+ | 1.0+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.2+ | 0.7− | | |
| 2003 01 08 | 704 | 0.4+ | 0.9+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.7+ | 0.0 | | |
| 2004 05 11 | 699 | (0.2− | 1.5+) | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 12 01 | 704 | 0.3− | 0.1− | | |
| 2004 05 11 | 699 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.3− | 0.3− | | |
| 2004 05 11 | 699 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 12 01 | 704 | 0.6− | 0.2− | | |
| 2004 05 11 | 699 | 0.6− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− | | | | | | |
| 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.1− | | | | | | |

**(143295)∗ 2003 AA$_{35}$ = 2001 LN$_{13}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47248)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.39903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23032076 | $\omega$ | 251.04607 | | +0.97913883 | −0.04037912 | |
| $a$ | 2.6358093 | $\Omega$ | 110.86833 | | +0.10372633 | +0.94206650 | |
| $e$ | 0.2731748 | $i$ | 12.30527 | | −0.17472263 | +0.33298683 | |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 03 | 566 | 0.1+ | 0.3+ | 2003 01 08 | 704 | (0.2+ | 2.4+) | 2006 10 17 | 703 | 0.1+ | 0.3− | | |
| 1997 08 03 | 566 | 0.7− | 0.3+ | 2003 01 08 | 704 | 0.8+ | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.3+ | | |
| 1997 08 03 | 566 | 0.1+ | 0.2+ | 2003 01 08 | 704 | (0.9+ | 1.6+) | 2006 10 17 | 703 | 0.3− | 0.1+ | | |
| 1999 01 10 | 691 | 0.1− | 0.0 | 2005 05 12 | 703 | (1.1+ | 2.2+) | 2006 10 17 | 703 | 0.1+ | 0.7+ | | |
| 1999 01 10 | 691 | 0.1− | 0.2+ | 2005 05 12 | 703 | (1.7+ | 1.7+) | 2006 10 28 | 703 | 0.2+ | 0.6− | | |
| 1999 01 10 | 691 | 0.0 | 0.0 | 2005 05 12 | 703 | 0.0 | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.1+ | | |
| 2001 06 15 | 704 | 0.5+ | 0.9+ | 2005 05 12 | 703 | 0.0 | 0.5− | 2006 10 28 | 703 | 0.6− | 0.2− | | |
| 2001 06 15 | 704 | 0.9+ | 0.0 | 2005 05 15 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.3− | | |
| 2001 06 15 | 704 | 0.5+ | 0.4+ | 2005 05 15 | 644 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.2+ | 0.1− | | |
| 2001 06 15 | 704 | 0.8− | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.5+ | 2006 11 07 | 644 | 0.1− | 0.2− | | |
| 2001 06 15 | 704 | 0.5+ | 0.1− | 2005 06 29 | 644 | 0.2− | 0.6+ | 2006 11 07 | 644 | 0.1+ | 0.0 | | |
| 2001 06 22 | 704 | 0.4+ | 0.2+ | 2005 06 29 | 644 | 0.1+ | 0.4+ | 2006 11 10 | 704 | 0.6− | 0.8+ | | |
| 2001 06 22 | 704 | 0.2− | 0.2− | 2005 06 29 | 644 | 0.4+ | 0.4+ | 2006 11 10 | 704 | 0.4− | 0.4+ | | |
| 2001 06 22 | 704 | (0.1+ | 1.7+) | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 11 10 | 704 | 0.4− | 0.5+ | | |
| 2001 06 22 | 704 | 0.5− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 11 10 | 704 | 0.7− | 0.6+ | | |
| 2002 12 11 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 10 | 704 | 0.7− | 0.3+ | | |
| 2002 12 11 | 704 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.3− | 0.0 | | |
| 2002 12 11 | 704 | 0.4+ | 0.2− | 2006 09 30 | 704 | 0.4+ | 0.9+ | 2006 11 16 | 703 | 0.4− | 0.1− | | |
| 2002 12 11 | 704 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.2+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.1− | 0.4− | 2006 09 30 | 704 | (2.2− | 0.9+) | 2006 11 16 | 703 | 0.1+ | 0.3− | | |
| 2003 01 07 | 704 | 0.0 | 0.6+ | 2006 09 30 | 704 | 0.9+ | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.6− | | |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.9+ | 0.3+ | | |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.9+ | 0.8+ | | |
| 2003 01 07 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.6− | 0.1+ | | |
| 2003 01 07 | 704 | 0.4+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 11 22 | 704 | 1.0− | 0.6− | | |

**(143296)∗ 2003 AF$_{36}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.85743 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23740703 | $\omega$ | 286.24013 | | +0.65859935 | −0.75000734 | |
| $a$ | 2.5830947 | $\Omega$ | 122.40458 | | +0.71509603 | +0.59851187 | |
| $e$ | 0.0724906 | $i$ | 4.15155 | | +0.23427456 | +0.28155379 | |
| $P$ | 4.15 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.0 | 0.1+ | 2005 07 03 | G96 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2001 08 20 | 807 | 0.0 | 0.2+ | 2005 07 03 | G96 | 1.1+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2002 12 11 | 704 | 0.7− | 0.7+ | 2005 07 03 | G96 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2002 12 11 | 704 | 0.6+ | 1.2+ | 2005 07 03 | G96 | 0.3+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2002 12 11 | 704 | 0.5+ | 0.6+ | 2005 07 15 | G96 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.0 | | |
| 2003 01 07 | 704 | 0.4− | 0.4− | 2005 07 15 | G96 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.1+ | | |
| 2003 01 07 | 704 | 0.3+ | 0.6− | 2005 07 15 | G96 | 0.3− | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.1+ | | |
| 2003 01 07 | 704 | 0.1+ | 0.3+ | 2005 07 15 | G96 | (0.4+ | 1.8+) | 2006 11 17 | G96 | 0.1+ | 0.0 | | |
| 2003 01 08 | 704 | 0.1− | 0.2+ | 2006 10 01 | 703 | 1.5− | 0.6+ | 2006 11 18 | G96 | 0.6+ | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.1+ | 0.2+ | 2006 10 01 | 703 | (1.6− | 0.1+) | 2006 11 18 | G96 | 0.0 | 0.1− | | |
| 2003 01 08 | 704 | 0.6− | 0.0 | 2006 10 01 | 703 | 0.0 | 0.7+ | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2003 01 08 | 704 | 0.3− | 0.6+ | 2006 10 01 | 703 | 0.4+ | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2003 01 08 | 704 | 0.2+ | 0.2− | 2006 11 02 | G96 | 0.8+ | 1.4+ | 2006 11 20 | 691 | 0.1− | 0.1− | | |
| 2004 03 29 | 704 | 1.1+ | 1.2+ | 2006 11 02 | G96 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.3− | 0.0 | | |
| 2004 03 29 | 704 | 0.3− | 0.8+ | 2006 11 02 | G96 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1− | | |
| 2004 03 29 | 704 | 0.3− | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.6+ | | |
| 2004 03 29 | 704 | (1.2+ | 2.1+) | 2006 11 16 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.1− | | |
| 2004 04 20 | 704 | 1.2+ | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.0 | | |
| 2004 04 20 | 704 | 0.4− | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.4+ | | |
| 2004 04 20 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.0 | 1.0+ | 2006 11 20 | 704 | 0.2+ | 0.1+ | | |
| 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 1.1+ | 2006 11 24 | 691 | 0.2+ | 0.1− | | |
| 2004 04 20 | 704 | 0.4+ | 1.0+ | 2006 11 17 | 704 | (0.1+ | 1.6+) | 2006 11 24 | 703 | 0.5− | 0.2− | | |
| 2005 05 19 | G96 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.1− | 2006 11 24 | 703 | 0.9− | 0.1+ | | |
| 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 24 | 703 | 0.0 | 1.6+ | | |
| 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.0 | 2006 11 24 | 691 | 0.1− | 0.1+ | | |
| 2005 05 19 | G96 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− | 2006 11 24 | 703 | 1.1− | 0.0 | | |
| 2005 06 13 | G96 | 0.6− | 0.8+ | 2006 11 17 | G96 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.1− | 0.0 | | |
| 2005 06 13 | G96 | 0.2− | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.0 | | |
| 2005 06 13 | G96 | 0.9− | 1.0+ | 2006 11 17 | G96 | 0.5+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.2+ | | |
| 2005 06 13 | G96 | 0.5− | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.0 | | |

**(143297)∗ 2003 AU$_{37}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.96494 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26417218 | $\omega$ | 269.94161 | | −0.63303524 | −0.77384122 | |
| $a$ | 2.4055330 | $\Omega$ | 219.35826 | | +0.72270047 | −0.58110111 | |
| $e$ | 0.1335531 | $i$ | 1.88719 | | +0.27743541 | −0.25197474 | |
| $P$ | 3.73 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 385 | 1.1+ | 0.3− | 2003 02 02 | 704 | 0.1− | 0.0 | 2005 09 29 | 699 | 0.9+ | 0.5+ | | |
| 1998 11 23 | 385 | 0.3+ | 0.9− | 2005 08 25 | 644 | 0.3− | 0.1+ | 2005 09 29 | 699 | 0.5− | 0.4+ | | |
| 2000 05 26 | 691 | 0.0 | 0.1− | 2005 08 25 | 644 | 0.1+ | 0.1+ | 2005 09 29 | 699 | 1.2+ | 0.4+ | | |
| 2000 05 26 | 691 | 0.1+ | 0.2− | 2005 08 25 | 644 | 0.2− | 0.0 | 2005 10 27 | G96 | 0.2+ | 0.0 | | |
| 2000 05 26 | 691 | 0.2− | 0.0 | 2005 08 31 | 691 | 0.2+ | 0.4+ | 2005 10 27 | G96 | 0.1+ | 0.2− | | |
| 2003 01 07 | 704 | 0.1− | 0.4− | 2005 08 31 | 691 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.1− | 0.1− | | |
| 2003 01 07 | 704 | 1.1+ | 0.0 | 2005 08 31 | 691 | 0.1− | 0.1+ | 2005 10 27 | G96 | 0.2+ | 0.0 | | |
| 2003 01 07 | 704 | 0.7+ | 0.1− | 2005 09 08 | 704 | 0.7− | 0.6− | 2005 11 29 | G96 | 0.7+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2005 09 08 | 704 | 0.3− | 0.2+ | 2005 11 29 | G96 | 0.1− | 0.2− | | |
| 2003 01 07 | 704 | 0.7+ | 0.4− | 2005 09 08 | 704 | 1.1− | 0.7− | 2005 11 29 | G96 | 0.2+ | 0.6− | | |
| 2003 01 08 | 704 | 0.3+ | 0.5− | 2005 09 08 | 704 | 0.5+ | 0.1+ | 2005 11 29 | G96 | 0.1− | 0.3− | | |
| 2003 01 08 | 704 | 0.2− | 0.5− | 2005 09 23 | 703 | 0.6− | 0.3− | 2005 12 04 | G96 | 0.0 | 0.4− | | |
| 2003 01 08 | 704 | 0.1+ | 0.4+ | 2005 09 23 | 703 | 0.3− | 0.9− | 2005 12 04 | G96 | 0.1− | 0.0 | | |
| 2003 01 26 | 291 | 0.1+ | 0.1+ | 2005 09 23 | 703 | (2.9− | 0.7−) | 2005 12 04 | G96 | 0.0 | 0.0 | | |
| 2003 01 26 | 291 | 0.6− | 0.5+ | 2005 09 23 | 703 | 0.6− | 1.1− | 2005 12 04 | G96 | 0.1− | 0.4− | | |
| 2003 01 26 | 291 | 1.5− | 0.3+ | 2005 09 24 | A50 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.6+ | 0.3− | | |
| 2003 01 27 | 704 | 0.5+ | 0.2+ | 2005 09 24 | A50 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.2− | | |
| 2003 01 27 | 704 | 1.4+ | 0.8+ | 2005 09 25 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2003 01 27 | 704 | (1.7+ | 0.6−) | 2005 09 25 | 644 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.7+ | 1.0− | | |
| 2003 01 27 | 704 | 1.1+ | 0.2− | 2005 09 25 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2003 01 27 | 704 | 0.4− | 0.1+ | 2005 09 26 | 644 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.4− | | |
| 2003 02 02 | 704 | 0.1− | 0.2− | 2005 09 26 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1+ | | |
| 2003 02 02 | 704 | 0.4+ | 0.6− | 2005 09 26 | 644 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2003 02 02 | 704 | 0.6+ | 0.3− | 2005 09 29 | 699 | (0.4− | 2.1+) | | | | | | |

**(143298)∗ 2003 AW$_{38}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.07394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21491577 | $\omega$ | 214.34656 | | +0.12012597 | −0.99103364 | |
| $a$ | 2.7603058 | $\Omega$ | 228.82819 | | +0.92739044 | +0.13304975 | |
| $e$ | 0.0854143 | $i$ | 4.45718 | | +0.35428340 | −0.01225062 | |
| $P$ | 4.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.6− | 0.2+ | 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.3+ | | |
| 2001 09 23 | 704 | (1.7− | 1.1+) | 2004 05 09 | 691 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.2− | | |
| 2001 09 23 | 704 | 0.8+ | 1.2+ | 2004 05 09 | 691 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 0.6− | 0.5+ | 2004 05 09 | 691 | 0.1− | 0.7+ | 2006 11 11 | G96 | 0.4+ | 0.1− | | |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2004 05 13 | 291 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.1− | | |
| 2001 10 21 | 704 | 0.9− | 0.2+ | 2004 05 13 | 291 | 0.2+ | 0.8+ | 2006 11 17 | 703 | 0.8− | 0.9− | | |
| 2001 10 21 | 704 | 0.9− | 0.8+ | 2004 05 13 | 291 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 0.9− | 0.5− | | |
| 2001 10 21 | 704 | 0.3− | 0.2+ | 2004 05 13 | 291 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.1+ | | |
| 2003 01 01 | 704 | 1.0+ | 0.8+ | 2004 05 13 | 291 | 0.1− | 0.3+ | 2006 11 18 | 704 | (3.4+ | 3.7+) | | |
| 2003 01 01 | 704 | 0.8+ | 0.1− | 2004 05 13 | 291 | 0.4− | 0.3+ | 2006 11 18 | 704 | (1.0+ | 3.1+) | | |
| 2003 01 01 | 704 | 0.3+ | 0.5+ | 2005 07 15 | 691 | 0.2+ | 0.5+ | 2006 11 18 | 704 | (0.2− | 3.0+) | | |
| 2003 01 07 | 704 | 0.1− | 0.2+ | 2005 07 15 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | (2.1+ | 1.8+) | | |
| 2003 01 07 | 704 | 0.1+ | 0.7+ | 2005 07 15 | 691 | 0.0 | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2003 01 07 | 704 | 0.1− | 0.4+ | 2005 07 18 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.0 | | |
| 2003 01 07 | 704 | 0.3− | 0.6+ | 2005 07 18 | 644 | 0.2− | 0.6+ | 2006 11 21 | G96 | 0.4+ | 0.1− | | |
| 2003 01 07 | 704 | 0.1− | 0.5+ | 2005 07 18 | 644 | 0.5− | 0.5+ | 2006 11 21 | G96 | 0.5− | 0.6+ | | |
| 2003 01 08 | 704 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.7+ | | |
| 2003 01 08 | 704 | 0.2+ | 0.3− | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.1+ | | |
| 2003 01 08 | 704 | 0.4+ | 0.2− | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.6+ | | |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.7+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.8+ | | |
| 2003 01 08 | 704 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.3− | 0.9+ | | |
| 2003 01 26 | 644 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 27 | 703 | 0.0 | 1.6+ | | |
| 2003 01 26 | 644 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 1.2− | 0.6+ | | |
| 2003 01 26 | 644 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.5+ | | |
| 2003 01 27 | 704 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.2− | 1.6+ | | |
| 2003 01 27 | 704 | 0.0 | 1.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.1− | 1.2+ | | |
| 2003 01 27 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.2+ | 2006 11 29 | 704 | 1.0− | 1.3+ | | |
| 2003 01 27 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.3+ | | |
| 2004 04 22 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.7− | 1.6+ | | |
| 2004 04 22 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.9+ | | |

**(143299)∗ 2003 AC$_{39}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.58387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26124472 | $\omega$ | 320.81613 | | −0.50654619 | −0.86107687 | |
| $a$ | 2.4234703 | $\Omega$ | 159.50017 | | +0.81941912 | −0.49673651 | |
| $e$ | 0.1446873 | $i$ | 7.25812 | | +0.26825970 | −0.10862536 | |
| $P$ | 3.77 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.3+ | 0.4+ | 2003 01 07 | 704 | 0.8− | 0.0 | 2003 02 03 | 644 | 0.1+ | 0.3+ | | |
| 1996 03 27 | 691 | 0.2− | 0.0 | 2003 01 08 | 704 | 0.5+ | 0.3+ | 2003 02 03 | 644 | 0.3− | 0.4+ | | |
| 1996 03 27 | 691 | 0.1+ | 0.3+ | 2003 01 08 | 704 | 0.1+ | 0.5− | 2003 02 28 | 704 | 0.7+ | 0.2+ | | |
| 2000 06 11 | 691 | 0.2− | 0.1+ | 2003 01 08 | 704 | 1.5− | 0.5+ | 2003 02 28 | 704 | 1.7+ | 1.3+ | | |
| 2000 06 11 | 691 | 0.4+ | 0.6+ | 2003 01 08 | 704 | 1.7+ | 0.4− | 2003 02 28 | 704 | 0.3+ | 0.3+ | | |
| 2000 06 11 | 691 | 0.3+ | 0.5+ | 2003 01 27 | 704 | 0.1− | 0.1− | 2003 02 28 | 704 | 0.0 | 0.4+ | | |
| 2000 06 24 | 691 | 0.2+ | 0.2− | 2003 01 27 | 704 | 0.6+ | 0.5− | 2005 08 28 | 691 | 0.1+ | 0.2+ | | |
| 2000 06 24 | 691 | 0.1+ | 0.0 | 2003 01 27 | 704 | 0.1+ | 0.7− | 2005 08 28 | 691 | 0.2+ | 0.1+ | | |
| 2000 06 24 | 691 | 0.1+ | 0.3− | 2003 01 27 | 644 | 0.1+ | 0.5+ | 2005 08 28 | 691 | 0.1+ | 0.1+ | | |
| 2000 07 04 | 691 | 1.0− | 0.4− | 2003 01 27 | 699 | 0.6− | 0.3+ | 2005 09 11 | 691 | 0.0 | 0.4+ | | |
| 2000 07 04 | 691 | 0.0 | 0.1− | 2003 01 27 | 699 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.0 | 0.0 | | |
| 2000 07 04 | 691 | 0.2− | 0.3− | 2003 01 27 | 644 | 0.1+ | 0.3+ | 2005 09 11 | 691 | 0.0 | 0.4+ | | |
| 2003 01 01 | 704 | 0.5− | 0.1− | 2003 01 27 | 699 | 0.6− | 0.2+ | 2005 09 23 | 703 | 0.4− | 0.8− | | |
| 2003 01 01 | 704 | 0.0 | 0.3− | 2003 01 27 | 699 | 0.5− | 0.3+ | 2005 09 23 | 703 | 0.0 | 1.2− | | |
| 2003 01 01 | 704 | 0.0 | 0.7+ | 2003 01 27 | 644 | 0.1− | 0.4+ | 2005 09 23 | 703 | 0.8− | 0.5+ | | |
| 2003 01 01 | 704 | 0.8− | 1.0− | 2003 02 02 | 704 | 0.3+ | 0.3+ | 2005 09 23 | 703 | 1.5− | 0.7+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 1.1+ | 0.8+ | 2003 02 02 | 704 | 0.4− | 0.2− | 2005 09 28 | 644 | 0.1− | 0.0 | |
| 2003 01 07 | 704 | 0.9− | 0.4+ | 2003 02 02 | 704 | 0.1+ | 1.2− | 2005 09 28 | 644 | 0.2− | 0.5+ | |
| 2003 01 07 | 704 | 0.1+ | 0.5− | 2003 02 02 | 704 | 0.3+ | 0.8− | 2005 09 28 | 644 | 0.1+ | 0.3+ | |
| 2003 01 07 | 704 | 0.7− | 0.1− | 2003 02 03 | 644 | 0.2+ | 0.4+ | | | | | |

**(143300)∗ 2003 AD$_{39}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.11782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22280721 | $\omega$ | 183.56086 | | +0.80745243 | −0.57779909 | |
| $a$ | 2.6947381 | $\Omega$ | 212.67145 | | +0.54655443 | +0.80863503 | |
| $e$ | 0.1853298 | $i$ | 12.73864 | | +0.22203340 | +0.11071405 | |
| $P$ | 4.42 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 1.4− | 0.9− | 2003 01 02 | 704 | 0.1− | 0.8+ | 2006 10 23 | 704 | 0.4− | 0.2+ | |
| 1997 10 05 | 691 | 0.1+ | 0.6− | 2003 01 07 | 704 | 0.0 | 0.4+ | 2006 10 23 | 704 | 0.5+ | 0.1− | |
| 1997 10 05 | 691 | 0.4+ | 0.5− | 2003 01 07 | 704 | 0.8+ | 0.6+ | 2006 10 27 | 704 | 0.6− | 0.8+ | |
| 1997 10 26 | 688 | 0.6+ | 0.0 | 2003 01 07 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 704 | 1.4− | 0.7+ | |
| 1997 10 26 | 688 | 0.9+ | 0.4+ | 2003 01 07 | 704 | 0.6+ | 0.2+ | 2006 10 27 | 704 | 0.6− | 0.7+ | |
| 1997 10 30 | 704 | 1.2+ | 1.1+ | 2003 01 07 | 704 | 0.0 | 0.4+ | 2006 10 27 | 704 | 0.3− | 0.3− | |
| 1997 10 30 | 704 | 1.4− | 0.4+ | 2003 01 08 | 704 | 1.0− | 0.5+ | 2006 10 27 | 704 | 0.2− | 0.0 | |
| 1997 10 30 | 704 | 0.5+ | 0.5+ | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 11 02 | 704 | 0.7+ | 0.4+ | |
| 1997 10 30 | 704 | 0.4+ | 0.1+ | 2003 01 08 | 704 | 0.6− | 0.1− | 2006 11 02 | 704 | 0.2− | 0.4+ | |
| 1997 10 30 | 704 | 1.0− | 0.2+ | 2003 01 28 | 704 | 0.6+ | 0.7− | 2006 11 02 | 704 | 0.6+ | 0.4+ | |
| 2001 05 23 | 699 | 0.5− | 0.4− | 2003 01 28 | 704 | 0.6+ | 0.9− | 2006 11 02 | 704 | 0.1− | 0.5+ | |
| 2001 05 23 | 699 | 0.8+ | 1.2+ | 2003 01 28 | 704 | 0.5+ | 0.8− | 2006 11 02 | 703 | 0.1− | 0.4− | |
| 2001 05 23 | 699 | 1.2+ | 0.5+ | 2003 01 28 | 704 | 0.7+ | 0.7− | 2006 11 02 | 703 | 0.3− | 0.1+ | |
| 2001 05 23 | 699 | 0.2− | 0.8+ | 2004 04 20 | 691 | 0.7− | 0.1+ | 2006 11 02 | 703 | 0.3− | 0.0 | |
| 2001 06 17 | 699 | 0.7− | 0.3+ | 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.2− | 0.1+ | |
| 2001 06 17 | 699 | (1.2+ | 2.3+) | 2004 04 20 | 691 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | |
| 2001 06 17 | 699 | 0.2− | 0.9+ | 2006 08 29 | 703 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1+ | |
| 2001 06 17 | 699 | (0.4− | 1.6+) | 2006 08 29 | 703 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ | |
| 2001 07 12 | 644 | 0.6+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ | |
| 2001 07 12 | 644 | 0.4+ | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.3+ | |
| 2001 07 12 | 644 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.7+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ | |
| 2001 08 07 | 644 | 0.0 | 0.3+ | 2006 09 17 | 704 | 1.2+ | 0.6+ | 2006 11 09 | A24 | 0.1− | 0.1− | |
| 2001 08 07 | 644 | 0.0 | 0.3+ | 2006 09 17 | 704 | (1.1+ | 1.7+) | 2006 11 09 | A24 | 0.2− | 0.3+ | |
| 2001 08 07 | 644 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.7+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.1+ | |
| 2001 08 20 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | |
| 2001 08 20 | 704 | 0.0 | 0.3+ | 2006 09 20 | 704 | 1.0+ | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.3+ | |
| 2001 08 20 | 704 | (2.1+ | 0.0 ) | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1+ | |
| 2001 09 16 | 704 | 0.8+ | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.1+ | |
| 2001 09 16 | 704 | 0.6+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.1+ | |
| 2001 09 16 | 704 | 0.8− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.1− | |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.0 | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | (0.5− | 1.7−) | |
| 2001 09 25 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 703 | 1.2+ | 1.3− | |
| 2001 09 25 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 704 | (1.8+ | 0.2−) | 2006 11 14 | 704 | 0.3− | 0.1+ | |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.9+ | 2006 11 14 | 704 | 0.2− | 0.6+ | |
| 2001 10 19 | 704 | 0.5− | 0.9+ | 2006 09 29 | 704 | 0.1− | 0.6− | 2006 11 14 | 704 | 0.3− | 0.0 | |
| 2001 10 19 | 704 | 0.0 | 0.6+ | 2006 10 04 | 703 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.4− | 0.5+ | |
| 2001 10 19 | 704 | 0.1− | 0.5+ | 2006 10 04 | 703 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.7− | 0.3+ | |
| 2001 10 19 | 704 | 0.3− | 0.3+ | 2006 10 04 | 703 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.3− | 1.1+ | |
| 2001 11 10 | 704 | 0.7+ | 0.8+ | 2006 10 04 | 703 | 0.3+ | 0.5− | 2006 11 17 | 704 | 0.6− | 1.2+ | |
| 2001 11 10 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.1− | 1.0+ | |
| 2001 11 10 | 704 | 1.1+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.1− | 1.0+ | |
| 2001 11 10 | 704 | 1.0+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 17 | G96 | 0.0 | 0.1− | |
| 2002 11 12 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 1.3− | 0.8+ | 2006 11 17 | G96 | 0.1− | 0.2− | |
| 2002 11 12 | 704 | 1.2+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.5− | 0.5+ | |
| 2002 11 12 | 704 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.1− | 0.0 | |
| 2002 11 12 | 704 | 1.1+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.1− | |
| 2002 11 12 | 704 | 1.4+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | (0.3+ | 2.0−) | |
| 2002 12 14 | 704 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 1.4− | |
| 2002 12 14 | 704 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | (0.4+ | 2.1−) | |
| 2002 12 14 | 704 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.8+ | 1.3− | |
| 2002 12 14 | 704 | 0.9+ | 1.2− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1− | 1.3− | |
| 2002 12 14 | 704 | 0.6+ | 0.6− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.6+ | 1.2− | |
| 2003 01 02 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.5+ | 1.3− | |
| 2003 01 02 | 704 | 0.4− | 0.9+ | 2006 10 23 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 704 | (0.4+ | 1.6−) | |
| 2003 01 02 | 704 | 0.4− | 0.8+ | 2006 10 23 | 704 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 1.2− | |
| 2003 01 02 | 704 | 0.2− | 0.5+ | 2006 10 23 | 704 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.5− | |

**(143301)∗ 2003 AO$_{39}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.21664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21353776 | $\omega$ | 210.72360 | | −0.17709842 | −0.98173502 | |
| $a$ | 2.7721683 | $\Omega$ | 249.55401 | | +0.91738680 | −0.13908534 | |
| $e$ | 0.1371617 | $i$ | 4.25468 | | +0.35642337 | −0.12981379 | |
| $P$ | 4.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2− | 1.0+ | 2003 01 30 | 699 | 0.7− | 0.0 | 2006 10 28 | 691 | 0.3− | 0.0 | |
| 2001 09 16 | 704 | 0.9+ | 0.7+ | 2004 04 28 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.1− | |
| 2001 09 16 | 704 | 0.5+ | 0.0 | 2004 04 28 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2− | |
| 2001 09 16 | 704 | 0.6− | 0.6+ | 2004 04 28 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− | |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2005 07 11 | G96 | 0.5− | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.1− | |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2005 07 11 | G96 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ | |
| 2001 12 10 | 645 | 0.0 | 0.1− | 2005 07 11 | G96 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2− | |
| 2001 12 10 | 645 | 0.2+ | 0.0 | 2005 07 11 | G96 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ | |
| 2003 01 07 | 704 | 0.1+ | 0.6− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.1− | |
| 2003 01 07 | 704 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.5− | 0.8+ | |
| 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1− | |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.0 | 0.4+ | |
| 2003 01 08 | 704 | 1.1− | 0.2− | 2006 10 15 | 691 | 0.5+ | 0.7+ | 2006 11 10 | 644 | 0.3− | 0.4+ | |
| 2003 01 08 | 704 | 1.1− | 0.5+ | 2006 10 15 | 691 | 0.5+ | 0.8+ | 2006 11 10 | 644 | 0.0 | 0.4+ | |
| 2003 01 08 | 704 | 0.1− | 1.1+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.0 | |
| 2003 01 26 | 644 | 0.4− | 0.5+ | 2006 10 15 | 691 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.3− | |
| 2003 01 26 | 644 | 0.5− | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.1− | |
| 2003 01 26 | 644 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.2− | |
| 2003 01 27 | 704 | 1.5+ | 0.9+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.1− | |
| 2003 01 27 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.1− | |
| 2003 01 27 | 704 | 1.4+ | 1.1− | 2006 10 19 | 691 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2+ | |
| 2003 01 27 | 704 | 0.9+ | 0.3− | 2006 10 20 | 644 | 0.5+ | 0.7− | 2006 11 22 | 691 | 0.0 | 0.2− | |
| 2003 01 30 | 699 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.3− | |
| 2003 01 30 | 699 | 0.8+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.0 | |
| 2003 01 30 | 699 | 0.3− | 0.7− | 2006 10 28 | 691 | 0.0 | 0.0 | | | | | |

**(143302)∗ 2003 AZ$_{39}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.20027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17189600 | $\omega$ | 25.65846 | | −0.97803684 | −0.15918908 | |
| $a$ | 3.2035059 | $\Omega$ | 144.35704 | | +0.12802986 | −0.96821284 | |
| $e$ | 0.0771920 | $i$ | 13.34942 | | +0.16447582 | −0.19293192 | |
| $P$ | 5.73 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 09 | 809 | 1.5− | 1.3+ | 2003 02 02 | 704 | 0.2+ | 1.1+ | 2004 04 24 | 704 | 0.5+ | 0.2+ | |
| 2001 10 23 | 644 | 0.3− | 1.0+ | 2003 02 02 | 704 | (0.6+ | 1.8+) | 2004 04 24 | 704 | 1.2+ | 0.6+ | |
| 2001 10 23 | 644 | 0.3− | 0.6+ | 2003 02 04 | 644 | 0.3+ | 0.1+ | 2004 04 24 | 704 | 0.5+ | 0.5+ | |
| 2001 10 23 | 644 | 0.6− | 1.0+ | 2003 02 04 | 644 | 0.3+ | 0.1+ | 2004 04 24 | 704 | 0.6+ | 0.0 | |
| 2001 11 11 | 645 | 0.1+ | 0.1+ | 2003 02 04 | 644 | 0.4+ | 0.2+ | 2004 04 24 | 704 | 0.7+ | 0.7+ | |
| 2001 11 11 | 645 | 0.2+ | 0.1+ | 2003 02 21 | 608 | 0.2− | 1.3− | 2004 04 26 | 699 | 1.0− | 0.0 | |
| 2001 11 20 | 699 | 0.3+ | 0.6+ | 2003 02 21 | 608 | 0.3− | 0.7− | 2004 04 26 | 699 | 0.2− | 1.3+ | |
| 2001 11 20 | 699 | 0.1− | 0.6+ | 2003 02 21 | 608 | 0.7− | 1.0− | 2004 04 26 | 699 | 1.2− | 0.4+ | |
| 2001 11 20 | 699 | 0.0 | 0.5+ | 2003 02 28 | 704 | 0.6+ | 0.7− | 2004 04 26 | 699 | 1.3+ | 1.0− | |
| 2001 11 20 | 699 | (0.0 | 1.5+) | 2003 02 28 | 704 | 0.1− | 0.0 | 2004 05 08 | 703 | 0.6− | 0.8+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 704 | 0.6− | 0.6− | 2003 02 28 | 704 | 0.6+ | 0.4− | 2004 05 08 | 703 | 1.0+ | 0.3+ |
| 2001 12 07 | 704 | 0.0 | 0.0 | 2003 02 28 | 704 | 0.8+ | 0.1− | 2004 05 08 | 703 | 0.4− | 0.3+ |
| 2001 12 07 | 704 | 1.2− | 0.1− | 2003 03 06 | 704 | 0.4+ | 0.3+ | 2004 05 08 | 703 | 0.4+ | 0.8+ |
| 2001 12 07 | 704 | 0.2− | 0.3− | 2003 03 06 | 704 | 0.6+ | 0.1− | 2004 05 13 | 704 | 0.5+ | 0.3− |
| 2002 01 09 | 645 | 0.0 | 0.1+ | 2003 03 06 | 704 | 1.1+ | 0.7+ | 2004 05 13 | 704 | 0.7+ | 0.0 |
| 2002 01 09 | 645 | 0.1+ | 0.1+ | 2003 03 06 | 704 | 0.3− | 0.6− | 2004 05 13 | 704 | 0.7+ | 0.1− |
| 2003 01 07 | 704 | 0.7+ | 0.3+ | 2003 03 06 | 704 | 1.0− | 0.3+ | 2004 05 13 | 704 | 0.0 | 0.2− |
| 2003 01 07 | 704 | 0.4+ | 0.5+ | 2003 03 07 | 704 | 0.2− | 0.1+ | 2004 05 13 | 704 | 0.5+ | 0.3+ |
| 2003 01 07 | 704 | 0.1− | 1.2+ | 2003 03 07 | 704 | 0.2− | 0.6− | 2004 05 24 | 704 | 0.3− | 0.6+ |
| 2003 01 07 | 704 | 0.8+ | 0.2+ | 2003 03 07 | 704 | 0.5− | 1.3− | 2004 05 24 | 704 | 0.4− | 0.5+ |
| 2003 01 07 | 704 | 0.1+ | 0.3+ | 2003 03 07 | 704 | 0.9− | 0.1+ | 2004 05 24 | 704 | 0.1+ | 0.4− |
| 2003 01 08 | 704 | 1.0− | 0.1− | 2003 03 07 | 704 | 0.3+ | 0.8+ | 2004 05 24 | 704 | 1.0− | 0.1− |
| 2003 01 08 | 704 | (1.7− | 1.1−) | 2004 03 16 | 704 | 0.8+ | 0.9+ | 2004 05 24 | 703 | 0.9− | 0.7+ |
| 2003 01 08 | 704 | 0.9− | 0.3− | 2004 03 16 | 704 | 1.0+ | 0.5+ | 2004 05 24 | 704 | 0.7− | 0.1− |
| 2003 01 08 | 704 | 1.1− | 0.5− | 2004 03 16 | 704 | 0.1+ | 1.3+ | 2004 05 24 | 703 | 0.2− | 0.8+ |
| 2003 01 08 | 704 | 1.4− | 0.5− | 2004 03 27 | 699 | (1.8+ | 0.7+) | 2004 05 24 | 703 | 1.1+ | 0.6+ |
| 2003 01 14 | 608 | 1.4+ | 0.6+ | 2004 03 27 | 699 | 0.4+ | 0.3− | 2004 05 24 | 703 | 0.6− | 1.4+ |
| 2003 01 14 | 608 | (1.6+ | 1.0+) | 2004 03 27 | 699 | 0.7− | 1.0+ | 2006 09 17 | 699 | 0.1− | 0.3+ |
| 2003 01 14 | 608 | 1.0+ | 0.5+ | 2004 03 27 | 699 | 0.2− | 0.5+ | 2006 09 17 | 699 | 0.1− | 0.8+ |
| 2003 01 26 | 699 | 0.6− | 0.2+ | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 699 | 0.7− | 0.5+ |
| 2003 01 26 | 699 | 0.4− | 0.4+ | 2004 03 28 | 691 | 0.2+ | 0.0 | 2006 09 17 | 699 | 1.0− | 1.1+ |
| 2003 01 26 | 699 | 0.2− | 0.7+ | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.1+ |
| 2003 01 26 | 699 | 0.0 | 0.1+ | 2004 04 16 | 704 | 0.7+ | 0.0 | 2006 09 19 | 703 | 0.7− | 1.2+ |
| 2003 01 27 | 704 | 0.9− | 0.7+ | 2004 04 16 | 704 | 0.8− | 0.5− | 2006 09 19 | 703 | 0.8− | 0.8+ |
| 2003 01 27 | 704 | 0.9− | 0.2− | 2004 04 16 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.8+ | 0.3+ |
| 2003 01 27 | 704 | 1.1− | 0.4+ | 2004 04 16 | 704 | 0.4+ | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.3+ |
| 2003 01 27 | 704 | 1.1− | 0.0 | 2004 04 16 | 704 | 0.3+ | 0.2− | 2006 09 25 | 703 | 0.6− | 0.6− |
| 2003 01 27 | 699 | 0.8+ | 0.4− | 2004 04 20 | 704 | 0.7+ | 0.4+ | 2006 09 25 | 703 | 1.4− | 0.6− |
| 2003 01 27 | 699 | 0.4+ | 0.1− | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 703 | 1.3− | 0.6+ |
| 2003 01 27 | 699 | 0.7+ | 0.6+ | 2004 04 20 | 704 | 0.3+ | 0.1− | 2006 10 19 | 703 | 1.4− | 0.1− |
| 2003 01 27 | 699 | 0.1+ | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.5+ | 0.5+ |
| 2003 01 30 | 699 | 0.1+ | 0.5+ | 2004 04 20 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2003 01 30 | 699 | 0.0 | 0.4− | 2004 04 21 | 704 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2003 01 30 | 699 | 0.2− | 0.2− | 2004 04 21 | 704 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.6+ |
| 2003 01 30 | 699 | 0.2+ | 0.2− | 2004 04 21 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.6− | 0.3+ |
| 2003 02 01 | 608 | 0.4− | 0.4− | 2004 04 21 | 704 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2003 02 01 | 608 | 0.6− | 0.1− | 2004 04 21 | 704 | 0.4− | 0.7+ | 2006 10 23 | 644 | 0.6− | 0.8+ |
| 2003 02 01 | 608 | 0.3− | 0.2− | 2004 04 21 | 703 | 0.6− | 0.3+ | 2006 10 23 | 644 | 0.7− | 0.7+ |
| 2003 02 02 | 704 | 0.5+ | 0.7+ | 2004 04 21 | 703 | 1.0− | 0.8− | 2006 10 23 | 644 | 0.3− | 0.5+ |
| 2003 02 02 | 704 | 0.6+ | 0.2+ | 2004 04 21 | 703 | 0.6− | 0.1+ | | | | |
| 2003 02 02 | 704 | 0.3+ | 0.4+ | 2004 04 21 | 703 | 1.3+ | 1.4− | | | | |

**(143303)∗ 2003 AF$_{40}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.75764 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23720848 | $\omega$ | 79.25231 | | +0.96542737 | −0.10189383 | |
| $a$ | 2.5845360 | $\Omega$ | 286.26877 | | −0.01741847 | +0.89316404 | |
| $e$ | 0.3577925 | $i$ | 14.47400 | | +0.26008960 | +0.43803613 | |
| $P$ | 4.16 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 09 08 | 261 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.3− | 0.0 | 2006 10 28 | 703 | 1.4+ | 0.5+ |
| 1989 09 08 | 261 | 0.3+ | 0.3+ | 2003 01 27 | 704 | 0.1− | 0.2+ | 2006 10 28 | 703 | 1.4+ | 0.6+ |
| 1989 12 02 | 261 | 0.0 | 0.3+ | 2003 01 27 | 704 | 0.5− | 0.1− | 2006 10 28 | 703 | 1.0+ | 0.2+ |
| 1989 12 02 | 261 | 0.3− | 0.3− | 2003 01 27 | 704 | 0.4− | 0.3+ | 2006 10 28 | 703 | (2.0+ | 0.2−) |
| 1993 07 27 | 261 | 0.1+ | 0.4+ | 2003 01 27 | 699 | 0.4+ | 0.9+ | 2006 11 02 | G96 | 0.3− | 0.6− |
| 1993 07 27 | 261 | 0.1− | 0.3− | 2003 01 27 | 699 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.7− | 1.1− |
| 2002 11 14 | 644 | 0.4+ | 0.3+ | 2003 01 27 | 699 | 0.4− | 0.1+ | 2006 11 02 | G96 | 0.6− | 0.7− |
| 2002 11 14 | 644 | 0.2+ | 0.1+ | 2003 01 27 | 699 | 0.3− | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.5− |
| 2002 11 15 | 644 | 1.0+ | 0.0 | 2003 01 30 | 699 | 0.6− | 0.0 | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2002 11 15 | 644 | 0.2− | 0.3+ | 2003 01 30 | 699 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2002 11 15 | 644 | 0.1+ | 0.2+ | 2003 01 30 | 699 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.6− | 0.5− |
| 2003 01 01 | 704 | (2.0− | 0.3+) | 2003 01 30 | 699 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2003 01 01 | 704 | 0.9+ | 0.1+ | 2003 02 01 | 608 | 0.1− | 0.7− | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2003 01 01 | 704 | 0.1− | 0.2+ | 2003 02 01 | 608 | 0.5− | 0.8− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2003 01 01 | 704 | 0.5+ | 0.9− | 2003 02 01 | 608 | 1.0− | 0.8− | 2006 11 22 | 704 | 0.6+ | 0.6− |
| 2003 01 07 | 704 | 0.3− | 0.5+ | 2003 02 02 | 704 | 0.2+ | 0.2+ | 2006 11 24 | 644 | 0.1− | 0.1+ |
| 2003 01 07 | 704 | 0.5− | 0.9+ | 2003 02 02 | 704 | 0.2− | 0.2+ | 2006 11 24 | 644 | 0.3− | 0.1− |
| 2003 01 07 | 704 | 0.2− | 1.4+ | 2003 02 02 | 704 | 0.4+ | 0.9+ | 2006 11 24 | 644 | 0.1− | 0.0 |
| 2003 01 07 | 704 | 0.7+ | 0.7+ | 2003 02 02 | 704 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.3− | 0.8− |
| 2003 01 08 | 704 | 0.2+ | 0.2− | 2003 02 03 | 699 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.5+ |
| 2003 01 08 | 704 | 0.1− | 0.1+ | 2003 02 03 | 699 | 0.5+ | 0.1+ | 2006 11 27 | 703 | 0.2− | 0.4− |
| 2003 01 08 | 704 | 0.7+ | 0.0 | 2003 02 03 | 699 | 0.8+ | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.1− |
| 2003 01 08 | 704 | 1.0+ | 0.4− | 2003 02 03 | 644 | 0.3+ | 0.0 | 2006 12 01 | 704 | 0.3− | 0.1− |
| 2003 01 14 | 608 | 0.1− | 0.3+ | 2003 02 03 | 699 | 1.1+ | 0.4+ | 2006 12 01 | 704 | 0.8− | 0.0 |
| 2003 01 14 | 608 | 0.3− | 0.3+ | 2003 02 03 | 644 | 0.1− | 0.4+ | 2006 12 01 | 704 | 1.4+ | 0.3− |
| 2003 01 14 | 608 | 0.4+ | 0.2− | 2003 02 03 | 644 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.9− | 1.3+ |
| 2003 01 26 | 608 | 0.1− | 0.9− | 2003 03 07 | 704 | 0.3− | 1.0− | 2006 12 01 | 704 | 0.2− | 0.7+ |
| 2003 01 26 | 608 | 0.3− | 1.0− | 2003 03 07 | 704 | 0.0 | 0.2+ | | | | |
| 2003 01 26 | 608 | 0.5− | 0.5− | 2003 03 07 | 704 | 0.3+ | 0.3− | | | | |

**(143304)∗ 2003 AU$_{40}$ = 1998 FC$_{101}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41430)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.31239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18068027 | $\omega$ | 234.63238 | | −0.84743469 | −0.50343940 | |
| $a$ | 3.0988144 | $\Omega$ | 274.58743 | | +0.52522154 | −0.74870334 | |
| $e$ | 0.1326129 | $i$ | 9.73399 | | +0.07743886 | −0.43126799 | |
| $P$ | 5.45 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 31 | 704 | 0.3− | 0.8+ | 2003 01 14 | 608 | 0.2+ | 0.7− | 2003 02 28 | 704 | 0.8+ | 0.4+ |
| 1998 03 31 | 704 | 0.9+ | 0.1− | 2003 01 14 | 608 | 0.1+ | 0.7− | 2003 02 28 | 704 | 0.9− | 1.2+ |
| 1998 03 31 | 704 | (2.9+ | 0.8+) | 2003 01 25 | 809 | 0.1+ | 0.1+ | 2003 02 28 | 704 | 0.5+ | 0.3+ |
| 1998 03 31 | 704 | 0.4− | 1.4− | 2003 01 25 | 809 | 0.1+ | 0.1− | 2003 02 28 | 704 | 0.9− | 1.0+ |
| 1998 04 01 | 704 | 0.5− | 1.8+ | 2003 01 25 | 809 | 0.1+ | 0.0 | 2003 02 28 | 704 | (2.3+ | 0.2−) |
| 1998 04 01 | 704 | 1.2− | 0.1− | 2003 01 26 | 644 | 0.0 | 0.2− | 2003 02 28 | 704 | 0.3− | 0.2− |
| 1998 04 01 | 704 | (2.1+ | 1.4+) | 2003 01 26 | 644 | 0.1+ | 0.1− | 2003 03 07 | 704 | 0.4+ | 0.9+ |
| 1998 04 01 | 704 | 1.0+ | 1.7+ | 2003 01 26 | 644 | 0.1+ | 0.4− | 2003 03 07 | 704 | 1.0+ | 0.1+ |
| 2001 10 18 | 704 | 0.2+ | 0.1+ | 2003 01 27 | 704 | 0.0 | 0.4− | 2003 03 07 | 704 | 1.2− | 0.0 |
| 2001 10 18 | 704 | 0.0 | 0.3− | 2003 01 27 | 704 | 0.0 | 0.0 | 2003 03 07 | 704 | 0.3+ | 1.0− |
| 2001 10 18 | 704 | 0.8+ | 0.1+ | 2003 01 27 | 704 | 0.3+ | 1.0+ | 2003 03 07 | 704 | 0.4− | 0.3+ |
| 2001 10 18 | 704 | 0.2− | 0.6− | 2003 01 27 | 704 | 0.1+ | 0.2+ | 2003 03 07 | 608 | (2.0+ | 0.3+) |
| 2001 11 12 | 704 | 0.2− | 0.9+ | 2003 01 27 | 644 | 0.4+ | 0.5+ | 2003 03 07 | 608 | 0.5+ | 0.6+ |
| 2001 11 12 | 704 | (0.1+ | 1.7+) | 2003 01 27 | 704 | 0.1− | 0.2− | 2003 03 07 | 608 | 0.5+ | 0.0 |
| 2001 11 12 | 704 | 0.5+ | 1.0+ | 2003 01 27 | 644 | 0.5+ | 0.3+ | 2005 06 30 | 691 | 0.0 | 0.5+ |
| 2001 11 12 | 704 | 0.3+ | 1.2+ | 2003 01 27 | 644 | 0.2+ | 0.4+ | 2005 06 30 | 691 | 0.1+ | 1.4+ |
| 2001 11 12 | 704 | (1.3+ | 2.6+) | 2003 02 01 | 699 | 0.9− | 1.3+ | 2005 06 30 | 691 | 0.3− | 0.3+ |
| 2003 01 01 | 704 | 0.0 | 1.1+ | 2003 02 01 | 699 | 0.1+ | 0.6+ | 2005 07 06 | 691 | 0.1− | 0.3+ |
| 2003 01 01 | 704 | 0.5− | 0.2+ | 2003 02 01 | 699 | 0.6− | 0.3+ | 2005 07 06 | 691 | 0.2− | 0.4+ |
| 2003 01 01 | 704 | 0.8+ | 0.7+ | 2003 02 01 | 699 | 0.0 | 0.7+ | 2005 07 06 | 691 | 0.0 | 0.4+ |
| 2003 01 07 | 704 | 0.1+ | 0.7− | 2003 02 02 | 704 | 1.1+ | 0.1− | 2006 09 16 | 703 | (2.1− | 0.4+) |
| 2003 01 07 | 704 | 0.6− | 0.4− | 2003 02 02 | 704 | 0.4+ | 0.7+ | 2006 09 16 | 703 | 0.8− | 0.6− |
| 2003 01 07 | 704 | 0.3+ | 0.6− | 2003 02 02 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 703 | 0.9− | 0.7+ |
| 2003 01 07 | 704 | 0.2+ | 0.2− | 2003 02 02 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.9− | 0.3+ |
| 2003 01 07 | 704 | 0.1− | 0.1− | 2003 02 02 | 704 | 0.7+ | 0.3+ | 2006 09 27 | 703 | 0.4− | 0.6+ |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2003 02 03 | 644 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 1.1− | 0.4− |
| 2003 01 08 | 704 | 0.3+ | 0.0 | 2003 02 03 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.3+ |
| 2003 01 08 | 704 | 0.2+ | 0.7− | 2003 02 03 | 644 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.2+ |
| 2003 01 08 | 704 | 0.0 | 0.7+ | 2003 02 28 | 704 | 0.3+ | 0.6+ | 2006 10 15 | 621 | 0.6− | 0.4− |
| 2003 01 08 | 704 | 0.6− | 0.8+ | 2003 02 28 | 704 | 0.7+ | 0.0 | 2006 10 15 | 621 | 0.3− | 0.0 |
| 2003 01 14 | 608 | 0.0 | 0.3− | 2003 02 28 | 704 | 0.6− | 0.4+ | 2006 10 15 | 621 | 0.3− | 0.1− |

**(143305)∗ 2003 AD$_{41}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.99002 | | | (2000.0) | | |
| $n$ | 0.23426960 | $\omega$ | 207.92006 | | +0.69791528 | −0.71570121 |
| $a$ | 2.6061061 | $\Omega$ | 197.86191 | | +0.67196278 | +0.66703894 |
| $e$ | 0.2332612 | $i$ | 4.89868 | | +0.24775045 | +0.20695612 |
| $P$ | 4.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.3+ | 1.0− | 2003 01 30 | 704 | (0.3− | 2.3+) | 2004 04 20 | 291 | (0.6+ | 1.7+) |
| 2001 07 25 | 608 | 0.9+ | 1.0− | 2003 01 30 | 704 | (0.1− | 1.8+) | 2004 04 24 | 691 | 0.5− | 0.3− |
| 2001 07 25 | 608 | 0.1+ | 0.6− | 2003 02 02 | 704 | (2.1+ | 1.6−) | 2004 04 24 | 691 | 0.2− | 0.0 |
| 2003 01 07 | 704 | 0.5+ | 0.9− | 2003 02 02 | 704 | 0.4+ | 0.6− | 2004 04 24 | 691 | 0.0 | 0.2− |
| 2003 01 07 | 704 | 1.1+ | 0.5+ | 2003 02 02 | 704 | 0.3− | 1.1+ | 2004 05 10 | 291 | 0.1+ | 0.3+ |
| 2003 01 07 | 704 | 0.0 | 0.2− | 2003 02 02 | 704 | 0.9+ | 0.4− | 2004 05 10 | 291 | 0.7+ | 0.3+ |
| 2003 01 08 | 704 | 0.5− | 0.2+ | 2003 02 02 | 704 | 0.0 | 1.2+ | 2004 05 10 | 291 | 0.7+ | 0.2+ |
| 2003 01 08 | 704 | 0.2+ | 0.2− | 2003 02 03 | 699 | 0.8+ | 0.8− | 2004 05 14 | 691 | 0.0 | 0.4+ |
| 2003 01 08 | 704 | 0.7− | 0.4+ | 2003 02 03 | 699 | 0.2− | 1.4+ | 2004 05 14 | 691 | 0.1− | 0.1+ |
| 2003 01 08 | 704 | 0.0 | 0.3+ | 2003 02 03 | 699 | 0.4− | 0.8+ | 2004 05 14 | 691 | 0.2− | 0.2+ |
| 2003 01 27 | 704 | 0.3− | 0.3+ | 2003 02 03 | 699 | 0.3+ | 1.0+ | 2005 06 13 | 691 | 0.2− | 0.4+ |
| 2003 01 27 | 704 | (1.9− | 0.0 ) | 2003 02 08 | 608 | 0.1+ | 0.1− | 2005 06 13 | 691 | 0.1− | 0.3+ |
| 2003 01 27 | 704 | 0.5− | 0.9− | 2003 02 08 | 608 | 0.4+ | 0.0 | 2005 06 13 | 691 | 0.0 | 0.4+ |
| 2003 01 27 | 704 | 0.4− | 0.6− | 2003 02 08 | 608 | 0.4+ | 0.2− | 2006 08 21 | 691 | 0.2− | 0.3+ |
| 2003 01 28 | 645 | 0.0 | 0.2− | 2003 02 19 | 644 | 0.1− | 0.3+ | 2006 08 21 | 691 | 0.4− | 0.5+ |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2003 02 19 | 644 | 0.0 | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.5+ |
| 2003 01 28 | 608 | 0.1− | 0.9+ | 2003 02 19 | 644 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.8+ | 0.4+ |
| 2003 01 28 | 608 | 0.6− | 1.0+ | 2003 03 07 | 608 | 0.3+ | 0.4− | 2006 11 28 | 704 | 1.0+ | 0.4+ |
| 2003 01 28 | 608 | 0.5− | 0.8+ | 2003 03 07 | 608 | 0.2− | 0.7− | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2003 01 30 | 704 | (0.8+ | 1.6+) | 2003 03 07 | 608 | 0.2+ | 0.7− | 2006 11 28 | 704 | 0.1− | 0.5+ |
| 2003 01 30 | 704 | (0.1− | 2.5+) | 2004 04 20 | 291 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.4+ |
| 2003 01 30 | 704 | (0.3+ | 2.3+) | 2004 04 20 | 291 | 0.3− | 0.1− | | | | |

**(143306)∗ 2003 AE$_{41}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.70040 | | | (2000.0) | | |
| $n$ | 0.18970807 | $\omega$ | 215.73622 | | −0.67395383 | −0.72244023 |
| $a$ | 2.9997070 | $\Omega$ | 277.18732 | | +0.70883138 | −0.57341258 |
| $e$ | 0.1259283 | $i$ | 8.95803 | | +0.20819295 | −0.38636529 |
| $P$ | 5.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.6− | 0.4− | 2003 01 28 | 704 | 0.5+ | 0.4− | 2003 03 07 | 704 | 0.2− | 1.2+ |
| 1996 12 01 | 691 | 0.2− | 0.3− | 2003 01 28 | 704 | 0.7− | 0.8+ | 2003 03 07 | 704 | (0.3− | 2.3+) |
| 1996 12 01 | 691 | 0.0 | 0.0 | 2003 01 28 | 704 | 0.3+ | 0.4+ | 2003 03 07 | 608 | 0.2− | 0.2+ |
| 1996 12 09 | 691 | 0.0 | 0.3+ | 2003 01 28 | 704 | 0.3+ | 0.3+ | 2003 03 07 | 608 | 0.7− | 0.4+ |
| 1996 12 09 | 691 | 0.4+ | 0.2− | 2003 02 02 | 704 | 0.7+ | 0.0 | 2003 03 07 | 608 | 0.0 | 0.1− |
| 1996 12 09 | 691 | 0.6+ | 0.4− | 2003 02 02 | 704 | 0.4+ | 0.6+ | 2005 07 18 | 644 | 0.6− | 0.8+ |
| 2000 09 02 | 691 | 0.2− | 0.2+ | 2003 02 02 | 704 | 0.6+ | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.5+ |
| 2000 09 02 | 691 | 0.0 | 0.6+ | 2003 02 02 | 704 | 0.6+ | 0.3+ | 2005 07 18 | 644 | 0.0 | 0.4+ |
| 2000 09 02 | 691 | 0.2− | 0.0 | 2003 02 02 | 704 | 0.8+ | 0.2+ | 2005 07 30 | E12 | 0.3− | 0.4+ |
| 2001 10 18 | 704 | (1.6− | 1.0+) | 2003 02 04 | 644 | 0.4+ | 0.0 | 2005 07 30 | E12 | (2.6− | 0.1−) |
| 2001 10 18 | 704 | 0.2+ | 0.2+ | 2003 02 04 | 644 | 0.5+ | 0.3+ | 2005 07 30 | E12 | 0.3− | 0.3+ |
| 2001 10 18 | 704 | (1.6+ | 1.0−) | 2003 02 04 | 644 | 0.4+ | 0.1− | 2005 07 30 | E12 | 0.6+ | 1.4+ |
| 2001 10 18 | 704 | 0.3+ | 0.6− | 2003 02 06 | 704 | 0.0 | 0.2− | 2006 09 28 | 703 | 0.1− | 0.1+ |
| 2003 01 07 | 704 | 0.5+ | 0.3− | 2003 02 06 | 704 | 0.6− | 0.5+ | 2006 09 28 | 703 | 0.9− | 0.6+ |
| 2003 01 07 | 704 | 0.2+ | 0.2− | 2003 02 06 | 704 | 0.5− | 1.1+ | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2003 01 07 | 704 | 0.6+ | 0.4+ | 2003 02 06 | 704 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.7− | 0.1+ |
| 2003 01 07 | 704 | 0.1− | 0.0 | 2003 02 08 | 608 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2003 01 08 | 704 | 0.1+ | 1.2+ | 2003 02 08 | 608 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.4− |
| 2003 01 08 | 704 | 0.5− | 0.8+ | 2003 02 08 | 608 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2003 01 08 | 704 | 0.2− | 0.5+ | 2003 02 19 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2003 01 08 | 704 | 0.9+ | 0.7+ | 2003 02 19 | 644 | 0.4− | 0.9− | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2003 01 08 | 704 | (0.8+ | 2.2+) | 2003 02 19 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2003 01 26 | 644 | 0.8+ | 0.4− | 2003 03 07 | 704 | 0.5− | 1.1+ | 2006 10 23 | 644 | 0.1+ | 0.9+ |
| 2003 01 26 | 644 | 0.1+ | 0.0 | 2003 03 07 | 704 | 0.5− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2003 01 26 | 644 | 0.1+ | 0.2− | 2003 03 07 | 704 | 0.4− | 0.8+ | 2006 10 23 | 644 | 0.5− | 0.8+ |

**(143307)∗ 2003 AK$_{41}$ = 1981 UQ$_{24}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41432)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.28507 | | | (2000.0) | | |
| $n$ | 0.23870516 | $\omega$ | 231.20024 | | +0.74238716 | −0.66985495 |
| $a$ | 2.5737213 | $\Omega$ | 170.83198 | | +0.63640557 | +0.69925097 |
| $e$ | 0.3389173 | $i$ | 4.49104 | | +0.20940213 | +0.24968466 |
| $P$ | 4.13 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 10 24 | 675 | 0.3− | 0.2+ | 2003 01 28 | 645 | 0.1− | 0.2− | 2003 02 22 | 699 | 1.0− | 1.5+ |
| 1981 10 25 | 675 | 0.1+ | 0.7+ | 2003 01 30 | 699 | 0.3+ | 0.7+ | 2003 03 08 | 291 | 0.1+ | 0.4+ |
| 1991 03 15 | 691 | (0.9− | 2.3+) | 2003 01 30 | 699 | 0.5+ | 1.3+ | 2003 03 08 | 291 | 0.3+ | 0.6+ |
| 1991 03 15 | 691 | 0.7− | 0.0 | 2003 01 30 | 699 | 0.9− | 0.3+ | 2003 03 08 | 291 | 0.6− | 0.5− |
| 1991 03 15 | 691 | 0.8+ | 0.1− | 2003 01 30 | 699 | 0.7+ | 0.8+ | 2003 03 12 | 644 | 0.0 | 0.9+ |
| 1999 04 19 | 691 | 0.0 | 0.6− | 2003 02 02 | 704 | 0.4− | 0.0 | 2003 03 12 | 644 | 0.0 | 0.7+ |
| 1999 04 19 | 691 | 0.7− | 0.8− | 2003 02 02 | 704 | 0.4− | 0.1+ | 2003 03 12 | 644 | 0.3+ | 0.7+ |
| 1999 04 19 | 691 | 0.3− | 0.7− | 2003 02 02 | 704 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.6− | 0.4− |
| 2000 05 03 | 688 | 0.1− | 0.7+ | 2003 02 02 | 704 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.4+ |
| 2000 05 03 | 688 | 0.5+ | 0.7+ | 2003 02 02 | 704 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.3− | 0.0 |
| 2000 05 03 | 688 | 0.3+ | 0.6+ | 2003 02 03 | 699 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.2− | 0.2− |
| 2003 01 07 | 704 | 1.2+ | 0.1− | 2003 02 03 | 699 | 0.3+ | 0.0 | 2006 11 05 | 644 | 0.0 | 0.2− |
| 2003 01 07 | 704 | 0.6+ | 0.7− | 2003 02 03 | 699 | (1.7− | 1.5+) | 2006 11 05 | 644 | 0.0 | 0.0 |
| 2003 01 07 | 704 | 0.8+ | 0.2− | 2003 02 03 | 699 | 0.7+ | 0.6+ | 2006 11 05 | 644 | 0.2− | 0.0 |
| 2003 01 07 | 704 | 0.3+ | 1.4− | 2003 02 08 | 704 | (0.1− | 2.4+) | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2003 01 08 | 704 | 0.1+ | 0.6+ | 2003 02 08 | 704 | 0.1+ | 1.4+ | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2003 01 08 | 704 | 1.0+ | 0.2+ | 2003 02 08 | 704 | 0.2− | 1.4+ | 2006 11 19 | 704 | 0.7− | 0.4− |
| 2003 01 08 | 704 | 0.5− | 0.7+ | 2003 02 21 | 644 | 1.4+ | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2003 01 27 | 699 | 0.4+ | 0.1− | 2003 02 21 | 644 | 0.5+ | 0.4+ | 2006 11 20 | 704 | 1.3+ | 1.0− |
| 2003 01 27 | 699 | 1.0− | 0.1+ | 2003 02 21 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.5− |
| 2003 01 27 | 699 | 0.1+ | 0.1+ | 2003 02 22 | 699 | (1.6− | 0.4+) | 2006 11 20 | 704 | 0.6+ | 0.7− |
| 2003 01 27 | 699 | 0.8+ | 0.1− | 2003 02 22 | 699 | 0.5+ | 0.4− | | | | |
| 2003 01 28 | 645 | 0.1− | 0.2− | 2003 02 22 | 699 | 0.3− | 0.9+ | | | | |

**(143308)∗ 2003 AQ$_{41}$ = 2001 SR$_{187}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41433)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.48423 | | | (2000.0) | | |
| $n$ | 0.27555777 | $\omega$ | 310.02269 | | −0.20121058 | −0.97807089 |
| $a$ | 2.3388064 | $\Omega$ | 151.44917 | | +0.92950713 | −0.20796545 |
| $e$ | 0.0864830 | $i$ | 6.46016 | | +0.30908057 | −0.01130074 |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.1− | 0.2− | 2003 02 03 | 704 | 0.2− | 0.2− | 2005 10 10 | 703 | 0.0 | 0.9− |
| 1996 02 10 | 691 | 0.0 | 0.3− | 2003 02 03 | 704 | 0.5− | 0.0 | 2005 10 10 | 703 | 0.5− | 0.7− |
| 1996 02 10 | 691 | 0.0 | 0.3− | 2003 02 03 | 704 | 0.8− | 0.4− | 2005 10 10 | 703 | 0.0 | 0.1− |
| 2001 08 24 | 704 | 0.1+ | 0.7+ | 2003 02 03 | 608 | 0.3− | 0.7+ | 2005 10 22 | 703 | 1.0+ | 0.5− |
| 2001 08 24 | 704 | 0.1+ | 0.8+ | 2003 02 03 | 608 | 0.5− | 0.7+ | 2005 10 22 | 703 | (0.9+ | 2.2+) |
| 2001 08 24 | 704 | 0.4− | 0.3+ | 2003 02 03 | 608 | 0.1− | 0.5+ | 2005 10 22 | 703 | 0.3+ | 1.3+ |
| 2001 09 19 | 704 | (0.8− | 2.4+) | 2003 02 08 | 704 | 0.4+ | 0.0 | 2005 10 22 | 703 | 0.8+ | 0.3+ |
| 2001 09 19 | 704 | (0.4+ | 2.2+) | 2003 02 08 | 704 | 0.5+ | 0.9− | 2005 10 22 | 644 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 1.2+ | 2003 02 08 | 704 | 0.3+ | 1.0− | 2005 10 22 | 644 | 0.0 | 0.5+ |
| 2001 09 19 | 704 | 0.2+ | 1.4+ | 2003 02 08 | 704 | 0.4+ | 0.5− | 2005 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2003 02 08 | 704 | 0.7+ | 0.6− | 2005 10 28 | 703 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.0 | 2003 02 09 | 608 | 0.2− | 1.2+ | 2005 10 28 | 703 | (0.0 | 3.0+) |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2003 02 09 | 608 | 0.0 | 1.3+ | 2005 10 28 | 703 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.4− | 2003 02 09 | 608 | 0.0 | 0.8+ | 2005 10 28 | 703 | 0.1− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.6− | 0.1− | 2003 02 21 | 644 | 0.1− | 0.6+ | 2005 11 03 | 703 | 0.2− | 0.0 |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2003 02 21 | 644 | 0.0 | 0.5+ | 2005 11 03 | 703 | 0.2+ | 0.5− |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2003 02 21 | 644 | 0.0 | 0.6+ | 2005 11 03 | 703 | 0.3− | 0.9− |
| 2003 01 07 | 704 | 0.3+ | 0.1+ | 2003 02 22 | 699 | 0.1− | 0.8+ | 2005 11 03 | 703 | 0.0 | 0.9− |
| 2003 01 07 | 704 | 0.1− | 0.8− | 2003 02 22 | 699 | 1.3− | 0.3− | 2005 11 06 | 699 | 0.4− | 0.4+ |
| 2003 01 07 | 704 | 0.5+ | 0.1+ | 2003 02 22 | 699 | 1.2− | 0.1+ | 2005 11 06 | 699 | 0.4+ | 0.5− |
| 2003 01 07 | 704 | 0.3+ | 0.2− | 2003 02 22 | 699 | 0.3+ | 0.3+ | 2005 11 06 | 699 | 0.5− | 0.1+ |
| 2003 01 08 | 704 | 0.7− | 1.2− | 2003 03 05 | 704 | 0.4− | 0.4+ | 2005 11 06 | 699 | 0.2+ | 0.5− |
| 2003 01 08 | 704 | 0.5+ | 0.3− | 2003 03 05 | 704 | 0.1− | 0.2− | 2005 11 09 | 703 | 0.4− | 0.1+ |
| 2003 01 08 | 704 | 0.2− | 0.6+ | 2003 03 05 | 704 | 0.2− | 0.5− | 2005 11 09 | 703 | 0.2− | 0.5− |
| 2003 01 17 | 644 | 0.8+ | 0.8+ | 2003 03 05 | 704 | 0.7− | 1.1+ | 2005 11 09 | 703 | (2.9− | 0.3+) |
| 2003 01 17 | 644 | 0.1− | 0.3+ | 2003 03 06 | 644 | 0.6+ | 0.3+ | 2005 11 09 | 703 | (0.1+ | 2.2+) |
| 2003 01 17 | 644 | 0.9+ | 0.0 | 2003 03 06 | 644 | 0.2+ | 0.7+ | 2005 11 28 | 644 | 0.0 | 0.2+ |
| 2003 01 31 | 704 | 0.5+ | 0.3+ | 2003 03 06 | 644 | 0.7+ | 0.3+ | 2005 11 28 | 644 | 0.4+ | 0.0 |
| 2003 01 31 | 704 | 0.4+ | 0.1+ | 2003 03 12 | 644 | 0.1+ | 0.7+ | 2005 11 28 | 644 | 0.2− | 0.4+ |
| 2003 01 31 | 704 | 0.4+ | 0.1− | 2003 03 12 | 644 | 0.0 | 0.5+ | 2005 11 29 | 703 | 0.1− | 0.9+ |
| 2003 01 31 | 704 | 0.9+ | 0.7+ | 2003 03 12 | 644 | 0.2+ | 0.2+ | 2005 11 29 | 703 | 0.0 | 0.5− |
| 2003 01 31 | 704 | 0.3+ | 0.3+ | 2003 03 12 | 644 | 0.0 | 0.3+ | 2005 11 29 | 703 | 0.1+ | 0.1+ |
| 2003 02 03 | 704 | 0.1− | 0.1− | 2003 03 12 | 644 | 0.3+ | 0.4+ | 2005 11 29 | 703 | 0.3+ | 0.4+ |
| 2003 02 03 | 704 | 0.1− | 0.3+ | 2003 03 12 | 644 | 0.4+ | 0.3+ | | | | |

**(143309)∗ 2003 AM$_{42}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.00907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27535609 | $\omega$ | 160.90221 | | +0.29573501 | −0.95233735 | |
| $a$ | 2.3399483 | $\Omega$ | 271.84117 | | +0.86641586 | +0.30037992 | |
| $e$ | 0.1709914 | $i$ | 4.29169 | | +0.40232371 | +0.05315513 | |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.0 | 0.3+ | 2003 02 19 | 644 | 0.1+ | 0.9− | 2005 10 05 | 683 | 1.3− | 0.6+ |
| 1996 03 27 | 691 | 0.2− | 0.5− | 2003 02 19 | 644 | 0.0 | 0.5− | 2005 10 06 | 699 | 0.1+ | 0.5− |
| 1996 03 27 | 691 | 0.1− | 0.2− | 2003 02 19 | 644 | 0.2+ | 0.6− | 2005 10 06 | 699 | 0.1− | 0.2− |
| 1998 11 15 | 699 | 0.8+ | 1.0+ | 2003 02 22 | 644 | 0.2+ | 0.6+ | 2005 10 06 | 703 | 0.2− | 0.1+ |
| 1998 11 15 | 699 | 0.2+ | 0.5− | 2003 02 22 | 644 | 0.4+ | 0.7+ | 2005 10 06 | 703 | 0.1− | 0.1+ |
| 1998 11 15 | 699 | 0.8+ | 1.2+ | 2003 02 22 | 644 | 0.2+ | 0.5+ | 2005 10 06 | 699 | 0.7+ | 0.6+ |
| 1999 02 14 | 691 | 0.4− | 0.9− | 2003 03 06 | 704 | 0.9+ | 0.6+ | 2005 10 06 | 683 | 1.6+ | 1.0− |
| 1999 02 14 | 691 | 0.0 | 0.7− | 2003 03 06 | 704 | 0.0 | 0.1+ | 2005 10 06 | 703 | 0.4+ | 0.1− |
| 1999 02 14 | 691 | 0.2− | 0.8− | 2003 03 06 | 704 | 0.1+ | 0.4+ | 2005 10 06 | 683 | 1.9+ | 0.9− |
| 2003 01 01 | 704 | 0.2+ | 0.0 | 2003 03 06 | 704 | 0.0 | 0.6+ | 2005 10 06 | 699 | 0.2+ | 0.1− |
| 2003 01 01 | 704 | 0.4+ | 0.1+ | 2005 08 30 | 644 | 0.0 | 0.1− | 2005 10 06 | 683 | 0.3+ | 0.6+ |
| 2003 01 01 | 704 | 0.0 | 0.7+ | 2005 08 30 | 644 | 0.1− | 0.0 | 2005 10 08 | 704 | 0.6− | 0.3+ |
| 2003 01 01 | 704 | 0.1+ | 0.8− | 2005 08 30 | 644 | 0.4− | 0.2+ | 2005 10 08 | 704 | 0.4− | 0.0 |
| 2003 01 07 | 704 | 0.3+ | 0.8+ | 2005 09 10 | 699 | 0.4− | 0.2− | 2005 10 08 | 704 | 0.3− | 0.4+ |
| 2003 01 07 | 704 | 0.9− | 0.5− | 2005 09 10 | 699 | 0.8− | 0.8+ | 2005 10 08 | 704 | 0.3− | 0.0 |
| 2003 01 07 | 704 | 0.0 | 0.0 | 2005 09 10 | 699 | 0.0 | 0.5+ | 2005 10 08 | 704 | 0.5+ | 0.5+ |
| 2003 01 08 | 704 | 1.2+ | 0.3− | 2005 09 10 | 699 | 0.7− | 0.9+ | 2005 10 11 | 704 | 0.6+ | 1.2+ |
| 2003 01 08 | 704 | 1.3+ | 0.7− | 2005 09 12 | 704 | 1.7+ | 0.1+ | 2005 10 11 | 704 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 1.8+ | 0.9− | 2005 09 12 | 704 | 0.7+ | 0.1+ | 2005 10 11 | 704 | 0.8− | 1.4− |
| 2003 01 08 | 704 | 0.7+ | 0.2+ | 2005 09 12 | 704 | 0.0 | 0.7+ | 2005 10 11 | 704 | 0.5− | 0.7+ |
| 2003 01 08 | 704 | 0.7+ | 0.6+ | 2005 09 12 | 704 | 0.0 | 0.7+ | 2005 10 27 | 699 | 0.1− | 0.4+ |
| 2003 01 17 | 644 | 0.3+ | 0.5+ | 2005 09 23 | 644 | 0.1− | 0.6− | 2005 10 27 | 699 | 0.2+ | 0.1− |
| 2003 01 17 | 644 | 0.1+ | 0.3+ | 2005 09 23 | 644 | 0.2− | 0.1+ | 2005 10 27 | 699 | 0.3+ | 0.5− |
| 2003 01 17 | 644 | 0.1+ | 0.1+ | 2005 09 23 | 644 | 0.2− | 0.2− | 2005 10 27 | 699 | 0.1− | 0.1− |
| 2003 01 27 | 704 | 0.9+ | 0.1− | 2005 09 23 | 703 | 0.1− | 0.2+ | 2005 10 28 | 703 | 0.4− | 0.6− |
| 2003 01 27 | 699 | 1.7− | 0.2+ | 2005 09 23 | 703 | 0.0 | 1.4+ | 2005 10 28 | 703 | 0.9− | 0.2− |
| 2003 01 27 | 704 | 0.2+ | 0.3+ | 2005 09 23 | 703 | 0.0 | 0.3− | 2005 10 28 | 703 | 0.3− | 0.3− |
| 2003 01 27 | 704 | 0.3− | 0.2+ | 2005 09 23 | 703 | 0.4− | 0.4+ | 2005 10 28 | 703 | 0.8− | 0.6+ |
| 2003 01 27 | 699 | 0.3− | 1.0− | 2005 09 26 | 644 | 0.2− | 0.2− | 2005 10 30 | 704 | 0.3+ | 0.5+ |
| 2003 01 27 | 699 | 0.2− | 0.3− | 2005 09 26 | 644 | 0.2− | 0.2− | 2005 10 30 | 704 | 1.0+ | 1.3+ |
| 2003 01 27 | 699 | 0.0 | 0.7+ | 2005 09 26 | 644 | 0.5− | 0.1− | 2005 10 30 | 704 | 0.7+ | 1.5+ |
| 2003 01 27 | 644 | 0.0 | 0.2− | 2005 09 29 | 683 | 1.0− | 1.7− | 2005 10 30 | 704 | 0.9+ | 0.7+ |
| 2003 01 27 | 644 | 0.4+ | 0.0 | 2005 09 29 | 699 | 0.4− | 0.6+ | 2005 11 02 | G96 | 0.1+ | 0.5− |
| 2003 01 27 | 644 | 0.4+ | 0.2+ | 2005 09 29 | 683 | (1.0− | 2.8−) | 2005 11 02 | G96 | 0.2+ | 0.5− |
| 2003 01 28 | 645 | 0.2− | 0.1− | 2005 09 29 | 699 | 0.5− | 0.7− | 2005 11 02 | G96 | 0.1− | 0.5− |
| 2003 01 28 | 645 | 0.2− | 0.1− | 2005 09 29 | 683 | 1.8− | 1.3− | 2005 11 02 | G96 | 0.0 | 0.5− |
| 2003 01 30 | 699 | 1.1+ | 0.3+ | 2005 09 29 | 699 | 0.7+ | 0.4+ | 2005 11 02 | G96 | 0.3− | 0.6− |
| 2003 01 30 | 699 | 0.6+ | 0.6+ | 2005 09 29 | 699 | 0.1+ | 0.6− | 2005 11 02 | G96 | 0.2− | 0.3− |
| 2003 01 30 | 699 | 0.0 | 0.3+ | 2005 09 30 | 683 | 1.4+ | 0.1− | 2005 11 02 | G96 | 0.1− | 0.7− |
| 2003 01 30 | 699 | 0.3+ | 0.4+ | 2005 09 30 | 683 | 0.4+ | 0.5− | 2005 11 02 | G96 | 0.1+ | 0.8− |
| 2003 02 02 | 704 | 0.4− | 1.0+ | 2005 09 30 | 683 | 0.8+ | 0.2− | 2005 11 02 | 704 | 0.0 | 0.7+ |
| 2003 02 02 | 704 | 0.7+ | 1.3+ | 2005 10 01 | 291 | 0.1− | 0.0 | 2005 11 02 | 704 | 0.5− | 0.3+ |
| 2003 02 02 | 704 | 0.4+ | 1.9+ | 2005 10 01 | 291 | 0.1− | 0.1− | 2005 11 02 | 704 | 0.2+ | 0.2− |
| 2003 02 02 | 704 | 0.0 | 0.7+ | 2005 10 01 | 291 | 0.1− | 0.1− | 2005 11 02 | 704 | 0.2+ | 0.3+ |
| 2003 02 02 | 704 | 0.1+ | 1.5+ | 2005 10 01 | 683 | 0.4− | 0.9+ | 2005 11 02 | 704 | 0.0 | 0.3+ |
| 2003 02 03 | 699 | 0.2+ | 1.5− | 2005 10 01 | 683 | 1.2+ | 1.0− | 2005 11 05 | 704 | 0.6+ | 0.9+ |
| 2003 02 03 | 699 | 0.8+ | 1.1+ | 2005 10 01 | 683 | 0.3+ | 0.0 | 2005 11 05 | 704 | 0.5− | 0.4+ |
| 2003 02 03 | 699 | 1.2− | 0.1+ | 2005 10 03 | 683 | 0.4− | 0.6− | 2005 11 05 | 704 | 0.6+ | 0.1+ |
| 2003 02 03 | 699 | 0.1− | 0.4+ | 2005 10 03 | 683 | 0.8+ | 0.5+ | 2005 11 28 | 703 | 0.6− | 0.2− |
| 2003 02 09 | 608 | 0.1+ | 0.1+ | 2005 10 03 | 683 | 0.6− | 0.0 | 2005 11 28 | 703 | 1.5− | 1.0− |
| 2003 02 09 | 608 | 0.1− | 0.1− | 2005 10 05 | 683 | 0.3− | 0.7+ | 2005 11 28 | 703 | 0.4+ | 0.0 |
| 2003 02 09 | 608 | 0.2+ | 0.1+ | 2005 10 05 | 683 | 0.2− | 0.6+ | 2005 11 28 | 703 | 0.1+ | 1.6+ |

**(143310)∗ 2003 AV$_{42}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.96684 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21281449 | $\omega$ | 62.96004 | | +0.98157942 | −0.08024144 | |
| $a$ | 2.7784458 | $\Omega$ | 301.17862 | | −0.01436551 | +0.87396087 | |
| $e$ | 0.2251869 | $i$ | 11.69255 | | +0.19051371 | +0.47932631 | |
| $P$ | 4.63 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 18 | 691 | 0.1− | 0.2+ | 2004 03 16 | 691 | 0.5+ | 0.6+ | 2006 08 31 | 704 | 0.3+ | 0.2− |
| 1994 01 18 | 691 | 0.7+ | 0.3+ | 2004 03 27 | 691 | 0.3+ | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.3+ |
| 1994 01 18 | 691 | 0.3− | 0.1− | 2004 03 27 | 691 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.3− | 0.5+ |
| 2002 12 05 | 704 | 0.5+ | 0.3− | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.7+ | 0.9+ |
| 2002 12 05 | 704 | 0.5+ | 0.3− | 2006 07 21 | 704 | 0.6+ | 1.2− | 2006 09 15 | 704 | 0.6+ | 0.8+ |
| 2002 12 05 | 704 | 0.4+ | 0.9− | 2006 07 21 | 704 | 0.2− | 0.5+ | 2006 09 15 | 704 | 0.6+ | 0.8+ |
| 2002 12 05 | 704 | 0.6+ | 0.7− | 2006 07 21 | 704 | 0.6− | 0.4+ | 2006 09 15 | 704 | 0.3+ | 1.0+ |
| 2002 12 05 | 704 | 0.9+ | 0.7− | 2006 07 21 | 704 | 1.0− | 0.8+ | 2006 09 15 | 704 | 0.5+ | 0.5+ |
| 2002 12 15 | 704 | 0.4− | 0.0 | 2006 07 21 | 704 | 0.7− | 0.7+ | 2006 09 27 | 703 | 0.9− | 0.4+ |
| 2002 12 15 | 704 | 1.0− | 0.3− | 2006 07 24 | 704 | 0.4− | 0.7+ | 2006 09 27 | 703 | 0.5− | 0.3+ |
| 2002 12 15 | 704 | 0.1+ | 1.0− | 2006 07 24 | 704 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.5+ | 0.1+ |
| 2002 12 15 | 704 | 0.1+ | 0.6− | 2006 07 24 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.8+ | 0.1+ |
| 2002 12 15 | 704 | 0.2+ | 0.3− | 2006 07 24 | 704 | 0.5− | 0.2− | 2006 09 28 | 704 | 0.5+ | 0.4− |
| 2003 01 05 | 704 | 0.2− | 0.2− | 2006 07 24 | 704 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.4+ | 0.5− |
| 2003 01 05 | 704 | 0.6− | 0.2+ | 2006 08 08 | 704 | 0.4− | 1.4+ | 2006 09 28 | 704 | 0.7− | 0.6− |
| 2003 01 05 | 704 | 0.1+ | 0.5+ | 2006 08 08 | 704 | 0.3+ | 1.1+ | 2006 09 28 | 704 | 1.3− | 0.6− |
| 2003 01 05 | 704 | 1.1− | 0.3− | 2006 08 08 | 704 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.1+ | 0.6− |
| 2003 01 09 | 704 | 0.0 | 0.1− | 2006 08 08 | 704 | 0.9− | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.1+ |
| 2003 01 09 | 704 | 0.5− | 1.4+ | 2006 08 26 | 704 | (3.1− | 0.0 ) | 2006 09 29 | 699 | 0.2+ | 0.2+ |
| 2003 01 09 | 704 | 0.0 | 0.1+ | 2006 08 26 | 704 | (1.7− | 0.2+) | 2006 09 29 | 699 | 0.2− | 0.1+ |
| 2003 01 09 | 704 | 0.5− | 0.0 | 2006 08 26 | 704 | 0.5− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2003 02 01 | 704 | (1.7− | 1.3+) | 2006 08 26 | 704 | 1.4− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.3− |
| 2003 02 01 | 704 | 0.5+ | 1.0+ | 2006 08 27 | 699 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3− |
| 2003 02 01 | 704 | 0.0 | 1.2+ | 2006 08 27 | 699 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.2− |
| 2003 02 01 | 704 | 0.4− | 1.1+ | 2006 08 27 | 699 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.4+ |
| 2003 02 01 | 704 | 0.4− | 1.1+ | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.2− |
| 2004 03 16 | 691 | 0.4+ | 0.8+ | 2006 08 31 | 704 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.9− | 0.1− |
| 2004 03 16 | 691 | 0.7+ | 0.5+ | 2006 08 31 | 704 | 0.2− | 0.2+ | | | | |

**(143311)∗ 2003 AW$_{45}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.97558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23339647 | $\omega$ | 298.17362 | | +0.98372996 | −0.14648875 | |
| $a$ | 2.6126016 | $\Omega$ | 70.40738 | | +0.17726223 | +0.88559098 | |
| $e$ | 0.2766195 | $i$ | 6.33801 | | −0.02921420 | +0.44076032 | |
| $P$ | 4.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 703 | (0.7− | 2.3+) | 2006 11 18 | 704 | 0.1+ | 0.3− |
| 2002 12 06 | 704 | 0.5− | 0.3− | 2006 09 16 | 703 | 0.2+ | 0.6− | 2006 11 18 | 704 | 0.1− | 0.6− |
| 2002 12 06 | 704 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.9+ | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.7− | 2006 09 22 | 704 | (0.9+ | 1.5−) | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.3+ | 1.0+ | 2006 09 22 | 704 | 0.5+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.4+ | 0.5− | 2006 09 22 | 704 | 0.5+ | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2002 12 11 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.8+ | 2006 11 19 | 691 | 1.3− | 0.3+ |
| 2002 12 11 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 12 14 | 704 | (0.8+ | 2.1−) | 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2002 12 14 | 704 | 0.8− | 1.3− | 2006 10 01 | 703 | 0.7+ | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 12 14 | 704 | (0.2− | 1.6+) | 2006 10 01 | 703 | 0.2+ | 0.8+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2003 01 05 | 704 | 0.2− | 0.3− | 2006 10 01 | 703 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2003 01 05 | 704 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2003 01 05 | 704 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.5− | 2006 11 27 | 691 | 1.0− | 0.4− |
| 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.4− | 1.4+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.6− |
| 2003 01 09 | 704 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 27 | H07 | 0.3+ | 0.1− |
| 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 27 | H07 | 0.2+ | 0.1− |
| 2003 01 09 | 704 | 0.6− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.1+ | 2006 11 27 | H07 | 0.1+ | 0.1+ |
| 2004 03 20 | 691 | 0.3− | 0.6− | 2006 11 15 | 703 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.4+ | 0.3+ |
| 2004 03 20 | 691 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.6+ | 0.2+ |
| 2004 03 20 | 691 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.1+ | 2006 12 01 | 704 | 0.1+ | 0.9+ |
| 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.3− | 2006 12 01 | 704 | 0.7− | 0.5+ |
| 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.2− | 2006 12 03 | 644 | 0.4+ | 0.0 |
| 2004 03 30 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 12 03 | 644 | 0.2− | 0.1+ |
| 2005 06 13 | G96 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.2+ | 0.6+ | 2006 12 03 | 644 | 0.3− | 0.0 |
| 2005 06 13 | G96 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.3− | 0.3+ | 2006 12 03 | 644 | 0.2+ | 0.1− |
| 2005 06 13 | G96 | 0.1− | 0.7+ | 2006 11 17 | 704 | 0.4+ | 0.4− | 2006 12 03 | 644 | 0.0 | 0.1+ |
| 2005 06 13 | G96 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.5− | 0.2+ | 2006 12 03 | 644 | 0.2+ | 0.2+ |
| 2006 09 16 | 703 | (1.4+ | 2.8+) | 2006 11 17 | 704 | 0.5− | 0.2− | | | | |

**(143312)∗ 2003 AB$_{47}$ = 1996 GE$_{21}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61698)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.83703 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23470011 | $\omega$ | 310.68869 | | +0.89999095 | −0.42693393 | |
| $a$ | 2.6029182 | $\Omega$ | 74.75068 | | +0.42238311 | +0.80421405 | |
| $e$ | 0.2122568 | $i$ | 5.23321 | | +0.10774414 | +0.41348177 | |
| $P$ | 4.20 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.1− | 0.1− | 2003 02 01 | 704 | (1.6− | 1.0+) | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 1996 04 13 | 691 | 0.4− | 0.0 | 2003 02 01 | 704 | 1.2− | 1.0+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1996 04 13 | 691 | 0.7− | 0.4+ | 2003 02 01 | 704 | 1.3− | 1.4+ | 2006 11 17 | 704 | 0.6+ | 0.4+ |
| 2001 07 10 | 644 | 0.6+ | 0.6+ | 2003 02 01 | 704 | 1.3− | 1.3+ | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2001 07 10 | 644 | 0.4+ | 0.7+ | 2004 03 20 | 704 | 1.5+ | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.6+ |
| 2001 07 10 | 644 | 0.5+ | 0.8+ | 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.2+ | 0.8+ | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2004 04 20 | E12 | 0.9+ | 0.6− | 2006 11 18 | 704 | 0.5+ | 1.3− |
| 2002 11 06 | 704 | 0.0 | 0.2− | 2004 04 20 | E12 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.6− |
| 2002 11 14 | 704 | 0.6− | 0.6+ | 2004 04 20 | E12 | 0.6+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2002 11 14 | 704 | 0.1+ | 0.2− | 2004 04 20 | E12 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | 0.4+ | 0.8+ | 2004 04 26 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 04 26 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.3− | 0.4− |
| 2002 12 11 | 704 | 0.4+ | 0.3− | 2004 04 26 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.1− |
| 2002 12 11 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.7+ | 2006 11 21 | 704 | 0.7− | 0.1− |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2002 12 30 | 704 | 0.6+ | 0.5+ | 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2002 12 30 | 704 | 0.4+ | 0.4− | 2006 09 20 | 704 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2002 12 30 | 704 | 0.5+ | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.3+ | 2006 11 23 | 691 | 0.5− | 0.2+ |
| 2002 12 30 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.6+ | 0.9− | 2006 09 20 | 704 | 1.0+ | 0.8− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2003 01 05 | 704 | 0.5+ | 0.8− | 2006 09 27 | 704 | 0.7+ | 0.6+ | 2006 11 27 | 704 | 0.6− | 0.8+ |
| 2003 01 05 | 704 | 0.5+ | 0.8− | 2006 09 27 | 704 | 0.8+ | 0.9+ | 2006 11 27 | 704 | 0.6− | 0.8+ |
| 2003 01 05 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 704 | 0.0 | 0.3+ | 2006 11 27 | 704 | 0.3− | 0.6+ |
| 2003 01 05 | 704 | 0.9+ | 1.0− | 2006 09 27 | 704 | 1.3+ | 0.7+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 01 09 | 704 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2003 01 09 | 704 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2003 01 09 | 704 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.4+ |
| 2003 01 09 | 704 | 0.1+ | 0.6− | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2003 01 09 | 704 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 12 01 | 704 | 0.5− | 0.2− |
| 2003 01 13 | 644 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.3− | 2006 12 01 | 704 | 0.4− | 0.3+ |
| 2003 01 13 | 644 | 0.4+ | 0.3− | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.2− | 0.5+ |
| 2003 01 13 | 644 | 0.4+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 | | | | |

**(143313)∗ 2003 AC$_{47}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.26993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18342809 | $\omega$ | 242.32152 | | −0.97509512 | +0.18838515 | |
| $a$ | 3.0677890 | $\Omega$ | 308.29925 | | −0.11092782 | −0.87125160 | |
| $e$ | 0.0340922 | $i$ | 8.57758 | | −0.19205344 | −0.45324572 | |
| $P$ | 5.37 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.3− | 0.1− | 2003 02 01 | 704 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1995 07 25 | 691 | 0.2− | 0.0 | 2003 02 01 | 704 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1995 07 25 | 691 | 0.3− | 0.0 | 2003 02 01 | 704 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 08 01 | 704 | 0.0 | 0.4+ | 2003 02 04 | 704 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2000 08 01 | 704 | 0.2+ | 0.6+ | 2003 02 04 | 704 | 0.6+ | 1.0+ | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2000 08 01 | 704 | 0.2+ | 0.5+ | 2003 02 04 | 704 | 0.6+ | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2000 08 01 | 704 | 1.1+ | 1.4+ | 2004 03 15 | 644 | 0.1− | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2000 08 23 | 734 | 0.5+ | 1.1+ | 2004 03 15 | 644 | 0.1+ | 0.9+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2000 08 23 | 734 | 0.2− | 0.8+ | 2004 03 15 | 644 | 0.2+ | 0.9+ | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 2000 08 23 | 734 | 0.7− | 1.5+ | 2004 03 26 | 704 | 0.9+ | 1.3+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2004 03 26 | 704 | 0.5+ | 1.1+ | 2006 10 19 | 691 | 0.1+ | 0.3− |
| 2001 09 25 | 704 | 0.4+ | 0.7+ | 2004 03 26 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.5− | 0.1− | 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2005 05 19 | 644 | 0.5− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 644 | 0.2+ | 0.5+ | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 10 22 | 291 | 0.1+ | 0.0 |
| 2001 10 13 | 644 | 0.6+ | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 10 22 | 291 | 0.2+ | 0.1+ |
| 2001 10 13 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.2− | 1.2− | 2006 10 22 | 291 | 0.2+ | 0.4− |
| 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.3− | 0.8− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2003 01 05 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 703 | (1.7− | 0.4−) | 2006 10 23 | 291 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.1− | 0.5+ | 2006 09 27 | 703 | (0.5+ | 1.6−) | 2006 10 23 | 291 | 0.1+ | 0.1+ |
| 2003 01 05 | 704 | 0.1+ | 1.2+ | 2006 09 27 | 703 | 0.5− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2003 01 09 | 704 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.5− | 0.2+ | 2006 10 23 | 291 | 0.1+ | 0.1+ |
| 2003 01 09 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.5+ |
| 2003 01 09 | 704 | 0.1+ | 0.0 | 2006 09 29 | 699 | (0.9− | 1.5+) | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2003 01 09 | 704 | 0.3− | 0.4+ | 2006 09 29 | 699 | (0.4+ | 2.8+) | 2006 10 28 | 691 | 0.5− | 0.1− |
| 2003 01 09 | 704 | 0.1− | 0.4+ | 2006 09 29 | 699 | 0.5− | 0.3+ | | | | |
| 2003 02 01 | 704 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.6+ | 0.3+ | | | | |

**(143314)∗ 2003 AL$_{47}$ = 2000 HP$_{17}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41435)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.45895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23413054 | $\omega$ | 13.70008 | | +0.76468630 | −0.64381678 | |
| $a$ | 2.6071379 | $\Omega$ | 26.43869 | | +0.58526257 | +0.67603365 | |
| $e$ | 0.1926023 | $i$ | 3.53775 | | +0.26967125 | +0.35843892 | |
| $P$ | 4.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 691 | 0.3− | 0.2+ | 2003 01 09 | 704 | 0.5+ | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.6− |
| 2000 04 24 | 691 | 0.2− | 0.2− | 2003 01 09 | 704 | (1.7− | 0.2−) | 2006 11 19 | 704 | (0.7− | 1.7+) |
| 2000 04 24 | 691 | 0.2− | 0.1+ | 2003 01 09 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2000 04 30 | 691 | 0.6− | 0.6− | 2003 01 09 | 704 | 1.2− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2000 04 30 | 691 | 0.2− | 0.7− | 2003 01 09 | 704 | 1.1+ | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2000 04 30 | 691 | 0.2+ | 0.6− | 2003 01 13 | 704 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.7− |
| 2001 06 27 | 644 | 0.0 | 0.5+ | 2003 01 13 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.5− | 0.5− |
| 2001 06 27 | 644 | 0.7+ | 0.4+ | 2003 01 13 | 704 | 0.7− | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.4+ |
| 2001 06 27 | 644 | 0.2+ | 1.0+ | 2003 01 13 | 704 | 0.0 | 0.5+ | 2006 11 19 | 704 | 1.2− | 0.9+ |
| 2001 07 12 | 644 | 0.2− | 0.8+ | 2003 01 13 | 704 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.7− | 0.4− |
| 2001 07 12 | 644 | 0.5− | 0.6+ | 2004 05 09 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | (1.6+ | 0.2−) |
| 2001 07 12 | 644 | 0.5− | 0.6+ | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 1.1− | 0.2− |
| 2002 12 11 | 704 | 0.9+ | 0.5+ | 2004 05 09 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2004 05 16 | 691 | 0.8+ | 0.8+ | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2002 12 11 | 704 | 0.4− | 1.1+ | 2004 05 16 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.6− |
| 2003 01 05 | 704 | 0.5+ | 1.0+ | 2004 05 16 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2003 01 05 | 704 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2003 01 05 | 704 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 11 23 | 703 | (2.5− | 0.3−) |
| 2003 01 05 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | 0.8− | 0.1− | 2006 11 23 | 703 | 0.3− | 0.4− |
| 2003 01 08 | 300 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 11 23 | 703 | 0.1− | 0.8− |
| 2003 01 08 | 300 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 23 | 703 | 0.4− | 0.4− |
| 2003 01 08 | 300 | 0.3+ | 0.9− | 2006 09 28 | G96 | 0.3− | 0.5− | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2003 01 08 | 300 | 0.3+ | 0.4− | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2003 01 09 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2003 01 09 | 704 | 0.9+ | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 2.5+ | 0.7− |
| 2003 01 09 | 704 | 0.1− | 0.4− | 2006 11 17 | 691 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.6− |
| 2003 01 09 | 704 | 0.2− | 0.6− | 2006 11 17 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 1.5+ | 1.4− |
| 2003 01 09 | 704 | 0.5− | 1.1− | 2006 11 19 | 704 | 0.5+ | 0.2+ | 2006 11 28 | 704 | 1.1+ | 0.2− |
| 2003 01 09 | 704 | 1.0+ | 0.4+ | 2006 11 19 | 704 | 0.6− | 0.2+ | 2006 11 28 | 704 | 1.6+ | 1.5− |
| 2003 01 09 | 704 | 1.2− | 0.5− | 2006 11 19 | 704 | 0.7+ | 1.0+ | | | | |

**(143315)∗ 2003 AQ$_{48}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.56508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19046830 | $\omega$ | 280.11903 | | +0.97223683 | −0.12313747 | |
| $a$ | 2.9917198 | $\Omega$ | 87.15731 | | +0.19511591 | +0.89600997 | |
| $e$ | 0.1137135 | $i$ | 11.49160 | | −0.12917168 | +0.42661844 | |
| $P$ | 5.17 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 644 | 0.3+ | 0.4+ | 2001 11 19 | 608 | 0.8− | 0.3− | 2005 05 30 | E12 | 0.7+ | 0.5+ |
| 2001 09 25 | 644 | 0.1− | 0.3+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2005 05 30 | E12 | 0.2− | 0.2+ |
| 2001 09 25 | 644 | 0.2− | 0.8+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2005 05 30 | E12 | 0.8+ | 0.0 |
| 2001 10 11 | 704 | 0.1− | 0.5+ | 2003 01 05 | 704 | (0.1+ | 2.1+) | 2005 06 05 | 704 | 1.0− | 1.2+ |
| 2001 10 11 | 704 | 0.4− | 1.1− | 2003 01 05 | 704 | (0.2− | 2.1+) | 2005 06 05 | 704 | 0.1+ | 0.5+ |
| 2001 10 11 | 704 | 0.7− | 0.7− | 2003 01 05 | 704 | (0.3− | 2.7+) | 2005 06 05 | 704 | 0.5+ | 0.6+ |
| 2001 10 11 | 704 | 0.8− | 0.0 | 2003 01 09 | 704 | 0.1+ | 0.5+ | 2005 06 05 | 704 | 0.1− | 0.8+ |
| 2001 10 19 | 699 | 0.3+ | 0.2+ | 2003 01 09 | 704 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.3+ | 0.4+ |
| 2001 10 19 | 699 | 0.5− | 0.3+ | 2003 01 09 | 704 | 0.3+ | 1.2+ | 2006 09 26 | 703 | 0.1+ | 0.5+ |
| 2001 10 19 | 699 | 0.5− | 0.3+ | 2003 02 01 | 704 | 0.6− | 0.6+ | 2006 09 26 | 703 | 0.5− | 0.1+ |
| 2001 10 19 | 699 | 1.3+ | 0.2− | 2003 02 01 | 704 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 2001 10 23 | 644 | 0.1− | 0.4+ | 2003 02 01 | 704 | 0.2+ | 0.7+ | 2006 10 12 | E12 | 0.7+ | 0.2+ |
| 2001 10 23 | 644 | 0.0 | 0.2+ | 2003 02 01 | 704 | 0.6− | 0.7+ | 2006 10 12 | E12 | 0.8+ | 0.1− |
| 2001 10 23 | 644 | 0.0 | 0.3+ | 2003 02 01 | 704 | 1.1+ | 0.4− | 2006 10 12 | E12 | 0.0 | 0.6− |
| 2001 11 07 | 644 | 0.3+ | 0.9+ | 2004 03 25 | 704 | 0.5+ | 1.1+ | 2006 10 12 | E12 | 0.4− | 1.3− |
| 2001 11 07 | 644 | 0.3+ | 0.6+ | 2004 03 25 | 704 | 0.3− | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.2− |
| 2001 11 07 | 644 | 0.4+ | 1.1+ | 2004 03 25 | 704 | (0.7+ | 1.6+) | 2006 11 19 | 703 | 0.4+ | 1.0− |
| 2001 11 19 | 608 | 0.9− | 0.2+ | 2004 03 25 | 704 | (0.0 | 2.6+) | 2006 11 19 | 703 | 0.2− | 0.2+ |
| 2001 11 19 | 608 | (1.7− | 0.1−) | 2005 05 30 | E12 | 0.5+ | 0.4+ | 2006 11 19 | 703 | 0.9− | 0.0 |

**(143316)∗ 2003 AY$_{48}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.06072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22351596 | $\omega$ | 1.00812 | | +0.86081615 | −0.50660951 | |
| $a$ | 2.6890385 | $\Omega$ | 29.58825 | | +0.46623269 | +0.74692027 | |
| $e$ | 0.1974777 | $i$ | 5.62507 | | +0.20401625 | +0.43064709 | |
| $P$ | 4.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 1997 10 30 | 704 | 0.2+ | 0.6− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.5+ | 0.4− |
| 1997 10 30 | 704 | 0.7+ | 1.0− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.5+ | 0.3− |
| 1997 10 30 | 704 | 1.4+ | 1.3− | 2006 10 12 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.5+ | 0.3− |
| 1997 12 03 | 910 | 0.0 | 0.7− | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 11 16 | 704 | (0.1− | 1.5+) |
| 1997 12 03 | 910 | 0.1+ | 0.6− | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 16 | 704 | (1.9+ | 1.6+) |
| 1997 12 03 | 910 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | (1.5+ | 4.6+) |
| 2001 07 14 | 644 | 1.0− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 1.4− | 0.1+ |
| 2001 07 14 | 644 | 0.6− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2001 07 14 | 644 | 0.8− | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.0 |
| 2001 08 12 | 644 | 0.1+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2001 08 12 | 644 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2001 08 12 | 644 | 0.2+ | 1.1+ | 2006 10 23 | 704 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 704 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 10 23 | 704 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.4− | 1.3+ |
| 2002 12 11 | 704 | 0.4+ | 0.3− | 2006 10 23 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.8+ |
| 2002 12 11 | 704 | (3.1− | 3.0−) | 2006 10 23 | 704 | 0.7+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | 0.2− | 0.4− | 2006 10 28 | 704 | (2.0+ | 0.1−) | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2002 12 14 | 704 | 0.2− | 0.5− | 2006 10 28 | 704 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 12 14 | 704 | 1.3− | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.9+ | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2002 12 31 | 699 | 0.5− | 0.1+ | 2006 10 28 | 704 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2002 12 31 | 699 | 1.3+ | 0.2+ | 2006 10 28 | 704 | 0.4− | 0.6+ | 2006 11 18 | 291 | 0.1− | 0.1+ |
| 2002 12 31 | 699 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 18 | 291 | 0.0 | 0.0 |
| 2002 12 31 | 699 | 0.8− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 18 | 291 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.0 | 0.6− | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2003 01 05 | 704 | 0.9− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2003 01 05 | 704 | 1.0+ | 1.3+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2003 01 09 | 704 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2003 01 09 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2003 01 09 | 704 | 1.4+ | 1.2+ | 2006 11 10 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2003 01 09 | 704 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.6+ |
| 2003 01 09 | 704 | 0.3− | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | (1.6+ | 0.1−) |
| 2006 08 25 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2006 08 25 | 704 | 0.8+ | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2006 08 25 | 704 | 0.6+ | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2006 08 25 | 704 | 0.6− | 0.1− | 2006 11 10 | 644 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2006 08 28 | 703 | 1.0+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.4+ |
| 2006 08 28 | 703 | 0.8− | 0.6+ | 2006 11 10 | 644 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2006 08 28 | 703 | 0.0 | 1.2+ | 2006 11 10 | 644 | 0.3− | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2006 08 28 | 703 | 1.5− | 0.8− | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.7+ |
| 2006 09 17 | 704 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2006 09 17 | 704 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.1+ |
| 2006 09 17 | 704 | 0.3+ | 0.8− | 2006 11 11 | 703 | 0.0 | 0.2− | | | | |
| 2006 09 17 | 704 | 0.1+ | 1.4+ | 2006 11 11 | 703 | 0.3+ | 0.7− | | | | |

**(143317)∗ 2003 AS$_{51}$ = 1999 FD$_{77}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 72742)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.07975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21000059 | $\omega$ | 69.03726 | | −0.40954820 | −0.91080976 | |
| $a$ | 2.8032105 | $\Omega$ | 45.25071 | | +0.80750510 | −0.38840384 | |
| $e$ | 0.0477093 | $i$ | 4.19257 | | +0.42450652 | −0.13988577 | |
| $P$ | 4.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 01 09 | 704 | 0.3− | 0.7− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 01 09 | 704 | 0.5+ | 0.5− | 2006 10 28 | 691 | 0.3+ | 0.7+ |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2003 01 09 | 704 | 0.7+ | 0.9− | 2006 10 29 | 291 | 0.2+ | 0.2+ |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2003 01 09 | 704 | 0.2− | 0.3− | 2006 10 29 | 291 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2003 01 09 | 704 | 1.1+ | 0.6− | 2006 10 29 | 291 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.7+ | 0.1+ | 2003 02 01 | 704 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.7− | 0.5− | 2003 02 01 | 704 | 0.4− | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2001 09 21 | 704 | (0.5− | 1.6−) | 2003 02 01 | 704 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2001 10 14 | 645 | 0.1− | 0.0 | 2004 05 14 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 05 14 | 691 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 05 14 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.9+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 10 17 | 644 | 0.6− | 0.4+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2001 10 17 | 644 | 0.8− | 0.6+ | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 10 17 | 644 | 0.6− | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.8− | 1.1− |
| 2001 12 10 | 645 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2001 12 10 | 645 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2002 12 11 | 704 | 0.6+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2002 12 11 | 704 | 0.8+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.5− |
| 2002 12 11 | 704 | 1.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | (1.7+ | 0.5−) |
| 2002 12 11 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2003 01 05 | 704 | 0.6− | 1.3+ | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.9− | 1.0+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2003 01 05 | 704 | 0.8+ | 0.5− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.5− | 0.6− |
| 2003 01 05 | 704 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.3− | | | | |
| 2003 01 05 | 704 | 0.6+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.4+ | | | | |

**(143318)∗ 2003 AQ$_{53}$ = 2001 TK$_{198}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41438)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.44675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21960929 | $\omega$ | 11.57519 | | +0.26745663 | −0.96135975 | |
| $a$ | 2.7208352 | $\Omega$ | 62.94037 | | +0.87810931 | +0.21530607 | |
| $e$ | 0.0514234 | $i$ | 4.20030 | | +0.39672533 | +0.17155388 | |
| $P$ | 4.49 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 1.2− | 0.7+ | 2003 01 26 | 644 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2001 09 18 | 699 | 0.3− | 0.6+ | 2003 02 01 | 704 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2001 09 18 | 699 | 0.2− | 0.8+ | 2003 02 01 | 704 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 09 18 | 699 | (0.8− | 1.9+) | 2003 02 01 | 704 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 10 11 | 704 | 0.4− | 0.2+ | 2003 02 01 | 704 | 0.4+ | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2001 10 11 | 704 | 0.6− | 1.2+ | 2003 02 01 | 704 | 0.5+ | 0.2− | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2001 10 11 | 704 | 0.1− | 0.8+ | 2004 03 27 | 291 | 0.5− | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2001 10 11 | 704 | 0.7− | 0.0 | 2004 03 27 | 291 | 0.3− | 0.6+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 10 17 | 644 | 0.1+ | 0.8+ | 2004 03 27 | 291 | 0.4− | 0.6+ | 2006 11 18 | 691 | 0.7− | 1.0+ |
| 2001 10 17 | 644 | 0.2+ | 1.0+ | 2004 04 21 | 704 | 1.4+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2001 10 17 | 644 | 0.1+ | 0.6+ | 2004 04 21 | 704 | 0.5+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2002 12 31 | 704 | 0.2− | 1.0+ | 2004 04 21 | 704 | (1.4+ | 1.5+) | 2006 11 18 | 704 | 0.5+ | 0.1− |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2004 04 22 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.5+ |
| 2002 12 31 | 704 | 0.0 | 0.7+ | 2004 04 22 | 691 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2002 12 31 | 704 | 0.8− | 0.5+ | 2004 04 22 | 691 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.8− |
| 2003 01 05 | 704 | 0.2+ | 0.6+ | 2004 05 12 | 699 | (2.2+ | 2.2−) | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2003 01 05 | 704 | 0.5+ | 0.1− | 2004 05 12 | 699 | 0.2+ | 1.0− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.7+ | 0.2− | 2004 05 12 | 699 | 0.6− | 0.8− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.8+ | 0.1− | 2004 05 12 | 699 | 0.4− | 1.0+ | 2006 11 27 | 703 | 0.1− | 1.0− |
| 2003 01 05 | 704 | 0.1+ | 0.4− | 2005 07 03 | 644 | 0.0 | 0.5+ | 2006 11 27 | 703 | 0.1− | 0.8− |
| 2003 01 09 | 704 | 0.4− | 0.0 | 2005 07 03 | 644 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.8− | 0.1− |
| 2003 01 09 | 704 | 0.6− | 0.3− | 2005 07 03 | 644 | 0.2− | 0.3+ | 2006 11 27 | 703 | 1.4+ | 0.2+ |
| 2003 01 09 | 704 | 0.4− | 0.4+ | 2006 09 28 | G96 | 0.4− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2003 01 09 | 704 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2003 01 09 | 704 | 0.2− | 0.9+ | 2006 09 28 | G96 | 1.1+ | 0.9− | 2006 12 01 | G96 | 0.1+ | 0.2+ |
| 2003 01 16 | 644 | 0.8+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 1.2− | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2003 01 16 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.4− | 2006 12 01 | 704 | 0.4− | 0.7− |
| 2003 01 16 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 12 01 | 704 | 0.4+ | 0.3− |
| 2003 01 26 | 644 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.3− |
| 2003 01 26 | 644 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.6− |

**(143319)∗ 2003 AV$_{54}$ = 2001 UW$_{27}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47251)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.60526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21156008 | $\omega$ | 58.91375 | | −0.45724762 | −0.88585114 | |
| $a$ | 2.7894178 | $\Omega$ | 58.49686 | | +0.78128355 | −0.44238828 | |
| $e$ | 0.0231068 | $i$ | 5.29564 | | +0.42487719 | −0.13985839 | |
| $P$ | 4.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 18 | J95 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.7− | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 18 | J95 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | (2.2− | 0.0 ) | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 18 | J95 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | (1.0− | 1.6+) | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 19 | 204 | 0.1+ | 0.1+ |
| 2001 10 16 | 704 | 0.3+ | 1.4+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 19 | 204 | 0.1− | 0.2+ |
| 2001 10 16 | 704 | (0.4+ | 3.1+) | 2006 10 28 | G96 | 0.0 | 0.7− | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2001 10 16 | 704 | 0.3+ | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.6+ | 1.0+ |
| 2001 10 16 | 704 | (1.0+ | 1.9+) | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2001 10 16 | 704 | 0.4+ | 0.9+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.6− | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.6− | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2001 10 20 | 704 | 1.3− | 0.5− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 1.4− | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2003 01 05 | 704 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.3+ | 2006 11 22 | 704 | (0.7+ | 1.9+) |
| 2003 01 05 | 704 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 1.2+ | 0.9+ |
| 2003 01 05 | 704 | (1.5+ | 1.9+) | 2006 11 12 | 703 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2003 01 09 | 704 | 0.4+ | 0.3+ | 2006 11 12 | 703 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.1− | 0.4− |
| 2003 01 09 | 704 | 0.2− | 0.5+ | 2006 11 12 | 703 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.4− | 1.6− |
| 2003 01 09 | 704 | 0.4+ | 0.5+ | 2006 11 12 | 703 | (0.4+ | 1.6−) | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2003 01 09 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.4+ |
| 2003 01 10 | 704 | 0.6+ | 0.4− | 2006 11 14 | 691 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.8− |
| 2003 01 10 | 704 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2003 01 10 | 704 | 1.1− | 0.8− | 2006 11 14 | 691 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.5+ |
| 2004 03 26 | 291 | 0.1− | 1.3+ | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.7+ | 0.2− |
| 2004 03 26 | 291 | 0.4+ | 0.6+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2004 03 26 | 291 | 0.3+ | 0.3+ | 2006 11 16 | 703 | 0.4− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2004 04 21 | 704 | (1.9+ | 0.2+) | 2006 11 16 | 703 | 0.5− | 0.5+ | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2004 04 21 | 704 | (2.3+ | 0.4−) | 2006 11 16 | 703 | (1.8− | 0.0 ) | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2004 04 21 | 704 | 1.1+ | 1.1+ | 2006 11 16 | 703 | 0.1+ | 0.5− | | | | |

**(143320)∗ 2003 AY$_{56}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 260.74811 | | (2000.0) | | | |
| $n$ | 0.17918893 | $\omega$ | 150.52663 | | −0.23485563 | −0.95263727 |
| $a$ | 3.1159844 | $\Omega$ | 312.31277 | | +0.83285542 | −0.09473278 |
| $e$ | 0.0505744 | $i$ | 15.14485 | | +0.50119326 | −0.28897738 |
| $P$ | 5.50 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | (1.7+ | 0.5+) | 2003 01 27 | 699 | 0.6+ | 0.0 | 2006 09 17 | 703 | 0.2− | 0.5− |
| 2001 08 23 | 704 | 1.0+ | 0.0 | 2003 01 27 | 699 | 0.9+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 0.3+ |
| 2001 08 23 | 704 | (3.1+ | 0.2+) | 2003 01 27 | 699 | 1.5+ | 0.9+ | 2006 09 18 | 703 | 0.3+ | 0.4+ |
| 2001 08 23 | 704 | (1.9+ | 0.4−) | 2003 01 27 | 699 | (0.3+ | 1.8+) | 2006 09 18 | 703 | 0.4+ | 0.1− |
| 2001 09 22 | 699 | 0.3− | 0.2+ | 2003 01 27 | 608 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.1− | 0.0 |
| 2001 09 22 | 699 | 0.2− | 0.6+ | 2003 01 27 | 608 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 1.1− | 0.2+ |
| 2001 09 22 | 699 | (0.4+ | 2.1+) | 2003 01 27 | 608 | 0.4− | 0.9+ | 2006 09 18 | G92 | 0.6+ | 0.5+ |
| 2001 09 22 | 699 | 1.1+ | 0.4+ | 2003 01 30 | 644 | 0.2+ | 0.2− | 2006 09 18 | G92 | 0.1− | 0.5+ |
| 2001 09 28 | 704 | 0.3− | 0.3− | 2003 01 30 | 644 | 0.3+ | 0.2+ | 2006 09 18 | G92 | 0.1+ | 0.3+ |
| 2001 09 28 | 704 | 0.3+ | 0.1+ | 2003 01 30 | 644 | 0.1+ | 0.9+ | 2006 09 19 | G92 | 0.0 | 0.4+ |
| 2001 09 28 | 704 | 0.8− | 0.1+ | 2003 02 02 | 608 | (0.5+ | 1.7−) | 2006 09 19 | G92 | 0.0 | 0.4+ |
| 2001 09 28 | 704 | 0.5− | 0.1− | 2003 02 02 | 608 | 0.0 | 1.1− | 2006 09 19 | G92 | 0.1− | 0.3+ |
| 2001 10 08 | 704 | (1.8+ | 0.0 ) | 2003 02 02 | 608 | 0.3+ | 0.8+ | 2006 09 21 | 699 | 0.3+ | 0.8− |
| 2001 10 08 | 704 | 0.4+ | 0.8− | 2003 02 02 | 587 | 0.0 | 0.6+ | 2006 09 21 | 699 | 0.2− | 1.2+ |
| 2001 10 08 | 704 | 0.5+ | 0.3+ | 2003 02 02 | 587 | 0.0 | 0.3+ | 2006 09 21 | 699 | 1.3− | 0.8− |
| 2001 10 20 | 699 | 0.8+ | 0.7+ | 2003 02 02 | 587 | 0.7− | 0.2+ | 2006 09 21 | 699 | (0.4+ | 1.9+) |
| 2001 10 20 | 699 | 0.1+ | 0.2+ | 2003 02 03 | 704 | (1.1− | 2.5+) | 2006 09 21 | 699 | 0.0 | 0.5+ |
| 2001 10 20 | 699 | 0.5− | 0.5+ | 2003 02 03 | 704 | 0.8− | 0.6+ | 2006 09 21 | 699 | 0.4− | 0.9+ |
| 2001 10 20 | 699 | 0.2+ | 0.1− | 2003 02 03 | 704 | 1.1+ | 0.7+ | 2006 09 21 | 699 | 1.0+ | 0.9+ |
| 2001 10 25 | 704 | 0.4+ | 0.2+ | 2004 03 25 | E12 | 1.3− | 1.2+ | 2006 09 21 | 699 | (1.7− | 3.1−) |
| 2001 10 25 | 704 | 0.6− | 0.4− | 2004 03 25 | E12 | (1.7+ | 2.0+) | 2006 09 25 | 683 | 1.2− | 0.4+ |
| 2001 10 25 | 704 | 0.7− | 0.1− | 2004 03 25 | E12 | 0.5+ | 0.9+ | 2006 09 25 | 683 | (0.7− | 3.1−) |
| 2001 10 25 | 704 | 0.3− | 0.5− | 2004 03 25 | E12 | 0.7+ | 0.6+ | 2006 09 25 | 683 | 1.1− | 1.5− |
| 2001 11 12 | 699 | 0.3+ | 0.2− | 2004 04 15 | E12 | 0.5+ | 0.8+ | 2006 09 26 | 683 | (1.9+ | 0.9−) |
| 2001 11 12 | 699 | 0.1− | 0.4+ | 2004 04 15 | E12 | 0.3+ | 0.5+ | 2006 09 26 | 683 | (3.0+ | 0.8−) |
| 2001 11 12 | 699 | 0.8− | 0.1+ | 2004 04 15 | E12 | 1.0− | 1.2+ | 2006 09 26 | 683 | (3.7+ | 0.2−) |
| 2001 11 12 | 699 | 0.2+ | 1.3− | 2004 04 15 | E12 | 1.2+ | 0.4+ | 2006 09 27 | 703 | (0.2+ | 3.1+) |
| 2001 12 09 | 704 | 0.4+ | 0.5− | 2004 04 21 | E12 | 1.4+ | 0.2− | 2006 09 27 | 703 | 0.6− | 0.1+ |
| 2001 12 09 | 704 | 0.1+ | 0.5− | 2004 04 21 | E12 | 0.8+ | 0.2+ | 2006 09 27 | 703 | 0.5− | 0.2− |
| 2001 12 09 | 704 | 0.7+ | 0.3− | 2004 04 21 | E12 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.2− | 0.3− |
| 2001 12 09 | 704 | (1.8+ | 0.5−) | 2004 04 21 | E12 | 0.2+ | 0.4− | 2006 09 28 | 683 | 0.9− | 0.6− |
| 2002 12 31 | 704 | 0.6+ | 0.1− | 2004 05 14 | E12 | 0.2+ | 0.1− | 2006 09 28 | 683 | 0.4+ | 0.6− |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2004 05 14 | E12 | 0.0 | 1.0+ | 2006 09 28 | 683 | 0.5+ | 0.7− |
| 2002 12 31 | 704 | 0.3− | 0.2− | 2004 05 14 | E12 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.2− |
| 2002 12 31 | 704 | 0.2+ | 0.3+ | 2004 05 14 | E12 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.0 | 0.8+ |
| 2002 12 31 | 704 | 0.2+ | 0.7+ | 2006 08 29 | 699 | 0.6− | 1.1+ | 2006 09 29 | 699 | 0.7− | 0.0 |
| 2003 01 05 | 704 | (1.5− | 2.1+) | 2006 08 29 | 699 | 0.2+ | 0.8+ | 2006 09 29 | 699 | 1.2+ | 1.2+ |
| 2003 01 05 | 704 | (1.5− | 0.2+) | 2006 08 29 | 699 | 0.4+ | 0.6+ | 2006 10 03 | 703 | (0.9− | 1.6+) |
| 2003 01 05 | 704 | 1.4− | 0.2+ | 2006 08 29 | 699 | 0.8− | 1.2+ | 2006 10 03 | 703 | 0.3+ | 0.3+ |
| 2003 01 05 | 704 | (2.1− | 0.7+) | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 0.1+ | 0.7− |
| 2003 01 05 | 704 | 0.6− | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 03 | 703 | 0.1− | 0.1+ |
| 2003 01 09 | 704 | 0.0 | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2003 01 09 | 704 | 0.5+ | 0.9− | 2006 09 16 | 703 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2003 01 09 | 704 | 1.0− | 0.1− | 2006 09 16 | 703 | 0.6− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2003 01 09 | 704 | 0.4+ | 1.3+ | 2006 09 16 | 703 | 0.1− | 0.4+ | 2006 10 26 | 703 | 0.0 | 0.8+ |
| 2003 01 14 | 608 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.2− | 0.4− | 2006 10 26 | 703 | 0.9+ | 0.1− |
| 2003 01 14 | 608 | 0.3+ | 0.8− | 2006 09 17 | 703 | 0.4− | 0.4+ | 2006 10 26 | 703 | 0.4+ | 0.5+ |
| 2003 01 14 | 608 | 0.1+ | 0.6− | 2006 09 17 | 703 | 0.6− | 0.2+ | 2006 10 26 | 703 | 0.5− | 0.8+ |

**(143321)∗ 2003 AP$_{57}$ = 2001 QO$_{124}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41443)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.05328 | | (2000.0) | | | |
| $n$ | 0.21563953 | $\omega$ | 319.02797 | | +0.70258753 | −0.70709498 |
| $a$ | 2.7541260 | $\Omega$ | 86.16755 | | +0.67198881 | +0.62233447 |
| $e$ | 0.2170534 | $i$ | 4.59435 | | +0.23409784 | +0.33573278 |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 13 | 691 | 0.1− | 0.3− | 2003 02 04 | 704 | 0.4+ | 1.1+ | 2006 10 27 | 704 | 1.0− | 1.4+ |
| 1994 02 13 | 691 | 0.2+ | 0.5− | 2003 02 04 | 704 | 0.5− | 0.3+ | 2006 10 27 | 704 | (0.9− | 1.5+) |
| 1994 02 13 | 691 | 0.2− | 0.5− | 2004 04 14 | 691 | 0.0 | 0.2− | 2006 10 27 | 704 | 0.7− | 0.3+ |
| 2001 08 19 | 704 | 0.1− | 1.2− | 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 10 27 | 704 | 0.0 | 0.6+ |
| 2001 08 19 | 704 | 0.6− | 0.1+ | 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 704 | (1.8− | 0.3+) |
| 2001 08 19 | 704 | 0.1− | 0.6− | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 08 25 | 704 | 0.3− | 0.1− | 2004 04 23 | 691 | 0.4+ | 0.7+ | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2001 08 25 | 704 | 0.1− | 0.6− | 2004 04 23 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2001 08 25 | 704 | 0.4+ | 0.9+ | 2006 09 29 | 699 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.4− | 1.3− |
| 2003 01 05 | 704 | 0.5+ | 0.6+ | 2006 09 29 | 699 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.9− | 0.0 | 2006 11 13 | 703 | 0.2− | 0.4+ |
| 2003 01 05 | 704 | 0.3− | 0.3− | 2006 09 29 | 699 | 0.7− | 0.5− | 2006 11 13 | 703 | 0.0 | 0.4+ |
| 2003 01 05 | 704 | 1.1+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.8+ | 0.9+ |
| 2003 01 09 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 11 14 | 704 | 0.6+ | 0.3+ |
| 2003 01 09 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.7+ | 0.0 |
| 2003 01 09 | 704 | 1.1− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.7+ |
| 2003 01 09 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.1− | 1.3+ |
| 2003 01 27 | 699 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.2+ | 0.1− |
| 2003 01 27 | 699 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.9+ | 0.1− |
| 2003 01 27 | 699 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2003 01 27 | 699 | 0.1− | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2003 01 27 | 608 | 0.2+ | 0.9− | 2006 10 20 | 644 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.7+ | 1.2+ |
| 2003 01 27 | 608 | 0.1+ | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.9+ | 1.1+ |
| 2003 01 27 | 608 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2003 01 30 | 699 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2003 01 30 | 699 | 0.9− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | (2.1− | 0.9+) |
| 2003 01 30 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.8+ |
| 2003 01 30 | 699 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.9− | 0.1− | 2006 11 20 | 704 | (2.0+ | 0.7−) |
| 2003 02 04 | 704 | (1.0− | 1.6+) | 2006 10 22 | 703 | 0.7− | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.8+ |
| 2003 02 04 | 704 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.6+ |

**(143322)∗ 2003 AV$_{57}$ = 2001 UV$_{218}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47252)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 274.22794 | | (2000.0) | | | |
| $n$ | 0.18987886 | $\omega$ | 17.28867 | | −0.20469810 | −0.96909783 |
| $a$ | 2.9979080 | $\Omega$ | 84.68952 | | +0.88092057 | −0.24369858 |
| $e$ | 0.1241928 | $i$ | 7.94633 | | +0.42670556 | +0.03821513 |
| $P$ | 5.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 03 | 691 | 0.5− | 0.1+ | 2003 01 09 | 704 | 0.1− | 0.8+ | 2003 04 26 | 645 | 0.0 | 0.0 |
| 1991 12 03 | 691 | 0.6+ | 0.2− | 2003 01 31 | 699 | 0.6− | 0.5− | 2003 04 26 | 645 | 0.0 | 0.0 |
| 2001 09 18 | 645 | 0.1+ | 0.2− | 2003 01 31 | 699 | 0.2+ | 1.1+ | 2006 08 27 | D35 | 0.0 | 0.5+ |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2003 01 31 | 699 | 0.7− | 0.0 | 2006 08 27 | D35 | 0.4+ | 0.3+ |
| 2001 10 10 | 644 | 0.0 | 0.4+ | 2003 01 31 | 699 | 0.2− | 0.7+ | 2006 08 27 | D35 | 0.1+ | 0.5+ |
| 2001 10 10 | 644 | 0.7− | 0.8+ | 2003 02 02 | 644 | 0.1+ | 0.3− | 2006 08 30 | D35 | 0.2− | 0.9+ |
| 2001 10 10 | 644 | 0.2− | 0.4+ | 2003 02 02 | 644 | 0.1+ | 0.4− | 2006 08 30 | D35 | 0.3+ | 0.8+ |
| 2001 10 23 | 644 | 0.2− | 0.8+ | 2003 02 02 | 644 | 0.5+ | 0.6− | 2006 08 30 | D35 | 0.2− | 0.5+ |
| 2001 10 23 | 644 | 0.1− | 0.7+ | 2003 02 04 | 699 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.6− |
| 2001 10 23 | 644 | 0.0 | 0.2+ | 2003 02 04 | 699 | 0.2− | 0.8+ | 2006 09 19 | 703 | 0.2+ | 0.8+ |
| 2003 01 05 | 704 | 0.5+ | 1.3− | 2003 02 04 | 699 | 1.2− | 0.7− | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2003 01 05 | 704 | 0.7+ | 0.4+ | 2003 02 04 | 699 | 0.1+ | 0.3− | 2006 09 19 | 703 | 1.1− | 0.0 |
| 2003 01 05 | 704 | 0.4+ | 1.4− | 2003 03 05 | 704 | 1.8− | 1.4+ | 2006 09 25 | 703 | (0.5− | 3.6−) |
| 2003 01 05 | 704 | 0.2+ | 1.0− | 2003 03 05 | 704 | 0.3− | 0.6+ | 2006 09 25 | 703 | 1.7− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.0 | 1.2− | 2003 03 05 | 704 | 0.0 | 1.0+ | 2006 09 25 | 703 | 0.3+ | 2.0+ |
| 2003 01 09 | 704 | 0.7+ | 0.8+ | 2003 03 07 | 644 | 0.1+ | 0.4+ | 2006 09 25 | 703 | 1.1+ | 1.8+ |
| 2003 01 09 | 704 | 1.4+ | 0.1+ | 2003 03 07 | 644 | 0.2+ | 0.6+ | | | | |
| 2003 01 09 | 704 | 0.1+ | 0.1+ | 2003 03 07 | 644 | 0.0 | 0.6+ | | | | |

**(143323)∗ 2003 AE$_{58}$**

Discovered 2003 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.04408 | | (2000.0) | | | |
| $n$ | 0.24203906 | $\omega$ | 330.43019 | | +0.61883800 | −0.77869052 |
| $a$ | 2.5500326 | $\Omega$ | 81.14314 | | +0.73967319 | +0.53336634 |
| $e$ | 0.2504339 | $i$ | 6.00379 | | +0.26442978 | +0.33039586 |
| $P$ | 4.07 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 12 | 691 | 0.2+ | 0.3+ | 2003 02 01 | 704 | 0.3− | 1.2− | 2006 10 20 | 703 | 0.6+ | 0.9+ |
| 1996 05 12 | 691 | 0.3+ | 0.3+ | 2003 02 01 | 704 | 0.6− | 0.9− | 2006 10 20 | 703 | 0.0 | 0.3+ |
| 1996 05 12 | 691 | 0.1+ | 0.1+ | 2003 02 01 | 704 | 0.6− | 1.1− | 2006 10 20 | 703 | 1.0− | 1.4− |
| 1996 05 18 | 691 | 0.9− | 0.1− | 2003 02 02 | 644 | 0.1− | 0.5− | 2006 10 20 | 703 | 0.3+ | 0.0 |
| 1996 05 18 | 691 | 0.8− | 0.0 | 2003 02 02 | 644 | 0.4− | 0.4− | 2006 10 20 | 703 | 0.2+ | 0.5− |
| 1996 05 18 | 691 | 0.6+ | 0.2+ | 2003 02 02 | 644 | 0.3− | 0.4− | 2006 10 20 | 703 | 0.6+ | 0.4+ |
| 1999 02 12 | 699 | 0.5+ | 0.2− | 2003 02 04 | 699 | 0.6− | 0.5− | 2006 10 20 | 703 | 0.7+ | 1.3+ |
| 1999 02 12 | 699 | 0.5+ | 0.5+ | 2003 02 04 | 699 | 0.3+ | 0.4− | 2006 10 20 | 703 | 0.4− | 0.8+ |
| 1999 02 12 | 699 | 1.1+ | 0.1− | 2003 02 04 | 699 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.4− | 0.4− |
| 1999 02 20 | 699 | 0.1− | 0.7+ | 2003 02 04 | 699 | 0.5− | 0.5− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 1999 02 20 | 699 | 1.7+ | 1.1+ | 2003 02 04 | 704 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.5− |
| 1999 02 20 | 699 | 0.3+ | 0.1− | 2003 02 04 | 704 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 07 20 | 644 | 0.2− | 0.4+ | 2003 02 04 | 704 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2001 07 20 | 644 | 0.4− | 0.7+ | 2003 02 04 | 704 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2001 07 20 | 644 | 0.3− | 0.7+ | 2003 02 04 | 704 | 0.9− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2002 12 06 | 608 | 0.7+ | 0.2− | 2003 02 23 | 699 | 0.1− | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 12 06 | 608 | 0.5+ | 0.0 | 2003 02 23 | 699 | 0.4− | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.9+ |
| 2002 12 06 | 608 | 0.7+ | 0.1+ | 2003 02 23 | 699 | 0.2− | 0.9+ | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2002 12 31 | 704 | 0.5+ | 0.5+ | 2003 02 23 | 699 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2002 12 31 | 704 | 0.3+ | 0.6+ | 2003 02 26 | 704 | 1.3+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2002 12 31 | 704 | 0.4+ | 0.4+ | 2003 02 26 | 704 | 0.7+ | 0.6− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 12 31 | 704 | 0.8+ | 0.5+ | 2003 02 26 | 704 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2003 02 26 | 704 | 0.2+ | 1.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2003 01 05 | 699 | 0.2+ | 0.5+ | 2003 02 26 | 704 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.4− | 1.3+ |
| 2003 01 05 | 699 | 0.8+ | 0.2− | 2003 03 05 | 704 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2003 01 05 | 699 | 0.9+ | 0.2+ | 2003 03 05 | 704 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2003 01 05 | 699 | 0.4+ | 0.0 | 2003 03 05 | 704 | 0.8− | 0.7+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2003 01 05 | 704 | 0.2− | 0.6− | 2003 03 07 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2003 01 05 | 704 | 0.2+ | 0.4− | 2003 03 07 | 644 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2003 01 05 | 704 | 0.6− | 1.0− | 2003 03 07 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.9− | 0.8− | 2004 04 22 | 704 | 0.9+ | 0.5− | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2003 01 05 | 704 | 0.4− | 0.2+ | 2004 04 22 | 704 | 0.8+ | 0.2+ | 2006 11 25 | G96 | 0.5− | 0.3− |
| 2003 01 09 | 704 | 0.2+ | 0.6+ | 2004 04 22 | 704 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2003 01 09 | 704 | 0.2− | 0.1+ | 2005 06 07 | E12 | 0.4+ | 0.2− | 2006 11 25 | G96 | 0.4− | 0.4− |
| 2003 01 09 | 704 | 0.0 | 0.1+ | 2005 06 07 | E12 | 0.8+ | 0.5+ | 2006 11 27 | 704 | 0.2− | 0.0 |
| 2003 01 09 | 704 | 0.2+ | 0.5+ | 2005 06 07 | E12 | 0.6+ | 0.3− | 2006 11 27 | 704 | 0.4− | 0.2+ |
| 2003 01 09 | 704 | 0.1+ | 0.7+ | 2005 06 07 | E12 | (1.9+ | 0.9+) | 2006 11 27 | 704 | 0.3+ | 0.2− |
| 2003 01 31 | 699 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 12 01 | 704 | 0.0 | 0.8− |
| 2003 01 31 | 699 | 0.4− | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.4+ |
| 2003 01 31 | 699 | 0.5− | 0.6− | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 12 01 | 704 | 0.9+ | 0.5+ |
| 2003 01 31 | 699 | 0.4+ | 0.4− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.4− |
| 2003 02 01 | 704 | 0.4− | 1.1− | 2006 09 24 | 691 | 0.6− | 0.0 | 2006 12 01 | 704 | 0.6+ | 0.4+ |
| 2003 02 01 | 704 | 0.3− | 0.6− | 2006 09 24 | 691 | 0.3+ | 0.2+ | | | | |

**(143324)∗ 2003 AO$_{60}$ = 2004 JX$_{54}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69428)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.46435 | | (2000.0) | | | |
| $n$ | 0.23471351 | $\omega$ | 247.48368 | | +0.41422689 | −0.91017207 |
| $a$ | 2.6028191 | $\Omega$ | 178.04321 | | +0.85229540 | +0.38722996 |
| $e$ | 0.1608303 | $i$ | 2.85371 | | +0.31938792 | +0.14710458 |
| $P$ | 4.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.1− | 0.8+ |
| 1995 03 10 | 691 | 0.6− | 0.7− | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.0 | 1.1+ |
| 1995 03 10 | 691 | 0.3− | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.2− |
| 1997 08 06 | 910 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.4− | 2006 11 15 | G96 | 0.2− | 0.5− |
| 1997 08 06 | 910 | 0.4− | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 1997 08 06 | 910 | 0.3− | 0.7+ | 2006 10 18 | 691 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 11 14 | 704 | 0.3+ | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2002 11 14 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.2− | 1.4+ |
| 2002 11 14 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | (1.8+ | 0.3+) |
| 2002 11 14 | 704 | 0.5− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2002 11 14 | 704 | 0.7− | 0.2− | 2006 11 02 | 703 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.5+ |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2002 12 11 | 704 | 0.6− | 0.2− | 2006 11 02 | 703 | 0.2− | 0.6+ | 2006 11 17 | 703 | 0.4+ | 0.1− |
| 2002 12 11 | 704 | 0.2+ | 0.7− | 2006 11 02 | 703 | 0.7− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.3− | 2006 11 02 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.6− | 0.9− |
| 2003 01 07 | 704 | 1.5− | 0.0 | 2006 11 02 | 703 | 0.2+ | 1.0− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2003 01 07 | 704 | 0.5+ | 1.3+ | 2006 11 02 | 703 | 0.9+ | 0.1+ | 2006 11 19 | 704 | 1.0− | 0.2+ |
| 2003 01 07 | 704 | 0.3− | 1.0+ | 2006 11 02 | 703 | 0.3− | 0.7− | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2003 01 07 | 704 | 0.3+ | 1.2+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2003 01 07 | 704 | 1.0− | 1.2+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.6− | 0.3+ |
| 2003 01 09 | 704 | (1.6+ | 1.1−) | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2003 01 09 | 704 | 1.4+ | 1.1− | 2006 11 08 | 644 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.8+ |
| 2003 01 09 | 704 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2004 04 12 | 691 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2004 04 12 | 691 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2004 04 12 | 691 | 0.6+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 683 | 0.3− | 0.2+ |
| 2004 04 16 | 644 | 0.1+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 22 | 683 | (1.6− | 1.1+) |
| 2004 04 16 | 644 | 0.3+ | 0.9+ | 2006 11 10 | 644 | 0.2+ | 0.2− | 2006 11 22 | 683 | 0.5+ | 0.7+ |
| 2004 04 16 | 644 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.3− | 2006 11 23 | 683 | 1.3+ | 0.7− |
| 2004 05 10 | 691 | 1.0− | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.3− | 2006 11 23 | 683 | 0.7+ | 0.2− |
| 2004 05 10 | 691 | 0.5− | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.2+ | 2006 11 23 | 683 | 0.2− | 0.0 |
| 2004 05 10 | 691 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.3+ | 2006 11 25 | 683 | 1.3− | 0.7− |
| 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.1− | 2006 11 25 | 683 | 0.9− | 0.8+ |
| 2004 05 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.5− | 2006 11 25 | 683 | 0.2− | 0.1− |
| 2004 05 19 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 11 11 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 11 11 | 644 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.4− | 0.3+ |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.8− | 0.9+ | 2006 11 28 | 704 | 1.3+ | 0.0 |
| 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 1.2− | 0.3+ |

**(143325)∗ 2003 AX$_{61}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.51345 | | (2000.0) | | | |
| $n$ | 0.19282958 | $\omega$ | 234.66840 | | −0.59793007 | −0.78446963 |
| $a$ | 2.9672464 | $\Omega$ | 252.89058 | | +0.77990467 | −0.52199550 |
| $e$ | 0.0440109 | $i$ | 9.91589 | | +0.18500901 | −0.33485533 |
| $P$ | 5.11 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.5− | 0.0 | 2003 01 07 | 704 | 0.5+ | 0.9− | 2004 04 25 | 704 | 0.3+ | 0.9+ |
| 2001 09 25 | 704 | 0.7+ | 0.8− | 2003 01 07 | 704 | 0.1− | 0.2− | 2004 04 25 | 704 | 0.7− | 0.4+ |
| 2001 09 25 | 704 | 0.2− | 0.1− | 2003 01 09 | 704 | 0.5+ | 1.5+ | 2004 04 25 | 704 | 0.5− | 0.4+ |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2003 01 09 | 704 | 0.7+ | 0.8+ | 2004 04 27 | 704 | 0.2+ | 0.1+ |
| 2001 10 13 | 644 | 0.4+ | 0.2+ | 2003 01 09 | 704 | 0.4+ | 0.5+ | 2004 04 27 | 704 | 0.1− | 0.3− |
| 2001 10 13 | 644 | 0.4+ | 0.2+ | 2003 01 10 | 704 | 0.0 | 1.5+ | 2004 04 27 | 704 | 0.2+ | 0.2+ |
| 2001 10 13 | 644 | 0.4+ | 0.3+ | 2003 01 10 | 704 | 1.2+ | 1.0+ | 2005 06 04 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 644 | 0.2+ | 0.0 | 2003 01 10 | 704 | 0.7+ | 0.7+ | 2005 06 04 | 691 | 0.0 | 0.5+ | | |
| 2001 10 20 | 644 | 0.2+ | 0.4− | 2003 01 10 | 704 | (0.3+ | 2.1+) | 2005 06 04 | 691 | 0.1− | 0.2+ | | |
| 2001 10 20 | 644 | 0.2− | 0.1− | 2003 01 10 | 704 | (0.8− | 2.1+) | 2005 06 13 | 691 | 0.0 | 0.3+ | | |
| 2001 11 17 | 704 | 0.6− | 0.6− | 2003 01 27 | 704 | 0.2− | 0.3− | 2005 06 13 | 691 | 0.0 | 0.1− | | |
| 2001 11 17 | 704 | 0.3− | 0.7− | 2003 01 27 | 704 | 0.8− | 0.3− | 2005 06 13 | 691 | 0.2− | 0.6+ | | |
| 2001 11 17 | 704 | 1.1− | 0.9+ | 2003 01 27 | 704 | 1.0− | 0.5+ | 2006 09 16 | 703 | 0.3+ | 0.9+ | | |
| 2003 01 01 | 704 | (0.3− | 2.0−) | 2003 01 27 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 1.7− | 0.2+ | | |
| 2003 01 01 | 704 | (0.1− | 2.1+) | 2003 12 25 | 413 | 0.3− | 0.2+ | 2006 09 16 | 703 | 1.0− | 1.2+ | | |
| 2003 01 01 | 704 | 0.9+ | 0.7+ | 2003 12 25 | 413 | 0.6− | 0.5+ | 2006 09 16 | 703 | 0.1+ | 0.3− | | |
| 2003 01 01 | 704 | (0.0 | 2.5+) | 2003 12 25 | 413 | 0.6− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.5+ | | |
| 2003 01 01 | 704 | 0.6− | 0.6+ | 2004 04 17 | 704 | 0.8+ | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.2+ | | |
| 2003 01 07 | 704 | 1.0+ | 0.6+ | 2004 04 17 | 704 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.4+ | | |
| 2003 01 07 | 704 | 0.1+ | 0.1+ | 2004 04 17 | 704 | (2.1+ | 0.1−) | | | | | | |

**(143326)∗ 2003 AL$_{62}$ = 2004 HN$_{50}$**

Discovered 2003 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69428)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.67381 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19433519 | $\omega$ | 155.32222 | | −0.18812156 | | +0.93640292 |
| $a$ | 2.9519008 | $\Omega$ | 102.71030 | | −0.94399587 | | −0.08914249 |
| $e$ | 0.0323559 | $i$ | 17.67905 | | −0.27107577 | | −0.33941595 |
| $P$ | 5.07 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.0 | 0.2− | 2003 02 03 | 644 | 0.2− | 0.5+ | 2004 04 26 | 704 | 0.4− | 0.6+ | | |
| 2002 12 31 | 645 | 0.1+ | 0.2− | 2003 02 03 | 644 | 0.1+ | 0.1+ | 2005 07 29 | E12 | 0.4+ | 0.3+ | | |
| 2002 12 31 | 704 | 0.7+ | 0.0 | 2003 02 03 | 644 | 0.1+ | 0.2+ | 2005 07 29 | E12 | 0.1− | 0.1+ | | |
| 2002 12 31 | 704 | 0.2− | 0.1+ | 2004 02 15 | 291 | 0.4+ | 0.7+ | 2005 07 29 | E12 | 0.4− | 1.2+ | | |
| 2002 12 31 | 704 | 0.3+ | 0.0 | 2004 02 15 | 291 | 0.5+ | 0.2+ | 2005 07 29 | E12 | 0.2− | 0.4+ | | |
| 2002 12 31 | 704 | 0.7− | 0.2− | 2004 02 15 | 291 | 0.6+ | 0.4+ | 2006 09 25 | 703 | 0.9− | 1.2+ | | |
| 2003 01 08 | 704 | (1.5− | 1.5−) | 2004 03 29 | 704 | 0.6+ | 0.7+ | 2006 09 25 | 703 | 1.4− | 0.6+ | | |
| 2003 01 08 | 704 | 1.3− | 0.1+ | 2004 03 29 | 704 | 0.3− | 0.5− | 2006 09 25 | 703 | 0.7− | 0.1+ | | |
| 2003 01 08 | 704 | 0.4− | 0.6+ | 2004 03 29 | 704 | 0.0 | 0.2+ | 2006 09 25 | 703 | 1.2− | 0.5+ | | |
| 2003 01 08 | 704 | 0.4− | 0.6+ | 2004 03 29 | 704 | 1.2− | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.9+ | | |
| 2003 01 08 | 704 | 0.3− | 1.0+ | 2004 04 23 | 703 | (0.7− | 1.5−) | 2006 10 21 | 703 | 0.5− | 0.2+ | | |
| 2003 01 09 | 704 | 0.2− | 1.3+ | 2004 04 23 | 703 | 1.2− | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.3+ | | |
| 2003 01 09 | 704 | 0.3− | 0.2+ | 2004 04 23 | 703 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.2− | 0.4+ | | |
| 2003 01 09 | 704 | 1.2+ | 1.2+ | 2004 04 23 | 703 | 1.3− | 0.6− | 2006 11 18 | 703 | 0.5− | 0.3+ | | |
| 2003 01 09 | 704 | 0.7+ | 1.0+ | 2004 04 26 | 704 | 0.2+ | 0.9+ | 2006 11 18 | 703 | 0.4+ | 1.2+ | | |
| 2003 02 01 | 704 | 1.2− | 0.6− | 2004 04 26 | 704 | 0.8+ | 0.9+ | 2006 11 18 | 703 | 2.3+ | 1.7+ | | |
| 2003 02 01 | 704 | 0.6− | 0.6+ | 2004 04 26 | 704 | 0.6+ | 0.1+ | 2006 11 18 | 703 | 0.1− | 0.5− | | |
| 2003 02 01 | 704 | 0.9+ | 0.9+ | 2004 04 26 | 704 | (0.5+ | 2.5+) | | | | | | |

**(143327)∗ 2003 AV$_{63}$ = 2002 AM$_{18}$**

Discovered 2003 Jan. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 43255)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.28802 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19240447 | $\omega$ | 196.06446 | | +0.67135902 | | +0.72020678 |
| $a$ | 2.9716154 | $\Omega$ | 116.47763 | | −0.65666038 | | +0.68744016 |
| $e$ | 0.0780405 | $i$ | 11.26581 | | −0.34361928 | | +0.09342492 |
| $P$ | 5.12 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.2− | 0.4− | 2003 01 09 | 704 | 0.7+ | 0.2− | 2006 09 25 | 699 | 0.9+ | 0.6+ | | |
| 1993 01 26 | 691 | 0.0 | 0.2− | 2003 02 03 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 703 | (1.0+ | 2.2+) | | |
| 1993 01 26 | 691 | 0.0 | 0.5− | 2003 02 03 | 704 | 0.2− | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.4− | | |
| 2000 07 07 | 704 | 0.1− | 0.5− | 2003 02 03 | 704 | 0.2− | 0.9+ | 2006 09 26 | 703 | 0.1− | 0.1− | | |
| 2000 07 07 | 704 | 0.4+ | 0.2+ | 2003 02 03 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.9− | 0.2+ | | |
| 2000 07 07 | 704 | 0.1− | 0.3+ | 2003 02 04 | 704 | 0.8− | 0.2+ | 2006 09 29 | 699 | 0.3+ | 1.2+ | | |
| 2001 09 19 | 645 | 0.1+ | 0.1− | 2003 02 04 | 704 | 0.4− | 1.1+ | 2006 09 29 | 699 | 0.0 | 0.3+ | | |
| 2001 09 19 | 645 | 0.1+ | 0.1− | 2003 02 04 | 704 | (0.6+ | 3.6+) | 2006 09 29 | 699 | 1.1+ | 0.3− | | |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.0 | 0.1− | | |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.2− | 0.1− | | |
| 2001 09 23 | 699 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.6+ | 1.0− | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 2001 09 23 | 699 | (0.1+ | 1.5+) | 2004 03 15 | 704 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2001 09 23 | 699 | 0.0 | 0.9+ | 2004 03 23 | 704 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2001 09 23 | 699 | 0.8− | 1.1+ | 2004 03 23 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2001 10 23 | 699 | 0.6− | 0.4− | 2004 03 23 | 704 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2001 10 23 | 699 | (0.2− | 1.5+) | 2004 03 23 | 704 | 0.3− | 0.8+ | 2006 10 12 | 644 | 0.4− | 0.2+ | | |
| 2001 10 23 | 699 | 0.6− | 0.3− | 2004 03 23 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2001 10 23 | 699 | 0.3− | 0.2+ | 2004 04 15 | 704 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2001 10 23 | 644 | 0.2− | 0.5+ | 2004 04 15 | 704 | 0.6+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2001 10 23 | 644 | 0.1− | 0.4+ | 2004 04 15 | 704 | (3.0+ | 0.2−) | 2006 10 12 | 644 | 0.3− | 0.2+ | | |
| 2001 10 23 | 644 | 0.0 | 0.3+ | 2004 04 25 | 699 | (0.2+ | 1.6+) | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2002 01 02 | 209 | (1.9+ | 1.3+) | 2004 04 25 | 699 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.1− | 1.0− | | |
| 2002 01 02 | 209 | 0.0 | 0.5− | 2004 04 25 | 699 | 1.1− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.0 | | |
| 2002 01 02 | 209 | 0.2− | 0.3− | 2004 04 25 | 699 | 0.9+ | 0.3− | 2006 10 17 | 703 | 0.1− | 0.0 | | |
| 2002 01 08 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.5− | 0.5− | | |
| 2002 01 08 | 645 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.2+ | | |
| 2002 01 10 | 209 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.9− | 0.1+ | | |
| 2002 01 10 | 209 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.5+ | 2006 10 17 | 703 | 0.8− | 0.4− | | |
| 2002 01 10 | 209 | 0.5+ | 0.5+ | 2006 09 21 | 699 | 0.9− | 1.5+ | 2006 10 17 | 703 | 0.4− | 0.5− | | |
| 2003 01 08 | 704 | (1.9+ | 0.8+) | 2006 09 21 | 699 | 1.0+ | 0.9+ | 2006 10 28 | 703 | 0.0 | 0.1− | | |
| 2003 01 08 | 704 | 0.3+ | 0.0 | 2006 09 21 | 699 | 0.9+ | 0.7+ | 2006 10 28 | 703 | 0.3− | 0.7+ | | |
| 2003 01 08 | 704 | 0.5+ | 0.2+ | 2006 09 21 | 699 | 0.9+ | 0.3− | 2006 10 28 | 703 | 0.6− | 0.3− | | |
| 2003 01 09 | 704 | (0.2− | 1.6+) | 2006 09 25 | 699 | 0.9+ | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.3+ | | |
| 2003 01 09 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 699 | 0.0 | 0.1− | | | | | | |
| 2003 01 09 | 704 | 0.5+ | 1.1+ | 2006 09 25 | 699 | 0.1+ | 1.1+ | | | | | | |

**(143328)∗ 2003 AD$_{64}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.44427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24176996 | $\omega$ | 348.98519 | | −0.51416659 | | −0.85505671 |
| $a$ | 2.5519245 | $\Omega$ | 131.91782 | | +0.79361614 | | −0.50399205 |
| $e$ | 0.1828860 | $i$ | 5.17851 | | +0.32527855 | | −0.12194276 |
| $P$ | 4.08 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 20 | 704 | 0.6+ | 1.6− | 2003 01 27 | 704 | 1.1+ | 0.6+ | 2006 10 01 | 703 | 0.5+ | 0.7+ | | |
| 1999 01 20 | 704 | 0.1+ | 1.6+ | 2003 02 02 | 704 | 0.8− | 0.4+ | 2006 11 02 | 703 | (2.0+ | 1.9+) | | |
| 1999 01 20 | 704 | 0.5− | 0.3− | 2003 02 02 | 704 | 1.3− | 0.2+ | 2006 11 02 | 703 | 0.1+ | 0.5− | | |
| 1999 01 20 | 704 | (5.8− | 3.0−) | 2003 02 02 | 704 | 0.9− | 0.3+ | 2006 11 02 | 703 | (2.2− | 0.4−) | | |
| 2002 12 01 | 704 | 0.7− | 0.3+ | 2003 02 02 | 704 | 0.9− | 0.8+ | 2006 11 02 | 703 | 1.5− | 0.8+ | | |
| 2002 12 01 | 704 | 0.9− | 0.5− | 2004 04 30 | 691 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.7− | | |
| 2002 12 01 | 704 | 0.8− | 0.3+ | 2004 04 30 | 691 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.5+ | 0.9+ | | |
| 2002 12 11 | 704 | (1.3− | 2.4+) | 2004 04 30 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.3+ | | |
| 2002 12 11 | 704 | (0.5− | 1.6+) | 2004 05 18 | 704 | 1.0+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.4+ | | |
| 2002 12 11 | 704 | (2.0− | 1.6+) | 2004 05 18 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 1.3− | 0.1− | | |
| 2002 12 11 | 704 | 0.3− | 1.4+ | 2004 05 18 | 704 | 1.0+ | 1.3+ | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2002 12 31 | 704 | 0.6+ | 0.0 | 2004 05 18 | 704 | 1.0+ | 1.3+ | 2006 11 18 | 704 | 0.5− | 0.3− | | |
| 2002 12 31 | 704 | 0.4+ | 0.2+ | 2004 05 18 | 704 | 1.1+ | 0.3+ | 2006 11 20 | 704 | 1.3− | 0.5− | | |
| 2002 12 31 | 704 | 0.9+ | 0.1+ | 2004 06 10 | 599 | 1.1− | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.2− | | |
| 2003 01 07 | 704 | 0.3− | 0.4+ | 2004 06 10 | 599 | 1.2− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.1+ | | |
| 2003 01 07 | 704 | 0.4− | 0.2+ | 2004 06 10 | 599 | 0.9− | 0.6+ | 2006 11 20 | 704 | 1.0+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.4− | 0.4+ | 2004 06 10 | 599 | 1.2− | 0.2+ | 2006 11 25 | 704 | 0.9+ | 0.4+ | | |
| 2003 01 07 | 704 | 0.1+ | 0.6+ | 2005 07 05 | 291 | 0.3− | 0.3+ | 2006 11 25 | 704 | 1.0+ | 2.2+ | | |
| 2003 01 07 | 704 | 0.1− | 0.2+ | 2005 07 05 | 291 | 0.0 | 0.2+ | 2006 11 25 | 704 | 0.3+ | 0.6+ | | |
| 2003 01 10 | 704 | 0.3+ | 1.2− | 2005 07 05 | 291 | 0.3− | 0.2+ | 2006 11 25 | 704 | 0.3+ | 0.3+ | | |
| 2003 01 10 | 704 | (1.0+ | 2.3−) | 2005 08 06 | 644 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.1+ | | |
| 2003 01 10 | 704 | (0.1+ | 2.2−) | 2005 08 06 | 644 | 0.4+ | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.1+ | | |
| 2003 01 27 | 704 | 0.8+ | 0.2+ | 2005 08 06 | 644 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.1− | 0.2+ | | |
| 2003 01 27 | 704 | 1.2+ | 0.2+ | 2006 10 01 | 703 | 0.5− | 0.5+ | 2006 11 28 | 704 | 0.0 | 0.0 | | |
| 2003 01 27 | 704 | 1.4+ | 0.4+ | 2006 10 01 | 703 | 0.3+ | 1.0− | 2006 11 28 | 704 | 0.1− | 0.2− | | |
| 2003 01 27 | 704 | (1.8+ | 1.0−) | 2006 10 01 | 703 | 0.1− | 0.3− | | | | | | |

**(143329)∗ 2003 $AP_{64}$ = 1997 $XH_6$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47253)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 245.91375 | | (2000.0) | | | |
| $n$ | 0.21866013 | $\omega$ | 110.26129 | | −0.94621917 | −0.25293685 |
| $a$ | 2.7287033 | $\Omega$ | 55.60025 | | +0.11812307 | −0.85056569 |
| $e$ | 0.1429952 | $i$ | 14.15102 | | +0.30119135 | −0.46104335 |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 691 | 0.7− | 0.4− | 2004 05 15 | 704 | 0.7+ | 0.7− | 2006 10 15 | D35 | 0.3+ | 0.2+ |
| 1997 11 02 | 691 | 0.1+ | 0.7− | 2004 05 15 | 704 | 0.6+ | 0.4− | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 1997 11 02 | 691 | 0.1+ | 0.6− | 2004 05 15 | 704 | (2.0− | 1.3−) | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 1997 12 05 | 910 | 0.9+ | 0.1− | 2004 05 15 | 704 | 0.3+ | 1.1− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 1997 12 05 | 910 | 1.0+ | 0.1− | 2004 05 16 | 704 | (1.6+ | 0.1−) | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 1997 12 05 | 910 | 1.0+ | 0.1+ | 2004 05 16 | 704 | 1.0+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 1997 12 07 | 910 | 1.6+ | 0.5− | 2004 05 16 | 704 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 1997 12 07 | 910 | 0.9+ | 0.5− | 2004 05 16 | 704 | 0.9+ | 0.8− | 2006 11 08 | 644 | 0.3+ | 0.6+ |
| 1997 12 07 | 910 | 1.3+ | 0.4− | 2004 05 16 | E12 | 0.6− | 0.2+ | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2004 05 16 | E12 | 0.9− | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2004 05 16 | E12 | 0.2+ | 0.9+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2004 05 16 | E12 | 0.4− | 0.9+ | 2006 11 09 | 644 | 0.3+ | 0.6+ |
| 2002 12 15 | 704 | 0.1+ | 1.0+ | 2004 05 18 | 704 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2002 12 15 | 704 | 0.3− | 0.4− | 2004 05 18 | 704 | 0.2− | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2002 12 15 | 704 | 0.1+ | 0.3+ | 2004 05 18 | 704 | 0.6− | 0.6− | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2002 12 15 | 704 | 0.9− | 0.2− | 2004 05 18 | 704 | 0.6− | 1.3+ | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2003 01 07 | 704 | 0.1− | 0.0 | 2004 06 12 | E12 | (0.9− | 2.2+) | 2006 11 12 | G96 | 0.4+ | 0.4− |
| 2003 01 07 | 704 | 0.9+ | 0.4+ | 2004 06 12 | E12 | 0.4− | 0.9+ | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2003 01 07 | 704 | 0.5+ | 0.2+ | 2004 06 12 | E12 | (0.6− | 1.7+) | 2006 11 21 | 704 | 0.3+ | 0.5− |
| 2003 01 10 | 704 | 0.5− | 0.6− | 2004 06 12 | E12 | 0.5− | 1.2+ | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2003 01 10 | 704 | 0.7+ | 0.5− | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 27 | 703 | 1.6− | 0.5− |
| 2003 01 10 | 704 | 0.0 | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.3+ | 0.7+ |
| 2003 01 10 | 704 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.3− | 1.2− |
| 2004 05 14 | 599 | 0.5− | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 27 | 703 | 0.9− | 0.3− |
| 2004 05 14 | 599 | 0.7+ | 1.3− | 2006 10 15 | D35 | 0.1− | 0.4+ | | | | |
| 2004 05 15 | 704 | 0.3+ | 0.7− | 2006 10 15 | D35 | 0.6− | 0.3+ | | | | |

**(143330)∗ 2003 $AL_{65}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 287.08702 | | (2000.0) | | | |
| $n$ | 0.23370663 | $\omega$ | 113.18726 | | −0.92502423 | −0.36128435 |
| $a$ | 2.6102896 | $\Omega$ | 45.86769 | | +0.26019857 | −0.82782729 |
| $e$ | 0.2575001 | $i$ | 9.42144 | | +0.27681560 | −0.42915683 |
| $P$ | 4.22 | $H$ | 14.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 0.1+ | 0.7+ | 2002 12 15 | 704 | 0.5+ | 1.0+ | 2003 03 31 | 704 | 0.6+ | 0.4− |
| 1999 02 23 | 699 | 0.5+ | 0.3+ | 2002 12 15 | 704 | 0.5+ | 1.3+ | 2003 03 31 | 704 | 0.1+ | 0.0 |
| 1999 02 23 | 699 | 0.0 | 0.1+ | 2002 12 29 | 704 | 0.3+ | 0.0 | 2003 03 31 | 704 | 0.6+ | 0.4− |
| 1999 04 07 | 699 | 0.7+ | 0.3+ | 2002 12 29 | 704 | 0.3+ | 0.4− | 2003 03 31 | 704 | 0.1− | 1.0+ |
| 1999 04 07 | 699 | 0.2− | 1.2+ | 2002 12 29 | 704 | (1.7+ | 1.4−) | 2003 03 31 | 704 | 1.0+ | 0.3+ |
| 1999 04 07 | 699 | 0.7− | 1.3+ | 2003 01 07 | 704 | 0.3− | 0.3− | 2003 04 03 | 704 | 0.1− | 0.5+ |
| 1999 05 08 | 704 | 1.7+ | 0.4+ | 2003 01 07 | 704 | 0.0 | 0.2− | 2003 04 03 | 704 | 1.1+ | 0.2+ |
| 1999 05 08 | 704 | 1.3− | 1.1+ | 2003 01 07 | 704 | 0.3− | 0.3− | 2003 04 03 | 704 | 0.2− | 0.3− |
| 1999 05 08 | 704 | 0.9− | 1.5− | 2003 01 07 | 704 | 0.3− | 0.4− | 2003 04 03 | 704 | 1.0+ | 0.9+ |
| 1999 05 08 | 704 | 1.2+ | 0.3+ | 2003 01 07 | 704 | 0.2+ | 0.4− | 2005 08 27 | 644 | 0.2− | 0.4+ |
| 2001 10 11 | 734 | 0.0 | 0.4+ | 2003 01 10 | 704 | 0.7− | 0.0 | 2005 08 27 | 644 | 0.3− | 0.3+ |
| 2001 10 11 | 734 | 0.1− | 0.8+ | 2003 01 10 | 704 | 0.1+ | 0.0 | 2005 08 27 | 644 | 0.1+ | 0.1− |
| 2001 10 24 | 644 | 0.7− | 0.7+ | 2003 01 10 | 704 | 0.4− | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.1− |
| 2001 10 24 | 644 | 0.1− | 1.0+ | 2003 01 10 | 704 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 10 24 | 644 | 0.7− | 1.0+ | 2003 01 10 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.4− | 0.4+ |
| 2002 11 12 | 704 | 0.2+ | 0.8+ | 2003 01 13 | 704 | 0.2+ | 0.3− | 2006 11 15 | 704 | 0.5− | 0.1− |
| 2002 11 12 | 704 | 1.1+ | 0.4+ | 2003 01 13 | 704 | 0.2+ | 0.7− | 2006 11 15 | 704 | 0.4− | 0.5+ |
| 2002 11 12 | 704 | 0.1+ | 0.1+ | 2003 01 13 | 704 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.6− | 0.6+ |
| 2002 11 12 | 704 | 0.1− | 0.2− | 2003 01 13 | 704 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.6+ | 0.7− |
| 2002 11 28 | 699 | (0.8− | 1.8+) | 2003 01 13 | 704 | 0.6− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2002 11 28 | 699 | 0.4− | 0.2− | 2003 02 02 | 704 | 0.3− | 0.6− | 2006 11 16 | 704 | 0.2− | 0.8− |
| 2002 11 28 | 699 | 0.8− | 0.2+ | 2003 02 02 | 704 | 0.0 | 0.7− | 2006 11 16 | 704 | 0.6− | 0.3− |
| 2002 11 28 | 699 | 0.7− | 0.2+ | 2003 02 02 | 704 | 0.1− | 0.8− | 2006 11 16 | 704 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.1− | 0.5− | 2003 02 02 | 704 | 0.0 | 0.8− | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.4− | 2003 02 02 | 704 | 0.3− | 0.7− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2003 03 09 | 699 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.4− | 2003 03 09 | 699 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2002 12 05 | 704 | 0.0 | 0.7− | 2003 03 09 | 699 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2002 12 10 | 704 | 0.1− | 1.1+ | 2003 03 09 | 699 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2002 12 10 | 704 | 0.1+ | 1.1− | 2003 03 31 | 704 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2002 12 10 | 704 | 0.2+ | 0.9− | 2003 03 31 | 704 | 0.9+ | 1.1+ | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2002 12 15 | 704 | 0.8+ | 0.7+ | 2003 03 31 | 704 | 1.0− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.8+ |
| 2002 12 15 | 704 | 0.6+ | 1.4+ | 2003 03 31 | 704 | 0.6+ | 1.4− | 2006 11 29 | 704 | 0.5+ | 0.1+ |
| 2002 12 15 | 704 | 0.6+ | 1.1+ | 2003 03 31 | 704 | 0.4− | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.8− |

**(143331)∗ 2003 $AN_{65}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.00557 | | (2000.0) | | | |
| $n$ | 0.20044988 | $\omega$ | 10.98364 | | +0.91000592 | −0.41245468 |
| $a$ | 2.8915598 | $\Omega$ | 13.60985 | | +0.36554563 | +0.75031944 |
| $e$ | 0.3088296 | $i$ | 10.30046 | | +0.19561600 | +0.51662547 |
| $P$ | 4.92 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.2− | 0.1− | 2003 01 10 | 704 | 0.8+ | 0.0 | 2006 07 29 | E12 | 0.5− | 0.4+ |
| 1994 03 10 | 691 | 0.1− | 0.2− | 2003 01 13 | 704 | 0.5+ | 0.5+ | 2006 08 12 | E12 | 0.4− | 0.0 |
| 2002 11 28 | 699 | 1.0− | 0.4+ | 2003 01 13 | 704 | 0.8+ | 0.2− | 2006 08 12 | E12 | 0.5+ | 0.2− |
| 2002 11 28 | 699 | 0.2− | 1.4− | 2003 01 13 | 704 | 0.4+ | 1.0+ | 2006 08 12 | E12 | 0.8− | 0.8+ |
| 2002 11 28 | 699 | 0.3+ | 0.5+ | 2003 01 13 | 704 | 1.1+ | 0.2− | 2006 08 12 | E12 | 0.4+ | 0.3+ |
| 2002 11 28 | 699 | 1.4− | 0.9+ | 2003 01 31 | 699 | 0.1+ | 0.2+ | 2006 08 26 | E12 | 0.2+ | 0.7+ |
| 2002 12 15 | 704 | 0.5+ | 1.0+ | 2003 01 31 | 699 | 0.5+ | 1.0+ | 2006 08 26 | E12 | 0.1− | 0.3− |
| 2002 12 15 | 704 | 0.2− | 0.7+ | 2003 01 31 | 699 | 0.7+ | 1.3+ | 2006 08 26 | E12 | 0.2− | 0.5+ |
| 2002 12 15 | 704 | 0.1− | 0.5+ | 2003 01 31 | 699 | 0.1+ | 1.5+ | 2006 08 26 | E12 | 0.2+ | 0.1+ |
| 2002 12 15 | 704 | 0.3− | 0.8+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 12 | E12 | 0.3+ | 0.7+ |
| 2002 12 31 | 699 | 0.1+ | 0.2+ | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 12 | E12 | 0.2+ | 0.2+ |
| 2002 12 31 | 699 | 0.3+ | 0.2+ | 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 09 12 | E12 | 0.1+ | 0.1+ |
| 2002 12 31 | 699 | 0.3+ | 0.3− | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 09 12 | E12 | 0.4+ | 0.2+ |
| 2002 12 31 | 699 | 0.4− | 0.2+ | 2004 03 29 | 691 | 0.1+ | 0.8+ | 2006 09 12 | E12 | 0.0 | 0.2+ |
| 2003 01 07 | 704 | 0.5− | 0.7+ | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 09 12 | E12 | 1.1− | 0.3+ |
| 2003 01 07 | 704 | 0.3− | 0.4+ | 2006 07 26 | E12 | 0.2− | 0.5+ | 2006 09 12 | E12 | 0.4− | 1.6+ |
| 2003 01 07 | 704 | 0.5− | 0.7+ | 2006 07 26 | E12 | 0.5+ | 0.2+ | 2006 09 12 | E12 | 0.6− | 1.1+ |
| 2003 01 07 | 704 | 0.6− | 0.7+ | 2006 07 26 | E12 | 0.4− | 0.0 | 2006 09 27 | E12 | 0.2+ | 1.6+ |
| 2003 01 10 | 704 | 0.1+ | 0.0 | 2006 07 26 | E12 | 0.2− | 0.4+ | 2006 09 27 | E12 | 0.5− | 0.3− |
| 2003 01 10 | 704 | 0.4+ | 0.8− | 2006 07 29 | E12 | 0.2− | 0.5+ | 2006 09 27 | E12 | 0.2− | 0.2− |
| 2003 01 10 | 704 | 0.5+ | 0.6− | 2006 07 29 | E12 | 0.2− | 0.3+ | 2006 09 27 | E12 | 0.3+ | 0.3+ |
| 2003 01 10 | 704 | 0.6+ | 0.1− | 2006 07 29 | E12 | 0.2− | 1.3+ | | | | |

**(143332)∗ 2003 $AD_{66}$ = 1997 $PE_1$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41452)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.93592 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23380067 | $\omega$ | 212.67498 | | +0.94839625 | −0.31575942 | |
| $a$ | 2.6095896 | $\Omega$ | 165.64525 | | +0.31021025 | +0.90500038 | |
| $e$ | 0.2954370 | $i$ | 6.71549 | | +0.06568222 | +0.28507947 | |
| $P$ | 4.22 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 11 | 910 | 0.3+ | 0.2+ | 2003 01 07 | 704 | 0.2− | 0.8+ | 2006 10 03 | 704 | 0.8+ | 0.1+ |
| 1997 07 11 | 910 | 0.1+ | 0.4+ | 2003 01 07 | 704 | (0.2− | 1.7+) | 2006 10 03 | 704 | 0.5+ | 0.0 |
| 1997 07 11 | 910 | 0.0 | 0.5+ | 2003 01 07 | 704 | (1.0+ | 1.9+) | 2006 10 03 | 704 | 1.2+ | 0.2+ |
| 1997 08 06 | 784 | 0.0 | 0.5+ | 2003 01 10 | 704 | 1.0+ | 0.4+ | 2006 10 22 | D35 | 0.2− | 0.1− |
| 1997 08 06 | 784 | 0.0 | 0.2+ | 2003 01 10 | 704 | 0.8+ | 0.8+ | 2006 10 22 | D35 | 0.2− | 0.1− |
| 1997 08 06 | 784 | 0.1+ | 0.2+ | 2003 01 10 | 704 | 0.6+ | 0.2+ | 2006 10 22 | D35 | 0.2− | 0.2− |
| 1997 08 06 | 784 | 0.2+ | 0.1+ | 2003 01 11 | 704 | 0.2+ | 0.1− | 2006 11 19 | 704 | 1.4− | 0.2− |
| 1997 08 07 | 784 | 0.7− | 0.0 | 2003 01 11 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.7− | 0.0 |
| 1997 08 07 | 784 | 0.5− | 0.6+ | 2003 01 11 | 704 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.2− |
| 1997 08 07 | 784 | 0.2− | 0.1+ | 2003 01 12 | 704 | 0.5+ | 0.7− | 2006 11 25 | 704 | 0.7− | 0.2− |
| 1997 08 07 | 784 | 0.0 | 0.0 | 2003 01 12 | 704 | 0.1+ | 0.1− | 2006 11 25 | 704 | 0.4+ | 0.2− |
| 2002 12 05 | 644 | 0.1− | 0.0 | 2003 01 12 | 704 | 0.2− | 1.1+ | 2006 11 25 | 704 | 1.3− | 1.0+ |
| 2002 12 05 | 644 | 0.3− | 0.1− | 2003 01 24 | 644 | 0.1− | 0.4+ | 2006 11 25 | 704 | 1.4− | 0.5− |
| 2002 12 05 | 644 | 0.2− | 0.1+ | 2003 01 24 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.2− |
| 2002 12 11 | 704 | (2.0+ | 1.5+) | 2003 01 24 | 644 | 0.1− | 0.6+ | 2006 11 28 | 704 | 0.0 | 1.6+ |
| 2002 12 11 | 704 | (2.2+ | 2.4+) | 2003 01 27 | 704 | 0.4− | 0.9− | 2006 11 28 | 704 | 0.9− | 1.4+ |
| 2002 12 11 | 704 | (2.2+ | 1.4+) | 2003 01 27 | 704 | 0.4− | 0.7− | 2006 11 29 | 704 | 0.1− | 1.1+ |
| 2003 01 01 | 704 | (1.6− | 0.1−) | 2003 01 27 | 704 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.6+ | 0.7+ |
| 2003 01 01 | 704 | 0.0 | 0.8+ | 2003 01 27 | 704 | 0.5− | 1.3− | 2006 11 29 | 704 | 0.5+ | 0.0 |
| 2003 01 01 | 704 | (1.0+ | 1.7+) | 2005 06 08 | 691 | 0.0 | 0.6+ | 2006 11 29 | 704 | 2.5+ | 0.7+ |
| 2003 01 01 | 704 | 0.3− | 0.7+ | 2005 06 08 | 691 | 0.3+ | 0.6+ | | | | |
| 2003 01 07 | 704 | 0.7+ | 1.2+ | 2005 06 08 | 691 | 0.0 | 0.5+ | | | | |

**(143333)∗ 2003 AJ$_{66}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.28296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20707331 | $\omega$ | 90.43377 | | −0.72498846 | −0.66404672 | |
| $a$ | 2.8295669 | $\Omega$ | 47.97026 | | +0.49227582 | −0.68524972 | |
| $e$ | 0.0226617 | $i$ | 14.25054 | | +0.48172218 | −0.29912333 | |
| $P$ | 4.76 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.7− | 0.2+ | 2003 01 13 | 704 | 0.8+ | 0.5− | 2004 04 20 | 703 | (0.2+ | 1.6+) |
| 2001 09 25 | 704 | (1.7− | 1.1+) | 2003 01 13 | 704 | 0.3− | 0.9− | 2004 04 20 | 704 | 0.1+ | 0.7+ |
| 2001 09 25 | 704 | 0.4− | 0.0 | 2003 01 13 | 704 | 0.5+ | 0.4− | 2004 04 20 | 703 | 0.2+ | 0.6+ |
| 2001 09 25 | 704 | 1.0− | 0.3+ | 2003 01 13 | 704 | 0.8+ | 1.0− | 2004 04 20 | 704 | 0.6+ | 0.6+ |
| 2001 10 15 | 644 | 0.3− | 0.8+ | 2003 01 13 | 704 | 0.9+ | 0.3− | 2004 04 20 | 703 | 0.2+ | 0.6+ |
| 2001 10 15 | 644 | 0.2− | 0.8+ | 2003 01 31 | 644 | 0.1− | 0.2+ | 2004 04 22 | 704 | 1.0+ | 0.3+ |
| 2001 10 15 | 644 | 0.5− | 0.5+ | 2003 01 31 | 644 | 0.4− | 0.3+ | 2004 04 22 | 704 | 1.0− | 1.0+ |
| 2001 10 23 | 644 | (0.6+ | 1.9+) | 2003 01 31 | 644 | 0.4− | 0.3+ | 2004 04 22 | 704 | 0.6− | 0.5+ |
| 2001 10 23 | 644 | 0.3+ | 1.3+ | 2004 03 22 | 850 | 0.9− | 0.4− | 2004 04 22 | 704 | 0.0 | 0.6+ |
| 2001 10 23 | 644 | (0.3+ | 1.7+) | 2004 03 22 | 850 | 0.1− | 1.1+ | 2006 09 20 | 699 | (1.8+ | 0.6+) |
| 2002 12 06 | 704 | 0.1+ | 0.7− | 2004 03 23 | 850 | 0.2− | 0.2− | 2006 09 20 | 699 | 0.4+ | 1.1+ |
| 2002 12 06 | 704 | 0.3+ | 1.0− | 2004 03 23 | 850 | 1.1− | 1.5− | 2006 09 20 | 699 | 0.1− | 0.8+ |
| 2002 12 06 | 704 | 0.0 | 0.7− | 2004 03 30 | 704 | 0.9+ | 0.1+ | 2006 09 20 | 699 | (0.7− | 1.9+) |
| 2002 12 15 | 704 | 0.6− | 0.3− | 2004 03 30 | 704 | 1.0+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2002 12 15 | 704 | 0.2+ | 0.3+ | 2004 03 30 | 704 | 0.8+ | 0.5− | 2006 10 11 | 644 | 0.4− | 0.4+ |
| 2002 12 15 | 704 | 0.4+ | 0.3− | 2004 03 30 | 704 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 12 15 | 704 | 0.4+ | 0.2+ | 2004 03 31 | 704 | 1.0+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 12 15 | 704 | 0.2− | 1.0+ | 2004 03 31 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 01 07 | 704 | 0.1− | 0.4+ | 2004 03 31 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2003 01 07 | 704 | 1.1− | 0.1+ | 2004 04 09 | E12 | 0.6+ | 0.6+ | 2006 10 22 | 703 | (1.5− | 0.6+) |
| 2003 01 07 | 704 | 0.1− | 0.5+ | 2004 04 09 | E12 | 0.9− | 0.5+ | 2006 10 22 | 703 | 0.4+ | 1.4+ |
| 2003 01 10 | 704 | 1.1− | 1.4+ | 2004 04 09 | E12 | 0.4+ | 0.3− | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2003 01 10 | 704 | 0.5− | 1.1+ | 2004 04 09 | E12 | 0.1+ | 1.0+ | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2003 01 10 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 2003 01 10 | 644 | 0.4+ | 0.2+ | 2004 04 20 | 704 | 0.9+ | 0.6+ | 2006 11 13 | 703 | 0.1+ | 0.5− |
| 2003 01 10 | 644 | 0.1− | 0.0 | 2004 04 20 | 703 | 0.4+ | 0.6+ | 2006 11 13 | 703 | 1.2− | 0.7+ |
| 2003 01 10 | 644 | 0.1− | 0.0 | 2004 04 20 | 704 | 0.6+ | 0.5+ | 2006 11 13 | 703 | 2.0− | 0.3+ |

**(143334)∗ 2003 AK$_{70}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.78885 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17697956 | $\omega$ | 143.43702 | | −0.18276517 | −0.96408512 | |
| $a$ | 3.1418635 | $\Omega$ | 316.14610 | | +0.82321548 | −0.04290226 | |
| $e$ | 0.1893690 | $i$ | 16.14988 | | +0.53750643 | −0.26210547 | |
| $P$ | 5.57 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 01 | 691 | 0.4− | 0.7− | 2003 01 10 | 704 | 0.1+ | 0.3+ | 2003 03 06 | 704 | 0.6+ | 0.1+ |
| 1992 02 01 | 691 | 0.8− | 0.7− | 2003 01 10 | 704 | 0.0 | 0.1+ | 2003 03 06 | 704 | 0.8+ | 0.5+ |
| 1992 02 01 | 691 | 0.4− | 0.8− | 2003 01 11 | 704 | 0.6+ | 0.8− | 2003 03 26 | 704 | 0.6− | 0.4+ |
| 1998 03 24 | 566 | 0.2− | 0.3− | 2003 01 11 | 704 | 0.2+ | 0.2+ | 2003 03 26 | 704 | 0.1+ | 0.8+ |
| 1998 03 24 | 566 | 1.0+ | 0.4− | 2003 01 11 | 704 | 0.6+ | 0.1− | 2003 03 26 | 704 | 0.2− | 1.7+ |
| 1998 03 24 | 566 | 0.1− | 0.2− | 2003 01 11 | 704 | (2.2+ | 1.5+) | 2003 03 26 | 704 | (0.1+ | 2.0+) |
| 2001 09 10 | 704 | 0.1− | 1.6− | 2003 01 24 | 644 | 0.3+ | 1.2+ | 2006 06 19 | G96 | 0.1− | 0.4− |
| 2001 09 10 | 704 | 0.2+ | 0.2+ | 2003 01 24 | 644 | 0.3+ | 1.2+ | 2006 06 19 | G96 | 0.4+ | 0.8− |
| 2001 09 10 | 704 | 0.1+ | 0.1+ | 2003 01 24 | 644 | 0.4+ | 1.5+ | 2006 06 19 | G96 | 0.0 | 0.5− |
| 2001 09 25 | 704 | 0.4− | 0.5− | 2003 02 01 | 704 | (6.1+ | 0.2−) | 2006 06 19 | G96 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.0 | 0.2+ | 2003 02 01 | 704 | (6.5+ | 0.7−) | 2006 08 14 | 644 | 0.4+ | 0.3+ |
| 2001 09 25 | 704 | 1.1+ | 0.8+ | 2003 02 01 | 704 | (6.3+ | 1.0−) | 2006 08 14 | 644 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 0.1+ | 2003 02 01 | 704 | (5.9+ | 1.5−) | 2006 08 14 | 644 | 0.0 | 0.5+ |
| 2002 12 15 | 704 | 0.8− | 0.2− | 2003 02 04 | 704 | 0.2+ | 0.6+ | 2006 08 16 | 644 | 0.3− | 0.3+ |
| 2002 12 15 | 704 | 0.8− | 0.0 | 2003 02 04 | 704 | 0.4− | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.2− |
| 2002 12 15 | 704 | 0.5− | 1.2+ | 2003 02 04 | 704 | 0.7− | 0.2− | 2006 08 16 | 644 | 0.6− | 0.3+ |
| 2002 12 15 | 704 | 0.0 | 1.4− | 2003 02 04 | 704 | 0.2− | 0.1− | 2006 08 28 | 703 | (0.1− | 3.2+) |
| 2002 12 15 | 704 | 0.7− | 1.0− | 2003 02 04 | 704 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.4− |
| 2003 01 04 | 704 | 0.8+ | 0.1− | 2003 02 26 | 704 | 1.0− | 0.8+ | 2006 08 28 | 703 | 0.5+ | 0.7+ |
| 2003 01 04 | 704 | 0.6+ | 0.3+ | 2003 02 26 | 704 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.5− |
| 2003 01 04 | 704 | 0.5+ | 0.1+ | 2003 02 26 | 704 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2003 01 04 | 704 | 0.4+ | 0.6− | 2003 02 26 | 704 | 1.1+ | 0.9+ | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 2003 01 10 | 704 | 0.2+ | 0.1− | 2003 03 06 | 704 | 0.5+ | 1.2+ | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2003 01 10 | 704 | 0.0 | 0.2+ | 2003 03 06 | 704 | 0.7+ | 0.4− | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.1− | 0.1− | 2003 03 06 | 704 | 0.5+ | 0.6+ | | | | |

**(143335)∗ 2003 AA$_{72}$ = 2005 MP$_1$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75830)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.66306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23955947 | $\omega$ | 295.93827 | | +0.94945459 | +0.23931832 | |
| $a$ | 2.5675988 | $\Omega$ | 50.91264 | | −0.09696967 | +0.83907453 | |
| $e$ | 0.2028662 | $i$ | 15.17131 | | −0.29855128 | +0.48854957 | |
| $P$ | 4.11 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 704 | 0.1− | 0.9− | 2003 01 14 | 704 | 0.5+ | 0.3+ | 2005 06 17 | E12 | 0.0 | 0.2+ |
| 1999 01 14 | 704 | 0.9+ | 1.7− | 2003 01 14 | 704 | 0.4− | 1.0+ | 2005 07 04 | E12 | 0.5+ | 0.1+ |
| 1999 01 14 | 704 | 1.9− | 1.0− | 2003 01 14 | 704 | 0.9− | 0.0 | 2005 07 04 | E12 | 0.3+ | 0.3+ |
| 1999 01 14 | 704 | 0.6+ | 1.1+ | 2003 01 14 | 704 | 0.0 | 0.3+ | 2005 07 04 | E12 | 0.5+ | 0.3+ |
| 1999 01 14 | 704 | 0.7− | 0.1− | 2003 01 14 | 704 | 0.0 | 0.1− | 2005 07 16 | E12 | 0.1+ | 0.3+ |
| 2002 12 15 | 704 | 0.2+ | 0.7+ | 2003 01 31 | 644 | 0.4− | 0.2+ | 2005 07 16 | E12 | 0.1+ | 0.4+ |
| 2002 12 15 | 704 | 0.1+ | 0.0 | 2003 01 31 | 644 | 0.3− | 0.1+ | 2005 08 01 | E12 | 0.1− | 1.1+ |
| 2002 12 15 | 704 | 0.2+ | 0.8+ | 2003 01 31 | 644 | 0.3− | 0.3− | 2005 08 01 | E12 | 1.0+ | 1.1+ |
| 2002 12 15 | 704 | 0.7+ | 0.1− | 2004 03 24 | 703 | (2.4− | 3.7+) | 2005 08 01 | E12 | 0.3− | 0.5+ |
| 2002 12 15 | 704 | 0.1+ | 0.9+ | 2004 03 24 | 703 | 0.1+ | 1.0+ | 2006 10 27 | 703 | (3.9+ | 0.6−) |
| 2002 12 31 | 699 | 0.8+ | 0.9+ | 2004 03 24 | 703 | (2.0− | 0.3−) | 2006 10 27 | 703 | 1.4+ | 1.4− |
| 2002 12 31 | 699 | 0.8+ | 0.8+ | 2004 03 24 | 703 | 0.2− | 0.3+ | 2006 10 27 | 703 | (0.4+ | 3.3+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 699 | 0.6+ | 0.9+ | 2005 05 13 | E12 | 1.0− | 0.5+ | 2006 10 27 | 703 | (0.2− | 2.3+) | | |
| 2002 12 31 | 699 | 0.9+ | 0.6+ | 2005 05 13 | E12 | 0.3− | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.3+ | | |
| 2003 01 10 | 704 | 0.4+ | 0.8+ | 2005 05 13 | E12 | 0.2− | 0.4+ | 2006 11 17 | 644 | 0.2+ | 0.2+ | | |
| 2003 01 10 | 704 | 0.2− | 0.6− | 2005 05 13 | E12 | 0.8− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.4+ | | |
| 2003 01 10 | 704 | 0.2+ | 0.1+ | 2005 06 16 | 428 | 0.6+ | 0.0 | 2006 11 22 | 703 | 0.7− | 0.4+ | | |
| 2003 01 10 | 704 | 0.3− | 0.9+ | 2005 06 16 | 428 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.7+ | | |
| 2003 01 12 | 699 | 0.4+ | 0.0 | 2005 06 17 | 428 | 0.2+ | 0.1− | 2006 11 22 | 703 | 0.4+ | 0.5+ | | |
| 2003 01 12 | 699 | 0.5− | 0.3+ | 2005 06 17 | 428 | 0.1+ | 0.5− | 2006 11 22 | 703 | 0.9− | 0.7+ | | |
| 2003 01 12 | 699 | (2.2− | 0.7+) | 2005 06 17 | 428 | 0.6− | 0.6+ | | | | | | |
| 2003 01 12 | 699 | 0.3− | 0.4− | 2005 06 17 | E12 | 1.0− | 1.4+ | | | | | | |

**(143336)∗ 2003 AV$_{73}$ = 1997 WK$_{11}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41455)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 281.05153 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21910719 | $\omega$ | 75.24742 | | −0.50085932 | −0.85710591 | |
| *a* | 2.7249903 | $\Omega$ | 45.46785 | | +0.71482814 | −0.48809612 | |
| *e* | 0.0823023 | *i* | 9.72823 | | +0.48801707 | −0.16471686 | |
| *P* | 4.50 | *H* | 15.6 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | 1.5− | 1.3− | 2003 01 31 | 704 | (3.4+ | 0.4+) | 2006 10 19 | 691 | 0.0 | 0.3+ | | |
| 1997 10 29 | 704 | (2.5+ | 0.1−) | 2003 01 31 | 704 | (3.4+ | 0.5−) | 2006 10 19 | 691 | 0.1− | 0.4+ | | |
| 1997 10 29 | 704 | 1.5− | 1.0+ | 2004 04 12 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.5+ | | |
| 1997 10 29 | 704 | (3.7− | 0.7+) | 2004 04 12 | 644 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.4+ | | |
| 1997 11 22 | 691 | 0.4+ | 0.2− | 2004 04 12 | 644 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.5+ | | |
| 1997 11 22 | 691 | 0.5+ | 0.2− | 2004 04 26 | 699 | 0.2+ | 0.7+ | 2006 10 27 | 691 | 0.4− | 0.1− | | |
| 1997 11 22 | 691 | 0.4+ | 0.4− | 2004 04 26 | 699 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.3+ | | |
| 1997 11 28 | 691 | 0.4+ | 0.2− | 2004 04 26 | 699 | 0.2− | 1.0− | 2006 10 27 | 691 | 0.1− | 0.6+ | | |
| 1997 11 28 | 691 | 0.1+ | 0.4− | 2004 04 26 | 699 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 1997 11 28 | 691 | 0.6+ | 0.5− | 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.1− | | |
| 1997 12 05 | 691 | (7.6+ | 7.3−) | 2004 05 14 | 691 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.2− | 0.2− | | |
| 1997 12 05 | 691 | 0.1+ | 1.4− | 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 1997 12 05 | 691 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− | | |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.2− | 0.1− | | |
| 2002 12 05 | 704 | 0.8+ | 0.8− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.1− | | |
| 2002 12 05 | 704 | 0.8+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1− | 0.3− | | |
| 2002 12 05 | 704 | 1.1+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.9− | | |
| 2003 01 04 | 704 | 1.4− | 1.1+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.7+ | | |
| 2003 01 04 | 704 | 0.0 | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.7− | | |
| 2003 01 04 | 704 | 0.4− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2+ | 1.1+ | | |
| 2003 01 04 | 704 | (0.9+ | 1.5+) | 2006 10 03 | 291 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.5− | | |
| 2003 01 10 | 704 | 0.8− | 1.1+ | 2006 10 03 | 291 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.6− | | |
| 2003 01 10 | 704 | 0.2+ | 0.7+ | 2006 10 03 | 291 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.8− | | |
| 2003 01 10 | 704 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.9+ | | |
| 2003 01 10 | 704 | (1.7+ | 1.0−) | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | (1.0− | 1.7−) | | |
| 2003 01 10 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 691 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.3− | | |
| 2003 01 13 | 704 | 0.1+ | 0.2− | 2006 10 12 | 291 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 1.3+ | | |
| 2003 01 13 | 704 | 0.1− | 0.7− | 2006 10 12 | 291 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.1+ | 1.1− | | |
| 2003 01 13 | 704 | 0.1− | 0.1− | 2006 10 12 | 291 | 0.0 | 0.4+ | 2006 11 21 | 704 | 1.2+ | 0.6− | | |
| 2003 01 13 | 704 | 0.1+ | 0.9+ | 2006 10 12 | 291 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.1− | | |
| 2003 01 31 | 704 | (4.0+ | 0.4−) | 2006 10 12 | 291 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.4− | 0.3− | | |
| 2003 01 31 | 704 | (3.3+ | 0.9−) | 2006 10 12 | 291 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.0 | | |
| 2003 01 31 | 704 | (3.9+ | 0.3−) | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.2− | | |

**(143337)∗ 2003 AW$_{73}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 7.26720 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.23122006 | $\omega$ | 54.34027 | | +0.93085648 | −0.35151951 | |
| *a* | 2.6289705 | $\Omega$ | 325.92133 | | +0.25037184 | +0.81237910 | |
| *e* | 0.2561305 | *i* | 10.24933 | | +0.26612057 | +0.46526791 | |
| *P* | 4.26 | *H* | 15.1 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 22 | 675 | 0.1+ | 0.8− | 2002 12 15 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 704 | 0.2+ | 0.9+ | | |
| 1993 09 22 | 675 | 0.6+ | 0.8− | 2002 12 15 | 704 | 0.7− | 0.1− | 2006 09 19 | 704 | 0.1− | 0.9+ | | |
| 1994 02 10 | 691 | 0.1− | 0.9− | 2002 12 15 | 704 | 0.1− | 0.1− | 2006 09 19 | 704 | 0.0 | 0.6+ | | |
| 1994 02 10 | 691 | 1.2+ | 1.4− | 2002 12 15 | 704 | 0.5− | 0.2− | 2006 09 19 | 704 | 0.3+ | 0.3+ | | |
| 1994 02 10 | 691 | 0.4− | 1.1− | 2003 01 10 | 704 | 0.8− | 0.2− | 2006 09 19 | 704 | 0.5− | 0.0 | | |
| 1997 10 01 | 691 | 0.3− | 0.8+ | 2003 01 10 | 704 | 0.4− | 0.2− | 2006 10 02 | 703 | 0.1− | 0.1+ | | |
| 1997 10 01 | 691 | 0.3− | 0.9+ | 2003 01 10 | 704 | 0.5− | 0.2− | 2006 10 02 | 703 | 0.1+ | 0.1− | | |
| 1997 10 01 | 691 | 0.1− | 0.9+ | 2003 01 10 | 704 | 0.6− | 0.0 | 2006 10 02 | 703 | 0.6+ | 0.2+ | | |
| 1999 01 22 | 699 | 0.8+ | 1.3+ | 2003 01 10 | 704 | 0.7− | 0.1− | 2006 10 02 | 703 | 0.2− | 0.3+ | | |
| 1999 01 22 | 699 | 0.1− | 0.2− | 2003 01 11 | 644 | 0.8− | 0.5+ | 2006 10 23 | 703 | 0.0 | 0.2− | | |
| 1999 01 22 | 699 | 1.0− | 1.4+ | 2003 01 11 | 644 | 0.6− | 0.5+ | 2006 10 23 | 703 | 0.0 | 0.1+ | | |
| 1999 02 12 | 699 | 0.9+ | 1.4+ | 2003 01 11 | 644 | 0.7− | 0.4+ | 2006 10 23 | 703 | 0.1+ | 0.2+ | | |
| 1999 02 12 | 699 | 0.6+ | 0.9+ | 2003 01 13 | 704 | 1.3− | 0.2+ | 2006 10 23 | 703 | 0.2+ | 0.1− | | |
| 1999 02 12 | 699 | 0.1+ | 1.1+ | 2003 01 13 | 704 | 0.1− | 0.5+ | 2006 11 13 | 704 | 0.2+ | 0.0 | | |
| 1999 03 23 | 691 | 0.8+ | 0.5− | 2003 01 13 | 704 | 1.1− | 0.1− | 2006 11 13 | 704 | 0.5+ | 0.3+ | | |
| 1999 03 23 | 691 | 0.6+ | 0.5− | 2003 02 01 | 704 | 0.5− | 0.7+ | 2006 11 13 | 704 | 0.3+ | 0.1+ | | |
| 1999 03 23 | 691 | 0.8+ | 0.6− | 2003 02 01 | 704 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 31 | 704 | (0.7− | 2.1+) | 2003 02 01 | 704 | 0.3− | 0.7+ | 2006 11 14 | 704 | 0.0 | 0.0 | | |
| 2002 10 31 | 704 | (2.5− | 0.3+) | 2003 02 01 | 704 | 0.2− | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.1− | | |
| 2002 10 31 | 704 | (1.6− | 0.2−) | 2003 02 01 | 704 | 0.5− | 0.5+ | 2006 11 14 | 704 | 0.2+ | 0.4− | | |
| 2002 11 28 | 699 | 0.4− | 0.4+ | 2003 02 04 | 704 | 0.5+ | 0.3+ | 2006 11 14 | 704 | 0.3+ | 0.2− | | |
| 2002 11 28 | 699 | 0.5− | 0.5+ | 2003 02 04 | 704 | 0.8+ | 0.0 | 2006 11 16 | 704 | 0.1− | 0.2+ | | |
| 2002 11 28 | 699 | 0.8+ | 0.9+ | 2003 02 04 | 704 | 0.5+ | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.3+ | | |
| 2002 11 28 | 699 | 0.3− | 0.7+ | 2003 02 04 | 704 | 0.5+ | 0.4− | 2006 11 16 | 704 | 0.6− | 0.1+ | | |
| 2002 12 05 | 704 | 1.3+ | 0.4− | 2004 03 27 | 704 | 0.0 | 0.8+ | 2006 11 16 | 704 | 0.5− | 0.1+ | | |
| 2002 12 05 | 704 | 1.3+ | 0.1+ | 2004 03 27 | 704 | 0.6− | 0.9+ | 2006 11 16 | 704 | 0.1− | 0.3+ | | |
| 2002 12 05 | 704 | 1.2+ | 0.4+ | 2004 03 27 | 704 | 0.5− | 1.1+ | 2006 12 01 | 704 | 0.2− | 0.5+ | | |
| 2002 12 05 | 704 | 1.0+ | 0.3+ | 2004 03 27 | 704 | 0.7+ | 0.1+ | 2006 12 01 | 704 | 0.4− | 0.8+ | | |
| 2002 12 05 | 704 | 1.4+ | 0.1+ | 2004 03 27 | 704 | 0.8− | 0.2− | 2006 12 01 | 704 | 0.6− | 0.4+ | | |
| 2002 12 15 | 704 | 0.1− | 0.1− | 2004 03 27 | 704 | 1.0− | 0.9+ | 2006 12 01 | 704 | 0.5+ | 0.0 | | |

**(143338)∗ 2003 AX$_{73}$ = 2004 HD$_5$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61701)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 306.72778 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21485317 | $\omega$ | 33.70995 | | +0.13247601 | −0.98366856 | |
| *a* | 2.7608419 | $\Omega$ | 48.99489 | | +0.87002767 | +0.05650643 | |
| *e* | 0.1189729 | *i* | 9.29160 | | +0.47487046 | +0.17088941 | |
| *P* | 4.59 | *H* | 15.6 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 26 | 816 | 0.3− | 0.8+ | 2004 04 21 | 704 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.1− | 0.1+ | | |
| 1997 10 26 | 816 | 0.6− | 0.9+ | 2004 04 21 | 704 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 1997 10 26 | 816 | 0.1− | 1.0+ | 2004 04 22 | 704 | 1.4+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.7+ | | |
| 1997 10 31 | 704 | 0.1+ | 1.1+ | 2004 04 22 | 704 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.4+ | | |
| 1997 10 31 | 704 | 1.1− | 1.2+ | 2004 04 22 | 704 | 0.1− | 1.0+ | 2006 10 11 | 644 | 0.5− | 0.3+ | | |
| 1997 10 31 | 704 | 0.4− | 1.2+ | 2004 04 22 | 704 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.4+ | | |
| 1997 10 31 | 704 | 1.4− | 1.5+ | 2004 04 22 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.4+ | | |
| 1997 11 06 | 704 | (4.4− | 2.2+) | 2004 04 23 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.5+ | | |
| 1997 11 06 | 704 | (4.0− | 2.4+) | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 1997 11 06 | 704 | (4.3− | 0.7−) | 2004 04 23 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 1997 11 06 | 704 | (4.2− | 0.2−) | 2004 04 24 | 704 | (0.9+ | 2.0−) | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 1997 11 06 | 704 | (5.3− | 0.1+) | 2004 04 24 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.6+ | | |
| 2003 01 04 | 704 | 0.5− | 0.3− | 2004 04 24 | 704 | 0.8+ | 1.4+ | 2006 10 20 | 644 | 0.4− | 0.8+ | | |
| 2003 01 04 | 704 | 0.0 | 0.2+ | 2004 05 13 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.1− | 1.0+ | 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.2− |
| 2003 01 04 | 704 | (1.2− | 1.6−) | 2004 05 13 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2003 01 10 | 704 | 0.6+ | 0.2− | 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.3− |
| 2003 01 10 | 704 | 0.4+ | 0.2+ | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2003 01 10 | 704 | 0.2− | 0.3− | 2004 05 21 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 01 10 | 704 | 0.5+ | 0.4+ | 2004 05 23 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2003 01 10 | 704 | 0.3+ | 1.0+ | 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2003 01 11 | 644 | 0.2− | 0.2+ | 2004 05 23 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2003 01 11 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.4+ |
| 2003 01 11 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | (1.6+ | 0.5−) | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2003 01 13 | 704 | 0.4+ | 0.9− | 2006 09 18 | 703 | 1.5+ | 0.4− | 2006 11 11 | 703 | 1.6− | 0.5− |
| 2003 01 13 | 704 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.8+ |
| 2003 01 13 | 704 | 0.5− | 1.0− | 2006 09 25 | 699 | 1.4+ | 1.3+ | 2006 11 11 | 703 | 0.9− | 0.3+ |
| 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2004 04 16 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.8+ | 0.9+ | 2006 11 17 | 703 | 0.4+ | 1.8+ |
| 2004 04 16 | 644 | 0.6+ | 0.6+ | 2006 09 25 | 699 | (2.0− | 0.4−) | 2006 11 17 | 703 | 0.9+ | 0.8− |
| 2004 04 19 | 704 | 0.6+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.2− |
| 2004 04 19 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.0− | 0.1+ | 2006 11 17 | 703 | 1.5− | 0.0 |
| 2004 04 19 | 704 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.9− | 0.7− | 2006 11 18 | G96 | 0.8+ | 0.4− |
| 2004 04 19 | 704 | (1.2+ | 1.6+) | 2006 09 30 | 703 | 0.8− | 0.9+ | 2006 11 18 | G96 | 0.6+ | 0.3− |
| 2004 04 21 | 704 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2004 04 21 | 704 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.5− | 0.4+ | 2006 11 18 | G96 | 0.6+ | 0.3− |

**(143339)∗ 2003 AZ$_{73}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.65134 | | (2000.0) | | | |
| $n$ | 0.22856755 | $\omega$ | 138.78583 | | −0.94547897 | +0.24936440 |
| $a$ | 2.6492707 | $\Omega$ | 56.84278 | | −0.32327305 | −0.79667298 |
| $e$ | 0.1079567 | $i$ | 14.49157 | | +0.03954814 | −0.55057202 |
| $P$ | 4.31 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 1.2− | 0.6− | 2004 04 22 | 704 | (3.5+ | 0.5−) | 2004 06 17 | 691 | 0.1+ | 0.2− |
| 1999 02 18 | 704 | 0.7+ | 0.8− | 2004 04 22 | 704 | (3.4+ | 0.4+) | 2004 06 23 | E12 | 0.2− | 0.1+ |
| 1999 02 18 | 704 | 0.7+ | 0.1− | 2004 04 25 | 704 | 0.5− | 0.3+ | 2004 06 23 | E12 | 0.7+ | 0.8+ |
| 1999 02 18 | 704 | 0.0 | 0.6+ | 2004 04 25 | 704 | 0.2− | 0.4+ | 2004 06 23 | E12 | 0.5− | 0.1+ |
| 1999 02 18 | 704 | 0.3+ | 1.6+ | 2004 04 25 | 704 | 0.3− | 0.9+ | 2004 06 23 | E12 | 0.8+ | 1.1− |
| 2001 10 15 | 644 | 0.6− | 1.0+ | 2004 04 25 | 704 | 0.7+ | 1.2+ | 2004 07 05 | E12 | (0.0 | 1.6−) |
| 2001 10 15 | 644 | 0.9− | 0.6+ | 2004 04 29 | 704 | 1.0+ | 1.2+ | 2004 07 05 | E12 | 0.1+ | 0.6− |
| 2001 10 15 | 644 | 0.5− | 0.8+ | 2004 04 29 | 704 | (3.6+ | 0.2−) | 2004 07 05 | E12 | 0.2+ | 1.1− |
| 2001 10 23 | 644 | 0.6− | 0.4+ | 2004 04 29 | 704 | 0.5+ | 0.4+ | 2004 07 05 | E12 | 0.4− | 1.4− |
| 2001 10 23 | 644 | 0.7− | 0.4+ | 2004 04 29 | 704 | 0.6+ | 0.9+ | 2005 09 02 | 644 | 0.1− | 0.5+ |
| 2001 10 23 | 644 | 0.6− | 0.9+ | 2004 04 29 | 704 | 0.1− | 0.9+ | 2005 09 02 | 644 | 0.1+ | 0.2+ |
| 2002 12 15 | 704 | 0.2− | 0.2+ | 2004 05 12 | E12 | 0.6− | 0.9+ | 2005 09 02 | 644 | 0.1− | 0.6+ |
| 2002 12 15 | 704 | 1.2− | 0.1+ | 2004 05 12 | E12 | 0.8− | 1.2+ | 2006 09 27 | G96 | 0.0 | 0.4− |
| 2002 12 15 | 704 | 0.3+ | 0.5− | 2004 05 12 | E12 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.5− |
| 2002 12 15 | 704 | 0.5− | 0.4+ | 2004 05 12 | E12 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.5− |
| 2003 01 10 | 704 | 0.2− | 0.4+ | 2004 05 15 | 704 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.6− | 0.6− |
| 2003 01 10 | 704 | 0.3+ | 0.3− | 2004 05 15 | 704 | 1.1− | 1.3+ | 2006 09 27 | G96 | 0.6+ | 0.1− |
| 2003 01 10 | 704 | 0.4+ | 0.0 | 2004 05 15 | 704 | 0.6− | 0.3+ | 2006 09 27 | G96 | 0.6− | 0.6− |
| 2003 01 10 | 704 | 0.0 | 0.2+ | 2004 05 15 | 704 | 0.2− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2003 01 10 | 704 | 0.1− | 0.1+ | 2004 05 15 | 704 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2003 01 13 | 704 | 0.4− | 0.3+ | 2004 05 16 | 704 | 0.5+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2003 01 13 | 704 | 0.5+ | 0.2+ | 2004 05 16 | 704 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2003 01 13 | 704 | 0.8+ | 0.7− | 2004 05 16 | 704 | 0.6+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2003 01 13 | 704 | 0.8+ | 0.5+ | 2004 05 16 | 704 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.1+ |
| 2004 04 12 | 644 | 0.2− | 0.5+ | 2004 05 16 | 704 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2004 04 12 | 644 | 0.0 | 0.5+ | 2004 05 19 | 704 | 0.5+ | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2004 04 12 | 644 | 0.2+ | 0.8+ | 2004 05 19 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2004 04 17 | 704 | 0.4− | 1.1+ | 2004 05 19 | 704 | 0.2+ | 1.0+ | 2006 11 22 | 704 | (0.3− | 1.6+) |
| 2004 04 17 | 704 | 0.0 | 0.8+ | 2004 05 19 | 704 | 0.7+ | 0.3− | 2006 11 22 | 704 | (0.8+ | 2.3+) |
| 2004 04 17 | 704 | 0.2+ | 0.4+ | 2004 05 19 | 704 | 0.2+ | 0.3− | 2006 11 22 | 704 | 1.0− | 0.1− |
| 2004 04 19 | 704 | 0.7+ | 0.8− | 2004 06 16 | 704 | 0.7+ | 0.4− | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2004 04 19 | 704 | 0.2− | 0.4− | 2004 06 16 | 704 | 0.2+ | 0.5− | 2006 11 27 | 704 | 1.2+ | 1.7+ |
| 2004 04 19 | 704 | 0.9− | 0.2+ | 2004 06 16 | 704 | 0.0 | 0.3− | 2006 11 27 | 704 | 0.8+ | 0.2+ |
| 2004 04 19 | 704 | 1.1− | 0.5− | 2004 06 16 | 704 | 0.0 | 0.5− | 2006 11 27 | 704 | 0.3+ | 0.7+ |
| 2004 04 19 | 704 | 0.5− | 0.3+ | 2004 06 17 | 691 | 0.1+ | 0.2− | | | | |
| 2004 04 22 | 704 | 1.2+ | 0.8− | 2004 06 17 | 691 | 0.2+ | 0.2− | | | | |

**(143340)∗ 2003 AC$_{74}$ = 1992 SQ$_6$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41455)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.61098 | | (2000.0) | | | |
| $n$ | 0.21144261 | $\omega$ | 41.18234 | | +0.66610246 | −0.74567531 |
| $a$ | 2.7904509 | $\Omega$ | 7.10732 | | +0.64433353 | +0.56407371 |
| $e$ | 0.2329418 | $i$ | 7.71423 | | +0.37568844 | +0.35466771 |
| $P$ | 4.66 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 26 | 691 | 0.3+ | 0.3− | 2003 01 10 | 704 | (0.3− | 2.9−) | 2006 09 19 | 699 | 0.1+ | 0.0 |
| 1992 09 26 | 691 | 0.0 | 0.1+ | 2003 01 10 | 704 | 0.2+ | 0.3− | 2006 09 19 | 699 | 0.3− | 0.2+ |
| 1992 09 26 | 691 | 0.0 | 0.0 | 2003 01 13 | 704 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.6− | 0.1− |
| 1992 09 27 | 691 | 0.0 | 0.0 | 2003 01 13 | 704 | 0.2+ | 0.0 | 2006 09 26 | 704 | (1.8+ | 0.8+) |
| 1992 09 27 | 691 | 0.3− | 0.2+ | 2003 01 13 | 704 | 0.1− | 0.3+ | 2006 09 26 | 704 | (1.6+ | 0.8+) |
| 1992 09 27 | 691 | 0.3− | 0.2+ | 2003 01 13 | 704 | 0.1− | 0.4+ | 2006 09 26 | 704 | 1.4+ | 0.9+ |
| 1994 02 12 | 691 | 0.2+ | 0.2− | 2003 01 13 | 704 | 0.2− | 0.2+ | 2006 09 26 | 704 | (1.6+ | 1.6+) |
| 1994 02 12 | 691 | 0.2+ | 0.6+ | 2003 01 22 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.2+ | 0.5+ |
| 1994 02 12 | 691 | 0.1− | 0.1− | 2003 01 22 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.3+ | 0.1− |
| 2001 08 12 | 644 | 0.2+ | 0.9− | 2003 01 22 | 644 | 0.3− | 0.4+ | 2006 09 28 | 704 | (0.7− | 1.6+) |
| 2001 08 12 | 644 | 0.1+ | 1.4− | 2003 01 31 | 704 | 0.4− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.5− |
| 2001 08 12 | 644 | 0.3− | 0.9− | 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.7+ | 0.4+ |
| 2001 08 24 | 644 | (1.1− | 2.5−) | 2003 01 31 | 704 | 1.0− | 0.0 | 2006 09 28 | 704 | 1.0+ | 1.0+ |
| 2001 08 24 | 644 | (0.9− | 2.4−) | 2003 01 31 | 704 | 0.1− | 0.3+ | 2006 09 28 | 704 | (0.7− | 1.9+) |
| 2001 08 24 | 644 | (1.1− | 2.5−) | 2003 01 31 | 704 | 0.9− | 0.3+ | 2006 09 28 | 704 | 0.8+ | 0.9+ |
| 2002 10 04 | 704 | 0.9+ | 1.2+ | 2003 03 05 | 704 | 0.9− | 0.4+ | 2006 09 28 | 704 | 1.1− | 0.3− |
| 2002 10 04 | 704 | (0.1+ | 1.7+) | 2003 03 05 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 1.1− | 0.0 | 2003 03 05 | 704 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.5− |
| 2002 10 04 | 704 | (0.1− | 1.9+) | 2006 08 23 | 704 | 0.6+ | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2002 10 10 | 704 | 0.3+ | 0.5+ | 2006 08 23 | 704 | 0.7+ | 0.9− | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.1+ | 0.5+ | 2006 08 23 | 704 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.4− | 0.3− |
| 2002 10 10 | 704 | 0.3− | 0.4− | 2006 08 23 | 704 | 0.7+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2002 10 10 | 704 | 0.1+ | 0.7+ | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 10 10 | 704 | 0.1− | 0.8+ | 2006 08 23 | 644 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.4− | 0.1− |
| 2002 11 06 | 704 | 0.6− | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 11 06 | 704 | 0.8− | 0.5− | 2006 08 28 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2002 11 06 | 704 | 0.7− | 0.3+ | 2006 08 28 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 11 28 | 699 | 1.0+ | 0.1− | 2006 08 28 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 11 28 | 699 | 0.5+ | 0.4+ | 2006 08 28 | 704 | 0.6+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 11 28 | 699 | 1.0+ | 0.1+ | 2006 08 28 | 704 | 0.2− | 1.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 11 28 | 699 | 0.0 | 0.1+ | 2006 08 30 | 704 | (3.1− | 0.1−) | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 1.2+ | 1.3− | 2006 08 30 | 704 | 1.0− | 0.4+ | 2006 10 20 | G96 | 1.1− | 0.5− |
| 2002 12 05 | 704 | 0.6+ | 1.1− | 2006 08 30 | 704 | 0.6+ | 0.1− | 2006 10 20 | G96 | 0.6− | 1.3− |
| 2002 12 05 | 704 | (0.5+ | 1.5−) | 2006 08 30 | 704 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2002 12 05 | 704 | (0.5+ | 1.6−) | 2006 09 12 | 704 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 12 05 | 704 | (0.4+ | 2.5−) | 2006 09 12 | 704 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2002 12 15 | 704 | 0.2− | 1.1− | 2006 09 12 | 704 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2002 12 15 | 704 | 0.3− | 0.8− | 2006 09 12 | 704 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.7− |
| 2002 12 15 | 704 | 0.3− | 1.1− | 2006 09 12 | 704 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2002 12 15 | 704 | 0.4− | 1.1− | 2006 09 14 | 703 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 12 15 | 704 | 0.1− | 1.2− | 2006 09 14 | 703 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2002 12 29 | 704 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.8− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2002 12 29 | 704 | 0.1+ | 0.5− | 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2002 12 29 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 704 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2003 01 10 | 704 | 0.5+ | 0.0 | 2006 09 19 | 704 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2003 01 10 | 704 | 0.4+ | 0.1− | 2006 09 19 | 704 | (1.7+ | 0.3+) | | | | |
| 2003 01 10 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 704 | 0.3+ | 0.7+ | | | | |

**(143341)*** **2003 AV$_{75}$ = 2004 FH$_{87}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61701)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 46.57702 | | (2000.0) | | | |
| *n* | 0.22967590 | $\omega$ | 289.95221 | | +0.94586876 | +0.28240579 |
| *a* | 2.6407408 | $\Omega$ | 53.96922 | | −0.17013626 | +0.85111117 |
| *e* | 0.1693801 | *i* | 11.40647 | | −0.27638007 | +0.44255705 |
| *P* | 4.29 | *H* | 14.3 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.5− | 1.4+ | 2004 03 25 | 704 | 0.2+ | 0.8+ | 2006 11 01 | G96 | 0.5− | 0.1− |
| 2000 03 29 | 704 | 0.1+ | 0.4− | 2004 03 25 | 704 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2000 03 29 | 704 | 0.1+ | 0.6+ | 2004 04 09 | 644 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.0 |
| 2000 03 29 | 704 | 0.3+ | 1.3+ | 2004 04 09 | 644 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.4− | 0.1+ |
| 2001 07 18 | 644 | 0.1− | 0.9+ | 2004 04 09 | 644 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2001 07 18 | 644 | 0.3− | 1.0+ | 2006 08 25 | 704 | 1.3+ | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.0 |
| 2001 07 18 | 644 | 0.1− | 1.2+ | 2006 08 25 | 704 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2001 11 06 | 704 | 1.2− | 0.8+ | 2006 08 25 | 704 | 0.5+ | 0.7− | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2001 11 06 | 704 | (0.4− | 1.8+) | 2006 08 25 | 704 | 0.4− | 0.7+ | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2001 11 06 | 704 | 0.0 | 0.6+ | 2006 09 01 | 704 | 0.6− | 0.7+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.7− | 0.5+ | 2006 09 01 | 704 | 0.1+ | 0.0 | 2006 11 14 | 691 | 1.0+ | 0.2+ |
| 2002 11 12 | 704 | 0.5− | 0.6− | 2006 09 01 | 704 | 1.0− | 1.1+ | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2006 09 01 | 704 | 0.7− | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.2− |
| 2002 12 15 | 704 | 0.6− | 0.7− | 2006 09 17 | 704 | 0.3+ | 0.9− | 2006 11 15 | 703 | 0.5− | 0.3− |
| 2002 12 15 | 704 | 0.5− | 0.7− | 2006 09 17 | 704 | (0.7+ | 1.9−) | 2006 11 15 | 703 | 0.6− | 0.1− |
| 2002 12 15 | 704 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.5− | 0.2− |
| 2003 01 04 | 704 | (2.1− | 0.8−) | 2006 09 27 | 704 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.8− | 0.4+ |
| 2003 01 04 | 704 | (1.8− | 0.3+) | 2006 09 27 | 704 | 0.5+ | 0.2− | 2006 11 16 | 704 | 1.3− | 0.2+ |
| 2003 01 04 | 704 | (1.8− | 0.3−) | 2006 09 27 | 704 | 0.7+ | 0.1− | 2006 11 16 | 704 | 0.7− | 0.3+ |
| 2003 01 04 | 704 | (2.6− | 0.7−) | 2006 09 27 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.6− | 0.4+ |
| 2003 01 10 | 704 | 0.7+ | 0.3− | 2006 09 27 | 704 | 0.9+ | 0.9+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.8+ | 0.4− | 2006 09 27 | G96 | 0.5− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2003 01 10 | 704 | 0.5+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2003 01 10 | 704 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5+ | 1.0+ |
| 2003 01 13 | 704 | 0.5+ | 0.6− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2003 01 13 | 704 | 0.3− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2003 01 13 | 704 | 1.0+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2003 01 13 | 704 | 0.6+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2003 01 13 | 704 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.9− |
| 2004 02 27 | 704 | 0.1+ | 0.8+ | 2006 10 23 | 704 | (1.7− | 1.5−) | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 2004 02 27 | 704 | 0.2+ | 1.0+ | 2006 10 23 | 704 | (1.2+ | 1.6+) | 2006 11 21 | 704 | (1.8+ | 0.2−) |
| 2004 02 27 | 704 | 0.6+ | 0.3+ | 2006 10 23 | 704 | (0.7+ | 2.2+) | 2006 11 21 | 704 | 0.7− | 1.4− |
| 2004 03 11 | 644 | 0.1+ | 0.4− | 2006 10 23 | 704 | (0.8− | 3.3+) | 2006 11 21 | 704 | (2.1+ | 0.2+) |
| 2004 03 11 | 644 | 0.0 | 0.1− | 2006 10 23 | 704 | (1.5− | 0.5+) | 2006 11 22 | 704 | 0.9− | 0.2+ |
| 2004 03 11 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2004 03 19 | 644 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 1.0+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2004 03 19 | 644 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2004 03 19 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2004 03 19 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.5+ | 2006 11 27 | 704 | 0.4+ | 0.2+ |
| 2004 03 19 | 644 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.2− | 0.6+ | 2006 11 27 | 704 | 0.4+ | 0.3+ |
| 2004 03 19 | 644 | 0.2+ | 0.2− | 2006 10 28 | 704 | 0.2− | 0.3+ | 2006 11 27 | 704 | 0.4+ | 0.4+ |
| 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 704 | 0.5+ | 0.6+ | 2006 11 27 | 704 | 0.1+ | 0.5− |
| 2004 03 23 | 704 | 1.2+ | 0.5+ | 2006 10 28 | 704 | 0.3− | 0.8+ | 2006 11 28 | 704 | 0.4+ | 1.3− |
| 2004 03 23 | 704 | 0.5+ | 0.1− | 2006 10 29 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.6− | 0.5+ |
| 2004 03 23 | 704 | 0.2+ | 0.9+ | 2006 10 29 | G96 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.6− | 0.1+ |
| 2004 03 23 | 704 | 0.4+ | 0.0 | 2006 10 29 | G96 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.6+ |
| 2004 03 25 | 704 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.4− | 0.3+ |

**(143342)*** **2003 AW$_{75}$ = 2000 GM$_{177}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41456)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 25.93973 | | (2000.0) | | | |
| *n* | 0.22391309 | $\omega$ | 350.66222 | | +0.98123281 | +0.19277584 |
| *a* | 2.6858581 | $\Omega$ | 358.20480 | | −0.16652309 | +0.83556612 |
| *e* | 0.2286884 | *i* | 8.13534 | | −0.09722263 | +0.51445771 |
| *P* | 4.40 | *H* | 14.8 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.1− | 1.0+ | 2003 01 31 | 704 | 1.2− | 0.8+ | 2006 09 25 | 704 | 0.9+ | 0.4− |
| 1997 10 30 | 704 | (3.3− | 0.5+) | 2004 03 14 | 703 | 0.5+ | 0.2− | 2006 09 25 | 704 | 0.1+ | 1.1+ |
| 1997 10 30 | 704 | 0.4− | 0.0 | 2004 03 14 | 703 | (1.5+ | 2.5+) | 2006 09 25 | 704 | 0.1+ | 0.6+ |
| 1997 10 30 | 704 | (5.9− | 1.7+) | 2004 03 14 | 703 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.9− | 0.1− |
| 2000 04 03 | 699 | (0.0 | 2.2+) | 2004 03 14 | 703 | 0.9+ | 0.6− | 2006 09 28 | 703 | 0.5− | 0.1+ |
| 2000 04 03 | 699 | (2.1+ | 3.6+) | 2004 03 15 | 704 | 0.3+ | 0.6− | 2006 09 28 | 703 | 0.1− | 0.3− |
| 2000 04 03 | 699 | 0.7− | 0.7+ | 2004 03 15 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.1− | 0.2− |
| 2000 04 03 | 699 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.4+ | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.5− |
| 2000 04 05 | 699 | 1.2+ | 1.3+ | 2004 03 15 | 704 | (1.3+ | 2.4−) | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2000 04 05 | 699 | 0.6+ | 1.1+ | 2004 03 19 | 704 | (2.3+ | 1.1+) | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2000 04 05 | 699 | 1.0+ | 1.4+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2000 04 05 | 699 | 0.5+ | 0.9+ | 2004 03 19 | 704 | 1.1+ | 0.9− | 2006 10 19 | 703 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.7+ | 0.1+ | 2004 03 19 | 704 | 0.5− | 0.9+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.2+ | 0.7− | 2004 03 20 | 699 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.4− |
| 2002 12 05 | 704 | 0.0 | 0.5− | 2004 03 20 | 699 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2004 03 20 | 699 | 1.1− | 1.3+ | 2006 10 20 | 704 | 0.8− | 0.4+ |
| 2002 12 05 | 704 | 0.2+ | 0.6− | 2004 03 20 | 699 | 1.1+ | 0.0 | 2006 10 20 | 704 | 0.3− | 0.4+ |
| 2002 12 15 | 704 | 0.5+ | 0.6− | 2004 03 28 | 691 | 0.2+ | 0.0 | 2006 10 20 | 704 | 0.0 | 1.4+ |
| 2002 12 15 | 704 | 1.1− | 0.2+ | 2004 03 28 | 691 | 0.4− | 0.1− | 2006 10 20 | 704 | 0.5− | 0.2+ |
| 2002 12 15 | 704 | 0.1− | 0.2+ | 2004 03 28 | 691 | 0.1− | 0.1− | 2006 10 20 | 704 | 0.2+ | 1.0+ |
| 2002 12 15 | 704 | 0.3− | 0.0 | 2006 08 29 | 703 | (3.4− | 3.5−) | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 12 15 | 704 | 0.9− | 0.0 | 2006 08 29 | 703 | 0.5− | 0.8+ | 2006 10 27 | 703 | 0.4− | 0.2− |
| 2003 01 04 | 704 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.5+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2003 01 04 | 704 | 0.4− | 0.6− | 2006 08 29 | 703 | 0.7− | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.4− |
| 2003 01 04 | 704 | 0.3+ | 0.5− | 2006 08 30 | 704 | 0.6− | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2003 01 04 | 704 | 0.1+ | 0.8− | 2006 08 30 | 704 | (1.5− | 0.3−) | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2003 01 10 | 704 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2003 01 10 | 704 | 0.3− | 0.4+ | 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.5− |
| 2003 01 10 | 704 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.9+ | 0.7+ | 2006 11 15 | 703 | 0.3+ | 0.6− |
| 2003 01 10 | 704 | 0.5− | 1.0+ | 2006 09 18 | 704 | (2.0+ | 1.2−) | 2006 11 15 | 703 | 0.3+ | 0.5− |
| 2003 01 13 | 704 | 0.3+ | 0.1− | 2006 09 18 | 704 | 0.5+ | 1.1+ | 2006 11 15 | 703 | (0.2+ | 1.6−) |
| 2003 01 13 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.3− | 0.9− | 2006 11 16 | 704 | 0.2− | 0.7− |
| 2003 01 13 | 704 | (0.0 | 1.9−) | 2006 09 18 | 704 | 0.3− | 1.2+ | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2003 01 13 | 704 | 0.7+ | 1.3− | 2006 09 18 | 704 | 1.5+ | 0.8− | 2006 11 16 | 704 | 0.4− | 0.6− |
| 2003 01 13 | 704 | 1.1+ | 0.5+ | 2006 09 21 | 704 | (0.2+ | 1.7+) | 2006 11 16 | 704 | 0.5− | 0.2+ |
| 2003 01 13 | 704 | 0.3− | 0.8+ | 2006 09 21 | 704 | (0.4− | 1.7+) | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2003 01 13 | 704 | 0.8+ | 0.5− | 2006 09 21 | 704 | (0.4− | 2.1+) | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2003 01 13 | 704 | (0.5− | 1.6+) | 2006 09 21 | 704 | 0.6− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2003 01 14 | 704 | 0.7+ | 0.6+ | 2006 09 21 | 704 | 1.0+ | 1.4+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2003 01 14 | 704 | 0.3+ | 0.3− | 2006 09 21 | 704 | (1.6+ | 0.1+) | 2006 11 22 | 703 | 0.5+ | 0.3+ |
| 2003 01 14 | 704 | 0.0 | 0.4− | 2006 09 21 | 704 | 0.1− | 0.6+ | 2006 11 22 | 703 | (0.5− | 1.8−) |
| 2003 01 14 | 704 | (0.2− | 1.6−) | 2006 09 21 | 704 | 0.4− | 1.1+ | 2006 11 22 | 703 | 1.0+ | 1.4− |
| 2003 01 31 | 704 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.4− | 0.4− |
| 2003 01 31 | 704 | 1.3− | 0.8+ | 2006 09 25 | 704 | 0.6− | 0.5+ | | | | |

**(143343)*** **2003 AH$_{76}$ = 2004 FX$_{87}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 94893)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 329.96272 | | (2000.0) | | | |
| *n* | 0.21137456 | $\omega$ | 359.12041 | | +0.82185556 | −0.56276028 |
| *a* | 2.7910497 | $\Omega$ | 35.59813 | | +0.52361108 | +0.68488245 |
| *e* | 0.2267062 | *i* | 8.75738 | | +0.22446577 | +0.46285731 |
| *P* | 4.66 | *H* | 15.1 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 566 | 0.8+ | 0.7− | 2003 01 10 | 704 | 0.5+ | 0.3+ | 2006 09 21 | 699 | 0.0 | 0.1+ |
| 1997 10 30 | 566 | 0.6+ | 0.4− | 2003 01 13 | 704 | 0.0 | 1.0+ | 2006 09 21 | 699 | 0.1− | 0.1− |
| 1997 10 30 | 566 | 0.9+ | 0.4− | 2003 01 13 | 704 | 0.1− | 0.7− | 2006 09 26 | 703 | 0.1− | 0.2+ |
| 1997 10 31 | 704 | 0.1+ | 0.6+ | 2003 01 13 | 704 | 1.0− | 1.2− | 2006 09 26 | 703 | 0.1− | 0.7+ |
| 1997 10 31 | 704 | 0.8+ | 0.5+ | 2003 01 13 | 704 | 0.4+ | 0.6− | 2006 09 26 | 703 | 0.3+ | 0.4+ |
| 1997 10 31 | 704 | 0.5+ | 0.3+ | 2003 01 13 | 704 | 0.0 | 1.1− | 2006 09 26 | 703 | 0.2+ | 0.2+ |
| 1997 10 31 | 704 | 1.0+ | 1.8+ | 2004 03 19 | 704 | (0.2+ | 2.2+) | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 1997 10 31 | 704 | (2.9− | 0.3+) | 2004 03 19 | 704 | 0.7+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 1997 11 06 | 704 | 0.6− | 1.0− | 2004 03 19 | 704 | 0.6+ | 1.2+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 1997 11 06 | 704 | 1.2− | 0.7+ | 2004 03 23 | 704 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.0 | 0.8− |
| 1997 11 06 | 704 | 1.7− | 0.3+ | 2004 03 23 | 704 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.4− | 1.0− |
| 1997 11 06 | 704 | 1.0− | 0.6− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.6+ | 0.6− |
| 1997 11 06 | 704 | 1.3− | 0.2+ | 2004 07 15 | 807 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.1+ |
| 2001 08 24 | 644 | 0.3+ | 0.6+ | 2004 07 16 | 807 | 0.1+ | 0.7+ | 2006 10 23 | G92 | 0.1− | 0.3+ |
| 2001 08 24 | 644 | 0.3+ | 0.6+ | 2006 08 07 | E12 | 0.1− | 0.7+ | 2006 10 23 | G92 | 0.1− | 0.4+ |
| 2001 08 24 | 644 | 0.4− | 0.7− | 2006 08 07 | E12 | 0.2− | 0.4+ | 2006 10 23 | G92 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.6+ | 2006 08 07 | E12 | 0.2− | 0.4+ | 2006 11 17 | 704 | (0.2+ | 2.3+) |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2006 08 07 | E12 | 0.8+ | 0.9− | 2006 11 17 | 704 | 0.3− | 1.2+ |
| 2002 12 05 | 704 | 0.1− | 0.5− | 2006 08 15 | 644 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.9+ | 0.9+ |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.3− | 0.2+ | 2006 11 20 | 704 | (1.1+ | 1.7+) |
| 2002 12 05 | 704 | 0.4+ | 0.6− | 2006 08 15 | 644 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.5+ | 1.5+ |
| 2002 12 15 | 704 | 0.5+ | 1.1+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 11 20 | 704 | 1.0+ | 0.8+ |
| 2002 12 15 | 704 | 0.5+ | 0.6+ | 2006 08 16 | 644 | 0.5− | 0.1+ | 2006 11 20 | 704 | (1.2+ | 2.1+) |
| 2002 12 15 | 704 | 0.2+ | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 11 20 | 704 | (1.1+ | 2.0+) |
| 2002 12 15 | 704 | 0.4+ | 0.1+ | 2006 08 30 | 699 | 1.1+ | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2002 12 15 | 704 | 0.1− | 0.6+ | 2006 08 30 | 699 | 0.4+ | 0.2+ | 2006 11 27 | G96 | 0.6+ | 0.0 |
| 2003 01 04 | 704 | (1.0− | 3.9+) | 2006 08 30 | 699 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.5+ | 0.4− |
| 2003 01 04 | 704 | (0.6− | 3.8+) | 2006 08 30 | 699 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.5− |
| 2003 01 04 | 704 | (0.8− | 4.2+) | 2006 09 20 | 703 | 0.4− | 0.2+ | 2006 11 27 | 703 | 0.4+ | 1.0− |
| 2003 01 04 | 704 | (0.7− | 3.9+) | 2006 09 20 | 703 | (2.0− | 1.9+) | 2006 11 27 | 703 | 0.0 | 0.4− |
| 2003 01 04 | 704 | (1.1− | 4.7+) | 2006 09 20 | 703 | 0.1+ | 1.6+ | 2006 11 27 | 703 | 1.6− | 1.5− |
| 2003 01 10 | 704 | 0.5− | 0.2− | 2006 09 20 | 703 | 0.3− | 0.1+ | 2006 11 27 | 703 | (2.6− | 3.1−) |
| 2003 01 10 | 704 | 0.1− | 0.6+ | 2006 09 21 | 699 | 0.2− | 0.4− | | | | |
| 2003 01 10 | 704 | 0.2+ | 0.6+ | 2006 09 21 | 699 | 0.3− | 0.1− | | | | |

**(143344)∗ 2003 AT$_{77}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.87633 | | (2000.0) | | +0.43691409 | −0.85979922 |
| $n$ | 0.19240412 | $\omega$ | 351.24892 | | +0.84114348 | +0.28642260 |
| $a$ | 2.9716191 | $\Omega$ | 72.48135 | | +0.31872201 | +0.42273797 |
| $e$ | 0.1484786 | $i$ | 16.09009 | | | |
| $P$ | 5.12 | $H$ | 14.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 09 | 691 | 0.1+ | 0.1− | 2003 01 10 | 704 | 1.4+ | 0.2− | 2003 03 08 | 644 | 0.0 | 0.9+ |
| 1994 06 09 | 691 | 0.1− | 0.0 | 2003 01 10 | 704 | 0.3+ | 0.2+ | 2003 03 09 | 644 | 0.1− | 0.4+ |
| 1994 06 09 | 691 | 0.2− | 0.0 | 2003 01 10 | 704 | 1.0+ | 0.4+ | 2003 03 09 | 644 | 0.1+ | 0.1+ |
| 2001 09 11 | 704 | 0.3+ | 0.3− | 2003 01 13 | 704 | 0.9+ | 0.0 | 2003 03 09 | 644 | 0.1− | 0.4+ |
| 2001 09 11 | 704 | 0.1+ | 0.4− | 2003 01 13 | 704 | 0.4+ | 0.0 | 2004 04 24 | 704 | 1.2+ | 0.5+ |
| 2001 09 11 | 704 | 0.4+ | 0.2+ | 2003 01 13 | 704 | 0.8+ | 0.6− | 2004 04 24 | 704 | 0.6+ | 0.3− |
| 2001 09 11 | 704 | 0.2+ | 0.4+ | 2003 01 13 | 704 | 0.4+ | 0.4− | 2004 04 24 | 704 | 0.0 | 1.4− |
| 2001 09 11 | 704 | 0.2+ | 0.8+ | 2003 01 13 | 704 | 0.1+ | 0.2− | 2004 04 26 | 699 | 0.5− | 0.4+ |
| 2001 09 29 | 608 | 0.2+ | 0.2− | 2003 01 14 | 704 | 0.6+ | 0.2− | 2004 04 26 | 699 | 1.3− | 0.3+ |
| 2001 09 29 | 608 | 0.0 | 0.3− | 2003 01 14 | 704 | 0.7− | 1.3+ | 2004 04 26 | 699 | 0.9+ | 0.9+ |
| 2001 09 29 | 608 | 0.3− | 0.5− | 2003 01 14 | 704 | 0.4+ | 0.3+ | 2004 04 26 | 699 | 0.1+ | 0.4+ |
| 2002 11 14 | 644 | 0.6+ | 0.4+ | 2003 01 14 | 704 | 0.7+ | 1.0+ | 2006 08 14 | 644 | 0.3− | 0.2+ |
| 2002 11 14 | 644 | 0.4+ | 0.1+ | 2003 01 14 | 704 | (0.2+ | 1.6+) | 2006 08 14 | 644 | 0.4− | 0.0 |
| 2002 11 14 | 644 | 0.6+ | 0.6+ | 2003 01 25 | 704 | (1.7+ | 0.2+) | 2006 08 14 | 644 | 0.3− | 0.3+ |
| 2002 12 15 | 704 | 0.5− | 0.3+ | 2003 01 25 | 704 | 1.0+ | 1.0+ | 2006 09 16 | E12 | 0.1− | 0.9+ |
| 2002 12 15 | 704 | 0.7− | 0.2− | 2003 01 25 | 704 | (2.0+ | 0.5+) | 2006 09 16 | E12 | 0.2− | 0.0 |
| 2002 12 15 | 704 | 0.8− | 0.7+ | 2003 01 25 | 704 | 1.2+ | 0.8+ | 2006 09 16 | E12 | 0.5− | 0.4+ |
| 2002 12 15 | 704 | 0.3− | 0.3− | 2003 01 25 | 704 | 1.5+ | 0.8+ | 2006 09 16 | E12 | 0.2+ | 0.0 |
| 2002 12 31 | 645 | 0.2− | 0.2− | 2003 02 06 | 699 | 0.2− | 0.8+ | 2006 10 12 | E12 | 0.3− | 0.0 |
| 2002 12 31 | 645 | 0.2− | 0.3− | 2003 02 06 | 699 | 0.0 | 0.1+ | 2006 10 12 | E12 | 0.7+ | 0.3+ |
| 2003 01 05 | 699 | 0.2+ | 0.2− | 2003 02 06 | 699 | 0.1+ | 0.0 | 2006 10 12 | E12 | 0.3− | 0.2− |
| 2003 01 05 | 699 | 1.0− | 0.6+ | 2003 02 06 | 699 | 0.3− | 0.5− | 2006 10 12 | E12 | 0.9− | 0.4+ |
| 2003 01 05 | 699 | 0.0 | 0.4+ | 2003 03 08 | 644 | 0.1− | 0.8+ | | | | |
| 2003 01 05 | 699 | 0.7− | 0.9+ | 2003 03 08 | 644 | 0.2− | 0.8+ | | | | |

**(143345)∗ 2003 AF$_{78}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.38898 | | (2000.0) | | +0.68122540 | −0.72445624 |
| $n$ | 0.23991063 | $\omega$ | 353.08391 | | +0.67775349 | +0.56972556 |
| $a$ | 2.5650927 | $\Omega$ | 53.91160 | | +0.27673483 | +0.38804116 |
| $e$ | 0.2037632 | $i$ | 7.48955 | | | |
| $P$ | 4.11 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.1− | 0.4+ | 2003 01 10 | 704 | 0.2− | 1.1+ | 2004 05 27 | 691 | 0.1− | 0.4+ |
| 2001 07 14 | 644 | 0.1+ | 0.4+ | 2003 01 10 | 704 | 0.2− | 0.1+ | 2004 05 27 | 691 | 0.3+ | 0.1+ |
| 2001 07 14 | 644 | 0.2+ | 0.4+ | 2003 01 13 | 704 | 1.0+ | 0.1+ | 2005 07 29 | E12 | 0.3− | 0.5+ |
| 2001 08 12 | 644 | 0.2+ | 0.4+ | 2003 01 13 | 704 | 0.6− | 0.7+ | 2005 07 29 | E12 | 0.4+ | 0.9+ |
| 2001 08 12 | 644 | 0.1− | 0.4+ | 2003 01 13 | 704 | 0.4− | 0.2+ | 2005 07 29 | E12 | 0.8− | 0.9+ |
| 2001 08 12 | 644 | 0.3− | 0.5+ | 2003 01 13 | 704 | 0.2− | 0.3+ | 2005 07 29 | E12 | 0.2− | 1.2+ |
| 2001 08 24 | 644 | 0.2− | 0.1+ | 2003 01 31 | 699 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2001 08 24 | 644 | 0.2+ | 0.1− | 2003 01 31 | 699 | 0.7+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2001 08 24 | 644 | 0.1− | 0.3− | 2003 01 31 | 704 | 0.5− | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2002 12 02 | 704 | 0.1− | 0.3+ | 2003 01 31 | 699 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.5+ | 1.3− |
| 2002 12 02 | 704 | 0.2+ | 0.2+ | 2003 01 31 | 699 | 1.4+ | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2002 12 02 | 704 | 0.3+ | 0.2− | 2003 01 31 | 704 | 0.3− | 0.6− | 2006 10 28 | 703 | 0.2+ | 0.5+ |
| 2002 12 14 | 704 | 0.6+ | 0.7+ | 2003 01 31 | 704 | 0.6− | 0.4− | 2006 10 28 | 703 | 0.7− | 0.7− |
| 2002 12 14 | 704 | 0.4− | 0.9− | 2003 03 07 | 644 | 0.6+ | 0.7+ | 2006 11 02 | G96 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 0.8− | 0.4+ | 2003 03 07 | 644 | 0.9+ | 0.6+ | 2006 11 02 | G96 | 0.3− | 0.1− |
| 2002 12 14 | 704 | 0.9+ | 1.2− | 2003 03 07 | 644 | 1.0+ | 0.4+ | 2006 11 02 | G96 | 0.3− | 0.1+ |
| 2002 12 27 | 699 | 0.5− | 0.9+ | 2003 03 08 | 644 | 0.2− | 0.2− | 2006 11 02 | G96 | 0.2− | 0.2− |
| 2002 12 27 | 699 | 1.0− | 0.5+ | 2003 03 08 | 644 | 0.2− | 0.6− | 2006 11 27 | 704 | 0.2− | 0.7+ |
| 2002 12 27 | 699 | 1.1− | 0.5+ | 2003 03 08 | 644 | 0.3− | 0.5− | 2006 11 27 | 704 | 0.1+ | 1.2− |
| 2002 12 27 | 699 | 0.1+ | 0.0 | 2004 04 24 | 691 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.4+ |
| 2003 01 10 | 704 | 0.4+ | 0.7+ | 2004 04 24 | 691 | 0.3− | 0.2− | 2006 11 27 | 704 | 0.3− | 0.6+ |
| 2003 01 10 | 704 | 0.0 | 0.6+ | 2004 04 24 | 691 | 0.4+ | 0.0 | | | | |
| 2003 01 10 | 704 | 0.0 | 0.9+ | 2004 05 27 | 691 | 0.2− | 0.2− | | | | |

**(143346)∗ 2003 AS$_{78}$ = 2001 UU$_{211}$**

Discovered 2003 Jan. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 41458)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 238.60611 | | (2000.0) | | −0.99728361 | +0.06437490 |
| $n$ | 0.21296255 | $\omega$ | 306.86300 | | −0.04624548 | −0.92547824 |
| $a$ | 2.7771578 | $\Omega$ | 236.85433 | | −0.05733026 | −0.37329064 |
| $e$ | 0.1167459 | $i$ | 2.45021 | | | |
| $P$ | 4.63 | $H$ | 15.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 691 | 0.3+ | 0.2+ | 2003 01 30 | 699 | 1.1+ | 0.5+ | 2005 09 13 | 691 | 0.4− | 0.6+ |
| 1996 09 17 | 691 | 0.2+ | 0.3+ | 2003 01 30 | 699 | 0.5+ | 0.1+ | 2005 09 27 | 691 | 0.1− | 0.2+ |
| 1996 09 17 | 691 | 0.2+ | 0.3+ | 2003 01 30 | 699 | (1.5+ | 0.2−) | 2005 09 27 | 691 | 0.0 | 0.5+ |
| 1996 09 20 | 691 | 1.9− | 0.9+ | 2003 01 30 | 699 | 0.1+ | 0.0 | 2005 09 27 | 691 | 0.1− | 0.4+ |
| 1996 09 20 | 691 | 0.3+ | 0.1− | 2003 02 03 | 704 | 0.2+ | 1.3+ | 2006 09 27 | G96 | 0.2− | 0.6− |
| 1996 09 20 | 691 | 0.1− | 0.2− | 2003 02 03 | 704 | 0.6− | 1.3+ | 2006 09 27 | G96 | 0.0 | 0.7− |
| 1999 04 12 | 691 | 0.1+ | 0.1+ | 2003 02 03 | 704 | 0.6+ | 0.9+ | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 1999 04 12 | 691 | 0.6+ | 0.0 | 2003 02 03 | 704 | 0.8+ | 1.2+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 1999 04 12 | 691 | 0.3+ | 0.1+ | 2003 02 03 | 704 | (0.5− | 1.6+) | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.4+ | 0.3+ | 2005 07 31 | 644 | 0.6+ | 0.5+ | 2006 10 27 | G96 | 0.8+ | 0.6− |
| 2001 10 21 | 704 | 0.2− | 1.4+ | 2005 07 31 | 644 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2005 07 31 | 644 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.1+ | 0.4+ | 2005 08 27 | 644 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 049 | 0.2+ | 0.3+ | 2005 08 27 | 644 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.3+ | 0.4− |
| 2001 10 23 | 049 | 0.5+ | 0.2+ | 2005 08 27 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.3+ | 0.2− |
| 2001 10 23 | 049 | 0.3+ | 0.7+ | 2005 08 29 | 185 | (3.0+ | 14.8+) | 2006 11 15 | 691 | 0.5− | 0.1+ |
| 2003 01 10 | 291 | 0.3− | 0.3+ | 2005 08 29 | 185 | 0.6+ | 0.4+ | 2006 11 15 | 691 | 0.4− | 0.2− |
| 2003 01 10 | 291 | 0.6− | 0.1+ | 2005 08 29 | 185 | 0.1− | 0.9− | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2003 01 10 | 291 | 0.4− | 0.2+ | 2005 08 31 | 691 | 0.0 | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.2− |
| 2003 01 13 | 291 | 0.8− | 0.5+ | 2005 08 31 | 691 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.3− | 0.3− |
| 2003 01 13 | 291 | 0.4− | 0.1+ | 2005 08 31 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.5− |
| 2003 01 13 | 291 | 0.1− | 0.1+ | 2005 09 04 | 185 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2003 01 26 | 699 | 0.1+ | 1.5+ | 2005 09 04 | 185 | 0.8− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2003 01 26 | 699 | 1.0+ | 0.9− | 2005 09 04 | 185 | 0.1− | 1.2+ | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2003 01 26 | 699 | 0.4+ | 0.4− | 2005 09 06 | 185 | 0.2+ | 1.0− | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2003 01 26 | 699 | 0.9+ | 0.1− | 2005 09 06 | 185 | 1.2− | 1.1− | 2006 11 23 | 691 | 0.3+ | 0.3− |
| 2003 01 27 | 704 | (0.0 | 1.7+) | 2005 09 06 | 185 | 1.2− | 1.5− | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2003 01 27 | 704 | 0.0 | 0.8+ | 2005 09 07 | A13 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.2+ | 1.0− |
| 2003 01 27 | 704 | 0.1+ | 0.4+ | 2005 09 07 | A13 | 0.3− | 0.7− | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2003 01 27 | 644 | 0.4+ | 1.1+ | 2005 09 07 | A13 | 0.2+ | 0.6− | 2006 11 27 | 703 | 0.9+ | 0.2− |
| 2003 01 27 | 704 | 0.1+ | 1.1+ | 2005 09 12 | A13 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.6+ | 0.2− |
| 2003 01 27 | 644 | 0.0 | 0.2+ | 2005 09 12 | A13 | 0.3− | 0.7− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2003 01 27 | 704 | 0.6+ | 1.2+ | 2005 09 12 | A13 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.2− | 0.4+ |
| 2003 01 27 | 644 | 1.2+ | 0.9+ | 2005 09 12 | A13 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2003 01 27 | 644 | 0.1+ | 0.0 | 2005 09 12 | A13 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.2− | 0.3− |
| 2003 01 27 | 644 | 0.9+ | 0.7+ | 2005 09 13 | 691 | 0.3− | 0.3+ | 2006 12 01 | 691 | 0.4+ | 0.1− |
| 2003 01 27 | 644 | 0.2− | 0.0 | 2005 09 13 | 691 | 0.5− | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.2− |

**(143347)∗ 2003 AR$_{80}$**

Discovered 2003 Jan. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.48745 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22942564 | $\omega$ | 308.22452 | | +0.64022784 | −0.59504127 | |
| $a$ | 2.6426608 | $\Omega$ | 94.08994 | | +0.76334401 | +0.56369010 | |
| $e$ | 0.2352849 | $i$ | 29.14844 | | −0.08610597 | +0.57286941 | |
| $P$ | 4.30 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 704 | 0.1+ | 0.3+ | 2004 05 20 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.7− | 0.9+ |
| 2003 01 11 | 704 | (1.2+ | 1.9+) | 2004 05 20 | 691 | 0.3− | 0.0 | 2006 10 20 | 703 | (2.8− | 1.3−) |
| 2003 01 11 | 704 | 0.4− | 0.6+ | 2005 07 28 | E12 | 0.6+ | 0.0 | 2006 10 20 | 703 | 0.6− | 1.5− |
| 2003 01 11 | 704 | 0.4+ | 0.3− | 2005 07 28 | E12 | 0.6+ | 0.5+ | 2006 10 20 | 703 | 0.5− | 0.9+ |
| 2003 01 11 | 704 | 0.7− | 1.0− | 2005 07 28 | E12 | 1.3+ | 0.0 | 2006 10 20 | 703 | (1.4− | 1.9+) |
| 2003 01 13 | 704 | 0.4+ | 0.4+ | 2005 07 28 | E12 | 0.3− | 1.3+ | 2006 10 28 | 703 | (0.0 | 2.0−) |
| 2003 01 13 | 704 | 0.2+ | 0.9− | 2005 08 09 | E12 | 0.6− | 0.8+ | 2006 10 28 | 703 | (0.1− | 2.2+) |
| 2003 01 13 | 704 | 0.7+ | 0.4− | 2005 08 09 | E12 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 1.4− |
| 2003 03 23 | 704 | 0.4− | 0.1− | 2005 08 09 | E12 | 0.3− | 0.5+ | 2006 10 28 | 703 | 1.1− | 0.3− |
| 2003 03 23 | 704 | 0.5+ | 0.2− | 2005 08 09 | E12 | 0.5− | 0.9+ | 2006 11 16 | 704 | 1.2+ | 0.6+ |
| 2003 03 23 | 704 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.9+ | 1.3+ |
| 2003 03 23 | 704 | 0.1− | 1.3+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.9+ |
| 2003 03 24 | 704 | 0.1− | 1.4+ | 2006 09 25 | G96 | 0.4− | 0.1− | 2006 11 16 | 704 | 1.0+ | 0.3− |
| 2003 03 24 | 704 | 0.6+ | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.8+ |
| 2003 03 24 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.8+ | 2006 11 23 | 703 | 0.4+ | 0.5+ |
| 2003 03 24 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.0 | 2006 11 23 | 703 | 0.6− | 0.1+ |
| 2004 05 20 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | (1.0+ | 1.7+) | 2006 11 23 | 703 | 0.6+ | 0.2− |

**(143348)∗ 2003 AE$_{81}$**

Discovered 2003 Jan. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.09198 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24465295 | $\omega$ | 84.93776 | | −0.23504265 | −0.96739950 | |
| $a$ | 2.5318370 | $\Omega$ | 19.45791 | | +0.74125347 | −0.24116049 | |
| $e$ | 0.1842357 | $i$ | 16.44511 | | +0.62872749 | −0.07732935 | |
| $P$ | 4.03 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 0.4− | 0.5− | 2002 12 12 | 704 | 1.1− | 0.0 | 2003 04 04 | 704 | 1.5+ | 0.4+ |
| 1998 12 12 | 704 | 0.3− | 1.1− | 2002 12 28 | 704 | 0.1+ | 0.3+ | 2003 04 04 | 704 | 1.1+ | 1.0+ |
| 1998 12 12 | 704 | 1.7− | 2.0− | 2002 12 28 | 704 | 0.1− | 0.2+ | 2003 04 05 | 704 | (0.1+ | 1.6+) |
| 1998 12 12 | 704 | 1.2+ | 1.8− | 2002 12 28 | 704 | 0.2− | 0.1− | 2003 04 05 | 704 | 0.3− | 0.7+ |
| 1998 12 12 | 704 | 0.5− | 0.7− | 2002 12 28 | 704 | 0.7− | 0.1− | 2003 04 05 | 704 | 0.2+ | 1.0+ |
| 1999 01 14 | 704 | 0.1+ | 0.3− | 2002 12 28 | 704 | 0.9− | 0.3− | 2005 08 08 | E12 | 0.1+ | 0.8+ |
| 1999 01 14 | 704 | 0.6+ | 0.2+ | 2003 01 12 | 699 | 0.0 | 0.1+ | 2005 08 08 | E12 | 0.2− | 0.0 |
| 1999 01 14 | 704 | 0.3+ | 0.4− | 2003 01 12 | 699 | 0.1− | 0.5− | 2005 08 08 | E12 | 0.3− | 0.5+ |
| 1999 01 14 | 704 | 0.3+ | 0.3− | 2003 01 12 | 699 | 0.6− | 0.5− | 2005 08 08 | E12 | 0.3− | 0.9+ |
| 1999 01 14 | 704 | 0.4+ | 0.5− | 2003 01 12 | 699 | 0.6− | 0.4+ | 2005 09 06 | E12 | 0.7+ | 0.1− |
| 2001 08 10 | 644 | 0.4− | 0.2+ | 2003 01 14 | 704 | 0.0 | 0.1+ | 2005 09 06 | E12 | 0.3− | 0.6+ |
| 2001 08 10 | 644 | 0.6− | 0.1− | 2003 01 14 | 704 | 0.0 | 0.2− | 2005 09 06 | E12 | 0.4− | 0.2+ |
| 2001 08 10 | 644 | 0.4− | 0.2− | 2003 01 14 | 704 | 0.2− | 0.1− | 2005 09 06 | E12 | 0.7+ | 0.8− |
| 2002 10 05 | 704 | 0.6− | 1.5+ | 2003 01 14 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 703 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.1− | 0.5+ | 2003 01 21 | 704 | 0.0 | 0.0 | 2006 11 18 | 703 | 0.5+ | 0.1− |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2003 01 21 | 704 | 0.2− | 0.1− | 2006 11 18 | 703 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | 0.2+ | 0.6+ | 2003 01 21 | 704 | 0.7− | 0.2+ | 2006 11 18 | 703 | 0.0 | 0.3− |
| 2002 10 14 | 704 | 0.7+ | 0.0 | 2003 01 31 | 644 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.6+ | 0.9+ |
| 2002 10 14 | 704 | 1.3+ | 0.3− | 2003 01 31 | 644 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.8+ | 0.1+ |
| 2002 10 14 | 704 | 1.0+ | 0.2+ | 2003 01 31 | 644 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.1− |
| 2002 10 14 | 704 | 0.2+ | 0.5− | 2003 02 23 | 704 | 0.6+ | 0.6+ | 2006 11 19 | 703 | 0.3+ | 0.3− |
| 2002 10 14 | 704 | (1.6+ | 1.5−) | 2003 02 23 | 704 | 0.3− | 0.8+ | 2006 11 20 | 703 | 0.5+ | 0.1+ |
| 2002 10 30 | 704 | 0.4− | 0.3+ | 2003 02 23 | 704 | 0.7+ | 0.6+ | 2006 11 20 | 703 | 0.2+ | 0.5+ |
| 2002 10 30 | 704 | 0.7− | 0.7+ | 2003 02 23 | 704 | 0.1+ | 1.4+ | 2006 11 20 | 703 | 0.7+ | 0.1+ |
| 2002 10 30 | 704 | 0.3− | 0.0 | 2003 03 24 | 704 | 0.5− | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.2+ |
| 2002 10 30 | 704 | 0.9+ | 0.0 | 2003 03 24 | 704 | 0.8+ | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.3+ |
| 2002 11 17 | 644 | 0.1+ | 0.3+ | 2003 03 24 | 704 | 0.4− | 0.5− | 2006 11 27 | 703 | 0.1+ | 0.0 |
| 2002 11 17 | 644 | 0.0 | 0.2+ | 2003 03 24 | 704 | 0.3+ | 0.9− | 2006 11 27 | 703 | 0.3+ | 0.5+ |
| 2002 11 17 | 644 | 0.1+ | 0.1+ | 2003 03 24 | 704 | 0.2− | 0.3+ | 2006 12 03 | 704 | 0.6− | 0.4− |
| 2002 12 12 | 704 | 1.2− | 0.2− | 2003 04 04 | 704 | 0.9+ | 0.7+ | 2006 12 03 | 704 | 1.1− | 0.2+ |
| 2002 12 12 | 704 | 0.7− | 0.0 | 2003 04 04 | 704 | 1.0+ | 1.3+ | 2006 12 03 | 704 | (0.4+ | 1.5+) |
| 2002 12 12 | 704 | 0.9− | 0.1+ | 2003 04 04 | 704 | (2.3+ | 0.8+) | | | | |

**(143349)∗ 2003 AG$_{81}$**

Discovered 2003 Jan. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.08931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22679770 | $\omega$ | 13.39196 | | +0.58998140 | −0.79476696 | |
| $a$ | 2.6630354 | $\Omega$ | 40.71040 | | +0.71922782 | +0.43718056 | |
| $e$ | 0.1812690 | $i$ | 12.60746 | | +0.36692409 | +0.42097344 | |
| $P$ | 4.35 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.1+ | 0.1− | 2004 04 19 | 704 | 0.6+ | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.1− |
| 1993 12 14 | 691 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 1.1+ | 0.3− | 2006 10 23 | 691 | 0.7− | 0.0 |
| 1993 12 14 | 691 | 0.5− | 0.2− | 2004 04 22 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 691 | 0.6− | 0.0 |
| 1999 02 18 | 704 | 0.7+ | 1.0− | 2004 04 22 | 704 | 0.5+ | 0.2+ | 2006 10 26 | 704 | 0.6− | 0.1+ |
| 1999 02 18 | 704 | 0.6+ | 1.1− | 2004 04 22 | 704 | 1.5− | 0.4+ | 2006 10 26 | 704 | 0.6− | 0.1− |
| 1999 02 18 | 704 | 1.2− | 1.8+ | 2004 05 28 | 691 | 0.3+ | 0.3+ | 2006 10 26 | 704 | 1.0− | 0.2− |
| 1999 02 18 | 704 | (0.5− | 2.2+) | 2004 05 28 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2002 10 31 | 704 | 1.1+ | 0.2− | 2004 05 28 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2006 08 28 | 704 | 0.7+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2002 10 31 | 704 | 0.2+ | 0.6− | 2006 08 28 | 704 | 0.7− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2006 08 28 | 704 | 1.3+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | 0.3− | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.7− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.3− | 0.6+ | 2006 09 19 | 704 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.1− | 1.2+ | 2006 09 19 | 704 | 0.4− | 1.2+ | 2006 10 28 | 704 | 0.7− | 0.2+ |
| 2002 11 06 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 704 | 1.3− | 1.4+ | 2006 10 28 | 704 | 0.1− | 0.2+ |
| 2002 11 15 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 704 | (0.9− | 3.0+) | 2006 10 28 | 704 | 0.2− | 0.3+ |
| 2002 11 15 | 704 | 1.0+ | 0.2+ | 2006 09 19 | 683 | 0.3+ | 0.0 | 2006 10 28 | 704 | 0.1+ | 0.9+ |
| 2002 11 15 | 704 | 0.3+ | 0.2− | 2006 09 19 | 683 | 0.6+ | 0.5+ | 2006 10 28 | 704 | 0.3+ | 0.3+ |
| 2002 11 28 | 699 | (1.9− | 2.2−) | 2006 09 19 | 683 | 0.8− | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 11 28 | 699 | 0.4+ | 1.0− | 2006 09 26 | 704 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 11 28 | 699 | 0.8− | 0.9− | 2006 09 26 | 704 | 0.5+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 699 | 0.1− | 0.8− | 2006 09 26 | 704 | 0.8+ | 0.9+ | 2006 11 02 | 704 | (1.5+ | 0.3+) |
| 2002 12 06 | 704 | 0.5− | 0.1− | 2006 09 26 | 704 | (0.4− | 1.5+) | 2006 11 02 | 704 | (2.1+ | 0.7+) |
| 2002 12 06 | 704 | 0.4+ | 0.9− | 2006 09 26 | 704 | 0.9− | 1.1+ | 2006 11 02 | 704 | 1.3+ | 0.9+ |
| 2002 12 06 | 704 | 0.6− | 1.4− | 2006 09 27 | 683 | (1.5− | 2.2−) | 2006 11 02 | 704 | (1.9+ | 0.5+) |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2006 09 27 | 683 | (1.6− | 2.4−) | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 12 15 | 704 | 0.5+ | 0.1− | 2006 09 27 | 683 | (2.9− | 3.6−) | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 12 15 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 12 15 | 704 | 0.0 | 0.4− | 2006 09 28 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2002 12 15 | 704 | 0.6+ | 0.1+ | 2006 09 28 | 704 | 0.5− | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2002 12 15 | 704 | 0.7+ | 0.8− | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2002 12 28 | 704 | 0.6− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2002 12 28 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2002 12 28 | 704 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2002 12 28 | 704 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2002 12 28 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2003 01 10 | 704 | 0.5− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2003 01 10 | 704 | 0.6− | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2003 01 10 | 704 | 0.7− | 0.3+ | 2006 10 03 | 704 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2003 01 10 | 704 | 0.5− | 0.2+ | 2006 10 03 | 704 | 1.0− | 0.8+ | 2006 11 17 | 703 | 0.0 | 0.4− |
| 2003 01 14 | 704 | 0.0 | 0.5+ | 2006 10 03 | 704 | (0.8+ | 2.6+) | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2003 01 14 | 704 | 0.5+ | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2003 01 14 | 704 | 0.3+ | 0.2− | 2006 10 03 | 704 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2003 01 14 | 704 | 0.5+ | 0.6− | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.3− |
| 2004 03 20 | 704 | 0.1+ | 1.2+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.3− |
| 2004 03 20 | 704 | 0.9+ | 1.1+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2004 03 20 | 704 | 0.3+ | 1.2+ | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2004 03 25 | 699 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.4− |
| 2004 03 25 | 699 | 0.5− | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.9+ | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2004 03 25 | 699 | 1.1+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 1.1+ | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2004 03 25 | 699 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2004 03 28 | 704 | 0.8− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2004 03 28 | 704 | 0.7+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2004 03 28 | 704 | 0.8+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2004 03 28 | 704 | 0.6+ | 1.4+ | 2006 10 19 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2004 04 09 | E12 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2004 04 09 | E12 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2004 04 09 | E12 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.2+ |
| 2004 04 09 | E12 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 704 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.6+ |
| 2004 04 14 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 704 | 0.5− | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.7+ |
| 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 704 | 0.5+ | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.9+ |
| 2004 04 19 | 704 | 0.6+ | 0.1− | 2006 10 23 | 704 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.4+ | 1.8+ |
| 2004 04 19 | 704 | 1.2+ | 0.1− | 2006 10 23 | 704 | 0.2− | 0.1+ | | | | |

**(143350)∗ 2003 AW$_{81}$**

Discovered 2003 Jan. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.66542 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21911833 | $\omega$ | 65.77067 | | −0.22100759 | | −0.96391538 |
| $a$ | 2.7248979 | $\Omega$ | 37.97262 | | +0.78425465 | | −0.26610356 |
| $e$ | 0.1336064 | $i$ | 13.95681 | | +0.57974157 | | −0.00748552 |
| $P$ | 4.50 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 910 | 0.5− | 0.9− | 2003 01 12 | 699 | 0.4− | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 1997 10 04 | 910 | 0.4− | 0.8− | 2003 01 12 | 699 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 1997 10 04 | 910 | 0.4− | 0.9− | 2003 01 12 | 699 | 0.1− | 0.0 | 2006 10 28 | 704 | (1.7+ | 0.4+) |
| 1997 10 31 | 704 | 1.0− | 0.9− | 2003 01 14 | 704 | 0.0 | 0.3− | 2006 10 28 | 704 | 0.8+ | 0.7+ |
| 1997 10 31 | 704 | 1.7+ | 0.2+ | 2003 01 14 | 704 | 0.1+ | 0.7− | 2006 10 28 | 704 | 1.2+ | 0.1+ |
| 1997 10 31 | 704 | 0.3+ | 0.9− | 2003 01 14 | 704 | 0.8− | 0.7− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 1997 10 31 | 704 | 1.5+ | 0.4− | 2003 01 14 | 704 | 0.9− | 1.1− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 1997 10 31 | 704 | (3.0− | 0.2+) | 2003 01 14 | 704 | 1.2− | 1.1− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1997 11 06 | 704 | (3.5− | 2.2−) | 2003 01 21 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 1997 11 06 | 704 | (5.2− | 1.2−) | 2003 01 21 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 1997 11 06 | 704 | (5.1− | 2.1−) | 2003 01 21 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 1997 11 06 | 704 | (5.4− | 0.1−) | 2003 02 18 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 1997 11 06 | 704 | (2.3+ | 0.1+) | 2003 02 18 | 644 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.3− |
| 1997 11 06 | 704 | 1.4+ | 1.3+ | 2003 02 18 | 644 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.1− |
| 1997 11 06 | 704 | (1.0− | 3.2−) | 2003 03 09 | 699 | 0.8− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 1997 11 06 | 704 | (2.0− | 0.9+) | 2003 03 09 | 699 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2001 09 11 | 704 | 0.6− | 0.1− | 2003 03 09 | 699 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2001 09 11 | 704 | 0.4− | 0.6− | 2003 03 09 | 699 | 0.6− | 0.9+ | 2006 11 17 | 704 | 1.1− | 1.2+ |
| 2001 09 11 | 704 | 0.3+ | 0.6− | 2004 04 20 | 704 | 0.1− | 1.2+ | 2006 11 17 | 704 | (1.8+ | 0.3+) |
| 2002 12 07 | 704 | 0.1− | 0.2+ | 2004 04 20 | 704 | 0.3− | 1.1+ | 2006 11 17 | 704 | (1.6− | 0.2+) |
| 2002 12 07 | 704 | 0.6− | 0.1+ | 2004 04 20 | 704 | 1.0+ | 0.9− | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2002 12 07 | 704 | 0.9− | 0.5− | 2004 05 15 | 704 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 12 07 | 704 | 0.6− | 0.3− | 2004 05 15 | 704 | 0.8+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2002 12 07 | 704 | 0.4+ | 0.4+ | 2004 05 15 | 704 | (0.5+ | 1.8+) | 2006 11 19 | 704 | 0.7+ | 0.1− |
| 2002 12 15 | 704 | 0.6+ | 0.5− | 2004 05 15 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2002 12 15 | 704 | (1.9+ | 0.5−) | 2006 09 25 | G96 | 0.4+ | 1.2− | 2006 11 22 | 704 | 0.5− | 0.9+ |
| 2002 12 15 | 704 | (1.9+ | 0.4−) | 2006 09 25 | G96 | 0.3+ | 0.8− | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2002 12 15 | 704 | 1.2+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.7− | 2006 11 22 | 704 | 0.7− | 1.3+ |
| 2002 12 15 | 704 | 1.0+ | 0.4− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.8− | 0.4+ |
| 2002 12 28 | 704 | 0.2+ | 0.4− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2002 12 28 | 704 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.6+ |
| 2002 12 28 | 704 | 0.7+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2002 12 28 | 704 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.3− |
| 2002 12 28 | 704 | 0.6+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.9+ | 0.1+ |
| 2003 01 12 | 699 | 0.0 | 1.3+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.2+ |

**(143351)∗ 2003 AD$_{84}$ = 1999 BK$_{33}$**

Discovered 2003 Jan. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 94894)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.82793 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24290478 | $\omega$ | 306.09932 | | +0.41684826 | | −0.90664283 |
| $a$ | 2.5439701 | $\Omega$ | 119.14117 | | +0.85608830 | | +0.36751827 |
| $e$ | 0.2272948 | $i$ | 4.27361 | | +0.30553290 | | +0.20719337 |
| $P$ | 4.06 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.1− | 0.5− | 2003 01 11 | 291 | 0.2+ | 0.2+ | 2005 06 13 | G96 | 0.3+ | 0.2+ |
| 1995 02 02 | 691 | 0.2− | 0.2− | 2003 01 11 | 291 | 0.4+ | 0.2+ | 2005 06 13 | G96 | 0.6− | 0.5+ |
| 1995 02 02 | 691 | 0.4− | 0.3− | 2003 01 15 | 644 | 0.3+ | 0.1+ | 2005 06 13 | G96 | 0.5− | 0.9+ |
| 1998 12 22 | 097 | 0.4− | 0.2− | 2003 01 15 | 644 | 0.2+ | 0.1+ | 2005 06 13 | G96 | 0.3− | 0.5+ |
| 1998 12 22 | 097 | 0.7− | 0.1− | 2003 01 15 | 644 | 0.2+ | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.4− |
| 1998 12 22 | 097 | 0.4− | 0.2− | 2003 01 27 | 699 | 1.3+ | 0.9− | 2005 07 09 | 691 | 0.0 | 0.0 |
| 1999 01 24 | 159 | 1.9+ | 1.5− | 2003 01 27 | 699 | 0.2− | 0.7+ | 2005 07 09 | 691 | 0.2+ | 0.1− |
| 1999 01 24 | 159 | 0.5+ | 0.5− | 2003 01 27 | 699 | 0.2+ | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 1999 01 24 | 159 | 1.2+ | 1.1+ | 2003 01 27 | 699 | (0.9+ | 2.0+) | 2006 11 01 | G96 | 0.2− | 0.6− |
| 2002 10 31 | 291 | 0.1− | 0.1+ | 2003 01 29 | 645 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.5− | 0.4− |
| 2002 10 31 | 291 | 0.1+ | 0.0 | 2003 01 29 | 645 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2002 10 31 | 291 | 0.1+ | 0.1+ | 2003 01 31 | 291 | 0.4− | 0.6+ | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2003 01 04 | 704 | 0.9+ | 0.0 | 2003 01 31 | 291 | 0.2− | 0.6+ | 2006 11 18 | G96 | 0.3− | 0.5− |
| 2003 01 04 | 704 | 0.8+ | 0.0 | 2003 01 31 | 291 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2003 01 04 | 704 | 0.1+ | 0.1− | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2003 01 11 | 291 | 0.2+ | 0.2+ | 2003 02 01 | 645 | 0.1− | 0.0 | | | | |

**(143352)∗ 2003 AB$_{85}$ = 1998 FV$_{147}$**

Discovered 2003 Jan. 7 by Deep Lens Survey at Kitt Peak.

Id. A. Doppler (*MPO* 47257)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.58223 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18119039 | $\omega$ | 181.52246 | | −0.96992094 | | +0.24026188 |
| $a$ | 3.0929954 | $\Omega$ | 12.58811 | | −0.22139554 | | −0.80397695 |
| $e$ | 0.1229364 | $i$ | 10.33106 | | −0.10117997 | | −0.54396258 |
| $P$ | 5.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 26 | 704 | 0.5− | 0.4− | 2003 01 07 | 695 | 0.5+ | 0.9− | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 1998 03 26 | 704 | 1.5+ | 1.5+ | 2003 01 07 | 695 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 26 | 704 | 0.8− | 1.0+ | 2003 01 10 | 644 | 0.7+ | 0.9+ | 2006 10 11 | 691 | 0.3− | 0.1+ |
| 1998 03 29 | 704 | 0.1+ | 0.9− | 2003 01 10 | 644 | 0.7+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.2− |
| 1998 03 29 | 704 | 0.9+ | 0.4− | 2003 01 10 | 644 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.3+ |
| 1998 03 29 | 704 | 1.0− | 1.1− | 2003 01 29 | 645 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.3+ | 0.2+ |
| 1998 03 29 | 704 | (0.2− | 2.2−) | 2003 01 29 | 645 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.3− |
| 2000 09 05 | 691 | 0.1− | 0.4− | 2003 01 31 | 699 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.2+ |
| 2000 09 05 | 691 | 0.3− | 0.4− | 2003 01 31 | 699 | 0.5− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.4− |
| 2000 09 05 | 691 | 0.4− | 0.4− | 2003 01 31 | 699 | 0.5− | 0.2− | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2000 09 26 | 645 | 0.1+ | 0.1+ | 2003 01 31 | 699 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2000 09 26 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2003 01 07 | 695 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2003 01 07 | 695 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2003 01 07 | 695 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.4− |

**(143353)∗ 2003 AP$_{86}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.43563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24095376 | $\omega$ | 224.48564 | | +0.99236597 | −0.09826641 | |
| $a$ | 2.5576842 | $\Omega$ | 140.97198 | | +0.11673819 | +0.94333407 | |
| $e$ | 0.3076980 | $i$ | 6.79659 | | −0.03977415 | +0.31696142 | |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 691 | 0.2− | 0.3+ | 2005 06 01 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2001 05 24 | 691 | 0.0 | 0.4+ | 2005 06 01 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2001 05 24 | 691 | 0.3− | 0.3+ | 2005 06 05 | 691 | 0.4+ | 0.4+ | 2006 11 15 | 703 | 0.6− | 0.3+ |
| 2003 01 01 | 704 | 0.7− | 0.2+ | 2005 06 05 | 691 | 0.2+ | 0.5+ | 2006 11 15 | 703 | (0.2+ | 1.5−) |
| 2003 01 01 | 704 | 0.6− | 1.3+ | 2005 06 05 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2003 01 01 | 704 | 0.9+ | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2003 01 07 | 704 | 0.7+ | 1.1− | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.5− | 1.0+ |
| 2003 01 07 | 704 | 0.7+ | 0.2− | 2005 06 17 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.8+ |
| 2003 01 07 | 704 | 1.1+ | 0.4+ | 2006 09 22 | 704 | 0.8+ | 0.4− | 2006 11 17 | 703 | 0.2− | 0.8+ |
| 2003 01 07 | 704 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 0.2− | 1.2+ | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2003 01 07 | 704 | 0.5+ | 1.3+ | 2006 09 22 | 704 | 0.9+ | 0.8+ | 2006 11 19 | 704 | 0.7+ | 0.5+ |
| 2003 01 27 | 704 | 0.4− | 0.4− | 2006 09 22 | 704 | 0.6− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2003 01 27 | 704 | 0.6− | 0.5+ | 2006 10 01 | 703 | 0.0 | 0.8+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2003 01 27 | 704 | 0.5− | 0.3− | 2006 10 01 | 703 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2003 01 27 | 704 | 0.1− | 0.3− | 2006 10 01 | 703 | 0.4− | 0.8+ | 2006 11 25 | 704 | 0.8+ | 1.2+ |
| 2004 03 17 | 691 | 0.2− | 0.2− | 2006 10 01 | 703 | 0.8− | 0.5+ | 2006 11 25 | 704 | 0.9− | 0.2+ |
| 2004 03 17 | 691 | 0.4+ | 0.0 | 2006 10 03 | 704 | 1.0+ | 0.8+ | 2006 11 25 | 704 | 0.4− | 0.3− |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.7+ | 0.4+ | 2006 11 25 | 704 | 0.5− | 0.3+ |
| 2004 03 27 | 691 | 0.1+ | 0.4− | 2006 10 03 | 704 | 0.4+ | 0.7− | 2006 11 25 | 704 | 0.3− | 0.1− |
| 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 1.1− | 0.1− |
| 2004 03 27 | 691 | 0.3− | 0.2− | 2006 10 03 | 704 | 1.1+ | 0.2− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2005 05 20 | G96 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.5+ | 2006 11 28 | 704 | 0.5− | 0.2+ |
| 2005 05 20 | G96 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2005 05 20 | G96 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 12 03 | 644 | 0.1+ | 0.1− |
| 2005 05 20 | G96 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.3− | 0.1+ | 2006 12 03 | 644 | 0.0 | 0.2+ |
| 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.0 | 2006 12 03 | 644 | 0.6− | 0.0 |

**(143354)∗ 2003 AS$_{87}$**

Discovered 2003 Jan. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.19096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18354980 | $\omega$ | 27.48850 | | −0.96397202 | −0.23107467 | |
| $a$ | 3.0664327 | $\Omega$ | 138.45937 | | +0.19260761 | −0.94799417 | |
| $e$ | 0.0809204 | $i$ | 11.46082 | | +0.18346731 | −0.21888705 | |
| $P$ | 5.37 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 14 | 704 | 0.7+ | 0.1− | 2004 03 26 | 683 | 1.3+ | 0.7− | 2004 04 26 | 704 | 0.1+ | 0.3+ |
| 1999 06 14 | 704 | 1.0− | 1.1+ | 2004 03 26 | 683 | 0.6+ | 0.3+ | 2004 04 26 | 704 | 0.1+ | 0.1− |
| 1999 06 14 | 704 | 0.1− | 0.8+ | 2004 03 26 | 683 | 1.1− | 0.4+ | 2004 04 26 | 704 | 0.3+ | 0.3+ |
| 1999 06 14 | 704 | 0.4+ | 0.1− | 2004 03 27 | 699 | 0.4+ | 0.3− | 2004 04 26 | 704 | 0.1− | 0.1+ |
| 2001 09 18 | 645 | 0.0 | 0.1+ | 2004 03 27 | 699 | 0.7+ | 0.3+ | 2004 04 26 | 704 | 0.1+ | 0.3− |
| 2001 09 18 | 645 | 0.1− | 0.2+ | 2004 03 27 | 699 | 0.5− | 0.6+ | 2004 05 11 | 703 | 0.6− | 0.8+ |
| 2001 09 21 | 645 | 0.0 | 0.2+ | 2004 03 27 | 699 | 0.7− | 0.2+ | 2004 05 11 | 703 | 0.8+ | 1.3+ |
| 2001 09 21 | 645 | 0.0 | 0.1+ | 2004 03 28 | 683 | 1.3− | 0.4+ | 2004 05 11 | 703 | 1.1− | 0.7+ |
| 2001 10 15 | 644 | 0.7− | 0.8+ | 2004 03 28 | 683 | 0.1− | 0.0 | 2004 05 11 | 703 | 0.4− | 0.2+ |
| 2001 10 15 | 644 | 0.6− | 0.3+ | 2004 03 28 | 683 | 0.7+ | 0.8+ | 2004 05 13 | 704 | 1.1+ | 0.2+ |
| 2001 10 15 | 644 | 0.4− | 0.3+ | 2004 03 28 | 703 | 0.1+ | 1.0+ | 2004 05 13 | 704 | 1.2+ | 0.1− |
| 2003 01 01 | 704 | 0.3− | 1.2+ | 2004 03 28 | 703 | (1.6− | 0.4−) | 2004 05 13 | 704 | 0.9+ | 0.6− |
| 2003 01 01 | 704 | 0.8+ | 0.4+ | 2004 03 28 | 703 | 0.7− | 0.2− | 2005 06 09 | 691 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.0 | 0.4+ | 2004 03 28 | 703 | (0.2− | 2.3+) | 2005 06 09 | 691 | 0.1+ | 0.2+ |
| 2003 01 07 | 704 | 0.1+ | 0.3+ | 2004 03 30 | 691 | 0.1− | 0.1+ | 2005 06 09 | 691 | 0.4− | 0.2+ |
| 2003 01 07 | 704 | 0.6− | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.1+ | 2006 09 17 | 699 | 0.2+ | 0.7+ |
| 2003 01 07 | 704 | 0.2− | 0.6+ | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.7− | 0.6+ |
| 2003 01 13 | 644 | 0.2+ | 0.9+ | 2004 04 10 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 699 | (0.0 | 1.8+) |
| 2003 01 13 | 644 | 0.1+ | 0.6+ | 2004 04 10 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.6+ | 0.9+ |
| 2003 01 13 | 644 | 0.1− | 0.3+ | 2004 04 10 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2003 01 27 | 704 | 0.4− | 0.0 | 2004 04 24 | 704 | 0.3+ | 0.1− | 2006 09 19 | 703 | (1.6− | 0.7+) |
| 2003 01 27 | 704 | (0.7− | 1.7+) | 2004 04 24 | 704 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2003 01 27 | 704 | 0.3− | 0.7+ | 2004 04 24 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | 0.4− | 0.8+ |
| 2003 01 27 | 704 | 0.3+ | 0.1− | 2004 04 24 | 704 | 0.1+ | 0.2− | 2006 09 25 | 703 | 0.6− | 0.1− |
| 2004 03 16 | 704 | 0.9+ | 0.4+ | 2004 04 25 | 699 | 0.5+ | 0.2+ | 2006 09 25 | 703 | 0.2− | 0.9+ |
| 2004 03 16 | 704 | 0.8+ | 1.4+ | 2004 04 25 | 699 | 0.1+ | 0.6+ | 2006 09 25 | 703 | 0.3+ | 0.6+ |
| 2004 03 16 | 704 | 0.6+ | 0.9+ | 2004 04 25 | 699 | 0.5− | 0.4+ | 2006 09 25 | 703 | 1.5− | 0.3− |
| 2004 03 16 | 704 | 0.4+ | 1.5+ | 2004 04 25 | 699 | 0.1− | 0.9+ | 2006 10 21 | 703 | 1.9+ | 0.2+ |
| 2004 03 23 | 704 | 1.0+ | 1.1+ | 2004 04 26 | 704 | 0.3− | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2004 03 23 | 704 | 0.1− | 1.0+ | 2004 04 26 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 1.0− | 2.4+ |
| 2004 03 23 | 704 | 0.1+ | 1.1+ | 2004 04 26 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.4− |
| 2004 03 23 | 704 | 0.2− | 0.5+ | 2004 04 26 | 704 | 0.1+ | 0.4− | | | | |

**(143355)∗ 2003 AD$_{88}$ = 1999 JJ$_{67}$**

Discovered 2003 Jan. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47258)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.19344 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20090142 | $\omega$ | 88.76859 | | −0.73574076 | −0.65718673 | |
| $a$ | 2.8872255 | $\Omega$ | 50.11688 | | +0.50494085 | −0.69334236 | |
| $e$ | 0.1569631 | $i$ | 12.31607 | | +0.45135382 | −0.29560441 | |
| $P$ | 4.91 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 1.7+ | 1.5+ | 2003 01 13 | 704 | 0.2+ | 0.2+ | 2004 05 15 | 704 | (0.4− | 1.5+) |
| 1999 05 12 | 704 | 0.8− | 1.4+ | 2003 01 13 | 704 | 0.1− | 0.0 | 2004 05 15 | 704 | 0.3+ | 0.0 |
| 1999 05 12 | 704 | 1.3− | 0.0 | 2003 01 13 | 704 | 0.1+ | 0.2+ | 2004 05 16 | 691 | 0.1+ | 0.1+ |
| 1999 05 12 | 704 | 0.8− | 0.4+ | 2004 02 23 | 704 | 0.9+ | 1.4− | 2004 05 16 | 704 | 0.2− | 0.0 |
| 1999 05 13 | 704 | 0.1− | 0.8− | 2004 02 23 | 704 | (0.4+ | 1.8−) | 2004 05 16 | 704 | 0.4+ | 0.1+ |
| 1999 05 13 | 704 | 1.4− | 0.6+ | 2004 02 23 | 704 | 0.5− | 0.1+ | 2004 05 16 | 691 | 0.2+ | 0.1+ |
| 1999 05 13 | 704 | (0.4+ | 2.1−) | 2004 02 23 | 704 | 0.0 | 0.5− | 2004 05 16 | 704 | 0.1+ | 0.1− |
| 1999 05 13 | 704 | (2.5− | 0.7+) | 2004 03 24 | 699 | (1.9+ | 1.6−) | 2004 05 16 | 704 | 0.5+ | 0.0 |
| 1999 05 19 | 704 | 0.8+ | 1.1− | 2004 03 24 | 699 | (1.7+ | 0.2−) | 2004 05 16 | 691 | 0.0 | 0.2+ |
| 1999 05 19 | 704 | 0.5− | 0.3+ | 2004 03 24 | 699 | 0.5+ | 1.4+ | 2004 05 19 | 704 | 0.4− | 0.2− |
| 1999 05 19 | 704 | 0.1+ | 0.1− | 2004 03 24 | 699 | 0.4+ | 0.5+ | 2004 05 19 | 704 | 1.1− | 0.3+ |
| 1999 05 19 | 704 | 1.0− | 0.0 | 2004 03 25 | 699 | (1.7− | 1.1−) | 2004 05 19 | 704 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.0 | 2004 03 25 | 699 | 0.2− | 1.2+ | 2004 05 19 | 704 | 0.7+ | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 0.8+ | 2004 03 25 | 699 | 0.9+ | 0.8+ | 2004 05 19 | 704 | 0.8+ | 0.5+ |
| 2001 09 25 | 704 | 0.4− | 0.7+ | 2004 03 25 | 699 | 0.4− | 0.2+ | 2004 05 21 | G92 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 0.9+ | 2004 03 28 | 704 | 0.3− | 0.0 | 2004 05 21 | G92 | 0.1− | 0.7− |
| 2001 10 15 | 644 | 0.1− | 1.3+ | 2004 03 28 | 704 | 1.4+ | 1.0− | 2004 05 21 | G92 | 0.0 | 0.4− |
| 2001 10 15 | 644 | 0.4− | 1.2+ | 2004 03 28 | 704 | 0.8− | 1.4+ | 2004 06 07 | 699 | 0.4+ | 0.9+ |
| 2001 10 15 | 644 | 0.0 | 1.0+ | 2004 03 28 | 704 | 0.8− | 0.2− | 2004 06 07 | 699 | 0.4− | 0.8+ |
| 2001 10 23 | 644 | 0.3+ | 0.8+ | 2004 03 31 | 704 | 0.4+ | 0.4+ | 2004 06 07 | 699 | 0.0 | 1.0+ |
| 2001 10 23 | 644 | 0.2+ | 0.6+ | 2004 03 31 | 704 | 0.2+ | 0.1− | 2004 06 07 | 699 | 1.3+ | 0.8+ |
| 2001 10 23 | 644 | 0.3+ | 1.0+ | 2004 03 31 | 704 | 0.2+ | 0.1− | 2004 06 11 | 644 | 0.1+ | 0.7+ |
| 2002 11 12 | 704 | 0.5+ | 1.2+ | 2004 03 31 | 704 | 0.0 | 0.2− | 2004 06 11 | 644 | 0.0 | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.2+ | 0.7+ | 2004 04 12 | 699 | 0.3+ | 0.1− | 2004 06 11 | 644 | 0.0 | 0.7+ |
| 2002 11 12 | 704 | 0.2− | 0.4− | 2004 04 12 | 699 | 0.7+ | 0.3+ | 2006 09 19 | 703 | 0.9− | 0.2+ |
| 2002 12 05 | 704 | 0.2− | 0.8+ | 2004 04 12 | 699 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.9− | 0.2− |
| 2002 12 05 | 704 | 0.3− | 1.4+ | 2004 04 12 | 699 | 0.8+ | 1.2− | 2006 09 19 | 703 | 0.7+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.9+ | 2004 04 15 | 699 | 0.9+ | 0.2+ | 2006 09 19 | 703 | 0.9− | 0.2+ |
| 2002 12 05 | 704 | 0.8− | 1.0+ | 2004 04 15 | 699 | 0.0 | 0.8− | 2006 09 26 | 703 | 0.7− | 0.4+ |
| 2002 12 05 | 704 | 0.5− | 1.2+ | 2004 04 15 | 699 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 2002 12 15 | 704 | 0.4+ | 0.7+ | 2004 04 15 | 699 | 0.1− | 0.9− | 2006 09 26 | 703 | 0.8+ | 0.9+ |
| 2002 12 15 | 704 | 0.1+ | 0.6+ | 2004 04 17 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.7+ |
| 2002 12 15 | 704 | 0.7+ | 0.7+ | 2004 04 17 | 704 | 0.7+ | 0.2+ | 2006 10 02 | 703 | 0.6− | 0.7− |
| 2002 12 15 | 704 | 0.9+ | 0.8+ | 2004 04 17 | 704 | (2.0+ | 0.0 ) | 2006 10 02 | 703 | 0.8− | 0.6− |
| 2002 12 15 | 704 | 0.8+ | 1.1+ | 2004 04 19 | 704 | 0.2+ | 0.7+ | 2006 10 02 | 703 | 0.1− | 0.4− |
| 2003 01 02 | 704 | 0.3+ | 0.2− | 2004 04 19 | 704 | 0.2− | 0.1+ | 2006 10 02 | 703 | 1.0− | 1.0+ |
| 2003 01 02 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 704 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2003 01 02 | 704 | 0.1+ | 0.2+ | 2004 04 19 | 704 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2003 01 02 | 704 | 0.5+ | 0.5− | 2004 04 19 | 704 | 0.6− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2003 01 02 | 704 | 0.6− | 0.7− | 2004 04 22 | 704 | 0.2− | 0.3+ | 2006 10 17 | 703 | (1.6+ | 0.7+) |
| 2003 01 02 | 704 | 0.3− | 0.2+ | 2004 04 22 | 704 | 0.3+ | 0.9− | 2006 10 17 | 703 | 1.0+ | 0.9− |
| 2003 01 02 | 704 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 703 | 1.2− | 0.5+ |
| 2003 01 02 | 704 | 0.1− | 0.3+ | 2004 04 22 | 704 | 0.1+ | 1.0− | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2003 01 02 | 704 | 0.0 | 0.2− | 2004 04 22 | 704 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.3+ | 1.9− |
| 2003 01 07 | 704 | 0.2+ | 1.1− | 2004 05 09 | 691 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.4+ | 0.1− |
| 2003 01 07 | 704 | 0.7− | 0.9− | 2004 05 09 | 691 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.4− | 0.7− |
| 2003 01 07 | 704 | 0.2− | 0.9− | 2004 05 09 | 691 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.2− | 0.7− |
| 2003 01 07 | 704 | 0.0 | 0.8− | 2004 05 15 | 704 | 0.2+ | 0.6+ | | | | |
| 2003 01 13 | 704 | 0.0 | 0.5+ | 2004 05 15 | 704 | 0.9+ | 0.8+ | | | | |

**(143356)∗ 2003 AK$_{92}$ = 2003 BF$_{88}$**

Discovered 2003 Jan. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 48394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 223.38875 | | (2000.0) | | | |
| *n* | 0.17577961 | $\omega$ | 214.80492 | | −0.80036846 | −0.55341118 |
| *a* | 3.1561458 | $\Omega$ | 289.95636 | | +0.59051750 | −0.66139865 |
| *e* | 0.0657386 | *i* | 14.19734 | | +0.10343801 | −0.50624884 |
| *P* | 5.61 | *H* | 15.2 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1− | 0.4+ | 2003 01 08 | 704 | 0.1− | 0.3− | 2004 05 15 | E12 | (2.5− | 1.8+) |
| 2001 11 11 | 704 | 0.6− | 0.2+ | 2003 01 08 | 704 | 0.2− | 0.9− | 2004 05 15 | E12 | 0.9+ | 0.5+ |
| 2001 11 11 | 704 | 0.1− | 0.7+ | 2003 01 27 | 704 | 0.2− | 1.3+ | 2004 05 15 | E12 | (0.7− | 1.7+) |
| 2001 11 11 | 704 | 0.2+ | 0.6+ | 2003 01 27 | 704 | 0.7− | 0.5− | 2005 07 03 | G96 | (0.8− | 1.7+) |
| 2001 11 11 | 704 | 0.1− | 0.5+ | 2003 01 27 | 704 | 1.3+ | 0.7+ | 2005 07 03 | G96 | 0.2+ | 0.5+ |
| 2001 12 09 | 704 | 0.0 | 0.4− | 2003 01 27 | 704 | 0.8+ | 1.3+ | 2005 07 03 | G96 | 0.1+ | 0.4+ |
| 2001 12 09 | 704 | 0.2+ | 0.2− | 2003 01 27 | 644 | 0.6+ | 0.4+ | 2005 07 03 | G96 | 0.1− | 0.3+ |
| 2001 12 09 | 704 | 0.1+ | 0.3− | 2003 01 27 | 704 | 0.8− | 0.4− | 2005 07 06 | 691 | 0.0 | 0.1+ |
| 2001 12 09 | 704 | 0.5+ | 0.5+ | 2003 01 27 | 644 | 0.4+ | 0.3+ | 2005 07 06 | 691 | 0.1− | 0.1+ |
| 2001 12 09 | 704 | 1.5+ | 0.9− | 2003 01 27 | 644 | 0.3+ | 0.2+ | 2005 07 06 | 691 | 0.1+ | 0.1+ |
| 2001 12 22 | 704 | 0.5− | 0.3− | 2003 01 28 | 645 | 0.1− | 0.2− | 2005 07 15 | 691 | 0.2− | 0.2− |
| 2001 12 22 | 704 | 1.4− | 1.1+ | 2003 01 28 | 645 | 0.0 | 0.2− | 2005 07 15 | 691 | 0.0 | 0.1+ |
| 2001 12 22 | 704 | 0.4− | 0.6+ | 2003 02 02 | 704 | 0.7− | 0.7+ | 2005 07 15 | 691 | 0.2− | 0.1+ |
| 2001 12 22 | 704 | 0.3+ | 0.3+ | 2003 02 02 | 704 | 0.7+ | 1.3+ | 2006 09 14 | 644 | 0.9+ | 0.4+ |
| 2003 01 07 | 704 | (0.1+ | 2.7+) | 2003 02 02 | 704 | 0.3− | 1.0− | 2006 09 14 | 644 | 1.2+ | 0.6+ |
| 2003 01 07 | 704 | (0.4+ | 2.9+) | 2003 02 02 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 644 | 0.8+ | 0.7+ |
| 2003 01 07 | 704 | (2.5− | 0.9+) | 2003 03 07 | 608 | 0.1+ | 1.0+ | 2006 10 20 | 703 | 0.7− | 0.8+ |
| 2003 01 07 | 704 | (2.5− | 1.6+) | 2003 03 07 | 608 | 0.3− | 0.9+ | 2006 10 20 | 703 | 0.8− | 1.1− |
| 2003 01 08 | 704 | 0.5+ | 0.7+ | 2003 03 07 | 608 | 0.7− | 1.4+ | 2006 10 20 | 703 | 0.5− | 1.1− |
| 2003 01 08 | 704 | 0.1+ | 0.6+ | 2004 05 15 | E12 | (0.3− | 1.9+) | 2006 10 20 | 703 | 0.2− | 1.2− |

**(143357)∗ 2003 AS$_{92}$**

Discovered 2003 Jan. 10 at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 343.44915 | | (2000.0) | | | |
| *n* | 0.21639517 | $\omega$ | 181.87857 | | +0.90683265 | −0.41127828 |
| *a* | 2.7477107 | $\Omega$ | 203.09912 | | +0.38971082 | +0.90149074 |
| *e* | 0.1868453 | *i* | 13.59540 | | +0.16056156 | +0.13477620 |
| *P* | 4.55 | *H* | 15.0 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.2+ | 1.2+ | 2005 06 03 | E12 | 0.7− | 0.2+ | 2006 10 01 | 703 | 0.0 | 0.1+ |
| 1997 10 30 | 704 | 0.6− | 0.9+ | 2005 06 03 | E12 | 1.4− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 1997 10 30 | 704 | 0.2+ | 1.9+ | 2005 06 08 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 1997 10 30 | 704 | 1.0− | 1.4+ | 2005 06 08 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 1997 10 30 | 704 | (0.9− | 2.7+) | 2005 06 08 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2000 05 01 | 699 | 0.5+ | 1.7+ | 2005 06 13 | 691 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2000 05 01 | 699 | 0.4+ | 0.2+ | 2005 06 13 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2000 05 01 | 699 | 0.5+ | 0.5+ | 2005 06 13 | 691 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2000 05 01 | 699 | 0.8+ | 0.8+ | 2005 06 17 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 06 20 | 608 | 0.2+ | 1.1− | 2005 06 17 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 06 20 | 608 | 0.4+ | 1.4− | 2005 06 17 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 06 20 | 608 | 0.5+ | 1.2− | 2005 07 01 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 01 02 | 704 | (2.2− | 0.5+) | 2005 07 01 | 644 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 01 02 | 704 | 0.6− | 0.6+ | 2005 07 01 | 644 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 2003 01 02 | 704 | 0.5− | 0.3+ | 2006 08 29 | 699 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2003 01 02 | 704 | 0.3− | 0.1+ | 2006 08 29 | 699 | 0.6+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2003 01 02 | 704 | 0.5− | 0.2− | 2006 08 29 | 699 | 0.5+ | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2003 01 10 | 683 | 0.4− | 1.0+ | 2006 08 29 | 699 | 0.9− | 0.7− | 2006 10 29 | 704 | (0.1− | 1.5+) |
| 2003 01 10 | 683 | 0.2+ | 0.7+ | 2006 08 31 | 704 | 0.8+ | 0.1− | 2006 10 29 | 704 | 0.3− | 0.6+ |
| 2003 01 10 | 683 | 1.0− | 0.2+ | 2006 08 31 | 704 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.8+ | 1.2+ |
| 2003 01 11 | 683 | 0.9+ | 0.9+ | 2006 08 31 | 704 | 0.9− | 0.2− | 2006 10 29 | 704 | 0.4− | 0.5+ |
| 2003 01 11 | 683 | 0.8+ | 0.2+ | 2006 08 31 | 704 | 1.4− | 0.4− | 2006 11 06 | 644 | 0.0 | 0.4+ |
| 2003 01 11 | 683 | 0.4+ | 0.5+ | 2006 08 31 | 704 | 0.6− | 0.4− | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2003 01 28 | 704 | (1.0− | 1.6+) | 2006 09 06 | 644 | 0.2− | 0.6+ | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2003 01 28 | 704 | (1.6− | 1.1+) | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2003 01 28 | 704 | (1.2− | 1.6+) | 2006 09 06 | 644 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2004 03 18 | 704 | (2.3+ | 0.8+) | 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2004 03 18 | 704 | 0.9+ | 0.0 | 2006 09 06 | 644 | 0.4− | 1.3+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.3− | 0.7+ | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.4+ | 1.1+ | 2006 09 13 | 644 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2004 03 19 | 704 | 0.7− | 1.3+ | 2006 09 13 | 644 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | (1.6− | 3.0+) | 2006 09 15 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.7+ | 0.2− |
| 2004 03 19 | 704 | 0.4+ | 0.6+ | 2006 09 15 | 704 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2004 03 19 | 704 | 0.0 | 1.2+ | 2006 09 15 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 1.0− | 0.4+ |
| 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 09 15 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 1.3− |
| 2004 03 19 | 704 | 1.0− | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.4− |
| 2004 03 19 | 704 | 1.2+ | 0.2− | 2006 09 17 | 703 | 0.4+ | 0.5+ | 2006 11 18 | 122 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 703 | 0.8+ | 0.4+ | 2006 11 18 | 122 | 0.5+ | 0.3− |
| 2004 03 19 | 704 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 11 18 | 122 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 0.9+ | 1.0+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2004 03 19 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 699 | 1.0+ | 0.6+ | 2006 11 21 | 704 | (0.5+ | 1.7+) |
| 2004 03 19 | 704 | (1.9+ | 0.9+) | 2006 09 19 | 699 | (1.0+ | 1.8+) | 2006 11 21 | 704 | 0.8+ | 0.0 |
| 2004 03 19 | 704 | 0.5+ | 1.3+ | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2004 03 28 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 699 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2004 03 28 | 691 | 0.1+ | 0.6+ | 2006 09 27 | 699 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2004 03 28 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 699 | (1.7− | 1.1+) | 2006 11 21 | 704 | 0.6− | 0.9+ |
| 2005 05 16 | 704 | 1.2+ | 1.2+ | 2006 09 27 | 703 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2005 05 16 | 704 | (0.4+ | 2.4+) | 2006 09 27 | 703 | 0.3− | 0.1+ | 2006 11 21 | 704 | 1.2− | 1.3+ |
| 2005 05 16 | 704 | (1.3+ | 2.7+) | 2006 09 27 | 703 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.1− | 0.2− |
| 2005 06 03 | 691 | 0.1+ | 0.1− | 2006 09 27 | 699 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2005 06 03 | 691 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.7− | 0.6− | 2006 11 27 | 703 | 0.1− | 0.3− |
| 2005 06 03 | 691 | 0.1− | 0.1+ | 2006 10 01 | 703 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.8+ | 0.7+ |
| 2005 06 03 | E12 | 1.3− | 1.1+ | 2006 10 01 | 703 | 0.1+ | 0.2+ | | | | |
| 2005 06 03 | E12 | 0.4+ | 0.2− | 2006 10 01 | 703 | 0.0 | 0.2+ | | | | |

**(143358)∗ 2003 BF**

Discovered 2003 Jan. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.60594 | | (2000.0) | | | |
| $n$ | 0.26901656 | $\omega$ | 83.19595 | | −0.80322733 | −0.58364885 |
| $a$ | 2.3765669 | $\Omega$ | 61.02836 | | +0.47850446 | −0.75126864 |
| $e$ | 0.1762218 | $i$ | 7.82295 | | +0.35476660 | −0.30813867 |
| $P$ | 3.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.2+ | 0.1− | 2003 02 21 | 644 | 0.0 | 0.3− | 2005 10 23 | 703 | 0.8− | 0.0 |
| 1996 05 11 | 691 | 0.0 | 0.2+ | 2003 02 21 | 644 | 0.1− | 0.3− | 2005 10 23 | 703 | 0.6− | 0.3+ |
| 1996 05 11 | 691 | 0.1+ | 0.1+ | 2003 02 21 | 644 | 0.4+ | 0.3− | 2005 10 23 | 703 | (2.1− | 0.5+) |
| 1996 05 17 | 691 | 0.2− | 0.1+ | 2003 02 23 | 608 | 0.1− | 0.4− | 2005 10 23 | 703 | 0.9− | 0.6+ |
| 1996 05 17 | 691 | 0.2− | 0.4+ | 2003 02 23 | 608 | 0.1− | 0.3+ | 2005 10 28 | 704 | 0.3− | 0.5+ |
| 1996 05 17 | 691 | 0.3+ | 0.2+ | 2003 02 23 | 608 | 0.1− | 0.2− | 2005 10 28 | 704 | 0.6+ | 1.4+ |
| 1998 12 17 | 704 | 1.6+ | 1.9− | 2003 03 08 | 644 | 0.4− | 0.2+ | 2005 10 28 | 704 | 0.7− | 0.6+ |
| 1998 12 17 | 704 | (2.5+ | 0.7−) | 2003 03 08 | 644 | 0.1− | 0.3+ | 2005 10 28 | 704 | 0.5− | 1.1+ |
| 1998 12 17 | 704 | 0.7− | 1.8− | 2003 03 08 | 644 | 0.1− | 0.1+ | 2005 10 28 | 703 | 1.1− | 0.8− |
| 1998 12 17 | 704 | 0.1+ | 1.9− | 2003 03 12 | 704 | 0.3+ | 0.4− | 2005 10 28 | 703 | 1.0+ | 0.0 |
| 1998 12 17 | 704 | 1.1+ | 1.6− | 2003 03 12 | 704 | 0.0 | 0.0 | 2005 10 28 | 703 | 1.2− | 0.2− |
| 2002 12 31 | 704 | 0.4− | 0.4+ | 2003 03 12 | 704 | 0.2− | 0.1− | 2005 10 28 | 703 | 1.1− | 0.1+ |
| 2002 12 31 | 704 | 0.5− | 0.7+ | 2003 03 12 | 704 | 1.5+ | 0.3+ | 2005 10 31 | 704 | 0.6+ | 0.0 |
| 2002 12 31 | 704 | 0.0 | 0.3+ | 2003 03 12 | 704 | 0.2− | 0.0 | 2005 10 31 | 704 | 0.0 | 0.9+ |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2003 03 12 | 704 | 0.8− | 0.1− | 2005 10 31 | 704 | 0.0 | 0.5+ |
| 2003 01 10 | 704 | 0.4− | 0.1+ | 2003 03 12 | 704 | 0.1− | 0.3− | 2005 10 31 | 704 | 0.5+ | 0.1− |
| 2003 01 10 | 704 | 0.2− | 0.2− | 2003 03 12 | 704 | 0.4− | 0.1− | 2005 11 03 | 704 | 0.5+ | 0.3+ |
| 2003 01 10 | 704 | 0.5− | 0.6+ | 2003 03 12 | 704 | 0.5+ | 0.0 | 2005 11 03 | 704 | 1.1+ | 1.1+ |
| 2003 01 10 | 704 | 0.1− | 0.3− | 2003 03 12 | 704 | 0.5+ | 0.7+ | 2005 11 03 | 704 | 0.1+ | 1.6+ |
| 2003 01 10 | 704 | 0.7+ | 1.2+ | 2003 03 13 | 704 | 0.4+ | 0.5+ | 2005 11 06 | 699 | 1.3+ | 0.2− |
| 2003 01 18 | 644 | 0.6+ | 0.5+ | 2003 03 13 | 704 | 0.1+ | 0.2− | 2005 11 06 | 699 | 1.1− | 0.6+ |
| 2003 01 18 | 644 | 0.7+ | 0.6+ | 2003 03 13 | 704 | 0.2− | 0.9+ | 2005 11 06 | 699 | 1.2+ | 1.0+ |
| 2003 01 18 | 644 | 0.7+ | 0.7+ | 2003 03 13 | 704 | 0.4+ | 0.2− | 2005 11 06 | 699 | 1.3+ | 0.1− |
| 2003 01 19 | 644 | 0.0 | 0.0 | 2003 03 31 | 704 | 0.0 | 0.9+ | 2005 12 01 | G96 | 0.3− | 0.2− |
| 2003 01 19 | 644 | 0.1− | 0.0 | 2003 03 31 | 704 | 0.4− | 0.5+ | 2005 12 01 | G96 | 0.3− | 0.0 |
| 2003 01 19 | 644 | 0.0 | 0.1− | 2003 03 31 | 704 | 0.2− | 0.5+ | 2005 12 01 | G96 | 0.3− | 0.1+ |
| 2003 02 02 | 704 | 0.6+ | 0.1− | 2003 03 31 | 704 | 0.6− | 1.3+ | 2006 01 05 | G96 | 0.5− | 0.0 |
| 2003 02 02 | 704 | 0.6+ | 0.1+ | 2003 03 31 | 704 | 1.2+ | 0.0 | 2006 01 05 | G96 | 0.6− | 0.3+ |
| 2003 02 02 | 704 | 0.0 | 0.4− | 2005 09 25 | 691 | 0.4− | 0.0 | 2006 01 05 | G96 | 0.2− | 0.1− |
| 2003 02 21 | 636 | 0.1+ | 0.1− | 2005 09 25 | 691 | 0.3− | 0.4+ | 2006 01 05 | G96 | 0.5− | 0.3− |
| 2003 02 21 | 636 | 0.2− | 0.5− | 2005 09 25 | 691 | 0.5− | 0.2+ | | | | |

**(143359)∗ 2003 BV = 1989 TY$_9$**

Discovered 2003 Jan. 24 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 47259)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.16275 | | (2000.0) | | | |
| $n$ | 0.23826642 | $\omega$ | 27.66885 | | +0.38770526 | −0.91061109 |
| $a$ | 2.5768797 | $\Omega$ | 39.98421 | | +0.79925298 | +0.25476547 |
| $e$ | 0.2149594 | $i$ | 12.86574 | | +0.45921598 | +0.32539514 |
| $P$ | 4.14 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 07 | 809 | 0.0 | 0.9+ | 2003 01 13 | 704 | 0.7+ | 0.7+ | 2003 03 12 | 644 | 0.3+ | 0.3+ |
| 1989 10 07 | 809 | 0.1− | 0.8+ | 2003 01 13 | 704 | 0.3+ | 0.4+ | 2003 03 12 | 644 | 0.3+ | 0.3+ |
| 1989 10 07 | 809 | 1.0− | 0.6+ | 2003 01 24 | 644 | 0.2+ | 0.5+ | 2004 04 21 | 691 | 0.1− | 0.3+ |
| 2001 07 27 | 644 | 0.8− | 0.2− | 2003 01 24 | 644 | 0.0 | 0.4+ | 2004 04 21 | 691 | 0.0 | 0.3+ |
| 2001 07 27 | 644 | 0.7− | 0.1+ | 2003 01 24 | 644 | 0.2+ | 0.4+ | 2004 04 21 | 691 | 0.3− | 0.0 |
| 2001 07 27 | 644 | 0.8− | 0.1− | 2003 01 25 | 704 | 0.0 | 1.0+ | 2005 07 05 | E12 | 0.2− | 1.2+ |
| 2001 08 09 | 644 | 1.2− | 0.6+ | 2003 01 25 | 704 | 0.5− | 0.8+ | 2005 07 05 | E12 | 0.1− | 0.2− |
| 2001 08 09 | 644 | 0.8− | 0.3+ | 2003 01 25 | 704 | 0.2+ | 0.3+ | 2005 07 05 | E12 | 0.6+ | 1.0+ |
| 2001 08 09 | 644 | 0.6− | 0.1+ | 2003 01 25 | 704 | 0.0 | 0.2+ | 2005 07 05 | E12 | 0.8+ | 0.2+ |
| 2001 08 22 | 644 | 0.4+ | 1.2+ | 2003 01 25 | 704 | 0.1− | 0.4+ | 2005 08 07 | E12 | 0.2− | 1.0+ |
| 2001 08 22 | 644 | 0.2+ | 1.2+ | 2003 02 08 | 699 | 0.2+ | 0.2+ | 2005 08 07 | E12 | 0.1+ | 0.5+ |
| 2001 08 22 | 644 | 0.1+ | 0.8+ | 2003 02 08 | 699 | 0.3+ | 0.0 | 2005 08 07 | E12 | 0.1− | 0.5+ |
| 2002 11 23 | 644 | 0.2+ | 0.5+ | 2003 02 08 | 699 | 0.3− | 0.2− | 2005 08 07 | E12 | 0.7+ | 1.3+ |
| 2002 11 23 | 644 | 0.0 | 0.3+ | 2003 02 08 | 699 | 0.3− | 1.1+ | 2006 10 27 | 703 | 0.1− | 0.6− |
| 2002 11 23 | 644 | 0.8+ | 0.1+ | 2003 03 03 | 644 | 0.1+ | 0.9+ | 2006 10 27 | 703 | 0.6− | 0.0 |
| 2002 12 04 | 704 | 0.8+ | 1.2+ | 2003 03 03 | 644 | 0.3+ | 0.9+ | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2002 12 04 | 704 | 0.1− | 0.5+ | 2003 03 03 | 644 | 0.4+ | 1.1+ | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 12 04 | 704 | 0.5+ | 0.0 | 2003 03 08 | 644 | 0.2+ | 0.2− | 2006 11 21 | 703 | 0.8+ | 0.1+ |
| 2002 12 04 | 704 | 0.6+ | 0.1− | 2003 03 08 | 644 | 0.4+ | 0.2+ | 2006 11 21 | 703 | 0.4+ | 0.2− |
| 2003 01 13 | 704 | 0.5+ | 0.6+ | 2003 03 08 | 644 | 0.0 | 0.1− | 2006 11 21 | 703 | 0.3− | 1.3− |
| 2003 01 13 | 704 | 0.3+ | 0.2+ | 2003 03 12 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 703 | 1.3− | 1.8− |

**(143360)∗ 2003 BB$_2$**

Discovered 2003 Jan. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.39045 | | (2000.0) | | | |
| $n$ | 0.25277400 | $\omega$ | 297.23423 | | +0.81742464 | −0.57345487 |
| $a$ | 2.4773143 | $\Omega$ | 97.80523 | | +0.54603956 | +0.74127361 |
| $e$ | 0.1729651 | $i$ | 3.15141 | | +0.18346049 | +0.34880216 |
| $P$ | 3.90 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 691 | 0.0 | 0.2+ | 2003 01 27 | 699 | 0.8− | 0.3− | 2005 08 28 | 699 | 0.8− | 0.3+ |
| 2000 04 27 | 691 | 0.1− | 0.1+ | 2003 01 27 | 699 | 0.3− | 0.6+ | 2005 08 28 | 699 | 0.7− | 0.8+ |
| 2000 04 27 | 691 | 0.2+ | 0.2− | 2003 01 27 | 699 | 0.5− | 1.2+ | 2005 08 28 | 699 | 0.2− | 0.6+ |
| 2001 05 24 | 807 | 0.2− | 0.4+ | 2003 01 29 | 644 | 0.8+ | 1.4+ | 2005 08 28 | 699 | 0.1+ | 0.2+ |
| 2001 05 24 | 807 | 0.1− | 0.4+ | 2003 01 29 | 644 | 0.6+ | 1.0+ | 2005 08 29 | 704 | 0.9+ | 0.6+ |
| 2001 08 19 | 807 | 0.1− | 0.1+ | 2003 01 29 | 644 | 0.6+ | 0.9+ | 2005 08 29 | 704 | 0.2+ | 0.6− |
| 2001 08 19 | 807 | 0.0 | 0.2+ | 2003 02 03 | 704 | 0.6− | 0.4− | 2005 08 29 | 704 | 0.0 | 0.7+ |
| 2002 12 31 | 704 | 0.4− | 0.1− | 2003 02 03 | 704 | 0.0 | 0.1− | 2005 08 29 | 704 | 0.0 | 0.4− |
| 2002 12 31 | 704 | 0.4+ | 0.1+ | 2003 02 03 | 704 | 0.2− | 0.3+ | 2005 09 01 | 644 | 0.1+ | 0.6+ |
| 2002 12 31 | 704 | 0.4− | 0.5+ | 2003 02 03 | 704 | 0.0 | 0.8+ | 2005 09 01 | 644 | 0.0 | 0.5+ |
| 2002 12 31 | 704 | 0.6− | 1.1+ | 2003 02 03 | 704 | 0.1+ | 0.5+ | 2005 09 01 | 644 | 0.0 | 0.5+ |
| 2003 01 08 | 704 | 0.3+ | 0.5+ | 2003 02 08 | 704 | 1.3+ | 1.3+ | 2005 11 06 | G96 | 0.3+ | 0.2+ |
| 2003 01 08 | 704 | 0.4+ | 0.0 | 2003 02 08 | 704 | 0.7+ | 0.1+ | 2005 11 06 | G96 | 0.2+ | 0.0 |
| 2003 01 08 | 704 | 0.3+ | 0.0 | 2003 02 08 | 704 | 1.2+ | 0.3+ | 2005 11 06 | G96 | 0.1− | 0.2+ |
| 2003 01 08 | 704 | 0.0 | 0.3− | 2004 05 27 | 691 | 0.4− | 0.5+ | 2005 11 06 | G96 | 0.2+ | 0.5+ |
| 2003 01 08 | 704 | 0.0 | 0.6+ | 2004 05 27 | 691 | 0.7+ | 0.2− | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2003 01 14 | 608 | 0.1+ | 0.2− | 2004 05 27 | 691 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2003 01 14 | 608 | 0.5+ | 0.4− | 2005 07 04 | 644 | 0.0 | 0.9+ | 2006 10 23 | G96 | 0.5− | 0.7− |
| 2003 01 14 | 608 | 0.5+ | 0.2− | 2005 07 04 | 644 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2003 01 15 | 644 | 0.4+ | 1.4+ | 2005 07 04 | 644 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.4− |
| 2003 01 15 | 644 | (0.4+ | 1.6+) | 2005 07 27 | 644 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2003 01 15 | 644 | 0.3+ | 1.3+ | 2005 07 27 | 644 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2003 01 25 | 699 | 0.5− | 0.1− | 2005 07 27 | 644 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.6− | 0.2− |
| 2003 01 25 | 699 | 0.3+ | 1.2− | 2005 08 02 | 704 | 0.6− | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.1+ |
| 2003 01 25 | 699 | 1.2− | 0.5+ | 2005 08 02 | 704 | 1.0− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2003 01 25 | 699 | 0.9− | 1.0+ | 2005 08 02 | 704 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2003 01 26 | 608 | 0.1− | 0.7+ | 2005 08 06 | 704 | (2.4+ | 0.2+) | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2003 01 26 | 608 | 0.0 | 0.8+ | 2005 08 06 | 704 | (1.6+ | 0.9+) | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2003 01 26 | 608 | 0.1− | 0.6+ | 2005 08 06 | 704 | (2.6+ | 0.1+) | 2006 11 27 | G96 | 0.2− | 0.6− |
| 2003 01 27 | 699 | 0.5+ | 0.8+ | 2005 08 06 | 704 | 0.8− | 1.4+ | 2006 11 27 | G96 | 0.6− | 0.2− |

**(143361)∗ 2003 BP$_2$**

Discovered 2003 Jan. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.38476 | | (2000.0) | | | |
| $n$ | 0.24089773 | $\omega$ | 231.15793 | | −0.99135854 | +0.12399592 |
| $a$ | 2.5580807 | $\Omega$ | 315.91709 | | −0.09296426 | −0.89435858 |
| $e$ | 0.1010579 | $i$ | 3.52849 | | −0.09255214 | −0.42982292 |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 699 | 0.1− | 0.3− | 2003 01 31 | 291 | 0.1− | 0.2+ | 2005 10 03 | 703 | 0.7+ | 0.2+ |
| 1999 02 12 | 699 | 1.0+ | 0.1− | 2003 01 31 | 291 | 0.4− | 0.0 | 2005 10 06 | 691 | 0.0 | 0.0 |
| 1999 02 12 | 699 | 0.5+ | 0.6− | 2003 01 31 | 704 | 0.2− | 0.6+ | 2005 10 06 | 691 | 0.0 | 0.1− |
| 2001 10 18 | 704 | 0.4− | 0.3+ | 2003 01 31 | 704 | 0.2− | 0.1+ | 2005 10 06 | 691 | 0.1− | 0.2− |
| 2001 10 18 | 704 | 0.1− | 0.1+ | 2003 01 31 | 704 | 0.3+ | 1.0+ | 2005 10 07 | 152 | 1.1+ | 0.8+ |
| 2001 10 18 | 704 | 0.6− | 0.7+ | 2003 01 31 | 704 | 0.1+ | 1.0+ | 2005 10 07 | 152 | 0.1− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.7− | 0.3+ | 2003 01 31 | 704 | 0.2+ | 0.9+ | 2005 10 07 | 152 | 1.2+ | 1.2− |
| 2001 10 18 | 704 | 1.0− | 0.4+ | 2003 02 03 | 699 | 0.5+ | 1.4− | 2005 10 08 | 152 | 0.7+ | 0.1+ |
| 2001 10 23 | 333 | 0.4+ | 0.9− | 2003 02 03 | 699 | 1.0+ | 0.1− | 2005 10 08 | 152 | 1.1+ | 0.2+ |
| 2001 10 23 | 333 | 0.3− | 1.0− | 2003 02 03 | 704 | 0.6+ | 1.1+ | 2005 10 08 | 152 | (0.8+ | 4.1+) |
| 2001 10 23 | 333 | 0.2+ | 0.1+ | 2003 02 03 | 704 | 1.2+ | 0.5+ | 2005 10 08 | 704 | 0.5− | 0.4+ |
| 2001 11 17 | 704 | 0.5+ | 0.6− | 2003 02 03 | 699 | 0.5+ | 1.0− | 2005 10 08 | 704 | 0.7− | 0.2+ |
| 2001 11 17 | 704 | 0.9+ | 0.0 | 2003 02 03 | 704 | 0.4+ | 0.7+ | 2005 10 08 | 704 | 0.3+ | 0.1− |
| 2001 11 17 | 704 | 0.2− | 0.4+ | 2003 02 03 | 699 | 0.4− | 1.4+ | 2005 10 08 | 704 | 0.3− | 0.1− |
| 2001 11 17 | 704 | 0.3− | 1.1+ | 2003 02 03 | 704 | 0.2+ | 1.3+ | 2005 10 10 | 691 | 0.3− | 0.1− |
| 2003 01 08 | 704 | 0.4+ | 0.0 | 2003 02 08 | 704 | 0.8+ | 0.1− | 2005 10 10 | 691 | 0.2+ | 0.2− |
| 2003 01 08 | 704 | 0.0 | 0.0 | 2003 02 08 | 704 | 0.6+ | 0.7− | 2005 10 10 | 691 | 0.1− | 0.2− |
| 2003 01 08 | 704 | 0.7− | 0.2+ | 2003 02 08 | 704 | 0.2+ | 0.2− | 2005 10 12 | 704 | (1.9− | 0.0 ) |
| 2003 01 26 | 699 | 0.5− | 0.2− | 2003 02 08 | 704 | 0.2+ | 0.3+ | 2005 10 12 | 704 | (2.1− | 1.3+) |
| 2003 01 26 | 291 | 0.4− | 0.0 | 2003 02 08 | 704 | 0.2+ | 0.0 | 2005 10 12 | 704 | 1.3− | 0.6+ |
| 2003 01 26 | 699 | 0.1+ | 0.4− | 2003 02 11 | 608 | 0.0 | 1.0+ | 2005 10 12 | 704 | 0.9− | 1.0+ |
| 2003 01 26 | 291 | 0.1− | 0.1− | 2003 02 11 | 608 | 0.1− | 1.2+ | 2005 10 22 | 703 | 0.3+ | 0.8+ |
| 2003 01 26 | 699 | 0.1− | 0.0 | 2003 02 11 | 608 | 0.1+ | 0.9+ | 2005 10 22 | 703 | 0.1− | 1.5+ |
| 2003 01 26 | 291 | 0.7− | 0.1+ | 2003 02 22 | 644 | 0.4+ | 1.0+ | 2005 10 22 | 703 | 0.5− | 0.3+ |
| 2003 01 26 | 699 | 0.2− | 0.4+ | 2003 02 22 | 644 | 0.7+ | 1.0+ | 2005 10 22 | 703 | (1.1− | 1.7+) |
| 2003 01 26 | 608 | 0.7+ | 1.0− | 2003 02 22 | 644 | 0.5+ | 1.1+ | 2005 10 22 | 644 | (0.4− | 1.7+) |
| 2003 01 26 | 608 | 0.9+ | 0.9− | 2003 02 22 | 699 | 0.1− | 0.3− | 2005 10 22 | 644 | 0.1+ | 0.6+ |
| 2003 01 26 | 291 | 0.6− | 0.1+ | 2003 02 22 | 699 | 0.7+ | 0.3+ | 2005 10 22 | 644 | 0.2− | 0.3− |
| 2003 01 26 | 291 | 0.3− | 0.3+ | 2003 02 22 | 699 | 0.1+ | 0.2− | 2005 10 28 | 703 | 0.8+ | 0.2+ |
| 2003 01 26 | 608 | 0.5+ | 0.8− | 2003 02 22 | 699 | 0.3− | 0.2− | 2005 10 28 | 703 | (0.4+ | 1.8+) |
| 2003 01 26 | 291 | 0.2− | 0.2+ | 2003 03 05 | 704 | 0.1− | 0.1− | 2005 10 28 | 703 | 0.2− | 0.1+ |
| 2003 01 26 | 291 | 0.5− | 0.2− | 2003 03 05 | 704 | 0.4− | 1.2− | 2005 10 28 | 703 | 0.2− | 0.7+ |
| 2003 01 26 | 291 | 0.8− | 0.0 | 2003 03 05 | 704 | 0.7+ | 0.7− | 2005 11 02 | 704 | 0.0 | 0.3− |
| 2003 01 26 | 291 | 0.8− | 0.2− | 2003 03 05 | 704 | 0.2− | 0.5− | 2005 11 02 | 704 | 0.2+ | 0.8+ |
| 2003 01 27 | 291 | 0.3+ | 0.4+ | 2003 03 05 | 704 | 0.5− | 0.4− | 2005 11 02 | 704 | 0.4+ | 1.2+ |
| 2003 01 27 | 291 | 0.2+ | 0.4+ | 2003 03 06 | 644 | 0.4+ | 0.2+ | 2005 11 02 | 704 | 0.7− | 0.8− |
| 2003 01 27 | 291 | 0.2+ | 0.4+ | 2003 03 06 | 644 | 0.5+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.7− |
| 2003 01 27 | 291 | 0.1+ | 0.0 | 2003 03 06 | 644 | 0.7+ | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.7− |
| 2003 01 27 | 291 | 0.1+ | 0.0 | 2003 03 12 | 644 | 0.5+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.8− |
| 2003 01 27 | 291 | 0.1+ | 0.1− | 2003 03 12 | 644 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 2003 01 27 | 644 | 0.2+ | 0.0 | 2003 03 12 | 644 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.3− | 1.0− |
| 2003 01 27 | 644 | 0.1+ | 0.2+ | 2005 09 25 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.7− |
| 2003 01 27 | 644 | 0.7+ | 0.0 | 2005 09 25 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.8− |
| 2003 01 28 | 645 | 0.1− | 0.4− | 2005 09 25 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2003 01 28 | 645 | 0.3+ | 0.0 | 2005 09 30 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.5− | 0.7− |
| 2003 01 30 | 699 | 0.4+ | 0.2+ | 2005 09 30 | 691 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.7− |
| 2003 01 30 | 699 | 0.2− | 0.0 | 2005 09 30 | 691 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2003 01 30 | 699 | 0.3− | 0.2− | 2005 10 03 | 703 | (2.2− | 0.7−) | 2006 11 27 | G96 | 0.1− | 0.7− |
| 2003 01 30 | 699 | 0.1− | 0.4− | 2005 10 03 | 703 | (1.9− | 2.3−) | | | | |
| 2003 01 31 | 291 | 0.2− | 0.1+ | 2005 10 03 | 703 | (0.0 | 1.5−) | | | | |

**(143362)∗ 2003 BC$_6$ = 2004 HW$_{64}$**

Discovered 2003 Jan. 23 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Id. A. Doppler (*MPO* 69432)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 217.75930 | | (2000.0) | | | |
| $n$ | 0.17640622 | $\omega$ | 17.98980 | | −0.87866033 | −0.45616832 |
| $a$ | 3.1486673 | $\Omega$ | 134.01267 | | +0.41043790 | −0.87249543 |
| $e$ | 0.0240329 | $i$ | 11.30217 | | +0.24391956 | −0.17510619 |
| $P$ | 5.59 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | (2.0+ | 0.2+) | 2003 03 06 | 644 | 0.1+ | 0.6+ | 2005 06 13 | 691 | 0.1− | 0.3+ |
| 2001 11 15 | 704 | (2.1− | 0.4+) | 2003 03 06 | 644 | 0.5+ | 0.8+ | 2005 06 17 | 691 | 0.2− | 0.1+ |
| 2001 11 15 | 704 | 0.1− | 0.6+ | 2004 04 16 | 704 | 0.2− | 0.5+ | 2005 06 17 | 691 | 0.1+ | 0.0 |
| 2001 11 15 | 704 | 1.1+ | 0.6− | 2004 04 16 | 704 | 0.1+ | 0.1− | 2005 06 17 | 691 | 0.1+ | 0.1+ |
| 2001 11 15 | 704 | 0.9− | 0.2− | 2004 04 16 | 704 | 0.7− | 0.2− | 2005 07 08 | 691 | 0.1+ | 0.1+ |
| 2003 01 23 | 049 | 0.2− | 0.1− | 2004 04 16 | 704 | 0.2+ | 0.7− | 2005 07 08 | 691 | (2.1− | 0.1+) |
| 2003 01 23 | 049 | 0.6− | 0.1+ | 2004 04 16 | 704 | 0.1+ | 0.0 | 2005 07 08 | 691 | 0.5− | 1.0+ |
| 2003 01 23 | 049 | 0.6− | 0.2+ | 2004 04 24 | 704 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.6+ | 0.3− |
| 2003 01 23 | 049 | 0.3− | 0.2+ | 2004 04 24 | 704 | 0.6− | 0.7− | 2006 09 19 | 703 | 0.6− | 0.8+ |
| 2003 01 27 | 704 | 1.4− | 0.0 | 2004 04 24 | 704 | 0.1+ | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2003 01 27 | 704 | (1.6− | 1.1+) | 2004 04 24 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | (0.6− | 1.6+) |
| 2003 01 27 | 704 | (1.3− | 1.9+) | 2004 05 10 | 683 | (1.5− | 1.2+) | 2006 09 19 | F84 | 0.6− | 1.0+ |
| 2003 01 27 | 704 | (0.8− | 2.5+) | 2004 05 10 | 683 | (1.4+ | 2.3−) | 2006 09 19 | F84 | 0.4+ | 0.1− |
| 2003 01 29 | 291 | 0.2+ | 0.3+ | 2004 05 10 | 683 | (1.3+ | 3.1−) | 2006 09 19 | F84 | (2.3+ | 0.9−) |
| 2003 01 29 | 291 | 0.3+ | 0.4+ | 2004 05 11 | 683 | 0.5+ | 0.8+ | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 2003 01 29 | 291 | 0.4+ | 0.5+ | 2004 05 11 | 683 | (0.1− | 1.8−) | 2006 09 26 | 703 | 0.5+ | 0.1+ |
| 2003 01 31 | 704 | 1.2− | 1.4+ | 2004 05 11 | 683 | 1.3− | 0.5+ | 2006 09 26 | 703 | 0.2+ | 0.9− |
| 2003 01 31 | 704 | 0.5− | 0.2− | 2004 05 24 | 704 | 1.0+ | 0.5− | 2006 09 26 | 703 | 0.0 | 0.7− |
| 2003 01 31 | 704 | (1.8− | 1.1+) | 2004 05 24 | 704 | 0.4+ | 1.3+ | 2006 10 11 | 644 | 0.3− | 0.7+ |
| 2003 01 31 | 704 | 0.5+ | 1.1+ | 2004 05 24 | 704 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2003 01 31 | 704 | 1.1− | 0.4+ | 2004 05 24 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 2003 02 21 | 644 | 0.7+ | 1.5+ | 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.3+ |
| 2003 02 21 | 644 | 0.7+ | 1.3+ | 2005 06 04 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2003 02 21 | 699 | 0.6+ | 0.4− | 2005 06 04 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.5+ |
| 2003 02 21 | 644 | (0.5+ | 1.8+) | 2005 06 09 | 691 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.9+ | 0.7+ |
| 2003 02 21 | 699 | 0.0 | 0.9− | 2005 06 09 | 691 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.5− | 0.5+ |
| 2003 02 21 | 699 | (1.6+ | 0.1−) | 2005 06 09 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2003 02 21 | 699 | 0.4− | 0.2− | 2005 06 13 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.7+ |
| 2003 03 06 | 644 | 0.3+ | 0.7+ | 2005 06 13 | 691 | 0.2+ | 0.2+ | | | | |

**(143363)∗ 2003 BK$_6$ = 1995 UP$_{81}$**

Discovered 2003 Jan. 24 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47260)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 184.74003 | | (2000.0) | | | |
| $n$ | 0.18177812 | $\omega$ | 339.81945 | | −0.96842655 | +0.24727456 |
| $a$ | 3.0863249 | $\Omega$ | 214.54609 | | −0.22036905 | −0.90856079 |
| $e$ | 0.1881064 | $i$ | 3.20527 | | −0.11656546 | −0.33670844 |
| $P$ | 5.42 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.5+ | 0.2+ | 2004 05 15 | 704 | 0.6− | 0.6+ | 2004 06 11 | 644 | 0.1− | 0.7+ |
| 1995 10 23 | 691 | 0.4+ | 0.3+ | 2004 05 15 | 704 | 0.7+ | 0.2− | 2004 06 12 | 644 | 0.0 | 0.5+ |
| 1995 10 23 | 691 | 0.3+ | 0.6+ | 2004 05 15 | 704 | 0.3+ | 0.2− | 2004 06 12 | 644 | 0.2+ | 0.7+ |
| 1995 10 28 | 691 | 0.3− | 0.2+ | 2004 05 15 | 704 | 0.3+ | 0.2+ | 2004 06 12 | 644 | 0.2+ | 0.9+ |
| 1995 10 28 | 691 | 0.7− | 0.0 | 2004 05 15 | 704 | 0.5+ | 0.0 | 2004 06 17 | 691 | 0.1+ | 0.1+ |
| 1995 10 28 | 691 | 0.6− | 0.2− | 2004 05 15 | 704 | 0.4+ | 0.3− | 2004 06 17 | 691 | 0.0 | 0.4+ |
| 2003 01 07 | 704 | 0.6+ | 0.5+ | 2004 05 16 | 704 | 0.3− | 0.0 | 2004 06 17 | 691 | 0.2+ | 0.6+ |
| 2003 01 07 | 704 | 0.5+ | 0.9+ | 2004 05 16 | 704 | 0.2+ | 0.0 | 2005 08 06 | 644 | 0.0 | 0.1+ |
| 2003 01 07 | 704 | 0.1− | 0.7+ | 2004 05 16 | 704 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.3+ | 0.2+ |
| 2003 01 07 | 704 | 0.5+ | 0.3− | 2004 05 16 | 704 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.2+ | 0.0 |
| 2003 01 07 | 704 | 0.2− | 0.5+ | 2004 05 16 | 704 | 0.2− | 0.2− | 2006 09 14 | 691 | 0.5+ | 0.1+ |
| 2003 01 24 | 644 | 0.2+ | 0.4− | 2004 05 16 | E12 | 0.2+ | 0.1− | 2006 09 14 | 691 | 0.3+ | 0.4+ |
| 2003 01 24 | 644 | 0.2+ | 0.5− | 2004 05 16 | E12 | 0.3− | 1.0− | 2006 09 14 | 691 | 0.3+ | 0.0 |
| 2003 01 24 | 644 | 0.0 | 0.3− | 2004 05 16 | E12 | 0.9− | 0.5+ | 2006 09 30 | 691 | 0.4− | 0.3− |
| 2003 01 27 | 704 | 0.5− | 1.2+ | 2004 05 16 | E12 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2003 01 27 | 704 | 0.2− | 0.2− | 2004 05 19 | 704 | 0.7+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2003 01 27 | 704 | 0.3+ | 0.2− | 2004 05 19 | 704 | 0.4+ | 0.2− | 2006 10 13 | A50 | 0.1+ | 0.6− |
| 2003 01 27 | 704 | 0.3− | 0.2+ | 2004 05 19 | 704 | 0.8− | 0.2+ | 2006 10 13 | A50 | 0.1− | 0.5− |
| 2003 01 27 | 704 | 0.2+ | 0.3− | 2004 05 19 | 704 | 0.3− | 0.9− | 2006 10 13 | A50 | 0.3− | 0.3+ |
| 2003 01 28 | 291 | 0.3− | 0.6+ | 2004 05 19 | 704 | 0.6− | 0.0 | 2006 11 01 | 691 | 0.6− | 0.3+ |
| 2003 01 28 | 291 | 0.1+ | 0.4+ | 2004 06 07 | 699 | 1.4− | 0.9+ | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2003 01 28 | 291 | 0.3+ | 0.5+ | 2004 06 07 | 699 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.3− | 0.6+ |
| 2004 05 15 | 704 | 0.5+ | 0.5+ | 2004 06 07 | 699 | 0.1− | 1.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 05 15 | 704 | 0.3+ | 0.2+ | 2004 06 07 | 699 | (0.7− | 1.8+) | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2004 05 15 | 704 | 0.7+ | 0.5+ | 2004 06 11 | 644 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2004 05 15 | 704 | 0.4+ | 0.5+ | 2004 06 11 | 644 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.0 |

**(143364)∗ 2003 BL$_6$**

Discovered 2003 Jan. 24 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.06786 | | (2000.0) | | | |
| $n$ | 0.21952287 | $\omega$ | 145.24971 | | +0.44030984 | −0.87758109 |
| $a$ | 2.7215493 | $\Omega$ | 277.95782 | | +0.77422048 | +0.47809272 |
| $e$ | 0.1609065 | $i$ | 11.04178 | | +0.45465359 | +0.03576001 |
| $P$ | 4.49 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 566 | 0.1+ | 0.3− | 2002 12 10 | 704 | 0.3− | 1.1+ | 2006 10 02 | 704 | 0.1+ | 0.2+ |
| 1997 10 30 | 566 | 0.3+ | 0.1+ | 2003 01 07 | 704 | 0.7+ | 0.1+ | 2006 10 02 | 704 | 0.1− | 0.7+ |
| 1997 10 30 | 566 | 0.1− | 0.3− | 2003 01 07 | 704 | 0.7+ | 0.1+ | 2006 10 02 | 704 | 1.0− | 1.5+ |
| 2001 08 23 | 699 | 1.2− | 0.3+ | 2003 01 07 | 704 | 1.5+ | 0.8+ | 2006 10 02 | 703 | 0.3+ | 0.8− |
| 2001 08 23 | 699 | 0.1− | 0.3+ | 2003 01 07 | 704 | 0.9+ | 0.7− | 2006 10 02 | 703 | 0.2− | 0.4− |
| 2001 08 23 | 699 | 0.5+ | 0.2+ | 2003 01 07 | 704 | 0.6+ | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.6− |
| 2001 08 23 | 699 | 0.8+ | 0.7+ | 2003 01 24 | 644 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.0 |
| 2001 08 25 | 704 | (2.0+ | 0.2−) | 2003 01 24 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4− |
| 2001 08 25 | 704 | 0.1− | 0.5− | 2003 01 24 | 644 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2001 08 25 | 704 | 0.4+ | 0.6− | 2003 01 27 | 704 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2003 01 27 | 704 | 0.0 | 0.0 | 2006 10 20 | 704 | 0.8+ | 0.3− |
| 2001 08 25 | 704 | 0.2− | 0.6+ | 2003 01 27 | 704 | 0.3− | 0.7− | 2006 10 20 | 704 | 0.1− | 0.7+ |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.2− | 0.5− | 2006 10 20 | 704 | 1.2− | 0.2+ |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2003 01 27 | 704 | 0.6− | 0.3− | 2006 10 20 | 704 | 0.2+ | 0.3+ |
| 2001 09 25 | 704 | 0.0 | 0.6+ | 2004 03 17 | E12 | 0.1+ | 1.1+ | 2006 10 27 | 703 | 0.5+ | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.6+ | 2004 03 17 | E12 | 0.7− | 0.6+ | 2006 10 27 | 703 | 0.5+ | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.6+ | 2004 03 17 | E12 | 0.2− | 0.6+ | 2006 10 27 | 703 | 0.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.5− | 0.3+ | 2004 03 17 | E12 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.5− |
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2004 04 25 | 704 | 0.7+ | 0.4− | 2006 11 15 | 703 | 0.1+ | 1.1− |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2004 04 25 | 704 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.1− | 1.0− |
| 2002 12 10 | 704 | 0.1− | 0.6+ | 2004 04 25 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.3+ | 0.6− |
| 2002 12 10 | 704 | 0.1− | 0.8+ | 2004 04 25 | 704 | 0.4+ | 0.8− | 2006 11 15 | 703 | 0.6+ | 0.1+ |

**(143365)∗ 2003 BH$_7$**

Discovered 2003 Jan. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.44018 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21238940 | $\omega$ | 338.29795 | | −0.09876779 | −0.97075610 | |
| $a$ | 2.7821518 | $\Omega$ | 116.79073 | | +0.94525557 | −0.16024908 | |
| $e$ | 0.1709165 | $i$ | 14.18898 | | +0.31102546 | +0.17875354 | |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.7− | 2003 01 25 | 699 | 0.2+ | 0.2− | 2004 04 25 | 691 | 0.3+ | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2003 01 25 | 699 | 0.0 | 0.4− | 2004 04 25 | 691 | 0.2+ | 0.5+ |
| 2002 12 05 | 704 | 0.6− | 0.2+ | 2003 01 25 | 699 | 0.7+ | 0.0 | 2004 05 19 | 691 | 0.2+ | 0.5+ |
| 2002 12 05 | 704 | 0.5− | 0.1− | 2003 01 27 | 699 | 0.2− | 0.6+ | 2004 05 19 | 691 | 0.1+ | 0.5+ |
| 2002 12 10 | 644 | 0.3+ | 0.2+ | 2003 01 27 | 699 | 0.2+ | 0.2+ | 2004 05 19 | 691 | 0.1+ | 0.4+ |
| 2002 12 10 | 644 | 0.0 | 0.3+ | 2003 01 27 | 699 | 0.7− | 0.3+ | 2005 06 13 | G96 | 0.3+ | 0.0 |
| 2002 12 10 | 644 | 0.4+ | 0.2+ | 2003 01 27 | 699 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.5− | 0.4+ |
| 2002 12 19 | 644 | 0.1− | 0.3+ | 2003 01 27 | 608 | 0.5+ | 0.8+ | 2005 06 13 | G96 | 0.2− | 0.2+ |
| 2002 12 19 | 644 | 0.0 | 0.3− | 2003 01 27 | 608 | 0.6+ | 0.4+ | 2005 06 13 | G96 | 0.4− | 0.3+ |
| 2002 12 19 | 644 | 0.1− | 0.4− | 2003 01 27 | 608 | 0.3+ | 0.8+ | 2005 07 15 | G96 | 0.5− | 0.5+ |
| 2003 01 01 | 291 | 0.2− | 0.0 | 2003 02 01 | 704 | 0.6+ | 0.5+ | 2005 07 15 | G96 | 0.4− | 0.4+ |
| 2003 01 01 | 291 | 0.3− | 0.0 | 2003 02 01 | 704 | 0.6− | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.5+ |
| 2003 01 01 | 291 | 0.2− | 0.2+ | 2003 02 01 | 704 | 0.1− | 0.5+ | 2005 07 15 | G96 | 0.5− | 0.9+ |
| 2003 01 01 | A38 | 0.2− | 0.6− | 2003 02 01 | 704 | 0.1+ | 0.8+ | 2005 08 08 | 807 | 0.2+ | 0.6+ |
| 2003 01 01 | A38 | 0.3+ | 0.4− | 2003 02 01 | 704 | 0.5+ | 0.5+ | 2005 08 08 | 807 | 0.0 | 0.6+ |
| 2003 01 01 | A38 | 0.6+ | 0.3− | 2003 02 01 | 704 | 0.5+ | 0.2+ | 2006 10 02 | 703 | 1.2− | 0.3+ |
| 2003 01 04 | 704 | (0.7− | 2.4+) | 2003 02 01 | 704 | 0.6+ | 0.2− | 2006 10 02 | 703 | 0.1− | 0.2+ |
| 2003 01 04 | 704 | 1.2− | 1.3+ | 2003 02 01 | 704 | 0.3− | 0.4+ | 2006 10 02 | 703 | 1.0− | 0.0 |
| 2003 01 04 | 704 | 0.1+ | 0.8+ | 2003 02 01 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.2− | 0.6+ |
| 2003 01 04 | 704 | 0.2+ | 0.2− | 2003 02 04 | 704 | 1.0− | 0.4− | 2006 10 21 | 703 | 1.0+ | 0.4+ |
| 2003 01 08 | 704 | 0.4+ | 0.2− | 2003 02 04 | 704 | 1.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 2003 01 08 | 704 | 0.3+ | 0.3− | 2003 02 04 | 704 | (1.5+ | 0.2−) | 2006 10 21 | 703 | 1.4− | 0.9+ |
| 2003 01 08 | 704 | 0.5+ | 0.7− | 2003 02 04 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 2003 01 08 | 704 | 0.6+ | 0.3− | 2003 02 04 | 704 | 0.0 | 0.4+ | 2006 10 31 | 703 | 1.3+ | 0.0 |
| 2003 01 14 | 608 | 0.2− | 1.2+ | 2003 02 07 | 704 | 0.7+ | 1.3+ | 2006 10 31 | 703 | 0.2+ | 0.6+ |
| 2003 01 14 | 608 | 0.2+ | 0.7+ | 2003 02 07 | 704 | 0.4+ | 0.9+ | 2006 10 31 | 703 | 0.5− | 0.2+ |
| 2003 01 14 | 608 | 0.2− | 1.0+ | 2003 02 07 | 704 | 0.4+ | 0.7− | 2006 10 31 | 703 | 0.6− | 0.3+ |
| 2003 01 15 | 644 | 0.3+ | 0.3+ | 2003 02 07 | 704 | 0.1− | 0.7+ | 2006 11 23 | 703 | 0.5+ | 1.4+ |
| 2003 01 15 | 644 | 0.4+ | 0.7+ | 2003 04 26 | 645 | 0.1− | 0.3− | 2006 11 23 | 703 | 0.2+ | 0.4− |
| 2003 01 15 | 644 | 1.0+ | 0.5+ | 2003 04 26 | 645 | 0.2− | 0.3− | 2006 11 23 | 703 | 0.1+ | 0.4+ |
| 2003 01 25 | 699 | 0.3+ | 0.1− | 2004 04 25 | 691 | 0.4+ | 0.3+ | 2006 11 23 | 703 | 0.0 | 0.1+ |

**(143366)∗ 2003 BL$_7$ = 1993 XF$_2$**

Discovered 2003 Jan. 25 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41462)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.82524 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22762833 | $\omega$ | 198.13727 | | +0.21003614 | −0.96134508 | |
| $a$ | 2.6565531 | $\Omega$ | 240.07527 | | +0.92053350 | +0.25580445 | |
| $e$ | 0.2588324 | $i$ | 11.85493 | | +0.32939777 | −0.10188094 | |
| $P$ | 4.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.3+ | 0.1− | 2006 09 25 | 704 | 0.8− | 0.9− | 2006 11 20 | 703 | 0.1− | 0.1− |
| 1993 12 14 | 691 | 0.1− | 0.1+ | 2006 09 25 | 704 | 1.2+ | 0.2− | 2006 11 20 | 703 | 0.3− | 0.1− |
| 1993 12 14 | 691 | 0.2+ | 0.8+ | 2006 10 19 | 704 | 0.6+ | 1.2+ | 2006 11 20 | 704 | 0.2− | 0.3− |
| 1993 12 16 | 691 | 0.0 | 0.8− | 2006 10 19 | 704 | 1.0+ | 0.5+ | 2006 11 20 | 704 | 0.6+ | 0.2+ |
| 1993 12 16 | 691 | 0.4− | 0.6− | 2006 10 19 | 704 | 0.0 | 0.5+ | 2006 11 20 | 703 | 0.0 | 0.4− |
| 1993 12 16 | 691 | 0.1− | 0.9− | 2006 10 19 | 704 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.2+ | 0.2+ |
| 2001 09 20 | 645 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.7+ | 0.4+ |
| 2002 11 07 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.9+ | 0.3+ |
| 2002 11 07 | 704 | 0.5− | 1.2+ | 2006 10 19 | 703 | 0.1− | 0.8− | 2006 11 20 | G96 | 0.2+ | 0.2+ |
| 2002 12 15 | 608 | 1.0+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.4− |
| 2002 12 15 | 608 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.5− | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2002 12 15 | 608 | 0.3+ | 0.1− | 2006 10 20 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2003 01 02 | 699 | 0.2− | 0.9+ | 2006 10 20 | 704 | 0.6+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2003 01 02 | 699 | 0.1+ | 0.4+ | 2006 10 20 | 704 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.4− |
| 2003 01 02 | 699 | 0.0 | 0.1− | 2006 10 20 | 704 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.2+ |
| 2003 01 02 | 699 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2003 01 02 | 704 | 1.0+ | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.1+ |
| 2003 01 02 | 704 | 0.7+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2003 01 02 | 704 | 0.7+ | 0.2+ | 2006 10 29 | 704 | 0.9+ | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2003 01 02 | 704 | 0.6+ | 0.9− | 2006 10 29 | 704 | 0.8+ | 0.2− | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2003 01 25 | 644 | 0.2+ | 0.3+ | 2006 10 29 | 704 | 0.9+ | 0.6− | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2003 01 25 | 644 | 0.1+ | 0.4+ | 2006 10 29 | 704 | 0.2+ | 1.3+ | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2003 01 25 | 644 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2003 01 27 | 608 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2003 01 27 | 608 | 0.0 | 0.6− | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2003 01 27 | 608 | 0.3− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2003 01 28 | 704 | 0.1− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2003 01 28 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | H42 | 1.0− | 1.3− |
| 2003 01 28 | 704 | 0.5+ | 0.4+ | 2006 11 09 | D35 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2003 01 28 | 704 | 0.4+ | 0.1+ | 2006 11 09 | D35 | 0.2+ | 0.2+ | 2006 11 22 | H42 | 0.5− | 0.6− |
| 2003 01 28 | 704 | 0.2+ | 0.1− | 2006 11 09 | D35 | 0.2+ | 0.2+ | 2006 11 22 | H42 | 0.3− | 0.8− |
| 2003 02 01 | 699 | 1.0− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.1+ | 2006 11 22 | H42 | 1.9− | 2.6− |
| 2003 02 01 | 699 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 02 01 | 699 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2003 02 01 | 699 | 0.3+ | 0.9+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 04 28 | 691 | 0.4− | 0.2− | 2006 11 17 | 704 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 1.2− | 0.4+ | 2006 11 27 | 703 | 0.4− | 0.2− |
| 2004 04 28 | 691 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.9− | 0.5+ | 2006 11 27 | 703 | 0.4− | 0.1− |
| 2004 05 21 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.5+ | 2006 11 27 | 703 | 0.1+ | 0.0 |
| 2004 05 21 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.1+ |
| 2004 05 21 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.2+ | 2006 11 27 | 704 | 0.4− | 0.8+ |
| 2006 08 29 | 703 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.3− | 0.3+ |
| 2006 08 29 | 703 | 0.1+ | 0.8− | 2006 11 18 | 704 | 0.3− | 0.4+ | 2006 11 27 | 704 | 0.6− | 0.4− |
| 2006 08 29 | 703 | 0.9− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.3+ | 2006 11 27 | 704 | 0.6− | 0.1+ |
| 2006 08 29 | 703 | 0.9+ | 0.1− | 2006 11 19 | 704 | 1.2+ | 0.7+ | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2006 09 18 | 703 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 0.2− | 0.1− |
| 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.7+ | 1.3+ | 2006 11 29 | 704 | 0.5− | 0.5+ |
| 2006 09 18 | 703 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.5− | 0.5+ |
| 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 1.1+ | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2006 09 25 | 704 | 0.5− | 1.1− | 2006 11 20 | 703 | 0.3− | 0.4− | | | | |

**(143367)∗ 2003 BA$_8$ = 2004 FV$_{118}$**

Discovered 2003 Jan. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61704)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.01890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23821969 | $\omega$ | 237.80130 | | +0.43039973 | −0.90223488 | |
| $a$ | 2.5772168 | $\Omega$ | 186.87127 | | +0.88535278 | +0.42779185 | |
| $e$ | 0.1513095 | $i$ | 13.03632 | | +0.17580253 | +0.05446422 | |
| $P$ | 4.14 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 18 | 691 | 0.1− | 0.6+ | 2003 02 09 | 608 | 0.5− | 1.0+ | 2006 09 30 | 703 | 0.3+ | 0.5− |
| 1993 09 18 | 691 | 0.0 | 0.9+ | 2004 03 14 | 644 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 1993 09 18 | 691 | 0.1− | 0.5+ | 2004 03 14 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 1996 04 15 | 691 | 0.5− | 0.4+ | 2004 03 14 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 1996 04 15 | 691 | 0.2+ | 0.1+ | 2004 03 14 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 1996 04 15 | 691 | 0.1− | 0.3+ | 2004 03 14 | 644 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.8+ | 0.6+ | 2004 03 14 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2002 10 31 | 704 | 1.1+ | 1.5+ | 2004 03 22 | 704 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2002 10 31 | 704 | (1.8+ | 1.3+) | 2004 03 22 | 704 | 0.2+ | 0.5− | 2006 10 22 | 703 | 0.7− | 0.5+ |
| 2002 10 31 | 704 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.7− |
| 2002 10 31 | 704 | 1.0+ | 0.7+ | 2004 03 22 | 704 | 0.7+ | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.6+ |
| 2003 01 02 | 704 | 0.2− | 0.8+ | 2004 03 28 | 704 | 0.3− | 0.2− | 2006 10 28 | 703 | 1.0+ | 1.2− |
| 2003 01 02 | 704 | (0.2− | 1.7+) | 2004 03 28 | 704 | (0.5− | 1.6+) | 2006 10 28 | 703 | 0.2+ | 0.2− |
| 2003 01 02 | 704 | 0.9− | 0.6+ | 2004 03 28 | 704 | 0.6− | 0.4− | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2003 01 02 | 704 | 0.4− | 1.2+ | 2004 03 28 | 704 | 1.1− | 0.8+ | 2006 10 30 | 703 | 0.2− | 0.1+ |
| 2003 01 02 | 704 | 0.1+ | 1.4+ | 2004 04 14 | 691 | 0.1− | 0.5+ | 2006 10 30 | 703 | 0.8− | 0.0 |
| 2003 01 26 | 644 | 0.1+ | 0.1− | 2004 04 14 | 691 | 0.1− | 0.5+ | 2006 10 30 | 703 | 0.4− | 0.3+ |
| 2003 01 26 | 644 | 0.5+ | 0.4− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 10 30 | 703 | 0.2+ | 0.3+ |
| 2003 01 26 | 644 | 0.4+ | 0.0 | 2004 04 20 | 704 | 0.5+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.6+ |
| 2003 01 27 | 699 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.9+ | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.2+ |
| 2003 01 27 | 699 | (2.5− | 0.9+) | 2004 04 20 | 704 | 1.1+ | 0.8+ | 2006 11 13 | 703 | 0.4− | 0.0 |
| 2003 01 27 | 699 | 0.6− | 0.0 | 2004 04 20 | 704 | 0.9+ | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.2+ |
| 2003 01 27 | 699 | 0.3− | 0.8− | 2004 04 20 | 704 | 1.2+ | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.1+ |
| 2003 01 28 | 704 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.7− | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.2− |
| 2003 01 28 | 704 | 0.3− | 0.4− | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.4+ |
| 2003 01 28 | 704 | 0.4+ | 0.3− | 2006 09 18 | 703 | 0.8+ | 0.5− | 2006 11 19 | 703 | 0.3+ | 0.2+ |
| 2003 01 28 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2003 01 28 | 704 | 0.1+ | 1.0− | 2006 09 19 | 699 | 0.2− | 0.7+ | 2006 11 21 | 704 | 0.9+ | 0.1+ |
| 2003 02 04 | 644 | 0.5+ | 0.6− | 2006 09 19 | 699 | 1.0− | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2003 02 04 | 644 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2003 02 04 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.7− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2003 02 09 | 608 | 0.6− | 1.4+ | 2006 09 30 | 703 | 0.4− | 0.3+ | | | | |
| 2003 02 09 | 608 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 0.0 | 0.4+ | | | | |

**(143368)∗ 2003 BT$_8$ = 1998 EW$_1$ = 2001 UG$_{172}$**

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 41463)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.86899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17200400 | $\omega$ | 313.03523 | | −0.75779383 | −0.65241512 | |
| $a$ | 3.2021648 | $\Omega$ | 186.26524 | | +0.62243525 | −0.71812960 | |
| $e$ | 0.1409010 | $i$ | 5.33663 | | +0.19576228 | −0.24216603 | |
| $P$ | 5.73 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 910 | 0.3+ | 0.5+ | 2001 10 25 | 691 | 0.1+ | 0.2+ | 2004 04 19 | 704 | 0.3+ | 0.4− |
| 1998 03 02 | 910 | 0.2+ | 0.8+ | 2001 10 25 | 691 | 0.1+ | 0.1− | 2004 04 19 | 704 | 0.9+ | 0.1− |
| 1998 03 02 | 910 | 0.3+ | 0.5+ | 2003 01 08 | 704 | 0.6− | 0.1+ | 2004 04 19 | 704 | 0.7+ | 0.8+ |
| 1998 03 03 | 910 | 0.6− | 0.9+ | 2003 01 08 | 704 | 1.2+ | 0.4+ | 2004 04 19 | 704 | 0.5+ | 0.0 |
| 1998 03 03 | 910 | 0.3− | 0.3+ | 2003 01 08 | 704 | 0.3− | 0.2+ | 2005 06 13 | 691 | 0.5− | 0.4− |
| 1998 03 03 | 910 | 0.3− | 0.6+ | 2003 01 08 | 704 | 0.6− | 1.3− | 2005 06 13 | 691 | 0.2− | 0.5+ |
| 1998 03 29 | 704 | 0.6+ | 0.8− | 2003 01 26 | 699 | 0.8− | 0.1+ | 2005 06 13 | 691 | 0.2− | 0.4+ |
| 1998 03 29 | 704 | 0.1− | 1.3+ | 2003 01 26 | 699 | 0.5+ | 0.2− | 2006 08 19 | 691 | 0.2+ | 0.5− |
| 1998 03 29 | 704 | 0.9+ | 0.6+ | 2003 01 26 | 699 | 0.0 | 0.3− | 2006 08 19 | 691 | 0.0 | 0.5− |
| 1998 03 29 | 704 | (3.5− | 0.3+) | 2003 01 26 | 699 | 0.3− | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.1+ |
| 2001 10 18 | 644 | 0.1+ | 0.6+ | 2003 01 27 | 704 | (0.1+ | 3.9−) | 2006 08 28 | 691 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.0 | 0.9+ | 2003 01 27 | 704 | (1.1+ | 4.0−) | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2001 10 18 | 644 | 0.2− | 0.8+ | 2003 01 27 | 704 | (0.2− | 4.8−) | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2001 10 25 | 644 | 0.7− | 0.5+ | 2003 01 27 | 704 | (0.2+ | 4.2−) | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2001 10 25 | 644 | 0.5− | 1.3+ | 2003 02 03 | 644 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.4+ |
| 2001 10 25 | 644 | 0.6− | 1.1+ | 2003 02 03 | 644 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2001 10 25 | 691 | 0.1+ | 0.2+ | 2003 02 03 | 644 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− |

**(143369)∗ 2003 BB$_9$**

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.32978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17937036 | $\omega$ | 293.56997 | | −0.17283775 | −0.98423611 | |
| $a$ | 3.1138827 | $\Omega$ | 166.22448 | | +0.95133666 | −0.17668025 | |
| $e$ | 0.0884325 | $i$ | 9.06136 | | +0.25511892 | −0.00796003 | |
| $P$ | 5.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 28 | 691 | 0.2− | 0.1− | 2003 01 16 | 644 | 0.2+ | 0.4+ | 2003 03 06 | 704 | 0.4− | 0.7− |
| 1992 01 28 | 691 | 0.3− | 0.4− | 2003 01 16 | 644 | 0.1+ | 0.7+ | 2003 03 06 | 704 | 0.2− | 0.9+ |
| 1992 01 28 | 691 | 0.4+ | 0.1+ | 2003 01 26 | 699 | 0.6− | 0.1+ | 2003 03 06 | 704 | 0.9− | 0.8+ |
| 1995 09 17 | 691 | 0.5− | 0.9+ | 2003 01 26 | 699 | 0.4+ | 0.7− | 2003 03 06 | 704 | 0.1− | 0.3+ |
| 1995 09 17 | 691 | 0.4− | 0.1+ | 2003 01 26 | 699 | 0.2− | 0.5− | 2003 03 07 | 608 | 0.2− | 0.8+ |
| 1995 09 17 | 691 | 0.3+ | 0.3+ | 2003 01 26 | 699 | 0.8+ | 0.1− | 2003 03 07 | 608 | 0.4− | 0.4+ |
| 1998 03 24 | 704 | 1.5− | 0.8− | 2003 01 27 | 704 | (0.3+ | 2.1−) | 2003 03 07 | 608 | 0.2− | 0.2+ |
| 1998 03 24 | 704 | 0.2+ | 0.1+ | 2003 01 27 | 704 | 1.1− | 0.9− | 2004 04 16 | 704 | (1.6+ | 2.2+) |
| 1998 03 24 | 704 | 0.8− | 0.8+ | 2003 01 27 | 704 | 0.6− | 0.4+ | 2004 04 16 | 704 | 0.3+ | 2.0+ |
| 1998 03 24 | 704 | 0.1+ | 1.1+ | 2003 01 27 | 644 | 0.1+ | 0.0 | 2004 04 16 | 704 | (0.9+ | 2.5+) |
| 1998 03 24 | 704 | 1.8+ | 0.9− | 2003 01 27 | 704 | 0.6− | 0.1− | 2006 08 06 | D35 | 0.0 | 0.2+ |
| 1998 03 24 | 704 | 0.9+ | 1.4+ | 2003 01 27 | 644 | 0.1+ | 0.1− | 2006 08 06 | D35 | 0.2+ | 0.2+ |
| 1998 03 24 | 704 | 0.4+ | 0.7− | 2003 01 27 | 644 | 0.3+ | 0.2+ | 2006 08 06 | D35 | 0.0 | 0.2+ |
| 1998 03 24 | 704 | (4.4− | 0.9+) | 2003 02 01 | 699 | 1.1+ | 1.2+ | 2006 08 06 | D35 | 0.1+ | 0.2+ |
| 1998 03 24 | 704 | 0.2− | 1.9− | 2003 02 01 | 699 | 1.0+ | 0.3− | 2006 08 06 | D35 | 0.2− | 0.7+ |
| 2001 10 10 | 644 | 0.4+ | 0.0 | 2003 02 01 | 699 | 0.1− | 0.5− | 2006 08 06 | D35 | 0.0 | 0.4+ |
| 2001 10 10 | 644 | 0.2+ | 0.1+ | 2003 02 01 | 699 | 0.7+ | 0.1+ | 2006 08 06 | D35 | 0.2+ | 0.3+ |
| 2001 10 10 | 644 | 0.3+ | 0.0 | 2003 02 02 | 704 | 0.1− | 0.3+ | 2006 08 06 | D35 | 0.1+ | 0.6+ |
| 2001 10 20 | 704 | 0.6+ | 0.4− | 2003 02 02 | 704 | 0.2− | 0.1+ | 2006 08 06 | D35 | 0.1− | 0.5+ |
| 2001 10 20 | 704 | 0.8+ | 0.4− | 2003 02 02 | 704 | 0.3− | 0.1− | 2006 09 12 | 703 | 1.1+ | 0.3− |
| 2001 10 20 | 704 | 1.0+ | 1.6− | 2003 02 03 | 699 | 0.2+ | 0.7+ | 2006 09 12 | 703 | 0.3+ | 0.5+ |
| 2001 11 18 | 704 | 0.6+ | 0.7− | 2003 02 03 | 699 | 0.2− | 0.5+ | 2006 09 12 | 703 | 0.6+ | 0.6+ |
| 2001 11 18 | 704 | 1.2+ | 1.5− | 2003 02 03 | 699 | 0.0 | 0.9+ | 2006 09 12 | 703 | 0.4+ | 0.2− |
| 2001 11 18 | 704 | 0.9+ | 1.0− | 2003 02 03 | 699 | 0.4− | 1.2+ | 2006 09 14 | 644 | 0.4− | 0.1− |
| 2001 11 20 | 699 | 1.7− | 0.8− | 2003 02 03 | 644 | 0.8+ | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 2001 11 20 | 699 | 0.9− | 0.3− | 2003 02 03 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 2001 11 20 | 699 | 0.6− | 1.1+ | 2003 02 03 | 644 | 0.6+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 699 | 0.6− | 0.2− | 2003 02 19 | 644 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.6+ | 0.0 |
| 2003 01 07 | 704 | 0.2+ | 0.7+ | 2003 02 19 | 644 | 0.6+ | 0.2− | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2003 01 07 | 704 | 1.2− | 1.6+ | 2003 02 19 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2003 01 07 | 704 | 0.6− | 0.4− | 2003 02 22 | 699 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.9− | 0.7+ |
| 2003 01 07 | 704 | 0.6+ | 0.7+ | 2003 02 22 | 699 | 0.5− | 0.2+ | 2006 09 26 | 704 | 0.7− | 1.2+ |
| 2003 01 07 | 704 | 0.1− | 0.1+ | 2003 02 22 | 699 | 0.0 | 0.9− | | | | |
| 2003 01 16 | 644 | 0.3+ | 0.7+ | 2003 02 22 | 699 | 0.1− | 0.0 | | | | |

**(143370)∗ 2003 BJ$_9$ = 2001 TM$_{249}$**

Discovered 2003 Jan. 26 by NEAT at Palomar.

Id. A. Doppler (*MPO* 72742)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.56466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26096684 | $\omega$ | 138.00694 | | −0.96101921 | +0.27197874 | |
| $a$ | 2.4251903 | $\Omega$ | 57.83972 | | −0.26671705 | −0.86463333 | |
| $e$ | 0.1375150 | $i$ | 3.36535 | | −0.07282921 | −0.42241776 | |
| $P$ | 3.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 809 | 0.3− | 0.1+ | 2003 01 26 | 644 | 0.0 | 1.2+ | 2005 10 28 | G96 | 0.2+ | 0.2+ | |
| 1996 03 27 | 809 | 0.7+ | 0.2+ | 2003 01 26 | 644 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.8+ | 0.4+ | |
| 1996 03 27 | 809 | 0.1− | 0.7+ | 2003 01 26 | 644 | 0.2+ | 0.5+ | 2005 10 29 | G96 | 0.0 | 0.2− | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2003 01 27 | 644 | 0.5+ | 0.1+ | 2005 10 29 | G96 | 0.0 | 0.1+ | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2003 01 27 | 644 | 0.2+ | 0.1+ | 2005 10 29 | G96 | 0.0 | 0.0 | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2003 01 27 | 644 | 0.3+ | 0.0 | 2005 10 29 | G96 | 0.1− | 0.2− | |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2003 02 01 | 704 | 0.3+ | 0.4− | 2005 11 28 | G96 | 0.2− | 0.1+ | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.6− | 1.3− | 2005 11 28 | G96 | 0.6+ | 0.5− | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.7+ | 0.3− | 2005 11 28 | G96 | 0.3+ | 0.9− | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.1− | 0.8+ | 2005 11 28 | G96 | 0.5+ | 0.1+ | |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2003 02 01 | 704 | 0.4− | 0.6− | 2005 11 29 | G96 | 0.4− | 0.2+ | |
| 2001 12 10 | 645 | 0.0 | 0.1− | 2005 10 04 | G96 | 0.1+ | 0.2− | 2005 11 29 | G96 | 0.9+ | 0.3− | |
| 2001 12 10 | 645 | 0.1+ | 0.1− | 2005 10 04 | G96 | 0.0 | 0.0 | 2005 11 29 | G96 | 0.7− | 0.1+ | |
| 2002 12 31 | 704 | 0.6+ | 0.5+ | 2005 10 04 | G96 | 0.0 | 0.1− | 2005 11 29 | G96 | 0.6+ | 0.1− | |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2005 10 04 | G96 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.2+ | 0.3− | |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2005 10 07 | 691 | 0.1− | 0.2− | 2005 12 04 | G96 | 0.2− | 0.2− | |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2005 10 07 | 691 | 0.3− | 0.4+ | 2005 12 04 | G96 | 0.6− | 0.3− | |
| 2003 01 09 | 704 | 1.2− | 0.6+ | 2005 10 07 | 691 | 0.0 | 0.0 | 2005 12 04 | G96 | 0.5− | 0.1− | |
| 2003 01 09 | 704 | 0.1− | 0.0 | 2005 10 28 | G96 | 0.1+ | 0.1− | | | | | |
| 2003 01 09 | 704 | 0.2− | 0.4− | 2005 10 28 | G96 | 0.1− | 0.0 | | | | | |

**(143371)∗ 2003 BN$_{10}$**

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.99058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18857731 | $\omega$ | 318.61596 | | +0.34390940 | −0.92109159 | |
| $a$ | 3.0116865 | $\Omega$ | 110.54254 | | +0.90462624 | +0.27288393 | |
| $e$ | 0.0841058 | $i$ | 11.24023 | | +0.25174924 | +0.27771323 | |
| $P$ | 5.23 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.2− | 0.5− | 2003 01 27 | 699 | 0.6− | 0.2+ | 2003 03 13 | 644 | 0.0 | 0.2+ | |
| 1996 12 07 | 691 | 0.3+ | 0.4− | 2003 01 27 | 699 | 0.8− | 0.2− | 2003 03 13 | 644 | 0.1+ | 0.2+ | |
| 1996 12 07 | 691 | 0.2+ | 0.3− | 2003 01 27 | 699 | 0.3− | 0.5+ | 2004 04 16 | 704 | 0.7+ | 0.0 | |
| 1998 03 25 | 704 | 0.2+ | 0.5− | 2003 01 27 | 699 | 0.9− | 0.2− | 2004 04 16 | 704 | (0.6+ | 1.6+) | |
| 1998 03 25 | 704 | 1.2− | 1.1+ | 2003 01 28 | 644 | 0.5+ | 0.4− | 2004 04 16 | 704 | (0.3− | 1.6+) | |
| 1998 03 25 | 704 | 1.1− | 1.9− | 2003 01 28 | 644 | 0.7+ | 0.2+ | 2004 05 16 | 704 | (0.2+ | 1.6+) | |
| 1998 03 25 | 704 | 0.8+ | 0.4− | 2003 01 28 | 644 | 0.3+ | 0.0 | 2004 05 16 | 704 | 0.2− | 0.7+ | |
| 2001 08 20 | 644 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.1+ | 0.6+ | 2004 05 16 | 704 | (0.4+ | 2.3+) | |
| 2001 08 20 | 644 | 0.2+ | 0.2+ | 2003 02 01 | 704 | 0.6+ | 0.6+ | 2006 09 24 | 699 | (0.1− | 1.6+) | |
| 2001 08 20 | 644 | 0.0 | 0.6+ | 2003 02 01 | 704 | 0.2+ | 0.2− | 2006 09 24 | 699 | 1.0− | 0.5+ | |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.4− | 0.6− | 2006 09 24 | 699 | 0.1+ | 1.0+ | |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.6− | 0.3+ | 2006 09 24 | 699 | 0.9− | 0.0 | |
| 2001 10 14 | 699 | 1.3+ | 1.1− | 2003 02 02 | 644 | 0.2+ | 1.3+ | 2006 09 25 | 703 | (0.4+ | 2.0+) | |
| 2001 10 14 | 699 | 0.4+ | 0.0 | 2003 02 02 | 644 | 0.1+ | 1.4+ | 2006 09 25 | 703 | (0.2− | 1.7+) | |
| 2001 10 14 | 699 | 1.0− | 1.1+ | 2003 02 02 | 644 | 0.0 | 1.4+ | 2006 09 25 | 703 | 0.0 | 0.3+ | |
| 2001 10 14 | 699 | 0.5− | 0.1+ | 2003 02 04 | 699 | 0.6− | 0.3− | 2006 09 25 | 703 | 1.1+ | 0.1− | |
| 2001 10 23 | 644 | 0.6− | 1.0+ | 2003 02 04 | 699 | 0.8+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2001 10 23 | 644 | 0.7− | 1.0+ | 2003 02 04 | 699 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.4+ | |
| 2001 10 23 | 644 | 0.7− | 1.1+ | 2003 02 04 | 704 | 0.5+ | 0.7− | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2001 12 07 | 704 | 0.7+ | 0.5− | 2003 02 04 | 699 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.4+ | |
| 2001 12 07 | 704 | 0.0 | 1.0+ | 2003 02 04 | 704 | 0.8+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2001 12 07 | 704 | 0.4− | 0.9+ | 2003 02 04 | 704 | 1.0+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2001 12 07 | 704 | 0.6− | 0.7+ | 2003 02 04 | 704 | 0.7+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | |
| 2001 12 07 | 704 | 0.8− | 0.6+ | 2003 02 04 | 704 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ | |
| 2001 12 15 | 704 | 0.6+ | 1.2+ | 2003 02 04 | 608 | 0.4− | 1.2− | 2006 10 12 | 644 | 0.2− | 0.3+ | |
| 2001 12 15 | 704 | 1.1+ | 0.7+ | 2003 02 04 | 608 | 0.3+ | 0.8− | 2006 10 21 | 703 | 0.1+ | 1.4− | |
| 2001 12 15 | 704 | 0.1+ | 0.9+ | 2003 02 04 | 608 | 0.4+ | 0.8− | 2006 10 21 | 703 | 0.8− | 0.7+ | |
| 2001 12 15 | 704 | 1.2+ | 0.9+ | 2003 02 19 | 644 | 0.1+ | 0.2− | 2006 10 21 | 703 | 1.1− | 0.3− | |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2003 02 19 | 644 | 0.0 | 0.3− | 2006 10 21 | 703 | 1.5+ | 0.7− | |
| 2001 12 18 | 645 | 0.0 | 0.2− | 2003 02 19 | 644 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.1− | 1.0+ | |
| 2003 01 05 | 704 | 0.1− | 0.4− | 2003 03 07 | 644 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.6− | 1.0+ | |
| 2003 01 05 | 704 | 0.9+ | 1.0+ | 2003 03 07 | 644 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.1+ | |
| 2003 01 05 | 704 | 0.8+ | 0.1− | 2003 03 07 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.2+ | |
| 2003 01 05 | 704 | 0.0 | 0.1+ | 2003 03 08 | 704 | 1.3− | 1.2+ | 2006 10 22 | 644 | 0.5− | 0.0 | |
| 2003 01 13 | 106 | 0.2− | 1.2+ | 2003 03 08 | 704 | (0.1+ | 2.1+) | 2006 10 22 | 644 | 0.3− | 0.2+ | |
| 2003 01 13 | 106 | 1.5− | 0.8+ | 2003 03 08 | 704 | (0.5− | 2.8+) | 2006 10 22 | 644 | 0.4− | 0.0 | |
| 2003 01 13 | 106 | 0.2− | 0.9− | 2003 03 08 | 704 | 0.2+ | 0.7+ | 2006 10 28 | 703 | 0.6+ | 0.0 | |
| 2003 01 26 | 699 | 0.4+ | 0.8− | 2003 03 08 | 704 | (0.9− | 2.4+) | 2006 10 28 | 703 | 0.4+ | 0.5+ | |
| 2003 01 26 | 699 | 0.1− | 0.0 | 2003 03 08 | 704 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.3− | 1.5− | |
| 2003 01 26 | 699 | 0.6− | 0.3+ | 2003 03 08 | 704 | (0.2+ | 3.2+) | 2006 10 28 | 703 | 1.7+ | 0.3+ | |
| 2003 01 26 | 699 | 0.8− | 0.3− | 2003 03 13 | 644 | 0.2+ | 0.3+ | | | | | |

**(143372)∗ 2003 BB$_{11}$**

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.01223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18299593 | $\omega$ | 197.55677 | | −0.97182455 | −0.22183534 | |
| $a$ | 3.0726169 | $\Omega$ | 329.27605 | | +0.23061551 | −0.82502934 | |
| $e$ | 0.0664129 | $i$ | 8.97046 | | +0.04871883 | −0.51972653 | |
| $P$ | 5.39 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.5− | 0.0 | 2003 02 04 | 699 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.4+ | 1.0− | |
| 2001 10 15 | 704 | 0.2+ | 0.4− | 2003 02 04 | 699 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.9− | 0.3− | |
| 2001 10 15 | 704 | 1.0− | 0.6+ | 2003 02 04 | 699 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.8− | 0.1− | |
| 2001 10 15 | 704 | 0.6− | 0.2+ | 2003 02 21 | 699 | 0.5− | 0.9+ | 2006 09 18 | 703 | 0.0 | 0.6− | |
| 2001 11 11 | 704 | (0.5− | 1.8−) | 2003 02 21 | 699 | 0.2− | 0.8− | 2006 09 18 | 703 | 0.7+ | 0.4− | |
| 2001 11 11 | 704 | 1.0− | 0.7+ | 2003 02 21 | 699 | 1.1+ | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.5− | |
| 2001 11 11 | 704 | 0.3− | 0.4+ | 2003 02 21 | 699 | 1.4− | 0.4+ | 2006 09 28 | 703 | 0.2+ | 0.1+ | |
| 2001 12 09 | 704 | 1.0+ | 0.4+ | 2003 03 06 | 644 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.3− | |
| 2001 12 09 | 704 | 1.0+ | 0.3+ | 2003 03 06 | 644 | 0.7+ | 0.2+ | 2006 09 28 | 703 | (1.7+ | 0.9−) | |
| 2001 12 09 | 704 | 0.7+ | 0.5− | 2003 03 06 | 644 | 0.8+ | 0.1− | 2006 09 28 | 703 | 0.2− | 0.1− | |
| 2001 12 09 | 704 | 0.1− | 0.7+ | 2003 03 08 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.5+ | |
| 2003 01 26 | 699 | 0.8− | 0.5− | 2003 03 08 | 704 | 0.7+ | 1.0+ | 2006 10 17 | 703 | 0.6+ | 0.0 | |
| 2003 01 26 | 699 | 1.4− | 0.2+ | 2003 03 08 | 704 | 0.5+ | 0.6− | 2006 10 17 | 703 | 0.8+ | 0.7+ | |
| 2003 01 26 | 699 | 0.6− | 0.7+ | 2003 03 08 | 704 | 0.2− | 1.0+ | 2006 10 17 | 703 | (1.9− | 1.2+) | |
| 2003 01 26 | 699 | 0.5− | 0.5− | 2003 03 12 | 644 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.0 | |
| 2003 01 27 | 704 | 0.0 | 0.7− | 2003 03 12 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | |
| 2003 01 27 | 704 | 0.5+ | 0.7− | 2003 03 12 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.2− | |
| 2003 01 27 | 704 | 0.1+ | 0.5− | 2003 03 23 | 291 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.3− | 0.0 | |
| 2003 01 27 | 704 | 0.1− | 0.7− | 2003 03 23 | 291 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.2− | 0.3− | |
| 2003 01 27 | 704 | 0.7+ | 0.5− | 2003 03 23 | 291 | 0.1+ | 0.1− | 2006 10 31 | 703 | 0.1− | 0.4− | |
| 2003 02 01 | 704 | (0.4− | 1.7+) | 2005 07 04 | 644 | 0.5− | 0.4+ | 2006 10 31 | 703 | 0.4− | 0.7+ | |
| 2003 02 01 | 704 | (0.1− | 4.5+) | 2005 07 04 | 644 | 0.2− | 0.9+ | 2006 11 14 | 703 | 0.4+ | 0.3+ | |
| 2003 02 01 | 704 | (0.2+ | 2.1+) | 2005 07 04 | 644 | 0.3− | 0.6+ | 2006 11 14 | 703 | 0.3+ | 0.8− | |
| 2003 02 01 | 704 | (1.1+ | 3.0+) | 2006 09 17 | 703 | 1.1+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.4+ | |
| 2003 02 04 | 699 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 11 14 | 703 | 0.7− | 0.7+ | |

**(143373)∗ 2003 BK$_{12}$**

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.00887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22803505 | $\omega$ | 303.87099 | | +0.25114039 | +0.96492352 | |
| $a$ | 2.6533934 | $\Omega$ | 340.24347 | | −0.79644737 | +0.16108619 | |
| $e$ | 0.0782879 | $i$ | 13.07894 | | −0.55009099 | +0.20730133 | |
| $P$ | 4.32 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 16 | 566 | 0.3− | 1.2+ | 2003 02 21 | 644 | 0.3+ | 0.9+ | 2005 10 10 | 699 | 0.6− | 0.1− |
| 1996 09 16 | 566 | 0.7− | 0.4+ | 2003 02 21 | 644 | 0.0 | 1.2+ | 2005 10 10 | 699 | 0.3− | 0.8− |
| 1996 09 16 | 566 | 0.6− | 0.8+ | 2003 02 24 | 608 | 0.6− | 0.4− | 2005 10 13 | 704 | 0.2+ | 0.6− |
| 2001 09 25 | 704 | (2.6+ | 0.8−) | 2003 02 24 | 608 | 0.2− | 0.7− | 2005 10 13 | 704 | 0.3+ | 0.4− |
| 2001 09 25 | 704 | 0.4+ | 0.3− | 2003 02 24 | 608 | 0.5− | 0.2− | 2005 10 13 | 704 | 0.1+ | 0.2− |
| 2001 09 25 | 704 | (2.2+ | 0.3−) | 2003 03 06 | 699 | 1.1+ | 1.2+ | 2005 10 13 | 704 | 0.3− | 0.3− |
| 2001 09 25 | 704 | 0.5+ | 0.6− | 2003 03 06 | 699 | 0.3− | 0.4+ | 2005 10 23 | 703 | 0.2+ | 0.2− |
| 2001 10 25 | 704 | 0.7+ | 0.6− | 2003 03 06 | 699 | 0.4− | 0.2+ | 2005 10 23 | 703 | 0.4− | 0.0 |
| 2001 10 25 | 704 | 0.3+ | 0.1− | 2003 03 06 | 699 | 0.1+ | 0.1− | 2005 10 23 | 703 | 0.0 | 0.5− |
| 2001 10 25 | 704 | 0.2+ | 0.4+ | 2003 03 06 | 704 | 0.5+ | 0.3− | 2005 10 23 | 703 | 0.5+ | 0.4+ |
| 2001 10 25 | 704 | 0.5− | 0.8− | 2003 03 06 | 704 | 0.2− | 0.7+ | 2005 10 26 | 699 | 0.0 | 0.2− |
| 2001 10 25 | 704 | 0.2+ | 0.6− | 2003 03 06 | 704 | 0.1+ | 0.2+ | 2005 10 26 | 699 | 0.4+ | 0.3− |
| 2001 11 11 | 704 | 0.3− | 1.1+ | 2005 09 10 | 699 | 1.8+ | 0.0 | 2005 10 26 | 699 | 0.3+ | 0.5+ |
| 2001 11 11 | 704 | 1.0− | 1.2+ | 2005 09 10 | 699 | 0.6+ | 1.0− | 2005 10 26 | 699 | 0.2+ | 0.1− |
| 2001 11 11 | 704 | 1.0− | 1.5+ | 2005 09 10 | 699 | 0.9+ | 0.2+ | 2005 10 29 | 703 | 0.8− | 0.2+ |
| 2003 01 05 | 704 | 0.8+ | 0.4− | 2005 09 10 | 699 | 1.6− | 0.9+ | 2005 10 29 | 703 | 0.0 | 0.5+ |
| 2003 01 05 | 704 | 0.2+ | 0.4− | 2005 09 13 | 704 | 0.2− | 0.6+ | 2005 10 29 | 703 | 0.0 | 0.3− |
| 2003 01 05 | 704 | 0.3− | 0.6+ | 2005 09 13 | 704 | 0.6− | 0.1− | 2005 10 29 | 703 | 0.0 | 1.1− |
| 2003 01 26 | 699 | 0.4+ | 1.3+ | 2005 09 13 | 704 | 0.7− | 0.0 | 2005 10 30 | 644 | 0.0 | 0.2− |
| 2003 01 26 | 699 | 0.3+ | 0.5+ | 2005 09 13 | 704 | 0.8+ | 0.3− | 2005 10 30 | 644 | 0.4+ | 0.0 |
| 2003 01 26 | 699 | 0.4− | 0.3− | 2005 09 13 | 704 | 0.5− | 0.5− | 2005 10 30 | 644 | 0.2+ | 0.2− |
| 2003 01 26 | 699 | 0.8− | 0.9+ | 2005 09 18 | 644 | 0.3− | 0.0 | 2005 11 01 | 699 | 1.7+ | 1.2+ |
| 2003 01 27 | 704 | 0.7− | 0.1− | 2005 09 18 | 644 | 0.2− | 0.1− | 2005 11 01 | 699 | 0.4+ | 0.1− |
| 2003 01 27 | 704 | 0.2− | 0.2− | 2005 09 18 | 644 | 0.2− | 0.1+ | 2005 11 01 | 699 | 0.4+ | 0.5+ |
| 2003 01 27 | 704 | 0.3− | 1.1− | 2005 09 23 | 703 | 0.3− | 0.4− | 2005 11 01 | 699 | 0.3+ | 0.2− |
| 2003 01 27 | 704 | 0.5− | 0.2+ | 2005 09 23 | 703 | 0.8+ | 0.2+ | 2005 11 03 | 704 | 0.3+ | 0.4+ |
| 2003 01 27 | 704 | 0.2− | 0.1− | 2005 09 23 | 703 | 0.4+ | 0.0 | 2005 11 03 | 704 | 0.7+ | 0.6+ |
| 2003 01 30 | 608 | 0.4+ | 1.0− | 2005 09 23 | 703 | 0.9+ | 0.5+ | 2005 11 03 | 704 | 0.2+ | 0.7+ |
| 2003 01 30 | 608 | 0.0 | 0.8− | 2005 10 01 | 703 | 0.9− | 0.0 | 2005 11 03 | 704 | 0.3− | 0.6− |
| 2003 01 30 | 608 | 0.1− | 0.5− | 2005 10 01 | 703 | 0.2− | 0.1+ | 2005 11 03 | 704 | 0.2+ | 0.4+ |
| 2003 02 12 | 608 | 0.7+ | 0.6+ | 2005 10 01 | 703 | 0.3− | 0.2− | 2005 11 07 | 704 | 0.2− | 0.3− |
| 2003 02 12 | 608 | 0.0 | 1.1+ | 2005 10 01 | 703 | 0.6− | 0.3+ | 2005 11 07 | 704 | 0.3+ | 0.0 |
| 2003 02 12 | 608 | 0.6+ | 0.7+ | 2005 10 02 | 644 | 0.1− | 0.1− | 2005 11 07 | 704 | 0.4− | 0.1+ |
| 2003 02 19 | 608 | 0.2+ | 1.6− | 2005 10 02 | 644 | 0.0 | 0.0 | 2005 11 07 | 704 | 0.3− | 0.9− |
| 2003 02 19 | 608 | 0.1+ | 1.1− | 2005 10 02 | 644 | 0.0 | 0.0 | 2005 11 07 | 704 | 0.3− | 0.1+ |
| 2003 02 19 | 608 | 0.3+ | 0.9− | 2005 10 10 | 699 | 0.1− | 0.1− | | | | |
| 2003 02 21 | 644 | 0.3+ | 0.8+ | 2005 10 10 | 699 | 0.8− | 0.4− | | | | |

**(143374)∗ 2003 BE$_{13}$**

Discovered 2003 Jan. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.67031 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25556926 | $\omega$ | 99.11881 | | −0.98768587 | +0.14694464 | |
| $a$ | 2.4592177 | $\Omega$ | 89.34435 | | −0.15613667 | −0.90410331 | |
| $e$ | 0.1561075 | $i$ | 3.07858 | | −0.00989765 | −0.40125362 | |
| $P$ | 3.86 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 08 | 691 | 0.5+ | 0.4+ | 2003 01 29 | 644 | 0.0 | 0.0 | 2005 10 07 | 703 | 1.3− | 0.2+ |
| 1992 05 08 | 691 | 0.2+ | 0.5+ | 2003 01 29 | 644 | 0.5+ | 1.1+ | 2005 10 07 | 703 | (0.9+ | 2.1+) |
| 1992 05 08 | 691 | 0.1− | 0.6+ | 2003 01 30 | 699 | 0.1+ | 0.1+ | 2005 10 07 | 703 | 1.0+ | 0.8− |
| 2001 09 19 | 704 | (1.5− | 0.4+) | 2003 01 30 | 699 | 0.3− | 0.8+ | 2005 10 22 | 703 | (1.8− | 0.3−) |
| 2001 09 19 | 704 | 0.0 | 0.9+ | 2003 01 30 | 699 | 1.1+ | 0.9+ | 2005 10 22 | 703 | (0.6− | 1.6−) |
| 2001 09 19 | 704 | (1.5+ | 4.4−) | 2003 01 30 | 699 | 0.3− | 0.6+ | 2005 10 22 | 703 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2003 02 01 | 704 | 0.2+ | 0.3+ | 2005 10 22 | 703 | (2.2+ | 1.0−) |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.5+ | 0.5+ | 2005 10 24 | 691 | 0.1+ | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.7+ | 0.4+ | 2005 10 24 | 691 | 0.0 | 0.1+ |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.6+ | 0.7+ | 2005 10 24 | 691 | 0.1− | 0.1+ |
| 2001 12 10 | 645 | 0.0 | 0.1+ | 2003 02 01 | 704 | 0.9+ | 0.5+ | 2005 10 28 | 704 | 0.0 | 0.5+ |
| 2002 12 28 | 699 | 0.5− | 1.4+ | 2003 02 04 | 644 | 0.2+ | 0.6+ | 2005 10 28 | 704 | 0.1− | 1.0+ |
| 2002 12 28 | 699 | 0.6+ | 0.7− | 2003 02 04 | 644 | 0.3+ | 0.6+ | 2005 10 28 | 704 | 0.2+ | 0.5+ |
| 2002 12 28 | 699 | (1.6+ | 0.4−) | 2003 02 04 | 644 | 0.0 | 0.6+ | 2005 11 01 | 691 | 0.1− | 0.2− |
| 2002 12 28 | 699 | 1.2− | 1.2− | 2003 02 07 | 704 | 0.9+ | 0.4+ | 2005 11 01 | 691 | 0.4− | 0.4+ |
| 2002 12 31 | 704 | 0.2− | 0.4+ | 2003 02 07 | 704 | 0.3− | 0.6+ | 2005 11 01 | 691 | 0.2− | 0.1+ |
| 2002 12 31 | 704 | 0.5− | 0.3+ | 2003 02 07 | 704 | 0.2+ | 0.5+ | 2005 11 30 | G96 | 0.2− | 0.2− |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2003 02 07 | 704 | 0.2+ | 1.1+ | 2005 11 30 | G96 | 0.5− | 0.1− |
| 2003 01 09 | 704 | 0.4+ | 0.3+ | 2003 02 08 | 704 | 0.8− | 0.5+ | 2005 11 30 | G96 | 0.4− | 0.0 |
| 2003 01 09 | 704 | 0.2+ | 0.3+ | 2003 02 08 | 704 | 0.7+ | 0.8+ | 2005 11 30 | G96 | 0.3+ | 0.5+ |
| 2003 01 09 | 704 | 1.1− | 0.4+ | 2003 02 08 | 704 | 1.1− | 0.7+ | 2006 11 01 | 691 | 0.3+ | 0.2− |
| 2003 01 09 | 704 | 0.2− | 0.2+ | 2003 02 08 | 704 | (2.0+ | 0.9+) | 2006 11 01 | 691 | 0.5+ | 0.2+ |
| 2003 01 09 | 704 | 0.4− | 0.1+ | 2004 07 16 | 704 | 1.0− | 0.9+ | 2006 11 01 | 691 | 0.6+ | 0.2− |
| 2003 01 25 | 645 | 0.1− | 0.3− | 2004 07 16 | 704 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2003 01 25 | 645 | 0.0 | 0.3− | 2004 07 16 | 704 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2003 01 26 | 608 | (1.1− | 1.7+) | 2005 09 27 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2003 01 26 | 608 | 0.9− | 1.3+ | 2005 09 27 | 644 | 0.1+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2003 01 26 | 608 | 0.3− | 1.1+ | 2005 09 27 | 644 | 0.3+ | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.6− |
| 2003 01 27 | 699 | 0.5− | 0.9+ | 2005 10 01 | 704 | 0.9− | 1.3+ | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2003 01 27 | 699 | 0.7− | 0.5+ | 2005 10 01 | 704 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.6− |
| 2003 01 27 | 699 | 1.2+ | 0.4+ | 2005 10 01 | 704 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2003 01 27 | 699 | 0.2+ | 0.7− | 2005 10 01 | 704 | 0.2− | 1.0+ | | | | |
| 2003 01 29 | 644 | 0.5− | 0.1+ | 2005 10 07 | 703 | 1.3+ | 0.5+ | | | | |

**(143375)∗ 2003 BG$_{13}$ = 2004 HR$_{55}$**

Discovered 2003 Jan. 26 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 61705)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.38845 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18307047 | $\omega$ | 88.93900 | | −0.76136907 | +0.63151214 | |
| $a$ | 3.0717829 | $\Omega$ | 130.20333 | | −0.64451026 | −0.71279130 | |
| $e$ | 0.0860863 | $i$ | 11.07103 | | −0.07016875 | −0.30515731 | |
| $P$ | 5.38 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.2+ | 0.7+ | 2004 03 23 | 704 | 0.8+ | 1.1+ | 2004 06 12 | 699 | 1.3+ | 0.9+ |
| 2000 08 26 | 704 | 0.5− | 0.7+ | 2004 03 23 | 704 | 0.7+ | 1.1+ | 2004 06 12 | 699 | 0.7+ | 0.1+ |
| 2000 08 26 | 704 | 0.2− | 1.3+ | 2004 03 23 | 704 | 0.6+ | 1.0+ | 2004 06 12 | 699 | 0.7+ | 0.6+ |
| 2000 08 26 | 704 | 0.4− | 1.2+ | 2004 03 23 | 704 | 0.5− | 0.7+ | 2004 06 12 | 699 | (0.7+ | 1.7−) |
| 2000 08 26 | 704 | 0.4− | 1.8+ | 2004 03 23 | 704 | 0.1+ | 0.7+ | 2005 06 27 | 691 | 0.2+ | 0.4+ |
| 2001 11 19 | 704 | 0.2− | 0.7+ | 2004 03 28 | 703 | 0.2− | 0.9+ | 2005 06 27 | 691 | 0.2+ | 0.3+ |
| 2001 11 19 | 704 | 0.2− | 1.1+ | 2004 03 28 | 703 | 0.8− | 1.4− | 2005 06 27 | 691 | 0.2+ | 0.4+ |
| 2001 11 19 | 704 | 0.1− | 1.1+ | 2004 03 28 | 703 | (1.2+ | 3.3+) | 2005 06 28 | 644 | 0.2− | 0.6+ |
| 2001 11 19 | 704 | 1.2− | 0.9+ | 2004 03 28 | 703 | 0.2− | 1.3+ | 2005 06 28 | 644 | 0.1+ | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 0.8+ | 2004 04 16 | 704 | 0.3+ | 0.0 | 2005 06 28 | 644 | 0.3+ | 0.0 |
| 2003 01 26 | 608 | 0.1+ | 1.1+ | 2004 04 16 | 704 | 0.4− | 0.3− | 2005 07 04 | G96 | 0.6− | 0.4+ |
| 2003 01 26 | 608 | 0.3− | 0.9+ | 2004 04 16 | 704 | 0.1+ | 0.1+ | 2005 07 04 | G96 | 0.1− | 0.3+ |
| 2003 01 26 | 608 | 0.4− | 0.6+ | 2004 04 16 | 704 | 0.3− | 0.3− | 2005 07 04 | G96 | 0.3− | 0.5+ |
| 2003 01 27 | 704 | 0.1− | 0.2+ | 2004 04 21 | 703 | 0.3− | 0.1− | 2005 07 04 | G96 | 0.6− | 0.4+ |
| 2003 01 27 | 704 | 0.2+ | 1.1+ | 2004 04 21 | 703 | 0.4+ | 0.6− | 2005 07 07 | 691 | 0.2− | 0.1+ |
| 2003 01 27 | 704 | 0.0 | 1.5+ | 2004 04 21 | 703 | 0.6+ | 0.8+ | 2005 07 07 | 691 | 0.2− | 0.1+ |
| 2003 01 27 | 704 | 0.3+ | 0.8+ | 2004 04 21 | 703 | (3.8− | 1.6−) | 2005 07 07 | 691 | 0.1− | 0.2+ |
| 2003 01 27 | 704 | 0.1− | 1.2+ | 2004 04 24 | 704 | 0.6− | 0.4− | 2005 07 30 | E12 | 0.1− | 0.3+ |
| 2003 01 29 | 644 | 0.3+ | 0.4+ | 2004 04 24 | 704 | 0.3− | 0.4− | 2005 07 30 | E12 | 0.6− | 0.5− |
| 2003 01 29 | 644 | 0.1+ | 0.2+ | 2004 04 24 | 704 | 0.3− | 0.4− | 2005 07 30 | E12 | 0.9+ | 0.8+ |
| 2003 01 29 | 644 | 0.4+ | 0.7+ | 2004 04 24 | 704 | 0.6− | 0.2+ | 2005 07 30 | E12 | 0.7− | 0.4− |
| 2003 01 30 | 699 | 0.1+ | 0.6− | 2004 04 24 | 704 | 1.1− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2003 01 30 | 699 | 0.1+ | 0.6+ | 2004 04 26 | 699 | 1.2+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2003 01 30 | 699 | 0.3+ | 0.5+ | 2004 04 26 | 699 | 0.6− | 1.2+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2003 01 30 | 699 | 0.1+ | 0.7+ | 2004 04 26 | 699 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.7− | 0.4+ |
| 2003 01 31 | 704 | 0.6+ | 0.3− | 2004 04 26 | 699 | 0.3− | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2003 01 31 | 704 | 0.6− | 0.1− | 2004 05 13 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2003 01 31 | 704 | 0.3− | 0.5+ | 2004 05 13 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2003 01 31 | 704 | 0.2− | 0.7+ | 2004 05 13 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.2+ | 1.0+ |
| 2003 01 31 | 704 | 0.4+ | 0.4+ | 2004 05 13 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2003 02 04 | 644 | 0.1− | 0.6+ | 2004 05 13 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2003 02 04 | 644 | 0.0 | 0.3+ | 2004 05 24 | 704 | 0.9+ | 0.1+ | 2006 10 28 | 703 | 1.0− | 0.0 |
| 2003 02 04 | 644 | 0.1− | 0.4+ | 2004 05 24 | 704 | 0.0 | 0.8+ | 2006 10 28 | 703 | 0.1+ | 0.9+ |
| 2004 01 23 | 704 | 1.3+ | 0.6+ | 2004 05 24 | 704 | 0.8+ | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2004 01 23 | 704 | 0.5+ | 0.8+ | 2004 05 24 | 704 | 0.0 | 0.4+ | 2006 10 28 | 703 | 1.0+ | 0.7+ |
| 2004 01 23 | 704 | 1.2− | 0.3+ | 2004 05 24 | 704 | 0.2+ | 0.0 | | | | |

**(143376)∗ 2003 BB$_{15}$**

Discovered 2003 Jan. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.25521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17153338 | $\omega$ | 190.85486 | | −0.99447724 | −0.09714854 | |
| $a$ | 3.2080192 | $\Omega$ | 343.41318 | | +0.10366494 | −0.85014928 | |
| $e$ | 0.0555528 | $i$ | 7.99682 | | +0.01638898 | −0.51750204 | |
| $P$ | 5.75 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 02 09 | 644 | 0.0 | 0.9+ | 2006 09 17 | 703 | 0.7− | 0.1+ | |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 02 09 | 644 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.1+ | |
| 2001 11 11 | 704 | 1.2+ | 0.7+ | 2003 02 09 | 644 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.3+ | |
| 2001 11 11 | 704 | 0.4+ | 1.1+ | 2003 02 21 | 644 | 0.0 | 0.8+ | 2006 09 17 | 703 | 0.1− | 0.1− | |
| 2001 11 11 | 704 | 0.1− | 1.0+ | 2003 02 21 | 644 | 0.2− | 0.9+ | 2006 09 17 | 691 | 0.1− | 0.1+ | |
| 2001 11 11 | 704 | 0.6− | 1.1+ | 2003 02 21 | 644 | 0.2− | 0.9+ | 2006 09 17 | 703 | 0.0 | 0.1− | |
| 2001 12 09 | 704 | 0.1− | 0.4+ | 2003 03 06 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 1.1+ | |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2003 03 06 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | (2.5+ | 0.6+) | |
| 2001 12 09 | 704 | 0.5+ | 0.4− | 2003 03 06 | 704 | 0.9− | 0.8+ | 2006 09 18 | 703 | 0.3− | 1.2− | |
| 2001 12 09 | 704 | 0.5+ | 0.2− | 2003 03 06 | 704 | 0.4+ | 1.3− | 2006 09 18 | 703 | (1.9− | 1.0−) | |
| 2001 12 22 | 704 | 0.2− | 0.1+ | 2003 03 08 | 704 | 1.4− | 0.4+ | 2006 09 19 | 699 | 1.0+ | 0.7+ | |
| 2001 12 22 | 704 | 0.7− | 0.1− | 2003 03 08 | 704 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.9− | |
| 2001 12 22 | 704 | 0.5− | 0.7− | 2003 03 08 | 704 | 0.9− | 0.8+ | 2006 09 19 | 699 | 0.5− | 0.1+ | |
| 2001 12 22 | 704 | 0.5− | 0.9− | 2003 03 08 | 704 | 0.7+ | 0.2− | 2006 09 19 | 699 | 0.8− | 0.3+ | |
| 2001 12 22 | 704 | 0.8− | 0.1+ | 2004 04 25 | 704 | 0.1+ | 0.8+ | 2006 09 27 | 699 | (1.5+ | 3.5−) | |
| 2003 01 26 | 608 | 0.1− | 0.5− | 2004 04 25 | 704 | 1.1+ | 1.2+ | 2006 09 27 | 699 | 1.1+ | 0.0 | |
| 2003 01 26 | 608 | 0.4+ | 0.1+ | 2004 04 25 | 704 | (2.6+ | 0.1−) | 2006 09 27 | 699 | 0.6− | 1.0+ | |
| 2003 01 26 | 608 | 1.0+ | 0.3− | 2004 06 05 | 644 | 0.3− | 0.5+ | 2006 09 27 | 699 | 0.2− | 0.8− | |
| 2003 01 27 | 704 | 1.1+ | 0.4+ | 2004 06 05 | 644 | 0.3− | 0.5+ | 2006 10 17 | 703 | 1.0− | 1.2− | |
| 2003 01 27 | 704 | (1.7+ | 1.0+) | 2004 06 05 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 1.4+ | 0.2− | |
| 2003 01 27 | 704 | 0.3+ | 0.8+ | 2005 07 10 | E12 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.7+ | 0.9− | |
| 2003 01 27 | 704 | 0.3+ | 0.3+ | 2005 07 10 | E12 | 0.6− | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.2+ | |
| 2003 01 30 | 608 | 0.2− | 1.1− | 2005 07 10 | E12 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | |
| 2003 01 30 | 608 | 0.1+ | 1.4− | 2005 07 10 | E12 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.9+ | |
| 2003 01 30 | 608 | 0.3+ | 1.2− | 2006 09 17 | 703 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.0 | |

**(143377)∗ 2003 BD$_{15}$**

Discovered 2003 Jan. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.48351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18498490 | $\omega$ | 155.44902 | | −0.60489313 | −0.78491769 | |
| $a$ | 3.0505527 | $\Omega$ | 331.20413 | | +0.67679133 | −0.41795504 | |
| $e$ | 0.1067141 | $i$ | 16.17628 | | +0.41959241 | −0.45740334 | |
| $P$ | 5.33 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 31 | 691 | 0.0 | 0.2− | 2003 02 04 | 699 | (1.8− | 0.3+) | 2003 02 23 | 291 | 0.3− | 0.0 | |
| 1997 12 31 | 691 | 0.6− | 0.1− | 2003 02 04 | 699 | 1.1+ | 0.4+ | 2003 02 24 | 608 | 0.5+ | 0.3+ | |
| 1997 12 31 | 691 | 0.6− | 0.1+ | 2003 02 04 | 699 | 0.7+ | 0.1− | 2003 02 24 | 608 | 0.4+ | 0.4+ | |
| 2001 08 23 | 704 | 0.6+ | 0.5− | 2003 02 04 | 704 | 0.6+ | 1.1+ | 2003 02 24 | 608 | 0.3+ | 0.3+ | |
| 2001 08 23 | 704 | 0.2+ | 0.1− | 2003 02 04 | 699 | (1.6+ | 0.1+) | 2003 03 06 | 704 | 0.1+ | 0.8+ | |
| 2001 08 23 | 704 | 0.4+ | 0.9− | 2003 02 04 | 704 | 0.2+ | 0.2+ | 2003 03 06 | 704 | 0.1− | 1.0+ | |
| 2001 10 25 | 704 | 0.1− | 1.2− | 2003 02 04 | 704 | 0.6+ | 0.7+ | 2003 03 06 | 704 | 0.2+ | 1.3+ | |
| 2001 10 25 | 704 | 0.9+ | 0.6− | 2003 02 04 | 704 | 0.6+ | 0.7+ | 2003 03 06 | 704 | 0.1− | 1.3+ | |
| 2001 10 25 | 704 | 0.9+ | 0.6− | 2003 02 04 | 704 | 1.0+ | 0.3+ | 2003 03 06 | 704 | (0.6+ | 1.5+) | |
| 2001 11 12 | 699 | 0.2− | 0.7+ | 2003 02 04 | 608 | 0.4+ | 0.4− | 2003 03 06 | 644 | 0.6+ | 0.5+ | |
| 2001 11 12 | 699 | 0.1+ | 0.7+ | 2003 02 04 | 608 | 0.2+ | 0.1− | 2003 03 06 | 644 | 0.3+ | 0.3+ | |
| 2001 11 12 | 699 | 0.7− | 0.8+ | 2003 02 04 | 608 | 0.1− | 1.4− | 2003 03 06 | 644 | 0.2+ | 0.3+ | |
| 2001 11 12 | 699 | (2.3− | 0.2−) | 2003 02 19 | 608 | 0.2+ | 0.1− | 2003 04 06 | 291 | 0.5+ | 0.5+ | |
| 2001 12 09 | 704 | 0.3− | 0.8+ | 2003 02 19 | 608 | 0.1+ | 0.3+ | 2003 04 06 | 291 | 0.4+ | 0.3+ | |
| 2001 12 09 | 704 | 0.0 | 0.9+ | 2003 02 19 | 608 | 0.4− | 0.4+ | 2003 04 06 | 291 | 0.7+ | 0.3+ | |
| 2001 12 09 | 704 | 0.2+ | 1.2+ | 2003 02 21 | 644 | 0.1− | 0.1− | 2005 08 12 | E12 | 0.4− | 0.6+ | |
| 2001 12 22 | 704 | 0.2− | 1.3− | 2003 02 21 | 644 | 0.0 | 0.2− | 2005 08 12 | E12 | 0.8+ | 0.3+ | |
| 2001 12 22 | 704 | 0.6+ | 0.3− | 2003 02 21 | 644 | 0.3+ | 0.1− | 2005 08 12 | E12 | 0.5+ | 0.2+ | |
| 2001 12 22 | 704 | 0.6+ | 0.2+ | 2003 02 22 | 291 | 0.3− | 0.0 | 2005 08 12 | E12 | 1.0+ | 0.3+ | |
| 2003 01 09 | 704 | (2.0+ | 0.6+) | 2003 02 22 | 291 | 0.0 | 0.4− | 2006 09 16 | 703 | 0.2− | 0.1+ | |
| 2003 01 09 | 704 | (1.6+ | 0.8+) | 2003 02 22 | 291 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.4− | 1.1− | |
| 2003 01 09 | 704 | 0.1+ | 0.8+ | 2003 02 22 | 291 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.8− | 0.4− | |
| 2003 01 26 | 699 | 0.5+ | 0.4+ | 2003 02 22 | 291 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.5+ | 1.0− | |
| 2003 01 26 | 699 | 0.5+ | 0.3+ | 2003 02 22 | 291 | 0.2+ | 0.2− | 2006 09 25 | 703 | 0.2− | 0.1− | |
| 2003 01 26 | 699 | 0.1+ | 0.5− | 2003 02 22 | 291 | 0.6+ | 0.4− | 2006 09 25 | 703 | 0.6− | 1.0− | |
| 2003 01 26 | 699 | 0.2+ | 1.1+ | 2003 02 22 | 291 | 1.4+ | 0.7− | 2006 09 25 | 703 | 1.4− | 0.5− | |
| 2003 01 26 | 608 | 0.1+ | 0.6+ | 2003 02 22 | 291 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.3+ | 0.3− | |
| 2003 01 26 | 608 | 0.1+ | 1.0+ | 2003 02 23 | 291 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1+ | |
| 2003 01 26 | 608 | 0.4+ | 0.4+ | 2003 02 23 | 291 | 0.8− | 0.3− | 2006 10 11 | 644 | 0.4− | 0.3+ | |
| 2003 01 27 | 704 | 0.1+ | 0.0 | 2003 02 23 | 291 | 0.5− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ | |
| 2003 01 27 | 704 | 0.0 | 0.3− | 2003 02 23 | 291 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 | |
| 2003 01 27 | 704 | 1.0− | 0.1− | 2003 02 23 | 291 | 0.9− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.3+ | |
| 2003 01 27 | 704 | 0.3− | 0.3− | 2003 02 23 | 291 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 | |
| 2003 01 30 | 608 | (1.5+ | 2.1+) | 2003 02 23 | 699 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.4− | 0.1+ | |
| 2003 01 30 | 608 | (1.7+ | 2.0+) | 2003 02 23 | 699 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.4+ | 1.1+ | |
| 2003 01 30 | 608 | (1.5+ | 1.8+) | 2003 02 23 | 699 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.4+ | |
| 2003 02 01 | 704 | 0.9+ | 0.4+ | 2003 02 23 | 699 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.2+ | |
| 2003 02 01 | 704 | 0.8+ | 0.4− | 2003 02 23 | 291 | 0.7− | 0.0 | | | | | |
| 2003 02 01 | 704 | 0.4+ | 0.1− | 2003 02 23 | 291 | 0.5− | 0.0 | | | | | |

**(143378)∗ 2003 BU$_{16}$**

Discovered 2003 Jan. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.37712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21393513 | $\omega$ | 323.76313 | | +0.10927240 | −0.98558927 | |
| $a$ | 2.7687345 | $\Omega$ | 119.63476 | | +0.94335327 | +0.06188358 | |
| $e$ | 0.2080726 | $i$ | 8.54333 | | +0.31327967 | +0.15743004 | |
| $P$ | 4.61 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2+ | 0.0 | 2003 02 01 | 704 | 0.6− | 0.9− | 2003 03 08 | 704 | 0.3+ | 0.9+ | |
| 2001 09 12 | 704 | 0.2+ | 0.7− | 2003 02 01 | 704 | 0.1− | 0.4+ | 2003 03 08 | 704 | (1.6+ | 0.2+) | |
| 2001 09 12 | 704 | 0.6− | 0.9+ | 2003 02 01 | 704 | 0.2− | 1.3− | 2003 03 13 | 644 | 0.1+ | 0.6+ | |
| 2001 09 12 | 704 | 0.6+ | 0.7− | 2003 02 04 | 704 | 0.2− | 1.0+ | 2003 03 13 | 644 | 0.1+ | 0.5+ | |
| 2001 10 15 | 644 | 0.5− | 0.7+ | 2003 02 04 | 704 | 0.6− | 0.9− | 2003 03 13 | 644 | 0.2− | 0.6+ | |
| 2001 10 15 | 644 | 0.4− | 0.9+ | 2003 02 04 | 704 | 0.6− | 0.2+ | 2005 07 04 | 691 | 0.5− | 0.1− | |
| 2001 10 15 | 644 | 0.1− | 0.4+ | 2003 02 04 | 704 | 0.1− | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.8+ | |
| 2001 10 23 | 644 | 0.2+ | 1.1+ | 2003 02 12 | 608 | (0.4+ | 2.1+) | 2005 07 04 | 691 | 0.2+ | 0.6+ | |
| 2001 10 23 | 644 | 0.6− | 0.8+ | 2003 02 12 | 608 | (0.2+ | 1.7+) | 2006 09 18 | 703 | 0.9− | 0.4+ | |
| 2001 10 23 | 644 | 0.1− | 1.1+ | 2003 02 12 | 608 | 0.1+ | 1.4+ | 2006 09 18 | 703 | 0.5− | 0.4− | |
| 2003 01 01 | 704 | 0.5− | 0.2− | 2003 03 05 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.5− | |
| 2003 01 01 | 704 | 0.4− | 0.3+ | 2003 03 05 | 704 | 0.8+ | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.1− | |
| 2003 01 01 | 704 | 1.0− | 0.3+ | 2003 03 05 | 704 | 0.5+ | 0.1− | 2006 11 13 | 703 | 0.4+ | 0.2+ | |
| 2003 01 01 | 704 | 0.2− | 0.2+ | 2003 03 05 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.1+ | |
| 2003 01 26 | 608 | 0.7+ | 0.2− | 2003 03 06 | 704 | (1.9+ | 0.5−) | 2006 11 13 | 703 | 0.1+ | 0.2− | |
| 2003 01 26 | 608 | 0.9+ | 0.6− | 2003 03 06 | 704 | 0.5+ | 1.0+ | 2006 11 13 | 703 | 0.4+ | 0.6+ | |
| 2003 01 26 | 608 | 0.5+ | 1.1− | 2003 03 06 | 704 | 0.0 | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.0 | |
| 2003 01 27 | 704 | 0.4− | 0.0 | 2003 03 06 | 704 | (1.7+ | 0.9+) | 2006 11 13 | 644 | 0.1− | 0.1− | |
| 2003 01 27 | 704 | 0.1− | 0.9− | 2003 03 07 | 644 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.1− | |
| 2003 01 27 | 704 | 0.1− | 0.5+ | 2003 03 07 | 644 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.8− | 0.8+ | |
| 2003 01 27 | 704 | 0.6+ | 0.1+ | 2003 03 07 | 644 | 0.3− | 0.3+ | 2006 11 19 | 703 | 2.0+ | 1.0+ | |
| 2003 01 27 | 704 | 0.5+ | 0.4+ | 2003 03 08 | 704 | (2.9+ | 1.1+) | 2006 11 19 | 703 | 0.6− | 0.6− | |
| 2003 02 01 | 704 | 0.1− | 0.1− | 2003 03 08 | 704 | 0.6+ | 0.4+ | 2006 11 19 | 703 | 0.5− | 0.3− | |
| 2003 02 01 | 704 | 0.3− | 0.2+ | 2003 03 08 | 704 | 0.6+ | 1.4+ | | | | | |

**(143379)∗ 2003 BA$_{18}$ = 2001 SA$_{295}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41467)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.61147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23899104 | $\omega$ | 158.83554 | | −0.25284111 | −0.96652221 | |
| $a$ | 2.5716684 | $\Omega$ | 305.78502 | | +0.87976256 | −0.21089814 | |
| $e$ | 0.1589395 | $i$ | 3.08517 | | +0.40260305 | −0.14613964 | |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.7− | 0.9+ | 2003 02 03 | 704 | 0.4− | 0.0 | 2003 03 06 | 644 | 0.4+ | 0.4+ |
| 2001 08 21 | 807 | 0.7− | 0.9+ | 2003 02 03 | 704 | 0.0 | 0.3+ | 2003 03 06 | 644 | 0.3+ | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.6− | 2003 02 03 | 704 | 0.2+ | 0.5+ | 2003 03 12 | 644 | 0.6+ | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.6− | 2003 02 03 | 704 | 0.5− | 0.4+ | 2003 03 12 | 644 | 0.5+ | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.6− | 2003 02 03 | 704 | 0.1− | 1.1+ | 2003 03 12 | 644 | 0.4+ | 0.6+ |
| 2001 09 20 | 704 | 0.1− | 0.5− | 2003 02 03 | 704 | 0.7− | 0.2+ | 2005 06 18 | G96 | 0.0 | 0.6+ |
| 2001 09 20 | 704 | 0.9+ | 0.3− | 2003 02 03 | 704 | 0.4− | 0.8+ | 2005 06 18 | G96 | 0.3+ | 0.3+ |
| 2001 09 23 | 704 | 0.8+ | 0.4− | 2003 02 03 | 704 | 0.1+ | 0.7+ | 2005 06 18 | G96 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 0.3− | 0.0 | 2003 02 03 | 704 | 0.3+ | 0.1− | 2005 06 18 | G96 | 0.2+ | 0.4+ |
| 2001 09 23 | 704 | (1.4+ | 1.9+) | 2003 02 03 | 704 | 0.3− | 0.6+ | 2005 07 30 | 644 | 0.3+ | 0.5+ |
| 2001 09 23 | 704 | 0.4− | 0.1− | 2003 02 03 | 704 | 1.3− | 0.3− | 2005 07 30 | 644 | 0.0 | 0.6+ |
| 2003 01 08 | 704 | 0.4+ | 1.0+ | 2003 02 03 | 704 | 0.0 | 0.6− | 2005 07 30 | 644 | 0.2+ | 0.7+ |
| 2003 01 08 | 704 | 1.1+ | 1.1+ | 2003 02 03 | 704 | 1.1− | 0.1− | 2005 08 25 | 644 | 0.2+ | 0.3+ |
| 2003 01 08 | 704 | 1.0+ | 0.5+ | 2003 02 04 | 704 | 0.6− | 0.1+ | 2005 08 25 | 644 | 0.0 | 0.7+ |
| 2003 01 14 | 599 | 1.2− | 1.3− | 2003 02 04 | 704 | 1.1− | 0.2− | 2005 08 25 | 644 | 0.1+ | 0.6+ |
| 2003 01 14 | 599 | 0.1+ | 0.2+ | 2003 02 04 | 704 | 0.1− | 0.1+ | 2005 09 23 | 691 | 0.4− | 0.8+ |
| 2003 01 15 | 599 | 0.3+ | 0.2− | 2003 02 04 | 704 | 0.6− | 0.3+ | 2005 09 23 | 691 | 0.3− | 0.4+ |
| 2003 01 15 | 599 | 0.3+ | 0.2− | 2003 02 04 | 704 | 0.4− | 0.0 | 2005 09 23 | 691 | 0.4− | 0.3+ |
| 2003 01 27 | 704 | 0.5+ | 0.0 | 2003 02 07 | 333 | 0.8− | 0.1+ | 2005 10 05 | 691 | 0.4− | 0.4+ |
| 2003 01 27 | 699 | 0.6+ | 0.1− | 2003 02 07 | 333 | 0.2− | 0.2+ | 2005 10 05 | 691 | 0.2− | 0.9+ |
| 2003 01 27 | 704 | 0.0 | 1.0− | 2003 02 07 | 333 | 0.0 | 0.0 | 2005 10 05 | 691 | 0.3− | 0.4+ |
| 2003 01 27 | 704 | 0.2+ | 0.2− | 2003 02 08 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 2003 01 27 | 699 | 0.8+ | 0.3− | 2003 02 08 | 704 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 2003 01 27 | 704 | 0.3+ | 0.1− | 2003 02 08 | 704 | 0.3+ | 0.9+ | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2003 01 27 | 699 | 0.2+ | 1.1− | 2003 02 08 | 704 | 0.1− | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2003 01 27 | 704 | 0.1− | 0.3+ | 2003 02 08 | 704 | 0.4+ | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.5− |
| 2003 01 27 | 699 | 0.8+ | 0.8− | 2003 02 09 | 333 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2003 01 28 | 291 | 0.1− | 0.1+ | 2003 02 09 | 333 | 0.5− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2003 01 28 | 291 | 0.4+ | 0.2+ | 2003 02 09 | 333 | 0.5− | 0.4+ | 2006 11 25 | G96 | 0.5− | 0.5− |
| 2003 01 28 | 291 | 0.3+ | 0.2+ | 2003 02 09 | 333 | 0.7− | 0.3+ | 2006 11 25 | G96 | 0.3− | 0.6− |
| 2003 01 30 | 699 | 0.3− | 0.0 | 2003 02 09 | 608 | 0.4+ | 0.1− | 2006 11 25 | G96 | 0.6− | 0.3− |
| 2003 01 30 | 699 | 0.1− | 0.4− | 2003 02 09 | 608 | 0.6+ | 0.3− | 2006 11 25 | G96 | 0.3− | 0.5− |
| 2003 01 30 | 699 | 0.5− | 0.8− | 2003 02 09 | 608 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.6− |
| 2003 01 30 | 699 | 0.3− | 0.5+ | 2003 02 22 | 699 | 0.7+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.6− |
| 2003 01 31 | 704 | 0.7+ | 1.3+ | 2003 02 22 | 699 | 0.5+ | 0.1− | 2006 11 25 | G96 | 0.5− | 0.5− |
| 2003 01 31 | 704 | 1.1+ | 1.2+ | 2003 02 22 | 699 | 0.1+ | 1.4+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2003 01 31 | 704 | 0.8+ | 1.4+ | 2003 02 22 | 699 | 0.2+ | 0.5− | 2006 11 27 | G96 | 0.6− | 0.6− |
| 2003 01 31 | 704 | 0.9+ | 0.9+ | 2003 02 28 | 704 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2003 01 31 | 704 | 0.5+ | 1.1+ | 2003 02 28 | 704 | 1.0+ | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.6− |
| 2003 02 03 | 704 | 0.1+ | 0.2+ | 2003 02 28 | 704 | 0.2+ | 1.3+ | 2006 11 27 | G96 | 0.1+ | 0.7− |
| 2003 02 03 | 704 | 0.2− | 0.2+ | 2003 03 06 | 644 | 0.3+ | 0.2+ | | | | |

## (143380)∗ 2003 BH$_{19}$ = 2000 SM$_3$

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47269)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.37317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17514782 | $\omega$ | 226.80226 | | +0.89182365 | +0.40364147 | |
| $a$ | 3.1637311 | $\Omega$ | 108.43429 | | −0.32683307 | +0.88708356 | |
| $e$ | 0.0548363 | $i$ | 12.43391 | | −0.31277903 | +0.22395608 | |
| $P$ | 5.63 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 14 | 691 | 0.0 | 0.8− | 2003 01 26 | 699 | 0.4+ | 0.8+ | 2004 04 24 | 704 | 0.6+ | 1.3+ |
| 1993 05 14 | 691 | 0.0 | 0.3+ | 2003 01 26 | 699 | 1.0− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 1993 05 14 | 691 | 0.1+ | 0.1− | 2003 01 26 | 699 | 0.8+ | 0.4− | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2000 08 10 | 704 | 0.3− | 0.6+ | 2003 01 26 | 699 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2000 08 10 | 704 | 0.2+ | 1.3+ | 2003 01 28 | 644 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2000 08 10 | 704 | (0.6− | 2.1+) | 2003 01 28 | 644 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 08 10 | 704 | (1.1+ | 2.2+) | 2003 01 28 | 644 | 0.6− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2000 08 26 | 704 | 0.3+ | 0.2− | 2003 02 07 | 644 | 0.2+ | 1.1+ | 2006 10 21 | 703 | 0.8+ | 0.6− |
| 2000 08 26 | 704 | 0.6− | 1.1+ | 2003 02 07 | 644 | 0.2− | 1.1+ | 2006 10 21 | 703 | 0.0 | 0.5− |
| 2000 08 26 | 704 | 0.3− | 1.0+ | 2003 02 07 | 644 | 0.1+ | 1.3+ | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 2000 08 26 | 704 | 0.6− | 0.9+ | 2003 02 23 | 699 | 0.8− | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.5− |
| 2000 09 20 | 704 | 0.3+ | 0.1+ | 2003 02 23 | 699 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2000 09 20 | 704 | 1.1− | 0.4+ | 2003 02 23 | 699 | 0.4+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2000 09 20 | 704 | 0.4− | 0.5− | 2003 02 23 | 699 | 0.6+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2000 09 20 | 704 | 1.3− | 0.3+ | 2004 04 15 | 644 | 0.1− | 1.0+ | 2006 11 14 | 291 | 0.0 | 0.7+ |
| 2000 09 22 | 704 | 0.4+ | 0.5+ | 2004 04 15 | 644 | 0.1− | 0.9+ | 2006 11 14 | 291 | 0.1+ | 0.5+ |
| 2000 09 22 | 704 | 1.0− | 0.2+ | 2004 04 15 | 644 | 0.2+ | 0.9+ | 2006 11 14 | 291 | 0.0 | 0.5+ |
| 2000 09 22 | 704 | 0.4+ | 0.4− | 2004 04 24 | 704 | 0.1+ | 1.4+ | 2006 11 17 | 703 | 0.6+ | 0.5+ |
| 2002 01 09 | 209 | 0.6+ | 0.1+ | 2004 04 24 | 704 | 0.8+ | 0.8+ | 2006 11 17 | 703 | 0.7+ | 1.2− |
| 2002 01 09 | 209 | 0.1− | 0.4− | 2004 04 24 | 704 | 0.3+ | 0.7+ | 2006 11 17 | 703 | 0.6− | 0.8− |
| 2002 01 09 | 209 | 0.5+ | 0.2− | 2004 04 24 | 704 | 1.0+ | 1.0+ | 2006 11 17 | 703 | 0.8− | 0.3+ |

## (143381)∗ 2003 BC$_{21}$

Discovered 2003 Jan. 27 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.15779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23512234 | $\omega$ | 113.54921 | | +0.68764747 | −0.72071103 | |
| $a$ | 2.5998011 | $\Omega$ | 292.70260 | | +0.62657853 | +0.65020597 | |
| $e$ | 0.5073149 | $i$ | 5.46408 | | +0.36679735 | +0.24043254 | |
| $P$ | 4.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 04 13 | 413 | 0.8− | 0.4− | 2003 04 20 | 540 | 0.1+ | 0.0 | 2006 11 03 | 704 | 1.0+ | 0.1− |
| 1989 08 02 | 413 | 1.3− | 0.9+ | 2003 04 20 | 540 | 0.2+ | 0.3− | 2006 11 03 | 704 | 0.2+ | 0.3+ |
| 1989 08 02 | 413 | 0.9+ | 0.1+ | 2004 05 13 | 291 | 0.4+ | 0.2+ | 2006 11 06 | 644 | 0.4+ | 0.7+ |
| 2003 01 27 | 608 | 0.3− | 0.2+ | 2004 05 13 | 291 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 2003 01 27 | 608 | 0.4− | 0.1− | 2004 05 13 | 291 | 0.3+ | 0.3+ | 2006 11 06 | 644 | 0.2+ | 0.0 |
| 2003 01 27 | 608 | 0.3− | 0.2+ | 2004 07 21 | 568 | 0.0 | 0.1+ | 2006 11 07 | A13 | (2.1− | 0.5−) |
| 2003 01 28 | 651 | 0.0 | 0.1− | 2004 07 21 | 568 | 0.2+ | 0.2+ | 2006 11 08 | A13 | 0.9+ | 0.5− |
| 2003 01 28 | 651 | 0.4− | 0.4− | 2004 07 22 | 568 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.9+ | 0.5− |
| 2003 01 28 | 651 | 0.2− | 0.2− | 2004 07 22 | 568 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.1+ |
| 2003 01 28 | 673 | 0.0 | 0.5+ | 2005 07 06 | 413 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 1.3− | 0.4+ |
| 2003 01 28 | 673 | 0.3+ | 0.5+ | 2005 07 06 | 413 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.0 | 0.2+ |
| 2003 01 28 | 673 | 0.7− | 0.6+ | 2005 07 09 | 695 | 0.2+ | 0.3+ | 2006 11 15 | 704 | 0.3− | 0.2+ |
| 2003 01 28 | 704 | 1.2+ | 0.5− | 2005 07 10 | 695 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.1+ |
| 2003 01 28 | 704 | 0.3+ | 0.1− | 2005 07 10 | 695 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.8+ |
| 2003 01 28 | 926 | 0.0 | 0.2− | 2005 07 10 | 695 | 0.2+ | 0.3+ | 2006 11 15 | 704 | 0.5− | 0.0 |
| 2003 01 28 | 704 | (1.7+ | 0.1+) | 2006 08 23 | A14 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.3− |
| 2003 01 28 | 926 | 0.3− | 0.2+ | 2006 08 23 | A14 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2003 01 28 | 926 | 0.4− | 0.4− | 2006 08 23 | A14 | 0.3+ | 0.7+ | 2006 11 15 | 703 | 0.5− | 0.2− |
| 2003 01 29 | 673 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 1.0− | 0.2+ |
| 2003 01 29 | 673 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 704 | 0.7− | 0.5+ |
| 2003 01 29 | 673 | 0.1− | 0.4+ | 2006 08 24 | 704 | 1.1− | 0.5+ | 2006 11 16 | 704 | 0.4− | 0.5+ |
| 2003 01 29 | 413 | 0.6− | 0.1+ | 2006 08 24 | 704 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.3− | 0.1+ |
| 2003 01 29 | 413 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.4− | 0.9+ | 2006 11 16 | 704 | 0.2− | 0.9+ |
| 2003 01 29 | 413 | 0.4− | 0.1− | 2006 08 30 | 704 | (0.6+ | 1.6+) | 2006 11 16 | 704 | 0.6− | 0.4+ |
| 2003 02 01 | 704 | 0.2+ | 0.5− | 2006 08 30 | 704 | 0.3+ | 0.7+ | 2006 11 17 | 704 | 0.8+ | 0.0 |
| 2003 02 01 | 704 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.7+ | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2003 02 01 | 704 | 0.2− | 1.4− | 2006 08 30 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.8+ | 0.5+ |
| 2003 02 02 | 246 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.6+ |
| 2003 02 02 | 246 | 0.1+ | 0.3− | 2006 09 01 | 704 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2003 02 02 | 246 | 0.6+ | 0.1+ | 2006 09 01 | 704 | 0.3− | 0.8− | 2006 11 19 | 704 | (1.7+ | 1.4−) |
| 2003 02 02 | 246 | 0.1+ | 0.2− | 2006 09 01 | 704 | 0.5+ | 0.8+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2003 02 02 | 246 | 0.0 | 0.2− | 2006 09 01 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2003 02 02 | 246 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2003 02 04 | 446 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2003 02 04 | 446 | 0.7+ | 0.8− | 2006 09 18 | 704 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2003 02 04 | 446 | 0.4− | 1.2− | 2006 09 18 | 704 | 0.7+ | 1.0+ | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2003 02 04 | 446 | 0.7− | 0.9− | 2006 09 29 | 704 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.5+ |
| 2003 02 04 | 446 | 0.2− | 0.6− | 2006 09 29 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2003 02 06 | 670 | (1.7+ | 0.1−) | 2006 09 29 | 704 | 0.4+ | 0.6− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2003 02 06 | 670 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.6+ | 2006 11 24 | G96 | 0.5− | 0.2− |
| 2003 02 08 | 608 | 0.2− | 1.0+ | 2006 10 01 | 704 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2003 02 08 | 608 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.5+ | 2006 11 24 | G96 | 0.5− | 0.3− |
| 2003 02 08 | 608 | 0.2− | 0.7+ | 2006 10 19 | 704 | (0.9− | 2.5−) | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2003 02 20 | 649 | 0.3− | 0.1+ | 2006 10 19 | 704 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.5− | 0.4− |
| 2003 02 20 | 649 | 0.3− | 0.1+ | 2006 10 19 | 704 | 0.8+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2003 02 20 | 649 | 0.6+ | 0.6− | 2006 10 19 | 704 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.4− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 22 | 176 | 0.6+ | 0.8− | 2006 10 20 | H51 | (2.9− | 0.8+) | 2006 11 25 | 704 | 0.6+ | 0.3− | | |
| 2003 02 22 | 176 | 0.4+ | 0.6− | 2006 10 20 | H51 | (3.1+ | 0.5−) | 2006 11 25 | 704 | 0.4+ | 0.2− | | |
| 2003 02 22 | 176 | 0.3+ | 0.5− | 2006 10 20 | H51 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.4− | 0.3− | | |
| 2003 02 22 | 176 | 0.2+ | 0.4− | 2006 10 20 | 703 | 1.2− | 0.6+ | 2006 11 25 | 704 | 0.9+ | 0.2− | | |
| 2003 03 06 | 699 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.0 | 2006 11 25 | G96 | 0.3− | 0.3− | | |
| 2003 03 06 | 699 | 0.1+ | 0.2+ | 2006 10 20 | 704 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.4− | | |
| 2003 03 06 | 699 | 1.0+ | 0.3− | 2006 10 20 | 703 | 0.1+ | 0.3+ | 2006 11 25 | 704 | 0.9+ | 0.2+ | | |
| 2003 03 06 | 699 | 0.1+ | 0.1+ | 2006 10 20 | 704 | 0.9+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.4− | | |
| 2003 03 06 | 474 | 0.1− | 0.3− | 2006 10 20 | 704 | 0.1− | 0.1+ | 2006 11 25 | 704 | 1.1+ | 0.1− | | |
| 2003 03 06 | 474 | 0.1− | 0.4− | 2006 10 20 | 704 | 1.0+ | 0.5+ | 2006 11 29 | 704 | 0.3+ | 0.7+ | | |
| 2003 03 07 | 704 | 0.0 | 0.5− | 2006 10 28 | 703 | 0.1+ | 0.9+ | 2006 11 29 | 704 | 0.1+ | 0.5+ | | |
| 2003 03 07 | 711 | 0.2− | 0.3+ | 2006 10 28 | 703 | 1.0− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.9+ | | |
| 2003 03 07 | 704 | 0.5− | 0.1− | 2006 10 28 | 703 | 0.5− | 0.3− | 2006 11 29 | 704 | 0.1− | 0.7+ | | |
| 2003 03 07 | 711 | 0.8− | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 1.1+ | | |
| 2003 03 07 | 704 | 0.3− | 0.6+ | 2006 10 29 | 704 | 0.3+ | 0.3+ | 2006 12 02 | H45 | 0.1− | 0.0 | | |
| 2003 03 07 | 711 | 0.0 | 0.4+ | 2006 10 29 | 704 | 0.4+ | 0.3+ | 2006 12 02 | H45 | 0.3− | 0.1− | | |
| 2003 03 09 | 704 | 0.5+ | 0.6+ | 2006 10 29 | 704 | 0.2+ | 0.2+ | 2006 12 02 | H45 | 0.2− | 0.2− | | |
| 2003 03 09 | 704 | 0.0 | 0.7− | 2006 10 29 | 704 | 0.7+ | 0.1− | 2006 12 02 | H45 | 0.3− | 0.1+ | | |
| 2003 03 09 | 704 | 0.5+ | 0.7− | 2006 10 29 | 704 | 0.4+ | 0.2+ | 2006 12 02 | H45 | 0.2− | 0.1− | | |
| 2003 04 19 | 413 | 0.5− | 0.3+ | 2006 11 03 | 704 | 0.6+ | 0.1− | | | | | | |
| 2003 04 19 | 413 | 0.3− | 1.0+ | 2006 11 03 | 704 | 0.6− | 0.5+ | | | | | | |

**(143382)∗ 2003 BT$_{21}$**

Discovered 2003 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.75426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28352471 | $\omega$ | 95.17232 | | +0.81952745 | −0.56391779 | |
| $a$ | 2.2947855 | $\Omega$ | 299.19215 | | +0.46861988 | +0.76180697 | |
| $e$ | 0.2086036 | $i$ | 6.69922 | | +0.32980322 | +0.31882105 | |
| $P$ | 3.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 26 | 691 | 0.2− | 0.0 | 2003 01 31 | 704 | 0.0 | 0.4+ | 2005 10 14 | 699 | 0.2− | 0.0 | | |
| 1996 01 26 | 691 | 0.3− | 0.2− | 2003 01 31 | 704 | 0.1+ | 0.9+ | 2005 10 14 | 699 | 0.4− | 0.2+ | | |
| 1996 01 26 | 691 | 0.4− | 0.3− | 2003 01 31 | 704 | 0.5+ | 0.1− | 2005 10 14 | 704 | 0.6− | 0.4+ | | |
| 1998 08 29 | 704 | 0.6− | 1.3+ | 2003 02 03 | 608 | 0.5+ | 1.4− | 2005 10 14 | 704 | 0.5− | 0.2+ | | |
| 1998 08 29 | 704 | (2.4− | 0.1+) | 2003 02 03 | 608 | 0.0 | 1.9− | 2005 10 14 | 704 | 0.3− | 0.6+ | | |
| 1998 08 29 | 704 | 0.1+ | 1.0− | 2003 02 03 | 608 | 0.6+ | 1.4− | 2005 10 23 | 703 | 0.0 | 0.2− | | |
| 1998 08 29 | 704 | 1.7− | 1.4+ | 2003 02 08 | 704 | 0.7+ | 1.3+ | 2005 10 23 | 703 | 0.2− | 0.2− | | |
| 1998 09 20 | 699 | 1.5+ | 0.9− | 2003 02 08 | 704 | 0.4+ | 0.1+ | 2005 10 23 | 703 | 0.2− | 0.2− | | |
| 1998 09 20 | 699 | 1.2+ | 0.1− | 2003 02 08 | 704 | 0.0 | 0.2+ | 2005 10 23 | 703 | 0.0 | 0.3− | | |
| 1998 09 20 | 699 | 0.2+ | 0.3− | 2003 02 08 | 704 | 0.7+ | 0.2+ | 2005 10 26 | 699 | 0.3+ | 0.0 | | |
| 1998 12 09 | 704 | 1.4− | 0.6− | 2003 02 08 | 704 | 0.0 | 1.2+ | 2005 10 26 | 699 | 0.7+ | 0.1+ | | |
| 1998 12 09 | 704 | 1.2+ | 1.1− | 2003 02 08 | 608 | 0.2− | 0.8+ | 2005 10 26 | 699 | 0.3+ | 0.2+ | | |
| 1998 12 09 | 704 | 0.3+ | 0.4+ | 2003 02 08 | 608 | 0.5− | 0.9+ | 2005 11 03 | 704 | 0.1− | 0.0 | | |
| 1998 12 09 | 704 | 1.1+ | 0.9+ | 2003 02 08 | 608 | 0.4− | 1.2+ | 2005 11 03 | 704 | 0.2+ | 0.1− | | |
| 1998 12 09 | 704 | (4.7− | 0.7−) | 2003 02 22 | 699 | 0.5+ | 0.4+ | 2005 11 03 | 704 | 0.2+ | 0.1+ | | |
| 2003 01 04 | 704 | 0.0 | 0.5− | 2003 02 22 | 699 | 0.1+ | 0.2+ | 2005 11 03 | 704 | 0.2+ | 0.1− | | |
| 2003 01 04 | 704 | 1.5+ | 0.1+ | 2003 02 22 | 699 | 0.3− | 0.2+ | 2005 11 03 | 704 | 0.3+ | 0.1− | | |
| 2003 01 04 | 704 | 0.1+ | 0.2− | 2003 02 22 | 699 | 0.5+ | 0.2+ | 2005 11 08 | 704 | 0.2+ | 0.4+ | | |
| 2003 01 04 | 704 | 0.0 | 0.2+ | 2005 08 31 | 704 | 0.1− | 0.2− | 2005 11 08 | 704 | 0.6+ | 0.2+ | | |
| 2003 01 17 | 644 | 0.0 | 0.1+ | 2005 08 31 | 704 | 0.4− | 0.6+ | 2005 11 08 | 704 | 0.3+ | 0.5+ | | |
| 2003 01 17 | 644 | 0.1− | 0.0 | 2005 08 31 | 704 | 0.6+ | 1.1+ | 2005 11 08 | 704 | 0.5+ | 0.1+ | | |
| 2003 01 17 | 644 | 0.4+ | 0.1− | 2005 08 31 | 704 | 0.6− | 0.4+ | 2005 11 08 | 704 | 0.4+ | 0.3+ | | |
| 2003 01 27 | 704 | 0.4+ | 1.6− | 2005 08 31 | 704 | 0.6− | 0.3+ | 2005 11 29 | 704 | 0.9− | 1.4+ | | |
| 2003 01 27 | 704 | 0.2+ | 1.3− | 2005 09 10 | 699 | 0.1+ | 0.5− | 2005 11 29 | 704 | 0.1− | 0.1+ | | |
| 2003 01 27 | 699 | 0.7− | 0.2+ | 2005 09 10 | 699 | 0.2+ | 0.1− | 2005 11 29 | 704 | 0.6− | 0.0 | | |
| 2003 01 27 | 704 | 0.1+ | 0.8− | 2005 09 10 | 699 | 0.1+ | 0.2− | 2005 11 29 | 704 | 0.2− | 0.1+ | | |
| 2003 01 27 | 699 | 1.1− | 0.4+ | 2005 09 10 | 699 | 0.4+ | 0.2− | 2005 11 29 | 704 | 0.2+ | 0.3+ | | |
| 2003 01 27 | 699 | 0.9− | 0.3+ | 2005 09 13 | 704 | 1.5− | 0.9− | 2005 12 02 | 703 | 0.3+ | 0.1− | | |
| 2003 01 27 | 699 | 0.5+ | 0.0 | 2005 09 13 | 704 | 0.0 | 0.6− | 2005 12 02 | 703 | 0.5+ | 0.2+ | | |
| 2003 01 27 | 644 | 0.1− | 0.1+ | 2005 09 13 | 704 | 0.7− | 0.0 | 2005 12 02 | 703 | 0.1− | 0.4− | | |
| 2003 01 27 | 644 | 0.0 | 0.2+ | 2005 09 13 | 704 | 0.3− | 0.8+ | 2005 12 02 | 703 | 0.6− | 0.3+ | | |
| 2003 01 27 | 644 | 0.1+ | 0.1+ | 2005 09 25 | 703 | 0.5+ | 0.2− | 2005 12 06 | 699 | 1.1+ | 0.2− | | |
| 2003 01 28 | 704 | 0.3+ | 0.7+ | 2005 09 25 | 703 | 0.1+ | 0.2+ | 2005 12 06 | 699 | 0.4− | 0.6− | | |
| 2003 01 28 | 704 | 0.1+ | 0.2− | 2005 09 25 | 703 | 0.1+ | 0.1− | 2005 12 06 | 699 | 0.2− | 1.1− | | |
| 2003 01 28 | 704 | 0.3− | 0.1+ | 2005 09 25 | 703 | 0.1+ | 0.3+ | 2005 12 06 | 699 | 0.8− | 0.7− | | |
| 2003 01 28 | 704 | 0.1− | 0.8+ | 2005 09 29 | 703 | 0.0 | 0.1− | 2005 12 10 | 704 | 0.9+ | 0.0 | | |
| 2003 01 31 | 704 | 0.0 | 0.9+ | 2005 09 29 | 703 | 0.0 | 0.1− | 2005 12 10 | 704 | 0.5+ | 0.2+ | | |
| 2003 01 31 | 704 | 0.9+ | 0.5+ | 2005 09 29 | 703 | 0.4+ | 0.0 | 2005 12 10 | 704 | 0.2+ | 0.7+ | | |
| 2003 01 31 | 704 | 0.4+ | 0.6+ | 2005 09 29 | 703 | 0.1− | 0.2− | 2005 12 24 | 703 | 0.1− | 1.0− | | |
| 2003 01 31 | 704 | 0.3− | 0.0 | 2005 10 10 | 699 | 0.2+ | 0.7− | 2005 12 24 | 703 | 0.2− | 0.5− | | |
| 2003 01 31 | 704 | 0.5− | 0.8+ | 2005 10 10 | 699 | 1.6− | 0.6+ | 2005 12 24 | 703 | 0.1− | 0.7− | | |
| 2003 01 31 | 704 | 0.1− | 0.0 | 2005 10 10 | 699 | 0.5− | 0.1+ | 2005 12 24 | 703 | 0.8+ | 0.2+ | | |
| 2003 01 31 | 704 | 0.3+ | 0.7− | 2005 10 14 | 699 | 0.4− | 0.3+ | | | | | | |

**(143383)∗ 2003 BR$_{24}$**

Discovered 2003 Jan. 25 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.02729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19586502 | $\omega$ | 183.69482 | | −0.04368677 | −0.97553014 | |
| $a$ | 2.9365099 | $\Omega$ | 268.89589 | | +0.92204214 | +0.04366581 | |
| $e$ | 0.0562923 | $i$ | 12.44614 | | +0.38461638 | −0.21548608 | |
| $P$ | 5.03 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 02 | 691 | 1.0+ | 0.2− | 2003 01 28 | 704 | 0.6+ | 0.6− | 2005 07 11 | 703 | (1.7− | 0.1−) | | |
| 2000 06 02 | 691 | 0.6+ | 0.3+ | 2003 01 28 | 704 | 0.3+ | 0.6+ | 2005 07 11 | 703 | (2.0− | 1.0−) | | |
| 2000 06 02 | 691 | 1.0+ | 1.1+ | 2003 01 28 | 704 | 0.4− | 0.2+ | 2005 07 11 | 703 | 0.1− | 0.3+ | | |
| 2000 09 03 | 645 | 0.2− | 0.0 | 2003 01 28 | 704 | 0.3− | 0.2+ | 2005 07 29 | 644 | 0.4− | 0.3+ | | |
| 2000 09 03 | 645 | 0.2− | 0.0 | 2003 01 28 | 704 | 0.3− | 0.5− | 2005 07 29 | 644 | 0.3− | 0.3+ | | |
| 2001 11 11 | 704 | 0.1− | 0.1+ | 2003 02 01 | 699 | 0.1+ | 0.4− | 2005 07 29 | 644 | 0.3− | 0.2+ | | |
| 2001 11 11 | 704 | 0.4− | 0.6+ | 2003 02 01 | 699 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.3+ | | |
| 2001 11 11 | 704 | 0.0 | 0.2+ | 2003 02 01 | 699 | 1.2+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2001 11 11 | 704 | 0.1− | 0.1− | 2003 02 01 | 699 | 1.0− | 0.5− | 2006 10 20 | 644 | 0.6+ | 0.0 | | |
| 2001 11 11 | 704 | 0.3− | 0.2+ | 2003 03 08 | 699 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.3+ | 0.4+ | | |
| 2003 01 02 | 704 | 0.8+ | 0.7+ | 2003 03 08 | 699 | 1.0− | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.0 | | |
| 2003 01 02 | 704 | (1.0+ | 3.2+) | 2003 03 08 | 699 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.3− | | |
| 2003 01 02 | 704 | (0.5+ | 2.4+) | 2003 03 08 | 699 | 0.6+ | 1.1+ | 2006 10 27 | 703 | 1.3− | 0.2− | | |
| 2003 01 02 | 704 | 0.9+ | 1.0+ | 2005 06 28 | 644 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.3+ | | |
| 2003 01 25 | 644 | 0.2+ | 0.5+ | 2005 06 28 | 644 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.4+ | | |
| 2003 01 25 | 644 | 0.3− | 0.5+ | 2005 06 28 | 644 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.0 | | |
| 2003 01 25 | 644 | 0.5+ | 0.4+ | 2005 07 11 | 703 | 0.3− | 0.0 | 2006 11 15 | 703 | 1.1+ | 1.3− | | |

**(143384)∗ 2003 BZ$_{24}$**

Discovered 2003 Jan. 25 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.51871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18869773 | $\omega$ | 198.02835 | | −0.11963618 | −0.97836986 | |
| $a$ | 3.0104051 | $\Omega$ | 259.10377 | | +0.93074131 | −0.05136154 | |
| $e$ | 0.0812490 | $i$ | 9.89583 | | +0.34555434 | −0.20038563 | |
| $P$ | 5.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 08 | 691 | 0.3− | 0.1+ | 2001 12 20 | 644 | 0.3− | 0.5+ | 2006 09 17 | 703 | (1.6− | 0.3−) | | |
| 2000 07 08 | 691 | 0.1− | 0.1+ | 2001 12 20 | 644 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.3− | | |
| 2000 07 08 | 691 | 0.2− | 0.2+ | 2003 01 25 | 644 | 0.3+ | 1.0+ | 2006 09 17 | 703 | 0.6− | 1.1− | | |
| 2000 08 31 | 691 | 0.1− | 0.1− | 2003 01 25 | 644 | 0.0 | 0.7+ | 2006 09 28 | 703 | 0.9− | 0.7+ | | |
| 2000 08 31 | 691 | 0.0 | 0.0 | 2003 01 25 | 644 | 0.4− | 0.6+ | 2006 09 28 | 703 | 0.0 | 0.4+ | | |
| 2000 08 31 | 691 | 0.1− | 0.2− | 2003 01 28 | 704 | 0.9+ | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.4+ | | |
| 2001 10 14 | 704 | 1.1+ | 0.1− | 2003 01 28 | 704 | 0.8+ | 0.0 | 2006 09 28 | 703 | 0.5+ | 0.3− | | |
| 2001 10 14 | 704 | 0.3+ | 0.4+ | 2003 01 28 | 704 | 0.1− | 0.8+ | 2006 10 11 | 104 | (1.5+ | 2.3−) | | |
| 2001 10 14 | 704 | 0.4+ | 0.1− | 2003 01 28 | 704 | 0.5+ | 1.3+ | 2006 10 11 | 104 | (0.4− | 4.0−) | | |
| 2001 10 14 | 704 | 0.3+ | 0.8+ | 2003 02 02 | 699 | 0.8+ | 0.4+ | 2006 10 11 | 104 | (0.7− | 3.4−) | | |
| 2001 10 14 | 704 | 0.7+ | 0.6+ | 2003 02 02 | 699 | 0.6− | 0.2− | 2006 10 11 | 104 | (0.2+ | 1.8−) | | |
| 2001 11 10 | 644 | 0.0 | 0.2− | 2003 02 02 | 699 | 0.7− | 0.7+ | 2006 10 19 | 703 | 0.4− | 0.4+ | | |
| 2001 11 10 | 644 | 0.5+ | 0.0 | 2003 02 02 | 699 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.1+ | | |
| 2001 11 10 | 644 | 0.5+ | 0.7− | 2003 03 10 | 699 | 0.3− | 1.2+ | 2006 10 19 | 703 | 0.3+ | 0.7− | | |
| 2001 11 12 | 704 | 0.6− | 0.8+ | 2003 03 10 | 699 | 0.6+ | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.3− | 1.0+ | 2003 03 10 | 699 | (1.3+ | 1.7+) | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 11 12 | 704 | 0.3− | 1.3+ | 2003 03 10 | 699 | 1.2+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2001 11 12 | 704 | (0.0 | 1.5+) | 2005 07 05 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.3+ | 0.7+ | 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 10 27 | 703 | (2.4− | 1.6−) |
| 2001 12 10 | 704 | 1.3− | 0.5+ | 2005 07 05 | 691 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.3− | 1.1− |
| 2001 12 10 | 704 | 0.2+ | 0.2− | 2005 07 09 | 691 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.6− |
| 2001 12 10 | 704 | (0.8+ | 1.9+) | 2005 07 09 | 691 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.8− | 0.1+ |
| 2001 12 10 | 704 | 0.5+ | 0.5− | 2005 07 09 | 691 | 0.2− | 0.5+ | | | | |
| 2001 12 20 | 644 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.4+ | 1.0− | | | | |

**(143385)∗ 2003 BR$_{25}$ = 2004 FB$_{12}$**

Discovered 2003 Jan. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61706)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.26522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22446992 | $\omega$ | 167.72517 | | +0.93600193 | −0.33191527 | |
| $a$ | 2.6814145 | $\Omega$ | 212.43094 | | +0.30164445 | +0.92793997 | |
| $e$ | 0.1671119 | $i$ | 12.62189 | | +0.18141393 | +0.16958673 | |
| $P$ | 4.39 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | (1.4− | 1.5+) | 2005 06 28 | 691 | (0.1+ | 1.6+) | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.8+ | 2005 06 28 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 683 | 1.0− | 0.8− |
| 2002 09 06 | 704 | (0.6− | 2.6+) | 2005 06 28 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 683 | 0.9− | 0.8+ |
| 2002 09 06 | 704 | (0.5+ | 3.3+) | 2005 07 05 | 644 | 0.4+ | 0.0 | 2006 10 16 | 683 | 1.4− | 0.1− |
| 2002 10 03 | 704 | 0.9+ | 1.1− | 2005 07 05 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.3− |
| 2002 10 03 | 704 | (1.3+ | 1.9−) | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2002 10 03 | 704 | 1.4+ | 1.2− | 2005 07 27 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 1.1+ | 1.4− | 2005 07 27 | 644 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2002 11 05 | 704 | 0.2− | 0.9+ | 2005 07 27 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 704 | 0.5− | 0.4+ |
| 2002 11 05 | 704 | 0.7− | 0.5+ | 2005 08 05 | 644 | 0.5+ | 0.2+ | 2006 10 19 | 704 | 0.3− | 0.6+ |
| 2002 11 05 | 704 | 0.6− | 0.0 | 2005 08 05 | 644 | 0.0 | 0.3+ | 2006 10 19 | 704 | (1.7− | 1.2+) |
| 2002 11 05 | 704 | 0.4− | 0.9− | 2005 08 05 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 704 | 0.6− | 0.7+ |
| 2002 11 12 | 704 | 0.1+ | 1.5+ | 2006 08 06 | 699 | 0.3+ | 0.0 | 2006 10 19 | 704 | 1.0− | 0.7+ |
| 2002 11 12 | 704 | 0.3+ | 0.6+ | 2006 08 06 | 699 | 0.6+ | 0.5+ | 2006 10 19 | 644 | (1.6+ | 0.3+) |
| 2002 11 12 | 704 | 0.6+ | 0.8+ | 2006 08 06 | 699 | 0.5− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.9+ | 0.2+ | 2006 08 06 | 699 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2002 12 08 | 608 | (0.7+ | 2.3+) | 2006 08 12 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 12 08 | 608 | (0.6+ | 2.6+) | 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 12 08 | 608 | (0.8+ | 2.4+) | 2006 08 12 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 12 14 | 704 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 24 | 704 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 24 | 704 | 0.1− | 0.3+ |
| 2002 12 14 | 704 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 24 | 704 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.8+ | 2006 10 24 | 704 | 1.0− | 0.8+ |
| 2002 12 14 | 704 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 691 | 0.3− | 0.1− |
| 2003 01 01 | 704 | 0.5− | 0.3+ | 2006 09 18 | 704 | 0.1− | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2003 01 01 | 704 | 0.1− | 0.8+ | 2006 09 18 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2003 01 01 | 704 | 0.1− | 1.2+ | 2006 09 18 | 704 | 0.5+ | 1.5+ | 2006 10 29 | 704 | 0.0 | 0.6+ |
| 2003 01 01 | 704 | 0.4− | 1.1+ | 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 10 29 | 704 | 0.2+ | 0.4+ |
| 2003 01 26 | 644 | 0.2− | 1.3+ | 2006 09 20 | 699 | 0.1− | 0.2− | 2006 10 29 | 704 | 0.2+ | 0.4− |
| 2003 01 26 | 644 | 0.5− | 1.3+ | 2006 09 20 | 699 | 0.3+ | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.1+ |
| 2003 01 26 | 644 | 0.0 | 1.1+ | 2006 09 20 | 699 | 0.3+ | 0.1− | 2006 10 29 | 704 | 0.9− | 0.3+ |
| 2003 01 28 | 704 | 0.3+ | 0.5+ | 2006 09 21 | 704 | 0.5+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2003 01 28 | 704 | 0.1− | 0.3− | 2006 09 21 | 704 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2003 01 28 | 704 | 0.0 | 0.0 | 2006 09 21 | 704 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2003 01 28 | 704 | 0.8− | 0.6+ | 2006 09 22 | 704 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2004 02 18 | 703 | 0.3− | 0.9+ | 2006 09 22 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 2004 02 18 | 703 | 0.2− | 0.8− | 2006 09 22 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 2004 02 18 | 703 | 0.6− | 1.2+ | 2006 09 25 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2004 02 18 | 703 | 0.1− | 0.6+ | 2006 09 25 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2004 03 16 | 703 | (0.9+ | 1.5+) | 2006 09 25 | 704 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2004 03 16 | 703 | 0.8+ | 1.4+ | 2006 09 25 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2004 03 16 | 703 | 0.3+ | 1.0+ | 2006 09 25 | 704 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2004 03 16 | 703 | 1.3+ | 1.3+ | 2006 09 29 | 704 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2004 03 17 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 704 | 1.5+ | 0.9+ | 2006 09 29 | 704 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2004 03 17 | 704 | 1.1+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.4− |
| 2004 03 17 | 704 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.7+ | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2004 03 17 | 704 | 0.6+ | 0.1+ | 2006 09 29 | 704 | 0.5+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2004 03 26 | 699 | 1.2− | 0.9+ | 2006 09 29 | 704 | (2.2+ | 1.0+) | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2004 03 26 | 699 | 0.5+ | 1.2+ | 2006 09 29 | 704 | (1.6+ | 0.8+) | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2004 03 26 | 699 | 0.5+ | 0.4+ | 2006 09 29 | 704 | 1.0+ | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2004 03 26 | 699 | (1.7+ | 0.2+) | 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.9+ | 0.5+ |
| 2005 06 03 | E12 | 0.1+ | 1.1+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2005 06 03 | E12 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2005 06 03 | E12 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 11 20 | 704 | 1.3− | 0.5+ |
| 2005 06 03 | E12 | 0.5− | 0.6+ | 2006 10 03 | 704 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.8+ | 0.6+ |
| 2005 06 09 | 703 | 0.9− | 0.2− | 2006 10 03 | 704 | 0.9+ | 0.0 | 2006 11 20 | 704 | 1.7+ | 0.1+ |
| 2005 06 09 | 703 | 0.4− | 0.7+ | 2006 10 03 | 704 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.7− | 0.5− |
| 2005 06 09 | 703 | 0.6− | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 0.5+ | 1.0− |
| 2005 06 09 | 703 | 0.7− | 0.6+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2005 06 11 | 691 | 0.1− | 0.5+ | 2006 10 03 | 704 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2005 06 11 | 691 | 0.2+ | 0.5+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2005 06 24 | 644 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2005 06 24 | 644 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | | | |
| 2005 06 24 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.0 | | | | |

**(143386)∗ 2003 BY$_{25}$ = 1999 JR$_{94}$**

Discovered 2003 Jan. 26 by NEAT at Palomar.

Id. S. Nakano (*MPO* 43269)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.01002 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19138355 | $\omega$ | 5.78394 | | −0.77467425 | −0.60037369 | |
| $a$ | 2.9821740 | $\Omega$ | 135.25332 | | +0.56828539 | −0.79869852 | |
| $e$ | 0.1855235 | $i$ | 16.38406 | | +0.27736532 | −0.04039921 | |
| $P$ | 5.15 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 1.0− | 0.1+ | 2003 02 01 | 704 | 0.9− | 0.2− | 2004 04 22 | 703 | 0.5− | 0.2+ |
| 1999 05 12 | 704 | 0.4− | 0.8+ | 2003 02 01 | 704 | 0.4+ | 0.0 | 2004 04 22 | 703 | 0.6− | 1.5+ |
| 1999 05 12 | 704 | 0.6+ | 1.4+ | 2003 02 01 | 704 | 0.7− | 0.1− | 2004 04 22 | 703 | 0.2+ | 0.6+ |
| 1999 05 12 | 704 | 1.4− | 0.0 | 2003 02 28 | 704 | 0.1+ | 1.5+ | 2004 04 24 | 608 | 0.0 | 0.2− |
| 1999 05 17 | 704 | 0.3+ | 1.2− | 2003 02 28 | 704 | 0.5+ | 0.1+ | 2004 04 24 | 608 | 0.1+ | 0.5− |
| 1999 05 17 | 704 | 0.3+ | 1.8− | 2003 02 28 | 704 | 0.5+ | 0.5+ | 2004 04 24 | 608 | 0.1− | 0.3− |
| 1999 05 17 | 704 | 0.2+ | 0.6+ | 2003 02 28 | 704 | 0.3+ | 0.7+ | 2004 04 26 | 704 | 0.1− | 0.2+ |
| 1999 05 17 | 704 | 0.3+ | 1.4+ | 2004 02 19 | 704 | 0.4+ | 0.1+ | 2004 04 26 | 704 | 0.1+ | 0.0 |
| 2001 08 26 | 644 | 0.5+ | 1.4+ | 2004 02 19 | 704 | 0.1− | 0.9− | 2004 04 26 | 704 | 0.5− | 0.1+ |
| 2001 08 26 | 644 | 0.5+ | 1.1+ | 2004 02 19 | 704 | 0.5+ | 0.1+ | 2004 04 26 | 704 | 0.2− | 0.3+ |
| 2001 08 26 | 644 | 0.9+ | 1.4+ | 2004 02 19 | 704 | 0.2+ | 0.2− | 2004 04 26 | 704 | 0.2+ | 0.1+ |
| 2002 10 31 | 704 | 0.5+ | 1.7+ | 2004 02 19 | 704 | 0.5+ | 0.2+ | 2004 05 13 | 704 | 0.3+ | 0.4+ |
| 2002 10 31 | 704 | 0.8+ | 0.0 | 2004 03 01 | 703 | 0.4− | 0.2− | 2004 05 13 | 704 | 0.6− | 0.5+ |
| 2002 10 31 | 704 | 0.5− | 0.5− | 2004 03 01 | 703 | 0.6− | 0.7− | 2004 05 13 | 704 | 0.5+ | 0.1+ |
| 2002 11 30 | 704 | 0.3− | 1.8− | 2004 03 01 | 703 | 1.2+ | 0.4− | 2004 05 13 | 704 | 0.3− | 0.3+ |
| 2002 11 30 | 704 | 0.5+ | 1.6− | 2004 03 01 | 703 | 1.0+ | 0.7− | 2006 09 20 | 703 | 1.9− | 1.4+ |
| 2002 11 30 | 704 | 1.0− | 1.5− | 2004 03 15 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 703 | 0.3− | 0.8+ |
| 2002 11 30 | 704 | 0.2− | 1.7− | 2004 03 15 | 704 | 1.3+ | 1.3+ | 2006 09 20 | 703 | (2.5+ | 3.0+) |
| 2002 12 13 | 608 | 0.2+ | 0.8+ | 2004 03 15 | 704 | 0.5+ | 1.4+ | 2006 09 20 | 703 | (0.6+ | 2.5+) |
| 2002 12 13 | 608 | 0.3+ | 1.3+ | 2004 03 15 | 704 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.2+ | 1.1+ |
| 2002 12 13 | 608 | 0.2+ | 0.8+ | 2004 03 15 | 704 | (0.8− | 2.6+) | 2006 09 26 | 703 | 0.8− | 0.4− |
| 2003 01 01 | 704 | 0.3− | 0.1+ | 2004 03 28 | 704 | 0.5+ | 0.0 | 2006 09 26 | 703 | 0.3− | 0.8+ |
| 2003 01 01 | 704 | 0.3− | 1.1+ | 2004 03 28 | 704 | 0.7+ | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2003 01 01 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.2+ | 0.3+ |
| 2003 01 26 | 644 | 0.1+ | 0.7+ | 2004 03 28 | 704 | 0.2− | 0.8− | 2006 09 26 | 703 | 1.0− | 0.7+ |
| 2003 01 26 | 644 | 0.2+ | 0.7+ | 2004 03 28 | 704 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2003 01 26 | 644 | 0.3+ | 0.7+ | 2004 04 15 | 704 | 0.9− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2003 01 28 | 704 | 0.0 | 0.5+ | 2004 04 15 | 704 | 0.5+ | 0.9− | 2006 09 26 | 703 | 1.1+ | 0.1+ |
| 2003 01 28 | 704 | 0.7− | 0.7+ | 2004 04 15 | 704 | 0.6− | 0.6+ | 2006 09 26 | 703 | 1.0− | 0.3− |
| 2003 01 28 | 704 | 0.3− | 0.2+ | 2004 04 15 | 704 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.5+ | 1.1− |
| 2003 02 01 | 704 | 1.2− | 0.1− | 2004 04 22 | 703 | 0.0 | 0.8+ | 2006 09 26 | 703 | 0.8+ | 0.4− |

**(143387)∗ 2003 BG$_{26}$ = 1999 CV$_{106}$**

Discovered 2003 Jan. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41469)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.34950 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23108858 | $\omega$ | 298.23970 | | −0.67804790 | −0.73289933 | |
| $a$ | 2.6299676 | $\Omega$ | 194.87401 | | +0.72723205 | −0.65791888 | |
| $e$ | 0.2072115 | $i$ | 12.54691 | | +0.10669860 | −0.17320889 | |
| $P$ | 4.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 10 | 691 | 0.1+ | 0.3− | 2003 01 02 | 704 | 0.2− | 0.7+ | 2004 06 27 | 691 | 0.0 | 0.5+ | |
| 1997 10 10 | 691 | 0.1− | 0.2− | 2003 01 02 | 704 | 0.4+ | 1.0+ | 2006 10 16 | 703 | 0.8− | 0.4− | |
| 1997 10 10 | 691 | 0.0 | 0.0 | 2003 01 02 | 704 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.2− | 0.9− | |
| 1999 01 23 | 704 | 1.1+ | 0.4+ | 2003 01 26 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 1.2− | 1.5+ | |
| 1999 01 23 | 704 | 0.9+ | 0.8− | 2003 01 26 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.2− | |
| 1999 01 23 | 704 | 0.8+ | 0.0 | 2003 01 26 | 644 | 0.5+ | 0.4+ | 2006 10 22 | 703 | 0.2− | 0.1− | |
| 1999 01 23 | 704 | 0.2− | 1.5− | 2003 01 28 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.0 | |
| 1999 01 23 | 704 | 0.6− | 0.8− | 2003 01 28 | 704 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.2− | |
| 1999 02 12 | 704 | 0.6+ | 0.5+ | 2003 01 28 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.1− | |
| 1999 02 12 | 704 | 0.2− | 0.1− | 2003 01 28 | 704 | 0.3+ | 0.4+ | 2006 10 31 | A50 | 0.3+ | 0.0 | |
| 1999 02 12 | 704 | 0.7− | 0.9− | 2003 01 28 | 704 | 0.2+ | 0.1+ | 2006 10 31 | A50 | 0.1− | 0.5+ | |
| 1999 02 12 | 704 | 0.6− | 0.3− | 2003 02 04 | 644 | 0.4+ | 0.6+ | 2006 11 01 | 703 | 0.1− | 0.0 | |
| 1999 02 12 | 704 | 1.9− | 0.4− | 2003 02 04 | 644 | 0.2+ | 0.3+ | 2006 11 01 | 703 | (1.0+ | 1.8+) | |
| 1999 02 16 | 704 | 0.0 | 0.2+ | 2003 02 04 | 644 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.4+ | 0.7+ | |
| 1999 02 16 | 704 | 0.6+ | 0.4− | 2004 05 24 | 704 | (2.2− | 2.3−) | 2006 11 01 | 703 | 0.9+ | 1.0+ | |
| 1999 02 16 | 704 | 1.7− | 0.7+ | 2004 05 24 | 704 | 0.8+ | 1.2− | 2006 11 13 | 703 | 1.3− | 0.7− | |
| 1999 02 16 | 704 | 0.7+ | 0.2− | 2004 05 24 | 704 | (2.4+ | 0.4+) | 2006 11 13 | 703 | 0.1+ | 0.2− | |
| 1999 02 16 | 704 | 0.6− | 0.5+ | 2004 05 24 | 704 | (2.3− | 2.1−) | 2006 11 13 | 703 | 0.1− | 0.5+ | |
| 2002 11 30 | 704 | 0.9+ | 0.2+ | 2004 06 19 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.2− | |
| 2002 11 30 | 704 | 0.2+ | 0.5+ | 2004 06 19 | 691 | 0.0 | 0.5+ | 2006 11 19 | 703 | 0.1+ | 0.1− | |
| 2002 11 30 | 704 | 0.3+ | 0.1− | 2004 06 19 | 691 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.6+ | 0.7+ | |
| 2003 01 02 | 704 | 0.4+ | 0.6+ | 2004 06 27 | 691 | 0.5+ | 0.7+ | 2006 11 19 | 703 | 0.4− | 0.4− | |
| 2003 01 02 | 704 | 0.3+ | 0.5+ | 2004 06 27 | 691 | 0.3− | 0.3+ | 2006 11 19 | 703 | 0.2+ | 1.0+ | |

**(143388)∗ 2003 BN$_{26}$**

Discovered 2003 Jan. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.96571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18585044 | $\omega$ | 234.23324 | | +0.81861411 | −0.56862675 | |
| $a$ | 3.0410740 | $\Omega$ | 160.02719 | | +0.57300918 | +0.79899211 | |
| $e$ | 0.0550253 | $i$ | 13.68944 | | +0.03913333 | +0.19564053 | |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | 0.2− | 1.2+ | 2003 01 28 | 645 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.2+ | 0.5− | |
| 2001 09 17 | 699 | 0.7− | 0.5+ | 2003 01 28 | 704 | 0.3− | 1.1+ | 2006 09 18 | 703 | 0.5+ | 1.3− | |
| 2001 09 17 | 699 | 0.8− | 0.5+ | 2003 01 28 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.2+ | |
| 2001 09 17 | 699 | 0.1− | 1.3+ | 2003 01 28 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.7+ | |
| 2001 09 25 | 704 | 0.5− | 0.2− | 2003 02 04 | 644 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.8− | |
| 2001 09 25 | 704 | 0.4+ | 0.8+ | 2003 02 04 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 1.2− | 0.6− | |
| 2001 09 25 | 704 | 0.6− | 0.8+ | 2003 02 04 | 644 | 0.0 | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.5+ | |
| 2001 10 15 | 644 | 0.3− | 0.3+ | 2003 03 07 | 704 | (1.6+ | 0.9+) | 2006 09 18 | 699 | 0.0 | 0.6+ | |
| 2001 10 15 | 644 | 0.1− | 0.3+ | 2003 03 07 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.4− | |
| 2001 10 15 | 644 | 0.1− | 0.4+ | 2003 03 07 | 704 | (1.7+ | 0.7−) | 2006 09 18 | 699 | 0.2− | 0.2− | |
| 2001 10 23 | 699 | 0.4+ | 0.9+ | 2003 03 07 | 704 | 1.0+ | 0.6+ | 2006 09 24 | 608 | 0.5+ | 1.4− | |
| 2001 10 23 | 699 | 0.5+ | 0.3+ | 2003 03 07 | 608 | 0.1− | 0.5+ | 2006 09 24 | 608 | 0.7+ | 1.4− | |
| 2001 10 23 | 699 | 0.0 | 1.1+ | 2003 03 07 | 608 | (0.5− | 2.0+) | 2006 09 24 | 608 | (0.6+ | 1.5−) | |
| 2001 10 23 | 699 | 0.2+ | 0.2− | 2003 03 07 | 608 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.4+ | 1.2+ | |
| 2001 10 23 | 644 | 0.0 | 0.1− | 2004 03 28 | 683 | 0.4− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.9+ | |
| 2001 10 23 | 644 | 0.1+ | 0.3− | 2004 03 28 | 683 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.6+ | |
| 2001 10 23 | 644 | 0.0 | 0.3− | 2004 03 28 | 683 | (3.4− | 0.3+) | 2006 09 26 | 704 | 0.1− | 0.3+ | |
| 2002 11 13 | 645 | 0.0 | 0.1− | 2004 04 10 | 644 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.5− | 0.1− | |
| 2002 11 13 | 645 | 0.0 | 0.1− | 2004 04 10 | 644 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.2+ | |
| 2003 01 05 | 704 | 0.5− | 1.2+ | 2004 04 10 | 644 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.8+ | |
| 2003 01 05 | 704 | 0.5− | 0.7+ | 2004 04 15 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 1.0+ | |
| 2003 01 05 | 704 | (1.8− | 0.7+) | 2004 04 15 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 1.2+ | |
| 2003 01 05 | 704 | 0.8− | 1.1+ | 2004 04 15 | 704 | 0.5− | 0.7+ | 2006 10 02 | 703 | 0.3− | 0.1+ | |
| 2003 01 26 | 699 | 0.7− | 0.6+ | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.7− | 0.5+ | |
| 2003 01 26 | 699 | 0.8− | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.7− | 0.4− | |
| 2003 01 26 | 699 | 1.0− | 0.3+ | 2006 08 23 | 644 | 0.1− | 0.2− | 2006 10 02 | 703 | 0.3− | 0.0 | |
| 2003 01 26 | 699 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.9+ | 1.2+ | 2006 10 16 | 703 | 0.5+ | 0.3+ | |
| 2003 01 26 | 644 | 0.1+ | 0.7− | 2006 09 12 | 703 | 0.3+ | 1.3− | 2006 10 16 | 703 | 0.4+ | 1.8− | |
| 2003 01 26 | 644 | 0.1+ | 0.7− | 2006 09 12 | 703 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.1+ | |
| 2003 01 26 | 644 | 0.0 | 1.0− | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.3− | |
| 2003 01 26 | 644 | 0.4+ | 1.0+ | 2006 09 16 | 704 | 0.3+ | 0.7− | 2006 10 21 | 703 | 0.2+ | 0.3+ | |
| 2003 01 26 | 644 | 0.5+ | 0.2+ | 2006 09 16 | 704 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.9− | 0.1+ | |
| 2003 01 26 | 644 | 0.3+ | 0.2− | 2006 09 16 | 704 | 0.4− | 0.7− | 2006 10 21 | 703 | 0.0 | 0.9− | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 16 | 704 | 0.3+ | 0.6− | 2006 10 21 | 703 | 0.5+ | 0.5+ | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.9+ | 0.1− | | | | | |
| 2003 01 28 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.1− | | | | | |

**(143389)∗ 2003 BK$_{27}$**

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.45286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17834154 | $\omega$ | 275.57179 | | +0.26633952 | −0.95490406 | |
| $a$ | 3.1258470 | $\Omega$ | 157.59801 | | +0.96287827 | +0.25738216 | |
| $e$ | 0.1091526 | $i$ | 20.14181 | | +0.04391700 | +0.14802924 | |
| $P$ | 5.53 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.8+ | 0.0 | 2003 02 03 | 699 | 0.4− | 0.3+ | 2003 03 06 | 699 | 0.6− | 0.7+ | |
| 2001 10 11 | 704 | 0.1− | 1.2− | 2003 02 03 | 699 | 0.7− | 0.8+ | 2003 03 06 | 699 | 0.2+ | 0.8+ | |
| 2001 10 11 | 704 | 0.2− | 1.3− | 2003 02 03 | 699 | 0.4+ | 0.5− | 2004 04 19 | 704 | 0.5− | 0.9+ | |
| 2001 10 26 | 608 | 0.5− | 0.1+ | 2003 02 09 | 644 | 0.0 | 0.4+ | 2004 04 19 | 704 | 0.7+ | 1.0+ | |
| 2001 10 26 | 608 | 0.1− | 0.5+ | 2003 02 09 | 644 | 0.2− | 0.1+ | 2004 04 19 | 704 | (0.4+ | 1.7+) | |
| 2001 10 26 | 608 | 0.5− | 0.2+ | 2003 02 09 | 644 | 0.0 | 0.3+ | 2006 08 23 | 704 | 0.4+ | 0.9+ | |
| 2001 11 17 | 699 | 0.1− | 0.3+ | 2003 02 12 | 608 | 0.7− | 1.0− | 2006 08 23 | 704 | 0.8+ | 0.4+ | |
| 2001 11 17 | 699 | 0.4+ | 0.1− | 2003 02 12 | 608 | 0.4− | 1.0− | 2006 08 23 | 704 | (0.3+ | 1.7+) | |
| 2001 11 17 | 699 | 0.4+ | 0.3+ | 2003 02 12 | 608 | 0.1− | 1.1− | 2006 08 23 | 704 | (0.6+ | 1.5+) | |
| 2001 11 17 | 699 | 0.1+ | 0.2− | 2003 02 22 | 644 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.8+ | |
| 2003 01 26 | 699 | (2.4+ | 0.9+) | 2003 02 22 | 644 | 0.0 | 0.2− | 2006 08 28 | 699 | 1.0− | 0.3+ | |
| 2003 01 26 | 699 | 1.2+ | 0.2+ | 2003 02 22 | 644 | 0.6+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 1.2+ | |
| 2003 01 26 | 699 | 0.9+ | 1.4+ | 2003 03 05 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 699 | 0.5+ | 0.7+ | |
| 2003 01 26 | 699 | 0.7+ | 0.9− | 2003 03 05 | 704 | 0.8+ | 0.1− | 2006 10 09 | 644 | 0.4− | 0.6+ | |
| 2003 01 28 | 704 | 0.2+ | 0.2+ | 2003 03 05 | 704 | 0.1− | 1.2+ | 2006 10 09 | 644 | 0.1− | 0.4+ | |
| 2003 01 28 | 704 | 0.4− | 0.2+ | 2003 03 05 | 704 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.3+ | |
| 2003 01 28 | 704 | 0.5− | 0.3− | 2003 03 05 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ | |
| 2003 01 28 | 704 | 0.2+ | 0.1+ | 2003 03 06 | 699 | 1.2− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ | |
| 2003 02 03 | 699 | 0.3+ | 0.8+ | 2003 03 06 | 699 | 0.9− | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.1+ | |

**(143390)∗ 2003 BN$_{27}$ = 2001 SM$_{80}$**

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 41470)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.61208 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24076446 | $\omega$ | 165.28927 | | +0.09009554 | −0.99404980 | |
| $a$ | 2.5590246 | $\Omega$ | 279.51384 | | +0.90736626 | +0.10726885 | |
| $e$ | 0.2290596 | $i$ | 3.55881 | | +0.41057188 | −0.01893135 | |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 691 | 0.1− | 0.4+ | 2003 02 22 | 333 | 0.1+ | 0.7+ | 2005 08 06 | 644 | 0.6− | 0.2+ | |
| 1993 09 16 | 691 | 0.5− | 0.5+ | 2003 02 22 | 333 | 0.3+ | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.3+ | |
| 1993 09 16 | 691 | 0.3+ | 0.4+ | 2003 02 27 | 608 | 0.7+ | 0.0 | 2005 08 06 | 644 | 0.1− | 0.4+ | |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2003 02 27 | 608 | 0.4+ | 0.2− | 2005 08 22 | 644 | 0.1+ | 0.7+ | |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2003 02 27 | 608 | 0.6+ | 0.4+ | 2005 08 22 | 644 | 0.3− | 0.2+ | |
| 1999 03 21 | 645 | 0.1− | 0.1+ | 2003 03 06 | 699 | 1.4+ | 0.3+ | 2005 08 22 | 644 | 0.4+ | 0.5+ | |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2003 03 06 | 699 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.2− | |
| 2001 09 20 | 704 | 0.3− | 0.3− | 2003 03 06 | 699 | 0.2− | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.2− | |
| 2001 09 20 | 704 | (2.3− | 0.9+) | 2003 03 06 | 704 | 0.2− | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.6− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.1− | 0.3+ | 2003 03 06 | 704 | 1.6+ | 1.0+ | 2006 10 03 | G96 | 0.1+ | 0.5− |
| 2001 09 20 | 704 | 0.3− | 0.8+ | 2003 03 06 | 699 | 0.5− | 1.2+ | 2006 11 01 | G96 | (1.8− | 0.3−) |
| 2001 09 22 | 704 | 0.1− | 0.8+ | 2003 03 06 | 704 | 0.7+ | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2001 09 22 | 704 | (0.4− | 1.8+) | 2003 03 06 | 704 | 1.2+ | 0.1− | 2006 11 01 | G96 | 0.6− | 0.2− |
| 2001 09 22 | 704 | 0.1+ | 0.5+ | 2003 03 06 | 704 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2003 01 26 | 699 | 0.4− | 0.9− | 2003 03 06 | 704 | (1.6+ | 0.4−) | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2003 01 26 | 699 | 1.1− | 1.0+ | 2003 03 06 | 704 | 0.8+ | 0.5− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2003 01 26 | 699 | 1.2+ | 0.0 | 2003 03 06 | 704 | (3.0+ | 0.8+) | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2003 01 26 | 699 | 0.2+ | 0.4+ | 2003 03 07 | 704 | 0.9+ | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2003 01 28 | 704 | 1.0+ | 1.2− | 2003 03 07 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.5+ | 0.7+ |
| 2003 01 28 | 704 | 1.3+ | 0.4− | 2003 03 07 | 704 | 0.3+ | 0.1− | 2006 11 15 | 703 | 1.1− | 0.2− |
| 2003 01 28 | 704 | 0.3+ | 1.0− | 2003 03 07 | 704 | 0.9+ | 0.5− | 2006 11 15 | 703 | 0.0 | 0.3+ |
| 2003 01 28 | 704 | 0.3+ | 0.6− | 2003 03 07 | 704 | (1.8+ | 0.5+) | 2006 11 15 | 703 | 0.1− | 1.2− |
| 2003 02 01 | 608 | 0.7+ | 0.7− | 2003 03 09 | 704 | 0.5+ | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 02 01 | 608 | (0.6+ | 1.7−) | 2003 03 09 | 704 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2003 02 01 | 608 | 0.2− | 0.9− | 2003 03 09 | 704 | 1.2+ | 0.9+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2003 02 03 | 699 | 0.4− | 0.5+ | 2003 03 09 | 704 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2003 02 03 | 699 | (0.1− | 1.8+) | 2003 03 26 | 699 | 0.8+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2003 02 03 | 699 | 0.4− | 0.3+ | 2003 03 26 | 699 | 0.3+ | 0.3− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2003 02 03 | 699 | 1.5+ | 0.2− | 2003 03 26 | 699 | 0.7− | 0.4− | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2003 02 12 | 608 | (0.8− | 1.6+) | 2003 03 26 | 699 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2003 02 12 | 608 | (1.2− | 1.7+) | 2005 07 29 | 644 | 0.2− | 0.5+ | 2006 11 24 | 291 | 0.2− | 0.4+ |
| 2003 02 12 | 608 | (0.7− | 2.1+) | 2005 07 29 | 644 | 0.1− | 0.3+ | 2006 11 24 | 291 | 0.4− | 0.6+ |
| 2003 02 22 | 333 | 0.4− | 0.6+ | 2005 07 29 | 644 | 0.1− | 0.4+ | 2006 11 24 | 291 | 0.4− | 0.6+ |

**(143391)∗ 2003 BM$_{28}$ = 2001 TR$_{170}$**

Discovered 2003 Jan. 26 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 41470)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.41647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21421038 | $\omega$ | 188.30948 | | −0.75837236 | −0.64512558 | |
| $a$ | 2.7663622 | $\Omega$ | 311.08495 | | +0.60491737 | −0.64331847 | |
| $e$ | 0.1604900 | $i$ | 7.10207 | | +0.24278868 | −0.41225518 | |
| $P$ | 4.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.2− | 0.4+ | 2003 01 31 | 683 | 0.5− | 0.2+ | 2003 03 06 | 704 | 0.0 | 1.1+ |
| 1996 10 05 | 691 | 0.3− | 0.4+ | 2003 01 31 | 683 | 1.2− | 0.8− | 2003 03 06 | 704 | 0.1− | 0.6+ |
| 1996 10 05 | 691 | 0.0 | 0.2+ | 2003 02 01 | 683 | 0.9− | 1.0+ | 2003 03 06 | 704 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.7+ | 0.1+ | 2003 02 01 | 683 | 0.9+ | 1.1+ | 2003 03 07 | 704 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 0.0 | 0.3− | 2003 02 01 | 683 | 1.1− | 0.2− | 2003 03 07 | 704 | 0.5− | 0.2− |
| 2001 09 25 | 704 | 0.9− | 1.9− | 2003 02 02 | 704 | (0.6+ | 2.2+) | 2003 03 07 | 704 | 0.6− | 0.4+ |
| 2001 10 13 | 644 | 0.5+ | 1.0+ | 2003 02 02 | 704 | 0.8+ | 1.8+ | 2003 03 07 | 704 | 0.3− | 1.3+ |
| 2001 10 13 | 644 | 0.3+ | 0.7+ | 2003 02 02 | 704 | 1.7+ | 2.0+ | 2003 03 07 | 704 | 0.4− | 0.5+ |
| 2001 10 13 | 644 | 0.3+ | 0.5+ | 2003 02 03 | 699 | 0.7+ | 0.1+ | 2003 03 09 | 704 | 1.0+ | 0.8− |
| 2001 10 20 | 644 | 0.5+ | 0.8− | 2003 02 03 | 699 | 0.2+ | 0.6+ | 2003 03 09 | 704 | 0.6+ | 0.7+ |
| 2001 10 20 | 644 | 0.8+ | 1.5− | 2003 02 03 | 699 | 0.6+ | 0.2+ | 2003 03 09 | 704 | 0.3+ | 0.7+ |
| 2001 10 20 | 644 | 0.6+ | 0.8− | 2003 02 03 | 699 | 0.4− | 0.8+ | 2003 03 09 | 704 | 0.2− | 0.2+ |
| 2001 11 11 | 699 | 0.5− | 0.0 | 2003 02 07 | 683 | 1.8+ | 1.2+ | 2003 03 09 | 704 | 0.0 | 1.5− |
| 2001 11 11 | 699 | 0.3− | 0.3+ | 2003 02 07 | 683 | 1.4+ | 1.2+ | 2003 03 13 | 644 | 0.4+ | 0.4+ |
| 2001 11 11 | 699 | 0.3+ | 0.4+ | 2003 02 07 | 683 | (2.2+ | 0.5+) | 2003 03 13 | 644 | 0.6+ | 0.5+ |
| 2001 11 11 | 699 | 1.9− | 0.1+ | 2003 02 22 | 683 | 0.8+ | 0.0 | 2003 03 13 | 644 | 0.6+ | 0.3+ |
| 2002 12 07 | 645 | 0.2− | 0.3− | 2003 02 22 | 683 | 0.2− | 0.1− | 2003 03 14 | 608 | 0.0 | 0.3− |
| 2002 12 07 | 645 | 0.1− | 0.3− | 2003 02 22 | 683 | 0.4+ | 0.5− | 2003 03 14 | 608 | 0.3+ | 0.6− |
| 2003 01 01 | 291 | 0.5− | 0.7+ | 2003 02 23 | 699 | 0.5+ | 0.4+ | 2003 03 14 | 608 | 0.6+ | 0.6− |
| 2003 01 01 | 291 | 0.5− | 0.4+ | 2003 02 23 | 699 | 0.8+ | 0.1− | 2003 03 26 | 699 | 0.7+ | 0.4+ |
| 2003 01 01 | 291 | 1.1− | 0.4+ | 2003 02 23 | 699 | 0.6+ | 0.1+ | 2003 03 26 | 699 | 0.8− | 0.7− |
| 2003 01 26 | 608 | 1.0+ | 0.1− | 2003 02 23 | 699 | 1.3+ | 0.1− | 2003 03 26 | 699 | 0.6− | 0.4+ |
| 2003 01 26 | 608 | 1.1+ | 0.1− | 2003 03 06 | 699 | (2.4+ | 0.5+) | 2003 03 26 | 699 | 0.5+ | 1.0− |
| 2003 01 26 | 608 | 1.0+ | 0.3+ | 2003 03 06 | 699 | 0.6+ | 0.2− | 2005 08 30 | 691 | 0.1+ | 0.5+ |
| 2003 01 28 | 683 | 0.8+ | 0.0 | 2003 03 06 | 699 | 0.2− | 0.1− | 2005 08 30 | 691 | 0.3+ | 0.5+ |
| 2003 01 28 | 683 | 0.1+ | 1.2− | 2003 03 06 | 699 | 0.5+ | 0.6+ | 2005 08 30 | 691 | 0.2+ | 0.2+ |
| 2003 01 28 | 683 | 0.7+ | 0.8− | 2003 03 06 | 704 | 0.1+ | 0.5+ | 2005 09 12 | 691 | 0.5− | 0.4+ |
| 2003 01 28 | 704 | 0.8+ | 0.6+ | 2003 03 06 | 704 | 0.4− | 0.4− | 2005 09 12 | 691 | 0.8− | 0.2+ |
| 2003 01 28 | 704 | 0.8+ | 0.6+ | 2003 03 06 | 704 | 0.5− | 0.6+ | 2005 09 12 | 691 | 0.5− | 0.1− |
| 2003 01 28 | 704 | 0.7+ | 0.4+ | 2003 03 06 | 704 | 0.4+ | 0.2+ | 2005 09 25 | 691 | 0.0 | 0.4+ |
| 2003 01 28 | 704 | 0.8+ | 0.0 | 2003 03 06 | 704 | 0.6− | 0.2+ | 2005 09 25 | 691 | 0.5− | 0.8+ |
| 2003 01 28 | 704 | 1.4+ | 0.9+ | 2003 03 06 | 704 | 0.2− | 0.0 | 2005 09 25 | 691 | 0.0 | 0.3+ |
| 2003 01 31 | 683 | 1.6− | 1.1+ | 2003 03 06 | 704 | 0.4− | 0.6+ | | | | |

**(143392)∗ 2003 BT$_{28}$ = 2004 FZ$_{138}$**

Discovered 2003 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69433)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.90659 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23057089 | $\omega$ | 237.44103 | | +0.59375561 | −0.80452473 | |
| $a$ | 2.6339027 | $\Omega$ | 176.04947 | | +0.78930485 | +0.57898225 | |
| $e$ | 0.1863368 | $i$ | 11.67100 | | +0.15637179 | +0.13236129 | |
| $P$ | 4.27 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 26 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.9− | 2006 09 30 | 703 | 0.3− | 0.6− |
| 1995 02 26 | 691 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.8− | 0.0 | 2006 10 01 | 704 | 0.9+ | 0.7+ |
| 1995 02 26 | 691 | 0.0 | 0.5− | 2006 08 28 | 703 | 0.4+ | 0.5− | 2006 10 01 | 704 | 0.6+ | 0.6+ |
| 2002 11 30 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 10 01 | 704 | 0.5+ | 0.2− |
| 2002 11 30 | 704 | 0.2+ | 0.3− | 2006 09 15 | 644 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.2− |
| 2002 11 30 | 704 | 0.4+ | 0.5+ | 2006 09 15 | 644 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.7+ | 0.3− |
| 2002 11 30 | 704 | 0.4− | 1.0+ | 2006 09 15 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2002 11 30 | 704 | 0.8− | 0.9− | 2006 09 16 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2003 01 02 | 704 | 0.1+ | 0.2− | 2006 09 16 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2003 01 02 | 704 | 0.2+ | 0.5− | 2006 09 16 | 704 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 2003 01 02 | 704 | 0.2− | 0.2− | 2006 09 16 | 699 | 0.6+ | 0.3+ | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2003 01 02 | 704 | 0.4+ | 0.2− | 2006 09 16 | 699 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2003 01 27 | 699 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.4− |
| 2003 01 27 | 699 | 0.6− | 0.4− | 2006 09 16 | 699 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2003 01 27 | 699 | 0.4− | 0.4− | 2006 09 20 | 699 | 0.6+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2003 01 27 | 699 | 0.9− | 0.4+ | 2006 09 20 | 699 | 0.6− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2003 01 28 | 704 | 0.3+ | 1.2+ | 2006 09 20 | 699 | 0.5+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2003 01 28 | 704 | 0.5+ | 0.8+ | 2006 09 20 | 699 | 0.1− | 0.3− | 2006 10 28 | 703 | 0.6+ | 0.5+ |
| 2003 01 28 | 704 | 0.6+ | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.6+ |
| 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2004 03 19 | 704 | 1.0+ | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2004 03 19 | 704 | 0.1− | 1.1+ | 2006 09 22 | 704 | 0.1− | 0.9+ | 2006 11 10 | 704 | (2.4+ | 1.8−) |
| 2004 03 19 | 704 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.8− | 0.5+ | 2006 11 10 | 704 | (1.7+ | 2.2−) |
| 2004 03 20 | 699 | 0.8− | 0.6− | 2006 09 22 | 704 | 0.7− | 0.3+ | 2006 11 10 | 704 | 1.3− | 0.6− |
| 2004 03 20 | 699 | 0.4− | 0.8− | 2006 09 22 | 704 | 1.3− | 1.2+ | 2006 11 16 | 703 | 0.6+ | 0.5+ |
| 2004 03 20 | 699 | 1.4− | 0.5+ | 2006 09 26 | 704 | (2.1− | 0.6+) | 2006 11 16 | 703 | 0.8+ | 0.6+ |
| 2004 03 20 | 699 | 0.5− | 0.7+ | 2006 09 26 | 704 | (2.1− | 1.9+) | 2006 11 16 | 703 | 0.4+ | 0.9+ |
| 2004 03 22 | 704 | 0.9+ | 0.1− | 2006 09 26 | 704 | (1.8− | 0.2+) | 2006 11 16 | 703 | 0.5+ | 1.1+ |
| 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 09 26 | 704 | (2.4− | 0.5+) | 2006 11 16 | 703 | (4.4+ | 0.7−) |
| 2004 03 22 | 704 | (0.4− | 2.1+) | 2006 09 26 | 704 | 1.5− | 0.2− | 2006 11 16 | 703 | 0.2− | 0.3− |
| 2004 04 26 | 691 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.9− | 0.1+ |
| 2004 04 26 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 11 16 | 703 | 1.0− | 0.2− |
| 2004 04 26 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.0 | | | | |

**(143393)∗ 2003 BX$_{28}$ = 2000 OZ$_{35}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47274)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.86224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23630741 | $\omega$ | 14.46492 | | −0.81161950 | −0.57316970 | |
| $a$ | 2.5911019 | $\Omega$ | 129.99504 | | +0.52027028 | −0.79709834 | |
| $e$ | 0.1079699 | $i$ | 8.47583 | | +0.26569273 | −0.19002825 | |
| $P$ | 4.17 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 1.0− | 1.0+ | 2003 02 02 | 704 | 1.1− | 0.9+ | 2004 05 23 | 704 | 0.0 | 0.1− |
| 2000 05 27 | 704 | 0.1− | 1.1+ | 2004 03 18 | 291 | 0.2+ | 0.1+ | 2004 05 23 | 704 | 0.8+ | 1.1− |
| 2000 05 27 | 704 | 0.2+ | 0.1+ | 2004 03 18 | 291 | 0.5− | 0.1+ | 2004 05 23 | 704 | 0.4+ | 0.1+ |
| 2000 05 27 | 704 | 0.1+ | 0.6+ | 2004 03 18 | 291 | 0.3− | 0.2+ | 2005 07 28 | 644 | 0.0 | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.4+ | 0.6+ | 2004 03 31 | 704 | 1.1+ | 0.2+ | 2005 07 28 | 644 | 0.6− | 0.7+ | | |
| 2000 07 31 | 691 | 0.1− | 0.5+ | 2004 03 31 | 704 | 0.7+ | 0.2+ | 2005 07 28 | 644 | 0.3− | 0.5+ | | |
| 2000 07 31 | 691 | 0.2+ | 0.0 | 2004 03 31 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.6+ | | |
| 2000 07 31 | 691 | 0.2− | 0.2+ | 2004 03 31 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2000 08 02 | 691 | 0.3+ | 0.9+ | 2004 04 11 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2000 08 02 | 691 | 0.2+ | 0.5+ | 2004 04 11 | 644 | 0.2+ | 0.2+ | 2006 10 30 | 703 | 0.6− | 0.2− | | |
| 2000 08 02 | 691 | 0.3+ | 0.4+ | 2004 04 11 | 644 | 0.4+ | 0.2+ | 2006 10 30 | 703 | 0.7− | 0.3+ | | |
| 2002 12 01 | 704 | 0.7+ | 0.2+ | 2004 04 16 | 704 | 0.5− | 1.1+ | 2006 10 30 | 703 | 0.4+ | 0.1+ | | |
| 2002 12 01 | 704 | 0.3+ | 1.4+ | 2004 04 16 | 704 | 0.2− | 0.1− | 2006 10 30 | 703 | 0.2− | 0.4+ | | |
| 2002 12 01 | 704 | 0.2− | 0.7+ | 2004 04 16 | 704 | 0.4+ | 0.2− | 2006 11 05 | 644 | 0.1− | 0.5+ | | |
| 2002 12 14 | 704 | 0.5− | 0.8+ | 2004 04 16 | 704 | 0.4+ | 0.2+ | 2006 11 05 | 644 | 0.3− | 0.2+ | | |
| 2002 12 14 | 704 | 0.5− | 0.4+ | 2004 04 16 | 699 | 1.2− | 1.4+ | 2006 11 05 | 644 | 0.1− | 0.4+ | | |
| 2002 12 14 | 704 | 0.4− | 0.9+ | 2004 04 16 | 699 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.3+ | | |
| 2002 12 14 | 704 | 0.0 | 0.0 | 2004 04 16 | 699 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.5+ | 0.2+ | | |
| 2002 12 14 | 704 | 0.7− | 0.4+ | 2004 04 16 | 699 | 0.4− | 0.5− | 2006 11 13 | 703 | 0.4+ | 0.8+ | | |
| 2003 01 01 | 704 | 0.9+ | 0.1− | 2004 05 01 | 703 | (1.8+ | 0.5−) | 2006 11 13 | 703 | 0.7− | 0.4+ | | |
| 2003 01 01 | 704 | 1.2+ | 1.3+ | 2004 05 01 | 703 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.1+ | 0.4+ | | |
| 2003 01 01 | 704 | 0.0 | 0.7+ | 2004 05 01 | 703 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.1− | 0.7+ | | |
| 2003 01 01 | 704 | 0.4+ | 0.5− | 2004 05 01 | 703 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.4+ | | |
| 2003 01 27 | 704 | 0.1+ | 0.5− | 2004 05 14 | 704 | 1.1− | 0.5− | 2006 11 19 | 703 | (0.4− | 1.8+) | | |
| 2003 01 27 | 704 | 0.1− | 0.2+ | 2004 05 14 | 704 | 0.4− | 0.7+ | 2006 11 20 | 704 | 0.2+ | 0.6+ | | |
| 2003 01 27 | 704 | 0.3− | 0.3− | 2004 05 14 | 704 | 1.3+ | 0.8+ | 2006 11 20 | 704 | 0.5− | 0.3+ | | |
| 2003 01 27 | 704 | 0.7+ | 0.3− | 2004 05 14 | 704 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.2+ | 1.0+ | | |
| 2003 01 28 | 704 | 0.8+ | 0.8− | 2004 05 14 | 704 | 0.5+ | 0.1+ | 2006 11 20 | 704 | 1.4− | 0.8+ | | |
| 2003 01 28 | 704 | 0.0 | 0.2+ | 2004 05 21 | 703 | 0.7− | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.6− | | |
| 2003 01 28 | 704 | 0.9− | 0.4+ | 2004 05 21 | 703 | 0.3+ | 0.5− | 2006 12 01 | G96 | 0.1− | 0.1− | | |
| 2003 01 28 | 704 | 0.3+ | 0.2+ | 2004 05 21 | 703 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.3+ | 0.1− | | |
| 2003 01 28 | 704 | 0.1+ | 0.6+ | 2004 05 21 | 703 | 0.7+ | 1.3− | 2006 12 01 | G96 | 0.1+ | 0.2− | | |
| 2003 02 02 | 704 | 0.8− | 1.1+ | 2004 05 23 | 704 | 0.8+ | 0.6+ | 2006 12 01 | G96 | 0.4+ | 0.1− | | |
| 2003 02 02 | 704 | 1.2− | 0.4+ | 2004 05 23 | 704 | 0.8+ | 0.5+ | | | | | | |

**(143394)∗ 2003 $BG_{29}$ = 2004 $GN_{81}$**

Discovered 2003 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 65432)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 127.75227 | | | (2000.0) | | | | **P** | | | **Q** | | |
| $n$ | 0.17416478 | | $\omega$ | 292.44907 | | | | −0.52146584 | | | +0.84119861 | | |
| $a$ | 3.1756247 | | $\Omega$ | 305.33275 | | | | −0.70416008 | | | −0.51892059 | | |
| $e$ | 0.0668340 | | $i$ | 10.09765 | | | | −0.48190450 | | | −0.15200767 | | |
| $P$ | 5.66 | | $H$ | 14.9 | | $G$ | 0.15 | | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.7+ | 1.0− | 2003 01 29 | 291 | 0.0 | 0.2+ | 2005 08 01 | E12 | 0.2+ | 0.1+ | | |
| 2001 11 11 | 704 | 0.2− | 0.1− | 2003 01 29 | 291 | 0.1+ | 0.4+ | 2005 08 01 | E12 | 0.0 | 0.6+ | | |
| 2001 11 11 | 704 | 0.7− | 0.1+ | 2003 01 31 | 704 | 1.0+ | 0.3+ | 2005 08 01 | E12 | 0.3+ | 1.3+ | | |
| 2003 01 08 | 704 | 0.3+ | 0.7+ | 2003 01 31 | 704 | 0.0 | 0.4+ | 2005 08 01 | E12 | 0.5− | 0.4+ | | |
| 2003 01 08 | 704 | 0.7+ | 0.3+ | 2003 01 31 | 704 | 0.2− | 1.1+ | 2005 11 03 | 695 | 0.2− | 0.1− | | |
| 2003 01 08 | 704 | 0.3+ | 1.1+ | 2003 01 31 | 704 | (0.1+ | 1.6+) | 2005 11 03 | 695 | 0.2+ | 0.2+ | | |
| 2003 01 27 | 699 | 0.1− | 0.8+ | 2003 02 07 | 699 | (0.0 | 1.7−) | 2006 09 16 | 703 | 0.2− | 0.4+ | | |
| 2003 01 27 | 699 | 0.0 | 0.6+ | 2003 02 07 | 699 | 0.3− | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.3+ | | |
| 2003 01 27 | 704 | 0.4− | 0.0 | 2004 03 26 | 699 | 1.3+ | 1.0+ | 2006 09 16 | 703 | 0.7+ | 0.4− | | |
| 2003 01 27 | 704 | 0.3− | 0.1− | 2004 03 26 | 699 | (0.9+ | 2.6+) | 2006 09 16 | 703 | 0.1− | 0.2+ | | |
| 2003 01 27 | 704 | 0.4− | 0.3− | 2004 03 26 | 699 | 0.4− | 0.1− | 2006 09 28 | 703 | 1.2− | 0.3+ | | |
| 2003 01 27 | 699 | 0.8− | 0.2+ | 2004 03 26 | 699 | 0.8− | 0.3+ | 2006 09 28 | 703 | 0.2+ | 0.8+ | | |
| 2003 01 27 | 704 | 0.4+ | 0.5+ | 2004 04 13 | 644 | 1.2+ | 0.3+ | 2006 09 28 | 703 | 1.0+ | 0.1+ | | |
| 2003 01 27 | 699 | 0.2− | 0.8+ | 2004 04 13 | 644 | 0.8+ | 0.3+ | 2006 09 28 | 703 | 0.7− | 0.6− | | |
| 2003 01 27 | 608 | 0.5+ | 0.2− | 2004 04 13 | 644 | 0.9+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.4+ | | |
| 2003 01 27 | 608 | 0.5+ | 0.3− | 2004 04 25 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 1.3− | 0.7+ | | |
| 2003 01 27 | 608 | 0.2+ | 0.0 | 2004 04 25 | 704 | 1.3− | 0.4− | 2006 10 19 | 703 | 0.1− | 0.7+ | | |
| 2003 01 28 | 704 | 0.8+ | 0.1− | 2004 04 25 | 704 | 0.5− | 0.1+ | 2006 10 19 | 703 | (0.8− | 1.7+) | | |
| 2003 01 28 | 704 | 0.8+ | 0.4+ | 2004 04 25 | 704 | 0.4− | 0.6+ | 2006 10 22 | G92 | 0.6− | 0.3+ | | |
| 2003 01 28 | 704 | 1.0+ | 0.1+ | 2004 04 25 | 704 | 0.7− | 0.2− | 2006 10 22 | G92 | 0.7− | 0.7+ | | |
| 2003 01 28 | 704 | 1.1+ | 1.2− | 2005 07 07 | 691 | 0.3− | 0.4+ | 2006 10 22 | G92 | 0.0 | 0.3+ | | |
| 2003 01 28 | 704 | 0.3+ | 0.2− | 2005 07 07 | 691 | 0.1− | 0.4+ | | | | | | |
| 2003 01 29 | 291 | 0.2− | 0.2+ | 2005 07 07 | 691 | 0.2− | 0.4+ | | | | | | |

**(143395)∗ 2003 $BU_{29}$ = 2005 $JD_{81}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 75834)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 18.73561 | | | (2000.0) | | | | **P** | | | **Q** | | |
| $n$ | 0.18742092 | | $\omega$ | 212.12746 | | | | +0.88703153 | | | +0.31990284 | | |
| $a$ | 3.0240619 | | $\Omega$ | 125.52599 | | | | −0.28710628 | | | +0.94687769 | | |
| $e$ | 0.2427828 | | $i$ | 24.14641 | | | | −0.36158684 | | | +0.03293642 | | |
| $P$ | 5.26 | | $H$ | 14.7 | | $G$ | 0.15 | | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 608 | (0.4− | 1.6+) | 2005 05 11 | 703 | 0.9− | 0.3+ | 2005 07 09 | 703 | 0.6+ | 0.4+ | | |
| 2001 10 19 | 608 | (0.8− | 1.8+) | 2005 05 12 | 704 | 0.3+ | 0.2+ | 2006 09 19 | E12 | 0.1+ | 0.4+ | | |
| 2001 10 19 | 608 | 0.0 | 1.1+ | 2005 05 12 | 704 | 0.4− | 0.3+ | 2006 09 19 | E12 | 0.1− | 0.4+ | | |
| 2001 12 13 | 644 | 0.6− | 0.1+ | 2005 05 12 | 704 | 0.0 | 0.4+ | 2006 09 19 | E12 | 0.3− | 0.6+ | | |
| 2001 12 13 | 644 | 0.4− | 0.2+ | 2005 05 12 | 704 | 0.3+ | 0.8+ | 2006 09 19 | E12 | 0.2+ | 0.4+ | | |
| 2001 12 13 | 644 | 0.4− | 0.4+ | 2005 05 16 | 704 | 0.4+ | 1.0+ | 2006 10 02 | E12 | 0.0 | 0.1− | | |
| 2003 01 27 | 704 | 1.0+ | 1.1+ | 2005 05 16 | 704 | 0.0 | 0.3− | 2006 10 02 | E12 | 0.2+ | 0.1− | | |
| 2003 01 27 | 704 | 0.9+ | 0.4+ | 2005 05 16 | 704 | 0.6+ | 1.3− | 2006 10 02 | E12 | 0.0 | 0.1+ | | |
| 2003 01 27 | 704 | 1.4+ | 0.6− | 2005 05 30 | 703 | 0.6− | 1.1+ | 2006 10 02 | E12 | 0.2− | 0.2+ | | |
| 2003 01 27 | 704 | 0.5+ | 0.2− | 2005 05 30 | 703 | (1.7− | 0.8+) | 2006 10 12 | E12 | 0.2− | 0.2+ | | |
| 2003 01 28 | 704 | 0.0 | 0.0 | 2005 05 30 | 703 | 1.0+ | 0.4+ | 2006 10 12 | E12 | 0.6+ | 0.4+ | | |
| 2003 01 28 | 704 | 1.0− | 0.3+ | 2005 05 30 | 703 | (1.7− | 1.7+) | 2006 10 12 | E12 | 0.5− | 0.1− | | |
| 2003 01 28 | 704 | 0.7+ | 0.9+ | 2005 06 01 | 699 | 0.5− | 0.8+ | 2006 10 12 | E12 | 0.4+ | 0.5+ | | |
| 2003 01 28 | 704 | 0.0 | 0.1+ | 2005 06 01 | 699 | 0.0 | 1.4+ | 2006 10 29 | E12 | 0.2+ | 0.5− | | |
| 2003 01 29 | 291 | 0.4− | 0.0 | 2005 06 01 | 699 | (2.9+ | 0.4+) | 2006 10 29 | E12 | 0.2− | 1.3+ | | |
| 2003 01 29 | 291 | 0.1− | 0.3+ | 2005 06 01 | 699 | 0.4+ | 0.7+ | 2006 10 29 | E12 | 0.7− | 0.3+ | | |
| 2003 01 29 | 291 | 0.2− | 0.3+ | 2005 06 08 | 703 | 0.1− | 0.9− | 2006 10 29 | E12 | 0.2+ | 0.1+ | | |
| 2003 01 30 | 644 | 0.2− | 0.2+ | 2005 06 08 | 703 | 0.9+ | 0.2− | 2006 11 11 | E12 | 0.4− | 0.3− | | |
| 2003 01 30 | 644 | 0.0 | 0.2+ | 2005 06 08 | 703 | 0.7− | 0.0 | 2006 11 11 | E12 | 0.2− | 0.5+ | | |
| 2003 01 30 | 644 | 0.2+ | 0.4+ | 2005 06 08 | 703 | 0.4+ | 0.4− | 2006 11 11 | E12 | 0.1+ | 0.3+ | | |
| 2005 05 11 | 703 | 0.2− | 0.5+ | 2005 07 09 | 703 | 1.1+ | 0.1+ | 2006 11 11 | E12 | 0.7− | 0.3+ | | |
| 2005 05 11 | 703 | 0.8− | 0.2+ | 2005 07 09 | 703 | 0.1+ | 1.0+ | | | | | | |
| 2005 05 11 | 703 | 0.5− | 0.8+ | 2005 07 09 | 703 | 0.6+ | 0.4+ | | | | | | |

**(143396)∗ 2003 $BP_{30}$ = 1995 $SO_{11}$ = 2004 $HM_{75}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47274, *MPO* 75835)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 277.21823 | | | (2000.0) | | | | **P** | | | **Q** | | |
| $n$ | 0.18210682 | | $\omega$ | 218.79158 | | | | −0.01016332 | | | −0.99984390 | | |
| $a$ | 3.0826099 | | $\Omega$ | 231.79552 | | | | +0.92195723 | | | −0.00377347 | | |
| $e$ | 0.0406545 | | $i$ | 1.05387 | | | | +0.38715832 | | | −0.01726102 | | |
| $P$ | 5.41 | | $H$ | 15.9 | | $G$ | 0.15 | | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 809 | 1.1+ | 0.2− | 2003 01 28 | 704 | 0.8− | 0.6− | 2004 04 21 | 291 | 0.5+ | 0.7+ | | |
| 1995 09 18 | 691 | 0.1− | 0.3+ | 2003 01 28 | 704 | 0.2− | 0.5+ | 2004 04 22 | 691 | 0.2− | 0.4+ | | |
| 1995 09 18 | 691 | 0.3− | 0.8+ | 2003 01 28 | 704 | 0.1+ | 0.3− | 2004 04 22 | 691 | 0.0 | 0.5+ | | |
| 1995 09 18 | 691 | 0.3− | 0.5+ | 2003 01 30 | 699 | (1.4+ | 1.8+) | 2004 04 22 | 691 | 0.1− | 0.3+ | | |
| 1995 09 22 | 691 | 0.6− | 0.1− | 2003 01 30 | 644 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.2− | | |
| 1995 09 22 | 691 | 0.2− | 0.7+ | 2003 01 30 | 644 | 0.5+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.5+ | | |
| 1995 09 22 | 691 | 0.1− | 0.6+ | 2003 01 30 | 699 | (1.6+ | 1.1+) | 2006 09 15 | 691 | 0.4− | 0.3+ | | |
| 2001 10 13 | 691 | 0.3− | 0.1+ | 2003 01 30 | 699 | 0.0 | 1.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | |
| 2001 10 13 | 691 | 0.1− | 0.3− | 2003 01 30 | 699 | 1.1− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2001 10 13 | 691 | 0.7− | 0.2+ | 2003 01 30 | 644 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2001 10 21 | 704 | 0.3+ | 0.5+ | 2003 01 30 | 644 | 0.9+ | 0.5+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.7+ | 0.5+ | 2003 01 30 | 644 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.1+ | | |
| 2001 10 21 | 704 | (0.2+ | 2.8+) | 2003 01 30 | 644 | 0.8+ | 1.0+ | 2006 09 23 | 691 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 1.4+ | 0.5+ | 2003 01 31 | 291 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.3− | | |
| 2001 11 15 | 691 | 0.1+ | 0.5+ | 2003 01 31 | 291 | 0.1+ | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.0 | | |
| 2001 11 15 | 691 | 0.1− | 0.5+ | 2003 01 31 | 291 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 691 | 0.1+ | 0.1+ | 2004 03 23 | 291 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2003 01 27 | 704 | 0.0 | 0.8− | 2004 03 23 | 291 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2003 01 27 | 704 | (1.5− | 1.1−) | 2004 03 23 | 291 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2003 01 27 | 704 | 0.1− | 0.6− | 2004 04 16 | 691 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2003 01 27 | 704 | 0.3− | 0.2− | 2004 04 16 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2003 01 27 | 608 | 0.4+ | 0.4− | 2004 04 16 | 691 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.5− | 1.1+ |
| 2003 01 27 | 608 | 0.3+ | 0.3− | 2004 04 21 | 291 | 0.6+ | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2003 01 27 | 608 | 0.1+ | 0.3+ | 2004 04 21 | 291 | 0.5+ | 0.7+ | 2006 10 28 | G96 | 0.0 | 0.4− |

**(143397)∗ 2003 BC$_{32}$ = 2005 UU$_{17}$**

Discovered 2003 Jan. 27 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 89410)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.99488 | | (2000.0) | | +0.62947081 | −0.77666434 |
| $n$ | 0.29348206 | $\omega$ | 252.32326 | | +0.73522041 | +0.58548373 |
| $a$ | 2.2425821 | $\Omega$ | 158.61173 | | +0.25143080 | +0.23238182 |
| $e$ | 0.1421917 | $i$ | 3.71719 | | | |
| $P$ | 3.36 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 26 | 691 | 0.0 | 0.3− | 2005 10 22 | 291 | 0.0 | 0.1+ | 2005 11 05 | 704 | 0.5+ | 0.3+ |
| 1995 12 26 | 691 | 0.1+ | 0.3− | 2005 10 22 | 291 | 0.1+ | 0.2+ | 2005 11 05 | 704 | 0.2+ | 0.7+ |
| 1995 12 26 | 691 | 0.0 | 0.3− | 2005 10 25 | 703 | 0.4+ | 0.3− | 2005 11 05 | 704 | 0.2− | 0.8+ |
| 1996 01 15 | 691 | 0.1+ | 0.3− | 2005 10 25 | 703 | 0.2+ | 0.3− | 2005 11 05 | 704 | 0.5− | 1.0+ |
| 1996 01 15 | 691 | 0.2− | 0.2− | 2005 10 25 | 703 | 0.6− | 0.7− | 2005 11 05 | 704 | 0.2− | 0.3+ |
| 1996 01 15 | 691 | 0.4+ | 0.6− | 2005 10 25 | 703 | 0.2+ | 0.2− | 2005 11 05 | 704 | 0.4− | 0.6+ |
| 2000 03 11 | 704 | 0.4+ | 0.4+ | 2005 10 27 | 699 | 0.5+ | 0.1− | 2005 11 05 | 704 | 0.3+ | 0.3+ |
| 2000 03 11 | 704 | 1.3+ | 0.8+ | 2005 10 27 | 691 | (2.1− | 1.0+) | 2005 11 05 | 703 | 0.2− | 0.5− |
| 2000 03 11 | 704 | 0.4+ | 1.1+ | 2005 10 27 | 699 | 0.1+ | 0.5− | 2005 11 05 | 704 | 0.6− | 1.0+ |
| 2000 04 10 | 695 | 0.3+ | 0.5+ | 2005 10 27 | 691 | 1.1− | 0.8+ | 2005 11 05 | 703 | 0.2+ | 0.2− |
| 2000 04 10 | 695 | 0.2+ | 0.4+ | 2005 10 27 | 703 | 0.5− | 0.5− | 2005 11 05 | 703 | 0.4+ | 0.2+ |
| 2003 01 14 | 608 | 0.3− | 0.3− | 2005 10 27 | 703 | 0.5+ | 0.3+ | 2005 11 05 | 703 | 0.4+ | 0.1− |
| 2003 01 14 | 608 | 0.5− | 0.1+ | 2005 10 27 | 691 | 1.4− | 0.7+ | 2005 11 10 | 703 | 0.2+ | 0.2− |
| 2003 01 14 | 608 | 0.6− | 0.6+ | 2005 10 27 | 699 | 0.6+ | 0.5+ | 2005 11 10 | 703 | 0.5− | 0.3− |
| 2003 01 27 | 704 | 0.4+ | 0.7+ | 2005 10 27 | 703 | 1.6+ | 0.5+ | 2005 11 10 | 703 | 0.5− | 0.2− |
| 2003 01 27 | 704 | 0.7+ | 0.6+ | 2005 10 27 | 699 | 0.3− | 0.7+ | 2005 11 10 | 703 | 1.0− | 0.4− |
| 2003 01 27 | 704 | 1.1+ | 1.1+ | 2005 10 30 | 704 | 0.2+ | 0.4+ | 2005 11 20 | 644 | 0.2+ | 0.1+ |
| 2003 01 27 | 704 | 0.8+ | 0.8+ | 2005 10 30 | 704 | 0.2+ | 0.0 | 2005 11 20 | 644 | 0.4+ | 0.1− |
| 2003 01 27 | 644 | 0.1+ | 0.2− | 2005 10 30 | 704 | 0.2+ | 0.1− | 2005 11 20 | 644 | 0.3+ | 0.4− |
| 2003 01 27 | 644 | 0.0 | 0.1− | 2005 10 30 | 704 | 1.3− | 1.5+ | 2005 11 26 | 703 | 0.9− | 0.7− |
| 2003 01 27 | 644 | 0.0 | 0.1− | 2005 10 30 | 704 | 0.2+ | 0.6+ | 2005 11 26 | 703 | 0.1− | 0.1− |
| 2003 01 28 | 704 | 0.4− | 0.3+ | 2005 10 31 | 691 | 0.3+ | 0.3− | 2005 11 26 | 703 | 0.9− | 0.2+ |
| 2003 01 28 | 704 | 0.3− | 0.1− | 2005 10 31 | 691 | 0.1− | 0.0 | 2005 11 26 | 703 | 0.7− | 0.9− |
| 2003 01 28 | 704 | 0.6− | 0.6+ | 2005 10 31 | 691 | 0.1+ | 0.1− | 2005 11 30 | 704 | 0.6+ | 0.3+ |
| 2003 01 28 | 704 | 0.0 | 0.3+ | 2005 11 02 | 704 | 0.2+ | 0.0 | 2005 11 30 | 704 | 1.0− | 0.2− |
| 2003 01 31 | 704 | 0.2− | 0.0 | 2005 11 02 | 704 | 0.7− | 0.0 | 2005 11 30 | 704 | 0.1+ | 0.0 |
| 2003 01 31 | 704 | 0.1+ | 0.6− | 2005 11 02 | 704 | 0.1+ | 0.8− | 2005 11 30 | 704 | 1.4+ | 1.3+ |
| 2003 01 31 | 704 | 0.1+ | 0.0 | 2005 11 02 | 704 | 0.3− | 0.6+ | 2005 11 30 | 704 | 0.3− | 0.1− |
| 2003 01 31 | 704 | 0.2+ | 0.2− | 2005 11 02 | 704 | 0.6− | 0.7− | 2005 12 07 | 704 | 0.2+ | 0.3+ |
| 2003 01 31 | 704 | 0.0 | 1.0+ | 2005 11 03 | 704 | 1.6+ | 0.6+ | 2005 12 07 | 704 | 0.4+ | 0.6+ |
| 2004 06 22 | 691 | 0.2+ | 0.4+ | 2005 11 03 | 704 | 0.6+ | 0.7+ | 2005 12 07 | 704 | 0.0 | 0.1− |
| 2004 06 22 | 691 | 0.1− | 0.9+ | 2005 11 03 | 704 | 0.5+ | 0.1+ | 2005 12 07 | 704 | 0.5− | 0.5− |
| 2004 06 22 | 691 | 0.1+ | 0.8+ | 2005 11 03 | 704 | 0.5+ | 0.5+ | 2005 12 07 | 704 | 0.3− | 0.2+ |
| 2005 10 22 | 691 | 0.2+ | 0.1+ | 2005 11 03 | 704 | 0.1+ | 0.0 | 2005 12 07 | 704 | 1.2− | 0.0 |
| 2005 10 22 | 691 | 0.1+ | 0.1− | 2005 11 04 | 704 | 0.6+ | 0.1− | 2005 12 27 | 704 | 0.1+ | 0.8+ |
| 2005 10 22 | 691 | 0.4+ | 0.0 | 2005 11 04 | 704 | 0.8+ | 0.7− | 2005 12 27 | 704 | 0.7− | 0.1− |
| 2005 10 22 | 291 | 0.1+ | 0.1− | 2005 11 04 | 704 | 0.2+ | 0.7+ | 2005 12 27 | 704 | 0.1− | 0.2− |
| 2005 10 22 | 291 | 0.0 | 0.0 | 2005 11 04 | 704 | 1.1+ | 0.8− | 2005 12 27 | 704 | 0.7− | 1.0+ |
| 2005 10 22 | 291 | 0.1+ | 0.1− | 2005 11 05 | 704 | 0.1+ | 0.8+ | | | | |
| 2005 10 22 | 291 | 0.1− | 0.2+ | 2005 11 05 | 704 | 0.6+ | 0.6+ | | | | |

**(143398)∗ 2003 BE$_{34}$**

Discovered 2003 Jan. 25 by A. Boattini and H. Scholl at the European Southern Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 242.24615 | | (2000.0) | | −0.81854849 | −0.55111144 |
| $n$ | 0.19002152 | $\omega$ | 220.93252 | | +0.56100732 | −0.70631246 |
| $a$ | 2.9964074 | $\Omega$ | 284.91151 | | +0.12348746 | −0.44429596 |
| $e$ | 0.0674054 | $i$ | 9.65291 | | | |
| $P$ | 5.19 | $H$ | 15.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.1− | 0.0 | 2003 02 02 | 704 | 0.6+ | 1.3+ | 2005 07 15 | 691 | 0.1− | 0.3+ |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2003 02 03 | 699 | 0.3+ | 1.3+ | 2005 07 15 | 691 | 0.3− | 0.3+ |
| 2001 11 12 | 704 | 1.0+ | 0.0 | 2003 02 03 | 699 | 0.8− | 0.9+ | 2005 07 18 | 644 | 0.1+ | 0.9+ |
| 2001 11 12 | 704 | 0.5+ | 0.6− | 2003 02 03 | 699 | (2.4+ | 0.9−) | 2005 07 18 | 644 | 0.3+ | 0.5+ |
| 2001 11 12 | 704 | 0.3+ | 0.4+ | 2003 02 03 | 699 | (3.2+ | 1.1+) | 2005 07 18 | 644 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.1+ | 0.5+ | 2003 02 08 | 608 | 0.3− | 0.2− | 2005 07 27 | 644 | 0.2− | 0.6+ |
| 2001 11 12 | 704 | 0.2− | 0.2− | 2003 02 08 | 608 | 0.1− | 0.8− | 2005 07 27 | 644 | 0.1+ | 0.4+ |
| 2003 01 07 | 704 | (0.2− | 1.5+) | 2003 02 08 | 608 | 0.3− | 0.4− | 2005 07 27 | 644 | 0.2− | 0.5+ |
| 2003 01 07 | 704 | 0.4+ | 0.8+ | 2003 02 19 | 644 | 0.3+ | 0.7+ | 2005 08 05 | 644 | 0.4− | 0.4+ |
| 2003 01 07 | 704 | 0.2+ | 0.1− | 2003 02 19 | 644 | 0.1+ | 0.1+ | 2005 08 05 | 644 | 0.0 | 0.5+ |
| 2003 01 25 | 809 | 0.1− | 0.7+ | 2003 02 19 | 644 | 0.2+ | 0.3+ | 2005 08 05 | 644 | 0.1− | 0.4+ |
| 2003 01 25 | 809 | 0.0 | 0.6+ | 2003 02 22 | 699 | (1.6+ | 1.0+) | 2005 08 29 | 691 | 0.0 | 0.4+ |
| 2003 01 25 | 809 | 0.1+ | 0.6+ | 2003 02 22 | 699 | 0.4+ | 0.1− | 2005 08 29 | 691 | 0.1− | 0.5+ |
| 2003 01 27 | 704 | 0.4+ | 0.9+ | 2003 02 22 | 699 | 0.2+ | 0.9+ | 2005 08 29 | 691 | 0.1+ | 0.2+ |
| 2003 01 27 | 704 | 0.3+ | 1.0+ | 2003 02 22 | 699 | 0.1− | 0.1− | 2005 09 12 | 691 | 0.0 | 0.5+ |
| 2003 01 27 | 704 | 0.9+ | 1.1+ | 2003 02 28 | 704 | 1.4− | 0.3− | 2005 09 12 | 691 | 0.2+ | 0.4+ |
| 2003 01 27 | 704 | 0.0 | 1.0+ | 2003 02 28 | 704 | 0.3− | 0.5− | 2005 09 12 | 691 | 0.1+ | 0.3+ |
| 2003 01 27 | 704 | 0.5− | 0.4+ | 2003 02 28 | 704 | 0.5− | 0.0 | 2006 09 17 | 703 | 0.5− | 0.1− |
| 2003 01 27 | 644 | 0.2+ | 0.7+ | 2003 02 28 | 608 | (0.0 | 2.0+) | 2006 09 17 | 703 | 0.2+ | 0.5+ |
| 2003 01 27 | 644 | 0.2+ | 0.5+ | 2003 02 28 | 608 | 0.8− | 1.5+ | 2006 09 17 | 703 | 0.5− | 0.3+ |
| 2003 01 27 | 644 | 0.6+ | 0.5+ | 2003 02 28 | 608 | (1.0− | 1.9+) | 2006 09 17 | 703 | 0.3+ | 0.0 |
| 2003 01 28 | 645 | 0.1+ | 0.1− | 2003 03 07 | 704 | 0.3− | 0.1+ | 2006 09 22 | 104 | 0.3− | 0.0 |
| 2003 01 28 | 645 | 0.2+ | 0.1− | 2003 03 07 | 704 | 0.3− | 0.3+ | 2006 09 22 | 104 | 0.4− | 0.3+ |
| 2003 02 01 | 699 | 0.2+ | 0.6+ | 2003 03 07 | 704 | 0.1− | 0.7+ | 2006 09 22 | 104 | 0.0 | 0.1− |
| 2003 02 01 | 699 | 0.3+ | 1.2+ | 2003 03 07 | 704 | 1.2− | 0.0 | 2006 09 22 | 104 | 0.5− | 0.3+ |
| 2003 02 01 | 699 | 0.3+ | 0.3+ | 2003 03 07 | 704 | 0.7− | 0.1− | 2006 09 22 | 104 | 0.1+ | 0.5+ |
| 2003 02 01 | 699 | 0.3+ | 1.2+ | 2005 05 19 | G96 | 0.4− | 0.2− | 2006 09 22 | 104 | 1.0− | 0.6− |
| 2003 02 02 | 704 | (0.8− | 1.6+) | 2005 05 19 | G96 | 0.0 | 0.4− | 2006 10 16 | 104 | 0.2+ | 0.4− |
| 2003 02 02 | 704 | (0.1− | 1.9+) | 2005 05 19 | G96 | 0.1− | 0.3+ | 2006 10 16 | 104 | 1.1− | 0.2+ |
| 2003 02 02 | 704 | 0.5+ | 1.4+ | 2005 05 19 | G96 | 0.3− | 0.2+ | 2006 10 16 | 104 | 1.1+ | 0.1− |
| 2003 02 02 | 608 | 0.7+ | 0.3+ | 2005 07 10 | 691 | 0.2− | 0.4+ | 2006 10 17 | A50 | 0.2+ | 0.2+ |
| 2003 02 02 | 704 | 1.0+ | 1.1+ | 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 10 17 | A50 | 0.2− | 0.4− |
| 2003 02 02 | 608 | 0.6+ | 0.1+ | 2005 07 10 | 691 | 0.1− | 0.5+ | | | | |
| 2003 02 02 | 608 | 0.1+ | 0.4+ | 2005 07 15 | 691 | 0.8− | 0.3− | | | | |

**(143399)∗ 2003 BU$_{34}$ = 2001 TP$_{255}$**

Discovered 2003 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 72742)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 273.61453 | | (2000.0) | | −0.49865662 | −0.85904992 |
| $n$ | 0.20272515 | $\omega$ | 5.73004 | | +0.79015157 | −0.50535256 |
| $a$ | 2.8698836 | $\Omega$ | 114.22973 | | +0.35637350 | −0.08155996 |
| $e$ | 0.0303395 | $i$ | 7.28596 | | | |
| $P$ | 4.86 | $H$ | 16.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2003 01 30 | 699 | 0.6+ | 0.4+ | 2005 07 31 | E12 | 0.1+ | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2003 01 30 | 699 | 0.0 | 0.4− | 2005 07 31 | E12 | 0.0 | 0.0 |
| 2001 10 19 | 699 | (0.3+ | 1.8−) | 2003 01 30 | 699 | 1.2+ | 0.5+ | 2005 07 31 | E12 | 0.5− | 0.7+ |
| 2001 10 19 | 699 | 0.7− | 1.4+ | 2003 01 30 | 699 | 0.5− | 0.1− | 2005 07 31 | E12 | (2.0− | 0.7+) |
| 2001 10 19 | 699 | 0.5− | 0.4− | 2003 01 30 | 699 | 1.2+ | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.1+ |
| 2001 10 19 | 699 | 1.2− | 1.0+ | 2003 01 30 | 699 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.5− |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 01 31 | 704 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.1− | 0.0 |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 01 31 | 704 | 0.8− | 0.3− | 2006 09 30 | 703 | 1.1− | 0.1− |
| 2003 01 08 | 704 | 0.4− | 0.1− | 2003 01 31 | 704 | 0.8− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2003 01 08 | 704 | 0.4+ | 0.6− | 2003 01 31 | 704 | 1.1− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.7− | 0.5+ | 2003 01 31 | 704 | 0.6+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 2003 01 08 | 704 | 0.3+ | 0.8+ | 2003 02 03 | 704 | (2.5+ | 1.2−) | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2003 01 27 | 699 | 0.3+ | 0.9+ | 2003 02 03 | 704 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 2003 01 27 | 699 | 0.5− | 0.3+ | 2003 02 03 | 704 | 0.7+ | 0.8− | 2006 10 23 | 644 | 0.1+ | 0.6+ |
| 2003 01 27 | 699 | 0.8− | 0.1+ | 2003 02 03 | 704 | 1.2+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2003 01 27 | 699 | 0.4+ | 0.4− | 2004 04 26 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2003 01 29 | 644 | 0.1+ | 1.2+ | 2004 04 26 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2003 01 29 | 644 | 0.3+ | 1.1+ | 2004 04 26 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 1.1− | 0.1− |
| 2003 01 29 | 644 | 0.1− | 0.4− | 2005 07 16 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.7− | 0.0 |
| 2003 01 30 | 699 | 1.0+ | 0.3+ | 2005 07 16 | 691 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.9+ | 0.4− |
| 2003 01 30 | 699 | 1.4− | 0.7+ | 2005 07 16 | 691 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.3+ | 0.1− |

**(143400)∗ 2003 BX$_{34}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.78038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19029163 | $\omega$ | 321.47629 | | −0.99330404 | +0.11505666 | |
| $a$ | 2.9935712 | $\Omega$ | 225.13408 | | −0.10201098 | −0.91591295 | |
| $e$ | 0.1518474 | $i$ | 0.84424 | | −0.05422962 | −0.38453274 | |
| $P$ | 5.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 691 | 0.2+ | 0.1− | 2004 06 09 | E12 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.3− | 0.3+ |
| 2001 11 15 | 691 | 0.0 | 0.6− | 2004 06 09 | E12 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.5+ | 0.0 |
| 2001 11 15 | 691 | 0.1− | 0.1− | 2005 07 28 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2003 01 08 | 704 | 0.9+ | 0.1+ | 2005 07 28 | 644 | 0.2− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.4+ |
| 2003 01 08 | 704 | 0.9− | 0.1− | 2005 07 28 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.3+ | 0.6− |
| 2003 01 08 | 704 | 0.7+ | 0.4+ | 2005 08 27 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.4− |
| 2003 01 08 | 704 | 0.2+ | 0.5− | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2003 01 27 | 704 | 0.1+ | 0.1+ | 2005 08 27 | 644 | 0.4+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2003 01 27 | 704 | 0.1− | 0.3+ | 2005 09 30 | G96 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2003 01 27 | 704 | 0.3+ | 0.7+ | 2005 09 30 | G96 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2003 01 27 | 704 | 0.7− | 0.3− | 2005 09 30 | G96 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2003 01 27 | 704 | 0.6+ | 0.1+ | 2005 09 30 | G96 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.2+ |
| 2003 01 29 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2003 01 29 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2003 01 29 | 644 | 0.8+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.3− | 0.1− |
| 2004 05 16 | 704 | (1.0+ | 2.1+) | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2004 05 16 | 704 | 0.9+ | 0.9+ | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.6− | 0.0 |
| 2004 05 16 | 704 | (1.1+ | 1.6+) | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.2− |
| 2004 05 16 | 704 | (0.7+ | 3.2+) | 2006 10 02 | 691 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2004 06 09 | E12 | 0.6− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.9+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2004 06 09 | E12 | 0.1+ | 1.3+ | 2006 10 11 | 691 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.2− |

**(143401)∗ 2003 BF$_{37}$ = 2000 TD$_{64}$ = 2001 YT$_{128}$**

Discovered 2003 Jan. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 43272)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.90289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16818276 | $\omega$ | 188.69017 | | −0.99239942 | −0.12004486 | |
| $a$ | 3.2504868 | $\Omega$ | 344.33753 | | +0.11807088 | −0.86687424 | |
| $e$ | 0.0421391 | $i$ | 5.75408 | | +0.03467931 | −0.48385771 | |
| $P$ | 5.86 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 04 | 704 | 0.4− | 0.2+ | 2003 03 26 | 699 | 0.5+ | 0.9− | 2006 10 17 | 703 | 0.0 | 1.0+ |
| 2000 10 04 | 704 | 0.1+ | 0.2− | 2003 03 26 | 699 | 1.0+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2000 10 04 | 704 | 0.0 | 0.2+ | 2003 03 26 | 699 | 0.4− | 0.9− | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2000 10 04 | 704 | 0.8− | 0.0 | 2003 03 26 | 699 | 0.0 | 0.9− | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2000 10 05 | 691 | 0.4+ | 0.4− | 2003 03 31 | 691 | 0.2− | 0.8+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2000 10 05 | 691 | 0.1+ | 0.4− | 2003 03 31 | 691 | 0.1− | 0.9+ | 2006 10 21 | 691 | 0.5− | 0.3− |
| 2000 10 05 | 691 | 0.2+ | 0.5− | 2003 03 31 | 691 | 0.1− | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 1.0− | 2003 03 31 | 695 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2001 12 17 | 704 | 0.8+ | 1.2− | 2003 03 31 | 695 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.6+ | 1.1+ |
| 2001 12 17 | 704 | 0.5− | 0.6− | 2003 04 03 | 699 | 0.1− | 1.2− | 2006 10 21 | 703 | 0.7− | 1.2+ |
| 2001 12 22 | 704 | (0.4− | 1.8−) | 2003 04 03 | 699 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 1.2+ |
| 2001 12 22 | 704 | (1.1− | 1.6−) | 2003 04 03 | 699 | 0.0 | 0.8+ | 2006 10 21 | 703 | 0.1− | 0.9+ |
| 2001 12 22 | 704 | 0.3− | 0.6− | 2003 04 03 | 699 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 12 22 | 704 | 0.6+ | 1.1− | 2003 04 11 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2003 01 28 | 291 | 0.0 | 0.4+ | 2003 04 11 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.8− | 0.1− |
| 2003 01 28 | 291 | 0.2− | 0.3+ | 2003 04 11 | 691 | 0.7+ | 0.2+ | 2006 10 25 | 106 | (1.3− | 2.0−) |
| 2003 01 28 | 291 | 0.4− | 0.3+ | 2005 07 04 | 644 | 0.6− | 1.1+ | 2006 10 25 | 106 | 0.2− | 0.3− |
| 2003 01 30 | 291 | 0.0 | 0.1+ | 2005 07 04 | 644 | 0.5− | 0.8+ | 2006 10 25 | 106 | 0.2− | 0.3+ |
| 2003 01 30 | 291 | 0.3− | 0.1+ | 2005 07 04 | 644 | 0.1− | 1.1+ | 2006 10 25 | 106 | 0.7+ | 0.5+ |
| 2003 01 30 | 291 | 0.3− | 0.1+ | 2005 10 25 | G96 | 0.1− | 0.2+ | 2006 10 27 | 291 | 0.2− | 0.2+ |
| 2003 02 09 | 608 | 0.2+ | 0.9− | 2005 10 25 | G96 | 0.0 | 0.5+ | 2006 10 27 | 291 | 0.1− | 0.0 |
| 2003 02 09 | 608 | 0.8+ | 0.7− | 2005 10 25 | G96 | 0.4− | 0.4+ | 2006 10 27 | 291 | 0.0 | 0.3+ |
| 2003 02 09 | 608 | 0.0 | 0.3− | 2005 10 25 | G96 | 0.4+ | 0.4+ | 2006 10 27 | 291 | 0.2− | 0.1+ |
| 2003 03 07 | 699 | 0.2− | 0.7− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 27 | 291 | 0.2+ | 0.2+ |
| 2003 03 07 | 699 | 0.6+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 27 | 291 | 0.1+ | 0.3+ |
| 2003 03 07 | 699 | 1.0+ | 0.8− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2003 03 07 | 699 | 0.3+ | 0.8+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2003 03 09 | 704 | 0.6+ | 0.9− | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.7+ | 0.3− |
| 2003 03 09 | 704 | 0.5+ | 0.5− | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.5− |
| 2003 03 09 | 704 | 1.0+ | 0.2− | 2006 10 15 | 104 | 0.0 | 0.7+ | 2006 11 14 | 703 | 1.0− | 0.7+ |
| 2003 03 09 | 704 | 0.9+ | 0.2+ | 2006 10 15 | 104 | 0.3− | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.8+ |
| 2003 03 09 | 704 | 0.6+ | 0.7+ | 2006 10 15 | 104 | (1.1+ | 1.9+) | 2006 11 14 | 703 | 0.6− | 0.6− |
| 2003 03 10 | 683 | 0.2− | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2003 03 10 | 683 | 0.8− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2003 03 10 | 683 | 0.4− | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2003 03 26 | 644 | 0.3+ | 0.8+ | 2006 10 17 | 703 | (0.6+ | 1.6+) | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2003 03 26 | 644 | 0.7+ | 0.7+ | 2006 10 17 | 703 | (2.0+ | 0.9+) | | | | |
| 2003 03 26 | 644 | 0.3+ | 0.8+ | 2006 10 17 | 703 | (0.0 | 1.8+) | | | | |

**(143402)∗ 2003 BL$_{42}$ = 1996 XU$_{15}$**

Discovered 2003 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 43273)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.18121 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17462928 | $\omega$ | 239.84322 | | −0.91111414 | −0.23789295 | |
| $a$ | 3.1699908 | $\Omega$ | 284.59704 | | +0.37820954 | −0.80710602 | |
| $e$ | 0.0663516 | $i$ | 20.35244 | | −0.16379428 | −0.54035805 | |
| $P$ | 5.64 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 10 | 327 | 0.2+ | 0.6+ | 2003 01 05 | 704 | 0.0 | 0.1+ | 2005 06 30 | 691 | 0.4− | 0.5+ |
| 1996 12 10 | 327 | 0.4− | 0.1− | 2003 01 05 | 704 | 0.3− | 0.6− | 2005 06 30 | 691 | 0.2− | 0.3+ |
| 1996 12 10 | 327 | 0.1+ | 0.0 | 2003 01 28 | 704 | (0.3+ | 2.0+) | 2005 07 11 | 691 | 0.1− | 0.3+ |
| 1996 12 11 | 327 | 0.1+ | 0.2+ | 2003 01 28 | 704 | 0.2+ | 0.3+ | 2005 07 11 | 691 | 0.1− | 0.2+ |
| 1996 12 11 | 327 | 0.1+ | 0.4− | 2003 01 28 | 704 | 0.1+ | 0.3+ | 2005 07 11 | 691 | 0.0 | 0.1+ |
| 1996 12 11 | 327 | 0.7+ | 0.3+ | 2003 01 28 | 704 | 0.2+ | 0.4+ | 2005 08 04 | 185 | 0.2+ | 0.6− |
| 1996 12 11 | 327 | 0.3− | 0.2− | 2003 01 28 | 704 | 0.4− | 0.2− | 2005 08 04 | 185 | 0.4+ | 0.2− |
| 2000 09 22 | 704 | 0.2+ | 0.2+ | 2003 01 30 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 703 | 0.5+ | 0.3− |
| 2000 09 22 | 704 | 0.5− | 0.7+ | 2003 01 30 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.4− |
| 2000 09 22 | 704 | 1.2− | 0.5+ | 2003 01 30 | 704 | 0.2+ | 0.9+ | 2006 09 17 | 703 | 1.0− | 0.1− |
| 2000 09 22 | 704 | (0.2+ | 2.5+) | 2003 01 30 | 704 | 0.6− | 0.4+ | 2006 09 17 | 703 | 0.7− | 1.4− |
| 2002 01 14 | 644 | 0.1− | 0.0 | 2003 01 30 | 704 | 0.5+ | 1.0+ | 2006 10 20 | 703 | 1.4+ | 0.5+ |
| 2002 01 14 | 644 | 0.1+ | 0.3+ | 2003 02 01 | 699 | 0.3− | 0.2+ | 2006 10 20 | 703 | 1.4− | 0.0 |
| 2002 01 14 | 644 | 0.1+ | 0.3+ | 2003 02 01 | 699 | 0.4+ | 0.1− | 2006 10 20 | 703 | 0.2+ | 0.3− |
| 2003 01 02 | 704 | (1.9+ | 3.0−) | 2003 02 01 | 699 | 0.7+ | 0.7+ | 2006 10 20 | 703 | 0.5− | 0.9− |
| 2003 01 02 | 704 | (1.8+ | 1.4−) | 2003 02 01 | 699 | 0.4+ | 0.0 | 2006 11 15 | 703 | 0.7− | 0.8+ |
| 2003 01 02 | 704 | 0.1− | 0.6+ | 2003 02 22 | 644 | 0.5+ | 0.6+ | 2006 11 15 | 703 | 1.0+ | 0.9+ |
| 2003 01 05 | 704 | 0.4+ | 0.6+ | 2003 02 22 | 644 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.9+ |
| 2003 01 05 | 704 | 0.5− | 0.3− | 2003 02 22 | 644 | 0.8+ | 0.3+ | 2006 11 15 | 703 | 1.0+ | 0.7+ |
| 2003 01 05 | 704 | 0.5+ | 0.4+ | 2005 06 30 | 691 | 0.2− | 0.3+ | | | | |

**(143403)∗ 2003 BT$_{42}$ = 1996 XJ$_9$**

Discovered 2003 Jan. 29 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47277)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.37561 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19505620 | $\omega$ | 175.00077 | | +0.04740723 | −0.98171758 |
| $a$ | 2.9446219 | $\Omega$ | 272.19624 | | +0.90993709 | +0.11857079 |
| $e$ | 0.0215368 | $i$ | 10.63086 | | +0.41202796 | −0.14890118 |
| $P$ | 5.05 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.8+ | 0.2+ | 2002 12 07 | 645 | 0.0 | 0.1+ | 2005 07 04 | 691 | 0.0 | 0.3+ |
| 1996 12 01 | 691 | 0.3+ | 0.2− | 2002 12 07 | 645 | 0.0 | 0.1+ | 2005 07 30 | 644 | 0.0 | 0.5+ |
| 1996 12 01 | 691 | 0.6+ | 0.2− | 2003 01 29 | 644 | 0.1+ | 0.3+ | 2005 07 30 | 644 | 0.0 | 0.6+ |
| 1996 12 08 | 691 | 0.5− | 0.5− | 2003 01 29 | 644 | 0.1+ | 0.4+ | 2005 07 30 | 644 | 0.0 | 0.6+ |
| 1996 12 08 | 691 | 0.2− | 0.2− | 2003 01 29 | 644 | 0.2− | 0.4+ | 2006 10 27 | 703 | 1.1− | 0.2− |
| 1996 12 14 | 691 | (1.1− | 6.2−) | 2003 01 30 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.2+ | 1.3+ |
| 1996 12 14 | 691 | 0.1− | 0.4+ | 2003 01 30 | 704 | 0.8+ | 0.4− | 2006 10 27 | 703 | 0.4− | 0.0 |
| 1996 12 14 | 691 | 0.9− | 0.0 | 2003 01 30 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2003 01 30 | 704 | (0.6+ | 1.7+) | 2006 11 15 | 703 | 0.2− | 1.5+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2003 02 22 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.7+ |
| 2001 11 12 | 704 | 0.1− | 0.8− | 2003 02 22 | 644 | 0.4+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 1.2− |
| 2001 11 12 | 704 | 0.5+ | 0.5+ | 2003 02 22 | 644 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.8+ | 1.1− |
| 2001 11 12 | 704 | 0.4− | 0.9+ | 2005 07 04 | 691 | 0.1− | 0.1+ | | | | |
| 2001 11 12 | 704 | 0.4+ | 0.9+ | 2005 07 04 | 691 | 0.2− | 0.5+ | | | | |

**(143404)∗ 2003 BD$_{44}$**

Discovered 2003 Jan. 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.66183 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.35731280 | $\omega$ | 88.49568 | | +0.00678742 | +0.99997578 |
| $a$ | 1.9668459 | $\Omega$ | 181.89527 | | −0.93496231 | +0.00580054 |
| $e$ | 0.6050894 | $i$ | 2.66568 | | −0.35468212 | +0.00384561 |
| $P$ | 2.76 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 28 | 260 | (5.6− | 0.4−) | 2003 02 25 | 240 | 0.7+ | 0.3− | 2006 03 23 | 379 | 0.5− | 0.5+ |
| 1981 02 28 | 260 | (5.8− | 0.8−) | 2003 02 25 | 240 | 0.3+ | 0.3− | 2006 03 23 | 379 | 0.2− | 0.0 |
| 1981 09 29 | 260 | 0.8+ | 1.3− | 2003 02 25 | 240 | 0.6+ | 0.5− | 2006 03 24 | 704 | 0.5− | 0.1+ |
| 1981 09 29 | 260 | 0.6− | 0.5+ | 2003 03 05 | 246 | 0.1+ | 0.5+ | 2006 03 24 | 704 | 0.2− | 0.3+ |
| 2003 01 17 | 644 | 0.6+ | 0.3− | 2003 03 05 | 246 | 0.1− | 0.5+ | 2006 03 24 | 704 | 0.3− | 0.8+ |
| 2003 01 17 | 644 | 0.6+ | 0.2+ | 2003 03 05 | 246 | 0.4− | 0.1+ | 2006 03 24 | 704 | 0.0 | 0.1+ |
| 2003 01 27 | 644 | 0.2− | 0.3− | 2003 03 05 | 246 | 0.1− | 0.1+ | 2006 03 24 | E12 | 0.3+ | 0.0 |
| 2003 01 27 | 644 | 0.0 | 0.2− | 2003 03 06 | 711 | 0.8+ | 0.4− | 2006 03 24 | E12 | 0.2+ | 0.2− |
| 2003 01 27 | 644 | 0.1+ | 0.2− | 2003 03 06 | 711 | 1.0+ | 0.3− | 2006 03 24 | E12 | 0.0 | 0.1− |
| 2003 01 30 | 699 | 0.3+ | 0.1− | 2003 03 06 | 711 | (1.6+ | 0.0 ) | 2006 03 24 | E12 | 0.1+ | 0.1− |
| 2003 01 30 | 699 | 0.7− | 0.8+ | 2003 04 14 | 608 | 1.0− | 0.3− | 2006 08 23 | A14 | 0.1− | 0.2− |
| 2003 01 30 | 699 | 0.4+ | 0.4+ | 2003 04 14 | 608 | 0.0 | 0.3− | 2006 08 23 | A14 | 0.2+ | 0.1+ |
| 2003 01 30 | 699 | 0.2+ | 1.4+ | 2003 05 03 | 941 | 0.4− | 0.1− | 2006 08 23 | A14 | 0.2+ | 0.1− |
| 2003 01 30 | J95 | 0.3+ | 0.2+ | 2003 05 03 | 941 | 0.5− | 0.1− | 2006 08 29 | 703 | 1.4− | 0.5+ |
| 2003 01 31 | J95 | 0.4+ | 0.3+ | 2003 05 03 | 941 | 0.4− | 0.4− | 2006 08 29 | 703 | 1.0− | 0.3− |
| 2003 01 31 | 858 | 0.3+ | 0.3+ | 2003 05 03 | 941 | 0.5− | 0.2− | 2006 08 29 | 703 | 0.7− | 0.7+ |
| 2003 01 31 | 858 | 0.2− | 0.1− | 2003 10 23 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.3+ |
| 2003 01 31 | 858 | 0.9− | 0.4+ | 2003 10 23 | 704 | 0.5− | 0.0 | 2006 09 16 | 703 | 0.3− | 0.3+ |
| 2003 01 31 | 704 | 0.8+ | 0.1+ | 2003 10 23 | 704 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.7− | 0.6− |
| 2003 01 31 | 704 | 0.1− | 0.4+ | 2003 10 23 | 704 | 0.0 | 0.3− | 2006 09 16 | 703 | 0.4− | 0.5+ |
| 2003 01 31 | 704 | (1.5+ | 0.3+) | 2003 11 21 | 704 | 0.3+ | 1.3+ | 2006 09 16 | 703 | 0.6− | 0.4+ |
| 2003 02 01 | 734 | 1.1− | 0.4+ | 2003 11 21 | 704 | 0.5+ | 0.8+ | 2006 09 17 | 699 | (0.3+ | 1.6+) |
| 2003 02 01 | 734 | 1.2+ | 0.0 | 2003 11 21 | 704 | (0.1+ | 1.6+) | 2006 09 17 | 699 | (0.9− | 1.6+) |
| 2003 02 01 | 246 | 0.1+ | 0.9− | 2003 11 21 | 704 | 0.9+ | 0.4+ | 2006 09 17 | 699 | 0.5+ | 0.5+ |
| 2003 02 01 | 246 | 0.1− | 0.1− | 2003 11 28 | 699 | 1.3+ | 0.8− | 2006 09 17 | 699 | 0.3+ | 0.0 |
| 2003 02 01 | 246 | 0.5− | 0.5− | 2003 11 28 | 699 | (2.1+ | 1.0−) | 2006 09 20 | 704 | 0.4− | 0.1− |
| 2003 02 03 | 644 | 0.3+ | 0.1+ | 2003 11 28 | 699 | 0.4− | 1.0+ | 2006 09 20 | 704 | 0.4+ | 0.0 |
| 2003 02 03 | 644 | 0.4− | 0.5+ | 2003 11 28 | 699 | 0.5− | 1.2+ | 2006 09 20 | 704 | 0.1+ | 0.1+ |
| 2003 02 03 | 644 | 0.1+ | 0.3+ | 2004 11 20 | 291 | 0.6− | 0.1− | 2006 09 20 | 704 | 0.8− | 0.3+ |
| 2003 02 04 | J95 | 0.1− | 0.2− | 2004 11 20 | 291 | (1.1+ | 2.5+) | 2006 09 20 | 704 | 0.4− | 0.2− |
| 2003 02 04 | J95 | 0.8− | 0.1+ | 2006 01 10 | G96 | 0.6− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2003 02 04 | J95 | 0.5− | 0.4+ | 2006 01 10 | G96 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2003 02 05 | 620 | 0.2+ | 1.2− | 2006 01 10 | G96 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2003 02 05 | 620 | 0.6+ | 0.9− | 2006 01 10 | G96 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2003 02 05 | 620 | 0.4+ | 0.5− | 2006 02 02 | G96 | 0.5− | 0.1− | 2006 09 28 | 704 | 0.1− | 0.2− |
| 2003 02 05 | J95 | 0.4− | 0.1− | 2006 02 02 | G96 | 0.3− | 0.2− | 2006 09 28 | 704 | 0.2− | 0.9+ |
| 2003 02 05 | J95 | 0.6− | 0.0 | 2006 02 02 | G96 | 0.6− | 0.1− | 2006 09 28 | 704 | 1.2+ | 0.6+ |
| 2003 02 05 | J95 | 0.5+ | 0.2+ | 2006 02 10 | 703 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 2003 02 06 | 670 | 1.0− | 0.1− | 2006 02 10 | 703 | 0.8− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2003 02 06 | 670 | 0.3+ | 0.0 | 2006 02 10 | 703 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2003 02 07 | 649 | 0.0 | 0.1+ | 2006 02 10 | 703 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2003 02 07 | 649 | 0.3− | 0.2− | 2006 02 20 | 703 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2003 02 07 | 649 | 0.0 | 0.2− | 2006 02 20 | 703 | 0.4− | 0.4− | 2006 10 15 | H55 | 0.7− | 0.0 |
| 2003 02 08 | 941 | 0.9− | 0.2− | 2006 02 20 | 703 | 0.1+ | 0.4− | 2006 10 15 | H55 | 0.2− | 0.3− |
| 2003 02 08 | 941 | 0.3+ | 0.5− | 2006 02 20 | 703 | 0.0 | 0.4− | 2006 10 15 | H55 | 0.2+ | 0.1− |
| 2003 02 08 | 941 | 1.2− | 0.7+ | 2006 02 22 | G92 | 0.2+ | 0.3− | 2006 10 16 | 693 | 0.1+ | 0.1+ |
| 2003 02 08 | 941 | 1.5+ | 0.6+ | 2006 02 22 | G92 | 0.1+ | 0.2+ | 2006 10 16 | 693 | 0.0 | 0.2+ |
| 2003 02 09 | 176 | 0.0 | 0.2+ | 2006 02 22 | G92 | 0.0 | 0.3− | 2006 10 16 | 693 | 0.0 | 0.1+ |
| 2003 02 09 | 176 | 0.0 | 0.1+ | 2006 02 24 | 704 | (0.6+ | 3.0+) | 2006 10 16 | 693 | 0.0 | 0.1+ |
| 2003 02 09 | 176 | 0.1− | 0.1+ | 2006 02 24 | 704 | (3.4+ | 1.1+) | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 02 09 | 176 | 0.0 | 0.1+ | 2006 02 24 | 704 | 1.4+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 02 09 | 176 | 0.0 | 0.0 | 2006 02 24 | 704 | 1.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 02 09 | 671 | 0.2+ | 0.0 | 2006 02 24 | 703 | 0.2− | 0.2− | 2006 10 26 | A41 | 0.4− | 0.3+ |
| 2003 02 09 | 671 | 0.0 | 0.0 | 2006 02 24 | 703 | 0.5− | 0.1− | 2006 10 26 | A41 | 0.9− | 0.3− |
| 2003 02 09 | 671 | 0.0 | 0.1+ | 2006 02 24 | 704 | (1.5+ | 0.3+) | 2006 10 26 | 151 | 0.8+ | 0.2− |
| 2003 02 09 | 671 | 0.1+ | 0.2+ | 2006 02 24 | 703 | 0.7− | 0.3− | 2006 10 26 | 151 | 0.4+ | 0.3− |
| 2003 02 19 | 246 | 0.7+ | 0.7+ | 2006 02 24 | 703 | 0.2− | 0.2+ | 2006 10 26 | 151 | 0.3+ | 0.2− |
| 2003 02 19 | 246 | 0.1+ | 0.2− | 2006 02 25 | G96 | 0.4− | 0.3− | 2006 10 26 | 151 | 0.2+ | 0.8+ |
| 2003 02 19 | 246 | 0.3− | 0.4+ | 2006 02 25 | G96 | 0.5− | 0.3− | 2006 10 28 | 704 | 1.1+ | 1.0+ |
| 2003 02 19 | 246 | 0.2+ | 0.1+ | 2006 02 25 | G96 | 0.1− | 0.3− | 2006 10 28 | 704 | 0.0 | 0.5− |
| 2003 02 20 | 649 | 0.4+ | 0.1− | 2006 02 25 | G96 | 0.5− | 0.3− | 2006 10 28 | 704 | 0.4+ | 0.2− |
| 2003 02 20 | 649 | 0.2+ | 0.0 | 2006 02 27 | 704 | 0.2+ | 0.6− | 2006 10 28 | 704 | 0.3− | 0.6+ |
| 2003 02 20 | 649 | 0.4+ | 0.1− | 2006 02 27 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 704 | 0.3+ | 0.1− |
| 2003 02 20 | 587 | 0.1+ | 0.5− | 2006 02 27 | 704 | 0.1+ | 0.4+ | 2006 10 30 | 151 | 0.3− | 0.3− |
| 2003 02 20 | 587 | 0.4− | 0.7− | 2006 02 27 | 704 | 0.4+ | 0.1+ | 2006 10 30 | 151 | 0.5− | 0.3− |
| 2003 02 20 | 587 | 0.1+ | 0.3− | 2006 03 03 | 704 | 0.2+ | 0.4+ | 2006 10 30 | 151 | 0.9− | 0.3− |
| 2003 02 21 | 644 | 0.2− | 0.2+ | 2006 03 03 | 704 | 0.6+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2003 02 21 | 644 | 0.0 | 0.2+ | 2006 03 03 | 704 | 0.4+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2003 02 21 | 644 | 0.2− | 0.3+ | 2006 03 03 | 704 | 0.9+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2003 02 21 | 176 | 0.1− | 0.3− | 2006 03 03 | 699 | 0.1+ | 0.0 | 2006 11 07 | A13 | 0.5+ | 1.1− |
| 2003 02 21 | 176 | 0.1− | 0.3− | 2006 03 03 | 699 | 0.1− | 0.4− | 2006 11 07 | A13 | 0.1− | 0.2+ |
| 2003 02 21 | 176 | 0.0 | 0.2− | 2006 03 03 | 699 | (3.0− | 0.4−) | 2006 11 07 | A13 | 0.2+ | 0.2− |
| 2003 02 21 | 176 | 0.0 | 0.2− | 2006 03 03 | 379 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2003 02 21 | 176 | 0.1− | 0.3− | 2006 03 03 | 379 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2003 02 22 | 699 | 0.5+ | 1.1− | 2006 03 03 | 379 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2003 02 22 | 699 | 0.3+ | 0.1− | 2006 03 03 | 379 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.7− | 0.9+ |
| 2003 02 22 | 699 | 0.2+ | 0.4+ | 2006 03 03 | 379 | 0.2− | 0.2− | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2003 02 22 | 699 | 0.4− | 0.3+ | 2006 03 03 | 379 | 0.1+ | 0.2+ | 2006 11 13 | 703 | (1.6− | 0.6−) |
| 2003 02 23 | 246 | 0.0 | 0.3− | 2006 03 05 | 704 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.6+ |
| 2003 02 23 | 246 | 0.4− | 0.6− | 2006 03 05 | 704 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2003 02 23 | 246 | 0.1+ | 0.8− | 2006 03 05 | 704 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 02 23 | 246 | 0.5− | 0.5− | 2006 03 09 | 808 | 0.8− | 1.3− | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2003 02 23 | 246 | 0.1− | 0.2− | 2006 03 09 | 808 | (1.6− | 0.3−) | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2003 02 23 | 246 | 0.3+ | 0.7− | 2006 03 09 | 704 | 0.5+ | 0.4+ | 2006 11 18 | H45 | 0.4+ | 0.2+ |
| 2003 02 24 | 246 | 0.7+ | 0.6− | 2006 03 09 | 704 | 0.1+ | 0.3+ | 2006 11 18 | H45 | 0.1− | 0.4− |
| 2003 02 24 | 246 | 0.5+ | 0.3+ | 2006 03 09 | 704 | 0.2− | 0.5+ | 2006 11 18 | H45 | 0.1+ | 0.1− |
| 2003 02 24 | 246 | 0.3+ | 0.9+ | 2006 03 09 | 704 | 0.3+ | 0.1+ | 2006 11 18 | H45 | 0.3+ | 0.2− |
| 2003 02 24 | 246 | 1.0+ | 0.1+ | 2006 03 09 | 704 | 0.1+ | 0.7+ | 2006 11 18 | H45 | 0.2− | 0.2− |
| 2003 02 24 | 246 | 1.1+ | 0.2− | 2006 03 23 | 379 | 0.1− | 0.6+ | 2006 11 26 | 151 | 0.3− | 0.4− |
| 2003 02 24 | 246 | 0.2+ | 0.4+ | 2006 03 23 | 379 | 0.0 | 0.3+ | | | | |

**(143405)∗ 2003 BE$_{44}$ = 2000 JR$_{78}$**

Discovered 2003 Jan. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41473)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.10455 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23639816 | $\omega$ | 326.67575 | | −0.08470008 | −0.97566952 | |
| $a$ | 2.5904387 | $\Omega$ | 127.35726 | | +0.96074323 | −0.13378144 | |
| $e$ | 0.1168578 | $i$ | 14.73882 | | +0.26419377 | +0.17369948 | |
| $P$ | 4.17 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | 1.5− | 0.4+ | 2004 03 17 | 704 | 0.0 | 0.0 | 2004 04 25 | 608 | 0.0 | 0.4− | |
| 1998 12 22 | 704 | 0.8− | 1.2− | 2004 03 17 | 704 | 0.6+ | 0.8+ | 2004 04 26 | 704 | 0.5+ | 0.6+ | |
| 1998 12 22 | 704 | 0.0 | 1.0− | 2004 03 17 | 704 | 0.5+ | 0.4+ | 2004 04 26 | 704 | 0.0 | 1.3− | |
| 1998 12 22 | 704 | (1.4− | 2.2−) | 2004 03 17 | 704 | 1.3+ | 0.4+ | 2004 04 26 | 704 | 0.0 | 0.2− | |
| 1998 12 22 | 704 | 1.5+ | 1.5− | 2004 03 17 | 704 | 0.6+ | 0.9+ | 2004 04 26 | 704 | 0.5− | 0.6+ | |
| 2000 05 03 | 704 | 1.1− | 1.0+ | 2004 03 17 | 704 | 0.2− | 0.7− | 2004 05 12 | 644 | 0.1+ | 0.0 | |
| 2000 05 03 | 704 | 0.4− | 0.8+ | 2004 03 18 | 704 | (0.5− | 1.9+) | 2004 05 12 | 644 | 0.1− | 0.1− | |
| 2000 05 03 | 704 | 0.2− | 0.9+ | 2004 03 18 | 704 | 0.7− | 0.1− | 2004 05 12 | 644 | 0.1− | 0.2+ | |
| 2000 05 03 | 704 | 0.8− | 0.7+ | 2004 03 18 | 704 | 0.2+ | 0.0 | 2004 05 24 | 703 | 0.6+ | 0.0 | |
| 2000 05 07 | 608 | 0.6+ | 0.4− | 2004 03 18 | 704 | 1.1− | 0.5+ | 2004 05 24 | 703 | 0.5+ | 0.3+ | |
| 2000 05 07 | 608 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.2− | 1.4+ | 2004 05 24 | 703 | 0.1+ | 0.4+ | |
| 2000 05 07 | 608 | 1.1+ | 1.2− | 2004 03 21 | 691 | 0.2− | 0.1+ | 2004 05 24 | 703 | 0.2+ | 0.0 | |
| 2002 10 30 | 704 | (0.9− | 2.3+) | 2004 03 21 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.5+ | |
| 2002 10 30 | 704 | (0.1− | 1.6+) | 2004 03 21 | 691 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.2+ | |
| 2002 10 30 | 704 | (0.8− | 1.7−) | 2004 03 22 | 699 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.2− | 1.1+ | |
| 2002 10 30 | 704 | 0.1− | 0.2− | 2004 03 22 | 699 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.2+ | 0.4+ | |
| 2002 11 06 | 644 | 0.2+ | 0.1+ | 2004 03 22 | 699 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.8− | |
| 2002 11 06 | 644 | 0.4+ | 0.0 | 2004 03 22 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.1+ | |
| 2002 11 06 | 644 | 0.3+ | 0.0 | 2004 03 23 | 113 | 0.6− | 0.3− | 2006 09 26 | 703 | 0.4− | 0.1− | |
| 2002 11 23 | 644 | 0.3− | 0.1− | 2004 03 23 | 113 | 0.3− | 0.3− | 2006 09 27 | 703 | 0.4− | 0.1+ | |
| 2002 11 23 | 644 | 0.3− | 0.1+ | 2004 03 23 | 113 | 0.1− | 0.8+ | 2006 09 27 | 703 | 0.4+ | 1.1+ | |
| 2002 11 23 | 644 | 0.1− | 0.5+ | 2004 03 23 | 113 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.6+ | |
| 2002 11 30 | 704 | 0.2+ | 0.1+ | 2004 03 23 | 113 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.1+ | |
| 2002 11 30 | 704 | 0.4+ | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.4+ | 2006 10 02 | 703 | 0.6− | 0.2− | |
| 2002 11 30 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 704 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.1+ | |
| 2002 11 30 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 704 | 0.5+ | 0.9+ | 2006 10 02 | 703 | 0.2− | 0.2− | |
| 2002 12 13 | 644 | 0.4+ | 0.7+ | 2004 03 28 | 704 | 0.1− | 0.1− | 2006 10 02 | 703 | 1.2− | 0.7+ | |
| 2002 12 13 | 644 | 0.3+ | 0.7+ | 2004 04 13 | 703 | 0.6+ | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.3+ | |
| 2002 12 13 | 644 | 0.2+ | 0.8+ | 2004 04 13 | 703 | 0.3+ | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.5+ | |
| 2003 01 02 | 704 | 0.0 | 0.2+ | 2004 04 13 | 703 | 0.8+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.3+ | |
| 2003 01 02 | 704 | 0.7− | 1.2+ | 2004 04 13 | 703 | 0.9+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 1.0+ | |
| 2003 01 02 | 704 | 0.9+ | 0.6+ | 2004 04 15 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.1− | |
| 2003 01 02 | 704 | 0.0 | 0.2+ | 2004 04 15 | 704 | 0.6+ | 1.1+ | 2006 10 21 | 703 | 0.4+ | 0.2+ | |
| 2003 01 26 | 644 | 0.4+ | 0.4+ | 2004 04 15 | 704 | 0.8+ | 0.2− | 2006 10 21 | 703 | 0.4− | 0.6+ | |
| 2003 01 26 | 644 | 0.2+ | 0.3+ | 2004 04 15 | 704 | (1.2+ | 1.9+) | 2006 10 31 | 703 | 0.8− | 0.1+ | |
| 2003 01 26 | 644 | 0.0 | 0.2+ | 2004 04 15 | 704 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 0.2− | 0.4+ | |
| 2003 01 28 | 608 | 0.0 | 0.6− | 2004 04 24 | 703 | 1.2− | 1.3− | 2006 10 31 | 703 | 0.2− | 0.3+ | |
| 2003 01 28 | 608 | 0.4+ | 0.7− | 2004 04 24 | 703 | 0.8+ | 0.2+ | 2006 10 31 | 703 | 0.3+ | 0.5+ | |
| 2003 01 28 | 608 | 0.4+ | 1.1− | 2004 04 24 | 703 | 0.3− | 0.6− | 2006 11 17 | 703 | 0.3− | 0.4− | |
| 2004 03 13 | 644 | 0.3− | 0.1− | 2004 04 24 | 703 | 0.5+ | 0.5+ | 2006 11 17 | 703 | 0.3+ | 0.7+ | |
| 2004 03 13 | 644 | 0.3+ | 0.2+ | 2004 04 25 | 699 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.4+ | 0.7− | |
| 2004 03 13 | 644 | 0.2+ | 0.4+ | 2004 04 25 | 699 | 0.4− | 0.2+ | 2006 11 23 | 703 | 0.5+ | 0.5− | |
| 2004 03 15 | 704 | 1.3+ | 0.0 | 2004 04 25 | 699 | 0.2− | 1.0− | 2006 11 23 | 703 | 0.3+ | 0.4− | |
| 2004 03 15 | 704 | 0.5+ | 0.7− | 2004 04 25 | 699 | 0.4− | 0.5+ | 2006 11 23 | 703 | 0.4− | 0.3+ | |
| 2004 03 15 | 704 | 0.9− | 0.6− | 2004 04 25 | 608 | 0.2− | 0.5− | 2006 11 23 | 703 | 1.6− | 1.4− | |
| 2004 03 17 | 704 | 1.4+ | 0.8− | 2004 04 25 | 608 | 0.4− | 0.5− | | | | | |

**(143406)∗ 2003 BV$_{44}$ = 2000 KS$_{75}$**

Discovered 2003 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 43274)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.76727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27806403 | $\omega$ | 119.33892 | | −0.88785657 | +0.45596797 | |
| $a$ | 2.3247317 | $\Omega$ | 87.84842 | | −0.44065775 | −0.80405486 | |
| $e$ | 0.1150984 | $i$ | 3.53851 | | −0.13240639 | −0.38156127 | |
| $P$ | 3.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 05 | 691 | 0.3− | 0.2− | 2001 10 15 | 645 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.1− | 0.6+ | |
| 1994 10 05 | 691 | 0.1− | 0.3+ | 2003 01 27 | 699 | 0.5+ | 1.1+ | 2003 02 04 | 704 | 0.2+ | 0.6+ | |
| 1994 10 05 | 691 | 0.6+ | 0.5− | 2003 01 27 | 699 | 0.8+ | 1.1+ | 2005 10 29 | G96 | 0.4− | 0.3− | |
| 1996 01 28 | 691 | 0.2− | 0.3− | 2003 01 27 | 699 | 1.9+ | 0.2− | 2005 10 29 | G96 | 0.0 | 0.3− | |
| 1996 01 28 | 691 | 0.3− | 0.4− | 2003 01 27 | 699 | 0.7+ | 0.1− | 2005 10 29 | G96 | 0.2− | 0.5− | |
| 1996 01 28 | 691 | 0.3− | 0.0 | 2003 01 28 | 608 | 0.6− | 0.2+ | 2005 10 29 | G96 | 0.1+ | 0.3− | |
| 1996 02 18 | 691 | 0.0 | 0.0 | 2003 01 28 | 608 | 0.6− | 0.2− | 2005 11 05 | G96 | 0.1− | 0.0 | |
| 1996 02 18 | 691 | 0.0 | 0.3− | 2003 01 28 | 608 | 0.2− | 0.4+ | 2005 11 05 | G96 | 0.0 | 0.1− | |
| 1996 02 18 | 691 | 0.1+ | 0.6− | 2003 01 30 | 699 | 0.4+ | 1.3+ | 2005 11 05 | G96 | 0.3− | 0.1− | |
| 2000 05 27 | 704 | 0.7− | 1.8+ | 2003 01 30 | 699 | 0.1+ | 0.1+ | 2005 11 05 | G96 | 0.2− | 0.4− | |
| 2000 05 27 | 704 | 0.9+ | 0.4+ | 2003 01 30 | 699 | 0.0 | 0.5+ | 2005 12 04 | G96 | 0.2− | 0.5− | |
| 2000 05 27 | 704 | 1.0+ | 0.1− | 2003 01 30 | 699 | 0.7+ | 0.5+ | 2005 12 04 | G96 | 0.1+ | 0.6− | |
| 2000 06 01 | 608 | 0.1− | 0.7− | 2003 02 01 | 704 | 0.4− | 0.5+ | 2005 12 04 | G96 | 0.3+ | 0.6− | |
| 2000 06 01 | 608 | 0.7− | 0.4− | 2003 02 01 | 704 | 1.3+ | 0.4+ | 2005 12 04 | G96 | 0.0 | 0.6− | |
| 2000 06 01 | 608 | 0.6− | 1.5− | 2003 02 01 | 704 | 0.1− | 0.4+ | 2006 01 21 | G96 | 0.2+ | 0.2− | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 1.2− | 0.2+ | 2006 01 21 | G96 | 0.3+ | 0.2− | |
| 2001 10 14 | 645 | 0.0 | 0.2+ | 2003 02 04 | 704 | 1.0− | 0.1+ | 2006 01 21 | G96 | 0.7+ | 0.8+ | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.5+ | 0.3+ | 2006 01 21 | G96 | 0.0 | 0.3+ | |

**(143407)∗ 2003 BJ$_{45}$**

Discovered 2003 Jan. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.71417 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18242104 | $\omega$ | 297.88200 | | −0.34831731 | −0.93714386 | |
| $a$ | 3.0790691 | $\Omega$ | 172.41260 | | +0.90603078 | −0.34230118 | |
| $e$ | 0.1909385 | $i$ | 9.10359 | | +0.24038151 | −0.06775902 | |
| $P$ | 5.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.3+ | 0.1− | 2003 01 28 | 608 | 0.3− | 0.6− | 2003 02 24 | 599 | 0.4− | 0.3+ | |
| 1996 11 08 | 691 | 0.2− | 0.3− | 2003 01 29 | 644 | 0.0 | 0.3+ | 2003 02 24 | 599 | 0.1− | 0.5+ | |
| 1996 11 08 | 691 | 0.0 | 0.2− | 2003 01 29 | 644 | 0.6+ | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.6+ | |
| 2001 09 18 | 691 | 0.5− | 0.3+ | 2003 01 29 | 644 | 0.6+ | 0.5+ | 2006 08 28 | 691 | 0.1− | 0.7+ | |
| 2001 09 18 | 691 | 0.2− | 0.2+ | 2003 02 08 | 608 | 0.4+ | 0.9+ | 2006 08 28 | 691 | 0.0 | 0.6+ | |
| 2001 09 18 | 691 | 0.3− | 0.2+ | 2003 02 08 | 608 | 0.0 | 0.6+ | 2006 09 14 | 850 | 0.7+ | 0.6− | |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2003 02 08 | 608 | 0.2+ | 0.5+ | 2006 09 14 | 850 | 0.5+ | 1.3− | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2003 02 19 | 644 | 0.3+ | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.2− | |
| 2001 10 16 | 644 | 0.3+ | 0.7+ | 2003 02 19 | 644 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | |
| 2001 10 16 | 644 | 0.2+ | 0.3+ | 2003 02 19 | 644 | 0.4+ | 1.1+ | 2006 09 25 | G96 | 0.1− | 0.1− | |
| 2001 10 16 | 644 | 0.4+ | 0.6+ | 2003 02 23 | 599 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.4− | 0.3− | |
| 2002 11 13 | 645 | 0.0 | 0.0 | 2003 02 23 | 599 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.3− | 0.5+ | |
| 2002 11 13 | 645 | 0.1− | 0.0 | 2003 02 23 | 599 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.2+ | |
| 2003 01 28 | 608 | 0.0 | 0.7− | 2003 02 23 | 599 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.1− | |
| 2003 01 28 | 608 | 0.3− | 0.7− | 2003 02 24 | 599 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.4+ | |

**(143408)∗ 2003 BS$_{45}$**

Discovered 2003 Jan. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.00139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22281016 | $\omega$ | 111.17041 | | −0.06981035 | +0.99716177 | |
| $a$ | 2.6947142 | $\Omega$ | 154.77648 | | −0.93803272 | −0.05600105 | |
| $e$ | 0.0534149 | $i$ | 3.79351 | | −0.33944238 | −0.05032193 | |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 21 | 691 | 0.3+ | 0.0 | 2003 03 27 | 691 | 0.3− | 0.4+ | 2005 10 31 | 704 | 0.2+ | 1.1+ | |
| 1992 11 21 | 691 | 0.1+ | 0.1− | 2004 06 18 | 704 | 0.1− | 1.4+ | 2005 11 03 | 691 | 0.1+ | 0.4+ | |
| 1992 11 21 | 691 | 0.3− | 0.4− | 2004 06 18 | 704 | 0.3− | 1.1+ | 2005 11 03 | 691 | 0.0 | 0.4+ | |
| 2003 01 29 | 291 | 0.5− | 0.1+ | 2004 06 18 | 704 | 0.2− | 1.4+ | 2005 11 03 | 691 | 0.1+ | 0.4+ | |
| 2003 01 29 | 291 | 0.4− | 0.2− | 2004 06 18 | 704 | (0.2− | 1.6+) | 2005 11 05 | 704 | 0.3+ | 1.2+ | |
| 2003 01 29 | 291 | 1.4+ | 0.2− | 2005 09 25 | 691 | 0.1− | 0.1+ | 2005 11 05 | 704 | (0.7− | 1.8+) | |
| 2003 01 31 | 291 | 0.3− | 0.2+ | 2005 09 25 | 691 | 0.1− | 0.2+ | 2005 11 05 | 704 | 0.0 | 0.9+ | |
| 2003 01 31 | 291 | 0.2− | 0.4+ | 2005 09 25 | 691 | 0.4− | 0.0 | 2005 11 09 | 703 | 0.1+ | 0.4+ | |
| 2003 01 31 | 291 | 0.3− | 0.4+ | 2005 10 01 | 699 | 0.5− | 0.2− | 2005 11 09 | 703 | 0.3+ | 1.0+ | |
| 2003 03 06 | 699 | 1.5+ | 1.2+ | 2005 10 01 | 699 | (1.6− | 0.4+) | 2005 11 09 | 703 | 0.6− | 0.4+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 699 | (1.8+ | 0.6+) | 2005 10 01 | 699 | 0.2+ | 0.6− | 2005 11 09 | 703 | 0.4− | 0.7+ |
| 2003 03 06 | 699 | 0.0 | 0.1+ | 2005 10 01 | 699 | 1.1− | 0.1+ | 2005 12 01 | G96 | 0.3− | 0.6− |
| 2003 03 06 | 699 | 0.4+ | 0.4− | 2005 10 23 | 703 | 1.0− | 0.0 | 2005 12 01 | G96 | 0.6+ | 0.3− |
| 2003 03 08 | 291 | 0.4+ | 0.3+ | 2005 10 23 | 703 | (0.5− | 1.8−) | 2005 12 01 | G96 | 0.3+ | 0.5− |
| 2003 03 08 | 291 | 0.2+ | 0.2+ | 2005 10 23 | 703 | 0.0 | 1.0+ | 2005 12 01 | G96 | 0.1− | 0.5− |
| 2003 03 08 | 291 | 0.4+ | 0.4+ | 2005 10 23 | 703 | 0.4− | 0.6− | 2005 12 02 | G96 | 0.1+ | 0.2+ |
| 2003 03 09 | 704 | 0.4− | 0.5+ | 2005 10 26 | 691 | 0.1+ | 0.1+ | 2005 12 02 | G96 | 0.0 | 0.1+ |
| 2003 03 09 | 704 | 1.0+ | 0.1− | 2005 10 26 | 691 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.0 | 0.3+ |
| 2003 03 09 | 704 | 0.0 | 0.3+ | 2005 10 26 | 691 | 0.2+ | 0.1+ | 2005 12 02 | G96 | 0.1+ | 0.3+ |
| 2003 03 09 | 704 | 0.0 | 0.7+ | 2005 10 30 | 691 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.1+ | 1.1− |
| 2003 03 26 | 644 | 0.5+ | 0.3+ | 2005 10 30 | 691 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.8− |
| 2003 03 26 | 644 | 0.3+ | 0.2+ | 2005 10 30 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.6− | 0.8− |
| 2003 03 26 | 644 | 0.4+ | 0.3+ | 2005 10 31 | 704 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.5− | 0.6− |
| 2003 03 27 | 691 | 0.2− | 0.3− | 2005 10 31 | 704 | 1.1+ | 0.5+ | | | | |
| 2003 03 27 | 691 | 0.2− | 0.0 | 2005 10 31 | 704 | (1.0− | 2.1+) | | | | |

**(143409)∗ 2003 BQ$_{46}$**

Discovered 2003 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.80564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36216946 | $\omega$ | 44.08206 | | −0.88092412 | +0.47162068 | |
| $a$ | 1.9492229 | $\Omega$ | 163.92654 | | −0.46394171 | −0.84418989 | |
| $e$ | 0.3514141 | $i$ | 8.16604 | | −0.09343869 | −0.25478887 | |
| $P$ | 2.72 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 19 | 644 | 0.2+ | 0.7− | 2003 02 27 | 118 | 1.0+ | 0.1+ | 2003 03 26 | 704 | 1.2+ | 1.0− |
| 2002 11 19 | 644 | 0.0 | 0.4− | 2003 02 27 | 118 | 0.1− | 1.2− | 2003 03 26 | 704 | (0.5+ | 2.0+) |
| 2003 01 28 | 704 | 0.3− | 0.0 | 2003 02 27 | 118 | 0.8− | 0.0 | 2003 03 26 | 704 | (2.1+ | 1.3−) |
| 2003 01 28 | 704 | 0.1+ | 0.1+ | 2003 02 27 | 118 | 0.8+ | 0.5− | 2003 03 26 | 704 | 1.4+ | 0.3− |
| 2003 01 28 | 704 | 0.3− | 0.0 | 2003 02 27 | 151 | (1.9− | 0.1+) | 2003 03 26 | 704 | (0.1+ | 1.6+) |
| 2003 01 28 | 704 | 0.1+ | 0.4+ | 2003 02 28 | 704 | 0.5− | 0.3+ | 2003 03 26 | 704 | (1.6+ | 1.1−) |
| 2003 01 28 | 704 | 0.1− | 0.1+ | 2003 02 28 | 704 | 0.1+ | 0.2+ | 2003 03 26 | 704 | (0.3− | 2.2+) |
| 2003 01 31 | 704 | 0.1− | 0.1+ | 2003 02 28 | 704 | 0.4− | 0.3+ | 2003 03 26 | 670 | 0.9+ | 0.1− |
| 2003 01 31 | 704 | 0.6− | 0.2+ | 2003 02 28 | 704 | 0.0 | 0.1− | 2003 03 26 | 670 | 0.0 | 0.6− |
| 2003 01 31 | 704 | 0.2− | 0.9+ | 2003 02 28 | 704 | 0.5− | 0.2+ | 2003 04 04 | 704 | 0.3+ | 0.8+ |
| 2003 01 31 | 704 | 0.1− | 0.0 | 2003 02 28 | 608 | 0.3+ | 1.2+ | 2003 04 04 | 704 | 0.0 | 1.3+ |
| 2003 01 31 | 704 | 0.0 | 0.3− | 2003 02 28 | 608 | 0.1+ | 1.1+ | 2003 04 04 | 704 | 0.4+ | 1.4+ |
| 2003 02 01 | 699 | 0.3+ | 0.1− | 2003 02 28 | 608 | 0.0 | 1.4+ | 2003 04 04 | 704 | (0.4+ | 2.2+) |
| 2003 02 01 | 699 | 0.0 | 0.4− | 2003 02 28 | 246 | 0.2+ | 0.2+ | 2003 04 04 | 704 | 0.4− | 1.4+ |
| 2003 02 01 | 699 | 0.1+ | 0.8− | 2003 02 28 | 246 | 0.3− | 0.2+ | 2003 05 01 | 704 | 0.7+ | 0.6+ |
| 2003 02 01 | 699 | 0.2− | 0.1+ | 2003 02 28 | 246 | 0.3− | 0.4+ | 2003 05 01 | 704 | 0.7− | 0.4+ |
| 2003 02 04 | 644 | 0.0 | 0.3+ | 2003 02 28 | 246 | 0.4− | 0.1− | 2003 05 01 | 704 | 0.6− | 1.1+ |
| 2003 02 04 | 644 | 0.0 | 0.3+ | 2003 02 28 | 246 | 0.3− | 0.9+ | 2003 05 01 | 704 | 0.4+ | 0.0 |
| 2003 02 04 | 644 | 0.2+ | 0.0 | 2003 02 28 | 246 | 0.5− | 0.2+ | 2003 05 01 | 704 | 0.0 | 0.9+ |
| 2003 02 08 | 130 | (1.5− | 2.0+) | 2003 03 02 | 670 | 0.9+ | 1.0− | 2003 05 02 | 703 | (1.0+ | 2.3+) |
| 2003 02 08 | 130 | 1.2− | 1.3+ | 2003 03 02 | 670 | 1.1+ | 0.2− | 2003 05 02 | 703 | 0.9+ | 0.1+ |
| 2003 02 08 | 130 | 0.7− | 0.5+ | 2003 03 02 | 670 | 0.4− | 0.1+ | 2003 05 02 | 703 | 0.0 | 1.4+ |
| 2003 02 19 | 151 | 0.7− | 0.2+ | 2003 03 02 | 084 | 0.1− | 1.1− | 2003 05 02 | 703 | 1.4− | 0.6− |
| 2003 02 19 | 151 | (1.8− | 0.5−) | 2003 03 03 | 084 | 0.9− | 0.4− | 2003 08 19 | 413 | 0.4− | 0.3+ |
| 2003 02 19 | 151 | 0.7− | 0.7− | 2003 03 04 | 084 | 0.2+ | 0.3− | 2004 09 07 | 568 | 0.1− | 0.1+ |
| 2003 02 19 | 151 | 0.2− | 0.2− | 2003 03 04 | 118 | 1.1− | 0.4+ | 2004 09 07 | 568 | 0.1− | 0.1+ |
| 2003 02 19 | 246 | 0.4+ | 0.1− | 2003 03 04 | 118 | 0.0 | 0.4− | 2004 09 09 | 568 | 0.2+ | 0.1+ |
| 2003 02 19 | 246 | 0.0 | 0.3− | 2003 03 04 | 118 | 0.5− | 0.6− | 2004 09 09 | 568 | 0.0 | 0.1+ |
| 2003 02 19 | 246 | 0.1+ | 0.1− | 2003 03 04 | 118 | 0.9− | 0.0 | 2004 10 07 | 696 | 0.7− | 0.2− |
| 2003 02 19 | 246 | 0.3+ | 0.1− | 2003 03 05 | 240 | 0.2− | 0.2+ | 2004 10 07 | 696 | 0.5− | 0.6− |
| 2003 02 19 | 246 | 0.5+ | 0.0 | 2003 03 05 | 240 | 0.0 | 0.5− | 2004 10 07 | 696 | 0.0 | 1.2− |
| 2003 02 19 | 246 | 0.2+ | 0.2+ | 2003 03 05 | 240 | 0.3− | 0.6− | 2005 12 08 | 291 | 0.7+ | 1.0+ |
| 2003 02 22 | 198 | 0.2+ | 0.1− | 2003 03 06 | 704 | 0.3+ | 0.2− | 2005 12 08 | 291 | 0.3+ | 0.9+ |
| 2003 02 22 | 198 | 0.0 | 0.1− | 2003 03 06 | 704 | 0.3− | 0.5+ | 2005 12 08 | 291 | 0.2− | 1.4+ |
| 2003 02 22 | 198 | 0.1− | 0.1− | 2003 03 06 | 704 | 0.7+ | 0.4− | 2006 06 04 | 941 | 0.2− | 0.0 |
| 2003 02 22 | 246 | 0.3+ | 0.4− | 2003 03 06 | 704 | 0.6+ | 0.2− | 2006 06 04 | 941 | 0.2+ | 0.3+ |
| 2003 02 22 | 246 | 0.1+ | 0.2− | 2003 03 06 | 704 | 0.7− | 0.3+ | 2006 06 04 | 941 | 0.5+ | 0.4+ |
| 2003 02 22 | 246 | 0.1+ | 0.1− | 2003 03 06 | 704 | 0.7+ | 0.1− | 2006 06 04 | 941 | 0.6+ | 0.5+ |
| 2003 02 22 | 246 | 0.2+ | 0.4− | 2003 03 06 | 704 | 0.1− | 0.1− | 2006 07 07 | H55 | 0.3+ | 0.5+ |
| 2003 02 22 | 246 | 0.2+ | 0.3− | 2003 03 06 | 704 | 0.8+ | 0.0 | 2006 07 07 | H55 | 0.5+ | 0.1+ |
| 2003 02 22 | 246 | 0.2+ | 0.3− | 2003 03 06 | 704 | 0.7− | 0.6+ | 2006 07 07 | H55 | 1.2− | 0.4+ |
| 2003 02 23 | 536 | 0.0 | 0.0 | 2003 03 13 | 413 | 0.1+ | 0.2− | 2006 07 23 | A13 | 0.2+ | 0.4+ |
| 2003 02 23 | 536 | 0.1+ | 0.2− | 2003 03 13 | 413 | 0.2+ | 0.3− | 2006 07 23 | A13 | 0.1+ | 0.3+ |
| 2003 02 23 | 536 | 0.2+ | 0.1− | 2003 03 13 | 413 | 0.2+ | 0.2− | 2006 07 23 | A13 | 0.0 | 0.0 |
| 2003 02 25 | 246 | 0.0 | 0.2− | 2003 03 19 | 941 | (1.1+ | 2.6−) | 2006 07 26 | A13 | 0.5− | 0.4+ |
| 2003 02 25 | 246 | 0.3+ | 0.3− | 2003 03 19 | 941 | 0.1− | 0.6− | 2006 07 26 | A13 | 0.3+ | 0.0 |
| 2003 02 25 | 246 | 0.2+ | 0.3− | 2003 03 19 | 941 | 0.5− | 0.6− | 2006 07 26 | A13 | 0.1− | 0.1+ |
| 2003 02 25 | 246 | 0.1+ | 0.1− | 2003 03 20 | 198 | 0.5− | 0.3+ | 2006 08 02 | H55 | 0.6− | 0.5− |
| 2003 02 25 | 246 | 0.2+ | 0.1− | 2003 03 20 | 198 | 0.4− | 0.1+ | 2006 08 02 | H55 | 0.5− | 0.6− |
| 2003 02 25 | 246 | 0.0 | 0.3− | 2003 03 20 | 198 | 0.5− | 0.1+ | 2006 08 02 | H55 | 0.3− | 0.5− |
| 2003 02 25 | 246 | 0.2+ | 0.1− | 2003 03 20 | 198 | 0.3− | 0.1+ | 2006 08 02 | H55 | 0.3− | 0.2− |
| 2003 02 25 | 113 | 0.3+ | 0.4+ | 2003 03 20 | 198 | 0.3− | 0.2− | 2006 08 15 | 644 | 0.1+ | 0.7+ |
| 2003 02 25 | 113 | 0.2+ | 0.1− | 2003 03 24 | 240 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.3+ | 0.7+ |
| 2003 02 25 | 113 | 0.3+ | 0.1− | 2003 03 24 | 240 | 0.2− | 0.3+ | 2006 08 15 | 644 | 0.2+ | 0.6+ |
| 2003 02 25 | 113 | 0.1+ | 0.2− | 2003 03 24 | 240 | 0.2− | 0.2+ | 2006 08 18 | E17 | 0.2− | 0.3+ |
| 2003 02 25 | 113 | 0.4+ | 0.1+ | 2003 03 24 | 240 | 0.2− | 0.2+ | 2006 08 18 | E17 | 0.2+ | 0.3− |
| 2003 02 27 | 151 | 0.1+ | 0.1− | 2003 03 24 | 240 | 0.1− | 0.2+ | 2006 08 18 | E17 | 0.4+ | 0.4+ |
| 2003 02 27 | 151 | 0.7+ | 0.4− | 2003 03 24 | 240 | 0.2− | 0.1+ | | | | |
| 2003 02 27 | 151 | 0.9+ | 1.0+ | 2003 03 26 | 704 | (1.5+ | 1.3−) | | | | |

**(143410)∗ 2003 BJ$_{47}$ = 2001 QZ$_{151}$**

Discovered 2003 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47279)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.01405 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23745059 | $\omega$ | 226.03177 | | −0.84792632 | −0.28999709 | |
| $a$ | 2.5827788 | $\Omega$ | 292.33137 | | +0.50639883 | −0.69068118 | |
| $e$ | 0.1320709 | $i$ | 28.66837 | | −0.15678386 | −0.66246600 | |
| $P$ | 4.15 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 704 | 0.4− | 0.0 | 2003 02 24 | 608 | 0.1− | 0.5− | 2006 11 02 | G96 | 0.0 | 0.3− |
| 2001 08 26 | 704 | 0.2− | 0.4− | 2003 02 24 | 608 | 0.1− | 0.5− | 2006 11 02 | G96 | 0.4− | 0.5− |
| 2001 08 26 | 704 | 0.1+ | 0.4− | 2003 03 11 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2001 08 26 | 704 | 0.5− | 0.5− | 2003 03 11 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.5+ | 1.2+ |
| 2001 08 27 | 704 | 0.1− | 0.1+ | 2003 03 11 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.1+ |
| 2001 08 27 | 704 | 0.3+ | 0.1+ | 2003 03 12 | 704 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2001 08 27 | 704 | 0.2− | 0.2+ | 2003 03 12 | 704 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2001 08 27 | 704 | 0.2− | 0.3− | 2003 03 12 | 704 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 08 27 | 704 | 0.2− | 0.4+ | 2003 03 12 | 704 | 0.5− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2001 08 27 | 704 | 0.4+ | 0.7− | 2003 03 12 | 704 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2001 08 27 | 704 | 0.3− | 0.6+ | 2003 03 13 | 704 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2001 08 27 | 704 | 0.1− | 0.2− | 2003 03 13 | 704 | 0.4+ | 0.7+ | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2001 08 27 | 704 | 0.8− | 0.7− | 2003 03 13 | 704 | 0.1− | 0.6− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2001 08 27 | 704 | 0.1+ | 0.1− | 2003 03 13 | 704 | 0.4+ | 0.6− | 2006 11 18 | 704 | 0.7+ | 0.0 |
| 2001 12 08 | 704 | 0.2+ | 0.3+ | 2003 03 13 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2001 12 08 | 704 | 1.0+ | 0.3+ | 2003 03 21 | 608 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.4− |
| 2001 12 08 | 704 | (0.4+ | 1.9+) | 2003 03 21 | 608 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2001 12 08 | 704 | 0.1+ | 0.1− | 2003 03 21 | 608 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 2001 12 08 | 704 | 0.9+ | 1.1+ | 2004 06 11 | 704 | 0.4− | 0.5− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2002 12 15 | 608 | (1.6+ | 0.4−) | 2004 06 11 | 704 | 0.6+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2002 12 15 | 608 | 1.4+ | 0.3+ | 2004 06 11 | 704 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2002 12 15 | 608 | (1.7+ | 0.1−) | 2004 07 12 | 428 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2003 01 13 | 644 | 0.3+ | 0.4+ | 2004 07 12 | 428 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2003 01 13 | 644 | 0.3+ | 0.4+ | 2004 07 16 | 704 | (0.0 | 1.7+) | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2003 01 13 | 644 | 0.3+ | 0.4+ | 2004 07 16 | 704 | (0.7− | 2.3+) | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2003 01 30 | 704 | (0.2− | 1.7+) | 2004 07 16 | 704 | 1.1− | 1.1+ | 2006 11 24 | G96 | 0.6− | 0.0 |
| 2003 01 30 | 704 | 1.2− | 1.2+ | 2004 07 16 | 704 | (1.0− | 2.1+) | 2006 11 24 | G96 | 0.7− | 0.1− |
| 2003 01 30 | 704 | 0.7− | 0.9+ | 2006 10 20 | 703 | 0.5+ | 1.2+ | 2006 11 28 | 704 | 0.0 | 0.5− |
| 2003 01 30 | 704 | 1.1− | 0.3+ | 2006 10 20 | 703 | 1.0− | 0.5− | 2006 11 28 | 704 | 0.2+ | 1.1+ |
| 2003 02 01 | 608 | 0.3− | 0.8− | 2006 10 20 | 703 | 0.5+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2003 02 01 | 608 | 0.2+ | 0.7− | 2006 10 20 | 703 | 0.5+ | 0.5− | 2006 11 28 | 704 | 0.8+ | 0.5+ |
| 2003 02 01 | 608 | 0.2+ | 0.6− | 2006 11 02 | G96 | 0.1− | 0.6− | 2006 11 28 | 704 | 0.6+ | 0.2− |
| 2003 02 24 | 608 | 0.0 | 0.8− | 2006 11 02 | G96 | 0.2− | 0.2− | | | | |

**(143411)∗ 2003 BS$_{48}$ = 2002 AL$_{131}$**

Discovered 2003 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 43275)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 191.60376 | | (2000.0) | | | |
| $n$ | 0.16546034 | $\omega$ | 327.85899 | | −0.98771725 | +0.15600960 |
| $a$ | 3.2860445 | $\Omega$ | 221.11918 | | −0.14041420 | −0.91064409 |
| $e$ | 0.2114522 | $i$ | 0.75775 | | −0.06854551 | −0.38260730 |
| $P$ | 5.96 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 06 | 704 | 0.9− | 0.5+ | 2003 01 30 | 699 | 0.2+ | 1.2+ | 2003 03 30 | 645 | 0.1− | 0.1− |
| 1997 03 06 | 704 | 0.5− | 0.4+ | 2003 01 30 | 699 | 0.0 | 0.7+ | 2005 08 27 | 701 | 0.3+ | 0.3+ |
| 1999 08 08 | 691 | 0.2− | 0.3+ | 2003 01 31 | 704 | 0.6+ | 0.3+ | 2005 08 27 | 701 | 1.3+ | 0.5+ |
| 1999 08 08 | 691 | 0.1− | 0.6+ | 2003 01 31 | 704 | 0.5− | 0.4+ | 2005 08 27 | 701 | 0.3+ | 0.4+ |
| 1999 08 08 | 691 | 0.3− | 0.5+ | 2003 01 31 | 704 | 0.2− | 0.4+ | 2005 09 30 | G96 | 0.0 | 0.0 |
| 2001 11 15 | 691 | 0.1− | 0.1− | 2003 01 31 | 704 | 0.0 | 0.0 | 2005 09 30 | G96 | 0.3+ | 0.9+ |
| 2001 11 15 | 691 | 0.1− | 0.1− | 2003 01 31 | 704 | 0.3− | 0.4+ | 2005 09 30 | G96 | 0.3− | 0.6+ |
| 2001 11 15 | 691 | 0.1− | 0.0 | 2003 02 22 | 699 | 1.1+ | 0.4+ | 2005 09 30 | G96 | 0.5+ | 0.4+ |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2003 02 22 | 699 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.4− | 0.2− |
| 2001 11 20 | 704 | 0.7+ | 0.0 | 2003 02 22 | 699 | 0.0 | 0.0 | 2006 09 18 | 691 | 1.1− | 0.2− |
| 2001 11 20 | 704 | (1.5− | 1.6−) | 2003 02 22 | 699 | 0.6− | 0.3− | 2006 09 18 | 691 | 1.0− | 0.2− |
| 2001 11 20 | 704 | 1.2− | 1.2− | 2003 03 05 | 704 | 0.7+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.3− | 0.8− | 2003 03 05 | 704 | 0.5+ | 0.6− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2003 03 05 | 704 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.4− | 0.4− | 2003 03 05 | 704 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2002 01 14 | 291 | 0.2+ | 0.2− | 2003 03 06 | 704 | 0.3− | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 01 14 | 291 | 0.4+ | 0.2− | 2003 03 06 | 704 | (0.0 | 1.5+) | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2002 01 14 | 291 | 0.5+ | 0.1− | 2003 03 06 | 704 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2002 01 15 | 691 | 0.2+ | 0.2+ | 2003 03 06 | 704 | 0.3+ | 0.3− | 2006 10 16 | G96 | 0.9+ | 0.8+ |
| 2002 01 15 | 691 | 0.7+ | 0.6+ | 2003 03 06 | 704 | 0.9− | 0.8+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2002 01 15 | 691 | 0.2+ | 0.5+ | 2003 03 06 | 644 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2003 01 26 | 699 | 0.2+ | 0.6+ | 2003 03 06 | 644 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2003 01 26 | 699 | 0.0 | 0.1+ | 2003 03 06 | 644 | 0.1+ | 0.5+ | 2006 11 22 | G96 | 0.9+ | 0.2+ |
| 2003 01 26 | 699 | 0.7+ | 0.9+ | 2003 03 12 | 644 | 0.5+ | 0.3+ | 2006 11 22 | G96 | 0.6+ | 0.1+ |
| 2003 01 26 | 699 | 0.5+ | 0.4− | 2003 03 12 | 644 | 0.5+ | 0.4+ | 2006 11 22 | G96 | 0.4+ | 0.3+ |
| 2003 01 30 | 699 | 1.2+ | 0.8+ | 2003 03 12 | 644 | 0.4+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.2+ |
| 2003 01 30 | 699 | 0.9+ | 1.0+ | 2003 03 30 | 645 | 0.1− | 0.1− | | | | |

**(143412)∗ 2003 BV$_{48}$**

Discovered 2003 Jan. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 242.89815 | | (2000.0) | | | |
| $n$ | 0.18673087 | $\omega$ | 186.55419 | | −0.87788019 | −0.47765064 |
| $a$ | 3.0315074 | $\Omega$ | 324.84748 | | +0.44202440 | −0.78068327 |
| $e$ | 0.1755783 | $i$ | 3.41499 | | +0.18423030 | −0.40296836 |
| $P$ | 5.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 1.8+ | 1.4− | 2003 01 28 | 645 | 0.1− | 0.1− | 2003 03 06 | 644 | 0.3+ | 0.3+ |
| 1998 03 20 | 704 | 1.1− | 1.2− | 2003 01 30 | 699 | 0.6+ | 0.4+ | 2003 03 06 | 644 | 0.5+ | 0.5+ |
| 1998 03 20 | 704 | 0.4+ | 0.9− | 2003 01 30 | 699 | 0.3+ | 0.4+ | 2003 03 06 | 644 | 0.4+ | 0.5+ |
| 1998 03 20 | 704 | 0.9− | 0.3− | 2003 01 30 | 699 | 1.1+ | 0.2− | 2003 03 09 | 291 | 0.2− | 0.3+ |
| 1998 03 29 | 704 | 0.5+ | 1.4− | 2003 01 30 | 699 | 0.6+ | 0.4+ | 2003 03 09 | 291 | 0.2− | 0.4+ |
| 1998 03 29 | 704 | (1.7+ | 2.9+) | 2003 01 31 | 704 | (0.2− | 1.5+) | 2003 03 09 | 291 | 0.1− | 0.5+ |
| 1998 03 29 | 704 | 0.5− | 0.9+ | 2003 01 31 | 704 | 0.3+ | 0.7+ | 2003 03 12 | 644 | 0.2+ | 0.5+ |
| 1998 03 29 | 704 | 0.1− | 1.2+ | 2003 01 31 | 704 | 0.2− | 0.4+ | 2003 03 12 | 644 | 0.1+ | 0.5+ |
| 1998 03 29 | 704 | 0.1+ | 0.6− | 2003 01 31 | 704 | 0.0 | 0.5+ | 2003 03 12 | 644 | 0.1+ | 0.4+ |
| 2001 10 21 | 704 | 0.7+ | 0.1− | 2003 01 31 | 704 | 1.4+ | 1.1+ | 2005 07 05 | 291 | 0.6− | 0.5+ |
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2003 02 03 | 699 | 1.3+ | 0.1+ | 2005 07 05 | 291 | 0.7− | 0.6+ |
| 2001 10 21 | 704 | 1.4− | 0.3+ | 2003 02 03 | 699 | 1.0+ | 0.8+ | 2005 07 05 | 291 | 0.4− | 0.5+ |
| 2001 10 26 | 644 | 0.9− | 1.2+ | 2003 02 03 | 704 | (2.0+ | 2.0+) | 2005 07 12 | G96 | 0.1− | 0.7+ |
| 2001 10 26 | 644 | 0.5− | 1.1+ | 2003 02 03 | 704 | 0.8+ | 0.0 | 2005 07 12 | G96 | 0.0 | 0.4+ |
| 2001 10 26 | 644 | 0.7− | 1.2+ | 2003 02 03 | 699 | (1.5+ | 0.4+) | 2005 07 12 | G96 | 0.5+ | 0.0 |
| 2001 11 19 | 704 | 0.4− | 1.0− | 2003 02 03 | 699 | 1.3+ | 0.4+ | 2005 07 12 | G96 | 0.3− | 0.5+ |
| 2001 11 19 | 704 | 0.6− | 0.3+ | 2003 02 03 | 704 | 0.9− | 1.5− | 2006 09 15 | 691 | 0.2+ | 0.3− |
| 2001 11 19 | 704 | 1.0+ | 0.3+ | 2003 02 11 | 704 | 0.9+ | 0.0 | 2006 09 15 | 691 | 0.5+ | 0.1+ |
| 2001 11 19 | 704 | 0.7− | 0.0 | 2003 02 11 | 704 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.3+ |
| 2001 11 19 | 704 | 0.1+ | 1.3− | 2003 02 11 | 704 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.0 |
| 2002 12 14 | 645 | 0.2− | 0.1− | 2003 02 11 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 2002 12 14 | 645 | 0.2− | 0.1− | 2003 02 12 | 608 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1− |
| 2003 01 26 | 699 | (1.3+ | 1.6+) | 2003 02 12 | 608 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2003 01 26 | 291 | 0.1+ | 0.5+ | 2003 02 12 | 608 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2003 01 26 | 699 | 0.0 | 0.6− | 2003 02 19 | 608 | 0.5+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2003 01 26 | 699 | 0.7+ | 0.7+ | 2003 02 19 | 608 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2003 01 26 | 291 | 0.1− | 0.4+ | 2003 02 19 | 608 | 0.2− | 0.5− | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2003 01 26 | 699 | (0.4− | 1.7+) | 2003 02 21 | 644 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2003 01 26 | 291 | 0.5+ | 0.4+ | 2003 02 21 | 644 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2003 01 26 | 608 | 1.0+ | 0.1− | 2003 02 21 | 644 | 0.1− | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2003 01 26 | 608 | 0.0 | 0.5− | 2003 02 28 | 704 | (1.0− | 1.7+) | 2006 11 17 | G96 | 0.0 | 0.6− |
| 2003 01 26 | 608 | 0.6+ | 0.3− | 2003 02 28 | 704 | 0.0 | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2003 02 28 | 704 | 0.8− | 0.5+ | | | | |

**(143413)∗ 2003 BF$_{49}$ = 2000 SL$_{283}$ = 2001 XS$_{7}$**

Discovered 2003 Jan. 26 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 43276)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.08572 | | (2000.0) | | | |
| $n$ | 0.15714421 | $\omega$ | 117.23860 | | −0.03453494 | −0.99322375 |
| $a$ | 3.4009778 | $\Omega$ | 334.01254 | | +0.80379292 | +0.03837958 |
| $e$ | 0.0864698 | $i$ | 14.66998 | | +0.59390596 | −0.10969776 |
| $P$ | 6.27 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.4− | 0.1+ | 2003 01 30 | 699 | 0.2− | 0.6+ | 2003 03 07 | 699 | 0.2+ | 0.4− |
| 2000 08 30 | 691 | 0.3− | 0.2+ | 2003 01 30 | 699 | 0.9+ | 0.5+ | 2003 03 07 | 699 | 0.2+ | 0.4− |
| 2000 08 30 | 691 | 0.3− | 0.1+ | 2003 02 01 | 704 | 0.3+ | 0.3+ | 2003 03 07 | 699 | 0.5+ | 0.4+ |
| 2000 09 23 | 704 | 0.3− | 0.3+ | 2003 02 01 | 704 | 1.5− | 0.1+ | 2003 03 07 | 699 | 0.3− | 0.2+ |
| 2000 09 23 | 704 | 0.6+ | 0.1− | 2003 02 01 | 704 | 0.4+ | 0.5− | 2003 03 08 | 291 | 0.5+ | 0.5+ |
| 2000 09 23 | 704 | 0.2− | 1.4+ | 2003 02 01 | 704 | 0.2+ | 0.4+ | 2003 03 08 | 291 | 0.1+ | 0.4+ |
| 2000 09 23 | 704 | 0.5− | 0.4+ | 2003 02 21 | 644 | 0.5+ | 0.3+ | 2003 03 08 | 291 | 0.2− | 0.3+ |
| 2000 10 03 | 704 | 0.3− | 0.4− | 2003 02 21 | 644 | 0.5+ | 0.5+ | 2003 03 12 | 644 | 0.3+ | 0.6+ |
| 2000 10 03 | 704 | 0.8− | 1.1+ | 2003 02 21 | 644 | 0.4+ | 0.6+ | 2003 03 12 | 644 | 0.5+ | 0.6+ |
| 2000 10 03 | 704 | 1.0+ | 0.1+ | 2003 02 22 | 699 | 0.6+ | 0.1− | 2003 03 12 | 644 | 0.3+ | 0.6+ |
| 2000 10 03 | 704 | 1.9+ | 0.2− | 2003 02 22 | 699 | 0.4− | 0.2+ | 2004 04 21 | E12 | 0.2+ | 0.5− |
| 2001 12 08 | 704 | 0.1+ | 0.9− | 2003 02 22 | 699 | 0.2− | 0.7+ | 2004 04 21 | E12 | 0.1− | 1.1+ |
| 2001 12 08 | 704 | 0.9− | 0.3− | 2003 02 22 | 699 | 0.7+ | 0.6+ | 2004 04 21 | E12 | 0.2− | 0.0 |
| 2001 12 08 | 704 | 0.0 | 0.5− | 2003 02 25 | 608 | 0.3+ | 0.2+ | 2004 04 21 | E12 | 0.3+ | 0.1+ |
| 2001 12 08 | 704 | 0.1− | 0.7− | 2003 02 25 | 608 | 0.9+ | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.2+ |
| 2001 12 08 | 704 | 0.6− | 0.4− | 2003 02 25 | 608 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 2001 12 10 | 704 | 0.2+ | 0.1− | 2003 02 25 | 024 | 0.2+ | 0.8+ | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 2001 12 10 | 704 | 1.0+ | 0.4+ | 2003 02 25 | 024 | 0.4+ | 0.6+ | 2006 08 28 | 691 | 0.2− | 0.3+ |
| 2001 12 10 | 704 | 0.6+ | 0.4+ | 2003 02 25 | 024 | 0.2+ | 0.8+ | 2006 08 28 | 691 | 0.3− | 0.2+ |
| 2001 12 10 | 704 | 0.4+ | 0.4+ | 2003 02 26 | 599 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.0 |
| 2001 12 23 | 704 | 0.2+ | 0.2− | 2003 02 26 | 599 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.3− |
| 2001 12 23 | 704 | 0.5+ | 0.4− | 2003 02 26 | 599 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.0 |
| 2001 12 23 | 704 | 0.6− | 0.4+ | 2003 02 26 | 599 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.9+ |
| 2001 12 23 | 704 | 0.5− | 0.4− | 2003 03 05 | 704 | 0.4− | 1.1− | 2006 08 28 | 703 | (1.8+ | 1.7−) |
| 2001 12 23 | 704 | 0.3− | 0.5− | 2003 03 05 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.6+ |
| 2003 01 26 | 699 | 0.0 | 0.9+ | 2003 03 05 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.5− | 0.2+ |
| 2003 01 26 | 699 | 0.0 | 0.7+ | 2003 03 05 | 704 | 0.7+ | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2003 01 26 | 699 | 1.0− | 0.4− | 2003 03 06 | 699 | 0.7− | 0.4+ | 2006 09 26 | G96 | 0.8− | 0.1− |
| 2003 01 26 | 699 | 0.4+ | 0.0 | 2003 03 06 | 699 | 0.6+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2003 01 26 | 608 | 0.0 | 0.7− | 2003 03 06 | 699 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2003 01 26 | 608 | 0.1− | 0.7− | 2003 03 06 | 699 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.7− | 0.2− |
| 2003 01 26 | 608 | 0.5− | 0.4− | 2003 03 06 | 644 | 1.4+ | 0.2+ | 2006 11 17 | 291 | 0.2+ | 0.6+ |
| 2003 01 30 | 699 | 0.0 | 0.2+ | 2003 03 06 | 644 | 0.6+ | 0.0 | 2006 11 17 | 291 | 0.0 | 0.6+ |
| 2003 01 30 | 699 | 0.6+ | 0.4+ | 2003 03 06 | 644 | 0.7+ | 0.1+ | 2006 11 17 | 291 | 0.1+ | 0.4+ |

**(143414)∗ 2003 BQ$_{50}$ = 2005 LF$_{52}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 85883)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.81200 | | $\omega$ | 317.16130 | +0.12404637 | −0.98206721 |
| $n$ | 0.21763367 | | $\Omega$ | 125.22467 | +0.95092244 | +0.07677838 |
| $a$ | 2.7372765 | | $i$ | 10.00862 | +0.28347666 | +0.17218909 |
| $e$ | 0.1157833 | | | | | |
| $P$ | 4.53 | | $H$ | 15.7 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.3− | 1.3+ | 2003 02 02 | 608 | 0.6+ | 0.1− | 2005 07 02 | 691 | 0.1+ | 0.4+ |
| 2001 08 26 | 644 | 0.8− | 1.4+ | 2003 02 03 | 704 | 0.0 | 0.1+ | 2005 07 04 | 644 | 0.1− | 0.2− |
| 2001 08 26 | 644 | 0.6− | 1.5+ | 2003 02 03 | 704 | 0.2− | 1.0+ | 2005 07 04 | 644 | 0.4− | 0.3+ |
| 2001 09 16 | 704 | 0.4− | 0.1− | 2003 02 03 | 704 | 0.1+ | 1.4+ | 2005 07 04 | 644 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 0.6− | 1.1+ | 2003 02 03 | 704 | 0.4− | 1.0+ | 2005 07 18 | 644 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 1.0− | 0.7+ | 2003 02 03 | 704 | 0.2− | 0.6+ | 2005 07 18 | 644 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 0.1+ | 0.8+ | 2003 02 07 | 704 | 0.5+ | 0.2+ | 2005 07 18 | 644 | 0.1+ | 0.0 |
| 2003 01 27 | 704 | 0.5− | 0.1+ | 2003 02 07 | 704 | 0.6− | 0.1− | 2006 10 22 | 703 | 1.0+ | 0.4+ |
| 2003 01 27 | 704 | (0.2− | 2.3+) | 2003 02 07 | 704 | 0.8+ | 1.2− | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2003 01 27 | 704 | 0.8− | 1.1+ | 2003 02 23 | 699 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2003 01 27 | 704 | 0.3− | 1.4+ | 2003 02 23 | 699 | 1.0− | 0.7+ | 2006 10 22 | 703 | 0.6+ | 1.2− |
| 2003 01 27 | 704 | 1.0− | 1.5+ | 2003 02 23 | 699 | 0.4+ | 1.1+ | 2006 10 30 | 703 | 0.1− | 0.3+ |
| 2003 01 27 | 608 | 0.6+ | 0.3− | 2003 02 23 | 699 | 0.0 | 0.5− | 2006 10 30 | 703 | 0.2+ | 0.2+ |
| 2003 01 27 | 608 | 0.3+ | 0.4+ | 2004 05 14 | 691 | 0.2+ | 0.7+ | 2006 10 30 | 703 | 0.6+ | 0.0 |
| 2003 01 27 | 608 | 0.5+ | 0.6+ | 2004 05 14 | 691 | 0.1− | 0.4+ | 2006 10 30 | 703 | 1.0− | 0.6− |
| 2003 01 30 | 699 | 0.2+ | 0.4+ | 2004 05 14 | 691 | 0.3− | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.4+ |
| 2003 01 30 | 699 | 0.6+ | 0.6+ | 2005 06 15 | G96 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.9− | 0.7+ |
| 2003 01 30 | 699 | 0.1+ | 0.7+ | 2005 06 15 | G96 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2003 01 30 | 699 | 0.5+ | 1.3+ | 2005 06 15 | G96 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.4+ | 0.2− |
| 2003 01 31 | 704 | 0.2+ | 0.8+ | 2005 06 15 | G96 | 0.1− | 0.1− | 2006 11 19 | 703 | (2.0− | 0.5+) |
| 2003 01 31 | 704 | 0.3+ | 0.3+ | 2005 06 27 | 691 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.8− | 0.2+ |
| 2003 01 31 | 704 | 0.7+ | 0.4+ | 2005 06 27 | 691 | 0.5+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.4− |
| 2003 01 31 | 704 | 0.2+ | 1.1+ | 2005 06 27 | 691 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.4− | 0.2− |
| 2003 02 02 | 608 | 1.0+ | 0.6− | 2005 07 02 | 691 | 0.1+ | 0.2+ | | | | |
| 2003 02 02 | 608 | 0.4+ | 0.4− | 2005 07 02 | 691 | 0.3+ | 0.4+ | | | | |

**(143415)∗ 2003 BF$_{51}$ = 1998 GT$_{12}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43277)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 229.56874 | | $\omega$ | 55.55930 | −0.94190225 | −0.33204683 |
| $n$ | 0.18630064 | | $\Omega$ | 105.00199 | +0.28840500 | −0.87679467 |
| $a$ | 3.0361728 | | $i$ | 3.00559 | +0.17217059 | −0.34781605 |
| $e$ | 0.1636345 | | | | | |
| $P$ | 5.29 | | $H$ | 15.1 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.9− | 0.9+ | 2003 01 17 | 644 | 0.3+ | 0.5− | 2003 02 21 | 699 | 0.2− | 0.5− |
| 1998 03 29 | 704 | 0.3− | 0.8+ | 2003 01 17 | 644 | 0.6+ | 0.4− | 2003 02 21 | 699 | 0.1− | 0.3− |
| 1998 03 29 | 704 | 0.4+ | 1.3+ | 2003 01 27 | 704 | 0.5+ | 0.3− | 2003 03 06 | 704 | 0.7− | 0.5− |
| 1998 03 29 | 704 | 1.8− | 0.3+ | 2003 01 27 | 704 | 0.2− | 0.1+ | 2003 03 06 | 704 | 0.0 | 0.6+ |
| 1998 04 02 | 809 | 1.6+ | 0.5− | 2003 01 27 | 704 | 0.1− | 0.3− | 2003 03 06 | 704 | 0.2+ | 1.0+ |
| 1998 04 02 | 809 | 0.5+ | 0.4− | 2003 01 27 | 704 | 0.4− | 0.5− | 2003 03 06 | 704 | 0.1− | 0.8+ |
| 1998 04 02 | 809 | 1.1+ | 0.0 | 2003 01 27 | 704 | 0.0 | 0.4− | 2003 03 06 | 704 | 0.4− | 0.2− |
| 1998 04 03 | 809 | 1.6+ | 0.4− | 2003 01 30 | 699 | 0.1+ | 0.3− | 2003 03 08 | 704 | 0.4+ | 0.6+ |
| 1998 04 03 | 809 | 0.7− | 1.2+ | 2003 01 30 | 699 | 0.6− | 0.3− | 2003 03 08 | 704 | 0.6− | 0.0 |
| 1998 04 03 | 809 | 0.3− | 0.1+ | 2003 01 30 | 699 | 0.3+ | 0.5− | 2003 03 08 | 704 | (0.3− | 1.5+) |
| 2001 10 24 | 704 | 0.3− | 0.4− | 2003 01 30 | 699 | 0.2− | 0.7− | 2003 03 08 | 704 | 0.2− | 1.3+ |
| 2001 10 24 | 704 | 1.1+ | 0.6− | 2003 02 02 | 644 | 0.3+ | 0.7+ | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.1− | 1.5+ | 2003 02 02 | 644 | 0.6+ | 0.7+ | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.4+ | 0.3+ | 2003 02 02 | 644 | 0.3+ | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 0.5+ | 1.2− | 2003 02 03 | 704 | (0.8+ | 1.7−) | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2003 02 03 | 704 | (0.0 | 2.9−) | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.9− | 0.2+ | 2003 02 03 | 704 | (1.7− | 1.3−) | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | 0.7+ | 0.5+ | 2003 02 03 | 704 | (0.3+ | 1.5−) | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.9− | 1.1− | 2003 02 03 | 704 | 0.9+ | 0.5− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2003 01 08 | 704 | 0.9+ | 0.6− | 2003 02 04 | 704 | 1.3− | 1.0+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2003 01 08 | 704 | 0.6+ | 0.1+ | 2003 02 04 | 704 | 0.2− | 0.8+ | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2003 01 08 | 704 | 0.3+ | 0.4− | 2003 02 04 | 704 | 0.3− | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2003 01 08 | 704 | 1.3+ | 0.1− | 2003 02 04 | 704 | (0.2− | 1.6+) | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2003 01 08 | 704 | 0.2+ | 0.9− | 2003 02 09 | 608 | 0.6− | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2003 01 17 | 644 | 0.2− | 0.4− | 2003 02 09 | 608 | 0.6− | 0.6+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2003 01 17 | 644 | 0.4− | 0.4− | 2003 02 09 | 608 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2003 01 17 | 644 | 0.3− | 0.5− | 2003 02 21 | 699 | 0.4− | 0.5− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2003 01 17 | 644 | 0.1+ | 0.3− | 2003 02 21 | 699 | 0.2− | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.2− |

**(143416)∗ 2003 BG$_{51}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.54698 | | $\omega$ | 31.64353 | −0.65269247 | −0.75618124 |
| $n$ | 0.24047722 | | $\Omega$ | 99.14527 | +0.68485747 | −0.61525077 |
| $a$ | 2.5610620 | | $i$ | 2.71216 | +0.32397961 | −0.22283720 |
| $e$ | 0.0556237 | | | | | |
| $P$ | 4.10 | | $H$ | 16.6 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2003 01 30 | 699 | 0.2− | 0.2− | 2005 09 30 | G96 | 0.2+ | 0.1− |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2003 01 30 | 699 | 1.1+ | 0.2+ | 2005 09 30 | 699 | 0.8− | 1.3+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2003 01 30 | 699 | 0.9− | 0.2+ | 2005 09 30 | 699 | 0.3− | 1.3+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2003 02 02 | 644 | 0.4− | 1.0+ | 2005 09 30 | 699 | 0.3− | 0.7+ |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2003 02 02 | 644 | 0.3− | 1.0+ | 2005 09 30 | 699 | 1.3− | 0.8+ |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2003 02 02 | 644 | 0.1− | 1.0+ | 2005 10 01 | 704 | (0.3+ | 1.6+) |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.2− | 0.2+ | 2005 10 01 | 704 | 1.0− | 1.3+ |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2003 02 04 | 704 | 0.3+ | 0.0 | 2005 10 01 | 704 | 0.4− | 0.0 |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.2+ | 1.1+ | 2006 09 25 | G96 | 0.9+ | 0.3− |
| 2001 12 10 | 645 | 0.0 | 0.1− | 2003 02 04 | 704 | 0.5+ | 1.1+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2003 01 27 | 704 | 0.0 | 0.6+ | 2003 02 04 | 704 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.5+ | 0.3− |
| 2003 01 27 | 699 | (0.1+ | 2.1+) | 2005 08 28 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2003 01 27 | 704 | (0.1− | 1.6−) | 2005 08 28 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2003 01 27 | 704 | 0.9− | 0.8− | 2005 08 28 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2003 01 27 | 699 | 0.2+ | 0.6− | 2005 09 25 | 644 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2003 01 27 | 704 | 1.0+ | 0.1+ | 2005 09 25 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2003 01 27 | 699 | 0.7+ | 1.1+ | 2005 09 25 | 644 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2003 01 27 | 704 | 0.4+ | 0.3+ | 2005 09 30 | G96 | 0.5− | 0.1− | 2006 11 27 | G96 | 0.6− | 0.2− |
| 2003 01 27 | 699 | (0.5− | 2.7+) | 2005 09 30 | G96 | 0.2− | 0.7− | 2006 11 27 | G96 | 0.6− | 0.5− |
| 2003 01 30 | 699 | 0.1+ | 0.2− | 2005 09 30 | G96 | 0.2− | 0.5− | 2006 11 27 | G96 | 0.0 | 0.3− |

**(143417)∗ 2003 BN$_{52}$ = 2001 TN$_{216}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43278)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 277.98897 | | $\omega$ | 120.46631 | −0.22991327 | −0.97078400 |
| $n$ | 0.18276838 | | $\Omega$ | 342.42427 | +0.79660413 | −0.14717599 |
| $a$ | 3.0751667 | | $i$ | 13.14852 | +0.55907222 | −0.18951956 |
| $e$ | 0.1124122 | | | | | |
| $P$ | 5.39 | | $H$ | 15.0 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 461 | 0.0 | 0.2+ | 2003 02 04 | 704 | 0.3− | 0.0 | 2006 09 21 | 683 | (2.4+ | 0.5+) |
| 1998 02 28 | 461 | 0.2+ | 0.0 | 2003 02 04 | 704 | 0.7+ | 0.9+ | 2006 09 21 | 683 | (0.9− | 2.3+) |
| 2001 10 13 | 644 | 0.2− | 0.3− | 2003 02 21 | 644 | 0.2− | 0.3− | 2006 09 25 | 704 | 0.1+ | 0.8− |
| 2001 10 13 | 644 | 0.2+ | 0.3+ | 2003 02 21 | 644 | 0.4− | 0.3− | 2006 09 25 | 291 | 0.2− | 0.2+ |
| 2001 10 13 | 644 | 0.1+ | 0.2− | 2003 02 21 | 644 | 0.0 | 0.0 | 2006 09 25 | 291 | 0.2− | 0.2+ |
| 2001 10 15 | 704 | 0.4+ | 0.4+ | 2003 02 27 | 608 | 0.5+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 0.9− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.4− | 1.1+ | 2003 02 27 | 608 | 0.8+ | 0.4− | 2006 09 25 | 291 | 0.3− | 0.2+ |
| 2001 10 15 | 704 | 0.9− | 0.5+ | 2003 02 27 | 608 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.1− | 0.6− |
| 2001 10 15 | 704 | 1.0− | 0.9+ | 2003 02 28 | 704 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.6− | 1.1− |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2003 02 28 | 704 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.7− |
| 2001 11 11 | 704 | 0.3+ | 0.6− | 2003 02 28 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 1.0+ | 0.9− |
| 2001 11 11 | 704 | 0.0 | 0.7− | 2003 03 06 | 704 | 0.3+ | 0.5− | 2006 09 27 | 703 | 0.1− | 0.0 |
| 2001 11 11 | 704 | 0.0 | 0.3− | 2003 03 06 | 704 | 0.0 | 0.5− | 2006 09 27 | 703 | 0.3+ | 0.1− |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2003 03 06 | 704 | 0.5− | 0.1+ | 2006 09 30 | 683 | 0.6− | 1.4+ |
| 2001 12 09 | 704 | (1.6+ | 1.6+) | 2003 03 06 | 704 | 0.2+ | 0.0 | 2006 09 30 | 683 | (1.4− | 2.6+) |
| 2001 12 09 | 704 | 1.0+ | 0.0 | 2003 03 06 | 704 | 0.2− | 0.5+ | 2006 09 30 | 683 | 0.9+ | 1.0+ |
| 2001 12 09 | 704 | 1.1+ | 1.2− | 2003 03 07 | 699 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2003 01 27 | 704 | 0.4− | 0.1+ | 2003 03 07 | 699 | 0.0 | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2003 01 27 | 704 | 0.8− | 0.3+ | 2003 03 07 | 699 | (1.6+ | 0.3−) | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2003 01 27 | 704 | 0.6− | 0.1+ | 2003 03 07 | 699 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2003 01 27 | 704 | 0.6− | 0.7+ | 2006 09 16 | 703 | 0.7+ | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 2003 01 27 | 704 | 0.8− | 0.3− | 2006 09 16 | 703 | 0.3− | 0.7− | 2006 10 09 | 644 | 0.3+ | 0.4+ |
| 2003 01 30 | 699 | 1.0+ | 0.0 | 2006 09 16 | 703 | 0.5− | 0.3+ | 2006 10 09 | 644 | 0.5+ | 0.3+ |
| 2003 01 30 | 699 | 0.8+ | 0.2− | 2006 09 16 | 703 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2003 01 30 | 699 | (0.6+ | 1.6−) | 2006 09 19 | 699 | 0.3− | 1.2+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2003 01 30 | 699 | (1.6+ | 0.4+) | 2006 09 19 | 699 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2003 02 04 | 704 | 0.5− | 0.4− | 2006 09 19 | 699 | 1.0− | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2003 02 04 | 704 | 0.2+ | 0.4− | 2006 09 19 | 699 | (0.1− | 1.8+) | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2003 02 04 | 704 | 0.6+ | 0.1− | 2006 09 21 | 683 | 0.6+ | 0.9− | 2006 10 22 | 644 | 0.1− | 0.3+ |

**(143418)∗ 2003 BA$_{53}$**

Discovered 2003 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.05530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21437071 | $\omega$ | 122.53192 | | −0.61712300 | +0.77331548 | |
| $a$ | 2.7649827 | $\Omega$ | 108.66935 | | −0.76357909 | −0.54392193 | |
| $e$ | 0.1640726 | $i$ | 8.82866 | | −0.19001626 | −0.32577923 | |
| $P$ | 4.60 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.0 | 2003 01 30 | 699 | 0.6− | 0.1+ | 2005 08 31 | 644 | 0.1− | 0.6+ |
| 1999 03 20 | 645 | 0.0 | 0.1− | 2003 01 30 | 699 | 0.3− | 0.2+ | 2005 09 24 | 703 | 1.2− | 0.1− |
| 1999 03 20 | 699 | 0.1+ | 0.3− | 2003 01 30 | 699 | 0.2+ | 0.1+ | 2005 09 24 | 703 | 1.0− | 0.5− |
| 1999 03 20 | 699 | 0.6+ | 0.4− | 2003 02 01 | 704 | 0.3− | 0.4+ | 2005 09 24 | 703 | 0.4+ | 1.1− |
| 1999 03 20 | 699 | 0.2+ | 0.9+ | 2003 02 01 | 704 | 0.6− | 0.1+ | 2005 09 24 | 703 | (1.6+ | 0.9−) |
| 1999 05 17 | 704 | 2.0+ | 0.8+ | 2003 02 01 | 704 | 1.1+ | 0.5+ | 2005 10 03 | 703 | 1.0+ | 1.3+ |
| 1999 05 17 | 704 | (0.6− | 2.1−) | 2003 02 01 | 704 | 0.2− | 0.9+ | 2005 10 03 | 703 | 0.3− | 1.1+ |
| 1999 05 17 | 704 | 1.2− | 0.9+ | 2003 02 01 | 704 | 0.1+ | 0.7+ | 2005 10 03 | 703 | 0.1+ | 0.8+ |
| 1999 05 17 | 704 | (0.6+ | 2.4+) | 2003 02 01 | 608 | 0.0 | 0.6− | 2005 10 03 | 703 | 0.5− | 0.1+ |
| 2000 08 26 | 704 | 0.5+ | 0.6+ | 2003 02 01 | 608 | 0.5+ | 0.9− | 2005 10 08 | A50 | 0.3+ | 0.4− |
| 2000 08 26 | 704 | 0.2+ | 0.6+ | 2003 02 01 | 608 | 0.4+ | 0.7− | 2005 10 08 | A50 | (1.6+ | 2.2+) |
| 2000 08 26 | 704 | 0.4− | 0.1+ | 2003 02 04 | 704 | 0.7+ | 0.2+ | 2005 10 10 | 703 | 1.3− | 0.4+ |
| 2000 08 26 | 704 | 0.6+ | 0.5+ | 2003 02 04 | 704 | (0.5+ | 2.1+) | 2005 10 10 | 703 | 0.1− | 0.5− |
| 2001 12 11 | 704 | 1.1− | 0.6− | 2003 02 04 | 704 | 0.9+ | 0.3− | 2005 10 10 | 703 | 0.3+ | 0.3− |
| 2001 12 11 | 704 | 0.5+ | 0.5+ | 2003 02 04 | 704 | 0.2+ | 0.3+ | 2005 10 10 | 703 | 0.5+ | 1.2− |
| 2001 12 11 | 704 | (0.0 | 1.6+) | 2003 02 07 | 704 | 0.3+ | 0.4− | 2005 10 22 | 644 | 0.4− | 0.1+ |
| 2001 12 11 | 704 | 0.2− | 1.0+ | 2003 02 07 | 704 | 0.2+ | 1.0+ | 2005 10 22 | 644 | 0.5− | 0.3+ |
| 2003 01 17 | 644 | 0.2+ | 0.7+ | 2003 02 07 | 704 | 0.4− | 0.4− | 2005 10 22 | 644 | 0.0 | 0.2+ |
| 2003 01 17 | 644 | 0.1+ | 1.0+ | 2003 02 07 | 704 | 0.4− | 1.0+ | 2006 11 27 | 691 | 0.3+ | 0.6− |
| 2003 01 17 | 644 | 0.4− | 0.7+ | 2003 02 23 | 699 | 1.4− | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2003 01 27 | 699 | 0.1− | 0.1+ | 2003 02 23 | 699 | 1.0+ | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2003 01 27 | 699 | 0.4+ | 0.3− | 2003 02 23 | 699 | 1.3− | 0.1− | 2006 12 01 | 691 | (1.7− | 1.5−) |
| 2003 01 27 | 699 | (0.5− | 1.7−) | 2003 02 23 | 699 | 0.4− | 1.1+ | 2006 12 01 | 691 | 0.5+ | 0.1− |
| 2003 01 27 | 699 | 0.5− | 0.4+ | 2005 08 31 | 644 | 0.2− | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2003 01 30 | 699 | 0.6− | 0.2+ | 2005 08 31 | 644 | 0.4− | 0.2+ | | | | |

**(143419)∗ 2003 BQ$_{53}$ = 2004 KF$_3$**

Discovered 2003 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 65437)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.22643 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21280915 | $\omega$ | 211.88092 | | −0.20049119 | −0.97822193 | |
| $a$ | 2.7784922 | $\Omega$ | 249.73230 | | +0.91045411 | −0.16579525 | |
| $e$ | 0.0289842 | $i$ | 3.28248 | | +0.36176871 | −0.12487514 | |
| $P$ | 4.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.7− | 0.1+ | 2004 05 19 | 704 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.1− | 1.1+ | 2004 05 19 | 704 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.3− |
| 2001 11 17 | 704 | 0.6+ | 0.7+ | 2004 05 19 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 691 | 0.4+ | 0.4− |
| 2001 11 20 | 691 | 0.1− | 0.3+ | 2004 06 11 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.7− | 1.0− |
| 2001 11 20 | 691 | 0.2− | 0.5+ | 2004 06 11 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.1− | 1.0− |
| 2001 11 20 | 691 | 0.1+ | 0.5+ | 2004 06 11 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.1+ | 1.2− |
| 2003 01 27 | 699 | 0.6+ | 0.1+ | 2005 07 31 | 644 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.7− | 1.3− |
| 2003 01 27 | 699 | 1.0+ | 0.5+ | 2005 07 31 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.1+ | 1.1+ |
| 2003 01 27 | 699 | 0.5+ | 0.7+ | 2005 07 31 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2003 01 27 | 699 | (0.1− | 1.6+) | 2005 08 06 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2003 01 27 | 644 | 0.2+ | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2003 01 27 | 644 | 0.1+ | 0.5+ | 2005 08 06 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2003 01 27 | 644 | 0.0 | 0.4+ | 2005 08 24 | 644 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2005 08 24 | 644 | 0.5− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 08 24 | 644 | 0.6− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2003 01 30 | 699 | 0.2+ | 0.3+ | 2005 10 30 | G96 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.8+ | 1.4+ |
| 2003 01 30 | 699 | 0.4− | 0.7+ | 2005 10 30 | G96 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.7− | 0.1+ |
| 2003 01 30 | 699 | 0.0 | 0.8+ | 2005 10 30 | G96 | 0.4− | 0.3− | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2003 01 30 | 699 | 0.0 | 0.4+ | 2005 10 30 | G96 | 0.6− | 0.4− | 2006 12 01 | 704 | 0.1+ | 0.1+ |
| 2004 05 16 | 704 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2004 05 16 | 704 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.4+ |
| 2004 05 16 | 704 | (1.6+ | 0.2−) | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 12 01 | 704 | 0.4− | 0.6+ |
| 2004 05 16 | 704 | 1.3+ | 0.8+ | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 12 01 | 691 | 0.1+ | 0.0 |

**(143420)∗ 2003 BQ$_{55}$**

Discovered 2003 Jan. 28 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.46745 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18911386 | $\omega$ | 274.65358 | | +0.37107233 | −0.92359311 | |
| $a$ | 3.0059873 | $\Omega$ | 152.92897 | | +0.91362142 | +0.34455418 | |
| $e$ | 0.0938896 | $i$ | 12.22133 | | +0.16613616 | +0.16810169 | |
| $P$ | 5.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 1.0+ | 1.0+ | 2003 02 22 | 699 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.8+ |
| 2001 10 16 | 704 | 0.0 | 1.3+ | 2003 02 22 | 699 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.9+ | 0.2− |
| 2001 10 16 | 704 | 0.7+ | 0.3+ | 2003 02 22 | 699 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.5+ | 0.2+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2003 02 22 | 644 | 0.3+ | 1.1+ | 2006 10 12 | 644 | 0.5+ | 0.2+ |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2003 02 22 | 644 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2003 02 22 | 699 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.7− |
| 2003 01 28 | 291 | 0.5− | 0.3+ | 2003 03 06 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 703 | (1.7+ | 0.7+) |
| 2003 01 28 | 291 | 0.3− | 0.3+ | 2003 03 06 | 644 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.1− | 1.0+ |
| 2003 01 28 | 291 | 0.4− | 0.1+ | 2003 03 06 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2003 01 30 | 699 | 0.2+ | 0.5− | 2003 03 12 | 644 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 1.2− |
| 2003 01 30 | 699 | 0.9+ | 0.1− | 2003 03 12 | 644 | 0.7+ | 0.2+ | 2006 10 22 | 703 | 0.9− | 1.3− |
| 2003 01 30 | 699 | 0.3− | 1.1+ | 2003 03 12 | 644 | 0.6+ | 0.6+ | 2006 10 22 | 703 | 0.4− | 0.9− |
| 2003 01 30 | 699 | 0.4− | 0.5+ | 2005 06 11 | 691 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.3+ | 1.1− |
| 2003 01 31 | 704 | 1.1+ | 1.2+ | 2005 06 11 | 691 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2003 01 31 | 704 | 0.4+ | 0.3+ | 2005 06 11 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2003 01 31 | 704 | (2.1+ | 0.4+) | 2006 09 18 | 703 | 0.4− | 1.0+ | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2003 02 22 | 644 | 0.3+ | 0.9+ | 2006 09 18 | 703 | 0.9+ | 1.3+ | 2006 10 28 | 703 | 0.0 | 0.7+ |
| 2003 02 22 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.4+ |
| 2003 02 22 | 644 | 0.2+ | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.7+ | 2006 10 28 | 703 | 1.2− | 0.8+ |
| 2003 02 22 | 644 | 0.5+ | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.9+ | 2006 10 28 | 703 | 0.7− | 0.8+ |

**(143421)∗ 2003 BG$_{56}$**

Discovered 2003 Jan. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.07049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21986627 | $\omega$ | 347.53680 | | −0.04965852 | −0.99354120 | |
| $a$ | 2.7187147 | $\Omega$ | 105.24262 | | +0.92518893 | −0.08424228 | |
| $e$ | 0.1303145 | $i$ | 6.07033 | | +0.37624391 | +0.07602048 | |
| $P$ | 4.48 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 27 | 691 | 0.0 | 0.2− | 2003 01 30 | 699 | 0.8+ | 0.0 | 2005 07 18 | 644 | 0.6− | 0.4+ | |
| 1998 01 27 | 691 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.5+ | 0.3+ | 2005 07 18 | 644 | 0.5− | 0.4+ | |
| 1998 01 27 | 691 | 0.1+ | 0.2− | 2003 02 01 | 704 | 1.0+ | 0.0 | 2005 07 18 | 644 | 0.2+ | 0.5− | |
| 2001 08 26 | 644 | 0.4− | 1.1+ | 2003 02 01 | 704 | (0.4+ | 2.8+) | 2006 10 20 | 644 | 0.1− | 0.4+ | |
| 2001 08 26 | 644 | 0.7− | 1.0+ | 2003 02 01 | 704 | 0.0 | 0.7− | 2006 10 20 | 644 | 0.3+ | 0.3+ | |
| 2001 08 26 | 644 | 0.1− | 0.9+ | 2003 02 01 | 608 | (0.0 | 1.5−) | 2006 10 20 | 644 | 0.3+ | 0.6+ | |
| 2001 09 12 | 704 | (0.3+ | 1.7+) | 2003 02 01 | 608 | 0.0 | 1.2− | 2006 10 23 | G96 | 0.4− | 0.2− | |
| 2001 09 12 | 704 | 1.1+ | 0.4+ | 2003 02 01 | 608 | 0.2+ | 0.8− | 2006 10 23 | G96 | 0.1− | 0.2− | |
| 2001 09 12 | 704 | (2.8+ | 4.1+) | 2003 02 02 | 644 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.2− | |
| 2001 10 17 | 644 | 0.7− | 0.7+ | 2003 02 02 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.1− | |
| 2001 10 17 | 644 | 0.1− | 0.6+ | 2003 02 02 | 644 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2+ | |
| 2001 10 17 | 644 | 0.7− | 0.7+ | 2003 02 04 | 704 | 0.4+ | 1.3− | 2006 10 31 | G96 | 0.1+ | 0.3+ | |
| 2002 12 31 | 704 | 0.3− | 0.6− | 2003 02 04 | 704 | 0.8− | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.4+ | |
| 2002 12 31 | 704 | 0.7+ | 0.7+ | 2003 02 04 | 704 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.3+ | |
| 2002 12 31 | 704 | 0.6+ | 1.1− | 2003 02 04 | 704 | 0.3+ | 0.9+ | 2006 11 02 | 703 | 0.5− | 1.1− | |
| 2002 12 31 | 704 | 0.4+ | 0.2+ | 2003 02 04 | 704 | 0.4+ | 0.5− | 2006 11 02 | 703 | 1.3− | 0.6− | |
| 2003 01 05 | 704 | 1.3− | 1.4+ | 2003 02 07 | 704 | (0.0 | 3.2+) | 2006 11 02 | 703 | 1.2− | 0.3− | |
| 2003 01 05 | 704 | 0.8− | 0.2+ | 2003 02 07 | 704 | (1.4− | 1.5+) | 2006 11 02 | 703 | 1.2− | 0.3− | |
| 2003 01 05 | 704 | 0.2− | 0.5+ | 2003 02 07 | 704 | 0.6− | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.0 | |
| 2003 01 05 | 704 | 0.2− | 0.9+ | 2003 02 07 | 704 | 0.5− | 1.0+ | 2006 11 18 | G96 | 0.1− | 0.1− | |
| 2003 01 08 | 608 | 0.3− | 1.0+ | 2003 02 07 | 704 | 1.3− | 0.6− | 2006 11 18 | G96 | 0.0 | 0.1− | |
| 2003 01 08 | 608 | 0.4− | 0.9+ | 2003 03 06 | 704 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.2− | |
| 2003 01 08 | 608 | 0.6− | 0.8+ | 2003 03 06 | 704 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.5+ | |
| 2003 01 17 | 644 | 0.1− | 0.3+ | 2003 03 06 | 704 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.0 | |
| 2003 01 17 | 644 | 0.1+ | 0.2+ | 2003 03 06 | 704 | 0.7+ | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.2+ | |
| 2003 01 17 | 644 | 0.2+ | 0.4+ | 2003 03 06 | 704 | 0.4− | 1.1+ | 2006 11 20 | 704 | 1.3+ | 0.7+ | |
| 2003 01 28 | 608 | 0.3− | 0.2− | 2003 03 07 | 644 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.5+ | |
| 2003 01 28 | 608 | 0.0 | 0.0 | 2003 03 07 | 644 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.0 | 0.2+ | |
| 2003 01 28 | 608 | 0.1+ | 0.2+ | 2003 03 07 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.2+ | |
| 2003 01 30 | 699 | 0.5+ | 0.1− | 2004 05 09 | 691 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.5+ | |
| 2003 01 30 | 699 | 0.6+ | 0.6− | 2004 05 09 | 691 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.4− | 0.3+ | |
| 2003 01 30 | 699 | 0.4+ | 0.2− | 2004 05 09 | 691 | 0.0 | 0.5+ | | | | | |

**(143422)∗ 2003 BJ$_{56}$ = 2001 TD$_{216}$**

Discovered 2003 Jan. 28 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 69435)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.54032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17409928 | $\omega$ | 88.97331 | | +0.37356907 | −0.92611949 | |
| $a$ | 3.1764210 | $\Omega$ | 338.85404 | | +0.78274884 | +0.34505790 | |
| $e$ | 0.0913520 | $i$ | 8.35674 | | +0.49774532 | +0.15243927 | |
| $P$ | 5.66 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.2− | 0.2+ | 2003 01 30 | 699 | (0.2+ | 2.3+) | 2006 08 28 | 703 | (0.8+ | 1.6−) | |
| 2001 09 25 | 704 | 0.0 | 0.8+ | 2003 01 30 | 699 | (0.2+ | 2.1+) | 2006 08 28 | 703 | 0.3− | 0.9− | |
| 2001 09 25 | 704 | 0.3− | 1.1− | 2003 01 30 | 699 | 0.4+ | 0.9+ | 2006 08 28 | 703 | 0.9− | 0.6+ | |
| 2001 09 25 | 704 | 0.6+ | 0.2+ | 2003 02 01 | 704 | (0.3+ | 1.6+) | 2006 08 28 | 703 | 0.8− | 0.6− | |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2003 02 01 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 703 | (2.2+ | 2.4−) | |
| 2001 10 13 | 644 | 0.2+ | 0.1− | 2003 02 01 | 704 | 0.2+ | 0.9+ | 2006 09 14 | 703 | 1.0+ | 0.2+ | |
| 2001 10 13 | 644 | 0.3+ | 0.2+ | 2003 02 01 | 704 | (1.7+ | 0.7+) | 2006 09 14 | 703 | 1.3+ | 0.6+ | |
| 2001 10 13 | 644 | 0.2+ | 0.4+ | 2003 02 01 | 608 | 0.4− | 0.7− | 2006 09 14 | 703 | 1.1+ | 0.2+ | |
| 2001 10 19 | 704 | 1.1− | 1.0+ | 2003 02 01 | 608 | 0.6− | 0.6− | 2006 09 20 | 699 | 1.0− | 0.6+ | |
| 2001 10 19 | 704 | 0.2− | 0.6− | 2003 02 01 | 608 | 0.2− | 0.6− | 2006 09 20 | 699 | 0.4− | 1.0+ | |
| 2001 10 19 | 704 | 0.3+ | 0.7− | 2003 02 04 | 704 | 0.8+ | 1.0+ | 2006 09 20 | 699 | 0.4+ | 0.3− | |
| 2001 10 19 | 704 | 0.6− | 0.3+ | 2003 02 04 | 704 | 0.7+ | 0.6+ | 2006 09 20 | 699 | 0.3+ | 0.1+ | |
| 2001 11 11 | 699 | 0.8− | 0.5− | 2003 02 04 | 704 | 0.5+ | 0.6+ | 2006 09 27 | G96 | 0.3+ | 0.3− | |
| 2001 11 11 | 699 | 0.2+ | 0.6+ | 2003 02 04 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.5− | |
| 2001 11 11 | 699 | 0.1− | 0.3− | 2004 05 13 | 644 | 0.8+ | 0.5+ | 2006 09 27 | G96 | 0.4− | 0.2+ | |
| 2001 11 11 | 699 | 0.6+ | 0.2+ | 2004 05 13 | 644 | 0.0 | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.2+ | |
| 2001 11 12 | 704 | 0.1+ | 0.4− | 2004 05 13 | 644 | 0.2+ | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.6− | |
| 2001 11 12 | 704 | 0.4+ | 0.0 | 2006 08 19 | 691 | 0.5− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.0 | |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2006 08 19 | 691 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.5− | |
| 2001 12 07 | 644 | 0.2+ | 0.2− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− | |
| 2001 12 07 | 644 | 0.2− | 0.3− | 2006 08 25 | 104 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.5− | |
| 2001 12 07 | 644 | 0.2− | 0.1+ | 2006 08 25 | 104 | 0.8+ | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.5− | |
| 2003 01 28 | 608 | (1.8+ | 2.0+) | 2006 08 26 | 104 | 0.2+ | 1.2+ | 2006 11 16 | G96 | 0.5− | 0.1− | |
| 2003 01 28 | 608 | (1.4+ | 2.0+) | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− | |
| 2003 01 28 | 608 | (1.8+ | 1.2+) | 2006 08 27 | 691 | 0.1− | 0.1+ | | | | | |
| 2003 01 30 | 699 | 0.6− | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.1+ | | | | | |

**(143423)∗ 2003 BL$_{56}$**

Discovered 2003 Jan. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.74773 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20482805 | $\omega$ | 318.27991 | | +0.12245304 | −0.96495942 | |
| $a$ | 2.8502072 | $\Omega$ | 123.42009 | | +0.96821557 | +0.06476417 | |
| $e$ | 0.1136040 | $i$ | 16.14377 | | +0.21809140 | +0.25428120 | |
| $P$ | 4.81 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 608 | 0.6+ | 0.5− | 2003 02 02 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.7− | |
| 2001 10 19 | 608 | 0.2− | 0.6− | 2003 02 02 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 1.3+ | 0.6+ | |
| 2001 10 19 | 608 | 0.0 | 0.4− | 2003 02 02 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.1+ | |
| 2003 01 08 | 704 | (0.9− | 1.7+) | 2003 02 04 | 704 | 1.2+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.1− | |
| 2003 01 08 | 704 | 0.1− | 0.9+ | 2003 02 04 | 704 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.1− | 0.2+ | |
| 2003 01 08 | 704 | (0.8+ | 2.1−) | 2003 02 04 | 704 | 0.1+ | 0.7+ | 2006 10 02 | 703 | 0.8+ | 0.5− | |
| 2003 01 08 | 704 | 0.1+ | 1.1− | 2003 02 04 | 704 | 0.5+ | 1.0+ | 2006 10 02 | 703 | 0.2− | 0.1+ | |
| 2003 01 08 | 704 | (2.0+ | 1.4−) | 2003 02 04 | 704 | 0.0 | 0.3− | 2006 10 02 | 703 | 0.3− | 0.0 | |
| 2003 01 17 | 644 | 0.2− | 0.2+ | 2003 02 07 | 704 | (0.4+ | 2.4−) | 2006 10 10 | 644 | 0.4+ | 0.4+ | |
| 2003 01 17 | 644 | 0.2− | 0.3− | 2003 02 07 | 704 | 0.7− | 1.1− | 2006 10 10 | 644 | 0.3− | 0.2+ | |
| 2003 01 17 | 644 | 0.0 | 0.3+ | 2003 02 07 | 704 | 0.4− | 1.3− | 2006 10 10 | 644 | 0.1− | 0.6+ | |
| 2003 01 28 | 608 | 0.7− | 0.3+ | 2003 03 07 | 644 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.6+ | |
| 2003 01 28 | 608 | 0.2− | 0.1+ | 2003 03 07 | 644 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.7+ | |
| 2003 01 28 | 608 | 0.1+ | 0.1+ | 2003 03 07 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 1.1+ | 0.5+ | |
| 2003 01 30 | 699 | 0.0 | 0.1+ | 2005 06 18 | G96 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.3+ | |
| 2003 01 30 | 699 | 0.1+ | 0.6+ | 2005 06 18 | G96 | 0.2+ | 0.7+ | 2006 10 31 | 703 | (1.6− | 1.0+) | |
| 2003 01 30 | 699 | 0.0 | 0.3+ | 2005 06 18 | G96 | 0.1− | 0.7+ | 2006 10 31 | 703 | 0.2+ | 0.1− | |
| 2003 01 30 | 699 | 0.1− | 0.6+ | 2005 06 18 | G96 | 0.0 | 0.8+ | 2006 10 31 | 703 | 1.1− | 0.1− | |
| 2003 02 01 | 704 | (1.7+ | 0.4−) | 2005 07 09 | 691 | 0.3− | 0.4+ | 2006 10 31 | 703 | 1.0− | 1.0− | |
| 2003 02 01 | 704 | (1.7+ | 1.4−) | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.1+ | 0.1+ | |
| 2003 02 01 | 704 | 0.4+ | 0.2+ | 2005 07 09 | 691 | 0.4+ | 0.2− | 2006 11 23 | 703 | 0.1− | 0.0 | |
| 2003 02 01 | 704 | (1.6+ | 1.3−) | 2005 07 15 | G96 | 0.4− | 0.3+ | 2006 11 23 | 703 | 0.1+ | 0.2− | |
| 2003 02 01 | 608 | 0.5− | 0.6− | 2005 07 15 | G96 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.4+ | |
| 2003 02 01 | 608 | 0.1+ | 0.1− | 2005 07 15 | G96 | 0.1− | 0.3− | | | | | |
| 2003 02 01 | 608 | 0.4+ | 0.0 | 2005 07 15 | G96 | 0.1− | 0.1− | | | | | |

**(143424)∗ 2003 BB$_{57}$ = 2004 HG$_{51}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61708)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.46087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19278573 | $\omega$ | 270.58650 | | +0.77619424 | −0.61079950 | |
| $a$ | 2.9676964 | $\Omega$ | 127.07229 | | +0.62776532 | +0.72564857 | |
| $e$ | 0.0265428 | $i$ | 11.30095 | | +0.05859352 | +0.31679349 | |
| $P$ | 5.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 24 | 910 | 1.2+ | 0.2− | 2003 02 04 | 644 | 0.4+ | 0.3+ | 2004 04 25 | 699 | 0.1+ | 0.3+ | |
| 1997 12 24 | 910 | 1.5+ | 0.0 | 2003 02 04 | 644 | 0.4+ | 0.4+ | 2006 08 28 | 699 | 0.3+ | 0.5+ | |
| 1997 12 24 | 910 | 1.5+ | 0.3− | 2003 02 04 | 644 | 0.6+ | 0.6+ | 2006 08 28 | 699 | 0.3− | 1.4+ | |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.2− | 0.6+ | 2006 08 28 | 699 | 0.1+ | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.9+ | 1.1+ | 2006 08 28 | 699 | 0.1+ | 0.8− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.4− | 0.3− |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.2+ | 0.2+ |
| 2001 10 23 | 644 | 0.4− | 0.8+ | 2004 03 23 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 0.7− | 0.6+ |
| 2001 10 23 | 644 | 0.1− | 1.0+ | 2004 04 15 | 704 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.5− | 1.0− |
| 2001 10 23 | 644 | 0.0 | 1.0+ | 2004 04 15 | 704 | 0.2+ | 0.0 | 2006 09 21 | 699 | 0.5− | 0.2− |
| 2003 01 08 | 704 | 1.0− | 1.2+ | 2004 04 15 | 704 | 0.4+ | 0.9− | 2006 09 21 | 699 | 0.7− | 0.1+ |
| 2003 01 08 | 704 | 0.1+ | 0.2− | 2004 04 15 | 704 | 1.2+ | 0.6− | 2006 09 21 | 699 | 0.6+ | 0.5+ |
| 2003 01 08 | 704 | 0.1+ | 0.0 | 2004 04 15 | 644 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.4− | 0.6+ |
| 2003 01 08 | 704 | 0.1+ | 0.6+ | 2004 04 15 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.5− | 1.2+ |
| 2003 01 27 | 704 | 1.1− | 0.3− | 2004 04 15 | 644 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.5+ |
| 2003 01 27 | 704 | 0.8− | 0.1+ | 2004 04 24 | 704 | 0.9+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2003 01 27 | 704 | 1.1− | 0.1+ | 2004 04 24 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 2003 01 27 | 704 | 0.4− | 1.2+ | 2004 04 24 | 704 | 0.6+ | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2003 01 30 | 699 | 0.3− | 0.3− | 2004 04 24 | 704 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2003 01 30 | 699 | 0.5− | 0.3+ | 2004 04 25 | 704 | 0.6+ | 0.2− | 2006 10 10 | 644 | 0.4− | 0.3+ |
| 2003 01 30 | 699 | 0.4− | 1.4− | 2004 04 25 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2003 01 30 | 699 | (0.4+ | 3.1−) | 2004 04 25 | 704 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2003 01 31 | 704 | 0.1− | 0.3− | 2004 04 25 | 704 | 0.0 | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2003 01 31 | 704 | 0.2− | 0.8− | 2004 04 25 | 704 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2003 01 31 | 704 | 0.4− | 0.7+ | 2004 04 25 | 699 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2003 01 31 | 704 | 0.4+ | 0.4− | 2004 04 25 | 699 | 0.7+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2003 01 31 | 704 | 0.6+ | 0.6− | 2004 04 25 | 699 | 0.6+ | 0.6+ | | | | |

## (143425)∗ 2003 BG$_{57}$ = 2004 GL$_{16}$

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69435)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.53762 | | (2000.0) | | | |
| $n$ | 0.18999874 | $\omega$ | 296.64447 | | +0.35729638 | −0.92240761 |
| $a$ | 2.9966469 | $\Omega$ | 131.62277 | | +0.91142924 | +0.31004045 |
| $e$ | 0.0555989 | $i$ | 11.31284 | | +0.20404913 | +0.23030223 |
| $P$ | 5.19 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.3− | 1.2+ | 2003 01 27 | 699 | 0.6− | 1.0− | 2004 04 15 | 644 | 0.3+ | 0.4+ |
| 2001 10 15 | 644 | 0.2− | 0.2+ | 2003 01 31 | 704 | 1.0− | 0.3+ | 2004 04 15 | 644 | 0.6+ | 0.3+ |
| 2001 10 15 | 644 | 0.1− | 0.7+ | 2003 01 31 | 704 | 0.3+ | 0.6+ | 2004 04 15 | 644 | 0.6+ | 0.4+ |
| 2001 10 23 | 644 | 0.1− | 0.7+ | 2003 01 31 | 704 | 0.4+ | 1.2+ | 2006 09 19 | 703 | 1.0+ | 0.7− |
| 2001 10 23 | 644 | 0.6− | 0.4+ | 2003 01 31 | 704 | 0.3+ | 0.4− | 2006 09 19 | 703 | 0.6− | 1.1+ |
| 2001 10 23 | 644 | 0.3− | 0.4+ | 2003 01 31 | 704 | 0.2− | 0.5+ | 2006 09 19 | 703 | (0.3+ | 2.8−) |
| 2003 01 08 | 704 | 0.5− | 0.4− | 2003 01 31 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | 0.9+ | 0.0 |
| 2003 01 08 | 704 | (0.9− | 1.8−) | 2003 01 31 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 0.9− | 1.0+ |
| 2003 01 08 | 704 | (1.9− | 1.1+) | 2003 01 31 | 704 | (1.7+ | 0.9+) | 2006 09 25 | 703 | 0.1+ | 0.4+ |
| 2003 01 08 | 704 | 0.1+ | 1.1+ | 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 09 25 | 703 | (0.7− | 2.0+) |
| 2003 01 27 | 699 | 0.6+ | 0.6+ | 2004 03 30 | 691 | 0.0 | 0.5+ | 2006 09 25 | 703 | 0.8− | 0.6+ |
| 2003 01 27 | 699 | 0.8+ | 0.7+ | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.7− | 0.3+ |
| 2003 01 27 | 704 | 0.3+ | 0.6+ | 2004 03 30 | 691 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2003 01 27 | 704 | 0.1− | 1.4− | 2004 04 10 | 644 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2003 01 27 | 699 | 0.2− | 0.9− | 2004 04 10 | 644 | 0.8+ | 0.4+ | | | | |
| 2003 01 27 | 704 | 0.0 | 0.6− | 2004 04 10 | 644 | 0.3+ | 0.3+ | | | | |

## (143426)∗ 2003 BR$_{57}$

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 191.90304 | | (2000.0) | | | |
| $n$ | 0.17382246 | $\omega$ | 243.50498 | | −0.99368017 | −0.07607577 |
| $a$ | 3.1797926 | $\Omega$ | 292.03759 | | +0.10422776 | −0.89829598 |
| $e$ | 0.0698669 | $i$ | 5.10847 | | −0.04166885 | −0.43275491 |
| $P$ | 5.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 08 | 809 | 0.1− | 0.2+ | 2003 01 31 | 644 | 0.1+ | 0.4+ | 2005 06 17 | G96 | 0.2− | 0.0 |
| 1994 09 08 | 691 | 0.2− | 0.9+ | 2003 01 31 | 704 | 1.1+ | 0.8+ | 2005 07 04 | 691 | 0.1− | 0.0 |
| 1994 09 08 | 691 | 0.1− | 0.5+ | 2003 01 31 | 704 | 0.7+ | 0.6+ | 2005 07 04 | 691 | 0.1− | 0.1− |
| 1994 09 08 | 691 | (2.2− | 0.5+) | 2003 01 31 | 704 | (0.4+ | 2.0+) | 2005 07 04 | 691 | 0.0 | 0.0 |
| 1998 04 01 | 704 | 0.3+ | 0.1− | 2003 01 31 | 644 | 0.2− | 0.5+ | 2005 07 15 | G96 | 0.1+ | 0.2+ |
| 1998 04 01 | 704 | 0.8+ | 0.5− | 2003 02 08 | 704 | (0.9− | 1.7+) | 2005 07 15 | G96 | 0.0 | 0.1+ |
| 1998 04 01 | 704 | 0.4− | 0.0 | 2003 02 08 | 704 | 0.4+ | 1.5+ | 2005 07 15 | G96 | 0.5− | 0.4+ |
| 1998 04 01 | 704 | (5.6− | 1.2−) | 2003 02 08 | 704 | (0.6+ | 2.3+) | 2005 07 15 | G96 | 0.5+ | 0.4+ |
| 2000 09 25 | 691 | 0.4− | 0.3+ | 2003 02 21 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.6+ | 0.1− |
| 2000 09 25 | 691 | 0.5− | 0.1+ | 2003 02 21 | 644 | 0.2− | 0.9+ | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2000 09 25 | 691 | 0.2− | 0.5+ | 2003 02 21 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.4− |
| 2003 01 27 | 704 | (1.7− | 0.3−) | 2004 04 16 | E12 | 0.2− | 0.9+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2003 01 27 | 704 | 0.9− | 0.5− | 2004 04 16 | E12 | 1.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2003 01 27 | 704 | 0.5− | 0.0 | 2004 04 16 | E12 | 0.1− | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2003 01 27 | 704 | 0.5− | 0.1+ | 2004 04 16 | E12 | 0.6− | 0.2+ | 2006 09 30 | 691 | 0.4+ | 0.2+ |
| 2003 01 27 | 704 | 1.0− | 0.2− | 2004 05 12 | E12 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2003 01 27 | 644 | 0.3+ | 0.7+ | 2004 05 12 | E12 | 1.0+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2003 01 27 | 644 | 0.2+ | 0.7+ | 2004 05 12 | E12 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2003 01 27 | 644 | 0.1− | 0.6+ | 2004 05 12 | E12 | (2.0− | 2.2−) | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2003 01 31 | 644 | 0.2+ | 0.5+ | 2005 06 17 | G96 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2003 01 31 | 704 | 0.9+ | 0.9+ | 2005 06 17 | G96 | 0.4− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2003 01 31 | 704 | 1.0+ | 0.5+ | 2005 06 17 | G96 | 0.0 | 0.2+ | | | | |

## (143427)∗ 2003 BF$_{58}$ = 1984 BL$_{6}$

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43281)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.64222 | | (2000.0) | | | |
| $n$ | 0.26015436 | $\omega$ | 25.29416 | | −0.99988173 | −0.00715665 |
| $a$ | 2.4302371 | $\Omega$ | 154.28472 | | +0.00158507 | −0.92837243 |
| $e$ | 0.1310965 | $i$ | 1.79784 | | +0.01529747 | −0.37158232 |
| $P$ | 3.79 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 01 25 | 675 | 1.3+ | 0.9− | 2003 02 08 | 704 | 0.8− | 0.4+ | 2005 10 25 | 699 | 0.4− | 0.4+ |
| 1984 01 26 | 675 | 0.5+ | 0.6− | 2003 02 08 | 704 | 0.0 | 0.4+ | 2005 10 27 | 691 | 0.0 | 0.1+ |
| 1990 11 19 | 691 | 0.3− | 0.6+ | 2003 02 20 | 049 | 0.1− | 0.3− | 2005 10 27 | 691 | 0.0 | 0.2+ |
| 1990 11 19 | 691 | 0.4− | 0.1+ | 2003 02 20 | 049 | 1.2− | 1.0− | 2005 10 27 | 691 | 0.0 | 0.1− |
| 1990 11 19 | 691 | 0.3− | 0.6+ | 2003 02 20 | 049 | 0.7− | 0.9− | 2005 10 28 | G96 | 0.4+ | 0.4− |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2003 02 21 | 644 | 0.1+ | 0.2+ | 2005 10 28 | G96 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.2+ | 0.9− | 2003 02 21 | 644 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.2+ | 0.5− |
| 2001 10 20 | 704 | 0.4+ | 0.6+ | 2003 02 21 | 699 | 0.4− | 0.7+ | 2005 10 28 | G96 | 0.3+ | 0.3− |
| 2001 10 20 | 704 | 0.2− | 0.0 | 2003 02 21 | 644 | 0.0 | 0.0 | 2005 10 31 | G96 | 0.1+ | 0.3− |
| 2001 10 20 | 704 | 0.6− | 0.0 | 2003 02 21 | 644 | 0.3+ | 0.1− | 2005 10 31 | G96 | 0.1+ | 0.3− |
| 2003 01 27 | 704 | 0.1+ | 0.2+ | 2003 02 21 | 699 | 0.1− | 0.3− | 2005 10 31 | G96 | 0.4+ | 0.0 |
| 2003 01 27 | 704 | 0.1+ | 0.2+ | 2003 02 21 | 699 | 0.5+ | 0.1− | 2005 10 31 | G96 | 0.4+ | 0.2− |
| 2003 01 27 | 704 | 0.2− | 0.1+ | 2003 02 21 | 644 | 0.4+ | 0.1− | 2005 11 28 | G96 | 0.4+ | 0.3− |
| 2003 01 27 | 699 | 0.6+ | 0.2− | 2003 02 21 | 699 | 0.3+ | 0.4− | 2005 11 28 | G96 | 0.2+ | 0.0 |
| 2003 01 27 | 704 | 0.3− | 1.0+ | 2003 02 21 | 644 | 0.4+ | 0.2− | 2005 11 28 | G96 | 0.0 | 0.4− |
| 2003 01 27 | 699 | 0.1+ | 0.1− | 2003 02 21 | 049 | 0.9− | 0.1+ | 2005 11 28 | G96 | 0.3+ | 0.1+ |
| 2003 01 27 | 704 | 0.3− | 0.2+ | 2003 02 21 | 049 | 1.0− | 0.1+ | 2005 11 29 | G96 | 0.4+ | 1.2− |
| 2003 01 27 | 699 | 0.5− | 0.5− | 2003 02 21 | 049 | 0.9− | 0.7+ | 2005 11 29 | G96 | 1.1+ | 0.6− |
| 2003 01 27 | 699 | 0.3− | 0.1+ | 2003 03 06 | 644 | 0.1+ | 0.2+ | 2005 11 29 | G96 | 0.7+ | 0.7− |
| 2003 01 27 | 644 | 0.4+ | 1.2+ | 2003 03 06 | 644 | 0.3− | 0.3+ | 2005 11 29 | G96 | 0.3+ | 0.3− |
| 2003 01 27 | 644 | 0.3+ | 1.0+ | 2003 03 06 | 644 | 0.4− | 0.4+ | 2005 12 01 | G96 | 0.2− | 0.0 |
| 2003 01 27 | 644 | 0.4+ | 1.2+ | 2003 03 07 | 704 | 0.5+ | 0.7− | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2003 01 31 | 704 | 0.1− | 0.3− | 2003 03 07 | 704 | 1.1+ | 0.4− | 2005 12 01 | G96 | 0.2+ | 0.0 |
| 2003 01 31 | 704 | 0.5+ | 0.3− | 2003 03 07 | 704 | 0.2+ | 0.2− | 2005 12 01 | G96 | 0.1− | 0.1+ |
| 2003 01 31 | 704 | 0.4+ | 0.3− | 2003 03 12 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.4+ | 0.3− |
| 2003 01 31 | 704 | 0.4+ | 0.4− | 2003 03 12 | 644 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.8− |
| 2003 01 31 | 704 | 0.0 | 0.1+ | 2003 03 12 | 644 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.3+ | 0.1− |
| 2003 02 03 | 704 | 1.0− | 1.0− | 2004 07 17 | 807 | 0.4− | 0.6+ | 2006 11 21 | 691 | 0.3+ | 0.2+ |
| 2003 02 03 | 704 | 1.3− | 0.2+ | 2004 07 17 | 807 | 0.5− | 0.5+ | 2006 11 21 | 691 | 0.3+ | 0.3+ |
| 2003 02 03 | 704 | 1.2− | 0.0 | 2005 10 01 | G96 | 0.5+ | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 03 | 644 | 0.8+ | 0.4+ | 2005 10 01 | G96 | 0.1− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2003 02 03 | 644 | 0.0 | 0.1− | 2005 10 01 | G96 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.5− | 1.5− |
| 2003 02 03 | 644 | 0.7+ | 1.1− | 2005 10 01 | G96 | 1.0+ | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2003 02 08 | 704 | 0.4− | 0.5+ | 2005 10 25 | 699 | 0.4− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2003 02 08 | 704 | 0.2− | 1.1+ | 2005 10 25 | 699 | 0.0 | 0.2− | | | | |
| 2003 02 08 | 704 | 0.3− | 1.1+ | 2005 10 25 | 699 | (0.8− | 2.3−) | | | | |

**(143428)∗ 2003 BV$_{58}$ = 2000 PG$_{31}$ = 2003 BK$_{61}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 43281), G. V. Williams (*MPO* 41479)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.36424 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18596761 | $\omega$ | 357.92221 | | −0.75894538 | | −0.64143326 |
| $a$ | 3.0397965 | $\Omega$ | 141.41671 | | +0.59998466 | | −0.75575781 |
| $e$ | 0.0964244 | $i$ | 10.35460 | | +0.25302237 | | −0.13188443 |
| $P$ | 5.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 1.1− | 0.6− | 2003 02 03 | 704 | 0.2+ | 0.8+ | 2003 03 08 | 704 | 0.2+ | 1.0+ |
| 1998 03 25 | 704 | (1.5− | 4.0+) | 2003 02 03 | 644 | 0.3+ | 0.3+ | 2003 03 08 | 704 | (0.2+ | 1.8+) |
| 1998 03 25 | 704 | 1.9− | 0.8+ | 2003 02 03 | 704 | (1.9+ | 1.3+) | 2005 07 06 | 691 | 0.1+ | 0.4+ |
| 1998 03 25 | 704 | 1.1+ | 1.7+ | 2003 02 03 | 644 | 0.6+ | 0.2+ | 2005 07 06 | 691 | 0.0 | 0.3+ |
| 2000 08 01 | 807 | 0.2+ | 0.4+ | 2003 02 07 | 333 | 0.5+ | 0.2− | 2005 07 06 | 691 | 0.1− | 0.4+ |
| 2000 08 01 | 807 | 0.2+ | 0.4+ | 2003 02 07 | 333 | 0.3− | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.4+ |
| 2000 08 02 | 691 | 0.3− | 0.0 | 2003 02 07 | 333 | 0.2− | 0.5+ | 2005 07 09 | 691 | 0.2+ | 0.5+ |
| 2000 08 02 | 691 | 0.3+ | 0.3− | 2003 02 07 | 333 | 0.3− | 0.4+ | 2005 07 09 | 691 | 0.1− | 0.4+ |
| 2000 08 02 | 691 | 0.3+ | 0.3− | 2003 02 08 | 704 | 0.6− | 1.4+ | 2005 08 31 | 691 | 0.2+ | 0.1+ |
| 2001 10 23 | 644 | 0.5+ | 0.6+ | 2003 02 08 | 704 | 0.0 | 1.4+ | 2005 08 31 | 691 | 0.0 | 0.4+ |
| 2001 10 23 | 644 | 0.0 | 0.6+ | 2003 02 08 | 704 | (0.8+ | 1.6+) | 2005 08 31 | 691 | 0.1− | 0.2+ |
| 2001 10 23 | 644 | 0.6+ | 0.7+ | 2003 02 23 | 699 | 0.6− | 0.6+ | 2005 09 01 | 291 | 0.1− | 0.3+ |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2003 02 23 | 699 | 1.2− | 0.9+ | 2005 09 01 | 291 | 0.3− | 0.5+ |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2003 02 23 | 699 | (1.8− | 0.2−) | 2005 09 01 | 291 | 0.1− | 0.5+ |
| 2003 01 27 | 704 | 1.0+ | 0.1+ | 2003 02 23 | 699 | 0.4− | 1.2− | 2006 09 18 | 703 | 0.2+ | 0.4+ |
| 2003 01 27 | 704 | 0.3+ | 1.2+ | 2003 03 05 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 1.5+ |
| 2003 01 27 | 704 | 0.3+ | 0.7+ | 2003 03 05 | 704 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.1+ | 1.2+ |
| 2003 01 27 | 644 | 0.5+ | 0.5+ | 2003 03 05 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.5+ |
| 2003 01 27 | 644 | 0.4+ | 0.7+ | 2003 03 05 | 704 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 2003 01 27 | 644 | 0.5+ | 0.3− | 2003 03 05 | 704 | 0.4+ | 1.0+ | 2006 10 16 | 703 | 0.5+ | 0.0 |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2003 03 06 | 644 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2003 03 06 | 644 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.8− | 0.4− |
| 2003 01 31 | 704 | (0.5− | 1.8+) | 2003 03 06 | 644 | 1.0+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 1.2− |
| 2003 01 31 | 704 | (0.6+ | 1.6+) | 2003 03 06 | 644 | 0.1+ | 0.5− | 2006 10 22 | 703 | 1.0− | 0.5+ |
| 2003 01 31 | 704 | 0.6+ | 1.0+ | 2003 03 06 | 644 | 0.7+ | 0.3+ | 2006 10 22 | 703 | 1.9− | 0.3+ |
| 2003 01 31 | 704 | (0.1+ | 1.5+) | 2003 03 06 | 644 | 1.2+ | 0.6+ | 2006 10 22 | 703 | 0.4+ | 0.7− |
| 2003 02 03 | 644 | 0.2+ | 0.0 | 2003 03 08 | 704 | (0.9+ | 2.2+) | | | | |
| 2003 02 03 | 704 | 0.8+ | 1.3+ | 2003 03 08 | 704 | 1.0+ | 0.0 | | | | |

**(143429)∗ 2003 BW$_{58}$ = 2000 SY$_{341}$ = 2004 HR$_{17}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61709)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.60877 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17536712 | $\omega$ | 50.02360 | | −0.58077102 | | +0.81406617 |
| $a$ | 3.1610929 | $\Omega$ | 184.47206 | | −0.75126641 | | −0.53650532 |
| $e$ | 0.1351531 | $i$ | 0.83553 | | −0.31353437 | | −0.22239227 |
| $P$ | 5.62 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 691 | 0.1+ | 0.1− | 2004 04 21 | 704 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2000 09 24 | 691 | 0.5+ | 0.4− | 2004 04 21 | 704 | 0.8+ | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2000 09 24 | 691 | 0.1+ | 0.3− | 2004 04 26 | 699 | 0.0 | 1.5+ | 2006 10 21 | 703 | 0.2+ | 0.5+ |
| 2000 10 01 | 704 | 1.5− | 1.9+ | 2004 04 26 | 699 | 0.4− | 0.2− | 2006 10 21 | 703 | 1.4− | 0.5+ |
| 2000 10 01 | 704 | 0.7− | 0.8+ | 2004 04 26 | 699 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.5− |
| 2000 10 01 | 704 | 0.3+ | 0.8+ | 2004 04 26 | 699 | 0.4− | 0.3+ | 2006 10 21 | 703 | (0.7+ | 2.7−) |
| 2001 11 16 | 691 | 0.4− | 0.5+ | 2004 05 14 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.2+ | 0.2− |
| 2001 11 16 | 691 | 0.0 | 0.1− | 2004 05 14 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.2+ | 0.2− |
| 2001 11 16 | 691 | 0.3− | 0.3− | 2004 05 14 | 691 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2003 01 27 | 704 | 1.4+ | 1.5+ | 2004 05 16 | 704 | 0.0 | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2003 01 27 | 704 | 0.5+ | 0.9+ | 2004 05 16 | 704 | 0.4− | 1.5+ | 2006 10 27 | G96 | 0.6+ | 0.7− |
| 2003 01 27 | 704 | 0.2+ | 0.1+ | 2004 05 16 | 704 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2003 01 30 | 291 | 0.2− | 0.1+ | 2004 05 16 | 704 | 0.5− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2003 01 30 | 291 | 0.2+ | 0.0 | 2004 05 16 | 704 | 0.7− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2003 01 30 | 291 | 0.5+ | 0.3+ | 2005 07 28 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2003 01 31 | 704 | (1.6− | 1.3+) | 2005 07 28 | 644 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.0 |
| 2003 01 31 | 704 | 0.5− | 0.1+ | 2005 07 28 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2003 01 31 | 704 | 0.2+ | 0.7− | 2005 08 22 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2004 04 12 | 699 | 0.5− | 0.0 | 2005 08 22 | 644 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2004 04 12 | 699 | 1.1− | 0.4− | 2005 08 22 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2004 04 12 | 699 | 0.9− | 0.4− | 2005 08 25 | 644 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2004 04 12 | 699 | (0.8− | 1.7+) | 2005 08 25 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.7− | 0.4+ |
| 2004 04 17 | 704 | 0.6+ | 0.2+ | 2005 08 25 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 691 | 0.4− | 0.1− |
| 2004 04 17 | 704 | 0.1− | 0.7+ | 2006 09 18 | 691 | 0.4+ | 0.8+ | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 2004 04 17 | 704 | 0.3− | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2004 04 21 | 704 | 0.7+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2004 04 21 | 704 | 0.4+ | 0.8− | 2006 10 02 | 691 | 0.2− | 0.3+ | | | | |

**(143430)∗ 2003 BF$_{60}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.74297 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23767106 | $\omega$ | 17.38538 | | −0.19679267 | | −0.97322873 |
| $a$ | 2.5811813 | $\Omega$ | 84.08830 | | +0.88475744 | | −0.22846257 |
| $e$ | 0.2742749 | $i$ | 6.85586 | | +0.42246528 | | +0.02511374 |
| $P$ | 4.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 03 | 691 | (34.9− | 11.3+) | 2003 02 04 | 608 | 0.8+ | 1.1+ | 2003 05 02 | 704 | 0.3+ | 0.8+ |
| 1995 04 03 | 691 | (34.8− | 11.4+) | 2003 02 04 | 608 | 1.4+ | 0.1+ | 2003 05 02 | 704 | 0.3− | 0.1+ |
| 1995 04 03 | 691 | (34.5− | 11.6+) | 2003 02 06 | 704 | 0.3+ | 0.3+ | 2005 07 30 | 644 | 0.1− | 0.6+ |
| 1999 03 20 | 699 | 1.3+ | 0.0 | 2003 02 06 | 704 | 0.2+ | 0.2− | 2005 07 30 | 644 | 0.1− | 0.9+ |
| 1999 03 20 | 699 | 0.5+ | 0.3− | 2003 02 06 | 704 | 0.0 | 0.0 | 2005 07 30 | 644 | 0.1− | 0.8+ |
| 1999 03 20 | 699 | 1.4− | 0.2+ | 2003 02 06 | 704 | 0.6− | 0.2+ | 2005 09 01 | 644 | 0.2− | 0.6+ |
| 1999 03 23 | 699 | 1.6+ | 0.1+ | 2003 02 06 | 704 | 0.6+ | 0.2+ | 2005 09 01 | 644 | 0.0 | 0.8+ |
| 1999 03 23 | 699 | 0.6+ | 1.5+ | 2003 02 11 | 608 | 0.1+ | 0.7− | 2005 09 01 | 644 | 0.3− | 0.8+ |
| 1999 03 23 | 699 | 0.8+ | 0.6+ | 2003 02 11 | 608 | 0.2+ | 0.7− | 2006 10 16 | 703 | 0.8− | 0.5+ |
| 1999 04 12 | 704 | 0.8+ | 0.4− | 2003 02 11 | 608 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.7− | 0.1+ |
| 1999 04 12 | 704 | 0.0 | 0.9− | 2003 03 01 | 608 | 1.3− | 1.1− | 2006 10 16 | 703 | 0.2− | 0.3− |
| 1999 04 12 | 704 | 0.8+ | 0.1+ | 2003 03 01 | 608 | 0.2+ | 1.0− | 2006 10 16 | 703 | 0.1+ | 0.8− |
| 1999 04 12 | 704 | 1.2+ | 0.8− | 2003 03 01 | 608 | 0.5− | 1.5− | 2006 10 20 | 703 | 0.6− | 0.2− |
| 1999 04 12 | 704 | 0.3− | 0.7+ | 2003 03 08 | 704 | 0.2− | 0.9+ | 2006 10 20 | 703 | 0.4− | 0.1− |
| 2001 08 01 | 644 | 0.7− | 1.1+ | 2003 03 08 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 703 | 0.9+ | 0.2− |
| 2001 08 01 | 644 | 1.1− | 0.9+ | 2003 03 08 | 704 | 0.2− | 0.6+ | 2006 10 20 | 703 | (2.3− | 1.4+) |
| 2001 08 01 | 644 | 0.7− | 1.0+ | 2003 03 08 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.6+ | 0.7− |
| 2001 08 25 | 699 | 0.3− | 1.3+ | 2003 03 08 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 704 | 0.2+ | 0.2+ |
| 2001 08 25 | 699 | 0.9+ | 0.6+ | 2003 03 23 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 1.6+ | 0.2− |
| 2001 08 25 | 699 | 0.5− | 1.1+ | 2003 03 23 | 644 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.9+ | 0.0 |
| 2001 08 25 | 699 | 1.4− | 0.2− | 2003 03 23 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2001 10 10 | 644 | 0.0 | 0.1− | 2003 03 25 | 608 | 1.0+ | 1.7+ | 2006 11 14 | 703 | 0.6+ | 0.1− |
| 2001 10 10 | 644 | 0.2− | 0.4+ | 2003 03 25 | 608 | 0.1− | 1.0+ | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2001 10 10 | 644 | 0.5− | 0.3+ | 2003 03 25 | 608 | 0.1+ | 1.0+ | 2006 11 14 | 703 | 0.0 | 0.6− |
| 2002 12 06 | 704 | 0.4+ | 0.2+ | 2003 03 26 | 691 | 0.4− | 0.3+ | 2006 11 15 | 704 | 0.2− | 1.7+ |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2003 03 26 | 691 | 0.4− | 0.2+ | 2006 11 15 | 704 | 0.9+ | 1.0+ |
| 2002 12 06 | 704 | 0.0 | 0.2+ | 2003 03 26 | 691 | 0.6− | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2003 03 26 | 704 | 0.5− | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.7+ | 0.6+ | 2003 03 26 | 704 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.4+ | 1.3+ |
| 2002 12 11 | 704 | 1.9+ | 0.1− | 2003 03 26 | 704 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 2002 12 11 | 704 | 0.5− | 0.1− | 2003 03 31 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.6+ | 1.0+ |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2003 03 31 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2003 03 31 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.5− | 0.3+ | 2003 03 31 | 704 | 0.4+ | 0.7− | 2006 11 17 | 704 | 1.3− | 1.6+ |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2003 03 31 | 704 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.6+ | 0.8+ |
| 2003 01 05 | 704 | 0.6+ | 0.3− | 2003 03 31 | 704 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.6− | 0.7+ |
| 2003 01 10 | 704 | 0.5+ | 0.5+ | 2003 03 31 | 704 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.1+ |
| 2003 01 10 | 704 | 0.1+ | 0.3+ | 2003 03 31 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2003 01 10 | 704 | 0.2+ | 0.4+ | 2003 04 03 | 704 | 0.7+ | 1.4+ | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2003 01 10 | 704 | 0.1− | 0.3+ | 2003 04 03 | 704 | 0.8+ | 1.1+ | 2006 11 19 | 704 | 0.6− | 0.8+ |
| 2003 01 10 | 704 | 0.4− | 0.1+ | 2003 04 03 | 704 | 1.1+ | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2003 01 16 | 699 | 0.7− | 0.6+ | 2003 04 03 | 704 | 0.9+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 1.2+ |
| 2003 01 16 | 699 | 1.1+ | 0.5+ | 2003 04 03 | 704 | 1.0+ | 0.8+ | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2003 01 16 | 699 | 0.2+ | 0.4+ | 2003 04 03 | 704 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2003 01 16 | 699 | 0.9+ | 1.6+ | 2003 04 03 | 704 | 1.4+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2003 01 27 | 704 | 0.5− | 1.4− | 2003 04 03 | 704 | 1.1+ | 0.4− | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2003 01 27 | 704 | 0.6− | 0.4− | 2003 04 03 | 704 | 0.7+ | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2003 01 27 | 704 | 0.7+ | 0.3+ | 2003 04 03 | 704 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2003 01 27 | 704 | 0.2+ | 0.8− | 2003 04 06 | 699 | 0.6− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2003 01 27 | 704 | 0.7− | 0.6+ | 2003 04 06 | 699 | 0.8− | 0.2− | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2003 01 28 | 645 | 0.3− | 0.3− | 2003 04 06 | 699 | 0.6− | 0.6+ | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2003 01 28 | 645 | 0.4− | 0.3− | 2003 04 06 | 699 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.3− | 0.5− |
| 2003 01 31 | 704 | 0.2− | 1.2+ | 2003 04 10 | 691 | 0.5+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2003 01 31 | 704 | 0.5− | 0.7+ | 2003 04 10 | 691 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.3− | 0.6− |
| 2003 01 31 | 704 | 0.5− | 1.4+ | 2003 04 10 | 691 | 0.4+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2003 01 31 | 704 | 1.0− | 1.3+ | 2003 04 25 | 699 | 0.7− | 0.6− | 2006 12 01 | 704 | 0.4+ | 0.5+ |
| 2003 02 02 | 699 | 0.4+ | 0.2+ | 2003 04 25 | 699 | 0.8− | 0.7− | 2006 12 01 | 704 | 0.4+ | 0.1+ |
| 2003 02 02 | 699 | 0.2− | 0.5+ | 2003 04 25 | 699 | 0.2+ | 0.6− | 2006 12 01 | 704 | 0.4+ | 0.2+ |
| 2003 02 02 | 699 | 0.1− | 0.2+ | 2003 04 25 | 699 | 0.2− | 0.3+ | 2006 12 01 | 704 | 0.6+ | 0.6+ |
| 2003 02 02 | 699 | 0.0 | 0.7+ | 2003 05 02 | 704 | 0.3− | 0.0 | 2006 12 01 | 704 | 1.0+ | 0.3+ |
| 2003 02 04 | 608 | 1.3+ | 0.9+ | 2003 05 02 | 704 | 0.0 | 0.4+ | | | | |

**(143431)∗ 2003 BC$_{62}$**

Discovered 2003 Jan. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 223.71283 | | (2000.0) | | | |
| $n$ | 0.21903179 | $\omega$ | 113.47483 | | −0.85752692 | +0.47729240 |
| $a$ | 2.7256157 | $\Omega$ | 95.52021 | | −0.51357053 | −0.77259166 |
| $e$ | 0.0804886 | $i$ | 11.11802 | | −0.02988136 | −0.41868138 |
| $P$ | 4.50 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | (0.1+ | 1.6+) | 2003 01 31 | 704 | 0.6+ | 0.9+ | 2004 06 11 | 704 | 0.0 | 0.5+ |
| 2001 10 23 | 644 | 0.0 | 1.4+ | 2003 02 02 | 644 | 0.1+ | 0.8+ | 2004 06 15 | 704 | 0.1− | 0.1− |
| 2001 10 23 | 644 | (0.1+ | 1.5+) | 2003 02 02 | 644 | 0.6+ | 0.9+ | 2004 06 15 | 704 | 0.3+ | 0.3+ |
| 2001 11 18 | 704 | 1.1− | 0.1+ | 2003 02 02 | 644 | 0.2+ | 0.5+ | 2004 06 15 | 704 | 0.0 | 0.9+ |
| 2001 11 18 | 704 | 0.7− | 0.7− | 2003 02 04 | 699 | 0.2− | 0.2− | 2004 06 15 | 704 | (0.1− | 1.6+) |
| 2001 11 18 | 704 | 0.3− | 0.1− | 2003 02 04 | 699 | 0.4+ | 0.1+ | 2004 06 18 | 704 | (1.2+ | 1.7+) |
| 2001 11 18 | 704 | 1.3− | 0.0 | 2003 02 04 | 699 | 0.5− | 0.3− | 2004 06 18 | 704 | 0.3+ | 0.1+ |
| 2001 11 18 | 608 | 0.4+ | 0.3− | 2003 02 04 | 699 | 0.6− | 0.1+ | 2004 06 18 | 704 | 0.0 | 1.0+ |
| 2001 11 18 | 608 | 0.2+ | 0.1− | 2003 02 26 | 704 | 1.0− | 0.7+ | 2004 06 18 | 704 | 0.1+ | 0.6+ |
| 2001 11 18 | 608 | 0.3− | 0.1− | 2003 02 26 | 704 | 0.0 | 0.4+ | 2004 06 18 | 704 | 0.8+ | 1.0+ |
| 2001 12 07 | 704 | 0.9− | 0.8+ | 2003 02 26 | 704 | 0.2− | 0.1+ | 2004 07 06 | 644 | 0.4− | 0.4+ |
| 2001 12 07 | 704 | 0.9+ | 0.2− | 2003 02 26 | 704 | 0.4+ | 0.4+ | 2004 07 06 | 644 | 0.3− | 0.2+ |
| 2001 12 07 | 704 | 0.4+ | 0.6+ | 2003 02 26 | 704 | 0.3− | 0.7+ | 2004 07 06 | 644 | 0.3− | 0.3+ |
| 2001 12 07 | 704 | 0.5+ | 1.0+ | 2003 03 03 | 644 | 0.1− | 0.2− | 2005 08 27 | 644 | 0.4− | 0.6+ |
| 2001 12 07 | 704 | 1.3+ | 0.4− | 2003 03 03 | 644 | 0.3− | 0.1− | 2005 08 27 | 644 | 0.1− | 0.8+ |
| 2002 12 31 | 704 | 0.3− | 0.2+ | 2003 03 03 | 644 | 0.3− | 0.2− | 2005 08 27 | 644 | 0.1− | 0.7+ |
| 2002 12 31 | 704 | 0.3+ | 0.2+ | 2003 03 07 | 644 | 0.7+ | 0.6+ | 2005 08 29 | 644 | 0.4− | 0.8+ |
| 2002 12 31 | 704 | 0.4+ | 0.6− | 2003 03 07 | 644 | 0.6+ | 0.6+ | 2005 08 29 | 644 | 0.2− | 0.8+ |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2003 03 07 | 644 | 0.6+ | 1.2+ | 2005 08 29 | 644 | 0.3− | 0.8+ |
| 2002 12 31 | 704 | 0.3+ | 0.9+ | 2004 05 15 | 704 | 0.8+ | 0.3+ | 2006 11 23 | 691 | 0.6− | 0.6− |
| 2003 01 28 | 644 | 0.3− | 0.7− | 2004 05 15 | 704 | 0.1+ | 1.0+ | 2006 11 23 | 691 | 0.1+ | 1.1+ |
| 2003 01 28 | 644 | 0.1− | 0.3− | 2004 05 15 | 704 | 0.3+ | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.2− |
| 2003 01 28 | 644 | 0.1+ | 0.6− | 2004 05 15 | 704 | 0.3+ | 0.3+ | 2006 12 01 | 691 | 0.7+ | 0.7+ |
| 2003 01 31 | 704 | 0.0 | 0.1+ | 2004 06 11 | 704 | 0.5+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.2− |
| 2003 01 31 | 704 | 0.2+ | 0.0 | 2004 06 11 | 704 | 0.4− | 1.0+ | 2006 12 01 | 691 | 0.2− | 0.1+ |

**(143432)∗ 2003 BU$_{62}$ = 2001 RZ$_{101}$**

Discovered 2003 Jan. 28 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41480)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.79787 | | (2000.0) | | | |
| $n$ | 0.22633766 | $\omega$ | 59.81195 | | −0.23574237 | −0.96928148 |
| $a$ | 2.6666427 | $\Omega$ | 44.00439 | | +0.85330987 | −0.24099254 |
| $e$ | 0.2154365 | $i$ | 5.79420 | | +0.46506753 | −0.04915285 |
| $P$ | 4.35 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.1+ | 0.2− | 2003 02 19 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.3+ |
| 1997 10 30 | 704 | 0.3+ | 0.4− | 2003 02 19 | 644 | 0.1− | 0.3+ | 2006 09 27 | 704 | (0.5− | 1.8+) |
| 1997 10 30 | 704 | (1.5+ | 2.1−) | 2003 02 23 | 699 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.9+ |
| 1997 10 30 | 704 | 0.3− | 0.5+ | 2003 02 23 | 699 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.6+ |
| 1997 10 30 | 704 | 0.6+ | 0.8− | 2003 02 23 | 699 | 0.2− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2003 02 23 | 699 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.2− |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2003 02 26 | 704 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2003 02 26 | 704 | 0.5+ | 0.8+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2003 02 26 | 704 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 09 12 | 704 | 0.4− | 0.2+ | 2003 02 26 | 704 | 0.7+ | 0.7+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2001 09 12 | 704 | 0.6− | 1.1+ | 2003 02 26 | 704 | 0.5− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.3+ | 1.0+ | 2003 02 26 | 704 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2003 02 26 | 704 | 0.5− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | (1.0+ | 1.6+) | 2003 02 26 | 704 | 0.1+ | 1.3+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | (0.5− | 1.5+) | 2003 02 26 | 704 | 0.4− | 0.2− | 2006 11 10 | 691 | 0.4− | 1.3+ |
| 2001 09 19 | 704 | (0.8− | 2.1+) | 2003 02 26 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 1.0− | 0.1− |
| 2001 10 10 | 644 | 1.1− | 0.8+ | 2003 03 03 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2001 10 10 | 644 | 0.7+ | 0.3+ | 2003 03 03 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2001 10 10 | 644 | 1.1− | 0.6+ | 2003 03 03 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 10 10 | 644 | 0.8+ | 0.4+ | 2003 03 05 | 704 | 0.1− | 1.1− | 2006 11 14 | 691 | 0.1− | 0.8− |
| 2001 10 10 | 644 | 0.5− | 0.6+ | 2003 03 05 | 704 | 0.2− | 1.3− | 2006 11 14 | 691 | 0.6− | 0.1+ |
| 2001 10 10 | 644 | 0.3+ | 0.4+ | 2003 03 05 | 704 | (1.7− | 1.5−) | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.0 | 0.1+ | 2003 03 05 | 704 | 0.5− | 1.1− | 2006 11 15 | 704 | 0.1+ | 0.2+ |
| 2002 11 12 | 704 | 0.7+ | 0.1+ | 2003 03 05 | 704 | (2.2− | 2.4−) | 2006 11 15 | 704 | 0.4− | 0.2− |
| 2002 11 12 | 704 | 0.5+ | 0.7− | 2003 03 05 | 704 | 1.3− | 0.6− | 2006 11 15 | 704 | 0.4− | 0.3− |
| 2002 11 12 | 704 | 0.7+ | 0.3− | 2003 03 05 | 704 | (2.1− | 2.4−) | 2006 11 15 | 704 | 0.5− | 0.0 |
| 2002 11 21 | 644 | 0.1− | 0.3+ | 2003 03 05 | 704 | 0.5− | 1.2− | 2006 11 15 | 703 | (0.6+ | 2.3−) |
| 2002 11 21 | 644 | 0.4− | 0.3+ | 2003 03 07 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.8− | 0.1+ |
| 2002 11 21 | 644 | 0.5+ | 0.3+ | 2003 03 07 | 644 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.2− |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2003 03 07 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.7− |
| 2002 12 06 | 704 | 0.1+ | 0.6+ | 2003 03 13 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.5− |
| 2002 12 06 | 704 | 0.1− | 0.7+ | 2003 03 13 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.8− | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 0.4+ | 2003 03 13 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 1.0+ | 0.6− |
| 2002 12 11 | 704 | 0.7+ | 0.3+ | 2003 03 26 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 0.4+ | 0.1+ | 2003 03 26 | 704 | 0.1− | 0.6− | 2006 11 16 | 704 | 0.4− | 0.5− |
| 2002 12 11 | 704 | 0.1− | 0.1+ | 2003 03 26 | 704 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.7− | 2003 03 26 | 704 | 0.7+ | 0.8+ | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2002 12 16 | 644 | 0.2+ | 0.3+ | 2003 03 26 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2002 12 16 | 644 | 0.3+ | 0.0 | 2003 03 30 | 704 | 0.8+ | 0.6+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 12 16 | 644 | 0.4+ | 0.3+ | 2003 03 30 | 704 | 0.2− | 0.8− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 1.2+ | 0.6− | 2003 03 30 | 704 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 12 31 | 704 | (1.7+ | 0.5+) | 2003 03 30 | 704 | 0.8+ | 0.9− | 2006 11 19 | 704 | 0.8− | 0.8+ |
| 2002 12 31 | 704 | (2.3+ | 0.3+) | 2003 04 24 | 704 | 1.3+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.5+ |
| 2002 12 31 | 704 | 0.8+ | 0.6− | 2003 04 24 | 704 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2002 12 31 | 704 | (1.5+ | 1.1+) | 2003 04 24 | 704 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.1+ | 0.6+ | 2003 04 24 | 704 | 0.6+ | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2003 01 10 | 704 | 0.1− | 0.4+ | 2003 05 01 | 704 | 0.2− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2003 01 10 | 704 | 0.4− | 0.5+ | 2003 05 01 | 704 | (1.7+ | 0.4+) | 2006 11 22 | 704 | 0.7+ | 0.1+ |
| 2003 01 10 | 704 | 0.0 | 0.2+ | 2003 05 01 | 704 | 0.8+ | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2003 01 10 | 704 | 0.6− | 0.2+ | 2003 05 01 | 704 | (1.6+ | 0.3+) | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2003 01 28 | 644 | 0.1+ | 0.1+ | 2004 06 14 | 704 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2003 01 28 | 644 | 0.0 | 0.2+ | 2004 06 14 | 704 | 0.2+ | 1.3+ | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2003 01 28 | 644 | 0.0 | 0.2+ | 2004 06 14 | 704 | 0.1+ | 0.7+ | 2006 11 27 | 704 | 0.6+ | 0.5+ |
| 2003 01 31 | 704 | 0.3+ | 0.1+ | 2004 06 14 | 704 | 0.2+ | 1.2+ | 2006 11 27 | 704 | 1.0+ | 0.8− |
| 2003 01 31 | 704 | 0.1+ | 0.6+ | 2005 08 04 | 644 | 0.2+ | 0.9+ | 2006 11 27 | 704 | 0.6+ | 0.1+ |
| 2003 01 31 | 704 | 0.1+ | 0.3+ | 2005 08 04 | 644 | 0.0 | 0.7+ | 2006 11 27 | 704 | 0.5+ | 0.0 |
| 2003 01 31 | 704 | 0.4+ | 0.0 | 2005 08 04 | 644 | 0.3+ | 0.7+ | 2006 11 28 | 704 | 0.4+ | 0.2+ |
| 2003 01 31 | 704 | 0.7+ | 0.1− | 2005 08 04 | 644 | 0.1− | 0.9+ | 2006 11 28 | 704 | 0.4+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 04 | 699 | 0.3+ | 0.1− | 2005 08 04 | 644 | 0.1− | 0.7+ | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2003 02 04 | 699 | 0.4+ | 0.2+ | 2005 08 04 | 644 | 0.0 | 1.0+ | 2006 11 28 | 704 | 0.4+ | 0.4− |
| 2003 02 04 | 699 | 0.2+ | 0.2− | 2006 09 20 | 704 | 1.1+ | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.3− |
| 2003 02 04 | 699 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.7− | | | | |
| 2003 02 19 | 644 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.7+ | | | | |

**(143433)∗ 2003 BX$_{62}$**

Discovered 2003 Jan. 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.95003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23394252 | $\omega$ | 335.52389 | | +0.78334736 | −0.61497431 | |
| $a$ | 2.6085346 | $\Omega$ | 62.73164 | | +0.58574264 | +0.68165305 | |
| $e$ | 0.2895380 | $i$ | 5.83768 | | +0.20802038 | +0.39642871 | |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.5− | 0.6+ | 2003 02 04 | 608 | 0.2− | 0.4+ | 2006 11 02 | G96 | 0.1− | 0.7− |
| 2001 06 27 | 644 | 0.7− | 0.5+ | 2003 02 04 | 608 | 0.5− | 0.8+ | 2006 11 02 | G96 | 0.2− | 0.3− |
| 2001 06 27 | 644 | 0.5− | 0.1+ | 2003 02 04 | 608 | 0.2− | 0.8+ | 2006 11 02 | G96 | 0.1+ | 0.6− |
| 2001 08 12 | 644 | 0.1− | 1.0+ | 2003 02 07 | 644 | 0.8− | 0.9− | 2006 11 02 | G96 | 0.1− | 0.4− |
| 2001 08 12 | 644 | 0.7+ | 0.6+ | 2003 02 07 | 644 | 0.0 | 0.3− | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2001 08 12 | 644 | 0.2+ | 0.3+ | 2003 02 07 | 644 | 0.4+ | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 1.2+ | 0.6+ | 2003 02 23 | 699 | 1.1− | 0.6− | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2003 02 23 | 699 | 1.4− | 1.1+ | 2006 11 22 | 704 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.2− | 0.6+ | 2003 02 23 | 699 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2003 01 09 | 704 | 0.0 | 0.0 | 2003 02 23 | 699 | 0.5− | 1.0+ | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2003 01 09 | 704 | 1.3+ | 0.3+ | 2004 05 13 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2003 01 09 | 704 | 0.2+ | 0.2+ | 2004 05 13 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2003 01 28 | 644 | 0.3+ | 0.2− | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.5− | 0.3− |
| 2003 01 28 | 644 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.4− | 0.4− |
| 2003 01 28 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2003 01 31 | 704 | 0.8+ | 0.3+ | 2006 09 25 | 691 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.4− | 0.4− |
| 2003 01 31 | 704 | 0.7+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.3− | 2006 11 27 | 704 | 0.5+ | 1.2− |
| 2003 01 31 | 704 | (1.6+ | 0.3−) | 2006 10 23 | G96 | 0.3− | 0.1− | 2006 11 27 | 704 | 0.5− | 0.8+ |
| 2003 01 31 | 704 | 0.8+ | 0.3− | 2006 10 23 | G96 | 0.4− | 0.1+ | 2006 11 27 | 704 | 0.3+ | 0.5+ |
| 2003 01 31 | 704 | 0.4+ | 0.5− | 2006 10 23 | G96 | 0.1− | 0.4− | 2006 11 27 | 704 | 0.2− | 1.2+ |

**(143434)∗ 2003 BY$_{62}$**

Discovered 2003 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.40367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18124683 | $\omega$ | 149.98394 | | −0.92495411 | −0.37935753 | |
| $a$ | 3.0923532 | $\Omega$ | 7.83072 | | +0.30550460 | −0.77869369 | |
| $e$ | 0.0425129 | $i$ | 9.89129 | | +0.22611245 | −0.49972392 | |
| $P$ | 5.44 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 557 | 1.0− | 0.1+ | 2003 01 26 | 608 | 0.9+ | 0.7+ | 2006 09 25 | 691 | 0.6+ | 0.4− |
| 1995 10 21 | 557 | 0.5− | 0.1+ | 2003 01 26 | 608 | 0.5+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 1998 03 20 | 704 | 0.1− | 1.4+ | 2003 01 26 | 608 | 0.5+ | 1.2+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 1998 03 20 | 704 | 1.5+ | 1.5+ | 2003 01 28 | 704 | 0.1− | 0.3− | 2006 09 27 | 291 | 0.2− | 0.0 |
| 1998 03 20 | 704 | 1.3− | 0.4− | 2003 01 28 | 704 | 0.3− | 0.1+ | 2006 09 27 | 291 | 0.3− | 0.1+ |
| 1998 03 20 | 704 | 0.4+ | 0.2− | 2003 01 28 | 704 | 0.9+ | 1.0+ | 2006 09 27 | 291 | 0.1− | 0.0 |
| 1998 03 29 | 704 | 0.5− | 1.5− | 2003 01 28 | 704 | 0.6+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.4+ |
| 1998 03 29 | 704 | 0.1− | 0.4− | 2003 01 31 | 704 | (1.9+ | 1.8−) | 2006 10 03 | 691 | 0.1+ | 0.3+ |
| 1998 03 29 | 704 | 0.0 | 1.9− | 2003 01 31 | 704 | 0.0 | 0.4+ | 2006 10 03 | 691 | 0.1− | 0.3+ |
| 1998 03 29 | 704 | (0.4+ | 2.1−) | 2003 01 31 | 704 | 1.0− | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 1998 03 29 | 704 | (3.7− | 0.1−) | 2003 01 31 | 704 | 0.1+ | 1.2+ | 2006 10 17 | 691 | 0.5− | 0.0 |
| 1998 04 01 | 704 | 0.8− | 0.1− | 2003 01 31 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 1998 04 01 | 704 | 1.3− | 0.5− | 2003 01 31 | 704 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.4− |
| 1998 04 01 | 704 | 1.2+ | 0.2− | 2003 01 31 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.0 |
| 1998 04 01 | 704 | (4.9− | 0.9−) | 2003 01 31 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.2− |
| 1998 04 19 | 704 | 0.9− | 0.3− | 2003 01 31 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 703 | 0.5+ | 0.8− |
| 1998 04 19 | 704 | 0.5− | 0.7+ | 2003 02 04 | 699 | 0.5− | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.8+ |
| 1998 04 19 | 704 | 0.5− | 1.2− | 2003 02 04 | 699 | 0.4+ | 0.3+ | 2006 10 21 | 703 | (2.8+ | 2.5−) |
| 1998 04 19 | 704 | 0.4+ | 1.6− | 2003 02 04 | 699 | 1.2− | 0.5+ | 2006 10 21 | 703 | 0.6+ | 0.7+ |
| 1998 04 19 | 704 | (1.0− | 2.2−) | 2003 02 04 | 699 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 11 11 | 704 | 0.1+ | 1.1− | 2003 02 21 | 644 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2001 11 11 | 704 | 0.7+ | 0.4− | 2003 02 21 | 644 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 11 11 | 704 | 0.4+ | 0.7− | 2003 02 21 | 644 | 0.1− | 0.4− | 2006 10 25 | 106 | (0.6− | 2.1−) |
| 2001 11 11 | 704 | 0.2+ | 0.7− | 2003 03 05 | 704 | 0.8− | 0.6+ | 2006 10 25 | 106 | 0.1+ | 0.3− |
| 2001 11 11 | 704 | 0.5− | 1.2− | 2003 03 05 | 704 | 0.5− | 0.4+ | 2006 10 25 | 106 | 0.2− | 0.3− |
| 2001 12 09 | 704 | 0.1− | 0.5− | 2003 03 05 | 704 | 0.1− | 0.7+ | 2006 10 26 | 106 | 0.2+ | 0.9+ |
| 2001 12 09 | 704 | 0.1+ | 0.3− | 2003 03 08 | 704 | 0.5+ | 1.3− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2001 12 09 | 704 | 1.1+ | 0.8− | 2003 03 08 | 704 | 1.4+ | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 12 09 | 704 | 0.9+ | 0.1+ | 2003 03 08 | 704 | 0.2+ | 0.8− | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 12 09 | 704 | 0.2+ | 1.0− | 2003 03 09 | 599 | (3.9+ | 2.0+) | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 12 22 | 704 | 1.0+ | 0.6− | 2003 03 09 | 599 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.4− |
| 2001 12 22 | 704 | 0.3+ | 0.1− | 2003 03 09 | 599 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2001 12 22 | 704 | 0.2+ | 0.5− | 2003 03 09 | 599 | 0.2+ | 0.9+ | | | | |

**(143435)∗ 2003 BD$_{64}$ = 1998 XL$_{49}$**

Discovered 2003 Jan. 29 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47284)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.49074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23541695 | $\omega$ | 153.78175 | | −0.13877823 | −0.97818221 | |
| $a$ | 2.5976316 | $\Omega$ | 303.82466 | | +0.87276436 | −0.04703279 | |
| $e$ | 0.1449083 | $i$ | 10.72493 | | +0.46799890 | −0.20235486 | |
| $P$ | 4.19 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.1− | 0.1+ | 2003 01 29 | 644 | 0.2+ | 0.0 | 2005 07 07 | 691 | 0.0 | 0.0 |
| 1998 12 14 | 704 | 0.1+ | 0.4+ | 2003 01 29 | 644 | 0.1+ | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.2+ |
| 1998 12 14 | 704 | 0.3− | 0.9− | 2003 01 31 | 704 | 0.6− | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.3− |
| 1998 12 14 | 704 | 0.6+ | 0.2+ | 2003 01 31 | 704 | 0.0 | 0.8+ | 2006 09 19 | 703 | 0.1− | 0.7+ |
| 1998 12 14 | 704 | 0.7+ | 1.3+ | 2003 01 31 | 704 | 0.3− | 0.3− | 2006 09 19 | 703 | 1.0− | 0.3+ |
| 1998 12 17 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 1.3+ | 0.4− |
| 1998 12 17 | 704 | 0.7− | 1.1− | 2003 02 01 | 704 | 0.4− | 1.1+ | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 1998 12 17 | 704 | 1.5+ | 0.2− | 2003 02 01 | 704 | 0.4+ | 0.5− | 2006 09 25 | 703 | 0.5− | 0.2+ |
| 1998 12 17 | 704 | 0.0 | 1.6− | 2003 02 01 | 704 | 1.1+ | 0.7− | 2006 09 25 | 703 | 0.2+ | 0.1+ |
| 1998 12 17 | 704 | 1.3− | 1.1− | 2003 02 01 | 704 | 0.7+ | 0.4+ | 2006 09 25 | 703 | 0.3+ | 0.1+ |
| 2002 10 01 | 704 | 0.0 | 1.0+ | 2003 02 04 | 704 | 0.4+ | 0.2− | 2006 10 02 | 704 | 0.3+ | 0.6− |
| 2002 10 01 | 704 | 0.0 | 0.3+ | 2003 02 04 | 704 | 0.6+ | 0.0 | 2006 10 02 | 704 | 1.2+ | 1.0− |
| 2002 10 01 | 704 | 0.7+ | 0.3+ | 2003 02 04 | 704 | 0.3+ | 0.0 | 2006 10 02 | 704 | 0.9− | 0.2− |
| 2002 10 30 | 704 | 0.3− | 0.1− | 2003 02 04 | 704 | 0.2− | 0.8+ | 2006 10 02 | 704 | 0.4+ | 0.3− |
| 2002 10 30 | 704 | 0.5− | 0.3+ | 2004 03 16 | 644 | 0.1+ | 0.1− | 2006 10 02 | 704 | 0.0 | 0.6− |
| 2002 10 30 | 704 | 1.4− | 0.8+ | 2004 03 16 | 644 | 0.1− | 0.6+ | 2006 10 02 | 703 | 0.1− | 0.1− |
| 2002 10 30 | 704 | 0.1− | 0.8− | 2004 03 16 | 644 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.7− | 0.2+ | 2004 03 17 | E12 | 0.1+ | 0.6+ | 2006 10 02 | 703 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.7− | 0.0 | 2004 03 17 | E12 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2002 11 07 | 704 | 0.4− | 0.2+ | 2004 03 17 | E12 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 11 07 | 704 | 1.2− | 0.3+ | 2004 03 17 | E12 | 0.1− | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 1.3− | 0.1+ | 2004 03 30 | E12 | 0.5+ | 1.1+ | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2002 11 15 | 704 | 0.1− | 0.5+ | 2004 03 30 | E12 | 0.8+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 11 15 | 704 | 0.3− | 0.2− | 2004 03 30 | E12 | 0.8+ | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2002 11 15 | 704 | 0.0 | 0.6+ | 2004 03 30 | E12 | 0.7+ | 0.4+ | 2006 10 23 | 703 | 0.3− | 0.8+ |
| 2002 11 15 | 704 | 1.0+ | 0.8+ | 2004 04 12 | E12 | (1.1+ | 1.9+) | 2006 10 23 | 703 | 0.3+ | 0.1− |
| 2002 12 06 | 704 | (0.5+ | 2.1−) | 2004 04 12 | E12 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.5− | 0.8+ |
| 2002 12 06 | 704 | (0.2+ | 2.6−) | 2004 04 12 | E12 | (1.1+ | 2.0+) | 2006 10 23 | 703 | 0.4− | 0.5+ |
| 2002 12 06 | 704 | (0.3− | 2.5−) | 2004 04 12 | E12 | (1.6+ | 1.5+) | 2006 11 15 | 703 | 0.3+ | 0.9+ |
| 2002 12 06 | 704 | (0.3− | 2.6−) | 2004 04 16 | 699 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2002 12 06 | 704 | (0.3− | 2.7−) | 2004 04 16 | 699 | 0.7− | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.4+ |
| 2002 12 15 | 704 | 0.6− | 0.3+ | 2004 04 16 | 699 | 1.1− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2002 12 15 | 704 | 0.0 | 0.1+ | 2004 04 16 | 699 | 0.9+ | 1.1− | 2006 11 21 | 703 | 0.1− | 0.2+ |
| 2002 12 15 | 704 | 0.8− | 0.4− | 2004 04 16 | E12 | 0.1+ | 0.1+ | 2006 11 21 | 703 | 0.7− | 0.0 |
| 2002 12 15 | 704 | 0.6− | 0.3+ | 2004 04 16 | E12 | 1.1+ | 0.1+ | 2006 11 21 | 703 | 1.3− | 1.4− |
| 2002 12 15 | 704 | 0.5− | 0.3+ | 2004 04 16 | E12 | 0.6+ | 1.0+ | 2006 11 21 | 703 | 0.6− | 0.5− |
| 2003 01 04 | 704 | 0.5+ | 1.1− | 2004 04 16 | E12 | 0.4+ | 0.1− | 2006 11 29 | 704 | 0.2− | 1.0+ |
| 2003 01 04 | 704 | 1.2+ | 0.5− | 2004 04 22 | E12 | 0.6− | 0.8+ | 2006 11 29 | 704 | 0.0 | 0.6+ |
| 2003 01 04 | 704 | 1.0+ | 0.9− | 2004 04 22 | E12 | 0.7− | 0.9+ | 2006 11 29 | 704 | 0.5− | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.9+ | 0.8− | 2004 04 22 | E12 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.9+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.3− | 2004 04 22 | E12 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.8+ | 0.3+ | | |
| 2003 01 29 | 644 | 0.6− | 0.2− | 2005 07 07 | 691 | 0.1+ | 0.1+ | | | | | | |

**(143436)∗ 2003 BX$_{66}$**

Discovered 2003 Jan. 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 188.55379 | | (2000.0) | | −0.79709371 | +0.59586693 |
| $n$ | 0.19651378 | $\omega$ | 70.81151 | | −0.59836883 | −0.75759634 |
| $a$ | 2.9300433 | $\Omega$ | 145.56298 | | −0.08121800 | −0.26644022 |
| $e$ | 0.0374190 | $i$ | 9.96924 | | | |
| $P$ | 5.02 | $H$ | 15.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.8+ | 0.1+ | 2003 01 31 | 704 | 0.7+ | 0.4+ | 2005 08 04 | 644 | 0.2− | 0.3+ | | |
| 1995 07 27 | 691 | 0.2− | 0.0 | 2003 02 08 | 704 | 0.7+ | 0.8+ | 2005 08 04 | 644 | 0.1− | 0.2+ | | |
| 1995 07 27 | 691 | 0.2− | 0.2+ | 2003 02 08 | 704 | 0.2− | 1.0+ | 2005 08 05 | 644 | 0.2− | 0.2+ | | |
| 1998 03 21 | 691 | 0.1+ | 0.1− | 2003 02 08 | 704 | 0.7− | 0.8+ | 2005 08 05 | 644 | 0.2− | 0.4+ | | |
| 1998 03 21 | 691 | 0.4− | 0.2+ | 2003 02 08 | 704 | 0.5+ | 0.7+ | 2005 08 05 | 644 | 0.6− | 0.2+ | | |
| 1998 03 21 | 691 | 0.7− | 0.1− | 2003 02 11 | 608 | 0.6+ | 0.1− | 2005 08 06 | 644 | 0.1− | 0.3+ | | |
| 2000 08 29 | 704 | 0.3− | 0.5+ | 2003 02 11 | 608 | 0.7+ | 1.0− | 2005 08 06 | 644 | 0.3− | 0.1+ | | |
| 2000 08 29 | 704 | 0.1+ | 1.3+ | 2003 02 11 | 608 | 1.0+ | 0.3− | 2005 08 06 | 644 | 0.2− | 0.2+ | | |
| 2000 08 29 | 704 | 0.0 | 1.7+ | 2003 03 12 | 644 | 0.0 | 0.1− | 2005 08 27 | 644 | 0.3− | 0.1+ | | |
| 2001 12 18 | 704 | 0.9+ | 0.1+ | 2003 03 12 | 644 | 0.0 | 0.0 | 2005 08 27 | 644 | 0.5− | 0.2+ | | |
| 2001 12 18 | 704 | 1.4− | 0.4+ | 2003 03 12 | 644 | 0.1+ | 0.0 | 2005 08 27 | 644 | 0.5− | 0.2+ | | |
| 2001 12 18 | 704 | 0.0 | 0.8− | 2004 05 12 | 703 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.2+ | | |
| 2001 12 18 | 704 | (2.4− | 1.5+) | 2004 05 12 | 703 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.1− | | |
| 2002 12 07 | 645 | 0.0 | 0.1+ | 2004 05 12 | 703 | 1.3+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.2+ | | |
| 2002 12 07 | 645 | 0.0 | 0.1+ | 2004 05 12 | 703 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.6+ | 0.8+ | | |
| 2003 01 30 | 699 | 0.6− | 0.5+ | 2004 05 15 | 704 | (0.5− | 6.5−) | 2006 11 10 | D35 | 0.2− | 0.4+ | | |
| 2003 01 30 | 699 | 0.3− | 0.9+ | 2004 05 15 | 704 | 0.1− | 0.6+ | 2006 11 10 | D35 | 0.5− | 0.4+ | | |
| 2003 01 30 | 699 | 0.1− | 0.5− | 2004 05 15 | 704 | 0.0 | 0.2+ | 2006 11 10 | D35 | 0.2− | 0.3+ | | |
| 2003 01 30 | 699 | 0.4− | 0.0 | 2004 05 24 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.6− | 0.4− | | |
| 2003 01 31 | 704 | 0.7+ | 0.7+ | 2004 05 24 | 704 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.5+ | | |
| 2003 01 31 | 704 | 0.7+ | 1.0+ | 2004 05 24 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.2− | | |
| 2003 01 31 | 704 | 1.3+ | 0.1− | 2004 05 24 | 704 | 0.1− | 0.7+ | 2006 11 13 | 703 | 1.9+ | 1.2− | | |
| 2003 01 31 | 704 | 0.3− | 0.1+ | 2005 08 04 | 644 | 0.1− | 0.4+ | | | | | | |

**(143437)∗ 2003 BY$_{66}$**

Discovered 2003 Jan. 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.53501 | | (2000.0) | | −0.84744345 | −0.51403787 |
| $n$ | 0.17651122 | $\omega$ | 193.86183 | | +0.50306135 | −0.69769396 |
| $a$ | 3.1474186 | $\Omega$ | 314.39563 | | +0.16961389 | −0.49898718 |
| $e$ | 0.0299290 | $i$ | 10.70155 | | | |
| $P$ | 5.58 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.5− | 0.0 | 2003 01 30 | 699 | 0.0 | 0.9− | 2003 03 12 | 644 | 0.1− | 0.8+ | | |
| 2000 09 03 | 704 | 0.1− | 1.0+ | 2003 01 30 | 699 | 1.3+ | 1.1+ | 2003 03 12 | 644 | 0.0 | 0.8+ | | |
| 2000 09 03 | 704 | 0.3− | 1.0+ | 2003 01 30 | 699 | (2.1+ | 0.6−) | 2003 03 12 | 644 | 0.1+ | 0.2+ | | |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 01 31 | 704 | 0.2+ | 0.1+ | 2003 03 12 | 644 | (1.6+ | 0.5+) | | |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 01 31 | 704 | 0.3+ | 0.1− | 2006 09 28 | 703 | 1.0+ | 1.4− | | |
| 2001 10 25 | 704 | (0.1− | 1.8−) | 2003 01 31 | 704 | 0.4− | 0.6+ | 2006 09 28 | 703 | 0.8+ | 0.2− | | |
| 2001 10 25 | 704 | 0.3+ | 1.4− | 2003 01 31 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.8+ | 1.4+ | | |
| 2001 10 25 | 704 | 0.6+ | 0.4− | 2003 02 03 | 644 | 0.3+ | 0.7+ | 2006 09 28 | 703 | 0.2+ | 0.4+ | | |
| 2001 10 25 | 704 | 0.6− | 0.3− | 2003 02 03 | 644 | 0.2+ | 0.6+ | 2006 09 28 | 703 | 0.7− | 0.1+ | | |
| 2001 10 25 | 704 | 0.8− | 1.2− | 2003 02 03 | 644 | 0.9+ | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.5+ | | |
| 2001 11 18 | 704 | 0.3− | 0.2− | 2003 02 08 | 704 | 0.8+ | 0.3− | 2006 09 28 | 703 | 0.2− | 0.5− | | |
| 2001 11 18 | 704 | 0.1+ | 0.0 | 2003 02 08 | 704 | 0.7+ | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.6− | | |
| 2001 11 18 | 704 | 0.5− | 0.4+ | 2003 02 08 | 704 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2001 11 18 | 704 | 0.8− | 1.0− | 2003 02 21 | 644 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 18 | 704 | 0.5− | 0.1− | 2003 02 21 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2001 12 09 | 704 | 0.0 | 0.1− | 2003 02 21 | 644 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 1.2− | 0.7+ | | |
| 2001 12 09 | 704 | 0.6+ | 0.9+ | 2003 02 22 | 644 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.4− | 1.1− | | |
| 2001 12 09 | 704 | 0.6+ | 1.2+ | 2003 02 22 | 644 | 0.2+ | 0.5− | 2006 10 17 | 703 | 0.7− | 0.1+ | | |
| 2001 12 22 | 704 | (0.2+ | 1.8+) | 2003 02 22 | 644 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.3+ | | |
| 2001 12 22 | 704 | 0.4+ | 0.6+ | 2003 03 05 | 704 | 0.2+ | 1.3+ | 2006 10 23 | 644 | 0.2− | 0.3+ | | |
| 2001 12 22 | 704 | 0.7+ | 0.2+ | 2003 03 05 | 704 | (0.1− | 1.6+) | 2006 10 23 | 644 | 0.4+ | 0.1+ | | |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2003 03 05 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2003 01 28 | 645 | 0.2− | 0.1− | 2003 03 12 | 644 | 0.2− | 0.2+ | | | | | | |
| 2003 01 30 | 699 | 0.5+ | 0.6− | 2003 03 12 | 644 | 0.2− | 0.4+ | | | | | | |

**(143438)∗ 2003 BB$_{67}$ = 2004 GQ$_{87}$**

Discovered 2003 Jan. 30 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 75837)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.14744 | | (2000.0) | | −0.78721159 | −0.60359864 |
| $n$ | 0.18692843 | $\omega$ | 19.29986 | | +0.54416101 | −0.77630312 |
| $a$ | 3.0293711 | $\Omega$ | 122.92052 | | +0.29014945 | −0.18171999 |
| $e$ | 0.0275226 | $i$ | 8.65766 | | | |
| $P$ | 5.27 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.0 | 0.4− | 2003 01 31 | 704 | 0.3+ | 0.1+ | 2004 04 15 | 644 | 0.4+ | 0.3+ | | |
| 1996 11 08 | 691 | 0.2− | 0.0 | 2003 01 31 | 704 | 1.1+ | 0.7− | 2004 04 15 | 644 | 0.4+ | 0.2+ | | |
| 1996 11 08 | 691 | 0.4− | 0.4− | 2003 01 31 | 704 | 1.2+ | 0.8+ | 2004 04 25 | 704 | 0.1+ | 0.5+ | | |
| 2001 10 15 | 644 | 0.1− | 1.0+ | 2003 01 31 | 704 | 0.9+ | 0.3+ | 2004 04 25 | 704 | 0.4+ | 1.4+ | | |
| 2001 10 15 | 644 | 0.1− | 0.8+ | 2003 01 31 | 704 | 0.7+ | 1.7+ | 2004 04 25 | 704 | 0.5+ | 1.0+ | | |
| 2001 10 15 | 644 | 0.5− | 0.6+ | 2003 02 03 | 704 | 1.0− | 0.8− | 2004 04 25 | 704 | 1.1+ | 1.4+ | | |
| 2001 10 23 | 644 | 0.1− | 1.1+ | 2003 02 03 | 704 | 1.6− | 1.1+ | 2006 09 19 | 703 | 0.5− | 0.1+ | | |
| 2001 10 23 | 644 | 0.2− | 1.3+ | 2003 02 03 | 704 | 0.9− | 0.3+ | 2006 09 19 | 703 | 0.2− | 1.0+ | | |
| 2001 10 23 | 644 | 0.1− | 1.1+ | 2003 02 03 | 704 | 0.6− | 0.1+ | 2006 09 19 | 703 | 1.5− | 0.7− | | |
| 2001 11 11 | 645 | 0.1+ | 0.1+ | 2004 01 30 | 291 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.8+ | | |
| 2001 11 11 | 645 | 0.1+ | 0.1+ | 2004 01 30 | 291 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.1− | | |
| 2003 01 08 | 704 | 0.0 | 1.2− | 2004 01 30 | 291 | 0.7− | 0.5+ | 2006 09 26 | 703 | 0.0 | 1.8+ | | |
| 2003 01 08 | 704 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.6+ | | |
| 2003 01 08 | 704 | 0.1− | 1.6− | 2004 03 23 | 704 | 0.6+ | 1.0+ | 2006 09 26 | 703 | 1.2+ | 0.7+ | | |
| 2003 01 08 | 704 | 0.5+ | 0.9− | 2004 03 23 | 704 | 0.2+ | 1.4+ | 2006 10 02 | 703 | 1.7− | 0.6+ | | |
| 2003 01 08 | 704 | 0.3− | 1.3− | 2004 04 13 | 683 | (0.5+ | 2.9−) | 2006 10 02 | 703 | 0.3− | 0.8− | | |
| 2003 01 30 | 608 | 0.0 | 0.7+ | 2004 04 13 | 683 | 1.9+ | 1.3− | 2006 10 02 | 703 | 0.0 | 0.1− | | |
| 2003 01 30 | 608 | 0.3+ | 1.3+ | 2004 04 13 | 683 | (0.1− | 2.1+) | 2006 10 02 | 703 | 1.3− | 0.2+ | | |
| 2003 01 30 | 608 | 0.2− | 1.4+ | 2004 04 15 | 644 | 0.3+ | 0.3+ | | | | | | |

**(143439)∗ 2003 BM$_{67}$**

Discovered 2003 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.28587 | | (2000.0) | | +0.94310095 | −0.28119322 |
| $n$ | 0.22320942 | $\omega$ | 270.35689 | | +0.32716799 | +0.88000475 |
| $a$ | 2.6914999 | $\Omega$ | 105.98069 | | −0.05934396 | +0.38278195 |
| $e$ | 0.1076878 | $i$ | 10.63726 | | | |
| $P$ | 4.42 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2003 01 31 | 644 | 0.2+ | 0.3+ | 2004 04 24 | 704 | 0.3− | 0.1− | | |
| 2001 09 12 | 704 | 0.3− | 0.7+ | 2003 02 01 | 704 | 0.8+ | 0.1+ | 2004 04 24 | 704 | 0.6+ | 0.5− | | |
| 2001 09 12 | 704 | 0.9− | 0.7+ | 2003 02 01 | 704 | 0.3− | 0.6+ | 2004 04 24 | 704 | 0.1+ | 0.0 | | |
| 2001 09 12 | 704 | 0.2− | 1.2+ | 2003 02 01 | 704 | (2.3+ | 0.3+) | 2004 04 24 | 704 | 0.5+ | 0.4+ | | |
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2003 02 01 | 704 | 0.0 | 1.1+ | 2004 04 26 | 699 | (1.8− | 0.6+) | | |
| 2001 10 19 | 699 | 0.5+ | 0.1+ | 2003 02 01 | 704 | 1.1+ | 1.1+ | 2004 04 26 | 699 | 1.2− | 0.9+ | | |
| 2001 10 19 | 699 | 0.2+ | 0.0 | 2003 02 02 | 644 | 0.2+ | 0.6+ | 2004 04 26 | 699 | 0.2− | 1.1+ | | |
| 2001 10 19 | 699 | 0.4− | 0.1+ | 2003 02 02 | 644 | 0.4+ | 0.5+ | 2004 04 26 | 699 | (1.3+ | 3.7+) | | |
| 2001 10 19 | 699 | 0.2+ | 0.4+ | 2003 02 02 | 644 | 0.2+ | 0.4+ | 2005 08 10 | E12 | 0.4+ | 0.5− | | |
| 2001 10 23 | 644 | 0.2+ | 0.7+ | 2003 02 07 | 704 | 0.3+ | 0.7− | 2005 08 10 | E12 | 0.0 | 0.5+ | | |
| 2001 10 23 | 644 | 0.3+ | 0.7+ | 2003 02 07 | 704 | 0.4+ | 1.0+ | 2005 08 10 | E12 | 0.3+ | 0.2+ | | |
| 2001 10 23 | 644 | 0.0 | 0.7+ | 2003 02 07 | 704 | 0.5+ | 0.5+ | 2005 08 10 | E12 | 0.6− | 0.1+ | | |
| 2003 01 27 | 699 | 0.3+ | 0.9+ | 2003 02 23 | 699 | 0.4+ | 0.6− | 2005 08 31 | 699 | 0.9− | 1.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 699 | 1.0− | 1.4+ | 2003 02 23 | 699 | 1.3− | 0.7+ | 2005 08 31 | 699 | 1.1− | 1.1+ |
| 2003 01 27 | 699 | 0.1− | 0.6+ | 2003 02 23 | 699 | 0.1+ | 0.4+ | 2005 08 31 | 699 | 0.9− | 1.3+ |
| 2003 01 27 | 699 | 0.1− | 0.2− | 2003 02 23 | 699 | 0.3− | 0.6+ | 2005 08 31 | 699 | 0.8+ | 1.3+ |
| 2003 01 31 | 644 | 0.6− | 0.0 | 2003 04 26 | 645 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.3− |
| 2003 01 31 | 699 | 0.4+ | 0.1+ | 2003 04 26 | 645 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.1− |
| 2003 01 31 | 699 | 0.9+ | 0.9+ | 2004 04 16 | 704 | 1.0+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.1+ |
| 2003 01 31 | 644 | 0.3+ | 0.4+ | 2004 04 16 | 704 | 0.6+ | 0.1+ | 2006 11 20 | 704 | 0.4+ | 1.6− |
| 2003 01 31 | 699 | 0.5+ | 0.4+ | 2004 04 16 | 704 | 0.5+ | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.6− |
| 2003 01 31 | 699 | 0.1− | 0.6+ | 2004 04 16 | 704 | 0.6+ | 0.9− | 2006 11 20 | 704 | 0.1− | 2.3− |

**(143440)∗ 2003 BV$_{70}$**

Discovered 2003 Jan. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.17360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18289140 | $\omega$ | 78.62971 | | −0.89892928 | +0.43710419 | |
| $a$ | 3.0737877 | $\Omega$ | 127.28271 | | −0.41498784 | −0.82806680 | |
| $e$ | 0.1170672 | $i$ | 2.11969 | | −0.14039673 | −0.35106309 | |
| $P$ | 5.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 03 | 691 | 0.0 | 0.6− | 2003 02 21 | 644 | 0.7+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 1998 04 03 | 691 | 0.0 | 0.6− | 2003 02 23 | 291 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.6− |
| 1998 04 03 | 691 | 0.6− | 1.0− | 2003 02 23 | 291 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.8− |
| 2000 09 29 | 691 | 0.4+ | 0.0 | 2003 02 23 | 291 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.7− |
| 2000 09 29 | 691 | 0.3+ | 0.2+ | 2005 09 01 | 691 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.5+ | 0.4− |
| 2000 09 29 | 691 | 0.7+ | 0.2+ | 2005 09 01 | 691 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2000 10 02 | 645 | 0.1− | 0.2− | 2005 09 01 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2000 10 02 | 645 | 0.1− | 0.3− | 2005 09 11 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 2003 01 31 | 291 | 0.2− | 0.2+ | 2005 09 11 | 691 | 0.0 | 0.8+ | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2003 01 31 | 291 | 0.0 | 0.3+ | 2005 09 11 | 691 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2003 01 31 | 291 | 0.2+ | 0.3+ | 2005 10 06 | G96 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2003 02 01 | 291 | 0.2+ | 0.1+ | 2005 10 06 | G96 | 0.4− | 0.5− | 2006 10 31 | 691 | 0.3+ | 0.4+ |
| 2003 02 01 | 291 | 0.1− | 0.2+ | 2005 10 06 | G96 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.6+ | 0.5− |
| 2003 02 01 | 291 | 0.1+ | 0.3+ | 2005 10 06 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.7+ | 0.7− |
| 2003 02 21 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.9− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2003 02 21 | 644 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.8− | 2006 11 15 | G96 | 0.0 | 0.7− |

**(143441)∗ 2003 BM$_{72}$ = 1997 AJ$_6$**

Discovered 2003 Jan. 28 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41482)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.57921 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17463002 | $\omega$ | 264.58609 | | +0.95954885 | −0.23021303 | |
| $a$ | 3.1699818 | $\Omega$ | 108.64596 | | +0.27344068 | +0.89913557 | |
| $e$ | 0.0826035 | $i$ | 9.84900 | | −0.06705372 | +0.37223271 | |
| $P$ | 5.64 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 08 | 684 | 0.2− | 0.4− | 2003 02 04 | 699 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.6− |
| 1997 01 08 | 684 | 0.4− | 0.7− | 2003 02 04 | 699 | 0.7− | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 1997 01 09 | 684 | 0.0 | 0.3− | 2003 02 04 | 699 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.3− | 0.7− |
| 1997 01 09 | 684 | 0.2+ | 0.3− | 2003 02 04 | 699 | 0.4+ | 1.0+ | 2006 09 25 | 703 | 0.1+ | 1.2+ |
| 1997 01 09 | 684 | 0.0 | 0.5− | 2003 02 07 | 644 | 0.4− | 0.2+ | 2006 09 25 | 703 | (1.2+ | 1.7−) |
| 2001 11 21 | 608 | 0.4+ | 0.0 | 2003 02 07 | 644 | 0.4− | 0.2+ | 2006 09 25 | 703 | 0.8− | 0.8− |
| 2001 11 21 | 608 | 0.1− | 0.4+ | 2003 02 07 | 644 | 0.0 | 0.7+ | 2006 09 25 | 703 | (1.8− | 0.2−) |
| 2001 11 21 | 608 | 0.1− | 0.4+ | 2003 02 19 | 644 | 0.3− | 0.5− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.2− | 1.3− | 2003 02 19 | 644 | 0.5− | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2001 12 15 | 704 | 0.5+ | 1.3− | 2003 02 19 | 644 | 0.1+ | 0.3− | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2001 12 15 | 704 | 0.3+ | 0.7+ | 2003 03 07 | 644 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2003 01 28 | 644 | 0.0 | 0.2+ | 2003 03 07 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2003 01 28 | 644 | 0.2+ | 0.4+ | 2003 03 07 | 644 | 0.6+ | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2003 01 28 | 644 | 0.3+ | 0.2+ | 2006 09 17 | 699 | 0.6+ | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 02 01 | 704 | 0.2− | 0.2+ | 2006 09 17 | 699 | 0.5− | 0.1+ | 2006 10 23 | 644 | 0.5+ | 0.2+ |
| 2003 02 01 | 704 | 1.4+ | 1.0+ | 2006 09 17 | 699 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2003 02 01 | 704 | 1.0− | 0.1+ | 2006 09 17 | 699 | 1.1+ | 1.1+ | | | | |
| 2003 02 01 | 704 | 0.8+ | 1.0+ | 2006 09 19 | 703 | 1.1− | 1.1+ | | | | |

**(143442)∗ 2003 BK$_{73}$**

Discovered 2003 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.02900 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23698052 | $\omega$ | 198.67228 | | −0.21022346 | −0.94585586 | |
| $a$ | 2.5861931 | $\Omega$ | 264.04993 | | +0.92566660 | −0.11118006 | |
| $e$ | 0.1279902 | $i$ | 14.39768 | | +0.31455912 | −0.30495195 | |
| $P$ | 4.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.5+ | 0.2− | 2003 01 29 | 704 | 1.2+ | 1.4+ | 2005 09 30 | 703 | 0.3− | 0.7− |
| 2001 08 22 | 704 | 0.2− | 0.2+ | 2003 02 01 | 699 | 0.0 | 0.1+ | 2005 09 30 | 703 | 1.1− | 0.7+ |
| 2001 08 22 | 704 | 0.2− | 1.0+ | 2003 02 01 | 699 | 0.2− | 0.2− | 2005 09 30 | 703 | 0.4− | 0.4+ |
| 2001 08 22 | 704 | 0.2− | 0.9− | 2003 02 01 | 699 | 0.2− | 0.7+ | 2005 09 30 | 703 | 1.2− | 1.2+ |
| 2001 09 10 | 699 | 0.9− | 0.3+ | 2003 02 01 | 699 | 0.2+ | 0.9+ | 2005 10 02 | 644 | 0.3+ | 0.2− |
| 2001 09 10 | 699 | 0.3− | 0.7+ | 2003 02 06 | 644 | 0.4+ | 0.2+ | 2005 10 02 | 644 | 0.1− | 0.3− |
| 2001 09 10 | 699 | 1.3− | 0.1+ | 2003 02 06 | 644 | 0.5+ | 0.1+ | 2005 10 02 | 644 | 0.3+ | 0.2+ |
| 2001 09 10 | 699 | 0.8− | 0.9− | 2003 02 06 | 644 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.7− |
| 2001 09 21 | 699 | 0.2− | 0.1− | 2003 03 08 | 699 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.7− | 0.6+ |
| 2001 09 21 | 699 | 0.7− | 0.5− | 2003 03 08 | 699 | 0.4+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 699 | 0.8− | 0.0 | 2003 03 08 | 699 | 1.5+ | 1.0− | 2006 09 24 | 691 | 0.2+ | 0.1− |
| 2001 09 21 | 699 | 0.1− | 0.8− | 2003 03 08 | 699 | 1.4− | 0.1+ | 2006 09 24 | 691 | 0.4+ | 0.1+ |
| 2001 09 30 | 644 | 0.4+ | 0.8+ | 2005 08 28 | 699 | 0.5+ | 1.0+ | 2006 09 24 | 691 | 0.3+ | 0.0 |
| 2001 09 30 | 644 | 0.1+ | 1.1+ | 2005 08 28 | 699 | 0.4+ | 0.6− | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2001 09 30 | 644 | 0.2− | 0.7+ | 2005 08 28 | 699 | 0.4+ | 1.1+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2001 10 17 | 704 | 1.1+ | 0.2+ | 2005 08 28 | 699 | 1.3+ | 0.8− | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2001 10 17 | 704 | 0.3+ | 0.1− | 2005 09 03 | 568 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 1.4+ | 0.0 | 2005 09 03 | 568 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.5+ | 0.4− |
| 2001 10 17 | 704 | 0.8+ | 0.1+ | 2005 09 03 | 568 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.3− | 0.5− |
| 2001 10 17 | 704 | 0.5− | 0.5+ | 2005 09 05 | 568 | 0.3+ | 0.1− | 2006 11 02 | 703 | 0.7− | 0.0 |
| 2003 01 02 | 704 | 0.4+ | 0.3− | 2005 09 08 | A50 | 0.2− | 0.1− | 2006 11 02 | 703 | 1.1− | 0.2+ |
| 2003 01 02 | 704 | 0.3+ | 1.0− | 2005 09 08 | A50 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2003 01 02 | 704 | 1.1− | 0.5− | 2005 09 12 | 704 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.4− |
| 2003 01 02 | 704 | 0.2− | 0.4− | 2005 09 12 | 704 | 0.2− | 0.7− | 2006 11 28 | 704 | 0.3+ | 0.5+ |
| 2003 01 29 | 704 | 0.3− | 0.6+ | 2005 09 12 | 704 | 0.0 | 0.3+ | | | | |
| 2003 01 29 | 704 | 0.1+ | 0.8+ | 2005 09 12 | 704 | 0.3+ | 0.1+ | | | | |

**(143443)∗ 2003 BV$_{73}$ = 2001 XO$_{124}$**

Discovered 2003 Jan. 29 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47288)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.30497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18566235 | $\omega$ | 333.47917 | | +0.66440925 | −0.72752526 | |
| $a$ | 3.0431276 | $\Omega$ | 74.35727 | | +0.71337889 | +0.54910620 | |
| $e$ | 0.0361604 | $i$ | 10.23332 | | +0.22282485 | +0.41132637 | |
| $P$ | 5.31 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.1− | 0.7− | 2003 01 29 | 644 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 1.4− | 0.9+ | 2003 02 01 | 644 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.5− | 0.8− |
| 2001 10 17 | 704 | 0.2− | 0.6+ | 2003 02 01 | 644 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 1.0− | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 1.0+ | 2003 02 01 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 1.1− | 0.7+ | 2003 04 26 | 645 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.1+ |
| 2001 11 18 | 704 | 0.8+ | 1.2− | 2003 04 26 | 645 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.5+ | 0.4+ |
| 2001 11 18 | 704 | 0.5+ | 1.1− | 2004 04 13 | 691 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 1.3+ | 0.7− |
| 2001 11 18 | 704 | 0.2+ | 1.1− | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 1.1+ | 0.8+ |
| 2001 11 18 | 704 | 0.5+ | 0.7− | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.5− | 0.8+ |
| 2001 11 18 | 704 | 0.5+ | 0.6− | 2004 04 16 | 704 | 0.8+ | 1.0+ | 2006 10 17 | 703 | 0.1+ | 0.9+ |
| 2001 12 14 | 704 | 0.4+ | 0.4− | 2004 04 16 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2001 12 14 | 704 | 0.1− | 0.6− | 2004 04 16 | 704 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2001 12 14 | 704 | 0.4+ | 0.2+ | 2004 04 23 | 704 | 0.7− | 0.0 | 2006 10 17 | 703 | 0.2− | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.2− | 0.5+ | 2004 04 23 | 704 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2001 12 17 | 704 | 0.0 | 0.9+ | 2004 04 23 | 704 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.6− | 0.2+ |
| 2001 12 17 | 704 | 0.4+ | 0.3+ | 2004 04 23 | 704 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 0.1+ | 1.2+ | 2004 04 23 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 644 | 0.7− | 0.3− |
| 2003 01 10 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.7+ | 1.4+ | 2006 10 22 | 644 | 0.9− | 0.2+ |
| 2003 01 10 | 704 | 0.6+ | 0.6− | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.8− | 0.2+ |
| 2003 01 10 | 704 | 1.0+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.7− | 2006 10 22 | 644 | 0.7− | 0.0 |
| 2003 01 10 | 704 | 0.5− | 0.6− | 2006 09 18 | 703 | 0.6+ | 1.4+ | 2006 10 22 | 644 | 0.6− | 0.5+ |
| 2003 01 10 | 704 | 0.4+ | 0.8− | 2006 09 25 | 699 | 1.2− | 0.5+ | 2006 10 22 | 644 | 0.6− | 0.2+ |
| 2003 01 29 | 644 | 0.6− | 0.2− | 2006 09 25 | 699 | 0.1+ | 1.4+ | | | | |
| 2003 01 29 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.0 | 1.3+ | | | | |

**(143444)∗ 2003 BO$_{74}$**

Discovered 2003 Jan. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 298.21085 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.21455319 | $\omega$ | 37.55960 | | −0.42468939 | | −0.89260860 |
| $a$ | 2.7634147 | $\Omega$ | 78.02632 | | +0.78861581 | | −0.44680977 |
| $e$ | 0.1781961 | $i$ | 8.89681 | | +0.44466170 | | −0.06009098 |
| $P$ | 4.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 21 | 691 | 0.3+ | 0.7− | 2003 02 08 | 699 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.2− |
| 1999 05 21 | 691 | 1.2− | 0.4− | 2003 02 08 | 699 | 0.8+ | 0.3+ | 2006 11 11 | 703 | (1.8+ | 1.3+) |
| 1999 05 21 | 691 | 0.0 | 0.2+ | 2003 02 08 | 699 | 0.7+ | 0.2+ | 2006 11 14 | 704 | 0.4− | 0.3− |
| 1999 05 23 | 691 | 0.4+ | 0.1− | 2003 02 08 | 699 | 0.8+ | 0.8+ | 2006 11 14 | 704 | 0.6− | 1.0+ |
| 1999 05 23 | 691 | 0.3+ | 0.2+ | 2003 02 26 | 704 | 0.1+ | 0.6+ | 2006 11 14 | 704 | 0.9− | 0.5+ |
| 1999 05 23 | 691 | 0.3+ | 0.2+ | 2003 02 26 | 704 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2001 09 12 | 704 | 0.0 | 0.4− | 2003 02 26 | 704 | 1.1+ | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.1− | 0.9− | 2003 02 26 | 704 | 0.6+ | 0.1− | 2006 11 16 | 704 | (1.6− | 0.0 ) |
| 2001 09 12 | 704 | 0.4+ | 1.1− | 2003 02 26 | 704 | 0.8+ | 0.3− | 2006 11 16 | 704 | 0.4+ | 0.9+ |
| 2001 10 15 | 644 | 0.0 | 0.0 | 2003 03 03 | 644 | 0.0 | 1.1+ | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2001 10 15 | 644 | 0.1+ | 0.3+ | 2003 03 03 | 644 | 0.1− | 1.1+ | 2006 11 16 | 704 | 0.5− | 0.7+ |
| 2001 10 15 | 644 | 0.0 | 0.2+ | 2003 03 03 | 644 | 0.1− | 1.0+ | 2006 11 17 | 704 | 0.5+ | 0.8+ |
| 2002 12 16 | 644 | 0.3+ | 0.1+ | 2003 03 07 | 645 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.2+ | 0.3− |
| 2002 12 16 | 644 | 0.5+ | 0.3− | 2003 03 07 | 645 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.1+ | 1.1− |
| 2002 12 16 | 644 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.8− | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2002 12 31 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2002 12 31 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 17 | 704 | 0.9− | 0.8+ |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.8− | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2002 12 31 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.6+ | 0.8− |
| 2002 12 31 | 704 | 0.7+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2003 01 10 | 704 | 0.4+ | 0.9+ | 2006 10 22 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.7+ |
| 2003 01 10 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2003 01 10 | 704 | 0.2+ | 0.7+ | 2006 11 01 | 703 | 0.4+ | 0.1− | 2006 11 19 | 704 | 1.4+ | 0.4− |
| 2003 01 10 | 704 | 0.8+ | 0.4+ | 2006 11 01 | 703 | 0.2+ | 0.1− | 2006 11 19 | 704 | 1.4+ | 0.6+ |
| 2003 01 10 | 704 | 1.0+ | 0.4+ | 2006 11 01 | 703 | 0.7− | 0.6− | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2003 01 24 | 644 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2003 01 24 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.9+ |
| 2003 01 24 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.4− | 2006 11 20 | 704 | 1.0+ | 0.8+ |
| 2003 01 29 | 644 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 1.1+ |
| 2003 01 29 | 644 | 0.5+ | 0.4− | 2006 11 10 | 644 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2003 01 29 | 644 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2003 02 02 | 704 | 0.7− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2003 02 02 | 704 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.7− | | | | |
| 2003 02 02 | 704 | 0.5− | 0.7+ | 2006 11 11 | 703 | 0.0 | 1.2− | | | | |

**(143445)∗ 2003 BV$_{74}$ = 1998 FE$_{46}$**

Discovered 2003 Jan. 29 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41483)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 186.00371 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.17918489 | $\omega$ | 185.28040 | | −0.96959720 | | +0.24237103 |
| $a$ | 3.1160312 | $\Omega$ | 8.96348 | | −0.21584402 | | −0.78213532 |
| $e$ | 0.0930852 | $i$ | 12.50199 | | −0.11529367 | | −0.57403887 |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 1.0− | 0.0 | 2001 11 11 | 704 | 0.0 | 0.3+ | 2005 08 04 | 644 | 0.0 | 0.5+ |
| 1998 03 02 | 691 | 0.6+ | 0.2+ | 2001 11 11 | 704 | 0.8+ | 1.5+ | 2006 07 21 | G96 | 0.0 | 0.2+ |
| 1998 03 02 | 691 | 0.6+ | 0.2+ | 2003 01 24 | 644 | 0.2+ | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.3+ |
| 1998 03 20 | 704 | 1.8+ | 0.6+ | 2003 01 24 | 644 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.1− |
| 1998 03 20 | 704 | 0.4+ | 1.4+ | 2003 01 24 | 644 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.5+ |
| 1998 03 20 | 704 | (2.2+ | 1.2−) | 2003 01 29 | 644 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.0 |
| 1998 03 20 | 704 | 1.9+ | 0.5− | 2003 01 29 | 644 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.2+ |
| 1998 03 20 | 704 | (3.3− | 0.0 ) | 2003 01 29 | 644 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.5− | 0.3− |
| 1998 03 22 | 704 | 0.6− | 1.9+ | 2003 02 01 | 644 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1998 03 22 | 704 | 0.6+ | 1.1+ | 2003 02 01 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.2+ |
| 1998 03 22 | 704 | (2.3+ | 2.3+) | 2003 02 01 | 644 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 1998 03 22 | 704 | 0.6+ | 0.9− | 2003 02 01 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 1998 03 22 | 704 | 1.8− | 0.4+ | 2003 02 01 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 1998 04 19 | 704 | 0.4+ | 1.8− | 2003 02 01 | 644 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1998 04 19 | 704 | (2.3+ | 0.6−) | 2003 03 03 | 644 | 0.3+ | 1.0+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 1998 04 19 | 704 | (2.6− | 0.8+) | 2003 03 03 | 644 | 0.9+ | 1.2+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 1998 04 19 | 704 | (3.3− | 0.9−) | 2003 03 03 | 644 | 0.5+ | 0.6+ | 2006 09 30 | 691 | 0.4− | 0.0 |
| 2000 09 05 | 691 | 0.3− | 0.3− | 2003 03 07 | 645 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2000 09 05 | 691 | 0.1+ | 0.3− | 2003 03 07 | 645 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2000 09 05 | 691 | 0.1+ | 0.2− | 2005 08 04 | 644 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2001 11 11 | 704 | 0.2− | 0.6+ | 2005 08 04 | 644 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.3− |

**(143446)∗ 2003 BY$_{75}$**

Discovered 2003 Jan. 29 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 227.08691 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.19183552 | $\omega$ | 175.31052 | | −0.98669209 | | −0.16129364 |
| $a$ | 2.9774881 | $\Omega$ | 355.25705 | | +0.13992106 | | −0.77780981 |
| $e$ | 0.1252653 | $i$ | 14.40431 | | +0.08283008 | | −0.60745062 |
| $P$ | 5.14 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.4− | 0.2+ | 2003 02 02 | 704 | 0.7− | 0.6+ | 2003 03 25 | 704 | 0.6− | 0.3+ |
| 2001 10 15 | 704 | 1.2− | 0.8− | 2003 02 02 | 704 | 0.7− | 0.1− | 2003 03 25 | 704 | 0.6− | 0.2+ |
| 2001 10 15 | 704 | 1.2− | 0.8− | 2003 02 02 | 704 | 0.1− | 0.3− | 2003 03 25 | 704 | 0.6+ | 0.1+ |
| 2001 11 11 | 704 | 0.3+ | 0.6− | 2003 02 02 | 704 | 0.1− | 0.0 | 2005 07 30 | 644 | 0.7− | 0.7+ |
| 2001 11 11 | 704 | 0.8+ | 0.0 | 2003 02 19 | 644 | 0.0 | 0.2+ | 2005 07 30 | 644 | 0.5− | 0.5+ |
| 2001 11 11 | 704 | 1.3+ | 0.1− | 2003 02 19 | 644 | 0.1+ | 0.2+ | 2005 07 30 | 644 | 0.5− | 0.8+ |
| 2001 11 11 | 704 | 0.2+ | 0.6+ | 2003 02 19 | 644 | 0.3+ | 0.2+ | 2005 09 01 | 644 | 0.1− | 0.5+ |
| 2001 11 11 | 704 | 0.4+ | 0.9+ | 2003 02 20 | 636 | 0.6− | 0.7− | 2005 09 01 | 644 | 0.2− | 0.5+ |
| 2003 01 10 | 704 | 0.1− | 0.2+ | 2003 02 20 | 636 | 0.0 | 0.1− | 2005 09 01 | 644 | 0.5− | 0.5+ |
| 2003 01 10 | 704 | 0.5+ | 0.2− | 2003 02 20 | 636 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.0 | 0.8− |
| 2003 01 10 | 704 | 0.8+ | 0.1+ | 2003 02 26 | 704 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.3+ | 0.2+ |
| 2003 01 10 | 704 | 0.4+ | 0.1+ | 2003 02 26 | 704 | 0.6+ | 0.3− | 2006 09 28 | 703 | 0.1+ | 1.4+ |
| 2003 01 10 | 704 | 0.5− | 0.1− | 2003 02 26 | 704 | 0.6+ | 0.6− | 2006 09 28 | 703 | 1.4+ | 0.3+ |
| 2003 01 10 | 704 | 0.0 | 0.9+ | 2003 02 26 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 1.3+ | 0.5− |
| 2003 01 10 | 704 | 1.0+ | 1.3− | 2003 02 26 | 704 | 1.5+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.1+ |
| 2003 01 10 | 704 | 0.2− | 0.5− | 2003 03 07 | 644 | 1.2+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2003 01 24 | 644 | 0.3− | 0.1+ | 2003 03 07 | 644 | 0.5+ | 1.1+ | 2006 10 19 | 703 | 0.6− | 0.9− |
| 2003 01 24 | 644 | 0.5− | 0.4+ | 2003 03 07 | 644 | 0.9+ | 0.8+ | 2006 10 27 | 703 | 0.2− | 0.4+ |
| 2003 01 24 | 644 | 0.5− | 0.3+ | 2003 03 23 | 246 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.7− | 0.2+ |
| 2003 01 29 | 644 | 0.3− | 0.1+ | 2003 03 23 | 246 | 0.3+ | 0.5− | 2006 10 27 | 703 | 0.6− | 0.7+ |
| 2003 01 29 | 644 | 0.2− | 0.1+ | 2003 03 23 | 246 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1− | 0.5+ |
| 2003 01 29 | 644 | 0.3− | 0.1+ | 2003 03 23 | 246 | 0.0 | 0.5+ | 2006 11 15 | 703 | 1.3+ | 0.2− |
| 2003 02 01 | 644 | 0.1− | 0.1+ | 2003 03 23 | 246 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.7− | 0.5− |
| 2003 02 01 | 644 | 0.1− | 0.1+ | 2003 03 23 | 246 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 1.0− | 0.5− |
| 2003 02 01 | 644 | 0.1− | 0.1+ | 2003 03 25 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.3− |

**(143447)∗ 2003 BO$_{78}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.12882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19149675 | $\omega$ | 42.17834 | | −0.60447769 | −0.77745470 | |
| $a$ | 2.9809986 | $\Omega$ | 85.75271 | | +0.67644793 | −0.61610062 | |
| $e$ | 0.0503408 | $i$ | 10.03072 | | +0.42074329 | −0.12642873 | |
| $P$ | 5.15 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 09 | 691 | 0.3+ | 0.0 | 2003 01 09 | 704 | (0.7+ | 3.1+) | 2004 05 14 | 599 | 0.5+ | 0.3+ |
| 1994 06 09 | 691 | 0.2− | 0.6+ | 2003 01 09 | 704 | 0.7+ | 0.0 | 2004 05 14 | 599 | 0.7+ | 1.4+ |
| 1994 06 09 | 691 | 0.2− | 0.1+ | 2003 01 09 | 704 | 0.4+ | 0.8+ | 2004 05 14 | 599 | 0.7+ | 0.1+ |
| 2001 09 18 | 645 | 0.1+ | 0.1+ | 2003 01 09 | 704 | 0.6+ | 1.0+ | 2006 09 29 | 699 | (2.6+ | 1.0+) |
| 2001 09 18 | 645 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.2+ | 1.2− | 2006 09 29 | 699 | 0.0 | 0.2+ |
| 2001 10 15 | 644 | 0.2− | 0.0 | 2003 01 31 | 704 | 1.3+ | 0.2− | 2006 09 29 | 699 | 0.7− | 0.7+ |
| 2001 10 15 | 644 | 0.1+ | 0.1− | 2003 01 31 | 704 | 1.3− | 0.6+ | 2006 09 29 | 699 | 0.5− | 0.9+ |
| 2001 10 15 | 644 | 0.1− | 0.2− | 2003 01 31 | 704 | 0.5− | 0.3− | 2006 10 02 | 703 | 0.5− | 0.9− |
| 2001 10 23 | 644 | 0.2− | 1.0+ | 2003 02 01 | 704 | 0.5− | 0.6+ | 2006 10 02 | 703 | 0.5− | 0.3− |
| 2001 10 23 | 644 | 0.6− | 0.8+ | 2003 02 01 | 704 | 0.1− | 0.1+ | 2006 10 02 | 703 | 1.1− | 0.0 |
| 2001 10 23 | 644 | 0.6− | 1.1+ | 2003 02 01 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.6+ | 0.3− |
| 2003 01 05 | 704 | 0.1+ | 0.2+ | 2003 02 01 | 704 | 0.9− | 0.5+ | 2006 10 17 | 703 | 1.4+ | 0.9− |
| 2003 01 05 | 704 | 0.2− | 0.4− | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.9− | 0.3+ |
| 2003 01 05 | 704 | 0.3− | 0.6− | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.6− |
| 2003 01 05 | 704 | (1.9− | 0.1+) | 2004 04 20 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 2.0− | 1.1+ |
| 2003 01 05 | 704 | 0.3− | 1.1+ | 2004 05 14 | 599 | 0.1+ | 0.2− | | | | |

**(143448)∗ 2003 BY$_{78}$**

Discovered 2003 Jan. 31 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.26167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24332220 | $\omega$ | 112.56442 | | −0.82160430 | −0.56925169 | |
| $a$ | 2.5410599 | $\Omega$ | 32.76024 | | +0.50028310 | −0.74551178 | |
| $e$ | 0.0634100 | $i$ | 3.21131 | | +0.27328225 | −0.34664781 | |
| $P$ | 4.05 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.2− | 0.3+ | 2003 02 04 | 704 | 0.3− | 1.6+ | 2006 10 03 | G96 | 0.4+ | 0.1− |
| 2001 09 12 | 695 | 0.3− | 0.2+ | 2003 02 04 | 704 | 0.4− | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2003 02 04 | 704 | 0.0 | 1.5+ | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.6− |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2005 08 27 | 644 | 0.6− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 1.1− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 08 27 | 644 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 08 30 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 08 30 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2001 12 10 | 645 | 0.1+ | 0.3− | 2005 08 30 | 691 | 0.2− | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2001 12 10 | 645 | 0.1− | 0.4− | 2005 09 13 | 691 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2003 01 09 | 704 | 0.2− | 1.1+ | 2005 09 13 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.6− | 0.4− |
| 2003 01 09 | 704 | 0.9− | 0.7+ | 2005 09 13 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2003 01 09 | 704 | 0.7+ | 0.0 | 2005 09 25 | A50 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.1− | 0.6− |
| 2003 01 31 | 644 | 0.9+ | 0.6+ | 2005 09 25 | A50 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2003 01 31 | 644 | 0.8+ | 0.7+ | 2005 10 06 | G96 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.4+ | 0.5− |
| 2003 01 31 | 644 | 0.4+ | 0.5+ | 2005 10 06 | G96 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2003 02 01 | 704 | 0.3+ | 0.2+ | 2005 10 06 | G96 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2003 02 01 | 704 | 0.4+ | 0.1+ | 2005 10 06 | G96 | 0.0 | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2003 02 01 | 704 | 0.0 | 1.0− | 2005 10 29 | G96 | 0.4− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2003 02 01 | 704 | 0.1+ | 0.3− | 2005 10 29 | G96 | 0.6− | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2003 02 04 | 704 | 1.0− | 0.9+ | 2005 10 29 | G96 | 0.1− | 0.1− | | | | |
| 2003 02 04 | 704 | 0.3+ | 1.6+ | 2005 10 29 | G96 | 0.2− | 0.1+ | | | | |

**(143449)∗ 2003 BG$_{79}$**

Discovered 2003 Jan. 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.68437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18308895 | $\omega$ | 47.75009 | | −0.84713759 | −0.49971367 | |
| $a$ | 3.0715762 | $\Omega$ | 101.51874 | | +0.41687596 | −0.83584751 | |
| $e$ | 0.0345494 | $i$ | 10.62561 | | +0.32950317 | −0.22725578 | |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 01 | 327 | 0.1− | 0.6− | 2003 02 02 | 644 | 0.1+ | 0.8+ | 2004 04 26 | 699 | 0.1+ | 0.0 |
| 1998 03 01 | 327 | 0.6− | 0.1− | 2003 02 02 | 644 | 0.0 | 0.7+ | 2004 04 26 | 699 | (1.1− | 1.9−) |
| 1998 03 01 | 327 | 0.1+ | 0.5− | 2003 02 26 | 704 | 0.9+ | 1.3− | 2004 04 26 | 699 | 1.4− | 0.9+ |
| 2001 10 23 | 644 | 0.1+ | 0.9+ | 2003 02 26 | 704 | 1.0− | 0.8+ | 2004 04 26 | 699 | 0.7+ | 0.3− |
| 2001 10 23 | 644 | 0.3− | 0.8+ | 2003 02 26 | 704 | 1.0+ | 1.0− | 2005 07 29 | E12 | 0.8− | 0.5+ |
| 2001 10 23 | 644 | 0.2− | 0.9+ | 2003 02 26 | 704 | 0.7+ | 0.8− | 2005 07 29 | E12 | 0.2− | 1.1+ |
| 2001 11 20 | 699 | 0.3− | 0.0 | 2003 03 06 | 704 | 0.7+ | 0.4+ | 2005 07 29 | E12 | 0.2− | 0.1+ |
| 2001 11 20 | 699 | (0.8− | 1.9+) | 2003 03 06 | 704 | 0.0 | 0.3+ | 2005 07 29 | E12 | 0.4+ | 0.7− |
| 2001 11 20 | 699 | 0.0 | 1.2− | 2003 03 06 | 704 | 1.4+ | 1.2+ | 2006 09 20 | 703 | 0.6− | 0.6− |
| 2001 11 20 | 699 | 1.2− | 0.1− | 2003 03 06 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 703 | (0.2+ | 1.6+) |
| 2001 12 07 | 704 | 0.1− | 1.3+ | 2003 03 07 | 644 | 0.5+ | 0.4+ | 2006 09 20 | 703 | 0.8+ | 0.4+ |
| 2001 12 07 | 704 | 0.5+ | 0.5+ | 2003 03 07 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 703 | 0.3+ | 0.3− |
| 2001 12 07 | 704 | 0.2+ | 1.0+ | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 1.4− |
| 2003 01 05 | 704 | (1.6− | 0.2+) | 2003 04 26 | 645 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.1+ |
| 2003 01 05 | 704 | 0.3− | 0.1− | 2003 04 26 | 645 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.5+ |
| 2003 01 05 | 704 | 0.9− | 0.3+ | 2004 04 11 | 644 | 0.0 | 0.6+ | 2006 09 26 | 703 | 1.1+ | 0.8+ |
| 2003 01 05 | 704 | 0.2− | 0.2+ | 2004 04 11 | 644 | 0.2+ | 0.4+ | 2006 10 02 | 703 | (2.4− | 0.9−) |
| 2003 01 05 | 704 | 0.6+ | 0.5+ | 2004 04 11 | 644 | 0.2+ | 0.6+ | 2006 10 02 | 703 | 1.1− | 1.1− |
| 2003 01 31 | 699 | (1.8+ | 0.3+) | 2004 04 13 | 703 | 0.3− | 0.5− | 2006 10 02 | 703 | 0.3− | 1.0+ |
| 2003 01 31 | 699 | 1.0+ | 0.7+ | 2004 04 13 | 703 | 0.4+ | 0.8+ | 2006 10 02 | 703 | 1.5− | 0.0 |
| 2003 01 31 | 699 | 0.5+ | 0.4+ | 2004 04 13 | 703 | 0.6+ | 1.4+ | 2006 10 21 | 703 | 0.4+ | 1.2+ |
| 2003 01 31 | 699 | 1.2+ | 0.0 | 2004 04 13 | 703 | 0.3+ | 1.2+ | 2006 10 21 | 703 | 0.1+ | 1.6+ |
| 2003 02 01 | 704 | 0.1+ | 1.1+ | 2004 04 16 | 704 | 1.2+ | 0.7+ | 2006 10 21 | 703 | 0.1+ | 1.1+ |
| 2003 02 01 | 704 | 0.3− | 0.4+ | 2004 04 16 | 704 | (1.7+ | 1.9+) | 2006 10 21 | 703 | 0.8− | 0.8− |
| 2003 02 01 | 704 | 0.0 | 0.9− | 2004 04 16 | 704 | 0.9+ | 1.1+ | | | | |
| 2003 02 02 | 644 | 0.1− | 0.8+ | 2004 04 16 | 704 | 1.2+ | 0.3+ | | | | |

**(143450)∗ 2003 BU$_{79}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.70258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21615971 | $\omega$ | 241.90182 | | −0.61261696 | +0.78998069 | |
| $a$ | 2.7497057 | $\Omega$ | 350.19994 | | −0.66347137 | −0.53126317 | |
| $e$ | 0.0831622 | $i$ | 8.48649 | | −0.42954185 | −0.30608815 | |
| $P$ | 4.56 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 691 | 0.3+ | 0.4− | 2003 02 04 | 704 | 0.3− | 0.3+ | 2005 09 05 | A50 | 0.0 | 0.3+ |
| 1996 09 17 | 691 | 0.3+ | 0.4− | 2003 02 04 | 704 | 0.8+ | 0.2− | 2005 09 06 | 704 | 0.2− | 0.2− |
| 1996 09 17 | 691 | 0.2+ | 0.6− | 2003 02 04 | 704 | 0.6+ | 0.1− | 2005 09 06 | 704 | 0.7− | 0.2+ |
| 2001 11 12 | 704 | 0.3− | 0.9− | 2003 02 04 | 704 | 0.8− | 0.2+ | 2005 09 06 | 704 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.2+ | 0.5− | 2003 02 23 | 699 | 1.0+ | 0.5+ | 2005 09 06 | 704 | 0.3− | 0.0 |
| 2001 11 12 | 704 | 0.1+ | 0.6− | 2003 02 23 | 699 | 0.5+ | 0.5+ | 2005 09 08 | 704 | 0.5− | 0.5− |
| 2001 11 12 | 704 | 0.7+ | 0.4+ | 2003 02 23 | 699 | 1.1+ | 0.1+ | 2005 09 08 | 704 | 0.1− | 0.5+ |
| 2001 11 12 | 704 | 0.8+ | 0.2+ | 2003 02 23 | 699 | 0.2− | 0.3+ | 2005 09 08 | 704 | 0.3− | 0.7+ |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2003 02 26 | 704 | 0.0 | 0.1+ | 2005 09 08 | 704 | 0.6− | 0.2− |
| 2001 12 10 | 704 | 0.0 | 0.3+ | 2003 02 26 | 704 | 0.9+ | 0.6+ | 2005 09 08 | 704 | 0.3− | 0.9+ |
| 2001 12 10 | 704 | 0.3− | 0.5− | 2003 02 26 | 704 | 0.8+ | 0.4− | 2005 09 13 | 691 | 0.3− | 0.1+ |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2003 02 26 | 704 | 1.3+ | 0.6− | 2005 09 13 | 691 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.7− | 0.2− | 2003 03 07 | 644 | 0.0 | 0.1+ | 2005 09 13 | 691 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2003 03 07 | 644 | 0.7+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.6− | 0.5− | 2003 03 07 | 644 | 0.0 | 0.0 | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 0.4− | 2003 03 07 | 644 | 1.0+ | 0.3+ | 2005 09 22 | 644 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.2− | 0.2+ | 2003 03 07 | 644 | 0.3+ | 0.0 | 2005 09 23 | 703 | 0.8+ | 0.4− |
| 2003 01 10 | 704 | 0.1− | 0.3− | 2003 03 07 | 644 | 0.6+ | 0.1− | 2005 09 23 | 703 | 0.6− | 0.3+ |
| 2003 01 10 | 704 | 0.3− | 0.1− | 2003 03 10 | 699 | 0.6− | 0.1− | 2005 09 23 | 703 | 0.5+ | 0.5+ |
| 2003 01 10 | 704 | 0.1− | 0.2+ | 2003 03 10 | 699 | 0.2+ | 0.1− | 2005 09 23 | 703 | 0.8+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.2+ | 0.8+ | 2003 03 10 | 699 | 0.5− | 0.3+ | 2005 09 23 | 699 | 0.4+ | 0.8+ | | |
| 2003 01 31 | 699 | 1.0− | 0.0 | 2003 03 10 | 699 | 0.4− | 0.7− | 2005 09 23 | 699 | (2.0− | 0.1−) | | |
| 2003 01 31 | 704 | 0.2+ | 0.1− | 2005 08 29 | 704 | 0.0 | 0.2+ | 2005 09 23 | 699 | 0.0 | 0.9+ | | |
| 2003 01 31 | 699 | 0.7− | 0.4− | 2005 08 29 | 704 | 1.1− | 0.1+ | 2005 09 23 | 699 | (1.6+ | 0.6+) | | |
| 2003 01 31 | 704 | 1.0− | 0.0 | 2005 08 29 | 704 | 0.4− | 0.1+ | 2005 10 01 | 703 | 0.8− | 0.4− | | |
| 2003 01 31 | 699 | 0.0 | 0.3+ | 2005 08 29 | 704 | 0.3− | 0.2+ | 2005 10 01 | 703 | 0.2+ | 0.5− | | |
| 2003 01 31 | 704 | 0.0 | 0.0 | 2005 08 29 | 699 | 0.5+ | 0.9+ | 2005 10 01 | 703 | (1.6− | 1.3−) | | |
| 2003 01 31 | 699 | 0.1− | 0.1+ | 2005 08 29 | 699 | 0.5− | 0.8+ | 2005 10 01 | 703 | 0.0 | 0.9− | | |
| 2003 02 01 | 704 | 0.4− | 1.2+ | 2005 08 29 | 699 | 0.8+ | 0.0 | 2005 10 22 | 703 | (1.9− | 0.4−) | | |
| 2003 02 01 | 704 | 0.0 | 0.5− | 2005 08 29 | 699 | 0.8+ | 0.4+ | 2005 10 22 | 703 | 0.5− | 0.7− | | |
| 2003 02 01 | 704 | 0.5− | 1.1+ | 2005 08 29 | 143 | 0.6+ | 0.1+ | 2005 10 22 | 703 | 0.3− | 0.5− | | |
| 2003 02 01 | 704 | 0.0 | 0.3− | 2005 08 29 | 143 | 0.5+ | 0.0 | 2005 10 22 | 703 | 1.1− | 0.1+ | | |
| 2003 02 01 | 704 | 0.1− | 0.7− | 2005 08 29 | 143 | 0.6+ | 0.5+ | 2005 10 30 | G96 | 0.0 | 0.3− | | |
| 2003 02 02 | 644 | 0.3− | 0.7+ | 2005 08 30 | 691 | 0.2− | 0.4+ | 2005 10 30 | G96 | 0.2− | 0.3− | | |
| 2003 02 02 | 644 | 0.1− | 1.1+ | 2005 08 30 | 691 | 0.1− | 0.4+ | 2005 10 30 | G96 | 0.2+ | 0.4− | | |
| 2003 02 02 | 644 | 0.2+ | 0.9+ | 2005 08 30 | 691 | 0.0 | 0.3+ | 2005 10 30 | G96 | 0.0 | 0.3− | | |
| 2003 02 04 | 704 | 0.3− | 0.2− | 2005 09 05 | A50 | 0.7+ | 0.7+ | | | | | | |

**(143451)∗ 2003 BR$_{80}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.74303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21030895 | $\omega$ | 64.97354 | | −0.64155008 | −0.76104544 | |
| $a$ | 2.8004697 | $\Omega$ | 65.27941 | | +0.66016561 | −0.61154415 | |
| $e$ | 0.2082415 | $i$ | 6.06907 | | +0.39063392 | −0.21638762 | |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.4+ | 0.2− | 2003 02 02 | 699 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.6+ |
| 1992 11 27 | 691 | 0.1− | 0.5− | 2003 02 03 | 608 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 1992 11 27 | 691 | 0.1+ | 0.3− | 2003 02 03 | 608 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.9− |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2003 02 03 | 608 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2003 02 08 | 699 | 0.9+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 02 08 | 699 | 1.4+ | 1.5+ | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2001 11 18 | 645 | 0.1+ | 0.1+ | 2003 02 08 | 699 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.4− | 0.1+ | 2003 02 08 | 699 | 1.3+ | 1.2− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.7+ | 0.8+ | 2003 02 28 | 608 | 0.7− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.0 | 0.4− | 2003 02 28 | 608 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.2− |
| 2001 11 20 | 704 | (1.5− | 0.1−) | 2003 02 28 | 608 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2001 11 20 | 704 | 0.8− | 0.5− | 2003 03 08 | 704 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2003 03 08 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.5− |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2003 03 08 | 704 | 0.6+ | 0.6− | 2006 11 13 | G96 | 0.1− | 0.7− |
| 2003 01 28 | 645 | 0.2− | 0.2− | 2003 03 08 | 704 | 0.3+ | 1.5+ | 2006 11 13 | G96 | 0.3− | 0.6− |
| 2003 01 28 | 645 | 0.2− | 0.2− | 2003 03 08 | 704 | 0.1− | 1.2+ | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2003 01 31 | 704 | 0.4+ | 0.1− | 2003 03 23 | 644 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2003 01 31 | 704 | 0.3− | 0.1+ | 2003 03 23 | 644 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 1.2+ |
| 2003 01 31 | 704 | 0.2+ | 1.0+ | 2003 03 23 | 644 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2003 01 31 | 704 | 0.6+ | 0.4+ | 2003 03 30 | 644 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.0 | 1.1+ |
| 2003 02 02 | 699 | 1.0+ | 1.2+ | 2003 03 30 | 644 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.8+ |
| 2003 02 02 | 699 | 0.4− | 0.7+ | 2003 03 30 | 644 | 0.4− | 0.6+ | | | | |
| 2003 02 02 | 699 | 0.9+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 1.3− | | | | |

**(143452)∗ 2003 BX$_{81}$ = 2001 ST$_{328}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41484)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.58109 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21128972 | $\omega$ | 302.36574 | | −0.08587830 | −0.99359208 | |
| $a$ | 2.7917968 | $\Omega$ | 152.27716 | | +0.95893097 | −0.10244346 | |
| $e$ | 0.2944508 | $i$ | 9.08855 | | +0.27032630 | +0.04775046 | |
| $P$ | 4.66 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2− | 1.4+ | 2003 03 06 | 699 | 0.2− | 1.1+ | 2005 07 12 | G96 | 0.4− | 1.0+ |
| 2001 09 12 | 704 | 0.1+ | 0.1− | 2003 03 06 | 699 | 0.7+ | 0.4+ | 2005 07 12 | G96 | 0.3− | 0.7+ |
| 2001 09 12 | 704 | (0.1+ | 1.6+) | 2003 03 06 | 699 | 0.0 | 0.7+ | 2005 07 12 | G96 | 0.1− | 0.9+ |
| 2001 09 12 | 704 | 0.0 | 1.0+ | 2003 03 06 | 699 | 0.5+ | 0.8+ | 2006 09 16 | 699 | 1.3+ | 0.2− |
| 2001 09 12 | 704 | (0.0 | 1.5+) | 2003 03 07 | 699 | 0.4+ | 0.5+ | 2006 09 16 | 699 | 0.1− | 1.2+ |
| 2001 09 19 | 699 | 0.2+ | 0.4+ | 2003 03 07 | 699 | 0.6+ | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.4− |
| 2001 09 19 | 699 | 1.0− | 1.4+ | 2003 03 07 | 699 | 0.9+ | 0.2+ | 2006 09 16 | 699 | 0.1− | 0.2− |
| 2001 09 19 | 699 | 0.3− | 0.7− | 2003 03 07 | 699 | 0.3− | 0.6− | 2006 09 29 | 699 | 0.0 | 0.5+ |
| 2001 09 19 | 699 | 0.4− | 0.1− | 2003 03 09 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 0.9+ | 0.7+ | 2003 03 09 | 704 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.5+ | 0.3+ |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2003 03 09 | 704 | 0.4+ | 0.1− | 2006 09 29 | 699 | 0.1− | 0.8+ |
| 2001 09 21 | 704 | 0.5+ | 0.7+ | 2003 03 09 | 704 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.1− |
| 2001 10 16 | 644 | 0.2− | 0.8+ | 2003 03 09 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.7+ | 0.5+ |
| 2001 10 16 | 644 | 0.5− | 1.2+ | 2003 03 09 | 599 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.7− | 0.0 |
| 2001 10 16 | 644 | 0.5− | 0.6+ | 2003 03 10 | 599 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 2003 01 31 | 704 | 0.9− | 0.9+ | 2003 03 10 | 599 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2003 01 31 | 704 | 0.1+ | 1.0+ | 2003 03 15 | 608 | 0.7+ | 0.9− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2003 01 31 | 704 | 0.4− | 0.4+ | 2003 03 15 | 608 | 0.5+ | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2003 02 03 | 704 | 0.4− | 0.2− | 2003 03 15 | 608 | 1.1+ | 0.8− | 2006 10 28 | 703 | 0.0 | 0.5− |
| 2003 02 03 | 704 | 1.0− | 0.7− | 2003 03 25 | 644 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2003 02 03 | 704 | 0.4− | 0.5+ | 2003 03 25 | 644 | 0.4+ | 1.2+ | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2003 02 03 | 704 | (0.8+ | 1.6+) | 2003 03 25 | 644 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.8− | 0.6+ |
| 2003 02 06 | 683 | 0.2− | 0.6+ | 2003 03 27 | 704 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.3− |
| 2003 02 06 | 683 | 0.1− | 0.6− | 2003 03 27 | 704 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2003 02 06 | 683 | 0.4− | 0.3− | 2003 03 27 | 704 | 0.4+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.2− |
| 2003 02 11 | 608 | 0.9+ | 1.2+ | 2003 03 27 | 704 | 1.0+ | 0.4+ | 2006 11 10 | 704 | 0.2− | 0.1+ |
| 2003 02 11 | 608 | 0.8+ | 0.8+ | 2003 03 27 | 704 | 0.8− | 0.9+ | 2006 11 10 | 704 | 0.5− | 0.3+ |
| 2003 02 11 | 608 | 0.8+ | 0.8+ | 2003 03 30 | 704 | 0.8+ | 0.1+ | 2006 11 10 | 704 | 0.2− | 0.1+ |
| 2003 02 24 | 608 | 0.5− | 0.2− | 2003 03 30 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 704 | 0.2+ | 0.1− |
| 2003 02 24 | 608 | 0.1+ | 0.0 | 2003 03 30 | 704 | 0.7+ | 0.5− | 2006 11 10 | 704 | 0.5+ | 0.1+ |
| 2003 02 24 | 608 | 0.1− | 0.1− | 2003 03 30 | 704 | 0.4+ | 0.0 | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2003 03 01 | 608 | 0.0 | 0.2− | 2003 03 30 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2003 03 01 | 608 | 1.4− | 0.1+ | 2003 04 05 | 699 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2003 03 01 | 608 | 0.0 | 0.3− | 2003 04 05 | 699 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.1− | 0.0 |
| 2003 03 06 | 704 | 0.5+ | 0.1− | 2003 04 05 | 699 | 0.7− | 0.0 | 2006 11 17 | 644 | 0.2+ | 0.2− |
| 2003 03 06 | 704 | 0.2+ | 0.2+ | 2003 04 05 | 699 | 0.6+ | 0.4− | 2006 11 17 | 644 | 0.4+ | 0.2− |
| 2003 03 06 | 704 | 0.2+ | 0.1+ | 2003 04 08 | 691 | 0.6− | 0.2+ | 2006 11 17 | 644 | 0.3+ | 0.2− |
| 2003 03 06 | 704 | 0.3+ | 0.2+ | 2003 04 08 | 691 | 0.5− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2003 03 06 | 704 | 0.1+ | 0.2+ | 2003 04 08 | 691 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2003 03 06 | 699 | (1.6+ | 1.0+) | 2003 04 10 | 644 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.3− | 0.2− |
| 2003 03 06 | 699 | 0.8+ | 1.1+ | 2003 04 10 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2003 03 06 | 699 | 0.7− | 0.1− | 2003 04 10 | 644 | 0.5+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2003 03 06 | 699 | 0.1− | 0.1− | 2005 07 12 | G96 | 0.0 | 0.5+ | | | | |

**(143453)∗ 2003 BO$_{82}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.66493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21269857 | $\omega$ | 12.88721 | | −0.33169573 | −0.91509489 | |
| $a$ | 2.7794551 | $\Omega$ | 96.84852 | | +0.84375978 | −0.39648665 | |
| $e$ | 0.0532694 | $i$ | 13.35298 | | +0.42195661 | +0.07348249 | |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 699 | 0.8− | 0.3+ | 2003 01 31 | 704 | 0.3+ | 0.8+ | 2004 06 09 | 691 | 0.0 | 0.4+ |
| 2001 10 19 | 699 | 0.1− | 0.8+ | 2003 01 31 | 699 | 1.1+ | 0.1+ | 2004 06 09 | 691 | 0.1+ | 0.1+ |
| 2001 10 19 | 699 | 0.2− | 1.4+ | 2003 01 31 | 699 | (2.7+ | 0.2−) | 2004 06 09 | 691 | 0.4+ | 0.1+ |
| 2001 10 19 | 699 | (2.2− | 0.3+) | 2003 01 31 | 699 | (3.5+ | 0.8−) | 2005 07 03 | 644 | 0.3− | 0.7+ |
| 2002 12 31 | 704 | 0.9+ | 0.2− | 2003 02 01 | 645 | 0.0 | 0.1− | 2005 07 03 | 644 | 0.2− | 0.6+ |
| 2002 12 31 | 704 | (1.5+ | 0.1+) | 2003 02 01 | 645 | 0.1− | 0.0 | 2005 07 03 | 644 | 0.2− | 0.6+ |
| 2002 12 31 | 704 | (1.5− | 0.7−) | 2003 02 04 | 699 | (0.9+ | 2.2+) | 2005 08 04 | 644 | 0.3− | 0.4+ |
| 2002 12 31 | 704 | 0.2+ | 0.9+ | 2003 02 04 | 699 | 1.2+ | 0.3+ | 2005 08 04 | 644 | 0.2− | 0.5+ |
| 2003 01 05 | 699 | 1.4+ | 0.3+ | 2003 02 04 | 699 | 1.3+ | 0.4+ | 2005 08 04 | 644 | 0.0 | 0.7+ |
| 2003 01 05 | 699 | (1.7+ | 0.3−) | 2003 02 04 | 699 | 0.3+ | 0.9+ | 2006 10 30 | 703 | 0.4+ | 1.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 699 | 1.1+ | 0.2− | 2003 02 06 | 699 | 0.2− | 0.2+ | 2006 10 30 | 703 | 0.1− | 0.6− |
| 2003 01 05 | 699 | 0.9− | 0.1+ | 2003 02 06 | 699 | 0.6− | 0.5+ | 2006 10 30 | 703 | 0.4+ | 0.0 |
| 2003 01 10 | 704 | 0.3+ | 0.3+ | 2003 02 06 | 699 | 0.3− | 0.4+ | 2006 10 30 | 703 | 0.0 | 0.6+ |
| 2003 01 10 | 704 | 0.4− | 0.5+ | 2003 02 06 | 699 | 0.8− | 1.0+ | 2006 11 13 | 703 | 0.2+ | 0.6− |
| 2003 01 10 | 704 | 0.4+ | 0.3+ | 2004 05 19 | 691 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.4+ | 0.1+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2004 05 19 | 691 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.5− | 0.5+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2004 05 19 | 691 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.6+ |
| 2003 01 31 | 704 | 0.5− | 0.1+ | 2004 05 23 | 704 | 1.1+ | 0.3− | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2003 01 31 | 704 | 0.4− | 0.9+ | 2004 05 23 | 704 | 1.3+ | 0.5+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2003 01 31 | 704 | 0.3− | 1.0+ | 2004 05 23 | 704 | 0.6+ | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.3+ |
| 2003 01 31 | 699 | (1.8+ | 0.3−) | 2004 05 23 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.0 |
| 2003 01 31 | 704 | 1.1− | 0.4− | 2004 05 23 | 704 | 0.2+ | 0.2− | | | | |

**(143454)∗ 2003 BB$_{83}$ = 2001 WC$_{58}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. E. Sansaturio (*MPO* 61709)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 220.13775 | | (2000.0) | | −0.94067707 | −0.33882347 |
| $n$ | 0.18664554 | $\omega$ | 217.19321 | | +0.31624673 | −0.85625607 |
| $a$ | 3.0324313 | $\Omega$ | 302.99217 | | +0.12294164 | −0.38990281 |
| $e$ | 0.0463156 | $i$ | 1.23216 | | | |
| $P$ | 5.28 | $H$ | 15.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 291 | 0.3− | 0.2+ | 2003 02 04 | 704 | 0.2− | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 10 15 | 291 | 0.3− | 0.2+ | 2003 02 04 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2001 10 15 | 291 | 0.0 | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.2+ | 0.6− | 2004 04 22 | 691 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.2− |
| 2001 11 19 | 704 | 0.3− | 0.4− | 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.2+ | 0.3− | 2005 07 05 | 691 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.3− |
| 2001 11 19 | 704 | 0.2− | 0.3+ | 2005 07 05 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 1.0+ | 0.0 | 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 704 | (0.7+ | 1.9−) | 2005 07 16 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2005 07 16 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.7+ | 0.4− | 2005 07 16 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2003 01 27 | 699 | 1.5+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2003 01 27 | 699 | (1.7+ | 0.1−) | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2003 01 27 | 699 | 0.8+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2003 01 27 | 699 | 0.9− | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.1+ |
| 2003 01 31 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2003 01 31 | 704 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.5+ | 2006 11 27 | G96 | 0.4+ | 0.4− |
| 2003 01 31 | 704 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.4− | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2003 01 31 | 704 | 0.6+ | 1.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2003 02 04 | 704 | 0.4− | 0.9+ | 2006 09 26 | 691 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.7− |

**(143455)∗ 2003 BL$_{83}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.21911 | | (2000.0) | | −0.48252675 | −0.84801216 |
| $n$ | 0.18378744 | $\omega$ | 11.40073 | | +0.78442129 | −0.52972694 |
| $a$ | 3.0637888 | $\Omega$ | 107.78100 | | +0.38968086 | +0.01627112 |
| $e$ | 0.1045033 | $i$ | 13.30788 | | | |
| $P$ | 5.36 | $H$ | 17.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.1+ | 0.3+ | 2003 02 04 | 699 | 0.1+ | 1.3+ | 2004 05 22 | 703 | 0.7+ | 1.1+ |
| 2001 11 12 | 645 | 0.2− | 0.2+ | 2003 02 04 | 699 | 0.2+ | 0.4+ | 2005 07 02 | 691 | 0.3− | 0.3+ |
| 2001 11 13 | 608 | 1.2− | 0.7− | 2003 02 06 | 704 | 0.3− | 0.4− | 2005 07 02 | 691 | 0.0 | 0.0 |
| 2001 11 13 | 608 | 0.2− | 0.3− | 2003 02 06 | 704 | 1.0+ | 0.3+ | 2005 07 02 | 691 | 0.1+ | 0.1− |
| 2001 11 13 | 608 | 0.6− | 0.3− | 2003 02 06 | 704 | 0.3+ | 0.8+ | 2005 07 07 | 691 | 0.0 | 0.4+ |
| 2001 12 14 | 699 | 0.2− | 0.8+ | 2003 02 21 | 644 | 0.2+ | 0.6+ | 2005 07 07 | 691 | 0.1+ | 0.5+ |
| 2001 12 14 | 699 | (0.1+ | 1.5+) | 2003 02 21 | 644 | 0.2+ | 0.6+ | 2005 07 07 | 691 | 0.0 | 0.1+ |
| 2001 12 14 | 699 | 1.2− | 0.1+ | 2003 02 21 | 644 | 0.2+ | 0.4+ | 2005 07 11 | 691 | 0.1+ | 0.4+ |
| 2001 12 14 | 699 | 0.4− | 0.5+ | 2003 02 26 | 704 | 0.3− | 1.4+ | 2005 07 11 | 691 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | (0.9+ | 1.7+) | 2003 02 26 | 704 | 0.1+ | 1.1+ | 2005 07 11 | 691 | 0.0 | 0.5+ |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2003 02 26 | 704 | 0.9+ | 0.2+ | 2006 09 25 | 703 | (0.3+ | 2.2+) |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2003 02 26 | 704 | 0.4+ | 0.9− | 2006 09 25 | 703 | (0.4+ | 1.9+) |
| 2003 01 05 | 704 | 0.3+ | 0.2+ | 2003 02 26 | 704 | 0.3− | 0.5+ | 2006 09 25 | 703 | (0.1+ | 1.9+) |
| 2003 01 05 | 704 | 1.2+ | 0.5+ | 2003 03 08 | 644 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.3− | 0.8+ |
| 2003 01 05 | 704 | (1.7+ | 1.1−) | 2003 03 08 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.9+ |
| 2003 01 05 | 704 | 0.8+ | 0.1+ | 2003 03 08 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.5+ | 0.8+ |
| 2003 01 26 | 699 | 0.0 | 0.2+ | 2004 04 20 | 691 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.7+ |
| 2003 01 26 | 699 | 0.6− | 0.6− | 2004 04 20 | 691 | 0.3− | 0.5+ | 2006 10 21 | 703 | 1.6− | 0.5− |
| 2003 01 26 | 699 | 0.8− | 0.3+ | 2004 04 20 | 691 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.5+ | 1.0− |
| 2003 01 26 | 699 | 0.8− | 0.1− | 2004 05 13 | 699 | 0.2− | 0.9+ | 2006 10 21 | 703 | 0.5+ | 0.4− |
| 2003 01 31 | 704 | 0.7+ | 0.9+ | 2004 05 13 | 699 | 0.9+ | 1.4+ | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2003 01 31 | 704 | 0.5+ | 0.5+ | 2004 05 13 | 699 | 1.1+ | 0.9− | 2006 10 21 | 703 | 0.8− | 0.2− |
| 2003 01 31 | 704 | 1.4− | 0.7+ | 2004 05 13 | 699 | 0.7+ | 1.2− | 2006 10 21 | 703 | 0.5+ | 0.6− |
| 2003 01 31 | 704 | 0.6− | 0.4− | 2004 05 22 | 703 | 0.4− | 0.3− | 2006 10 21 | 703 | 0.3− | 0.8+ |
| 2003 02 04 | 699 | 0.1− | 0.3+ | 2004 05 22 | 703 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.4− |
| 2003 02 04 | 699 | 1.3+ | 0.3+ | 2004 05 22 | 703 | 0.3+ | 0.2+ | | | | |

**(143456)∗ 2003 BU$_{83}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 247.28946 | | (2000.0) | | −0.89429591 | −0.44717629 |
| $n$ | 0.19182958 | $\omega$ | 148.44216 | | +0.36231244 | −0.74508644 |
| $a$ | 2.9775496 | $\Omega$ | 5.07856 | | +0.26261097 | −0.49485307 |
| $e$ | 0.0466796 | $i$ | 10.66111 | | | |
| $P$ | 5.14 | $H$ | 14.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 30 | 809 | 0.5+ | 0.0 | 2003 01 31 | 704 | 0.3− | 0.8− | 2005 07 30 | 644 | 0.7− | 0.3+ |
| 2001 09 21 | 704 | 1.3+ | 0.5− | 2003 02 04 | 699 | (0.8− | 1.8+) | 2005 07 30 | 644 | 0.3− | 0.4+ |
| 2001 09 21 | 704 | 0.4+ | 0.3− | 2003 02 04 | 699 | 0.1+ | 0.0 | 2005 07 30 | E12 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 1.0+ | 0.5− | 2003 02 04 | 699 | 0.2− | 0.8+ | 2005 07 30 | E12 | 0.8− | 0.0 |
| 2001 09 21 | 704 | 0.3+ | 0.4− | 2003 02 04 | 699 | 0.1+ | 0.4− | 2005 07 30 | E12 | 0.4− | 0.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.4− | 2003 02 27 | 608 | 0.1+ | 0.1+ | 2005 08 01 | E12 | 0.8− | 1.2+ |
| 2001 11 11 | 704 | 0.2+ | 0.1− | 2003 02 27 | 608 | 0.1+ | 0.0 | 2005 08 01 | E12 | 0.1+ | 0.6+ |
| 2001 11 11 | 699 | 0.1− | 0.8+ | 2003 02 27 | 608 | 0.5+ | 0.5− | 2005 08 01 | E12 | 0.2− | 0.4+ |
| 2001 11 11 | 704 | 0.0 | 0.4− | 2003 03 05 | 704 | 0.1+ | 0.8+ | 2005 08 01 | E12 | 0.3− | 0.7+ |
| 2001 11 11 | 699 | 0.0 | 0.4+ | 2003 03 05 | 704 | 0.3− | 0.4− | 2005 11 06 | G96 | 0.4+ | 0.1+ |
| 2001 11 11 | 704 | 0.7− | 0.1+ | 2003 03 05 | 704 | 0.1− | 0.4+ | 2005 11 06 | G96 | 0.5− | 0.7+ |
| 2001 11 11 | 704 | 0.5− | 0.2+ | 2003 03 05 | 704 | 0.6+ | 0.6− | 2005 11 06 | G96 | 0.4− | 0.5+ |
| 2001 11 11 | 699 | 0.1+ | 0.3+ | 2003 03 05 | 704 | 0.6+ | 0.5+ | 2005 11 06 | G96 | 0.3− | 0.5+ |
| 2001 11 11 | 704 | 0.1− | 0.1+ | 2003 03 05 | 704 | 0.3+ | 0.7− | 2006 09 28 | 703 | 1.0+ | 0.1+ |
| 2001 11 11 | 699 | 0.0 | 0.6+ | 2003 03 05 | 704 | 0.4− | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.8+ |
| 2001 12 09 | 704 | 0.1− | 0.5− | 2003 03 05 | 704 | 1.2− | 1.1+ | 2006 09 28 | 703 | 0.7+ | 0.5− |
| 2001 12 09 | 704 | 0.4− | 0.5− | 2003 03 05 | 704 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.0 |
| 2001 12 09 | 704 | 0.5− | 0.1− | 2003 03 07 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2001 12 09 | 704 | 0.3+ | 0.5− | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2001 12 09 | 704 | 0.2+ | 0.2− | 2003 03 07 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.7+ | 0.0 |
| 2001 12 22 | 704 | 0.4− | 0.0 | 2003 03 08 | 704 | 0.4+ | 0.4− | 2006 10 19 | 703 | 0.8− | 1.2+ |
| 2001 12 22 | 704 | 0.8− | 0.0 | 2003 03 08 | 704 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.0 | 0.8− |
| 2001 12 22 | 704 | 0.8− | 0.7+ | 2003 03 08 | 704 | 1.0+ | 0.2+ | 2006 10 27 | 703 | (1.6+ | 3.3−) |
| 2001 12 22 | 704 | 0.3+ | 0.3− | 2003 03 08 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.2− |
| 2001 12 22 | 704 | 0.3− | 1.0+ | 2003 03 08 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.7− |
| 2003 01 26 | 699 | 0.6+ | 0.1+ | 2003 03 13 | 644 | 0.4+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2003 01 26 | 699 | 0.9+ | 0.7+ | 2003 03 13 | 644 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2003 01 26 | 699 | 0.2+ | 1.1+ | 2003 03 13 | 644 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2003 01 26 | 699 | (1.0+ | 1.8+) | 2003 03 26 | 704 | 0.1+ | 0.6+ | 2006 11 22 | 703 | 0.5− | 0.1+ |
| 2003 01 26 | 608 | 0.1− | 0.4− | 2003 03 26 | 704 | 0.3− | 1.0+ | 2006 11 22 | 703 | 0.4− | 0.0 |
| 2003 01 26 | 608 | 0.2+ | 0.4− | 2003 03 26 | 704 | 0.0 | 0.8+ | 2006 11 22 | 703 | 0.1+ | 0.4+ |
| 2003 01 26 | 608 | 0.1− | 0.2− | 2003 03 26 | 704 | 0.1+ | 0.8+ | 2006 11 22 | 703 | 0.4− | 0.0 |
| 2003 01 31 | 704 | 0.9− | 1.1− | 2003 03 26 | 704 | 0.2+ | 0.9+ | | | | |
| 2003 01 31 | 704 | 0.7− | 0.4− | 2005 07 30 | 644 | 0.4− | 0.5+ | | | | |

**(143457)∗ 2003 $BM_{85}$ = 2001 $WK_{21}$**

Discovered 2003 Jan. 31 by J. W. Kessel at the Goodricke-Pigott Observatory, Tucson.

Id. G. V. Williams (*MPO* 43292)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.91161 | | (2000.0) | | | |
| $n$ | 0.19338563 | $\omega$ | 284.59115 | | −0.22901175 | −0.97341288 |
| $a$ | 2.9615557 | $\Omega$ | 178.62264 | | +0.95028859 | −0.22458641 |
| $e$ | 0.0699769 | $i$ | 10.98756 | | +0.21096258 | −0.04503680 |
| $P$ | 5.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.8− | 0.9+ | 2003 01 31 | 683 | 1.0+ | 0.8− | 2004 05 19 | 691 | 0.1+ | 0.3+ |
| 2001 09 17 | 704 | 0.4− | 0.8+ | 2003 02 01 | 683 | (1.1− | 2.1+) | 2004 05 19 | 691 | 0.3+ | 0.4+ |
| 2001 09 17 | 704 | 0.2+ | 0.7+ | 2003 02 01 | 683 | 0.2− | 0.9+ | 2005 07 29 | 644 | 0.1− | 0.4+ |
| 2001 09 17 | 704 | 0.1− | 0.6+ | 2003 02 01 | 683 | 0.7− | 0.0 | 2005 07 29 | 644 | 0.1− | 0.5+ |
| 2001 09 17 | 704 | 0.3+ | 0.5+ | 2003 02 03 | 608 | 0.3+ | 0.9− | 2005 07 29 | 644 | 0.1− | 0.4+ |
| 2001 10 16 | 704 | (0.2− | 1.9+) | 2003 02 03 | 608 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.7+ |
| 2001 10 16 | 704 | 0.2− | 1.3+ | 2003 02 03 | 608 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.5− | 0.7+ |
| 2001 10 16 | 704 | (0.9+ | 2.3+) | 2003 02 22 | 333 | 1.0− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 2001 10 16 | 704 | (1.0− | 2.2+) | 2003 02 22 | 333 | 0.2− | 0.5+ | 2006 09 30 | 703 | 1.4− | 0.1− |
| 2001 11 18 | 704 | 0.0 | 0.5+ | 2003 02 23 | 333 | 0.8+ | 0.2− | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2001 11 18 | 704 | 0.7− | 0.5+ | 2003 02 23 | 333 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.2− | 0.1+ |
| 2001 11 18 | 704 | 0.5− | 1.3+ | 2003 03 07 | 704 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.1+ |
| 2001 11 18 | 704 | 0.7− | 1.1+ | 2003 03 07 | 704 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.1+ |
| 2001 11 18 | 704 | 0.5− | 1.3+ | 2003 03 07 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 703 | (1.0+ | 1.8+) |
| 2001 11 18 | 608 | 0.1+ | 0.1+ | 2003 03 07 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2001 11 18 | 608 | 0.7− | 0.4− | 2003 03 07 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.8− |
| 2001 11 18 | 608 | 0.4+ | 0.3− | 2003 03 07 | 704 | 1.0+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2001 11 19 | 704 | 0.5+ | 0.2+ | 2003 03 07 | 704 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2001 11 19 | 704 | 0.4+ | 0.5+ | 2003 03 07 | 704 | 1.0+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2001 11 19 | 704 | 0.5+ | 0.4+ | 2003 03 07 | 704 | (2.2+ | 0.6+) | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 11 19 | 704 | 0.1+ | 0.3+ | 2003 03 07 | 704 | 0.3− | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.8− |
| 2003 01 28 | 704 | 0.0 | 0.2− | 2003 03 07 | 704 | 0.8− | 0.5− | 2006 10 22 | 703 | 0.1− | 0.9− |
| 2003 01 28 | 704 | 0.4+ | 0.6+ | 2003 03 07 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 703 | 1.4− | 0.5− |
| 2003 01 28 | 704 | 0.4+ | 1.4+ | 2003 03 07 | 704 | 0.6− | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.7− |
| 2003 01 28 | 704 | 0.0 | 0.7+ | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 11 13 | 703 | 1.7+ | 1.0− |
| 2003 01 30 | 683 | 0.1+ | 0.8+ | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2003 01 30 | 683 | 0.2− | 0.7+ | 2004 05 14 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.5+ | 0.7− |
| 2003 01 30 | 683 | 0.6+ | 0.2+ | 2004 05 14 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 2.4+ | 0.7+ |
| 2003 01 31 | 683 | 1.2+ | 0.6+ | 2004 05 14 | 691 | 0.1− | 0.4+ | | | | |
| 2003 01 31 | 683 | 0.6+ | 0.7− | 2004 05 19 | 691 | 0.1+ | 0.3+ | | | | |

**(143458)∗ 2003 $BF_{86}$ = 2003 $DL_{23}$ = 2005 $MT_{29}$**

Discovered 2003 Jan. 24 at the European Southern Observatory.

Id. G. V. Williams (*MPO* 85900), A. Doppler (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 135.06408 | | (2000.0) | | | |
| $n$ | 0.18266974 | $\omega$ | 326.73151 | | −0.32800957 | +0.92319061 |
| $a$ | 3.0762737 | $\Omega$ | 283.42525 | | −0.81556195 | −0.38375135 |
| $e$ | 0.0606019 | $i$ | 11.88509 | | −0.47672679 | +0.02130705 |
| $P$ | 5.40 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.0 | 1.8+ | 2003 02 24 | 599 | 0.3+ | 0.2+ | 2005 07 29 | 644 | 0.0 | 0.1− |
| 2000 09 01 | 704 | 0.6− | 0.7+ | 2003 02 24 | 599 | 0.0 | 0.5+ | 2005 07 29 | 644 | 0.1+ | 0.0 |
| 2000 09 01 | 704 | 0.1− | 0.4+ | 2004 04 19 | E12 | (2.4+ | 2.8+) | 2005 08 06 | 644 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 1.2− | 0.8+ | 2004 04 19 | E12 | 0.4− | 0.8+ | 2005 08 06 | 644 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.7− | 0.3− | 2004 04 19 | E12 | (0.8+ | 2.9+) | 2005 08 06 | 644 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 0.3+ | 0.6+ | 2004 04 19 | E12 | 0.0 | 0.9+ | 2005 08 24 | 644 | 0.2+ | 0.3+ |
| 2003 01 24 | 809 | 0.3+ | 0.6+ | 2004 04 21 | E12 | 0.3− | 0.0 | 2005 08 24 | 644 | 0.0 | 0.1+ |
| 2003 01 24 | 809 | 0.2+ | 0.6+ | 2004 04 21 | E12 | 0.1+ | 0.2+ | 2005 08 24 | 644 | 0.2− | 0.2− |
| 2003 01 24 | 809 | 0.2+ | 0.6+ | 2004 04 21 | E12 | 0.2+ | 0.2+ | 2005 09 03 | 644 | 0.2− | 0.1+ |
| 2003 01 25 | 809 | 0.4+ | 0.5+ | 2004 04 21 | E12 | (0.8+ | 2.3−) | 2005 09 03 | 644 | 0.3− | 0.1− |
| 2003 01 25 | 809 | 0.4+ | 0.6+ | 2005 06 29 | 691 | 0.0 | 0.0 | 2005 09 03 | 644 | 0.5− | 0.1− |
| 2003 01 25 | 809 | 0.4+ | 0.4+ | 2005 06 29 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.5− | 0.2+ |
| 2003 01 25 | 809 | 0.4+ | 0.4+ | 2005 06 29 | 691 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2003 02 08 | 608 | 0.2+ | 0.5− | 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.6− | 0.4+ |
| 2003 02 08 | 608 | 0.5+ | 0.9− | 2005 07 04 | 691 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2003 02 08 | 608 | 0.1− | 0.1+ | 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.8+ | 0.5+ |
| 2003 02 23 | 599 | 0.1− | 0.6+ | 2005 07 08 | 691 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.9− |
| 2003 02 23 | 599 | 0.4+ | 0.6+ | 2005 07 08 | 691 | (0.7+ | 1.9+) | 2006 10 19 | 703 | 0.4+ | 0.1− |
| 2003 02 23 | 599 | 0.2+ | 0.6+ | 2005 07 08 | 691 | 0.1+ | 0.0 | | | | |
| 2003 02 24 | 599 | 0.3+ | 0.7+ | 2005 07 29 | 644 | 0.3+ | 0.1− | | | | |

**(143459)∗ 2003 $BG_{88}$ = 2000 $OV_{55}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43293)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 247.18114 | | (2000.0) | | | |
| $n$ | 0.23019587 | $\omega$ | 261.32294 | | −0.86255066 | +0.46466777 |
| $a$ | 2.6367626 | $\Omega$ | 306.11998 | | −0.30868212 | −0.79681707 |
| $e$ | 0.1225918 | $i$ | 14.35150 | | −0.40090113 | −0.38622068 |
| $P$ | 4.28 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 699 | 0.9− | 0.4+ | 2003 01 27 | 704 | 0.2− | 0.5− | 2003 03 07 | 704 | 0.2+ | 0.7+ |
| 2000 07 29 | 699 | 0.5− | 1.6+ | 2003 02 02 | 704 | 0.4− | 0.4− | 2003 03 07 | 704 | 1.2+ | 0.9− |
| 2000 07 29 | 699 | 0.8− | 1.5+ | 2003 02 02 | 704 | 0.2− | 0.1− | 2003 03 07 | 704 | 0.2+ | 0.2+ |
| 2000 07 29 | 699 | 1.4− | 0.1+ | 2003 02 02 | 704 | 0.4− | 0.3+ | 2003 03 07 | 704 | 0.5+ | 0.6+ |
| 2000 08 01 | 704 | 1.3+ | 1.4+ | 2003 02 02 | 704 | 0.0 | 0.4− | 2003 03 07 | 704 | 0.2+ | 0.7− |
| 2000 08 01 | 704 | 0.2+ | 0.9+ | 2003 02 02 | 704 | 0.0 | 0.5− | 2003 03 07 | 608 | 0.1+ | 1.4+ |
| 2000 08 01 | 704 | 0.9− | 0.3− | 2003 02 03 | 608 | (0.7+ | 1.7−) | 2003 03 07 | 608 | 0.1+ | 0.8+ |
| 2001 10 25 | 704 | 1.2+ | 1.1+ | 2003 02 03 | 608 | (0.8+ | 1.6−) | 2003 03 07 | 608 | 0.2+ | 1.0+ |
| 2001 10 25 | 704 | 0.7− | 0.6− | 2003 02 03 | 608 | 0.3+ | 0.6− | 2005 09 02 | 644 | 0.0 | 0.2+ |
| 2001 10 25 | 704 | 0.6− | 0.5− | 2003 02 09 | 608 | 0.4− | 1.1− | 2005 09 02 | 644 | 0.4+ | 0.1+ |
| 2001 10 25 | 704 | 0.4− | 0.1+ | 2003 02 09 | 608 | 0.1− | 0.9− | 2005 09 02 | 644 | 0.3+ | 0.4+ |
| 2001 11 11 | 704 | 0.6+ | 0.3+ | 2003 02 09 | 608 | 0.3− | 0.7− | 2005 09 29 | 703 | 0.6− | 0.5+ |
| 2001 11 11 | 704 | 0.2− | 0.3− | 2003 02 19 | 644 | 0.1− | 1.0+ | 2005 09 29 | 703 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.5+ | 0.0 | 2003 02 19 | 644 | 0.0 | 1.2+ | 2005 09 29 | 703 | 0.1+ | 0.5− |
| 2001 11 11 | 704 | 0.3− | 0.7+ | 2003 02 19 | 644 | 0.0 | 1.1+ | 2005 09 29 | 703 | 1.2+ | 1.3− |
| 2001 11 11 | 704 | 0.5− | 0.2+ | 2003 03 01 | 608 | (0.5+ | 2.1+) | 2005 10 04 | 703 | 0.2+ | 1.1+ |
| 2001 11 12 | 699 | 0.1+ | 0.3− | 2003 03 01 | 608 | 0.7+ | 0.6+ | 2005 10 04 | 703 | 0.6− | 0.5+ |
| 2001 11 12 | 699 | 0.1− | 0.2+ | 2003 03 01 | 608 | 0.1+ | 1.1+ | 2005 10 04 | 703 | 0.5− | 1.3+ |
| 2001 11 12 | 699 | 0.3+ | 1.9− | 2003 03 06 | 704 | 0.3+ | 0.7− | 2005 10 04 | 703 | (0.3− | 2.4+) |
| 2001 11 12 | 699 | 0.5− | 0.7+ | 2003 03 06 | 704 | 0.4+ | 0.3− | 2005 10 23 | 703 | 0.0 | 1.0− |
| 2003 01 08 | 704 | 0.4+ | 0.3+ | 2003 03 06 | 704 | 0.3+ | 0.7+ | 2005 10 23 | 703 | 0.1− | 1.2+ |
| 2003 01 08 | 704 | 0.5− | 0.2− | 2003 03 06 | 704 | 0.7− | 0.6+ | 2005 10 23 | 703 | 0.3− | 0.4− |
| 2003 01 08 | 704 | 0.5+ | 0.5+ | 2003 03 06 | 704 | 0.1+ | 1.1− | 2005 10 23 | 703 | 0.0 | 1.1+ |
| 2003 01 08 | 704 | 0.1− | 0.4+ | 2003 03 07 | 704 | 0.5− | 0.6+ | 2005 10 29 | 703 | 0.3− | 0.1− |
| 2003 01 08 | 704 | 0.4− | 0.7+ | 2003 03 07 | 704 | 0.5+ | 0.8− | 2005 10 29 | 703 | (0.4− | 1.6−) |
| 2003 01 08 | 608 | 0.2− | 0.3− | 2003 03 07 | 704 | 0.4+ | 0.7+ | 2005 10 29 | 703 | 0.8− | 0.6− |
| 2003 01 08 | 608 | 0.1− | 0.0 | 2003 03 07 | 704 | 0.4+ | 0.2+ | 2005 10 29 | 703 | 0.2+ | 0.7− |
| 2003 01 08 | 608 | 0.3− | 0.1− | 2003 03 07 | 704 | 0.2− | 0.8+ | 2005 11 01 | 699 | 0.1+ | 0.7− |
| 2003 01 17 | 644 | 0.2+ | 0.3+ | 2003 03 07 | 704 | 0.5+ | 0.1− | 2005 11 01 | 699 | 1.4+ | 1.2+ |
| 2003 01 17 | 644 | 0.3+ | 0.2+ | 2003 03 07 | 704 | 0.3− | 0.8+ | 2005 11 01 | 699 | 0.6− | 0.1+ |
| 2003 01 17 | 644 | 0.4+ | 0.0 | 2003 03 07 | 704 | 0.4+ | 0.4+ | 2005 11 01 | 699 | 0.9− | 0.3− |
| 2003 01 27 | 704 | 0.3+ | 0.1− | 2003 03 07 | 704 | 0.4+ | 0.7+ | | | | |
| 2003 01 27 | 704 | 0.2+ | 0.1− | 2003 03 07 | 704 | 0.1+ | 0.4− | | | | |

**(143460)∗ 2003 $BQ_{88}$**

Discovered 2003 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 288.94300 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.23312426 | $\omega$ | 72.84612 | −0.97484579 | −0.00371632 | | | | | | | | |
| $a$ | 2.6146350 | $\Omega$ | 106.49723 | −0.07100590 | −0.94258476 | | | | | | | | |
| $e$ | 0.1071108 | $i$ | 13.43943 | +0.21126723 | −0.33394635 | | | | | | | | |
| $P$ | 4.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 608 | 0.5− | 0.9− | 2003 01 27 | 704 | 0.4+ | 0.5+ | 2005 10 31 | 644 | 0.1+ | 0.4+ | | | | | |
| 2001 10 19 | 608 | 0.3− | 0.7− | 2003 01 27 | 704 | 1.1+ | 0.8+ | 2005 11 05 | 703 | 0.0 | 0.0 | | | | | |
| 2001 10 19 | 608 | 0.5− | 0.3− | 2003 02 02 | 699 | 0.4+ | 1.0− | 2005 11 05 | 703 | 0.7+ | 0.9− | | | | | |
| 2001 12 07 | 704 | 0.5+ | 0.6− | 2003 02 02 | 699 | 0.2− | 0.3+ | 2005 11 05 | 703 | 0.8− | 0.2− | | | | | |
| 2001 12 07 | 704 | 0.4− | 0.6+ | 2003 02 02 | 699 | 0.1− | 0.9− | 2005 11 05 | 703 | 1.0+ | 0.4− | | | | | |
| 2001 12 07 | 704 | 0.4− | 1.1− | 2003 02 02 | 699 | 0.1− | 1.2+ | 2006 11 01 | G96 | 0.2− | 0.4− | | | | | |
| 2001 12 07 | 704 | 0.1+ | 0.3− | 2003 03 25 | 704 | 0.7− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.0 | | | | | |
| 2001 12 07 | 704 | (0.8− | 2.4−) | 2003 03 25 | 704 | 0.4+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.5− | | | | | |
| 2001 12 18 | 645 | 0.0 | 0.1+ | 2003 03 25 | 704 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.4− | | | | | |
| 2001 12 18 | 645 | 0.0 | 0.2+ | 2004 06 20 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.6− | 0.8− | | | | | |
| 2003 01 10 | 704 | 0.0 | 0.0 | 2004 06 20 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.7− | | | | | |
| 2003 01 10 | 704 | 0.2+ | 0.3+ | 2004 06 20 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− | | | | | |
| 2003 01 10 | 704 | 0.1+ | 0.4+ | 2005 10 01 | 699 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.4− | | | | | |
| 2003 01 10 | 704 | 0.3− | 0.2+ | 2005 10 01 | 699 | 0.5− | 0.9+ | 2006 11 27 | G96 | 0.2+ | 0.3− | | | | | |
| 2003 01 10 | 704 | 0.7− | 1.2− | 2005 10 01 | 699 | 1.4+ | 0.8− | 2006 11 27 | G96 | 0.2− | 0.3− | | | | | |
| 2003 01 27 | 704 | (1.8+ | 0.9+) | 2005 10 01 | 699 | 0.6− | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.4− | | | | | |
| 2003 01 27 | 704 | 0.8+ | 0.5+ | 2005 10 31 | 644 | 0.4− | 0.9+ | 2006 11 27 | G96 | 0.2+ | 0.1− | | | | | |
| 2003 01 27 | 704 | 0.1+ | 0.0 | 2005 10 31 | 644 | 0.1− | 0.1− | | | | | | | | | |

**(143461)∗ 2003 BK$_{89}$ = 2001 SS$_{343}$**

Discovered 2003 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47294)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 270.40068 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.17130667 | $\omega$ | 283.25029 | +0.23966488 | −0.95796157 | | | | | | | | |
| $a$ | 3.2108488 | $\Omega$ | 151.34539 | +0.96826438 | +0.22399045 | | | | | | | | |
| $e$ | 0.1587335 | $i$ | 19.20032 | +0.07088605 | +0.17927050 | | | | | | | | |
| $P$ | 5.75 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.7− | 0.6+ | 2003 01 28 | 704 | 0.6+ | 0.1− | 2004 04 16 | 704 | 0.4− | 0.9+ | | | | | |
| 2001 08 20 | 644 | 0.8− | 0.6+ | 2003 02 02 | 704 | (2.1+ | 0.3−) | 2006 08 17 | 644 | 0.2− | 0.6+ | | | | | |
| 2001 08 20 | 644 | 1.1− | 1.0+ | 2003 02 02 | 704 | 0.5− | 0.0 | 2006 08 17 | 644 | 0.3− | 0.4+ | | | | | |
| 2001 09 22 | 644 | 0.0 | 0.2+ | 2003 02 02 | 704 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 0.4+ | 0.5+ | | | | | |
| 2001 09 22 | 644 | 0.0 | 0.2− | 2003 02 02 | 704 | 0.3+ | 0.0 | 2006 08 18 | 644 | 0.2− | 0.4+ | | | | | |
| 2001 09 22 | 644 | 0.0 | 0.4− | 2003 02 19 | 644 | 0.4− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.4+ | | | | | |
| 2001 09 23 | 699 | 0.7+ | 0.2+ | 2003 02 19 | 644 | 0.2− | 0.0 | 2006 08 18 | 644 | 0.1− | 0.3+ | | | | | |
| 2001 09 23 | 699 | 0.9− | 0.6+ | 2003 02 19 | 644 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− | | | | | |
| 2001 09 23 | 699 | 0.9+ | 0.5− | 2003 03 07 | 704 | 1.0− | 1.2+ | 2006 09 27 | G96 | 0.1+ | 0.2+ | | | | | |
| 2001 09 23 | 699 | 1.1+ | 0.8+ | 2003 03 07 | 704 | 1.0+ | 0.8+ | 2006 09 27 | G96 | 0.3+ | 0.2+ | | | | | |
| 2001 10 28 | 644 | 0.1− | 0.0 | 2003 03 07 | 704 | 0.9− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.1+ | | | | | |
| 2001 10 28 | 644 | 0.0 | 0.7+ | 2003 03 07 | 704 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.5+ | 0.2− | | | | | |
| 2001 10 28 | 644 | 0.2− | 0.8+ | 2004 04 16 | 704 | 0.1+ | 0.8+ | 2006 10 20 | G96 | 0.3− | 0.1− | | | | | |
| 2003 01 28 | 704 | 0.8+ | 0.6− | 2004 04 16 | 704 | 0.4+ | 0.9+ | 2006 10 20 | G96 | 0.0 | 1.0− | | | | | |
| 2003 01 28 | 704 | 0.3+ | 0.4− | 2004 04 16 | 704 | 0.5+ | 0.9+ | 2006 10 20 | G96 | 0.1− | 0.6− | | | | | |

**(143462)∗ 2003 BN$_{89}$**

Discovered 2003 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 279.72133 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.17042823 | $\omega$ | 144.60655 | +0.24943646 | −0.94877903 | | | | | | | | |
| $a$ | 3.2218726 | $\Omega$ | 290.25398 | +0.83404869 | +0.31223047 | | | | | | | | |
| $e$ | 0.1332341 | $i$ | 11.92826 | +0.49208153 | −0.04827520 | | | | | | | | |
| $P$ | 5.78 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2001 12 14 | 704 | 1.7− | 1.0+ | 2006 08 17 | 644 | 0.3− | 0.1+ | | | | | |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.4− | 0.5+ | 2006 08 29 | 703 | 1.0− | 1.1− | | | | | |
| 2001 09 25 | 704 | 0.5− | 1.8− | 2002 01 08 | 704 | 0.4+ | 0.1− | 2006 08 29 | 703 | 0.6− | 0.8− | | | | | |
| 2001 09 25 | 704 | 1.0− | 0.4− | 2002 01 08 | 704 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.2+ | 0.5− | | | | | |
| 2001 09 25 | 704 | 1.4− | 0.1− | 2003 01 28 | 704 | 0.4+ | 0.6− | 2006 08 29 | 703 | 0.4+ | 0.0 | | | | | |
| 2001 09 25 | 704 | 1.2− | 0.5− | 2003 01 28 | 704 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | | | | | |
| 2001 09 25 | 704 | 2.0− | 0.8− | 2003 01 28 | 704 | 0.7+ | 0.4− | 2006 09 17 | 691 | 0.0 | 0.1− | | | | | |
| 2001 10 13 | 644 | 1.4+ | 0.2− | 2003 02 02 | 699 | 0.6− | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.1− | | | | | |
| 2001 10 13 | 644 | 0.9+ | 0.1− | 2003 02 02 | 699 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.2− | | | | | |
| 2001 10 13 | 644 | 1.3+ | 0.3− | 2003 02 02 | 699 | 0.9− | 0.6− | 2006 09 19 | 691 | 0.0 | 0.1− | | | | | |
| 2001 10 15 | 704 | 0.2− | 0.4+ | 2003 02 02 | 699 | (0.1− | 2.6+) | 2006 09 19 | 691 | 0.0 | 0.0 | | | | | |
| 2001 10 15 | 704 | 0.9+ | 1.7+ | 2003 02 03 | 699 | 1.0− | 0.7+ | 2006 09 22 | 691 | 0.1− | 0.3+ | | | | | |
| 2001 10 15 | 704 | (2.9− | 0.8+) | 2003 02 03 | 699 | 1.0− | 0.6− | 2006 09 22 | 691 | 0.1− | 0.1+ | | | | | |
| 2001 10 15 | 704 | 0.8− | 0.7+ | 2003 02 03 | 699 | 1.5− | 0.7− | 2006 09 22 | 691 | 0.2+ | 0.2+ | | | | | |
| 2001 10 15 | 704 | 0.5− | 0.1+ | 2003 02 03 | 699 | 0.6− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 | | | | | |
| 2001 11 11 | 704 | 0.6+ | 0.9− | 2003 02 09 | 608 | 0.8+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− | | | | | |
| 2001 11 11 | 704 | 1.0+ | 0.3− | 2003 02 09 | 608 | 0.6+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.3+ | | | | | |
| 2001 11 11 | 704 | 1.2+ | 0.6− | 2003 02 09 | 608 | 0.4+ | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.3+ | | | | | |
| 2001 11 11 | 704 | 1.4+ | 0.4− | 2003 03 07 | 704 | 1.4+ | 0.4− | 2006 09 28 | 691 | 0.3− | 0.3− | | | | | |
| 2001 11 11 | 704 | 1.4+ | 0.3+ | 2003 03 07 | 704 | 1.2+ | 0.9− | 2006 09 28 | 691 | 0.2+ | 0.3+ | | | | | |
| 2001 12 14 | 704 | 1.2− | 0.6+ | 2003 03 07 | 704 | (2.1+ | 0.1−) | 2006 09 30 | 691 | 0.3− | 0.0 | | | | | |
| 2001 12 14 | 704 | 0.1− | 1.0+ | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | | | | |
| 2001 12 14 | 704 | 0.6− | 0.5+ | 2006 08 17 | 644 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.9+ | 0.4− | | | | | |

**(143463)∗ 2003 BG$_{90}$**

Discovered 2003 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 324.57356 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.23647262 | $\omega$ | 23.33887 | −0.75723778 | −0.65160551 | | | | | | | | |
| $a$ | 2.5898949 | $\Omega$ | 115.92112 | +0.59113266 | −0.71286698 | | | | | | | | |
| $e$ | 0.2881666 | $i$ | 2.85099 | +0.27776452 | −0.25928927 | | | | | | | | |
| $P$ | 4.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2003 03 09 | 704 | 0.8+ | 0.4+ | 2005 08 30 | 691 | 0.0 | 0.5+ | | | | | |
| 2001 09 21 | 704 | 0.3+ | 1.4+ | 2003 03 09 | 704 | 0.7+ | 1.2− | 2005 08 30 | 691 | 0.2− | 0.5+ | | | | | |
| 2001 09 21 | 704 | 0.9− | 0.9+ | 2003 03 16 | 608 | 0.8+ | 0.5− | 2005 10 06 | G96 | 0.0 | 0.2+ | | | | | |
| 2001 09 21 | 704 | 0.6− | 0.6+ | 2003 03 16 | 608 | 0.8+ | 0.6− | 2005 10 06 | G96 | 0.1+ | 0.0 | | | | | |
| 2002 11 30 | 568 | 0.1− | 0.2− | 2003 03 16 | 608 | 0.3+ | 0.7− | 2005 10 06 | G96 | 0.0 | 0.5+ | | | | | |
| 2003 01 08 | 704 | 0.2+ | 0.5+ | 2003 03 26 | 644 | 0.2+ | 0.4+ | 2005 10 06 | G96 | 0.4− | 0.4+ | | | | | |
| 2003 01 08 | 704 | 0.6+ | 0.7+ | 2003 03 26 | 699 | 0.4− | 1.3+ | 2006 09 26 | 691 | 0.4+ | 0.3+ | | | | | |
| 2003 01 08 | 704 | 0.1− | 0.5+ | 2003 03 26 | 699 | 0.5− | 0.1+ | 2006 09 26 | 691 | 0.7− | 0.0 | | | | | |
| 2003 01 08 | 704 | (2.0+ | 0.3−) | 2003 03 26 | 699 | 0.5− | 0.3+ | 2006 09 26 | 691 | 0.6+ | 0.2− | | | | | |
| 2003 01 28 | 704 | 0.3+ | 0.7− | 2003 03 26 | 699 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.2− | | | | | |
| 2003 01 28 | 704 | 0.0 | 0.4+ | 2003 03 26 | 644 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 | | | | | |
| 2003 01 28 | 704 | 0.1+ | 0.8+ | 2003 03 26 | 644 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | | | | |
| 2003 01 28 | 704 | 0.2+ | 0.9+ | 2003 03 27 | 704 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.7− | | | | | |
| 2003 02 01 | 704 | 0.0 | 0.1+ | 2003 03 27 | 704 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.9− | | | | | |
| 2003 02 01 | 704 | 0.7+ | 0.5− | 2003 03 27 | 704 | 0.9− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.8− | | | | | |
| 2003 02 01 | 704 | 0.2+ | 0.2+ | 2003 03 27 | 704 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.6− | | | | | |
| 2003 02 01 | 704 | 0.5+ | 0.6+ | 2003 03 27 | 704 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.7+ | | | | | |
| 2003 02 01 | 704 | 0.9+ | 0.3+ | 2003 03 30 | 704 | 0.8+ | 0.5+ | 2006 11 21 | 704 | 0.4− | 0.2+ | | | | | |
| 2003 02 23 | 683 | 1.3+ | 1.3+ | 2003 03 30 | 704 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.9− | 0.5+ | | | | | |
| 2003 02 23 | 683 | 0.1− | 0.2− | 2003 03 30 | 704 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.4+ | | | | | |
| 2003 02 23 | 683 | 0.2+ | 0.4+ | 2003 03 30 | 704 | 0.3+ | 0.5+ | 2006 11 27 | G96 | 0.4− | 0.7− | | | | | |
| 2003 03 06 | 704 | 0.5+ | 0.8+ | 2003 04 01 | 645 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.7− | 0.8− | | | | | |
| 2003 03 06 | 704 | 0.0 | 0.1− | 2003 04 01 | 645 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.5− | 0.5− | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 704 | 1.2+ | 0.1− | 2003 04 09 | 704 | 0.3+ | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.6− |
| 2003 03 06 | 704 | 0.1+ | 0.3− | 2003 04 09 | 704 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2003 03 06 | 704 | 0.4+ | 0.5+ | 2003 04 09 | 704 | 0.4+ | 0.0 | 2006 11 29 | 704 | 1.3+ | 0.7+ |
| 2003 03 09 | 704 | 0.6+ | 0.7+ | 2003 04 09 | 704 | 0.6+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2003 03 09 | 704 | 0.2+ | 0.2+ | 2003 04 09 | 704 | 0.3+ | 0.6+ | 2006 11 29 | 704 | 1.4+ | 0.0 |
| 2003 03 09 | 704 | 0.6+ | 0.0 | 2005 08 30 | 691 | 0.4− | 0.6+ | | | | |

**(143464)∗ 2003 BB$_{91}$**

Discovered 2003 Jan. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.80348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17761960 | $\omega$ | 45.52950 | | −0.97305385 | +0.12926600 | |
| $a$ | 3.1343112 | $\Omega$ | 140.70638 | | −0.16166272 | −0.97292202 | |
| $e$ | 0.1682461 | $i$ | 17.54748 | | +0.16441221 | −0.19160646 | |
| $P$ | 5.55 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 23 | 704 | 1.0− | 0.6− | 2003 02 12 | 608 | 0.3− | 0.8− | 2003 03 12 | 704 | 0.2+ | 0.5+ |
| 1998 05 23 | 704 | 0.3− | 0.1+ | 2003 02 12 | 608 | 0.5+ | 0.6− | 2003 03 12 | 704 | 0.2+ | 0.7+ |
| 1998 05 23 | 704 | 0.1− | 1.3− | 2003 02 12 | 608 | 0.1− | 0.4+ | 2003 03 26 | 704 | 0.7+ | 0.6+ |
| 1998 05 23 | 704 | 0.5+ | 0.9− | 2003 02 28 | 704 | 0.1+ | 0.6− | 2003 03 26 | 704 | 0.0 | 0.5+ |
| 1998 05 23 | 704 | (5.7− | 0.0 ) | 2003 02 28 | 704 | 0.0 | 0.5− | 2003 03 26 | 704 | 0.7+ | 0.0 |
| 1998 05 26 | 704 | 0.4− | 1.7+ | 2003 02 28 | 704 | 0.5− | 0.0 | 2003 03 26 | 704 | 0.1− | 0.6+ |
| 1998 05 26 | 704 | 0.9+ | 0.2− | 2003 02 28 | 704 | 0.2− | 0.0 | 2003 04 06 | 699 | 0.6− | 0.7+ |
| 1998 05 26 | 704 | (0.1− | 2.1−) | 2003 02 28 | 704 | 0.1+ | 0.6− | 2003 04 06 | 699 | 0.5− | 0.5+ |
| 1998 05 26 | 704 | (3.9− | 1.0+) | 2003 03 03 | 704 | 0.4− | 0.2− | 2003 04 06 | 699 | 0.1− | 0.6+ |
| 2001 12 07 | 704 | 0.9+ | 0.2− | 2003 03 03 | 704 | 0.5− | 0.4+ | 2003 04 06 | 699 | 0.5− | 0.0 |
| 2001 12 07 | 704 | 0.1+ | 0.3− | 2003 03 03 | 704 | 0.7− | 0.1− | 2003 04 09 | 644 | 0.2− | 0.2+ |
| 2001 12 07 | 704 | 0.3+ | 0.3+ | 2003 03 07 | 735 | 0.3− | 0.1− | 2003 04 09 | 644 | 0.2− | 0.2+ |
| 2001 12 07 | 704 | 0.0 | 0.3+ | 2003 03 07 | 735 | 0.3− | 0.1− | 2003 04 09 | 644 | 0.1− | 0.4+ |
| 2002 02 08 | 644 | 0.3− | 0.3− | 2003 03 07 | 735 | 0.4− | 0.3+ | 2005 07 29 | 644 | 0.3− | 0.3+ |
| 2002 02 08 | 644 | 0.5− | 0.1− | 2003 03 08 | 699 | 0.3− | 0.2+ | 2005 07 29 | 644 | 0.0 | 0.7+ |
| 2002 02 08 | 644 | 0.0 | 0.3− | 2003 03 08 | 699 | 0.3− | 0.2+ | 2005 07 29 | 644 | 0.1+ | 0.5+ |
| 2003 01 31 | 704 | 1.0+ | 0.3− | 2003 03 08 | 699 | 1.0+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2003 01 31 | 704 | 0.2+ | 0.5− | 2003 03 08 | 699 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2003 01 31 | 704 | 0.3+ | 0.1− | 2003 03 08 | 644 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2003 02 06 | 704 | 0.2+ | 0.7− | 2003 03 08 | 644 | 0.1+ | 0.3+ | 2006 11 26 | 809 | 0.3− | 0.2+ |
| 2003 02 06 | 704 | 0.7+ | 1.1− | 2003 03 08 | 644 | 0.1− | 0.1+ | 2006 11 26 | 809 | 0.2− | 0.1+ |
| 2003 02 06 | 704 | 0.3− | 0.8− | 2003 03 12 | 704 | 0.4+ | 0.3+ | 2006 11 26 | 809 | 0.2− | 0.2+ |
| 2003 02 06 | 704 | 0.1+ | 1.0− | 2003 03 12 | 704 | 0.8+ | 1.1+ | 2006 11 26 | 809 | 0.3− | 0.1+ |
| 2003 02 06 | 704 | 0.1+ | 0.5− | 2003 03 12 | 704 | 0.0 | 0.9+ | 2006 11 26 | 809 | 0.3− | 0.1+ |

**(143465)∗ 2003 CT**

Discovered 2003 Feb. 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.19383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24423474 | $\omega$ | 4.14848 | | −0.18888523 | −0.94977274 | |
| $a$ | 2.5347264 | $\Omega$ | 96.87377 | | +0.89358045 | −0.27160382 | |
| $e$ | 0.1333864 | $i$ | 14.55529 | | +0.40723010 | +0.15544485 | |
| $P$ | 4.04 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 0.2+ | 0.2− | 2003 02 01 | 644 | 0.0 | 0.5+ | 2004 07 08 | 691 | 0.5+ | 0.7+ |
| 1999 02 18 | 704 | 0.8+ | 0.5− | 2003 02 01 | 644 | 0.0 | 0.6+ | 2004 07 08 | 691 | 0.1− | 0.8+ |
| 1999 02 18 | 704 | 0.3+ | 1.1+ | 2003 02 02 | 704 | 0.1+ | 0.7+ | 2005 07 28 | 644 | 0.1− | 0.5+ |
| 1999 02 18 | 704 | 0.0 | 0.5+ | 2003 02 02 | 704 | 0.1+ | 0.4+ | 2005 07 28 | 644 | 0.1− | 0.3+ |
| 1999 02 18 | 704 | 0.4− | 1.0− | 2003 02 02 | 704 | 0.1+ | 0.0 | 2005 07 28 | 644 | 0.1− | 0.6+ |
| 1999 02 18 | 566 | 0.1+ | 0.3− | 2003 02 02 | 704 | 0.0 | 0.3+ | 2005 09 02 | 644 | 0.0 | 0.8+ |
| 1999 02 18 | 566 | 0.0 | 0.1+ | 2003 02 02 | 704 | 0.2+ | 0.6+ | 2005 09 02 | 644 | 0.1− | 0.7+ |
| 1999 02 18 | 566 | 0.0 | 0.5− | 2003 02 08 | 699 | 0.6+ | 0.5+ | 2005 09 02 | 644 | 0.0 | 0.6+ |
| 2001 09 11 | 704 | (2.5− | 1.7−) | 2003 02 08 | 699 | 0.1+ | 0.1+ | 2005 10 02 | E12 | 1.0− | 0.6+ |
| 2001 09 11 | 704 | 0.8− | 1.2+ | 2003 02 08 | 699 | 0.1+ | 0.0 | 2005 10 02 | E12 | 0.5− | 0.6+ |
| 2001 09 11 | 704 | (1.6− | 0.7+) | 2003 02 08 | 699 | 0.0 | 0.2+ | 2005 10 02 | E12 | 0.5− | 0.3+ |
| 2001 09 11 | 704 | 0.3− | 1.3+ | 2003 02 26 | 704 | (0.1+ | 2.4+) | 2005 10 02 | E12 | 1.1+ | 0.7− |
| 2001 09 11 | 704 | (0.4+ | 2.2+) | 2003 02 26 | 704 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.7− | 0.0 |
| 2002 11 21 | 644 | 0.4+ | 0.3+ | 2003 02 26 | 704 | (0.2+ | 2.0+) | 2006 10 17 | G96 | 0.9− | 0.1+ |
| 2002 11 21 | 644 | 0.1+ | 0.8+ | 2003 02 26 | 704 | 0.3− | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 2002 11 21 | 644 | 0.2+ | 0.5+ | 2003 02 26 | 704 | (0.8+ | 2.8+) | 2006 10 17 | G96 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.8− | 0.2− | 2003 02 26 | 704 | 0.4− | 0.6− | 2006 10 23 | G96 | 0.4− | 0.1+ |
| 2002 12 06 | 704 | 0.7− | 0.7+ | 2003 02 26 | 704 | (0.4+ | 2.3+) | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.2+ | 2003 02 26 | 704 | 0.7− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.5+ | 0.2− | 2003 02 26 | 704 | (0.3+ | 1.8+) | 2006 11 19 | 704 | 0.8+ | 1.4+ |
| 2002 12 11 | 704 | 0.3− | 1.3+ | 2003 02 26 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | (1.3+ | 1.5−) | 2003 03 08 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | (2.2+ | 1.5−) |
| 2002 12 11 | 704 | 1.1+ | 0.6+ | 2003 03 08 | 644 | 0.3+ | 1.1+ | 2006 11 22 | 704 | 1.1+ | 0.5+ |
| 2002 12 31 | 704 | 0.1− | 0.4+ | 2003 03 08 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2003 03 08 | 644 | 0.4+ | 1.1+ | 2006 11 22 | 704 | 0.7+ | 0.3+ |
| 2002 12 31 | 704 | 0.1− | 0.1+ | 2003 03 08 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2003 03 08 | 644 | 0.4+ | 1.2+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2003 04 26 | 645 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2003 01 10 | 704 | 0.2− | 1.1+ | 2003 04 26 | 645 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2003 01 10 | 704 | 0.2− | 0.1− | 2004 06 16 | 704 | 0.7− | 0.5− | 2006 12 01 | 704 | 0.6+ | 1.3− |
| 2003 01 10 | 704 | 0.3− | 0.3+ | 2004 06 16 | 704 | 0.6+ | 0.1+ | 2006 12 01 | 704 | 0.6+ | 0.8+ |
| 2003 01 10 | 704 | 0.3+ | 0.1+ | 2004 06 16 | 704 | 0.3− | 0.1+ | 2006 12 01 | 704 | 0.7+ | 0.4+ |
| 2003 01 10 | 704 | 0.3− | 0.1+ | 2004 06 16 | 704 | 1.4+ | 1.3+ | 2006 12 01 | 704 | 1.0− | 1.1+ |
| 2003 02 01 | 644 | 0.0 | 0.4+ | 2004 07 08 | 691 | 0.2+ | 0.4+ | 2006 12 01 | 704 | 0.2− | 0.6− |

**(143466)∗ 2003 CW$_2$ = 2003 CR$_{14}$**

Discovered 2003 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 48394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.75601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20539291 | $\omega$ | 305.81814 | | −0.13643780 | −0.98203954 | |
| $a$ | 2.8449791 | $\Omega$ | 151.18258 | | +0.97357151 | −0.15724102 | |
| $e$ | 0.1052484 | $i$ | 15.68571 | | +0.18314815 | +0.10427655 | |
| $P$ | 4.80 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.5− | 0.7+ | 2003 02 03 | 699 | 0.4+ | 0.0 | 2003 03 12 | 644 | 0.2+ | 0.5+ |
| 2001 10 11 | 704 | 0.2− | 0.6+ | 2003 02 03 | 608 | 0.1− | 1.0+ | 2005 06 29 | 691 | 0.1+ | 0.4+ |
| 2001 10 11 | 704 | 0.0 | 0.9+ | 2003 02 03 | 608 | 0.5− | 1.1+ | 2005 06 29 | 691 | 0.2− | 0.5+ |
| 2003 01 08 | 704 | 0.9− | 0.8+ | 2003 02 03 | 608 | 0.1− | 0.7+ | 2005 06 29 | 691 | 0.0 | 0.4+ |
| 2003 01 08 | 704 | 1.2− | 1.0+ | 2003 02 09 | 608 | 0.4+ | 0.9+ | 2005 07 04 | 691 | 0.1+ | 0.5+ |
| 2003 01 08 | 704 | 0.1− | 0.7+ | 2003 02 09 | 608 | 0.6+ | 0.5+ | 2005 07 04 | 691 | 0.2+ | 0.5+ |
| 2003 01 08 | 608 | 0.1+ | 0.0 | 2003 02 09 | 608 | 0.4+ | 1.0+ | 2005 07 04 | 691 | 0.1− | 0.5+ |
| 2003 01 08 | 608 | 0.7+ | 0.6− | 2003 02 19 | 644 | 0.1+ | 1.0+ | 2005 07 05 | 644 | 0.1+ | 0.0 |
| 2003 01 08 | 608 | 0.8+ | 0.5− | 2003 02 19 | 644 | 0.2+ | 1.1+ | 2005 07 05 | 644 | 0.2− | 0.5+ |
| 2003 01 28 | 704 | 0.9− | 0.2+ | 2003 02 19 | 644 | 0.2+ | 1.2+ | 2005 07 05 | 644 | 0.2+ | 0.2+ |
| 2003 01 28 | 704 | 0.8− | 0.0 | 2003 02 21 | 644 | 0.0 | 0.3+ | 2005 08 29 | 691 | 0.1− | 0.3+ |
| 2003 01 28 | 704 | 1.4− | 0.5+ | 2003 02 21 | 644 | 0.1+ | 0.3+ | 2005 08 29 | 691 | 0.1− | 0.4+ |
| 2003 01 28 | 704 | 0.9− | 0.1− | 2003 02 21 | 644 | 0.0 | 0.4+ | 2005 08 29 | 691 | 0.1+ | 0.1+ |
| 2003 01 28 | 608 | 0.3− | 0.5− | 2003 02 22 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2003 01 28 | 608 | 0.5− | 0.3− | 2003 02 22 | 699 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2003 01 28 | 608 | 0.4− | 0.4− | 2003 02 22 | 699 | 0.1− | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 02 02 | 704 | 0.5+ | 0.0 | 2003 02 22 | 699 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2003 02 02 | 704 | 0.5+ | 0.5− | 2003 02 22 | 699 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.9+ |
| 2003 02 02 | 704 | 0.1+ | 0.4− | 2003 02 22 | 644 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.1− |
| 2003 02 02 | 704 | 0.1+ | 0.1− | 2003 02 22 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2003 02 02 | 704 | 0.4+ | 0.3− | 2003 03 01 | 608 | 0.1− | 0.6− | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2003 02 03 | 704 | 0.9+ | 0.5+ | 2003 03 01 | 608 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2003 02 03 | 699 | 0.0 | 0.0 | 2003 03 01 | 608 | 0.6+ | 1.1− | 2006 11 17 | 703 | 0.3+ | 0.4− |
| 2003 02 03 | 699 | 1.2+ | 0.4+ | 2003 03 06 | 644 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2003 02 03 | 704 | 0.9+ | 0.5+ | 2003 03 06 | 644 | 0.2+ | 0.5+ | 2006 11 23 | 703 | 0.3+ | 0.5+ |
| 2003 02 03 | 704 | 0.3− | 0.0 | 2003 03 06 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.8− |
| 2003 02 03 | 699 | 0.5+ | 0.5+ | 2003 03 12 | 644 | 0.2− | 0.6+ | 2006 11 23 | 703 | 0.4− | 0.3− |
| 2003 02 03 | 704 | 0.1− | 0.3+ | 2003 03 12 | 644 | 0.3− | 0.4+ | 2006 11 23 | 703 | 0.5− | 1.2+ |

**(143467)∗ 2003 $CH_3$ = 2001 $TN_{200}$**

Discovered 2003 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41485)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 326.51922 | | (2000.0) | | | |
| $n$ | 0.24420329 | $\omega$ | 53.67245 | | −0.84243557 | −0.51928692 |
| $a$ | 2.5349440 | $\Omega$ | 94.62876 | | +0.43652263 | −0.81412360 |
| $e$ | 0.2039529 | $i$ | 8.28796 | | +0.31583270 | −0.25989201 |
| $P$ | 4.04 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 07 | 699 | 0.5− | 0.0 | 2003 02 11 | 608 | (0.3+ | 1.6+) | 2005 10 10 | 703 | 1.0− | 0.4+ |
| 1999 04 07 | 699 | 0.1− | 0.8+ | 2003 02 11 | 608 | 0.3+ | 1.4+ | 2005 10 10 | 703 | 0.9+ | 1.1+ |
| 1999 04 07 | 699 | 0.5+ | 0.2+ | 2003 02 11 | 608 | 0.1− | 1.2+ | 2005 10 10 | 703 | 0.5+ | 0.5+ |
| 2001 10 11 | 704 | 0.1− | 0.2− | 2003 03 08 | 704 | 0.8+ | 0.8+ | 2005 10 10 | 703 | (0.2+ | 2.6−) |
| 2001 10 11 | 704 | 0.3− | 0.0 | 2003 03 08 | 704 | 1.3+ | 0.2+ | 2005 11 03 | G96 | 0.1− | 0.2+ |
| 2001 10 11 | 704 | 0.0 | 0.6+ | 2003 03 08 | 704 | 0.5+ | 1.1+ | 2005 11 03 | G96 | 0.1− | 0.1+ |
| 2001 10 11 | 704 | 0.1− | 0.2− | 2003 03 08 | 704 | 0.7+ | 0.0 | 2005 11 03 | G96 | 0.1− | 0.0 |
| 2001 10 15 | 644 | 0.2− | 1.4+ | 2003 03 08 | 704 | 0.4+ | 0.1+ | 2005 11 03 | G96 | 0.1− | 0.2+ |
| 2001 10 15 | 644 | 0.3− | 1.3+ | 2003 03 23 | 644 | 0.1+ | 0.2+ | 2005 11 05 | G96 | 0.2− | 0.3+ |
| 2001 10 15 | 644 | (0.3− | 1.6+) | 2003 03 23 | 644 | 0.0 | 0.2+ | 2005 11 05 | G96 | 0.4+ | 0.1+ |
| 2001 10 23 | 644 | 0.0 | 0.3+ | 2003 03 23 | 644 | 0.0 | 0.1+ | 2005 11 05 | G96 | 0.1− | 0.1− |
| 2001 10 23 | 644 | 0.3− | 0.5+ | 2003 03 26 | 704 | 0.6+ | 0.2− | 2005 11 05 | G96 | 0.2− | 0.1− |
| 2001 10 23 | 644 | 0.7+ | 0.6+ | 2003 03 26 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.9− | 0.3− |
| 2003 01 10 | 704 | 0.3+ | 0.2+ | 2003 03 26 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 703 | 1.4− | 0.3+ |
| 2003 01 10 | 704 | (0.9+ | 2.1−) | 2003 03 26 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 703 | 1.0− | 0.3+ |
| 2003 01 10 | 704 | 0.5+ | 0.2+ | 2003 03 26 | 704 | 0.3− | 0.7+ | 2006 10 20 | 703 | (0.8− | 2.3+) |
| 2003 01 10 | 704 | 0.2− | 0.8− | 2003 03 31 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.5+ | 0.2− |
| 2003 01 10 | 704 | 1.2+ | 0.9− | 2003 03 31 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.5+ | 0.5− |
| 2003 01 16 | 699 | 0.5− | 0.3+ | 2003 03 31 | 644 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.9+ | 0.3− |
| 2003 01 16 | 699 | 0.2− | 0.4+ | 2003 04 04 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2003 01 16 | 699 | (0.4+ | 1.6+) | 2003 04 04 | 704 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.0 | 0.5− |
| 2003 01 16 | 699 | (2.1− | 2.7+) | 2003 04 04 | 704 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2003 01 27 | 704 | 0.5− | 0.1+ | 2003 04 04 | 704 | 0.0 | 0.8− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 01 27 | 704 | 0.4− | 0.4+ | 2003 04 06 | 699 | 0.6− | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2003 01 27 | 704 | 0.4− | 0.4+ | 2003 04 06 | 699 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2003 01 27 | 704 | 0.2− | 0.5+ | 2003 04 06 | 699 | 1.0− | 0.4− | 2006 11 15 | 703 | (1.7− | 0.4+) |
| 2003 01 27 | 704 | 0.6− | 0.4+ | 2003 04 06 | 699 | 0.3− | 0.4− | 2006 11 15 | 703 | 0.8− | 1.1+ |
| 2003 02 02 | 699 | 0.4− | 0.1+ | 2003 04 24 | 704 | (0.6− | 2.9+) | 2006 11 15 | 703 | (1.9− | 0.6−) |
| 2003 02 02 | 699 | 0.8− | 0.5+ | 2003 04 24 | 704 | (1.2+ | 2.7+) | 2006 11 15 | 703 | 0.9− | 0.7+ |
| 2003 02 02 | 699 | 1.2− | 0.0 | 2003 04 24 | 704 | (0.7+ | 3.0+) | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2003 02 02 | 699 | 0.4− | 0.5+ | 2003 04 24 | 704 | (0.0 | 3.5+) | 2006 11 22 | 704 | 1.1+ | 0.2− |
| 2003 02 02 | 704 | (1.8− | 0.3+) | 2003 04 24 | 704 | (0.6+ | 4.0+) | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2003 02 02 | 704 | (1.5− | 0.7+) | 2003 05 01 | 608 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.8− | 1.1+ |
| 2003 02 02 | 704 | 1.1− | 0.0 | 2003 05 01 | 608 | 0.2+ | 0.3− | 2006 11 22 | 704 | (0.1− | 1.7+) |
| 2003 02 02 | 704 | (2.6− | 0.1+) | 2003 05 01 | 608 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.6− | 0.5− |
| 2003 02 03 | 608 | 1.2+ | 1.1− | 2004 07 15 | E12 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.4− | 0.3− |
| 2003 02 03 | 608 | 1.1+ | 1.5− | 2004 07 15 | E12 | 0.5− | 0.6+ | 2006 11 27 | G96 | 0.4− | 0.3− |
| 2003 02 03 | 608 | 1.3+ | 1.0− | 2004 07 15 | E12 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.6− | 0.1− |
| 2003 02 06 | 704 | 0.4− | 0.1+ | 2004 07 15 | E12 | 0.5+ | 0.6+ | 2006 11 29 | 704 | 0.5+ | 0.7+ |
| 2003 02 06 | 704 | 0.2− | 0.0 | 2005 10 03 | 703 | 1.1− | 0.2− | 2006 11 29 | 704 | 0.2− | 0.4− |
| 2003 02 06 | 704 | 0.7+ | 0.7− | 2005 10 03 | 703 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.3− |
| 2003 02 06 | 704 | 0.2− | 0.0 | 2005 10 03 | 703 | 0.9− | 0.0 | | | | |
| 2003 02 06 | 704 | 0.4− | 0.0 | 2005 10 03 | 703 | 0.6+ | 0.3− | | | | |

**(143468)∗ 2003 $CP_3$**

Discovered 2003 Feb. 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.87177 | | (2000.0) | | | |
| $n$ | 0.17793163 | $\omega$ | 46.43619 | | +0.51327563 | −0.85356332 |
| $a$ | 3.1306458 | $\Omega$ | 13.53472 | | +0.63540360 | +0.30799230 |
| $e$ | 0.1440336 | $i$ | 22.43571 | | +0.57689721 | +0.42020281 |
| $P$ | 5.54 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 11 | 691 | 0.5− | 0.8− | 2003 03 26 | 704 | 0.3− | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.2− |
| 1992 03 11 | 691 | 0.7− | 0.1− | 2003 03 26 | 704 | 0.2− | 0.6+ | 2006 09 22 | 704 | 0.3+ | 1.3− |
| 1992 03 11 | 691 | 0.7− | 0.8− | 2003 03 31 | 644 | 0.7+ | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.0 |
| 2001 09 25 | 704 | (0.2+ | 1.6−) | 2003 03 31 | 644 | 0.6+ | 1.4+ | 2006 09 26 | 704 | 0.1− | 0.7+ |
| 2001 09 25 | 704 | 0.1− | 0.6− | 2003 03 31 | 644 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.9− | 2003 03 31 | 644 | 0.8+ | 1.2+ | 2006 09 26 | 704 | 0.6− | 0.4+ |
| 2001 09 25 | 704 | 0.1+ | 1.3− | 2003 03 31 | 644 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.5+ |
| 2001 09 28 | 704 | (1.5+ | 3.3−) | 2003 03 31 | 644 | 0.9+ | 1.4+ | 2006 09 26 | 704 | 0.3− | 0.4+ |
| 2001 09 28 | 704 | 0.7+ | 1.0+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.2− | 0.6+ |
| 2001 09 28 | 704 | 0.5− | 0.5+ | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 26 | 704 | 1.0− | 0.8+ |
| 2001 09 28 | 704 | (0.9− | 1.9+) | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.3− | 0.2− |
| 2001 10 25 | 704 | (1.9− | 0.3−) | 2006 08 28 | 699 | 0.5+ | 0.8− | 2006 09 28 | 704 | 0.1− | 0.1+ |
| 2001 10 25 | 704 | (1.5− | 2.2−) | 2006 08 28 | 699 | 0.0 | 1.3+ | 2006 09 28 | 704 | 0.0 | 0.2+ |
| 2001 10 25 | 704 | (1.2− | 1.9−) | 2006 08 28 | 699 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.4− | 0.1− |
| 2001 10 25 | 704 | 0.4− | 0.8− | 2006 08 28 | 699 | 0.1+ | 0.6+ | 2006 09 28 | 704 | 0.2+ | 0.6+ |
| 2001 12 08 | 704 | (2.7+ | 1.1−) | 2006 08 30 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.1+ |
| 2001 12 08 | 704 | (2.8+ | 0.9−) | 2006 08 30 | 704 | 0.6− | 0.8− | 2006 09 30 | 703 | 0.5+ | 0.4+ |
| 2001 12 08 | 704 | (2.3+ | 1.9−) | 2006 08 30 | 704 | 1.3− | 0.8− | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2001 12 23 | 704 | 0.9+ | 0.4− | 2006 09 12 | 703 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2001 12 23 | 704 | 0.7+ | 0.4− | 2006 09 12 | 703 | 0.1− | 0.8+ | 2006 09 30 | 704 | 1.0− | 0.2+ |
| 2001 12 23 | 704 | 0.8+ | 0.1− | 2006 09 12 | 703 | 0.2+ | 1.4+ | 2006 09 30 | 704 | 0.3− | 0.3+ |
| 2001 12 23 | 704 | 0.8+ | 0.1+ | 2006 09 12 | 703 | 0.6+ | 0.2+ | 2006 09 30 | 704 | 0.9− | 0.5+ |
| 2001 12 23 | 704 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.4− | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.6+ |
| 2003 02 01 | 644 | 0.3+ | 0.2− | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.6+ | 0.3+ |
| 2003 02 01 | 644 | 0.2+ | 0.2− | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2003 02 01 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2003 02 04 | 644 | 1.1+ | 0.7+ | 2006 09 16 | 704 | 0.1+ | 1.0− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2003 02 04 | 644 | 1.2+ | 1.0+ | 2006 09 16 | 704 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2003 02 04 | 644 | 0.6+ | 1.1+ | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2003 03 08 | 704 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 03 08 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2003 03 08 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 11 06 | 644 | 0.3− | 0.6− |
| 2003 03 08 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.5+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2003 03 08 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 699 | 0.7− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2003 03 08 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2003 03 08 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2003 03 08 | 704 | 0.2+ | 1.5+ | 2006 09 19 | 704 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2003 03 08 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 704 | 1.0+ | 1.1+ | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2003 03 08 | 704 | 0.7− | 0.4− | 2006 09 19 | 704 | 0.9+ | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2003 03 08 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 704 | 1.1+ | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2003 03 08 | 644 | 0.4+ | 0.2+ | 2006 09 19 | 704 | (2.8+ | 0.1−) | 2006 11 13 | G96 | 0.7+ | 0.3+ |
| 2003 03 08 | 644 | 0.5+ | 0.0 | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.4− |
| 2003 03 12 | 704 | 0.6+ | 1.0+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2003 03 12 | 704 | 0.6+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2003 03 12 | 704 | 0.6+ | 0.7+ | 2006 09 22 | 704 | 0.5+ | 0.5− | 2006 11 18 | 704 | (0.9− | 1.6+) |
| 2003 03 26 | 704 | 0.7+ | 0.5− | 2006 09 22 | 704 | 0.4+ | 0.1− | | | | |
| 2003 03 26 | 704 | (1.1− | 1.6+) | 2006 09 22 | 704 | (1.9− | 0.4+) | | | | |

**(143469)∗ 2003 $CZ_3$**

Discovered 2003 Feb. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 254.73023 | | (2000.0) | | | |
| $n$ | 0.22970199 | $\omega$ | 265.40122 | | −0.86592749 | −0.37161992 |
| $a$ | 2.6405408 | $\Omega$ | 252.48259 | | +0.46708885 | −0.84018918 |
| $e$ | 0.1277054 | $i$ | 20.55127 | | −0.17887873 | −0.39494402 |
| $P$ | 4.29 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 23 | 644 | 0.4− | 0.8+ | 2003 01 09 | 704 | 0.0 | 0.9− | 2006 10 23 | 703 | 0.1+ | 0.1+ |
| 2001 07 23 | 644 | 0.3− | 0.6+ | 2003 01 09 | 704 | (2.2− | 1.2+) | 2006 10 23 | 703 | 0.5− | 0.6+ |
| 2001 07 23 | 644 | 0.5− | 0.8+ | 2003 01 09 | 704 | (2.4− | 0.3+) | 2006 10 29 | 703 | 0.5− | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2003 01 27 | 644 | 0.1− | 0.2+ | 2006 10 29 | 703 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 1.3+ | 0.8+ | 2003 01 27 | 644 | 0.1− | 0.3+ | 2006 10 29 | 703 | 0.5− | 0.1+ |
| 2002 10 11 | 704 | 0.8+ | 0.1− | 2003 01 27 | 644 | 0.3− | 0.2+ | 2006 10 29 | 703 | 0.9− | 0.3+ |
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2003 02 03 | 644 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.2− | 0.8− | 2003 02 03 | 644 | 0.1− | 0.0 | 2006 11 02 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.3− | 0.5− | 2003 02 03 | 644 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.2− | | |
| 2002 11 06 | 704 | 0.0 | 0.8− | 2003 02 04 | 673 | 0.2+ | 0.0 | 2006 11 02 | G96 | 0.2− | 0.0 | | |
| 2002 11 06 | 704 | 0.8− | 0.7− | 2003 02 04 | 673 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.2− | 0.1− | | |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 02 04 | 673 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.2− | 0.3− | | |
| 2002 12 11 | 704 | 0.1+ | 0.6+ | 2004 05 22 | 704 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.1+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.1− | 1.0+ | 2004 05 22 | 704 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.3− | 0.3− | | |
| 2002 12 11 | 704 | 0.0 | 0.4+ | 2004 05 22 | 704 | 0.5− | 0.2+ | 2006 11 15 | 704 | (2.4+ | 1.4−) | | |
| 2002 12 11 | 704 | 0.2+ | 0.6+ | 2004 05 22 | 704 | 0.0 | 0.5− | 2006 11 15 | 704 | 0.2+ | 0.3− | | |
| 2002 12 31 | 704 | 0.6− | 0.5+ | 2004 05 22 | 704 | 0.4− | 0.3+ | 2006 11 15 | 704 | 1.0+ | 0.1− | | |
| 2002 12 31 | 704 | 0.0 | 0.4+ | 2004 06 11 | 704 | (0.6− | 1.5−) | 2006 11 15 | 704 | 1.2+ | 0.4− | | |
| 2002 12 31 | 704 | 0.9− | 0.9+ | 2004 06 11 | 704 | 0.0 | 0.1+ | 2006 11 15 | 704 | (2.5+ | 1.7−) | | |
| 2003 01 07 | 704 | 0.7+ | 0.4− | 2004 06 11 | 704 | 0.5+ | 0.1− | 2006 11 21 | 703 | 0.5− | 0.3− | | |
| 2003 01 07 | 704 | 0.6− | 0.6+ | 2004 06 17 | 704 | 0.4+ | 1.2+ | 2006 11 21 | 703 | 0.3− | 0.1− | | |
| 2003 01 07 | 704 | 0.2+ | 0.2+ | 2004 06 17 | 704 | 0.1+ | 0.1+ | 2006 11 21 | 703 | 0.0 | 0.2− | | |
| 2003 01 07 | 704 | 0.1− | 0.1− | 2004 06 17 | 704 | 0.6+ | 0.0 | 2006 11 21 | 703 | 0.8+ | 0.0 | | |
| 2003 01 07 | 704 | 1.2+ | 0.0 | 2004 06 17 | 704 | 0.2− | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.0 | | |
| 2003 01 09 | 704 | 0.7+ | 0.3+ | 2006 10 23 | 703 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.7+ | 0.2− | | |
| 2003 01 09 | 704 | (1.6− | 1.5−) | 2006 10 23 | 703 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.7− | 0.5− | | |

**(143470)∗ 2003 CZ$_4$ = 2005 NQ$_{39}$**

Discovered 2003 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 85907)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 296.61690 | | (2000.0) | | | |
| $n$ | 0.19494365 | $\omega$ | 123.71858 | | +0.05451938 | −0.99158131 |
| $a$ | 2.9457552 | $\Omega$ | 322.60873 | | +0.84015804 | +0.10911815 |
| $e$ | 0.0215568 | $i$ | 11.15179 | | +0.53959440 | −0.06971179 |
| $P$ | 5.06 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.3− | 0.5+ | 2003 02 01 | 704 | 0.9+ | 0.2+ | 2006 09 17 | 703 | 0.2+ | 0.1+ | | |
| 2001 10 18 | 704 | 0.7− | 0.0 | 2003 02 01 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.5+ | 0.0 | | |
| 2001 10 18 | 704 | 0.0 | 1.0+ | 2003 02 01 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.3+ | 0.2− | | |
| 2001 10 18 | 704 | 0.6− | 0.5+ | 2003 02 04 | 704 | 0.0 | 0.4− | 2006 09 17 | 703 | 0.2+ | 0.1+ | | |
| 2001 10 18 | 704 | 0.8− | 0.1+ | 2003 02 04 | 704 | (1.1− | 1.6+) | 2006 09 28 | 703 | 0.1+ | 0.7− | | |
| 2001 11 12 | 704 | 0.4+ | 0.9− | 2003 02 04 | 704 | 1.0+ | 1.1+ | 2006 09 28 | 703 | 0.8− | 0.6− | | |
| 2001 11 12 | 704 | 0.3+ | 0.3+ | 2003 02 04 | 704 | (0.3− | 1.8+) | 2006 09 28 | 703 | 0.2− | 0.9+ | | |
| 2001 11 12 | 704 | (0.5+ | 2.2−) | 2003 02 04 | 704 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.4+ | | |
| 2001 11 12 | 704 | 0.8+ | 0.5+ | 2004 04 14 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | (2.1+ | 0.1+) | | |
| 2003 01 05 | 704 | 0.3− | 0.6+ | 2004 04 14 | 644 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.2− | 0.4− | | |
| 2003 01 05 | 704 | 0.3− | 1.2+ | 2004 04 14 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.1− | | |
| 2003 01 05 | 704 | 0.3− | 0.1+ | 2005 07 07 | 428 | 0.1+ | 0.3− | 2006 10 19 | 703 | 0.9− | 0.4− | | |
| 2003 01 05 | 704 | (1.7− | 0.7+) | 2005 07 07 | 428 | 1.0+ | 0.9− | 2006 10 27 | 703 | 0.5+ | 1.0− | | |
| 2003 01 25 | 699 | 0.2− | 0.5+ | 2005 07 09 | 428 | 0.5− | 0.1+ | 2006 10 27 | 703 | 0.7+ | 0.4− | | |
| 2003 01 25 | 699 | 0.7− | 0.2− | 2005 07 09 | 428 | 0.1+ | 0.9− | 2006 10 27 | 703 | 0.7− | 0.7− | | |
| 2003 01 25 | 699 | 0.5+ | 0.3− | 2005 07 26 | 428 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.1− | | |
| 2003 01 25 | 699 | 1.3− | 0.0 | 2005 07 26 | 428 | 0.1+ | 0.7+ | 2006 11 15 | 703 | 2.4+ | 1.4− | | |
| 2003 02 01 | 645 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.4− | 0.0 | 2006 11 15 | 703 | 0.1+ | 1.2+ | | |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2005 11 25 | G96 | 0.1− | 0.6+ | 2006 11 15 | 703 | 0.7− | 0.8+ | | |
| 2003 02 01 | 704 | 1.0+ | 0.3+ | 2005 11 25 | G96 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.0 | 0.7+ | | |
| 2003 02 01 | 704 | 0.7+ | 0.0 | 2005 11 25 | G96 | 0.9− | 0.5− | | | | | | |

**(143471)∗ 2003 CT$_5$**

Discovered 2003 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 269.43703 | | (2000.0) | | | |
| $n$ | 0.19281766 | $\omega$ | 126.62894 | | −0.42481440 | −0.90469324 |
| $a$ | 2.9673687 | $\Omega$ | 348.37521 | | +0.77034283 | −0.34234270 |
| $e$ | 0.0473526 | $i$ | 9.31103 | | +0.47550462 | −0.25363679 |
| $P$ | 5.11 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 17 | 327 | 0.1+ | 0.1− | 2003 02 04 | 699 | 0.1+ | 0.7− | 2006 09 28 | 691 | 0.0 | 0.4+ | | |
| 1998 02 17 | 327 | 0.0 | 0.6+ | 2003 02 04 | 699 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.3− | | |
| 1998 02 17 | 327 | 0.9+ | 0.1+ | 2003 02 26 | 704 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.5− | 0.0 | 2003 02 26 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 1.0+ | 0.0 | | |
| 2001 09 20 | 704 | 1.2− | 0.5+ | 2003 02 26 | 704 | 1.0+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.2− | | |
| 2001 09 20 | 704 | (1.6− | 1.0+) | 2003 02 26 | 704 | (0.1− | 2.0+) | 2006 10 10 | 644 | 0.4− | 0.1+ | | |
| 2001 11 11 | 699 | 0.0 | 1.0+ | 2003 03 10 | 699 | 0.8− | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2001 11 11 | 699 | 1.3+ | 1.1− | 2003 03 10 | 699 | 0.6+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2001 11 11 | 699 | 0.8− | 0.2+ | 2003 03 10 | 699 | 0.8− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2001 11 11 | 699 | 0.3+ | 1.0− | 2003 03 10 | 699 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2003 01 10 | 704 | 0.4+ | 0.3+ | 2004 05 13 | 703 | 0.8− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2003 01 10 | 704 | 0.7+ | 0.6+ | 2004 05 13 | 703 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.2+ | | |
| 2003 01 10 | 704 | 0.6+ | 0.5+ | 2004 05 13 | 703 | 1.0− | 1.4+ | 2006 10 17 | 703 | 0.4− | 0.0 | | |
| 2003 01 10 | 704 | 0.0 | 0.3+ | 2004 05 13 | 703 | 1.5+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.2− | | |
| 2003 02 01 | 704 | 0.2− | 0.5− | 2005 07 10 | E12 | 0.2+ | 0.9+ | 2006 10 17 | 703 | 0.2− | 0.4+ | | |
| 2003 02 01 | 704 | 0.2+ | 0.0 | 2005 07 10 | E12 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.5+ | | |
| 2003 02 01 | 704 | 0.1+ | 0.4+ | 2005 07 10 | E12 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2003 02 01 | 704 | 0.8− | 0.7+ | 2005 07 10 | E12 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2003 02 01 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.2+ | | |
| 2003 02 02 | 644 | 1.0− | 0.7− | 2006 09 16 | 703 | 0.3− | 0.8− | 2006 11 14 | 703 | 0.7+ | 0.0 | | |
| 2003 02 02 | 644 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.7− | 1.3− | 2006 11 14 | 703 | 0.6+ | 0.4+ | | |
| 2003 02 02 | 644 | 0.1+ | 0.6− | 2006 09 16 | 703 | 0.6− | 0.5− | 2006 11 14 | 703 | 0.6− | 0.8− | | |
| 2003 02 04 | 699 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.3+ | | | | | | |
| 2003 02 04 | 699 | 0.1+ | 0.9+ | 2006 09 28 | 691 | 0.3+ | 0.1+ | | | | | | |

**(143472)∗ 2003 CJ$_6$ = 1998 HX$_{134}$**

Discovered 2003 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 43296)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.14033 | | (2000.0) | | | |
| $n$ | 0.17830655 | $\omega$ | 66.65018 | | −0.99438767 | +0.02119826 |
| $a$ | 3.1262558 | $\Omega$ | 114.43004 | | −0.05660779 | −0.93428966 |
| $e$ | 0.0827826 | $i$ | 6.53702 | | +0.08937963 | −0.35588405 |
| $P$ | 5.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 21 | 691 | 0.7− | 0.4+ | 2003 02 04 | 699 | 0.8− | 0.1− | 2004 04 20 | 704 | 0.3+ | 0.1+ | | |
| 1993 06 21 | 691 | 0.2− | 1.0+ | 2003 02 04 | 699 | 0.7− | 0.0 | 2004 05 15 | 704 | (7.4+ | 4.3+) | | |
| 1993 06 21 | 691 | 1.0+ | 0.1+ | 2003 02 04 | 704 | 0.2− | 1.1+ | 2004 05 15 | 704 | (3.3+ | 1.5+) | | |
| 1998 04 19 | 704 | 1.0+ | 0.5− | 2003 02 04 | 699 | 0.2+ | 0.1+ | 2004 05 15 | 704 | (3.8+ | 1.6+) | | |
| 1998 04 19 | 704 | 0.5+ | 0.6− | 2003 02 04 | 704 | 0.7− | 1.6+ | 2004 05 15 | 704 | (3.8+ | 1.2+) | | |
| 1998 04 19 | 704 | 0.8− | 0.5− | 2003 02 04 | 704 | 0.2− | 1.9+ | 2004 05 15 | 704 | (3.2+ | 1.7+) | | |
| 1998 04 19 | 704 | 0.2+ | 1.6− | 2003 02 04 | 704 | 0.0 | 1.4+ | 2004 05 18 | 704 | (2.1− | 1.2+) | | |
| 1998 04 20 | 704 | 0.4− | 0.1− | 2003 02 04 | 704 | 0.8− | 1.4+ | 2004 05 18 | 704 | 1.3− | 0.1+ | | |
| 1998 04 20 | 704 | 0.5+ | 1.6− | 2003 02 19 | 644 | 0.6+ | 0.6+ | 2004 05 18 | 704 | 1.4− | 1.0+ | | |
| 1998 04 20 | 704 | 0.0 | 0.2− | 2003 02 19 | 644 | 0.5+ | 0.6+ | 2004 05 18 | 704 | 0.9+ | 0.3+ | | |
| 1998 04 20 | 704 | 0.3− | 0.3− | 2003 02 19 | 644 | 0.7+ | 0.4+ | 2004 05 18 | 704 | 1.7− | 1.0− | | |
| 2003 01 27 | 704 | (2.2+ | 0.1−) | 2003 03 08 | 704 | 0.7− | 0.7− | 2005 07 18 | 644 | 0.4+ | 0.7+ | | |
| 2003 01 27 | 704 | 1.0− | 0.4− | 2003 03 08 | 704 | 0.5− | 0.2− | 2005 07 18 | 644 | 0.2+ | 0.6+ | | |
| 2003 01 27 | 704 | 1.6+ | 0.3+ | 2003 03 08 | 704 | 0.2+ | 0.0 | 2005 07 18 | 644 | 0.3+ | 0.0 | | |
| 2003 01 27 | 704 | 1.3+ | 0.3+ | 2003 03 08 | 704 | 0.2+ | 0.4− | 2006 09 14 | 291 | 0.4− | 0.6+ | | |
| 2003 01 27 | 704 | 1.3+ | 0.7+ | 2004 04 17 | 704 | 0.7+ | 0.4− | 2006 09 14 | 291 | 0.1− | 0.5+ | | |
| 2003 02 01 | 704 | 0.5+ | 0.4− | 2004 04 17 | 704 | 0.0 | 0.7+ | 2006 09 14 | 291 | 0.1− | 0.7+ | | |
| 2003 02 01 | 704 | 0.1+ | 0.0 | 2004 04 17 | 704 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.2+ | | |
| 2003 02 01 | 704 | 1.5− | 0.9− | 2004 04 17 | 704 | 0.2− | 0.9+ | 2006 10 04 | G96 | 0.6− | 0.1+ | | |
| 2003 02 02 | 644 | 0.4+ | 0.2+ | 2004 04 17 | 704 | 0.3+ | 0.8+ | 2006 10 04 | G96 | 0.2− | 0.1− | | |
| 2003 02 02 | 644 | 0.4+ | 0.3+ | 2004 04 20 | 704 | 1.1+ | 0.9+ | 2006 10 04 | G96 | 0.1+ | 0.1− | | |
| 2003 02 02 | 644 | 0.0 | 0.2+ | 2004 04 20 | 704 | 1.4+ | 0.7+ | | | | | | |
| 2003 02 04 | 699 | 0.3+ | 0.9+ | 2004 04 20 | 704 | 0.3+ | 0.5+ | | | | | | |

**(143473)∗ 2003 CR$_6$ = 1997 NA$_{11}$**

Discovered 2003 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 41486)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.29692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23889878 | $\omega$ | 301.27087 | | +0.66281152 | −0.74498336 | |
| $a$ | 2.5723305 | $\Omega$ | 107.01961 | | +0.71101034 | +0.59460917 | |
| $e$ | 0.2203838 | $i$ | 4.52088 | | +0.23483012 | +0.30239001 | |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 06 | 688 | 0.8− | 0.6+ | 2003 01 27 | 704 | 0.2− | 0.5+ | 2005 07 05 | 691 | 0.0 | 0.1− |
| 1997 07 06 | 688 | 0.1− | 0.8+ | 2003 01 27 | 704 | 0.3+ | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.2+ |
| 1997 07 06 | 688 | 0.4− | 0.3+ | 2003 02 01 | 704 | 0.4+ | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.3+ |
| 1997 07 06 | 688 | 0.1− | 0.5+ | 2003 02 01 | 704 | 1.2− | 0.5+ | 2005 07 09 | 691 | 0.2− | 0.1+ |
| 1997 07 07 | 688 | 0.2+ | 0.2+ | 2003 02 01 | 704 | (0.3− | 1.5−) | 2005 07 30 | E12 | 0.2− | 0.0 |
| 1997 07 07 | 688 | 0.0 | 0.5+ | 2003 02 01 | 704 | (0.4− | 2.4−) | 2005 07 30 | E12 | 0.7+ | 0.6− |
| 1997 07 07 | 688 | 0.1− | 0.3+ | 2003 02 04 | 699 | 0.7+ | 1.0+ | 2005 07 30 | E12 | (0.7+ | 3.1−) |
| 1997 07 07 | 688 | 0.4+ | 0.4+ | 2003 02 04 | 699 | 0.2+ | 0.5+ | 2005 07 30 | E12 | 0.4+ | 0.7+ |
| 2001 08 23 | 699 | (1.6+ | 0.9+) | 2003 02 04 | 699 | 0.7+ | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2001 08 23 | 699 | 0.4+ | 0.5+ | 2003 02 04 | 699 | 0.7+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.2+ |
| 2001 08 23 | 699 | (1.6− | 1.1+) | 2004 05 18 | 599 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2001 08 23 | 699 | (1.5− | 1.1+) | 2004 05 18 | 599 | 0.6− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.2+ |
| 2001 09 11 | 704 | 0.0 | 0.7− | 2004 05 18 | 599 | 0.6+ | 0.3− | 2006 11 28 | G96 | 0.1− | 0.0 |
| 2001 09 11 | 704 | 1.0− | 0.3+ | 2005 07 04 | 644 | 0.1+ | 0.2+ | 2006 11 28 | G96 | 0.0 | 0.1+ |
| 2001 09 11 | 704 | 0.1− | 0.1+ | 2005 07 04 | 644 | 0.2+ | 0.2+ | 2006 11 28 | G96 | 0.0 | 0.1+ |
| 2003 01 27 | 704 | 0.6− | 0.5+ | 2005 07 04 | 644 | 0.1− | 0.1+ | 2006 11 28 | G96 | 0.2+ | 0.3+ |
| 2003 01 27 | 704 | 0.1+ | 0.7+ | 2005 07 05 | 691 | 0.0 | 0.2+ | | | | |
| 2003 01 27 | 704 | 0.6+ | 1.1+ | 2005 07 05 | 691 | 0.1− | 0.0 | | | | |

**(143474)∗ 2003 CX$_6$ = 2000 TP$_6$**

Discovered 2003 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 41486)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.93261 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17829267 | $\omega$ | 207.23642 | | −0.81025925 | +0.58593602 | |
| $a$ | 3.1264181 | $\Omega$ | 8.66594 | | −0.52132970 | −0.71075769 | |
| $e$ | 0.0967857 | $i$ | 4.79943 | | −0.26775976 | −0.38923320 | |
| $P$ | 5.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | (0.8− | 5.5+) | 2003 02 21 | 644 | 0.4− | 0.4+ | 2005 11 06 | G96 | 0.4− | 0.1+ |
| 1998 03 22 | 704 | (0.5− | 3.0+) | 2003 02 21 | 644 | 0.1− | 0.4+ | 2005 11 06 | G96 | 0.2− | 0.1+ |
| 1998 03 22 | 704 | 0.8+ | 0.7+ | 2003 02 25 | 608 | (0.3+ | 1.6−) | 2005 11 06 | G96 | 0.1− | 0.4+ |
| 1998 03 22 | 704 | (6.2− | 0.2−) | 2003 02 25 | 608 | (0.1+ | 1.9−) | 2006 10 02 | G96 | 0.7+ | 0.2− |
| 1998 03 28 | 704 | 1.4+ | 0.1+ | 2003 02 25 | 608 | 0.0 | 1.4− | 2006 10 02 | G96 | 0.7+ | 0.2− |
| 1998 03 28 | 704 | 0.3− | 1.4+ | 2003 02 26 | 608 | (0.8− | 1.8−) | 2006 10 02 | G96 | 0.7+ | 0.0 |
| 1998 03 28 | 704 | 0.9+ | 1.2+ | 2003 02 26 | 608 | 0.4− | 1.4− | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 1998 03 28 | 704 | (5.5− | 1.0+) | 2003 02 26 | 608 | 0.1− | 1.0− | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2000 10 01 | 704 | 0.2− | 0.0 | 2003 02 26 | 599 | (0.9− | 2.1+) | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2000 10 01 | 704 | 0.1− | 0.1− | 2003 02 26 | 599 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.6+ | 0.3− |
| 2000 10 01 | 704 | 0.3− | 0.3+ | 2003 02 26 | 599 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.4− | 0.2− |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2003 02 26 | 599 | 0.4− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1− |
| 2000 10 01 | 704 | 0.1+ | 0.4− | 2003 03 06 | 699 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.5− | 0.2− |
| 2000 10 02 | 704 | 0.0 | 0.0 | 2003 03 06 | 699 | 0.3− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 0.5+ | 0.8+ | 2003 03 06 | 699 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1+ |
| 2000 10 02 | 704 | 0.1+ | 0.3− | 2003 03 06 | 699 | 0.5− | 0.6− | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.4+ | 0.5− | 2003 03 06 | 704 | 1.1+ | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | 0.6− | 0.3− | 2003 03 06 | 704 | 0.3+ | 1.1+ | 2006 10 15 | 691 | 0.1− | 0.5+ |
| 2001 12 17 | 704 | 0.2− | 0.9− | 2003 03 06 | 704 | 0.9+ | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 1.1− | 0.7− | 2003 03 06 | 704 | 1.4+ | 0.1+ | 2006 10 15 | 691 | 0.4− | 0.2+ |
| 2003 01 27 | 704 | 1.4+ | 0.5+ | 2003 03 06 | 704 | 1.2+ | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2003 01 27 | 704 | (0.6− | 1.6+) | 2005 08 04 | 644 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2003 01 27 | 704 | (0.7− | 2.0+) | 2005 08 04 | 644 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2003 02 01 | 704 | 0.3+ | 1.0+ | 2005 08 04 | 644 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.5+ |
| 2003 02 01 | 704 | 0.1− | 1.0+ | 2005 08 05 | 644 | 0.2− | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2003 02 01 | 704 | 1.0− | 0.6+ | 2005 08 05 | 644 | 0.2− | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2003 02 01 | 704 | 0.3− | 0.6− | 2005 08 05 | 644 | 0.4− | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2003 02 01 | 704 | (0.2+ | 1.8+) | 2005 08 28 | E12 | 0.6+ | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2003 02 04 | 704 | 0.2− | 0.9+ | 2005 08 28 | E12 | 0.6+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2003 02 04 | 704 | 0.3+ | 0.8+ | 2005 08 28 | E12 | 0.4− | 1.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 02 04 | 704 | 0.4− | 1.0+ | 2005 08 28 | E12 | 0.9− | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2003 02 12 | 608 | 0.2− | 0.3− | 2005 09 22 | 644 | 0.7− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2003 02 12 | 608 | 0.2+ | 0.4− | 2005 09 22 | 644 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2003 02 12 | 608 | 0.4− | 1.4− | 2005 09 22 | 644 | 0.2− | 0.2+ | | | | |
| 2003 02 21 | 644 | 0.4− | 0.4+ | 2005 11 06 | G96 | 0.1− | 0.4+ | | | | |

**(143475)∗ 2003 CB$_8$ = 1997 WN$_{55}$**

Discovered 2003 Feb. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 41486)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.69254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23716018 | $\omega$ | 95.52203 | | −0.99461731 | −0.05951343 | |
| $a$ | 2.5848869 | $\Omega$ | 81.08623 | | +0.01976418 | −0.91253804 | |
| $e$ | 0.1114557 | $i$ | 4.92535 | | +0.10171425 | −0.40463870 | |
| $P$ | 4.16 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 23 | 691 | 0.3− | 0.2+ | 2003 02 04 | 704 | 0.7+ | 0.8+ | 2004 07 16 | 428 | 0.5+ | 1.2+ |
| 1995 04 23 | 691 | 0.2+ | 0.1− | 2003 02 09 | 608 | 0.1+ | 0.6+ | 2004 07 16 | 428 | 0.4− | 0.3+ |
| 1995 04 23 | 691 | 0.2− | 0.1+ | 2003 02 09 | 608 | 0.2− | 0.7+ | 2005 09 23 | 691 | 0.2− | 0.3+ |
| 1997 11 29 | 691 | 0.3+ | 0.5− | 2003 02 09 | 608 | 0.4+ | 0.7+ | 2005 09 23 | 691 | 0.1+ | 0.1− |
| 1997 11 29 | 691 | 0.5+ | 0.3− | 2003 02 28 | 704 | 0.2+ | 1.0+ | 2005 09 23 | 691 | 0.5− | 0.3+ |
| 1997 12 06 | 691 | 0.0 | 0.9− | 2003 02 28 | 704 | 0.9+ | 0.3+ | 2005 09 24 | 291 | 0.1+ | 0.3+ |
| 1997 12 06 | 691 | 0.2− | 0.4− | 2003 02 28 | 704 | 0.2+ | 0.1− | 2005 09 24 | 291 | 0.1+ | 0.1+ |
| 1997 12 06 | 691 | 0.3+ | 0.3− | 2003 02 28 | 704 | 0.4+ | 0.7+ | 2005 09 24 | 291 | 0.0 | 0.5+ |
| 1999 03 23 | 699 | 1.4+ | 0.0 | 2003 02 28 | 704 | 0.2+ | 0.0 | 2005 09 29 | 691 | 0.4− | 0.2+ |
| 1999 03 23 | 699 | 0.4+ | 0.0 | 2003 02 28 | 608 | 0.5− | 0.5+ | 2005 09 29 | 691 | 0.3− | 0.0 |
| 1999 03 23 | 699 | 1.5+ | 0.1+ | 2003 02 28 | 608 | 0.8− | 0.6+ | 2005 09 29 | 691 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.8+ | 2003 02 28 | 608 | 0.4− | 0.2+ | 2005 10 08 | 691 | 0.2− | 0.7+ |
| 2001 11 20 | 704 | (0.2− | 1.8+) | 2003 03 05 | 704 | 0.4+ | 0.2− | 2005 10 08 | 691 | 0.2− | 0.4+ |
| 2001 11 20 | 704 | 0.3+ | 1.3+ | 2003 03 05 | 704 | 0.3− | 0.3+ | 2005 10 08 | 691 | 0.3− | 0.4+ |
| 2001 11 20 | 704 | (1.2+ | 1.7+) | 2003 03 05 | 704 | 0.1+ | 0.2− | 2005 11 01 | 644 | 0.3− | 0.7+ |
| 2001 11 20 | 704 | 0.0 | 1.1+ | 2003 03 05 | 704 | 0.6+ | 0.9+ | 2005 11 01 | 644 | 0.3− | 0.8+ |
| 2003 02 01 | 704 | 0.6+ | 0.7− | 2003 03 05 | 704 | 0.3− | 0.0 | 2005 11 01 | 644 | 0.1− | 0.1+ |
| 2003 02 01 | 704 | 0.2+ | 0.7+ | 2003 03 05 | 704 | 0.1+ | 0.9+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2003 02 01 | 704 | 0.8+ | 1.0+ | 2003 03 06 | 704 | 0.2− | 0.7− | 2006 10 23 | G96 | 0.0 | 0.9− |
| 2003 02 01 | 704 | 0.3+ | 0.5+ | 2003 03 06 | 704 | 0.0 | 0.5− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2003 02 02 | 699 | (1.7+ | 0.5−) | 2003 03 06 | 704 | 0.5+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2003 02 02 | 699 | 0.1+ | 1.0+ | 2003 03 06 | 704 | 0.3+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2003 02 02 | 699 | 0.3+ | 0.1+ | 2003 03 06 | 704 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2003 02 02 | 699 | (1.1− | 1.8−) | 2003 03 25 | 699 | 0.0 | 0.6+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2003 02 04 | 704 | 0.5− | 0.5+ | 2003 03 25 | 699 | 0.7− | 0.0 | 2006 11 24 | G96 | 0.5+ | 0.0 |
| 2003 02 04 | 704 | 0.5+ | 0.1+ | 2003 03 25 | 699 | 0.2+ | 0.1+ | | | | |
| 2003 02 04 | 704 | 1.1− | 0.1+ | 2003 03 25 | 699 | 1.3− | 1.0− | | | | |

**(143476)∗ 2003 CB$_9$**

Discovered 2003 Feb. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.17006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18497357 | $\omega$ | 198.20265 | | −0.64066216 | −0.75220985 | |
| $a$ | 3.0506773 | $\Omega$ | 291.93950 | | +0.72349055 | −0.52420840 | |
| $e$ | 0.0662922 | $i$ | 9.56003 | | +0.25712531 | −0.39923164 | |
| $P$ | 5.33 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.4+ | 0.2+ | 2003 02 07 | 683 | (1.8− | 1.1−) | 2005 08 29 | 691 | 0.0 | 0.2+ |
| 2001 10 15 | 704 | 0.4+ | 0.7+ | 2003 02 07 | 683 | 0.7+ | 1.0+ | 2005 08 29 | 691 | 0.1− | 0.3+ |
| 2001 10 15 | 704 | 0.2+ | 0.1+ | 2003 02 07 | 683 | 0.8+ | 0.5− | 2005 08 29 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.9+ | 0.8+ | 2003 02 11 | 608 | (2.0+ | 0.1−) | 2006 09 17 | 703 | 1.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.0 | 0.4− | 2003 02 11 | 608 | (1.6+ | 0.3−) | 2006 09 17 | 703 | 0.7+ | 0.1+ |
| 2001 11 11 | 699 | 0.4− | 0.4− | 2003 02 11 | 608 | (2.1+ | 0.1−) | 2006 09 17 | 703 | 0.6− | 0.0 |
| 2001 11 11 | 704 | 0.7− | 0.5+ | 2003 03 09 | 704 | 0.8− | 1.0+ | 2006 09 17 | 703 | 0.1+ | 0.8+ |
| 2001 11 11 | 699 | 0.6− | 1.4+ | 2003 03 09 | 704 | (2.8+ | 0.8−) | 2006 09 28 | 703 | (1.6+ | 2.6−) |
| 2001 11 11 | 704 | 0.4− | 0.3+ | 2003 03 09 | 704 | 0.2+ | 1.1+ | 2006 09 28 | 703 | (2.1+ | 0.9+) |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2003 03 09 | 704 | 0.6+ | 0.5− | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2001 11 11 | 699 | (1.3+ | 1.6−) | 2005 06 18 | G96 | 0.4− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.5− |
| 2001 11 11 | 704 | 0.3− | 1.1+ | 2005 06 18 | G96 | 0.4− | 0.2+ | 2006 10 17 | A50 | 0.1− | 0.4+ |
| 2001 11 11 | 699 | 0.1+ | 0.2− | 2005 06 18 | G96 | 0.4− | 0.4+ | 2006 10 17 | A50 | 0.5− | 0.6+ |
| 2003 02 02 | 699 | 0.3− | 0.5+ | 2005 06 18 | G96 | 0.4− | 0.2+ | 2006 10 18 | A50 | 0.8+ | 0.1+ |
| 2003 02 02 | 699 | 0.3+ | 1.2+ | 2005 06 30 | 644 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2003 02 02 | 699 | 0.9+ | 0.6+ | 2005 06 30 | 644 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.4− |
| 2003 02 02 | 699 | 0.0 | 0.4+ | 2005 06 30 | 644 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.4− |
| 2003 02 04 | 683 | 1.3+ | 0.2− | 2005 07 18 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 2003 02 04 | 683 | 1.0− | 1.3− | 2005 07 18 | 644 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.4− | 1.3− |
| 2003 02 04 | 683 | 1.0+ | 0.6+ | 2005 07 18 | 644 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.6− | 0.4− |
| 2003 02 04 | 608 | 0.4− | 0.4+ | 2005 07 28 | 644 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.2+ | 1.0− |
| 2003 02 04 | 608 | 0.1− | 0.7+ | 2005 07 28 | 644 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2003 02 04 | 608 | 0.4− | 0.2− | 2005 07 28 | 644 | 0.1+ | 0.4+ | | | | |

**(143477)∗ 2003 CC$_{10}$ = 2003 CF$_9$**

Discovered 2003 Feb. 2 by NEAT at Haleakala.

Id. A. Doppler (d, *MPO* 47300)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.93794 | | (2000.0) | | +0.46458842 | −0.88491945 |
| $n$ | 0.26856172 | $\omega$ | 192.56135 | | +0.81612552 | +0.44225361 |
| $a$ | 2.3792494 | $\Omega$ | 229.76497 | | +0.34365207 | +0.14604559 |
| $e$ | 0.1114397 | $i$ | 2.46174 | | | |
| $P$ | 3.67 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.2+ | 0.5+ | 2003 02 03 | 699 | 0.6+ | 0.1− | 2005 10 21 | 644 | 0.0 | 0.1− |
| 1996 03 20 | 691 | 0.1− | 0.2+ | 2003 02 22 | 699 | 0.2− | 0.4− | 2005 10 21 | 644 | 0.1− | 0.3+ |
| 1996 03 20 | 691 | 0.0 | 0.3+ | 2003 02 22 | 699 | 0.3− | 0.1+ | 2005 10 22 | 703 | 0.2− | 0.3+ |
| 2001 07 26 | 691 | 0.1− | 0.8+ | 2003 02 22 | 699 | 0.7− | 0.5+ | 2005 10 22 | 703 | 1.4− | 1.1− |
| 2001 07 26 | 691 | 0.3− | 0.8+ | 2003 02 22 | 699 | 0.0 | 0.5− | 2005 10 22 | 703 | 0.5+ | 0.1− |
| 2001 07 26 | 691 | 0.0 | 0.8+ | 2003 03 06 | 644 | 0.1+ | 0.5+ | 2005 10 22 | 703 | 1.2− | 0.8+ |
| 2001 08 16 | 704 | 1.0− | 0.1− | 2003 03 06 | 644 | 0.5+ | 0.7+ | 2005 10 22 | 699 | 0.5− | 0.5+ |
| 2001 08 16 | 704 | 0.0 | 0.2− | 2003 03 06 | 644 | 0.3+ | 0.4+ | 2005 10 22 | 699 | 0.2− | 0.4+ |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2003 03 12 | 644 | 0.3+ | 0.8+ | 2005 10 22 | 699 | 0.1+ | 0.8− |
| 2001 09 20 | 704 | 0.6− | 1.2− | 2003 03 12 | 644 | 0.4+ | 0.7+ | 2005 10 22 | 699 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.9− | 2003 03 12 | 644 | 0.3+ | 0.7+ | 2005 10 27 | 699 | 0.2− | 1.9+ |
| 2001 09 20 | 704 | 1.0+ | 0.8+ | 2005 09 25 | 291 | 0.2− | 0.0 | 2005 10 27 | 699 | 0.6− | 0.2− |
| 2001 09 20 | 704 | 0.8+ | 0.6− | 2005 09 25 | 291 | 0.1− | 0.0 | 2005 10 27 | 699 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2005 09 25 | 291 | 0.0 | 0.0 | 2005 10 27 | 703 | 0.1− | 0.6+ |
| 2003 01 27 | 699 | 0.0 | 0.5− | 2005 09 29 | 699 | 0.5+ | 0.3− | 2005 10 27 | 703 | 0.2− | 0.6− |
| 2003 01 27 | 699 | 0.4− | 0.0 | 2005 09 29 | 699 | 0.1− | 1.0+ | 2005 10 27 | 699 | 0.0 | 0.4− |
| 2003 01 27 | 699 | 0.1− | 0.6+ | 2005 09 29 | 699 | 1.0− | 0.5+ | 2005 10 27 | 703 | 0.3− | 0.5+ |
| 2003 01 27 | 699 | 0.3+ | 0.3+ | 2005 09 29 | 699 | 0.2− | 0.1− | 2005 10 27 | 703 | 0.5− | 0.8− |
| 2003 01 27 | 644 | 0.2+ | 0.4+ | 2005 10 03 | 703 | 0.6− | 0.3− | 2005 11 01 | 704 | 1.1+ | 1.8+ |
| 2003 01 27 | 644 | 0.1− | 0.6+ | 2005 10 03 | 703 | 0.5− | 1.8− | 2005 11 01 | 704 | 0.4+ | 0.4+ |
| 2003 01 27 | 644 | 0.3+ | 0.5+ | 2005 10 03 | 703 | 0.6+ | 0.6− | 2005 11 01 | 704 | 0.8+ | 0.2+ |
| 2003 02 02 | 704 | 0.1− | 0.6+ | 2005 10 03 | 703 | 0.1+ | 0.2− | 2005 11 01 | 704 | 1.0− | 0.5− |
| 2003 02 02 | 704 | 1.3− | 0.1− | 2005 10 07 | 704 | 0.5+ | 0.3− | 2005 11 04 | 704 | 1.8+ | 1.1+ |
| 2003 02 02 | 704 | 0.8+ | 1.0+ | 2005 10 07 | 704 | 0.1− | 0.2+ | 2005 11 04 | 704 | 0.4+ | 1.2− |
| 2003 02 02 | 608 | 0.0 | 1.2− | 2005 10 07 | 704 | 0.4− | 0.4+ | 2005 11 04 | 704 | 0.9+ | 0.5+ |
| 2003 02 02 | 608 | 0.3+ | 1.5− | 2005 10 07 | 704 | 0.7− | 0.1+ | 2005 11 04 | 704 | 0.5+ | 0.4− |
| 2003 02 02 | 704 | 1.0+ | 0.2+ | 2005 10 11 | 704 | 0.2+ | 1.0+ | 2006 01 05 | G96 | 0.3+ | 0.6− |
| 2003 02 02 | 608 | 1.0+ | 0.9− | 2005 10 11 | 704 | 0.0 | 0.1− | 2006 01 05 | G96 | 0.2+ | 0.5− |
| 2003 02 03 | 699 | 0.3− | 0.9+ | 2005 10 11 | 704 | 0.2− | 0.2+ | 2006 01 05 | G96 | 0.2+ | 0.4− |
| 2003 02 03 | 699 | 0.2+ | 0.2+ | 2005 10 11 | 704 | 0.2− | 0.7+ | 2006 01 05 | G96 | 0.0 | 0.2− |
| 2003 02 03 | 699 | 0.1+ | 1.9+ | 2005 10 21 | 644 | 0.0 | 0.3+ | | | | |

**(143478)∗ 2003 CJ$_{10}$**

Discovered 2003 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.22993 | | (2000.0) | | −0.49173071 | −0.86807615 |
| $n$ | 0.23990683 | $\omega$ | 208.24511 | | +0.81117912 | −0.42823438 |
| $a$ | 2.5651197 | $\Omega$ | 271.28174 | | +0.31652700 | −0.25111575 |
| $e$ | 0.2419031 | $i$ | 3.90884 | | | |
| $P$ | 4.11 | $H$ | 15.9 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.5− | 0.2+ | 2003 02 28 | 608 | 0.3+ | 1.1+ | 2005 08 30 | 691 | 0.1− | 0.4+ |
| 2001 09 26 | 704 | 0.2− | 0.2+ | 2003 02 28 | 608 | 0.9+ | 0.7+ | 2005 09 12 | 691 | 0.1− | 0.3+ |
| 2001 09 26 | 704 | 0.1+ | 0.5− | 2003 03 06 | 699 | 0.3+ | 0.1− | 2005 09 12 | 691 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.5− | 0.5+ | 2003 03 06 | 683 | (2.0− | 0.7+) | 2005 09 12 | 691 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2003 03 06 | 699 | 0.2− | 0.1+ | 2005 09 23 | A50 | 0.0 | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2003 03 06 | 683 | 0.2− | 0.8− | 2005 09 25 | 691 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 1.0+ | 2003 03 06 | 683 | 1.1− | 0.3+ | 2005 09 25 | 691 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.7− | 2003 03 06 | 699 | 0.1+ | 0.2− | 2005 09 25 | 691 | 0.2+ | 0.0 |
| 2002 12 18 | 608 | 0.0 | 0.3− | 2003 03 06 | 704 | 0.3+ | 0.5+ | 2005 10 07 | 691 | 0.0 | 0.2+ |
| 2002 12 18 | 608 | 0.3+ | 0.7− | 2003 03 06 | 704 | 0.8+ | 0.1− | 2005 10 07 | 691 | 0.2− | 0.8+ |
| 2002 12 18 | 608 | 0.5− | 0.7− | 2003 03 06 | 699 | 0.1− | 0.3+ | 2005 10 07 | 691 | 0.2− | 0.3+ |
| 2003 01 07 | 704 | 1.2+ | 0.2+ | 2003 03 06 | 704 | 0.5+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2003 01 07 | 704 | 1.2+ | 0.2− | 2003 03 06 | 704 | 0.6+ | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.2− |
| 2003 01 07 | 704 | 0.7+ | 0.1+ | 2003 03 06 | 704 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2003 01 07 | 704 | 0.7+ | 0.4− | 2003 03 06 | 704 | 0.9+ | 0.2+ | 2006 09 28 | G96 | 0.6− | 0.2− |
| 2003 01 28 | 704 | 0.9− | 0.4+ | 2003 03 06 | 704 | 0.7+ | 0.9+ | 2006 10 17 | G96 | (2.8− | 0.6−) |
| 2003 01 28 | 704 | 0.2− | 0.2+ | 2003 03 06 | 704 | 0.5+ | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2003 01 28 | 704 | 0.1− | 0.0 | 2003 03 06 | 704 | 0.6+ | 1.2+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 2003 01 28 | 704 | 0.6− | 0.2+ | 2003 03 06 | 704 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.6− |
| 2003 01 28 | 704 | 0.2− | 0.3− | 2003 03 07 | 704 | 0.5+ | 1.5− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2003 02 02 | 704 | (0.2+ | 1.8+) | 2003 03 07 | 704 | 0.0 | 1.0− | 2006 10 31 | G96 | 0.6− | 0.2− |
| 2003 02 02 | 704 | 0.4− | 1.3+ | 2003 03 07 | 704 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2003 02 02 | 704 | 0.0 | 0.6+ | 2003 03 07 | 704 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.8+ | 0.7− |
| 2003 02 02 | 704 | 0.2− | 0.9+ | 2003 03 07 | 704 | 0.7+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2003 02 02 | 704 | 0.2− | 1.3+ | 2003 03 09 | 704 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.5− | 0.3+ |
| 2003 02 03 | 699 | 0.6− | 0.7+ | 2003 03 09 | 704 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2003 02 03 | 699 | 0.3− | 0.4+ | 2003 03 09 | 704 | 0.2+ | 0.6− | 2006 11 15 | G96 | 1.0− | 0.3− |
| 2003 02 03 | 699 | 0.3+ | 0.2+ | 2003 03 09 | 704 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.8+ | 0.4− |
| 2003 02 03 | 699 | 0.7− | 0.6+ | 2003 03 09 | 704 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2003 02 20 | 608 | 0.5+ | 0.6+ | 2003 03 26 | 699 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.8+ |
| 2003 02 20 | 608 | 0.1− | 0.6+ | 2003 03 26 | 699 | 0.9− | 0.4− | 2006 11 28 | G96 | 0.2− | 0.3− |
| 2003 02 20 | 608 | 0.1− | 0.3+ | 2003 03 26 | 699 | 0.2− | 0.1− | 2006 11 28 | G96 | 0.4− | 0.2− |
| 2003 02 22 | 636 | 0.8+ | 0.1− | 2003 03 26 | 699 | 0.4− | 0.0 | 2006 11 28 | G96 | 0.1− | 0.2− |
| 2003 02 22 | 636 | 0.5− | 0.0 | 2003 04 26 | 699 | 0.0 | 1.4+ | 2006 11 28 | G96 | 0.3− | 0.3− |
| 2003 02 22 | 636 | 0.3− | 0.0 | 2003 04 26 | 699 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.5+ |
| 2003 02 22 | 333 | 0.1− | 0.7+ | 2003 04 26 | 699 | (1.5+ | 2.1+) | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2003 02 22 | 333 | 0.7− | 0.2+ | 2003 04 26 | 699 | (0.3+ | 2.0+) | 2006 11 29 | 704 | 0.6+ | 1.1+ |
| 2003 02 22 | 333 | 0.1− | 0.3+ | 2005 08 30 | 691 | 0.1− | 0.3+ | | | | |
| 2003 02 28 | 608 | 0.1+ | 1.3+ | 2005 08 30 | 691 | 0.3− | 0.1+ | | | | |

**(143479)∗ 2003 CP$_{10}$ = 2000 SV$_{96}$**

Discovered 2003 Feb. 3 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 43300)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.59370 | | (2000.0) | | +0.08564596 | +0.98859628 |
| $n$ | 0.17993476 | $\omega$ | 307.73031 | | −0.82877594 | +0.00168928 |
| $a$ | 3.1073679 | $\Omega$ | 326.54212 | | −0.55298753 | +0.15058068 |
| $e$ | 0.0757937 | $i$ | 12.98322 | | | |
| $P$ | 5.48 | $H$ | 14.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.3+ | 1.3+ | 2003 03 12 | 644 | 0.6+ | 0.5+ | 2005 08 29 | 699 | 0.4− | 0.9+ |
| 2000 09 23 | 704 | 0.7+ | 0.3− | 2003 03 12 | 644 | 0.4+ | 0.9+ | 2005 09 29 | G96 | 0.4+ | 0.4+ |
| 2000 09 23 | 699 | 0.7− | 0.1− | 2004 04 21 | 704 | 0.1− | 1.1+ | 2005 09 29 | G96 | 0.5+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.5− | 1.0− | 2004 04 21 | 704 | 0.1+ | 0.0 | 2005 09 29 | G96 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2000 09 23 | 699 | 0.9− | 1.1+ | 2004 04 21 | 704 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2000 09 23 | 704 | 1.0+ | 1.2− | 2004 04 21 | 704 | 0.2− | 0.9+ | 2005 09 29 | G96 | 0.1− | 0.1+ | 2006 09 26 | 701 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2000 09 23 | 699 | 0.3− | 0.4+ | 2005 07 18 | 644 | 0.3− | 0.4+ | 2005 09 29 | G96 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2000 09 23 | 704 | 0.7+ | 0.3− | 2005 07 18 | 644 | 0.1− | 0.5+ | 2005 09 29 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2000 09 27 | 704 | 0.3+ | 0.0 | 2005 07 18 | 644 | 0.1− | 0.4+ | 2005 09 29 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 701 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2000 09 27 | 704 | 0.7− | 0.6− | 2005 07 27 | 644 | 0.3− | 0.6+ | 2005 10 26 | G96 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2000 09 27 | 704 | 0.9− | 0.3− | 2005 07 27 | 644 | 0.3− | 0.3+ | 2005 10 26 | G96 | 0.9+ | 0.5− | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2000 09 27 | 704 | 0.1+ | 0.2+ | 2005 07 27 | 644 | 0.2− | 0.5+ | 2005 10 26 | G96 | 0.1+ | 0.7− | 2006 09 26 | 701 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.1+ | 0.5+ | 2005 08 06 | 704 | 0.1− | 0.4+ | 2005 10 26 | G96 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 12 09 | 704 | 0.7+ | 0.6+ | 2005 08 06 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 703 | 0.1+ | 1.5+ | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 12 09 | 704 | 0.7+ | 0.6− | 2005 08 06 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 703 | 0.8+ | 0.9+ | 2006 09 26 | 701 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 01 27 | 704 | 0.3+ | 0.2− | 2005 08 06 | 704 | 0.2− | 0.5+ | 2006 09 25 | 703 | 0.9− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2003 01 27 | 704 | (1.7+ | 0.6+) | 2005 08 25 | 644 | 0.3− | 0.2+ | 2006 09 25 | 703 | 0.3− | 0.3+ | 2006 09 26 | 649 | 0.1+ | 0.6− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2003 01 27 | 704 | 0.2+ | 0.1− | 2005 08 25 | 644 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.2+ | 0.1− | 2006 09 26 | 701 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.4+ |
| 2003 01 27 | 704 | 0.2− | 1.4+ | 2005 08 25 | 644 | 0.1− | 0.1+ | 2006 10 02 | 703 | (2.1− | 0.3−) | 2006 09 26 | 649 | 0.1− | 0.5− | | | | |
| 2003 02 03 | 644 | 0.5+ | 1.0+ | 2005 08 27 | E12 | 0.1+ | 0.1− | 2006 10 02 | 703 | 0.1− | 0.1− | | | | | | | | |
| 2003 02 03 | 644 | 0.3+ | 1.1+ | 2005 08 27 | E12 | 0.5− | 0.5+ | 2006 10 02 | 703 | 0.0 | 1.1− | | | | | | | | |
| 2003 02 03 | 644 | 0.2+ | 1.0+ | 2005 08 27 | E12 | 0.3− | 0.4+ | 2006 10 29 | 703 | 1.0+ | 1.1+ | | | | | | | | |
| 2003 02 04 | 699 | 0.2− | 0.3− | 2005 08 27 | E12 | 0.6+ | 1.3− | 2006 10 29 | 703 | (0.6+ | 1.6−) | | | | | | | | |
| 2003 02 04 | 699 | 0.4+ | 1.2+ | 2005 08 29 | 699 | 0.2− | 1.4+ | 2006 10 29 | 703 | 0.1+ | 1.0− | | | | | | | | |
| 2003 02 04 | 699 | 0.4+ | 0.3− | 2005 08 29 | 704 | 0.5− | 0.6− | 2006 10 29 | 703 | 0.1+ | 0.2+ | | | | | | | | |
| 2003 02 04 | 699 | 0.2− | 0.5− | 2005 08 29 | 699 | 0.0 | 0.6− | 2006 11 15 | 703 | 1.0− | 0.6− | | | | | | | | |
| 2003 03 06 | 644 | 0.3+ | 0.5+ | 2005 08 29 | 704 | 0.9− | 0.2+ | 2006 11 15 | 703 | 0.3− | 0.5+ | | | | | | | | |
| 2003 03 06 | 644 | 0.5+ | 0.1+ | 2005 08 29 | 704 | 1.2− | 1.1+ | 2006 11 15 | 703 | 1.0− | 0.2− | | | | | | | | |
| 2003 03 06 | 644 | 0.6+ | 0.0 | 2005 08 29 | 699 | 0.6+ | 0.2+ | 2006 11 15 | 703 | 0.8− | 0.1+ | | | | | | | | |
| 2003 03 12 | 644 | 0.2+ | 0.7+ | 2005 08 29 | 704 | 0.1+ | 0.4+ | | | | | | | | | | | | |

**(143480)∗ 2003 CU$_{10}$**

Discovered 2003 Feb. 3 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.17910 | | (2000.0) | | | |
| $n$ | 0.17864969 | $\omega$ | 249.22317 | | +0.36101058 | −0.93256101 |
| $a$ | 3.1222514 | $\Omega$ | 179.60895 | | +0.90595664 | +0.35041874 |
| $e$ | 0.0966997 | $i$ | 9.69513 | | +0.22116494 | +0.08681398 |
| $P$ | 5.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 09 | 691 | 0.1+ | 0.2− | 2004 04 22 | 704 | (2.5+ | 1.0+) | 2006 09 26 | 649 | 0.3+ | 0.2− | 2003 02 04 | 608 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2000 08 09 | 691 | 0.1+ | 0.2− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 26 | 701 | 0.3+ | 0.1+ | 2003 02 09 | 608 | 0.6+ | 0.6− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2000 08 09 | 691 | 0.2+ | 0.1− | 2006 08 19 | 691 | 0.5+ | 0.4+ | 2006 09 27 | 704 | (2.2− | 0.4+) | 2003 02 09 | 608 | 0.5+ | 0.6− | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2000 08 09 | 691 | 0.2− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.5+ | 2003 02 09 | 608 | 0.2+ | 0.6− | 2006 09 26 | 701 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2000 08 09 | 691 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.1− | 2003 02 22 | 644 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2000 08 09 | 691 | 0.0 | 0.2− | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.6+ | 0.8+ | 2003 02 22 | 644 | 0.7+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 10 19 | 608 | 0.6+ | 1.1+ | 2006 08 22 | 644 | 0.2+ | 0.1− | 2006 09 28 | 704 | 1.1− | 0.1+ | 2003 02 22 | 644 | 0.6+ | 0.3+ | 2006 09 26 | 701 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 10 19 | 608 | 0.2+ | 0.9+ | 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.4− | 0.3− | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 10 19 | 608 | 0.4+ | 0.7+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.6+ | 0.2− | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 09 26 | 649 | 0.1+ | 0.2− | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2001 11 18 | 704 | 0.0 | 0.9− | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.0 | 2004 04 22 | 704 | (2.8+ | 2.3+) | 2006 09 26 | 649 | 0.1+ | 0.6− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2001 11 18 | 704 | 0.4+ | 1.5− | 2006 09 16 | 699 | 0.5− | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.1− | 2004 04 22 | 704 | (1.7+ | 2.8+) | 2006 09 26 | 701 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.4+ |
| 2001 11 18 | 704 | (0.6− | 1.7−) | 2006 09 16 | 699 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.1+ | 2004 04 22 | 704 | (2.8+ | 1.8+) | 2006 09 26 | 649 | 0.1− | 0.5− | | | | |
| 2001 11 19 | 608 | 0.4− | 0.1− | 2006 09 16 | 699 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.5− | | | | | | | | | | | | |
| 2001 11 19 | 608 | 0.5− | 0.0 | 2006 09 16 | 699 | 1.0+ | 0.0 | 2006 09 30 | 704 | 0.2− | 0.4− | | | | | | | | | | | | |
| 2001 11 19 | 608 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.7− | 0.1+ | | | | | | | | | | | | |
| 2001 11 20 | 699 | 0.2+ | 0.6− | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.2− | 0.8− | | | | | | | | | | | | |
| 2001 11 20 | 699 | 0.4− | 0.8− | 2006 09 19 | 699 | 0.7− | 0.7− | 2006 10 01 | 703 | 0.6− | 0.3− | | | | | | | | | | | | |
| 2001 11 20 | 699 | 0.4+ | 0.6− | 2006 09 20 | 704 | 0.5− | 0.1+ | 2006 10 01 | 703 | 0.5− | 0.3− | | | | | | | | | | | | |
| 2001 11 20 | 699 | 0.2− | 0.3− | 2006 09 20 | 704 | 0.4− | 0.5+ | 2006 10 01 | 703 | 0.6− | 1.0− | | | | | | | | | | | | |
| 2003 01 28 | 704 | 0.7+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 703 | 0.9− | 0.2− | | | | | | | | | | | | |
| 2003 01 28 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 704 | 0.5− | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.1+ | | | | | | | | | | | | |
| 2003 01 28 | 704 | 0.1+ | 1.4+ | 2006 09 20 | 704 | 0.2− | 0.8+ | 2006 10 09 | 644 | 0.1+ | 0.3+ | | | | | | | | | | | | |
| 2003 02 03 | 699 | 0.9+ | 0.7+ | 2006 09 25 | 699 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.1− | | | | | | | | | | | | |
| 2003 02 03 | 699 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | | | | | | | | | | | |
| 2003 02 03 | 699 | 0.2+ | 0.3− | 2006 09 25 | 699 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.1− | | | | | | | | | | | | |
| 2003 02 03 | 699 | 0.7− | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ | | | | | | | | | | | | |
| 2003 02 04 | 608 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.3− | | | | | | | | | | | | |
| 2003 02 04 | 608 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.0 | 0.4− | | | | | | | | | | | | |

**(143481)∗ 2003 CB$_{11}$ = 2001 YR$_{125}$**

Discovered 2003 Feb. 3 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 43300)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 210.46453 | | (2000.0) | | | |
| $n$ | 0.17274781 | $\omega$ | 125.45001 | | −0.93985489 | +0.18375899 |
| $a$ | 3.1929664 | $\Omega$ | 66.70816 | | −0.30970821 | −0.81397442 |
| $e$ | 0.1234525 | $i$ | 18.26913 | | +0.14406111 | −0.55107012 |
| $P$ | 5.71 | $H$ | 14.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 1.2− | 1.4+ | 2003 03 08 | 704 | 0.7− | 0.1− | 2005 07 28 | 644 | 0.8− | 1.0+ | 2001 11 24 | 704 | 1.0+ | 0.4− | 2003 03 08 | 704 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2000 10 02 | 699 | 0.3+ | 0.2− | 2003 03 08 | 704 | 0.2+ | 0.7− | 2005 07 28 | 644 | 0.5− | 0.7+ | 2001 11 24 | 704 | (2.1+ | 0.1−) | 2003 03 14 | 185 | 1.0− | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.7− |
| 2000 10 02 | 699 | (0.5+ | 2.7+) | 2003 03 08 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.9− | 0.6+ | 2001 11 24 | 704 | 1.2+ | 0.1− | 2003 03 14 | 185 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2000 10 02 | 699 | 0.2− | 0.6+ | 2003 03 08 | 704 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.4− | 0.4− | 2001 12 09 | 704 | 0.2− | 0.2− | 2003 03 14 | 185 | 0.8+ | 0.6− | 2006 10 22 | 703 | 1.1− | 0.0 |
| 2001 11 24 | 704 | 1.0+ | 0.4− | 2003 03 08 | 704 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.9− | 0.3− | 2001 12 09 | 704 | 0.6− | 0.3+ | 2003 03 26 | 704 | 1.2− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.4− |
| 2001 11 24 | 704 | (2.1+ | 0.1−) | 2003 03 14 | 185 | 1.0− | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.7− | 2001 12 09 | 704 | 0.6− | 0.0 | 2003 03 26 | 704 | 1.4− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 1.2+ | 0.1− | 2003 03 14 | 185 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.2+ | 2001 12 09 | 704 | 0.6− | 0.3− | 2003 03 26 | 704 | 0.8− | 0.2− | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2001 12 09 | 704 | 0.2− | 0.2− | 2003 03 14 | 185 | 0.8+ | 0.6− | 2006 10 22 | 703 | 1.1− | 0.0 | 2001 12 17 | 704 | (3.4+ | 0.6+) | 2003 03 26 | 704 | (2.2− | 1.3+) | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 12 09 | 704 | 0.6− | 0.3+ | 2003 03 26 | 704 | 1.2− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.4− | 2001 12 17 | 704 | (2.3+ | 0.4+) | 2003 03 26 | 704 | (1.8− | 0.1+) | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2001 12 09 | 704 | 0.6− | 0.0 | 2003 03 26 | 704 | 1.4− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.0 | 2001 12 17 | 704 | (2.0+ | 0.1−) | 2003 04 01 | 699 | 0.4− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2001 12 09 | 704 | 0.6− | 0.3− | 2003 03 26 | 704 | 0.8− | 0.2− | 2006 11 08 | 644 | 0.3+ | 0.3+ | 2001 12 22 | 704 | (0.1− | 3.4−) | 2003 04 01 | 699 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | (3.4+ | 0.6+) | 2003 03 26 | 704 | (2.2− | 1.3+) | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2001 12 22 | 704 | (0.5− | 3.6−) | 2003 04 01 | 699 | 0.7− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | (2.3+ | 0.4+) | 2003 03 26 | 704 | (1.8− | 0.1+) | 2006 11 08 | 644 | 0.2+ | 0.4+ | 2001 12 22 | 704 | (0.4− | 3.7−) | 2003 04 01 | 699 | 0.3− | 0.5− | 2006 11 14 | 704 | 1.0+ | 0.4+ |
| 2001 12 17 | 704 | (2.0+ | 0.1−) | 2003 04 01 | 699 | 0.4− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.2+ | 2001 12 22 | 704 | (0.9− | 4.0−) | 2003 04 03 | 608 | 0.6− | 0.6+ | 2006 11 14 | 704 | 0.8− | 1.3+ |
| 2001 12 22 | 704 | (0.1− | 3.4−) | 2003 04 01 | 699 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.2+ | 2003 01 27 | 704 | 0.5+ | 0.3+ | 2003 04 03 | 608 | 0.4− | 0.7+ | 2006 11 14 | 704 | 1.3+ | 0.9+ |
| 2001 12 22 | 704 | (0.5− | 3.6−) | 2003 04 01 | 699 | 0.7− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.0 | 2003 01 27 | 704 | 0.5− | 0.4+ | 2003 04 03 | 608 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.6+ |
| 2001 12 22 | 704 | (0.4− | 3.7−) | 2003 04 01 | 699 | 0.3− | 0.5− | 2006 11 14 | 704 | 1.0+ | 0.4+ | 2003 01 27 | 704 | 1.0+ | 0.1− | 2003 04 08 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.2− |
| 2001 12 22 | 704 | (0.9− | 4.0−) | 2003 04 03 | 608 | 0.6− | 0.6+ | 2006 11 14 | 704 | 0.8− | 1.3+ | 2003 01 27 | 704 | 0.4+ | 0.4+ | 2003 04 08 | 644 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.2− |
| 2003 01 27 | 704 | 0.5+ | 0.3+ | 2003 04 03 | 608 | 0.4− | 0.7+ | 2006 11 14 | 704 | 1.3+ | 0.9+ | 2003 02 03 | 608 | 0.3+ | 0.0 | 2003 04 08 | 644 | 0.5+ | 0.2+ | 2006 11 19 | 703 | 0.4+ | 0.7− |
| 2003 01 27 | 704 | 0.5− | 0.4+ | 2003 04 03 | 608 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.6+ | 2003 02 03 | 608 | 0.4+ | 0.0 | 2003 04 10 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 703 | 0.5− | 0.3− |
| 2003 01 27 | 704 | 1.0+ | 0.1− | 2003 04 08 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.2− | 2003 02 03 | 608 | 0.5+ | 0.4− | 2003 04 10 | 704 | 0.3+ | 0.9+ | 2006 11 20 | 704 | 0.3+ | 0.1− |
| 2003 01 27 | 704 | 0.4+ | 0.4+ | 2003 04 08 | 644 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.2− | 2003 02 04 | 699 | 0.4+ | 0.6− | 2003 04 10 | 704 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.4+ |
| 2003 02 03 | 608 | 0.3+ | 0.0 | 2003 04 08 | 644 | 0.5+ | 0.2+ | 2006 11 19 | 703 | 0.4+ | 0.7− | 2003 02 04 | 699 | 0.4− | 1.2+ | 2003 04 10 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.0 |
| 2003 02 03 | 608 | 0.4+ | 0.0 | 2003 04 10 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 703 | 0.5− | 0.3− | 2003 02 04 | 699 | 0.7+ | 0.8+ | 2003 04 10 | 704 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.9+ | 0.2+ |
| 2003 02 03 | 608 | 0.5+ | 0.4− | 2003 04 10 | 704 | 0.3+ | 0.9+ | 2006 11 20 | 704 | 0.3+ | 0.1− | 2003 02 04 | 699 | 0.3+ | 0.1+ | 2003 04 24 | 704 | 1.5+ | 0.2+ | 2006 11 20 | 704 | 0.4+ | 1.0− |
| 2003 02 04 | 699 | 0.4+ | 0.6− | 2003 04 10 | 704 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.4+ | 2003 03 08 | 704 | 0.6+ | 0.2+ | 2003 04 24 | 704 | 0.6+ | 0.5− | 2006 11 24 | G96 | 0.0 | 0.5+ |
| 2003 02 04 | 699 | 0.4− | 1.2+ | 2003 04 10 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.0 | 2003 03 08 | 704 | 0.3+ | 0.0 | 2003 04 24 | 704 | 0.7+ | 0.3− | 2006 11 24 | G96 | 0.5+ | 0.2− |
| 2003 02 04 | 699 | 0.7+ | 0.8+ | 2003 04 10 | 704 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.9+ | 0.2+ | 2003 03 08 | 704 | (1.7+ | 0.4+) | 2003 04 24 | 704 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2003 02 04 | 699 | 0.3+ | 0.1+ | 2003 04 24 | 704 | 1.5+ | 0.2+ | 2006 11 20 | 704 | 0.4+ | 1.0− | 2003 03 08 | 704 | (1.9− | 0.4+) | 2003 04 24 | 704 | 0.7+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2003 03 08 | 704 | 0.6+ | 0.2+ | 2003 04 24 | 704 | 0.6+ | 0.5− | 2006 11 24 | G96 | 0.0 | 0.5+ | 2003 03 08 | 704 | 0.1− | 1.1− | 2005 07 28 | 644 | 0.8− | 0.6+ | | | | |
| 2003 03 08 | 704 | 0.3+ | 0.0 | 2003 04 24 | 704 | 0.7+ | 0.3− | 2006 11 24 | G96 | 0.5+ | 0.2− | | | | | | | | | | | | |
| 2003 03 08 | 704 | (1.7+ | 0.4+) | 2003 04 24 | 704 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.4+ | 0.2− | | | | | | | | | | | | |
| 2003 03 08 | 704 | (1.9− | 0.4+) | 2003 04 24 | 704 | 0.7+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.4− | | | | | | | | | | | | |
| 2003 03 08 | 704 | 0.1− | 1.1− | 2005 07 28 | 644 | 0.8− | 0.6+ | | | | | | | | | | | | | | | | |

**(143482)∗ 2003 CU$_{12}$ = 1998 FR$_{92}$**

Discovered 2003 Feb. 2 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41487)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.22937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18350474 | $\omega$ | 124.67042 | | −0.86831438 | +0.48901347 | |
| $a$ | 3.0669346 | $\Omega$ | 84.73503 | | −0.47799461 | −0.78024326 | |
| $e$ | 0.1989534 | $i$ | 4.78366 | | −0.13248127 | −0.38998242 | |
| $P$ | 5.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | (1.9+ | 2.2−) | 2003 01 05 | 699 | 0.3− | 0.3+ | 2003 02 23 | 699 | 0.2− | 0.4+ | |
| 1998 03 24 | 704 | 1.5− | 1.5+ | 2003 01 05 | 699 | 0.4+ | 0.9− | 2003 02 23 | 699 | 0.2− | 0.4+ | |
| 1998 03 24 | 704 | 0.7− | 1.7− | 2003 01 05 | 699 | 0.2+ | 0.3− | 2003 03 07 | 644 | 0.1− | 0.2+ | |
| 1998 03 24 | 704 | 0.2− | 1.9− | 2003 01 27 | 699 | 0.2− | 0.3+ | 2003 03 07 | 644 | 0.1− | 0.2− | |
| 1998 03 25 | 704 | 0.5− | 0.8+ | 2003 01 27 | 699 | 0.7− | 0.0 | 2003 03 07 | 644 | 0.1− | 0.0 | |
| 1998 03 25 | 704 | 0.7+ | 0.3− | 2003 01 27 | 699 | 1.3+ | 0.6− | 2005 08 27 | 644 | 0.1− | 1.0+ | |
| 1998 03 25 | 704 | 0.9+ | 1.1+ | 2003 01 27 | 699 | 0.4+ | 0.9− | 2005 08 27 | 644 | 0.4+ | 1.0+ | |
| 1998 03 25 | 704 | 0.8+ | 0.9+ | 2003 02 02 | 644 | 0.2− | 0.1− | 2005 08 27 | 644 | 0.3+ | 0.9+ | |
| 1998 03 25 | 704 | 0.0 | 1.1+ | 2003 02 02 | 644 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ | |
| 1998 04 19 | 704 | (2.2− | 0.7−) | 2003 02 02 | 644 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.7− | 0.2+ | |
| 1998 04 19 | 704 | 0.0 | 1.2− | 2003 02 04 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.1+ | |
| 1998 04 19 | 704 | 0.4− | 0.8+ | 2003 02 04 | 704 | 0.4+ | 0.8+ | 2006 10 31 | G96 | 0.3+ | 0.1− | |
| 1998 04 19 | 704 | (1.8− | 2.4+) | 2003 02 04 | 704 | 0.2+ | 0.9− | 2006 10 31 | G96 | 0.3+ | 0.1− | |
| 2001 11 14 | 691 | 0.1+ | 0.5− | 2003 02 04 | 704 | 0.6+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.3− | |
| 2001 11 14 | 691 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− | |
| 2001 11 14 | 691 | 0.7+ | 0.0 | 2003 02 07 | 704 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.4− | |
| 2001 11 20 | 704 | 0.1+ | 0.4+ | 2003 02 07 | 704 | 0.4+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.1− | |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2003 02 07 | 704 | 0.1+ | 1.3+ | 2006 11 16 | G96 | 0.4+ | 0.2− | |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2003 02 07 | 704 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.4− | |
| 2001 11 20 | 704 | 0.4− | 0.5− | 2003 02 23 | 699 | 0.1+ | 0.1+ | | | | | |
| 2003 01 05 | 699 | 0.8+ | 0.3+ | 2003 02 23 | 699 | 0.2− | 0.0 | | | | | |

**(143483)∗ 2003 CF$_{13}$ = 1998 FW$_{91}$**

Discovered 2003 Feb. 3 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 41488)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.83577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19121867 | $\omega$ | 68.85128 | | −0.88446986 | −0.43300032 | |
| $a$ | 2.9838881 | $\Omega$ | 85.13958 | | +0.33648852 | −0.85003339 | |
| $e$ | 0.1135282 | $i$ | 10.04824 | | +0.32324687 | −0.29992326 | |
| $P$ | 5.15 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.9− | 0.8− | 2003 02 03 | 644 | 0.5+ | 0.5+ | 2005 08 28 | E12 | 0.2− | 0.4+ | |
| 1998 03 24 | 704 | 0.3− | 0.1− | 2003 02 06 | 704 | 0.3+ | 0.0 | 2005 08 28 | E12 | 0.0 | 0.8+ | |
| 1998 03 24 | 704 | 0.4+ | 0.4+ | 2003 02 06 | 704 | 0.8+ | 0.3+ | 2005 08 28 | E12 | 0.6− | 1.0+ | |
| 1998 03 24 | 704 | (5.3− | 0.2+) | 2003 02 06 | 704 | 0.5+ | 0.1− | 2005 08 28 | E12 | 0.3+ | 0.3+ | |
| 1998 03 25 | 704 | 0.9+ | 0.8+ | 2003 02 06 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 1.2− | |
| 1998 03 25 | 704 | 1.3+ | 0.6+ | 2003 02 06 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.4+ | 0.4− | |
| 1998 03 25 | 704 | 0.6+ | 1.3+ | 2003 02 08 | 699 | 0.2− | 0.1+ | 2006 09 30 | 703 | (0.3+ | 1.6−) | |
| 1998 03 25 | 704 | 0.3+ | 0.5+ | 2003 02 08 | 699 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 1.4− | |
| 1998 03 25 | 704 | 1.8− | 0.9+ | 2003 02 08 | 699 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.6+ | |
| 2001 11 19 | 699 | 0.5− | 0.6+ | 2003 02 08 | 699 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.5+ | |
| 2001 11 19 | 699 | 0.3+ | 0.2− | 2003 02 23 | 608 | 0.1− | 1.0+ | 2006 10 22 | 703 | 0.0 | 1.1+ | |
| 2001 11 19 | 699 | 0.4+ | 0.2− | 2003 02 23 | 608 | 0.8− | 1.1+ | 2006 10 22 | 703 | 0.1+ | 0.6+ | |
| 2001 11 19 | 699 | 0.3− | 1.2+ | 2003 02 23 | 608 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1+ | |
| 2001 12 11 | 704 | 0.4− | 0.7+ | 2003 03 08 | 704 | 0.5− | 1.0− | 2006 11 08 | 644 | 0.0 | 0.3− | |
| 2001 12 11 | 704 | 0.3− | 0.6+ | 2003 03 08 | 704 | 0.4+ | 1.2− | 2006 11 08 | 644 | 0.4− | 0.3− | |
| 2001 12 11 | 704 | 0.3− | 1.2+ | 2003 03 08 | 704 | 0.0 | 1.2− | 2006 11 13 | 703 | 0.0 | 1.3− | |
| 2001 12 11 | 704 | 0.3− | 0.3+ | 2003 03 08 | 704 | (1.8− | 1.7−) | 2006 11 13 | 703 | 0.4− | 0.9− | |
| 2001 12 11 | 704 | 0.2+ | 0.3+ | 2003 03 25 | 704 | 0.5− | 0.1+ | 2006 11 13 | 703 | 0.7+ | 0.1− | |
| 2002 02 12 | 209 | 1.2+ | 0.5− | 2003 03 25 | 704 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.0 | |
| 2002 02 12 | 209 | 0.1− | 1.0− | 2003 03 25 | 704 | 0.2− | 0.7+ | 2006 11 19 | 703 | 0.1− | 0.1− | |
| 2002 02 12 | 209 | 1.0+ | 1.5− | 2005 07 30 | 644 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.8+ | |
| 2003 02 03 | 644 | 0.4+ | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.6+ | 2006 11 19 | 703 | 0.1+ | 0.1− | |
| 2003 02 03 | 644 | 0.2− | 0.0 | 2005 07 30 | 644 | 0.2− | 0.7+ | 2006 11 19 | 703 | 1.0− | 1.1+ | |

**(143484)∗ 2003 CY$_{13}$ = 2005 NR$_{102}$**

Discovered 2003 Feb. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 94915)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.19637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21009990 | $\omega$ | 323.18187 | | −0.19044048 | −0.98017552 | |
| $a$ | 2.8023271 | $\Omega$ | 137.71883 | | +0.91895182 | −0.19758039 | |
| $e$ | 0.0625242 | $i$ | 4.66072 | | +0.34534039 | −0.01476292 | |
| $P$ | 4.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.0 | 0.4− | 2003 02 07 | 333 | 0.2+ | 0.3+ | 2005 07 28 | 644 | 0.1+ | 0.4+ | |
| 1994 03 05 | 691 | 0.3− | 0.0 | 2003 02 07 | 333 | 0.7− | 0.6+ | 2005 07 28 | 644 | 0.4− | 0.3+ | |
| 1994 03 05 | 691 | 0.0 | 0.2− | 2003 02 07 | 333 | 0.1− | 0.0 | 2005 08 27 | 644 | 0.4− | 0.1+ | |
| 2001 10 24 | 644 | 0.0 | 0.1− | 2003 02 07 | 333 | 0.2− | 0.0 | 2005 08 27 | 644 | 0.5− | 0.0 | |
| 2001 10 24 | 644 | 0.3+ | 0.3− | 2003 02 21 | 644 | 0.1− | 0.4+ | 2005 08 27 | 644 | 0.1+ | 0.3+ | |
| 2001 10 24 | 644 | 0.9+ | 0.2− | 2003 02 21 | 644 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.0 | |
| 2001 11 18 | 704 | 0.8− | 0.1− | 2003 02 21 | 644 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.1− | |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2004 05 28 | 291 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.7− | 0.0 | |
| 2001 11 18 | 704 | 0.0 | 1.3+ | 2004 05 28 | 291 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.1+ | |
| 2001 11 18 | 704 | 0.3+ | 0.8+ | 2004 05 28 | 291 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.0 | 0.1+ | |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2005 07 11 | G96 | 0.2− | 0.2+ | 2006 11 28 | 704 | 1.4+ | 0.0 | |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2005 07 11 | G96 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.6− | |
| 2003 02 03 | 291 | 0.2− | 0.4+ | 2005 07 11 | G96 | 0.9− | 0.6+ | 2006 11 28 | 704 | 0.2+ | 0.5+ | |
| 2003 02 03 | 291 | 0.2− | 0.0 | 2005 07 11 | G96 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.5− | |
| 2003 02 03 | 291 | 0.2+ | 0.7+ | 2005 07 28 | 644 | 0.2− | 0.5+ | | | | | |

**(143485)∗ 2003 CV$_{14}$ = 2001 VZ$_{75}$ = 2005 SS$_{109}$**

Discovered 2003 Feb. 3 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 85914), A. Doppler (*MPO* 94915)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.89178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23017268 | $\omega$ | 355.73797 | | −0.87041138 | +0.49187538 | |
| $a$ | 2.6369397 | $\Omega$ | 213.75210 | | −0.45057267 | −0.81308939 | |
| $e$ | 0.1375579 | $i$ | 2.17014 | | −0.19841447 | −0.31135873 | |
| $P$ | 4.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 26 | 691 | 1.6− | 0.2+ | 2001 11 08 | 290 | 0.1− | 0.1+ | 2003 03 06 | 644 | 0.7+ | 0.9+ | |
| 1995 05 26 | 691 | 1.2+ | 0.0 | 2001 11 08 | 290 | 0.6+ | 0.2− | 2003 03 06 | 644 | 0.4+ | 0.8+ | |
| 1995 05 26 | 691 | 1.5− | 0.2+ | 2001 11 08 | 290 | 0.5+ | 0.2− | 2003 03 06 | 644 | 0.5+ | 0.6+ | |
| 1995 05 31 | 691 | 0.5+ | 0.5+ | 2001 11 08 | 290 | 0.1+ | 0.1− | 2003 03 12 | 644 | 0.3− | 0.5+ | |
| 1995 05 31 | 691 | 1.6+ | 0.5+ | 2001 11 08 | 290 | 0.5+ | 0.1− | 2003 03 12 | 644 | 0.0 | 0.2+ | |
| 1995 05 31 | 691 | 0.5+ | 0.6+ | 2001 11 08 | 290 | 0.5+ | 0.2− | 2003 03 12 | 644 | 0.3+ | 0.5+ | |
| 2001 10 17 | 691 | 0.8− | 0.3+ | 2001 11 08 | 290 | 0.3+ | 0.2− | 2005 09 26 | 691 | 0.1− | 0.0 | |
| 2001 10 17 | 691 | 0.8− | 0.3+ | 2001 11 08 | 290 | 0.5+ | 0.2− | 2005 09 26 | 691 | 0.2+ | 0.3+ | |
| 2001 10 17 | 691 | 0.8− | 0.1+ | 2001 11 08 | 290 | 0.5+ | 0.1− | 2005 09 26 | 691 | 0.1− | 0.2− | |
| 2001 11 08 | 290 | 0.1− | 0.0 | 2001 11 08 | 290 | 0.4+ | 0.3− | 2005 09 30 | G96 | 0.3+ | 0.1+ | |
| 2001 11 08 | 290 | 0.3− | 0.0 | 2001 11 08 | 290 | 0.3+ | 0.2− | 2005 09 30 | G96 | 0.2+ | 0.0 | |
| 2001 11 08 | 290 | 0.1− | 0.1+ | 2001 11 08 | 290 | 0.4+ | 0.2− | 2005 09 30 | G96 | 0.1+ | 0.3− | |
| 2001 11 08 | 290 | 0.1− | 0.1+ | 2001 11 08 | 290 | 0.8+ | 0.2− | 2005 09 30 | G96 | 0.1− | 0.0 | |
| 2001 11 08 | 290 | 0.2− | 0.1+ | 2001 11 08 | 290 | 0.6+ | 0.0 | 2005 10 07 | 691 | 0.6− | 0.1+ | |
| 2001 11 08 | 290 | 0.4− | 0.1− | 2001 11 08 | 290 | 0.6+ | 0.1− | 2005 10 07 | 691 | 0.3− | 0.5+ | |
| 2001 11 08 | 290 | 0.3+ | 0.2+ | 2001 11 08 | 290 | 0.6+ | 0.1− | 2005 10 07 | 691 | 0.6− | 0.1+ | |
| 2001 11 08 | 290 | 0.0 | 0.0 | 2001 11 08 | 290 | 0.5+ | 0.2− | 2005 10 27 | 691 | 0.2+ | 0.4+ | |
| 2001 11 08 | 290 | 0.0 | 0.2+ | 2001 11 08 | 290 | 0.3+ | 0.2− | 2005 10 27 | 691 | 0.1+ | 0.4+ | |
| 2001 11 08 | 290 | 0.1+ | 0.2+ | 2002 12 14 | 645 | 0.0 | 0.0 | 2005 10 27 | 691 | 0.2− | 0.2+ | |
| 2001 11 08 | 290 | 0.2+ | 0.1+ | 2002 12 14 | 645 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.1+ | 0.3+ | |
| 2001 11 08 | 290 | 0.1+ | 0.2+ | 2003 02 03 | 608 | 0.6+ | 0.9+ | 2005 10 27 | G96 | 0.3+ | 0.2+ | |
| 2001 11 08 | 290 | 0.3+ | 0.0 | 2003 02 03 | 608 | 0.7+ | 0.6+ | 2005 10 27 | G96 | 0.2− | 0.3+ | |
| 2001 11 08 | 290 | 0.2+ | 0.1+ | 2003 02 03 | 608 | 0.3+ | 0.2+ | 2005 10 27 | G96 | 0.0 | 0.4+ | |
| 2001 11 08 | 290 | 0.1+ | 0.1+ | 2003 02 07 | 644 | 0.0 | 0.1+ | 2005 11 21 | 701 | 0.9+ | 0.5+ | |
| 2001 11 08 | 290 | 0.1+ | 0.0 | 2003 02 07 | 644 | 0.1+ | 0.2+ | 2005 11 21 | 701 | 1.0+ | 0.2+ | |
| 2001 11 08 | 290 | 0.0 | 0.0 | 2003 02 07 | 644 | 0.0 | 0.2+ | 2005 11 21 | 701 | 0.0 | 0.2+ | |
| 2001 11 08 | 290 | 0.2+ | 0.0 | 2003 02 09 | 608 | 0.1− | 0.8− | 2005 11 25 | G96 | 0.1+ | 0.3+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 08 | 290 | 0.1− | 0.2+ | 2003 02 09 | 608 | 0.1− | 0.7− | 2005 11 25 | G96 | 0.2+ | 0.1+ |
| 2001 11 08 | 290 | 0.1+ | 0.2+ | 2003 02 09 | 608 | 0.7− | 0.4− | 2005 11 25 | G96 | 0.1+ | 0.3+ |
| 2001 11 08 | 290 | 0.3+ | 0.1+ | 2003 02 21 | 644 | 0.1+ | 0.2+ | 2005 11 25 | G96 | 0.1− | 0.1− |
| 2001 11 08 | 290 | 0.1− | 0.0 | 2003 02 21 | 644 | 0.2+ | 0.2+ | | | | |
| 2001 11 08 | 290 | 0.1+ | 0.2+ | 2003 02 21 | 644 | 0.0 | 0.6+ | | | | |

**(143486)∗ 2003 CJ$_{15}$**

Discovered 2003 Feb. 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.34952 | | (2000.0) | | | |
| $n$ | 0.17123735 | $\omega$ | 120.80068 | | −0.91349991 | −0.34683263 |
| $a$ | 3.2117154 | $\Omega$ | 40.03304 | | +0.15432462 | −0.77905668 |
| $e$ | 0.1022541 | $i$ | 19.30616 | | +0.37643302 | −0.52228136 |
| $P$ | 5.76 | $H$ | 13.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 24 | 691 | 0.3− | 0.1− | 2003 03 13 | 704 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1992 04 24 | 691 | 0.0 | 0.1− | 2003 03 13 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1992 04 24 | 691 | 0.3− | 0.4− | 2003 03 13 | 608 | 1.1+ | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 25 | 704 | 0.3+ | 0.8− | 2003 03 13 | 608 | 0.4+ | 1.2− | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2001 10 25 | 704 | 0.5+ | 0.1− | 2003 03 13 | 608 | 0.5+ | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2001 10 25 | 704 | 0.0 | 0.1+ | 2003 03 26 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2001 12 23 | 704 | 0.6+ | 0.7− | 2003 03 26 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.7+ |
| 2001 12 23 | 704 | 0.7+ | 1.3− | 2003 03 26 | 704 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2001 12 23 | 704 | (1.7+ | 0.2+) | 2003 03 26 | 704 | 0.5− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2001 12 23 | 704 | 0.4+ | 1.2− | 2003 03 26 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.1− |
| 2003 02 04 | 699 | 0.1− | 0.2− | 2003 04 06 | 699 | 0.7− | 0.9+ | 2006 10 19 | 644 | 0.5− | 0.0 |
| 2003 02 04 | 699 | 0.7− | 0.9+ | 2003 04 06 | 699 | 1.0− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2003 02 04 | 699 | 0.7− | 0.2+ | 2003 04 06 | 699 | 1.3− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2003 02 04 | 699 | 0.0 | 0.7− | 2003 04 06 | 699 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2003 02 07 | 704 | 1.5+ | 0.2− | 2003 04 09 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2003 02 07 | 704 | 0.1− | 0.1+ | 2003 04 09 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2003 02 07 | 704 | 0.0 | 0.9+ | 2003 04 09 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2003 02 27 | 608 | 0.5+ | 0.7+ | 2003 04 24 | 704 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2003 02 27 | 608 | 0.7+ | 0.2+ | 2003 04 24 | 704 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2003 02 27 | 608 | 0.6+ | 0.8+ | 2003 04 24 | 704 | 0.5+ | 0.9+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2003 03 08 | 699 | (1.8− | 0.4+) | 2003 04 24 | 704 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 03 08 | 699 | 0.6+ | 0.2− | 2003 04 24 | 704 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 03 08 | 699 | 0.4+ | 0.1− | 2003 05 03 | 608 | 0.0 | 0.8− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 03 08 | 699 | 0.7+ | 0.0 | 2003 05 03 | 608 | 0.4+ | 0.5− | 2006 11 07 | 644 | 0.4− | 0.2+ |
| 2003 03 08 | 704 | 0.0 | 0.1+ | 2003 05 03 | 608 | 0.2+ | 0.8− | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2003 03 08 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.7+ | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.2− |
| 2003 03 08 | 704 | 0.6− | 0.1+ | 2006 09 18 | 703 | 1.0− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2003 03 08 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 1.0− | 0.1+ | 2006 11 07 | 644 | 0.6− | 0.2− |
| 2003 03 08 | 704 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.7+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2003 03 08 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.5+ | 2006 11 13 | 703 | (1.6− | 0.5−) |
| 2003 03 08 | 704 | 0.5− | 0.0 | 2006 09 20 | 699 | 0.6− | 0.5+ | 2006 11 13 | 703 | 0.8− | 0.1− |
| 2003 03 08 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 699 | (1.7− | 0.0 ) | 2006 11 13 | 703 | 0.4+ | 0.8+ |
| 2003 03 08 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.8− | 0.4+ |
| 2003 03 08 | 704 | 0.8+ | 0.4+ | 2006 09 26 | 704 | 0.8− | 0.0 | 2006 11 14 | 704 | 0.5+ | 1.0+ |
| 2003 03 09 | 704 | (0.3− | 2.5+) | 2006 09 26 | 704 | 0.1− | 0.1− | 2006 11 14 | 704 | 1.2+ | 0.6+ |
| 2003 03 09 | 704 | 1.4− | 1.3+ | 2006 09 26 | 704 | 0.7+ | 1.5− | 2006 11 14 | 704 | 0.0 | 0.5+ |
| 2003 03 09 | 704 | 0.4+ | 1.4+ | 2006 09 30 | 703 | (1.7− | 0.2−) | 2006 11 14 | 704 | 1.0+ | 0.1− |
| 2003 03 09 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.5+ | 2006 11 14 | 704 | 1.4+ | 0.3− |
| 2003 03 09 | 644 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2003 03 09 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | (2.4− | 0.0 ) | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2003 03 09 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2003 03 10 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.3− | 1.0− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2003 03 10 | 704 | 1.1+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2003 03 10 | 704 | 1.0− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2003 03 10 | 704 | 0.6+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2003 03 10 | 704 | 1.1+ | 0.9− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2003 03 10 | 644 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.0 | 1.2+ |
| 2003 03 10 | 644 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.2+ | 1.3+ |
| 2003 03 10 | 644 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2003 03 13 | 704 | 0.2− | 0.6− | 2006 10 10 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 2003 03 13 | 704 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1+ | | | | |

**(143487)∗ 2003 CR$_{20}$**

Discovered 2003 Feb. 11 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.40625 | | (2000.0) | | | |
| $n$ | 0.31873316 | $\omega$ | 88.09557 | | −0.07197461 | +0.99740071 |
| $a$ | 2.1225172 | $\Omega$ | 177.76854 | | −0.94620438 | −0.06720526 |
| $e$ | 0.7319755 | $i$ | 4.99075 | | −0.31546303 | −0.02598598 |
| $P$ | 3.09 | $H$ | 18.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1975 10 06 | 413 | 1.1− | 0.4− | 2003 02 23 | 246 | 0.2+ | 0.2+ | 2003 03 05 | 246 | 0.2− | 0.6+ |
| 1975 10 06 | 413 | 0.9+ | 0.9+ | 2003 02 23 | 246 | 0.2− | 0.0 | 2003 03 05 | 246 | 0.3+ | 0.2+ |
| 2003 02 11 | 608 | 0.0 | 1.2+ | 2003 02 24 | 246 | 0.4+ | 0.1− | 2003 03 05 | 246 | 0.2+ | 0.0 |
| 2003 02 11 | 608 | 0.3− | 1.0+ | 2003 02 24 | 246 | 0.2+ | 0.0 | 2003 03 05 | 246 | 0.1+ | 0.8+ |
| 2003 02 11 | 608 | 0.1− | 0.6+ | 2003 02 24 | 246 | 0.7+ | 0.0 | 2003 03 05 | 246 | 0.9+ | 0.4+ |
| 2003 02 13 | 649 | 0.3+ | 0.2− | 2003 02 24 | 246 | 0.0 | 0.1− | 2003 03 06 | 704 | 0.0 | 0.8+ |
| 2003 02 13 | 649 | 0.1+ | 0.0 | 2003 02 24 | 587 | 0.1+ | 0.1+ | 2003 03 06 | 704 | 0.2+ | 0.3+ |
| 2003 02 13 | 649 | 0.2+ | 0.0 | 2003 02 24 | 587 | 0.1− | 0.3− | 2003 03 06 | 704 | 1.0+ | 0.1+ |
| 2003 02 14 | 046 | 0.0 | 0.0 | 2003 02 25 | 246 | 0.3+ | 0.2− | 2003 03 06 | 704 | 1.2+ | 0.1+ |
| 2003 02 14 | 046 | 0.1+ | 0.1+ | 2003 02 25 | 246 | 0.1+ | 0.2− | 2003 03 07 | 704 | 0.8+ | 0.5− |
| 2003 02 14 | 809 | 0.7− | 0.3− | 2003 02 25 | 246 | 0.3+ | 0.4− | 2003 03 07 | 704 | 0.5+ | 0.4− |
| 2003 02 14 | 809 | 0.0 | 0.5− | 2003 02 25 | 246 | 0.4+ | 0.4− | 2003 03 07 | 711 | 0.3− | 0.1+ |
| 2003 02 14 | 809 | 0.7+ | 0.4− | 2003 02 25 | 246 | 0.1+ | 0.6− | 2003 03 07 | 711 | 0.8− | 1.1+ |
| 2003 02 15 | 809 | 1.5− | 0.5+ | 2003 02 25 | 246 | 0.6+ | 0.4− | 2003 03 07 | 704 | 0.4+ | 0.2− |
| 2003 02 15 | 809 | 1.4+ | 0.8− | 2003 02 26 | 246 | 0.2+ | 0.3− | 2003 03 07 | 711 | 0.6+ | 1.1− |
| 2003 02 15 | 809 | 0.9− | 0.2+ | 2003 02 26 | 246 | 0.6+ | 0.5− | 2003 03 07 | 704 | 0.1+ | 0.2− |
| 2003 02 15 | 809 | 1.0+ | 0.9− | 2003 02 26 | 246 | 0.6+ | 0.6− | 2003 03 07 | 704 | 0.3+ | 0.3+ |
| 2003 02 18 | 950 | 0.2+ | 0.0 | 2003 02 26 | 246 | 0.4+ | 0.4− | 2003 03 07 | 608 | 0.1+ | 0.5− |
| 2003 02 18 | 950 | 0.5− | 0.4− | 2003 02 26 | 246 | 0.4+ | 0.3− | 2003 03 07 | 608 | 0.1− | 0.4− |
| 2003 02 18 | 950 | 0.3+ | 0.0 | 2003 02 26 | 246 | 0.1− | 0.3− | 2003 03 07 | 608 | 0.1− | 0.6− |
| 2003 02 18 | 950 | 0.2+ | 0.2− | 2003 02 27 | 246 | 0.0 | 0.1+ | 2003 03 11 | 170 | 1.0− | 0.2− |
| 2003 02 19 | 246 | 0.2− | 0.3− | 2003 02 27 | 246 | 0.1+ | 0.1+ | 2003 03 11 | 170 | (2.5+ | 0.7−) |
| 2003 02 19 | 246 | 0.8+ | 0.6− | 2003 02 27 | 246 | 0.1− | 0.1+ | 2003 03 21 | 246 | 0.5− | 0.2− |
| 2003 02 19 | 246 | 0.3+ | 0.6− | 2003 02 27 | 246 | 0.2+ | 0.5+ | 2003 03 21 | 246 | 0.6+ | 0.4+ |
| 2003 02 19 | 246 | 0.6+ | 0.6− | 2003 02 27 | 246 | 0.3+ | 0.1− | 2003 03 21 | 246 | 0.4+ | 0.7+ |
| 2003 02 20 | 649 | 0.5+ | 0.6− | 2003 02 27 | 246 | 0.1− | 0.0 | 2003 03 21 | 246 | 0.2− | 0.1+ |
| 2003 02 20 | 649 | 0.1+ | 0.3− | 2003 02 28 | 941 | 0.0 | 0.2+ | 2003 03 21 | 246 | 0.3+ | 1.2+ |
| 2003 02 20 | 649 | 0.1− | 0.1+ | 2003 02 28 | 246 | 0.7− | 0.3− | 2003 03 22 | 734 | 0.3+ | 0.6− |
| 2003 02 20 | 587 | 0.4− | 0.1− | 2003 02 28 | 246 | 0.3− | 0.4− | 2003 03 22 | 734 | 0.3+ | 0.3− |
| 2003 02 20 | 587 | (1.6+ | 0.4−) | 2003 02 28 | 246 | 0.3− | 0.4− | 2003 03 22 | 734 | 0.1− | 0.4− |
| 2003 02 20 | 587 | 0.0 | 0.9+ | 2003 02 28 | 246 | 0.3+ | 0.2− | 2003 03 22 | 734 | 0.4+ | 1.4− |
| 2003 02 21 | 670 | 0.2+ | 1.0− | 2003 02 28 | 246 | 0.0 | 0.1+ | 2003 03 23 | 587 | 0.0 | 0.3+ |
| 2003 02 21 | 670 | 1.1− | 0.5+ | 2003 02 28 | 941 | 0.2− | 0.1+ | 2003 03 23 | 587 | 0.3+ | 0.3+ |
| 2003 02 21 | 246 | 0.5− | 0.0 | 2003 02 28 | 540 | 0.3− | 0.2− | 2003 03 23 | 587 | 0.4+ | 0.1− |
| 2003 02 21 | 246 | 0.3− | 0.8+ | 2003 02 28 | 540 | 0.2− | 0.3− | 2003 03 24 | 413 | 0.1+ | 0.1− |
| 2003 02 21 | 246 | 1.0− | 0.0 | 2003 02 28 | 941 | 0.7− | 0.3− | 2003 03 24 | 413 | 0.1+ | 0.2− |
| 2003 02 21 | 246 | 0.8− | 0.3+ | 2003 02 28 | 540 | 0.3− | 0.1− | 2003 04 01 | 704 | 0.1+ | 0.5+ |
| 2003 02 21 | 246 | 0.5+ | 0.4+ | 2003 02 28 | 941 | 1.0− | 0.4− | 2003 04 01 | 704 | 0.5+ | 0.6+ |
| 2003 02 21 | 246 | 0.6− | 0.3+ | 2003 02 28 | 941 | 0.1+ | 0.3+ | 2003 04 01 | 704 | 0.8+ | 1.2+ |
| 2003 02 21 | 246 | 0.1+ | 0.1+ | 2003 02 28 | 941 | 0.8− | 0.6+ | 2003 04 01 | 704 | 0.6+ | 0.9+ |
| 2003 02 21 | 246 | 0.6+ | 0.0 | 2003 02 28 | 941 | 0.1+ | 0.4+ | 2003 04 01 | 704 | 0.1− | 1.4+ |
| 2003 02 21 | 941 | 0.3+ | 0.2+ | 2003 03 01 | 715 | 0.5− | 0.4− | 2003 07 31 | 568 | 0.2− | 0.2+ |
| 2003 02 21 | 941 | 0.7− | 0.1− | 2003 03 01 | 715 | 0.3− | 0.1− | 2003 07 31 | 568 | 0.1− | 0.2+ |
| 2003 02 21 | 941 | 0.2− | 0.1− | 2003 03 01 | 715 | 0.4− | 0.1+ | 2003 08 05 | 291 | 0.7− | 0.3+ |
| 2003 02 21 | 941 | 1.0− | 0.2− | 2003 03 01 | 246 | 0.3+ | 0.4− | 2003 08 05 | 291 | 0.3− | 1.1− |
| 2003 02 21 | 941 | 1.3− | 0.8+ | 2003 03 01 | 246 | 0.0 | 0.0 | 2003 08 05 | 291 | 0.2+ | 0.2+ |
| 2003 02 21 | 941 | 0.0 | 0.7+ | 2003 03 01 | 246 | 0.1+ | 0.2− | 2003 09 19 | 291 | 0.9− | 0.0 |
| 2003 02 21 | 941 | 0.8− | 0.5+ | 2003 03 01 | 246 | 0.1+ | 0.2− | 2003 09 19 | 291 | 0.6− | 0.9+ |
| 2003 02 21 | 941 | 0.4− | 0.2+ | 2003 03 01 | 246 | 0.2+ | 0.5− | 2003 10 29 | 568 | 0.1+ | 0.1+ |
| 2003 02 22 | 950 | 0.6− | 0.3− | 2003 03 01 | 246 | 0.4+ | 0.4− | 2003 10 29 | 568 | 0.1+ | 0.1+ |
| 2003 02 22 | 950 | 0.7− | 0.5− | 2003 03 01 | 170 | 1.3− | 1.5+ | 2003 10 30 | 568 | 0.1+ | 0.1+ |
| 2003 02 22 | 950 | 0.7− | 0.5− | 2003 03 03 | 670 | 0.3− | 0.7− | 2003 10 30 | 568 | 0.1+ | 0.0 |
| 2003 02 22 | 950 | 0.4− | 0.5− | 2003 03 03 | 670 | (1.6− | 0.4−) | 2006 05 21 | 568 | 0.0 | 0.3+ |
| 2003 02 22 | 950 | 0.6− | 0.5− | 2003 03 03 | 670 | 0.4− | 1.1− | 2006 05 21 | 568 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 22 | 950 | 0.9− | 0.3− | 2003 03 03 | 587 | 0.4− | 0.1+ | 2006 05 21 | 568 | 0.0 | 0.2+ |
| 2003 02 22 | 950 | 0.7− | 0.3− | 2003 03 03 | 587 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.5+ | 0.0 |
| 2003 02 22 | 950 | 0.6− | 0.5− | 2003 03 03 | 587 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.1+ |
| 2003 02 22 | 246 | 0.5+ | 0.2− | 2003 03 04 | 170 | 0.7+ | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.1+ |
| 2003 02 22 | 246 | 0.7− | 0.2− | 2003 03 04 | 170 | 0.3− | 1.2+ | 2006 10 03 | G96 | 0.9− | 0.2− |
| 2003 02 22 | 246 | 0.2− | 0.1− | 2003 03 04 | 170 | (2.8− | 0.5+) | 2006 10 18 | 691 | 0.2− | 0.2− |
| 2003 02 22 | 246 | 0.5− | 0.1− | 2003 03 04 | 176 | 0.3+ | 0.5− | 2006 10 18 | 691 | 0.3+ | 0.0 |
| 2003 02 22 | 246 | 0.2+ | 0.0 | 2003 03 04 | 176 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.0 |
| 2003 02 22 | 246 | 0.2+ | 0.3− | 2003 03 04 | 176 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 2003 02 23 | 715 | 0.0 | 0.2+ | 2003 03 04 | 176 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2003 02 23 | 715 | 0.3− | 0.1+ | 2003 03 04 | 176 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2003 02 23 | 715 | 0.2+ | 0.3+ | 2003 03 04 | 118 | 0.9+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2003 02 23 | 715 | 0.0 | 0.3+ | 2003 03 04 | 118 | 0.8− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.3− |
| 2003 02 23 | 715 | 0.2− | 0.2+ | 2003 03 04 | 118 | 0.7+ | 0.4+ | 2006 10 22 | 691 | 0.8− | 0.4− |
| 2003 02 23 | 246 | 0.3+ | 0.7+ | 2003 03 04 | 118 | 0.4− | 0.3− | 2006 10 22 | 691 | 1.2− | 0.4− |
| 2003 02 23 | 246 | 0.0 | 0.5+ | 2003 03 04 | 204 | 1.2+ | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2003 02 23 | 246 | 0.7+ | 0.0 | 2003 03 05 | J86 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.7− |
| 2003 02 23 | 246 | 0.2− | 0.8+ | 2003 03 05 | J86 | 0.5− | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2003 02 23 | 246 | 0.1+ | 0.4+ | 2003 03 05 | J86 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.1− |

**(143488)∗ 2003 CX$_{21}$**

Discovered 2003 Feb. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.28924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19162744 | $\omega$ | 150.14744 | | −0.98060683 | +0.19512697 | |
| $a$ | 2.9796432 | $\Omega$ | 41.11764 | | −0.18487891 | −0.88996080 | |
| $e$ | 0.2210645 | $i$ | 1.59658 | | −0.06503865 | −0.41218350 | |
| $P$ | 5.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | 0.1+ | 0.5+ | 2003 01 27 | 704 | 0.1− | 0.4+ | 2005 10 06 | G96 | 0.1+ | 0.4+ |
| 1998 03 03 | 704 | 0.9+ | 0.3− | 2003 02 03 | 644 | 0.2+ | 1.1+ | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 1998 03 03 | 704 | 0.2− | 1.2+ | 2003 02 03 | 704 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.5− | 0.5− |
| 1998 03 03 | 704 | 0.9− | 1.4− | 2003 02 03 | 704 | 0.4+ | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.8− |
| 1998 03 20 | 691 | 0.4− | 0.2+ | 2003 02 03 | 644 | 0.2+ | 1.2+ | 2006 09 25 | G96 | 1.2− | 0.1+ |
| 1998 03 20 | 691 | 0.7− | 0.2+ | 2003 02 03 | 704 | 1.3+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 1998 03 20 | 691 | 0.7− | 0.1+ | 2003 02 03 | 704 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 1998 04 03 | 691 | 0.2+ | 0.4− | 2003 02 03 | 644 | 0.1+ | 1.4+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1998 04 03 | 691 | 0.2− | 0.3− | 2003 02 08 | 704 | 0.2− | 0.8+ | 2006 10 27 | G96 | 0.5+ | 0.6− |
| 1998 04 03 | 691 | 0.1− | 0.2− | 2003 02 08 | 704 | 0.5− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.4− |
| 1998 05 02 | 691 | 0.5+ | 0.3− | 2003 02 08 | 704 | 0.8+ | 0.7+ | 2006 10 28 | 691 | 0.3− | 0.2− |
| 1998 05 02 | 691 | 0.8+ | 0.2− | 2003 02 24 | 608 | 0.2+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.6+ |
| 1998 05 02 | 691 | 0.5+ | 0.1− | 2003 02 24 | 608 | 0.5+ | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 11 15 | 291 | 0.2+ | 0.1− | 2003 02 24 | 608 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 11 15 | 291 | 0.5+ | 0.1− | 2005 09 12 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2001 11 15 | 291 | 0.2− | 0.0 | 2005 09 12 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2003 01 27 | 704 | 0.4− | 0.1+ | 2005 09 12 | 691 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2003 01 27 | 704 | 0.3+ | 0.5− | 2005 10 06 | G96 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.7− |
| 2003 01 27 | 704 | 0.5− | 0.8− | 2005 10 06 | G96 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.7+ | 0.6− |
| 2003 01 27 | 704 | 0.6+ | 0.1+ | 2005 10 06 | G96 | 0.2− | 0.1+ | | | | |

**(143489)∗ 2003 DS = 2000 QS$_{159}$**

Discovered 2003 Feb. 21 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47306)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.25129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19265253 | $\omega$ | 314.62255 | | −0.18570593 | +0.97284180 | |
| $a$ | 2.9690641 | $\Omega$ | 304.19241 | | −0.84760463 | −0.22973563 | |
| $e$ | 0.0602996 | $i$ | 9.61621 | | −0.49707112 | +0.02829070 | |
| $P$ | 5.12 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.2+ | 0.2+ | 2003 02 09 | 608 | 0.3− | 0.4+ | 2005 08 29 | 699 | 0.3− | 0.3− |
| 2000 08 31 | 704 | 0.2+ | 0.1+ | 2003 02 21 | 644 | 0.1− | 0.3+ | 2005 08 29 | A50 | (3.0− | 0.4+) |
| 2000 08 31 | 704 | 0.5− | 0.3+ | 2003 02 21 | 644 | 0.3+ | 0.2+ | 2005 08 29 | A50 | 0.2+ | 1.0− |
| 2000 08 31 | 704 | 0.2+ | 0.1− | 2003 02 21 | 644 | 0.1+ | 0.2+ | 2005 08 29 | A50 | 0.7+ | 0.2− |
| 2000 09 03 | 704 | 0.1− | 0.4+ | 2003 02 22 | 644 | 0.4+ | 0.3+ | 2005 08 29 | A50 | 0.3+ | 0.5− |
| 2000 09 03 | 704 | 0.0 | 0.0 | 2003 02 22 | 699 | (2.6+ | 0.8−) | 2006 10 23 | 703 | 0.1+ | 0.5+ |
| 2000 09 03 | 704 | 0.1− | 0.5+ | 2003 02 22 | 699 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.2− | 0.1− |
| 2000 09 03 | 704 | 0.5+ | 0.1− | 2003 02 22 | 699 | 0.9− | 0.7+ | 2006 10 23 | 703 | 1.1− | 0.1+ |
| 2000 09 03 | 704 | 0.0 | 0.1+ | 2003 02 22 | 644 | 0.6+ | 0.3+ | 2006 10 23 | 703 | (1.7+ | 1.9+) |
| 2000 09 03 | 704 | 0.0 | 0.4− | 2003 02 22 | 699 | 1.3+ | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.1− |
| 2000 09 03 | 704 | 0.4− | 0.5− | 2003 02 22 | 644 | 0.2+ | 0.4+ | 2006 11 02 | G96 | 0.6+ | 0.1− |
| 2000 09 03 | 704 | 0.2− | 0.6+ | 2005 07 30 | 644 | 0.1+ | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.0 | 0.6+ | 2005 07 30 | 644 | 0.2− | 0.4+ | 2006 11 02 | G96 | 0.3+ | 0.0 |
| 2001 11 11 | 704 | 0.5− | 0.3− | 2005 07 30 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2001 11 11 | 704 | 0.9+ | 0.1− | 2005 08 06 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2001 11 11 | 704 | 0.8− | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.5+ | 0.1− |
| 2001 11 11 | 704 | 0.2− | 0.8+ | 2005 08 06 | 644 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2003 02 03 | 704 | 0.3− | 1.1+ | 2005 08 24 | 644 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.9+ |
| 2003 02 03 | 704 | 0.8+ | 0.5− | 2005 08 24 | 644 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.7− | 0.8− |
| 2003 02 03 | 704 | 0.1+ | 0.5+ | 2005 08 24 | 644 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.4− |
| 2003 02 03 | 704 | 1.2+ | 0.6+ | 2005 08 29 | 699 | 0.8− | 1.2+ | 2006 11 15 | 703 | 0.4+ | 1.0− |
| 2003 02 09 | 608 | 0.5− | 0.1− | 2005 08 29 | 699 | 0.9− | 1.4+ | | | | |
| 2003 02 09 | 608 | 0.3− | 0.1+ | 2005 08 29 | 699 | 0.6− | 0.2+ | | | | |

**(143490)∗ 2003 DL$_3$ = 1998 HS$_{28}$**

Discovered 2003 Feb. 22 by NEAT at Palomar.

Id. A. Doppler (*MPO* 94918)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.76690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17958677 | $\omega$ | 146.81594 | | +0.26214964 | +0.96434879 | |
| $a$ | 3.1113807 | $\Omega$ | 138.34969 | | −0.89682542 | +0.25729519 | |
| $e$ | 0.0515593 | $i$ | 3.12071 | | −0.35634496 | +0.06189177 | |
| $P$ | 5.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 691 | 0.7− | 0.4− | 2003 03 30 | 645 | 0.1− | 0.2+ | 2005 11 03 | G96 | 0.3− | 0.4− |
| 1998 04 24 | 691 | 0.9− | 0.9− | 2004 05 17 | 704 | 0.3+ | 1.0+ | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 1998 04 24 | 691 | 0.1− | 0.7− | 2004 05 17 | 704 | 0.5+ | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 1998 04 27 | 691 | 0.5+ | 0.1− | 2004 05 17 | 704 | 1.3+ | 0.9− | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 1998 04 27 | 691 | 0.4+ | 0.2− | 2004 06 17 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 1998 04 27 | 691 | 0.5+ | 0.3− | 2004 06 17 | 691 | 0.1+ | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2000 10 01 | 691 | 0.0 | 0.3+ | 2004 06 17 | 691 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2000 10 01 | 691 | 0.4− | 0.4+ | 2005 06 17 | G96 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2000 10 01 | 691 | 0.3− | 0.1+ | 2005 06 17 | G96 | 0.7− | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.5+ |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2005 06 17 | G96 | 0.0 | 0.1− | 2006 11 02 | 703 | (1.7+ | 0.9+) |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2005 06 17 | G96 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.8+ | 0.9+ |
| 2001 12 17 | 704 | 0.2− | 0.3+ | 2005 07 11 | G96 | 0.2− | 0.2+ | 2006 11 02 | 703 | 0.5+ | 1.5+ |
| 2001 12 17 | 704 | 0.9− | 0.7− | 2005 07 11 | G96 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.5− | 0.9+ | 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2001 12 17 | 704 | (1.6− | 0.5+) | 2005 07 11 | G96 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2001 12 17 | 704 | 0.9− | 0.5− | 2005 07 28 | 644 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.4− |
| 2003 02 22 | 644 | 0.1+ | 0.5+ | 2005 07 28 | 644 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2003 02 22 | 644 | 0.7+ | 0.6+ | 2005 07 28 | 644 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2003 02 22 | 644 | 0.2− | 0.6+ | 2005 07 28 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2003 02 23 | 291 | 0.3+ | 0.0 | 2005 07 28 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2003 02 23 | 291 | 0.2− | 0.0 | 2005 07 28 | 644 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2003 02 23 | 291 | 0.6+ | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1− | 1.3− |
| 2003 02 26 | 599 | 0.2+ | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2003 02 26 | 599 | 0.0 | 0.2+ | 2005 08 06 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 703 | (2.6− | 0.9−) |
| 2003 02 26 | 599 | 0.2+ | 0.3+ | 2005 11 03 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2003 02 26 | 599 | 0.3+ | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | (0.6+ | 1.8+) |
| 2003 03 30 | 645 | 0.1− | 0.1+ | 2005 11 03 | G96 | 0.4− | 0.1− | | | | |

**(143491)∗ 2003 DO$_3$**

Discovered 2003 Feb. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 264.91302 | | (2000.0) | | | |
| $n$ | 0.18424036 | $\omega$ | 337.07099 | | −0.64198365 | −0.76502411 |
| $a$ | 3.0587656 | $\Omega$ | 152.78610 | | +0.71958532 | −0.62412339 |
| $e$ | 0.0755411 | $i$ | 6.39570 | | +0.26467706 | −0.15877062 |
| $P$ | 5.35 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.4+ | 1.6+ | 2003 02 25 | 599 | 0.0 | 0.3− | 2003 03 30 | 645 | 0.1− | 0.1− |
| 1998 03 29 | 704 | 0.5+ | 1.6− | 2003 02 25 | 599 | 0.0 | 0.2− | 2003 03 31 | 645 | 0.1− | 0.2− |
| 1998 03 29 | 704 | 0.7+ | 0.2− | 2003 02 25 | 599 | 0.0 | 0.3− | 2003 03 31 | 645 | 0.1− | 0.3− |
| 1998 03 29 | 704 | 1.2− | 1.1+ | 2003 02 25 | 599 | 0.0 | 0.0 | 2005 07 28 | 644 | 0.1− | 0.7+ |
| 1998 03 29 | 704 | (3.6− | 2.2+) | 2003 02 25 | 599 | 0.1− | 0.3− | 2005 07 28 | 644 | 0.3− | 0.2+ |
| 1998 04 22 | 704 | 0.3− | 0.9− | 2003 02 25 | 599 | 0.2+ | 0.0 | 2005 07 28 | 644 | 0.0 | 0.7+ |
| 1998 04 22 | 704 | 0.6+ | 0.8− | 2003 02 25 | 599 | 0.2+ | 0.3− | 2005 08 06 | 644 | 0.3− | 0.0 |
| 1998 04 22 | 704 | 0.4− | 0.8− | 2003 02 25 | 599 | 0.2+ | 0.2− | 2005 08 06 | 644 | 0.2− | 0.3+ |
| 1998 04 22 | 704 | 0.3+ | 0.1+ | 2003 02 26 | 599 | 0.1+ | 0.1− | 2005 08 06 | 644 | 0.3− | 0.5+ |
| 2001 08 21 | 691 | 0.7+ | 0.3− | 2003 02 26 | 599 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.9+ |
| 2001 08 21 | 691 | 0.4+ | 0.3− | 2003 02 26 | 599 | 0.1− | 0.2− | 2006 09 30 | 703 | 1.4− | 0.2+ |
| 2001 08 21 | 691 | 0.2+ | 0.2+ | 2003 02 27 | 599 | 0.0 | 0.1+ | 2006 09 30 | 703 | (1.9− | 1.5−) |
| 2001 08 21 | 691 | 0.8− | 0.3− | 2003 02 28 | 704 | 0.7− | 0.8+ | 2006 09 30 | 703 | 0.7− | 1.2+ |
| 2001 08 21 | 691 | 0.1− | 0.3− | 2003 02 28 | 704 | 0.8+ | 1.3+ | 2006 10 03 | G96 | 0.6+ | 0.2− |
| 2001 08 21 | 691 | 0.6− | 0.5+ | 2003 02 28 | 704 | 0.4− | 0.4+ | 2006 10 03 | G96 | 0.8+ | 0.6− |
| 2003 01 01 | 291 | 0.9− | 0.7+ | 2003 02 28 | 704 | 1.2+ | 0.4− | 2006 10 03 | G96 | 0.5+ | 0.1− |
| 2003 01 01 | 291 | 1.3− | 0.6+ | 2003 02 28 | 704 | 1.2− | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2003 01 01 | 291 | 0.4− | 0.1+ | 2003 02 28 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.1+ |
| 2003 02 08 | 608 | 0.5+ | 0.4− | 2003 02 28 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 1.2− | 0.7+ |
| 2003 02 08 | 608 | 0.5+ | 0.2− | 2003 02 28 | 704 | (2.1+ | 1.6+) | 2006 10 16 | 703 | 1.4− | 0.3− |
| 2003 02 08 | 608 | 0.5+ | 0.3− | 2003 02 28 | 608 | 0.8+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2003 02 22 | 644 | 0.4+ | 0.4+ | 2003 02 28 | 608 | 0.8+ | 0.7+ | 2006 10 22 | 703 | 1.0+ | 0.3+ |
| 2003 02 22 | 644 | 0.1+ | 0.2+ | 2003 02 28 | 608 | 0.9+ | 1.4+ | 2006 10 22 | 703 | 1.3+ | 0.0 |
| 2003 02 22 | 644 | 0.8+ | 0.3+ | 2003 03 06 | 699 | 0.8+ | 1.2+ | 2006 10 22 | 703 | (0.0 | 1.5−) |
| 2003 02 23 | 291 | 0.1+ | 0.0 | 2003 03 06 | 699 | 0.6− | 1.3+ | 2006 10 22 | 703 | 0.4+ | 0.1− |
| 2003 02 23 | 291 | 0.3+ | 0.1+ | 2003 03 06 | 699 | (0.8− | 2.1+) | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2003 02 23 | 291 | 0.5+ | 0.1+ | 2003 03 06 | 699 | 0.6+ | 0.9+ | 2006 11 24 | G96 | 0.5+ | 0.6− |
| 2003 02 23 | 699 | (0.6+ | 1.8+) | 2003 03 06 | 644 | 1.3+ | 0.9+ | 2006 11 24 | G96 | 0.6+ | 0.3− |
| 2003 02 23 | 699 | 0.2− | 0.0 | 2003 03 06 | 644 | 1.5+ | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2003 02 23 | 699 | 0.2− | 0.1− | 2003 03 06 | 644 | 0.6+ | 0.6+ | | | | |
| 2003 02 23 | 699 | (1.2− | 1.8−) | 2003 03 30 | 645 | 0.1− | 0.1− | | | | |

**(143492)∗ 2003 DP$_4$ = 2005 QV$_{149}$**

Discovered 2003 Feb. 22 at Kleť Observatory-KLENOT.

Id. A. Doppler (*MPO* 85919)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 174.16402 | | (2000.0) | | | |
| $n$ | 0.18366532 | $\omega$ | 190.00563 | | −0.71704376 | +0.68686622 |
| $a$ | 3.0651468 | $\Omega$ | 34.36306 | | −0.62411286 | −0.55691746 |
| $e$ | 0.0699836 | $i$ | 12.12820 | | −0.31037298 | −0.46696653 |
| $P$ | 5.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 0.4+ | 0.1+ | 2003 02 23 | 246 | 0.6+ | 0.8− | 2006 10 13 | 691 | 0.2+ | 0.5+ |
| 2000 09 24 | 699 | 0.4− | 0.8− | 2003 02 23 | 246 | 0.2− | 0.8− | 2006 10 13 | 691 | 0.2+ | 0.0 |
| 2000 09 24 | 699 | 0.5− | 0.4+ | 2003 02 23 | 246 | 0.2+ | 0.5− | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 2000 09 24 | 699 | 1.3+ | 1.1+ | 2003 02 23 | 246 | 0.2+ | 0.8− | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2000 11 30 | 691 | 0.2− | 0.3− | 2003 03 08 | 644 | 0.5+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2000 11 30 | 691 | 0.3+ | 0.3− | 2003 03 08 | 644 | 0.7+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2000 11 30 | 691 | 0.1+ | 0.2− | 2003 03 08 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.6− |
| 2003 02 21 | 644 | 0.8− | 0.3+ | 2003 03 08 | 644 | 0.5+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2003 02 21 | 644 | 0.5− | 0.2+ | 2003 03 08 | 644 | 0.6+ | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2003 02 21 | 644 | 0.0 | 0.4+ | 2003 03 08 | 644 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2003 02 22 | 246 | 0.3+ | 0.7+ | 2005 08 28 | E12 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2003 02 22 | 246 | 0.2− | 0.6+ | 2005 08 28 | E12 | 0.9− | 0.5+ | 2006 11 11 | 703 | 1.0− | 0.6− |
| 2003 02 22 | 246 | 0.2− | 0.7+ | 2005 08 28 | E12 | 0.3− | 1.2+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2003 02 22 | 246 | 0.1+ | 0.4+ | 2005 08 28 | E12 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2003 02 22 | 246 | 0.2− | 0.5+ | 2005 09 02 | 644 | 0.5− | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2003 02 22 | 246 | 0.4− | 0.6+ | 2005 09 02 | 644 | 0.7− | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2003 02 22 | 246 | 0.1− | 0.3+ | 2005 09 02 | 644 | 0.7− | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2003 02 22 | 246 | 0.4+ | 0.6+ | 2005 09 02 | 644 | 0.2− | 0.8+ | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2003 02 22 | 246 | 0.5+ | 0.6+ | 2005 09 02 | 644 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2003 02 22 | 246 | 0.2− | 0.6+ | 2005 09 02 | 644 | 0.6− | 0.7+ | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2003 02 22 | 246 | 0.2− | 0.8+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.9+ |
| 2003 02 22 | 246 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2003 02 23 | 246 | 0.4− | 0.4− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2003 02 23 | 246 | 0.1+ | 0.7− | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.6+ |
| 2003 02 23 | 246 | 0.2+ | 0.5− | 2006 10 13 | 691 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.6− | 1.0+ |

**(143493)∗ 2003 DF$_5$**

Discovered 2003 Feb. 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.04791 | | (2000.0) | | | |
| $n$ | 0.21124810 | $\omega$ | 148.75984 | | +0.01302193 | −0.99147040 |
| $a$ | 2.7921635 | $\Omega$ | 300.20325 | | +0.88366680 | +0.07210292 |
| $e$ | 0.1537200 | $i$ | 8.62981 | | +0.46793527 | −0.10857078 |
| $P$ | 4.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.5+ | 0.5− | 2003 02 03 | 699 | 1.2− | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2001 08 25 | 704 | 0.3− | 0.4+ | 2003 02 03 | 699 | (0.7+ | 2.8+) | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.5− | 0.6− | 2003 02 03 | 608 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 0.5− | 0.1− | 2003 02 03 | 608 | (0.4+ | 1.6+) | 2006 10 19 | 703 | 0.4− | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2003 02 03 | 608 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.6− | 1.0+ | 2003 02 09 | 608 | 0.7+ | 0.5− | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2001 09 25 | 704 | 1.0+ | 0.4+ | 2003 02 09 | 608 | 0.2+ | 0.6− | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 0.4+ | 0.6+ | 2003 02 09 | 608 | 0.3+ | 0.5− | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.7− | 1.1+ | 2003 02 19 | 644 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 09 29 | 644 | 1.3− | 0.3+ | 2003 02 19 | 644 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 2001 09 29 | 644 | 0.5− | 0.6+ | 2003 02 19 | 644 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.3− |
| 2001 09 29 | 644 | 0.9+ | 0.1+ | 2003 02 22 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.5− |
| 2001 09 29 | 644 | 0.6− | 0.4+ | 2003 02 22 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 1.3− |
| 2001 09 29 | 644 | 0.7+ | 0.2− | 2003 02 22 | 644 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.4− | 0.6− |
| 2001 09 29 | 644 | 0.7+ | 0.2− | 2005 07 04 | 644 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2001 10 13 | 644 | 0.3− | 0.1− | 2005 07 04 | 644 | 0.2− | 0.4+ | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2001 10 13 | 644 | 0.4− | 0.3− | 2005 07 04 | 644 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2001 10 13 | 644 | 0.4− | 0.1− | 2005 07 05 | 691 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.5− | 0.6+ |
| 2003 01 08 | 704 | 0.1+ | 0.5+ | 2005 07 05 | 691 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.6− | 1.0− |
| 2003 01 08 | 704 | 0.1− | 0.5+ | 2005 07 05 | 691 | 0.1− | 0.1− | 2006 11 21 | 703 | 0.1− | 0.3− |
| 2003 01 08 | 704 | 0.5− | 1.1+ | 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 11 21 | 703 | 0.0 | 0.4− |
| 2003 01 08 | 704 | 0.7+ | 0.0 | 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 11 21 | 703 | 0.4− | 0.5− |
| 2003 01 17 | 644 | 0.4+ | 0.8+ | 2005 07 09 | 691 | 0.1+ | 0.3− | 2006 11 22 | 703 | (2.3− | 1.4−) |
| 2003 01 17 | 644 | 0.7+ | 0.3+ | 2005 07 15 | G96 | 0.4− | 0.1+ | 2006 11 22 | 703 | (2.4− | 1.0−) |
| 2003 01 17 | 644 | 0.3+ | 0.1+ | 2005 07 15 | G96 | 0.0 | 0.1+ | 2006 11 22 | 703 | 1.2+ | 1.1+ |
| 2003 01 27 | 644 | 0.5+ | 0.5+ | 2005 07 15 | G96 | 0.0 | 0.3+ | 2006 11 22 | 703 | (1.9+ | 1.8+) |
| 2003 01 27 | 644 | 0.4+ | 0.3+ | 2005 07 15 | G96 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2003 01 27 | 644 | 0.2+ | 0.7+ | 2005 07 16 | 691 | 0.0 | 0.2+ | 2006 11 22 | 703 | 1.0+ | 0.6+ |
| 2003 02 03 | 699 | 0.8− | 0.6+ | 2005 07 16 | 691 | 0.1− | 0.4+ | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2003 02 03 | 699 | 0.6− | 1.0− | 2005 07 16 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.4− | 0.0 |

**(143494)∗ 2003 DB$_8$ = 1995 OS$_8$**

Discovered 2003 Feb. 22 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 43306)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.66117 | | (2000.0) | | | |
| $n$ | 0.19190513 | $\omega$ | 270.26001 | | +0.30528476 | −0.94943421 |
| $a$ | 2.9767680 | $\Omega$ | 161.44868 | | +0.93938109 | +0.28764062 |
| $e$ | 0.1666005 | $i$ | 13.32392 | | +0.15609093 | +0.12584733 |
| $P$ | 5.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.6+ | 0.2+ | 2003 02 26 | 599 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.2− |
| 1995 07 27 | 691 | 0.1+ | 0.1+ | 2003 02 26 | 599 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.3+ | 0.2+ | 2003 02 26 | 599 | 0.4+ | 0.0 | 2006 09 26 | 703 | 1.3+ | 0.2+ |
| 1995 07 30 | 691 | 0.3− | 0.3− | 2003 02 27 | 599 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.5+ |
| 1995 07 30 | 691 | 0.2− | 0.0 | 2003 03 06 | 699 | 1.4− | 1.1+ | 2006 09 29 | 699 | 0.9+ | 0.2+ |
| 1995 07 30 | 691 | 0.7− | 0.4− | 2003 03 06 | 699 | (2.1− | 1.0+) | 2006 09 29 | 699 | 0.1− | 0.8+ |
| 2001 09 25 | 704 | 0.6− | 0.2+ | 2003 03 06 | 699 | 0.4− | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.7− |
| 2001 09 25 | 704 | 0.7− | 0.0 | 2003 03 06 | 699 | 0.6− | 0.5− | 2006 09 29 | 699 | 0.7+ | 1.0+ |
| 2001 09 25 | 704 | 0.3+ | 0.7+ | 2003 03 24 | 691 | (0.4− | 1.7+) | 2006 10 16 | 703 | 0.5+ | 1.3− |
| 2001 09 25 | 704 | 0.6+ | 1.2+ | 2003 03 24 | 691 | (0.1− | 1.8+) | 2006 10 16 | 703 | 0.3+ | 0.9+ |
| 2001 10 15 | 644 | 0.7+ | 0.1+ | 2003 03 24 | 691 | (0.3− | 2.4+) | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2001 10 15 | 644 | 0.6+ | 0.1− | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2001 10 15 | 644 | 0.5+ | 0.2+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2001 10 23 | 699 | 0.1+ | 1.2+ | 2004 05 14 | 691 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.6− | 0.0 |
| 2001 10 23 | 699 | 0.6− | 0.4+ | 2004 05 14 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2001 10 23 | 699 | 0.2+ | 0.7+ | 2004 05 14 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.7− | 0.1+ |
| 2001 10 23 | 699 | 0.7+ | 0.3+ | 2004 05 19 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2001 10 28 | 644 | 0.6− | 0.1+ | 2004 05 19 | 691 | 0.0 | 0.7+ | 2006 10 23 | 644 | 0.7− | 0.1+ |
| 2001 10 28 | 644 | 0.4− | 0.6+ | 2004 05 19 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 1.2− | 1.4+ |
| 2001 10 28 | 644 | 1.0− | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.3− | 2006 10 28 | 703 | 0.9− | 0.5+ |
| 2003 02 22 | 644 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.6− |
| 2003 02 22 | 644 | 0.6+ | 0.6+ | 2006 09 18 | 703 | 1.2− | 0.6+ | 2006 10 28 | 703 | 0.1+ | 0.9+ |
| 2003 02 22 | 644 | 0.7+ | 0.5+ | 2006 09 18 | 703 | 0.8− | 1.1+ | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2003 02 25 | 599 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.8− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2003 02 25 | 599 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 1.1+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2003 02 25 | 599 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.7+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2003 02 25 | 599 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.1+ | | | | |

**(143495)∗ 2003 DW$_9$ = 2001 XY$_{122}$**

Discovered 2003 Feb. 24 by T. Pauwels at Uccle.

Id. G. V. Williams (*MPO* 43307)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 206.94363 | | (2000.0) | | | |
| $n$ | 0.16944887 | $\omega$ | 76.95992 | | −0.91070748 | −0.37454227 |
| $a$ | 3.2342749 | $\Omega$ | 80.82801 | | +0.27624398 | −0.86574727 |
| $e$ | 0.0590261 | $i$ | 10.16075 | | +0.30708494 | −0.33196347 |
| $P$ | 5.82 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | (1.8+ | 0.2+) | 2003 02 24 | 012 | 0.5− | 0.2− | 2004 04 22 | 704 | 0.3− | 0.6− |
| 2001 11 17 | 704 | 0.1+ | 1.2+ | 2003 02 24 | 012 | 0.3− | 0.2− | 2004 04 22 | 704 | 0.5+ | 0.8+ |
| 2001 11 17 | 704 | 0.3+ | 0.2+ | 2003 02 24 | 012 | 0.5− | 0.8− | 2004 05 18 | 704 | 0.3+ | 0.6− |
| 2001 12 13 | 644 | 0.0 | 0.1+ | 2003 02 24 | 012 | 0.2+ | 0.6− | 2004 05 18 | 704 | 0.0 | 0.9+ |
| 2001 12 13 | 644 | 0.0 | 0.2+ | 2003 02 26 | 704 | 0.6+ | 0.0 | 2004 05 18 | 704 | 0.1− | 0.7+ |
| 2001 12 13 | 644 | 0.6+ | 0.2+ | 2003 02 26 | 704 | 0.6+ | 0.2− | 2006 09 19 | 703 | 0.1− | 0.5+ |
| 2001 12 14 | 704 | 0.2+ | 0.1− | 2003 02 26 | 704 | 0.9− | 1.3+ | 2006 09 19 | 703 | 1.3− | 1.2+ |
| 2001 12 14 | 704 | 0.3− | 0.1− | 2003 02 26 | 704 | 1.2+ | 0.5− | 2006 09 19 | 703 | 1.3− | 0.4− |
| 2001 12 14 | 704 | 0.3− | 0.2+ | 2003 03 03 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.3− |
| 2001 12 14 | 704 | 0.4+ | 0.8+ | 2003 03 03 | 644 | 0.0 | 0.2+ | 2006 09 21 | 012 | 1.6+ | 0.6− |
| 2001 12 14 | 704 | 0.5− | 0.3− | 2003 03 03 | 644 | 0.1+ | 0.0 | 2006 09 21 | 012 | 0.0 | 1.4− |
| 2001 12 17 | 704 | 0.2− | 0.1− | 2003 03 07 | 695 | 0.4+ | 0.2− | 2006 09 21 | 012 | 0.4+ | 0.1+ |
| 2001 12 17 | 704 | 0.9− | 0.7+ | 2003 03 07 | 695 | 0.2+ | 0.4− | 2006 09 21 | 012 | 0.0 | 0.3− |
| 2001 12 17 | 704 | 0.6− | 0.4+ | 2003 03 07 | 695 | 0.4+ | 0.2− | 2006 09 21 | 012 | 0.4− | 0.4− |
| 2001 12 17 | 704 | 0.0 | 1.0− | 2003 03 07 | 695 | 0.2+ | 0.4− | 2006 09 21 | 012 | 1.1+ | 1.0− |
| 2003 02 08 | 699 | 1.5− | 0.7+ | 2003 03 10 | 695 | 0.5− | 0.3− | 2006 09 25 | 703 | (1.0+ | 1.8+) |
| 2003 02 08 | 699 | 0.7+ | 0.3+ | 2003 03 10 | 695 | 0.4− | 0.4− | 2006 09 25 | 703 | 1.2− | 1.0+ |
| 2003 02 08 | 699 | 0.4+ | 0.3+ | 2004 04 20 | 704 | 0.5+ | 1.1+ | 2006 09 25 | 703 | 0.5+ | 1.2+ |
| 2003 02 08 | 699 | 0.4− | 0.4+ | 2004 04 20 | 704 | 1.0+ | 0.5+ | 2006 09 25 | 703 | 0.1+ | 1.2+ |
| 2003 02 19 | 644 | 0.0 | 0.5+ | 2004 04 20 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2003 02 19 | 644 | 0.0 | 0.4+ | 2004 04 20 | 704 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2003 02 19 | 644 | 0.1− | 0.5+ | 2004 04 20 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.5+ |
| 2003 02 24 | 012 | 0.2+ | 0.6− | 2004 04 22 | 704 | 1.1− | 0.7+ | | | | |
| 2003 02 24 | 012 | 0.2+ | 0.4+ | 2004 04 22 | 704 | 0.3− | 0.3− | | | | |

**(143496)∗ 2003 DU$_{10}$**

Discovered 2003 Feb. 26 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 205.07216 | | (2000.0) | | | |
| $n$ | 0.18198535 | $\omega$ | 119.78152 | | −0.82229759 | +0.56765352 |
| $a$ | 3.0839815 | $\Omega$ | 94.83294 | | −0.53496537 | −0.74719059 |
| $e$ | 0.1901358 | $i$ | 2.29786 | | −0.19400703 | −0.34565258 |
| $P$ | 5.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.2− | 0.6+ | 2003 03 09 | 704 | 0.7+ | 0.6+ | 2004 06 12 | E12 | 0.7+ | 0.4+ |
| 1998 05 01 | 704 | 0.2+ | 0.9− | 2003 03 15 | 608 | 0.3− | 0.6− | 2004 06 12 | E12 | 0.7− | 0.4− |
| 1998 05 01 | 704 | 0.8− | 0.3− | 2003 03 15 | 608 | 0.3− | 0.2+ | 2004 06 12 | E12 | 0.5− | 0.5+ |
| 1998 05 01 | 704 | 0.0 | 1.3+ | 2003 03 15 | 608 | 0.1+ | 0.1+ | 2004 07 16 | 704 | (0.7− | 1.8+) |
| 1998 05 01 | 704 | (7.0− | 0.7−) | 2003 03 26 | 644 | 0.1− | 0.6+ | 2004 07 16 | 704 | 0.7− | 1.2+ |
| 2001 12 17 | 704 | 0.7+ | 0.5− | 2003 03 26 | 644 | 0.1− | 0.5+ | 2004 07 16 | 704 | 0.2− | 1.1+ |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2003 03 26 | 644 | 0.3+ | 0.4+ | 2004 07 16 | 704 | 0.5− | 0.2+ |
| 2001 12 17 | 704 | 0.2+ | 1.2− | 2003 03 26 | 699 | 1.1− | 0.2+ | 2004 07 16 | 704 | 0.2+ | 0.8+ |
| 2001 12 17 | 704 | 0.7+ | 0.7− | 2003 03 26 | 699 | 0.6− | 0.2+ | 2005 09 23 | 691 | 0.0 | 0.3+ |
| 2003 02 07 | 291 | 0.5− | 0.1+ | 2003 03 26 | 699 | 0.5− | 0.3− | 2005 09 23 | 691 | 0.1+ | 0.3+ |
| 2003 02 07 | 291 | 0.4− | 0.0 | 2003 03 26 | 699 | 0.6− | 0.7+ | 2005 09 23 | 691 | 0.1+ | 0.2+ |
| 2003 02 07 | 291 | 0.4− | 0.1− | 2003 03 27 | 691 | 1.0+ | 0.9− | 2005 10 06 | G96 | 0.1+ | 0.1+ |
| 2003 02 11 | 608 | 0.0 | 0.3− | 2003 03 27 | 691 | 1.2+ | 1.3+ | 2005 10 06 | G96 | 0.1+ | 0.2+ |
| 2003 02 11 | 608 | 0.1− | 0.6− | 2003 03 27 | 691 | 0.7+ | 0.7− | 2005 10 06 | G96 | 0.1+ | 0.1+ |
| 2003 02 11 | 608 | 0.1+ | 0.7− | 2003 03 27 | 691 | 1.2+ | 0.9+ | 2005 10 06 | G96 | 0.1+ | 0.2+ |
| 2003 02 26 | 599 | 0.1− | 0.1− | 2003 03 27 | 691 | 1.0+ | 0.9− | 2005 11 06 | G96 | 0.2+ | 0.9+ |
| 2003 02 26 | 599 | 0.3− | 0.1− | 2003 03 27 | 691 | 1.4+ | 1.3+ | 2005 11 06 | G96 | 0.6− | 0.1+ |
| 2003 02 26 | 599 | 0.2− | 0.0 | 2003 03 27 | 704 | 0.1− | 0.0 | 2005 11 06 | G96 | 0.1− | 0.2+ |
| 2003 02 26 | 599 | 0.4− | 0.4+ | 2003 03 27 | 704 | 0.6− | 0.4+ | 2005 11 06 | G96 | 0.3− | 0.2− |
| 2003 02 27 | 599 | 0.1− | 0.3+ | 2003 03 27 | 704 | 0.5− | 0.3+ | 2006 10 19 | G96 | 0.1− | 1.0− |
| 2003 02 27 | 599 | 0.4− | 0.3+ | 2003 03 30 | 704 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2003 02 27 | 599 | 0.4− | 0.0 | 2003 03 30 | 704 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2003 02 27 | 599 | 0.1− | 0.1+ | 2003 03 30 | 704 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 2003 03 06 | 704 | 0.4+ | 0.4− | 2003 03 30 | 704 | 0.5− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2003 03 06 | 704 | 0.9+ | 0.4+ | 2003 03 30 | 704 | 0.4− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2003 03 06 | 704 | 0.5+ | 0.0 | 2003 04 01 | 645 | 0.4− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2003 03 06 | 704 | 0.1+ | 0.1− | 2003 04 01 | 645 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2003 03 06 | 704 | 0.4+ | 1.5+ | 2003 04 03 | 699 | 0.2+ | 0.7+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2003 03 09 | 704 | 0.1− | 0.2+ | 2003 04 03 | 699 | 0.4+ | 1.1+ | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2003 03 09 | 704 | 0.5+ | 0.1+ | 2003 04 03 | 699 | 0.7− | 0.4− | 2006 11 23 | 691 | 1.4− | 2.0+ |
| 2003 03 09 | 704 | 0.4+ | 0.6+ | 2003 04 03 | 699 | 0.3+ | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.3− |
| 2003 03 09 | 704 | 0.2+ | 0.1− | 2004 06 12 | E12 | 1.0+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1− |

**(143497)∗ 2003 DB$_{11}$ = 2000 ST$_{302}$**

Discovered 2003 Feb. 23 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 47309)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.12185 | | (2000.0) | | | |
| $n$ | 0.16889419 | $\omega$ | 314.14939 | | +0.35496598 | +0.93179350 |
| $a$ | 3.2413524 | $\Omega$ | 336.32404 | | −0.79471982 | +0.25799784 |
| $e$ | 0.0524668 | $i$ | 10.89433 | | −0.49236121 | +0.25533895 |
| $P$ | 5.84 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 0.1− | 1.3+ | 2003 03 06 | 644 | 0.8+ | 0.7+ | 2006 09 17 | 703 | 0.8+ | 0.7+ |
| 2000 09 26 | 699 | 0.8− | 0.8+ | 2003 03 07 | 699 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.4− | 0.5− |
| 2000 09 26 | 699 | 0.1− | 0.9+ | 2003 03 07 | 699 | 0.7+ | 0.9+ | 2006 09 17 | 703 | 0.2− | 0.4− |
| 2000 09 26 | 699 | 0.9+ | 1.3− | 2003 03 07 | 699 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.8+ |
| 2000 09 28 | 704 | 0.5+ | 0.9− | 2003 03 07 | 699 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.4+ |
| 2000 09 28 | 704 | 0.4− | 0.0 | 2004 04 13 | E12 | 1.0− | 1.3+ | 2006 09 18 | 703 | 0.3+ | 0.3− |
| 2000 09 28 | 704 | 0.3+ | 0.6− | 2004 04 13 | E12 | 0.9− | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.1− |
| 2000 10 03 | 704 | 0.1− | 0.7+ | 2004 04 13 | E12 | (2.6+ | 0.9+) | 2006 09 18 | 703 | 0.4+ | 1.0− |
| 2000 10 03 | 704 | 0.2− | 0.2+ | 2004 04 13 | E12 | 0.6− | 0.1+ | 2006 09 18 | G92 | 1.3− | 1.4+ |
| 2000 10 03 | 704 | 1.1− | 0.0 | 2004 04 14 | E12 | 0.3− | 1.4+ | 2006 09 18 | G92 | 0.4+ | 0.0 |
| 2000 10 03 | 704 | 0.3− | 0.2+ | 2004 04 14 | E12 | 0.4− | 1.0+ | 2006 09 18 | G92 | 1.0+ | 0.0 |
| 2000 10 03 | 704 | 0.8− | 0.4+ | 2004 04 14 | E12 | 0.1− | 0.7+ | 2006 09 28 | 703 | 0.6+ | 0.3− |
| 2001 12 09 | 704 | 0.7+ | 0.2+ | 2004 04 14 | E12 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.5+ | 0.4+ |
| 2001 12 09 | 704 | 0.1− | 0.2− | 2004 04 25 | 704 | 1.0+ | 0.5− | 2006 09 28 | 703 | 1.3− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.7+ | 0.8− | 2004 04 25 | 704 | 1.2+ | 1.0+ | 2006 09 28 | 703 | 0.5+ | 0.2− |
| 2003 01 26 | 608 | 0.7+ | 0.6− | 2004 04 25 | 704 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2003 01 26 | 608 | 0.6+ | 0.4− | 2004 04 25 | 704 | 0.0 | 0.9− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2003 01 26 | 608 | 0.3+ | 0.6− | 2005 07 10 | E12 | 0.2− | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 07 10 | E12 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.4+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 07 10 | E12 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2003 02 22 | 699 | 0.3− | 1.3+ | 2005 07 10 | E12 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.6+ |
| 2003 02 22 | 699 | 0.2+ | 0.6+ | 2005 07 29 | E12 | 0.3+ | 0.9+ | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 2003 02 22 | 699 | 0.1− | 0.0 | 2005 07 29 | E12 | 0.3+ | 0.6+ | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2003 02 22 | 699 | 0.3+ | 0.4− | 2005 07 29 | E12 | 0.4− | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2003 02 23 | 291 | 0.3+ | 0.5+ | 2005 07 29 | E12 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.8− | 0.6− |
| 2003 02 23 | 291 | 0.0 | 0.5+ | 2005 08 12 | E12 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.5+ | 0.0 |
| 2003 02 23 | 291 | 0.0 | 0.5+ | 2005 08 12 | E12 | 0.1− | 0.9+ | 2006 10 27 | 703 | 0.8− | 0.0 |
| 2003 02 26 | 599 | 0.3+ | 0.1+ | 2005 08 12 | E12 | 0.2− | 0.2+ | 2006 10 27 | 703 | 1.1− | 0.1− |
| 2003 02 26 | 599 | 0.3+ | 0.2+ | 2005 08 12 | E12 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.4− | 0.3− |
| 2003 02 26 | 599 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.3+ | 0.6− | 2006 10 31 | 703 | 0.4− | 1.8+ |
| 2003 02 26 | 599 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.7− | 0.3+ | 2006 10 31 | 703 | 0.1+ | 1.3+ |
| 2003 03 06 | 644 | 0.5+ | 0.6+ | 2006 09 16 | 703 | (0.2− | 2.0+) | 2006 10 31 | 703 | 0.1+ | 0.7− |
| 2003 03 06 | 644 | 0.5+ | 0.9+ | 2006 09 16 | 703 | 0.9− | 0.4− | 2006 10 31 | 703 | 0.8− | 0.8+ |

**(143498)∗ 2003 DJ$_{12}$**

Discovered 2003 Feb. 25 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.60356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17431303 | $\omega$ | 181.41027 | | +0.17290178 | | +0.98398932 |
| $a$ | 3.1738238 | $\Omega$ | 98.54766 | | −0.90323529 | | +0.17591440 |
| $e$ | 0.1049684 | $i$ | 2.50629 | | −0.39277346 | | +0.02862060 |
| $P$ | 5.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 25 | 599 | 0.6+ | 0.4+ | 2004 06 07 | 699 | 0.0 | 0.2+ | 2005 09 05 | 703 | 0.8− | 0.1− |
| 2003 02 25 | 599 | 0.4+ | 0.8+ | 2004 06 07 | 699 | 0.6+ | 0.8+ | 2005 09 05 | 703 | 0.9+ | 0.8+ |
| 2003 02 25 | 599 | 0.6+ | 0.7+ | 2004 06 12 | E12 | 0.0 | 0.3− | 2005 09 14 | 691 | 0.4+ | 0.1− |
| 2003 02 25 | 599 | 0.5+ | 0.5+ | 2004 06 12 | E12 | 0.7+ | 0.5+ | 2005 09 14 | 691 | 0.3+ | 0.1+ |
| 2003 02 26 | 599 | 0.1− | 0.8+ | 2004 06 12 | E12 | 0.4− | 0.6+ | 2005 09 14 | 691 | 0.2+ | 0.3+ |
| 2003 02 26 | 599 | 0.3+ | 0.7+ | 2004 06 12 | E12 | (2.1− | 0.4+) | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2003 02 26 | 599 | 0.4+ | 0.9+ | 2005 08 06 | 644 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1+ |
| 2003 02 27 | 599 | 0.2+ | 0.6+ | 2005 08 06 | 644 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.1+ |
| 2003 03 06 | 699 | 0.2+ | 0.3+ | 2005 08 06 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2003 03 06 | 699 | 0.2− | 0.4+ | 2005 08 27 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2003 03 06 | 699 | (2.0+ | 0.1−) | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2003 03 06 | 699 | 0.4− | 0.2+ | 2005 08 27 | 644 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.8+ | 0.3− |
| 2004 05 15 | 704 | 0.6− | 0.6− | 2005 08 29 | 699 | 0.8− | 0.8+ | 2006 10 28 | 691 | 0.4− | 0.3+ |
| 2004 05 15 | 704 | 0.5+ | 0.6− | 2005 08 29 | 699 | 1.0− | 1.1− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2004 05 15 | 704 | 0.8+ | 0.2+ | 2005 08 29 | 699 | 0.4+ | 1.0+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2004 05 20 | 599 | 0.1+ | 0.5+ | 2005 08 29 | 699 | 0.2− | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2004 05 20 | 599 | 0.1+ | 0.5+ | 2005 08 31 | 691 | 0.7− | 0.4+ | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2004 05 20 | 599 | 0.1+ | 0.4+ | 2005 08 31 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 2004 05 20 | 599 | 0.0 | 0.5+ | 2005 08 31 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.9+ | 1.3+ |
| 2004 06 07 | 699 | 0.3− | 0.5+ | 2005 09 05 | 703 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2004 06 07 | 699 | 0.6− | 0.1− | 2005 09 05 | 703 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.9− | 0.1+ |

**(143499)∗ 2003 DQ$_{12}$ = 1997 EG$_{44}$**

Discovered 2003 Feb. 26 by CINEOS at Campo Imperatore.

Id. G. V. Williams (*MPO* 47310)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.29736 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16870339 | $\omega$ | 329.72526 | | −0.83243487 | | −0.55407131 |
| $a$ | 3.2437958 | $\Omega$ | 176.59920 | | +0.53052971 | | −0.80085705 |
| $e$ | 0.0217399 | $i$ | 7.32334 | | +0.15997007 | | −0.22722890 |
| $P$ | 5.84 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 03 | 691 | 0.8− | 0.1+ | 2003 04 01 | 704 | 0.1+ | 0.8+ | 2005 10 30 | G96 | 0.5− | 0.2+ |
| 1992 05 03 | 691 | 0.4− | 0.0 | 2003 04 01 | 704 | 0.2+ | 1.4+ | 2005 10 30 | G96 | 0.5+ | 0.3+ |
| 1992 05 03 | 691 | 0.0 | 0.3+ | 2003 04 01 | 704 | (1.9+ | 2.3+) | 2005 10 30 | G96 | 0.2− | 0.2+ |
| 1997 03 11 | 704 | 0.3+ | 0.4− | 2003 04 01 | 704 | (1.8+ | 0.4+) | 2005 10 30 | G96 | 0.3− | 0.3− |
| 1997 03 11 | 704 | 1.9+ | 1.3− | 2003 04 04 | 704 | 0.7+ | 1.4+ | 2006 09 16 | 699 | 0.2− | 1.1+ |
| 1997 03 12 | 704 | 1.2+ | 0.7+ | 2003 04 04 | 704 | 0.9+ | 0.7+ | 2006 09 16 | 699 | 0.4− | 0.4+ |
| 1997 03 12 | 704 | 1.8+ | 0.7− | 2003 04 04 | 704 | (0.6+ | 1.8+) | 2006 09 16 | 699 | 0.7+ | 1.5+ |
| 2000 09 24 | 704 | 0.2+ | 1.6+ | 2003 04 04 | 704 | (1.3+ | 2.4+) | 2006 09 16 | 699 | (0.7− | 2.1+) |
| 2000 09 24 | 704 | 1.3+ | 1.1+ | 2003 04 09 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2000 09 24 | 704 | 0.0 | 1.2+ | 2003 04 09 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2000 09 24 | 704 | 1.1+ | 0.7+ | 2003 04 09 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2001 12 11 | 704 | 0.2− | 0.1− | 2004 04 30 | 691 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2001 12 11 | 704 | 0.5− | 0.3+ | 2004 04 30 | 691 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.1+ |
| 2001 12 11 | 704 | (1.6+ | 0.8+) | 2004 04 30 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2001 12 11 | 704 | 0.1+ | 1.0+ | 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.0− | 1.4+ |
| 2003 02 26 | 599 | 0.2+ | 0.5+ | 2005 07 04 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.6− | 0.3+ |
| 2003 02 26 | 599 | 0.2+ | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2003 02 26 | 599 | 0.3+ | 0.3+ | 2005 07 05 | 644 | 0.2+ | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2003 02 26 | 599 | 0.3+ | 0.3+ | 2005 07 05 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.4+ |
| 2003 02 27 | 599 | 0.3+ | 0.4+ | 2005 07 05 | 644 | 0.3+ | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2003 02 27 | 599 | 0.4+ | 0.3+ | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2003 02 27 | 599 | 0.4+ | 0.3+ | 2005 07 08 | 691 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 02 27 | 599 | 0.1− | 0.1+ | 2005 07 08 | 691 | (1.6+ | 2.2−) | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2003 03 09 | 704 | 1.3+ | 1.3+ | 2005 07 29 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2003 03 09 | 704 | 0.9+ | 0.8+ | 2005 07 29 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 03 09 | 704 | 0.7+ | 1.2+ | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2003 03 09 | 704 | (2.8− | 1.2−) | 2005 08 06 | 644 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2003 03 09 | 704 | 0.0 | 1.5+ | 2005 08 06 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.5+ |
| 2003 03 27 | 691 | 0.4− | 0.2+ | 2005 08 06 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 2.5− | 0.2− |
| 2003 03 27 | 691 | 0.1− | 0.2+ | 2005 09 01 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.8− | 0.9+ |
| 2003 03 27 | 691 | 0.0 | 0.4+ | 2005 09 01 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.0 |
| 2003 04 01 | 704 | 0.7+ | 0.9+ | 2005 09 01 | 691 | 0.3+ | 0.3+ | | | | |

**(143500)∗ 2003 DU$_{13}$**

Discovered 2003 Feb. 25 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.52182 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19014611 | $\omega$ | 110.75276 | | −0.21906909 | | −0.97539664 |
| $a$ | 2.9950983 | $\Omega$ | 351.78352 | | +0.81853822 | | −0.16994323 |
| $e$ | 0.0754319 | $i$ | 9.95289 | | +0.53104041 | | −0.14043041 |
| $P$ | 5.18 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.7+ | 0.2− | 2003 03 06 | 699 | 0.8− | 0.6− | 2006 09 30 | 691 | 0.3+ | 0.2− |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2003 03 06 | 699 | 1.1+ | 1.1− | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2001 10 15 | 704 | 0.4− | 0.6− | 2003 03 06 | 699 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 10 15 | 704 | 0.3− | 0.3− | 2003 03 06 | 704 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.7− | 0.2+ |
| 2001 10 15 | 704 | 0.1+ | 0.3− | 2003 03 06 | 704 | 0.0 | 0.8− | 2006 10 11 | 644 | 0.4− | 0.3+ |
| 2001 11 11 | 704 | 0.4− | 1.0+ | 2003 03 06 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2001 11 11 | 704 | (2.5+ | 0.7−) | 2003 03 06 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2001 11 11 | 704 | 0.3+ | 0.0 | 2003 03 06 | 704 | (0.1− | 1.6+) | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2001 11 11 | 704 | 0.3− | 0.3+ | 2003 03 07 | 644 | 0.3+ | 0.5+ | 2006 10 25 | 106 | 0.8+ | 1.0− |
| 2003 01 27 | 704 | 0.6− | 0.5− | 2003 03 07 | 644 | 0.2+ | 0.2+ | 2006 10 25 | 106 | 0.4− | 0.2− |
| 2003 01 27 | 704 | 0.6− | 0.0 | 2003 03 07 | 644 | 0.2+ | 0.4+ | 2006 10 25 | 106 | 0.0 | 0.1+ |
| 2003 01 27 | 704 | 0.2+ | 0.3− | 2005 07 17 | 644 | 0.4− | 1.1+ | 2006 10 26 | 106 | 0.0 | 0.8+ |
| 2003 02 01 | 704 | 0.4+ | 0.8+ | 2005 07 17 | 644 | 0.6− | 0.9+ | 2006 10 27 | 703 | (1.9− | 1.0+) |
| 2003 02 01 | 704 | 0.3− | 0.2+ | 2005 07 17 | 644 | 0.4− | 1.1+ | 2006 10 27 | 703 | 0.7− | 0.1− |
| 2003 02 01 | 704 | 0.7− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.4− |
| 2003 02 25 | 608 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.6− | 0.3+ |
| 2003 02 25 | 608 | 0.1+ | 1.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.5+ |
| 2003 02 25 | 608 | 0.3− | 0.8+ | 2006 09 28 | 703 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.7− | 0.2− |
| 2003 02 27 | 608 | 0.3+ | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.5− |
| 2003 02 27 | 608 | 0.6+ | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.2+ | 2006 11 14 | 703 | 0.1− | 1.2+ |
| 2003 02 27 | 608 | 0.1+ | 0.4− | 2006 09 28 | 703 | 0.3− | 0.1+ | | | | |
| 2003 03 06 | 699 | 0.4+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2− | | | | |

**(143501)∗ 2003 DY$_{13}$ = 2003 BO$_{70}$**

Discovered 2003 Feb. 26 by NEAT at Haleakala.

Id. A. Doppler (d, *MPO* 85925)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.81523 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18223297 | $\omega$ | 312.91305 | | −0.00151215 | −0.99280923 | |
| $a$ | 3.0811872 | $\Omega$ | 136.73161 | | +0.96082165 | −0.03461836 | |
| $e$ | 0.1371789 | $i$ | 10.05742 | | +0.27716327 | +0.11459236 | |
| $P$ | 5.41 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4+ | 0.7+ | 2003 01 30 | 699 | 0.4+ | 1.3+ | 2003 03 07 | 699 | 1.0+ | 0.6+ | |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2003 01 30 | 699 | 0.5+ | 0.8+ | 2003 03 07 | 699 | 0.1− | 0.4+ | |
| 2001 09 25 | 704 | 1.0+ | 0.5+ | 2003 02 01 | 608 | 0.4− | 0.9− | 2003 03 07 | 699 | 0.1+ | 0.5+ | |
| 2001 10 15 | 644 | 0.4− | 0.8+ | 2003 02 01 | 608 | 0.2− | 0.3+ | 2005 06 04 | 691 | 0.4− | 0.5+ | |
| 2001 10 15 | 644 | 0.2− | 0.8+ | 2003 02 01 | 608 | 0.4− | 0.4− | 2005 06 04 | 691 | 0.2− | 0.7+ | |
| 2001 10 15 | 644 | 0.4− | 0.7+ | 2003 02 21 | 644 | 0.4+ | 0.4+ | 2005 06 04 | 691 | 0.1− | 0.2+ | |
| 2001 10 23 | 644 | 0.7− | 0.1+ | 2003 02 21 | 644 | 0.2+ | 0.5+ | 2005 06 17 | 691 | 0.2+ | 0.3+ | |
| 2001 10 23 | 644 | 0.6− | 0.1+ | 2003 02 21 | 644 | 0.7+ | 0.5+ | 2005 06 17 | 691 | 0.0 | 0.3+ | |
| 2001 10 23 | 644 | 0.8− | 0.2+ | 2003 02 21 | 049 | 0.1− | 0.6+ | 2005 06 17 | 691 | 0.4+ | 0.2+ | |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2003 02 21 | 049 | 0.3− | 0.7+ | 2006 09 17 | 699 | 0.3− | 0.1+ | |
| 2001 11 11 | 645 | 0.1+ | 0.0 | 2003 02 21 | 049 | 0.3− | 0.6+ | 2006 09 17 | 699 | (2.4− | 1.0+) | |
| 2001 11 18 | 608 | 0.4− | 0.8+ | 2003 02 22 | 699 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 1.1− | 1.3+ | |
| 2001 11 18 | 608 | 0.8− | 1.1+ | 2003 02 22 | 699 | 0.7+ | 0.6+ | 2006 09 17 | 699 | 0.3+ | 0.4− | |
| 2001 11 18 | 608 | 0.8− | 1.0+ | 2003 02 22 | 699 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.1+ | |
| 2001 11 20 | 699 | 0.1+ | 0.2+ | 2003 02 22 | 699 | 0.4− | 0.6− | 2006 09 19 | 703 | 1.4+ | 0.2− | |
| 2001 11 20 | 699 | 0.0 | 0.4+ | 2003 02 26 | 608 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.5+ | |
| 2001 11 20 | 699 | 0.4− | 0.8+ | 2003 02 26 | 608 | 0.7+ | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.6+ | |
| 2001 11 20 | 699 | 0.3+ | 0.6− | 2003 02 26 | 608 | 0.4+ | 0.1+ | 2006 09 25 | 703 | 0.3− | 0.5+ | |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2003 02 27 | 608 | 0.6+ | 0.2− | 2006 09 25 | 703 | 0.3+ | 0.6+ | |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2003 02 27 | 608 | 0.2+ | 0.8− | 2006 09 25 | 703 | 0.2− | 0.4− | |
| 2003 01 04 | 291 | 0.3− | 0.2+ | 2003 02 27 | 608 | 0.2+ | 0.4− | 2006 09 25 | 703 | 0.2− | 1.0+ | |
| 2003 01 04 | 291 | 0.1− | 0.3+ | 2003 03 06 | 704 | (1.7+ | 1.4+) | 2006 10 21 | 703 | 0.8− | 1.0− | |
| 2003 01 04 | 291 | 0.3− | 0.5+ | 2003 03 06 | 704 | (0.1+ | 2.5+) | 2006 10 21 | 703 | 0.1− | 0.6+ | |
| 2003 01 30 | 699 | 0.6+ | 0.6+ | 2003 03 06 | 704 | (0.3− | 2.3+) | 2006 10 21 | 703 | 0.1+ | 1.0+ | |
| 2003 01 30 | 699 | 0.2− | 0.1+ | 2003 03 07 | 699 | 0.4− | 1.3+ | 2006 10 21 | 703 | 0.2+ | 0.8+ | |

**(143502)∗ 2003 DS$_{14}$ = 2001 WT$_{76}$**

Discovered 2003 Feb. 25 by NEAT at Haleakala.
Id. A. Doppler (*MPO* 47311)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.95090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22255292 | $\omega$ | 126.85005 | | −0.69666323 | +0.71667794 | |
| $a$ | 2.6967903 | $\Omega$ | 98.95661 | | −0.66812347 | −0.63184322 | |
| $e$ | 0.0693215 | $i$ | 1.86463 | | −0.26128791 | −0.29520650 | |
| $P$ | 4.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.5+ | 0.4− | 2003 01 31 | 704 | 0.3+ | 0.1+ | 2005 10 01 | 704 | 0.3− | 1.0+ | |
| 1992 11 18 | 691 | 0.0 | 0.1+ | 2003 01 31 | 704 | 0.1− | 0.3+ | 2005 10 01 | 691 | 0.2− | 0.3+ | |
| 1992 11 18 | 691 | 0.3− | 0.4− | 2003 02 07 | I03 | 0.3+ | 0.4− | 2005 10 01 | 691 | 0.4− | 0.2+ | |
| 2000 08 27 | 807 | 0.1+ | 0.2+ | 2003 02 07 | I03 | 0.3− | 0.7+ | 2005 10 12 | 691 | 0.3+ | 0.3+ | |
| 2000 08 27 | 807 | 0.0 | 0.2+ | 2003 02 07 | I03 | 0.2+ | 0.9+ | 2005 10 12 | 691 | 0.5+ | 0.2+ | |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2003 02 25 | 608 | (2.1+ | 3.0+) | 2005 10 12 | 691 | 0.1+ | 0.5+ | |
| 2001 11 20 | 704 | 0.4− | 0.5− | 2003 02 25 | 608 | (1.8+ | 2.8+) | 2005 10 29 | G96 | 0.5− | 0.1− | |
| 2001 11 20 | 704 | 0.0 | 0.5− | 2003 02 25 | 608 | (2.5+ | 2.9+) | 2005 10 29 | G96 | 0.1− | 0.1− | |
| 2001 11 20 | 704 | 0.6+ | 0.3− | 2003 02 28 | 704 | 1.2+ | 0.4+ | 2005 10 29 | G96 | 0.1+ | 0.1− | |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2003 02 28 | 704 | 0.8+ | 0.3+ | 2005 10 29 | G96 | 0.2− | 0.3− | |
| 2001 11 21 | 704 | 0.7+ | 0.4+ | 2003 02 28 | 704 | 1.0+ | 0.6+ | 2006 09 24 | 691 | 0.3− | 0.2− | |
| 2001 11 21 | 704 | 0.5− | 0.2− | 2003 03 06 | 704 | (0.2− | 2.2+) | 2006 09 24 | 691 | 0.2+ | 0.1+ | |
| 2001 11 21 | 704 | 0.5− | 0.6− | 2003 03 06 | 704 | 1.2+ | 0.5+ | 2006 09 24 | 691 | 0.6+ | 0.0 | |
| 2001 11 21 | 704 | 0.1+ | 0.1− | 2003 03 06 | 704 | 0.5+ | 0.9+ | 2006 12 01 | G96 | 0.1+ | 0.3+ | |
| 2001 11 21 | 704 | 0.9+ | 0.2+ | 2005 10 01 | 704 | 0.7− | 0.6+ | 2006 12 01 | G96 | 0.3− | 0.2− | |
| 2002 12 14 | 645 | 0.1− | 0.1+ | 2005 10 01 | 704 | 0.7− | 0.6− | 2006 12 01 | G96 | 0.4− | 0.2− | |
| 2002 12 14 | 645 | 0.1− | 0.0 | 2005 10 01 | 704 | 0.4− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.1− | |
| 2003 01 31 | 704 | 1.0− | 0.4− | 2005 10 01 | 691 | 0.5− | 0.2+ | | | | | |

**(143503)∗ 2003 DC$_{15}$**

Discovered 2003 Feb. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.81349 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21582468 | $\omega$ | 183.37866 | | −0.98992453 | −0.13646843 | |
| $a$ | 2.7525506 | $\Omega$ | 348.56816 | | +0.13396885 | −0.81634348 | |
| $e$ | 0.0644306 | $i$ | 10.98260 | | +0.04584510 | −0.56121269 | |
| $P$ | 4.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.1− | 0.3+ | 2003 02 06 | 699 | 0.1+ | 0.6+ | 2003 03 25 | 704 | 0.8+ | 0.6+ | |
| 1996 09 08 | 691 | 0.1− | 0.1+ | 2003 02 06 | 699 | 0.1− | 0.3+ | 2003 03 25 | 704 | 0.1− | 0.4− | |
| 1996 09 08 | 691 | 0.1− | 0.1+ | 2003 02 06 | 699 | 1.1+ | 0.4+ | 2005 07 28 | 644 | 0.3− | 0.4+ | |
| 2001 10 13 | 699 | 0.1− | 0.2− | 2003 02 26 | 704 | 0.2+ | 0.4+ | 2005 07 28 | 644 | 0.1+ | 0.3+ | |
| 2001 10 13 | 699 | 0.3+ | 0.6− | 2003 02 26 | 704 | 0.3+ | 0.8− | 2005 07 28 | 644 | 0.2− | 0.5+ | |
| 2001 10 13 | 699 | 0.2+ | 1.5− | 2003 02 26 | 704 | 0.8+ | 0.6+ | 2005 07 29 | 644 | 0.2− | 0.3+ | |
| 2001 10 13 | 699 | 0.7− | 0.8+ | 2003 02 26 | 704 | 0.3+ | 0.8+ | 2005 07 29 | 644 | 0.2− | 0.1+ | |
| 2001 10 20 | 644 | 0.3+ | 0.1− | 2003 02 28 | 704 | 0.6+ | 0.5+ | 2005 07 29 | 644 | 0.0 | 0.3+ | |
| 2001 10 20 | 644 | 0.5+ | 0.1− | 2003 02 28 | 704 | 0.2− | 0.2+ | 2005 08 31 | 691 | 0.0 | 0.2+ | |
| 2001 10 20 | 644 | 0.6+ | 0.0 | 2003 02 28 | 704 | 1.7+ | 1.0+ | 2005 08 31 | 691 | 0.1− | 0.4+ | |
| 2002 11 14 | 644 | 0.2+ | 0.4− | 2003 02 28 | 704 | 0.2+ | 0.9+ | 2005 08 31 | 691 | 0.2− | 0.3+ | |
| 2002 11 14 | 644 | 0.3+ | 0.3+ | 2003 02 28 | 704 | 0.6+ | 1.1+ | 2005 09 05 | 703 | 0.8− | 0.2+ | |
| 2002 11 14 | 644 | 0.4+ | 0.4− | 2003 03 05 | 704 | 0.3− | 0.3+ | 2005 09 05 | 703 | 0.7− | 0.1+ | |
| 2003 01 05 | 699 | 0.6− | 0.8+ | 2003 03 05 | 704 | 0.4+ | 0.3+ | 2005 09 05 | 703 | 0.0 | 0.2+ | |
| 2003 01 05 | 699 | 0.5− | 1.4+ | 2003 03 05 | 704 | 0.2+ | 0.9+ | 2005 09 05 | 703 | 0.5+ | 0.9+ | |
| 2003 01 05 | 699 | 0.9+ | 1.2− | 2003 03 06 | 704 | 0.3− | 0.0 | 2005 09 22 | 644 | 0.2+ | 0.2+ | |
| 2003 01 05 | 699 | 0.2− | 0.6+ | 2003 03 06 | 704 | 0.7+ | 0.3+ | 2005 09 22 | 644 | 0.0 | 0.0 | |
| 2003 01 10 | 704 | 0.6+ | 1.4+ | 2003 03 06 | 704 | 0.2+ | 0.5+ | 2005 09 22 | 644 | 0.6− | 0.2+ | |
| 2003 01 10 | 704 | 0.1+ | 0.1+ | 2003 03 06 | 704 | 0.3− | 0.6+ | 2005 10 29 | G96 | 0.0 | 0.4− | |
| 2003 01 10 | 704 | 1.9+ | 0.9− | 2003 03 06 | 704 | 0.3− | 0.5+ | 2005 10 29 | G96 | 0.7+ | 0.6− | |
| 2003 01 10 | 704 | 0.1− | 0.1+ | 2003 03 07 | 644 | 0.0 | 0.3+ | 2005 10 29 | G96 | 0.2+ | 0.2− | |
| 2003 01 25 | 645 | 0.3− | 0.3− | 2003 03 07 | 644 | 0.2− | 0.6+ | 2005 10 29 | G96 | 0.4− | 0.5− | |
| 2003 01 25 | 645 | 0.3− | 0.3− | 2003 03 07 | 644 | 0.0 | 0.4+ | 2005 11 30 | G96 | 1.1+ | 0.2− | |
| 2003 01 31 | 704 | 0.4+ | 1.0+ | 2003 03 10 | 699 | 0.0 | 0.7+ | 2005 11 30 | G96 | 0.2+ | 0.5− | |
| 2003 01 31 | 704 | 0.5+ | 0.5+ | 2003 03 10 | 699 | 0.1+ | 0.4+ | 2005 11 30 | G96 | 0.9− | 0.0 | |
| 2003 01 31 | 704 | 0.7+ | 0.5+ | 2003 03 10 | 699 | (0.1− | 2.5+) | 2005 11 30 | G96 | 0.3− | 0.7− | |
| 2003 01 31 | 704 | 1.2+ | 1.3+ | 2003 03 10 | 699 | 0.7+ | 0.2+ | | | | | |
| 2003 02 06 | 699 | 0.5+ | 0.7+ | 2003 03 25 | 704 | 1.2+ | 0.3+ | | | | | |

**(143504)∗ 2003 DL$_{17}$ = 2001 YA$_{14}$**

Discovered 2003 Feb. 22 by J. W. Kessel at the Goodricke-Pigott Observatory, Tucson.
Id. G. V. Williams (*MPO* 43309)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.68998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17158484 | $\omega$ | 300.51936 | | −0.94475107 | +0.31907515 | |
| $a$ | 3.2073777 | $\Omega$ | 258.17620 | | −0.26828239 | −0.88428441 | |
| $e$ | 0.1143684 | $i$ | 4.39913 | | −0.18833477 | −0.34092834 | |
| $P$ | 5.74 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 05 | 691 | 0.2− | 0.1− | 2003 02 23 | 683 | (2.0+ | 0.4−) | 2004 07 13 | 460 | 0.5+ | 0.6+ | |
| 1996 11 05 | 691 | 0.1+ | 0.3+ | 2003 02 23 | 683 | 0.4+ | 0.3+ | 2004 07 16 | E12 | 0.5+ | 0.4+ | |
| 1996 11 05 | 691 | 0.4− | 0.3− | 2003 02 23 | 699 | 0.1+ | 0.1− | 2004 07 16 | E12 | 0.3+ | 0.5+ | |
| 1997 03 13 | 691 | 0.1− | 0.7− | 2003 02 23 | 699 | 0.3− | 0.2+ | 2004 07 16 | E12 | 0.1− | 0.1+ | |
| 1997 03 13 | 691 | 0.3− | 0.7− | 2003 02 23 | 699 | 0.2+ | 0.8+ | 2004 07 16 | E12 | 0.3+ | 0.0 | |
| 1997 03 13 | 691 | 0.3− | 0.7− | 2003 02 23 | 699 | 0.0 | 0.5+ | 2005 08 06 | 644 | (0.3− | 2.0+) | |
| 2001 12 17 | 704 | 0.8+ | 0.5+ | 2003 03 06 | 699 | 0.1+ | 1.5+ | 2005 08 06 | 644 | 0.2+ | 0.5+ | |
| 2001 12 17 | 704 | 0.5+ | 0.3− | 2003 03 06 | 699 | 0.3+ | 0.5+ | 2005 08 06 | 644 | 0.0 | 0.1+ | |
| 2001 12 17 | 704 | 0.8+ | 0.1− | 2003 03 06 | 699 | 0.8+ | 0.6+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | |
| 2001 12 17 | 704 | 0.9+ | 0.5− | 2003 03 06 | 699 | 0.3− | 1.3+ | 2006 09 25 | 691 | 0.1+ | 0.1− | |
| 2001 12 17 | 704 | 0.6+ | 0.1− | 2003 03 07 | 704 | 0.5+ | 1.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2003 03 07 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.0 | 0.1− | 2003 03 07 | 704 | 0.4− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2003 03 07 | 704 | 0.4+ | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.3+ | 0.2+ | 2003 03 07 | 704 | 0.0 | 1.5+ | 2006 10 21 | 691 | 0.7− | 0.1− |
| 2001 12 19 | 704 | 0.3− | 0.1+ | 2003 03 14 | 608 | 0.9+ | 1.0− | 2006 10 21 | 691 | 0.8− | 0.1+ |
| 2003 01 28 | 704 | 0.3− | 0.2− | 2003 03 14 | 608 | 0.8+ | 0.4− | 2006 10 21 | 691 | 0.5− | 0.3+ |
| 2003 01 28 | 704 | 0.2− | 0.3− | 2003 03 14 | 608 | 0.1+ | 0.6− | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 2003 01 28 | 704 | 0.1− | 0.0 | 2003 03 26 | 699 | 0.6− | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2003 02 03 | 699 | 0.1+ | 0.3+ | 2003 03 26 | 699 | 0.5− | 0.4+ | 2006 11 15 | 691 | 0.4+ | 0.2+ |
| 2003 02 03 | 699 | 0.2− | 0.1− | 2003 03 26 | 699 | 0.3− | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.4+ |
| 2003 02 03 | 699 | 0.3+ | 0.5− | 2003 03 26 | 699 | 1.1+ | 0.6+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2003 02 03 | 699 | 0.4− | 1.3+ | 2004 07 11 | 460 | 0.4− | 0.3+ | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2003 02 22 | 683 | (1.2+ | 1.8+) | 2004 07 11 | 460 | 0.4− | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2003 02 22 | 683 | 1.1+ | 0.5+ | 2004 07 12 | 460 | 0.9− | 1.3+ | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2003 02 22 | 683 | 0.2− | 0.4+ | 2004 07 12 | 460 | 0.5+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2003 02 23 | 683 | 1.3+ | 1.4+ | 2004 07 13 | 460 | 0.6+ | 0.1− | | | | |

**(143505)∗ 2003 DM$_{17}$**

Discovered 2003 Feb. 22 by J. W. Kessel at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.31341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21416462 | $\omega$ | 148.94388 | | −0.19367590 | −0.97749114 | |
| $a$ | 2.7667562 | $\Omega$ | 312.08099 | | +0.87539389 | −0.13368201 | |
| $e$ | 0.0763828 | $i$ | 6.47289 | | +0.44291667 | −0.16321821 | |
| $P$ | 4.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 18 | 691 | 0.2+ | 0.7− | 2003 02 23 | 683 | (0.7− | 2.4+) | 2003 04 01 | 691 | 0.0 | 0.4+ |
| 1996 10 18 | 691 | 0.1+ | 0.2− | 2003 02 23 | 699 | 0.4+ | 0.6+ | 2005 08 30 | 691 | 0.0 | 0.3+ |
| 1996 10 18 | 691 | 0.3+ | 0.1− | 2003 02 23 | 699 | 0.3+ | 0.1+ | 2005 08 30 | 691 | 0.1+ | 0.2+ |
| 2001 10 13 | 644 | 1.2− | 1.3+ | 2003 02 23 | 699 | 0.6− | 0.1+ | 2005 08 30 | 691 | 0.0 | 0.2+ |
| 2001 10 13 | 644 | 1.1− | 0.8+ | 2003 02 23 | 699 | 0.4+ | 1.0+ | 2005 08 31 | 291 | 0.1+ | 0.2− |
| 2001 10 13 | 644 | 1.2− | 0.8+ | 2003 02 28 | 608 | 0.2+ | 0.3− | 2005 08 31 | 291 | 0.1+ | 0.1− |
| 2001 11 11 | 699 | 0.4+ | 0.0 | 2003 02 28 | 608 | 0.4− | 0.0 | 2005 08 31 | 291 | 0.1+ | 0.2− |
| 2001 11 11 | 699 | 0.3+ | 0.4− | 2003 02 28 | 608 | 0.5− | 0.5− | 2005 09 12 | 691 | 0.4− | 0.3+ |
| 2001 11 11 | 699 | 1.1+ | 0.3− | 2003 03 06 | 699 | 1.3+ | 0.1− | 2005 09 12 | 691 | 0.3− | 0.4+ |
| 2001 11 11 | 699 | 0.5− | 0.3− | 2003 03 06 | 699 | 0.5+ | 0.3− | 2005 09 12 | 691 | 0.3− | 0.3+ |
| 2001 11 17 | 704 | 0.3− | 0.5+ | 2003 03 06 | 699 | 1.7+ | 1.1+ | 2005 09 23 | 703 | 1.3+ | 0.1+ |
| 2001 11 17 | 704 | 0.1+ | 0.0 | 2003 03 06 | 699 | 1.2+ | 0.1+ | 2005 09 23 | 703 | 0.4− | 0.1− |
| 2001 11 17 | 704 | 1.3+ | 0.7− | 2003 03 07 | 704 | 0.6+ | 0.2− | 2005 09 23 | 703 | 0.3− | 0.7+ |
| 2001 11 17 | 704 | 0.1− | 0.6− | 2003 03 07 | 704 | 0.6− | 0.8+ | 2005 09 23 | 703 | 0.2− | 0.7+ |
| 2001 12 10 | 704 | 0.4+ | 0.5− | 2003 03 07 | 704 | 0.1− | 0.3− | 2005 09 25 | 691 | 0.4− | 0.4+ |
| 2001 12 10 | 704 | 0.2+ | 0.5+ | 2003 03 07 | 704 | 1.4+ | 1.7+ | 2005 09 25 | 691 | 0.2− | 0.4+ |
| 2001 12 10 | 704 | 0.4− | 0.4+ | 2003 03 08 | 704 | 0.8+ | 0.2− | 2005 09 25 | 691 | 0.3− | 0.3+ |
| 2003 02 22 | 683 | (1.2− | 2.4+) | 2003 03 08 | 704 | 0.8+ | 0.9− | 2005 09 28 | 644 | 0.0 | 0.8+ |
| 2003 02 22 | 683 | 1.2− | 1.6+ | 2003 03 08 | 704 | 0.2+ | 0.0 | 2005 09 28 | 644 | 0.2− | 0.3+ |
| 2003 02 22 | 683 | (2.0− | 1.9+) | 2003 03 08 | 704 | 1.0− | 0.2+ | 2005 09 28 | 644 | 0.2+ | 0.2+ |
| 2003 02 23 | 683 | 0.2− | 1.4+ | 2003 04 01 | 691 | 0.1− | 0.2+ | | | | |
| 2003 02 23 | 683 | (1.4+ | 2.4+) | 2003 04 01 | 691 | 0.0 | 0.1+ | | | | |

**(143506)∗ 2003 DO$_{17}$**

Discovered 2003 Feb. 22 by J. W. Kessel at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.77974 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17421780 | $\omega$ | 228.17730 | | −0.93850835 | +0.33787504 | |
| $a$ | 3.1749803 | $\Omega$ | 331.35562 | | −0.25622785 | −0.81946477 | |
| $e$ | 0.0323612 | $i$ | 8.51875 | | −0.23140737 | −0.46294486 | |
| $P$ | 5.66 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 1.1− | 0.0 | 2003 03 09 | 644 | 0.1+ | 0.8+ | 2005 08 05 | 644 | 0.4− | 0.4+ |
| 2001 12 22 | 704 | 0.6+ | 0.5+ | 2003 03 09 | 704 | 0.6+ | 0.2+ | 2005 08 05 | 644 | 0.2− | 0.7+ |
| 2001 12 22 | 704 | 0.5+ | 0.1+ | 2003 03 09 | 644 | 0.1+ | 0.8+ | 2006 09 28 | 703 | 0.6+ | 0.7+ |
| 2003 01 28 | 608 | 0.2− | 0.8− | 2003 03 09 | 644 | 0.4+ | 0.8+ | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2003 01 28 | 608 | 0.1− | 0.4− | 2003 03 25 | 608 | 0.3+ | 0.8− | 2006 09 28 | 703 | 0.5− | 0.6+ |
| 2003 01 28 | 608 | 0.6− | 0.6− | 2003 03 25 | 608 | 0.4+ | 0.4− | 2006 09 28 | 703 | 1.2− | 0.1+ |
| 2003 02 22 | 683 | (1.2− | 1.8+) | 2003 03 25 | 608 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2003 02 22 | 683 | 0.2+ | 0.9+ | 2003 03 26 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2003 02 22 | 683 | 0.2− | 0.5+ | 2003 03 26 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2003 02 23 | 683 | (0.4− | 2.6+) | 2003 03 26 | 644 | 0.2+ | 0.2+ | 2006 10 19 | A50 | 0.6+ | 0.4+ |
| 2003 02 23 | 683 | 0.8+ | 0.2+ | 2003 03 26 | 699 | 0.7− | 0.4+ | 2006 10 19 | A50 | 0.3− | 0.4+ |
| 2003 02 23 | 699 | 0.5− | 0.9− | 2003 03 26 | 699 | 0.8+ | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.6+ |
| 2003 02 23 | 699 | 0.2− | 0.8+ | 2003 03 26 | 699 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.9+ |
| 2003 02 23 | 683 | 0.5+ | 0.1+ | 2003 03 26 | 699 | 1.0− | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2003 02 23 | 699 | 0.4+ | 0.6+ | 2003 03 27 | 691 | 0.6− | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.1− |
| 2003 02 23 | 699 | (0.5− | 1.9+) | 2003 03 27 | 691 | 0.5− | 0.0 | 2006 11 15 | 703 | 1.0− | 0.4− |
| 2003 03 06 | 699 | 0.4+ | 0.9+ | 2003 03 27 | 691 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2003 03 06 | 699 | 1.0+ | 0.3− | 2005 07 28 | 644 | 0.5− | 0.3+ | 2006 11 15 | 703 | 1.5− | 0.9− |
| 2003 03 06 | 699 | 0.9+ | 0.8+ | 2005 07 28 | 644 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 1.2+ | 0.4− |
| 2003 03 06 | 699 | 1.1+ | 0.5+ | 2005 07 28 | 644 | 0.3− | 0.4+ | 2006 11 22 | 703 | 0.2+ | 1.0− |
| 2003 03 09 | 704 | 0.3+ | 0.1− | 2005 08 04 | 644 | 0.4− | 0.6+ | 2006 11 22 | 703 | 1.2+ | 0.2+ |
| 2003 03 09 | 704 | 0.9+ | 0.0 | 2005 08 04 | 644 | 0.2− | 0.6+ | 2006 11 22 | 703 | 0.4− | 1.3− |
| 2003 03 09 | 704 | 0.9+ | 0.2+ | 2005 08 04 | 644 | 0.3− | 0.6+ | | | | |
| 2003 03 09 | 704 | 0.5+ | 0.4− | 2005 08 05 | 644 | 0.3− | 0.4+ | | | | |

**(143507)∗ 2003 DL$_{20}$**

Discovered 2003 Feb. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.49625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21109794 | $\omega$ | 290.70594 | | −0.24918736 | +0.96821493 | |
| $a$ | 2.7934874 | $\Omega$ | 324.84225 | | −0.87401688 | −0.23442786 | |
| $e$ | 0.1453120 | $i$ | 2.14729 | | −0.41713326 | −0.08719760 | |
| $P$ | 4.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.6− | 0.2+ | 2003 03 06 | 644 | 0.6− | 0.7+ | 2005 10 28 | 703 | 0.3+ | 0.3− |
| 1995 07 27 | 691 | 0.2+ | 0.2+ | 2003 03 31 | 291 | 0.6+ | 0.1− | 2005 10 28 | 703 | (0.2− | 2.1−) |
| 1995 07 27 | 691 | 0.1+ | 0.2+ | 2003 03 31 | 291 | 0.6+ | 0.1+ | 2005 10 28 | G96 | 0.1− | 0.3+ |
| 1998 01 08 | 691 | 0.1+ | 0.3− | 2003 03 31 | 291 | 0.6+ | 0.3+ | 2005 10 28 | G96 | 0.1− | 0.2+ |
| 1998 01 08 | 691 | 0.1+ | 0.6− | 2004 06 14 | 704 | 0.6+ | 0.9− | 2005 10 28 | G96 | 0.1− | 0.1+ |
| 1998 01 08 | 691 | 0.5− | 0.4− | 2004 06 14 | 704 | 0.6− | 0.1− | 2005 10 28 | G96 | 1.0+ | 0.6− |
| 1999 06 15 | 704 | 0.8− | 0.2− | 2004 06 14 | 704 | 0.1+ | 0.3− | 2005 11 06 | 704 | 0.1− | 0.1+ |
| 1999 06 15 | 704 | 0.5− | 0.0 | 2004 07 08 | 428 | 0.5+ | 0.4− | 2005 11 06 | 704 | 0.0 | 0.2− |
| 1999 06 15 | 704 | 0.2− | 0.3+ | 2004 07 08 | 428 | 0.5− | 0.1+ | 2005 11 06 | 704 | 0.5+ | 0.3+ |
| 1999 06 15 | 704 | 0.4+ | 0.6− | 2004 07 09 | 428 | 1.0+ | 0.3+ | 2005 11 06 | 704 | 1.1+ | 0.3− |
| 1999 06 15 | 704 | 0.4− | 0.7+ | 2004 07 09 | 428 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.3− | 0.5+ |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2004 07 09 | 428 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.6− | 0.4− |
| 2001 12 19 | 704 | 0.6+ | 0.1+ | 2005 09 29 | 691 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.5− | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2005 09 29 | 691 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.2+ |
| 2001 12 19 | 704 | 0.3+ | 0.5− | 2005 09 29 | 691 | 0.4− | 0.6+ | 2006 12 01 | G96 | 0.5− | 0.1− |
| 2003 02 22 | 644 | 0.1+ | 0.8+ | 2005 10 06 | G96 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2003 02 22 | 644 | 0.2+ | 0.5+ | 2005 10 06 | G96 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.7− | 0.0 |
| 2003 02 22 | 644 | 0.3+ | 0.6+ | 2005 10 06 | G96 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2003 02 23 | 699 | 0.2+ | 1.0+ | 2005 10 06 | G96 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2003 02 23 | 699 | 0.4+ | 0.6+ | 2005 10 13 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2003 02 23 | 699 | 0.8+ | 0.2+ | 2005 10 13 | 691 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2003 02 23 | 699 | 0.7− | 1.2+ | 2005 10 13 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2003 03 06 | 644 | 0.4− | 0.9+ | 2005 10 28 | 703 | 0.5+ | 1.3− | | | | |
| 2003 03 06 | 644 | 1.2− | 1.3+ | 2005 10 28 | 703 | 0.7− | 0.5− | | | | |

**(143508)∗ 2003 DJ$_{22}$**

Discovered 2003 Feb. 24 by J. Dellinger and W. G. Dillon at George Observatory, Needville.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.88926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19819331 | $\omega$ | 82.88009 | | +0.84343822 | −0.52893147 | |
| $a$ | 2.9134667 | $\Omega$ | 309.00542 | | +0.43265830 | +0.77254643 | |
| $e$ | 0.0315022 | $i$ | 6.95073 | | +0.31846312 | +0.35128837 | |
| $P$ | 4.97 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.2− | 0.3− | 2003 03 07 | 735 | 0.4− | 0.3− | 2005 10 27 | G96 | 0.0 | 0.2− |
| 1996 12 01 | 691 | 0.3− | 0.2− | 2003 03 07 | 735 | 1.2− | 0.2+ | 2005 10 27 | G96 | 0.2− | 0.0 |
| 1996 12 01 | 691 | 0.1− | 0.3− | 2003 03 07 | 735 | 0.8+ | 1.4+ | 2006 11 02 | G96 | 0.2+ | 0.2+ |
| 1996 12 06 | 691 | 0.6+ | 0.7− | 2005 06 13 | G96 | 0.6− | 0.2− | 2006 11 02 | G96 | 0.1+ | 0.1− |
| 1996 12 06 | 691 | 0.5+ | 0.3+ | 2005 06 13 | G96 | 0.8− | 0.1− | 2006 11 02 | G96 | 0.3+ | 0.3+ |
| 1996 12 06 | 691 | (2.1+ | 4.3−) | 2005 06 13 | G96 | 0.9− | 0.1− | 2006 11 02 | G96 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.7− | 1.2+ | 2005 06 13 | G96 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.4+ | 0.5+ |
| 2001 11 11 | 704 | 0.4− | 0.6+ | 2005 06 29 | 644 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.6+ |
| 2001 11 11 | 704 | 0.2+ | 0.7+ | 2005 06 29 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2001 11 11 | 704 | 0.4− | 1.0+ | 2005 06 29 | 644 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.6+ | 0.4+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 07 18 | 644 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 1.0− | 0.2+ |
| 2003 01 28 | 645 | 0.1+ | 0.0 | 2005 07 18 | 644 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2003 02 04 | 735 | 0.1− | 0.4+ | 2005 07 18 | 644 | 0.2+ | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.5+ |
| 2003 02 04 | 735 | 0.1− | 0.4+ | 2005 08 03 | 735 | 0.7− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 02 04 | 735 | 0.7+ | 1.0− | 2005 08 03 | 735 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2003 02 24 | 735 | (0.3− | 2.2+) | 2005 08 03 | 735 | 0.0 | 1.1− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2003 02 24 | 735 | 0.1+ | 0.3+ | 2005 08 06 | 644 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 02 24 | 735 | 0.1+ | 0.5+ | 2005 08 06 | 644 | 0.0 | 0.6+ | 2006 11 21 | 703 | 0.7+ | 0.1− |
| 2003 02 28 | 735 | 0.2− | 0.8+ | 2005 08 06 | 644 | 0.1− | 0.3+ | 2006 11 21 | 703 | 1.1− | 0.8− |
| 2003 02 28 | 735 | 0.3+ | 0.1− | 2005 10 27 | G96 | 0.5+ | 0.6− | 2006 11 21 | 703 | 1.2− | 0.3+ |
| 2003 02 28 | 735 | 0.6− | 0.2+ | 2005 10 27 | G96 | 0.3− | 0.2− | 2006 11 21 | 703 | 0.1− | 0.6+ |

**(143509)∗ 2003 EG$_1$ = 2004 JE$_{12}$**

Discovered 2003 Mar. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69445)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.36271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17860818 | $\omega$ | 7.43949 | | −0.92935818 | −0.35955947 | |
| $a$ | 3.1227352 | $\Omega$ | 151.04256 | | +0.32918505 | −0.90975297 | |
| $e$ | 0.0529622 | $i$ | 9.95848 | | +0.16712445 | −0.20752474 | |
| $P$ | 5.52 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.2+ | 2003 02 08 | 704 | 0.2+ | 0.1− | 2004 05 14 | 699 | 0.4− | 1.3+ |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2003 02 08 | 704 | 0.3+ | 0.9+ | 2004 05 14 | 699 | 0.0 | 1.3+ |
| 2001 10 17 | 704 | 0.1+ | 1.3+ | 2003 02 08 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.4− |
| 2001 10 17 | 704 | 0.5− | 1.0+ | 2003 02 21 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | 1.1− | 0.3− | 2003 02 21 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.3− | 1.0+ |
| 2001 11 15 | 704 | 0.9− | 0.6− | 2003 02 21 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | (1.5+ | 0.4−) |
| 2001 11 15 | 704 | (0.0 | 1.7+) | 2003 03 05 | 704 | 0.3+ | 0.2− | 2006 09 21 | 699 | (0.4− | 2.5+) |
| 2001 11 15 | 704 | 0.0 | 0.3− | 2003 03 05 | 704 | 0.2+ | 0.7+ | 2006 09 21 | 699 | 1.0+ | 0.7+ |
| 2001 11 15 | 704 | 0.3+ | 1.3− | 2003 03 05 | 704 | (0.1− | 1.7+) | 2006 09 21 | 699 | 0.3+ | 0.5+ |
| 2001 12 18 | 704 | 0.3− | 0.0 | 2003 03 05 | 704 | 0.4− | 1.5+ | 2006 09 21 | 699 | 0.8+ | 0.9+ |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2003 03 06 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.8− | 0.4+ |
| 2001 12 18 | 704 | 0.7− | 0.5+ | 2003 03 06 | 644 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 1.5− | 0.3− |
| 2001 12 18 | 704 | 0.2− | 0.6+ | 2003 03 06 | 644 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.9− |
| 2001 12 18 | 704 | 0.1− | 0.7+ | 2003 03 12 | 644 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.2+ | 1.3+ |
| 2003 01 30 | 699 | 0.5+ | 0.0 | 2003 03 12 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 01 30 | 699 | 0.1+ | 0.5+ | 2003 03 12 | 644 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2003 01 30 | 699 | 0.3+ | 1.4+ | 2004 05 12 | 703 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2003 01 30 | 699 | 0.3+ | 0.1+ | 2004 05 12 | 703 | 0.2− | 1.4+ | 2006 10 28 | 703 | (1.9− | 0.1+) |
| 2003 02 03 | 608 | 0.3+ | 0.6− | 2004 05 12 | 703 | 0.4+ | 1.0+ | 2006 10 28 | 703 | 0.2+ | 0.1+ |
| 2003 02 03 | 608 | 0.4− | 1.0− | 2004 05 12 | 703 | 0.2− | 1.1+ | 2006 10 28 | 703 | (1.9− | 0.1+) |
| 2003 02 03 | 608 | 0.7+ | 0.6− | 2004 05 14 | 699 | 0.7− | 0.8+ | 2006 10 28 | 703 | 0.3− | 0.7− |
| 2003 02 08 | 704 | 0.1− | 0.4+ | 2004 05 14 | 699 | 0.4+ | 0.1− | | | | |

**(143510)∗ 2003 EN$_4$ = 2001 SC$_{325}$**

Discovered 2003 Mar. 6 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 43312)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.31882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23290055 | $\omega$ | 177.64800 | | −0.57513115 | −0.81509655 | |
| $a$ | 2.6163091 | $\Omega$ | 307.45203 | | +0.74911840 | −0.49057582 | |
| $e$ | 0.2662911 | $i$ | 5.02848 | | +0.32870317 | −0.30814442 | |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2003 03 10 | 699 | 0.2+ | 0.3− | 2005 09 26 | 691 | 0.2− | 0.4+ |
| 2001 09 16 | 704 | 0.9− | 0.4+ | 2003 03 10 | 704 | 1.1+ | 0.4+ | 2005 09 26 | 691 | 0.3− | 0.3+ |
| 2001 09 16 | 704 | 0.5− | 0.3− | 2003 03 10 | 699 | 0.3− | 0.1− | 2005 09 26 | 691 | 0.1− | 0.1+ |
| 2001 09 18 | 699 | 0.4+ | 0.9+ | 2003 03 10 | 704 | 0.5+ | 0.1− | 2005 10 10 | 691 | 0.0 | 0.4+ |
| 2001 09 18 | 699 | 0.1+ | 0.1+ | 2003 03 10 | 704 | 0.0 | 0.7+ | 2005 10 10 | 691 | 0.4− | 0.5+ |
| 2001 09 18 | 699 | 0.8− | 0.4− | 2003 03 10 | 699 | 0.1− | 0.1+ | 2005 10 10 | 691 | 0.6− | 0.8+ |
| 2001 09 18 | 699 | 0.3+ | 0.2+ | 2003 03 10 | 704 | 0.4+ | 0.5+ | 2006 10 29 | 704 | 0.3− | 0.1+ |
| 2003 02 12 | 608 | 0.2+ | 0.3+ | 2003 03 10 | 704 | 0.3+ | 0.5+ | 2006 10 29 | 704 | 0.3− | 0.5− |
| 2003 02 12 | 608 | 0.5− | 0.2+ | 2003 03 28 | 691 | 0.3+ | 0.3+ | 2006 10 29 | 704 | 0.2− | 0.1− |
| 2003 02 12 | 608 | 0.6− | 0.1− | 2003 03 28 | 691 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.2+ |
| 2003 03 06 | 333 | 1.2− | 0.1+ | 2003 03 28 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.5− | 0.6+ |
| 2003 03 06 | 333 | 1.1− | 0.4+ | 2003 03 31 | 704 | 0.7+ | 0.2+ | 2006 11 15 | 704 | 0.8+ | 0.1− |
| 2003 03 06 | 333 | (1.9− | 0.6+) | 2003 03 31 | 704 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2003 03 07 | 704 | 0.5+ | 0.7− | 2003 03 31 | 704 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.0+ | 0.8+ |
| 2003 03 07 | 704 | 0.3− | 1.4+ | 2003 03 31 | 704 | 0.3+ | 0.8+ | 2006 11 19 | 704 | 1.3+ | 1.2+ |
| 2003 03 07 | 704 | 0.7+ | 0.1+ | 2003 03 31 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2003 03 07 | 333 | 0.6− | 0.2+ | 2003 04 01 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2003 03 07 | 704 | 0.5+ | 0.6− | 2003 04 01 | 704 | 0.6+ | 0.5+ | 2006 11 25 | G96 | 0.5− | 0.5− |
| 2003 03 07 | 704 | 0.4− | 0.8+ | 2003 04 01 | 704 | 0.5+ | 0.3− | 2006 11 25 | G96 | 0.0 | 0.6− |
| 2003 03 07 | 333 | 1.4− | 0.4− | 2003 04 01 | 704 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2003 03 07 | 333 | 0.6− | 0.1+ | 2003 04 01 | 704 | 0.8+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.7− |
| 2003 03 07 | 704 | 0.4+ | 0.2+ | 2003 04 04 | 699 | 0.4− | 0.4+ | 2006 12 01 | 704 | 0.1+ | 0.7+ |
| 2003 03 07 | 704 | 1.0+ | 1.0− | 2003 04 04 | 699 | 0.0 | 0.4+ | 2006 12 01 | 704 | 0.2− | 0.1+ |
| 2003 03 07 | 704 | 0.3− | 1.1+ | 2003 04 04 | 699 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 0.3− | 0.8+ |
| 2003 03 07 | 704 | 0.5+ | 0.5+ | 2003 04 04 | 699 | 0.1+ | 0.5+ | 2006 12 01 | 704 | 0.0 | 0.3+ |
| 2003 03 07 | 704 | 0.1+ | 0.7+ | 2005 08 31 | 691 | 0.1− | 0.5+ | 2006 12 01 | 704 | 0.5− | 0.1+ |
| 2003 03 07 | 704 | 0.7+ | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.2+ | | | | |
| 2003 03 10 | 699 | 0.1+ | 0.0 | 2005 08 31 | 691 | 0.2+ | 0.5+ | | | | |

**(143511)∗ 2003 EZ$_5$ = 2001 YK$_{150}$ = 2004 HY$_7$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69447)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.69568 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18196240 | $\omega$ | 81.27350 | | −0.75693798 | +0.63744990 | |
| $a$ | 3.0842408 | $\Omega$ | 138.15153 | | −0.65155995 | −0.71929008 | |
| $e$ | 0.0256382 | $i$ | 12.45455 | | −0.05014506 | −0.27618728 | |
| $P$ | 5.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2003 02 25 | 608 | (0.5− | 1.7−) | 2004 05 24 | 704 | (1.7+ | 0.1+) |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2003 03 06 | 699 | 0.7+ | 1.2− | 2004 05 24 | 704 | 0.5− | 0.2+ |
| 2001 12 19 | 704 | 0.0 | 0.6+ | 2003 03 06 | 699 | 0.9+ | 0.0 | 2005 06 29 | 644 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.9+ | 0.7− | 2003 03 06 | 699 | 1.0− | 1.0+ | 2005 06 29 | 644 | 0.1+ | 0.1+ |
| 2001 12 20 | 209 | 0.7− | 0.1+ | 2003 03 06 | 699 | 0.3− | 0.2+ | 2005 06 29 | 644 | 0.2+ | 0.6+ |
| 2001 12 20 | 209 | 0.6− | 0.0 | 2003 03 07 | 644 | 0.4+ | 0.8+ | 2005 07 04 | G96 | 0.1+ | 0.3+ |
| 2001 12 20 | 209 | 0.1+ | 0.0 | 2003 03 07 | 644 | 0.5+ | 0.5+ | 2005 07 04 | G96 | 0.2− | 0.3+ |
| 2002 12 07 | 645 | 0.1− | 0.1− | 2003 03 07 | 644 | 0.5+ | 1.0+ | 2005 07 04 | G96 | 0.4− | 0.2+ |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2004 04 19 | 691 | 0.0 | 0.2+ | 2005 07 04 | G96 | 0.2− | 0.2+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.5+ | 0.7+ |
| 2003 02 21 | 644 | 0.3+ | 1.1+ | 2004 04 20 | 291 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2003 02 21 | 644 | 0.7+ | 0.7+ | 2004 04 20 | 291 | 0.0 | 0.3+ | 2006 11 16 | 703 | 1.0− | 0.5+ |
| 2003 02 21 | 644 | 0.1+ | 0.3+ | 2004 04 20 | 291 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 1.1+ | 1.6+ |
| 2003 02 25 | 608 | (0.1+ | 2.1−) | 2004 05 24 | 704 | (0.5+ | 2.3+) | 2006 11 16 | 703 | 0.0 | 0.5+ |
| 2003 02 25 | 608 | (0.2− | 2.2−) | 2004 05 24 | 704 | (0.3+ | 1.8+) | 2006 11 16 | 703 | (2.6− | 3.1+) |

**(143512)∗ 2003 ED$_7$ = 1994 PH$_{36}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 47324)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 298.77531 | | (2000.0) | | | |
| $n$ | 0.16934997 | $\omega$ | 111.34750 | | +0.35652231 | −0.92906794 |
| $a$ | 3.2355339 | $\Omega$ | 317.35302 | | +0.79419109 | +0.35696211 |
| $e$ | 0.0959137 | $i$ | 8.36967 | | +0.49208978 | +0.09700937 |
| $P$ | 5.82 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | 1.6+ | 1.7+ | 2001 12 09 | 704 | 0.1− | 0.4+ | 2003 03 06 | 699 | 0.4− | 0.8+ |
| 1994 08 10 | 809 | 0.3− | 0.0 | 2001 12 09 | 704 | 0.3− | 0.3+ | 2003 03 06 | 699 | 0.7− | 0.1+ |
| 1994 08 10 | 809 | 1.7− | 0.1− | 2001 12 09 | 704 | 0.2− | 0.3+ | 2003 03 07 | 704 | 0.8+ | 0.3− |
| 1994 08 11 | 809 | (0.7+ | 2.2+) | 2001 12 09 | 704 | 0.5− | 0.1+ | 2003 03 07 | 704 | 0.5+ | 0.1+ |
| 1994 08 11 | 809 | 0.1+ | 1.8+ | 2001 12 22 | 704 | 0.5+ | 0.4− | 2003 03 07 | 704 | 0.0 | 0.0 |
| 1994 08 11 | 809 | 0.6+ | 1.5+ | 2001 12 22 | 704 | 0.5+ | 0.1− | 2003 03 07 | 704 | 1.2+ | 0.3− |
| 2000 09 02 | 699 | 1.6− | 0.0 | 2001 12 22 | 704 | 0.3+ | 0.4− | 2003 03 07 | 704 | 0.2− | 0.1− |
| 2000 09 02 | 699 | (2.5− | 1.0+) | 2001 12 22 | 704 | 0.3+ | 0.2− | 2006 09 17 | 703 | 0.3− | 0.2+ |
| 2000 09 02 | 699 | (2.1− | 0.6+) | 2002 01 08 | 704 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.1− | 0.0 |
| 2000 09 02 | 699 | 1.5− | 0.4+ | 2002 01 08 | 704 | 0.7+ | 0.0 | 2006 09 17 | 703 | 0.7− | 0.4+ |
| 2000 09 24 | 691 | 0.3− | 0.3− | 2002 01 08 | 704 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.0 | 0.4− |
| 2000 09 24 | 691 | 0.0 | 0.3− | 2002 01 08 | 704 | 0.7− | 0.5− | 2006 09 18 | 704 | 0.1− | 0.2+ |
| 2000 09 24 | 691 | 0.2− | 0.1+ | 2002 01 08 | 704 | 0.6− | 0.7+ | 2006 09 18 | 704 | 0.4+ | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.3− | 2003 02 23 | 699 | 0.2− | 0.9+ | 2006 09 18 | 704 | 0.2+ | 1.1+ |
| 2001 09 21 | 704 | 0.0 | 0.4− | 2003 02 23 | 699 | 0.3− | 0.8+ | 2006 09 18 | 704 | 0.4+ | 0.1+ |
| 2001 09 21 | 704 | 0.1− | 0.8− | 2003 02 23 | 699 | 1.3+ | 0.8+ | 2006 09 20 | 699 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.4+ | 0.6+ | 2003 02 23 | 699 | 1.5+ | 0.5+ | 2006 09 20 | 699 | 0.4− | 0.4+ |
| 2001 11 11 | 704 | (1.5+ | 2.1+) | 2003 02 28 | 608 | 0.3− | 0.5+ | 2006 09 20 | 699 | 0.5+ | 0.6+ |
| 2001 11 11 | 704 | (2.6+ | 2.3+) | 2003 02 28 | 608 | 0.4− | 0.6+ | 2006 10 23 | 703 | 0.3+ | 0.8+ |
| 2001 11 11 | 704 | (2.5+ | 2.6+) | 2003 02 28 | 608 | 0.1− | 0.2+ | 2006 10 23 | 703 | 0.4− | 0.4− |
| 2001 11 11 | 704 | (1.9+ | 1.7+) | 2003 03 06 | 699 | 0.4− | 1.5+ | 2006 10 23 | 703 | 0.0 | 1.3+ |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2003 03 06 | 699 | 1.1+ | 0.0 | 2006 10 23 | 703 | 1.9+ | 1.4− |

**(143513)∗ 2003 EH$_7$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 135.75574 | | (2000.0) | | | |
| $n$ | 0.16928660 | $\omega$ | 337.23969 | | −0.21549672 | +0.97238326 |
| $a$ | 3.2363414 | $\Omega$ | 280.22280 | | −0.88132774 | −0.23319339 |
| $e$ | 0.1273872 | $i$ | 5.22499 | | −0.42050276 | −0.00957331 |
| $P$ | 5.82 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 0.2− | 0.4+ | 2004 06 16 | 704 | 0.2+ | 0.9+ | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 1998 05 24 | 704 | 0.1− | 0.6− | 2005 07 31 | 644 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 1998 05 24 | 704 | (2.4+ | 0.1−) | 2005 07 31 | 644 | 0.0 | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.1− |
| 1998 05 24 | 704 | 0.4+ | 1.1− | 2005 07 31 | 644 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.5− | 0.3− |
| 1999 09 07 | 704 | 1.1− | 0.7− | 2005 08 27 | 699 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.4− | 0.3− |
| 1999 09 07 | 704 | 0.0 | 0.8− | 2005 08 27 | 699 | 0.1− | 1.0+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 1999 09 07 | 704 | 0.4− | 1.4+ | 2005 08 27 | 699 | 0.6+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2003 02 23 | 699 | 0.0 | 0.3+ | 2005 08 27 | 699 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2003 02 23 | 699 | 1.2+ | 0.4+ | 2005 08 30 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.2− |
| 2003 02 23 | 699 | 0.4+ | 1.0+ | 2005 08 30 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2003 02 23 | 699 | (1.6− | 0.8+) | 2005 08 30 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2003 03 06 | 699 | 1.3+ | 1.0+ | 2005 08 30 | 704 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2003 03 06 | 699 | 1.1+ | 1.0+ | 2005 08 30 | 704 | 0.2− | 0.9+ | 2006 11 08 | 644 | 0.3− | 0.4+ |
| 2003 03 06 | 683 | 0.3+ | 0.4+ | 2005 08 30 | 704 | 0.6+ | 0.9− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2003 03 06 | 683 | 0.7+ | 0.6+ | 2005 08 30 | 704 | 0.8+ | 0.9− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2003 03 06 | 699 | 0.3+ | 1.2+ | 2005 08 30 | 704 | 0.1− | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2003 03 06 | 683 | (1.9+ | 0.4−) | 2005 08 30 | 704 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2003 03 06 | 699 | 0.7− | 0.4+ | 2005 08 30 | 704 | 0.7− | 1.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2003 03 07 | 683 | 1.2+ | 0.9+ | 2005 08 30 | 704 | 0.7+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2003 03 07 | 683 | (3.6+ | 0.4+) | 2005 09 12 | 691 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2003 03 07 | 704 | 0.9+ | 1.1+ | 2005 09 12 | 691 | 0.7− | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.4+ |
| 2003 03 07 | 683 | (2.6+ | 1.8−) | 2005 09 12 | 691 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.5+ |
| 2003 03 07 | 704 | 0.3+ | 0.5+ | 2005 09 14 | 703 | 0.0 | 1.4+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2003 03 07 | 704 | 0.1+ | 1.3+ | 2005 09 14 | 703 | (1.0+ | 2.1+) | 2006 11 11 | 703 | 0.4+ | 0.6+ |
| 2003 03 07 | 704 | 0.3+ | 0.5+ | 2005 09 14 | 703 | 0.8+ | 0.2+ | 2006 11 11 | 703 | (3.6+ | 2.8+) |
| 2004 06 11 | 704 | 0.0 | 0.6+ | 2005 09 14 | 703 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.0+ | 0.8− |
| 2004 06 11 | 704 | 0.7− | 0.1− | 2005 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.3+ |
| 2004 06 11 | 704 | 0.1+ | 0.8+ | 2005 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | (2.2− | 0.2−) |
| 2004 06 11 | 704 | 0.9− | 0.8+ | 2005 09 26 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2004 06 14 | 704 | 0.2− | 0.7+ | 2005 10 05 | 703 | 0.1− | 0.7− | 2006 11 14 | 703 | (2.0− | 1.3+) |
| 2004 06 14 | 704 | 0.0 | 0.6+ | 2005 10 05 | 703 | 0.6+ | 0.7− | 2006 11 14 | G96 | 0.7− | 0.9+ |
| 2004 06 14 | 704 | 0.6− | 0.1+ | 2005 10 05 | 703 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.5+ | 1.4+ |
| 2004 06 14 | 704 | 0.4+ | 0.4+ | 2005 10 05 | 703 | (1.7− | 1.3−) | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2004 06 14 | 704 | 0.5− | 0.1+ | 2005 10 09 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2004 06 16 | 704 | 0.4+ | 0.0 | 2005 10 09 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2004 06 16 | 704 | 0.6+ | 0.0 | 2005 10 09 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 1.2− | 0.5+ |
| 2004 06 16 | 704 | 0.8− | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.1+ |

**(143514)∗ 2003 EN$_8$ = 2001 SB$_{316}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. M. E. Sansaturio (*MPO* 56745)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 309.57325 | | (2000.0) | | | |
| $n$ | 0.17595368 | $\omega$ | 113.87117 | | +0.46334554 | −0.86940223 |
| $a$ | 3.1540638 | $\Omega$ | 307.41070 | | +0.71399799 | +0.48095751 |
| $e$ | 0.1340631 | $i$ | 12.47737 | | +0.52489788 | +0.11322382 |
| $P$ | 5.60 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.0 | 0.1− | 2001 12 22 | 704 | 0.4− | 0.6+ | 2006 08 29 | 683 | (0.1+ | 1.7+) |
| 1997 01 31 | 691 | 0.0 | 0.0 | 2001 12 22 | 704 | 0.6− | 0.1+ | 2006 08 29 | 683 | (2.6− | 2.0+) |
| 1997 01 31 | 691 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.6− | 1.2− | 2006 08 31 | 704 | (2.6+ | 0.0 ) |
| 1997 02 01 | 691 | 0.2− | 0.3− | 2002 01 08 | 704 | 0.4+ | 1.1− | 2006 08 31 | 704 | 0.8+ | 0.2− |
| 1997 02 01 | 691 | 0.1− | 0.3− | 2002 01 08 | 704 | 0.7+ | 0.9− | 2006 08 31 | 704 | 0.2+ | 0.3− |
| 1997 02 01 | 691 | (1.7− | 4.5+) | 2002 01 08 | 704 | 0.4+ | 0.9− | 2006 08 31 | 704 | (2.1+ | 0.4−) |
| 2001 09 25 | 704 | 0.7− | 0.4− | 2002 01 08 | 704 | 0.3+ | 0.8− | 2006 09 16 | 703 | 0.4− | 0.7− |
| 2001 09 25 | 704 | 1.2− | 0.6− | 2002 01 15 | 644 | 0.3− | 0.7+ | 2006 09 16 | 703 | 0.6− | 0.4− |
| 2001 09 25 | 704 | 0.8− | 0.4− | 2002 01 15 | 644 | 0.1− | 0.9+ | 2006 09 16 | 703 | 0.3− | 0.2− |
| 2001 09 25 | 704 | 0.0 | 0.2− | 2002 01 15 | 644 | 0.1− | 0.7+ | 2006 09 16 | 703 | 0.6− | 0.3+ |
| 2001 09 25 | 704 | 0.5− | 0.1− | 2002 02 08 | 704 | 0.5+ | 0.6+ | 2006 09 16 | 683 | (1.6+ | 0.2−) |
| 2001 09 28 | 704 | 0.1+ | 0.4+ | 2002 02 08 | 704 | 0.1− | 0.7+ | 2006 09 16 | 683 | (2.3+ | 1.2+) |
| 2001 09 28 | 704 | 1.0+ | 0.3− | 2002 02 08 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.3+ |
| 2001 09 28 | 704 | 0.2+ | 0.8− | 2002 02 08 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 644 | 0.2+ | 0.4+ |
| 2001 09 28 | 704 | 0.3+ | 0.8− | 2002 02 08 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 644 | 0.4+ | 0.2+ |
| 2001 10 25 | 704 | 0.7+ | 0.4+ | 2003 02 12 | 608 | 0.4− | 1.3+ | 2006 09 17 | 683 | (3.2− | 0.4−) |
| 2001 10 25 | 704 | 0.7+ | 0.8+ | 2003 02 12 | 608 | (0.2− | 1.9+) | 2006 09 17 | 683 | 0.1− | 0.2− |
| 2001 10 25 | 704 | 0.2+ | 0.5+ | 2003 02 12 | 608 | (0.5+ | 2.1+) | 2006 09 17 | 683 | 0.2− | 0.1+ |
| 2001 10 25 | 704 | 0.4+ | 0.5+ | 2003 03 06 | 699 | 0.5+ | 1.4+ | 2006 09 27 | 703 | 1.4− | 0.9+ |
| 2001 10 25 | 704 | 0.8+ | 0.5+ | 2003 03 06 | 699 | 0.8+ | 1.2+ | 2006 09 27 | 703 | (0.4+ | 1.8+) |
| 2001 11 11 | 704 | 1.1− | 0.0 | 2003 03 06 | 699 | 1.1+ | 1.3+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.5− | 0.5− | 2003 03 06 | 699 | 0.1+ | 1.2− | 2006 09 27 | 703 | 0.8− | 0.3− |
| 2001 11 11 | 704 | 0.3− | 0.3+ | 2003 03 07 | 704 | 0.8+ | 1.0+ | 2006 09 29 | 699 | 0.2+ | 0.2+ |
| 2001 11 11 | 704 | 0.1− | 1.1+ | 2003 03 07 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.2+ |
| 2001 12 09 | 704 | 0.7− | 0.4− | 2003 03 07 | 704 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.8+ |
| 2001 12 09 | 704 | 0.3+ | 1.0− | 2003 03 07 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 1.1+ | 0.1+ |
| 2001 12 09 | 704 | 0.7+ | 0.9− | 2003 03 07 | 704 | 0.4− | 0.0 | 2006 10 26 | 703 | 0.0 | 0.9+ |
| 2001 12 09 | 704 | 0.0 | 0.6− | 2006 08 28 | 683 | 0.2+ | 0.8+ | 2006 10 26 | 703 | 0.7+ | 0.3− |
| 2001 12 22 | 704 | (2.0+ | 1.6+) | 2006 08 28 | 683 | (0.8− | 1.6+) | 2006 10 26 | 703 | 0.1− | 0.7+ |
| 2001 12 22 | 704 | 0.9− | 0.9+ | 2006 08 28 | 683 | 1.2− | 1.0+ | 2006 10 26 | 703 | 0.2− | 0.5− |
| 2001 12 22 | 704 | 0.2− | 0.9+ | 2006 08 29 | 683 | 0.5− | 0.6+ | | | | |

**(143515)∗ 2003 EX$_8$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 146.76993 | | | (2000.0) | | |
| $n$ | 0.16933831 | $\omega$ | 275.40682 | | −0.53189340 | +0.83794160 |
| $a$ | 3.2356825 | $\Omega$ | 321.63703 | | −0.67781962 | −0.50781771 |
| $e$ | 0.0670539 | $i$ | 11.35936 | | −0.50759232 | −0.19993761 |
| $P$ | 5.82 | $H$ | 14.5 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 327 | 1.2+ | 0.4+ | 2003 03 06 | 704 | (2.0+ | 0.6+) | 2005 08 15 | E12 | 0.3− | 0.9− |
| 1997 02 06 | 327 | 0.1− | 0.1+ | 2003 03 07 | 704 | 0.5+ | 0.1− | 2005 08 15 | E12 | 0.1− | 0.4+ |
| 1997 02 06 | 327 | 0.1+ | 0.1− | 2003 03 07 | 704 | 0.2+ | 0.1− | 2005 08 26 | 699 | 0.4+ | 0.5+ |
| 1997 02 08 | 910 | 1.1− | 0.3+ | 2003 03 07 | 704 | 0.1− | 0.7+ | 2005 08 26 | 699 | 0.3+ | 0.5+ |
| 1997 02 08 | 910 | 1.1− | 0.0 | 2003 03 07 | 704 | 0.4+ | 0.1+ | 2005 08 26 | 699 | 0.5+ | 0.2− |
| 1997 02 08 | 910 | 0.9− | 0.1+ | 2003 03 07 | 704 | 0.4+ | 0.4+ | 2005 08 26 | 699 | 0.2+ | 0.6+ |
| 1999 07 14 | 704 | 0.3+ | 0.7+ | 2003 03 09 | 704 | 0.4− | 1.3+ | 2005 08 27 | 644 | 0.2− | 0.1+ |
| 1999 07 14 | 704 | 1.0+ | 0.6+ | 2003 03 09 | 704 | 1.3+ | 0.9+ | 2005 08 27 | 644 | 0.3− | 0.3+ |
| 1999 07 14 | 704 | 0.2+ | 0.3+ | 2003 03 09 | 704 | 0.0 | 0.0 | 2005 08 27 | 644 | 0.0 | 0.1+ |
| 2002 12 07 | 645 | 0.0 | 0.1− | 2003 03 09 | 704 | (0.4+ | 1.7+) | 2005 10 27 | G96 | 0.1− | 0.2+ |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2003 03 09 | 704 | 0.1− | 1.1− | 2005 10 27 | G96 | 0.1− | 0.0 |
| 2003 02 03 | 699 | 0.8− | 1.3+ | 2005 07 11 | 699 | 0.5− | 0.5+ | 2005 10 27 | G96 | 0.4− | 0.1− |
| 2003 02 03 | 699 | 0.5+ | 0.4+ | 2005 07 11 | 699 | (0.5+ | 2.4+) | 2005 10 27 | G96 | 0.1+ | 0.3+ |
| 2003 02 03 | 699 | 0.4+ | 0.1− | 2005 07 11 | 699 | 0.9− | 0.1− | 2006 09 28 | 703 | 0.1+ | 1.2+ |
| 2003 02 03 | 699 | 0.6+ | 1.1+ | 2005 07 11 | 699 | (0.5− | 3.1+) | 2006 09 28 | 703 | 0.1+ | 0.3− |
| 2003 02 08 | 704 | (1.8+ | 0.1+) | 2005 07 28 | 644 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.6+ | 0.1+ |
| 2003 02 08 | 704 | 0.2− | 0.7− | 2005 07 28 | 644 | 0.6− | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2003 02 08 | 704 | 0.3+ | 0.4+ | 2005 07 28 | 644 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.4+ |
| 2003 02 08 | 704 | (2.6+ | 0.3−) | 2005 08 02 | 704 | 0.7− | 0.6+ | 2006 10 19 | 703 | 0.6− | 0.1+ |
| 2003 02 22 | 644 | 0.4+ | 0.5+ | 2005 08 02 | 704 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2003 02 22 | 644 | 0.5+ | 0.1+ | 2005 08 02 | 704 | 0.3− | 0.6+ | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2003 02 22 | 644 | 0.1+ | 0.2+ | 2005 08 02 | 704 | 0.5− | 0.4− | 2006 10 27 | 703 | 1.0+ | 0.5+ |
| 2003 03 06 | 699 | (0.4+ | 1.7+) | 2005 08 02 | 704 | 0.5+ | 1.0+ | 2006 10 27 | 703 | 1.3+ | 0.1− |
| 2003 03 06 | 699 | 1.4+ | 0.3+ | 2005 08 03 | 947 | 0.3− | 0.6− | 2006 10 27 | 703 | 0.5+ | 0.5+ |
| 2003 03 06 | 699 | 0.6+ | 0.1− | 2005 08 04 | 947 | 0.6− | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2003 03 06 | 704 | 1.1+ | 1.4+ | 2005 08 04 | 947 | 1.0− | 0.0 | 2006 11 22 | 703 | 0.1− | 0.5+ |
| 2003 03 06 | 699 | 0.3+ | 1.0+ | 2005 08 08 | 947 | 0.3− | 0.4− | 2006 11 22 | 703 | 1.2− | 0.3− |
| 2003 03 06 | 704 | (1.8+ | 0.5+) | 2005 08 08 | 947 | 0.0 | 0.2− | 2006 11 22 | 703 | 1.2− | 0.5− |
| 2003 03 06 | 704 | (1.9+ | 0.4+) | 2005 08 15 | E12 | 0.5+ | 0.4+ | 2006 11 22 | 703 | 0.3+ | 1.3+ |
| 2003 03 06 | 704 | (2.9+ | 2.3+) | 2005 08 15 | E12 | 0.6− | 0.3+ | | | | |

**(143516)∗ 2003 EP$_9$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 173.63583 | | | (2000.0) | | |
| $n$ | 0.17867865 | $\omega$ | 9.83845 | | −0.40189108 | +0.91491031 |
| $a$ | 3.1219140 | $\Omega$ | 236.47422 | | −0.84317218 | −0.38581574 |
| $e$ | 0.1431609 | $i$ | 2.59328 | | −0.35713336 | −0.11868170 |
| $P$ | 5.52 | $H$ | 15.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 12 | 691 | 0.1+ | 0.1− | 2003 04 04 | 704 | 0.9+ | 1.1+ | 2005 10 10 | 291 | 0.2− | 0.5+ |
| 1997 03 12 | 691 | 0.1+ | 0.3+ | 2003 04 04 | 704 | 0.7+ | 1.0+ | 2005 10 10 | 291 | 0.4− | 0.4+ |
| 1997 03 12 | 691 | 0.2+ | 0.1+ | 2003 04 05 | 704 | 0.4+ | 0.8− | 2005 10 10 | 691 | 0.0 | 0.0 |
| 1998 05 24 | 704 | 0.1− | 1.6+ | 2003 04 05 | 704 | 0.7+ | 0.1+ | 2005 10 10 | 691 | 0.1+ | 0.1+ |
| 1998 05 24 | 704 | 1.0− | 0.2+ | 2003 04 05 | 704 | 1.2+ | 0.7+ | 2005 11 03 | G96 | 0.1− | 0.2+ |
| 1998 05 24 | 704 | 2.0− | 0.1+ | 2004 06 15 | 704 | 0.5+ | 1.1+ | 2005 11 03 | G96 | 0.9− | 1.0+ |
| 1998 05 24 | 704 | (4.9− | 2.3+) | 2004 06 15 | 704 | 1.0+ | 0.7+ | 2005 11 03 | G96 | (0.1+ | 2.0+) |
| 2000 11 28 | 691 | 0.3+ | 0.3− | 2004 06 15 | 704 | 0.1+ | 0.7+ | 2005 11 03 | G96 | 0.1− | 0.1+ |
| 2000 11 28 | 691 | 0.7+ | 0.1− | 2005 09 26 | 691 | 0.4− | 0.4+ | 2005 11 05 | 691 | 0.2+ | 0.4+ |
| 2000 11 28 | 691 | 0.3+ | 0.3− | 2005 09 26 | 691 | 0.3− | 0.6+ | 2005 11 05 | 691 | 0.0 | 0.5+ |
| 2003 03 06 | 699 | 0.3+ | 0.2− | 2005 09 26 | 691 | 0.1− | 0.3+ | 2005 11 05 | 691 | 0.3− | 0.2+ |
| 2003 03 06 | 699 | 1.4+ | 0.5− | 2005 09 27 | 691 | 0.3− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2003 03 06 | 699 | 0.3+ | 0.3− | 2005 09 27 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.3− |
| 2003 03 06 | 699 | 0.4− | 1.0+ | 2005 09 27 | 691 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.5− | 0.2+ |
| 2003 03 07 | 704 | 0.2+ | 0.7+ | 2005 10 01 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2003 03 07 | 704 | 0.7+ | 0.5+ | 2005 10 01 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2003 03 07 | 704 | 0.7+ | 0.2+ | 2005 10 01 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2003 03 24 | 691 | 0.1+ | 0.4+ | 2005 10 01 | 703 | 0.4− | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2003 03 24 | 691 | 0.0 | 0.3+ | 2005 10 01 | 703 | 0.2+ | 0.5+ | 2006 11 15 | 691 | (1.6+ | 2.2−) |
| 2003 03 24 | 691 | 0.0 | 0.6+ | 2005 10 01 | 703 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2003 03 25 | 703 | (1.7− | 1.5+) | 2005 10 01 | 703 | 0.4+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2003 03 25 | 703 | 0.5− | 0.7+ | 2005 10 05 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2003 03 25 | 703 | 0.2− | 0.7+ | 2005 10 05 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2003 03 25 | 703 | (1.2− | 1.7+) | 2005 10 05 | 691 | 0.1− | 0.5+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2003 03 25 | 699 | 0.1− | 0.3+ | 2005 10 07 | 703 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2003 03 25 | 699 | 0.0 | 0.2+ | 2005 10 07 | 703 | 0.0 | 1.2− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2003 03 25 | 699 | 1.2+ | 0.2+ | 2005 10 07 | 703 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2003 03 25 | 699 | 0.5+ | 0.2+ | 2005 10 07 | 703 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2003 04 01 | 704 | (1.1− | 2.5+) | 2005 10 07 | 703 | 0.4− | 0.8+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 04 01 | 704 | 0.2− | 0.9+ | 2005 10 07 | 703 | 0.9− | 1.3− | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2003 04 01 | 704 | 0.0 | 1.2+ | 2005 10 07 | 703 | 1.2− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2003 04 01 | 704 | 0.4+ | 1.2+ | 2005 10 07 | 703 | 0.7+ | 0.3+ | 2006 12 01 | 691 | 0.8− | 0.1− |
| 2003 04 04 | 704 | (1.9+ | 0.9+) | 2005 10 10 | 691 | 0.5+ | 0.8− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2003 04 04 | 704 | (1.1+ | 1.8+) | 2005 10 10 | 291 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.1− | 0.2− |

**(143517)∗ 2003 ES$_9$ = 2005 SG$_{73}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 85936)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.08375 | | | (2000.0) | | |
| $n$ | 0.23731361 | $\omega$ | 205.05684 | | +0.84695491 | −0.53145711 |
| $a$ | 2.5837725 | $\Omega$ | 187.10203 | | +0.50579677 | +0.81404232 |
| $e$ | 0.0693599 | $i$ | 6.90170 | | +0.16382005 | +0.23428284 |
| $P$ | 4.15 | $H$ | 15.6 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 06 | 691 | 0.5− | 0.2− | 2005 09 23 | 691 | 0.2+ | 0.3+ | 2005 10 22 | 703 | 0.0 | 0.2+ |
| 1999 04 06 | 691 | (6.0− | 1.0−) | 2005 09 23 | 691 | 0.0 | 0.2+ | 2005 10 24 | 699 | 0.2− | 0.1− |
| 1999 04 06 | 691 | 0.2− | 0.4− | 2005 09 23 | 691 | 0.1+ | 0.0 | 2005 10 24 | 699 | 0.2+ | 0.1+ |
| 1999 04 12 | 691 | 0.1− | 0.3− | 2005 09 25 | 703 | 1.2+ | 0.6+ | 2005 10 24 | 699 | 0.4− | 0.3− |
| 1999 04 12 | 691 | 0.0 | 0.2− | 2005 09 25 | 703 | 0.3− | 0.3+ | 2005 10 24 | 699 | 0.2− | 0.0 |
| 1999 04 12 | 691 | 0.4+ | 0.2− | 2005 09 25 | 703 | 0.3− | 0.5+ | 2005 10 25 | 699 | 0.1− | 0.4− |
| 2001 10 17 | 704 | 0.3− | 0.8+ | 2005 09 25 | 703 | 0.2− | 0.0 | 2005 10 25 | 699 | 0.7− | 0.5− |
| 2001 10 17 | 704 | 1.1+ | 0.4+ | 2005 09 30 | 644 | 0.1− | 0.2− | 2005 10 25 | 699 | 0.2− | 0.2+ |
| 2001 10 17 | 704 | 0.5− | 0.8+ | 2005 09 30 | 644 | 0.0 | 0.1+ | 2005 10 25 | 699 | 0.2+ | 1.0− |
| 2001 10 17 | 704 | 0.6− | 0.2+ | 2005 09 30 | 644 | 0.0 | 0.0 | 2005 10 28 | 704 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 0.4− | 1.1+ | 2005 10 01 | 704 | 0.1+ | 1.1+ | 2005 10 28 | 704 | 0.1− | 0.5− |
| 2001 11 09 | 704 | 0.9+ | 0.1+ | 2005 10 01 | 704 | 0.5+ | 0.5+ | 2005 10 28 | 703 | 0.4+ | 1.0− |
| 2001 11 09 | 704 | 0.3+ | 0.7− | 2005 10 01 | 704 | 0.3+ | 0.1− | 2005 10 28 | 704 | 0.1+ | 0.3− |
| 2001 11 20 | 608 | 0.2− | 1.0− | 2005 10 01 | 704 | 0.2− | 0.4− | 2005 10 28 | 703 | (0.8− | 2.3−) |
| 2001 11 20 | 608 | 0.6+ | 0.6− | 2005 10 01 | 704 | 0.1− | 0.1− | 2005 10 28 | 703 | 0.2+ | 1.5− |
| 2001 11 20 | 608 | 0.6+ | 0.7− | 2005 10 01 | 703 | 0.7− | 1.1+ | 2005 10 28 | 704 | 0.2+ | 0.4+ |
| 2001 12 11 | 704 | 0.3+ | 0.6− | 2005 10 01 | 703 | (2.3− | 1.4+) | 2005 10 28 | 703 | 1.1+ | 1.2− |
| 2001 12 11 | 704 | 0.6− | 0.6− | 2005 10 01 | 703 | 0.2− | 0.4+ | 2005 10 28 | 704 | 0.6− | 0.9− |
| 2001 12 11 | 704 | 0.7− | 0.9− | 2005 10 01 | 703 | 0.8− | 0.7− | 2005 10 30 | 699 | 0.5− | 0.1− |
| 2001 12 11 | 704 | 0.2+ | 0.7− | 2005 10 01 | 699 | 1.5+ | 0.0 | 2005 10 30 | 699 | 0.1− | 1.0+ |
| 2003 03 06 | 699 | (2.3+ | 0.8+) | 2005 10 01 | 699 | 0.8+ | 0.7+ | 2005 10 30 | 699 | 1.2− | 0.3− |
| 2003 03 06 | 699 | (0.0 | 2.1−) | 2005 10 01 | 699 | 0.3+ | 0.3+ | 2005 10 30 | 699 | 0.9− | 0.3− |
| 2003 03 06 | 699 | 0.6− | 0.1+ | 2005 10 01 | 699 | 0.4− | 0.5+ | 2005 10 31 | 704 | 0.5− | 0.5− |
| 2003 03 06 | 699 | 0.9+ | 0.6− | 2005 10 05 | 704 | 0.1+ | 0.8+ | 2005 10 31 | 704 | 0.7− | 0.4+ |
| 2003 03 07 | 699 | 0.6+ | 0.7+ | 2005 10 05 | 704 | 0.5− | 0.2+ | 2005 10 31 | 704 | 0.6− | 0.5+ |
| 2003 03 07 | 699 | 0.1− | 0.8+ | 2005 10 05 | 704 | 0.2− | 0.3+ | 2005 10 31 | 704 | 0.7− | 0.7− |
| 2003 03 07 | 704 | 1.5+ | 1.0+ | 2005 10 05 | 704 | 0.2+ | 0.4+ | 2005 10 31 | 704 | 0.5+ | 0.0 |
| 2003 03 07 | 699 | 0.4− | 0.4+ | 2005 10 07 | 703 | 0.3+ | 0.6− | 2005 11 03 | 704 | 0.5− | 1.1+ |
| 2003 03 07 | 704 | 0.1− | 1.0+ | 2005 10 07 | 699 | 1.5+ | 0.4− | 2005 11 03 | 704 | 0.2+ | 0.7− |
| 2003 03 07 | 699 | 1.1+ | 0.7− | 2005 10 07 | 703 | 0.3− | 0.3− | 2005 11 03 | 704 | 0.4+ | 0.1+ |
| 2003 03 07 | 704 | 0.1− | 0.6− | 2005 10 07 | 703 | 0.9+ | 0.3− | 2005 11 03 | 704 | 0.4+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 704 | 1.2− | 0.2− | 2005 10 07 | 703 | 0.7− | 0.6− | 2005 11 03 | 704 | 0.5+ | 0.0 |
| 2003 03 26 | 644 | 0.1+ | 0.6+ | 2005 10 07 | 699 | 0.3+ | 0.4+ | 2005 11 05 | 699 | 0.3+ | 0.8+ |
| 2003 03 26 | 644 | 0.1− | 0.7+ | 2005 10 07 | 699 | 0.2+ | 0.0 | 2005 11 05 | 699 | 0.5+ | 0.2− |
| 2003 03 26 | 644 | 0.2+ | 0.6+ | 2005 10 07 | 699 | 0.1− | 0.7+ | 2005 11 05 | 699 | 0.3− | 0.5+ |
| 2003 03 31 | 691 | 0.0 | 0.3+ | 2005 10 22 | 703 | 0.5+ | 0.3+ | 2005 12 23 | 291 | 0.3− | 0.0 |
| 2003 03 31 | 691 | 0.1+ | 0.4+ | 2005 10 22 | 703 | 0.2− | 0.2+ | 2005 12 23 | 291 | 0.5− | 0.0 |
| 2003 03 31 | 691 | 0.0 | 0.1− | 2005 10 22 | 703 | 0.8+ | 0.6+ | 2005 12 23 | 291 | 0.0 | 0.0 |

**(143518)∗ 2003 ED$_{10}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.10324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18821091 | $\omega$ | 157.79354 | | −0.46561291 | −0.87491208 | |
| $a$ | 3.0155939 | $\Omega$ | 319.61839 | | +0.77792569 | −0.33288223 | |
| $e$ | 0.0895683 | $i$ | 11.86136 | | +0.42194341 | −0.35173609 | |
| $P$ | 5.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.0 | 0.3+ | 2003 03 07 | 699 | 0.0 | 0.5+ | 2005 10 27 | G96 | 0.1+ | 0.2− |
| 2001 10 25 | 704 | 0.0 | 0.5+ | 2003 03 07 | 704 | 0.3+ | 0.4+ | 2005 10 27 | G96 | 0.1+ | 0.1− |
| 2001 10 25 | 704 | 0.2+ | 1.2+ | 2003 03 07 | 704 | 1.4+ | 0.0 | 2005 10 27 | G96 | 0.1+ | 0.3− |
| 2001 10 25 | 704 | 0.4− | 0.7+ | 2003 03 10 | 699 | (1.2+ | 1.7+) | 2005 10 27 | G96 | 0.1+ | 1.0+ |
| 2001 11 11 | 704 | 0.4+ | 0.4+ | 2003 03 10 | 699 | 0.8+ | 0.2+ | 2006 09 25 | 703 | (0.4− | 2.0−) |
| 2001 11 11 | 704 | 0.6− | 0.1− | 2003 03 10 | 699 | 0.5+ | 0.4+ | 2006 09 25 | 703 | 0.4+ | 0.2+ |
| 2001 11 11 | 704 | (0.3+ | 2.5−) | 2003 03 10 | 699 | (1.8+ | 0.5+) | 2006 09 25 | 703 | 0.6+ | 1.3+ |
| 2003 03 06 | 699 | 0.7− | 0.6+ | 2003 03 25 | 608 | 0.2− | 0.1− | 2006 09 25 | 703 | 0.5− | 1.1+ |
| 2003 03 06 | 699 | 0.5+ | 0.5+ | 2003 03 25 | 608 | 0.2− | 0.4− | 2006 10 23 | 703 | 0.5+ | 0.7+ |
| 2003 03 06 | 699 | 0.2− | 0.3+ | 2003 03 25 | 608 | 0.1− | 0.5− | 2006 10 23 | 703 | 0.9+ | 0.9+ |
| 2003 03 06 | 699 | 0.1− | 0.9+ | 2005 07 05 | 291 | 0.1− | 0.3+ | 2006 10 23 | 703 | 0.0 | 0.0 |
| 2003 03 07 | 704 | (1.8+ | 1.5+) | 2005 07 05 | 291 | 0.7− | 0.3+ | 2006 10 23 | 703 | 0.5− | 0.3− |
| 2003 03 07 | 699 | 0.1+ | 0.9+ | 2005 07 05 | 291 | 0.6− | 0.4+ | 2006 10 29 | 703 | 1.3− | 1.9− |
| 2003 03 07 | 704 | 0.5+ | 0.6+ | 2005 07 12 | G96 | 0.3+ | 0.1+ | 2006 10 29 | 703 | 0.0 | 0.1+ |
| 2003 03 07 | 699 | 0.8+ | 0.5+ | 2005 07 12 | G96 | 0.2+ | 0.4+ | 2006 10 29 | 703 | 0.1+ | 0.1− |
| 2003 03 07 | 704 | 0.3+ | 0.4+ | 2005 07 12 | G96 | 0.3− | 0.4+ | 2006 10 29 | 703 | 1.3− | 0.5+ |
| 2003 03 07 | 704 | (2.4+ | 1.8+) | 2005 07 12 | G96 | 0.2+ | 0.4+ | 2006 11 01 | 628 | 0.6+ | 0.6− |
| 2003 03 07 | 699 | 0.0 | 1.0+ | 2005 08 06 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 628 | 0.2+ | 0.4− |
| 2003 03 07 | 704 | (2.7+ | 2.0+) | 2005 08 06 | 644 | 0.2+ | 0.5+ | | | | |
| 2003 03 07 | 704 | 0.3+ | 0.2+ | 2005 08 06 | 644 | 0.3+ | 0.2+ | | | | |

**(143519)∗ 2003 EV$_{11}$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.17135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17932396 | $\omega$ | 184.77727 | | −0.92099419 | −0.38084447 | |
| $a$ | 3.1144199 | $\Omega$ | 332.38434 | | +0.36303519 | −0.76263257 | |
| $e$ | 0.1241363 | $i$ | 10.19170 | | +0.14133345 | −0.52282794 | |
| $P$ | 5.50 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.4+ | 0.6+ | 2003 03 07 | 699 | 0.3+ | 0.2+ | 2005 08 28 | 701 | 0.8− | 0.9+ |
| 2001 12 09 | 704 | 0.3+ | 0.1− | 2003 03 07 | 699 | 0.6+ | 0.1− | 2005 08 28 | 701 | 0.8− | 0.7+ |
| 2001 12 09 | 704 | 0.7− | 0.0 | 2003 03 07 | 704 | 0.4− | 0.1+ | 2005 08 28 | 701 | 0.4− | 0.7+ |
| 2001 12 09 | 704 | 0.5− | 0.7+ | 2003 03 07 | 704 | 0.9+ | 1.3+ | 2005 09 30 | G96 | 0.1+ | 0.7+ |
| 2001 12 22 | 704 | 0.0 | 0.4− | 2003 03 25 | 644 | 0.1+ | 0.1− | 2005 09 30 | G96 | 0.3− | 0.5+ |
| 2001 12 22 | 704 | 0.5+ | 0.3+ | 2003 03 25 | 644 | 0.3+ | 0.2+ | 2005 09 30 | G96 | 0.2− | 0.7+ |
| 2001 12 22 | 704 | 0.1+ | 0.0 | 2003 03 25 | 699 | 1.3− | 0.3− | 2005 09 30 | G96 | 0.2− | 0.6+ |
| 2003 02 11 | 608 | 0.3− | 0.1− | 2003 03 25 | 644 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.8+ |
| 2003 02 11 | 608 | 0.2+ | 0.2+ | 2003 03 25 | 699 | 0.1− | 0.5+ | 2006 09 28 | 703 | 0.3− | 0.1+ |
| 2003 02 11 | 608 | 0.3− | 0.0 | 2003 03 25 | 699 | 0.9− | 0.4− | 2006 09 28 | 703 | 0.5+ | 0.1+ |
| 2003 03 06 | 699 | 0.3+ | 1.1+ | 2003 03 25 | 699 | 0.6+ | 0.5− | 2006 09 28 | 703 | 0.3+ | 0.4− |
| 2003 03 06 | 699 | 0.1− | 0.8+ | 2003 03 25 | 699 | 0.1− | 0.1+ | 2006 10 27 | 703 | 1.2− | 0.2+ |
| 2003 03 06 | 699 | 0.4+ | 0.4+ | 2003 03 25 | 699 | 0.1− | 0.4− | 2006 10 27 | 703 | (1.5+ | 1.9+) |
| 2003 03 06 | 699 | 0.0 | 0.4− | 2003 03 25 | 699 | 0.7− | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2003 03 06 | 704 | 0.5+ | 0.8+ | 2003 03 25 | 699 | 0.8− | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.6+ |
| 2003 03 06 | 704 | 0.4− | 1.1+ | 2003 03 27 | 644 | 0.2+ | 1.1− | 2006 11 15 | 703 | 0.4− | 0.6+ |
| 2003 03 06 | 704 | 0.2− | 0.0 | 2003 03 27 | 644 | 0.2+ | 1.1− | 2006 11 15 | 703 | 0.5+ | 0.7+ |
| 2003 03 07 | 699 | 0.6+ | 0.5− | 2003 03 27 | 644 | 0.3+ | 1.0− | 2006 11 15 | 703 | 0.3− | 2.0− |
| 2003 03 07 | 704 | 0.3− | 1.2+ | 2003 03 30 | 644 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.6− |
| 2003 03 07 | 699 | 0.9+ | 0.6+ | 2003 03 30 | 644 | 0.2− | 0.0 | | | | |
| 2003 03 07 | 704 | 1.5+ | 0.8+ | 2003 03 30 | 644 | 0.2+ | 0.2− | | | | |

**(143520)∗ 2003 EJ$_{12}$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.00648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22313223 | $\omega$ | 62.92010 | | +0.64230443 | −0.76424321 | |
| $a$ | 2.6921206 | $\Omega$ | 346.62058 | | +0.58366138 | +0.53686014 | |
| $e$ | 0.1390843 | $i$ | 14.54537 | | +0.49677402 | +0.35737028 | |
| $P$ | 4.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 566 | 0.3− | 0.2+ | 2003 03 31 | 691 | 0.4+ | 1.1+ | 2005 10 01 | 703 | 0.8− | 0.1+ |
| 1996 09 17 | 566 | 0.3− | 0.3− | 2003 03 31 | 704 | 1.5+ | 0.6+ | 2005 10 06 | 699 | 0.7− | 0.3− |
| 1996 09 17 | 566 | 0.3− | 0.1+ | 2003 03 31 | 704 | 0.8+ | 0.0 | 2005 10 06 | 699 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | (0.7− | 2.7−) | 2003 03 31 | 704 | 0.7+ | 0.5+ | 2005 10 06 | 703 | 0.6− | 0.1− |
| 2001 09 25 | 704 | (0.6− | 2.4−) | 2003 03 31 | 691 | 0.6+ | 1.4+ | 2005 10 06 | 703 | 1.1− | 0.6+ |
| 2001 09 25 | 704 | (1.1− | 3.1−) | 2003 03 31 | 691 | 0.7+ | 1.3+ | 2005 10 06 | 699 | 0.9− | 0.4+ |
| 2001 09 25 | 704 | (0.8− | 3.2−) | 2005 08 29 | 699 | 0.3− | 0.3+ | 2005 10 06 | 703 | 1.2− | 1.4+ |
| 2001 09 25 | 704 | (1.2− | 3.9−) | 2005 08 29 | 699 | 0.7− | 0.5+ | 2005 10 06 | 699 | 0.4− | 0.1+ |
| 2001 11 08 | 704 | 0.0 | 0.1− | 2005 08 29 | 699 | 0.2− | 0.2− | 2005 10 08 | 704 | 0.3+ | 0.7+ |
| 2001 11 08 | 704 | 0.0 | 0.1+ | 2005 08 29 | 699 | 0.1− | 0.1+ | 2005 10 08 | 704 | 0.2− | 1.2+ |
| 2001 11 08 | 704 | 0.3+ | 0.0 | 2005 08 29 | 644 | 0.3− | 0.2+ | 2005 10 08 | 704 | 0.4+ | 0.8+ |
| 2001 12 08 | 704 | 0.1+ | 0.3+ | 2005 08 29 | 644 | 0.5− | 0.2+ | 2005 10 08 | 704 | 0.1− | 0.6+ |
| 2001 12 08 | 704 | 0.5+ | 0.5+ | 2005 08 29 | 644 | 0.4− | 0.2+ | 2005 10 08 | 704 | 0.1− | 0.7+ |
| 2001 12 08 | 704 | 0.5+ | 0.2+ | 2005 08 30 | 704 | 0.3+ | 0.2− | 2005 10 30 | 699 | 0.1+ | 0.2+ |
| 2001 12 08 | 704 | 0.5+ | 0.3+ | 2005 08 30 | 704 | 0.6+ | 0.1− | 2005 10 30 | 699 | 0.5+ | 0.0 |
| 2001 12 08 | 704 | 0.4+ | 0.5+ | 2005 08 30 | 704 | 0.3+ | 0.2+ | 2005 10 30 | 699 | 0.4+ | 0.4+ |
| 2001 12 23 | 704 | 0.0 | 0.3− | 2005 08 30 | 704 | 0.1+ | 0.1− | 2005 11 05 | 704 | 0.7+ | 0.2+ |
| 2001 12 23 | 704 | 0.3− | 0.5− | 2005 09 01 | 691 | 0.1− | 0.3+ | 2005 11 05 | 704 | 0.9− | 0.3+ |
| 2001 12 23 | 704 | 0.1− | 0.5− | 2005 09 01 | 691 | 0.1+ | 0.2+ | 2005 11 05 | 704 | 0.4+ | 0.7+ |
| 2001 12 23 | 704 | 0.3− | 0.7− | 2005 09 01 | 691 | 0.2− | 0.2+ | 2005 11 05 | 704 | (0.6− | 1.7+) |
| 2001 12 23 | 704 | 0.7− | 0.8− | 2005 09 08 | A50 | 0.1+ | 0.4+ | 2005 11 05 | 704 | 0.2− | 0.0 |
| 2002 01 06 | 704 | 0.5− | 0.3− | 2005 09 08 | A50 | 1.3+ | 0.8+ | 2005 11 20 | 644 | 0.3− | 0.3+ |
| 2002 01 06 | 704 | 0.2− | 0.0 | 2005 09 08 | A50 | 0.9+ | 1.4+ | 2005 11 20 | 644 | 0.2− | 0.4+ |
| 2002 01 06 | 704 | 0.3− | 0.9+ | 2005 09 08 | A50 | 0.6− | 0.4+ | 2005 11 20 | 644 | 0.2− | 0.5+ |
| 2003 03 06 | 704 | 0.7+ | 0.7+ | 2005 09 11 | 704 | 0.6− | 0.6+ | 2005 11 30 | 644 | 0.6− | 0.3− |
| 2003 03 06 | 704 | 1.2+ | 0.2+ | 2005 09 11 | 704 | 0.5− | 0.2+ | 2005 11 30 | 644 | 0.3− | 0.9+ |
| 2003 03 06 | 704 | 1.4+ | 0.1+ | 2005 09 11 | 704 | 0.4− | 0.1− | 2005 11 30 | 644 | 0.1+ | 0.7+ |
| 2003 03 07 | 704 | 1.0+ | 0.3− | 2005 09 11 | 704 | 0.1+ | 0.7+ | 2005 12 02 | 703 | 0.1− | 0.8+ |
| 2003 03 07 | 704 | 0.7+ | 0.4− | 2005 09 11 | 704 | 0.7− | 0.3+ | 2005 12 02 | 703 | 0.9− | 1.1+ |
| 2003 03 07 | 704 | (2.6+ | 0.2−) | 2005 09 22 | 224 | 0.7− | 0.2− | 2005 12 02 | 703 | 0.1− | 0.2− |
| 2003 03 10 | 699 | 0.9+ | 0.9+ | 2005 09 23 | 224 | 0.1− | 0.4+ | 2005 12 02 | 703 | 0.9− | 0.3− |
| 2003 03 10 | 699 | 1.1+ | 0.9+ | 2005 09 23 | 224 | 0.4− | 0.2− | 2006 11 16 | 703 | 0.7− | 0.8− |
| 2003 03 10 | 699 | 0.4+ | 0.5+ | 2005 09 29 | 699 | 0.1− | 0.3− | 2006 11 16 | 703 | 1.3− | 0.6− |
| 2003 03 10 | 699 | 1.0+ | 0.6+ | 2005 09 29 | 699 | 0.5− | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.8+ |
| 2003 03 26 | 644 | 0.4+ | 0.5+ | 2005 09 29 | 699 | 0.3− | 0.4− | 2006 11 16 | 703 | 0.0 | 0.6+ |
| 2003 03 26 | 644 | 0.4+ | 0.5+ | 2005 09 29 | 699 | 0.2− | 0.6+ | 2006 11 23 | 703 | 0.8− | 1.0− |
| 2003 03 26 | 644 | 0.2+ | 0.3+ | 2005 10 01 | 703 | 0.9− | 0.2+ | 2006 11 23 | 703 | 0.5− | 0.5+ |
| 2003 03 31 | 704 | (1.7+ | 0.2+) | 2005 10 01 | 703 | 0.3− | 0.3+ | 2006 11 23 | 703 | 0.8− | 0.4− |
| 2003 03 31 | 704 | 0.9+ | 1.1+ | 2005 10 01 | 703 | 0.9− | 0.2+ | 2006 11 23 | 703 | 0.6− | 1.0+ |

**(143521)∗ 2003 EY$_{12}$ = 2000 WM$_{150}$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47328)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 272.64284 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21485224 | $\omega$ | 23.49915 | | −0.94340964 | | +0.33116372 | |
| $a$ | 2.7608499 | $\Omega$ | 175.72335 | | −0.32917264 | | −0.92866523 | |
| $e$ | 0.0961643 | $i$ | 13.63084 | | −0.04029426 | | −0.16706730 | |
| $P$ | 4.59 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 1.2− | 0.4+ | 2003 03 30 | 704 | 1.6+ | 0.1− | 2003 04 25 | 699 | 0.6− | 0.1− |
| 1998 03 04 | 704 | 0.9− | 0.2− | 2003 03 31 | 699 | 0.1+ | 0.0 | 2003 04 26 | 683 | 0.1− | 0.5+ |
| 1998 03 04 | 704 | 0.7− | 1.1− | 2003 03 31 | 699 | 0.6− | 0.4+ | 2003 04 26 | 683 | 0.6+ | 0.2+ |
| 1998 03 04 | 704 | 0.5+ | 1.7− | 2003 03 31 | 699 | 0.0 | 0.8+ | 2003 04 26 | 683 | 0.2+ | 1.3− |
| 1999 06 14 | 704 | 1.7− | 0.5− | 2003 03 31 | 699 | 1.2− | 0.8− | 2003 04 26 | 704 | 0.2+ | 0.6+ |
| 1999 06 14 | 704 | 1.9− | 0.1+ | 2003 04 01 | 704 | 0.1− | 0.2+ | 2003 04 26 | 704 | 0.7+ | 0.3− |
| 1999 06 14 | 704 | 1.2− | 1.2− | 2003 04 01 | 704 | 0.4+ | 0.2+ | 2003 04 26 | 704 | 0.7+ | 0.7− |
| 1999 06 14 | 704 | 0.6+ | 0.8− | 2003 04 01 | 704 | 0.1+ | 0.2+ | 2003 04 26 | 704 | 0.3+ | 0.3+ |
| 2000 09 30 | 691 | 0.4+ | 0.4+ | 2003 04 01 | 704 | 0.3− | 0.1+ | 2003 04 26 | 704 | 1.2+ | 0.4+ |
| 2000 09 30 | 691 | 0.3+ | 0.5+ | 2003 04 01 | 704 | 0.1− | 0.1− | 2003 04 28 | 691 | 0.7− | 0.1+ |
| 2000 09 30 | 691 | 0.4+ | 0.3+ | 2003 04 02 | 704 | 0.3− | 0.8+ | 2003 04 28 | 691 | 0.3− | 0.0 |
| 2000 11 30 | 691 | 0.2− | 0.3+ | 2003 04 02 | 704 | 0.1− | 0.1+ | 2003 04 28 | 691 | 0.5− | 0.1+ |
| 2000 11 30 | 691 | 0.4− | 0.1+ | 2003 04 02 | 704 | 0.0 | 0.5+ | 2003 04 29 | 683 | 0.5− | 0.3+ |
| 2000 11 30 | 691 | 0.2+ | 0.8+ | 2003 04 02 | 704 | 0.3+ | 0.1+ | 2003 04 29 | 683 | 1.4− | 1.8− |
| 2000 12 04 | 691 | 0.7+ | 0.4+ | 2003 04 02 | 704 | 0.1+ | 0.1+ | 2003 04 29 | 683 | 0.1− | 0.5− |
| 2000 12 04 | 691 | 0.1− | 0.1+ | 2003 04 02 | 608 | 0.0 | 0.6− | 2003 05 02 | 704 | 0.5+ | 1.0+ |
| 2000 12 04 | 691 | 0.3+ | 0.1+ | 2003 04 02 | 608 | 0.0 | 0.4− | 2003 05 02 | 704 | 0.6+ | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.7− | 2003 04 02 | 608 | 0.0 | 0.8− | 2003 05 02 | 704 | 0.1+ | 0.4− |
| 2001 12 19 | 704 | 0.1+ | 1.1− | 2003 04 07 | 691 | 0.2− | 0.3+ | 2003 05 02 | 704 | 0.7+ | 0.1− |
| 2001 12 19 | 704 | 0.3+ | 0.8− | 2003 04 07 | 691 | 0.2− | 0.2+ | 2003 05 02 | 704 | 0.6+ | 0.7+ |
| 2001 12 19 | 704 | 0.9+ | 0.0 | 2003 04 07 | 691 | 0.2− | 0.2+ | 2003 05 06 | 703 | 0.1+ | 0.3− |
| 2003 02 11 | 608 | 1.1+ | 0.9+ | 2003 04 08 | 704 | 1.2+ | 1.5− | 2003 05 06 | 703 | 0.9+ | 0.5+ |
| 2003 02 11 | 608 | 1.0+ | 0.9+ | 2003 04 08 | 704 | 1.5− | 1.2+ | 2003 05 06 | 703 | 1.2+ | 0.8+ |
| 2003 02 11 | 608 | 0.8+ | 0.8+ | 2003 04 08 | 704 | 1.0+ | 1.2− | 2003 05 06 | 703 | (2.4+ | 1.0+) |
| 2003 03 06 | 704 | 0.5+ | 0.0 | 2003 04 08 | 704 | 0.2− | 0.6− | 2005 10 10 | 703 | 0.1− | 0.3− |
| 2003 03 06 | 704 | 0.3+ | 0.5+ | 2003 04 08 | 704 | 1.8+ | 0.9− | 2005 10 10 | 703 | 1.2− | 0.9+ |
| 2003 03 06 | 704 | 0.2− | 0.1+ | 2003 04 08 | 704 | 0.1+ | 0.2+ | 2005 10 10 | 703 | 0.7− | 0.4+ |
| 2003 03 06 | 704 | 0.3− | 0.1− | 2003 04 08 | 704 | 0.4− | 1.3− | 2005 10 10 | 703 | 0.2− | 0.4− |
| 2003 03 06 | 704 | 0.5− | 0.0 | 2003 04 09 | 704 | 0.1+ | 0.4+ | 2005 10 22 | 644 | 0.3+ | 1.0+ |
| 2003 03 08 | 291 | 0.4− | 0.4+ | 2003 04 09 | 704 | 0.1+ | 0.1+ | 2005 10 22 | 644 | 0.1− | 0.9+ |
| 2003 03 08 | 291 | 0.2− | 0.6+ | 2003 04 09 | 704 | 0.1+ | 0.3+ | 2005 10 22 | 644 | 0.1+ | 0.3+ |
| 2003 03 08 | 291 | 0.5− | 0.6+ | 2003 04 09 | 704 | 0.0 | 0.4+ | 2005 10 27 | 644 | 0.0 | 0.3+ |
| 2003 03 10 | 704 | 0.6− | 0.3− | 2003 04 09 | 704 | 0.0 | 0.4+ | 2005 10 27 | 644 | 0.1+ | 0.7+ |
| 2003 03 10 | 704 | 2.0+ | 0.2− | 2003 04 09 | 704 | 0.1+ | 0.5+ | 2005 10 27 | 644 | 0.0 | 0.9+ |
| 2003 03 10 | 704 | (0.9+ | 2.3−) | 2003 04 09 | 704 | 0.1+ | 0.4+ | 2005 10 28 | 703 | 0.6− | 0.3+ |
| 2003 03 10 | 704 | 1.1+ | 0.0 | 2003 04 09 | 704 | 0.3+ | 0.8+ | 2005 10 28 | 703 | 0.6− | 0.7+ |
| 2003 03 13 | 608 | 1.3+ | 1.0+ | 2003 04 10 | 704 | 0.6+ | 0.6+ | 2005 10 28 | 703 | 0.1− | 0.2+ |
| 2003 03 13 | 608 | 2.0+ | 0.7+ | 2003 04 10 | 704 | 1.4+ | 0.9+ | 2005 10 28 | 703 | 0.0 | 0.6+ |
| 2003 03 13 | 608 | 1.5+ | 1.2+ | 2003 04 10 | 704 | 0.2+ | 0.8+ | 2005 11 03 | 703 | 0.8+ | 0.5+ |
| 2003 03 17 | 608 | 1.3− | 0.2− | 2003 04 10 | 704 | 0.9+ | 0.1+ | 2005 11 03 | 703 | 0.1− | 0.3+ |
| 2003 03 17 | 608 | 0.5− | 0.2− | 2003 04 10 | 704 | 0.9+ | 1.1+ | 2005 11 03 | 703 | 0.1− | 0.1− |
| 2003 03 17 | 608 | 0.7− | 0.7− | 2003 04 24 | 683 | (2.8− | 1.9+) | 2005 11 03 | 703 | 0.0 | 0.8− |
| 2003 03 29 | 699 | 0.1− | 0.5− | 2003 04 24 | 683 | (2.1− | 1.1−) | 2005 11 06 | 699 | 1.4+ | 1.2+ |
| 2003 03 29 | 699 | 0.3+ | 0.3− | 2003 04 24 | 683 | (2.4+ | 4.4−) | 2005 11 06 | 699 | 0.2+ | 0.2+ |
| 2003 03 29 | 699 | 0.7− | 0.2− | 2003 04 25 | 683 | 1.0− | 1.2+ | 2005 11 06 | 699 | 0.1− | 0.7+ |
| 2003 03 29 | 699 | 0.5− | 0.8− | 2003 04 25 | 683 | 0.4− | 0.9+ | 2005 11 06 | 699 | 0.9− | 1.0+ |
| 2003 03 30 | 704 | (2.6+ | 0.1−) | 2003 04 25 | 683 | 0.6− | 0.4+ | 2005 11 09 | 703 | 0.7− | 0.4− |
| 2003 03 30 | 704 | 1.3+ | 0.1+ | 2003 04 25 | 699 | 0.2− | 0.6− | 2005 11 09 | 703 | 1.6− | 0.4− |
| 2003 03 30 | 704 | 1.5+ | 0.4+ | 2003 04 25 | 699 | 1.3− | 0.5− | 2005 11 09 | 703 | 0.8− | 0.4− |
| 2003 03 30 | 704 | 1.4+ | 0.6+ | 2003 04 25 | 699 | 0.4− | 0.2+ | 2005 11 09 | 703 | 2.0− | 0.4− |

**(143522)∗ 2003 EG$_{13}$**

Discovered 2003 Mar. 6 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 180.26199 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.16978783 | $\omega$ | 12.60773 | | −0.94177078 | | +0.33610800 | |
| $a$ | 3.2299689 | $\Omega$ | 187.05622 | | −0.31512091 | | −0.89252663 | |
| $e$ | 0.0889344 | $i$ | 4.65088 | | −0.11733121 | | −0.30071188 | |
| $P$ | 5.80 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 05 | 691 | 0.3− | 0.3+ | 2003 03 07 | 704 | 0.9+ | 1.0+ | 2004 06 18 | 704 | 0.6− | 0.8+ |
| 1992 04 05 | 691 | 0.0 | 0.1+ | 2003 03 07 | 704 | 0.5+ | 0.5+ | 2004 06 18 | 704 | 0.6+ | 0.9+ |
| 1992 04 05 | 691 | 0.0 | 0.4+ | 2003 03 07 | 704 | 0.5+ | 0.1− | 2004 06 18 | 704 | 0.1− | 0.2+ |
| 1995 12 14 | 691 | 0.4− | 0.0 | 2003 03 07 | 704 | 0.1− | 0.1− | 2004 06 18 | 704 | 0.2− | 0.1− |
| 1995 12 14 | 691 | 0.2− | 0.1+ | 2003 03 12 | 644 | 0.4+ | 0.7+ | 2005 07 29 | 644 | 0.0 | 0.1− |
| 1995 12 14 | 691 | 0.3+ | 0.3+ | 2003 03 12 | 644 | 0.7+ | 0.7+ | 2005 07 29 | 644 | 0.0 | 0.1+ |
| 1997 03 13 | 691 | 0.2− | 0.6− | 2003 03 12 | 644 | 0.3+ | 0.6+ | 2005 07 29 | 644 | 0.1+ | 0.1− |
| 1997 03 13 | 691 | 0.3+ | 0.4− | 2003 03 30 | 645 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.2+ |
| 1997 03 13 | 691 | 0.2− | 0.4− | 2003 03 30 | 645 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.2+ |
| 1998 05 01 | 704 | 1.1− | 0.4− | 2004 04 23 | 599 | 0.3+ | 0.1+ | 2006 09 14 | 691 | 0.3− | 0.0 |
| 1998 05 01 | 704 | 0.6+ | 0.9+ | 2004 04 23 | 599 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 1998 05 01 | 704 | 1.2+ | 1.2+ | 2004 04 23 | 599 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 1998 05 01 | 704 | 0.7+ | 0.8+ | 2004 04 23 | 599 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2000 09 20 | 691 | 0.3+ | 0.4+ | 2004 05 14 | 704 | 0.8+ | 0.5+ | 2006 10 03 | 691 | 0.6− | 0.2+ |
| 2000 09 20 | 691 | 0.2+ | 0.1+ | 2004 05 14 | 704 | 0.2+ | 0.7+ | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 2000 09 20 | 691 | 0.5+ | 0.2+ | 2004 05 14 | 704 | 0.6− | 0.8+ | 2006 10 03 | 691 | 0.3− | 0.3+ |
| 2000 10 01 | 704 | 0.2+ | 0.6+ | 2004 05 15 | 704 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.3− | 0.2− | 2004 05 15 | 704 | 0.5+ | 1.2+ | 2006 10 16 | 691 | 0.3− | 0.1+ |
| 2000 10 01 | 704 | 0.3+ | 0.6+ | 2004 05 15 | 704 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.5− | 0.0 |
| 2000 10 01 | 704 | 0.3− | 0.6+ | 2004 05 15 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 695 | 0.2− | 0.2+ |
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2004 05 17 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 695 | 0.2− | 0.1+ |
| 2001 12 20 | 644 | 0.2+ | 0.2− | 2004 05 17 | 704 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 12 20 | 644 | 0.1− | 0.0 | 2004 05 17 | 704 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 12 20 | 644 | 0.4+ | 0.7− | 2004 05 17 | 704 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2003 02 03 | 699 | 0.5− | 0.2− | 2004 05 17 | 704 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.5+ | 0.4+ |
| 2003 02 03 | 699 | 0.2− | 0.1+ | 2004 05 20 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2003 02 03 | 699 | (0.2+ | 1.6+) | 2004 05 20 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2003 02 03 | 699 | 1.5+ | 0.9+ | 2004 05 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 1.0+ |
| 2003 03 06 | 644 | 0.6+ | 0.6+ | 2004 06 11 | 599 | (2.2− | 1.0+) | 2006 11 11 | 703 | 0.5− | 1.5+ |
| 2003 03 06 | 644 | 0.8+ | 0.6+ | 2004 06 11 | 599 | 1.2− | 0.8+ | 2006 11 11 | 703 | 1.3− | 1.5+ |
| 2003 03 06 | 644 | 0.5+ | 0.6+ | 2004 06 11 | 599 | (1.8− | 0.9+) | 2006 11 11 | 703 | 0.9− | 1.0− |
| 2003 03 07 | 704 | 0.5+ | 0.4+ | 2004 06 11 | 599 | (2.1− | 1.3+) | | | | |

**(143523)∗ 2003 EH$_{13}$ = 2000 QC$_{113}$ = 2001 YO$_{150}$**

Discovered 2003 Mar. 6 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 50178)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 10.22371 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17808060 | $\omega$ | 198.64809 | | +0.99209093 | | −0.11877450 | |
| $a$ | 3.1288997 | $\Omega$ | 167.95534 | | +0.12477032 | | +0.96847597 | |
| $e$ | 0.0891830 | $i$ | 11.21858 | | −0.01370956 | | +0.21896782 | |
| $P$ | 5.53 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 17 | 599 | 0.1− | 0.8− | 2003 03 07 | 704 | 0.7+ | 0.2+ | 2006 10 14 | 130 | 0.3+ | 1.3− |
| 1997 01 17 | 599 | 0.4− | 1.5− | 2003 03 07 | 704 | 0.2+ | 0.7− | 2006 10 14 | 130 | 0.1− | 1.0− |
| 1998 03 22 | 691 | 0.5− | 0.6− | 2003 03 07 | 704 | 0.1+ | 0.0 | 2006 10 14 | 130 | 0.3− | 0.4+ |
| 1998 03 22 | 691 | 0.3− | 0.4− | 2003 03 07 | 704 | (1.6+ | 0.9+) | 2006 10 16 | 703 | 0.7− | 0.0 |
| 1998 03 22 | 691 | 0.6− | 1.0− | 2003 03 12 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2000 08 24 | 704 | 0.3− | 1.1+ | 2003 03 12 | 644 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 1.3− | 0.3− |
| 2000 08 24 | 704 | 0.8+ | 0.0 | 2003 03 12 | 644 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2000 08 24 | 704 | (2.4+ | 0.7−) | 2003 03 30 | 645 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2000 08 31 | 704 | 0.7+ | 0.2+ | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.5− |
| 2000 08 31 | 704 | 0.3+ | 0.1− | 2004 04 16 | 704 | (0.6+ | 1.8+) | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2000 08 31 | 704 | 1.2− | 0.1− | 2004 04 16 | 704 | 0.1− | 0.9+ | 2006 10 22 | 703 | 0.0 | 0.7+ |
| 2000 08 31 | 704 | 0.1+ | 0.7+ | 2004 04 16 | 704 | 0.7+ | 1.2+ | 2006 10 22 | 703 | 0.1− | 1.0+ |
| 2000 08 31 | 704 | 0.7+ | 0.5+ | 2004 04 16 | 704 | 0.9+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.7− | 0.1− | 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.7− | 0.4− | 2006 09 16 | 699 | 1.2+ | 1.0− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.2+ | 0.0 | 2006 09 16 | 699 | 1.3+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.1+ | 1.0+ | 2006 09 16 | 699 | 0.8+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 1.0+ | 1.1+ | 2006 09 18 | 703 | (1.1+ | 2.0−) | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 1.1+ | 1.1+ | 2006 09 18 | 703 | 0.4+ | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.8+ | 1.3+ | 2006 09 18 | 703 | 0.1− | 1.0− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 0.9+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2001 12 20 | 608 | 0.3− | 1.2− | 2006 09 25 | 699 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 12 20 | 608 | 0.2− | 0.9− | 2006 09 25 | 699 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.3− |
| 2001 12 20 | 608 | 0.5− | 1.0− | 2006 09 25 | 699 | 0.7− | 0.5− | 2006 10 28 | 703 | 0.6+ | 0.5+ |
| 2001 12 20 | 209 | 0.1− | 0.6− | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2001 12 20 | 209 | 0.3− | 0.7− | 2006 09 26 | 704 | 0.6− | 0.7+ | 2006 10 28 | 703 | 0.5− | 0.2− |
| 2001 12 20 | 209 | 0.1− | 0.9− | 2006 09 26 | 704 | 0.8+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 1.0− |
| 2003 02 09 | 644 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.2− | 0.3+ | 2006 11 10 | 704 | (3.0+ | 0.5−) |
| 2003 02 09 | 644 | 0.2+ | 0.7+ | 2006 09 26 | 704 | (2.1− | 0.8+) | 2006 11 10 | 704 | (0.2− | 1.9+) |
| 2003 02 09 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.2− | 2006 11 10 | 704 | 0.7+ | 1.0+ |
| 2003 02 22 | 644 | 0.5+ | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.9+ | 0.7+ |
| 2003 02 22 | 644 | 0.7+ | 0.6+ | 2006 09 26 | 703 | 0.8− | 0.3+ | 2006 11 16 | 703 | 0.1− | 0.8− |
| 2003 02 22 | 644 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.5− | 0.8+ | 2006 11 16 | 703 | 0.3− | 0.6− |
| 2003 03 06 | 699 | (0.9− | 1.6+) | 2006 09 29 | 699 | 0.4+ | 0.3− | 2006 11 16 | 703 | 0.6− | 0.4− |
| 2003 03 06 | 699 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.8+ | 2006 11 16 | 703 | 0.2− | 0.0 |
| 2003 03 06 | 699 | 0.0 | 0.9+ | 2006 09 29 | 699 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.2− | 0.5+ |
| 2003 03 06 | 699 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2003 03 06 | 644 | 0.3+ | 0.7+ | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 16 | 703 | 1.4− | 0.8+ |
| 2003 03 06 | 644 | 0.8+ | 0.9+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.5− | 0.4+ |
| 2003 03 06 | 644 | 0.2+ | 0.9+ | 2006 10 04 | G96 | 0.1+ | 0.2− | | | | |
| 2003 03 07 | 704 | (1.8+ | 0.1+) | 2006 10 04 | G96 | 0.1+ | 0.3− | | | | |

**(143524)∗ 2003 ET$_{13}$ = 2005 NA$_{62}$**

Discovered 2003 Mar. 6 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 85939)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.44690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17101131 | $\omega$ | 207.28518 | | −0.94143606 | −0.33054414 | |
| $a$ | 3.2145449 | $\Omega$ | 313.24819 | | +0.32364483 | −0.83035779 | |
| $e$ | 0.0866401 | $i$ | 5.24799 | | +0.09461588 | −0.44860507 | |
| $P$ | 5.76 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.9+ | 0.4+ | 2003 02 26 | 599 | 0.6+ | 0.2+ | 2005 07 15 | G96 | 0.3− | 0.2+ |
| 2001 11 11 | 704 | 0.7+ | 0.8+ | 2003 03 06 | 644 | 0.5+ | 0.5+ | 2005 07 15 | G96 | 0.0 | 0.1+ |
| 2001 11 11 | 704 | 0.6− | 1.0+ | 2003 03 06 | 644 | 0.3+ | 0.3+ | 2005 07 15 | G96 | 0.7− | 0.3+ |
| 2001 11 16 | 734 | 0.9− | 1.1− | 2003 03 06 | 644 | 0.6+ | 0.1+ | 2005 07 31 | E12 | 0.4− | 0.4+ |
| 2001 11 16 | 734 | 0.1+ | 0.2− | 2003 03 07 | 704 | 0.4+ | 0.5+ | 2005 07 31 | E12 | (0.1− | 2.1+) |
| 2001 11 16 | 734 | (0.6− | 1.5+) | 2003 03 07 | 704 | 0.2− | 0.3+ | 2005 07 31 | E12 | 0.3− | 0.8+ |
| 2002 01 08 | 704 | 0.3− | 0.1+ | 2003 03 07 | 704 | 0.2− | 0.4− | 2005 07 31 | E12 | 1.1− | 0.2+ |
| 2002 01 08 | 704 | 1.0+ | 0.1+ | 2003 03 07 | 704 | 0.3− | 0.7+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2002 01 08 | 704 | 0.3+ | 0.6− | 2003 03 09 | 704 | 0.5+ | 1.3+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2002 01 08 | 704 | 1.0− | 0.2− | 2003 03 09 | 704 | 0.2+ | 1.1+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2003 01 31 | 704 | 1.0− | 1.0+ | 2003 03 09 | 704 | (0.6− | 1.8+) | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2003 01 31 | 704 | 0.3− | 0.8+ | 2003 03 09 | 704 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2003 01 31 | 704 | 0.9− | 0.1+ | 2005 07 11 | 691 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2003 01 31 | 704 | 0.8+ | 0.8+ | 2005 07 11 | 691 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2003 02 22 | 644 | 0.6+ | 0.3+ | 2005 07 11 | 691 | 0.7+ | 0.4− | 2006 10 17 | 703 | 1.4+ | 0.5− |
| 2003 02 22 | 644 | 1.1+ | 0.2+ | 2005 07 12 | G96 | 0.5− | 0.5+ | 2006 10 17 | 703 | 1.1+ | 0.5− |
| 2003 02 22 | 644 | 0.3+ | 0.7+ | 2005 07 12 | G96 | 0.1+ | 0.4+ | 2006 10 17 | 703 | (0.2+ | 2.2−) |
| 2003 02 26 | 599 | 0.2+ | 0.0 | 2005 07 12 | G96 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 02 26 | 599 | 0.1+ | 0.1+ | 2005 07 12 | G96 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2003 02 26 | 599 | 0.2+ | 0.1+ | 2005 07 15 | G96 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.9+ |

**(143525)∗ 2003 EZ$_{14}$**

Discovered 2003 Mar. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.24437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18648339 | $\omega$ | 0.59588 | | −0.97969862 | +0.19843968 | |
| $a$ | 3.0341889 | $\Omega$ | 190.97529 | | −0.18454685 | −0.94823081 | |
| $e$ | 0.0884789 | $i$ | 8.60963 | | −0.07831394 | −0.24795165 | |
| $P$ | 5.29 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.4− | 1.2− | 2003 03 07 | 704 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.3− |
| 1998 03 29 | 704 | 0.6+ | 0.7− | 2003 03 07 | 704 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.5− |
| 1998 03 29 | 704 | (2.3− | 2.5−) | 2003 03 08 | 704 | 0.6+ | 0.8+ | 2006 10 03 | G96 | 0.2+ | 0.6− |
| 1998 03 29 | 704 | 1.9− | 0.7+ | 2003 03 08 | 704 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.3− | 0.5− |
| 1998 03 29 | 704 | (3.7− | 0.5−) | 2003 03 08 | 704 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.3− | 0.2+ |
| 2000 08 31 | 691 | 0.4+ | 0.3− | 2003 03 09 | 704 | 1.0+ | 0.7− | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2000 08 31 | 691 | 0.5+ | 0.3− | 2003 03 09 | 704 | 0.6+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2000 08 31 | 691 | 0.3+ | 0.3− | 2003 03 09 | 704 | 1.3+ | 1.2+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2000 08 31 | 691 | 0.5+ | 0.3− | 2003 03 09 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2000 08 31 | 691 | 0.4+ | 0.4− | 2003 03 09 | 704 | 0.5− | 0.9− | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 2000 08 31 | 691 | 0.1+ | 0.1− | 2003 03 26 | 699 | 0.6− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2000 09 29 | 691 | 0.4− | 0.3+ | 2003 03 26 | 699 | 0.8+ | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2000 09 29 | 691 | 0.5− | 0.3+ | 2003 03 26 | 699 | 0.7− | 1.4− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2000 09 29 | 691 | 0.3− | 0.4+ | 2003 03 26 | 699 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2005 08 29 | 599 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2000 10 02 | 645 | 0.1− | 0.1+ | 2005 08 29 | 599 | 0.6− | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2003 03 07 | 704 | 0.1+ | 1.3+ | 2005 08 29 | 599 | 0.4− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2003 03 07 | 704 | 0.3+ | 1.2− | 2005 08 29 | 599 | 1.1+ | 0.8+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2003 03 07 | 704 | 1.1+ | 0.1+ | 2005 11 01 | G96 | 0.5− | 0.3− | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2003 03 07 | 704 | 0.6+ | 0.9+ | 2005 11 01 | G96 | 0.3− | 0.3− | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2003 03 07 | 704 | 0.4− | 0.6+ | 2005 11 01 | G96 | 0.7− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.6− |
| 2003 03 07 | 704 | (1.6+ | 0.1+) | 2005 11 01 | G96 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.5− |

**(143526)∗ 2003 EG$_{15}$**

Discovered 2003 Mar. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.12089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18879998 | $\omega$ | 191.51885 | | −0.87059442 | −0.48309200 | |
| $a$ | 3.0093180 | $\Omega$ | 319.16459 | | +0.46196880 | −0.73747460 | |
| $e$ | 0.1137376 | $i$ | 8.19497 | | +0.16926364 | −0.47196752 | |
| $P$ | 5.22 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.3− | 0.2− | 2003 03 09 | 704 | 0.9+ | 0.1+ | 2003 03 31 | 704 | 0.0 | 0.8− |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2003 03 09 | 704 | 0.4+ | 0.1− | 2003 04 04 | 699 | 0.6− | 0.2+ |
| 2001 11 11 | 704 | 0.4+ | 1.2− | 2003 03 09 | 704 | 0.2+ | 0.0 | 2003 04 04 | 699 | (1.8− | 0.4−) |
| 2001 11 11 | 704 | 0.3− | 0.5+ | 2003 03 09 | 704 | 0.4+ | 0.7+ | 2003 04 04 | 699 | 0.8− | 0.5+ |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2003 03 10 | 699 | 0.1+ | 0.2+ | 2003 04 04 | 699 | 1.0− | 0.8+ |
| 2001 12 22 | 704 | 1.1+ | 0.6+ | 2003 03 10 | 699 | 0.1+ | 0.5− | 2005 10 06 | 691 | 0.3− | 0.5+ |
| 2001 12 22 | 704 | 0.9+ | 0.6+ | 2003 03 10 | 704 | 0.2+ | 0.2+ | 2005 10 06 | 691 | 0.2− | 0.5+ |
| 2001 12 22 | 704 | 1.1− | 0.1+ | 2003 03 10 | 699 | 0.1− | 0.1+ | 2005 10 06 | 691 | 0.4− | 0.8+ |
| 2001 12 22 | 704 | 0.2+ | 0.2− | 2003 03 10 | 704 | 0.7+ | 0.1− | 2006 10 19 | 703 | 0.9− | 0.8+ |
| 2001 12 22 | 704 | (1.8− | 2.4+) | 2003 03 10 | 699 | 0.6− | 0.6+ | 2006 10 19 | 703 | 0.5− | 0.6+ |
| 2002 01 08 | 704 | 0.5− | 0.6− | 2003 03 10 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 703 | (2.0− | 0.6−) |
| 2002 01 08 | 704 | 0.5− | 1.1− | 2003 03 10 | 704 | 0.1+ | 0.9+ | 2006 10 19 | 703 | 1.2− | 0.4+ |
| 2002 01 08 | 704 | 0.6+ | 1.0− | 2003 03 25 | 699 | 0.7+ | 0.1+ | 2006 10 27 | 703 | 0.7+ | 0.5+ |
| 2003 02 11 | 608 | 0.0 | 0.2+ | 2003 03 25 | 699 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.6+ |
| 2003 02 11 | 608 | 0.6− | 0.3+ | 2003 03 25 | 699 | 0.1+ | 0.9+ | 2006 10 27 | 703 | 0.1+ | 1.0+ |
| 2003 02 11 | 608 | 0.4+ | 0.1+ | 2003 03 25 | 699 | 0.9− | 0.5− | 2006 10 27 | 703 | 0.7+ | 0.2+ |
| 2003 03 07 | 704 | 0.1− | 0.2+ | 2003 03 27 | 644 | 0.5− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.6− |
| 2003 03 07 | 704 | 0.8+ | 0.0 | 2003 03 27 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 1.2− | 0.4− |
| 2003 03 07 | 704 | 0.1− | 0.7+ | 2003 03 27 | 644 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.6− |
| 2003 03 07 | 704 | 0.1+ | 0.2+ | 2003 03 30 | 644 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.6+ | 1.2− |
| 2003 03 07 | 704 | 0.5+ | 0.1+ | 2003 03 30 | 644 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.3+ |
| 2003 03 07 | 704 | 0.7+ | 0.1− | 2003 03 30 | 644 | 0.1− | 0.4+ | 2006 11 17 | 644 | 0.3+ | 0.5+ |
| 2003 03 07 | 704 | 0.4+ | 0.2+ | 2003 03 31 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 644 | 0.0 | 0.4+ |
| 2003 03 07 | 704 | 0.0 | 0.7− | 2003 03 31 | 644 | 0.1+ | 0.5+ | 2006 11 21 | 703 | 1.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 704 | 0.4+ | 0.1− | 2003 03 31 | 644 | 0.1− | 0.5+ | 2006 11 21 | 703 | 0.4− | 0.9+ | | |
| 2003 03 08 | 704 | 0.3+ | 1.2+ | 2003 03 31 | 704 | 0.4+ | 0.5− | 2006 11 21 | 703 | 0.8+ | 0.7+ | | |
| 2003 03 08 | 704 | 0.6+ | 0.4− | 2003 03 31 | 704 | 0.1+ | 0.2− | 2006 11 21 | 703 | 0.7− | 0.2+ | | |
| 2003 03 08 | 704 | 0.1+ | 0.0 | 2003 03 31 | 704 | 0.3− | 0.0 | | | | | | |
| 2003 03 09 | 704 | 0.9+ | 0.1− | 2003 03 31 | 704 | 0.5+ | 0.1+ | | | | | | |

**(143527)∗ 2003 EN$_{16}$**

Discovered 2003 Mar. 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.67170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.46031238 | $\omega$ | 242.01860 | | +0.44174447 | −0.89708956 | |
| $a$ | 1.6612473 | $\Omega$ | 181.84855 | | +0.89153932 | +0.44015500 | |
| $e$ | 0.3523530 | $i$ | 17.31256 | | +0.10009727 | +0.03865104 | |
| $P$ | 2.14 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 691 | 0.7− | 0.3− | 2003 03 26 | 691 | 1.1+ | 1.0+ | 2004 09 22 | 704 | 0.4+ | 0.8+ | | |
| 2003 03 08 | 691 | 0.4− | 0.5− | 2003 03 26 | 246 | 0.0 | 0.1− | 2004 09 22 | 704 | 0.2− | 1.2+ | | |
| 2003 03 08 | 691 | 0.4− | 0.8− | 2003 03 26 | 246 | 0.3+ | 0.2+ | 2004 09 22 | 704 | 0.4− | 1.2+ | | |
| 2003 03 08 | 246 | 0.9− | 0.5− | 2003 03 26 | 246 | 0.3+ | 0.2+ | 2004 09 22 | 704 | 0.5− | 0.6+ | | |
| 2003 03 08 | 246 | 0.2− | 0.7+ | 2003 03 26 | 246 | 0.0 | 0.3+ | 2004 09 22 | 704 | 0.4− | 1.1+ | | |
| 2003 03 09 | 176 | (1.3− | 2.3+) | 2003 03 26 | 246 | 0.3+ | 0.3+ | 2004 09 24 | 704 | 0.4+ | 0.9+ | | |
| 2003 03 09 | 176 | 1.0− | 1.2+ | 2003 03 27 | 246 | (0.1+ | 1.6+) | 2004 09 24 | 704 | (0.4− | 2.0+) | | |
| 2003 03 09 | 176 | 0.6− | 0.3+ | 2003 03 27 | 246 | 1.2+ | 0.3+ | 2004 09 24 | 704 | 0.0 | 0.8+ | | |
| 2003 03 09 | 176 | 0.4− | 0.4− | 2003 03 27 | 246 | 1.1+ | 1.4+ | 2004 09 24 | 704 | 0.1+ | 1.3+ | | |
| 2003 03 09 | 651 | 0.4− | 0.5+ | 2003 03 27 | 246 | 0.5+ | 0.8+ | 2004 10 07 | 704 | 0.2− | 0.6+ | | |
| 2003 03 09 | 651 | 0.6− | 0.6− | 2003 03 27 | 246 | 0.2+ | 0.5+ | 2004 10 07 | 704 | 0.5− | 0.6+ | | |
| 2003 03 09 | 651 | 0.3− | 0.7+ | 2003 03 27 | 246 | 0.6+ | 0.2+ | 2004 10 07 | 704 | 0.5− | 0.7+ | | |
| 2003 03 09 | 926 | 0.3+ | 0.3− | 2003 03 28 | 291 | 0.3− | 0.4+ | 2004 10 07 | 704 | 0.4− | 0.8+ | | |
| 2003 03 09 | 926 | 0.2+ | 1.4− | 2003 03 28 | 291 | 0.2+ | 0.3+ | 2005 02 05 | E17 | 0.0 | 0.2− | | |
| 2003 03 09 | 926 | 0.8− | 1.1+ | 2003 03 28 | 291 | 0.2− | 0.2+ | 2005 02 05 | E17 | 0.2− | 0.1− | | |
| 2003 03 09 | 291 | 0.2+ | 0.4+ | 2003 03 29 | 291 | 0.1− | 0.1+ | 2005 02 05 | E17 | 0.3− | 0.3− | | |
| 2003 03 09 | 291 | 0.2− | 0.2+ | 2003 03 29 | 291 | (1.8+ | 0.2−) | 2005 02 09 | 704 | 1.1+ | 0.4− | | |
| 2003 03 09 | 291 | 0.2− | 0.3+ | 2003 03 30 | 291 | 0.2− | 0.2+ | 2005 02 09 | 704 | 0.9+ | 0.6− | | |
| 2003 03 09 | 711 | (0.7+ | 2.3+) | 2003 03 30 | 291 | 0.0 | 0.4+ | 2005 02 09 | 704 | 0.5+ | 0.3− | | |
| 2003 03 09 | 711 | 0.8− | 1.5+ | 2003 03 30 | 291 | 0.0 | 0.4+ | 2005 03 07 | 704 | (0.1+ | 2.1+) | | |
| 2003 03 09 | 448 | 0.3− | 0.1+ | 2003 04 04 | 246 | 0.2+ | 0.2+ | 2005 03 07 | 704 | 0.7− | 1.3+ | | |
| 2003 03 09 | 711 | 0.7+ | 1.3+ | 2003 04 04 | 246 | 0.8+ | 0.1+ | 2005 03 07 | 704 | 0.8+ | 0.8+ | | |
| 2003 03 09 | 448 | 0.2+ | 1.0− | 2003 04 26 | 291 | 0.2+ | 0.1− | 2005 03 07 | 704 | 0.8− | 0.7+ | | |
| 2003 03 09 | 448 | 0.2− | 0.3− | 2003 04 26 | 291 | 0.7+ | 0.1− | 2005 03 07 | 704 | 0.1+ | 0.0 | | |
| 2003 03 09 | 474 | 0.5+ | 0.5+ | 2003 04 26 | 291 | 0.3+ | 0.2− | 2005 03 11 | 704 | 1.1− | 0.2− | | |
| 2003 03 09 | 474 | 0.0 | 0.8− | 2003 04 27 | 291 | 0.3+ | 0.5− | 2005 03 11 | 704 | 0.4− | 0.2− | | |
| 2003 03 09 | 474 | 0.2− | 1.0− | 2003 04 27 | 291 | 0.3+ | 0.2− | 2005 03 11 | 704 | 0.6+ | 0.3+ | | |
| 2003 03 10 | 291 | 0.1+ | 0.3+ | 2003 04 27 | 291 | 0.2+ | 0.6− | 2005 03 17 | 703 | 0.8− | 1.0− | | |
| 2003 03 10 | 291 | 0.3− | 0.4+ | 2003 07 31 | 568 | 0.1− | 0.0 | 2005 03 17 | 703 | (2.2− | 0.3+) | | |
| 2003 03 10 | 291 | 0.1+ | 0.5+ | 2003 07 31 | 568 | 0.1− | 0.0 | 2005 03 17 | 703 | 0.3− | 0.6− | | |
| 2003 03 10 | 474 | 0.2+ | 0.0 | 2004 07 17 | 246 | 0.5+ | 0.2+ | 2005 03 17 | 703 | 0.5− | 0.7+ | | |
| 2003 03 10 | 474 | 0.7+ | 0.2+ | 2004 07 17 | 246 | 0.6+ | 0.5− | 2006 07 16 | H55 | 0.3+ | 0.1+ | | |
| 2003 03 12 | 413 | 0.2+ | 0.1+ | 2004 07 17 | 246 | 0.5+ | 1.0+ | 2006 07 16 | H55 | 0.5+ | 0.1− | | |
| 2003 03 12 | 413 | 0.4− | 0.1+ | 2004 07 17 | 246 | 0.7+ | 0.6+ | 2006 07 16 | H55 | 0.1− | 0.1+ | | |
| 2003 03 13 | 291 | 0.1− | 0.4+ | 2004 07 17 | 246 | 0.2− | 1.1+ | 2006 07 24 | A13 | 0.3+ | 0.0 | | |
| 2003 03 13 | 291 | 0.1+ | 0.4+ | 2004 07 22 | 246 | 0.9− | 1.3+ | 2006 07 24 | A13 | 0.3+ | 0.1− | | |
| 2003 03 13 | 291 | 0.1− | 0.4+ | 2004 07 22 | 246 | 0.7− | 0.9+ | 2006 07 29 | H55 | (1.1− | 1.5+) | | |
| 2003 03 13 | 413 | 0.0 | 0.5+ | 2004 07 22 | 246 | 0.3− | 0.7+ | 2006 07 29 | H55 | 0.3− | 0.5− | | |
| 2003 03 13 | 413 | 0.5+ | 0.3+ | 2004 07 22 | 246 | 0.5− | 0.9+ | 2006 07 29 | H55 | 0.2− | 0.5− | | |
| 2003 03 21 | 448 | 0.5+ | 1.0− | 2004 07 22 | 246 | 0.1− | 0.3+ | 2006 08 02 | H45 | 0.4− | 0.3+ | | |
| 2003 03 21 | 448 | (0.7+ | 2.0−) | 2004 07 22 | 246 | 0.2− | 0.6+ | 2006 08 02 | H45 | 0.0 | 0.2+ | | |
| 2003 03 21 | 448 | (1.0+ | 1.8−) | 2004 08 16 | 246 | 0.8+ | 0.1+ | 2006 08 02 | H45 | 0.4+ | 0.3+ | | |
| 2003 03 22 | 246 | 0.3− | 0.0 | 2004 08 16 | 246 | 0.4+ | 0.0 | 2006 08 02 | H45 | 0.0 | 0.1+ | | |
| 2003 03 22 | 246 | 0.7− | 0.0 | 2004 08 16 | 246 | 0.1+ | 0.3+ | 2006 08 02 | H45 | 0.2+ | 0.4+ | | |
| 2003 03 22 | 246 | 0.1− | 0.2+ | 2004 08 16 | 246 | 0.4− | 0.4+ | 2006 08 24 | H55 | 0.8− | 0.7− | | |
| 2003 03 22 | 246 | 0.5+ | 0.6+ | 2004 08 16 | 246 | 0.0 | 0.3+ | 2006 08 24 | H55 | 0.5− | 0.0 | | |
| 2003 03 24 | 413 | 0.1+ | 0.0 | 2004 08 19 | 704 | 0.5+ | 0.8+ | 2006 08 24 | H55 | 0.7− | 0.3− | | |
| 2003 03 24 | 413 | 0.4− | 0.2+ | 2004 08 19 | 704 | 0.5+ | 0.2+ | 2006 08 30 | H45 | 0.3+ | 0.6+ | | |
| 2003 03 24 | 413 | 0.1+ | 0.1+ | 2004 08 19 | 704 | 0.1− | 0.0 | 2006 08 30 | H45 | 0.1+ | 0.5+ | | |
| 2003 03 24 | 413 | 0.1+ | 0.1− | 2004 08 19 | 704 | 0.6+ | 0.6+ | 2006 08 30 | H45 | 0.3+ | 0.2+ | | |
| 2003 03 24 | 413 | 0.1+ | 0.1+ | 2004 09 09 | 704 | 0.4− | 0.3+ | 2006 08 30 | H45 | 0.1+ | 0.2+ | | |
| 2003 03 24 | 413 | 0.0 | 0.1− | 2004 09 09 | 704 | 0.6− | 0.5+ | 2006 08 30 | H45 | 0.0 | 0.3+ | | |
| 2003 03 25 | 291 | (2.1− | 0.2+) | 2004 09 09 | 704 | 0.1− | 0.6+ | 2006 10 22 | G96 | 0.4+ | 0.1− | | |
| 2003 03 25 | 291 | 0.1− | 0.2+ | 2004 09 09 | 704 | 0.6+ | 1.5+ | 2006 10 22 | G96 | 0.0 | 0.2− | | |
| 2003 03 25 | 291 | 0.0 | 0.3+ | 2004 09 09 | 704 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.3+ | 0.0 | | |
| 2003 03 26 | 291 | 0.0 | 0.0 | 2004 09 17 | 704 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.2+ | | |
| 2003 03 26 | 291 | 0.0 | 0.1+ | 2004 09 17 | 704 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2003 03 26 | 291 | 0.1+ | 0.1+ | 2004 09 17 | 704 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2003 03 26 | 691 | 0.6+ | 1.1+ | 2004 09 17 | 704 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.5+ | 0.2+ | | |
| 2003 03 26 | 691 | 0.4+ | 1.0+ | 2004 09 17 | 704 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.5+ | 0.3− | | |

**(143528)∗ 2003 ET$_{18}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.68478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17804467 | $\omega$ | 234.90215 | | +0.81087947 | −0.58158682 | |
| $a$ | 3.1293207 | $\Omega$ | 160.40261 | | +0.57992648 | +0.78366779 | |
| $e$ | 0.0432386 | $i$ | 11.18263 | | +0.07848420 | +0.21822368 | |
| $P$ | 5.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.3− | 0.6− | 2003 04 05 | 691 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.1− | | |
| 2001 12 19 | 704 | 0.4− | 0.2− | 2005 07 04 | 691 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2001 12 19 | 704 | 0.4+ | 1.1+ | 2005 07 04 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 2001 12 19 | 704 | 0.6− | 0.3+ | 2005 07 04 | 691 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.6+ | | |
| 2001 12 19 | 704 | 0.8+ | 0.8+ | 2005 07 26 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.5− | 0.1− | | |
| 2003 03 06 | 699 | 0.4+ | 0.3+ | 2005 07 26 | 644 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.6− | 0.1− | | |
| 2003 03 06 | 699 | 0.5+ | 0.1+ | 2005 07 26 | 644 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2003 03 06 | 699 | 0.0 | 0.6+ | 2005 07 26 | 644 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.7− | 1.0− | | |
| 2003 03 06 | 699 | 0.1+ | 0.4+ | 2005 07 26 | 644 | 0.3− | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2003 03 09 | 704 | 0.1+ | 0.6+ | 2005 07 26 | 644 | (0.4− | 2.3+) | 2006 10 22 | 703 | 0.2+ | 0.7+ | | |
| 2003 03 09 | 704 | (0.7+ | 1.8+) | 2005 12 01 | 695 | 0.1− | 0.5+ | 2006 10 22 | 703 | (2.5− | 0.8+) | | |
| 2003 03 09 | 704 | (1.1+ | 1.6+) | 2005 12 01 | 695 | 0.1+ | 0.7+ | 2006 10 22 | 644 | 0.4− | 0.7+ | | |
| 2003 03 24 | 691 | 0.2+ | 0.5+ | 2006 09 29 | 699 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.4+ | | |
| 2003 03 24 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.6+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.1− | | |
| 2003 03 24 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.5+ | | |
| 2003 03 31 | 645 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.0 | 0.7+ | 2006 11 16 | 703 | 0.5+ | 0.5+ | | |
| 2003 03 31 | 645 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.4− | 2006 11 16 | 703 | 0.1− | 0.3+ | | |
| 2003 04 05 | 691 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.2+ | 2006 11 16 | 703 | 1.0− | 0.1+ | | |
| 2003 04 05 | 691 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.9+ | 1.2− | | | | | | |

**(143529)∗ 2003 EU$_{18}$ = 2000 SY$_{299}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 47333)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.65709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17432077 | $\omega$ | 344.67675 | | +0.84476892 | +0.53323662 | |
| $a$ | 3.1737299 | $\Omega$ | 342.87275 | | −0.47351479 | +0.70568616 | |
| $e$ | 0.0652053 | $i$ | 8.78768 | | −0.24929745 | +0.46654663 | |
| $P$ | 5.65 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.2+ | 0.0 | 2003 03 09 | 704 | 0.8+ | 1.2+ | 2005 08 27 | E12 | 0.2− | 0.1− | | |
| 2000 09 28 | 704 | 0.2− | 0.5+ | 2003 03 09 | 704 | 0.7− | 0.3− | 2005 08 27 | E12 | 1.0− | 0.2+ | | |
| 2000 09 28 | 704 | 0.1− | 0.7+ | 2003 03 09 | 291 | 1.2− | 0.6+ | 2005 09 01 | 644 | 0.2− | 0.3+ | | |
| 2000 09 28 | 704 | 1.4− | 0.2+ | 2003 03 09 | 704 | 1.5+ | 0.6+ | 2005 09 01 | 644 | 0.2− | 0.4+ | | |
| 2000 09 28 | 704 | 0.4+ | 0.9− | 2003 03 11 | 291 | 0.3+ | 0.1− | 2005 09 01 | 644 | 0.0 | 0.4+ | | |
| 2000 10 03 | 704 | 0.2− | 0.9+ | 2003 03 11 | 291 | 0.2+ | 0.2− | 2005 10 28 | G96 | 0.3+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.6+ | 0.2+ | 2003 03 11 | 291 | 0.1+ | 0.2− | 2005 10 28 | G96 | 0.3− | 0.3− | | |
| 2000 10 03 | 704 | 0.1− | 0.0 | 2003 03 24 | 691 | 0.3− | 0.3+ | 2005 10 28 | G96 | 0.2+ | 0.5+ | | |
| 2000 10 03 | 704 | 0.2+ | 0.4+ | 2003 03 24 | 691 | 0.2+ | 0.1+ | 2005 10 28 | G96 | 0.2+ | 0.1+ | | |
| 2001 12 19 | 644 | 0.3− | 0.0 | 2003 03 24 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 1.1− | 0.6+ | | |
| 2001 12 19 | 644 | 0.1− | 0.2− | 2003 04 05 | 691 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.5+ | | |
| 2001 12 19 | 644 | 0.4− | 0.3− | 2003 04 05 | 691 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.9+ | 0.8+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 24 | 621 | 0.9+ | 0.2+ | 2003 04 05 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.7− | 0.1+ |
| 2003 02 24 | 621 | 0.3+ | 0.2+ | 2004 04 17 | 644 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2003 02 24 | 621 | 0.5+ | 0.0 | 2004 04 17 | 644 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2003 02 24 | 621 | 0.4− | 0.0 | 2004 04 17 | 644 | 0.2+ | 0.2− | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2003 02 24 | 621 | 0.0 | 0.6+ | 2005 07 03 | 644 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.4+ | 0.8− |
| 2003 03 06 | 699 | 0.5+ | 0.3+ | 2005 07 03 | 644 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.4− | 0.3+ |
| 2003 03 06 | 699 | 0.1+ | 0.8+ | 2005 07 03 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 2003 03 06 | 699 | 0.4+ | 0.2+ | 2005 07 26 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.5+ |
| 2003 03 06 | 699 | 1.1+ | 0.3− | 2005 07 26 | 644 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.5+ |
| 2003 03 09 | 291 | 0.3+ | 0.2+ | 2005 07 26 | 644 | 0.4− | 0.6+ | 2006 11 22 | 703 | 0.6− | 0.3− |
| 2003 03 09 | 704 | 1.2+ | 0.9+ | 2005 08 27 | E12 | 0.8− | 0.2+ | 2006 11 22 | 703 | 0.4+ | 0.4− |
| 2003 03 09 | 291 | 0.1+ | 0.1+ | 2005 08 27 | E12 | 0.1+ | 0.6+ | 2006 11 22 | 703 | 0.4+ | 0.1− |

**(143530)∗ 2003 EE$_{19}$ = 2001 YT$_5$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 47333)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.10831 | | (2000.0) | | | |
| $n$ | 0.18423154 | $\omega$ | 332.04476 | | −0.80872140 | −0.58755920 |
| $a$ | 3.0588632 | $\Omega$ | 171.80633 | | +0.56902690 | −0.79326961 |
| $e$ | 0.0544424 | $i$ | 11.03286 | | +0.14892307 | −0.15967941 |
| $P$ | 5.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.4− | 0.2− | 2003 02 23 | 699 | 0.0 | 0.7+ | 2003 03 26 | 699 | 0.5+ | 0.4− |
| 1993 04 21 | 691 | 0.9− | 0.1− | 2003 02 23 | 699 | 0.7+ | 0.1− | 2003 03 26 | 699 | 0.2− | 0.1+ |
| 1993 04 21 | 691 | 0.2− | 0.1+ | 2003 03 06 | 699 | 0.1− | 0.1+ | 2003 04 05 | 691 | 0.3+ | 0.6+ |
| 1993 05 14 | 691 | 0.5+ | 0.4+ | 2003 03 06 | 699 | 0.2+ | 0.4− | 2003 04 05 | 691 | 0.2+ | 0.7+ |
| 1993 05 14 | 691 | 0.5+ | 0.0 | 2003 03 06 | 699 | 0.7− | 0.4+ | 2003 04 05 | 691 | 0.6+ | 0.7+ |
| 1993 05 14 | 691 | 0.7+ | 0.0 | 2003 03 06 | 699 | 0.8− | 0.0 | 2005 08 06 | 644 | 0.6+ | 0.5+ |
| 1998 03 29 | 704 | 0.7− | 1.0− | 2003 03 09 | 704 | 0.3− | 0.3− | 2005 08 06 | 644 | 0.1− | 0.5+ |
| 1998 03 29 | 704 | 1.4− | 1.6− | 2003 03 09 | 704 | 0.1+ | 0.7+ | 2005 08 06 | 644 | 0.3− | 0.7+ |
| 1998 03 29 | 704 | (2.3+ | 2.1−) | 2003 03 09 | 704 | 0.2− | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.6+ |
| 1998 03 29 | 704 | (1.3+ | 2.2+) | 2003 03 09 | 704 | 0.0 | 0.1+ | 2005 08 06 | 644 | 0.4− | 0.5+ |
| 1998 03 29 | 704 | (0.6+ | 3.0−) | 2003 03 09 | 644 | 0.2+ | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.6+ |
| 2001 12 19 | 209 | 0.1− | 0.1− | 2003 03 09 | 704 | 0.4− | 0.2+ | 2005 08 24 | 644 | 0.2− | 0.4+ |
| 2001 12 19 | 209 | 0.3+ | 0.4+ | 2003 03 09 | 644 | 0.2+ | 0.3− | 2005 08 24 | 644 | 0.1+ | 0.9+ |
| 2001 12 19 | 209 | 0.2− | 0.0 | 2003 03 09 | 644 | 0.0 | 0.0 | 2005 08 24 | 644 | 0.3− | 0.7+ |
| 2001 12 20 | 209 | 0.0 | 0.1+ | 2003 03 24 | 691 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2001 12 20 | 209 | 0.3− | 0.2+ | 2003 03 24 | 691 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 12 20 | 209 | 0.6+ | 0.5− | 2003 03 24 | 691 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.4− | 0.4+ |
| 2003 02 08 | 608 | 0.5− | 0.4+ | 2003 03 26 | 644 | 0.3+ | 1.0+ | 2006 10 22 | 703 | 0.9− | 0.9− |
| 2003 02 08 | 608 | 0.6+ | 0.6+ | 2003 03 26 | 644 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.3+ |
| 2003 02 08 | 608 | 0.5− | 0.0 | 2003 03 26 | 644 | 0.2− | 1.0+ | 2006 10 22 | 703 | 0.7+ | 1.3+ |
| 2003 02 23 | 683 | 0.3− | 0.9+ | 2003 03 26 | 644 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 2003 02 23 | 683 | 0.6+ | 0.1+ | 2003 03 26 | 644 | 0.2+ | 1.0+ | 2006 11 16 | 703 | 0.4− | 0.5+ |
| 2003 02 23 | 699 | 0.0 | 0.5− | 2003 03 26 | 644 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.9− | 0.7− |
| 2003 02 23 | 683 | 1.2+ | 0.5+ | 2003 03 26 | 699 | 0.6− | 0.7− | 2006 11 16 | 703 | 0.0 | 0.5+ |
| 2003 02 23 | 699 | 0.6+ | 0.1+ | 2003 03 26 | 699 | 1.1− | 0.7+ | 2006 11 16 | 703 | 0.6+ | 0.5− |

**(143531)∗ 2003 EC$_{20}$ = 2005 QX$_{109}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 85941)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 204.11295 | | (2000.0) | | | |
| $n$ | 0.19239602 | $\omega$ | 42.22063 | | −0.80905768 | +0.58729207 |
| $a$ | 2.9717024 | $\Omega$ | 173.62204 | | −0.57889066 | −0.78963513 |
| $e$ | 0.0486661 | $i$ | 11.77261 | | −0.10154445 | −0.17766370 |
| $P$ | 5.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 691 | 0.1− | 0.5− | 2002 01 18 | 209 | 0.9− | 0.0 | 2005 08 30 | 691 | 0.1+ | 0.2+ |
| 1993 03 24 | 691 | 0.3− | 0.4− | 2003 02 23 | 599 | 0.0 | 0.3+ | 2005 08 30 | 691 | 0.3+ | 0.2+ |
| 1993 03 24 | 691 | 0.2− | 0.8− | 2003 02 23 | 599 | 0.1+ | 0.3+ | 2005 08 30 | 691 | 0.3+ | 0.3+ |
| 1995 09 25 | 691 | 0.2+ | 0.3− | 2003 02 24 | 599 | 0.1− | 0.5+ | 2005 09 13 | 691 | 0.3− | 0.4− |
| 1995 09 25 | 691 | 0.2+ | 0.2− | 2003 02 24 | 599 | 0.1− | 0.2+ | 2005 09 13 | 691 | 0.3− | 0.4+ |
| 1995 09 25 | 691 | 0.3+ | 0.2− | 2003 03 06 | 683 | (0.1− | 5.0+) | 2005 09 13 | 691 | 0.1− | 0.6+ |
| 1995 10 26 | 104 | 0.1− | 0.5+ | 2003 03 06 | 683 | (0.1+ | 3.1+) | 2005 10 01 | G96 | 0.2+ | 0.2− |
| 1995 10 26 | 104 | 0.5− | 0.2+ | 2003 03 06 | 699 | 0.1− | 0.6+ | 2005 10 01 | G96 | 0.5− | 0.1− |
| 1995 10 26 | 104 | 0.2− | 0.0 | 2003 03 06 | 683 | 0.2+ | 1.2+ | 2005 10 01 | G96 | 0.1+ | 0.1− |
| 1995 10 26 | 104 | 0.2+ | 0.4+ | 2003 03 06 | 699 | 0.3+ | 0.5+ | 2005 10 01 | G96 | 0.0 | 0.2− |
| 2000 11 30 | 691 | 0.2− | 0.8− | 2003 03 06 | 699 | 0.4− | 1.7+ | 2005 10 01 | 703 | 0.3− | 1.0− |
| 2000 11 30 | 691 | 0.0 | 0.3− | 2003 03 06 | 699 | 1.0+ | 1.4+ | 2005 10 01 | 703 | 0.9− | 1.3− |
| 2000 11 30 | 691 | 0.0 | 0.2+ | 2003 03 09 | 704 | 0.4− | 0.4+ | 2005 10 01 | 703 | 1.0− | 1.5− |
| 2001 12 19 | 704 | 0.0 | 0.3+ | 2003 03 09 | 704 | 0.2+ | 1.3− | 2005 10 01 | 703 | 0.5+ | 1.8+ |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2003 03 09 | 704 | 0.3+ | 0.8− | 2005 10 03 | G96 | 0.8− | 1.3− |
| 2001 12 19 | 704 | 0.4+ | 1.2− | 2003 03 09 | 704 | 1.0+ | 0.5− | 2005 10 03 | G96 | 0.6+ | 0.2− |
| 2001 12 19 | 704 | 1.0+ | 0.2− | 2005 08 27 | 644 | 0.1− | 0.3+ | 2005 10 03 | G96 | 1.5+ | 0.6+ |
| 2002 01 18 | 209 | 0.8− | 0.3+ | 2005 08 27 | 644 | 0.4− | 0.4+ | 2005 10 03 | G96 | 0.3+ | 0.0 |
| 2002 01 18 | 209 | 0.8− | 0.4− | 2005 08 27 | 644 | 0.3+ | 0.5+ | | | | |

**(143532)∗ 2003 EK$_{20}$ = 1993 PT**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47335)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.82655 | | (2000.0) | | | |
| $n$ | 0.17373033 | $\omega$ | 78.63800 | | −0.42550037 | +0.90469444 |
| $a$ | 3.1809166 | $\Omega$ | 166.11777 | | −0.86174669 | −0.39769305 |
| $e$ | 0.1841303 | $i$ | 5.22499 | | −0.27630071 | −0.15286660 |
| $P$ | 5.67 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 13 | 691 | 0.3− | 0.7+ | 2003 03 06 | 683 | 0.9− | 0.1+ | 2003 04 01 | 704 | 0.5+ | 0.2+ |
| 1993 08 13 | 691 | 0.3− | 0.5+ | 2003 03 06 | 699 | 1.1− | 0.4− | 2003 04 07 | 691 | 0.7+ | 0.7+ |
| 1993 08 13 | 691 | 0.1− | 0.7+ | 2003 03 06 | 699 | 0.2− | 1.0+ | 2003 04 07 | 691 | 0.5+ | 0.5+ |
| 1993 08 14 | 691 | 0.1+ | 0.5− | 2003 03 07 | 699 | 0.7+ | 0.7− | 2003 04 07 | 691 | 0.6+ | 0.8+ |
| 1993 08 14 | 691 | 0.0 | 0.4+ | 2003 03 07 | 683 | 0.1− | 0.4− | 2003 04 09 | 704 | 0.3− | 1.2+ |
| 1998 05 24 | 704 | 0.3− | 1.3− | 2003 03 07 | 683 | (3.2+ | 0.3−) | 2003 04 09 | 704 | 0.9+ | 0.6+ |
| 1998 05 24 | 704 | 0.1− | 0.4+ | 2003 03 07 | 699 | 0.3+ | 0.0 | 2003 04 09 | 704 | 0.1− | 0.8+ |
| 1998 05 24 | 704 | 1.3+ | 0.7+ | 2003 03 07 | 699 | 0.2− | 0.1+ | 2003 04 09 | 704 | 0.0 | 0.4+ |
| 1998 05 24 | 704 | 0.3− | 0.2− | 2003 03 07 | 699 | 0.0 | 0.0 | 2003 04 09 | 704 | 0.5+ | 0.6− |
| 1998 05 24 | 704 | 0.4− | 1.1+ | 2003 03 09 | 704 | 0.5+ | 0.6+ | 2005 09 30 | 699 | (0.0 | 1.6+) |
| 1999 09 17 | 691 | 0.1+ | 0.7+ | 2003 03 09 | 704 | 0.9+ | 0.6− | 2005 09 30 | 699 | (0.2+ | 2.7+) |
| 1999 09 17 | 691 | 0.3− | 0.7+ | 2003 03 09 | 704 | 0.1+ | 0.6+ | 2005 09 30 | 699 | 0.7− | 0.9+ |
| 1999 09 17 | 691 | 0.2− | 0.6+ | 2003 03 09 | 704 | 0.4+ | 0.1− | 2005 09 30 | 699 | 0.6+ | 1.3+ |
| 1999 11 11 | 695 | 0.5− | 0.4+ | 2003 03 09 | 704 | 0.5+ | 0.6+ | 2005 10 07 | 703 | 1.0− | 0.7+ |
| 1999 11 11 | 695 | 0.6− | 0.0 | 2003 03 26 | 699 | 0.3+ | 0.4+ | 2005 10 07 | 703 | (1.4− | 1.7+) |
| 2003 01 31 | 291 | 0.3− | 0.3+ | 2003 03 26 | 699 | 0.6− | 1.0+ | 2005 10 07 | 703 | (1.6− | 1.3+) |
| 2003 01 31 | 291 | 0.4− | 0.1+ | 2003 03 26 | 699 | 1.1+ | 0.5+ | 2005 10 07 | 703 | 0.8− | 0.4+ |
| 2003 01 31 | 291 | 0.1− | 0.2− | 2003 03 26 | 699 | 0.0 | 0.2+ | 2005 11 01 | G96 | 0.3− | 0.8+ |
| 2003 02 11 | 608 | 0.3+ | 0.8− | 2003 03 27 | 691 | 0.1+ | 0.8+ | 2005 11 01 | G96 | 0.3− | 0.7+ |
| 2003 02 11 | 608 | 0.4+ | 0.7− | 2003 03 27 | 691 | 0.2− | 1.0+ | 2005 11 01 | G96 | 0.4− | 0.7+ |
| 2003 02 11 | 608 | 0.6+ | 0.8− | 2003 03 27 | 691 | 0.1− | 0.7+ | 2005 11 01 | G96 | 0.4− | 0.6+ |
| 2003 02 24 | 608 | 0.3+ | 0.3− | 2003 03 28 | 699 | 0.2− | 1.4+ | 2006 10 31 | G96 | 0.4− | 0.6+ |
| 2003 02 24 | 608 | 0.4− | 0.4− | 2003 03 28 | 699 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.5+ | 0.8+ |
| 2003 02 24 | 608 | 0.1+ | 0.3− | 2003 03 28 | 699 | 0.2− | 0.8− | 2006 10 31 | G96 | 0.1− | 1.2+ |
| 2003 03 06 | 683 | 0.6− | 0.1− | 2003 03 28 | 699 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.8+ |
| 2003 03 06 | 699 | 0.4− | 0.5− | 2003 04 01 | 704 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.8+ |
| 2003 03 06 | 683 | 0.3+ | 0.3+ | 2003 04 01 | 704 | 0.0 | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.8+ |
| 2003 03 06 | 699 | 0.1+ | 0.7+ | 2003 04 01 | 704 | 0.1+ | 0.7− | 2006 11 18 | G96 | 0.3+ | 0.5+ |

**(143533)∗ 2003 ER$_{20}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.36408 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23781354 | $\omega$ | 70.15700 | | +0.37760467 | −0.92590556 | |
| $a$ | 2.5801503 | $\Omega$ | 357.57807 | | +0.72682882 | +0.30350913 | |
| $e$ | 0.3151780 | $i$ | 14.60899 | | +0.57370253 | +0.22490241 | |
| $P$ | 4.14 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 01 | 104 | (5.1− | 3.0+) | 2003 03 07 | 699 | 0.3− | 0.1− | 2005 07 27 | E12 | 0.2− | 0.1− |
| 1997 09 01 | 104 | (3.3− | 2.7+) | 2003 03 07 | 699 | 0.6− | 0.1− | 2005 08 06 | E12 | 0.0 | 0.7+ |
| 2001 08 25 | 699 | 0.6+ | 0.4+ | 2003 03 07 | 699 | 1.1+ | 0.1− | 2005 08 06 | E12 | 0.1− | 0.6+ |
| 2001 08 25 | 699 | 0.2+ | 0.7+ | 2003 03 09 | 704 | 0.8+ | 0.3+ | 2005 08 06 | E12 | 0.5− | 0.6+ |
| 2001 08 25 | 699 | 0.4− | 0.1+ | 2003 03 09 | 704 | 0.2− | 0.1− | 2005 08 06 | E12 | 0.4+ | 0.1+ |
| 2001 08 25 | 699 | 0.1+ | 0.2+ | 2003 03 09 | 704 | 0.3− | 0.4+ | 2006 09 24 | 703 | 0.7+ | 0.0 |
| 2001 09 11 | 704 | 0.4− | 0.3+ | 2003 03 09 | 704 | 0.2+ | 0.1+ | 2006 09 24 | 703 | 0.6+ | 1.4− |
| 2001 09 11 | 704 | 0.5− | 0.3− | 2003 03 09 | 704 | 0.2+ | 0.5− | 2006 09 24 | 703 | 0.4− | 1.6− |
| 2001 09 11 | 704 | 0.2+ | 0.5+ | 2003 03 24 | 691 | 0.2− | 0.1− | 2006 09 24 | 703 | 1.3− | 0.1− |
| 2001 09 11 | 704 | 0.2− | 0.3− | 2003 03 24 | 691 | 0.4− | 0.3− | 2006 10 28 | 703 | 0.0 | 0.9+ |
| 2001 09 11 | 704 | 0.3+ | 0.7− | 2003 03 24 | 691 | 0.4− | 0.0 | 2006 10 28 | 703 | 0.2− | 1.2+ |
| 2003 02 01 | 704 | 1.3+ | 0.7− | 2003 03 30 | 695 | 0.1− | 0.1− | 2006 10 28 | 703 | 1.0+ | 0.0 |
| 2003 02 01 | 704 | 1.0+ | 0.4− | 2003 03 30 | 695 | 0.1− | 0.1− | 2006 10 28 | 703 | (1.7− | 2.4+) |
| 2003 02 01 | 704 | 1.3+ | 0.5− | 2003 04 01 | 704 | 1.0+ | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.3+ |
| 2003 02 01 | 704 | (0.9− | 2.8+) | 2003 04 01 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 703 | 1.2+ | 0.5+ |
| 2003 02 01 | 704 | 0.2+ | 0.5+ | 2003 04 01 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 703 | 1.1+ | 0.1− |
| 2003 02 12 | 608 | 0.2− | 0.4− | 2003 04 01 | 704 | (1.7+ | 0.2−) | 2006 11 17 | 704 | 1.1+ | 1.4− |
| 2003 02 12 | 608 | 0.9− | 1.1+ | 2003 04 01 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.7+ |
| 2003 02 12 | 608 | 0.5− | 0.4+ | 2003 04 04 | 704 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.2− |
| 2003 02 27 | 608 | 0.5− | 0.7+ | 2003 04 04 | 704 | 0.2− | 0.9+ | 2006 11 17 | 704 | 0.9− | 0.1− |
| 2003 02 27 | 608 | (0.8− | 1.5+) | 2003 04 04 | 704 | 0.3+ | 1.0− | 2006 11 23 | 703 | 0.8− | 0.1+ |
| 2003 02 27 | 608 | 0.5− | 0.1− | 2003 04 07 | 691 | 0.1− | 0.0 | 2006 11 23 | 703 | 1.0+ | 1.0− |
| 2003 03 06 | 699 | 0.9+ | 0.9+ | 2003 04 07 | 691 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.6− | 0.2+ |
| 2003 03 06 | 699 | 0.5− | 0.7− | 2003 04 07 | 691 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.5+ |
| 2003 03 06 | 699 | 0.9+ | 0.5+ | 2005 07 27 | E12 | 0.4− | 0.4+ | 2006 12 01 | 704 | 0.2− | 1.4+ |
| 2003 03 06 | 699 | 0.5+ | 0.6− | 2005 07 27 | E12 | 0.3− | 0.5+ | 2006 12 01 | 704 | 0.3+ | 1.3+ |
| 2003 03 07 | 699 | 0.1− | 0.2+ | 2005 07 27 | E12 | 0.3− | 0.3− | 2006 12 01 | 704 | 1.0+ | 1.0+ |

**(143534)∗ 2003 EC$_{21}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.95837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17759834 | $\omega$ | 303.04029 | | −0.49661832 | −0.86764945 | |
| $a$ | 3.1345614 | $\Omega$ | 176.47690 | | +0.86758063 | −0.49702497 | |
| $e$ | 0.2052505 | $i$ | 22.53581 | | +0.02596352 | +0.01227228 | |
| $P$ | 5.55 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | (0.5− | 2.1−) | 2003 03 25 | 683 | 0.2− | 0.6+ | 2003 04 26 | 704 | 0.1+ | 0.1+ |
| 1998 04 23 | 704 | 0.0 | 1.5+ | 2003 03 25 | 683 | 1.3− | 0.6− | 2003 04 26 | 704 | 0.1− | 0.2+ |
| 1998 04 23 | 704 | 0.4+ | 0.5+ | 2003 03 25 | 699 | 0.1+ | 0.6− | 2003 04 26 | 704 | 1.4− | 0.9+ |
| 1998 04 23 | 704 | 1.1− | 0.1− | 2003 03 25 | 699 | 0.9− | 0.1+ | 2006 09 17 | 704 | 1.0− | 0.7+ |
| 2001 09 19 | 645 | 0.1− | 0.2− | 2003 03 25 | 699 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.9+ | 0.3− |
| 2001 09 19 | 645 | 0.1− | 0.2− | 2003 03 25 | 699 | 0.8− | 0.1− | 2006 09 17 | 704 | 1.2+ | 0.1− |
| 2001 10 11 | 704 | 1.0+ | 0.2+ | 2003 03 26 | 683 | 0.3+ | 0.8+ | 2006 09 17 | 704 | 0.1+ | 0.1− |
| 2001 10 11 | 704 | 0.8+ | 1.3+ | 2003 03 26 | 683 | 0.2+ | 0.4− | 2006 09 17 | 704 | 0.9+ | 0.3+ |
| 2001 10 11 | 704 | 0.8+ | 1.3+ | 2003 03 26 | 683 | 0.6− | 0.5+ | 2006 09 18 | 699 | 0.5− | 1.3+ |
| 2001 10 11 | 704 | 0.8+ | 0.8+ | 2003 04 01 | 704 | 0.3+ | 1.0+ | 2006 09 18 | 699 | 0.3− | 0.9+ |
| 2001 12 13 | 644 | 0.1+ | 0.2+ | 2003 04 01 | 704 | 0.5+ | 1.0+ | 2006 09 18 | 699 | (2.6− | 0.7+) |
| 2001 12 13 | 644 | 0.1+ | 0.6+ | 2003 04 01 | 695 | 0.9+ | 0.1+ | 2006 09 18 | 699 | (0.6− | 2.1+) |
| 2001 12 13 | 644 | 0.2+ | 0.9+ | 2003 04 01 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.7+ |
| 2003 01 07 | 704 | 0.4− | 0.6+ | 2003 04 01 | 704 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.7+ | 0.4+ |
| 2003 01 07 | 704 | 0.5+ | 0.7+ | 2003 04 01 | 704 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.8+ |
| 2003 01 07 | 704 | 0.1+ | 1.0+ | 2003 04 01 | 695 | 0.8+ | 0.2− | 2006 09 28 | 691 | 0.3− | 0.2+ |
| 2003 02 11 | 608 | 0.1− | 1.0− | 2003 04 03 | 699 | 0.2+ | 0.5+ | 2006 09 28 | 704 | (1.8+ | 0.1−) |
| 2003 02 11 | 608 | 0.0 | 1.1− | 2003 04 03 | 699 | 0.7− | 0.3+ | 2006 09 28 | 704 | (2.0+ | 0.4−) |
| 2003 02 11 | 608 | 0.1+ | 0.8− | 2003 04 03 | 699 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 2003 03 06 | 699 | 0.2− | 0.6− | 2003 04 03 | 699 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 2003 03 06 | 699 | 0.0 | 0.7− | 2003 04 04 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 1.2+ | 0.5− |
| 2003 03 06 | 699 | 0.6− | 0.3− | 2003 04 04 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 2003 03 06 | 699 | 0.1− | 0.5+ | 2003 04 04 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 703 | (1.0− | 1.9+) |
| 2003 03 07 | 699 | 0.3− | 0.2− | 2003 04 04 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 1.1+ |
| 2003 03 07 | 699 | 0.3+ | 0.2− | 2003 04 04 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 703 | 0.4+ | 1.4+ |
| 2003 03 07 | 699 | 0.8+ | 0.0 | 2003 04 06 | 691 | 0.1+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.3+ |
| 2003 03 07 | 699 | 0.6− | 0.5− | 2003 04 06 | 691 | 0.2− | 0.8+ | 2006 10 02 | G96 | 0.1+ | 0.3+ |
| 2003 03 09 | 704 | 0.8− | 0.1+ | 2003 04 06 | 691 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.3+ |
| 2003 03 09 | 704 | 0.6+ | 0.2− | 2003 04 09 | 704 | 0.3− | 0.8+ | 2006 10 02 | G96 | 0.4− | 0.2+ |
| 2003 03 09 | 704 | 0.4− | 0.2+ | 2003 04 09 | 704 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.6+ |
| 2003 03 09 | 704 | 0.8+ | 0.1+ | 2003 04 09 | 704 | 0.4+ | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.5+ |
| 2003 03 09 | 704 | 0.9− | 0.1− | 2003 04 09 | 704 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.7+ |
| 2003 03 09 | 704 | 0.3+ | 0.1− | 2003 04 09 | 704 | 0.4+ | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.7+ |
| 2003 03 09 | 704 | 0.3− | 0.0 | 2003 04 22 | 703 | 0.6+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2003 03 09 | 704 | 0.3− | 0.2− | 2003 04 22 | 703 | 1.3+ | 0.6− | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2003 03 24 | 691 | 0.1+ | 0.2+ | 2003 04 22 | 703 | 0.7− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.8+ |
| 2003 03 24 | 691 | 0.1+ | 0.1+ | 2003 04 22 | 703 | 1.2− | 0.2− | 2006 10 22 | 644 | 0.3− | 0.6+ |
| 2003 03 24 | 683 | 1.2+ | 0.2− | 2003 04 25 | 699 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.2− | 0.8+ |
| 2003 03 24 | 683 | (2.3+ | 1.8−) | 2003 04 25 | 699 | 0.1− | 0.9− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2003 03 24 | 691 | 0.2− | 0.2+ | 2003 04 25 | 699 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 2003 03 24 | 683 | (2.6+ | 1.6−) | 2003 04 25 | 699 | 0.3− | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 2003 03 25 | 683 | (1.0− | 1.9+) | 2003 04 26 | 704 | 0.7+ | 0.3+ | | | | |

**(143535)∗ 2003 EZ$_{22}$ = 2001 XB$_{189}$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47341)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.98633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17261119 | $\omega$ | 141.96794 | | −0.47596116 | +0.87813601 | |
| $a$ | 3.1946509 | $\Omega$ | 99.56249 | | −0.81843555 | −0.42213720 | |
| $e$ | 0.1087518 | $i$ | 2.81066 | | −0.32190718 | −0.22511628 | |
| $P$ | 5.71 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 28 | 691 | 0.1− | 0.0 | 2003 03 09 | 704 | 1.1+ | 0.4+ | 2005 08 30 | 691 | 0.0 | 0.4+ |
| 1992 04 28 | 691 | 0.2+ | 0.0 | 2003 03 09 | 704 | 0.3− | 1.3+ | 2005 09 11 | 704 | (0.6− | 2.2+) |
| 1992 04 28 | 691 | 0.1− | 0.1− | 2003 03 09 | 704 | 1.0+ | 0.5− | 2005 09 11 | 704 | 0.1− | 0.8+ |
| 1998 05 24 | 704 | 1.1− | 0.5− | 2003 03 09 | 704 | (2.0+ | 0.4−) | 2005 09 11 | 704 | (1.6− | 0.9+) |
| 1998 05 24 | 704 | 1.0− | 0.4− | 2003 03 24 | 691 | 0.2+ | 0.3+ | 2005 09 11 | 704 | 0.7− | 1.0+ |
| 1998 05 24 | 704 | 0.5− | 1.3+ | 2003 03 24 | 691 | 0.1+ | 0.3+ | 2005 09 13 | 691 | 0.1+ | 0.3+ |
| 1998 05 24 | 704 | (4.4− | 0.5−) | 2003 03 24 | 691 | 0.0 | 0.3+ | 2005 09 13 | 691 | 0.1+ | 0.3+ |
| 2000 11 02 | 704 | 0.5+ | 0.6+ | 2003 03 26 | 644 | 0.2+ | 0.8+ | 2005 09 13 | 691 | 0.1+ | 0.4+ |
| 2000 11 02 | 704 | 0.3+ | 0.5− | 2003 03 26 | 644 | (0.3+ | 1.7+) | 2005 10 01 | 703 | 0.9− | 1.0+ |
| 2000 11 02 | 704 | 1.4+ | 0.5− | 2003 03 26 | 644 | 0.3+ | 0.5+ | 2005 10 01 | 703 | 0.7− | 0.5+ |
| 2000 11 02 | 704 | 0.5− | 0.9− | 2003 03 26 | 644 | 0.4+ | 1.4+ | 2005 10 01 | 703 | 0.5− | 1.2+ |
| 2001 12 14 | 704 | 0.6+ | 0.3+ | 2003 03 26 | 644 | 0.5+ | 0.6+ | 2005 10 01 | 703 | 0.6+ | 0.9+ |
| 2001 12 14 | 704 | 0.5+ | 0.0 | 2003 03 26 | 644 | 0.2+ | 1.4+ | 2005 10 12 | 691 | 0.4− | 0.5+ |
| 2001 12 14 | 704 | 0.2− | 0.3+ | 2003 03 26 | 699 | 0.5− | 0.7+ | 2005 10 12 | 691 | 0.7− | 0.5+ |
| 2001 12 17 | 704 | 0.2+ | 0.2− | 2003 03 26 | 699 | 0.6− | 0.3+ | 2005 10 12 | 691 | 0.0 | 0.8+ |
| 2001 12 17 | 704 | 0.8+ | 0.2+ | 2003 03 26 | 699 | 0.3− | 0.6+ | 2005 10 29 | G96 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.5+ | 0.3+ | 2003 03 26 | 699 | 1.0− | 0.4+ | 2005 10 29 | G96 | 0.1+ | 0.1+ |
| 2003 02 27 | 608 | 1.2+ | 0.4− | 2003 03 30 | 704 | 0.5+ | 0.8+ | 2005 10 29 | G96 | 0.1+ | 0.0 |
| 2003 02 27 | 608 | 1.2+ | 0.4− | 2003 03 30 | 704 | 1.0+ | 0.9+ | 2005 10 29 | G96 | 0.2+ | 0.1+ |
| 2003 02 27 | 608 | 0.9+ | 1.4− | 2003 03 30 | 704 | (0.5+ | 2.1+) | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2003 03 06 | 704 | 0.9+ | 0.3− | 2003 03 30 | 704 | 0.7− | 1.1+ | 2006 10 19 | G96 | 0.4− | 0.3− |
| 2003 03 06 | 704 | 0.4− | 0.5− | 2003 04 05 | 699 | 0.1+ | 1.0+ | 2006 10 19 | G96 | 0.2− | 0.7− |
| 2003 03 06 | 704 | 0.5+ | 0.4+ | 2003 04 05 | 699 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2003 03 06 | 704 | 0.5+ | 0.2+ | 2003 04 05 | 699 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2003 03 06 | 699 | (0.7− | 1.6+) | 2003 04 05 | 699 | 0.8− | 0.7− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2003 03 06 | 704 | 0.3− | 0.8+ | 2005 08 25 | 644 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2003 03 06 | 699 | 0.8+ | 0.9+ | 2005 08 25 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2003 03 06 | 699 | 0.7− | 0.3+ | 2005 08 25 | 644 | 0.4− | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2003 03 06 | 699 | (0.7− | 1.6+) | 2005 08 27 | 699 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2003 03 07 | 699 | 0.5+ | 0.4+ | 2005 08 27 | 699 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 699 | 0.3+ | 0.4+ | 2005 08 27 | 699 | (1.0− | 1.6+) | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2003 03 07 | 699 | 0.7+ | 1.1+ | 2005 08 27 | 699 | (2.6− | 1.5+) | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2003 03 07 | 699 | 0.6+ | 1.3+ | 2005 08 30 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2003 03 09 | 704 | (1.8+ | 0.7+) | 2005 08 30 | 691 | 0.0 | 0.5+ | | | | |

**(143536)∗ 2003 EZ$_{23}$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.55981 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17592078 | $\omega$ | 143.29807 | | −0.98292462 | +0.18201207 | |
| $a$ | 3.1544571 | $\Omega$ | 47.21218 | | −0.17636925 | −0.89000176 | |
| $e$ | 0.1350474 | $i$ | 2.11106 | | −0.05246990 | −0.41805319 | |
| $P$ | 5.60 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 691 | 0.1− | 0.2+ | 2003 03 27 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1999 09 07 | 691 | 0.1− | 0.6+ | 2003 03 27 | 691 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.7+ |
| 2003 02 11 | 608 | 0.7+ | 0.1− | 2003 03 30 | 704 | 0.8+ | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.5+ |
| 2003 02 11 | 608 | 0.3+ | 0.2− | 2003 03 30 | 704 | 0.6+ | 0.0 | 2006 10 23 | 691 | 0.7− | 0.4− |
| 2003 02 11 | 608 | 0.2+ | 0.5− | 2003 03 30 | 704 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2003 03 06 | 704 | 0.7+ | 0.5+ | 2003 04 03 | 699 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.5− | 0.4− |
| 2003 03 06 | 704 | 0.7+ | 1.0+ | 2003 04 03 | 699 | 0.9− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2003 03 06 | 704 | 1.1+ | 0.4+ | 2003 04 03 | 699 | 0.6− | 0.7+ | 2006 10 27 | G96 | 0.4+ | 0.7− |
| 2003 03 06 | 704 | (1.0+ | 2.1+) | 2003 04 03 | 699 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2003 03 07 | 699 | 0.2+ | 0.6+ | 2005 08 26 | 644 | 0.7− | 0.0 | 2006 10 27 | G96 | 0.4− | 0.2+ |
| 2003 03 07 | 699 | (2.1+ | 1.1+) | 2005 08 26 | 644 | 0.4− | 0.8+ | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 2003 03 07 | 699 | 0.8+ | 0.8+ | 2005 08 26 | 644 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2003 03 07 | 699 | 1.0+ | 0.5− | 2005 08 30 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2003 03 09 | 704 | 0.1− | 0.8+ | 2005 08 30 | 691 | 0.0 | 0.8+ | 2006 11 11 | G96 | 0.4+ | 0.1+ |
| 2003 03 09 | 704 | 0.1− | 1.2+ | 2005 08 30 | 691 | 0.4− | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2003 03 09 | 704 | 0.6+ | 1.1+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.5− | 0.4− |
| 2003 03 09 | 704 | 0.4+ | 1.3+ | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2003 03 09 | 704 | 0.2− | 0.9+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.6+ | 0.1+ |
| 2003 03 26 | 644 | 0.8+ | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.6+ | 0.1+ |
| 2003 03 26 | 644 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.1− |
| 2003 03 26 | 644 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2003 03 26 | 699 | 0.0 | 1.3+ | 2006 10 04 | G96 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2003 03 26 | 699 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2003 03 26 | 699 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.2− | 0.7+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2003 03 26 | 699 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2003 03 27 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | | | | |

**(143537)∗ 2003 EV$_{24}$ = 2000 QV$_{42}$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47345)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.20830 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22143431 | $\omega$ | 130.17353 | | +0.35927942 | +0.93036618 | |
| $a$ | 2.7058649 | $\Omega$ | 160.50322 | | −0.90888806 | +0.36659711 | |
| $e$ | 0.0266985 | $i$ | 12.64381 | | −0.21175645 | +0.00503261 | |
| $P$ | 4.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.2− | 0.2− | 2003 01 31 | 291 | 0.5− | 0.5+ | 2003 03 30 | 704 | 1.5+ | 0.1− |
| 2000 08 24 | 704 | 0.6− | 0.7+ | 2003 03 06 | 704 | 0.0 | 0.1+ | 2003 04 04 | 691 | 0.1− | 0.5+ |
| 2000 08 24 | 704 | 0.3− | 0.9+ | 2003 03 06 | 704 | 0.2− | 0.0 | 2003 04 04 | 691 | 0.1− | 0.5+ |
| 2000 08 24 | 704 | 0.1+ | 0.9+ | 2003 03 06 | 704 | 0.2+ | 0.7− | 2003 04 04 | 691 | 0.2− | 0.2+ |
| 2000 08 24 | 704 | 0.5+ | 2.0+ | 2003 03 07 | 699 | 0.4− | 0.3− | 2005 10 05 | 703 | 0.7+ | 0.0 |
| 2000 08 29 | 704 | 0.3− | 0.1+ | 2003 03 07 | 699 | 0.7− | 0.1+ | 2005 10 05 | 703 | 0.4− | 0.6+ |
| 2000 08 29 | 704 | 0.3+ | 0.1+ | 2003 03 07 | 699 | 0.8+ | 0.9+ | 2005 10 05 | 703 | 1.5− | 1.4+ |
| 2000 08 29 | 704 | 0.4+ | 0.2+ | 2003 03 07 | 699 | 1.0− | 0.9+ | 2005 10 05 | 703 | 0.5+ | 0.7+ |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2003 03 09 | 704 | 0.4+ | 0.2− | 2005 10 26 | 644 | 0.0 | 0.2− |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2003 03 09 | 704 | 0.8+ | 0.0 | 2005 10 26 | 644 | 0.2+ | 0.2+ |
| 2001 11 15 | 704 | 0.6+ | 1.3+ | 2003 03 09 | 704 | 1.1+ | 0.9+ | 2005 10 26 | 644 | 0.3− | 0.1+ |
| 2001 11 15 | 704 | 0.1− | 0.6+ | 2003 03 09 | 704 | 0.5+ | 1.1+ | 2005 10 27 | 703 | 0.2+ | 0.3− |
| 2001 11 15 | 704 | 0.3+ | 0.9+ | 2003 03 09 | 704 | 1.3+ | 0.7− | 2005 10 27 | 703 | 0.0 | 0.2+ |
| 2001 11 15 | 704 | 0.9+ | 0.5+ | 2003 03 13 | 608 | 0.4+ | 0.2+ | 2005 10 27 | 703 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2003 03 13 | 608 | 0.9+ | 0.1− | 2005 10 27 | 703 | 0.5− | 0.5− |
| 2001 12 19 | 704 | 1.0− | 0.4− | 2003 03 13 | 608 | 0.7+ | 0.1+ | 2005 11 01 | 703 | 0.7+ | 0.1− |
| 2001 12 19 | 704 | 0.8− | 0.2− | 2003 03 30 | 704 | 0.0 | 1.6− | 2005 11 01 | 703 | 1.1− | 0.1− |
| 2003 01 31 | 291 | 0.2− | 0.3+ | 2003 03 30 | 704 | 0.1+ | 0.8+ | 2005 11 01 | 703 | 0.3+ | 1.0− |
| 2003 01 31 | 291 | 0.5− | 0.4+ | 2003 03 30 | 704 | 1.1+ | 0.1− | 2005 11 01 | 703 | 0.6+ | 0.1+ |

**(143538)∗ 2003 EG$_{25}$ = 1992 EN$_{18}$ = 1998 HY$_{111}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47346, *MPO* 94929)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.04003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18302362 | $\omega$ | 35.52019 | | −0.97670898 | −0.17100940 | |
| $a$ | 3.0723071 | $\Omega$ | 134.07499 | | +0.13009287 | −0.95227594 | |
| $e$ | 0.0383603 | $i$ | 10.39242 | | +0.17063241 | −0.25283656 | |
| $P$ | 5.39 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.3+ | 0.7+ | 2003 02 26 | 608 | 0.4− | 1.1− | 2003 04 01 | 703 | (2.0− | 3.8+) |
| 1992 03 04 | 809 | (2.4+ | 2.0−) | 2003 02 26 | 608 | (0.1+ | 1.6−) | 2003 04 01 | 703 | (1.0− | 3.1+) |
| 1998 04 23 | 704 | 0.5+ | 1.5+ | 2003 02 26 | 608 | 0.1− | 1.0− | 2003 04 05 | 699 | 0.2+ | 0.1− |
| 1998 04 23 | 704 | (3.1+ | 0.9+) | 2003 02 28 | 704 | 0.8+ | 1.3− | 2003 04 05 | 699 | 0.2− | 1.4− |
| 1998 04 23 | 704 | 0.1+ | 0.4+ | 2003 02 28 | 704 | 0.3− | 0.5+ | 2003 04 05 | 699 | 0.7− | 0.1+ |
| 1998 04 23 | 704 | (2.7+ | 0.1−) | 2003 02 28 | 704 | 1.0+ | 0.3+ | 2003 04 05 | 699 | 0.5− | 0.1+ |
| 1998 04 23 | 704 | (2.2+ | 0.6−) | 2003 03 06 | 699 | 0.4+ | 1.1+ | 2003 04 20 | 049 | 0.2+ | 0.3− |
| 1998 04 24 | 704 | 0.4− | 0.9− | 2003 03 06 | 699 | (2.0+ | 0.7+) | 2003 04 20 | 049 | 0.0 | 0.2− |
| 1998 04 24 | 704 | 0.6− | 0.4+ | 2003 03 06 | 699 | 1.2+ | 0.3+ | 2003 04 20 | 049 | 0.2− | 0.4− |
| 1998 04 24 | 704 | (0.8+ | 5.1+) | 2003 03 06 | 699 | 0.4+ | 0.6+ | 2005 07 29 | 644 | 0.4+ | 0.7+ |
| 1998 04 24 | 704 | 1.4− | 1.5+ | 2003 03 07 | 699 | 0.1− | 0.4+ | 2005 07 29 | 644 | 0.5+ | 0.7+ |
| 2001 11 17 | 704 | 0.8+ | 0.9− | 2003 03 07 | 699 | 0.2− | 0.7+ | 2005 07 29 | 644 | 0.2+ | 0.5+ |
| 2001 11 17 | 704 | 0.5+ | 0.1+ | 2003 03 07 | 699 | 0.6+ | 0.5+ | 2005 07 30 | 644 | 0.1− | 0.5+ |
| 2001 11 17 | 704 | 0.6− | 0.2+ | 2003 03 07 | 699 | 0.1+ | 0.4+ | 2005 07 30 | 644 | 0.2+ | 0.5+ |
| 2001 11 17 | 704 | 0.1+ | 0.0 | 2003 03 11 | 644 | 0.2− | 0.4+ | 2005 07 30 | 644 | 0.0 | 0.6+ |
| 2001 12 14 | 704 | 0.6− | 0.9+ | 2003 03 11 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2001 12 14 | 704 | 0.2− | 0.7− | 2003 03 11 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.3− | 1.0− |
| 2001 12 14 | 704 | 1.4+ | 0.2− | 2003 03 25 | 644 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2003 03 25 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.1− |
| 2002 01 14 | 704 | (2.5+ | 1.4+) | 2003 03 25 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 1.1+ | 1.5− |
| 2002 01 14 | 704 | 0.7+ | 0.6+ | 2003 03 26 | 644 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2002 01 14 | 704 | 0.1+ | 0.6+ | 2003 03 26 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 1.0− | 0.2+ |
| 2002 01 14 | 704 | (0.1+ | 1.5+) | 2003 03 26 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.7− |
| 2003 02 01 | 704 | 0.6+ | 0.1− | 2003 03 31 | 645 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.8− | 0.4+ |
| 2003 02 01 | 704 | 1.1+ | 1.2+ | 2003 03 31 | 645 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.1− | 1.4+ |
| 2003 02 01 | 704 | 0.8+ | 0.9+ | 2003 04 01 | 703 | (1.9− | 2.6+) | 2006 11 13 | 703 | 0.5− | 0.0 |
| 2003 02 01 | 704 | 0.6+ | 0.2+ | 2003 04 01 | 703 | (1.5− | 2.6+) | 2006 11 13 | 703 | 0.0 | 1.2+ |

**(143539)∗ 2003 EN$_{25}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.81850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17641713 | $\omega$ | 87.25518 | | −0.27497106 | −0.95974889 | |
| $a$ | 3.1485376 | $\Omega$ | 19.00679 | | +0.79750689 | −0.26091413 | |
| $e$ | 0.0531152 | $i$ | 10.11727 | | +0.53700436 | −0.10395139 | |
| $P$ | 5.59 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 30 | 691 | 0.1− | 0.4− | 2003 03 09 | 704 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.6− |
| 1992 03 30 | 691 | 0.3− | 0.4− | 2003 03 09 | 704 | 0.7+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.4− |
| 2000 09 20 | 608 | 0.7− | 0.0 | 2003 03 09 | 704 | 0.2− | 1.0+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2000 09 20 | 608 | 0.1− | 0.4− | 2003 03 09 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 608 | 0.5− | 0.3− | 2003 03 25 | 644 | 1.0+ | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.1+ | | |
| 2000 09 30 | 691 | 0.1+ | 0.4+ | 2003 03 25 | 644 | 1.0+ | 0.8+ | 2006 10 19 | 691 | 0.4− | 0.2+ | | |
| 2000 09 30 | 691 | 0.4− | 0.2+ | 2003 03 25 | 644 | 0.5+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2000 09 30 | 691 | 0.1− | 0.4+ | 2003 03 26 | 644 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2001 12 22 | 704 | 0.4− | 0.5+ | 2003 03 26 | 644 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.2+ | | |
| 2001 12 22 | 704 | 0.2− | 0.8+ | 2003 03 26 | 644 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.1− | | |
| 2001 12 22 | 704 | 0.7+ | 0.5− | 2003 04 05 | 699 | 0.9− | 0.2− | 2006 10 28 | 691 | 0.4+ | 0.1− | | |
| 2002 01 12 | 704 | 1.1− | 0.8− | 2003 04 05 | 699 | 0.5− | 0.7− | 2006 10 28 | 691 | 0.3+ | 0.1− | | |
| 2002 01 12 | 704 | 0.3+ | 0.3− | 2003 04 05 | 699 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2002 01 12 | 704 | 0.5+ | 0.2+ | 2003 04 05 | 699 | (2.4− | 1.7+) | 2006 11 01 | 691 | 0.3+ | 0.0 | | |
| 2002 01 12 | 704 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2003 03 06 | 699 | 0.7+ | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.5+ | 0.3− | | |
| 2003 03 06 | 699 | 0.1+ | 0.8+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.4− | | |
| 2003 03 06 | 699 | (0.8+ | 2.0+) | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.4− | | |
| 2003 03 06 | 699 | 0.6− | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 18 | G96 | 0.4+ | 0.3− | | |

**(143540)∗ 2003 ED$_{27}$ = 2000 QJ$_{229}$**

Discovered 2003 Mar. 6 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 47348)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.19122 | | (2000.0) | | +0.67082338 | −0.74069282 |
| $n$ | 0.19073804 | $\omega$ | 240.32943 | | +0.72531167 | +0.64484802 |
| $a$ | 2.9888986 | $\Omega$ | 167.32842 | | +0.15465764 | +0.18853430 |
| $e$ | 0.0303461 | $i$ | 9.71464 | | | |
| $P$ | 5.17 | $H$ | 15.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 691 | 0.2+ | 1.2− | 2003 03 09 | 704 | 0.3+ | 0.3− | 2005 08 29 | 699 | 0.4+ | 1.4+ | | |
| 1993 03 24 | 691 | 0.3− | 0.8− | 2003 03 09 | 704 | 1.2+ | 1.4+ | 2005 08 29 | 699 | 0.7− | 0.9+ | | |
| 1993 03 24 | 691 | 0.3− | 1.0− | 2003 03 09 | 704 | 1.4+ | 0.9+ | 2005 10 01 | G96 | 0.2+ | 0.2+ | | |
| 2000 08 31 | 704 | 0.4− | 0.1+ | 2003 04 05 | 291 | 0.0 | 0.9+ | 2005 10 01 | G96 | 0.0 | 0.0 | | |
| 2000 08 31 | 704 | 1.0− | 0.9+ | 2003 04 05 | 291 | 0.4− | 0.7+ | 2005 10 01 | G96 | 0.5+ | 0.3+ | | |
| 2000 08 31 | 704 | 0.2+ | 0.9+ | 2003 04 05 | 291 | 0.3− | 0.8+ | 2005 10 01 | G96 | 0.1− | 0.1+ | | |
| 2000 08 31 | 704 | 0.6− | 1.8+ | 2003 04 09 | 691 | 0.2+ | 0.6+ | 2006 10 30 | 703 | 0.4− | 0.2+ | | |
| 2000 09 02 | 699 | 0.0 | 0.0 | 2003 04 09 | 691 | 0.1+ | 0.6+ | 2006 10 30 | 703 | (1.1− | 1.7−) | | |
| 2000 09 02 | 699 | 1.4− | 0.8+ | 2003 04 09 | 691 | 0.0 | 0.5+ | 2006 10 30 | 703 | 1.0− | 0.2+ | | |
| 2000 09 02 | 699 | 1.1− | 0.1+ | 2004 06 13 | 691 | 0.1+ | 0.4+ | 2006 10 30 | 703 | (0.4− | 1.6+) | | |
| 2000 09 02 | 699 | 0.1− | 0.6− | 2004 06 13 | 691 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.6− | 1.3+ | | |
| 2001 12 11 | 704 | 0.6+ | 0.0 | 2004 06 13 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.9+ | 0.7+ | | |
| 2001 12 11 | 704 | 0.9+ | 0.1− | 2005 08 06 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 703 | (0.4− | 1.9+) | | |
| 2001 12 11 | 704 | 0.0 | 0.4− | 2005 08 06 | 644 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.4− | | |
| 2003 03 06 | 699 | 0.8− | 0.3+ | 2005 08 06 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 703 | (1.2+ | 2.3+) | | |
| 2003 03 06 | 699 | 0.4+ | 0.6+ | 2005 08 24 | 644 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.1− | | |
| 2003 03 06 | 699 | 0.5+ | 0.4+ | 2005 08 24 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.6+ | | |
| 2003 03 06 | 699 | 0.9− | 0.2− | 2005 08 24 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.4+ | 0.3− | | |
| 2003 03 09 | 704 | 1.2+ | 1.4+ | 2005 08 29 | 699 | 0.7+ | 0.0 | | | | | | |
| 2003 03 09 | 704 | 0.5+ | 0.5+ | 2005 08 29 | 699 | 0.6− | 1.2+ | | | | | | |

**(143541)∗ 2003 EL$_{27}$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 268.08467 | | (2000.0) | | −0.66662676 | −0.74378665 |
| $n$ | 0.17584058 | $\omega$ | 125.08210 | | +0.49603063 | −0.49161787 |
| $a$ | 3.1554161 | $\Omega$ | 7.33982 | | +0.55638330 | −0.45287227 |
| $e$ | 0.0452893 | $i$ | 22.50007 | | | |
| $P$ | 5.61 | $H$ | 14.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | (3.4− | 0.5+) | 2003 03 26 | 699 | 0.3+ | 0.9− | 2005 07 27 | 644 | 0.3− | 0.8+ | | |
| 2000 09 26 | 699 | 0.8− | 1.1+ | 2003 03 26 | 699 | 0.2+ | 0.4− | 2005 07 27 | 644 | 0.6− | 0.7+ | | |
| 2000 09 26 | 699 | 1.3− | 0.6+ | 2003 03 27 | 703 | 0.2− | 0.9− | 2005 08 28 | E12 | 0.1− | 0.2+ | | |
| 2000 09 26 | 699 | 0.3+ | 0.2+ | 2003 03 27 | 703 | (1.0+ | 1.8−) | 2005 08 28 | E12 | 0.3− | 0.8+ | | |
| 2000 10 02 | 704 | 0.3+ | 1.6+ | 2003 03 27 | 703 | 0.0 | 0.0 | 2005 08 28 | E12 | 1.3− | 1.1+ | | |
| 2000 10 02 | 704 | 0.8− | 1.1+ | 2003 03 27 | 703 | (1.8+ | 0.4−) | 2005 08 28 | E12 | 1.0− | 1.0+ | | |
| 2000 10 02 | 704 | 0.4− | 0.1+ | 2003 03 30 | 704 | 1.3+ | 0.3+ | 2005 09 11 | I10 | 0.2− | 0.2+ | | |
| 2000 10 02 | 704 | 1.6− | 0.6− | 2003 03 30 | 704 | 0.3+ | 0.7+ | 2005 09 11 | I10 | 0.5− | 0.1+ | | |
| 2003 03 06 | 704 | 1.1+ | 0.5− | 2003 03 30 | 704 | 0.3− | 0.0 | 2005 09 11 | I10 | 0.2− | 0.2+ | | |
| 2003 03 06 | 704 | 0.1+ | 0.0 | 2003 03 30 | 704 | 0.2− | 1.0+ | 2006 09 19 | 703 | 1.0− | 0.4− | | |
| 2003 03 06 | 704 | 0.2+ | 0.5+ | 2003 03 30 | 704 | 0.9+ | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.3+ | | |
| 2003 03 06 | 704 | 1.1+ | 0.2+ | 2003 04 05 | 691 | 0.5− | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.8+ | | |
| 2003 03 06 | 704 | 0.9+ | 0.7+ | 2003 04 05 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.7− | | |
| 2003 03 09 | 704 | 0.2+ | 0.2+ | 2003 04 05 | 691 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.7− | 0.8+ | | |
| 2003 03 09 | 704 | 0.2+ | 0.2+ | 2003 04 09 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.2+ | 0.1+ | | |
| 2003 03 09 | 704 | 0.5+ | 1.1+ | 2003 04 09 | 704 | 0.3+ | 0.2− | 2006 09 28 | 703 | (0.2+ | 1.6+) | | |
| 2003 03 09 | 704 | 0.7+ | 0.5+ | 2003 04 09 | 704 | 0.1+ | 0.9− | 2006 09 28 | 703 | 0.8− | 1.3+ | | |
| 2003 03 09 | 704 | 1.0+ | 1.4+ | 2003 04 09 | 704 | 0.2− | 0.9− | 2006 10 02 | 703 | 0.2+ | 0.2− | | |
| 2003 03 10 | 599 | 0.7+ | 0.0 | 2003 04 09 | 704 | 0.4− | 1.1− | 2006 10 02 | 703 | 0.7+ | 1.2+ | | |
| 2003 03 10 | 599 | 0.1+ | 0.4− | 2003 04 26 | 699 | 0.4+ | 0.8− | 2006 10 02 | 703 | 0.1− | 0.2+ | | |
| 2003 03 10 | 599 | 0.2− | 0.5− | 2003 04 26 | 699 | 0.6− | 0.5+ | 2006 10 02 | 703 | 0.4− | 0.4− | | |
| 2003 03 10 | 599 | 0.1+ | 0.1− | 2003 04 26 | 699 | 0.6− | 0.6+ | 2006 10 23 | 703 | 0.1− | 1.2+ | | |
| 2003 03 16 | 608 | (1.2+ | 1.7−) | 2003 04 26 | 699 | (2.0− | 1.6+) | 2006 10 23 | 703 | 0.2+ | 0.4+ | | |
| 2003 03 16 | 608 | 0.2+ | 1.2− | 2003 05 01 | 691 | 0.5+ | 1.1+ | 2006 10 23 | 703 | 0.4− | 0.1+ | | |
| 2003 03 16 | 608 | 0.4+ | 1.2− | 2003 05 01 | 691 | 0.5+ | 1.0+ | 2006 10 23 | 703 | 0.1− | 0.1− | | |
| 2003 03 26 | 699 | 0.9+ | 0.5− | 2003 05 01 | 691 | 0.4+ | 0.9+ | | | | | | |
| 2003 03 26 | 699 | 0.9− | 0.7− | 2005 07 27 | 644 | 0.4− | 0.7+ | | | | | | |

**(143542)∗ 2003 EC$_{30}$ = 2001 YT$_{29}$**

Discovered 2003 Mar. 6 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47355)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 190.14015 | | (2000.0) | | −0.94848238 | +0.31639802 |
| $n$ | 0.17349591 | $\omega$ | 157.27566 | | −0.29440866 | −0.86087345 |
| $a$ | 3.1837812 | $\Omega$ | 41.18115 | | −0.11706716 | −0.39848362 |
| $e$ | 0.1326177 | $i$ | 1.43916 | | | |
| $P$ | 5.68 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.1+ | 0.2+ | 2003 03 07 | 699 | 0.5+ | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.0 | | |
| 2000 09 20 | 691 | 0.6− | 0.2+ | 2003 03 07 | 699 | 0.6+ | 0.1− | 2006 10 21 | 703 | 0.0 | 1.3+ | | |
| 2000 09 20 | 691 | 0.2− | 0.2+ | 2003 03 07 | 699 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.5− | 0.9+ | | |
| 2001 12 18 | 704 | (2.5+ | 0.2−) | 2003 03 12 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 1.2− | 0.6− | | |
| 2001 12 18 | 704 | 0.9+ | 0.4+ | 2003 03 12 | 644 | 0.2− | 0.8+ | 2006 10 21 | 703 | (1.1− | 2.0+) | | |
| 2001 12 18 | 704 | 0.9+ | 0.6− | 2003 03 12 | 644 | 0.2− | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.2+ | | |
| 2001 12 19 | 704 | 0.3− | 0.1− | 2004 06 06 | 926 | 0.6+ | 1.1+ | 2006 10 27 | G96 | 0.6+ | 0.3− | | |
| 2001 12 19 | 704 | 0.4+ | 0.3− | 2004 06 06 | 926 | 0.1+ | 1.4+ | 2006 10 27 | G96 | 0.0 | 0.1+ | | |
| 2001 12 19 | 704 | 0.1+ | 0.5+ | 2004 06 06 | 926 | 0.5− | 1.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2001 12 19 | 704 | 0.5+ | 1.1− | 2004 06 14 | 704 | 1.0+ | 0.5+ | 2006 10 28 | 691 | 0.3− | 0.6+ | | |
| 2003 01 30 | 699 | 1.1− | 0.8+ | 2004 06 14 | 704 | 0.6− | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.4+ | | |
| 2003 01 30 | 699 | 0.2− | 0.0 | 2004 06 14 | 704 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2003 01 30 | 699 | 0.1− | 0.2− | 2005 10 06 | G96 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.1− | | |
| 2003 01 30 | 699 | 0.4+ | 0.3+ | 2005 10 06 | G96 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.6+ | 0.2− | | |
| 2003 02 12 | 608 | 0.7+ | 0.7+ | 2005 10 06 | G96 | 0.3+ | 0.9+ | 2006 11 11 | G96 | 0.4+ | 0.0 | | |
| 2003 02 12 | 608 | 0.1− | 1.2+ | 2005 10 06 | G96 | 0.0 | 0.7+ | 2006 11 11 | G96 | 0.3− | 0.4− | | |
| 2003 02 12 | 608 | 0.2+ | 0.8+ | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2003 02 21 | 644 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.5− | 0.5− | | |
| 2003 02 21 | 644 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.3− | | |
| 2003 02 21 | 644 | 0.3+ | 0.1− | 2006 10 16 | 947 | 0.6+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.3− | | |
| 2003 03 06 | 644 | 0.4+ | 0.8+ | 2006 10 16 | 947 | 0.4+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2003 03 06 | 644 | 0.1+ | 0.7+ | 2006 10 16 | 947 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2003 03 06 | 644 | 0.5+ | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.7+ | 0.7− | | |
| 2003 03 07 | 699 | 0.5+ | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | | | |

**(143543)∗ 2003 EW$_{30}$ = 1998 HU$_{55}$**

Discovered 2003 Mar. 6 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 47356)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.03961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18468904 | $\omega$ | 88.59432 | | −0.75115300 | +0.65946760 | |
| $a$ | 3.0538097 | $\Omega$ | 132.66386 | | −0.62050103 | −0.69009272 | |
| $e$ | 0.1375712 | $i$ | 2.30104 | | −0.22527238 | −0.29811830 | |
| $P$ | 5.34 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.4− | 0.3+ | 2003 03 06 | 644 | 0.8+ | 0.2+ | 2005 10 29 | G96 | 0.1− | 0.0 | |
| 1998 03 25 | 704 | 1.1+ | 0.4+ | 2003 03 09 | 699 | 0.8+ | 0.7+ | 2005 10 29 | G96 | 0.3− | 0.1− | |
| 1998 03 25 | 704 | (2.7+ | 2.1+) | 2003 03 09 | 699 | 0.5+ | 0.2+ | 2005 10 29 | G96 | 0.5− | 0.1+ | |
| 1998 03 25 | 704 | 0.3− | 1.9+ | 2003 03 09 | 704 | 0.1+ | 0.1+ | 2005 10 29 | G96 | 0.1− | 0.2+ | |
| 1998 03 25 | 704 | (4.8− | 0.0 ) | 2003 03 09 | 699 | 0.4+ | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.2− | |
| 1998 03 29 | 704 | 0.3− | 1.2− | 2003 03 09 | 704 | 0.9+ | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.4− | |
| 1998 03 29 | 704 | (2.4+ | 2.2+) | 2003 03 09 | 704 | 0.7+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− | |
| 1998 03 29 | 704 | 0.8+ | 1.6+ | 2003 03 09 | 699 | 1.0+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.6− | |
| 1998 03 29 | 704 | 1.0− | 0.9+ | 2003 03 09 | 704 | 1.5+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.1− | |
| 1998 03 29 | 704 | (3.6− | 1.6+) | 2003 03 09 | 704 | (0.8+ | 1.7+) | 2006 11 11 | 691 | 0.2− | 0.2+ | |
| 1998 04 21 | 704 | 0.4− | 1.7− | 2003 03 12 | 291 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1− | |
| 1998 04 21 | 704 | 0.5+ | 1.2+ | 2003 03 12 | 291 | 0.2+ | 0.3+ | 2006 11 13 | 291 | 0.5− | 0.2+ | |
| 1998 04 21 | 704 | 0.3− | 0.9− | 2003 03 12 | 291 | 0.3+ | 0.3+ | 2006 11 13 | 291 | 0.1+ | 0.2+ | |
| 1998 04 21 | 704 | 1.2+ | 1.3− | 2003 03 26 | 699 | 0.3+ | 0.1+ | 2006 11 13 | 291 | 0.1− | 0.2+ | |
| 1998 04 22 | 704 | 0.2+ | 1.7− | 2003 03 26 | 699 | 0.6− | 0.4− | 2006 11 13 | 291 | 0.3− | 0.2+ | |
| 1998 04 22 | 704 | 0.3− | 0.5− | 2003 03 26 | 699 | 0.7+ | 0.8+ | 2006 11 13 | 291 | 0.2− | 0.1+ | |
| 1998 04 22 | 704 | 0.7+ | 1.5+ | 2003 03 26 | 699 | 0.8− | 0.5+ | 2006 11 13 | 291 | 0.1− | 0.2+ | |
| 1998 04 22 | 704 | 1.2− | 1.7+ | 2003 03 31 | 691 | 0.8− | 0.0 | 2006 11 19 | 691 | 0.3− | 0.2+ | |
| 1999 08 08 | 691 | 0.2− | 0.9+ | 2003 03 31 | 691 | 0.6− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.0 | |
| 1999 08 08 | 691 | 0.2− | 0.8+ | 2003 03 31 | 691 | 0.5− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ | |
| 1999 08 08 | 691 | 0.1− | 0.8+ | 2005 09 03 | 644 | 0.5− | 0.5+ | 2006 11 23 | 691 | 0.3+ | 0.1+ | |
| 2003 03 06 | 699 | (1.9+ | 0.4+) | 2005 09 03 | 644 | 0.2+ | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.3+ | |
| 2003 03 06 | 699 | 1.1+ | 1.2+ | 2005 09 03 | 644 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2− | |
| 2003 03 06 | 699 | 0.5− | 0.2− | 2005 10 06 | G96 | 0.4− | 0.5+ | 2006 11 27 | 691 | 0.2+ | 0.2+ | |
| 2003 03 06 | 699 | 0.0 | 0.9+ | 2005 10 06 | G96 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.5+ | 0.1− | |
| 2003 03 06 | 644 | 0.9+ | 0.2+ | 2005 10 06 | G96 | 0.4− | 0.3+ | 2006 11 27 | 691 | 0.2+ | 0.1+ | |
| 2003 03 06 | 644 | 1.1+ | 0.1+ | 2005 10 06 | G96 | 0.0 | 0.4+ | | | | | |

**(143544)∗ 2003 EX$_{30}$ = 2002 AY$_{203}$**

Discovered 2003 Mar. 6 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47356)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.89780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18276178 | $\omega$ | 273.60267 | | +0.27271199 | −0.96038079 | |
| $a$ | 3.0752408 | $\Omega$ | 160.27892 | | +0.93639716 | +0.25125270 | |
| $e$ | 0.0820401 | $i$ | 9.79707 | | +0.22088125 | +0.12058534 | |
| $P$ | 5.39 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 31 | 691 | 0.3+ | 0.6+ | 2003 03 10 | 291 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.8− | 0.5+ | |
| 1997 12 31 | 691 | 0.2− | 0.3+ | 2003 03 12 | 291 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.2+ | |
| 1997 12 31 | 691 | 0.5− | 0.5+ | 2003 03 12 | 291 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.4+ | |
| 2001 12 11 | 704 | 0.3+ | 0.1+ | 2003 03 12 | 291 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.2− | |
| 2001 12 11 | 704 | 0.0 | 0.1− | 2003 03 31 | 691 | (0.3− | 1.7+) | 2006 09 30 | 703 | 0.3− | 0.7+ | |
| 2001 12 11 | 704 | 0.1− | 0.6− | 2003 03 31 | 691 | (0.4− | 2.1+) | 2006 10 12 | 644 | 0.1+ | 0.8+ | |
| 2001 12 11 | 704 | 0.1+ | 0.4− | 2003 03 31 | 691 | (0.2− | 1.9+) | 2006 10 12 | 644 | 0.0 | 0.6+ | |
| 2001 12 11 | 704 | 0.0 | 0.4+ | 2003 04 11 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.8+ | |
| 2002 01 02 | 209 | 0.8− | 0.3− | 2003 04 11 | 691 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 1.3− | 0.5− | |
| 2002 01 02 | 209 | 0.8− | 0.1− | 2003 04 11 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.4− | |
| 2002 01 02 | 209 | (1.6− | 1.1−) | 2004 04 19 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | (0.3− | 2.1−) | |
| 2002 01 04 | 209 | 0.8+ | 0.3+ | 2004 04 19 | 691 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.9− | |
| 2002 01 04 | 209 | 0.6+ | 0.2− | 2004 04 19 | 691 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.6+ | 1.4+ | |
| 2002 01 04 | 209 | 1.1+ | 0.2+ | 2005 07 05 | 644 | 0.1− | 0.5+ | 2006 10 22 | 703 | (0.8− | 1.9+) | |
| 2002 01 09 | 644 | 0.0 | 0.4+ | 2005 07 05 | 644 | 0.1− | 0.5+ | 2006 10 22 | 703 | (1.7− | 4.1+) | |
| 2002 01 09 | 644 | 0.2+ | 0.8+ | 2005 07 05 | 644 | 0.1+ | 0.6+ | 2006 10 22 | 703 | (0.6+ | 1.8+) | |
| 2002 01 09 | 644 | 0.3+ | 0.6+ | 2005 07 26 | 644 | 0.3− | 0.8+ | 2006 11 13 | 703 | 1.1+ | 0.2+ | |
| 2003 02 01 | 291 | 0.2− | 0.2+ | 2005 07 26 | 644 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.5+ | 0.7− | |
| 2003 02 01 | 291 | 0.4− | 0.3+ | 2005 07 26 | 644 | 0.2+ | 0.9+ | 2006 11 13 | 703 | 0.8− | 0.2+ | |
| 2003 02 01 | 291 | 0.6− | 0.3− | 2005 07 27 | 644 | 0.1+ | 1.0+ | 2006 11 13 | 703 | 0.3− | 0.4+ | |
| 2003 03 06 | 644 | 0.4+ | 0.5+ | 2005 07 27 | 644 | 0.0 | 0.8+ | 2006 11 19 | 703 | 1.3− | 0.3+ | |
| 2003 03 06 | 644 | 0.6+ | 0.4− | 2005 07 27 | 644 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.7− | 1.2− | |
| 2003 03 06 | 644 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.9+ | 2006 11 19 | 703 | 0.2− | 0.6+ | |
| 2003 03 10 | 291 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.5− | 1.0+ | 2006 11 19 | 703 | 1.2− | 0.5− | |
| 2003 03 10 | 291 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.1− | 0.2+ | | | | | |

**(143545)∗ 2003 EA$_{31}$ = 2001 UN$_{72}$**

Discovered 2003 Mar. 6 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47356)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.45112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18585931 | $\omega$ | 299.10648 | | −0.31555609 | −0.94707964 | |
| $a$ | 3.0409772 | $\Omega$ | 168.80647 | | +0.94136664 | −0.32024999 | |
| $e$ | 0.1892587 | $i$ | 17.65045 | | +0.11938675 | +0.02191116 | |
| $P$ | 5.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 691 | 0.2+ | 0.3+ | 2003 03 06 | 644 | 0.3+ | 0.1+ | 2003 04 01 | 704 | 0.8− | 1.1+ | |
| 2000 09 07 | 691 | 0.0 | 0.3+ | 2003 03 07 | 699 | 0.1− | 0.0 | 2003 04 01 | 704 | 0.3− | 0.2+ | |
| 2000 09 07 | 691 | 0.1− | 0.3+ | 2003 03 07 | 699 | 0.4− | 0.1− | 2003 04 01 | 704 | 0.3− | 1.1+ | |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2003 03 07 | 699 | 0.0 | 0.6+ | 2003 04 01 | 704 | 0.1− | 0.2+ | |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2003 03 07 | 699 | 0.0 | 0.1− | 2003 04 11 | 691 | 0.3− | 0.0 | |
| 2001 10 20 | 608 | 0.3− | 0.3− | 2003 03 09 | 699 | 0.6+ | 0.2+ | 2003 04 11 | 691 | 0.1− | 0.1− | |
| 2001 10 20 | 608 | 0.6− | 0.2− | 2003 03 09 | 699 | 1.0+ | 0.5− | 2003 04 11 | 691 | 0.2− | 0.1+ | |
| 2001 10 20 | 608 | 0.3− | 0.2+ | 2003 03 09 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.6− | |
| 2001 10 22 | 644 | 0.5+ | 0.4+ | 2003 03 09 | 699 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.2− | 0.0 | |
| 2001 10 22 | 644 | 0.3+ | 0.6+ | 2003 03 09 | 704 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.7− | |
| 2001 10 22 | 644 | 0.3+ | 0.1− | 2003 03 09 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.6+ | |
| 2003 01 07 | 704 | 0.2− | 1.2+ | 2003 03 09 | 699 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.5+ | |
| 2003 01 07 | 704 | 0.6− | 0.2+ | 2003 03 09 | 704 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.6+ | |
| 2003 01 07 | 704 | 0.0 | 1.2+ | 2003 03 09 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 644 | 0.3+ | 0.5+ | |
| 2003 01 28 | 704 | 0.2+ | 0.7− | 2003 03 09 | 599 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.7− | 0.8+ | |
| 2003 01 28 | 704 | 0.9− | 0.5+ | 2003 03 09 | 599 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.6+ | 0.4+ | |
| 2003 01 28 | 704 | 0.5− | 0.5− | 2003 03 09 | 599 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.7+ | |
| 2003 01 28 | 704 | 0.2− | 0.4+ | 2003 03 09 | 599 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.9− | 0.2+ | |
| 2003 01 28 | 704 | 0.7+ | 0.1+ | 2003 03 10 | 704 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.1− | |
| 2003 01 31 | 699 | 0.9+ | 0.1− | 2003 03 10 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3− | 1.0− | |
| 2003 01 31 | 699 | 0.5+ | 0.1+ | 2003 03 10 | 704 | 0.8+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.1+ | |
| 2003 01 31 | 699 | 0.5+ | 0.0 | 2003 03 10 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.3+ | |
| 2003 01 31 | 699 | 1.5− | 0.8+ | 2003 03 27 | 704 | 0.6+ | 0.7− | 2006 10 17 | 703 | 0.1− | 0.3+ | |
| 2003 02 03 | 608 | (0.2+ | 2.0−) | 2003 03 27 | 704 | 0.4+ | 1.0+ | 2006 10 17 | 703 | 0.4+ | 0.3− | |
| 2003 02 03 | 608 | (0.6+ | 1.7−) | 2003 03 27 | 704 | 0.3− | 0.6− | 2006 10 17 | 703 | 0.4− | 1.2+ | |
| 2003 02 03 | 608 | (0.7+ | 1.5−) | 2003 03 27 | 704 | 1.3+ | 0.9+ | 2006 10 17 | 703 | 1.2+ | 0.5+ | |
| 2003 02 09 | 608 | 0.4− | 1.4+ | 2003 03 27 | 704 | 0.6+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.1+ | |
| 2003 02 09 | 608 | 0.4− | 1.2+ | 2003 03 31 | 691 | 0.3− | 0.4− | 2006 10 22 | 644 | 0.0 | 0.1− | |
| 2003 02 09 | 608 | 0.1− | 1.3+ | 2003 03 31 | 691 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.0 | 0.1+ | |
| 2003 03 06 | 644 | 0.3+ | 0.2+ | 2003 03 31 | 691 | 0.1− | 0.3− | | | | | |
| 2003 03 06 | 644 | 0.2+ | 0.0 | 2003 04 01 | 704 | 0.5+ | 0.0 | | | | | |

**(143546)∗ 2003 EG$_{31}$ = 1998 ME$_{6}$**

Discovered 2003 Mar. 6 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 47356)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.25899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17519971 | $\omega$ | 293.06601 | | −0.97040566 | −0.24083894 | |
| $a$ | 3.1631063 | $\Omega$ | 233.00241 | | +0.22883367 | −0.89387359 | |
| $e$ | 0.1825077 | $i$ | 1.26212 | | +0.07712336 | −0.37813571 | |
| $P$ | 5.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 19 | 691 | 0.1+ | 0.1+ | 2003 03 07 | 699 | 0.3− | 0.5+ | 2003 04 03 | 699 | 0.2− | 0.1+ | |
| 1998 06 19 | 691 | 0.5+ | 0.4+ | 2003 03 07 | 699 | 0.1− | 0.6− | 2003 04 09 | 704 | 0.5+ | 0.1+ | |
| 1998 06 19 | 691 | 0.2+ | 0.6+ | 2003 03 07 | 699 | 0.3+ | 0.1+ | 2003 04 09 | 704 | 0.4− | 0.1+ | |
| 1998 06 25 | 691 | 0.3− | 0.3+ | 2003 03 25 | 699 | 0.9− | 0.0 | 2003 04 09 | 704 | 0.8+ | 0.7+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 25 | 691 | 0.0 | 0.0 | 2003 03 25 | 699 | 0.6− | 0.1+ | 2003 04 09 | 704 | 0.5+ | 0.8+ |
| 1998 06 25 | 691 | 0.4− | 0.2+ | 2003 03 25 | 699 | 0.0 | 0.3− | 2003 04 11 | 691 | 0.5+ | 0.8+ |
| 2000 09 24 | 691 | 0.1+ | 0.3+ | 2003 03 25 | 699 | 0.2+ | 0.6− | 2003 04 11 | 691 | 0.5+ | 1.0+ |
| 2000 09 24 | 691 | 0.2+ | 0.0 | 2003 03 26 | 644 | 0.2− | 0.2+ | 2003 04 11 | 691 | (2.5+ | 1.3+) |
| 2000 09 24 | 691 | 0.3+ | 0.2+ | 2003 03 26 | 644 | 0.2+ | 0.1+ | 2005 09 30 | G96 | 0.1+ | 0.6+ |
| 2001 11 15 | 691 | 0.0 | 0.4+ | 2003 03 26 | 644 | 0.0 | 0.1+ | 2005 09 30 | G96 | 0.0 | 0.6+ |
| 2001 11 15 | 691 | 0.2+ | 0.1+ | 2003 03 30 | 683 | (2.3− | 1.2+) | 2005 09 30 | G96 | 0.2− | 0.8+ |
| 2001 11 15 | 691 | 0.2+ | 0.1− | 2003 03 30 | 683 | 0.6− | 0.4+ | 2005 09 30 | G96 | 0.3− | 0.4+ |
| 2001 12 07 | 644 | 0.1− | 0.8+ | 2003 03 30 | 683 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.3+ | 0.4+ |
| 2001 12 07 | 644 | 0.2+ | 0.4+ | 2003 04 01 | 683 | 0.5− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.6+ |
| 2001 12 07 | 644 | 0.1+ | 0.3+ | 2003 04 01 | 683 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.6+ |
| 2001 12 17 | 704 | 0.8− | 0.2− | 2003 04 01 | 683 | 0.1+ | 0.5− | 2006 10 27 | 691 | 0.7− | 0.6+ |
| 2001 12 17 | 704 | 0.2− | 0.0 | 2003 04 01 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.5− | 0.4+ | 2003 04 01 | 704 | 1.0+ | 0.5− | 2006 10 27 | 691 | 0.4− | 0.2− |
| 2001 12 17 | 704 | 1.1− | 0.2− | 2003 04 01 | 704 | 1.0+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.2− | 2003 04 01 | 704 | 0.6+ | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2003 03 06 | 644 | 0.1+ | 0.8− | 2003 04 01 | 704 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.6− | 0.2− |
| 2003 03 06 | 644 | 0.6− | 0.1+ | 2003 04 03 | 699 | 1.5+ | 0.6+ | 2006 10 28 | G96 | 0.4− | 0.3+ |
| 2003 03 06 | 644 | 0.1− | 0.6− | 2003 04 03 | 699 | 1.0− | 0.3− | | | | |
| 2003 03 07 | 699 | 0.7− | 0.5− | 2003 04 03 | 699 | 0.1+ | 0.0 | | | | |

**(143547)∗ 2003 ES$_{31}$**

Discovered 2003 Mar. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.81915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18833692 | $\omega$ | 273.46064 | | −0.93543121 | +0.33645464 | |
| $a$ | 3.0142487 | $\Omega$ | 286.22296 | | −0.26253746 | −0.86668249 | |
| $e$ | 0.1420215 | $i$ | 6.48672 | | −0.23673304 | −0.36832016 | |
| $P$ | 5.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 566 | 0.3− | 0.4− | 2003 02 12 | 608 | 0.2+ | 0.0 | 2003 03 10 | 683 | 0.5+ | 0.4+ |
| 1998 02 26 | 566 | 0.5+ | 0.1+ | 2003 03 07 | 683 | 0.3− | 0.3+ | 2003 03 10 | 683 | 1.0− | 0.4+ |
| 1998 02 26 | 566 | 0.1− | 1.0− | 2003 03 07 | 683 | 0.9− | 0.7− | 2003 03 11 | 683 | 0.2− | 0.5+ |
| 1998 04 01 | 704 | 0.2− | 1.8− | 2003 03 07 | 704 | 0.2+ | 0.2+ | 2003 03 11 | 683 | 0.3+ | 0.5+ |
| 1998 04 01 | 704 | (1.6+ | 2.0+) | 2003 03 07 | 704 | 0.9+ | 0.3− | 2003 03 11 | 683 | 0.3+ | 0.5+ |
| 1998 04 01 | 704 | 0.6− | 1.7+ | 2003 03 07 | 704 | 0.6+ | 0.0 | 2003 03 26 | 699 | 0.2− | 0.8+ |
| 1998 04 01 | 704 | 1.8− | 0.7− | 2003 03 07 | 683 | 0.3− | 0.1+ | 2003 03 26 | 699 | 0.6− | 1.4− |
| 2001 11 19 | 704 | 0.5+ | 0.6− | 2003 03 07 | 704 | 0.1+ | 0.0 | 2003 03 26 | 699 | (1.8− | 1.3−) |
| 2001 11 19 | 704 | 0.8+ | 0.2+ | 2003 03 07 | 704 | 0.3+ | 0.3+ | 2003 03 26 | 699 | 0.2− | 0.3+ |
| 2001 11 19 | 704 | 0.0 | 0.1+ | 2003 03 07 | 704 | 0.1− | 0.3+ | 2005 09 29 | 691 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2003 03 07 | 704 | 0.5+ | 0.9− | 2005 09 29 | 691 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 0.2− | 2003 03 07 | 704 | 0.9+ | 0.8+ | 2005 09 29 | 691 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.8+ | 0.5+ | 2003 03 07 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 0.5− | 2003 03 07 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.4− | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.8+ | 2003 03 07 | 704 | 0.3+ | 0.6− | 2006 10 19 | 691 | 0.2+ | 0.4+ |
| 2003 01 28 | 704 | 0.3+ | 0.2− | 2003 03 07 | 704 | 1.2− | 1.0− | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2003 01 28 | 704 | 0.2+ | 0.1+ | 2003 03 09 | 704 | 0.9− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2003 01 28 | 704 | 0.2+ | 0.2+ | 2003 03 09 | 704 | 0.9+ | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2003 01 28 | 704 | 0.6+ | 0.3+ | 2003 03 09 | 704 | 0.6+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 02 12 | 608 | 0.4+ | 0.2+ | 2003 03 09 | 704 | 0.7+ | 0.2− | 2006 11 15 | 691 | 0.9− | 0.2− |
| 2003 02 12 | 608 | 0.7+ | 0.4+ | 2003 03 10 | 683 | 1.2− | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.2− |

**(143548)∗ 2003 ER$_{35}$ = 2001 WQ$_{52}$**

Discovered 2003 Mar. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47360)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.85296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22907137 | $\omega$ | 254.12093 | | −0.87937502 | −0.47453114 | |
| $a$ | 2.6453847 | $\Omega$ | 257.53638 | | +0.45069274 | −0.80319577 | |
| $e$ | 0.1611223 | $i$ | 2.28816 | | +0.15354358 | −0.36013435 | |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.1− | 0.2− | 2003 03 30 | 699 | 0.3− | 0.2− | 2005 10 07 | G96 | 0.1+ | 0.5+ |
| 1994 01 10 | 691 | 0.3− | 0.1− | 2003 03 30 | 699 | 1.0− | 0.1+ | 2005 10 07 | G96 | 0.1+ | 0.4+ |
| 1994 01 10 | 691 | 0.3+ | 0.3+ | 2003 03 31 | 704 | 0.6− | 0.6+ | 2005 10 07 | 691 | 0.4− | 0.3+ |
| 2001 10 26 | 644 | 0.4− | 0.5+ | 2003 03 31 | 704 | (0.1− | 1.9+) | 2005 10 07 | 691 | 0.4− | 0.8+ |
| 2001 10 26 | 644 | 0.6− | 0.6+ | 2003 03 31 | 704 | 0.2− | 0.3+ | 2005 10 31 | G96 | 0.3− | 0.1− |
| 2001 10 26 | 644 | 0.2− | 1.1+ | 2003 03 31 | 704 | 0.1+ | 1.0+ | 2005 10 31 | G96 | 0.2+ | 0.1+ |
| 2001 11 19 | 704 | 0.3+ | 0.8+ | 2003 03 31 | 704 | 0.0 | 0.7+ | 2005 10 31 | G96 | 0.5− | 0.0 |
| 2001 11 19 | 704 | 0.1+ | 0.1− | 2003 04 03 | 699 | 0.9− | 0.1− | 2005 10 31 | G96 | 0.5− | 0.0 |
| 2001 11 19 | 704 | 0.5+ | 0.2+ | 2003 04 03 | 699 | (3.3− | 1.3−) | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.4− | 2003 04 03 | 699 | 1.2− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | (0.4− | 1.6+) | 2003 04 03 | 699 | 0.2− | 1.0− | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 0.1− | 2003 04 07 | 691 | 0.7+ | 0.4− | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2001 11 21 | 704 | 0.5+ | 0.4− | 2003 04 07 | 691 | 0.7+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.7− |
| 2001 11 21 | 704 | 0.8+ | 0.9+ | 2003 04 07 | 691 | 0.7+ | 0.1− | 2006 09 28 | G96 | 0.2− | 0.4+ |
| 2003 03 07 | 704 | 1.2− | 0.7+ | 2003 04 24 | 608 | 0.1− | 0.9− | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2003 03 07 | 704 | (1.6− | 0.4+) | 2003 04 24 | 608 | 0.4− | 1.0− | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2003 03 07 | 704 | 1.3− | 0.5+ | 2003 04 24 | 608 | 0.1− | 0.7− | 2006 10 21 | G96 | 0.4− | 0.7− |
| 2003 03 07 | 704 | 0.5+ | 0.2+ | 2003 04 26 | 691 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.3− | 0.2+ |
| 2003 03 10 | 704 | (1.8+ | 0.0 ) | 2003 04 26 | 691 | 0.2− | 0.6+ | 2006 10 21 | G96 | 1.0− | 0.5− |
| 2003 03 10 | 704 | 0.9+ | 0.6− | 2003 04 26 | 691 | (1.0+ | 1.6+) | 2006 10 21 | G96 | 0.3− | 0.5− |
| 2003 03 10 | 704 | 0.7− | 1.3− | 2003 04 26 | 699 | 0.2− | 0.6+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2003 03 10 | 704 | 0.3+ | 0.0 | 2003 04 26 | 699 | 0.7+ | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2003 03 26 | 691 | 0.4+ | 0.9+ | 2003 04 26 | 699 | 0.5+ | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2003 03 26 | 691 | 0.2+ | 0.9+ | 2003 04 26 | 699 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2003 03 26 | 691 | 0.3+ | 0.6+ | 2005 09 27 | 691 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2003 03 27 | 644 | 0.1− | 0.2+ | 2005 09 27 | 691 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2003 03 27 | 644 | 0.0 | 0.3+ | 2005 09 27 | 691 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2003 03 27 | 644 | 0.2+ | 0.3+ | 2005 10 07 | G96 | 0.8− | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2003 03 30 | 699 | 0.1− | 0.8+ | 2005 10 07 | 691 | 0.3− | 0.6+ | | | | |
| 2003 03 30 | 699 | 0.3− | 0.6− | 2005 10 07 | G96 | 0.1+ | 0.2+ | | | | |

**(143549)∗ 2003 EU$_{36}$**

Discovered 2003 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.60750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21325856 | $\omega$ | 64.64357 | | −0.80524769 | −0.54066495 | |
| $a$ | 2.7745873 | $\Omega$ | 81.73613 | | +0.41591603 | −0.80764810 | |
| $e$ | 0.1233571 | $i$ | 14.23993 | | +0.42259912 | −0.23534221 | |
| $P$ | 4.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 1.3+ | 1.1+ | 2003 02 01 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 1.0+ | 1.0− |
| 1999 05 12 | 704 | 0.1− | 2.0+ | 2003 02 19 | 644 | 1.3+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 1999 05 12 | 704 | (2.3+ | 2.1+) | 2003 02 19 | 644 | 0.3+ | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.6− |
| 1999 05 12 | 704 | (3.3+ | 0.6−) | 2003 02 19 | 644 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2003 03 08 | 699 | 0.4+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2003 03 08 | 699 | 0.7− | 0.3− | 2006 11 18 | 691 | 0.5− | 0.5+ |
| 2001 10 23 | 699 | 0.7− | 0.9+ | 2003 03 08 | 699 | 0.8− | 0.6− | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2001 10 23 | 699 | 0.2− | 1.1+ | 2003 03 08 | 699 | 0.8− | 1.0− | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2001 10 23 | 699 | (2.0− | 1.6+) | 2003 03 09 | 644 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.9− | 0.5+ |
| 2001 10 23 | 699 | 0.8− | 0.6+ | 2003 03 09 | 644 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.5+ |
| 2001 10 23 | 644 | 0.0 | 0.2+ | 2003 03 09 | 644 | 0.1− | 0.5+ | 2006 11 20 | 704 | 1.2+ | 0.9+ |
| 2001 10 23 | 644 | 0.0 | 0.2+ | 2003 03 21 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2001 10 23 | 644 | 0.1+ | 0.1+ | 2003 03 21 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2001 12 18 | 645 | 0.1+ | 0.1− | 2003 03 21 | 644 | 0.6+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2001 12 18 | 645 | 0.1+ | 0.1− | 2006 08 29 | A79 | 0.1+ | 1.5− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2003 01 26 | 699 | 0.2− | 0.3− | 2006 08 29 | A79 | 0.8− | 0.9+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2003 01 26 | 699 | 0.1− | 0.5− | 2006 11 12 | D35 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.3− | 0.3+ |
| 2003 01 26 | 699 | 0.7− | 0.4− | 2006 11 12 | D35 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.0 | 0.7+ |
| 2003 01 26 | 699 | 0.4+ | 0.4+ | 2006 11 12 | D35 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2003 02 01 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 1.0+ | 0.8+ | 2006 11 29 | 704 | 0.0 | 0.6+ |
| 2003 02 01 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.2− | 0.3+ |

**(143550)∗ 2003 EC$_{37}$ = 2001 SL$_{343}$**

Discovered 2003 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47361)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.72150 | | (2000.0) | | | |
| $n$ | 0.23146364 | $\omega$ | 8.57103 | | −0.25858457 | −0.93293095 |
| $a$ | 2.6271258 | $\Omega$ | 96.69921 | | +0.87065044 | −0.33744234 |
| $e$ | 0.1509229 | $i$ | 14.61185 | | +0.41845170 | +0.12558863 |
| $P$ | 4.26 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 608 | 0.2− | 0.5+ | 2003 03 13 | 704 | 0.7+ | 0.0 | 2006 10 23 | 704 | 0.7− | 1.4+ |
| 2001 08 20 | 608 | 0.1− | 0.2+ | 2003 03 13 | 704 | 0.6+ | 0.4+ | 2006 10 23 | 704 | 0.1+ | 0.2+ |
| 2001 08 20 | 608 | 0.2+ | 0.3+ | 2003 03 13 | 704 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.3+ | 0.2− |
| 2001 09 22 | 644 | 0.1+ | 0.5+ | 2003 03 13 | 704 | 0.3+ | 0.4+ | 2006 10 28 | 704 | 1.1+ | 0.6− |
| 2001 09 22 | 644 | 0.1+ | 0.6+ | 2003 03 13 | 704 | 0.5+ | 0.2+ | 2006 10 28 | 704 | 0.4− | 0.4+ |
| 2001 09 22 | 644 | 0.1+ | 0.5+ | 2003 03 23 | 636 | 0.1− | 0.1+ | 2006 10 28 | 704 | 1.0− | 0.2+ |
| 2001 09 25 | 699 | 0.8− | 0.7+ | 2003 03 23 | 636 | 0.5− | 0.4− | 2006 10 29 | G96 | 0.1+ | 0.3− |
| 2001 09 25 | 699 | 0.2− | 0.5+ | 2003 03 23 | 636 | 0.5+ | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.4− |
| 2001 09 25 | 699 | 0.3+ | 0.1+ | 2003 03 25 | 704 | 0.2+ | 1.2+ | 2006 10 29 | G96 | 0.1− | 0.4− |
| 2001 09 25 | 699 | 0.1− | 0.6+ | 2003 03 25 | 704 | 0.1+ | 0.6+ | 2006 10 29 | G96 | 0.3+ | 0.4− |
| 2001 10 15 | 704 | 0.2+ | 0.3+ | 2003 03 25 | 704 | 0.0 | 0.9+ | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2001 10 15 | 704 | 0.9− | 0.6+ | 2003 03 25 | 704 | 0.4− | 0.6+ | 2006 11 13 | G96 | 0.2+ | 0.7− |
| 2001 10 15 | 704 | 0.4+ | 1.1+ | 2003 04 08 | 644 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2002 12 05 | 704 | 0.6+ | 0.3− | 2003 04 08 | 644 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2002 12 05 | 704 | 0.3+ | 0.8+ | 2003 04 08 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.5− |
| 2002 12 05 | 704 | 0.5− | 0.2+ | 2003 04 10 | 704 | 0.6+ | 0.5+ | 2006 11 14 | 703 | 1.0− | 1.0− |
| 2002 12 31 | 704 | 0.4+ | 0.4+ | 2003 04 10 | 704 | (1.6+ | 0.6−) | 2006 11 14 | 703 | (1.7− | 1.5−) |
| 2002 12 31 | 704 | 0.3+ | 0.3+ | 2003 04 10 | 704 | 0.8− | 0.2+ | 2006 11 14 | 703 | 1.0− | 1.1− |
| 2002 12 31 | 704 | 0.3+ | 0.3+ | 2003 04 10 | 704 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 12 31 | 704 | 0.3+ | 0.2+ | 2003 04 23 | 704 | 0.5− | 1.1+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 12 31 | 704 | 0.2+ | 0.3+ | 2003 04 23 | 704 | 0.8+ | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2003 01 19 | 644 | 0.2+ | 0.3+ | 2003 04 23 | 704 | 0.8+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.1+ |
| 2003 01 19 | 644 | 0.3+ | 0.2+ | 2003 04 23 | 704 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 2003 01 19 | 644 | 0.0 | 0.1+ | 2005 08 10 | E12 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 2003 02 06 | 704 | 0.4+ | 0.3− | 2005 08 10 | E12 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2003 02 06 | 704 | (1.8− | 0.1+) | 2005 08 10 | E12 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2003 02 06 | 704 | 0.4− | 1.1+ | 2005 08 10 | E12 | 0.6+ | 1.0+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2003 02 06 | 704 | 0.4− | 0.3+ | 2005 08 27 | E12 | 1.1− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2003 02 21 | 644 | 0.1+ | 0.0 | 2005 08 27 | E12 | 0.8− | 0.1− | 2006 11 27 | 703 | 0.4− | 1.1− |
| 2003 02 21 | 644 | 0.2+ | 0.0 | 2005 08 27 | E12 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.3− | 0.7− |
| 2003 02 21 | 644 | 0.0 | 0.0 | 2005 08 27 | E12 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.3− | 0.6− |
| 2003 02 26 | 704 | 0.5− | 0.4+ | 2005 10 03 | 644 | 0.1− | 0.8+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2003 02 26 | 704 | 0.4− | 0.2+ | 2005 10 03 | 644 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.5− |
| 2003 02 26 | 704 | 0.4− | 0.5+ | 2005 10 03 | 644 | 0.4− | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.5− |
| 2003 03 08 | 699 | 0.7− | 0.6+ | 2005 10 03 | 644 | 0.7− | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2003 03 08 | 699 | 0.4− | 0.5+ | 2005 10 03 | 644 | 0.1− | 0.4+ | 2006 12 01 | 704 | 0.9+ | 0.1− |
| 2003 03 08 | 699 | 0.1+ | 0.2+ | 2005 10 03 | 644 | 0.4− | 0.5+ | 2006 12 01 | 704 | 0.8+ | 0.1− |
| 2003 03 08 | 699 | 0.4− | 0.5+ | 2005 10 25 | 644 | 0.2− | 1.0+ | 2006 12 01 | 704 | 0.9+ | 0.2+ |
| 2003 03 09 | 644 | 0.2+ | 0.2+ | 2005 10 25 | 644 | 0.2− | 0.5+ | 2006 12 01 | 704 | 0.4+ | 0.1− |
| 2003 03 09 | 644 | 0.1+ | 0.4+ | 2005 10 25 | 644 | 0.4− | 0.1+ | 2006 12 01 | 704 | 1.0+ | 0.0 |
| 2003 03 09 | 644 | 0.2+ | 0.0 | 2006 10 23 | 704 | 0.9+ | 1.0+ | | | | |

**(143551)∗ 2003 EH$_{37}$ = 1998 HF$_{157}$**

Discovered 2003 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47362)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 133.87936 | | (2000.0) | | | |
| $n$ | 0.17482095 | $\omega$ | 217.82051 | | +0.05972089 | +0.96422284 |
| $a$ | 3.1676734 | $\Omega$ | 57.03846 | | −0.82423853 | +0.19358619 |
| $e$ | 0.1725416 | $i$ | 17.92836 | | −0.56308459 | −0.18110413 |
| $P$ | 5.64 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.6+ | 0.2+ | 2003 02 21 | 644 | 0.2+ | 0.2+ | 2005 10 05 | 703 | 0.4− | 0.2− |
| 1998 04 21 | 704 | 0.0 | 0.2− | 2003 03 08 | 699 | 0.2+ | 0.4− | 2005 10 08 | 699 | 0.3− | 0.6+ |
| 1998 04 21 | 704 | 1.4− | 0.7− | 2003 03 08 | 699 | 0.8− | 0.9+ | 2005 10 08 | 699 | 0.5− | 0.8+ |
| 1998 04 21 | 704 | 1.2− | 1.3− | 2003 03 08 | 699 | 0.5+ | 0.4− | 2005 10 08 | 699 | 1.2− | 0.1− |
| 1998 04 21 | 704 | 0.1+ | 0.5− | 2003 03 08 | 699 | 0.6− | 0.2+ | 2005 10 08 | 699 | 0.1+ | 0.1− |
| 1998 04 23 | 704 | 0.3+ | 1.2+ | 2003 03 09 | 644 | 0.2− | 0.4+ | 2005 11 06 | 703 | (0.2+ | 2.5+) |
| 1998 04 23 | 704 | 1.1+ | 1.2+ | 2003 03 09 | 644 | 0.5− | 0.1+ | 2005 11 06 | 703 | 1.2− | 1.1+ |
| 1998 04 23 | 704 | 1.9+ | 0.3− | 2003 03 09 | 644 | 0.4− | 0.3+ | 2005 11 06 | 699 | 0.2− | 0.5+ |
| 1998 04 23 | 704 | 0.1+ | 1.3+ | 2003 03 22 | 644 | 0.7+ | 1.1+ | 2005 11 06 | 703 | (1.7+ | 0.5+) |
| 1998 04 23 | 704 | (2.7− | 0.9−) | 2003 03 22 | 644 | (0.2+ | 1.7+) | 2005 11 06 | 703 | 0.1− | 0.9+ |
| 1998 05 24 | 704 | 0.9+ | 0.1+ | 2003 03 22 | 644 | 0.3+ | 1.3+ | 2005 11 06 | 699 | 0.0 | 0.7+ |
| 1998 05 24 | 704 | 0.1+ | 1.0− | 2003 04 07 | 644 | 0.1− | 1.3+ | 2005 11 06 | 699 | 0.1+ | 0.3+ |
| 1998 05 24 | 704 | (2.6− | 0.8+) | 2003 04 07 | 644 | 0.0 | 1.5+ | 2005 11 06 | 699 | (0.4− | 2.2+) |
| 1998 05 24 | 704 | 0.0 | 0.1+ | 2003 04 07 | 644 | 0.1− | 1.0+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 1998 05 24 | 704 | (1.7+ | 3.2−) | 2005 09 27 | 704 | 0.6− | 1.1+ | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2000 11 18 | 691 | 0.0 | 0.4− | 2005 09 27 | 704 | 0.5− | 0.3+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2000 11 18 | 691 | 0.2− | 0.3− | 2005 09 27 | 704 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.1− | 1.3+ |
| 2000 11 18 | 691 | 0.2+ | 0.4− | 2005 10 04 | 644 | 0.6− | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.8− |
| 2002 01 14 | 644 | 0.1+ | 0.2+ | 2005 10 04 | 644 | 0.3− | 0.5+ | 2006 11 22 | 704 | 1.4+ | 0.3− |
| 2002 01 14 | 644 | 0.0 | 0.3+ | 2005 10 04 | 644 | 0.4− | 0.2+ | 2006 11 22 | 704 | (1.7+ | 0.5−) |
| 2002 01 14 | 644 | 0.1+ | 0.3+ | 2005 10 05 | 703 | 0.2+ | 0.7+ | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2003 02 21 | 644 | 0.3+ | 0.2+ | 2005 10 05 | 703 | 1.1− | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2003 02 21 | 644 | 0.4+ | 0.1+ | 2005 10 05 | 703 | 0.1− | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.1+ |

**(143552)∗ 2003 ET$_{37}$**

Discovered 2003 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.52182 | | (2000.0) | | | |
| $n$ | 0.18901912 | $\omega$ | 272.71205 | | +0.16083498 | −0.98654671 |
| $a$ | 3.0069916 | $\Omega$ | 167.91322 | | +0.95199215 | +0.14723424 |
| $e$ | 0.1957985 | $i$ | 8.03995 | | +0.26046702 | +0.07104692 |
| $P$ | 5.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.6− | 0.5− | 2003 02 03 | 699 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.9+ |
| 2001 09 14 | 644 | 0.1− | 0.0 | 2003 02 22 | 291 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.0 |
| 2001 09 14 | 644 | 0.1− | 0.0 | 2003 02 22 | 291 | 0.1+ | 0.0 | 2006 09 27 | 691 | (0.4− | 3.8+) |
| 2001 09 21 | 704 | 0.8+ | 0.1+ | 2003 02 22 | 291 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.7+ | 0.3+ | 2003 03 08 | 699 | 0.3+ | 1.0+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.7+ | 2003 03 08 | 699 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2003 03 08 | 699 | 0.7+ | 0.3+ | 2006 09 30 | 704 | 0.6− | 0.7+ |
| 2001 09 21 | 704 | 0.7+ | 0.2+ | 2003 03 08 | 699 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.6− | 1.0+ |
| 2001 10 16 | 704 | 0.7+ | 0.1+ | 2003 03 09 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2001 10 16 | 704 | 0.5+ | 0.1− | 2003 03 09 | 704 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.0 | 0.3+ |
| 2001 10 16 | 704 | 0.5+ | 0.5− | 2003 03 09 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 106 | 0.2+ | 0.1+ |
| 2001 10 16 | 704 | 0.3+ | 0.5− | 2003 03 09 | 704 | 0.7+ | 0.6+ | 2006 10 15 | 106 | 0.1− | 0.7− |
| 2001 10 16 | 704 | 1.0+ | 0.5− | 2003 03 09 | 704 | 0.0 | 0.4+ | 2006 10 15 | 106 | 0.7+ | 0.0 |
| 2001 10 16 | 644 | 0.0 | 0.2+ | 2003 03 26 | 699 | (1.9− | 1.8−) | 2006 10 15 | 106 | 0.3− | 0.1− |
| 2001 10 16 | 644 | 0.0 | 0.2− | 2003 03 26 | 699 | 0.0 | 0.6+ | 2006 10 16 | 703 | 1.3− | 0.8+ |
| 2001 10 16 | 644 | 0.2− | 0.3− | 2003 03 26 | 699 | (0.6+ | 1.5+) | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | 0.6− | 1.3− | 2003 03 26 | 699 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.7− | 0.3− |
| 2001 10 24 | 704 | 1.3− | 0.1− | 2003 04 09 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | (2.0− | 0.7−) |
| 2001 10 24 | 704 | 1.4− | 1.0− | 2003 04 09 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 10 24 | 644 | 0.1+ | 0.4+ | 2003 04 09 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 644 | 0.0 | 0.3+ | 2004 05 19 | 599 | 0.1− | 1.1+ | 2006 10 19 | 644 | 0.4+ | 0.3+ |
| 2001 10 24 | 644 | 0.2+ | 0.4+ | 2004 05 19 | 599 | 0.2+ | 1.3+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2001 11 18 | 704 | 0.0 | 0.1− | 2004 05 19 | 599 | 0.5+ | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.3+ | 0.1− | 2004 05 19 | 599 | 0.3− | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2001 11 18 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 703 | (0.2− | 2.2+) | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2001 11 18 | 704 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 699 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.5− | 0.5− | 2006 10 19 | 644 | 0.4− | 0.2− |
| 2001 11 20 | 699 | 0.6− | 0.4− | 2006 09 18 | 703 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 11 20 | 699 | 0.4− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 11 20 | 699 | 0.5+ | 0.9+ | 2006 09 18 | 703 | 0.7− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2003 02 03 | 699 | (1.9− | 0.4−) | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 02 03 | 699 | (1.9− | 1.1−) | 2006 09 22 | 704 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2003 02 03 | 699 | 0.3− | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.3+ |

**(143553)∗ 2003 EG$_{38}$ = 2000 QP$_{249}$**

Discovered 2003 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47363)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.40224 | | (2000.0) | | | |
| $n$ | 0.18141982 | $\omega$ | 154.04582 | | −0.13980454 | −0.96859601 |
| $a$ | 3.0903872 | $\Omega$ | 303.34045 | | +0.86023396 | −0.01597614 |
| $e$ | 0.1472627 | $i$ | 14.24796 | | +0.49035927 | −0.24812604 |
| $P$ | 5.43 | $H$ | 14.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1− | 0.7+ | 2002 01 23 | 704 | 0.6+ | 0.3− | 2003 03 14 | 608 | 0.8+ | 0.2− |
| 2000 08 31 | 704 | 0.2+ | 1.0+ | 2002 01 23 | 704 | 1.1+ | 0.8− | 2003 03 20 | 608 | 0.3− | 0.5+ |
| 2000 08 31 | 704 | 0.4− | 0.2+ | 2003 01 07 | 704 | 0.2+ | 0.2+ | 2003 03 20 | 608 | 0.2− | 1.0+ |
| 2000 09 07 | 691 | 0.2+ | 0.1+ | 2003 01 07 | 704 | 0.6− | 0.0 | 2003 03 20 | 608 | 0.2− | 0.7+ |
| 2000 09 07 | 691 | 0.3+ | 0.2+ | 2003 01 07 | 704 | 0.1− | 0.1+ | 2003 03 28 | 699 | 0.4− | 0.0 |
| 2000 09 07 | 691 | 0.3+ | 0.2+ | 2003 01 07 | 704 | 0.4− | 0.7+ | 2003 03 28 | 699 | 0.4+ | 0.3+ |
| 2000 09 27 | 645 | 0.2− | 0.1+ | 2003 01 07 | 704 | 0.7+ | 0.4+ | 2003 03 28 | 699 | 0.3− | 0.0 |
| 2000 09 27 | 645 | 0.2− | 0.1+ | 2003 01 26 | 608 | 0.6+ | 0.6− | 2003 03 28 | 699 | 0.0 | 0.1+ |
| 2001 09 28 | 704 | 0.1+ | 0.5− | 2003 01 26 | 608 | 0.6+ | 0.7− | 2003 04 02 | 608 | 0.1− | 0.3+ |
| 2001 09 28 | 704 | 0.0 | 0.2+ | 2003 01 26 | 608 | 0.8+ | 0.6− | 2003 04 02 | 608 | 0.6+ | 0.5+ |
| 2001 09 28 | 704 | 0.6+ | 0.2+ | 2003 02 01 | 704 | (2.2− | 0.4+) | 2003 04 02 | 608 | 0.1+ | 0.4+ |
| 2001 09 28 | 704 | 1.1− | 0.3+ | 2003 02 01 | 704 | (2.4− | 0.5+) | 2005 07 07 | 691 | 0.7+ | 0.2− |
| 2001 11 11 | 704 | 0.1− | 0.3+ | 2003 02 01 | 704 | (3.3− | 0.1+) | 2005 07 07 | 691 | 0.4− | 0.1+ |
| 2001 11 11 | 704 | 0.2− | 0.8+ | 2003 03 08 | 699 | 0.4+ | 0.3+ | 2005 07 07 | 691 | 0.3+ | 0.2− |
| 2001 11 11 | 704 | 0.6− | 0.9+ | 2003 03 08 | 699 | 0.5+ | 0.5+ | 2005 08 01 | E12 | 0.4− | 0.1+ |
| 2001 11 11 | 704 | 0.2− | 0.5+ | 2003 03 08 | 699 | 0.2− | 0.2+ | 2005 08 01 | E12 | 0.4− | 0.5+ |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2003 03 08 | 699 | 0.2+ | 0.0 | 2005 08 01 | E12 | 0.0 | 0.4+ |
| 2001 12 09 | 704 | 0.1− | 0.3− | 2003 03 10 | 704 | 0.5+ | 0.9+ | 2005 08 01 | E12 | 0.6− | 0.1+ |
| 2001 12 09 | 704 | 0.3− | 0.1− | 2003 03 10 | 704 | 0.7+ | 0.0 | 2006 09 22 | 699 | 0.1− | 0.3+ |
| 2001 12 09 | 704 | 0.0 | 0.9+ | 2003 03 10 | 704 | 0.8+ | 0.2+ | 2006 09 22 | 699 | 0.4+ | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 1.0− | 2003 03 10 | 704 | 0.2+ | 0.1− | 2006 09 22 | 699 | 0.4+ | 0.3− |
| 2001 12 22 | 704 | 0.1− | 0.1+ | 2003 03 11 | 704 | 0.4+ | 1.0+ | 2006 09 22 | 699 | 0.3+ | 0.4+ |
| 2001 12 22 | 704 | 0.5− | 0.1− | 2003 03 11 | 704 | 0.6− | 0.8+ | 2006 09 22 | 113 | 0.3+ | 0.4− |
| 2001 12 22 | 704 | 0.0 | 0.6− | 2003 03 11 | 704 | 1.2+ | 0.1+ | 2006 09 22 | 113 | 0.3+ | 0.4− |
| 2001 12 22 | 704 | 0.5− | 0.4− | 2003 03 11 | 704 | 1.0− | 0.0 | 2006 09 22 | 113 | 0.2+ | 0.3− |
| 2001 12 22 | 704 | 0.8− | 0.6− | 2003 03 11 | 704 | 0.2+ | 0.0 | 2006 10 18 | 106 | 0.3− | 0.0 |
| 2002 01 08 | 704 | 0.4+ | 0.5+ | 2003 03 11 | 704 | 1.0− | 0.2+ | 2006 10 18 | 106 | 0.8+ | 1.1− |
| 2002 01 08 | 704 | 0.2− | 0.8+ | 2003 03 11 | 704 | 0.8− | 0.3+ | 2006 10 18 | 106 | 0.1− | 0.6− |
| 2002 01 08 | 704 | 0.3− | 0.8+ | 2003 03 11 | 704 | 0.4− | 0.6+ | 2006 10 18 | 106 | 0.3+ | 0.4− |
| 2002 01 08 | 704 | 0.6+ | 1.1+ | 2003 03 11 | 704 | 0.5− | 0.5− | 2006 10 20 | 703 | 0.4− | 0.5+ |
| 2002 01 23 | 704 | 0.2+ | 0.0 | 2003 03 14 | 608 | 1.0+ | 0.1− | 2006 10 20 | 703 | 0.4− | 0.4+ |
| 2002 01 23 | 704 | 0.8+ | 0.8− | 2003 03 14 | 608 | 1.2+ | 0.0 | 2006 10 20 | 703 | 1.2− | 0.6+ |

**(143554)∗ 2003 ED$_{39}$**

Discovered 2003 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.10921 | | (2000.0) | | | |
| $n$ | 0.24404086 | $\omega$ | 357.90043 | | −0.65265668 | −0.73872210 |
| $a$ | 2.5360687 | $\Omega$ | 132.78760 | | +0.69843328 | −0.67270965 |
| $e$ | 0.1058078 | $i$ | 13.25859 | | +0.29364980 | −0.04184953 |
| $P$ | 4.04 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.7− | 0.7+ | 2003 03 09 | 704 | 0.2− | 0.2+ | 2005 09 15 | 703 | 0.8− | 0.8+ |
| 2001 08 18 | 644 | 0.0 | 0.9+ | 2003 03 09 | 704 | 0.6− | 0.4+ | 2005 09 15 | 703 | 0.9− | 0.3+ |
| 2001 08 18 | 644 | 0.2− | 0.8+ | 2003 03 09 | 704 | 0.7− | 0.0 | 2005 09 15 | 703 | 0.6− | 1.3− |
| 2001 09 23 | 699 | 1.2− | 0.3+ | 2003 03 09 | 704 | 0.6− | 0.3+ | 2005 09 15 | 703 | 0.6− | 0.7− |
| 2001 09 23 | 699 | 0.6+ | 0.5+ | 2003 03 09 | 704 | 0.2− | 0.4+ | 2005 09 15 | 703 | 0.6− | 1.1+ |
| 2001 09 23 | 699 | 0.0 | 1.0+ | 2003 03 10 | 704 | 0.9+ | 0.9+ | 2005 09 15 | 703 | 0.5− | 0.2+ |
| 2001 09 23 | 699 | 0.6− | 0.2− | 2003 03 10 | 704 | 0.9+ | 0.0 | 2005 09 15 | 703 | 0.9− | 0.1+ |
| 2001 10 22 | 644 | 1.4+ | 0.4+ | 2003 03 10 | 704 | 0.3+ | 0.0 | 2005 10 08 | 703 | 0.1+ | 0.4+ |
| 2001 10 22 | 644 | 1.1+ | 0.2− | 2003 03 10 | 704 | 1.4− | 0.3+ | 2005 10 08 | 703 | 0.1− | 0.1− |
| 2001 10 22 | 644 | 1.0+ | 0.0 | 2003 03 10 | 704 | 0.2+ | 0.1− | 2005 10 08 | 703 | 0.2− | 0.1− |
| 2003 02 01 | 704 | 0.4+ | 0.0 | 2003 03 11 | 704 | 0.3− | 0.7+ | 2005 10 08 | 703 | 0.8+ | 0.3+ |
| 2003 02 01 | 704 | 0.2+ | 0.5+ | 2003 03 11 | 704 | 0.4− | 0.6+ | 2005 10 31 | 703 | 1.1− | 0.2− |
| 2003 02 01 | 704 | 1.1+ | 0.0 | 2003 03 11 | 704 | 0.5− | 0.4+ | 2005 10 31 | 703 | 0.4− | 0.8+ |
| 2003 02 01 | 704 | 0.2+ | 0.0 | 2003 03 11 | 704 | 0.3− | 0.3+ | 2005 10 31 | 703 | 0.1− | 1.0− |
| 2003 02 01 | 704 | 0.1+ | 0.1− | 2003 03 11 | 704 | 0.3− | 0.8+ | 2005 10 31 | 703 | 0.5− | 0.4− |
| 2003 02 04 | 608 | 0.5+ | 0.5− | 2003 03 20 | 644 | 0.4− | 0.8+ | 2005 10 31 | 644 | 0.1− | 0.3+ |
| 2003 02 04 | 608 | 0.2+ | 0.2− | 2003 03 20 | 644 | 0.2− | 0.9+ | 2005 10 31 | 644 | 0.0 | 0.1+ |
| 2003 02 04 | 608 | 0.1− | 0.1+ | 2003 03 20 | 644 | 0.6− | 1.1+ | 2005 10 31 | 644 | 0.2− | 0.4+ |
| 2003 02 11 | 608 | (0.6− | 1.6+) | 2003 03 26 | 704 | 0.0 | 0.7+ | 2005 11 25 | 644 | 0.5+ | 0.3+ |
| 2003 02 11 | 608 | 1.0− | 1.3+ | 2003 03 26 | 704 | 0.1+ | 0.5+ | 2005 11 25 | 644 | 0.4+ | 0.1+ |
| 2003 02 11 | 608 | 0.5− | 1.2+ | 2003 03 26 | 704 | 0.1− | 0.2+ | 2005 11 25 | 644 | 0.5+ | 0.2+ |
| 2003 02 28 | 704 | 1.4+ | 0.4+ | 2003 03 26 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.8− |
| 2003 02 28 | 704 | 0.9+ | 0.3− | 2003 03 26 | 704 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.8− |
| 2003 02 28 | 704 | 0.7+ | 0.3− | 2003 04 10 | 644 | 0.3+ | 0.8+ | 2006 10 22 | G96 | 0.2− | 1.1− |
| 2003 02 28 | 704 | 1.3+ | 0.6− | 2003 04 10 | 644 | 0.2+ | 0.7+ | 2006 10 22 | G96 | 0.2+ | 0.8− |
| 2003 02 28 | 704 | (1.5+ | 1.0−) | 2003 04 10 | 644 | 0.2− | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2003 03 08 | 704 | 0.6− | 0.2− | 2005 08 31 | 644 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.5− | 0.5− |
| 2003 03 08 | 704 | 0.0 | 1.0− | 2005 08 31 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2003 03 08 | 704 | (0.9− | 1.6−) | 2005 08 31 | 644 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2003 03 08 | 704 | 0.1− | 1.2− | 2005 09 13 | 703 | (0.9+ | 1.6+) | 2006 11 26 | 691 | 0.0 | 0.4− |
| 2003 03 08 | 704 | (1.2− | 1.9−) | 2005 09 13 | 703 | 1.4+ | 0.4+ | 2006 11 26 | 691 | 0.6+ | 0.4− |
| 2003 03 08 | 644 | 0.1− | 0.1+ | 2005 09 13 | 703 | 0.1− | 1.0+ | 2006 11 26 | 691 | 0.2+ | 0.2− |
| 2003 03 08 | 644 | 0.2− | 0.1− | 2005 09 13 | 703 | 0.4+ | 1.0+ | | | | |
| 2003 03 08 | 644 | 0.2− | 0.0 | 2005 09 15 | 703 | 0.2− | 0.1+ | | | | |

**(143555)∗ 2003 EH$_{39}$**

Discovered 2003 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.75636 | | (2000.0) | | | |
| $n$ | 0.22439126 | $\omega$ | 19.06861 | | −0.15449923 | −0.96331789 |
| $a$ | 2.6820410 | $\Omega$ | 80.28808 | | +0.87507627 | −0.23652862 |
| $e$ | 0.1572296 | $i$ | 12.86287 | | +0.45866273 | +0.12677880 |
| $P$ | 4.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 0.2− | 1.4− | 2003 03 09 | 644 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 1997 11 29 | 704 | 0.7+ | 0.1− | 2003 03 09 | 644 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 1997 11 29 | 704 | 0.1+ | 0.8− | 2003 03 09 | 644 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 1997 11 29 | 704 | 1.0− | 0.5+ | 2003 03 22 | 644 | 0.4+ | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 03 22 | 644 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.3− | 0.3− |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 03 22 | 644 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.4− |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2003 04 01 | 699 | 0.6+ | 0.3− | 2006 10 29 | G96 | 0.1− | 0.0 |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2003 04 01 | 699 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.6− |
| 2001 10 14 | 644 | 0.3+ | 0.3+ | 2003 04 01 | 699 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.2− | 1.3− |
| 2001 10 14 | 644 | 0.4+ | 0.6+ | 2003 04 01 | 699 | 1.2− | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.3− |
| 2001 10 14 | 644 | 0.4+ | 0.5+ | 2003 04 07 | 644 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2001 10 23 | 644 | 0.1+ | 0.8+ | 2003 04 07 | 644 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.3− | 1.0+ | 2003 04 07 | 644 | 0.5+ | 0.3+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2001 10 23 | 644 | 0.1+ | 0.9+ | 2003 04 10 | 644 | 0.3+ | 0.6+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2003 02 24 | 608 | 0.7+ | 0.8− | 2003 04 10 | 644 | 0.2+ | 0.4+ | 2006 11 22 | 704 | (0.2− | 1.6+) |
| 2003 02 24 | 608 | 1.0+ | 0.7− | 2003 04 10 | 644 | 0.4+ | 0.6+ | 2006 11 22 | G96 | 0.3− | 0.1+ |
| 2003 02 24 | 608 | 0.8+ | 0.7− | 2005 07 28 | 644 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.1− | 1.4+ |
| 2003 03 08 | 699 | 0.1− | 0.5+ | 2005 07 28 | 644 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2003 03 08 | 699 | 0.4+ | 1.3+ | 2005 07 28 | 644 | 0.6− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2003 03 08 | 699 | 0.5− | 0.4+ | 2005 09 02 | 644 | 0.4− | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2003 03 08 | 699 | 0.3+ | 0.4+ | 2005 09 02 | 644 | 0.1− | 0.1+ | 2006 11 27 | 704 | 0.1− | 0.5+ |
| 2003 03 08 | 704 | 0.9+ | 0.7− | 2005 09 02 | 644 | 0.0 | 0.3+ | 2006 11 27 | 704 | 0.3− | 0.6− |
| 2003 03 08 | 704 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.4+ | 0.0 | 2006 11 27 | 704 | 0.3+ | 0.1− |
| 2003 03 08 | 704 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.1+ | | | | |
| 2003 03 08 | 704 | 0.4− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.0 | | | | |

**(143556)∗ 2003 ED$_{40}$ = 1995 UL$_{73}$**

Discovered 2003 Mar. 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 47365)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.22320 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17629407 | $\omega$ | 290.94371 | | −0.06194853 | −0.99763905 | |
| $a$ | 3.1500026 | $\Omega$ | 162.52931 | | +0.94848407 | −0.06809015 | |
| $e$ | 0.1199774 | $i$ | 5.66653 | | +0.31070944 | +0.00894773 | |
| $P$ | 5.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1− | 1.0+ | 2003 01 30 | 291 | 0.1− | 0.2+ | 2005 07 11 | G96 | 0.3+ | 0.2− |
| 1995 10 20 | 691 | 0.4− | 0.2+ | 2003 03 08 | 291 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.2+ | 0.1− |
| 1995 10 20 | 691 | 0.1− | 0.4+ | 2003 03 08 | 291 | 0.3+ | 0.1− | 2005 07 11 | G96 | (1.0− | 2.5−) |
| 1995 10 25 | 691 | 0.5+ | 1.1− | 2003 03 08 | 291 | 0.1+ | 0.1+ | 2006 09 30 | 703 | (2.7− | 0.3+) |
| 1995 10 25 | 691 | 0.4+ | 1.1− | 2003 03 09 | 704 | (2.4+ | 0.4+) | 2006 09 30 | 703 | (2.0− | 0.9+) |
| 1995 10 25 | 691 | 0.4+ | 1.1− | 2003 03 09 | 291 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.8+ |
| 1997 03 02 | 691 | 0.1− | 0.3− | 2003 03 09 | 291 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 1.4+ |
| 1997 03 02 | 691 | 0.2− | 0.3− | 2003 03 09 | 291 | 0.7+ | 0.1+ | 2006 10 12 | 644 | 0.5− | 0.7+ |
| 1997 03 02 | 691 | 0.2− | 0.1+ | 2003 03 09 | 704 | 0.6+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.9+ |
| 2001 11 17 | 704 | (0.7− | 1.9+) | 2003 03 09 | 704 | 0.7+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 1.1+ |
| 2001 11 17 | 704 | 0.1− | 0.2+ | 2003 03 09 | 704 | 1.2+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 1.0+ |
| 2001 11 17 | 704 | 0.8+ | 1.2+ | 2003 03 26 | 699 | 0.1+ | 0.9+ | 2006 10 16 | 703 | (2.9− | 0.4−) |
| 2001 12 11 | 704 | 0.5− | 0.1+ | 2003 03 26 | 699 | 0.1− | 0.2− | 2006 10 16 | 703 | (2.7− | 0.9+) |
| 2001 12 11 | 704 | 0.1− | 0.1− | 2003 03 26 | 699 | (0.6+ | 1.5+) | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2001 12 11 | 704 | 0.4+ | 0.7+ | 2003 03 26 | 699 | 0.9− | 0.6− | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.4+ | 0.3+ | 2003 04 11 | 691 | 0.9− | 0.4− | 2006 11 17 | G96 | 0.4− | 0.4+ |
| 2001 12 11 | 704 | 0.7− | 0.2− | 2003 04 11 | 691 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.3+ |
| 2003 01 30 | 291 | 0.4− | 0.1− | 2003 04 11 | 691 | 0.5− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2003 01 30 | 291 | 0.3− | 0.2+ | 2005 07 11 | G96 | 0.6− | 0.2− | | | | |

**(143557)∗ 2003 ER$_{40}$ = 1997 EM$_{18}$**

Discovered 2003 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47367)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.77477 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18175211 | $\omega$ | 337.11188 | | −0.77890183 | −0.62103911 | |
| $a$ | 3.0866193 | $\Omega$ | 163.56035 | | +0.61249350 | −0.78321303 | |
| $e$ | 0.1501714 | $i$ | 17.96866 | | +0.13477258 | −0.02979540 | |
| $P$ | 5.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 691 | 0.2+ | 0.0 | 2003 04 09 | 704 | 0.0 | 0.1+ | 2005 09 23 | 703 | 0.7− | 0.6+ |
| 1997 03 03 | 691 | 0.1+ | 0.2− | 2003 04 09 | 704 | 0.6− | 0.5− | 2005 09 23 | 703 | 0.9+ | 0.6+ |
| 1997 03 03 | 691 | 0.2+ | 0.3− | 2003 04 09 | 704 | 0.7− | 0.0 | 2005 10 01 | 704 | 0.2− | 0.0 |
| 1997 03 11 | 691 | 0.2+ | 0.4+ | 2003 04 09 | 704 | 0.1− | 0.1+ | 2005 10 01 | 704 | 0.4− | 0.7+ |
| 1997 03 11 | 691 | 0.1− | 0.3+ | 2003 04 27 | 645 | 0.0 | 0.0 | 2005 10 01 | 704 | 0.6+ | 0.4+ |
| 1997 03 11 | 691 | 0.8− | 0.5+ | 2003 04 27 | 645 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.5− | 0.0 |
| 2000 10 01 | 704 | 0.5− | 1.8+ | 2003 04 28 | 645 | 0.0 | 0.0 | 2006 10 20 | 703 | 1.3+ | 0.2− |
| 2000 10 01 | 704 | 0.8− | 0.4+ | 2003 04 28 | 645 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.1− | 0.5+ |
| 2000 10 01 | 704 | 0.0 | 0.5+ | 2003 05 09 | 699 | 0.6+ | 1.2+ | 2006 10 20 | 703 | 0.5+ | 0.2+ |
| 2002 01 12 | 704 | 0.4+ | 0.0 | 2003 05 09 | 699 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.2− | 1.2− |
| 2002 01 12 | 704 | 1.1+ | 0.6+ | 2003 05 09 | 699 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.9− | 0.5− |
| 2002 01 12 | 704 | 0.5+ | 0.1+ | 2003 05 09 | 699 | 0.2− | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.0 |
| 2003 03 08 | 699 | 0.0 | 0.2+ | 2005 08 24 | 644 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.6− | 0.6− |
| 2003 03 08 | 699 | 0.6− | 0.7− | 2005 08 24 | 644 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.4+ | 0.3+ |
| 2003 03 08 | 699 | 0.1− | 0.2+ | 2005 08 24 | 644 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.6− | 0.1− |
| 2003 03 08 | 699 | 1.1+ | 0.4+ | 2005 08 25 | 644 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.0 | 0.4+ |
| 2003 03 09 | 704 | 0.3− | 0.0 | 2005 08 25 | 644 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.1− |
| 2003 03 09 | 704 | 0.1+ | 0.2+ | 2005 08 25 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2003 03 09 | 704 | 0.3− | 0.7− | 2005 08 29 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2003 03 12 | 704 | 0.0 | 0.1− | 2005 08 29 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2003 03 12 | 704 | 0.5+ | 0.4− | 2005 08 29 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 1.1+ | 0.6− |
| 2003 03 12 | 704 | 1.2+ | 0.2− | 2005 09 12 | 691 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.4− | 0.7− |
| 2003 03 13 | 608 | 0.1+ | 0.6+ | 2005 09 12 | 691 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.4+ | 0.6− |
| 2003 03 13 | 608 | 0.1+ | 0.7+ | 2005 09 12 | 691 | 0.1+ | 0.0 | 2006 11 22 | 703 | 1.1− | 0.3− |
| 2003 03 13 | 608 | 0.1+ | 0.2+ | 2005 09 23 | 703 | 0.9− | 0.5− | 2006 11 22 | 703 | 0.3− | 0.4+ |
| 2003 04 09 | 704 | 0.7+ | 0.4+ | 2005 09 23 | 703 | 0.2+ | 0.4+ | | | | |

**(143558)∗ 2003 ET$_{42}$**

Discovered 2003 Mar. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.34279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18224010 | $\omega$ | 80.42877 | | −0.40030655 | −0.90056604 | |
| $a$ | 3.0811068 | $\Omega$ | 34.76784 | | +0.67999131 | −0.41592165 | |
| $e$ | 0.0998898 | $i$ | 17.29333 | | +0.61430163 | −0.12645152 | |
| $P$ | 5.41 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 327 | 0.3+ | 0.1− | 2003 03 12 | 291 | 0.0 | 0.0 | 2003 05 07 | 608 | 0.5+ | 0.9− |
| 1995 09 27 | 327 | 0.5+ | 0.6− | 2003 03 22 | 644 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.0 |
| 1995 09 27 | 327 | 0.6+ | 0.3− | 2003 03 22 | 644 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.1− | 0.0 |
| 1995 09 27 | 327 | 0.7− | 0.2− | 2003 03 22 | 644 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 1995 11 16 | 691 | 0.2− | 0.0 | 2003 03 26 | 608 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.4+ |
| 1995 11 16 | 691 | 0.5− | 0.1+ | 2003 03 26 | 608 | 1.1+ | 0.3− | 2006 10 19 | 703 | 0.4− | 1.0− |
| 1995 11 16 | 691 | 0.3− | 0.1− | 2003 03 26 | 608 | 0.8+ | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.2− |
| 1995 11 30 | 691 | 0.4− | 0.6+ | 2003 03 29 | 699 | 0.5+ | 0.5+ | 2006 10 19 | 703 | 0.5− | 1.0− |
| 1995 11 30 | 691 | 0.6− | 0.7+ | 2003 03 29 | 699 | 0.3− | 0.2− | 2006 10 19 | 703 | 1.2− | 0.1+ |
| 1995 11 30 | 691 | 0.6− | 0.6+ | 2003 03 29 | 699 | 0.1+ | 0.8− | 2006 10 27 | 703 | 0.5+ | 0.1+ |
| 2000 09 23 | 699 | 1.1+ | 1.5+ | 2003 03 29 | 699 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2000 09 23 | 699 | 0.5+ | 0.7+ | 2003 03 31 | 699 | 1.5− | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.5− |
| 2000 09 23 | 699 | 0.8− | 1.3+ | 2003 03 31 | 699 | 0.4− | 0.8− | 2006 10 27 | 703 | 0.3+ | 0.3− |
| 2000 09 23 | 699 | 1.1− | 0.6+ | 2003 03 31 | 699 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2000 10 02 | 699 | 0.4− | 1.0+ | 2003 03 31 | 699 | 0.8− | 0.9− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2000 10 02 | 699 | 1.2− | 0.6− | 2003 04 01 | 704 | (1.7+ | 0.0 ) | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2000 10 02 | 699 | 0.6− | 0.4− | 2003 04 01 | 704 | 1.2− | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2000 10 02 | 699 | 1.4− | 0.4− | 2003 04 01 | 704 | 0.8+ | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2000 12 04 | 691 | 0.5+ | 0.3+ | 2003 04 01 | 704 | 1.2+ | 0.3+ | 2006 11 13 | 644 | 0.5+ | 0.3+ |
| 2000 12 04 | 691 | 0.4+ | 0.4+ | 2003 04 01 | 704 | (2.2+ | 0.3+) | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2000 12 04 | 691 | 0.6+ | 0.1+ | 2003 04 01 | 704 | 1.0+ | 0.5− | 2006 11 13 | 644 | 0.3+ | 0.1+ |
| 2001 10 25 | 704 | 0.3+ | 0.5− | 2003 04 01 | 704 | (1.8+ | 0.6+) | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 10 25 | 704 | 0.5+ | 1.0− | 2003 04 01 | 704 | 1.2+ | 0.4− | 2006 11 14 | 703 | 0.5+ | 0.3− |
| 2001 10 25 | 704 | 0.2+ | 0.1− | 2003 04 08 | 644 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.8− | 1.2− |
| 2001 10 25 | 704 | 0.3+ | 0.2− | 2003 04 08 | 704 | 0.5+ | 0.8− | 2006 11 14 | 703 | (0.3+ | 2.6−) |
| 2001 12 23 | 704 | 0.0 | 0.7− | 2003 04 08 | 644 | 0.5+ | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.6− |
| 2001 12 23 | 704 | (0.2+ | 1.7−) | 2003 04 08 | 704 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2001 12 23 | 704 | 0.7+ | 0.3− | 2003 04 08 | 704 | 1.2+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2001 12 23 | 644 | 0.2+ | 0.3− | 2003 04 08 | 704 | 0.8− | 0.8+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2001 12 23 | 704 | 1.0+ | 0.3+ | 2003 04 08 | 644 | (0.2+ | 2.3+) | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 12 23 | 644 | 0.5+ | 0.0 | 2003 04 20 | 608 | 0.6+ | 0.1− | 2006 11 16 | 704 | 0.8− | 1.1+ |
| 2001 12 23 | 644 | 0.5+ | 0.3− | 2003 04 20 | 608 | 0.6+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.7+ |
| 2001 12 23 | 704 | 0.9+ | 0.1− | 2003 04 20 | 608 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.5− | 0.3− |
| 2002 01 06 | 704 | 0.2− | 0.2− | 2003 04 27 | 699 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.2− | 0.4+ |
| 2002 01 06 | 704 | 0.0 | 0.3− | 2003 04 27 | 699 | 0.9− | 0.0 | 2006 11 22 | 703 | 0.2− | 0.3+ |
| 2002 01 06 | 704 | 0.3+ | 0.2− | 2003 04 27 | 699 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2002 01 06 | 704 | (2.3− | 0.8−) | 2003 04 27 | 699 | 1.5− | 1.0+ | 2006 11 22 | 703 | 0.2− | 0.4+ |
| 2002 01 06 | 704 | 0.4− | 0.3− | 2003 05 01 | 704 | 0.9+ | 1.1+ | 2006 11 22 | 703 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 291 | 0.0 | 0.1− | 2003 05 01 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2003 03 09 | 291 | 0.1+ | 0.2+ | 2003 05 01 | 704 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.1− | 0.1− |
| 2003 03 09 | 291 | 0.0 | 0.0 | 2003 05 01 | 704 | (2.7+ | 0.4−) | 2006 11 28 | 704 | 0.2+ | 0.2− |
| 2003 03 11 | 291 | 0.0 | 0.2+ | 2003 05 02 | 691 | 0.0 | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2003 03 11 | 291 | 0.0 | 0.2+ | 2003 05 02 | 691 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.4+ | 0.8− |
| 2003 03 11 | 291 | 0.0 | 0.3+ | 2003 05 02 | 691 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.5+ |
| 2003 03 12 | 291 | 0.0 | 0.1+ | 2003 05 07 | 608 | 0.3− | 0.7− | 2006 11 28 | 704 | 1.3− | 0.3+ |
| 2003 03 12 | 291 | 0.0 | 0.2+ | 2003 05 07 | 608 | 0.6− | 0.3− | | | | |

**(143559)∗ 2003 ET$_{43}$ = 2001 SS$_{338}$**

Discovered 2003 Mar. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47370)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.08194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26785875 | $\omega$ | 277.09521 | | −0.57582383 | −0.81707969 | |
| $a$ | 2.3834103 | $\Omega$ | 208.12179 | | +0.77189825 | −0.53186945 | |
| $e$ | 0.1473431 | $i$ | 3.45676 | | +0.26944390 | −0.22247621 | |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.0 | 1.0− | 2003 04 01 | 704 | 0.3+ | 0.7+ | 2005 10 31 | 704 | 0.4− | 0.9− |
| 1995 02 03 | 691 | 0.4+ | 0.8− | 2003 04 05 | 691 | 0.0 | 0.3+ | 2005 10 31 | 704 | 0.4− | 0.3+ |
| 1995 02 03 | 691 | 0.1− | 0.3− | 2003 04 05 | 691 | 0.1+ | 0.1+ | 2005 10 31 | 704 | 0.4− | 0.8− |
| 2001 09 20 | 704 | 1.1+ | 0.5+ | 2003 04 05 | 691 | 0.2+ | 0.5+ | 2005 10 31 | 704 | 1.2− | 0.2− |
| 2001 09 20 | 704 | 1.0+ | 1.0+ | 2005 10 22 | 691 | 0.2+ | 0.1− | 2005 10 31 | 691 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 1.7+ | 0.1− | 2005 10 22 | 691 | 0.1+ | 0.1− | 2005 10 31 | 691 | 0.0 | 0.2+ |
| 2001 09 22 | 691 | 0.9− | 0.5+ | 2005 10 22 | 691 | 0.1+ | 0.2+ | 2005 10 31 | 691 | 0.0 | 0.3+ |
| 2001 09 22 | 691 | 1.1− | 0.7+ | 2005 10 25 | 691 | 0.2+ | 0.1+ | 2005 11 03 | 704 | 0.6− | 0.5+ |
| 2001 09 22 | 691 | 0.8− | 0.5+ | 2005 10 25 | 691 | 0.2+ | 0.0 | 2005 11 03 | 704 | 0.7+ | 0.3+ |
| 2001 10 14 | 691 | 0.3+ | 0.1+ | 2005 10 25 | 691 | 0.1+ | 0.0 | 2005 11 03 | 704 | 0.6− | 0.4+ |
| 2001 10 14 | 691 | 0.5+ | 0.1+ | 2005 10 25 | 703 | (0.6+ | 2.9+) | 2005 11 03 | 704 | 0.2+ | 0.0 |
| 2001 10 14 | 691 | 0.2+ | 0.2+ | 2005 10 25 | 703 | 0.7− | 0.6+ | 2005 11 06 | 704 | 0.9+ | 1.1+ |
| 2003 03 06 | 704 | 1.3+ | 0.8+ | 2005 10 25 | 703 | 0.6+ | 1.3− | 2005 11 06 | 704 | 0.6+ | 1.3+ |
| 2003 03 06 | 704 | 1.2+ | 0.3− | 2005 10 25 | 703 | 0.5− | 0.7+ | 2005 11 06 | 704 | 0.7+ | 1.1+ |
| 2003 03 06 | 704 | 0.8+ | 0.2+ | 2005 10 25 | 291 | 0.2− | 0.2+ | 2005 11 06 | 704 | 1.0+ | 1.0+ |
| 2003 03 10 | 699 | 0.5+ | 0.2+ | 2005 10 25 | 291 | 0.3− | 0.0 | 2005 11 26 | 703 | 0.5− | 0.6+ |
| 2003 03 10 | 699 | 0.6+ | 1.3+ | 2005 10 25 | 291 | 0.3− | 0.0 | 2005 11 26 | 703 | 0.6− | 0.1− |
| 2003 03 10 | 699 | 0.6+ | 0.6+ | 2005 10 27 | 691 | 0.0 | 0.2+ | 2005 11 26 | 703 | 0.6+ | 0.7− |
| 2003 03 10 | 699 | 0.3+ | 0.9+ | 2005 10 27 | 691 | 0.1− | 0.1+ | 2005 11 26 | 703 | 0.7− | 0.4− |
| 2003 03 25 | 699 | 0.4+ | 0.2+ | 2005 10 27 | 691 | 0.0 | 0.1+ | 2005 12 01 | 704 | 0.5+ | 0.6+ |
| 2003 03 25 | 699 | 0.3− | 0.3+ | 2005 10 28 | 704 | 0.2− | 1.3− | 2005 12 01 | 704 | 0.2+ | 0.5+ |
| 2003 03 25 | 699 | 0.4− | 0.1− | 2005 10 28 | 704 | 0.0 | 0.8− | 2005 12 01 | 704 | 0.0 | 0.1+ |
| 2003 03 25 | 699 | 0.5− | 0.8+ | 2005 10 28 | 704 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2003 04 01 | 704 | 0.4− | 1.1+ | 2005 10 28 | G96 | 0.2+ | 0.2− | 2005 12 01 | G96 | 0.2− | 0.2− |
| 2003 04 01 | 704 | 0.4− | 1.1+ | 2005 10 28 | G96 | 0.2+ | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.1− |
| 2003 04 01 | 704 | 0.6− | 0.0 | 2005 10 28 | G96 | 0.1− | 0.1− | 2005 12 01 | G96 | 0.1+ | 0.1+ |
| 2003 04 01 | 704 | 0.1+ | 0.7+ | 2005 10 28 | G96 | 0.0 | 0.4− | | | | |

**(143560)∗ 2003 EV$_{44}$ = 2004 JL$_{9}$**

Discovered 2003 Mar. 7 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69457)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.41457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18416485 | $\omega$ | 220.09096 | | +0.61720590 | −0.78614129 | |
| $a$ | 3.0596017 | $\Omega$ | 191.91526 | | +0.75594843 | +0.60386394 | |
| $e$ | 0.1419570 | $i$ | 8.98074 | | +0.21817160 | +0.13164428 | |
| $P$ | 5.35 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2005 06 06 | 691 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2005 06 06 | 691 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.2+ | 0.2− | 2005 06 06 | 691 | 0.0 | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.8+ |
| 2001 11 17 | 704 | 0.4− | 0.5+ | 2006 07 22 | G96 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.5− | 1.4+ | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 11 17 | 704 | 0.5+ | 0.7+ | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.5− | 1.3+ | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2001 12 11 | 704 | 0.2− | 0.5+ | 2006 08 12 | 644 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2001 12 11 | 704 | 0.1− | 0.4+ | 2006 08 12 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 0.1+ | 0.3+ | 2006 08 12 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 12 11 | 704 | 0.3+ | 0.3+ | 2006 09 15 | 644 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 12 11 | 704 | 0.3+ | 0.4+ | 2006 09 15 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.3− |
| 2003 03 07 | 699 | 0.4+ | 0.5+ | 2006 09 15 | 644 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2003 03 07 | 699 | 0.9− | 0.2− | 2006 09 17 | 704 | 0.2− | 1.2+ | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2003 03 07 | 699 | 0.8− | 0.3+ | 2006 09 17 | 704 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 03 07 | 699 | 0.2+ | 0.4− | 2006 09 17 | 704 | 0.9+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 03 10 | 699 | (0.6+ | 1.6+) | 2006 09 18 | 699 | 0.0 | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 03 10 | 699 | 0.6+ | 0.1+ | 2006 09 18 | 699 | 0.7+ | 0.1− | 2006 10 22 | 691 | 0.8− | 0.1+ |
| 2003 03 10 | 699 | (2.4+ | 1.5+) | 2006 09 18 | 699 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2003 03 10 | 699 | 1.0+ | 0.9+ | 2006 09 18 | 699 | 0.0 | 0.6− | 2006 10 22 | 691 | 0.4+ | 0.1+ |
| 2003 03 26 | 644 | 1.3+ | 1.3+ | 2006 09 20 | 644 | 0.0 | 0.4+ | 2006 10 22 | 704 | 0.4+ | 0.4+ |
| 2003 03 26 | 644 | 1.2+ | 1.3+ | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 22 | 704 | 0.5− | 0.1+ |
| 2003 03 26 | 644 | 1.4+ | 1.4+ | 2006 09 20 | 644 | 0.0 | 0.6+ | 2006 10 22 | 704 | 0.5− | 0.5+ |
| 2003 03 26 | 699 | 0.4− | 1.2− | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2003 03 26 | 699 | 1.2+ | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2003 03 26 | 699 | 0.7− | 0.1− | 2006 09 23 | 691 | 1.0− | 0.8− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2003 03 26 | 699 | (1.6+ | 0.3−) | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2003 03 27 | 691 | 0.2+ | 0.8+ | 2006 09 27 | 691 | 0.5− | 0.0 | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2003 03 27 | 691 | 0.0 | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2003 03 27 | 691 | 0.2− | 1.1+ | 2006 10 01 | 691 | 0.2+ | 0.5+ | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 2004 05 13 | 291 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.1− |
| 2004 05 13 | 291 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 1.1− | 0.0 |
| 2004 05 13 | 291 | 0.1− | 0.5+ | 2006 10 15 | 703 | 0.2+ | 0.8+ | 2006 11 13 | 703 | 0.5− | 0.3− |
| 2004 05 14 | 291 | 0.1− | 0.6+ | 2006 10 15 | 703 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.9− | 0.9− |
| 2004 05 14 | 291 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 1.5+ | 1.2+ | | | | |
| 2004 05 14 | 291 | 0.0 | 0.6+ | 2006 10 15 | 703 | 0.3+ | 0.9+ | | | | |

**(143561)∗ 2003 EP$_{45}$**

Discovered 2003 Mar. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.67526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21689442 | $\omega$ | 294.32151 | | −0.98850200 | −0.14706221 | |
| $a$ | 2.7434926 | $\Omega$ | 237.23932 | | +0.14941019 | −0.91421938 | |
| $e$ | 0.1272612 | $i$ | 2.39653 | | +0.02324626 | −0.37759187 | |
| $P$ | 4.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 691 | 0.1+ | 0.2− | 2003 03 07 | 704 | 1.0+ | 0.2− | 2003 04 03 | 699 | 0.1+ | 0.6+ |
| 1996 10 10 | 691 | 0.3− | 0.2+ | 2003 03 11 | 644 | 0.5+ | 0.0 | 2003 04 03 | 699 | 0.4− | 0.2+ |
| 1996 10 10 | 691 | 0.2+ | 0.0 | 2003 03 11 | 644 | 0.5+ | 0.1+ | 2003 04 03 | 699 | 0.3+ | 0.7− |
| 2001 11 17 | 691 | 0.3+ | 0.5− | 2003 03 11 | 644 | 0.6+ | 0.1+ | 2003 04 03 | 699 | 0.2− | 0.8− |
| 2001 11 17 | 691 | 0.3+ | 0.2− | 2003 03 25 | 699 | 0.6− | 0.3− | 2003 04 05 | 691 | 0.5+ | 1.1+ |
| 2001 11 17 | 691 | 0.1+ | 0.2− | 2003 03 25 | 699 | 0.2− | 0.6+ | 2003 04 05 | 691 | 0.6+ | 1.2+ |
| 2001 11 19 | 704 | 0.1− | 0.2+ | 2003 03 25 | 699 | 1.7− | 0.4+ | 2003 04 05 | 691 | 0.5+ | 1.1+ |
| 2001 11 19 | 704 | 0.1+ | 0.8− | 2003 03 25 | 699 | 0.1+ | 0.0 | 2003 05 01 | 691 | 0.6− | 0.2+ |
| 2001 11 19 | 704 | 0.7− | 0.1− | 2003 03 28 | 691 | 0.1+ | 0.3− | 2003 05 01 | 691 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.9+ | 0.0 | 2003 03 28 | 691 | 0.5− | 0.3− | 2003 05 01 | 691 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.5+ | 0.0 | 2003 03 28 | 691 | 0.5− | 0.4− | 2005 10 07 | 691 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.5+ | 0.3+ | 2003 03 31 | 704 | 0.1− | 0.9− | 2005 10 07 | 691 | 0.1+ | 0.3+ |
| 2001 11 21 | 704 | 0.5+ | 0.1+ | 2003 03 31 | 704 | 0.5+ | 0.2+ | 2005 10 07 | 691 | 0.3− | 0.4+ |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2003 03 31 | 704 | 0.8+ | 0.2− | 2005 10 11 | 691 | 0.1− | 0.6+ |
| 2001 12 17 | 691 | 0.3− | 0.4+ | 2003 03 31 | 704 | 0.8+ | 0.2+ | 2005 10 11 | 691 | 0.6− | 0.5+ |
| 2001 12 17 | 691 | 0.4− | 0.4+ | 2003 03 31 | 704 | 0.6+ | 0.5+ | 2005 10 11 | 691 | 0.1− | 0.7+ |
| 2001 12 17 | 691 | 0.4− | 0.4− | 2003 04 01 | 704 | 0.5− | 0.4+ | 2005 10 30 | G96 | 0.2+ | 0.0 |
| 2003 03 07 | 704 | (2.1+ | 1.1−) | 2003 04 01 | 704 | 0.1− | 0.2− | 2005 10 30 | G96 | 0.1− | 0.5+ |
| 2003 03 07 | 704 | 1.9+ | 0.9− | 2003 04 01 | 704 | 0.6− | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.1+ |
| 2003 03 07 | 704 | 0.5+ | 0.0 | 2003 04 01 | 704 | 0.3− | 0.1− | 2005 10 30 | G96 | 0.3− | 0.4+ |

**(143562)∗ 2003 EZ$_{45}$**

Discovered 2003 Mar. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.72166 | | $\omega$ | (2000.0) | −0.13748067 | −0.98694138 |
| $n$ | 0.23431447 | | $\Omega$ | 154.55430 | +0.89075569 | −0.08612884 |
| $a$ | 2.6057734 | | $i$ | 303.24285 | +0.43318976 | −0.13611959 |
| $e$ | 0.3635945 | | $H$ | 5.76008 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.21 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3− | 1.0+ | 2003 03 31 | 699 | 0.2− | 1.0− | 2006 11 02 | G96 | 0.2− | 0.3− |
| 2001 09 12 | 704 | 1.1− | 0.4+ | 2003 03 31 | 699 | 0.5− | 0.4− | 2006 11 02 | G96 | 0.2+ | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.9+ | 2003 03 31 | 699 | 0.4− | 0.6− | 2006 11 06 | 644 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2003 03 31 | 699 | 0.0 | 0.3− | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.7− | 1.2+ | 2003 04 02 | 704 | 0.6+ | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.7+ | 2003 04 02 | 704 | 0.9+ | 0.6− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.2− | 1.4+ | 2003 04 02 | 704 | 0.4− | 0.5+ | 2006 11 06 | 644 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2003 04 07 | 704 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.3+ | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 1.1+ | 2003 04 07 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.9− | 0.1− |
| 2003 01 07 | 704 | 0.8+ | 0.2+ | 2003 04 07 | 704 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.0 | 0.4− |
| 2003 01 07 | 704 | 1.5+ | 0.3− | 2003 04 07 | 704 | 1.0+ | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.8− |
| 2003 01 07 | 704 | (1.5+ | 0.9−) | 2003 04 07 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.0 |
| 2003 03 07 | 704 | 0.1− | 0.0 | 2005 07 05 | G96 | 0.3+ | 0.0 | 2006 11 18 | 704 | (1.8− | 0.1−) |
| 2003 03 07 | 704 | 0.3+ | 0.5+ | 2005 07 05 | G96 | 0.1− | 0.4+ | 2006 11 18 | 704 | 1.2− | 0.6+ |
| 2003 03 07 | 704 | 1.0+ | 0.3− | 2005 07 05 | G96 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.9+ |
| 2003 03 07 | 704 | 0.1+ | 0.1+ | 2005 07 05 | G96 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.8+ |
| 2003 03 11 | 704 | 1.0+ | 0.1− | 2005 07 18 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 1.0+ | 0.7+ |
| 2003 03 11 | 704 | 0.5+ | 0.2− | 2005 07 18 | 644 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.7+ | 0.6+ |
| 2003 03 11 | 704 | (2.9+ | 1.5−) | 2005 07 18 | 644 | 0.3− | 0.6+ | 2006 11 19 | 704 | 1.0+ | 0.5+ |
| 2003 03 11 | 704 | 0.8+ | 0.0 | 2005 07 28 | 644 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2003 03 11 | 704 | 0.8+ | 0.9− | 2005 07 28 | 644 | 0.5− | 0.5+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2003 03 28 | 644 | 0.2+ | 0.5− | 2005 07 28 | 644 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2003 03 28 | 644 | 0.4+ | 0.0 | 2006 10 01 | 703 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2003 03 28 | 644 | 0.1+ | 0.2− | 2006 10 01 | 703 | 1.0− | 0.4− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2003 03 29 | 699 | 0.3− | 0.4− | 2006 10 01 | 703 | 0.5− | 0.8+ | 2006 11 28 | 704 | 0.8+ | 0.4+ |
| 2003 03 29 | 699 | 0.2− | 0.9− | 2006 10 20 | 703 | 0.1+ | 0.8+ | 2006 11 28 | 704 | 0.6+ | 0.6+ |
| 2003 03 29 | 699 | 0.7− | 0.1+ | 2006 10 20 | 703 | 0.7− | 0.4+ | 2006 11 28 | 704 | 1.0+ | 0.7+ |
| 2003 03 29 | 699 | 0.8− | 0.5− | 2006 10 20 | 703 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.9+ | 0.5+ |
| 2003 03 30 | 691 | 0.1− | 0.8+ | 2006 10 20 | 703 | 0.2− | 0.7+ | 2006 11 28 | 704 | 1.0+ | 0.6+ |
| 2003 03 30 | 691 | 0.3− | 1.1+ | 2006 11 02 | G96 | 0.0 | 0.0 | | | | |
| 2003 03 30 | 691 | 0.5− | 0.9+ | 2006 11 02 | G96 | 0.4+ | 0.3− | | | | |

**(143563)∗ 2003 EQ$_{46}$**

Discovered 2003 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.48789 | | $\omega$ | (2000.0) | −0.80952284 | +0.54876206 |
| $n$ | 0.22296451 | | $\Omega$ | 290.02249 | −0.42551028 | −0.79328053 |
| $a$ | 2.6934705 | | $i$ | 283.79344 | −0.40449200 | −0.26375405 |
| $e$ | 0.1536476 | | $H$ | 12.40621 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.42 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 17 | 691 | 0.4− | 0.1− | 2004 07 16 | 704 | 0.7− | 0.1− | 2005 11 02 | 703 | 0.7+ | 0.4+ |
| 1994 01 17 | 691 | 0.3+ | 0.8− | 2004 07 16 | 704 | 0.0 | 0.0 | 2005 11 02 | 703 | 0.8+ | 0.5+ |
| 1994 01 17 | 691 | 0.7− | 0.3− | 2004 07 16 | 704 | 0.2− | 0.1+ | 2005 11 02 | 703 | 0.2− | 0.5− |
| 2001 11 11 | 704 | (1.6+ | 0.6+) | 2004 07 18 | 704 | 0.3− | 0.9+ | 2005 11 04 | 699 | 1.1− | 0.0 |
| 2001 11 11 | 704 | 0.1− | 0.8+ | 2004 07 18 | 704 | 0.4− | 0.8+ | 2005 11 04 | 699 | 0.6+ | 0.1+ |
| 2001 11 11 | 704 | 0.6+ | 0.5+ | 2004 07 18 | 704 | 0.6+ | 0.2+ | 2005 11 04 | 699 | (0.6+ | 3.0+) |
| 2001 11 11 | 704 | 1.2+ | 0.8+ | 2004 07 18 | 704 | 0.2+ | 0.5+ | 2005 11 04 | 699 | 0.3− | 1.2+ |
| 2003 03 08 | 699 | 0.6− | 0.6+ | 2004 07 18 | 704 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.1− |
| 2003 03 08 | 699 | 0.3− | 1.3+ | 2004 08 06 | 644 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2003 03 08 | 699 | 0.4− | 1.4+ | 2004 08 06 | 644 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.1+ |
| 2003 03 08 | 699 | 0.0 | 0.3+ | 2004 08 06 | 644 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.2− | 0.3− |
| 2003 03 11 | 704 | 0.8+ | 1.4− | 2004 08 09 | 704 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.6+ | 0.1− |
| 2003 03 11 | 704 | 0.1− | 0.6+ | 2004 08 09 | 704 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.2+ |
| 2003 03 11 | 704 | 0.3+ | 0.5+ | 2004 08 09 | 704 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2003 03 11 | 704 | 0.1+ | 1.0+ | 2004 08 09 | 704 | 0.6+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2003 03 11 | 704 | 0.4+ | 0.1+ | 2004 08 09 | 704 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.2+ |
| 2003 03 24 | 608 | 1.2+ | 0.1− | 2005 10 10 | 703 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.2+ |
| 2003 03 24 | 608 | 1.0+ | 0.1− | 2005 10 10 | 703 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 2003 03 24 | 608 | 1.0+ | 0.2+ | 2005 10 10 | 703 | (1.5− | 1.3+) | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 2004 07 14 | 704 | 0.1− | 0.7− | 2005 10 10 | 703 | 0.2− | 1.1− | 2006 11 27 | G96 | 0.1− | 0.3+ |
| 2004 07 14 | 704 | 0.3+ | 0.8− | 2005 10 25 | 703 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.3− | 0.1+ |
| 2004 07 14 | 704 | 0.1+ | 0.6− | 2005 10 25 | 703 | 0.3− | 0.6− | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2004 07 14 | 704 | 0.2+ | 0.2− | 2005 10 25 | 703 | 0.9− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2004 07 14 | 704 | 0.6+ | 0.8− | 2005 10 25 | 703 | 0.5− | 0.2+ | | | | |
| 2004 07 16 | 704 | 0.3− | 0.9+ | 2005 11 02 | 703 | 0.3+ | 0.8− | | | | |

**(143564)∗ 2003 ER$_{47}$ = 1998 KP$_{57}$**

Discovered 2003 Mar. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 47375)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 213.10509 | | $\omega$ | (2000.0) | −0.87183787 | +0.47034675 |
| $n$ | 0.18292830 | | $\Omega$ | 340.43377 | −0.42151175 | −0.86259257 |
| $a$ | 3.0733743 | | $i$ | 228.39617 | −0.24945254 | −0.18630078 |
| $e$ | 0.1690127 | | $H$ | 10.52966 | $G$ 0.15 | $U$ 1 |
| $P$ | 5.39 | | | 14.7 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.1− | 0.1+ | 2003 03 11 | 704 | 0.7+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 1995 12 19 | 691 | 0.1− | 0.2− | 2003 03 11 | 704 | 0.0 | 0.7+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 1995 12 19 | 691 | 0.0 | 0.3− | 2003 03 12 | 704 | 0.9− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 1998 04 22 | 704 | 0.2− | 0.5− | 2003 03 12 | 704 | 1.0+ | 0.0 | 2006 10 19 | G96 | 0.3− | 0.1+ |
| 1998 04 22 | 704 | (2.6− | 0.5+) | 2003 03 12 | 704 | 0.6+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.4− |
| 1998 04 22 | 704 | (0.3+ | 3.2+) | 2003 03 12 | 704 | 0.3− | 0.7− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 1998 04 22 | 704 | 1.2− | 0.7+ | 2003 03 13 | 704 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 1998 05 01 | 704 | 0.5− | 0.5− | 2003 03 13 | 704 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.6− | 0.0 |
| 1998 05 01 | 704 | 0.0 | 0.9− | 2003 03 13 | 704 | 0.7− | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 1998 05 01 | 704 | 0.3− | 0.3− | 2003 03 13 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 1998 05 01 | 704 | 0.3+ | 0.6− | 2003 03 13 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 1998 05 01 | 704 | 0.9− | 0.3− | 2003 03 28 | 699 | 1.0− | 0.9− | 2006 11 11 | G96 | 0.2+ | 0.7− |
| 1998 05 22 | 704 | 0.9+ | 0.7+ | 2003 03 28 | 699 | 0.1− | 0.7+ | 2006 11 11 | G96 | 0.5− | 0.6− |
| 1998 05 22 | 704 | 1.1+ | 0.9− | 2003 03 28 | 699 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 1998 05 22 | 704 | 1.0− | 0.7+ | 2003 03 28 | 699 | 0.2+ | 0.7− | 2006 11 11 | G96 | 0.1− | 1.3− |
| 1998 05 24 | 704 | 1.5− | 1.2− | 2003 04 04 | 699 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 1998 05 24 | 704 | (3.3+ | 0.7+) | 2003 04 04 | 699 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1998 05 24 | 704 | 1.9+ | 0.2− | 2003 04 04 | 699 | 1.2− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 1998 05 24 | 704 | 1.0+ | 0.8+ | 2003 04 04 | 699 | 0.9− | 0.5− | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2002 01 09 | 704 | 0.4+ | 0.2+ | 2003 05 05 | 699 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2002 01 09 | 704 | 0.5+ | 0.0 | 2003 05 05 | 699 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.4− |
| 2002 01 09 | 704 | (0.3− | 1.5+) | 2003 05 05 | 699 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2002 01 09 | 704 | 1.2+ | 0.5− | 2003 05 05 | 699 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2003 03 09 | 699 | 0.2+ | 0.2− | 2005 09 30 | 644 | 0.3+ | 0.7+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2003 03 09 | 699 | 0.8+ | 0.1+ | 2005 09 30 | 644 | 0.1+ | 0.9+ | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2003 03 09 | 699 | 0.8+ | 0.3+ | 2005 09 30 | 644 | 0.1+ | 1.0+ | 2006 11 29 | 704 | 0.0 | 0.3+ |
| 2003 03 09 | 699 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.5− | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2003 03 11 | 704 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2003 03 11 | 704 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.1− | | | | |
| 2003 03 11 | 704 | 1.1+ | 0.8+ | 2006 09 28 | G96 | 0.3− | 0.6− | | | | |

**(143565)∗ 2003 EW$_{48}$**

Discovered 2003 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.00849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17672185 | $\omega$ | 164.30096 | | −0.77319810 | +0.63348822 | |
| $a$ | 3.1449172 | $\Omega$ | 55.04429 | | −0.58561231 | −0.69552127 | |
| $e$ | 0.1666382 | $i$ | 2.04740 | | −0.24335762 | −0.33903220 | |
| $P$ | 5.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.1− | 0.3− | 2003 03 09 | 704 | (1.0− | 2.2+) | 2005 09 01 | 691 | 0.2− | 0.2+ |
| 1994 09 29 | 691 | 0.3+ | 0.2− | 2003 03 11 | 704 | 0.1− | 0.5− | 2005 09 11 | 691 | 0.2+ | 0.4− |
| 1994 09 29 | 691 | 0.5+ | 0.4− | 2003 03 11 | 704 | 0.1+ | 0.5+ | 2005 09 11 | 691 | 0.1+ | 0.2+ |
| 1998 04 25 | 809 | (0.8+ | 2.5+) | 2003 03 11 | 704 | 0.2+ | 0.0 | 2005 09 11 | 691 | 0.2− | 0.7+ |
| 1998 04 25 | 809 | 0.6+ | 1.9+ | 2003 03 11 | 704 | 0.4+ | 0.6+ | 2005 10 06 | G96 | 0.1+ | 0.2− |
| 1998 04 25 | 809 | 0.6− | 1.5+ | 2003 03 11 | 704 | 0.4+ | 0.4+ | 2005 10 06 | G96 | 0.2+ | 0.1− |
| 1998 06 01 | 691 | 0.2− | 0.1− | 2003 03 26 | 699 | 0.4+ | 0.5+ | 2005 10 06 | G96 | 0.1− | 0.0 |
| 1998 06 01 | 691 | 0.5− | 0.0 | 2003 03 26 | 699 | 0.9+ | 0.9+ | 2005 10 06 | G96 | 0.0 | 0.1− |
| 1998 06 01 | 691 | 0.1− | 0.1+ | 2003 03 26 | 699 | (1.5+ | 1.9+) | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 1998 06 20 | 691 | 0.2+ | 0.9− | 2003 03 26 | 699 | 0.3+ | 0.4− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 1998 06 20 | 691 | 0.3+ | 0.1− | 2003 04 11 | 691 | 0.6+ | 1.0− | 2006 10 27 | G96 | 0.3− | 0.4− |
| 1998 06 20 | 691 | 0.0 | 0.1− | 2003 04 11 | 691 | 0.5− | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2003 03 06 | 699 | 0.7− | 0.7+ | 2003 04 11 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.8− |
| 2003 03 06 | 699 | (0.1− | 2.3+) | 2005 08 28 | 691 | 0.3− | 0.8+ | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2003 03 06 | 699 | (0.3− | 1.9+) | 2005 08 28 | 691 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2003 03 06 | 699 | 0.8+ | 0.5− | 2005 08 28 | 691 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2003 03 09 | 704 | 0.6+ | 0.6+ | 2005 09 01 | 691 | 0.2− | 0.5+ | | | | |
| 2003 03 09 | 704 | 0.1− | 0.8+ | 2005 09 01 | 691 | 0.2− | 0.0 | | | | |

**(143566)∗ 2003 EP$_{51}$**

Discovered 2003 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.57139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17426314 | $\omega$ | 198.52545 | | −0.18240937 | +0.98250898 | |
| $a$ | 3.1744295 | $\Omega$ | 60.97928 | | −0.89658927 | −0.15058071 | |
| $e$ | 0.1349968 | $i$ | 2.45493 | | −0.40355236 | −0.10955157 | |
| $P$ | 5.66 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.3− | 0.2+ | 2003 03 26 | 699 | 0.4+ | 0.6− | 2005 10 06 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 644 | 0.2− | 0.0 | 2003 03 26 | 699 | 0.5+ | 0.0 | 2005 10 06 | 691 | 0.1− | 0.5+ |
| 2001 12 19 | 644 | 0.3− | 0.4+ | 2003 03 26 | 699 | 0.0 | 1.3+ | 2005 10 25 | 691 | 0.4− | 0.5+ |
| 2001 12 19 | 704 | 0.6+ | 0.0 | 2003 03 30 | 704 | 0.4+ | 0.5+ | 2005 10 25 | 691 | 0.1− | 0.4+ |
| 2001 12 19 | 704 | 0.6+ | 0.9+ | 2003 03 30 | 704 | 0.4+ | 0.1+ | 2005 10 25 | 691 | 0.5− | 0.3+ |
| 2001 12 19 | 704 | 0.2− | 1.4− | 2003 03 30 | 704 | 0.4+ | 0.2+ | 2005 10 27 | 699 | (1.6− | 2.2+) |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2003 03 30 | 704 | (1.7+ | 0.9+) | 2005 10 27 | 644 | 0.0 | 0.6+ |
| 2001 12 20 | 645 | 0.1− | 0.2− | 2003 03 30 | 704 | 1.1+ | 0.0 | 2005 10 27 | 644 | 0.6− | 0.7+ |
| 2001 12 20 | 645 | 0.1− | 0.2− | 2003 04 05 | 691 | 0.2+ | 0.6+ | 2005 10 27 | 699 | (2.4− | 1.8+) |
| 2002 01 14 | 704 | 1.0+ | 1.1− | 2003 04 05 | 691 | 0.2+ | 0.5+ | 2005 10 27 | 644 | 0.5− | 0.4+ |
| 2002 01 14 | 704 | 0.4+ | 0.1− | 2003 04 05 | 691 | 0.0 | 1.0+ | 2005 10 27 | 699 | 0.4− | 0.7+ |
| 2002 01 14 | 704 | 0.8+ | 0.5+ | 2003 04 09 | 704 | 0.9+ | 0.4+ | 2005 10 27 | 699 | 1.4− | 0.2− |
| 2002 01 14 | 704 | 0.6+ | 0.7+ | 2003 04 09 | 704 | (1.6+ | 0.1+) | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2002 01 14 | 704 | (2.4− | 2.9+) | 2003 04 09 | 704 | 0.9+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2003 03 07 | 683 | (1.8+ | 2.1+) | 2003 04 09 | 704 | 0.7+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2003 03 07 | 683 | 0.6+ | 0.0 | 2003 04 09 | 704 | 1.3+ | 0.6+ | 2006 10 28 | G96 | 0.2− | 0.2+ |
| 2003 03 07 | 683 | 1.3+ | 0.5+ | 2005 08 31 | 699 | 0.2− | 0.4− | 2006 11 11 | 691 | 0.4+ | 0.3− |
| 2003 03 09 | 704 | 1.1+ | 1.3+ | 2005 08 31 | 699 | 0.7− | 1.2+ | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2003 03 09 | 704 | 0.3− | 0.6+ | 2005 08 31 | 699 | 0.8− | 0.8+ | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2003 03 09 | 704 | 0.4+ | 0.6+ | 2005 08 31 | 699 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.3+ | 0.1− |
| 2003 03 09 | 704 | 0.6+ | 0.9+ | 2005 09 08 | 704 | (1.6+ | 1.3+) | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2003 03 09 | 704 | 0.7+ | 0.5+ | 2005 09 08 | 704 | (0.4+ | 1.7+) | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2003 03 10 | 683 | (2.0− | 1.2+) | 2005 09 08 | 704 | 1.0+ | 1.1+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2003 03 10 | 683 | 0.1+ | 0.2+ | 2005 09 08 | 704 | (1.5+ | 1.0+) | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2003 03 10 | 683 | 1.1− | 0.8+ | 2005 09 24 | 691 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2003 03 12 | 644 | 0.1+ | 0.1+ | 2005 09 24 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2003 03 12 | 644 | 0.4+ | 0.3+ | 2005 09 24 | 691 | 0.1− | 0.5+ | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2003 03 12 | 644 | 0.1+ | 0.1+ | 2005 10 01 | 704 | 0.8− | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2003 03 23 | 691 | 0.2− | 0.5+ | 2005 10 01 | 704 | 0.2− | 0.7+ | 2006 12 01 | 691 | 0.5− | 0.1+ |
| 2003 03 23 | 691 | 0.2− | 0.5+ | 2005 10 01 | 704 | 1.2− | 0.4+ | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2003 03 23 | 691 | 0.3− | 0.5+ | 2005 10 01 | 704 | 0.1− | 1.2+ | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2003 03 26 | 699 | 0.1+ | 0.4+ | 2005 10 06 | 691 | 0.1− | 0.5+ | | | | |

**(143567)∗ 2003 ET$_{51}$ = 2001 YM$_{109}$ = 2002 AG$_{204}$**

Discovered 2003 Mar. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 47378)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.13376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17359572 | $\omega$ | 198.55614 | | −0.95406355 | +0.29960228 | |
| $a$ | 3.1825608 | $\Omega$ | 358.87582 | | −0.26728256 | −0.85279368 | |
| $e$ | 0.1211198 | $i$ | 3.21960 | | −0.13536164 | −0.42776326 | |
| $P$ | 5.68 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.0 | 0.3+ | 2003 04 03 | 699 | 0.2+ | 1.3+ | 2005 12 02 | G96 | 1.1− | 0.2+ |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2003 04 03 | 699 | 0.3+ | 0.0 | 2005 12 02 | G96 | 1.0− | 0.5+ |
| 2001 12 18 | 704 | 0.3+ | 0.7+ | 2003 04 03 | 699 | 0.0 | 0.9+ | 2005 12 02 | G96 | 0.3+ | 0.0 |
| 2001 12 18 | 704 | 0.3− | 0.1− | 2003 04 03 | 699 | 0.6+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 1.2− | 1.1+ | 2003 04 05 | 691 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 12 20 | 704 | 0.4− | 0.7+ | 2003 04 05 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.3− |
| 2001 12 20 | 704 | 0.2− | 0.4+ | 2003 04 05 | 691 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.6− | 0.3− |
| 2001 12 20 | 704 | 0.1+ | 0.6+ | 2003 05 01 | 691 | 0.2+ | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.2+ |
| 2001 12 20 | 704 | 0.6− | 1.0+ | 2003 05 01 | 691 | 0.4+ | 0.6+ | 2006 10 13 | 691 | 0.3+ | 0.5+ |
| 2001 12 20 | 704 | 0.3− | 0.3+ | 2003 05 01 | 691 | 0.5+ | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.5+ |
| 2001 12 20 | 704 | 0.1+ | 0.6− | 2003 05 06 | 291 | 0.3+ | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2001 12 20 | 704 | 0.3− | 0.0 | 2003 05 06 | 291 | 0.4+ | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2001 12 20 | 704 | (1.5− | 0.3−) | 2003 05 06 | 291 | 0.2+ | 0.4+ | 2006 10 17 | 691 | 0.5+ | 0.2− |
| 2002 01 08 | 704 | 0.8+ | 0.8− | 2005 07 30 | 644 | 0.4− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2002 01 08 | 704 | 1.1+ | 0.6− | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 1.2+ | 1.3− | 2005 07 30 | 644 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2002 01 08 | 704 | (1.9+ | 0.8−) | 2005 08 30 | 291 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.9+ | 0.2− |
| 2003 03 10 | 699 | 0.5+ | 0.9+ | 2005 08 30 | 291 | 0.1+ | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2003 03 10 | 699 | 0.0 | 0.0 | 2005 08 30 | 291 | 0.3+ | 0.7+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2003 03 10 | 699 | 0.8+ | 0.3+ | 2005 09 12 | 691 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.5− | 0.2− |
| 2003 03 10 | 699 | 0.3+ | 1.0+ | 2005 09 12 | 691 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2003 03 12 | 644 | 0.3+ | 0.2+ | 2005 09 12 | 691 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2003 03 12 | 644 | 0.5+ | 0.1+ | 2005 09 22 | 644 | 0.5− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2003 03 12 | 644 | 0.3+ | 0.2+ | 2005 09 22 | 644 | 0.6− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2003 03 25 | 703 | (2.0− | 3.5−) | 2005 09 22 | 644 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.3− | 0.1− |
| 2003 03 25 | 703 | (2.0− | 3.9−) | 2005 09 22 | 644 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2003 03 25 | 699 | 0.7+ | 0.3+ | 2005 09 22 | 644 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2003 03 25 | 703 | (2.6− | 4.1−) | 2005 09 22 | 644 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.1+ |
| 2003 03 25 | 703 | (4.1− | 4.0−) | 2005 09 30 | 691 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 2003 03 25 | 699 | 0.0 | 0.0 | 2005 09 30 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.6− |
| 2003 03 25 | 699 | 0.2− | 0.1− | 2005 09 30 | 691 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2003 03 25 | 699 | 0.4− | 0.3+ | 2005 09 30 | 291 | 0.4− | 0.4+ | 2006 11 11 | 703 | 1.2− | 1.0+ |
| 2003 03 31 | 703 | 0.5− | 1.2+ | 2005 09 30 | 291 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.9+ |
| 2003 03 31 | 703 | 0.4+ | 0.7− | 2005 09 30 | 291 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2003 03 31 | 703 | 0.2+ | 0.5+ | 2005 10 01 | G96 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2003 03 31 | 703 | 1.0+ | 0.1− | 2005 10 01 | G96 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2003 04 01 | 704 | 0.5+ | 0.9+ | 2005 10 01 | G96 | 0.7− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2003 04 01 | 704 | 1.0− | 1.4+ | 2005 10 01 | G96 | 0.2− | 0.4+ | | | | |
| 2003 04 01 | 704 | 0.2− | 0.1+ | 2005 12 02 | G96 | 0.1− | 0.2+ | | | | |

**(143568)∗ 2003 EX$_{52}$**

Discovered 2003 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.66746 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18622067 | $\omega$ | 185.48706 | | −0.07295472 | +0.97820014 | |
| $a$ | 3.0370419 | $\Omega$ | 80.43555 | | −0.90737423 | +0.01581214 | |
| $e$ | 0.0178186 | $i$ | 11.37142 | | −0.41394397 | −0.20706148 | |
| $P$ | 5.29 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.8+ | 0.6+ | 2003 03 08 | 644 | 0.1+ | 0.6+ | 2005 09 01 | 644 | 0.3− | 0.5+ |
| 1998 04 24 | 704 | 1.6+ | 0.2+ | 2003 03 08 | 644 | 0.1+ | 0.5+ | 2005 09 25 | 703 | 0.9+ | 1.4− |
| 1998 04 24 | 704 | 1.2+ | 0.4+ | 2003 03 08 | 644 | 0.2− | 0.5+ | 2005 09 25 | 703 | 0.6− | 0.1+ |
| 1998 04 24 | 704 | 0.6+ | 0.5− | 2003 03 12 | 704 | 1.0+ | 1.0− | 2005 09 25 | 703 | 0.1+ | 0.9− |
| 2000 09 27 | 645 | 0.1− | 0.2+ | 2003 03 12 | 704 | 0.2+ | 1.3+ | 2005 09 25 | 703 | 1.1+ | 0.6− |
| 2000 09 27 | 645 | 0.1− | 0.1+ | 2003 03 12 | 704 | 0.4+ | 0.2+ | 2005 09 26 | 704 | 0.5− | 0.0 |
| 2001 12 19 | 704 | 0.1− | 1.0+ | 2003 03 12 | 704 | 0.7+ | 0.8+ | 2005 09 26 | 704 | 0.6− | 0.3+ |
| 2001 12 19 | 704 | 0.6− | 0.5+ | 2003 03 13 | 608 | 0.3+ | 0.1− | 2005 09 26 | 704 | 0.7− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.7+ | 2003 03 13 | 608 | 0.3+ | 0.4− | 2006 11 14 | 104 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.2− | 0.5+ | 2003 03 13 | 608 | 0.3+ | 0.1+ | 2006 11 14 | 104 | 0.2− | 0.1+ |
| 2002 01 08 | 704 | 0.2− | 0.4− | 2003 04 06 | 699 | (1.6− | 0.7−) | 2006 11 14 | 104 | 0.9− | 0.2+ |
| 2002 01 08 | 704 | 0.1− | 0.5− | 2003 04 06 | 699 | 0.9− | 0.5− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 01 08 | 704 | 0.5− | 0.1− | 2003 04 06 | 699 | 0.6+ | 1.0+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 01 08 | 704 | 0.7− | 0.9− | 2003 04 06 | 699 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 01 08 | 704 | 0.2+ | 0.9− | 2003 04 09 | 644 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2003 01 28 | 645 | 0.3− | 0.1− | 2003 04 09 | 644 | 0.1+ | 0.9+ | 2006 11 20 | 704 | 0.6+ | 0.4− |
| 2003 01 28 | 645 | 0.2− | 0.1− | 2003 04 09 | 644 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.8+ | 1.0− |
| 2003 03 08 | 699 | 1.2+ | 1.4+ | 2005 08 24 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.8− |
| 2003 03 08 | 699 | 0.2+ | 0.2− | 2005 08 24 | 644 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2003 03 08 | 699 | 1.0+ | 0.7+ | 2005 08 24 | 644 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.8+ | 0.7+ |
| 2003 03 08 | 699 | 0.9+ | 1.2+ | 2005 09 01 | 644 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.4+ | 1.6+ |
| 2003 03 08 | 704 | 0.6+ | 0.3+ | 2005 09 01 | 644 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.6+ |
| 2003 03 08 | 704 | 0.5+ | 1.3+ | 2005 09 01 | 644 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.4+ | 0.0 |
| 2003 03 08 | 704 | 0.4− | 0.4+ | 2005 09 01 | 644 | 0.5− | 0.4+ | 2006 11 29 | 704 | 0.8+ | 0.9+ |
| 2003 03 08 | 704 | 0.3+ | 0.6+ | 2005 09 01 | 644 | 0.2− | 0.3+ | | | | |

**(143569)∗ 2003 EB$_{53}$**

Discovered 2003 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.12235 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22346978 | $\omega$ | 233.55504 | | −0.90293250 | −0.38021830 | |
| $a$ | 2.6894090 | $\Omega$ | 283.32822 | | +0.42974356 | −0.79246479 | |
| $e$ | 0.1994822 | $i$ | 11.88296 | | +0.00577652 | −0.47689999 | |
| $P$ | 4.41 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 26 | 704 | 0.4+ | 0.2− | 2003 04 30 | 704 | 0.1+ | 0.1− | 2006 10 17 | 557 | 0.4− | 0.4+ |
| 1998 01 26 | 704 | 0.8− | 0.6+ | 2003 04 30 | 704 | 0.2− | 0.4+ | 2006 10 17 | 557 | 0.3− | 0.5− |
| 1998 01 26 | 704 | 0.2− | 0.4+ | 2003 04 30 | 704 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 1998 01 26 | 704 | 0.0 | 0.2− | 2003 04 30 | 704 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2001 10 15 | 704 | 0.8− | 0.1− | 2003 04 30 | 704 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | 0.4− | 0.9− | 2003 05 19 | 699 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2001 10 15 | 704 | (0.6+ | 1.6−) | 2003 05 19 | 699 | 1.3+ | 1.3+ | 2006 11 14 | 703 | 0.1+ | 0.1+ |
| 2001 10 15 | 704 | 0.2− | 0.2− | 2003 05 19 | 699 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2001 10 15 | 704 | 1.0− | 1.1− | 2003 05 19 | 699 | 1.1+ | 0.7− | 2006 11 14 | 703 | 0.9+ | 0.5+ |
| 2001 11 11 | 704 | 0.0 | 0.7− | 2004 06 24 | 599 | 0.2+ | 0.4− | 2006 11 14 | 703 | 1.5+ | 1.0− |
| 2001 11 11 | 704 | 1.0+ | 1.0− | 2004 06 24 | 599 | 0.5+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2001 11 11 | 704 | 0.5+ | 0.3+ | 2004 06 24 | 599 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2001 11 11 | 704 | 1.1+ | 0.3− | 2004 06 27 | 691 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2001 11 11 | 704 | 0.8+ | 0.1− | 2004 06 27 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 0.2− | 0.4+ | 2004 06 27 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | (1.0+ | 1.9+) |
| 2001 12 14 | 704 | 0.1+ | 0.5+ | 2004 07 11 | 704 | 0.4− | 1.1+ | 2006 11 18 | 704 | 0.5+ | 1.0+ |
| 2001 12 14 | 704 | 0.5+ | 0.1+ | 2004 07 11 | 704 | 0.4+ | 0.9+ | 2006 11 18 | 704 | 0.3+ | 1.2+ |
| 2003 01 30 | 704 | (0.2− | 2.1−) | 2004 07 11 | 704 | 0.2− | 0.6+ | 2006 11 18 | 704 | 1.1+ | 0.5+ |
| 2003 01 30 | 704 | 0.4− | 0.8− | 2004 07 11 | 704 | 0.9− | 0.4− | 2006 11 18 | 704 | 0.7+ | 0.8+ |
| 2003 01 30 | 704 | 0.5− | 1.0− | 2004 07 11 | 704 | 0.3− | 0.2+ | 2006 11 21 | 704 | 1.0+ | 0.9+ |
| 2003 03 08 | 699 | 0.4− | 0.2− | 2004 07 18 | 704 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.1+ | 0.8+ |
| 2003 03 08 | 699 | 0.7− | 0.4− | 2004 07 18 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2003 03 08 | 699 | 0.3+ | 0.2+ | 2004 07 18 | 704 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2003 03 08 | 699 | 0.6− | 0.1− | 2004 07 18 | 704 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.9+ | 0.3+ |
| 2003 03 12 | 704 | 1.0+ | 0.6− | 2004 07 18 | 704 | 0.7− | 0.1+ | 2006 11 27 | 703 | 0.6− | 0.6+ |
| 2003 03 12 | 704 | 0.9− | 0.6+ | 2004 07 22 | 699 | 0.5+ | 0.8+ | 2006 11 27 | 703 | 0.5− | 0.6+ |
| 2003 03 12 | 704 | 0.2+ | 0.3+ | 2004 07 22 | 699 | (0.1+ | 2.0+) | 2006 11 27 | 703 | 0.0 | 0.7+ |
| 2003 03 12 | 704 | 0.2− | 0.3− | 2004 07 22 | 699 | 0.5− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2003 03 12 | 704 | 0.3+ | 0.0 | 2004 07 22 | 699 | 0.8− | 0.3− | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2003 04 06 | 704 | 0.5− | 0.6+ | 2005 09 01 | 644 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2003 04 06 | 704 | 0.5+ | 0.0 | 2005 09 01 | 644 | 0.4+ | 0.8+ | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2003 04 06 | 704 | 0.7+ | 1.4− | 2005 09 01 | 644 | 0.6+ | 0.4+ | 2006 11 29 | 704 | 0.2− | 1.4+ |
| 2003 04 29 | 608 | 0.1− | 0.1+ | 2006 10 17 | 557 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.6+ |
| 2003 04 29 | 608 | 0.5− | 0.2+ | 2006 10 17 | 557 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.6− | 0.8+ |
| 2003 04 29 | 608 | 0.1− | 0.1+ | 2006 10 17 | 557 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.5+ |

**(143570)∗ 2003 ER$_{53}$ = 1999 LW$_{35}$**

Discovered 2003 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47381)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.94106 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23621833 | $\omega$ | 60.09783 | | −0.87689378 | +0.46210773 | |
| $a$ | 2.5917532 | $\Omega$ | 146.90229 | | −0.48023503 | −0.85411693 | |
| $e$ | 0.2322677 | $i$ | 14.02526 | | +0.02077536 | −0.23862254 | |
| $P$ | 4.17 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 14 | 704 | 0.8− | 0.7− | 2003 03 31 | 699 | 0.7− | 0.1− | 2003 05 26 | 703 | 1.1− | 0.9− |
| 1999 06 14 | 704 | 0.9− | 0.7− | 2003 04 04 | 608 | 0.6+ | 1.1− | 2003 05 26 | 703 | 0.7− | 0.9− |
| 1999 06 14 | 704 | 0.0 | 0.6− | 2003 04 04 | 608 | 0.6+ | 1.4− | 2003 05 26 | 703 | 0.5− | 1.0− |
| 1999 06 14 | 704 | 0.5− | 0.5− | 2003 04 04 | 608 | 0.8+ | 1.0− | 2003 05 30 | 699 | 0.8− | 0.2+ |
| 1999 06 14 | 704 | 0.1+ | 0.7− | 2003 04 09 | 704 | 0.9+ | 0.3− | 2003 05 30 | 699 | 0.3+ | 0.7− |
| 1999 06 22 | 703 | (2.2− | 0.3+) | 2003 04 09 | 704 | 0.7+ | 0.2− | 2003 05 30 | 699 | 0.0 | 0.7+ |
| 1999 06 22 | 703 | 0.9− | 0.3+ | 2003 04 09 | 704 | 0.7+ | 0.0 | 2003 05 30 | 699 | 0.4− | 0.5− |
| 1999 06 22 | 703 | 0.6+ | 0.8+ | 2003 04 09 | 704 | 1.2+ | 0.3− | 2003 06 21 | 699 | 0.8− | 0.4+ |
| 1999 06 22 | 703 | 1.7+ | 0.7− | 2003 04 09 | 704 | 0.8+ | 0.0 | 2003 06 21 | 699 | 0.3− | 0.7+ |
| 2000 09 26 | 645 | 0.0 | 0.1+ | 2003 04 10 | 704 | 0.4+ | 0.4+ | 2003 06 21 | 699 | 0.0 | 0.2− |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2003 04 10 | 704 | 0.5+ | 0.1+ | 2003 06 21 | 699 | 0.1− | 0.5− |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2003 04 10 | 704 | 0.3+ | 0.1+ | 2003 06 23 | 699 | 0.1+ | 0.2− |
| 2000 09 27 | 645 | 0.1+ | 0.0 | 2003 04 10 | 704 | 0.1+ | 0.5+ | 2003 06 23 | 699 | 0.3− | 0.4+ |
| 2003 03 09 | 704 | 1.0+ | 0.6− | 2003 04 10 | 704 | 0.1+ | 0.4+ | 2003 06 23 | 699 | 0.1− | 0.0 |
| 2003 03 09 | 704 | 0.2− | 0.3+ | 2003 04 26 | 704 | 0.6+ | 0.3− | 2003 06 23 | 699 | 0.2− | 0.1− |
| 2003 03 09 | 704 | 0.8+ | 0.4+ | 2003 04 26 | 704 | 0.8+ | 0.2+ | 2003 06 29 | 704 | 0.4+ | 1.0+ |
| 2003 03 09 | 704 | 0.5− | 0.2+ | 2003 04 26 | 704 | 1.1+ | 0.2+ | 2003 06 29 | 704 | 0.1+ | 1.1+ |
| 2003 03 09 | 704 | (1.7+ | 0.2−) | 2003 04 26 | 704 | 1.0+ | 0.2+ | 2003 06 29 | 704 | (1.0− | 1.5+) |
| 2003 03 09 | 704 | 0.2− | 0.4+ | 2003 04 26 | 704 | 0.5+ | 0.6+ | 2003 06 29 | 704 | (0.3+ | 1.6+) |
| 2003 03 09 | 704 | 0.7+ | 0.1− | 2003 04 28 | 699 | 0.3− | 0.1− | 2004 09 07 | 704 | 1.0− | 0.5+ |
| 2003 03 09 | 704 | 0.5+ | 0.3+ | 2003 04 28 | 699 | 0.0 | 0.1+ | 2004 09 07 | 704 | 0.2− | 1.0+ |
| 2003 03 09 | 704 | 1.4+ | 0.2+ | 2003 04 28 | 699 | 0.0 | 0.2− | 2004 09 07 | 704 | 0.3− | 1.5+ |
| 2003 03 09 | 704 | 0.2+ | 0.1+ | 2003 04 28 | 699 | 0.4− | 0.2− | 2005 11 01 | 703 | 0.8− | 1.0− |
| 2003 03 11 | A38 | 0.1+ | 1.2+ | 2003 05 04 | 608 | 0.2+ | 0.6− | 2005 11 01 | 703 | (1.9− | 0.2+) |
| 2003 03 11 | A38 | 0.4− | 0.8+ | 2003 05 04 | 608 | 0.1+ | 0.5− | 2005 11 01 | 703 | 0.3+ | 0.1− |
| 2003 03 11 | A38 | 0.0 | 1.2+ | 2003 05 04 | 608 | 0.1+ | 0.7− | 2005 11 01 | 703 | 1.3− | 0.2+ |
| 2003 03 12 | 704 | 1.0− | 0.3+ | 2003 05 07 | 703 | 0.4− | 0.5+ | 2005 11 26 | 703 | (0.6− | 1.6+) |
| 2003 03 12 | 704 | 1.1− | 0.9+ | 2003 05 07 | 703 | 0.5− | 0.5+ | 2005 11 26 | 703 | 0.6+ | 1.2+ |
| 2003 03 12 | 704 | 0.5− | 1.2+ | 2003 05 07 | 703 | (1.9− | 0.2+) | 2005 11 26 | 703 | (0.6− | 1.6+) |
| 2003 03 12 | 704 | 1.4− | 1.1+ | 2003 05 07 | 703 | 0.6− | 0.5+ | 2005 11 26 | 703 | (2.1− | 2.0+) |
| 2003 03 12 | 704 | 0.5− | 0.6+ | 2003 05 11 | 699 | 0.1− | 0.9− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2003 03 25 | 608 | 0.6− | 0.5+ | 2003 05 11 | 699 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2003 03 25 | 608 | 0.6− | 0.7+ | 2003 05 11 | 699 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2003 03 25 | 608 | 0.8− | 0.5+ | 2003 05 11 | 699 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.6− |
| 2003 03 26 | 683 | 1.5− | 0.2− | 2003 05 11 | 704 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.1+ |
| 2003 03 26 | 683 | 0.8− | 0.3+ | 2003 05 11 | 704 | 0.6+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2003 03 26 | 683 | (0.5− | 1.9−) | 2003 05 11 | 704 | 0.4+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.5+ |
| 2003 03 27 | 683 | 0.3− | 1.2− | 2003 05 11 | 704 | 0.4+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2003 03 27 | 683 | 0.2− | 0.5− | 2003 05 11 | 704 | 0.2− | 0.6+ | 2006 12 01 | G96 | 0.6+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 683 | 0.4− | 1.5− | 2003 05 21 | 608 | 0.4+ | 0.4+ | 2006 12 01 | G96 | 0.4+ | 0.0 |
| 2003 03 31 | 699 | 0.2− | 0.1+ | 2003 05 21 | 608 | 0.3+ | 0.6+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2003 03 31 | 699 | 0.5− | 0.1− | 2003 05 21 | 608 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.4+ | 0.1+ |
| 2003 03 31 | 699 | 0.1− | 0.2− | 2003 05 26 | 703 | 0.6− | 0.7− | | | | |

**(143571)∗ 2003 EX$_{57}$**

Discovered 2003 Mar. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.53948 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21167088 | $\omega$ | 99.22993 | | −0.83391223 | +0.50477191 | |
| $a$ | 2.7884443 | $\Omega$ | 111.37556 | | −0.55158139 | −0.77594430 | |
| $e$ | 0.1566712 | $i$ | 13.86492 | | +0.01866467 | −0.37830644 | |
| $P$ | 4.66 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 704 | 0.4− | 0.8− | 2003 04 10 | 704 | 1.3+ | 0.1− | 2003 06 04 | 704 | 0.3− | 0.8+ |
| 2003 03 09 | 704 | 0.1− | 0.1− | 2003 04 10 | 704 | 0.5+ | 0.5+ | 2003 06 04 | 704 | 0.1+ | 0.7+ |
| 2003 03 09 | 704 | 0.2+ | 0.1+ | 2003 04 10 | 704 | 0.8+ | 0.1− | 2003 06 04 | 704 | 0.1+ | 0.7+ |
| 2003 03 09 | 704 | 0.1− | 0.3+ | 2003 04 10 | 704 | 0.5+ | 0.6− | 2003 06 04 | 704 | 0.1− | 0.8+ |
| 2003 03 09 | 704 | 0.6− | 0.2+ | 2003 04 10 | 704 | 0.8− | 0.0 | 2003 06 04 | 704 | 0.4− | 0.9+ |
| 2003 03 13 | 704 | 0.8− | 0.6− | 2003 04 14 | 699 | (1.0+ | 1.7+) | 2003 06 07 | 704 | 0.7+ | 0.3+ |
| 2003 03 13 | 704 | 0.1+ | 0.1+ | 2003 04 14 | 699 | 0.1+ | 0.4− | 2003 06 07 | 704 | 0.2+ | 0.4+ |
| 2003 03 13 | 704 | 0.9+ | 0.7+ | 2003 04 14 | 699 | 0.5+ | 0.9+ | 2003 06 07 | 704 | 0.2− | 0.1− |
| 2003 03 13 | 704 | 0.2+ | 0.3− | 2003 04 14 | 699 | 0.6+ | 0.1− | 2004 07 25 | 699 | 1.0+ | 0.3− |
| 2003 03 13 | 704 | 0.1+ | 0.1+ | 2003 04 25 | 704 | 0.2+ | 1.2+ | 2004 07 25 | 699 | 0.6− | 0.3+ |
| 2003 03 13 | 704 | 0.8+ | 0.2− | 2003 04 25 | 704 | 0.5+ | 0.6+ | 2004 07 25 | 699 | 0.3+ | 0.1− |
| 2003 03 13 | 704 | 0.2+ | 0.8+ | 2003 04 25 | 704 | 0.2+ | 0.1− | 2004 07 25 | 699 | (1.9− | 0.3−) |
| 2003 03 13 | 704 | 1.3+ | 0.2− | 2003 04 25 | 704 | 0.3− | 0.9+ | 2005 10 07 | 703 | (0.9+ | 1.7+) |
| 2003 03 13 | 704 | 0.2+ | 0.5+ | 2003 04 25 | 704 | 0.6− | 0.1− | 2005 10 07 | 703 | 0.3− | 0.5− |
| 2003 03 17 | 608 | (0.4− | 1.6−) | 2003 04 25 | 645 | 0.2− | 0.2− | 2005 10 07 | 703 | 0.2+ | 1.0− |
| 2003 03 17 | 608 | 0.2− | 0.8− | 2003 04 25 | 645 | 0.2− | 0.3− | 2005 10 07 | 703 | 0.5− | 0.2− |
| 2003 03 17 | 608 | 0.0 | 1.1− | 2003 05 07 | 703 | 0.6− | 0.8+ | 2005 11 01 | 703 | 0.1− | 0.2+ |
| 2003 03 27 | 704 | 0.7+ | 0.2− | 2003 05 07 | 703 | 1.5− | 1.0+ | 2005 11 01 | 703 | 0.1+ | 0.3+ |
| 2003 03 27 | 704 | 0.5+ | 0.2+ | 2003 05 07 | 703 | 0.6− | 0.8+ | 2005 11 01 | 703 | 0.4+ | 0.3− |
| 2003 03 27 | 704 | 0.4+ | 0.3+ | 2003 05 07 | 703 | 0.1− | 0.7+ | 2005 11 01 | 703 | (2.2+ | 0.4+) |
| 2003 03 27 | 704 | 0.5+ | 0.1+ | 2003 05 10 | 704 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.7+ | 0.2+ |
| 2003 03 27 | 704 | 0.7+ | 0.1− | 2003 05 10 | 704 | 0.9+ | 0.8− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2003 04 01 | 608 | 0.3+ | 0.2− | 2003 05 10 | 704 | 0.2+ | 1.3− | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2003 04 01 | 608 | 0.7+ | 0.2− | 2003 05 11 | 608 | 1.0+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2003 04 01 | 608 | 0.6+ | 0.2− | 2003 05 11 | 608 | 0.8+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2003 04 05 | 699 | 0.1+ | 0.2− | 2003 05 11 | 608 | 0.7+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2003 04 05 | 699 | 0.3− | 0.4+ | 2003 05 22 | 608 | 0.7− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2003 04 05 | 699 | 0.5− | 0.1+ | 2003 05 22 | 608 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2003 04 05 | 699 | 0.6+ | 0.5− | 2003 05 22 | 608 | 0.5− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.2+ |
| 2003 04 09 | 704 | 0.7− | 1.2+ | 2003 05 30 | 699 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.1+ |
| 2003 04 09 | 704 | 0.0 | 0.9+ | 2003 05 30 | 699 | 0.5− | 0.4− | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2003 04 09 | 704 | 0.2+ | 0.6+ | 2003 05 30 | 699 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2003 04 09 | 704 | 0.0 | 0.7+ | 2003 05 30 | 699 | 0.6+ | 1.0− | | | | |

**(143572)∗ 2003 ET$_{58}$**

Discovered 2003 Mar. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.13277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18090568 | $\omega$ | 123.79791 | | −0.81450458 | −0.56787623 | |
| $a$ | 3.0962397 | $\Omega$ | 22.33338 | | +0.37270125 | −0.66902082 | |
| $e$ | 0.1532537 | $i$ | 18.20841 | | +0.44460777 | −0.47950781 | |
| $P$ | 5.45 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.3− | 0.3+ | 2003 03 31 | 703 | 0.5+ | 0.3− | 2003 05 10 | 703 | 1.2− | 0.1− |
| 2000 10 02 | 645 | 0.2− | 0.3+ | 2003 03 31 | 703 | 0.8− | 0.3− | 2006 09 28 | 703 | 1.5+ | 0.1− |
| 2001 11 08 | 704 | 0.3− | 0.2+ | 2003 04 07 | 704 | 0.5− | 0.6+ | 2006 09 28 | 703 | 0.4− | 0.5+ |
| 2001 11 08 | 704 | 0.9− | 0.2− | 2003 04 07 | 704 | 0.5− | 0.1− | 2006 09 28 | 703 | 0.5− | 1.0+ |
| 2001 11 08 | 704 | (0.9− | 1.7−) | 2003 04 07 | 704 | (2.7− | 0.8+) | 2006 09 28 | 703 | (0.0 | 2.4+) |
| 2001 12 23 | 704 | 0.4+ | 0.3+ | 2003 04 07 | 704 | (2.8− | 0.1−) | 2006 10 19 | 703 | 0.9+ | 0.4+ |
| 2001 12 23 | 704 | 0.1− | 1.2+ | 2003 04 07 | 704 | 1.0− | 0.0 | 2006 10 19 | 703 | (1.9+ | 0.3−) |
| 2001 12 23 | 644 | 0.7− | 0.1− | 2003 04 11 | 333 | 0.6− | 0.7− | 2006 10 19 | 703 | 0.4− | 0.3+ |
| 2001 12 23 | 644 | 0.2+ | 1.1− | 2003 04 11 | 333 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2001 12 23 | 704 | 0.0 | 1.0+ | 2003 04 11 | 333 | 0.4+ | 0.1+ | 2006 10 20 | A50 | 0.2− | 0.3+ |
| 2001 12 23 | 644 | 0.5+ | 1.1− | 2003 04 11 | 333 | 0.1− | 0.1− | 2006 10 20 | A50 | 0.6+ | 0.2+ |
| 2001 12 23 | 704 | 0.2+ | 1.3+ | 2003 04 11 | 333 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.8+ |
| 2003 03 10 | 704 | 0.3+ | 0.9+ | 2003 04 21 | 608 | 0.4+ | 0.6− | 2006 10 27 | 703 | 1.0− | 0.8+ |
| 2003 03 10 | 704 | 0.9+ | 1.1+ | 2003 04 21 | 608 | 0.6+ | 0.6− | 2006 10 27 | 703 | 0.2− | 0.2+ |
| 2003 03 10 | 704 | 0.1− | 0.2+ | 2003 04 21 | 608 | 0.1+ | 0.6− | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2003 03 10 | 704 | 0.1− | 0.5+ | 2003 04 28 | 704 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.1+ |
| 2003 03 13 | 608 | 0.4+ | 1.3+ | 2003 04 28 | 704 | 0.1− | 0.4− | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2003 03 13 | 608 | 0.7+ | 0.8+ | 2003 04 28 | 704 | 0.8+ | 1.2+ | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 2003 03 13 | 608 | 0.8+ | 1.0+ | 2003 04 28 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.4+ | 1.1+ |
| 2003 03 26 | 699 | 0.2+ | 0.2+ | 2003 04 28 | 704 | 0.1− | 0.7+ | 2006 11 14 | 703 | (0.2− | 2.2+) |
| 2003 03 26 | 699 | 0.7+ | 0.1+ | 2003 04 29 | 704 | 0.0 | 0.5− | 2006 11 14 | 703 | (0.1+ | 2.8+) |
| 2003 03 26 | 699 | 0.6− | 0.9− | 2003 04 29 | 704 | 0.0 | 0.6− | 2006 11 14 | 703 | 0.0 | 1.1+ |
| 2003 03 26 | 699 | 0.2− | 0.4− | 2003 04 29 | 704 | (1.7+ | 1.1−) | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2003 03 27 | 644 | 0.4− | 0.8+ | 2003 04 29 | 704 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2003 03 27 | 644 | 0.5+ | 0.0 | 2003 04 29 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2003 03 27 | 644 | 0.6+ | 0.1+ | 2003 05 06 | 691 | 0.8+ | 1.1+ | 2006 11 22 | 703 | 0.4− | 0.4− |
| 2003 03 27 | 644 | 0.2+ | 0.1+ | 2003 05 06 | 691 | 0.9+ | 1.3+ | 2006 11 22 | 703 | 1.2− | 0.1+ |
| 2003 03 27 | 644 | 0.9+ | 0.2+ | 2003 05 06 | 691 | 0.7+ | 1.2+ | 2006 11 22 | 703 | 0.7− | 0.1− |
| 2003 03 27 | 644 | 0.6+ | 0.1+ | 2003 05 10 | 703 | 0.2− | 0.2− | 2006 11 22 | 703 | 1.1− | 0.3+ |
| 2003 03 31 | 703 | 0.5+ | 0.7− | 2003 05 10 | 703 | (0.4− | 1.9+) | | | | |
| 2003 03 31 | 703 | 0.6+ | 0.1− | 2003 05 10 | 703 | 0.0 | 0.4+ | | | | |

**(143573)∗ 2003 EU$_{58}$**

Discovered 2003 Mar. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.78440 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17512689 | $\omega$ | 261.91186 | | +0.44022442 | −0.88634870 | |
| $a$ | 3.1639831 | $\Omega$ | 159.96273 | | +0.89563252 | +0.44479470 | |
| $e$ | 0.1068707 | $i$ | 24.75752 | | −0.06359914 | +0.12862216 | |
| $P$ | 5.63 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 699 | 1.0− | 0.6− | 2003 03 11 | 644 | 0.1− | 0.5+ | 2006 09 25 | 703 | (1.3+ | 1.8+) |
| 2000 09 02 | 699 | 0.9+ | 1.4− | 2003 03 13 | 608 | 1.0+ | 0.5+ | 2006 09 25 | 703 | 0.5+ | 0.3+ |
| 2000 09 02 | 699 | 0.2− | 0.2− | 2003 03 13 | 608 | 0.6+ | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.3+ |
| 2000 09 02 | 699 | 1.4− | 0.8+ | 2003 03 13 | 608 | 0.6+ | 0.1− | 2006 10 09 | 644 | 0.3− | 0.4+ |
| 2000 09 05 | 645 | 0.1+ | 0.1+ | 2003 03 26 | 699 | 1.0+ | 0.6− | 2006 10 09 | 644 | 0.2− | 0.3− |
| 2000 09 05 | 645 | 0.0 | 0.1+ | 2003 03 26 | 699 | 0.7− | 0.4− | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2000 10 03 | 704 | 1.2+ | 0.2+ | 2003 03 26 | 699 | 0.5+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2000 10 03 | 704 | 0.5− | 0.8+ | 2003 03 26 | 699 | (1.6+ | 0.2+) | 2006 10 21 | 703 | 0.0 | 1.4− |
| 2000 10 03 | 704 | 1.2− | 0.1− | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.2+ | 1.2− |
| 2002 01 12 | 644 | 0.3+ | 0.1− | 2003 03 31 | 645 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2002 01 12 | 644 | 0.1− | 0.0 | 2003 04 04 | 691 | 0.1− | 0.2+ | 2006 10 25 | E12 | 0.2− | 0.2− |
| 2002 01 12 | 644 | 0.2− | 0.3+ | 2003 04 04 | 691 | 0.0 | 0.1+ | 2006 10 25 | E12 | 0.1− | 0.1+ |
| 2003 03 06 | 699 | 0.5− | 0.3+ | 2003 04 04 | 691 | 0.0 | 0.1+ | 2006 10 25 | E12 | 0.3− | 0.0 |
| 2003 03 06 | 699 | (2.1+ | 0.3+) | 2006 09 24 | 699 | 1.3+ | 0.3+ | 2006 10 25 | E12 | (1.6− | 0.1+) |
| 2003 03 06 | 699 | 0.8− | 1.3+ | 2006 09 24 | 699 | 0.7− | 0.3+ | 2006 11 01 | 703 | 0.4− | 0.5+ |
| 2003 03 06 | 699 | (1.7+ | 0.6−) | 2006 09 24 | 699 | 0.0 | 0.4+ | 2006 11 01 | 703 | 0.7− | 0.3− |
| 2003 03 11 | 644 | 0.1+ | 0.4+ | 2006 09 24 | 699 | 0.8+ | 0.5+ | 2006 11 01 | 703 | 0.4+ | 0.3− |
| 2003 03 11 | 644 | 0.0 | 0.6+ | 2006 09 25 | 703 | 0.1+ | 1.0+ | 2006 11 01 | 703 | 0.0 | 0.3+ |

**(143574)∗ 2003 EC$_{59}$**

Discovered 2003 Mar. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.55311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23599763 | $\omega$ | 231.67191 | | −0.70806612 | −0.60901794 | |
| $a$ | 2.5933689 | $\Omega$ | 267.78549 | | +0.70614606 | −0.61043661 | |
| $e$ | 0.0829761 | $i$ | 20.95740 | | +0.00033088 | −0.50642304 | |
| $P$ | 4.18 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 0.7+ | 0.4+ | 2003 03 11 | 704 | 0.9− | 0.5− | 2005 11 04 | 699 | 0.0 | 0.2− |
| 2001 09 28 | 704 | 0.8+ | 0.9+ | 2003 03 11 | 704 | 0.7− | 0.1− | 2005 11 04 | 699 | 0.2+ | 0.4+ |
| 2001 09 28 | 704 | 0.5+ | 0.9+ | 2003 03 11 | 704 | 0.9+ | 0.2+ | 2005 11 04 | 703 | 0.8− | 0.7− |
| 2001 09 28 | 704 | 0.5+ | 1.0+ | 2003 03 11 | 704 | 0.7− | 0.4+ | 2005 11 04 | 703 | 0.9− | 0.7− |
| 2001 09 28 | 704 | 0.3+ | 1.0+ | 2003 03 13 | 704 | 0.1− | 0.4+ | 2005 11 04 | 703 | 0.4− | 0.7− |
| 2001 10 25 | 704 | 0.3− | 0.5− | 2003 03 13 | 704 | 0.9− | 0.0 | 2005 11 04 | 703 | 0.5− | 0.1− |
| 2001 10 25 | 704 | 0.7− | 0.2− | 2003 03 13 | 704 | 0.8− | 0.5− | 2005 11 22 | 644 | 0.4+ | 0.0 |
| 2001 10 25 | 704 | 0.9− | 0.2+ | 2003 03 13 | 704 | 0.6− | 0.2+ | 2005 11 22 | 644 | 0.2+ | 0.4+ |
| 2001 10 25 | 704 | 1.0− | 0.1− | 2003 04 07 | 704 | 0.1+ | 0.1+ | 2005 11 22 | 644 | 0.4+ | 0.1+ |
| 2001 11 11 | 704 | 0.5− | 0.2− | 2003 04 07 | 704 | 0.4− | 0.5+ | 2005 11 22 | 703 | 0.2− | 1.1− |
| 2001 11 11 | 704 | 0.4− | 0.4− | 2003 04 07 | 704 | 1.1+ | 0.6+ | 2005 11 22 | 703 | 0.6− | 0.9− |
| 2001 11 11 | 704 | 0.2− | 0.0 | 2003 04 07 | 704 | 0.6+ | 0.5+ | 2005 11 22 | 703 | 0.1− | 0.5− |
| 2001 11 11 | 704 | 0.0 | 0.4+ | 2003 04 07 | 704 | (1.3+ | 1.7+) | 2005 11 22 | 703 | 0.4+ | 0.5+ |
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2005 09 29 | 703 | 0.6+ | 0.9− | 2006 10 19 | 703 | 0.4− | 0.6+ |
| 2002 12 27 | 644 | 0.8+ | 0.3+ | 2005 09 29 | 703 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.4− |
| 2002 12 27 | 644 | 0.8+ | 0.5+ | 2005 09 29 | 703 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.9− | 0.6− |
| 2002 12 27 | 644 | 0.3+ | 0.5+ | 2005 09 29 | 703 | 0.6+ | 0.4− | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2003 01 03 | 704 | 0.6− | 0.7− | 2005 10 23 | 703 | 0.4− | 0.4+ | 2006 11 02 | 703 | 0.5− | 0.2− |
| 2003 01 03 | 704 | 0.7+ | 0.6− | 2005 10 23 | 703 | 1.1− | 0.5+ | 2006 11 02 | 703 | 0.5− | 0.9− |
| 2003 01 03 | 704 | 0.0 | 0.4− | 2005 10 23 | 703 | 0.8+ | 0.3− | 2006 11 02 | 703 | 0.4− | 0.3− |
| 2003 01 30 | 608 | 1.0+ | 0.4+ | 2005 10 23 | 703 | 0.0 | 0.7+ | 2006 11 02 | 703 | 0.8− | 0.7− |
| 2003 01 30 | 608 | 1.0+ | 0.1− | 2005 10 29 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 0.5+ |
| 2003 01 30 | 608 | 1.3+ | 0.4− | 2005 10 29 | 644 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.2− |
| 2003 02 09 | 644 | 0.2− | 0.1+ | 2005 10 29 | 644 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 2003 02 09 | 644 | 0.6− | 0.2+ | 2005 11 04 | 699 | 0.6+ | 1.2+ | | | | |
| 2003 02 09 | 644 | 0.4− | 0.1+ | 2005 11 04 | 699 | 0.6+ | 0.4+ | | | | |

**(143575)∗ 2003 EB$_{60}$ = 2000 SD$_{284}$**

Discovered 2003 Mar. 12 by B. Stevens at Desert Moon Observatory, Las Cruces.

Id. A. Doppler (*MPO* 47388), K. E. Smalley (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.40168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18069607 | $\omega$ | 125.32205 | | +0.24672428 | −0.96035283 | |
| $a$ | 3.0986337 | $\Omega$ | 309.86027 | | +0.82517790 | +0.27842817 | |
| $e$ | 0.0587030 | $i$ | 9.73573 | | +0.50814226 | +0.01414878 | |
| $P$ | 5.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.3− | 0.3+ | 2003 03 26 | 448 | 0.3− | 0.3+ | 2006 10 23 | 703 | 0.4+ | 0.3− |
| 2000 09 23 | 704 | 0.6− | 0.6+ | 2003 03 26 | 448 | 0.1− | 0.6+ | 2006 10 23 | 703 | 0.2− | 0.5+ |
| 2000 09 23 | 704 | 0.4− | 0.9+ | 2005 07 04 | G96 | 0.2− | 0.3+ | 2006 10 29 | 703 | 0.4− | 0.9− |
| 2000 10 03 | 704 | 0.7− | 0.4− | 2005 07 04 | G96 | 0.7− | 0.3+ | 2006 10 29 | 703 | 0.0 | 0.1+ |
| 2000 10 03 | 704 | 0.6− | 0.4+ | 2005 07 04 | G96 | 1.3− | 0.5+ | 2006 10 29 | 703 | 0.1− | 0.1− |
| 2000 10 03 | 704 | 0.1− | 1.3+ | 2005 07 04 | G96 | 1.1− | 0.1+ | 2006 10 29 | 703 | 0.7− | 0.6− |
| 2000 10 03 | 704 | 0.3+ | 1.9+ | 2005 08 06 | A55 | (2.5+ | 0.3+) | 2006 11 15 | 703 | 0.2− | 1.2− |
| 2001 12 09 | 704 | 0.3+ | 0.2+ | 2005 08 06 | A55 | (2.0+ | 1.5+) | 2006 11 15 | 703 | 0.7+ | 0.5+ |
| 2001 12 09 | 704 | 0.1− | 1.3+ | 2005 09 26 | 448 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | 0.0 | 0.9+ | 2005 09 26 | 448 | 0.5+ | 0.2+ | 2006 11 15 | 703 | 0.2− | 1.1− |
| 2001 12 09 | 704 | 0.0 | 1.4+ | 2005 09 26 | 448 | 0.3+ | 0.9+ | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2001 12 09 | 704 | 0.1+ | 0.7+ | 2005 10 26 | 448 | 0.3− | 0.7− | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.0 | 2005 10 27 | 448 | 0.5+ | 0.1− | 2006 11 15 | 703 | 0.3− | 0.4− |
| 2001 12 17 | 704 | 0.4− | 0.6− | 2005 10 27 | 448 | 1.1+ | 0.4− | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.0 | 0.1+ | 2005 10 27 | 448 | (0.9+ | 3.3−) | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | 0.3− | 0.3+ | 2006 09 25 | 448 | 0.6+ | 1.0− | 2006 11 15 | 703 | 0.2− | 0.2+ |
| 2003 03 12 | 448 | 0.1+ | 0.4− | 2006 09 25 | 448 | 0.2+ | 0.6− | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2003 03 12 | 448 | 0.4+ | 0.4− | 2006 09 25 | 448 | 0.4+ | 0.2− | 2006 11 21 | 703 | 0.4− | 0.1− |
| 2003 03 12 | 448 | 0.2− | 0.6− | 2006 09 26 | 448 | 0.2+ | 0.1− | 2006 11 21 | 703 | 0.3+ | 0.3− |
| 2003 03 22 | 448 | 0.3+ | 0.6+ | 2006 09 26 | 448 | 0.4+ | 0.0 | 2006 11 21 | 703 | 0.2+ | 0.2− |
| 2003 03 22 | 448 | 0.2+ | 0.3+ | 2006 09 26 | 448 | (1.5+ | 1.1−) | 2006 11 21 | 703 | 0.5+ | 0.8+ |
| 2003 03 22 | 448 | 1.0+ | 0.7+ | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 21 | 703 | 0.1+ | 0.1+ |
| 2003 03 23 | 448 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.6+ | 0.2+ | 2006 11 21 | 703 | 0.2+ | 0.6+ |
| 2003 03 23 | 448 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 21 | 703 | 0.6+ | 0.4+ |
| 2003 03 23 | 448 | 0.3+ | 0.6+ | 2006 10 23 | 703 | 0.3− | 0.8− | 2006 11 21 | 703 | 0.1+ | 0.1+ |
| 2003 03 26 | 448 | 0.1+ | 0.3+ | 2006 10 23 | 703 | 0.9− | 0.1+ | | | | |

**(143576)∗ 2003 FS$_1$**

Discovered 2003 Mar. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.45557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23227463 | $\omega$ | 107.91279 | | −0.66981721 | +0.59001576 | |
| $a$ | 2.6210071 | $\Omega$ | 110.81797 | | −0.71810887 | −0.66915214 | |
| $e$ | 0.1803510 | $i$ | 28.83528 | | +0.18885063 | −0.45179289 | |
| $P$ | 4.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 15 | 704 | (2.2− | 0.2−) | 2003 03 24 | 645 | 0.3− | 0.1− | 2004 08 16 | E12 | 0.1− | 0.1+ |
| 1999 05 15 | 704 | 0.1− | 0.8− | 2003 03 24 | 704 | 0.2+ | 0.4+ | 2004 08 16 | E12 | 0.5− | 0.0 |
| 1999 05 15 | 704 | 0.5+ | 0.1− | 2003 03 24 | 704 | 0.5+ | 1.4+ | 2004 08 16 | E12 | (1.0− | 2.1+) |
| 1999 05 15 | 704 | 0.0 | 0.2− | 2003 03 24 | 704 | 0.6+ | 0.6+ | 2004 09 14 | E12 | 0.1− | 0.5+ |
| 1999 05 15 | 704 | (4.2− | 2.0−) | 2003 03 24 | 704 | 0.6+ | 0.9+ | 2004 09 14 | E12 | 0.2+ | 0.3+ |
| 2002 12 31 | 704 | 0.6+ | 0.7+ | 2003 03 24 | 704 | 0.7+ | 0.2+ | 2004 09 14 | E12 | 0.4− | 0.1+ |
| 2002 12 31 | 704 | 0.8+ | 1.3+ | 2003 03 25 | 704 | 0.9− | 0.8+ | 2004 09 14 | E12 | 0.3+ | 0.0 |
| 2002 12 31 | 704 | (1.7+ | 0.6−) | 2003 03 25 | 704 | 0.0 | 0.4− | 2005 10 30 | 703 | 0.2− | 0.8+ |
| 2002 12 31 | 704 | 0.3− | 1.2+ | 2003 03 25 | 704 | 0.1+ | 0.1+ | 2005 10 30 | 703 | 1.2− | 1.2+ |
| 2003 01 11 | 704 | 0.1+ | 0.7− | 2003 03 25 | 704 | 0.2− | 0.2+ | 2005 10 30 | 703 | 0.0 | 0.0 |
| 2003 01 11 | 704 | 0.3+ | 0.9− | 2003 04 06 | 636 | 0.2− | 0.1− | 2005 10 30 | 703 | (0.3− | 2.4+) |
| 2003 01 11 | 704 | 0.6− | 0.6− | 2003 04 06 | 636 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.8− | 0.6− |
| 2003 02 06 | 699 | (2.6+ | 4.1−) | 2003 04 06 | 636 | 0.6+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.6− |
| 2003 02 06 | 699 | 0.9+ | 0.5+ | 2003 04 22 | 704 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2003 02 06 | 699 | 0.7+ | 1.2+ | 2003 04 22 | 704 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2003 02 06 | 699 | 0.6+ | 0.5+ | 2003 04 22 | 704 | 0.6+ | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2003 02 11 | 704 | 0.2+ | 0.3+ | 2003 04 22 | 704 | 0.5+ | 0.8+ | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2003 02 11 | 704 | 0.9+ | 0.5− | 2003 04 22 | 704 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.5+ | 0.3+ |
| 2003 02 11 | 704 | 0.6+ | 0.1+ | 2004 06 27 | E12 | 0.3+ | 0.6+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2003 03 20 | 644 | 0.7+ | 0.8+ | 2004 06 27 | E12 | 0.7+ | 0.7+ | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2003 03 20 | 644 | 0.7+ | 1.2+ | 2004 06 27 | E12 | 0.2+ | 1.0+ | 2006 11 24 | G96 | 0.6− | 0.6− |
| 2003 03 20 | 644 | 0.6+ | 0.9+ | 2004 06 27 | E12 | 0.1+ | 0.6+ | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2003 03 24 | 645 | 0.3− | 0.1− | 2004 08 16 | E12 | 0.7− | 0.2+ | | | | |

**(143577)∗ 2003 FG$_2$**

Discovered 2003 Mar. 23 by M. Ory at the Observatoire Astronomique Jurassien-Vicques.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.65003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17841605 | $\omega$ | 26.85712 | | −0.92926057 | +0.36927300 | |
| $a$ | 3.1249767 | $\Omega$ | 174.77963 | | −0.35641214 | −0.88861417 | |
| $e$ | 0.0572496 | $i$ | 6.68696 | | −0.09718637 | −0.27203365 | |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 691 | 0.0 | 0.4+ | 2003 03 24 | 185 | 0.7− | 0.3+ | 2003 04 23 | 185 | 0.5+ | 0.4+ |
| 2000 09 03 | 691 | 0.0 | 0.2+ | 2003 03 24 | 185 | 0.5+ | 1.5+ | 2005 07 30 | 644 | 0.0 | 0.4+ |
| 2000 09 03 | 691 | 0.2− | 0.7+ | 2003 03 24 | 185 | 0.0 | 0.3+ | 2005 07 30 | 644 | 0.3− | 0.3+ |
| 2000 11 25 | 691 | 0.1− | 0.5+ | 2003 03 26 | 644 | 0.1+ | 0.5+ | 2005 07 30 | 644 | 0.2− | 0.5+ |
| 2000 11 25 | 691 | 0.1− | 0.3+ | 2003 03 26 | 644 | 0.7+ | 0.2+ | 2005 08 25 | 644 | 0.2− | 0.4+ |
| 2000 11 25 | 691 | 0.2− | 0.4+ | 2003 03 26 | 644 | 0.3+ | 0.3+ | 2005 08 25 | 644 | 0.3− | 0.6+ |
| 2003 02 11 | 608 | 0.7+ | 0.0 | 2003 03 26 | 185 | 1.2+ | 0.1− | 2005 08 25 | 644 | 0.3− | 0.5+ |
| 2003 02 11 | 608 | 0.5− | 0.6− | 2003 03 26 | 185 | (1.6+ | 0.7−) | 2005 08 29 | 691 | 0.0 | 0.6+ |
| 2003 02 11 | 608 | 0.3− | 0.3− | 2003 03 26 | 185 | 0.8+ | 0.4− | 2005 08 29 | 691 | 0.2− | 0.4+ |
| 2003 02 27 | 599 | 0.2+ | 0.3+ | 2003 03 26 | 185 | 0.2+ | 0.3− | 2005 08 29 | 691 | 0.2− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 27 | 599 | 0.2+ | 0.4+ | 2003 03 30 | 695 | 0.3− | 0.2+ | 2005 09 13 | 691 | 0.1− | 0.3+ |
| 2003 02 27 | 599 | 0.4+ | 0.2+ | 2003 03 30 | 695 | 0.1− | 0.0 | 2005 09 13 | 691 | 0.1− | 0.6+ |
| 2003 02 27 | 599 | 0.1+ | 0.2+ | 2003 04 01 | 704 | 1.4+ | 0.9+ | 2005 09 13 | 691 | 0.0 | 0.3+ |
| 2003 03 07 | 699 | 0.9− | 0.1+ | 2003 04 01 | 704 | 0.4+ | 0.3− | 2005 09 30 | G96 | 0.2− | 0.2− |
| 2003 03 07 | 699 | (1.7+ | 0.5+) | 2003 04 01 | 704 | 0.5+ | 0.6+ | 2005 09 30 | G96 | 0.2− | 0.3+ |
| 2003 03 07 | 699 | 0.3− | 0.6− | 2003 04 01 | 704 | 0.7+ | 0.3− | 2005 09 30 | G96 | 0.3− | 0.1+ |
| 2003 03 07 | 699 | (0.8− | 1.7+) | 2003 04 05 | 448 | 0.1+ | 0.7+ | 2005 09 30 | G96 | 0.2+ | 0.2+ |
| 2003 03 23 | 683 | (0.2+ | 3.0−) | 2003 04 05 | 448 | 0.2+ | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2003 03 23 | 683 | (1.0+ | 1.8−) | 2003 04 05 | 448 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2003 03 23 | 683 | (1.7+ | 0.8−) | 2003 04 07 | 691 | 0.4+ | 0.8+ | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2003 03 23 | 185 | (1.6− | 0.6+) | 2003 04 07 | 691 | 0.1− | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2003 03 23 | 185 | 0.8+ | 0.3+ | 2003 04 07 | 691 | 0.1+ | 1.0+ | 2006 11 18 | G96 | 0.4− | 0.1+ |
| 2003 03 23 | 185 | 1.1+ | 0.3+ | 2003 04 07 | 185 | 0.8+ | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2003 03 24 | 691 | 0.1− | 0.5+ | 2003 04 07 | 185 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2003 03 24 | 691 | 0.4− | 0.1+ | 2003 04 07 | 185 | 0.2− | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2003 03 24 | 683 | 1.0− | 0.1+ | 2003 04 07 | 185 | 0.1− | 1.0+ | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2003 03 24 | 683 | (3.1− | 0.3−) | 2003 04 07 | 185 | 0.1+ | 0.9+ | 2006 11 19 | 703 | 0.2− | 0.5+ |
| 2003 03 24 | 683 | 0.7− | 0.5− | 2003 04 23 | 185 | 0.4+ | 1.3+ | 2006 11 19 | 703 | 0.6− | 0.7+ |
| 2003 03 24 | 691 | 0.3− | 0.1+ | 2003 04 23 | 185 | 0.4+ | 0.7+ | 2006 11 19 | 703 | 0.1+ | 0.4+ |
| 2003 03 24 | 185 | 0.7+ | 0.5− | 2003 04 23 | 185 | 0.1− | 0.2+ | | | | |

**(143578)∗ 2003 FA$_5$**

Discovered 2003 Mar. 24 by H. Mikuž and S. Matičič at Crni Vrh.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.61619 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17281989 | $\omega$ | 25.11311 | | −0.72378278 | +0.68429259 | |
| $a$ | 3.1920785 | $\Omega$ | 198.95338 | | −0.67022255 | −0.72777019 | |
| $e$ | 0.1675512 | $i$ | 15.86328 | | −0.16413476 | −0.04576237 | |
| $P$ | 5.70 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.3+ | 0.2− | 2003 03 25 | 106 | 0.0 | 0.8+ | 2005 08 29 | 644 | 0.0 | 0.3+ |
| 1994 10 08 | 691 | 0.1+ | 0.2− | 2003 03 26 | 106 | 0.4− | 0.3+ | 2005 09 06 | 461 | 0.1+ | 0.6+ |
| 1994 10 08 | 691 | 0.1+ | 0.1− | 2003 03 26 | 106 | 0.2− | 0.3+ | 2005 09 06 | 461 | 0.0 | 0.7+ |
| 1998 05 26 | 704 | 0.3+ | 0.3+ | 2003 03 26 | 106 | 0.2− | 0.3+ | 2005 09 06 | 461 | 0.4+ | 1.0+ |
| 1998 05 26 | 704 | 1.2− | 0.5− | 2003 03 28 | 699 | 0.5− | 0.6+ | 2005 09 06 | 461 | 0.5− | 0.3+ |
| 1998 05 26 | 704 | (1.0+ | 2.6−) | 2003 03 28 | 699 | 0.5− | 0.6+ | 2005 09 13 | 704 | 0.2− | 1.5+ |
| 1998 05 26 | 704 | 0.0 | 0.0 | 2003 03 28 | 699 | 0.8− | 0.1− | 2005 09 13 | 704 | 0.0 | 0.1+ |
| 1998 06 03 | 704 | (0.8+ | 2.2+) | 2003 03 28 | 699 | 0.5− | 0.2+ | 2005 09 13 | 704 | 0.2− | 0.8+ |
| 1998 06 03 | 704 | (1.3+ | 2.9+) | 2003 03 31 | 644 | 0.1+ | 0.4+ | 2005 09 13 | 704 | 0.0 | 1.4+ |
| 1998 06 03 | 704 | 0.8− | 1.5+ | 2003 03 31 | 644 | 0.2+ | 0.6+ | 2005 09 23 | 703 | 0.1− | 0.3− |
| 1998 06 03 | 704 | 0.1+ | 0.0 | 2003 03 31 | 644 | 0.3+ | 0.5+ | 2005 09 23 | 703 | 0.2− | 0.9+ |
| 1998 06 19 | 704 | 0.5− | 0.1− | 2003 04 04 | 699 | 0.2− | 0.0 | 2005 09 23 | 703 | 0.3− | 0.2+ |
| 1998 06 19 | 704 | 1.2+ | 0.5+ | 2003 04 04 | 699 | 0.0 | 0.5+ | 2005 09 23 | 703 | 0.9− | 0.5− |
| 1998 06 19 | 704 | (2.5− | 0.7−) | 2003 04 04 | 699 | 0.5− | 0.1+ | 2005 09 26 | 703 | 0.0 | 0.4− |
| 1998 06 19 | 704 | 1.2− | 0.9− | 2003 04 04 | 699 | 0.6+ | 0.6+ | 2005 09 26 | 703 | 0.1+ | 0.5− |
| 1998 06 19 | 704 | (3.1− | 2.0+) | 2003 04 08 | 704 | (0.7− | 1.7−) | 2005 09 26 | 703 | 1.2+ | 0.8+ |
| 2003 02 11 | 608 | 0.2+ | 1.2− | 2003 04 08 | 704 | 0.5− | 1.2− | 2005 09 26 | 703 | 0.1− | 0.4− |
| 2003 02 11 | 608 | 0.3+ | 0.8− | 2003 04 08 | 704 | 0.0 | 0.3+ | 2005 09 29 | 699 | (0.4− | 2.6−) |
| 2003 02 11 | 608 | 0.5+ | 0.4− | 2003 04 08 | 704 | 0.0 | 0.2− | 2005 09 29 | 699 | 0.9+ | 1.1+ |
| 2003 03 10 | 699 | 0.0 | 0.6+ | 2003 04 29 | 704 | 0.1+ | 0.1− | 2005 09 29 | 699 | 0.9+ | 0.8+ |
| 2003 03 10 | 699 | 0.6+ | 0.2+ | 2003 04 29 | 704 | 0.2+ | 0.6+ | 2005 09 29 | 699 | 0.7+ | 0.3− |
| 2003 03 10 | 704 | 0.4+ | 0.4− | 2003 04 29 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 703 | 0.9− | 0.2− |
| 2003 03 10 | 704 | 1.4+ | 0.3− | 2003 04 29 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2003 03 10 | 699 | 0.1+ | 0.2− | 2003 04 29 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 1.1− | 1.2+ |
| 2003 03 10 | 704 | 0.8+ | 0.3+ | 2004 09 08 | 704 | 0.7− | 0.3− | 2006 10 22 | 703 | 0.8− | 0.4− |
| 2003 03 10 | 699 | 0.1+ | 0.2+ | 2004 09 08 | 704 | 0.4− | 0.4− | 2006 11 19 | 703 | 1.4− | 1.0− |
| 2003 03 10 | 704 | 0.9+ | 0.2+ | 2004 09 08 | 704 | 0.6+ | 0.3− | 2006 11 19 | 703 | 1.0− | 1.9+ |
| 2003 03 10 | 704 | 0.4+ | 0.1− | 2004 09 08 | 704 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.1− | 0.7− |
| 2003 03 24 | 106 | 0.5− | 0.4+ | 2005 08 29 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.3+ | 0.5+ |
| 2003 03 25 | 106 | 0.2+ | 0.6− | 2005 08 29 | 644 | 0.7+ | 0.5+ | | | | |

**(143579)∗ 2003 FE$_7$ = 2005 VK$_{115}$**

Discovered 2003 Mar. 28 by K. Sárneczky at University of Szeged, Piszkéstető Stn. (Konkoly).

Id. G. V. Williams (*MPO* 94942)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.34113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21754773 | $\omega$ | 341.77600 | | +0.04495516 | +0.99663088 | |
| $a$ | 2.7379973 | $\Omega$ | 290.75542 | | −0.90718683 | +0.01197291 | |
| $e$ | 0.0792869 | $i$ | 4.20704 | | −0.41831937 | +0.08113905 | |
| $P$ | 4.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 02 | 691 | 0.9− | 0.6+ | 2003 03 29 | 461 | 0.0 | 0.3+ | 2003 04 02 | 461 | 0.4− | 0.5+ |
| 1995 07 02 | 691 | 1.1− | 0.6+ | 2003 03 29 | 461 | 0.8− | 0.0 | 2003 04 02 | 461 | 0.5− | 0.2+ |
| 1995 07 02 | 691 | 0.6− | 0.6+ | 2003 03 30 | 691 | 0.4+ | 0.6+ | 2003 04 02 | 461 | 0.5− | 0.2+ |
| 1998 01 26 | 566 | 0.9− | 0.4+ | 2003 03 30 | 691 | 0.6+ | 0.6+ | 2003 04 02 | 461 | 0.1+ | 1.2+ |
| 1998 01 26 | 566 | 0.6− | 0.9+ | 2003 03 30 | 691 | 0.6+ | 0.5+ | 2003 04 03 | 699 | 0.5− | 0.6− |
| 2000 08 05 | 608 | 1.3− | 1.5+ | 2003 03 30 | 461 | 0.5+ | 0.4− | 2003 04 03 | 699 | 0.4− | 0.6− |
| 2000 08 05 | 608 | 0.3− | 0.6+ | 2003 03 30 | 461 | 0.3− | 0.1− | 2003 04 03 | 699 | 0.8+ | 0.8+ |
| 2000 09 28 | 704 | 1.4− | 0.7+ | 2003 03 30 | 461 | 0.3+ | 0.4+ | 2003 04 03 | 699 | 0.6− | 0.8− |
| 2000 09 28 | 704 | 0.5+ | 0.1+ | 2003 03 30 | 461 | 0.0 | 0.2+ | 2004 08 08 | 704 | 0.9− | 0.6+ |
| 2000 09 28 | 704 | 1.4− | 1.1+ | 2003 03 30 | 461 | 0.0 | 0.4+ | 2004 08 08 | 704 | 0.7− | 0.9+ |
| 2000 09 28 | 704 | 0.2− | 1.1+ | 2003 03 30 | 461 | 0.3− | 0.2− | 2004 08 08 | 704 | 0.0 | 0.3+ |
| 2000 10 18 | 691 | 1.3+ | 0.5+ | 2003 03 30 | 461 | 0.1− | 0.3− | 2005 11 11 | 691 | 0.0 | 1.0+ |
| 2000 10 18 | 691 | 0.5+ | 0.7+ | 2003 03 30 | 461 | 0.2− | 0.1− | 2005 11 11 | 691 | 0.4− | 1.0+ |
| 2000 10 18 | 691 | 0.8+ | 0.6+ | 2003 03 30 | 461 | 0.1+ | 0.6− | 2005 11 11 | 691 | 0.1− | 1.1+ |
| 2000 10 29 | 691 | 0.6+ | 0.0 | 2003 03 30 | 461 | 0.2− | 0.0 | 2005 11 12 | 691 | 0.3− | 0.3+ |
| 2000 10 29 | 691 | 0.1+ | 0.4+ | 2003 03 30 | 461 | 0.6− | 0.1+ | 2005 11 12 | 691 | 0.3− | 0.3+ |
| 2000 10 29 | 691 | 0.6+ | 0.7− | 2003 03 31 | 461 | 0.4− | 0.0 | 2005 11 12 | 691 | 0.4− | 0.4+ |
| 2001 12 25 | 608 | 0.3+ | 0.2− | 2003 03 31 | 461 | 0.2+ | 0.8+ | 2005 11 29 | 691 | 0.4− | 0.3+ |
| 2001 12 25 | 608 | 0.0 | 0.5+ | 2003 03 31 | 461 | 0.4− | 0.6+ | 2005 11 29 | 691 | 0.5− | 0.2+ |
| 2002 01 08 | 704 | 0.7− | 1.9− | 2003 04 01 | 644 | 0.7+ | 0.1+ | 2005 11 29 | 691 | 0.4− | 0.3+ |
| 2002 01 08 | 704 | 0.2− | 1.3− | 2003 04 01 | 644 | 0.8+ | 0.3+ | 2005 12 08 | 691 | 0.4− | 0.0 |
| 2002 01 08 | 704 | 1.6+ | 1.5− | 2003 04 01 | 644 | 1.1+ | 0.3+ | 2005 12 08 | 691 | 0.4− | 0.0 |
| 2003 03 28 | 461 | 1.8+ | 1.3+ | 2003 04 01 | 461 | 2.0+ | 0.9+ | 2005 12 08 | 691 | 0.4− | 0.0 |
| 2003 03 28 | 461 | 1.8+ | 1.6+ | 2003 04 01 | 461 | 0.5+ | 1.5+ | 2005 12 31 | G96 | 0.3+ | 0.1+ |
| 2003 03 28 | 461 | 1.3+ | 1.7+ | 2003 04 01 | 461 | 0.8+ | 1.6+ | 2005 12 31 | G96 | 0.4− | 0.1− |
| 2003 03 29 | 461 | 0.8− | 0.8+ | 2003 04 01 | 461 | 0.2+ | 1.5+ | 2005 12 31 | G96 | 0.2+ | 0.1+ |
| 2003 03 29 | 461 | 0.5− | 0.3− | 2003 04 01 | 461 | 1.2+ | 0.5+ | 2005 12 31 | G96 | 0.3+ | 0.1− |
| 2003 03 29 | 461 | 1.3+ | 0.8+ | 2003 04 01 | 461 | 0.0 | 0.9+ | | | | |
| 2003 03 29 | 461 | 0.3− | 0.2− | 2003 04 02 | 461 | 0.5− | 0.4+ | | | | |

**(143580)∗ 2003 FO$_9$ = 2000 SV$_{305}$**

Discovered 2003 Mar. 21 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 47396)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.61573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22839699 | $\omega$ | 307.53115 | | −0.17642923 | +0.97171518 | |
| $a$ | 2.6505894 | $\Omega$ | 311.53768 | | −0.82395064 | −0.23304372 | |
| $e$ | 0.2264103 | $i$ | 12.10588 | | −0.53849612 | +0.03821302 | |
| $P$ | 4.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.2− | 0.1+ | 2004 07 17 | 704 | 0.0 | 0.0 | 2004 09 07 | 683 | 0.0 | 1.4+ |
| 2000 09 30 | 704 | 0.5+ | 0.5− | 2004 07 17 | 704 | 0.0 | 0.6+ | 2004 09 07 | 683 | 0.3+ | 1.0+ |
| 2000 09 30 | 704 | 0.3− | 0.1+ | 2004 07 17 | 704 | 0.6− | 0.7+ | 2004 09 07 | 683 | 0.1+ | 0.8+ |
| 2000 09 30 | 704 | 0.9+ | 0.7− | 2004 07 17 | 704 | 0.1+ | 0.8+ | 2004 09 07 | 049 | 0.8− | 0.4+ |
| 2000 10 03 | 699 | 0.1+ | 0.5+ | 2004 08 09 | 704 | 0.3+ | 0.0 | 2004 09 07 | 049 | 0.0 | 0.2− |
| 2000 10 03 | 699 | 0.2− | 0.2− | 2004 08 09 | 704 | 0.4+ | 0.2+ | 2004 09 07 | 049 | 0.2− | 0.1+ |
| 2000 10 03 | 699 | 0.5− | 0.9+ | 2004 08 09 | 704 | (5.4+ | 3.6−) | 2004 09 08 | 704 | 0.2− | 0.6+ |
| 2000 10 03 | 699 | 0.0 | 1.0+ | 2004 08 09 | 704 | 0.2+ | 0.4− | 2004 09 08 | 704 | 0.0 | 0.1+ |
| 2000 10 03 | 704 | 0.1+ | 0.1+ | 2004 08 11 | 683 | (0.3+ | 1.6−) | 2004 09 08 | 704 | 0.1+ | 0.0 |
| 2000 10 03 | 704 | 0.0 | 0.0 | 2004 08 11 | 683 | 0.1+ | 0.2− | 2004 09 08 | 704 | 0.1− | 0.5+ |
| 2000 10 03 | 704 | 0.4− | 0.3− | 2004 08 11 | 683 | 1.0− | 0.6− | 2004 09 08 | 704 | 0.1+ | 0.4+ |
| 2000 10 03 | 704 | 0.3+ | 0.1+ | 2004 08 12 | 704 | 0.1− | 0.1+ | 2004 09 10 | 704 | 0.1− | 0.5− |
| 2000 10 03 | 704 | 0.9− | 0.2+ | 2004 08 12 | 704 | 0.2+ | 0.3+ | 2004 09 10 | 704 | 0.2− | 0.1− |
| 2003 01 31 | 699 | 0.4− | 0.7+ | 2004 08 12 | 704 | 0.4− | 0.2+ | 2004 09 10 | 704 | 0.2+ | 0.0 |
| 2003 01 31 | 699 | 0.1− | 0.0 | 2004 08 12 | 704 | 0.2+ | 0.0 | 2004 09 10 | 704 | 0.3− | 0.1− |
| 2003 01 31 | 699 | (0.9− | 2.0+) | 2004 08 12 | 704 | 0.0 | 0.4+ | 2004 09 10 | 704 | 0.2− | 0.4− |
| 2003 01 31 | 699 | 0.8+ | 0.4− | 2004 08 13 | 644 | 0.2+ | 0.2+ | 2004 09 11 | 683 | 0.8+ | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 08 | 608 | 0.5+ | 0.4− | 2004 08 13 | 644 | 0.2+ | 0.3+ | 2004 09 11 | 683 | 0.0 | 1.1+ |
| 2003 02 08 | 608 | 0.6+ | 0.3− | 2004 08 13 | 644 | 0.2+ | 0.2+ | 2004 09 11 | 683 | 0.4− | 1.2+ |
| 2003 02 08 | 608 | 0.6+ | 0.2− | 2004 08 17 | 704 | 0.2+ | 0.3+ | 2004 09 12 | 683 | 0.9− | 0.0 |
| 2003 03 10 | 704 | 0.5+ | 0.4+ | 2004 08 17 | 704 | 0.2− | 0.8+ | 2004 09 12 | 683 | 0.9+ | 1.1+ |
| 2003 03 10 | 704 | 0.9+ | 0.2+ | 2004 08 17 | 704 | 0.5+ | 0.5+ | 2004 09 12 | 683 | 1.4− | 1.0+ |
| 2003 03 10 | 704 | 0.6+ | 0.6+ | 2004 08 17 | 704 | 0.7+ | 0.3+ | 2004 09 13 | 704 | 0.9− | 0.2+ |
| 2003 03 10 | 704 | 1.0+ | 0.3+ | 2004 08 17 | 704 | 0.5+ | 0.1+ | 2004 09 13 | 704 | 0.9− | 0.4− |
| 2003 03 10 | 704 | (1.7+ | 0.5+) | 2004 08 20 | 683 | 0.2+ | 0.0 | 2004 09 13 | 704 | 0.7− | 0.1+ |
| 2003 03 10 | 704 | 0.2− | 0.8+ | 2004 08 20 | 683 | 0.3+ | 1.2− | 2004 09 13 | 704 | 0.0 | 0.1− |
| 2003 03 10 | 704 | 0.0 | 1.2+ | 2004 08 20 | 683 | 0.2− | 0.2− | 2004 09 13 | 704 | 0.8− | 0.4− |
| 2003 03 21 | 608 | 0.3+ | 0.2+ | 2004 08 21 | 703 | 1.0+ | 0.3+ | 2004 09 15 | 683 | 0.2+ | 0.8+ |
| 2003 03 21 | 608 | 0.2+ | 0.7+ | 2004 08 21 | 683 | (0.8+ | 1.5−) | 2004 09 15 | 683 | (0.1− | 1.9+) |
| 2003 03 21 | 608 | 0.1+ | 0.7+ | 2004 08 21 | 703 | 0.1+ | 0.2+ | 2004 09 15 | 683 | (1.2+ | 2.0+) |
| 2003 03 24 | 608 | 0.4− | 0.9+ | 2004 08 21 | 683 | 0.5+ | 1.4− | 2004 09 16 | 683 | 0.9+ | 0.4− |
| 2003 03 24 | 608 | 0.2− | 1.0+ | 2004 08 21 | 703 | 0.4+ | 0.1− | 2004 09 16 | 683 | 0.6+ | 1.4+ |
| 2003 03 24 | 608 | 0.0 | 0.9+ | 2004 08 21 | 703 | 0.1− | 0.3+ | 2004 09 16 | 683 | (1.2− | 1.6+) |
| 2003 03 27 | 644 | (0.7+ | 2.2+) | 2004 08 21 | 683 | 1.1− | 1.3− | 2004 09 18 | 704 | 0.1+ | 0.2− |
| 2003 03 27 | 644 | (0.5+ | 2.2+) | 2004 08 22 | 683 | 0.3− | 1.1+ | 2004 09 18 | 704 | 0.6+ | 0.1+ |
| 2003 03 27 | 644 | (0.7+ | 2.1+) | 2004 08 22 | 683 | 0.4+ | 0.4− | 2004 09 18 | 704 | 0.7+ | 0.6+ |
| 2003 03 30 | 704 | (1.5+ | 1.2+) | 2004 08 22 | 683 | 0.9+ | 0.5+ | 2004 09 18 | 704 | 0.2+ | 0.3+ |
| 2003 03 30 | 704 | 0.8+ | 0.9+ | 2004 08 23 | 049 | 0.1+ | 0.0 | 2004 09 18 | 704 | 0.6+ | 0.2+ |
| 2003 03 30 | 704 | (1.7+ | 1.9+) | 2004 08 23 | 049 | 0.0 | 0.3+ | 2005 12 04 | 703 | 0.6− | 0.4+ |
| 2003 03 30 | 704 | (1.2+ | 2.1+) | 2004 08 23 | 049 | 0.1− | 0.0 | 2005 12 04 | 703 | (1.7+ | 4.1+) |
| 2003 03 30 | 704 | (0.8+ | 2.4+) | 2004 08 26 | 683 | 0.2+ | 0.0 | 2005 12 04 | 703 | 0.8− | 0.6+ |
| 2004 05 20 | E12 | 0.4− | 1.0+ | 2004 08 26 | 683 | 0.2− | 0.3− | 2005 12 04 | 703 | 0.2+ | 1.3+ |
| 2004 05 20 | E12 | 1.4− | 1.4+ | 2004 08 26 | 703 | 0.6− | 1.0− | 2005 12 10 | 291 | 0.1+ | 0.1− |
| 2004 05 20 | E12 | 0.6− | 1.3+ | 2004 08 26 | 683 | (1.2− | 2.2−) | 2005 12 10 | 291 | 0.0 | 0.0 |
| 2004 05 20 | E12 | 0.7− | 0.8+ | 2004 08 26 | 703 | 0.3− | 1.1− | 2005 12 10 | 291 | 0.2− | 0.1+ |
| 2004 06 18 | 704 | 1.0+ | 0.2− | 2004 08 26 | 703 | 0.8− | 0.2− | 2006 11 22 | G96 | 0.8− | 0.9− |
| 2004 06 18 | 704 | 0.3− | 0.5− | 2004 08 26 | 703 | 1.0− | 0.6− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2004 06 18 | 704 | 0.2− | 0.7− | 2004 08 27 | 683 | 0.5− | 1.2− | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2004 07 11 | 704 | 0.6− | 0.4− | 2004 08 27 | 683 | (1.6+ | 1.7−) | 2006 11 22 | G96 | 0.6− | 0.2− |
| 2004 07 11 | 704 | 0.6+ | 0.8− | 2004 08 27 | 683 | 0.5− | 1.4− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2004 07 11 | 704 | 0.1− | 0.6− | 2004 09 06 | 683 | 0.1− | 1.0− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2004 07 11 | 704 | 0.0 | 0.5− | 2004 09 06 | 683 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2004 07 11 | 704 | 0.5− | 0.1− | 2004 09 06 | 683 | 0.1− | 0.6− | 2006 11 24 | G96 | 0.3+ | 0.3− |

**(143581)∗ 2003 FV$_{12}$ = 1998 HY$_{73}$**

Discovered 2003 Mar. 23 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 47399)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.51341 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18734175 | $\omega$ | 350.45334 | | −0.99017242 | | −0.13980829 |
| $a$ | 3.0249137 | $\Omega$ | 181.52309 | | +0.13541975 | | −0.95224650 |
| $e$ | 0.0428332 | $i$ | 7.55984 | | +0.03492962 | | −0.27144106 |
| $P$ | 5.26 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.5+ | 0.3+ | 2003 03 25 | 703 | 0.4+ | 0.7− | 2005 09 29 | 699 | 0.6− | 0.3+ |
| 1995 11 19 | 691 | 0.4+ | 0.0 | 2003 03 26 | 691 | 0.1− | 0.1+ | 2005 09 29 | 699 | 0.4− | 0.3+ |
| 1995 11 19 | 691 | 0.2+ | 0.8− | 2003 03 26 | 691 | 0.4− | 0.2+ | 2005 10 01 | 703 | 0.6− | 0.9+ |
| 1998 04 21 | 704 | 1.1− | 0.7+ | 2003 03 26 | 691 | 0.2− | 0.3+ | 2005 10 01 | 703 | 0.1+ | 0.5+ |
| 1998 04 21 | 704 | (0.9− | 2.2−) | 2003 03 31 | 699 | 0.6− | 0.5+ | 2005 10 01 | 703 | 0.2+ | 0.1+ |
| 1998 04 21 | 704 | 0.5− | 0.7− | 2003 03 31 | 699 | 0.8+ | 0.7+ | 2005 10 01 | 703 | 0.2− | 1.2− |
| 1998 04 21 | 704 | 1.1− | 0.9+ | 2003 03 31 | 699 | 1.0+ | 0.1− | 2005 10 03 | G96 | 0.2+ | 0.1+ |
| 1998 04 21 | 704 | (0.2+ | 2.2+) | 2003 03 31 | 699 | 0.2− | 0.2+ | 2005 10 03 | G96 | 0.3+ | 0.1+ |
| 1998 04 22 | 704 | 0.0 | 1.2+ | 2003 04 03 | 699 | 0.5− | 0.1+ | 2005 10 03 | G96 | 0.3+ | 0.3+ |
| 1998 04 22 | 704 | 0.3+ | 0.7+ | 2003 04 03 | 699 | 0.3+ | 1.0+ | 2005 10 03 | G96 | 0.1− | 0.3− |
| 1998 04 22 | 704 | 1.1− | 0.9+ | 2003 04 03 | 699 | 0.5− | 0.1− | 2005 10 11 | 701 | 0.4− | 0.2− |
| 1998 04 22 | 704 | 1.5− | 1.4− | 2003 04 03 | 699 | 0.8+ | 0.4+ | 2005 10 11 | 701 | 0.7− | 0.1+ |
| 1998 04 22 | 704 | 1.0+ | 0.5+ | 2003 04 26 | 699 | (3.0− | 4.4−) | 2005 10 11 | 701 | 0.5− | 0.4− |
| 2000 10 01 | 704 | 0.4− | 0.1+ | 2003 04 26 | 699 | 0.3− | 0.3− | 2005 12 01 | G96 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.3− | 0.7+ | 2003 04 26 | 699 | 1.2− | 1.7− | 2005 12 01 | G96 | 0.2− | 0.0 |
| 2000 10 01 | 704 | 0.7+ | 0.1+ | 2003 04 26 | 699 | (0.4− | 2.2+) | 2005 12 01 | G96 | 0.6− | 0.1+ |
| 2000 10 01 | 704 | 0.8− | 0.3+ | 2005 08 27 | 644 | 0.0 | 0.4+ | 2005 12 01 | G96 | 0.1− | 0.2− |
| 2000 10 01 | 704 | 0.1+ | 0.4+ | 2005 08 27 | 644 | 0.3− | 0.3+ | 2006 11 15 | 703 | 1.3+ | 0.6+ |
| 2002 01 09 | 704 | 1.6− | 0.8− | 2005 08 27 | 644 | 0.0 | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.9+ |
| 2002 01 09 | 704 | 0.8− | 0.1− | 2005 08 27 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.1− |
| 2002 01 09 | 704 | 0.8− | 0.7− | 2005 08 27 | 644 | 0.1− | 0.4+ | 2006 11 15 | 703 | 1.9− | 1.8+ |
| 2002 01 09 | 704 | 1.1− | 0.2+ | 2005 08 27 | 644 | 0.1− | 0.4+ | 2006 11 25 | 683 | 0.3− | 0.2− |
| 2003 03 10 | 704 | 1.3+ | 0.6+ | 2005 09 06 | 699 | 1.3+ | 1.5+ | 2006 11 25 | G96 | 0.8+ | 0.0 |
| 2003 03 10 | 704 | 1.2+ | 1.1+ | 2005 09 06 | 699 | 0.4− | 0.2− | 2006 11 25 | 683 | 0.6+ | 0.1+ |
| 2003 03 10 | 704 | 1.5+ | 0.1− | 2005 09 06 | 699 | 0.2+ | 0.7+ | 2006 11 25 | G96 | 0.9+ | 0.0 |
| 2003 03 10 | 704 | 0.3+ | 0.2− | 2005 09 06 | 699 | 0.4− | 1.2+ | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2003 03 10 | 291 | 0.2+ | 0.8+ | 2005 09 22 | 644 | 0.2− | 0.2+ | 2006 11 25 | G96 | 1.1+ | 0.0 |
| 2003 03 10 | 291 | 0.2+ | 0.7+ | 2005 09 22 | 644 | 0.1− | 0.2+ | 2006 11 25 | 703 | 1.1+ | 0.4− |
| 2003 03 10 | 291 | 0.3+ | 0.7+ | 2005 09 22 | 644 | 0.3− | 0.2+ | 2006 11 25 | 703 | 0.5+ | 0.4+ |
| 2003 03 23 | 291 | 0.6+ | 0.5+ | 2005 09 23 | 703 | 1.2+ | 0.9+ | 2006 11 25 | 703 | 0.9+ | 0.2+ |
| 2003 03 23 | 291 | 0.4+ | 0.3+ | 2005 09 23 | 703 | 0.5− | 0.1+ | 2006 11 25 | 703 | 0.3+ | 0.3− |
| 2003 03 23 | 291 | 0.5+ | 0.3+ | 2005 09 23 | 703 | 0.1− | 0.4+ | 2006 11 28 | 704 | 1.9− | 0.3+ |
| 2003 03 23 | 691 | 0.5− | 0.6− | 2005 09 23 | 703 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.7− | 0.2+ |
| 2003 03 23 | 691 | 0.7− | 0.9− | 2005 09 28 | 644 | 0.2− | 0.3+ | 2006 11 28 | 704 | 1.3− | 1.1+ |
| 2003 03 23 | 691 | 0.0 | 0.8− | 2005 09 28 | 644 | 0.8− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2003 03 25 | 703 | 1.5+ | 0.8− | 2005 09 28 | 644 | 0.1− | 0.4+ | 2006 11 28 | 704 | 1.5− | 0.4+ |
| 2003 03 25 | 703 | (2.2+ | 0.4−) | 2005 09 29 | 699 | 1.0+ | 1.6− | | | | |
| 2003 03 25 | 703 | 1.3+ | 0.6− | 2005 09 29 | 699 | 0.0 | 0.4+ | | | | |

**(143582)∗ 2003 FQ$_{13}$ = 2001 XJ$_{259}$**

Discovered 2003 Mar. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 47400)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.48112 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18040973 | $\omega$ | 283.83840 | | −0.34228717 | | −0.93944389 |
| $a$ | 3.1019115 | $\Omega$ | 186.25571 | | +0.91075856 | | −0.32731402 |
| $e$ | 0.1416195 | $i$ | 8.90753 | | +0.23099424 | | −0.10154170 |
| $P$ | 5.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 699 | 0.8− | 0.1+ | 2003 05 01 | 691 | 0.2− | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2001 12 08 | 699 | 0.4− | 0.3+ | 2005 06 28 | 644 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.2+ |
| 2001 12 08 | 699 | 0.2− | 0.6+ | 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.0 |
| 2001 12 08 | 699 | 0.2− | 0.2− | 2005 06 28 | 644 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.8+ |
| 2001 12 11 | 704 | 0.9+ | 0.4+ | 2005 07 15 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.5− |
| 2001 12 11 | 704 | 0.3− | 0.3+ | 2005 07 15 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2001 12 11 | 704 | 0.7+ | 0.8+ | 2005 07 15 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.4+ |
| 2003 03 11 | 644 | 0.1− | 0.2+ | 2005 09 03 | 644 | 0.6− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2003 03 11 | 644 | 0.3− | 0.2+ | 2005 09 03 | 644 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.6+ |
| 2003 03 11 | 644 | 0.2− | 0.3+ | 2005 09 03 | 644 | 0.4− | 0.5+ | 2006 10 15 | 703 | 0.2− | 0.1− |
| 2003 03 23 | 691 | 0.4− | 0.7+ | 2005 09 12 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 1.4− | 0.1+ |
| 2003 03 23 | 691 | 0.2− | 0.8+ | 2005 09 12 | 691 | 0.1+ | 0.6+ | 2006 10 15 | 703 | 1.3− | 0.0 |
| 2003 03 23 | 691 | 0.1+ | 0.7+ | 2005 09 12 | 691 | 0.2− | 0.5+ | 2006 10 15 | 703 | 0.7+ | 0.1− |
| 2003 03 25 | 644 | 0.1− | 1.2+ | 2006 07 21 | G96 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.8+ |
| 2003 03 25 | 644 | 0.6+ | 1.2+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2003 03 25 | 644 | 0.3+ | 1.2+ | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.9− | 0.4− |
| 2003 03 31 | 703 | 0.3+ | 0.5− | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2003 03 31 | 703 | 0.3− | 0.4− | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2003 03 31 | 703 | 0.7+ | 0.9− | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.9+ |
| 2003 03 31 | 703 | 1.1+ | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2003 04 05 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.8+ | 1.0+ | 2006 10 21 | 703 | 0.7− | 1.3− |
| 2003 04 05 | 691 | 0.4+ | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 04 05 | 691 | 0.5+ | 0.0 | 2006 09 18 | 699 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2003 05 01 | 691 | 0.2+ | 1.0+ | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 05 01 | 691 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | | | | |

**(143583)∗ 2003 FY$_{13}$**

Discovered 2003 Mar. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.87974 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17597815 | $\omega$ | 88.10937 | | +0.18115243 | | +0.98260131 |
| $a$ | 3.1537715 | $\Omega$ | 192.55445 | | −0.96052671 | | +0.16783254 |
| $e$ | 0.0378723 | $i$ | 10.86398 | | −0.21112139 | | +0.07954180 |
| $P$ | 5.60 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 1.1− | 0.3+ | 2003 04 06 | 691 | 0.2− | 0.5+ | 2005 09 26 | 691 | 0.2− | 0.4+ |
| 1998 05 01 | 704 | (2.4+ | 0.9+) | 2003 04 06 | 691 | 0.1− | 0.4+ | 2005 09 26 | 691 | 0.0 | 0.2+ |
| 1998 05 01 | 704 | 1.3+ | 0.2− | 2003 04 06 | 691 | 0.1− | 0.5+ | 2005 09 26 | 691 | 0.1+ | 0.3+ |
| 1998 05 01 | 704 | 0.3+ | 1.8+ | 2004 05 15 | 704 | 0.2− | 0.3− | 2005 09 28 | 644 | 0.1− | 0.4+ |
| 1998 05 01 | 704 | 0.9− | 0.6− | 2004 05 15 | 704 | 0.6− | 0.4− | 2005 09 28 | 644 | 0.3+ | 0.3+ |
| 2000 11 02 | 704 | 0.8− | 1.5+ | 2004 05 15 | 704 | 0.2− | 0.5− | 2005 09 28 | 644 | 0.3+ | 0.2+ |
| 2000 11 02 | 704 | 0.4− | 0.2+ | 2004 05 15 | 704 | 0.7+ | 0.8− | 2005 09 30 | 703 | 0.6+ | 0.7+ |
| 2000 11 02 | 704 | 1.0+ | 0.5+ | 2004 05 23 | 704 | 0.2+ | 0.0 | 2005 09 30 | 703 | 0.1+ | 0.4− |
| 2003 03 07 | 704 | 0.1− | 0.6− | 2004 05 23 | 704 | 0.2+ | 0.0 | 2005 09 30 | 703 | 0.2+ | 0.5− |
| 2003 03 07 | 704 | 0.4+ | 0.3− | 2004 05 23 | 704 | 0.3− | 0.1− | 2005 09 30 | 703 | 0.7− | 0.2− |
| 2003 03 07 | 704 | 0.1− | 0.2+ | 2004 05 23 | 704 | 0.9− | 0.4− | 2005 10 10 | 691 | 0.3− | 0.3+ |
| 2003 03 07 | 704 | 0.2− | 0.3+ | 2004 06 12 | 704 | 0.1− | 0.4+ | 2005 10 10 | 691 | 0.1+ | 0.5+ |
| 2003 03 23 | 691 | 0.2+ | 0.3+ | 2004 06 12 | 704 | 0.5+ | 0.5+ | 2005 10 10 | 691 | 0.5− | 0.0 |
| 2003 03 23 | 691 | 0.3+ | 0.1+ | 2004 06 12 | 704 | 0.2+ | 0.4− | 2005 11 01 | G96 | 0.1+ | 0.2− |
| 2003 03 23 | 691 | 0.2+ | 0.5+ | 2004 06 17 | 644 | 0.0 | 0.3+ | 2005 11 01 | G96 | 0.2− | 0.2− |
| 2003 03 25 | 644 | 0.4+ | 0.5+ | 2004 06 17 | 644 | 0.0 | 0.5+ | 2005 11 01 | G96 | 0.0 | 0.1− |
| 2003 03 25 | 644 | 0.4+ | 0.4+ | 2004 06 17 | 644 | 0.1− | 1.0+ | 2005 11 01 | G96 | 0.2+ | 0.1− |
| 2003 03 25 | 699 | 0.7+ | 0.5+ | 2005 08 27 | 699 | 1.1− | 1.3+ | 2005 11 30 | G96 | 0.3+ | 0.2− |
| 2003 03 25 | 699 | 0.1− | 0.5+ | 2005 08 27 | 699 | 0.3+ | 0.5+ | 2005 11 30 | G96 | 0.3+ | 0.1+ |
| 2003 03 25 | 644 | 0.5+ | 0.3+ | 2005 08 27 | 699 | 0.2+ | 0.1+ | 2005 11 30 | G96 | 0.4+ | 0.2− |
| 2003 03 25 | 699 | 0.5+ | 0.3− | 2005 08 27 | 699 | 0.4− | 0.7+ | 2005 11 30 | G96 | 0.1− | 0.0 |
| 2003 03 25 | 699 | 0.3+ | 1.1+ | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 10 30 | 703 | (1.3− | 1.8+) |
| 2003 03 31 | 704 | (1.9− | 0.0 ) | 2005 08 27 | 644 | 0.2− | 0.0 | 2006 10 30 | 703 | 0.5− | 0.4+ |
| 2003 03 31 | 704 | 0.6+ | 0.7+ | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 10 30 | 703 | (0.3− | 2.1+) |
| 2003 03 31 | 704 | 0.6+ | 0.2+ | 2005 09 06 | 699 | 0.3+ | 1.0+ | 2006 10 30 | 703 | (2.4− | 0.5+) |
| 2003 03 31 | 704 | 0.9+ | 0.6+ | 2005 09 06 | 699 | 0.4− | 0.3− | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2003 04 01 | 704 | 0.1+ | 0.4+ | 2005 09 06 | 704 | 0.7+ | 0.2− | 2006 11 19 | 703 | 1.0+ | 1.2+ |
| 2003 04 01 | 704 | 0.2+ | 0.2− | 2005 09 06 | 699 | 0.7+ | 0.4− | 2006 11 19 | 703 | 0.3+ | 0.4− |
| 2003 04 01 | 704 | 0.1− | 0.5− | 2005 09 06 | 704 | 0.9+ | 0.2+ | 2006 11 19 | 703 | 0.4− | 0.9+ |
| 2003 04 01 | 704 | 0.6− | 0.6− | 2005 09 06 | 699 | 0.4− | 0.4− | 2006 12 01 | G96 | 0.5− | 0.2+ |
| 2003 04 01 | 704 | 0.2− | 0.9+ | 2005 09 06 | 704 | 0.8+ | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.1+ |
| 2003 04 03 | 699 | 0.1− | 0.7+ | 2005 09 24 | 703 | 1.1− | 1.4+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2003 04 03 | 699 | 0.4+ | 0.1+ | 2005 09 24 | 703 | 0.0 | 1.3+ | 2006 12 01 | G96 | 0.7− | 0.3+ |
| 2003 04 03 | 699 | 0.8− | 0.2− | 2005 09 24 | 703 | (1.5− | 1.0+) | | | | |
| 2003 04 03 | 699 | 0.3− | 0.3− | 2005 09 24 | 703 | 0.3− | 0.2+ | | | | |

**(143584)∗ 2003 FS$_{23}$ = 1977 RN$_{14}$ = 1998 KO$_{19}$**

Discovered 2003 Mar. 23 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 47406)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 120.55050 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.17601354 | $\omega$ | 125.85791 | +0.38559959 | +0.92240667 | |
| $a$ | 3.1533487 | $\Omega$ | 166.77028 | −0.87436689 | +0.37288511 | |
| $e$ | 0.0980067 | $i$ | 5.48741 | −0.29461084 | +0.10061131 | |
| $P$ | 5.60 | $H$ | 14.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 09 09 | 675 | (3.8− | 1.8−) | 2005 08 29 | 704 | 0.0 | 1.0− | 2005 10 05 | 704 | 1.3− | 0.1+ |
| 1977 09 10 | 675 | 0.3+ | 0.9− | 2005 08 29 | 704 | 1.3− | 0.4+ | 2005 10 05 | 704 | (1.8− | 0.1+) |
| 1998 05 22 | 704 | 1.6+ | 0.9+ | 2005 08 29 | 704 | 0.7− | 0.6+ | 2005 10 05 | 704 | 0.9− | 0.1− |
| 1998 05 22 | 704 | 0.6− | 0.6+ | 2005 08 29 | 699 | 0.0 | 1.0+ | 2005 10 06 | G96 | 0.2+ | 0.1− |
| 1998 05 22 | 704 | 0.6+ | 0.2− | 2005 08 29 | 699 | 0.5+ | 0.6+ | 2005 10 06 | G96 | 0.0 | 0.0 |
| 1998 05 22 | 704 | 1.4+ | 0.4− | 2005 08 29 | 699 | 0.5+ | 0.9+ | 2005 10 06 | G96 | 0.1+ | 0.0 |
| 1998 05 24 | 704 | 1.5− | 0.3+ | 2005 08 29 | 699 | 0.1− | 0.7− | 2005 10 06 | G96 | 0.0 | 0.0 |
| 1998 05 24 | 704 | 1.4+ | 1.2− | 2005 09 01 | 691 | 0.1− | 0.0 | 2005 10 13 | 691 | 0.1− | 0.6+ |
| 1998 05 24 | 704 | 0.2− | 0.1− | 2005 09 01 | 691 | 0.1− | 0.1+ | 2005 10 13 | 691 | 0.1− | 0.5+ |
| 1998 05 24 | 704 | 0.5− | 1.4+ | 2005 09 01 | 691 | 0.0 | 0.1+ | 2005 10 13 | 691 | 0.0 | 0.3+ |
| 1999 09 06 | 699 | 0.5− | 0.1− | 2005 09 08 | 704 | 0.1− | 0.0 | 2005 10 20 | 644 | 0.1− | 0.1− |
| 1999 09 06 | 699 | 0.3− | 0.3+ | 2005 09 08 | 704 | 0.1+ | 0.0 | 2005 10 20 | 644 | 0.1+ | 0.4+ |
| 1999 09 06 | 699 | 0.5− | 0.2+ | 2005 09 08 | 704 | 0.3− | 0.5+ | 2005 10 20 | 644 | 0.0 | 0.1+ |
| 2003 03 06 | 704 | 0.7+ | 0.5+ | 2005 09 08 | 704 | 0.5+ | 0.1+ | 2005 10 25 | 699 | (2.6− | 2.2+) |
| 2003 03 06 | 704 | 1.4+ | 1.0+ | 2005 09 08 | 704 | 0.1− | 0.4+ | 2005 10 25 | 699 | 0.3− | 1.0+ |
| 2003 03 06 | 704 | (2.4+ | 1.6+) | 2005 09 14 | 703 | (1.0− | 2.0+) | 2005 10 25 | 699 | 0.1+ | 0.6+ |
| 2003 03 23 | 683 | 1.2− | 1.3+ | 2005 09 14 | 703 | 1.2− | 1.1+ | 2005 10 25 | 699 | 0.4− | 1.5+ |
| 2003 03 23 | 691 | 0.2+ | 0.4+ | 2005 09 14 | 703 | 0.2+ | 0.2+ | 2005 10 29 | G96 | 0.3+ | 0.2− |
| 2003 03 23 | 683 | 1.1+ | 0.3+ | 2005 09 14 | 703 | 0.5− | 0.7+ | 2005 10 29 | G96 | 0.2+ | 0.2− |
| 2003 03 23 | 683 | 0.5+ | 1.3+ | 2005 09 23 | 703 | 0.2+ | 0.3+ | 2005 10 29 | G96 | 0.2+ | 0.2− |
| 2003 03 23 | 691 | 0.1+ | 0.4+ | 2005 09 23 | 703 | 0.4+ | 0.3+ | 2005 10 29 | G96 | 0.1+ | 0.0 |
| 2003 03 23 | 691 | 0.3+ | 0.5+ | 2005 09 23 | 703 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2003 03 25 | 699 | 0.2− | 0.6+ | 2005 09 23 | 703 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2003 03 25 | 699 | 1.0+ | 1.0+ | 2005 09 28 | 644 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2003 03 25 | 699 | 0.1− | 0.8+ | 2005 09 28 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2003 03 25 | 699 | 1.3− | 0.2+ | 2005 09 28 | 644 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 2003 03 26 | 644 | 0.3+ | 0.3+ | 2005 09 29 | G96 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.3+ |
| 2003 03 26 | 644 | 0.5+ | 0.7+ | 2005 09 29 | G96 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2003 03 26 | 644 | 0.6+ | 0.4+ | 2005 09 29 | G96 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2003 04 06 | 691 | 0.1+ | 0.7+ | 2005 09 29 | G96 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2003 04 06 | 691 | 0.1− | 0.6+ | 2005 10 01 | 704 | 0.6+ | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2003 04 06 | 691 | 0.3− | 0.8+ | 2005 10 01 | 704 | 0.1+ | 0.7+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 06 16 | 704 | 0.7− | 0.0 | 2005 10 01 | 704 | 0.3− | 1.1+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2004 06 16 | 704 | 1.3+ | 0.8+ | 2005 10 01 | 704 | 0.7− | 0.2+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2004 06 16 | 704 | 0.2+ | 0.2− | 2005 10 01 | 704 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2004 06 16 | 704 | 0.1− | 0.1− | 2005 10 01 | 703 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2005 08 25 | 644 | 0.1− | 0.2+ | 2005 10 01 | 703 | 0.3− | 0.5+ | 2006 11 20 | G96 | 0.4− | 0.2− |
| 2005 08 25 | 644 | 0.1− | 0.2+ | 2005 10 01 | 703 | 0.9− | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 2005 08 25 | 644 | 0.0 | 0.1+ | 2005 10 01 | 703 | 0.6− | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.1+ |
| 2005 08 28 | 691 | 0.2+ | 0.1+ | 2005 10 02 | 644 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.9+ | 1.5+ |
| 2005 08 28 | 691 | 0.1+ | 0.1+ | 2005 10 02 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.1− |
| 2005 08 28 | 691 | 0.1+ | 0.2+ | 2005 10 02 | 644 | 0.2− | 0.2+ | | | | |

**(143585)∗ 2003 FF$_{24}$ = 2002 AX$_{90}$**

Discovered 2003 Mar. 23 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (*MPO* 61714)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 333.40675 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.18451782 | $\omega$ | 74.83643 | +0.28988355 | −0.95704432 | |
| $a$ | 3.0556985 | $\Omega$ | 358.27983 | +0.78696983 | +0.24181227 | |
| $e$ | 0.0778545 | $i$ | 11.15149 | +0.54465220 | +0.15997814 | |
| $P$ | 5.34 | $H$ | 14.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 25 | 691 | 0.2− | 0.5− | 2003 03 06 | 699 | (1.7+ | 0.4+) | 2006 10 23 | 703 | 0.4+ | 0.8− |
| 1992 02 25 | 691 | 0.0 | 0.1− | 2003 03 06 | 699 | 0.0 | 1.2+ | 2006 10 23 | 703 | 1.2− | 0.4− |
| 1992 02 25 | 691 | 0.3− | 0.1+ | 2003 03 06 | 699 | (0.9− | 2.2+) | 2006 10 29 | 703 | 0.4− | 0.2+ |
| 2000 09 24 | 704 | 0.1+ | 0.8+ | 2003 03 23 | 691 | 0.2+ | 0.0 | 2006 10 29 | 703 | 1.0− | 0.0 |
| 2000 09 24 | 704 | 1.1− | 0.4− | 2003 03 23 | 691 | 0.1− | 0.0 | 2006 10 29 | 703 | 0.5− | 0.1+ |
| 2000 09 24 | 704 | 0.8− | 0.2− | 2003 03 23 | 691 | 0.3− | 0.1+ | 2006 10 29 | 703 | 0.2− | 0.2− |
| 2000 09 24 | 704 | (0.6+ | 2.3−) | 2003 03 25 | 699 | 0.4+ | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.2− |
| 2000 10 01 | 699 | 0.0 | 0.9+ | 2003 03 25 | 699 | (2.5+ | 0.4+) | 2006 11 02 | G96 | 0.1− | 0.1− |
| 2000 10 01 | 699 | 0.3+ | 1.3+ | 2003 03 25 | 699 | 0.5+ | 0.9+ | 2006 11 02 | G96 | 0.0 | 0.1− |
| 2000 10 01 | 699 | 0.5+ | 0.9+ | 2003 03 25 | 699 | 1.0+ | 1.0− | 2006 11 02 | G96 | 0.0 | 0.3− |
| 2000 10 01 | 699 | 0.5+ | 1.3+ | 2003 03 26 | 644 | 0.7+ | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2001 10 25 | 704 | 0.2− | 0.1− | 2003 03 26 | 644 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2001 10 25 | 704 | 1.1− | 0.3+ | 2003 03 26 | 644 | 0.8+ | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2001 10 25 | 704 | 0.1+ | 0.0 | 2003 04 01 | 704 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2001 10 25 | 704 | (0.1+ | 1.7+) | 2003 04 01 | 704 | (1.6+ | 0.6−) | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2001 12 20 | 644 | 0.1− | 0.5+ | 2003 04 01 | 704 | (2.1+ | 1.6+) | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2001 12 20 | 644 | 0.0 | 0.5+ | 2003 04 01 | 704 | 0.8+ | 0.6+ | 2006 11 15 | 703 | 0.6+ | 0.0 |
| 2001 12 20 | 644 | 0.1− | 0.7+ | 2005 11 06 | G96 | 0.5− | 0.5− | 2006 11 15 | 704 | 0.4+ | 1.1+ |
| 2002 01 13 | 704 | 0.4− | 0.2+ | 2005 11 06 | G96 | 0.7− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.7+ |
| 2002 01 13 | 704 | 0.1+ | 0.1+ | 2005 11 06 | G96 | 0.8− | 0.2− | 2006 11 15 | 704 | 1.0+ | 0.6+ |
| 2002 01 13 | 704 | 0.1+ | 0.7+ | 2005 11 06 | G96 | 0.3− | 0.7− | 2006 11 15 | 704 | 0.3+ | 0.2+ |
| 2002 01 14 | 704 | 0.5+ | 0.2− | 2006 10 23 | 703 | 0.3+ | 1.0− | 2006 11 15 | 704 | 0.5− | 0.4− |
| 2002 01 14 | 704 | 0.6+ | 0.2− | 2006 10 23 | 703 | 0.3− | 0.0 | 2006 11 15 | 704 | 1.2+ | 0.2− |
| 2002 01 14 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 703 | 0.1+ | 0.6− | 2006 11 21 | 703 | 0.2− | 0.0 |
| 2002 01 14 | 704 | 0.9− | 0.2+ | 2006 10 23 | 703 | 0.1− | 0.3+ | 2006 11 21 | 703 | 0.1− | 0.1+ |
| 2002 01 14 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 703 | 0.2− | 0.5− | 2006 11 21 | 703 | 0.8+ | 0.4− |
| 2003 03 06 | 699 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.2+ | 0.4+ | 2006 11 21 | 703 | 0.4+ | 0.1− |

**(143586)∗ 2003 FD$_{26}$**

Discovered 2003 Mar. 24 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.85871 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18311529 | $\omega$ | 67.64853 | | −0.76126658 | | +0.64828222 |
| $a$ | 3.0712817 | $\Omega$ | 152.75732 | | −0.60580405 | | −0.70319868 |
| $e$ | 0.1270095 | $i$ | 1.78514 | | −0.23124585 | | −0.29196193 |
| $P$ | 5.38 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 1.2− | 0.5+ | 2003 03 25 | 699 | 1.2+ | 1.0− | 2005 09 13 | 691 | 0.5− | 0.1+ |
| 1998 04 22 | 704 | 0.5− | 0.4+ | 2003 03 25 | 699 | 0.5− | 0.1− | 2005 09 25 | A50 | 0.4+ | 0.1− |
| 1998 04 22 | 704 | 1.6− | 0.3+ | 2003 03 25 | 699 | 0.4− | 0.3+ | 2005 10 01 | G96 | 0.3+ | 0.1+ |
| 1998 04 22 | 704 | (2.2− | 0.1+) | 2003 03 26 | 644 | 0.5+ | 0.2+ | 2005 10 01 | G96 | 0.3+ | 0.2+ |
| 1998 05 01 | 704 | 0.8+ | 0.2− | 2003 03 26 | 644 | 0.7+ | 0.4+ | 2005 10 01 | G96 | 0.3+ | 0.3+ |
| 1998 05 01 | 704 | 0.7+ | 0.2− | 2003 03 26 | 644 | 0.8+ | 0.2+ | 2005 10 01 | G96 | 0.1+ | 0.1+ |
| 1998 05 01 | 704 | 0.3+ | 0.4− | 2003 03 26 | 644 | 0.5+ | 0.4+ | 2005 10 28 | G96 | 0.2− | 0.1+ |
| 1998 05 01 | 704 | 0.6+ | 0.5− | 2003 03 26 | 644 | 0.8+ | 0.2+ | 2005 10 28 | G96 | 0.0 | 0.4− |
| 1999 09 06 | 691 | 0.3− | 0.3+ | 2003 03 26 | 644 | 0.4+ | 0.4+ | 2005 10 28 | G96 | 0.1+ | 0.1− |
| 1999 09 06 | 691 | 0.0 | 0.8+ | 2003 04 01 | 704 | 1.2+ | 0.9+ | 2005 10 28 | G96 | 0.2+ | 0.1+ |
| 1999 09 06 | 691 | 0.0 | 0.8+ | 2003 04 01 | 704 | 0.7− | 0.0 | 2006 09 28 | G96 | 0.1− | 0.2+ |
| 2001 12 14 | 704 | 0.2+ | 0.7+ | 2003 04 01 | 704 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2001 12 14 | 704 | (0.6− | 2.0+) | 2003 04 01 | 704 | 0.9+ | 1.1+ | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2001 12 14 | 704 | 0.5− | 1.2+ | 2003 04 03 | 699 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 0.5+ | 2003 04 03 | 699 | (1.6− | 1.5+) | 2006 10 21 | G96 | 0.2+ | 0.3+ |
| 2003 03 06 | 704 | 0.6+ | 0.5+ | 2003 04 03 | 699 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.4− | 0.1+ |
| 2003 03 06 | 704 | 0.9+ | 0.0 | 2003 04 03 | 699 | 1.4− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 2003 03 06 | 704 | 0.9+ | 1.0+ | 2003 04 06 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2003 03 24 | 691 | 0.0 | 0.1+ | 2003 04 06 | 691 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.3+ |
| 2003 03 24 | 691 | 0.0 | 0.0 | 2003 04 06 | 691 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2003 03 24 | 691 | 0.1− | 0.1− | 2005 09 13 | 691 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.7+ | 0.0 |
| 2003 03 25 | 699 | 0.2+ | 0.1− | 2005 09 13 | 691 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |

**(143587)∗ 2003 FY$_{28}$**

Discovered 2003 Mar. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.46279 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21765331 | $\omega$ | 14.06305 | | −0.95716321 | | −0.26643364 |
| $a$ | 2.7371118 | $\Omega$ | 149.73862 | | +0.23913593 | | −0.94815719 |
| $e$ | 0.0879664 | $i$ | 13.00027 | | +0.16325622 | | −0.17323701 |
| $P$ | 4.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 24 | 691 | 0.5− | 0.1− | 2003 03 24 | 608 | 0.6+ | 1.4− | 2003 04 27 | 645 | 0.1− | 0.0 |
| 1995 06 24 | 691 | 0.2− | 0.2− | 2003 03 26 | 644 | 0.5+ | 0.6+ | 2003 04 29 | 608 | 0.8+ | 0.1+ |
| 1995 06 24 | 691 | 0.2− | 0.2− | 2003 03 26 | 644 | 0.1+ | 0.3+ | 2003 04 29 | 608 | 0.7+ | 0.1+ |
| 2000 09 05 | 645 | 0.3+ | 0.0 | 2003 03 26 | 644 | 0.4+ | 0.7+ | 2003 04 29 | 608 | 0.9+ | 0.1+ |
| 2000 09 05 | 645 | 0.2+ | 0.0 | 2003 04 01 | 645 | 0.0 | 0.1+ | 2003 05 07 | 703 | 0.8− | 0.3+ |
| 2000 09 23 | 691 | 0.6− | 0.9+ | 2003 04 01 | 645 | 0.0 | 0.1+ | 2003 05 07 | 703 | 0.7− | 0.1− |
| 2000 09 23 | 691 | 0.9− | 0.9+ | 2003 04 03 | 608 | 0.7+ | 0.1− | 2003 05 07 | 703 | 1.4− | 0.7+ |
| 2000 09 23 | 691 | 0.3− | 1.0+ | 2003 04 03 | 608 | 0.6+ | 0.1+ | 2003 05 07 | 703 | 0.7− | 0.3− |
| 2001 11 18 | 704 | 0.2− | 0.8− | 2003 04 03 | 608 | 0.9+ | 0.3+ | 2005 10 22 | 644 | 0.2− | 0.1+ |
| 2001 11 18 | 704 | 1.3+ | 0.3+ | 2003 04 04 | 699 | 1.4− | 0.2+ | 2005 10 22 | 644 | 0.2− | 0.1+ |
| 2001 11 18 | 704 | 1.2+ | 0.6+ | 2003 04 04 | 699 | 0.6+ | 0.1+ | 2005 10 22 | 644 | 0.4− | 0.0 |
| 2001 12 19 | 704 | 0.8− | 0.6+ | 2003 04 04 | 699 | (0.4+ | 2.6+) | 2005 10 26 | 644 | 0.3− | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.7+ | 2003 04 04 | 699 | 0.2− | 1.7+ | 2005 10 26 | 644 | 0.7− | 0.4+ |
| 2001 12 19 | 704 | 0.3− | 0.1− | 2003 04 09 | 704 | 0.8+ | 0.4+ | 2005 10 26 | 644 | 0.5− | 0.2− |
| 2001 12 19 | 704 | 1.3+ | 0.2+ | 2003 04 09 | 704 | 0.4+ | 0.1+ | 2005 10 27 | 703 | 0.2− | 0.1− |
| 2001 12 19 | 704 | 0.9+ | 0.7+ | 2003 04 09 | 704 | 0.2+ | 0.3+ | 2005 10 27 | 703 | 0.2− | 0.1− |
| 2002 01 12 | 209 | 0.4+ | 0.3+ | 2003 04 09 | 704 | 1.8+ | 0.7+ | 2005 10 27 | 703 | 0.7− | 0.4+ |
| 2002 01 12 | 209 | 0.1+ | 0.2+ | 2003 04 09 | 704 | 1.2+ | 0.4+ | 2005 10 27 | 703 | 0.7− | 0.4+ |
| 2002 01 12 | 209 | 0.1+ | 0.1− | 2003 04 26 | 704 | 1.1+ | 0.0 | 2005 11 03 | 703 | 0.7− | 0.4− |
| 2002 01 18 | 209 | 0.7− | 0.1− | 2003 04 26 | 704 | 0.9+ | 0.5− | 2005 11 03 | 703 | 0.9− | 1.1+ |
| 2002 01 18 | 209 | 1.1− | 0.1+ | 2003 04 26 | 704 | 0.6+ | 0.1+ | 2005 11 03 | 703 | 0.0 | 0.6+ |
| 2002 01 18 | 209 | 1.3− | 0.0 | 2003 04 26 | 704 | 0.4− | 0.4+ | 2005 11 03 | 703 | 0.9+ | 0.5+ |
| 2003 03 24 | 608 | 0.7+ | 0.1− | 2003 04 26 | 704 | 0.4+ | 0.6+ | | | | |
| 2003 03 24 | 608 | 0.5+ | 1.2− | 2003 04 27 | 645 | 0.1− | 0.1+ | | | | |

**(143588)∗ 2003 FN$_{45}$ = 1997 AH$_{9}$ = 1997 BZ$_{9}$ = 2003 FP$_{128}$**

Discovered 2003 Mar. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 47417, d, *MPO* 75851)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.41667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17997821 | $\omega$ | 84.01299 | | −0.49487294 | | +0.86888589 |
| $a$ | 3.1068678 | $\Omega$ | 156.31437 | | −0.80838509 | | −0.45537000 |
| $e$ | 0.1176533 | $i$ | 1.67619 | | −0.31877001 | | −0.19410170 |
| $P$ | 5.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.1− | 0.4+ | 2003 03 29 | 291 | 0.1− | 0.4+ | 2005 10 01 | G96 | 0.0 | 0.1+ |
| 1994 09 28 | 691 | 0.6− | 0.0 | 2003 03 29 | 291 | 0.2− | 0.4+ | 2005 10 12 | 691 | 0.1+ | 0.0 |
| 1994 09 28 | 691 | 0.5− | 0.1− | 2003 03 29 | 291 | 0.0 | 0.9+ | 2005 10 12 | 691 | 0.1+ | 1.0+ |
| 1997 01 02 | 691 | 0.7− | 0.3− | 2003 03 31 | 699 | 0.1+ | 0.5− | 2005 10 12 | 691 | 0.4− | 0.9+ |
| 1997 01 02 | 691 | 0.5− | 0.4+ | 2003 03 31 | 699 | 0.4− | 1.3+ | 2005 10 26 | G96 | 0.2+ | 0.4+ |
| 1997 01 02 | 691 | 0.6− | 0.1+ | 2003 03 31 | 699 | 0.7+ | 0.0 | 2005 10 26 | G96 | 0.3+ | 0.3+ |
| 1997 01 10 | 691 | 0.4+ | 0.3− | 2003 03 31 | 699 | 0.3+ | 0.7− | 2005 10 26 | G96 | 0.4+ | 0.3+ |
| 1997 01 10 | 691 | 0.4+ | 0.6− | 2003 04 07 | 691 | 0.3+ | 0.5+ | 2005 10 26 | G96 | 0.0 | 0.4+ |
| 1997 01 10 | 691 | 0.8+ | 0.5− | 2003 04 07 | 691 | 0.5+ | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 1997 01 17 | 691 | 0.3+ | 2.0− | 2003 04 07 | 691 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 1997 01 17 | 691 | 0.2− | 0.6− | 2003 04 24 | 691 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 1997 01 17 | 691 | 0.2− | 0.5− | 2003 04 24 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 291 | 0.1− | 0.1+ |
| 2000 10 19 | 691 | 0.3+ | 0.2− | 2003 04 24 | 691 | 0.0 | 0.6+ | 2006 11 11 | 291 | 0.0 | 0.1− |
| 2000 10 19 | 691 | 0.2+ | 0.3− | 2003 04 29 | 691 | 0.0 | 0.2+ | 2006 11 11 | 291 | 0.0 | 0.1+ |
| 2000 10 19 | 691 | 0.3+ | 0.3− | 2003 04 29 | 691 | 0.1− | 0.1+ | 2006 11 11 | 291 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | 0.5− | 0.1+ | 2003 04 29 | 691 | 0.0 | 0.1+ | 2006 11 11 | 291 | 0.2− | 0.1− |
| 2001 12 14 | 704 | (1.8+ | 1.2+) | 2005 09 24 | 691 | 0.2− | 0.1+ | 2006 11 11 | 291 | 0.2− | 0.2− |
| 2001 12 14 | 704 | 0.5− | 0.6+ | 2005 09 24 | 691 | 0.4− | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 1.1− | 0.9+ | 2005 09 24 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | (0.6− | 1.5+) |
| 2003 03 10 | 699 | 0.9+ | 0.3+ | 2005 09 29 | G96 | 0.6+ | 0.3+ | 2006 11 19 | 691 | 1.0− | 1.3+ |
| 2003 03 10 | 699 | 0.0 | 1.0− | 2005 09 29 | G96 | 0.4+ | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2003 03 10 | 699 | 0.9+ | 0.5+ | 2005 09 29 | G96 | 0.7+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2003 03 10 | 699 | (0.5+ | 1.7+) | 2005 09 29 | G96 | 0.5+ | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2003 03 24 | 691 | 0.2+ | 0.6+ | 2005 10 01 | 704 | 0.7− | 0.2− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2003 03 24 | 691 | 0.4+ | 0.3+ | 2005 10 01 | 704 | 1.1− | 0.9+ | 2006 11 24 | G96 | 0.5− | 0.6+ |
| 2003 03 24 | 691 | 0.3+ | 0.5+ | 2005 10 01 | 704 | (1.5− | 0.1−) | 2006 11 24 | G96 | 0.8+ | 0.6+ |
| 2003 03 27 | 703 | (1.3− | 3.5+) | 2005 10 01 | 704 | 0.2− | 0.6− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2003 03 27 | 703 | (2.9− | 1.5+) | 2005 10 01 | G96 | 0.1− | 0.5+ | 2006 12 01 | 691 | 0.1+ | 0.5+ |
| 2003 03 27 | 703 | 1.0− | 1.0+ | 2005 10 01 | G96 | 0.5+ | 0.9+ | 2006 12 01 | 691 | 0.0 | 0.5+ |
| 2003 03 27 | 703 | (1.4− | 2.7+) | 2005 10 01 | G96 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.3+ |

**(143589)∗ 2003 FJ$_{46}$ = 2001 TB$_{194}$**

Discovered 2003 Mar. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 47419)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.03516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23637689 | $\omega$ | 124.92628 | | −0.75893651 | | −0.65087476 |
| $a$ | 2.5905941 | $\Omega$ | 14.49874 | | +0.56926664 | | −0.67767353 |
| $e$ | 0.1778236 | $i$ | 4.45044 | | +0.31615007 | | −0.34222892 |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.4− | 1.3+ | 2003 04 01 | 704 | 0.7+ | 0.4+ | 2003 04 26 | 691 | 0.2− | 0.2+ |
| 2000 08 01 | 807 | 0.3− | 1.3+ | 2003 04 01 | 704 | 0.4+ | 0.4+ | 2003 04 26 | 691 | 0.2− | 0.3+ |
| 2001 10 15 | 704 | (0.9− | 3.0−) | 2003 04 01 | 704 | 0.2+ | 1.0− | 2003 04 29 | 291 | 0.1+ | 0.4+ |
| 2001 10 15 | 704 | 1.2− | 0.5+ | 2003 04 01 | 704 | 0.4+ | 0.2+ | 2003 04 29 | 291 | 0.1+ | 0.3+ |
| 2001 10 15 | 704 | 0.1− | 0.7+ | 2003 04 01 | 704 | 0.4+ | 1.0+ | 2003 04 29 | 291 | 0.1+ | 0.2+ |
| 2001 10 15 | 704 | 1.3− | 0.5− | 2003 04 01 | 704 | 0.2− | 1.7− | 2005 09 30 | 691 | 0.2− | 0.5+ |
| 2001 10 21 | 704 | 0.9+ | 0.3− | 2003 04 01 | 704 | 0.5+ | 0.9+ | 2005 09 30 | 691 | 0.4− | 0.7+ |
| 2001 10 21 | 704 | 0.6+ | 1.2− | 2003 04 01 | 704 | 0.2+ | 0.3− | 2005 09 30 | 691 | 0.2− | 0.4+ |
| 2001 10 21 | 704 | 0.9+ | 0.9+ | 2003 04 01 | 704 | 0.3+ | 0.1+ | 2005 10 05 | 691 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.4+ | 0.6− | 2003 04 01 | 704 | 0.5+ | 0.1− | 2005 10 05 | 691 | 0.3− | 0.3+ |
| 2001 11 20 | 691 | 0.1+ | 0.6+ | 2003 04 01 | 704 | 0.3+ | 0.2− | 2005 10 05 | 691 | 0.3− | 0.2+ |
| 2001 11 20 | 691 | 0.2− | 0.3− | 2003 04 01 | 704 | 0.7+ | 0.9− | 2005 10 26 | G96 | 0.5− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 691 | 0.3− | 0.5+ | 2003 04 08 | 691 | 0.3− | 0.4+ | 2005 10 26 | G96 | 0.3− | 0.5+ | | |
| 2003 03 24 | 691 | 0.6+ | 0.2+ | 2003 04 08 | 691 | 0.1− | 0.5+ | 2005 10 26 | G96 | 0.3− | 0.3+ | | |
| 2003 03 24 | 691 | 0.3+ | 0.2+ | 2003 04 08 | 691 | 0.2+ | 0.3+ | 2005 10 26 | G96 | 0.1− | 0.0 | | |
| 2003 03 24 | 691 | 0.4+ | 0.2+ | 2003 04 08 | 704 | 0.5+ | 0.3+ | 2005 10 28 | 691 | 0.0 | 0.5+ | | |
| 2003 03 27 | 644 | 0.1− | 0.2+ | 2003 04 08 | 704 | 0.4− | 0.8+ | 2005 10 28 | 691 | 0.1+ | 0.3+ | | |
| 2003 03 27 | 644 | 0.5+ | 0.2+ | 2003 04 08 | 704 | 0.9− | 1.6+ | 2005 10 28 | 691 | 0.1− | 0.1− | | |
| 2003 03 27 | 644 | 0.3+ | 0.3+ | 2003 04 26 | 691 | 0.2− | 0.2+ | | | | | | |

**(143590)∗ 2003 FU$_{50}$ = 2000 RW$_{86}$**

Discovered 2003 Mar. 25 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47424)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.36939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17848770 | $\omega$ | 239.22512 | | +0.30306616 | −0.94996711 | |
| $a$ | 3.1241403 | $\Omega$ | 193.76843 | | +0.94626506 | +0.30937791 | |
| $e$ | 0.0816123 | $i$ | 18.51750 | | +0.11284213 | −0.04298590 | |
| $P$ | 5.52 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 699 | 1.8− | 0.3− | 2003 03 07 | 704 | 0.3− | 0.7− | 2006 09 30 | 699 | (1.3+ | 2.5−) | | |
| 2000 09 02 | 699 | 1.1− | 0.6+ | 2003 03 07 | 704 | 0.5− | 0.3+ | 2006 09 30 | 699 | (1.7+ | 1.6+) | | |
| 2000 09 02 | 699 | 0.1− | 0.4+ | 2003 03 07 | 704 | 1.0− | 1.4+ | 2006 09 30 | 699 | (1.8+ | 0.8+) | | |
| 2000 09 02 | 699 | 0.1− | 0.3+ | 2003 03 07 | 704 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.5+ | | |
| 2000 09 03 | 704 | 0.2+ | 0.0 | 2003 03 25 | 644 | 0.2+ | 0.2− | 2006 09 30 | 703 | (1.3− | 1.6+) | | |
| 2000 09 03 | 704 | 0.4+ | 0.9+ | 2003 03 25 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 699 | 0.4− | 1.1+ | | |
| 2000 09 03 | 704 | 0.9+ | 1.3+ | 2003 03 25 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.7+ | | |
| 2000 09 03 | 704 | 0.5+ | 0.1+ | 2003 03 28 | 691 | 0.2+ | 0.6+ | 2006 09 30 | 703 | (0.2+ | 2.2+) | | |
| 2000 09 03 | 704 | 0.8+ | 1.8+ | 2003 03 28 | 691 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.3+ | 0.5+ | | |
| 2000 09 03 | 704 | 0.7+ | 0.9+ | 2003 03 28 | 691 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.3+ | 0.4+ | | |
| 2000 09 03 | 704 | 0.1+ | 0.3+ | 2003 05 01 | 691 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 1.0+ | | |
| 2000 09 21 | 699 | 0.7+ | 1.3+ | 2003 05 01 | 691 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.3+ | 0.3− | | |
| 2000 09 21 | 699 | (0.7− | 2.7+) | 2003 05 01 | 691 | 0.6+ | 0.6+ | 2006 10 22 | 703 | 0.5− | 1.0+ | | |
| 2000 09 21 | 699 | 0.8+ | 0.9+ | 2004 06 12 | 691 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.7+ | | |
| 2000 09 21 | 699 | 1.5− | 1.6+ | 2004 06 12 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.1+ | | |
| 2002 01 12 | 704 | 1.0− | 0.4− | 2004 06 12 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | 1.2+ | 0.8+ | | |
| 2002 01 12 | 704 | 1.3− | 1.3+ | 2005 08 26 | 644 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.3− | 0.2+ | | |
| 2002 01 12 | 704 | 0.3− | 1.2− | 2005 08 26 | 644 | 0.1− | 0.7+ | 2006 11 16 | 703 | 0.3+ | 0.0 | | |
| 2002 01 12 | 704 | 0.1+ | 0.6− | 2005 08 26 | 644 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.5− | 0.6+ | | |

**(143591)∗ 2003 FF$_{51}$ = 2002 AM$_{196}$**

Discovered 2003 Mar. 25 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47424)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.24098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17282840 | $\omega$ | 102.46170 | | −0.93581242 | +0.34879482 | |
| $a$ | 3.1919737 | $\Omega$ | 97.96923 | | −0.34009579 | −0.85538589 | |
| $e$ | 0.0887464 | $i$ | 2.94978 | | −0.09268210 | −0.38295842 | |
| $P$ | 5.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 691 | 0.3− | 0.1+ | 2003 03 06 | 704 | 0.6+ | 0.4+ | 2004 07 16 | E12 | 0.4− | 0.1+ | | |
| 1999 08 07 | 691 | 0.1+ | 0.3+ | 2003 03 06 | 704 | 0.1+ | 1.1− | 2005 07 28 | 644 | 0.1− | 0.2+ | | |
| 1999 08 07 | 691 | 0.2+ | 0.4+ | 2003 03 06 | 704 | 0.0 | 0.4+ | 2005 07 28 | 644 | 0.4− | 0.5+ | | |
| 2001 12 17 | 704 | 0.8− | 0.5+ | 2003 03 06 | 699 | 0.2+ | 0.5+ | 2005 07 28 | 644 | 0.2− | 0.6+ | | |
| 2001 12 17 | 704 | 0.9+ | 1.2+ | 2003 03 06 | 704 | 0.8+ | 0.9+ | 2005 08 04 | 644 | 0.3− | 0.8+ | | |
| 2001 12 17 | 704 | 0.8− | 0.1+ | 2003 03 06 | 699 | 0.4− | 0.2+ | 2005 08 04 | 644 | 0.1− | 0.3+ | | |
| 2001 12 17 | 704 | 0.9− | 0.7+ | 2003 03 06 | 699 | 0.5+ | 0.4+ | 2005 08 04 | 644 | 0.3− | 0.8+ | | |
| 2002 01 13 | 691 | 0.1+ | 0.7− | 2003 03 06 | 699 | 0.3+ | 0.6+ | 2005 08 04 | 644 | 0.3− | 0.6+ | | |
| 2002 01 13 | 691 | 0.1− | 0.2− | 2003 03 10 | 599 | 0.1− | 1.2+ | 2005 08 04 | 644 | 0.2− | 0.5+ | | |
| 2002 01 13 | 691 | 0.2− | 0.0 | 2003 03 10 | 599 | 0.5− | 0.4+ | 2005 08 04 | 644 | 0.3− | 0.7+ | | |
| 2002 01 15 | 704 | 0.8+ | 0.5+ | 2003 03 10 | 599 | (0.8− | 1.7+) | 2005 08 05 | 644 | 0.0 | 0.3+ | | |
| 2002 01 15 | 704 | 0.5+ | 1.1+ | 2003 03 25 | 644 | 0.1+ | 0.4+ | 2005 08 05 | 644 | 0.1− | 0.2+ | | |
| 2002 01 15 | 704 | 0.5− | 0.3+ | 2003 03 25 | 644 | 0.4− | 0.3+ | 2005 08 05 | 644 | 0.5− | 0.4+ | | |
| 2002 01 15 | 704 | 0.2+ | 0.3+ | 2003 03 25 | 699 | 1.2− | 0.7− | 2006 09 30 | G96 | 0.2+ | 0.5+ | | |
| 2003 02 01 | 704 | 0.6+ | 0.8− | 2003 03 25 | 699 | 0.8− | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.5+ | | |
| 2003 02 01 | 704 | 0.3+ | 0.4+ | 2003 03 25 | 644 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.0 | | |
| 2003 02 01 | 704 | 0.9+ | 0.3+ | 2003 03 25 | 699 | (0.2− | 1.6+) | 2006 09 30 | G96 | 0.2+ | 0.2+ | | |
| 2003 02 01 | 704 | 0.7− | 0.8+ | 2003 03 25 | 699 | 0.1− | 1.3+ | 2006 10 31 | G96 | 0.0 | 0.3+ | | |
| 2003 02 01 | 704 | 0.5− | 0.0 | 2003 03 28 | 691 | 0.2+ | 0.7− | 2006 10 31 | G96 | 0.2− | 0.3+ | | |
| 2003 02 22 | 644 | 0.1+ | 0.1+ | 2003 03 28 | 691 | 0.0 | 0.6− | 2006 10 31 | G96 | 0.0 | 0.3+ | | |
| 2003 02 22 | 644 | 0.1+ | 0.6+ | 2003 03 28 | 691 | 0.0 | 0.4− | 2006 10 31 | G96 | 0.0 | 0.4+ | | |
| 2003 02 22 | 644 | 0.2+ | 0.2+ | 2003 04 10 | 691 | 0.1+ | 0.8+ | 2006 11 16 | G96 | 0.3+ | 0.1+ | | |
| 2003 02 28 | 704 | 0.4− | 0.4− | 2003 04 10 | 691 | 0.3+ | 1.0+ | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2003 02 28 | 704 | 0.1− | 0.2− | 2003 04 10 | 691 | 0.6+ | 1.2+ | 2006 11 16 | G96 | 0.2− | 0.5+ | | |
| 2003 02 28 | 704 | 0.6+ | 0.7− | 2004 07 16 | E12 | 0.6− | 0.5− | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2003 02 28 | 704 | 0.5− | 1.1− | 2004 07 16 | E12 | 0.3− | 0.1+ | | | | | | |
| 2003 03 06 | 704 | 0.7+ | 0.7− | 2004 07 16 | E12 | (1.7− | 0.1+) | | | | | | |

**(143592)∗ 2003 FS$_{52}$ = 2002 AC$_{70}$**

Discovered 2003 Mar. 25 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 47425)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.40841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17310527 | $\omega$ | 99.52562 | | −0.65594451 | −0.75345277 | |
| $a$ | 3.1885693 | $\Omega$ | 31.61221 | | +0.65425808 | −0.59742386 | |
| $e$ | 0.1875107 | $i$ | 4.95013 | | +0.37640824 | −0.27457905 | |
| $P$ | 5.69 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 807 | 0.0 | 0.5+ | 2003 03 27 | 644 | 0.3+ | 0.5+ | 2006 09 14 | 691 | 0.3− | 0.2+ | | |
| 2000 08 26 | 807 | 0.2+ | 0.7+ | 2003 03 27 | 699 | (1.7+ | 0.9+) | 2006 09 18 | 691 | 0.1− | 0.1+ | | |
| 2000 10 06 | 691 | 0.5− | 0.7+ | 2003 03 27 | 691 | 0.6+ | 0.9+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | | |
| 2000 10 06 | 691 | 0.3− | 0.5+ | 2003 03 27 | 699 | 0.3− | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.3+ | | |
| 2000 10 06 | 691 | 0.5− | 0.5+ | 2003 03 27 | 699 | 0.5− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.4+ | | |
| 2001 11 19 | 704 | 0.3− | 0.2+ | 2003 03 27 | 644 | 0.5+ | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.4+ | | |
| 2001 11 19 | 704 | 0.7− | 1.0+ | 2003 03 27 | 691 | 0.5+ | 1.1+ | 2006 09 25 | 691 | 0.6− | 0.3+ | | |
| 2001 11 19 | 704 | 0.3− | 0.7+ | 2003 03 27 | 691 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.1− | | |
| 2002 01 08 | 704 | 0.8+ | 0.9+ | 2003 04 08 | 704 | 0.4+ | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.1+ | | |
| 2002 01 08 | 704 | (0.7+ | 1.8+) | 2003 04 08 | 704 | (2.0+ | 0.9+) | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2002 01 08 | 704 | 0.6− | 0.4+ | 2003 04 08 | 704 | (1.1+ | 1.7+) | 2006 09 26 | G96 | 0.1+ | 0.1− | | |
| 2002 01 08 | 704 | 0.7+ | 1.0+ | 2003 04 30 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | (0.2− | 1.8−) | | |
| 2002 01 14 | 704 | 0.5+ | 0.4− | 2003 04 30 | 691 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2002 01 14 | 704 | 0.0 | 0.4− | 2003 04 30 | 691 | 0.1+ | 0.7+ | 2006 10 21 | G96 | 0.3− | 0.1− | | |
| 2002 01 14 | 704 | 0.1+ | 0.1+ | 2005 08 05 | 644 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.3+ | | |
| 2002 01 14 | 704 | 0.0 | 0.4+ | 2005 08 05 | 644 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.1+ | | |
| 2003 03 25 | 608 | 0.1− | 0.7− | 2005 08 05 | 644 | 0.2+ | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.4+ | | |
| 2003 03 25 | 608 | 0.4+ | 0.6− | 2005 11 03 | 695 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2003 03 25 | 608 | 0.4− | 1.3− | 2005 11 03 | 695 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.1− | | |
| 2003 03 27 | 644 | 0.5+ | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.4+ | | | | | | |
| 2003 03 27 | 699 | 0.2− | 1.0+ | 2006 09 14 | 691 | 0.4− | 0.2+ | | | | | | |

**(143593)∗ 2003 FG$_{61}$ = 1998 MV$_4$ = 1999 PV$_3$**

Discovered 2003 Mar. 26 by NEAT at Palomar.

Id. A. Doppler (*MPO* 47433)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.90922 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17231611 | $\omega$ | 339.55599 | | −0.34712585 | −0.93461654 | |
| $a$ | 3.1982971 | $\Omega$ | 130.67109 | | +0.87399381 | −0.35233550 | |
| $e$ | 0.0532179 | $i$ | 5.85950 | | +0.34005655 | −0.04849345 | |
| $P$ | 5.72 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 19 | 691 | 0.1+ | 0.6− | 2003 03 30 | 704 | 0.6− | 0.2+ | 2005 07 28 | 644 | 0.5+ | 0.3+ | | |
| 1998 06 19 | 691 | 0.2+ | 0.2+ | 2003 03 30 | 704 | 1.0− | 0.8+ | 2005 11 03 | G96 | 0.2− | 0.0 | | |
| 1998 06 19 | 691 | 0.1− | 0.4+ | 2003 03 30 | 704 | 0.8+ | 0.5+ | 2005 11 03 | G96 | 0.3+ | 0.3+ | | |
| 1998 06 24 | 691 | 0.1+ | 0.2+ | 2003 04 02 | 608 | 0.6− | 0.4− | 2005 11 03 | G96 | 0.8+ | 0.2+ | | |
| 1998 06 24 | 691 | 0.2+ | 0.1− | 2003 04 02 | 608 | 0.0 | 0.7− | 2005 11 03 | G96 | 0.3− | 0.1+ | | |
| 1998 06 24 | 691 | 0.7+ | 0.1− | 2003 04 02 | 608 | 0.2− | 0.8− | 2006 10 16 | 703 | 0.6+ | 0.1+ | | |
| 1999 08 07 | 691 | 0.4− | 0.0 | 2003 04 10 | 691 | 0.2+ | 0.8+ | 2006 10 16 | 703 | 1.1− | 0.4+ | | |
| 1999 08 07 | 691 | 0.3− | 0.1− | 2003 04 10 | 691 | 0.1+ | 0.7+ | 2006 10 16 | 703 | (0.8+ | 2.0+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 691 | 0.1+ | 0.8+ | 2003 04 10 | 691 | 0.0 | 0.9+ | 2006 10 16 | 703 | 1.4− | 1.3+ |
| 1999 08 13 | 691 | 0.2− | 0.3+ | 2003 04 24 | 608 | 0.4− | 0.8− | 2006 10 22 | 703 | (0.6+ | 3.1+) |
| 1999 08 13 | 691 | 0.1− | 0.1+ | 2003 04 24 | 608 | 0.0 | 1.1− | 2006 10 22 | 703 | 0.1+ | 1.3+ |
| 1999 08 13 | 691 | 0.7− | 0.5+ | 2003 04 24 | 608 | 0.5− | 1.0− | 2006 10 22 | 703 | 0.2− | 1.2+ |
| 2001 12 17 | 704 | 0.1− | 0.8+ | 2005 07 12 | G96 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2001 12 17 | 704 | 0.1+ | 1.2+ | 2005 07 12 | G96 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 1.2+ | 0.9+ | 2005 07 12 | G96 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2003 03 26 | 644 | 0.2+ | 0.3+ | 2005 07 12 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2003 03 26 | 644 | 0.0 | 0.7+ | 2005 07 28 | 644 | 0.8+ | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2003 03 26 | 644 | 0.3+ | 0.5+ | 2005 07 28 | 644 | 0.7+ | 0.0 | | | | |

**(143594)∗ 2003 FD$_{62}$**

Discovered 2003 Mar. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.13715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23073757 | $\omega$ | 7.00769 | | +0.90923882 | −0.40956815 | |
| $a$ | 2.6326341 | $\Omega$ | 17.74640 | | +0.36909632 | +0.71053033 | |
| $e$ | 0.1043974 | $i$ | 14.13247 | | +0.19249073 | +0.57218928 | |
| $P$ | 4.27 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 566 | 0.7− | 0.9+ | 2003 04 03 | 699 | 0.4− | 0.5− | 2005 10 14 | 704 | 0.2− | 0.8+ |
| 1996 09 13 | 566 | 1.2− | 1.0+ | 2003 04 03 | 699 | 0.4+ | 0.3− | 2005 10 14 | 704 | 1.1− | 1.2+ |
| 1996 09 13 | 566 | 0.8− | 1.0+ | 2003 04 08 | 691 | 0.0 | 0.1+ | 2005 10 14 | 704 | 0.5+ | 0.1+ |
| 2001 10 25 | 704 | 0.1+ | 0.1+ | 2003 04 08 | 691 | 0.2− | 0.2+ | 2005 10 14 | 703 | 1.3− | 0.2+ |
| 2001 10 25 | 704 | 0.4+ | 0.0 | 2003 04 08 | 691 | 0.1− | 0.2+ | 2005 10 14 | 703 | 0.5− | 0.2+ |
| 2001 10 25 | 704 | 0.5− | 0.2− | 2003 04 08 | 608 | 0.3− | 0.3+ | 2005 10 14 | 704 | 0.5− | 0.9+ |
| 2001 11 19 | 644 | 0.1− | 0.6− | 2003 04 08 | 608 | 0.6− | 0.3+ | 2005 10 14 | 703 | 0.6− | 0.7+ |
| 2001 11 19 | 644 | 0.1− | 0.9− | 2003 04 08 | 608 | 0.1− | 0.6+ | 2005 10 14 | 703 | 0.7− | 0.2+ |
| 2001 11 19 | 644 | 0.4− | 0.8− | 2003 04 26 | 691 | 0.0 | 0.3+ | 2005 11 01 | 699 | 0.0 | 0.0 |
| 2001 12 23 | 704 | 0.2+ | 0.5− | 2003 04 26 | 691 | 0.3+ | 0.2+ | 2005 11 01 | 699 | 0.2+ | 0.3+ |
| 2001 12 23 | 704 | 0.7+ | 0.3− | 2003 04 26 | 691 | 0.4+ | 0.1+ | 2005 11 01 | 699 | 0.1+ | 0.3+ |
| 2001 12 23 | 704 | 0.6+ | 0.1+ | 2003 04 26 | 699 | 1.2+ | 1.1− | 2005 11 01 | 699 | 0.3− | 1.0+ |
| 2001 12 23 | 704 | 1.2+ | 0.4− | 2003 04 26 | 699 | 1.0+ | 0.1+ | 2005 11 02 | 703 | 0.4− | 0.3− |
| 2002 01 06 | 704 | 0.3− | 0.2− | 2003 04 26 | 699 | 1.0+ | 1.1− | 2005 11 02 | 703 | 0.0 | 0.2+ |
| 2002 01 06 | 704 | 0.2− | 0.3− | 2003 04 26 | 699 | 0.5− | 0.3− | 2005 11 02 | 703 | 0.4+ | 0.7+ |
| 2002 01 06 | 704 | 0.4− | 0.6− | 2003 05 05 | 704 | 1.3+ | 1.5+ | 2005 11 02 | 703 | 0.6− | 0.3− |
| 2002 01 06 | 704 | 0.0 | 0.1− | 2003 05 05 | 704 | 0.7+ | 0.6+ | 2005 11 03 | 704 | 0.2+ | 0.1− |
| 2003 03 11 | 644 | 0.3+ | 0.2+ | 2003 05 05 | 704 | 1.0+ | 0.8+ | 2005 11 03 | 704 | 0.3+ | 0.2+ |
| 2003 03 11 | 644 | 0.3+ | 0.0 | 2003 05 05 | 704 | 0.1− | 1.1+ | 2005 11 03 | 704 | 0.3+ | 0.0 |
| 2003 03 11 | 644 | 0.5+ | 0.2+ | 2003 05 05 | 704 | 0.0 | 0.1− | 2005 11 03 | 704 | 0.2+ | 0.2− |
| 2003 03 26 | 291 | 0.2+ | 0.2− | 2005 08 30 | 704 | 0.1+ | 1.6+ | 2005 11 03 | 704 | 0.3+ | 0.0 |
| 2003 03 26 | 291 | 0.4+ | 0.2− | 2005 08 30 | 704 | 0.9+ | 0.1− | 2005 11 21 | 703 | 0.4− | 0.2− |
| 2003 03 26 | 291 | 0.0 | 0.2− | 2005 08 30 | 704 | 0.7+ | 0.9+ | 2005 11 21 | 703 | 0.2+ | 0.3− |
| 2003 03 26 | 691 | 0.2+ | 0.4+ | 2005 08 30 | 704 | 0.4− | 0.9+ | 2005 11 21 | 703 | 0.1+ | 0.1− |
| 2003 03 26 | 691 | 0.1+ | 0.4+ | 2005 08 30 | 704 | 0.5− | 0.5+ | 2005 11 21 | 703 | 0.2+ | 0.0 |
| 2003 03 26 | 691 | 0.2+ | 0.4+ | 2005 09 12 | 699 | 1.9+ | 1.4+ | 2005 11 27 | 704 | 0.4− | 0.1+ |
| 2003 03 27 | 644 | 0.5+ | 0.8+ | 2005 09 12 | 699 | 0.2− | 0.8− | 2005 11 27 | 704 | 0.5− | 0.0 |
| 2003 03 27 | 644 | 0.5+ | 1.0+ | 2005 09 12 | 699 | 0.8+ | 1.2+ | 2005 11 27 | 704 | 0.3− | 0.2− |
| 2003 03 27 | 699 | 1.0− | 0.0 | 2005 09 12 | 699 | 0.8+ | 0.2+ | 2005 12 03 | 703 | (2.2+ | 0.8−) |
| 2003 03 27 | 699 | 1.0− | 0.1+ | 2005 09 29 | 703 | 0.4− | 0.2− | 2005 12 03 | 703 | 0.5− | 0.2− |
| 2003 03 27 | 644 | 0.3+ | 0.7+ | 2005 09 29 | 703 | 0.1+ | 0.4− | 2005 12 03 | 703 | 0.3+ | 0.2− |
| 2003 03 27 | 699 | 0.5− | 0.4− | 2005 09 29 | 703 | 0.6+ | 0.1+ | 2005 12 03 | 703 | 0.2− | 0.3− |
| 2003 03 27 | 699 | 0.5− | 0.6− | 2005 09 29 | 703 | 0.1+ | 0.0 | 2006 01 06 | 704 | 1.1− | 0.7− |
| 2003 03 27 | 152 | 0.3+ | 0.2+ | 2005 10 03 | 704 | 0.3− | 0.5+ | 2006 01 06 | 704 | 0.1+ | 0.5+ |
| 2003 03 27 | 152 | 0.8+ | 0.0 | 2005 10 03 | 704 | 1.7− | 0.9+ | 2006 01 06 | 704 | 0.4− | 0.5− |
| 2003 03 27 | 152 | 0.0 | 0.3− | 2005 10 03 | 704 | 1.7− | 2.1+ | 2006 01 06 | 704 | 0.1− | 0.7+ |
| 2003 03 30 | 704 | 0.3+ | 1.0+ | 2005 10 08 | 704 | 0.1− | 0.1− | 2006 01 27 | 703 | 1.4+ | 0.5− |
| 2003 03 30 | 704 | 0.2+ | 0.8+ | 2005 10 08 | 704 | 0.5− | 0.3+ | 2006 01 27 | 703 | 0.5− | 0.4− |
| 2003 03 30 | 704 | 0.6− | 0.6+ | 2005 10 08 | 704 | 0.7− | 0.7+ | 2006 01 27 | 703 | 1.0+ | 0.8− |
| 2003 04 03 | 699 | 0.6− | 0.3− | 2005 10 08 | 704 | 0.1− | 0.4+ | 2006 01 27 | 703 | 0.5+ | 0.0 |
| 2003 04 03 | 699 | 0.5− | 0.3− | 2005 10 08 | 704 | 0.6− | 0.5+ | | | | |

**(143595)∗ 2003 FL$_{62}$ = 2000 SA$_{335}$**

Discovered 2003 Mar. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 47435)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.68050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18016008 | $\omega$ | 282.54899 | | +0.34991421 | −0.93087661 | |
| $a$ | 3.1047765 | $\Omega$ | 146.36790 | | +0.91616007 | +0.31666158 | |
| $e$ | 0.0679471 | $i$ | 10.93013 | | +0.19547576 | +0.18219268 | |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.1+ | 1.9+ | 2003 04 01 | 704 | 0.3+ | 1.4+ | 2005 08 30 | 699 | 0.5+ | 0.8− |
| 2000 09 23 | 699 | 0.4+ | 0.5+ | 2003 04 01 | 704 | 0.3− | 0.9+ | 2005 08 30 | 699 | 1.2− | 1.1+ |
| 2000 09 23 | 699 | 0.7− | 0.5+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2005 08 30 | 699 | (1.3+ | 1.8−) |
| 2000 09 23 | 699 | 0.6− | 1.1+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2005 11 06 | G96 | 0.3+ | 0.0 |
| 2000 09 26 | 608 | (3.9+ | 0.6+) | 2003 04 02 | 608 | 0.3+ | 0.1+ | 2005 11 06 | G96 | 0.4+ | 0.1+ |
| 2000 09 26 | 608 | (3.5+ | 0.6+) | 2003 04 02 | 608 | 0.6+ | 1.1− | 2005 11 06 | G96 | 0.3− | 0.4+ |
| 2000 09 26 | 608 | (3.6+ | 0.4+) | 2003 04 02 | 608 | 0.3+ | 0.5− | 2005 11 06 | G96 | 0.0 | 0.2+ |
| 2000 10 02 | 699 | 1.0+ | 0.9+ | 2003 04 10 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 1.3− | 0.3+ |
| 2000 10 02 | 699 | 0.5− | 0.1+ | 2003 04 10 | 691 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.2+ | 1.4+ |
| 2000 10 02 | 699 | 0.2− | 0.7+ | 2003 04 10 | 691 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 1.5+ |
| 2000 10 02 | 699 | 0.8− | 0.9+ | 2005 07 29 | 644 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.5− |
| 2002 01 09 | 704 | (0.1− | 1.9+) | 2005 07 29 | 644 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.1+ | 0.7+ |
| 2002 01 09 | 704 | 0.5− | 1.0+ | 2005 07 29 | 644 | 0.1− | 0.6+ | 2006 10 28 | 703 | (1.4− | 1.6+) |
| 2002 01 09 | 704 | 0.1− | 0.3+ | 2005 08 02 | E12 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.4+ | 1.3− |
| 2002 01 09 | 704 | 0.1+ | 0.3+ | 2005 08 02 | E12 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.5+ |
| 2003 03 26 | 691 | 0.5+ | 0.6+ | 2005 08 02 | E12 | 0.7− | 0.7− | 2006 11 13 | 703 | (1.4− | 2.1+) |
| 2003 03 26 | 691 | 0.6+ | 1.2+ | 2005 08 02 | E12 | (1.8− | 0.6+) | 2006 11 13 | 703 | 0.6+ | 0.4− |
| 2003 03 26 | 691 | 0.4+ | 1.2+ | 2005 08 04 | 644 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.6− | 0.5+ |
| 2003 03 26 | 644 | 0.1+ | 0.4− | 2005 08 04 | 644 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.8+ | 0.4− |
| 2003 03 26 | 644 | 0.1+ | 0.6− | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.6− | 0.3− |
| 2003 03 26 | 644 | 0.3+ | 0.5− | 2005 08 05 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.1− |
| 2003 03 27 | 704 | 0.6+ | 0.7+ | 2005 08 05 | 644 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.4+ | 0.3+ |
| 2003 03 27 | 704 | 0.8+ | 1.0− | 2005 08 05 | 644 | 0.2− | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.3+ |
| 2003 03 27 | 704 | (0.0 | 2.0+) | 2005 08 26 | 699 | (2.7+ | 0.9+) | 2006 11 19 | 703 | 0.6− | 0.1− |
| 2003 03 27 | 704 | 0.7+ | 1.0+ | 2005 08 26 | 699 | 0.2− | 0.3+ | 2006 11 19 | 703 | 0.3+ | 0.1+ |
| 2003 03 27 | 704 | 0.2− | 0.7+ | 2005 08 26 | 699 | (1.3+ | 1.6+) | 2006 11 19 | 703 | 0.6− | 0.6− |
| 2003 03 31 | 699 | 0.5− | 0.1− | 2005 08 26 | 699 | (1.0+ | 2.1+) | 2006 11 19 | 703 | 0.3+ | 0.1+ |
| 2003 03 31 | 699 | 1.0+ | 0.8− | 2005 08 27 | 644 | 0.1− | 0.2+ | 2006 11 20 | 703 | 0.3− | 0.3+ |
| 2003 03 31 | 699 | 1.0+ | 0.8− | 2005 08 27 | 644 | 0.1+ | 0.5+ | 2006 11 20 | 703 | 0.8+ | 0.5+ |
| 2003 03 31 | 699 | 0.6+ | 0.2+ | 2005 08 27 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 703 | 0.2− | 0.8+ |
| 2003 04 01 | 704 | 0.4− | 0.5+ | 2005 08 30 | 699 | 0.6− | 0.7+ | 2006 11 20 | 703 | 0.2− | 0.2− |

**(143596)∗ 2003 FN$_{62}$ = 1998 HK$_{85}$ = 2001 XV$_{159}$**

Discovered 2003 Mar. 26 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 47435), T. B. Spahr (*MPO* 69476)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.26069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18640673 | $\omega$ | 74.13553 | | −0.92628633 | +0.37514900 | |
| $a$ | 3.0350207 | $\Omega$ | 127.88453 | | −0.36063287 | −0.85528309 | |
| $e$ | 0.0627407 | $i$ | 2.57454 | | −0.10925921 | −0.35742701 | |
| $P$ | 5.29 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.0 | 0.6− | 2001 12 17 | 704 | 0.0 | 0.1− | 2005 09 30 | 699 | (1.7− | 0.5+) |
| 1997 01 09 | 691 | 0.1+ | 0.5− | 2001 12 17 | 704 | 0.3− | 0.4− | 2005 09 30 | 699 | 0.9+ | 0.1− |
| 1997 01 09 | 691 | 0.0 | 0.4− | 2003 03 26 | 691 | 0.4+ | 0.7+ | 2005 09 30 | 699 | (0.5− | 2.1−) |
| 1998 04 21 | 704 | 0.1− | 0.1− | 2003 03 26 | 691 | 0.4+ | 1.0+ | 2005 10 06 | G96 | 0.1+ | 0.4+ |
| 1998 04 21 | 704 | 0.4− | 0.6− | 2003 03 26 | 691 | 0.3+ | 1.1+ | 2005 10 06 | G96 | 0.2− | 0.3+ |
| 1998 04 21 | 704 | 1.9+ | 0.9− | 2003 03 27 | 703 | (0.4− | 1.8+) | 2005 10 06 | G96 | 0.2+ | 0.3+ |
| 1998 04 21 | 704 | (1.6+ | 2.7−) | 2003 03 27 | 703 | 1.2− | 1.1+ | 2005 10 06 | G96 | 0.0 | 1.1− |
| 1998 04 21 | 704 | (0.7− | 2.6+) | 2003 03 27 | 703 | (0.2− | 1.8+) | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 1998 04 22 | 704 | 0.4− | 0.8+ | 2003 03 27 | 703 | 0.0 | 1.0+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 1998 04 22 | 704 | (2.6+ | 1.5−) | 2003 04 03 | 699 | 0.4+ | 1.4+ | 2006 11 11 | 691 | 0.2+ | 0.6+ |
| 1998 04 22 | 704 | (2.6+ | 0.7+) | 2003 04 03 | 699 | (0.3− | 2.0+) | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1998 04 22 | 704 | (2.9+ | 0.6+) | 2003 04 03 | 699 | 0.0 | 0.6− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1998 05 01 | 704 | (2.2+ | 1.0−) | 2003 04 03 | 699 | 0.9+ | 0.9− | 2006 11 15 | 691 | 0.2− | 0.5+ |
| 1998 05 01 | 704 | (2.3− | 1.0+) | 2003 04 26 | 691 | 0.4+ | 0.7+ | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 1998 05 01 | 704 | 1.7− | 1.1− | 2003 04 26 | 691 | 0.2+ | 0.8+ | 2006 11 18 | 691 | 0.2− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.2+ | 0.5+ | 2003 04 26 | 691 | 0.3+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 1998 05 01 | 704 | (4.6− | 1.2−) | 2005 08 27 | 691 | 0.1− | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2005 08 27 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.4− | 0.9+ | 2005 08 27 | 691 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.6− | 0.8− | 2005 09 11 | 691 | 0.5− | 0.5+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 1.0− | 1.3− | 2005 09 11 | 691 | 0.3− | 0.6+ | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2005 09 11 | 691 | 0.4− | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.3+ | 0.2+ | 2005 09 30 | 699 | 0.8− | 0.9+ | | | | |

**(143597)∗ 2003 FZ$_{65}$ = 2005 TO$_{111}$**

Discovered 2003 Mar. 26 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 94955)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.92553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24121566 | $\omega$ | 174.76310 | | −0.67507165 | −0.73690190 | |
| $a$ | 2.5558325 | $\Omega$ | 317.69000 | | +0.67495018 | −0.59751532 | |
| $e$ | 0.1845496 | $i$ | 3.01537 | | +0.29785991 | −0.31615033 | |
| $P$ | 4.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.2− | 0.4− | 2003 03 30 | 699 | 0.0 | 0.5− | 2005 10 28 | 691 | 0.0 | 0.3+ |
| 1997 11 23 | 691 | 0.0 | 0.3− | 2003 03 30 | 699 | 1.2+ | 0.1+ | 2006 10 30 | G96 | 0.6− | 0.4+ |
| 1997 11 23 | 691 | 0.2+ | 0.2− | 2003 03 30 | 699 | 0.9− | 1.1+ | 2006 10 30 | G96 | 0.2− | 0.3+ |
| 2001 09 20 | 691 | 0.1− | 0.5+ | 2003 03 31 | 704 | (1.8+ | 0.9+) | 2006 10 30 | G96 | 0.7− | 0.2+ |
| 2001 09 20 | 691 | 0.5− | 0.5+ | 2003 03 31 | 704 | 1.0− | 0.6− | 2006 10 30 | G96 | 0.3+ | 0.4+ |
| 2001 09 20 | 691 | 0.2− | 0.5+ | 2003 03 31 | 704 | 1.2+ | 0.0 | 2006 11 20 | G96 | 0.5− | 0.0 |
| 2001 10 21 | 704 | 0.8+ | 0.5+ | 2003 03 31 | 704 | 0.1− | 0.6− | 2006 11 20 | G96 | 0.5− | 0.2+ |
| 2001 10 21 | 704 | 1.3+ | 0.3+ | 2003 04 26 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.3− | 0.2+ |
| 2001 10 21 | 704 | (1.6+ | 0.5+) | 2003 04 26 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.7− | 0.4− |
| 2001 10 21 | 704 | (1.7+ | 0.6+) | 2003 04 26 | 691 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.5+ | 0.1+ |
| 2001 10 21 | 704 | 1.3+ | 0.0 | 2005 10 07 | 691 | 0.1− | 0.4+ | 2006 11 21 | 691 | 0.3+ | 0.3+ |
| 2003 03 10 | 704 | (1.9+ | 0.1+) | 2005 10 07 | 691 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2003 03 10 | 704 | 1.2+ | 0.5+ | 2005 10 07 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2003 03 10 | 704 | 1.2+ | 1.3+ | 2005 10 11 | 691 | 0.6− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.7− |
| 2003 03 26 | 691 | 0.0 | 0.1+ | 2005 10 11 | 691 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2003 03 26 | 691 | 0.2+ | 0.4+ | 2005 10 11 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2003 03 26 | 691 | 0.2+ | 0.1+ | 2005 10 28 | 691 | 0.4+ | 0.8− | | | | |
| 2003 03 30 | 699 | 0.4+ | 0.4+ | 2005 10 28 | 691 | 0.2− | 0.6+ | | | | |

**(143598)∗ 2003 FV$_{75}$ = 2005 YF$_{209}$**

Discovered 2003 Mar. 27 by NEAT at Palomar.

Id. A. Doppler (*MPO* 100427)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.90920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23819113 | $\omega$ | 26.59152 | | +0.97650300 | +0.15439041 | |
| $a$ | 2.5774227 | $\Omega$ | 323.52340 | | −0.21327352 | +0.79245584 | |
| $e$ | 0.1081257 | $i$ | 14.64954 | | +0.03092393 | +0.59006554 | |
| $P$ | 4.14 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.3− | 0.1+ | 2003 03 10 | 699 | 0.0 | 0.5+ | 2005 12 08 | 703 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2003 03 10 | 704 | 0.1− | 0.5+ | 2005 12 08 | 703 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.6+ | 1.6+ | 2003 03 10 | 704 | 0.1+ | 0.3− | 2005 12 08 | 703 | (0.5− | 3.0−) |
| 2001 10 25 | 704 | 0.8+ | 0.5+ | 2003 03 27 | 644 | 0.1+ | 0.0 | 2005 12 23 | 704 | 0.4− | 0.2− |
| 2001 10 25 | 704 | 0.4− | 0.3+ | 2003 03 27 | 644 | 0.2+ | 0.2+ | 2005 12 23 | 704 | 0.5− | 0.2− |
| 2001 10 25 | 704 | 0.0 | 0.2+ | 2003 03 27 | 644 | 0.3+ | 0.3+ | 2005 12 23 | 704 | 1.2− | 0.1+ |
| 2001 10 25 | 704 | 0.3+ | 0.4− | 2003 03 28 | 699 | 1.5− | 0.2− | 2006 01 07 | 703 | 0.4+ | 0.3− |
| 2001 11 08 | 704 | 0.0 | 0.5− | 2003 03 28 | 699 | 0.8− | 1.0− | 2006 01 07 | 703 | 0.1− | 0.2+ |
| 2001 11 08 | 704 | 0.5+ | 0.0 | 2003 03 28 | 699 | 0.3− | 0.4− | 2006 01 07 | 703 | 0.0 | 0.4− |
| 2001 11 08 | 704 | 0.0 | 0.0 | 2003 03 28 | 699 | 0.9− | 0.0 | 2006 01 07 | 703 | 0.5− | 0.4− |
| 2001 11 08 | 704 | 0.5+ | 0.2+ | 2005 08 09 | 704 | 0.1− | 0.1+ | 2006 01 22 | 699 | 0.1+ | 0.6+ |
| 2001 12 23 | 704 | 0.3+ | 0.0 | 2005 08 09 | 704 | 0.9− | 0.1− | 2006 01 22 | 699 | 0.1+ | 0.0 |
| 2001 12 23 | 704 | 0.4+ | 0.1+ | 2005 08 09 | 704 | 0.6− | 0.2− | 2006 01 22 | 699 | 0.4+ | 0.2+ |
| 2001 12 23 | 704 | 0.2+ | 0.2+ | 2005 08 09 | 704 | 0.9− | 0.7+ | 2006 10 30 | G96 | 0.5− | 0.1− |
| 2001 12 23 | 704 | 0.1− | 0.1+ | 2005 08 09 | 704 | 0.1− | 0.3+ | 2006 10 30 | G96 | 0.0 | 0.2− |
| 2001 12 23 | 704 | 0.2+ | 0.5+ | 2005 09 01 | 704 | 0.8+ | 1.7− | 2006 10 30 | G96 | 0.2− | 0.3− |
| 2002 01 06 | 704 | (2.8− | 0.5−) | 2005 09 01 | 704 | 0.0 | 0.1+ | 2006 10 30 | G96 | 0.3− | 0.0 |
| 2002 01 06 | 704 | (2.9− | 0.2−) | 2005 09 01 | 704 | 0.8+ | 1.1+ | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2002 01 06 | 704 | (2.9− | 0.4−) | 2005 09 01 | 704 | 0.6− | 0.5− | 2006 11 01 | G96 | 0.5− | 0.0 |
| 2002 01 06 | 704 | (2.5− | 0.5−) | 2005 09 01 | 704 | 0.3− | 1.1+ | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2002 02 10 | 704 | 0.9− | 0.8− | 2005 09 16 | 704 | 0.6− | 0.3− | 2006 11 01 | G96 | 1.0− | 0.0 |
| 2002 02 10 | 704 | 0.8− | 1.2− | 2005 09 16 | 704 | 1.2+ | 0.6− | 2006 11 01 | G96 | 0.4− | 0.6− |
| 2002 02 10 | 704 | 1.0− | 0.7− | 2005 09 16 | 704 | 0.3+ | 0.8+ | 2006 11 01 | G96 | 0.5− | 0.1+ |
| 2002 03 05 | 704 | 0.2+ | 1.9− | 2005 09 16 | 704 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2002 03 05 | 704 | 0.8− | 0.6+ | 2005 09 16 | 704 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.1− |
| 2002 03 05 | 704 | 0.0 | 0.3− | 2005 11 11 | 704 | 0.8+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2002 03 05 | 704 | 0.2− | 0.2+ | 2005 11 11 | 704 | 0.5+ | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2003 02 04 | 608 | 0.7+ | 0.4+ | 2005 11 11 | 704 | 0.4+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2003 02 04 | 608 | 1.0+ | 0.9+ | 2005 11 11 | 704 | 0.4+ | 0.1− | 2006 11 21 | 691 | 0.4+ | 0.1− |
| 2003 02 04 | 608 | 1.2+ | 0.4+ | 2005 11 11 | 704 | 0.6+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2003 03 10 | 699 | 0.0 | 0.6− | 2005 11 23 | 704 | 0.1− | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2003 03 10 | 699 | 0.2+ | 0.0 | 2005 11 23 | 704 | 0.4− | 0.4− | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2003 03 10 | 704 | 0.7+ | 0.1+ | 2005 11 23 | 704 | 0.5− | 0.1+ | 2006 11 25 | 691 | 0.3+ | 0.3+ |
| 2003 03 10 | 704 | 0.2+ | 0.4− | 2005 11 23 | 704 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.3+ | 0.0 |
| 2003 03 10 | 699 | 0.3− | 0.5+ | 2005 11 23 | 704 | 0.4− | 0.1− | | | | |
| 2003 03 10 | 704 | 0.2− | 0.2+ | 2005 12 08 | 703 | 0.9+ | 0.4+ | | | | |

**(143599)∗ 2003 FM$_{78}$ = 2000 KL$_{80}$**

Discovered 2003 Mar. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 47448)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.37861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29878094 | $\omega$ | 89.72281 | | −0.05208319 | +0.99862816 | |
| $a$ | 2.2159883 | $\Omega$ | 177.27406 | | −0.95545160 | −0.04825722 | |
| $e$ | 0.1335864 | $i$ | 6.51797 | | −0.29051606 | −0.02032350 | |
| $P$ | 3.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 14 | 691 | 0.7− | 0.7− | 2003 03 31 | 704 | 1.0+ | 1.2+ | 2003 05 01 | 704 | 0.1− | 0.4− |
| 1996 01 14 | 691 | 0.0 | 0.7− | 2003 03 31 | 704 | 0.4+ | 0.3+ | 2006 01 23 | 703 | 0.5− | 0.2− |
| 1996 01 14 | 691 | 0.1+ | 0.6− | 2003 03 31 | 704 | 0.1− | 0.1− | 2006 01 23 | 703 | 0.5+ | 0.1+ |
| 2000 05 27 | 704 | 0.5− | 1.1− | 2003 04 01 | 704 | 1.5+ | 1.1− | 2006 01 23 | 703 | 0.4− | 0.3+ |
| 2000 05 27 | 704 | 0.6+ | 1.0− | 2003 04 01 | 704 | 1.3+ | 0.4− | 2006 01 23 | 703 | 0.4− | 1.5− |
| 2000 05 27 | 704 | 0.1+ | 0.8− | 2003 04 01 | 704 | 1.5+ | 0.6− | 2006 01 31 | 703 | 0.7− | 0.3+ |
| 2000 05 27 | 704 | 0.3− | 0.2− | 2003 04 01 | 704 | 0.5+ | 0.0 | 2006 01 31 | 703 | 1.2+ | 1.6+ |
| 2000 06 04 | 704 | 0.6− | 0.2+ | 2003 04 04 | 704 | 0.3− | 1.2+ | 2006 01 31 | 703 | 0.7− | 0.7− |
| 2000 06 04 | 704 | 0.0 | 0.1− | 2003 04 04 | 704 | 0.3− | 1.7+ | 2006 01 31 | 703 | 1.0− | 0.2− |
| 2000 06 04 | 704 | 0.2+ | 0.7− | 2003 04 04 | 704 | 0.9− | 1.9+ | 2006 02 07 | 703 | 0.4− | 1.2− |
| 2000 06 04 | 704 | 0.2+ | 0.4− | 2003 04 04 | 704 | 1.1− | 1.3+ | 2006 02 07 | 703 | 1.4+ | 0.1− |
| 2001 11 17 | 704 | 1.3− | 0.4− | 2003 04 26 | 608 | 1.2+ | 0.8− | 2006 02 07 | 703 | 0.4+ | 0.0 |
| 2001 11 17 | 704 | 0.6+ | 0.3− | 2003 04 26 | 608 | 0.7+ | 0.5− | 2006 02 07 | 703 | (4.1− | 0.8−) |
| 2001 11 17 | 704 | 0.4+ | 0.8+ | 2003 04 26 | 608 | 0.7+ | 0.5− | 2006 02 21 | 699 | 0.3+ | 1.2− |
| 2001 12 11 | 704 | 0.4+ | 1.0+ | 2003 04 27 | 699 | 1.0− | 0.6− | 2006 02 21 | 699 | 0.2− | 0.0 |
| 2001 12 11 | 704 | 0.5+ | 1.7+ | 2003 04 27 | 699 | 1.0− | 0.5− | 2006 02 21 | 699 | 0.6+ | 0.0 |
| 2001 12 11 | 704 | 0.5− | 1.6+ | 2003 04 27 | 699 | 0.4− | 0.4− | 2006 02 21 | 699 | 0.3− | 0.2+ |
| 2003 03 27 | 691 | 0.0 | 0.7+ | 2003 04 27 | 699 | 0.7− | 1.2− | 2006 05 25 | G96 | 1.0− | 0.7− |
| 2003 03 27 | 691 | 0.0 | 1.2+ | 2003 05 01 | 704 | 0.2+ | 1.2− | 2006 05 25 | G96 | 0.5− | 0.7− |
| 2003 03 27 | 691 | 0.1+ | 1.1+ | 2003 05 01 | 704 | 0.5− | 0.0 | 2006 05 25 | G96 | 0.2− | 0.8− |
| 2003 03 31 | 704 | 0.5+ | 0.4+ | 2003 05 01 | 704 | 0.6+ | 1.6− | 2006 05 25 | G96 | 0.7− | 0.3− |
| 2003 03 31 | 704 | 0.4+ | 0.4+ | 2003 05 01 | 704 | 0.5− | 0.6− | | | | |

**(143600)∗ 2003 FW$_{78}$ = 2005 VF$_{110}$**

Discovered 2003 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 94958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 258.19567 | | (2000.0) | | −0.74115396 | +0.66932414 |
| $n$ | 0.22812116 | $\omega$ | 150.49807 | | −0.62615985 | −0.66131742 |
| $a$ | 2.6527256 | $\Omega$ | 71.61234 | | −0.24210464 | −0.33862143 |
| $e$ | 0.1334080 | $i$ | 3.13661 | | | |
| $P$ | 4.32 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.2− | 0.1− | 2003 03 27 | 704 | 0.3− | 0.0 | 2005 11 06 | G96 | 0.0 | 0.2− |
| 1992 11 18 | 691 | 0.3+ | 0.1+ | 2003 03 27 | 704 | 0.4+ | 0.3− | 2005 11 12 | 691 | 0.2− | 0.5+ |
| 1992 11 18 | 691 | 0.1+ | 0.0 | 2003 03 30 | 704 | 0.4− | 1.0+ | 2005 11 12 | 691 | 0.0 | 0.5+ |
| 1999 04 21 | 691 | 0.3− | 0.3− | 2003 03 30 | 704 | 1.1− | 1.2+ | 2005 11 12 | 691 | 0.1+ | 0.4+ |
| 1999 04 21 | 691 | 0.1− | 0.4− | 2003 03 30 | 704 | 1.4+ | 0.8+ | 2005 12 04 | G96 | 0.2− | 0.3− |
| 1999 04 21 | 691 | 0.1+ | 0.2+ | 2003 03 30 | 704 | 0.0 | 0.6+ | 2005 12 04 | G96 | 0.1+ | 0.2− |
| 1999 05 10 | 704 | (0.2− | 2.6+) | 2003 04 01 | 645 | 0.1+ | 0.1+ | 2005 12 04 | G96 | 0.0 | 0.6− |
| 1999 05 10 | 704 | 0.8+ | 0.0 | 2003 04 01 | 645 | 0.1+ | 0.1+ | 2005 12 04 | G96 | 0.3− | 0.6− |
| 1999 05 10 | 704 | 0.2− | 1.8− | 2004 08 22 | E12 | 0.3− | 0.6+ | 2006 01 21 | G96 | 0.3− | 0.4− |
| 1999 05 10 | 704 | 0.7− | 1.3+ | 2004 08 22 | E12 | 0.2− | 1.0+ | 2006 01 21 | G96 | 0.4+ | 0.8+ |
| 2001 12 18 | 704 | 0.1− | 1.0+ | 2004 08 22 | E12 | 0.3+ | 0.1+ | 2006 01 21 | G96 | 0.0 | 0.5− |
| 2001 12 18 | 704 | 0.4+ | 0.4+ | 2004 08 22 | E12 | 0.1− | 0.1− | 2006 01 21 | G96 | 0.5− | 0.3− |
| 2001 12 18 | 704 | (0.0 | 2.0−) | 2005 11 06 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2001 12 23 | 291 | 0.1− | 0.4− | 2005 11 06 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 12 23 | 291 | 0.3− | 0.2− | 2005 11 06 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.4− |
| 2001 12 23 | 291 | 0.1+ | 0.3− | 2005 11 06 | 704 | 1.2− | 0.8− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2003 03 26 | 699 | 0.4− | 0.7− | 2005 11 06 | 704 | 0.3+ | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.6− |
| 2003 03 26 | 699 | 0.2+ | 0.2+ | 2005 11 06 | 704 | 0.3+ | 0.9+ | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2003 03 26 | 699 | (0.6+ | 1.8+) | 2005 11 06 | G96 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.4− | 0.1+ |
| 2003 03 26 | 699 | 0.4+ | 0.1− | 2005 11 06 | G96 | 0.1+ | 0.3− | | | | |
| 2003 03 27 | 704 | 0.3− | 0.2− | 2005 11 06 | G96 | 0.1+ | 0.3− | | | | |

**(143601)∗ 2003 FZ$_{78}$**

Discovered 2003 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 201.89625 | | (2000.0) | | −0.83399913 | +0.54114449 |
| $n$ | 0.17901848 | $\omega$ | 108.81621 | | −0.53878191 | −0.75658661 |
| $a$ | 3.1179619 | $\Omega$ | 104.07738 | | −0.11899373 | −0.36706856 |
| $e$ | 0.0898648 | $i$ | 6.37739 | | | |
| $P$ | 5.51 | $H$ | 15.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.2+ | 0.3+ | 2003 03 09 | 704 | 1.4+ | 0.1+ | 2005 10 01 | 703 | (0.1− | 1.6−) |
| 1995 11 30 | 691 | 0.0 | 0.1+ | 2003 03 09 | 704 | 0.5+ | 0.6+ | 2005 10 01 | 703 | 0.5− | 0.1+ |
| 1995 11 30 | 691 | 0.2+ | 0.0 | 2003 03 27 | 704 | 0.3+ | 0.2+ | 2005 10 01 | 703 | 1.3− | 1.4+ |
| 1995 12 14 | 691 | 0.0 | 0.3− | 2003 03 27 | 704 | 1.1+ | 0.3− | 2005 10 01 | 703 | 0.5− | 0.0 |
| 1995 12 14 | 691 | 0.4− | 0.1+ | 2003 03 27 | 704 | 0.6− | 0.3− | 2006 10 23 | G96 | 0.7+ | 0.1+ |
| 1995 12 14 | 691 | 0.2+ | 0.1+ | 2003 03 31 | 699 | 0.9− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.3+ |
| 1997 02 02 | 691 | 0.1+ | 0.3+ | 2003 03 31 | 699 | 0.8− | 1.1+ | 2006 10 23 | G96 | 0.6+ | 0.1+ |
| 1997 02 02 | 691 | 0.2− | 0.4− | 2003 03 31 | 699 | 0.9− | 1.1− | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 1997 02 02 | 691 | 0.1− | 0.0 | 2003 03 31 | 699 | (0.7− | 1.7+) | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1998 04 23 | 691 | 0.0 | 0.3+ | 2003 04 01 | 704 | 0.3+ | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1998 04 23 | 691 | 0.2− | 0.1− | 2003 04 01 | 704 | 0.9+ | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1998 04 23 | 691 | 0.0 | 0.2+ | 2003 04 01 | 704 | 0.1− | 0.7+ | 2006 11 18 | G96 | 0.5− | 0.4− |
| 2001 12 23 | 704 | (1.6+ | 1.9+) | 2003 04 01 | 704 | 0.8+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2001 12 23 | 704 | (1.7+ | 0.6+) | 2003 04 02 | 608 | (2.3− | 2.7+) | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2001 12 23 | 704 | (0.8+ | 2.0+) | 2003 04 02 | 608 | (2.0− | 3.0+) | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2001 12 23 | 704 | (1.8+ | 0.9+) | 2003 04 02 | 608 | (1.8− | 2.9+) | 2006 11 20 | 691 | 0.3− | 0.2+ |
| 2001 12 23 | 704 | (1.7+ | 1.8+) | 2005 08 26 | 644 | 0.7+ | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2003 03 09 | 704 | 0.9+ | 1.4+ | 2005 08 26 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2003 03 09 | 704 | (0.8− | 1.6+) | 2005 08 26 | 644 | 0.5+ | 0.6+ | | | | |

**(143602)∗ 2003 FW$_{81}$ = 2005 TX$_{72}$**

Discovered 2003 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 89457)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 152.74647 | | (2000.0) | | +0.30770515 | +0.94212614 |
| $n$ | 0.19190386 | $\omega$ | 150.90930 | | −0.90616086 | +0.33282612 |
| $a$ | 2.9767811 | $\Omega$ | 136.63082 | | −0.29015520 | −0.04031268 |
| $e$ | 0.1226113 | $i$ | 11.17626 | | | |
| $P$ | 5.14 | $H$ | 14.8 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 691 | 0.3− | 0.2− | 2002 02 11 | 704 | 0.7− | 1.4+ | 2005 10 07 | 699 | 0.3+ | 1.2+ |
| 1993 03 22 | 691 | 0.1+ | 0.3− | 2002 02 11 | 704 | 0.1+ | 1.0+ | 2005 10 07 | 699 | 0.8− | 0.2+ |
| 1993 03 22 | 691 | 0.6+ | 1.1− | 2003 03 27 | 704 | 0.3+ | 1.0+ | 2005 10 07 | 699 | 0.0 | 0.7+ |
| 1994 06 09 | 691 | 0.5− | 0.8+ | 2003 03 27 | 704 | 0.7+ | 1.1+ | 2005 10 07 | 699 | 0.4− | 0.3+ |
| 1994 06 09 | 691 | 0.4− | 0.4+ | 2003 03 27 | 704 | 0.6+ | 0.1+ | 2005 10 22 | 644 | 0.1+ | 0.3− |
| 1994 06 09 | 691 | 0.6− | 0.5+ | 2003 03 31 | 645 | 0.1− | 0.2+ | 2005 10 22 | 644 | 0.1+ | 0.1+ |
| 1998 04 24 | 704 | 0.8− | 0.1− | 2003 03 31 | 645 | 0.1− | 0.1+ | 2005 10 22 | 644 | 0.5+ | 0.1+ |
| 1998 04 24 | 704 | 1.5+ | 0.8+ | 2003 03 31 | 704 | 0.2+ | 1.7+ | 2005 10 26 | 644 | 0.1+ | 0.0 |
| 1998 04 24 | 704 | 1.0− | 1.3+ | 2003 03 31 | 704 | (1.1+ | 2.1+) | 2005 10 26 | 644 | 0.0 | 0.0 |
| 1998 04 24 | 704 | (3.0− | 2.0+) | 2003 03 31 | 704 | 0.5− | 0.9+ | 2005 10 26 | 644 | 0.3+ | 0.0 |
| 1999 07 13 | 704 | 1.0+ | 0.2+ | 2003 03 31 | 704 | 0.2+ | 1.5+ | 2005 10 27 | 704 | 0.3− | 1.0+ |
| 1999 07 13 | 704 | 0.9+ | 0.7+ | 2003 04 02 | 608 | 0.4+ | 1.3+ | 2005 10 27 | 704 | 0.2+ | 1.0+ |
| 1999 07 13 | 704 | 0.4+ | 1.2+ | 2003 04 02 | 608 | 0.7+ | 0.9+ | 2005 10 27 | 704 | 0.1+ | 0.9+ |
| 1999 07 13 | 704 | 0.8+ | 0.6+ | 2003 04 02 | 608 | 1.1+ | 1.7+ | 2005 10 27 | 704 | 0.2− | 0.6+ |
| 1999 07 13 | 704 | 0.9+ | 0.7+ | 2003 04 03 | 704 | 0.2+ | 1.3+ | 2005 10 27 | 704 | 0.1+ | 0.9+ |
| 1999 08 08 | 699 | 0.0 | 0.0 | 2003 04 03 | 704 | 0.5+ | 0.8+ | 2005 10 27 | 703 | 0.1+ | 0.1− |
| 1999 08 08 | 699 | 1.6− | 1.3+ | 2003 04 03 | 704 | 0.7+ | 0.1+ | 2005 10 27 | 703 | 0.8− | 0.9+ |
| 1999 08 08 | 699 | 0.0 | 1.8+ | 2005 09 30 | 704 | 0.1+ | 0.7− | 2005 10 27 | 703 | 0.8+ | 1.1+ |
| 2002 01 14 | 704 | 0.0 | 0.2+ | 2005 09 30 | 704 | 0.8− | 0.6+ | 2005 10 27 | 703 | 0.5− | 0.5− |
| 2002 01 14 | 704 | 0.2+ | 0.7+ | 2005 09 30 | 704 | 0.4− | 0.2− | 2005 11 01 | 703 | 0.2+ | 0.3− |
| 2002 01 14 | 704 | 0.3+ | 0.3+ | 2005 09 30 | 704 | 0.2+ | 0.5+ | 2005 11 01 | 703 | 0.7− | 0.5+ |
| 2002 01 14 | 704 | 1.0+ | 0.6+ | 2005 10 05 | 703 | 0.4− | 0.3− | 2005 11 01 | 703 | 0.2+ | 0.5+ |
| 2002 01 14 | 704 | 0.4+ | 0.0 | 2005 10 05 | 703 | 0.2+ | 0.9+ | 2005 11 01 | 703 | 0.7− | 0.2− |
| 2002 02 11 | 704 | 0.5+ | 0.7+ | 2005 10 05 | 703 | 0.5− | 0.6+ | | | | |
| 2002 02 11 | 704 | 0.6− | 1.1+ | 2005 10 05 | 703 | 0.0 | 0.9+ | | | | |

**(143603)∗ 2003 FM$_{89}$ = 2001 YK$_{65}$**

Discovered 2003 Mar. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 47462)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.58263 | | (2000.0) | | −0.90095734 | −0.43109354 |
| $n$ | 0.17063275 | $\omega$ | 206.39163 | | +0.40835108 | −0.80394628 |
| $a$ | 3.2192976 | $\Omega$ | 307.98344 | | +0.14671490 | −0.40966906 |
| $e$ | 0.1073680 | $i$ | 3.58887 | | | |
| $P$ | 5.78 | $H$ | 14.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.1+ | 0.1− | 2003 04 07 | 704 | (1.6+ | 0.7+) | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 0.8− | 2003 04 07 | 704 | 1.3− | 1.3+ | 2006 10 04 | G96 | 0.5+ | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.1− | 2003 04 08 | 644 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.3− | 2003 04 08 | 644 | 0.1− | 0.2+ | 2006 10 13 | 691 | 0.2− | 0.7+ |
| 2001 12 18 | 704 | 0.6− | 0.3− | 2003 04 08 | 644 | 0.2+ | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.3+ |
| 2001 12 19 | 704 | 0.1+ | 0.5+ | 2003 04 28 | 699 | 0.3− | 0.8+ | 2006 10 13 | 691 | 0.1− | 0.4+ |
| 2001 12 19 | 704 | 0.6+ | 0.6+ | 2003 04 28 | 699 | 1.2+ | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.4+ |
| 2001 12 19 | 704 | 0.3− | 0.7+ | 2003 04 28 | 699 | 0.6+ | 0.6+ | 2006 10 17 | 691 | 0.2+ | 0.3+ |
| 2003 03 29 | 699 | 0.5+ | 0.4− | 2003 04 28 | 699 | 0.9− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2003 03 29 | 699 | 0.1− | 0.2+ | 2003 05 03 | 691 | 0.8+ | 1.0+ | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2003 03 29 | 699 | 0.2− | 0.4+ | 2003 05 03 | 691 | 0.8+ | 0.9+ | 2006 10 21 | 691 | 0.2+ | 0.2+ |
| 2003 03 29 | 699 | 0.5− | 0.5+ | 2003 05 03 | 691 | 0.6+ | 0.6+ | 2006 10 21 | 691 | 1.2− | 0.6+ |
| 2003 03 31 | 699 | 1.0− | 1.1+ | 2005 08 06 | 644 | 0.4− | 1.0+ | 2006 10 27 | 703 | 0.5− | 0.6− |
| 2003 03 31 | 699 | 1.1− | 0.1− | 2005 08 06 | 644 | 0.3− | 1.2+ | 2006 10 27 | 703 | 0.3+ | 0.1− |
| 2003 03 31 | 699 | 0.1− | 0.3− | 2005 08 06 | 644 | 0.4− | 1.0+ | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2003 03 31 | 704 | 0.2− | 0.1− | 2005 08 10 | 807 | 0.5− | 0.9+ | 2006 10 27 | 703 | 1.0− | 1.4− |
| 2003 03 31 | 699 | 0.1− | 0.1+ | 2005 08 10 | 807 | 0.4− | 0.9+ | 2006 10 31 | 691 | 0.2+ | 0.4+ |
| 2003 03 31 | 704 | 0.4+ | 1.0+ | 2005 08 25 | 644 | 0.1− | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2003 03 31 | 704 | 0.4+ | 0.5+ | 2005 08 25 | 644 | 0.4− | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.4+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 04 07 | 704 | 0.6+ | 0.1+ | 2005 08 25 | 644 | 0.2− | 0.8+ | |
| 2003 04 07 | 704 | 1.4+ | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.2− | |

**(143604)∗ 2003 FK$_{91}$ = 2005 SB$_{159}$**

Discovered 2003 Mar. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 85998)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.71999 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23477833 | $\omega$ | 196.44815 | | −0.77955246 | | −0.62392961 |
| $a$ | 2.6023400 | $\Omega$ | 304.81902 | | +0.58191724 | | −0.68908489 |
| $e$ | 0.1468938 | $i$ | 3.83172 | | +0.23166850 | | −0.36861071 |
| $P$ | 4.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 691 | 0.0 | 0.3− | 2003 03 31 | 704 | 0.1+ | 0.3− | 2005 10 13 | 691 | 0.1+ | 0.3+ |
| 2001 10 17 | 691 | 0.3+ | 0.0 | 2003 03 31 | 704 | (0.7− | 2.7+) | 2005 10 13 | 691 | 0.1+ | 0.7+ |
| 2001 10 17 | 691 | 0.3+ | 0.2− | 2003 04 07 | 704 | 0.8+ | 1.3+ | 2005 10 28 | 703 | (2.2− | 0.8+) |
| 2001 11 12 | 704 | 0.1− | 0.3+ | 2003 04 07 | 704 | 1.2+ | 0.1+ | 2005 10 28 | 703 | 0.4− | 0.9− |
| 2001 11 12 | 704 | (2.3+ | 0.6−) | 2003 04 07 | 704 | 1.4+ | 1.1+ | 2005 10 28 | 703 | 0.2+ | 0.8− |
| 2001 11 12 | 704 | 0.4− | 1.2+ | 2003 04 07 | 704 | (0.1+ | 3.9−) | 2005 10 28 | 703 | (1.7− | 2.0+) |
| 2001 11 12 | 704 | 0.6− | 0.7+ | 2003 04 07 | 704 | 0.3− | 0.9+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.6− | 0.5+ | 2003 04 28 | 699 | (1.1+ | 2.4+) | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 11 24 | 704 | 0.5+ | 0.0 | 2003 04 28 | 699 | 1.0+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 11 24 | 704 | 0.3− | 0.4− | 2003 04 28 | 699 | (2.0+ | 0.5+) | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 11 24 | 704 | 1.2− | 0.3− | 2003 04 28 | 699 | 0.7+ | 0.6− | 2006 10 28 | G96 | 0.4− | 0.3+ |
| 2001 11 24 | 704 | 0.2+ | 0.4− | 2005 09 26 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 2003 03 29 | 699 | 1.0− | 0.2+ | 2005 09 26 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.4− |
| 2003 03 29 | 699 | 0.0 | 0.2− | 2005 09 26 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.6+ |
| 2003 03 29 | 699 | 0.4− | 0.5− | 2005 10 01 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2003 03 29 | 699 | 1.4− | 0.7− | 2005 10 01 | G96 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2003 03 31 | 704 | 0.1− | 0.6+ | 2005 10 01 | G96 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.5− | 0.6− |
| 2003 03 31 | 704 | 0.3− | 0.1+ | 2005 10 01 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2003 03 31 | 704 | 0.0 | 0.9+ | 2005 10 13 | 691 | 0.1− | 0.5+ | | | | |

**(143605)∗ 2003 FP$_{91}$**

Discovered 2003 Mar. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.76264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17021813 | $\omega$ | 347.42251 | | −0.95489721 | | −0.29564509 |
| $a$ | 3.2245232 | $\Omega$ | 175.11093 | | +0.29271903 | | −0.95288669 |
| $e$ | 0.0786969 | $i$ | 18.94092 | | +0.04986871 | | −0.06783017 |
| $P$ | 5.79 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 645 | 0.0 | 0.1+ | 2003 04 08 | 683 | 0.1− | 0.5+ | 2005 08 31 | 691 | 0.1+ | 0.2+ |
| 2000 10 01 | 645 | 0.0 | 0.1+ | 2003 04 08 | 683 | 0.2+ | 0.6− | 2005 08 31 | 691 | 0.1− | 0.2+ |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2003 04 09 | 704 | 0.3+ | 0.2− | 2005 09 13 | 691 | 0.1+ | 0.2+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 04 09 | 704 | 0.1+ | 0.3− | 2005 09 13 | 691 | 0.1− | 0.2+ |
| 2002 01 12 | 704 | 0.1− | 0.5+ | 2003 04 09 | 704 | 0.2− | 0.8− | 2005 09 13 | 691 | 0.0 | 0.0 |
| 2002 01 12 | 704 | 0.5− | 0.5− | 2003 04 09 | 704 | 1.3+ | 0.2− | 2005 09 28 | 644 | 0.2+ | 0.1+ |
| 2002 01 12 | 704 | 0.5− | 0.4+ | 2003 04 09 | 704 | 0.7+ | 0.2− | 2005 09 28 | 644 | 0.3+ | 0.2− |
| 2002 01 12 | 704 | 0.0 | 0.4+ | 2003 04 26 | 704 | 1.0− | 1.0+ | 2005 09 28 | 644 | 0.6+ | 0.6+ |
| 2003 03 06 | 704 | 0.8− | 0.4+ | 2003 04 26 | 704 | 0.1− | 1.0+ | 2005 10 27 | G96 | 0.2− | 0.1+ |
| 2003 03 06 | 704 | 0.9+ | 0.6+ | 2003 04 26 | 704 | (0.4− | 1.8+) | 2005 10 27 | G96 | 0.2+ | 0.2+ |
| 2003 03 06 | 704 | 0.6+ | 0.2+ | 2003 04 26 | 704 | 0.1− | 1.0+ | 2005 10 27 | G96 | 0.0 | 0.1− |
| 2003 03 06 | 704 | 1.2− | 0.1+ | 2003 04 28 | 699 | 0.7+ | 0.3+ | 2005 10 27 | G96 | 0.1− | 0.0 |
| 2003 03 29 | 699 | 0.8− | 0.2− | 2003 04 28 | 699 | 0.4− | 0.4+ | 2005 12 01 | G96 | 0.2+ | 0.3− |
| 2003 03 29 | 699 | 1.1+ | 0.5− | 2003 04 28 | 699 | 0.3− | 0.3+ | 2005 12 01 | G96 | 0.2− | 0.4− |
| 2003 03 29 | 699 | 1.1− | 0.5− | 2003 04 28 | 699 | 1.3− | 0.7+ | 2005 12 01 | G96 | 0.2− | 0.2− |
| 2003 03 29 | 699 | (1.7− | 1.2−) | 2003 04 29 | 608 | 0.7+ | 0.7+ | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2003 03 31 | 704 | 0.2+ | 0.6+ | 2003 04 29 | 608 | 0.1+ | 0.9+ | 2006 10 20 | 703 | (1.7− | 0.8+) |
| 2003 03 31 | 699 | 0.2− | 0.4− | 2003 04 29 | 608 | 0.8+ | 1.0+ | 2006 10 20 | 703 | (1.3− | 1.7−) |
| 2003 03 31 | 704 | 1.1+ | 0.7+ | 2003 04 29 | 608 | 1.0+ | 0.9+ | 2006 10 20 | 703 | 0.5+ | 0.5− |
| 2003 03 31 | 704 | 0.9+ | 0.6+ | 2003 04 29 | 608 | 0.5+ | 1.0+ | 2006 10 20 | 703 | 1.1+ | 0.0 |
| 2003 03 31 | 699 | 0.6− | 0.5+ | 2003 04 29 | 608 | 0.9+ | 0.8+ | 2006 10 28 | 703 | 0.2+ | 0.9+ |
| 2003 03 31 | 704 | 0.5+ | 1.0+ | 2004 06 21 | 704 | 1.3− | 0.2− | 2006 10 28 | 703 | 0.5− | 0.9+ |
| 2003 03 31 | 699 | (1.7− | 0.1−) | 2004 06 21 | 704 | 0.3− | 0.5− | 2006 10 28 | 703 | 0.1− | 0.2+ |
| 2003 03 31 | 699 | 0.6− | 1.3− | 2004 06 21 | 704 | 1.0− | 0.1− | 2006 10 28 | 703 | 0.2− | 1.1+ |
| 2003 04 01 | 704 | 0.4+ | 0.5+ | 2004 06 21 | 704 | 0.8− | 0.4+ | 2006 11 16 | 703 | 0.6− | 0.0 |
| 2003 04 01 | 704 | 0.1− | 1.0+ | 2005 08 27 | 644 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.1+ | 1.0+ |
| 2003 04 01 | 704 | 0.0 | 0.6+ | 2005 08 27 | 644 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.3− | 0.6+ |
| 2003 04 01 | 704 | 0.2+ | 0.4+ | 2005 08 27 | 644 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.2+ |
| 2003 04 01 | 704 | 0.1+ | 1.3+ | 2005 08 29 | 699 | 0.4+ | 0.4+ | 2006 11 20 | G96 | 0.2+ | 0.1− |
| 2003 04 02 | 608 | 0.5− | 0.0 | 2005 08 29 | 699 | 0.3+ | 1.0+ | 2006 11 20 | G96 | 0.2− | 0.1+ |
| 2003 04 02 | 608 | 0.2− | 0.0 | 2005 08 29 | 699 | 0.1+ | 0.5+ | 2006 11 20 | G96 | 0.5− | 0.2+ |
| 2003 04 02 | 608 | 0.2− | 0.2− | 2005 08 29 | 699 | 0.4+ | 0.5+ | 2006 11 20 | G96 | 0.3− | 0.3+ |
| 2003 04 08 | 683 | 0.2− | 0.4+ | 2005 08 31 | 691 | 0.1+ | 0.2+ | | | | |

**(143606)∗ 2003 FZ$_{92}$**

Discovered 2003 Mar. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.10824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17962109 | $\omega$ | 37.27944 | | +0.20141687 | | −0.95884078 |
| $a$ | 3.1109844 | $\Omega$ | 42.18007 | | +0.81146783 | | +0.04890589 |
| $e$ | 0.0921449 | $i$ | 17.34136 | | +0.54859019 | | +0.27970086 |
| $P$ | 5.49 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.3− | 0.3+ | 2002 02 21 | 704 | 0.2− | 0.7+ | 2003 04 30 | 291 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.6− | 0.9+ | 2002 02 21 | 704 | 0.3− | 0.2+ | 2003 04 30 | 291 | 0.0 | 0.2+ |
| 2000 10 01 | 704 | 1.0− | 0.6+ | 2002 02 21 | 704 | 0.4− | 0.0 | 2003 05 02 | 691 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 0.9− | 1.6+ | 2002 02 21 | 704 | 1.0− | 0.1+ | 2003 05 02 | 691 | 0.1+ | 0.1− |
| 2001 12 23 | 704 | 0.1− | 0.2+ | 2002 02 21 | 704 | 0.6− | 0.7− | 2003 05 02 | 691 | 0.3− | 0.0 |
| 2001 12 23 | 704 | 0.6+ | 0.5− | 2003 03 29 | 699 | 0.4− | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 2001 12 23 | 704 | 0.5+ | 0.4− | 2003 03 29 | 699 | 0.1+ | 0.5− | 2006 10 04 | G96 | 0.4+ | 0.2+ |
| 2001 12 23 | 704 | (1.0+ | 1.7−) | 2003 03 29 | 699 | 0.0 | 0.7+ | 2006 10 04 | G96 | 0.5+ | 0.1+ |
| 2001 12 23 | 704 | 0.6+ | 0.7− | 2003 03 29 | 699 | 0.9− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.0 |
| 2002 01 06 | 704 | 0.2+ | 0.2+ | 2003 04 01 | 704 | 0.7+ | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.7+ |
| 2002 01 06 | 704 | 0.1+ | 0.5+ | 2003 04 01 | 704 | 0.9− | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.6+ |
| 2002 01 06 | 704 | 0.3+ | 0.1+ | 2003 04 01 | 704 | (1.7+ | 0.2+) | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2002 01 06 | 704 | 0.5+ | 0.1+ | 2003 04 01 | 704 | 0.7+ | 0.8+ | 2006 10 27 | 703 | 0.8− | 0.1− |
| 2002 01 06 | 704 | 1.1+ | 0.5+ | 2003 04 07 | 691 | (1.9+ | 0.1+) | 2006 11 02 | 703 | 0.2+ | 0.6− |
| 2002 01 19 | 699 | (0.2+ | 1.6+) | 2003 04 07 | 691 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.7+ | 0.1− |
| 2002 01 19 | 699 | 0.7− | 0.5− | 2003 04 07 | 691 | 0.4+ | 0.0 | 2006 11 02 | 703 | 0.1+ | 1.1− |
| 2002 01 19 | 699 | 0.7− | 0.9− | 2003 04 08 | 704 | 0.9+ | 0.4− | 2006 11 02 | 703 | 0.3− | 0.0 |
| 2002 01 19 | 699 | 0.0 | 0.7+ | 2003 04 08 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 704 | 1.3− | 0.5+ |
| 2002 01 25 | 704 | (4.3− | 1.1−) | 2003 04 08 | 704 | 0.4+ | 0.0 | 2006 11 15 | 704 | 0.6+ | 0.7+ |
| 2002 01 25 | 704 | (4.0− | 0.9−) | 2003 04 28 | 291 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2002 01 25 | 704 | (4.0− | 0.8−) | 2003 04 28 | 291 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.6+ | 0.1− |
| 2002 01 25 | 704 | (4.1− | 0.8−) | 2003 04 28 | 291 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.4+ |
| 2002 01 25 | 704 | (4.2− | 0.0 ) | 2003 04 30 | 291 | 0.6+ | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.6− |

**(143607)∗ 2003 FD$_{94}$**

Discovered 2003 Mar. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.77272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17033449 | $\omega$ | 100.71421 | | −0.73900628 | | −0.62274596 |
| $a$ | 3.2230545 | $\Omega$ | 41.47209 | | +0.35787906 | | −0.68610168 |
| $e$ | 0.0342113 | $i$ | 22.83583 | | +0.57078218 | | −0.37610099 |
| $P$ | 5.79 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 704 | 0.3− | 0.8+ | 2002 02 21 | 704 | 0.8+ | 0.1+ | 2003 04 27 | 704 | (1.3− | 2.3+) |
| 2000 11 02 | 704 | 1.5− | 0.8+ | 2003 03 29 | 699 | 0.3− | 0.8− | 2003 04 27 | 704 | 0.4− | 0.7+ |
| 2000 11 02 | 704 | 0.2− | 0.8+ | 2003 03 29 | 699 | 0.2− | 0.3− | 2003 04 27 | 704 | (0.5+ | 1.7+) |
| 2000 11 02 | 704 | 0.1+ | 0.3− | 2003 03 29 | 699 | 0.6− | 1.0+ | 2003 04 27 | 704 | 0.8+ | 1.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 704 | 0.4− | 0.5+ | 2003 03 29 | 699 | 0.7− | 0.5+ | 2003 04 27 | 704 | 0.2− | 1.4+ |
| 2000 11 18 | 699 | 0.5+ | 0.3− | 2003 04 01 | 704 | 0.8+ | 0.7− | 2003 04 30 | 608 | 0.3− | 1.5− |
| 2000 11 18 | 699 | 0.6+ | 0.7+ | 2003 04 01 | 704 | (0.6− | 1.7−) | 2003 04 30 | 608 | 0.1− | 0.9− |
| 2000 11 18 | 699 | 1.5− | 0.6+ | 2003 04 01 | 704 | 0.0 | 0.6− | 2003 04 30 | 608 | 0.4− | 1.1− |
| 2000 11 18 | 699 | (2.9− | 0.2+) | 2003 04 01 | 704 | 0.9− | 1.5− | 2003 05 01 | 704 | 0.3+ | 0.4+ |
| 2000 11 20 | 704 | 0.2− | 0.7+ | 2003 04 01 | 704 | 1.2− | 0.3− | 2003 05 01 | 704 | 0.7+ | 0.5− |
| 2000 11 20 | 704 | 0.4− | 0.8+ | 2003 04 01 | 704 | 0.7− | 0.4− | 2003 05 01 | 704 | 0.1+ | 1.2+ |
| 2000 11 20 | 704 | 0.7− | 0.6+ | 2003 04 08 | 704 | 0.5− | 1.3+ | 2003 05 01 | 704 | 1.2+ | 0.5− |
| 2000 11 20 | 704 | 0.8− | 0.3+ | 2003 04 08 | 704 | 0.9+ | 1.5+ | 2003 05 01 | 704 | 0.3+ | 0.5− |
| 2000 11 20 | 704 | 1.3− | 0.7+ | 2003 04 08 | 704 | 1.0− | 0.9+ | 2005 07 28 | 644 | 0.5− | 0.7+ |
| 2001 12 08 | 704 | 0.4− | 0.9+ | 2003 04 08 | 704 | 0.2− | 1.5+ | 2005 07 28 | 644 | 0.3− | 0.5+ |
| 2001 12 08 | 704 | 0.1+ | 0.6+ | 2003 04 09 | 704 | 0.3+ | 0.2+ | 2005 07 28 | 644 | 0.2− | 0.5+ |
| 2001 12 08 | 704 | 0.5− | 0.6+ | 2003 04 09 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.7− | 0.5+ |
| 2001 12 08 | 704 | 0.6− | 0.0 | 2003 04 09 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 1.0+ | 0.1+ |
| 2001 12 08 | 704 | 0.6− | 0.8− | 2003 04 09 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 703 | 0.7− | 1.2− |
| 2001 12 20 | 645 | 0.0 | 0.2− | 2003 04 09 | 704 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.4+ | 0.1− |
| 2001 12 20 | 645 | 0.0 | 0.2− | 2003 04 26 | 291 | 0.9+ | 0.4+ | 2006 11 02 | 703 | 0.3− | 0.2+ |
| 2001 12 23 | 704 | 0.1− | 0.2+ | 2003 04 26 | 291 | 0.9+ | 0.5+ | 2006 11 02 | 703 | 0.6− | 0.8+ |
| 2001 12 23 | 704 | 1.3− | 0.3− | 2003 04 26 | 291 | 0.9+ | 0.4+ | 2006 11 02 | 703 | 0.0 | 1.3− |
| 2001 12 23 | 704 | 0.1− | 0.4+ | 2003 04 26 | 291 | 0.5+ | 0.2+ | 2006 11 02 | 703 | 0.3− | 0.4− |
| 2001 12 23 | 704 | 0.8+ | 0.8+ | 2003 04 26 | 291 | 0.6+ | 0.3+ | 2006 11 15 | 703 | 0.7− | 1.1+ |
| 2001 12 23 | 704 | 1.0+ | 0.2+ | 2003 04 26 | 291 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.5+ | 0.2− |
| 2002 01 25 | 704 | 0.2+ | 0.1− | 2003 04 26 | 291 | 0.4+ | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.4+ |
| 2002 01 25 | 704 | 0.6− | 0.3+ | 2003 04 26 | 291 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.6+ | 1.0+ |
| 2002 01 25 | 704 | 0.8− | 0.7+ | 2003 04 26 | 291 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 1.3− | 0.7+ |
| 2002 01 25 | 704 | 0.6− | 0.3+ | 2003 04 26 | 291 | 0.6− | 0.5− | 2006 11 22 | 703 | 1.2− | 0.7+ |
| 2002 02 21 | 704 | (1.8+ | 0.3−) | 2003 04 26 | 291 | 1.2− | 0.3− | 2006 11 22 | 703 | 0.2− | 0.9+ |
| 2002 02 21 | 704 | 0.7+ | 0.4− | 2003 04 26 | 291 | 0.9− | 0.5− | 2006 11 22 | 703 | 0.4+ | 0.2+ |

**(143608)∗ 2003 FD$_{112}$**

Discovered 2003 Mar. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 278.79132 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.17931992 | $\omega$ | 284.55825 | | −0.69029632 | −0.72200571 |
| $a$ | 3.1144667 | $\Omega$ | 209.26832 | | +0.69526240 | −0.64399832 |
| $e$ | 0.0179716 | $i$ | 5.50373 | | +0.20025278 | −0.25293064 |
| $P$ | 5.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.3− | 1.2+ | 2003 04 24 | 691 | 0.5− | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.0 | 0.9+ | 2003 04 29 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | (1.5− | 0.2+) |
| 2000 10 01 | 704 | 1.0− | 0.3+ | 2003 04 29 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2000 10 06 | 699 | 0.4+ | 1.0+ | 2003 04 29 | 691 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 1.0− |
| 2000 10 06 | 699 | 1.1+ | 0.4+ | 2005 08 30 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.6+ | 1.1− |
| 2000 10 06 | 699 | 1.7− | 0.7− | 2005 08 30 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.7− | 0.4+ |
| 2000 10 06 | 699 | 0.4− | 0.6+ | 2005 08 30 | 691 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 2000 11 17 | 691 | 0.6+ | 0.3− | 2005 09 12 | 691 | 0.4− | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.3+ |
| 2000 11 17 | 691 | 0.1− | 0.4− | 2005 09 12 | 691 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.3+ | 0.4+ |
| 2000 11 17 | 691 | 0.1− | 0.1− | 2005 09 12 | 691 | 0.3− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2003 03 31 | 704 | (1.9+ | 1.7+) | 2005 09 28 | 644 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2003 03 31 | 704 | 1.2+ | 0.8− | 2005 09 28 | 644 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2003 03 31 | 704 | 1.0+ | 0.4+ | 2005 09 28 | 644 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2003 03 31 | 704 | 0.8+ | 0.6− | 2006 10 22 | G96 | 0.2− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2003 04 01 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.6− | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2003 04 01 | 644 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2003 04 01 | 644 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2003 04 24 | 691 | 0.4− | 0.7+ | 2006 11 11 | 691 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.5+ |
| 2003 04 24 | 691 | 0.2− | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.1+ | | | | |

**(143609)∗ 2003 FL$_{114}$**

Discovered 2003 Mar. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 242.88448 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.17370625 | $\omega$ | 314.40889 | | −0.98073519 | −0.13045293 |
| $a$ | 3.1812106 | $\Omega$ | 218.78664 | | +0.16070765 | −0.96196050 |
| $e$ | 0.2279070 | $i$ | 13.42123 | | −0.11104743 | −0.24002924 |
| $P$ | 5.67 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.5+ | 0.4+ | 2003 04 29 | 704 | 0.2+ | 0.1+ | 2004 06 20 | 704 | 0.5+ | 0.5− |
| 2001 12 11 | 704 | 0.2+ | 0.3+ | 2003 04 29 | 704 | 0.0 | 0.1+ | 2004 06 20 | 704 | 0.4− | 0.3+ |
| 2001 12 11 | 704 | 0.2+ | 0.5+ | 2003 04 29 | 704 | 0.2− | 0.3+ | 2004 06 20 | 704 | 0.8− | 0.0 |
| 2002 02 16 | 704 | 0.5− | 0.7+ | 2003 04 29 | 704 | 0.3+ | 0.6+ | 2005 08 29 | 644 | 0.2− | 0.7+ |
| 2002 02 16 | 704 | (1.6− | 2.0+) | 2003 05 06 | 704 | 0.6+ | 0.8+ | 2005 08 29 | 644 | 0.1+ | 0.2+ |
| 2002 02 16 | 704 | (1.5+ | 0.5+) | 2003 05 06 | 704 | 0.3+ | 0.4+ | 2005 08 29 | 644 | 0.6− | 0.3+ |
| 2002 02 16 | 704 | (0.5− | 1.9+) | 2003 05 06 | 704 | 0.3+ | 0.7+ | 2006 10 12 | 691 | 0.3− | 0.5+ |
| 2003 03 31 | 704 | 0.6+ | 0.1− | 2003 05 06 | 704 | 0.3+ | 0.9+ | 2006 10 12 | 691 | 0.1+ | 0.5+ |
| 2003 03 31 | 704 | 0.2+ | 0.1+ | 2003 05 06 | 703 | 1.4+ | 0.0 | 2006 10 12 | 691 | 0.2− | 0.4+ |
| 2003 03 31 | 704 | 0.1+ | 0.3+ | 2003 05 06 | 703 | 0.9+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.7+ |
| 2003 03 31 | 704 | 0.1− | 0.9+ | 2003 05 06 | 703 | 0.6+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.6+ |
| 2003 03 31 | 704 | 0.4+ | 0.8+ | 2003 05 06 | 703 | 0.9+ | 0.2+ | 2006 10 16 | 691 | 0.6+ | 0.9+ |
| 2003 04 03 | 699 | 0.1+ | 0.2+ | 2003 05 11 | 608 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.3+ | 0.6+ |
| 2003 04 03 | 699 | 0.1+ | 0.2+ | 2003 05 11 | 608 | 0.0 | 0.8− | 2006 10 20 | 691 | 0.2− | 0.6+ |
| 2003 04 03 | 699 | 0.0 | 0.3+ | 2003 05 11 | 608 | 0.0 | 0.5− | 2006 10 20 | 691 | 0.2− | 0.7+ |
| 2003 04 03 | 699 | 0.2− | 0.1− | 2003 05 19 | 699 | (0.4+ | 3.4+) | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2003 04 07 | 704 | 0.3− | 0.4+ | 2003 05 19 | 699 | (1.1− | 2.5+) | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2003 04 07 | 704 | 0.0 | 0.5+ | 2003 05 19 | 699 | 0.9− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2003 04 07 | 704 | 0.6− | 0.7+ | 2003 05 19 | 699 | 1.0− | 0.8− | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 2003 04 07 | 704 | 0.4− | 0.7+ | 2003 05 20 | 699 | 0.9− | 1.0+ | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2003 04 07 | 704 | 0.1+ | 1.0+ | 2003 05 20 | 699 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2003 04 21 | 428 | 0.7− | 0.1+ | 2003 05 20 | 699 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.4− | 0.3+ |
| 2003 04 21 | 428 | 1.0− | 0.3+ | 2003 05 20 | 699 | (1.9− | 0.5+) | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2003 04 25 | 691 | 0.3− | 0.6+ | 2003 05 27 | 699 | 0.4− | 0.8+ | 2006 11 13 | G96 | 0.1− | 0.1+ |
| 2003 04 25 | 691 | 0.1+ | 0.5+ | 2003 05 27 | 699 | (2.1− | 1.0+) | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2003 04 25 | 691 | 0.4+ | 0.6+ | 2003 05 27 | 699 | 0.1− | 1.1+ | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2003 04 26 | 608 | 0.5+ | 1.0− | 2003 05 27 | 699 | 1.1+ | 0.9+ | 2006 11 17 | 703 | 1.5+ | 1.0+ |
| 2003 04 26 | 608 | 0.4+ | 0.9− | 2003 06 05 | 691 | 0.0 | 0.7+ | 2006 11 17 | 703 | (4.8+ | 1.9+) |
| 2003 04 26 | 608 | 0.5+ | 0.7− | 2003 06 05 | 691 | 0.0 | 1.0+ | 2006 11 17 | 703 | (0.2− | 2.7+) |
| 2003 04 28 | 704 | 0.0 | 0.1+ | 2003 06 05 | 691 | (0.8+ | 1.7+) | 2006 11 17 | 703 | (1.7− | 0.8−) |
| 2003 04 28 | 704 | 0.8+ | 0.8+ | 2003 06 16 | 644 | 0.0 | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.6+ |
| 2003 04 28 | 704 | 0.5− | 0.5+ | 2003 06 16 | 644 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.6+ |
| 2003 04 28 | 704 | 0.4− | 0.4+ | 2003 06 16 | 644 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.3+ | 0.6+ |
| 2003 04 28 | 704 | 0.0 | 0.7− | 2004 06 12 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.5+ |
| 2003 04 28 | 704 | 0.4− | 0.3+ | 2004 06 12 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2003 04 28 | 704 | 0.2− | 0.1− | 2004 06 12 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.8− | 0.1+ |
| 2003 04 28 | 704 | 0.5− | 0.6+ | 2004 06 20 | 704 | 0.2− | 1.3− | 2006 11 27 | 703 | 0.3+ | 0.0 |
| 2003 04 29 | 704 | 0.3+ | 0.0 | 2004 06 20 | 704 | 0.2− | 0.4+ | 2006 11 27 | 703 | 1.2− | 0.1+ |

**(143610)∗ 2003 FA$_{117}$ = 1997 EE$_{12}$**

Discovered 2003 Mar. 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 47491)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 244.71883 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.17961789 | $\omega$ | 344.86730 | | −0.99480295 | −0.10150296 |
| $a$ | 3.1110213 | $\Omega$ | 189.31801 | | +0.09780177 | −0.93069715 |
| $e$ | 0.1767404 | $i$ | 2.83729 | | +0.02831784 | −0.35142563 |
| $P$ | 5.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.3− | 0.3− | 2003 03 26 | 699 | 0.0 | 0.8+ | 2004 07 16 | 807 | 0.1− | 0.2− |
| 1994 09 11 | 691 | 0.2− | 0.7+ | 2003 03 26 | 699 | 0.0 | 0.1+ | 2004 07 16 | 807 | 0.0 | 0.2− |
| 1994 09 11 | 691 | 0.9− | 0.3+ | 2003 03 27 | 644 | 0.3+ | 0.2+ | 2005 08 30 | 691 | 0.3+ | 0.2+ |
| 1997 03 02 | 691 | 0.5− | 0.3+ | 2003 03 27 | 644 | 0.5+ | 0.0 | 2005 08 30 | 691 | 0.2− | 0.3+ |
| 1997 03 02 | 691 | 0.5− | 0.6+ | 2003 03 27 | 644 | 0.3+ | 0.3+ | 2005 08 30 | 691 | 0.2+ | 0.4+ |
| 1997 03 02 | 691 | 0.4− | 0.1+ | 2003 04 24 | 291 | 0.1+ | 0.0 | 2005 09 13 | 691 | 0.1− | 0.6+ |
| 1997 03 10 | 691 | 1.0+ | 0.1− | 2003 04 24 | 291 | 0.2+ | 0.3+ | 2005 09 13 | 691 | 0.1− | 0.3+ |
| 1997 03 10 | 691 | 0.3+ | 0.1+ | 2003 04 24 | 291 | 0.1+ | 0.0 | 2005 09 13 | 691 | 0.5− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 691 | 0.5+ | 0.1+ | 2003 04 26 | 291 | 0.7− | 0.2− | 2005 10 25 | G96 | 0.1+ | 0.2− |
| 2000 09 28 | 691 | 0.3+ | 0.8+ | 2003 04 26 | 291 | 0.8− | 0.0 | 2005 10 25 | G96 | 0.2− | 0.6− |
| 2000 09 28 | 691 | 0.3+ | 0.8+ | 2003 04 26 | 291 | 0.4− | 0.3− | 2005 10 25 | G96 | 0.4− | 0.7− |
| 2000 09 28 | 691 | 0.4+ | 1.1+ | 2003 04 30 | 291 | 0.2+ | 0.3+ | 2005 10 25 | G96 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.6+ | 2003 04 30 | 291 | 0.2+ | 0.3+ | 2006 11 02 | 621 | 0.9− | 0.2+ |
| 2001 12 14 | 704 | 0.2− | 0.7+ | 2003 04 30 | 291 | 0.2+ | 0.6+ | 2006 11 02 | 621 | 0.5− | 0.4+ |
| 2001 12 14 | 704 | 0.5+ | 1.1+ | 2003 05 05 | 704 | 1.1+ | 1.0+ | 2006 11 02 | 621 | 0.5− | 0.0 |
| 2001 12 14 | 704 | 0.4+ | 1.2+ | 2003 05 05 | 704 | 0.0 | 0.7+ | 2006 11 13 | G96 | 1.7− | 0.3+ |
| 2003 03 24 | 291 | 0.3+ | 0.1− | 2003 05 05 | 704 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.5− | 0.0 |
| 2003 03 24 | 291 | 0.1+ | 0.2− | 2003 05 05 | 704 | 0.7− | 0.3− | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2003 03 24 | 291 | 0.5+ | 0.0 | 2003 05 06 | 691 | 0.4+ | 1.0+ | 2006 11 13 | G96 | 0.2− | 0.2+ |
| 2003 03 26 | 699 | 1.0− | 1.3+ | 2003 05 06 | 691 | 0.7+ | 0.9+ | | | | |
| 2003 03 26 | 699 | 0.3+ | 0.3+ | 2003 05 06 | 691 | 0.6+ | 0.8+ | | | | |

**(143611)∗ 2003 FP$_{117}$ = 1997 XT$_3$**

Discovered 2003 Mar. 25 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 47492)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.06673 | | (2000.0) | | | |
| $n$ | 0.21307681 | $\omega$ | 35.67801 | | −0.73405270 | −0.67088070 |
| $a$ | 2.7761649 | $\Omega$ | 101.82944 | | +0.59543392 | −0.71039161 |
| $e$ | 0.1152621 | $i$ | 6.17545 | | +0.32653495 | −0.21275067 |
| $P$ | 4.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 03 | 910 | 1.2− | 0.9− | 2003 02 04 | 644 | 0.2+ | 0.1+ | 2003 03 26 | 699 | 0.0 | 0.9+ |
| 1997 12 04 | 910 | 1.0− | 0.9− | 2003 02 04 | 644 | 0.2+ | 0.3+ | 2003 03 26 | 699 | 0.1+ | 0.2+ |
| 1997 12 04 | 910 | 1.7− | 0.9− | 2003 02 04 | 644 | 0.1− | 0.3+ | 2003 03 31 | 645 | 0.1− | 0.0 |
| 1997 12 06 | 910 | 0.5+ | 0.7− | 2003 02 04 | 644 | 0.0 | 0.2+ | 2003 03 31 | 645 | 0.0 | 0.1− |
| 1997 12 06 | 910 | 0.6+ | 0.8− | 2003 02 04 | 644 | 0.1+ | 0.3+ | 2003 04 01 | 704 | 0.5+ | 0.4+ |
| 1997 12 06 | 910 | 0.0 | 0.8− | 2003 02 04 | 644 | 0.1+ | 0.5+ | 2003 04 01 | 704 | 0.3+ | 1.1+ |
| 1998 02 01 | 327 | 0.7+ | 0.2− | 2003 02 04 | 644 | 0.1+ | 0.2+ | 2003 04 01 | 704 | 0.5+ | 0.8+ |
| 1998 02 01 | 327 | 0.6+ | 0.1+ | 2003 02 28 | 704 | 1.5+ | 0.8+ | 2003 04 01 | 704 | (1.9+ | 0.1+) |
| 1998 02 01 | 327 | 0.4+ | 0.2+ | 2003 02 28 | 704 | 0.5+ | 0.3+ | 2003 04 01 | 704 | 0.8+ | 0.1− |
| 2001 11 19 | 699 | (2.1+ | 0.2+) | 2003 02 28 | 704 | 0.5+ | 0.0 | 2003 04 01 | 704 | 0.6+ | 1.1+ |
| 2001 11 19 | 699 | 0.7+ | 0.1+ | 2003 02 28 | 704 | 0.6+ | 0.0 | 2003 04 01 | 704 | 0.3+ | 0.7− |
| 2001 11 19 | 699 | (3.5+ | 0.3+) | 2003 02 28 | 704 | 1.3+ | 0.1− | 2003 04 01 | 704 | 0.2+ | 0.6− |
| 2001 11 19 | 699 | 0.4+ | 0.2+ | 2003 02 28 | 704 | 0.3− | 0.5+ | 2003 04 01 | 704 | 0.2− | 0.8+ |
| 2001 11 19 | 608 | 0.3+ | 0.5− | 2003 03 06 | 699 | (1.9+ | 0.3+) | 2003 04 01 | 704 | 0.5+ | 0.2+ |
| 2001 11 19 | 608 | 0.2+ | 0.2− | 2003 03 06 | 699 | 1.1+ | 0.4− | 2003 04 05 | 699 | 0.5− | 0.1− |
| 2001 11 19 | 608 | 0.4+ | 0.5− | 2003 03 06 | 699 | 0.2+ | 0.6− | 2003 04 05 | 699 | 0.4− | 0.8− |
| 2001 11 20 | 704 | 0.1+ | 0.4+ | 2003 03 06 | 699 | 0.1+ | 1.4+ | 2003 04 05 | 699 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2003 03 11 | 644 | 0.3+ | 0.4− | 2003 04 05 | 699 | 0.8+ | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.8+ | 2003 03 11 | 644 | 0.2+ | 0.4− | 2005 09 03 | 703 | 0.1− | 0.5+ |
| 2001 11 20 | 704 | 1.3− | 0.4− | 2003 03 11 | 644 | 0.4+ | 0.2− | 2005 09 03 | 703 | 0.3− | 0.9+ |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2003 03 23 | 645 | 0.1− | 0.0 | 2005 09 03 | 703 | (1.6− | 2.2+) |
| 2001 12 11 | 704 | 0.6− | 0.1− | 2003 03 23 | 645 | 0.3− | 0.1− | 2005 09 03 | 703 | (0.3+ | 1.8+) |
| 2001 12 11 | 704 | 0.4− | 0.3+ | 2003 03 25 | 644 | 0.0 | 0.6− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 12 11 | 704 | 0.3− | 0.5+ | 2003 03 25 | 644 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | 0.5− | 0.2+ | 2003 03 25 | 644 | 0.7+ | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2003 02 04 | 644 | 0.1+ | 0.3+ | 2003 03 25 | 644 | 0.5+ | 0.3+ | 2006 12 01 | 704 | 0.5+ | 0.1+ |
| 2003 02 04 | 644 | 0.4+ | 0.2+ | 2003 03 25 | 644 | 0.2+ | 0.5− | 2006 12 01 | 704 | 0.2+ | 0.3+ |
| 2003 02 04 | 644 | 0.0 | 0.2+ | 2003 03 25 | 644 | 0.4+ | 0.5+ | 2006 12 01 | 704 | 0.8− | 0.3+ |
| 2003 02 04 | 644 | 0.0 | 0.2+ | 2003 03 26 | 699 | 0.0 | 0.7+ | | | | |
| 2003 02 04 | 644 | 0.0 | 0.5+ | 2003 03 26 | 699 | 0.1− | 0.3+ | | | | |

**(143612)∗ 2003 FQ$_{120}$**

Discovered 2003 Mar. 24 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.89337 | | (2000.0) | | | |
| $n$ | 0.27969145 | $\omega$ | 74.55592 | | +0.30745315 | +0.95146057 |
| $a$ | 2.3157051 | $\Omega$ | 213.36020 | | −0.88249793 | +0.27961345 |
| $e$ | 0.2174944 | $i$ | 1.45643 | | −0.35590723 | +0.12860445 |
| $P$ | 3.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 23 | 010 | (0.1+ | 2.3−) | 2003 04 07 | 691 | 1.3+ | 0.5+ | 2004 10 12 | 699 | 0.1+ | 0.6+ |
| 1993 07 23 | 010 | 0.5+ | 0.9− | 2003 04 07 | 691 | 1.2+ | 0.6+ | 2004 10 13 | 691 | 0.1+ | 0.1+ |
| 1993 07 23 | 010 | 1.9+ | 0.6− | 2003 04 07 | 691 | 1.2+ | 0.4+ | 2004 10 13 | 691 | 0.2+ | 0.1+ |
| 1996 03 20 | 691 | 0.5− | 0.6− | 2003 04 09 | 704 | 0.3+ | 0.2+ | 2004 10 13 | 691 | 0.1+ | 0.1+ |
| 1996 03 20 | 691 | (3.5− | 0.3−) | 2003 04 09 | 704 | 1.2+ | 1.3+ | 2004 10 14 | 704 | 0.1+ | 0.7+ |
| 1996 03 20 | 691 | 0.4− | 0.6− | 2003 04 09 | 704 | 0.5+ | 1.0+ | 2004 10 14 | 704 | 0.5− | 0.7+ |
| 1997 11 01 | 691 | 0.5+ | 0.1− | 2004 09 16 | 699 | 0.1+ | 1.0+ | 2004 10 14 | 704 | 0.5− | 0.7+ |
| 1997 11 01 | 691 | 1.0+ | 0.1+ | 2004 09 16 | 699 | 0.2+ | 0.1− | 2004 10 14 | 704 | 0.8− | 0.5+ |
| 1997 11 01 | 691 | 0.5+ | 0.3− | 2004 09 16 | 699 | 0.4− | 0.5− | 2004 10 14 | 704 | 0.2− | 0.8+ |
| 2000 07 23 | 704 | 0.1+ | 0.8+ | 2004 09 16 | 699 | 0.2− | 0.4+ | 2004 10 20 | 704 | (0.8− | 3.2−) |
| 2000 07 23 | 704 | 0.3− | 0.8+ | 2004 09 17 | 333 | 1.0− | 0.5+ | 2004 10 20 | 704 | 0.4+ | 0.2+ |
| 2000 07 23 | 704 | 0.3− | 0.5+ | 2004 09 17 | 704 | 0.2− | 0.4− | 2004 10 20 | 704 | 0.6+ | 0.7+ |
| 2001 12 17 | 704 | 0.7+ | 0.4− | 2004 09 17 | 333 | 0.2− | 0.1− | 2004 10 20 | 704 | 0.2+ | 1.0+ |
| 2001 12 17 | 704 | 0.4+ | 0.7− | 2004 09 17 | 704 | 0.1− | 0.6− | 2004 10 20 | 704 | 1.7+ | 0.8− |
| 2001 12 17 | 704 | 0.7+ | 0.2+ | 2004 09 17 | 704 | 0.3− | 0.1− | 2004 10 21 | 704 | 0.3− | 0.1− |
| 2001 12 17 | 704 | 0.7+ | 0.6+ | 2004 09 17 | 704 | 0.5− | 0.3+ | 2004 10 21 | 704 | 0.2− | 0.0 |
| 2003 03 06 | 699 | 1.4+ | 0.7+ | 2004 09 17 | 704 | 1.2− | 1.1+ | 2004 10 21 | 704 | 0.2− | 0.1+ |
| 2003 03 06 | 699 | 0.2+ | 0.4+ | 2004 09 17 | 333 | 0.4− | 0.4+ | 2004 10 21 | 704 | 0.0 | 0.0 |
| 2003 03 06 | 699 | 1.6+ | 0.6− | 2004 09 22 | 704 | 0.9− | 0.2− | 2004 10 21 | 704 | 0.8− | 0.1+ |
| 2003 03 06 | 699 | 0.1− | 0.8− | 2004 09 22 | 704 | 0.7− | 0.7− | 2004 10 24 | 704 | 1.3− | 1.0− |
| 2003 03 24 | 691 | 0.4− | 0.5+ | 2004 09 22 | 704 | 0.1− | 0.0 | 2004 10 24 | 704 | 1.2− | 0.3+ |
| 2003 03 24 | 691 | 0.3− | 0.7+ | 2004 09 22 | 704 | 0.8− | 0.2+ | 2004 10 24 | 704 | 0.8− | 0.8+ |
| 2003 03 24 | 691 | 0.1− | 0.8+ | 2004 09 22 | 704 | 1.2− | 0.3+ | 2004 10 24 | 704 | 0.6− | 0.2− |
| 2003 03 25 | 699 | 0.7+ | 1.1− | 2004 09 23 | 333 | 0.4+ | 0.6+ | 2004 10 24 | 704 | 1.6− | 1.0+ |
| 2003 03 25 | 699 | 0.1+ | 0.4+ | 2004 09 23 | 333 | 1.8+ | 0.2− | 2006 01 10 | G96 | 0.2+ | 0.2− |
| 2003 03 25 | 699 | 1.8+ | 0.5+ | 2004 10 09 | 704 | 0.1+ | 0.0 | 2006 01 10 | G96 | 0.2+ | 0.4− |
| 2003 03 25 | 699 | 1.3− | 0.0 | 2004 10 09 | 704 | 0.0 | 0.3+ | 2006 01 10 | G96 | 0.2+ | 0.3− |
| 2003 03 31 | 703 | 0.7+ | 0.8− | 2004 10 09 | 691 | 0.2− | 0.1+ | 2006 01 10 | G96 | 0.2+ | 0.5− |
| 2003 03 31 | 703 | 0.5+ | 0.6+ | 2004 10 09 | 704 | 0.5− | 0.3− | 2006 01 23 | G96 | 0.0 | 0.6− |
| 2003 03 31 | 703 | 0.4− | 0.9+ | 2004 10 09 | 704 | 0.1− | 0.2+ | 2006 01 23 | G96 | 0.1+ | 0.6− |
| 2003 03 31 | 703 | 0.7− | 0.1+ | 2004 10 09 | 691 | 0.4− | 0.2+ | 2006 01 23 | G96 | 0.1+ | 0.5− |
| 2003 04 01 | 704 | 1.1+ | 0.6+ | 2004 10 09 | 704 | 0.1− | 0.1− | 2006 01 23 | G96 | 0.5− | 0.4− |
| 2003 04 01 | 704 | 0.8+ | 0.3+ | 2004 10 09 | 691 | 0.3− | 0.1+ | 2006 01 24 | 704 | 1.1− | 0.6− |
| 2003 04 01 | 704 | 0.2+ | 0.1− | 2004 10 12 | 699 | 0.3− | 0.4+ | 2006 01 24 | 704 | 0.6+ | 1.5− |
| 2003 04 01 | 704 | 1.7+ | 0.7+ | 2004 10 12 | 699 | 0.3− | 0.4− | 2006 01 24 | 704 | 0.8− | 0.6− |
| 2003 04 01 | 704 | 1.3+ | 1.1+ | 2004 10 12 | 699 | 0.1+ | 0.8+ | 2006 01 24 | 704 | 1.4− | 0.8+ |

**(143613)∗ 2003 FD$_{121}$ = 2001 YE$_{102}$**

Discovered 2003 Mar. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 47495)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.80141 | | (2000.0) | | | |
| $n$ | 0.18702914 | $\omega$ | 85.77114 | | −0.99708155 | +0.06153222 |
| $a$ | 3.0282836 | $\Omega$ | 97.75226 | | −0.07434867 | −0.91707609 |
| $e$ | 0.0600221 | $i$ | 2.61401 | | +0.01733974 | −0.39393557 |
| $P$ | 5.27 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.0 | 0.4− | 2003 03 10 | 599 | 0.6− | 0.9+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 1995 10 24 | 691 | 0.1+ | 0.3− | 2003 03 10 | 599 | 0.3− | 0.6+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 1995 10 24 | 691 | 0.1+ | 0.5− | 2003 03 10 | 599 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1998 03 29 | 704 | 0.9+ | 0.8+ | 2003 03 23 | 683 | 0.4+ | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 1998 03 29 | 704 | 0.9− | 0.9+ | 2003 03 23 | 683 | 0.2− | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 1998 03 29 | 704 | 1.8+ | 0.8+ | 2003 03 23 | 683 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 1998 03 29 | 704 | (2.0− | 0.9+) | 2003 03 25 | 699 | 0.1− | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1998 03 29 | 704 | (6.0− | 1.0+) | 2003 03 25 | 699 | 1.1− | 0.6− | 2006 11 15 | 691 | (1.8+ | 0.8−) |
| 1998 04 22 | 704 | (2.6− | 2.4+) | 2003 03 25 | 699 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.4+ | 0.0 |
| 1998 04 22 | 704 | 1.7+ | 1.5− | 2003 03 25 | 699 | 0.1+ | 1.2− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1998 04 22 | 704 | 1.0+ | 1.4− | 2003 03 26 | 644 | 0.0 | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 1998 04 22 | 704 | (2.5− | 1.0−) | 2003 03 26 | 644 | 0.4+ | 0.6+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 1.4− | 0.8− | 2003 03 26 | 644 | 0.1+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.4− | 0.3− | 2003 04 09 | 704 | 0.1− | 0.9+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2003 04 09 | 704 | 0.6− | 1.0+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | 0.7− | 0.5− | 2003 04 09 | 704 | 0.4+ | 0.5− | 2006 11 24 | G96 | 0.5+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 704 | 0.0 | 1.4− | 2003 04 09 | 704 | 0.1− | 1.3+ | 2006 11 24 | G96 | 0.3+ | 0.3+ |
| 2001 12 20 | 704 | 0.6− | 0.8− | 2003 04 09 | 704 | 0.1− | 1.1+ | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2001 12 20 | 704 | 0.2+ | 0.7− | 2005 08 29 | 691 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.6+ | 0.2− |
| 2001 12 20 | 704 | (0.5+ | 1.8−) | 2005 08 29 | 691 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2002 01 13 | 704 | 0.9+ | 1.3− | 2005 08 29 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2002 01 13 | 704 | 0.6+ | 0.8− | 2005 09 12 | 691 | 0.3− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2002 01 13 | 704 | 0.0 | 0.0 | 2005 09 12 | 691 | 0.2− | 0.5+ | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2003 03 09 | 704 | 0.2+ | 0.1+ | 2005 09 12 | 691 | 0.3− | 0.3+ | 2006 12 01 | 691 | 0.3+ | 0.2+ |
| 2003 03 09 | 704 | 1.2+ | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.4− | 0.5+ |
| 2003 03 09 | 704 | 0.3+ | 0.9+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 12 01 | G96 | 0.6− | 0.3+ |
| 2003 03 09 | 704 | 0.3+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.1− | 0.4+ |
| 2003 03 09 | 704 | 0.2− | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3− | 0.3+ |
| 2003 03 10 | 599 | 0.3+ | 0.7+ | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 12 01 | G96 | 0.4− | 0.0 |

**(143614)∗ 2003 GO$_2$ = 1999 RC$_9$**

Discovered 2003 Apr. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47502)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 188.05302 | | (2000.0) | | | |
| $n$ | 0.16948511 | $\omega$ | 235.65250 | | −0.69221523 | +0.72157614 |
| $a$ | 3.2338139 | $\Omega$ | 350.50873 | | −0.63383205 | −0.61638331 |
| $e$ | 0.0942904 | $i$ | 4.48066 | | −0.34510145 | −0.31527683 |
| $P$ | 5.82 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 691 | 0.6− | 0.6+ | 2003 03 27 | 691 | 0.9+ | 1.2+ | 2005 09 14 | 691 | 0.2− | 0.7+ |
| 1999 09 04 | 691 | 0.3− | 0.7+ | 2003 03 27 | 691 | 1.0+ | 0.9+ | 2005 09 14 | 691 | 0.4− | 0.3+ |
| 1999 09 04 | 691 | 0.5− | 0.6+ | 2003 04 01 | 704 | 0.3+ | 1.5+ | 2005 11 29 | G96 | 1.0− | 0.3− |
| 1999 09 08 | 691 | 0.2− | 0.6+ | 2003 04 01 | 704 | 1.0+ | 0.3− | 2005 11 29 | G96 | 0.3+ | 0.1+ |
| 1999 09 08 | 691 | 0.2− | 0.6+ | 2003 04 01 | 704 | 0.3+ | 0.7+ | 2005 11 29 | G96 | 0.5− | 0.0 |
| 1999 09 08 | 691 | 0.2− | 0.4+ | 2003 04 01 | 704 | 1.3+ | 1.1+ | 2005 11 29 | G96 | 0.3− | 0.4+ |
| 2002 01 09 | 645 | 0.1− | 0.0 | 2003 04 03 | 699 | (1.8− | 1.3−) | 2005 12 25 | 291 | 0.3+ | 0.9+ |
| 2002 01 09 | 645 | 0.0 | 0.1+ | 2003 04 03 | 699 | 1.0− | 0.3− | 2005 12 25 | 291 | 0.2+ | 0.6+ |
| 2002 01 14 | 704 | 0.1− | 1.3− | 2003 04 03 | 699 | (0.3+ | 2.1−) | 2005 12 25 | 291 | 0.2+ | 0.6+ |
| 2002 01 14 | 704 | 0.1+ | 0.1+ | 2003 04 03 | 699 | 1.4+ | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 01 14 | 704 | 0.9+ | 1.1− | 2003 04 04 | 704 | 0.4+ | 0.2+ | 2006 10 20 | G96 | 0.6− | 0.1− |
| 2002 01 14 | 704 | 0.5+ | 0.2+ | 2003 04 04 | 704 | 0.4+ | 0.0 | 2006 10 20 | G96 | 0.5− | 0.2− |
| 2002 01 14 | 704 | 0.8+ | 0.4− | 2003 04 04 | 704 | 0.5+ | 1.0+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2002 02 06 | 704 | 0.0 | 0.5+ | 2003 04 04 | 704 | 0.7+ | 0.2− | 2006 11 21 | 691 | 0.6− | 0.2+ |
| 2002 02 06 | 704 | 0.2− | 0.6+ | 2003 04 04 | 691 | 0.2− | 1.3+ | 2006 11 21 | 691 | 0.3− | 0.4+ |
| 2002 02 06 | 704 | 0.2+ | 1.0+ | 2003 04 04 | 691 | 0.1− | 1.3+ | 2006 11 21 | 691 | 0.1− | 0.6+ |
| 2003 03 27 | 699 | 0.5+ | 0.9− | 2003 04 04 | 691 | 0.0 | 1.3+ | 2006 11 25 | 691 | 0.4+ | 0.6+ |
| 2003 03 27 | 699 | 1.1− | 0.3+ | 2005 08 31 | 691 | 0.2− | 0.4+ | 2006 11 25 | 691 | 0.3+ | 0.1− |
| 2003 03 27 | 699 | 0.6+ | 0.2− | 2005 08 31 | 691 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.4− | 1.0+ |
| 2003 03 27 | 691 | 1.0+ | 0.9+ | 2005 08 31 | 691 | 0.5− | 0.6+ | | | | |
| 2003 03 27 | 699 | (0.2− | 1.7+) | 2005 09 14 | 691 | 0.3− | 0.4+ | | | | |

**(143615)∗ 2003 GK$_4$ = 2001 UH$_{195}$**

Discovered 2003 Apr. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47504)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.16915 | | (2000.0) | | | |
| $n$ | 0.26004111 | $\omega$ | 143.76012 | | −0.75894740 | −0.65115188 |
| $a$ | 2.4309426 | $\Omega$ | 355.61135 | | +0.59659865 | −0.69519908 |
| $e$ | 0.1518954 | $i$ | 0.19945 | | +0.26090016 | −0.30446588 |
| $P$ | 3.79 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 07 | 691 | 0.2+ | 0.2− | 2003 03 27 | 644 | 0.2+ | 0.6+ | 2005 10 27 | G96 | 0.7− | 0.1− |
| 1995 01 07 | 691 | 0.1+ | 0.1+ | 2003 03 27 | 699 | 0.1− | 0.7+ | 2005 10 27 | G96 | 0.1+ | 0.2− |
| 1995 01 07 | 691 | 0.1+ | 0.5− | 2003 03 27 | 691 | 0.7+ | 0.4+ | 2005 11 01 | 691 | 0.4− | 0.3+ |
| 1995 01 30 | 691 | 0.1+ | 0.7− | 2003 03 27 | 691 | 0.5+ | 0.6+ | 2005 11 01 | 691 | 0.2− | 0.3+ |
| 1995 01 30 | 691 | 0.8− | 0.9− | 2003 04 01 | 704 | 0.4− | 0.9+ | 2005 11 01 | 691 | 0.5− | 0.7+ |
| 1995 01 30 | 691 | 0.2− | 0.2− | 2003 04 01 | 704 | 0.4− | 0.3− | 2005 11 05 | 691 | 0.1+ | 0.3+ |
| 2000 07 30 | 807 | 0.4− | 0.0 | 2003 04 01 | 704 | 0.1+ | 0.9+ | 2005 11 05 | 691 | 0.1+ | 0.3+ |
| 2000 07 30 | 807 | 0.9− | 0.4− | 2003 04 01 | 704 | 0.1+ | 0.6+ | 2005 11 05 | 691 | 0.2+ | 0.3+ |
| 2001 10 18 | 644 | 1.0+ | 0.0 | 2003 04 01 | 704 | 1.3− | 0.0 | 2005 11 10 | 143 | 1.9− | 0.3+ |
| 2001 10 18 | 644 | 0.7+ | 0.0 | 2003 04 03 | 699 | 0.2+ | 0.2− | 2005 11 10 | 143 | 0.1− | 0.4+ |
| 2001 10 18 | 644 | 0.8+ | 0.2− | 2003 04 03 | 699 | 1.7+ | 0.5+ | 2005 11 10 | 143 | 0.2− | 0.5+ |
| 2001 10 21 | 704 | 0.8− | 1.1+ | 2003 04 03 | 699 | 0.5+ | 0.4+ | 2005 11 11 | 691 | 0.4+ | 0.3+ |
| 2001 10 21 | 704 | 0.4− | 0.8+ | 2003 04 03 | 699 | 0.0 | 0.5+ | 2005 11 11 | 691 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.0 | 1.3+ | 2003 04 26 | 608 | 0.4+ | 0.1− | 2005 11 11 | 691 | 0.2+ | 0.2+ |
| 2001 10 21 | 704 | 0.2− | 0.3− | 2003 04 26 | 608 | 0.8+ | 0.0 | 2005 11 26 | G96 | 0.0 | 0.0 |
| 2001 10 21 | 291 | 0.1− | 0.3+ | 2003 04 26 | 608 | 1.0+ | 0.6− | 2005 11 26 | G96 | (0.4+ | 2.0−) |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2003 04 27 | 699 | 0.0 | 0.5+ | 2005 11 26 | G96 | 0.2+ | 0.1− |
| 2001 10 21 | 291 | 0.1− | 0.3+ | 2003 04 27 | 699 | (2.2− | 0.4+) | 2005 11 26 | G96 | 0.2+ | 0.0 |
| 2001 10 21 | 291 | 0.1+ | 0.2+ | 2003 04 27 | 699 | 0.3+ | 0.5− | 2005 12 07 | 691 | 0.1− | 0.0 |
| 2003 03 27 | 644 | 0.4+ | 0.5+ | 2003 04 27 | 699 | 1.1+ | 0.4+ | 2005 12 07 | 691 | 0.4− | 0.4+ |
| 2003 03 27 | 699 | 1.5+ | 0.9− | 2003 04 30 | 691 | 0.3− | 0.7+ | 2005 12 07 | 691 | 0.6− | 0.4+ |
| 2003 03 27 | 644 | 0.1+ | 0.4+ | 2003 04 30 | 691 | 0.4− | 0.7+ | 2006 01 23 | G96 | 0.7+ | 0.1+ |
| 2003 03 27 | 699 | 0.1− | 0.5− | 2003 04 30 | 691 | 0.3− | 0.6+ | 2006 01 23 | G96 | 0.2− | 0.6− |
| 2003 03 27 | 691 | 0.4+ | 0.6+ | 2005 10 27 | G96 | 0.2− | 0.3− | 2006 01 23 | G96 | 0.1+ | 0.8− |
| 2003 03 27 | 699 | 0.6− | 0.3− | 2005 10 27 | G96 | 0.0 | 0.3− | 2006 01 23 | G96 | 0.2+ | 0.6− |

**(143616)∗ 2003 GA$_{11}$ = 1998 HW$_{65}$**

Discovered 2003 Apr. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 47514)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 226.90290 | | (2000.0) | | | |
| $n$ | 0.18540239 | $\omega$ | 179.83272 | | −0.98792877 | +0.15427404 |
| $a$ | 3.0459715 | $\Omega$ | 9.07812 | | −0.14222901 | −0.86751064 |
| $e$ | 0.1127651 | $i$ | 5.09414 | | −0.06138127 | −0.47288985 |
| $P$ | 5.32 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.6+ | 1.5+ | 2003 03 24 | 691 | 0.3+ | 0.6+ | 2005 10 06 | G96 | 0.0 | 0.2+ |
| 1998 04 21 | 704 | 1.0− | 0.1− | 2003 04 01 | 704 | 0.7+ | 0.5+ | 2006 10 04 | G96 | 0.5− | 0.1+ |
| 1998 04 21 | 704 | 0.8+ | 0.2− | 2003 04 01 | 704 | 0.1+ | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 1998 04 21 | 704 | (3.3− | 1.5+) | 2003 04 01 | 704 | 0.4+ | 1.5+ | 2006 10 04 | G96 | 0.3+ | 0.0 |
| 1998 04 22 | 704 | 0.1+ | 0.2− | 2003 04 04 | 704 | 0.2+ | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 1998 04 22 | 704 | (2.6− | 1.3+) | 2003 04 04 | 704 | 0.7+ | 1.1+ | 2006 10 23 | 691 | 0.1− | 0.4+ |
| 1998 04 22 | 704 | 0.8− | 0.6+ | 2003 04 04 | 704 | 0.5+ | 1.2+ | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 1998 04 22 | 704 | 0.0 | 0.2− | 2003 04 04 | 704 | 0.1− | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2003 03 09 | 704 | 0.3− | 0.6+ | 2005 08 29 | 691 | 0.2− | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2003 03 09 | 704 | 0.9+ | 0.2+ | 2005 08 29 | 691 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2003 03 09 | 704 | 1.0+ | 0.9+ | 2005 08 29 | 691 | 0.2− | 0.9+ | 2006 10 27 | 691 | 0.3+ | 0.3+ |
| 2003 03 09 | 704 | 0.4− | 0.1+ | 2005 09 12 | 691 | 0.4− | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2003 03 15 | 608 | 0.6+ | 0.1+ | 2005 09 12 | 691 | 0.5− | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.0 |
| 2003 03 15 | 608 | 0.6+ | 0.2− | 2005 09 12 | 691 | 0.5− | 0.4+ | 2006 12 01 | G96 | 0.2− | 0.6− |
| 2003 03 15 | 608 | 0.4+ | 0.1− | 2005 10 06 | G96 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.5+ | 0.2− |
| 2003 03 24 | 691 | 0.0 | 0.6+ | 2005 10 06 | G96 | 0.4− | 0.2+ | | | | |
| 2003 03 24 | 691 | 0.2+ | 0.4+ | 2005 10 06 | G96 | 0.0 | 0.1+ | | | | |

**(143617)∗ 2003 GH$_{12}$**

Discovered 2003 Apr. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.76054 | | (2000.0) | | | |
| $n$ | 0.18262980 | $\omega$ | 234.69765 | | +0.38824404 | −0.92091886 |
| $a$ | 3.0767222 | $\Omega$ | 192.59456 | | +0.88831154 | +0.38387991 |
| $e$ | 0.1191123 | $i$ | 9.04470 | | +0.24529406 | +0.06741421 |
| $P$ | 5.40 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.8− | 0.6+ | 2005 07 15 | 691 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2000 09 03 | 704 | 0.5− | 0.6+ | 2005 07 15 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 1.3− |
| 2000 09 03 | 704 | 0.7− | 0.3+ | 2005 07 15 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.6− | 1.0+ | 2006 09 30 | 703 | 0.5+ | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.3− | | |
| 2000 09 23 | 704 | 1.1+ | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.6+ | 2006 11 11 | 703 | 0.7+ | 0.4− | | |
| 2000 09 23 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.4+ | 1.1+ | | |
| 2000 09 23 | 704 | 0.8− | 0.8+ | 2006 09 30 | 703 | 1.2− | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.6+ | | |
| 2000 09 23 | 704 | 0.2+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.8+ | 0.2− | | |
| 2000 09 23 | 704 | 1.0+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.9+ | | |
| 2001 12 11 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 14 | 704 | (0.1+ | 1.8+) | | |
| 2001 12 11 | 704 | 0.0 | 0.4− | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.2− | 1.5+ | | |
| 2001 12 11 | 704 | 0.9− | 0.2− | 2006 10 16 | 703 | 0.9− | 0.9+ | 2006 11 17 | 704 | 0.6− | 0.2+ | | |
| 2003 03 07 | 699 | 0.0 | 0.9− | 2006 10 16 | 703 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.7+ | | |
| 2003 03 07 | 699 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.2− | | |
| 2003 03 07 | 699 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.6+ | 0.2+ | 2006 11 19 | 703 | 0.0 | 1.4+ | | |
| 2003 03 07 | 699 | 0.9− | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.3+ | 0.1− | | |
| 2003 04 01 | 704 | 0.4− | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.0 | 0.2+ | | |
| 2003 04 01 | 704 | 0.5− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.4− | 0.6+ | | |
| 2003 04 01 | 704 | 1.0+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.7+ | | |
| 2003 04 01 | 704 | 0.1+ | 1.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.7+ | | |
| 2003 04 01 | 704 | (0.1+ | 1.5+) | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.5+ | | |
| 2003 04 05 | 691 | 0.9+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.4+ | | |
| 2003 04 05 | 691 | 0.9+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.9+ | | |
| 2003 04 05 | 691 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.9− | 0.5+ | | |
| 2003 05 01 | 691 | 0.5− | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.4+ | | |
| 2003 05 01 | 691 | 0.3+ | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.4+ | 1.3+ | | |
| 2003 05 01 | 691 | 0.3− | 0.9+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.9+ | | |
| 2005 06 27 | 691 | 0.4− | 0.4+ | 2006 11 01 | 703 | 0.6− | 0.2− | 2006 11 20 | 704 | (1.0− | 1.8+) | | |
| 2005 06 27 | 691 | 0.2− | 0.2+ | 2006 11 01 | 703 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.4− | | |
| 2005 06 27 | 691 | 0.1+ | 0.1− | 2006 11 01 | 703 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2005 07 10 | 691 | 0.3− | 0.3+ | 2006 11 01 | 703 | 0.5− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.4− | | |
| 2005 07 10 | 691 | (1.7− | 0.1−) | 2006 11 08 | 644 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2005 07 10 | 691 | 0.5+ | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.1+ | | | | | | |

**(143618)∗ 2003 GQ$_{28}$**

Discovered 2003 Apr. 7 by T. Pauwels at Uccle.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.15821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17825435 | $\omega$ | 261.79691 | | +0.13981218 | −0.99017791 | |
| $a$ | 3.1268662 | $\Omega$ | 180.16876 | | +0.96377051 | +0.13620407 | |
| $e$ | 0.0378293 | $i$ | 10.18137 | | +0.22715405 | +0.03156213 | |
| $P$ | 5.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 31 | 691 | 0.0 | 0.6− | 2003 04 03 | 699 | 0.4+ | 0.0 | 2005 08 26 | 699 | 0.3+ | 0.9+ | | |
| 1994 08 31 | 691 | 0.5− | 0.7− | 2003 04 03 | 699 | 0.4− | 1.0+ | 2005 08 26 | 699 | (1.9− | 1.3+) | | |
| 1994 08 31 | 691 | 0.2− | 1.1− | 2003 04 03 | 699 | 0.1− | 0.8+ | 2005 08 27 | 644 | 0.0 | 0.2+ | | |
| 1997 01 15 | 910 | 0.2+ | 0.5− | 2003 04 03 | 699 | 0.9− | 0.1− | 2005 08 27 | 644 | 0.1− | 0.2+ | | |
| 1997 01 15 | 910 | 0.9+ | 0.2− | 2003 04 07 | 012 | (1.9− | 0.2+) | 2005 08 27 | 644 | 0.0 | 0.2+ | | |
| 1997 01 15 | 910 | 0.5+ | 0.1− | 2003 04 07 | 012 | 0.6− | 0.1+ | 2005 08 31 | 691 | 0.1+ | 0.2+ | | |
| 2000 10 01 | 691 | 0.4+ | 0.2+ | 2003 04 07 | 012 | 0.8+ | 0.6− | 2005 08 31 | 691 | 0.2− | 0.5+ | | |
| 2000 10 01 | 691 | 0.2+ | 0.1+ | 2003 04 07 | 012 | 0.3− | 0.3+ | 2005 08 31 | 691 | 0.4− | 0.3+ | | |
| 2000 10 01 | 691 | 0.3+ | 0.1+ | 2003 04 07 | 012 | 0.6− | 0.3− | 2005 09 13 | 691 | 0.0 | 0.3+ | | |
| 2000 10 06 | 699 | 0.5+ | 0.8+ | 2003 04 07 | 012 | 0.5− | 0.2− | 2005 09 13 | 691 | 0.0 | 0.3+ | | |
| 2000 10 06 | 699 | 0.1+ | 1.1+ | 2003 04 07 | 012 | 0.4− | 0.2− | 2005 09 13 | 691 | 0.1+ | 0.3+ | | |
| 2000 10 06 | 699 | (2.3+ | 0.9+) | 2003 04 07 | 012 | 0.3− | 0.3− | 2005 09 27 | 691 | 0.2+ | 0.5+ | | |
| 2000 10 06 | 699 | (5.0+ | 2.7+) | 2003 04 07 | 012 | 0.3+ | 0.5− | 2005 09 27 | 691 | 0.2+ | 0.3+ | | |
| 2001 12 19 | 704 | 0.7+ | 1.3+ | 2003 04 07 | 012 | 1.2+ | 0.2− | 2005 09 27 | 691 | 0.0 | 0.3+ | | |
| 2001 12 19 | 704 | 0.3− | 0.4+ | 2003 04 07 | 012 | 0.4+ | 1.4− | 2005 11 25 | G96 | 0.6− | 0.6− | | |
| 2001 12 19 | 704 | 0.8+ | 1.4+ | 2003 04 09 | 691 | 0.2+ | 0.2+ | 2005 11 25 | G96 | 0.6− | 0.4− | | |
| 2001 12 19 | 704 | 0.2+ | 0.6+ | 2003 04 09 | 691 | 0.1+ | 0.2+ | 2005 11 25 | G96 | 0.2+ | 0.3− | | |
| 2001 12 19 | 704 | 0.6+ | 0.5+ | 2003 04 09 | 691 | 0.2+ | 0.5+ | 2005 11 25 | G96 | 0.3+ | 0.2− | | |
| 2003 03 11 | 599 | 0.0 | 0.8+ | 2003 04 27 | 699 | 0.7+ | 0.2+ | 2006 10 20 | 703 | 1.0− | 0.4+ | | |
| 2003 03 11 | 599 | (0.3− | 2.8−) | 2003 04 27 | 699 | 0.1− | 0.7− | 2006 10 20 | 703 | 1.0− | 0.2− | | |
| 2003 03 11 | 599 | (2.1− | 0.0 ) | 2003 04 27 | 699 | 0.8+ | 0.6+ | 2006 10 20 | 703 | 0.3− | 0.6+ | | |
| 2003 03 27 | 644 | 0.5− | 1.1+ | 2003 04 27 | 699 | 1.1− | 0.9+ | 2006 10 20 | 703 | 0.9− | 0.5+ | | |
| 2003 03 27 | 644 | 0.4− | 1.0+ | 2005 07 31 | 644 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.6− | | |
| 2003 03 27 | 644 | 0.2+ | 1.4+ | 2005 07 31 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.9+ | 0.4− | | |
| 2003 03 30 | 704 | 1.0+ | 0.1+ | 2005 07 31 | 644 | 0.1− | 0.6+ | 2006 11 15 | 703 | 1.4− | 0.5− | | |
| 2003 03 30 | 704 | 1.2− | 0.3+ | 2005 08 26 | 699 | 0.7+ | 1.5+ | 2006 11 15 | 703 | 1.2− | 0.7− | | |
| 2003 03 30 | 704 | (2.2− | 0.4−) | 2005 08 26 | 699 | 1.0− | 0.7+ | | | | | | |

**(143619)∗ 2003 GC$_{49}$ = 2001 XT$_{261}$**

Discovered 2003 Apr. 9 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 47535)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.11219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23763328 | $\omega$ | 38.82086 | | −0.99735780 | +0.00207627 | |
| $a$ | 2.5814549 | $\Omega$ | 141.11001 | | −0.02473024 | −0.94959255 | |
| $e$ | 0.2052120 | $i$ | 6.64185 | | +0.06830697 | −0.31347994 | |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 14 | 704 | 1.6− | 2.0− | 2003 04 21 | 703 | (1.6− | 2.9+) | 2003 05 21 | 699 | 0.6− | 0.5− | | |
| 1999 06 14 | 704 | 0.4− | 0.7+ | 2003 04 21 | 703 | (4.8− | 4.7+) | 2003 05 21 | 699 | 0.3− | 0.5− | | |
| 1999 06 14 | 704 | 0.2+ | 1.1− | 2003 04 24 | 699 | 0.2+ | 0.3− | 2003 05 21 | 699 | 0.6− | 0.3+ | | |
| 1999 06 14 | 704 | 0.5− | 0.2− | 2003 04 24 | 699 | 0.4− | 0.2− | 2003 05 21 | 699 | 0.2− | 0.1+ | | |
| 2000 09 27 | 691 | 0.3+ | 0.3+ | 2003 04 24 | 699 | 0.8+ | 0.6− | 2003 05 22 | 703 | 0.1− | 0.7+ | | |
| 2000 09 27 | 691 | 0.2− | 0.1+ | 2003 04 24 | 699 | 0.2− | 0.3+ | 2003 05 22 | 703 | 1.9+ | 0.1+ | | |
| 2000 09 27 | 691 | 0.3− | 0.5+ | 2003 04 26 | 608 | 0.6− | 0.6− | 2003 05 22 | 703 | 0.7− | 1.0+ | | |
| 2001 11 17 | 704 | 0.4+ | 0.0 | 2003 04 26 | 608 | 0.5− | 0.2− | 2003 05 22 | 703 | 0.9+ | 0.9+ | | |
| 2001 11 17 | 704 | 1.1+ | 0.5+ | 2003 04 26 | 608 | 0.5− | 0.5− | 2003 05 27 | 699 | 0.4− | 0.6+ | | |
| 2001 11 17 | 704 | 0.6+ | 1.4+ | 2003 04 28 | 704 | 0.0 | 0.2+ | 2003 05 27 | 699 | 0.4− | 0.2− | | |
| 2001 12 11 | 704 | (2.7− | 2.5+) | 2003 04 28 | 704 | 0.2+ | 0.1− | 2003 05 27 | 699 | 0.1+ | 0.1− | | |
| 2001 12 11 | 704 | (2.1− | 2.6+) | 2003 04 28 | 704 | 1.2+ | 0.3+ | 2003 05 27 | 699 | 1.0− | 0.0 | | |
| 2001 12 11 | 704 | (3.0− | 2.1+) | 2003 04 28 | 704 | 0.1+ | 0.5+ | 2004 08 15 | 807 | 0.3+ | 0.6+ | | |
| 2001 12 11 | 704 | 1.0− | 1.2+ | 2003 05 01 | 608 | 0.4+ | 1.1− | 2004 08 15 | 807 | 0.3+ | 0.5+ | | |
| 2001 12 14 | 644 | 0.0 | 0.9+ | 2003 05 01 | 608 | 0.5+ | 0.9− | 2005 10 31 | 703 | 0.5− | 0.1− | | |
| 2001 12 14 | 644 | 0.3+ | 0.8+ | 2003 05 01 | 608 | 0.3+ | 0.7− | 2005 10 31 | 703 | 0.3− | 0.5− | | |
| 2001 12 14 | 644 | 0.2+ | 0.6+ | 2003 05 05 | 699 | 0.1− | 0.2+ | 2005 10 31 | 703 | 0.7− | 0.6+ | | |
| 2003 03 27 | 691 | 0.3+ | 0.2− | 2003 05 05 | 699 | 0.2− | 0.3− | 2005 10 31 | 703 | 0.1+ | 0.2+ | | |
| 2003 03 27 | 691 | 0.1+ | 0.1+ | 2003 05 05 | 699 | 0.1− | 0.1+ | 2005 11 10 | 703 | 1.5− | 0.6+ | | |
| 2003 03 27 | 691 | 0.3+ | 0.0 | 2003 05 05 | 699 | 0.0 | 0.1+ | 2005 11 10 | 703 | 0.0 | 0.9− | | |
| 2003 04 09 | 691 | 0.3+ | 0.3+ | 2003 05 09 | 704 | 0.0 | 0.3+ | 2005 11 10 | 703 | 1.1− | 0.8− | | |
| 2003 04 09 | 691 | 0.2+ | 0.5+ | 2003 05 09 | 704 | 0.7+ | 1.0+ | 2005 11 10 | 703 | 1.1− | 0.5− | | |
| 2003 04 09 | 691 | 0.3+ | 0.6+ | 2003 05 09 | 704 | 0.1− | 0.2+ | 2005 11 26 | 703 | 0.0 | 0.4+ | | |
| 2003 04 11 | 291 | 0.0 | 0.1+ | 2003 05 09 | 704 | 0.5− | 0.4+ | 2005 11 26 | 703 | 1.0+ | 0.2+ | | |
| 2003 04 11 | 291 | 0.0 | 0.1+ | 2003 05 09 | 704 | 0.2+ | 0.5+ | 2005 11 26 | 703 | 0.0 | 0.6+ | | |
| 2003 04 11 | 291 | 0.1− | 0.2+ | 2003 05 11 | 608 | (3.0− | 1.1−) | 2005 11 26 | 703 | 0.7+ | 0.7+ | | |
| 2003 04 21 | 703 | 1.5− | 1.6+ | 2003 05 11 | 608 | 0.3− | 0.2+ | | | | | | |
| 2003 04 21 | 703 | (1.4− | 2.8+) | 2003 05 11 | 608 | 0.4+ | 0.3+ | | | | | | |

**(143620)∗ 2003 GM$_{50}$ = 2004 ML$_{7}$**

Discovered 2003 Apr. 4 by NEAT at Haleakala.

Id. K. E. Smalley (*MPO* 65490)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.00733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17426753 | $\omega$ | 113.92280 | | −0.95474439 | +0.10588111 | |
| $a$ | 3.1743762 | $\Omega$ | 73.11996 | | −0.22860312 | −0.85905117 | |
| $e$ | 0.0665030 | $i$ | 16.88535 | | +0.19027286 | −0.50081961 | |
| $P$ | 5.66 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 645 | 0.1+ | 0.1− | 2003 04 04 | 608 | 0.8+ | 0.9− | 2006 10 23 | G96 | 0.2− | 0.1− | | |
| 2001 12 20 | 645 | 0.1+ | 0.2− | 2003 04 04 | 608 | 0.8+ | 0.7− | 2006 10 23 | G96 | 0.5− | 0.1− | | |
| 2002 01 05 | 699 | 0.1+ | 0.2+ | 2003 04 04 | 608 | 1.4+ | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.6+ | | |
| 2002 01 05 | 699 | 1.0+ | 0.1− | 2003 04 08 | 608 | 0.6− | 0.9+ | 2006 11 14 | 704 | 0.3− | 1.3+ | | |
| 2002 01 05 | 699 | 0.5+ | 0.5+ | 2003 04 08 | 608 | 0.9− | 1.0+ | 2006 11 14 | 704 | 0.5+ | 0.3+ | | |
| 2002 01 05 | 699 | 0.9+ | 0.9+ | 2003 04 08 | 608 | 0.4− | 1.0+ | 2006 11 16 | G96 | 0.4− | 0.2− | | |
| 2002 01 23 | 704 | 0.8− | 0.0 | 2003 04 09 | 704 | 0.0 | 1.3+ | 2006 11 16 | G96 | 0.3− | 0.5− | | |
| 2002 01 23 | 704 | 1.5− | 0.2− | 2003 04 09 | 704 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.6− | 0.3− | | |
| 2002 01 23 | 704 | 1.3− | 0.4− | 2003 04 09 | 704 | 0.1+ | 0.9+ | 2006 11 16 | G96 | 0.5− | 0.2− | | |
| 2002 01 23 | 704 | (1.9− | 0.4−) | 2003 04 09 | 704 | 0.1+ | 0.9+ | 2006 11 17 | 704 | 0.2+ | 0.7+ | | |
| 2002 01 23 | 704 | 1.2− | 0.0 | 2003 04 09 | 704 | 0.0 | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.7+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 699 | 1.1− | 0.1+ | 2003 04 26 | 704 | (0.6− | 1.7+) | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2002 02 07 | 699 | 0.7− | 0.1− | 2003 04 26 | 704 | 0.1− | 0.2− | 2006 11 17 | 704 | (0.4+ | 1.9−) |
| 2002 02 07 | 699 | 0.2− | 1.2+ | 2003 04 26 | 704 | 0.0 | 0.3− | 2006 11 19 | H07 | 0.1− | 0.5+ |
| 2002 02 07 | 699 | (0.1− | 2.4+) | 2003 04 26 | 608 | 0.3+ | 0.3− | 2006 11 19 | H07 | 0.3− | 0.8+ |
| 2002 02 13 | 704 | 0.3+ | 0.8− | 2003 04 26 | 608 | 1.0+ | 0.1+ | 2006 11 19 | H07 | 0.4+ | 0.3+ |
| 2002 02 13 | 704 | 0.4− | 0.4− | 2003 04 26 | 608 | 0.8+ | 0.4− | 2006 11 19 | H07 | 0.1+ | 0.3+ |
| 2002 02 13 | 704 | 1.0+ | 1.2+ | 2003 04 27 | 645 | 0.0 | 0.1+ | 2006 11 20 | H07 | 0.3− | 0.3+ |
| 2002 02 13 | 704 | 0.8+ | 1.4+ | 2003 04 27 | 645 | 0.0 | 0.1+ | 2006 11 20 | H07 | 0.3− | 0.1+ |
| 2003 03 09 | 704 | 0.9− | 0.0 | 2004 06 27 | 428 | 1.1+ | 0.5+ | 2006 11 20 | H07 | 0.1− | 0.1+ |
| 2003 03 09 | 704 | 0.1− | 0.0 | 2004 06 27 | 428 | 0.8− | 0.1− | 2006 11 20 | H07 | 0.3− | 0.3+ |
| 2003 03 09 | 704 | 0.5− | 0.2− | 2004 06 28 | 428 | 1.0− | 1.5+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2003 03 09 | 704 | 0.4+ | 1.1+ | 2004 06 28 | 428 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2003 03 09 | 704 | 0.0 | 1.0+ | 2004 07 08 | 428 | 0.3+ | 1.2+ | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2003 03 25 | 608 | 0.6+ | 0.5− | 2004 07 08 | 428 | 0.6− | 0.6+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2003 03 25 | 608 | 0.7+ | 0.6− | 2004 07 14 | 428 | 1.1+ | 0.5+ | 2006 11 29 | 704 | 0.8− | 0.6+ |
| 2003 03 25 | 608 | 0.3+ | 0.1− | 2004 07 16 | 428 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2003 04 01 | 645 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.5− | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.8+ |
| 2003 04 01 | 645 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.6− | 0.4+ |

**(143621)∗ 2003 GE$_{55}$**

Discovered 2003 Apr. 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.84581 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12465199 | $\omega$ | 147.30196 | | +0.23336082 | +0.97136549 | |
| $a$ | 3.9688977 | $\Omega$ | 136.14726 | | −0.90542161 | +0.23379830 | |
| $e$ | 0.2005989 | $i$ | 3.69348 | | −0.35461872 | +0.04227812 | |
| $P$ | 7.91 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 291 | 0.2+ | 0.4+ | 2003 05 29 | 691 | 0.3+ | 0.3− | 2005 09 30 | 699 | 0.5− | 1.4+ |
| 2002 02 13 | 291 | 0.0 | 0.5+ | 2003 05 29 | 691 | 0.4+ | 0.3− | 2005 09 30 | 699 | 0.3+ | 0.2+ |
| 2002 02 13 | 291 | 0.1− | 0.5+ | 2004 06 15 | 704 | 0.9+ | 0.3− | 2005 09 30 | 699 | 0.1+ | 0.3− |
| 2002 03 20 | 695 | 1.0+ | 1.0+ | 2004 06 15 | 704 | 0.2− | 0.3+ | 2005 10 07 | 703 | 1.0− | 1.4+ |
| 2002 03 20 | 695 | 1.1+ | 0.2+ | 2004 06 15 | 704 | 0.5− | 0.2+ | 2005 10 07 | 703 | (1.6+ | 2.5+) |
| 2003 03 23 | 291 | 0.1− | 0.0 | 2005 08 28 | 691 | 0.2− | 0.3+ | 2005 10 07 | 703 | (2.5− | 0.0 ) |
| 2003 03 23 | 291 | 0.2− | 0.1− | 2005 08 28 | 691 | 0.2− | 0.4+ | 2005 10 07 | 703 | 1.1− | 0.2+ |
| 2003 03 23 | 291 | 0.3− | 0.0 | 2005 08 28 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2003 04 04 | 691 | 0.2− | 0.6+ | 2005 09 03 | 644 | 0.2+ | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.5+ |
| 2003 04 04 | 691 | 0.1+ | 0.9+ | 2005 09 03 | 644 | 0.3− | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2003 04 04 | 691 | 0.1− | 0.7+ | 2005 09 03 | 644 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2003 04 11 | 644 | 0.2+ | 0.4+ | 2005 09 22 | 644 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2003 04 11 | 644 | 0.1+ | 0.3+ | 2005 09 22 | 644 | 0.5− | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2003 04 11 | 644 | 0.7+ | 0.3+ | 2005 09 22 | 644 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2003 05 29 | 691 | 0.4+ | 0.2− | 2005 09 30 | 699 | 0.1− | 1.4+ | 2006 11 16 | G96 | 0.1− | 0.1+ |

**(143622)∗ 2003 HG = 2001 XA$_{264}$**

Discovered 2003 Apr. 22 by M. Ory at the Observatoire Astronomique Jurassien-Vicques.

Id. K. E. Smalley (*MPO* 47539), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.34649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27958947 | $\omega$ | 153.12666 | | −0.87622389 | +0.47091384 | |
| $a$ | 2.3162682 | $\Omega$ | 55.33785 | | −0.46148741 | −0.75880942 | |
| $e$ | 0.0586608 | $i$ | 7.14685 | | −0.13878426 | −0.44994268 | |
| $P$ | 3.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.3+ | 0.2− | 2003 04 22 | 185 | 0.4+ | 0.1+ | 2003 05 05 | 699 | 0.0 | 0.9+ |
| 1996 04 14 | 691 | 0.5− | 0.4− | 2003 04 22 | 185 | 0.0 | 0.2+ | 2003 05 05 | 699 | 0.2+ | 0.2− |
| 2001 10 24 | 291 | 0.0 | 0.3+ | 2003 04 23 | 185 | 0.1− | 0.5− | 2003 05 05 | 699 | 0.1+ | 0.3+ |
| 2001 10 24 | 291 | 0.4− | 0.0 | 2003 04 23 | 185 | 0.2− | 0.3− | 2003 05 05 | 699 | 1.0− | 1.0− |
| 2001 10 24 | 291 | 0.1− | 0.2+ | 2003 04 23 | 185 | 0.2− | 0.2− | 2003 06 06 | 691 | 0.7+ | 1.0+ |
| 2001 11 21 | 704 | 0.9+ | 0.3+ | 2003 04 24 | 185 | 0.5+ | 0.0 | 2003 06 06 | 691 | 1.2+ | 0.7+ |
| 2001 11 21 | 704 | 1.2+ | 0.6+ | 2003 04 24 | 185 | 0.5− | 0.6− | 2003 06 06 | 691 | 0.9+ | 0.7+ |
| 2001 11 21 | 704 | 0.9+ | 0.3+ | 2003 04 24 | 185 | 0.2− | 0.5− | 2006 01 06 | 704 | 0.1− | 0.6− |
| 2001 12 14 | 644 | 0.1− | 0.4+ | 2003 04 24 | 185 | 0.5− | 0.4+ | 2006 01 06 | 704 | 0.1− | 0.2+ |
| 2001 12 14 | 644 | 0.2+ | 0.3+ | 2003 04 27 | 699 | 1.2− | 0.1− | 2006 01 06 | 704 | 1.1+ | 0.6+ |
| 2001 12 14 | 644 | 0.2+ | 0.4+ | 2003 04 27 | 699 | 0.6+ | 0.4+ | 2006 01 06 | 704 | 1.0+ | 0.6+ |
| 2001 12 18 | 704 | 1.1− | 0.2+ | 2003 04 27 | 699 | 1.1− | 0.7− | 2006 01 22 | 703 | 0.4− | 0.2− |
| 2001 12 18 | 704 | 1.1− | 0.0 | 2003 04 27 | 699 | 0.5+ | 0.5− | 2006 01 22 | 703 | 0.2− | 0.7− |
| 2001 12 18 | 704 | 0.4− | 0.1− | 2003 05 01 | 704 | 1.1− | 0.2+ | 2006 01 22 | 703 | 0.0 | 0.3+ |
| 2001 12 18 | 704 | 0.1− | 0.6+ | 2003 05 01 | 704 | 0.1− | 0.7− | 2006 01 22 | 703 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.5− | 0.4+ | 2003 05 01 | 704 | 0.0 | 0.0 | 2006 01 24 | 699 | 0.4− | 1.1− |
| 2003 03 26 | 699 | 0.8− | 1.1+ | 2003 05 05 | 704 | 0.4− | 1.4− | 2006 01 24 | 699 | 0.5− | 0.2+ |
| 2003 03 26 | 699 | 0.0 | 0.5+ | 2003 05 05 | 704 | 0.1− | 2.0− | 2006 01 24 | 699 | 0.3+ | 0.3+ |
| 2003 03 26 | 699 | 1.2− | 1.3+ | 2003 05 05 | 704 | 0.3− | 0.2+ | 2006 01 24 | 699 | 0.9− | 0.0 |
| 2003 03 26 | 699 | 0.2− | 1.1+ | 2003 05 05 | 704 | 0.8+ | 0.1− | | | | |

**(143623)∗ 2003 HJ$_3$ = 2001 YG$_{101}$**

Discovered 2003 Apr. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69511)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.40116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21980395 | $\omega$ | 350.08365 | | −0.90433409 | −0.42672696 | |
| $a$ | 2.7192286 | $\Omega$ | 164.64643 | | +0.39393705 | −0.84272351 | |
| $e$ | 0.0470658 | $i$ | 1.98325 | | +0.16429688 | −0.32820907 | |
| $P$ | 4.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 10 | 691 | 0.3+ | 0.2+ | 2005 10 07 | 703 | 0.2− | 0.4+ | 2005 11 10 | 703 | 0.3+ | 0.6− |
| 1991 09 10 | 691 | 0.1− | 0.6+ | 2005 10 07 | 703 | (1.7+ | 0.4−) | 2005 11 10 | 703 | 0.1− | 0.1− |
| 1991 09 10 | 691 | 0.6− | 0.3+ | 2005 10 07 | 703 | 1.3− | 0.5− | 2005 11 10 | 703 | 1.1+ | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 0.4+ | 2005 10 07 | 703 | 1.5− | 0.0 | 2005 11 10 | 703 | 0.8− | 0.3+ |
| 2001 12 17 | 704 | 1.0− | 0.1+ | 2005 10 22 | 703 | (1.1− | 2.5+) | 2005 11 11 | 703 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.2− | 0.0 | 2005 10 22 | 703 | 1.5+ | 0.7− | 2005 11 11 | 703 | 0.8− | 0.6− |
| 2001 12 20 | 704 | 0.2+ | 1.2+ | 2005 10 22 | 703 | 0.2− | 0.3− | 2005 11 11 | 703 | 0.5− | 0.6+ |
| 2001 12 20 | 704 | 0.6+ | 1.0+ | 2005 10 22 | 703 | 0.2− | 0.1− | 2005 11 11 | 703 | 0.3− | 0.0 |
| 2001 12 20 | 704 | 0.2+ | 1.1+ | 2005 10 25 | 691 | 0.1+ | 0.7+ | 2005 11 25 | 703 | 0.6+ | 0.7− |
| 2003 03 07 | 291 | 0.3+ | 0.4+ | 2005 10 25 | 691 | 0.0 | 0.5+ | 2005 11 25 | 703 | 1.1+ | 0.7− |
| 2003 03 07 | 291 | 0.2+ | 0.4+ | 2005 10 25 | 691 | 0.0 | 0.6+ | 2005 11 25 | 703 | 0.5+ | 0.2− |
| 2003 03 07 | 291 | 0.1− | 0.4+ | 2005 10 29 | G96 | 0.0 | 0.0 | 2005 11 25 | 703 | 0.6− | 1.3− |
| 2003 04 24 | 699 | 1.0+ | 0.3+ | 2005 10 29 | G96 | 0.1+ | 0.1− | 2005 12 04 | G96 | 0.4− | 0.7+ |
| 2003 04 24 | 699 | 0.4− | 1.0− | 2005 10 29 | G96 | 0.2+ | 0.1+ | 2005 12 04 | G96 | 0.1+ | 0.0 |
| 2003 04 24 | 699 | 0.1− | 1.2+ | 2005 10 29 | G96 | 0.1+ | 0.1− | 2005 12 04 | G96 | 0.0 | 0.1+ |
| 2003 04 24 | 699 | 0.3+ | 1.0− | 2005 10 31 | 704 | 0.2+ | 0.4+ | 2005 12 04 | G96 | 0.3+ | 0.1− |
| 2003 04 25 | 691 | 0.2− | 0.3+ | 2005 10 31 | 704 | 0.4+ | 0.9− | 2006 01 28 | G96 | 1.1+ | 0.9− |
| 2003 04 25 | 691 | 0.1− | 0.5+ | 2005 10 31 | 704 | 1.2+ | 0.8+ | 2006 01 28 | G96 | 0.0 | 0.8− |
| 2003 04 25 | 691 | 0.1− | 0.3+ | 2005 10 31 | 704 | 0.3+ | 0.6+ | 2006 01 28 | G96 | 0.6+ | 0.2− |
| 2003 05 05 | 704 | 0.2− | 0.2+ | 2005 11 01 | 691 | 0.2+ | 0.5+ | 2006 01 28 | G96 | 0.6+ | 0.7− |
| 2003 05 05 | 704 | 0.5+ | 0.9+ | 2005 11 01 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.6− | 0.2+ |
| 2003 05 05 | 691 | 0.0 | 0.3+ | 2005 11 01 | 691 | 0.3− | 0.7+ | 2006 10 22 | G96 | 0.5− | 0.6− |
| 2003 05 05 | 704 | (1.7+ | 0.1−) | 2005 11 04 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2003 05 05 | 704 | 0.5+ | 1.0+ | 2005 11 04 | 691 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2003 05 05 | 691 | 0.1− | 0.2+ | 2005 11 04 | 691 | 0.5− | 0.1+ | 2006 11 15 | G96 | 1.1+ | 0.2+ |
| 2003 05 05 | 704 | 0.5+ | 0.1− | 2005 11 05 | 699 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2003 05 05 | 691 | 0.1− | 0.3+ | 2005 11 05 | 699 | 0.5− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.3+ |
| 2003 05 10 | 691 | 0.7+ | 0.8+ | 2005 11 05 | 699 | 0.6− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2003 05 10 | 691 | 0.1− | 0.4− | 2005 11 05 | 699 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2003 05 10 | 691 | 1.0+ | 0.4+ | 2005 11 10 | 703 | 0.1− | 1.0+ | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2004 08 08 | 704 | 0.1− | 1.1+ | 2005 11 10 | 703 | 0.8+ | 0.3− | 2006 12 01 | G96 | 0.3− | 0.1+ |
| 2004 08 08 | 704 | 0.4− | 0.2− | 2005 11 10 | 703 | 0.1+ | 1.0− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2004 08 08 | 704 | 0.9− | 0.0 | 2005 11 10 | 703 | 0.0 | 0.2− | | | | |

**(143624)∗ 2003 HM$_{16}$**

Discovered 2003 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.38971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35747436 | $\omega$ | 46.85609 | | −0.49233805 | +0.85521347 | |
| $a$ | 1.9662533 | $\Omega$ | 196.12178 | | −0.86591700 | −0.46238866 | |
| $e$ | 0.5765759 | $i$ | 35.66625 | | +0.08826658 | +0.23410819 | |
| $P$ | 2.76 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 27 | 704 | 0.0 | 0.0 | 2003 08 09 | 704 | 0.4− | 0.8− | 2003 10 21 | 704 | 0.9− | 0.7+ | |
| 2003 04 27 | 704 | 0.6− | 0.2− | 2003 08 11 | 198 | 0.0 | 0.3− | 2003 10 21 | 704 | 1.1− | 0.7+ | |
| 2003 04 27 | 704 | 0.5− | 0.5− | 2003 08 11 | 198 | (0.3+ | 1.6+) | 2003 10 27 | 240 | 0.4+ | 0.5− | |
| 2003 04 27 | 704 | (1.7− | 0.0 ) | 2003 08 14 | J87 | 0.1+ | 0.5+ | 2003 10 27 | 240 | 0.2+ | 0.3− | |
| 2003 04 27 | 587 | 0.2− | 0.2− | 2003 08 14 | J87 | (0.5− | 3.1+) | 2003 10 27 | 240 | 0.5− | 0.9− | |
| 2003 04 27 | 587 | 0.4− | 0.7+ | 2003 08 14 | J87 | 0.1+ | 0.5+ | 2003 10 27 | 240 | (1.6− | 0.9−) | |
| 2003 04 27 | 587 | 0.2− | 1.0− | 2003 08 19 | 170 | 0.4− | 0.0 | 2003 11 20 | 704 | 0.2− | 0.3+ | |
| 2003 04 27 | 620 | 0.6− | 0.0 | 2003 08 19 | 170 | 0.4− | 0.0 | 2003 11 20 | 704 | 0.4+ | 0.2+ | |
| 2003 04 27 | 620 | 0.2+ | 0.4− | 2003 08 19 | 170 | 0.4− | 0.1− | 2003 11 20 | 704 | 0.7+ | 0.1+ | |
| 2003 04 27 | 176 | 0.2− | 0.0 | 2003 08 19 | 170 | 0.4− | 0.0 | 2003 11 20 | 704 | 0.5+ | 0.3+ | |
| 2003 04 27 | 176 | 0.0 | 0.1+ | 2003 08 24 | 649 | 0.2+ | 0.0 | 2003 12 13 | 704 | 0.7+ | 0.5+ | |
| 2003 04 27 | 176 | 0.1+ | 0.3+ | 2003 08 24 | 649 | 0.1− | 0.3− | 2003 12 13 | 704 | 0.4+ | 0.0 | |
| 2003 04 27 | 176 | 0.3+ | 0.4+ | 2003 08 24 | 649 | 0.0 | 0.3− | 2003 12 13 | 704 | 1.3+ | 0.5− | |
| 2003 04 27 | 176 | 0.6+ | 0.8+ | 2003 08 24 | 649 | 0.2− | 0.1+ | 2003 12 21 | 704 | 0.3+ | 0.8+ | |
| 2003 04 28 | 926 | (0.5+ | 1.5+) | 2003 08 25 | 469 | 0.2− | 0.2− | 2003 12 21 | 704 | 0.4+ | 0.1− | |
| 2003 04 28 | 658 | 0.0 | 0.6+ | 2003 08 25 | 469 | 0.3− | 0.2+ | 2003 12 21 | 704 | 0.2+ | 0.3− | |
| 2003 04 28 | 658 | 0.1− | 0.2+ | 2003 08 25 | 469 | 0.4− | 0.2− | 2003 12 21 | 704 | 0.7+ | 1.1+ | |
| 2003 04 28 | 658 | 0.2+ | 0.0 | 2003 08 25 | 469 | 0.3− | 0.2+ | 2004 11 09 | 696 | 0.3+ | 0.0 | |
| 2003 04 28 | 658 | 0.2+ | 0.2+ | 2003 08 25 | 469 | 0.0 | 0.2− | 2004 11 09 | 696 | 0.7+ | 0.2+ | |
| 2003 04 29 | 704 | 0.4− | 0.5+ | 2003 08 25 | 469 | 0.1− | 0.2− | 2005 10 20 | G96 | 0.2+ | 0.4+ | |
| 2003 04 29 | 333 | 0.4− | 0.6+ | 2003 08 25 | 469 | 0.8− | 0.4+ | 2005 10 20 | G96 | 0.9+ | 0.3− | |
| 2003 04 29 | 333 | 0.2− | 1.0+ | 2003 08 25 | J87 | 0.6+ | 0.3+ | 2005 10 20 | G96 | 0.1+ | 0.6− | |
| 2003 04 29 | 333 | 0.8− | 0.7+ | 2003 08 25 | J87 | 0.3− | 0.1+ | 2005 10 20 | G96 | 0.1− | 0.4− | |
| 2003 04 29 | 333 | 0.1− | 0.8+ | 2003 08 25 | J87 | 0.4+ | 0.1− | 2006 03 26 | 696 | 0.3− | 0.1+ | |
| 2003 04 29 | 704 | 0.1− | 0.4+ | 2003 08 29 | J87 | 0.9+ | 0.3+ | 2006 03 26 | 696 | 0.5− | 0.1+ | |
| 2003 04 29 | 704 | 0.4− | 0.1− | 2003 08 29 | J87 | 0.1− | 0.2+ | 2006 06 21 | 461 | 0.1− | 0.2− | |
| 2003 04 29 | 704 | 1.4− | 0.8− | 2003 08 29 | J87 | 0.6− | 0.2+ | 2006 06 21 | 461 | 0.1− | 0.2+ | |
| 2003 04 30 | 704 | 0.1+ | 0.2+ | 2003 09 03 | 379 | 0.8+ | 0.4− | 2006 06 21 | 461 | 0.0 | 0.2− | |
| 2003 04 30 | 704 | 0.3+ | 0.2− | 2003 09 03 | 379 | 0.0 | 0.3− | 2006 07 17 | 198 | 0.3+ | 0.5+ | |
| 2003 04 30 | 704 | 0.1− | 0.2+ | 2003 09 05 | J87 | 0.5+ | 0.1+ | 2006 07 17 | 198 | 0.1+ | 0.5+ | |
| 2003 04 30 | 704 | 0.1− | 0.4+ | 2003 09 05 | J87 | 0.5− | 0.3+ | 2006 07 17 | 198 | 0.1− | 0.6+ | |
| 2003 04 30 | 704 | 0.2− | 0.2+ | 2003 09 05 | J87 | 0.2− | 0.2+ | 2006 08 22 | A14 | 0.2− | 0.3+ | |
| 2003 05 01 | 926 | (0.5+ | 2.1+) | 2003 09 05 | J87 | 0.2− | 0.3+ | 2006 08 22 | A14 | 0.6+ | 0.2+ | |
| 2003 05 01 | 704 | 0.5− | 0.4+ | 2003 09 06 | 084 | 0.1+ | 0.1+ | 2006 08 22 | A14 | 0.2+ | 0.1+ | |
| 2003 05 01 | 926 | (2.0− | 0.4−) | 2003 09 08 | 151 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.8− | 0.2− | |
| 2003 05 01 | 704 | 0.1+ | 0.7+ | 2003 09 08 | 151 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.2− | |
| 2003 05 01 | 704 | 0.4− | 0.7+ | 2003 09 08 | 151 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.2− | 0.2+ | |
| 2003 05 01 | 704 | (1.5− | 1.4+) | 2003 09 08 | 151 | 1.5− | 0.4− | 2006 08 29 | 703 | 0.4− | 0.2+ | |
| 2003 05 01 | 704 | 0.6− | 0.9+ | 2003 09 08 | 151 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.7+ | |
| 2003 05 01 | 658 | 0.4− | 1.0+ | 2003 09 08 | 151 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.3+ | |
| 2003 05 01 | 658 | 0.5+ | 0.3+ | 2003 09 08 | 151 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.1− | 0.0 | |
| 2003 05 01 | 658 | 0.2− | 0.1+ | 2003 09 08 | 151 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.6+ | 0.5+ | |
| 2003 05 02 | 704 | 0.1− | 0.2− | 2003 09 08 | 084 | 0.5+ | 0.5− | 2006 09 06 | H55 | 0.8+ | 0.2+ | |
| 2003 05 02 | 704 | (0.7+ | 1.7−) | 2003 09 09 | 084 | 0.4+ | 0.7+ | 2006 09 06 | H55 | 1.1+ | 0.2+ | |
| 2003 05 02 | 926 | 0.6− | 0.1− | 2003 09 11 | 084 | 0.0 | 0.2+ | 2006 09 06 | H55 | 0.5+ | 0.3+ | |
| 2003 05 02 | 926 | 0.6+ | 1.3+ | 2003 09 11 | 213 | 0.8− | 0.1− | 2006 09 06 | H55 | 0.7+ | 0.2+ | |
| 2003 05 02 | 704 | 0.4− | 0.6− | 2003 09 11 | 213 | 0.2− | 0.6+ | 2006 09 06 | H55 | 0.6+ | 0.1+ | |
| 2003 05 02 | 704 | 0.4− | 0.6− | 2003 09 11 | 213 | 0.5+ | 0.6− | 2006 09 08 | 240 | 0.5+ | 0.3+ | |
| 2003 05 04 | E14 | 0.4+ | 0.4+ | 2003 09 11 | 213 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.4− | 0.1− | |
| 2003 05 04 | E14 | 0.0 | 0.1+ | 2003 09 13 | J87 | 0.3− | 0.6+ | 2006 09 16 | 703 | 0.9− | 0.1+ | |
| 2003 05 04 | E14 | 0.1+ | 0.1+ | 2003 09 13 | J87 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.3− | 0.3− | |
| 2003 05 05 | E14 | 0.6+ | 0.3+ | 2003 09 13 | J87 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.2− | |
| 2003 05 05 | E14 | 0.3− | 0.7+ | 2003 09 13 | J87 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.5− | 0.2+ | |
| 2003 05 05 | E14 | 0.7− | 0.4− | 2003 09 14 | 084 | 0.4+ | 0.1− | 2006 09 18 | 704 | 0.2+ | 0.2− | |
| 2003 05 06 | 926 | 0.1+ | 0.6+ | 2003 09 14 | 240 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.0 | 0.5+ | |
| 2003 05 06 | 926 | (0.2− | 2.3+) | 2003 09 14 | 240 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.8+ | 0.7+ | |
| 2003 05 06 | E14 | 0.0 | 1.2+ | 2003 09 14 | 240 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.6− | |
| 2003 05 06 | E14 | 0.1+ | 0.2+ | 2003 09 14 | 240 | 0.1− | 0.1− | 2006 09 18 | 699 | (2.3− | 0.8−) | |
| 2003 05 06 | E14 | 0.2− | 0.5+ | 2003 09 14 | 240 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.1+ | |
| 2003 05 08 | 587 | (1.6− | 0.3+) | 2003 09 14 | 240 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.5− | |
| 2003 05 08 | 587 | 1.2− | 0.1− | 2003 09 15 | A30 | (0.3− | 2.4+) | 2006 09 19 | 691 | 0.1+ | 0.0 | |
| 2003 05 08 | 587 | 0.5− | 0.7+ | 2003 09 15 | A30 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ | |
| 2003 05 10 | E14 | 0.2− | 0.1− | 2003 09 15 | A30 | 0.6− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.2+ | |
| 2003 05 10 | E14 | 0.3+ | 0.7+ | 2003 09 15 | A30 | 0.5− | 0.4− | 2006 09 20 | 693 | 0.5+ | 0.1− | |
| 2003 05 10 | 941 | 0.5− | 0.5+ | 2003 09 15 | A30 | 0.2+ | 0.0 | 2006 09 20 | 693 | 0.7+ | 0.2− | |
| 2003 05 10 | 941 | 0.4− | 0.4+ | 2003 09 17 | 084 | 0.7+ | 0.6− | 2006 09 20 | 693 | 0.4+ | 0.0 | |
| 2003 05 10 | 941 | 0.5− | 0.1+ | 2003 09 17 | 240 | 0.2− | 0.0 | 2006 09 20 | 693 | 0.3− | 0.3− | |
| 2003 05 10 | 941 | 0.6− | 0.2+ | 2003 09 17 | 240 | 0.1− | 0.2− | 2006 09 21 | B15 | 0.7+ | 0.1− | |
| 2003 05 18 | 587 | (1.3+ | 1.6+) | 2003 09 17 | 240 | 0.0 | 0.2− | 2006 09 22 | B15 | 0.2+ | 0.2+ | |
| 2003 05 18 | 587 | 0.2− | 0.5+ | 2003 09 17 | 240 | 0.2− | 0.3− | 2006 09 22 | B15 | 0.0 | 0.3+ | |
| 2003 05 18 | 587 | 0.3+ | 0.6+ | 2003 09 17 | 240 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.1+ | |
| 2003 05 18 | 587 | 0.2− | 0.4+ | 2003 09 18 | 670 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | |
| 2003 06 18 | 587 | 1.0− | 0.3− | 2003 09 18 | 670 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | |
| 2003 06 18 | 587 | 0.4− | 0.3+ | 2003 09 18 | 170 | 0.7− | 0.4− | 2006 09 26 | 152 | 0.6+ | 0.6− | |
| 2003 06 18 | 587 | 0.3+ | 1.4+ | 2003 09 18 | 170 | 0.5− | 0.4− | 2006 09 26 | 152 | (2.4+ | 1.6−) | |
| 2003 06 20 | J87 | 0.9− | 0.5+ | 2003 09 20 | 084 | 0.1− | 0.6+ | 2006 09 26 | 152 | 0.1− | 1.4− | |
| 2003 06 20 | J87 | 0.5+ | 0.0 | 2003 09 20 | 118 | 0.9+ | 0.0 | 2006 09 27 | 704 | 0.4− | 1.0+ | |
| 2003 06 20 | J87 | 0.9+ | 0.5+ | 2003 09 20 | 118 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.1+ | 1.1+ | |
| 2003 06 20 | J87 | 0.3+ | 0.1+ | 2003 09 20 | 118 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.5+ | |
| 2003 07 08 | 118 | 0.3+ | 0.1+ | 2003 09 20 | 118 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.3− | 0.1+ | |
| 2003 07 08 | 118 | 0.1+ | 0.0 | 2003 09 22 | 113 | 0.8+ | 0.3− | 2006 09 29 | 704 | 0.7− | 0.8+ | |
| 2003 07 08 | 118 | 0.3+ | 0.2− | 2003 09 22 | 113 | 0.2+ | 0.7+ | 2006 09 29 | 704 | 0.0 | 0.9+ | |
| 2003 07 08 | 118 | 0.3+ | 0.2+ | 2003 09 22 | 113 | (2.0+ | 1.1−) | 2006 09 29 | 704 | 0.8− | 0.2+ | |
| 2003 07 08 | 118 | 0.4+ | 0.0 | 2003 09 22 | 084 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.5− | 0.8+ | |
| 2003 07 09 | 762 | 0.6+ | 0.6+ | 2003 09 24 | 084 | 0.2+ | 0.3− | 2006 09 29 | 704 | (1.1− | 2.0+) | |
| 2003 07 09 | 762 | 0.3+ | 0.1− | 2003 09 25 | 240 | 0.1− | 0.1− | 2006 09 29 | 691 | 0.0 | 0.1+ | |
| 2003 07 09 | 762 | 0.7+ | 0.2+ | 2003 09 25 | 240 | 0.2− | 0.1+ | 2006 09 29 | 691 | 0.0 | 0.1− | |
| 2003 07 11 | 204 | 0.4− | 0.6− | 2003 09 25 | 240 | 0.2− | 0.1− | 2006 09 29 | 691 | 0.4− | 0.1− | |
| 2003 07 11 | 204 | 0.3+ | 0.3+ | 2003 09 25 | 240 | 0.2− | 0.2− | 2006 10 03 | 691 | 0.1− | 0.1− | |
| 2003 07 11 | 204 | 0.5+ | 0.6− | 2003 09 25 | 240 | 0.1− | 0.4− | 2006 10 03 | 691 | 0.2+ | 0.0 | |
| 2003 07 19 | 762 | 0.1− | 0.1+ | 2003 09 25 | 240 | 0.4− | 0.5− | 2006 10 03 | 691 | 0.2− | 0.1− | |
| 2003 07 19 | 762 | 0.6+ | 0.4+ | 2003 10 02 | 170 | 0.2− | 0.2− | 2006 10 15 | 703 | 0.3+ | 0.1− | |
| 2003 07 19 | 762 | 0.2− | 0.4+ | 2003 10 02 | 170 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.1− | 0.6− | |
| 2003 07 19 | 118 | 0.4− | 0.3+ | 2003 10 02 | 170 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.1+ | 0.7− | |
| 2003 07 19 | 118 | 0.5+ | 1.4+ | 2003 10 03 | 830 | (0.8+ | 2.8−) | 2006 10 15 | 703 | 1.4+ | 0.6− | |
| 2003 07 19 | 118 | 0.1+ | 0.4+ | 2003 10 03 | 830 | 0.8+ | 0.1+ | 2006 10 18 | H45 | 0.3− | 0.2− | |
| 2003 07 19 | 118 | 0.3+ | 0.3+ | 2003 10 03 | 830 | 0.2− | 0.1− | 2006 10 18 | H45 | 0.1+ | 0.6− | |
| 2003 07 20 | 118 | 0.2− | 0.1+ | 2003 10 06 | 750 | 0.2+ | 0.1− | 2006 10 18 | H45 | 0.0 | 0.3− | |
| 2003 07 20 | 118 | 0.1+ | 0.1+ | 2003 10 06 | 750 | 0.0 | 0.2+ | 2006 10 18 | H45 | 0.3− | 0.3+ | |
| 2003 07 20 | 118 | 0.1− | 0.1+ | 2003 10 06 | 750 | 0.1+ | 0.3+ | 2006 10 18 | H45 | 0.6− | 0.2− | |
| 2003 07 26 | 071 | 0.5− | 0.3− | 2003 10 08 | 084 | 0.2+ | 0.6+ | 2006 10 18 | H45 | 0.0 | 0.4− | |
| 2003 07 26 | 071 | 0.3− | 0.2− | 2003 10 09 | 941 | 0.1− | 0.2− | 2006 10 18 | H45 | 0.3− | 0.5− | |
| 2003 07 26 | 071 | 0.8− | 0.1− | 2003 10 09 | 941 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2+ | |
| 2003 07 26 | 071 | 0.6− | 0.0 | 2003 10 09 | 941 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.4+ | 0.0 | |
| 2003 07 26 | 071 | 0.9− | 0.2− | 2003 10 09 | 941 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.0 | |
| 2003 07 26 | 071 | 1.3− | 0.3− | 2003 10 09 | 941 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.2+ | |
| 2003 07 26 | 071 | 0.6− | 0.0 | 2003 10 10 | 434 | 0.9+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 2003 07 26 | 071 | 0.6− | 0.1+ | 2003 10 10 | 434 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 2003 07 26 | 071 | 0.4− | 0.7+ | 2003 10 10 | 434 | 0.2− | 0.1− | 2006 10 22 | 704 | 0.9+ | 0.7+ | |
| 2003 07 26 | 071 | (1.9− | 0.3−) | 2003 10 12 | 240 | 0.5− | 0.3− | 2006 10 22 | 704 | 0.5− | 0.8+ | |
| 2003 08 05 | 670 | 0.2+ | 0.7− | 2003 10 12 | 240 | 0.1+ | 0.3− | 2006 10 22 | 704 | (0.3− | 1.5+) | |
| 2003 08 05 | 670 | 0.3− | 0.9− | 2003 10 12 | 240 | 0.2+ | 0.1− | 2006 10 22 | 704 | 1.2+ | 0.5+ | |
| 2003 08 05 | 670 | 0.1+ | 0.4− | 2003 10 12 | 240 | 0.4+ | 0.2− | 2006 10 22 | 704 | 0.6− | 0.3+ | |
| 2003 08 08 | 130 | 0.2− | 0.4+ | 2003 10 19 | 113 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.6− | |
| 2003 08 08 | 130 | 0.1+ | 0.2+ | 2003 10 19 | 113 | 0.5+ | 0.4+ | 2006 10 22 | 703 | 0.8− | 0.0 | |
| 2003 08 08 | 130 | 0.0 | 0.4− | 2003 10 19 | 113 | 0.8+ | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.3− | |
| 2003 08 08 | 130 | 0.1− | 0.3− | 2003 10 19 | 113 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.4− | |
| 2003 08 09 | 704 | 0.1− | 0.3− | 2003 10 21 | 704 | 0.4− | 0.1− | 2006 11 20 | 711 | 0.2− | 0.5+ | |
| 2003 08 09 | 704 | 0.1+ | 0.4− | 2003 10 21 | 704 | 0.7− | 0.5+ | 2006 11 20 | 711 | 0.5+ | 0.1− | |
| 2003 08 09 | 704 | 0.4− | 0.5− | 2003 10 21 | 704 | 0.8− | 0.3+ | 2006 11 20 | 711 | 0.2+ | 0.9+ | |

**(143625)∗ 2003 HJ$_{26}$**

Discovered 2003 Apr. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.22392 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17421434 | $\omega$ | 329.91708 | | −0.81333476 | | −0.58081971 |
| $a$ | 3.1750224 | $\Omega$ | 174.22050 | | +0.57783857 | | −0.81318949 |
| $e$ | 0.2017441 | $i$ | 19.54562 | | +0.06774323 | | −0.03703116 |
| $P$ | 5.66 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 699 | 0.0 | 0.0 | 2003 04 28 | 645 | 0.2− | 0.0 | 2005 10 01 | 703 | 0.2+ | 0.3+ |
| 2001 12 23 | 699 | 0.2− | 0.5+ | 2003 04 29 | 691 | 0.6+ | 0.7+ | 2005 10 01 | 703 | 0.7− | 0.6+ |
| 2001 12 23 | 699 | 0.3− | 0.5+ | 2003 04 29 | 691 | 0.9+ | 0.4+ | 2005 10 01 | 703 | 0.5− | 1.2− |
| 2001 12 23 | 699 | 0.3− | 0.7+ | 2003 04 29 | 691 | 0.6+ | 0.4+ | 2005 10 01 | G96 | 0.2− | 0.0 |
| 2001 12 24 | 644 | 0.1− | 0.3+ | 2003 05 22 | 699 | 0.6− | 0.2− | 2005 10 01 | G96 | 0.4+ | 0.4− |
| 2001 12 24 | 644 | 0.1− | 0.2+ | 2003 05 22 | 699 | 0.4+ | 0.2− | 2005 10 01 | G96 | 0.4+ | 0.4− |
| 2001 12 24 | 644 | 0.0 | 0.2+ | 2003 05 22 | 699 | 0.1+ | 0.5+ | 2005 10 01 | G96 | 0.4+ | 0.1+ |
| 2002 01 12 | 704 | 0.0 | 0.3+ | 2003 05 22 | 699 | 0.1− | 0.2+ | 2005 10 28 | G96 | 0.3− | 0.1+ |
| 2002 01 12 | 704 | 0.1− | 0.1− | 2003 06 01 | 608 | 0.6− | 0.5+ | 2005 10 28 | G96 | 0.2+ | 0.2+ |
| 2002 01 12 | 704 | 0.2+ | 0.2+ | 2003 06 01 | 608 | 0.9− | 0.9+ | 2005 10 28 | G96 | 0.1+ | 0.2+ |
| 2002 01 12 | 704 | 0.2+ | 0.1+ | 2003 06 01 | 608 | 0.4− | 0.2+ | 2005 10 28 | G96 | 0.1+ | 0.1+ |
| 2002 01 12 | 704 | 0.0 | 0.4− | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.1− |
| 2002 02 15 | 704 | 0.3− | 0.5+ | 2005 08 27 | 644 | 0.3− | 0.3+ | 2006 10 20 | 703 | 0.7+ | 0.1− |
| 2002 02 15 | 704 | (2.2− | 1.6−) | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 703 | 0.6+ | 0.6+ |
| 2002 02 15 | 704 | 0.1+ | 0.9+ | 2005 08 27 | 644 | 0.1− | 0.3+ | 2006 10 20 | 703 | 1.0− | 0.1+ |
| 2002 02 15 | 704 | 0.2− | 0.5+ | 2005 08 27 | 644 | 0.4− | 0.0 | 2006 10 28 | 703 | (1.1+ | 2.1+) |
| 2002 03 12 | 704 | 0.0 | 1.3+ | 2005 08 27 | 644 | 0.3− | 0.3+ | 2006 10 28 | 703 | 1.0− | 0.1+ |
| 2002 03 12 | 704 | 0.8+ | 0.3+ | 2005 08 30 | 691 | 0.0 | 0.5+ | 2006 10 28 | 703 | (0.4− | 1.5+) |
| 2002 03 12 | 704 | 0.8+ | 0.9+ | 2005 08 30 | 691 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.9+ |
| 2002 03 12 | 704 | 0.4+ | 1.5+ | 2005 08 30 | 691 | 0.2− | 0.5+ | 2006 11 16 | 703 | 0.7+ | 0.2+ |
| 2002 04 14 | 704 | 1.0+ | 0.9− | 2005 09 30 | G96 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.6− | 0.6− |
| 2002 04 14 | 704 | 0.8− | 1.2− | 2005 09 30 | G96 | 0.3+ | 0.3− | 2006 11 16 | 703 | 0.5+ | 0.0 |
| 2002 04 14 | 704 | (2.4− | 1.0−) | 2005 09 30 | G96 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2002 04 14 | 704 | 1.0− | 0.3− | 2005 09 30 | G96 | 0.0 | 0.2− | 2006 11 23 | 703 | 0.0 | 1.1+ |
| 2003 04 25 | 699 | 0.7+ | 0.3+ | 2005 10 01 | G96 | 0.5+ | 0.0 | 2006 11 23 | 703 | 0.0 | 1.1+ |
| 2003 04 25 | 699 | 0.4+ | 0.5+ | 2005 10 01 | G96 | 0.1+ | 0.0 | 2006 11 23 | 703 | (0.6+ | 1.9+) |
| 2003 04 25 | 699 | 0.2+ | 0.0 | 2005 10 01 | G96 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.6+ | 0.9+ |
| 2003 04 25 | 699 | 0.0 | 0.5+ | 2005 10 01 | G96 | 0.4− | 0.2− | | | | |
| 2003 04 28 | 645 | 0.1− | 0.0 | 2005 10 01 | 703 | 0.6− | 1.0+ | | | | |

**(143626)∗ 2003 HU$_{27}$ = 1995 VK$_{15}$ = 2002 AS$_{135}$**

Discovered 2003 Apr. 25 by CINEOS at Campo Imperatore.

Id. K. E. Smalley (*MPO* 47557), A. Doppler (*ibid.*, *MPO* 75862)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.36170 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18205652 | $\omega$ | 300.17237 | | −0.99475931 | | −0.07403884 |
| $a$ | 3.0831777 | $\Omega$ | 235.66872 | | +0.09426877 | | −0.93118759 |
| $e$ | 0.1100977 | $i$ | 4.89840 | | −0.03958925 | | −0.35694246 |
| $P$ | 5.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.0 | 0.0 | 2003 03 28 | 699 | 0.1− | 0.6− | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 1995 11 15 | 691 | 0.2− | 0.1+ | 2003 04 25 | 691 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.3+ | 0.3+ |
| 1995 11 15 | 691 | 0.0 | 0.0 | 2003 04 25 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 1995 11 19 | 691 | 0.0 | 0.2+ | 2003 04 25 | 691 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 1995 11 19 | 691 | 0.4+ | 0.0 | 2003 04 25 | 599 | 0.5− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1995 11 19 | 691 | 0.1+ | 0.0 | 2003 04 25 | 599 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 1995 12 18 | 691 | 0.3− | 0.1− | 2003 04 25 | 599 | 0.3− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 1995 12 18 | 691 | 0.2− | 0.2− | 2003 04 25 | 599 | 0.4− | 1.1+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 1995 12 18 | 691 | 0.1+ | 0.2+ | 2003 04 29 | 704 | 0.7+ | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 0.3− | 0.3− | 2003 04 29 | 704 | 0.4+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.5− | 0.1− | 2003 04 29 | 704 | 1.4+ | 1.0+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2001 12 17 | 704 | 0.8− | 0.1− | 2003 04 29 | 704 | 0.9+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.9− | 0.7− | 2006 10 28 | G96 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2002 01 09 | 704 | 0.4+ | 1.0− | 2006 10 28 | G96 | 0.9− | 0.4− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2002 01 09 | 704 | 0.6+ | 1.3− | 2006 10 28 | G96 | 0.6− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 01 09 | 704 | 0.6+ | 0.7− | 2006 10 28 | G96 | 0.4− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2002 01 09 | 704 | 0.1− | 1.0− | 2006 10 31 | G96 | 0.7− | 0.0 | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2003 03 28 | 699 | (0.8− | 2.2+) | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2003 03 28 | 699 | 1.2− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2003 03 28 | 699 | 0.8− | 1.4− | 2006 10 31 | G96 | 0.5− | 0.2− | | | | |

**(143627)∗ 2003 HJ$_{28}$**

Discovered 2003 Apr. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.49173 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17961698 | $\omega$ | 267.01958 | | −0.66211028 | | −0.72633602 |
| $a$ | 3.1110318 | $\Omega$ | 226.29644 | | +0.74796438 | | −0.62522553 |
| $e$ | 0.2298516 | $i$ | 14.78751 | | +0.04646789 | | −0.28553287 |
| $P$ | 5.49 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.1− | 0.0 | 2005 09 28 | 850 | (1.7+ | 2.0+) | 2006 11 10 | 691 | 0.1+ | 0.4+ |
| 2001 11 17 | 704 | 0.5− | 0.2− | 2005 09 30 | 850 | 0.5+ | 0.5− | 2006 11 10 | 691 | 0.4+ | 0.2+ |
| 2001 11 17 | 704 | 0.5− | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.6+ |
| 2001 11 17 | 704 | 0.7− | 0.3− | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.3− | 0.5+ |
| 2001 12 11 | 704 | 0.6+ | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.2+ | 0.9+ | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.9+ | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 1.1+ |
| 2001 12 11 | 704 | 0.8+ | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2001 12 11 | 704 | 0.4+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 2002 01 18 | 209 | 0.6+ | 0.6− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.5− |
| 2002 01 18 | 209 | 0.6+ | 0.6− | 2006 10 19 | 691 | 0.6− | 0.2− | 2006 11 14 | 703 | 1.3+ | 0.4− |
| 2002 01 18 | 209 | 0.0 | 0.4− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.3− |
| 2002 01 19 | 699 | 0.5− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.6− |
| 2002 01 19 | 699 | 0.2− | 1.4+ | 2006 10 19 | 644 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2002 01 19 | 699 | 0.6− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2002 01 19 | 699 | (1.6+ | 0.3−) | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2003 04 26 | 608 | 0.2− | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2003 04 26 | 608 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.3+ |
| 2003 04 26 | 608 | 0.4− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2003 04 29 | 704 | 1.1+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2003 04 29 | 704 | (1.7+ | 1.6+) | 2006 10 21 | 691 | 1.1− | 1.5− | 2006 11 18 | 704 | 0.8− | 0.6+ |
| 2003 04 29 | 704 | 0.0 | 1.5+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2003 04 29 | 704 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.1− | 0.4+ |
| 2003 04 29 | 704 | 0.8+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.9+ |
| 2003 05 05 | 703 | (0.1− | 1.7−) | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 19 | 704 | (0.2+ | 1.7+) |
| 2003 05 05 | 703 | 1.1+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 1.5+ |
| 2003 05 05 | 703 | 0.6+ | 1.0+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2003 05 05 | 703 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | (1.1+ | 1.6+) |
| 2003 05 06 | 704 | (2.4+ | 0.6+) | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.2+ |
| 2003 05 06 | 704 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 05 06 | 704 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2003 05 22 | 691 | (0.6+ | 1.7+) | 2006 10 29 | 704 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2003 05 22 | 691 | (0.7+ | 1.8+) | 2006 10 29 | 704 | 0.2− | 1.1+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 05 22 | 691 | (0.8+ | 1.7+) | 2006 10 29 | 704 | 0.6− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2003 06 05 | 691 | 0.2− | 0.9+ | 2006 10 29 | 704 | 0.8− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2003 06 05 | 691 | 0.2− | 1.0+ | 2006 10 29 | 704 | (0.3+ | 2.1+) | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2003 06 05 | 691 | 0.5− | 1.1+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2003 06 07 | 291 | 0.1+ | 0.8+ | 2006 10 31 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.8+ |
| 2003 06 07 | 291 | 0.3+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.8+ |
| 2003 06 07 | 291 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.8+ |
| 2005 09 28 | 850 | 0.9− | 1.4− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.3+ | 1.6+ |
| 2005 09 28 | 850 | 0.3− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.6+ |

**(143628)∗ 2003 HG$_{31}$ = 2004 TR$_{156}$**

Discovered 2003 Apr. 26 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 72759)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.71502 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25566544 | $\omega$ | 217.41301 | | −0.13533971 | +0.99052229 | |
| $a$ | 2.4586009 | $\Omega$ | 44.82240 | | −0.90082053 | −0.11316974 | |
| $e$ | 0.1528534 | $i$ | 1.90441 | | −0.41255973 | −0.07783449 | |
| $P$ | 3.86 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 14 | 691 | 0.3− | 0.2− | 2003 04 29 | 699 | 0.2+ | 0.8+ | 2004 10 06 | 691 | 0.5− | 0.3+ | |
| 1996 09 14 | 691 | 0.4− | 0.2− | 2003 04 29 | 699 | 0.6+ | 0.4− | 2004 10 06 | 691 | 0.4− | 0.4+ | |
| 1996 09 14 | 691 | 0.0 | 0.5− | 2003 05 22 | 691 | 0.4+ | 0.1− | 2004 10 06 | 691 | 0.4− | 0.2+ | |
| 1996 09 21 | 691 | 0.2− | 0.3+ | 2003 05 22 | 691 | 0.3+ | 0.2− | 2004 10 10 | 691 | 0.1− | 0.2+ | |
| 1996 09 21 | 691 | 0.1+ | 0.3− | 2003 05 22 | 691 | 0.4+ | 0.0 | 2004 10 10 | 691 | 0.1− | 0.2+ | |
| 1996 09 21 | 691 | 0.3+ | 0.1− | 2003 06 05 | 691 | 0.1− | 1.4+ | 2004 10 10 | 691 | 0.5− | 0.5+ | |
| 2000 09 30 | 691 | 0.5+ | 0.4+ | 2003 06 05 | 691 | 0.1+ | 1.2+ | 2006 01 07 | G96 | 0.0 | 0.8+ | |
| 2000 09 30 | 691 | 0.8+ | 0.4+ | 2003 06 05 | 691 | 0.2− | 1.4+ | 2006 01 07 | G96 | 0.6+ | 1.0+ | |
| 2000 09 30 | 691 | 0.5+ | 0.3+ | 2004 09 15 | 691 | 0.2− | 0.4+ | 2006 01 07 | G96 | 0.2+ | 1.4+ | |
| 2003 04 26 | 691 | 0.0 | 0.1− | 2004 09 15 | 691 | 0.1− | 0.0 | 2006 01 07 | G96 | 0.2− | 0.8+ | |
| 2003 04 26 | 691 | 0.1+ | 0.1− | 2004 09 15 | 691 | 0.1+ | 0.1− | 2006 01 25 | G96 | 0.5− | 0.6+ | |
| 2003 04 26 | 691 | 0.2− | 0.3− | 2004 09 23 | 691 | 0.2− | 0.2+ | 2006 01 25 | G96 | 0.4+ | 0.6+ | |
| 2003 04 29 | 699 | 1.4+ | 0.2− | 2004 09 23 | 691 | 0.0 | 0.3+ | 2006 01 25 | G96 | 0.3− | 0.7+ | |
| 2003 04 29 | 699 | 0.3− | 0.3+ | 2004 09 23 | 691 | 0.2− | 0.3+ | 2006 01 25 | G96 | 0.6+ | 0.6+ | |

**(143629)∗ 2003 HS$_{32}$**

Discovered 2003 Apr. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.97816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18131599 | $\omega$ | 166.97773 | | −0.25461783 | +0.86395192 | |
| $a$ | 3.0915668 | $\Omega$ | 86.93920 | | −0.92166921 | −0.08080145 | |
| $e$ | 0.1647874 | $i$ | 25.79053 | | −0.29273815 | −0.49704949 | |
| $P$ | 5.44 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 704 | 0.9− | 1.1− | 2003 04 23 | 704 | 0.4− | 0.2+ | 2004 07 15 | E12 | 0.6+ | 0.5+ | |
| 1998 04 28 | 704 | 0.1− | 0.6+ | 2003 04 23 | 704 | 0.5− | 0.1− | 2004 07 15 | E12 | 0.7+ | 0.3+ | |
| 1998 04 28 | 704 | 0.5+ | 0.5+ | 2003 04 23 | 704 | 0.2+ | 0.2+ | 2004 09 19 | E12 | 0.6+ | 1.1+ | |
| 1998 04 28 | 704 | 1.0+ | 1.2− | 2003 04 24 | 704 | (0.4− | 2.3+) | 2004 09 19 | E12 | 0.2− | 0.0 | |
| 1998 04 28 | 704 | 1.0+ | 2.0+ | 2003 04 24 | 704 | 0.9− | 0.5+ | 2004 09 19 | E12 | 0.8− | 1.2− | |
| 1998 05 23 | 704 | 0.3− | 0.9+ | 2003 04 24 | 704 | 0.8+ | 0.4− | 2004 09 19 | E12 | 0.3+ | 0.4+ | |
| 1998 05 23 | 704 | 0.8− | 0.3+ | 2003 04 24 | 704 | 0.4− | 1.1− | 2005 10 30 | 703 | 1.2− | 0.7+ | |
| 1998 05 23 | 704 | 1.1− | 0.5− | 2003 04 29 | 704 | (0.0 | 2.1+) | 2005 10 30 | 703 | 1.1− | 1.0+ | |
| 1998 05 23 | 704 | (2.9+ | 0.7−) | 2003 04 29 | 704 | 0.9+ | 1.0+ | 2005 10 30 | 703 | 0.2+ | 1.0+ | |
| 1998 05 23 | 704 | 0.4+ | 1.1− | 2003 04 29 | 704 | 0.0 | 0.1+ | 2005 10 30 | 703 | 0.7− | 0.9+ | |
| 1998 05 28 | 699 | 1.0+ | 1.2+ | 2003 04 29 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | |
| 1998 05 28 | 699 | 0.7+ | 0.3− | 2003 04 30 | 704 | 0.1+ | 0.7− | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 1998 05 28 | 699 | 0.4+ | 0.9+ | 2003 04 30 | 704 | 0.7− | 0.8− | 2006 11 19 | 691 | 0.1+ | 0.0 | |
| 2003 03 10 | 699 | 0.7+ | 0.3+ | 2003 04 30 | 704 | 0.4− | 1.3+ | 2006 11 27 | 691 | 0.1− | 0.0 | |
| 2003 03 10 | 699 | 0.5+ | 1.1+ | 2003 04 30 | 704 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.2+ | |
| 2003 03 10 | 699 | 0.2− | 0.8+ | 2004 06 17 | E12 | 0.2− | 1.0+ | 2006 11 27 | 691 | 0.0 | 0.2+ | |
| 2003 03 10 | 699 | 0.2+ | 0.5+ | 2004 06 17 | E12 | 0.9− | 1.5+ | 2006 12 01 | 691 | 0.2− | 0.2+ | |
| 2003 04 07 | 644 | 0.3+ | 0.5+ | 2004 06 17 | E12 | (1.0− | 2.1+) | 2006 12 01 | 691 | 0.2− | 0.2+ | |
| 2003 04 07 | 644 | 0.2+ | 0.4+ | 2004 06 17 | E12 | 1.2− | 1.2+ | 2006 12 01 | 691 | 0.0 | 0.2+ | |
| 2003 04 07 | 644 | 0.3+ | 0.4+ | 2004 07 15 | E12 | 0.5+ | 0.1+ | | | | | |
| 2003 04 23 | 704 | 0.9+ | 0.2− | 2004 07 15 | E12 | 0.8+ | 0.1− | | | | | |

**(143630)∗ 2003 HA$_{33}$ = 2006 DV$_{29}$**

Discovered 2003 Apr. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 100438)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.56152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29982704 | $\omega$ | 161.47433 | | +0.71100426 | +0.70304947 | |
| $a$ | 2.2108309 | $\Omega$ | 153.83664 | | −0.64909259 | +0.66380500 | |
| $e$ | 0.2148600 | $i$ | 1.81201 | | −0.27046579 | +0.25511639 | |
| $P$ | 3.29 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.5+ | 0.2− | 2002 01 21 | 691 | 0.3− | 0.2− | 2005 12 03 | 568 | 0.1+ | 0.7+ | |
| 1996 03 26 | 691 | 0.5+ | 0.9− | 2003 04 29 | 699 | 0.4+ | 0.6+ | 2005 12 03 | 568 | 0.1+ | 0.4+ | |
| 1996 03 26 | 691 | 0.5+ | 0.3− | 2003 04 29 | 699 | 1.4− | 0.0 | 2005 12 03 | 568 | 0.2+ | 0.3+ | |
| 1999 01 22 | 691 | 1.4− | 0.1− | 2003 04 29 | 699 | 0.7− | 0.0 | 2006 02 20 | 691 | 0.1+ | 0.4+ | |
| 1999 01 22 | 691 | 0.4− | 0.3− | 2003 04 29 | 699 | 0.3− | 0.8− | 2006 02 20 | 691 | 0.1− | 0.2+ | |
| 1999 01 22 | 691 | 0.0 | 0.8− | 2003 04 30 | 608 | 0.1+ | 0.8− | 2006 02 20 | 691 | 0.2− | 0.3+ | |
| 2000 06 07 | 704 | 0.9− | 0.3+ | 2003 04 30 | 608 | 0.2+ | 0.6− | 2006 02 24 | 691 | 1.1+ | 0.3− | |
| 2000 06 07 | 704 | 0.7− | 1.6+ | 2003 04 30 | 608 | 0.2+ | 0.7− | 2006 02 24 | 691 | 0.1− | 0.2+ | |
| 2000 06 07 | 704 | 0.6− | 0.3+ | 2003 05 05 | 704 | 1.9+ | 0.9+ | 2006 02 24 | 691 | 0.0 | 0.0 | |
| 2001 12 17 | 704 | 0.6− | 0.7+ | 2003 05 05 | 704 | 0.9+ | 0.2+ | 2006 03 02 | 691 | 0.0 | 0.1+ | |
| 2001 12 17 | 704 | 0.3+ | 0.5+ | 2003 05 05 | 704 | 1.9+ | 1.1+ | 2006 03 02 | 691 | 0.0 | 0.2+ | |
| 2001 12 17 | 704 | 0.1− | 1.9+ | 2003 05 29 | 691 | 0.1+ | 0.1− | 2006 03 02 | 691 | 1.0− | 0.0 | |
| 2001 12 17 | 704 | 1.1+ | 1.6+ | 2003 05 29 | 691 | 0.1+ | 0.3+ | 2006 03 24 | G96 | 0.4− | 0.2− | |
| 2001 12 19 | 644 | 0.6+ | 0.0 | 2003 05 29 | 691 | 0.2+ | 0.4+ | 2006 03 24 | G96 | 0.3− | 0.1− | |
| 2001 12 19 | 644 | 0.1+ | 0.6+ | 2004 12 10 | 704 | 0.8+ | 0.1+ | 2006 03 24 | G96 | 0.2− | 0.1− | |
| 2001 12 19 | 644 | 0.3+ | 0.4+ | 2004 12 10 | 704 | 0.5+ | 0.4+ | 2006 03 24 | G96 | 0.7− | 0.1− | |
| 2002 01 09 | 704 | 0.5+ | 0.3− | 2004 12 10 | 704 | 0.4+ | 0.7+ | 2006 04 20 | A13 | 0.9+ | 0.0 | |
| 2002 01 09 | 704 | 0.2+ | 0.8+ | 2004 12 10 | 704 | 1.6+ | 0.8+ | 2006 04 20 | A13 | 0.3− | 0.5+ | |
| 2002 01 09 | 704 | 0.1+ | 1.1+ | 2005 01 18 | 691 | 0.3+ | 0.2+ | 2006 04 20 | A13 | 0.3+ | 1.2− | |
| 2002 01 21 | 691 | 0.9− | 0.2+ | 2005 01 18 | 691 | 0.4+ | 0.4+ | | | | | |
| 2002 01 21 | 691 | 0.8− | 0.2− | 2005 01 18 | 691 | 0.0 | 0.2+ | | | | | |

**(143631)∗ 2003 HS$_{35}$ = 2000 WU$_{112}$**

Discovered 2003 Apr. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 47560)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.66797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15740404 | $\omega$ | 174.33147 | | −0.68794002 | +0.68300431 | |
| $a$ | 3.3972341 | $\Omega$ | 51.89435 | | −0.67753388 | −0.48314953 | |
| $e$ | 0.0564076 | $i$ | 18.17528 | | −0.26016604 | −0.54778796 | |
| $P$ | 6.26 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.1+ | 1.6− | 2003 04 30 | 608 | 0.8+ | 0.2− | 2006 10 27 | G96 | 0.4− | 0.1− | |
| 2000 11 20 | 704 | 0.0 | 1.5− | 2003 05 02 | 704 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1+ | |
| 2000 11 20 | 704 | 0.3+ | 0.4− | 2003 05 02 | 704 | 1.3+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− | |
| 2000 11 30 | 704 | 0.3− | 1.2− | 2003 05 02 | 704 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.6+ | 0.3− | |
| 2000 11 30 | 704 | 0.9+ | 0.0 | 2003 05 02 | 704 | 0.9+ | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.5− | |
| 2000 11 30 | 704 | 0.4+ | 0.6+ | 2003 05 02 | 704 | 1.1+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.0 | |
| 2002 02 21 | 704 | 0.5+ | 0.6− | 2003 05 05 | 704 | 0.7− | 0.8− | 2006 11 09 | 691 | 0.1− | 0.4+ | |
| 2002 02 21 | 704 | (0.0 | 2.0−) | 2003 05 05 | 704 | 0.2+ | 1.3− | 2006 11 09 | 691 | 0.3− | 0.4+ | |
| 2002 02 21 | 704 | 0.0 | 0.1− | 2003 05 05 | 704 | 0.7+ | 1.2− | 2006 11 09 | 691 | 0.2− | 0.2+ | |
| 2002 02 21 | 704 | 0.1− | 1.2− | 2003 05 05 | 704 | 0.5+ | 0.7− | 2006 11 09 | 644 | 0.1− | 0.0 | |
| 2002 02 21 | 704 | 0.4− | 1.2− | 2003 05 05 | 704 | 0.2− | 1.1− | 2006 11 09 | 644 | 0.4+ | 0.2+ | |
| 2003 03 24 | 691 | 0.3+ | 0.7+ | 2003 05 08 | 608 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.3+ | |
| 2003 03 24 | 691 | 0.4+ | 0.4+ | 2003 05 08 | 608 | 0.6+ | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | |
| 2003 03 24 | 691 | 0.1+ | 0.7+ | 2003 05 08 | 608 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.3+ | |
| 2003 03 29 | 699 | 0.1+ | 0.9− | 2003 05 25 | 699 | (2.4+ | 1.1−) | 2006 11 13 | 691 | 0.5− | 0.3+ | |
| 2003 03 29 | 699 | 0.1+ | 0.8− | 2003 05 25 | 699 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.4+ | |
| 2003 03 29 | 699 | 0.1+ | 1.1− | 2003 05 25 | 699 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.3− | |
| 2003 03 29 | 699 | 0.6− | 0.9− | 2003 05 25 | 699 | 0.4− | 0.7− | 2006 11 18 | 704 | 0.8+ | 0.3+ | |
| 2003 04 27 | 704 | 0.9+ | 1.5− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 1.2− | 0.8− | |
| 2003 04 27 | 704 | (2.0+ | 0.3+) | 2006 09 28 | G96 | 0.6− | 0.1+ | 2006 11 21 | 704 | 1.1+ | 1.1+ | |
| 2003 04 27 | 704 | 1.0+ | 0.8− | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.7+ | 1.0+ | |
| 2003 04 27 | 704 | (1.6+ | 0.6−) | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.9+ | 1.4+ | |
| 2003 04 27 | 699 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.4+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 27 | 699 | 0.2− | 0.6− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2003 04 27 | 699 | 1.0− | 0.9− | 2006 10 16 | 691 | 0.5− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2003 04 27 | 699 | 0.4− | 0.5− | 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2003 04 30 | 691 | 0.4− | 1.4+ | 2006 10 17 | G96 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2003 04 30 | 691 | 0.4− | 1.1+ | 2006 10 17 | G96 | 0.3− | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2003 04 30 | 691 | 0.3− | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2003 04 30 | 608 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 04 30 | 608 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.2− | 0.3− |

**(143632)∗ 2003 HA$_{37}$ = 2001 XN$_{207}$**

Discovered 2003 Apr. 26 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 47561)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.42125 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19256262 | $\omega$ | 295.58935 | | −0.96782285 | | −0.16873406 |
| $a$ | 2.9699882 | $\Omega$ | 235.23557 | | +0.21547413 | | −0.93887323 |
| $e$ | 0.2049485 | $i$ | 13.13443 | | −0.12996091 | | −0.30007646 |
| $P$ | 5.12 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.8+ | 0.2− | 2003 04 05 | 608 | 0.2− | 1.3− | 2004 06 22 | 691 | 0.2− | 0.0 |
| 1998 05 01 | 704 | 0.4− | 0.2+ | 2003 04 05 | 608 | (0.5− | 1.7−) | 2005 09 01 | 644 | 0.1− | 0.1+ |
| 1998 05 01 | 704 | 0.4+ | 2.0− | 2003 04 05 | 608 | 0.8− | 1.0− | 2005 09 01 | 644 | 0.2+ | 0.1+ |
| 1998 05 01 | 704 | 0.0 | 0.4+ | 2003 04 12 | 704 | 0.8− | 0.6− | 2005 09 01 | 644 | 0.3− | 0.0 |
| 1998 05 01 | 704 | 0.7− | 0.2+ | 2003 04 12 | 704 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.9+ | 0.1− |
| 1998 05 24 | 704 | 0.7+ | 0.1+ | 2003 04 12 | 704 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 1998 05 24 | 704 | 1.6− | 0.7− | 2003 04 12 | 704 | 0.0 | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1998 05 24 | 704 | (0.4+ | 2.1−) | 2003 04 26 | 608 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 1998 05 24 | 704 | (2.6+ | 1.0−) | 2003 04 26 | 608 | 0.1+ | 0.4− | 2006 11 12 | G96 | (0.9+ | 1.6−) |
| 2001 12 11 | 704 | 1.0+ | 1.3+ | 2003 04 26 | 608 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2001 12 11 | 704 | 0.8+ | 0.9+ | 2003 04 30 | 704 | 0.3+ | 1.3+ | 2006 11 12 | G96 | 0.5+ | 0.1− |
| 2001 12 11 | 704 | 0.5− | 0.1+ | 2003 04 30 | 704 | 0.2− | 0.2+ | 2006 11 12 | G96 | (0.8− | 1.5−) |
| 2001 12 11 | 704 | 0.1− | 0.8+ | 2003 04 30 | 704 | (2.5− | 1.4+) | 2006 11 16 | 691 | 0.3− | 0.2+ |
| 2001 12 11 | 704 | 0.2− | 0.4+ | 2003 04 30 | 704 | 1.2+ | 0.3+ | 2006 11 16 | 691 | 0.4− | 0.0 |
| 2001 12 18 | 704 | 1.2− | 0.9+ | 2003 05 01 | 704 | 0.6− | 1.5− | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2001 12 18 | 704 | (1.9− | 1.2+) | 2003 05 01 | 704 | 1.1+ | 0.3+ | 2006 11 19 | H07 | 0.3− | 0.3− |
| 2001 12 18 | 704 | (2.5− | 0.2+) | 2003 05 01 | 704 | 0.6+ | 1.0− | 2006 11 19 | H07 | 0.1− | 0.1+ |
| 2002 01 09 | 704 | 0.7+ | 0.8− | 2003 05 01 | 704 | 0.6− | 0.4− | 2006 11 19 | H07 | 0.4+ | 0.1− |
| 2002 01 09 | 704 | 0.3+ | 0.4+ | 2003 05 01 | 704 | 1.0+ | 0.6+ | 2006 11 19 | H07 | 0.3+ | 0.3− |
| 2002 01 09 | 704 | 0.6+ | 0.8− | 2003 05 01 | 704 | (0.1− | 1.6−) | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2003 03 23 | 644 | 0.1+ | 0.4+ | 2003 05 01 | 704 | 1.1+ | 0.2+ | 2006 11 20 | 691 | 0.5− | 0.6− |
| 2003 03 23 | 644 | 0.3− | 0.6+ | 2003 06 06 | 691 | 0.2− | 0.7+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2003 03 23 | 644 | 0.4− | 0.2+ | 2003 06 06 | 691 | 0.3− | 0.4+ | 2006 12 01 | G96 | 0.4+ | 0.1− |
| 2003 04 02 | 704 | 0.7+ | 0.4+ | 2003 06 06 | 691 | 0.1+ | 0.6+ | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2003 04 02 | 704 | 0.4− | 0.0 | 2004 06 22 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2003 04 02 | 704 | 0.6+ | 0.5− | 2004 06 22 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.6+ | 0.1− |

**(143633)∗ 2003 HX$_{53}$ = 2002 AS$_{54}$**

Discovered 2003 Apr. 22 by W. Bickel at Bergisch Gladbach.

Id. A. Doppler (*MPO* 69525)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.11846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17533966 | $\omega$ | 31.95215 | | −0.84698980 | | +0.53160914 |
| $a$ | 3.1614230 | $\Omega$ | 180.16211 | | −0.49047141 | | −0.78147386 |
| $e$ | 0.1099909 | $i$ | 0.75435 | | −0.20505140 | | −0.32663485 |
| $P$ | 5.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.7− | 0.3− | 2003 04 22 | 621 | 0.6+ | 0.7+ | 2005 08 31 | 691 | 0.3+ | 0.5− |
| 1994 11 01 | 691 | (6.6+ | 2.5+) | 2003 04 22 | 621 | 0.5+ | 0.0 | 2005 08 31 | 691 | 0.1− | 0.0 |
| 1994 11 01 | 691 | 0.5+ | 0.5+ | 2003 04 23 | 621 | 0.4+ | 1.0+ | 2005 08 31 | 691 | 0.6− | 0.2+ |
| 2002 01 09 | 704 | 0.2+ | 1.1+ | 2003 04 23 | 621 | 0.0 | 1.2+ | 2005 09 29 | G96 | 0.2+ | 0.5+ |
| 2002 01 09 | 704 | 0.5+ | 0.1− | 2003 04 24 | 621 | 0.5+ | 0.1− | 2005 09 29 | G96 | 0.0 | 0.4+ |
| 2002 01 09 | 704 | 0.9− | 1.2+ | 2003 04 24 | 621 | 0.4+ | 0.8− | 2005 09 29 | G96 | 0.3+ | 0.6+ |
| 2002 01 09 | 704 | 1.4+ | 0.8+ | 2003 04 29 | 691 | 0.1− | 0.1− | 2005 10 25 | 691 | 0.0 | 0.5+ |
| 2002 01 13 | 291 | 0.1+ | 0.3+ | 2003 04 29 | 691 | 0.2− | 0.1− | 2005 10 25 | 691 | 0.3− | 0.4+ |
| 2002 01 13 | 704 | 0.7+ | 1.4+ | 2003 04 29 | 691 | 0.3− | 0.2− | 2005 10 25 | 691 | 0.2+ | 1.0+ |
| 2002 01 13 | 291 | 0.1+ | 0.3+ | 2003 05 04 | 621 | 1.0+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 01 13 | 704 | (1.9+ | 1.2+) | 2003 05 04 | 621 | (1.9+ | 0.4−) | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2002 01 13 | 291 | 0.2+ | 0.3+ | 2003 05 04 | 621 | 0.6+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2002 01 13 | 704 | (1.6+ | 0.7+) | 2004 06 27 | 291 | 0.1− | 0.5+ | 2006 11 24 | G96 | 0.5− | 0.3− |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2004 06 27 | 291 | 0.3− | 0.4+ | 2006 11 26 | H07 | 0.3+ | 0.0 |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2004 06 27 | 291 | 0.5− | 0.0 | 2006 11 26 | H07 | 0.3− | 0.8+ |
| 2003 03 07 | 291 | 0.4+ | 0.7+ | 2004 07 21 | E12 | 1.4− | 1.1− | 2006 11 26 | H07 | 0.9− | 0.3+ |
| 2003 03 07 | 291 | 0.4+ | 0.6+ | 2004 07 21 | E12 | 0.8+ | 0.0 | 2006 11 26 | H07 | 0.0 | 0.8+ |
| 2003 03 07 | 291 | 0.1− | 0.7+ | 2004 07 21 | E12 | 0.2+ | 0.9+ | 2006 11 26 | H07 | 0.1+ | 1.1+ |
| 2003 04 22 | 621 | 0.3− | 0.3+ | 2004 07 21 | E12 | 1.4+ | 0.8+ | 2006 11 26 | H07 | 0.6− | 0.6+ |
| 2003 04 22 | 621 | 0.1− | 0.5+ | 2004 08 14 | 807 | 0.5+ | 0.4+ | | | | |
| 2003 04 22 | 621 | 0.2+ | 0.8+ | 2004 08 14 | 807 | 0.5+ | 0.4+ | | | | |

**(143634)∗ 2003 HR$_{54}$**

Discovered 2003 Apr. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.50196 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18413821 | $\omega$ | 297.10648 | | −0.99487352 | | −0.05537098 |
| $a$ | 3.0598968 | $\Omega$ | 239.82791 | | +0.08175402 | | −0.93290087 |
| $e$ | 0.0919383 | $i$ | 5.61724 | | −0.05952284 | | −0.35585113 |
| $P$ | 5.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 20 | 691 | 0.4+ | 0.3− | 2003 04 30 | 704 | 0.0 | 1.3+ | 2005 08 29 | 644 | 0.4− | 0.3+ |
| 1998 06 20 | 691 | 0.4+ | 0.1+ | 2003 04 30 | 704 | (0.0 | 2.0+) | 2005 10 01 | 703 | (1.7+ | 2.4+) |
| 1998 06 20 | 691 | 0.1+ | 0.1+ | 2003 05 05 | 691 | 0.1+ | 0.2+ | 2005 10 01 | 703 | 1.5− | 0.1− |
| 1998 06 26 | 691 | (3.5+ | 0.4+) | 2003 05 05 | 691 | 0.1+ | 0.4+ | 2005 10 01 | 703 | 0.1+ | 0.1+ |
| 1998 06 26 | 691 | 0.3− | 0.4+ | 2003 05 05 | 691 | 0.2+ | 0.3+ | 2005 11 03 | G96 | 0.2+ | 0.2+ |
| 1998 06 26 | 691 | 0.9− | 0.2− | 2004 06 15 | 691 | 0.3+ | 0.1− | 2005 11 03 | G96 | 0.1− | 0.1+ |
| 2002 01 09 | 704 | 0.1+ | 0.3− | 2004 06 15 | 691 | 0.1+ | 0.1+ | 2005 11 03 | G96 | 0.3+ | 0.3+ |
| 2002 01 09 | 704 | 0.3+ | 0.9− | 2004 06 15 | 691 | 0.4+ | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.3+ |
| 2002 01 09 | 704 | 0.1+ | 1.3− | 2004 06 25 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.6+ |
| 2002 01 09 | 704 | 0.3+ | 0.9− | 2004 06 25 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2− | 0.5+ |
| 2003 03 28 | 699 | 0.5+ | 0.3+ | 2004 06 25 | 691 | (0.1+ | 2.5−) | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2003 03 28 | 699 | (1.6− | 0.5−) | 2004 07 14 | 704 | 1.2− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2003 03 28 | 699 | 0.7− | 1.5+ | 2004 07 14 | 704 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.3− | 0.3+ |
| 2003 03 28 | 699 | 0.9− | 0.8+ | 2004 07 14 | 704 | 0.3+ | 0.8+ | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2003 04 24 | 608 | 0.1+ | 0.2− | 2004 07 14 | 704 | 0.5− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2003 04 24 | 608 | 0.1+ | 0.6− | 2004 07 14 | 704 | 0.3− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2003 04 24 | 608 | 0.4+ | 0.8− | 2005 08 29 | 644 | 0.3− | 0.3+ | 2006 11 27 | 691 | 0.7+ | 0.8− |
| 2003 04 30 | 704 | (1.6+ | 1.3+) | 2005 08 29 | 644 | 0.2− | 0.1+ | | | | |

**(143635)∗ 2003 HU$_{54}$**

Discovered 2003 Apr. 24 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.35084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18290831 | $\omega$ | 274.06012 | | −0.39047670 | | −0.91916443 |
| $a$ | 3.0735982 | $\Omega$ | 199.17765 | | +0.89466309 | | −0.36565386 |
| $e$ | 0.1549366 | $i$ | 9.04102 | | +0.21703897 | | −0.14640356 |
| $P$ | 5.39 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 691 | 0.0 | 0.5+ | 2003 05 10 | 691 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2000 10 07 | 691 | 0.1+ | 0.5+ | 2003 05 10 | 691 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2000 10 07 | 691 | 0.2+ | 0.0 | 2005 07 31 | 644 | 0.1− | 0.8+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2000 10 27 | 691 | 0.2− | 0.1+ | 2005 07 31 | 644 | 0.3− | 1.1+ | 2006 11 14 | 704 | 0.5− | 0.8+ |
| 2000 10 27 | 691 | 0.2− | 0.0 | 2005 07 31 | 644 | 0.2+ | 0.9+ | 2006 11 14 | 704 | 0.0 | 0.8+ |
| 2000 10 27 | 691 | 0.2− | 0.2− | 2005 08 24 | 644 | 0.3− | 0.5+ | 2006 11 14 | 704 | (0.2− | 2.3+) |
| 2001 11 17 | 704 | 0.0 | 0.5+ | 2005 08 24 | 644 | 0.1− | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.2+ |
| 2001 11 17 | 704 | 0.3+ | 0.5+ | 2005 08 24 | 644 | 0.0 | 0.4+ | 2006 11 14 | 704 | 1.1+ | 0.2− |
| 2001 11 17 | 704 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.3+ |
| 2001 11 17 | 704 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 2001 11 17 | 704 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.0 |
| 2003 03 07 | 291 | 0.1− | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 291 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.5+ | |
| 2003 03 07 | 291 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2003 04 09 | 644 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− | |
| 2003 04 09 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.5+ | 0.2− | |
| 2003 04 09 | 644 | 0.1+ | 0.6+ | 2006 10 18 | 691 | 0.3− | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.1− | |
| 2003 04 24 | 608 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.5− | 0.2+ | 2006 11 19 | 704 | (0.6− | 1.9+) | |
| 2003 04 24 | 608 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 1.0+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.2− | |
| 2003 04 24 | 608 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.7− | 0.6− | 2006 11 19 | 704 | 0.9+ | 0.0 | |
| 2003 04 29 | 691 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | (3.0− | 0.3+) | |
| 2003 04 29 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.8− | 0.1+ | 2006 11 20 | 704 | 0.9+ | 0.6+ | |
| 2003 04 29 | 704 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.4+ | |
| 2003 04 29 | 691 | 0.8+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.0 | |
| 2003 04 29 | 704 | 1.4+ | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | (1.6+ | 0.8+) | |
| 2003 04 29 | 704 | 0.2− | 0.7+ | 2006 11 02 | 703 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.1+ | |
| 2003 04 29 | 691 | 0.9+ | 0.1+ | 2006 11 02 | 703 | 0.1− | 0.2− | 2006 11 25 | 704 | 0.4− | 0.3− | |
| 2003 04 29 | 704 | 1.1+ | 0.7+ | 2006 11 02 | 703 | 0.1− | 0.8− | 2006 11 25 | 704 | 0.2− | 0.1− | |
| 2003 05 05 | 691 | 0.3− | 0.3+ | 2006 11 02 | 703 | 0.8+ | 0.5− | 2006 11 25 | 704 | 0.3− | 0.1+ | |
| 2003 05 05 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 25 | 704 | 0.2− | 0.2+ | |
| 2003 05 05 | 691 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | | | | |
| 2003 05 10 | 691 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.3+ | | | | | |

**(143636)∗ 2003 KO$_{19}$ = 2002 CE$_{135}$**

Discovered 2003 May 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69535)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.48947 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17287203 | $\omega$ | 17.46913 | | −0.69983556 | −0.65642761 | |
| $a$ | 3.1914367 | $\Omega$ | 118.06702 | | +0.61132217 | −0.75437374 | |
| $e$ | 0.2049634 | $i$ | 18.61453 | | +0.36947989 | +0.00480136 | |
| $P$ | 5.70 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 18 | 327 | 0.3+ | 0.3+ | 2002 02 11 | 704 | 0.3+ | 0.9+ | 2006 09 25 | 703 | 0.2− | 0.0 | |
| 1997 02 18 | 327 | 0.1+ | 0.1+ | 2002 02 11 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 703 | (2.4− | 0.8−) | |
| 1997 02 18 | 327 | 0.5− | 0.1+ | 2002 02 11 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 703 | 1.4− | 0.8+ | |
| 2001 12 11 | 704 | 0.1+ | 1.0− | 2002 02 11 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 703 | (0.6+ | 2.0+) | |
| 2001 12 11 | 704 | 0.3− | 0.7− | 2003 05 11 | 704 | 0.9+ | 0.8+ | 2006 10 21 | 703 | (1.6− | 1.0+) | |
| 2001 12 11 | 704 | 0.6− | 0.6− | 2003 05 11 | 704 | (0.3+ | 1.9+) | 2006 10 21 | 703 | 0.8+ | 0.7+ | |
| 2001 12 11 | 704 | 0.3− | 0.6− | 2003 05 11 | 704 | 0.7− | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.5+ | |
| 2002 01 09 | 704 | 0.6+ | 0.1+ | 2003 05 11 | 704 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1− | 1.0+ | |
| 2002 01 09 | 704 | 0.7+ | 0.0 | 2003 05 11 | 704 | 0.5− | 0.8+ | 2006 11 19 | 703 | 0.0 | 0.2+ | |
| 2002 01 09 | 704 | 0.4+ | 0.5− | 2003 05 30 | 699 | 0.5− | 0.5+ | 2006 11 19 | 703 | 0.4− | 0.4+ | |
| 2002 01 09 | 704 | 0.6+ | 0.2+ | 2003 05 30 | 699 | 0.9+ | 0.7+ | 2006 11 19 | 703 | 0.5+ | 0.5− | |
| 2002 02 08 | 704 | 1.0− | 0.1+ | 2003 05 30 | 699 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.4+ | 0.3+ | |
| 2002 02 08 | 704 | 0.7− | 0.3+ | 2003 05 30 | 699 | 0.2− | 1.0+ | 2006 11 24 | 703 | (1.0− | 2.0−) | |
| 2002 02 08 | 704 | 0.3− | 0.4− | 2003 06 02 | 704 | 1.1+ | 0.2− | 2006 11 24 | 703 | 0.1− | 0.6+ | |
| 2002 02 08 | 704 | 0.5+ | 0.4+ | 2003 06 02 | 704 | (0.4+ | 1.6+) | 2006 11 24 | 703 | 1.3− | 0.4− | |
| 2002 02 11 | 704 | 0.1− | 0.7+ | 2003 06 02 | 704 | (0.5− | 1.9+) | 2006 11 24 | 703 | 0.3− | 0.8+ | |

**(143637)∗ 2003 LP$_{6}$**

Discovered 2003 June 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.47829 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.42714379 | $\omega$ | 260.40286 | | +0.54654446 | −0.73776308 | |
| $a$ | 1.7461705 | $\Omega$ | 144.94063 | | +0.71881059 | +0.65604613 | |
| $e$ | 0.8835545 | $i$ | 43.61253 | | −0.42965158 | +0.15908841 | |
| $P$ | 2.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 12 | 704 | 0.0 | 0.5− | 2003 06 18 | 587 | 0.6− | 0.1+ | 2003 07 12 | J95 | 0.1+ | 0.5+ | |
| 2003 06 12 | 704 | 0.3− | 0.3− | 2003 06 18 | 587 | 0.8− | 0.3− | 2003 07 12 | J95 | 0.1− | 0.4+ | |
| 2003 06 12 | 704 | 0.6− | 0.2− | 2003 06 20 | 151 | 0.3+ | 0.5− | 2003 07 12 | J95 | 0.1− | 0.0 | |
| 2003 06 12 | 704 | 0.6− | 0.2− | 2003 06 20 | 151 | 0.4− | 0.1+ | 2004 02 17 | 246 | 0.1+ | 0.4+ | |
| 2003 06 12 | 704 | 0.7− | 0.3+ | 2003 06 20 | 151 | 0.3− | 0.1+ | 2004 02 17 | 246 | 0.9− | 1.0+ | |
| 2003 06 13 | 620 | 0.0 | 0.3− | 2003 06 20 | 151 | 0.2+ | 0.0 | 2004 02 17 | 246 | 0.4− | 0.3− | |
| 2003 06 13 | 620 | 0.4− | 0.3− | 2003 06 21 | A50 | 0.1+ | 0.4+ | 2004 02 17 | 246 | 0.6+ | 0.8+ | |
| 2003 06 13 | 966 | 0.0 | 0.3+ | 2003 06 21 | A50 | 0.0 | 0.7− | 2004 02 17 | 246 | 0.3− | 0.2+ | |
| 2003 06 13 | 620 | 0.7− | 0.0 | 2003 06 21 | A50 | 0.1− | 0.4+ | 2004 02 17 | 246 | 0.3+ | 0.2+ | |
| 2003 06 13 | 966 | 0.1− | 0.0 | 2003 06 21 | A50 | 0.0 | 0.1+ | 2004 03 24 | 696 | 0.1− | 0.2− | |
| 2003 06 13 | A50 | 0.2− | 0.5+ | 2003 06 21 | A50 | 0.1+ | 0.3+ | 2004 03 24 | 696 | 1.1− | 0.2− | |
| 2003 06 13 | A50 | 0.1− | 0.1− | 2003 06 21 | A50 | 0.0 | 0.3+ | 2005 04 06 | 696 | 0.0 | 0.3− | |
| 2003 06 13 | A50 | 0.3− | 0.1+ | 2003 06 21 | A50 | 0.1− | 0.1− | 2005 04 06 | 696 | 0.9+ | 0.6− | |
| 2003 06 13 | A50 | 1.5+ | 1.1+ | 2003 06 21 | A50 | 0.0 | 0.4+ | 2005 04 07 | 696 | 0.4+ | 0.5+ | |
| 2003 06 13 | 176 | 0.3− | 0.4+ | 2003 06 21 | A50 | 0.1− | 0.3+ | 2005 04 07 | 696 | (0.0 | 1.5−) | |
| 2003 06 13 | 176 | 0.2− | 0.2+ | 2003 06 21 | A50 | 0.0 | 0.3+ | 2005 05 13 | F65 | 0.3− | 0.2− | |
| 2003 06 13 | 176 | 0.1− | 0.0 | 2003 06 24 | 785 | (0.2+ | 1.9+) | 2005 05 13 | F65 | 0.6− | 0.5− | |
| 2003 06 13 | 176 | 0.1− | 0.1− | 2003 06 24 | 785 | (2.6+ | 0.3+) | 2005 05 13 | F65 | 0.0 | 0.6− | |
| 2003 06 13 | 176 | 0.0 | 0.2− | 2003 06 24 | 785 | (2.6+ | 3.5−) | 2005 05 13 | F65 | 0.1+ | 0.5− | |
| 2003 06 14 | 118 | 0.0 | 0.4+ | 2003 06 24 | 785 | (0.7+ | 1.6+) | 2005 06 15 | 696 | 0.0 | 0.7− | |
| 2003 06 14 | 118 | 0.1− | 0.7+ | 2003 06 26 | 785 | (0.2− | 1.8−) | 2005 06 15 | 696 | 0.7− | 0.6− | |
| 2003 06 14 | 118 | 0.3+ | 0.4+ | 2003 06 26 | 785 | (2.5+ | 0.1+) | 2006 01 11 | 461 | 0.1− | 0.0 | |
| 2003 06 14 | 649 | 0.1− | 0.7− | 2003 06 26 | 785 | 0.7+ | 1.0+ | 2006 01 11 | 461 | 0.3− | 0.1+ | |
| 2003 06 14 | 649 | 0.1− | 0.0 | 2003 06 26 | 785 | (2.2+ | 2.8−) | 2006 01 11 | 461 | 0.1+ | 0.2+ | |
| 2003 06 14 | 649 | 0.3− | 0.6− | 2003 06 27 | 071 | 0.8+ | 1.1+ | 2006 01 11 | 461 | 0.1+ | 0.1+ | |
| 2003 06 14 | 649 | 0.1− | 0.2+ | 2003 06 27 | 071 | (0.7+ | 1.6+) | 2006 01 11 | 461 | 0.3− | 0.0 | |
| 2003 06 17 | 118 | 0.3+ | 0.2− | 2003 06 27 | 071 | (0.4+ | 1.7+) | 2006 01 11 | 461 | 0.1+ | 0.2+ | |
| 2003 06 17 | 118 | 0.1+ | 0.4− | 2003 06 27 | 071 | 0.9+ | 1.3+ | 2006 02 04 | 704 | 0.5+ | 0.7+ | |
| 2003 06 17 | 118 | 0.1− | 0.4− | 2003 07 07 | 599 | 0.1+ | 0.4− | 2006 02 04 | 704 | 1.2+ | 0.1− | |
| 2003 06 17 | 118 | 0.2− | 0.3+ | 2003 07 07 | 599 | 0.2+ | 0.4− | 2006 02 04 | 704 | 0.7+ | 0.3+ | |
| 2003 06 17 | 785 | (1.1− | 3.0+) | 2003 07 10 | J95 | 0.1− | 0.3− | 2006 03 19 | A74 | 1.0+ | 0.1− | |
| 2003 06 17 | 785 | 1.2− | 0.7− | 2003 07 10 | J95 | 0.3− | 0.0 | 2006 03 19 | A74 | (0.7+ | 1.8+) | |
| 2003 06 18 | 587 | 0.3− | 0.5− | 2003 07 10 | J95 | 0.1− | 0.1− | 2006 03 19 | A74 | 0.4− | 0.6+ | |
| 2003 06 18 | 587 | 0.8− | 0.4− | 2003 07 12 | J95 | 0.8− | 0.3+ | 2006 03 19 | A74 | 1.0+ | 0.4− | |

**(143638)∗ 2003 MU$_{8}$ = 1998 SE$_{170}$**

Discovered 2003 June 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 50231)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.09141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18381526 | $\omega$ | 42.37269 | | +0.78529555 | +0.61019597 | |
| $a$ | 3.0634797 | $\Omega$ | 279.72482 | | −0.59270865 | +0.69206718 | |
| $e$ | 0.2811424 | $i$ | 6.10053 | | −0.17890598 | +0.38562144 | |
| $P$ | 5.36 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 13 | 691 | 0.2+ | 0.3+ | 2003 07 02 | 704 | 0.6− | 0.8+ | 2004 12 02 | 703 | 1.0− | 0.1+ | |
| 1993 12 13 | 691 | 0.3− | 0.1− | 2003 07 25 | 704 | 0.8+ | 0.5− | 2004 12 02 | 703 | 0.4+ | 0.3+ | |
| 1993 12 13 | 691 | 0.7− | 0.7− | 2003 07 25 | 704 | 0.5+ | 0.1− | 2004 12 02 | 703 | 0.1+ | 0.8− | |
| 1996 03 19 | 691 | 0.4− | 0.1+ | 2003 07 25 | 704 | 0.6+ | 0.5− | 2004 12 02 | 703 | 1.1− | 0.4− | |
| 1996 03 19 | 691 | 0.1+ | 0.3− | 2003 07 25 | 704 | 0.2+ | 0.5− | 2004 12 10 | 704 | 0.2− | 0.1− | |
| 1996 03 19 | 691 | 0.2+ | 0.4− | 2003 07 25 | 704 | 0.6+ | 0.1− | 2004 12 10 | 704 | 0.2− | 0.6+ | |
| 1996 03 27 | 691 | 0.3− | 0.3− | 2003 08 05 | 704 | 0.4− | 1.2− | 2004 12 10 | 704 | 0.2− | 0.8+ | |
| 1996 03 27 | 691 | 0.3− | 0.2− | 2003 08 05 | 704 | 0.2− | 0.9+ | 2004 12 16 | 691 | 0.1+ | 0.2+ | |
| 1996 03 27 | 691 | 0.1+ | 0.5− | 2003 08 05 | 704 | 0.7− | 1.5− | 2004 12 16 | 691 | 0.1+ | 0.1− | |
| 1998 09 19 | 699 | 0.8+ | 0.0 | 2003 08 05 | 704 | 0.1+ | 0.9+ | 2004 12 16 | 691 | 0.3+ | 0.0 | |
| 1998 09 19 | 699 | 1.1+ | 1.5− | 2003 08 05 | 704 | 0.6− | 1.5− | 2004 12 17 | 704 | 0.2+ | 0.7− | |
| 1998 09 19 | 699 | 0.3+ | 0.8− | 2003 08 05 | 704 | 0.1− | 0.9+ | 2004 12 17 | 704 | 0.3+ | 0.6− | |
| 1998 09 25 | 699 | 0.4+ | 1.0+ | 2003 08 05 | 704 | 0.4− | 1.8− | 2004 12 17 | 704 | 0.9− | 0.7+ | |
| 1998 09 25 | 699 | 0.8+ | 1.5+ | 2003 08 05 | 704 | 0.0 | 0.8+ | 2004 12 21 | 691 | 0.1− | 0.4− | |
| 1998 09 25 | 699 | 0.8+ | 0.2+ | 2003 08 05 | 704 | 0.8− | 0.9+ | 2004 12 21 | 691 | 0.3− | 0.2− | |
| 2003 06 28 | 704 | 0.2− | 0.1− | 2003 08 22 | 608 | 0.0 | 1.1+ | 2004 12 21 | 691 | 0.0 | 0.1− | |
| 2003 06 28 | 704 | 0.3− | 0.4+ | 2003 08 22 | 608 | 0.1− | 1.5+ | 2005 01 18 | 691 | 0.1− | 0.0 | |
| 2003 06 28 | 704 | 0.8− | 0.1− | 2003 08 22 | 608 | 0.3+ | 1.4+ | 2005 01 18 | 691 | 0.0 | 0.1+ | |
| 2003 07 01 | 704 | 0.7− | 0.2+ | 2003 08 24 | 704 | 0.3− | 0.5+ | 2005 01 18 | 691 | 0.0 | 0.1− | |
| 2003 07 01 | 704 | 0.1+ | 0.2− | 2003 08 24 | 704 | 1.1− | 0.1+ | 2006 01 06 | 691 | 0.2− | 0.5+ | |
| 2003 07 01 | 704 | 0.9− | 0.0 | 2003 08 24 | 704 | 0.7− | 0.8+ | 2006 01 06 | 691 | 0.0 | 0.3+ | |
| 2003 07 01 | 704 | 0.7− | 0.2− | 2003 09 27 | 704 | 0.5+ | 0.2+ | 2006 01 06 | 691 | 0.2+ | 0.5+ | |
| 2003 07 02 | 704 | 0.4− | 0.5+ | 2003 09 27 | 704 | 0.1+ | 0.8+ | 2006 01 10 | 691 | 0.9+ | 0.7+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 02 | 704 | 0.3− | 0.5+ | 2003 09 27 | 704 | 0.1+ | 1.9+ | 2006 01 10 | 691 | 0.4+ | 1.0+ |
| 2003 07 02 | 704 | 0.2− | 0.5+ | 2003 09 27 | 704 | 0.6+ | 0.0 | 2006 01 10 | 691 | 1.2+ | 0.8+ |
| 2003 07 02 | 704 | 0.5+ | 0.7+ | 2003 09 27 | 704 | 1.6+ | 0.2− | | | | |

**(143639)∗ 2003 MK$_9$**

Discovered 2003 June 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.72181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37539175 | $\omega$ | 149.21274 | | +0.97819319 | +0.01471231 | |
| $a$ | 1.9031787 | $\Omega$ | 212.01919 | | −0.02817635 | +0.99766661 | |
| $e$ | 0.1221142 | $i$ | 23.00099 | | +0.20577700 | +0.06666988 | |
| $P$ | 2.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 608 | 0.1− | 0.0 | 2006 09 13 | 628 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.2− | 0.5+ |
| 2001 12 23 | 608 | 0.3− | 0.6− | 2006 09 13 | 628 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.3− | 0.6+ |
| 2001 12 23 | 608 | 0.1+ | 0.4− | 2006 09 13 | 628 | 0.5+ | 0.5− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 01 13 | 644 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.7− |
| 2002 01 13 | 644 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.9− | 2006 11 11 | 703 | 0.5+ | 1.0+ |
| 2002 01 13 | 644 | 0.5+ | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2003 06 01 | 608 | 0.5− | 1.0− | 2006 09 17 | 703 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2003 06 01 | 608 | 0.2− | 1.0− | 2006 09 28 | 703 | 0.5+ | 0.6− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2003 06 01 | 608 | 0.5− | 1.0− | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2003 06 30 | 704 | 0.1− | 0.6+ | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 11 14 | 703 | 0.2− | 0.6− |
| 2003 06 30 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.6+ | 0.1+ |
| 2003 06 30 | 704 | 0.2+ | 1.0+ | 2006 10 17 | 703 | 0.7+ | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2003 07 02 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2003 07 02 | 704 | 0.8+ | 0.6+ | 2006 10 17 | 703 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.6− |
| 2003 07 02 | 704 | 0.8− | 1.3+ | 2006 10 17 | 703 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 2003 07 06 | 704 | 0.2− | 0.0 | 2006 10 24 | 704 | 1.5− | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2003 07 06 | 704 | 0.1+ | 0.2+ | 2006 10 24 | 704 | 1.2− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2003 07 06 | 704 | 0.2− | 0.1+ | 2006 10 24 | 704 | 1.3− | 0.8+ | 2006 11 21 | 704 | 0.8− | 1.2+ |
| 2003 07 06 | 704 | 0.6− | 0.6+ | 2006 10 26 | 704 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2005 03 08 | 704 | 0.8+ | 0.1+ | 2006 10 26 | 704 | (2.0− | 1.0+) | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2005 03 08 | 704 | 0.9− | 1.3+ | 2006 10 26 | 704 | (2.4− | 1.0+) | 2006 11 21 | 704 | 0.8+ | 1.0+ |
| 2005 03 08 | 704 | 0.7− | 0.9− | 2006 10 26 | 704 | (2.3− | 0.6+) | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2005 03 08 | 704 | 0.9+ | 0.5− | 2006 10 26 | 704 | (1.7− | 0.6+) | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 03 09 | 704 | 0.6+ | 0.4− | 2006 10 29 | 704 | 0.5− | 0.8+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 03 09 | 704 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.4− | 0.9+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2005 03 09 | 704 | 0.0 | 0.7+ | 2006 10 29 | 704 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.2− |

**(143640)∗ 2003 NR$_4$ = 1998 SJ$_{167}$**

Discovered 2003 July 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69541)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.80971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37632826 | $\omega$ | 129.07074 | | +0.89508463 | +0.41670426 | |
| $a$ | 1.9000199 | $\Omega$ | 207.41817 | | −0.43370050 | +0.89627013 | |
| $e$ | 0.1176067 | $i$ | 20.15785 | | +0.10357304 | +0.15184669 | |
| $P$ | 2.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 23 | 704 | 0.3− | 0.9+ | 2006 09 21 | 704 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1998 09 23 | 704 | 0.2+ | 1.1− | 2006 09 21 | 704 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1998 09 23 | 704 | (1.3+ | 2.7−) | 2006 09 21 | 704 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1998 09 23 | 704 | 1.5− | 1.0− | 2006 09 25 | 704 | 0.6− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 1998 09 25 | 699 | 0.2− | 0.1+ | 2006 09 25 | 704 | 1.5− | 1.0− | 2006 10 21 | 703 | 0.0 | 0.7+ |
| 1998 09 25 | 699 | 0.3+ | 0.8+ | 2006 09 25 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 1998 09 25 | 699 | 0.4+ | 1.0+ | 2006 09 25 | 704 | 0.0 | 1.3+ | 2006 10 21 | 703 | 0.2− | 0.5+ |
| 1998 10 16 | 699 | 0.4+ | 1.8+ | 2006 09 25 | 704 | 1.1− | 0.4− | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 1998 10 16 | 699 | 0.5− | 0.9+ | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1998 10 16 | 699 | 0.3+ | 1.1+ | 2006 09 26 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 12 22 | 608 | 0.4+ | 0.5− | 2006 09 26 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 12 22 | 608 | 0.1− | 0.4− | 2006 09 28 | 703 | 0.0 | 0.7− | 2006 10 23 | 691 | 0.4− | 0.6− |
| 2001 12 22 | 608 | 0.1+ | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.7− | 2006 10 23 | 691 | 0.4− | 0.6− |
| 2002 01 12 | 644 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 0.6+ | 0.1− | 2006 10 23 | 704 | 1.2− | 0.6+ |
| 2002 01 12 | 644 | 0.4+ | 1.2+ | 2006 09 28 | 703 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.4− | 0.7− |
| 2002 01 12 | 644 | 0.1− | 0.7+ | 2006 09 29 | 704 | 0.2− | 0.1+ | 2006 10 23 | 704 | 1.0− | 1.3− |
| 2003 06 07 | 704 | 1.4− | 0.8− | 2006 09 29 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 704 | (0.9− | 1.6+) |
| 2003 06 07 | 704 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.7− | 0.4+ | 2006 10 23 | 704 | 0.1+ | 0.4− |
| 2003 06 07 | 704 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.4+ | 2006 10 23 | 704 | 0.5+ | 1.1+ |
| 2003 06 30 | 704 | 0.1+ | 0.1− | 2006 09 29 | 704 | (0.4− | 2.1+) | 2006 10 28 | 704 | 0.3+ | 0.0 |
| 2003 06 30 | 704 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.5+ | 0.1+ | 2006 10 28 | 704 | 0.5− | 0.1+ |
| 2003 06 30 | 704 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 10 28 | 704 | 0.0 | 0.1− |
| 2003 06 30 | 704 | 0.7+ | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 704 | 0.2+ | 0.5+ |
| 2003 06 30 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.2+ | 0.4+ |
| 2003 07 05 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2003 07 05 | 704 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2003 07 05 | 704 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2003 07 05 | 704 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2003 07 05 | 704 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.3+ | 0.4+ |
| 2003 07 06 | 704 | 0.2− | 0.2− | 2006 10 17 | 683 | 0.6+ | 0.2− | 2006 11 13 | 703 | 0.4+ | 0.7− |
| 2003 07 06 | 704 | 0.0 | 0.2− | 2006 10 17 | 683 | 0.1+ | 1.3+ | 2006 11 13 | 703 | 0.2− | 0.5+ |
| 2003 07 06 | 704 | 0.3+ | 0.5− | 2006 10 17 | 683 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.3+ | 0.3+ |
| 2003 07 06 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2005 03 02 | 704 | 0.8− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4− | 1.0+ |
| 2005 03 02 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2005 03 02 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2006 09 21 | 704 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |

**(143641)∗ 2003 NK$_5$ = 2002 EL$_{96}$ = 2003 UR$_{183}$ = 2003 UA$_{257}$**

Discovered 2003 July 5 by W. H. Ryan and C. T. Martinez at Mt. Graham.

Id. M. E. Sansaturio (*MPO* 56749)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.99779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31004588 | $\omega$ | 152.61208 | | +0.57696616 | +0.81613253 | |
| $a$ | 2.1619820 | $\Omega$ | 152.58895 | | −0.76159186 | +0.55182137 | |
| $e$ | 0.2004400 | $i$ | 4.01249 | | −0.29510656 | +0.17152514 | |
| $P$ | 3.18 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 644 | 0.6− | 1.0+ | 2003 10 25 | 704 | 0.5+ | 0.0 | 2006 09 22 | 704 | 0.8− | 0.7+ |
| 2002 03 09 | 644 | 0.2+ | 0.9+ | 2003 10 25 | 704 | 0.2+ | 0.3− | 2006 09 22 | 704 | 0.1+ | 1.2+ |
| 2002 03 09 | 644 | 0.6+ | 1.0+ | 2003 10 25 | 704 | 0.3+ | 0.5− | 2006 09 22 | 704 | 0.7− | 0.6+ |
| 2002 03 10 | 691 | 0.3− | 0.4+ | 2003 10 29 | 704 | 0.4+ | 0.3− | 2006 09 22 | 704 | 1.0− | 0.8+ |
| 2002 03 10 | 691 | 0.7− | 0.4+ | 2003 10 29 | 704 | 1.1+ | 0.9− | 2006 09 25 | 699 | 0.7+ | 0.5+ |
| 2002 03 10 | 691 | 0.4− | 0.6+ | 2003 10 29 | 704 | 0.7+ | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.2+ |
| 2002 03 16 | 704 | 0.9+ | 0.3+ | 2005 03 08 | 290 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.0 | 0.2− |
| 2002 03 16 | 704 | (0.3+ | 1.6+) | 2005 03 08 | 290 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.6+ |
| 2002 03 16 | 704 | 0.8+ | 1.1+ | 2005 03 08 | 290 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2002 03 17 | 691 | 0.9+ | 0.2+ | 2005 03 08 | 290 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2002 03 17 | 691 | 0.6+ | 0.8+ | 2005 03 08 | 290 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2002 03 17 | 691 | 0.8+ | 0.9+ | 2005 03 09 | 290 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.1− | 0.4− |
| 2003 07 05 | 290 | 0.1− | 0.4+ | 2005 03 09 | 290 | 0.6+ | 0.0 | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2003 07 05 | 290 | 0.1− | 0.1− | 2005 03 09 | 290 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.6− |
| 2003 07 05 | 290 | 0.4+ | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.5− |
| 2003 07 05 | 290 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.6− |
| 2003 07 05 | 290 | 0.5− | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.0 | 2006 09 28 | 704 | 0.7− | 0.6+ |
| 2003 07 07 | 290 | 0.4+ | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.2− |
| 2003 07 07 | 290 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.5+ | 0.0 | 2006 09 28 | 704 | 0.6+ | 0.3− |
| 2003 07 07 | 290 | 1.0− | 0.3− | 2006 09 12 | 703 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.8+ | 0.9+ |
| 2003 07 08 | 290 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.1+ |
| 2003 07 08 | 290 | 0.2− | 0.4+ | 2006 09 12 | 703 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.6+ |
| 2003 07 08 | 290 | 0.7− | 0.2+ | 2006 09 16 | 704 | (0.6− | 1.8+) | 2006 09 30 | 703 | 0.3+ | 1.4+ |
| 2003 07 09 | 290 | 0.4+ | 0.6+ | 2006 09 16 | 704 | 0.2− | 1.1+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2003 07 09 | 290 | 0.5+ | 0.6+ | 2006 09 16 | 704 | 1.4+ | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2003 07 09 | 290 | 0.1+ | 0.5+ | 2006 09 16 | 704 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.4+ | 0.3− |
| 2003 09 28 | 704 | 0.7− | 0.6+ | 2006 09 16 | 699 | (0.8+ | 1.7−) | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2003 09 28 | 704 | 0.1− | 1.0− | 2006 09 16 | 704 | 1.2+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2003 09 28 | 704 | 0.6− | 0.7+ | 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 704 | 0.1− | 0.6+ | 2006 09 16 | 699 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.8− | 0.3+ |
| 2003 09 28 | 704 | 0.4− | 0.5+ | 2006 09 16 | 699 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2003 10 21 | 644 | 0.6+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 1.2+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2003 10 21 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 16 | 703 | 1.1− | 0.6− |
| 2003 10 21 | 644 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.9+ | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2003 10 23 | 699 | 1.4− | 0.4− | 2006 09 19 | 703 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2003 10 23 | 699 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 11 25 | G96 | 0.4+ | 0.1+ |
| 2003 10 23 | 699 | 1.2− | 1.4− | 2006 09 19 | 703 | (1.6− | 0.7−) | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2003 10 23 | 699 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.8+ | | | | |
| 2003 10 25 | 704 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 1.3− | 0.3+ | | | | |

**(143642)∗ 2003 NV$_6$ = 9553 P-L**

Discovered 2003 July 7 by J. Broughton at Reedy Creek.

Id. T. B. Spahr (*MPO* 50240)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.73444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27346325 | $\omega$ | 276.52955 | | +0.91266717 | +0.40537517 | |
| $a$ | 2.3507335 | $\Omega$ | 59.56702 | | −0.34705941 | +0.83596212 | |
| $e$ | 0.1756622 | $i$ | 3.46116 | | −0.21584347 | +0.36991661 | |
| $P$ | 3.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 10 17 | 675 | 0.2+ | 0.7− | 2003 07 28 | 428 | 0.2+ | 0.2+ | 2006 03 26 | G96 | 0.3− | 0.0 |
| 1960 10 22 | 675 | 0.6− | 1.0+ | 2003 07 29 | 428 | 0.2− | 0.6+ | 2006 03 26 | G96 | 0.1− | 0.2+ |
| 1960 10 26 | 675 | 0.4− | 2.0+ | 2005 01 07 | 704 | 1.1− | 0.1+ | 2006 03 26 | G96 | 0.5− | 0.0 |
| 1999 05 13 | 704 | (2.3− | 2.4−) | 2005 01 07 | 704 | 0.2+ | 0.2− | 2006 04 09 | 691 | 0.1− | 0.3+ |
| 1999 05 13 | 704 | 1.5− | 0.1− | 2005 01 07 | 704 | 0.3− | 0.4+ | 2006 04 09 | 691 | 0.2+ | 0.0 |
| 1999 05 13 | 704 | (0.7− | 2.2−) | 2005 01 07 | 704 | 0.4+ | 0.5+ | 2006 04 09 | 691 | 0.0 | 0.3+ |
| 1999 05 13 | 704 | 0.0 | 0.0 | 2005 01 07 | 704 | 0.4+ | 2.1+ | 2006 04 24 | 699 | 0.2+ | 0.5+ |
| 2000 10 24 | 704 | 0.8− | 0.8+ | 2005 01 19 | 704 | 0.1− | 0.8− | 2006 04 24 | 699 | 0.5+ | 0.1+ |
| 2000 10 24 | 704 | 0.8− | 0.5+ | 2005 01 19 | 704 | 0.2+ | 0.0 | 2006 04 24 | 699 | 0.6− | 1.3+ |
| 2000 10 24 | 704 | 0.3− | 0.5+ | 2005 01 19 | 704 | 0.4+ | 0.6+ | 2006 04 24 | 699 | 0.2+ | 0.3+ |
| 2003 06 27 | 704 | 0.4+ | 0.8+ | 2005 01 19 | 704 | 0.7+ | 0.5− | 2006 05 06 | G96 | 0.6− | 0.2− |
| 2003 06 27 | 704 | 0.4+ | 0.1+ | 2005 02 01 | 703 | 0.4+ | 0.6+ | 2006 05 06 | G96 | 0.1− | 0.1− |
| 2003 06 27 | 704 | 0.4+ | 0.6− | 2005 02 01 | 703 | 0.3+ | 0.2+ | 2006 05 06 | G96 | 0.2+ | 0.2− |
| 2003 07 02 | 704 | 0.7− | 0.2+ | 2005 02 01 | 703 | 0.6+ | 0.0 | 2006 05 06 | G96 | 0.3− | 0.2− |
| 2003 07 02 | 704 | 0.4− | 1.3+ | 2005 02 01 | 703 | 0.3+ | 1.2+ | 2006 05 20 | G96 | 0.7− | 0.1+ |
| 2003 07 02 | 704 | 0.6− | 0.0 | 2006 03 23 | 291 | 0.3+ | 0.0 | 2006 05 20 | G96 | 0.1− | 0.1+ |
| 2003 07 02 | 704 | 0.3+ | 0.8+ | 2006 03 23 | 291 | 0.2+ | 0.3+ | 2006 05 20 | G96 | 0.6− | 0.4− |
| 2003 07 07 | 428 | 0.5+ | 0.0 | 2006 03 23 | 291 | 0.1+ | 0.2+ | 2006 05 20 | G96 | 0.4− | 0.0 |
| 2003 07 07 | 428 | 0.1+ | 0.2+ | 2006 03 23 | 291 | 0.1+ | 0.3+ | 2006 05 27 | 291 | 0.2+ | 0.3− |
| 2003 07 09 | 428 | 0.7+ | 1.1+ | 2006 03 23 | 291 | 0.1− | 0.3+ | 2006 05 27 | 291 | 0.1+ | 0.7− |
| 2003 07 09 | 428 | 1.4− | 0.0 | 2006 03 23 | 291 | 0.1− | 0.2+ | 2006 05 27 | 291 | 0.7+ | 0.4− |
| 2003 07 28 | 428 | 0.2+ | 0.5+ | 2006 03 26 | G96 | 0.5− | 0.1+ | | | | |

**(143643)∗ 2003 NP$_7$**

Discovered 2003 July 7 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.10765 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30592535 | $\omega$ | 323.42527 | | −0.35062025 | +0.91791845 | |
| $a$ | 2.1813519 | $\Omega$ | 285.38980 | | −0.80710381 | −0.39675446 | |
| $e$ | 0.4167027 | $i$ | 11.10601 | | −0.47502513 | −0.00340774 | |
| $P$ | 3.22 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 04 | 608 | 1.5− | 1.0− | 2003 07 12 | 809 | 0.3+ | 0.1− | 2003 07 27 | 952 | (1.1+ | 2.3+) |
| 2000 08 04 | 608 | 2.0+ | 0.5− | 2003 07 12 | 809 | 0.2+ | 0.2− | 2003 08 03 | 448 | 0.2− | 0.2− |
| 2000 08 04 | 608 | (2.7+ | 0.6−) | 2003 07 16 | 448 | 0.4+ | 0.2+ | 2003 08 03 | 448 | 0.2− | 0.1+ |
| 2000 08 05 | 608 | 1.3+ | 1.2+ | 2003 07 16 | 448 | 0.1− | 0.2+ | 2003 08 03 | 448 | 0.7− | 1.1+ |
| 2000 08 05 | 608 | 0.7− | 0.7+ | 2003 07 16 | 448 | 0.1− | 0.2+ | 2003 08 19 | 413 | 0.1+ | 0.1− |
| 2000 08 05 | 608 | (4.2+ | 1.8−) | 2003 07 16 | 649 | 0.0 | 0.5+ | 2003 10 25 | 568 | 0.2− | 0.1+ |
| 2000 08 06 | 608 | 1.2+ | 1.2− | 2003 07 16 | 649 | 0.1+ | 0.3+ | 2003 10 25 | 568 | 0.1− | 0.1+ |
| 2000 08 06 | 608 | 1.5+ | 0.1+ | 2003 07 16 | 649 | 0.5+ | 0.1+ | 2003 10 29 | 696 | 0.2+ | 1.5− |
| 2000 08 06 | 608 | 1.1− | 0.2− | 2003 07 16 | 448 | 0.1+ | 0.0 | 2003 10 29 | 696 | (0.8+ | 1.8−) |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2003 07 16 | 428 | 0.3+ | 0.0 | 2005 12 25 | 291 | 0.2− | 0.8+ |
| 2000 09 27 | 645 | 0.0 | 0.1+ | 2003 07 16 | 428 | 0.0 | 0.2− | 2005 12 25 | 291 | 0.0 | 0.8+ |
| 2003 07 07 | 644 | 0.3− | 0.0 | 2003 07 16 | 428 | 0.4− | 0.2− | 2005 12 25 | 291 | 0.1− | 0.6+ |
| 2003 07 07 | 644 | 0.2+ | 0.1+ | 2003 07 20 | 448 | 0.1+ | 0.2+ | 2006 01 05 | 291 | 1.1+ | 0.4+ |
| 2003 07 07 | 644 | 0.2+ | 0.2+ | 2003 07 20 | 448 | 0.2− | 0.2+ | 2006 01 05 | 291 | 0.7+ | 0.7+ |
| 2003 07 11 | 809 | 0.2+ | 0.1− | 2003 07 20 | 448 | 0.0 | 0.2+ | 2006 01 05 | 291 | 0.6+ | 0.8+ |
| 2003 07 11 | 809 | 0.1+ | 0.2− | 2003 07 26 | 448 | 0.1− | 0.8+ | 2006 02 04 | 291 | 0.0 | 0.1+ |
| 2003 07 11 | 809 | 0.1+ | 0.1− | 2003 07 26 | 448 | 0.2− | 0.4+ | 2006 02 04 | 291 | 0.0 | 0.4+ |
| 2003 07 12 | 711 | (1.8− | 0.1−) | 2003 07 26 | 448 | 0.7+ | 1.2+ | 2006 02 04 | 291 | 0.2+ | 0.1+ |
| 2003 07 12 | 711 | 0.5− | 1.1+ | 2003 07 27 | 952 | 1.1+ | 1.5+ | | | | |
| 2003 07 12 | 711 | 1.2− | 0.1+ | 2003 07 27 | 952 | (0.1+ | 2.0+) | | | | |

**(143644)∗ 2003 OE$_3$**

Discovered 2003 July 23 by D. Polishook at Wise Observatory, Mitzpeh Ramon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.12514 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26905840 | $\omega$ | 3.97333 | | +0.17081384 | +0.98487009 | |
| $a$ | 2.3763205 | $\Omega$ | 275.86354 | | −0.90480569 | +0.14505135 | |
| $e$ | 0.1935425 | $i$ | 1.68296 | | −0.39006320 | +0.09482093 | |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 25 | 644 | 0.0 | 0.5+ | 2003 08 25 | 704 | 0.1+ | 0.4+ | 2003 09 23 | 644 | 0.1+ | 0.5+ |
| 2002 02 25 | 644 | 0.3+ | 1.0+ | 2003 08 25 | 704 | 0.0 | 0.8+ | 2003 09 23 | 644 | 0.0 | 0.2+ |
| 2002 02 25 | 644 | 0.4+ | 1.0+ | 2003 08 25 | 704 | 0.4+ | 1.6+ | 2004 12 14 | 691 | 0.2+ | 0.4+ |
| 2002 03 05 | 644 | 0.4+ | 0.7+ | 2003 08 25 | 704 | 0.1+ | 0.2+ | 2004 12 14 | 691 | 0.2− | 0.5+ |
| 2002 03 05 | 644 | 0.9+ | 0.5+ | 2003 08 29 | 704 | 0.1+ | 0.7+ | 2004 12 14 | 691 | 0.2+ | 0.6+ |
| 2002 03 05 | 644 | 0.8+ | 0.7+ | 2003 08 29 | 704 | 1.0+ | 0.5+ | 2006 03 26 | 691 | 0.0 | 0.2− |
| 2002 03 13 | 704 | (0.2+ | 2.4+) | 2003 08 29 | 704 | 0.3+ | 1.6+ | 2006 03 26 | 691 | 0.2+ | 0.4+ |
| 2002 03 13 | 704 | (0.6+ | 2.3+) | 2003 09 02 | 704 | 0.0 | 0.2+ | 2006 03 26 | 691 | 0.1+ | 0.1+ |
| 2002 03 13 | 704 | (0.4+ | 2.3+) | 2003 09 02 | 704 | 0.3+ | 0.4+ | 2006 04 06 | 704 | 0.2+ | 0.1+ |
| 2002 03 13 | 704 | 0.3+ | 1.5+ | 2003 09 02 | 704 | 0.2− | 1.3+ | 2006 04 06 | 704 | 0.3− | 0.6− |
| 2002 03 13 | 644 | 0.2− | 0.1+ | 2003 09 14 | 608 | 0.5− | 0.1+ | 2006 04 06 | 704 | 0.1+ | 0.8+ |
| 2002 03 13 | 644 | 0.0 | 0.4+ | 2003 09 14 | 608 | 0.6− | 0.2+ | 2006 04 18 | 699 | 0.0 | 1.2+ |
| 2002 03 13 | 644 | 0.1− | 0.3+ | 2003 09 14 | 608 | 0.2− | 0.3+ | 2006 04 18 | 699 | 0.9+ | 0.2− |
| 2003 07 23 | 097 | 0.1− | 0.3+ | 2003 09 16 | 691 | 0.3− | 0.0 | 2006 04 18 | 699 | 0.1− | 0.3+ |
| 2003 07 23 | 097 | 0.3+ | 0.1+ | 2003 09 16 | 691 | 0.3− | 0.1+ | 2006 04 20 | 703 | 0.1− | 1.4+ |
| 2003 07 23 | 097 | 0.4+ | 0.1+ | 2003 09 16 | 691 | 0.2− | 0.0 | 2006 04 20 | 703 | 0.8+ | 1.6+ |
| 2003 07 24 | 097 | 0.2+ | 0.6+ | 2003 09 18 | 704 | 0.1+ | 0.3− | 2006 04 20 | 703 | 0.0 | 0.7+ |
| 2003 07 24 | 097 | 0.0 | 0.6+ | 2003 09 18 | 704 | 0.5− | 0.1− | 2006 04 20 | 703 | 0.2+ | 0.8+ |
| 2003 07 24 | 097 | 0.4+ | 0.8+ | 2003 09 18 | 704 | 0.1− | 0.5+ | 2006 04 25 | 644 | 0.0 | 0.3+ |
| 2003 08 20 | 644 | 0.8− | 0.3+ | 2003 09 18 | 704 | 0.5− | 0.1− | 2006 04 25 | 644 | 0.2+ | 0.2+ |
| 2003 08 20 | 644 | 0.6− | 0.6+ | 2003 09 18 | 704 | 0.6− | 0.1+ | 2006 04 25 | 644 | 0.1− | 0.0 |
| 2003 08 20 | 644 | 1.2− | 0.7+ | 2003 09 23 | 644 | 0.1− | 0.3+ | | | | |

**(143645)∗ 2003 OP$_4$**

Discovered 2003 July 22 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.39744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17775213 | $\omega$ | 286.72001 | | −0.67872767 | +0.62721287 | |
| $a$ | 3.1327531 | $\Omega$ | 293.91802 | | −0.40573474 | −0.75383749 | |
| $e$ | 0.2145840 | $i$ | 24.70194 | | −0.61213404 | −0.19578828 | |
| $P$ | 5.54 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 25 | 608 | 1.0+ | 0.2+ | 2003 07 25 | 704 | 0.2− | 0.3+ | 2004 10 08 | 704 | 0.3+ | 0.1+ |
| 2001 11 25 | 608 | 0.0 | 0.6+ | 2003 07 25 | 704 | 0.0 | 0.5+ | 2004 10 08 | 704 | 0.1− | 0.7+ |
| 2002 02 11 | 644 | 0.3− | 0.1− | 2003 08 01 | 608 | 0.8+ | 1.4+ | 2004 10 08 | 704 | 1.1+ | 0.3+ |
| 2002 02 11 | 644 | 0.1− | 0.7+ | 2003 08 01 | 608 | 0.7+ | 1.2+ | 2004 10 08 | 704 | 0.0 | 0.4+ |
| 2002 02 11 | 644 | 0.4+ | 0.0 | 2003 08 01 | 608 | 1.0+ | 1.3+ | 2004 10 08 | 704 | 1.4− | 0.1− |
| 2003 05 03 | 608 | 0.3− | 0.5+ | 2003 08 05 | 704 | 0.1− | 1.2− | 2004 10 08 | 704 | 0.7+ | 0.0 |
| 2003 05 07 | 608 | 0.2− | 0.5− | 2003 08 05 | 704 | 0.4− | 0.6− | 2004 10 09 | 704 | 0.3+ | 0.4+ |
| 2003 05 07 | 608 | 0.2+ | 0.1+ | 2003 08 05 | 704 | 0.2+ | 0.2+ | 2004 10 09 | 704 | 0.5+ | 0.4+ |
| 2003 05 07 | 608 | 0.3+ | 0.2+ | 2003 08 05 | 704 | 0.5+ | 0.9− | 2004 10 09 | 704 | 1.1+ | 0.0 |
| 2003 07 02 | 704 | 0.3− | 0.0 | 2003 08 05 | 704 | 0.1− | 1.1− | 2004 10 09 | 704 | 0.2+ | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 02 | 704 | 0.3+ | 0.8− | 2004 10 04 | 704 | 0.9− | 0.2+ | 2004 10 09 | 704 | 0.3+ | 0.1− |
| 2003 07 02 | 704 | 0.3− | 0.3− | 2004 10 04 | 704 | 0.5− | 0.3− | 2006 10 31 | G96 | 0.5− | 0.1− |
| 2003 07 02 | 704 | 0.1− | 0.4− | 2004 10 04 | 704 | 1.2− | 0.9− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2003 07 02 | 704 | 0.5− | 0.4− | 2004 10 04 | 704 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.6− | 0.0 |
| 2003 07 10 | 608 | 0.2+ | 0.3− | 2004 10 07 | 704 | 0.3− | 0.9+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2003 07 10 | 608 | 0.3− | 0.6− | 2004 10 07 | 704 | 0.6+ | 0.5− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2003 07 22 | 608 | 0.2+ | 0.4− | 2004 10 07 | 704 | 0.7+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2003 07 22 | 608 | 0.0 | 0.3− | 2004 10 07 | 704 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2003 07 22 | 608 | 0.3+ | 0.4− | 2004 10 07 | 704 | 0.7− | 0.6− | 2006 11 28 | G96 | 0.1+ | 0.2− |
| 2003 07 25 | 704 | 0.2− | 0.4+ | 2004 10 07 | 704 | 0.4− | 0.3− | 2006 11 28 | G96 | 0.1+ | 0.0 |
| 2003 07 25 | 704 | 0.1− | 0.8+ | 2004 10 08 | 704 | 0.2− | 0.7− | 2006 11 28 | G96 | 0.3− | 0.1− |
| 2003 07 25 | 704 | 0.4− | 0.2+ | 2004 10 08 | 704 | 0.8− | 1.1+ | 2006 11 28 | G96 | 0.3− | 0.3− |

**(143646)∗ 2003 OO$_7$ = 2004 XD$_{52}$**

Discovered 2003 July 25 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 72778)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 324.24441 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26832878 | $\omega$ | 64.86835 | +0.25845521 | +0.96365082 | |
| $a$ | 2.3806262 | $\Omega$ | 220.30071 | −0.91971135 | +0.22403394 | |
| $e$ | 0.1119022 | $i$ | 6.00464 | −0.29551979 | +0.14555375 | |
| $P$ | 3.67 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.8+ | 1.4+ | 2003 07 25 | 644 | 0.1+ | 0.5+ | 2004 12 14 | 599 | 0.2+ | 0.3+ |
| 2002 02 07 | 644 | 0.7+ | 1.2+ | 2003 07 26 | 704 | 0.6− | 1.2− | 2004 12 14 | 599 | 0.3− | 0.4+ |
| 2002 02 07 | 644 | 0.0 | 1.1+ | 2003 07 26 | 704 | 0.0 | 0.2+ | 2004 12 14 | 599 | 0.0 | 0.4+ |
| 2002 03 06 | 644 | 0.2+ | 0.1+ | 2003 07 26 | 704 | 0.3+ | 0.0 | 2006 03 26 | 699 | 0.2+ | 0.8− |
| 2002 03 06 | 644 | 0.2− | 0.3+ | 2003 07 30 | 599 | 0.1− | 0.4+ | 2006 03 26 | 699 | 0.3− | 0.1+ |
| 2002 03 06 | 644 | 0.1+ | 0.0 | 2003 07 30 | 599 | 0.3− | 0.7+ | 2006 03 26 | 699 | 0.5+ | 0.8+ |
| 2003 06 06 | 291 | 0.8− | 0.6− | 2003 07 30 | 599 | 0.3+ | 0.4+ | 2006 03 26 | 699 | 0.2− | 0.6− |
| 2003 06 06 | 291 | 0.3− | 0.1+ | 2003 08 01 | 608 | 0.5+ | 0.3+ | 2006 04 21 | 691 | 0.3+ | 0.2+ |
| 2003 06 06 | 291 | 0.4− | 0.4+ | 2003 08 01 | 608 | 0.0 | 0.0 | 2006 04 21 | 691 | 0.1+ | 0.2+ |
| 2003 07 06 | 691 | 0.2+ | 0.2+ | 2003 08 01 | 608 | 0.5+ | 0.2− | 2006 04 21 | 691 | 0.0 | 0.0 |
| 2003 07 06 | 691 | 0.1+ | 0.3+ | 2004 12 13 | 691 | 0.2− | 0.2+ | 2006 04 25 | 691 | 0.2− | 0.6− |
| 2003 07 06 | 691 | 0.3+ | 0.3+ | 2004 12 13 | 691 | 0.0 | 0.2+ | 2006 04 25 | 691 | 0.1− | 0.1+ |
| 2003 07 25 | 644 | 0.0 | 0.1− | 2004 12 13 | 691 | 0.1− | 0.1+ | 2006 04 25 | 691 | 0.1− | 0.0 |
| 2003 07 25 | 644 | 0.1+ | 0.5+ | 2004 12 14 | 599 | 0.7+ | 0.6− | | | | |

**(143647)∗ 2003 OZ$_{13}$**

Discovered 2003 July 27 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 47.73428 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.36069863 | $\omega$ | 159.22377 | +0.73634991 | +0.65948851 | |
| $a$ | 1.9545182 | $\Omega$ | 157.27957 | −0.66279241 | +0.74799810 | |
| $e$ | 0.0763941 | $i$ | 23.04731 | −0.13599643 | −0.07465759 | |
| $P$ | 2.73 | $H$ | 16.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 704 | 0.4− | 0.5+ | 2003 09 29 | 704 | 0.5+ | 0.7+ | 2005 03 16 | 703 | 0.9− | 0.5+ |
| 2000 05 02 | 704 | 0.2+ | 0.0 | 2003 09 29 | 704 | 0.4− | 1.0+ | 2005 03 16 | 704 | 0.8+ | 0.3+ |
| 2000 05 02 | 704 | 0.9+ | 0.0 | 2003 10 21 | 699 | 0.8− | 0.1+ | 2005 03 16 | 703 | 0.1− | 0.8− |
| 2000 05 02 | 704 | 1.2+ | 0.2− | 2003 10 21 | 699 | 0.8− | 0.7+ | 2005 03 16 | 704 | 0.4− | 0.2− |
| 2000 05 02 | 704 | 0.8+ | 0.5+ | 2003 10 21 | 699 | 1.1− | 0.5+ | 2005 03 16 | 703 | 0.1+ | 0.6+ |
| 2000 05 29 | 699 | (3.5− | 3.1+) | 2003 10 21 | 699 | 0.2+ | 0.8− | 2005 03 16 | 703 | (1.9− | 0.8−) |
| 2000 05 29 | 699 | 0.7+ | 0.3+ | 2005 02 02 | 704 | 0.2+ | 0.8+ | 2005 03 16 | 704 | 0.5− | 0.3+ |
| 2000 05 29 | 704 | 0.5+ | 0.7+ | 2005 02 02 | 704 | 1.2+ | 0.3+ | 2005 04 02 | 703 | (0.1− | 1.9−) |
| 2000 05 29 | 704 | 0.3− | 0.2+ | 2005 02 02 | 704 | 0.3+ | 0.8+ | 2005 04 02 | 703 | 0.0 | 0.6+ |
| 2000 05 29 | 699 | 0.1− | 0.1+ | 2005 02 02 | 704 | (2.1+ | 1.7−) | 2005 04 02 | 703 | 0.7− | 0.1− |
| 2000 05 29 | 704 | 0.0 | 0.2− | 2005 02 09 | 699 | 0.1+ | 0.0 | 2005 04 02 | 703 | (1.6− | 0.6+) |
| 2000 05 29 | 699 | 0.1− | 0.7+ | 2005 02 09 | 699 | 0.1+ | 0.9+ | 2005 04 12 | 704 | 1.0− | 0.5+ |
| 2000 05 29 | 704 | 0.7− | 0.7+ | 2005 02 09 | 699 | 0.4+ | 0.6+ | 2005 04 12 | 704 | 0.2− | 0.7+ |
| 2003 07 05 | 704 | 0.4+ | 0.5+ | 2005 02 09 | 699 | 0.5+ | 0.1+ | 2005 04 12 | 704 | 1.1− | 0.5+ |
| 2003 07 05 | 704 | 0.1− | 0.8+ | 2005 03 04 | G96 | 0.6− | 0.1+ | 2005 04 12 | 704 | 0.2− | 0.5+ |
| 2003 07 05 | 704 | 1.4− | 0.2+ | 2005 03 04 | G96 | 0.6− | 0.1+ | 2006 09 22 | 703 | 0.3− | 0.1− |
| 2003 07 05 | 704 | 0.5+ | 0.5+ | 2005 03 04 | G96 | 0.6− | 0.1− | 2006 09 22 | 703 | 0.4− | 0.2− |
| 2003 07 20 | 644 | 0.3− | 0.3+ | 2005 03 04 | G96 | 0.6− | 0.0 | 2006 09 22 | 703 | 0.9− | 0.3+ |
| 2003 07 20 | 644 | 0.3− | 0.2+ | 2005 03 08 | 699 | 0.2− | 0.1− | 2006 09 22 | 703 | 0.0 | 0.2+ |
| 2003 07 20 | 644 | 0.5− | 0.5+ | 2005 03 08 | 699 | 0.7− | 1.0+ | 2006 09 24 | 699 | 0.1− | 1.2+ |
| 2003 07 27 | 608 | 1.0+ | 0.9+ | 2005 03 08 | 699 | 0.2− | 0.1+ | 2006 09 24 | 699 | 0.2+ | 0.4+ |
| 2003 07 27 | 608 | 0.7+ | 1.2+ | 2005 03 08 | 704 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.0 | 0.3+ |
| 2003 07 27 | 608 | 1.0+ | 0.9+ | 2005 03 08 | 704 | 0.5+ | 0.0 | 2006 09 27 | 703 | 0.9+ | 0.9+ |
| 2003 07 30 | 704 | 0.1+ | 1.3+ | 2005 03 08 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.9+ | 0.4+ |
| 2003 07 30 | 704 | 0.5+ | 0.4+ | 2005 03 08 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 703 | 0.6− | 0.7+ |
| 2003 07 30 | 704 | 0.3+ | 0.3+ | 2005 03 09 | 699 | 0.3− | 0.4+ | 2006 09 27 | 703 | 0.0 | 0.5+ |
| 2003 07 30 | 704 | 0.2− | 0.4+ | 2005 03 09 | 699 | 0.4− | 1.4+ | 2006 09 27 | 703 | 0.3− | 0.4− |
| 2003 08 04 | 608 | 0.8+ | 0.3− | 2005 03 09 | 699 | 0.3− | 0.6− | 2006 09 27 | 703 | 0.4− | 0.3− |
| 2003 08 04 | 608 | 0.8+ | 0.2− | 2005 03 09 | 699 | 1.0+ | 0.9− | 2006 09 27 | 703 | 0.4− | 0.1− |
| 2003 08 04 | 608 | 0.4+ | 0.2− | 2005 03 09 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.1+ | 0.2+ |
| 2003 08 07 | 704 | (2.0− | 1.1+) | 2005 03 09 | 704 | 0.4− | 0.8+ | 2006 10 11 | E12 | 0.4+ | 0.6+ |
| 2003 08 07 | 704 | (1.9− | 0.9+) | 2005 03 09 | 704 | 1.2+ | 0.3+ | 2006 10 11 | E12 | 1.1− | 1.2+ |
| 2003 08 07 | 704 | (2.4− | 1.1+) | 2005 03 09 | 704 | 0.0 | 0.2− | 2006 10 11 | E12 | 0.3+ | 0.4+ |
| 2003 08 25 | 608 | 0.3− | 0.1− | 2005 03 09 | 704 | 0.2− | 0.4+ | 2006 10 11 | E12 | 0.1+ | 0.1+ |
| 2003 08 25 | 608 | 0.6− | 0.5− | 2005 03 10 | 699 | (0.1+ | 1.8−) | 2006 10 29 | E12 | 0.2− | 0.0 |
| 2003 08 25 | 608 | 0.5− | 0.6− | 2005 03 10 | 699 | (0.7+ | 1.7+) | 2006 10 29 | E12 | 0.0 | 0.1+ |
| 2003 08 31 | 608 | 0.6− | 0.3− | 2005 03 10 | 699 | (1.3+ | 1.9+) | 2006 10 29 | E12 | 0.7+ | 1.0+ |
| 2003 08 31 | 608 | 0.6− | 0.2+ | 2005 03 10 | 699 | 1.1+ | 1.3+ | 2006 10 29 | E12 | 0.1− | 0.3+ |
| 2003 08 31 | 608 | 0.4− | 0.1− | 2005 03 11 | 704 | 0.3+ | 0.8+ | 2006 11 11 | E12 | 1.0+ | 0.0 |
| 2003 09 01 | 704 | 0.3− | 0.5+ | 2005 03 11 | 704 | 0.2+ | 0.9+ | 2006 11 11 | E12 | 0.4− | 0.9+ |
| 2003 09 01 | 704 | 0.8− | 0.4+ | 2005 03 11 | 704 | 0.1+ | 1.3+ | 2006 11 18 | E12 | 0.4+ | 0.4+ |
| 2003 09 01 | 704 | 0.7− | 0.0 | 2005 03 11 | 704 | 0.3+ | 0.8+ | 2006 11 18 | E12 | 0.5+ | 0.9+ |
| 2003 09 01 | 704 | 0.5− | 0.3+ | 2005 03 11 | 704 | 0.2− | 0.6+ | 2006 11 18 | E12 | 0.2+ | 1.3+ |
| 2003 09 29 | 704 | 0.6+ | 0.5− | 2005 03 16 | 704 | 0.1− | 0.1− | 2006 11 18 | E12 | 0.2+ | 0.8+ |

**(143648)∗ 2003 QP$_{17}$**

Discovered 2003 Aug. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 261.90001 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.17450806 | $\omega$ | 267.94541 | −0.31643981 | +0.94556713 | |
| $a$ | 3.1714587 | $\Omega$ | 342.99988 | −0.73384183 | −0.29474657 | |
| $e$ | 0.1316613 | $i$ | 15.05676 | −0.60111731 | −0.13793933 | |
| $P$ | 5.65 | $H$ | 14.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 699 | 0.7+ | 0.1+ | 2003 09 04 | 608 | 1.1− | 0.7− | 2004 11 03 | 703 | 0.6− | 0.5− |
| 2001 02 02 | 699 | (2.2+ | 0.7+) | 2003 09 04 | 608 | 0.9− | 0.7− | 2004 11 03 | 703 | 0.2− | 0.3− |
| 2001 02 02 | 699 | 1.1+ | 1.0+ | 2003 09 15 | 608 | 1.0− | 0.9+ | 2004 11 03 | 703 | 1.0− | 1.1− |
| 2001 02 02 | 699 | 0.4− | 0.5− | 2003 09 15 | 608 | 0.8− | 0.9+ | 2004 11 03 | 703 | 0.2− | 0.3− |
| 2001 02 16 | 704 | (1.8+ | 0.7+) | 2003 09 15 | 608 | 0.6− | 0.9+ | 2004 11 04 | 704 | 1.0− | 0.1− |
| 2001 02 16 | 704 | 1.3− | 0.2+ | 2003 09 28 | 608 | 0.3+ | 0.6− | 2004 11 04 | 704 | 0.4+ | 0.5− |
| 2001 02 16 | 704 | 1.1+ | 0.0 | 2003 09 28 | 608 | 0.6− | 1.1− | 2004 11 04 | 704 | 0.2− | 0.2+ |
| 2001 02 16 | 704 | 0.4− | 0.1+ | 2003 09 28 | 608 | 0.2− | 0.3− | 2004 11 04 | 704 | 0.5+ | 1.0+ |
| 2001 02 16 | 704 | 0.5+ | 0.3+ | 2003 09 29 | 704 | 0.1+ | 0.1+ | 2004 11 04 | 704 | 0.1+ | 0.2− |
| 2003 07 25 | 644 | 0.3− | 0.1+ | 2003 09 29 | 704 | 0.8+ | 0.9+ | 2004 11 10 | 704 | 0.1− | 1.0+ |
| 2003 07 25 | 644 | 0.2− | 0.2+ | 2003 09 29 | 704 | 0.3− | 0.3− | 2004 11 10 | 704 | 0.3− | 0.4+ |
| 2003 07 25 | 644 | 0.0 | 0.2+ | 2003 09 29 | 704 | 0.1+ | 1.0+ | 2004 11 10 | 704 | 0.1+ | 0.6− |
| 2003 08 02 | 608 | 0.4+ | 1.3− | 2003 10 01 | 691 | 0.1− | 0.0 | 2004 11 10 | 704 | 0.8+ | 0.3+ |
| 2003 08 02 | 608 | 0.6+ | 1.2− | 2003 10 01 | 691 | 0.2− | 0.2+ | 2004 11 10 | 704 | 0.8− | 0.7+ |
| 2003 08 02 | 608 | (0.3+ | 1.7−) | 2003 10 01 | 691 | 0.1− | 0.0 | 2004 12 11 | 703 | 0.8+ | 1.4− |
| 2003 08 22 | 644 | 0.1− | 0.6+ | 2003 11 16 | 291 | 0.7+ | 0.2+ | 2004 12 11 | 703 | 0.0 | 0.7− |
| 2003 08 22 | 644 | 0.8− | 1.2+ | 2003 11 16 | 291 | 0.7+ | 0.2+ | 2004 12 11 | 703 | 0.0 | 0.1− |
| 2003 08 22 | 644 | 0.3− | 0.7+ | 2003 11 16 | 291 | 0.5+ | 0.2+ | 2004 12 11 | 703 | 0.2− | 0.8− |
| 2003 08 23 | 704 | 0.6− | 0.4+ | 2004 10 08 | 704 | 1.1+ | 0.2− | 2006 01 22 | 704 | 0.0 | 0.5− |
| 2003 08 23 | 704 | 1.0− | 0.1− | 2004 10 08 | 704 | 1.1+ | 0.3− | 2006 01 22 | 704 | 0.8− | 0.6+ |
| 2003 08 23 | 704 | 0.3− | 0.1− | 2004 10 08 | 704 | 0.9+ | 0.1+ | 2006 01 22 | 704 | 0.2− | 0.9+ |
| 2003 08 23 | 704 | 0.1− | 0.3+ | 2004 10 08 | 704 | 0.7+ | 0.7+ | 2006 01 22 | 704 | 1.0− | 1.1+ |
| 2003 08 30 | 608 | 0.3− | 0.7+ | 2004 10 24 | 704 | 0.3+ | 0.0 | 2006 11 17 | 691 | 1.0+ | 0.3− |
| 2003 08 30 | 608 | 0.5− | 1.1+ | 2004 10 24 | 704 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.5+ |
| 2003 08 30 | 608 | 0.1− | 0.7+ | 2004 10 24 | 704 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.4+ | 0.6+ |
| 2003 08 31 | 704 | 0.3− | 0.9− | 2004 10 24 | 704 | 1.1+ | 0.7+ | 2006 11 22 | 691 | 0.4+ | 0.4+ |
| 2003 08 31 | 704 | 0.1− | 0.6+ | 2004 11 03 | 699 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2003 08 31 | 704 | 0.5− | 0.7+ | 2004 11 03 | 699 | 0.6− | 0.8+ | 2006 11 22 | 691 | 0.1− | 0.1+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 08 31 | 704 | 0.0 | 1.0+ | 2004 11 03 | 699 | 0.3+ | 0.6− | |
| 2003 09 04 | 608 | 0.6− | 0.6− | 2004 11 03 | 699 | 0.2− | 0.1− | |

**(143649)∗ 2003 QQ$_{47}$**

Discovered 2003 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 180.95464 | | (2000.0) | | | |
| $n$ | 0.87169683 | $\omega$ | 105.00951 | | −0.26692101 | −0.96359200 |
| $a$ | 1.0853232 | $\Omega$ | 1.01197 | | +0.07084804 | −0.03577255 |
| $e$ | 0.1870434 | $i$ | 62.10076 | | +0.96111068 | −0.26497316 |
| $P$ | 1.13 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 24 | 704 | 0.4− | 0.0 | 2003 09 04 | 636 | 0.5+ | 0.1+ | 2004 03 29 | 413 | 0.2− | 0.2− | |
| 2003 08 24 | 704 | (2.5+ | 0.6−) | 2003 09 04 | 636 | 0.1+ | 0.2− | 2004 03 30 | 413 | 0.0 | 0.0 | |
| 2003 08 24 | 704 | 0.4− | 0.3+ | 2003 09 04 | 636 | 0.5− | 0.2− | 2004 03 30 | 413 | 0.2− | 0.1− | |
| 2003 08 24 | 704 | 0.0 | 0.0 | 2003 09 04 | 046 | 0.1+ | 0.8− | 2004 08 13 | E17 | (2.1− | 0.2−) | |
| 2003 08 24 | 704 | 0.0 | 0.5+ | 2003 09 04 | 046 | 0.2+ | 1.1+ | 2004 08 13 | E17 | 0.9− | 0.6+ | |
| 2003 08 25 | J87 | 1.0− | 1.3+ | 2003 09 04 | 046 | 0.4− | 0.1− | 2004 08 13 | E17 | (0.6+ | 1.8+) | |
| 2003 08 25 | J87 | 0.5+ | 0.5− | 2003 09 04 | 151 | 0.1+ | 0.5− | 2004 08 21 | E17 | (0.9+ | 4.4+) | |
| 2003 08 25 | J87 | 0.6− | 0.3− | 2003 09 04 | 151 | 0.4− | 0.5+ | 2004 08 21 | E17 | 0.1− | 0.1− | |
| 2003 08 25 | J87 | 0.1+ | 0.0 | 2003 09 04 | 151 | 0.5− | 0.7+ | 2004 08 21 | E17 | 0.3+ | 0.1− | |
| 2003 08 25 | J87 | 0.5− | 0.2− | 2003 09 04 | 151 | 0.1− | 0.2− | 2004 09 07 | 859 | 0.4− | 0.1− | |
| 2003 08 25 | 704 | 1.1+ | 0.3− | 2003 09 05 | J95 | 0.0 | 0.7+ | 2004 09 07 | 859 | 0.7+ | 0.4+ | |
| 2003 08 25 | 704 | 0.7+ | 0.1+ | 2003 09 05 | J95 | 0.2+ | 0.1+ | 2004 09 08 | 859 | 0.4+ | 0.4+ | |
| 2003 08 25 | 704 | 0.8+ | 0.1+ | 2003 09 05 | 046 | 0.1− | 0.6+ | 2004 09 08 | 859 | 0.3+ | 0.1+ | |
| 2003 08 25 | 704 | 1.1+ | 0.4+ | 2003 09 05 | J95 | 0.2− | 0.0 | 2004 09 08 | 859 | 0.7+ | 0.2− | |
| 2003 08 25 | 704 | 1.1+ | 1.5+ | 2003 09 05 | 046 | 0.2+ | 0.4+ | 2004 09 08 | 859 | 0.8+ | 0.3− | |
| 2003 08 26 | 704 | (0.3+ | 2.5−) | 2003 09 05 | 046 | 0.1− | 0.1+ | 2004 09 16 | E14 | 0.1+ | 0.3− | |
| 2003 08 26 | 704 | 0.2+ | 1.1− | 2003 09 05 | 046 | 0.2+ | 0.6+ | 2004 09 16 | E14 | 0.1+ | 0.1− | |
| 2003 08 26 | 704 | 1.3− | 1.5− | 2003 09 05 | 046 | 0.1+ | 0.4+ | 2004 09 16 | E14 | 0.0 | 0.1− | |
| 2003 08 26 | 704 | 0.9+ | 0.8+ | 2003 09 05 | 785 | (2.1− | 3.1−) | 2004 09 16 | E14 | 0.2+ | 0.4− | |
| 2003 08 26 | 704 | 0.8− | 0.9+ | 2003 09 05 | 785 | (2.0+ | 1.6−) | 2004 09 30 | 844 | 0.2− | 0.2− | |
| 2003 08 26 | 704 | 0.5+ | 0.7+ | 2003 09 05 | 785 | (2.9− | 4.2−) | 2004 09 30 | 844 | 0.5− | 0.3− | |
| 2003 08 26 | 704 | 0.5+ | 1.4− | 2003 09 05 | 785 | (4.0+ | 5.3+) | 2004 09 30 | 844 | 0.3− | 0.1+ | |
| 2003 08 26 | 704 | 0.7+ | 0.5+ | 2003 09 06 | 176 | 0.2+ | 0.1− | 2004 09 30 | 844 | 0.2− | 0.3− | |
| 2003 08 26 | 704 | (1.7+ | 0.6+) | 2003 09 06 | 176 | 0.0 | 0.1− | 2004 10 04 | G90 | 0.3− | 0.2+ | |
| 2003 08 26 | 704 | 0.8+ | 0.3+ | 2003 09 06 | 176 | 0.0 | 0.1+ | 2004 10 04 | G90 | 0.1− | 0.0 | |
| 2003 08 27 | 106 | 0.3− | 0.1+ | 2003 09 06 | 176 | 0.0 | 0.0 | 2004 10 04 | G90 | 0.1− | 0.1+ | |
| 2003 08 27 | 106 | 0.5− | 0.0 | 2003 09 06 | 176 | 0.1− | 0.2+ | 2004 10 05 | G90 | 0.1+ | 0.9− | |
| 2003 08 27 | 106 | 0.1+ | 0.2− | 2003 09 06 | 176 | 0.1− | 0.3+ | 2004 10 05 | G90 | 0.3− | 0.2− | |
| 2003 08 27 | 246 | 0.2− | 0.7− | 2003 09 06 | 176 | 0.3− | 0.5+ | 2004 10 05 | G90 | 0.1− | 0.4− | |
| 2003 08 27 | 246 | 0.0 | 0.6− | 2003 09 06 | 932 | 0.2− | 0.9− | 2004 10 06 | 704 | 0.5− | 0.9− | |
| 2003 08 27 | 246 | 0.1− | 0.3− | 2003 09 06 | 932 | 0.0 | 0.3− | 2004 10 06 | 704 | 0.0 | 1.3− | |
| 2003 08 27 | 246 | 0.1+ | 0.7− | 2003 09 06 | 932 | 0.8− | 0.6+ | 2004 10 06 | 704 | 1.4− | 0.9+ | |
| 2003 08 27 | 246 | 0.0 | 0.0 | 2003 09 07 | J95 | 0.2− | 0.2− | 2004 10 06 | 704 | 0.2− | 0.2+ | |
| 2003 08 28 | 704 | 0.5+ | 0.8+ | 2003 09 07 | J95 | 0.2− | 0.1+ | 2004 10 07 | 084 | 0.4− | 0.4+ | |
| 2003 08 28 | 704 | 0.2+ | 0.0 | 2003 09 07 | J95 | 0.1− | 0.3− | 2004 10 10 | 704 | 0.5+ | 0.5+ | |
| 2003 08 28 | 704 | 1.3+ | 0.3− | 2003 09 07 | 170 | 0.7− | 0.4+ | 2004 10 10 | 704 | 0.3+ | 0.2+ | |
| 2003 08 28 | 704 | 0.9+ | 1.1+ | 2003 09 07 | 557 | 0.6− | 0.5+ | 2004 10 10 | 704 | 0.3+ | 0.5+ | |
| 2003 08 28 | 704 | 0.4+ | 0.0 | 2003 09 07 | 557 | 0.1+ | 0.1+ | 2004 10 10 | 704 | (1.6+ | 0.4+) | |
| 2003 08 29 | 704 | 0.1− | 1.0+ | 2003 09 07 | 557 | 0.4− | 0.0 | 2004 10 10 | 704 | 0.4+ | 0.2+ | |
| 2003 08 29 | 704 | 0.2− | 0.3+ | 2003 09 07 | 557 | 0.1+ | 0.2− | 2004 10 10 | 084 | 0.5− | 0.1− | |
| 2003 08 29 | 704 | 0.5+ | 0.3+ | 2003 09 07 | 557 | 0.1+ | 0.3− | 2004 10 15 | 084 | 0.6− | 0.1+ | |
| 2003 08 29 | 704 | 0.2+ | 0.4+ | 2003 09 07 | 557 | 0.1+ | 0.4− | 2004 10 23 | 670 | 0.1− | 0.5− | |
| 2003 08 29 | 568 | 0.2− | 0.0 | 2003 09 07 | 170 | 0.0 | 0.2− | 2004 10 23 | 670 | 0.3− | 0.0 | |
| 2003 08 29 | 568 | 0.2− | 0.0 | 2003 09 07 | 785 | (0.0 | 3.0−) | 2004 10 25 | 084 | 0.3+ | 0.1+ | |
| 2003 08 30 | J95 | 0.3− | 0.4+ | 2003 09 07 | 785 | (2.1− | 1.0−) | 2005 02 18 | H36 | 0.0 | 0.2− | |
| 2003 08 30 | J95 | 0.1+ | 0.2+ | 2003 09 07 | 785 | 0.5− | 1.4− | 2005 02 18 | H36 | 0.0 | 0.3+ | |
| 2003 08 30 | J95 | 0.1+ | 0.0 | 2003 09 12 | J95 | 0.2+ | 0.1+ | 2005 02 18 | H36 | 0.2+ | 0.2+ | |
| 2003 08 30 | 587 | 1.4− | 0.3− | 2003 09 12 | J95 | 0.3− | 0.2+ | 2005 02 18 | H36 | 0.2+ | 0.3− | |
| 2003 08 30 | 587 | 0.6− | 1.5+ | 2003 09 12 | J95 | 0.5− | 0.4+ | 2005 03 13 | 071 | (1.3− | 4.5+) | |
| 2003 08 30 | 587 | 0.0 | 0.4− | 2003 09 13 | 950 | 0.6− | 0.1− | 2005 03 13 | 071 | (1.0− | 3.8+) | |
| 2003 08 31 | J95 | 0.1+ | 0.6+ | 2003 09 13 | 950 | 0.5− | 0.0 | 2005 03 13 | 071 | 0.4+ | 0.4+ | |
| 2003 08 31 | J95 | 0.2+ | 0.2− | 2003 09 13 | 950 | 0.7− | 0.0 | 2005 03 25 | 844 | 0.2+ | 0.5− | |
| 2003 08 31 | J95 | 0.3+ | 0.1− | 2003 09 13 | 950 | 0.6− | 0.1− | 2005 03 25 | 844 | 0.2+ | 0.9− | |
| 2003 09 02 | 704 | (0.1− | 2.1+) | 2003 09 13 | 950 | 0.6− | 0.0 | 2005 03 25 | 844 | 0.4+ | 0.8− | |
| 2003 09 02 | 704 | 0.3− | 1.0+ | 2003 09 13 | 950 | 0.6− | 0.0 | 2005 03 25 | 844 | 0.9+ | 0.9− | |
| 2003 09 02 | 704 | 1.0− | 0.2+ | 2003 09 13 | 704 | 0.3− | 0.7+ | 2005 03 25 | 844 | 0.5+ | 0.6− | |
| 2003 09 02 | 704 | 0.7− | 0.1+ | 2003 09 13 | 704 | 0.1+ | 0.7+ | 2005 04 13 | 428 | 0.2+ | 0.2+ | |
| 2003 09 02 | 151 | 0.4− | 0.7− | 2003 09 13 | 704 | 0.4+ | 0.2− | 2005 04 13 | 428 | 0.6− | 0.2− | |
| 2003 09 02 | 151 | 0.3− | 0.2+ | 2003 09 13 | 704 | 0.1− | 0.4+ | 2005 04 13 | 428 | 0.3− | 0.1− | |
| 2003 09 02 | 151 | 0.1+ | 0.0 | 2003 09 13 | 704 | 0.2+ | 0.2− | 2005 04 13 | E12 | 0.1− | 0.4− | |
| 2003 09 02 | 151 | 1.1+ | 0.3+ | 2003 09 14 | 118 | 0.8+ | 0.0 | 2005 04 13 | E12 | 0.2+ | 0.2− | |
| 2003 09 02 | 151 | 1.3+ | 0.1+ | 2003 09 14 | 118 | 0.2+ | 0.3+ | 2005 04 13 | E12 | 0.1+ | 0.5− | |
| 2003 09 03 | 557 | 0.1+ | 0.2+ | 2003 09 14 | 118 | 0.4+ | 0.2− | 2005 04 13 | E12 | 0.4+ | 0.2+ | |
| 2003 09 03 | 557 | 0.1+ | 0.4+ | 2003 09 15 | 118 | 0.5+ | 0.1+ | 2005 04 28 | 428 | 0.3+ | 0.0 | |
| 2003 09 03 | 557 | 0.1+ | 0.1+ | 2003 09 15 | J95 | 0.1− | 0.2− | 2005 04 28 | 428 | 0.0 | 0.1− | |
| 2003 09 03 | 649 | 0.0 | 0.1+ | 2003 09 15 | J95 | 0.0 | 0.7+ | 2005 04 28 | 428 | 0.2− | 0.4− | |
| 2003 09 03 | 649 | 0.1+ | 0.3+ | 2003 09 15 | J95 | 0.3− | 0.3+ | 2006 04 17 | 704 | 0.5+ | 0.1+ | |
| 2003 09 03 | 649 | 0.3+ | 0.1− | 2003 09 15 | 649 | 0.3− | 0.1− | 2006 04 17 | 704 | 0.6+ | 0.1− | |
| 2003 09 03 | 649 | 0.3+ | 0.0 | 2003 09 15 | 649 | 0.1+ | 0.1+ | 2006 04 17 | 704 | 0.1− | 0.4+ | |
| 2003 09 03 | 704 | 0.0 | 0.5+ | 2003 09 15 | 649 | 0.2− | 0.1+ | 2006 04 17 | 704 | 0.4− | 1.1+ | |
| 2003 09 03 | 704 | 0.2+ | 0.0 | 2003 09 20 | J87 | 0.1− | 0.9+ | 2006 04 17 | 704 | 0.1+ | 0.4+ | |
| 2003 09 03 | 704 | 0.4+ | 0.3− | 2003 09 20 | J87 | 0.7− | 0.2− | 2006 04 18 | 704 | 1.2+ | 0.1+ | |
| 2003 09 03 | 704 | 0.3− | 0.1+ | 2003 09 20 | J87 | 0.8− | 0.7− | 2006 04 18 | 704 | 0.8+ | 0.2+ | |
| 2003 09 03 | 704 | 0.1+ | 0.2+ | 2003 09 27 | 118 | 0.4− | 0.4+ | 2006 04 18 | 704 | 1.1+ | 0.2− | |
| 2003 09 04 | J95 | 0.0 | 0.5− | 2003 09 27 | 118 | 0.3− | 0.2+ | 2006 04 18 | 704 | 0.3+ | 0.4+ | |
| 2003 09 04 | J95 | 0.3− | 0.1− | 2003 09 27 | 118 | 0.2− | 0.2+ | 2006 04 18 | 704 | 0.1− | 0.1+ | |
| 2003 09 04 | J95 | 0.2+ | 0.3+ | 2003 12 17 | J95 | 0.7− | 0.2+ | 2006 04 27 | 704 | 0.3− | 0.5+ | |
| 2003 09 04 | 636 | 1.0+ | 0.6− | 2003 12 17 | J95 | 0.0 | 0.2+ | 2006 04 27 | 704 | 0.8+ | 0.2− | |
| 2003 09 04 | 636 | 0.4+ | 0.3− | 2004 03 29 | 413 | 0.1− | 0.1− | 2006 04 27 | 704 | 0.6+ | 0.2− | |

**(143650)∗ 2003 QZ$_{61}$ = 2002 GM$_{120}$**

Discovered 2003 Aug. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 53194)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.50498 | | (2000.0) | | | |
| $n$ | 0.23280831 | $\omega$ | 308.37262 | | +0.88773323 | +0.45818815 |
| $a$ | 2.6170001 | $\Omega$ | 24.45370 | | −0.38155030 | +0.78655979 |
| $e$ | 0.3014382 | $i$ | 6.19158 | | −0.25758315 | +0.41398952 |
| $P$ | 4.23 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.3− | 0.7− | 2003 09 20 | 704 | 0.2− | 0.6+ | 2003 10 21 | 704 | 0.2− | 0.1− | |
| 1999 12 07 | 703 | 1.3+ | 0.4− | 2003 09 20 | 699 | 0.4+ | 0.5+ | 2003 10 21 | 704 | 0.6− | 0.4+ | |
| 1999 12 07 | 703 | 0.2+ | 0.2− | 2003 09 20 | 699 | 0.5− | 0.2+ | 2003 10 21 | 644 | 0.2− | 0.2+ | |
| 1999 12 07 | 703 | 0.3− | 0.7+ | 2003 09 20 | 699 | 0.1+ | 0.1+ | 2003 10 21 | 704 | 0.0 | 0.3+ | |
| 2002 03 13 | 691 | 0.1− | 0.6+ | 2003 09 20 | 699 | 0.1− | 0.1+ | 2003 10 22 | 608 | 0.5− | 0.3− | |
| 2002 03 13 | 691 | 0.2− | 0.7+ | 2003 09 26 | 704 | 0.4+ | 0.4+ | 2003 10 22 | 608 | 0.5− | 0.4− | |
| 2002 03 13 | 691 | 0.0 | 0.1− | 2003 09 26 | 704 | 0.1+ | 0.4+ | 2003 10 22 | 608 | 0.2− | 0.3− | |
| 2002 04 12 | 704 | (0.5+ | 2.2+) | 2003 09 26 | 704 | 0.1+ | 0.3+ | 2003 10 23 | 704 | 0.1+ | 0.1− | |
| 2002 04 12 | 704 | (1.5+ | 2.6+) | 2003 09 26 | 704 | 0.1− | 0.1+ | 2003 10 23 | 704 | 0.1+ | 0.0 | |
| 2002 04 12 | 704 | 0.2+ | 0.7+ | 2003 09 26 | 704 | 0.2+ | 0.2+ | 2003 10 23 | 704 | 0.4+ | 0.1− | |
| 2002 04 12 | 704 | 0.2− | 1.5+ | 2003 09 28 | 691 | 0.2− | 0.1+ | 2003 10 23 | 704 | 0.1− | 0.2+ | |
| 2002 04 13 | 291 | 0.1+ | 0.2+ | 2003 09 28 | 691 | 0.2+ | 0.4+ | 2003 10 23 | 704 | 0.2+ | 0.3+ | |
| 2002 04 13 | 291 | 0.3+ | 0.3+ | 2003 09 28 | 691 | 0.1− | 0.1+ | 2003 10 28 | 704 | 0.2+ | 0.2− | |
| 2002 04 13 | 291 | 0.3+ | 0.5+ | 2003 09 29 | 704 | 0.3+ | 0.3+ | 2003 10 28 | 704 | 0.2− | 0.4− | |
| 2002 04 14 | 704 | 0.9+ | 0.4− | 2003 09 29 | 704 | 0.4+ | 0.4+ | 2003 10 28 | 704 | 0.1+ | 0.0 | |
| 2002 04 14 | 704 | 0.8+ | 0.8+ | 2003 09 29 | 704 | 0.6+ | 0.4+ | 2003 10 28 | 704 | 0.3+ | 0.2− | |
| 2002 04 14 | 704 | 1.2+ | 0.4+ | 2003 09 29 | 704 | 0.6+ | 0.4+ | 2003 10 28 | 704 | 0.0 | 0.2− | |
| 2002 04 14 | 704 | 0.0 | 0.3− | 2003 09 29 | 704 | 0.7+ | 0.3+ | 2003 11 01 | 704 | 0.8− | 0.7+ | |
| 2003 08 23 | 704 | 0.3+ | 0.3+ | 2003 09 30 | 678 | 0.5− | 0.8+ | 2003 11 01 | 704 | 0.8− | 0.6+ | |
| 2003 08 23 | 704 | 0.3+ | 0.1− | 2003 09 30 | 678 | 0.3+ | 1.8+ | 2003 11 01 | 704 | 0.9+ | 0.1− | |
| 2003 08 23 | 704 | 0.0 | 0.6+ | 2003 09 30 | 678 | 0.4− | 0.3+ | 2003 11 01 | 704 | 1.4− | 0.9+ | |
| 2003 08 23 | 704 | 0.1− | 0.4+ | 2003 10 14 | 699 | 0.1+ | 0.1− | 2003 11 19 | 644 | 0.3− | 0.1− | |
| 2003 08 23 | 704 | 0.4+ | 0.2− | 2003 10 14 | 699 | 0.1+ | 0.0 | 2003 11 19 | 644 | 0.0 | 0.1− | |
| 2003 08 26 | 704 | 0.1− | 0.0 | 2003 10 14 | 699 | 0.1+ | 0.3− | 2003 11 19 | 644 | 0.1− | 0.1− | |
| 2003 08 26 | 704 | 0.0 | 0.6+ | 2003 10 14 | 699 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.5+ | 1.0+ | |
| 2003 08 26 | 704 | 0.1− | 0.9+ | 2003 10 16 | 691 | 0.2+ | 0.1+ | 2003 12 22 | 704 | 0.8− | 0.2− | |
| 2003 08 26 | 704 | 0.3+ | 1.2+ | 2003 10 16 | 691 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.4+ | 1.0+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.0 | 0.1+ | 2003 10 16 | 691 | 0.3− | 0.2− | 2003 12 22 | 704 | 0.1− | 0.2− |
| 2003 09 16 | 691 | 0.1− | 0.1+ | 2003 10 17 | 704 | 0.4− | 1.1− | 2006 03 25 | 691 | 0.2+ | 0.1+ |
| 2003 09 16 | 691 | 0.0 | 0.0 | 2003 10 17 | 704 | (0.1+ | 5.6−) | 2006 03 25 | 691 | 0.5+ | 0.1+ |
| 2003 09 17 | 644 | 0.2− | 0.2+ | 2003 10 17 | 704 | 0.7− | 0.4− | 2006 03 25 | 691 | 0.4+ | 0.1+ |
| 2003 09 17 | 644 | 0.1− | 0.3+ | 2003 10 17 | 704 | (2.7+ | 2.7−) | 2006 04 20 | 691 | 0.3+ | 0.3+ |
| 2003 09 17 | 644 | 0.1− | 0.0 | 2003 10 21 | 699 | 0.4− | 0.0 | 2006 04 20 | 691 | 0.1+ | 0.9+ |
| 2003 09 20 | 106 | 0.0 | 0.3− | 2003 10 21 | 699 | 0.2− | 0.3+ | 2006 04 20 | 691 | 0.3+ | 0.7+ |
| 2003 09 20 | 106 | 0.0 | 0.2− | 2003 10 21 | 699 | 0.5− | 0.1+ | 2006 05 05 | G96 | 0.2− | 0.1− |
| 2003 09 20 | 106 | 0.2− | 0.1− | 2003 10 21 | 644 | 0.1− | 0.2+ | 2006 05 05 | G96 | 0.1+ | 0.0 |
| 2003 09 20 | 704 | 1.2− | 0.3− | 2003 10 21 | 704 | 0.1− | 0.2+ | 2006 05 05 | G96 | 0.2− | 0.3+ |
| 2003 09 20 | 704 | 0.5− | 0.5+ | 2003 10 21 | 699 | 0.6− | 0.1+ | 2006 05 05 | G96 | 0.7+ | 0.4+ |
| 2003 09 20 | 704 | 0.7− | 0.0 | 2003 10 21 | 704 | 0.2− | 0.0 | | | | |
| 2003 09 20 | 704 | 0.4− | 0.4+ | 2003 10 21 | 644 | 0.3− | 0.2+ | | | | |

**(143651)∗ 2003 QO$_{104}$**

Discovered 2003 Aug. 31 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $M$ | 50.01963 | | | | |
| $n$ | 0.31629760 | $\omega$ | 183.49193 | −0.47340772 | +0.86400700 |
| $a$ | 2.1333992 | $\Omega$ | 58.32141 | −0.80320006 | −0.34354784 |
| $e$ | 0.5244585 | $i$ | 11.61914 | −0.36160032 | −0.36805813 |
| $P$ | 3.12 | $H$ | 16.0 $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 07 10 | 413 | 0.9− | 0.0 | 2003 09 15 | 649 | 0.3− | 0.3+ | 2004 09 16 | 291 | 0.4+ | 0.4+ |
| 1981 07 10 | 413 | 0.4− | 0.1+ | 2003 09 16 | 413 | 0.2+ | 0.5− | 2004 09 16 | 291 | 0.8+ | 0.0 |
| 2001 12 20 | 644 | 0.4− | 0.2− | 2003 09 16 | 413 | 0.0 | 0.4− | 2004 09 16 | 291 | 0.2− | 0.2− |
| 2001 12 20 | 644 | 0.1+ | 0.0 | 2003 09 17 | 704 | 0.4− | 0.2− | 2004 10 24 | 291 | 0.3− | 0.0 |
| 2001 12 20 | 644 | 0.1+ | 0.2− | 2003 09 17 | 704 | (0.5− | 1.6+) | 2004 10 24 | 291 | 0.7− | 0.8+ |
| 2003 08 31 | 608 | (1.9+ | 0.2−) | 2003 09 17 | 704 | 0.2− | 0.6+ | 2004 10 24 | 291 | 0.0 | 0.5− |
| 2003 08 31 | 608 | (0.5+ | 1.7−) | 2003 09 17 | 413 | 0.3+ | 0.3− | 2004 12 03 | 291 | 0.1− | 0.1+ |
| 2003 08 31 | 608 | 1.1+ | 1.0− | 2003 09 17 | 413 | 0.1+ | 0.4− | 2004 12 03 | 291 | 0.3− | 0.3− |
| 2003 09 01 | 704 | 0.7+ | 0.5+ | 2003 09 17 | 413 | 0.1+ | 0.4− | 2004 12 03 | 291 | 0.4− | 0.3− |
| 2003 09 01 | 704 | 0.3+ | 1.5+ | 2003 09 17 | 413 | 0.2+ | 0.3− | 2005 12 02 | 291 | 0.2− | 0.3+ |
| 2003 09 01 | 704 | 0.4− | 1.0+ | 2003 09 17 | 413 | 0.2+ | 0.2− | 2005 12 02 | 291 | 0.1− | 0.3+ |
| 2003 09 01 | 704 | 0.5+ | 0.9+ | 2003 09 17 | 413 | 0.2+ | 0.5− | 2005 12 02 | 291 | 0.3− | 0.6+ |
| 2003 09 02 | 636 | 0.4+ | 1.3+ | 2003 09 17 | 246 | 0.1− | 0.1+ | 2005 12 27 | 703 | 1.3+ | 0.6+ |
| 2003 09 02 | 636 | 0.6− | 0.2+ | 2003 09 17 | 246 | 0.1+ | 0.4+ | 2005 12 27 | 703 | 0.8+ | 0.2+ |
| 2003 09 02 | 636 | 0.1− | 0.2+ | 2003 09 17 | 246 | 0.1+ | 0.2+ | 2005 12 27 | 703 | 0.8+ | 0.8+ |
| 2003 09 03 | 704 | 0.2+ | 0.6+ | 2003 09 17 | 246 | 0.0 | 0.2+ | 2005 12 27 | 703 | 0.8− | 0.2− |
| 2003 09 03 | 704 | 0.2− | 0.1+ | 2003 09 17 | 246 | 0.2+ | 0.5+ | 2005 12 30 | 703 | 0.8+ | 0.4− |
| 2003 09 03 | 704 | 0.7− | 0.7+ | 2003 09 17 | 246 | 0.1+ | 0.4+ | 2005 12 30 | 703 | 0.3+ | 0.6− |
| 2003 09 03 | 704 | 1.1+ | 0.2− | 2003 09 18 | 413 | 0.0 | 0.4− | 2005 12 30 | 703 | 0.4+ | 0.5+ |
| 2003 09 03 | 704 | 0.4− | 0.0 | 2003 09 18 | 413 | 0.2− | 0.3− | 2005 12 30 | 703 | 0.1+ | 1.1− |
| 2003 09 03 | 704 | 1.2− | 0.2+ | 2003 09 19 | 204 | 1.1+ | 0.9+ | 2006 01 02 | 704 | 0.3+ | 0.4− |
| 2003 09 03 | 704 | 0.1− | 0.1+ | 2003 09 19 | 587 | 0.8+ | 0.4− | 2006 01 02 | 704 | 1.1+ | 1.1+ |
| 2003 09 03 | 704 | 1.4− | 0.2− | 2003 09 19 | 587 | 0.3− | 0.8+ | 2006 01 02 | 704 | 0.4+ | 0.1+ |
| 2003 09 03 | 704 | 0.4− | 0.5+ | 2003 09 19 | 587 | 0.3− | 0.9+ | 2006 01 02 | 704 | 0.8+ | 0.2+ |
| 2003 09 04 | J95 | 0.0 | 0.5+ | 2003 09 19 | 587 | 0.1+ | 0.6+ | 2006 01 12 | 704 | (3.0+ | 0.6+) |
| 2003 09 04 | J95 | 0.7+ | 0.3+ | 2003 09 20 | 246 | 0.2+ | 0.3+ | 2006 01 12 | 704 | (2.5+ | 0.2−) |
| 2003 09 04 | J95 | 0.7+ | 0.5− | 2003 09 20 | 246 | 0.3+ | 0.3+ | 2006 01 12 | 704 | 1.3+ | 0.6+ |
| 2003 09 05 | 246 | 0.6+ | 0.1+ | 2003 09 20 | 246 | 0.3+ | 0.2+ | 2006 01 12 | 704 | (1.6+ | 0.0 ) |
| 2003 09 05 | 246 | 0.3+ | 0.7+ | 2003 09 20 | 246 | 0.1+ | 0.2+ | 2006 01 22 | 670 | 1.5+ | 0.4+ |
| 2003 09 05 | 246 | 0.3+ | 0.8+ | 2003 09 20 | 246 | 0.4+ | 0.0 | 2006 01 22 | 670 | (1.8+ | 0.4+) |
| 2003 09 05 | 246 | 0.7+ | 0.9+ | 2003 09 20 | 246 | 0.4+ | 0.3+ | 2006 02 25 | 703 | 0.3+ | 1.4+ |
| 2003 09 05 | J95 | 0.4− | 0.3+ | 2003 09 20 | H06 | 0.0 | 0.7+ | 2006 02 25 | 703 | 0.0 | 1.3+ |
| 2003 09 05 | J95 | 0.8+ | 0.5+ | 2003 09 20 | H06 | 0.2− | 0.6+ | 2006 02 25 | 703 | 0.2+ | 0.3+ |
| 2003 09 05 | J95 | 0.0 | 0.0 | 2003 09 20 | H06 | 0.0 | 0.4+ | 2006 02 25 | 703 | 0.3+ | 0.4+ |
| 2003 09 05 | 704 | 0.0 | 0.9+ | 2003 09 21 | 204 | 0.1+ | 0.9+ | 2006 02 26 | 844 | 0.8+ | 0.2− |
| 2003 09 05 | 704 | 0.3− | 1.0+ | 2003 09 21 | 587 | (0.2+ | 1.6+) | 2006 02 26 | 844 | (1.5+ | 1.9+) |
| 2003 09 05 | 704 | 0.5− | 0.6+ | 2003 09 21 | 587 | 0.3− | 0.8+ | 2006 02 26 | 844 | 0.3− | 0.1+ |
| 2003 09 05 | 413 | 0.2+ | 0.2− | 2003 09 21 | 587 | 0.7− | 1.3− | 2006 02 26 | 844 | 0.4− | 0.4− |
| 2003 09 05 | 413 | 0.1+ | 0.2− | 2003 09 21 | 246 | 0.1− | 0.5+ | 2006 04 25 | E12 | 0.2− | 0.4+ |
| 2003 09 05 | 413 | 0.1+ | 0.3− | 2003 09 21 | 246 | 0.2+ | 0.0 | 2006 04 25 | E12 | 0.2− | 0.5+ |
| 2003 09 05 | 413 | 0.2+ | 0.2− | 2003 09 21 | 246 | 0.4− | 0.4+ | 2006 04 25 | E12 | 0.7− | 0.2+ |
| 2003 09 05 | 246 | 0.4− | 0.2+ | 2003 09 21 | 246 | 0.1− | 0.5+ | 2006 04 25 | E12 | 0.7− | 0.5+ |
| 2003 09 05 | 246 | 0.6− | 0.6+ | 2003 09 21 | 246 | 0.4+ | 0.4+ | 2006 05 09 | E12 | 0.0 | 0.5+ |
| 2003 09 05 | 246 | 0.4− | 0.8+ | 2003 09 22 | 932 | 0.2− | 0.3+ | 2006 05 09 | E12 | 0.3+ | 0.7+ |
| 2003 09 05 | 246 | 0.6− | 0.7+ | 2003 09 22 | 932 | 0.5− | 0.6+ | 2006 05 09 | E12 | 0.2+ | 0.4+ |
| 2003 09 06 | 176 | 0.4+ | 0.1− | 2003 09 22 | 932 | 0.1+ | 0.3− | 2006 05 09 | E12 | 0.1+ | 0.5+ |
| 2003 09 06 | 176 | 0.0 | 0.2− | 2003 09 25 | 587 | 1.3+ | 0.1+ | 2006 07 30 | E12 | 0.2+ | 0.2+ |
| 2003 09 06 | 176 | 0.2− | 0.3− | 2003 09 25 | 587 | (2.2+ | 0.4+) | 2006 07 30 | E12 | 0.5+ | 0.2− |
| 2003 09 06 | 176 | 0.5− | 0.4− | 2003 09 25 | 587 | 1.0+ | 0.4+ | 2006 07 30 | E12 | 0.2− | 0.2− |
| 2003 09 06 | 176 | 0.9− | 0.4− | 2003 09 25 | 246 | 0.5+ | 0.5+ | 2006 08 14 | 644 | 0.1− | 0.1− |
| 2003 09 06 | 704 | 1.0+ | 0.6+ | 2003 09 25 | 246 | 0.2+ | 0.3+ | 2006 08 14 | 644 | 0.3− | 0.1− |
| 2003 09 06 | 704 | 0.3− | 0.4− | 2003 09 25 | 246 | 0.3+ | 0.7+ | 2006 08 14 | 644 | 0.1− | 0.1− |
| 2003 09 06 | 704 | 0.5− | 0.4+ | 2003 09 25 | 246 | 0.1+ | 0.5+ | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2003 09 06 | 413 | 0.2+ | 0.3− | 2003 09 27 | 715 | 0.3− | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2003 09 07 | 704 | 0.2+ | 0.5+ | 2003 09 27 | 715 | 0.7− | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.2+ |
| 2003 09 07 | 704 | 0.4− | 0.6+ | 2003 09 27 | 715 | 0.5− | 0.2+ | 2006 08 28 | 844 | 0.6− | 0.1+ |
| 2003 09 07 | 704 | 0.3− | 0.1− | 2003 09 27 | 715 | 0.6− | 0.3+ | 2006 08 28 | 844 | 0.8− | 0.1+ |
| 2003 09 07 | 704 | 0.2− | 0.3+ | 2003 10 03 | 176 | 0.1+ | 0.2− | 2006 08 28 | 844 | 0.7− | 0.0 |
| 2003 09 07 | 704 | 0.4+ | 0.5+ | 2003 10 03 | 176 | 0.0 | 0.3− | 2006 08 28 | 844 | 0.2+ | 0.4+ |
| 2003 09 08 | 413 | 0.2+ | 0.3− | 2003 10 03 | 176 | 0.1+ | 0.3− | 2006 08 28 | 844 | 0.5− | 0.7− |
| 2003 09 08 | 413 | 0.2+ | 0.3− | 2003 10 03 | 176 | 0.1− | 0.5− | 2006 08 28 | 844 | 0.5− | 0.3+ |
| 2003 09 10 | 620 | 0.1− | 0.2+ | 2003 10 12 | H36 | 1.3− | 0.5+ | 2006 08 28 | 844 | 0.6− | 0.3− |
| 2003 09 10 | 413 | 0.1+ | 0.3− | 2003 10 12 | H36 | 1.1− | 1.2+ | 2006 08 28 | 844 | 0.9− | 0.7+ |
| 2003 09 10 | 413 | 0.2+ | 0.4− | 2003 10 13 | 715 | 0.7− | 0.2+ | 2006 08 28 | 844 | 0.1− | 0.1− |
| 2003 09 10 | 413 | 0.3+ | 0.3− | 2003 10 13 | 715 | 0.3− | 0.2− | 2006 08 28 | 844 | 0.1+ | 0.2− |
| 2003 09 10 | 413 | 0.2+ | 0.0 | 2003 10 13 | 715 | 0.5− | 0.3+ | 2006 09 28 | E12 | 0.2+ | 0.1− |
| 2003 09 10 | 413 | 0.1+ | 0.2− | 2003 10 18 | 699 | 0.1+ | 0.6− | 2006 09 28 | E12 | 0.3− | 0.3− |
| 2003 09 10 | 413 | 0.2+ | 0.3− | 2003 10 18 | 699 | 1.2− | 0.9− | 2006 09 28 | E12 | 0.2− | 0.3− |
| 2003 09 11 | 170 | (0.7− | 1.7+) | 2003 10 18 | 699 | 0.8− | 0.0 | 2006 09 28 | E12 | 0.3− | 0.2+ |
| 2003 09 11 | 170 | 0.8− | 1.1+ | 2003 10 18 | 699 | 0.1− | 0.0 | 2006 10 01 | E17 | 0.3+ | 0.4− |
| 2003 09 11 | 170 | 0.7− | 0.1+ | 2003 10 19 | 704 | (0.3− | 1.7+) | 2006 10 01 | E17 | 0.5− | 0.2− |
| 2003 09 11 | 170 | 0.9− | 0.4+ | 2003 10 19 | 704 | 0.4+ | 0.6+ | 2006 10 01 | E17 | 0.5− | 0.1− |
| 2003 09 14 | 413 | 0.0 | 0.2+ | 2003 10 19 | 704 | 0.8− | 0.7+ | 2006 10 12 | E12 | 0.2+ | 0.6− |
| 2003 09 14 | 413 | 0.2− | 0.0 | 2003 10 19 | 704 | (1.5− | 1.0+) | 2006 10 12 | E12 | 0.2− | 0.2− |
| 2003 09 15 | 636 | (0.7+ | 1.7−) | 2003 11 19 | 291 | 0.2− | 0.3+ | 2006 10 12 | E12 | 0.2− | 0.1− |
| 2003 09 15 | 636 | 0.3+ | 1.1− | 2003 11 19 | 291 | 0.1− | 0.3+ | 2006 10 12 | E12 | 0.2+ | 0.3− |
| 2003 09 15 | 636 | 0.0 | 1.3− | 2003 11 19 | 291 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.9− | 0.8+ |
| 2003 09 15 | 649 | 0.3+ | 0.3+ | 2003 12 22 | 291 | 0.0 | 0.3+ | 2006 10 28 | 703 | 1.5− | 0.8− |
| 2003 09 15 | 649 | 0.0 | 0.1+ | 2003 12 22 | 291 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.7− | 0.6− |
| 2003 09 15 | 649 | 0.4− | 0.2+ | 2003 12 22 | 291 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.2+ | 0.3− |

**(143652)∗ 2003 RW$_{12}$**

Discovered 2003 Sept. 14 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $M$ | 265.65171 | | | | |
| $n$ | 0.24155975 | $\omega$ | 188.42498 | +0.99105877 | +0.13229425 |
| $a$ | 2.5534048 | $\Omega$ | 163.94171 | −0.11847180 | +0.93230496 |
| $e$ | 0.1824135 | $i$ | 3.59442 | −0.06137542 | +0.33660912 |
| $P$ | 4.08 | $H$ | 16.4 $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.1+ | 0.2+ | 2003 09 18 | 704 | 0.4+ | 0.7+ | 2003 10 16 | 644 | 0.1− | 0.1+ |
| 1999 09 04 | 699 | 1.1− | 0.4− | 2003 09 18 | 704 | 0.2− | 0.7+ | 2005 03 09 | G96 | 0.0 | 1.0+ |
| 1999 09 04 | 699 | 0.2+ | 0.2− | 2003 09 18 | 704 | 0.9− | 0.7+ | 2005 03 09 | G96 | 0.2+ | 0.6+ |
| 1999 09 14 | 704 | 0.7+ | 0.3+ | 2003 09 18 | 704 | 0.3− | 0.8+ | 2005 03 09 | G96 | 0.5+ | 1.0+ |
| 1999 09 14 | 704 | 0.7− | 0.1+ | 2003 09 18 | 704 | 0.3+ | 0.1+ | 2005 03 09 | G96 | 0.0 | 0.4+ |
| 1999 09 14 | 704 | 1.0+ | 0.3− | 2003 09 22 | 246 | 0.8+ | 0.6+ | 2006 03 23 | 291 | 0.0 | 0.1+ |
| 1999 10 07 | 703 | 0.2− | 0.7+ | 2003 09 22 | 246 | 0.0 | 0.2+ | 2006 03 23 | 291 | 0.1− | 0.4+ |
| 1999 10 07 | 703 | 1.0− | 0.4+ | 2003 09 22 | 246 | 0.5− | 0.6+ | 2006 03 23 | 291 | 0.0 | 0.4+ |
| 1999 10 07 | 703 | 0.3− | 1.1+ | 2003 09 24 | 644 | 0.0 | 0.0 | 2006 03 23 | 291 | 0.3+ | 0.1+ |
| 1999 10 07 | 703 | 0.3+ | 0.8+ | 2003 09 24 | 644 | 0.2− | 0.3+ | 2006 03 23 | 291 | 0.1− | 0.1+ |
| 2003 08 25 | 704 | 0.4− | 0.3+ | 2003 09 24 | 644 | 0.3− | 0.2+ | 2006 03 23 | 291 | 0.2+ | 0.1− |
| 2003 08 25 | 704 | 0.2+ | 0.6+ | 2003 09 25 | 608 | 0.4− | 0.4− | 2006 03 24 | 691 | 0.3+ | 0.4+ |
| 2003 08 25 | 704 | 0.7+ | 0.2+ | 2003 09 25 | 608 | 0.1− | 0.7− | 2006 03 24 | 691 | 0.3+ | 0.3+ |
| 2003 08 25 | 704 | 0.3+ | 0.4+ | 2003 09 25 | 608 | 0.1− | 0.8− | 2006 03 24 | 691 | 0.0 | 0.1+ |
| 2003 08 25 | 704 | 0.2− | 0.6+ | 2003 09 26 | 704 | 0.1+ | 1.0− | 2006 03 26 | G96 | 0.3− | 0.1+ |
| 2003 09 02 | 704 | 0.3+ | 0.6+ | 2003 09 26 | 704 | 0.5− | 0.7+ | 2006 03 26 | G96 | 0.1+ | 0.1+ |
| 2003 09 02 | 704 | 0.1− | 1.0− | 2003 09 26 | 704 | 0.7− | 0.6+ | 2006 03 26 | G96 | 0.3− | 0.2+ |
| 2003 09 02 | 704 | 0.3+ | 0.5− | 2003 09 29 | 704 | 0.1+ | 0.5+ | 2006 03 26 | G96 | 0.1− | 0.2+ |
| 2003 09 14 | 608 | 0.1− | 0.7− | 2003 09 29 | 704 | 0.6− | 0.1− | 2006 05 26 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 14 | 608 | 0.2− | 0.9− | 2003 09 29 | 704 | 0.0 | 0.2− | 2006 05 26 | G96 | 0.5− | 0.3− | | |
| 2003 09 14 | 608 | 0.0 | 0.2− | 2003 09 29 | 704 | 0.5− | 0.0 | 2006 05 26 | G96 | 0.1+ | 0.6− | | |
| 2003 09 16 | 691 | 0.2+ | 0.1− | 2003 09 29 | 704 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.5− | 0.6− | | |
| 2003 09 16 | 691 | 0.1+ | 0.0 | 2003 10 16 | 644 | 0.1− | 0.3+ | | | | | | |
| 2003 09 16 | 691 | 0.2+ | 0.0 | 2003 10 16 | 644 | 0.3− | 0.3+ | | | | | | |

**(143653)∗ 2003 RT$_{13}$ = 1997 GN$_{38}$**

Discovered 2003 Sept. 15 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 53264)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.49954 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36893020 | $\omega$ | 333.99765 | | −0.97730057 | −0.18565945 | |
| $a$ | 1.9253362 | $\Omega$ | 196.30742 | | +0.19148680 | −0.98019285 | |
| $e$ | 0.0478657 | $i$ | 21.31141 | | −0.09064433 | −0.06893871 | |
| $P$ | 2.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 809 | 0.5+ | 0.8− | 2003 10 21 | 699 | (1.7+ | 0.4+) | 2005 04 11 | 699 | 0.3+ | 0.6− | | |
| 1997 04 07 | 809 | 0.2+ | 0.2− | 2003 10 22 | 645 | 0.1− | 0.1− | 2005 04 13 | 704 | 0.5+ | 0.3− | | |
| 1997 04 07 | 809 | 0.4− | 0.1+ | 2003 10 22 | 645 | 0.1− | 0.2− | 2005 04 13 | 704 | 0.5+ | 0.7− | | |
| 1997 04 08 | 809 | (2.2+ | 3.3−) | 2005 03 15 | G96 | 0.2− | 0.1+ | 2005 04 13 | 704 | 0.5+ | 0.0 | | |
| 1997 04 08 | 809 | (0.7− | 2.5+) | 2005 03 15 | G96 | 0.4− | 0.4− | 2005 04 13 | 704 | 0.6+ | 0.0 | | |
| 1997 04 08 | 809 | 0.4− | 1.4+ | 2005 03 15 | G96 | 0.5− | 0.2− | 2005 04 13 | 704 | 0.7+ | 0.3− | | |
| 2003 08 27 | 644 | 0.2− | 0.2− | 2005 03 15 | G96 | 0.7− | 0.2− | 2005 04 15 | 699 | 0.5− | 0.7+ | | |
| 2003 08 27 | 644 | 0.1+ | 0.1− | 2005 03 17 | 704 | 0.8+ | 0.4− | 2005 04 15 | 699 | 0.1− | 0.5+ | | |
| 2003 08 27 | 644 | 0.1+ | 0.0 | 2005 03 17 | 704 | 0.8+ | 0.2− | 2005 04 15 | 699 | 0.2+ | 0.3− | | |
| 2003 09 15 | 608 | 0.0 | 1.0+ | 2005 03 17 | 704 | 0.8+ | 0.3− | 2005 04 15 | 699 | 0.3+ | 0.4− | | |
| 2003 09 15 | 608 | 0.0 | 0.6+ | 2005 03 17 | 704 | (0.1+ | 1.9+) | 2005 05 04 | 703 | 0.4+ | 0.6− | | |
| 2003 09 15 | 608 | 0.1− | 0.8+ | 2005 03 17 | 704 | 0.7+ | 0.8− | 2005 05 04 | 703 | 0.5− | 0.6− | | |
| 2003 09 16 | 644 | 0.4+ | 0.1+ | 2005 04 02 | 699 | 0.7+ | 0.5+ | 2005 05 04 | 703 | 0.7+ | 0.2+ | | |
| 2003 09 16 | 644 | 0.4+ | 0.1+ | 2005 04 02 | 699 | 0.2− | 0.1+ | 2005 05 04 | 703 | 1.2− | 0.2− | | |
| 2003 09 16 | 644 | 0.6+ | 0.1+ | 2005 04 02 | 699 | 1.1− | 0.4+ | 2006 09 18 | 703 | (0.4+ | 1.6−) | | |
| 2003 09 20 | 704 | 0.7+ | 0.5+ | 2005 04 02 | 699 | 1.5+ | 1.1+ | 2006 09 18 | 703 | 0.3+ | 0.8+ | | |
| 2003 09 20 | 704 | 0.1+ | 0.2− | 2005 04 05 | 703 | 1.2− | 0.0 | 2006 09 18 | 703 | (1.6− | 1.6+) | | |
| 2003 09 20 | 704 | 0.5+ | 0.1+ | 2005 04 05 | 704 | 0.5− | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.7+ | | |
| 2003 09 20 | 704 | 0.6+ | 0.4+ | 2005 04 05 | 703 | 0.9− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.0 | | |
| 2003 09 30 | 704 | 0.9− | 0.8+ | 2005 04 05 | 703 | 0.9− | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.4− | | |
| 2003 09 30 | 704 | 0.7− | 0.4+ | 2005 04 05 | 704 | 0.1+ | 1.2+ | 2006 10 17 | 703 | 0.6+ | 0.1+ | | |
| 2003 09 30 | 704 | 0.4+ | 0.0 | 2005 04 05 | 703 | 1.1− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.1+ | | |
| 2003 09 30 | 704 | 0.2− | 1.1− | 2005 04 05 | 704 | 0.5+ | 0.9+ | 2006 11 17 | 703 | 0.7+ | 1.0+ | | |
| 2003 10 05 | 691 | 0.1+ | 0.1+ | 2005 04 05 | 704 | 0.8− | 0.3+ | 2006 11 17 | 703 | 1.2+ | 0.6+ | | |
| 2003 10 05 | 691 | 0.1− | 0.0 | 2005 04 09 | 704 | 0.2+ | 1.3− | 2006 11 17 | 703 | 0.3− | 0.9+ | | |
| 2003 10 05 | 691 | 0.1+ | 0.0 | 2005 04 09 | 704 | 0.3− | 0.4− | 2006 11 17 | 703 | 0.4+ | 0.1+ | | |
| 2003 10 15 | 644 | 0.2+ | 0.5+ | 2005 04 09 | 704 | 0.1+ | 0.2− | 2006 11 23 | 703 | 1.2− | 1.6− | | |
| 2003 10 15 | 644 | 0.1+ | 0.2+ | 2005 04 09 | 704 | 0.3+ | 0.5− | 2006 11 23 | 703 | 0.4− | 1.1− | | |
| 2003 10 15 | 644 | 0.5+ | 0.3+ | 2005 04 09 | 704 | 0.3+ | 0.6− | 2006 11 23 | 703 | 1.1− | 0.4+ | | |
| 2003 10 21 | 699 | 0.8− | 0.1− | 2005 04 11 | 699 | (1.5+ | 1.9+) | 2006 11 23 | 703 | 0.3− | 0.6− | | |
| 2003 10 21 | 699 | 1.0+ | 1.1− | 2005 04 11 | 699 | 0.2+ | 0.3+ | | | | | | |
| 2003 10 21 | 699 | (0.6+ | 1.5+) | 2005 04 11 | 699 | (1.9+ | 1.2−) | | | | | | |

**(143654)∗ 2003 SH$_{11}$**

Discovered 2003 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.29842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28792497 | $\omega$ | 227.51662 | | +0.90161065 | −0.39152695 | |
| $a$ | 2.2713453 | $\Omega$ | 153.85309 | | +0.40131844 | +0.91576415 | |
| $e$ | 0.2155245 | $i$ | 24.65962 | | −0.16137458 | +0.08990369 | |
| $P$ | 3.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 05 | 608 | 0.7+ | 1.2+ | 2003 10 17 | 704 | 1.5+ | 0.3+ | 2003 12 16 | 699 | 0.1+ | 0.2− | | |
| 2001 01 05 | 608 | 0.8+ | 1.2+ | 2003 10 17 | 704 | 0.1+ | 0.1− | 2003 12 16 | 644 | 0.2+ | 0.6− | | |
| 2001 01 05 | 608 | 0.8+ | 1.4+ | 2003 10 17 | 704 | 0.1+ | 0.5− | 2003 12 16 | 699 | 0.3+ | 0.1+ | | |
| 2001 01 17 | 608 | 0.7− | 0.8− | 2003 10 17 | 704 | 0.3+ | 0.1− | 2003 12 16 | 699 | 0.7− | 0.3+ | | |
| 2001 01 17 | 608 | 0.7− | 0.7− | 2003 10 18 | 704 | 0.2− | 0.1+ | 2003 12 16 | 644 | 0.1− | 0.3− | | |
| 2001 01 17 | 608 | 0.8− | 0.4− | 2003 10 18 | 704 | 0.3− | 0.0 | 2003 12 16 | 644 | 0.2+ | 0.1− | | |
| 2003 09 01 | 704 | 0.2− | 0.7+ | 2003 10 18 | 704 | 0.1− | 0.3+ | 2005 04 02 | 703 | 0.5− | 0.3+ | | |
| 2003 09 01 | 704 | 0.3+ | 1.0+ | 2003 10 18 | 704 | 0.4+ | 0.1− | 2005 04 02 | 703 | 0.7− | 1.3+ | | |
| 2003 09 01 | 704 | 0.0 | 0.4+ | 2003 10 18 | 704 | 0.5+ | 0.0 | 2005 04 02 | 703 | 1.0+ | 0.7+ | | |
| 2003 09 01 | 704 | 0.1− | 0.8+ | 2003 11 21 | 644 | 0.2− | 0.2+ | 2005 04 02 | 703 | 0.0 | 0.7+ | | |
| 2003 09 01 | 704 | 0.2− | 0.8+ | 2003 11 21 | 644 | 0.3− | 0.0 | 2006 07 21 | 704 | 0.6+ | 0.7+ | | |
| 2003 09 17 | 704 | 0.4− | 0.7− | 2003 11 21 | 644 | 0.3− | 0.0 | 2006 07 21 | 704 | 0.7+ | 0.1+ | | |
| 2003 09 17 | 704 | 0.6− | 0.3− | 2003 11 27 | 699 | 0.5+ | 0.2+ | 2006 07 21 | 704 | 0.3+ | 0.4+ | | |
| 2003 09 17 | 704 | 0.5− | 0.0 | 2003 11 27 | 699 | 0.4+ | 0.4+ | 2006 07 21 | 704 | 0.3+ | 0.4+ | | |
| 2003 09 17 | 704 | 0.0 | 0.2− | 2003 11 27 | 699 | 0.2+ | 0.3+ | 2006 07 21 | A74 | 0.7− | 0.4− | | |
| 2003 09 18 | 704 | 0.3+ | 0.4− | 2003 11 27 | 699 | 0.2− | 0.5− | 2006 07 21 | A74 | 0.2− | 0.0 | | |
| 2003 09 18 | 704 | (2.3− | 0.4−) | 2003 12 16 | 704 | 0.4+ | 0.5− | 2006 07 21 | A74 | 0.5− | 0.0 | | |
| 2003 09 18 | 704 | 0.1− | 1.2+ | 2003 12 16 | 704 | 0.2+ | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.4− | | |
| 2003 09 18 | 704 | 0.3− | 0.9+ | 2003 12 16 | 704 | 0.1− | 0.7− | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2003 09 18 | 704 | 1.2− | 0.5+ | 2003 12 16 | 704 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.3− | 0.1− | | |
| 2003 10 17 | 704 | 0.2− | 0.0 | 2003 12 16 | 699 | 1.1− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.2− | | |

**(143655)∗ 2003 SE$_{18}$**

Discovered 2003 Sept. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.33292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36815156 | $\omega$ | 163.76263 | | +0.95883572 | +0.28395541 | |
| $a$ | 1.9280500 | $\Omega$ | 179.72035 | | −0.28383968 | +0.95859422 | |
| $e$ | 0.0891184 | $i$ | 22.11767 | | −0.00831208 | +0.02159750 | |
| $P$ | 2.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 704 | 0.6− | 1.6+ | 2003 09 27 | 704 | 0.3− | 0.5+ | 2005 03 09 | G96 | 0.4− | 0.1+ | | |
| 2000 05 30 | 704 | 0.7+ | 0.3− | 2003 09 27 | 699 | 0.4+ | 0.1− | 2005 03 09 | 699 | 0.5+ | 0.5+ | | |
| 2000 05 30 | 704 | 0.4− | 0.0 | 2003 09 27 | 704 | 0.5− | 0.2+ | 2005 03 09 | G96 | 0.5− | 0.0 | | |
| 2000 05 30 | 704 | 0.7+ | 0.4− | 2003 09 27 | 699 | 0.1− | 0.2− | 2005 03 09 | G96 | 0.2− | 0.1+ | | |
| 2003 07 28 | 644 | 0.2− | 0.1+ | 2003 09 27 | 704 | 0.1+ | 0.5+ | 2005 03 13 | 691 | 0.1+ | 0.5+ | | |
| 2003 07 28 | 644 | 0.0 | 0.2− | 2003 09 27 | 699 | 0.0 | 0.3− | 2005 03 13 | 703 | 0.4+ | 0.8− | | |
| 2003 07 28 | 644 | 0.1− | 0.3− | 2003 09 27 | 704 | 0.2− | 1.1+ | 2005 03 13 | 703 | 0.6− | 0.7+ | | |
| 2003 09 01 | 704 | 0.6+ | 0.0 | 2003 09 27 | 704 | 0.3+ | 0.3− | 2005 03 13 | 691 | 0.2+ | 0.4+ | | |
| 2003 09 01 | 704 | 0.1+ | 0.7+ | 2003 09 29 | 691 | 0.2+ | 0.1− | 2005 03 13 | 703 | 0.8− | 0.2− | | |
| 2003 09 01 | 704 | 0.2+ | 0.8+ | 2003 09 29 | 691 | 0.1+ | 0.1+ | 2005 03 13 | 703 | 0.9− | 0.4− | | |
| 2003 09 01 | 704 | 0.1+ | 1.2+ | 2003 09 29 | 691 | 0.1− | 0.1− | 2005 03 13 | 691 | 0.1+ | 0.2+ | | |
| 2003 09 01 | 704 | 0.4− | 0.3+ | 2003 10 17 | 699 | 0.3− | 0.5− | 2005 03 31 | 699 | 0.4+ | 0.7+ | | |
| 2003 09 16 | 699 | 0.5− | 0.3+ | 2003 10 17 | 699 | 0.4− | 0.1− | 2005 03 31 | 699 | 0.0 | 1.3+ | | |
| 2003 09 16 | 699 | 1.1+ | 0.0 | 2003 10 17 | 699 | 0.1+ | 0.4− | 2005 03 31 | 699 | 0.7+ | 1.4+ | | |
| 2003 09 16 | 699 | 0.3− | 1.0+ | 2003 10 17 | 699 | 0.5+ | 0.9− | 2005 03 31 | 699 | 0.5+ | 1.1+ | | |
| 2003 09 16 | 691 | 0.1− | 0.0 | 2003 10 23 | 704 | 0.2+ | 0.9+ | 2005 04 04 | 703 | 0.2− | 0.0 | | |
| 2003 09 16 | 699 | 0.5− | 0.4+ | 2003 10 23 | 704 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.2− | 0.7+ | | |
| 2003 09 16 | 691 | 0.1− | 0.1− | 2003 10 23 | 704 | 0.1− | 0.9+ | 2005 04 04 | 703 | 0.4− | 0.6+ | | |
| 2003 09 16 | 691 | 0.1− | 0.0 | 2003 10 23 | 704 | 0.4+ | 0.4+ | 2005 04 04 | 703 | 0.1+ | 0.2+ | | |
| 2003 09 18 | 644 | 0.1− | 0.1− | 2003 10 23 | 704 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.6− | 0.7+ | | |
| 2003 09 18 | 644 | 0.1− | 0.2+ | 2005 03 07 | 704 | (1.2+ | 1.6+) | 2006 09 30 | 703 | 0.2− | 0.0 | | |
| 2003 09 18 | 644 | 0.1− | 0.3− | 2005 03 07 | 704 | 1.2+ | 1.3+ | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2003 09 18 | 644 | 0.1− | 0.0 | 2005 03 07 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.1− | | |
| 2003 09 18 | 644 | 0.3− | 0.0 | 2005 03 08 | 699 | (2.3+ | 1.5+) | 2006 11 18 | 703 | 0.2− | 0.1− | | |
| 2003 09 18 | 644 | 0.1− | 0.0 | 2005 03 08 | 699 | 0.2− | 1.0+ | 2006 11 18 | 703 | 0.2+ | 1.3+ | | |
| 2003 09 19 | 704 | 0.0 | 0.4+ | 2005 03 08 | 699 | 0.6+ | 0.6− | 2006 11 18 | 703 | (1.2+ | 1.8+) | | |
| 2003 09 19 | 704 | 0.1+ | 0.9+ | 2005 03 08 | 699 | 0.2− | 0.2− | 2006 11 18 | 703 | 0.9− | 0.1− | | |
| 2003 09 19 | 704 | 0.0 | 0.3+ | 2005 03 09 | 699 | 0.6+ | 0.6+ | 2006 11 24 | 703 | 0.2− | 0.8+ | | |
| 2003 09 19 | 704 | 0.2+ | 1.1+ | 2005 03 09 | 699 | 0.6− | 0.0 | 2006 11 24 | 703 | 0.2− | 0.4− | | |
| 2003 09 19 | 704 | 0.1− | 0.4+ | 2005 03 09 | 699 | 1.2− | 0.2+ | 2006 11 24 | 703 | 1.1+ | 1.0+ | | |
| 2003 09 27 | 699 | 0.3+ | 0.2+ | 2005 03 09 | G96 | 0.4− | 0.2− | 2006 11 24 | 703 | 0.5+ | 2.4+ | | |

**(143656)∗ 2003 SJ$_{39}$**

Discovered 2003 Sept. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.65599 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24333829 | $\omega$ | 301.92950 | | +0.17131117 | +0.98500219 | |
| $a$ | 2.5409478 | $\Omega$ | 337.90678 | | −0.88445070 | +0.14455731 | |
| $e$ | 0.0560527 | $i$ | 3.13530 | | −0.43405005 | +0.09420125 | |
| $P$ | 4.05 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 31 | 691 | 0.1+ | 0.1+ | 2003 08 30 | 691 | 0.8− | 0.4+ | 2003 09 27 | 704 | (2.8− | 1.5−) |
| 1993 01 31 | 691 | 0.5− | 0.3+ | 2003 09 16 | 644 | 0.6+ | 0.0 | 2003 09 27 | 704 | 0.6− | 0.2+ |
| 1993 01 31 | 691 | 0.6− | 0.4+ | 2003 09 16 | 644 | 0.1+ | 0.4+ | 2003 10 24 | 691 | 0.1+ | 0.3− |
| 1993 01 31 | 691 | 0.1− | 0.8− | 2003 09 16 | 644 | 0.2+ | 0.1+ | 2003 10 24 | 691 | 0.1+ | 0.4− |
| 1993 01 31 | 691 | 0.1− | 0.6− | 2003 09 17 | 291 | 0.4− | 0.0 | 2003 10 24 | 704 | 0.5− | 0.2+ |
| 1993 01 31 | 691 | 0.1− | 0.9− | 2003 09 17 | 291 | 0.2− | 0.1− | 2003 10 24 | 704 | 0.2+ | 0.1− |
| 1999 10 13 | 704 | 0.9+ | 0.5+ | 2003 09 17 | 291 | 0.2− | 0.0 | 2003 10 24 | 704 | 0.2− | 0.5+ |
| 1999 10 13 | 704 | 1.9+ | 0.5− | 2003 09 17 | 691 | 0.4+ | 0.2− | 2003 10 24 | 691 | 0.1− | 0.2− |
| 1999 10 13 | 704 | 1.6+ | 1.0− | 2003 09 17 | 691 | 0.3+ | 0.1− | 2003 10 24 | 704 | 0.4− | 0.5+ |
| 1999 10 13 | 704 | 0.0 | 0.1− | 2003 09 17 | 691 | 0.1− | 0.2+ | 2003 10 24 | 704 | 0.2+ | 0.4+ |
| 2001 01 19 | 704 | 1.4+ | 0.1− | 2003 09 19 | 608 | 0.4+ | 0.1− | 2005 01 17 | 691 | 0.0 | 0.8+ |
| 2001 01 19 | 704 | 0.7− | 1.1+ | 2003 09 19 | 608 | 0.5+ | 0.2− | 2005 01 17 | 691 | 0.0 | 0.6+ |
| 2001 01 19 | 704 | 1.1+ | 0.7+ | 2003 09 19 | 608 | 0.6+ | 0.1− | 2005 01 17 | 691 | 0.2+ | 0.6+ |
| 2001 01 19 | 704 | 0.3+ | 0.3+ | 2003 09 20 | 704 | 0.1+ | 0.1− | 2005 03 16 | G96 | 0.2− | 0.4+ |
| 2001 01 31 | 691 | 0.1+ | 0.5− | 2003 09 20 | 704 | 0.3+ | 0.6− | 2005 03 16 | G96 | 0.3− | 0.3+ |
| 2001 01 31 | 691 | 0.0 | 0.3− | 2003 09 20 | 704 | 0.1− | 0.0 | 2005 03 16 | G96 | 0.3+ | 0.1− |
| 2001 01 31 | 691 | 0.1+ | 0.4− | 2003 09 20 | 704 | 0.5+ | 0.1+ | 2005 03 16 | G96 | 0.3− | 0.2+ |
| 2002 05 10 | 644 | 0.1− | 0.7− | 2003 09 20 | 704 | 0.5+ | 0.7+ | 2006 04 25 | 644 | 0.1− | 0.3+ |
| 2002 05 10 | 644 | 0.1− | 0.7− | 2003 09 22 | 699 | 0.1+ | 0.0 | 2006 04 25 | 644 | 0.1+ | 0.4+ |
| 2002 05 10 | 644 | 0.2+ | 0.7− | 2003 09 22 | 699 | 1.4− | 1.4− | 2006 04 25 | 644 | 0.1− | 0.2+ |
| 2002 05 29 | 644 | 0.1− | 0.0 | 2003 09 22 | 699 | 0.7+ | 1.6+ | 2006 05 16 | 644 | 0.4− | 0.1+ |
| 2002 05 29 | 644 | 0.0 | 0.1+ | 2003 09 22 | 699 | 0.3+ | 0.8− | 2006 05 16 | 644 | 0.5+ | 0.3+ |
| 2002 05 29 | 644 | 0.1− | 0.6+ | 2003 09 27 | 704 | 1.6− | 0.4+ | 2006 05 16 | 644 | 0.4+ | 0.1− |
| 2003 08 30 | 691 | 0.0 | 0.3− | 2003 09 27 | 704 | 0.4− | 0.3− | | | | |
| 2003 08 30 | 691 | 0.2− | 0.1− | 2003 09 27 | 704 | 0.8+ | 1.5+ | | | | |

**(143657)∗ 2003 SA$_{45}$ = 2002 EU$_{123}$**

Discovered 2003 Sept. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 53321)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.42927 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30200195 | $\omega$ | 331.48766 | | +0.67856624 | +0.73440604 | |
| $a$ | 2.2002037 | $\Omega$ | 341.23272 | | −0.66540266 | +0.60652163 | |
| $e$ | 0.1459349 | $i$ | 2.49170 | | −0.31110634 | +0.30459691 | |
| $P$ | 3.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 557 | 0.5− | 0.2− | 2003 09 22 | 246 | 0.3− | 0.5+ | 2003 10 20 | 704 | 0.1+ | 1.1+ |
| 1999 04 17 | 557 | 0.9+ | 1.7+ | 2003 09 23 | 012 | 0.8+ | 0.0 | 2003 10 20 | 704 | 0.3+ | 0.5+ |
| 1999 04 17 | 557 | 0.7+ | 1.1+ | 2003 09 23 | 012 | 0.5− | 0.1− | 2003 10 24 | 695 | 0.0 | 0.2+ |
| 2000 11 30 | 691 | 0.4− | 0.2+ | 2003 09 23 | 012 | 0.3− | 0.4+ | 2003 10 24 | 704 | 0.9− | 0.3+ |
| 2000 11 30 | 691 | 0.1− | 0.0 | 2003 09 24 | 012 | 0.1− | 0.2− | 2003 10 24 | 704 | 0.0 | 0.5+ |
| 2000 11 30 | 691 | 0.3− | 0.0 | 2003 09 24 | 012 | 0.4− | 0.2− | 2003 10 24 | 704 | 0.4− | 0.7+ |
| 2002 01 14 | 291 | 0.5− | 0.1− | 2003 09 24 | 608 | 0.9+ | 1.4− | 2003 10 24 | 704 | 0.2− | 0.6+ |
| 2002 01 14 | 291 | 0.1− | 0.2− | 2003 09 24 | 608 | 0.7+ | 0.9− | 2003 10 24 | 704 | 0.1− | 0.5+ |
| 2002 01 14 | 291 | 0.1− | 0.1− | 2003 09 24 | 608 | 0.2+ | 0.6− | 2003 10 24 | 608 | 0.7+ | 0.9+ |
| 2002 02 13 | 691 | 1.1+ | 1.0+ | 2003 09 24 | 012 | 0.4+ | 0.3+ | 2003 10 24 | 608 | (0.3+ | 1.7+) |
| 2002 02 13 | 691 | 0.3+ | 0.1+ | 2003 09 24 | 012 | 0.2− | 0.2+ | 2003 10 24 | 695 | 0.1− | 0.2+ |
| 2002 02 13 | 691 | 0.0 | 0.2+ | 2003 09 24 | 012 | 0.1+ | 0.0 | 2003 10 24 | 608 | 0.5+ | 1.2+ |
| 2002 03 12 | 291 | 0.1+ | 0.3+ | 2003 09 24 | 012 | 0.1+ | 0.0 | 2006 07 21 | 704 | (1.8− | 0.5−) |
| 2002 03 12 | 291 | 0.0 | 0.4+ | 2003 09 24 | 012 | 0.6+ | 0.0 | 2006 07 21 | 704 | (0.9− | 2.1−) |
| 2002 03 12 | 291 | 0.1+ | 0.2+ | 2003 09 24 | 012 | 0.2+ | 0.4− | 2006 07 21 | 704 | 0.2+ | 0.2− |
| 2002 03 13 | 704 | 0.4+ | 0.7+ | 2003 09 24 | 012 | 0.1+ | 0.3− | 2006 07 21 | 704 | 0.8+ | 0.3− |
| 2002 03 13 | 704 | 0.9+ | 1.1+ | 2003 09 26 | 704 | 0.9+ | 0.4+ | 2006 08 13 | 644 | 0.3− | 0.4+ |
| 2002 03 13 | 704 | (1.7+ | 1.3+) | 2003 09 26 | 704 | (0.1− | 1.7+) | 2006 08 13 | 644 | 0.2+ | 0.4+ |
| 2003 09 16 | 699 | (1.6+ | 2.3−) | 2003 09 26 | 704 | 0.9+ | 0.6+ | 2006 08 13 | 644 | 0.6+ | 0.8+ |
| 2003 09 16 | 699 | 1.0− | 0.2− | 2003 09 26 | 704 | 0.1− | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2003 09 16 | 699 | 0.2+ | 0.8− | 2003 09 26 | 704 | 0.6+ | 0.7+ | 2006 08 14 | 644 | 0.5− | 0.6+ |
| 2003 09 16 | 699 | 0.8+ | 0.4− | 2003 09 29 | 704 | 0.1+ | 1.0+ | 2006 08 14 | 644 | 0.7− | 0.9+ |
| 2003 09 19 | 704 | 0.4+ | 1.0− | 2003 09 29 | 704 | 0.2− | 0.9+ | 2006 08 14 | 644 | 0.5− | 0.4+ |
| 2003 09 19 | 704 | 0.3+ | 0.0 | 2003 09 29 | 704 | 0.0 | 0.8+ | 2006 08 14 | 644 | 0.4− | 0.4+ |
| 2003 09 19 | 704 | 0.2− | 0.6+ | 2003 09 29 | 704 | 0.1+ | 0.8+ | 2006 08 14 | 644 | 0.6− | 0.5+ |
| 2003 09 19 | 704 | 0.5− | 0.5− | 2003 09 29 | 012 | 0.2+ | 0.2− | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2003 09 21 | 012 | 0.5− | 0.1− | 2003 09 29 | 012 | 0.2− | 0.1− | 2006 08 20 | 644 | 0.1− | 0.4+ |
| 2003 09 21 | 012 | 0.1− | 0.1+ | 2003 09 29 | 012 | 0.0 | 0.2− | 2006 08 20 | 644 | 0.2− | 0.2+ |
| 2003 09 21 | 012 | 0.4− | 0.0 | 2003 09 29 | 012 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.8− | 0.0 |
| 2003 09 21 | 012 | 0.0 | 0.3− | 2003 09 29 | 012 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2003 09 22 | 246 | 0.1− | 0.3+ | 2003 09 29 | 012 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2003 09 22 | 246 | 0.1− | 0.1+ | 2003 10 04 | 608 | 0.7− | 1.1− | 2006 10 20 | G96 | 0.4− | 0.4− |
| 2003 09 22 | 246 | 0.1− | 0.1− | 2003 10 04 | 608 | 0.8− | 0.3− | 2006 10 23 | G96 | 1.3+ | 0.6− |
| 2003 09 22 | 246 | 0.0 | 0.6+ | 2003 10 04 | 608 | 0.9− | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2003 09 22 | 246 | 0.9− | 0.1− | 2003 10 20 | 704 | 0.6+ | 0.4+ | 2006 10 23 | G96 | 1.1− | 0.4− |
| 2003 09 22 | 246 | 0.2− | 0.9+ | 2003 10 20 | 704 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2003 09 22 | 246 | 0.5− | 0.1− | 2003 10 20 | 704 | 0.1+ | 0.7+ | | | | |

**(143658)∗ 2003 SB$_{45}$ = 2003 QP$_{106}$**

Discovered 2003 Sept. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (d, *MPO* 53872)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.05240 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12673150 | $\omega$ | 138.99420 | | +0.49719238 | −0.86762558 | |
| $a$ | 3.9253616 | $\Omega$ | 281.19081 | | +0.79469249 | +0.45772268 | |
| $e$ | 0.2578060 | $i$ | 0.29546 | | +0.34822921 | +0.19420556 | |
| $P$ | 7.78 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 809 | 0.5− | 1.1+ | 2003 10 05 | 683 | 0.3− | 0.4− | 2005 01 15 | 704 | 0.9+ | 0.4+ |
| 2003 08 31 | 291 | 0.2− | 0.2− | 2003 10 21 | 644 | 0.7+ | 0.2+ | 2005 01 15 | 704 | 0.2+ | 0.5+ |
| 2003 08 31 | 291 | 0.2− | 0.1− | 2003 10 21 | 644 | 0.6+ | 0.3+ | 2005 01 15 | 704 | 0.5− | 0.3− |
| 2003 08 31 | 291 | 0.2− | 0.2− | 2003 10 21 | 644 | 0.7+ | 0.0 | 2005 01 17 | 704 | 0.5− | 0.5+ |
| 2003 09 03 | 704 | 1.9− | 1.7+ | 2003 10 22 | 645 | 0.1+ | 0.2− | 2005 01 17 | 704 | 0.3+ | 0.9+ |
| 2003 09 03 | 704 | 0.8− | 1.4+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 01 17 | 704 | 0.1+ | 0.8+ |
| 2003 09 03 | 704 | 0.7− | 0.5+ | 2003 10 23 | 704 | 1.2− | 0.1+ | 2005 01 17 | 704 | 0.4− | 0.6+ |
| 2003 09 16 | 699 | 0.7− | 1.3− | 2003 10 23 | 704 | 0.6− | 0.2− | 2005 01 17 | 704 | 0.8+ | 1.1+ |
| 2003 09 16 | 699 | 0.7− | 1.2− | 2003 10 23 | 704 | 0.5− | 0.1+ | 2005 03 08 | G96 | 0.1− | 0.3− |
| 2003 09 16 | 699 | 0.9+ | 0.5+ | 2003 10 23 | 704 | 0.3− | 0.2− | 2005 03 08 | G96 | 0.0 | 0.2− |
| 2003 09 16 | 699 | 0.5+ | 1.0− | 2003 10 23 | 704 | 0.3− | 0.4+ | 2005 03 08 | G96 | 0.2− | 0.4+ |
| 2003 09 18 | 691 | 0.1− | 0.3+ | 2004 12 10 | 691 | 0.0 | 0.0 | 2005 03 08 | G96 | 0.4− | 0.1− |
| 2003 09 18 | 691 | 0.1+ | 0.3+ | 2004 12 10 | 691 | 0.0 | 0.1− | 2006 02 07 | G96 | 0.6+ | 0.6+ |
| 2003 09 18 | 691 | 0.2− | 0.3+ | 2004 12 10 | 691 | 0.0 | 0.0 | 2006 02 07 | G96 | 0.1− | 0.3− |
| 2003 09 22 | 644 | 0.2− | 0.3+ | 2004 12 14 | 704 | 1.1+ | 1.5+ | 2006 02 07 | G96 | 0.1− | 0.7− |
| 2003 09 22 | 644 | 0.3− | 0.3+ | 2004 12 14 | 704 | 0.2− | 1.5+ | 2006 02 07 | G96 | 0.2− | 0.1− |
| 2003 09 22 | 644 | 1.2+ | 0.2+ | 2004 12 14 | 704 | 1.0− | 0.5− | 2006 03 05 | G96 | 0.2+ | 0.2− |
| 2003 09 26 | 704 | 0.5+ | 1.1+ | 2004 12 14 | 704 | 0.5− | 0.5+ | 2006 03 05 | G96 | 0.1+ | 0.0 |
| 2003 09 26 | 704 | 0.3+ | 0.3+ | 2004 12 17 | H55 | 0.2+ | 0.7− | 2006 03 05 | G96 | 0.0 | 0.0 |
| 2003 09 26 | 704 | 0.2+ | 0.4− | 2004 12 17 | H55 | 0.8+ | 0.4− | 2006 03 05 | G96 | 0.1− | 0.4− |
| 2003 09 26 | 704 | 0.4+ | 1.3+ | 2004 12 17 | H55 | 1.5− | 0.0 | 2006 04 21 | G96 | 0.2− | 0.3+ |
| 2003 09 26 | 704 | 0.4− | 0.1+ | 2004 12 19 | 691 | 0.1− | 0.1− | 2006 04 21 | G96 | 0.5+ | 0.1+ |
| 2003 09 29 | 704 | 0.8+ | 0.3+ | 2004 12 19 | 691 | 0.1+ | 0.1− | 2006 04 21 | G96 | 0.6+ | 0.1− |
| 2003 09 29 | 704 | 0.2+ | 0.4+ | 2004 12 19 | 691 | 0.1− | 0.2− | 2006 04 21 | G96 | 0.3+ | 0.4+ |
| 2003 09 29 | 704 | 0.9+ | 0.0 | 2005 01 06 | 704 | 0.3+ | 1.1− | 2006 05 24 | G96 | 1.0− | 0.3+ |
| 2003 09 29 | 704 | 1.1+ | 0.3+ | 2005 01 06 | 704 | 0.4+ | 0.7− | 2006 05 24 | G96 | 0.3− | 0.3+ |
| 2003 10 05 | 683 | 0.4+ | 1.4− | 2005 01 06 | 704 | 0.2+ | 0.8− | 2006 05 24 | G96 | 0.2− | 0.3+ |
| 2003 10 05 | 683 | 1.3+ | 0.5− | 2005 01 15 | 704 | 0.4+ | 0.4− | 2006 05 24 | G96 | 0.3− | 0.2+ |

**(143659)∗ 2003 SR$_{55}$ = 2000 WR$_{149}$**

Discovered 2003 Sept. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 53335)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.18180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30726966 | $\omega$ | 96.22831 | | +0.85531696 | +0.51698768 | |
| $a$ | 2.1749850 | $\Omega$ | 232.64657 | | −0.49066584 | +0.78719288 | |
| $e$ | 0.1666410 | $i$ | 2.45210 | | −0.16637287 | +0.33623075 | |
| $P$ | 3.21 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 704 | 0.2− | 1.0+ | 2003 09 19 | 704 | 0.5− | 1.0+ | 2003 11 16 | 645 | 0.1+ | 0.0 | |
| 2000 11 02 | 704 | 0.3− | 0.8+ | 2003 09 19 | 704 | 0.6− | 0.1− | 2003 11 16 | 645 | 0.0 | 0.0 | |
| 2000 11 02 | 704 | 0.1− | 0.3+ | 2003 09 19 | 704 | 0.7− | 0.2+ | 2003 11 19 | 645 | 0.0 | 0.0 | |
| 2000 11 28 | 691 | 0.1− | 0.1+ | 2003 09 19 | 704 | 1.1− | 0.8+ | 2003 11 19 | 645 | 0.1+ | 0.0 | |
| 2000 11 28 | 691 | 0.0 | 0.1+ | 2003 09 22 | 699 | 0.1+ | 0.2+ | 2005 03 13 | G96 | 0.2− | 0.2+ | |
| 2000 11 28 | 691 | 0.1− | 0.1− | 2003 09 22 | 699 | 0.3+ | 0.2− | 2005 03 13 | G96 | 0.1− | 0.3+ | |
| 2000 12 04 | 691 | 0.4+ | 0.2− | 2003 09 22 | 699 | 0.5+ | 0.6+ | 2005 03 13 | G96 | 0.1− | 0.2+ | |
| 2000 12 04 | 691 | 0.1+ | 0.5− | 2003 09 22 | 699 | 0.0 | 0.3− | 2005 03 13 | G96 | 0.0 | 0.3+ | |
| 2000 12 04 | 691 | 0.1+ | 0.3− | 2003 09 27 | 704 | 0.0 | 1.0+ | 2006 07 23 | G96 | 0.7+ | 0.5− | |
| 2003 09 03 | 704 | 0.4− | 0.9− | 2003 09 27 | 704 | 0.2+ | 0.6+ | 2006 07 23 | G96 | 0.4+ | 0.4− | |
| 2003 09 03 | 704 | 0.8− | 0.1− | 2003 09 27 | 704 | 0.3+ | 0.6+ | 2006 07 23 | G96 | 0.0 | 0.5− | |
| 2003 09 03 | 704 | 0.4− | 0.0 | 2003 09 27 | 704 | 0.3+ | 0.8+ | 2006 07 23 | G96 | 0.0 | 0.2− | |
| 2003 09 03 | 704 | 1.0− | 0.1+ | 2003 10 15 | 699 | 0.3+ | 1.1+ | 2006 08 13 | 644 | 0.4+ | 0.2− | |
| 2003 09 16 | 699 | 0.2− | 0.3+ | 2003 10 15 | 699 | 0.1+ | 0.7− | 2006 08 13 | 644 | 0.3+ | 0.2− | |
| 2003 09 16 | 699 | 0.7− | 0.3+ | 2003 10 15 | 699 | (1.6+ | 1.2+) | 2006 08 13 | 644 | 0.1− | 0.2− | |
| 2003 09 16 | 699 | 1.1+ | 0.1+ | 2003 10 15 | 699 | (1.7+ | 0.9+) | 2006 11 18 | G96 | 0.2+ | 0.5− | |
| 2003 09 16 | 699 | (1.7+ | 0.6+) | 2003 10 23 | 645 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.1− | 0.8− | |
| 2003 09 17 | 644 | 0.2− | 0.5+ | 2003 10 23 | 645 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.4− | 0.8− | |
| 2003 09 17 | 644 | 0.4− | 0.4+ | 2003 10 24 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.8− | |
| 2003 09 17 | 644 | 0.2− | 0.5+ | 2003 10 24 | 691 | 0.1+ | 0.2+ | | | | | |
| 2003 09 19 | 704 | 0.7− | 1.3+ | 2003 10 24 | 691 | 0.1− | 0.1+ | | | | | |

**(143660)∗ 2003 SJ$_{70}$**

Discovered 2003 Sept. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.97072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31225076 | $\omega$ | 330.26313 | | +0.97927738 | −0.20164824 | |
| $a$ | 2.1517925 | $\Omega$ | 41.38383 | | +0.19097373 | +0.88852219 | |
| $e$ | 0.1904543 | $i$ | 1.63038 | | +0.06741544 | +0.41214841 | |
| $P$ | 3.16 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 704 | 0.3− | 0.3− | 2003 09 27 | 333 | 0.4− | 0.2+ | 2003 10 24 | 691 | 0.2− | 0.4+ | |
| 2000 11 02 | 704 | 0.9+ | 0.2+ | 2003 09 27 | 333 | 0.6− | 0.6+ | 2005 03 10 | G96 | 0.2− | 0.1− | |
| 2000 11 02 | 704 | 0.4− | 0.1+ | 2003 09 27 | 333 | 0.4− | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.2+ | |
| 2000 11 02 | 704 | 0.1+ | 0.2+ | 2003 09 28 | 333 | 0.4− | 0.1+ | 2005 03 10 | G96 | 0.6− | 0.1− | |
| 2000 11 02 | 704 | 0.5− | 0.3+ | 2003 09 28 | 333 | 0.2− | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.0 | |
| 2000 11 24 | 699 | 0.3− | 0.4+ | 2003 09 28 | 333 | 0.2− | 0.2− | 2005 03 12 | 691 | 0.3+ | 0.4+ | |
| 2000 11 24 | 699 | 0.6+ | 0.3+ | 2003 09 29 | 333 | 0.1− | 0.5+ | 2005 03 12 | 691 | 0.4+ | 0.6+ | |
| 2000 11 24 | 699 | 1.0− | 0.8+ | 2003 09 29 | 333 | 0.1+ | 0.1− | 2005 03 12 | 691 | 0.6+ | 0.0 | |
| 2000 11 24 | 699 | 0.2− | 0.6+ | 2003 09 29 | 333 | 0.1− | 0.3+ | 2005 03 16 | 691 | 0.4+ | 0.6+ | |
| 2003 09 17 | 691 | 0.2+ | 0.1+ | 2003 09 29 | 704 | 0.5− | 0.7+ | 2005 03 16 | 691 | 0.0 | 0.3+ | |
| 2003 09 17 | 691 | 0.1+ | 0.2+ | 2003 09 29 | 704 | 0.7− | 1.0+ | 2005 03 16 | 691 | 0.2− | 0.2+ | |
| 2003 09 17 | 691 | 0.0 | 0.5+ | 2003 09 29 | 704 | 0.7− | 0.7+ | 2005 04 04 | G96 | 0.9− | 0.1+ | |
| 2003 09 19 | 704 | (1.3− | 2.3+) | 2003 09 29 | 704 | 0.9− | 0.5+ | 2005 04 04 | G96 | 0.7− | 0.0 | |
| 2003 09 19 | 704 | 1.0− | 1.2+ | 2003 09 29 | 704 | 0.7− | 0.7+ | 2005 04 04 | G96 | 0.9+ | 0.2+ | |
| 2003 09 19 | 704 | 1.0− | 0.3+ | 2003 09 30 | 333 | 0.1+ | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.1+ | |
| 2003 09 23 | 608 | 0.2− | 0.7− | 2003 09 30 | 333 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.3− | 0.3+ | |
| 2003 09 23 | 608 | 0.1− | 0.2− | 2003 09 30 | 333 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.4− | 0.0 | |
| 2003 09 23 | 608 | 0.3− | 0.2− | 2003 10 15 | 699 | 1.1− | 0.8+ | 2006 08 15 | 644 | 0.3− | 0.3+ | |
| 2003 09 24 | 608 | 0.3+ | 0.4− | 2003 10 15 | 699 | 0.2− | 0.3− | 2006 08 17 | 644 | 0.0 | 0.0 | |
| 2003 09 24 | 608 | 0.5− | 1.0− | 2003 10 15 | 699 | 1.1+ | 0.5+ | 2006 08 17 | 644 | 0.3− | 0.2+ | |
| 2003 09 24 | 608 | 0.7+ | 1.3− | 2003 10 15 | 699 | 0.4+ | 0.5− | 2006 08 17 | 644 | 0.2− | 0.3+ | |
| 2003 09 24 | 608 | 0.1+ | 0.5− | 2003 10 19 | 704 | 0.2+ | 0.4− | 2006 08 20 | 644 | 0.1+ | 0.2+ | |
| 2003 09 24 | 608 | 0.2+ | 0.3− | 2003 10 19 | 704 | 0.4− | 0.6+ | 2006 08 20 | 644 | 0.1+ | 0.1+ | |
| 2003 09 24 | 608 | 0.2− | 0.4− | 2003 10 19 | 704 | (1.0− | 1.7+) | 2006 08 20 | 644 | 0.3+ | 0.1+ | |
| 2003 09 26 | 704 | 0.1+ | 1.5+ | 2003 10 19 | 704 | (1.6+ | 0.5+) | 2006 09 14 | 644 | 0.4− | 0.2+ | |
| 2003 09 26 | 704 | (0.7+ | 1.5+) | 2003 10 22 | 645 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.0 | 0.3+ | |
| 2003 09 26 | 704 | 0.4+ | 0.4+ | 2003 10 22 | 645 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1+ | |
| 2003 09 26 | 704 | 0.4− | 0.8+ | 2003 10 24 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.7− | |
| 2003 09 26 | 704 | 1.4+ | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2− | 0.0 | |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.2+ | |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 24 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1+ | |

**(143661)∗ 2003 SM$_{73}$**

Discovered 2003 Sept. 18 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.72532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31577496 | $\omega$ | 25.95209 | | +0.90557018 | −0.42419605 | |
| $a$ | 2.1357525 | $\Omega$ | 359.14701 | | +0.38183884 | +0.81576097 | |
| $e$ | 0.1179945 | $i$ | 2.31027 | | +0.18477485 | +0.39318159 | |
| $P$ | 3.12 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 699 | 1.4− | 0.3− | 2003 09 29 | 704 | 0.1− | 0.7+ | 2005 03 17 | 691 | 0.1+ | 0.6+ | |
| 2000 10 07 | 699 | 0.5− | 0.3− | 2003 09 29 | 704 | 0.4+ | 0.5+ | 2005 04 02 | G96 | 0.2− | 0.3+ | |
| 2000 10 07 | 699 | 1.0− | 0.3+ | 2003 09 29 | 704 | 1.4− | 0.2+ | 2005 04 02 | G96 | 0.5+ | 0.7+ | |
| 2000 10 07 | 699 | 0.7− | 0.4+ | 2003 09 29 | 691 | 0.0 | 0.5+ | 2005 04 02 | G96 | 0.3− | 0.4+ | |
| 2000 11 01 | 704 | 0.4− | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.6− | 0.2+ | |
| 2000 11 01 | 704 | 0.4+ | 0.5+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.2− | 0.3+ | |
| 2000 11 01 | 704 | 0.6− | 0.1− | 2003 10 23 | 704 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.3− | 0.2+ | |
| 2000 11 01 | 704 | 0.8+ | 0.4+ | 2003 10 23 | 704 | 0.4+ | 0.0 | 2005 04 02 | G96 | 0.3− | 0.1+ | |
| 2003 09 18 | 691 | 0.2+ | 0.1+ | 2003 10 23 | 704 | 0.6− | 0.0 | 2005 04 02 | G96 | 0.2− | 0.1+ | |
| 2003 09 18 | 691 | 0.1− | 0.1+ | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 08 13 | 644 | 0.1+ | 0.1+ | |
| 2003 09 18 | 691 | 0.1+ | 0.0 | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 08 13 | 644 | 0.3− | 0.1+ | |
| 2003 09 19 | 704 | 0.3+ | 0.8+ | 2003 11 19 | 645 | 0.0 | 0.1− | 2006 08 13 | 644 | 0.2− | 0.0 | |
| 2003 09 19 | 704 | 1.7+ | 1.4+ | 2003 11 19 | 645 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.2+ | 0.1− | |
| 2003 09 19 | 704 | 0.9+ | 0.6+ | 2003 11 20 | 645 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.0 | |
| 2003 09 26 | 704 | (1.0− | 2.8+) | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.0 | 0.3+ | |
| 2003 09 26 | 704 | 0.9+ | 1.4+ | 2005 03 09 | G96 | 1.5− | 0.5+ | 2006 08 29 | 704 | 0.0 | 0.0 | |
| 2003 09 26 | 704 | (0.8− | 2.2+) | 2005 03 09 | G96 | 0.9+ | 0.3− | 2006 08 29 | 704 | 1.0− | 0.5+ | |
| 2003 09 26 | 704 | 1.2+ | 0.6+ | 2005 03 09 | G96 | 0.7− | 0.5+ | 2006 08 29 | 704 | 0.8− | 1.0+ | |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2005 03 09 | G96 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.3− | 0.7− | |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.5− | 0.3− | |
| 2003 09 29 | 691 | 0.0 | 0.5+ | 2005 03 13 | 691 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.6− | |
| 2003 09 29 | 704 | 0.5− | 0.6+ | 2005 03 13 | 691 | 0.7+ | 0.0 | 2006 09 30 | G96 | 0.4− | 0.3− | |
| 2003 09 29 | 704 | 0.6+ | 0.7+ | 2005 03 17 | 691 | 0.1− | 0.4+ | | | | | |
| 2003 09 29 | 691 | 0.1+ | 0.3+ | 2005 03 17 | 691 | 0.7+ | 0.7+ | | | | | |

**(143662)∗ 2003 SP$_{84}$**

Discovered 2003 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.63884 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36009134 | $\omega$ | 215.08079 | | +0.63952189 | −0.76150116 | |
| $a$ | 1.9567151 | $\Omega$ | 196.05303 | | +0.76325453 | +0.64533697 | |
| $e$ | 0.0877027 | $i$ | 22.42507 | | +0.09194713 | −0.06046634 | |
| $P$ | 2.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 644 | 1.1+ | 0.3+ | 2003 09 21 | 704 | 0.6− | 0.2− | 2003 10 21 | 704 | 0.5− | 0.2+ | |
| 2002 03 09 | 644 | 0.7+ | 0.5+ | 2003 09 21 | 704 | 0.4+ | 0.1− | 2003 10 21 | 704 | 0.3+ | 0.6+ | |
| 2002 03 09 | 644 | 0.2− | 0.4+ | 2003 09 21 | 704 | 0.4+ | 0.2+ | 2003 10 21 | 704 | 0.5− | 0.7+ | |
| 2002 04 05 | 644 | 0.5+ | 0.4+ | 2003 09 21 | 704 | 0.2− | 0.2− | 2003 10 22 | 645 | 0.1− | 0.2− | |
| 2002 04 05 | 644 | 0.6+ | 0.5+ | 2003 09 21 | 704 | 0.3+ | 0.4+ | 2003 10 22 | 645 | 0.1− | 0.2− | |
| 2002 04 05 | 644 | 0.6+ | 0.6+ | 2003 09 22 | 608 | 0.3+ | 1.5− | 2003 10 24 | 691 | 0.2+ | 0.3+ | |
| 2002 04 14 | 704 | 0.9− | 0.8+ | 2003 09 22 | 608 | 0.3+ | 1.2− | 2003 10 24 | 691 | 0.1+ | 0.2+ | |
| 2002 04 14 | 704 | 0.1− | 0.4+ | 2003 09 22 | 608 | 0.1+ | 0.8− | 2003 10 24 | 691 | 0.2+ | 0.3+ | |
| 2002 04 14 | 704 | 0.9− | 0.8+ | 2003 09 29 | 699 | 0.1− | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.2− | |
| 2002 04 14 | 704 | 1.3− | 0.6+ | 2003 09 29 | 699 | 0.1− | 0.3+ | 2003 10 24 | 645 | 0.1− | 0.2− | |
| 2003 08 22 | 599 | 0.5− | 0.3+ | 2003 09 29 | 699 | 0.4− | 0.4− | 2003 10 26 | 703 | 0.6− | 1.1+ | |
| 2003 08 22 | 599 | 0.6− | 0.4+ | 2003 09 29 | 699 | 0.6− | 0.2+ | 2003 10 26 | 703 | (1.2+ | 5.9−) | |
| 2003 08 22 | 599 | 0.5− | 0.5+ | 2003 09 30 | 704 | 0.6+ | 0.3+ | 2003 10 26 | 703 | (1.5+ | 5.8+) | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 22 | 599 | 0.2− | 0.3+ | 2003 09 30 | 704 | 0.2+ | 0.4+ | 2003 10 26 | 703 | 0.2− | 0.4+ |
| 2003 08 27 | 608 | 0.1− | 0.8− | 2003 09 30 | 704 | 0.2+ | 0.3+ | 2003 11 09 | 608 | 1.0− | 0.2− |
| 2003 08 27 | 608 | 0.0 | 1.3− | 2003 09 30 | 704 | 0.2− | 0.1+ | 2003 11 09 | 608 | 0.8− | 0.1− |
| 2003 08 27 | 608 | 0.2+ | 0.1− | 2003 09 30 | 704 | 0.2+ | 0.4+ | 2003 11 09 | 608 | 1.2− | 0.4+ |
| 2003 09 15 | 644 | 0.1− | 0.0 | 2003 10 15 | 699 | 0.0 | 0.1− | 2003 11 22 | 704 | 1.3+ | 0.5+ |
| 2003 09 15 | 644 | 0.1− | 0.1+ | 2003 10 15 | 699 | 0.1+ | 0.5+ | 2003 11 22 | 704 | 0.1− | 1.0+ |
| 2003 09 15 | 644 | 0.0 | 0.3+ | 2003 10 15 | 699 | 0.5+ | 1.3− | 2003 11 22 | 704 | 0.1− | 1.1+ |
| 2003 09 20 | 704 | 0.5− | 0.4− | 2003 10 15 | 699 | 0.3+ | 1.2+ | 2005 03 31 | 691 | 0.2− | 0.5+ |
| 2003 09 20 | 704 | 0.2− | 0.1− | 2003 10 15 | 644 | 0.3− | 0.4+ | 2005 03 31 | 691 | 0.2+ | 0.1+ |
| 2003 09 20 | 704 | 0.3+ | 0.5+ | 2003 10 15 | 644 | 0.2− | 0.6+ | 2005 03 31 | 691 | 0.2+ | 0.4+ |
| 2003 09 20 | 704 | 0.2− | 0.7+ | 2003 10 15 | 644 | 0.3− | 0.7+ | 2005 04 09 | 704 | 0.3− | 0.4+ |
| 2003 09 20 | 644 | 0.0 | 0.3+ | 2003 10 18 | 683 | 0.4+ | 0.8+ | 2005 04 09 | 704 | 1.2+ | 0.1− |
| 2003 09 20 | 704 | 1.1+ | 0.5− | 2003 10 18 | 683 | 0.6− | 1.0+ | 2005 04 09 | 704 | 0.1+ | 0.5− |
| 2003 09 20 | 644 | 0.2+ | 0.4+ | 2003 10 18 | 683 | 0.3− | 0.1− | 2005 04 09 | 704 | 0.4− | 1.4+ |
| 2003 09 20 | 644 | 0.1+ | 0.3+ | 2003 10 19 | 049 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.0 | 0.5+ |
| 2003 09 21 | 699 | 0.2− | 0.3+ | 2003 10 19 | 049 | 0.4− | 0.3+ | 2005 04 18 | 703 | 0.0 | 0.8+ |
| 2003 09 21 | 699 | 0.3− | 1.2+ | 2003 10 19 | 049 | 0.0 | 0.2+ | 2005 04 18 | 703 | 0.4− | 0.1+ |
| 2003 09 21 | 699 | 0.2+ | 0.7− | 2003 10 20 | 704 | 0.0 | 1.0+ | 2005 04 18 | 703 | 0.4− | 0.1+ |
| 2003 09 21 | 699 | (1.9− | 0.2+) | 2003 10 20 | 704 | 0.3+ | 0.9+ | 2005 05 04 | 703 | 0.3− | 0.5+ |
| 2003 09 21 | 704 | 0.1− | 0.2− | 2003 10 20 | 704 | 0.2+ | 0.1− | 2005 05 04 | 703 | (0.7− | 1.6−) |
| 2003 09 21 | 704 | 0.1+ | 1.1+ | 2003 10 20 | 704 | 1.2+ | 1.2+ | 2005 05 04 | 703 | 0.6− | 0.3+ |
| 2003 09 21 | 704 | 0.3+ | 1.2+ | 2003 10 20 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.7+ |
| 2003 09 21 | 704 | 1.0+ | 0.3+ | 2003 10 20 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.9+ |
| 2003 09 21 | 704 | 0.3+ | 0.1+ | 2003 10 20 | 704 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.5− | 1.4+ |
| 2003 09 21 | 704 | (1.7+ | 0.0 ) | 2003 10 20 | 704 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.3− |
| 2003 09 21 | 704 | (1.6+ | 0.4+) | 2003 10 20 | 704 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.8− | 0.2− |
| 2003 09 21 | 704 | 0.4− | 0.1+ | 2003 10 20 | 704 | 0.8+ | 0.8+ | 2006 10 23 | 703 | 0.1+ | 1.1− |
| 2003 09 21 | 704 | 0.1+ | 0.2+ | 2003 10 21 | 704 | 0.2+ | 0.4− | 2006 10 23 | 703 | 0.0 | 0.7− |
| 2003 09 21 | 704 | 0.4− | 0.4+ | 2003 10 21 | 704 | (0.8− | 1.8+) | 2006 10 23 | 703 | 0.4− | 0.2− |
| 2003 09 21 | 704 | 0.3− | 0.2− | 2003 10 21 | 704 | 0.9+ | 0.8+ | 2006 11 24 | 703 | 0.0 | 1.2+ |
| 2003 09 21 | 704 | 1.0+ | 0.5− | 2003 10 21 | 704 | 0.4+ | 1.2+ | 2006 11 24 | 703 | 0.1+ | 1.4+ |
| 2003 09 21 | 704 | 1.1+ | 0.6+ | 2003 10 21 | 704 | 0.5− | 0.1+ | 2006 11 24 | 703 | 1.1+ | 0.6+ |
| 2003 09 21 | 704 | 0.4− | 1.3+ | 2003 10 21 | 704 | 0.1+ | 0.1+ | 2006 11 24 | 703 | (1.2+ | 2.4+) |

**(143663)∗ 2003 SW$_{88}$**

Discovered 2003 Sept. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 243.82909 | | (2000.0) | | | |
| $n$ | 0.36084612 | $\omega$ | 139.37426 | | −0.85298023 | −0.51878226 |
| $a$ | 1.9539856 | $\Omega$ | 9.87608 | | +0.34860637 | −0.64804105 |
| $e$ | 0.0654442 | $i$ | 19.53616 | | +0.38845633 | −0.55759103 |
| $P$ | 2.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 704 | 0.5− | 0.0 | 2002 04 16 | 704 | 0.1− | 1.2+ | 2005 05 11 | 644 | 0.6+ | 0.4+ |
| 1998 12 11 | 704 | (1.3+ | 2.4−) | 2002 04 16 | 704 | 0.1− | 0.9+ | 2005 05 12 | 644 | 0.6+ | 0.3+ |
| 1998 12 11 | 704 | (0.6+ | 2.1+) | 2002 04 16 | 704 | 0.1+ | 0.8+ | 2005 05 12 | 644 | 0.5+ | 0.6+ |
| 1998 12 11 | 704 | (3.7− | 1.3−) | 2002 04 16 | 704 | 0.8− | 1.1+ | 2005 05 12 | 644 | 0.5+ | 0.2+ |
| 2002 02 04 | 699 | 1.4+ | 0.1− | 2003 08 31 | 704 | 0.9− | 0.0 | 2006 09 18 | 703 | 1.2+ | 0.8+ |
| 2002 02 04 | 699 | 1.0+ | 0.0 | 2003 08 31 | 704 | (2.3− | 1.0−) | 2006 09 18 | 703 | 0.0 | 0.4+ |
| 2002 02 04 | 699 | 0.4+ | 0.5− | 2003 08 31 | 704 | (2.0− | 0.0 ) | 2006 09 18 | 703 | 1.1− | 0.9+ |
| 2002 02 04 | 699 | 0.3+ | 0.2− | 2003 09 18 | 699 | 1.3− | 0.9+ | 2006 09 18 | 703 | 1.4− | 0.3+ |
| 2002 02 21 | 704 | 0.0 | 0.2+ | 2003 09 18 | 699 | 1.4− | 0.7− | 2006 09 28 | 703 | 0.0 | 0.2+ |
| 2002 02 21 | 704 | 0.4+ | 0.5+ | 2003 09 18 | 699 | (0.6+ | 1.6+) | 2006 09 28 | 703 | 0.2+ | 1.0+ |
| 2002 02 21 | 704 | 0.6+ | 0.1− | 2003 09 18 | 699 | (2.2− | 0.9+) | 2006 09 28 | 703 | 0.5− | 0.8+ |
| 2002 02 21 | 704 | 0.1− | 0.2+ | 2003 09 21 | 691 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.5+ |
| 2002 02 21 | 704 | 0.8− | 0.6+ | 2003 09 21 | 691 | 0.3− | 0.3+ | 2006 10 23 | 703 | 0.6+ | 0.6+ |
| 2002 03 05 | 704 | 0.5+ | 0.2+ | 2003 09 21 | 691 | 0.2− | 1.1+ | 2006 10 23 | 703 | 0.3+ | 0.1− |
| 2002 03 05 | 704 | 0.9+ | 0.2+ | 2003 09 24 | 644 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.4− | 0.1− |
| 2002 03 05 | 704 | 0.9+ | 0.0 | 2003 09 24 | 644 | 0.2+ | 0.5+ | 2006 10 23 | 703 | 0.7+ | 0.8− |
| 2002 03 05 | 704 | 1.0+ | 0.0 | 2003 09 24 | 644 | 0.1+ | 0.7+ | 2006 10 29 | 703 | 0.1+ | 0.5− |
| 2002 03 16 | 699 | 0.5+ | 0.8+ | 2003 10 17 | 644 | 0.3− | 0.2+ | 2006 10 29 | 703 | 0.2+ | 0.2+ |
| 2002 03 16 | 699 | 0.0 | 1.0+ | 2003 10 17 | 644 | 0.1− | 0.4+ | 2006 10 29 | 703 | 0.2− | 0.0 |
| 2002 03 16 | 699 | 0.5− | 0.2+ | 2003 10 17 | 644 | 0.3− | 0.3+ | 2006 10 29 | 703 | 0.6− | 1.3− |
| 2002 03 16 | 699 | 0.3+ | 0.1+ | 2005 04 10 | E12 | 0.2− | 0.5+ | 2006 10 29 | 703 | 0.1− | 0.4− |
| 2002 03 20 | 644 | 0.4+ | 0.1+ | 2005 04 10 | E12 | 1.0+ | 0.4+ | 2006 10 29 | 703 | 0.2+ | 0.8+ |
| 2002 03 20 | 644 | 0.3+ | 0.0 | 2005 04 10 | E12 | 0.4+ | 0.2+ | 2006 10 29 | 703 | 0.8− | 0.8+ |
| 2002 03 20 | 644 | 0.3+ | 0.1+ | 2005 04 10 | E12 | 0.4+ | 0.7+ | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2002 03 20 | 704 | 0.3− | 0.0 | 2005 05 09 | E12 | 0.0 | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.2− |
| 2002 03 20 | 704 | 0.5− | 0.1+ | 2005 05 09 | E12 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2002 03 20 | 704 | 0.4− | 0.5− | 2005 05 09 | E12 | 0.2− | 0.4− | 2006 11 16 | 703 | 0.1+ | 0.3− |
| 2002 03 20 | 704 | 1.0− | 0.0 | 2005 05 09 | E12 | 0.6− | 0.9+ | 2006 11 22 | 703 | 0.7− | 0.8− |
| 2002 03 20 | 704 | 0.7− | 0.2+ | 2005 05 11 | 644 | 0.4+ | 0.4+ | 2006 11 22 | 703 | 0.4+ | 0.7+ |
| 2002 04 01 | 644 | 0.3+ | 1.2+ | 2005 05 11 | 644 | 0.6+ | 0.4+ | 2006 11 22 | 703 | 0.7− | 0.3+ |
| 2002 04 01 | 644 | 0.3+ | 0.8− | 2005 05 11 | 644 | 0.6+ | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.7+ |
| 2002 04 01 | 644 | 0.4+ | 0.8− | 2005 05 11 | 644 | 0.5+ | 0.8+ | | | | |
| 2002 04 16 | 704 | 0.2− | 0.9+ | 2005 05 11 | 644 | 0.2+ | 0.4+ | | | | |

**(143664)∗ 2003 SM$_{93}$ = 2003 UE$_{26}$**

Discovered 2003 Sept. 18 by Spacewatch at Kitt Peak.

Id. M. E. Sansaturio (d, *MPO* 56802)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.73874 | | (2000.0) | | | |
| $n$ | 0.18899146 | $\omega$ | 5.58175 | | +0.48254436 | +0.87569483 |
| $a$ | 3.0072851 | $\Omega$ | 293.27104 | | −0.80433555 | +0.43509306 |
| $e$ | 0.0649934 | $i$ | 1.09732 | | −0.34669189 | +0.20941010 |
| $P$ | 5.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 1.1− | 0.3− | 2003 09 29 | 704 | 0.8+ | 0.9+ | 2005 01 17 | 691 | 0.2+ | 0.0 |
| 1998 11 17 | 691 | 0.8− | 0.3− | 2003 09 29 | 691 | 0.2+ | 0.3+ | 2006 02 24 | G96 | 0.3− | 0.5+ |
| 1998 11 17 | 691 | 0.7− | 0.1− | 2003 09 29 | 691 | 0.1+ | 0.3+ | 2006 02 24 | G96 | 0.3− | 0.3+ |
| 1998 11 27 | 691 | 0.3+ | 0.0 | 2003 09 29 | 691 | 0.2+ | 0.2+ | 2006 02 24 | G96 | 0.3− | 0.5+ |
| 1998 11 27 | 691 | 0.6+ | 0.2+ | 2003 10 18 | 691 | 0.2+ | 0.1+ | 2006 02 24 | G96 | 0.4− | 0.2+ |
| 1998 11 27 | 691 | 0.4+ | 0.2− | 2003 10 18 | 691 | 0.1+ | 0.1+ | 2006 02 25 | 691 | 0.1+ | 0.5+ |
| 2000 02 02 | 691 | 0.2− | 0.4− | 2003 10 18 | 691 | 0.1+ | 0.2+ | 2006 02 25 | 691 | 0.1+ | 0.4+ |
| 2000 02 02 | 691 | 0.0 | 0.5− | 2003 10 21 | 704 | 0.4− | 0.5− | 2006 02 25 | 691 | 0.1+ | 0.5+ |
| 2000 02 02 | 691 | 0.3+ | 0.5− | 2003 10 21 | 704 | 1.0− | 0.2− | 2006 03 04 | 691 | 0.3+ | 0.4+ |
| 2001 04 28 | 691 | 0.6+ | 0.2+ | 2003 10 21 | 704 | 0.9− | 0.1− | 2006 03 04 | 691 | 0.1+ | 0.4+ |
| 2001 04 28 | 691 | 0.8+ | 0.4+ | 2003 10 21 | 704 | 0.0 | 0.3+ | 2006 03 04 | 691 | 0.0 | 0.5+ |
| 2001 04 28 | 691 | 0.2+ | 0.1+ | 2003 10 21 | 704 | 0.4− | 0.1+ | 2006 04 02 | G96 | 0.0 | 0.3+ |
| 2003 09 18 | 691 | 0.1+ | 0.2+ | 2003 10 24 | 704 | 1.2− | 1.6+ | 2006 04 02 | G96 | 0.1− | 0.5+ |
| 2003 09 18 | 691 | 0.1+ | 0.2+ | 2003 10 24 | 704 | 0.1+ | 0.0 | 2006 04 02 | G96 | 0.1− | 0.3+ |
| 2003 09 18 | 691 | 0.1+ | 0.2+ | 2003 10 24 | 704 | 0.5− | 0.0 | 2006 04 02 | G96 | 0.1− | 0.3+ |
| 2003 09 20 | 699 | 0.0 | 0.2+ | 2003 10 24 | 704 | 0.3− | 1.6+ | 2006 04 20 | 703 | 0.5− | 0.1+ |
| 2003 09 20 | 699 | 0.6− | 0.8− | 2003 10 24 | 704 | 0.8− | 1.3+ | 2006 04 20 | 703 | (1.5+ | 2.0−) |
| 2003 09 20 | 699 | 1.3− | 0.3− | 2003 10 24 | 704 | 0.2+ | 1.5+ | 2006 04 20 | 703 | 0.8− | 0.8+ |
| 2003 09 20 | 699 | 1.3− | 0.8+ | 2003 10 24 | 704 | 0.2− | 1.0+ | 2006 04 20 | 703 | 0.3− | 1.1+ |
| 2003 09 20 | 644 | 0.0 | 0.5+ | 2003 10 24 | 704 | 0.1+ | 0.4+ | 2006 05 04 | G96 | 0.2+ | 0.0 |
| 2003 09 20 | 644 | 0.0 | 0.5+ | 2004 12 16 | 691 | 0.0 | 0.6− | 2006 05 04 | G96 | 0.3+ | 0.2+ |
| 2003 09 20 | 644 | 0.1− | 0.5+ | 2004 12 16 | 691 | 0.3+ | 0.1+ | 2006 05 04 | G96 | 0.7− | 0.2+ |
| 2003 09 29 | 704 | 0.1− | 0.6+ | 2004 12 16 | 691 | 0.2+ | 0.1+ | 2006 05 04 | G96 | 0.2− | 0.3+ |
| 2003 09 29 | 704 | 0.3+ | 0.2+ | 2005 01 17 | 691 | 0.1+ | 0.1+ | | | | |
| 2003 09 29 | 704 | 0.6+ | 0.9+ | 2005 01 17 | 691 | 0.2− | 0.1− | | | | |

**(143665)∗ 2003 SP$_{98}$**

Discovered 2003 Sept. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.43193 | | (2000.0) | | | |
| $n$ | 0.26288917 | $\omega$ | 344.76858 | | +0.21171896 | +0.97308807 |
| $a$ | 2.4133534 | $\Omega$ | 297.38259 | | −0.88563752 | +0.15166186 |
| $e$ | 0.0934207 | $i$ | 5.87990 | | −0.41330530 | +0.17348859 |
| $P$ | 3.75 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 608 | 0.3− | 0.1− | 2003 10 16 | 644 | 0.3+ | 0.1− | 2005 01 17 | 704 | 0.4+ | 0.3+ |
| 2002 04 04 | 608 | 0.2− | 0.6− | 2003 10 21 | 644 | 0.3− | 0.1+ | 2005 01 17 | 704 | 0.4− | 0.4+ |
| 2002 04 04 | 608 | 0.0 | 0.6− | 2003 10 21 | 644 | 0.2− | 0.3+ | 2005 01 17 | 704 | 0.5+ | 0.2+ |
| 2003 09 19 | 691 | 0.1− | 0.0 | 2003 10 21 | 644 | 0.2− | 0.2+ | 2005 01 17 | 704 | 0.2− | 0.4+ |
| 2003 09 19 | 691 | 0.3− | 0.1+ | 2003 10 21 | 644 | 0.3− | 0.2+ | 2005 01 17 | 704 | 0.4+ | 0.4− |
| 2003 09 19 | 691 | 0.2− | 0.0 | 2003 10 21 | 644 | 0.5− | 0.0 | 2005 01 17 | 704 | 0.6− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 704 | 0.3+ | 0.6− | 2003 10 21 | 644 | 0.1− | 0.2+ | 2005 01 17 | 704 | 0.6+ | 0.9+ | | |
| 2003 09 21 | 704 | 0.1+ | 0.8− | 2003 10 21 | 704 | 0.6− | 1.3+ | 2005 01 18 | 691 | 0.2− | 0.1+ | | |
| 2003 09 21 | 704 | 0.6− | 0.2− | 2003 10 21 | 704 | 0.1− | 1.2+ | 2005 01 18 | 691 | 0.0 | 0.2+ | | |
| 2003 09 21 | 644 | 0.1− | 0.9+ | 2003 10 21 | 704 | 1.1− | 1.0+ | 2005 01 18 | 691 | 0.1− | 0.8− | | |
| 2003 09 21 | 704 | 0.0 | 0.0 | 2004 12 13 | G92 | 0.3− | 0.1+ | 2005 02 02 | 704 | 1.3+ | 0.6+ | | |
| 2003 09 21 | 644 | 0.0 | 0.1+ | 2004 12 13 | G92 | 0.1− | 0.1− | 2005 02 02 | 704 | 1.9+ | 0.9+ | | |
| 2003 09 21 | 644 | 0.2+ | 0.4+ | 2004 12 13 | G92 | 1.2− | 0.2− | 2005 02 02 | 704 | 1.0+ | 1.8+ | | |
| 2003 09 22 | 699 | 0.2− | 0.3+ | 2004 12 16 | G92 | 0.7− | 0.6− | 2005 02 02 | 704 | 1.7+ | 0.8+ | | |
| 2003 09 22 | 699 | 0.7+ | 0.6+ | 2004 12 16 | G92 | 0.2− | 0.7− | 2005 02 02 | 704 | 0.3+ | 0.4+ | | |
| 2003 09 22 | 699 | 0.0 | 1.1+ | 2004 12 16 | G92 | 0.5− | 0.8+ | 2006 05 22 | E12 | 0.2+ | 1.0+ | | |
| 2003 09 22 | 699 | 0.5+ | 0.8− | 2004 12 19 | G96 | 0.2− | 0.3− | 2006 05 22 | E12 | 0.2+ | 0.5+ | | |
| 2003 09 29 | 699 | 0.4+ | 0.1− | 2004 12 19 | G96 | 0.4− | 0.4− | 2006 05 22 | E12 | 0.3+ | 0.1+ | | |
| 2003 09 29 | 699 | 0.2− | 0.6− | 2004 12 19 | G96 | 0.2− | 0.3− | 2006 06 07 | E12 | 0.3+ | 0.7+ | | |
| 2003 09 29 | 699 | 0.1+ | 0.8− | 2004 12 19 | G96 | 0.3− | 0.5− | 2006 06 07 | E12 | 0.1− | 1.4+ | | |
| 2003 09 29 | 699 | 0.2+ | 0.3+ | 2005 01 11 | 704 | 0.6+ | 1.2+ | 2006 06 07 | E12 | 0.4+ | 1.2+ | | |
| 2003 09 30 | 704 | 0.6+ | 0.0 | 2005 01 11 | 704 | 0.2− | 1.2+ | 2006 06 07 | E12 | 0.6− | 0.9+ | | |
| 2003 09 30 | 704 | 1.4+ | 0.1− | 2005 01 11 | 704 | 0.8− | 0.7+ | 2006 06 27 | E12 | 0.3− | 0.5+ | | |
| 2003 09 30 | 704 | 0.1− | 0.4+ | 2005 01 11 | 704 | 0.3+ | 0.1+ | 2006 06 27 | E12 | 0.8+ | 0.1+ | | |
| 2003 10 16 | 644 | 0.1− | 0.3+ | 2005 01 17 | 704 | 0.0 | 0.4+ | 2006 06 27 | E12 | 0.2+ | 0.7+ | | |
| 2003 10 16 | 644 | 0.1− | 0.1+ | 2005 01 17 | 704 | 0.5− | 0.5+ | | | | | | |

**(143666)∗ 2003 SR$_{109}$**

Discovered 2003 Sept. 20 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.81275 | | (2000.0) | | +0.69462099 | −0.71767881 |
| $n$ | 0.29707333 | $\omega$ | 73.03855 | | +0.61213643 | +0.62573757 |
| $a$ | 2.2244720 | $\Omega$ | 332.76052 | | +0.37787654 | +0.30559717 |
| $e$ | 0.0901979 | $i$ | 6.19395 | | | |
| $P$ | 3.32 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 704 | 0.4− | 0.5+ | 2003 09 30 | 704 | (0.1− | 1.7−) | 2006 07 25 | 644 | 0.1− | 0.2+ | | |
| 2000 11 19 | 704 | 0.7− | 1.2+ | 2003 09 30 | 704 | 0.0 | 0.5− | 2006 08 14 | 644 | 0.0 | 0.3+ | | |
| 2000 11 19 | 704 | 0.2− | 0.7+ | 2003 09 30 | 704 | 1.3− | 0.5− | 2006 08 14 | 644 | 0.1+ | 0.1+ | | |
| 2000 12 19 | 704 | 0.2+ | 0.3+ | 2003 09 30 | 704 | 0.1+ | 0.3− | 2006 08 14 | 644 | 0.2− | 0.1+ | | |
| 2000 12 19 | 704 | 0.1+ | 0.3+ | 2003 10 01 | 691 | 0.2+ | 0.0 | 2006 08 28 | 699 | 0.4+ | 1.0+ | | |
| 2000 12 19 | 704 | 0.3+ | 0.2+ | 2003 10 01 | 691 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.5− | 0.1+ | | |
| 2000 12 19 | 704 | 0.2− | 0.3− | 2003 10 01 | 691 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.7− | 0.8+ | | |
| 2001 01 19 | 704 | 0.1+ | 0.2− | 2003 10 06 | 608 | 0.4+ | 1.2+ | 2006 08 28 | 699 | 0.5+ | 0.5+ | | |
| 2001 01 19 | 704 | 0.7− | 0.4+ | 2003 10 06 | 608 | 0.3+ | 1.2+ | 2006 08 28 | 699 | 0.9− | 0.7− | | |
| 2001 01 19 | 704 | 0.6+ | 0.0 | 2003 10 06 | 608 | (1.1+ | 1.6+) | 2006 08 28 | 699 | 0.0 | 0.7+ | | |
| 2001 01 19 | 704 | 0.3+ | 0.1− | 2003 10 17 | 699 | 0.5+ | 0.1− | 2006 08 28 | 699 | 1.1− | 0.0 | | |
| 2003 08 28 | 704 | 0.1− | 0.2+ | 2003 10 17 | 699 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.3+ | 1.2+ | | |
| 2003 08 28 | 704 | 0.4+ | 0.2+ | 2003 10 17 | 699 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.8+ | | |
| 2003 08 28 | 704 | 0.0 | 0.5+ | 2003 10 17 | 699 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.0 | 0.2+ | | |
| 2003 08 28 | 704 | 0.2− | 0.9+ | 2003 10 22 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.1− | 0.2+ | | |
| 2003 09 19 | 699 | 0.9+ | 0.1− | 2003 10 22 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.9− | 0.8+ | | |
| 2003 09 19 | 699 | 0.3− | 0.1− | 2003 10 22 | 691 | 0.2− | 0.2− | 2006 08 29 | 704 | 1.0+ | 0.7− | | |
| 2003 09 19 | 699 | (1.8− | 0.6+) | 2003 10 30 | 704 | 0.6+ | 0.9− | 2006 08 29 | 704 | 0.4− | 0.9− | | |
| 2003 09 19 | 699 | 0.4+ | 1.0+ | 2003 10 30 | 704 | 0.4+ | 0.2+ | 2006 08 29 | 704 | 0.4− | 0.1− | | |
| 2003 09 20 | 608 | 0.5− | 0.2+ | 2003 10 30 | 704 | 0.3+ | 0.0 | 2006 08 29 | 704 | 0.4+ | 0.6− | | |
| 2003 09 20 | 608 | 0.4− | 0.4+ | 2003 10 30 | 704 | (1.9+ | 0.1+) | 2006 08 29 | 704 | 0.1− | 0.0 | | |
| 2003 09 20 | 608 | 0.8− | 0.4+ | 2003 12 28 | 704 | 0.2+ | 1.3+ | 2006 09 26 | G96 | 0.3+ | 0.1− | | |
| 2003 09 20 | 691 | 0.2+ | 0.3− | 2003 12 28 | 704 | 0.6− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.2− | | |
| 2003 09 20 | 691 | 0.2+ | 0.3− | 2003 12 28 | 704 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 2003 09 20 | 691 | 0.2+ | 0.3− | 2003 12 28 | 704 | 0.8− | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.3− | | |
| 2003 09 20 | 599 | 0.1+ | 0.2− | 2005 03 13 | 703 | 0.6+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.0 | | |
| 2003 09 21 | 599 | 0.0 | 0.4− | 2005 03 13 | 703 | 0.3+ | 1.0+ | 2006 10 20 | G96 | 0.3− | 0.2− | | |
| 2003 09 21 | 599 | 0.1+ | 0.3− | 2005 03 13 | 703 | (1.5− | 2.7+) | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2003 09 21 | 599 | 0.3+ | 0.3− | 2005 03 13 | 703 | (2.3+ | 3.5+) | 2006 10 20 | G96 | 0.2− | 0.8− | | |
| 2003 09 21 | 704 | 0.6− | 0.1+ | 2006 07 25 | 644 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2003 09 21 | 704 | 0.2− | 0.3+ | 2006 07 25 | 644 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.5− | | |
| 2003 09 21 | 704 | 0.3− | 0.1+ | 2006 07 25 | 644 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2003 09 21 | 704 | 0.2+ | 0.1+ | 2006 07 25 | 644 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.4− | | |
| 2003 09 21 | 704 | 0.6− | 0.1− | 2006 07 25 | 644 | 0.0 | 0.3+ | | | | | | |

**(143667)∗ 2003 SQ$_{125}$ = 2001 FL$_{29}$**

Discovered 2003 Sept. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 53404)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.76917 | | (2000.0) | | | |
| $n$ | 0.22129366 | $\omega$ | 243.37067 | | +0.56516393 | −0.82474822 |
| $a$ | 2.7070113 | $\Omega$ | 172.12901 | | +0.79846592 | +0.54090517 |
| $e$ | 0.0678547 | $i$ | 8.18486 | | +0.20746545 | +0.16496051 |
| $P$ | 4.45 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 09 | 691 | 0.3− | 0.2− | 2003 09 28 | 699 | 0.6− | 0.1+ | 2005 02 02 | 704 | 0.1+ | 0.3− | | |
| 1997 05 09 | 691 | 0.0 | 0.2− | 2003 09 28 | 704 | 0.7− | 0.3+ | 2005 02 02 | 703 | 0.0 | 0.7− | | |
| 1997 05 09 | 691 | 0.1− | 0.4+ | 2003 09 28 | 699 | 0.0 | 0.2+ | 2005 02 02 | 704 | 1.0+ | 0.6− | | |
| 1999 12 05 | 704 | 0.2− | 0.0 | 2003 09 28 | 704 | 0.5− | 0.1− | 2005 02 02 | 703 | 0.6− | 0.2− | | |
| 1999 12 05 | 704 | 0.4+ | 0.3+ | 2003 09 28 | 699 | 0.8− | 0.3+ | 2005 02 02 | 704 | 0.8− | 1.1+ | | |
| 1999 12 05 | 704 | 1.7+ | 0.1+ | 2003 09 29 | 683 | 1.0+ | 1.2+ | 2005 02 02 | 704 | 1.0+ | 1.8+ | | |
| 1999 12 05 | 704 | 0.1− | 1.5+ | 2003 09 29 | 683 | (0.4+ | 2.1+) | 2005 03 02 | 703 | 0.4− | 0.1− | | |
| 1999 12 05 | 704 | 1.1− | 0.4+ | 2003 09 29 | 683 | 0.3+ | 0.8+ | 2005 03 02 | 703 | 0.3− | 0.2− | | |
| 2001 03 21 | 704 | 0.3+ | 0.9+ | 2003 10 01 | 699 | 0.3+ | 0.2+ | 2005 03 02 | 703 | 0.8− | 0.3+ | | |
| 2001 03 21 | 704 | 1.0+ | 0.9+ | 2003 10 01 | 699 | 1.0+ | 0.2+ | 2005 03 02 | 703 | 1.2+ | 0.6+ | | |
| 2001 03 21 | 704 | 0.8+ | 0.2− | 2003 10 01 | 699 | 0.5− | 0.2− | 2006 05 09 | G96 | 0.2− | 0.2+ | | |
| 2001 03 23 | 704 | 0.5− | 0.4+ | 2003 10 01 | 699 | 0.6− | 1.2− | 2006 05 09 | G96 | 0.1− | 0.3+ | | |
| 2001 03 23 | 704 | 1.4+ | 1.0+ | 2003 10 15 | 699 | 0.2− | 0.2+ | 2006 05 09 | G96 | 0.1− | 0.5+ | | |
| 2001 03 23 | 704 | 0.6+ | 0.6+ | 2003 10 15 | 699 | 0.4+ | 0.7− | 2006 05 09 | G96 | 0.4− | 0.3+ | | |
| 2001 03 23 | 704 | 0.7− | 0.3+ | 2003 10 15 | 699 | 0.2+ | 1.2+ | 2006 05 19 | 699 | 0.2− | 0.2− | | |
| 2003 09 19 | 704 | 1.0+ | 0.5− | 2003 10 15 | 699 | 0.4− | 2.0+ | 2006 05 19 | 699 | (0.4− | 2.2+) | | |
| 2003 09 19 | 704 | 1.1− | 0.8+ | 2003 10 25 | 704 | 0.7− | 0.3+ | 2006 05 19 | 699 | 0.1− | 1.3+ | | |
| 2003 09 19 | 704 | 0.0 | 0.6− | 2003 10 25 | 704 | 0.1+ | 0.4+ | 2006 05 19 | 699 | 0.0 | 0.9+ | | |
| 2003 09 19 | 704 | 0.4− | 0.9+ | 2003 10 25 | 704 | 0.2− | 0.7+ | 2006 05 19 | 703 | 0.0 | 1.2+ | | |
| 2003 09 20 | 599 | 0.1− | 0.2− | 2003 10 25 | 704 | 0.6− | 0.5+ | 2006 05 19 | 703 | 0.2+ | 0.4+ | | |
| 2003 09 20 | 599 | 0.2− | 0.0 | 2003 10 25 | 704 | 0.2− | 0.4+ | 2006 05 19 | 703 | 0.8+ | 0.7+ | | |
| 2003 09 20 | 599 | 0.2− | 0.1− | 2005 01 08 | 599 | 0.3+ | 0.1+ | 2006 05 19 | 703 | 0.5+ | 1.0+ | | |
| 2003 09 20 | 599 | 0.1− | 0.0 | 2005 01 08 | 599 | 0.3− | 0.3+ | 2006 05 30 | 699 | 0.6− | 0.3+ | | |
| 2003 09 28 | 704 | 1.1+ | 1.1+ | 2005 01 08 | 599 | 0.1+ | 0.3+ | 2006 05 30 | 699 | 0.3+ | 0.7+ | | |
| 2003 09 28 | 704 | 0.4− | 1.3+ | 2005 01 08 | 599 | 0.5− | 0.1+ | 2006 05 30 | 699 | 2.0+ | 1.5+ | | |
| 2003 09 28 | 699 | 0.5+ | 0.1+ | 2005 02 02 | 703 | 1.0− | 0.2− | 2006 05 30 | 699 | 0.6+ | 0.2− | | |
| 2003 09 28 | 704 | 0.6− | 0.0 | 2005 02 02 | 703 | 0.0 | 0.1− | | | | | | |

**(143668)∗ 2003 SF$_{128}$**

Discovered 2003 Sept. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.37881 | | (2000.0) | | | |
| $n$ | 0.30379706 | $\omega$ | 231.16627 | | +0.64879072 | −0.76096633 |
| $a$ | 2.1915279 | $\Omega$ | 178.38236 | | +0.70787505 | +0.60308158 |
| $e$ | 0.1346584 | $i$ | 1.86600 | | +0.27925527 | +0.23921300 |
| $P$ | 3.24 | $H$ | 17.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.1+ | 0.4+ | 2003 10 14 | 699 | 0.7+ | 0.1+ | 2006 08 28 | 699 | 0.1− | 0.1− | | |
| 1995 03 27 | 691 | 0.2+ | 0.6− | 2003 10 14 | 699 | 0.5− | 0.3+ | 2006 08 28 | 699 | 0.5+ | 0.4+ | | |
| 1995 03 27 | 691 | 0.6− | 0.6− | 2003 10 21 | 699 | 0.6+ | 0.4− | 2006 08 28 | 699 | 0.1+ | 0.5+ | | |
| 2000 11 21 | 704 | 0.2+ | 0.6− | 2003 10 21 | 699 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.4− | 0.1+ | | |
| 2000 11 21 | 704 | 0.3+ | 0.1+ | 2003 10 21 | 699 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.2+ | | |
| 2000 11 21 | 704 | 1.6− | 0.7+ | 2003 10 21 | 644 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.6− | 1.0+ | | |
| 2000 11 21 | 704 | 0.7− | 0.1− | 2003 10 21 | 644 | 0.2− | 0.0 | 2006 08 28 | 703 | 1.1− | 0.4+ | | |
| 2001 01 03 | 704 | 0.3+ | 0.8+ | 2003 10 21 | 704 | 0.7+ | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.2− | | |
| 2001 01 03 | 704 | 0.5− | 0.9+ | 2003 10 21 | 699 | 0.1− | 0.1− | 2006 08 29 | 704 | 0.1+ | 0.9− | | |
| 2001 01 03 | 704 | 0.7− | 0.5+ | 2003 10 21 | 704 | 0.5+ | 0.1− | 2006 08 29 | 704 | 0.3− | 0.7+ | | |
| 2003 09 20 | 704 | 0.4+ | 0.7− | 2003 10 21 | 644 | 0.1+ | 0.1− | 2006 08 29 | 704 | 0.2− | 1.1+ | | |
| 2003 09 20 | 704 | 0.0 | 1.1+ | 2003 10 21 | 644 | 0.4− | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.2− | | |
| 2003 09 20 | 704 | 0.2+ | 0.1− | 2003 10 21 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 703 | (2.2+ | 1.4−) | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 704 | 0.1+ | 0.1+ | 2003 10 21 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.4− | 0.2− |
| 2003 09 20 | 704 | 0.3+ | 0.0 | 2003 10 21 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.9− | 0.5− |
| 2003 09 20 | 699 | 0.1+ | 0.1+ | 2003 10 21 | 644 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.2− |
| 2003 09 20 | 699 | 0.8− | 0.4− | 2003 10 21 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.5+ | 0.4− |
| 2003 09 20 | 699 | 0.7− | 0.2+ | 2003 10 22 | 608 | 0.1+ | 1.5− | 2006 09 14 | 703 | 0.6+ | 0.0 |
| 2003 09 20 | 699 | 0.8− | 0.3+ | 2003 10 22 | 608 | 0.0 | 1.3− | 2006 09 14 | 644 | 0.3− | 0.1+ |
| 2003 09 21 | 699 | 0.0 | 0.1− | 2003 10 22 | 608 | 0.1+ | 1.1− | 2006 09 14 | 644 | 0.0 | 0.5− |
| 2003 09 21 | 333 | 0.0 | 0.1− | 2003 10 24 | 704 | 0.3+ | 0.1− | 2006 09 14 | 644 | 0.3+ | 0.0 |
| 2003 09 21 | 699 | 0.3− | 0.3− | 2003 10 24 | 704 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.9+ | 0.2− |
| 2003 09 21 | 699 | 0.1− | 0.3− | 2003 10 24 | 704 | 0.4+ | 0.3− | 2006 09 18 | 699 | 1.5+ | 0.7+ |
| 2003 09 21 | 333 | 0.0 | 0.4− | 2003 10 24 | 704 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.1− | 0.3− |
| 2003 09 21 | 699 | 0.0 | 0.6+ | 2003 10 24 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 699 | 0.6+ | 0.9+ |
| 2003 09 21 | 333 | 0.0 | 0.0 | 2003 10 26 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.1− |
| 2003 09 22 | 333 | 0.3− | 0.1+ | 2003 10 26 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | (1.8+ | 2.3+) |
| 2003 09 22 | 333 | 0.1+ | 0.0 | 2003 10 26 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | (0.5− | 1.8+) |
| 2003 09 22 | 333 | 0.3+ | 0.1+ | 2003 10 28 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 699 | 1.0− | 1.2− |
| 2003 09 26 | 333 | 0.1− | 0.3+ | 2003 10 28 | 704 | 0.0 | 0.2+ | 2006 09 24 | 699 | 0.3− | 0.5+ |
| 2003 09 26 | 333 | 0.3+ | 0.0 | 2003 10 28 | 704 | 0.5+ | 0.2+ | 2006 09 24 | 699 | 1.5− | 0.1− |
| 2003 09 26 | 333 | 0.0 | 0.4− | 2003 10 28 | 704 | 0.1+ | 0.2− | 2006 09 24 | 699 | 0.9+ | 0.2− |
| 2003 09 26 | 333 | 0.2− | 0.4− | 2003 10 28 | 704 | 0.5+ | 0.3+ | 2006 09 24 | 699 | 1.4− | 0.5− |
| 2003 09 26 | 333 | 0.4− | 0.1+ | 2003 11 16 | 703 | 0.4− | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2003 09 26 | 333 | 0.0 | 0.1− | 2003 11 16 | 703 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2003 09 26 | 704 | 1.0+ | 1.3+ | 2003 11 16 | 703 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.4− |
| 2003 09 26 | 704 | 0.6+ | 0.5+ | 2003 11 16 | 703 | 1.0− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2003 09 26 | 704 | 0.1− | 0.1+ | 2003 12 19 | 644 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2003 09 26 | 704 | 0.3− | 0.3+ | 2003 12 19 | 644 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2003 09 28 | 691 | 0.1− | 0.2− | 2003 12 19 | 644 | 0.2− | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2003 09 28 | 691 | 0.1+ | 0.2− | 2005 04 11 | 691 | 0.0 | 0.5+ | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2003 09 28 | 691 | 0.1+ | 0.2− | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2003 09 29 | 704 | 0.1+ | 0.5+ | 2005 04 11 | 691 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2003 09 29 | 704 | 0.0 | 0.2− | 2006 08 13 | 644 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2003 09 29 | 704 | 0.9− | 0.3+ | 2006 08 13 | 644 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.9− |
| 2003 09 29 | 704 | 0.4+ | 0.3+ | 2006 08 13 | 644 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2003 09 29 | 704 | 0.2− | 0.6+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2003 10 14 | 699 | 0.8+ | 0.8+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2003 10 14 | 699 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5− |

**(143669)∗ 2003 SO$_{140}$ = 2003 SB$_{309}$**

Discovered 2003 Sept. 19 by NEAT at Palomar.

Id. G. V. Williams (d, *MPO* 53872)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.66031 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36508949 | $\omega$ | 345.83482 | | −0.89136197 | | +0.39537759 |
| $a$ | 1.9388156 | $\Omega$ | 219.86978 | | −0.37490910 | | −0.91794373 |
| $e$ | 0.0444356 | $i$ | 20.23307 | | −0.25478817 | | −0.03249404 |
| $P$ | 2.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.2− | 0.1− | 2003 11 01 | 704 | 0.4− | 0.5+ | 2005 05 16 | 704 | 0.5+ | 0.6+ |
| 1995 10 24 | 691 | 0.1+ | 0.2− | 2003 11 01 | 704 | 1.0+ | 0.2− | 2005 05 16 | 704 | 0.4− | 0.2+ |
| 1995 10 24 | 691 | 0.0 | 0.3− | 2003 11 01 | 704 | 0.2+ | 0.0 | 2005 05 16 | 704 | 0.6+ | 0.2+ |
| 2002 05 08 | 704 | 0.8+ | 1.4+ | 2003 11 20 | 704 | 0.1+ | 0.0 | 2005 05 16 | 704 | 0.2− | 0.2+ |
| 2002 05 08 | 704 | 0.3− | 1.4− | 2003 11 20 | 704 | (0.6− | 1.5+) | 2005 05 16 | 704 | 0.2+ | 0.1− |
| 2002 05 08 | 704 | 0.2+ | 0.5+ | 2003 11 20 | 704 | (2.6+ | 2.8+) | 2005 05 31 | 699 | 0.3+ | 0.3+ |
| 2002 05 08 | 704 | 0.6− | 0.9+ | 2003 11 20 | 704 | (0.4− | 1.7+) | 2005 05 31 | 699 | 0.5+ | 0.0 |
| 2003 09 19 | 644 | 0.2+ | 0.0 | 2003 11 24 | 704 | (0.5− | 1.6+) | 2005 05 31 | 699 | 0.3− | 0.3− |
| 2003 09 19 | 644 | 0.0 | 0.4− | 2003 11 24 | 704 | 0.1− | 0.4+ | 2005 05 31 | 699 | 0.2− | 0.2+ |
| 2003 09 19 | 644 | 0.3+ | 0.2− | 2003 11 24 | 704 | (0.0 | 1.6+) | 2005 06 01 | 608 | 0.0 | 0.5− |
| 2003 09 22 | 644 | 0.4− | 0.1− | 2003 11 24 | 704 | 0.2+ | 0.3+ | 2005 06 01 | 608 | 0.1+ | 0.9− |
| 2003 09 22 | 644 | 0.4− | 0.1− | 2003 11 24 | 704 | 0.0 | 0.4+ | 2005 06 01 | 608 | 0.2+ | 0.8− |
| 2003 09 22 | 644 | 0.2− | 0.0 | 2005 04 11 | G96 | 0.4+ | 0.1+ | 2005 06 07 | 699 | 0.8+ | 0.0 |
| 2003 09 30 | 699 | 0.4− | 0.5− | 2005 04 11 | G96 | 0.4− | 0.1+ | 2005 06 07 | 699 | 0.1+ | 0.7+ |
| 2003 09 30 | 699 | 0.3− | 0.3+ | 2005 04 11 | G96 | 0.4− | 0.1+ | 2005 06 07 | 699 | 0.1+ | 0.8+ |
| 2003 09 30 | 699 | 0.1− | 0.2+ | 2005 04 11 | G96 | 0.3− | 0.1+ | 2005 06 07 | 703 | 0.2− | 0.5− |
| 2003 09 30 | 699 | 0.4− | 0.5+ | 2005 05 03 | 704 | 0.1+ | 0.1+ | 2005 06 07 | 699 | 0.2+ | 0.5+ |
| 2003 10 02 | 691 | 0.0 | 0.1+ | 2005 05 03 | 704 | 0.1+ | 0.6+ | 2005 06 07 | 703 | 0.8− | 1.0+ |
| 2003 10 02 | 691 | 0.0 | 0.1+ | 2005 05 03 | 704 | 0.0 | 0.3+ | 2005 06 07 | 703 | 0.9− | 1.1− |
| 2003 10 02 | 691 | 0.2+ | 0.0 | 2005 05 03 | 704 | 0.2− | 0.3+ | 2005 06 07 | 703 | (1.6− | 0.1−) |
| 2003 10 17 | 699 | 0.2− | 0.1− | 2005 05 03 | 704 | 0.1+ | 0.4+ | 2005 06 09 | 704 | 0.3− | 0.2+ |
| 2003 10 17 | 699 | 0.3− | 0.6− | 2005 05 08 | 699 | 0.1+ | 0.1+ | 2005 06 09 | 704 | 0.4+ | 0.6+ |
| 2003 10 17 | 699 | 0.3− | 0.2+ | 2005 05 08 | 699 | 0.1− | 0.7+ | 2005 06 09 | 704 | 0.4+ | 0.1+ |
| 2003 10 17 | 699 | 0.9− | 1.2− | 2005 05 08 | 691 | 0.2− | 0.2+ | 2005 06 09 | 704 | 0.2− | 0.2− |
| 2003 10 21 | 704 | (1.6+ | 1.3−) | 2005 05 08 | 699 | 0.6+ | 0.4+ | 2005 06 09 | 704 | 0.9− | 1.0+ |
| 2003 10 21 | 704 | 0.7+ | 0.0 | 2005 05 08 | 691 | 0.2− | 0.4+ | 2005 06 30 | 644 | 0.1+ | 0.3− |
| 2003 10 21 | 704 | 0.4+ | 0.8+ | 2005 05 08 | 704 | 1.1+ | 0.1− | 2005 06 30 | 644 | 0.4+ | 0.3− |
| 2003 10 21 | 704 | 0.3− | 0.0 | 2005 05 08 | 691 | 0.1− | 0.2+ | 2005 06 30 | 644 | 0.3+ | 0.2− |
| 2003 10 22 | 691 | 0.1− | 0.0 | 2005 05 08 | 704 | 0.9+ | 0.0 | 2005 07 05 | 703 | 0.1+ | 0.7− |
| 2003 10 22 | 704 | 0.4+ | 0.2+ | 2005 05 08 | 704 | 0.4+ | 0.0 | 2005 07 05 | 703 | 0.8− | 0.7+ |
| 2003 10 22 | 704 | 0.1− | 0.2+ | 2005 05 08 | 704 | 0.6+ | 0.1− | 2005 07 05 | 703 | (1.8− | 0.3+) |
| 2003 10 22 | 704 | 0.0 | 0.6+ | 2005 05 08 | 704 | 0.4− | 0.0 | 2005 07 05 | 703 | 1.1− | 0.6− |
| 2003 10 22 | 704 | 0.3+ | 0.1+ | 2005 05 09 | 699 | 0.0 | 0.1− | 2006 10 31 | 703 | 0.1+ | 0.6+ |
| 2003 10 22 | 691 | 0.2− | 0.1− | 2005 05 09 | 699 | 0.4+ | 0.8+ | 2006 10 31 | 703 | 0.5+ | 1.0+ |
| 2003 10 22 | 704 | 0.6+ | 0.6+ | 2005 05 09 | 699 | 0.9+ | 0.4+ | 2006 10 31 | 703 | 0.1+ | 1.3+ |
| 2003 10 22 | 704 | 0.0 | 0.1+ | 2005 05 09 | 699 | 0.2+ | 0.4+ | 2006 10 31 | 703 | 0.0 | 0.6+ |
| 2003 10 22 | 704 | 0.7+ | 0.2+ | 2005 05 10 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.5− |
| 2003 10 22 | 704 | 0.1− | 0.6+ | 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 2003 10 22 | 691 | 0.1− | 0.1+ | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | (1.6− | 1.9+) |
| 2003 10 22 | 704 | 0.8+ | 0.7+ | 2005 05 11 | 699 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.1+ | 0.9+ |
| 2003 10 22 | 704 | 0.7+ | 0.6+ | 2005 05 11 | 699 | (1.5− | 2.1+) | 2006 11 19 | 703 | 0.3− | 0.8+ |
| 2003 10 23 | 704 | 0.0 | 0.3+ | 2005 05 11 | 699 | 0.2+ | 0.9− | 2006 11 19 | 703 | 0.0 | 0.4+ |
| 2003 10 23 | 704 | 0.0 | 0.5+ | 2005 05 12 | 704 | 0.3− | 0.1+ | 2006 11 19 | 703 | 1.4− | 0.2− |
| 2003 10 23 | 704 | 0.2− | 0.2+ | 2005 05 12 | 704 | 0.1− | 0.2− | 2006 11 19 | 703 | 0.5+ | 0.7+ |
| 2003 10 23 | 704 | 0.1− | 0.3+ | 2005 05 12 | 704 | 0.4− | 0.4− | 2006 12 01 | 703 | 1.5+ | 2.3− |
| 2003 10 23 | 704 | 0.1− | 0.3+ | 2005 05 12 | 704 | 0.4− | 0.3− | 2006 12 01 | 703 | 0.4− | 2.2+ |
| 2003 10 30 | 704 | (0.5+ | 2.1+) | 2005 05 12 | 704 | 0.4− | 0.0 | 2006 12 01 | 703 | 0.2− | 1.1+ |
| 2003 10 30 | 704 | 0.7− | 0.7+ | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 12 01 | 703 | 0.5+ | 0.6− |
| 2003 10 30 | 704 | 0.0 | 0.2+ | 2005 05 14 | 644 | 0.2− | 0.0 | | | | |
| 2003 10 30 | 704 | 0.8− | 0.4+ | 2005 05 14 | 644 | 0.1− | 0.0 | | | | |

**(143670)∗ 2003 SJ$_{145}$ = 1993 RC$_{14}$**

Discovered 2003 Sept. 20 by CINEOS at Campo Imperatore.

Id. G. V. Williams (*MPO* 53419)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.91743 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30097902 | $\omega$ | 74.63235 | | +0.39702738 | | −0.91767963 |
| $a$ | 2.2051860 | $\Omega$ | 351.92502 | | +0.79484664 | | +0.35211109 |
| $e$ | 0.0667888 | $i$ | 6.24314 | | +0.45889876 | | +0.18407030 |
| $P$ | 3.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | 1.7+ | 0.8− | 2003 10 28 | 106 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.1− | 0.5+ |
| 1993 09 15 | 809 | 0.8− | 1.2− | 2003 10 28 | 106 | 0.1− | 0.3− | 2006 08 27 | 699 | 0.4+ | 0.2+ |
| 1993 09 15 | 809 | 1.0− | 2.0− | 2003 10 29 | 699 | 0.9+ | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 1993 09 17 | 809 | 0.1+ | 0.0 | 2003 10 29 | 699 | 0.3+ | 0.4+ | 2006 08 27 | 699 | 0.3+ | 0.3− |
| 1993 09 17 | 809 | (1.0− | 2.8−) | 2003 10 29 | 699 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 0.8− | 1.4+ |
| 1993 09 17 | 809 | (0.8− | 2.5−) | 2003 10 29 | 699 | 0.6+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.6+ |
| 1993 09 22 | 675 | 0.5+ | 0.0 | 2003 10 30 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.5+ |
| 1993 09 22 | 675 | 0.1+ | 1.1+ | 2003 10 30 | 704 | 0.6+ | 0.1− | 2006 08 28 | 703 | 0.1− | 0.7− |
| 1993 09 23 | 809 | (0.9− | 2.5+) | 2003 10 30 | 704 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.1+ |
| 1993 09 23 | 809 | (1.0− | 2.9+) | 2003 10 30 | 704 | 0.9+ | 1.3− | 2006 09 14 | 703 | 0.4− | 0.6+ |
| 1993 09 23 | 809 | 1.3+ | 0.5− | 2003 11 02 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.8− |
| 2000 12 04 | 704 | 0.3− | 0.6− | 2003 11 02 | 704 | 1.1+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2000 12 04 | 704 | 0.3+ | 1.3+ | 2003 11 02 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.1+ |
| 2000 12 04 | 704 | 0.4+ | 0.6+ | 2003 11 02 | 704 | 0.2− | 0.5+ | 2006 09 17 | 704 | 0.6+ | 0.2− |
| 2000 12 04 | 704 | 0.9− | 1.1+ | 2003 11 02 | 704 | 0.2+ | 0.7− | 2006 09 17 | 704 | 0.4+ | 1.0− |
| 2003 09 20 | 599 | 0.4− | 0.1− | 2003 11 18 | 644 | 0.1− | 0.8− | 2006 09 17 | 704 | 0.3− | 0.1+ |
| 2003 09 20 | 599 | 0.5− | 0.1− | 2003 11 18 | 644 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.9− |
| 2003 09 20 | 599 | 0.7− | 0.2+ | 2003 11 18 | 644 | 0.3− | 0.1+ | 2006 09 17 | 704 | 1.3− | 0.0 |
| 2003 09 22 | 704 | 0.4− | 0.6+ | 2003 11 19 | 704 | 0.3− | 0.7+ | 2006 09 20 | 699 | 1.1− | 1.0+ |
| 2003 09 22 | 704 | 0.1− | 0.1− | 2003 11 19 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.9− | 0.5+ |
| 2003 09 22 | 704 | 0.4+ | 0.6+ | 2003 11 19 | 704 | 1.4− | 0.7+ | 2006 09 20 | 699 | 0.4+ | 0.4+ |
| 2003 09 22 | 704 | 0.5− | 0.2− | 2003 11 19 | 704 | 0.8+ | 1.0+ | 2006 09 20 | 699 | 0.2− | 0.5+ |
| 2003 09 22 | 704 | 1.1+ | 1.0+ | 2003 11 19 | 704 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 2003 09 27 | 704 | 0.5− | 0.3+ | 2003 11 23 | 691 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 704 | 0.2− | 0.4+ | 2003 11 23 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.8− | 1.2+ |
| 2003 09 27 | 704 | 0.3+ | 0.3+ | 2003 11 23 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.1− |
| 2003 10 15 | 699 | 0.7− | 1.0− | 2005 04 06 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.6− |
| 2003 10 15 | 699 | (0.3− | 1.8−) | 2005 04 06 | 691 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2003 10 15 | 699 | 1.3+ | 0.6+ | 2005 04 06 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2003 10 15 | 699 | 0.3− | 0.2+ | 2005 04 11 | 699 | 0.6− | 0.8− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2003 10 22 | 704 | 0.7− | 0.2− | 2005 04 11 | 699 | 0.7− | 0.7− | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2003 10 22 | 704 | 0.5− | 0.1+ | 2005 04 11 | 699 | 0.3− | 1.4+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2003 10 22 | 704 | 0.1− | 0.7− | 2005 04 11 | 699 | 0.8− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2003 10 22 | 704 | 0.6+ | 0.0 | 2006 08 18 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2003 10 23 | 608 | 0.6− | 0.5− | 2006 08 18 | 691 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2003 10 23 | 608 | 0.2− | 0.8− | 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2003 10 23 | 608 | 0.4− | 0.8− | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2003 10 28 | 106 | 0.2− | 0.0 | 2006 08 27 | 699 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.4− |

**(143671)∗ 2003 SW$_{151}$ = 2004 XX$_{162}$**

Discovered 2003 Sept. 18 by NEAT at Palomar.

Id. A. Doppler (*MPO* 72878)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.41723 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17164512 | $\omega$ | 106.99922 | | −0.78499576 | −0.60030027 |
| $a$ | 3.2066267 | $\Omega$ | 36.52736 | | +0.42388450 | −0.70062906 |
| $e$ | 0.0803642 | $i$ | 14.89929 | | +0.45177824 | −0.38569225 |
| $P$ | 5.74 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.1+ | 1.3+ | 2003 10 18 | 704 | 0.7− | 0.1+ | 2006 02 26 | 699 | 0.3+ | 0.6+ |
| 2000 01 29 | 704 | 0.1− | 0.4+ | 2003 10 18 | 704 | 1.7− | 1.5+ | 2006 02 26 | 699 | 0.3+ | 0.1− |
| 2000 01 29 | 704 | 0.5− | 0.4+ | 2003 10 18 | 704 | 0.6− | 1.1+ | 2006 02 26 | 699 | 0.3− | 0.5+ |
| 2000 01 29 | 704 | 0.6− | 0.1− | 2004 11 19 | 704 | 0.9+ | 0.0 | 2006 02 26 | 699 | 0.7+ | 1.0+ |
| 2000 03 11 | 703 | 0.1− | 0.1− | 2004 11 19 | 704 | 0.5+ | 0.4+ | 2006 03 09 | 703 | 1.3+ | 0.6+ |
| 2000 03 11 | 703 | 0.9+ | 0.0 | 2004 11 19 | 704 | 0.4+ | 0.5− | 2006 03 09 | 703 | 0.6+ | 0.8+ |
| 2000 03 11 | 703 | 1.3+ | 0.1− | 2004 11 19 | 704 | 0.0 | 0.6− | 2006 03 09 | 703 | (2.6− | 0.7+) |
| 2000 03 11 | 703 | 0.4− | 1.7− | 2004 12 15 | 703 | 0.9+ | 0.5− | 2006 03 09 | 703 | 0.8+ | 0.7− |
| 2001 04 23 | 691 | 0.1− | 0.2+ | 2004 12 15 | 703 | 1.0+ | 0.1− | 2006 03 19 | 699 | 0.1+ | 0.4− |
| 2001 04 23 | 691 | 0.1− | 0.2+ | 2004 12 15 | 703 | 0.6− | 0.1− | 2006 03 19 | 699 | 0.1− | 0.4− |
| 2001 04 23 | 691 | 0.1− | 0.2+ | 2004 12 15 | 703 | 0.4+ | 0.1+ | 2006 03 19 | 699 | 1.4+ | 0.2+ |
| 2001 05 15 | 699 | 0.5+ | 0.2− | 2004 12 20 | 703 | 0.7− | 0.6− | 2006 03 19 | 699 | 0.9− | 1.5+ |
| 2001 05 15 | 699 | 0.4+ | 0.1+ | 2004 12 20 | 703 | 0.6− | 0.1− | 2006 03 24 | 703 | 0.7− | 0.2− |
| 2001 05 15 | 699 | 0.4+ | 1.0− | 2004 12 20 | 703 | 0.6− | 0.7− | 2006 03 24 | 703 | 0.5− | 0.4+ |
| 2001 05 15 | 699 | 0.0 | 0.1− | 2004 12 20 | 703 | 0.2− | 0.4− | 2006 03 24 | 703 | 0.4− | 0.4+ |
| 2003 09 18 | 644 | 0.2− | 0.9+ | 2006 01 12 | 644 | 0.5− | 0.6+ | 2006 03 24 | 703 | 0.1− | 1.4− |
| 2003 09 18 | 644 | 0.3− | 0.8+ | 2006 01 12 | 644 | 0.1− | 0.1+ | 2006 04 06 | 703 | (0.8− | 2.5+) |
| 2003 09 18 | 644 | 0.2− | 0.7+ | 2006 01 12 | 644 | 0.1+ | 0.2+ | 2006 04 06 | 703 | 0.5+ | 0.6+ |
| 2003 09 19 | 699 | 0.6− | 1.6+ | 2006 01 12 | 644 | 0.0 | 0.0 | 2006 04 06 | 703 | 0.3+ | 0.9− |
| 2003 09 19 | 699 | 0.6− | 0.5+ | 2006 01 12 | 644 | 0.1+ | 0.1+ | 2006 04 06 | 703 | 0.8− | 0.4+ |
| 2003 09 19 | 699 | 0.4− | 0.1+ | 2006 01 12 | 644 | 0.3+ | 0.0 | 2006 04 25 | 703 | 0.5− | 0.3+ |
| 2003 09 19 | 699 | 0.7+ | 0.6− | 2006 02 20 | 704 | 0.6+ | 0.9+ | 2006 04 25 | 703 | 0.8− | 0.6+ |
| 2003 09 24 | 644 | 0.6− | 0.6+ | 2006 02 20 | 704 | 0.8+ | 0.6+ | 2006 04 25 | 703 | 0.1− | 0.2+ |
| 2003 09 24 | 644 | 0.2+ | 0.1+ | 2006 02 20 | 704 | 0.5+ | 0.3+ | 2006 04 25 | 703 | 0.1+ | 1.0− |
| 2003 09 24 | 644 | 0.4− | 0.4+ | 2006 02 20 | 704 | 0.4+ | 0.6+ | | | | |
| 2003 10 18 | 704 | 1.0− | 1.2+ | 2006 02 20 | 704 | 1.1+ | 0.9+ | | | | |

**(143672)∗ 2003 SN$_{155}$ = 2002 EX$_{137}$**

Discovered 2003 Sept. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 53429)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.38417 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.29834403 | $\omega$ | 298.33363 | | +0.52224322 | +0.85277424 |
| $a$ | 2.2181512 | $\Omega$ | 3.16966 | | −0.73812370 | +0.45563252 |
| $e$ | 0.1537756 | $i$ | 6.41019 | | −0.42712460 | +0.25529414 |
| $P$ | 3.30 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 22 | 809 | (1.2− | 2.7+) | 2003 09 20 | 704 | 0.4− | 1.1+ | 2006 07 06 | E12 | 0.8+ | 0.1− |
| 1993 09 22 | 809 | (2.7− | 1.9+) | 2003 09 27 | 704 | 0.2− | 0.0 | 2006 07 06 | E12 | 0.6+ | 0.1+ |
| 1993 09 22 | 809 | (1.1− | 2.6+) | 2003 09 27 | 704 | 0.3+ | 0.0 | 2006 07 06 | E12 | 0.9− | 0.2− |
| 2002 03 12 | 644 | 0.4+ | 0.5+ | 2003 09 27 | 704 | 0.3− | 0.3+ | 2006 07 06 | E12 | 0.8+ | 0.8+ |
| 2002 03 12 | 644 | 0.5+ | 0.5+ | 2003 09 27 | 704 | 0.5− | 0.4+ | 2006 07 31 | E12 | 0.4− | 0.3− |
| 2002 03 12 | 644 | 0.5+ | 0.7+ | 2003 09 27 | 704 | 0.1− | 0.5− | 2006 07 31 | E12 | 0.6− | 0.3+ |
| 2002 03 12 | 644 | 0.2+ | 0.3+ | 2003 09 30 | 691 | 0.1− | 0.1− | 2006 07 31 | E12 | 0.1+ | 0.4+ |
| 2002 03 12 | 644 | 0.4+ | 0.7+ | 2003 09 30 | 691 | 0.2− | 0.1− | 2006 07 31 | E12 | 0.4− | 0.6+ |
| 2002 03 12 | 644 | 0.1+ | 0.9+ | 2003 09 30 | 691 | 0.1− | 0.1− | 2006 08 12 | 644 | 0.2− | 0.3+ |
| 2002 03 16 | 704 | (0.2− | 2.0+) | 2003 10 19 | 691 | 0.1− | 0.2+ | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2002 03 16 | 704 | 0.4− | 1.2+ | 2003 10 19 | 691 | 0.1− | 0.1+ | 2006 08 12 | 644 | 0.1− | 0.4+ |
| 2002 03 16 | 704 | 0.7+ | 1.2+ | 2003 10 19 | 691 | 0.1− | 0.0 | 2006 08 13 | 644 | 0.3− | 0.3+ |
| 2002 03 16 | 704 | 0.5− | 0.1+ | 2003 10 21 | 704 | 0.9+ | 0.4+ | 2006 08 13 | 644 | 0.3− | 0.3+ |
| 2002 03 16 | 704 | 0.0 | 1.5+ | 2003 10 21 | 704 | 0.3+ | 1.2+ | 2006 08 13 | 644 | 0.1− | 0.3+ |
| 2002 04 06 | 691 | 0.1+ | 0.0 | 2003 10 21 | 704 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.3+ |
| 2002 04 06 | 691 | 0.4+ | 0.0 | 2003 10 21 | 704 | 0.2+ | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2002 04 06 | 691 | 0.0 | 0.1− | 2003 10 21 | 704 | 0.4− | 0.5+ | 2006 08 14 | 644 | 0.1− | 0.3+ |
| 2003 09 19 | 699 | 0.6+ | 0.4− | 2003 10 25 | 704 | 0.1− | 0.4+ | 2006 08 19 | 644 | 0.0 | 0.3+ |
| 2003 09 19 | 699 | 0.0 | 0.0 | 2003 10 25 | 704 | 0.4− | 0.1+ | 2006 08 19 | 644 | 0.0 | 0.3+ |
| 2003 09 19 | 699 | 0.3+ | 0.5+ | 2003 10 25 | 704 | 0.4− | 0.1− | 2006 08 19 | 644 | 0.3− | 0.4+ |
| 2003 09 19 | 699 | 0.6+ | 0.1− | 2003 10 25 | 704 | 0.0 | 0.4+ | 2006 08 23 | 644 | 0.1− | 0.3+ |
| 2003 09 20 | 704 | 0.3− | 0.5− | 2003 10 25 | 704 | 0.1− | 0.1− | 2006 08 23 | 644 | 0.1− | 0.4+ |
| 2003 09 20 | 704 | 0.2+ | 0.3+ | 2005 01 19 | 691 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.3− |
| 2003 09 20 | 704 | 0.2− | 0.3− | 2005 01 19 | 691 | 0.0 | 0.2+ | | | | |
| 2003 09 20 | 704 | 0.2+ | 0.0 | 2005 01 19 | 691 | 0.4+ | 0.6+ | | | | |

**(143673)∗ 2003 SO$_{195}$**

Discovered 2003 Sept. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.35766 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27153917 | $\omega$ | 180.46791 | | −0.94939945 | −0.30977069 |
| $a$ | 2.3618251 | $\Omega$ | 341.23360 | | +0.28867511 | −0.79571543 |
| $e$ | 0.0794984 | $i$ | 9.26501 | | +0.12372292 | −0.52046044 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 06 | 704 | 0.0 | 0.4− | 2005 02 02 | 704 | 1.1+ | 0.3− | 2005 03 17 | 704 | 0.2− | 0.1+ |
| 2000 12 06 | 704 | 0.1− | 0.2− | 2005 02 02 | 704 | 0.4+ | 1.0+ | 2005 03 17 | 704 | 0.3+ | 0.4− |
| 2000 12 06 | 704 | 0.4+ | 0.5+ | 2005 02 02 | 704 | 0.0 | 0.0 | 2005 03 30 | 683 | 0.2+ | 1.0− |
| 2000 12 06 | 704 | 0.1+ | 0.1− | 2005 02 03 | 683 | 1.0− | 0.5− | 2005 03 30 | 683 | (0.3+ | 2.0+) |
| 2000 12 06 | 704 | 0.1+ | 0.3− | 2005 02 03 | 683 | 1.0+ | 0.1+ | 2005 03 30 | 683 | 0.5+ | 0.3+ |
| 2001 01 05 | 704 | 0.4+ | 0.3+ | 2005 02 03 | 683 | (2.3− | 0.2−) | 2005 03 31 | 644 | 0.4+ | 0.1+ |
| 2001 01 05 | 704 | 0.3+ | 0.3− | 2005 03 02 | 691 | 0.2+ | 0.1+ | 2005 03 31 | 644 | 0.2+ | 0.2+ |
| 2001 01 05 | 704 | 0.1− | 0.4− | 2005 03 02 | 691 | 0.2+ | 0.1+ | 2005 03 31 | 644 | 0.4+ | 0.3+ |
| 2001 01 05 | 704 | 0.5− | 0.1+ | 2005 03 02 | 691 | 0.4+ | 0.2− | 2005 04 01 | 699 | 0.1− | 0.6− |
| 2001 02 13 | 704 | 0.2− | 0.8− | 2005 03 03 | 703 | 0.3− | 0.2− | 2005 04 01 | 699 | 0.7− | 0.1+ |
| 2001 02 13 | 704 | 0.4− | 0.8− | 2005 03 03 | 703 | 0.5− | 0.0 | 2005 04 01 | 699 | 0.3− | 0.1− |
| 2001 02 13 | 704 | 0.9− | 0.0 | 2005 03 03 | 703 | 0.3− | 0.1− | 2005 04 01 | 699 | 1.2+ | 0.2+ |
| 2001 02 13 | 704 | 0.6+ | 0.1− | 2005 03 03 | 703 | 0.1− | 0.3+ | 2005 04 02 | 683 | (0.3− | 2.4+) |
| 2003 09 20 | 644 | 0.3− | 0.6+ | 2005 03 03 | 704 | 0.6+ | 0.6+ | 2005 04 02 | 683 | (1.1+ | 1.9+) |
| 2003 09 20 | 644 | 0.2− | 0.7+ | 2005 03 03 | 704 | 0.4+ | 0.5+ | 2005 04 02 | 683 | 0.2− | 0.9+ |
| 2003 09 20 | 644 | 0.2− | 0.4+ | 2005 03 03 | 704 | 0.5+ | 0.0 | 2005 04 04 | 683 | 0.4+ | 1.5− |
| 2003 09 21 | 699 | (1.7− | 0.1+) | 2005 03 08 | 699 | 0.6− | 0.4− | 2005 04 04 | 683 | 0.0 | 0.2+ |
| 2003 09 21 | 699 | 0.4+ | 1.4+ | 2005 03 08 | 699 | 0.6− | 0.3− | 2005 04 04 | 683 | 0.1+ | 0.5− |
| 2003 09 21 | 699 | 0.1+ | 0.5+ | 2005 03 08 | 699 | 0.1− | 0.6+ | 2005 04 05 | 683 | (0.0 | 2.3−) |
| 2003 09 21 | 699 | 0.8− | 0.0 | 2005 03 08 | 704 | 0.4+ | 0.1+ | 2005 04 05 | 683 | 0.5+ | 0.8− |
| 2003 09 30 | 704 | 0.5+ | 0.9− | 2005 03 08 | 704 | 0.4+ | 0.3− | 2005 04 05 | 683 | (0.4− | 1.8−) |
| 2003 09 30 | 704 | 1.3− | 0.3+ | 2005 03 08 | 699 | 0.3− | 0.1+ | 2005 04 06 | 683 | (0.1− | 2.7+) |
| 2003 09 30 | 704 | 0.5+ | 0.4− | 2005 03 08 | 704 | 1.0+ | 0.1− | 2005 04 06 | 683 | 0.4+ | 0.1+ |
| 2003 09 30 | 704 | 0.8− | 0.7+ | 2005 03 08 | 704 | 0.3+ | 0.2+ | 2005 04 06 | 683 | (0.5+ | 1.9+) |
| 2003 09 30 | 704 | 0.3+ | 0.4+ | 2005 03 08 | 704 | 0.0 | 0.1− | 2005 04 09 | 683 | 0.6− | 0.6+ |
| 2003 09 30 | 704 | 0.1+ | 0.3+ | 2005 03 09 | 699 | 0.1− | 0.3+ | 2005 04 09 | 683 | 0.1− | 1.2+ |
| 2003 09 30 | 704 | 0.0 | 0.5+ | 2005 03 09 | 699 | 0.0 | 0.4+ | 2005 04 09 | 683 | (2.3− | 0.6+) |
| 2003 09 30 | 704 | 0.1+ | 0.2+ | 2005 03 09 | 699 | 0.2+ | 0.1+ | 2005 04 09 | 699 | 1.0− | 0.7− |
| 2003 09 30 | 704 | 0.2+ | 0.1− | 2005 03 09 | 699 | 0.0 | 0.4+ | 2005 04 09 | 699 | 0.3+ | 0.6+ |
| 2003 10 03 | 691 | 0.1+ | 0.0 | 2005 03 11 | G96 | 0.1− | 0.1− | 2005 04 09 | 699 | (1.6+ | 0.8+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 03 | 691 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.4− | 0.1− | 2005 04 09 | 699 | 0.9− | 0.2+ |
| 2003 10 03 | 691 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.2− | 0.1− | 2005 04 15 | 683 | 0.9+ | 0.6+ |
| 2003 10 29 | 699 | 0.6− | 0.2+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2005 04 15 | 683 | 1.3− | 1.4+ |
| 2003 10 29 | 699 | 0.1− | 0.6+ | 2005 03 13 | 691 | 0.1− | 0.4+ | 2005 04 15 | 683 | (4.5− | 2.1+) |
| 2003 10 29 | 699 | 1.3− | 0.4+ | 2005 03 13 | 691 | 0.2+ | 0.5+ | 2006 08 12 | 644 | 0.2+ | 0.6+ |
| 2003 10 29 | 699 | 0.0 | 0.2− | 2005 03 13 | 691 | 0.1+ | 0.1+ | 2006 08 12 | 644 | 0.3− | 0.6+ |
| 2003 11 02 | 704 | 0.4+ | 0.7+ | 2005 03 14 | 704 | 0.2+ | 0.2+ | 2006 08 12 | 644 | 0.1− | 0.7+ |
| 2003 11 02 | 704 | 0.0 | 0.3+ | 2005 03 14 | 704 | 0.3− | 0.1− | 2006 08 14 | 644 | 0.1− | 0.4+ |
| 2003 11 02 | 704 | 0.4− | 0.2+ | 2005 03 14 | 704 | 0.5− | 0.4+ | 2006 08 14 | 644 | 0.3+ | 0.6+ |
| 2003 12 10 | 644 | 0.7− | 0.2− | 2005 03 14 | 704 | 0.5− | 0.2− | 2006 08 14 | 644 | 0.5− | 0.8+ |
| 2003 12 10 | 644 | 0.5− | 0.3− | 2005 03 14 | 704 | 0.3− | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2003 12 10 | 644 | 0.3− | 0.2− | 2005 03 17 | 704 | 0.4− | 0.2− | 2006 10 23 | G96 | 0.6− | 0.5+ |
| 2005 02 02 | 704 | 0.6+ | 1.0+ | 2005 03 17 | 704 | 0.8+ | 0.6+ | 2006 10 23 | G96 | 0.3− | 0.4+ |
| 2005 02 02 | 704 | 0.3+ | 0.4+ | 2005 03 17 | 704 | 0.5+ | 0.7− | 2006 10 23 | G96 | 0.6− | 0.3+ |

**(143674)∗ 2003 SB$_{210}$**

Discovered 2003 Sept. 25 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.38841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28893166 | $\omega$ | 41.27804 | | +0.99853394 | | −0.03705340 |
| $a$ | 2.2660664 | $\Omega$ | 320.79234 | | +0.01585053 | | +0.89718107 |
| $e$ | 0.0864726 | $i$ | 3.57884 | | +0.05175637 | | +0.44010587 |
| $P$ | 3.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 03 | 809 | 0.4− | 0.6+ | 2003 10 22 | 704 | 0.4+ | 0.1− | 2003 11 22 | 691 | 0.2+ | 0.2+ |
| 1996 10 03 | 809 | 0.3− | 0.9+ | 2003 10 27 | 691 | 0.0 | 0.0 | 2003 11 22 | 691 | 0.3+ | 0.3+ |
| 1996 10 03 | 809 | (1.8− | 2.1+) | 2003 10 27 | 691 | 0.3+ | 0.2− | 2003 11 22 | 691 | 0.3+ | 0.1+ |
| 2003 09 05 | 704 | 0.8+ | 0.1− | 2003 10 27 | 691 | 0.2− | 0.2− | 2003 11 24 | 704 | 0.5+ | 0.1− |
| 2003 09 05 | 704 | 0.9+ | 0.6+ | 2003 10 30 | 704 | 0.5+ | 0.5− | 2003 11 24 | 704 | 0.3+ | 0.6+ |
| 2003 09 05 | 704 | 0.1+ | 0.3+ | 2003 10 30 | 704 | 0.1+ | 0.1− | 2003 11 24 | 704 | 0.1− | 0.5+ |
| 2003 09 05 | 704 | 0.5+ | 0.6+ | 2003 10 30 | 704 | (1.3− | 2.4+) | 2003 11 24 | 704 | 0.1+ | 0.4+ |
| 2003 09 20 | 644 | 0.4− | 0.1+ | 2003 10 30 | 704 | 0.7− | 0.4+ | 2003 11 24 | 704 | 0.3+ | 0.4− |
| 2003 09 20 | 644 | 0.6− | 0.6+ | 2003 10 30 | 704 | 0.1− | 1.1− | 2005 03 08 | 699 | 0.0 | 1.4+ |
| 2003 09 20 | 644 | 0.6− | 0.1+ | 2003 11 02 | 704 | 0.4− | 0.0 | 2005 03 08 | 699 | 0.3+ | 1.2+ |
| 2003 09 25 | 608 | 0.6− | 0.2+ | 2003 11 02 | 704 | 0.1− | 0.3− | 2005 03 08 | 699 | 0.3+ | 0.1+ |
| 2003 09 25 | 608 | 0.8− | 0.1− | 2003 11 02 | 704 | 0.3− | 0.5− | 2005 03 08 | 699 | (3.2− | 1.8−) |
| 2003 09 25 | 608 | 0.4− | 0.3− | 2003 11 02 | 704 | 0.3+ | 0.6− | 2005 03 10 | 699 | 0.2+ | 0.3+ |
| 2003 09 27 | 704 | 0.2− | 0.0 | 2003 11 02 | 704 | 0.8+ | 0.2− | 2005 03 10 | 699 | 0.2+ | 1.0− |
| 2003 09 27 | 704 | 0.1− | 0.2+ | 2003 11 03 | 704 | 0.8+ | 0.8+ | 2005 03 10 | 699 | 1.4+ | 1.3+ |
| 2003 09 27 | 704 | 0.6− | 0.3− | 2003 11 03 | 704 | 0.2+ | 0.4+ | 2005 03 10 | 699 | 1.3+ | 0.4+ |
| 2003 09 27 | 704 | 0.1− | 0.1+ | 2003 11 03 | 704 | 0.5+ | 0.4+ | 2005 04 04 | 703 | 0.7− | 0.1− |
| 2003 09 27 | 704 | 0.2− | 0.1− | 2003 11 03 | 704 | 0.3+ | 0.6+ | 2005 04 04 | 703 | (2.9− | 2.5−) |
| 2003 10 15 | 699 | (2.5− | 0.4+) | 2003 11 03 | 704 | 0.4+ | 0.6+ | 2005 04 04 | 703 | 0.8− | 1.0+ |
| 2003 10 15 | 699 | 1.0− | 0.7+ | 2003 11 04 | 049 | 0.7− | 1.0− | 2005 04 04 | 703 | (2.4+ | 0.2−) |
| 2003 10 15 | 699 | 0.4− | 0.3− | 2003 11 04 | 049 | 1.0− | 0.9− | 2006 08 12 | 644 | 0.0 | 0.6+ |
| 2003 10 15 | 699 | 1.2− | 0.7− | 2003 11 04 | 049 | 0.8− | 0.6− | 2006 08 12 | 644 | 0.5− | 0.5+ |
| 2003 10 17 | 691 | 0.1+ | 0.1− | 2003 11 04 | 049 | 0.8− | 1.0− | 2006 08 12 | 644 | 0.3− | 0.9+ |
| 2003 10 17 | 691 | 0.1+ | 0.0 | 2003 11 18 | 699 | 0.9− | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2003 10 17 | 691 | 0.0 | 0.0 | 2003 11 18 | 699 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2003 10 20 | 644 | 0.2− | 0.2+ | 2003 11 18 | 699 | 0.7− | 0.7− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2003 10 20 | 644 | 0.1+ | 0.1+ | 2003 11 18 | 699 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2003 10 20 | 644 | 0.0 | 0.2+ | 2003 11 20 | 704 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.8+ | 0.1+ |
| 2003 10 22 | 704 | 0.4+ | 0.6+ | 2003 11 20 | 704 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2003 10 22 | 704 | 0.1+ | 0.8+ | 2003 11 20 | 704 | 0.3+ | 0.8+ | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2003 10 22 | 704 | 0.0 | 0.4+ | 2003 11 20 | 704 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2003 10 22 | 704 | 0.2+ | 0.2+ | 2003 11 20 | 704 | 0.5+ | 0.3+ | | | | |

**(143675)∗ 2003 SJ$_{214}$ = 2000 BY$_{38}$**

Discovered 2003 Sept. 26 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 53472)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.97305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20325167 | $\omega$ | 214.41800 | | +0.99450857 | | +0.09965852 |
| $a$ | 2.8649253 | $\Omega$ | 139.82489 | | −0.08138498 | | +0.92839657 |
| $e$ | 0.0770209 | $i$ | 2.83887 | | −0.06579662 | | +0.35797765 |
| $P$ | 4.85 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 691 | 0.1+ | 0.4+ | 2003 09 28 | 333 | 0.3− | 0.1+ | 2006 03 25 | 691 | 0.0 | 0.1− |
| 2000 01 27 | 691 | 0.0 | 0.2− | 2003 10 19 | 691 | 0.1− | 0.4+ | 2006 03 25 | 691 | 0.2+ | 0.1+ |
| 2000 01 27 | 691 | 0.1− | 0.1+ | 2003 10 19 | 691 | 0.0 | 0.3+ | 2006 03 25 | 691 | 0.1− | 0.1+ |
| 2000 02 03 | 691 | 0.2+ | 0.4− | 2003 10 19 | 691 | 0.2− | 0.4+ | 2006 04 07 | 691 | 0.3+ | 0.1+ |
| 2000 02 03 | 691 | 0.1− | 0.3− | 2003 10 28 | 704 | 0.9+ | 0.1+ | 2006 04 07 | 691 | 0.4+ | 0.5+ |
| 2000 02 03 | 691 | 0.2− | 0.4− | 2003 10 28 | 704 | 0.3− | 1.2+ | 2006 04 07 | 691 | 0.1− | 0.4+ |
| 2003 09 26 | 333 | 0.2+ | 0.1− | 2003 10 28 | 704 | 0.2− | 0.6+ | 2006 04 26 | 691 | 0.4− | 0.3+ |
| 2003 09 26 | 333 | 0.5− | 0.1− | 2003 10 28 | 704 | 0.7+ | 0.1− | 2006 04 26 | 691 | 0.2+ | 0.0 |
| 2003 09 26 | 333 | 0.2− | 0.6+ | 2005 02 04 | 691 | 0.2+ | 0.0 | 2006 04 26 | 691 | 0.2− | 0.2+ |
| 2003 09 27 | 333 | 0.3− | 0.5− | 2005 02 04 | 691 | 0.0 | 0.2+ | 2006 05 26 | G96 | 0.0 | 0.1+ |
| 2003 09 27 | 333 | 0.2− | 0.3+ | 2005 02 04 | 691 | 0.2− | 0.1+ | 2006 05 26 | G96 | 0.1− | 0.5− |
| 2003 09 27 | 333 | 0.2− | 0.2+ | 2005 03 04 | 691 | 0.1+ | 0.2+ | 2006 05 26 | G96 | 0.1− | 0.3− |
| 2003 09 28 | 333 | 0.3− | 0.3− | 2005 03 04 | 691 | 0.1− | 0.1− | 2006 05 26 | G96 | 0.0 | 0.0 |
| 2003 09 28 | 333 | 0.2− | 0.1+ | 2005 03 04 | 691 | 0.2+ | 0.1+ | | | | |

**(143676)∗ 2003 SK$_{214}$**

Discovered 2003 Sept. 26 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.96414 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29602657 | $\omega$ | 247.28492 | | +0.52680065 | | −0.84992102 |
| $a$ | 2.2297128 | $\Omega$ | 170.90283 | | +0.80265070 | | +0.49326437 |
| $e$ | 0.1615717 | $i$ | 3.89472 | | +0.27970151 | | +0.18526876 |
| $P$ | 3.33 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 02 | 704 | 0.8+ | 0.9+ | 2003 10 29 | 699 | 0.6− | 0.7+ | 2005 04 16 | 691 | 0.1+ | 0.5+ |
| 2001 01 02 | 704 | 0.1+ | 1.3+ | 2003 10 29 | 699 | 0.3− | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.0 |
| 2001 01 02 | 704 | 0.5+ | 0.9+ | 2003 11 01 | 704 | 1.0+ | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.0 |
| 2001 02 01 | 699 | 0.3+ | 0.2+ | 2003 11 01 | 704 | (2.4+ | 0.1−) | 2006 08 19 | 691 | 0.1− | 0.1+ |
| 2001 02 01 | 699 | 0.0 | 0.1+ | 2003 11 01 | 704 | (1.0− | 1.7+) | 2006 08 21 | 704 | 0.2+ | 0.4− |
| 2001 02 01 | 699 | 0.3− | 0.5− | 2003 11 01 | 704 | 0.5+ | 0.2− | 2006 08 21 | 704 | 0.5− | 0.2− |
| 2001 02 01 | 699 | 0.7− | 0.3− | 2003 11 05 | 699 | 0.1+ | 0.3+ | 2006 08 21 | 704 | 0.5− | 0.7+ |
| 2003 09 26 | 333 | 0.2− | 0.6− | 2003 11 05 | 699 | 0.4− | 0.1− | 2006 08 21 | 704 | 0.3− | 0.2+ |
| 2003 09 26 | 333 | 0.1− | 0.2− | 2003 11 05 | 699 | 0.0 | 0.8− | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 2003 09 26 | 333 | 0.3− | 0.2− | 2003 11 05 | 699 | 0.2+ | 0.1− | 2006 08 27 | 691 | 0.3+ | 0.2+ |
| 2003 09 27 | 333 | 0.0 | 0.7− | 2003 11 18 | 703 | 0.2+ | 0.9− | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 2003 09 27 | 333 | 0.1− | 0.7− | 2003 11 18 | 703 | 0.7+ | 0.5− | 2006 08 29 | 704 | 1.0− | 0.6+ |
| 2003 09 27 | 333 | 0.2+ | 0.5− | 2003 11 18 | 703 | 0.9− | 0.4+ | 2006 08 29 | 704 | 0.9+ | 0.3+ |
| 2003 09 29 | 333 | 0.2− | 0.6− | 2003 11 18 | 703 | 0.8+ | 0.9+ | 2006 08 29 | 704 | 0.7+ | 0.8+ |
| 2003 09 29 | 333 | 0.1− | 0.6− | 2003 11 18 | 644 | 0.2+ | 0.2− | 2006 08 30 | 704 | 0.0 | 0.4− |
| 2003 09 29 | 333 | 0.2− | 0.3− | 2003 11 18 | 644 | 0.3+ | 0.4− | 2006 08 30 | 704 | 0.5− | 0.8+ |
| 2003 10 21 | 704 | 0.9+ | 0.4− | 2003 11 18 | 644 | 0.8+ | 0.3− | 2006 08 30 | 704 | 0.3− | 0.5+ |
| 2003 10 21 | 704 | 0.3− | 0.4+ | 2003 11 21 | 699 | 0.1− | 0.3+ | 2006 09 14 | 703 | 1.1− | 0.1+ |
| 2003 10 21 | 704 | 0.0 | 0.1+ | 2003 11 21 | 699 | 0.6− | 0.0 | 2006 09 14 | 703 | 1.1− | 1.0− |
| 2003 10 21 | 704 | 0.6− | 0.4− | 2003 11 21 | 699 | 1.5− | 0.2+ | 2006 09 14 | 703 | (2.3− | 0.7+) |
| 2003 10 22 | 608 | 0.1+ | 0.0 | 2003 11 21 | 699 | 0.3+ | 0.8+ | 2006 09 14 | 703 | 1.3− | 0.3+ |
| 2003 10 22 | 608 | 0.4+ | 0.1− | 2003 11 21 | 608 | 0.6+ | 0.4+ | 2006 09 24 | 699 | (1.7+ | 1.2−) |
| 2003 10 22 | 608 | 0.1+ | 0.4+ | 2003 11 21 | 608 | 0.5+ | 0.4+ | 2006 09 24 | 699 | 0.4− | 0.4+ |
| 2003 10 25 | 704 | 0.7− | 0.5+ | 2003 11 21 | 608 | 0.7+ | 0.3− | 2006 09 24 | 699 | 0.9+ | 0.4− |
| 2003 10 25 | 704 | 0.2+ | 0.9+ | 2003 11 29 | 691 | 0.1+ | 0.2+ | 2006 09 24 | 699 | 0.5+ | 0.5+ |
| 2003 10 25 | 704 | 0.3− | 0.7+ | 2003 11 29 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.6− | 0.3− |
| 2003 10 25 | 704 | 0.4+ | 0.3+ | 2003 11 29 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.9+ | 1.3+ |
| 2003 10 25 | 704 | 0.0 | 0.9+ | 2003 11 30 | 704 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.0 | 0.3+ |
| 2003 10 29 | 691 | 0.3− | 0.1+ | 2003 11 30 | 704 | (0.9+ | 1.9−) | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2003 10 29 | 704 | 0.1− | 0.1− | 2003 11 30 | 704 | 0.8+ | 0.3+ | 2006 09 25 | G96 | 0.5− | 0.4− |
| 2003 10 29 | 704 | 0.4− | 0.1+ | 2003 11 30 | 704 | 1.4+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2003 10 29 | 691 | 0.3− | 0.1+ | 2003 11 30 | 704 | 0.6+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2003 10 29 | 704 | 0.0 | 0.6+ | 2005 03 14 | G96 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 704 | 0.4+ | 0.4− | 2005 03 14 | G96 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2003 10 29 | 691 | 0.4− | 0.0 | 2005 03 14 | G96 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2003 10 29 | 704 | 1.0− | 0.6+ | 2005 03 14 | G96 | 0.4− | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.9− |
| 2003 10 29 | 699 | 0.5− | 0.2+ | 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2003 10 29 | 699 | 0.3+ | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.5+ | | | | |

**(143677)∗ 2003 SW$_{220}$ = 1995 GZ$_1$**

Discovered 2003 Sept. 29 by W. K. Y. Yeung at Desert Eagle Observatory. Id. G. V. Williams (*MPO* 53476)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.62519 | | (2000.0) | | | |
| $n$ | 0.30330769 | $\omega$ | 10.24816 | | +0.48033194 | −0.87353257 |
| $a$ | 2.1938846 | $\Omega$ | 51.09133 | | +0.79736744 | +0.39744165 |
| $e$ | 0.0908476 | $i$ | 5.81801 | | +0.36535790 | +0.28103556 |
| $P$ | 3.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 02 | 691 | 0.1− | 0.2− | 2003 11 18 | 703 | 1.4− | 0.9+ | 2006 08 28 | 699 | 1.0+ | 0.4+ |
| 1995 04 02 | 691 | 0.1+ | 0.1+ | 2003 11 19 | 699 | 0.4− | 0.2− | 2006 08 28 | 699 | (2.6+ | 1.3+) |
| 1995 04 02 | 691 | 0.1+ | 0.1+ | 2003 11 19 | 699 | 0.3− | 0.3− | 2006 09 12 | 703 | 0.7− | 0.1− |
| 1995 04 07 | 691 | 0.1− | 0.2+ | 2003 11 19 | 699 | 0.3− | 0.1− | 2006 09 12 | 703 | 1.0+ | 1.4− |
| 1995 04 07 | 691 | 0.2− | 0.5− | 2003 11 19 | 699 | 0.4− | 0.1− | 2006 09 12 | 703 | 0.8− | 1.4− |
| 1995 04 07 | 691 | 0.0 | 0.3− | 2003 11 21 | 704 | 0.5− | 0.1− | 2006 09 12 | 703 | 0.9+ | 0.5− |
| 2001 01 05 | 704 | 0.1− | 0.5+ | 2003 11 21 | 704 | 0.3− | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.0 |
| 2001 01 05 | 704 | 0.7− | 0.6+ | 2003 11 21 | 704 | 0.3− | 0.6+ | 2006 09 18 | 699 | 0.3+ | 0.2+ |
| 2001 01 05 | 704 | 1.3− | 0.0 | 2003 11 21 | 704 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.7+ |
| 2001 01 05 | 704 | 0.4− | 0.9− | 2003 11 21 | 704 | 0.6− | 0.1− | 2006 09 18 | 699 | 0.0 | 1.2+ |
| 2001 01 05 | 704 | 0.2− | 0.9− | 2003 11 24 | 703 | 0.5+ | 1.4− | 2006 09 19 | 704 | 0.3+ | 0.1+ |
| 2003 09 29 | 333 | 0.4− | 0.0 | 2003 11 24 | 703 | 0.3− | 0.2− | 2006 09 19 | 704 | 0.9+ | 0.1− |
| 2003 09 29 | 333 | 0.0 | 0.3− | 2003 11 24 | 703 | 0.9− | 0.8− | 2006 09 19 | 704 | 0.1− | 1.1− |
| 2003 09 29 | 333 | 0.2− | 0.2+ | 2003 11 24 | 703 | 0.9− | 0.3− | 2006 09 19 | 704 | 0.4− | 0.4− |
| 2003 09 30 | 333 | 0.6+ | 0.5− | 2003 12 01 | 704 | 0.2+ | 0.0 | 2006 09 19 | 704 | 0.6+ | 0.4+ |
| 2003 09 30 | 333 | 0.0 | 0.3+ | 2003 12 01 | 704 | 0.7+ | 0.5− | 2006 09 22 | 704 | 0.8− | 0.2+ |
| 2003 09 30 | 333 | 0.1− | 0.1− | 2003 12 01 | 704 | 0.4+ | 0.0 | 2006 09 22 | 704 | 0.1− | 0.2+ |
| 2003 10 18 | 699 | 0.2− | 0.7+ | 2003 12 10 | 644 | 0.1+ | 0.2− | 2006 09 22 | 704 | 0.1+ | 0.6+ |
| 2003 10 18 | 699 | 0.7+ | 0.1+ | 2003 12 10 | 644 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.0 | 0.3− |
| 2003 10 18 | 699 | 0.2− | 0.3+ | 2003 12 10 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.2+ |
| 2003 10 18 | 699 | 0.2+ | 0.2− | 2003 12 18 | 703 | 1.1+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 1.0+ |
| 2003 10 20 | 691 | 0.8+ | 0.2+ | 2003 12 18 | 703 | 0.5− | 0.7+ | 2006 09 26 | 704 | 0.2+ | 0.2+ |
| 2003 10 20 | 691 | 0.1+ | 0.0 | 2003 12 18 | 703 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.3− | 0.4+ |
| 2003 10 20 | 691 | 0.1− | 0.1− | 2003 12 18 | 703 | (0.9− | 1.9−) | 2006 09 26 | 704 | 0.9+ | 1.0+ |
| 2003 10 23 | 608 | 0.9+ | 0.7+ | 2003 12 19 | 704 | 0.2+ | 0.8+ | 2006 09 26 | 704 | 0.2− | 0.8+ |
| 2003 10 23 | 608 | 0.9+ | 0.1+ | 2003 12 19 | 704 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2003 10 23 | 608 | 0.4+ | 0.7+ | 2003 12 19 | 704 | 0.8+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2003 10 28 | 704 | 0.0 | 0.1− | 2003 12 19 | 704 | 1.5+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 2003 10 28 | 704 | 0.5− | 0.0 | 2003 12 22 | 704 | 0.1− | 0.9+ | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 2003 10 28 | 704 | 0.2− | 0.1+ | 2003 12 22 | 704 | 0.3+ | 1.4+ | 2006 09 30 | 703 | 0.1+ | 0.5+ |
| 2003 10 28 | 608 | 0.4− | 0.2+ | 2003 12 22 | 704 | (0.2+ | 2.2+) | 2006 09 30 | 703 | 0.6+ | 0.3+ |
| 2003 10 28 | 608 | 0.6− | 0.2+ | 2003 12 22 | 704 | (0.3+ | 1.9+) | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 2003 10 28 | 608 | 0.3+ | 0.3− | 2003 12 22 | 704 | 0.7− | 1.4+ | 2006 09 30 | 703 | 1.1− | 0.8− |
| 2003 10 29 | 699 | 0.3+ | 0.3− | 2004 01 11 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 1.3− | 1.2− |
| 2003 10 29 | 699 | 0.4− | 0.1− | 2004 01 11 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.9− |
| 2003 10 29 | 699 | 0.3+ | 0.1+ | 2004 01 11 | 644 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.4+ | 0.3+ |
| 2003 10 29 | 699 | 0.1− | 0.3+ | 2005 04 16 | 691 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2003 11 02 | 704 | 0.2− | 0.1+ | 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2003 11 02 | 704 | 0.6− | 0.0 | 2005 04 16 | 691 | 0.7+ | 1.3− | 2006 10 16 | 703 | (0.6+ | 1.8+) |
| 2003 11 02 | 704 | 0.3+ | 0.0 | 2005 04 30 | 691 | 0.1+ | 1.1+ | 2006 10 16 | 703 | 0.9− | 0.6− |
| 2003 11 15 | 691 | 0.1− | 0.1+ | 2005 04 30 | 691 | 0.2+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2003 11 15 | 691 | 0.2+ | 0.2+ | 2005 04 30 | 691 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.5+ | 0.6− |
| 2003 11 15 | 691 | 0.2+ | 0.0 | 2005 05 01 | 644 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.9− | 0.7+ |
| 2003 11 16 | 703 | 0.2− | 0.6+ | 2005 05 01 | 644 | 0.5− | 0.7+ | 2006 10 16 | 703 | 1.2− | 0.9− |
| 2003 11 16 | 703 | 0.4− | 0.6+ | 2005 05 01 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.5+ |
| 2003 11 16 | 703 | 0.6− | 0.2− | 2005 05 14 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2003 11 16 | 703 | 0.4− | 0.7+ | 2005 05 14 | 644 | 0.1+ | 0.6+ | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2003 11 18 | 703 | 0.4− | 0.2+ | 2005 05 14 | 644 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2003 11 18 | 703 | 1.1+ | 0.8+ | 2006 08 28 | 699 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.7+ | 0.4− |
| 2003 11 18 | 703 | 1.5− | 0.9− | 2006 08 28 | 699 | 0.6− | 0.9+ | 2006 11 23 | G96 | 0.1− | 0.4− |

**(143678)∗ 2003 SA$_{224}$**

Discovered 2003 Sept. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 106.18113 | | (2000.0) | | | |
| $n$ | 0.46531412 | $\omega$ | 141.79950 | | −0.81523074 | −0.57900943 |
| $a$ | 1.6493211 | $\Omega$ | 2.90090 | | +0.45475804 | −0.65296720 |
| $e$ | 0.3287504 | $i$ | 13.85763 | | +0.35860001 | −0.48824371 |
| $P$ | 2.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 10 09 | 260 | 0.3+ | 1.3+ | 2005 12 12 | H45 | 0.1− | 0.1+ | 2006 03 04 | 379 | 0.3+ | 0.0 |
| 1979 10 09 | 260 | 0.0 | 0.1− | 2005 12 13 | 084 | 0.7+ | 0.0 | 2006 03 04 | 379 | 0.4+ | 0.0 |
| 1990 09 20 | 261 | 1.4− | 1.4+ | 2005 12 13 | 084 | 0.0 | 0.3− | 2006 03 04 | 379 | 0.2+ | 0.3+ |
| 1990 09 20 | 261 | (2.3− | 0.7−) | 2005 12 13 | 084 | 0.3+ | 0.3− | 2006 03 04 | 379 | 0.2+ | 0.0 |
| 1990 10 24 | 261 | (2.3− | 0.4+) | 2005 12 14 | 084 | 0.6− | 0.1+ | 2006 03 04 | 379 | 0.4+ | 0.0 |
| 1990 10 24 | 261 | 0.2+ | 0.2− | 2005 12 15 | H45 | 0.2+ | 0.2+ | 2006 03 04 | 379 | 0.3+ | 0.3+ |
| 1996 09 10 | 566 | 0.7+ | 0.0 | 2005 12 15 | H45 | 0.8+ | 0.3+ | 2006 03 05 | 071 | 0.0 | 0.5+ |
| 2003 09 30 | 704 | 1.0+ | 0.6+ | 2005 12 15 | H45 | 0.9+ | 0.3+ | 2006 03 05 | 071 | 0.3− | 1.2+ |
| 2003 09 30 | 704 | 0.3− | 0.0 | 2005 12 15 | H45 | 0.5+ | 0.3+ | 2006 03 05 | 703 | 0.1− | 0.4− |
| 2003 09 30 | 704 | 0.7− | 1.1+ | 2005 12 15 | H45 | 0.6+ | 0.1+ | 2006 03 05 | 703 | 0.1− | 0.3− |
| 2003 10 01 | G90 | 0.1+ | 0.2− | 2005 12 15 | H45 | 0.7+ | 0.5+ | 2006 03 05 | 703 | 0.3− | 0.1− |
| 2003 10 01 | G90 | 0.2+ | 0.6+ | 2005 12 21 | 704 | 0.5+ | 0.3+ | 2006 03 05 | 703 | 0.2− | 0.4− |
| 2003 10 01 | G90 | 0.4− | 0.3+ | 2005 12 21 | 704 | 0.0 | 0.5+ | 2006 03 06 | 608 | 0.2− | 1.2− |
| 2003 10 01 | 673 | 0.3− | 0.5+ | 2005 12 21 | 704 | 0.5+ | 0.4+ | 2006 03 06 | 608 | 0.4− | 1.4− |
| 2003 10 01 | 673 | 0.2+ | 0.7+ | 2005 12 21 | 704 | 0.4+ | 0.5+ | 2006 03 06 | 608 | 0.2− | 1.4− |
| 2003 10 01 | 673 | 0.3− | 0.3+ | 2005 12 21 | 704 | 0.5+ | 0.3+ | 2006 03 11 | 084 | 0.3− | 0.0 |
| 2003 10 01 | 673 | 0.3− | 0.3+ | 2005 12 23 | 084 | 0.4− | 0.2+ | 2006 03 11 | 084 | 0.6− | 0.0 |
| 2003 10 01 | 673 | 0.3+ | 0.6+ | 2005 12 23 | 084 | 0.3− | 0.0 | 2006 03 12 | 084 | 0.2− | 0.2− |
| 2003 10 01 | 673 | 0.0 | 0.8+ | 2005 12 26 | H45 | 0.2− | 0.1+ | 2006 03 12 | 084 | 0.3− | 0.1− |
| 2003 10 02 | G90 | 0.9− | 0.3− | 2005 12 26 | H45 | 0.5+ | 0.3+ | 2006 03 12 | 808 | 0.1+ | 1.0− |
| 2003 10 02 | G90 | 1.1− | 0.1+ | 2005 12 26 | H45 | 0.1− | 0.3+ | 2006 03 12 | 808 | 0.0 | 0.9− |
| 2003 10 02 | 854 | 0.2− | 0.8+ | 2005 12 26 | 084 | 0.4− | 0.2+ | 2006 03 12 | 808 | (0.5+ | 1.6−) |
| 2003 10 02 | G90 | 0.5+ | 0.1+ | 2005 12 26 | 084 | 0.4− | 0.4+ | 2006 03 12 | 084 | 0.1+ | 0.3− |
| 2003 10 02 | 854 | 0.0 | 0.6+ | 2005 12 27 | 084 | 0.0 | 0.2− | 2006 03 12 | 084 | 0.3− | 0.6− |
| 2003 10 02 | 333 | 0.3+ | 0.3+ | 2005 12 27 | 084 | 0.6− | 0.0 | 2006 03 13 | 084 | 0.1− | 0.1+ |
| 2003 10 02 | 333 | 0.2− | 0.1+ | 2005 12 28 | 084 | 0.3+ | 0.2− | 2006 03 13 | 084 | 0.3− | 0.1− |
| 2003 10 02 | 333 | 0.5+ | 0.5+ | 2005 12 28 | 084 | 0.1− | 0.2+ | 2006 03 14 | 084 | 0.3− | 0.1− |
| 2003 10 03 | 118 | 0.2− | 0.2+ | 2005 12 29 | H45 | 0.5− | 0.1+ | 2006 03 14 | 084 | 0.1− | 0.3+ |
| 2003 10 03 | 118 | 0.1− | 0.2+ | 2005 12 29 | H45 | 0.0 | 0.1− | 2006 03 16 | 084 | 0.2+ | 0.1− |
| 2003 10 03 | G90 | 0.2− | 0.2+ | 2005 12 29 | H45 | 0.0 | 0.3− | 2006 03 16 | 084 | 0.0 | 0.3− |
| 2003 10 03 | G90 | 0.5− | 0.3+ | 2005 12 29 | H45 | 0.5− | 0.3+ | 2006 03 18 | 084 | 0.3− | 0.4− |
| 2003 10 03 | G90 | 0.1− | 0.3+ | 2005 12 29 | H45 | 0.4+ | 0.1− | 2006 03 18 | 084 | 0.4− | 0.2− |
| 2003 10 05 | J95 | 0.7+ | 0.5+ | 2006 01 02 | H45 | 0.2+ | 0.2+ | 2006 03 20 | 834 | 0.6+ | 0.1+ |
| 2003 10 05 | J95 | 0.4+ | 0.0 | 2006 01 02 | H45 | 0.2− | 0.3+ | 2006 03 20 | 834 | 0.3+ | 0.1+ |
| 2003 10 05 | J95 | 0.1− | 0.2+ | 2006 01 02 | H45 | 0.1− | 0.3+ | 2006 03 20 | 834 | 0.5+ | 0.0 |
| 2003 10 05 | 704 | 0.1+ | 0.2− | 2006 01 02 | H45 | 0.0 | 0.3+ | 2006 03 21 | 379 | 0.3+ | 0.0 |
| 2003 10 05 | 704 | 0.8+ | 0.1+ | 2006 01 02 | H45 | 0.2− | 0.1+ | 2006 03 21 | 379 | 0.1+ | 0.1+ |
| 2003 10 05 | 704 | 0.7+ | 0.5+ | 2006 01 03 | H45 | 0.4+ | 0.0 | 2006 03 21 | 379 | 0.2+ | 0.1+ |
| 2003 10 07 | 649 | 0.7+ | 1.1− | 2006 01 03 | H45 | 0.4− | 0.0 | 2006 03 21 | 379 | 0.2+ | 0.6− |
| 2003 10 07 | 649 | 0.5− | 0.9+ | 2006 01 03 | H45 | 0.3− | 0.3− | 2006 03 21 | 379 | 0.0 | 0.1+ |
| 2003 10 07 | 649 | 0.5− | 0.1+ | 2006 01 03 | H45 | 0.1− | 0.1− | 2006 03 23 | 379 | 0.5− | 0.3+ |
| 2003 10 12 | 649 | 0.4− | 0.0 | 2006 01 03 | H45 | 0.4− | 0.2− | 2006 03 23 | 379 | 0.2− | 0.3− |
| 2003 10 12 | 649 | 0.3− | 0.1+ | 2006 01 06 | H45 | 0.3− | 0.1+ | 2006 03 23 | 379 | 0.0 | 0.1+ |
| 2003 10 12 | 649 | 0.1− | 0.0 | 2006 01 06 | H45 | 0.3− | 0.1− | 2006 03 23 | 379 | 0.2− | 0.3+ |
| 2003 10 12 | 649 | 0.5+ | 0.6+ | 2006 01 06 | H45 | 0.4− | 0.1+ | 2006 03 23 | 379 | 0.2− | 0.2+ |
| 2003 10 25 | 568 | 0.1+ | 0.1+ | 2006 01 06 | H45 | 0.3− | 0.1− | 2006 03 23 | 379 | 0.1+ | 0.5+ |
| 2003 10 25 | 568 | 0.0 | 0.1+ | 2006 01 06 | H45 | 0.1− | 0.2− | 2006 03 23 | 379 | 0.0 | 0.4+ |
| 2003 10 27 | J95 | 0.5− | 0.5+ | 2006 01 09 | H45 | 0.5− | 0.0 | 2006 03 24 | 703 | 0.2− | 0.1− |
| 2003 10 27 | J95 | 1.2− | 0.0 | 2006 01 09 | H45 | 0.5− | 0.0 | 2006 03 24 | 703 | 0.1− | 0.2− |
| 2003 10 30 | 649 | 0.0 | 0.2− | 2006 01 09 | H45 | 0.4− | 0.3+ | 2006 03 24 | 703 | 0.1+ | 0.1− |
| 2003 10 30 | 649 | 0.1− | 0.3− | 2006 01 09 | H45 | 0.3− | 0.2− | 2006 03 24 | 703 | 0.1+ | 0.1− |
| 2003 10 30 | 649 | 0.3+ | 0.2− | 2006 01 09 | H45 | 0.2− | 0.0 | 2006 03 24 | 379 | 0.1+ | 0.2− |
| 2003 12 01 | 704 | 1.2+ | 0.3+ | 2006 01 12 | 084 | 0.7− | 0.1− | 2006 03 24 | 379 | 0.2+ | 0.1− |
| 2003 12 01 | 704 | 0.7+ | 0.5+ | 2006 01 12 | 084 | 0.0 | 0.2− | 2006 03 24 | 379 | 0.0 | 0.1+ |
| 2003 12 01 | 704 | 0.5+ | 0.1+ | 2006 01 13 | 084 | 0.2− | 0.1− | 2006 03 24 | 379 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 704 | 0.9+ | 0.6+ | 2006 01 13 | 084 | 0.0 | 0.3− | 2006 03 24 | 379 | 0.0 | 0.3+ | 2005 11 27 | 379 | 0.2− | 0.1+ | 2006 02 05 | 557 | 0.2− | 0.0 | 2006 04 20 | E12 | 0.0 | 0.2− |
| 2003 12 01 | 704 | 0.7+ | 0.3+ | 2006 01 13 | A13 | 0.5+ | 0.8− | 2006 03 24 | 379 | 0.2+ | 0.3+ | 2005 11 27 | 379 | 0.5+ | 0.1+ | 2006 02 05 | 557 | 0.2− | 0.1− | 2006 04 20 | E12 | 0.1− | 0.0 |
| 2003 12 23 | 704 | (1.6+ | 0.5+) | 2006 01 13 | A13 | 0.5+ | 0.8− | 2006 03 24 | 379 | 0.1− | 0.3+ | 2005 11 27 | 379 | 0.1+ | 0.3− | 2006 02 05 | 557 | 0.2− | 0.1− | 2006 04 20 | 379 | 0.3+ | 0.2+ |
| 2003 12 23 | 704 | 1.3+ | 0.3+ | 2006 01 14 | A13 | 0.7+ | 1.0− | 2006 03 24 | 379 | 0.2+ | 0.3+ | 2005 11 27 | 379 | 0.2+ | 0.0 | 2006 02 05 | 557 | 0.2− | 0.1− | 2006 04 20 | 379 | 0.1+ | 0.3+ |
| 2003 12 23 | 704 | (1.6+ | 0.4+) | 2006 01 14 | A13 | 0.6+ | 0.8− | 2006 03 24 | 379 | 0.3− | 0.1+ | 2005 11 29 | A50 | 0.1− | 0.0 | 2006 02 07 | 084 | 0.4− | 0.0 | 2006 04 20 | 379 | 0.4+ | 0.5+ |
| 2003 12 23 | 704 | 1.3+ | 0.3+ | 2006 01 14 | A13 | 0.5+ | 0.8− | 2006 03 25 | H45 | 0.2− | 0.4+ | 2005 11 29 | A50 | 0.1− | 0.0 | 2006 02 07 | 084 | 0.3− | 0.3− | 2006 04 20 | 379 | 0.0 | 0.3+ |
| 2003 12 23 | 704 | 0.4+ | 0.2− | 2006 01 14 | H45 | 0.1− | 0.2+ | 2006 03 25 | H45 | 0.0 | 0.1− | 2005 11 29 | A50 | 0.0 | 0.1+ | 2006 02 07 | H45 | 0.0 | 0.1− | 2006 04 20 | 379 | 0.1− | 0.4+ |
| 2004 01 11 | 670 | 0.1− | 0.0 | 2006 01 14 | H45 | 0.2− | 0.2+ | 2006 03 25 | H45 | 0.1− | 0.0 | 2005 11 29 | A50 | 0.2+ | 0.0 | 2006 02 07 | H45 | 0.3− | 0.2− | 2006 04 20 | 379 | 0.7+ | 0.2+ |
| 2004 01 11 | 670 | (1.6+ | 1.0−) | 2006 01 14 | H45 | 0.6− | 0.2+ | 2006 03 25 | H45 | 0.1− | 0.3+ | 2005 11 29 | A50 | 0.2+ | 0.1− | 2006 02 07 | H45 | 0.4− | 0.1+ | 2006 04 20 | 379 | 0.6+ | 0.3+ |
| 2004 01 22 | 704 | 0.5+ | 0.3− | 2006 01 14 | H45 | 0.1− | 0.1− | 2006 03 25 | H45 | 0.1− | 0.0 | 2005 12 02 | H45 | 0.3+ | 0.6+ | 2006 02 07 | H45 | 0.1− | 0.2+ | 2006 04 20 | 379 | 0.0 | 0.5+ |
| 2004 01 22 | 704 | 0.6+ | 0.1− | 2006 01 14 | H45 | 0.1− | 0.1− | 2006 03 25 | 644 | 0.1+ | 0.2− | 2005 12 02 | H45 | 0.3+ | 0.2− | 2006 02 07 | H45 | 0.3− | 0.2+ | 2006 04 20 | 379 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.9+ | 0.2− | 2006 01 18 | 084 | 0.8− | 0.5− | 2006 03 25 | 644 | 0.0 | 0.2− | 2005 12 02 | H45 | 0.6+ | 0.0 | 2006 02 17 | 084 | 0.5− | 0.4+ | 2006 05 01 | 428 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.1− | 0.2− | 2006 01 18 | 084 | 0.7− | 0.1− | 2006 03 25 | 644 | 0.0 | 0.2− | 2005 12 02 | H45 | 0.1+ | 0.0 | 2006 02 17 | 084 | 0.6− | 0.4− | 2006 05 02 | 428 | 0.2+ | 0.0 |
| 2004 04 25 | 859 | 0.9+ | 0.4− | 2006 01 18 | H45 | 0.2− | 0.3+ | 2006 03 25 | 379 | 0.1+ | 0.0 | 2005 12 02 | H45 | 0.3+ | 0.3+ | 2006 02 19 | I77 | 0.4− | 0.3− | 2006 05 04 | E12 | 0.3+ | 0.2+ |
| 2004 04 25 | 859 | 1.0+ | 0.3+ | 2006 01 18 | H45 | 0.4− | 0.1− | 2006 03 25 | 379 | 0.3− | 0.2− | 2005 12 03 | 071 | 0.7+ | 0.1+ | 2006 02 19 | I77 | 0.3− | 0.4− | 2006 05 04 | E12 | 0.5+ | 0.2+ |
| 2004 04 25 | 859 | 0.8+ | 0.0 | 2006 01 18 | H45 | 0.2+ | 0.1+ | 2006 03 25 | 379 | 0.8− | 0.9− | 2005 12 03 | 071 | 0.1+ | 0.1+ | 2006 02 19 | I77 | 0.2− | 0.2− | 2006 05 04 | E12 | 0.3+ | 0.3+ |
| 2004 05 01 | E17 | 0.2+ | 0.0 | 2006 01 18 | H45 | 0.1− | 0.3+ | 2006 03 25 | 157 | 0.1− | 0.0 | 2005 12 03 | 071 | 0.1+ | 0.1+ | 2006 02 19 | I77 | 0.3− | 0.3− | 2006 05 04 | E12 | 0.5+ | 0.1+ |
| 2004 05 01 | E17 | 0.2+ | 0.2− | 2006 01 18 | H45 | 0.5− | 0.0 | 2006 03 25 | 157 | 0.2− | 0.2− | 2005 12 03 | 071 | 0.0 | 0.1− | 2006 02 20 | 932 | 0.1+ | 0.1− | 2006 05 19 | 808 | 0.3+ | 0.2+ |
| 2004 05 01 | E17 | (1.6+ | 1.1−) | 2006 01 20 | 084 | 0.1− | 0.2− | 2006 03 25 | 157 | 0.0 | 0.2− | 2005 12 04 | 084 | 0.7− | 0.3+ | 2006 02 20 | 932 | 0.2+ | 0.1+ | 2006 05 19 | 808 | 0.4+ | 0.2+ |
| 2004 05 02 | 859 | (2.3+ | 0.4−) | 2006 01 20 | 084 | 0.1− | 0.5− | 2006 03 25 | 157 | 0.4+ | 0.0 | 2005 12 04 | 084 | 0.3− | 0.2+ | 2006 02 20 | 932 | 0.1+ | 0.1− | 2006 05 20 | 808 | 0.4+ | 0.1+ |
| 2004 05 02 | 859 | 0.6− | 0.7+ | 2006 01 20 | 084 | 0.3− | 0.3− | 2006 03 26 | 834 | 0.1− | 0.3− | 2005 12 06 | H45 | 0.0 | 0.2− | 2006 02 21 | 379 | 0.4+ | 0.4+ | 2006 05 20 | 808 | 0.3+ | 0.2+ |
| 2004 05 14 | E17 | 0.0 | 0.1+ | 2006 01 22 | 704 | 0.4+ | 0.3+ | 2006 03 26 | 834 | 0.1− | 0.5− | 2005 12 06 | H45 | 0.4+ | 0.3− | 2006 02 21 | 379 | 0.1+ | 0.2+ | 2006 05 22 | 808 | 0.0 | 0.1+ |
| 2004 05 14 | E17 | 0.2− | 0.0 | 2006 01 22 | 704 | 0.2+ | 0.2+ | 2006 03 26 | H45 | 0.1+ | 0.3+ | 2005 12 06 | H45 | 0.5+ | 0.4+ | 2006 02 21 | 379 | 0.3− | 0.4+ | 2006 05 22 | 808 | 0.4+ | 0.2+ |
| 2004 05 14 | E17 | 0.1− | 0.1+ | 2006 01 22 | 704 | 0.0 | 0.4+ | 2006 03 26 | H45 | 0.2− | 0.1+ | 2005 12 06 | H45 | 0.7+ | 0.8− | 2006 02 22 | 704 | 0.9+ | 0.1+ | 2006 05 22 | 808 | 0.5+ | 0.2+ |
| 2004 06 12 | 859 | 0.0 | 0.0 | 2006 01 22 | 704 | 0.3− | 0.9+ | 2006 03 26 | H45 | 0.1− | 0.2+ | 2005 12 06 | H45 | 0.5+ | 0.4− | 2006 02 22 | 704 | 0.0 | 0.1+ | 2006 05 24 | E12 | 0.1+ | 0.1+ |
| 2004 06 12 | 859 | (0.4+ | 1.6+) | 2006 01 22 | 704 | 0.2+ | 0.4+ | 2006 03 26 | H45 | 0.2− | 0.2+ | 2005 12 10 | 703 | 0.2− | 0.3+ | 2006 02 22 | 704 | 0.4+ | 0.0 | 2006 05 24 | E12 | 0.1− | 0.3+ |
| 2004 06 12 | 859 | 0.4+ | 1.0+ | 2006 01 22 | 670 | 0.0 | 0.2− | 2006 03 26 | H45 | 0.3− | 0.2+ | 2005 12 10 | 703 | 0.3+ | 0.2+ | 2006 02 22 | 704 | 0.1+ | 0.6+ | 2006 05 24 | E12 | 0.2+ | 0.2+ |
| 2004 06 12 | E17 | 0.3+ | 1.1− | 2006 01 22 | 670 | 0.0 | 0.2− | 2006 03 27 | E12 | 0.1+ | 0.1− | 2005 12 10 | 703 | 0.1− | 0.2+ | 2006 02 22 | 704 | 0.0 | 0.8+ | 2006 05 24 | E12 | 1.3+ | 0.1+ |
| 2004 06 12 | E17 | 0.7+ | 0.1− | 2006 01 24 | H45 | 0.4− | 0.1+ | 2006 03 27 | E12 | 0.1− | 0.2− | 2005 12 10 | 703 | 0.3− | 0.3+ | 2006 02 22 | 704 | 0.0 | 0.5+ | 2006 06 13 | E12 | 0.6+ | 0.4+ |
| 2004 06 12 | E17 | (2.6− | 1.1+) | 2006 01 24 | H45 | 0.2− | 0.0 | 2006 03 27 | E12 | 0.1− | 0.2− | 2005 12 11 | H45 | 0.5+ | 0.7− | 2006 03 02 | 379 | 0.4− | 0.2+ | 2006 06 13 | E12 | 0.7+ | 0.8+ |
| 2004 06 20 | 859 | 0.4− | 1.0− | 2006 01 24 | H45 | 0.1− | 0.0 | 2006 03 27 | E12 | 0.5− | 0.1− | 2005 12 11 | H45 | 0.5+ | 0.4+ | 2006 03 02 | 379 | 0.2− | 0.1+ | 2006 06 13 | E12 | 0.8+ | 0.0 |
| 2004 06 20 | 859 | 1.3− | 0.9− | 2006 01 24 | H45 | 0.3− | 0.1+ | 2006 03 28 | 071 | 0.6+ | 0.6− | 2005 12 11 | H45 | 0.4+ | 0.4+ | 2006 03 02 | 379 | 0.1+ | 0.6+ | 2006 06 13 | E12 | 1.3+ | 0.1+ |
| 2004 07 26 | 859 | 0.6− | 0.0 | 2006 01 24 | H45 | 0.0 | 0.2+ | 2006 03 28 | 071 | (1.7+ | 0.1−) | 2005 12 11 | H45 | 0.1− | 0.1+ | 2006 03 02 | 379 | 0.1− | 0.1− | 2006 06 16 | 808 | 1.3+ | 0.2+ |
| 2005 08 31 | 704 | 0.4+ | 1.4+ | 2006 01 29 | H45 | 0.3− | 0.1+ | 2006 03 28 | 071 | (4.4+ | 11.5+) | 2005 12 11 | H45 | 0.2+ | 0.4+ | 2006 03 02 | 379 | 0.2+ | 0.2− | 2006 06 16 | 808 | 0.4+ | 0.9+ |
| 2005 08 31 | 704 | 0.1+ | 1.0+ | 2006 01 29 | H45 | 0.5− | 0.0 | 2006 03 30 | 379 | 0.3− | 0.8+ | 2005 12 11 | H45 | 0.8+ | 0.0 | 2006 03 03 | 379 | 0.0 | 0.3+ | 2006 06 17 | 808 | 1.4+ | 1.1+ |
| 2005 08 31 | 704 | (0.7− | 1.5+) | 2006 01 29 | H45 | 0.3− | 0.2− | 2006 03 30 | 379 | 0.6+ | 0.0 | 2005 12 12 | H45 | 0.2+ | 0.2+ | 2006 03 03 | 379 | 0.2− | 0.2+ | 2006 07 30 | E12 | 0.4− | 0.3+ |
| 2005 08 31 | 704 | 0.6− | 0.6+ | 2006 01 29 | H45 | 0.5− | 0.0 | 2006 03 30 | 379 | 0.3− | 0.3− | 2005 12 12 | H45 | 0.1− | 0.2+ | 2006 03 03 | 379 | 0.3+ | 0.2+ | 2006 07 30 | E12 | 0.1+ | 0.6+ |
| 2005 08 31 | 704 | 0.6− | 1.5+ | 2006 01 29 | H45 | 0.1− | 0.1+ | 2006 03 31 | 428 | 0.6− | 0.3− | 2005 12 12 | H45 | 0.6+ | 0.2+ | 2006 03 03 | 379 | 0.1− | 0.5+ | 2006 07 30 | E12 | 0.6− | 0.3+ |
| 2005 11 02 | 703 | 0.5− | 0.3+ | 2006 01 31 | H45 | 1.5− | 0.3− | 2006 04 01 | 428 | 0.2− | 0.1− | 2005 12 12 | H45 | 0.2+ | 0.3+ | 2006 03 03 | 379 | 0.3− | 0.6+ | 2006 07 30 | E12 | 1.1+ | 0.3+ |
| 2005 11 02 | 703 | 0.6− | 0.3+ | 2006 01 31 | H45 | 0.4− | 0.1− | 2006 04 01 | 428 | 0.0 | 0.0 | | | | | | | | | | | | |
| 2005 11 02 | 703 | 0.8+ | 0.6+ | 2006 01 31 | H45 | 0.3− | 0.0 | 2006 04 02 | 428 | 0.0 | 0.1+ | | | | | | | | | | | | |
| 2005 11 02 | 703 | (0.0 | 2.3+) | 2006 01 31 | H45 | 0.3− | 0.0 | 2006 04 06 | 808 | 0.8+ | 0.5+ | | | | | | | | | | | | |
| 2005 11 05 | 699 | 0.4+ | 0.3+ | 2006 01 31 | H45 | 0.1− | 0.3− | 2006 04 06 | 808 | 0.8+ | 0.4+ | | | | | | | | | | | | |
| 2005 11 05 | 699 | 0.2+ | 0.0 | 2006 02 02 | 557 | 0.2− | 0.2− | 2006 04 06 | 808 | (1.8+ | 0.9+) | | | | | | | | | | | | |
| 2005 11 05 | 699 | 0.2+ | 0.6+ | 2006 02 02 | 557 | 0.1− | 0.2− | 2006 04 07 | 808 | 0.1+ | 0.6+ | | | | | | | | | | | | |
| 2005 11 12 | 704 | 0.0 | 0.2+ | 2006 02 02 | 557 | 0.2− | 0.2− | 2006 04 07 | 808 | 0.6+ | 0.8+ | | | | | | | | | | | | |
| 2005 11 12 | 704 | 0.1+ | 0.2+ | 2006 02 02 | 557 | 0.3− | 0.1− | 2006 04 07 | 808 | 0.9+ | 0.4+ | | | | | | | | | | | | |
| 2005 11 12 | 704 | 0.1− | 0.0 | 2006 02 02 | 557 | 0.3− | 0.2− | 2006 04 07 | 808 | 0.5+ | 0.3− | | | | | | | | | | | | |
| 2005 11 12 | 704 | 0.1+ | 0.1+ | 2006 02 02 | 557 | 0.1− | 0.4− | 2006 04 07 | E12 | 0.2+ | 0.2+ | | | | | | | | | | | | |
| 2005 11 22 | 704 | 0.4+ | 0.3+ | 2006 02 02 | 557 | 0.0 | 0.3− | 2006 04 07 | E12 | 0.8+ | 0.4+ | | | | | | | | | | | | |
| 2005 11 22 | 704 | 0.4+ | 0.3− | 2006 02 02 | H07 | 0.1+ | 1.1+ | 2006 04 07 | E12 | 0.1− | 0.5+ | | | | | | | | | | | | |
| 2005 11 22 | 704 | 0.6+ | 0.2+ | 2006 02 02 | H07 | 0.1− | 0.1− | 2006 04 08 | 423 | 0.0 | 0.1+ | | | | | | | | | | | | |
| 2005 11 22 | 704 | 0.3+ | 0.0 | 2006 02 02 | H07 | 0.1+ | 0.5+ | 2006 04 08 | 423 | 0.1+ | 0.2− | | | | | | | | | | | | |
| 2005 11 22 | 704 | 0.5+ | 0.0 | 2006 02 02 | H07 | (0.1+ | 2.0+) | 2006 04 08 | 423 | 0.0 | 0.4− | | | | | | | | | | | | |
| 2005 11 22 | 084 | 0.7− | 0.2+ | 2006 02 02 | H07 | 0.2− | 0.8+ | 2006 04 08 | 423 | 0.1+ | 0.2− | | | | | | | | | | | | |
| 2005 11 24 | 379 | 0.6− | 0.3+ | 2006 02 02 | H07 | 0.0 | 0.4+ | 2006 04 08 | 423 | 0.0 | 0.1− | | | | | | | | | | | | |
| 2005 11 24 | 379 | 0.3− | 0.3− | 2006 02 02 | H07 | 0.1+ | 0.6+ | 2006 04 08 | 423 | 0.0 | 0.0 | | | | | | | | | | | | |
| 2005 11 24 | 379 | 0.4− | 0.9+ | 2006 02 02 | H07 | (0.2+ | 1.9+) | 2006 04 08 | 423 | 0.1+ | 0.1− | | | | | | | | | | | | |
| 2005 11 24 | 379 | 0.5− | 0.2+ | 2006 02 04 | H45 | 0.5+ | 0.3+ | 2006 04 08 | 423 | 0.1− | 0.1− | | | | | | | | | | | | |
| 2005 11 24 | 379 | 0.4+ | 0.2− | 2006 02 04 | H45 | 0.3− | 0.1+ | 2006 04 08 | 423 | 0.3+ | 0.1+ | | | | | | | | | | | | |
| 2005 11 25 | 379 | 0.3+ | 0.1+ | 2006 02 04 | H45 | 0.6− | 0.1− | 2006 04 09 | 808 | 1.0+ | 0.7+ | | | | | | | | | | | | |
| 2005 11 25 | 379 | 0.3− | 0.8+ | 2006 02 04 | H45 | 0.5− | 0.0 | 2006 04 09 | 808 | 0.8+ | 0.6+ | | | | | | | | | | | | |
| 2005 11 25 | 379 | 0.2− | 0.2− | 2006 02 04 | H45 | 0.0 | 0.0 | 2006 04 09 | 808 | 0.8+ | 0.7+ | | | | | | | | | | | | |
| 2005 11 25 | 379 | 0.2+ | 0.1+ | 2006 02 05 | 557 | 0.3− | 0.1− | 2006 04 16 | I77 | 0.1+ | 0.1+ | | | | | | | | | | | | |
| 2005 11 26 | 379 | 0.5+ | 0.7+ | 2006 02 05 | 557 | 0.2− | 0.0 | 2006 04 16 | I77 | 0.0 | 0.1− | | | | | | | | | | | | |
| 2005 11 26 | 379 | 0.1+ | 0.1+ | 2006 02 05 | 557 | 0.2− | 0.1− | 2006 04 16 | I77 | 0.1+ | 0.1+ | | | | | | | | | | | | |
| 2005 11 26 | 379 | 0.1+ | 0.4+ | 2006 02 05 | 557 | 0.2− | 0.0 | 2006 04 20 | E12 | 0.3− | 0.0 | | | | | | | | | | | | |
| 2005 11 26 | 379 | 0.2+ | 0.9+ | 2006 02 05 | 557 | 0.1− | 0.1− | 2006 04 20 | E12 | 0.5+ | 0.1− | | | | | | | | | | | | |

**(143679)∗ 2003 SK$_{236}$**

Discovered 2003 Sept. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.88297 | (2000.0) | | | | |
| $n$ | 0.20327379 | $\omega$ | 181.20491 | | −0.82105078 | −0.57074612 |
| $a$ | 2.8647175 | $\Omega$ | 323.98544 | | +0.52390797 | −0.74562144 |
| $e$ | 0.0053955 | $i$ | 1.08729 | | +0.22670700 | −0.34394410 |
| $P$ | 4.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 691 | 0.1+ | 0.5+ | 2003 10 18 | 645 | 0.1+ | 0.1+ | 2006 03 26 | 699 | 0.4+ | 0.5+ | | | | | | | | |
| 2001 03 29 | 691 | 0.0 | 0.0 | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 26 | 699 | 1.7+ | 0.8− | | | | | | | | |
| 2001 03 29 | 691 | 0.2+ | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 26 | 699 | 0.2− | 0.2− | | | | | | | | |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2004 12 03 | 691 | 0.2+ | 0.0 | 2006 04 02 | G96 | 0.2− | 0.1+ | | | | | | | | |
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2004 12 03 | 691 | 0.2+ | 0.0 | 2006 04 02 | G96 | 0.0 | 0.1+ | | | | | | | | |
| 2003 09 26 | 704 | 0.5+ | 0.7− | 2004 12 03 | 691 | 0.1− | 0.1− | 2006 04 02 | G96 | 0.1− | 0.1+ | | | | | | | | |
| 2003 09 26 | 704 | 0.3− | 0.1+ | 2004 12 15 | 691 | 0.0 | 0.1+ | 2006 04 02 | G96 | 0.2+ | 0.1+ | | | | | | | | |
| 2003 09 26 | 704 | 0.2− | 0.6+ | 2004 12 15 | 691 | 0.1− | 0.1+ | 2006 04 07 | G96 | 0.3− | 0.3+ | | | | | | | | |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2004 12 15 | 691 | 0.1− | 0.1+ | 2006 04 07 | G96 | 0.1− | 0.1+ | | | | | | | | |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 02 25 | G96 | 0.1− | 0.3+ | 2006 04 07 | G96 | 0.5− | 0.2+ | | | | | | | | |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 02 25 | G96 | 0.1+ | 0.1+ | 2006 04 07 | G96 | 0.4− | 0.4+ | | | | | | | | |
| 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 02 25 | G96 | 0.2− | 0.1+ | 2006 04 25 | 691 | 0.1+ | 0.0 | | | | | | | | |
| 2003 09 29 | 691 | 0.1+ | 0.4+ | 2006 02 25 | G96 | 0.6− | 0.2+ | 2006 04 25 | 691 | 0.0 | 0.1+ | | | | | | | | |
| 2003 09 29 | 691 | 0.3+ | 0.3+ | 2006 03 25 | G96 | 0.3− | 0.2+ | 2006 04 25 | 691 | 0.0 | 0.2+ | | | | | | | | |
| 2003 09 29 | 691 | 0.2+ | 0.3+ | 2006 03 25 | G96 | 0.0 | 0.1+ | 2006 04 25 | 691 | 0.4+ | 0.4+ | | | | | | | | |
| 2003 09 29 | 645 | 0.1− | 0.1+ | 2006 03 25 | G96 | 0.4− | 0.0 | 2006 04 25 | 691 | 0.0 | 0.1+ | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 645 | 0.2− | 0.0 | 2006 03 25 | G96 | 0.5− | 0.1+ | 2006 04 25 | 691 | 0.4+ | 0.1+ |
| 2003 10 18 | 645 | 0.0 | 0.1+ | 2006 03 26 | 699 | (2.2+ | 1.2+) | | | | |

**(143680)∗ 2003 SU$_{242}$ = 1998 HB$_{131}$**

Discovered 2003 Sept. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 53486)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.45658 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26654922 | $\omega$ | 67.02377 | | −0.71641198 | | +0.69765180 |
| $a$ | 2.3912103 | $\Omega$ | 157.21369 | | −0.64563357 | | −0.65969460 |
| $e$ | 0.1620859 | $i$ | 0.88557 | | −0.26440718 | | −0.27943693 |
| $P$ | 3.70 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 910 | 0.3− | 0.3+ | 2002 06 08 | 704 | 0.0 | 0.1+ | 2005 01 16 | 691 | 0.2+ | 0.0 |
| 1998 03 03 | 910 | 0.6− | 0.2− | 2002 06 08 | 704 | 0.1− | 0.2− | 2005 01 16 | 691 | 0.0 | 0.0 |
| 1998 03 03 | 910 | 0.8− | 0.1− | 2003 09 27 | 691 | 0.7+ | 0.1+ | 2005 01 16 | 691 | 0.1− | 0.1− |
| 1998 03 20 | 704 | 0.6− | 0.0 | 2003 09 27 | 691 | 0.2+ | 0.1− | 2005 01 17 | 704 | 0.8+ | 0.2− |
| 1998 03 20 | 704 | 0.1− | 0.0 | 2003 09 27 | 691 | 0.0 | 0.5+ | 2005 01 17 | 704 | 0.4+ | 0.2− |
| 1998 03 20 | 704 | 1.2+ | 1.5+ | 2003 09 29 | 691 | 0.5− | 0.0 | 2005 01 17 | 704 | 0.6+ | 0.4− |
| 1998 03 20 | 704 | 0.5+ | 0.5+ | 2003 09 29 | 691 | 0.2− | 0.1+ | 2005 01 17 | 704 | 0.5+ | 0.5+ |
| 1998 04 19 | 704 | 0.6− | 0.7− | 2003 09 29 | 691 | 0.2− | 0.1+ | 2005 01 17 | 704 | 0.3+ | 0.1− |
| 1998 04 19 | 704 | 0.8+ | 1.0+ | 2003 10 16 | 691 | 0.2+ | 0.1+ | 2005 01 19 | 691 | 0.0 | 0.1+ |
| 1998 04 19 | 704 | 0.9+ | 0.4+ | 2003 10 16 | 691 | 0.1− | 0.0 | 2005 01 19 | 691 | 0.2− | 0.0 |
| 1998 04 19 | 704 | (3.0+ | 1.2−) | 2003 10 16 | 691 | 0.0 | 0.0 | 2005 01 19 | 691 | 0.3− | 0.6+ |
| 1998 04 20 | 704 | 0.0 | 1.6− | 2003 10 18 | 691 | 0.3− | 0.1+ | 2006 08 12 | 644 | 0.5− | 0.4+ |
| 1998 04 20 | 704 | 0.0 | 1.7+ | 2003 10 18 | 691 | 0.0 | 0.1+ | 2006 08 12 | 644 | 0.4− | 0.4+ |
| 1998 04 20 | 704 | 0.1− | 0.6+ | 2003 10 18 | 691 | 0.2+ | 0.0 | 2006 08 12 | 644 | 0.3− | 0.6+ |
| 1998 04 20 | 704 | 0.2+ | 0.6− | 2003 10 23 | 291 | 0.1− | 0.3− | 2006 08 13 | 644 | 0.2+ | 0.4+ |
| 1999 10 15 | 691 | 0.3− | 0.2− | 2003 10 23 | 291 | 0.1− | 0.4− | 2006 08 13 | 644 | 0.1− | 0.1+ |
| 1999 10 15 | 691 | 0.1+ | 0.0 | 2003 10 23 | 291 | 0.1− | 0.1− | 2006 08 13 | 644 | 0.1− | 0.9+ |
| 1999 10 15 | 691 | 0.3+ | 0.2+ | 2003 11 20 | 695 | 0.4− | 0.2+ | | | | |
| 2002 06 08 | 704 | 0.5+ | 0.0 | 2003 11 20 | 695 | 0.2− | 0.2+ | | | | |

**(143681)∗ 2003 SX$_{255}$ = 2002 ES$_{124}$**

Discovered 2003 Sept. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 53495)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.88949 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30516796 | $\omega$ | 120.83426 | | +0.62936945 | | +0.77700226 |
| $a$ | 2.1849597 | $\Omega$ | 188.20527 | | −0.73994091 | | +0.59419138 |
| $e$ | 0.1728460 | $i$ | 5.10991 | | −0.23744796 | | +0.20785595 |
| $P$ | 3.23 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 291 | 0.4+ | 1.5+ | 2003 11 19 | 644 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.4− | 0.0 |
| 2002 03 12 | 291 | 0.5+ | 1.2+ | 2003 11 24 | 691 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.1+ |
| 2002 03 12 | 291 | 0.4+ | 1.3+ | 2003 11 24 | 691 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.7+ | 0.5− |
| 2002 03 13 | 704 | 0.4− | 1.3+ | 2003 11 24 | 691 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.4+ | 0.4− |
| 2002 03 13 | 704 | 0.6+ | 1.1+ | 2003 11 28 | 926 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.6+ | 0.4− |
| 2002 03 13 | 704 | (1.7+ | 1.9+) | 2003 11 28 | 926 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.0 |
| 2002 03 13 | 704 | 1.4+ | 0.1+ | 2003 11 28 | 926 | 0.0 | 0.3+ | 2006 09 01 | 704 | 0.1− | 0.0 |
| 2002 03 13 | 704 | 0.4− | 0.3− | 2003 11 28 | 926 | 0.7+ | 0.4+ | 2006 09 01 | 704 | 0.0 | 0.0 |
| 2003 09 22 | 691 | 0.0 | 0.0 | 2003 11 28 | 926 | 0.6− | 0.0 | 2006 09 01 | 704 | 0.0 | 0.7+ |
| 2003 09 22 | 691 | 0.1− | 0.1+ | 2003 11 29 | 926 | 0.4− | 0.3+ | 2006 09 09 | 644 | 0.1− | 0.2+ |
| 2003 09 22 | 691 | 0.2− | 0.1− | 2003 11 29 | 926 | 0.1− | 0.1+ | 2006 09 09 | 644 | 0.1+ | 0.0 |
| 2003 09 27 | 691 | 0.1− | 0.1− | 2003 11 29 | 926 | 0.1− | 0.9+ | 2006 09 09 | 644 | 0.2− | 0.3+ |
| 2003 09 27 | 691 | 0.1+ | 0.2− | 2005 03 13 | G96 | 0.1+ | 0.3+ | 2006 09 12 | 699 | 0.4+ | 1.2+ |
| 2003 09 27 | 691 | 0.0 | 0.0 | 2005 03 13 | G96 | 0.1− | 0.1− | 2006 09 12 | 699 | 0.0 | 0.0 |
| 2003 09 29 | 704 | 0.3− | 0.1− | 2005 03 13 | G96 | 0.0 | 0.1− | 2006 09 12 | 699 | 0.6+ | 0.0 |
| 2003 09 29 | 704 | 0.5+ | 0.9+ | 2005 03 13 | G96 | 0.4− | 0.1+ | 2006 09 12 | 699 | 0.1+ | 0.3+ |
| 2003 09 29 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.6+ | 2006 09 14 | 703 | (1.6− | 0.7+) |
| 2003 09 29 | 704 | 0.1+ | 0.6− | 2006 08 16 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2003 09 29 | 704 | 0.4− | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.9− | 0.3+ |
| 2003 10 16 | 691 | 0.1+ | 0.4− | 2006 08 18 | 699 | 0.8+ | 1.0+ | 2006 09 14 | 703 | 0.7− | 0.7+ |
| 2003 10 16 | 691 | 0.1+ | 0.3− | 2006 08 18 | 699 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.6+ |
| 2003 10 16 | 691 | 0.1− | 0.3− | 2006 08 18 | 699 | 0.6− | 0.9+ | 2006 09 18 | 703 | 0.0 | 0.4+ |
| 2003 10 21 | 699 | 1.1+ | 0.0 | 2006 08 21 | 644 | 0.5− | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 2003 10 21 | 699 | 0.8− | 0.5+ | 2006 08 21 | 644 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.9+ |
| 2003 10 21 | 699 | 0.4+ | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2003 10 21 | 644 | 0.1− | 0.1+ | 2006 08 24 | 704 | (0.3+ | 1.6+) | 2006 09 27 | 704 | (2.1+ | 0.2−) |
| 2003 10 21 | 699 | 0.5− | 0.1− | 2006 08 24 | 704 | 0.7− | 0.0 | 2006 09 27 | 704 | 0.5+ | 0.2+ |
| 2003 10 21 | 704 | 0.7− | 1.0+ | 2006 08 24 | 704 | 0.8− | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2003 10 21 | 644 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.2+ |
| 2003 10 21 | 704 | 0.8− | 0.5+ | 2006 08 24 | 704 | 0.4− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2003 10 21 | 704 | 0.2− | 0.8+ | 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2003 10 21 | 704 | 0.6− | 0.7+ | 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1+ |
| 2003 10 21 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.7− | 0.1− |
| 2003 10 24 | 704 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2003 10 24 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2003 10 24 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2003 10 24 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 699 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2003 10 24 | 704 | 0.4+ | 0.1− | 2006 08 28 | 699 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.3+ |
| 2003 10 28 | 704 | 0.5+ | 0.6+ | 2006 08 29 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2003 10 28 | 704 | 0.5+ | 1.0+ | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2003 10 28 | 704 | 0.3+ | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 1.1+ | 0.0 |
| 2003 10 28 | 704 | 1.4+ | 0.0 | 2006 08 30 | 704 | 0.1+ | 1.0− | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2003 11 19 | 644 | 0.2− | 0.0 | 2006 08 30 | 704 | 1.3− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2003 11 19 | 644 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.9+ | 0.5+ | | | | |

**(143682)∗ 2003 SQ$_{266}$ = 2002 GY$_{25}$**

Discovered 2003 Sept. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 53497)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.07918 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25949356 | $\omega$ | 162.77566 | | +0.53444178 | | +0.84493985 |
| $a$ | 2.4343611 | $\Omega$ | 139.52346 | | −0.77925335 | | +0.50228903 |
| $e$ | 0.1945111 | $i$ | 1.86986 | | −0.32731667 | | +0.18379985 |
| $P$ | 3.80 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.1+ | 0.1+ | 2003 09 17 | 644 | 0.5− | 0.0 | 2003 10 24 | 704 | 1.0+ | 1.0+ |
| 1994 02 10 | 691 | 0.3− | 0.5− | 2003 09 17 | 644 | 0.4− | 0.1− | 2004 12 19 | G96 | 0.3+ | 0.2+ |
| 1994 02 10 | 691 | 0.2+ | 0.2+ | 2003 09 17 | 644 | 0.2− | 0.2− | 2004 12 19 | G96 | 0.1− | 0.2+ |
| 1999 09 04 | 699 | 0.4− | 1.0+ | 2003 09 29 | 704 | 0.5− | 0.7+ | 2004 12 19 | G96 | 0.2+ | 0.2+ |
| 1999 09 04 | 699 | 0.5− | 1.1+ | 2003 09 29 | 704 | 1.0− | 0.3+ | 2004 12 19 | G96 | 0.2− | 0.7+ |
| 1999 09 04 | 699 | 0.8− | 0.7+ | 2003 09 29 | 704 | 0.6− | 0.2+ | 2005 01 13 | 691 | 0.2− | 0.7+ |
| 2000 12 19 | 691 | 0.1+ | 0.6− | 2003 09 29 | 704 | 0.3+ | 0.1+ | 2005 01 13 | 691 | 0.2+ | 0.9+ |
| 2000 12 19 | 691 | 0.4− | 0.5− | 2003 09 29 | 704 | 0.7− | 1.0+ | 2005 01 13 | 691 | 0.5+ | 0.4+ |
| 2000 12 19 | 691 | 0.5− | 0.1− | 2003 09 30 | 691 | 0.2− | 0.1+ | 2006 03 25 | 691 | 0.2+ | 0.4+ |
| 2002 04 14 | 691 | 0.0 | 0.4+ | 2003 09 30 | 691 | 0.0 | 0.4+ | 2006 03 25 | 691 | 0.2− | 0.3+ |
| 2002 04 14 | 691 | 0.2+ | 0.4+ | 2003 09 30 | 691 | 0.3− | 0.1+ | 2006 03 25 | 691 | 0.0 | 0.1+ |
| 2002 04 14 | 691 | 0.1− | 0.4+ | 2003 10 20 | 704 | 0.5+ | 1.5+ | 2006 05 06 | 691 | 0.3+ | 0.3+ |
| 2002 04 21 | 691 | 0.8+ | 0.3+ | 2003 10 20 | 704 | 0.3− | 1.3+ | 2006 05 06 | 691 | 0.0 | 0.4+ |
| 2002 04 21 | 691 | 0.5+ | 0.3+ | 2003 10 20 | 704 | 0.1+ | 0.5+ | 2006 05 06 | 691 | 0.0 | 0.1+ |
| 2002 04 21 | 691 | 0.2+ | 0.1+ | 2003 10 20 | 704 | 0.2+ | 1.4+ | 2006 05 26 | G96 | 0.4− | 0.2− |
| 2003 09 17 | 644 | 0.2− | 0.1+ | 2003 10 24 | 704 | 0.3+ | 1.5+ | 2006 05 26 | G96 | 0.5− | 0.2− |
| 2003 09 17 | 644 | 0.2− | 0.3+ | 2003 10 24 | 704 | 1.1+ | 0.5+ | 2006 05 26 | G96 | 0.4− | 0.2− |
| 2003 09 17 | 644 | 0.6− | 0.0 | 2003 10 24 | 704 | 0.8+ | 0.2+ | 2006 05 26 | G96 | 0.5− | 0.2− |

**(143683)∗ 2003 SV$_{280}$**

Discovered 2003 Sept. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.38499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29962774 | $\omega$ | 182.79966 | | −0.99243910 | | −0.12128837 |
| $a$ | 2.2118111 | $\Omega$ | 350.17393 | | +0.11464294 | | −0.86130310 |
| $e$ | 0.1064390 | $i$ | 6.32759 | | +0.04383642 | | −0.49340258 |
| $P$ | 3.29 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 20 | 691 | 0.3− | 0.5+ | 2005 03 04 | 691 | 0.1+ | 0.4+ | 2005 03 17 | 704 | 1.0+ | 0.5+ |
| 1993 09 20 | 691 | 0.4− | 0.3+ | 2005 03 04 | 691 | 0.0 | 0.4+ | 2005 04 01 | 699 | 0.9− | 0.5+ |
| 1993 09 20 | 691 | 0.2− | 0.7+ | 2005 03 04 | 704 | 0.5+ | 0.4+ | 2005 04 01 | 699 | 0.2+ | 0.3− |
| 2002 05 10 | 644 | 0.0 | 0.1− | 2005 03 04 | 704 | 0.6+ | 0.5+ | 2005 04 01 | 699 | 0.4+ | 0.5+ |
| 2002 05 10 | 644 | 0.3− | 0.2− | 2005 03 04 | 704 | 0.8+ | 0.5+ | 2005 04 01 | 699 | 0.4− | 0.7+ |
| 2002 05 10 | 644 | 0.3− | 0.1+ | 2005 03 08 | 699 | 0.1+ | 0.6+ | 2005 04 04 | 703 | 0.6− | 0.9− |
| 2002 05 16 | 644 | 0.2+ | 0.1+ | 2005 03 08 | 699 | 0.8+ | 0.0 | 2005 04 04 | 703 | 1.3+ | 0.1− |
| 2002 05 16 | 644 | 0.2+ | 0.2+ | 2005 03 08 | 699 | 0.6+ | 0.1+ | 2005 04 04 | 703 | 0.6+ | 0.2− |
| 2002 05 16 | 644 | 0.5+ | 0.4+ | 2005 03 08 | 699 | 0.1− | 0.2+ | 2005 04 04 | 704 | 0.1− | 0.7+ |
| 2003 09 18 | 644 | 0.9− | 0.7+ | 2005 03 08 | G96 | 0.0 | 0.2− | 2005 04 04 | 704 | 0.3+ | 0.7+ |
| 2003 09 18 | 644 | 0.7− | 0.5+ | 2005 03 08 | G96 | 0.0 | 0.3− | 2005 04 04 | 704 | 0.2+ | 0.2+ |
| 2003 09 18 | 644 | 0.6− | 0.7+ | 2005 03 08 | 704 | 0.2+ | 0.4+ | 2005 04 04 | 704 | 0.4− | 0.4+ |
| 2003 09 21 | 644 | 0.3− | 0.4+ | 2005 03 08 | G96 | 0.0 | 0.2− | 2005 04 09 | G96 | 0.1+ | 0.3− |
| 2003 09 21 | 644 | 0.3− | 0.4+ | 2005 03 08 | G96 | 0.1− | 0.3− | 2005 04 09 | G96 | 0.2− | 0.3− |
| 2003 09 21 | 644 | 0.3− | 0.0 | 2005 03 08 | 704 | 0.5+ | 0.7+ | 2005 04 09 | G96 | 0.0 | 0.3− |
| 2003 09 22 | 699 | (1.4− | 2.2−) | 2005 03 08 | 704 | 0.6+ | 0.4+ | 2005 04 09 | G96 | 0.0 | 0.4− |
| 2003 09 22 | 699 | (3.4− | 0.3−) | 2005 03 08 | 704 | 0.5− | 0.8+ | 2005 04 30 | 699 | 1.1− | 0.6+ |
| 2003 09 22 | 699 | (2.4− | 0.7+) | 2005 03 08 | 704 | 0.2+ | 1.0+ | 2005 04 30 | 699 | 0.1+ | 0.2+ |
| 2003 09 22 | 699 | 0.5+ | 0.1+ | 2005 03 08 | G96 | 0.1− | 0.1− | 2005 04 30 | 699 | 0.8+ | 0.4+ |
| 2003 09 27 | 691 | 0.3− | 0.2+ | 2005 03 08 | G96 | 0.2− | 0.0 | 2005 04 30 | 699 | 0.3− | 0.6+ |
| 2003 09 27 | 691 | 0.2− | 0.2+ | 2005 03 08 | G96 | 0.2− | 0.0 | 2006 08 17 | 644 | 0.4− | 0.4+ |
| 2003 09 27 | 691 | 0.1− | 0.2+ | 2005 03 08 | G96 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.5− | 0.8+ |
| 2003 10 25 | 704 | 1.3+ | 1.4+ | 2005 03 09 | 699 | 0.9+ | 0.8+ | 2006 08 17 | 644 | 0.3− | 0.0 |
| 2003 10 25 | 704 | 0.6+ | 1.0+ | 2005 03 09 | 699 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.4− | 0.2+ |
| 2003 10 25 | 704 | 0.7− | 0.1+ | 2005 03 09 | 699 | 0.2− | 0.4+ | 2006 08 18 | 644 | 0.4− | 0.1+ |
| 2005 01 18 | 703 | 0.2− | 0.2− | 2005 03 09 | 699 | 0.5+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.5+ |
| 2005 01 18 | 703 | 1.1− | 0.4− | 2005 03 12 | 695 | 0.4+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2005 01 18 | 703 | 0.3+ | 0.1+ | 2005 03 12 | 695 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.2− | 0.3+ |
| 2005 01 18 | 703 | 0.4− | 0.4− | 2005 03 14 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.5+ | 0.6+ |
| 2005 03 03 | 703 | 0.6− | 0.3− | 2005 03 14 | 704 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2005 03 03 | 703 | 0.1+ | 0.0 | 2005 03 14 | 704 | 0.1+ | 0.4− | 2006 08 28 | 703 | 1.0+ | 1.1+ |
| 2005 03 03 | 703 | 0.3− | 0.7− | 2005 03 14 | 704 | 0.1− | 0.7+ | 2006 08 28 | 703 | (0.4+ | 2.4+) |
| 2005 03 03 | 703 | 0.6+ | 0.2+ | 2005 03 14 | 704 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.4+ | 0.2+ |
| 2005 03 03 | 704 | 0.1+ | 0.2+ | 2005 03 17 | 704 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2005 03 03 | 704 | 0.1+ | 0.1+ | 2005 03 17 | 704 | (2.4+ | 1.0+) | 2006 09 30 | G96 | 0.6− | 0.2− |
| 2005 03 03 | 704 | 0.8+ | 0.2+ | 2005 03 17 | 704 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2005 03 04 | 691 | 0.2+ | 0.3+ | 2005 03 17 | 704 | 1.3+ | 0.7+ | 2006 09 30 | G96 | 0.4− | 0.4− |

**(143684)∗ 2003 SS$_{293}$**

Discovered 2003 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.16324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30276723 | $\omega$ | 298.11442 | | +0.28511211 | +0.95835436 | |
| $a$ | 2.1964946 | $\Omega$ | 348.41589 | | −0.84832020 | +0.24435269 | |
| $e$ | 0.1717845 | $i$ | 4.67629 | | −0.44616579 | +0.14781301 | |
| $P$ | 3.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 695 | 0.2− | 0.3+ | 2003 09 29 | 699 | 1.0− | 0.5− | 2006 08 28 | 703 | 0.7− | 0.1− |
| 2002 02 06 | 695 | 0.4− | 0.3+ | 2003 09 29 | 699 | 0.2− | 1.0− | 2006 08 28 | 703 | 0.3− | 1.1+ |
| 2002 02 20 | 704 | 0.3− | 1.0+ | 2003 09 29 | 699 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.7− |
| 2002 02 20 | 704 | 0.4+ | 0.7+ | 2003 09 29 | 699 | 0.1+ | 0.7− | 2006 09 14 | 644 | 0.1+ | 0.4+ |
| 2002 02 20 | 704 | 0.4− | 0.3− | 2003 10 20 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.3+ | 0.5+ |
| 2002 03 14 | 704 | 1.2+ | 1.2+ | 2003 10 20 | 691 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 2002 03 14 | 704 | 1.2+ | 1.1+ | 2003 10 20 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2002 03 14 | 704 | 0.6+ | 0.2+ | 2005 03 14 | G96 | 0.1− | 0.5− | 2006 09 30 | G96 | 0.8+ | 0.3+ |
| 2003 09 21 | 699 | 0.1+ | 0.0 | 2005 03 14 | G96 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2003 09 21 | 699 | 0.2+ | 0.7+ | 2005 03 14 | G96 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2003 09 21 | 699 | 0.9− | 0.6− | 2005 03 14 | G96 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2003 09 21 | 699 | 0.8+ | 0.1− | 2006 08 14 | 644 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2003 09 27 | 704 | 0.7− | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2003 09 27 | 704 | 0.4+ | 0.9+ | 2006 08 14 | 644 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2003 09 27 | 704 | 0.8+ | 0.4− | 2006 08 24 | 644 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2003 09 27 | 691 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 11 17 | G96 | 1.0− | 0.1+ |
| 2003 09 27 | 691 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2003 09 27 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.7+ |

**(143685)∗ 2003 SS$_{317}$**

Discovered 2003 Sept. 25 at Mauna Kea.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.65128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00449544 | $\omega$ | 197.38247 | | +0.96574073 | −0.25947428 | |
| $a$ | 36.3597921 | $\Omega$ | 177.64402 | | +0.24865688 | +0.92056292 | |
| $e$ | 0.2335418 | $i$ | 5.91318 | | +0.07426032 | +0.29195376 | |
| $P$ | 219 | $H$ | 7.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 25 | 568 | 0.3+ | 0.2− | 2005 09 15 | 705 | 0.2− | 0.1+ | 2005 11 26 | 705 | 0.2+ | 0.1− |
| 2003 09 25 | 568 | 0.1+ | 0.4− | 2005 09 15 | 705 | 0.1+ | 0.2+ | 2005 12 01 | 705 | 0.2+ | 0.1+ |
| 2003 09 27 | 568 | 0.0 | 0.1+ | 2005 09 22 | 705 | 0.0 | 0.0 | 2005 12 01 | 705 | 0.2− | 0.4− |
| 2003 09 27 | 568 | 0.1− | 0.1+ | 2005 09 22 | 705 | 0.5+ | 0.1+ | 2006 08 28 | 705 | 0.1− | 0.0 |
| 2003 09 27 | 568 | 0.1− | 0.1+ | 2005 09 26 | 705 | 0.0 | 0.1− | 2006 08 28 | 705 | 0.2− | 0.1+ |
| 2003 11 22 | 568 | 0.1+ | 0.3+ | 2005 09 26 | 705 | 0.1− | 0.1− | 2006 09 19 | 705 | 0.1− | 0.1+ |
| 2003 11 22 | 568 | 0.0 | 0.3+ | 2005 10 20 | 705 | 0.0 | 0.0 | 2006 09 19 | 705 | 0.0 | 0.0 |
| 2003 11 22 | 568 | 0.2− | 0.6+ | 2005 10 20 | 705 | 0.3+ | 0.1+ | 2006 09 22 | 705 | 0.2+ | 0.1− |
| 2004 09 06 | 695 | 0.1− | 0.0 | 2005 10 25 | 705 | 0.1− | 0.0 | 2006 09 22 | 705 | 0.1+ | 0.0 |
| 2004 09 06 | 695 | 0.1− | 0.2+ | 2005 10 25 | 705 | 0.2+ | 0.0 | 2006 09 27 | 705 | 0.1− | 0.2+ |
| 2004 09 11 | 695 | 0.3− | 0.1+ | 2005 10 27 | 705 | 0.0 | 0.0 | 2006 09 27 | 705 | 0.0 | 0.1+ |
| 2004 09 11 | 695 | 0.3− | 0.1+ | 2005 10 27 | 705 | 0.0 | 0.0 | 2006 09 30 | 705 | 0.1+ | 0.1+ |
| 2004 09 11 | 695 | 0.5− | 0.0 | 2005 10 30 | 705 | 0.2+ | 0.0 | 2006 09 30 | 705 | 0.0 | 0.1+ |
| 2005 07 08 | 568 | 0.0 | 0.1+ | 2005 10 30 | 705 | 0.0 | 0.1− | 2006 10 02 | 705 | 0.1− | 0.0 |
| 2005 07 09 | 675 | 0.4+ | 0.1− | 2005 11 01 | 705 | 0.0 | 0.2− | 2006 10 02 | 705 | 0.0 | 0.2+ |
| 2005 07 09 | 568 | 0.0 | 0.0 | 2005 11 01 | 705 | 0.1+ | 0.3− | 2006 10 17 | 705 | 0.2− | 0.2+ |
| 2005 07 10 | 675 | 0.3+ | 0.2− | 2005 11 03 | 705 | 0.0 | 0.0 | 2006 10 17 | 705 | 0.1− | 0.2+ |
| 2005 09 09 | 705 | 0.1− | 0.2− | 2005 11 03 | 705 | 0.2− | 0.3− | 2006 10 21 | 705 | 0.2− | 0.1+ |
| 2005 09 09 | 705 | 0.2+ | 0.1− | 2005 11 07 | 705 | 0.4+ | 0.6− | 2006 10 21 | 705 | 0.2− | 0.2− |
| 2005 09 10 | 705 | 0.2− | 0.5− | 2005 11 07 | 705 | 0.3+ | 0.4− | 2006 10 23 | 705 | 0.1− | 0.3+ |
| 2005 09 10 | 705 | 0.1+ | 0.2− | 2005 11 23 | 705 | 0.2− | 0.2+ | 2006 10 23 | 705 | 0.0 | 0.2+ |
| 2005 09 13 | 705 | 0.1− | 0.1− | 2005 11 23 | 705 | 0.1− | 0.3+ | 2006 10 31 | 705 | 0.1+ | 0.0 |
| 2005 09 13 | 705 | 0.2+ | 0.0 | 2005 11 26 | 705 | 0.1+ | 0.1− | 2006 10 31 | 705 | 0.1− | 0.0 |

**(143686)∗ 2003 TW$_{11}$**

Discovered 2003 Oct. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.30670 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28034438 | $\omega$ | 234.47362 | | +0.36301008 | −0.93142288 | |
| $a$ | 2.3121082 | $\Omega$ | 194.30973 | | +0.88531646 | +0.35346842 | |
| $e$ | 0.0956433 | $i$ | 6.03424 | | +0.29058295 | +0.08666885 | |
| $P$ | 3.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.1+ | 1.4− | 2003 10 21 | 704 | 0.2+ | 0.1− | 2005 04 02 | 644 | 0.7+ | 0.4+ |
| 1998 03 29 | 704 | 1.4− | 1.4+ | 2003 10 24 | 704 | 0.3− | 1.1+ | 2005 04 02 | 644 | 0.6+ | 0.3+ |
| 1998 03 29 | 704 | 1.7+ | 0.7+ | 2003 10 24 | 704 | 0.5− | 0.1+ | 2005 04 05 | G96 | 0.1− | 0.5+ |
| 1998 03 29 | 704 | 0.3+ | 0.3− | 2003 10 24 | 704 | 0.3− | 0.0 | 2005 04 05 | G96 | 0.0 | 0.1+ |
| 2001 01 04 | 704 | 1.4− | 0.8− | 2003 10 24 | 704 | 0.6+ | 0.2+ | 2005 04 05 | G96 | 0.6− | 0.3+ |
| 2001 01 04 | 704 | 0.2+ | 1.1+ | 2003 10 24 | 704 | 0.4+ | 0.2− | 2005 04 05 | G96 | 0.0 | 0.2+ |
| 2001 01 04 | 704 | 0.3− | 0.4+ | 2003 10 26 | 703 | 1.1− | 0.0 | 2005 04 30 | 691 | 0.4+ | 0.1+ |
| 2001 01 04 | 704 | 0.1− | 0.4− | 2003 10 26 | 703 | 0.1− | 0.5+ | 2005 04 30 | 691 | 0.1+ | 0.2+ |
| 2001 01 04 | 704 | 0.2− | 0.4+ | 2003 10 26 | 703 | 0.8− | 0.3− | 2005 04 30 | 691 | 0.1+ | 0.4+ |
| 2003 09 29 | 704 | 0.3+ | 1.4+ | 2003 10 26 | 703 | 0.5− | 0.2− | 2005 05 04 | G96 | 0.1+ | 0.6+ |
| 2003 09 29 | 704 | 0.1− | 0.1− | 2003 11 16 | 703 | 0.2− | 0.1− | 2005 05 04 | G96 | 0.1− | 0.3+ |
| 2003 09 29 | 704 | 0.5+ | 0.3− | 2003 11 16 | 703 | 0.4+ | 0.3+ | 2005 05 04 | G96 | 0.1− | 0.9+ |
| 2003 09 29 | 704 | 0.3+ | 0.2− | 2003 11 16 | 703 | 0.9− | 1.5+ | 2005 05 04 | G96 | 0.2− | 0.7+ |
| 2003 09 29 | 704 | 1.2+ | 0.8+ | 2003 11 16 | 703 | 1.3− | 0.2+ | 2005 05 06 | G96 | 0.1− | 0.1+ |
| 2003 09 29 | 691 | 0.1− | 0.0 | 2003 11 24 | 691 | 0.2− | 0.1+ | 2005 05 06 | G96 | 0.3+ | 0.2+ |
| 2003 09 29 | 691 | 0.0 | 0.1+ | 2003 11 24 | 691 | 0.2− | 0.1− | 2005 05 06 | G96 | 0.1− | 0.1+ |
| 2003 09 29 | 691 | 0.0 | 0.3+ | 2003 11 24 | 691 | 0.1+ | 0.0 | 2005 05 06 | G96 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 14 | 699 | 0.1+ | 0.3+ | 2005 03 03 | 691 | 0.2+ | 0.2+ | 2006 08 13 | 644 | 0.2− | 0.4+ |
| 2003 10 14 | 699 | 0.5+ | 1.0+ | 2005 03 03 | 691 | 0.4+ | 0.4+ | 2006 08 13 | 644 | 0.2− | 0.8+ |
| 2003 10 14 | 699 | (1.6− | 0.1+) | 2005 03 03 | 691 | 0.0 | 0.4+ | 2006 08 13 | 644 | 0.0 | 0.5+ |
| 2003 10 14 | 699 | 0.1+ | 0.9+ | 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.4− | 0.4+ |
| 2003 10 16 | 691 | 0.1+ | 0.3+ | 2005 03 11 | G96 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2003 10 16 | 691 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 08 15 | 644 | 0.3+ | 0.1+ |
| 2003 10 16 | 691 | 0.3+ | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 08 15 | 644 | 0.6− | 0.4+ |
| 2003 10 21 | 699 | 0.4+ | 0.4+ | 2005 03 12 | 691 | 0.2+ | 0.5+ | 2006 08 15 | 644 | 0.2− | 0.4+ |
| 2003 10 21 | 699 | 0.5− | 0.0 | 2005 03 12 | 691 | 0.3+ | 0.3+ | 2006 08 15 | 644 | 0.5− | 0.3+ |
| 2003 10 21 | 699 | 1.3− | 1.0+ | 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2003 10 21 | 704 | 0.2− | 0.5+ | 2005 03 13 | 703 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.8− | 0.2+ |
| 2003 10 21 | 699 | 0.4− | 0.5+ | 2005 03 13 | 703 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.5− | 2.0+ |
| 2003 10 21 | 704 | 0.3+ | 0.3+ | 2005 03 13 | 703 | 0.7− | 0.6+ | 2006 10 22 | G96 | 0.7− | 0.1+ |
| 2003 10 21 | 704 | 0.8+ | 0.1+ | 2005 03 13 | 703 | 0.9− | 0.4− | | | | |
| 2003 10 21 | 704 | 0.2+ | 0.4+ | 2005 04 02 | 644 | 0.5+ | 0.4+ | | | | |

**(143687)∗ 2003 TP$_{18}$**

Discovered 2003 Oct. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.30264 | | (2000.0) | | | |
| $n$ | 0.28849097 | $\omega$ | 193.09766 | | +0.74497164 | −0.66592593 |
| $a$ | 2.2683735 | $\Omega$ | 208.77726 | | +0.61920638 | +0.71230586 |
| $e$ | 0.1117344 | $i$ | 4.70598 | | +0.24819492 | +0.22172733 |
| $P$ | 3.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.6+ | 0.8+ | 2003 10 28 | 704 | 0.0 | 0.8+ | 2005 03 03 | 691 | 0.2+ | 0.1+ |
| 1995 05 29 | 691 | 0.7+ | 0.7+ | 2003 10 28 | 704 | 0.5− | 0.9+ | 2005 03 03 | 691 | 0.0 | 0.5+ |
| 1995 05 29 | 691 | 0.6− | 1.0+ | 2003 10 28 | 704 | 0.5− | 0.8+ | 2005 03 11 | G96 | 0.1+ | 0.0 |
| 2001 01 04 | 704 | 0.1+ | 0.6+ | 2003 10 28 | 704 | 0.2− | 0.8+ | 2005 03 11 | G96 | 0.3− | 0.2+ |
| 2001 01 04 | 704 | 0.1− | 0.3+ | 2003 10 28 | 704 | 0.2− | 0.7+ | 2005 03 11 | G96 | 0.4− | 0.2+ |
| 2001 01 04 | 704 | 0.7− | 0.5+ | 2003 11 01 | 704 | 0.1+ | 0.2− | 2005 03 11 | G96 | 0.1+ | 0.1− |
| 2003 10 02 | 704 | 0.9− | 1.3+ | 2003 11 01 | 704 | 0.7+ | 0.0 | 2005 03 13 | 691 | 0.2+ | 0.0 |
| 2003 10 02 | 704 | 0.4− | 1.1+ | 2003 11 01 | 704 | 0.3+ | 1.4+ | 2005 03 13 | 691 | 0.2+ | 0.2− |
| 2003 10 02 | 704 | (2.3− | 1.4+) | 2003 11 18 | 644 | 0.2+ | 0.1+ | 2005 03 13 | 691 | 0.2+ | 0.1− |
| 2003 10 02 | 691 | 0.1− | 0.4+ | 2003 11 18 | 644 | 0.2+ | 0.5+ | 2005 05 08 | G96 | 0.8− | 0.6+ |
| 2003 10 02 | 691 | 0.1+ | 0.4+ | 2003 11 18 | 644 | 0.5+ | 0.0 | 2005 05 08 | G96 | 0.2+ | 0.0 |
| 2003 10 02 | 691 | 0.0 | 0.4+ | 2003 11 18 | 644 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.5− | 0.1+ |
| 2003 10 15 | 699 | 0.1+ | 1.1− | 2003 11 18 | 644 | 0.1+ | 0.2− | 2005 05 08 | G96 | 0.2− | 0.1+ |
| 2003 10 15 | 699 | (1.8+ | 2.0−) | 2003 11 18 | 644 | 0.0 | 0.1+ | 2005 05 12 | 691 | 0.4− | 0.2+ |
| 2003 10 15 | 699 | (1.8− | 0.6+) | 2003 11 19 | 691 | 0.1+ | 0.2+ | 2005 05 12 | 691 | 0.4+ | 0.7+ |
| 2003 10 15 | 699 | 0.6+ | 0.6− | 2003 11 19 | 691 | 0.1+ | 0.1+ | 2005 05 12 | 691 | 0.0 | 0.7+ |
| 2003 10 18 | 608 | 0.2− | 0.8− | 2003 11 19 | 691 | 0.1+ | 0.2+ | 2006 07 21 | 703 | (1.9− | 0.8+) |
| 2003 10 18 | 608 | 0.2− | 1.3− | 2003 11 20 | 695 | 0.2− | 0.0 | 2006 07 21 | 703 | 0.4− | 0.5+ |
| 2003 10 18 | 608 | 0.9− | 0.8− | 2003 11 20 | 695 | 0.0 | 0.1+ | 2006 07 21 | 703 | 0.4− | 0.1− |
| 2003 10 21 | 691 | 0.3− | 0.2+ | 2003 11 21 | 704 | 0.4− | 0.6+ | 2006 07 21 | 703 | 0.1− | 0.0 |
| 2003 10 21 | 691 | 0.0 | 0.1+ | 2003 11 21 | 704 | 0.0 | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2003 10 21 | 691 | 0.0 | 0.1+ | 2003 11 21 | 704 | 0.4− | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.5+ |
| 2003 10 21 | 704 | 0.3− | 1.3− | 2003 11 21 | 704 | 0.5− | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 2003 10 21 | 704 | 0.1+ | 0.4+ | 2003 11 21 | 704 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2003 10 21 | 704 | 0.2+ | 1.0+ | 2003 11 26 | 699 | 1.3+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.1+ |
| 2003 10 21 | 644 | 0.1− | 0.0 | 2003 11 26 | 699 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.3+ |
| 2003 10 21 | 644 | 0.2− | 0.1− | 2003 11 26 | 699 | 0.9+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2003 10 21 | 644 | 0.0 | 0.2+ | 2003 11 26 | 699 | 0.4− | 0.7− | 2006 11 18 | G96 | 0.6− | 0.4+ |
| 2003 10 26 | 703 | (1.9− | 1.5+) | 2003 12 23 | 704 | 0.5+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2003 10 26 | 703 | 1.5− | 0.2− | 2003 12 23 | 704 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.5− | 0.3− |
| 2003 10 26 | 703 | (1.0+ | 2.8+) | 2003 12 23 | 704 | 0.1+ | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2003 10 26 | 703 | (2.3− | 0.9−) | 2005 03 03 | 691 | 0.5+ | 0.0 | | | | |

**(143688)∗ 2003 TH$_{30}$**

Discovered 2003 Oct. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.41654 | | (2000.0) | | | |
| $n$ | 0.31007289 | $\omega$ | 208.83803 | | +0.99271301 | −0.11992257 |
| $a$ | 2.1618564 | $\Omega$ | 158.04018 | | +0.11573121 | +0.92151114 |
| $e$ | 0.1074936 | $i$ | 1.80971 | | +0.03357345 | +0.36937215 |
| $P$ | 3.18 | $H$ | 18.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 691 | 0.2− | 0.2− | 2003 10 24 | 704 | 0.5+ | 0.5+ | 2006 08 23 | 644 | 0.3+ | 0.1− |
| 2000 11 20 | 691 | 0.8− | 0.1− | 2003 10 24 | 704 | 0.5+ | 1.7+ | 2006 08 23 | 644 | 0.8+ | 0.2− |
| 2000 11 20 | 691 | 0.5− | 0.1− | 2003 10 24 | 704 | 0.0 | 0.2+ | 2006 08 24 | 122 | 1.1+ | 0.4+ |
| 2002 02 18 | 807 | 0.6+ | 0.6+ | 2003 10 24 | 704 | (2.9+ | 1.0−) | 2006 08 24 | 122 | 0.1− | 0.4+ |
| 2002 02 18 | 807 | 0.7+ | 0.4+ | 2005 03 11 | 695 | 0.4+ | 0.2+ | 2006 08 25 | 122 | 0.3+ | 0.5− |
| 2002 02 18 | 807 | 0.1+ | 0.7+ | 2005 03 11 | 695 | 0.5+ | 0.2+ | 2006 08 27 | 691 | 0.5− | 0.4− |
| 2002 04 07 | 807 | 0.5+ | 0.7+ | 2005 04 02 | G96 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.2− | 0.1− |
| 2002 04 07 | 807 | 0.7+ | 0.7+ | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 2003 09 16 | 691 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.0 | 0.0 | 2006 08 28 | 122 | 0.2+ | 0.2− |
| 2003 09 16 | 691 | 0.5+ | 0.2+ | 2005 04 02 | G96 | 0.1− | 0.0 | 2006 08 28 | 122 | 0.2+ | 0.3− |
| 2003 09 16 | 691 | 0.2+ | 0.1+ | 2005 04 02 | G96 | 0.5− | 0.0 | 2006 08 28 | 122 | 0.3+ | 0.3− |
| 2003 09 29 | 704 | 1.8− | 1.3+ | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 08 28 | 699 | 1.2− | 0.8+ |
| 2003 09 29 | 704 | (2.3− | 0.3+) | 2005 04 02 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.5− | 0.4− |
| 2003 09 29 | 704 | 1.1− | 0.8+ | 2005 04 02 | G96 | 0.3+ | 0.2− | 2006 08 28 | 699 | 1.2− | 0.7− |
| 2003 09 29 | 704 | 1.8− | 1.0+ | 2006 08 16 | 644 | 0.4− | 0.0 | 2006 08 28 | 699 | 0.3+ | 0.0 |
| 2003 10 01 | 691 | 0.5+ | 0.2+ | 2006 08 16 | 644 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.7− |
| 2003 10 01 | 691 | 0.4+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2003 10 01 | 691 | 0.5+ | 0.0 | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.4− |
| 2003 10 18 | 691 | 0.4+ | 0.0 | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2003 10 18 | 691 | 0.2+ | 0.1− | 2006 08 19 | 691 | 0.0 | 0.1+ | | | | |
| 2003 10 18 | 691 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.1− | | | | |

**(143689)∗ 2003 UQ$_{9}$**

Discovered 2003 Oct. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.73302 | | (2000.0) | | | |
| $n$ | 0.29541199 | $\omega$ | 62.73538 | | −0.24318984 | −0.96713874 |
| $a$ | 2.2328042 | $\Omega$ | 41.55801 | | +0.84572058 | −0.24886053 |
| $e$ | 0.1044865 | $i$ | 6.41956 | | +0.47498989 | −0.05206815 |
| $P$ | 3.34 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.2+ | 1.1+ | 2003 10 23 | 704 | 0.0 | 0.4− | 2003 11 24 | 691 | 0.2− | 0.3− |
| 2000 11 20 | 704 | 0.2+ | 0.7+ | 2003 10 23 | 704 | 0.2+ | 0.1− | 2003 11 24 | 691 | 0.4− | 0.3− |
| 2000 11 20 | 704 | 0.5− | 0.2+ | 2003 10 23 | 704 | 0.1+ | 0.5− | 2005 04 04 | 185 | 1.6+ | 0.2+ |
| 2000 11 20 | 704 | 0.7− | 0.3+ | 2003 10 23 | 704 | 0.4+ | 0.2− | 2005 04 04 | 185 | (2.1+ | 0.0 ) |
| 2000 12 19 | 704 | 1.1+ | 0.4− | 2003 10 24 | 704 | 0.2− | 0.2+ | 2005 04 04 | 185 | 0.2− | 1.3+ |
| 2000 12 19 | 704 | 0.0 | 0.5+ | 2003 10 24 | 704 | 1.3− | 1.1+ | 2005 04 06 | G96 | 0.1− | 0.3+ |
| 2000 12 19 | 704 | 0.3− | 0.1− | 2003 10 24 | 704 | 0.8− | 0.3+ | 2005 04 06 | G96 | 0.1+ | 0.2+ |
| 2000 12 19 | 704 | 0.2+ | 0.6+ | 2003 10 24 | 704 | 0.6− | 0.4+ | 2005 04 06 | G96 | 0.1+ | 0.4+ |
| 2000 12 19 | 704 | 0.5− | 0.2− | 2003 10 24 | 704 | 0.7− | 0.4+ | 2005 04 06 | G96 | 0.0 | 0.3+ |
| 2001 01 06 | 704 | 1.8− | 0.7− | 2003 10 25 | 691 | 0.1+ | 0.4+ | 2005 04 13 | 699 | 0.6+ | 0.0 |
| 2001 01 06 | 704 | 0.6+ | 0.2+ | 2003 10 25 | 691 | 0.2+ | 0.4+ | 2005 04 13 | 699 | 0.9+ | 0.3− |
| 2001 01 06 | 704 | 0.2− | 0.6+ | 2003 10 25 | 691 | 0.2+ | 0.2+ | 2005 04 13 | 699 | 1.1+ | 1.1+ |
| 2001 01 06 | 704 | 0.8+ | 0.7− | 2003 10 26 | 703 | 0.5− | 0.1− | 2005 04 13 | 699 | 0.2+ | 0.2+ |
| 2001 01 06 | 704 | 0.3+ | 0.9+ | 2003 10 26 | 703 | 0.5+ | 0.8+ | 2005 05 11 | G96 | 0.3− | 0.3+ |
| 2003 09 20 | 699 | 0.1− | 0.5+ | 2003 10 26 | 703 | (2.7+ | 2.8+) | 2005 05 11 | G96 | 0.2+ | 0.3+ |
| 2003 09 20 | 699 | 0.2− | 0.4− | 2003 10 26 | 703 | 0.8− | 0.3+ | 2005 05 11 | G96 | 0.1− | 0.0 |
| 2003 09 20 | 699 | 0.5− | 0.8− | 2003 10 28 | 106 | 0.8+ | 0.6− | 2005 05 11 | G96 | 0.2+ | 0.0 |
| 2003 09 20 | 699 | 0.2− | 1.3− | 2003 10 28 | 106 | 0.4− | 0.5− | 2005 06 01 | G96 | 0.3− | 0.4+ |
| 2003 09 28 | 704 | 0.4+ | 0.0 | 2003 10 28 | 106 | 0.3+ | 0.3− | 2005 06 01 | G96 | 0.4− | 0.4+ |
| 2003 09 28 | 704 | 0.0 | 0.2− | 2003 10 28 | 704 | 0.7+ | 0.2− | 2005 06 01 | G96 | 0.3− | 0.3+ |
| 2003 09 28 | 704 | 0.3+ | 0.6+ | 2003 10 28 | 704 | 0.8+ | 0.4+ | 2005 06 01 | G96 | 0.3− | 0.4+ |
| 2003 09 28 | 704 | 0.5+ | 0.2+ | 2003 10 28 | 704 | 1.8+ | 0.6+ | 2006 08 15 | 644 | 0.1+ | 0.0 |
| 2003 09 28 | 691 | 0.3+ | 0.1+ | 2003 10 28 | 704 | 0.9+ | 0.9+ | 2006 08 15 | 644 | 0.5− | 0.1− |
| 2003 09 28 | 691 | 0.2+ | 0.1+ | 2003 11 01 | 704 | 0.2+ | 0.3− | 2006 08 15 | 644 | 0.0 | 0.0 |
| 2003 09 28 | 691 | 0.4+ | 0.0 | 2003 11 01 | 704 | 0.8− | 0.3+ | 2006 08 16 | 644 | 0.2+ | 0.6+ |
| 2003 10 14 | 699 | 0.3− | 0.6+ | 2003 11 01 | 704 | 0.2+ | 0.4+ | 2006 08 16 | 644 | 0.5− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 14 | 699 | 0.5+ | 0.9+ | 2003 11 01 | 704 | 0.1+ | 0.3+ | 2006 08 16 | 644 | 0.2+ | 0.1− |
| 2003 10 14 | 699 | 0.0 | 0.4− | 2003 11 01 | 704 | 0.2− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.1− |
| 2003 10 14 | 699 | (1.1+ | 2.1+) | 2003 11 03 | 608 | 0.0 | 0.7− | 2006 08 16 | 644 | 0.1− | 0.2− |
| 2003 10 19 | 691 | 0.5+ | 0.1− | 2003 11 03 | 608 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.4+ | 0.4− |
| 2003 10 19 | 691 | 0.4+ | 0.2− | 2003 11 03 | 608 | 0.1+ | 0.7+ | 2006 08 30 | 699 | 0.5+ | 0.7− |
| 2003 10 19 | 691 | 0.3+ | 0.1− | 2003 11 18 | 699 | 0.3+ | 0.7− | 2006 08 30 | 699 | 0.7− | 0.0 |
| 2003 10 21 | 843 | 1.5− | 0.4− | 2003 11 18 | 699 | 0.6+ | 0.1− | 2006 08 30 | 699 | 0.4− | 0.8+ |
| 2003 10 21 | 843 | 1.8− | 0.0 | 2003 11 18 | 699 | 0.5− | 0.4+ | 2006 08 30 | 699 | 0.2+ | 0.5+ |
| 2003 10 21 | 843 | 1.9− | 0.1− | 2003 11 18 | 699 | 0.1+ | 0.6− | 2006 09 26 | 703 | 0.7− | 0.3+ |
| 2003 10 21 | 843 | 1.5− | 0.1− | 2003 11 21 | 704 | 0.5− | 1.0+ | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 2003 10 21 | 644 | 0.1− | 0.0 | 2003 11 21 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.5+ |
| 2003 10 21 | 644 | 0.1+ | 0.1+ | 2003 11 21 | 704 | 0.4− | 0.5− | 2006 09 26 | 703 | 0.5− | 0.9+ |
| 2003 10 21 | 644 | 0.0 | 0.3+ | 2003 11 21 | 704 | 0.1− | 0.7+ | | | | |
| 2003 10 23 | 704 | 0.6− | 0.5− | 2003 11 24 | 691 | 0.2− | 0.4− | | | | |

**(143690)∗ 2003 UK$_{13}$**

Discovered 2003 Oct. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.38203 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31266847 | $\omega$ | 244.43370 | | −0.20928009 | −0.97677741 | |
| $a$ | 2.1498756 | $\Omega$ | 217.73762 | | +0.92193056 | −0.18144345 | |
| $e$ | 0.0669641 | $i$ | 4.30184 | | +0.32595381 | −0.11394807 | |
| $P$ | 3.15 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 18 | 691 | 0.2+ | 0.0 | 2003 10 24 | 704 | 0.3− | 0.2− | 2006 08 21 | 691 | 0.1− | 0.2− |
| 2000 11 18 | 691 | 0.1− | 0.2− | 2003 10 24 | 704 | 0.1− | 0.3− | 2006 09 20 | 691 | 0.2+ | 0.3− |
| 2000 11 18 | 691 | 0.2− | 0.0 | 2003 10 24 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 2003 09 16 | 691 | 0.4+ | 0.1+ | 2003 10 24 | 704 | (1.6+ | 0.5−) | 2006 09 20 | 691 | 0.4+ | 0.3− |
| 2003 09 16 | 691 | 0.1+ | 0.5+ | 2003 10 24 | 704 | 0.0 | 0.9+ | 2006 09 20 | 703 | 0.4− | 0.6− |
| 2003 09 16 | 691 | 0.4+ | 0.0 | 2005 04 12 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 703 | 0.7− | 0.1− |
| 2003 09 28 | 691 | 0.4− | 0.3+ | 2005 04 12 | 691 | 0.2+ | 0.6+ | 2006 09 20 | 703 | 0.7+ | 0.4− |
| 2003 09 28 | 691 | 0.0 | 0.0 | 2005 04 12 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 703 | 0.4+ | 0.2+ |
| 2003 09 28 | 691 | 0.1+ | 0.1+ | 2005 05 12 | G96 | 1.4− | 0.3− | 2006 09 22 | 703 | 0.3− | 0.3+ |
| 2003 09 28 | 691 | 0.1+ | 0.1− | 2005 05 12 | G96 | 0.6− | 0.0 | 2006 09 22 | 703 | 0.5+ | 0.6− |
| 2003 09 28 | 691 | 0.4− | 0.3+ | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 09 22 | 703 | 0.5+ | 1.2− |
| 2003 09 28 | 691 | 0.1− | 0.1− | 2005 05 12 | G96 | 0.3− | 0.1− | 2006 09 22 | 703 | 0.7+ | 0.0 |
| 2003 10 16 | 691 | 0.1− | 0.0 | 2005 06 13 | G96 | 0.3− | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2003 10 16 | 691 | 0.2− | 0.1− | 2005 06 13 | G96 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2003 10 16 | 691 | 0.3− | 0.1− | 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2003 10 22 | 704 | (0.1+ | 1.6+) | 2005 06 13 | G96 | 0.6+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2003 10 22 | 704 | 0.9+ | 1.1+ | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2003 10 22 | 704 | 0.0 | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.3+ |

**(143691)∗ 2003 UQ$_{15}$**

Discovered 2003 Oct. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.86104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28010756 | $\omega$ | 255.47655 | | −0.15361368 | −0.98750547 | |
| $a$ | 2.3134112 | $\Omega$ | 203.44720 | | +0.93720987 | −0.13433218 | |
| $e$ | 0.1057050 | $i$ | 5.06853 | | +0.31311420 | −0.08238814 | |
| $P$ | 3.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 09 | 691 | 0.4+ | 0.1− | 2003 10 24 | 704 | 0.1− | 0.2+ | 2005 04 16 | 691 | 0.1− | 0.6+ |
| 1994 03 09 | 691 | 0.8− | 0.4+ | 2003 10 24 | 695 | 0.4− | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.7+ |
| 1994 03 09 | 691 | 0.2+ | 0.2− | 2003 10 24 | 704 | 0.1+ | 1.8+ | 2005 04 16 | 691 | 0.7+ | 1.6+ |
| 2001 01 30 | 608 | 0.6+ | 0.4+ | 2003 10 24 | 695 | 0.5− | 0.0 | 2005 05 14 | G96 | 0.4− | 0.2+ |
| 2001 01 30 | 608 | 0.3+ | 0.1− | 2003 10 28 | 704 | 0.0 | 0.8+ | 2005 05 14 | G96 | 0.4− | 0.4+ |
| 2001 01 30 | 608 | 0.8+ | 0.3+ | 2003 10 28 | 704 | (2.8+ | 0.1+) | 2005 05 14 | G96 | 0.3− | 0.2+ |
| 2001 02 17 | 704 | 0.2− | 0.0 | 2003 10 28 | 704 | 0.0 | 0.4+ | 2005 05 14 | G96 | 0.4− | 0.1+ |
| 2001 02 17 | 704 | 0.3+ | 0.0 | 2003 10 28 | 704 | 0.7+ | 0.0 | 2005 05 14 | G96 | 0.1− | 0.2+ |
| 2001 02 17 | 704 | 0.5+ | 0.3+ | 2003 10 29 | 703 | 0.5+ | 1.3+ | 2005 05 14 | G96 | 0.4− | 0.1+ |
| 2001 02 17 | 704 | 0.3+ | 0.6+ | 2003 10 29 | 703 | 0.0 | 1.0+ | 2005 05 14 | G96 | 0.3− | 0.2+ |
| 2001 03 14 | 699 | 0.7+ | 0.0 | 2003 10 29 | 703 | 0.2+ | 0.5+ | 2005 05 14 | G96 | 0.3− | 0.3+ |
| 2001 03 14 | 699 | 1.2+ | 1.2+ | 2003 10 29 | 703 | 0.8+ | 0.5+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2001 03 14 | 699 | 0.2+ | 0.7+ | 2003 11 01 | 704 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.3− | 0.1+ |
| 2001 03 14 | 699 | (0.4+ | 2.1+) | 2003 11 01 | 704 | 1.5+ | 0.3− | 2006 08 29 | 691 | 0.3− | 0.0 |
| 2003 09 30 | 333 | 0.6− | 0.1+ | 2003 11 01 | 704 | (2.2+ | 1.5−) | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2003 09 30 | 333 | 0.4− | 0.1− | 2003 11 05 | 699 | 1.2+ | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 2003 09 30 | 333 | 0.4− | 0.1− | 2003 11 05 | 699 | 0.7− | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 2003 10 16 | 699 | 0.0 | 0.8− | 2003 11 05 | 699 | 0.7− | 0.2− | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2003 10 16 | 699 | 0.5+ | 0.1− | 2003 11 05 | 699 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2003 10 16 | 699 | 1.0− | 0.8− | 2003 11 19 | 699 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 2003 10 16 | 699 | 1.9− | 1.2+ | 2003 11 19 | 699 | 0.7− | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2003 10 21 | 704 | 0.9− | 0.4+ | 2003 11 19 | 699 | 0.8− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2003 10 21 | 704 | 0.9+ | 0.0 | 2003 11 19 | 699 | 0.8− | 1.1+ | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2003 10 21 | 704 | 0.9+ | 0.1− | 2003 11 30 | 704 | 0.8+ | 0.5+ | 2006 09 28 | 691 | 1.7+ | 1.1+ |
| 2003 10 22 | 608 | 0.6− | 0.0 | 2003 11 30 | 704 | 0.7− | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2003 10 22 | 608 | 0.7− | 0.4+ | 2003 11 30 | 704 | 0.0 | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2003 10 22 | 608 | 0.7− | 0.3+ | 2003 11 30 | 704 | 1.1− | 0.8+ | | | | |
| 2003 10 24 | 704 | 0.5+ | 0.0 | 2003 11 30 | 704 | 0.3+ | 0.1+ | | | | |

**(143692)∗ 2003 UF$_{20}$ = 2001 AY$_{20}$ = 2002 GW$_{155}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 53525)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.31294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30417333 | $\omega$ | 237.86441 | | +0.89776815 | +0.42713525 | |
| $a$ | 2.1897202 | $\Omega$ | 96.65268 | | −0.35879500 | +0.85080246 | |
| $e$ | 0.2022908 | $i$ | 6.21634 | | −0.25549656 | +0.30608929 | |
| $P$ | 3.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.3+ | 0.1+ | 2003 10 27 | 704 | 0.1+ | 0.3+ | 2003 12 22 | 704 | 0.2+ | 0.3− |
| 1999 05 13 | 704 | 1.6− | 0.9− | 2003 10 27 | 704 | 0.1+ | 0.4+ | 2005 03 16 | 703 | (0.6− | 2.1−) |
| 1999 05 13 | 704 | 0.0 | 0.8− | 2003 10 28 | 608 | 0.7− | 0.4− | 2005 03 16 | 703 | (0.1+ | 1.8−) |
| 1999 05 13 | 704 | 0.4− | 1.7+ | 2003 10 28 | 608 | 0.2− | 0.9− | 2005 03 16 | 703 | 0.4− | 0.4+ |
| 2001 01 03 | 704 | 0.3+ | 0.2− | 2003 10 28 | 608 | 0.5− | 0.4− | 2005 03 16 | 703 | (1.7− | 0.9−) |
| 2001 01 03 | 704 | (1.9− | 0.3+) | 2003 10 29 | 699 | 0.1+ | 1.3− | 2006 08 15 | 644 | 0.2− | 0.2+ |
| 2001 01 03 | 704 | 0.4− | 0.4+ | 2003 10 29 | 699 | 0.9− | 0.8+ | 2006 08 15 | 644 | 0.4− | 0.3+ |
| 2001 01 03 | 704 | 0.1+ | 0.6+ | 2003 10 29 | 699 | 0.5− | 0.5+ | 2006 08 15 | 644 | 0.2− | 0.1+ |
| 2001 01 04 | 704 | 0.0 | 0.9+ | 2003 10 29 | 699 | 0.2+ | 0.1− | 2006 08 23 | 644 | 0.2− | 0.2+ |
| 2001 01 04 | 704 | 0.0 | 0.2+ | 2003 11 01 | 704 | 0.1− | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.1+ |
| 2001 01 04 | 704 | 0.2− | 1.0− | 2003 11 01 | 704 | 0.1− | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.2+ |
| 2002 04 13 | 644 | 0.2+ | 0.2− | 2003 11 01 | 704 | 0.5+ | 0.3+ | 2006 08 30 | 699 | 0.4+ | 0.3+ |
| 2002 04 13 | 644 | 0.5+ | 0.6− | 2003 11 01 | 704 | 0.2− | 0.4− | 2006 08 30 | 699 | 0.1+ | 0.3+ |
| 2002 04 13 | 644 | 0.1− | 0.4− | 2003 11 18 | 703 | 0.3+ | 1.1− | 2006 08 30 | 699 | 0.3− | 0.2+ |
| 2002 04 16 | 704 | 0.3+ | 1.0+ | 2003 11 18 | 703 | 1.3− | 0.1+ | 2006 09 20 | 703 | 0.6− | 0.7− |
| 2002 04 16 | 704 | 0.5+ | 0.6+ | 2003 11 18 | 703 | 0.7+ | 1.0− | 2006 09 20 | 703 | 0.1− | 0.2− |
| 2002 04 16 | 704 | 0.4+ | 1.0+ | 2003 11 18 | 703 | 0.0 | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.2− |
| 2003 10 19 | 699 | 0.3+ | 0.3+ | 2003 11 19 | 644 | 0.1+ | 0.6+ | 2006 09 20 | 703 | 0.1− | 0.3− |
| 2003 10 19 | 699 | 0.3+ | 1.0+ | 2003 11 19 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.3− |
| 2003 10 19 | 699 | 0.5+ | 1.0+ | 2003 11 19 | 644 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 0.4+ | 0.7− |
| 2003 10 19 | 699 | 0.7+ | 0.1+ | 2003 11 21 | 699 | 0.8+ | 0.6+ | 2006 09 21 | 699 | 0.1+ | 0.9− |
| 2003 10 19 | 644 | 0.0 | 0.1+ | 2003 11 21 | 699 | 0.5+ | 0.5+ | 2006 09 21 | 699 | 0.6+ | 0.0 |
| 2003 10 19 | 644 | 0.2− | 0.0 | 2003 11 21 | 699 | 0.5− | 0.1+ | 2006 09 24 | 608 | 1.1+ | 1.3+ |
| 2003 10 19 | 644 | 0.1− | 0.1+ | 2003 11 21 | 699 | 0.2+ | 0.8+ | 2006 09 24 | 608 | 0.9+ | 1.4+ |
| 2003 10 21 | 704 | (0.2+ | 2.0−) | 2003 11 30 | 704 | 0.0 | 0.4− | 2006 09 24 | 608 | 1.1+ | 1.4+ |
| 2003 10 21 | 704 | 0.1− | 0.3+ | 2003 11 30 | 704 | 0.2+ | 0.5− | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2003 10 21 | 704 | 0.1− | 0.6− | 2003 11 30 | 703 | (1.9− | 1.1−) | 2006 09 26 | 703 | 0.8− | 0.3− |
| 2003 10 21 | 704 | 0.1+ | 0.1− | 2003 11 30 | 704 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2003 10 21 | 704 | 0.3+ | 0.8+ | 2003 11 30 | 703 | 1.3− | 0.7− | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2003 10 21 | 704 | 0.4− | 0.0 | 2003 11 30 | 704 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2003 10 21 | 704 | (0.9+ | 1.7−) | 2003 11 30 | 703 | 1.4− | 1.0− | 2006 10 21 | 703 | 0.5− | 0.0 |
| 2003 10 21 | 704 | 0.1− | 0.8+ | 2003 11 30 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.2− |
| 2003 10 21 | 704 | 0.7+ | 0.3+ | 2003 11 30 | 703 | (2.2− | 1.0−) | 2006 10 21 | 703 | 0.0 | 0.2+ |
| 2003 10 23 | 608 | (1.5+ | 0.8+) | 2003 12 21 | 704 | 0.0 | 0.7+ | 2006 11 19 | 703 | 0.2− | 0.4− |
| 2003 10 23 | 608 | 0.5+ | 0.9− | 2003 12 21 | 704 | 0.4+ | 0.9+ | 2006 11 19 | 703 | 0.4− | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 608 | 0.1+ | 1.2− | 2003 12 21 | 704 | 1.1− | 0.7+ | 2006 11 19 | 703 | 0.7− | 1.1− | | |
| 2003 10 27 | 704 | 0.7+ | 0.1+ | 2003 12 22 | 704 | 0.4+ | 0.6− | 2006 11 19 | 703 | 0.6+ | 0.0 | | |
| 2003 10 27 | 704 | 0.5+ | 0.4+ | 2003 12 22 | 704 | 0.4+ | 0.1+ | | | | | | |
| 2003 10 27 | 704 | 0.4− | 0.3+ | 2003 12 22 | 704 | 0.1+ | 1.1− | | | | | | |

**(143693)∗ 2003 UM$_{21}$**

Discovered 2003 Oct. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.02580 | | (2000.0) | | | |
| $n$ | 0.28857338 | $\omega$ | 266.13136 | | +0.87950098 | −0.46314813 |
| $a$ | 2.2679416 | $\Omega$ | 121.42836 | | +0.47144359 | +0.81654942 |
| $e$ | 0.1000280 | $i$ | 7.36720 | | +0.06495364 | +0.34458796 |
| $P$ | 3.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 28 | 691 | 0.1− | 0.2+ | 2003 11 26 | 691 | 0.1− | 0.2+ | 2005 04 13 | 703 | 1.0+ | 1.0+ | | |
| 2000 12 28 | 691 | 0.3− | 0.2+ | 2003 11 26 | 691 | 0.2+ | 0.2+ | 2005 04 13 | 703 | 0.5− | 0.7+ | | |
| 2000 12 28 | 691 | 0.4− | 0.2− | 2003 11 26 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 703 | (2.9+ | 1.6+) | | |
| 2001 01 21 | 704 | 0.5+ | 0.2+ | 2003 11 30 | 704 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.5+ | | |
| 2001 01 21 | 704 | 0.5+ | 0.4+ | 2003 11 30 | 704 | 1.0+ | 1.8+ | 2006 08 16 | 644 | 0.1− | 0.5+ | | |
| 2001 01 21 | 704 | 0.4+ | 0.2+ | 2003 11 30 | 704 | 0.7+ | 1.0+ | 2006 08 16 | 644 | 0.0 | 0.6+ | | |
| 2001 01 21 | 704 | 1.0+ | 0.1− | 2003 11 30 | 704 | 0.6+ | 0.7+ | 2006 08 22 | 644 | 0.6− | 0.3+ | | |
| 2003 10 19 | 699 | 0.1+ | 0.1+ | 2003 12 16 | 703 | 0.6− | 0.3− | 2006 08 22 | 644 | 0.0 | 0.6+ | | |
| 2003 10 19 | 699 | 0.1+ | 0.6− | 2003 12 16 | 703 | 1.9− | 0.5− | 2006 08 22 | 644 | 0.3− | 0.5+ | | |
| 2003 10 19 | 699 | 0.1+ | 1.0− | 2003 12 16 | 703 | 0.8− | 0.7− | 2006 08 22 | 644 | 0.1− | 0.1− | | |
| 2003 10 19 | 699 | 0.1− | 0.9− | 2003 12 16 | 703 | (4.0− | 0.6−) | 2006 08 22 | 644 | 0.2+ | 0.5+ | | |
| 2003 10 21 | 644 | 0.3− | 0.1− | 2003 12 20 | 704 | (2.2− | 0.7+) | 2006 08 22 | 644 | 0.0 | 0.3+ | | |
| 2003 10 21 | 644 | 0.3− | 0.3− | 2003 12 20 | 704 | (2.3− | 1.1+) | 2006 09 20 | 703 | 0.4− | 0.5+ | | |
| 2003 10 21 | 644 | 0.0 | 0.1− | 2003 12 20 | 704 | 1.7− | 0.2− | 2006 09 20 | 703 | 0.5+ | 0.0 | | |
| 2003 11 01 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 691 | 0.3− | 0.2− | 2006 09 20 | 703 | 0.2− | 0.2+ | | |
| 2003 11 01 | 704 | 0.5− | 0.2+ | 2003 12 22 | 691 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.3− | 1.0+ | | |
| 2003 11 01 | 704 | 0.3− | 1.0+ | 2003 12 22 | 704 | 0.0 | 0.5− | 2006 09 26 | 703 | 0.5− | 1.7− | | |
| 2003 11 01 | 704 | 0.8+ | 0.8+ | 2003 12 22 | 704 | 0.6− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.4− | | |
| 2003 11 23 | 699 | 1.3+ | 1.3− | 2003 12 22 | 691 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.0 | 0.0 | | |
| 2003 11 23 | 699 | 0.7+ | 0.4+ | 2003 12 22 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.4+ | 0.3− | | |
| 2003 11 23 | 699 | 1.1+ | 1.0− | 2003 12 22 | 704 | 0.2− | 0.5+ | | | | | | |
| 2003 11 23 | 699 | 1.2+ | 0.4+ | 2005 04 13 | 703 | 1.2+ | 1.7+ | | | | | | |

**(143694)∗ 2003 UK$_{24}$ = 1999 LN$_{30}$**

Discovered 2003 Oct. 22 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 95118)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 109.96721 | | (2000.0) | | | |
| $n$ | 0.31592077 | $\omega$ | 89.70807 | | −0.24347039 | +0.96988718 |
| $a$ | 2.1350953 | $\Omega$ | 166.19540 | | −0.90021070 | −0.22351138 |
| $e$ | 0.0714910 | $i$ | 1.53828 | | −0.36103028 | −0.09675496 |
| $P$ | 3.12 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | (0.2+ | 2.4−) | 2005 03 04 | G96 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.4+ | | |
| 1999 05 13 | 704 | 0.7+ | 1.8− | 2005 03 04 | G96 | 0.4− | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.1+ | | |
| 1999 05 13 | 704 | 0.7+ | 0.9− | 2005 03 04 | G96 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.3+ | | |
| 1999 05 13 | 704 | (2.7− | 0.1−) | 2005 03 04 | G96 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 1999 05 13 | 704 | (5.3− | 0.8−) | 2005 03 08 | 699 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 1999 06 12 | 691 | 0.3− | 0.2− | 2005 03 08 | 699 | 1.1− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 1999 06 12 | 691 | 0.6− | 0.3+ | 2005 03 08 | 699 | 1.0− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 1999 06 12 | 691 | 0.0 | 0.0 | 2005 03 08 | 699 | 0.7+ | 0.3− | 2006 09 29 | 691 | 0.1+ | 0.1− | | |
| 2002 04 09 | 644 | 0.5+ | 0.3+ | 2005 03 13 | 703 | 0.7− | 0.5+ | 2006 09 29 | 691 | 0.0 | 0.1+ | | |
| 2002 04 09 | 644 | 0.5+ | 0.6+ | 2005 03 13 | 703 | 0.1− | 1.1+ | 2006 09 29 | 691 | 0.9+ | 0.5− | | |
| 2002 04 09 | 704 | 0.3+ | 0.4− | 2005 03 13 | 703 | (1.7− | 0.6+) | 2006 10 11 | 644 | 0.4− | 0.3+ | | |
| 2002 04 09 | 704 | 1.2+ | 0.4− | 2005 03 13 | 703 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.5+ | | |
| 2002 04 09 | 704 | (1.8+ | 1.0+) | 2005 03 31 | 699 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.4− | 0.1+ | | |
| 2002 04 09 | 644 | (1.6+ | 0.4+) | 2005 03 31 | 699 | 0.2− | 1.0+ | 2006 10 15 | 703 | 0.3− | 0.9− | | |
| 2002 04 19 | 691 | 0.1− | 0.2+ | 2005 03 31 | 699 | 0.3+ | 0.4+ | 2006 10 15 | 703 | 1.3− | 0.4+ | | |
| 2002 04 19 | 691 | 0.1+ | 0.4+ | 2005 03 31 | 699 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.7− | 0.4− | | |
| 2002 04 19 | 691 | 0.2+ | 0.3+ | 2005 04 04 | 703 | 1.0− | 0.5+ | 2006 10 15 | 703 | 0.0 | 0.8+ | | |
| 2002 05 08 | 644 | 0.1− | 1.1+ | 2005 04 04 | 703 | (2.4− | 1.0+) | 2006 10 17 | G96 | 0.1+ | 0.5− | | |
| 2002 05 08 | 644 | 0.5+ | 0.6+ | 2005 04 04 | 703 | 1.1− | 0.6− | 2006 10 17 | G96 | 0.2+ | 0.1− | | |
| 2002 05 08 | 644 | 0.5+ | 1.3+ | 2005 04 04 | 703 | 0.4− | 0.5− | 2006 10 17 | G96 | 0.7+ | 0.7− | | |
| 2002 05 18 | 704 | 0.6− | 1.0+ | 2005 04 04 | G96 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.1− | | |
| 2002 05 18 | 704 | 1.4+ | 0.7− | 2005 04 04 | G96 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2002 05 18 | 704 | 0.4+ | 0.7+ | 2005 04 04 | G96 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 05 18 | 704 | 0.6+ | 0.9+ | 2005 04 04 | 704 | 1.5+ | 0.9+ | 2006 10 20 | 644 | 0.5− | 0.0 | | |
| 2003 10 22 | 291 | 0.0 | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2003 10 22 | 291 | 0.1− | 0.3+ | 2005 04 04 | 704 | 0.6+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2003 10 22 | 291 | 0.2− | 0.4+ | 2005 04 04 | 704 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− | | |
| 2003 10 24 | 704 | 1.2+ | 0.7+ | 2005 04 13 | 699 | 0.7− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.2− | | |
| 2003 10 24 | 704 | 0.1+ | 0.2− | 2005 04 13 | 699 | 1.1+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.2+ | | |
| 2003 10 24 | 704 | 0.6− | 0.6− | 2005 04 13 | 699 | 1.2+ | 0.2− | 2006 10 31 | G96 | 0.6+ | 0.1− | | |
| 2003 10 28 | 704 | 0.5+ | 0.9+ | 2005 04 13 | 699 | 0.9+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2003 10 28 | 704 | 0.2− | 0.4+ | 2006 07 21 | G96 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2003 10 28 | 704 | 0.1− | 0.9+ | 2006 07 21 | G96 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.1+ | | |
| 2003 10 28 | 704 | 0.5− | 0.9+ | 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.5− | | |
| 2003 10 28 | 704 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.5− | | |
| 2003 11 19 | 691 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.1+ | | |
| 2003 11 19 | 691 | 0.3− | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.3+ | | | | | | |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.2− | 0.2+ | | | | | | |

**(143695)∗ 2003 UQ$_{40}$**

Discovered 2003 Oct. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 222.83081 | | (2000.0) | | | |
| $n$ | 0.30158128 | $\omega$ | 207.23870 | | −0.88262426 | −0.46980973 |
| $a$ | 2.2022492 | $\Omega$ | 304.73046 | | +0.43473775 | −0.80292157 |
| $e$ | 0.1222262 | $i$ | 1.10947 | | +0.17882254 | −0.36687296 |
| $P$ | 3.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | 0.3+ | 0.4+ | 2003 10 22 | 691 | 0.1+ | 0.1− | 2005 03 11 | G96 | 0.4− | 0.6+ | | |
| 1998 03 03 | 704 | (2.3− | 0.8+) | 2003 10 22 | 691 | 0.1+ | 0.0 | 2005 03 11 | G96 | 0.0 | 0.3+ | | |
| 1998 03 03 | 704 | 1.2+ | 1.6+ | 2003 10 24 | 704 | 0.8+ | 1.2+ | 2005 03 11 | G96 | (0.2+ | 1.8−) | | |
| 1998 03 03 | 704 | 1.5+ | 1.7+ | 2003 10 24 | 704 | 0.9+ | 0.2+ | 2005 05 11 | 644 | 0.3+ | 0.5+ | | |
| 1998 03 03 | 704 | (4.3− | 0.4−) | 2003 10 24 | 704 | 1.0+ | 1.0+ | 2005 05 11 | 644 | 0.4+ | 0.7+ | | |
| 1998 03 04 | 704 | 0.2− | 0.7− | 2003 10 29 | 703 | (4.3− | 1.4+) | 2005 05 11 | 644 | 0.3+ | 0.7+ | | |
| 1998 03 04 | 704 | 1.0+ | 0.6− | 2003 10 29 | 703 | 1.4− | 0.3+ | 2006 09 17 | 691 | 0.5− | 0.1+ | | |
| 1998 03 04 | 704 | 1.8− | 0.2− | 2003 10 29 | 703 | (2.2− | 0.1+) | 2006 09 17 | 691 | 0.1− | 0.0 | | |
| 1998 03 04 | 704 | 0.5− | 0.5+ | 2003 10 29 | 703 | 0.5− | 0.8+ | 2006 09 17 | 691 | 0.4− | 0.2+ | | |
| 1998 03 04 | 704 | 0.0 | 1.1+ | 2003 11 02 | 704 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 2000 11 29 | 704 | 0.4+ | 0.4− | 2003 11 02 | 704 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.2+ | | |
| 2000 11 29 | 704 | 0.8− | 0.2+ | 2003 11 02 | 704 | 0.2− | 0.8+ | 2006 09 25 | 691 | 0.1+ | 0.0 | | |
| 2000 11 29 | 704 | 0.4+ | 0.5− | 2003 11 02 | 704 | 0.4− | 1.4+ | 2006 10 02 | 691 | 0.0 | 0.1+ | | |
| 2000 11 29 | 704 | 0.0 | 0.2− | 2003 11 02 | 704 | (1.2− | 1.8+) | 2006 10 02 | 691 | 0.1− | 0.3+ | | |
| 2000 12 21 | 704 | 0.1+ | 0.7− | 2003 11 19 | 699 | 0.5+ | 0.7+ | 2006 10 02 | 691 | 0.4+ | 0.1+ | | |
| 2000 12 21 | 704 | 0.6+ | 1.0− | 2003 11 19 | 699 | 0.1− | 0.0 | 2006 10 17 | 703 | (3.0+ | 2.4−) | | |
| 2000 12 21 | 704 | 0.2+ | 0.1+ | 2003 11 19 | 699 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.6− | 0.2+ | | |
| 2001 01 03 | 704 | 0.6+ | 0.8+ | 2003 11 19 | 699 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.3+ | 1.5+ | | |
| 2001 01 03 | 704 | 1.3− | 0.9− | 2003 11 21 | 704 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.0 | | |
| 2001 01 03 | 704 | 1.1+ | 0.4− | 2003 11 21 | 704 | 0.0 | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2001 01 03 | 704 | 1.5− | 0.1− | 2003 11 21 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2001 01 03 | 704 | 0.9+ | 0.7− | 2003 11 21 | 704 | 0.4− | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2001 01 03 | 704 | 1.4− | 0.6+ | 2003 11 21 | 704 | 0.0 | 0.7+ | 2006 10 19 | G96 | 0.4+ | 0.3− | | |
| 2003 10 16 | 699 | 0.1− | 0.8+ | 2003 11 21 | 704 | 0.3+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.5− | | |
| 2003 10 16 | 699 | 0.1+ | 0.7+ | 2003 11 21 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.0 | 0.4− | | |
| 2003 10 16 | 699 | 0.8− | 0.9+ | 2003 11 21 | 691 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.4− | | |
| 2003 10 16 | 699 | 0.2+ | 1.1− | 2003 11 24 | 699 | 0.5− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.7− | | |
| 2003 10 19 | 691 | 0.1+ | 0.2− | 2003 11 24 | 699 | 0.6+ | 0.5− | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2003 10 19 | 691 | 0.2− | 0.2− | 2003 11 24 | 699 | 0.8− | 0.6+ | 2006 10 31 | G96 | 0.4+ | 0.4− | | |
| 2003 10 19 | 691 | 0.0 | 0.3− | 2003 11 24 | 699 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2003 10 22 | 691 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 10 31 | G96 | 1.0− | 0.7− | | |

**(143696)∗ 2003 UU$_{40}$**

Discovered 2003 Oct. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.18413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29875603 | $\omega$ | 3.21976 | | +0.95824682 | −0.28547083 | |
| $a$ | 2.2161114 | $\Omega$ | 13.40197 | | +0.26073941 | +0.84878177 | |
| $e$ | 0.1591818 | $i$ | 4.06096 | | +0.11737965 | +0.44505720 | |
| $P$ | 3.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 809 | (0.9− | 2.5+) | 2003 11 02 | 704 | 0.4+ | 0.5+ | 2006 07 29 | F84 | (3.1+ | 1.3−) |
| 1993 10 12 | 809 | (1.4− | 2.7+) | 2003 11 02 | 704 | 0.4+ | 0.2+ | 2006 08 23 | 704 | 0.2− | 0.2+ |
| 1993 10 12 | 809 | 0.7− | 1.2+ | 2003 11 19 | 699 | 0.7+ | 0.5− | 2006 08 23 | 704 | 0.7+ | 1.0− |
| 2001 01 19 | 704 | 0.6+ | 0.5+ | 2003 11 19 | 699 | 0.1− | 0.4− | 2006 08 23 | 704 | 0.7+ | 0.8− |
| 2001 01 19 | 704 | 0.0 | 0.4+ | 2003 11 19 | 699 | 0.3− | 0.4− | 2006 08 23 | 704 | 1.0+ | 1.0− |
| 2001 01 19 | 704 | 0.2+ | 0.5+ | 2003 11 19 | 699 | 0.7− | 0.1+ | 2006 08 23 | 704 | (0.2− | 1.7+) |
| 2001 01 19 | 704 | 0.0 | 0.2− | 2003 11 19 | 699 | 0.2+ | 0.1− | 2006 08 23 | 644 | 0.5− | 0.4+ |
| 2003 09 26 | 704 | 0.0 | 0.5− | 2003 11 19 | 699 | 0.2+ | 0.2− | 2006 08 23 | 644 | 0.3− | 0.3+ |
| 2003 09 26 | 704 | 1.2+ | 0.6+ | 2003 11 19 | 699 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.3+ |
| 2003 09 26 | 704 | 0.3+ | 0.2+ | 2003 11 19 | 699 | 0.4− | 0.5− | 2006 08 24 | 644 | 0.4− | 0.4+ |
| 2003 09 26 | 704 | 0.5+ | 0.1+ | 2003 11 20 | 704 | 0.7− | 1.1+ | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 2003 10 16 | 699 | 0.4+ | 0.6− | 2003 11 20 | 704 | 0.8− | 1.0+ | 2006 08 24 | 644 | 0.4− | 0.4+ |
| 2003 10 16 | 699 | 0.6+ | 0.1− | 2003 11 20 | 704 | 0.9− | 0.6+ | 2006 08 28 | 699 | 0.5− | 0.1− |
| 2003 10 16 | 699 | (0.8− | 1.7+) | 2003 11 20 | 704 | 1.2− | 1.1+ | 2006 08 28 | 699 | 0.4− | 0.0 |
| 2003 10 16 | 699 | 0.3− | 0.9+ | 2003 11 20 | 704 | 0.7− | 1.0+ | 2006 08 28 | 699 | 0.3− | 0.3+ |
| 2003 10 19 | 691 | 0.1+ | 0.3− | 2003 11 24 | 704 | 0.1+ | 0.3− | 2006 08 28 | 699 | 0.6+ | 0.0 |
| 2003 10 19 | 691 | 0.1+ | 0.3− | 2003 11 24 | 704 | 0.1− | 0.3− | 2006 08 31 | 704 | 1.0+ | 0.5+ |
| 2003 10 19 | 691 | 0.0 | 0.3− | 2003 11 24 | 704 | 0.6− | 0.3+ | 2006 08 31 | 704 | 0.5− | 0.1+ |
| 2003 10 20 | 644 | 0.1+ | 0.1− | 2003 11 24 | 704 | 0.2− | 0.5− | 2006 08 31 | 704 | 0.3+ | 0.7− |
| 2003 10 20 | 644 | 0.2+ | 0.0 | 2003 11 24 | 704 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.2+ | 0.2+ |
| 2003 10 20 | 644 | 0.2+ | 0.1+ | 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.2− | 0.5+ |
| 2003 10 22 | 704 | 0.5+ | 0.3+ | 2003 12 28 | 704 | 0.5+ | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.0 |
| 2003 10 22 | 704 | 0.4+ | 0.2− | 2003 12 28 | 704 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.5+ |
| 2003 10 22 | 704 | 0.7+ | 0.0 | 2003 12 28 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.2+ |
| 2003 10 22 | 704 | 0.3+ | 0.3+ | 2005 04 04 | G96 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.6+ |
| 2003 10 22 | 704 | 0.3− | 1.1− | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.4− | 0.6+ |
| 2003 10 25 | 704 | 0.2− | 0.2+ | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.3+ |
| 2003 10 25 | 704 | 0.2+ | 0.4− | 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.4− | 0.3+ |
| 2003 10 25 | 704 | 0.4− | 0.9− | 2005 05 08 | G96 | 0.5− | 1.0+ | 2006 10 22 | G96 | 0.2− | 0.2+ |
| 2003 10 30 | 704 | 0.1− | 0.5− | 2005 05 08 | G96 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2003 10 30 | 704 | 0.2+ | 0.2− | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.2+ |
| 2003 10 30 | 704 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2003 10 30 | 704 | 0.7− | 0.6− | 2005 05 13 | G96 | 0.4− | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2003 10 30 | 704 | 0.1+ | 0.3+ | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2003 11 02 | 704 | 0.4− | 0.4+ | 2005 05 13 | G96 | 0.8+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.8− |
| 2003 11 02 | 704 | 0.0 | 0.7+ | 2005 05 13 | G96 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2003 11 02 | 704 | 0.2+ | 0.1+ | 2006 07 29 | F84 | 0.2− | 0.3− | | | | |

**(143697)∗ 2003 UP$_{44}$ = 2005 EN$_{203}$**

Discovered 2003 Oct. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.71928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31022777 | $\omega$ | 244.73854 | | +0.11745386 | +0.99271374 | |
| $a$ | 2.1611368 | $\Omega$ | 32.04226 | | −0.89191438 | +0.11736475 | |
| $e$ | 0.1706100 | $i$ | 2.90712 | | −0.43668448 | +0.02729374 | |
| $P$ | 3.18 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 809 | 0.6+ | 1.1+ | 2003 10 18 | 691 | 0.2− | 0.4+ | 2005 03 14 | G96 | 0.2+ | 1.0+ |
| 1996 04 18 | 809 | 0.0 | 1.1+ | 2003 10 19 | 691 | 0.3+ | 0.3+ | 2005 03 14 | G96 | 0.4− | 0.8+ |
| 1996 04 18 | 809 | 1.7− | 1.3+ | 2003 10 19 | 691 | 0.3+ | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.6+ |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2003 10 19 | 691 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.3+ |
| 1999 03 21 | 645 | 0.1+ | 0.1− | 2003 11 22 | 695 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.5+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2003 11 22 | 695 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.6− |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2005 02 04 | G96 | 0.4− | 0.4− | 2006 09 14 | 703 | 0.3− | 0.1− |
| 2003 09 16 | 691 | 0.3− | 0.5− | 2005 02 04 | G96 | 0.7− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.7+ |
| 2003 09 16 | 691 | 0.5+ | 0.2+ | 2005 02 04 | G96 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.3− | 0.1+ |
| 2003 09 16 | 691 | 0.1− | 0.2+ | 2005 02 04 | G96 | 0.9− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 2003 10 01 | 691 | 0.0 | 0.1+ | 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 1.8+ |
| 2003 10 01 | 691 | 0.0 | 0.1− | 2005 03 11 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.0− | 1.0+ |
| 2003 10 01 | 691 | 0.1− | 0.0 | 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 1.2− |
| 2003 10 18 | 691 | 0.2− | 0.0 | 2005 03 14 | G96 | 0.3+ | 0.1+ | | | | |
| 2003 10 18 | 691 | 0.2− | 0.0 | 2005 03 14 | G96 | 0.4− | 0.2+ | | | | |

**(143698)∗ 2003 UB$_{55}$ = 1997 AR$_{21}$**

Discovered 2003 Oct. 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 53533)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.57239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28098373 | $\omega$ | 128.59403 | | +0.60533526 | −0.79203107 | |
| $a$ | 2.3085995 | $\Omega$ | 283.97113 | | +0.70260617 | +0.57838359 | |
| $e$ | 0.1745640 | $i$ | 4.67514 | | +0.37405052 | +0.19534381 | |
| $P$ | 3.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 02 | 327 | 0.2− | 0.7− | 2003 10 22 | 704 | 0.4− | 0.7+ | 2003 11 24 | 704 | 0.2+ | 0.1− |
| 1997 01 02 | 327 | 0.5+ | 0.1+ | 2003 10 22 | 704 | 0.1+ | 0.6+ | 2003 11 24 | 704 | 0.3+ | 0.2+ |
| 1997 01 02 | 327 | 0.1− | 0.5− | 2003 10 22 | 704 | 0.2− | 0.0 | 2003 12 15 | 703 | 0.1+ | 0.7+ |
| 1997 01 05 | 327 | 0.4+ | 0.5− | 2003 10 22 | 704 | 0.4− | 0.6+ | 2003 12 15 | 703 | 0.5+ | 0.7+ |
| 1997 01 05 | 327 | 0.2− | 0.8− | 2003 10 22 | 704 | 0.1− | 0.0 | 2003 12 15 | 703 | 0.7+ | 0.6+ |
| 1997 01 05 | 327 | 0.5+ | 0.8− | 2003 10 23 | 699 | 0.3− | 0.1+ | 2003 12 15 | 703 | 0.1+ | 0.8+ |
| 2001 01 26 | 704 | 0.1+ | 0.1+ | 2003 10 23 | 699 | 0.4− | 0.2+ | 2003 12 19 | 704 | 0.5+ | 0.5+ |
| 2001 01 26 | 704 | 0.0 | 0.4+ | 2003 10 23 | 699 | 0.2− | 0.2+ | 2003 12 19 | 704 | 0.7− | 0.5+ |
| 2001 01 26 | 704 | 0.2+ | 1.0+ | 2003 10 23 | 699 | 0.1− | 0.1− | 2003 12 19 | 704 | 1.2+ | 0.6− |
| 2001 02 19 | 608 | (2.7+ | 0.2−) | 2003 10 30 | 704 | 0.2+ | 0.4− | 2003 12 19 | 704 | 0.8+ | 0.3+ |
| 2001 02 19 | 608 | (3.2+ | 0.2+) | 2003 10 30 | 704 | 0.2+ | 0.2+ | 2003 12 19 | 704 | 0.4+ | 0.0 |
| 2001 02 19 | 608 | (2.8+ | 0.1−) | 2003 10 30 | 704 | 0.8+ | 0.6− | 2004 01 09 | 699 | (2.7− | 0.3−) |
| 2001 02 20 | 704 | 0.7+ | 0.5+ | 2003 10 30 | 704 | (2.3+ | 2.0−) | 2004 01 09 | 699 | 0.6− | 1.0− |
| 2001 02 20 | 704 | 0.3+ | 0.5+ | 2003 11 02 | 704 | 0.4+ | 0.7+ | 2004 01 09 | 699 | (1.9− | 1.1+) |
| 2001 02 20 | 704 | 0.3− | 0.8+ | 2003 11 02 | 704 | 0.2+ | 0.1+ | 2004 01 09 | 699 | (0.4− | 1.6+) |
| 2001 02 20 | 704 | 0.5+ | 0.7+ | 2003 11 02 | 704 | 0.4+ | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.3+ |
| 2003 09 27 | 704 | 0.8+ | 1.2− | 2003 11 02 | 704 | 0.4− | 0.6+ | 2004 01 22 | 704 | 0.1− | 0.5− |
| 2003 09 27 | 704 | 0.1+ | 1.3− | 2003 11 19 | 691 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.1− | 0.1− |
| 2003 09 27 | 704 | 0.8− | 0.5− | 2003 11 19 | 691 | 0.2− | 0.1− | 2004 01 22 | 704 | 0.1+ | 0.3− |
| 2003 09 27 | 704 | 0.4− | 0.2− | 2003 11 19 | 691 | 0.1− | 0.1− | 2006 08 12 | 644 | 0.0 | 0.3+ |
| 2003 09 27 | 704 | 0.5+ | 0.1+ | 2003 11 20 | 704 | 0.0 | 0.6+ | 2006 08 12 | 644 | 0.3− | 0.9+ |
| 2003 10 18 | 699 | 0.0 | 0.3+ | 2003 11 20 | 704 | 0.0 | 0.1− | 2006 08 12 | 644 | 0.2− | 0.2+ |
| 2003 10 18 | 699 | (2.1− | 0.9+) | 2003 11 20 | 704 | 0.2− | 0.1+ | 2006 08 16 | A55 | 0.0 | 0.9+ |
| 2003 10 18 | 699 | (1.3− | 1.7+) | 2003 11 20 | 704 | 0.3− | 0.2− | 2006 08 16 | A55 | 0.1+ | 0.8+ |
| 2003 10 18 | 699 | 1.5− | 0.3+ | 2003 11 20 | 704 | 0.3− | 0.0 | 2006 08 16 | A55 | 0.2+ | 0.6+ |
| 2003 10 18 | 644 | 0.1− | 0.1− | 2003 11 21 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2003 10 18 | 644 | 0.2− | 0.0 | 2003 11 21 | 644 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2003 10 18 | 644 | 0.0 | 0.1− | 2003 11 21 | 644 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2003 10 19 | 644 | 0.0 | 0.2+ | 2003 11 24 | 704 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2003 10 19 | 644 | 0.1− | 0.1+ | 2003 11 24 | 704 | 0.1+ | 0.1+ | | | | |
| 2003 10 19 | 644 | 0.2+ | 0.0 | 2003 11 24 | 704 | 0.1− | 0.3+ | | | | |

**(143699)∗ 2003 UN$_{55}$**

Discovered 2003 Oct. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.96841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30744664 | $\omega$ | 133.60402 | | +0.19570130 | −0.97786290 | |
| $a$ | 2.1741502 | $\Omega$ | 304.96836 | | +0.87170306 | +0.20805841 | |
| $e$ | 0.0429996 | $i$ | 5.18534 | | +0.44926026 | +0.02226747 | |
| $P$ | 3.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 08 | 691 | 0.0 | 0.2− | 2003 11 05 | 699 | 1.2− | 0.8+ | 2006 08 29 | 699 | 0.1+ | 0.3− |
| 1998 01 08 | 691 | 0.2− | 0.4− | 2003 11 05 | 699 | 0.3+ | 0.1+ | 2006 08 29 | 699 | 0.2− | 0.3− |
| 1998 01 08 | 691 | 0.5− | 0.2− | 2003 11 16 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 699 | 1.2+ | 1.1+ |
| 1998 01 26 | 566 | 0.4+ | 0.4+ | 2003 11 16 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.7− |
| 1998 01 26 | 566 | 0.3+ | 0.0 | 2003 11 16 | 691 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.8+ | 1.4− |
| 1998 01 26 | 566 | 1.0+ | 0.1− | 2003 11 19 | 699 | 0.6− | 1.1+ | 2006 09 18 | 699 | 0.4− | 0.3+ |
| 2000 12 22 | 704 | 0.2− | 0.4+ | 2003 11 19 | 699 | 1.0− | 0.1− | 2006 09 18 | 699 | 0.8− | 0.4− |
| 2000 12 22 | 704 | 0.4− | 0.4+ | 2003 11 19 | 699 | 0.2− | 0.2+ | 2006 09 27 | 699 | 0.1− | 0.1+ |
| 2000 12 22 | 704 | 0.4+ | 0.9− | 2003 11 19 | 699 | 0.1− | 0.2+ | 2006 09 27 | 699 | 0.7+ | 0.1− |
| 2000 12 22 | 704 | 0.8+ | 0.4− | 2003 11 19 | 704 | 0.7+ | 0.4− | 2006 09 27 | 699 | 0.5+ | 1.0+ |
| 2001 01 04 | 704 | 0.0 | 0.7+ | 2003 11 19 | 704 | 0.7+ | 0.3+ | 2006 09 27 | 699 | 0.1− | 1.3− |
| 2001 01 04 | 704 | 0.2− | 0.0 | 2003 11 19 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 703 | (1.6− | 0.4+) |
| 2001 01 04 | 704 | 0.6− | 0.2− | 2003 11 19 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 703 | (0.1+ | 1.7+) |
| 2001 01 19 | 704 | (1.5+ | 1.5+) | 2003 11 19 | 704 | 0.6+ | 0.6− | 2006 09 27 | 703 | (1.7+ | 1.6+) |
| 2001 01 19 | 704 | 0.4− | 1.4+ | 2003 11 19 | 691 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.3− | 0.6− |
| 2001 01 19 | 704 | 0.4− | 1.1+ | 2003 11 19 | 691 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.4+ | 0.0 |
| 2003 10 18 | 699 | 0.1+ | 0.3+ | 2003 11 19 | 691 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.1− | 0.5− |
| 2003 10 18 | 699 | 0.5+ | 0.2+ | 2003 11 21 | 644 | 0.2+ | 0.1− | 2006 10 03 | 704 | 0.4− | 0.2− |
| 2003 10 18 | 699 | 0.0 | 0.1− | 2003 11 21 | 644 | 0.2+ | 0.1− | 2006 10 03 | 704 | 0.9+ | 0.5− |
| 2003 10 18 | 699 | 0.9− | 0.1− | 2003 11 21 | 644 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2003 10 18 | 644 | 0.1− | 0.2+ | 2003 11 24 | 699 | 0.7− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2003 10 18 | 644 | 0.0 | 0.2+ | 2003 11 24 | 699 | 0.4− | 1.1− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2003 10 18 | 644 | 0.1+ | 0.2+ | 2003 11 24 | 699 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 2003 10 19 | 644 | 0.0 | 0.3+ | 2003 11 24 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.5− |
| 2003 10 19 | 644 | 0.1+ | 0.4+ | 2003 12 15 | 703 | (0.9− | 1.9−) | 2006 10 17 | 703 | 0.2− | 0.9+ |
| 2003 10 19 | 644 | 0.2− | 0.5+ | 2003 12 15 | 703 | (1.7− | 0.2+) | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 2003 10 22 | 704 | 0.4+ | 0.6+ | 2003 12 15 | 703 | 1.1+ | 1.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 10 22 | 704 | 0.2+ | 0.6+ | 2003 12 15 | 703 | 0.5+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 10 22 | 704 | 0.4+ | 0.4− | 2003 12 17 | 644 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 10 22 | 704 | 0.2− | 0.3+ | 2003 12 17 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 11 03 | 704 | 0.7− | 0.8+ | 2003 12 17 | 644 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 11 03 | 704 | (1.7− | 1.2+) | 2003 12 28 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 11 03 | 704 | 1.1− | 0.8+ | 2003 12 28 | 704 | 0.5− | 1.1− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2003 11 03 | 704 | 0.6+ | 0.6+ | 2003 12 28 | 704 | 1.4+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2003 11 04 | 704 | 0.4− | 0.4+ | 2003 12 28 | 704 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2003 11 04 | 704 | 0.5− | 0.4− | 2005 05 16 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 683 | 1.0− | 0.4− |
| 2003 11 04 | 704 | 0.7− | 0.3− | 2005 05 16 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 683 | 1.6+ | 0.8− |
| 2003 11 05 | 699 | 0.1− | 0.3+ | 2005 05 16 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 683 | 0.5− | 0.5+ |
| 2003 11 05 | 699 | 0.3− | 0.2− | 2006 08 29 | 699 | 0.1− | 1.4+ | | | | |

**(143700)∗ 2003 UF$_{57}$**

Discovered 2003 Oct. 26 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.19067 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30210929 | $\omega$ | 105.62911 | | +0.99631908 | −0.08290344 | |
| $a$ | 2.1996825 | $\Omega$ | 259.13011 | | +0.06765924 | +0.91668628 | |
| $e$ | 0.1408602 | $i$ | 1.27206 | | +0.05263565 | +0.39091340 | |
| $P$ | 3.26 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.0 | 0.4− | 2003 11 19 | 703 | 0.3+ | 1.0− | 2006 08 28 | 699 | 0.6+ | 0.9+ |
| 2000 11 24 | 691 | 0.3+ | 0.3− | 2003 11 19 | 703 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.5+ |
| 2000 11 24 | 691 | 0.0 | 0.5− | 2003 11 19 | 703 | 0.8− | 0.2− | 2006 08 29 | 704 | 0.2− | 0.0 |
| 2000 12 03 | 691 | 0.4+ | 0.5+ | 2003 11 19 | 699 | 0.4+ | 0.1− | 2006 08 29 | 704 | 0.6− | 0.6+ |
| 2000 12 03 | 691 | 0.2+ | 1.1+ | 2003 11 19 | 699 | 0.2+ | 0.8− | 2006 08 29 | 704 | 0.3+ | 0.1+ |
| 2000 12 03 | 691 | 0.1+ | 1.2+ | 2003 11 19 | 699 | 0.3− | 0.4+ | 2006 08 29 | 704 | 0.5− | 0.7+ |
| 2002 04 20 | 691 | 0.0 | 0.4+ | 2003 11 19 | 699 | 1.1− | 1.0+ | 2006 08 29 | 691 | 0.1+ | 0.3+ |
| 2002 04 20 | 691 | 0.1+ | 0.8+ | 2003 11 21 | 704 | 0.1− | 0.7+ | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2002 04 20 | 691 | 0.4+ | 1.0+ | 2003 11 21 | 704 | 0.4+ | 0.5+ | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2003 10 19 | 608 | 0.3+ | 0.0 | 2003 11 21 | 704 | 0.7− | 0.5+ | 2006 08 30 | 704 | 0.4− | 1.0− |
| 2003 10 19 | 608 | 0.3+ | 0.1+ | 2003 11 21 | 704 | 0.2− | 0.9+ | 2006 08 30 | 704 | 1.4− | 0.2+ |
| 2003 10 19 | 608 | 0.1+ | 0.1+ | 2003 11 21 | 704 | 0.7− | 0.0 | 2006 08 30 | 704 | (1.8− | 0.4−) |
| 2003 10 22 | 704 | 0.2+ | 0.1− | 2003 11 21 | 699 | 0.2− | 0.3− | 2006 08 30 | 704 | 0.6− | 0.6+ |
| 2003 10 22 | 704 | 0.3− | 0.9− | 2003 11 21 | 699 | 1.4− | 0.3+ | 2006 09 14 | 703 | (0.0 | 1.5−) |
| 2003 10 22 | 704 | 0.1− | 0.5− | 2003 11 21 | 699 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.8− |
| 2003 10 22 | 704 | 0.4+ | 0.0 | 2003 11 21 | 699 | 0.2− | 1.3+ | 2006 09 14 | 703 | (1.6− | 0.3+) |
| 2003 10 22 | 691 | 0.1− | 0.2− | 2005 03 11 | G96 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.7− | 1.5+ |
| 2003 10 22 | 691 | 0.0 | 0.2− | 2005 03 11 | G96 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.3− | 0.6+ |
| 2003 10 22 | 691 | 0.1− | 0.1− | 2005 03 11 | G96 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.7− | 0.1− |
| 2003 10 23 | 699 | 0.1− | 0.6− | 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.6− | 0.0 |
| 2003 10 23 | 699 | 0.1+ | 0.5− | 2005 03 17 | 691 | 0.6+ | 0.7+ | 2006 09 17 | 704 | 0.8+ | 1.0+ |
| 2003 10 23 | 699 | 0.4− | 0.3− | 2005 03 17 | 691 | 0.2+ | 0.9+ | 2006 09 17 | 704 | 0.2+ | 1.0+ |
| 2003 10 23 | 699 | 0.5+ | 0.4− | 2005 03 17 | 691 | 0.3+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.6+ |
| 2003 10 24 | 704 | 0.3− | 0.1− | 2005 04 06 | G96 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.4+ |
| 2003 10 24 | 704 | 0.3− | 0.1+ | 2005 04 06 | G96 | 0.5+ | 0.5+ | 2006 09 18 | 699 | (1.4− | 1.7+) |
| 2003 10 24 | 704 | 0.7− | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.5+ |
| 2003 10 24 | 704 | 0.2+ | 0.1+ | 2005 04 06 | G96 | 0.3+ | 0.0 | 2006 09 25 | 699 | (0.4− | 2.3+) |
| 2003 10 26 | 608 | 0.4− | 0.6+ | 2005 04 07 | G96 | 0.2− | 0.2+ | 2006 09 25 | 699 | 1.2− | 0.4+ |
| 2003 10 26 | 608 | 0.6− | 0.6+ | 2005 04 07 | G96 | 0.0 | 0.1+ | 2006 09 25 | 699 | (1.6+ | 0.0 ) |
| 2003 10 26 | 608 | 0.7− | 0.6+ | 2005 04 07 | G96 | 0.3+ | 0.4+ | 2006 09 25 | 699 | (1.6+ | 0.2+) |
| 2003 10 26 | 049 | 0.6− | 0.3− | 2005 04 07 | G96 | 0.4− | 0.5+ | 2006 09 27 | 704 | 0.9− | 0.2+ |
| 2003 10 26 | 049 | 0.1− | 0.3+ | 2006 08 19 | 644 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 2003 10 26 | 049 | 0.3− | 0.3+ | 2006 08 19 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.8− |
| 2003 10 29 | 704 | 1.0+ | 1.0+ | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2003 10 29 | 704 | 0.3− | 0.3+ | 2006 08 21 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.6− |
| 2003 10 29 | 704 | 0.1+ | 0.2+ | 2006 08 21 | 704 | 0.9+ | 0.6+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2003 10 29 | 704 | 0.6− | 0.3+ | 2006 08 21 | 704 | (1.1− | 2.7+) | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2003 10 29 | 704 | 0.3+ | 0.0 | 2006 08 21 | 704 | 0.5+ | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2003 11 02 | 704 | 0.5− | 0.1− | 2006 08 21 | 704 | 0.8− | 0.1+ | 2006 10 19 | G96 | 1.3+ | 0.3+ |
| 2003 11 02 | 704 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.9+ | 0.4+ |
| 2003 11 02 | 704 | 0.8− | 0.2− | 2006 08 25 | 704 | 0.1+ | 0.4− | 2006 10 19 | G96 | 0.6+ | 0.1+ |
| 2003 11 02 | 704 | 0.5+ | 0.1+ | 2006 08 25 | 704 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2003 11 02 | 704 | 0.9+ | 0.2+ | 2006 08 25 | 704 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2003 11 18 | 644 | 0.0 | 0.8+ | 2006 08 25 | 704 | 0.5+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.6− |
| 2003 11 18 | 644 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2003 11 18 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2003 11 18 | 644 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.4+ | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2003 11 18 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.8+ | 2006 11 16 | G96 | 0.7+ | 0.2− |
| 2003 11 18 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2003 11 19 | 703 | 0.9+ | 0.4+ | 2006 08 28 | 699 | 0.5− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1− |

**(143701)∗ 2003 UV$_{79}$**

Discovered 2003 Oct. 19 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.22313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18906575 | $\omega$ | 84.30563 | | +0.99050808 | +0.13459013 | |
| $a$ | 3.0064973 | $\Omega$ | 267.95721 | | −0.13456301 | +0.90802821 | |
| $e$ | 0.1644164 | $i$ | 1.60064 | | −0.02804543 | +0.39669922 | |
| $P$ | 5.21 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.2+ | 0.5− | 2003 10 29 | 704 | 0.3+ | 1.6+ | 2003 11 24 | 699 | 0.2− | 0.6+ |
| 2000 02 02 | 691 | 0.8+ | 0.4− | 2003 10 29 | 703 | 0.2− | 0.4+ | 2003 11 24 | 699 | 1.0− | 0.5− |
| 2000 02 02 | 691 | 0.3− | 0.5− | 2003 10 29 | 704 | 0.6+ | 0.3+ | 2003 12 01 | 704 | 0.1− | 0.0 |
| 2000 02 11 | 691 | 0.5− | 0.4− | 2003 10 29 | 703 | 0.4+ | 0.6+ | 2003 12 01 | 704 | 0.0 | 0.1− |
| 2000 02 11 | 691 | 0.7− | 0.4− | 2003 10 29 | 703 | 0.1+ | 0.3+ | 2003 12 01 | 704 | 0.3+ | 0.3+ |
| 2000 02 11 | 691 | 0.4− | 0.3− | 2003 10 29 | 704 | 0.6+ | 0.3+ | 2003 12 01 | 704 | 0.4+ | 0.1+ |
| 2003 10 19 | 608 | 0.1+ | 0.5+ | 2003 10 29 | 703 | 0.1− | 0.4+ | 2003 12 01 | 704 | 0.1+ | 0.8+ |
| 2003 10 19 | 608 | 0.3+ | 0.3+ | 2003 10 29 | 704 | 0.5− | 0.4+ | 2004 12 18 | G96 | 0.4+ | 1.3+ |
| 2003 10 19 | 608 | 0.1+ | 0.3+ | 2003 10 29 | 704 | 0.2+ | 0.7+ | 2004 12 18 | G96 | 0.4+ | 0.2− |
| 2003 10 20 | 644 | 0.2+ | 0.2+ | 2003 11 02 | 704 | 0.6− | 0.5+ | 2004 12 18 | G96 | 0.1− | 0.2− |
| 2003 10 20 | 644 | 0.1+ | 0.1+ | 2003 11 02 | 704 | 0.5− | 0.3+ | 2004 12 18 | G96 | 0.0 | 0.1− |
| 2003 10 20 | 644 | 0.4+ | 0.4+ | 2003 11 02 | 704 | 0.3− | 1.2+ | 2005 03 09 | G96 | 0.3− | 0.5− |
| 2003 10 22 | 704 | 0.2− | 0.2+ | 2003 11 02 | 704 | 0.7− | 0.7+ | 2005 03 09 | G96 | 0.4− | 0.4− |
| 2003 10 22 | 704 | 0.1+ | 0.4+ | 2003 11 02 | 704 | 0.9− | 0.5+ | 2005 03 09 | G96 | 0.3− | 0.4− |
| 2003 10 22 | 704 | 0.5+ | 0.1+ | 2003 11 19 | 699 | 0.4+ | 0.3+ | 2005 03 09 | G96 | 0.3− | 0.1− |
| 2003 10 22 | 704 | 0.5+ | 0.9+ | 2003 11 19 | 699 | 0.3− | 0.3+ | 2006 02 25 | 691 | 0.5+ | 0.4+ |
| 2003 10 22 | 691 | 0.1+ | 0.0 | 2003 11 19 | 699 | 0.6− | 0.3− | 2006 02 25 | 691 | 0.6+ | 0.1+ |
| 2003 10 22 | 691 | 0.3+ | 0.1+ | 2003 11 19 | 699 | 0.6+ | 0.0 | 2006 02 25 | 691 | 0.4+ | 0.5+ |
| 2003 10 22 | 691 | 0.1+ | 0.2+ | 2003 11 21 | 704 | 0.1− | 0.0 | 2006 03 05 | 691 | 0.2+ | 0.3+ |
| 2003 10 23 | 699 | 0.3+ | 0.2− | 2003 11 21 | 291 | 0.5− | 0.3− | 2006 03 05 | 691 | 0.3+ | 0.8+ |
| 2003 10 23 | 699 | 0.3+ | 0.1+ | 2003 11 21 | 704 | 0.7− | 0.3− | 2006 03 05 | 691 | 0.1+ | 0.2+ |
| 2003 10 23 | 699 | 0.1+ | 0.5− | 2003 11 21 | 704 | 0.4− | 0.1− | 2006 03 09 | 691 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 699 | 0.3− | 0.3− | 2003 11 21 | 291 | 0.3− | 0.2− | 2006 03 09 | 691 | 0.1− | 0.6+ | | |
| 2003 10 24 | 704 | 0.2− | 0.0 | 2003 11 21 | 704 | 0.4− | 0.3− | 2006 03 09 | 691 | 0.1− | 0.7+ | | |
| 2003 10 24 | 704 | 0.4+ | 0.1+ | 2003 11 21 | 704 | 0.3− | 0.1− | 2006 05 06 | G96 | 0.6− | 0.3+ | | |
| 2003 10 24 | 704 | 0.4+ | 0.0 | 2003 11 21 | 291 | 0.1− | 0.1− | 2006 05 06 | G96 | 0.1+ | 0.3+ | | |
| 2003 10 24 | 704 | 0.1+ | 0.4+ | 2003 11 24 | 699 | 0.2− | 0.2− | 2006 05 06 | G96 | 0.2+ | 0.1− | | |
| 2003 10 24 | 704 | 0.4+ | 0.2− | 2003 11 24 | 699 | 0.8− | 0.0 | 2006 05 06 | G96 | 0.1− | 0.4+ | | |

**(143702)∗ 2003 UG$_{91}$**

Discovered 2003 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.29336 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29561305 | $\omega$ | 307.47504 | | +0.49434481 | −0.86728959 | |
| $a$ | 2.2317917 | $\Omega$ | 112.80089 | | +0.81625376 | +0.43996676 | |
| $e$ | 0.1144974 | $i$ | 3.64354 | | +0.29891973 | +0.23289056 | |
| $P$ | 3.33 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 22 | 691 | 0.0 | 0.2− | 2003 10 20 | 644 | 0.3+ | 0.1− | 2003 10 30 | 704 | 0.4− | 0.2+ | | |
| 1995 04 22 | 691 | 0.1+ | 0.2− | 2003 10 20 | 644 | 0.3+ | 0.1+ | 2003 10 30 | 704 | 0.5− | 0.1+ | | |
| 1995 04 22 | 691 | 0.1− | 0.3+ | 2003 10 20 | 704 | 0.5− | 1.2+ | 2003 10 30 | 704 | 1.9− | 0.4− | | |
| 2000 12 03 | 691 | 0.3− | 0.4− | 2003 10 20 | 704 | 0.5+ | 0.4− | 2003 11 19 | 644 | 0.5+ | 0.3+ | | |
| 2000 12 03 | 691 | 0.4− | 0.0 | 2003 10 20 | 704 | 1.0+ | 0.1+ | 2003 11 19 | 644 | 0.5+ | 0.2+ | | |
| 2000 12 03 | 691 | 0.4− | 0.1− | 2003 10 20 | 704 | 1.1− | 0.4+ | 2003 11 19 | 644 | 0.3+ | 0.3+ | | |
| 2000 12 30 | 704 | 0.0 | 1.1+ | 2003 10 20 | 704 | 0.4− | 1.2+ | 2005 04 01 | 691 | 0.3+ | 0.4+ | | |
| 2000 12 30 | 704 | 0.1+ | 0.6+ | 2003 10 20 | 644 | 0.3+ | 0.1+ | 2005 04 01 | 691 | 0.5− | 0.2+ | | |
| 2000 12 30 | 704 | 0.3− | 0.2− | 2003 10 21 | 691 | 0.3+ | 0.1+ | 2005 04 01 | 691 | 0.0 | 0.2+ | | |
| 2000 12 30 | 704 | 0.3+ | 0.7+ | 2003 10 21 | 691 | 0.3+ | 0.1+ | 2005 05 04 | 691 | 0.0 | 0.0 | | |
| 2001 01 15 | 704 | 0.5+ | 0.0 | 2003 10 21 | 691 | 0.2+ | 0.0 | 2005 05 04 | 691 | 0.3+ | 0.1+ | | |
| 2001 01 15 | 704 | 0.7+ | 1.0+ | 2003 10 21 | 644 | 0.4+ | 0.0 | 2005 05 04 | 691 | 0.6+ | 0.3+ | | |
| 2001 01 15 | 704 | 0.8+ | 0.1− | 2003 10 21 | 644 | 0.6+ | 0.4+ | 2006 08 16 | 644 | 0.5− | 0.1+ | | |
| 2003 09 22 | 644 | 0.3+ | 0.4+ | 2003 10 21 | 644 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.0 | | |
| 2003 09 22 | 644 | 0.5+ | 0.2+ | 2003 10 25 | 704 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.3− | 0.3− | | |
| 2003 09 22 | 644 | 0.3+ | 0.3+ | 2003 10 25 | 704 | 0.8− | 1.3− | 2006 08 17 | 644 | 0.5− | 0.3+ | | |
| 2003 09 28 | 704 | 0.2+ | 0.2− | 2003 10 25 | 704 | 1.1− | 0.0 | 2006 08 17 | 644 | 0.0 | 0.5+ | | |
| 2003 09 28 | 704 | 0.4− | 0.0 | 2003 10 25 | 704 | 0.1+ | 0.2− | 2006 08 17 | 644 | 1.0− | 0.3+ | | |
| 2003 09 28 | 704 | 0.3+ | 1.3+ | 2003 10 25 | 704 | 1.7− | 0.1+ | | | | | | |

**(143703)∗ 2003 UQ$_{101}$**

Discovered 2003 Oct. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.75401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30323981 | $\omega$ | 324.35133 | | +0.95135181 | −0.30110131 | |
| $a$ | 2.1942119 | $\Omega$ | 53.30264 | | +0.29819355 | +0.84645631 | |
| $e$ | 0.1479487 | $i$ | 4.67343 | | +0.07752641 | +0.43914659 | |
| $P$ | 3.25 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 0.1− | 0.6− | 2003 10 20 | 704 | 0.0 | 0.2− | 2003 11 21 | 704 | 0.2− | 0.3− | | |
| 2000 11 21 | 704 | 0.3+ | 0.3− | 2003 10 20 | 704 | 0.1− | 0.2+ | 2003 11 21 | 699 | 0.1− | 0.3− | | |
| 2000 11 21 | 704 | 0.3+ | 0.2− | 2003 10 21 | 699 | 0.3+ | 0.5− | 2003 11 21 | 704 | 0.1− | 0.1− | | |
| 2000 11 21 | 704 | 0.4− | 0.2− | 2003 10 21 | 699 | 0.1+ | 0.1− | 2003 11 21 | 699 | 0.6+ | 0.3+ | | |
| 2000 11 21 | 704 | 0.3+ | 0.5− | 2003 10 21 | 699 | 1.0− | 0.2− | 2003 12 12 | 644 | 0.3+ | 0.5+ | | |
| 2000 11 30 | 704 | 0.0 | 0.3− | 2003 10 21 | 704 | 0.3+ | 0.1− | 2003 12 12 | 644 | 0.3+ | 0.5+ | | |
| 2000 11 30 | 704 | 0.8− | 0.0 | 2003 10 21 | 699 | (2.1+ | 0.6+) | 2003 12 12 | 644 | 0.4+ | 0.1+ | | |
| 2000 11 30 | 704 | 0.1+ | 0.4− | 2003 10 21 | 704 | 0.2− | 0.3− | 2003 12 19 | 644 | 0.1− | 0.2+ | | |
| 2000 11 30 | 704 | 0.5− | 0.8− | 2003 10 21 | 704 | 0.1− | 0.3− | 2003 12 19 | 644 | 0.0 | 0.2+ | | |
| 2000 12 20 | 704 | 0.3− | 0.4+ | 2003 10 21 | 704 | 0.2− | 0.4− | 2003 12 19 | 644 | 0.4+ | 0.1+ | | |
| 2000 12 20 | 704 | 0.3+ | 0.8+ | 2003 10 21 | 704 | 0.1+ | 0.1+ | 2005 03 11 | 691 | 0.0 | 0.6+ | | |
| 2000 12 20 | 704 | 0.2+ | 0.7+ | 2003 10 24 | 704 | 0.5− | 0.0 | 2005 03 11 | 691 | 0.2+ | 0.4+ | | |
| 2000 12 20 | 704 | 1.4+ | 0.2+ | 2003 10 24 | 704 | 0.5− | 0.1+ | 2005 03 11 | 691 | 0.3+ | 0.4+ | | |
| 2003 08 26 | 704 | 0.5− | 0.8− | 2003 10 24 | 704 | 0.3− | 0.1− | 2006 08 16 | E12 | 0.3+ | 0.0 | | |
| 2003 08 26 | 704 | 0.4− | 0.4+ | 2003 10 24 | 704 | 0.7− | 0.1+ | 2006 08 16 | E12 | 0.2− | 0.5− | | |
| 2003 08 26 | 704 | 0.5− | 0.7− | 2003 10 24 | 704 | 0.4− | 0.1+ | 2006 08 16 | E12 | 0.3+ | 0.1− | | |
| 2003 08 26 | 704 | 0.4− | 0.4− | 2003 10 28 | 704 | 0.4− | 0.4+ | 2006 08 16 | E12 | 0.0 | 0.0 | | |
| 2003 08 26 | 704 | 0.3− | 0.1− | 2003 10 28 | 704 | 0.5− | 0.5+ | 2006 08 17 | 644 | 0.2− | 0.2+ | | |
| 2003 09 28 | 704 | 0.1− | 0.1− | 2003 10 28 | 704 | 0.9− | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.3+ | | |
| 2003 09 28 | 704 | 0.3+ | 0.1− | 2003 10 28 | 704 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.3+ | | |
| 2003 09 28 | 704 | 0.5+ | 0.4+ | 2003 10 28 | 704 | 0.1+ | 0.1− | 2006 08 28 | E12 | 0.0 | 0.3+ | | |
| 2003 09 28 | 704 | 0.5+ | 0.3+ | 2003 11 19 | 644 | 0.4+ | 0.2+ | 2006 08 28 | E12 | 0.8+ | 0.0 | | |
| 2003 09 28 | 704 | 0.0 | 0.0 | 2003 11 19 | 644 | 0.2+ | 0.1+ | 2006 08 28 | E12 | 0.7− | 0.6+ | | |
| 2003 10 05 | 608 | 0.2+ | 1.2+ | 2003 11 19 | 644 | 0.2+ | 1.3+ | 2006 08 28 | E12 | 0.4+ | 0.4− | | |
| 2003 10 05 | 608 | 0.1− | 1.2+ | 2003 11 21 | 704 | 0.7+ | 0.0 | 2006 09 15 | 644 | 0.1+ | 0.5+ | | |
| 2003 10 05 | 608 | 0.7− | 0.5+ | 2003 11 21 | 704 | 0.3+ | 0.2+ | 2006 09 15 | 644 | 0.3− | 0.5+ | | |
| 2003 10 20 | 704 | 0.1+ | 0.3− | 2003 11 21 | 699 | 0.8+ | 0.1+ | 2006 09 15 | 644 | 0.0 | 0.5+ | | |
| 2003 10 20 | 704 | 0.1− | 0.3− | 2003 11 21 | 704 | 0.2+ | 0.4+ | | | | | | |
| 2003 10 20 | 704 | 0.7− | 0.6− | 2003 11 21 | 699 | 0.2+ | 0.5+ | | | | | | |

**(143704)∗ 2003 UV$_{109}$**

Discovered 2003 Oct. 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.36385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29684271 | $\omega$ | 336.24841 | | +0.61770860 | +0.78544068 | |
| $a$ | 2.2256240 | $\Omega$ | 331.85327 | | −0.70763123 | +0.53352815 | |
| $e$ | 0.1478975 | $i$ | 4.73920 | | −0.34306577 | +0.31373659 | |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.4+ | 0.8+ | 2006 08 19 | A50 | 0.0 | 0.3+ | 2006 09 01 | 704 | 0.3− | 0.3+ | | |
| 2002 04 04 | 644 | 0.0 | 1.1+ | 2006 08 19 | A50 | 0.2+ | 0.2− | 2006 09 01 | 704 | 0.9− | 0.0 | | |
| 2002 04 04 | 644 | 0.6+ | 0.9+ | 2006 08 21 | 704 | 0.2− | 0.0 | 2006 09 11 | 703 | 1.0− | 0.8− | | |
| 2002 04 09 | 704 | 0.1+ | 0.2+ | 2006 08 21 | 704 | 0.6− | 0.5+ | 2006 09 11 | 703 | 0.2+ | 0.1− | | |
| 2002 04 09 | 704 | 1.0+ | 1.1− | 2006 08 21 | 704 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.4− | 0.1+ | | |
| 2002 04 09 | 704 | 0.4− | 0.5− | 2006 08 21 | 704 | 0.2− | 0.5+ | 2006 09 11 | 703 | 0.9− | 0.5− | | |
| 2002 04 09 | 704 | 0.1− | 0.1+ | 2006 08 24 | 608 | 0.4− | 1.3− | 2006 09 17 | 704 | 0.2+ | 0.2+ | | |
| 2002 04 09 | 704 | 0.4− | 0.8− | 2006 08 24 | 608 | 0.1− | 1.2− | 2006 09 17 | 704 | 0.1+ | 0.3+ | | |
| 2003 10 19 | 644 | 0.4− | 0.1− | 2006 08 24 | 608 | (1.0+ | 1.6−) | 2006 09 17 | 704 | 0.0 | 0.4− | | |
| 2003 10 19 | 644 | 0.5− | 0.1− | 2006 08 25 | 704 | 0.3+ | 0.8− | 2006 09 17 | 703 | 0.0 | 0.2− | | |
| 2003 10 19 | 644 | 0.3− | 0.2− | 2006 08 25 | 704 | 0.6+ | 0.7− | 2006 09 17 | 704 | 0.7+ | 0.4− | | |
| 2003 10 21 | 644 | 0.1− | 0.2+ | 2006 08 25 | 704 | 0.7+ | 1.0− | 2006 09 17 | 703 | 0.3− | 0.2− | | |
| 2003 10 21 | 644 | 0.0 | 0.2+ | 2006 08 25 | 704 | 1.1+ | 0.5− | 2006 09 17 | 704 | 0.1+ | 0.8+ | | |
| 2003 10 21 | 644 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.1− | 0.6− | | |
| 2003 10 22 | 704 | 0.7− | 0.8+ | 2006 08 27 | 699 | 0.1+ | 0.4− | 2006 09 18 | 704 | (3.1+ | 2.3−) | | |
| 2003 10 22 | 704 | 0.2+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 18 | 704 | (2.0+ | 0.1+) | | |
| 2003 10 22 | 704 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.6− | 0.9+ | | |
| 2003 11 19 | 704 | 0.2+ | 0.5− | 2006 08 27 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.2+ | | |
| 2003 11 19 | 704 | 0.0 | 0.5− | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.5+ | 1.0+ | | |
| 2003 11 19 | 704 | 0.4+ | 0.4− | 2006 08 27 | 699 | 0.5− | 0.1− | 2006 09 27 | 704 | 1.1− | 0.0 | | |
| 2003 11 19 | 704 | 0.6− | 0.4− | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.1− | 0.6+ | | |
| 2003 11 19 | 704 | 0.5− | 0.6− | 2006 08 28 | 703 | 0.2− | 0.8− | 2006 09 28 | G96 | 0.3+ | 0.1− | | |
| 2003 11 23 | 691 | 0.8+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.1− | | |
| 2003 11 23 | 691 | 0.3− | 0.4− | 2006 08 28 | 703 | 0.7− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.3− | | |
| 2003 11 23 | 691 | 0.0 | 0.5+ | 2006 08 30 | 704 | 1.0− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.3− | | |
| 2005 02 02 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.6+ | 2006 09 30 | 699 | 0.3+ | 0.9+ | | |
| 2005 02 02 | 691 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.6+ | 2006 09 30 | 699 | (2.8+ | 0.2+) | | |
| 2005 02 02 | 691 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.9− | 0.8+ | 2006 09 30 | 699 | 0.6+ | 0.0 | | |
| 2005 03 09 | G96 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.4− | 0.2+ | 2006 09 30 | 699 | 0.4+ | 0.5− | | |
| 2005 03 09 | G96 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2005 03 09 | G96 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.7+ | 0.3− | | |
| 2005 03 09 | G96 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.7+ | 0.1+ | | |
| 2005 03 11 | G96 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 291 | 0.3+ | 0.1+ | | |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 11 11 | 291 | 0.2+ | 0.4+ | | |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 291 | 0.2− | 0.1+ | | |
| 2005 03 11 | G96 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.9+ | 2006 11 17 | 291 | 0.5+ | 0.3+ | | |
| 2006 08 15 | 644 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.1− | 0.0 | 2006 11 17 | 291 | 0.4+ | 0.2+ | | |
| 2006 08 15 | 644 | 0.2− | 0.1− | 2006 09 01 | 704 | 0.3− | 0.3− | 2006 11 17 | 291 | 0.2+ | 0.1+ | | |
| 2006 08 15 | 644 | 0.2− | 0.3− | 2006 09 01 | 704 | 0.3− | 0.6+ | | | | | | |

**(143705)∗ 2003 UR$_{115}$**

Discovered 2003 Oct. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.43754 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27820281 | $\omega$ | 296.12338 | | +0.19242690 | +0.98084028 | |
| $a$ | 2.3239585 | $\Omega$ | 344.87790 | | −0.85358355 | +0.15201662 | |
| $e$ | 0.1103518 | $i$ | 6.69215 | | −0.48411466 | +0.12183305 | |
| $P$ | 3.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 704 | 0.2− | 0.0 | 2003 10 29 | 699 | 1.0+ | 0.8− | 2005 02 09 | 691 | 0.2+ | 0.0 | |
| 2002 05 17 | 704 | 0.5− | 0.6− | 2003 11 18 | 644 | 0.4− | 0.4− | 2005 02 09 | 699 | 0.2+ | 0.2+ | |
| 2002 05 17 | 704 | 0.6+ | 0.3+ | 2003 11 18 | 644 | 0.3− | 0.1− | 2005 02 09 | 691 | 0.1+ | 0.1+ | |
| 2002 05 17 | 704 | (1.9+ | 0.7+) | 2003 11 18 | 644 | 0.3− | 0.2− | 2005 02 09 | 699 | 0.2+ | 0.7− | |
| 2003 09 21 | 699 | 0.5+ | 1.0− | 2003 11 19 | 699 | 0.7− | 0.2+ | 2005 02 09 | 699 | 0.4+ | 0.8+ | |
| 2003 09 21 | 699 | 0.3+ | 0.1− | 2003 11 19 | 699 | (1.8− | 0.2−) | 2005 03 08 | 704 | 0.4+ | 0.0 | |
| 2003 09 21 | 699 | 0.1+ | 0.5+ | 2003 11 19 | 699 | 1.3− | 1.0− | 2005 03 08 | 704 | 0.3+ | 0.0 | |
| 2003 09 21 | 699 | 0.4+ | 0.2− | 2003 11 19 | 704 | 0.4+ | 0.4+ | 2005 03 08 | 704 | 0.4+ | 1.4+ | |
| 2003 10 03 | 691 | 0.0 | 0.1− | 2003 11 19 | 699 | 0.2+ | 1.3+ | 2005 03 14 | G96 | 0.3− | 0.2− | |
| 2003 10 03 | 691 | 0.1− | 0.1+ | 2003 11 19 | 704 | 0.4+ | 0.7+ | 2005 03 14 | G96 | 0.3− | 0.3− | |
| 2003 10 03 | 691 | 0.1+ | 0.0 | 2003 11 19 | 704 | 0.3+ | 0.7+ | 2005 03 14 | G96 | 0.4− | 0.4− | |
| 2003 10 20 | 644 | 0.2+ | 0.0 | 2003 11 19 | 704 | 0.7− | 0.4− | 2005 03 14 | G96 | 0.4− | 0.1+ | |
| 2003 10 20 | 644 | 0.1+ | 0.1+ | 2003 11 19 | 704 | 0.3− | 0.5+ | 2006 08 23 | 704 | 0.5− | 0.7+ | |
| 2003 10 20 | 644 | 0.0 | 0.1+ | 2005 01 17 | 703 | 1.3− | 0.1− | 2006 08 23 | 704 | 0.6− | 0.2+ | |
| 2003 10 22 | 644 | 0.1− | 0.0 | 2005 01 17 | 703 | 1.2− | 0.1+ | 2006 08 23 | 704 | 0.2− | 0.3+ | |
| 2003 10 22 | 644 | 0.0 | 0.0 | 2005 01 17 | 703 | 0.6− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.1− | |
| 2003 10 22 | 691 | 0.0 | 0.1− | 2005 01 17 | 703 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.8+ | 0.4+ | |
| 2003 10 22 | 691 | 0.1+ | 0.1− | 2005 02 03 | 704 | 0.4+ | 0.6− | 2006 10 21 | G96 | 0.1+ | 0.2+ | |
| 2003 10 22 | 691 | 0.0 | 0.0 | 2005 02 03 | 704 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.0 | 0.1+ | |
| 2003 10 22 | 644 | 0.1+ | 0.2+ | 2005 02 03 | 704 | 0.1− | 1.0+ | 2006 11 18 | G96 | 0.0 | 0.1+ | |
| 2003 10 29 | 699 | (1.8+ | 0.6+) | 2005 02 03 | 704 | (0.5+ | 1.8+) | 2006 11 18 | G96 | 0.2− | 0.0 | |
| 2003 10 29 | 699 | 0.1+ | 0.3− | 2005 02 09 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.5+ | |
| 2003 10 29 | 699 | (1.6+ | 1.3−) | 2005 02 09 | 699 | 1.2+ | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.8+ | |

**(143706)∗ 2003 UG$_{117}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.08043 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31616347 | $\omega$ | 221.22155 | | +0.72354755 | +0.68780528 | |
| $a$ | 2.1340025 | $\Omega$ | 95.22021 | | −0.61696910 | +0.68229383 | |
| $e$ | 0.1537445 | $i$ | 3.35813 | | −0.30956109 | +0.24778829 | |
| $P$ | 3.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 09 | 691 | 0.2+ | 0.0 | 2003 11 03 | 704 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.3+ | 0.4− | |
| 1996 04 09 | 691 | 0.1+ | 0.5+ | 2003 11 03 | 704 | 0.3− | 0.5− | 2006 09 26 | 704 | 0.1+ | 1.2+ | |
| 1996 04 09 | 691 | 0.1+ | 0.6+ | 2003 11 03 | 704 | 0.2+ | 0.5− | 2006 09 26 | 704 | 0.4+ | 0.1− | |
| 2003 09 28 | 704 | 0.2+ | 0.9+ | 2003 11 03 | 704 | 0.5+ | 0.2− | 2006 09 26 | 704 | 0.7+ | 1.4− | |
| 2003 09 28 | 704 | 0.2− | 0.6+ | 2003 11 03 | 704 | 0.4+ | 0.8+ | 2006 09 26 | 704 | 0.7+ | 0.5− | |
| 2003 09 28 | 704 | 0.0 | 0.5+ | 2003 11 03 | 704 | 0.2− | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.0 | |
| 2003 09 28 | 704 | 0.2− | 0.6+ | 2003 11 03 | 704 | 0.3+ | 0.1− | 2006 09 28 | 704 | 0.2− | 0.4+ | |
| 2003 09 28 | 704 | 0.6+ | 0.2− | 2005 03 03 | 703 | 0.2+ | 1.1+ | 2006 09 28 | 704 | 0.3− | 0.2− | |
| 2003 10 21 | 704 | 0.4+ | 0.8+ | 2005 03 03 | 703 | (1.6− | 0.0 ) | 2006 09 28 | 704 | 0.5+ | 0.1+ | |
| 2003 10 21 | 704 | 0.1− | 0.0 | 2005 03 03 | 703 | 0.4− | 0.4+ | 2006 09 28 | 704 | 0.4+ | 0.4− | |
| 2003 10 21 | 644 | 0.1− | 0.1− | 2005 03 03 | 703 | (2.8− | 0.4+) | 2006 09 29 | 704 | 0.7− | 0.1+ | |
| 2003 10 21 | 704 | 0.2+ | 0.3+ | 2005 03 09 | 704 | 0.2+ | 0.7− | 2006 09 29 | 704 | 0.5+ | 0.2+ | |
| 2003 10 21 | 704 | 0.4− | 0.6+ | 2005 03 09 | 704 | 0.3+ | 1.4− | 2006 09 29 | 704 | 0.9− | 0.3+ | |
| 2003 10 21 | 644 | 0.1− | 0.1+ | 2005 03 09 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.6+ | 1.1+ | |
| 2003 10 21 | 644 | 0.1− | 0.0 | 2005 03 09 | 704 | 0.3− | 1.0− | 2006 09 29 | 704 | (0.2− | 1.8+) | |
| 2003 10 22 | 704 | 0.1+ | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.6− | 0.2− | |
| 2003 10 22 | 691 | 0.2− | 0.1− | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.4− | |
| 2003 10 22 | 704 | 0.3+ | 0.3+ | 2005 04 15 | 691 | 0.1− | 0.4− | 2006 09 30 | 704 | 0.5+ | 0.6− | |
| 2003 10 22 | 704 | 0.6+ | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 30 | 704 | 0.7+ | 0.1− | |
| 2003 10 22 | 704 | 0.3+ | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.5+ | 1.5+ | |
| 2003 10 22 | 691 | 0.2− | 0.2− | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 30 | 704 | 1.0+ | 0.2+ | |
| 2003 10 22 | 704 | 0.2+ | 0.0 | 2006 09 12 | 703 | 1.1− | 0.2− | 2006 09 30 | 704 | 0.2+ | 0.7+ | |
| 2003 10 22 | 691 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.7− | 0.6− | 2006 09 30 | 704 | 0.0 | 0.4− | |
| 2003 10 25 | 704 | 0.1+ | 0.3− | 2006 09 12 | 703 | 1.3− | 0.8+ | 2006 09 30 | 704 | 1.1+ | 1.2+ | |
| 2003 10 25 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.5− | 0.5+ | 2006 09 30 | 704 | 0.2− | 0.6− | |
| 2003 10 25 | 704 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.4− | 0.1− | 2006 10 15 | 106 | 0.4+ | 0.2+ | |
| 2003 10 25 | 704 | 0.2− | 0.3+ | 2006 09 16 | 704 | 0.7− | 0.1+ | 2006 10 15 | 106 | 0.2+ | 0.0 | |
| 2003 10 25 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.1− | 0.4− | 2006 10 15 | 106 | 0.4+ | 0.4− | |
| 2003 10 29 | 704 | 0.2− | 1.5+ | 2006 09 16 | 704 | 0.7− | 0.3− | 2006 10 15 | 106 | 0.1− | 0.0 | |
| 2003 10 29 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.1− | |
| 2003 10 29 | 704 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.5− | 0.8− | 2006 10 16 | 703 | 1.1− | 0.3+ | |
| 2003 10 29 | 704 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.9− | |
| 2003 10 29 | 704 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.4− | |
| 2003 10 30 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.7+ | 0.6− | 2006 10 19 | 644 | 0.2− | 0.0 | |
| 2003 10 30 | 704 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.1+ | 1.0+ | 2006 10 19 | 644 | 0.7− | 0.2− | |
| 2003 10 30 | 704 | 1.0− | 0.7− | 2006 09 18 | 699 | 0.9+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.3− | |
| 2003 10 30 | 704 | 1.4− | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.4− | |
| 2003 11 01 | 704 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.6− | 0.0 | |
| 2003 11 01 | 704 | 0.6+ | 0.3− | 2006 09 19 | 704 | 1.0+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1− | |
| 2003 11 01 | 704 | 0.4− | 0.5+ | 2006 09 19 | 704 | (2.1+ | 0.9+) | 2006 10 20 | 644 | 0.1− | 0.4− | |
| 2003 11 01 | 704 | (2.5+ | 0.7−) | 2006 09 19 | 704 | 1.3+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.2− | |
| 2003 11 02 | 704 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | |
| 2003 11 02 | 704 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.8− | 0.5+ | |
| 2003 11 02 | 704 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.3− | |
| 2003 11 02 | 704 | 0.8− | 0.7+ | 2006 09 22 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.1− | 1.0− | |
| 2003 11 02 | 704 | 0.7− | 0.4− | 2006 09 22 | 704 | 1.1+ | 0.5− | 2006 10 22 | 703 | 0.3− | 0.2− | |
| 2003 11 03 | 704 | 0.5+ | 0.8+ | 2006 09 22 | 704 | 0.3+ | 0.1− | | | | | |
| 2003 11 03 | 704 | 0.7+ | 0.5− | 2006 09 22 | 704 | 0.8+ | 0.2− | | | | | |

**(143707)∗ 2003 UY$_{117}$**

Discovered 2003 Oct. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.81867 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00240008 | $\omega$ | 112.28650 | | +0.94619394 | −0.29598803 | |
| $a$ | 55.2483650 | $\Omega$ | 265.12654 | | +0.22687139 | +0.89498289 | |
| $e$ | 0.4124484 | $i$ | 7.54314 | | +0.23075182 | +0.33376147 | |
| $P$ | 411 | $H$ | 6.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 26 | 644 | 0.2− | 0.4− | 2003 10 22 | 691 | 0.1− | 0.0 | 2003 12 19 | 333 | 0.9− | 1.3+ | |
| 2001 08 05 | 644 | 0.3− | 0.2+ | 2003 11 02 | 291 | 0.1− | 0.3+ | 2003 12 20 | 333 | 0.2+ | 0.5− | |
| 2001 10 12 | 644 | 0.0 | 0.0 | 2003 11 02 | 291 | 0.1− | 0.2+ | 2003 12 22 | 333 | 0.2+ | 0.3− | |
| 2002 10 04 | 644 | 0.1− | 0.3− | 2003 11 02 | 291 | 0.2+ | 0.0 | 2004 12 09 | 621 | 0.2− | 0.2− | |
| 2002 10 04 | 644 | 0.3+ | 0.2− | 2003 11 23 | 695 | 0.1+ | 0.1− | 2004 12 10 | 621 | 0.3+ | 0.3− | |
| 2002 10 04 | 644 | 0.6+ | 0.2− | 2003 11 23 | 695 | 0.1− | 0.2− | 2004 12 14 | 621 | 0.2+ | 0.5− | |
| 2002 10 30 | 644 | 0.4+ | 0.1+ | 2003 11 24 | 695 | 0.0 | 0.0 | 2006 08 23 | 621 | 0.3− | 0.1+ | |
| 2002 11 22 | 644 | 0.3+ | 0.5− | 2003 11 24 | 695 | 0.1− | 0.1+ | 2006 09 21 | 621 | 0.0 | 0.1− | |
| 2003 10 22 | 691 | 0.2− | 0.0 | 2003 12 17 | 333 | 0.4− | 0.0 | 2006 09 22 | 621 | 0.4+ | 0.0 | |
| 2003 10 22 | 691 | 0.1+ | 0.0 | 2003 12 18 | 333 | 0.3− | 0.2− | 2006 09 22 | 621 | 0.1+ | 0.2− | |

**(143708)∗ 2003 UV$_{126}$ = 1996 HL$_8$ = 2006 DT$_{190}$**

Discovered 2003 Oct. 20 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57046, *MPO* 100622)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.00587 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19038542 | $\omega$ | 259.71848 | | +0.34084601 | +0.93854691 | |
| $a$ | 2.9925880 | $\Omega$ | 30.38564 | | −0.81501810 | +0.32380965 | |
| $e$ | 0.0781113 | $i$ | 6.16809 | | −0.46858243 | +0.11948642 | |
| $P$ | 5.18 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 809 | (0.1+ | 4.5+) | 2003 11 01 | 704 | 0.6+ | 0.6+ | 2006 03 02 | G96 | 0.9− | 0.1+ | |
| 1996 04 17 | 809 | (0.3− | 4.1+) | 2003 11 01 | 704 | 0.2+ | 0.9+ | 2006 03 02 | G96 | 0.4− | 0.0 | |
| 1996 04 17 | 809 | (0.0 | 4.5+) | 2003 11 01 | 704 | 0.3+ | 0.3− | 2006 03 02 | G96 | 0.5+ | 0.3− | |
| 1996 04 18 | 809 | (1.4+ | 2.1+) | 2003 11 01 | 704 | 0.0 | 0.6+ | 2006 03 02 | G96 | 0.2− | 0.1− | |
| 1996 04 18 | 809 | (0.4+ | 2.4+) | 2003 11 01 | 704 | 0.8+ | 0.4− | 2006 03 03 | 691 | 0.5+ | 0.1+ | |
| 1996 04 18 | 809 | (0.2− | 2.3+) | 2003 11 01 | 704 | 0.0 | 0.3+ | 2006 03 03 | 691 | 0.3+ | 0.0 | |
| 2002 07 06 | 644 | 0.4− | 1.1+ | 2003 11 01 | 704 | 0.5+ | 0.0 | 2006 03 03 | 691 | 0.4+ | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.3− | 1.0+ | 2003 11 01 | 704 | 0.3+ | 0.2+ | 2006 03 03 | 408 | 1.1− | 0.2− |
| 2002 07 06 | 644 | 0.3− | 1.0+ | 2003 11 18 | 644 | 0.1+ | 0.0 | 2006 03 03 | 408 | 0.5− | 0.4+ |
| 2002 07 15 | 644 | 0.3− | 1.1+ | 2003 11 18 | 644 | 0.1+ | 0.1+ | 2006 03 04 | 408 | 0.6− | 0.2− |
| 2002 07 15 | 644 | 0.4− | 1.3+ | 2003 11 18 | 644 | 0.1+ | 0.2+ | 2006 03 04 | 408 | 0.2− | 0.2− |
| 2002 07 15 | 644 | 0.2− | 1.0+ | 2003 11 19 | 691 | 0.1− | 0.4+ | 2006 03 24 | 704 | (2.2+ | 0.5+) |
| 2003 10 02 | 691 | 0.2+ | 0.3+ | 2003 11 19 | 691 | 0.1− | 0.1+ | 2006 03 24 | 704 | 0.0 | 0.2+ |
| 2003 10 02 | 691 | 0.1+ | 0.4+ | 2003 11 19 | 691 | 0.3− | 0.2− | 2006 03 24 | 704 | 0.3+ | 0.3+ |
| 2003 10 02 | 691 | 0.0 | 0.3+ | 2003 11 19 | 291 | 0.5− | 0.1− | 2006 03 24 | 704 | 0.5+ | 0.4+ |
| 2003 10 20 | 644 | 0.0 | 0.3− | 2003 11 19 | 291 | 0.3− | 0.2− | 2006 03 25 | 691 | 0.5+ | 0.1+ |
| 2003 10 20 | 644 | 0.2− | 0.1− | 2003 11 19 | 291 | 0.8− | 0.2− | 2006 03 25 | 691 | 0.5+ | 0.0 |
| 2003 10 20 | 644 | 0.2+ | 0.1− | 2003 11 24 | 704 | 0.5− | 0.7+ | 2006 03 25 | 691 | 0.3+ | 0.0 |
| 2003 10 22 | 291 | 0.5− | 0.1− | 2003 11 24 | 704 | 1.6+ | 0.6+ | 2006 03 26 | 699 | 1.0− | 0.3+ |
| 2003 10 22 | 291 | 0.2− | 0.1− | 2003 11 24 | 704 | 0.8+ | 1.6+ | 2006 03 26 | 699 | 0.3+ | 0.6+ |
| 2003 10 22 | 291 | 0.4− | 0.2− | 2003 11 24 | 704 | 0.7+ | 0.6+ | 2006 03 26 | 699 | 0.5+ | 1.8+ |
| 2003 10 23 | 699 | 1.4+ | 0.6− | 2003 11 24 | 704 | 0.9+ | 0.5+ | 2006 03 26 | 699 | 1.2− | 0.4+ |
| 2003 10 23 | 699 | 0.2− | 0.3− | 2005 01 07 | 704 | 0.5+ | 0.8+ | 2006 04 09 | G96 | 0.1+ | 0.3− |
| 2003 10 23 | 699 | 0.5+ | 0.2+ | 2005 01 07 | 704 | 0.9− | 0.5+ | 2006 04 09 | G96 | 0.2+ | 0.0 |
| 2003 10 23 | 699 | 0.3− | 0.3− | 2005 01 07 | 704 | 0.2− | 0.4− | 2006 04 09 | G96 | 0.1− | 0.4− |
| 2003 10 24 | 704 | 0.6+ | 0.3+ | 2005 01 07 | 704 | 1.4+ | 1.0− | 2006 04 09 | G96 | 0.2+ | 0.1− |
| 2003 10 24 | 704 | 0.1+ | 0.2+ | 2005 01 16 | 704 | 1.2− | 0.6− | 2006 04 20 | 703 | 0.0 | 0.4+ |
| 2003 10 24 | 704 | 0.2+ | 0.6+ | 2005 01 16 | 704 | 0.4+ | 0.8+ | 2006 04 20 | 703 | 0.6− | 0.3+ |
| 2003 10 24 | 704 | 1.5− | 0.2+ | 2005 01 16 | 704 | 0.1+ | 0.5+ | 2006 04 20 | 703 | 1.6+ | 0.9+ |
| 2003 10 24 | 704 | 0.2+ | 0.5+ | 2006 02 27 | 691 | 0.1− | 0.2+ | 2006 04 20 | 703 | 0.5+ | 0.2+ |
| 2003 10 29 | 703 | 0.6− | 0.8+ | 2006 02 27 | 691 | 0.1+ | 0.1− | 2006 04 24 | 699 | 0.1+ | 0.5+ |
| 2003 10 29 | 703 | 0.3+ | 0.6+ | 2006 02 27 | 691 | 0.1− | 0.3+ | 2006 04 24 | 699 | 1.1− | 1.2+ |
| 2003 10 29 | 703 | 0.1− | 0.3+ | 2006 03 02 | G96 | 1.7+ | 0.1+ | 2006 04 24 | 699 | 1.8− | 1.8+ |
| 2003 10 29 | 703 | 0.9− | 0.1+ | 2006 03 02 | G96 | 0.3− | 0.2+ | 2006 04 24 | 699 | 0.8+ | 0.4− |
| 2003 11 01 | 704 | 0.4− | 0.7+ | 2006 03 02 | G96 | 0.2− | 0.1+ | | | | |
| 2003 11 01 | 704 | 0.6+ | 0.6+ | 2006 03 02 | G96 | 0.6− | 0.1− | | | | |

**(143709)∗ 2003 UM$_{132}$ = 1995 FR$_4$**

Discovered 2003 Oct. 19 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57051)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.89109 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30386602 | $\omega$ | 9.46525 | | +0.95330475 | | −0.30132907 |
| $a$ | 2.1911963 | $\Omega$ | 8.15846 | | +0.26690628 | | +0.80919398 |
| $e$ | 0.1397890 | $i$ | 8.21172 | | +0.14131913 | | +0.50438665 |
| $P$ | 3.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.2− | 0.1− | 2005 03 13 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.4+ |
| 1995 03 23 | 691 | 0.1+ | 0.0 | 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.8+ |
| 1995 03 23 | 691 | 0.1− | 0.1+ | 2005 03 17 | 691 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.6+ |
| 1995 04 04 | 691 | 0.2+ | 0.3+ | 2005 03 17 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1995 04 04 | 691 | 0.1+ | 0.1+ | 2005 03 17 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.7− |
| 1995 04 04 | 691 | 0.1+ | 0.1+ | 2005 04 04 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.9+ | 0.3− |
| 2003 09 27 | 704 | 1.2− | 0.7− | 2005 04 04 | 691 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2003 09 27 | 704 | 0.2+ | 0.5+ | 2005 04 04 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.0 |
| 2003 09 27 | 704 | 1.0− | 0.2+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.2+ |
| 2003 09 27 | 704 | 0.2+ | 1.4+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.6− |
| 2003 10 19 | 644 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.8+ | 0.3+ |
| 2003 10 19 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.7+ | 0.9+ | 2006 09 28 | 704 | 0.4+ | 1.0+ |
| 2003 10 19 | 644 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.7+ | 2006 09 28 | 704 | 0.2− | 1.2+ |
| 2003 10 22 | 704 | (1.7− | 0.4−) | 2006 08 28 | 699 | 0.6− | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.5− |
| 2003 10 22 | 704 | 0.0 | 1.0+ | 2006 08 30 | 704 | 1.2− | 0.6+ | 2006 09 28 | 704 | 0.1+ | 0.5+ |
| 2003 10 22 | 704 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 2003 10 22 | 704 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.7+ | 0.6+ |
| 2003 10 22 | 704 | 0.4− | 0.6+ | 2006 09 14 | 703 | 1.0− | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.6+ |
| 2003 11 03 | 704 | 0.5+ | 0.8+ | 2006 09 14 | 703 | 0.6− | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2003 11 03 | 704 | 1.1+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2003 11 03 | 704 | 0.6+ | 1.2− | 2006 09 14 | 703 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2003 11 05 | 699 | 0.4+ | 0.4+ | 2006 09 16 | 704 | (1.5− | 0.1+) | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2003 11 05 | 699 | 0.8− | 0.2+ | 2006 09 16 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.0− | 0.4− |
| 2003 11 05 | 699 | 0.7− | 0.5− | 2006 09 16 | 704 | 0.6− | 0.5− | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2003 11 05 | 699 | 0.7+ | 0.4− | 2006 09 16 | 699 | 0.1+ | 0.6− | 2006 10 16 | 703 | 1.2− | 0.3− |
| 2003 11 19 | 644 | 0.2− | 0.1+ | 2006 09 16 | 704 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2003 11 19 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 699 | 0.4+ | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2003 11 19 | 704 | 0.3+ | 0.7+ | 2006 09 16 | 699 | 0.2+ | 0.6+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2003 11 19 | 644 | 0.1− | 0.1− | 2006 09 16 | 699 | 0.2+ | 0.5+ | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 2003 11 19 | 704 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2003 11 19 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 704 | 0.1+ | 0.6− | 2006 10 17 | 106 | 0.1− | 0.1+ |
| 2003 11 19 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.2+ | 2006 10 17 | 106 | 0.8− | 0.1− |
| 2003 11 19 | 644 | 0.3− | 0.2+ | 2006 09 19 | 704 | 0.8+ | 0.7+ | 2006 10 17 | 106 | 0.7+ | 0.4+ |
| 2003 11 24 | 703 | 1.3+ | 1.0+ | 2006 09 19 | 704 | (0.4+ | 1.6+) | 2006 10 17 | 106 | 0.9+ | 0.5− |
| 2003 11 24 | 703 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2003 11 24 | 703 | 0.9− | 0.0 | 2006 09 19 | 704 | 0.6+ | 1.4+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2003 11 24 | 703 | 1.4− | 0.2− | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2005 03 10 | G96 | 0.7− | 0.2+ | 2006 09 22 | 704 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 22 | 704 | 0.4+ | 1.5+ | 2006 11 14 | G96 | 0.4− | 0.4− |
| 2005 03 10 | G96 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.3− | 0.7− | 2006 11 14 | G96 | 0.4− | 0.3− |
| 2005 03 10 | G96 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.6+ | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2005 03 13 | 691 | 0.4+ | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.1− |

**(143710)∗ 2003 UG$_{134}$**

Discovered 2003 Oct. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.47603 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28778747 | $\omega$ | 91.92631 | | +0.86869348 | | −0.48940354 |
| $a$ | 2.2720687 | $\Omega$ | 297.38238 | | +0.41329119 | | +0.80124493 |
| $e$ | 0.1264061 | $i$ | 4.94383 | | +0.27306049 | | +0.34422483 |
| $P$ | 3.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.4− | 0.3− | 2003 10 22 | 704 | 0.4+ | 0.5− | 2003 11 22 | 691 | 0.1− | 0.0 |
| 2001 01 03 | 704 | 0.4+ | 0.1− | 2003 10 22 | 704 | 0.3+ | 0.6− | 2003 11 22 | 691 | 0.1− | 0.0 |
| 2001 01 03 | 704 | 0.8+ | 0.0 | 2003 10 22 | 704 | 0.8+ | 0.5− | 2005 03 03 | 691 | 0.0 | 0.4+ |
| 2001 01 21 | 704 | 0.3− | 0.7+ | 2003 10 22 | 704 | 0.2− | 0.9− | 2005 03 03 | 691 | 0.3+ | 0.3+ |
| 2001 01 21 | 704 | 0.1− | 0.2+ | 2003 10 23 | 608 | 0.1− | 0.0 | 2005 03 03 | 691 | 0.2+ | 0.6+ |
| 2001 01 21 | 704 | 0.6+ | 0.0 | 2003 10 23 | 608 | 0.1+ | 0.0 | 2006 06 19 | G96 | 0.1+ | 0.1− |
| 2001 01 21 | 704 | 0.5− | 0.8− | 2003 10 23 | 608 | 0.2− | 0.1− | 2006 06 19 | G96 | 0.3+ | 0.0 |
| 2003 09 20 | 644 | 0.0 | 0.5+ | 2003 10 30 | 704 | 0.2− | 0.0 | 2006 06 19 | G96 | 0.2− | 0.2+ |
| 2003 09 20 | 644 | 0.3− | 0.2+ | 2003 10 30 | 704 | 0.3− | 0.5+ | 2006 06 19 | G96 | 0.4+ | 0.5+ |
| 2003 09 20 | 644 | 0.1− | 0.5+ | 2003 10 30 | 704 | (1.4+ | 1.7+) | 2006 08 20 | 644 | 0.2− | 0.6+ |
| 2003 09 25 | 608 | 0.2− | 1.2− | 2003 11 02 | 704 | 0.3− | 0.4− | 2006 08 20 | 644 | 0.1− | 0.6+ |
| 2003 09 25 | 608 | 1.2− | 1.2− | 2003 11 02 | 704 | 0.7− | 0.9+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2003 09 25 | 608 | 0.7− | 0.5− | 2003 11 02 | 704 | 0.9− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2003 09 30 | 704 | 0.2− | 0.9− | 2003 11 02 | 704 | 0.7− | 1.1+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2003 09 30 | 704 | 0.1+ | 0.8+ | 2003 11 02 | 704 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.6− | 0.4+ |
| 2003 09 30 | 704 | 0.3+ | 0.5+ | 2003 11 18 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2003 09 30 | 704 | 0.3− | 0.9+ | 2003 11 18 | 644 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.5+ |
| 2003 09 30 | 704 | 0.0 | 0.9+ | 2003 11 18 | 644 | 0.6+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 2003 10 20 | 644 | 0.1+ | 0.4+ | 2003 11 19 | 704 | 0.6+ | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.4+ |
| 2003 10 20 | 644 | 0.3+ | 0.5+ | 2003 11 19 | 704 | (1.7+ | 1.3+) | 2006 10 22 | G96 | 0.1− | 0.4+ |
| 2003 10 20 | 644 | 0.4+ | 0.3+ | 2003 11 19 | 704 | 0.6+ | 1.0+ | | | | |
| 2003 10 22 | 704 | 0.9+ | 1.4− | 2003 11 22 | 691 | 0.0 | 0.1+ | | | | |

**(143711)∗ 2003 UR$_{136}$ = 1996 FG$_7$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 53538)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.93617 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20313639 | $\omega$ | 299.64170 | | +0.80103012 | | +0.59843528 |
| $a$ | 2.8660091 | $\Omega$ | 23.61037 | | −0.53543496 | | +0.72747906 |
| $e$ | 0.0642144 | $i$ | 2.15096 | | −0.26769414 | | +0.33563288 |
| $P$ | 4.85 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 18 | 691 | 0.2+ | 0.2+ | 2003 10 21 | 699 | 0.1− | 1.2+ | 2003 10 27 | 704 | 0.0 | 1.9+ |
| 1996 03 18 | 691 | 0.1− | 0.4+ | 2003 10 21 | 699 | 0.1− | 0.4− | 2003 10 27 | 704 | 0.6− | 0.4− |
| 1996 03 18 | 691 | 0.3− | 0.1− | 2003 10 21 | 699 | 0.2+ | 1.3+ | 2003 10 27 | 704 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.2− | 0.3− | 2003 10 21 | 699 | 1.1+ | 0.1+ | 2003 10 28 | 704 | 1.1− | 1.1+ |
| 1996 03 27 | 691 | 0.1− | 0.3− | 2003 10 21 | 704 | 0.0 | 0.6+ | 2003 10 28 | 704 | 0.5+ | 1.7+ |
| 1996 03 27 | 691 | 0.1+ | 0.2− | 2003 10 21 | 704 | 0.8+ | 0.1+ | 2003 10 28 | 704 | 0.2− | 0.2+ |
| 1998 09 19 | 691 | 0.1− | 0.0 | 2003 10 21 | 704 | 0.6+ | 0.1+ | 2003 10 28 | 704 | 0.7− | 1.5+ |
| 1998 09 19 | 691 | 0.1− | 0.1+ | 2003 10 21 | 704 | 0.3− | 0.9+ | 2003 11 02 | 701 | (2.6+ | 1.1+) |
| 1998 09 19 | 691 | 0.1− | 0.0 | 2003 10 21 | 704 | 0.3− | 0.2− | 2003 11 02 | 701 | (2.3+ | 1.2+) |
| 2001 03 23 | 608 | 0.5+ | 0.5+ | 2003 10 22 | 704 | 0.9− | 0.1+ | 2003 11 02 | 701 | (2.6+ | 0.7−) |
| 2001 03 23 | 608 | 0.5+ | 0.2− | 2003 10 22 | 704 | 0.0 | 1.3− | 2005 01 17 | 704 | 0.6− | 0.1− |
| 2001 03 23 | 608 | 0.5+ | 0.2− | 2003 10 22 | 704 | 0.6− | 0.0 | 2005 01 17 | 704 | 0.1+ | 0.0 |
| 2001 04 18 | 691 | 0.2+ | 0.1− | 2003 10 22 | 704 | 0.8− | 0.2− | 2005 01 17 | 704 | 0.3− | 0.7− |
| 2001 04 18 | 691 | 0.3+ | 0.0 | 2003 10 22 | 704 | 0.3− | 0.1+ | 2006 04 08 | 703 | 0.3+ | 1.2− |
| 2001 04 18 | 691 | 0.0 | 0.2+ | 2003 10 22 | 704 | 0.7+ | 0.2+ | 2006 04 08 | 703 | 1.1+ | 0.3+ |
| 2003 09 22 | 691 | 0.2+ | 0.0 | 2003 10 22 | 704 | 0.1− | 0.2+ | 2006 04 08 | 703 | 0.1+ | 0.8− |
| 2003 09 22 | 691 | 0.0 | 0.2− | 2003 10 22 | 704 | 0.4+ | 0.4− | 2006 04 08 | 703 | 0.9+ | 1.8+ |
| 2003 09 22 | 691 | 0.3+ | 0.1+ | 2003 10 22 | 704 | 0.0 | 0.2− | 2006 04 19 | G96 | 0.2− | 0.5+ |
| 2003 09 27 | 691 | 0.0 | 0.1− | 2003 10 22 | 704 | 0.2− | 0.1+ | 2006 04 19 | G96 | 0.4− | 0.6+ |
| 2003 09 27 | 691 | 0.1+ | 0.1+ | 2003 10 22 | 704 | 0.1+ | 0.3+ | 2006 04 19 | G96 | 0.2− | 0.5+ |
| 2003 09 27 | 691 | 0.1− | 0.3+ | 2003 10 22 | 704 | 0.0 | 0.6+ | 2006 04 19 | G96 | 0.0 | 0.5+ |
| 2003 09 29 | 704 | 1.9− | 0.7− | 2003 10 24 | 291 | 0.1+ | 0.0 | 2006 04 21 | 703 | 0.0 | 0.0 |
| 2003 09 29 | 704 | 0.5− | 0.8+ | 2003 10 24 | 291 | 0.1+ | 0.1+ | 2006 04 21 | 703 | 0.1− | 1.0+ |
| 2003 09 29 | 704 | 0.1+ | 0.3+ | 2003 10 24 | 291 | 0.0 | 0.1+ | 2006 04 21 | 703 | 1.1− | 0.2+ |
| 2003 09 29 | 704 | 0.0 | 0.3− | 2003 10 25 | 704 | 0.6− | 0.1+ | 2006 04 21 | 703 | 1.5+ | 0.6+ |
| 2003 09 29 | 704 | 0.7− | 0.9− | 2003 10 25 | 704 | 0.2− | 0.2+ | 2006 05 03 | 691 | 0.2+ | 0.6+ |
| 2003 10 16 | 691 | 0.0 | 0.1+ | 2003 10 25 | 704 | 0.7− | 0.2+ | 2006 05 03 | 691 | 0.5+ | 0.8+ |
| 2003 10 16 | 691 | 0.1− | 0.0 | 2003 10 25 | 704 | 0.1+ | 0.2+ | 2006 05 03 | 691 | 0.1− | 0.8+ |
| 2003 10 16 | 691 | 0.0 | 0.1− | 2003 10 27 | 704 | 0.3+ | 0.9+ | | | | |

**(143712)∗ 2003 UD$_{142}$**

Discovered 2003 Oct. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.41821 | | (2000.0) | | | |
| $n$ | 0.19235667 | $\omega$ | 117.94967 | | −0.98118171 | −0.04225489 |
| $a$ | 2.9721078 | $\Omega$ | 60.18494 | | −0.05605214 | −0.87140949 |
| $e$ | 0.0530259 | $i$ | 12.54166 | | +0.18477179 | −0.48873308 |
| $P$ | 5.12 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 23 | 809 | (2.3+ | 3.6+) | 2003 10 05 | 691 | 0.1− | 0.1+ | 2006 04 07 | 703 | 0.8+ | 0.3+ |
| 1996 05 23 | 809 | (2.2+ | 3.0+) | 2003 10 05 | 691 | 0.1− | 0.1− | 2006 04 07 | 703 | 0.3− | 0.4− |
| 1996 05 23 | 809 | (1.1+ | 3.8+) | 2003 10 18 | 699 | 1.6− | 0.3+ | 2006 04 19 | 703 | 0.2+ | 0.5− |
| 2000 01 29 | 704 | 0.2+ | 1.2− | 2003 10 18 | 699 | 0.3+ | 0.1− | 2006 04 19 | 703 | 0.4− | 0.1− |
| 2000 01 29 | 704 | 0.1− | 0.3+ | 2003 10 18 | 699 | 0.5− | 0.3− | 2006 04 19 | 703 | 1.6− | 0.3+ |
| 2000 01 29 | 704 | 0.8+ | 0.3+ | 2003 10 18 | 699 | 1.3− | 0.9+ | 2006 04 19 | 703 | 0.5+ | 1.0− |
| 2000 01 29 | 704 | 0.5+ | 1.0+ | 2003 10 21 | 644 | 0.2− | 0.3+ | 2006 04 19 | 644 | 0.4+ | 0.4+ |
| 2000 04 04 | 645 | 0.0 | 0.0 | 2003 10 21 | 644 | 0.1− | 0.5+ | 2006 04 19 | 644 | 0.0 | 0.5+ |
| 2000 04 04 | 645 | 0.0 | 0.0 | 2003 10 21 | 644 | 0.3+ | 0.6+ | 2006 04 19 | 644 | 0.3+ | 0.1+ |
| 2000 04 05 | 645 | 0.0 | 0.0 | 2003 10 23 | 691 | 0.4+ | 0.3+ | 2006 04 19 | 644 | 0.2+ | 0.3+ |
| 2000 04 05 | 645 | 0.0 | 0.0 | 2003 10 23 | 691 | 0.2+ | 0.0 | 2006 04 19 | 644 | 0.1+ | 0.4+ |
| 2001 03 26 | 608 | 0.4+ | 1.4+ | 2003 10 23 | 691 | 0.2+ | 0.0 | 2006 04 19 | 644 | 0.4+ | 0.2+ |
| 2001 03 26 | 608 | 1.0+ | 0.4+ | 2004 12 14 | 699 | 0.1+ | 0.4+ | 2006 04 23 | 699 | 0.7+ | 0.1+ |
| 2001 03 26 | 608 | 0.1+ | 0.8+ | 2004 12 14 | 699 | 0.0 | 0.2+ | 2006 04 23 | 699 | 1.1+ | 0.7+ |
| 2001 04 16 | 704 | 0.9+ | 0.4− | 2004 12 14 | 699 | 0.4− | 0.0 | 2006 04 23 | 699 | (2.1+ | 0.3+) |
| 2001 04 16 | 704 | (2.4+ | 0.5−) | 2004 12 14 | 699 | 0.4− | 0.4+ | 2006 04 23 | 699 | 0.1+ | 1.2+ |
| 2001 04 16 | 704 | 0.6− | 0.2+ | 2005 01 06 | 703 | 0.2+ | 0.5− | 2006 05 01 | 703 | (2.8+ | 0.0 ) |
| 2001 04 16 | 704 | 0.4− | 0.8+ | 2005 01 06 | 703 | 0.4− | 0.2− | 2006 05 01 | 703 | 1.3− | 0.5− |
| 2002 07 16 | 644 | 0.2− | 0.3+ | 2005 01 06 | 703 | 0.4− | 0.5− | 2006 05 01 | 703 | 0.8+ | 1.2− |
| 2002 07 16 | 644 | 0.6− | 0.2+ | 2005 01 06 | 703 | 0.1− | 0.3+ | 2006 05 01 | 703 | 1.0− | 0.7− |
| 2002 07 16 | 644 | 0.1− | 0.1+ | 2006 04 07 | 703 | 0.7− | 1.0− | | | | |
| 2003 10 05 | 691 | 0.1+ | 0.1− | 2006 04 07 | 703 | 0.2− | 0.6− | | | | |

**(143713)∗ 2003 UF$_{143}$ = 2000 YC$_{88}$ = 2003 UP$_{249}$**

Discovered 2003 Oct. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57066)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.77506 | | (2000.0) | | | |
| $n$ | 0.29707630 | $\omega$ | 140.40076 | | +0.81637853 | −0.57174293 |
| $a$ | 2.2244572 | $\Omega$ | 254.65678 | | +0.50613563 | +0.77625053 |
| $e$ | 0.0912361 | $i$ | 4.84573 | | +0.27812376 | +0.26560334 |
| $P$ | 3.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 13 | 691 | 0.2+ | 0.8− | 2003 10 30 | 704 | 0.4− | 0.5+ | 2003 12 27 | 704 | 0.5− | 0.5+ |
| 1993 10 13 | 691 | 0.2+ | 0.9− | 2003 10 30 | 704 | 0.3+ | 0.5+ | 2005 04 05 | 699 | 1.2+ | 1.5+ |
| 1993 10 13 | 691 | 0.1+ | 0.5− | 2003 10 30 | 704 | 0.1− | 1.3+ | 2005 04 05 | 699 | 0.4+ | 0.9+ |
| 2000 11 22 | 691 | 0.4− | 0.4− | 2003 10 30 | 704 | 0.3− | 0.3+ | 2005 04 05 | 699 | 1.0+ | 0.3+ |
| 2000 11 22 | 691 | 0.5− | 0.1− | 2003 10 30 | 704 | 0.4− | 0.9+ | 2005 04 05 | 699 | 0.7+ | 1.3+ |
| 2000 11 22 | 691 | 0.6− | 0.3− | 2003 11 02 | 704 | 1.5+ | 0.3− | 2005 04 06 | 691 | 0.1+ | 0.7+ |
| 2000 12 30 | 704 | 1.1+ | 0.2− | 2003 11 02 | 704 | 0.1+ | 0.9+ | 2005 04 06 | 691 | 0.1+ | 0.5+ |
| 2000 12 30 | 704 | 0.3+ | 0.1− | 2003 11 02 | 704 | 0.5+ | 0.7+ | 2005 04 06 | 691 | 0.1+ | 0.6+ |
| 2000 12 30 | 704 | 1.6+ | 0.3− | 2003 11 02 | 704 | 0.1− | 1.7+ | 2005 04 10 | 691 | 0.0 | 0.7+ |
| 2000 12 30 | 704 | 0.7+ | 0.4− | 2003 11 04 | 704 | 0.2+ | 0.0 | 2005 04 10 | 691 | 0.1− | 0.6+ |
| 2001 01 03 | 704 | 0.7+ | 0.9− | 2003 11 04 | 704 | 1.1+ | 0.8+ | 2005 04 10 | 691 | 0.3+ | 0.6+ |
| 2001 01 03 | 704 | 0.5+ | 0.0 | 2003 11 04 | 704 | 0.2+ | 0.3− | 2005 04 11 | 699 | 0.3+ | 0.1+ |
| 2001 01 03 | 704 | 0.2+ | 0.0 | 2003 11 04 | 704 | 0.4+ | 0.3+ | 2005 04 11 | 699 | 0.6+ | 0.2+ |
| 2001 01 03 | 704 | 1.3+ | 0.1− | 2003 11 04 | 704 | 0.5− | 0.6+ | 2005 04 11 | 699 | 1.2− | 0.9+ |
| 2001 01 03 | 704 | 0.6+ | 0.5− | 2003 11 18 | 644 | 0.1+ | 0.3+ | 2005 04 11 | 699 | 0.1+ | 0.5+ |
| 2003 10 18 | 699 | 0.9− | 0.4+ | 2003 11 18 | 644 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.1+ |
| 2003 10 18 | 699 | 0.2− | 0.2+ | 2003 11 18 | 644 | 0.0 | 0.6+ | 2006 08 22 | 644 | 0.2− | 0.1+ |
| 2003 10 18 | 699 | 0.8+ | 0.1+ | 2003 11 19 | 699 | 0.5− | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.3+ |
| 2003 10 18 | 699 | 0.1− | 0.6+ | 2003 11 19 | 699 | 0.5− | 0.2+ | 2006 08 24 | 704 | 0.3+ | 1.2+ |
| 2003 10 18 | 699 | 0.9+ | 0.2+ | 2003 11 19 | 699 | 0.6− | 0.3− | 2006 08 24 | 704 | 0.9+ | 0.5+ |
| 2003 10 18 | 699 | 0.5− | 0.8− | 2003 11 19 | 699 | 0.1+ | 0.2− | 2006 08 24 | 704 | 0.5+ | 1.4+ |
| 2003 10 18 | 699 | 0.8+ | 0.4+ | 2003 11 20 | 691 | 0.3+ | 0.1+ | 2006 08 24 | 704 | 1.2+ | 1.0+ |
| 2003 10 18 | 699 | 1.3− | 0.0 | 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 08 24 | 704 | 0.3+ | 1.1+ |
| 2003 10 22 | 704 | 1.1− | 0.1− | 2003 11 20 | 691 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.1− | 0.2− |
| 2003 10 22 | 704 | 0.6− | 0.3+ | 2003 11 20 | 704 | 0.1− | 0.6+ | 2006 08 27 | 699 | 0.4− | 0.2+ |
| 2003 10 22 | 704 | 1.3− | 0.0 | 2003 11 20 | 704 | 0.0 | 0.6+ | 2006 08 27 | 699 | 0.3− | 0.4+ |
| 2003 10 22 | 704 | 1.8− | 0.3+ | 2003 11 20 | 704 | 0.6− | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.1+ |
| 2003 10 23 | 699 | 0.2+ | 1.1+ | 2003 11 20 | 704 | 0.2− | 0.4+ | 2006 08 29 | 703 | 0.1+ | 0.2+ |
| 2003 10 23 | 699 | 0.0 | 0.2+ | 2003 11 20 | 704 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.7− | 0.3− |
| 2003 10 23 | 699 | 0.0 | 0.4+ | 2003 11 24 | 704 | 0.8− | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.5− |
| 2003 10 23 | 699 | 0.0 | 0.6+ | 2003 11 24 | 704 | 1.2− | 0.8+ | 2006 09 11 | 703 | 0.3− | 0.2− |
| 2003 10 24 | 691 | 0.1+ | 0.1+ | 2003 11 24 | 699 | 0.4− | 0.4+ | 2006 09 11 | 703 | 1.4− | 0.0 |
| 2003 10 24 | 691 | 0.2+ | 0.0 | 2003 11 24 | 704 | 0.3− | 0.4+ | 2006 09 11 | 703 | 1.3− | 0.8+ |
| 2003 10 24 | 691 | 0.1+ | 0.1+ | 2003 11 24 | 704 | 0.6+ | 0.4+ | 2006 09 11 | 703 | 0.2− | 0.2− |
| 2003 10 25 | 704 | 0.3− | 0.1+ | 2003 11 24 | 699 | 0.8+ | 0.1− | 2006 09 18 | 704 | 0.6+ | 1.8+ |
| 2003 10 25 | 704 | 0.2− | 0.6+ | 2003 11 24 | 704 | 0.1− | 0.7+ | 2006 09 18 | 704 | 0.5+ | 0.2+ |
| 2003 10 25 | 704 | 0.1− | 0.2+ | 2003 11 24 | 699 | 0.1+ | 0.2− | 2006 09 18 | 704 | 0.7− | 0.8+ |
| 2003 10 25 | 704 | 0.1− | 0.1+ | 2003 11 24 | 699 | 0.3− | 0.4− | 2006 09 18 | 704 | 0.0 | 1.4− |
| 2003 10 25 | 704 | 0.1+ | 0.4+ | 2003 12 10 | 644 | 0.1+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 0.4+ |
| 2003 10 27 | 704 | 2.0− | 0.2− | 2003 12 10 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.3+ |
| 2003 10 27 | 704 | 1.3− | 0.8+ | 2003 12 10 | 644 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.1+ |
| 2003 10 27 | 704 | 1.6− | 0.1− | 2003 12 27 | 704 | 0.5− | 0.6+ | 2006 09 25 | 704 | 0.5+ | 0.1+ |
| 2003 10 27 | 704 | 1.8− | 0.5+ | 2003 12 27 | 704 | 0.8+ | 0.7+ | 2006 09 25 | 704 | 0.1+ | 0.3+ |
| 2003 10 27 | 704 | (2.6− | 0.6+) | 2003 12 27 | 704 | 0.8− | 1.0+ | | | | |

**(143714)∗ 2003 UL$_{158}$**

Discovered 2003 Oct. 20 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.48131 | | (2000.0) | | | |
| $n$ | 0.30681335 | $\omega$ | 84.77510 | | +0.69197818 | +0.71835421 |
| $a$ | 2.1771410 | $\Omega$ | 229.28067 | | −0.69413832 | +0.63479845 |
| $e$ | 0.1394637 | $i$ | 5.42445 | | −0.19833859 | +0.28460176 |
| $P$ | 3.21 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 0.5+ | 1.0− | 2003 11 21 | 291 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.1− | 1.0+ |
| 1999 05 13 | 704 | 1.2− | 1.9+ | 2003 11 21 | 704 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.8− | 0.9+ |
| 1999 05 13 | 704 | (1.0− | 2.1+) | 2003 11 21 | 704 | 0.3+ | 0.6+ | 2006 09 21 | 683 | (1.9+ | 0.9−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | (5.2− | 1.0+) | 2003 11 21 | 291 | 0.2+ | 0.4+ | 2006 09 21 | 683 | 0.6+ | 0.9− | | |
| 1999 05 15 | 691 | 0.1− | 0.7+ | 2003 11 21 | 704 | 0.3+ | 0.8+ | 2006 09 21 | 683 | 1.1+ | 0.9− | | |
| 1999 05 15 | 691 | 0.1+ | 0.3+ | 2003 11 21 | 704 | 0.6− | 0.7+ | 2006 09 25 | 704 | 0.3+ | 0.0 | | |
| 1999 05 15 | 691 | 0.1− | 0.4+ | 2003 11 21 | 704 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.8− | 1.3− | | |
| 1999 06 18 | 691 | 0.3+ | 0.3− | 2003 11 24 | 699 | 0.3+ | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.1− | | |
| 1999 06 18 | 691 | 0.3+ | 0.1− | 2003 11 24 | 703 | 0.2− | 0.7− | 2006 09 25 | 704 | (1.7+ | 0.9−) | | |
| 1999 06 18 | 691 | 0.1− | 0.1+ | 2003 11 24 | 699 | 0.2− | 0.8− | 2006 09 26 | 683 | 0.8− | 0.5+ | | |
| 2003 10 20 | 691 | 0.2− | 0.1+ | 2003 11 24 | 703 | 0.3+ | 0.2− | 2006 09 26 | 683 | 0.1− | 1.2+ | | |
| 2003 10 20 | 691 | 0.3− | 0.0 | 2003 11 24 | 699 | 0.5− | 0.4− | 2006 09 26 | 683 | (0.1+ | 1.7+) | | |
| 2003 10 20 | 691 | 0.0 | 0.0 | 2003 11 24 | 703 | 0.5− | 0.0 | 2006 09 27 | 699 | 0.0 | 0.3− | | |
| 2003 10 23 | 691 | 0.0 | 0.0 | 2003 11 24 | 703 | 0.1− | 0.7+ | 2006 09 27 | 699 | 1.2+ | 0.4+ | | |
| 2003 10 23 | 691 | 0.0 | 0.1− | 2003 11 24 | 699 | (2.0− | 0.5−) | 2006 09 27 | 699 | 0.5− | 0.2+ | | |
| 2003 10 23 | 691 | 0.1+ | 0.2− | 2003 11 30 | 691 | 0.1− | 0.1− | 2006 09 27 | 699 | 0.4+ | 0.4− | | |
| 2003 10 29 | 704 | 0.5+ | 0.5+ | 2003 11 30 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.8− | | |
| 2003 10 29 | 704 | 0.5+ | 1.1+ | 2003 11 30 | 691 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.6− | 0.9− | | |
| 2003 10 29 | 704 | 0.7+ | 1.0+ | 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.9− | 0.8− | | |
| 2003 10 29 | 704 | 1.2+ | 0.7+ | 2005 03 10 | G96 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1− | | |
| 2003 10 29 | 699 | 0.8− | 0.0 | 2005 03 10 | G96 | 0.5+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1− | | |
| 2003 10 29 | 704 | 0.6+ | 0.7+ | 2005 03 10 | G96 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.0 | | |
| 2003 10 29 | 699 | 0.4+ | 0.9− | 2005 03 13 | 703 | 0.7− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.0 | | |
| 2003 10 29 | 699 | 0.6− | 0.6− | 2005 03 13 | 703 | (0.6+ | 1.7+) | 2006 10 17 | 703 | 0.0 | 0.5− | | |
| 2003 10 29 | 699 | 0.2− | 0.2+ | 2005 03 13 | 703 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 2003 11 15 | 644 | 0.5− | 0.0 | 2005 03 13 | 703 | 0.2+ | 1.1+ | 2006 10 17 | 703 | 0.6+ | 0.7− | | |
| 2003 11 15 | 644 | 0.2− | 0.4+ | 2006 08 29 | 699 | 0.8+ | 0.6+ | 2006 10 17 | 703 | 0.5+ | 0.5+ | | |
| 2003 11 15 | 644 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.6− | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2003 11 15 | 644 | 0.5− | 0.2− | 2006 08 29 | 699 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2003 11 15 | 644 | 0.5+ | 0.1+ | 2006 08 29 | 699 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2003 11 15 | 644 | 0.5− | 0.2− | 2006 09 16 | 703 | 1.1+ | 0.7+ | 2006 10 23 | G96 | 0.4− | 0.3− | | |
| 2003 11 16 | 691 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.6− | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.4− | | |
| 2003 11 16 | 691 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.2+ | 0.4− | 2006 10 23 | G96 | 0.3− | 0.3− | | |
| 2003 11 16 | 691 | 0.1+ | 0.2− | 2006 09 16 | 703 | 1.1− | 0.6+ | 2006 10 23 | G96 | 0.3− | 0.3− | | |
| 2003 11 21 | 291 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.3+ | 0.7+ | | | | | | |

**(143715)∗ 2003 UT$_{158}$**

Discovered 2003 Oct. 20 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.88018 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31245043 | $\omega$ | 331.59769 | | −0.98548818 | +0.16867496 | |
| $a$ | 2.1508756 | $\Omega$ | 218.12808 | | −0.14932680 | −0.91477359 | |
| $e$ | 0.0442803 | $i$ | 1.76540 | | −0.08071273 | −0.36706680 | |
| $P$ | 3.15 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 25 | 691 | 0.3− | 0.1+ | 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.2− | | |
| 2000 12 25 | 691 | 0.2+ | 0.0 | 2005 05 03 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.2− | | |
| 2000 12 25 | 691 | 0.0 | 0.0 | 2005 05 04 | 699 | (2.1+ | 0.9+) | 2006 10 15 | 691 | 0.1+ | 0.1+ | | |
| 2002 06 06 | 704 | 0.2+ | 0.2+ | 2005 05 04 | 699 | 0.6− | 1.0+ | 2006 10 19 | 691 | 0.2− | 0.2− | | |
| 2002 06 06 | 704 | 0.6− | 0.5− | 2005 05 04 | 699 | (2.0+ | 0.1−) | 2006 10 19 | 691 | 0.2− | 0.1− | | |
| 2002 06 06 | 704 | 0.4+ | 0.4− | 2005 05 04 | 699 | 0.1+ | 1.2− | 2006 10 19 | 691 | 0.1− | 0.2− | | |
| 2002 06 06 | 704 | (1.0+ | 2.7+) | 2005 05 08 | 699 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2003 10 20 | 691 | 0.2− | 0.0 | 2005 05 08 | 699 | 1.1− | 1.4+ | 2006 10 20 | 703 | 0.5− | 0.2+ | | |
| 2003 10 20 | 691 | 0.1− | 0.0 | 2005 05 08 | 699 | (0.5− | 1.8+) | 2006 10 20 | 703 | 0.7+ | 0.5+ | | |
| 2003 10 20 | 691 | 0.2− | 0.2+ | 2005 05 08 | 699 | (2.2− | 0.6+) | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2003 10 23 | 691 | 0.1− | 0.0 | 2005 05 09 | 704 | (1.4+ | 2.2+) | 2006 10 20 | 703 | 0.7+ | 0.2+ | | |
| 2003 10 23 | 691 | 0.3− | 0.1+ | 2005 05 09 | 704 | (0.0 | 2.1+) | 2006 10 20 | 703 | 1.3+ | 0.8+ | | |
| 2003 10 23 | 691 | 0.2− | 0.1− | 2005 05 09 | 704 | 0.0 | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.5+ | | |
| 2003 10 28 | 704 | 0.0 | 1.2+ | 2005 05 13 | 704 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.3+ | 1.1+ | | |
| 2003 10 28 | 704 | 0.1+ | 0.2+ | 2005 05 13 | 704 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.6− | 0.6+ | | |
| 2003 10 28 | 704 | 0.8+ | 0.4− | 2005 05 13 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 703 | 1.1+ | 0.8+ | | |
| 2003 11 15 | 644 | 0.2− | 0.3+ | 2005 05 13 | G96 | 0.0 | 1.0+ | 2006 10 21 | 703 | (2.4− | 1.7−) | | |
| 2003 11 15 | 644 | 0.3− | 0.4+ | 2005 05 13 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | | |
| 2003 11 15 | 644 | 0.9+ | 0.9+ | 2005 05 13 | G96 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.4− | | |
| 2003 11 16 | 691 | 0.2− | 0.1+ | 2005 05 13 | G96 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.3− | | |
| 2003 11 16 | 691 | 0.1− | 0.0 | 2005 05 13 | 704 | 0.8+ | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.2− | | |
| 2003 11 16 | 691 | 0.0 | 0.1− | 2005 05 13 | G96 | 0.3− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1− | | |
| 2003 11 19 | 699 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.6+ | 2006 10 27 | 691 | 0.3− | 0.0 | | |
| 2003 11 19 | 699 | 0.5− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2003 11 19 | 699 | (1.5+ | 0.3−) | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.4− | | |
| 2003 11 19 | 699 | 0.5+ | 0.8− | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2003 11 20 | 291 | 0.2− | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2003 11 20 | 291 | 0.1− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.3− | 0.2− | | |
| 2003 11 20 | 291 | 0.0 | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.1− | | |
| 2003 11 30 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.2− | | |
| 2003 11 30 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.1+ | | |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2005 04 02 | G96 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.4+ | | |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2005 04 02 | G96 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.3+ | | |
| 2005 04 18 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.3− | | |
| 2005 04 18 | 691 | 0.2+ | 0.4+ | 2006 10 12 | A13 | 0.5+ | 0.2− | 2006 11 20 | G96 | 0.2− | 0.3− | | |
| 2005 04 18 | 691 | 0.4+ | 0.5+ | 2006 10 12 | A13 | 0.2+ | 0.2− | 2006 11 20 | G96 | 0.5+ | 0.2− | | |
| 2005 05 03 | 691 | 0.0 | 0.6+ | 2006 10 12 | A13 | 0.1− | 1.2+ | 2006 11 20 | G96 | 0.6+ | 0.1− | | |

**(143716)∗ 2003 UM$_{164}$ = 2003 UL$_{245}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 58141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.12751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28394425 | $\omega$ | 331.98566 | | +0.77540216 | −0.62632214 | |
| $a$ | 2.2925246 | $\Omega$ | 67.02250 | | +0.59446115 | +0.68103972 | |
| $e$ | 0.0662826 | $i$ | 5.01302 | | +0.21299632 | +0.37934875 | |
| $P$ | 3.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.2+ | 1.0+ | 2003 10 29 | 699 | 0.2− | 0.2− | 2003 12 18 | 703 | 0.8+ | 0.5− | | |
| 1999 08 13 | 699 | 0.5− | 0.3+ | 2003 10 29 | 699 | 0.3− | 0.6− | 2005 03 11 | 691 | 0.3+ | 0.2+ | | |
| 1999 08 13 | 699 | (0.1+ | 2.2+) | 2003 11 01 | 704 | 0.4+ | 0.4+ | 2005 03 11 | 691 | 0.4+ | 0.2+ | | |
| 2001 01 19 | 704 | 0.8− | 0.4+ | 2003 11 01 | 704 | 0.8+ | 0.4+ | 2005 03 11 | 691 | 0.1+ | 0.3+ | | |
| 2001 01 19 | 704 | 0.3+ | 0.8− | 2003 11 01 | 704 | 0.8+ | 0.2− | 2005 03 18 | 703 | 1.2− | 0.2+ | | |
| 2001 01 19 | 704 | 0.3− | 1.2− | 2003 11 01 | 704 | 0.7+ | 0.7+ | 2005 03 18 | 703 | 0.2− | 0.1− | | |
| 2001 01 19 | 704 | 0.1− | 0.2− | 2003 11 05 | 699 | (2.5+ | 0.2−) | 2005 03 18 | 703 | 0.6− | 0.5− | | |
| 2003 10 21 | 704 | 1.1+ | 1.4− | 2003 11 05 | 699 | 0.1+ | 0.1+ | 2005 03 18 | 703 | 0.5− | 0.1+ | | |
| 2003 10 21 | 704 | 0.2+ | 0.5+ | 2003 11 05 | 699 | 0.3+ | 0.4− | 2005 04 04 | 703 | 0.6+ | 0.7− | | |
| 2003 10 21 | 704 | (1.1− | 2.1−) | 2003 11 05 | 699 | 0.1− | 0.9+ | 2005 04 04 | 703 | 0.6+ | 0.7+ | | |
| 2003 10 21 | 704 | 0.5− | 0.1− | 2003 11 17 | 703 | 1.0− | 1.1− | 2005 04 04 | 703 | 0.0 | 0.9+ | | |
| 2003 10 23 | 691 | 0.0 | 0.2+ | 2003 11 17 | 703 | 1.3− | 0.6+ | 2005 04 04 | 703 | 1.7− | 0.8+ | | |
| 2003 10 23 | 691 | 0.1+ | 0.1+ | 2003 11 17 | 703 | 0.3− | 0.8− | 2005 05 04 | 691 | 0.1+ | 0.0 | | |
| 2003 10 23 | 691 | 0.0 | 0.2+ | 2003 11 17 | 703 | (2.4+ | 1.6+) | 2005 05 04 | 691 | 0.3+ | 0.4+ | | |
| 2003 10 24 | 704 | 0.9+ | 0.8− | 2003 11 19 | 699 | 0.6− | 0.1+ | 2005 05 04 | 691 | 0.4+ | 0.1+ | | |
| 2003 10 24 | 704 | 1.0+ | 0.2+ | 2003 11 19 | 699 | 0.9− | 0.6− | 2006 08 16 | E12 | 0.3+ | 0.3− | | |
| 2003 10 24 | 704 | 0.7+ | 0.1+ | 2003 11 19 | 699 | 0.9+ | 0.1− | 2006 08 16 | E12 | 0.2− | 0.4− | | |
| 2003 10 24 | 704 | 0.9− | 0.5− | 2003 11 19 | 699 | 0.4+ | 0.4− | 2006 08 16 | E12 | 1.0+ | 0.4+ | | |
| 2003 10 24 | 704 | 0.5+ | 0.4+ | 2003 11 21 | 704 | 0.7− | 0.9+ | 2006 08 16 | E12 | 0.0 | 0.2− | | |
| 2003 10 28 | 704 | 0.8+ | 0.7+ | 2003 11 21 | 704 | 0.4− | 0.0 | 2006 08 17 | 644 | 0.5− | 0.3+ | | |
| 2003 10 28 | 704 | 0.1− | 0.3+ | 2003 11 21 | 704 | 0.5− | 1.4+ | 2006 08 17 | 644 | 0.4− | 0.1+ | | |
| 2003 10 28 | 704 | 0.6+ | 0.1+ | 2003 11 21 | 704 | 1.3− | 0.2+ | 2006 08 17 | 644 | 0.6− | 0.2+ | | |
| 2003 10 28 | 704 | 0.3− | 0.5+ | 2003 11 21 | 704 | 0.1− | 0.9+ | 2006 09 13 | 644 | 0.3− | 0.3+ | | |
| 2003 10 29 | 703 | 0.3− | 0.9+ | 2003 11 30 | 691 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.3− | 0.4+ | | |
| 2003 10 29 | 699 | 0.3− | 0.4+ | 2003 11 30 | 691 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.7− | 0.3+ | | |
| 2003 10 29 | 703 | 0.0 | 0.7+ | 2003 11 30 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.5+ | 0.4+ | | |
| 2003 10 29 | 703 | 0.8− | 0.6+ | 2003 12 18 | 703 | 1.7− | 1.7− | 2006 09 17 | 699 | 1.3+ | 2.0− | | |
| 2003 10 29 | 699 | (2.7− | 2.1−) | 2003 12 18 | 703 | (2.3− | 1.3−) | 2006 09 17 | 699 | 0.6− | 0.6+ | | |
| 2003 10 29 | 703 | (2.9− | 2.7−) | 2003 12 18 | 703 | 0.1− | 0.1+ | 2006 09 17 | 699 | 0.3− | 0.3− | | |

**(143717)∗ 2003 UF$_{165}$**

Discovered 2003 Oct. 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.88736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29973316 | $\omega$ | 160.73737 | | +0.83893272 | −0.54392436 | |
| $a$ | 2.2112925 | $\Omega$ | 232.22761 | | +0.49622334 | +0.77836311 | |
| $e$ | 0.1163047 | $i$ | 1.33311 | | +0.22350457 | +0.31352378 | |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | (4.2− | 2.0−) | 2003 11 01 | 704 | 0.2+ | 0.5− | 2005 05 08 | G96 | 0.2+ | 0.1+ | |
| 1993 09 15 | 809 | (2.8− | 0.9−) | 2003 11 01 | 704 | 0.8+ | 0.8− | 2005 05 08 | G96 | 0.5+ | 0.0 | |
| 1993 09 15 | 809 | 1.6− | 1.6− | 2003 11 01 | 704 | 0.8+ | 0.1+ | 2005 05 08 | G96 | 0.5− | 0.1− | |
| 1993 09 18 | 809 | 1.1+ | 1.2+ | 2003 11 01 | 704 | 0.1− | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.2+ | |
| 1993 09 18 | 809 | 0.6+ | 0.8+ | 2003 11 01 | 704 | 0.4− | 0.2− | 2006 08 14 | 644 | 0.1+ | 0.2+ | |
| 1993 09 18 | 809 | 0.0 | 0.2+ | 2003 11 01 | 704 | 0.1+ | 0.4+ | 2006 08 14 | 644 | 0.3+ | 0.2− | |
| 2002 05 11 | 704 | 0.7− | 0.2+ | 2003 11 01 | 704 | 0.3+ | 0.9− | 2006 08 15 | 644 | 0.5− | 0.1− | |
| 2002 05 11 | 704 | 1.3− | 0.4− | 2003 11 01 | 704 | 0.4+ | 0.5+ | 2006 08 15 | 644 | 0.1− | 0.3+ | |
| 2002 05 11 | 704 | 0.2+ | 0.0 | 2003 11 01 | 704 | 0.2+ | 1.2− | 2006 08 15 | 644 | 0.0 | 0.3− | |
| 2003 10 02 | 691 | 0.3− | 0.4+ | 2003 11 02 | 704 | 0.4+ | 0.1+ | 2006 08 21 | 704 | 0.4+ | 0.5+ | |
| 2003 10 02 | 691 | 0.3− | 0.3+ | 2003 11 02 | 704 | 0.1+ | 0.8+ | 2006 08 21 | 704 | 0.7+ | 0.3− | |
| 2003 10 02 | 691 | 0.3− | 0.3+ | 2003 11 02 | 704 | 0.4+ | 0.4+ | 2006 08 21 | 704 | 0.6+ | 0.4+ | |
| 2003 10 15 | 699 | 0.3+ | 0.3− | 2003 11 02 | 704 | 0.7+ | 0.0 | 2006 08 21 | 704 | 1.1+ | 0.2+ | |
| 2003 10 15 | 699 | 0.2− | 0.7− | 2003 11 03 | 704 | 0.1+ | 0.0 | 2006 08 21 | 704 | 0.2+ | 0.1− | |
| 2003 10 15 | 699 | (1.7+ | 0.0 ) | 2003 11 03 | 704 | 0.5− | 0.1+ | 2006 08 21 | 644 | 0.3− | 0.1− | |
| 2003 10 15 | 699 | (0.5− | 1.5+) | 2003 11 03 | 704 | 0.2+ | 0.3− | 2006 08 21 | 644 | 0.4+ | 0.0 | |
| 2003 10 21 | 644 | 0.1+ | 0.0 | 2003 11 15 | 291 | 0.0 | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.1+ | |
| 2003 10 21 | 644 | 0.2+ | 0.0 | 2003 11 15 | 291 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.6− | |
| 2003 10 21 | 644 | 0.3+ | 0.3− | 2003 11 15 | 291 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.3+ | |
| 2003 10 23 | 699 | 0.3+ | 0.2− | 2003 11 18 | 644 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.4− | |
| 2003 10 23 | 699 | 1.2− | 0.3+ | 2003 11 18 | 644 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.3− | |
| 2003 10 23 | 699 | 0.5+ | 0.2+ | 2003 11 18 | 644 | 0.0 | 0.5+ | 2006 08 29 | 704 | 0.1+ | 1.3+ | |
| 2003 10 23 | 699 | 0.4− | 0.5− | 2003 11 18 | 699 | 0.9+ | 0.4+ | 2006 08 29 | 704 | 0.4− | 0.7+ | |
| 2003 10 23 | 291 | 0.0 | 0.3− | 2003 11 18 | 699 | 0.1+ | 0.7− | 2006 08 29 | 704 | 0.4+ | 0.8+ | |
| 2003 10 23 | 291 | 0.1− | 0.2− | 2003 11 18 | 699 | 1.2− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.6+ | |
| 2003 10 23 | 291 | 0.1+ | 0.1− | 2003 11 18 | 699 | 1.3+ | 0.8+ | 2006 09 14 | 703 | (1.7− | 1.2+) | |
| 2003 10 24 | 704 | 0.1+ | 0.5+ | 2003 11 21 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 703 | (0.0 | 1.8+) | |
| 2003 10 24 | 704 | 0.5+ | 0.0 | 2003 11 21 | 704 | 1.3− | 0.7+ | 2006 09 14 | 703 | 0.7− | 0.5+ | |
| 2003 10 24 | 704 | 0.9+ | 0.1+ | 2003 11 21 | 704 | 0.3− | 0.4+ | 2006 09 14 | 703 | (0.1− | 2.2+) | |
| 2003 10 24 | 704 | 0.6+ | 0.1− | 2003 11 21 | 704 | 0.1− | 0.3− | 2006 09 14 | 703 | (0.8− | 2.2+) | |
| 2003 10 24 | 704 | 0.5+ | 0.3+ | 2003 11 21 | 704 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.4+ | |
| 2003 10 25 | 608 | 0.1− | 1.1− | 2005 03 10 | G96 | 0.2− | 0.6+ | 2006 09 14 | 703 | 1.1+ | 0.8+ | |
| 2003 10 25 | 608 | 0.1− | 0.8− | 2005 03 10 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.4− | |
| 2003 10 25 | 608 | 0.1− | 0.7− | 2005 03 10 | G96 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1− | |
| 2003 10 29 | 704 | 0.9− | 0.2− | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.6− | 0.1− | |
| 2003 10 29 | 704 | 1.1− | 0.3− | 2005 03 13 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2− | |
| 2003 10 29 | 704 | 0.6− | 0.5− | 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− | |
| 2003 10 29 | 704 | 0.1− | 0.3− | 2005 03 13 | 691 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.1− | |
| 2003 10 29 | 703 | 0.1+ | 0.6+ | 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.0 | |
| 2003 10 29 | 703 | 0.6− | 0.4+ | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.1+ | |
| 2003 10 29 | 703 | 1.1− | 0.2− | 2005 03 17 | 691 | 0.3+ | 0.2+ | | | | | |
| 2003 10 29 | 703 | 0.6− | 1.0+ | 2005 05 08 | G96 | 0.1+ | 0.1− | | | | | |

**(143718)∗ 2003 UX$_{167}$ = 2000 WL$_{136}$**

Discovered 2003 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57096)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.31194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31890897 | $\omega$ | 337.06181 | | −0.27804504 | +0.95553404 | |
| $a$ | 2.1217370 | $\Omega$ | 276.68143 | | −0.86526449 | −0.29354721 | |
| $e$ | 0.0979312 | $i$ | 5.67490 | | −0.41714303 | −0.02801322 | |
| $P$ | 3.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.2− | 0.3+ | 2003 11 20 | 704 | (0.8− | 1.7+) | 2005 04 06 | 704 | (1.5+ | 0.2−) | |
| 2000 11 20 | 704 | 0.5+ | 0.5− | 2003 11 20 | 704 | (2.0− | 0.8+) | 2005 04 07 | 704 | 0.0 | 0.4+ | |
| 2000 11 20 | 704 | 0.8− | 0.7− | 2003 11 20 | 704 | (1.9− | 0.9−) | 2005 04 07 | 704 | 0.1− | 0.8+ | |
| 2000 11 20 | 704 | 1.1+ | 1.2− | 2003 11 20 | 704 | 0.6− | 0.1− | 2005 04 07 | 704 | 0.5− | 0.3− | |
| 2000 11 24 | 699 | 0.1− | 1.1− | 2003 11 24 | 691 | 0.1− | 0.2+ | 2005 04 07 | 704 | 0.6− | 0.8+ | |
| 2000 11 24 | 699 | 0.4+ | 0.5− | 2003 11 24 | 691 | 0.1− | 0.3+ | 2005 04 14 | 703 | 0.3− | 0.2− | |
| 2000 11 24 | 699 | 0.8+ | 0.5− | 2003 11 24 | 691 | 0.3− | 0.1+ | 2005 04 14 | 703 | (0.4− | 1.6+) | |
| 2000 11 24 | 699 | 1.2− | 0.4− | 2003 12 13 | 644 | 0.1+ | 0.0 | 2005 04 14 | 703 | 0.8− | 0.9+ | |
| 2002 04 04 | 608 | 0.8− | 0.1− | 2003 12 13 | 644 | 0.0 | 0.1− | 2005 04 14 | 703 | 0.8− | 1.1+ | |
| 2002 04 04 | 608 | 1.0− | 0.7+ | 2003 12 13 | 644 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2002 04 04 | 608 | 0.4− | 0.2− | 2005 03 11 | 699 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2002 05 15 | 644 | 1.1+ | 0.0 | 2005 03 11 | 699 | 0.9+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | |
| 2002 05 15 | 644 | 1.1+ | 0.1+ | 2005 03 11 | 699 | 1.2+ | 1.0− | 2006 10 19 | 703 | 1.0+ | 0.0 | |
| 2002 05 15 | 644 | 0.8+ | 0.1+ | 2005 03 11 | 699 | 0.1+ | 0.5− | 2006 10 19 | 703 | 0.5− | 0.5− | |
| 2003 10 22 | 704 | 0.2− | 1.2+ | 2005 03 17 | 704 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.8− | 0.6+ | |
| 2003 10 22 | 704 | 1.1− | 1.2+ | 2005 03 17 | 704 | 0.5+ | 1.5+ | 2006 10 19 | 703 | 0.4+ | 0.0 | |
| 2003 10 22 | 704 | 0.1+ | 1.2+ | 2005 03 17 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.3+ | |
| 2003 10 23 | 691 | 0.0 | 0.1− | 2005 04 06 | 699 | 1.3− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.3+ | |
| 2003 10 23 | 691 | 0.4+ | 0.0 | 2005 04 06 | 699 | 0.8+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2003 10 23 | 691 | 0.0 | 0.1− | 2005 04 06 | 699 | 0.7− | 0.0 | 2006 11 14 | 703 | 0.7− | 0.8− | |
| 2003 10 23 | 699 | 0.0 | 1.0− | 2005 04 06 | 699 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.4+ | 1.6+ | |
| 2003 10 23 | 699 | 0.7+ | 0.2+ | 2005 04 06 | 704 | 1.0+ | 1.0− | 2006 11 14 | 703 | 1.0− | 0.3+ | |
| 2003 10 23 | 699 | 0.2+ | 0.0 | 2005 04 06 | 704 | 1.1+ | 0.5− | 2006 11 14 | 703 | 0.3− | 0.2+ | |
| 2003 10 23 | 699 | 0.9+ | 0.9+ | 2005 04 06 | 704 | 0.3+ | 0.6+ | | | | | |

**(143719)∗ 2003 UU$_{177}$ = 2001 CK$_{46}$**

Discovered 2003 Oct. 21 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69575)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.33134 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21600927 | $\omega$ | 266.86721 | | +0.50463464 | +0.86109722 | |
| $a$ | 2.7509822 | $\Omega$ | 33.67130 | | −0.74093786 | +0.46888567 | |
| $e$ | 0.0515771 | $i$ | 6.43024 | | −0.44311958 | +0.19661587 | |
| $P$ | 4.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 15 | 950 | 0.2− | 0.4+ | 2003 10 28 | 704 | 1.3− | 0.7− | 2006 03 25 | G96 | 0.5− | 0.2+ | |
| 2001 02 15 | 950 | 0.3+ | 0.4+ | 2005 01 06 | 703 | 0.9+ | 0.3− | 2006 03 25 | G96 | 0.8− | 0.3+ | |
| 2001 02 15 | 950 | 0.1− | 0.4+ | 2005 01 06 | 703 | 1.3+ | 0.7+ | 2006 03 25 | G96 | 0.4− | 0.2+ | |
| 2001 02 20 | 950 | 0.1+ | 0.1+ | 2005 01 06 | 703 | 1.1− | 0.7− | 2006 03 25 | G96 | 0.3− | 0.3+ | |
| 2001 02 20 | 950 | 0.4+ | 0.1+ | 2005 01 06 | 703 | 0.4− | 0.8+ | 2006 03 25 | G96 | 0.3− | 0.4+ | |
| 2001 02 20 | 950 | 0.4+ | 0.2+ | 2005 02 04 | 621 | 0.3− | 0.4− | 2006 03 25 | G96 | 0.2− | 0.2+ | |
| 2003 09 16 | 691 | 0.0 | 0.4+ | 2005 02 04 | 621 | 0.2− | 0.3− | 2006 03 25 | G96 | 0.1− | 0.6+ | |
| 2003 09 16 | 691 | 0.1+ | 0.2+ | 2005 02 04 | 621 | 0.0 | 0.7− | 2006 04 02 | 691 | 0.4+ | 0.2+ | |
| 2003 09 16 | 691 | 0.0 | 0.7+ | 2006 03 23 | 691 | 0.3+ | 0.1− | 2006 04 02 | 691 | 0.5+ | 0.6+ | |
| 2003 10 21 | 644 | 0.3− | 0.1− | 2006 03 23 | 691 | 1.1+ | 0.1− | 2006 04 02 | 691 | 0.2+ | 0.4+ | |
| 2003 10 21 | 644 | 0.3− | 0.1+ | 2006 03 23 | 691 | 0.2+ | 0.1+ | 2006 04 19 | G96 | 0.2+ | 0.1+ | |
| 2003 10 21 | 644 | 0.3+ | 0.1+ | 2006 03 24 | G96 | 0.1+ | 0.1+ | 2006 04 19 | G96 | 0.5− | 0.1− | |
| 2003 10 24 | 704 | 0.8− | 0.1− | 2006 03 24 | G96 | 0.0 | 0.1+ | 2006 04 19 | G96 | 0.1− | 0.1− | |
| 2003 10 24 | 704 | 0.7− | 0.4+ | 2006 03 24 | G96 | 0.1+ | 0.0 | 2006 04 19 | G96 | 0.0 | 0.1− | |
| 2003 10 24 | 704 | 1.3− | 1.5+ | 2006 03 24 | G96 | 0.1+ | 0.1+ | 2006 05 22 | G96 | 0.3− | 0.0 | |
| 2003 10 24 | 704 | 1.2− | 0.3+ | 2006 03 24 | G96 | 0.9− | 0.3+ | 2006 05 22 | G96 | 0.0 | 0.1− | |
| 2003 10 24 | 704 | 0.7− | 1.5+ | 2006 03 24 | G96 | 0.7− | 0.3+ | 2006 05 22 | G96 | 0.3+ | 0.0 | |
| 2003 10 28 | 704 | 1.3+ | 0.8+ | 2006 03 24 | G96 | 0.6− | 0.3+ | 2006 05 22 | G96 | 0.4− | 0.0 | |
| 2003 10 28 | 704 | 0.1− | 0.1− | 2006 03 24 | G96 | 1.5− | 0.2+ | | | | | |
| 2003 10 28 | 704 | 0.2+ | 0.3− | 2006 03 25 | G96 | 0.5− | 0.1+ | | | | | |

**(143720)∗ 2003 US$_{182}$ = 2005 CW$_{37}$ = 2005 CX$_{69}$**

Discovered 2003 Oct. 21 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 76120)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.47188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26771360 | $\omega$ | 228.08600 | | −0.97727074 | +0.21194836 | |
| $a$ | 2.3842718 | $\Omega$ | 324.14990 | | −0.19218400 | −0.89460713 | |
| $e$ | 0.1305713 | $i$ | 0.43523 | | −0.08948301 | −0.39339037 | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 07 | 691 | 0.8− | 1.2+ | 2005 02 04 | 143 | 0.6− | 0.0 | 2005 03 09 | 699 | 0.0 | 0.0 |
| 1994 03 07 | 691 | 1.9+ | 0.2+ | 2005 02 04 | 143 | (3.6+ | 1.4+) | 2005 03 10 | 695 | 0.2− | 0.2+ |
| 1994 03 07 | 691 | 0.5− | 0.1+ | 2005 02 07 | 143 | 0.4+ | 0.2− | 2005 03 10 | 695 | 0.5− | 0.3+ |
| 1999 11 01 | 691 | 0.3+ | 0.5− | 2005 02 07 | 143 | 1.0+ | 0.5− | 2005 03 17 | 704 | 0.1+ | 0.3+ |
| 1999 11 01 | 691 | 0.1+ | 0.1− | 2005 02 07 | 143 | 1.1+ | 0.9− | 2005 03 17 | 704 | 0.5+ | 0.3+ |
| 1999 11 01 | 691 | 0.1+ | 0.3+ | 2005 02 09 | 143 | 0.8− | 0.2− | 2005 03 17 | 704 | 0.8+ | 0.1− |
| 2003 09 27 | 691 | 0.6− | 0.2− | 2005 02 09 | 143 | 0.5− | 0.0 | 2005 03 17 | 704 | 0.0 | 1.0− |
| 2003 09 27 | 691 | 0.4− | 0.2− | 2005 02 09 | 143 | 0.5− | 0.0 | 2005 04 02 | 691 | 0.3− | 0.1+ |
| 2003 09 27 | 691 | 0.1− | 0.4− | 2005 02 09 | 704 | 0.2− | 0.2− | 2005 04 02 | 691 | 0.3− | 0.1+ |
| 2003 10 21 | 644 | 0.5+ | 0.7+ | 2005 02 09 | 704 | 0.0 | 0.1− | 2005 04 02 | 691 | 0.2− | 0.1+ |
| 2003 10 21 | 644 | 0.2− | 0.1− | 2005 02 09 | 704 | 0.4+ | 0.0 | 2005 04 02 | G96 | 0.3− | 0.2− |
| 2003 10 21 | 644 | 0.5+ | 0.9+ | 2005 02 10 | 143 | 0.6− | 0.3+ | 2005 04 02 | G96 | 0.4− | 0.1− |
| 2003 10 24 | 704 | 1.2− | 0.3+ | 2005 02 10 | 143 | 0.9− | 0.2+ | 2005 04 02 | G96 | 0.2− | 0.2− |
| 2003 10 24 | 704 | 0.0 | 0.6+ | 2005 02 10 | 143 | 0.7− | 0.0 | 2005 04 02 | G96 | 0.4− | 0.1− |
| 2003 10 24 | 704 | 0.4− | 0.5+ | 2005 02 10 | 143 | 0.2− | 0.4− | 2005 05 04 | G96 | 0.3− | 0.0 |
| 2003 10 24 | 704 | 0.5− | 1.3+ | 2005 03 01 | 143 | 0.6− | 0.5− | 2005 05 04 | G96 | 0.2− | 0.0 |
| 2003 10 24 | 704 | 0.5+ | 0.8+ | 2005 03 01 | 143 | 0.5− | 0.6− | 2005 05 04 | G96 | 0.4− | 0.3− |
| 2003 10 25 | 691 | 0.1+ | 0.2− | 2005 03 01 | 143 | 0.7− | 0.4− | 2005 05 04 | G96 | 0.7− | 0.3− |
| 2003 10 25 | 691 | 0.3− | 0.1+ | 2005 03 03 | 704 | 0.4+ | 0.2− | 2005 05 13 | G96 | 0.4− | 0.0 |
| 2003 10 25 | 691 | 0.4+ | 0.2− | 2005 03 03 | 704 | 1.2+ | 0.3+ | 2005 05 13 | G96 | 0.2− | 0.0 |
| 2003 10 25 | 291 | 0.4+ | 0.2+ | 2005 03 03 | 704 | 1.6+ | 0.8+ | 2005 05 13 | G96 | 0.6− | 0.0 |
| 2003 10 25 | 291 | 0.3+ | 0.4+ | 2005 03 08 | 704 | 0.9+ | 0.1− | 2005 05 13 | G96 | 0.1− | 0.2− |
| 2003 10 25 | 291 | 0.4+ | 0.3+ | 2005 03 08 | 704 | 0.8+ | 0.0 | 2006 07 18 | G96 | 0.1− | 0.3+ |
| 2003 10 28 | 704 | (3.0+ | 1.7+) | 2005 03 08 | G96 | 0.6− | 0.2− | 2006 07 18 | G96 | 0.4− | 0.1− |
| 2003 10 28 | 704 | 0.8+ | 1.9+ | 2005 03 08 | G96 | 1.0− | 0.1− | 2006 07 18 | G96 | 0.6− | 0.0 |
| 2003 10 28 | 704 | 0.6− | 0.2+ | 2005 03 08 | 704 | 1.6+ | 0.4+ | 2006 07 18 | G96 | 0.2− | 0.3+ |
| 2003 11 16 | 291 | 0.2− | 0.5− | 2005 03 08 | G96 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.2+ | 1.1+ |
| 2003 11 16 | 291 | 0.4− | 0.1− | 2005 03 08 | G96 | 0.4+ | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.4+ |
| 2003 11 16 | 291 | 0.3− | 0.4− | 2005 03 08 | 704 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.1+ | 1.0+ |
| 2005 02 02 | 691 | 0.1− | 0.1+ | 2005 03 08 | 704 | 1.6+ | 0.3− | 2006 09 26 | G96 | 0.4− | 0.5+ |
| 2005 02 02 | 691 | 0.1+ | 0.1+ | 2005 03 09 | 699 | 0.2− | 0.7− | 2006 09 26 | G96 | 0.1− | 0.4+ |
| 2005 02 02 | 691 | 0.2− | 0.2+ | 2005 03 09 | 699 | 1.1+ | 0.6+ | 2006 09 26 | G96 | 0.4− | 0.3+ |
| 2005 02 04 | 143 | (2.2+ | 0.7+) | 2005 03 09 | 699 | 1.1+ | 0.5− | 2006 09 26 | G96 | 0.5− | 0.5+ |

**(143721)∗ 2003 UB$_{184}$ = 2000 YP$_{130}$**

Discovered 2003 Oct. 21 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 76122)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.19187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30311091 | $\omega$ | 59.04969 | | −0.62833857 | −0.77680239 | |
| $a$ | 2.1948340 | $\Omega$ | 69.93748 | | +0.69760237 | −0.58655218 | |
| $e$ | 0.0901763 | $i$ | 2.56614 | | +0.34429868 | −0.22920423 | |
| $P$ | 3.25 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.5− | 1.2− | 2003 11 19 | 644 | 0.1+ | 0.2+ | 2005 06 12 | G96 | 0.0 | 0.0 |
| 2000 12 30 | 704 | 0.4+ | 0.2+ | 2003 11 30 | 691 | 0.1+ | 0.3+ | 2005 06 12 | G96 | 0.6− | 0.3− |
| 2000 12 30 | 704 | 1.6− | 0.4− | 2003 11 30 | 691 | 0.0 | 0.1− | 2005 06 12 | G96 | 0.1− | 0.4− |
| 2000 12 30 | 704 | 0.7+ | 0.5+ | 2003 11 30 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2003 10 21 | 644 | 0.2+ | 0.3+ | 2005 03 12 | G96 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2003 10 21 | 644 | 0.3− | 0.0 | 2005 03 12 | G96 | 0.4− | 0.9− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2003 10 21 | 644 | 0.1+ | 0.3+ | 2005 03 12 | G96 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2003 10 24 | 704 | 0.4+ | 1.4+ | 2005 03 12 | G96 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2003 10 24 | 704 | 0.3+ | 0.9+ | 2005 05 03 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.4− |
| 2003 10 24 | 704 | 0.3+ | 0.2− | 2005 05 03 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.2− |
| 2003 10 24 | 704 | 1.0+ | 0.5+ | 2005 05 03 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 1.0− |
| 2003 10 28 | 704 | 0.1+ | 0.1+ | 2005 05 07 | G96 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2003 10 28 | 704 | 0.3− | 0.1+ | 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2003 10 28 | 704 | 0.2+ | 0.4+ | 2005 05 07 | G96 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2003 10 28 | 704 | 0.5− | 0.7+ | 2005 05 07 | G96 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2003 10 28 | 704 | 0.6− | 1.1+ | 2005 05 09 | 699 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2003 11 01 | 704 | 0.6− | 0.2+ | 2005 05 09 | 699 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2003 11 01 | 704 | 0.1− | 0.3+ | 2005 05 09 | 699 | 0.7− | 1.3+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2003 11 01 | 704 | 0.6− | 0.7− | 2005 05 09 | 699 | 0.5− | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2003 11 18 | 644 | 0.2− | 0.9+ | 2005 05 13 | 704 | 0.2+ | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2003 11 18 | 644 | 0.3− | 0.2+ | 2005 05 13 | 704 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2003 11 18 | 644 | 0.2− | 0.1+ | 2005 05 13 | 704 | 0.8− | 0.5− | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2003 11 19 | 644 | 0.1− | 0.2+ | 2005 05 13 | 704 | 0.4+ | 0.4+ | | | | |
| 2003 11 19 | 644 | 0.2− | 0.4+ | 2005 06 12 | G96 | 0.0 | 0.0 | | | | |

**(143722)∗ 2003 UM$_{188}$ = 2000 YM$_{40}$**

Discovered 2003 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57117)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.31277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29725060 | $\omega$ | 205.13161 | | −0.07373470 | −0.99473217 | |
| $a$ | 2.2235875 | $\Omega$ | 249.16321 | | +0.92737482 | −0.04212837 | |
| $e$ | 0.1199418 | $i$ | 4.36989 | | +0.36679578 | −0.09345114 | |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.1+ | 0.0 | 2003 11 18 | 699 | 0.4+ | 0.3− | 2005 06 02 | G96 | 0.2− | 0.2+ |
| 2000 12 30 | 704 | 0.3− | 0.2+ | 2003 11 18 | 699 | 0.1+ | 0.5+ | 2005 06 02 | G96 | 0.2− | 0.7+ |
| 2000 12 30 | 704 | 0.5+ | 0.1+ | 2003 11 19 | 691 | 0.2+ | 0.3− | 2005 06 02 | G96 | 0.0 | 0.4+ |
| 2000 12 30 | 704 | 0.3− | 0.1− | 2003 11 19 | 691 | 0.0 | 0.2− | 2005 06 02 | G96 | 0.1− | 0.2+ |
| 2000 12 30 | 704 | 0.0 | 0.2− | 2003 11 19 | 691 | 0.1+ | 0.2− | 2005 06 02 | G96 | 0.3− | 0.6+ |
| 2001 01 02 | 704 | 0.0 | 0.4+ | 2003 11 20 | 704 | 0.8− | 0.8+ | 2006 08 27 | 699 | 0.2− | 0.7+ |
| 2001 01 02 | 704 | 0.1+ | 0.6+ | 2003 11 20 | 704 | 0.0 | 0.3+ | 2006 08 27 | 699 | 1.3+ | 0.1− |
| 2001 01 02 | 704 | 0.2+ | 0.0 | 2003 11 20 | 704 | 0.6− | 0.4+ | 2006 08 27 | 699 | 0.2− | 0.6+ |
| 2001 01 02 | 704 | 0.5+ | 0.4− | 2003 11 20 | 704 | 0.8− | 0.9+ | 2006 08 27 | 699 | 0.2+ | 0.5+ |
| 2003 10 22 | 704 | 1.3− | 0.8+ | 2003 11 24 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 703 | 0.1+ | 0.1− |
| 2003 10 22 | 704 | 0.0 | 0.7− | 2003 11 24 | 704 | 0.4− | 0.4+ | 2006 08 29 | 703 | 1.1− | 0.2− |
| 2003 10 22 | 704 | 0.2− | 1.0+ | 2003 11 24 | 704 | 0.2+ | 0.3− | 2006 08 29 | 703 | 2.0+ | 0.4− |
| 2003 10 22 | 704 | 0.2− | 0.9+ | 2003 11 24 | 704 | 0.0 | 0.2− | 2006 08 29 | 703 | 0.3− | 1.2− |
| 2003 10 23 | 699 | 0.9− | 1.1+ | 2003 11 24 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.6+ | 0.4− |
| 2003 10 23 | 699 | 0.9− | 0.6− | 2003 12 01 | 704 | 0.4+ | 0.5− | 2006 08 29 | 703 | 1.1− | 0.6+ |
| 2003 10 23 | 699 | 0.6+ | 0.6− | 2003 12 01 | 704 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.1− | 0.4− |
| 2003 10 23 | 699 | 0.4− | 0.1+ | 2003 12 01 | 704 | 0.4+ | 0.1+ | 2006 08 29 | 703 | 0.3− | 1.5+ |
| 2003 10 25 | 704 | 0.3+ | 0.1+ | 2003 12 01 | 704 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.2+ | 0.0 |
| 2003 10 25 | 704 | 0.3− | 0.6+ | 2003 12 01 | 704 | 0.1− | 0.8+ | 2006 08 29 | 691 | 0.3+ | 0.3+ |
| 2003 10 25 | 704 | 0.1− | 0.4+ | 2005 05 04 | 644 | 0.8+ | 0.5+ | 2006 08 29 | 691 | 0.2+ | 0.2+ |
| 2003 10 25 | 704 | 0.1+ | 0.1+ | 2005 05 04 | 644 | 0.2+ | 0.5+ | 2006 09 11 | 703 | 0.7+ | 0.1− |
| 2003 10 25 | 704 | 0.1+ | 0.0 | 2005 05 04 | 644 | 0.5+ | 0.4+ | 2006 09 11 | 703 | 0.6− | 0.4− |
| 2003 10 30 | 704 | 0.1+ | 0.1− | 2005 05 16 | G96 | 0.1+ | 0.7+ | 2006 09 11 | 703 | 0.6− | 0.4+ |
| 2003 10 30 | 704 | 0.5− | 0.2+ | 2005 05 16 | G96 | 0.2+ | 0.6+ | 2006 09 11 | 703 | 0.7− | 0.4+ |
| 2003 10 30 | 704 | 0.8− | 0.4+ | 2005 05 16 | G96 | 0.3− | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2003 10 30 | 704 | 0.5+ | 0.1− | 2005 05 16 | G96 | 0.4+ | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2003 11 02 | 704 | 0.2− | 0.2+ | 2005 06 02 | G96 | 0.2− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.2+ |
| 2003 11 02 | 704 | 0.3+ | 0.1+ | 2005 06 02 | G96 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.0 |
| 2003 11 02 | 704 | 0.1− | 0.3+ | 2005 06 02 | G96 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.5− |
| 2003 11 02 | 704 | 0.0 | 0.9+ | 2005 06 02 | G96 | 0.7+ | 0.3+ | 2006 09 18 | 703 | 0.7− | 1.4− |
| 2003 11 02 | 704 | 0.1+ | 0.8+ | 2005 06 02 | G96 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.6− | 1.4− |
| 2003 11 18 | 699 | 0.1− | 0.1+ | 2005 06 02 | G96 | 0.5− | 0.5+ | 2006 09 20 | A13 | 0.1− | 0.1− |
| 2003 11 18 | 699 | 0.3+ | 0.1− | 2005 06 02 | G96 | 0.1− | 0.3+ | 2006 09 20 | A13 | 0.7+ | 0.3− |

**(143723)∗ 2003 UW$_{199}$ = 2003 SD$_{204}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (d, *MPO* 58141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.67760 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18132840 | $\omega$ | 218.64364 | | +0.91308764 | +0.40608784 | |
| $a$ | 3.0914259 | $\Omega$ | 117.35943 | | −0.36302823 | +0.85081441 | |
| $e$ | 0.1481757 | $i$ | 2.38295 | | −0.18569187 | +0.33347789 | |
| $P$ | 5.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 809 | 1.0+ | 2.8+ | 2003 10 14 | 699 | 0.4+ | 0.7+ | 2003 11 26 | 699 | 0.3− | 1.2+ |
| 1996 04 18 | 809 | (1.0+ | 3.3+) | 2003 10 14 | 699 | 0.4− | 0.6+ | 2003 11 26 | 699 | (2.3− | 0.1+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 809 | 1.1+ | 2.4+ | 2003 10 21 | 699 | 0.3+ | 0.1+ | 2004 12 16 | 691 | 0.3+ | 0.5+ |
| 2000 01 30 | 691 | 0.3− | 0.1+ | 2003 10 21 | 699 | 0.7− | 0.9+ | 2004 12 16 | 691 | 0.4+ | 0.2+ |
| 2000 01 30 | 691 | 0.2− | 0.5− | 2003 10 21 | 699 | 0.1− | 0.4+ | 2004 12 16 | 691 | 0.1− | 0.3+ |
| 2000 01 30 | 691 | 0.1+ | 0.2− | 2003 10 21 | 704 | 0.4− | 0.6+ | 2005 01 13 | 291 | 0.3+ | 0.2− |
| 2001 04 15 | 691 | 0.0 | 0.2+ | 2003 10 21 | 699 | 0.3+ | 1.0+ | 2005 01 13 | 291 | 0.3− | 0.3− |
| 2001 04 15 | 691 | 0.0 | 0.2+ | 2003 10 21 | 704 | 1.7+ | 0.6+ | 2005 01 13 | 291 | 0.2− | 0.1− |
| 2001 04 15 | 691 | 0.1+ | 0.1− | 2003 10 21 | 704 | 0.2+ | 0.2+ | 2005 01 15 | 704 | 1.1+ | 1.1+ |
| 2003 09 22 | 644 | 0.2− | 0.5+ | 2003 10 21 | 704 | 0.2− | 0.6+ | 2005 01 15 | 704 | 0.5+ | 0.5+ |
| 2003 09 22 | 644 | 0.1− | 0.6+ | 2003 10 21 | 704 | 0.3+ | 0.4+ | 2005 01 15 | 704 | 1.2− | 0.7+ |
| 2003 09 22 | 644 | 0.2− | 0.4+ | 2003 10 24 | 704 | 1.2− | 0.4+ | 2005 01 17 | 704 | (2.5− | 0.2+) |
| 2003 09 26 | 704 | 0.8− | 0.1+ | 2003 10 24 | 704 | 0.8− | 0.3+ | 2005 01 17 | 704 | 0.6− | 0.8− |
| 2003 09 26 | 704 | 0.4− | 0.7+ | 2003 10 24 | 704 | 0.9− | 0.6+ | 2005 01 17 | 704 | 1.0+ | 0.1− |
| 2003 09 26 | 704 | 1.0− | 0.8+ | 2003 10 24 | 704 | 0.6− | 0.6+ | 2006 02 25 | G96 | 0.0 | 0.2− |
| 2003 09 26 | 704 | 0.4− | 0.3+ | 2003 10 24 | 704 | 0.7− | 0.1− | 2006 02 25 | G96 | 0.4− | 0.2+ |
| 2003 09 26 | 704 | 0.4+ | 1.4+ | 2003 10 28 | 608 | 1.0− | 1.0− | 2006 02 25 | G96 | 0.1− | 0.0 |
| 2003 09 29 | 704 | 0.4− | 0.0 | 2003 10 28 | 608 | 0.3+ | 1.2− | 2006 02 25 | G96 | 0.3− | 0.0 |
| 2003 09 29 | 704 | 0.5− | 1.0+ | 2003 10 28 | 608 | 0.0 | 1.1− | 2006 03 03 | 691 | 0.2+ | 0.2+ |
| 2003 09 29 | 704 | 0.3+ | 0.5− | 2003 11 24 | 691 | 0.1− | 0.2− | 2006 03 03 | 691 | 0.1+ | 0.4+ |
| 2003 09 29 | 704 | 0.4+ | 0.0 | 2003 11 24 | 691 | 0.1+ | 0.1− | 2006 03 03 | 691 | 0.3+ | 0.5+ |
| 2003 09 29 | 704 | 0.6+ | 1.0+ | 2003 11 24 | 691 | 0.0 | 0.1− | 2006 04 02 | 691 | 0.2− | 0.2− |
| 2003 10 14 | 699 | 0.2+ | 0.1+ | 2003 11 26 | 699 | 1.3+ | 1.1− | 2006 04 02 | 691 | 0.2− | 0.1− |
| 2003 10 14 | 699 | 0.1− | 0.0 | 2003 11 26 | 699 | 0.1+ | 0.2− | 2006 04 02 | 691 | 0.3+ | 0.0 |

**(143724)∗ 2003 UJ$_{200}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.82209 | | (2000.0) | | +0.58376148 | +0.81155339 |
| $n$ | 0.20036978 | $\omega$ | 158.56381 | | −0.75135429 | +0.55143302 |
| $a$ | 2.8923304 | $\Omega$ | 147.13738 | | −0.30771621 | +0.19313913 |
| $e$ | 0.0368571 | $i$ | 2.59512 | | | |
| $P$ | 4.92 | $H$ | 15.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 695 | 0.0 | 0.2− | 2003 10 28 | 704 | 1.4+ | 0.5+ | 2006 03 26 | G96 | 0.0 | 0.2− |
| 2001 03 26 | 695 | 0.0 | 0.3− | 2003 10 28 | 704 | 1.4− | 0.7+ | 2006 03 26 | G96 | 0.1+ | 0.4− |
| 2001 04 16 | 691 | 0.0 | 0.4+ | 2003 11 01 | 704 | 0.1− | 0.7+ | 2006 03 26 | G96 | 0.1+ | 0.2+ |
| 2001 04 16 | 691 | 0.1+ | 0.2+ | 2003 11 01 | 704 | 0.0 | 0.4+ | 2006 03 26 | G96 | 0.2− | 0.3+ |
| 2001 04 16 | 691 | 0.3+ | 0.3+ | 2003 11 01 | 704 | 2.0− | 0.1− | 2006 04 08 | G96 | 0.3− | 0.1+ |
| 2002 06 29 | 644 | (2.4− | 0.8−) | 2003 11 01 | 704 | 0.2− | 0.7+ | 2006 04 08 | G96 | 0.2− | 0.1− |
| 2002 06 29 | 644 | 0.3− | 0.0 | 2003 11 01 | 704 | 0.1+ | 0.9+ | 2006 04 08 | G96 | 0.1− | 0.3+ |
| 2002 06 29 | 644 | 0.4− | 0.0 | 2004 12 20 | G96 | 0.9− | 0.7− | 2006 04 08 | G96 | 0.4+ | 0.3+ |
| 2003 09 28 | 691 | 0.2− | 0.5+ | 2004 12 20 | G96 | 0.6− | 0.6− | 2006 04 09 | 691 | 0.4+ | 1.0+ |
| 2003 09 28 | 691 | 0.0 | 0.4+ | 2004 12 20 | G96 | 0.5− | 0.5− | 2006 04 09 | 691 | 0.0 | 0.1+ |
| 2003 09 28 | 691 | 0.0 | 0.3+ | 2004 12 20 | G96 | 0.4− | 0.5− | 2006 04 09 | 691 | 0.4+ | 0.5+ |
| 2003 10 21 | 704 | 0.1+ | 0.4+ | 2005 01 13 | 691 | 0.0 | 0.0 | 2006 04 20 | 703 | 1.2− | 0.8− |
| 2003 10 21 | 704 | 0.1+ | 0.5+ | 2005 01 13 | 691 | 0.5− | 0.2+ | 2006 04 20 | 703 | 0.5− | 1.3+ |
| 2003 10 21 | 704 | 0.1− | 1.8+ | 2005 01 13 | 691 | 0.1+ | 0.0 | 2006 04 20 | 703 | 0.2− | 1.0− |
| 2003 10 21 | 704 | 0.5− | 0.3+ | 2005 02 02 | 704 | 0.1+ | 0.7− | 2006 04 20 | 703 | 0.5− | 1.3+ |
| 2003 10 24 | 704 | 0.5+ | 0.5− | 2005 02 02 | 704 | 0.8+ | 0.7+ | 2006 05 24 | G96 | 0.1− | 0.1+ |
| 2003 10 24 | 704 | 0.9− | 0.9+ | 2005 02 02 | 704 | 0.3+ | 0.3+ | 2006 05 24 | G96 | 0.4− | 0.0 |
| 2003 10 24 | 704 | 0.6− | 0.3+ | 2005 02 02 | 704 | 1.7+ | 0.5− | 2006 05 24 | G96 | 0.2− | 0.1− |
| 2003 10 24 | 704 | 0.2+ | 0.8+ | 2006 03 24 | 691 | 0.2+ | 0.1− | 2006 05 24 | G96 | 0.0 | 0.1+ |
| 2003 10 24 | 704 | 1.3− | 0.5+ | 2006 03 24 | 691 | 0.3+ | 0.3+ | | | | |
| 2003 10 28 | 704 | 1.4+ | 0.3− | 2006 03 24 | 691 | 0.4+ | 0.2+ | | | | |

**(143725)∗ 2003 UX$_{200}$ = 1998 EK$_{18}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57128)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 113.39363 | | (2000.0) | | −0.82945375 | +0.55857395 |
| $n$ | 0.28032919 | $\omega$ | 31.99598 | | −0.52000580 | −0.77301103 |
| $a$ | 2.3121917 | $\Omega$ | 181.96264 | | −0.20396187 | −0.30074756 |
| $e$ | 0.1674708 | $i$ | 2.13236 | | | |
| $P$ | 3.52 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 04 | 691 | 0.7− | 0.2− | 2005 01 19 | 691 | 0.0 | 0.2+ | 2005 03 09 | G96 | 0.4− | 0.2− |
| 1992 10 04 | 691 | 0.1+ | 0.2− | 2005 01 19 | 691 | 0.3− | 0.1+ | 2005 03 09 | G96 | 0.5− | 0.1− |
| 1992 10 04 | 691 | 0.5− | 0.2+ | 2005 01 19 | 691 | 0.1− | 0.1+ | 2005 03 09 | 704 | 0.1− | 0.1− |
| 1998 03 03 | 809 | 1.8+ | 1.2− | 2005 01 20 | 699 | 0.8− | 0.3− | 2005 03 09 | 704 | (1.5+ | 0.3+) |
| 1998 03 03 | 809 | 1.7+ | 1.0− | 2005 01 20 | 699 | (1.7− | 0.1−) | 2005 03 09 | 704 | 1.1+ | 0.2− |
| 1998 03 03 | 809 | 1.0+ | 1.9− | 2005 01 20 | 699 | 0.8− | 0.5+ | 2005 03 09 | 704 | 0.1− | 0.7+ |
| 1998 03 03 | 704 | 0.2+ | 0.5+ | 2005 01 20 | 699 | 0.7− | 0.1+ | 2005 03 10 | 699 | 0.5+ | 0.0 |
| 1998 03 03 | 704 | (2.3− | 1.4+) | 2005 02 02 | 703 | 0.1− | 0.1+ | 2005 03 10 | 699 | 0.1+ | 0.1− |
| 1998 03 03 | 704 | 0.5− | 0.5+ | 2005 02 02 | 704 | 0.5+ | 0.2+ | 2005 03 10 | 699 | 0.0 | 0.5+ |
| 1998 03 03 | 704 | 0.1− | 1.2− | 2005 02 02 | 703 | 0.3− | 0.6− | 2005 03 10 | 699 | 0.4+ | 0.2+ |
| 1998 03 03 | 704 | 1.5− | 0.1− | 2005 02 02 | 703 | 0.9− | 0.8+ | 2005 03 11 | G96 | 0.6− | 0.2− |
| 1998 03 04 | 809 | (0.3− | 2.4−) | 2005 02 02 | 704 | 0.7+ | 0.0 | 2005 03 11 | G96 | 0.7− | 0.4− |
| 1998 03 04 | 809 | (1.0− | 4.1−) | 2005 02 02 | 703 | 1.4− | 0.1− | 2005 03 11 | G96 | 0.3− | 0.1+ |
| 1998 03 04 | 809 | (2.2− | 3.0−) | 2005 02 02 | 704 | 1.0+ | 0.4− | 2005 03 11 | G96 | 0.4− | 0.1− |
| 1998 03 04 | 704 | 0.4− | 0.1− | 2005 02 02 | 704 | 0.2+ | 0.7+ | 2005 03 17 | 704 | 0.1− | 1.1− |
| 1998 03 04 | 704 | 0.7− | 0.4− | 2005 02 09 | 699 | 0.9− | 0.5+ | 2005 03 17 | 704 | (0.4− | 1.8+) |
| 1998 03 04 | 704 | 1.1+ | 0.0 | 2005 02 09 | 699 | 0.1− | 0.3+ | 2005 03 17 | 704 | 0.2− | 1.1+ |
| 1998 03 04 | 704 | 0.3− | 1.6− | 2005 02 09 | 699 | 0.3− | 0.7− | 2005 03 17 | 704 | 0.7+ | 0.9+ |
| 1998 03 04 | 704 | (4.8− | 1.1−) | 2005 02 09 | 704 | 0.7+ | 0.7+ | 2005 03 17 | 704 | 0.5− | 0.1+ |
| 2003 09 28 | 691 | 0.4+ | 0.1+ | 2005 02 09 | 704 | 0.3+ | 0.2+ | 2005 03 30 | 644 | 0.3+ | 0.1+ |
| 2003 09 28 | 691 | 0.3+ | 0.1− | 2005 02 09 | 699 | 0.0 | 0.1+ | 2005 03 30 | 644 | 0.5− | 0.1+ |
| 2003 09 28 | 691 | 0.4+ | 0.2+ | 2005 02 09 | 704 | 0.1+ | 0.4+ | 2005 03 30 | 644 | 0.0 | 0.5+ |
| 2003 10 21 | 704 | 0.1− | 0.3− | 2005 02 09 | 704 | 0.7+ | 0.1− | 2006 08 23 | 644 | 0.3+ | 0.4+ |
| 2003 10 21 | 704 | 0.4+ | 0.0 | 2005 02 09 | 704 | 0.1+ | 0.4− | 2006 08 23 | 644 | 0.3+ | 0.5+ |
| 2003 10 21 | 704 | 0.1+ | 0.9+ | 2005 03 02 | 699 | 1.4+ | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.7+ |
| 2003 10 25 | 691 | 0.0 | 0.3− | 2005 03 02 | 699 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.4+ |
| 2003 10 25 | 691 | 0.0 | 0.1− | 2005 03 02 | 699 | 0.7− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2003 10 25 | 691 | 0.1− | 0.2− | 2005 03 02 | 699 | 0.7+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.3+ |
| 2003 10 28 | 704 | 0.6+ | 0.3+ | 2005 03 08 | 704 | 0.2+ | 1.3+ | 2006 09 27 | G96 | 0.4+ | 0.0 |
| 2003 10 28 | 704 | 0.3− | 0.1+ | 2005 03 08 | 704 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2003 10 28 | 704 | 0.2− | 0.5+ | 2005 03 08 | 704 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.5− |
| 2003 10 28 | 704 | 0.2+ | 0.1− | 2005 03 08 | 704 | 0.4+ | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2003 11 24 | 691 | 0.2− | 0.1− | 2005 03 08 | 704 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.3+ |
| 2003 11 24 | 691 | 0.4− | 0.0 | 2005 03 09 | G96 | 0.5− | 0.2− | | | | |
| 2003 11 24 | 691 | 0.3− | 0.0 | 2005 03 09 | G96 | 0.4− | 0.2− | | | | |

**(143726)∗ 2003 UG$_{201}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 213.47648 | | (2000.0) | | −0.35901925 | −0.93331727 |
| $n$ | 0.26745676 | $\omega$ | 297.04865 | | +0.87203881 | −0.33731066 |
| $a$ | 2.3857980 | $\Omega$ | 173.98505 | | +0.33264621 | −0.12304629 |
| $e$ | 0.0494197 | $i$ | 2.68237 | | | |
| $P$ | 3.69 | $H$ | 16.5 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.3− | 0.2+ | 2003 10 28 | 704 | 1.9+ | 1.1− | 2005 03 12 | 691 | 0.2− | 0.1+ |
| 1999 09 30 | 691 | 0.1− | 0.1+ | 2003 11 18 | 644 | 0.2− | 0.3+ | 2005 03 17 | 691 | 0.0 | 0.3+ |
| 1999 09 30 | 691 | 0.2− | 0.5+ | 2003 11 18 | 644 | 0.2− | 0.3+ | 2005 03 17 | 691 | 0.3+ | 0.1+ |
| 2001 02 02 | 704 | 0.3+ | 0.7+ | 2003 11 18 | 644 | 0.3− | 0.3+ | 2005 03 17 | 691 | 0.0 | 0.3+ |
| 2001 02 02 | 704 | 0.2− | 0.4+ | 2003 11 21 | 704 | 0.9− | 0.3+ | 2005 03 31 | 699 | 0.7− | 0.2− |
| 2001 02 02 | 704 | 0.8+ | 0.0 | 2003 11 21 | 704 | 0.4− | 0.7+ | 2005 03 31 | 699 | 0.5− | 0.2− |
| 2001 02 20 | 704 | 0.1+ | 0.7+ | 2003 11 21 | 704 | 0.7− | 1.0+ | 2005 03 31 | 699 | 1.0− | 0.8+ |
| 2001 02 20 | 704 | 0.6+ | 1.1+ | 2003 11 21 | 704 | 0.7− | 0.1+ | 2005 03 31 | 699 | 0.2− | 1.3+ |
| 2001 02 20 | 704 | 0.2+ | 1.3+ | 2005 03 01 | 691 | 0.6+ | 0.2− | 2005 04 02 | G96 | 0.2− | 0.2− |
| 2001 02 20 | 704 | 0.9+ | 1.0+ | 2005 03 01 | 691 | 0.5+ | 0.4− | 2005 04 02 | G96 | 0.0 | 0.1− |
| 2003 10 21 | 691 | 0.3− | 0.1− | 2005 03 01 | 691 | 0.3+ | 0.2− | 2005 04 02 | G96 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 691 | 0.2− | 0.2− | 2005 03 04 | G96 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.1− | 0.1+ |
| 2003 10 21 | 691 | 0.5− | 0.1+ | 2005 03 04 | G96 | 0.4− | 0.1− | 2005 04 04 | 703 | 0.4+ | 0.4+ |
| 2003 10 21 | 704 | 1.8+ | 0.5+ | 2005 03 04 | G96 | 0.4− | 0.2+ | 2005 04 04 | 703 | 1.5− | 0.2+ |
| 2003 10 21 | 704 | 1.1+ | 0.3+ | 2005 03 04 | G96 | 0.5− | 0.0 | 2005 04 04 | 703 | 0.5+ | 0.3+ |
| 2003 10 21 | 704 | 1.7+ | 0.6+ | 2005 03 08 | 699 | 0.6− | 1.1+ | 2005 04 04 | 703 | 0.9− | 1.6− |
| 2003 10 24 | 704 | 0.2− | 0.4+ | 2005 03 08 | 699 | 0.0 | 1.1+ | 2006 06 22 | 691 | 0.2− | 0.5+ |
| 2003 10 24 | 704 | 0.1+ | 0.5− | 2005 03 08 | 699 | 0.8+ | 0.2+ | 2006 06 22 | 691 | 0.2+ | 0.9+ |
| 2003 10 24 | 704 | 0.8− | 0.6− | 2005 03 08 | 699 | (2.2+ | 2.1+) | 2006 06 22 | 691 | 0.2+ | 0.7+ |
| 2003 10 24 | 704 | 0.2− | 0.3− | 2005 03 09 | G96 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2003 10 24 | 704 | 0.1− | 0.2− | 2005 03 09 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2003 10 28 | 704 | 0.6+ | 0.9+ | 2005 03 09 | G96 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.5− | 0.1+ |
| 2003 10 28 | 704 | 0.6+ | 0.3+ | 2005 03 09 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2003 10 28 | 704 | 0.0 | 1.5+ | 2005 03 12 | 691 | 0.2+ | 0.2+ | | | | |
| 2003 10 28 | 704 | (2.9+ | 0.1−) | 2005 03 12 | 691 | 0.1+ | 0.1+ | | | | |

**(143727)∗ 2003 UB$_{204}$**

Discovered 2003 Oct. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.12315 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29767273 | $\omega$ | 86.37207 | | −0.68226813 | −0.72545984 | |
| $a$ | 2.2214848 | $\Omega$ | 47.09114 | | +0.61199535 | −0.63454478 | |
| $e$ | 0.0295430 | $i$ | 7.10978 | | +0.39996486 | −0.26657259 | |
| $P$ | 3.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.9− | 1.0+ | 2003 11 21 | 699 | 1.0+ | 0.6− | 2005 05 08 | 703 | 0.3− | 0.5+ |
| 2001 01 19 | 704 | 0.3− | 0.8+ | 2003 11 26 | 699 | (1.5− | 1.6+) | 2005 05 11 | G96 | 0.1− | 0.0 |
| 2001 01 19 | 704 | 0.5− | 0.2− | 2003 11 26 | 699 | 0.3− | 0.7+ | 2005 05 11 | G96 | 0.1− | 0.2+ |
| 2002 06 08 | 704 | 0.6− | 0.3− | 2003 11 26 | 699 | 0.4+ | 0.6+ | 2005 05 11 | G96 | 0.2+ | 0.1− |
| 2002 06 08 | 704 | 0.2− | 0.8− | 2003 11 26 | 699 | 1.3+ | 0.2− | 2005 05 11 | G96 | 0.1− | 0.1− |
| 2002 06 08 | 704 | 0.5+ | 0.2+ | 2005 03 18 | 703 | 0.4− | 0.3− | 2006 09 14 | 644 | 0.2− | 0.8+ |
| 2003 09 29 | 704 | 0.2+ | 1.0+ | 2005 03 18 | 703 | 0.6− | 0.3− | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 2003 09 29 | 704 | 0.6− | 0.0 | 2005 03 18 | 703 | 0.4− | 1.1− | 2006 09 14 | 644 | 0.2+ | 0.5+ |
| 2003 09 29 | 704 | 0.4− | 1.0+ | 2005 03 18 | 703 | 0.5− | 0.9− | 2006 09 14 | 703 | 0.2− | 0.3− |
| 2003 10 21 | 691 | 0.7− | 0.0 | 2005 04 01 | H06 | 0.7+ | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.5+ |
| 2003 10 21 | 691 | 0.6− | 0.1+ | 2005 04 01 | H06 | 0.2− | 0.8+ | 2006 09 14 | 703 | 0.5− | 1.0+ |
| 2003 10 21 | 691 | 0.1− | 0.4− | 2005 04 01 | H06 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.0 |
| 2003 10 24 | 704 | 0.5+ | 0.0 | 2005 04 02 | 644 | 0.0 | 0.5+ | 2006 09 15 | 703 | (0.8− | 1.9−) |
| 2003 10 24 | 704 | 0.4+ | 0.9+ | 2005 04 02 | 644 | 0.3+ | 0.6+ | 2006 09 15 | 703 | 0.7+ | 1.1− |
| 2003 10 24 | 704 | 1.2+ | 0.6+ | 2005 04 02 | 644 | 0.5+ | 0.7+ | 2006 09 15 | 703 | 0.6+ | 0.6− |
| 2003 10 24 | 704 | 0.6+ | 0.6+ | 2005 04 09 | 704 | 0.7+ | 1.2+ | 2006 09 15 | 703 | 1.1− | 0.0 |
| 2003 10 28 | 704 | 0.6+ | 0.5+ | 2005 04 09 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.8+ |
| 2003 10 28 | 704 | 1.0+ | 0.6+ | 2005 04 09 | 704 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 2003 10 28 | 704 | 0.0 | 0.4+ | 2005 04 09 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 703 | 0.8− | 1.4+ |
| 2003 10 28 | 704 | 1.5+ | 0.7+ | 2005 04 13 | 704 | 1.0+ | 0.8+ | 2006 09 26 | 703 | 1.2− | 0.1+ |
| 2003 10 28 | 704 | 0.5+ | 0.1− | 2005 04 13 | 704 | 0.5+ | 0.1− | 2006 09 26 | 703 | 0.4− | 0.1− |
| 2003 11 01 | 704 | 0.9+ | 0.8+ | 2005 04 13 | 704 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.6− |
| 2003 11 01 | 704 | 0.4+ | 0.4+ | 2005 04 13 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.3− | 0.3− |
| 2003 11 01 | 704 | 0.1+ | 0.1− | 2005 04 15 | 699 | 1.0+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.5− |
| 2003 11 01 | 704 | 0.1− | 0.0 | 2005 04 15 | 699 | 0.2+ | 0.3+ | 2006 10 02 | 703 | 0.8+ | 1.0+ |
| 2003 11 21 | 704 | 1.0− | 0.9− | 2005 04 15 | 699 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.6+ | 0.5+ |
| 2003 11 21 | 704 | 0.1− | 0.1+ | 2005 04 15 | 699 | 1.0+ | 0.7+ | 2006 10 02 | 703 | 0.5− | 0.4+ |
| 2003 11 21 | 704 | 0.3− | 0.1+ | 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.4+ | 0.4+ |
| 2003 11 21 | 704 | 0.1− | 0.3− | 2005 05 07 | 691 | 0.1− | 0.3+ | 2006 10 24 | 644 | 0.4+ | 0.2+ |
| 2003 11 21 | 704 | 0.7− | 0.2− | 2005 05 07 | 691 | 0.1+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2003 11 21 | 699 | 0.9− | 0.2− | 2005 05 08 | 703 | 0.2− | 0.7+ | 2006 10 24 | 644 | 0.2− | 0.5+ |
| 2003 11 21 | 699 | 0.4+ | 0.5− | 2005 05 08 | 703 | 0.7− | 0.2+ | | | | |
| 2003 11 21 | 699 | 0.5− | 1.0+ | 2005 05 08 | 703 | 0.2+ | 0.0 | | | | |

**(143728)∗ 2003 UE$_{206}$**

Discovered 2003 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.70796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29142493 | $\omega$ | 200.88614 | | −0.04223056 | −0.99275363 | |
| $a$ | 2.2531231 | $\Omega$ | 251.67100 | | +0.93265042 | +0.00121100 | |
| $e$ | 0.0535055 | $i$ | 6.80642 | | +0.35830124 | −0.12016139 | |
| $P$ | 3.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 1.4+ | 0.1+ | 2003 10 30 | 704 | 0.1+ | 0.8− | 2005 05 01 | 644 | 0.3+ | 0.3+ |
| 2000 11 27 | 704 | 0.5− | 0.6+ | 2003 10 30 | 704 | 0.8+ | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.5− |
| 2000 11 27 | 704 | 0.8+ | 0.1+ | 2003 11 14 | 644 | 0.5− | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.4− |
| 2001 01 19 | 704 | 0.5− | 0.5+ | 2003 11 14 | 644 | 0.2− | 0.5+ | 2006 09 14 | 703 | (1.6− | 0.6−) |
| 2001 01 19 | 704 | 0.2− | 0.5− | 2003 11 14 | 644 | 0.2− | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2001 01 19 | 704 | 0.7+ | 0.9− | 2003 11 16 | 691 | 0.2− | 0.0 | 2006 09 18 | 703 | 1.1+ | 0.0 |
| 2001 01 19 | 704 | 0.0 | 0.8+ | 2003 11 16 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 1.0+ | 0.2+ |
| 2001 01 19 | 704 | 0.3+ | 0.1+ | 2003 11 16 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.9+ | 0.4− |
| 2001 02 02 | 704 | 1.1− | 0.3+ | 2003 11 20 | 704 | 1.1+ | 1.0− | 2006 09 18 | 703 | 0.7+ | 1.3+ |
| 2001 02 02 | 704 | 0.7+ | 0.2− | 2003 11 20 | 704 | 0.8+ | 0.8− | 2006 10 01 | 703 | 1.1− | 0.8+ |
| 2001 02 02 | 704 | 0.9− | 0.3+ | 2003 11 20 | 704 | 0.8+ | 0.9− | 2006 10 01 | 703 | (0.2− | 2.7−) |
| 2001 02 02 | 704 | 0.3+ | 0.3+ | 2003 11 20 | 704 | 0.5+ | 0.6− | 2006 10 01 | 703 | 0.5+ | 0.6− |
| 2003 10 22 | 704 | (1.6− | 0.3+) | 2003 11 20 | 704 | 0.5+ | 0.5− | 2006 10 01 | 703 | 0.2+ | 0.6− |
| 2003 10 22 | 704 | 0.9− | 0.6+ | 2003 11 24 | 704 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.4− | 0.1− |
| 2003 10 22 | 704 | 0.0 | 0.3− | 2003 11 24 | 704 | 0.2− | 0.7− | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2003 10 25 | 704 | 0.0 | 0.4+ | 2003 11 24 | 704 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.5− | 0.0 |
| 2003 10 25 | 691 | 0.3− | 0.0 | 2003 11 24 | 704 | 0.6− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2003 10 25 | 704 | 0.2+ | 0.1− | 2003 12 10 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2003 10 25 | 704 | 0.1+ | 0.3+ | 2003 12 10 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2003 10 25 | 691 | 0.1− | 0.3− | 2003 12 10 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2003 10 25 | 704 | 0.6+ | 0.7+ | 2005 04 14 | 703 | 1.3− | 0.3− | 2006 10 16 | 703 | (1.9− | 0.3+) |
| 2003 10 25 | 704 | 0.1− | 0.6+ | 2005 04 14 | 703 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 1.0+ |
| 2003 10 25 | 691 | 0.1− | 0.0 | 2005 04 14 | 703 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.6− |
| 2003 10 30 | 704 | 0.3+ | 0.2− | 2005 04 14 | 703 | 0.8+ | 1.2+ | 2006 10 22 | 644 | 0.6− | 0.3+ |
| 2003 10 30 | 704 | 0.2+ | 0.6+ | 2005 05 01 | 644 | 0.6+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2003 10 30 | 704 | 0.1− | 0.3+ | 2005 05 01 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.6+ |

**(143729)∗ 2003 UX$_{209}$**

Discovered 2003 Oct. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.36341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28225395 | $\omega$ | 63.16511 | | +0.09330739 | −0.99453945 | |
| $a$ | 2.3016681 | $\Omega$ | 21.63375 | | +0.86255949 | +0.05729772 | |
| $e$ | 0.0600300 | $i$ | 7.28417 | | +0.49727744 | +0.08722532 | |
| $P$ | 3.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 699 | 0.6− | 0.1− | 2003 11 05 | 704 | 0.3− | 0.4− | 2005 04 03 | 644 | 0.5+ | 0.6+ |
| 2000 12 29 | 699 | 0.8+ | 0.6+ | 2003 11 06 | 704 | 0.1− | 0.1+ | 2005 04 03 | 644 | 0.5+ | 0.2+ |
| 2000 12 29 | 699 | 0.2+ | 0.4+ | 2003 11 06 | 704 | 0.3+ | 0.2− | 2005 04 05 | G96 | 0.2− | 0.0 |
| 2000 12 29 | 699 | 0.8+ | 0.1− | 2003 11 06 | 704 | 0.4− | 0.8+ | 2005 04 05 | G96 | 0.0 | 0.1− |
| 2001 01 18 | 704 | 0.1+ | 0.3+ | 2003 11 19 | 703 | 0.5− | 0.6+ | 2005 04 05 | G96 | 0.2− | 0.2+ |
| 2001 01 18 | 704 | 0.4+ | 0.2+ | 2003 11 19 | 703 | 1.0− | 0.2− | 2005 04 05 | G96 | 0.2− | 0.0 |
| 2001 01 18 | 704 | 0.4− | 0.4− | 2003 11 19 | 703 | 0.4+ | 0.6+ | 2005 04 09 | 691 | 0.1+ | 0.5+ |
| 2001 01 18 | 704 | 0.1+ | 0.4− | 2003 11 19 | 703 | 0.4− | 1.2+ | 2005 04 09 | 691 | 0.4+ | 0.4+ |
| 2001 01 18 | 704 | 0.8− | 0.9+ | 2003 11 20 | 704 | 1.6+ | 1.2+ | 2005 04 09 | 691 | 0.1+ | 0.7+ |
| 2003 10 23 | 699 | 0.1+ | 0.2− | 2003 11 20 | 704 | 0.5− | 0.4− | 2005 04 09 | 691 | 0.3+ | 0.5+ |
| 2003 10 23 | 699 | 0.3+ | 0.2+ | 2003 11 20 | 704 | 0.1+ | 1.2+ | 2005 04 09 | 691 | 0.2+ | 0.2+ |
| 2003 10 23 | 699 | 1.4− | 0.6+ | 2003 11 20 | 704 | 0.0 | 1.7+ | 2005 04 09 | 691 | 0.2+ | 0.4+ |
| 2003 10 23 | 699 | 1.9− | 1.0+ | 2003 11 20 | 704 | 0.3+ | 0.1− | 2005 04 09 | G96 | 0.0 | 0.2+ |
| 2003 10 25 | 704 | 1.0+ | 0.1+ | 2003 11 20 | 704 | 0.9+ | 0.5− | 2005 04 09 | G96 | 0.0 | 0.0 |
| 2003 10 25 | 704 | 0.6+ | 0.3− | 2003 11 20 | 704 | 0.3+ | 0.5− | 2005 04 09 | G96 | 0.1+ | 0.1+ |
| 2003 10 25 | 704 | 0.8+ | 0.6− | 2003 11 20 | 704 | 0.2+ | 0.5− | 2005 04 09 | G96 | 0.0 | 0.3+ |
| 2003 10 25 | 704 | 0.1+ | 0.2− | 2003 11 20 | 704 | 0.3− | 0.1+ | 2005 04 15 | 699 | 0.6+ | 0.7+ |
| 2003 10 25 | 704 | 0.3+ | 0.3− | 2003 11 24 | 699 | 0.1− | 0.1+ | 2005 04 15 | 699 | 0.1+ | 1.2+ |
| 2003 10 25 | 691 | 0.3+ | 0.1− | 2003 11 24 | 699 | 0.2− | 0.6− | 2005 04 15 | 699 | 0.7+ | 0.7+ |
| 2003 10 25 | 691 | 0.1+ | 0.1− | 2003 11 24 | 699 | 1.2− | 0.2+ | 2005 04 15 | 699 | (0.5+ | 2.3+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 691 | 0.0 | 0.0 | 2003 11 24 | 704 | 0.6+ | 0.9+ | 2006 08 16 | E12 | 1.3− | 1.2+ |
| 2003 10 30 | 704 | 0.2− | 1.1+ | 2003 11 24 | 704 | 1.1− | 0.4+ | 2006 08 16 | E12 | 0.1+ | 0.9+ |
| 2003 10 30 | 704 | 0.5− | 0.1+ | 2003 11 24 | 699 | 0.3− | 0.3− | 2006 08 16 | E12 | 1.2− | 1.3+ |
| 2003 10 30 | 704 | 0.3+ | 0.9+ | 2003 11 24 | 704 | 0.1+ | 0.2+ | 2006 08 16 | E12 | 0.4− | 0.1− |
| 2003 10 30 | 704 | 0.5+ | 0.6+ | 2003 11 24 | 704 | 0.2− | 0.7+ | 2006 08 20 | 644 | 0.3− | 0.6+ |
| 2003 11 02 | 704 | 1.1+ | 0.8+ | 2003 11 24 | 704 | 0.0 | 0.6+ | 2006 08 20 | 644 | 0.4− | 0.6+ |
| 2003 11 02 | 704 | 0.5− | 0.8+ | 2005 03 09 | G96 | 0.9− | 0.4− | 2006 08 20 | 644 | 0.3− | 0.8+ |
| 2003 11 02 | 704 | 0.2− | 0.1+ | 2005 03 09 | G96 | 0.2− | 0.1− | 2006 08 23 | 644 | 0.6− | 0.4+ |
| 2003 11 02 | 704 | 0.1− | 1.1+ | 2005 03 09 | G96 | 0.9− | 0.3− | 2006 08 23 | 644 | 0.2+ | 0.2+ |
| 2003 11 02 | 704 | 0.2+ | 0.6− | 2005 03 09 | G96 | 0.2− | 0.2− | 2006 08 23 | 644 | 0.1− | 0.5+ |
| 2003 11 04 | 704 | 1.4− | 0.6+ | 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 08 28 | E12 | 1.4+ | 1.1+ |
| 2003 11 04 | 704 | 0.2+ | 0.7+ | 2005 04 02 | G96 | 0.0 | 0.2+ | 2006 08 28 | E12 | 0.0 | 0.0 |
| 2003 11 04 | 704 | 0.7− | 0.3− | 2005 04 02 | G96 | 0.0 | 0.2+ | 2006 08 28 | E12 | 0.1+ | 0.0 |
| 2003 11 04 | 704 | 1.3− | 0.2+ | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.3− | 0.3− |
| 2003 11 04 | 704 | 1.7− | 1.3− | 2005 04 03 | 644 | 0.7+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 2003 11 05 | 704 | 0.1+ | 0.7+ | 2005 04 03 | 644 | 0.9+ | 0.5+ | 2006 09 14 | 644 | 0.4− | 0.3+ |
| 2003 11 05 | 704 | 0.5− | 0.5+ | 2005 04 03 | 644 | 0.7+ | 0.5+ | 2006 09 14 | 644 | 0.5− | 0.5+ |
| 2003 11 05 | 704 | 0.8− | 0.2− | 2005 04 03 | 644 | 0.8+ | 0.5+ | | | | |

**(143730)∗ 2003 UJ$_{211}$**

Discovered 2003 Oct. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.38037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28254048 | $\omega$ | 2.16381 | | −0.53500812 | +0.84184925 | |
| $a$ | 2.3001117 | $\Omega$ | 235.49959 | | −0.77642197 | −0.52311369 | |
| $e$ | 0.1217094 | $i$ | 4.94973 | | −0.33306942 | −0.13282284 | |
| $P$ | 3.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | (3.7− | 0.4+) | 2003 11 19 | 699 | 0.1+ | 0.2+ | 2005 04 09 | 704 | 1.1+ | 0.0 |
| 1998 03 04 | 704 | (4.6− | 0.8−) | 2003 11 21 | 704 | 0.7− | 1.2− | 2005 04 09 | 699 | 0.1− | 0.2+ |
| 1998 03 04 | 704 | (4.4− | 3.1−) | 2003 11 21 | 704 | 0.6+ | 1.3− | 2005 04 09 | 704 | 0.5+ | 0.4+ |
| 1998 03 04 | 704 | (4.0− | 0.7+) | 2003 11 21 | 704 | 0.1+ | 0.4+ | 2005 04 09 | 699 | 0.4− | 0.3− |
| 1999 09 07 | 704 | 0.5+ | 0.5− | 2003 11 21 | 704 | 0.5− | 0.2+ | 2006 08 24 | 704 | 1.1+ | 0.7+ |
| 1999 09 07 | 704 | 0.5+ | 0.4− | 2003 11 21 | 704 | 0.3+ | 0.1+ | 2006 08 24 | 704 | 0.1− | 0.6+ |
| 1999 09 07 | 704 | 1.1+ | 0.6− | 2005 03 04 | 703 | 0.6− | 0.0 | 2006 08 24 | 704 | 1.2− | 0.3+ |
| 1999 09 07 | 704 | 1.3+ | 0.0 | 2005 03 04 | 703 | 0.5− | 0.9− | 2006 08 24 | 704 | 0.5− | 0.1− |
| 1999 09 07 | 704 | 1.3+ | 0.7− | 2005 03 04 | 703 | 0.1+ | 0.7+ | 2006 08 24 | 704 | 0.5+ | 1.1+ |
| 1999 10 15 | 704 | 0.6− | 0.5+ | 2005 03 04 | 703 | (2.7− | 0.6−) | 2006 08 29 | 703 | 0.0 | 0.6+ |
| 1999 10 15 | 704 | 0.3− | 0.2+ | 2005 03 07 | 704 | (2.1+ | 0.0 ) | 2006 08 29 | 703 | 0.4− | 0.8+ |
| 1999 10 15 | 704 | 1.4− | 0.4+ | 2005 03 07 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.3− | 0.4− |
| 1999 10 15 | 704 | 0.6− | 0.3+ | 2005 03 07 | 704 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.7− | 0.5− |
| 1999 10 16 | 645 | 0.1− | 0.0 | 2005 03 07 | 704 | (0.5+ | 1.6+) | 2006 08 30 | 704 | 0.7+ | 0.6+ |
| 1999 10 16 | 645 | 0.0 | 0.1− | 2005 03 10 | 699 | 0.6− | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.7+ |
| 2003 10 23 | 695 | 0.4− | 0.1+ | 2005 03 10 | 699 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.1− | 0.4+ |
| 2003 10 23 | 691 | 0.1− | 0.0 | 2005 03 10 | 699 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.6+ |
| 2003 10 23 | 695 | 0.7− | 0.0 | 2005 03 10 | 699 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.4+ |
| 2003 10 23 | 691 | 0.2− | 0.1+ | 2005 03 13 | 703 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.7+ | 0.3+ |
| 2003 10 23 | 691 | 0.3− | 0.1+ | 2005 03 13 | 703 | 0.6+ | 0.2− | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2003 10 24 | 704 | 0.9+ | 0.5+ | 2005 03 13 | 703 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.8− | 0.3+ |
| 2003 10 24 | 704 | 0.5+ | 0.9+ | 2005 03 13 | 703 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 1.0− | 0.4− |
| 2003 10 24 | 704 | 0.2+ | 0.9+ | 2005 04 01 | 699 | 0.0 | 0.8+ | 2006 09 19 | 703 | 0.7+ | 0.1+ |
| 2003 10 24 | 704 | 0.2− | 0.2− | 2005 04 01 | 699 | 0.6+ | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.2− |
| 2003 10 29 | 704 | 0.3+ | 0.6+ | 2005 04 01 | 699 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.1− | 1.1+ |
| 2003 10 29 | 704 | 0.2− | 0.4− | 2005 04 01 | 699 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2003 10 29 | 704 | 0.9+ | 0.2− | 2005 04 09 | 699 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2003 10 29 | 704 | 1.1+ | 0.8+ | 2005 04 09 | 704 | 0.7+ | 0.1− | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2003 11 19 | 699 | 0.2− | 0.4− | 2005 04 09 | 704 | 1.2+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2003 11 19 | 699 | 0.3− | 1.5− | 2005 04 09 | 699 | 1.1+ | 1.0+ | 2006 10 23 | 644 | 0.4+ | 0.5+ |
| 2003 11 19 | 699 | 0.5+ | 0.3+ | 2005 04 09 | 704 | 0.4+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.0 |

**(143731)∗ 2003 UH$_{213}$**

Discovered 2003 Oct. 23 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.00736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27529247 | $\omega$ | 262.56970 | | −0.32521044 | −0.94433601 | |
| $a$ | 2.3403088 | $\Omega$ | 206.57493 | | +0.90550611 | −0.29583594 | |
| $e$ | 0.0750655 | $i$ | 6.37526 | | +0.27257450 | −0.14391176 | |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.2+ | 0.8− | 2003 11 18 | 703 | 0.5− | 1.0+ | 2005 05 14 | G96 | 0.3− | 0.2− |
| 1999 10 13 | 704 | 0.4− | 1.1+ | 2003 11 19 | 703 | 0.7− | 0.7− | 2005 05 14 | G96 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 1.7− | 0.3+ | 2003 11 19 | 703 | 1.2+ | 0.4+ | 2005 05 14 | G96 | 0.3− | 0.2− |
| 1999 10 16 | 645 | 0.1+ | 0.1− | 2003 11 19 | 703 | 0.4+ | 1.6+ | 2006 08 29 | 703 | 0.5− | 0.0 |
| 1999 10 16 | 645 | 0.1+ | 0.2− | 2003 11 19 | 703 | 0.0 | 1.5− | 2006 08 29 | 703 | 0.4− | 0.6− |
| 2001 02 19 | 699 | 0.4− | 0.4− | 2003 11 19 | 699 | 0.6− | 0.4+ | 2006 08 29 | 703 | 0.8− | 0.4+ |
| 2001 02 19 | 699 | 0.1+ | 1.2+ | 2003 11 19 | 699 | 0.9+ | 0.5+ | 2006 08 29 | 703 | 0.8− | 0.1+ |
| 2001 02 19 | 699 | 0.5+ | 0.0 | 2003 11 19 | 699 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2001 02 19 | 699 | (0.7+ | 2.2+) | 2003 11 19 | 699 | 0.5− | 1.1+ | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2003 10 23 | 608 | 0.4− | 0.1+ | 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.3+ |
| 2003 10 23 | 608 | 0.5+ | 0.3+ | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2003 10 23 | 608 | 0.1− | 0.3+ | 2005 03 11 | G96 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2003 10 24 | 704 | 0.0 | 1.5+ | 2005 03 11 | G96 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 2003 10 24 | 704 | 0.5− | 1.7+ | 2005 04 02 | G96 | 0.4− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.2− |
| 2003 10 24 | 704 | 0.9+ | 0.3+ | 2005 04 02 | G96 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2003 10 28 | 704 | 0.0 | 1.3+ | 2005 04 02 | G96 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.4+ |
| 2003 10 28 | 704 | 0.1+ | 0.9− | 2005 04 02 | G96 | 1.1+ | 1.9+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2003 10 28 | 704 | 0.3− | 0.5− | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2003 11 18 | 703 | 0.2+ | 0.0 | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2003 11 18 | 703 | 0.4− | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | | | | |
| 2003 11 18 | 703 | 1.1− | 1.0− | 2005 05 14 | G96 | 0.7− | 0.2− | | | | |

**(143732)∗ 2003 UD$_{217}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.46248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30288777 | $\omega$ | 235.19920 | | +0.66453099 | −0.74720352 | |
| $a$ | 2.1959118 | $\Omega$ | 173.13191 | | +0.70837055 | +0.62595918 | |
| $e$ | 0.0966213 | $i$ | 4.43372 | | +0.23792799 | +0.22329802 | |
| $P$ | 3.25 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 09 | 691 | 0.6+ | 0.2− | 2005 03 09 | G96 | 0.4+ | 0.2+ | 2006 08 21 | 291 | 0.2− | 0.3+ |
| 1995 03 09 | 691 | 0.2− | 0.8+ | 2005 04 10 | G96 | 0.2− | 0.2− | 2006 08 21 | 291 | 0.1− | 0.3+ |
| 1995 03 09 | 691 | 0.1− | 0.4+ | 2005 04 10 | G96 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.5+ | 1.3+ |
| 2003 09 28 | 704 | 1.1− | 0.7+ | 2005 04 10 | G96 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.5+ | 0.7+ |
| 2003 09 28 | 704 | 0.2− | 0.6+ | 2005 04 10 | G96 | 0.0 | 0.3+ | 2006 08 28 | 703 | (0.6+ | 1.5+) |
| 2003 09 28 | 704 | 0.3− | 0.9− | 2005 04 12 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.3+ |
| 2003 10 21 | 704 | 0.6+ | 0.3− | 2005 04 12 | 691 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 1.2+ | 0.1+ |
| 2003 10 21 | 704 | 0.1+ | 0.3+ | 2005 04 12 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 1.0+ | 0.3+ |
| 2003 10 21 | 704 | 1.1+ | 0.0 | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.3+ |
| 2003 10 21 | 704 | 0.4+ | 0.3+ | 2005 05 11 | G96 | 0.7− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.7− |
| 2003 10 25 | 704 | 0.6− | 1.0+ | 2005 05 11 | G96 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.3− |
| 2003 10 25 | 704 | 0.4+ | 0.1− | 2005 05 11 | G96 | 0.4− | 0.2+ | 2006 09 14 | 703 | (1.6− | 1.3−) |
| 2003 10 25 | 704 | 1.3− | 0.4+ | 2006 08 19 | 941 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.6+ | 0.4+ |
| 2003 10 25 | 704 | 0.1− | 1.2+ | 2006 08 19 | 941 | 0.5− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2005 03 09 | G96 | 0.6− | 0.1+ | 2006 08 19 | 941 | 0.4− | 0.6− | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2005 03 09 | G96 | 0.4+ | 0.2− | 2006 08 19 | 941 | 0.3− | 0.5− | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2005 03 09 | G96 | 0.3− | 0.1+ | 2006 08 21 | 291 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3− |

**(143733)∗ 2003 UB$_{220}$**

Discovered 2003 Oct. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.09816 | | (2000.0) | | | |
| $n$ | 0.28935238 | $\omega$ | 348.18086 | | +0.56276537 | −0.71514138 |
| $a$ | 2.2638693 | $\Omega$ | 66.14917 | | +0.79053764 | +0.31906981 |
| $e$ | 0.2589681 | $i$ | 26.95426 | | +0.24154787 | +0.62190615 |
| $P$ | 3.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 644 | 0.7+ | 1.3+ | 2003 12 06 | 628 | 0.0 | 0.2+ | 2006 07 29 | E12 | 0.0 | 0.2+ | |
| 2001 05 26 | 644 | (0.6+ | 1.5+) | 2003 12 06 | 628 | 0.2− | 0.2+ | 2006 08 10 | E12 | 0.4+ | 0.2− | |
| 2001 05 26 | 644 | 0.3+ | 0.9+ | 2003 12 06 | 628 | 0.1+ | 0.0 | 2006 08 10 | E12 | 0.5− | 0.1− | |
| 2003 09 03 | 704 | 0.0 | 0.6− | 2003 12 06 | 628 | 0.1− | 0.1− | 2006 08 10 | E12 | 0.2− | 0.4+ | |
| 2003 09 03 | 704 | 0.3+ | 1.2− | 2003 12 15 | 704 | 0.7− | 0.7+ | 2006 08 10 | E12 | 0.1+ | 0.4+ | |
| 2003 09 03 | 704 | 0.6− | 0.1− | 2003 12 15 | 704 | 0.5− | 0.2− | 2006 08 10 | E12 | 0.1+ | 0.3+ | |
| 2003 09 03 | 704 | 0.4− | 0.6− | 2003 12 15 | 704 | 0.7− | 0.2− | 2006 08 21 | E12 | 0.2− | 0.1+ | |
| 2003 10 21 | 704 | 0.8+ | 0.9+ | 2003 12 15 | 704 | 0.3− | 0.1− | 2006 08 21 | E12 | 0.2+ | 0.3+ | |
| 2003 10 21 | 704 | 0.2+ | 0.0 | 2003 12 15 | 704 | 0.3− | 0.0 | 2006 08 21 | E12 | 1.2− | 0.9− | |
| 2003 10 21 | 704 | 0.0 | 0.3− | 2004 01 17 | 704 | 0.1− | 0.0 | 2006 08 21 | E12 | 0.1+ | 1.1+ | |
| 2003 10 21 | 704 | 0.1− | 0.1− | 2004 01 17 | 704 | 0.1− | 0.4+ | 2006 09 02 | E12 | 0.2− | 0.4+ | |
| 2003 10 25 | 704 | 0.1− | 0.0 | 2004 01 17 | 704 | 0.2− | 0.1+ | 2006 09 02 | E12 | 0.1− | 0.5+ | |
| 2003 10 25 | 704 | 0.1+ | 0.3+ | 2004 02 10 | 704 | 0.3+ | 0.4+ | 2006 09 02 | E12 | 0.4− | 0.6+ | |
| 2003 10 25 | 704 | 0.3+ | 0.4+ | 2004 02 10 | 704 | 0.2+ | 0.1+ | 2006 09 02 | E12 | 0.4− | 0.1− | |
| 2003 10 25 | 704 | 0.6+ | 1.1+ | 2004 02 10 | 704 | 0.0 | 0.3+ | 2006 09 17 | E12 | 0.2− | 0.1+ | |
| 2003 10 25 | 704 | 0.0 | 0.1− | 2004 02 10 | 704 | 0.3+ | 0.1− | 2006 09 17 | E12 | 0.3+ | 0.4+ | |
| 2003 10 29 | 704 | 0.5+ | 0.7+ | 2004 02 10 | 704 | 0.0 | 0.3− | 2006 09 17 | E12 | 0.1− | 0.6+ | |
| 2003 10 29 | 704 | 1.3− | 1.1+ | 2005 05 11 | 699 | 0.6+ | 0.2− | 2006 09 17 | E12 | 0.1+ | 0.0 | |
| 2003 10 29 | 704 | 0.3− | 1.2− | 2005 05 11 | 699 | (1.6+ | 0.6+) | 2006 09 21 | E12 | 0.1+ | 0.3− | |
| 2003 10 29 | 704 | 0.5+ | 0.1− | 2005 05 11 | 699 | 0.3+ | 0.2+ | 2006 09 21 | E12 | 0.1+ | 0.0 | |
| 2003 10 29 | 704 | 1.0+ | 0.9+ | 2005 05 11 | 703 | (2.1+ | 0.5+) | 2006 09 21 | E12 | 0.2+ | 0.2− | |
| 2003 11 02 | 704 | 0.4− | 0.2− | 2005 05 11 | 703 | (1.0+ | 1.9−) | 2006 09 21 | E12 | 0.1+ | 0.5− | |
| 2003 11 02 | 704 | 0.1− | 0.3+ | 2005 05 11 | 699 | 0.1+ | 1.2+ | 2006 09 21 | E12 | 0.0 | 0.2− | |
| 2003 11 02 | 704 | 0.0 | 0.4+ | 2005 05 11 | 703 | 0.5− | 0.2+ | 2006 09 21 | E12 | 0.2+ | 0.1− | |
| 2003 11 02 | 704 | 0.3+ | 0.6+ | 2005 05 11 | 703 | 1.0+ | 0.0 | 2006 09 21 | E12 | 0.0 | 0.4− | |
| 2003 11 20 | 704 | 0.4− | 0.2− | 2005 05 14 | 704 | 1.2+ | 1.0+ | 2006 09 21 | E12 | 0.6− | 0.2− | |
| 2003 11 20 | 704 | 0.9− | 0.1+ | 2005 05 14 | 704 | 0.7+ | 0.4+ | 2006 10 22 | E12 | 0.2− | 0.4+ | |
| 2003 11 20 | 704 | 0.8+ | 0.7− | 2005 05 14 | 704 | 0.2− | 1.1+ | 2006 10 22 | E12 | 0.1− | 0.5+ | |
| 2003 11 20 | 704 | 0.4− | 0.0 | 2005 05 14 | 704 | 0.9+ | 1.4+ | 2006 10 22 | E12 | 0.3− | 0.2+ | |
| 2003 11 20 | 704 | 1.1− | 0.2+ | 2005 05 14 | 704 | 0.1− | 0.8− | 2006 10 22 | E12 | 0.1− | 0.0 | |
| 2003 11 24 | 704 | 0.0 | 0.0 | 2006 05 31 | E12 | 0.4− | 0.1− | 2006 10 23 | E12 | 0.5− | 0.4+ | |
| 2003 11 24 | 704 | 1.0+ | 0.6− | 2006 05 31 | E12 | 0.9− | 0.4+ | 2006 10 23 | E12 | 0.1+ | 0.3+ | |
| 2003 11 24 | 704 | 0.9+ | 0.9− | 2006 05 31 | E12 | 0.0 | 0.3+ | 2006 10 23 | E12 | 0.5+ | 0.5+ | |
| 2003 11 24 | 704 | 0.1− | 0.1+ | 2006 05 31 | E12 | 0.7− | 1.0− | 2006 11 23 | E12 | 0.4+ | 0.7+ | |
| 2003 11 24 | 704 | 0.4+ | 0.6+ | 2006 06 27 | E12 | 0.2+ | 0.1+ | 2006 11 23 | E12 | 0.4+ | 0.1+ | |
| 2003 12 03 | 704 | 0.1− | 0.3+ | 2006 06 27 | E12 | 0.0 | 0.1+ | 2006 11 23 | E12 | 0.0 | 0.2+ | |
| 2003 12 03 | 704 | 0.1− | 0.3+ | 2006 06 27 | E12 | 0.4+ | 0.5+ | 2006 11 23 | E12 | 0.1− | 0.1− | |
| 2003 12 03 | 704 | 0.0 | 0.1+ | 2006 06 27 | E12 | 0.2− | 0.1+ | 2006 11 26 | E12 | 0.4+ | 0.0 | |
| 2003 12 03 | 704 | 0.2− | 0.7+ | 2006 07 29 | E12 | 0.1+ | 0.2− | 2006 11 26 | E12 | 0.0 | 0.9+ | |
| 2003 12 03 | 704 | 0.1− | 0.5+ | 2006 07 29 | E12 | 0.2+ | 0.1+ | 2006 11 26 | E12 | 0.6+ | 0.1− | |
| 2003 12 06 | 628 | 0.1− | 0.2+ | 2006 07 29 | E12 | 0.2+ | 0.1+ | 2006 11 26 | E12 | 0.2+ | 0.8− | |

**(143734)∗ 2003 UK$_{222}$**

Discovered 2003 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.24507 | | (2000.0) | | | |
| $n$ | 0.30672663 | $\omega$ | 70.85768 | | +0.90906726 | +0.41059853 |
| $a$ | 2.1775513 | $\Omega$ | 264.84803 | | −0.40397165 | +0.82703611 |
| $e$ | 0.1869534 | $i$ | 4.07355 | | −0.10199819 | +0.38395327 |
| $P$ | 3.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 23 | 691 | 0.2− | 0.1− | 2003 11 19 | 699 | 0.6+ | 0.4− | 2006 09 06 | 644 | 0.2− | 0.2+ | |
| 1993 07 23 | 691 | 1.5− | 0.2+ | 2003 11 19 | 703 | 0.1− | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.2+ | |
| 1993 07 23 | 691 | (2.3− | 0.1+) | 2003 11 19 | 703 | 0.9− | 0.1− | 2006 09 06 | 644 | 0.2− | 0.3+ | |
| 1993 08 17 | 691 | 1.2+ | 0.7− | 2003 11 19 | 703 | 0.3− | 0.2+ | 2006 09 15 | 704 | 0.2− | 0.8− | |
| 1993 08 17 | 691 | 0.5+ | 0.6+ | 2003 11 19 | 703 | 0.4− | 0.1− | 2006 09 15 | 704 | 0.2+ | 0.5− | |
| 1993 08 17 | 691 | 0.1− | 0.2+ | 2003 11 20 | 704 | 0.4− | 0.6− | 2006 09 15 | 704 | 0.1− | 0.1− | |
| 2000 12 30 | 704 | 0.6− | 1.1+ | 2003 11 20 | 704 | 0.4+ | 0.3− | 2006 09 15 | 704 | 0.3− | 0.2− | |
| 2000 12 30 | 704 | 0.2− | 0.8+ | 2003 11 20 | 704 | 0.5+ | 0.9− | 2006 09 15 | 704 | 0.2+ | 0.1− | |
| 2000 12 30 | 704 | 0.8− | 0.0 | 2003 11 20 | 704 | 0.6+ | 0.5− | 2006 09 17 | 703 | 0.0 | 0.1− | |
| 2002 04 04 | 644 | 0.9+ | 0.6+ | 2003 11 20 | 704 | 0.2+ | 1.0− | 2006 09 17 | 703 | 0.2− | 0.4− | |
| 2002 04 04 | 644 | 1.2+ | 0.7+ | 2003 11 24 | 699 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.4− | |
| 2002 04 04 | 644 | 1.1+ | 1.1+ | 2003 11 24 | 699 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.3− | 0.2− | |
| 2003 10 22 | 704 | 0.5− | 0.2− | 2003 11 24 | 699 | 0.2+ | 0.1− | 2006 09 19 | 699 | 1.2− | 0.3+ | |
| 2003 10 22 | 704 | 0.1+ | 0.1+ | 2003 11 24 | 704 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.0 | |
| 2003 10 22 | 704 | 0.0 | 0.0 | 2003 11 24 | 699 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.6− | 0.1+ | |
| 2003 10 22 | 704 | 0.4− | 0.1+ | 2003 11 24 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.3+ | |
| 2003 10 22 | 704 | 0.1− | 0.3− | 2003 11 24 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.1− | |
| 2003 10 25 | 704 | 0.2− | 0.2− | 2003 11 24 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.2+ | |
| 2003 10 25 | 704 | 0.1− | 0.3− | 2003 11 24 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.5+ | 0.3+ | |
| 2003 10 25 | 704 | 0.2+ | 0.2+ | 2003 11 24 | 703 | 0.5− | 0.0 | 2006 10 01 | 703 | 0.0 | 0.1+ | |
| 2003 10 25 | 704 | 0.5+ | 0.8+ | 2003 11 24 | 703 | 0.3+ | 0.2− | 2006 10 01 | 703 | 0.2− | 0.2+ | |
| 2003 10 25 | 704 | 0.3+ | 0.5+ | 2003 11 24 | 703 | 0.4− | 0.8+ | 2006 10 01 | 703 | 0.0 | 0.0 | |
| 2003 10 29 | 699 | 0.1+ | 0.2− | 2003 11 24 | 703 | 0.4− | 0.3− | 2006 10 01 | 703 | 0.4− | 0.7+ | |
| 2003 10 29 | 699 | 0.9− | 0.3− | 2003 11 26 | 704 | 0.6+ | 1.1+ | 2006 10 17 | 691 | 0.0 | 0.2+ | |
| 2003 10 29 | 699 | 0.9− | 0.1+ | 2003 11 26 | 704 | 0.4+ | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.2+ | |
| 2003 10 29 | 699 | 0.7+ | 0.4− | 2003 11 26 | 704 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | |
| 2003 10 30 | 704 | 0.2− | 0.0 | 2003 11 26 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 691 | 0.5− | 0.9− | |
| 2003 10 30 | 704 | 0.2+ | 0.3+ | 2003 11 30 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1+ | |
| 2003 10 30 | 704 | 0.1− | 0.2− | 2003 11 30 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.8+ | 1.1+ | |
| 2003 10 30 | 704 | 0.3+ | 1.2− | 2003 11 30 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.1+ | |
| 2003 10 30 | 704 | 0.1− | 0.5− | 2003 12 16 | 291 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1+ | |
| 2003 11 02 | 704 | 0.5+ | 0.1+ | 2003 12 16 | 291 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.0 | |
| 2003 11 02 | 704 | 1.2+ | 0.3− | 2003 12 16 | 291 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.0 | |
| 2003 11 02 | 704 | 0.4+ | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 691 | 0.0 | 0.1− | |
| 2003 11 02 | 704 | 0.6+ | 0.5+ | 2003 12 22 | 704 | 0.8+ | 1.0+ | 2006 10 23 | 691 | 0.1+ | 0.0 | |
| 2003 11 02 | 704 | 0.2+ | 0.5+ | 2003 12 22 | 704 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.0 | |
| 2003 11 05 | 699 | 0.8− | 0.1+ | 2005 03 13 | 703 | 0.7− | 1.1+ | 2006 10 23 | 691 | 0.0 | 0.1− | |
| 2003 11 05 | 699 | 0.1+ | 0.7− | 2005 03 13 | 703 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1− | |
| 2003 11 05 | 699 | 0.6+ | 0.1− | 2005 03 13 | 703 | 0.9− | 1.3− | 2006 10 24 | 644 | 0.1+ | 0.1+ | |
| 2003 11 05 | 699 | 0.1− | 0.3+ | 2005 03 13 | 703 | 0.5− | 0.5− | 2006 10 24 | 644 | 0.2+ | 0.0 | |
| 2003 11 14 | 644 | 0.2− | 0.2+ | 2006 08 25 | D35 | 0.1− | 0.4− | 2006 10 24 | 644 | 0.0 | 0.1− | |
| 2003 11 14 | 644 | 0.1− | 0.0 | 2006 08 25 | D35 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.5− | 0.2+ | |
| 2003 11 14 | 644 | 0.1− | 0.1+ | 2006 08 25 | D35 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.8+ | 0.2− | |
| 2003 11 14 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.1+ | 2006 11 13 | 703 | 1.1− | 0.5+ | |
| 2003 11 14 | 644 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.5− | 0.0 | 2006 11 13 | 703 | 1.3− | 0.2− | |
| 2003 11 14 | 644 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.8− | 0.9− | |
| 2003 11 16 | 691 | 0.1+ | 0.2− | 2006 08 29 | 703 | 0.4− | 0.5+ | 2006 11 15 | 704 | 0.3− | 0.7+ | |
| 2003 11 16 | 691 | 0.3− | 0.0 | 2006 08 31 | 704 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.1+ | |
| 2003 11 16 | 691 | 0.5− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.1− | |
| 2003 11 19 | 699 | 0.3+ | 0.3− | 2006 08 31 | 704 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.1− | |
| 2003 11 19 | 699 | 0.1− | 0.4− | 2006 08 31 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 1.6− | |
| 2003 11 19 | 699 | 0.3− | 0.4− | 2006 08 31 | 704 | 0.3+ | 0.1− | | | | | |

**(143735)∗ 2003 US$_{223}$**

Discovered 2003 Oct. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.64267 | | (2000.0) | | | |
| $n$ | 0.28600866 | $\omega$ | 80.05656 | | −0.16835197 | −0.98518435 |
| $a$ | 2.2814796 | $\Omega$ | 19.72638 | | +0.86217822 | −0.16325130 |
| $e$ | 0.1082839 | $i$ | 5.55991 | | +0.47781412 | −0.05254345 |
| $P$ | 3.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.1− | 0.4+ | 2003 11 24 | 699 | 0.0 | 0.1− | 2003 12 29 | 691 | 0.0 | 0.1+ | |
| 2001 01 18 | 704 | 1.1+ | 0.8+ | 2003 11 24 | 699 | 0.1− | 0.1+ | 2003 12 29 | 691 | 0.1+ | 0.0 | |
| 2001 01 18 | 704 | 0.4+ | 0.3+ | 2003 11 24 | 699 | 0.9+ | 0.7− | 2003 12 29 | 691 | 0.2+ | 0.0 | |
| 2001 01 18 | 704 | 0.4+ | 1.0+ | 2003 11 24 | 699 | 0.3− | 0.7+ | 2005 05 04 | E12 | 0.4− | 0.5+ | |
| 2001 01 18 | 704 | (1.8+ | 0.7+) | 2003 11 24 | 704 | 0.7− | 0.1− | 2005 05 04 | E12 | 0.8− | 0.1− | |
| 2001 02 03 | 704 | 0.9+ | 0.1− | 2003 11 24 | 704 | 0.5+ | 0.3− | 2005 05 04 | E12 | 0.1− | 0.4+ | |
| 2001 02 03 | 704 | 0.1+ | 0.7− | 2003 11 24 | 704 | 0.4− | 0.7+ | 2005 05 04 | E12 | 0.7− | 0.7+ | |
| 2001 02 03 | 704 | 0.0 | 0.3− | 2003 11 24 | 704 | 0.0 | 0.6− | 2005 05 11 | 644 | 0.2+ | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 03 | 704 | 0.2+ | 0.7− | 2003 11 24 | 704 | 0.7− | 0.3+ | 2005 05 11 | 644 | 0.4+ | 0.6+ | | |
| 2001 02 16 | 704 | 0.0 | 0.4+ | 2003 12 04 | 704 | 1.1+ | 0.1− | 2005 05 11 | 644 | 0.9+ | 1.0+ | | |
| 2001 02 16 | 704 | 0.2− | 0.2+ | 2003 12 04 | 704 | (1.7+ | 0.8−) | 2005 05 12 | 644 | 0.6+ | 0.3+ | | |
| 2001 02 16 | 704 | 0.2− | 0.7+ | 2003 12 04 | 704 | 0.9− | 0.1− | 2005 05 12 | 644 | 0.7+ | 0.6+ | | |
| 2001 02 16 | 704 | 0.6− | 0.1+ | 2003 12 04 | 704 | 0.5+ | 1.2+ | 2005 05 12 | 644 | 0.5+ | 0.4+ | | |
| 2001 02 16 | 704 | 0.6− | 0.0 | 2003 12 04 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 1.2− | 1.0+ | | |
| 2003 10 22 | 704 | (1.6+ | 0.1−) | 2003 12 16 | 691 | 0.3− | 0.3− | 2006 08 30 | 699 | 0.5− | 0.1+ | | |
| 2003 10 22 | 704 | 0.2− | 0.0 | 2003 12 16 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | (1.5− | 1.5+) | | |
| 2003 10 22 | 704 | 0.0 | 0.9+ | 2003 12 16 | 691 | 0.0 | 0.1− | 2006 08 30 | 699 | 1.0+ | 0.2+ | | |
| 2003 10 25 | 704 | 0.8− | 0.3− | 2003 12 17 | 644 | 0.3+ | 0.5− | 2006 09 14 | 703 | 1.2+ | 0.0 | | |
| 2003 10 25 | 704 | 0.5− | 0.2+ | 2003 12 17 | 644 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.6+ | 0.9+ | | |
| 2003 10 25 | 704 | 0.5− | 0.2+ | 2003 12 17 | 644 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.6− | 0.1+ | | |
| 2003 10 25 | 704 | 0.1− | 0.2+ | 2003 12 18 | 704 | 1.1+ | 0.5+ | 2006 09 14 | 703 | 0.9+ | 0.4+ | | |
| 2003 10 25 | 704 | 0.0 | 0.1+ | 2003 12 18 | 704 | 0.8− | 0.1+ | 2006 09 30 | 703 | 1.4− | 0.4+ | | |
| 2003 11 20 | 691 | 0.1+ | 0.0 | 2003 12 18 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 1.0− | 0.2+ | | |
| 2003 11 20 | 704 | 0.4+ | 0.0 | 2003 12 18 | 704 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.4− | | |
| 2003 11 20 | 691 | 0.1+ | 0.1+ | 2003 12 18 | 704 | 0.2+ | 0.5− | 2006 09 30 | 703 | 0.7+ | 0.0 | | |
| 2003 11 20 | 704 | 0.1+ | 0.3− | 2003 12 23 | 704 | 0.2− | 0.7+ | 2006 11 17 | G96 | 0.4− | 0.3+ | | |
| 2003 11 20 | 704 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.3+ | | |
| 2003 11 20 | 704 | 0.0 | 0.3− | 2003 12 23 | 704 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2+ | | |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2003 12 23 | 704 | 0.5− | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.1− | | |
| 2003 11 20 | 704 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.2− | 0.4+ | | | | | | |

**(143736)∗ 2003 UM$_{226}$**

Discovered 2003 Oct. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.75291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31055380 | $\omega$ | 246.04667 | | −0.93567990 | −0.34813690 | |
| $a$ | 2.1596240 | $\Omega$ | 273.53882 | | +0.34104684 | −0.85051999 | |
| $e$ | 0.0385129 | $i$ | 3.30141 | | +0.09049957 | −0.39422893 | |
| $P$ | 3.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 704 | 0.5− | 0.1− | 2003 11 19 | 703 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.9− | 0.6− | | |
| 2000 11 29 | 704 | 0.2− | 1.6+ | 2003 11 20 | 704 | (2.6− | 1.8−) | 2006 09 14 | 703 | 0.6− | 0.2− | | |
| 2000 11 29 | 704 | 0.5+ | 0.5+ | 2003 11 20 | 704 | (2.1− | 1.4+) | 2006 09 14 | 703 | 0.2− | 0.1− | | |
| 2000 11 29 | 704 | 0.2− | 0.1+ | 2003 11 20 | 704 | 0.6− | 1.3+ | 2006 09 14 | 703 | 0.5− | 0.5− | | |
| 2002 05 30 | 644 | 0.4− | 0.2− | 2003 11 20 | 704 | (0.6+ | 2.1+) | 2006 09 17 | 691 | 0.0 | 0.2− | | |
| 2002 05 30 | 644 | 0.3+ | 0.8+ | 2003 11 20 | 704 | 0.4− | 0.4+ | 2006 09 17 | 691 | 0.4− | 0.2− | | |
| 2002 05 30 | 644 | 0.3− | 0.2− | 2003 11 24 | 704 | 0.1+ | 0.7+ | 2006 09 17 | 691 | 0.2− | 0.2− | | |
| 2002 05 30 | 644 | 0.2+ | 0.8+ | 2003 11 24 | 704 | 1.0+ | 0.9+ | 2006 09 18 | 699 | 0.0 | 0.0 | | |
| 2002 05 30 | 644 | 0.1+ | 0.2− | 2003 11 24 | 704 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.6− | 0.7+ | | |
| 2002 05 30 | 644 | 0.7+ | 1.1+ | 2003 11 24 | 704 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.8+ | | |
| 2003 10 18 | 699 | 0.1+ | 0.1+ | 2003 11 30 | 691 | 0.1+ | 0.2− | 2006 09 18 | 699 | (0.1+ | 1.6+) | | |
| 2003 10 18 | 699 | (1.7− | 0.6−) | 2003 11 30 | 691 | 0.2+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1− | | |
| 2003 10 18 | 699 | 0.0 | 0.2+ | 2003 11 30 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1− | | |
| 2003 10 18 | 699 | 0.3+ | 1.3+ | 2003 12 10 | 644 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.7+ | | |
| 2003 10 22 | 691 | 0.0 | 0.1− | 2003 12 10 | 644 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.4− | | |
| 2003 10 22 | 691 | 0.1− | 0.0 | 2003 12 10 | 644 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.9+ | 0.1+ | | |
| 2003 10 22 | 691 | 0.2− | 0.3− | 2003 12 13 | 644 | 0.5− | 0.2− | 2006 09 29 | 704 | 0.6+ | 0.3+ | | |
| 2003 10 25 | 704 | 0.0 | 0.1− | 2003 12 13 | 644 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.9+ | 0.5− | | |
| 2003 10 25 | 704 | 0.0 | 0.1− | 2003 12 13 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.9+ | | |
| 2003 10 25 | 704 | 0.5− | 0.1+ | 2005 04 14 | 703 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.0 | 1.4+ | | |
| 2003 11 02 | 704 | 0.1+ | 0.2− | 2005 04 14 | 703 | 0.6− | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2003 11 02 | 704 | 0.3+ | 0.1− | 2005 04 14 | 703 | 0.2− | 1.1+ | 2006 10 17 | 703 | 1.1+ | 0.6+ | | |
| 2003 11 02 | 704 | 0.5− | 0.4− | 2005 04 14 | 703 | 0.7− | 1.5+ | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2003 11 02 | 704 | 0.6+ | 1.4+ | 2005 05 10 | 699 | (0.6− | 2.1+) | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2003 11 18 | 644 | 0.0 | 0.1+ | 2005 05 10 | 699 | 1.3+ | 1.3+ | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2003 11 18 | 644 | 0.4− | 0.2+ | 2005 05 10 | 699 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2003 11 18 | 644 | 0.2− | 0.2+ | 2005 05 10 | 699 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2003 11 19 | 703 | (0.4− | 2.7+) | 2005 05 19 | 644 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2− | | |
| 2003 11 19 | 703 | (1.9− | 0.0 ) | 2005 05 19 | 644 | 0.4+ | 0.4+ | | | | | | |
| 2003 11 19 | 703 | 0.3− | 0.2+ | 2005 05 19 | 644 | 0.5+ | 0.3+ | | | | | | |

**(143737)∗ 2003 UJ$_{236}$ = 2002 BZ$_{20}$**

Discovered 2003 Oct. 22 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 57163)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.23256 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35628626 | $\omega$ | 279.97051 | | +0.44874892 | +0.88760290 | |
| $a$ | 1.9706220 | $\Omega$ | 17.84399 | | −0.62779387 | +0.39581563 | |
| $e$ | 0.1061348 | $i$ | 19.81094 | | −0.63600256 | +0.23556543 | |
| $P$ | 2.77 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.5+ | 1.3+ | 2003 12 14 | 704 | (0.6− | 2.0+) | 2006 08 28 | 703 | 0.1− | 0.3+ | | |
| 2001 12 23 | 704 | 0.4+ | 0.2+ | 2003 12 14 | 704 | 0.1− | 1.3+ | 2006 09 18 | 704 | 1.1+ | 0.1− | | |
| 2001 12 23 | 704 | 0.0 | 0.0 | 2003 12 14 | 704 | (0.4− | 1.7+) | 2006 09 18 | 704 | (1.9+ | 1.3−) | | |
| 2001 12 23 | 704 | 0.1+ | 0.0 | 2003 12 17 | 699 | 0.3+ | 1.4+ | 2006 09 18 | 704 | 0.7+ | 0.4− | | |
| 2002 01 13 | 645 | 0.0 | 0.1− | 2003 12 17 | 699 | (0.5− | 1.7+) | 2006 09 18 | 704 | 0.0 | 0.7+ | | |
| 2002 01 13 | 645 | 0.0 | 0.1− | 2003 12 17 | 699 | (1.7+ | 0.9−) | 2006 09 18 | 704 | 0.0 | 1.2− | | |
| 2002 01 25 | 704 | (2.0− | 1.5+) | 2003 12 17 | 699 | (1.5+ | 0.5−) | 2006 09 18 | 703 | 0.5− | 1.0− | | |
| 2002 01 25 | 704 | 0.8− | 1.0+ | 2003 12 22 | 704 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.4− | | |
| 2002 01 25 | 704 | 1.1− | 0.6+ | 2003 12 22 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.0 | 0.5− | | |
| 2002 01 25 | 704 | 0.0 | 0.6+ | 2003 12 22 | 704 | 0.7− | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.4− | | |
| 2002 01 25 | 704 | 0.8− | 1.1+ | 2003 12 22 | 704 | 0.5− | 0.4− | 2006 09 21 | 704 | 0.2+ | 1.0+ | | |
| 2002 01 26 | 704 | 0.6+ | 0.3+ | 2003 12 27 | 704 | 0.4− | 0.5− | 2006 09 21 | 704 | 1.1+ | 0.1+ | | |
| 2002 01 26 | 704 | 0.4+ | 0.9− | 2003 12 27 | 704 | 1.3− | 0.2+ | 2006 09 21 | 704 | 1.4+ | 0.0 | | |
| 2002 01 26 | 704 | (1.8+ | 0.9+) | 2003 12 27 | 704 | 0.1− | 0.7+ | 2006 09 21 | 704 | 0.9+ | 0.0 | | |
| 2002 01 26 | 704 | 1.2+ | 1.1− | 2003 12 27 | 704 | 0.7− | 1.0− | 2006 09 21 | 704 | 0.0 | 0.6+ | | |
| 2002 02 21 | 704 | 0.1+ | 0.3+ | 2005 01 09 | 703 | 1.0− | 0.7− | 2006 09 22 | 699 | 0.7+ | 0.3− | | |
| 2002 02 21 | 704 | 0.5− | 0.0 | 2005 01 09 | 703 | 1.1− | 1.0− | 2006 09 22 | 699 | 0.1+ | 0.2+ | | |
| 2002 02 21 | 704 | 0.3+ | 0.8− | 2005 01 09 | 703 | 0.8− | 0.1− | 2006 09 22 | 699 | 0.7− | 0.1+ | | |
| 2003 08 31 | 704 | 0.2− | 0.1+ | 2005 01 09 | 703 | 0.6− | 0.5− | 2006 09 22 | 699 | 0.1− | 0.1− | | |
| 2003 08 31 | 704 | 0.6+ | 1.1− | 2005 02 01 | 703 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.7− | 0.1+ | | |
| 2003 08 31 | 704 | 0.2− | 0.1+ | 2005 02 01 | 703 | 0.6+ | 0.2+ | 2006 09 25 | 704 | 0.7− | 0.0 | | |
| 2003 08 31 | 704 | 0.5− | 0.0 | 2005 02 01 | 703 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.5+ | 1.3+ | | |
| 2003 08 31 | 704 | 0.6+ | 1.2− | 2005 02 01 | 703 | 0.4+ | 0.2+ | 2006 09 25 | 704 | 0.5− | 0.9+ | | |
| 2003 09 16 | 704 | 0.6− | 0.5+ | 2005 03 08 | 704 | 0.9+ | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.4− | | |
| 2003 09 16 | 704 | 0.4− | 0.5+ | 2005 03 08 | 704 | 1.1+ | 0.1+ | 2006 09 28 | 703 | 0.6− | 0.2− | | |
| 2003 09 16 | 704 | 0.5− | 0.2+ | 2005 03 08 | 704 | (1.7+ | 1.6+) | 2006 09 28 | 703 | 0.1− | 0.1− | | |
| 2003 09 16 | 704 | 0.3− | 0.3+ | 2005 03 16 | 703 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.5− | | |
| 2003 09 16 | 704 | 0.0 | 0.3+ | 2005 03 16 | 703 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.2− | | |
| 2003 09 27 | 699 | 0.6+ | 0.1+ | 2005 03 16 | 703 | 0.3− | 0.1− | 2006 10 01 | 704 | (2.1+ | 0.3+) | | |
| 2003 09 27 | 699 | 0.1− | 0.0 | 2005 03 16 | 703 | 1.1− | 0.3+ | 2006 10 01 | 704 | (2.4+ | 0.8+) | | |
| 2003 09 27 | 699 | 0.2+ | 0.5+ | 2005 04 02 | 699 | 0.3+ | 0.6+ | 2006 10 01 | 704 | (2.7+ | 0.3−) | | |
| 2003 09 27 | 699 | 0.3− | 0.2− | 2005 04 02 | 699 | 0.1+ | 0.1+ | 2006 10 01 | 704 | (1.7+ | 0.3−) | | |
| 2003 09 28 | 608 | (0.3− | 2.6−) | 2005 04 02 | 699 | 0.5+ | 0.1+ | 2006 10 06 | 204 | 0.0 | 0.1+ | | |
| 2003 09 28 | 608 | 0.7− | 0.5− | 2005 04 02 | 703 | 0.4− | 0.3− | 2006 10 06 | 204 | 0.3+ | 0.1+ | | |
| 2003 09 28 | 608 | (0.5− | 1.9+) | 2005 04 02 | 703 | 0.0 | 0.7− | 2006 10 12 | 644 | 0.3− | 0.1+ | | |
| 2003 10 03 | 608 | 0.2− | 0.5− | 2005 04 02 | 699 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.0 | | |
| 2003 10 03 | 608 | 0.1− | 0.4− | 2005 04 02 | 703 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.4− | 0.1+ | | |
| 2003 10 03 | 608 | 0.4− | 0.5− | 2005 04 02 | 703 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.2− | | |
| 2003 10 18 | 704 | 0.4+ | 0.3+ | 2005 04 09 | 703 | 0.7− | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.1− | | |
| 2003 10 18 | 704 | 0.1+ | 0.3+ | 2005 04 09 | 703 | (2.0− | 0.7+) | 2006 10 19 | 703 | 0.2+ | 0.5− | | |
| 2003 10 18 | 704 | 0.1− | 0.1+ | 2005 04 09 | 703 | 0.6− | 0.1+ | 2006 10 20 | 704 | (1.1− | 3.1−) | | |
| 2003 10 18 | 704 | 0.8+ | 0.3+ | 2005 04 09 | 703 | 0.9− | 0.2− | 2006 10 20 | 704 | (0.0 | 2.0+) | | |
| 2003 10 18 | 704 | 0.9+ | 0.4+ | 2005 04 12 | 704 | 0.0 | 1.0+ | 2006 10 20 | 704 | 1.6+ | 0.0 | | |
| 2003 10 22 | 608 | 0.3− | 0.0 | 2005 04 12 | 704 | 1.3+ | 1.2+ | 2006 10 20 | 704 | 0.8+ | 0.4+ | | |
| 2003 10 22 | 608 | 0.3+ | 0.1− | 2005 04 12 | 704 | 0.6+ | 1.0+ | 2006 10 20 | 704 | 0.3+ | 1.4+ | | |
| 2003 10 22 | 608 | 0.1− | 0.1− | 2005 04 12 | 704 | (1.5+ | 0.6+) | 2006 10 27 | 703 | 0.2+ | 0.4+ | | |
| 2003 10 25 | 704 | 0.7+ | 0.2− | 2005 04 12 | 704 | 1.1+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.3+ | | |
| 2003 10 25 | 704 | 1.4+ | 0.2+ | 2005 04 17 | 703 | 1.1+ | 0.3− | 2006 10 27 | 703 | 0.4+ | 0.5+ | | |
| 2003 10 25 | 704 | 0.8+ | 0.6+ | 2005 04 17 | 703 | 1.3+ | 0.6− | 2006 10 27 | 703 | 0.2− | 0.1− | | |
| 2003 10 25 | 704 | 0.9+ | 0.5+ | 2005 04 17 | 703 | 0.6− | 0.7− | 2006 11 16 | 703 | 0.1− | 0.9− | | |
| 2003 10 25 | 704 | 0.9+ | 0.5+ | 2005 04 17 | 703 | 0.2+ | 0.3− | 2006 11 16 | 703 | 0.2+ | 0.3− | | |
| 2003 10 29 | 704 | 0.8+ | 0.1+ | 2005 05 09 | 703 | 0.1− | 0.9+ | 2006 11 16 | 703 | 0.5− | 0.4− | | |
| 2003 10 29 | 704 | 0.9− | 0.8− | 2005 05 09 | 703 | 0.9+ | 0.9+ | 2006 11 16 | 703 | 0.1− | 0.4− | | |
| 2003 10 29 | 704 | 1.4− | 0.5+ | 2005 05 09 | 703 | (0.3+ | 1.7+) | 2006 11 16 | 703 | 1.1− | 0.4− | | |
| 2003 11 18 | 699 | 0.9− | 0.4− | 2005 05 09 | 703 | 1.3+ | 0.5+ | 2006 11 16 | 703 | 0.9− | 0.7− | | |
| 2003 11 18 | 699 | 0.5+ | 0.9− | 2005 05 12 | 704 | 0.7+ | 0.7+ | 2006 11 16 | 703 | 1.1+ | 0.2+ | | |
| 2003 11 18 | 699 | 0.2− | 0.5+ | 2005 05 12 | 704 | 0.7− | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.2− | | |
| 2003 11 18 | 699 | 0.0 | 0.2+ | 2005 05 12 | 704 | 0.0 | 0.9+ | 2006 11 22 | 703 | 0.3− | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 704 | 0.7− | 0.2+ | 2005 05 12 | 704 | 0.5+ | 0.8+ | 2006 11 22 | 703 | 0.1+ | 0.6− |
| 2003 11 21 | 704 | 0.2− | 0.1+ | 2005 05 12 | 704 | 0.3+ | 0.3− | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 0.7− | 0.1+ | 2006 08 21 | 704 | 0.0 | 0.4+ | 2006 11 22 | 703 | 0.6− | 0.3+ |
| 2003 11 21 | 704 | 0.3− | 0.3+ | 2006 08 21 | 704 | 0.8+ | 1.2+ | 2006 11 29 | 704 | 0.7− | 0.2− |
| 2003 11 21 | 704 | 0.3− | 0.3+ | 2006 08 21 | 704 | 0.3+ | 0.2− | 2006 11 29 | 704 | 1.2− | 0.1− |
| 2003 11 27 | 703 | (2.4− | 0.8+) | 2006 08 21 | 704 | 0.8+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.7− |
| 2003 11 27 | 703 | 0.8− | 0.2+ | 2006 08 21 | 704 | 0.5+ | 0.1+ | 2006 11 29 | 704 | 0.9− | 0.9+ |
| 2003 11 27 | 703 | (1.4− | 1.6−) | 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 11 29 | 704 | 1.3− | 1.2− |
| 2003 11 27 | 703 | (1.6− | 0.8−) | 2006 08 28 | 703 | 0.0 | 0.4+ | | | | |
| 2003 12 14 | 704 | 0.5− | 1.2+ | 2006 08 28 | 703 | 0.3− | 0.9+ | | | | |

**(143738)∗ 2003 UK$_{239}$ = 1994 VO$_4$**

Discovered 2003 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69578)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.29382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21585878 | $\omega$ | 201.68319 | | −0.83902970 | +0.54384621 | |
| $a$ | 2.7522607 | $\Omega$ | 11.30489 | | −0.48630847 | −0.73630016 | |
| $e$ | 0.1035243 | $i$ | 4.72238 | | −0.24399433 | −0.40260822 | |
| $P$ | 4.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 05 | 691 | 0.2− | 0.3+ | 2002 07 12 | 644 | 0.2− | 1.1+ | 2003 10 26 | 291 | 0.1− | 0.4+ |
| 1994 11 05 | 691 | 0.3+ | 0.1− | 2002 07 12 | 644 | 0.1− | 1.5+ | 2004 12 14 | 691 | 0.2− | 0.1− |
| 1994 11 05 | 691 | 0.2+ | 0.2− | 2002 07 12 | 644 | 0.3− | 1.2+ | 2004 12 14 | 691 | 0.1+ | 0.0 |
| 1994 11 10 | 691 | 0.5− | 0.0 | 2003 09 18 | 691 | 0.2+ | 0.2+ | 2004 12 14 | 691 | 0.5− | 0.2− |
| 1994 11 10 | 691 | 0.1− | 0.2− | 2003 09 18 | 691 | 0.1+ | 0.5+ | 2005 01 06 | 703 | 0.4− | 0.4− |
| 1994 11 10 | 691 | 0.4− | 0.2− | 2003 09 18 | 691 | 0.0 | 0.3+ | 2005 01 06 | 703 | 0.9− | 0.2+ |
| 2001 02 17 | 704 | 0.7+ | 0.9+ | 2003 09 28 | 691 | 0.0 | 0.2+ | 2005 01 06 | 703 | 0.2+ | 0.5+ |
| 2001 02 17 | 704 | 0.4− | 0.4+ | 2003 09 28 | 691 | 0.1− | 0.1+ | 2005 01 06 | 703 | 0.4+ | 0.0 |
| 2001 02 17 | 704 | 0.0 | 1.0− | 2003 09 28 | 691 | 0.0 | 0.3+ | 2006 04 07 | 691 | 0.1+ | 0.2+ |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2003 10 16 | 691 | 0.1+ | 0.2+ | 2006 04 07 | 691 | 0.0 | 0.3− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 10 16 | 691 | 0.4− | 0.4+ | 2006 04 07 | 691 | 0.1− | 0.2+ |
| 2001 03 03 | 704 | 0.2+ | 0.2+ | 2003 10 16 | 691 | 0.2− | 0.3+ | 2006 05 24 | 699 | 0.7− | 0.5+ |
| 2001 03 03 | 704 | 0.7+ | 0.5+ | 2003 10 24 | 704 | 0.4− | 0.2− | 2006 05 24 | 699 | 0.5+ | 0.4− |
| 2001 03 03 | 704 | 0.2− | 0.1− | 2003 10 24 | 704 | 0.7− | 0.1− | 2006 05 24 | 699 | 0.7− | 0.9+ |
| 2001 03 21 | 691 | 0.8+ | 0.4+ | 2003 10 24 | 704 | 0.7− | 0.3+ | 2006 05 24 | 699 | 1.0− | 0.5− |
| 2001 03 21 | 691 | 0.8+ | 1.0+ | 2003 10 26 | 291 | 1.0+ | 0.3+ | | | | |
| 2001 03 21 | 691 | 0.8+ | 0.9+ | 2003 10 26 | 291 | 0.1− | 0.1+ | | | | |

**(143739)∗ 2003 UB$_{246}$ = 2001 CD$_{49}$**

Discovered 2003 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57172)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.56550 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29559426 | $\omega$ | 34.60060 | | −0.06987460 | −0.99341189 | |
| $a$ | 2.2318862 | $\Omega$ | 59.56268 | | +0.88979585 | −0.10323150 | |
| $e$ | 0.1205125 | $i$ | 6.04736 | | +0.45097771 | +0.04976011 | |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.2+ | 0.1− | 2003 11 16 | 703 | 0.6+ | 0.3+ | 2004 01 22 | 704 | 0.4+ | 0.4− |
| 2001 01 18 | 704 | 0.0 | 0.1+ | 2003 11 16 | 703 | 0.1+ | 0.4− | 2004 01 22 | 704 | 0.0 | 0.3+ |
| 2001 01 18 | 704 | 0.2− | 0.3+ | 2003 11 16 | 703 | 0.0 | 0.4− | 2005 04 07 | G96 | 0.2+ | 1.1− |
| 2001 01 18 | 704 | 0.0 | 0.2− | 2003 11 21 | 704 | 0.2− | 0.4+ | 2005 04 07 | G96 | 0.1+ | 0.0 |
| 2001 01 18 | 704 | 0.2− | 0.0 | 2003 11 21 | 704 | 0.2− | 0.1+ | 2005 04 07 | G96 | 0.0 | 0.0 |
| 2001 02 01 | 699 | 0.3− | 1.0+ | 2003 11 21 | 704 | 0.2+ | 0.2+ | 2005 04 07 | G96 | 0.4− | 0.3+ |
| 2001 02 01 | 699 | 0.1− | 1.4+ | 2003 11 21 | 704 | 0.1− | 0.1+ | 2005 06 06 | 691 | 0.5+ | 0.6+ |
| 2001 02 01 | 699 | 0.2− | 0.4+ | 2003 11 21 | 704 | 0.2− | 0.1+ | 2005 06 06 | 691 | 0.2+ | 0.5+ |
| 2001 02 01 | 699 | 0.1− | 0.4+ | 2003 11 24 | 703 | 0.0 | 0.1− | 2005 06 06 | 691 | 0.4+ | 0.2+ |
| 2001 02 16 | 699 | 0.1+ | 0.6+ | 2003 11 24 | 703 | 0.7− | 0.3− | 2005 06 14 | G96 | 1.0− | 0.2+ |
| 2001 02 16 | 699 | (0.0 | 1.7+) | 2003 11 24 | 703 | 0.7− | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.6+ |
| 2001 02 16 | 699 | 0.6− | 0.0 | 2003 11 24 | 703 | 0.2− | 0.6− | 2005 06 14 | G96 | 0.3− | 0.5+ |
| 2001 02 16 | 699 | 0.1− | 1.1+ | 2003 11 29 | 691 | 0.1− | 0.1− | 2005 06 14 | G96 | 0.5− | 0.0 |
| 2001 02 16 | 704 | 0.7+ | 0.9+ | 2003 11 29 | 691 | 0.0 | 0.1− | 2006 09 13 | F84 | 0.8+ | 0.5+ |
| 2001 02 16 | 704 | 0.7+ | 0.5− | 2003 11 29 | 691 | 0.0 | 0.1− | 2006 09 13 | F84 | 0.2+ | 0.2+ |
| 2001 02 16 | 704 | 0.4+ | 0.2− | 2003 12 10 | 644 | 0.3− | 0.1+ | 2006 09 13 | F84 | 0.5+ | 0.3− |
| 2001 02 16 | 704 | 0.5+ | 0.8− | 2003 12 10 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.4− |
| 2003 10 18 | 699 | 0.1− | 0.4+ | 2003 12 10 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.7+ |
| 2003 10 18 | 699 | 0.5+ | 0.4+ | 2003 12 18 | 703 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.9− | 0.7− |
| 2003 10 18 | 699 | 0.3+ | 0.3+ | 2003 12 18 | 703 | (2.2− | 2.4+) | 2006 09 14 | 703 | 1.0+ | 0.1− |
| 2003 10 18 | 699 | 0.9+ | 0.4+ | 2003 12 18 | 703 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 0.3+ | 0.1− |
| 2003 10 24 | 704 | 0.4− | 0.3− | 2003 12 18 | 703 | 0.2+ | 0.9+ | 2006 09 27 | 703 | 0.2− | 0.8− |
| 2003 10 24 | 704 | 0.5− | 0.3+ | 2003 12 19 | 704 | 0.2− | 0.3− | 2006 09 27 | 703 | 0.8+ | 0.3+ |
| 2003 10 24 | 704 | 0.5− | 0.2− | 2003 12 19 | 704 | 0.7+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 1.2− |
| 2003 10 24 | 704 | 0.0 | 0.3+ | 2003 12 19 | 704 | 0.3+ | 0.3− | 2006 10 02 | 703 | (0.8− | 1.9+) |
| 2003 10 24 | 704 | 0.2− | 0.4+ | 2003 12 19 | 704 | 0.1− | 0.5+ | 2006 10 02 | 703 | 0.7− | 0.2+ |
| 2003 10 28 | 704 | 0.3− | 0.7+ | 2003 12 19 | 704 | (1.7− | 0.0 ) | 2006 10 02 | 703 | 1.2− | 1.1+ |
| 2003 10 28 | 704 | 0.0 | 0.4+ | 2003 12 22 | 704 | (0.3+ | 1.5+) | 2006 10 02 | 703 | 1.0− | 0.8+ |
| 2003 10 28 | 704 | 0.3+ | 0.3+ | 2003 12 22 | 704 | (0.5− | 1.8+) | 2006 10 19 | 703 | (1.8− | 0.7−) |
| 2003 10 28 | 704 | 0.3− | 0.1+ | 2003 12 22 | 704 | (0.0 | 2.2+) | 2006 10 19 | 703 | 0.2− | 0.6+ |
| 2003 11 02 | 704 | 0.7+ | 0.1+ | 2003 12 22 | 704 | (0.6− | 2.8+) | 2006 10 19 | 703 | 0.5+ | 0.7+ |
| 2003 11 02 | 704 | 0.2− | 0.7− | 2004 01 12 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.4+ |
| 2003 11 02 | 704 | 0.3+ | 0.2− | 2004 01 12 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2003 11 02 | 704 | 0.0 | 0.0 | 2004 01 12 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.9+ |
| 2003 11 02 | 704 | 0.0 | 0.2− | 2004 01 13 | 699 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2003 11 15 | 691 | 0.1+ | 0.1+ | 2004 01 13 | 699 | 0.7− | 0.8− | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2003 11 15 | 691 | 0.0 | 0.1+ | 2004 01 13 | 699 | 0.1− | 0.3− | 2006 10 24 | 644 | 0.3− | 0.3− |
| 2003 11 15 | 691 | 0.0 | 0.1+ | 2004 01 13 | 699 | 1.0+ | 0.9− | 2006 10 24 | 644 | 0.3− | 0.3+ |
| 2003 11 16 | 703 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 0.6+ | 0.2− | | | | |

**(143740)∗ 2003 UF$_{247}$**

Discovered 2003 Oct. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.63994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28106199 | $\omega$ | 274.90717 | | −0.01464660 | −0.99988977 | |
| $a$ | 2.3081710 | $\Omega$ | 175.92967 | | +0.93044231 | −0.01452093 | |
| $e$ | 0.1268623 | $i$ | 1.96577 | | +0.36614557 | −0.00309740 | |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.3− | 0.6+ | 2003 11 15 | 644 | 0.3− | 0.2+ | 2003 12 22 | 691 | 0.1+ | 0.1+ |
| 2001 02 19 | 704 | 0.3− | 0.9+ | 2003 11 15 | 644 | 0.1+ | 0.0 | 2003 12 22 | 691 | 0.4+ | 0.2+ |
| 2001 02 19 | 704 | 0.6+ | 0.6− | 2003 11 16 | 703 | 0.3− | 0.7+ | 2003 12 22 | 691 | 0.2+ | 0.2+ |
| 2001 02 19 | 704 | 0.5+ | 0.4− | 2003 11 16 | 703 | 0.3− | 0.2+ | 2005 05 03 | 691 | 0.5+ | 0.6+ |
| 2001 03 15 | 701 | 0.0 | 0.7+ | 2003 11 16 | 703 | 0.2+ | 1.4− | 2005 05 03 | 691 | 0.1− | 0.5+ |
| 2001 03 15 | 701 | 0.3− | 0.6− | 2003 11 16 | 703 | 0.9− | 1.2− | 2005 05 03 | 691 | 0.2+ | 0.3+ |
| 2001 03 15 | 701 | 0.1+ | 0.4+ | 2003 11 18 | 291 | 0.9− | 0.2+ | 2005 05 10 | 691 | 0.1+ | 0.5+ |
| 2003 10 24 | 704 | 0.6− | 0.9− | 2003 11 18 | 291 | 0.6+ | 0.2+ | 2005 05 10 | 691 | 0.0 | 0.1+ |
| 2003 10 24 | 704 | 1.0− | 0.4+ | 2003 11 18 | 291 | 0.6+ | 0.1+ | 2005 05 10 | 691 | 0.1+ | 0.6+ |
| 2003 10 24 | 704 | 0.4+ | 0.2+ | 2003 11 24 | 703 | 0.5− | 0.9− | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 2003 10 24 | 704 | 0.1+ | 0.9+ | 2003 11 24 | 703 | (2.8+ | 1.5+) | 2006 08 19 | 691 | 0.0 | 0.2+ |
| 2003 10 28 | 704 | 0.9+ | 0.2− | 2003 11 24 | 703 | 1.1− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.3+ |
| 2003 10 28 | 704 | 0.3+ | 0.1− | 2003 11 24 | 703 | 0.6− | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.2− |
| 2003 10 28 | 704 | 0.0 | 0.6+ | 2003 11 24 | 699 | 0.4− | 0.1− | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 2003 10 28 | 608 | 0.1+ | 0.2+ | 2003 11 24 | 699 | 1.6− | 1.2+ | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2003 10 28 | 608 | 0.3− | 0.7+ | 2003 11 24 | 699 | 0.6− | 1.0− | 2006 08 28 | 703 | 0.2− | 1.0− |
| 2003 10 28 | 608 | 0.4− | 0.4+ | 2003 11 24 | 699 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.2+ |
| 2003 10 29 | 699 | 0.9− | 0.4+ | 2003 11 28 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.3+ | 1.5+ |
| 2003 10 29 | 699 | (0.9− | 2.2+) | 2003 11 28 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.4+ |
| 2003 10 29 | 699 | 0.2− | 0.4+ | 2003 11 28 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2003 10 29 | 699 | 0.1+ | 0.7+ | 2003 12 01 | 704 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2003 11 15 | 691 | 0.3− | 0.6+ | 2003 12 01 | 704 | 0.5+ | 1.2+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2003 11 15 | 691 | 0.1− | 0.4− | 2003 12 01 | 704 | 0.9+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.5− |
| 2003 11 15 | 691 | 0.1− | 0.4− | 2003 12 01 | 704 | 0.4− | 0.2− | | | | |
| 2003 11 15 | 644 | 0.1− | 0.0 | 2003 12 01 | 704 | 0.7+ | 0.6+ | | | | |

**(143741)∗ 2003 UX$_{248}$**

Discovered 2003 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.54796 | | | (2000.0) | | |
| $n$ | 0.28674084 | $\omega$ | 346.18042 | | +0.01267491 | +0.99839580 |
| $a$ | 2.2775942 | $\Omega$ | 284.52427 | | −0.91190698 | −0.01109812 |
| $e$ | 0.1362471 | $i$ | 3.26791 | | −0.41020118 | +0.05552161 |
| $P$ | 3.44 | $H$ | 17.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 15 | 644 | 0.3− | 1.1+ | 2003 10 17 | 699 | 1.4− | 1.2+ | 2006 08 11 | 644 | 0.2+ | 0.2+ |
| 2002 04 15 | 644 | 0.3+ | 0.9+ | 2003 10 25 | 704 | (1.5− | 1.6−) | 2006 08 11 | 644 | 0.2− | 0.1− |
| 2002 04 15 | 644 | 0.1− | 0.8+ | 2003 10 25 | 704 | (2.1− | 0.7−) | 2006 08 11 | 644 | 0.1+ | 0.2+ |
| 2002 04 30 | 644 | 0.4+ | 0.0 | 2003 10 25 | 704 | 1.4− | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2002 04 30 | 644 | 0.4+ | 0.1− | 2003 10 27 | 291 | 0.1− | 0.2+ | 2006 08 15 | 644 | 0.0 | 0.1+ |
| 2002 04 30 | 644 | 0.9+ | 0.0 | 2003 10 27 | 291 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.2− | 0.1− |
| 2003 09 22 | 644 | 0.0 | 0.1− | 2003 10 27 | 291 | 0.3+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2003 09 22 | 644 | 0.2+ | 0.4+ | 2005 03 11 | G96 | 0.2− | 0.4− | 2006 08 16 | 644 | 0.1− | 0.1+ |
| 2003 09 22 | 644 | 0.3+ | 0.0 | 2005 03 11 | G96 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.0 |
| 2003 10 02 | 691 | 0.3− | 0.1+ | 2005 03 11 | G96 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.2+ | 0.1− |
| 2003 10 02 | 691 | 0.1− | 0.0 | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2003 10 02 | 691 | 0.3− | 0.1+ | 2006 06 19 | G96 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.0 |
| 2003 10 16 | 691 | 0.1+ | 0.0 | 2006 06 19 | G96 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 10 16 | 691 | 0.3+ | 0.0 | 2006 06 19 | G96 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2003 10 16 | 691 | 0.2+ | 0.1− | 2006 06 19 | G96 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2003 10 17 | 699 | (1.1− | 1.7−) | 2006 06 20 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2003 10 17 | 699 | (1.7+ | 0.8+) | 2006 06 20 | 691 | 0.1− | 0.0 | | | | |
| 2003 10 17 | 699 | (3.1− | 1.0+) | 2006 06 20 | 691 | 0.1− | 0.1− | | | | |

**(143742)∗ 2003 UZ$_{250}$ = 1996 TY$_{23}$**

Discovered 2003 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57179)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 300.07942 | | | (2000.0) | | |
| $n$ | 0.28807767 | $\omega$ | 36.46379 | | +0.61034612 | −0.79147837 |
| $a$ | 2.2705426 | $\Omega$ | 16.00296 | | +0.69631765 | +0.51666817 |
| $e$ | 0.1063491 | $i$ | 6.71635 | | +0.37764975 | +0.32652103 |
| $P$ | 3.42 | $H$ | 16.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.3− | 0.0 | 2003 11 19 | 699 | 0.4+ | 0.0 | 2005 03 11 | G96 | 0.6− | 0.3− |
| 1996 10 06 | 691 | 0.3− | 0.1+ | 2003 11 19 | 699 | 0.3− | 0.9+ | 2005 04 11 | 691 | 0.6+ | 0.3− |
| 1996 10 06 | 691 | 0.4− | 0.5+ | 2003 11 19 | 699 | 0.2− | 0.5+ | 2005 04 11 | 691 | 0.0 | 0.3+ |
| 1996 10 16 | 691 | 0.3+ | 0.2− | 2003 11 19 | 704 | 0.8− | 0.1− | 2005 04 11 | 691 | 0.0 | 0.8+ |
| 1996 10 16 | 691 | 0.3+ | 0.3− | 2003 11 19 | 704 | 0.3− | 0.4− | 2005 04 15 | 691 | 0.3+ | 0.4+ |
| 1996 10 16 | 691 | 0.4+ | 0.3− | 2003 11 19 | 704 | 0.1− | 0.0 | 2005 04 15 | 691 | 0.1+ | 0.6+ |
| 2003 10 19 | 644 | 0.4− | 0.2+ | 2003 11 19 | 704 | 0.9− | 0.8− | 2005 04 15 | 691 | 0.2+ | 0.2+ |
| 2003 10 19 | 644 | 0.4− | 0.4+ | 2003 11 21 | 644 | 0.4+ | 0.4+ | 2005 04 15 | 691 | 0.3+ | 0.2+ |
| 2003 10 19 | 644 | 0.2− | 0.5+ | 2003 11 21 | 644 | 0.2+ | 0.4+ | 2005 04 15 | 691 | 0.2+ | 0.2+ |
| 2003 10 25 | 704 | 0.0 | 0.6+ | 2003 11 21 | 644 | 0.3+ | 0.4+ | 2005 04 15 | 691 | 0.1+ | 0.4+ |
| 2003 10 25 | 704 | 0.2− | 0.1+ | 2003 11 24 | 699 | 0.4+ | 0.3+ | 2006 08 15 | 644 | 0.4− | 0.6+ |
| 2003 10 25 | 704 | 0.9− | 0.7+ | 2003 11 24 | 699 | 0.5− | 0.5− | 2006 08 15 | 644 | 0.3− | 0.7+ |
| 2003 10 25 | 704 | 0.3− | 0.3+ | 2003 11 24 | 699 | 0.7− | 0.2+ | 2006 08 15 | 644 | 0.1+ | 0.5+ |
| 2003 10 25 | 704 | 0.2+ | 0.9+ | 2003 11 24 | 699 | 0.0 | 0.2+ | 2006 08 23 | 704 | 0.9+ | 1.0+ |
| 2003 10 27 | 691 | 0.3+ | 0.2+ | 2003 11 26 | 704 | 0.0 | 0.0 | 2006 08 23 | 704 | 0.9− | 0.2+ |
| 2003 10 27 | 691 | 0.0 | 0.4+ | 2003 11 26 | 704 | 0.5+ | 0.0 | 2006 08 23 | 704 | 0.5− | 0.5+ |
| 2003 10 27 | 691 | 0.1− | 0.3+ | 2003 11 26 | 704 | 0.4− | 0.6− | 2006 08 23 | 704 | (0.9− | 2.0+) |
| 2003 11 05 | 699 | 0.3− | 1.3− | 2003 11 26 | 704 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.2+ | 1.1+ |
| 2003 11 05 | 699 | 0.8+ | 0.4− | 2005 03 11 | G96 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.8+ |
| 2003 11 05 | 699 | 0.1+ | 0.9+ | 2005 03 11 | G96 | 0.3− | 0.5− | 2006 08 28 | 699 | (2.7− | 0.4+) |
| 2003 11 05 | 699 | (2.5+ | 0.9+) | 2005 03 11 | G96 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.2− | 0.6− |
| 2003 11 16 | 691 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 1.1− | 2.7− |
| 2003 11 16 | 691 | 0.1+ | 0.2+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2003 11 16 | 691 | 0.1− | 0.1+ | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.3+ |
| 2003 11 19 | 699 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.9− | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.3+ |

**(143743)∗ 2003 UJ$_{253}$ = 1995 BB$_7$**

Discovered 2003 Oct. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57183)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.07917 | | | (2000.0) | | |
| $n$ | 0.31093550 | $\omega$ | 325.55474 | | +0.90157575 | −0.43225139 |
| $a$ | 2.1578563 | $\Omega$ | 60.06545 | | +0.40142131 | +0.82042464 |
| $e$ | 0.0763535 | $i$ | 1.18262 | | +0.16131366 | +0.37424877 |
| $P$ | 3.17 | $H$ | 16.9 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 28 | 691 | 0.3+ | 0.2− | 2003 11 16 | 703 | 0.5− | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.2+ |
| 1995 01 28 | 691 | 0.5− | 0.4+ | 2003 11 16 | 703 | 0.7+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 1995 01 28 | 691 | 0.3− | 0.1+ | 2003 11 21 | 704 | 0.4+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 1995 02 06 | 691 | 0.1+ | 0.2− | 2003 11 21 | 704 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 1995 02 06 | 691 | 0.4+ | 0.1+ | 2003 11 21 | 704 | 0.8+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1995 02 06 | 691 | 0.4+ | 0.1+ | 2003 11 21 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1997 11 24 | 910 | 1.9− | 0.3− | 2003 11 21 | 704 | 0.6+ | 1.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1997 11 24 | 910 | 1.7− | 0.6− | 2003 11 24 | 703 | (2.4+ | 1.1+) | 2006 10 15 | 703 | 0.7− | 0.6− |
| 1997 11 24 | 910 | (2.1− | 0.6−) | 2003 11 24 | 703 | 0.0 | 0.4+ | 2006 10 15 | 703 | 0.4+ | 0.1+ |
| 2000 12 30 | 704 | 0.8+ | 1.0+ | 2003 11 24 | 703 | (1.7− | 0.8−) | 2006 10 15 | 703 | 0.1− | 0.4− |
| 2000 12 30 | 704 | 0.5+ | 0.5− | 2003 11 24 | 703 | 0.6− | 0.6− | 2006 10 15 | 703 | 0.6− | 1.2− |
| 2000 12 30 | 704 | 0.3− | 0.1+ | 2003 11 29 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2000 12 30 | 704 | 0.0 | 1.0− | 2003 11 29 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2000 12 30 | 704 | 0.4− | 1.4− | 2003 11 29 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.7+ | 0.2− |
| 2002 05 11 | 704 | 0.1+ | 1.0+ | 2003 12 01 | 291 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.6− |
| 2002 05 11 | 704 | 1.2− | 0.1− | 2003 12 01 | 291 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 05 11 | 704 | 0.2− | 1.3+ | 2003 12 01 | 291 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 05 11 | 704 | (1.6− | 1.1−) | 2003 12 04 | 703 | 0.5− | 1.4+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 05 17 | 644 | 0.4+ | 0.6+ | 2003 12 04 | 703 | (2.0− | 2.4−) | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 05 17 | 644 | 0.8+ | 0.4+ | 2003 12 04 | 703 | 0.6+ | 1.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 05 17 | 644 | 0.4+ | 0.2+ | 2003 12 04 | 703 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2003 10 27 | 704 | 0.6+ | 0.3+ | 2005 05 04 | 568 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.9+ |
| 2003 10 27 | 704 | 0.4+ | 0.0 | 2005 05 04 | 568 | 0.5+ | 0.7+ | 2006 10 21 | 703 | 0.8+ | 0.7+ |
| 2003 10 27 | 704 | 0.6− | 0.2+ | 2005 05 04 | 568 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.5+ |
| 2003 10 27 | 704 | 0.2+ | 0.4+ | 2005 05 05 | 568 | (0.6+ | 1.7+) | 2006 10 21 | 703 | 0.8− | 1.0+ |
| 2003 10 28 | 704 | 0.7+ | 0.3+ | 2006 08 24 | 644 | 0.9+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2003 10 28 | 704 | 0.5+ | 0.2− | 2006 08 24 | 644 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2003 10 28 | 704 | 0.5+ | 0.8+ | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2003 10 28 | 608 | 0.7− | 0.8− | 2006 09 14 | 703 | 0.0 | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2003 10 28 | 608 | 0.4− | 0.9− | 2006 09 14 | 703 | 1.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 10 28 | 608 | 0.9− | 0.5− | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2003 10 29 | 699 | 0.2+ | 0.8+ | 2006 09 14 | 703 | 0.7− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2003 10 29 | 703 | (3.6+ | 2.4+) | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 10 23 | 704 | 0.2+ | 0.3+ |
| 2003 10 29 | 699 | 0.3+ | 0.4− | 2006 09 18 | 699 | 0.7− | 0.2+ | 2006 10 23 | 704 | 0.0 | 0.5+ |
| 2003 10 29 | 703 | (1.1+ | 4.2+) | 2006 09 18 | 699 | 1.1− | 0.5− | 2006 10 23 | 704 | 0.5− | 0.2− |
| 2003 10 29 | 703 | (2.3+ | 3.3+) | 2006 09 18 | 699 | 1.1+ | 0.2+ | 2006 10 23 | 704 | 0.8− | 0.1+ |
| 2003 10 29 | 703 | (1.8+ | 3.4+) | 2006 09 20 | 704 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2003 10 29 | 699 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2003 10 29 | 699 | 0.6− | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2003 11 15 | 691 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2003 11 15 | 691 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2003 11 15 | 691 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.6− |
| 2003 11 15 | 644 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2003 11 15 | 644 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.4+ |
| 2003 11 15 | 644 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2003 11 15 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.7+ | 0.3− |
| 2003 11 15 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2003 11 15 | 644 | 0.4− | 0.6+ | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2003 11 16 | 703 | 0.6+ | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.6+ | | | | |
| 2003 11 16 | 703 | 0.8− | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.2+ | | | | |

**(143744)∗ 2003 UD$_{258}$**

Discovered 2003 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.23509 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30808982 | $\omega$ | 106.59315 | | −0.90188410 | +0.42523459 | |
| $a$ | 2.1711233 | $\Omega$ | 98.62530 | | −0.41983697 | −0.82141766 | |
| $e$ | 0.1507919 | $i$ | 4.41040 | | −0.10169558 | −0.38006391 | |
| $P$ | 3.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.0 | 0.3− | 2005 05 03 | 704 | (0.1− | 1.6+) | 2005 06 28 | 699 | (1.5− | 0.4+) |
| 1999 07 14 | 704 | 0.2− | 0.2+ | 2005 05 08 | 704 | 0.8+ | 1.2+ | 2006 09 30 | 703 | 0.9+ | 0.6+ |
| 1999 07 14 | 704 | 0.5− | 0.5− | 2005 05 08 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 703 | (0.3− | 2.1+) |
| 1999 07 14 | 704 | 0.9+ | 0.0 | 2005 05 08 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 2003 10 24 | 695 | 0.5− | 0.4+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.3− |
| 2003 10 24 | 695 | 0.0 | 0.5+ | 2005 05 11 | 691 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2003 10 25 | 704 | 1.1− | 0.3+ | 2005 05 11 | 691 | 0.3− | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2003 10 25 | 704 | 0.5− | 0.4+ | 2005 05 11 | 699 | 0.6+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2003 10 25 | 704 | 0.6− | 0.8+ | 2005 05 11 | 699 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.4− |
| 2003 10 29 | 691 | 0.0 | 0.3+ | 2005 05 11 | 699 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2003 10 29 | 691 | 0.0 | 0.2+ | 2005 05 11 | 699 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2003 10 29 | 691 | 0.2− | 0.4+ | 2005 05 12 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2003 11 21 | 699 | (1.3+ | 1.5+) | 2005 05 12 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2003 11 21 | 699 | 0.2+ | 0.0 | 2005 05 12 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2003 11 21 | 699 | 0.2+ | 1.0+ | 2005 05 12 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2003 11 21 | 699 | 0.1+ | 0.6− | 2005 05 12 | 704 | 0.7+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 1.2+ |
| 2003 11 30 | 704 | (1.7− | 1.0+) | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.9+ | 1.2+ |
| 2003 11 30 | 704 | 0.3− | 0.4+ | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | (2.4+ | 0.3−) |
| 2003 11 30 | 704 | 0.5− | 0.3+ | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 1.4+ | 1.1+ |
| 2003 11 30 | 704 | 0.6+ | 1.0+ | 2005 05 16 | 704 | 0.2+ | 0.4− | 2006 10 22 | 703 | (2.3− | 1.2+) |
| 2005 02 01 | 691 | 0.4+ | 0.5+ | 2005 05 16 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2005 02 01 | 691 | 0.2+ | 0.4+ | 2005 05 16 | 704 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2005 02 01 | 691 | 0.6+ | 0.0 | 2005 05 16 | 704 | 1.0+ | 0.3− | 2006 10 22 | 703 | 1.0− | 0.4+ |
| 2005 03 12 | 699 | 0.7+ | 1.4+ | 2005 05 16 | 704 | 0.2+ | 0.7− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2005 03 12 | 699 | (1.2− | 1.5+) | 2005 05 31 | 699 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2005 03 12 | 699 | 0.8− | 0.2+ | 2005 05 31 | 699 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2005 03 12 | 699 | 0.2+ | 0.6+ | 2005 05 31 | 699 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2005 04 10 | 608 | 0.4− | 0.2− | 2005 06 07 | 699 | 0.9− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2005 04 10 | 608 | 0.1− | 0.1− | 2005 06 07 | 699 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2005 04 10 | 608 | 0.1+ | 0.3− | 2005 06 07 | 699 | 0.7− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2005 04 13 | 699 | 0.0 | 0.1+ | 2005 06 07 | 699 | 0.8− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2005 04 13 | 699 | 0.1− | 0.6+ | 2005 06 14 | 699 | 0.7− | 1.2+ | 2006 10 23 | 644 | 0.5− | 0.7+ |
| 2005 04 13 | 699 | 0.7+ | 0.1+ | 2005 06 14 | 699 | (1.5+ | 1.1+) | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2005 04 13 | 699 | 0.4+ | 0.2+ | 2005 06 14 | 699 | 0.6− | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.3+ |
| 2005 04 30 | 644 | 0.1− | 0.1− | 2005 06 14 | 699 | 0.8− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2005 04 30 | 644 | 0.1+ | 0.3− | 2005 06 28 | 699 | 0.6+ | 0.3− | 2006 10 23 | 644 | 0.3− | 0.7+ |
| 2005 04 30 | 644 | 0.3− | 0.0 | 2005 06 28 | 644 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2005 05 03 | 704 | 0.4+ | 0.6+ | 2005 06 28 | 699 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.5− | 0.0 |
| 2005 05 03 | 704 | 0.1+ | 0.1+ | 2005 06 28 | 644 | 0.5− | 0.0 | 2006 11 24 | G96 | 0.7− | 0.0 |
| 2005 05 03 | 704 | 0.1− | 0.3− | 2005 06 28 | 699 | 0.9− | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2005 05 03 | 704 | 0.6+ | 1.0+ | 2005 06 28 | 644 | 0.0 | 0.1− | | | | |

**(143745)∗ 2003 UC$_{259}$**

Discovered 2003 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.53753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26605451 | $\omega$ | 177.33572 | | −0.55799556 | −0.82950944 | |
| $a$ | 2.3941736 | $\Omega$ | 306.58046 | | +0.76082342 | −0.50004347 | |
| $e$ | 0.1078707 | $i$ | 1.68122 | | +0.33134374 | −0.24873806 | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 14 | 691 | 0.1− | 0.4− | 2003 10 29 | 704 | 0.9+ | 0.7+ | 2003 11 28 | 691 | 0.4− | 0.3+ |
| 1997 02 14 | 691 | 0.3− | 0.0 | 2003 10 29 | 704 | 0.3+ | 0.5+ | 2003 11 28 | 691 | 0.2− | 0.1+ |
| 1997 02 14 | 691 | 0.2− | 0.6− | 2003 10 29 | 704 | 0.3− | 0.1− | 2003 12 22 | 704 | 0.0 | 0.8+ |
| 1999 10 13 | 704 | (0.8+ | 2.4+) | 2003 10 29 | 704 | 0.5− | 0.3− | 2003 12 22 | 704 | 0.5− | 0.2− |
| 1999 10 13 | 704 | 0.3+ | 0.5+ | 2003 10 29 | 704 | 0.0 | 0.5− | 2003 12 22 | 704 | 0.4− | 0.0 |
| 1999 10 13 | 704 | 1.1+ | 0.4− | 2003 11 18 | 691 | 0.2− | 0.1+ | 2005 05 16 | G96 | 0.1+ | 0.3− |
| 2001 03 02 | 691 | 0.5+ | 0.7− | 2003 11 18 | 691 | 0.1− | 0.0 | 2005 05 16 | G96 | 0.1− | 0.3− |
| 2001 03 02 | 691 | 0.3+ | 0.8+ | 2003 11 18 | 691 | 0.3− | 0.0 | 2005 05 16 | G96 | 0.2− | 0.0 |
| 2001 03 02 | 691 | 0.3+ | 0.7+ | 2003 11 18 | 644 | 0.3− | 0.2+ | 2005 05 16 | G96 | 0.1− | 0.1− |
| 2001 03 18 | 704 | 0.2+ | 1.8+ | 2003 11 18 | 644 | 0.5− | 0.5+ | 2006 07 18 | G96 | 1.3− | 0.1+ |
| 2001 03 18 | 704 | 0.4− | 0.7+ | 2003 11 18 | 644 | 0.5− | 0.6+ | 2006 07 18 | G96 | 0.4− | 0.6− |
| 2001 03 18 | 704 | 0.2− | 0.1− | 2003 11 20 | 704 | 1.7+ | 0.2− | 2006 07 18 | G96 | 0.9− | 0.7− |
| 2001 03 18 | 704 | 0.1− | 1.4+ | 2003 11 20 | 704 | 1.5+ | 0.3+ | 2006 07 18 | G96 | 0.0 | 0.0 |
| 2001 05 21 | 807 | 0.3+ | 0.2+ | 2003 11 20 | 704 | 0.9+ | 0.4+ | 2006 09 17 | 291 | 0.1+ | 0.6+ |
| 2001 05 22 | 807 | 0.7+ | 0.0 | 2003 11 20 | 704 | 1.1+ | 0.3− | 2006 09 17 | 291 | 0.2− | 0.5+ |
| 2003 10 18 | 691 | 0.1+ | 0.0 | 2003 11 20 | 704 | 1.4+ | 0.3+ | 2006 09 17 | 291 | 0.1− | 0.3+ |
| 2003 10 18 | 691 | 0.2+ | 0.2− | 2003 11 24 | 704 | 0.1− | 1.0+ | 2006 09 25 | G96 | 0.2+ | 0.3+ |
| 2003 10 18 | 691 | 0.2− | 0.3− | 2003 11 24 | 704 | 1.0− | 0.9+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2003 10 25 | 704 | 0.3+ | 0.0 | 2003 11 24 | 704 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2003 10 25 | 704 | 0.2+ | 0.6− | 2003 11 24 | 704 | 0.7+ | 1.0+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2003 10 25 | 704 | 0.1− | 0.3− | 2003 11 28 | 691 | 0.4− | 0.2− | | | | |

**(143746)∗ 2003 UD$_{259}$ = 2001 DD$_{98}$**

Discovered 2003 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57189)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.04806 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27558306 | $\omega$ | 283.99348 | | −0.98363229 | −0.15203201 | |
| $a$ | 2.3386633 | $\Omega$ | 247.33305 | | +0.17692341 | −0.91660009 | |
| $e$ | 0.0458455 | $i$ | 6.01625 | | −0.03414119 | −0.36977094 | |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 24 | 691 | 0.1− | 0.2− | 2003 11 24 | 699 | 0.3− | 1.0+ | 2005 05 04 | E12 | 0.1+ | 0.4+ |
| 1995 06 24 | 691 | 0.1− | 0.2− | 2003 11 24 | 699 | 0.1− | 0.3+ | 2005 05 09 | 699 | 0.3+ | 0.5+ |
| 1995 06 24 | 691 | 0.1+ | 0.2+ | 2003 11 28 | 691 | 0.3+ | 0.2+ | 2005 05 09 | 703 | 0.1− | 1.5+ |
| 2001 02 17 | 704 | 1.3+ | 0.0 | 2003 11 28 | 691 | 0.2− | 0.2+ | 2005 05 09 | 703 | 0.7− | 0.2+ |
| 2001 02 17 | 704 | 0.9+ | 0.3− | 2003 11 28 | 691 | 0.4− | 0.4+ | 2005 05 09 | 703 | 0.9− | 0.0 |
| 2001 02 17 | 704 | 0.8+ | 0.0 | 2005 04 03 | E12 | 0.4− | 0.3− | 2005 05 09 | 703 | 1.6− | 0.7− |
| 2001 02 17 | 704 | 0.2− | 0.6+ | 2005 04 03 | E12 | 0.0 | 0.3− | 2005 05 09 | 699 | 0.5− | 0.4+ |
| 2001 02 18 | 608 | 0.0 | 0.4− | 2005 04 03 | E12 | 0.6− | 0.8+ | 2005 05 09 | 699 | 0.6− | 1.3+ |
| 2001 02 18 | 608 | 0.1− | 0.5− | 2005 04 03 | E12 | 0.9− | 0.6+ | 2005 05 09 | 699 | 1.0+ | 0.2− |
| 2001 02 18 | 608 | 0.1− | 0.3− | 2005 04 12 | 691 | 0.0 | 0.0 | 2005 05 12 | 699 | 1.4+ | 0.9− |
| 2003 10 25 | 704 | 0.3+ | 0.8− | 2005 04 12 | 691 | 0.1− | 0.1− | 2005 05 12 | 699 | 0.8+ | 0.9+ |
| 2003 10 25 | 704 | 0.0 | 1.3− | 2005 04 12 | 691 | 0.0 | 0.4− | 2005 05 12 | 699 | 1.9− | 0.4− |
| 2003 10 25 | 704 | 0.4+ | 0.8− | 2005 04 16 | G92 | 0.1+ | 0.2− | 2005 05 12 | 699 | 1.0+ | 0.2− |
| 2003 10 25 | 704 | 0.7− | 1.2− | 2005 04 16 | G92 | 0.3+ | 0.1− | 2006 08 27 | 699 | 0.6+ | 1.9− |
| 2003 10 25 | 704 | 0.3+ | 1.3− | 2005 04 16 | G92 | 0.4+ | 0.2+ | 2006 08 27 | 699 | 0.6+ | 0.4+ |
| 2003 10 29 | 704 | (0.3− | 2.1−) | 2005 04 17 | G92 | 0.0 | 0.4+ | 2006 08 27 | 699 | 0.7+ | 0.7+ |
| 2003 10 29 | 704 | 0.6+ | 0.8− | 2005 04 17 | G92 | 0.8+ | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.3− |
| 2003 10 29 | 704 | 0.6− | 0.1+ | 2005 04 17 | G92 | 0.5+ | 0.2− | 2006 08 29 | 703 | 0.1− | 0.1− |
| 2003 11 19 | 699 | 0.1+ | 0.2− | 2005 04 18 | 703 | 0.2+ | 1.6+ | 2006 08 29 | 703 | 1.0− | 0.7− |
| 2003 11 19 | 699 | 0.7+ | 1.2− | 2005 04 18 | 703 | 0.2− | 0.9+ | 2006 08 29 | 703 | 0.1+ | 1.4+ |
| 2003 11 19 | 699 | 0.1+ | 0.8− | 2005 04 18 | 703 | 0.8− | 0.4− | 2006 08 29 | 703 | 0.2+ | 0.2+ |
| 2003 11 19 | 699 | 0.3− | 0.0 | 2005 04 18 | 703 | (2.8− | 1.4+) | 2006 09 13 | 644 | 1.2− | 0.2− |
| 2003 11 21 | 704 | 0.5− | 0.3− | 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.5− | 0.1+ |
| 2003 11 21 | 704 | 0.5− | 1.1+ | 2005 05 01 | 644 | 0.3+ | 0.0 | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 2003 11 21 | 704 | 0.3+ | 0.8+ | 2005 05 01 | 644 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.3− | 1.3+ |
| 2003 11 21 | 704 | 0.5− | 0.6+ | 2005 05 04 | E12 | 0.8+ | 0.2− | 2006 09 18 | 703 | 0.8+ | 1.0+ |
| 2003 11 24 | 699 | 0.7− | 1.6+ | 2005 05 04 | E12 | 0.9− | 0.8− | 2006 09 18 | 703 | 1.2+ | 0.9+ |
| 2003 11 24 | 699 | 0.6− | 0.2− | 2005 05 04 | E12 | 0.8+ | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.5+ |

**(143747)∗ 2003 UQ$_{259}$**

Discovered 2003 Oct. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.11696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27459681 | $\omega$ | 328.17572 | | +0.66382539 | −0.73483106 | |
| $a$ | 2.3442597 | $\Omega$ | 79.83148 | | +0.71240720 | +0.56467179 | |
| $e$ | 0.1118210 | $i$ | 8.12641 | | +0.22762212 | +0.37572475 | |
| $P$ | 3.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.6− | 0.7+ | 2003 12 04 | 703 | 0.8− | 0.4− | 2004 01 13 | 699 | 1.0− | 0.1− |
| 2001 02 16 | 704 | 0.5+ | 0.1+ | 2003 12 04 | 703 | 0.8− | 0.7− | 2004 01 13 | 699 | 0.6− | 0.7− |
| 2001 02 16 | 704 | 0.3+ | 1.0+ | 2003 12 04 | 703 | 0.7− | 1.3− | 2004 01 13 | 699 | 0.2− | 0.6− |
| 2001 02 16 | 704 | 0.2− | 0.9+ | 2003 12 04 | 703 | 0.7− | 0.4+ | 2004 01 13 | 699 | 0.5+ | 0.3+ |
| 2001 02 16 | 704 | 0.4+ | 0.2+ | 2003 12 14 | 691 | 0.1− | 0.2− | 2004 01 17 | 644 | 0.1+ | 0.1− |
| 2001 03 04 | 704 | 0.6+ | 0.4− | 2003 12 14 | 691 | 0.1− | 0.0 | 2004 01 17 | 644 | 0.0 | 0.0 |
| 2001 03 04 | 704 | 0.3+ | 0.5+ | 2003 12 14 | 691 | 0.1− | 0.2− | 2004 01 17 | 644 | 0.0 | 0.2− |
| 2001 03 04 | 704 | 1.0− | 0.2+ | 2003 12 17 | 699 | 0.5− | 0.3− | 2004 01 24 | 704 | 0.2− | 0.4− |
| 2003 09 28 | 704 | 0.2− | 0.3− | 2003 12 17 | 699 | 0.0 | 0.8− | 2004 01 24 | 704 | 0.3− | 0.5− |
| 2003 09 28 | 704 | 0.2− | 0.3+ | 2003 12 17 | 699 | 0.5− | 0.5+ | 2004 01 24 | 704 | 0.1+ | 1.1− |
| 2003 09 28 | 704 | 0.4+ | 1.3+ | 2003 12 17 | 699 | 0.6− | 0.3− | 2004 01 24 | 704 | 0.8− | 0.1+ |
| 2003 10 25 | 704 | 1.4+ | 0.5− | 2003 12 19 | 704 | 1.2− | 0.1+ | 2004 02 10 | 644 | 0.3+ | 0.1− |
| 2003 10 25 | 704 | 1.5+ | 0.6− | 2003 12 19 | 704 | 0.6− | 1.1+ | 2004 02 10 | 644 | 0.5+ | 0.3+ |
| 2003 10 25 | 704 | 0.8+ | 0.1+ | 2003 12 19 | 704 | 0.3+ | 1.3+ | 2004 02 10 | 644 | 0.4+ | 0.2+ |
| 2003 10 25 | 704 | 0.8+ | 1.0+ | 2003 12 19 | 704 | 1.0− | 1.4− | 2005 04 04 | 703 | 1.1− | 0.2− |
| 2003 10 25 | 704 | 0.6+ | 1.0+ | 2003 12 21 | 704 | 0.5+ | 0.9+ | 2005 04 04 | 703 | 0.7+ | 0.4− |
| 2003 10 29 | 704 | 0.9+ | 1.4+ | 2003 12 21 | 704 | 0.3− | 0.0 | 2005 04 04 | 703 | 1.3+ | 0.9+ |
| 2003 10 29 | 704 | 0.9+ | 0.9+ | 2003 12 21 | 704 | 0.0 | 0.6+ | 2005 04 04 | 703 | 0.8+ | 1.2+ |
| 2003 10 29 | 704 | 0.6+ | 0.5+ | 2003 12 21 | 704 | 0.3+ | 0.8+ | 2005 05 13 | 691 | 0.3+ | 0.1− |
| 2003 10 29 | 704 | 1.9+ | 1.7+ | 2003 12 21 | 704 | 0.9+ | 0.3+ | 2005 05 13 | 691 | 0.2+ | 0.7+ |
| 2003 10 29 | 704 | 0.5+ | 0.4+ | 2003 12 23 | 699 | 0.0 | 0.2+ | 2005 05 13 | 691 | 0.1+ | 0.6+ |
| 2003 11 02 | 704 | 0.0 | 0.8+ | 2003 12 23 | 699 | 0.3+ | 0.3− | 2006 08 14 | E12 | 0.5− | 0.4+ |
| 2003 11 02 | 704 | 0.6+ | 0.9+ | 2003 12 23 | 699 | 0.8− | 1.0− | 2006 08 14 | E12 | 0.0 | 0.8+ |
| 2003 11 02 | 704 | 0.2+ | 0.4+ | 2003 12 23 | 699 | 0.0 | 0.1+ | 2006 08 14 | E12 | 0.7− | 0.9+ |
| 2003 11 02 | 704 | 0.9+ | 0.5+ | 2003 12 24 | 704 | 0.3− | 0.3+ | 2006 08 28 | E12 | 0.3+ | 0.8− |
| 2003 11 02 | 704 | 0.8− | 0.6+ | 2003 12 24 | 704 | 0.7− | 0.4− | 2006 08 28 | E12 | 0.6− | 1.0+ |
| 2003 11 24 | 699 | 0.4+ | 0.1− | 2003 12 24 | 704 | 1.1+ | 0.1+ | 2006 08 28 | E12 | 0.3− | 0.2+ |
| 2003 11 24 | 699 | 0.4− | 0.3− | 2003 12 27 | 691 | 0.3− | 0.2+ | 2006 09 09 | 644 | 0.4− | 0.9+ |
| 2003 11 24 | 699 | 0.9+ | 0.6− | 2003 12 27 | 691 | 0.1− | 0.0 | 2006 09 09 | 644 | 0.2− | 1.2+ |
| 2003 11 24 | 699 | 0.3+ | 0.1− | 2003 12 27 | 691 | 0.4− | 0.0 | 2006 09 09 | 644 | 0.1− | 0.3+ |

**(143748)∗ 2003 UA$_{262}$ = 2001 DY$_{37}$ = 2003 UQ$_{212}$**

Discovered 2003 Oct. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57193)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.11255 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28915703 | $\omega$ | 145.35065 | | +0.68932198 | −0.72113294 | |
| $a$ | 2.2648888 | $\Omega$ | 260.96333 | | +0.64779625 | +0.65638025 | |
| $e$ | 0.0839463 | $i$ | 4.02380 | | +0.32433812 | +0.22165794 | |
| $P$ | 3.41 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 704 | 0.5+ | 0.3− | 2003 12 17 | 644 | 0.2− | 1.0+ | 2005 05 06 | 703 | (1.9− | 0.4+) |
| 2001 02 02 | 704 | 0.3+ | 0.2+ | 2003 12 19 | 704 | 0.3+ | 0.3+ | 2005 05 06 | 703 | (2.3− | 1.0+) |
| 2001 02 02 | 704 | 0.6− | 0.3+ | 2003 12 19 | 704 | 1.2+ | 0.6+ | 2005 05 06 | 703 | (1.7− | 1.2−) |
| 2001 02 02 | 704 | 0.0 | 0.1− | 2003 12 19 | 704 | 0.4− | 0.8+ | 2006 08 15 | 644 | 0.2− | 0.1+ |
| 2001 02 02 | 704 | 0.3+ | 0.3+ | 2003 12 20 | 699 | 1.1+ | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2001 02 19 | 704 | 0.4+ | 0.5− | 2003 12 20 | 699 | 0.0 | 0.5− | 2006 08 15 | 644 | 0.2− | 0.4+ |
| 2001 02 19 | 704 | 0.9− | 0.8+ | 2003 12 20 | 699 | 0.3+ | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2001 02 19 | 704 | 0.0 | 0.5+ | 2003 12 20 | 699 | 0.5− | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 2001 02 19 | 704 | 0.6− | 0.0 | 2003 12 21 | 691 | 0.1− | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.2+ |
| 2001 02 19 | 704 | 0.6+ | 0.6+ | 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 08 19 | 644 | 0.2− | 0.3+ |
| 2001 02 20 | 704 | 0.4+ | 0.0 | 2003 12 21 | 691 | 0.1− | 0.3+ | 2006 08 19 | 644 | 0.0 | 0.3+ |
| 2001 02 20 | 704 | 0.2+ | 0.2− | 2003 12 22 | 704 | 0.6− | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.2+ |
| 2001 02 20 | 704 | 0.8+ | 0.2− | 2003 12 22 | 704 | 0.1+ | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 2001 02 20 | 704 | 0.8− | 0.2− | 2003 12 22 | 704 | 0.8− | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.2+ |
| 2003 10 23 | 691 | 0.3+ | 0.2− | 2003 12 22 | 704 | 0.8− | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2003 10 23 | 691 | 0.1+ | 0.1− | 2003 12 22 | 704 | 1.0− | 0.0 | 2006 08 24 | 704 | 0.2− | 0.3− |
| 2003 10 23 | 691 | 0.2+ | 0.2− | 2003 12 23 | 699 | 0.9− | 0.6− | 2006 08 24 | 704 | 0.3+ | 0.5+ |
| 2003 10 24 | 704 | 0.2+ | 0.1− | 2003 12 23 | 699 | 1.2− | 1.4+ | 2006 08 24 | 704 | 0.3+ | 0.3+ |
| 2003 10 24 | 704 | 0.2− | 0.1+ | 2003 12 23 | 699 | 0.4− | 0.5+ | 2006 08 24 | 704 | 0.2− | 0.2+ |
| 2003 10 24 | 704 | 0.6+ | 0.0 | 2003 12 23 | 699 | 1.1− | 0.3− | 2006 08 24 | 704 | 0.7+ | 0.2+ |
| 2003 10 24 | 704 | 0.4+ | 0.2+ | 2003 12 23 | 704 | 0.6− | 0.6− | 2006 08 27 | 699 | 0.7− | 1.4+ |
| 2003 10 24 | 704 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.2− | 0.3+ | 2006 08 27 | 699 | 0.0 | 0.2− |
| 2003 10 26 | 691 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.3+ | 0.9+ | 2006 08 27 | 699 | 0.1− | 1.1+ |
| 2003 10 26 | 691 | 0.3+ | 0.1+ | 2003 12 23 | 704 | 0.3− | 0.3− | 2006 08 27 | 699 | 0.3− | 0.7+ |
| 2003 10 26 | 691 | 0.3+ | 0.1− | 2003 12 23 | 704 | 0.3− | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.5− |
| 2003 10 29 | 704 | 0.5+ | 0.1− | 2003 12 23 | 704 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.1− | 0.3+ |
| 2003 10 29 | 704 | 0.4+ | 0.2+ | 2003 12 23 | 704 | 1.1+ | 0.2− | 2006 08 29 | 703 | 0.5− | 0.4+ |
| 2003 10 29 | 704 | 0.2+ | 0.1− | 2003 12 23 | 704 | 0.1+ | 0.2− | 2006 08 29 | 703 | 0.2− | 0.6+ |
| 2003 10 29 | 704 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.2− | 0.8+ | 2006 09 01 | 704 | 0.2+ | 1.2+ |
| 2003 10 29 | 704 | 0.1+ | 0.2− | 2003 12 23 | 704 | 0.0 | 0.2− | 2006 09 01 | 704 | 0.2− | 0.5+ |
| 2003 11 14 | 644 | 0.1− | 0.0 | 2003 12 23 | 704 | 1.1− | 1.0+ | 2006 09 01 | 704 | 0.0 | 0.2+ |
| 2003 11 14 | 644 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.3+ | 0.4+ | 2006 09 01 | 704 | 0.0 | 0.2+ |
| 2003 11 14 | 644 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 1.3− | 0.2− | 2006 09 11 | 703 | 0.7− | 0.4+ |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 0.7− | 0.6− | 2006 09 11 | 703 | 0.2− | 0.0 |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2003 12 23 | 704 | 0.2+ | 0.2− | 2006 09 11 | 703 | 0.5− | 0.6− |
| 2003 11 18 | 691 | 0.1+ | 0.0 | 2003 12 25 | 608 | (0.4− | 2.5+) | 2006 09 11 | 703 | 0.5− | 0.4+ |
| 2003 11 19 | 699 | 0.5− | 0.0 | 2003 12 25 | 608 | (0.3− | 1.9+) | 2006 09 11 | 703 | 0.3+ | 0.3+ |
| 2003 11 19 | 699 | 0.1− | 0.4+ | 2003 12 25 | 608 | (0.2− | 1.6+) | 2006 09 11 | 703 | 0.2+ | 0.9− |
| 2003 11 19 | 699 | 0.2− | 0.7− | 2003 12 27 | 704 | 0.2− | 1.2+ | 2006 09 11 | 703 | 1.1− | 0.5− |
| 2003 11 19 | 699 | 0.1− | 0.3− | 2003 12 27 | 704 | 0.3− | 1.0+ | 2006 09 11 | 703 | 0.7− | 1.0+ |
| 2003 11 24 | 704 | 0.1+ | 0.0 | 2003 12 27 | 704 | 0.4+ | 0.0 | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 2003 11 24 | 704 | 0.3− | 0.3− | 2003 12 27 | 704 | 0.2− | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2003 11 24 | 704 | 0.6− | 0.1+ | 2003 12 27 | 704 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.3− | 0.2+ |
| 2003 11 24 | 704 | 0.3− | 0.3+ | 2004 01 12 | 644 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.4+ | 1.0+ |
| 2003 11 24 | 704 | 0.9− | 0.3+ | 2004 01 12 | 644 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.9+ |
| 2003 11 26 | 704 | (1.6+ | 1.2+) | 2004 01 12 | 644 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.7+ | 0.6+ |
| 2003 11 26 | 704 | (1.6+ | 0.9+) | 2004 01 12 | 644 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.7+ |
| 2003 11 26 | 704 | 1.3+ | 0.6+ | 2004 01 12 | 644 | 0.4− | 0.5+ | 2006 09 18 | 704 | 0.0 | 0.3− |
| 2003 11 30 | 691 | 0.0 | 0.0 | 2004 01 12 | 644 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.9− |
| 2003 11 30 | 691 | 0.0 | 0.1− | 2004 01 21 | 704 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.5+ | 0.4+ |
| 2003 11 30 | 691 | 0.1+ | 0.0 | 2004 01 21 | 704 | 0.6− | 0.6+ | 2006 09 18 | 704 | 0.3+ | 0.3+ |
| 2003 12 01 | 704 | (1.1+ | 2.2−) | 2004 01 21 | 704 | 1.0− | 0.1+ | 2006 09 18 | 704 | 0.4+ | 0.7− |
| 2003 12 01 | 704 | 0.2+ | 1.4− | 2005 04 12 | 691 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.0 |
| 2003 12 01 | 704 | 0.3+ | 0.3+ | 2005 04 12 | 691 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.5+ | 1.1− |
| 2003 12 01 | 704 | 0.2+ | 0.3+ | 2005 04 12 | 691 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 0.0 | 0.2+ |
| 2003 12 01 | 704 | 0.1+ | 0.3+ | 2005 04 16 | 691 | 0.3+ | 0.8+ | 2006 09 25 | 704 | 1.4− | 0.5− |
| 2003 12 04 | 703 | 0.7− | 0.5− | 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 0.2− | 0.3+ |
| 2003 12 04 | 703 | 0.2+ | 0.9− | 2005 04 16 | 691 | 0.2+ | 0.7+ | 2006 09 30 | 699 | 0.8− | 0.1+ |
| 2003 12 04 | 703 | 0.5+ | 0.8− | 2005 05 01 | 644 | 0.2− | 0.6+ | 2006 09 30 | 699 | 0.7− | 0.1− |
| 2003 12 04 | 703 | 1.4− | 1.1− | 2005 05 01 | 644 | 0.1− | 0.2+ | 2006 09 30 | 699 | 0.4+ | 0.5− |
| 2003 12 17 | 644 | 0.0 | 0.1− | 2005 05 01 | 644 | 0.4+ | 0.3+ | 2006 09 30 | 699 | 0.9− | 0.5+ |
| 2003 12 17 | 644 | 0.2− | 0.5+ | 2005 05 01 | 644 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.9+ |
| 2003 12 17 | 644 | 0.3+ | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2003 12 17 | 644 | 0.2− | 0.4+ | 2005 05 01 | 644 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2003 12 17 | 644 | 0.1− | 0.1+ | 2005 05 06 | 703 | (2.1− | 0.7+) | | | | |

**(143749)∗ 2003 UR$_{266}$**

Discovered 2003 Oct. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.56088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31081271 | $\omega$ | 192.26168 | | +0.99891645 | +0.04594262 | |
| $a$ | 2.1584245 | $\Omega$ | 165.09905 | | −0.03988548 | +0.92737827 | |
| $e$ | 0.2045162 | $i$ | 1.65573 | | −0.02398079 | +0.37129344 | |
| $P$ | 3.17 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 691 | 0.7− | 0.9+ | 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 09 16 | 699 | 0.4+ | 0.3− |
| 2002 03 13 | 691 | 0.2+ | 0.5+ | 2005 04 05 | G96 | 0.2+ | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 691 | 0.4− | 0.9+ | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.2+ |
| 2002 04 13 | 691 | 0.4+ | 0.5− | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.3− |
| 2002 04 13 | 691 | 0.4+ | 0.2− | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.6+ | 0.3− |
| 2002 04 13 | 691 | 0.1+ | 0.1+ | 2006 08 15 | 644 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.3− | 0.6+ |
| 2003 10 16 | 608 | 0.7− | 0.3− | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.4− |
| 2003 10 16 | 608 | 0.3− | 0.7+ | 2006 08 15 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.3− |
| 2003 10 16 | 608 | 0.2− | 0.4+ | 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.3+ |
| 2003 10 22 | 608 | 0.4+ | 1.3+ | 2006 08 21 | 704 | (0.1− | 1.7+) | 2006 09 19 | 703 | 0.5− | 0.6− |
| 2003 10 22 | 608 | 0.8+ | 0.8+ | 2006 08 21 | 704 | 0.9+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2003 10 22 | 608 | 0.5+ | 1.3+ | 2006 08 21 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.1− |
| 2003 10 28 | 704 | 0.0 | 0.1− | 2006 08 21 | 704 | (1.5− | 0.8+) | 2006 09 19 | 699 | 0.4− | 0.1+ |
| 2003 10 28 | 704 | 0.7− | 0.2+ | 2006 08 23 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.8− | 1.1+ |
| 2003 10 28 | 704 | 0.5− | 0.2+ | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.9+ |
| 2003 10 28 | 704 | 0.2− | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.4− | 0.4+ |
| 2003 10 29 | 703 | 1.2− | 0.3− | 2006 08 25 | 704 | 0.7+ | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.6+ |
| 2003 10 29 | 703 | 0.0 | 0.1− | 2006 08 25 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.4− |
| 2003 10 29 | 703 | 0.8− | 0.0 | 2006 08 25 | 704 | 0.4+ | 0.8− | 2006 09 20 | 704 | 0.1− | 0.0 |
| 2003 10 29 | 703 | 0.2+ | 0.0 | 2006 08 25 | 704 | 0.9+ | 0.8− | 2006 09 25 | 699 | 0.6+ | 0.1+ |
| 2003 11 21 | 704 | 0.4+ | 0.3+ | 2006 08 27 | 699 | 0.8+ | 0.8+ | 2006 09 25 | 699 | 0.3− | 0.2− |
| 2003 11 21 | 704 | 0.4+ | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.9+ | 2006 09 25 | 699 | 0.9+ | 0.9+ |
| 2003 11 21 | 704 | 0.4+ | 0.2− | 2006 08 27 | 699 | 0.9+ | 0.3+ | 2006 09 25 | 699 | 0.9− | 0.4+ |
| 2003 11 21 | 704 | 0.5+ | 0.4+ | 2006 08 27 | 699 | 1.4− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2003 11 21 | 704 | 0.5+ | 0.8+ | 2006 08 28 | 703 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2003 12 01 | 704 | 0.3− | 0.6− | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2003 12 01 | 704 | 0.0 | 0.7− | 2006 08 28 | 703 | 1.3− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2003 12 01 | 704 | 0.5− | 1.5+ | 2006 08 28 | 703 | 0.5− | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.2+ |
| 2003 12 01 | 704 | (1.0+ | 1.8−) | 2006 09 01 | 704 | 0.4− | 0.6+ | 2006 09 30 | 704 | 0.5+ | 0.3+ |
| 2005 03 12 | 691 | 0.0 | 0.4+ | 2006 09 01 | 704 | 0.6− | 0.8+ | 2006 09 30 | 704 | 0.5− | 0.5+ |
| 2005 03 12 | 691 | 0.7+ | 0.1+ | 2006 09 01 | 704 | 0.4+ | 0.6+ | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2005 03 12 | 691 | 0.4+ | 0.2+ | 2006 09 01 | 704 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.0 | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2005 04 02 | G96 | 0.5− | 0.2+ | 2006 09 12 | 703 | (1.5− | 0.5+) | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2005 04 02 | G96 | 0.4− | 0.5+ | 2006 09 12 | 703 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 1.2− | 0.8− |
| 2005 04 04 | G96 | 0.3− | 0.3+ | 2006 09 12 | 703 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2005 04 04 | G96 | 0.4− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 11 18 | 703 | 0.4− | 1.8− |
| 2005 04 04 | G96 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 11 18 | 703 | 0.4− | 0.3− |
| 2005 04 04 | G96 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 11 18 | 703 | 0.9− | 0.7− |
| 2005 04 05 | G96 | 0.1+ | 0.5+ | 2006 09 16 | 699 | 0.3− | 0.4+ | 2006 11 18 | 703 | 0.2+ | 1.2− |

**(143750)∗ 2003 UJ$_{288}$ = 2000 ET$_{190}$**

Discovered 2003 Oct. 23 by M. W. Buie at Kitt Peak.

Id. A. Doppler (*MPO* 69579)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.74749 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18252410 | $\omega$ | 238.73934 | | −0.45208014 | −0.89157431 | |
| $a$ | 3.0779100 | $\Omega$ | 238.16112 | | +0.82872965 | −0.40871804 | |
| $e$ | 0.0818658 | $i$ | 1.80849 | | +0.32989501 | −0.19505078 | |
| $P$ | 5.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.4− | 0.6+ | 2003 09 28 | 691 | 0.0 | 0.5+ | 2005 02 02 | 704 | 0.0 | 0.4+ |
| 2000 03 03 | 704 | 1.1+ | 0.8+ | 2003 09 28 | 691 | 0.1− | 0.5+ | 2005 02 02 | 704 | 1.2− | 0.6− |
| 2000 03 03 | 704 | 0.0 | 1.1+ | 2003 10 23 | 695 | 0.2− | 0.3+ | 2005 02 02 | 704 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.4+ | 0.9+ | 2003 10 23 | 695 | 0.3− | 0.3+ | 2005 02 02 | 704 | 0.9− | 0.5− |
| 2000 03 03 | 704 | 1.0+ | 1.5+ | 2003 10 24 | 704 | 1.0− | 0.2− | 2006 03 26 | 691 | 0.3+ | 0.3+ |
| 2000 03 11 | 704 | 0.6− | 0.4+ | 2003 10 24 | 704 | 0.2+ | 0.0 | 2006 03 26 | 691 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2003 10 24 | 704 | 0.9− | 0.8+ | 2006 03 26 | 691 | 0.0 | 0.3+ |
| 2000 03 11 | 704 | 0.0 | 0.7+ | 2003 11 28 | 691 | 0.2+ | 0.2+ | 2006 05 03 | G96 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 1.1+ | 1.2+ | 2003 11 28 | 691 | 0.4− | 0.2+ | 2006 05 03 | G96 | 0.3+ | 0.0 |
| 2000 03 11 | 704 | 0.2− | 0.3− | 2003 11 28 | 691 | 0.1− | 0.4+ | 2006 05 03 | G96 | 0.2− | 0.2− |
| 2000 03 11 | 699 | 0.1+ | 0.8+ | 2005 01 06 | 704 | 0.3− | 0.1+ | 2006 05 03 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 699 | 1.2+ | 0.9+ | 2005 01 06 | 704 | 0.0 | 0.7+ | 2006 05 26 | G96 | 0.0 | 0.3+ |
| 2000 03 11 | 699 | 0.6+ | 0.8+ | 2005 01 06 | 704 | 1.0− | 1.0+ | 2006 05 26 | G96 | 0.5− | 0.1+ |
| 2000 03 11 | 699 | 1.2− | 0.4− | 2005 01 16 | 691 | 1.4+ | 1.9− | 2006 05 26 | G96 | 0.1+ | 0.2+ |
| 2001 05 22 | 807 | 0.3+ | 0.1+ | 2005 01 16 | 691 | 0.3− | 0.0 | 2006 05 26 | G96 | 0.3− | 0.4+ |
| 2001 05 22 | 807 | 0.2+ | 0.1+ | 2005 01 16 | 691 | 0.5− | 0.1+ | | | | |
| 2003 09 28 | 691 | 0.2+ | 0.5+ | 2005 02 02 | 704 | 0.4− | 0.4− | | | | |

**(143751)∗ 2003 US$_{292}$**

Discovered 2003 Oct. 24 by M. W. Buie at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.33624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00362060 | $\omega$ | 346.74759 | | +0.96056277 | −0.27034620 | |
| $a$ | 42.0032217 | $\Omega$ | 29.18990 | | +0.26573409 | +0.82360263 | |
| $e$ | 0.2498011 | $i$ | 7.66547 | | +0.08188137 | +0.49858964 | |
| $P$ | 272 | $H$ | 8.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 695 | 0.3− | 0.0 | 2004 10 17 | 304 | 0.4+ | 0.0 | 2005 08 10 | 807 | 0.1+ | 0.1− |
| 2003 10 24 | 695 | 0.1− | 0.1+ | 2004 12 12 | 568 | 0.1− | 0.1− | 2006 10 19 | 695 | 0.2− | 0.1+ |
| 2003 11 20 | 695 | 0.0 | 0.1+ | 2004 12 13 | 568 | 0.0 | 0.3− | 2006 10 20 | 695 | 0.2+ | 0.1+ |
| 2003 11 20 | 695 | 0.0 | 0.0 | 2004 12 14 | 568 | 0.2− | 0.2− | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2004 10 17 | 304 | 0.1+ | 0.1+ | 2005 08 08 | 807 | 0.1− | 0.0 | | | | |
| 2004 10 17 | 304 | 0.3+ | 0.2+ | 2005 08 09 | 807 | 0.2− | 0.3− | | | | |

**(143752)∗ 2003 VJ$_1$ = 1998 HY$_{49}$**

Discovered 2003 Nov. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69581)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.38099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28210372 | $\omega$ | 347.75037 | | +0.96205476 | −0.18486143 | |
| $a$ | 2.3024851 | $\Omega$ | 25.71957 | | +0.27262435 | +0.62091039 | |
| $e$ | 0.2392181 | $i$ | 27.54578 | | +0.01125209 | +0.76177198 | |
| $P$ | 3.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | 0.4− | 0.3− | 2003 11 07 | 649 | 0.3+ | 0.2+ | 2005 05 11 | G96 | 0.1− | 0.3+ |
| 1998 04 27 | 691 | 0.1− | 0.0 | 2003 11 07 | 649 | 0.5+ | 0.1− | 2005 05 15 | 644 | 0.4+ | 0.3+ |
| 1998 04 27 | 691 | 0.6− | 0.2− | 2003 11 07 | 649 | 0.5+ | 0.4− | 2005 05 15 | 644 | 0.7+ | 0.3+ |
| 1998 05 03 | 691 | 0.1+ | 0.2− | 2003 11 07 | 290 | 0.2− | 0.3+ | 2005 05 15 | 644 | 0.9+ | 0.4+ |
| 1998 05 03 | 691 | 0.1− | 0.1− | 2003 11 07 | 290 | 0.1− | 0.2+ | 2006 05 31 | E12 | 0.4− | 1.2+ |
| 1998 05 03 | 691 | 0.6+ | 0.1+ | 2003 11 07 | 290 | 0.2− | 0.2+ | 2006 05 31 | E12 | 0.4+ | 0.8− |
| 2001 03 26 | 699 | 1.0+ | 0.2− | 2003 11 07 | 290 | 0.1− | 0.1+ | 2006 05 31 | E12 | 0.2+ | 0.6+ |
| 2001 03 26 | 699 | 1.4− | 0.1− | 2003 11 07 | 290 | 0.2− | 0.1+ | 2006 05 31 | E12 | 0.0 | 0.3− |
| 2001 03 26 | 699 | 0.3− | 0.1+ | 2003 11 07 | 290 | 0.1− | 0.1+ | 2006 06 03 | E12 | 0.4− | 0.1− |
| 2001 03 26 | 699 | 0.5+ | 1.0+ | 2003 11 07 | 290 | 0.3− | 0.1+ | 2006 06 03 | E12 | 0.3+ | 0.0 |
| 2003 08 29 | 704 | 0.5+ | 0.3− | 2003 11 07 | 290 | 0.2− | 0.2+ | 2006 06 03 | E12 | 0.5+ | 0.2+ |
| 2003 08 29 | 704 | 0.5+ | 0.1+ | 2003 11 07 | 290 | 0.2− | 0.2+ | 2006 06 03 | E12 | 0.0 | 0.5+ |
| 2003 08 29 | 704 | 0.5− | 0.9− | 2003 11 07 | 926 | 0.2+ | 0.4− | 2006 06 04 | E12 | 0.4+ | 0.1− |
| 2003 08 29 | 704 | 0.1+ | 0.2+ | 2003 11 07 | 926 | 0.1+ | 0.0 | 2006 06 04 | E12 | 0.3+ | 0.1+ |
| 2003 11 05 | 704 | (1.8+ | 4.5−) | 2003 11 07 | 926 | 0.1+ | 0.2+ | 2006 06 04 | E12 | 0.1− | 0.0 |
| 2003 11 05 | 704 | (2.0+ | 3.4−) | 2003 11 08 | 290 | 0.2− | 0.3+ | 2006 06 04 | E12 | 0.1− | 0.2− |
| 2003 11 05 | 704 | 0.5− | 0.4+ | 2003 11 08 | 290 | 0.2− | 0.2+ | 2006 06 28 | E12 | 0.2− | 0.1− |
| 2003 11 06 | 461 | 0.1− | 0.2+ | 2003 11 08 | 290 | 0.2− | 0.2+ | 2006 06 28 | E12 | 0.1− | 0.4− |
| 2003 11 06 | 461 | 0.3− | 0.2+ | 2003 11 08 | 290 | 0.2− | 0.2+ | 2006 06 28 | E12 | 0.3− | 0.0 |
| 2003 11 06 | 461 | 0.2− | 0.1+ | 2003 11 08 | 290 | 0.2− | 0.3+ | 2006 06 28 | E12 | 0.3− | 0.1− |
| 2003 11 06 | 461 | 0.0 | 0.0 | 2003 11 08 | 290 | 0.2− | 0.2+ | 2006 08 15 | E12 | 0.4− | 0.7− |
| 2003 11 06 | 557 | 0.1+ | 0.0 | 2003 11 09 | 290 | 0.2− | 0.1+ | 2006 08 15 | E12 | 0.3− | 0.4+ |
| 2003 11 06 | 557 | 0.2+ | 0.2+ | 2003 11 09 | 290 | 0.2− | 0.2+ | 2006 08 15 | E12 | 0.4− | 0.1+ |
| 2003 11 06 | 557 | 0.0 | 0.0 | 2003 11 09 | 290 | 0.2− | 0.1+ | 2006 08 15 | E12 | 0.7+ | 0.6+ |
| 2003 11 06 | 854 | 0.9+ | 0.6− | 2003 11 09 | 290 | 0.2− | 0.2+ | 2006 08 20 | E12 | 0.4+ | 0.4− |
| 2003 11 06 | 854 | 0.7+ | 0.3− | 2003 11 09 | 290 | 0.2− | 0.3+ | 2006 08 20 | E12 | 0.3− | 0.1+ |
| 2003 11 06 | 854 | 0.1+ | 0.4− | 2003 11 09 | 290 | 0.2− | 0.3+ | 2006 08 20 | E12 | 0.1+ | 0.2− |
| 2003 11 06 | 926 | 0.3+ | 0.6− | 2004 01 13 | 704 | 0.7− | 0.1− | 2006 08 20 | E12 | 0.3− | 0.5− |
| 2003 11 06 | 926 | 0.2− | 0.0 | 2004 01 13 | 704 | (0.6+ | 2.8+) | 2006 09 15 | E12 | 0.0 | 0.1+ |
| 2003 11 06 | 926 | 0.2+ | 0.4+ | 2004 01 13 | 704 | (1.3+ | 2.5+) | 2006 09 15 | E12 | 0.3− | 0.0 |
| 2003 11 07 | 132 | 0.9− | 1.3− | 2004 01 13 | 704 | (0.0 | 2.2+) | 2006 09 15 | E12 | 0.3+ | 0.2− |
| 2003 11 07 | 132 | 1.3+ | 0.7− | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 09 30 | E12 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 07 | 132 | 1.0+ | 1.1− | 2005 05 11 | G96 | 0.1+ | 0.1+ | 2006 09 30 | E12 | 0.3+ | 0.3+ | | |
| 2003 11 07 | 649 | 0.4+ | 0.1+ | 2005 05 11 | G96 | 0.2+ | 0.1+ | 2006 09 30 | E12 | 0.1− | 0.0 | | |

**(143753)∗ 2003 VN$_8$ = 1992 BO$_5$**

Discovered 2003 Nov. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57234)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 207.72700 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.31987088 | ω | 348.02590 | | −0.97337853 | +0.22787125 | |
| *a* | 2.1174813 | Ω | 205.18710 | | −0.20521502 | −0.91438995 | |
| *e* | 0.0642785 | *i* | 3.32409 | | −0.10208345 | −0.33461278 | |
| *P* | 3.08 | *H* | 15.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 30 | 809 | (0.7+ | 3.0−) | 2003 12 17 | 699 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 1992 01 30 | 809 | (0.0 | 2.4−) | 2003 12 17 | 699 | 0.3− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.3− | | |
| 1992 01 30 | 809 | 0.9− | 1.1− | 2003 12 17 | 699 | (0.0 | 1.6−) | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 1999 06 15 | 704 | 0.6+ | 0.1− | 2003 12 17 | 699 | (1.6− | 0.1−) | 2006 10 28 | G96 | 0.0 | 0.3− | | |
| 1999 06 15 | 704 | 0.3− | 1.0+ | 2003 12 19 | 704 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 1999 06 15 | 704 | 0.2− | 0.0 | 2003 12 19 | 704 | 0.0 | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.3− | | |
| 1999 06 15 | 704 | 0.4− | 0.8+ | 2003 12 19 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.2− | | |
| 2000 12 30 | 704 | 0.4− | 0.2+ | 2003 12 19 | 704 | 0.3+ | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.0 | | |
| 2000 12 30 | 704 | 0.0 | 0.1− | 2003 12 21 | 704 | 0.6+ | 0.8+ | 2006 11 11 | 703 | 0.9− | 0.7− | | |
| 2000 12 30 | 704 | 0.5− | 0.2− | 2003 12 21 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 2000 12 30 | 704 | 0.3+ | 0.1+ | 2003 12 21 | 704 | 0.9+ | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.1− | | |
| 2000 12 30 | 704 | 0.7+ | 0.0 | 2003 12 21 | 704 | 1.3+ | 0.9+ | 2006 11 11 | 703 | 0.3+ | 0.4− | | |
| 2003 09 26 | 333 | 0.1+ | 0.7− | 2003 12 21 | 704 | 0.7+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.1− | | |
| 2003 09 26 | 333 | 0.1− | 0.1− | 2003 12 23 | 704 | 0.6− | 1.2+ | 2006 11 13 | G96 | 0.5− | 0.2− | | |
| 2003 09 26 | 333 | 0.0 | 0.7− | 2003 12 23 | 704 | 0.3+ | 1.2+ | 2006 11 13 | G96 | 0.2− | 0.2− | | |
| 2003 10 24 | 704 | 0.3− | 0.5+ | 2003 12 23 | 704 | 0.0 | 0.6+ | 2006 11 13 | G96 | 0.8− | 0.2− | | |
| 2003 10 24 | 704 | 0.2+ | 0.1+ | 2003 12 23 | 704 | 0.2− | 1.0+ | 2006 11 17 | 704 | 0.8+ | 0.3+ | | |
| 2003 10 24 | 704 | 0.2+ | 0.1− | 2003 12 23 | 704 | 0.8− | 1.0+ | 2006 11 17 | 704 | 0.3+ | 0.2+ | | |
| 2003 10 24 | 704 | 0.5− | 0.6+ | 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.5+ | | |
| 2003 10 24 | 704 | 0.1− | 0.1− | 2004 01 17 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.5+ | | |
| 2003 11 02 | 704 | 0.4− | 0.3− | 2004 01 17 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.8+ | | |
| 2003 11 02 | 704 | 0.3+ | 0.0 | 2004 01 26 | 699 | 1.3− | 1.4+ | 2006 11 17 | 703 | 0.0 | 0.2− | | |
| 2003 11 02 | 704 | 0.8− | 0.2− | 2004 01 26 | 699 | 0.6− | 0.9− | 2006 11 17 | 703 | 0.3− | 0.8− | | |
| 2003 11 02 | 704 | 0.2− | 0.2− | 2004 01 26 | 699 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4− | 0.2− | | |
| 2003 11 15 | 644 | 0.0 | 0.1− | 2004 01 26 | 699 | 0.5− | 1.1− | 2006 11 17 | 703 | 0.1− | 0.0 | | |
| 2003 11 15 | 644 | 0.0 | 0.2− | 2005 02 16 | 809 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.6− | | |
| 2003 11 15 | 644 | 0.1+ | 0.1+ | 2005 02 16 | 809 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.7− | 0.9− | | |
| 2003 11 18 | 644 | 0.3+ | 0.2− | 2005 02 16 | 809 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 1.0− | | |
| 2003 11 18 | 644 | 0.4+ | 0.2− | 2005 06 17 | G96 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.6+ | 0.0 | | |
| 2003 11 18 | 644 | 0.5+ | 0.1− | 2005 06 17 | G96 | 0.4+ | 0.7+ | 2006 11 18 | 704 | (0.6− | 2.7−) | | |
| 2003 11 24 | 699 | 0.1− | 0.2− | 2005 06 17 | G96 | 0.4+ | 0.7+ | 2006 11 21 | 704 | 0.3+ | 0.7+ | | |
| 2003 11 24 | 699 | 0.1− | 0.4− | 2005 06 17 | G96 | 0.6+ | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.4+ | | |
| 2003 11 24 | 699 | 0.2+ | 0.6− | 2005 07 04 | 703 | 0.6− | 0.5+ | 2006 11 21 | 704 | 0.2− | 0.3+ | | |
| 2003 11 24 | 699 | 0.6+ | 0.4− | 2005 07 04 | 703 | 0.6+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.0 | | |
| 2003 12 01 | 691 | 0.0 | 0.2− | 2005 07 04 | 703 | 0.8− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.3+ | | |
| 2003 12 01 | 691 | 0.0 | 0.1− | 2005 07 04 | 703 | 0.7− | 0.8− | 2006 11 26 | 704 | 1.2+ | 0.3+ | | |
| 2003 12 01 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 26 | 704 | 0.1− | 1.4+ | | |
| 2003 12 04 | 703 | 0.3+ | 0.7− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 26 | 704 | 0.9− | 1.0+ | | |
| 2003 12 04 | 703 | 0.3+ | 0.3− | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.1− | | |
| 2003 12 04 | 703 | (0.2+ | 1.6−) | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.9+ | | |
| 2003 12 04 | 703 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.1− | 1.0+ | | |
| 2003 12 16 | 703 | 0.6− | 0.5+ | 2006 10 12 | 691 | 0.1− | 1.2− | 2006 11 29 | 704 | 1.1+ | 1.1+ | | |
| 2003 12 16 | 703 | 0.3+ | 0.7+ | 2006 10 12 | 691 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.9+ | 1.9+ | | |
| 2003 12 16 | 703 | 1.1+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.6+ | | | | | | |
| 2003 12 16 | 703 | 0.1+ | 0.6− | 2006 10 20 | 691 | 0.3− | 0.0 | | | | | | |

**(143754)∗ 2003 VB$_{11}$**

Discovered 2003 Nov. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 26.04783 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.29247818 | ω | 256.58501 | | +0.73510815 | +0.67041434 | |
| *a* | 2.2477107 | Ω | 61.21166 | | −0.56897685 | +0.69093355 | |
| *e* | 0.1340265 | *i* | 6.60450 | | −0.36862087 | +0.27047262 | |
| *P* | 3.37 | *H* | 16.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 0.3− | 1.4+ | 2003 11 19 | 699 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.3+ | 0.2+ | | |
| 1999 06 15 | 704 | 0.1+ | 2.0+ | 2003 11 21 | 704 | 1.1− | 0.2− | 2006 08 16 | 644 | 0.5+ | 0.0 | | |
| 1999 06 15 | 704 | 0.1+ | 1.0+ | 2003 11 21 | 704 | 0.8− | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | | |
| 1999 06 15 | 704 | 0.4− | 0.2− | 2003 11 21 | 704 | 0.7− | 0.3+ | 2006 08 17 | 704 | 0.1− | 0.7− | | |
| 2001 01 15 | 012 | (3.8+ | 0.3−) | 2003 11 21 | 704 | 0.6− | 0.5+ | 2006 08 17 | 704 | 0.2− | 0.1− | | |
| 2001 01 15 | 012 | 0.1+ | 1.5− | 2003 11 21 | 704 | 0.6− | 0.7+ | 2006 08 17 | 704 | 0.2− | 0.0 | | |
| 2001 01 15 | 012 | 0.6− | 0.2+ | 2003 11 24 | 699 | 0.4+ | 1.2− | 2006 08 19 | 644 | 0.1+ | 0.0 | | |
| 2001 01 16 | 012 | 0.0 | 0.7+ | 2003 11 24 | 699 | 0.1+ | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.2− | | |
| 2001 01 16 | 012 | (1.7+ | 0.5+) | 2003 11 24 | 699 | 0.4+ | 0.1+ | 2006 08 19 | 644 | 0.2+ | 0.1− | | |
| 2002 04 14 | 644 | 1.0+ | 1.6+ | 2003 11 24 | 699 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.1+ | 0.0 | | |
| 2002 04 14 | 644 | (0.7+ | 2.1+) | 2003 11 28 | 691 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.1+ | | |
| 2002 04 14 | 644 | (1.0+ | 1.8+) | 2003 11 28 | 691 | 0.2+ | 0.1− | 2006 08 23 | 644 | 0.0 | 0.0 | | |
| 2002 05 08 | 704 | (0.5− | 1.9+) | 2003 11 28 | 691 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.4− | 0.2− | | |
| 2002 05 08 | 704 | 0.3− | 1.3+ | 2003 12 01 | 704 | 0.5+ | 0.1− | 2006 08 30 | 699 | 0.8+ | 1.1+ | | |
| 2002 05 08 | 704 | (0.6− | 2.0+) | 2003 12 01 | 704 | 0.5+ | 0.3+ | 2006 08 30 | 699 | 0.0 | 0.2+ | | |
| 2002 05 08 | 704 | 0.4+ | 1.1+ | 2003 12 01 | 291 | 0.5− | 0.2+ | 2006 09 20 | 703 | 0.7− | 0.4+ | | |
| 2002 05 08 | 704 | (0.1− | 1.7+) | 2003 12 01 | 704 | 0.4− | 0.6+ | 2006 09 20 | 703 | 0.6− | 0.4+ | | |
| 2002 05 19 | 644 | 0.5+ | 0.7+ | 2003 12 01 | 704 | 0.3+ | 0.0 | 2006 09 20 | 703 | (4.8− | 1.0+) | | |
| 2002 05 19 | 644 | 0.5+ | 0.9+ | 2003 12 01 | 291 | 0.5− | 0.2+ | 2006 09 21 | 699 | (1.5− | 0.9+) | | |
| 2002 05 19 | 644 | 0.6+ | 0.8+ | 2003 12 01 | 291 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.6− | 0.3− | | |
| 2003 10 24 | 704 | (0.5+ | 2.2+) | 2003 12 21 | 704 | 0.6+ | 0.7+ | 2006 09 21 | 699 | (1.2+ | 1.9−) | | |
| 2003 10 24 | 704 | 0.6+ | 0.1+ | 2003 12 21 | 704 | 0.6+ | 0.3+ | 2006 09 21 | 699 | 0.8− | 0.7+ | | |
| 2003 10 24 | 704 | (1.8+ | 1.5+) | 2003 12 21 | 704 | 0.9+ | 1.0+ | 2006 09 26 | 703 | 0.6− | 0.7+ | | |
| 2003 10 24 | 704 | 0.8+ | 1.2+ | 2003 12 21 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.2+ | | |
| 2003 10 24 | 704 | 0.2+ | 0.5+ | 2005 03 10 | 699 | 0.9+ | 1.6+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | | |
| 2003 11 15 | 644 | 0.4− | 0.4+ | 2005 03 10 | 699 | 0.9+ | 0.8+ | 2006 09 26 | 703 | 0.4+ | 0.3+ | | |
| 2003 11 15 | 644 | 0.1+ | 0.1− | 2005 03 10 | 699 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2− | | |
| 2003 11 15 | 644 | 0.2+ | 0.1− | 2005 03 10 | 699 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.3− | | |
| 2003 11 19 | 699 | 0.9− | 0.4+ | 2005 03 13 | 152 | 0.7− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2003 11 19 | 699 | 0.6+ | 0.2+ | 2005 03 13 | 152 | 1.1+ | 1.5+ | | | | | | |
| 2003 11 19 | 699 | 0.4+ | 1.0+ | 2005 03 13 | 152 | 0.2+ | 0.7− | | | | | | |

**(143755)∗ 2003 VG$_{11}$**

Discovered 2003 Nov. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 168.12125 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.30175096 | ω | 304.23369 | | −0.88921536 | +0.45311588 | |
| *a* | 2.2014235 | Ω | 262.78274 | | −0.39603753 | −0.83146557 | |
| *e* | 0.1124759 | *i* | 3.64689 | | −0.22902034 | −0.32148252 | |
| *P* | 3.27 | *H* | 16.9 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.7− | 0.9− | 2003 11 24 | 704 | 0.4+ | 0.2+ | 2005 05 30 | 699 | (1.4− | 2.1+) | | |
| 1993 10 12 | 691 | 0.8+ | 0.5− | 2003 11 24 | 704 | 0.0 | 0.6− | 2005 05 30 | 699 | 1.5+ | 0.4− | | |
| 1993 10 12 | 691 | 0.6+ | 0.8− | 2003 11 24 | 704 | 0.9− | 0.7+ | 2005 05 30 | 699 | 0.9+ | 1.2+ | | |
| 2003 10 18 | 691 | 0.0 | 0.1− | 2003 11 24 | 704 | 0.6− | 1.4+ | 2005 05 30 | 699 | (2.3+ | 1.2−) | | |
| 2003 10 18 | 691 | 0.0 | 0.1− | 2003 12 16 | 291 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 | | |
| 2003 10 18 | 691 | 0.0 | 0.1− | 2003 12 16 | 291 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1− | | |
| 2003 11 15 | 691 | 0.1− | 0.0 | 2003 12 16 | 291 | 1.3+ | 1.0+ | 2006 09 28 | 691 | 0.6− | 0.6+ | | |
| 2003 11 15 | 691 | 0.1− | 0.0 | 2005 04 18 | 703 | 0.2+ | 0.7− | 2006 10 02 | 691 | 0.2+ | 0.0 | | |
| 2003 11 15 | 691 | 0.1− | 0.1+ | 2005 04 18 | 703 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.3+ | | |
| 2003 11 15 | 644 | 0.1− | 0.3+ | 2005 04 18 | 703 | 0.2+ | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | | |
| 2003 11 15 | 644 | 0.2− | 0.0 | 2005 04 18 | 703 | 1.1− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2003 11 15 | 644 | 0.1− | 0.2+ | 2005 05 08 | E12 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.3+ | | |
| 2003 11 16 | 703 | (1.6− | 0.4−) | 2005 05 08 | E12 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.5+ | | |
| 2003 11 16 | 703 | 0.1− | 0.9− | 2005 05 08 | E12 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.8+ | | |
| 2003 11 16 | 703 | 0.2+ | 1.2+ | 2005 05 08 | E12 | 1.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2003 11 16 | 703 | (1.7+ | 0.6−) | 2005 05 11 | 644 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 699 | 1.1− | 0.5− | 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2003 11 19 | 699 | 0.4+ | 0.1− | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2003 11 19 | 699 | 0.3− | 0.6− | 2005 05 19 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2003 11 19 | 699 | 0.5− | 0.6+ | 2005 05 19 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2003 11 24 | 704 | (0.6− | 1.7−) | 2005 05 19 | 644 | 0.1+ | 0.4+ | | | | |

**(143756)∗ 2003 WF$_4$ = 1999 RU$_{250}$**

Discovered 2003 Nov. 16 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 57243)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.91494 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27192390 | $\omega$ | 256.88799 | | +0.25214608 | −0.96768882 | |
| $a$ | 2.3595968 | $\Omega$ | 178.50669 | | +0.89986377 | +0.23415362 | |
| $e$ | 0.1800849 | $i$ | 1.84815 | | +0.35590386 | +0.09354376 | |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 691 | 0.1+ | 0.1− | 2003 11 21 | 704 | 0.9+ | 0.5+ | 2003 12 21 | 704 | 0.2+ | 0.5+ |
| 1999 09 05 | 691 | 0.2+ | 0.0 | 2003 11 21 | 704 | 1.1+ | 0.2− | 2003 12 23 | 699 | 0.4+ | 0.7− |
| 1999 09 05 | 691 | 0.0 | 0.0 | 2003 11 21 | 704 | 0.5− | 0.1+ | 2003 12 23 | 699 | 0.3− | 0.0 |
| 1999 09 17 | 691 | 0.2− | 0.2− | 2003 11 24 | 699 | 0.4+ | 0.4− | 2003 12 23 | 699 | 0.4− | 0.6− |
| 1999 09 17 | 691 | 0.1− | 0.0 | 2003 11 24 | 699 | 0.3+ | 0.2− | 2003 12 23 | 699 | 1.1− | 0.7− |
| 1999 09 17 | 691 | 0.0 | 0.2+ | 2003 11 24 | 699 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.4+ | 0.4− |
| 2001 03 20 | 608 | 0.4− | 1.2− | 2003 11 24 | 699 | 0.5− | 0.3− | 2003 12 23 | 704 | 0.5+ | 0.2+ |
| 2001 03 20 | 608 | 0.1− | 1.1− | 2003 12 01 | 704 | 0.6− | 0.4− | 2003 12 23 | 704 | 0.6+ | 0.2− |
| 2001 03 20 | 608 | 0.3− | 0.6− | 2003 12 01 | 704 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.7+ | 0.5− |
| 2003 10 24 | 704 | 0.8− | 0.0 | 2003 12 01 | 704 | 0.4− | 0.2− | 2004 01 13 | 699 | 0.9− | 0.9+ |
| 2003 10 24 | 704 | 0.2+ | 0.2− | 2003 12 01 | 704 | 0.0 | 0.1− | 2004 01 13 | 699 | 0.2− | 0.7− |
| 2003 10 24 | 704 | 0.3− | 0.8− | 2003 12 01 | 704 | 0.8− | 0.1+ | 2004 01 13 | 699 | 0.0 | 0.0 |
| 2003 10 29 | 699 | 0.5− | 0.8− | 2003 12 04 | 703 | 0.8− | 0.5+ | 2004 01 13 | 699 | 0.1− | 0.8− |
| 2003 10 29 | 699 | 0.5− | 1.2− | 2003 12 04 | 703 | 0.9− | 0.0 | 2004 01 17 | 644 | 0.0 | 0.5+ |
| 2003 10 29 | 699 | 0.8− | 0.6− | 2003 12 04 | 703 | 0.1+ | 0.3+ | 2004 01 17 | 644 | 0.0 | 0.1− |
| 2003 10 29 | 699 | 0.4− | 0.2− | 2003 12 04 | 703 | 0.6− | 0.3+ | 2004 01 17 | 644 | 0.1− | 0.3+ |
| 2003 11 02 | 704 | 0.5+ | 0.3+ | 2003 12 11 | 703 | 0.3− | 0.3− | 2005 05 14 | G96 | 0.4− | 0.2+ |
| 2003 11 02 | 704 | 0.8+ | 0.0 | 2003 12 11 | 703 | 0.4− | 0.6+ | 2005 05 14 | G96 | 0.2+ | 0.0 |
| 2003 11 02 | 704 | 0.7+ | 0.2− | 2003 12 11 | 703 | 0.0 | 0.2− | 2005 05 14 | G96 | 0.1− | 0.2+ |
| 2003 11 02 | 704 | 0.2+ | 0.2− | 2003 12 11 | 703 | (2.3− | 4.8−) | 2005 05 14 | G96 | 0.0 | 0.3+ |
| 2003 11 05 | 699 | 1.4+ | 0.6− | 2003 12 17 | 703 | 1.4− | 1.1+ | 2005 05 19 | G96 | 0.0 | 0.3+ |
| 2003 11 05 | 699 | 0.8+ | 0.6+ | 2003 12 17 | 703 | 0.2+ | 0.1+ | 2005 05 19 | G96 | 0.2− | 0.0 |
| 2003 11 05 | 699 | 0.4+ | 0.9+ | 2003 12 17 | 703 | 0.5+ | 0.1+ | 2005 05 19 | G96 | 0.1+ | 0.2+ |
| 2003 11 05 | 699 | 0.5+ | 1.0+ | 2003 12 17 | 703 | 0.5− | 0.1+ | 2005 05 19 | G96 | 0.2+ | 0.5+ |
| 2003 11 16 | 703 | (2.3+ | 1.4−) | 2003 12 19 | 704 | 0.5+ | 0.8+ | 2006 08 14 | 644 | 0.0 | 0.3+ |
| 2003 11 16 | 703 | 0.8+ | 0.7− | 2003 12 19 | 704 | 0.2+ | 0.8+ | 2006 08 14 | 644 | 0.1+ | 0.3+ |
| 2003 11 16 | 703 | (2.4+ | 2.5−) | 2003 12 19 | 704 | 0.3+ | 0.7+ | 2006 08 14 | 644 | 0.1− | 0.0 |
| 2003 11 16 | 703 | 0.5+ | 1.4− | 2003 12 19 | 704 | 0.6+ | 0.5+ | 2006 08 20 | 644 | 0.0 | 0.5+ |
| 2003 11 18 | 644 | 0.4− | 0.2− | 2003 12 21 | 691 | 0.0 | 0.3+ | 2006 08 20 | 644 | 0.6+ | 0.2+ |
| 2003 11 18 | 644 | 0.1− | 0.0 | 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2003 11 18 | 644 | 0.1+ | 0.0 | 2003 12 21 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.6− | 0.0 |
| 2003 11 19 | 691 | 0.2− | 0.1− | 2003 12 21 | 704 | (2.0+ | 0.1−) | 2006 10 28 | G96 | 0.2+ | 0.5− |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2003 12 21 | 704 | 0.0 | 0.8+ | 2006 10 28 | G96 | 0.4− | 0.5− |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2003 12 21 | 704 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.1+ | 1.1− |

**(143757)∗ 2003 WX$_5$**

Discovered 2003 Nov. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.90285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28908208 | $\omega$ | 261.63694 | | +0.98108868 | +0.18045944 | |
| $a$ | 2.2652802 | $\Omega$ | 87.94574 | | −0.13825160 | +0.90642301 | |
| $e$ | 0.1721608 | $i$ | 4.01632 | | −0.13546767 | +0.38187918 | |
| $P$ | 3.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 13 | 566 | (4.2− | 1.2−) | 2003 11 24 | 699 | 0.3+ | 0.8+ | 2006 08 16 | E12 | 0.3+ | 0.0 |
| 1996 10 13 | 566 | 0.1− | 0.5− | 2003 11 24 | 699 | 1.2+ | 1.1− | 2006 08 23 | 704 | 0.8− | 1.5+ |
| 1996 10 13 | 566 | 1.4+ | 0.4− | 2003 12 01 | 704 | 0.5− | 0.4− | 2006 08 23 | 704 | 0.7− | 0.9+ |
| 1996 10 15 | 691 | 0.1+ | 0.2− | 2003 12 01 | 704 | 0.2+ | 0.5+ | 2006 08 23 | 704 | 0.3+ | 0.0 |
| 1996 10 15 | 691 | 0.1+ | 0.0 | 2003 12 01 | 704 | 0.2− | 0.2+ | 2006 08 23 | 704 | 0.5+ | 0.3+ |
| 1996 10 15 | 691 | 0.2− | 0.3− | 2003 12 01 | 704 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.0 | 0.0 |
| 1996 10 15 | 691 | 0.1+ | 0.4− | 2003 12 04 | 703 | (4.5− | 1.5−) | 2006 08 23 | 644 | 0.3− | 0.0 |
| 1996 10 15 | 691 | 0.2+ | 0.3− | 2003 12 04 | 703 | 1.1− | 1.1− | 2006 08 23 | 644 | 0.2− | 0.1− |
| 2003 10 29 | 699 | 1.2+ | 1.1+ | 2003 12 04 | 703 | (2.9+ | 2.2+) | 2006 08 24 | 704 | 0.0 | 0.1− |
| 2003 10 29 | 699 | 1.3+ | 0.4+ | 2003 12 04 | 703 | 0.9− | 0.5− | 2006 08 24 | 704 | 0.7− | 0.8+ |
| 2003 10 29 | 699 | 0.8+ | 0.1− | 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 08 24 | 704 | 0.6+ | 0.2− |
| 2003 10 29 | 699 | 0.6+ | 1.6+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 08 24 | 704 | 0.8− | 0.8+ |
| 2003 11 02 | 704 | 0.2+ | 0.7+ | 2003 12 19 | 704 | 0.3− | 0.1− | 2006 08 24 | 704 | 0.9− | 0.1− |
| 2003 11 02 | 704 | 0.0 | 0.3+ | 2003 12 19 | 691 | 0.2+ | 0.1− | 2006 08 24 | 704 | 0.5− | 0.5+ |
| 2003 11 02 | 704 | 0.1− | 0.3+ | 2003 12 19 | 704 | 0.6+ | 0.9− | 2006 08 24 | 704 | 0.2− | 0.1+ |
| 2003 11 18 | 644 | 0.1+ | 0.1+ | 2003 12 19 | 704 | 1.2+ | 0.7+ | 2006 08 24 | 704 | 0.1+ | 0.5− |
| 2003 11 18 | 644 | 0.1− | 0.1+ | 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 08 24 | 704 | 0.4− | 0.2− |
| 2003 11 18 | 644 | 0.1+ | 0.2− | 2003 12 21 | 691 | 0.2− | 0.0 | 2006 08 24 | 704 | 0.2+ | 0.4+ |
| 2003 11 19 | 699 | 0.1+ | 0.3+ | 2003 12 21 | 691 | 0.7− | 0.0 | 2006 08 25 | 428 | 0.4− | 0.0 |
| 2003 11 19 | 699 | 0.3− | 0.2+ | 2003 12 21 | 704 | (0.1− | 2.2+) | 2006 08 25 | 428 | 0.1+ | 0.1− |
| 2003 11 19 | 699 | 0.2− | 0.5− | 2003 12 21 | 704 | 0.4− | 0.6− | 2006 08 25 | 428 | 0.7+ | 0.3+ |
| 2003 11 19 | 691 | 0.1+ | 0.0 | 2003 12 21 | 704 | 0.7− | 0.4− | 2006 08 28 | 704 | 0.1− | 0.4+ |
| 2003 11 19 | 699 | 0.5− | 0.7+ | 2003 12 21 | 704 | 0.3+ | 0.8+ | 2006 08 28 | 704 | 0.8+ | 0.0 |
| 2003 11 19 | 691 | 0.2+ | 0.0 | 2003 12 21 | 704 | 1.8− | 0.1+ | 2006 08 28 | 704 | 0.3+ | 0.2− |
| 2003 11 19 | 691 | 0.2+ | 0.1+ | 2003 12 24 | 704 | 0.4− | 0.1+ | 2006 08 28 | 704 | 0.2− | 0.6− |
| 2003 11 23 | 704 | 0.3+ | 1.2+ | 2003 12 24 | 704 | 0.8− | 0.2+ | 2006 08 28 | 704 | 0.9− | 1.1+ |
| 2003 11 23 | 704 | 0.3− | 1.3− | 2003 12 24 | 704 | 0.6− | 0.3+ | 2006 08 28 | E12 | 0.3− | 0.3+ |
| 2003 11 23 | 704 | 0.9− | 0.5+ | 2005 03 18 | 703 | 0.4− | 0.8+ | 2006 08 28 | E12 | 0.4+ | 0.4− |
| 2003 11 23 | 704 | 0.1− | 0.0 | 2005 03 18 | 703 | 1.0− | 1.3+ | 2006 08 28 | E12 | 0.2+ | 0.4+ |
| 2003 11 23 | 704 | 0.2− | 0.4+ | 2005 03 18 | 703 | 0.5+ | 1.3− | 2006 08 31 | 704 | 0.1+ | 0.6− |
| 2003 11 24 | 704 | 0.4+ | 0.1+ | 2005 03 18 | 703 | 0.8+ | 1.4− | 2006 08 31 | 704 | 0.5+ | 0.7− |
| 2003 11 24 | 704 | 0.0 | 0.5+ | 2006 07 19 | 644 | 0.2− | 0.3+ | 2006 08 31 | 704 | 0.3+ | 0.5− |
| 2003 11 24 | 704 | 0.1+ | 0.1+ | 2006 07 19 | 644 | 0.3+ | 0.2+ | 2006 08 31 | 704 | 1.0+ | 1.4− |
| 2003 11 24 | 704 | 0.0 | 0.2− | 2006 07 19 | 644 | 0.6− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1+ |
| 2003 11 24 | 704 | 0.5+ | 0.1+ | 2006 08 16 | E12 | 0.2+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 2003 11 24 | 699 | 0.1− | 0.4− | 2006 08 16 | E12 | 0.2+ | 0.2− | 2006 09 14 | 644 | 0.6+ | 0.6+ |
| 2003 11 24 | 699 | 0.3+ | 0.1− | 2006 08 16 | E12 | 0.3− | 0.1+ | | | | |

**(143758)∗ 2003 WY$_{10}$ = 2000 YY$_{133}$**

Discovered 2003 Nov. 18 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69582)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.49485 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29021358 | $\omega$ | 120.82920 | | +0.24059726 | −0.96843143 | |
| $a$ | 2.2593884 | $\Omega$ | 315.09592 | | +0.85599422 | +0.24338037 | |
| $e$ | 0.1100510 | $i$ | 5.30103 | | +0.45758807 | +0.05391259 | |
| $P$ | 3.40 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.2+ | 0.0 | 2001 01 19 | 704 | 1.2− | 0.8+ | 2003 11 24 | 703 | 0.5− | 0.7+ |
| 1996 10 04 | 691 | 0.2+ | 0.5− | 2003 09 30 | 704 | 0.1− | 0.8+ | 2003 11 24 | 703 | 0.3− | 0.6− |
| 1996 10 04 | 691 | 0.1+ | 0.1− | 2003 09 30 | 704 | 0.6+ | 0.8+ | 2003 11 24 | 703 | 0.1− | 1.0− |
| 1996 10 12 | 691 | 0.0 | 0.1+ | 2003 09 30 | 704 | 0.7− | 0.6− | 2006 08 13 | 644 | 0.3− | 0.0 |
| 1996 10 12 | 691 | 0.2− | 0.1− | 2003 09 30 | 704 | 0.1+ | 0.8+ | 2006 08 13 | 644 | 0.1− | 0.4+ |
| 2000 12 31 | 691 | 0.2+ | 0.1+ | 2003 09 30 | 704 | 1.0− | 0.6− | 2006 08 13 | 644 | 0.0 | 0.1+ |
| 2000 12 31 | 691 | 0.9+ | 1.0+ | 2003 10 22 | 704 | 0.2− | 1.1− | 2006 08 19 | 691 | 0.0 | 0.1− |
| 2000 12 31 | 691 | 0.0 | 0.0 | 2003 10 22 | 704 | 0.3+ | 0.1− | 2006 08 19 | 691 | 0.4− | 1.1+ |
| 2001 01 04 | 704 | 0.3+ | 0.8+ | 2003 10 22 | 704 | 0.6+ | 0.0 | 2006 08 19 | 691 | 0.1− | 1.0+ |
| 2001 01 04 | 704 | 1.3− | 1.1+ | 2003 10 22 | 704 | 1.3+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.3+ |
| 2001 01 04 | 704 | 0.7− | 0.0 | 2003 11 18 | 644 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.1− |
| 2001 01 04 | 704 | 0.1− | 0.7+ | 2003 11 18 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.6+ |
| 2001 01 04 | 704 | 0.5− | 0.1+ | 2003 11 18 | 644 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.9− | 0.6+ |
| 2001 01 19 | 704 | 0.1+ | 0.1− | 2003 11 19 | 704 | (2.4+ | 1.5−) | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2001 01 19 | 704 | 0.8+ | 0.3+ | 2003 11 19 | 704 | (2.2+ | 1.5−) | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2001 01 19 | 704 | 0.3− | 0.7+ | 2003 11 19 | 704 | 0.8+ | 0.8− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 01 19 | 704 | 1.2+ | 0.3− | 2003 11 24 | 703 | 1.4+ | 1.2− | 2006 09 27 | G96 | 0.2− | 0.1− |

**(143759)∗ 2003 WC$_{11}$ = 2001 AG$_{49}$**

Discovered 2003 Nov. 18 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69583)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.27465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28489782 | $\omega$ | 163.29689 | | −0.82504679 | −0.56435839 | |
| $a$ | 2.2874062 | $\Omega$ | 342.25815 | | +0.50726600 | −0.71771297 | |
| $e$ | 0.0930614 | $i$ | 5.31706 | | +0.24895580 | −0.40790650 | |
| $P$ | 3.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.6− | 1.1− | 2003 11 19 | 704 | 0.0 | 1.0+ | 2005 05 01 | 644 | 0.3+ | 0.1− |
| 1998 03 29 | 704 | 0.5+ | 0.2+ | 2003 11 19 | 704 | 0.2− | 0.5+ | 2005 05 01 | 644 | 0.2+ | 0.3+ |
| 1998 03 29 | 704 | (1.6+ | 2.6−) | 2003 11 19 | 704 | 0.5− | 0.8+ | 2005 05 09 | E12 | (2.2− | 2.7−) |
| 1998 03 29 | 704 | (5.1− | 1.0−) | 2003 11 19 | 704 | 0.7+ | 0.7+ | 2005 05 09 | E12 | 0.7+ | 0.4+ |
| 2001 01 15 | 704 | 0.8− | 0.4+ | 2003 11 21 | 691 | 0.2+ | 0.2+ | 2005 05 09 | E12 | 0.2− | 0.8+ |
| 2001 01 15 | 704 | 0.6+ | 0.3− | 2003 11 21 | 691 | 0.0 | 0.1+ | 2005 05 09 | E12 | 0.3+ | 0.5+ |
| 2001 01 15 | 704 | 0.2+ | 0.8+ | 2003 11 21 | 691 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 2001 01 19 | 704 | 0.1− | 0.1+ | 2003 11 24 | 704 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.3+ |
| 2001 01 19 | 704 | 0.5+ | 0.3+ | 2003 11 24 | 704 | 0.6− | 0.3+ | 2006 08 16 | 644 | 0.4+ | 0.6+ |
| 2001 01 19 | 704 | 0.1− | 0.9+ | 2003 11 24 | 704 | 0.1+ | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.1+ |
| 2001 01 19 | 704 | 0.1+ | 0.2− | 2003 11 24 | 704 | 1.7− | 1.1+ | 2006 08 23 | 644 | 0.0 | 0.1+ |
| 2001 01 19 | 704 | 0.3− | 0.0 | 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 08 23 | 644 | 0.0 | 0.0 |
| 2003 10 03 | 691 | 0.1− | 0.1− | 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2003 10 03 | 691 | 0.2− | 0.3+ | 2005 04 12 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2003 10 03 | 691 | 0.0 | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.2+ |
| 2003 10 23 | 699 | 1.3− | 1.2+ | 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2003 10 23 | 699 | 0.1− | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.8+ |
| 2003 10 23 | 699 | 0.1− | 0.2+ | 2005 04 18 | 703 | 0.0 | 1.7+ | 2006 09 25 | G96 | 0.3− | 0.0 |
| 2003 10 23 | 699 | 1.0− | 0.6− | 2005 04 18 | 703 | 1.7− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2003 11 18 | 644 | 0.2+ | 0.1+ | 2005 04 18 | 703 | 0.6− | 0.3− | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2003 11 18 | 644 | 0.5+ | 0.1+ | 2005 04 18 | 703 | 0.7− | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2003 11 18 | 644 | 0.3+ | 0.0 | 2005 05 01 | 644 | 0.4+ | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.0 |

**(143760)∗ 2003 WX$_{11}$**

Discovered 2003 Nov. 18 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.47277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29245550 | $\omega$ | 61.65693 | | +0.72449340 | −0.68856736 | |
| $a$ | 2.2478269 | $\Omega$ | 341.80065 | | +0.59201274 | +0.64492263 | |
| $e$ | 0.1511920 | $i$ | 5.76518 | | +0.35303006 | +0.33158677 | |
| $P$ | 3.37 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 327 | 0.8+ | 0.8− | 2003 12 12 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.3+ | 0.2+ |
| 1996 10 10 | 327 | 0.4− | 0.3− | 2003 12 17 | 704 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.1− |
| 1996 10 10 | 327 | 0.3+ | 0.1− | 2003 12 17 | 704 | 0.3− | 0.4+ | 2006 08 28 | 691 | 0.1+ | 0.7+ |
| 2001 01 19 | 704 | 0.0 | 0.5+ | 2003 12 17 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 691 | 0.3+ | 0.2− |
| 2001 01 19 | 704 | 0.0 | 0.3+ | 2003 12 17 | 704 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 1.2+ | 0.3+ |
| 2001 01 19 | 704 | 1.2+ | 1.4+ | 2003 12 17 | 704 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.3− | 0.1− |
| 2001 01 19 | 704 | 0.7− | 0.5+ | 2003 12 18 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.6− |
| 2001 02 01 | 704 | 0.2+ | 0.2− | 2003 12 18 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.0 |
| 2001 02 01 | 704 | 0.4+ | 1.3+ | 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.2− |
| 2001 02 01 | 704 | 0.6+ | 0.3− | 2003 12 29 | 704 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.7+ |
| 2001 02 01 | 704 | 0.3− | 0.7+ | 2003 12 29 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.7+ |
| 2003 10 05 | 704 | 0.3− | 1.3− | 2003 12 29 | 704 | 1.0+ | 0.2+ | 2006 09 18 | 699 | 1.2+ | 0.2+ |
| 2003 10 05 | 704 | (0.8+ | 2.3−) | 2003 12 29 | 704 | 1.3+ | 0.4− | 2006 09 18 | 699 | 0.8+ | 0.1− |
| 2003 10 05 | 704 | 1.0− | 0.9− | 2003 12 29 | 704 | (1.6+ | 0.1−) | 2006 09 18 | 699 | 0.2− | 0.2+ |
| 2003 10 05 | 704 | (0.7− | 1.7−) | 2006 08 14 | 644 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.4+ |
| 2003 10 05 | 704 | (0.4− | 1.8−) | 2006 08 14 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.8+ | 1.2+ |
| 2003 11 18 | 644 | 0.1+ | 0.3− | 2006 08 14 | 644 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.2− |
| 2003 11 18 | 644 | 0.2− | 0.2− | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2003 11 18 | 644 | 0.1+ | 0.3− | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2003 11 18 | 644 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.3− |
| 2003 11 18 | 644 | 0.0 | 0.1+ | 2006 08 18 | 699 | 0.7− | 0.4− | 2006 09 25 | G96 | 0.5+ | 0.3− |
| 2003 11 18 | 644 | 0.1− | 0.2− | 2006 08 18 | 699 | 0.5+ | 0.5− | 2006 09 27 | 704 | 0.5− | 1.1− |
| 2003 11 19 | 704 | 0.9+ | 0.5− | 2006 08 18 | 699 | 1.0− | 0.4+ | 2006 09 27 | 704 | 0.8+ | 0.1− |
| 2003 11 19 | 704 | 0.2+ | 0.5− | 2006 08 18 | 699 | 1.4− | 0.3+ | 2006 09 27 | 704 | 0.7+ | 0.5− |
| 2003 11 19 | 704 | (1.9+ | 0.7+) | 2006 08 21 | 704 | 0.0 | 0.6− | 2006 09 29 | 704 | (1.5+ | 0.6+) |
| 2003 11 19 | 704 | 0.4− | 0.1− | 2006 08 21 | 704 | 1.1− | 0.8+ | 2006 09 29 | 704 | 0.7− | 0.5− |
| 2003 11 21 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 704 | 0.3+ | 0.9+ | 2006 09 29 | 704 | (0.7− | 1.6−) |
| 2003 11 21 | 691 | 0.1+ | 0.0 | 2006 08 21 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2003 11 21 | 691 | 0.0 | 0.1+ | 2006 08 21 | 704 | (2.2+ | 0.6+) | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2003 12 03 | 704 | 0.0 | 0.3− | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2003 12 03 | 704 | 0.3− | 0.1− | 2006 08 21 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2003 12 03 | 704 | 0.9− | 0.1+ | 2006 08 25 | 704 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2003 12 03 | 704 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.1− | 0.9− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2003 12 03 | 704 | 0.3− | 0.1+ | 2006 08 25 | 704 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2003 12 12 | 644 | 0.3− | 0.1+ | 2006 08 25 | 704 | 0.8− | 1.2+ | | | | |
| 2003 12 12 | 644 | 0.0 | 0.2− | 2006 08 25 | 704 | 0.6− | 1.0+ | | | | |

**(143761)∗ 2003 WS$_{22}$ = 1998 FD$_{37}$**

Discovered 2003 Nov. 16 by the Catalina Sky Survey.
Id. K. E. Smalley (*MPO* 57259)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.11185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29219969 | $\omega$ | 37.48007 | | −0.78654816 | +0.61752863 | |
| $a$ | 2.2491386 | $\Omega$ | 180.65677 | | −0.57878457 | −0.73754677 | |
| $e$ | 0.0615370 | $i$ | 3.08067 | | −0.21529147 | −0.27328218 | |
| $P$ | 3.37 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | 1.1− | 1.5+ | 2003 12 23 | 704 | 0.6− | 0.5+ | 2006 09 12 | 703 | (2.3− | 0.1−) |
| 1998 03 03 | 704 | 1.1− | 1.0− | 2003 12 23 | 704 | 0.7− | 0.0 | 2006 09 12 | 703 | 0.7− | 0.6+ |
| 1998 03 03 | 704 | 1.5+ | 1.6+ | 2003 12 23 | 704 | 0.7− | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 1998 03 03 | 704 | 0.3+ | 0.4+ | 2005 04 04 | 704 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 1998 03 03 | 704 | (1.3− | 2.5−) | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 1998 03 04 | 704 | (3.6− | 0.3−) | 2005 04 04 | 704 | 0.7+ | 0.1+ | 2006 09 16 | 644 | 0.3+ | 0.1− |
| 1998 03 04 | 704 | (3.2− | 0.4−) | 2005 04 04 | G96 | 0.5− | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.1+ |
| 1998 03 04 | 704 | (2.9− | 1.4+) | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 16 | 644 | 0.6+ | 0.2+ |
| 1998 03 04 | 704 | (2.6− | 1.0+) | 2005 04 04 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 704 | 0.5+ | 0.8+ |
| 1998 03 04 | 704 | (6.9− | 0.6+) | 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.1+ |
| 1998 03 20 | 704 | 1.6− | 0.6− | 2005 04 04 | 704 | 0.3+ | 0.4− | 2006 09 17 | 704 | 0.3+ | 1.2− |
| 1998 03 20 | 704 | 0.1+ | 0.7− | 2005 04 04 | 704 | 0.5+ | 0.7− | 2006 09 17 | 691 | 0.2− | 0.5+ |
| 1998 03 20 | 704 | 0.9− | 0.8− | 2005 04 06 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.7+ | 0.9+ |
| 1998 03 20 | 704 | 1.3− | 0.3− | 2005 04 06 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.2+ |
| 1998 03 22 | 704 | 0.0 | 0.2− | 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 1998 03 22 | 704 | 1.6+ | 0.2+ | 2005 04 07 | 704 | (0.2− | 2.2+) | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1998 03 22 | 704 | 1.4+ | 1.2+ | 2005 04 07 | 704 | 1.1+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 1998 03 22 | 704 | 0.5− | 1.4− | 2005 04 07 | 704 | (0.4+ | 2.3+) | 2006 09 19 | 699 | 0.6− | 0.5− |
| 1998 03 22 | 704 | (5.4− | 1.3−) | 2005 04 07 | 704 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.0 | 1.1− |
| 1998 03 26 | 704 | 0.8+ | 1.0+ | 2005 04 11 | 699 | 0.9+ | 0.8+ | 2006 09 19 | 699 | 0.8− | 0.6+ |
| 1998 03 26 | 704 | 0.2+ | 0.7− | 2005 04 11 | 699 | 0.8+ | 0.4− | 2006 09 19 | 699 | 0.4− | 0.9− |
| 1998 03 26 | 704 | 0.1+ | 0.9+ | 2005 04 11 | 699 | 0.8+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.2+ |
| 2001 01 03 | 704 | (1.6+ | 0.9+) | 2005 04 11 | 699 | 0.8+ | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.2+ |
| 2001 01 03 | 704 | 0.6+ | 0.3− | 2005 04 12 | 704 | 0.6+ | 0.3+ | 2006 09 24 | 691 | 0.2− | 0.0 |
| 2001 01 03 | 704 | 0.8+ | 0.0 | 2005 04 12 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2001 01 03 | 704 | 0.0 | 0.7+ | 2005 04 12 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2001 01 03 | 704 | 1.4+ | 1.1− | 2005 04 12 | 704 | 0.2+ | 0.9− | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2001 01 03 | 704 | 0.6+ | 0.7+ | 2005 04 12 | 704 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2001 01 03 | 704 | 0.6+ | 0.7− | 2005 04 15 | 699 | 0.0 | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2003 10 26 | 691 | 0.2+ | 0.3+ | 2005 04 15 | 699 | 0.5− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2003 10 26 | 691 | 0.2− | 0.3+ | 2005 04 15 | 699 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2003 10 26 | 691 | 0.6+ | 0.2+ | 2005 04 18 | 703 | 1.4− | 0.6+ | 2006 10 01 | 704 | 0.6− | 1.1+ |
| 2003 11 16 | 703 | 1.3− | 0.4− | 2005 04 18 | 703 | 1.0− | 0.3+ | 2006 10 01 | 704 | 0.4− | 1.0+ |
| 2003 11 16 | 703 | 0.1− | 0.6+ | 2005 04 18 | 703 | 1.0− | 0.3− | 2006 10 01 | 704 | 0.1− | 0.3+ |
| 2003 11 16 | 703 | 0.8− | 0.0 | 2005 04 18 | 703 | 1.0− | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.9+ |
| 2003 11 16 | 703 | (0.2+ | 2.5−) | 2005 04 18 | 704 | 1.2+ | 1.4+ | 2006 10 16 | 703 | (1.4+ | 2.2+) |
| 2003 11 19 | 699 | 1.5− | 0.8− | 2005 04 18 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 703 | 0.9+ | 1.2+ |
| 2003 11 19 | 699 | 0.2+ | 0.0 | 2005 04 18 | 704 | (1.7+ | 1.4+) | 2006 10 16 | 703 | 0.4+ | 0.1− |
| 2003 11 19 | 699 | 0.9+ | 0.7+ | 2005 04 18 | 704 | (0.8+ | 2.2+) | 2006 10 16 | 703 | 0.9+ | 0.8+ |
| 2003 11 19 | 699 | 1.4− | 1.3+ | 2005 04 18 | 704 | 0.7+ | 1.0+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2003 11 19 | 599 | 0.0 | 0.1+ | 2005 05 08 | 703 | 1.2− | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2003 11 19 | 599 | 0.5− | 0.4+ | 2005 05 08 | 703 | 0.7− | 0.3+ | 2006 10 16 | G96 | 0.7+ | 1.2− |
| 2003 11 19 | 599 | 0.1− | 0.5+ | 2005 05 08 | 703 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.4+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 854 | 0.3+ | 0.2+ | 2005 05 08 | 703 | 0.4− | 1.1+ | 2006 10 16 | 703 | (1.8+ | 0.3−) |
| 2003 11 23 | 854 | (1.7+ | 0.6+) | 2005 05 09 | 699 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.7− |
| 2003 11 23 | 854 | 0.4− | 0.6+ | 2005 05 09 | 699 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.4− |
| 2003 11 23 | 926 | 0.0 | 0.0 | 2005 05 09 | 699 | 0.7+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2003 11 23 | 926 | 0.3+ | 0.2+ | 2005 05 09 | 699 | 0.2+ | 1.4+ | 2006 10 17 | G96 | 0.3+ | 1.2− |
| 2003 11 23 | 926 | (1.5− | 0.5+) | 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.3+ |
| 2003 11 24 | 703 | (1.7+ | 0.3−) | 2005 05 13 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 1.0+ | 1.4+ |
| 2003 11 24 | 703 | 0.4+ | 0.5− | 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.6− |
| 2003 11 24 | 703 | 0.6− | 1.2− | 2005 05 14 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.8+ |
| 2003 11 24 | 703 | (0.2+ | 1.5−) | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2003 12 11 | 703 | (0.6− | 1.8+) | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2003 12 11 | 703 | (1.6− | 0.8−) | 2005 05 18 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2003 12 11 | 703 | 0.3+ | 1.0+ | 2005 05 18 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 12 11 | 703 | 0.1+ | 0.6+ | 2005 05 18 | 644 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2003 12 21 | 704 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.7− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2003 12 21 | 704 | (1.9− | 0.3−) | 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2003 12 21 | 704 | 0.6− | 0.8+ | 2006 08 28 | 703 | 0.5− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2003 12 21 | 704 | 1.3− | 1.1+ | 2006 08 28 | 703 | 0.9− | 0.4− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2003 12 21 | 704 | 0.9− | 0.7+ | 2006 09 12 | 703 | 1.2− | 0.3+ | | | | |
| 2003 12 23 | 704 | 0.7− | 1.0+ | 2006 09 12 | 703 | 1.0+ | 1.4− | | | | |

**(143762)∗ 2003 WJ$_{29}$ = 2002 JM$_{139}$**

Discovered 2003 Nov. 18 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69584)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.72158 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30376286 | $\omega$ | 303.34114 | | +0.56060950 | +0.82807944 | |
| $a$ | 2.1916924 | $\Omega$ | 0.75994 | | −0.72660709 | +0.49260497 | |
| $e$ | 0.1012548 | $i$ | 5.17731 | | −0.39718904 | +0.26762808 | |
| $P$ | 3.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 18 | 644 | 0.1− | 0.6+ | 2005 03 04 | G96 | 0.4− | 0.0 | 2006 09 14 | 703 | (2.2− | 0.2+) |
| 2002 04 18 | 644 | 0.3− | 0.8+ | 2005 03 09 | G96 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.6− | 0.8+ |
| 2002 04 18 | 644 | 0.1+ | 0.0 | 2005 03 09 | G96 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.5− | 0.7− |
| 2002 05 10 | 644 | 0.1+ | 0.1− | 2005 03 09 | G96 | 0.3− | 0.1− | 2006 09 15 | 704 | 0.0 | 0.3+ |
| 2002 05 10 | 644 | 0.1− | 0.1− | 2005 03 09 | G96 | 0.0 | 0.2+ | 2006 09 17 | 704 | 1.0− | 0.5+ |
| 2002 05 10 | 644 | 0.4+ | 0.2+ | 2005 03 13 | 703 | 0.5− | 0.7− | 2006 09 17 | 704 | 1.1− | 0.3+ |
| 2002 05 11 | 704 | 0.6− | 0.0 | 2005 03 13 | 703 | 0.3− | 0.8− | 2006 09 17 | 704 | 1.0+ | 0.8+ |
| 2002 05 11 | 704 | 0.5+ | 0.2+ | 2005 03 13 | 703 | 0.6− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2002 05 11 | 704 | 0.7+ | 0.6+ | 2005 03 13 | 703 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.4+ |
| 2002 05 11 | 704 | 0.8+ | 1.0+ | 2005 03 31 | 699 | 0.3− | 0.4− | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2003 11 18 | 691 | 0.2+ | 0.2− | 2005 03 31 | 699 | 0.2− | 1.4+ | 2006 09 20 | 704 | 0.1+ | 0.4− |
| 2003 11 18 | 691 | 0.0 | 0.2− | 2005 03 31 | 699 | 0.5+ | 0.7− | 2006 09 20 | 704 | 0.1− | 0.3− |
| 2003 11 18 | 691 | 0.1+ | 0.2− | 2005 03 31 | 699 | 0.2+ | 1.0+ | 2006 09 20 | 704 | 0.3− | 0.3+ |
| 2003 11 19 | 699 | 0.4− | 1.0− | 2005 04 04 | 704 | 0.9+ | 0.9+ | 2006 09 20 | 704 | 0.0 | 0.8− |
| 2003 11 19 | 699 | 0.1− | 0.2− | 2005 04 04 | 703 | 0.5− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.1+ |
| 2003 11 19 | 699 | 0.7− | 0.0 | 2005 04 04 | 704 | 0.8+ | 0.0 | 2006 09 26 | 691 | 1.0+ | 0.2− |
| 2003 11 19 | 699 | 0.6+ | 0.0 | 2005 04 04 | 703 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2003 11 20 | 704 | (1.1+ | 1.5+) | 2005 04 04 | 703 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2003 11 20 | 704 | 0.3+ | 0.5+ | 2005 04 04 | 704 | 0.7+ | 0.5− | 2006 09 27 | 704 | 0.1− | 0.0 |
| 2003 11 20 | 704 | 0.0 | 0.0 | 2005 04 04 | 703 | 1.3− | 0.0 | 2006 09 27 | 704 | 0.6− | 0.2− |
| 2003 11 20 | 704 | 0.1− | 0.0 | 2005 04 05 | G96 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.7+ | 0.6+ |
| 2003 11 20 | 704 | 0.2− | 0.5+ | 2005 04 05 | G96 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.3− |
| 2003 11 20 | 704 | 0.6− | 0.4− | 2005 04 05 | G96 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.4− | 0.4+ |
| 2003 11 20 | 704 | 0.6− | 0.6+ | 2005 04 05 | G96 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2003 11 20 | 704 | 0.0 | 0.4− | 2005 04 09 | 704 | 1.3+ | 1.1+ | 2006 09 29 | 704 | 0.0 | 0.2+ |
| 2003 11 20 | 704 | 0.1− | 0.5+ | 2005 04 09 | 704 | 0.5+ | 1.0+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2003 11 20 | 704 | 0.2− | 0.9+ | 2005 04 09 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 691 | 0.1− | 0.3− |
| 2003 11 24 | 699 | 1.4+ | 0.6− | 2005 04 09 | 704 | 0.9+ | 0.8+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2003 11 24 | 699 | (0.5− | 1.5+) | 2005 04 09 | 704 | 0.3+ | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2003 11 24 | 699 | 0.6− | 0.2+ | 2005 04 13 | 699 | (1.7+ | 0.3+) | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2003 11 24 | 704 | 0.8− | 0.6+ | 2005 04 13 | 699 | 0.6+ | 1.0+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2003 11 24 | 699 | 0.3+ | 0.3− | 2005 04 13 | 699 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.1+ |
| 2003 11 24 | 704 | 0.3− | 0.8+ | 2005 04 13 | 699 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.2− |
| 2003 11 24 | 704 | 0.3− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2003 11 24 | 704 | 0.3− | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2003 11 24 | 704 | 0.5+ | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 10 26 | 246 | 0.0 | 1.0+ |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 26 | 246 | 0.3+ | 0.2+ |
| 2003 12 19 | 691 | 0.1− | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 26 | 246 | 0.1+ | 1.1+ |
| 2003 12 19 | 691 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 26 | 246 | 0.9− | 0.3+ |
| 2005 03 04 | G96 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 10 26 | 246 | 0.8− | 0.7+ |
| 2005 03 04 | G96 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.3− | 0.0 | 2006 10 26 | 246 | 0.5− | 0.4+ |
| 2005 03 04 | G96 | 1.1− | 0.2− | 2006 09 14 | 703 | 0.7− | 0.8− | 2006 10 26 | 246 | 0.4− | 1.2+ |

**(143763)∗ 2003 WQ$_{29}$ = 2002 JZ$_{111}$**

Discovered 2003 Nov. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57264)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.96993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28328757 | $\omega$ | 271.48045 | | +0.37852427 | +0.92457923 | |
| $a$ | 2.2960660 | $\Omega$ | 20.92478 | | −0.79372919 | +0.34829430 | |
| $e$ | 0.1218983 | $i$ | 6.95945 | | −0.47614426 | +0.15441607 | |
| $P$ | 3.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.6+ | 0.8− | 2003 12 01 | 691 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.6− | 0.8− |
| 2002 05 11 | 704 | 0.4+ | 0.3+ | 2003 12 01 | 691 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.2− | 1.1+ |
| 2002 05 11 | 704 | 0.1− | 0.7− | 2003 12 01 | 691 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.9− | 0.9+ |
| 2002 05 11 | 704 | 0.1− | 1.4− | 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.8+ | 0.2− |
| 2002 05 17 | 704 | 0.1+ | 0.3+ | 2003 12 19 | 691 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.9− | 0.9+ |
| 2002 05 17 | 704 | 0.4− | 0.1+ | 2003 12 19 | 691 | 0.2− | 0.1− | 2006 08 31 | 704 | 0.4− | 0.5+ |
| 2002 05 17 | 704 | 0.1− | 0.2− | 2005 03 03 | 703 | 1.1− | 1.0+ | 2006 08 31 | 704 | 0.5− | 0.0 |
| 2002 05 17 | 704 | 0.2+ | 0.4+ | 2005 03 03 | 703 | 0.1+ | 0.8+ | 2006 08 31 | 704 | 0.1− | 0.1+ |
| 2002 05 17 | 704 | 0.6− | 0.2+ | 2005 03 03 | 703 | 0.2− | 1.3+ | 2006 09 12 | 704 | 0.1− | 1.1− |
| 2002 06 05 | 644 | 0.5+ | 0.2+ | 2005 03 03 | 703 | 0.1+ | 0.7+ | 2006 09 12 | 704 | 1.0− | 1.3+ |
| 2002 06 05 | 644 | 0.3+ | 0.2+ | 2005 03 04 | 704 | 0.1+ | 0.5+ | 2006 09 12 | 704 | 0.6+ | 0.8+ |
| 2002 06 05 | 644 | 0.1+ | 0.6+ | 2005 03 04 | 704 | 0.4+ | 1.2+ | 2006 09 12 | 704 | 0.6− | 0.8+ |
| 2002 06 18 | 644 | 0.2− | 0.8+ | 2005 03 04 | 704 | 0.3+ | 0.9+ | 2006 09 12 | 704 | 0.3− | 1.2− |
| 2002 06 18 | 644 | 0.1+ | 0.9+ | 2005 03 04 | 704 | 1.0+ | 1.2+ | 2006 09 14 | 644 | 0.1− | 0.4+ |
| 2002 06 18 | 644 | 0.1− | 0.8+ | 2005 03 09 | 704 | 0.0 | 0.8+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 2003 10 19 | 644 | 0.1− | 0.2+ | 2005 03 09 | 704 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.5− | 0.0 |
| 2003 10 19 | 644 | 0.2− | 0.3+ | 2005 03 09 | 704 | 0.6+ | 0.9+ | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 2003 10 19 | 644 | 0.0 | 0.3+ | 2005 03 09 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2003 10 25 | 704 | 0.1+ | 0.4− | 2005 03 09 | 704 | (0.9+ | 2.7+) | 2006 09 14 | 703 | 0.2− | 0.4− |
| 2003 10 25 | 704 | 0.1+ | 0.6+ | 2005 03 12 | 704 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.3− | 0.0 |
| 2003 10 25 | 704 | 0.6+ | 0.3− | 2005 03 12 | 704 | 0.8+ | 0.5+ | 2006 09 16 | 704 | 1.4− | 0.2− |
| 2003 10 25 | 704 | 0.9+ | 0.3+ | 2005 03 12 | 704 | 1.3+ | 0.5+ | 2006 09 16 | 704 | 0.8+ | 0.3+ |
| 2003 11 18 | 691 | 0.0 | 0.1− | 2005 03 12 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.3+ |
| 2003 11 18 | 691 | 0.1+ | 0.2+ | 2005 03 16 | 703 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.2+ | 0.5+ |
| 2003 11 18 | 691 | 0.1+ | 0.0 | 2005 03 16 | 703 | 0.6− | 0.2+ | 2006 09 16 | 704 | (1.5+ | 0.5+) |
| 2003 11 19 | 699 | 1.2− | 0.2+ | 2005 03 16 | 704 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.0 | 0.6+ |
| 2003 11 19 | 699 | 0.1− | 0.3+ | 2005 03 16 | 703 | 0.5+ | 1.1− | 2006 09 19 | 704 | (0.5− | 1.6+) |
| 2003 11 19 | 699 | 0.4− | 0.2+ | 2005 03 16 | 704 | (1.0+ | 2.2+) | 2006 09 19 | 704 | 0.1− | 1.0+ |
| 2003 11 19 | 699 | 1.1+ | 0.8− | 2005 03 16 | 703 | 0.6− | 0.1− | 2006 09 19 | 704 | 0.2+ | 0.3− |
| 2003 11 20 | 704 | 0.2− | 0.5− | 2005 03 16 | 704 | 0.2+ | 1.3+ | 2006 09 22 | 704 | (0.0 | 1.7+) |
| 2003 11 20 | 704 | 0.4+ | 0.2+ | 2005 03 16 | 704 | (2.1+ | 0.3+) | 2006 09 22 | 704 | 0.0 | 0.0 |
| 2003 11 20 | 704 | 0.0 | 0.6+ | 2005 04 10 | 691 | 0.3+ | 0.2+ | 2006 09 22 | 704 | 0.8+ | 0.4+ |
| 2003 11 20 | 704 | 0.0 | 0.3+ | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.1+ | 0.8+ |
| 2003 11 20 | 704 | 0.4− | 0.4+ | 2005 04 10 | 691 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.5+ | 1.1+ |
| 2003 11 24 | 699 | 0.7+ | 0.4− | 2006 08 16 | 644 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.5− | 1.4− |
| 2003 11 24 | 699 | 1.1− | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.4+ | 1.4− |
| 2003 11 24 | 699 | 0.8+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.9− | 1.5+ |
| 2003 11 24 | 704 | 0.5− | 0.5− | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2003 11 24 | 699 | 1.3− | 0.6− | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2003 11 24 | 704 | 0.4+ | 0.5+ | 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.4+ |
| 2003 11 24 | 704 | 0.1+ | 0.2− | 2006 08 28 | 704 | 0.5− | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2003 11 24 | 704 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.3+ | 0.9+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2003 11 24 | 704 | 0.5− | 0.2+ | 2006 08 28 | 704 | 0.6+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |

**(143764)∗ 2003 WS$_{30}$ = 2003 UC$_{224}$**

Discovered 2003 Nov. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (d, *MPO* 57266)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.93549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26978025 | $\omega$ | 229.61711 | | −0.67382412 | −0.73143001 | |
| $a$ | 2.3720797 | $\Omega$ | 263.07396 | | +0.70586798 | −0.59530181 | |
| $e$ | 0.0582562 | $i$ | 6.05675 | | +0.21842952 | −0.33260472 | |
| $P$ | 3.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 11 | 644 | 0.3+ | 0.5+ | 2003 11 24 | 699 | 0.8+ | 0.5− | 2005 05 09 | 703 | 0.4− | 0.6+ |
| 2002 06 11 | 644 | 0.5− | 0.7+ | 2003 11 24 | 699 | 0.6+ | 0.0 | 2005 05 09 | 703 | 0.0 | 0.2− |
| 2002 06 11 | 644 | 0.1− | 0.4+ | 2003 11 24 | 704 | 0.3− | 0.1− | 2005 05 09 | 703 | 0.5− | 0.7+ |
| 2002 07 14 | 704 | 0.5− | 0.3− | 2003 11 24 | 699 | 0.6+ | 0.3− | 2006 08 21 | 644 | 0.3− | 0.2− |
| 2002 07 14 | 704 | 0.1− | 0.3− | 2003 11 24 | 704 | 0.4− | 0.5+ | 2006 08 21 | 644 | 0.1+ | 0.2− |
| 2002 07 14 | 704 | 0.8+ | 0.8− | 2003 11 24 | 704 | 0.6− | 0.4+ | 2006 08 21 | 644 | 0.5− | 0.2− |
| 2003 10 22 | 704 | 0.4+ | 0.4− | 2003 11 28 | 691 | 0.4− | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.1+ |
| 2003 10 22 | 704 | 0.4+ | 0.2− | 2003 11 28 | 691 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.1− | 0.2− |
| 2003 10 22 | 704 | 1.8+ | 0.6− | 2003 11 28 | 691 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.8− |
| 2003 10 25 | 704 | 0.4+ | 0.7+ | 2003 12 01 | 691 | 0.2− | 0.1+ | 2006 08 29 | 703 | 1.0− | 0.5+ |
| 2003 10 25 | 704 | 0.5+ | 0.3− | 2003 12 01 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 2003 10 25 | 704 | 1.8+ | 1.0+ | 2003 12 01 | 691 | 0.2− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3− |
| 2003 10 25 | 704 | 0.2+ | 0.1+ | 2003 12 19 | 704 | 0.5− | 0.5− | 2006 09 15 | 691 | 0.1− | 0.3− |
| 2003 10 25 | 704 | 0.3− | 0.2− | 2003 12 19 | 704 | 0.6+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2003 10 30 | 704 | 0.4+ | 0.7− | 2003 12 19 | 704 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2003 10 30 | 704 | 0.1− | 0.2− | 2003 12 19 | 704 | 1.4+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2003 10 30 | 704 | 0.2+ | 0.1+ | 2003 12 19 | 704 | 0.7+ | 0.7+ | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2003 11 18 | 691 | 0.3− | 0.1− | 2003 12 22 | 704 | 0.2− | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2003 11 18 | 691 | 0.1− | 0.2− | 2003 12 22 | 704 | 1.1− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.2− |
| 2003 11 18 | 691 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2003 11 19 | 699 | 0.6− | 0.3+ | 2003 12 22 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2003 11 19 | 699 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.3+ | 0.0 |
| 2003 11 19 | 699 | 0.2+ | 0.9− | 2003 12 27 | 704 | 0.5− | 0.8+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2003 11 19 | 699 | 0.3+ | 0.8+ | 2003 12 27 | 704 | 0.3− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2003 11 20 | 704 | 0.1− | 0.3− | 2003 12 27 | 704 | 0.4− | 0.7− | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2003 11 20 | 704 | 0.4+ | 0.1+ | 2005 04 18 | 703 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.5+ | 0.0 |
| 2003 11 20 | 704 | 0.2+ | 0.1+ | 2005 04 18 | 703 | 0.9+ | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2003 11 20 | 704 | 0.2− | 0.6− | 2005 04 18 | 703 | 0.4− | 0.7− | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2003 11 20 | 704 | 0.1− | 0.1− | 2005 04 18 | 703 | 0.2− | 0.8− | | | | |
| 2003 11 24 | 699 | 0.4+ | 0.3− | 2005 05 09 | 703 | 0.5+ | 0.1− | | | | |

**(143765)∗ 2003 WP$_{31}$ = 2005 JK$_{153}$**

Discovered 2003 Nov. 18 by NEAT at Palomar.

Id. A. Doppler (*MPO* 86158)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.75246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30083799 | $\omega$ | 205.58783 | | −0.99882919 | +0.03299839 | |
| $a$ | 2.2058752 | $\Omega$ | 336.22279 | | −0.01251716 | −0.88262625 | |
| $e$ | 0.0790351 | $i$ | 5.03350 | | −0.04672862 | −0.46891577 | |
| $P$ | 3.28 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 29 | 327 | 0.2− | 0.2+ | 2005 04 14 | 703 | 0.6− | 1.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 1997 12 29 | 327 | 0.4− | 0.4− | 2005 04 14 | 703 | 1.1+ | 1.0+ | 2006 09 19 | 699 | 0.8− | 0.6+ |
| 1997 12 29 | 327 | 0.8+ | 0.1+ | 2005 04 14 | 703 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.6+ | 0.5− |
| 2003 10 18 | 699 | (0.5− | 2.3−) | 2005 05 04 | 644 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.1− | 1.3+ |
| 2003 10 18 | 699 | 1.1− | 1.1+ | 2005 05 04 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.4− | 0.7− |
| 2003 10 18 | 699 | 0.4+ | 0.1+ | 2005 05 04 | 644 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2003 10 18 | 699 | 1.3− | 0.8+ | 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2003 10 23 | 691 | 0.2+ | 0.0 | 2005 05 16 | 644 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.8− | 0.1− |
| 2003 10 23 | 691 | 0.2+ | 0.2− | 2005 05 16 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2003 10 23 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 1.1− | 0.9− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2003 11 18 | 644 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2003 11 18 | 644 | 0.2+ | 0.4+ | 2006 08 28 | 703 | (1.9− | 1.0−) | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2003 11 18 | 644 | 0.3− | 0.4− | 2006 08 28 | 703 | 0.5+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2003 11 20 | 704 | 1.2+ | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2003 11 20 | 704 | 0.6− | 0.5+ | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2003 11 20 | 704 | 0.5− | 0.2+ | 2006 09 06 | 644 | 0.4+ | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2003 11 24 | 704 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 01 | 691 | 0.5+ | 0.0 |
| 2003 11 24 | 704 | 0.9− | 0.1+ | 2006 09 17 | 703 | 1.0− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.4− |
| 2003 11 24 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2003 11 24 | 704 | 0.5− | 0.2+ | 2006 09 17 | 703 | (2.0+ | 0.1+) | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2003 11 24 | 704 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.2+ | | | | |
| 2005 04 14 | 703 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.3+ | 0.0 | | | | |

**(143766)∗ 2003 WZ$_{33}$ = 1998 HU$_{37}$ = 1999 TR$_{331}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 72980)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.14402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27083550 | $\omega$ | 337.14631 | | −0.10305605 | +0.99314030 | |
| $a$ | 2.3659142 | $\Omega$ | 286.90280 | | −0.90344528 | −0.11669463 | |
| $e$ | 0.1587204 | $i$ | 3.30995 | | −0.41613229 | +0.00739693 | |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 704 | 1.3− | 0.3− | 2003 12 21 | 691 | 0.3− | 0.3+ | 2006 09 20 | 699 | 0.1+ | 0.0 |
| 1998 04 20 | 704 | (2.2− | 1.5+) | 2003 12 21 | 691 | 0.3− | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.2− |
| 1998 04 20 | 704 | (0.9+ | 3.2+) | 2006 08 24 | 704 | 0.9− | 0.6− | 2006 09 20 | 699 | 0.4− | 0.7− |
| 1998 04 20 | 704 | 1.7− | 0.4+ | 2006 08 24 | 704 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.9+ |
| 1998 04 22 | 704 | 0.7+ | 1.3− | 2006 08 24 | 704 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.3− | 0.9− |
| 1998 04 22 | 704 | 0.2+ | 0.2− | 2006 08 24 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 0.8+ |
| 1998 04 22 | 704 | (0.4− | 2.5−) | 2006 08 24 | 704 | 0.7− | 1.0+ | 2006 09 25 | 704 | 0.9+ | 0.2− |
| 1998 04 22 | 704 | 1.6+ | 0.4− | 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 11 10 | 291 | 0.0 | 0.2+ |
| 1998 04 22 | 704 | (1.4− | 2.6−) | 2006 08 27 | 699 | 0.1− | 0.1+ | 2006 11 10 | 291 | 0.1− | 0.2+ |
| 1999 10 13 | 645 | 0.0 | 0.2− | 2006 08 27 | 699 | 0.8− | 0.2+ | 2006 11 10 | 291 | 0.3+ | 0.1+ |
| 1999 10 13 | 645 | 0.1+ | 0.2− | 2006 08 27 | 699 | 0.5− | 0.2+ | 2006 11 11 | 291 | 0.2+ | 0.1+ |
| 1999 10 14 | 645 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.0 | 0.3+ | 2006 11 11 | 291 | 0.0 | 0.1− |
| 1999 10 14 | 645 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 11 11 | 291 | 0.1− | 0.1− |
| 1999 10 15 | 704 | 0.2− | 1.3− | 2006 08 30 | 704 | 0.8+ | 0.4+ | 2006 11 21 | 291 | 0.3+ | 0.1+ |
| 1999 10 15 | 704 | 0.8+ | 1.9+ | 2006 08 30 | 704 | 1.4− | 1.1+ | 2006 11 21 | 291 | 0.2+ | 0.1+ |
| 1999 10 15 | 704 | (2.0+ | 1.4+) | 2006 08 30 | 704 | 0.6− | 0.3+ | 2006 11 21 | 291 | 0.7+ | 0.1− |
| 1999 10 20 | 704 | 1.6+ | 0.6+ | 2006 09 11 | 703 | 1.2− | 0.1+ | 2006 11 22 | 291 | 0.3− | 0.3+ |
| 1999 10 20 | 704 | 0.2+ | 0.1− | 2006 09 11 | 703 | 0.4− | 0.6+ | 2006 11 22 | 291 | 0.3+ | 0.2+ |
| 1999 10 20 | 704 | 0.0 | 0.5− | 2006 09 11 | 703 | 0.9+ | 0.3+ | 2006 11 22 | 291 | 0.1+ | 0.1− |
| 2003 11 19 | 691 | 0.1+ | 0.5+ | 2006 09 11 | 703 | 1.1− | 0.9+ | 2006 11 24 | 291 | 0.2+ | 0.0 |
| 2003 11 19 | 691 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.2− | 2006 11 24 | 291 | 0.3+ | 0.0 |
| 2003 11 19 | 691 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 11 24 | 291 | 0.1− | 0.0 |
| 2003 11 20 | 704 | 0.8− | 1.3+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 11 25 | 291 | 0.3− | 0.1+ |
| 2003 11 20 | 704 | 0.2+ | 1.0+ | 2006 09 16 | 644 | 0.5− | 0.3− | 2006 11 25 | 291 | 0.1− | 0.3+ |
| 2003 11 20 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 644 | 0.7− | 0.2− | 2006 11 25 | 291 | 0.5+ | 0.5+ |
| 2003 11 20 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.1− | | | | |
| 2003 12 21 | 691 | 0.3− | 0.2+ | 2006 09 20 | 699 | 1.3− | 0.7+ | | | | |

**(143767)∗ 2003 WZ$_{35}$ = 2003 VK$_{12}$**

Discovered 2003 Nov. 19 by the Catalina Sky Survey.

Id. A. Doppler (d, *MPO* 86159)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.23906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29553364 | $\omega$ | 344.19177 | | +0.99171147 | −0.12536879 | |
| $a$ | 2.2321914 | $\Omega$ | 23.06645 | | +0.12428785 | +0.88056051 | |
| $e$ | 0.1262122 | $i$ | 4.11649 | | +0.03257117 | +0.45705127 | |
| $P$ | 3.34 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 05 | 691 | 0.3− | 0.3− | 2003 11 24 | 699 | 0.2− | 0.8+ | 2006 08 22 | 644 | 0.4+ | 0.0 |
| 1995 04 05 | 691 | 0.5− | 0.1− | 2003 11 24 | 699 | 0.4− | 0.7− | 2006 08 22 | 644 | 0.1+ | 0.2+ |
| 1995 04 05 | 691 | 0.4+ | 0.2− | 2003 11 24 | 704 | 0.4− | 0.6+ | 2006 08 22 | 644 | 0.3+ | 0.1+ |
| 2003 10 20 | 691 | 0.1+ | 0.1− | 2003 11 24 | 699 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2003 10 20 | 691 | 0.1+ | 0.1− | 2003 11 24 | 704 | 0.2− | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.2− |
| 2003 10 20 | 691 | 1.0+ | 0.4+ | 2003 11 24 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.2− | 1.0− |
| 2003 10 29 | 704 | 0.3+ | 0.6+ | 2003 11 24 | 704 | 0.6+ | 0.2− | 2006 09 14 | 703 | 0.0 | 1.0− |
| 2003 10 29 | 704 | 1.1+ | 0.7+ | 2003 11 24 | 704 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.6+ | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 704 | 0.4− | 0.4+ | 2003 12 01 | 691 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.1+ | | |
| 2003 10 29 | 704 | 0.4+ | 0.1− | 2003 12 01 | 691 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.4+ | 0.1− | | |
| 2003 10 29 | 704 | 0.3− | 0.2− | 2003 12 01 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.9− | 0.8+ | | |
| 2003 11 15 | 691 | 0.1− | 0.2− | 2005 04 06 | G96 | 1.1+ | 1.2− | 2006 09 18 | 699 | 0.7− | 0.2+ | | |
| 2003 11 15 | 691 | 0.1− | 0.1− | 2005 04 06 | G96 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 1.2+ | | |
| 2003 11 15 | 691 | 0.0 | 0.1− | 2005 04 06 | G96 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.6+ | | |
| 2003 11 19 | 699 | 0.3+ | 0.5− | 2005 04 06 | G96 | 0.1− | 0.6+ | 2006 09 30 | 703 | (1.8− | 2.6−) | | |
| 2003 11 19 | 699 | 1.0− | 1.0− | 2005 05 06 | G96 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.7− | | |
| 2003 11 19 | 699 | 0.3− | 0.5− | 2005 05 06 | G96 | 0.0 | 0.7+ | 2006 09 30 | 703 | (1.3− | 2.0−) | | |
| 2003 11 19 | 699 | 0.7− | 0.4− | 2005 05 06 | G96 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.8− | 0.4+ | | |
| 2003 11 19 | 703 | 1.0− | 0.3− | 2005 05 06 | G96 | 0.4+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.5− | | |
| 2003 11 19 | 703 | 0.2+ | 0.8− | 2006 08 16 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2003 11 19 | 703 | 0.2− | 0.0 | 2006 08 16 | 644 | 0.7+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2003 11 19 | 703 | 1.5− | 1.3+ | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.4− | | |
| 2003 11 20 | 704 | 0.2+ | 0.5− | 2006 08 17 | 644 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 2003 11 20 | 704 | 0.2+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2003 11 20 | 704 | 0.2− | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.2− | | |
| 2003 11 20 | 704 | 0.3− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.2− | | |
| 2003 11 20 | 704 | 0.1− | 0.3+ | 2006 08 18 | 644 | 0.3+ | 0.3+ | | | | | | |
| 2003 11 24 | 699 | 0.9+ | 1.0+ | 2006 08 18 | 644 | 0.1− | 0.1− | | | | | | |

**(143768)∗ 2003 WH$_{36}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.42314 | | (2000.0) | | | |
| $n$ | 0.28685448 | $\omega$ | 35.25273 | | +0.99976288 | +0.01010054 |
| $a$ | 2.2769926 | $\Omega$ | 324.15367 | | −0.01730144 | +0.90640250 |
| $e$ | 0.1153502 | $i$ | 1.88780 | | +0.01322284 | +0.42229430 |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 691 | 0.2+ | 0.9+ | 2005 05 12 | G96 | 0.5− | 0.3+ | 2006 08 28 | 699 | 0.9− | 0.8+ | | |
| 2001 02 19 | 691 | 0.2+ | 0.5+ | 2006 08 06 | A50 | 0.7+ | 0.3+ | 2006 08 28 | 699 | 0.1− | 0.1+ | | |
| 2001 02 19 | 691 | 0.0 | 0.4+ | 2006 08 06 | A50 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.1− | 0.1− | | |
| 2003 10 24 | 704 | 0.9− | 0.3− | 2006 08 06 | A50 | 0.3+ | 0.1− | 2006 08 29 | 704 | 0.0 | 0.2− | | |
| 2003 10 24 | 704 | 0.1− | 0.1− | 2006 08 07 | A50 | 0.1− | 0.5+ | 2006 08 29 | 704 | 0.3+ | 0.2+ | | |
| 2003 10 24 | 704 | 0.8+ | 0.2− | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 08 29 | 704 | 0.6+ | 0.2+ | | |
| 2003 10 29 | 704 | (2.0+ | 2.0−) | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 08 30 | 704 | (0.3− | 2.6−) | | |
| 2003 10 29 | 704 | 0.5+ | 0.5− | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.2− | 1.1− | | |
| 2003 10 29 | 704 | 0.9+ | 0.3− | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 08 30 | 704 | (0.4+ | 4.0−) | | |
| 2003 10 29 | 704 | 0.2− | 0.8+ | 2006 08 18 | 699 | 0.3+ | 1.0+ | 2006 08 30 | 704 | (0.2+ | 2.8−) | | |
| 2003 11 19 | 691 | 0.1− | 0.2− | 2006 08 18 | 704 | (1.8− | 1.4+) | 2006 08 30 | 704 | (0.5+ | 3.1−) | | |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2006 08 18 | 699 | 0.4+ | 0.9+ | 2006 09 18 | 699 | 0.3+ | 0.3− | | |
| 2003 11 19 | 691 | 0.1+ | 0.1− | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.0 | 0.0 | | |
| 2003 11 20 | 704 | 0.6− | 0.3− | 2006 08 18 | 704 | (1.0− | 1.9+) | 2006 09 18 | 699 | 1.1+ | 0.5− | | |
| 2003 11 20 | 704 | 0.4+ | 0.1+ | 2006 08 18 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 1.1+ | 0.2+ | | |
| 2003 11 20 | 704 | 0.6+ | 0.1+ | 2006 08 18 | 699 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.1− | 0.0 | | |
| 2003 11 20 | 704 | 0.1+ | 1.0− | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 20 | 704 | 1.2+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.4+ | 0.6+ | 2006 08 18 | 699 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.7+ | | |
| 2003 11 24 | 704 | 0.3+ | 1.3+ | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.4+ | | |
| 2003 11 24 | 704 | 0.2+ | 1.2+ | 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.6+ | 0.3− | | |
| 2003 11 24 | 704 | 0.5− | 1.0+ | 2006 08 19 | 691 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.3− | 0.4− | | |
| 2003 11 24 | 704 | 0.1− | 0.6+ | 2006 08 21 | 704 | 0.3− | 0.8+ | 2006 09 25 | 699 | 0.4− | 0.3+ | | |
| 2003 11 29 | 704 | 0.5+ | 1.2+ | 2006 08 21 | 704 | 0.0 | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.0 | | |
| 2003 11 29 | 704 | 1.5+ | 0.4+ | 2006 08 21 | 704 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.3− | | |
| 2003 11 29 | 704 | 0.6+ | 0.3+ | 2006 08 21 | 704 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.2− | | |
| 2003 12 19 | 691 | 0.5− | 0.0 | 2006 08 21 | 704 | 0.3+ | 0.4− | 2006 09 25 | G96 | 0.3− | 0.3− | | |
| 2003 12 19 | 704 | 0.4+ | 0.0 | 2006 08 25 | 704 | 0.8+ | 0.7+ | 2006 09 27 | 704 | 0.8− | 0.6+ | | |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2006 08 25 | 704 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.2− | | |
| 2003 12 19 | 704 | 0.7− | 0.3+ | 2006 08 25 | 704 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.8− | 0.8+ | | |
| 2003 12 19 | 704 | 0.3− | 0.6− | 2006 08 25 | 704 | 0.7− | 1.3+ | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2003 12 19 | 691 | 0.3− | 0.1+ | 2006 08 25 | 704 | 0.8+ | 1.3+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2005 03 17 | 691 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.2− | 0.3− | | |
| 2005 03 17 | 691 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.2− | 0.2− | | |
| 2005 03 17 | 691 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.8− | 0.5− | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2005 05 12 | G96 | 0.3− | 0.3+ | 2006 08 28 | 699 | 0.6− | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.5− | | |
| 2005 05 12 | G96 | 0.6− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2005 05 12 | G96 | 0.1− | 0.7+ | 2006 08 28 | 699 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.2+ | 2.4− | | |

**(143769)∗ 2003 WM$_{37}$**

Discovered 2003 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 204.10936 | | (2000.0) | | | |
| $n$ | 0.26825895 | $\omega$ | 198.08388 | | −0.75828315 | −0.64541497 |
| $a$ | 2.3810393 | $\Omega$ | 301.36470 | | +0.61063344 | −0.65378851 |
| $e$ | 0.0626769 | $i$ | 6.17877 | | +0.22832751 | −0.39496848 |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | (0.2+ | 2.7−) | 2003 10 22 | 704 | 0.8− | 0.1+ | 2003 12 04 | 291 | 0.1+ | 0.0 | | |
| 1999 10 13 | 704 | 0.2+ | 0.6− | 2003 10 22 | 704 | 0.1− | 0.3+ | 2003 12 04 | 291 | 0.2+ | 0.1+ | | |
| 1999 10 13 | 704 | 0.4− | 0.9− | 2003 10 22 | 704 | 0.7+ | 1.3+ | 2003 12 04 | 291 | 0.1+ | 0.0 | | |
| 1999 10 13 | 704 | 0.6+ | 0.7− | 2003 11 19 | 704 | 0.3+ | 0.2− | 2003 12 17 | 691 | 0.1− | 0.2− | | |
| 1999 10 13 | 704 | 0.5− | 1.0− | 2003 11 19 | 704 | 0.1− | 0.1+ | 2003 12 17 | 691 | 0.0 | 0.0 | | |
| 1999 10 13 | 704 | 0.1− | 0.9− | 2003 11 19 | 704 | 1.4+ | 0.5+ | 2003 12 17 | 691 | 0.1− | 0.0 | | |
| 1999 10 13 | 704 | 0.1+ | 0.5− | 2003 11 19 | 704 | 1.8− | 0.4+ | 2005 05 04 | 644 | 0.2− | 0.3+ | | |
| 1999 10 13 | 704 | 0.1+ | 0.1− | 2003 11 20 | 704 | 0.8+ | 0.1+ | 2005 05 04 | 644 | 0.3− | 0.3+ | | |
| 1999 10 13 | 704 | 0.3+ | 1.5− | 2003 11 20 | 704 | 0.4− | 0.5− | 2005 05 04 | 644 | 0.1− | 0.1+ | | |
| 1999 10 13 | 645 | 0.1+ | 0.2− | 2003 11 20 | 704 | 0.4+ | 0.3+ | 2006 07 21 | 703 | 1.4+ | 1.2+ | | |
| 1999 10 13 | 645 | 0.1+ | 0.2− | 2003 12 01 | 691 | 0.0 | 0.3+ | 2006 07 21 | 703 | 0.5+ | 0.8+ | | |
| 1999 10 14 | 645 | 0.1+ | 0.2− | 2003 12 01 | 691 | 0.1+ | 0.4+ | 2006 07 21 | 703 | 0.4− | 0.7+ | | |
| 1999 10 14 | 645 | 0.1+ | 0.2− | 2003 12 01 | 691 | 0.1+ | 0.3+ | 2006 07 21 | 703 | 1.9− | 0.9+ | | |
| 2000 12 23 | 645 | 0.0 | 0.1+ | 2003 12 01 | 691 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.4+ | | |
| 2000 12 23 | 645 | 0.0 | 0.2+ | 2003 12 01 | 691 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.4+ | 0.1+ | | |
| 2001 01 26 | 704 | 0.2− | 0.1− | 2003 12 01 | 691 | 0.1+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.1+ | | |
| 2001 01 26 | 704 | 0.0 | 0.7+ | 2003 12 04 | 704 | 0.2− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.2− | | |
| 2001 01 26 | 704 | 0.7− | 1.0+ | 2003 12 04 | 704 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.3+ | | |
| 2001 01 26 | 704 | 0.8− | 0.8− | 2003 12 04 | 704 | 0.6+ | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.1+ | | |
| 2001 02 17 | 608 | 0.3+ | 0.5− | 2003 12 04 | 291 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.5+ | | |
| 2001 02 17 | 608 | 0.6+ | 0.3− | 2003 12 04 | 291 | 0.4− | 0.1− | 2006 09 14 | 691 | 0.2− | 0.2+ | | |
| 2001 02 17 | 608 | 0.4+ | 0.3− | 2003 12 04 | 291 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.7− | 0.6+ | | |
| 2001 03 19 | 608 | 0.3− | 1.5− | 2003 12 04 | 291 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.7+ | | |
| 2001 03 19 | 608 | 0.0 | 1.3− | 2003 12 04 | 291 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.7− | 0.7+ | | |
| 2001 03 19 | 608 | 0.1− | 1.9− | 2003 12 04 | 291 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.9− | 1.2+ | | |

**(143770)∗ 2003 WR$_{37}$**

Discovered 2003 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.52915 | | (2000.0) | | | |
| $n$ | 0.29696537 | $\omega$ | 14.57616 | | +0.95304195 | −0.30277123 |
| $a$ | 2.2250111 | $\Omega$ | 3.07010 | | +0.26457453 | +0.82220084 |
| $e$ | 0.1651363 | $i$ | 6.83413 | | +0.14734772 | +0.48199103 |
| $P$ | 3.32 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 21 | 691 | 0.2− | 0.4+ | 2005 04 04 | 691 | 0.3+ | 1.0+ | 2006 09 16 | 704 | 0.1− | 0.5− | | |
| 1998 03 21 | 691 | 0.0 | 0.0 | 2005 04 04 | 691 | 0.0 | 0.3− | 2006 09 16 | 704 | 0.0 | 0.1+ | | |
| 1998 03 21 | 691 | 0.4+ | 0.2+ | 2005 04 04 | 691 | 0.5+ | 0.1− | 2006 09 18 | 699 | 0.5− | 0.5+ | | |
| 2003 10 05 | 704 | 0.2+ | 1.4+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.6+ | | |
| 2003 10 05 | 704 | 0.2+ | 1.0− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 1.2− | 1.2− | | |
| 2003 10 05 | 704 | 0.2− | 0.9+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.9+ | | |
| 2003 10 05 | 704 | 1.0− | 1.0+ | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.1+ | 0.1+ | | |
| 2003 11 19 | 704 | 0.5+ | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.2+ | | |
| 2003 11 19 | 704 | 0.5+ | 0.3+ | 2006 08 21 | 644 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.2+ | | |
| 2003 11 19 | 704 | 0.5− | 0.4+ | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.5+ | 0.2+ | | |
| 2003 11 19 | 704 | 0.6+ | 0.5− | 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.2+ | 1.0+ | | |
| 2003 11 19 | 704 | 0.6+ | 1.1− | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.5− | 0.1− | | |
| 2003 11 20 | 704 | 0.3+ | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.5+ | | |
| 2003 11 20 | 704 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 0.2− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2003 11 20 | 704 | 0.3− | 0.1+ | 2006 08 23 | 704 | 0.3− | 0.3− | 2006 09 26 | 704 | 0.3+ | 1.3− |
| 2003 11 20 | 704 | 0.6+ | 0.4+ | 2006 08 23 | 704 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.2− | 0.7+ |
| 2003 12 03 | 704 | 0.4+ | 0.3− | 2006 08 23 | 704 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.7− | 1.4+ |
| 2003 12 03 | 704 | 0.3− | 0.2+ | 2006 08 23 | 704 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.3+ | 0.4− |
| 2003 12 03 | 704 | 0.3− | 0.3+ | 2006 08 23 | 704 | 0.4− | 0.7+ | 2006 09 28 | 704 | 0.4− | 1.0+ |
| 2003 12 03 | 704 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.4+ | 0.6+ | 2006 09 28 | 704 | 0.3− | 0.2− |
| 2003 12 03 | 704 | 0.3+ | 0.1− | 2006 08 28 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2003 12 16 | 691 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.6− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2003 12 16 | 691 | 0.2− | 0.1+ | 2006 08 28 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2003 12 16 | 691 | 0.1− | 0.2− | 2006 08 28 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 1.0+ |
| 2003 12 17 | 704 | 0.2− | 0.3+ | 2006 08 31 | 704 | 1.0+ | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2003 12 17 | 704 | 0.2− | 0.2+ | 2006 08 31 | 704 | (0.3+ | 1.8+) | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2003 12 17 | 704 | 0.4− | 0.4+ | 2006 08 31 | 704 | 0.6+ | 1.0+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2003 12 17 | 704 | 0.3− | 0.7+ | 2006 08 31 | 704 | 0.2+ | 0.9+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2003 12 17 | 704 | 0.4+ | 0.2+ | 2006 08 31 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 09 12 | 704 | 0.0 | 1.1− | 2006 11 11 | G96 | 0.2− | 0.6− |
| 2004 01 17 | 644 | 0.3− | 0.3+ | 2006 09 12 | 704 | 1.3+ | 1.1− | 2006 11 11 | 703 | 0.9+ | 0.1+ |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 09 12 | 704 | 0.6− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2004 01 17 | 644 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.0 | 0.8− |
| 2005 03 11 | G96 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.6− | 2006 11 13 | G96 | 0.9+ | 0.1+ |
| 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.3+ | 0.4− | 2006 11 13 | G96 | 0.1− | 0.8− |
| 2005 03 11 | G96 | 0.3− | 0.2+ | 2006 09 16 | 704 | 0.0 | 1.2+ | 2006 11 13 | G96 | 0.2+ | 1.1− |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 09 16 | 704 | (0.9− | 2.2+) | 2006 11 13 | G96 | 0.2+ | 0.3− |

**(143771)∗ 2003 WS$_{39}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.51160 | | (2000.0) | | | |
| $n$ | 0.29383573 | $\omega$ | 278.44953 | | +0.41676434 | +0.90844890 |
| $a$ | 2.2407822 | $\Omega$ | 16.29559 | | −0.78257089 | +0.37651523 |
| $e$ | 0.1234475 | $i$ | 6.56159 | | −0.46248274 | +0.18154027 |
| $P$ | 3.35 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.6− | 0.1− | 2003 12 01 | 691 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.5− |
| 2002 04 14 | 704 | 0.2+ | 0.8+ | 2003 12 01 | 691 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.7− | 0.5+ |
| 2002 04 14 | 704 | 1.0+ | 1.0+ | 2003 12 01 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | (0.6− | 1.7+) |
| 2002 04 14 | 704 | 0.2+ | 0.5+ | 2005 03 10 | 699 | 0.0 | 0.0 | 2006 09 22 | 704 | (1.6− | 0.7+) |
| 2002 04 14 | 704 | 0.3+ | 0.7+ | 2005 03 10 | 699 | 0.7− | 0.1− | 2006 09 22 | 704 | 0.7− | 0.4+ |
| 2002 05 10 | 644 | 0.7+ | 0.9+ | 2005 03 10 | 699 | 0.9+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.3+ |
| 2002 05 10 | 644 | 0.6+ | 1.4+ | 2005 03 10 | 699 | 1.4+ | 1.3+ | 2006 09 25 | 699 | 1.0+ | 0.3+ |
| 2002 05 10 | 644 | 0.2+ | 0.3+ | 2005 05 11 | G96 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.4+ |
| 2002 05 10 | 644 | 0.1+ | 0.3+ | 2005 05 11 | G96 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.5− | 1.0+ |
| 2002 05 10 | 644 | 0.4+ | 1.4+ | 2005 05 11 | G96 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.5+ |
| 2002 05 10 | 644 | 0.8+ | 0.7+ | 2005 05 11 | G96 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.1− |
| 2003 10 25 | 704 | 0.6− | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.3− | 1.3+ |
| 2003 10 25 | 704 | 0.5− | 0.8− | 2006 08 16 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2003 10 25 | 704 | 0.9− | 0.4+ | 2006 08 16 | 644 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2003 10 25 | 704 | 0.2+ | 0.6− | 2006 08 29 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2003 11 19 | 691 | 0.2+ | 0.0 | 2006 08 29 | 691 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2003 11 19 | 691 | 0.0 | 0.2+ | 2006 08 29 | 691 | 0.4+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2003 11 19 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.6− |
| 2003 11 20 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 1.4− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 11 20 | 704 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2003 11 20 | 704 | 0.3− | 0.8+ | 2006 09 14 | 703 | 0.9− | 1.0− | 2006 11 15 | G96 | 0.1− | 0.7− |
| 2003 11 20 | 704 | 0.8− | 0.4+ | 2006 09 16 | 699 | 0.5− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2003 11 20 | 704 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.6+ | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2003 12 01 | 691 | 0.0 | 0.3+ | 2006 09 16 | 699 | 1.3− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2003 12 01 | 691 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.4− | 0.5− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2003 12 01 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.3− | | | | |

**(143772)∗ 2003 WF$_{41}$ = 1993 UL$_{1}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57275)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.52450 | | (2000.0) | | | |
| $n$ | 0.29863077 | $\omega$ | 106.50385 | | +0.93722455 | −0.34421884 |
| $a$ | 2.2167311 | $\Omega$ | 273.65742 | | +0.29477598 | +0.86761887 |
| $e$ | 0.1752403 | $i$ | 3.21039 | | +0.18632570 | +0.35881874 |
| $P$ | 3.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 16 | 691 | 0.5+ | 0.1+ | 2003 12 22 | 704 | 0.4+ | 1.3+ | 2006 09 01 | 704 | 0.4+ | 0.4− |
| 1993 10 16 | 691 | 0.5+ | 0.1− | 2003 12 22 | 704 | 1.1+ | 1.4+ | 2006 09 01 | 704 | 0.9+ | 1.4− |
| 1993 10 16 | 691 | 0.6+ | 0.2− | 2003 12 22 | 704 | (0.4+ | 2.0+) | 2006 09 01 | 704 | 0.7+ | 0.0 |
| 1993 10 21 | 691 | 0.1− | 0.2+ | 2003 12 27 | 691 | 0.1+ | 0.3− | 2006 09 01 | 704 | 0.5− | 0.8− |
| 1993 10 21 | 691 | 0.5− | 0.3+ | 2003 12 27 | 691 | 0.1− | 0.4− | 2006 09 11 | 703 | 0.5+ | 0.4− |
| 1993 10 21 | 691 | 0.9− | 0.2− | 2003 12 27 | 691 | 0.4− | 0.3− | 2006 09 11 | 703 | 0.6+ | 0.3− |
| 2003 10 16 | 691 | 0.3− | 0.1+ | 2003 12 27 | 704 | 0.5− | 0.8− | 2006 09 11 | 703 | 0.3− | 0.0 |
| 2003 10 16 | 691 | 0.1− | 0.1− | 2003 12 27 | 704 | (1.8+ | 0.2−) | 2006 09 11 | 703 | 0.3+ | 0.9− |
| 2003 10 16 | 691 | 0.0 | 0.1+ | 2003 12 27 | 704 | 1.2+ | 0.7+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2003 10 29 | 704 | 0.4− | 0.1− | 2005 04 06 | 691 | 0.5+ | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.1− |
| 2003 10 29 | 704 | 0.5− | 0.7+ | 2005 04 06 | 691 | 0.1+ | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2003 10 29 | 704 | 0.5− | 0.6+ | 2005 04 06 | 691 | 0.1− | 0.3+ | 2006 09 18 | 703 | 1.0− | 0.6− |
| 2003 11 19 | 691 | 0.1+ | 0.1− | 2006 08 15 | 644 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.7− |
| 2003 11 19 | 691 | 0.0 | 0.1− | 2006 08 15 | 644 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.1+ |
| 2003 11 19 | 691 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.5− | 1.0− |
| 2003 11 20 | 704 | 0.8+ | 0.7− | 2006 08 19 | 644 | 0.3− | 0.1+ | 2006 09 18 | 704 | 0.3+ | 0.1+ |
| 2003 11 20 | 704 | 0.5− | 0.0 | 2006 08 19 | 644 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.9− | 0.7− |
| 2003 11 20 | 704 | 0.4+ | 0.1− | 2006 08 19 | 644 | 0.4− | 0.3+ | 2006 09 18 | 704 | 0.6− | 0.3− |
| 2003 11 20 | 704 | 0.3+ | 0.2+ | 2006 08 24 | 704 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.3− |
| 2003 11 20 | 704 | 0.1− | 0.1+ | 2006 08 24 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.4+ |
| 2003 11 21 | 704 | 0.1− | 0.2+ | 2006 08 24 | 704 | 0.3− | 0.5+ | 2006 09 20 | 699 | 0.8− | 0.4− |
| 2003 11 21 | 704 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.6− | 0.3+ | 2006 09 20 | 699 | 0.6+ | 0.3− |
| 2003 11 21 | 704 | 0.0 | 0.3− | 2006 08 26 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.9+ |
| 2003 11 21 | 704 | 0.1− | 0.5+ | 2006 08 26 | 704 | 0.1− | 0.7+ | 2006 09 25 | 704 | 1.3− | 0.9+ |
| 2003 11 21 | 704 | 0.6+ | 0.0 | 2006 08 26 | 704 | 0.6− | 1.3+ | 2006 09 25 | 704 | (0.6− | 2.0+) |
| 2003 11 24 | 704 | 0.7− | 0.0 | 2006 08 29 | 703 | 0.5+ | 0.1+ | 2006 09 25 | 704 | 1.0− | 0.9+ |
| 2003 11 24 | 704 | 0.6− | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.4− | 1.2+ |
| 2003 11 24 | 704 | 0.5− | 0.2+ | 2006 08 29 | 703 | 0.7− | 0.3+ | 2006 09 30 | 699 | 0.1+ | 0.2+ |
| 2003 11 24 | 704 | 0.9− | 0.2+ | 2006 08 30 | 704 | 0.7+ | 0.5− | 2006 09 30 | 699 | 0.5− | 0.1− |
| 2003 11 24 | 704 | 0.7− | 0.2− | 2006 08 30 | 704 | 1.0+ | 0.1+ | 2006 09 30 | 699 | 0.3− | 0.5+ |
| 2003 12 14 | 291 | 0.4+ | 0.1− | 2006 08 30 | 704 | (1.6+ | 1.3+) | 2006 09 30 | 699 | 0.7+ | 0.5− |
| 2003 12 14 | 291 | 0.1− | 0.7+ | 2006 08 30 | 704 | 0.6+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2003 12 14 | 291 | 0.5+ | 0.2− | 2006 08 30 | 704 | 1.5+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | 0.7− | 0.4+ | 2006 09 01 | 704 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ |

**(143773)∗ 2003 WY$_{42}$ = 1993 TU$_{45}$**

Discovered 2003 Nov. 16 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 57277)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.72253 | | (2000.0) | | | |
| $n$ | 0.29950180 | $\omega$ | 191.59468 | | +0.99936450 | −0.03069651 |
| $a$ | 2.2124311 | $\Omega$ | 170.11055 | | +0.03472279 | +0.95324375 |
| $e$ | 0.1934731 | $i$ | 6.05598 | | −0.00805708 | +0.30063946 |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | (1.9− | 2.4−) | 2005 04 09 | G96 | 0.2− | 0.9+ | 2006 09 01 | 704 | 0.0 | 0.7− |
| 1993 10 09 | 809 | 1.2− | 1.4− | 2005 04 09 | G96 | 0.3+ | 0.5+ | 2006 09 12 | 699 | 1.4− | 0.9+ |
| 1993 10 09 | 809 | (1.2− | 2.7−) | 2005 04 09 | G96 | 0.6+ | 0.9+ | 2006 09 12 | 699 | 0.2+ | 0.4+ |
| 1993 10 11 | 809 | 0.2+ | 1.0+ | 2005 04 09 | G96 | (0.7+ | 1.5+) | 2006 09 12 | 699 | 0.4+ | 0.0 |
| 1993 10 11 | 809 | 0.4+ | 1.5+ | 2005 04 09 | G96 | 0.1− | 1.2+ | 2006 09 12 | 704 | 0.5+ | 0.5+ |
| 1993 10 11 | 809 | 0.3+ | 0.7+ | 2005 04 09 | G96 | 1.2+ | 0.8+ | 2006 09 12 | 704 | 0.4+ | 0.3− |
| 1999 07 04 | 691 | 0.2+ | 0.3− | 2005 04 09 | G96 | 0.3− | 0.9+ | 2006 09 12 | 704 | 1.1+ | 0.2− |
| 1999 07 04 | 691 | 0.4− | 0.0 | 2006 07 21 | 644 | 0.2− | 0.2+ | 2006 09 12 | 704 | 0.4+ | 0.1+ |
| 1999 07 04 | 691 | 0.0 | 0.6− | 2006 07 21 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 704 | 0.7− | 0.4+ |
| 2003 10 21 | 704 | 0.4− | 0.9+ | 2006 07 21 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 704 | 1.2− | 0.9− | 2006 08 18 | 704 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.3− |
| 2003 10 21 | 704 | 0.1− | 0.4− | 2006 08 18 | 699 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.5− |
| 2003 10 21 | 704 | 0.2− | 0.5− | 2006 08 18 | 704 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.5− |
| 2003 10 21 | 704 | 0.7− | 0.0 | 2006 08 18 | 699 | 0.1− | 0.5− | 2006 09 17 | 704 | 0.8+ | 0.3− |
| 2003 10 29 | 699 | 1.1− | 1.0− | 2006 08 18 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.2− |
| 2003 10 29 | 699 | 0.7+ | 0.4− | 2006 08 18 | 704 | 0.2+ | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.4− |
| 2003 10 29 | 699 | 0.3− | 0.2− | 2006 08 18 | 699 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.0 |
| 2003 10 29 | 699 | 0.6− | 0.1− | 2006 08 18 | 699 | 0.6− | 0.0 | 2006 09 17 | 704 | 0.7+ | 0.0 |
| 2003 11 01 | 704 | 0.5− | 0.6+ | 2006 08 24 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.2− |
| 2003 11 01 | 704 | 0.4− | 0.5+ | 2006 08 24 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.3+ |
| 2003 11 01 | 704 | 1.5+ | 0.9+ | 2006 08 24 | 704 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.3+ |
| 2003 11 01 | 704 | 0.2+ | 0.3+ | 2006 08 24 | 704 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.9+ | 0.3+ |
| 2003 11 01 | 704 | 0.8− | 0.8+ | 2006 08 24 | 704 | 0.0 | 0.4+ | 2006 09 24 | 699 | 0.1− | 0.9+ |
| 2003 11 16 | 703 | (0.4− | 1.7−) | 2006 08 28 | 699 | 0.0 | 0.2+ | 2006 09 24 | 699 | 0.3+ | 0.1+ |
| 2003 11 16 | 703 | (2.3− | 1.3−) | 2006 08 28 | 699 | 0.3− | 0.1− | 2006 09 24 | 699 | 0.8+ | 0.0 |
| 2003 11 16 | 703 | 0.9− | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.3− | 2006 09 24 | 699 | 0.0 | 0.3+ |
| 2003 11 16 | 703 | (0.5− | 2.3−) | 2006 08 28 | 699 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2003 11 19 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | 1.1− | 0.5− | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2003 11 19 | 644 | 0.1+ | 0.0 | 2006 08 28 | 703 | (1.9− | 0.1+) | 2006 09 25 | G96 | 0.0 | 0.6− |
| 2003 11 19 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2003 11 23 | 699 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 2003 11 23 | 699 | 1.0+ | 0.3+ | 2006 08 30 | 704 | (0.7− | 1.6+) | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2003 11 23 | 699 | 0.4+ | 0.0 | 2006 08 30 | 704 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.6− |
| 2003 11 23 | 699 | 0.5− | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.3− | 1.0− |
| 2003 11 30 | 704 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.6− | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2003 11 30 | 704 | 0.4+ | 0.3− | 2006 08 30 | 704 | 0.2− | 0.4+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2003 11 30 | 704 | 1.2+ | 0.8− | 2006 08 30 | 704 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2003 11 30 | 704 | 0.8+ | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2003 11 30 | 704 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2005 03 10 | G96 | 0.5+ | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2005 03 10 | G96 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.1+ | 1.4+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2005 03 10 | G96 | 0.3+ | 0.2+ | 2006 09 01 | 704 | 0.1− | 0.7+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 03 10 | G96 | 0.1− | 0.3+ | 2006 09 01 | 704 | 0.5− | 0.8+ | | | | |
| 2005 04 09 | G96 | 0.2+ | 1.0+ | 2006 09 01 | 704 | 0.0 | 1.4+ | | | | |

**(143774)∗ 2003 WF$_{43}$ = 1999 RD$_{141}$**

Discovered 2003 Nov. 18 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 69586)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.09719 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27689449 | $\omega$ | 349.85379 | | −0.93531720 | −0.35333530 | |
| $a$ | 2.3312732 | $\Omega$ | 169.39956 | | +0.33119624 | −0.89258241 | |
| $e$ | 0.0459011 | $i$ | 5.71779 | | +0.12446198 | −0.28009071 | |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 691 | 0.1+ | 0.2+ | 2005 03 07 | 704 | 0.2− | 0.8+ | 2005 05 15 | 644 | 0.2− | 0.7+ |
| 1999 09 13 | 691 | 0.1− | 0.2+ | 2005 03 09 | G96 | 0.1− | 0.2+ | 2005 05 15 | 644 | 0.0 | 0.9+ |
| 1999 09 13 | 691 | 0.3− | 0.0 | 2005 03 09 | G96 | 0.5− | 0.0 | 2005 05 15 | 644 | 0.5+ | 0.6+ |
| 1999 09 17 | 691 | 0.2+ | 0.2+ | 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.3+ |
| 1999 09 17 | 691 | 0.0 | 0.2− | 2005 03 09 | G96 | 0.4− | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.7+ |
| 1999 09 17 | 691 | 0.2− | 0.1+ | 2005 03 13 | 703 | (0.4− | 1.5+) | 2006 08 16 | 644 | 0.1+ | 0.3+ |
| 2001 02 19 | 704 | 0.2+ | 0.2+ | 2005 03 13 | 703 | 0.4+ | 0.3− | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 2001 02 19 | 704 | 0.3+ | 0.6+ | 2005 03 13 | 703 | 0.4− | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.6+ |
| 2001 02 19 | 704 | 0.3+ | 0.0 | 2005 03 13 | 703 | 0.5− | 1.2+ | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 2001 02 19 | 704 | 1.1+ | 0.4+ | 2005 04 01 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.0 |
| 2003 10 29 | 691 | 0.1+ | 0.4+ | 2005 04 01 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.5+ | 0.1− |
| 2003 10 29 | 691 | 0.7− | 0.1− | 2005 04 01 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.7+ |
| 2003 10 29 | 691 | 0.2− | 0.0 | 2005 04 01 | 699 | 0.1+ | 1.0+ | 2006 08 28 | 703 | 0.2− | 0.7+ |
| 2003 11 18 | 703 | (2.2− | 0.1−) | 2005 04 01 | 699 | 0.7+ | 1.4+ | 2006 08 28 | 703 | 0.2− | 0.9+ |
| 2003 11 18 | 703 | 0.7− | 0.3+ | 2005 04 01 | 699 | 1.2+ | 0.7+ | 2006 08 28 | 699 | 0.3+ | 0.6+ |
| 2003 11 18 | 703 | (1.0− | 1.6+) | 2005 04 01 | 699 | 0.2+ | 1.0+ | 2006 08 28 | 699 | 1.2− | 1.0+ |
| 2003 11 18 | 703 | 1.3− | 1.0+ | 2005 04 09 | 704 | 0.4+ | 0.3− | 2006 08 28 | 699 | 0.4+ | 0.2+ |
| 2003 11 19 | 644 | 0.3+ | 0.2+ | 2005 04 09 | 704 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2003 11 19 | 644 | 0.5+ | 0.0 | 2005 04 09 | 704 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2003 11 19 | 644 | 0.2+ | 0.3+ | 2005 04 13 | 704 | 0.7+ | 1.2+ | 2006 09 26 | G96 | 0.5+ | 0.9− |
| 2003 11 29 | 691 | 0.3+ | 0.3+ | 2005 04 13 | 704 | 0.9+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2003 11 29 | 691 | 0.0 | 0.2+ | 2005 04 13 | 704 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2003 11 29 | 691 | 0.1+ | 0.5+ | 2005 04 18 | 703 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2005 03 07 | 704 | (2.2− | 0.6+) | 2005 04 18 | 703 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.5+ |
| 2005 03 07 | 704 | 0.6− | 0.5− | 2005 04 18 | 703 | 0.8− | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2005 03 07 | 704 | (2.0− | 0.4+) | 2005 04 18 | 703 | 0.9− | 0.1+ | | | | |

**(143775)∗ 2003 WR$_{57}$ = 2005 EJ$_{102}$**

Discovered 2003 Nov. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76210)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.11721 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28597776 | $\omega$ | 195.22595 | | −0.45204906 | +0.88805885 | |
| $a$ | 2.2816440 | $\Omega$ | 47.97857 | | −0.80616958 | −0.36660022 | |
| $e$ | 0.1057588 | $i$ | 6.46791 | | −0.38176204 | −0.27740900 | |
| $P$ | 3.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.0 | 0.4+ | 2005 03 18 | 703 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.0 |
| 1998 03 25 | 704 | 0.4− | 1.4− | 2005 03 18 | 703 | 0.4− | 0.5− | 2006 09 30 | 703 | 0.9+ | 0.5− |
| 1998 03 25 | 704 | 1.2+ | 0.5+ | 2005 04 04 | 703 | 0.8− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.0 |
| 1998 03 25 | 704 | 1.1− | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 2003 11 18 | 691 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.2− |
| 2003 11 18 | 691 | 0.1− | 0.2+ | 2005 04 04 | 703 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2005 04 05 | 699 | (2.7+ | 1.0−) | 2006 09 30 | 703 | 0.1+ | 0.7+ |
| 2003 11 21 | 704 | 0.7− | 0.4− | 2005 04 05 | 699 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.4− |
| 2003 11 21 | 704 | 0.0 | 0.1+ | 2005 04 05 | 699 | 0.1− | 0.9+ | 2006 09 30 | 703 | 1.2− | 1.1+ |
| 2003 11 21 | 704 | 0.7+ | 0.2+ | 2005 04 05 | 699 | 1.0+ | 0.7+ | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2003 11 21 | 704 | 0.3+ | 0.7+ | 2005 04 08 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 1.5− | 0.1+ |
| 2003 11 21 | 704 | 0.9− | 0.2− | 2005 04 08 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 703 | 0.8+ | 0.7+ |
| 2003 12 18 | 691 | 0.2+ | 0.0 | 2005 04 08 | 704 | 0.2− | 1.0+ | 2006 10 16 | 703 | 1.1− | 0.9+ |
| 2003 12 18 | 691 | 0.1+ | 0.0 | 2005 04 08 | 704 | 1.0+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2003 12 18 | 691 | 0.1+ | 0.1− | 2005 04 13 | 699 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2005 03 03 | 703 | 0.1+ | 0.4+ | 2005 04 13 | 699 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.5+ |
| 2005 03 03 | 703 | 1.3− | 1.0+ | 2005 04 13 | 704 | 1.5+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2005 03 03 | 703 | 0.4+ | 0.3+ | 2005 04 13 | 704 | 1.2+ | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2005 03 03 | 703 | 0.7+ | 0.0 | 2005 04 13 | 699 | 0.4+ | 0.6− | 2006 10 22 | 644 | 0.6+ | 0.3+ |
| 2005 03 10 | 703 | 0.6− | 1.0− | 2005 04 13 | 704 | 1.2+ | 0.6+ | 2006 11 23 | G96 | 0.5+ | 0.0 |
| 2005 03 10 | 703 | 1.1− | 0.3− | 2005 04 13 | 704 | (0.1− | 1.6+) | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2005 03 10 | 703 | 0.6− | 0.8− | 2005 04 13 | 699 | 0.7+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2005 03 10 | 703 | 1.0− | 0.9− | 2005 04 13 | 704 | 0.4− | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2005 03 18 | 704 | 0.2+ | 0.1+ | 2005 05 04 | 644 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2005 03 18 | 704 | 1.0+ | 1.2+ | 2005 05 04 | 644 | 0.6+ | 0.1+ | 2006 11 25 | G96 | 0.1− | 1.1+ |
| 2005 03 18 | 704 | 0.0 | 0.6+ | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.4− | 0.3+ |
| 2005 03 18 | 703 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.3+ |
| 2005 03 18 | 704 | 0.6− | 0.6+ | 2006 09 18 | 703 | (1.6− | 0.4−) | | | | |
| 2005 03 18 | 703 | 0.2+ | 0.8− | 2006 09 18 | 703 | 0.6− | 0.1− | | | | |

**(143776)∗ 2003 WG$_{59}$ = 1993 TC$_{34}$ = 2000 YA$_{110}$**

Discovered 2003 Nov. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57286)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.47023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29997791 | $\omega$ | 345.14918 | | +0.54643405 | −0.83438175 | |
| $a$ | 2.2100895 | $\Omega$ | 71.67984 | | +0.77594180 | +0.47192875 | |
| $e$ | 0.0838411 | $i$ | 4.36354 | | +0.31515734 | +0.28476367 | |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.1+ | 0.4+ | 2003 12 01 | 704 | 0.9− | 0.9+ | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 1993 10 09 | 809 | 0.6− | 0.4+ | 2003 12 01 | 704 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.1+ |
| 1993 10 09 | 809 | 1.7− | 0.5+ | 2003 12 01 | 704 | 0.8+ | 0.5+ | 2006 09 14 | 703 | (1.8+ | 0.2+) |
| 1993 10 11 | 809 | 1.4+ | 0.7− | 2003 12 01 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.3+ | 1.1+ |
| 1993 10 11 | 809 | 0.8+ | 0.8− | 2003 12 01 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 1993 10 11 | 809 | 0.2+ | 1.0− | 2003 12 04 | 703 | 1.3+ | 0.1+ | 2006 09 22 | 704 | 0.6− | 1.2+ |
| 2000 12 30 | 704 | 0.0 | 0.7+ | 2003 12 04 | 703 | 0.6+ | 0.1− | 2006 09 22 | 704 | (0.8− | 2.3+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.4− | 0.6− | 2003 12 04 | 703 | 0.3+ | 0.5− | 2006 09 22 | 704 | 0.1+ | 0.6+ |
| 2000 12 30 | 704 | 0.6+ | 0.9− | 2003 12 04 | 703 | 0.5+ | 1.0+ | 2006 09 25 | 699 | 0.7− | 1.0+ |
| 2000 12 30 | 704 | 0.1+ | 0.4− | 2003 12 16 | 104 | 0.3− | 0.1− | 2006 09 25 | 699 | (0.8+ | 1.7+) |
| 2001 01 04 | 704 | 0.5+ | 1.1+ | 2003 12 16 | 104 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 1.4+ | 0.7− |
| 2001 01 04 | 704 | 0.2− | 0.7+ | 2003 12 16 | 104 | 0.1− | 0.2− | 2006 09 25 | 699 | (1.9+ | 0.1+) |
| 2001 01 04 | 704 | 1.0+ | 1.4+ | 2003 12 16 | 104 | 0.3+ | 0.2− | 2006 09 26 | 704 | 0.3− | 0.4+ |
| 2003 10 24 | 704 | 0.8− | 0.8+ | 2003 12 21 | 291 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.7+ | 1.1+ |
| 2003 10 24 | 704 | 0.6− | 1.2+ | 2003 12 21 | 291 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.1+ |
| 2003 10 24 | 704 | 0.3+ | 0.1+ | 2003 12 21 | 291 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.1+ |
| 2003 10 29 | 699 | 0.8− | 0.0 | 2003 12 21 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.9+ |
| 2003 10 29 | 699 | 1.3+ | 0.2− | 2003 12 21 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.3− |
| 2003 10 29 | 699 | 0.4+ | 0.6− | 2003 12 21 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 0.7− | 0.2− |
| 2003 10 29 | 703 | 1.1− | 0.3− | 2003 12 21 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2003 10 29 | 703 | 1.1− | 0.8+ | 2003 12 21 | 704 | 1.0− | 0.3− | 2006 09 30 | 703 | 0.7+ | 0.3− |
| 2003 10 29 | 699 | 0.1+ | 1.3− | 2003 12 22 | 691 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2003 10 29 | 703 | 0.2− | 0.4+ | 2003 12 22 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2003 10 29 | 703 | 1.1− | 0.1+ | 2003 12 22 | 691 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2003 11 18 | 691 | 0.1+ | 0.1− | 2003 12 26 | 104 | 0.2− | 0.1− | 2006 10 19 | 703 | 1.1+ | 0.5− |
| 2003 11 18 | 691 | 0.1− | 0.1+ | 2003 12 26 | 104 | 1.0− | 0.2− | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2003 11 18 | 691 | 0.2− | 0.1+ | 2003 12 26 | 104 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.5− | 1.3+ |
| 2003 11 19 | 699 | 0.1+ | 0.2− | 2003 12 26 | 104 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.6− | 1.2+ |
| 2003 11 19 | 699 | 0.9− | 0.0 | 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2003 11 19 | 699 | 0.5+ | 0.6+ | 2005 04 12 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2003 11 19 | 699 | 0.6+ | 0.1+ | 2005 04 12 | 691 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2003 11 21 | 704 | 0.8+ | 1.1− | 2005 04 16 | 691 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.3− |
| 2003 11 21 | 704 | 0.1− | 0.3− | 2005 04 16 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2003 11 21 | 704 | 0.4− | 0.2− | 2005 04 16 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 11 21 | 704 | 0.9− | 0.2− | 2006 08 28 | 699 | 0.1− | 0.6+ | 2006 10 23 | 644 | 0.4− | 0.3− |
| 2003 11 21 | 704 | 0.5− | 0.2− | 2006 08 28 | 699 | 0.4− | 1.0− | 2006 10 23 | 644 | 0.4− | 0.3− |
| 2003 11 24 | 703 | 1.0− | 0.6+ | 2006 08 28 | 699 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.5− |
| 2003 11 24 | 703 | 0.3− | 0.6+ | 2006 08 28 | 699 | 0.8− | 0.6+ | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2003 11 24 | 703 | 0.8+ | 0.5− | 2006 08 29 | 691 | 0.2− | 0.3+ | 2006 10 24 | 644 | 0.4− | 0.2− |
| 2003 11 24 | 703 | (1.4− | 2.4+) | 2006 08 29 | 691 | 0.1− | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.3− |

**(143777)∗ 2003 WL$_{66}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.43951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29156863 | $\omega$ | 344.72835 | | +0.85409143 | −0.51618249 | |
| $a$ | 2.2523827 | $\Omega$ | 46.53026 | | +0.48595416 | +0.74814179 | |
| $e$ | 0.1825896 | $i$ | 5.05150 | | +0.18540871 | +0.41694064 | |
| $P$ | 3.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.5− | 0.5+ | 2003 11 24 | 699 | 0.2− | 0.3+ | 2004 01 20 | 704 | 0.7+ | 0.1− |
| 2001 02 16 | 704 | 0.1− | 0.0 | 2003 11 24 | 699 | 0.1+ | 0.6+ | 2005 04 01 | 691 | 0.1− | 0.1− |
| 2001 02 16 | 704 | 0.0 | 0.3+ | 2003 11 26 | 704 | 0.2− | 0.8+ | 2005 04 01 | 691 | 0.1− | 0.0 |
| 2001 02 16 | 704 | 0.4− | 0.7+ | 2003 11 26 | 704 | 0.3− | 0.6+ | 2005 04 01 | 691 | 0.3+ | 0.4+ |
| 2002 05 18 | 644 | 0.6+ | 0.4+ | 2003 11 26 | 704 | 0.1− | 0.9+ | 2005 04 11 | 691 | 0.4− | 0.1+ |
| 2002 05 18 | 644 | 0.2+ | 0.2+ | 2003 11 26 | 704 | 0.1− | 0.5+ | 2005 04 11 | 691 | 0.2+ | 0.1+ |
| 2002 05 18 | 644 | 0.0 | 0.2+ | 2003 11 26 | 704 | 0.1− | 0.5+ | 2005 04 11 | 691 | 0.0 | 0.1− |
| 2003 11 02 | 704 | 0.7+ | 0.2− | 2003 11 30 | 691 | 0.1+ | 0.0 | 2005 04 12 | 691 | 0.1+ | 0.2+ |
| 2003 11 02 | 704 | 0.4− | 1.7+ | 2003 11 30 | 691 | 0.3+ | 0.1− | 2005 04 12 | 691 | 0.3+ | 0.1+ |
| 2003 11 02 | 704 | 0.5+ | 0.4+ | 2003 11 30 | 691 | 0.2+ | 0.1+ | 2005 04 12 | 691 | 0.3+ | 0.2+ |
| 2003 11 02 | 704 | 0.1− | 0.3+ | 2003 12 15 | 703 | 1.3− | 0.2+ | 2005 05 08 | 691 | 0.2+ | 0.2+ |
| 2003 11 02 | 704 | 1.0+ | 1.1+ | 2003 12 15 | 703 | 1.3− | 0.6− | 2005 05 08 | 691 | 0.4+ | 0.0 |
| 2003 11 19 | 699 | 0.3− | 0.2+ | 2003 12 15 | 703 | 1.0− | 1.6− | 2005 05 08 | 691 | 0.2+ | 0.3+ |
| 2003 11 19 | 699 | 0.2− | 0.2− | 2003 12 15 | 703 | 1.6− | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.2+ |
| 2003 11 19 | 699 | 0.2+ | 0.2+ | 2003 12 19 | 704 | 0.1+ | 0.2− | 2005 05 10 | G96 | 0.8− | 0.3+ |
| 2003 11 19 | 699 | 0.3− | 0.1− | 2003 12 19 | 704 | 0.6− | 0.5+ | 2005 05 10 | G96 | 0.2− | 0.5+ |
| 2003 11 19 | 291 | 0.0 | 0.2− | 2003 12 19 | 704 | 0.5+ | 0.4− | 2005 05 10 | G96 | 0.4+ | 1.3+ |
| 2003 11 19 | 291 | 0.1− | 0.2− | 2003 12 19 | 704 | 0.4+ | 0.2+ | 2006 08 16 | E12 | 0.8− | 0.9+ |
| 2003 11 19 | 291 | 0.0 | 0.1− | 2003 12 19 | 704 | 0.3− | 0.4+ | 2006 08 16 | E12 | 1.3− | 0.1+ |
| 2003 11 21 | 704 | 0.3+ | 0.1+ | 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 08 16 | E12 | 0.7− | 0.4+ |
| 2003 11 21 | 704 | 0.2− | 0.3+ | 2003 12 21 | 691 | 0.1+ | 0.0 | 2006 08 16 | E12 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 0.1− | 0.5+ | 2003 12 21 | 691 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2003 11 21 | 704 | 0.0 | 0.1− | 2003 12 22 | 704 | 0.2− | 0.4− | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2003 11 21 | 704 | 0.2+ | 0.1+ | 2003 12 22 | 704 | (2.1+ | 0.6+) | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 2003 11 21 | 644 | 0.3+ | 0.2− | 2003 12 22 | 704 | 1.8+ | 0.2+ | 2006 08 28 | E12 | 0.0 | 0.2− |
| 2003 11 21 | 644 | 0.1+ | 0.0 | 2003 12 22 | 704 | (2.5+ | 0.8+) | 2006 08 28 | E12 | 0.0 | 0.2+ |
| 2003 11 21 | 644 | 0.1− | 0.1+ | 2003 12 22 | 704 | 1.1− | 0.3− | 2006 09 15 | 644 | 0.0 | 0.7+ |
| 2003 11 24 | 699 | 0.0 | 0.6+ | 2004 01 20 | 704 | 0.3− | 0.2+ | 2006 09 15 | 644 | 0.2+ | 0.8+ |
| 2003 11 24 | 699 | 0.1+ | 0.2+ | 2004 01 20 | 704 | 0.3+ | 0.1− | 2006 09 15 | 644 | 0.4+ | 0.7+ |

**(143778)∗ 2003 WG$_{67}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.17211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30996837 | $\omega$ | 87.07642 | | −0.42414456 | −0.90521858 | |
| $a$ | 2.1623424 | $\Omega$ | 28.06586 | | +0.80728182 | −0.39099700 | |
| $e$ | 0.0590572 | $i$ | 3.17892 | | +0.41036259 | −0.16643518 | |
| $P$ | 3.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 31 | 691 | 0.2+ | 0.0 | 2003 12 17 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1995 03 31 | 691 | 0.0 | 0.3− | 2003 12 17 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 704 | 0.7+ | 0.3− |
| 1995 03 31 | 691 | 0.1− | 0.1− | 2003 12 18 | 704 | 0.7+ | 0.3− | 2006 10 23 | 704 | 0.8+ | 0.6− |
| 1995 04 05 | 691 | 0.1− | 0.0 | 2003 12 18 | 704 | 1.0+ | 0.0 | 2006 10 23 | 704 | 0.1− | 0.8+ |
| 1995 04 05 | 691 | 0.1− | 0.3+ | 2003 12 18 | 704 | 1.0+ | 1.1− | 2006 10 23 | 704 | 0.1+ | 0.7− |
| 1995 04 05 | 691 | 0.1+ | 0.4+ | 2003 12 18 | 704 | 0.6+ | 0.0 | 2006 10 23 | 704 | 0.1− | 0.3− |
| 2000 12 20 | 704 | 0.2− | 0.8− | 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.4− |
| 2000 12 20 | 704 | 0.7− | 0.3− | 2003 12 18 | 691 | 0.4− | 0.3− | 2006 10 29 | 691 | 0.2− | 0.2− |
| 2000 12 20 | 704 | 1.0− | 0.4− | 2003 12 18 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.2− |
| 2000 12 20 | 704 | 0.2+ | 0.1− | 2003 12 22 | 704 | 0.2+ | 0.4+ | 2006 11 09 | 691 | 1.2− | 1.1+ |
| 2000 12 20 | 704 | 0.0 | 0.7+ | 2003 12 22 | 704 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2001 01 04 | 704 | 0.4− | 0.2+ | 2003 12 22 | 704 | 0.2− | 0.7+ | 2006 11 09 | 691 | 0.4− | 1.1− |
| 2001 01 04 | 704 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 01 04 | 704 | 0.3− | 0.5+ | 2003 12 27 | 691 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2001 01 04 | 704 | 0.2− | 0.6+ | 2003 12 27 | 691 | 0.5− | 0.5− | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2001 01 04 | 704 | 0.2+ | 0.9+ | 2003 12 27 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2001 01 19 | 704 | 1.5+ | 0.0 | 2003 12 27 | 704 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.0 | 0.9+ |
| 2001 01 19 | 704 | 0.1− | 0.2− | 2003 12 27 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2001 01 19 | 704 | 0.2+ | 0.1− | 2003 12 27 | 704 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.0 | 1.2+ |
| 2001 01 19 | 704 | 0.1− | 0.7− | 2003 12 27 | 704 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2001 01 19 | 704 | 0.6+ | 0.8− | 2005 05 11 | 644 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2003 11 19 | 691 | 0.3− | 0.3+ | 2005 05 11 | 644 | 0.5+ | 1.1+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2005 05 11 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 2003 11 19 | 691 | 0.3− | 0.1+ | 2005 05 22 | 644 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.3+ | 0.6+ |
| 2003 11 20 | 704 | (1.1+ | 2.4−) | 2005 05 22 | 644 | 0.2− | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2003 11 20 | 704 | (0.3+ | 2.7+) | 2005 05 22 | 644 | 0.0 | 0.7+ | 2006 11 17 | 703 | 0.6− | 0.2− |
| 2003 11 20 | 704 | 0.9+ | 1.5+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2003 11 20 | 704 | 0.7− | 1.2+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2003 11 20 | 704 | 0.5+ | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 1.2+ | 0.2− |
| 2003 11 21 | 704 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2003 11 21 | 704 | 0.3+ | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2003 11 21 | 704 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.3− |
| 2003 11 21 | 704 | 0.5− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.9+ |
| 2003 11 21 | 644 | 0.2− | 0.2+ | 2006 10 16 | 104 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2003 11 21 | 644 | 0.2− | 0.3+ | 2006 10 16 | 104 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2003 11 21 | 644 | 0.2− | 0.1+ | 2006 10 16 | 104 | 0.5− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2003 11 24 | 704 | 0.2+ | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2003 11 24 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2003 11 24 | 704 | 0.1− | 1.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2003 11 24 | 704 | 0.1− | 0.4+ | 2006 10 17 | 104 | (0.7+ | 2.1−) | 2006 11 22 | 691 | 0.1− | 0.4+ |
| 2003 11 24 | 704 | 0.1− | 0.5+ | 2006 10 17 | 104 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.3− | 0.1+ |
| 2003 11 26 | 704 | 0.4+ | 0.1− | 2006 10 17 | 104 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2003 11 26 | 704 | 0.2− | 0.7− | 2006 10 17 | 104 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2003 11 26 | 704 | 0.7− | 0.5− | 2006 10 17 | 104 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.3+ |
| 2003 12 04 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 104 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2003 12 04 | 704 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.6+ | 0.4− |
| 2003 12 04 | 704 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.6+ | 0.1− |
| 2003 12 04 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.4+ | 0.3− |
| 2003 12 04 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1+ | | | | |
| 2003 12 17 | 644 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | | | | |

**(143779)∗ 2003 WN$_{67}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC |
|---|---|---|---|---|
| $M$ 21.55985 | (2000.0) | **P** | **Q** | |
| $n$ 0.29285434 | $\omega$ 294.29773 | +0.94553631 | +0.32335983 | |
| $a$ 2.2457855 | $\Omega$ 46.85994 | −0.27697548 | +0.85958403 | |
| $e$ 0.0491533 | $i$ 2.93878 | −0.17101368 | +0.39566869 | |
| $P$ 3.37 | $H$ 16.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.3− | 0.2− | 2003 12 27 | 691 | 0.0 | 0.4− | 2006 08 22 | 644 | 0.1− | 0.0 |
| 2001 01 04 | 704 | 0.6− | 0.4+ | 2003 12 27 | 704 | 0.1+ | 0.5+ | 2006 08 23 | 644 | 0.6− | 0.6+ |
| 2001 01 04 | 704 | 0.6− | 0.5+ | 2003 12 27 | 704 | 0.1− | 0.6+ | 2006 08 23 | 644 | 0.6− | 0.2+ |
| 2001 01 19 | 704 | 0.6+ | 0.2+ | 2003 12 27 | 704 | 0.3+ | 1.1+ | 2006 08 23 | 644 | 0.4− | 0.3+ |
| 2001 01 19 | 704 | 0.4+ | 1.5+ | 2005 03 09 | G96 | 0.4− | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 2001 01 19 | 704 | 0.2− | 0.4− | 2005 03 09 | G96 | 0.4− | 0.1− | 2006 08 24 | 644 | 0.5− | 0.0 |
| 2001 01 19 | 704 | 0.3− | 0.0 | 2005 03 09 | G96 | 0.4− | 0.4− | 2006 08 24 | 644 | 0.8− | 0.2+ |
| 2001 02 17 | 704 | 0.0 | 0.5+ | 2005 03 09 | G96 | 0.8− | 0.3− | 2006 09 12 | 703 | (3.9− | 3.0+) |
| 2001 02 17 | 704 | (1.7+ | 0.2−) | 2005 04 01 | 699 | 0.5+ | 0.6+ | 2006 09 12 | 703 | 0.5− | 1.0+ |
| 2001 02 17 | 704 | 0.7− | 0.8+ | 2005 04 01 | 699 | 0.0 | 1.3+ | 2006 09 12 | 703 | 0.8− | 0.5+ |
| 2001 02 17 | 704 | 0.8+ | 0.1− | 2005 04 01 | 699 | 0.4+ | 0.6+ | 2006 09 12 | 703 | 0.7− | 0.2+ |
| 2003 09 21 | 599 | 0.2− | 0.8+ | 2005 04 01 | 699 | 1.3+ | 0.2− | 2006 09 18 | 703 | 0.6− | 0.0 |
| 2003 09 21 | 599 | 0.1+ | 0.7+ | 2005 04 06 | G96 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.6+ |
| 2003 09 21 | 599 | 0.7− | 0.6− | 2005 04 06 | G96 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.8− | 0.5+ |
| 2003 10 05 | 701 | 0.9+ | 0.2+ | 2005 04 06 | G96 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.1− |
| 2003 10 05 | 701 | 0.4+ | 0.3+ | 2005 04 06 | G96 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.2+ | 1.1+ |
| 2003 10 05 | 701 | 0.8+ | 0.4+ | 2005 04 07 | G96 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.6+ |
| 2003 11 04 | 704 | 0.2+ | 0.1+ | 2005 04 07 | G96 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.5− | 1.0+ |
| 2003 11 04 | 704 | 0.1− | 0.3+ | 2005 04 07 | G96 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.4+ | 1.2+ |
| 2003 11 04 | 704 | 0.1+ | 0.7+ | 2005 04 07 | G96 | 0.3− | 0.2+ | 2006 09 19 | 704 | 0.3+ | 0.9+ |
| 2003 11 04 | 704 | 0.3+ | 0.7+ | 2005 04 09 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 704 | 0.2− | 0.9+ |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2005 04 09 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 704 | (1.6− | 0.1+) |
| 2003 11 19 | 691 | 0.0 | 0.3+ | 2005 04 09 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 704 | 0.3+ | 0.7− |
| 2003 11 19 | 691 | 0.2− | 0.3+ | 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.3+ |
| 2003 11 21 | 704 | 0.2− | 0.3+ | 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 644 | 0.6− | 0.3+ |
| 2003 11 21 | 704 | 0.4− | 0.6+ | 2005 04 10 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.5− | 0.4+ |
| 2003 11 21 | 704 | 0.4− | 0.3+ | 2005 04 11 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 1.2+ |
| 2003 11 21 | 704 | 0.4− | 0.3+ | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.8+ |
| 2003 11 21 | 704 | 0.5+ | 0.8+ | 2005 04 11 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 1.0+ |
| 2003 11 23 | 704 | (2.1+ | 0.8+) | 2005 04 11 | 699 | 1.1+ | 0.3+ | 2006 09 26 | 704 | 0.5+ | 1.1+ |
| 2003 11 23 | 704 | 1.4+ | 0.8+ | 2005 04 11 | 699 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.9+ |
| 2003 11 23 | 704 | (2.1+ | 0.5+) | 2005 04 11 | 699 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.6− | 0.4+ |
| 2003 11 23 | 704 | 0.7+ | 0.0 | 2005 04 11 | 699 | 0.6+ | 0.1− | 2006 09 28 | 704 | 1.2− | 1.0+ |
| 2003 11 23 | 704 | (2.0+ | 0.8+) | 2005 04 12 | 704 | 0.1+ | 1.5+ | 2006 09 28 | 704 | 0.4− | 0.4+ |
| 2003 12 14 | 691 | 0.0 | 0.0 | 2005 04 12 | 704 | 0.5− | 0.4+ | 2006 09 28 | 704 | 0.6− | 0.1+ |
| 2003 12 14 | 691 | 0.0 | 0.0 | 2005 04 12 | 704 | 0.9+ | 0.6+ | 2006 10 17 | 703 | 0.6+ | 0.6+ |
| 2003 12 14 | 691 | 0.0 | 0.1+ | 2005 04 12 | 704 | 1.3+ | 0.2− | 2006 10 17 | 703 | 0.6+ | 1.2+ |
| 2003 12 22 | 704 | 0.8+ | 0.3− | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | (0.6+ | 3.2+) |
| 2003 12 22 | 704 | 0.1+ | 0.6− | 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.6+ | 1.1+ |
| 2003 12 22 | 704 | 0.2+ | 0.2− | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2003 12 22 | 704 | 0.3− | 0.7− | 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2003 12 22 | 704 | 0.4+ | 0.8− | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2003 12 23 | 699 | 0.4+ | 0.4+ | 2005 04 18 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2003 12 23 | 699 | 1.0− | 1.0− | 2005 05 08 | 703 | (3.4− | 0.5−) | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2003 12 23 | 699 | 0.5− | 1.2+ | 2005 05 08 | 703 | 1.3− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2003 12 23 | 699 | (1.7+ | 0.1−) | 2005 05 08 | 703 | 0.7− | 0.3+ | 2006 11 16 | G96 | 1.8− | 1.2− |
| 2003 12 27 | 691 | 0.0 | 0.1+ | 2005 05 08 | 703 | 0.7− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2003 12 27 | 691 | 0.4− | 0.1− | 2006 08 22 | 644 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2003 12 27 | 704 | 0.6+ | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.6− | 0.2− |

**(143780)∗ 2003 WT$_{67}$ = 1999 NW$_{35}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57295)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC |
|---|---|---|---|---|
| $M$ 142.86020 | (2000.0) | **P** | **Q** | |
| $n$ 0.31165768 | $\omega$ 336.16767 | −0.43727200 | +0.89886199 | |
| $a$ 2.1545215 | $\Omega$ 267.89155 | −0.82038608 | −0.41188695 | |
| $e$ 0.1084569 | $i$ 1.66227 | −0.36845608 | −0.14965382 | |
| $P$ 3.16 | $H$ 16.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.2− | 0.4+ | 2005 05 04 | 699 | 0.2− | 0.6− | 2005 05 16 | G96 | 0.0 | 0.1+ |
| 1995 02 03 | 691 | 0.1− | 0.1+ | 2005 05 04 | 704 | (0.4− | 2.0+) | 2005 05 16 | G96 | 0.2+ | 0.7+ |
| 1995 02 03 | 691 | 0.1+ | 0.2+ | 2005 05 04 | 699 | 0.6+ | 1.2+ | 2005 05 16 | G96 | 0.1− | 0.3+ |
| 1996 09 18 | 327 | 0.1+ | 0.2− | 2005 05 04 | 704 | 0.3− | 0.1− | 2005 05 16 | G96 | 0.1+ | 0.3+ |
| 1996 09 18 | 327 | 0.3+ | 0.3+ | 2005 05 04 | 699 | 0.3− | 0.1+ | 2005 05 26 | 699 | 1.0+ | 0.4− |
| 1996 09 18 | 327 | 0.8+ | 0.0 | 2005 05 04 | 704 | 0.2− | 0.5+ | 2005 05 26 | 699 | 0.9+ | 0.8+ |
| 1999 07 14 | 704 | 0.1+ | 0.5− | 2005 05 04 | 704 | 0.2+ | 0.0 | 2005 05 26 | 699 | 0.9+ | 1.1+ |
| 1999 07 14 | 704 | 0.7− | 0.3+ | 2005 05 04 | 644 | 0.1− | 0.1+ | 2005 05 26 | 699 | 1.3+ | 0.8+ |
| 1999 07 14 | 704 | 0.3+ | 0.6+ | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1+ |
| 1999 07 16 | 704 | 0.8− | 0.3+ | 2005 05 04 | 644 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 1999 07 16 | 704 | 0.3− | 1.4+ | 2005 05 04 | E12 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 1999 07 16 | 704 | 0.4− | 0.1+ | 2005 05 04 | E12 | 0.5− | 0.3+ | 2006 09 30 | G96 | 0.5− | 0.1− |
| 1999 07 16 | 704 | 0.2+ | 0.6+ | 2005 05 04 | E12 | 0.0 | 0.5+ | 2006 10 13 | 691 | 0.0 | 0.3+ |
| 2003 10 16 | 691 | 0.0 | 0.0 | 2005 05 04 | E12 | 0.1− | 0.3+ | 2006 10 13 | 691 | 0.3− | 0.8+ |
| 2003 10 16 | 691 | 0.1− | 0.3− | 2005 05 07 | 691 | 0.1+ | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.5+ |
| 2003 10 16 | 691 | 0.3+ | 0.3+ | 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2003 11 19 | 691 | 0.1− | 0.1+ | 2005 05 08 | 699 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2003 11 19 | 691 | 0.1+ | 0.1− | 2005 05 08 | 699 | 0.7+ | 0.9+ | 2006 10 21 | 691 | 0.5− | 0.3+ |
| 2003 11 21 | 704 | 0.2+ | 1.3+ | 2005 05 08 | 699 | 0.1+ | 1.4+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2003 11 21 | 704 | 0.4+ | 1.1+ | 2005 05 08 | 699 | 0.0 | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2003 11 21 | 704 | 0.1− | 1.0+ | 2005 05 08 | E12 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.9− | 0.0 |
| 2003 11 21 | 704 | 0.5+ | 0.1− | 2005 05 08 | E12 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2003 11 21 | 704 | 0.8+ | 0.2− | 2005 05 08 | E12 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2003 11 21 | 644 | 0.2− | 0.2+ | 2005 05 08 | E12 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.2+ |
| 2003 11 21 | 644 | 0.3− | 0.3+ | 2005 05 09 | 704 | 0.4+ | 0.1− | 2006 11 10 | 644 | 0.4− | 0.7+ |
| 2003 11 21 | 644 | 0.6− | 0.4+ | 2005 05 09 | 704 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.5− | 0.0 |
| 2003 11 26 | 704 | 0.1+ | 0.4+ | 2005 05 09 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2003 11 26 | 704 | 0.5+ | 1.2+ | 2005 05 09 | 704 | 1.4+ | 0.6− | 2006 11 11 | 703 | (1.9+ | 0.9+) |
| 2003 11 26 | 704 | 0.2+ | 0.8+ | 2005 05 09 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.9+ | 0.6− |
| 2003 11 26 | 704 | 0.6+ | 0.7+ | 2005 05 11 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2003 11 26 | 704 | 0.5+ | 0.7+ | 2005 05 11 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 104 | 0.0 | 0.2− |
| 2003 12 21 | 704 | 0.7− | 0.1+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 104 | 0.2− | 0.1− |
| 2003 12 21 | 704 | 0.3+ | 0.0 | 2005 05 13 | 704 | 0.2− | 0.4+ | 2006 11 13 | 104 | 0.3+ | 0.5+ |
| 2003 12 21 | 704 | 0.2− | 0.7+ | 2005 05 13 | 704 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2003 12 21 | 704 | 0.5+ | 0.3+ | 2005 05 13 | 704 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.1+ |
| 2003 12 21 | 704 | 0.3− | 0.6+ | 2005 05 13 | 704 | 0.8− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2005 05 04 | 699 | 0.4+ | 0.0 | 2005 05 13 | 704 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.4− |

**(143781)∗ 2003 WE$_{68}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC |
|---|---|---|---|---|
| $M$ 220.95794 | (2000.0) | **P** | **Q** | |
| $n$ 0.28602352 | $\omega$ 264.93790 | −0.88056330 | −0.46842219 | |
| $a$ 2.2814006 | $\Omega$ 247.11403 | +0.45988978 | −0.80783076 | |
| $e$ 0.1036895 | $i$ 4.48449 | +0.11449748 | −0.35775706 | |
| $P$ 3.45 | $H$ 16.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 11 23 | 704 | 0.1+ | 1.2+ | 2005 06 13 | G96 | 0.1− | 0.3+ |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 11 23 | 704 | (2.2− | 1.4+) | 2005 06 28 | G96 | 0.3− | 0.3+ |
| 2001 03 03 | 704 | (0.7+ | 1.6+) | 2003 11 23 | 704 | 0.7− | 0.4− | 2005 06 28 | G96 | 0.2− | 0.2+ |
| 2001 03 03 | 704 | 0.0 | 0.0 | 2003 12 01 | 691 | 0.0 | 0.2+ | 2005 06 28 | G96 | 0.1+ | 0.8+ |
| 2001 03 03 | 704 | 1.0− | 0.6+ | 2003 12 01 | 691 | 0.1+ | 0.2+ | 2005 06 28 | G96 | 0.3+ | 0.2+ |
| 2001 03 15 | 699 | 0.5+ | 0.4+ | 2003 12 01 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.5+ |
| 2001 03 15 | 699 | 0.0 | 0.2+ | 2003 12 17 | 699 | (1.3− | 1.9+) | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 2001 03 15 | 699 | 0.1− | 0.5+ | 2003 12 17 | 699 | 0.2+ | 0.5− | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2001 03 15 | 699 | 0.9+ | 0.3+ | 2003 12 17 | 699 | 0.2+ | 1.4+ | 2006 09 19 | 699 | 0.9+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.4− | 0.7+ | 2003 12 17 | 699 | 0.6− | 0.5− | 2006 09 19 | 699 | 0.0 | 0.6+ |
| 2002 08 07 | 644 | 0.1+ | 1.0+ | 2003 12 19 | 291 | 0.1+ | 0.3− | 2006 09 19 | 699 | 1.1− | 0.8− |
| 2002 08 07 | 644 | 0.0 | 0.5+ | 2003 12 19 | 291 | 0.1+ | 0.2− | 2006 09 19 | 699 | 1.3+ | 1.4− |
| 2003 11 19 | 691 | 0.1+ | 0.1− | 2003 12 19 | 291 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2003 11 19 | 691 | 0.2− | 0.0 | 2003 12 21 | 704 | 0.1+ | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2003 12 21 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2003 11 21 | 704 | 0.7− | 0.6− | 2003 12 21 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2003 11 21 | 704 | 0.6− | 0.2+ | 2003 12 21 | 704 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2003 11 21 | 704 | 0.7+ | 0.8− | 2003 12 21 | 704 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2003 11 21 | 704 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2003 11 21 | 704 | 0.3− | 0.4+ | 2005 06 13 | G96 | 1.0+ | 0.1− | | | | |
| 2003 11 23 | 704 | 0.7− | 0.3+ | 2005 06 13 | G96 | 0.1− | 0.4+ | | | | |

**(143782)∗ 2003 WU$_{68}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.85419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27458894 | $\omega$ | 346.44920 | | −0.75605033 | +0.64942820 | |
| $a$ | 2.3443045 | $\Omega$ | 234.34960 | | −0.59077795 | −0.73067712 | |
| $e$ | 0.0603174 | $i$ | 5.75133 | | −0.28172559 | −0.21060379 | |
| $P$ | 3.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 23 | 950 | 0.0 | 0.5+ | 2003 12 14 | 691 | 0.1+ | 0.4+ | 2005 05 01 | 644 | 0.1− | 0.2+ |
| 2002 06 23 | 950 | 0.0 | 0.4+ | 2003 12 14 | 691 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.5− | 0.3− |
| 2002 06 23 | 950 | 0.1− | 0.3+ | 2003 12 14 | 691 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.7− | 0.1− |
| 2002 07 08 | 644 | 0.4− | 0.7+ | 2005 04 06 | 691 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 0.8− | 1.0− |
| 2002 07 08 | 644 | 0.3− | 1.2+ | 2005 04 06 | 691 | 0.3+ | 0.7+ | 2006 08 27 | 699 | 1.0− | 1.3+ |
| 2002 07 08 | 644 | 0.1− | 1.1+ | 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.3− | 1.2+ |
| 2003 11 19 | 691 | 0.1− | 0.1+ | 2005 04 11 | 699 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.5+ | 0.9+ |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2005 04 11 | 699 | 0.8− | 0.7+ | 2006 08 29 | 703 | 0.1+ | 0.1− |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2005 04 11 | 699 | 0.7+ | 0.9+ | 2006 08 29 | 703 | 1.5− | 0.8+ |
| 2003 11 21 | 704 | 0.7+ | 0.7− | 2005 04 11 | 699 | 0.3+ | 0.7+ | 2006 09 17 | 703 | 0.1− | 0.1+ |
| 2003 11 21 | 704 | 0.2+ | 0.9+ | 2005 04 15 | 691 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.3+ | 0.6+ |
| 2003 11 21 | 704 | 0.0 | 0.2+ | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 09 17 | 703 | 1.8− | 1.1− |
| 2003 11 21 | 704 | 0.1+ | 0.9+ | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.3− |
| 2003 11 23 | 695 | 0.1+ | 0.3+ | 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.3+ | 0.7+ |
| 2003 11 23 | 695 | 0.5− | 0.1+ | 2005 05 01 | 644 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.6+ | 0.1+ |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2005 05 01 | 644 | 0.2− | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.5+ |
| 2003 12 01 | 691 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.0 | 0.5+ | | | | |
| 2003 12 01 | 691 | 0.1+ | 0.3+ | 2005 05 01 | 644 | 0.2− | 0.5+ | | | | |

**(143783)∗ 2003 WC$_{74}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.58483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28768678 | $\omega$ | 30.92287 | | +0.78998229 | −0.61310247 | |
| $a$ | 2.2725988 | $\Omega$ | 6.89994 | | +0.55225347 | +0.70742391 | |
| $e$ | 0.2110501 | $i$ | 2.75507 | | +0.26635330 | +0.35164866 | |
| $P$ | 3.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 0.5+ | 0.7− | 2003 11 24 | 704 | 0.3− | 0.8+ | 2004 01 13 | 703 | (0.8+ | 1.6+) |
| 1994 01 11 | 691 | 0.2+ | 0.2− | 2003 11 24 | 704 | 0.3− | 0.4+ | 2004 01 20 | 704 | 0.4− | 0.0 |
| 1994 01 11 | 691 | 0.1− | 0.4− | 2003 11 24 | 704 | 0.2− | 1.2+ | 2004 01 20 | 704 | 0.3− | 0.3− |
| 1994 01 16 | 691 | 0.2+ | 0.1− | 2003 11 24 | 704 | 0.1− | 0.5+ | 2004 01 20 | 704 | 0.3+ | 0.1− |
| 1994 01 16 | 691 | 1.6− | 0.9− | 2003 12 04 | 704 | 0.5− | 0.3+ | 2004 01 20 | 704 | 0.8+ | 0.2+ |
| 1994 01 16 | 691 | 0.0 | 0.1+ | 2003 12 04 | 704 | 0.1+ | 0.5− | 2005 04 05 | G96 | 0.4− | 0.1+ |
| 1999 07 16 | 704 | 0.3+ | 1.8+ | 2003 12 04 | 704 | 0.0 | 0.3+ | 2005 04 05 | G96 | 0.2− | 0.1+ |
| 1999 07 16 | 704 | 0.6+ | 0.8+ | 2003 12 04 | 704 | 0.0 | 0.4+ | 2005 04 05 | G96 | 0.3− | 0.2+ |
| 1999 07 16 | 704 | 0.1− | 1.5+ | 2003 12 04 | 704 | 0.1− | 0.4− | 2005 04 05 | G96 | 0.2− | 0.1+ |
| 2001 01 24 | 691 | 0.1− | 0.3+ | 2003 12 05 | 704 | 0.0 | 0.4+ | 2005 04 11 | 691 | 0.4+ | 0.6+ |
| 2001 01 24 | 691 | 0.1− | 0.3+ | 2003 12 05 | 704 | 0.4+ | 0.3+ | 2005 04 11 | 691 | 0.3+ | 0.1+ |
| 2001 01 24 | 691 | 0.1− | 0.3+ | 2003 12 05 | 704 | 0.2− | 0.1+ | 2005 04 11 | 691 | 0.3+ | 0.3+ |
| 2003 10 05 | 704 | 0.4− | 0.2+ | 2003 12 05 | 704 | 0.5− | 0.5+ | 2005 04 15 | 691 | 0.4+ | 0.6+ |
| 2003 10 05 | 704 | 0.4− | 0.8+ | 2003 12 05 | 704 | 0.6− | 0.1+ | 2005 04 15 | 691 | 0.2+ | 0.6+ |
| 2003 10 05 | 704 | 0.3− | 0.5− | 2003 12 15 | 703 | 0.2+ | 0.3+ | 2005 04 15 | 691 | 0.4+ | 0.7+ |
| 2003 10 05 | 704 | 0.1− | 0.7+ | 2003 12 15 | 703 | 0.5+ | 0.0 | 2005 04 17 | 691 | 0.1+ | 0.4+ |
| 2003 10 05 | 704 | 0.2+ | 0.5− | 2003 12 15 | 703 | 1.0+ | 0.0 | 2005 04 17 | 691 | 0.4+ | 0.3+ |
| 2003 10 16 | 691 | 0.2+ | 0.2+ | 2003 12 15 | 703 | 0.7+ | 0.4+ | 2005 04 17 | 691 | 0.3+ | 0.5+ |
| 2003 10 16 | 691 | 0.1− | 0.3+ | 2003 12 17 | 644 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.2− | 0.3+ |
| 2003 10 16 | 691 | 0.0 | 0.2+ | 2003 12 17 | 644 | 0.1− | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2003 10 29 | 704 | 0.1− | 0.1− | 2003 12 17 | 644 | 0.0 | 0.6+ | 2006 08 24 | 644 | 0.3− | 0.1+ |
| 2003 10 29 | 704 | 0.3− | 0.0 | 2003 12 18 | 704 | 0.4− | 0.7+ | 2006 08 28 | 699 | (0.9− | 1.5+) |
| 2003 10 29 | 704 | 0.5+ | 0.3+ | 2003 12 18 | 704 | 0.1− | 0.8+ | 2006 08 28 | 699 | 1.1− | 1.0+ |
| 2003 10 29 | 704 | 0.2− | 1.4+ | 2003 12 18 | 704 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.1+ | 0.0 |
| 2003 11 20 | 704 | 1.2− | 0.1− | 2003 12 18 | 704 | 0.2+ | 0.8+ | 2006 08 28 | 699 | 1.3− | 0.5− |
| 2003 11 20 | 704 | 0.2+ | 0.6+ | 2003 12 18 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.3+ | 0.8+ |
| 2003 11 20 | 704 | 0.8+ | 0.4+ | 2003 12 22 | 704 | (0.1− | 1.6+) | 2006 08 28 | 703 | 0.7− | 0.2− |
| 2003 11 20 | 704 | 0.8+ | 1.3+ | 2003 12 22 | 704 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.3+ | 0.5+ |
| 2003 11 21 | 704 | 0.3+ | 0.0 | 2003 12 22 | 704 | 0.5+ | 1.1+ | 2006 08 28 | 703 | 0.3− | 0.1+ |
| 2003 11 21 | 704 | (1.5+ | 0.1−) | 2003 12 22 | 704 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2003 11 21 | 704 | 0.1− | 0.6− | 2003 12 22 | 704 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 2003 11 21 | 704 | 0.9− | 0.5− | 2004 01 13 | 703 | 0.1− | 1.0+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2003 11 21 | 704 | 0.2− | 0.3− | 2004 01 13 | 703 | 0.9− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2003 11 24 | 704 | 0.5− | 0.6+ | 2004 01 13 | 703 | 0.6+ | 0.1+ | | | | |

**(143784)∗ 2003 WU$_{74}$ = 2000 DQ$_{79}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57303)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.54762 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22503700 | $\omega$ | 127.88836 | | −0.47247174 | −0.88069992 | |
| $a$ | 2.6769079 | $\Omega$ | 350.13456 | | +0.73413817 | −0.37208878 | |
| $e$ | 0.1360739 | $i$ | 11.35574 | | +0.48765931 | −0.29311704 | |
| $P$ | 4.38 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 28 | 704 | 0.6+ | 1.2+ | 2002 09 15 | 644 | 0.6− | 0.1+ | 2003 12 29 | 704 | 0.2− | 0.5+ |
| 2000 02 28 | 704 | 0.4+ | 0.3+ | 2003 11 20 | 704 | 0.6− | 0.5− | 2003 12 29 | 704 | 0.3+ | 0.4+ |
| 2000 02 28 | 704 | 1.1+ | 0.0 | 2003 11 20 | 704 | 0.9− | 0.3− | 2003 12 29 | 704 | 0.2− | 0.7+ |
| 2000 02 28 | 704 | 0.1+ | 0.6− | 2003 11 20 | 704 | 0.8− | 0.4+ | 2003 12 29 | 704 | 0.3− | 0.5+ |
| 2000 03 04 | 704 | 0.9− | 0.1− | 2003 11 21 | 704 | 0.2+ | 0.5− | 2004 01 02 | 704 | 0.1+ | 0.3− |
| 2000 03 04 | 704 | 0.1− | 0.2+ | 2003 11 21 | 704 | 0.5+ | 0.4− | 2004 01 02 | 704 | 0.1+ | 0.1− |
| 2000 03 04 | 704 | 0.8− | 0.4+ | 2003 11 21 | 704 | 0.2+ | 0.3− | 2004 01 02 | 704 | 0.2− | 0.3+ |
| 2002 08 15 | 699 | 0.4+ | 0.2− | 2003 11 21 | 704 | 0.4+ | 0.1− | 2004 01 02 | 704 | 0.2+ | 0.5− |
| 2002 08 15 | 699 | 0.8+ | 0.4− | 2003 11 21 | 704 | 0.3+ | 0.7− | 2004 01 19 | 704 | (0.6+ | 2.6+) |
| 2002 08 15 | 699 | 0.1− | 0.4+ | 2003 12 04 | 704 | 0.5+ | 0.3+ | 2004 01 19 | 704 | (0.3− | 3.1+) |
| 2002 08 15 | 699 | 1.8− | 0.8− | 2003 12 04 | 704 | 0.3− | 0.5+ | 2004 01 19 | 704 | (1.4− | 3.8+) |
| 2002 08 17 | 608 | 0.6+ | 0.5+ | 2003 12 04 | 704 | 0.3+ | 0.2− | 2005 04 10 | E12 | 0.0 | 0.4+ |
| 2002 08 17 | 608 | 1.2+ | 0.4− | 2003 12 05 | 704 | 0.7+ | 1.9+ | 2005 04 10 | E12 | 0.0 | 0.4+ |
| 2002 08 17 | 608 | 0.5+ | 0.1− | 2003 12 05 | 704 | 0.2+ | 0.2+ | 2005 04 10 | E12 | 0.3+ | 0.4+ |
| 2002 08 18 | 644 | 0.3− | 0.6+ | 2003 12 05 | 704 | 0.6+ | 0.2+ | 2005 04 10 | E12 | 0.6+ | 0.3+ |
| 2002 08 18 | 644 | 0.4+ | 0.5+ | 2003 12 05 | 704 | 0.8+ | 0.8+ | 2006 07 29 | E12 | 0.2− | 0.3+ |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2003 12 05 | 704 | 0.5+ | 0.5+ | 2006 07 29 | E12 | 0.2+ | 0.1− |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2003 12 15 | 704 | (0.9+ | 2.2+) | 2006 07 29 | E12 | 0.3− | 0.6+ |
| 2002 08 29 | 644 | 0.2− | 0.2+ | 2003 12 15 | 704 | 0.1− | 0.2− | 2006 07 29 | E12 | 0.4− | 0.4− |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2003 12 15 | 704 | 1.1− | 0.2− | 2006 08 14 | 644 | 0.0 | 0.5+ |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2003 12 15 | 704 | 0.7− | 1.4− | 2006 08 14 | 644 | 0.2+ | 0.2+ |
| 2002 09 15 | 644 | 0.4− | 0.1+ | 2003 12 29 | 704 | 0.6− | 0.6+ | 2006 08 14 | 644 | 0.5− | 0.3+ |

**(143785)∗ 2003 WR$_{76}$**

Discovered 2003 Nov. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.93252 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26291983 | $\omega$ | 141.07440 | | −0.61049430 | | −0.79162781 |
| $a$ | 2.4131658 | $\Omega$ | 346.49018 | | +0.69736906 | | −0.52234055 |
| $e$ | 0.0596475 | $i$ | 6.12907 | | +0.37546385 | | −0.31699488 |
| $P$ | 3.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | (0.1+ | 1.7+) | 2003 11 19 | 691 | 0.3− | 0.2− | 2005 04 05 | 699 | 0.1− | 0.2+ |
| 2001 02 19 | 704 | 0.5+ | 0.2+ | 2003 11 19 | 691 | 0.2− | 0.3− | 2005 04 05 | 644 | 0.5+ | 0.8+ |
| 2001 02 19 | 704 | 0.5+ | 0.2+ | 2003 11 21 | 644 | 0.1− | 0.1+ | 2005 04 05 | 699 | 0.9− | 1.0+ |
| 2001 02 19 | 704 | 0.0 | 0.2− | 2003 11 21 | 644 | 0.2+ | 0.0 | 2005 04 05 | 644 | 1.3+ | 0.7+ |
| 2001 02 19 | 704 | 1.4− | 0.4+ | 2003 11 21 | 644 | 0.3− | 0.2+ | 2006 08 12 | 644 | 0.2+ | 0.2+ |
| 2001 03 20 | 608 | 0.2− | 0.7− | 2003 12 01 | 691 | 0.2+ | 0.2+ | 2006 08 12 | 644 | 0.3+ | 0.3+ |
| 2001 03 20 | 608 | 0.2− | 0.9− | 2003 12 01 | 691 | 0.1− | 0.2+ | 2006 08 12 | 644 | 0.1− | 0.4+ |
| 2001 03 20 | 608 | 0.2− | 0.9− | 2003 12 01 | 691 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2003 10 18 | 699 | 0.2+ | 0.4+ | 2004 01 11 | 644 | 0.0 | 0.6+ | 2006 08 14 | 644 | 0.2− | 0.1− |
| 2003 10 18 | 699 | 0.2+ | 0.8+ | 2004 01 11 | 644 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.2+ | 0.2+ |
| 2003 10 18 | 699 | 0.1+ | 0.4+ | 2004 01 11 | 644 | 0.3+ | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2003 10 18 | 699 | 0.2+ | 0.0 | 2005 03 17 | G96 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2003 11 19 | 704 | 0.9+ | 0.1+ | 2005 03 17 | G96 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2003 11 19 | 704 | 0.3+ | 0.5+ | 2005 03 17 | G96 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2003 11 19 | 704 | 0.3+ | 0.0 | 2005 03 17 | G96 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.6− | 0.4− |
| 2003 11 19 | 704 | 0.9− | 0.6+ | 2005 04 05 | 699 | 0.9+ | 0.5− | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2003 11 19 | 704 | (0.0 | 1.7−) | 2005 04 05 | 699 | (0.3+ | 1.8+) | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2003 11 19 | 691 | 0.2− | 0.2− | 2005 04 05 | 644 | 0.6+ | 0.6+ | | | | |

**(143786)∗ 2003 WZ$_{90}$ = 1995 HK$_1$**

Discovered 2003 Nov. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57322)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.14122 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29927101 | $\omega$ | 318.78447 | | +0.67070207 | | −0.73765378 |
| $a$ | 2.2135684 | $\Omega$ | 88.94047 | | +0.69924910 | | +0.59391188 |
| $e$ | 0.0972191 | $i$ | 4.45282 | | +0.24740539 | | +0.32114728 |
| $P$ | 3.29 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 24 | 691 | 0.6− | 0.6+ | 2003 11 19 | 699 | 0.3+ | 0.3+ | 2003 12 18 | 644 | 0.1+ | 0.3+ |
| 1995 04 24 | 691 | 0.5− | 0.1− | 2003 11 19 | 699 | 0.2− | 0.2− | 2003 12 18 | 644 | 0.2+ | 0.1+ |
| 1995 04 24 | 691 | 0.0 | 0.6− | 2003 11 19 | 699 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.8+ |
| 1995 04 26 | 691 | 0.5+ | 0.4− | 2003 11 24 | 699 | 0.2+ | 0.1− | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 1995 04 26 | 691 | 0.3+ | 0.3− | 2003 11 24 | 699 | 0.7− | 0.9− | 2006 08 29 | 691 | 0.5− | 0.1+ |
| 2000 12 31 | 691 | 0.0 | 0.1+ | 2003 11 24 | 699 | 0.7+ | 1.2− | 2006 09 14 | 703 | 1.2− | 0.1+ |
| 2000 12 31 | 691 | 0.2+ | 0.1+ | 2003 11 24 | 699 | 0.2+ | 1.5− | 2006 09 14 | 703 | 1.4+ | 0.2− |
| 2000 12 31 | 691 | 0.1− | 0.1+ | 2003 11 30 | 691 | 0.2+ | 0.6− | 2006 09 14 | 703 | 1.5+ | 0.4+ |
| 2001 01 14 | 691 | 0.1− | 0.5+ | 2003 11 30 | 691 | 0.2+ | 0.3− | 2006 09 14 | 703 | 0.7+ | 0.7+ |
| 2001 01 14 | 691 | 0.1− | 0.7+ | 2003 11 30 | 691 | 0.3+ | 0.4− | 2006 09 18 | 703 | 1.0− | 0.6+ |
| 2001 01 14 | 691 | 0.1+ | 0.5+ | 2003 12 01 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.4+ |
| 2003 10 29 | 699 | 0.7+ | 1.1− | 2003 12 01 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.6− | 0.6+ |
| 2003 10 29 | 699 | 0.7+ | 1.5+ | 2003 12 01 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.1+ | 0.6− |
| 2003 10 29 | 699 | 0.0 | 0.0 | 2003 12 01 | 704 | 0.5− | 0.4− | 2006 10 02 | 703 | 1.0− | 2.4− |
| 2003 10 29 | 699 | (2.9+ | 0.9−) | 2003 12 01 | 704 | 0.3− | 0.1+ | 2006 10 02 | 703 | 1.5+ | 1.0+ |
| 2003 11 18 | 691 | 0.3− | 0.2− | 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 1.6− | 0.9− |
| 2003 11 18 | 691 | 0.0 | 0.1− | 2003 12 18 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.2− | 0.3+ |
| 2003 11 18 | 691 | 0.2− | 0.2− | 2003 12 18 | 691 | 0.3+ | 0.1+ | | | | |
| 2003 11 19 | 699 | 0.5− | 0.1− | 2003 12 18 | 644 | 0.2+ | 0.6+ | | | | |

**(143787)∗ 2003 WO$_{91}$**

Discovered 2003 Nov. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.75884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31337113 | $\omega$ | 181.77135 | | +0.74845617 | | +0.66147181 |
| $a$ | 2.1466606 | $\Omega$ | 136.68989 | | −0.60760274 | | +0.71273752 |
| $e$ | 0.1935217 | $i$ | 3.98146 | | −0.26576733 | | +0.23336726 |
| $P$ | 3.15 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 291 | 0.0 | 0.1+ | 2005 03 01 | 691 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.2+ |
| 2002 03 05 | 291 | 0.0 | 0.0 | 2005 03 01 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2002 03 05 | 291 | 0.0 | 0.0 | 2005 03 01 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2002 04 06 | 691 | (0.4+ | 2.4+) | 2005 03 12 | 704 | (2.8− | 1.2+) | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2002 04 06 | 691 | (0.1− | 2.7+) | 2005 03 12 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.5− | 1.1+ |
| 2002 04 06 | 691 | (0.3+ | 2.5+) | 2005 03 12 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2003 10 29 | 699 | 0.9+ | 0.9− | 2005 03 12 | 704 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2003 10 29 | 699 | 0.3− | 0.1+ | 2005 04 13 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.6+ | 0.2+ |
| 2003 10 29 | 699 | (2.5+ | 0.3+) | 2005 04 13 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2003 10 29 | 699 | 1.0+ | 0.9+ | 2005 04 13 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2003 11 18 | 644 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2003 11 18 | 644 | 0.5+ | 0.2− | 2006 08 28 | 703 | 0.6− | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2003 11 18 | 644 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.6+ | 2006 10 27 | 704 | 0.0 | 0.2− |
| 2003 11 19 | 699 | 1.4− | 0.2+ | 2006 08 28 | 703 | 0.1− | 1.3− | 2006 10 27 | 704 | 0.3− | 0.3+ |
| 2003 11 19 | 699 | 0.2+ | 0.5+ | 2006 09 20 | 699 | 0.2− | 1.5+ | 2006 10 27 | 704 | 1.0+ | 0.6− |
| 2003 11 19 | 699 | 0.1+ | 0.9− | 2006 09 20 | 699 | 0.3+ | 1.0+ | 2006 10 27 | 704 | 0.4− | 0.4+ |
| 2003 11 19 | 699 | (1.8− | 0.7−) | 2006 09 20 | 699 | 0.6+ | 0.5+ | 2006 11 13 | 703 | 0.6− | 0.1− |
| 2003 12 01 | 704 | 0.7− | 0.2− | 2006 09 20 | 699 | 0.3− | 1.4+ | 2006 11 13 | 703 | 0.5− | 0.4− |
| 2003 12 01 | 704 | 0.4− | 0.0 | 2006 09 22 | 704 | 0.8− | 0.4+ | 2006 11 13 | 703 | 0.4− | 0.8− |
| 2003 12 01 | 704 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.7− | 0.4+ |
| 2003 12 01 | 704 | 0.0 | 1.1+ | 2006 09 22 | 704 | 0.3+ | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2003 12 22 | 691 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2003 12 22 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.7− |
| 2003 12 22 | 691 | 0.2+ | 0.5− | 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.6+ | 0.6− |

**(143788)∗ 2003 WL$_{92}$**

Discovered 2003 Nov. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.56425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29801711 | $\omega$ | 233.68525 | | +0.99380462 | | +0.05421702 |
| $a$ | 2.2197731 | $\Omega$ | 123.01543 | | −0.01842333 | | +0.94122943 |
| $e$ | 0.1947799 | $i$ | 6.64419 | | −0.10960360 | | +0.33338817 |
| $P$ | 3.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 25 | 691 | 0.0 | 0.1+ | 2003 12 16 | 703 | 1.2− | 0.2+ | 2006 08 23 | 704 | 0.9+ | 0.9− |
| 1998 01 25 | 691 | 0.5− | 0.3− | 2003 12 16 | 703 | 0.7+ | 0.8− | 2006 08 23 | 704 | 0.4+ | 0.1− |
| 1998 01 25 | 691 | 0.1− | 0.6− | 2003 12 16 | 703 | 1.1− | 0.5+ | 2006 08 23 | 704 | 1.1+ | 0.1+ |
| 2000 12 26 | 691 | 0.3+ | 0.6+ | 2003 12 16 | 703 | (0.8− | 1.9−) | 2006 08 23 | 704 | 0.9− | 0.2+ |
| 2000 12 26 | 691 | 0.5+ | 0.3+ | 2003 12 17 | 699 | 0.5+ | 1.1− | 2006 08 23 | 704 | 1.1+ | 0.3− |
| 2000 12 26 | 691 | 0.4+ | 0.7+ | 2003 12 17 | 699 | 0.2+ | 0.2− | 2006 08 28 | 704 | 0.7− | 0.1+ |
| 2001 01 21 | 704 | 0.1− | 0.9+ | 2003 12 17 | 699 | 0.0 | 0.6+ | 2006 08 28 | 704 | 0.3− | 0.3+ |
| 2001 01 21 | 704 | 0.7+ | 0.9+ | 2003 12 17 | 699 | 0.3− | 0.1+ | 2006 08 28 | 704 | 0.4− | 0.2− |
| 2001 01 21 | 704 | 0.7− | 0.1− | 2003 12 20 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 704 | 0.2− | 0.2+ |
| 2001 01 21 | 704 | 0.5− | 1.4+ | 2003 12 20 | 704 | 0.9+ | 0.6+ | 2006 08 28 | 704 | 0.1+ | 0.5− |
| 2001 02 13 | 691 | 0.1− | 0.2+ | 2003 12 20 | 704 | 1.0+ | 0.5+ | 2006 08 30 | 699 | 0.7− | 0.2+ |
| 2001 02 13 | 691 | 0.3− | 0.0 | 2003 12 20 | 704 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.2− | 0.0 |
| 2001 02 13 | 691 | 1.2− | 1.2− | 2003 12 20 | 704 | 0.3− | 0.1+ | 2006 08 30 | 699 | 0.2− | 0.4+ |
| 2002 04 03 | 691 | 0.7+ | 0.5+ | 2006 07 21 | 704 | 0.3+ | 1.0+ | 2006 08 30 | 699 | 0.2− | 0.1+ |
| 2002 04 03 | 691 | 0.1+ | 0.8+ | 2006 07 21 | 704 | 0.2− | 0.7+ | 2006 09 14 | 703 | 1.0− | 0.6+ |
| 2002 04 03 | 691 | 0.4+ | 0.4+ | 2006 07 21 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.1+ |
| 2003 11 18 | 644 | 0.1− | 0.3+ | 2006 07 21 | 704 | (1.9+ | 1.2+) | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2003 11 18 | 644 | 0.1+ | 0.0 | 2006 07 21 | 699 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.2− |
| 2003 11 18 | 644 | 0.2+ | 1.0+ | 2006 07 21 | 703 | (1.6− | 0.1+) | 2006 09 20 | 703 | 0.2+ | 0.8+ |
| 2003 11 19 | 699 | 1.0− | 0.1+ | 2006 07 21 | 703 | 0.8− | 1.3− | 2006 09 20 | 703 | 0.9+ | 0.0 |
| 2003 11 19 | 699 | 0.2+ | 0.0 | 2006 07 21 | 699 | 0.5− | 0.4+ | 2006 09 20 | 703 | 0.8+ | 0.0 |
| 2003 11 19 | 699 | 0.5+ | 0.7+ | 2006 07 21 | 703 | 0.5− | 0.7− | 2006 09 20 | 703 | 0.5+ | 0.2+ |
| 2003 11 19 | 699 | 0.1− | 0.2+ | 2006 07 21 | 703 | 1.4− | 0.5− | 2006 09 21 | 699 | 0.1− | 1.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 691 | 0.2+ | 0.3− | 2006 07 21 | 699 | 0.1− | 0.3− | 2006 09 21 | 699 | 0.2+ | 0.4+ |
| 2003 11 23 | 691 | 0.2+ | 0.4− | 2006 07 21 | 699 | 0.2− | 0.5+ | 2006 09 21 | 699 | 0.1− | 0.7+ |
| 2003 11 23 | 691 | 0.3+ | 0.3− | 2006 08 06 | 699 | 0.2+ | 1.3+ | 2006 09 21 | 699 | 0.4+ | 0.3+ |
| 2003 11 30 | 704 | 0.6+ | 0.8+ | 2006 08 06 | 699 | 1.1+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| 2003 11 30 | 704 | 0.2+ | 0.7+ | 2006 08 06 | 699 | 0.2+ | 0.4− | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2003 11 30 | 704 | 0.7+ | 0.5+ | 2006 08 06 | 699 | (2.4− | 0.6+) | 2006 09 26 | 703 | 0.5− | 0.5− |
| 2003 11 30 | 704 | (1.9+ | 0.3+) | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.4− |
| 2003 11 30 | 704 | 0.3+ | 0.5− | 2006 08 16 | 644 | 0.3− | 0.3− | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 2003 12 05 | 703 | 1.0+ | 0.8+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2003 12 05 | 703 | 0.8− | 0.9+ | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 1.1− | 0.1− |
| 2003 12 05 | 703 | 0.9− | 0.9− | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.5− | 0.4+ |
| 2003 12 05 | 703 | 1.0− | 0.6+ | 2006 08 21 | 644 | 0.1+ | 0.1+ | | | | |

**(143789)∗ 2003 WR$_{92}$**

Discovered 2003 Nov. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.26374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29835735 | $\omega$ | 30.12243 | | +0.57651481 | −0.81513834 | |
| $a$ | 2.2180852 | $\Omega$ | 24.80566 | | +0.72027071 | +0.47440483 | |
| $e$ | 0.0647340 | $i$ | 7.72482 | | +0.38579889 | +0.33239967 | |
| $P$ | 3.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.4+ | 0.2− | 2003 12 01 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 1.2− | 0.4− |
| 1993 11 20 | 691 | 0.5+ | 0.4+ | 2003 12 01 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.6− | 1.1− |
| 1993 11 20 | 691 | 0.9− | 0.1− | 2003 12 01 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.8− |
| 2001 01 05 | 704 | 0.2− | 0.2+ | 2003 12 04 | 704 | (1.9+ | 0.4−) | 2006 09 18 | 699 | 0.8+ | 0.0 |
| 2001 01 05 | 704 | 0.7− | 0.6+ | 2003 12 04 | 704 | 1.2+ | 1.0− | 2006 09 18 | 699 | 0.2+ | 0.7+ |
| 2001 01 05 | 704 | (0.4+ | 2.6+) | 2003 12 04 | 704 | 1.1+ | 0.0 | 2006 09 18 | 699 | 0.1− | 0.1+ |
| 2003 10 25 | 704 | 0.4+ | 0.2− | 2003 12 04 | 704 | 1.2+ | 0.8− | 2006 09 18 | 699 | 0.3+ | 0.3+ |
| 2003 10 25 | 704 | 0.1+ | 0.3+ | 2004 01 20 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.0 |
| 2003 10 25 | 704 | 0.2− | 0.7+ | 2004 01 20 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2003 10 25 | 704 | 0.2+ | 0.6+ | 2004 01 20 | 704 | 0.6− | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2003 10 30 | 704 | 0.7− | 0.4− | 2005 03 10 | G96 | 0.4+ | 0.4+ | 2006 09 22 | 704 | (1.9+ | 0.7+) |
| 2003 10 30 | 704 | 0.2+ | 0.4− | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.9+ | 0.7+ |
| 2003 10 30 | 704 | 0.2+ | 0.6− | 2005 03 10 | G96 | 0.4− | 0.4+ | 2006 09 22 | 704 | 0.6+ | 0.4− |
| 2003 10 30 | 704 | 0.8+ | 0.1+ | 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.2+ |
| 2003 11 19 | 699 | 0.6+ | 0.5− | 2005 04 12 | 704 | 1.1+ | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.4− |
| 2003 11 19 | 699 | 0.4+ | 0.4+ | 2005 04 12 | 704 | 0.9+ | 1.2+ | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2003 11 19 | 699 | 0.5+ | 0.2− | 2005 04 12 | 704 | 0.1− | 1.5+ | 2006 09 30 | 703 | 0.8− | 0.7+ |
| 2003 11 19 | 699 | 1.4− | 0.3− | 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.6+ |
| 2003 11 20 | 704 | (0.7− | 1.5+) | 2005 05 01 | 644 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.4− |
| 2003 11 20 | 704 | 0.1− | 0.1+ | 2005 05 01 | 644 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2003 11 20 | 704 | 1.0+ | 1.4+ | 2006 08 22 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2003 11 20 | 704 | 0.5− | 0.1− | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.5+ |
| 2003 11 20 | 704 | (1.9+ | 4.2−) | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 11 20 | 704 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2003 11 20 | 704 | (1.4+ | 3.0−) | 2006 08 28 | 699 | 1.1− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2003 11 20 | 704 | 0.2− | 0.2+ | 2006 08 28 | 699 | (0.0 | 1.7+) | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2003 11 24 | 699 | 0.3− | 0.2+ | 2006 08 28 | 699 | 1.0+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 11 24 | 699 | 0.6− | 1.2− | 2006 08 29 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2003 11 24 | 699 | 0.4− | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.4− |
| 2003 11 24 | 704 | 0.6− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2003 11 24 | 699 | 0.1+ | 0.5− | 2006 09 12 | 703 | 0.6− | 1.2− | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2003 11 24 | 704 | 0.4− | 1.1+ | 2006 09 12 | 703 | 0.6− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2003 11 24 | 704 | 0.4− | 0.0 | 2006 09 12 | 703 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2003 11 24 | 704 | 0.3− | 1.2+ | 2006 09 12 | 703 | 0.7− | 1.3− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2003 11 24 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.9− | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.3+ |

**(143790)∗ 2003 WE$_{96}$ = 1998 FC$_{143}$**

Discovered 2003 Nov. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69591)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.84424 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28503943 | $\omega$ | 318.19448 | | −0.99645285 | +0.07032233 | |
| $a$ | 2.2866485 | $\Omega$ | 225.90178 | | −0.04935380 | −0.93323566 | |
| $e$ | 0.0659356 | $i$ | 3.69028 | | −0.06816101 | −0.35231516 | |
| $P$ | 3.46 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.2− | 0.5− | 2005 03 17 | G96 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.1+ | 0.2+ |
| 1998 03 29 | 704 | 1.7− | 1.4− | 2005 03 17 | G96 | 0.4− | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.4+ |
| 1998 03 29 | 704 | 0.2+ | 0.0 | 2005 03 17 | G96 | 0.6− | 0.5+ | 2005 05 01 | 644 | 0.1+ | 0.5+ |
| 1998 03 29 | 704 | 0.5− | 0.4+ | 2005 04 12 | G96 | 0.2− | 0.3+ | 2005 05 01 | 644 | 0.2+ | 0.2+ |
| 1998 04 01 | 704 | (0.7+ | 2.1−) | 2005 04 12 | G96 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.1− | 0.4+ |
| 1998 04 01 | 704 | 0.5− | 1.6− | 2005 04 12 | G96 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.0 | 0.0 |
| 1998 04 01 | 704 | 1.5+ | 1.0− | 2005 04 12 | G96 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.1+ |
| 1998 04 01 | 704 | 0.3− | 0.4− | 2005 04 13 | 699 | 1.0+ | 0.5+ | 2005 05 14 | G96 | 0.3− | 0.1− |
| 2003 10 20 | 691 | 0.1+ | 0.4+ | 2005 04 13 | 699 | 0.1+ | 0.9+ | 2005 05 14 | G96 | 0.0 | 0.1− |
| 2003 10 20 | 691 | 0.1− | 0.4+ | 2005 04 13 | 699 | 0.8+ | 0.6+ | 2005 06 13 | G96 | 0.1− | 0.2− |
| 2003 10 20 | 691 | 0.1− | 0.2+ | 2005 04 13 | 699 | 0.8+ | 0.7+ | 2005 06 13 | G96 | 0.1+ | 0.3− |
| 2003 11 15 | 691 | 0.1+ | 0.5+ | 2005 04 14 | 703 | 1.1− | 0.6+ | 2005 06 13 | G96 | 0.0 | 0.2− |
| 2003 11 15 | 691 | 0.1+ | 0.1+ | 2005 04 14 | 703 | 0.0 | 0.3− | 2005 06 13 | G96 | 0.0 | 0.4− |
| 2003 11 15 | 691 | 0.0 | 0.3+ | 2005 04 14 | 703 | 1.2− | 1.2+ | 2006 09 20 | 691 | 0.1+ | 0.3+ |
| 2003 11 19 | 699 | 0.1− | 0.7+ | 2005 04 14 | 703 | 1.2− | 0.7+ | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 2003 11 19 | 699 | 0.7− | 0.1+ | 2005 04 17 | 691 | 0.5+ | 0.4+ | 2006 09 20 | 691 | 0.2+ | 0.3+ |
| 2003 11 19 | 699 | (2.1+ | 0.0 ) | 2005 04 17 | 691 | 0.5+ | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.5− |
| 2003 11 19 | 699 | 0.3− | 0.7+ | 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2003 11 21 | 704 | 1.5− | 0.4+ | 2005 04 18 | 704 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.7+ | 0.1+ |
| 2003 11 21 | 704 | 0.3+ | 0.0 | 2005 04 18 | 704 | 0.7+ | 0.9+ | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2003 11 21 | 704 | 0.4+ | 1.5− | 2005 04 18 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.7− | 0.4+ |
| 2005 03 17 | G96 | 0.4− | 0.1+ | 2005 05 01 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.2− |

**(143791)∗ 2003 WT$_{103}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.89807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30775677 | $\omega$ | 2.88245 | | −0.22355592 | +0.97233488 | |
| $a$ | 2.1726894 | $\Omega$ | 254.20663 | | −0.89566371 | −0.23234368 | |
| $e$ | 0.0321033 | $i$ | 4.03635 | | −0.38445971 | −0.02411025 | |
| $P$ | 3.20 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 691 | 0.1− | 0.3− | 2003 12 19 | 704 | 0.3+ | 0.2− | 2005 06 04 | 703 | 0.3+ | 1.0− |
| 1998 01 07 | 691 | 0.1− | 0.0 | 2003 12 19 | 704 | 0.9+ | 0.1− | 2006 10 13 | 691 | 0.3+ | 0.1+ |
| 1998 01 07 | 691 | 0.3+ | 0.1+ | 2003 12 21 | 704 | 0.1− | 0.7+ | 2006 10 13 | 691 | 0.2+ | 0.1− |
| 2003 11 21 | 704 | 0.6− | 0.8− | 2003 12 21 | 704 | 0.4− | 0.1+ | 2006 10 13 | 691 | 0.4− | 0.3− |
| 2003 11 21 | 704 | 0.9− | 0.7+ | 2003 12 21 | 704 | 0.1− | 1.3+ | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2003 11 21 | 704 | 0.4− | 0.1− | 2003 12 24 | 704 | 1.3+ | 0.8− | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2003 11 21 | 704 | 1.0+ | 0.5+ | 2003 12 24 | 704 | (1.9+ | 1.3−) | 2006 10 17 | 691 | 0.3− | 0.0 |
| 2003 11 21 | 704 | 1.0− | 1.1− | 2003 12 24 | 704 | (0.7− | 1.6−) | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 2003 11 24 | 691 | 0.1+ | 0.1− | 2005 05 08 | E12 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2003 11 24 | 691 | 0.0 | 0.1− | 2005 05 08 | E12 | 0.7+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2003 11 24 | 691 | 0.3+ | 0.0 | 2005 05 08 | E12 | 0.5− | 1.0+ | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2003 11 30 | 691 | 0.2+ | 0.1− | 2005 05 08 | E12 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2003 11 30 | 691 | 0.2+ | 0.0 | 2005 05 16 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2003 11 30 | 691 | 0.2+ | 0.0 | 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2003 12 14 | 691 | 0.1+ | 0.2+ | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2003 12 14 | 691 | 0.4+ | 0.1+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2003 12 14 | 691 | 0.0 | 0.3+ | 2005 05 19 | 644 | 0.6+ | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2003 12 17 | 291 | 0.6− | 0.2+ | 2005 05 19 | 644 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.8+ | 0.1+ |
| 2003 12 17 | 291 | 1.0− | 0.3+ | 2005 06 04 | 703 | 0.9− | 1.2+ | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2003 12 17 | 291 | 0.6− | 0.1+ | 2005 06 04 | 703 | 1.4− | 0.2+ | | | | |
| 2003 12 19 | 704 | 0.6+ | 0.1− | 2005 06 04 | 703 | 0.8− | 0.8+ | | | | |

**(143792)∗ 2003 $WL_{104}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.56845 | | (2000.0) | | | |
| $n$ | 0.29004710 | $\omega$ | 157.85649 | | +0.98997883 | +0.14106094 |
| $a$ | 2.2602529 | $\Omega$ | 194.03910 | | −0.13330630 | +0.91805501 |
| $e$ | 0.1811251 | $i$ | 1.56187 | | −0.04659763 | +0.37050885 |
| $P$ | 3.40 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 566 | 0.2− | 0.5+ | 2006 06 21 | 703 | 0.8+ | 0.8+ | 2006 08 30 | 704 | 0.7+ | 0.8+ |
| 1996 10 12 | 566 | 0.7− | 0.3+ | 2006 06 21 | 703 | 1.0+ | 0.8− | 2006 08 30 | 704 | 0.6+ | 0.1+ |
| 1996 10 12 | 566 | 0.5+ | 0.3+ | 2006 06 21 | 703 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.4+ | 0.5+ |
| 2003 11 21 | 704 | 0.9+ | 0.0 | 2006 06 21 | 703 | (0.9− | 1.7+) | 2006 08 30 | 704 | (0.2− | 1.8+) |
| 2003 11 21 | 704 | 0.5+ | 0.6+ | 2006 07 25 | 644 | 0.2− | 0.3+ | 2006 08 30 | 704 | 0.9− | 0.7+ |
| 2003 11 21 | 704 | 0.3+ | 0.2− | 2006 07 25 | 644 | 0.3− | 0.3+ | 2006 09 01 | 704 | 0.3+ | 0.8+ |
| 2003 11 21 | 704 | 0.7+ | 0.1+ | 2006 07 25 | 644 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.7+ | 0.0 |
| 2003 11 21 | 704 | 0.4+ | 0.3− | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 09 01 | 704 | 0.1+ | 0.6+ |
| 2003 11 24 | 691 | 0.1− | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.6− | 0.1+ |
| 2003 11 24 | 691 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.6− | 0.4+ |
| 2003 11 24 | 691 | 0.4− | 0.0 | 2006 08 17 | 644 | 0.4− | 0.4− | 2006 09 14 | 703 | 0.9− | 0.1+ |
| 2003 11 30 | 691 | 1.0+ | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.3− | 0.4+ |
| 2003 11 30 | 691 | 0.1− | 0.1− | 2006 08 17 | 644 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.3+ |
| 2003 11 30 | 691 | 0.0 | 0.0 | 2006 08 21 | 704 | 1.0+ | 0.3− | 2006 09 17 | 704 | 0.7− | 0.5− |
| 2003 12 14 | 691 | 0.1− | 0.1+ | 2006 08 21 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 1.2+ | 0.6− |
| 2003 12 14 | 691 | 0.4− | 0.1+ | 2006 08 21 | 704 | 0.3− | 0.8+ | 2006 09 17 | 704 | 0.6+ | 0.0 |
| 2003 12 14 | 691 | 0.3− | 0.1+ | 2006 08 21 | 704 | 0.4+ | 0.0 | 2006 09 17 | 704 | 0.2− | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 08 21 | 704 | 0.1− | 0.8+ | 2006 09 18 | 699 | (1.6− | 0.2+) |
| 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.3+ |
| 2005 03 13 | 691 | 0.4+ | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.7− | 2006 09 18 | 699 | (1.7+ | 1.5+) |
| 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.6− |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2006 08 28 | 703 | 1.0+ | 1.0+ | 2006 09 26 | G96 | 0.4− | 0.7− |
| 2005 04 02 | G96 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2005 04 02 | G96 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.9− | 0.5− |
| 2005 04 02 | G96 | 0.2− | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | G96 | 0.2+ | 0.2− | 2006 08 28 | 699 | 0.8+ | 0.5+ | 2006 10 27 | G96 | 0.7− | 0.4− |
| 2005 04 02 | G96 | 0.7− | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.6− |
| 2006 05 26 | G96 | 0.2− | 0.1+ | 2006 08 29 | 704 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2006 05 26 | G96 | 1.0− | 0.5− | 2006 08 29 | 704 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2006 05 26 | G96 | 0.1− | 0.2+ | 2006 08 29 | 704 | 0.5+ | 0.6+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2006 05 26 | G96 | 0.2+ | 0.2+ | 2006 08 29 | 704 | 0.8+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.7− |

**(143793)∗ 2003 $WQ_{104}$ = 1999 $RD_{253}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57334)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.86088 | | (2000.0) | | | |
| $n$ | 0.27199185 | $\omega$ | 127.01951 | | +0.99625453 | −0.03488467 |
| $a$ | 2.3592038 | $\Omega$ | 235.11167 | | +0.00543830 | +0.93847511 |
| $e$ | 0.1114185 | $i$ | 5.53514 | | +0.08629799 | +0.34358046 |
| $P$ | 3.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.1− | 0.4− | 2003 11 21 | 704 | 0.4− | 0.7− | 2006 07 26 | 644 | 0.4− | 0.2+ |
| 1992 11 26 | 691 | 0.4− | 0.0 | 2003 11 21 | 704 | 0.0 | 0.2− | 2006 07 26 | 644 | 0.3+ | 0.7− |
| 1992 11 26 | 691 | 0.0 | 0.4− | 2003 11 21 | 704 | 0.2+ | 0.6+ | 2006 07 26 | 644 | 0.0 | 0.9− |
| 1999 09 08 | 704 | 0.1+ | 0.6+ | 2003 11 21 | 704 | 0.5− | 0.3+ | 2006 08 15 | 644 | 0.4− | 0.1+ |
| 1999 09 08 | 704 | 0.8+ | 1.8+ | 2003 11 24 | 691 | 0.3− | 0.0 | 2006 08 15 | 644 | 0.1− | 0.1+ |
| 1999 09 08 | 704 | 0.0 | 0.8+ | 2003 11 24 | 691 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.8− | 0.4+ |
| 1999 09 18 | 703 | 0.2+ | 0.1− | 2003 11 24 | 691 | 0.2+ | 0.0 | 2006 08 18 | 644 | 0.1− | 0.2+ |
| 1999 09 18 | 703 | 0.6− | 0.9+ | 2003 12 21 | 704 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 1999 09 18 | 703 | 1.4+ | 0.5+ | 2003 12 21 | 704 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.2− |
| 1999 09 18 | 703 | 0.8+ | 0.2+ | 2003 12 21 | 704 | 0.7+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2003 12 21 | 704 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2000 12 23 | 645 | 0.0 | 0.1+ | 2006 07 21 | 703 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.3+ |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2006 07 21 | 703 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 07 21 | 703 | 0.1+ | 0.7+ | | | | |
| 2003 11 21 | 704 | 0.8− | 0.9+ | 2006 07 21 | 703 | 0.3+ | 0.3+ | | | | |

**(143794)∗ 2003 $WY_{104}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.42251 | | (2000.0) | | | |
| $n$ | 0.27550506 | $\omega$ | 100.75295 | | +0.98750736 | −0.15393653 |
| $a$ | 2.3391047 | $\Omega$ | 268.10831 | | +0.12818801 | +0.90902721 |
| $e$ | 0.1687734 | $i$ | 1.92980 | | +0.09163544 | +0.38726357 |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.5− | 1.0+ | 2003 11 24 | 704 | 0.9+ | 0.7− | 2004 01 12 | 644 | 0.1− | 0.3+ |
| 1999 09 05 | 699 | 0.6+ | 1.1+ | 2003 11 24 | 704 | 0.4− | 0.3− | 2004 01 12 | 644 | 0.0 | 0.5+ |
| 1999 09 05 | 699 | 0.3+ | 1.7+ | 2003 11 24 | 704 | 0.0 | 0.1+ | 2005 03 17 | 691 | 0.4+ | 0.3+ |
| 1999 09 09 | 704 | 0.2− | 0.4− | 2003 11 26 | 691 | 0.0 | 0.1+ | 2005 03 17 | 691 | 0.1+ | 0.4+ |
| 1999 09 09 | 704 | 1.0− | 0.8− | 2003 11 26 | 691 | 0.6+ | 0.2− | 2005 03 17 | 691 | 0.4+ | 0.3+ |
| 1999 09 09 | 704 | 0.5+ | 0.3+ | 2003 11 26 | 691 | 0.5+ | 0.3− | 2005 05 12 | G96 | 0.1− | 0.5+ |
| 1999 09 09 | 704 | 0.1− | 0.2+ | 2003 12 17 | 691 | 0.4− | 0.0 | 2005 05 12 | G96 | 0.7− | 0.2− |
| 1999 09 09 | 704 | 1.1− | 0.6+ | 2003 12 17 | 691 | 0.3− | 0.4+ | 2005 05 12 | G96 | 0.1− | 0.0 |
| 2003 11 21 | 704 | 0.3+ | 0.9− | 2003 12 17 | 691 | 0.4− | 0.1+ | 2005 05 12 | G96 | 0.7− | 0.3+ |
| 2003 11 21 | 704 | 0.0 | 0.0 | 2003 12 19 | 691 | 0.3− | 0.1+ | 2006 07 20 | 644 | 0.3− | 0.2+ |
| 2003 11 21 | 704 | 0.2+ | 0.4+ | 2003 12 19 | 691 | 0.1− | 0.0 | 2006 07 20 | 644 | 0.6− | 0.0 |
| 2003 11 21 | 704 | 0.3+ | 0.2− | 2003 12 19 | 691 | 0.2− | 0.1− | 2006 07 20 | 644 | 0.0 | 0.8+ |
| 2003 11 21 | 704 | 0.7+ | 0.3− | 2003 12 21 | 704 | 0.1− | 0.9+ | 2006 08 12 | 644 | 0.1− | 0.1+ |
| 2003 11 23 | 704 | 0.2+ | 0.4− | 2003 12 21 | 704 | 0.4+ | 0.9+ | 2006 08 12 | 644 | 0.1+ | 0.2+ |
| 2003 11 23 | 704 | 0.9− | 0.3− | 2003 12 21 | 704 | 0.2− | 0.6+ | 2006 08 12 | 644 | 0.2+ | 0.1+ |
| 2003 11 23 | 704 | 0.8+ | 0.4− | 2003 12 24 | 704 | 0.4− | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2003 11 23 | 704 | 0.6+ | 0.5+ | 2003 12 24 | 704 | 0.3− | 1.1+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2003 11 24 | 704 | 0.0 | 0.4− | 2003 12 24 | 704 | (0.2− | 2.0+) | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2003 11 24 | 704 | 0.0 | 0.0 | 2004 01 12 | 644 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.2− |

**(143795)∗ 2003 $WO_{105}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.71876 | | (2000.0) | | | |
| $n$ | 0.28413267 | $\omega$ | 234.11673 | | +0.27438185 | +0.95711970 |
| $a$ | 2.2915110 | $\Omega$ | 52.07382 | | −0.83994256 | +0.28559475 |
| $e$ | 0.1320307 | $i$ | 6.76600 | | −0.46819986 | +0.04855423 |
| $P$ | 3.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 1.0+ | 1.3+ | 2005 03 18 | 703 | 0.7− | 0.7+ | 2006 09 18 | 699 | 0.8− | 0.1+ |
| 1998 03 25 | 704 | 0.9+ | 1.6+ | 2005 03 18 | 703 | 0.6− | 1.2+ | 2006 09 26 | 704 | 0.1− | 0.4+ |
| 1998 03 25 | 704 | 0.3− | 1.3+ | 2005 03 18 | 703 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.5+ |
| 1998 03 25 | 704 | 0.7+ | 0.2+ | 2005 03 30 | 703 | 0.5− | 0.5− | 2006 09 26 | 704 | 0.1− | 0.5+ |
| 2001 02 22 | 645 | 0.1− | 0.2− | 2005 03 30 | 703 | 0.3− | 1.1− | 2006 09 26 | 704 | 0.1− | 0.6+ |
| 2001 02 22 | 645 | 0.1− | 0.2− | 2005 03 30 | 703 | 0.8− | 0.3− | 2006 09 26 | 704 | 0.6+ | 0.4− |
| 2003 10 29 | 704 | 0.3+ | 0.0 | 2005 03 30 | 703 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2003 10 29 | 704 | 0.4− | 0.7− | 2005 03 31 | 246 | (2.0+ | 0.7+) | 2006 09 29 | 704 | 0.1+ | 0.4+ |
| 2003 10 29 | 704 | 0.9+ | 1.3+ | 2005 03 31 | 246 | 1.4+ | 0.1+ | 2006 09 29 | 704 | 0.7− | 1.1+ |
| 2003 10 29 | 704 | 0.1+ | 0.4+ | 2005 03 31 | 246 | 1.0+ | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.0 |
| 2003 11 21 | 704 | 0.2− | 0.2+ | 2005 03 31 | 246 | 0.4+ | 1.1+ | 2006 09 30 | 704 | 0.0 | 0.1+ |
| 2003 11 21 | 704 | 0.2− | 0.3+ | 2005 03 31 | 246 | 0.7+ | 0.9+ | 2006 09 30 | 704 | 0.4− | 0.5+ |
| 2003 11 21 | 704 | 0.4+ | 0.9+ | 2005 03 31 | 246 | (1.5+ | 0.1+) | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2003 11 21 | 704 | 0.5− | 0.6+ | 2005 03 31 | 246 | 0.5+ | 1.1+ | 2006 09 30 | 704 | 0.5− | 0.3− |
| 2003 11 23 | 704 | 0.2− | 0.3+ | 2005 03 31 | 246 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 704 | 0.9− | 0.0 | 2005 04 05 | 704 | (0.2− | 1.9+) | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2003 11 23 | 704 | 0.4+ | 0.6+ | 2005 04 05 | 704 | (1.0− | 1.5+) | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2003 11 23 | 704 | 1.2+ | 0.4+ | 2005 04 05 | 704 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2003 11 24 | 691 | 0.0 | 0.3+ | 2005 04 05 | 704 | 1.0+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.9+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 1.0+ |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.9+ | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2003 11 30 | 691 | 0.0 | 0.0 | 2005 04 11 | 699 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2003 11 30 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.0 |
| 2003 11 30 | 691 | 0.3+ | 0.0 | 2005 04 17 | 703 | 0.2− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 18 | 704 | 0.5+ | 0.0 | 2005 04 17 | 703 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2003 12 18 | 704 | 0.0 | 0.6+ | 2005 04 17 | 703 | 0.2+ | 1.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.0 | 1.2+ | 2005 04 17 | 703 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.5− | 0.6− | 2006 09 17 | F84 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.1− | 2006 09 17 | F84 | 0.9+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 1.5− | 0.4− | 2006 09 17 | F84 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2003 12 22 | 704 | 0.3− | 0.9− | 2006 09 18 | 703 | 0.4+ | 0.5− | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2003 12 22 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.9− |
| 2005 03 03 | 703 | 1.4− | 1.1− | 2006 09 18 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | 1.2− | 0.7− |
| 2005 03 03 | 703 | 0.3+ | 0.6− | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2005 03 03 | 703 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2005 03 03 | 703 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.1+ | 1.2+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 03 18 | 703 | 0.2− | 1.1+ | 2006 09 18 | 699 | 0.7− | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.2− |

**(143796)∗ 2003 WP$_{107}$**

Discovered 2003 Nov. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 137.64195 | | (2000.0) | | −0.41144975 | +0.90836261 |
| $n$ | 0.30483422 | $\omega$ | 19.20990 | | −0.84911508 | −0.41182884 |
| $a$ | 2.1865542 | $\Omega$ | 226.57390 | | −0.33122904 | −0.07262495 |
| $e$ | 0.1128540 | $i$ | 5.90702 | | | |
| $P$ | 3.23 | $H$ | 16.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.9+ | 0.6− | 2005 05 04 | 704 | 0.1+ | 0.8− | 2005 06 04 | 703 | 0.4+ | 0.3− |
| 1999 07 13 | 704 | 0.0 | 0.2+ | 2005 05 04 | G96 | 0.8− | 0.1+ | 2005 06 04 | 703 | 0.1− | 0.3− |
| 1999 07 13 | 704 | 0.7+ | 0.7+ | 2005 05 04 | 699 | 0.6+ | 0.2− | 2005 06 04 | 703 | 0.7− | 0.5+ |
| 1999 07 13 | 704 | 0.1− | 0.0 | 2005 05 04 | G96 | 0.2− | 0.1+ | 2005 06 04 | 703 | 0.5+ | 0.1− |
| 2002 06 09 | 704 | 0.2− | 1.2+ | 2005 05 04 | 704 | 0.5+ | 0.4+ | 2005 06 22 | 644 | 0.1− | 0.2+ |
| 2002 06 09 | 704 | 0.1− | 1.1+ | 2005 05 04 | G96 | 0.5+ | 0.5+ | 2005 06 22 | 644 | 0.1+ | 0.1+ |
| 2002 06 09 | 704 | 0.0 | 1.2+ | 2005 05 04 | G96 | 0.2− | 0.3+ | 2005 06 22 | 644 | 0.1+ | 0.0 |
| 2002 06 09 | 704 | 0.2− | 1.1+ | 2005 05 04 | 699 | 0.3− | 0.0 | 2005 06 28 | 699 | 0.2+ | 0.3− |
| 2002 07 18 | 704 | 0.3− | 0.0 | 2005 05 04 | 704 | 0.2+ | 0.7− | 2005 06 28 | 699 | 0.9+ | 0.3+ |
| 2002 07 18 | 704 | 0.6− | 0.5+ | 2005 05 04 | 704 | 0.1− | 1.1− | 2005 06 28 | 699 | 0.5− | 0.3− |
| 2002 07 18 | 704 | 1.3− | 0.0 | 2005 05 04 | E12 | 0.4− | 0.3+ | 2005 06 28 | 699 | 0.2+ | 1.1+ |
| 2003 11 23 | 704 | 0.0 | 0.0 | 2005 05 04 | E12 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2003 11 23 | 704 | 0.6+ | 0.6− | 2005 05 04 | E12 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2003 11 23 | 704 | 0.3− | 1.1− | 2005 05 04 | E12 | 0.5− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2003 11 23 | 704 | 0.2− | 0.2+ | 2005 05 08 | 699 | 0.6+ | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2003 11 24 | 691 | 0.0 | 0.1+ | 2005 05 08 | 699 | 0.6− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2003 11 24 | 691 | 0.0 | 0.3+ | 2005 05 08 | 699 | 0.5+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2003 11 24 | 691 | 0.0 | 0.2+ | 2005 05 08 | 699 | 0.8+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.3+ |
| 2003 12 14 | 691 | 0.1+ | 0.2+ | 2005 05 08 | E12 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2003 12 14 | 691 | 0.1+ | 0.1+ | 2005 05 08 | E12 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2003 12 14 | 691 | 0.1+ | 0.2+ | 2005 05 08 | E12 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2003 12 16 | 703 | (2.0+ | 0.3−) | 2005 05 08 | E12 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2003 12 16 | 703 | (1.6− | 0.6+) | 2005 05 09 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 12 16 | 703 | (1.9− | 0.1−) | 2005 05 09 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 12 16 | 703 | (1.3+ | 4.5−) | 2005 05 09 | 704 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2003 12 17 | 699 | (1.3− | 3.0−) | 2005 05 09 | 699 | 0.3+ | 1.0+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2003 12 17 | 699 | 0.2+ | 0.3+ | 2005 05 09 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.5+ |
| 2003 12 17 | 699 | 0.1− | 0.8+ | 2005 05 09 | 699 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2003 12 17 | 699 | 0.1− | 0.4+ | 2005 05 09 | 699 | (1.6+ | 0.9+) | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2003 12 19 | 704 | 0.4+ | 0.5+ | 2005 05 09 | 699 | 0.6+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.5+ |
| 2003 12 19 | 704 | 0.6− | 0.7+ | 2005 05 13 | 701 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2003 12 19 | 704 | 0.9− | 0.6− | 2005 05 13 | 704 | 0.3+ | 1.3+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2003 12 19 | 704 | 0.1− | 0.9− | 2005 05 13 | 701 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2003 12 21 | 704 | (0.4− | 2.9+) | 2005 05 13 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2003 12 21 | 704 | 0.5− | 1.4+ | 2005 05 13 | 704 | 0.2+ | 1.2+ | 2006 11 11 | 703 | 0.7+ | 0.5+ |
| 2003 12 21 | 704 | 0.5− | 1.2+ | 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2003 12 21 | 704 | 0.1+ | 1.4+ | 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.7+ |
| 2003 12 21 | 704 | (0.6− | 1.6+) | 2005 05 13 | 701 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.2+ |
| 2003 12 23 | 704 | (1.0− | 2.1+) | 2005 05 13 | 704 | 0.2− | 1.0+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2003 12 23 | 704 | 0.6− | 1.4+ | 2005 05 13 | G96 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.5+ | 0.1− |
| 2003 12 23 | 704 | (0.1− | 2.0+) | 2005 05 13 | 704 | 0.8+ | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.1− |
| 2004 01 12 | 644 | 0.0 | 0.7+ | 2005 05 13 | G96 | 0.4− | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2004 01 12 | 644 | 0.1+ | 0.8+ | 2005 05 17 | 704 | 0.3+ | 0.8+ | 2006 11 17 | 703 | 0.3− | 0.9+ |
| 2004 01 12 | 644 | 0.1+ | 0.9+ | 2005 05 17 | 704 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2005 04 03 | E12 | 0.0 | 1.0+ | 2005 05 17 | 704 | 0.3− | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2005 04 03 | E12 | 0.4− | 0.5+ | 2005 05 17 | 704 | 1.3+ | 0.5+ | 2006 11 17 | 703 | 1.0− | 0.2− |
| 2005 04 03 | E12 | 0.3− | 0.9+ | 2005 05 26 | 699 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2005 04 03 | E12 | 0.2− | 0.5+ | 2005 05 26 | 699 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.6+ | 1.3+ |
| 2005 04 18 | 704 | 0.6− | 0.2+ | 2005 05 26 | 699 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2005 04 18 | 704 | 0.3+ | 0.0 | 2005 05 26 | 699 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 1.0+ | 1.0+ |
| 2005 04 18 | 704 | 0.1− | 0.5+ | 2005 06 04 | 704 | 1.3+ | 0.6− | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2005 04 18 | 704 | 0.6+ | 0.3+ | 2005 06 04 | 704 | 0.8+ | 0.9− | 2006 11 27 | 703 | 0.3+ | 0.2− |
| 2005 04 18 | 704 | 0.2+ | 0.9+ | 2005 06 04 | 704 | 0.9+ | 0.2− | 2006 11 27 | 703 | 0.5+ | 0.6+ |
| 2005 05 04 | 699 | 0.3+ | 0.4+ | 2005 06 04 | 704 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.9− | 0.7+ |
| 2005 05 04 | 699 | 0.0 | 0.7+ | 2005 06 04 | 704 | 0.7− | 0.4+ | 2006 11 27 | 703 | 0.7− | 0.3− |

**(143797)∗ 2003 WA$_{112}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.59627 | | (2000.0) | | +0.92578187 | +0.37781836 |
| $n$ | 0.30893180 | $\omega$ | 329.65629 | | −0.32506375 | +0.81368605 |
| $a$ | 2.1671766 | $\Omega$ | 8.17918 | | −0.19303236 | +0.44177856 |
| $e$ | 0.0143740 | $i$ | 5.42946 | | | |
| $P$ | 3.19 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 26 | 691 | 0.7− | 1.4− | 2003 12 23 | 704 | 0.1− | 1.5− | 2006 10 20 | 644 | 0.1− | 0.3− |
| 1992 03 26 | 691 | 0.7− | 0.8− | 2003 12 23 | 704 | 0.3− | 1.3+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 1992 03 26 | 691 | 0.5− | 1.1− | 2005 05 04 | 699 | 0.6+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2000 12 19 | 704 | 0.5− | 0.8+ | 2005 05 04 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2000 12 19 | 704 | 0.1− | 1.1+ | 2005 05 04 | 699 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.4− | 0.2− |
| 2000 12 19 | 704 | 0.3− | 0.1− | 2005 05 04 | 699 | 0.3− | 0.8+ | 2006 10 29 | 704 | 0.9− | 0.7− |
| 2000 12 19 | 704 | 1.5− | 0.2− | 2005 05 04 | 644 | 0.4+ | 0.4+ | 2006 10 29 | 704 | 0.9− | 0.5+ |
| 2000 12 29 | 912 | 0.1+ | 2.0+ | 2005 05 04 | 644 | 0.5+ | 0.6+ | 2006 10 29 | 704 | 0.5+ | 0.1− |
| 2000 12 29 | 912 | 0.9− | 1.9+ | 2005 05 04 | 644 | 0.5+ | 0.6+ | 2006 10 29 | 704 | 0.4− | 0.5− |
| 2000 12 29 | 912 | 0.4− | 0.2+ | 2005 05 08 | 699 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.1+ | 0.5+ |
| 2000 12 29 | 912 | 1.0+ | 0.9− | 2005 05 08 | 699 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2003 09 27 | 704 | 0.0 | 1.3+ | 2005 05 08 | 699 | 0.4+ | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2003 09 27 | 704 | 0.2+ | 0.5− | 2005 05 08 | 699 | 1.3+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2003 09 27 | 704 | 0.0 | 1.3+ | 2005 05 08 | E12 | 0.0 | 0.5+ | 2006 11 07 | 644 | 1.2− | 0.3− |
| 2003 09 27 | 704 | 0.2+ | 0.1+ | 2005 05 08 | E12 | 0.5− | 0.1− | 2006 11 07 | 644 | 0.3− | 0.2− |
| 2003 10 22 | 704 | (1.5+ | 0.0 ) | 2005 05 08 | E12 | 0.2− | 1.4+ | 2006 11 07 | 644 | 0.7− | 0.2− |
| 2003 10 22 | 704 | 1.0+ | 1.3+ | 2005 05 08 | E12 | 0.2− | 1.0+ | 2006 11 07 | 644 | 0.2− | 0.1− |
| 2003 10 22 | 704 | 0.4+ | 0.4− | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 11 07 | 644 | 0.5− | 0.2− |
| 2003 10 22 | 704 | 0.6+ | 0.8+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 11 07 | 644 | 0.1− | 0.2− |
| 2003 10 22 | 704 | 0.8− | 1.3− | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2003 10 22 | 704 | 0.2+ | 1.1+ | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2003 10 22 | 704 | 0.5+ | 0.3− | 2006 08 30 | 699 | 1.3+ | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2003 11 03 | 704 | (0.2− | 1.6+) | 2006 08 30 | 699 | 0.7− | 0.0 | 2006 11 14 | 703 | 0.7+ | 0.3− |
| 2003 11 03 | 704 | (0.4+ | 1.7+) | 2006 08 30 | 699 | 1.2+ | 0.7− | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 2003 11 03 | 704 | 0.5+ | 0.1− | 2006 08 30 | 699 | 0.4+ | 0.9+ | 2006 11 14 | 703 | 0.1− | 1.2− |
| 2003 11 03 | 704 | 0.1+ | 1.3+ | 2006 09 20 | 699 | 0.8− | 1.2+ | 2006 11 14 | 703 | 0.3+ | 1.3− |
| 2003 11 03 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 699 | 1.2+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2003 11 20 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2003 11 20 | 704 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.7− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2003 11 20 | 704 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | (0.2− | 2.1+) |
| 2003 11 20 | 704 | 0.2− | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | (0.2+ | 2.3+) |
| 2003 11 20 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.4− | 0.6− |
| 2003 11 24 | 704 | 0.0 | 0.0 | 2006 09 29 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 704 | 0.1− | 0.5+ | 2006 09 29 | 691 | 0.0 | 0.7− | 2006 11 18 | 704 | 0.4− | 0.4+ | | |
| 2003 11 24 | 704 | 0.4+ | 0.5− | 2006 09 29 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.7− | | |
| 2003 11 24 | 704 | 0.1+ | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.3+ | | |
| 2003 11 24 | 704 | 0.1+ | 0.4− | 2006 10 03 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 1.2+ | 0.3− | | |
| 2003 12 04 | 704 | 0.0 | 1.1+ | 2006 10 03 | 691 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.1+ | | |
| 2003 12 04 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.4+ | | |
| 2003 12 04 | 704 | (1.6+ | 1.2+) | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2003 12 04 | 704 | 0.6+ | 0.5+ | 2006 10 12 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 1.1− | 0.4− | | |
| 2003 12 04 | 704 | 0.5+ | 1.1+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 1.3+ | 0.8− | | |
| 2003 12 16 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.3− | | |
| 2003 12 16 | 691 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.3+ | | |
| 2003 12 16 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.8+ | | |
| 2003 12 17 | 644 | 0.5− | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.3− | | |
| 2003 12 17 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.5− | | |
| 2003 12 17 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.6− | | |
| 2003 12 23 | 704 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.0 | 0.6− | | |
| 2003 12 23 | 704 | 1.2− | 1.1+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.1− | 0.6− | | |
| 2003 12 23 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2− | | | | | | |

**(143798)∗ 2003 WC$_{113}$ = 2002 GN$_{167}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69593)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.29324 | | (2000.0) | | +0.48846306 | +0.87149065 |
| $n$ | 0.30268192 | $\omega$ | 331.78468 | | −0.78456126 | +0.41672812 |
| $a$ | 2.1969073 | $\Omega$ | 327.39989 | | −0.38192600 | +0.25853764 |
| $e$ | 0.1916145 | $i$ | 4.65018 | | | |
| $P$ | 3.26 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 704 | 0.5+ | 0.0 | 2003 12 28 | 691 | 0.2+ | 0.4− | 2006 09 20 | 699 | 0.5+ | 0.1+ | | |
| 2002 04 09 | 704 | 0.2− | 1.3+ | 2003 12 28 | 691 | 0.3− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.5+ | | |
| 2002 04 09 | 704 | 0.1− | 0.6+ | 2005 03 09 | G96 | 0.4− | 0.3− | 2006 09 30 | 703 | 1.2− | 0.1+ | | |
| 2002 04 09 | 704 | 1.0+ | 0.9+ | 2005 03 09 | G96 | 0.5− | 0.4− | 2006 09 30 | 703 | 0.2+ | 0.0 | | |
| 2002 04 14 | 704 | 0.2− | 0.1+ | 2005 03 09 | G96 | 0.1− | 0.4− | 2006 09 30 | 703 | 1.0− | 0.0 | | |
| 2002 04 14 | 704 | 0.6+ | 1.0+ | 2005 03 09 | G96 | 0.8− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.8+ | | |
| 2002 04 14 | 704 | 0.5+ | 0.5+ | 2005 03 11 | G96 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.2− | | |
| 2002 04 30 | 644 | 0.1+ | 0.2+ | 2005 03 11 | G96 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.5+ | 0.5+ | | |
| 2002 04 30 | 644 | 0.5+ | 0.6+ | 2005 03 11 | G96 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.5− | | |
| 2002 04 30 | 644 | 0.3+ | 0.2+ | 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.2+ | | |
| 2003 11 20 | 704 | 0.2+ | 0.9+ | 2005 04 12 | G96 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.3− | | |
| 2003 11 20 | 704 | 0.3+ | 1.0+ | 2005 04 12 | G96 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.3+ | | |
| 2003 11 20 | 704 | 0.4+ | 0.6+ | 2005 04 12 | G96 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.9+ | | |
| 2003 11 20 | 704 | 0.6− | 0.7+ | 2005 04 12 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2003 11 20 | 704 | 0.7+ | 0.7+ | 2005 04 15 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2003 11 24 | 704 | 0.1+ | 0.1− | 2005 04 15 | 691 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2003 11 24 | 704 | 0.0 | 0.6+ | 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 10 26 | 104 | 1.2+ | 0.2+ | | |
| 2003 11 24 | 704 | 0.8− | 0.7− | 2006 09 16 | 703 | 0.5− | 0.2+ | 2006 10 26 | 104 | 1.2− | 1.0+ | | |
| 2003 11 24 | 704 | 0.4− | 0.3− | 2006 09 16 | 703 | 1.0− | 1.0− | 2006 10 26 | 104 | 0.4+ | 0.0 | | |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.0 | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2003 12 18 | 691 | 0.1− | 0.0 | 2006 09 16 | 703 | (2.1− | 1.3−) | 2006 11 25 | G96 | 0.3+ | 0.5− | | |
| 2003 12 18 | 691 | 0.4− | 0.1+ | 2006 09 20 | 699 | 1.3+ | 1.2− | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2003 12 28 | 691 | 0.4+ | 0.1− | 2006 09 20 | 699 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.4− | | |

**(143799)∗ 2003 WJ$_{113}$ = 2004 XD$_{184}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76237)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 187.11717 | | (2000.0) | | +0.92812528 | +0.37201866 |
| $n$ | 0.12557269 | $\omega$ | 326.87337 | | −0.32467001 | +0.82681778 |
| $a$ | 3.9494739 | $\Omega$ | 11.31094 | | −0.18213416 | +0.42187022 |
| $e$ | 0.1364495 | $i$ | 3.98289 | | | |
| $P$ | 7.85 | $H$ | 14.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 06 | 809 | 1.4+ | 0.3+ | 2003 11 16 | 691 | 0.0 | 0.4+ | 2006 01 31 | 691 | 0.3+ | 0.0 | | |
| 1994 09 06 | 809 | 0.3+ | 0.5− | 2003 11 16 | 691 | 0.1+ | 0.2+ | 2006 01 31 | 691 | 0.2+ | 0.4+ | | |
| 1994 09 06 | 809 | 0.6+ | 0.4− | 2003 11 20 | 704 | 0.5− | 0.6− | 2006 01 31 | 691 | 0.2+ | 0.3+ | | |
| 1995 10 24 | 691 | 0.1− | 0.3− | 2003 11 20 | 704 | 0.3+ | 0.9− | 2006 02 02 | G96 | 0.1− | 0.2+ | | |
| 1995 10 24 | 691 | 0.2− | 0.3− | 2003 11 20 | 704 | 1.7− | 0.4+ | 2006 02 02 | G96 | 0.4− | 0.2− | | |
| 1995 10 24 | 691 | 0.0 | 0.3− | 2003 11 20 | 704 | 0.3− | 0.7+ | 2006 02 02 | G96 | 0.5− | 0.4− | | |
| 2002 08 29 | 644 | 0.6− | 0.5+ | 2003 11 24 | 704 | 0.2− | 0.6+ | 2006 02 02 | G96 | 0.1− | 0.2− | | |
| 2002 08 29 | 644 | 0.8− | 0.6+ | 2003 11 24 | 704 | 0.1− | 0.6+ | 2006 03 03 | 691 | 0.3− | 0.4− | | |
| 2002 08 29 | 644 | 0.8− | 0.6+ | 2003 11 24 | 704 | 0.3+ | 1.2− | 2006 03 03 | 691 | 0.5+ | 0.0 | | |
| 2002 10 11 | 704 | 0.3− | 0.5+ | 2003 11 24 | 704 | 0.4− | 0.7+ | 2006 03 03 | 691 | 0.2+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.6− | 0.3+ | 2004 12 09 | 691 | 0.1− | 0.2− | 2006 03 05 | 691 | 0.2− | 0.6+ | | |
| 2002 10 11 | 704 | 0.5− | 0.7+ | 2004 12 09 | 691 | 0.1− | 0.4− | 2006 03 05 | 691 | 0.2− | 0.4+ | | |
| 2003 10 19 | 691 | 0.2+ | 0.0 | 2004 12 09 | 691 | 0.2+ | 0.5+ | 2006 03 05 | 691 | 0.6− | 0.1− | | |
| 2003 10 19 | 691 | 0.3+ | 0.0 | 2004 12 18 | 691 | 0.1+ | 0.1− | 2006 03 08 | 691 | 0.2+ | 0.2+ | | |
| 2003 10 19 | 691 | 0.3+ | 0.1+ | 2004 12 18 | 691 | 0.2+ | 0.4− | 2006 03 08 | 691 | 0.1− | 0.0 | | |
| 2003 11 16 | 691 | 0.1+ | 0.3+ | 2004 12 18 | 691 | 0.2− | 0.2− | 2006 03 08 | 691 | 0.4+ | 0.4− | | |

**(143800)∗ 2003 WM$_{115}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.30331 | | (2000.0) | | +0.86421209 | +0.49718418 |
| $n$ | 0.28612844 | $\omega$ | 37.21673 | | −0.47939434 | +0.76720441 |
| $a$ | 2.2808429 | $\Omega$ | 292.79937 | | −0.15270405 | +0.40522252 |
| $e$ | 0.1550062 | $i$ | 4.79790 | | | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.2− | 0.7+ | 2003 12 27 | 704 | 0.2− | 0.8+ | 2006 08 30 | 704 | 0.5+ | 0.3+ | | |
| 1999 07 13 | 704 | 0.0 | 0.5+ | 2003 12 27 | 704 | 0.8− | 0.3− | 2006 08 30 | 699 | 0.4− | 0.2− | | |
| 1999 07 13 | 704 | 0.2− | 0.1− | 2003 12 27 | 704 | 0.2+ | 0.8− | 2006 09 01 | 704 | 0.3+ | 0.5+ | | |
| 1999 07 13 | 704 | 0.6− | 0.1+ | 2003 12 27 | 704 | 0.1− | 0.1− | 2006 09 01 | 704 | 0.2+ | 0.3+ | | |
| 1999 07 13 | 704 | 0.5− | 0.1− | 2003 12 27 | 704 | 0.5+ | 0.1+ | 2006 09 01 | 704 | 0.3+ | 0.1+ | | |
| 1999 07 20 | 699 | 0.3− | 0.7+ | 2005 03 08 | 691 | 0.1+ | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.3+ | | |
| 1999 07 20 | 699 | 0.2+ | 0.4− | 2005 03 08 | 691 | 0.4+ | 0.6+ | 2006 09 11 | 703 | 0.5− | 0.2+ | | |
| 1999 07 20 | 699 | 0.1+ | 0.3− | 2005 03 08 | 691 | 0.5+ | 0.6+ | 2006 09 11 | 703 | (1.7− | 0.2−) | | |
| 1999 08 08 | 699 | 0.6− | 0.4+ | 2006 08 16 | D35 | 0.1− | 0.1− | 2006 09 11 | 703 | 0.1− | 0.1− | | |
| 1999 08 08 | 699 | 0.0 | 0.4− | 2006 08 16 | D35 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.8+ | 0.4+ | | |
| 1999 08 08 | 699 | 0.1+ | 0.7− | 2006 08 16 | D35 | 0.1+ | 0.3− | 2006 09 18 | 704 | 0.2− | 0.1+ | | |
| 1999 09 05 | 699 | 0.3+ | 0.0 | 2006 08 21 | 807 | 0.3− | 0.3− | 2006 09 18 | 704 | 0.9+ | 0.3+ | | |
| 1999 09 05 | 699 | 1.8+ | 0.1− | 2006 08 21 | 807 | 0.2− | 0.4− | 2006 09 18 | 704 | 0.4− | 0.3+ | | |
| 1999 09 05 | 699 | 0.0 | 0.4+ | 2006 08 22 | 807 | 0.1− | 0.2− | 2006 09 20 | 699 | 0.1− | 0.7+ | | |
| 2001 01 21 | 704 | 1.0+ | 1.0+ | 2006 08 22 | 807 | 0.2− | 0.3− | 2006 09 20 | 699 | 0.7+ | 0.6+ | | |
| 2001 01 21 | 704 | (0.4+ | 1.8+) | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 20 | 699 | 0.2+ | 0.2− | | |
| 2001 01 21 | 704 | (2.2+ | 1.4+) | 2006 08 22 | 644 | 0.2− | 0.4− | 2006 09 20 | 699 | 0.2− | 0.1− | | |
| 2001 01 21 | 704 | 0.3+ | 1.0+ | 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 25 | 704 | (2.5− | 1.5+) | | |
| 2002 04 18 | 644 | 0.4− | 0.3+ | 2006 08 24 | 704 | 1.3+ | 0.4− | 2006 09 25 | 704 | 1.0− | 0.6+ | | |
| 2002 04 18 | 644 | 0.2− | 0.2− | 2006 08 24 | 704 | 0.6− | 0.9+ | 2006 09 25 | 704 | 0.3− | 0.4+ | | |
| 2002 04 18 | 644 | 0.1− | 0.1+ | 2006 08 24 | 704 | 0.4− | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.7+ | | |
| 2003 10 25 | 704 | 0.5− | 0.5− | 2006 08 24 | 704 | 1.0+ | 0.8+ | 2006 09 25 | 704 | 0.4− | 0.4− | | |
| 2003 10 25 | 704 | 0.4− | 0.2− | 2006 08 24 | 704 | 0.5+ | 0.1− | 2006 09 26 | 704 | (1.5+ | 0.2+) | | |
| 2003 10 25 | 704 | 0.3− | 0.4+ | 2006 08 27 | 699 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.3− | | |
| 2003 11 20 | 704 | 0.5− | 0.5+ | 2006 08 27 | 699 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.2+ | | |
| 2003 11 20 | 704 | 0.1+ | 0.2− | 2006 08 27 | 699 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.2− | | |
| 2003 11 20 | 704 | 0.7− | 0.2− | 2006 08 29 | 703 | 0.6− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.0 | | |
| 2003 11 20 | 704 | 0.8− | 1.4− | 2006 08 29 | 703 | 0.8− | 0.1+ | 2006 09 29 | 704 | 0.7+ | 0.4+ | | |
| 2003 11 20 | 704 | 0.6− | 0.2− | 2006 08 29 | 703 | 0.8− | 0.1+ | 2006 09 29 | 704 | 1.1+ | 0.8− | | |
| 2003 11 24 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 1.0− | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 704 | (0.2+ | 1.6+) | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.2+ | | |
| 2003 11 24 | 704 | 0.7+ | 0.5− | 2006 08 29 | 703 | 1.0− | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.6+ | | |
| 2003 11 24 | 704 | 1.1+ | 1.3+ | 2006 08 29 | 703 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.9+ | 0.2− | | |
| 2003 11 24 | 704 | 0.1+ | 1.3+ | 2006 08 29 | 703 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.1− | | |
| 2003 12 04 | 704 | 0.1− | 0.9− | 2006 08 30 | 699 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2003 12 04 | 704 | 0.2+ | 0.2− | 2006 08 30 | 704 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2003 12 04 | 704 | 0.6+ | 0.1+ | 2006 08 30 | 699 | 0.8+ | 1.2+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2003 12 04 | 704 | 0.4− | 0.6+ | 2006 08 30 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.6− | | |
| 2003 12 18 | 691 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2003 12 18 | 691 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.1− | 0.2− | | | | | | |
| 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.6− | 0.3+ | | | | | | |

**(143801)∗ 2003 WR$_{116}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.87323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28397338 | $\omega$ | 13.23605 | | +0.13006544 | +0.98599219 | |
| $a$ | 2.2923678 | $\Omega$ | 264.31001 | | −0.91897811 | +0.08034499 | |
| $e$ | 0.1109435 | $i$ | 6.02322 | | −0.37223946 | +0.14616457 | |
| $P$ | 3.47 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.2+ | 0.4+ | 2003 12 27 | 691 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.1− | 0.2− | | |
| 1999 09 08 | 704 | 1.1− | 0.4+ | 2003 12 27 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.4− | 0.3+ | | |
| 1999 09 08 | 704 | 0.0 | 0.3+ | 2003 12 27 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.1− | 0.6+ | | |
| 1999 09 08 | 704 | 0.5+ | 0.9+ | 2005 03 17 | 704 | (1.6+ | 2.0+) | 2006 09 19 | 699 | 0.2+ | 0.6+ | | |
| 1999 09 08 | 704 | 0.2− | 0.1+ | 2005 03 17 | 704 | 0.4+ | 0.0 | 2006 09 20 | 644 | 0.1− | 0.2+ | | |
| 2003 10 29 | 704 | 0.7+ | 0.2− | 2005 03 17 | 704 | 0.9+ | 1.3+ | 2006 09 20 | 644 | 0.0 | 0.2+ | | |
| 2003 10 29 | 704 | 0.3+ | 0.0 | 2005 03 17 | 704 | 0.5+ | 1.4+ | 2006 09 20 | 644 | 0.0 | 0.3+ | | |
| 2003 10 29 | 704 | 0.2+ | 1.3+ | 2005 03 17 | 704 | 0.2+ | 0.9+ | 2006 09 22 | 106 | 0.6− | 0.3+ | | |
| 2003 11 20 | 704 | 0.2− | 1.0+ | 2005 04 06 | 699 | 1.1+ | 0.5+ | 2006 09 22 | 106 | 0.6+ | 0.4+ | | |
| 2003 11 20 | 704 | (2.3+ | 1.1+) | 2005 04 06 | 699 | 0.2− | 1.0+ | 2006 09 22 | 106 | 0.2− | 0.5+ | | |
| 2003 11 20 | 704 | (1.0+ | 1.7+) | 2005 04 06 | 699 | 0.0 | 0.4+ | 2006 09 22 | 106 | 0.4− | 0.7− | | |
| 2003 11 20 | 704 | 0.3+ | 1.3+ | 2005 04 06 | 699 | 0.9+ | 0.2+ | 2006 09 27 | 703 | 0.5+ | 1.5+ | | |
| 2003 11 24 | 704 | 0.1+ | 0.1− | 2005 04 07 | 704 | 0.2− | 0.3+ | 2006 09 27 | 703 | (0.1− | 1.7+) | | |
| 2003 11 24 | 704 | 0.3+ | 0.7+ | 2005 04 07 | 704 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.4+ | 1.4+ | | |
| 2003 11 24 | 704 | 0.1+ | 0.3− | 2005 04 07 | 704 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.2− | 0.9+ | | |
| 2003 11 24 | 704 | 0.3+ | 0.5− | 2005 04 15 | 703 | (1.8− | 0.5−) | 2006 10 09 | 644 | 0.0 | 0.3+ | | |
| 2003 12 14 | 291 | 0.0 | 0.1+ | 2005 04 15 | 703 | 1.0− | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.1+ | | |
| 2003 12 14 | 291 | 0.4− | 0.1+ | 2005 04 15 | 703 | (1.2− | 1.9+) | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2003 12 14 | 291 | 0.0 | 0.0 | 2005 04 15 | 703 | (1.7− | 1.9+) | 2006 10 17 | 703 | 0.6− | 0.2− | | |
| 2003 12 17 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.2+ | | |
| 2003 12 17 | 644 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 1.4− | | |
| 2003 12 17 | 644 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 1.1− | 0.5+ | | |
| 2003 12 19 | 704 | 0.5+ | 0.6− | 2006 09 16 | 703 | 0.6+ | 1.0− | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2003 12 19 | 704 | 0.4− | 0.5− | 2006 09 16 | 703 | 0.4− | 0.7− | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2003 12 19 | 704 | 0.6− | 0.4− | 2006 09 16 | 703 | 0.5− | 1.1− | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2003 12 19 | 704 | 0.2+ | 0.3− | 2006 09 16 | 703 | 0.4+ | 0.6− | | | | | | |

**(143802)∗ 2003 WV$_{117}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.01245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27795406 | $\omega$ | 323.19974 | | +0.98974831 | −0.12760573 | |
| $a$ | 2.3253448 | $\Omega$ | 44.26818 | | +0.14280977 | +0.87820187 | |
| $e$ | 0.0727628 | $i$ | 5.27300 | | +0.00191289 | +0.46095364 | |
| $P$ | 3.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 1.0− | 0.4− | 2003 12 23 | 704 | (1.7+ | 0.7+) | 2006 08 21 | 644 | 0.3+ | 0.4+ | | |
| 1998 04 22 | 704 | (0.1− | 2.3+) | 2003 12 23 | 704 | (1.6+ | 1.5+) | 2006 08 21 | 644 | 0.1+ | 0.2+ | | |
| 1998 04 22 | 704 | (0.5+ | 4.0+) | 2003 12 23 | 704 | 0.7− | 1.3− | 2006 08 21 | 644 | 0.0 | 0.3+ | | |
| 1998 04 22 | 704 | (2.3+ | 1.5−) | 2003 12 25 | 691 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.0 | | |
| 1998 04 22 | 704 | (2.0+ | 0.8−) | 2003 12 25 | 691 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.2− | 0.2− | | |
| 1999 09 08 | 703 | 0.2+ | 0.0 | 2003 12 25 | 691 | 0.3− | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.0 | | |
| 1999 09 08 | 703 | 0.2+ | 0.1− | 2003 12 27 | 704 | 0.3− | 0.4+ | 2006 08 30 | 699 | 0.2− | 0.8+ | | |
| 1999 09 08 | 703 | 0.7− | 1.5+ | 2003 12 27 | 704 | 0.2− | 0.7+ | 2006 09 14 | 703 | (0.5− | 1.6−) | | |
| 1999 09 08 | 703 | 0.1+ | 0.4+ | 2003 12 27 | 704 | 0.1− | 0.6+ | 2006 09 14 | 703 | 1.0− | 0.3− | | |
| 1999 09 14 | 704 | 0.2− | 0.1+ | 2003 12 27 | 704 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.0 | | |
| 1999 09 14 | 704 | 0.4+ | 0.5+ | 2005 03 09 | G96 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.2− | | |
| 1999 09 14 | 704 | (2.0− | 0.3+) | 2005 03 09 | G96 | 0.1+ | 0.1− | 2006 09 16 | 704 | 0.7+ | 0.6+ | | |
| 2001 02 19 | 699 | 0.6− | 1.1+ | 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 09 16 | 704 | 0.7+ | 1.0+ | | |
| 2001 02 19 | 699 | 0.2− | 0.1+ | 2005 03 09 | G96 | 0.3− | 0.2− | 2006 09 16 | 704 | 0.7+ | 0.8+ | | |
| 2001 02 19 | 699 | 0.0 | 1.2+ | 2005 04 09 | 704 | 0.2− | 0.6+ | 2006 09 17 | 850 | 1.0+ | 0.3− | | |
| 2001 02 19 | 699 | (0.6− | 3.8+) | 2005 04 09 | 704 | 0.2+ | 1.0+ | 2006 09 17 | 850 | 0.5+ | 0.4− | | |
| 2003 10 29 | 704 | 0.6+ | 0.4− | 2005 04 09 | 704 | 0.9+ | 0.2+ | 2006 09 17 | 850 | 0.0 | 0.1+ | | |
| 2003 10 29 | 704 | 0.5+ | 0.6+ | 2005 04 11 | 699 | 0.2+ | 0.9+ | 2006 09 17 | 850 | 0.1− | 1.2− | | |
| 2003 10 29 | 704 | 0.2− | 0.1− | 2005 04 11 | 699 | 0.9+ | 0.2− | 2006 09 18 | 699 | 0.0 | 0.2− | | |
| 2003 11 20 | 704 | 0.7− | 0.0 | 2005 04 11 | 699 | 0.2− | 1.1+ | 2006 09 18 | 699 | 0.2− | 0.4+ | | |
| 2003 11 20 | 704 | 0.4− | 0.2− | 2005 04 11 | 699 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.3+ | | |
| 2003 11 20 | 704 | 0.1+ | 0.4− | 2005 04 12 | 691 | 0.2+ | 1.2+ | 2006 09 18 | 699 | 1.4− | 0.7+ | | |
| 2003 11 24 | 704 | (1.6+ | 1.3+) | 2005 04 12 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 699 | (0.0 | 1.6+) | | |
| 2003 11 24 | 704 | (2.2+ | 1.3+) | 2005 04 12 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 1.4− | 0.7+ | | |
| 2003 11 24 | 704 | (2.8+ | 0.7+) | 2005 04 15 | 699 | (0.9+ | 2.3+) | 2006 09 25 | 699 | 0.9+ | 1.0+ | | |
| 2003 11 24 | 704 | (2.4+ | 0.8+) | 2005 04 15 | 699 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.4+ | 0.8− | | |
| 2003 12 04 | 704 | 0.4+ | 0.7− | 2005 04 15 | 699 | 1.0− | 0.6− | 2006 09 26 | 704 | 0.0 | 0.6+ | | |
| 2003 12 04 | 704 | 0.8+ | 0.1+ | 2005 04 15 | 699 | (0.5− | 1.6+) | 2006 09 26 | 704 | (0.4+ | 1.8+) | | |
| 2003 12 04 | 704 | 0.3− | 0.3+ | 2005 04 19 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 1.0+ | | |
| 2003 12 04 | 704 | 0.2+ | 0.5+ | 2005 04 19 | 691 | 0.6+ | 0.1+ | 2006 09 26 | 704 | 0.6− | 1.3+ | | |
| 2003 12 04 | 704 | 0.5+ | 0.8− | 2005 04 19 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.0− | 1.0− | | |
| 2003 12 17 | 644 | 0.1− | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.7+ | | |
| 2003 12 17 | 644 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 1.1− | | |
| 2003 12 17 | 644 | 0.7+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.5− | | |
| 2003 12 18 | 704 | 0.1+ | 1.5+ | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2003 12 18 | 704 | 0.7− | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.4− | | |
| 2003 12 18 | 704 | 0.4+ | 0.8+ | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | | |
| 2003 12 18 | 704 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.2− | | |
| 2003 12 18 | 704 | 0.5− | 1.4+ | 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.0 | | |
| 2003 12 19 | 691 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.6− | 0.2− | | |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.2− | | |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.4− | 0.3+ | | | | | | |
| 2003 12 23 | 704 | 0.4+ | 0.5+ | 2006 08 18 | 644 | 0.3− | 0.3+ | | | | | | |

**(143803)∗ 2003 WA$_{119}$ = 1999 RT$_{148}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57346)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.12882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27388622 | $\omega$ | 105.48229 | | +0.56005165 | −0.82811965 | |
| $a$ | 2.3483127 | $\Omega$ | 310.43381 | | +0.74767970 | +0.51754069 | |
| $e$ | 0.1690531 | $i$ | 1.78161 | | +0.35681538 | +0.21533575 | |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 26 | 691 | 0.2+ | 0.0 | 2003 11 24 | 704 | 0.2+ | 0.2+ | 2003 12 29 | 691 | 0.2+ | 0.1− | | |
| 1992 10 26 | 691 | 0.5+ | 0.3+ | 2003 11 24 | 704 | 0.6− | 0.2+ | 2003 12 29 | 691 | 0.1− | 0.1− | | |
| 1992 10 26 | 691 | 1.2− | 0.3− | 2003 12 04 | 704 | 0.1− | 0.0 | 2004 01 12 | 644 | 0.1− | 0.2+ | | |
| 1999 09 14 | 703 | 0.1− | 0.7− | 2003 12 04 | 704 | 0.3+ | 0.3+ | 2004 01 12 | 644 | 0.0 | 0.2+ | | |
| 1999 09 14 | 703 | 1.4− | 1.7+ | 2003 12 04 | 704 | (1.7− | 0.9+) | 2004 01 12 | 644 | 0.2+ | 0.2+ | | |
| 1999 09 14 | 703 | 1.3+ | 0.7+ | 2003 12 04 | 704 | (1.4+ | 3.0+) | 2004 01 17 | 644 | 0.3+ | 0.0 | | |
| 1999 09 14 | 691 | 0.0 | 0.1+ | 2003 12 17 | 644 | 0.0 | 0.2+ | 2004 01 17 | 644 | 0.2− | 0.3− | | |
| 1999 09 14 | 703 | 1.0+ | 0.1− | 2003 12 17 | 644 | 0.0 | 0.1+ | 2004 01 17 | 644 | 0.0 | 0.0 | | |
| 1999 09 14 | 691 | 0.0 | 0.1+ | 2003 12 17 | 644 | 0.0 | 0.1− | 2006 08 14 | 644 | 0.7− | 0.3+ | | |
| 1999 09 14 | 691 | 0.3+ | 0.0 | 2003 12 18 | 704 | 0.1+ | 0.2− | 2006 08 14 | 644 | 0.2− | 0.4+ | | |
| 1999 09 18 | 691 | 0.1+ | 0.1+ | 2003 12 18 | 704 | 0.4+ | 0.3+ | 2006 08 14 | 644 | 0.6− | 0.5+ | | |
| 1999 09 18 | 691 | 0.1+ | 0.2+ | 2003 12 18 | 704 | 0.6+ | 0.2+ | 2006 08 20 | 644 | 0.4− | 0.2+ | | |
| 1999 09 18 | 691 | 0.2+ | 0.1+ | 2003 12 18 | 704 | 0.2+ | 0.1− | 2006 08 20 | 644 | 0.2− | 0.2+ | | |
| 1999 10 06 | 704 | 0.7+ | 0.3− | 2003 12 18 | 704 | 0.1− | 0.1− | 2006 08 20 | 644 | 0.3− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2− | 0.3− | 2003 12 19 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 1999 10 06 | 704 | 0.3+ | 0.8− | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 1999 10 06 | 704 | 0.2+ | 0.3− | 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 1999 10 06 | 704 | 0.1− | 1.0− | 2003 12 22 | 704 | (1.2+ | 1.7+) | 2006 10 19 | G96 | 0.5− | 0.2− |
| 2001 03 17 | 734 | 0.4+ | 0.3+ | 2003 12 22 | 704 | (1.4+ | 1.6+) | 2006 10 28 | G96 | 0.2− | 0.3+ |
| 2001 03 17 | 734 | 0.5+ | 1.1+ | 2003 12 22 | 704 | 0.1+ | 0.8+ | 2006 10 28 | G96 | 0.3− | 0.2+ |
| 2003 09 21 | 599 | 0.2+ | 0.1− | 2003 12 22 | 704 | (0.2− | 2.0+) | 2006 10 28 | G96 | 0.7+ | 0.0 |
| 2003 09 21 | 599 | 0.2+ | 0.3− | 2003 12 22 | 704 | (1.3− | 2.5+) | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2003 09 21 | 599 | 0.3− | 0.4+ | 2003 12 27 | 704 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.4− | 0.2− |
| 2003 11 20 | 704 | (0.6+ | 1.6+) | 2003 12 27 | 704 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.6− | 0.4− |
| 2003 11 20 | 704 | 0.0 | 1.3+ | 2003 12 27 | 704 | 0.7− | 1.3− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2003 11 20 | 704 | 0.1− | 1.1+ | 2003 12 27 | 704 | (0.1− | 1.6−) | 2006 11 18 | G96 | 0.5− | 0.9− |
| 2003 11 24 | 704 | 0.6− | 0.2+ | 2003 12 27 | 704 | 0.1+ | 0.2− | | | | |
| 2003 11 24 | 704 | 0.2− | 0.4− | 2003 12 29 | 691 | 0.1− | 0.1− | | | | |

**(143804)∗ 2003 WE$_{119}$ = 1998 DP$_{19}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57347)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.50849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30470058 | $\omega$ | 3.51791 | | +0.77858305 | −0.62694376 | |
| $a$ | 2.1871935 | $\Omega$ | 35.35469 | | +0.57459682 | +0.69467241 | |
| $e$ | 0.1186637 | $i$ | 2.71265 | | +0.25228341 | +0.35266380 | |
| $P$ | 3.23 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 24 | 691 | 0.2− | 0.0 | 2003 12 22 | 704 | 1.0− | 0.9+ | 2006 10 15 | 703 | 0.3− | 0.1− |
| 1998 02 24 | 691 | 0.4− | 0.2− | 2003 12 22 | 704 | 0.1− | 0.5+ | 2006 10 15 | 703 | 0.1− | 0.0 |
| 1998 02 24 | 691 | 0.2− | 0.2+ | 2003 12 22 | 704 | 0.7− | 1.0+ | 2006 10 15 | 703 | 0.6− | 0.3+ |
| 1998 02 28 | 691 | 0.0 | 0.7− | 2003 12 22 | 704 | 0.8− | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 1998 02 28 | 691 | 0.2+ | 0.3− | 2003 12 27 | 704 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 1998 02 28 | 691 | 0.1+ | 0.3− | 2003 12 27 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2001 02 01 | 699 | 0.4+ | 1.3+ | 2003 12 27 | 704 | 0.1− | 0.6+ | 2006 10 18 | 106 | 0.0 | 0.1+ |
| 2001 02 01 | 699 | 0.0 | 0.1− | 2003 12 27 | 704 | 1.3− | 0.1+ | 2006 10 18 | 106 | 0.6+ | 0.3− |
| 2001 02 01 | 699 | 0.2− | 1.3+ | 2003 12 27 | 704 | 0.1+ | 0.3+ | 2006 10 18 | 106 | 0.3− | 0.1− |
| 2001 02 01 | 699 | 1.0− | 0.0 | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 10 18 | 106 | 0.8− | 1.5− |
| 2003 11 20 | 704 | 0.1− | 1.1− | 2003 12 29 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2003 11 20 | 704 | 0.3+ | 0.0 | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2003 11 20 | 704 | 1.2+ | 1.2− | 2005 04 07 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2003 11 20 | 704 | 0.5+ | 0.1− | 2005 04 07 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2003 11 20 | 704 | 0.4+ | 0.6+ | 2005 04 07 | 691 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2003 11 24 | 704 | 0.0 | 0.5− | 2005 04 17 | 691 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2003 11 24 | 704 | 0.6− | 0.1+ | 2005 04 17 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 704 | 1.4− | 0.4+ |
| 2003 11 24 | 704 | 0.1− | 0.1− | 2005 04 17 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 704 | 0.5− | 0.4+ |
| 2003 11 24 | 704 | 1.3+ | 0.9+ | 2005 05 04 | G96 | 0.4− | 0.3+ | 2006 10 23 | 704 | 0.9− | 0.6− |
| 2003 12 04 | 704 | 0.5+ | 0.2+ | 2005 05 04 | G96 | 0.4− | 0.6+ | 2006 10 23 | 704 | 0.7− | 0.7+ |
| 2003 12 04 | 704 | 0.2− | 0.2− | 2005 05 04 | G96 | 0.4+ | 0.1+ | 2006 10 23 | 704 | 0.5− | 1.0− |
| 2003 12 04 | 704 | 0.9− | 0.2+ | 2005 05 04 | G96 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2003 12 04 | 704 | 0.5+ | 0.2− | 2005 05 07 | G96 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2003 12 04 | 704 | 0.2− | 0.8− | 2005 05 07 | G96 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2003 12 14 | 644 | 0.2− | 0.2+ | 2005 05 07 | G96 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2003 12 14 | 644 | 0.0 | 0.1+ | 2005 05 07 | G96 | 0.1+ | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2003 12 14 | 644 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2003 12 17 | 691 | 0.2+ | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2003 12 17 | 691 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2003 12 19 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2003 12 19 | 704 | 0.4− | 0.0 | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.9− | 0.5− |
| 2003 12 19 | 704 | 0.2− | 0.5+ | 2006 09 20 | 704 | 1.2+ | 0.4+ | 2006 11 11 | G96 | 0.6− | 0.3− |
| 2003 12 19 | 704 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.0 |
| 2003 12 19 | 704 | 0.0 | 1.1+ | 2006 09 20 | 704 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2003 12 20 | 704 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.5− | 0.3+ | 2006 11 11 | G96 | 0.7+ | 0.3− |
| 2003 12 20 | 704 | (1.2− | 1.5+) | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.4+ | 0.3+ |
| 2003 12 20 | 704 | 0.5− | 0.1− | 2006 09 25 | 691 | (1.5− | 0.3+) | 2006 11 11 | 703 | 0.7+ | 0.0 |
| 2003 12 20 | 704 | 0.7− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2003 12 20 | 704 | 0.4+ | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.5− | 0.5+ |
| 2003 12 21 | 704 | 0.2+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.4− | 0.0 |
| 2003 12 21 | 704 | 0.3− | 0.1− | 2006 10 03 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2003 12 21 | 704 | 0.6+ | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2003 12 21 | 704 | 0.5+ | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.5− |
| 2003 12 21 | 704 | 0.2+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2003 12 22 | 704 | 0.5− | 0.4− | 2006 10 15 | 703 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.4− |

**(143805)∗ 2003 WZ$_{122}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.42118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28511151 | $\omega$ | 318.11952 | | +0.06538747 | +0.99528348 | |
| $a$ | 2.2862632 | $\Omega$ | 315.48883 | | −0.88623116 | +0.02491759 | |
| $e$ | 0.0881634 | $i$ | 5.86700 | | −0.45860529 | +0.09375453 | |
| $P$ | 3.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 327 | 0.8− | 0.9− | 2003 12 18 | 704 | 0.7− | 0.3+ | 2006 09 27 | 699 | 0.9− | 0.4+ |
| 1996 11 18 | 327 | 0.1+ | 0.1− | 2003 12 23 | 704 | 0.1− | 1.0− | 2006 09 27 | 699 | 0.4− | 0.8+ |
| 1996 11 18 | 327 | 0.6+ | 0.1+ | 2003 12 23 | 704 | 0.9− | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.4+ |
| 1998 04 19 | 704 | 0.7+ | 1.3− | 2003 12 23 | 704 | 0.1+ | 0.4− | 2006 09 27 | 703 | 1.0+ | 1.4+ |
| 1998 04 19 | 704 | 0.9− | 0.6− | 2005 04 05 | 699 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.3+ | 1.0− |
| 1998 04 19 | 704 | (2.2− | 1.7+) | 2005 04 05 | 699 | 0.1+ | 0.6+ | 2006 09 27 | 703 | 0.4+ | 0.3+ |
| 1998 04 19 | 704 | (3.8− | 1.1+) | 2005 04 05 | 699 | 0.7+ | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 1999 10 04 | 704 | 0.8− | 0.6− | 2005 04 05 | 699 | 0.3− | 1.2− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 1999 10 04 | 704 | 0.3+ | 0.1+ | 2005 04 14 | 703 | (1.9− | 0.0 ) | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 1999 10 04 | 704 | 0.2+ | 0.8− | 2005 04 14 | 703 | 0.6− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2000 12 29 | 691 | 0.3− | 0.2− | 2005 04 14 | 703 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2000 12 29 | 691 | 0.3− | 0.0 | 2005 04 14 | 703 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2000 12 29 | 691 | 0.2− | 0.1− | 2005 05 23 | 644 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 02 20 | 691 | 0.3+ | 0.2+ | 2005 05 23 | 644 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 02 20 | 691 | 0.6+ | 0.3+ | 2005 05 23 | 644 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 02 20 | 691 | 0.7+ | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 2003 11 20 | 704 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.7+ | 0.4− |
| 2003 11 20 | 704 | 0.8− | 0.2− | 2006 09 16 | 703 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.5− |
| 2003 11 20 | 704 | 0.2+ | 0.7− | 2006 09 16 | 703 | 0.7− | 0.3− | 2006 10 17 | 703 | 0.9− | 0.7− |
| 2003 11 20 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.2+ | 0.7+ | 2006 10 26 | 104 | 0.4+ | 0.1+ |
| 2003 11 24 | 704 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 10 26 | 104 | 0.2− | 0.2− |
| 2003 11 24 | 704 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.7− | 0.6+ | 2006 10 26 | 104 | 0.1+ | 0.1+ |
| 2003 11 24 | 704 | 0.7− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 10 26 | 104 | 1.1+ | 0.1− |
| 2003 12 18 | 704 | 0.8+ | 0.0 | 2006 09 27 | 699 | 0.5+ | 0.1+ | | | | |
| 2003 12 18 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 699 | (1.7− | 0.6+) | | | | |

**(143806)∗ 2003 WD$_{123}$ = 2005 EA$_{156}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76242)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.14771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29608128 | $\omega$ | 210.30186 | | −0.42524233 | +0.90249080 | |
| $a$ | 2.2294381 | $\Omega$ | 34.66394 | | −0.80438720 | −0.34220664 | |
| $e$ | 0.1431474 | $i$ | 6.90774 | | −0.41488575 | −0.26154344 | |
| $P$ | 3.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.6− | 0.3+ | 2005 04 04 | 704 | 0.5+ | 0.6− | 2005 05 16 | G96 | 0.3− | 0.4− |
| 1999 09 14 | 704 | 0.4+ | 0.9− | 2005 04 07 | 704 | 0.7+ | 0.5+ | 2005 05 16 | G96 | 0.2− | 0.2− |
| 1999 09 14 | 704 | 0.6+ | 0.1− | 2005 04 07 | 704 | 1.0+ | 0.1− | 2005 05 16 | G96 | 0.3− | 0.3− |
| 2002 05 18 | 644 | 0.1− | 0.2+ | 2005 04 07 | 704 | 1.0+ | 0.4+ | 2005 05 16 | G96 | 0.3− | 0.3− |
| 2002 05 18 | 644 | 0.0 | 0.3+ | 2005 04 07 | 704 | (1.6+ | 0.0 ) | 2005 05 18 | 644 | 0.1− | 0.1+ |
| 2002 05 18 | 644 | 0.2+ | 0.5+ | 2005 04 07 | 704 | 1.4+ | 0.4+ | 2005 05 18 | 644 | 0.1− | 0.3− |
| 2002 07 06 | 644 | 0.0 | 0.3− | 2005 04 12 | 704 | 0.2+ | 0.1+ | 2005 05 18 | 644 | 0.3− | 0.2− |
| 2002 07 06 | 644 | 0.0 | 0.2− | 2005 04 12 | 704 | 0.6− | 0.2+ | 2005 05 26 | 699 | 0.7+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.2− | 0.1− | 2005 04 12 | 704 | 0.2− | 0.3+ | 2005 05 26 | 699 | 0.3− | 0.5+ | 2003 12 04 | 704 | 0.2− | 0.4+ | 2006 09 22 | 704 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2002 07 16 | 644 | 0.1+ | 0.0 | 2005 04 12 | 704 | 0.1− | 0.4+ | 2005 05 26 | 699 | 0.5− | 0.3+ | 2003 12 04 | 704 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2002 07 16 | 644 | 0.0 | 0.0 | 2005 04 12 | 704 | 0.0 | 0.6+ | 2005 05 26 | 699 | 0.5− | 0.3+ | 2003 12 18 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.2− | 1.0− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2002 07 16 | 644 | 0.4− | 0.0 | 2005 04 15 | I10 | 0.6+ | 0.3− | 2005 05 27 | 699 | 0.1− | 0.5+ | 2003 12 18 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2002 07 27 | 644 | 0.3− | 0.1− | 2005 04 15 | I10 | 0.4+ | 0.8− | 2005 05 27 | 699 | 0.5+ | 0.0 | 2003 12 18 | 704 | 0.4− | 0.5− | 2006 09 26 | 704 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 07 27 | 644 | 0.1+ | 0.2+ | 2005 04 15 | I10 | 0.1− | 0.7− | 2005 05 27 | 699 | 0.8+ | 0.3+ | 2003 12 21 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 704 | (0.4− | 2.3+) | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2002 07 27 | 644 | 0.1+ | 0.2− | 2005 04 18 | 704 | 1.0+ | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2003 12 21 | 704 | 0.8+ | 0.2− | 2006 09 26 | 704 | 0.0 | 1.3+ | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2002 08 13 | 644 | 0.1+ | 0.4+ | 2005 04 18 | 704 | 0.3− | 0.9− | 2006 09 25 | G96 | 0.0 | 0.1− | 2003 12 21 | 704 | 0.6+ | 0.8− | 2006 09 26 | 704 | (1.1− | 1.9+) | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2002 08 13 | 644 | 0.1− | 0.3+ | 2005 04 18 | 704 | 0.4+ | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.2− | 2003 12 21 | 704 | 1.0+ | 0.6+ | 2006 09 26 | 704 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 08 13 | 644 | 0.1+ | 0.5+ | 2005 04 18 | 704 | 0.2+ | 1.5+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2003 12 22 | 704 | 0.6+ | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2003 11 20 | 704 | 0.6+ | 0.3− | 2005 04 18 | 704 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3+ | 2003 12 22 | 704 | 0.7+ | 0.4− | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2003 11 20 | 704 | (0.7+ | 2.0+) | 2005 04 19 | I10 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.1+ | 2003 12 22 | 704 | 0.8+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2003 11 20 | 704 | 0.1+ | 0.4− | 2005 04 19 | I10 | 0.1− | 1.1+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2003 12 22 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.6− | 0.7− | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2003 11 20 | 704 | (0.5+ | 1.7+) | 2005 04 19 | I10 | 1.3− | 1.0+ | 2006 10 04 | G96 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.6− | 0.8− | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 2003 11 24 | 704 | 1.0− | 0.8+ | 2005 05 04 | 699 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.2+ | 2003 12 23 | 704 | 0.1− | 0.6− | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2003 11 24 | 704 | 0.2− | 0.9+ | 2005 05 04 | 699 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2003 12 23 | 704 | 0.6− | 0.8− | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.9− | 0.2− |
| 2003 11 24 | 704 | 1.0+ | 1.1+ | 2005 05 04 | 704 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2003 12 23 | 704 | 0.9− | 1.1− | 2006 09 30 | 703 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2003 12 04 | 704 | 0.6− | 0.3− | 2005 05 04 | 704 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.4+ | 2003 12 28 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.8− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 2003 12 04 | 704 | (1.5− | 0.7+) | 2005 05 04 | 699 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.6+ | 0.6+ | 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2003 12 04 | 704 | 0.6+ | 0.1− | 2005 05 04 | 699 | 0.3− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.7+ | 2003 12 28 | 704 | 0.7− | 1.0+ | 2006 09 30 | 703 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2003 12 23 | 704 | (0.3+ | 1.7+) | 2005 05 04 | 704 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2003 12 28 | 704 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 2003 12 23 | 704 | 0.0 | 0.5+ | 2005 05 04 | 704 | 0.4− | 0.9+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2003 12 28 | 704 | 0.2− | 1.1+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.6+ |
| 2003 12 23 | 704 | 1.3− | 0.7+ | 2005 05 08 | 699 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2003 12 28 | 704 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.7+ | 0.9+ |
| 2005 03 08 | 699 | 0.6− | 1.2+ | 2005 05 08 | 699 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3+ | 2003 12 28 | 704 | 0.4+ | 1.2+ | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2005 03 08 | 699 | 1.2− | 0.0 | 2005 05 08 | 699 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.3+ | 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2005 03 08 | 699 | 0.1− | 0.1− | 2005 05 08 | 699 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.4+ | 2003 12 28 | 704 | (0.5− | 2.7+) | 2006 10 15 | 703 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2005 03 08 | 699 | 0.5+ | 0.2− | 2005 05 08 | 699 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.2+ | 2003 12 28 | 704 | 1.3− | 0.3+ | 2006 10 15 | 703 | 0.6− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2005 03 12 | G96 | 0.3− | 0.1− | 2005 05 08 | 699 | 0.4+ | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.4+ | 2003 12 29 | 704 | 0.3− | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2005 03 12 | G96 | 0.4− | 0.2− | 2005 05 08 | E12 | 0.3− | 0.2− | 2006 10 29 | 691 | 0.2− | 0.2+ | 2003 12 29 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2005 03 12 | G96 | 0.4− | 0.1+ | 2005 05 08 | E12 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.4+ | 2003 12 29 | 704 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.5+ | 2006 11 27 | 703 | 0.5+ | 0.5− |
| 2005 03 12 | G96 | 0.1− | 0.0 | 2005 05 08 | E12 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.9− | 0.4− | 2003 12 29 | 704 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.8+ | 0.3− |
| 2005 04 04 | 704 | 0.2+ | 0.3+ | 2005 05 08 | E12 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.5+ | 1.1+ | 2004 01 19 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2005 04 04 | 704 | 0.1+ | 0.2+ | 2005 05 09 | 699 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.2− | 2004 01 19 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 1.4+ | 1.0− |
| 2005 04 04 | 704 | 1.1+ | 0.1+ | 2005 05 09 | 699 | 1.0+ | 1.3+ | 2006 11 11 | 703 | 0.1− | 0.6− | 2004 01 19 | 691 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 | | | | |
| 2005 04 04 | 704 | 0.8+ | 0.3+ | 2005 05 09 | 699 | 0.1+ | 0.2+ | | | | | 2005 03 14 | G96 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.4− | | | | |

**(143807)∗ 2003 WY$_{126}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.93773 | | (2000.0) | | +0.96791684 | −0.24041166 |
| $n$ | 0.29793120 | $\omega$ | 322.88397 | | +0.24712320 | +0.85818220 |
| $a$ | 2.2201998 | $\Omega$ | 51.18854 | | +0.04546548 | +0.45356978 |
| $e$ | 0.1404033 | $i$ | 5.38076 | | | |
| $P$ | 3.31 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.2+ | 0.0 | 2005 03 14 | G96 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.7− | 0.0 | 1999 09 07 | 704 | 0.1− | 0.1− | 2003 12 30 | 704 | 1.3+ | 0.2− | 2006 09 22 | 704 | 0.5+ | 0.4+ |
| 2001 02 16 | 704 | 0.3− | 0.6+ | 2005 03 14 | G96 | 0.7− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.2+ | 1999 09 07 | 704 | 0.3+ | 0.2+ | 2003 12 30 | 704 | 0.5+ | 0.2− | 2006 09 22 | 704 | 0.4+ | 0.8+ |
| 2001 02 16 | 704 | 0.0 | 1.1+ | 2005 03 14 | G96 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.3− | 1999 09 07 | 704 | 0.2− | 0.4+ | 2003 12 30 | 704 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.0 | 0.5+ |
| 2002 06 13 | 644 | 0.2− | 0.3+ | 2005 04 10 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.1+ | 1999 09 07 | 704 | 0.3+ | 0.8+ | 2005 04 02 | G96 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.0 |
| 2002 06 13 | 644 | 0.2+ | 0.3+ | 2005 04 10 | G96 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ | 1999 09 14 | 704 | 0.8− | 0.1− | 2005 04 02 | G96 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.5+ |
| 2002 06 13 | 644 | 0.3+ | 0.3+ | 2005 04 10 | G96 | (0.6− | 1.6−) | 2006 10 21 | G96 | 0.2− | 0.1+ | 1999 09 14 | 704 | 0.2+ | 0.1− | 2005 04 02 | G96 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.3+ |
| 2003 10 24 | 704 | 0.5− | 0.8+ | 2005 04 10 | G96 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.0 | 1999 09 14 | 704 | 0.3+ | 0.4− | 2005 04 02 | G96 | 0.1− | 0.3+ | 2006 09 26 | 704 | (1.6+ | 0.1−) |
| 2003 10 24 | 704 | 0.7− | 0.2− | 2005 04 16 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ | 1999 09 14 | 704 | 0.7− | 0.2+ | 2005 05 01 | 644 | 0.6+ | 0.5+ | 2006 09 26 | 704 | 0.4− | 0.1+ |
| 2003 10 24 | 704 | 0.4− | 1.0+ | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 1999 09 14 | 704 | 0.7+ | 0.8− | 2005 05 01 | 644 | 0.4+ | 0.8+ | 2006 09 28 | 704 | 0.1+ | 0.4− |
| 2003 11 20 | 704 | 0.2− | 0.4− | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2003 11 20 | 704 | 0.4− | 1.0+ | 2005 05 01 | 644 | 0.7+ | 0.7+ | 2006 09 28 | 704 | 0.6− | 1.2+ |
| 2003 11 20 | 704 | 0.6+ | 0.5− | 2005 05 14 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2003 11 20 | 704 | 0.6+ | 0.5+ | 2005 05 11 | G96 | 0.2− | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.1− |
| 2003 11 20 | 704 | 0.1− | 0.1+ | 2005 05 14 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2003 11 20 | 704 | 0.5− | 0.9+ | 2005 05 11 | G96 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.4− | 0.8+ |
| 2003 11 24 | 704 | 0.6+ | 0.4+ | 2005 05 14 | 644 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2003 11 20 | 704 | 0.1− | 0.7+ | 2005 05 11 | G96 | 0.0 | 0.4+ | 2006 09 28 | 704 | 0.6+ | 1.1+ |
| 2003 11 24 | 704 | 0.4+ | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 10 22 | 704 | 0.6+ | 0.7+ | 2003 11 24 | 704 | (0.4− | 1.6−) | 2005 05 11 | G96 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.9+ | 0.3+ |
| 2003 11 24 | 704 | 0.6+ | 0.3+ | 2005 05 14 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 704 | 0.1− | 0.5+ | 2003 11 24 | 704 | 0.6+ | 0.6− | 2005 05 11 | G96 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 1.1+ | 0.1+ |
| 2003 11 24 | 704 | 0.7+ | 1.2+ | 2005 05 14 | G96 | 0.2− | 0.2+ | 2006 10 22 | 704 | 0.3− | 0.1+ | 2003 11 24 | 704 | 0.2− | 1.4+ | 2005 05 11 | G96 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.4+ | 0.2+ |
| 2003 11 24 | 691 | 0.1+ | 0.3− | 2005 05 14 | G96 | 0.1− | 0.3+ | 2006 10 27 | 704 | 1.3+ | 0.1− | 2003 11 24 | 704 | 0.1+ | 0.2− | 2005 05 11 | G96 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.1− | 0.3+ |
| 2003 11 24 | 691 | 0.2+ | 0.3− | 2006 09 15 | 644 | 0.3− | 0.4+ | 2006 10 27 | 704 | 0.4− | 0.7− | 2003 12 17 | 704 | 0.3− | 0.0 | 2005 05 11 | G96 | 0.2+ | 0.0 | 2006 09 30 | 703 | 1.0+ | 0.4+ |
| 2003 11 24 | 691 | 0.3− | 0.2+ | 2006 09 15 | 644 | 0.4− | 0.3+ | 2006 10 27 | 704 | 0.6− | 0.3+ | | | | | | | | | | | | |
| 2003 12 04 | 704 | 0.2+ | 0.5+ | 2006 09 15 | 644 | 0.1+ | 0.4+ | 2006 10 27 | 704 | 1.4− | 0.1− | | | | | | | | | | | | |

**(143808)∗ 2003 WG$_{127}$ = 1999 RK$_{249}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57362)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.57125 | | (2000.0) | | +0.94503121 | −0.32130343 |
| $n$ | 0.28160643 | $\omega$ | 340.35110 | | +0.31150956 | +0.82829586 |
| $a$ | 2.3051950 | $\Omega$ | 38.55936 | | +0.09938716 | +0.45900988 |
| $e$ | 0.1238152 | $i$ | 5.58505 | | | |
| $P$ | 3.50 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.7− | 0.2− | 2006 08 20 | 691 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.6+ | 0.1+ | | |
| 2003 12 17 | 704 | 0.1− | 0.2− | 2006 08 20 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.4+ | | |
| 2003 12 17 | 704 | 0.2− | 0.5− | 2006 08 20 | 691 | 0.2− | 0.2− | 2006 09 30 | 704 | 0.0 | 0.5+ | | |
| 2003 12 17 | 704 | 1.1− | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.2− | 0.1− | | |
| 2003 12 18 | 704 | 0.2+ | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2003 12 18 | 704 | 0.7+ | 0.0 | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2003 12 18 | 704 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.5− | 0.6− | 2006 10 19 | 644 | 0.2+ | 0.3− | | |
| 2003 12 21 | 704 | 0.1− | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2003 12 21 | 704 | 0.8+ | 0.3− | 2006 08 30 | 704 | 0.3− | 0.4− | 2006 10 19 | 644 | 0.3+ | 0.0 | | |
| 2003 12 21 | 704 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2003 12 21 | 704 | 0.5− | 0.7− | 2006 09 12 | 703 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2003 12 23 | 704 | 0.5+ | 0.1− | 2006 09 12 | 703 | 0.3− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2003 12 23 | 704 | 0.2− | 0.7− | 2006 09 12 | 703 | 0.6− | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2003 12 23 | 704 | 0.0 | 0.5− | 2006 09 12 | 703 | 0.9− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2003 12 23 | 704 | 0.5+ | 0.2− | 2006 09 19 | 704 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2003 12 28 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 704 | 0.1− | 0.1− | 2006 10 24 | 644 | 0.0 | 0.2− | | |
| 2003 12 28 | 704 | 0.4+ | 0.4− | 2006 09 19 | 704 | 0.8− | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.1− | | |
| 2003 12 28 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 704 | 0.1+ | 1.5+ | 2006 10 24 | 644 | 0.2− | 0.0 | | |
| 2003 12 28 | 704 | 0.1− | 0.6+ | 2006 09 19 | 704 | 1.4− | 0.7+ | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2003 12 28 | 704 | 0.6+ | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.1− | 0.7− | | |
| 2003 12 29 | 704 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.2− | | |
| 2003 12 29 | 704 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.4− | | |
| 2003 12 29 | 704 | 1.2− | 0.5+ | 2006 09 22 | 704 | (0.9+ | 2.1+) | | | | | | |
| 2003 12 30 | 704 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.1+ | 1.1+ | | | | | | |

**(143809)∗ 2003 WN$_{127}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.25964 | | (2000.0) | | | |
| $n$ | 0.28804945 | $\omega$ | 350.93628 | | +0.68943848 | −0.71654819 |
| $a$ | 2.2706909 | $\Omega$ | 55.39260 | | +0.67238139 | +0.57867084 |
| $e$ | 0.1727738 | $i$ | 7.39861 | | +0.26940277 | +0.38948523 |
| $P$ | 3.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.0 | 0.3− | 2003 12 23 | 704 | 0.2− | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.4+ | | |
| 1996 11 17 | 691 | 0.2+ | 0.2− | 2003 12 23 | 704 | 0.6+ | 1.1+ | 2006 08 15 | 644 | 0.2− | 0.1+ | | |
| 1996 11 17 | 691 | 0.1+ | 0.3− | 2005 04 16 | 691 | 0.3+ | 0.2+ | 2006 08 15 | 644 | 0.3− | 0.2+ | | |
| 2003 11 20 | 704 | 0.8− | 0.5+ | 2005 04 16 | 691 | 0.4+ | 0.1+ | 2006 08 19 | 644 | 0.4− | 0.3+ | | |
| 2003 11 20 | 704 | 0.8+ | 0.1+ | 2005 04 16 | 691 | 0.5+ | 0.5+ | 2006 08 19 | 644 | 0.0 | 0.0 | | |
| 2003 11 20 | 704 | (0.3+ | 1.9+) | 2005 05 12 | G96 | 0.3+ | 0.2− | 2006 08 19 | 644 | 0.2+ | 0.4+ | | |
| 2003 11 20 | 695 | 0.2− | 0.0 | 2005 05 12 | G96 | 1.0+ | 0.6− | 2006 08 30 | 699 | 0.0 | 1.1+ | | |
| 2003 11 20 | 695 | 0.2− | 0.2+ | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.9+ | 1.2+ | | |
| 2003 11 24 | 704 | 0.7− | 0.6+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.3− | | |
| 2003 11 24 | 704 | 0.4− | 0.2+ | 2005 05 12 | G96 | 0.7− | 0.1− | 2006 08 30 | 699 | 0.8+ | 1.3+ | | |
| 2003 11 24 | 704 | 1.0− | 0.9+ | 2005 05 12 | G96 | 0.2+ | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.4− | | |
| 2003 11 24 | 704 | 0.2− | 0.1+ | 2005 05 12 | G96 | 0.1− | 0.3− | 2006 09 20 | 703 | 1.4− | 1.2− | | |
| 2003 11 24 | 704 | 0.7− | 0.4+ | 2005 05 12 | G96 | 0.4− | 0.7+ | 2006 09 20 | 703 | 0.1− | 0.7− | | |
| 2003 12 04 | 704 | 0.4+ | 0.3+ | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 09 20 | 703 | 1.1+ | 0.4− | | |
| 2003 12 04 | 704 | 0.2+ | 0.1− | 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 09 21 | 699 | (1.9+ | 1.0+) | | |
| 2003 12 04 | 704 | 0.3+ | 1.1+ | 2005 05 13 | G96 | 0.2− | 0.2− | 2006 09 21 | 699 | 0.9− | 0.5+ | | |
| 2003 12 04 | 704 | 0.6− | 0.2+ | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 09 21 | 699 | 0.4− | 0.4− | | |
| 2003 12 04 | 704 | 0.0 | 0.3+ | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 09 21 | 699 | 0.1− | 0.5− | | |
| 2003 12 17 | 704 | 0.0 | 0.5+ | 2005 05 14 | G96 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.5+ | | |
| 2003 12 17 | 704 | 0.1− | 0.4+ | 2005 05 14 | G96 | 0.6− | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.4+ | | |
| 2003 12 17 | 704 | 0.2+ | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.2+ | | |
| 2003 12 17 | 704 | 0.3+ | 0.0 | 2005 06 12 | G96 | 0.1− | 0.5− | 2006 09 26 | 703 | 0.2− | 0.7+ | | |
| 2003 12 23 | 704 | 0.6+ | 0.2+ | 2005 06 12 | G96 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2003 12 23 | 704 | 0.4+ | 0.1− | 2005 06 12 | G96 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.2+ | | |
| 2003 12 23 | 704 | 0.6+ | 0.0 | 2005 06 12 | G96 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.4+ | | |

**(143810)∗ 2003 WR$_{127}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.33380 | | (2000.0) | | | |
| $n$ | 0.24220230 | $\omega$ | 226.23596 | | +0.49967446 | +0.83086173 |
| $a$ | 2.5488868 | $\Omega$ | 75.26055 | | −0.70405674 | +0.55428455 |
| $e$ | 0.1910457 | $i$ | 14.67119 | | −0.50460830 | +0.04937020 |
| $P$ | 4.07 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.1− | 0.9+ | 2005 01 09 | 703 | 1.0+ | 0.8− | 2006 07 18 | E12 | 0.6− | 0.2+ | | |
| 2001 02 16 | 704 | 0.9− | 0.2+ | 2005 03 08 | 704 | 1.0+ | 0.2+ | 2006 08 23 | E12 | 0.1+ | 0.1+ | | |
| 2001 02 16 | 704 | (0.0 | 1.6−) | 2005 03 08 | 704 | 1.2+ | 0.5+ | 2006 08 23 | E12 | 0.2+ | 0.3+ | | |
| 2001 02 16 | 704 | 0.6+ | 0.1+ | 2005 03 08 | 704 | (0.4− | 1.6+) | 2006 08 23 | E12 | 0.3− | 0.4+ | | |
| 2001 02 16 | 704 | 0.1+ | 1.4+ | 2005 03 08 | 704 | (1.7+ | 0.9+) | 2006 08 23 | E12 | 0.1+ | 0.2+ | | |
| 2002 10 26 | 704 | 0.1− | 0.5+ | 2005 03 08 | 704 | 0.4+ | 0.5+ | 2006 09 03 | E12 | 0.0 | 0.9+ | | |
| 2002 10 26 | 704 | 0.2+ | 0.0 | 2005 04 02 | 699 | 1.2+ | 0.1− | 2006 09 03 | E12 | 0.0 | 0.1− | | |
| 2002 10 26 | 704 | 0.7+ | 0.9− | 2005 04 02 | 699 | 0.1− | 0.2− | 2006 09 03 | E12 | 0.4+ | 0.2+ | | |
| 2003 11 20 | 704 | 0.7− | 0.7+ | 2005 04 02 | 699 | 0.8− | 0.8+ | 2006 09 03 | E12 | 0.4+ | 0.4+ | | |
| 2003 11 20 | 704 | 0.6− | 0.2− | 2005 04 02 | 699 | 0.0 | 1.3+ | 2006 09 14 | E12 | 0.2− | 0.0 | | |
| 2003 11 20 | 704 | 0.3− | 0.2+ | 2005 04 30 | 703 | 0.0 | 0.6+ | 2006 09 14 | E12 | 0.3+ | 0.0 | | |
| 2003 11 24 | 704 | 1.0+ | 0.2+ | 2005 04 30 | 703 | 1.0− | 0.8+ | 2006 09 14 | E12 | 0.5− | 0.1+ | | |
| 2003 11 24 | 704 | 0.2− | 0.0 | 2005 04 30 | 703 | 0.1+ | 0.1+ | 2006 09 14 | E12 | 0.1− | 0.3− | | |
| 2003 11 24 | 704 | 0.4− | 0.2+ | 2005 04 30 | 703 | 0.1+ | 0.1+ | 2006 09 23 | E12 | 0.8− | 0.1+ | | |
| 2003 12 23 | 704 | 0.3− | 0.2+ | 2006 05 28 | E12 | 0.3− | 0.0 | 2006 09 23 | E12 | 0.2− | 0.2+ | | |
| 2003 12 23 | 704 | (2.4+ | 1.3+) | 2006 05 28 | E12 | 0.2+ | 0.2+ | 2006 09 23 | E12 | 0.4− | 0.8+ | | |
| 2003 12 23 | 704 | 0.4+ | 0.3+ | 2006 05 28 | E12 | 0.5+ | 0.0 | 2006 09 23 | E12 | 0.2− | 0.5+ | | |
| 2003 12 23 | 704 | 0.1+ | 0.2− | 2006 05 28 | E12 | 0.6− | 0.0 | 2006 09 28 | E12 | 0.2+ | 0.3− | | |
| 2003 12 28 | 704 | 0.7− | 0.9+ | 2006 06 22 | E12 | 0.6+ | 0.3+ | 2006 09 28 | E12 | 0.3− | 0.1+ | | |
| 2003 12 28 | 704 | 0.1+ | 0.4+ | 2006 06 22 | E12 | 0.2− | 0.8+ | 2006 09 28 | E12 | 0.2+ | 0.3− | | |
| 2003 12 28 | 704 | 0.3+ | 0.3+ | 2006 06 22 | E12 | 0.3− | 0.8+ | 2006 09 28 | E12 | 0.2− | 0.0 | | |
| 2003 12 28 | 704 | 0.2+ | 0.2+ | 2006 06 22 | E12 | 0.5− | 0.2+ | 2006 10 25 | E12 | 0.7− | 0.5+ | | |
| 2003 12 29 | 704 | 0.4+ | 0.8+ | 2006 07 05 | E12 | 0.4+ | 1.0+ | 2006 10 25 | E12 | 0.5− | 0.8+ | | |
| 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 07 05 | E12 | 0.4− | 0.3+ | 2006 10 25 | E12 | 0.7− | 0.4+ | | |
| 2003 12 29 | 704 | 0.6+ | 0.5+ | 2006 07 05 | E12 | 0.5+ | 0.0 | 2006 10 25 | E12 | 0.3− | 0.2+ | | |
| 2003 12 29 | 704 | 0.1+ | 0.2+ | 2006 07 05 | E12 | 0.3− | 0.2+ | 2006 11 23 | E12 | 0.1− | 0.6+ | | |
| 2005 01 09 | 703 | 0.2+ | 1.6+ | 2006 07 18 | E12 | 0.3+ | 0.0 | 2006 11 23 | E12 | 0.3− | 0.3+ | | |
| 2005 01 09 | 703 | (1.2+ | 1.7+) | 2006 07 18 | E12 | 0.1+ | 0.1+ | 2006 11 23 | E12 | 1.0− | 0.5+ | | |
| 2005 01 09 | 703 | 0.4+ | 1.4+ | 2006 07 18 | E12 | 0.0 | 0.3− | 2006 11 23 | E12 | 0.7+ | 1.0+ | | |

**(143811)∗ 2003 WE$_{130}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 260.29169 | | (2000.0) | | | |
| $n$ | 0.28833782 | $\omega$ | 118.59796 | | −0.31148438 | −0.95022732 |
| $a$ | 2.2691766 | $\Omega$ | 349.54411 | | +0.85834122 | −0.27830391 |
| $e$ | 0.0589474 | $i$ | 2.13039 | | +0.40771047 | −0.14005345 |
| $P$ | 3.42 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.1+ | 0.2+ | 2003 11 21 | 704 | 0.3+ | 1.1+ | 2005 05 19 | 644 | 0.0 | 0.3+ | | |
| 2001 02 02 | 704 | 1.0+ | 0.2− | 2003 11 21 | 704 | 0.0 | 0.5− | 2005 05 19 | 644 | 0.3+ | 0.4+ | | |
| 2001 02 02 | 691 | 0.0 | 0.0 | 2003 11 21 | 704 | 0.3+ | 0.1− | 2005 05 19 | 644 | 0.1+ | 0.4+ | | |
| 2001 02 02 | 704 | 0.7− | 0.7+ | 2003 11 21 | 704 | 1.2+ | 0.6− | 2006 07 21 | G96 | 0.4+ | 0.3− | | |
| 2001 02 02 | 704 | 0.3− | 0.5+ | 2003 11 21 | 644 | 0.3− | 0.0 | 2006 07 21 | G96 | 0.0 | 0.4− | | |
| 2001 02 02 | 691 | 0.0 | 0.3+ | 2003 11 21 | 644 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.2− | | |
| 2001 02 02 | 704 | 0.0 | 0.8− | 2003 11 21 | 644 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.3− | 0.5− | | |
| 2001 02 02 | 704 | 0.1− | 0.4− | 2003 11 24 | 704 | 1.3− | 0.7+ | 2006 09 23 | 691 | 0.4− | 0.7+ | | |
| 2001 02 21 | 699 | 0.9+ | 0.7+ | 2003 11 24 | 704 | 0.0 | 0.9+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | | |
| 2001 02 21 | 699 | 0.4+ | 1.1+ | 2003 11 24 | 704 | 0.6+ | 0.6− | 2006 09 23 | 691 | 0.0 | 0.2+ | | |
| 2001 02 21 | 699 | 0.3− | 0.0 | 2003 11 24 | 704 | 1.8+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1− | | |
| 2001 02 21 | 699 | 0.2+ | 0.9+ | 2003 12 14 | 691 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 2003 10 29 | 704 | 0.0 | 0.9+ | 2003 12 14 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.2− | 0.4− | | |
| 2003 10 29 | 704 | 0.0 | 1.1+ | 2003 12 14 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.1− | | |
| 2003 10 29 | 704 | 0.9− | 0.0 | 2003 12 27 | 691 | 0.1− | 0.3− | 2006 09 27 | 691 | 0.2− | 0.0 | | |
| 2003 10 29 | 704 | 0.5− | 0.1− | 2003 12 27 | 691 | 0.3− | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.3+ | | |
| 2003 11 21 | 704 | 0.8− | 0.2+ | 2003 12 27 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ | | |

**(143812)*** **2003 WW$_{131}$ = 2002 LP$_{44}$**

Discovered 2003 Nov. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57367)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 141.12428 | | (2000.0) | | | |
| $n$ | 0.29650318 | $\omega$ | 156.87564 | | −0.65993555 | +0.74231295 |
| $a$ | 2.2273227 | $\Omega$ | 71.61591 | | −0.70701230 | −0.56132969 |
| $e$ | 0.0849722 | $i$ | 7.02146 | | −0.25420203 | −0.36589681 |
| $P$ | 3.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 15 | 691 | 0.3− | 0.1+ | 2005 04 09 | 704 | 0.2− | 0.5+ | 2005 06 15 | G96 | 0.2+ | 0.8+ |
| 1993 12 15 | 691 | 0.1+ | 0.1+ | 2005 04 12 | 699 | 0.1+ | 0.6+ | 2005 06 15 | G96 | 0.2− | 0.3+ |
| 1993 12 15 | 691 | 0.1− | 0.3+ | 2005 04 12 | 699 | 0.0 | 0.5+ | 2005 06 15 | G96 | 0.5− | 0.0 |
| 2002 06 04 | 644 | 0.4− | 0.1+ | 2005 04 12 | 699 | 0.9+ | 0.0 | 2005 07 04 | 703 | 0.5− | 0.6− |
| 2002 06 04 | 644 | 0.1+ | 0.1− | 2005 04 12 | 699 | 0.1+ | 0.9+ | 2005 07 04 | 703 | 1.1− | 0.6− |
| 2002 06 04 | 644 | 0.5− | 0.1− | 2005 04 13 | 704 | 0.2+ | 0.6+ | 2005 07 04 | 703 | (1.7− | 1.3−) |
| 2002 06 08 | 704 | 0.6+ | 1.1+ | 2005 04 13 | 704 | 0.1+ | 0.6+ | 2005 07 04 | 703 | (0.8+ | 1.6+) |
| 2002 06 08 | 704 | 0.4+ | 1.2+ | 2005 04 13 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.7+ |
| 2002 06 08 | 704 | 0.2+ | 0.4+ | 2005 04 13 | 704 | 0.6− | 0.8+ | 2006 09 18 | 703 | 0.5− | 1.1+ |
| 2002 06 08 | 704 | 0.0 | 0.7+ | 2005 04 15 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.6− |
| 2003 11 19 | 691 | 0.1+ | 0.3+ | 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.3+ |
| 2003 11 19 | 691 | 0.1− | 0.4+ | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 21 | 699 | 1.1− | 0.5− |
| 2003 11 19 | 699 | 0.2+ | 0.7− | 2005 04 18 | 703 | 0.6− | 0.5− | 2006 09 21 | 699 | 0.4− | 0.3− |
| 2003 11 19 | 691 | 0.3− | 0.4+ | 2005 04 18 | 703 | 0.7− | 0.3− | 2006 09 21 | 699 | 0.7+ | 0.8+ |
| 2003 11 19 | 699 | 1.0− | 0.5− | 2005 04 18 | 703 | 1.0− | 0.6− | 2006 09 21 | 699 | 0.3− | 1.0− |
| 2003 11 19 | 699 | 0.6+ | 0.8+ | 2005 04 18 | 703 | 0.5− | 0.4− | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2003 11 19 | 699 | 0.6− | 0.2− | 2005 04 19 | 704 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.6− |
| 2003 11 23 | 704 | 1.2+ | 0.4− | 2005 04 19 | 704 | 0.1− | 1.3+ | 2006 09 26 | 703 | 0.9− | 0.7+ |
| 2003 11 23 | 704 | 0.4− | 0.5+ | 2005 04 19 | 704 | 0.2− | 1.2+ | 2006 09 26 | 703 | 1.3− | 0.0 |
| 2003 11 23 | 704 | 0.1− | 1.2+ | 2005 04 19 | 704 | 0.7+ | 0.9+ | 2006 09 29 | 699 | 0.8− | 0.9+ |
| 2003 11 23 | 704 | 1.1− | 0.2+ | 2005 04 19 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.5− |
| 2003 11 23 | 704 | 0.8+ | 1.1+ | 2005 05 03 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.1+ |
| 2003 11 24 | 699 | 0.6+ | 0.1+ | 2005 05 03 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.8+ | 0.3+ |
| 2003 11 24 | 699 | 1.0− | 1.0+ | 2005 05 03 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 1.0+ | 1.1+ |
| 2003 11 24 | 699 | 1.0+ | 0.4− | 2005 05 03 | 704 | 0.1+ | 0.9+ | 2006 10 01 | 704 | 0.6− | 0.6+ |
| 2003 11 24 | 699 | 0.3− | 0.9+ | 2005 05 03 | 704 | 0.8+ | 0.3+ | 2006 10 01 | 704 | 0.3+ | 1.0+ |
| 2003 12 17 | 703 | 0.3− | 0.9− | 2005 05 05 | 608 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2003 12 17 | 703 | 0.1+ | 1.0+ | 2005 05 05 | 608 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.1− |
| 2003 12 17 | 703 | 0.9− | 1.2+ | 2005 05 05 | 608 | 0.6− | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2003 12 17 | 703 | (0.3− | 1.5+) | 2005 05 07 | 703 | 0.8− | 0.8− | 2006 10 04 | G96 | 0.4+ | 0.1+ |
| 2005 02 09 | 691 | 0.9+ | 1.1− | 2005 05 07 | 703 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 2005 02 09 | 691 | 0.7+ | 0.2− | 2005 05 07 | 703 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.2− | 1.1+ |
| 2005 02 09 | 691 | 0.3+ | 0.3+ | 2005 05 07 | 703 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2005 04 02 | 644 | 0.4+ | 0.2+ | 2005 05 08 | 704 | 0.2+ | 1.2+ | 2006 10 16 | 703 | 0.6+ | 0.4+ |
| 2005 04 02 | 644 | 0.4+ | 0.6+ | 2005 05 08 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2005 04 02 | 644 | 0.2+ | 0.2+ | 2005 05 08 | 704 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 04 05 | 703 | 0.9− | 0.3+ | 2005 05 11 | 699 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 04 05 | 703 | 0.9− | 1.0+ | 2005 05 11 | 699 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2005 04 05 | 703 | 1.0− | 0.9+ | 2005 05 11 | 699 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 04 05 | 704 | 1.0+ | 0.7− | 2005 05 12 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 04 05 | 703 | 0.4− | 0.7+ | 2005 05 12 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2005 04 05 | 704 | 0.2+ | 0.7− | 2005 05 12 | 704 | 1.4+ | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2005 04 05 | 704 | 0.4+ | 0.2− | 2005 05 12 | 704 | 0.9+ | 1.3+ | 2006 10 22 | 703 | 0.9− | 0.8+ |
| 2005 04 05 | 704 | 0.6+ | 1.2− | 2005 05 12 | 704 | 0.7+ | 0.4− | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2005 04 05 | 704 | 0.7+ | 0.3+ | 2005 06 01 | 699 | 0.3− | 0.7− | 2006 10 28 | 703 | 0.4+ | 0.7+ |
| 2005 04 09 | 704 | 1.3+ | 0.6+ | 2005 06 01 | 699 | 0.2− | 0.3+ | 2006 10 28 | 703 | 0.4− | 2.4+ |
| 2005 04 09 | 704 | 0.3− | 0.9+ | 2005 06 01 | 699 | 0.3− | 0.4+ | 2006 10 28 | 703 | 1.0− | 0.3+ |
| 2005 04 09 | 704 | 0.0 | 0.1+ | 2005 06 01 | 699 | 0.8− | 0.7+ | 2006 10 28 | 703 | 0.6− | 0.0 |
| 2005 04 09 | 704 | 0.1− | 0.3+ | 2005 06 15 | G96 | 0.2− | 0.1+ | | | | |

**(143813)*** **2003 WO$_{136}$ = 2001 AN$_{21}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57374)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 117.13551 | | (2000.0) | | | |
| $n$ | 0.30221696 | $\omega$ | 188.69806 | | −0.12313369 | +0.98624335 |
| $a$ | 2.1991600 | $\Omega$ | 74.28429 | | −0.90346972 | −0.06542893 |
| $e$ | 0.0711226 | $i$ | 6.57853 | | −0.41058563 | −0.15179958 |
| $P$ | 3.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.9− | 1.1+ | 2004 01 17 | 644 | 0.9+ | 0.1+ | 2005 05 11 | 699 | 0.4+ | 0.3+ |
| 1999 09 11 | 704 | 0.0 | 0.2+ | 2005 02 09 | 691 | 0.5+ | 0.1− | 2005 05 11 | 699 | 0.5+ | 0.3+ |
| 1999 09 11 | 704 | 0.3− | 0.4+ | 2005 02 09 | 691 | 0.1+ | 0.2+ | 2005 05 11 | 699 | 0.1− | 0.4+ |
| 1999 09 11 | 704 | 0.3+ | 1.1+ | 2005 02 09 | 691 | 0.4+ | 0.0 | 2005 05 11 | 699 | 0.4+ | 0.1+ |
| 2001 01 03 | 704 | 0.1− | 0.0 | 2005 04 02 | 699 | 0.5+ | 0.2− | 2005 05 12 | 704 | 0.1+ | 0.4+ |
| 2001 01 03 | 704 | 0.3− | 1.0+ | 2005 04 02 | 691 | 0.0 | 0.2+ | 2005 05 12 | 704 | 0.3+ | 0.2+ |
| 2001 01 03 | 704 | 0.5− | 0.5+ | 2005 04 02 | 699 | 0.7− | 0.7+ | 2005 05 12 | 704 | 0.3+ | 0.3+ |
| 2001 01 03 | 704 | 0.5+ | 0.5+ | 2005 04 02 | 699 | 0.4+ | 0.0 | 2005 05 12 | 704 | 0.0 | 0.1− |
| 2001 01 03 | 704 | 0.4− | 0.2− | 2005 04 02 | 691 | 0.2− | 0.1+ | 2005 05 12 | 704 | 0.3− | 0.2+ |
| 2001 01 03 | 704 | 0.1− | 0.5− | 2005 04 02 | 699 | 0.1+ | 0.4− | 2005 05 16 | 704 | 0.8+ | 0.1− |
| 2001 01 03 | 704 | 0.3+ | 0.0 | 2005 04 02 | 691 | 0.1− | 0.1+ | 2005 05 16 | 704 | 1.1+ | 0.7+ |
| 2001 01 03 | 704 | 1.0− | 0.5− | 2005 04 05 | 704 | 0.5− | 0.3− | 2005 05 16 | 704 | 0.7+ | 0.0 |
| 2001 01 03 | 704 | 0.1− | 0.5+ | 2005 04 05 | 704 | 0.2+ | 0.2+ | 2005 05 16 | 704 | 0.8+ | 1.0+ |
| 2001 01 03 | 704 | 0.5+ | 0.2− | 2005 04 05 | 703 | 0.2− | 0.7− | 2005 06 04 | 703 | 0.0 | 0.2− |
| 2001 01 03 | 704 | 0.5+ | 0.1− | 2005 04 05 | 703 | (1.7− | 0.1+) | 2005 06 04 | 703 | 0.2+ | 0.4+ |
| 2001 01 03 | 704 | 1.1− | 0.7− | 2005 04 05 | 704 | 1.1− | 0.6+ | 2005 06 04 | 703 | 0.9− | 1.2+ |
| 2001 01 03 | 704 | 0.5+ | 0.1+ | 2005 04 05 | 703 | 0.8− | 0.4+ | 2005 06 04 | 703 | 0.6− | 1.1− |
| 2001 01 03 | 704 | 0.2− | 0.5+ | 2005 04 05 | 704 | (0.2+ | 2.2+) | 2006 09 20 | 644 | 0.1+ | 0.6+ |
| 2001 01 03 | 704 | 0.8+ | 0.8+ | 2005 04 05 | 703 | (1.7− | 0.2−) | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2001 01 03 | 704 | 0.8+ | 0.6− | 2005 04 05 | 704 | 0.3− | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.8+ |
| 2001 01 03 | 704 | 0.5− | 0.2+ | 2005 04 07 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.6+ | 0.7− |
| 2001 01 03 | 704 | (0.4+ | 2.6+) | 2005 04 07 | 704 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.6+ |
| 2001 01 04 | 704 | 0.1− | 0.1− | 2005 04 07 | 704 | 1.0− | 1.1− | 2006 09 30 | 703 | 1.1+ | 1.4− |
| 2001 01 04 | 704 | 0.3+ | 1.0− | 2005 04 11 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.0 |
| 2001 01 04 | 704 | 0.3+ | 0.5+ | 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 10 15 | D35 | 0.2− | 0.7+ |
| 2001 01 04 | 704 | 0.7− | 0.2+ | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 10 15 | D35 | 0.2− | 0.5+ |
| 2001 01 04 | 704 | 0.5− | 0.3+ | 2005 04 13 | 699 | 0.1+ | 0.2+ | 2006 10 15 | D35 | 0.4− | 0.3+ |
| 2003 11 15 | 291 | 0.1− | 0.2+ | 2005 04 13 | 699 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4− | 1.0− |
| 2003 11 15 | 291 | 0.1− | 0.1+ | 2005 04 13 | 699 | 0.5− | 1.1+ | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2003 11 15 | 291 | 0.2+ | 0.2+ | 2005 04 13 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2003 11 21 | 704 | 0.3− | 1.4+ | 2005 04 13 | 704 | 0.9+ | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2003 11 21 | 704 | 0.7+ | 0.5− | 2005 04 13 | 704 | (0.1− | 1.6+) | 2006 10 22 | 703 | 1.0− | 0.9+ |
| 2003 11 21 | 704 | 0.5+ | 0.2− | 2005 04 13 | 704 | 0.0 | 0.7+ | 2006 10 22 | 703 | 1.1− | 1.0+ |
| 2003 11 21 | 704 | 0.5+ | 0.3+ | 2005 04 13 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 703 | 1.3− | 1.3+ |
| 2003 11 21 | 704 | 0.8+ | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.9+ |
| 2003 11 23 | 704 | 0.3− | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.5+ |
| 2003 11 23 | 704 | 0.5− | 0.9− | 2005 04 15 | 691 | 0.2− | 0.5− | 2006 11 08 | 644 | 0.4− | 0.3+ |
| 2003 11 23 | 704 | 0.3− | 0.4− | 2005 04 19 | 704 | 0.6+ | 1.1− | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2003 12 17 | 644 | 0.0 | 0.3+ | 2005 04 19 | 704 | 0.6− | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.6+ |
| 2003 12 17 | 644 | 0.1− | 0.5+ | 2005 04 19 | 704 | 0.5+ | 0.3− | 2006 11 13 | 644 | 0.2− | 0.4+ |
| 2003 12 17 | 644 | 0.6− | 0.1+ | 2005 04 19 | 704 | 0.4+ | 0.2+ | 2006 11 13 | 644 | 0.4− | 0.6+ |
| 2003 12 19 | 704 | 0.2− | 0.6+ | 2005 04 19 | 704 | 0.5− | 0.4− | 2006 11 13 | 703 | 0.6− | 1.1+ |
| 2003 12 19 | 704 | 0.0 | 0.2− | 2005 05 03 | 704 | 0.2+ | 0.9+ | 2006 11 13 | 703 | 0.3− | 0.1− |
| 2003 12 19 | 704 | 0.4− | 0.7+ | 2005 05 03 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 1.2− | 0.7+ |
| 2003 12 19 | 691 | 0.0 | 0.0 | 2005 05 03 | 704 | 0.6+ | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.2+ |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2005 05 03 | 704 | 0.7+ | 0.7+ | 2006 11 20 | 704 | 0.2+ | 1.4+ |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2005 05 03 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.3+ | 0.3− |
| 2003 12 21 | 704 | 0.5+ | 0.0 | 2005 05 08 | 699 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.3− | 1.0+ |
| 2003 12 21 | 704 | 0.3+ | 0.4+ | 2005 05 08 | 699 | 0.5+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2003 12 21 | 704 | 0.1+ | 0.3+ | 2005 05 08 | 699 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2003 12 21 | 704 | 0.5+ | 0.1+ | 2005 05 08 | 699 | 0.3− | 0.9+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2003 12 21 | 704 | 0.3− | 0.1+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.2+ |
| 2004 01 17 | 644 | 0.5+ | 0.2+ | 2005 05 11 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2004 01 17 | 644 | 0.6+ | 0.5+ | 2005 05 11 | 691 | 0.2+ | 0.2+ | | | | |

**(143814)∗ 2003 WP$_{136}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.28936 | | (2000.0) | | | |
| $n$ | 0.29350780 | $\omega$ | 212.08727 | | +0.04138585 | −0.99760057 |
| $a$ | 2.2424509 | $\Omega$ | 235.59775 | | +0.93032310 | +0.05873472 |
| $e$ | 0.1134308 | $i$ | 3.85696 | | +0.36439834 | −0.03665142 |
| $P$ | 3.36 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 18 | 566 | 0.1+ | 0.5+ | 2003 12 01 | 704 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.2+ | 0.2− |
| 1996 10 18 | 566 | 0.3+ | 0.4− | 2003 12 01 | 704 | 0.4− | 0.0 | 2006 09 06 | 644 | 0.2− | 0.1− |
| 1996 10 18 | 566 | 0.7− | 0.1− | 2003 12 01 | 704 | 1.3− | 0.3− | 2006 09 06 | 644 | 0.1+ | 0.0 |
| 2001 01 26 | 704 | 0.0 | 0.5− | 2003 12 01 | 704 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.5+ | 0.9+ |
| 2001 01 26 | 704 | 0.2+ | 0.6+ | 2003 12 01 | 704 | 0.5− | 0.3− | 2006 09 17 | 703 | 1.2+ | 0.1− |
| 2001 01 26 | 704 | 0.7+ | 0.2+ | 2003 12 01 | 704 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.8− | 0.3− |
| 2001 01 26 | 704 | 0.8+ | 1.0+ | 2003 12 19 | 704 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.6− | 0.5+ |
| 2001 01 26 | 704 | 0.5+ | 0.2+ | 2003 12 19 | 704 | 0.9− | 0.0 | 2006 09 18 | 704 | 0.5+ | 1.0+ |
| 2001 02 19 | 704 | 0.2+ | 0.1+ | 2003 12 19 | 704 | 0.5− | 0.4− | 2006 09 18 | 704 | 0.5+ | 0.7+ |
| 2001 02 19 | 704 | 0.4+ | 0.7+ | 2003 12 19 | 704 | 0.2+ | 0.6− | 2006 09 18 | 704 | 0.3− | 0.1+ |
| 2001 02 19 | 704 | 0.8+ | 0.7+ | 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2− |
| 2001 02 19 | 704 | 0.2+ | 0.5+ | 2003 12 19 | 704 | 0.6− | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.0 |
| 2001 02 19 | 704 | 1.0+ | 0.7+ | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.1− | 0.2+ |
| 2003 09 21 | 599 | 0.3+ | 0.1− | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 1.3− | 1.3+ |
| 2003 09 21 | 599 | 0.0 | 0.2− | 2003 12 21 | 704 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2003 09 21 | 599 | 0.1− | 0.1+ | 2003 12 21 | 704 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2003 11 15 | 291 | 0.0 | 0.0 | 2003 12 21 | 704 | 0.6− | 1.0+ | 2006 09 25 | 691 | 0.0 | 0.4+ |
| 2003 11 15 | 291 | 0.2+ | 0.0 | 2003 12 21 | 704 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.5+ | 0.2− |
| 2003 11 15 | 291 | 0.1+ | 0.1− | 2003 12 23 | 704 | 0.7− | 0.0 | 2006 09 25 | 704 | 0.1− | 0.3− |
| 2003 11 21 | 704 | 0.4− | 0.1+ | 2003 12 23 | 704 | 0.5− | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.4+ |
| 2003 11 21 | 704 | 0.1+ | 1.3− | 2003 12 23 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.7+ |
| 2003 11 21 | 704 | (1.6− | 1.3−) | 2003 12 23 | 704 | 0.1− | 0.7+ | 2006 09 29 | 704 | 0.1+ | 0.3− |
| 2003 11 21 | 704 | 0.8− | 0.3+ | 2003 12 23 | 704 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.2− | 0.2− |
| 2003 11 21 | 704 | 0.8− | 0.1− | 2003 12 29 | 691 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.8− | 0.5+ |
| 2003 11 23 | 704 | 0.6+ | 0.0 | 2003 12 29 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.6− | 0.3+ |
| 2003 11 23 | 704 | 0.3+ | 0.4+ | 2003 12 29 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | 1.0+ | 0.7+ |
| 2003 11 23 | 704 | 0.1+ | 0.6+ | 2005 02 09 | 809 | 0.4− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2003 11 23 | 704 | 0.6+ | 0.1+ | 2005 02 09 | 809 | 0.3− | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2003 11 23 | 704 | 0.3+ | 0.2+ | 2005 02 09 | 809 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2003 11 26 | 704 | 0.7− | 0.3+ | 2005 06 01 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.7+ |
| 2003 11 26 | 704 | 0.6− | 0.1− | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.6+ | 0.9+ |
| 2003 11 26 | 704 | 0.5− | 0.2+ | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2003 11 26 | 704 | 0.3− | 0.8+ | 2005 06 11 | 691 | 0.1+ | 0.6+ | 2006 10 17 | 703 | (2.1− | 0.5−) |
| 2003 11 26 | 704 | 0.5− | 0.6+ | 2005 06 11 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 11 29 | 704 | 0.0 | 0.1− | 2005 06 11 | 691 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2003 11 29 | 704 | 0.4+ | 0.3+ | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 11 29 | 704 | 0.2+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2003 11 29 | 704 | 0.5+ | 1.5+ | 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2003 11 29 | 704 | 0.5− | 0.1+ | 2005 06 13 | G96 | 0.6− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2003 12 01 | 704 | (5.2− | 1.3−) | 2005 06 14 | 291 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2003 12 01 | 704 | 0.3+ | 1.2+ | 2005 06 14 | 291 | 0.0 | 0.4+ | | | | |
| 2003 12 01 | 704 | 0.6+ | 0.3+ | 2005 06 14 | 291 | 0.2+ | 0.2+ | | | | |

**(143815)∗ 2003 WR$_{136}$ = 1996 XM**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57374)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 264.30771 | | (2000.0) | | | |
| $n$ | 0.28145474 | $\omega$ | 30.91991 | | −0.23055226 | −0.95905072 |
| $a$ | 2.3060232 | $\Omega$ | 72.84183 | | +0.85387350 | −0.28048099 |
| $e$ | 0.1321796 | $i$ | 9.91488 | | +0.46663231 | +0.03939712 |
| $P$ | 3.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 721 | 0.2+ | 1.6− | 2003 12 17 | 644 | 0.1+ | 0.1+ | 2004 02 17 | 644 | 0.2+ | 0.4+ |
| 1996 12 01 | 721 | 0.3+ | 0.6− | 2003 12 17 | 644 | 0.2− | 0.1+ | 2005 05 15 | G96 | 0.0 | 0.1+ |
| 1996 12 03 | 721 | 0.1+ | 0.2− | 2003 12 17 | 644 | 0.1− | 0.1+ | 2005 05 15 | G96 | 0.3− | 0.2− |
| 1996 12 03 | 721 | 0.2+ | 0.1− | 2003 12 18 | 704 | 0.7+ | 0.0 | 2005 05 15 | G96 | 0.1− | 0.2+ |
| 2001 03 16 | 704 | 0.2+ | 0.7+ | 2003 12 18 | 704 | 1.0+ | 0.2− | 2005 05 15 | G96 | 0.3− | 0.2+ |
| 2001 03 16 | 704 | 0.3− | 0.2+ | 2003 12 18 | 704 | 0.5+ | 0.2+ | 2005 05 19 | G96 | 0.2+ | 0.1+ |
| 2001 03 16 | 704 | 0.5− | 0.1− | 2003 12 18 | 704 | 0.5+ | 0.1− | 2005 05 19 | G96 | 0.3+ | 0.1− |
| 2001 03 16 | 704 | 0.2+ | 0.1− | 2003 12 18 | 704 | 0.2+ | 0.2− | 2005 05 19 | G96 | 0.2+ | 0.2+ |
| 2001 03 16 | 704 | 0.6+ | 0.5+ | 2003 12 21 | 704 | 0.5− | 0.3+ | 2005 05 19 | G96 | 0.0 | 0.2+ |
| 2003 11 21 | 704 | 0.3+ | 0.0 | 2003 12 21 | 704 | 0.0 | 0.8+ | 2005 06 10 | 691 | 0.1+ | 0.4+ |
| 2003 11 21 | 704 | 1.7+ | 1.9− | 2003 12 21 | 704 | 0.3− | 0.1+ | 2005 06 10 | 691 | 0.0 | 0.2+ |
| 2003 11 21 | 704 | 0.3− | 0.1− | 2003 12 27 | 704 | 0.0 | 0.9+ | 2005 06 10 | 691 | 0.3+ | 0.2+ |
| 2003 11 21 | 704 | 0.2+ | 0.0 | 2003 12 27 | 704 | 0.8− | 1.5+ | 2006 09 19 | F84 | 0.9+ | 1.1+ |
| 2003 11 21 | 704 | 0.0 | 0.2− | 2003 12 27 | 704 | 0.8− | 0.6+ | 2006 09 19 | F84 | 0.5− | 0.4+ |
| 2003 11 23 | 704 | 0.1− | 0.4+ | 2003 12 27 | 704 | 0.4− | 0.3+ | 2006 09 19 | F84 | 0.3+ | 0.4+ |
| 2003 11 23 | 704 | 0.4− | 0.6+ | 2003 12 27 | 704 | 0.9− | 1.2+ | 2006 09 20 | 703 | 0.1+ | 0.3+ |
| 2003 11 23 | 704 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.0 | 2006 09 20 | 703 | 1.8− | 0.9− |
| 2003 11 23 | 704 | 0.9+ | 0.2+ | 2004 01 22 | 704 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.6− | 0.5+ |
| 2003 11 23 | 704 | 0.0 | 0.6+ | 2004 01 22 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 703 | 1.5− | 1.4+ |
| 2003 11 26 | 691 | 0.3+ | 0.2− | 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.9+ | 0.2+ |
| 2003 11 26 | 691 | 0.3+ | 0.2+ | 2004 02 15 | 704 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.7+ | 0.2+ |
| 2003 11 26 | 691 | 0.6+ | 0.3+ | 2004 02 15 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.9− |
| 2003 12 14 | 291 | 0.6− | 0.2− | 2004 02 15 | 704 | 0.3+ | 0.5− | 2006 09 26 | 703 | 0.6+ | 0.0 |
| 2003 12 14 | 291 | 0.5− | 0.0 | 2004 02 17 | 644 | 0.1+ | 0.2− | | | | |
| 2003 12 14 | 291 | 0.8− | 0.2− | 2004 02 17 | 644 | 0.0 | 0.4+ | | | | |

**(143816)∗ 2003 WC$_{137}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.29106 | | (2000.0) | | | |
| $n$ | 0.27589955 | $\omega$ | 331.68499 | | +0.77868365 | −0.62002338 |
| $a$ | 2.3368745 | $\Omega$ | 66.95663 | | +0.59353963 | +0.67834246 |
| $e$ | 0.1139791 | $i$ | 5.99044 | | +0.20337769 | +0.39423663 |
| $P$ | 3.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 0.4− | 0.4+ | 2003 12 18 | 704 | 0.2+ | 0.5+ | 2005 04 02 | 691 | 0.4+ | 0.4+ |
| 1999 09 04 | 703 | 0.8− | 1.0+ | 2003 12 18 | 704 | 0.9+ | 0.2− | 2005 04 02 | 691 | 0.5+ | 0.6+ |
| 1999 09 04 | 703 | 0.1+ | 0.4− | 2003 12 18 | 704 | 0.1− | 1.6+ | 2005 04 14 | 691 | 0.1+ | 0.5+ |
| 1999 09 04 | 703 | 0.1+ | 0.6+ | 2003 12 22 | 704 | 1.3+ | 0.4+ | 2005 04 14 | 691 | 0.1+ | 0.5+ |
| 1999 09 30 | 704 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.0 | 0.3+ | 2005 04 14 | 691 | 0.0 | 0.4+ |
| 1999 09 30 | 704 | 1.0− | 0.8+ | 2003 12 22 | 704 | 0.3+ | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.6+ |
| 1999 09 30 | 704 | 0.5+ | 0.4+ | 2003 12 22 | 704 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.5+ |
| 2003 11 21 | 704 | 0.8− | 0.2+ | 2003 12 22 | 704 | 0.2− | 0.4+ | 2006 08 17 | 644 | 0.2+ | 0.5+ |
| 2003 11 21 | 704 | 0.2− | 0.3+ | 2003 12 23 | 704 | 1.3− | 1.0+ | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2003 11 21 | 704 | 0.6+ | 0.1− | 2003 12 23 | 704 | 0.1− | 0.3+ | 2006 08 20 | 644 | 0.3+ | 0.1+ |
| 2003 11 21 | 704 | 0.2− | 0.2− | 2003 12 23 | 704 | 0.2− | 1.7+ | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2003 11 21 | 704 | 0.4− | 0.1− | 2003 12 23 | 704 | 0.8+ | 0.6+ | 2006 08 23 | 644 | 0.4+ | 0.5+ |
| 2003 11 23 | 704 | 0.3− | 1.0+ | 2003 12 23 | 704 | 1.5+ | 1.1+ | 2006 08 23 | 644 | 0.6+ | 0.5+ |
| 2003 11 23 | 704 | 0.0 | 0.0 | 2003 12 27 | 704 | 0.3− | 0.7+ | 2006 08 23 | 644 | 0.5+ | 0.6+ |
| 2003 11 23 | 704 | 0.1+ | 0.3− | 2003 12 27 | 704 | 1.1+ | 0.3− | 2006 09 26 | 703 | 0.4− | 0.7+ |
| 2003 11 23 | 704 | 0.2+ | 0.8− | 2003 12 27 | 704 | 0.7+ | 0.9+ | 2006 09 26 | 703 | 0.8− | 0.7+ |
| 2003 11 26 | 691 | 0.7− | 0.1+ | 2004 01 16 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 1.4− | 0.3− |
| 2003 11 26 | 691 | 0.2− | 0.0 | 2004 01 16 | 644 | 0.0 | 0.3− | 2006 09 26 | 703 | 2.9− | 1.7+ |
| 2003 11 26 | 691 | 0.6− | 0.1+ | 2004 01 16 | 644 | 0.1+ | 0.1− | | | | |
| 2003 12 18 | 704 | 0.7+ | 0.4− | 2005 04 02 | 691 | 0.3+ | 0.8+ | | | | |

**(143817)∗ 2003 WJ$_{137}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.64616 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29649682 | $\omega$ | 37.88434 | | −0.18279783 | −0.97975507 | |
| $a$ | 2.2273546 | $\Omega$ | 62.78285 | | +0.87811465 | −0.20004948 | |
| $e$ | 0.1188591 | $i$ | 5.26738 | | +0.44215339 | −0.00775912 | |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.7− | 0.2+ | 2003 12 18 | 704 | 0.8+ | 0.1+ | 2004 01 11 | 644 | 0.2+ | 0.3− |
| 1998 04 21 | 704 | 0.7− | 1.6− | 2003 12 18 | 704 | 0.5+ | 0.0 | 2004 01 11 | 644 | 0.0 | 0.1− |
| 1998 04 21 | 704 | 1.2+ | 0.4− | 2003 12 18 | 704 | 0.1− | 0.4+ | 2004 01 11 | 644 | 0.0 | 0.3− |
| 1998 04 21 | 704 | (4.0− | 2.4−) | 2003 12 18 | 704 | 0.5− | 0.0 | 2004 01 11 | 644 | 0.1− | 0.2− |
| 2001 01 18 | 704 | 0.6+ | 0.1− | 2003 12 19 | 704 | 0.6+ | 0.0 | 2005 05 29 | E12 | 0.3− | 0.5+ |
| 2001 01 18 | 704 | 0.6− | 0.2− | 2003 12 19 | 704 | 0.2+ | 0.6+ | 2005 05 29 | E12 | 0.8+ | 1.0+ |
| 2001 01 18 | 704 | 0.1− | 0.6+ | 2003 12 19 | 704 | 0.2+ | 0.2+ | 2005 05 29 | E12 | 0.3+ | 0.6+ |
| 2001 01 18 | 704 | 0.6+ | 0.2− | 2003 12 19 | 704 | 0.1+ | 0.3+ | 2005 05 29 | E12 | 0.1− | 1.0+ |
| 2001 01 18 | 704 | 0.3+ | 1.4+ | 2003 12 19 | 704 | 0.0 | 0.0 | 2005 06 14 | G96 | 0.2+ | 0.6+ |
| 2001 02 03 | 704 | 0.5+ | 0.4+ | 2003 12 20 | 704 | 1.4− | 0.3− | 2005 06 14 | G96 | 0.0 | 0.4+ |
| 2001 02 03 | 704 | 0.1+ | 0.9+ | 2003 12 20 | 704 | 0.2− | 0.0 | 2005 06 14 | G96 | 0.2− | 0.6+ |
| 2001 02 03 | 704 | 0.2+ | 0.5+ | 2003 12 20 | 704 | 0.5− | 0.1− | 2005 06 14 | G96 | 0.0 | 0.7+ |
| 2001 02 03 | 704 | 0.2+ | 0.1+ | 2003 12 20 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.3+ |
| 2001 02 03 | 704 | 0.1+ | 0.2+ | 2003 12 21 | 704 | 0.6− | 0.0 | 2006 09 18 | 703 | (2.2− | 0.8−) |
| 2001 02 17 | 704 | 1.0+ | 0.1+ | 2003 12 21 | 704 | 1.0− | 0.5− | 2006 09 18 | 703 | 0.7− | 0.4− |
| 2001 02 17 | 704 | 0.8− | 0.6+ | 2003 12 21 | 704 | 1.1− | 0.3− | 2006 09 18 | 703 | 1.5+ | 1.1+ |
| 2001 02 17 | 704 | 0.7+ | 0.1− | 2003 12 21 | 704 | 1.1− | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.3+ |
| 2001 02 17 | 704 | 0.4− | 0.8+ | 2003 12 21 | 704 | 0.9− | 0.1+ | 2006 09 25 | 699 | 0.9− | 0.3− |
| 2001 03 16 | 704 | 0.0 | 0.6+ | 2003 12 22 | 704 | 0.3− | 0.7− | 2006 09 25 | 699 | 0.4− | 1.3+ |
| 2001 03 16 | 704 | 0.6+ | 0.5− | 2003 12 22 | 704 | (1.7+ | 0.4−) | 2006 09 25 | 699 | 0.3− | 0.6+ |
| 2001 03 16 | 704 | 0.1− | 0.1− | 2003 12 22 | 704 | 1.4+ | 0.5− | 2006 09 30 | 703 | (3.1− | 0.1−) |
| 2003 11 21 | 704 | 0.0 | 0.5+ | 2003 12 22 | 704 | (1.6+ | 0.3−) | 2006 09 30 | 703 | (2.0+ | 0.8+) |
| 2003 11 21 | 704 | 0.4+ | 0.5+ | 2003 12 22 | 704 | (1.8+ | 0.2−) | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2003 11 21 | 704 | 0.3+ | 0.2− | 2003 12 23 | 704 | 1.4+ | 1.0− | 2006 09 30 | 703 | 0.6+ | 0.8+ |
| 2003 11 21 | 704 | 0.1− | 0.2+ | 2003 12 23 | 704 | (0.9+ | 2.8−) | 2006 10 20 | 644 | 0.3+ | 0.4− |
| 2003 11 21 | 704 | 0.4+ | 0.9+ | 2003 12 23 | 704 | (1.5+ | 3.2−) | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2003 11 23 | 704 | (2.2− | 1.4+) | 2003 12 23 | 704 | (1.4+ | 2.9−) | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2003 11 23 | 704 | 0.8− | 0.2− | 2003 12 23 | 704 | (0.9+ | 2.9−) | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 11 23 | 704 | 1.1− | 0.7+ | 2003 12 27 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2003 11 23 | 704 | 1.2− | 0.6+ | 2003 12 27 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 11 23 | 704 | 0.7− | 0.4+ | 2003 12 27 | 704 | 1.0+ | 0.4+ | 2006 10 22 | 703 | 1.0− | 0.8− |
| 2003 12 17 | 691 | 0.3+ | 0.3− | 2003 12 27 | 704 | 0.4− | 0.7+ | 2006 10 22 | 703 | 0.6− | 0.0 |
| 2003 12 17 | 691 | 0.2+ | 0.2− | 2003 12 27 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.7+ |
| 2003 12 17 | 691 | 0.0 | 0.3− | 2004 01 11 | 644 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2003 12 18 | 704 | 0.3+ | 0.8+ | 2004 01 11 | 644 | 0.1+ | 0.1+ | | | | |

**(143818)∗ 2003 WF$_{138}$ = 1996 TV$_4$ = 2005 GN$_{67}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57378), A. Doppler (*MPO* 95145)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.60411 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29049678 | $\omega$ | 359.87716 | | +0.93248172 | −0.36116918 | |
| $a$ | 2.2579198 | $\Omega$ | 21.29779 | | +0.33142410 | +0.84897466 | |
| $e$ | 0.1610165 | $i$ | 0.92886 | | +0.14365205 | +0.38574454 | |
| $P$ | 3.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 566 | 1.0+ | 0.0 | 2004 01 16 | 644 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.1+ |
| 1996 10 08 | 566 | 1.1− | 0.6− | 2004 01 16 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.9+ | 1.3− |
| 1996 10 08 | 566 | 0.2− | 0.2− | 2004 01 16 | 644 | 0.4+ | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.0 |
| 1996 10 09 | 566 | 0.3− | 0.4− | 2005 04 02 | G96 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.3+ | 1.3+ |
| 1996 10 09 | 566 | 0.1+ | 0.4− | 2005 04 02 | G96 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.0 |
| 1996 10 09 | 566 | 0.4− | 0.5− | 2005 04 02 | G96 | 0.5− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 1996 11 06 | 691 | 0.2+ | 0.2− | 2005 04 02 | G96 | 0.6+ | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.2+ |
| 1996 11 06 | 691 | 0.4+ | 0.5− | 2006 08 15 | 644 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.5− | 0.3− |
| 1996 11 06 | 691 | 0.3+ | 0.4− | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.3− | 0.2− |
| 2001 02 02 | 691 | 0.1− | 0.3+ | 2006 08 15 | 644 | 0.6− | 0.1− | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2001 02 02 | 691 | 0.1+ | 0.5+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 02 02 | 691 | 0.2+ | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.6− |
| 2003 11 21 | 704 | 1.2+ | 0.7− | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2003 11 21 | 704 | 1.4− | 0.5− | 2006 08 21 | 704 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2003 11 21 | 704 | 0.4− | 0.0 | 2006 08 21 | 704 | 0.1− | 0.7+ | 2006 09 27 | 704 | (1.7− | 0.3+) |
| 2003 11 21 | 704 | 0.3− | 0.4− | 2006 08 21 | 704 | 0.7+ | 0.5+ | 2006 09 27 | 704 | (2.1− | 1.3−) |
| 2003 11 21 | 704 | 0.4− | 0.8− | 2006 08 21 | 704 | 0.6− | 0.5+ | 2006 09 27 | 704 | 1.4− | 0.1+ |
| 2003 11 23 | 704 | 1.1− | 0.8− | 2006 08 21 | 704 | 0.9+ | 1.5+ | 2006 09 27 | 704 | 0.6− | 0.4− |
| 2003 11 23 | 704 | 0.6− | 1.0− | 2006 08 24 | 644 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.2+ |
| 2003 11 23 | 704 | 0.3+ | 0.3− | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.2− | 1.4+ |
| 2003 11 23 | 704 | 0.3− | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.3− | 2006 09 30 | 703 | 1.2− | 0.1+ |
| 2003 11 26 | 291 | 0.8+ | 0.2+ | 2006 08 25 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.7+ |
| 2003 11 26 | 291 | 0.8+ | 0.2+ | 2006 08 25 | 704 | 0.7+ | 1.4− | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 2003 11 26 | 704 | 0.3− | 0.2+ | 2006 08 25 | 704 | 0.6+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2003 11 26 | 704 | (0.6+ | 2.1+) | 2006 08 27 | 691 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 2003 11 26 | 291 | 0.9+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2003 11 26 | 704 | 0.2− | 0.7+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2003 11 26 | 704 | 0.8− | 0.8+ | 2006 08 30 | 704 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.5− |
| 2003 11 26 | 704 | 0.1− | 1.3+ | 2006 08 30 | 704 | 0.5− | 1.1+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2003 11 29 | 691 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2003 11 29 | 691 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.4+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2003 11 29 | 691 | 0.3− | 0.0 | 2006 08 31 | 704 | 0.8+ | 1.3+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2003 12 18 | 704 | (2.0− | 0.2+) | 2006 08 31 | 704 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2003 12 18 | 704 | (2.3− | 0.5−) | 2006 08 31 | 704 | 0.4− | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2003 12 18 | 704 | (2.0− | 0.6−) | 2006 08 31 | 704 | (0.4− | 2.2+) | 2006 11 15 | G96 | 0.5− | 0.4− |
| 2003 12 21 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 704 | 1.1+ | 0.9+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2003 12 21 | 704 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.6+ | 0.6+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2003 12 21 | 704 | 0.5+ | 0.3+ | 2006 09 17 | 704 | 0.2+ | 1.0− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2003 12 29 | 691 | 0.4− | 0.2+ | 2006 09 17 | 704 | (2.8− | 0.8+) | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2003 12 29 | 691 | 0.5− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2003 12 29 | 691 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.2− | 0.2− |

**(143819)∗ 2003 WJ$_{138}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.09183 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31915502 | $\omega$ | 354.73026 | | +0.67067093 | −0.73854251 | |
| $a$ | 2.1206464 | $\Omega$ | 53.12974 | | +0.68365738 | +0.57939550 | |
| $e$ | 0.1281036 | $i$ | 4.94505 | | +0.28777265 | +0.34475471 | |
| $P$ | 3.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 23 | 691 | 0.3+ | 0.0 | 2003 12 22 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.1− |
| 1992 02 23 | 691 | (3.5− | 8.8−) | 2003 12 22 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 1992 02 23 | 691 | 0.3− | 0.2− | 2003 12 27 | 704 | 0.0 | 0.9− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2000 11 20 | 704 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2000 11 20 | 704 | 0.1+ | 0.3+ | 2003 12 27 | 704 | 0.1− | 0.9− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2000 11 20 | 704 | 1.5− | 0.1+ | 2003 12 27 | 704 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2000 11 20 | 704 | 1.2− | 0.2+ | 2003 12 27 | 704 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.5+ |
| 2000 11 20 | 704 | 0.0 | 0.7− | 2004 01 11 | 644 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2000 12 20 | 704 | 0.1− | 0.3+ | 2004 01 11 | 644 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.0 |
| 2000 12 20 | 704 | 0.2+ | 0.4− | 2004 01 11 | 644 | 0.3+ | 0.0 | 2006 11 17 | 704 | 1.1+ | 1.5+ |
| 2000 12 20 | 704 | 0.0 | 0.6− | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.5− | 0.2+ |
| 2000 12 20 | 704 | 0.1+ | 0.7+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2000 12 20 | 704 | 0.3− | 0.3− | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 1.1+ |
| 2001 01 04 | 704 | 0.4− | 0.1− | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 01 04 | 704 | 0.5− | 0.1− | 2005 06 15 | 691 | 0.3+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 01 04 | 704 | 0.3+ | 0.7+ | 2005 06 15 | 691 | 0.4+ | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2001 01 04 | 704 | 0.5− | 0.1− | 2005 06 15 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2001 01 04 | 704 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.9− | 1.0− | 2006 11 18 | 704 | (1.8+ | 0.9−) |
| 2001 01 19 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.5+ | 0.0 | 2006 11 18 | 704 | 1.4+ | 0.2− |
| 2001 01 19 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 703 | 1.0+ | 0.2+ | 2006 11 18 | 704 | 1.1+ | 0.1− |
| 2001 01 19 | 704 | 0.4+ | 0.2− | 2006 09 16 | 703 | 1.1− | 0.9+ | 2006 11 18 | 704 | (1.6+ | 0.3−) |
| 2003 10 29 | 704 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.6+ | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2003 10 29 | 704 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.4+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2003 11 21 | 704 | 0.8− | 0.8+ | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2003 11 21 | 704 | 0.5− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2003 11 21 | 704 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2003 11 21 | 704 | 0.4− | 0.4− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.7− | 0.3− |
| 2003 11 21 | 704 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.9− | 0.0 |
| 2003 11 23 | 704 | 0.7− | 0.3− | 2006 10 19 | G96 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2003 11 23 | 704 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2003 11 23 | 704 | 0.8− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2003 11 23 | 704 | 0.5− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2003 11 23 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.3− | 2006 11 27 | 704 | 0.0 | 0.6− |
| 2003 11 29 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.5− | 0.2+ |
| 2003 11 29 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 27 | 704 | 0.2− | 0.5+ |
| 2003 11 29 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 704 | (2.1+ | 0.1+) | 2006 11 27 | 704 | 0.6+ | 0.4+ |
| 2003 12 04 | 704 | 0.7+ | 0.3− | 2006 10 23 | 704 | 1.1+ | 0.2+ | 2006 11 27 | 704 | 0.7− | 0.2− |
| 2003 12 04 | 704 | 0.1− | 0.1− | 2006 10 23 | 704 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2003 12 04 | 704 | 0.9+ | 0.8+ | 2006 10 23 | 704 | 1.5+ | 1.1+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2003 12 04 | 704 | 0.7+ | 0.1− | 2006 10 25 | 704 | 1.3− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2003 12 18 | 704 | 0.1− | 0.5+ | 2006 10 25 | 704 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2003 12 18 | 704 | 0.1+ | 0.4+ | 2006 10 25 | 704 | 0.3− | 0.9+ | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2003 12 18 | 704 | 0.9+ | 0.3+ | 2006 10 25 | 704 | 0.3− | 0.3− | 2006 12 01 | 704 | 1.0− | 0.3− |
| 2003 12 18 | 704 | 0.7+ | 0.2+ | 2006 10 28 | 704 | (0.2− | 1.7+) | 2006 12 01 | 704 | 1.0− | 0.7+ |
| 2003 12 18 | 704 | 0.3− | 0.1+ | 2006 10 28 | 704 | 0.2+ | 1.1+ | 2006 12 01 | 704 | 0.3− | 0.7− |
| 2003 12 22 | 704 | 0.8+ | 0.3+ | 2006 10 28 | 704 | 1.0− | 0.2+ | 2006 12 01 | 704 | 0.3− | 0.5− |
| 2003 12 22 | 704 | 0.9− | 0.4+ | 2006 10 28 | 704 | 0.6+ | 0.2+ | | | | |
| 2003 12 22 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2− | | | | |

**(143820)∗ 2003 WS$_{139}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.53817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28665569 | $\omega$ | 348.08243 | | +0.30378149 | −0.94868614 | |
| $a$ | 2.2780452 | $\Omega$ | 84.18446 | | +0.88121410 | +0.24474016 | |
| $e$ | 0.1408384 | $i$ | 5.06403 | | +0.36218575 | +0.20024201 | |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 04 | 691 | 0.2− | 0.1+ | 2003 12 23 | 704 | 0.0 | 0.4− | 2005 06 16 | G96 | 0.2− | 0.9+ |
| 1997 02 04 | 691 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.1+ | 0.1+ | 2005 06 16 | G96 | 0.1− | 0.4+ |
| 1997 02 04 | 691 | 0.2+ | 0.2− | 2003 12 23 | 704 | 0.2− | 0.2− | 2006 08 30 | 699 | 0.1− | 0.2− |
| 2001 03 04 | 704 | 0.1+ | 1.1− | 2003 12 23 | 704 | 0.3+ | 0.2− | 2006 08 30 | 699 | 0.4+ | 1.3+ |
| 2001 03 04 | 704 | 0.1+ | 0.4+ | 2003 12 23 | 704 | 0.4+ | 0.2+ | 2006 08 30 | 699 | 0.0 | 1.3+ |
| 2001 03 04 | 704 | 0.5+ | 0.8+ | 2003 12 23 | 704 | 0.8− | 0.2− | 2006 08 30 | 699 | 0.6− | 0.0 |
| 2001 03 04 | 704 | 0.3− | 0.7+ | 2003 12 23 | 704 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.4− |
| 2001 03 18 | 699 | 1.0+ | 1.4+ | 2003 12 23 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | (0.9− | 1.9−) |
| 2001 03 18 | 699 | 0.1− | 1.2+ | 2003 12 24 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2001 03 18 | 699 | 1.3+ | 0.7+ | 2003 12 24 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.6− | 0.6+ |
| 2001 03 18 | 699 | 0.3+ | 0.8+ | 2003 12 24 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 1.2− | 0.7+ |
| 2003 11 21 | 704 | 0.2+ | 0.0 | 2003 12 29 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.5+ | 0.4+ |
| 2003 11 21 | 704 | 0.2− | 0.4+ | 2003 12 29 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 703 | 0.8− | 0.9+ |
| 2003 11 21 | 704 | 0.2− | 0.2+ | 2003 12 29 | 704 | 0.7+ | 0.5− | 2006 09 26 | 703 | 0.1− | 1.0+ |
| 2003 11 21 | 704 | 0.1− | 0.3+ | 2003 12 29 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2003 11 21 | 704 | 0.1+ | 0.2+ | 2003 12 29 | 704 | 0.6− | 0.6+ | 2006 09 26 | 703 | 0.3+ | 0.6− |
| 2003 11 23 | 704 | 1.0− | 0.7− | 2003 12 29 | 704 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.3− |
| 2003 11 23 | 704 | 0.9+ | 0.4− | 2003 12 29 | 704 | 0.9+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.1− |
| 2003 11 23 | 704 | 0.4+ | 0.9− | 2003 12 29 | 704 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 2003 11 23 | 704 | 0.0 | 1.0− | 2003 12 29 | 704 | 0.3+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2003 12 18 | 704 | (2.1− | 1.1+) | 2003 12 29 | 704 | 0.3+ | 0.8− | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.4+ | 0.0 | 2003 12 29 | 704 | 1.4− | 0.8− | 2006 09 27 | G96 | 0.3− | 0.1+ |
| 2003 12 18 | 704 | 0.4+ | 0.1− | 2003 12 29 | 704 | (2.7− | 1.2−) | 2006 09 27 | 703 | 0.6− | 0.4− |
| 2003 12 18 | 704 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.3+ |
| 2003 12 21 | 704 | 0.3+ | 0.3+ | 2003 12 29 | 704 | 0.9− | 0.5+ | 2006 09 27 | 703 | 0.9+ | 0.8− |
| 2003 12 21 | 704 | 0.6+ | 0.7+ | 2003 12 29 | 704 | 1.2+ | 1.1+ | 2006 09 27 | 703 | 0.3+ | 0.0 |
| 2003 12 21 | 704 | 0.6+ | 0.4+ | 2003 12 29 | 704 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.2+ | 1.0− |
| 2003 12 21 | 704 | 0.0 | 0.3+ | 2003 12 29 | 704 | 0.4− | 0.8+ | 2006 10 02 | 703 | 0.7− | 0.1− |
| 2003 12 21 | 704 | 0.2− | 0.5+ | 2003 12 29 | 704 | 0.8− | 0.0 | 2006 10 02 | 703 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 0.3+ | 2003 12 30 | 704 | 0.7− | 0.1− | 2006 10 02 | 703 | 0.0 | 0.5+ |
| 2003 12 22 | 704 | 0.6+ | 0.2+ | 2003 12 30 | 704 | 1.0− | 0.3− | 2006 10 19 | 703 | (1.9− | 0.1+) |
| 2003 12 22 | 704 | 0.5− | 0.5+ | 2003 12 30 | 704 | 0.2− | 0.6− | 2006 10 19 | 703 | 0.4− | 0.0 |
| 2003 12 22 | 704 | 0.4+ | 1.5+ | 2003 12 30 | 704 | 0.7− | 0.2− | 2006 10 19 | 703 | 1.4+ | 1.3+ |
| 2003 12 22 | 704 | 0.1− | 0.3+ | 2004 01 13 | 691 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 2003 12 22 | 704 | 0.3− | 0.1+ | 2004 01 13 | 691 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.9+ |
| 2003 12 22 | 704 | 0.4− | 0.5+ | 2004 01 13 | 691 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.4+ |
| 2003 12 22 | 704 | 0.3+ | 0.0 | 2005 06 14 | 691 | 0.5+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2003 12 22 | 704 | 0.1+ | 1.1+ | 2005 06 14 | 691 | 0.1− | 0.5+ | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2003 12 22 | 704 | 0.3+ | 0.6+ | 2005 06 14 | 691 | (1.1− | 3.6−) | 2006 10 24 | 644 | 0.1+ | 0.6+ |
| 2003 12 23 | 704 | 0.1+ | 0.1+ | 2005 06 16 | G96 | 0.3+ | 0.2+ | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2003 12 23 | 704 | 0.3− | 0.4+ | 2005 06 16 | G96 | 0.2− | 0.0 | | | | |

**(143821)∗ 2003 WR$_{141}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.35853 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30162500 | $\omega$ | 122.47237 | | +0.98752663 | −0.13915568 | |
| $a$ | 2.2020364 | $\Omega$ | 245.61933 | | +0.10304746 | +0.92495450 | |
| $e$ | 0.1792866 | $i$ | 4.63914 | | +0.11904780 | +0.35368754 | |
| $P$ | 3.27 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 1.0+ | 0.3+ | 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.5− | 0.1+ |
| 2002 05 11 | 704 | (1.6+ | 0.6+) | 2005 04 16 | 691 | 0.0 | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2002 05 11 | 704 | 1.0+ | 1.1+ | 2005 04 16 | 691 | 0.1− | 0.9+ | 2006 10 29 | 704 | 0.0 | 0.3+ |
| 2002 05 11 | 704 | 0.5+ | 0.9+ | 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 10 29 | 704 | 0.0 | 0.4+ |
| 2002 05 11 | 704 | 1.1+ | 0.5+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 10 29 | 704 | 0.2+ | 0.2+ |
| 2002 05 18 | 644 | 0.1+ | 0.4+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 704 | 0.3+ | 0.1+ |
| 2002 05 18 | 644 | 0.1+ | 0.3+ | 2006 08 24 | 704 | 0.5+ | 0.1− | 2006 10 29 | 704 | 0.3+ | 0.7+ |
| 2002 05 18 | 644 | 0.0 | 0.5+ | 2006 08 24 | 704 | 0.7+ | 1.1+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2002 06 07 | 291 | 0.2+ | 0.4+ | 2006 08 24 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2002 06 07 | 291 | 1.0− | 0.5+ | 2006 08 24 | 704 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2002 06 07 | 291 | 0.4+ | 0.5+ | 2006 08 24 | 704 | 1.0− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2003 11 21 | 704 | 0.7− | 0.4+ | 2006 08 29 | 703 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2003 11 21 | 704 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2003 11 21 | 704 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.1− | 0.2− | 2006 11 11 | 703 | (1.9− | 1.0−) |
| 2003 11 21 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2003 11 23 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2003 11 23 | 704 | 0.6− | 1.0− | 2006 08 30 | 704 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2003 11 23 | 704 | 0.4− | 0.2+ | 2006 08 30 | 704 | 0.4+ | 0.4− | 2006 11 16 | 704 | (1.1− | 3.1+) |
| 2003 11 23 | 704 | 0.7− | 1.2− | 2006 08 30 | 704 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.4− | 0.9+ |
| 2003 11 23 | 704 | 0.5− | 0.6− | 2006 08 30 | 704 | 0.0 | 0.3+ | 2006 11 16 | 704 | (2.5− | 1.9+) |
| 2003 11 24 | 695 | 0.7+ | 0.2+ | 2006 08 30 | 699 | 0.3+ | 0.7+ | 2006 11 16 | 704 | (0.9− | 3.0+) |
| 2003 11 24 | 695 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.3− | 2006 11 16 | 704 | (1.9+ | 0.5+) |
| 2003 12 03 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 0.1+ | 1.0+ | 2006 11 18 | 704 | 0.8− | 0.5+ |
| 2003 12 03 | 704 | 0.2− | 0.6+ | 2006 08 30 | 699 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.7− | 0.2− |
| 2003 12 03 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2003 12 03 | 704 | 0.9+ | 0.2+ | 2006 09 29 | 704 | 0.7− | 1.0+ | 2006 11 18 | 704 | 1.1− | 0.1− |
| 2003 12 04 | 704 | (0.4+ | 1.9−) | 2006 09 29 | 704 | 0.2+ | 0.9− | 2006 11 18 | 704 | 0.9− | 0.4− |
| 2003 12 04 | 704 | 1.2+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 1.0− | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 2003 12 04 | 704 | 1.1+ | 1.2− | 2006 09 29 | 704 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2003 12 04 | 704 | (1.8+ | 0.3+) | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.5− | 0.6+ |
| 2003 12 05 | 704 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.9+ |
| 2003 12 05 | 704 | 0.7+ | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2003 12 05 | 704 | (1.6− | 0.4+) | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2003 12 05 | 704 | (1.6− | 0.5+) | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2003 12 05 | 704 | 1.5− | 0.2− | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2003 12 19 | 704 | (0.4− | 1.8+) | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.5+ |
| 2003 12 19 | 704 | 0.6− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2003 12 19 | 704 | 0.5− | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 1.1+ | 0.4+ |
| 2003 12 19 | 704 | 1.1− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | (1.6+ | 0.2−) |
| 2003 12 21 | 704 | 1.0+ | 0.2+ | 2006 10 19 | 704 | (2.3− | 1.9+) | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2003 12 21 | 704 | 0.8+ | 0.5+ | 2006 10 19 | 704 | (2.1− | 1.5+) | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2003 12 21 | 704 | 0.6+ | 0.0 | 2006 10 19 | 704 | (1.0− | 2.1+) | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2003 12 21 | 704 | 0.6+ | 1.5+ | 2006 10 19 | 703 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 704 | (0.5+ | 1.7+) | 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 28 | 704 | 1.5+ | 0.4− | | |
| 2003 12 23 | 704 | 0.1− | 1.0+ | 2006 10 19 | 703 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.8+ | 0.3+ | | |
| 2003 12 23 | 704 | 1.3− | 0.8+ | 2006 10 19 | 703 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.8+ | 0.2− | | |
| 2003 12 23 | 704 | 0.1+ | 0.7+ | 2006 10 21 | 691 | 0.5− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.1− | | |

**(143822)∗ 2003 WC$_{142}$ = 1999 VK$_{224}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57387), K. E. Smalley (*MPO* 61735)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 203.79081 | | (2000.0) | | | |
| $n$ | 0.26911620 | $\omega$ | 108.52223 | | −0.88356929 | +0.26513410 |
| $a$ | 2.3759802 | $\Omega$ | 88.32183 | | −0.41349076 | −0.82865798 |
| $e$ | 0.2655378 | $i$ | 22.71719 | | +0.21984246 | −0.49298060 |
| $P$ | 3.66 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 1.0− | 0.2+ | 2003 12 18 | 704 | 0.3+ | 0.1− | 2005 06 05 | E12 | 0.2− | 0.2− | | |
| 1999 11 05 | 704 | 0.4− | 0.4− | 2003 12 18 | 704 | 0.1+ | 0.2+ | 2005 06 05 | E12 | 0.6+ | 0.7+ | | |
| 1999 11 05 | 704 | 0.5+ | 1.3− | 2003 12 18 | 704 | 0.1+ | 0.1− | 2005 06 05 | E12 | 0.3+ | 0.2+ | | |
| 1999 11 16 | 703 | 0.1+ | 1.3− | 2003 12 18 | 704 | 0.2+ | 0.2− | 2005 07 27 | E12 | 0.1+ | 0.6− | | |
| 1999 11 16 | 703 | 1.3+ | 0.9+ | 2003 12 23 | 704 | 0.4+ | 0.4+ | 2005 07 27 | E12 | 0.3− | 0.1+ | | |
| 1999 11 16 | 703 | 0.7− | 0.0 | 2003 12 23 | 704 | 0.5− | 0.5− | 2005 07 27 | E12 | 0.2+ | 0.5− | | |
| 1999 11 16 | 703 | 0.5− | 0.5+ | 2003 12 23 | 704 | 0.0 | 0.2+ | 2005 07 27 | E12 | 0.1+ | 0.5+ | | |
| 1999 12 14 | 704 | 0.7+ | 0.8− | 2003 12 23 | 704 | 0.1− | 0.4+ | 2005 08 25 | E12 | 0.6− | 0.1+ | | |
| 1999 12 14 | 704 | 1.2+ | 0.1+ | 2003 12 28 | 704 | 0.8+ | 0.6− | 2005 08 25 | E12 | (0.1+ | 1.6+) | | |
| 1999 12 14 | 704 | 0.0 | 0.4+ | 2003 12 28 | 704 | 0.4+ | 0.4+ | 2005 08 25 | E12 | 0.2− | 0.3+ | | |
| 2003 10 24 | 704 | (2.3− | 1.3−) | 2003 12 28 | 704 | 1.0+ | 0.9− | 2005 08 25 | E12 | 0.0 | 0.1+ | | |
| 2003 10 24 | 704 | (1.6− | 0.2+) | 2003 12 28 | 704 | 0.7+ | 0.7− | 2005 09 02 | E12 | 0.0 | 0.2+ | | |
| 2003 10 24 | 704 | 1.4− | 0.8+ | 2003 12 28 | 704 | 0.4+ | 0.1− | 2005 09 02 | E12 | 0.0 | 0.3− | | |
| 2003 10 24 | 704 | 0.2+ | 0.0 | 2004 01 16 | 644 | 0.1− | 0.1+ | 2005 09 02 | E12 | (1.6− | 0.3+) | | |
| 2003 11 02 | 704 | 0.5− | 0.7+ | 2004 01 16 | 644 | 0.2− | 0.4+ | 2005 09 02 | E12 | 0.6− | 0.8+ | | |
| 2003 11 02 | 704 | 0.2+ | 0.7+ | 2004 01 16 | 644 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.0 | 1.0− | | |
| 2003 11 02 | 704 | 0.5− | 0.7+ | 2004 01 19 | 704 | 0.3+ | 0.1− | 2006 09 28 | 703 | 0.4− | 0.8+ | | |
| 2003 11 02 | 704 | 0.3− | 0.2+ | 2004 01 19 | 704 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.1− | 0.0 | | |
| 2003 11 02 | 704 | 0.1− | 0.9+ | 2004 01 19 | 704 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.0 | 1.2− | | |
| 2003 11 21 | 704 | 0.0 | 0.3+ | 2004 01 19 | 704 | 0.1− | 0.2− | 2006 10 03 | 703 | 0.6− | 0.0 | | |
| 2003 11 21 | 704 | 1.0− | 0.2+ | 2004 01 19 | 704 | 0.1+ | 0.2− | 2006 10 03 | 703 | 1.3− | 0.9− | | |
| 2003 11 21 | 704 | 0.5− | 0.9+ | 2004 02 02 | 704 | 0.1+ | 0.0 | 2006 10 03 | 703 | 0.4− | 0.9− | | |
| 2003 11 21 | 704 | 1.2− | 0.9+ | 2004 02 02 | 704 | 0.1− | 0.5− | 2006 10 03 | 703 | 0.6+ | 0.1+ | | |
| 2003 11 21 | 704 | 0.6− | 0.4+ | 2004 02 02 | 704 | 0.5+ | 0.1− | 2006 10 31 | 703 | 0.2− | 0.9+ | | |
| 2003 11 23 | 704 | 0.4+ | 0.1− | 2004 02 02 | 704 | 0.4+ | 0.0 | 2006 10 31 | 703 | 0.7+ | 0.0 | | |
| 2003 11 23 | 704 | 0.4− | 0.7+ | 2004 02 02 | 704 | 0.3+ | 0.2− | 2006 10 31 | 703 | 0.4+ | 0.6+ | | |
| 2003 11 23 | 704 | 0.9− | 0.6+ | 2004 02 11 | 704 | 0.0 | 0.1− | 2006 10 31 | 703 | (1.1− | 1.5+) | | |
| 2003 11 23 | 704 | 0.4− | 0.5+ | 2004 02 11 | 704 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.9− | 0.1+ | | |
| 2003 11 23 | 704 | 1.0− | 0.5+ | 2004 02 11 | 704 | 1.0− | 0.1− | 2006 11 17 | 703 | 1.5+ | 0.6+ | | |
| 2003 12 04 | 704 | 0.0 | 1.1− | 2004 02 11 | 704 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.7+ | 1.0− | | |
| 2003 12 04 | 704 | 0.0 | 0.6− | 2004 02 11 | 704 | 0.6− | 0.1+ | 2006 11 23 | 703 | 1.0+ | 0.5+ | | |
| 2003 12 04 | 704 | 0.2+ | 0.6− | 2004 05 11 | 704 | 0.3+ | 1.1+ | 2006 11 23 | 703 | 0.6+ | 0.3+ | | |
| 2003 12 04 | 704 | 0.2+ | 0.3− | 2004 05 11 | 704 | 1.2+ | 0.8+ | 2006 11 23 | 703 | 1.4− | 0.7+ | | |
| 2003 12 04 | 704 | 0.3+ | 0.2− | 2004 05 11 | 704 | 0.6+ | 0.4+ | 2006 11 23 | 703 | 0.3− | 0.3+ | | |
| 2003 12 18 | 704 | 0.1+ | 0.0 | 2005 06 05 | E12 | 0.0 | 0.5+ | | | | | | |

**(143823)∗ 2003 WU$_{142}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.15591 | | (2000.0) | | | |
| $n$ | 0.27937454 | $\omega$ | 178.06811 | | −0.09130798 | −0.98199391 |
| $a$ | 2.3174560 | $\Omega$ | 277.14383 | | +0.91139987 | −0.01548733 |
| $e$ | 0.1658569 | $i$ | 9.59454 | | +0.40126442 | −0.18827667 |
| $P$ | 3.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.1+ | 0.0 | 2003 12 01 | 704 | 0.4+ | 0.4+ | 2004 01 31 | 608 | 0.3− | 0.7+ | | |
| 1999 10 12 | 704 | 0.0 | 0.2− | 2003 12 16 | 699 | 0.9− | 0.2+ | 2004 02 17 | 704 | 0.0 | 0.5+ | | |
| 1999 10 12 | 704 | 0.1+ | 0.2− | 2003 12 16 | 699 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.5− | 0.9+ | | |
| 1999 10 12 | 704 | 0.3+ | 0.2− | 2003 12 16 | 699 | 0.7+ | 0.1− | 2004 02 17 | 704 | 0.6− | 0.5− | | |
| 1999 10 12 | 704 | 0.5− | 0.2− | 2003 12 16 | 699 | 0.4+ | 0.9− | 2004 02 17 | 704 | 0.1+ | 0.6+ | | |
| 2002 07 21 | 644 | 0.0 | 0.6+ | 2003 12 22 | 703 | 1.1− | 1.3+ | 2004 02 17 | 704 | 0.1− | 0.4+ | | |
| 2002 07 21 | 644 | 0.2+ | 0.7+ | 2003 12 22 | 703 | 0.7− | 1.0+ | 2006 09 16 | 703 | 0.3+ | 0.2+ | | |
| 2002 07 21 | 644 | 0.5− | 0.8+ | 2003 12 22 | 703 | 0.5+ | 0.3− | 2006 09 16 | 703 | 0.3− | 0.4− | | |
| 2002 08 05 | 644 | 0.4− | 0.8+ | 2003 12 22 | 703 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.9− | 0.1+ | | |
| 2002 08 05 | 644 | 0.1− | 0.5+ | 2003 12 23 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.6− | 0.5+ | | |
| 2002 08 05 | 644 | 0.6− | 0.5+ | 2003 12 23 | 704 | 0.1− | 0.3+ | 2006 09 22 | 699 | 0.1− | 0.1− | | |
| 2002 08 11 | 644 | 0.2− | 0.8+ | 2003 12 23 | 704 | 0.3− | 0.7+ | 2006 09 22 | 699 | 0.1− | 0.2− | | |
| 2002 08 11 | 644 | 0.3− | 0.8+ | 2003 12 23 | 704 | 0.5− | 0.0 | 2006 09 22 | 699 | 0.2+ | 0.3− | | |
| 2002 08 11 | 644 | 0.3− | 0.8+ | 2003 12 23 | 704 | 0.5− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.2− | | |
| 2003 10 24 | 704 | (0.2− | 2.1+) | 2004 01 13 | 644 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.1− | | |
| 2003 10 24 | 704 | 0.5+ | 0.0 | 2004 01 13 | 644 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.1− | 0.6− | | |
| 2003 10 24 | 704 | 0.2+ | 0.7+ | 2004 01 13 | 644 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.1− | 0.0 | | |
| 2003 10 24 | 704 | 0.8+ | 0.4+ | 2004 01 16 | 644 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.6+ | 0.3− | | |
| 2003 11 21 | 704 | 0.0 | 0.2− | 2004 01 16 | 644 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.4− | | |
| 2003 11 21 | 704 | 0.2+ | 0.1− | 2004 01 16 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.2+ | | |
| 2003 11 21 | 704 | 0.5+ | 0.2− | 2004 01 23 | 704 | 1.3+ | 0.4− | 2006 09 30 | 704 | 0.5+ | 0.3− | | |
| 2003 11 21 | 704 | 0.1+ | 0.5+ | 2004 01 23 | 704 | (1.7+ | 0.3+) | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2003 11 21 | 704 | 0.3+ | 0.5+ | 2004 01 23 | 704 | 1.3+ | 0.4− | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 2003 11 23 | 704 | 0.5− | 0.1− | 2004 01 23 | 704 | 1.3+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2003 11 23 | 704 | 0.9− | 0.5− | 2004 01 23 | 704 | 1.2+ | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.1− | | |
| 2003 11 23 | 704 | 0.3+ | 0.9− | 2004 01 29 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.4+ | | |
| 2003 11 23 | 704 | 0.7+ | 0.8− | 2004 01 29 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 2003 12 01 | 704 | 0.4+ | 0.6+ | 2004 01 29 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.9+ | | |
| 2003 12 01 | 704 | 0.5+ | 0.3+ | 2004 01 29 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2003 12 01 | 704 | 0.2− | 0.1− | 2004 01 31 | 608 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.4− | | |
| 2003 12 01 | 704 | 0.0 | 0.0 | 2004 01 31 | 608 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |

**(143824)∗ 2003 WX$_{145}$**

Discovered 2003 Nov. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.59423 | | (2000.0) | | | |
| $n$ | 0.28974395 | $\omega$ | 298.66552 | | +0.84420473 | −0.53463859 |
| $a$ | 2.2618291 | $\Omega$ | 93.67802 | | +0.50426410 | +0.76780512 |
| $e$ | 0.0678414 | $i$ | 2.20927 | | +0.18175833 | +0.35303948 |
| $P$ | 3.40 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 691 | 0.0 | 0.1− | 2005 03 14 | G96 | 0.5− | 0.1− | 2005 05 10 | G96 | 0.1− | 0.3− | | |
| 2001 02 22 | 691 | 0.1+ | 0.0 | 2005 03 14 | G96 | 1.3− | 0.3+ | 2005 05 10 | G96 | 0.6− | 0.1+ | | |
| 2001 02 22 | 691 | 0.2− | 0.2− | 2005 03 14 | G96 | 0.6− | 0.1− | 2006 08 24 | 644 | 0.3− | 0.3+ | | |
| 2003 10 26 | 691 | 0.9− | 0.3+ | 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 08 24 | 644 | 0.8− | 0.0 | | |
| 2003 10 26 | 691 | 0.5− | 0.5+ | 2005 04 01 | 691 | 0.3+ | 0.5+ | 2006 08 24 | 644 | 0.4− | 0.3+ | | |
| 2003 10 26 | 691 | 0.0 | 0.2+ | 2005 04 01 | 691 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.5− | 2.0+ | | |
| 2003 11 21 | 704 | (2.1+ | 0.5−) | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.8+ | 0.2− | | |
| 2003 11 21 | 704 | 0.7+ | 0.2+ | 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 699 | (1.0− | 2.2−) | | |
| 2003 11 21 | 704 | 1.3+ | 0.4− | 2005 04 10 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.6+ | | |
| 2003 11 24 | 699 | 0.7− | 0.2+ | 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.1+ | | |
| 2003 11 24 | 699 | 0.4− | 0.7+ | 2005 04 11 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.5+ | | |
| 2003 11 24 | 699 | 0.2− | 0.2+ | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 1.1+ | | |
| 2003 11 24 | 699 | 0.2− | 0.1+ | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.7+ | | |
| 2003 11 30 | 691 | 0.0 | 0.2+ | 2005 04 14 | 691 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.0 | | |
| 2003 11 30 | 691 | 0.1− | 0.1+ | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.1− | | |
| 2003 11 30 | 691 | 0.0 | 0.2+ | 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.8+ | | |
| 2003 12 01 | 291 | 0.0 | 0.0 | 2005 04 18 | 691 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.8− | 0.2− | | |
| 2003 12 01 | 291 | 0.1+ | 0.2+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.6− | | |
| 2003 12 01 | 291 | 0.0 | 0.2+ | 2005 05 04 | 691 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2005 05 04 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.4+ | | |
| 2003 12 21 | 691 | 0.3+ | 0.1+ | 2005 05 04 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.7− | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.3+ | 0.0 | 2005 05 10 | G96 | (2.1− | 0.0 | ) |
| 2005 03 14 | G96 | 0.3− | 0.2− | 2005 05 10 | G96 | 0.5− | 0.0 | |

**(143825)∗ 2003 WK$_{147}$**

Discovered 2003 Nov. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.35827 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28314031 | $\omega$ | 172.06899 | | +0.96068092 | | −0.27426411 |
| $a$ | 2.2968620 | $\Omega$ | 203.98543 | | +0.24854600 | | +0.91891092 |
| $e$ | 0.1097786 | $i$ | 6.10886 | | +0.12376211 | | +0.28351705 |
| $P$ | 3.48 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.1+ | 0.3− | 2005 03 13 | 691 | 0.2− | 0.5+ | 2006 08 29 | 704 | 1.3+ | 0.1+ |
| 2002 06 09 | 704 | 0.2− | 0.3− | 2005 04 04 | 691 | 0.0 | 0.6+ | 2006 08 29 | 703 | 0.4− | 0.5− |
| 2002 06 09 | 704 | 0.0 | 0.1− | 2005 04 04 | 691 | 0.0 | 0.6+ | 2006 08 29 | 703 | 1.4− | 0.4− |
| 2003 11 23 | 691 | 0.1+ | 0.1+ | 2005 04 04 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.9− | 0.0 |
| 2003 11 23 | 691 | 0.0 | 0.2+ | 2005 05 04 | 691 | 0.3+ | 0.8+ | 2006 08 29 | 703 | 0.9− | 0.7− |
| 2003 11 23 | 691 | 0.0 | 0.3+ | 2005 05 04 | 691 | 0.3+ | 0.6+ | 2006 09 11 | 703 | 0.9− | 1.0− |
| 2003 11 24 | 699 | 0.5+ | 0.8− | 2005 05 04 | 691 | 0.5+ | 0.2+ | 2006 09 11 | 703 | 0.5+ | 0.4− |
| 2003 11 24 | 699 | 0.3+ | 0.2+ | 2006 08 17 | 644 | 0.3− | 0.4+ | 2006 09 11 | 703 | 0.2− | 0.1+ |
| 2003 11 24 | 699 | 1.2+ | 0.2+ | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 09 11 | 703 | 1.0− | 0.2+ |
| 2003 11 24 | 699 | 0.1+ | 1.8− | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 17 | 291 | 0.0 | 0.2+ |
| 2003 12 01 | 704 | 0.3− | 1.2+ | 2006 08 24 | 704 | 0.2− | 0.0 | 2006 09 17 | 291 | 0.2+ | 0.2+ |
| 2003 12 01 | 704 | 0.0 | 0.1+ | 2006 08 24 | 704 | 0.8+ | 0.3+ | 2006 09 17 | 291 | 0.0 | 0.3+ |
| 2003 12 01 | 704 | 0.2− | 0.5+ | 2006 08 24 | 704 | 1.0+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.4+ |
| 2003 12 01 | 704 | 0.3− | 0.6+ | 2006 08 24 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.3+ | 1.0− |
| 2003 12 01 | 704 | 0.6− | 0.8+ | 2006 08 24 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.4+ |
| 2003 12 04 | 703 | 0.9− | 0.6− | 2006 08 27 | 699 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2003 12 04 | 703 | 0.9+ | 0.9+ | 2006 08 27 | 699 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2003 12 04 | 703 | 0.2− | 0.7+ | 2006 08 27 | 699 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 1.0− | 0.2+ |
| 2003 12 04 | 703 | 1.8− | 0.2− | 2006 08 27 | 699 | 0.5− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2003 12 22 | 704 | 0.2− | 1.6+ | 2006 08 29 | 703 | 0.7− | 0.4− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2003 12 22 | 704 | 0.1− | 1.8+ | 2006 08 29 | 703 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2003 12 22 | 704 | 0.1− | 1.0+ | 2006 08 29 | 703 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2003 12 22 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.3+ | 0.3− | 2006 09 30 | 691 | 0.3+ | 0.6+ |
| 2005 03 13 | 691 | 0.1− | 0.5+ | 2006 08 29 | 704 | 1.2− | 1.0+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2005 03 13 | 691 | 0.2+ | 0.6+ | 2006 08 29 | 704 | 0.6− | 0.4+ | | | | |

**(143826)∗ 2003 WH$_{148}$**

Discovered 2003 Nov. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.30252 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28615148 | $\omega$ | 187.97549 | | −0.50677817 | | +0.85365821 |
| $a$ | 2.2807204 | $\Omega$ | 51.66042 | | −0.78224250 | | −0.39676552 |
| $e$ | 0.0836825 | $i$ | 8.81383 | | −0.36231554 | | −0.33740892 |
| $P$ | 3.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | 0.1+ | 0.1− | 2005 04 01 | 699 | 1.4+ | 0.1− | 2005 05 06 | 704 | 0.2− | 0.5+ |
| 1996 11 11 | 691 | 0.0 | 0.0 | 2005 04 01 | 699 | 0.6− | 0.9+ | 2005 05 11 | 699 | 0.2− | 0.2+ |
| 1996 11 11 | 691 | 0.1+ | 0.1+ | 2005 04 01 | 699 | 0.4+ | 0.2− | 2005 05 11 | 699 | 0.8+ | 0.1− |
| 2001 01 26 | 645 | 0.1− | 0.0 | 2005 04 05 | 704 | 1.1− | 0.4+ | 2005 05 11 | 699 | 0.1+ | 1.1+ |
| 2001 01 26 | 645 | 0.1− | 0.0 | 2005 04 05 | 704 | 0.2+ | 1.0− | 2005 05 11 | 699 | 0.8− | 0.4+ |
| 2003 11 19 | 291 | 0.4+ | 0.0 | 2005 04 05 | 704 | 0.8+ | 1.3+ | 2005 05 13 | 703 | 0.3+ | 0.8+ |
| 2003 11 19 | 291 | 0.0 | 0.5− | 2005 04 05 | 704 | 0.0 | 0.5+ | 2005 05 13 | 703 | 0.9+ | 1.3− |
| 2003 11 19 | 291 | 1.3+ | 0.4− | 2005 04 09 | 699 | 0.5+ | 0.4+ | 2005 05 13 | 703 | 0.0 | 0.3+ |
| 2003 11 24 | 699 | 1.1+ | 0.5+ | 2005 04 09 | 699 | 0.6+ | 0.5+ | 2005 05 13 | 703 | 1.4− | 0.2− |
| 2003 11 24 | 699 | 0.7− | 0.1− | 2005 04 09 | 699 | 0.8− | 1.3− | 2006 09 19 | 703 | 0.7− | 0.9+ |
| 2003 11 24 | 699 | 0.9− | 0.4+ | 2005 04 09 | 699 | 0.4− | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 2003 11 24 | 699 | 0.6+ | 0.6+ | 2005 04 13 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.6− | 0.5+ |
| 2003 11 26 | 704 | 0.4− | 1.4+ | 2005 04 13 | 704 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.2− | 0.5+ |
| 2003 11 26 | 704 | 0.8+ | 1.4+ | 2005 04 13 | 704 | 1.3+ | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.9+ |
| 2003 11 26 | 704 | 0.4− | 0.7+ | 2005 04 13 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 703 | 0.9− | 0.3+ |
| 2003 11 30 | 691 | 0.1+ | 0.0 | 2005 04 13 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 1.0− | 0.4+ |
| 2003 11 30 | 691 | 0.0 | 0.2+ | 2005 04 14 | 704 | 1.1+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2003 11 30 | 691 | 0.1− | 0.1+ | 2005 04 14 | 704 | 1.0+ | 0.3− | 2006 10 02 | 703 | 0.2+ | 1.4+ |
| 2003 12 19 | 704 | (0.8+ | 3.6+) | 2005 04 14 | 704 | (1.6+ | 1.2−) | 2006 10 02 | 703 | 0.1− | 0.5+ |
| 2003 12 19 | 704 | (1.0+ | 2.7+) | 2005 04 14 | 704 | 1.2+ | 1.1+ | 2006 10 02 | 703 | 1.2+ | 0.6+ |
| 2003 12 19 | 704 | 0.5− | 1.4+ | 2005 04 14 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.3− | 0.5− |
| 2003 12 21 | 691 | 0.2− | 0.0 | 2005 04 15 | 699 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.2− | 0.5+ |
| 2003 12 21 | 691 | 0.5− | 0.2+ | 2005 04 15 | 699 | 0.5+ | 0.3+ | 2006 10 02 | 703 | 0.6− | 0.5+ |
| 2003 12 21 | 691 | 0.1− | 0.2+ | 2005 04 15 | 699 | 0.8+ | 0.2− | 2006 10 02 | 703 | (0.0 | 1.5+) |
| 2003 12 22 | 704 | (1.6+ | 0.2+) | 2005 04 18 | 703 | 0.2− | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.4+ |
| 2003 12 22 | 704 | 0.1− | 1.3+ | 2005 04 18 | 703 | 0.2+ | 1.2− | 2006 10 16 | 703 | 0.9− | 0.5+ |
| 2003 12 22 | 704 | 0.7− | 1.4+ | 2005 04 18 | 703 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.1+ |
| 2005 03 10 | 703 | 0.6− | 0.3+ | 2005 04 18 | 703 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.7+ | 1.2+ |
| 2005 03 10 | 703 | 0.2− | 0.8+ | 2005 04 18 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.7− |
| 2005 03 10 | 703 | 0.3− | 0.5+ | 2005 04 18 | 704 | 0.6− | 0.4+ | 2006 10 22 | 703 | 1.8− | 0.4− |
| 2005 03 10 | 703 | 0.2− | 1.0+ | 2005 04 18 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.1+ |
| 2005 03 18 | 703 | 1.4− | 0.2+ | 2005 04 18 | 704 | 0.7+ | 0.2− | 2006 10 22 | 703 | 0.2− | 1.7− |
| 2005 03 18 | 703 | 0.5− | 0.8+ | 2005 05 06 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2005 03 18 | 703 | 0.3+ | 1.4− | 2005 05 06 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 1.5− | 0.1+ |
| 2005 03 18 | 703 | 0.9− | 1.1− | 2005 05 06 | 704 | 1.4+ | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2005 04 01 | 699 | 0.7+ | 0.8+ | 2005 05 06 | 704 | 1.1+ | 1.0+ | 2006 10 22 | 644 | 0.6− | 0.9+ |

**(143827)∗ 2003 WM$_{150}$**

Discovered 2003 Nov. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.22961 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28043228 | $\omega$ | 109.71277 | | −0.20485991 | | +0.97682568 |
| $a$ | 2.3116250 | $\Omega$ | 148.26380 | | −0.93637203 | | −0.17714227 |
| $e$ | 0.1543953 | $i$ | 6.76912 | | −0.28502602 | | −0.12013412 |
| $P$ | 3.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 691 | 0.1− | 0.2− | 2005 03 01 | 691 | 0.1+ | 0.2+ | 2005 04 11 | 699 | 0.4+ | 0.7− |
| 1998 03 04 | 691 | 0.2− | 0.3− | 2005 03 03 | 703 | 0.1+ | 0.7− | 2005 04 11 | 699 | 0.0 | 0.5− |
| 1998 03 04 | 691 | 0.3− | 0.3− | 2005 03 03 | 703 | 0.0 | 0.3+ | 2005 04 17 | 691 | 0.1− | 0.2+ |
| 2002 06 09 | 704 | 0.2− | 1.4+ | 2005 03 03 | 703 | 1.4+ | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.1+ |
| 2002 06 09 | 704 | 0.0 | 0.8+ | 2005 03 03 | 703 | 0.6− | 0.7+ | 2005 04 17 | 691 | 0.0 | 0.2+ |
| 2002 06 09 | 704 | 0.2− | 0.3+ | 2005 03 04 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2002 06 09 | 704 | 1.2+ | 0.8+ | 2005 03 04 | 704 | 0.5− | 0.0 | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2003 11 19 | 699 | 0.4− | 1.0− | 2005 03 04 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.2+ |
| 2003 11 19 | 699 | 0.2+ | 0.2+ | 2005 03 04 | 704 | 0.5+ | 0.0 | 2006 09 26 | 703 | (0.7− | 1.8+) |
| 2003 11 19 | 699 | 0.5+ | 0.1− | 2005 03 04 | 704 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.4− | 0.4+ |
| 2003 11 19 | 699 | 0.0 | 0.4+ | 2005 03 08 | 699 | 0.4− | 1.0+ | 2006 09 29 | 704 | (0.2− | 1.5+) |
| 2003 11 24 | 699 | 0.8+ | 0.4− | 2005 03 08 | 699 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 2003 11 24 | 699 | 1.3+ | 0.2− | 2005 03 08 | 699 | 0.1+ | 0.2+ | 2006 09 29 | 704 | (0.8− | 1.7−) |
| 2003 11 24 | 699 | 0.8− | 0.7− | 2005 03 08 | 699 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.6+ |
| 2003 11 24 | 699 | 0.8+ | 0.6+ | 2005 03 09 | 699 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 1.4+ |
| 2003 11 26 | 691 | 0.0 | 0.2+ | 2005 03 09 | 699 | 1.1+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.6+ |
| 2003 11 26 | 691 | 0.7− | 0.4+ | 2005 03 09 | 699 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2003 11 26 | 691 | (1.6− | 0.4+) | 2005 03 09 | 699 | 0.4− | 0.5+ | 2006 09 30 | 704 | 0.5− | 0.2− |
| 2003 11 30 | 704 | 0.5+ | 0.8− | 2005 03 09 | 704 | (1.6− | 3.0+) | 2006 09 30 | 704 | 0.8− | 1.1+ |
| 2003 11 30 | 704 | 0.8+ | 0.3− | 2005 03 09 | 704 | 0.6− | 0.8+ | 2006 09 30 | 704 | (1.7− | 1.1+) |
| 2003 11 30 | 704 | 0.0 | 0.1− | 2005 03 09 | 704 | (0.7− | 2.2+) | 2006 09 30 | 704 | 0.7− | 0.5+ |
| 2003 11 30 | 704 | 0.3− | 0.7+ | 2005 03 09 | 704 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.5+ | 0.2+ |
| 2003 12 01 | 703 | 0.5+ | 0.9− | 2005 03 09 | 704 | 0.9+ | 1.2+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2003 12 01 | 703 | (4.2− | 2.2−) | 2005 03 12 | 704 | 0.2+ | 0.8− | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2003 12 01 | 703 | 0.8− | 0.6− | 2005 03 12 | 704 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.6+ | 0.2+ |
| 2003 12 01 | 703 | 1.0− | 0.3− | 2005 03 12 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.1− |
| 2003 12 16 | 691 | 0.0 | 0.3− | 2005 03 12 | 704 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2003 12 16 | 691 | 0.3+ | 0.2− | 2005 03 16 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 1.2− | 0.3− |
| 2003 12 16 | 691 | 0.1+ | 0.2− | 2005 03 16 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | (0.3− | 5.2−) |
| 2003 12 22 | 691 | 0.1+ | 0.5+ | 2005 03 16 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.5− | 0.3+ |
| 2003 12 22 | 691 | 0.0 | 0.4+ | 2005 03 16 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2003 12 22 | 691 | 0.1+ | 0.6+ | 2005 03 16 | 704 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.7+ |
| 2005 03 01 | 691 | 0.1− | 0.2+ | 2005 04 11 | 699 | 0.6+ | 0.2− | | | | |
| 2005 03 01 | 691 | 0.1+ | 0.3+ | 2005 04 11 | 699 | 0.1− | 0.1+ | | | | |

**(143828)*** **2003 WP$_{150}$ = 2002 LB$_{12}$**

Discovered 2003 Nov. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 146.50337 | | (2000.0) | | | |
| $n$ | 0.30360283 | $\omega$ | 108.50922 | | −0.61776524 | +0.77933754 |
| $a$ | 2.1924625 | $\Omega$ | 122.88198 | | −0.76035176 | −0.55797635 |
| $e$ | 0.1210896 | $i$ | 7.17407 | | −0.20057746 | −0.28512348 |
| $P$ | 3.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 699 | 0.4+ | 0.7+ | 2005 04 09 | 704 | 0.4+ | 0.8+ | 2005 06 08 | 699 | 0.6+ | 0.6− |
| 1999 08 07 | 699 | 0.8− | 0.6+ | 2005 04 09 | 704 | 0.4+ | 0.6+ | 2005 06 08 | 699 | 0.4− | 0.4− |
| 1999 08 07 | 699 | 0.9− | 0.4+ | 2005 04 09 | 704 | 0.8+ | 0.6+ | 2005 06 09 | 704 | (1.1+ | 1.8+) |
| 2002 06 05 | 704 | 1.0+ | 0.2− | 2005 04 09 | 704 | 0.2+ | 1.1+ | 2005 06 09 | 704 | 1.5+ | 1.0+ |
| 2002 06 05 | 704 | 0.9+ | 0.4− | 2005 04 12 | 699 | 0.5− | 1.0+ | 2005 06 09 | 704 | 0.2− | 1.4+ |
| 2002 06 05 | 704 | 0.4+ | 0.3+ | 2005 04 12 | 699 | 0.6+ | 0.1+ | 2005 06 09 | 704 | (1.8+ | 0.2+) |
| 2002 06 09 | 704 | 0.3− | 0.1− | 2005 04 12 | 699 | 1.0+ | 0.7+ | 2005 06 09 | 704 | 1.2− | 0.8− |
| 2002 06 09 | 704 | 0.6− | 0.2− | 2005 04 12 | 699 | 0.4+ | 0.5+ | 2005 06 13 | 699 | 0.7+ | 0.2− |
| 2002 06 09 | 704 | 0.6− | 0.7+ | 2005 04 18 | 703 | 0.9− | 0.5− | 2005 06 13 | 699 | 0.8+ | 0.8− |
| 2003 11 24 | 699 | 0.3+ | 0.9+ | 2005 04 18 | 703 | 0.2− | 0.4− | 2005 06 13 | 699 | 0.4+ | 0.6+ |
| 2003 11 24 | 699 | 0.2− | 1.1+ | 2005 04 18 | 703 | 0.4− | 0.4− | 2005 06 13 | 699 | 0.3+ | 0.3+ |
| 2003 11 24 | 699 | 0.5− | 0.2− | 2005 04 18 | 703 | (1.4− | 1.6−) | 2005 06 22 | 644 | 0.3− | 0.1+ |
| 2003 11 24 | 699 | 0.1− | 0.3− | 2005 04 28 | 608 | 0.0 | 0.8− | 2005 06 22 | 644 | 0.2− | 0.1− |
| 2003 11 26 | 691 | 0.0 | 0.3+ | 2005 04 28 | 608 | 0.2+ | 0.6− | 2005 06 22 | 644 | 0.0 | 0.3+ |
| 2003 11 26 | 691 | 0.1+ | 0.5+ | 2005 04 28 | 608 | (0.4+ | 2.5−) | 2005 06 23 | 644 | 0.1− | 0.0 |
| 2003 11 26 | 691 | 0.0 | 0.3+ | 2005 05 03 | 608 | (1.8+ | 0.3−) | 2005 06 23 | 644 | 0.1+ | 0.1+ |
| 2003 11 30 | 704 | 0.5− | 0.5+ | 2005 05 03 | 608 | (1.6+ | 0.1−) | 2005 06 23 | 644 | 0.2− | 0.1+ |
| 2003 11 30 | 704 | 0.7− | 0.9+ | 2005 05 03 | 608 | (1.8+ | 1.0−) | 2005 06 26 | 699 | 0.1− | 0.3− |
| 2003 11 30 | 704 | 0.2+ | 0.1+ | 2005 05 04 | 703 | 0.2− | 0.0 | 2005 06 26 | 699 | 0.3+ | 0.6− |
| 2003 11 30 | 704 | 0.4+ | 1.0+ | 2005 05 04 | 703 | 0.7− | 0.1+ | 2005 06 26 | 699 | 0.8+ | 0.1+ |
| 2005 02 09 | 691 | 0.1+ | 0.3+ | 2005 05 04 | 703 | 0.2− | 0.2+ | 2005 06 26 | 699 | 0.4+ | 1.4+ |
| 2005 02 09 | 691 | 0.1+ | 0.4+ | 2005 05 04 | 703 | 0.4− | 0.1− | 2005 07 01 | 699 | 0.1+ | 0.9+ |
| 2005 02 09 | 691 | 0.4+ | 0.4+ | 2005 05 06 | 704 | 0.3+ | 0.0 | 2005 07 01 | 699 | 0.3− | 1.3+ |
| 2005 03 07 | 704 | 0.9+ | 0.7− | 2005 05 06 | 704 | 0.6+ | 0.2+ | 2005 07 01 | 699 | 0.1− | 0.8+ |
| 2005 03 07 | 704 | 0.9+ | 0.5− | 2005 05 06 | 704 | 0.4+ | 0.0 | 2005 07 01 | 699 | 0.6− | 0.5+ |
| 2005 03 07 | 704 | 0.0 | 0.3+ | 2005 05 06 | 704 | 0.1+ | 0.4− | 2006 09 29 | 699 | (0.9− | 1.6+) |
| 2005 03 07 | 704 | 0.1+ | 0.7+ | 2005 05 06 | 704 | 0.9+ | 0.5− | 2006 09 29 | 699 | 0.2− | 0.3− |
| 2005 03 07 | 704 | 0.6+ | 0.4+ | 2005 05 11 | 703 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.7− | 1.2+ |
| 2005 03 09 | 699 | 0.1− | 0.1+ | 2005 05 11 | 703 | 0.0 | 0.4+ | 2006 09 29 | 699 | 1.3− | 1.4+ |
| 2005 03 09 | 699 | 0.7+ | 0.0 | 2005 05 11 | 703 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.4− |
| 2005 03 09 | 699 | 0.1− | 0.2− | 2005 05 11 | 703 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.7− |
| 2005 03 09 | 699 | 0.5+ | 0.1− | 2005 05 31 | 703 | 0.4− | 0.5+ | 2006 09 30 | 703 | (0.4+ | 1.8+) |
| 2005 03 13 | 703 | 0.2− | 1.0− | 2005 05 31 | 703 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2005 03 13 | 703 | 0.2− | 0.3+ | 2005 05 31 | 703 | (1.7+ | 1.6+) | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2005 03 13 | 703 | 0.3− | 0.2− | 2005 05 31 | 703 | (1.6− | 0.4−) | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2005 03 13 | 703 | 0.5− | 0.2+ | 2005 06 03 | 699 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2005 04 05 | 703 | 0.0 | 1.3− | 2005 06 03 | 699 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2005 04 05 | 703 | 0.5− | 0.2+ | 2005 06 03 | 699 | 0.9+ | 1.2+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2005 04 05 | 703 | 0.4− | 0.3+ | 2005 06 03 | 699 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.6+ |
| 2005 04 05 | 703 | 0.4− | 0.2− | 2005 06 07 | 703 | 1.1− | 0.2− | 2006 10 16 | 703 | 1.0− | 0.4+ |
| 2005 04 07 | 699 | 0.8− | 0.3+ | 2005 06 07 | 703 | 1.0− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2005 04 07 | 699 | 0.2+ | 0.4+ | 2005 06 07 | 703 | 1.4− | 0.6− | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2005 04 07 | 699 | 0.2− | 0.6+ | 2005 06 07 | 703 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.3− | 1.1+ |
| 2005 04 07 | 699 | 0.1− | 0.9+ | 2005 06 08 | 699 | 0.0 | 0.5+ | | | | |
| 2005 04 09 | 704 | 0.5+ | 0.3+ | 2005 06 08 | 699 | 0.1+ | 0.3− | | | | |

**(143829)*** **2003 WP$_{151}$**

Discovered 2003 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 246.84328 | | (2000.0) | | | |
| $n$ | 0.28308120 | $\omega$ | 105.99202 | | −0.38366686 | −0.92335923 |
| $a$ | 2.2971818 | $\Omega$ | 6.62285 | | +0.79232214 | −0.33715148 |
| $e$ | 0.0369527 | $i$ | 7.17441 | | +0.47436838 | −0.18367530 |
| $P$ | 3.48 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.4+ | 0.0 | 2003 12 04 | 704 | 0.3+ | 0.3− | 2006 09 25 | 699 | 0.3+ | 1.3+ |
| 2001 01 18 | 704 | 0.3− | 0.5+ | 2003 12 04 | 704 | 0.5+ | 0.3− | 2006 09 25 | 699 | 0.5+ | 0.8+ |
| 2001 01 18 | 704 | 0.5+ | 0.6+ | 2003 12 04 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.4− |
| 2001 02 16 | 704 | 0.8+ | 0.0 | 2003 12 04 | 704 | 0.2+ | 1.2− | 2006 09 26 | 691 | 0.4− | 0.3+ |
| 2001 02 16 | 704 | 0.8+ | 0.7+ | 2003 12 12 | 644 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2001 02 16 | 704 | 0.1− | 0.7+ | 2003 12 12 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2001 02 16 | 704 | 0.2+ | 0.6+ | 2003 12 12 | 644 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2001 02 16 | 704 | 0.5− | 1.0+ | 2003 12 17 | 704 | 1.0+ | 0.2− | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2003 11 19 | 704 | 0.3− | 0.0 | 2003 12 17 | 704 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2003 11 19 | 704 | 0.2+ | 0.0 | 2003 12 17 | 704 | 0.6+ | 0.6+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2003 11 19 | 704 | 0.8+ | 0.9− | 2003 12 17 | 704 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2003 11 19 | 704 | 0.1+ | 0.3+ | 2003 12 28 | 691 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.4− |
| 2003 11 21 | 704 | (2.1+ | 4.3−) | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2003 11 21 | 704 | (1.3+ | 2.9−) | 2003 12 28 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2003 11 21 | 704 | 0.0 | 0.1+ | 2005 05 11 | 644 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2003 11 29 | 926 | 0.0 | 0.1+ | 2005 05 11 | 644 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.1+ |
| 2003 11 29 | 926 | 0.1+ | 0.0 | 2005 05 11 | 644 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.4− | 0.2+ |
| 2003 11 29 | 926 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2003 11 29 | 926 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2003 11 29 | 926 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2003 12 04 | 704 | 0.5− | 0.2− | 2006 09 25 | 699 | 0.9+ | 0.7+ | 2006 11 11 | G96 | 0.4+ | 0.4− |

**(143830)*** **2003 WV$_{152}$ = 2000 EM$_{151}$ = 2002 TJ$_{151}$**

Discovered 2003 Nov. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 57396)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 241.30694 | | (2000.0) | | | |
| $n$ | 0.25693080 | $\omega$ | 308.93968 | | −0.78258665 | −0.61360485 |
| $a$ | 2.4505220 | $\Omega$ | 194.27487 | | +0.61531184 | −0.78805026 |
| $e$ | 0.2465503 | $i$ | 25.23076 | | −0.09460167 | −0.04965767 |
| $P$ | 3.84 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 06 | 608 | 0.4− | 1.3+ | 2004 01 30 | 704 | 0.4− | 0.2− | 2006 09 06 | 644 | 0.0 | 0.4+ |
| 2000 03 06 | 608 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.3− | 0.3+ |
| 2000 03 06 | 608 | 0.1− | 1.2+ | 2004 01 30 | 704 | 0.3− | 0.1− | 2006 09 06 | 644 | 0.2− | 0.2+ |
| 2000 03 09 | 704 | 0.5+ | 1.0− | 2004 02 20 | 704 | 0.3− | 0.3+ | 2006 09 06 | 644 | 0.6+ | 0.4+ |
| 2000 03 09 | 704 | 1.4+ | 0.0 | 2004 02 20 | 704 | (1.3− | 1.6+) | 2006 09 06 | 644 | 0.4+ | 0.2+ |
| 2000 03 09 | 704 | 0.5+ | 1.0− | 2004 02 20 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.8+ |
| 2000 03 09 | 704 | 0.7+ | 0.1+ | 2004 02 20 | 704 | 0.4+ | 0.4− | 2006 09 17 | 703 | 0.8− | 0.7+ |
| 2000 03 09 | 704 | 0.2− | 0.1− | 2004 03 17 | 704 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.1− |
| 2002 10 05 | 704 | 0.1+ | 0.1+ | 2004 03 17 | 704 | 0.3+ | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 2002 10 05 | 704 | 0.4− | 1.4+ | 2004 03 17 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.9+ | 0.5− |
| 2002 10 05 | 704 | 0.0 | 0.6+ | 2004 03 17 | 704 | 0.3+ | 0.7+ | 2006 09 19 | 699 | 0.6+ | 0.3− |
| 2002 10 05 | 704 | 0.0 | 0.7+ | 2004 03 17 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.6+ | 0.5+ |
| 2002 10 05 | 704 | 0.3− | 0.7+ | 2004 03 28 | 608 | (0.1− | 1.7+) | 2006 09 19 | 699 | 0.3+ | 1.1+ |
| 2002 10 06 | 644 | 0.6− | 0.4+ | 2004 03 28 | 608 | 0.2− | 0.9+ | 2006 09 25 | 704 | 1.4+ | 0.4+ |
| 2002 10 06 | 644 | 0.0 | 0.9+ | 2004 03 28 | 608 | 0.4+ | 1.1+ | 2006 09 25 | 704 | 0.4+ | 0.1+ |
| 2002 10 06 | 644 | 0.0 | 0.4+ | 2004 03 31 | 704 | 1.2− | 0.3+ | 2006 09 25 | 704 | (0.4+ | 1.8−) |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2004 03 31 | 704 | 0.1− | 0.7+ | 2006 09 29 | 704 | 0.1+ | 0.9+ |
| 2002 11 08 | 645 | 0.1− | 0.1− | 2004 03 31 | 704 | 0.5− | 0.2+ | 2006 09 29 | 704 | 0.9+ | 0.1− |
| 2003 11 26 | 704 | 0.8− | 0.3− | 2004 03 31 | 704 | 0.4− | 0.2− | 2006 09 29 | 704 | 1.3+ | 0.3− |
| 2003 11 26 | 704 | 0.2− | 0.7+ | 2004 03 31 | 704 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.5+ |
| 2003 11 26 | 704 | 0.2+ | 0.0 | 2004 04 16 | 704 | 0.6+ | 1.3+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2003 11 29 | 704 | 0.4− | 0.3− | 2004 04 16 | 704 | 0.6− | 1.2+ | 2006 10 11 | 644 | 0.4− | 0.1− |
| 2003 11 29 | 704 | 0.0 | 0.7+ | 2004 04 16 | 704 | 0.3− | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 29 | 704 | 0.5− | 0.5− | 2004 04 16 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 01 27 | 704 | 0.1− | 0.0 | 2004 04 25 | 703 | 0.2− | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 01 27 | 704 | 0.1− | 0.3− | 2004 04 25 | 703 | 0.1+ | 0.9+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2004 01 27 | 704 | 0.5− | 0.3− | 2004 04 25 | 703 | 0.0 | 0.9− | 2006 10 23 | G96 | 0.2− | 0.0 |
| 2004 01 27 | 704 | 0.1+ | 0.8− | 2004 04 25 | 703 | 0.5− | 0.3− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2004 01 28 | 704 | 0.0 | 0.3− | 2004 05 13 | 704 | 0.4+ | 0.8+ | 2006 10 23 | G96 | 0.9− | 0.4− |
| 2004 01 28 | 704 | 0.5+ | 0.9− | 2004 05 13 | 704 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2004 01 28 | 704 | 0.2+ | 0.3− | 2004 05 13 | 704 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2004 01 29 | 704 | 0.4− | 0.4− | 2004 05 13 | 704 | 0.5+ | 0.5+ | 2006 11 13 | G96 | 0.1− | 0.6+ |
| 2004 01 29 | 704 | 0.3− | 1.2− | 2004 05 17 | 704 | 0.9− | 0.5+ | 2006 11 13 | G96 | 0.8− | 0.2− |
| 2004 01 29 | 704 | 0.1+ | 0.2+ | 2004 05 17 | 704 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 01 29 | 704 | 0.3+ | 0.6− | 2004 05 17 | 704 | 0.5+ | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2004 01 30 | 704 | 0.3+ | 0.4+ | 2004 05 17 | 704 | 0.6+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2004 01 30 | 704 | 0.8+ | 0.3+ | 2006 09 06 | 644 | 0.3+ | 0.6+ | 2006 11 21 | G96 | 0.4− | 0.1+ |

**(143831)∗ 2003 WH$_{157}$ = 2001 CD**

Discovered 2003 Nov. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.20564 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28448793 | $\omega$ | 352.71057 | | −0.25773705 | −0.95782111 |
| $a$ | 2.2896028 | $\Omega$ | 112.15936 | | +0.89326663 | −0.28634377 |
| $e$ | 0.0336866 | $i$ | 7.88696 | | +0.36830198 | +0.02420662 |
| $P$ | 3.46 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.5− | 0.0 | 2003 12 01 | 704 | 0.7+ | 0.5+ | 2005 05 04 | 703 | (1.5− | 3.6−) |
| 2001 01 04 | 704 | 0.3− | 0.4+ | 2003 12 01 | 704 | 0.4− | 0.3+ | 2005 05 06 | 704 | 0.9− | 1.0+ |
| 2001 01 04 | 704 | 1.3+ | 0.0 | 2003 12 01 | 704 | 0.3− | 0.2+ | 2005 05 06 | 704 | 0.2+ | 0.0 |
| 2001 01 04 | 704 | 0.5+ | 0.3− | 2003 12 01 | 704 | 0.2− | 0.5+ | 2005 05 06 | 704 | 0.0 | 0.7+ |
| 2001 02 01 | 704 | 0.6− | 0.3− | 2003 12 01 | 704 | 0.5− | 0.0 | 2005 05 11 | 703 | 1.4+ | 0.3− |
| 2001 02 01 | 704 | 0.2− | 0.3− | 2003 12 01 | 701 | 0.6+ | 1.0− | 2005 05 11 | 703 | 0.8+ | 0.3− |
| 2001 02 01 | 684 | 0.3− | 0.1− | 2003 12 01 | 704 | 0.1− | 0.1− | 2005 05 11 | 703 | (3.4+ | 0.1+) |
| 2001 02 01 | 684 | 0.8− | 0.3− | 2003 12 01 | 704 | 0.1+ | 0.1+ | 2005 05 11 | 703 | 0.3+ | 0.1− |
| 2001 02 01 | 704 | 0.4+ | 0.5+ | 2003 12 01 | 704 | 0.1+ | 0.5− | 2006 08 16 | 644 | 0.6− | 0.0 |
| 2001 02 01 | 704 | 0.4+ | 0.3+ | 2003 12 01 | 704 | 0.5+ | 0.3+ | 2006 08 16 | 644 | 0.7− | 0.1+ |
| 2001 02 02 | 684 | 0.0 | 0.2− | 2003 12 01 | 704 | 0.8− | 0.9+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2001 02 02 | 684 | 0.1+ | 0.0 | 2003 12 20 | 704 | 1.1+ | 1.4+ | 2006 08 30 | 699 | 0.1+ | 0.8− |
| 2003 10 29 | 699 | 1.0− | 0.6+ | 2003 12 20 | 704 | 1.0− | 1.8+ | 2006 08 30 | 699 | 0.9+ | 1.1+ |
| 2003 10 29 | 699 | 0.4+ | 1.8+ | 2003 12 20 | 704 | 0.3+ | 0.6+ | 2006 08 30 | 699 | 0.3− | 0.7− |
| 2003 10 29 | 699 | 0.1− | 0.2+ | 2003 12 20 | 704 | 1.6+ | 0.4+ | 2006 08 30 | 699 | 1.7− | 0.6+ |
| 2003 10 29 | 699 | 0.2− | 0.3− | 2005 02 12 | 809 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.8+ | 0.8+ |
| 2003 11 23 | 699 | 0.1+ | 0.0 | 2005 02 12 | 809 | 0.7+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.4− |
| 2003 11 23 | 699 | 1.8− | 1.0− | 2005 04 04 | 703 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.6+ | 1.0+ |
| 2003 11 23 | 699 | 0.6− | 0.4− | 2005 04 04 | 703 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.8+ | 0.1+ |
| 2003 11 23 | 699 | 0.0 | 1.1− | 2005 04 04 | 703 | 1.7− | 1.0− | 2006 09 20 | 703 | 0.0 | 0.7+ |
| 2003 11 30 | 704 | 1.3+ | 0.2− | 2005 04 04 | 703 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.4− | 0.3+ |
| 2003 11 30 | 704 | 0.8+ | 0.0 | 2005 04 18 | 703 | 0.2− | 0.9+ | 2006 09 20 | 703 | 0.5− | 0.5+ |
| 2003 11 30 | 704 | 0.5+ | 1.4− | 2005 04 18 | 703 | 0.4+ | 0.6− | 2006 09 20 | 703 | 0.1+ | 1.1− |
| 2003 11 30 | 704 | 0.3− | 1.1+ | 2005 04 18 | 703 | 0.1− | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.2+ |
| 2003 12 01 | 701 | 0.0 | 1.4− | 2005 04 18 | 703 | (2.1+ | 1.2+) | 2006 09 26 | 703 | 0.5+ | 0.2+ |
| 2003 12 01 | 701 | 0.7− | 0.1− | 2005 05 04 | 703 | 0.8+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 1.0− |
| 2003 12 01 | 704 | 0.4− | 0.8− | 2005 05 04 | 703 | (1.8− | 2.2−) | 2006 09 26 | 703 | 0.1− | 1.3− |
| 2003 12 01 | 704 | 0.2− | 0.6+ | 2005 05 04 | 703 | 0.6− | 1.0+ | | | | |

**(143832)∗ 2003 WQ$_{159}$**

Discovered 2003 Nov. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.47246 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.20939238 | $\omega$ | 149.19650 | | −0.32906076 | −0.93371863 |
| $a$ | 2.8086361 | $\Omega$ | 319.53413 | | +0.81608574 | −0.20605170 |
| $e$ | 0.1425952 | $i$ | 12.55051 | | +0.47510323 | −0.29276650 |
| $P$ | 4.71 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | (1.2− | 2.4−) | 2004 01 23 | 699 | 0.3− | 0.3− | 2004 02 24 | 608 | 0.3− | 0.0 |
| 1998 12 17 | 704 | (3.9− | 1.0−) | 2004 01 23 | 699 | 0.3− | 0.5+ | 2004 02 24 | 608 | 0.2− | 0.3− |
| 1998 12 17 | 704 | 0.2+ | 0.4− | 2004 01 23 | 699 | 0.1+ | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.6− |
| 1998 12 17 | 704 | (0.8− | 2.5−) | 2004 01 23 | 699 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.4+ |
| 1999 01 16 | 704 | 0.6+ | 0.3− | 2004 01 24 | 704 | 1.2− | 0.5+ | 2004 02 26 | 704 | 0.2+ | 0.7− |
| 1999 01 16 | 704 | 1.0+ | 1.4− | 2004 01 24 | 704 | 1.3− | 0.5+ | 2004 02 26 | 704 | 0.4+ | 0.7− |
| 1999 01 16 | 704 | 0.4− | 0.5− | 2004 01 24 | 704 | 1.1− | 0.5+ | 2004 02 26 | 704 | 0.2+ | 0.6− |
| 1999 01 16 | 704 | 0.5− | 1.1− | 2004 01 24 | 704 | 1.2− | 0.5+ | 2004 02 27 | 333 | 0.3+ | 0.2+ |
| 2001 07 19 | 644 | 0.9− | 0.1− | 2004 01 24 | 704 | 0.7− | 0.5+ | 2004 02 27 | 333 | 0.1+ | 0.1− |
| 2001 07 19 | 644 | 0.6− | 0.6+ | 2004 01 29 | 704 | 0.1+ | 0.5+ | 2004 02 27 | 333 | 0.1+ | 0.1− |
| 2001 07 19 | 644 | 1.0− | 0.3+ | 2004 01 29 | 704 | 0.5+ | 0.8+ | 2004 03 10 | 644 | 0.3+ | 0.3+ |
| 2002 08 30 | 704 | 1.4− | 0.2− | 2004 01 29 | 704 | 0.0 | 0.2+ | 2004 03 10 | 644 | 0.3+ | 0.2+ |
| 2002 08 30 | 704 | 0.9− | 0.6+ | 2004 01 29 | 704 | 0.1+ | 0.1+ | 2004 03 10 | 644 | 1.0+ | 0.3+ |
| 2002 08 30 | 704 | 0.4− | 0.9+ | 2004 01 30 | 691 | 0.1+ | 0.0 | 2004 03 15 | 703 | 0.5− | 0.1+ |
| 2002 08 30 | 704 | 0.5− | 0.6+ | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2004 03 15 | 703 | 0.3− | 0.1− |
| 2002 08 30 | 704 | 0.2− | 0.8+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2004 03 15 | 703 | 0.2− | 0.1+ |
| 2002 10 06 | 699 | 0.1− | 0.1− | 2004 01 30 | 608 | 0.4+ | 0.0 | 2004 03 15 | 703 | 0.5− | 0.2− |
| 2002 10 06 | 699 | 0.2− | 0.5− | 2004 01 30 | 608 | 0.2+ | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.7+ |
| 2002 10 06 | 699 | 0.4+ | 0.0 | 2004 01 30 | 608 | 0.6+ | 0.3− | 2004 03 15 | 704 | 0.5− | 0.6+ |
| 2002 10 06 | 699 | 1.0− | 0.0 | 2004 02 04 | 608 | 0.7+ | 0.0 | 2004 03 15 | 704 | 0.4− | 0.1+ |
| 2002 10 06 | 704 | 0.4+ | 0.1+ | 2004 02 04 | 608 | 0.5+ | 0.4− | 2004 03 15 | 704 | 0.3− | 0.2− |
| 2002 10 06 | 704 | 0.1− | 0.3+ | 2004 02 04 | 608 | 1.0+ | 0.0 | 2004 03 15 | 704 | 1.1− | 0.4+ |
| 2002 10 06 | 704 | 0.3− | 0.3+ | 2004 02 09 | 333 | 0.5− | 0.7+ | 2004 03 18 | 704 | 0.5+ | 0.3+ |
| 2002 10 06 | 704 | 0.0 | 0.1− | 2004 02 09 | 333 | 0.9− | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.4+ |
| 2002 10 06 | 704 | 0.4+ | 0.3+ | 2004 02 09 | 333 | 0.4+ | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.2− |
| 2002 11 14 | 704 | 0.0 | 0.5− | 2004 02 09 | 333 | 0.2− | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 0.7− | 2004 02 09 | 333 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.5+ | 0.8− | 2004 02 09 | 333 | 0.2+ | 0.0 | 2004 03 20 | 704 | 1.4+ | 0.1− |
| 2002 12 31 | 704 | 0.5+ | 0.6+ | 2004 02 10 | 333 | 0.6− | 0.0 | 2004 03 20 | 704 | 1.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2004 02 10 | 333 | 0.5− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.5− |
| 2002 12 31 | 704 | 0.3− | 0.2− | 2004 02 10 | 333 | 0.4− | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.5− |
| 2002 12 31 | 704 | 0.1+ | 0.6+ | 2004 02 11 | 333 | 0.5− | 0.1− | 2006 08 12 | 644 | 0.2− | 0.8+ |
| 2003 10 25 | 704 | 0.0 | 0.3+ | 2004 02 11 | 333 | 0.3− | 0.0 | 2006 08 12 | 644 | 0.0 | 0.7+ |
| 2003 10 25 | 704 | (1.7− | 0.3+) | 2004 02 11 | 333 | 0.1− | 0.2+ | 2006 08 12 | 644 | 0.0 | 0.7+ |
| 2003 10 25 | 704 | (1.5− | 0.6+) | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 1.2+ | 0.4+ |
| 2003 10 25 | 704 | 0.1+ | 1.2+ | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.2− | 0.5+ |
| 2003 11 29 | 703 | 1.3+ | 0.8+ | 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.1+ |
| 2003 11 29 | 703 | (2.5− | 3.0+) | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.7+ |
| 2003 11 29 | 703 | 0.3− | 0.1+ | 2004 02 13 | 691 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.4− | 0.1+ |
| 2003 11 29 | 703 | 0.4+ | 0.3− | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.3+ |
| 2003 12 01 | 704 | 0.4+ | 0.2+ | 2004 02 13 | 333 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.7+ |
| 2003 12 01 | 704 | 1.3+ | 0.1− | 2004 02 13 | 333 | 0.7− | 0.2+ | 2006 09 14 | 703 | (0.5+ | 1.6+) |
| 2003 12 01 | 704 | (1.1+ | 1.6+) | 2004 02 13 | 333 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.7+ | 0.4+ |
| 2003 12 01 | 704 | 1.3− | 0.4+ | 2004 02 14 | 608 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.5− | 0.4− |
| 2003 12 22 | 704 | 0.2+ | 1.0+ | 2004 02 14 | 608 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.6+ |
| 2003 12 22 | 704 | 1.5+ | 0.4+ | 2004 02 14 | 608 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3+ |
| 2003 12 22 | 704 | 0.1+ | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.3+ |
| 2003 12 22 | 704 | 0.9+ | 0.0 | 2004 02 17 | 704 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2004 01 05 | 699 | 0.2+ | 1.0− | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.4+ |
| 2004 01 05 | 699 | 0.7− | 0.2− | 2004 02 17 | 704 | 0.5+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2004 01 05 | 699 | (2.0− | 0.8+) | 2004 02 17 | 704 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.8− | 0.2+ |
| 2004 01 05 | 699 | 0.1+ | 0.1− | 2004 02 19 | 608 | 1.4+ | 0.7+ | 2006 11 23 | G96 | 0.7− | 0.3− |
| 2004 01 21 | 704 | 0.4+ | 0.5+ | 2004 02 19 | 608 | 1.2+ | 0.9+ | 2006 11 23 | G96 | 0.7− | 0.2+ |
| 2004 01 21 | 704 | 0.3− | 0.5+ | 2004 02 19 | 608 | (1.6+ | 0.9+) | | | | |
| 2004 01 21 | 704 | 0.2+ | 0.4+ | 2004 02 24 | 608 | 0.0 | 0.1− | | | | |

**(143833)∗ 2003 WB$_{161}$ = 2005 EB$_{80}$**

Discovered 2003 Nov. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76264)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.63959 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26251893 | $\omega$ | 180.50677 | | −0.17805616 | +0.98217712 |
| $a$ | 2.4156219 | $\Omega$ | 79.23762 | | −0.90260527 | −0.13865219 |
| $e$ | 0.1676486 | $i$ | 3.51320 | | −0.39191801 | −0.12690024 |
| $P$ | 3.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 691 | 0.2− | 0.4− | 2005 03 03 | 703 | 0.0 | 0.9− | 2005 03 16 | 703 | 0.6+ | 0.6− |
| 2001 01 04 | 691 | 0.5− | 0.1− | 2005 03 03 | 703 | 1.0− | 0.5− | 2005 03 16 | 703 | 0.4+ | 0.5+ |
| 2001 01 04 | 691 | 0.1− | 0.0 | 2005 03 03 | 703 | 0.6− | 0.4+ | 2005 04 04 | 691 | 0.4+ | 0.1− |
| 2002 08 06 | 644 | 0.2− | 0.1− | 2005 03 03 | 703 | 0.8− | 0.4+ | 2005 04 04 | 691 | 0.3+ | 0.1− |
| 2002 08 06 | 644 | 0.1+ | 0.0 | 2005 03 04 | 704 | 0.5+ | 1.9+ | 2005 04 04 | 691 | 0.3+ | 0.1+ |
| 2002 08 06 | 644 | 0.4+ | 0.5− | 2005 03 04 | 704 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.4+ | 2005 03 04 | 704 | 1.2+ | 0.4− | 2006 09 14 | 703 | 0.9− | 0.7+ |
| 2002 08 29 | 644 | 0.6+ | 1.1+ | 2005 03 09 | 704 | 1.2− | 0.4− | 2006 09 14 | 703 | 0.5− | 1.1− |
| 2002 08 29 | 644 | 0.2− | 0.2+ | 2005 03 09 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.3+ | 0.5− |
| 2003 11 30 | 291 | 0.0 | 0.0 | 2005 03 09 | 704 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.5− | 1.0+ |
| 2003 11 30 | 291 | 0.4− | 0.2+ | 2005 03 09 | 704 | 0.7− | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.4+ |
| 2003 11 30 | 291 | 0.2+ | 0.2+ | 2005 03 09 | 704 | 0.8− | 1.0+ | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2005 03 12 | 704 | 0.0 | 1.6− | 2006 09 21 | 699 | (2.2+ | 0.5+) |
| 2003 12 01 | 691 | 0.2+ | 0.1− | 2005 03 12 | 704 | 0.8+ | 0.4− | 2006 09 21 | 699 | 0.1− | 1.1+ |
| 2003 12 01 | 691 | 0.2− | 0.1− | 2005 03 12 | 704 | 1.3+ | 1.5+ | 2006 09 21 | 699 | (2.0− | 0.8+) |
| 2003 12 19 | 291 | 0.5+ | 0.1+ | 2005 03 12 | 704 | 0.4+ | 0.4+ | 2006 09 21 | 699 | 0.0 | 0.1+ |
| 2003 12 19 | 291 | 0.1+ | 0.2+ | 2005 03 12 | 704 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.3− |
| 2003 12 19 | 291 | 0.1− | 0.0 | 2005 03 16 | 704 | 0.4− | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 2005 02 14 | 704 | 1.0+ | 0.7+ | 2005 03 16 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 1.1+ | 0.8− |
| 2005 02 14 | 704 | 0.5− | 1.1− | 2005 03 16 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 1.1− | 0.8+ |
| 2005 02 14 | 704 | 0.9+ | 0.7+ | 2005 03 16 | 703 | 0.9+ | 0.1+ | | | | |
| 2005 02 14 | 704 | 0.9− | 0.6+ | 2005 03 16 | 703 | 0.4− | 0.0 | | | | |

**(143834)∗ 2003 WV$_{167}$ = 2005 GU$_{148}$**

Discovered 2003 Nov. 19 by NEAT at Palomar.

Id. A. Doppler (*MPO* 86175)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.90709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29519926 | $\omega$ | 348.60051 | | −0.92330910 | −0.38367292 | |
| $a$ | 2.2338768 | $\Omega$ | 168.79180 | | +0.35895281 | −0.87800442 | |
| $e$ | 0.0773056 | $i$ | 5.07286 | | +0.13657668 | −0.28618758 | |
| $P$ | 3.34 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | 1.3+ | 0.6+ | 2003 11 21 | 699 | (0.1+ | 1.7−) | 2006 07 22 | G96 | 0.1+ | 0.3− |
| 1998 03 03 | 704 | 0.9+ | 0.5+ | 2003 11 21 | 699 | 0.8+ | 0.6+ | 2006 09 17 | 704 | 0.7− | 0.0 |
| 1998 03 03 | 704 | 0.4+ | 0.6+ | 2005 03 16 | G96 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.2+ | 0.3− |
| 1998 03 03 | 704 | 0.1− | 1.7− | 2005 03 16 | G96 | 0.7− | 0.0 | 2006 09 17 | 704 | 0.1+ | 1.4+ |
| 1998 03 03 | 704 | 0.8− | 0.7+ | 2005 03 16 | G96 | 0.9− | 0.2− | 2006 09 17 | 704 | (0.4+ | 2.0+) |
| 1998 03 04 | 704 | (3.2− | 0.6+) | 2005 03 16 | G96 | 0.7− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 1998 03 04 | 704 | (2.3− | 1.4−) | 2005 04 02 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 1998 03 04 | 704 | 1.4− | 0.8− | 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1998 03 04 | 704 | (2.4− | 1.9−) | 2005 04 02 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 1998 03 20 | 704 | 1.3− | 1.6− | 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 1998 03 20 | 704 | (2.0+ | 2.4+) | 2005 04 11 | 691 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 1998 03 20 | 704 | (1.0+ | 2.4+) | 2005 04 11 | 691 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.2− |
| 1998 03 20 | 704 | (2.7− | 2.3+) | 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2003 10 29 | 691 | 0.1+ | 0.7+ | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2003 10 29 | 691 | 0.1− | 0.6+ | 2005 04 15 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.5− | 0.2− |
| 2003 10 29 | 691 | 0.0 | 0.5+ | 2005 05 14 | 704 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2003 11 19 | 644 | 0.2− | 0.8+ | 2005 05 14 | 704 | 0.9− | 0.2+ | 2006 10 23 | 644 | 0.4+ | 0.8+ |
| 2003 11 19 | 644 | 0.4− | 0.9+ | 2005 05 14 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2003 11 19 | 644 | 0.3− | 0.6+ | 2006 07 22 | G96 | 0.2+ | 0.7− | 2006 10 23 | 644 | 0.5− | 0.1− |
| 2003 11 21 | 699 | 0.7− | 0.5+ | 2006 07 22 | G96 | 0.2− | 0.2+ | | | | |
| 2003 11 21 | 699 | 0.3− | 0.4− | 2006 07 22 | G96 | 0.0 | 0.3− | | | | |

**(143835)∗ 2003 WG$_{181}$**

Discovered 2003 Nov. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.12401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28484977 | $\omega$ | 16.76297 | | +0.93782107 | −0.34710221 | |
| $a$ | 2.2876634 | $\Omega$ | 3.55273 | | +0.31180698 | +0.83804577 | |
| $e$ | 0.1783116 | $i$ | 3.16462 | | +0.15253870 | +0.42095052 | |
| $P$ | 3.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 24 | 691 | 0.4+ | 0.4− | 2005 04 09 | 691 | 0.0 | 0.5+ | 2006 08 31 | 704 | 0.1− | 0.2+ |
| 2001 01 24 | 691 | 0.2− | 0.4+ | 2006 07 25 | 644 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 1.1− | 0.0 |
| 2001 01 24 | 691 | 0.2− | 0.1− | 2006 07 25 | 644 | 0.3− | 0.4+ | 2006 09 12 | 699 | 0.1− | 0.7+ |
| 2003 11 20 | 704 | 0.0 | 0.5+ | 2006 07 25 | 644 | 0.1+ | 0.6+ | 2006 09 12 | 699 | 0.7+ | 0.5− |
| 2003 11 20 | 704 | 0.4+ | 0.2+ | 2006 08 13 | 644 | 0.4− | 0.1+ | 2006 09 12 | 699 | 0.2+ | 1.2+ |
| 2003 11 20 | 704 | 0.1+ | 0.4− | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 09 12 | 699 | 0.1− | 0.8+ |
| 2003 11 21 | 695 | 0.3− | 0.0 | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.3+ |
| 2003 11 21 | 695 | 0.4− | 0.2− | 2006 08 13 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2003 12 04 | 704 | 0.6+ | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.2− |
| 2003 12 04 | 704 | 0.3+ | 0.3+ | 2006 08 13 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.9+ | 1.3+ |
| 2003 12 04 | 704 | 0.5− | 1.4+ | 2006 08 21 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.9− | 0.5+ |
| 2003 12 04 | 704 | 1.0− | 0.5− | 2006 08 21 | 644 | 0.5− | 0.1+ | 2006 09 18 | 699 | 1.2+ | 0.6− |
| 2003 12 18 | 704 | 0.0 | 0.5+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 18 | 699 | (1.8+ | 0.4−) |
| 2003 12 18 | 704 | 0.4− | 1.0+ | 2006 08 23 | 704 | (1.6+ | 0.6−) | 2006 09 18 | 699 | 0.4− | 0.6+ |
| 2003 12 18 | 704 | 0.3− | 0.7+ | 2006 08 23 | 704 | (1.7+ | 0.8−) | 2006 09 24 | 699 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.6+ | 1.0+ | 2006 08 23 | 704 | 1.3+ | 0.5− | 2006 09 24 | 699 | 0.4− | 0.6+ |
| 2003 12 22 | 704 | 0.3+ | 0.4+ | 2006 08 23 | 704 | 0.7+ | 0.5− | 2006 09 24 | 699 | 0.6+ | 0.3− |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2006 08 23 | 704 | 1.3+ | 1.0− | 2006 09 24 | 699 | 0.7− | 0.0 |
| 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.8− |
| 2003 12 27 | 704 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.2− |
| 2003 12 27 | 704 | 0.5+ | 0.2− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2003 12 27 | 704 | 0.3− | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.9− | 0.6+ |
| 2003 12 27 | 704 | 0.0 | 0.4− | 2006 08 24 | 644 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.1− | 0.5− |
| 2003 12 27 | 704 | 0.0 | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.3+ |
| 2005 03 11 | G96 | 0.5− | 0.4+ | 2006 08 28 | 704 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2005 03 11 | G96 | 0.9− | 0.4+ | 2006 08 28 | 704 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.4− | 0.4− |
| 2005 03 11 | G96 | 0.1− | 0.4+ | 2006 08 28 | 704 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 08 28 | 704 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.6+ |
| 2005 04 09 | 691 | 0.4− | 0.7+ | 2006 08 28 | 704 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.8+ |
| 2005 04 09 | 691 | 0.8+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2005 04 09 | 691 | 0.3+ | 0.5− | 2006 08 28 | 699 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2005 04 09 | 691 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 0.4+ | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2005 04 09 | 691 | 0.2+ | 0.4+ | 2006 08 31 | 704 | 0.8− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.5− |

**(143836)∗ 2003 XL$_{1}$**

Discovered 2003 Dec. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.83672 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28340031 | $\omega$ | 295.20585 | | −0.18673124 | +0.98065511 | |
| $a$ | 2.2954570 | $\Omega$ | 323.87737 | | −0.86170150 | −0.19219580 | |
| $e$ | 0.1706435 | $i$ | 5.71569 | | −0.47180714 | −0.03709892 | |
| $P$ | 3.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 02 | 691 | (0.8+ | 3.7+) | 2005 03 01 | 683 | 0.9− | 0.9− | 2006 08 29 | 703 | 0.3− | 0.2+ |
| 1992 10 02 | 691 | 0.3− | 0.7+ | 2005 03 01 | 683 | (2.2− | 1.0−) | 2006 08 29 | 703 | 1.0+ | 0.7+ |
| 1992 10 02 | 691 | 0.3− | 0.5+ | 2005 03 02 | 691 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.0 |
| 1998 03 03 | 704 | 0.8+ | 0.1− | 2005 03 02 | 691 | 0.5+ | 0.6+ | 2006 09 17 | 703 | 0.8− | 0.5+ |
| 1998 03 03 | 704 | 0.8− | 0.3+ | 2005 03 02 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.2− | 0.9+ |
| 1998 03 03 | 704 | 0.4+ | 1.1+ | 2005 03 03 | 703 | 0.5− | 0.1− | 2006 09 17 | 703 | 0.2− | 0.1+ |
| 1998 03 03 | 704 | (3.1− | 0.6+) | 2005 03 03 | 703 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.3− |
| 2003 11 20 | 691 | 0.1+ | 0.1− | 2005 03 03 | 703 | 0.2− | 0.8+ | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 2003 11 20 | 691 | 0.0 | 0.2− | 2005 03 03 | 703 | 0.7+ | 0.5+ | 2006 09 19 | 699 | 0.6− | 0.2− |
| 2003 11 20 | 691 | 0.1− | 0.1− | 2005 03 08 | 699 | 0.3+ | 0.8+ | 2006 09 19 | 699 | 0.7+ | 0.4+ |
| 2003 12 01 | 691 | 0.0 | 0.0 | 2005 03 08 | 699 | 0.8+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.6+ |
| 2003 12 01 | 691 | 0.2− | 0.0 | 2005 03 08 | 699 | 0.7+ | 0.2+ | 2006 09 19 | 699 | 1.0− | 1.1+ |
| 2003 12 01 | 691 | 0.1− | 0.2− | 2005 03 08 | 699 | 0.2+ | 0.9+ | 2006 09 19 | 699 | 0.3+ | 0.4+ |
| 2003 12 04 | 291 | 0.4− | 0.0 | 2005 03 09 | 699 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 04 | 291 | 0.2− | 0.2− | 2005 03 09 | 699 | 0.1+ | 0.0 | 2006 09 19 | 699 | 1.1− | 0.5+ |
| 2003 12 04 | 291 | 0.2− | 0.2− | 2005 03 09 | 699 | 0.5+ | 0.4− | 2006 09 26 | 691 | 0.3− | 0.3+ |
| 2003 12 04 | 291 | 0.2+ | 0.2− | 2005 03 09 | 699 | 0.8+ | 1.1+ | 2006 09 26 | 691 | 0.4+ | 0.1+ |
| 2003 12 04 | 291 | 0.0 | 0.1+ | 2005 03 17 | 703 | 0.5+ | 0.9− | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2003 12 04 | 291 | 0.2+ | 0.2+ | 2005 03 17 | 703 | 0.1− | 1.0− | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2003 12 04 | 291 | 0.3+ | 0.3− | 2005 03 17 | 703 | 1.1− | 0.2− | 2006 10 02 | G96 | 0.4− | 0.1− |
| 2003 12 04 | 291 | 0.3+ | 0.2− | 2005 03 17 | 703 | (1.6− | 1.1−) | 2006 10 02 | G96 | 0.5− | 0.1+ |
| 2003 12 04 | 291 | 0.9+ | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2003 12 29 | 691 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2005 04 04 | 703 | 0.4− | 0.8+ | 2006 10 17 | 703 | 0.9+ | 0.5− |
| 2003 12 29 | 691 | 0.2− | 0.1− | 2005 04 04 | 703 | 0.8− | 1.3− | 2006 10 17 | 703 | (1.4+ | 1.6−) |
| 2005 02 09 | 704 | 0.2+ | 0.9+ | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2005 02 09 | 704 | 0.3− | 0.8− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.9+ |
| 2005 02 09 | 704 | 0.6+ | 0.0 | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2005 03 01 | 683 | 0.3+ | 0.9+ | 2006 08 29 | 703 | 1.0− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.2− |

**(143837)∗ 2003 XO$_7$**

Discovered 2003 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.63145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28181223 | $\omega$ | 263.61887 | | +0.97166840 | | −0.18989728 |
| $a$ | 2.3040726 | $\Omega$ | 107.26032 | | +0.22845938 | | +0.90717633 |
| $e$ | 0.0817057 | $i$ | 8.47318 | | −0.06055442 | | +0.37545988 |
| $P$ | 3.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 03 | 704 | (0.5+ | 1.7+) | 2003 12 22 | 704 | 0.0 | 0.8+ | 2006 08 30 | 699 | 1.4− | 1.0+ |
| 2001 02 03 | 704 | (0.6− | 1.9+) | 2003 12 22 | 704 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.0 | 0.1+ |
| 2001 02 03 | 704 | 0.4− | 0.6+ | 2003 12 22 | 704 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.8− | 0.4− |
| 2001 02 03 | 704 | 0.2− | 0.1− | 2003 12 22 | 704 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.2− |
| 2001 02 16 | 704 | 0.1− | 0.2+ | 2003 12 24 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.3+ |
| 2001 02 16 | 704 | 0.7+ | 0.3+ | 2003 12 24 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.1− |
| 2001 02 16 | 704 | 0.2− | 0.2+ | 2003 12 24 | 704 | 0.4− | 0.0 | 2006 09 20 | 703 | 0.4+ | 0.1+ |
| 2001 02 16 | 704 | 0.1− | 0.9+ | 2005 04 13 | 703 | 0.5− | 0.7+ | 2006 09 20 | 703 | 0.3+ | 0.3+ |
| 2003 12 01 | 704 | 0.5+ | 0.5+ | 2005 04 13 | 703 | 0.5+ | 1.0+ | 2006 09 20 | 703 | 0.2+ | 0.5+ |
| 2003 12 01 | 704 | 0.4+ | 0.1+ | 2005 04 13 | 703 | 0.1− | 1.2+ | 2006 09 20 | 703 | 0.1− | 0.9+ |
| 2003 12 01 | 704 | 0.2+ | 0.5+ | 2005 04 13 | 703 | 0.3+ | 1.0+ | 2006 09 21 | 699 | (0.7+ | 1.6+) |
| 2003 12 01 | 704 | 0.2+ | 0.7+ | 2005 04 15 | 699 | 0.9+ | 0.8+ | 2006 09 21 | 699 | 0.4− | 0.7+ |
| 2003 12 01 | 704 | 0.6+ | 0.2+ | 2005 04 15 | 699 | (2.9+ | 0.2−) | 2006 09 21 | 699 | 0.1+ | 0.0 |
| 2003 12 05 | 704 | 0.3− | 0.5+ | 2005 04 15 | 699 | 1.0+ | 0.7+ | 2006 09 21 | 699 | 0.4− | 0.7+ |
| 2003 12 05 | 704 | 0.3+ | 0.5+ | 2005 04 15 | 699 | 0.8+ | 0.6+ | 2006 09 26 | 703 | 0.7− | 0.3+ |
| 2003 12 05 | 704 | 1.0+ | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2003 12 05 | 704 | 0.2− | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.1− |
| 2003 12 19 | 704 | 0.4− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.4+ | 2006 09 26 | 703 | 1.0− | 0.1− |
| 2003 12 19 | 704 | 0.1+ | 0.4+ | 2006 08 21 | 644 | 0.1− | 0.5+ | 2006 10 09 | 644 | 0.3+ | 0.2− |
| 2003 12 19 | 704 | 1.1− | 0.4+ | 2006 08 21 | 644 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2003 12 19 | 704 | 0.1+ | 0.5− | 2006 08 21 | 644 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2003 12 19 | 704 | 0.8− | 0.7− | 2006 08 30 | 699 | 0.0 | 0.1+ | | | | |
| 2003 12 22 | 704 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.1− | | | | |

**(143838)∗ 2003 XT$_7$**

Discovered 2003 Dec. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.01359 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28029187 | $\omega$ | 182.58764 | | +0.59245804 | | −0.80171489 |
| $a$ | 2.3123969 | $\Omega$ | 231.09365 | | +0.74093677 | | +0.58078570 |
| $e$ | 0.0891782 | $i$ | 5.82936 | | +0.31623754 | | +0.14121331 |
| $P$ | 3.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 16 | 691 | 0.5− | 0.0 | 2003 12 23 | 704 | (0.9− | 2.6−) | 2005 06 02 | G96 | 0.6− | 0.0 |
| 1994 03 16 | 691 | 0.1− | 0.1− | 2003 12 27 | 704 | 0.3+ | 0.8+ | 2006 08 29 | 703 | 0.4+ | 0.1+ |
| 1994 03 16 | 691 | 0.2+ | 0.7− | 2003 12 27 | 704 | 0.7− | 0.4+ | 2006 08 29 | 703 | 0.2+ | 0.2− |
| 2003 12 03 | 704 | 0.2− | 0.7+ | 2003 12 27 | 704 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.7+ | 0.7+ |
| 2003 12 03 | 704 | 0.8− | 0.0 | 2003 12 27 | 704 | 0.7− | 0.5+ | 2006 08 29 | 703 | 0.5+ | 0.1+ |
| 2003 12 03 | 704 | 0.9− | 1.2− | 2003 12 27 | 704 | 0.3+ | 0.7+ | 2006 08 31 | A13 | 0.1− | 0.6− |
| 2003 12 03 | 704 | 0.0 | 0.0 | 2004 01 12 | 644 | 0.1+ | 0.4+ | 2006 08 31 | A13 | 0.1− | 0.3− |
| 2003 12 05 | 704 | 0.1+ | 0.2+ | 2004 01 12 | 644 | 0.4+ | 0.3+ | 2006 08 31 | A13 | 0.0 | 0.5+ |
| 2003 12 05 | 704 | 0.4+ | 0.2− | 2004 01 12 | 644 | 0.2+ | 0.3+ | 2006 08 31 | A13 | 0.1+ | 0.2− |
| 2003 12 05 | 704 | 0.6− | 0.2+ | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 08 31 | A13 | 0.3− | 0.3+ |
| 2003 12 05 | 704 | 0.5− | 0.7+ | 2005 04 14 | 691 | 0.4+ | 0.2+ | 2006 08 31 | A13 | 0.1− | 0.3− |
| 2003 12 05 | 704 | 0.4− | 0.1− | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 11 | 703 | 0.3+ | 0.0 |
| 2003 12 19 | 704 | 0.1− | 0.2+ | 2005 06 01 | G96 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.4− | 0.8− |
| 2003 12 19 | 704 | 0.4− | 0.2− | 2005 06 01 | G96 | 0.1− | 0.4+ | 2006 09 11 | 703 | 0.0 | 1.0− |
| 2003 12 19 | 704 | 0.1+ | 0.6+ | 2005 06 01 | G96 | 0.4− | 0.0 | 2006 09 11 | 703 | 0.9+ | 0.5− |
| 2003 12 21 | 704 | 0.4+ | 0.5+ | 2005 06 01 | G96 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.8− | 0.6+ |
| 2003 12 21 | 704 | 0.8+ | 0.8+ | 2005 06 02 | G96 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.8− | 0.3+ |
| 2003 12 21 | 704 | 0.9+ | 0.2− | 2005 06 02 | G96 | 0.1− | 0.5+ | 2006 09 18 | 704 | 0.7− | 0.3− |
| 2003 12 21 | 704 | 0.8+ | 0.2+ | 2005 06 02 | G96 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2003 12 23 | 704 | 0.7− | 0.8− | 2005 06 02 | G96 | 0.6− | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2003 12 23 | 704 | 0.7+ | 0.8− | 2005 06 02 | G96 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2003 12 23 | 704 | 0.6+ | 1.0− | 2005 06 02 | G96 | 0.3− | 0.1+ | | | | |
| 2003 12 23 | 704 | (0.9− | 1.8−) | 2005 06 02 | G96 | 0.2− | 0.5+ | | | | |

**(143839)∗ 2003 XL$_{16}$ = 2001 EM$_{20}$**

Discovered 2003 Dec. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57436)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.85275 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28695100 | $\omega$ | 238.97584 | | +0.35438933 | | −0.93490181 |
| $a$ | 2.2764820 | $\Omega$ | 190.32203 | | +0.89024503 | | +0.34358708 |
| $e$ | 0.1794742 | $i$ | 6.13593 | | +0.28613283 | | +0.08891862 |
| $P$ | 3.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 22 | 327 | 0.1− | 0.1+ | 2003 12 14 | 644 | 0.0 | 0.2+ | 2005 05 08 | 691 | 0.2+ | 0.3+ |
| 1996 09 22 | 327 | 0.1− | 0.0 | 2003 12 14 | 644 | 0.0 | 0.4+ | 2005 05 08 | 691 | 0.1+ | 0.4+ |
| 1996 09 22 | 327 | 0.3− | 0.1+ | 2003 12 14 | 644 | 0.0 | 0.3+ | 2005 05 08 | 691 | 0.2+ | 0.4+ |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2003 12 14 | 644 | 0.4+ | 0.3+ | 2005 05 13 | 691 | 0.0 | 0.5+ |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2003 12 14 | 644 | 0.2+ | 0.4+ | 2005 05 13 | 691 | 0.0 | 0.6+ |
| 2001 03 15 | 699 | 0.0 | 1.0+ | 2003 12 17 | 699 | 0.6− | 0.3+ | 2005 05 13 | 691 | 0.2− | 0.3+ |
| 2001 03 15 | 699 | 0.5+ | 0.8+ | 2003 12 17 | 699 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.7+ | 1.3+ |
| 2001 03 15 | 699 | 0.1+ | 0.7+ | 2003 12 17 | 691 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.3+ | 1.3+ |
| 2001 03 15 | 699 | 0.2+ | 1.5+ | 2003 12 17 | 699 | 0.1+ | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.5+ |
| 2001 03 18 | 704 | 0.6+ | 0.9+ | 2003 12 17 | 699 | 0.6− | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.2+ |
| 2001 03 18 | 704 | 0.7+ | 0.3− | 2003 12 17 | 691 | 0.1− | 0.6+ | 2006 09 17 | 703 | 1.1− | 0.5− |
| 2001 03 18 | 704 | 0.2+ | 0.1− | 2003 12 17 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.6− |
| 2003 10 27 | 704 | 1.0+ | 0.1+ | 2003 12 20 | 704 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.5+ |
| 2003 10 27 | 704 | (1.5+ | 0.6+) | 2003 12 20 | 704 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.3− |
| 2003 10 27 | 704 | 0.9+ | 1.0− | 2003 12 20 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.3− |
| 2003 10 27 | 704 | 0.5+ | 0.1+ | 2003 12 20 | 704 | 0.1− | 0.5+ | 2006 09 19 | 703 | 1.0− | 1.0+ |
| 2003 10 27 | 704 | 0.0 | 0.3+ | 2003 12 20 | 704 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2003 11 01 | 704 | 0.1− | 0.5+ | 2003 12 28 | 691 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.8+ |
| 2003 11 01 | 704 | 0.1+ | 0.0 | 2003 12 28 | 691 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2003 11 01 | 704 | 0.2+ | 0.3− | 2003 12 28 | 691 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2003 11 30 | 704 | 0.0 | 0.4+ | 2004 01 13 | 644 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2003 11 30 | 704 | 0.2− | 0.7+ | 2004 01 13 | 644 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.3+ |
| 2003 11 30 | 704 | 0.2+ | 0.3+ | 2004 01 13 | 644 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.6+ | 0.3+ |
| 2003 11 30 | 704 | 0.2− | 0.2+ | 2004 01 18 | 644 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 11 30 | 704 | 0.2+ | 0.5− | 2004 01 18 | 644 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 2003 12 05 | 703 | 0.5− | 0.5+ | 2004 01 18 | 644 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2003 12 05 | 703 | 0.3− | 0.0 | 2004 01 19 | 703 | 1.4− | 0.6− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2003 12 05 | 703 | (3.4− | 6.8−) | 2004 01 19 | 703 | 0.7− | 0.6− | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2003 12 05 | 703 | (2.2+ | 5.1−) | 2004 01 19 | 703 | 0.9+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.3+ |
| 2003 12 14 | 644 | 0.0 | 0.4+ | 2004 01 19 | 703 | 0.4− | 0.8− | | | | |

**(143840)∗ 2003 XA$_{18}$**

Discovered 2003 Dec. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.21876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29277165 | $\omega$ | 13.28101 | | +0.43445245 | −0.89364476 | |
| $a$ | 2.2462084 | $\Omega$ | 51.08789 | | +0.81260086 | +0.33503032 | |
| $e$ | 0.0854539 | $i$ | 8.31099 | | +0.38849826 | +0.29858622 | |
| $P$ | 3.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.2+ | 0.4− | 2003 12 27 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1996 11 08 | 691 | 0.0 | 0.5− | 2003 12 27 | 704 | 0.2+ | 0.9+ | 2006 10 22 | 704 | 0.9+ | 0.7+ |
| 1996 11 08 | 691 | 0.2+ | 0.4− | 2003 12 27 | 704 | 0.1− | 0.4+ | 2006 10 22 | 704 | 0.1+ | 1.2+ |
| 1999 10 31 | 557 | 0.4− | 0.6+ | 2003 12 29 | 704 | 0.3− | 0.4+ | 2006 10 22 | 704 | (1.9− | 0.7+) |
| 1999 10 31 | 557 | 1.1+ | 1.4+ | 2003 12 29 | 704 | 0.5− | 0.1+ | 2006 10 22 | 704 | 0.7− | 0.5− |
| 2001 02 16 | 704 | 0.4+ | 0.2− | 2003 12 29 | 704 | 0.6− | 0.5+ | 2006 10 22 | 704 | (2.1− | 0.6−) |
| 2001 02 16 | 704 | 0.4+ | 0.3− | 2003 12 29 | 704 | 0.4− | 0.4− | 2006 10 27 | 704 | 0.4− | 0.1+ |
| 2001 02 16 | 704 | 0.5+ | 0.5+ | 2003 12 29 | 704 | 0.6− | 0.7+ | 2006 10 27 | 704 | 0.0 | 0.1− |
| 2001 02 16 | 704 | 0.4+ | 0.2+ | 2004 01 14 | 644 | 0.2− | 0.2− | 2006 10 27 | 704 | 0.1+ | 0.7− |
| 2001 02 16 | 704 | 0.4+ | 0.2− | 2004 01 14 | 644 | 0.0 | 0.1− | 2006 10 27 | 704 | 0.5+ | 0.3− |
| 2001 03 04 | 704 | 0.0 | 0.5+ | 2004 01 14 | 644 | 0.5+ | 0.2− | 2006 10 27 | 704 | 0.6+ | 0.9− |
| 2001 03 04 | 704 | 0.7+ | 0.8+ | 2004 01 19 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2001 03 04 | 704 | 0.4+ | 0.8+ | 2004 01 19 | 704 | 0.8+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2001 03 04 | 704 | 0.3+ | 1.4+ | 2004 01 19 | 704 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2001 03 16 | 704 | 0.1+ | 0.2+ | 2004 01 19 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2001 03 16 | 704 | (0.4+ | 1.5+) | 2004 01 19 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2001 03 16 | 704 | 0.1+ | 0.1+ | 2005 06 26 | 644 | 0.3+ | 1.0+ | 2006 11 11 | 703 | 1.4− | 0.8+ |
| 2001 03 16 | 704 | 0.5− | 0.6+ | 2005 06 26 | 644 | 0.6+ | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2001 03 26 | 608 | 0.2− | 1.1+ | 2005 06 26 | 644 | 0.3+ | 1.0+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 03 26 | 608 | 0.6− | 1.3+ | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 03 26 | 608 | 0.1+ | 0.6+ | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 07 06 | 644 | 0.1− | 0.9+ | 2006 09 20 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.2+ |
| 2002 07 06 | 644 | 0.4− | 1.0+ | 2006 09 26 | 704 | 1.1− | 0.1− | 2006 11 17 | 703 | 1.2− | 0.0 |
| 2002 07 06 | 644 | 0.1− | 1.0+ | 2006 09 26 | 704 | 0.9− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2003 11 18 | 699 | (2.9− | 1.3+) | 2006 09 26 | 704 | 1.2− | 1.0+ | 2006 11 17 | 703 | 0.2+ | 0.6− |
| 2003 11 18 | 699 | 0.1− | 1.2− | 2006 09 26 | 704 | 1.1− | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2003 11 18 | 699 | 0.2− | 0.5+ | 2006 09 26 | 704 | 1.2− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2003 11 18 | 699 | 0.9+ | 0.2− | 2006 09 29 | 699 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2003 11 20 | 704 | 0.6− | 0.4− | 2006 09 29 | 699 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2003 11 20 | 704 | 1.1+ | 0.3− | 2006 09 29 | 699 | 1.2− | 0.4− | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2003 11 20 | 704 | 0.9+ | 0.3+ | 2006 09 29 | 699 | 0.5− | 1.0+ | 2006 11 19 | 704 | 0.7+ | 1.0+ |
| 2003 11 20 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2003 12 04 | 704 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2003 12 04 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 19 | 704 | 1.2− | 1.4+ |
| 2003 12 04 | 704 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.8+ |
| 2003 12 04 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2003 12 04 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2003 12 14 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.7− | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2003 12 14 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | (4.6− | 2.7−) | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2003 12 14 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2003 12 17 | 699 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2003 12 17 | 699 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.1+ |
| 2003 12 17 | 704 | 1.1− | 0.9− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2003 12 17 | 699 | 0.8− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 1.0− | 0.2− |
| 2003 12 17 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 25 | 703 | 1.9− | 0.4+ |
| 2003 12 17 | 699 | 0.7+ | 1.3− | 2006 10 21 | G96 | 0.4+ | 0.3− | 2006 11 25 | 703 | 0.1− | 0.5− |
| 2003 12 17 | 704 | 0.6− | 1.0− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 25 | 703 | 1.1+ | 0.9− |
| 2003 12 17 | 704 | 0.1+ | 0.8− | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2003 12 27 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |

**(143841)∗ 2003 XN$_{20}$ = 2000 YD$_{138}$ = 2002 PU$_{13}$**

Discovered 2003 Dec. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69599)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.52712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29960420 | $\omega$ | 303.84718 | | −0.87435935 | +0.47657762 | |
| $a$ | 2.2119270 | $\Omega$ | 264.76792 | | −0.40934743 | −0.82557447 | |
| $e$ | 0.0921842 | $i$ | 5.27106 | | −0.26063462 | −0.30215982 | |
| $P$ | 3.29 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | (4.8− | 2.5−) | 2003 12 14 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 1998 03 04 | 704 | 1.4− | 0.6− | 2003 12 14 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 1.3− | 0.5− |
| 1998 03 04 | 704 | (3.5− | 1.4−) | 2003 12 21 | 704 | (0.6+ | 3.0+) | 2006 10 19 | 703 | 0.2+ | 0.3+ |
| 1998 03 04 | 704 | (7.7− | 1.2+) | 2003 12 21 | 704 | 0.4+ | 1.0+ | 2006 10 19 | A50 | 0.5− | 0.4+ |
| 2000 12 26 | 691 | 0.1− | 0.2+ | 2003 12 21 | 704 | 0.5+ | 0.0 | 2006 10 19 | A50 | 0.5− | 0.7− |
| 2000 12 26 | 691 | 0.2+ | 0.1+ | 2003 12 21 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2000 12 26 | 691 | 0.0 | 0.3+ | 2005 05 30 | E12 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2000 12 30 | 704 | 0.2+ | 1.0+ | 2005 05 30 | E12 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2000 12 30 | 704 | 0.1− | 0.6− | 2005 05 30 | E12 | 0.1− | 0.7+ | 2006 10 21 | J95 | 0.3+ | 0.1+ |
| 2000 12 30 | 704 | 1.6+ | 1.1− | 2005 05 30 | E12 | 0.0 | 0.0 | 2006 10 21 | J95 | 0.3+ | 0.4+ |
| 2002 07 14 | 704 | 0.1− | 0.2− | 2005 06 04 | 704 | 0.6− | 1.1+ | 2006 10 22 | J95 | 0.4− | 0.2+ |
| 2002 07 14 | 704 | 0.7− | 0.2+ | 2005 06 04 | 704 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.5+ | 1.0− |
| 2002 07 14 | 704 | 0.2− | 0.5− | 2005 06 04 | 704 | 1.1− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 07 14 | 704 | 0.7+ | 0.3− | 2005 06 04 | 704 | 1.0− | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 07 14 | 704 | 0.5+ | 0.4− | 2005 06 11 | 701 | 0.6+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 08 06 | 644 | (0.4+ | 2.0+) | 2005 06 11 | 701 | 0.5+ | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 08 06 | 644 | 0.6+ | 1.4+ | 2005 06 11 | 701 | 0.8+ | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2002 08 06 | 644 | (0.3+ | 2.0+) | 2005 06 26 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 08 07 | 644 | 0.1− | 0.1− | 2005 06 26 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 08 07 | 644 | 0.0 | 0.2− | 2005 06 26 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2002 08 07 | 644 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2003 11 24 | 691 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 16 | 540 | 0.1− | 0.6+ |
| 2003 11 24 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 16 | 540 | 0.0 | 0.9− |
| 2003 11 24 | 691 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.2− | 0.5+ | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2003 12 14 | 291 | 0.6− | 0.0 | 2006 10 13 | 691 | 0.4+ | 0.5− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2003 12 14 | 291 | 0.2− | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2003 12 14 | 691 | 0.3+ | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2003 12 14 | 291 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.2− | | | | |

**(143842)∗ 2003 XY$_{24}$ = 1998 FR$_{133}$**

Discovered 2003 Dec. 1 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69599)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.23402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29625082 | $\omega$ | 318.71934 | | −0.96437276 | −0.26021396 | |
| $a$ | 2.2285874 | $\Omega$ | 206.31258 | | +0.26205084 | −0.91492233 | |
| $e$ | 0.0865067 | $i$ | 6.17561 | | +0.03625647 | −0.30855440 | |
| $P$ | 3.33 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.7− | 0.2− | 2003 12 01 | 704 | 0.1− | 1.1+ | 2006 09 30 | 691 | 0.4+ | 0.3− |
| 1998 03 20 | 704 | (2.3− | 0.6−) | 2003 12 01 | 704 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 1998 03 20 | 704 | 0.9− | 0.7− | 2003 12 01 | 704 | 0.5+ | 0.4+ | 2006 10 15 | 703 | 1.3− | 0.6− |
| 1998 03 20 | 704 | 0.0 | 1.9− | 2003 12 01 | 704 | 0.3+ | 0.8+ | 2006 10 15 | 703 | 1.0+ | 0.5− |
| 1998 03 24 | 704 | (0.1− | 2.2−) | 2003 12 21 | 691 | 0.1− | 0.4+ | 2006 10 15 | 703 | 0.0 | 1.3+ |
| 1998 03 24 | 704 | 0.6+ | 1.2+ | 2003 12 21 | 691 | 0.1− | 0.5+ | 2006 10 15 | 703 | 1.1− | 0.6− |
| 1998 03 24 | 704 | 0.1− | 0.1− | 2003 12 21 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.7− |
| 1998 03 24 | 704 | 1.1− | 0.3− | 2005 05 15 | G96 | 0.6− | 0.1− | 2006 10 17 | 703 | 1.1+ | 1.3− |
| 1998 03 24 | 704 | (2.1+ | 0.9−) | 2005 05 15 | G96 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.6+ | 0.7− |
| 1998 03 24 | 704 | (1.1+ | 2.4+) | 2005 05 15 | G96 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.7− | 0.7− |
| 1998 03 24 | 704 | 0.0 | 0.1− | 2005 05 15 | G96 | 0.2+ | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 1998 03 24 | 704 | 1.1+ | 0.2− | 2005 05 27 | 599 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 1998 03 24 | 704 | 0.1− | 0.4− | 2005 05 27 | 599 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.1− |
| 1998 03 29 | 704 | 1.4− | 1.5− | 2005 05 27 | 599 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 1998 03 29 | 704 | 0.2+ | 0.5− | 2005 05 27 | 599 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 1998 03 29 | 704 | 0.0 | 0.5− | 2005 06 09 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.1− | 1.2− | 2005 06 09 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.5− | 0.6− |
| 2003 11 19 | 699 | (2.9+ | 0.9−) | 2005 06 09 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2003 11 19 | 699 | 0.4+ | 0.6+ | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2003 11 19 | 699 | (0.2+ | 1.6+) | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2003 11 19 | 699 | 0.3+ | 0.8+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.5− |
| 2003 12 01 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 691 | 0.1− | 0.7− | 2006 11 21 | G96 | 0.2− | 0.1− |

**(143843)∗ 2003 XG$_{36}$ = 2001 FZ$_{118}$**

Discovered 2003 Dec. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69601)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.74812 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28390989 | $\omega$ | 148.42267 | | +0.16813928 | −0.97387691 | |
| $a$ | 2.2927095 | $\Omega$ | 291.51383 | | +0.86680852 | +0.21979686 | |
| $e$ | 0.1312758 | $i$ | 9.44204 | | +0.46943815 | −0.05703591 | |
| $P$ | 3.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.0 | 0.8− | 2003 12 03 | 704 | 0.7− | 0.3+ | 2006 08 27 | 699 | (0.8+ | 2.8+) |
| 1999 09 09 | 704 | 0.5+ | 0.5− | 2003 12 03 | 704 | 0.2− | 0.6+ | 2006 08 27 | 699 | 0.6− | 0.2+ |
| 1999 09 09 | 704 | 0.1+ | 0.1+ | 2003 12 03 | 704 | 0.8− | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.4− |
| 2001 03 02 | 691 | 0.2− | 0.1+ | 2003 12 03 | 704 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.0 | 1.1+ |
| 2001 03 02 | 691 | 0.1+ | 0.2− | 2003 12 17 | 704 | 0.4− | 0.6− | 2006 09 14 | 703 | 0.1− | 0.6− |
| 2001 03 02 | 691 | 0.1− | 0.0 | 2003 12 17 | 704 | 1.1+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.0 |
| 2001 03 20 | 608 | 0.8+ | 1.5+ | 2003 12 17 | 704 | 0.2+ | 0.3− | 2006 09 15 | 704 | 0.3+ | 0.7+ |
| 2001 03 20 | 608 | 0.7+ | 0.8+ | 2003 12 23 | 704 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.6− | 0.1+ |
| 2001 03 20 | 608 | 1.1+ | 0.1+ | 2003 12 23 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.0 |
| 2001 03 21 | 699 | 0.6− | 0.2+ | 2003 12 23 | 704 | 0.1− | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.9+ |
| 2001 03 21 | 699 | 0.1− | 0.1− | 2003 12 23 | 704 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.1− |
| 2001 03 21 | 699 | 1.4+ | 0.7− | 2003 12 23 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 644 | 0.2+ | 0.3+ |
| 2001 03 21 | 699 | 1.2− | 0.7+ | 2004 01 22 | 704 | 0.5− | 0.6− | 2006 09 16 | 644 | 0.0 | 0.5+ |
| 2003 11 19 | 704 | 0.9+ | 0.0 | 2004 01 22 | 704 | 0.6− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2003 11 19 | 704 | 0.2+ | 0.4− | 2004 01 22 | 704 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2003 11 19 | 704 | 0.4+ | 0.1− | 2004 01 22 | 704 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2003 11 19 | 704 | 0.4+ | 0.3− | 2006 08 27 | 699 | 1.3− | 0.2+ | | | | |
| 2003 11 19 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 1.0+ | 0.3+ | | | | |

**(143844)∗ 2003 XW$_{37}$ = 2001 BK$_{18}$**

Discovered 2003 Dec. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69603)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.26182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30046080 | $\omega$ | 11.61122 | | +0.76142274 | −0.64566477 | |
| $a$ | 2.2077209 | $\Omega$ | 28.86096 | | +0.58474675 | +0.64552646 | |
| $e$ | 0.1562210 | $i$ | 6.88945 | | +0.27983326 | +0.40793700 | |
| $P$ | 3.28 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.0 | 1.0+ | 2005 04 12 | G96 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.2− | 0.9+ |
| 2001 01 19 | 704 | 0.5− | 0.5+ | 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.1+ |
| 2001 01 19 | 704 | 0.4− | 0.3+ | 2005 04 12 | G96 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.1+ | 1.0+ |
| 2001 01 19 | 704 | 0.7+ | 1.1+ | 2005 04 14 | 691 | 0.2+ | 0.6+ | 2006 09 28 | 704 | 0.0 | 0.6+ |
| 2001 01 21 | 704 | 0.1+ | 0.9+ | 2005 04 14 | 691 | 0.3+ | 0.6+ | 2006 09 28 | 704 | 0.3− | 0.5+ |
| 2001 01 21 | 704 | 0.1− | 1.1+ | 2005 04 14 | 691 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.6+ | 0.2− |
| 2001 01 21 | 704 | 0.9+ | 1.0+ | 2006 08 28 | 699 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.3+ |
| 2001 01 21 | 704 | (1.6+ | 1.0+) | 2006 08 28 | 699 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 2001 01 21 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 699 | 0.5− | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2003 10 05 | 704 | 1.4+ | 0.7+ | 2006 08 28 | 699 | 0.6+ | 0.3− | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2003 10 05 | 704 | 0.2− | 0.6− | 2006 09 14 | 703 | 0.4− | 0.5− | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2003 10 05 | 704 | (0.9− | 1.9+) | 2006 09 14 | 703 | 1.0− | 0.1− | 2006 10 03 | G96 | 0.0 | 0.4− |
| 2003 10 05 | 704 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2003 10 05 | 704 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.5+ |
| 2003 12 04 | 704 | 0.1− | 0.4− | 2006 09 16 | 704 | 1.3+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.9− |
| 2003 12 04 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 0.8+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.1− |
| 2003 12 04 | 704 | 0.2− | 0.3− | 2006 09 16 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2003 12 04 | 704 | 0.4+ | 0.8+ | 2006 09 16 | 704 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2003 12 04 | 704 | 0.1+ | 0.5− | 2006 09 17 | 608 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2003 12 17 | 704 | 0.1− | 0.2+ | 2006 09 17 | 608 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2003 12 17 | 704 | 0.3− | 0.7+ | 2006 09 17 | 608 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2003 12 17 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2003 12 17 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2003 12 17 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 1.0− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2003 12 29 | 704 | 1.0+ | 0.4− | 2006 09 18 | 699 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2003 12 29 | 704 | 0.3+ | 0.5− | 2006 09 19 | 704 | 1.1− | 0.4− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2003 12 29 | 704 | 0.7− | 0.5+ | 2006 09 19 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 01 11 | 644 | 0.2− | 0.2+ | 2006 09 19 | 704 | 1.0− | 1.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 01 11 | 644 | 0.3− | 0.4+ | 2006 09 19 | 704 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 01 11 | 644 | 0.1− | 0.3+ | 2006 09 19 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2005 04 02 | G96 | 0.7+ | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2005 04 02 | G96 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.1− | 2006 10 24 | 644 | 0.4− | 0.0 |
| 2005 04 02 | G96 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.2− | 0.6+ | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2005 04 10 | G96 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 24 | 644 | 0.5− | 0.1+ |
| 2005 04 10 | G96 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.9+ |
| 2005 04 10 | G96 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2005 04 10 | G96 | 0.4+ | 0.3− | 2006 09 26 | 704 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.0 | 2.2− |
| 2005 04 11 | G96 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 1.1+ | 0.5+ | 2006 11 11 | 703 | 0.6+ | 0.2+ |
| 2005 04 11 | G96 | 0.2− | 0.4+ | 2006 09 28 | 704 | 0.5− | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.1− | 1.2+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2005 04 12 | G96 | 0.3+ | 0.1+ | 2006 09 28 | 704 | 0.5+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.2− |

**(143845)∗ 2003 XT$_{38}$**

Discovered 2003 Dec. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.43135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28071868 | $\omega$ | 19.67629 | | +0.34277163 | −0.93343522 | |
| $a$ | 2.3100524 | $\Omega$ | 50.42780 | | +0.84246148 | +0.25557749 | |
| $e$ | 0.0622704 | $i$ | 7.89358 | | +0.41565161 | +0.25175152 | |
| $P$ | 3.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 18 | 691 | 0.0 | 0.5+ | 2004 01 19 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.6+ | 0.4+ |
| 1998 06 18 | 691 | 0.5+ | 0.0 | 2005 03 13 | G96 | 0.9− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 1998 06 18 | 691 | 0.1+ | 0.8+ | 2005 03 13 | G96 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2003 11 24 | 704 | 0.1+ | 0.3+ | 2005 03 13 | G96 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.5+ | 0.2− |
| 2003 11 24 | 704 | 0.1− | 0.3+ | 2005 03 13 | G96 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.7+ |
| 2003 11 24 | 704 | 0.5− | 0.0 | 2005 04 07 | G96 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.7+ |
| 2003 12 04 | 704 | 0.5+ | 0.5+ | 2005 04 07 | G96 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2003 12 04 | 704 | 0.1− | 0.6+ | 2005 04 07 | G96 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 1.1− |
| 2003 12 04 | 704 | 0.4− | 0.3+ | 2005 04 07 | G96 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2003 12 04 | 704 | 0.1+ | 0.4− | 2005 05 11 | 691 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2003 12 23 | 704 | 0.0 | 0.4− | 2005 05 11 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | (2.3+ | 0.5+) |
| 2003 12 23 | 704 | 1.0+ | 1.0− | 2005 05 11 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | (1.2− | 2.2+) |
| 2003 12 23 | 704 | 0.1− | 0.5− | 2006 10 02 | 703 | 0.5− | 0.8+ | 2006 10 21 | 703 | (1.8+ | 1.2+) |
| 2003 12 23 | 704 | 0.9− | 0.1− | 2006 10 02 | 703 | 1.0− | 1.2− | 2006 10 21 | 703 | 1.1− | 0.6+ |
| 2003 12 28 | 704 | 0.0 | 1.3+ | 2006 10 02 | 703 | 0.0 | 0.5− | 2006 11 25 | G96 | 0.8+ | 0.1− |
| 2003 12 28 | 704 | 0.9− | 0.4− | 2006 10 02 | 703 | 0.0 | 1.0+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2003 12 28 | 704 | 1.0− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.6+ | 0.0 |
| 2004 01 19 | 691 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.7− | 0.4+ | | | | |

**(143846)∗ 2003 YA$_3$ = 1999 RK$_{125}$**

Discovered 2003 Dec. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57444)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.65089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28229388 | $\omega$ | 133.29061 | | +0.49507645 | −0.86800780 | |
| $a$ | 2.3014510 | $\Omega$ | 286.99789 | | +0.78513097 | +0.46578606 | |
| $e$ | 0.2238051 | $i$ | 2.29127 | | +0.37211378 | +0.17206340 | |
| $P$ | 3.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.2− | 0.3+ | 2004 01 24 | 704 | 0.4− | 0.8+ | 2006 08 30 | 704 | 0.2+ | 0.5+ |
| 1999 09 09 | 704 | 0.6− | 0.7− | 2004 01 24 | 704 | 0.1− | 0.8+ | 2006 08 30 | 704 | 0.5+ | 0.5+ |
| 1999 09 09 | 704 | 0.5− | 0.0 | 2004 01 24 | 704 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.3+ |
| 1999 09 09 | 704 | 0.6+ | 1.2+ | 2004 01 27 | 704 | 0.5+ | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.7+ |
| 1999 09 14 | 704 | 0.9− | 0.1− | 2004 01 27 | 704 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.5+ |
| 1999 09 14 | 704 | 0.3+ | 0.9− | 2004 01 27 | 704 | 0.0 | 0.4+ | 2006 09 01 | 704 | 0.1+ | 0.9− |
| 1999 09 14 | 704 | 0.7+ | 0.6− | 2004 01 27 | 704 | 0.2+ | 0.9+ | 2006 09 01 | 704 | 0.4+ | 0.9− |
| 1999 09 14 | 704 | 0.7+ | 0.8− | 2004 01 27 | 704 | 0.1− | 0.1+ | 2006 09 01 | 704 | 0.9+ | 0.1+ |
| 1999 09 14 | 704 | 0.3+ | 0.4− | 2004 01 28 | 704 | 0.1+ | 0.2+ | 2006 09 11 | 703 | 0.0 | 0.7− |
| 1999 10 08 | 704 | 0.4+ | 0.2+ | 2004 01 28 | 704 | 0.6+ | 0.0 | 2006 09 11 | 703 | 0.6− | 0.4+ |
| 1999 10 08 | 704 | 0.1− | 0.8+ | 2004 01 28 | 704 | 0.6+ | 0.1− | 2006 09 11 | 703 | 0.1− | 0.7− |
| 1999 10 08 | 704 | 0.3− | 0.5− | 2004 01 28 | 704 | 0.2− | 0.2+ | 2006 09 11 | 703 | 0.2− | 0.1− |
| 1999 10 08 | 704 | 0.1+ | 0.2+ | 2004 01 28 | 704 | 0.1− | 0.5− | 2006 09 17 | 703 | 0.8− | 0.4− |
| 2001 03 21 | 608 | 0.1− | 0.2+ | 2004 01 29 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | (2.6− | 3.2−) |
| 2001 03 21 | 608 | 0.2+ | 0.1+ | 2004 01 29 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 703 | (4.2+ | 1.5−) |
| 2001 03 21 | 608 | 0.9+ | 1.1+ | 2004 01 29 | 704 | 0.3+ | 0.2− | 2006 09 17 | 703 | 0.2− | 0.5− |
| 2003 10 29 | 704 | 1.1+ | 0.8− | 2004 01 29 | 704 | 0.7− | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.8+ |
| 2003 10 29 | 704 | 0.5+ | 0.2− | 2004 01 30 | 704 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.6+ |
| 2003 10 29 | 704 | 0.7+ | 1.4− | 2004 01 30 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.9+ |
| 2003 12 16 | 699 | 0.6− | 0.5+ | 2004 01 30 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | (0.2− | 1.6+) |
| 2003 12 16 | 691 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.6− | 0.3+ |
| 2003 12 16 | 699 | 0.2− | 0.8+ | 2006 08 15 | 644 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.0 |
| 2003 12 16 | 699 | 0.4+ | 0.1− | 2006 08 15 | 644 | 0.2+ | 0.3− | 2006 09 20 | 699 | 0.2− | 0.7− |
| 2003 12 16 | 691 | 0.6− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.6− | 0.7+ |
| 2003 12 16 | 699 | 0.7− | 0.6− | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2003 12 16 | 691 | 0.2− | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2003 12 19 | 704 | 0.4− | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2003 12 19 | 704 | 0.2+ | 0.2− | 2006 08 19 | A50 | 0.5− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2003 12 19 | 704 | 0.3+ | 0.4− | 2006 08 19 | A50 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.9− | 1.1− |
| 2003 12 19 | 704 | 0.3− | 0.3− | 2006 08 21 | 704 | 0.4− | 0.1+ | 2006 09 29 | 704 | 1.2− | 1.4− |
| 2003 12 19 | 704 | 0.3+ | 0.4− | 2006 08 21 | 704 | 1.1+ | 0.1+ | 2006 09 29 | 704 | 1.3+ | 0.4− |
| 2003 12 19 | 608 | 0.7+ | 0.7− | 2006 08 21 | 704 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.6+ | 0.3− |
| 2003 12 19 | 608 | 0.7+ | 0.5− | 2006 08 21 | 704 | 1.0− | 0.6+ | 2006 09 30 | 699 | 0.6+ | 1.1− |
| 2003 12 19 | 608 | 0.4+ | 0.5− | 2006 08 21 | 704 | 0.3− | 0.2− | 2006 09 30 | 699 | 0.0 | 0.4− |
| 2003 12 20 | 701 | 0.6− | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 699 | 0.7+ | 0.6+ |
| 2003 12 20 | 701 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 30 | 699 | 0.4− | 0.4+ |
| 2003 12 20 | 701 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.4+ | 0.1+ |
| 2003 12 21 | 704 | 0.3− | 1.0+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.4+ | 0.1− |
| 2003 12 21 | 704 | 0.7+ | 0.6− | 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.3+ | 0.1+ |
| 2003 12 21 | 704 | 0.1+ | 0.4− | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | (3.7− | 1.2+) |
| 2003 12 21 | 704 | 0.3+ | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.8+ |
| 2003 12 21 | 704 | 0.4+ | 1.0+ | 2006 08 28 | 703 | 0.9− | 0.2+ | 2006 11 11 | 703 | 1.3− | 0.1+ |
| 2004 01 21 | 704 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.2+ | 0.5+ | 2006 11 11 | 703 | (1.6− | 0.5+) |
| 2004 01 21 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.7− |
| 2004 01 21 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 01 21 | 704 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 01 21 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 0.6− | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2004 01 24 | 704 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.9+ | | | | |

**(143847)∗ 2003 YO$_4$ = 2001 AC$_{48}$**

Discovered 2003 Dec. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57446)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.12089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29692957 | $\omega$ | 146.98550 | | −0.88224380 | +0.46037447 | |
| $a$ | 2.2251899 | $\Omega$ | 60.72811 | | −0.45271169 | −0.77216392 | |
| $e$ | 0.1333399 | $i$ | 6.48325 | | −0.12922076 | −0.43797059 | |
| $P$ | 3.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 15 | 704 | 0.4+ | 0.0 | 2002 08 13 | 644 | 0.1− | 0.3+ | 2003 12 29 | 691 | 0.2+ | 0.0 |
| 2001 01 15 | 704 | (1.2+ | 1.9+) | 2003 12 17 | 691 | 0.1− | 0.1+ | 2005 02 11 | 809 | 0.1− | 0.2+ |
| 2001 01 15 | 704 | 0.4− | 1.1+ | 2003 12 17 | 691 | 0.5+ | 0.5− | 2005 02 11 | 809 | 0.0 | 0.2+ |
| 2001 01 15 | 704 | 0.0 | 0.5+ | 2003 12 17 | 691 | 0.3+ | 0.5− | 2005 02 11 | 809 | 0.2− | 0.1− |
| 2001 01 15 | 704 | 0.2+ | 0.4− | 2003 12 18 | 704 | 0.2+ | 0.1− | 2005 02 16 | 809 | 0.2+ | 0.2+ |
| 2001 01 15 | 704 | 1.0+ | 0.3+ | 2003 12 18 | 704 | 0.7− | 0.4+ | 2005 02 16 | 809 | 0.1− | 0.2+ |
| 2001 01 15 | 704 | 0.5− | 0.1+ | 2003 12 18 | 704 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.6+ | 1.0− |
| 2001 01 15 | 704 | 0.2+ | 0.1− | 2003 12 19 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2001 01 18 | 704 | 0.3− | 0.1+ | 2003 12 19 | 704 | 0.2− | 1.0+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 01 18 | 704 | 0.1+ | 0.4− | 2003 12 19 | 704 | 0.7− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 01 18 | 704 | 0.6− | 0.1+ | 2003 12 21 | 704 | 1.2− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2001 01 18 | 704 | 0.7− | 0.8− | 2003 12 21 | 704 | 0.3− | 0.9+ | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 2001 02 16 | 704 | 1.2+ | 0.5+ | 2003 12 21 | 704 | 0.5− | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.5+ |
| 2001 02 16 | 704 | 0.4− | 0.4+ | 2003 12 21 | 704 | 0.6− | 0.7+ | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2001 02 16 | 704 | 1.1+ | 1.0− | 2003 12 21 | 704 | 0.8− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2001 02 16 | 704 | 0.3− | 0.1+ | 2003 12 22 | 704 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 07 29 | 644 | 0.4− | 0.2+ | 2003 12 22 | 704 | 0.4+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2002 07 29 | 644 | 0.2− | 0.0 | 2003 12 22 | 704 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 07 29 | 644 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.4− | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2002 08 13 | 644 | 0.2− | 0.3+ | 2003 12 29 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2002 08 13 | 644 | 0.3+ | 0.6+ | 2003 12 29 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.2− |

**(143848)∗ 2003 YZ$_5$ = 2002 LM$_{20}$**

Discovered 2003 Dec. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57448)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.26744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27872454 | $\omega$ | 69.66782 | | +0.98186801 | −0.10296277 | |
| $a$ | 2.3210575 | $\Omega$ | 295.95784 | | +0.01796298 | +0.88639218 | |
| $e$ | 0.1874454 | $i$ | 10.19653 | | +0.18871286 | +0.45133975 | |
| $P$ | 3.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.1− | 0.4− | 2003 12 21 | 704 | 0.4− | 1.0− | 2006 09 19 | 703 | 0.2− | 0.5+ |
| 1999 10 14 | 704 | 0.5− | 0.2− | 2003 12 29 | 699 | 1.1− | 0.7+ | 2006 09 19 | 703 | 0.2+ | 0.1+ |
| 1999 10 14 | 704 | 0.7+ | 0.8− | 2003 12 29 | 699 | 0.7+ | 1.2+ | 2006 09 19 | 704 | 0.5+ | 0.2+ |
| 1999 10 14 | 704 | 0.2− | 1.8− | 2003 12 29 | 699 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.3− | 0.3+ |
| 1999 10 14 | 704 | 0.2+ | 0.8− | 2003 12 29 | 699 | 0.2+ | 0.6+ | 2006 09 19 | 704 | 0.5+ | 0.3+ |
| 1999 11 01 | 704 | 0.7− | 0.2− | 2004 01 05 | 703 | 0.4+ | 0.0 | 2006 09 19 | 704 | 0.1+ | 0.5+ |
| 1999 11 01 | 704 | 0.2− | 0.0 | 2004 01 05 | 703 | 0.7− | 0.1− | 2006 09 25 | 703 | 0.2− | 0.3+ |
| 1999 11 01 | 704 | 0.4− | 0.4+ | 2004 01 05 | 703 | 0.1− | 0.5+ | 2006 09 25 | 703 | 0.3− | 0.4− |
| 1999 11 01 | 704 | 0.0 | 0.2+ | 2004 01 05 | 703 | (2.1+ | 0.9+) | 2006 09 25 | 703 | 0.2− | 0.2− |
| 1999 11 01 | 704 | 0.2− | 0.5+ | 2004 01 12 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.3− | 0.3+ |
| 1999 12 12 | 704 | 0.1− | 0.8− | 2004 01 12 | 644 | 0.2+ | 0.0 | 2006 10 02 | 704 | 0.1− | 1.4− |
| 1999 12 12 | 704 | 0.6+ | 0.5− | 2004 01 12 | 644 | 0.0 | 0.2− | 2006 10 02 | 704 | 0.3+ | 0.0 |
| 1999 12 12 | 704 | 0.1− | 0.1− | 2004 01 16 | 644 | 0.2+ | 0.0 | 2006 10 02 | 704 | 1.0+ | 0.1− |
| 1999 12 12 | 704 | 0.8+ | 0.4+ | 2004 01 16 | 644 | 0.2+ | 0.1+ | 2006 10 02 | 704 | 1.0+ | 1.3+ |
| 1999 12 12 | 704 | 1.4+ | 0.3+ | 2004 01 16 | 644 | 0.3+ | 0.0 | 2006 10 02 | 703 | (0.1+ | 1.8+) |
| 1999 12 31 | 699 | 0.2− | 0.0 | 2004 01 17 | 644 | 0.5+ | 0.0 | 2006 10 02 | 703 | 1.1+ | 1.4+ |
| 1999 12 31 | 699 | 0.1− | 1.0+ | 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 10 02 | 703 | (1.7+ | 0.9+) |
| 1999 12 31 | 699 | 0.7− | 0.5+ | 2004 01 17 | 644 | 0.4+ | 0.0 | 2006 10 02 | 703 | 0.1+ | 0.7+ |
| 2002 06 06 | 704 | 0.6− | 0.6+ | 2004 01 19 | 699 | 0.4− | 0.3− | 2006 10 03 | 703 | 0.4− | 0.2+ |
| 2002 06 06 | 704 | 0.4+ | 0.6+ | 2004 01 19 | 699 | 0.5− | 0.1− | 2006 10 03 | 703 | 1.0− | 0.2+ |
| 2002 06 06 | 704 | 0.2− | 0.8+ | 2004 01 19 | 699 | 0.2− | 0.7− | 2006 10 03 | 703 | 0.2− | 0.3− |
| 2002 06 08 | 704 | 0.2− | 0.3+ | 2004 01 19 | 699 | 1.1− | 0.2− | 2006 10 03 | 703 | 0.6+ | 0.0 |
| 2002 06 08 | 704 | 0.6+ | 0.5+ | 2004 01 19 | 703 | 0.3+ | 0.7− | 2006 10 22 | 644 | 0.0 | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 0.4− | 0.5+ | 2004 01 19 | 703 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 | |
| 2002 07 05 | 704 | 0.7− | 0.0 | 2004 01 19 | 703 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ | |
| 2002 07 05 | 704 | 0.4− | 0.2+ | 2004 01 19 | 703 | 0.8− | 0.3+ | 2006 10 23 | 703 | 0.3− | 0.3+ | |
| 2002 07 05 | 704 | 0.1− | 0.6+ | 2004 01 21 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 0.0 | 0.4+ | |
| 2002 07 05 | 704 | 0.1− | 0.7+ | 2004 01 21 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 703 | 0.2+ | 0.4+ | |
| 2003 11 18 | 291 | 0.3− | 0.1+ | 2004 01 21 | 704 | 0.1+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2003 11 18 | 291 | 0.3+ | 0.2+ | 2004 01 21 | 704 | 0.3+ | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.0 | |
| 2003 11 18 | 291 | 0.3+ | 0.2+ | 2004 01 21 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1+ | |
| 2003 12 16 | 699 | (2.1+ | 0.1−) | 2004 01 24 | 704 | 0.4+ | 0.1− | 2006 10 29 | 703 | 0.1− | 1.5+ | |
| 2003 12 16 | 699 | 0.9+ | 0.6− | 2004 01 24 | 704 | 0.8+ | 0.1− | 2006 10 29 | 703 | (0.3− | 1.7+) | |
| 2003 12 16 | 699 | 0.0 | 0.3+ | 2004 01 24 | 704 | 0.7+ | 0.2+ | 2006 10 29 | 703 | 0.6− | 0.1− | |
| 2003 12 16 | 699 | 1.0− | 0.4− | 2004 01 24 | 704 | 0.6+ | 0.0 | 2006 10 29 | 703 | 0.4+ | 0.3− | |
| 2003 12 18 | 291 | 0.6− | 0.5+ | 2004 01 30 | 704 | 0.7− | 0.3− | 2006 10 31 | 703 | 0.1− | 0.1+ | |
| 2003 12 18 | 291 | 0.9− | 0.5+ | 2004 01 30 | 704 | 0.6− | 0.1+ | 2006 10 31 | 703 | 0.0 | 0.0 | |
| 2003 12 18 | 291 | (2.1− | 0.3+) | 2004 01 30 | 704 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.1− | 0.0 | |
| 2003 12 19 | 704 | 0.3+ | 0.3+ | 2004 01 30 | 704 | 1.0− | 0.5+ | 2006 10 31 | 703 | 0.1− | 0.3− | |
| 2003 12 19 | 704 | 0.5+ | 0.1− | 2004 02 16 | 704 | 0.6− | 0.1− | 2006 11 16 | 703 | 0.0 | 0.3− | |
| 2003 12 19 | 704 | 0.8+ | 0.2− | 2004 02 16 | 704 | 0.2+ | 0.3− | 2006 11 16 | 703 | 0.2− | 0.3− | |
| 2003 12 19 | 704 | 0.7+ | 0.1− | 2004 02 16 | 704 | 1.1+ | 0.0 | 2006 11 16 | 703 | 0.5− | 0.4− | |
| 2003 12 19 | 704 | 0.4+ | 0.1+ | 2004 02 16 | 704 | 1.4+ | 0.7+ | 2006 11 16 | 703 | 1.1− | 0.3− | |
| 2003 12 21 | 704 | 1.3+ | 0.3+ | 2004 02 22 | 704 | 1.3+ | 0.1+ | 2006 11 22 | 703 | 0.2+ | 0.4− | |
| 2003 12 21 | 704 | 0.5+ | 0.0 | 2004 02 22 | 704 | 0.9+ | 0.4− | 2006 11 22 | 703 | 0.1− | 0.5− | |
| 2003 12 21 | 704 | 0.6+ | 0.2+ | 2004 02 22 | 704 | 1.0− | 1.2− | 2006 11 22 | 703 | 0.4− | 0.4− | |
| 2003 12 21 | 704 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.6− | |

**(143849)∗ 2003 YG$_6$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.62534 | | (2000.0) | | | |
| $n$ | 0.31471565 | $\omega$ | 344.38543 | | +0.88983236 | +0.45580708 |
| $a$ | 2.1405423 | $\Omega$ | 348.42975 | | −0.40666579 | +0.77141896 |
| $e$ | 0.1005569 | $i$ | 5.99137 | | −0.20693310 | +0.44401880 |
| $P$ | 3.13 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 27 | 691 | 0.0 | 0.2+ | 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.4+ | 1.1− | |
| 1992 01 27 | 691 | 0.6+ | 0.4− | 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.3− | 0.2− | |
| 1992 01 27 | 691 | 0.4− | 0.2+ | 2003 12 29 | 704 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.1+ | |
| 1992 02 24 | 691 | 0.6− | 0.3− | 2003 12 29 | 704 | 0.2+ | 0.8+ | 2006 10 27 | 703 | 0.2− | 0.5− | |
| 1992 02 24 | 691 | 0.2− | 0.5− | 2003 12 29 | 704 | (0.0 | 2.3+) | 2006 10 27 | 703 | 0.1− | 0.2− | |
| 1992 02 24 | 691 | 0.0 | 0.0 | 2003 12 29 | 704 | (0.8− | 1.9+) | 2006 11 08 | 644 | 0.3− | 0.4+ | |
| 2002 05 10 | 644 | 0.8+ | 0.1− | 2003 12 29 | 704 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.4+ | |
| 2002 05 10 | 644 | 0.6+ | 0.2− | 2005 04 03 | 644 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | |
| 2002 05 10 | 644 | 0.4+ | 0.3− | 2005 04 03 | 644 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.4− | 0.1− | |
| 2003 11 19 | 704 | 0.5+ | 0.3− | 2005 04 03 | 644 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.4+ | 0.2+ | |
| 2003 11 19 | 704 | 0.3+ | 0.3+ | 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.4− | 1.4+ | |
| 2003 11 19 | 704 | 0.7+ | 0.2+ | 2005 04 06 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 0.2− | 0.2+ | |
| 2003 11 19 | 704 | 0.6+ | 0.2+ | 2005 04 06 | 691 | 0.4+ | 0.1+ | 2006 11 15 | 703 | (1.8− | 0.0 ) | |
| 2003 11 24 | 704 | (0.7− | 5.6−) | 2005 04 11 | 699 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.5+ | 0.5+ | |
| 2003 11 24 | 704 | 1.0− | 0.2+ | 2005 04 11 | 699 | 0.9− | 0.9+ | 2006 11 15 | 703 | (2.7+ | 1.1+) | |
| 2003 11 24 | 704 | (1.9− | 3.4−) | 2005 04 11 | 699 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.5+ | 0.6+ | |
| 2003 11 24 | 704 | 0.3+ | 0.0 | 2005 04 11 | 699 | 0.6− | 0.3+ | 2006 11 16 | 704 | 1.0− | 0.4+ | |
| 2003 12 03 | 704 | 0.1− | 0.4− | 2005 04 15 | 691 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.7− | 0.7+ | |
| 2003 12 03 | 704 | 1.1− | 0.7− | 2005 04 15 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.2+ | |
| 2003 12 03 | 704 | 0.2+ | 0.5+ | 2005 04 15 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.0 | 1.4+ | |
| 2003 12 03 | 704 | 0.0 | 0.1− | 2005 04 18 | 703 | (2.2− | 1.8+) | 2006 11 16 | 704 | 0.4− | 0.8+ | |
| 2003 12 17 | 704 | 0.3+ | 0.4+ | 2005 04 18 | 703 | 0.9+ | 1.2+ | 2006 11 22 | 703 | (2.3− | 0.0 ) | |
| 2003 12 17 | 704 | 0.2+ | 0.3− | 2005 04 18 | 703 | 0.2− | 0.7+ | 2006 11 22 | 703 | 0.2− | 0.5+ | |
| 2003 12 17 | 704 | 0.3+ | 0.2+ | 2005 04 18 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 1.0− | 0.0 | |
| 2003 12 17 | 704 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.8− | 0.1− | 2006 11 22 | 703 | 0.2+ | 0.6+ | |
| 2003 12 17 | 704 | 0.4− | 1.2− | 2006 10 19 | 703 | 0.1+ | 0.6− | | | | | |
| 2003 12 18 | 691 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.9− | 0.1+ | | | | | |

**(143850)∗ 2003 YV$_6$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 296.96592 | | (2000.0) | | | |
| $n$ | 0.28119006 | $\omega$ | 31.67525 | | +0.18649065 | −0.97923421 |
| $a$ | 2.3074701 | $\Omega$ | 47.70790 | | +0.87744712 | +0.12960755 |
| $e$ | 0.1292008 | $i$ | 6.17030 | | +0.44193641 | +0.15589178 |
| $P$ | 3.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 1.1+ | 0.7− | 2004 01 19 | 704 | (4.0− | 0.2+) | 2006 10 09 | 644 | 0.1− | 0.3+ | |
| 2001 03 26 | 704 | 0.4+ | 0.0 | 2004 01 19 | 704 | (3.2− | 0.1+) | 2006 10 09 | 644 | 0.2− | 0.0 | |
| 2001 03 26 | 704 | 0.4+ | 0.9+ | 2004 01 19 | 704 | (3.7− | 0.3−) | 2006 10 10 | 644 | 0.1+ | 0.2+ | |
| 2001 03 26 | 704 | 1.1+ | 1.2+ | 2005 02 16 | 809 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.4− | 0.1− | |
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2005 02 16 | 809 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.3− | 0.0 | |
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2005 02 16 | 809 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.4− | 0.2+ | |
| 2003 11 20 | 704 | 0.6+ | 0.0 | 2006 08 28 | 699 | (0.2− | 1.7−) | 2006 10 12 | 644 | 0.0 | 0.4+ | |
| 2003 11 20 | 704 | 1.4− | 1.0+ | 2006 08 28 | 699 | 1.2− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.0 | |
| 2003 11 20 | 704 | 1.0+ | 0.5− | 2006 08 28 | 699 | 1.4− | 0.2+ | 2006 10 16 | 291 | 0.2+ | 0.4+ | |
| 2003 11 20 | 704 | 1.1+ | 0.1+ | 2006 08 28 | 699 | 1.0+ | 0.2+ | 2006 10 16 | 291 | 0.1+ | 0.4+ | |
| 2003 12 17 | 704 | 0.2+ | 0.3− | 2006 09 12 | 703 | 0.4− | 0.1+ | 2006 10 16 | 291 | 0.3+ | 0.4+ | |
| 2003 12 17 | 704 | 0.6− | 0.6− | 2006 09 12 | 703 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.2− | 0.2+ | |
| 2003 12 17 | 704 | 0.4− | 0.2− | 2006 09 12 | 703 | 0.6− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.1− | |
| 2003 12 17 | 704 | 0.7− | 0.2+ | 2006 09 12 | 703 | 0.4+ | 0.7− | 2006 10 22 | 644 | 0.4− | 0.2+ | |
| 2003 12 18 | 691 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.6+ | 2006 10 22 | 703 | 0.6− | 1.4+ | |
| 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.1− | 0.6− | 2006 10 22 | 703 | 1.2− | 0.3− | |
| 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.6− | 0.6+ | |
| 2003 12 23 | 704 | (1.2− | 2.0+) | 2006 09 18 | 703 | (0.9− | 1.7−) | 2006 10 22 | 703 | 0.1+ | 0.2+ | |
| 2003 12 23 | 704 | 0.1+ | 0.6− | 2006 09 26 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2003 12 23 | 704 | 1.4− | 0.9+ | 2006 09 26 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.3+ | |
| 2003 12 23 | 704 | (1.6− | 0.7+) | 2006 09 26 | 704 | (0.5+ | 2.4+) | 2006 10 23 | 644 | 0.1− | 0.3− | |
| 2003 12 23 | 704 | (2.0− | 0.6+) | 2006 09 26 | 704 | 0.4+ | 1.0+ | 2006 11 23 | G96 | 0.0 | 0.4− | |
| 2004 01 17 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1− | |
| 2004 01 17 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.6− | |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.4− | |
| 2004 01 19 | 704 | (3.4− | 1.0−) | 2006 09 30 | 703 | (1.8− | 0.3+) | | | | | |
| 2004 01 19 | 704 | (3.7− | 0.7−) | 2006 10 09 | 644 | 0.6− | 0.2+ | | | | | |

**(143851)∗ 2003 YK$_7$ = 1999 TB$_{297}$**

Discovered 2003 Dec. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57449)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.07809 | | (2000.0) | | | |
| $n$ | 0.28669578 | $\omega$ | 61.83259 | | −0.21861010 | −0.97178048 |
| $a$ | 2.2778328 | $\Omega$ | 41.10555 | | +0.84136366 | −0.23370939 |
| $e$ | 0.1555677 | $i$ | 7.74612 | | +0.49428415 | −0.03197845 |
| $P$ | 3.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 703 | 0.5− | 0.4+ | 2004 02 13 | 699 | 0.8+ | 0.1− | 2006 11 09 | 691 | 0.2− | 0.3+ | |
| 1999 10 02 | 703 | 1.0− | 0.6+ | 2004 02 13 | 699 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.0 | |
| 1999 10 02 | 703 | 0.6− | 0.4+ | 2004 02 14 | 704 | 0.7+ | 0.6+ | 2006 11 09 | 691 | 0.1− | 0.1+ | |
| 1999 10 02 | 703 | 0.5+ | 0.6+ | 2004 02 14 | 704 | 0.8+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 | |
| 1999 10 09 | 704 | 0.2+ | 0.5− | 2004 02 14 | 704 | 0.2+ | 0.8+ | 2006 11 10 | 683 | 0.3+ | 0.8− | |
| 1999 10 09 | 704 | 0.4+ | 0.1+ | 2004 02 14 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 683 | 0.1+ | 1.2− | |
| 1999 10 09 | 704 | 0.1+ | 0.3+ | 2004 02 14 | 704 | 0.5+ | 1.0+ | 2006 11 10 | 683 | 1.2− | 1.1− | |
| 1999 10 09 | 704 | 0.0 | 0.6− | 2004 03 20 | 703 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1+ | |
| 1999 10 09 | 704 | 0.3+ | 0.0 | 2004 03 20 | 703 | 0.4− | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.1+ | |
| 2001 04 18 | 704 | 1.2+ | 0.4+ | 2004 03 20 | 703 | 0.7+ | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.0 | |
| 2001 04 18 | 704 | 0.5+ | 1.2+ | 2004 03 20 | 703 | 0.8+ | 1.0+ | 2006 11 11 | 683 | 0.1+ | 0.2− | |
| 2001 04 18 | 704 | 1.0+ | 0.4+ | 2004 03 23 | 704 | 0.4− | 0.3+ | 2006 11 11 | 683 | 0.3+ | 0.1+ | |
| 2001 04 27 | 608 | 0.6− | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 683 | 1.0+ | 0.1− | |
| 2001 04 27 | 608 | 1.0− | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.4− | |
| 2001 04 27 | 608 | 1.0− | 0.0 | 2004 03 23 | 704 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.6− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.1− | 0.9+ | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.1− | | |
| 2002 08 13 | 644 | 0.0 | 0.4+ | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.6− | | |
| 2002 08 13 | 644 | 0.1− | 0.3+ | 2004 04 16 | 645 | 0.1+ | 0.1− | 2006 11 13 | 683 | 1.1− | 0.9− | | |
| 2003 11 19 | 704 | 0.3+ | 0.3+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 11 13 | 683 | 0.3+ | 1.4− | | |
| 2003 11 19 | 704 | 0.4− | 1.4+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 13 | 683 | 1.0− | 1.0− | | |
| 2003 11 19 | 704 | 1.0− | 0.6− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 14 | 683 | 0.0 | 0.5− | | |
| 2003 11 19 | 704 | 1.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 14 | 683 | 0.5+ | 0.4+ | | |
| 2003 12 04 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 14 | 683 | 0.9+ | 0.9+ | | |
| 2003 12 04 | 704 | 0.5− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 15 | 683 | 0.0 | 0.0 | | |
| 2003 12 04 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 1.2− | 0.1− | 2006 11 15 | 683 | 0.4+ | 0.1+ | | |
| 2003 12 04 | 704 | 0.8+ | 0.8+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 11 15 | 683 | 0.2− | 0.8+ | | |
| 2003 12 17 | 644 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1− | 0.2− | | |
| 2003 12 17 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 683 | 0.2+ | 0.9− | 2006 11 17 | 703 | 0.3− | 0.3− | | |
| 2003 12 17 | 644 | 0.4+ | 0.3+ | 2006 10 16 | 683 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4+ | | |
| 2003 12 17 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 683 | 0.5+ | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.3+ | | |
| 2003 12 17 | 644 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.2− | 0.6+ | | |
| 2003 12 17 | 644 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.1+ | | |
| 2003 12 18 | 703 | (2.1− | 0.3+) | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.1− | 0.4− | | |
| 2003 12 18 | 703 | 0.3− | 0.7− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.4+ | | |
| 2003 12 18 | 703 | (2.3− | 1.1−) | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.8+ | 1.2+ | | |
| 2003 12 18 | 703 | (1.9− | 0.1−) | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.1− | | |
| 2003 12 18 | 704 | 0.1+ | 0.9+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.3+ | | |
| 2003 12 18 | 704 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2003 12 18 | 704 | 0.0 | 0.2− | 2006 10 20 | 683 | 0.4− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.1− | | |
| 2003 12 18 | 704 | 0.4+ | 0.3+ | 2006 10 20 | 683 | 0.7− | 0.7− | 2006 11 19 | 704 | 0.4+ | 0.2+ | | |
| 2003 12 28 | 704 | 0.7+ | 0.5− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.6+ | | |
| 2003 12 28 | 704 | 0.8+ | 0.2− | 2006 10 20 | 683 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.2− | | |
| 2003 12 28 | 704 | 0.3+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.1+ | | |
| 2003 12 28 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.6+ | | |
| 2003 12 28 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.9+ | | |
| 2003 12 30 | 704 | 0.1− | 0.2− | 2006 10 22 | 683 | 0.2− | 0.1+ | 2006 11 22 | 691 | (2.3+ | 2.0−) | | |
| 2003 12 30 | 704 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.5− | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.0 | | |
| 2003 12 30 | 704 | 0.1+ | 0.1− | 2006 10 22 | 683 | 0.2+ | 0.9− | 2006 11 22 | 691 | 0.5+ | 0.1+ | | |
| 2003 12 30 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 683 | 0.8+ | 0.5+ | 2006 11 22 | 683 | 0.6+ | 0.6+ | | |
| 2003 12 30 | 704 | 0.3− | 0.2+ | 2006 10 23 | 683 | (1.6− | 0.5−) | 2006 11 22 | 683 | 0.9+ | 1.1− | | |
| 2004 01 13 | 699 | 0.5− | 0.0 | 2006 10 23 | 683 | 1.4− | 1.2− | 2006 11 22 | 683 | 0.4+ | 0.5+ | | |
| 2004 01 13 | 699 | 0.1+ | 0.0 | 2006 10 23 | 683 | 0.5− | 0.9− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2004 01 13 | 699 | 0.5+ | 0.4+ | 2006 10 27 | 683 | 0.6+ | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2004 01 13 | 699 | 0.6+ | 0.2− | 2006 10 27 | 683 | 1.2+ | 0.2− | 2006 11 23 | 691 | 0.4− | 0.4− | | |
| 2004 01 31 | 704 | 0.4− | 0.9+ | 2006 10 27 | 683 | 0.3+ | 1.5+ | 2006 11 23 | 683 | 0.5+ | 1.2− | | |
| 2004 01 31 | 704 | 0.3− | 0.1− | 2006 10 28 | 704 | (2.1− | 0.4+) | 2006 11 23 | 683 | (0.6− | 1.6−) | | |
| 2004 01 31 | 704 | 0.5− | 0.3+ | 2006 10 28 | 683 | 0.3+ | 0.2− | 2006 11 23 | 683 | 0.9− | 0.2− | | |
| 2004 01 31 | 704 | 0.0 | 0.3− | 2006 10 28 | 704 | (2.0− | 0.0 ) | 2006 11 26 | 704 | 0.1− | 0.1− | | |
| 2004 01 31 | 704 | 0.2− | 0.0 | 2006 10 28 | 683 | 0.2− | 0.1− | 2006 11 26 | 704 | 2.3+ | 2.1+ | | |
| 2004 01 31 | 599 | 0.7+ | 0.4− | 2006 10 28 | 704 | (1.6− | 1.2−) | 2006 11 26 | 704 | 0.1+ | 0.3+ | | |
| 2004 01 31 | 599 | 0.6− | 0.4− | 2006 10 28 | 683 | 0.2− | 0.6+ | 2006 11 26 | 704 | 0.8+ | 0.3+ | | |
| 2004 01 31 | 599 | 0.6+ | 0.5− | 2006 10 28 | 704 | 0.2− | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.2+ | | |
| 2004 01 31 | 599 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 02 | 704 | 0.8− | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 02 | 704 | 1.3− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.1− | | |
| 2004 02 02 | 704 | 1.2− | 0.4+ | 2006 10 31 | 683 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.4− | 0.0 | | |
| 2004 02 02 | 704 | 1.0− | 0.4+ | 2006 10 31 | 683 | 0.3+ | 0.8− | 2006 11 28 | 704 | 0.4+ | 0.1− | | |
| 2004 02 02 | 704 | 1.4− | 0.2+ | 2006 10 31 | 683 | (1.9− | 0.6+) | 2006 11 28 | 704 | 0.2+ | 0.1− | | |
| 2004 02 13 | 699 | 0.3+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.9+ | | |
| 2004 02 13 | 699 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.0 | 0.0 | | | | | | |

**(143852)∗ 2003 YR$_7$ = 2000 AN$_{257}$ = 2001 FS$_{31}$**

Discovered 2003 Dec. 20 by R. Clingan at Area 52 Observatory, Nashville.

Id. A. Doppler (*MPO* 69605, *MPO* 76293)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.39884 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26664404 | $\omega$ | 93.44558 | | −0.92035266 | +0.38412611 | |
| $a$ | 2.3906434 | $\Omega$ | 109.15460 | | −0.38255866 | −0.84522316 | |
| $e$ | 0.1161235 | $i$ | 4.46085 | | −0.08123947 | −0.37154400 | |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 17 | 691 | 0.0 | 0.1− | 2003 12 30 | 460 | 0.7+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 1992 12 17 | 691 | 0.6+ | 0.3+ | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 460 | 0.3− | 0.2− |
| 1992 12 17 | 691 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 2000 01 12 | 691 | 0.2− | 0.2+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 22 | 460 | 1.0+ | 0.2+ |
| 2000 01 12 | 691 | 0.7− | 0.2+ | 2005 06 12 | 460 | 1.1+ | 0.2+ | 2006 10 22 | 460 | 0.1+ | 1.1+ |
| 2000 01 12 | 691 | 0.4− | 0.2− | 2005 06 12 | 460 | (2.2+ | 0.9+) | 2006 10 22 | 460 | 1.5+ | 1.2− |
| 2001 03 22 | 691 | 0.9− | 0.2+ | 2005 06 12 | 460 | 0.0 | 0.1− | 2006 10 23 | 460 | 0.1+ | 0.8− |
| 2001 03 22 | 691 | 0.4− | 0.0 | 2005 07 04 | 460 | 0.4− | 0.1− | 2006 10 23 | 460 | 0.2+ | 0.1− |
| 2001 03 22 | 691 | 1.0− | 0.3+ | 2005 07 04 | 460 | 0.6+ | 0.5− | 2006 10 23 | 460 | (2.1+ | 1.1−) |
| 2001 03 24 | 691 | 0.8+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.1+ | 2006 10 24 | 460 | 0.1+ | 0.3+ |
| 2001 03 24 | 691 | 0.5+ | 0.0 | 2006 10 02 | G96 | (0.0 | 1.8−) | 2006 10 24 | 460 | 0.0 | 0.2+ |
| 2001 03 24 | 691 | 0.7+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.5− | 0.4+ |
| 2003 12 20 | 460 | 0.6+ | 0.7− | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2003 12 20 | 460 | 0.7− | 0.4− | 2006 10 21 | 460 | 0.7− | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.3+ |
| 2003 12 21 | 460 | 0.9+ | 0.4− | 2006 10 21 | 703 | 1.1+ | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.4+ |
| 2003 12 21 | 460 | 1.1+ | 1.0− | 2006 10 21 | 460 | 0.4− | 1.0+ | | | | |
| 2003 12 30 | 460 | 0.4− | 0.3− | 2006 10 21 | 703 | 1.1− | 0.0 | | | | |

**(143853)∗ 2003 YX$_7$ = 1999 VC$_{200}$**

Discovered 2003 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57450)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.66141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26639656 | $\omega$ | 315.70513 | | −0.04716331 | −0.99119326 | |
| $a$ | 2.3921238 | $\Omega$ | 136.54864 | | +0.95916202 | −0.07952648 | |
| $e$ | 0.1905631 | $i$ | 10.36526 | | +0.27889754 | +0.10588414 | |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.5− | 1.1+ | 2003 12 22 | 704 | 0.4− | 1.1+ | 2004 02 22 | 704 | 0.4+ | 0.3+ |
| 1999 10 09 | 704 | 0.5− | 0.9− | 2003 12 22 | 704 | 0.3− | 0.3+ | 2004 02 22 | 704 | 0.6− | 0.9+ |
| 1999 10 09 | 704 | 1.0+ | 0.4+ | 2004 01 13 | 699 | 0.4− | 0.2− | 2004 02 22 | 704 | 0.4+ | 0.6+ |
| 1999 10 09 | 704 | 0.4+ | 0.1+ | 2004 01 13 | 699 | 0.3− | 0.5− | 2004 02 26 | 704 | 0.2− | 0.2+ |
| 1999 11 05 | 703 | 0.5− | 0.2+ | 2004 01 13 | 699 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.2− |
| 1999 11 05 | 703 | 1.1− | 0.1− | 2004 01 13 | 699 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.4− | 0.4+ |
| 1999 11 05 | 703 | 0.3− | 0.5+ | 2004 01 17 | 608 | 1.4+ | 0.8+ | 2004 02 26 | 704 | 0.5− | 0.4+ |
| 1999 11 05 | 703 | 0.3− | 0.5− | 2004 01 17 | 608 | 1.8+ | 1.3+ | 2004 02 26 | 704 | 0.0 | 0.5+ |
| 1999 11 07 | 704 | 0.1− | 0.3+ | 2004 01 17 | 608 | 1.3+ | 1.3+ | 2004 03 18 | 704 | 0.2+ | 0.4+ |
| 1999 11 07 | 704 | 1.1+ | 0.4+ | 2004 01 19 | 699 | 0.5− | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.5− |
| 1999 11 07 | 704 | 0.5+ | 0.4− | 2004 01 19 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.2− | 0.3− |
| 1999 11 07 | 704 | 0.4− | 0.6− | 2004 01 19 | 691 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.1+ |
| 1999 11 07 | 704 | 0.7+ | 0.5+ | 2004 01 19 | 699 | 0.2− | 0.2− | 2005 06 11 | 691 | 0.1− | 0.5+ |
| 1999 11 07 | 704 | 0.9− | 0.6− | 2004 01 19 | 691 | 0.3− | 0.1+ | 2005 06 11 | 691 | 0.3− | 0.4+ |
| 1999 11 07 | 704 | 0.3+ | 1.1− | 2004 01 19 | 699 | 0.9− | 0.1+ | 2005 06 11 | 691 | 0.1− | 0.3+ |
| 1999 11 07 | 704 | 0.6+ | 0.3− | 2004 01 19 | 699 | 0.9− | 0.2− | 2005 06 27 | 691 | 0.0 | 0.1+ |
| 2001 04 01 | 691 | 0.6+ | 0.1− | 2004 01 24 | 704 | 0.5+ | 0.3− | 2005 06 27 | 691 | 0.3+ | 0.4+ |
| 2001 04 01 | 691 | 0.0 | 0.5+ | 2004 01 24 | 704 | 0.5+ | 0.1+ | 2005 06 27 | 691 | 0.0 | 0.1+ |
| 2001 04 01 | 691 | 0.1− | 0.3+ | 2004 01 24 | 704 | 0.7+ | 0.3− | 2006 08 29 | 703 | 0.6− | 0.9+ |
| 2003 11 21 | 691 | 0.3− | 0.1− | 2004 01 24 | 704 | 0.4+ | 0.3− | 2006 08 29 | 703 | 0.4+ | 1.1+ |
| 2003 11 21 | 691 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.1− | 0.3− | 2006 08 29 | 703 | (0.1− | 2.2+) |
| 2003 11 21 | 691 | 0.0 | 0.1− | 2004 01 30 | 704 | 1.0+ | 0.2+ | 2006 08 29 | 703 | 1.3+ | 0.5+ |
| 2003 12 20 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.4+ | 0.3+ |
| 2003 12 20 | 704 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.0 | 0.8+ | 2006 08 29 | 703 | 0.9− | 1.1+ |
| 2003 12 20 | 704 | 0.2+ | 0.7+ | 2004 01 30 | 704 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.1− | 1.5+ |
| 2003 12 20 | 704 | 0.7− | 1.0+ | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.4− | 1.8+ |
| 2003 12 21 | 608 | 0.1− | 0.3+ | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.4− | 2.1+ |
| 2003 12 21 | 608 | 0.2− | 0.3+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 1.0− | 1.6+ |
| 2003 12 21 | 608 | 0.4+ | 0.2+ | 2004 02 16 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 1.2− | 1.8+ |
| 2003 12 22 | 704 | 0.5− | 0.5+ | 2004 02 16 | 704 | 0.3+ | 0.5− | 2006 09 14 | 703 | 0.5+ | 1.1− |
| 2003 12 22 | 704 | 0.9− | 0.5+ | 2004 02 16 | 704 | 0.3− | 0.5− | | | | |
| 2003 12 22 | 704 | 0.1− | 0.8+ | 2004 02 22 | 704 | 1.3+ | 0.1− | | | | |

**(143854)*** **2003 YT$_8$ = 2005 EH$_{187}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76293)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| *M* | 19.31562 | | (2000.0) | | | |
| *n* | 0.30106126 | $\omega$ | 139.91016 | | +0.98530308 | +0.16832014 |
| *a* | 2.2047844 | $\Omega$ | 210.43684 | | −0.16771276 | +0.92096735 |
| *e* | 0.1984886 | *i* | 3.29181 | | −0.03240786 | +0.35140783 |
| *P* | 3.27 | *H* | 16.6 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 704 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 05 10 | 704 | 0.2+ | 1.0+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2002 05 10 | 704 | 0.5+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 1.1+ | 2006 10 28 | 704 | 0.0 | 1.5+ |
| 2002 05 17 | 291 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.7+ | 2006 10 28 | 704 | 0.3− | 0.8+ |
| 2002 05 17 | 291 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.1− |
| 2002 05 17 | 291 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.4− | 2006 10 28 | 704 | 0.0 | 0.3+ |
| 2003 12 19 | 704 | 0.7+ | 0.2+ | 2006 09 29 | 704 | 0.5− | 1.0+ | 2006 10 28 | 704 | 0.3− | 0.2+ |
| 2003 12 19 | 704 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2003 12 19 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2003 12 21 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.0 | 1.4+ | 2006 10 31 | 683 | 0.4− | 0.0 |
| 2003 12 21 | 704 | 0.7+ | 0.3− | 2006 10 03 | 704 | 0.5+ | 1.1+ | 2006 10 31 | 683 | 0.4− | 0.3+ |
| 2003 12 21 | 704 | 0.3+ | 0.3+ | 2006 10 03 | 704 | 0.5− | 0.4+ | 2006 10 31 | 683 | 0.1+ | 0.5+ |
| 2003 12 21 | 704 | 0.1− | 0.2− | 2006 10 03 | 704 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2003 12 23 | 704 | 0.9− | 0.4− | 2006 10 03 | 704 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2003 12 23 | 704 | 0.3+ | 0.2− | 2006 10 03 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.5− | 0.3− |
| 2003 12 23 | 704 | 0.9+ | 0.2− | 2006 10 04 | 703 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2003 12 23 | 704 | 0.1− | 0.0 | 2006 10 04 | 703 | 0.7− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2003 12 23 | 704 | 0.3+ | 0.0 | 2006 10 04 | 703 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2004 01 28 | 691 | 0.2− | 0.2− | 2006 10 04 | 703 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.5+ |
| 2004 01 28 | 691 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.9+ |
| 2004 01 28 | 691 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.8+ |
| 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2005 03 10 | G96 | 0.5− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 2005 03 10 | G96 | 0.4− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2005 03 13 | 691 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | (1.6− | 0.3+) |
| 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 1.0− | 0.7+ |
| 2005 05 04 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 1.3− | 0.1− |
| 2005 05 04 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.9+ |
| 2005 05 04 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 10 23 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2005 05 08 | G96 | 0.7− | 0.0 | 2006 10 23 | 704 | 0.2− | 0.6− | 2006 11 19 | 704 | 0.1+ | 1.0+ |
| 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 10 23 | 704 | 0.5− | 0.8− | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 2005 05 08 | G96 | 0.6− | 0.2+ | 2006 10 23 | 704 | 0.7− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 1.5+ | 0.0 |
| 2005 05 13 | G96 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2005 05 13 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2005 05 13 | G96 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.7− | 2006 11 21 | 704 | 0.1− | 1.0+ |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 1.0+ |

**(143855)*** **2003 YC$_9$ = 1999 PX$_8$**

Discovered 2003 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76293)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| *M* | 7.52073 | | (2000.0) | | | |
| *n* | 0.29501445 | $\omega$ | 53.49509 | | +0.99755706 | −0.03665551 |
| *a* | 2.2348096 | $\Omega$ | 308.52839 | | +0.00676143 | +0.89793844 |
| *e* | 0.2228027 | *i* | 4.35956 | | +0.06952844 | +0.43859198 |
| *P* | 3.34 | *H* | 15.7 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.5− | 0.9+ | 2003 12 22 | 704 | 0.6− | 0.3− | 2006 09 01 | 704 | 0.6+ | 1.0+ |
| 1999 07 16 | 704 | 0.6− | 0.4+ | 2003 12 27 | 704 | 0.2− | 0.9+ | 2006 09 21 | 704 | 1.3+ | 0.2+ |
| 1999 07 16 | 704 | 0.1− | 0.2+ | 2003 12 27 | 704 | 0.0 | 0.3+ | 2006 09 21 | 704 | 0.3+ | 1.1+ |
| 1999 07 16 | 704 | 0.2− | 0.2+ | 2003 12 27 | 704 | 0.2+ | 0.6+ | 2006 09 21 | 704 | (0.2− | 1.6+) |
| 1999 08 12 | 704 | 0.8+ | 0.1+ | 2003 12 27 | 704 | 0.4− | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.1− |
| 1999 08 12 | 704 | 0.8+ | 0.6+ | 2003 12 27 | 704 | 0.6− | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.2− |
| 1999 08 12 | 704 | 0.3− | 0.8+ | 2003 12 27 | 704 | 0.2− | 0.7+ | 2006 09 28 | 703 | 0.6− | 0.1+ |
| 2001 02 20 | 704 | 0.3+ | 0.6− | 2003 12 27 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 1.1− | 0.4− |
| 2001 02 20 | 704 | 0.3− | 0.1+ | 2003 12 27 | 704 | 0.3− | 0.7+ | 2006 09 30 | 704 | 0.4− | 1.1+ |
| 2001 02 20 | 704 | 0.4+ | 0.9+ | 2003 12 27 | 704 | 0.0 | 0.6− | 2006 09 30 | 704 | 0.6− | 0.8+ |
| 2001 02 20 | 704 | 0.2− | 0.0 | 2003 12 27 | 704 | 0.6− | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.5+ |
| 2002 06 05 | 644 | 0.1− | 1.4+ | 2004 01 22 | 704 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2002 06 05 | 644 | 0.3+ | 1.4+ | 2004 01 22 | 704 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2002 06 05 | 644 | 0.1− | 1.3+ | 2004 01 22 | 704 | (0.2+ | 1.7−) | 2006 10 19 | 703 | 0.3+ | 0.1+ |
| 2003 12 04 | 704 | 0.2− | 0.3+ | 2004 01 22 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2003 12 04 | 704 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.3+ | 1.5+ | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 2003 12 04 | 704 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2003 12 04 | 704 | 0.0 | 0.3+ | 2004 01 30 | 704 | 1.0+ | 0.9+ | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2003 12 04 | 704 | 0.9− | 0.3+ | 2004 01 30 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2003 12 18 | 704 | 0.8+ | 0.5− | 2004 01 30 | 704 | 1.5− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.3+ | 0.0 | 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.1+ | 0.6+ | 2005 04 15 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2003 12 18 | 704 | 0.0 | 0.2+ | 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2003 12 19 | 704 | 0.1− | 0.1− | 2006 08 06 | 699 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2003 12 19 | 704 | 0.4+ | 0.0 | 2006 08 06 | 699 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 0.4− | 2006 08 06 | 699 | 0.4− | 0.2+ | 2006 10 31 | 703 | 0.2+ | 0.1− |
| 2003 12 20 | 704 | 0.5+ | 0.8+ | 2006 08 06 | 699 | 0.3− | 0.5+ | 2006 10 31 | 703 | 0.5+ | 0.2− |
| 2003 12 20 | 704 | 0.0 | 0.4+ | 2006 08 24 | 704 | 0.5− | 0.3+ | 2006 10 31 | 703 | 0.4+ | 0.4− |
| 2003 12 20 | 704 | 0.7+ | 0.9+ | 2006 08 24 | 704 | 0.3− | 0.5− | 2006 10 31 | 703 | 0.2+ | 0.0 |
| 2003 12 21 | 704 | 0.6+ | 0.2− | 2006 08 24 | 704 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2003 12 21 | 704 | 0.3− | 0.5+ | 2006 08 25 | 704 | 0.2− | 0.2− | 2006 11 14 | 703 | 0.3− | 0.6− |
| 2003 12 21 | 704 | 0.5+ | 0.4+ | 2006 08 25 | 704 | 0.2+ | 0.7− | 2006 11 14 | 703 | 0.4− | 0.1− |
| 2003 12 21 | 704 | 0.4+ | 0.4+ | 2006 08 25 | 704 | 0.4− | 0.5+ | 2006 11 14 | 703 | 0.2− | 0.6− |
| 2003 12 21 | 704 | 0.6+ | 0.9− | 2006 08 25 | 704 | 0.4− | 0.7+ | 2006 11 18 | 704 | 1.1+ | 0.7+ |
| 2003 12 21 | 704 | 0.1+ | 0.1+ | 2006 08 25 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.2+ |
| 2003 12 21 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 704 | 0.8− | 0.3+ | 2006 11 18 | 704 | 1.0+ | 0.6− |
| 2003 12 21 | 704 | 0.9− | 0.1− | 2006 08 30 | 704 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.9− | 0.4+ |
| 2003 12 21 | 704 | 0.8+ | 0.1− | 2006 08 30 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2003 12 21 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.8+ | 1.4+ |
| 2003 12 22 | 704 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2003 12 22 | 704 | 0.2− | 0.1+ | 2006 09 01 | 704 | 0.7+ | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2003 12 22 | 704 | 0.3− | 0.3− | 2006 09 01 | 704 | 1.2+ | 0.0 | 2006 11 29 | 704 | 1.3+ | 0.5+ |

**(143856)*** **2003 YN$_{10}$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| *M* | 38.70120 | | (2000.0) | | | |
| *n* | 0.30353208 | $\omega$ | 358.14291 | | +0.88435254 | +0.46304165 |
| *a* | 2.1928031 | $\Omega$ | 334.01302 | | −0.42653607 | +0.74990274 |
| *e* | 0.1599615 | *i* | 7.77422 | | −0.18970391 | +0.47248100 |
| *P* | 3.25 | *H* | 16.2 | *G* | 0.15 | *U* 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.0 | 0.1− | 2005 03 09 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 01 19 | 704 | 0.8+ | 0.6− | 2005 03 09 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.7+ | 0.7− |
| 2001 01 19 | 704 | 0.8+ | 0.0 | 2005 03 09 | 691 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2001 01 19 | 704 | 0.1− | 0.6− | 2005 03 09 | 691 | 0.6− | 0.0 | 2006 10 19 | 703 | 1.3− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.7+ | 0.7+ | 2005 03 09 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 1.0− | 0.3− |
| 2001 01 26 | 645 | 0.0 | 0.1− | 2005 04 05 | 699 | 0.1+ | 0.4− | 2006 10 20 | 704 | 0.7+ | 0.4+ |
| 2001 01 26 | 645 | 0.1− | 0.2− | 2005 04 05 | 699 | 0.7− | 0.6+ | 2006 10 20 | 704 | 1.2+ | 0.4+ |
| 2003 11 19 | 704 | 0.5− | 0.5+ | 2005 04 05 | 699 | 0.1− | 0.1− | 2006 10 20 | 704 | 0.1− | 0.3+ |
| 2003 11 19 | 704 | 0.2+ | 0.0 | 2005 04 05 | 699 | 0.7+ | 1.0+ | 2006 10 20 | 704 | 0.1+ | 0.3+ |
| 2003 11 19 | 704 | 0.4− | 0.3+ | 2005 04 14 | 703 | 0.9+ | 0.2+ | 2006 10 20 | 704 | 0.1− | 0.1− |
| 2003 11 19 | 704 | 0.3− | 0.1+ | 2005 04 14 | 703 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 11 19 | 704 | 0.3− | 0.3+ | 2005 04 14 | 703 | 0.8− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 12 17 | 704 | 0.3− | 0.4+ | 2005 04 14 | 703 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2003 12 17 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.5+ |
| 2003 12 17 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.3+ | 1.1+ |
| 2003 12 17 | 704 | 0.4− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.4+ |
| 2003 12 18 | 704 | 0.8+ | 1.3+ | 2006 09 18 | 703 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.3− | 0.3+ |
| 2003 12 18 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 1.2+ | 1.3+ | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2003 12 18 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 703 | (1.9+ | 0.5+) | 2006 11 15 | 703 | 0.7− | 0.4− |
| 2003 12 18 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.7− | 0.2− |
| 2003 12 18 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.5+ | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.3− |
| 2003 12 27 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.2+ | 2006 11 16 | 704 | (0.2− | 2.5+) |
| 2003 12 27 | 704 | 0.2− | 0.5+ | 2006 09 28 | 703 | 1.0+ | 0.4+ | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 2003 12 27 | 704 | 0.9− | 0.3+ | 2006 09 28 | 703 | 0.2+ | 0.2− | 2006 11 16 | 704 | 1.3+ | 0.2− |
| 2003 12 29 | 704 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2003 12 29 | 704 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2003 12 29 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.0 |
| 2003 12 29 | 704 | 0.5− | 0.3− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.5− |
| 2003 12 29 | 704 | 0.7− | 0.7− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.4− |
| 2005 03 09 | 691 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.6− |

**(143857)∗ 2003 YU$_{11}$ = 2001 FW$_{100}$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69605)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.75409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27522142 | $\omega$ | 213.50542 | | −0.68935533 | +0.72371767 | |
| $a$ | 2.3407115 | $\Omega$ | 13.01497 | | −0.62957629 | −0.57668602 | |
| $e$ | 0.0648859 | $i$ | 8.16075 | | −0.35836143 | −0.37903294 | |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1− | 0.1− | 2003 12 17 | 704 | 0.7+ | 0.3− | 2006 09 18 | 691 | 0.3− | 0.1+ |
| 2001 02 20 | 645 | 0.2− | 0.1− | 2003 12 17 | 704 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 03 17 | 691 | 0.0 | 0.3+ | 2003 12 17 | 704 | (1.7+ | 0.3−) | 2006 10 17 | 691 | 0.2− | 0.3− |
| 2001 03 17 | 691 | 0.1− | 0.3+ | 2003 12 17 | 704 | 0.3− | 0.7+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2001 03 17 | 691 | 0.4− | 0.5+ | 2003 12 18 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2001 03 18 | 699 | 0.8+ | 0.4− | 2003 12 18 | 704 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2001 03 18 | 699 | 1.4− | 0.8− | 2003 12 18 | 704 | 0.4+ | 0.9+ | 2006 10 17 | 703 | 0.6+ | 0.9+ |
| 2001 03 18 | 699 | 1.5+ | 0.1+ | 2003 12 18 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.7+ |
| 2001 03 18 | 699 | 0.7+ | 0.2+ | 2003 12 28 | 704 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.5+ |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2003 12 28 | 704 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2003 12 28 | 704 | 0.4− | 0.9− | 2006 10 21 | 703 | 1.3+ | 0.3+ |
| 2001 04 26 | 691 | 0.6+ | 0.6+ | 2003 12 28 | 704 | 0.1− | 0.5− | 2006 10 21 | 703 | 0.3− | 0.6− |
| 2001 04 26 | 691 | 0.6+ | 0.5+ | 2003 12 28 | 704 | 0.6− | 0.0 | 2006 11 10 | 691 | 0.5+ | 0.2− |
| 2001 04 26 | 691 | 0.1+ | 0.6+ | 2003 12 29 | 704 | 1.2+ | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.5− | 0.4+ | 2003 12 29 | 704 | (2.2+ | 1.9+) | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2002 08 19 | 644 | 0.0 | 0.6+ | 2003 12 29 | 704 | (2.4+ | 2.2+) | 2006 11 13 | 691 | 0.5− | 0.2+ |
| 2002 08 19 | 644 | 0.1− | 0.6+ | 2005 01 18 | 809 | 0.5+ | 0.1+ | 2006 11 13 | 691 | 0.4− | 0.1− |
| 2002 08 30 | 644 | 0.2− | 0.5+ | 2005 01 18 | 809 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2002 08 30 | 644 | 0.2− | 0.1+ | 2005 01 18 | 809 | 0.1+ | 0.4− | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2002 08 30 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2003 12 17 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.1− |

**(143858)∗ 2003 YH$_{12}$ = 2000 AO$_{39}$ = 2002 RO$_{170}$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57453)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.12863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23297993 | $\omega$ | 162.51290 | | −0.60564799 | −0.78673695 | |
| $a$ | 2.6157147 | $\Omega$ | 324.49503 | | +0.70331458 | −0.45911959 | |
| $e$ | 0.0993596 | $i$ | 11.85510 | | +0.37220842 | −0.41261868 | |
| $P$ | 4.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.3− | 0.8− | 2002 09 06 | 704 | 0.6+ | 0.5− | 2003 12 29 | 704 | 0.0 | 0.1+ |
| 2000 01 03 | 704 | 0.5− | 1.4− | 2002 09 13 | 644 | 0.1− | 0.4+ | 2003 12 29 | 704 | 0.0 | 0.0 |
| 2000 01 03 | 704 | 0.6+ | 0.1− | 2002 09 13 | 644 | 0.5− | 0.5+ | 2003 12 30 | 704 | 0.3+ | 0.0 |
| 2000 01 03 | 704 | 0.2− | 0.7− | 2002 09 13 | 644 | 0.0 | 0.1+ | 2003 12 30 | 704 | 1.2+ | 0.2+ |
| 2000 01 04 | 704 | 0.3+ | 1.0− | 2002 09 14 | 644 | 0.1− | 0.4+ | 2003 12 30 | 704 | 0.5+ | 0.2+ |
| 2000 01 04 | 704 | 0.8− | 0.7− | 2002 09 14 | 644 | 0.3− | 0.5+ | 2003 12 30 | 704 | 1.1+ | 0.2− |
| 2000 01 04 | 704 | 0.2+ | 0.9− | 2002 09 14 | 644 | 0.7− | 0.4+ | 2003 12 30 | 704 | 1.0+ | 0.5− |
| 2000 01 04 | 704 | 1.2− | 0.3− | 2003 12 17 | 704 | 0.6− | 0.7+ | 2006 08 12 | 644 | 0.4+ | 0.2+ |
| 2000 01 04 | 704 | 0.0 | 1.2− | 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 08 12 | 644 | 0.3− | 0.1+ |
| 2000 01 06 | 699 | 0.8+ | 0.5+ | 2003 12 17 | 704 | 0.1− | 0.1− | 2006 08 12 | 644 | 0.4− | 0.8+ |
| 2000 01 06 | 699 | 0.9− | 1.3+ | 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.5+ |
| 2000 01 06 | 699 | 0.4− | 0.5+ | 2003 12 18 | 704 | (1.1+ | 1.7−) | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2000 02 11 | 704 | 0.5+ | 0.1+ | 2003 12 18 | 704 | 0.5+ | 0.1− | 2006 08 15 | 644 | 0.1+ | 0.2+ |
| 2000 02 11 | 704 | 0.5+ | 1.5+ | 2003 12 18 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 1.0+ | 0.4− |
| 2000 02 11 | 704 | 0.4+ | 1.5+ | 2003 12 19 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.9− | 1.1− |
| 2000 02 11 | 704 | 0.4+ | 0.1− | 2003 12 19 | 704 | 0.9− | 0.7+ | 2006 08 28 | 703 | 0.8+ | 0.9− |
| 2000 02 11 | 704 | 0.1− | 0.3+ | 2003 12 19 | 704 | 1.0− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.6− |
| 2000 02 24 | 703 | 0.0 | 0.4+ | 2003 12 19 | 704 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2000 02 24 | 703 | 0.3− | 0.7+ | 2003 12 19 | 704 | 0.6− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2000 02 24 | 703 | 0.3+ | 1.1+ | 2003 12 28 | 704 | 0.8− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2000 02 24 | 703 | 0.0 | 0.7− | 2003 12 28 | 704 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.1− | 0.3+ | 2003 12 28 | 704 | (2.7− | 0.9+) | 2006 10 22 | G96 | 0.4− | 0.1+ |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2003 12 28 | 704 | 0.2− | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 08 28 | 644 | 0.4− | 0.3+ | 2003 12 28 | 704 | 0.4− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.2+ | 0.5− | 2003 12 29 | 704 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2002 09 06 | 704 | 0.2− | 0.4− | 2003 12 29 | 704 | 0.4+ | 0.3− | | | | |

**(143859)∗ 2003 YD$_{13}$ = 1993 FJ$_{49}$**

Discovered 2003 Dec. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57454)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.75976 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26008037 | $\omega$ | 121.23953 | | −0.60219557 | −0.79833750 | |
| $a$ | 2.4306980 | $\Omega$ | 5.79316 | | +0.71754913 | −0.54355333 | |
| $e$ | 0.1734390 | $i$ | 2.39120 | | +0.34997679 | −0.25924316 | |
| $P$ | 3.79 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 1.1+ | 0.1− | 2003 12 22 | 704 | 0.3− | 0.1+ | 2004 01 22 | 704 | 0.4− | 0.0 |
| 1993 03 20 | 809 | 1.0+ | 0.3+ | 2003 12 22 | 704 | 0.1+ | 0.6+ | 2004 01 31 | 704 | 0.1− | 0.4− |
| 1993 03 24 | 809 | 0.4+ | 0.4+ | 2003 12 22 | 704 | 0.1+ | 0.7+ | 2004 01 31 | 704 | 1.0+ | 0.1− |
| 1993 04 17 | 691 | 0.2− | 0.4− | 2003 12 22 | 704 | 0.2+ | 0.6+ | 2004 01 31 | 704 | (1.8+ | 0.4+) |
| 1993 04 17 | 691 | 0.3− | 0.2− | 2003 12 22 | 704 | 0.1+ | 0.9− | 2004 01 31 | 704 | 0.2+ | 0.2+ |
| 1993 04 17 | 691 | 0.4− | 0.0 | 2003 12 27 | 704 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.3− | 0.1+ |
| 1995 11 16 | 691 | 0.2+ | 0.4− | 2003 12 27 | 704 | 1.3− | 0.9− | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 1995 11 16 | 691 | 0.0 | 0.2− | 2003 12 27 | 704 | 0.6+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 1995 11 16 | 691 | 0.0 | 0.3− | 2003 12 27 | 704 | 0.7− | 0.8− | 2006 09 19 | 703 | (1.7− | 1.2+) |
| 2000 01 04 | 704 | 0.2+ | 0.9− | 2003 12 27 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 703 | (0.5− | 1.6−) |
| 2000 01 04 | 704 | 1.4+ | 0.4− | 2003 12 27 | 704 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.9− | 0.8− |
| 2000 01 04 | 704 | 0.6+ | 1.9− | 2003 12 27 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.7+ |
| 2000 01 04 | 704 | 0.0 | 1.1− | 2003 12 27 | 704 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.1− | 0.2+ |
| 2002 08 29 | 644 | 0.3+ | 1.5+ | 2003 12 27 | 704 | 0.2− | 0.7− | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | (0.1− | 1.9+) | 2003 12 28 | 704 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | (0.4+ | 1.9+) | 2003 12 28 | 704 | 1.1+ | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.0 |
| 2003 11 20 | 704 | 0.4+ | 0.2+ | 2003 12 28 | 704 | 0.8+ | 0.2− | 2006 09 25 | 699 | 0.8− | 0.1+ |
| 2003 11 20 | 704 | 0.5− | 0.5+ | 2003 12 28 | 704 | 0.6+ | 0.5+ | 2006 09 25 | 699 | (0.4− | 2.2+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | (1.8+ | 1.4+) | 2003 12 28 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 699 | (1.7− | 0.5−) | | |
| 2003 11 20 | 704 | 1.1+ | 1.1+ | 2003 12 30 | 704 | 0.7+ | 0.5+ | 2006 10 16 | G96 | 0.5+ | 0.4− | | |
| 2003 12 17 | 699 | 0.8− | 0.9+ | 2003 12 30 | 704 | 0.7− | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.3− | | |
| 2003 12 17 | 699 | 0.1+ | 0.1− | 2003 12 30 | 704 | (2.1+ | 2.1+) | 2006 10 16 | G96 | 0.2− | 0.2− | | |
| 2003 12 17 | 699 | 0.3+ | 0.0 | 2004 01 20 | 704 | 0.1− | 1.3+ | 2006 10 16 | G96 | 0.2+ | 0.5− | | |
| 2003 12 17 | 699 | 0.9− | 0.0 | 2004 01 20 | 704 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2003 12 18 | 704 | 0.4− | 1.0+ | 2004 01 20 | 704 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2003 12 18 | 704 | 0.1− | 0.4+ | 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.2− | | |
| 2003 12 18 | 704 | 0.1+ | 0.8+ | 2004 01 22 | 704 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2003 12 18 | 704 | 0.1− | 0.5+ | 2004 01 22 | 704 | 0.2− | 0.1+ | | | | | | |
| 2003 12 18 | 704 | 0.8− | 0.5+ | 2004 01 22 | 704 | 0.3− | 0.2+ | | | | | | |

**(143860)∗ 2003 YL$_{13}$**

Discovered 2003 Dec. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.74346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29153333 | $\omega$ | 55.75965 | | +0.96142599 | −0.26684829 | |
| $a$ | 2.2525645 | $\Omega$ | 319.60198 | | +0.20612637 | +0.85957141 | |
| $e$ | 0.2007250 | $i$ | 5.90928 | | +0.18213176 | +0.43580841 | |
| $P$ | 3.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 06 | 699 | 0.3− | 1.2+ | 2004 01 16 | 691 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.3− | 0.3+ | | |
| 1999 09 06 | 699 | 0.9− | 0.5+ | 2004 01 22 | 704 | 0.2+ | 0.8− | 2006 10 19 | 703 | 0.2− | 0.2− | | |
| 1999 09 06 | 699 | 0.5+ | 1.7+ | 2004 01 22 | 704 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.1− | 0.2− | | |
| 1999 10 13 | 704 | 0.1+ | 0.4− | 2004 01 22 | 704 | 0.4+ | 0.4− | 2006 10 21 | 704 | 0.7− | 1.3+ | | |
| 1999 10 13 | 704 | 0.7+ | 0.9− | 2004 01 22 | 704 | 1.0− | 1.0− | 2006 10 21 | 704 | 0.0 | 0.6+ | | |
| 1999 10 13 | 704 | 0.2+ | 0.5− | 2004 01 22 | 704 | 0.2− | 0.5+ | 2006 10 21 | 704 | 0.4− | 0.8+ | | |
| 1999 10 13 | 704 | 0.3− | 0.6− | 2004 01 31 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 704 | 0.3+ | 0.1+ | | |
| 1999 10 13 | 704 | 0.4− | 0.9− | 2004 01 31 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2− | | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2004 01 31 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 08 06 | 699 | (0.1+ | 1.6−) | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 08 06 | 699 | 0.3+ | 0.4− | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 08 06 | 699 | (0.2− | 1.7+) | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2003 12 17 | 699 | 0.7− | 0.1+ | 2006 08 06 | 699 | 0.2− | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.1+ | | |
| 2003 12 17 | 699 | 0.1+ | 1.3− | 2006 08 30 | 704 | 0.6+ | 0.2+ | 2006 10 27 | 703 | 0.5+ | 0.4− | | |
| 2003 12 17 | 699 | 0.7− | 0.1+ | 2006 08 30 | 704 | 0.7− | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.4− | | |
| 2003 12 17 | 699 | 0.8− | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.4− | | |
| 2003 12 18 | 704 | 0.5+ | 0.3− | 2006 08 30 | 699 | 0.2+ | 0.8+ | 2006 10 27 | 703 | 0.0 | 0.2− | | |
| 2003 12 18 | 704 | 0.8+ | 0.5− | 2006 08 30 | 699 | 0.3− | 0.0 | 2006 10 30 | 203 | 0.5− | 0.4+ | | |
| 2003 12 18 | 704 | 0.7+ | 0.1+ | 2006 08 30 | 699 | 0.6+ | 0.3+ | 2006 10 30 | 203 | 0.1+ | 0.2− | | |
| 2003 12 23 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.8+ | 0.6+ | 2006 11 07 | 644 | 0.1− | 0.3+ | | |
| 2003 12 23 | 704 | 0.1− | 0.2+ | 2006 09 21 | 704 | 0.3+ | 1.0− | 2006 11 07 | 644 | 0.0 | 0.2+ | | |
| 2003 12 23 | 704 | 0.3+ | 0.9− | 2006 09 21 | 704 | 0.0 | 0.5+ | 2006 11 07 | 644 | 0.1− | 0.1+ | | |
| 2003 12 23 | 704 | 0.3+ | 0.1− | 2006 09 21 | 704 | 0.6− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.5− | | |
| 2003 12 23 | 704 | 0.6− | 0.2+ | 2006 09 28 | 703 | 0.5+ | 0.4− | 2006 11 15 | 703 | 0.3− | 0.3− | | |
| 2003 12 28 | 704 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.5− | 2006 11 15 | 703 | 0.3− | 0.3− | | |
| 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.1+ | 0.3− | | |
| 2003 12 28 | 704 | 1.1+ | 0.1− | 2006 09 28 | 703 | 0.0 | 0.6+ | 2006 11 17 | 704 | 0.0 | 1.1+ | | |
| 2003 12 28 | 704 | 0.4− | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.8− | | |
| 2003 12 28 | 704 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.3− | | |
| 2004 01 16 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | | | | | | |
| 2004 01 16 | 691 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.0 | | | | | | |

**(143861)∗ 2003 YP$_{13}$ = 2002 TD$_{97}$**

Discovered 2003 Dec. 17 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 57455)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.76676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26667432 | $\omega$ | 172.29247 | | −0.97495876 | +0.21972958 | |
| $a$ | 2.3904624 | $\Omega$ | 20.49853 | | −0.20889988 | −0.85205229 | |
| $e$ | 0.1718003 | $i$ | 5.61587 | | −0.07626434 | −0.47510610 | |
| $P$ | 3.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 807 | 1.0− | 1.3+ | 2003 12 28 | 704 | 0.3+ | 0.7+ | 2005 07 06 | E12 | 0.3− | 0.9+ | | |
| 2002 08 12 | 807 | 0.1− | 1.0− | 2003 12 29 | 704 | 0.3− | 0.6+ | 2005 07 29 | E12 | 0.3− | 0.3+ | | |
| 2002 09 26 | 644 | 0.6− | 0.3+ | 2003 12 29 | 704 | 0.6− | 0.2+ | 2005 07 29 | E12 | 0.3+ | 0.7+ | | |
| 2002 09 26 | 644 | 0.6− | 0.3+ | 2003 12 29 | 704 | 0.9− | 0.2− | 2005 07 29 | E12 | 0.9− | 0.3+ | | |
| 2002 09 26 | 644 | 0.7− | 0.3+ | 2003 12 29 | 291 | 0.5+ | 0.3+ | 2005 07 29 | E12 | 0.8− | 0.4+ | | |
| 2002 10 02 | 704 | 0.4+ | 1.3+ | 2003 12 29 | 291 | 0.5+ | 0.2+ | 2005 08 24 | E12 | 0.5− | 0.6+ | | |
| 2002 10 02 | 704 | (0.3+ | 1.6+) | 2003 12 29 | 704 | 0.6− | 0.4− | 2005 08 24 | E12 | 0.3+ | 0.5+ | | |
| 2002 10 02 | 704 | (1.6+ | 0.6+) | 2003 12 29 | 291 | 0.4+ | 0.1+ | 2005 08 24 | E12 | 0.4− | 0.8+ | | |
| 2002 10 05 | 644 | 0.2− | 0.4+ | 2003 12 29 | 704 | 0.2− | 0.5− | 2005 08 24 | E12 | 0.4− | 1.3+ | | |
| 2002 10 05 | 644 | 0.6− | 0.3+ | 2004 01 16 | 699 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.7− | | |
| 2002 10 05 | 644 | 0.5− | 0.5+ | 2004 01 16 | 699 | 0.6− | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.5− | | |
| 2002 10 06 | 644 | 0.4− | 0.5+ | 2004 01 16 | 699 | 0.5− | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.6− | | |
| 2002 10 06 | 644 | 0.2− | 0.5+ | 2004 01 16 | 699 | 0.1− | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.4− | | |
| 2002 10 06 | 644 | 0.2− | 0.3+ | 2004 01 19 | 704 | 0.5+ | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.4− | | |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2004 01 19 | 704 | 0.2+ | 0.7+ | 2006 09 27 | G96 | 0.3− | 0.3− | | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2004 01 19 | 704 | 0.6+ | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.3− | | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2004 01 19 | 704 | 0.7+ | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.2− | | |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2004 02 14 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.5+ | | |
| 2003 12 17 | 703 | (2.4− | 1.1−) | 2004 02 14 | 704 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2003 12 17 | 699 | 0.3− | 0.0 | 2004 02 14 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2− | | |
| 2003 12 17 | 699 | 0.8− | 1.4− | 2004 02 14 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3− | 0.2+ | | |
| 2003 12 17 | 703 | 1.4− | 1.3− | 2004 02 14 | 704 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.7− | 0.6+ | | |
| 2003 12 17 | 699 | 0.6+ | 0.8− | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 2003 12 17 | 703 | (1.7− | 1.2−) | 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2+ | | |
| 2003 12 17 | 699 | 0.1− | 1.1− | 2004 03 20 | 704 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.4− | 0.2+ | | |
| 2003 12 17 | 703 | 1.3− | 0.3− | 2004 04 19 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.5− | 0.0 | | |
| 2003 12 18 | 704 | 0.2+ | 0.2+ | 2004 04 19 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2003 12 18 | 704 | 0.9+ | 1.0+ | 2004 04 19 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2003 12 18 | 704 | (0.2+ | 1.7+) | 2004 04 19 | 704 | 1.1+ | 0.0 | 2006 10 21 | 644 | 0.5− | 0.2− | | |
| 2003 12 18 | 704 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.5+ | 0.9+ | 2006 10 29 | 691 | 0.3− | 0.1− | | |
| 2003 12 28 | 704 | 0.2+ | 0.6+ | 2004 04 22 | 704 | (0.7− | 1.6+) | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2003 12 28 | 704 | 0.7− | 0.1+ | 2004 04 22 | 704 | 1.0− | 1.0+ | 2006 10 29 | 691 | 0.1− | 0.2+ | | |
| 2003 12 28 | 704 | 0.2+ | 0.5+ | 2005 06 08 | E12 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.5+ | 0.1+ | | |
| 2003 12 28 | 704 | 0.1+ | 0.2+ | 2005 06 08 | E12 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.1− | | |
| 2003 12 28 | 704 | 0.3− | 0.6+ | 2005 06 08 | E12 | 0.4+ | 1.0+ | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2003 12 28 | 704 | 0.6− | 0.3− | 2005 06 08 | E12 | 0.2− | 0.7+ | 2006 11 17 | 691 | 0.5+ | 0.1− | | |
| 2003 12 28 | 704 | 0.7− | 0.5+ | 2005 07 06 | E12 | 0.2+ | 0.3− | 2006 11 17 | 691 | 0.5+ | 0.1− | | |
| 2003 12 28 | 704 | 0.3− | 0.6+ | 2005 07 06 | E12 | 0.2− | 0.8+ | 2006 11 17 | 691 | 0.5+ | 0.1− | | |
| 2003 12 28 | 704 | 0.4+ | 0.7+ | 2005 07 06 | E12 | 0.2+ | 0.5+ | | | | | | |

**(143862)∗ 2003 YW$_{13}$ = 2001 DD$_3$**

Discovered 2003 Dec. 17 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 57456)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.02765 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30344900 | $\omega$ | 349.83685 | | +0.87207309 | −0.48407938 | |
| $a$ | 2.1932034 | $\Omega$ | 39.37838 | | +0.45656302 | +0.75197392 | |
| $e$ | 0.1719961 | $i$ | 6.49842 | | +0.17617814 | +0.44743980 | |
| $P$ | 3.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.1+ | 0.4− | 2004 01 21 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.3− | | |
| 2001 02 16 | 704 | 0.3− | 0.5− | 2004 01 21 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.5+ | | |
| 2001 02 16 | 704 | 0.4+ | 0.3− | 2004 01 21 | 704 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2001 02 16 | 704 | (0.3+ | 2.0−) | 2004 01 21 | 704 | 0.7− | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.0 | | |
| 2001 02 17 | 704 | 0.9+ | 0.8+ | 2004 01 22 | 704 | 0.0 | 1.0+ | 2006 11 13 | 644 | 0.3− | 0.0 | | |
| 2001 02 17 | 704 | 0.1+ | 0.4− | 2004 01 22 | 704 | 0.4− | 1.0− | 2006 11 15 | 704 | 0.7+ | 0.0 | | |
| 2001 02 17 | 704 | 0.1− | 0.2+ | 2004 01 22 | 704 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.2+ | 0.3− | | |
| 2001 02 17 | 704 | 0.2+ | 0.5− | 2004 01 22 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 704 | 0.6+ | 0.4+ | | |
| 2001 02 17 | 704 | 0.8− | 0.2+ | 2004 01 22 | 704 | 0.2− | 1.0+ | 2006 11 15 | 704 | 0.6+ | 0.1+ | | |
| 2001 02 19 | 699 | 0.1− | 0.4− | 2004 02 02 | 704 | (0.9− | 2.0−) | 2006 11 16 | 704 | (2.3+ | 1.7−) | | |
| 2001 02 19 | 699 | 0.4− | 0.0 | 2004 02 02 | 704 | 1.2+ | 0.1− | 2006 11 16 | 704 | (2.0+ | 1.2−) | | |
| 2001 02 19 | 699 | 0.1+ | 0.4− | 2004 02 02 | 704 | (1.6+ | 1.1+) | 2006 11 16 | 704 | (2.4+ | 1.3−) | | |
| 2001 02 19 | 699 | 0.3+ | 0.4+ | 2004 02 14 | 704 | (0.0 | 2.7−) | 2006 11 16 | 704 | (3.0+ | 0.8−) | | |
| 2003 10 25 | 704 | 0.4− | 0.5+ | 2004 02 14 | 704 | 0.2+ | 1.2− | 2006 11 16 | 704 | (2.2+ | 1.5−) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | (0.7+ | 1.6+) | 2004 02 14 | 704 | 0.5+ | 0.6− | 2006 11 16 | 704 | (2.2+ | 1.4−) | | |
| 2003 10 25 | 704 | 0.8− | 0.2+ | 2004 02 14 | 704 | 0.2+ | 1.0− | 2006 11 16 | 704 | (2.0+ | 1.5−) | | |
| 2003 10 25 | 704 | 0.3+ | 0.0 | 2005 05 04 | 644 | 0.4+ | 0.1+ | 2006 11 16 | 704 | (2.2+ | 1.3−) | | |
| 2003 11 20 | 704 | 0.3− | 0.5+ | 2005 05 04 | 644 | 0.1− | 0.2+ | 2006 11 16 | 704 | 1.0+ | 0.7− | | |
| 2003 11 20 | 704 | 0.5+ | 0.4− | 2005 05 04 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | (2.0+ | 0.4−) | | |
| 2003 11 20 | 704 | 0.2+ | 0.1+ | 2005 05 11 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1+ | | |
| 2003 11 20 | 704 | 0.5+ | 0.6+ | 2005 05 11 | 644 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.4+ | | |
| 2003 12 04 | 704 | 0.2− | 0.4− | 2005 05 11 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.2− | | |
| 2003 12 04 | 704 | 0.1+ | 0.1+ | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.8+ | | |
| 2003 12 04 | 704 | 0.3+ | 0.4+ | 2005 05 12 | G96 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.9− | 0.6+ | | |
| 2003 12 17 | 703 | (2.3− | 1.1−) | 2005 05 12 | G96 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.6− | | |
| 2003 12 17 | 703 | (0.1− | 2.1−) | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.3− | | |
| 2003 12 17 | 703 | 1.3− | 1.2− | 2005 05 12 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.1− | | |
| 2003 12 17 | 703 | 0.3− | 0.3− | 2005 05 12 | 644 | 0.1+ | 0.7+ | 2006 11 21 | 691 | 0.0 | 0.1+ | | |
| 2003 12 18 | 704 | 0.2− | 0.6+ | 2005 05 12 | 644 | 0.5+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2003 12 18 | 704 | 0.5+ | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.0 | | |
| 2003 12 18 | 704 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.7+ | | |
| 2003 12 18 | 704 | 0.7− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.7+ | | |
| 2003 12 27 | 704 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.0 | 0.7+ | | |
| 2003 12 27 | 704 | 0.5− | 0.1− | 2006 10 28 | 704 | 0.5− | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.7+ | | |
| 2003 12 27 | 704 | 0.0 | 0.4− | 2006 10 28 | 704 | 0.6− | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.7+ | | |
| 2003 12 27 | 704 | 0.3− | 0.0 | 2006 10 28 | 704 | 0.4− | 0.1− | 2006 11 23 | 644 | 0.1− | 0.2− | | |
| 2003 12 27 | 704 | 0.2+ | 0.4− | 2006 10 28 | 704 | 0.4− | 0.4− | 2006 11 23 | 644 | 0.2+ | 0.0 | | |
| 2003 12 29 | 704 | 0.6− | 0.6+ | 2006 10 28 | 704 | 0.7− | 0.1− | 2006 11 23 | 644 | 0.1− | 0.2− | | |
| 2003 12 29 | 704 | 0.3+ | 1.2+ | 2006 11 01 | G96 | 0.3− | 0.4− | 2006 11 25 | 691 | 0.0 | 0.2− | | |
| 2003 12 29 | 704 | 0.3+ | 1.2+ | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 25 | 691 | 0.1+ | 0.0 | | |
| 2003 12 29 | 704 | 0.1+ | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.0 | | |
| 2004 01 11 | 699 | 1.0+ | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 27 | 704 | 0.2− | 0.6− | | |
| 2004 01 11 | 699 | 0.0 | 0.4− | 2006 11 10 | 644 | 0.3− | 0.3+ | 2006 11 27 | 704 | 0.3+ | 0.4− | | |
| 2004 01 11 | 699 | 0.5+ | 0.6− | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 27 | 704 | 0.2+ | 0.2− | | |
| 2004 01 11 | 699 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 27 | 704 | 0.3+ | 0.1+ | | |
| 2004 01 19 | 704 | (2.5− | 0.6+) | 2006 11 10 | 644 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.5− | 0.1− | | |
| 2004 01 19 | 704 | (2.4− | 0.1−) | 2006 11 10 | 644 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.1+ | | |
| 2004 01 19 | 704 | (2.1− | 0.1−) | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.0 | 0.1− | | |
| 2004 01 19 | 704 | (2.0− | 0.2−) | 2006 11 11 | 703 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.1− | 0.1− | | |
| 2004 01 21 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3+ | 2006 11 28 | 704 | 0.3+ | 0.6+ | | |

### (143863)∗ 2003 YC$_{15}$ = 2002 QK$_2$

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57458)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 224.18296 | | (2000.0) | | | | |
| $n$ | 0.27075297 | $\omega$ | 184.34331 | | −0.84791209 | −0.52613299 | |
| $a$ | 2.3663950 | $\Omega$ | 323.67130 | | +0.48963815 | −0.73019847 | |
| $e$ | 0.0548404 | $i$ | 6.30229 | | +0.20322294 | −0.43588333 | |
| $P$ | 3.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 08 | 910 | 1.1− | 0.3+ | 2003 12 18 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.5+ | | |
| 1997 02 08 | 910 | 1.1− | 0.3+ | 2003 12 18 | 704 | 0.6+ | 0.2+ | 2006 09 21 | 683 | (0.2+ | 1.7−) | | |
| 1997 02 08 | 910 | 1.1− | 0.1+ | 2003 12 18 | 704 | 0.9+ | 0.2+ | 2006 09 21 | 683 | 0.9− | 0.4+ | | |
| 1997 03 05 | 704 | 0.5+ | 0.6− | 2003 12 23 | 704 | 0.5+ | 0.0 | 2006 09 21 | 683 | (0.2+ | 2.3+) | | |
| 1997 03 05 | 704 | 1.8+ | 0.1+ | 2003 12 23 | 704 | 1.1+ | 0.4− | 2006 09 25 | 704 | 0.3+ | 0.9+ | | |
| 2001 03 03 | 704 | (2.1+ | 1.0+) | 2003 12 23 | 704 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.8+ | 0.8+ | | |
| 2001 03 03 | 704 | 0.7+ | 0.7+ | 2003 12 23 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 704 | 0.8+ | 1.0+ | | |
| 2001 03 03 | 704 | 0.0 | 0.2− | 2003 12 23 | 704 | 0.3+ | 0.1− | 2006 09 25 | 683 | 0.8+ | 0.4− | | |
| 2001 03 26 | 704 | 0.2+ | 0.8+ | 2003 12 28 | 704 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.4− | | |
| 2001 03 26 | 704 | 0.1+ | 0.0 | 2003 12 28 | 704 | 0.3+ | 0.3− | 2006 09 25 | 683 | 0.8+ | 1.4− | | |
| 2001 03 26 | 704 | 0.4+ | 0.1− | 2003 12 28 | 704 | 0.6− | 0.4+ | 2006 09 26 | 683 | (2.1− | 1.0+) | | |
| 2002 08 16 | 608 | 0.5− | 0.3− | 2003 12 28 | 704 | 0.3+ | 0.4− | 2006 09 26 | 683 | 0.6− | 0.8+ | | |
| 2002 08 16 | 608 | 0.2− | 0.9− | 2003 12 28 | 704 | 0.0 | 0.1− | 2006 09 26 | 683 | (1.7− | 1.4+) | | |
| 2002 08 16 | 608 | 0.3− | 0.1+ | 2003 12 28 | 704 | 0.4+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.6− | | |
| 2002 08 17 | 644 | 0.2− | 0.8+ | 2003 12 28 | 704 | 0.5− | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.8+ | | |
| 2002 08 17 | 644 | 0.4− | 0.7+ | 2003 12 28 | 704 | 0.2+ | 0.3− | 2006 09 27 | 703 | 0.9− | 0.4− | | |
| 2002 08 17 | 644 | 0.0 | 0.8+ | 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.8− | 0.2− | | |
| 2002 09 05 | 704 | 0.3− | 1.3+ | 2003 12 28 | 704 | 0.3+ | 0.7− | 2006 10 02 | G96 | 0.0 | 0.3− | | |
| 2002 09 05 | 704 | 0.2+ | 1.1+ | 2005 02 15 | 809 | 0.5− | 0.5+ | 2006 10 02 | G96 | 1.2− | 0.6− | | |
| 2002 09 05 | 704 | 1.1+ | 0.5− | 2005 02 15 | 809 | 0.4− | 0.5+ | 2006 10 02 | G96 | 0.9+ | 0.0 | | |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2005 02 15 | 809 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.3− | | |
| 2002 09 05 | 704 | 0.8+ | 0.3+ | 2006 08 29 | 699 | (3.3− | 0.2+) | 2006 10 09 | 644 | 0.0 | 0.5+ | | |
| 2003 12 04 | 704 | (1.5+ | 2.1+) | 2006 08 29 | 699 | 0.6− | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.6+ | | |
| 2003 12 04 | 704 | 0.1+ | 1.2+ | 2006 08 29 | 699 | (1.6+ | 0.7−) | 2006 10 09 | 644 | 0.1− | 0.2− | | |
| 2003 12 04 | 704 | 1.4− | 1.3+ | 2006 08 29 | 699 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.6− | | |
| 2003 12 04 | 704 | 0.1− | 0.2+ | 2006 09 16 | 703 | (1.8− | 0.1−) | 2006 10 17 | 703 | 0.9− | 0.6− | | |
| 2003 12 17 | 704 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.9− | 0.4− | 2006 10 17 | 703 | 0.1− | 0.3+ | | |
| 2003 12 17 | 704 | 0.4+ | 0.5− | 2006 09 16 | 703 | 0.9+ | 1.0− | 2006 10 17 | 703 | 0.4− | 0.7− | | |
| 2003 12 17 | 704 | 1.4− | 1.1+ | 2006 09 16 | 703 | 0.7+ | 1.1− | 2006 10 21 | G96 | 0.1− | 0.5− | | |
| 2003 12 17 | 704 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.0 | 1.0+ | 2006 10 21 | G96 | 0.0 | 0.5− | | |
| 2003 12 17 | 704 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− | | |
| 2003 12 18 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− | | |

### (143864)∗ 2003 YN$_{15}$

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | **Q** | |
| $M$ | 14.42980 | | (2000.0) | | | | |
| $n$ | 0.29569304 | $\omega$ | 19.90488 | | +0.99888363 | +0.02054043 | |
| $a$ | 2.2313892 | $\Omega$ | 338.78297 | | −0.03894689 | +0.86770382 | |
| $e$ | 0.1992013 | $i$ | 6.75034 | | +0.02673246 | +0.49665699 | |
| $P$ | 3.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.5− | 0.7− | 2004 01 19 | 704 | (2.8+ | 0.6+) | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 1999 07 16 | 704 | 0.8+ | 0.2− | 2004 01 19 | 704 | (2.1+ | 0.1+) | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 1999 07 16 | 704 | 0.2+ | 1.4− | 2004 01 19 | 704 | (2.1+ | 0.4+) | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 1999 07 16 | 704 | 0.9+ | 0.7− | 2004 01 19 | 704 | (1.6+ | 0.9+) | 2006 10 19 | 703 | 0.2− | 0.4− | | |
| 2001 02 01 | 704 | (2.0+ | 0.1−) | 2004 01 31 | 704 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.5+ | 0.1− | | |
| 2001 02 01 | 704 | 0.6+ | 0.3+ | 2004 01 31 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.2− | | |
| 2001 02 01 | 704 | 0.3+ | 0.5− | 2004 01 31 | 704 | 0.4+ | 0.7− | 2006 10 19 | 703 | 0.4+ | 0.1− | | |
| 2001 02 01 | 704 | 1.1− | 0.1+ | 2005 04 06 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 704 | 0.5− | 0.4+ | | |
| 2001 02 01 | 691 | 0.2+ | 0.0 | 2005 04 06 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 704 | 1.0− | 0.6− | | |
| 2001 02 01 | 691 | 0.1+ | 0.0 | 2005 04 06 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 704 | 0.0 | 0.4+ | | |
| 2001 02 01 | 691 | 0.2+ | 0.2+ | 2005 04 08 | 735 | 0.6− | 0.9+ | 2006 10 20 | 704 | 0.1+ | 0.5− | | |
| 2001 02 17 | 704 | 1.1− | 0.4− | 2005 04 08 | 735 | 0.5− | 0.8+ | 2006 10 20 | 704 | 0.3− | 0.6+ | | |
| 2001 02 17 | 704 | 0.4+ | 0.4+ | 2005 04 08 | 735 | 0.3+ | 0.9− | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2001 02 17 | 704 | 0.2− | 0.2+ | 2006 08 24 | 704 | (1.2− | 2.0+) | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 02 17 | 704 | 0.1− | 1.0+ | 2006 08 24 | 704 | 0.1− | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 07 06 | 644 | 0.2− | 0.8+ | 2006 08 24 | 704 | 0.6+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.5− | | |
| 2002 07 06 | 644 | 0.0 | 0.7+ | 2006 08 26 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.7− | | |
| 2002 07 06 | 644 | 0.0 | 0.7+ | 2006 08 26 | 704 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.2− | 0.5− | | |
| 2003 12 03 | 704 | 0.7+ | 0.2− | 2006 08 26 | 704 | 0.6− | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.8− | | |
| 2003 12 03 | 704 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.3− | 0.4− | 2006 11 07 | 644 | 0.2− | 0.1+ | | |
| 2003 12 03 | 704 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.6− | 2006 11 07 | 644 | 0.4− | 0.2+ | | |
| 2003 12 03 | 704 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.2− | 0.1+ | | |
| 2003 12 03 | 704 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.4− | 0.3− | 2006 11 15 | 703 | 0.6+ | 0.5+ | | |
| 2003 12 17 | 704 | 0.0 | 0.3− | 2006 08 30 | 704 | 1.1+ | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.3+ | | |
| 2003 12 17 | 704 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.2− | | |
| 2003 12 17 | 704 | 0.1− | 0.4− | 2006 08 30 | 704 | 0.8+ | 0.9+ | 2006 11 15 | 703 | 0.3+ | 0.3− | | |
| 2003 12 18 | 704 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.4− | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.5− | | |
| 2003 12 18 | 704 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.0 | | |
| 2003 12 18 | 704 | 0.3− | 0.1+ | 2006 08 30 | 699 | 0.5− | 0.5+ | 2006 11 15 | 703 | 0.1+ | 0.5− | | |
| 2003 12 18 | 704 | (0.2+ | 1.8+) | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.9+ | 0.7+ | | |
| 2003 12 18 | 704 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.9+ | | |
| 2003 12 19 | 704 | 0.6+ | 0.2− | 2006 09 17 | 703 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.1+ | 1.1+ | | |
| 2003 12 19 | 704 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.2− | 1.2+ | | |
| 2003 12 19 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.9− | 0.5+ | | |
| 2003 12 19 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 704 | 0.6+ | 0.1− | 2006 11 22 | 703 | 0.1− | 0.2− | | |
| 2003 12 19 | 704 | 0.0 | 0.4− | 2006 09 21 | 704 | 0.3+ | 0.2− | 2006 11 22 | 703 | 0.3− | 0.3− | | |
| 2003 12 21 | 704 | 0.4+ | 0.3− | 2006 09 21 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.4− | | |
| 2003 12 21 | 704 | 0.3− | 0.3− | 2006 09 21 | 704 | 0.2− | 0.6+ | 2006 11 22 | 703 | 0.3+ | 0.7− | | |
| 2003 12 21 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.4− | 0.2+ | | |
| 2003 12 21 | 704 | 0.0 | 0.5− | 2006 09 28 | 703 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.5+ | 0.6+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.6− | 1.2− | 2006 09 28 | 703 | 0.4− | 0.1− | 2006 12 01 | 704 | 1.6− | 1.4+ |
| 2003 12 27 | 704 | 0.5− | 0.2− | 2006 09 28 | 703 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2003 12 27 | 704 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 12 01 | 704 | 1.1+ | 0.2− |
| 2003 12 27 | 704 | 1.2− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.1+ | | | | |
| 2003 12 27 | 704 | 0.1+ | 0.7− | 2006 10 11 | 644 | 0.0 | 0.2+ | | | | |

**(143865)∗ 2003 YG$_{16}$**

Discovered 2003 Dec. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.43995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29928145 | $\omega$ | 304.77644 | | +0.99376576 | +0.08700602 | |
| $a$ | 2.2135169 | $\Omega$ | 50.33592 | | −0.04660751 | +0.89222767 | |
| $e$ | 0.1891863 | $i$ | 5.19564 | | −0.10127863 | +0.44312498 | |
| $P$ | 3.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.5+ | 1.3+ | 2004 01 19 | 699 | 1.1− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.7+ |
| 1999 09 11 | 704 | 0.5+ | 1.4+ | 2004 01 19 | 699 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 1999 09 11 | 704 | 0.8− | 0.3− | 2004 01 19 | 699 | 1.1− | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 1999 09 11 | 704 | 0.1− | 1.0− | 2004 01 31 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 1999 09 11 | 704 | 0.6− | 0.3− | 2004 01 31 | 704 | 0.6+ | 0.2− | 2006 11 16 | 704 | 0.1− | 0.5− |
| 2001 02 16 | 704 | 0.4+ | 0.0 | 2004 01 31 | 704 | 1.0+ | 0.8− | 2006 11 16 | 704 | 0.1+ | 0.5+ |
| 2001 02 16 | 704 | 0.4+ | 0.4− | 2004 01 31 | 704 | (0.2+ | 1.8+) | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2001 02 16 | 704 | 0.4− | 0.4− | 2004 02 11 | 699 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.7+ |
| 2001 02 16 | 704 | 1.0+ | 0.6+ | 2004 02 11 | 699 | 0.9+ | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2003 11 24 | 291 | 0.8− | 0.3+ | 2004 02 11 | 699 | 1.0− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2003 11 24 | 291 | 0.5− | 0.1+ | 2004 02 11 | 699 | 1.3− | 0.2− | 2006 11 16 | 691 | 0.2− | 0.5− |
| 2003 11 24 | 291 | 0.3− | 0.2+ | 2005 04 07 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 408 | 0.0 | 0.2− |
| 2003 12 17 | 699 | 0.0 | 0.4+ | 2005 04 07 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 408 | 0.2− | 0.1− |
| 2003 12 17 | 699 | 0.5+ | 0.2+ | 2005 04 07 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2003 12 17 | 699 | 0.2− | 0.4− | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2003 12 17 | 699 | 0.1− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2003 12 18 | 704 | 0.3− | 0.0 | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2003 12 18 | 704 | 0.3− | 0.3+ | 2005 05 10 | G96 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2003 12 18 | 704 | 0.5+ | 0.7− | 2005 05 13 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2003 12 18 | 704 | 0.7+ | 0.5+ | 2005 05 13 | 704 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | 1.0+ | 0.3+ | 2005 05 13 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2003 12 23 | 704 | (0.8+ | 1.6+) | 2005 05 13 | 704 | 0.4− | 0.3+ | 2006 11 21 | 408 | 0.3+ | 0.0 |
| 2003 12 23 | 704 | (1.0+ | 2.2+) | 2005 06 01 | G96 | 0.3− | 0.4+ | 2006 11 21 | 408 | 0.4− | 0.3− |
| 2003 12 23 | 704 | 0.4+ | 1.1+ | 2005 06 01 | G96 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2003 12 28 | 704 | 0.3+ | 0.3+ | 2005 06 01 | G96 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2003 12 28 | 704 | 0.7+ | 0.2+ | 2005 06 01 | G96 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2003 12 28 | 704 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2003 12 28 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2003 12 28 | 704 | 0.2− | 0.4+ | 2006 08 29 | 703 | 0.1+ | 0.3+ | 2006 11 24 | 408 | 1.4− | 0.7+ |
| 2004 01 13 | 699 | 0.1+ | 0.5− | 2006 08 29 | 703 | 0.4− | 0.6− | 2006 11 24 | 408 | 1.1− | 0.5+ |
| 2004 01 13 | 699 | 0.0 | 0.5− | 2006 11 15 | 704 | 0.2+ | 1.0+ | 2006 11 25 | 408 | 0.4− | 1.4− |
| 2004 01 13 | 699 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.0 | 0.8+ | 2006 11 25 | 408 | 0.7− | 1.6− |
| 2004 01 13 | 699 | 1.0+ | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.7− |
| 2004 01 16 | 106 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.8− |
| 2004 01 16 | 106 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.2− |
| 2004 01 16 | 106 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.4− |
| 2004 01 19 | 699 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.4− |

**(143866)∗ 2003 YH$_{16}$**

Discovered 2003 Dec. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.89689 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30404564 | $\omega$ | 299.91524 | | +0.92622120 | −0.34503409 | |
| $a$ | 2.1903333 | $\Omega$ | 80.62704 | | +0.37655822 | +0.82771816 | |
| $e$ | 0.2301424 | $i$ | 8.85470 | | +0.01783786 | +0.44253150 | |
| $P$ | 3.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 0.5+ | 0.9− | 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 1993 12 16 | 691 | 0.1+ | 0.7− | 2005 05 11 | 691 | 0.4+ | 0.0 | 2006 11 14 | 704 | (0.2− | 2.2+) |
| 1993 12 16 | 691 | 0.0 | 0.2− | 2005 05 11 | 691 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.4− | 0.0 |
| 2003 11 20 | 704 | 0.2+ | 0.9+ | 2005 05 11 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2003 11 20 | 704 | 0.9+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2003 11 20 | 704 | (1.8+ | 2.4+) | 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.5− |
| 2003 11 20 | 704 | 0.9+ | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2003 11 20 | 704 | 0.7+ | 1.0+ | 2006 09 18 | 703 | 0.5− | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2003 12 17 | 699 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.8− | 2006 11 17 | 704 | 0.4− | 0.0 |
| 2003 12 17 | 699 | 0.1− | 1.2+ | 2006 09 19 | 699 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.2− | 0.2− |
| 2003 12 17 | 699 | 0.4+ | 0.7− | 2006 09 19 | 699 | 0.7+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2003 12 17 | 699 | 1.0− | 0.4− | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2003 12 18 | 704 | 0.1− | 0.8+ | 2006 09 22 | 683 | 1.2− | 0.9+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 0.1+ | 0.3+ | 2006 09 22 | 683 | (0.9− | 2.0+) | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.1− | 1.0+ | 2006 09 22 | 683 | 1.2− | 1.3+ | 2006 11 18 | 704 | 0.7− | 0.2+ |
| 2003 12 18 | 704 | 0.0 | 0.2− | 2006 09 25 | 683 | 1.3+ | 0.8− | 2006 11 18 | 704 | 0.5+ | 0.3− |
| 2003 12 18 | 704 | 0.4− | 1.5+ | 2006 09 25 | 683 | (1.8− | 1.8+) | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2006 09 26 | 683 | 0.1+ | 1.0+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2006 09 26 | 683 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2003 12 23 | 704 | 0.7+ | 1.0− | 2006 09 26 | 683 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2003 12 23 | 704 | 0.8+ | 1.1+ | 2006 10 01 | 703 | 0.8− | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.3− |
| 2003 12 23 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.4− | 1.2+ | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2003 12 23 | 704 | 0.8+ | 0.9+ | 2006 10 01 | 703 | 0.5− | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2003 12 23 | 704 | 0.3− | 0.4+ | 2006 10 01 | 703 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.9− | 0.4+ | 2006 11 24 | 691 | 0.5+ | 0.2+ |
| 2003 12 28 | 704 | 0.7− | 0.5+ | 2006 10 03 | 704 | 0.5+ | 0.3+ | 2006 11 24 | 691 | 0.4+ | 0.0 |
| 2003 12 28 | 704 | 0.7+ | 0.6+ | 2006 10 03 | 704 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.4+ | 0.1+ |
| 2003 12 28 | 704 | 0.2+ | 0.5+ | 2006 10 03 | 704 | 0.4− | 0.4+ | 2006 11 29 | 704 | 2.3+ | 0.5− |
| 2003 12 28 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.9− | 1.0+ |
| 2004 01 13 | 699 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.5− |
| 2004 01 13 | 699 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2004 01 13 | 699 | 1.0− | 0.0 | 2006 11 02 | 703 | 1.1+ | 0.4− | 2006 11 29 | 704 | 1.2+ | 0.7− |
| 2004 01 13 | 699 | 0.9− | 0.2+ | 2006 11 02 | 703 | 0.9− | 0.3− | 2006 11 30 | 291 | 0.3− | 0.2+ |
| 2004 01 31 | 704 | 0.2+ | 0.0 | 2006 11 02 | 703 | 0.3− | 0.1+ | 2006 11 30 | 291 | 0.0 | 0.1+ |
| 2004 01 31 | 704 | (0.2+ | 2.0−) | 2006 11 02 | 703 | 0.3+ | 0.3+ | 2006 11 30 | 291 | 0.0 | 0.1+ |
| 2004 01 31 | 704 | 0.6+ | 0.3+ | 2006 11 05 | 644 | 0.5+ | 0.5+ | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2004 01 31 | 704 | 0.0 | 0.6− | 2006 11 05 | 644 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2004 01 31 | 704 | 0.3+ | 0.5+ | 2006 11 05 | 644 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2005 04 11 | 691 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2005 04 11 | 691 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.3+ | | | | |

**(143867)∗ 2003 YZ$_{16}$ = 2000 EY$_{179}$**

Discovered 2003 Dec. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57462)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.47674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23730856 | $\omega$ | 73.58129 | | −0.73339909 | −0.65571895 | |
| $a$ | 2.5838092 | $\Omega$ | 65.05922 | | +0.52346405 | −0.71303841 | |
| $e$ | 0.0466857 | $i$ | 11.40665 | | +0.43371784 | −0.24821137 | |
| $P$ | 4.15 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 1.4+ | 0.7+ | 2003 12 30 | 704 | 0.1− | 0.4− | 2004 03 23 | 704 | 0.1− | 0.8+ |
| 2000 03 04 | 704 | 0.4− | 0.1+ | 2003 12 30 | 704 | 0.6+ | 0.6− | 2004 03 23 | 704 | 1.0− | 0.5+ |
| 2000 03 04 | 704 | 0.8− | 0.4+ | 2004 01 19 | 704 | (1.6+ | 0.5−) | 2004 03 25 | 704 | 0.3+ | 0.5+ |
| 2000 03 12 | 704 | 0.3− | 0.3+ | 2004 01 19 | 704 | 1.4+ | 0.2+ | 2004 03 25 | 704 | 1.0+ | 0.7+ |
| 2000 03 12 | 704 | 0.6+ | 0.1+ | 2004 01 19 | 704 | 1.0+ | 0.2+ | 2004 03 25 | 704 | 0.7− | 0.2+ |
| 2000 03 12 | 704 | 0.7+ | 0.5+ | 2004 01 19 | 704 | (1.6+ | 0.1−) | 2004 03 25 | 704 | 0.8+ | 0.3− |
| 2000 03 12 | 704 | 0.4− | 0.9+ | 2004 01 31 | 699 | 1.0− | 0.2− | 2006 09 17 | 699 | 0.6+ | 0.7+ |
| 2000 03 12 | 704 | 0.4+ | 1.4+ | 2004 01 31 | 699 | 0.5+ | 0.5− | 2006 09 17 | 699 | 0.3+ | 0.0 |
| 2002 09 16 | 608 | 0.1− | 0.0 | 2004 01 31 | 699 | 0.1+ | 0.4− | 2006 09 17 | 699 | 0.2+ | 0.3+ |
| 2002 09 16 | 608 | 0.7− | 0.1+ | 2004 01 31 | 699 | 0.4− | 0.2− | 2006 09 20 | 703 | 0.4− | 0.6+ |
| 2002 09 16 | 608 | 0.2− | 0.5− | 2004 01 31 | 704 | 0.4+ | 0.6− | 2006 09 20 | 703 | 0.1+ | 0.5+ |
| 2002 10 16 | 644 | 0.0 | 0.8+ | 2004 01 31 | 704 | 0.2− | 0.8− | 2006 09 20 | 703 | 0.0 | 0.4+ |
| 2002 10 16 | 644 | 0.2+ | 0.6+ | 2004 01 31 | 704 | 0.7− | 0.4+ | 2006 09 20 | 703 | 0.4− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.1+ | 0.7+ | 2004 01 31 | 704 | 0.3+ | 1.0− | 2006 09 26 | 703 | 0.2− | 0.5− |
| 2002 10 28 | 644 | 0.4− | 0.4+ | 2004 01 31 | 704 | 0.1+ | 0.5− | 2006 09 26 | 703 | 1.3− | 0.9− |
| 2002 10 28 | 644 | 0.2+ | 0.7+ | 2004 02 02 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.7+ | 0.2− |
| 2002 10 28 | 644 | 0.3+ | 0.5+ | 2004 02 02 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 703 | (1.7+ | 0.1+) |
| 2002 11 03 | 608 | 0.6− | 0.1+ | 2004 02 02 | 704 | 1.0+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 11 03 | 608 | 0.0 | 0.3+ | 2004 02 02 | 704 | 0.1+ | 0.5− | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2002 11 03 | 608 | 0.2− | 0.1− | 2004 02 02 | 704 | 1.1+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2003 12 17 | 644 | 0.4− | 0.1− | 2004 02 11 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2003 12 17 | 644 | 0.6− | 0.1− | 2004 02 11 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2003 12 17 | 644 | 0.2− | 0.1+ | 2004 02 11 | 704 | 0.8− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2003 12 18 | 704 | 0.4− | 0.9− | 2004 02 11 | 704 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.2− |
| 2003 12 18 | 704 | 0.1+ | 0.1− | 2004 02 11 | 704 | 0.9− | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2003 12 18 | 704 | 0.1− | 0.3− | 2004 02 11 | 704 | 0.8− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2003 12 18 | 704 | 0.5+ | 0.5− | 2004 02 11 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2003 12 28 | 704 | 0.3+ | 0.4− | 2004 02 11 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.4− |
| 2003 12 28 | 704 | 0.3− | 0.1+ | 2004 02 11 | 704 | 1.1− | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2003 12 28 | 704 | 0.4+ | 0.3− | 2004 02 11 | 644 | 0.2− | 0.1− | 2006 10 28 | 703 | (3.0+ | 1.2+) |
| 2003 12 28 | 704 | 0.5− | 0.4+ | 2004 02 11 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | (4.3+ | 0.8+) |
| 2003 12 30 | 704 | 0.6+ | 0.5− | 2004 03 23 | 704 | 0.3− | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.5− |
| 2003 12 30 | 704 | 0.0 | 0.3− | 2004 03 23 | 704 | 0.6− | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.4− |

**(143868)∗ 2003 YA$_{18}$**

Discovered 2003 Dec. 16 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.67313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26943323 | $\omega$ | 329.01465 | | +0.21925642 | −0.96449131 | |
| $a$ | 2.3741160 | $\Omega$ | 107.97307 | | +0.92386751 | +0.15671486 | |
| $e$ | 0.2312457 | $i$ | 8.90556 | | +0.31368049 | +0.21259578 | |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.8− | 0.3+ | 2003 12 19 | 608 | 0.4− | 0.4− | 2004 01 31 | 704 | 0.9− | 1.0− |
| 1999 10 08 | 704 | 0.5− | 0.6+ | 2003 12 19 | 608 | 0.8− | 0.7− | 2004 02 13 | 185 | 0.3+ | 0.3− |
| 1999 10 08 | 704 | 0.3− | 1.2+ | 2003 12 21 | 704 | 0.1+ | 0.5+ | 2004 02 13 | 185 | 0.0 | 0.0 |
| 1999 10 08 | 704 | 0.5− | 0.9+ | 2003 12 21 | 704 | 0.1+ | 0.4+ | 2004 02 13 | 185 | 0.1+ | 0.9− |
| 1999 10 08 | 704 | 0.3+ | 1.0+ | 2003 12 21 | 704 | 0.1− | 0.2+ | 2004 02 13 | 185 | 0.5− | 0.2+ |
| 1999 10 08 | 704 | 0.5− | 1.0+ | 2003 12 21 | 704 | 0.1+ | 0.5+ | 2004 02 15 | 704 | 0.6+ | 0.0 |
| 1999 10 08 | 704 | 0.0 | 0.4+ | 2003 12 21 | 704 | 0.6− | 0.5+ | 2004 02 15 | 704 | 0.4+ | 0.3+ |
| 1999 10 08 | 704 | (0.3− | 2.9+) | 2003 12 25 | 608 | (0.5− | 2.4+) | 2004 02 15 | 704 | 0.7+ | 0.5+ |
| 1999 10 08 | 704 | 0.3− | 0.4+ | 2003 12 25 | 608 | (0.8− | 2.4+) | 2004 02 15 | 704 | 0.7+ | 0.8+ |
| 2003 12 01 | 704 | 0.3− | 0.8+ | 2003 12 25 | 608 | (0.6− | 2.4+) | 2004 02 15 | 704 | 0.5+ | 0.8+ |
| 2003 12 01 | 704 | 0.7+ | 1.0+ | 2003 12 29 | 699 | 0.0 | 0.3+ | 2005 04 30 | 691 | 0.2+ | 0.4+ |
| 2003 12 01 | 704 | 0.5+ | 0.7+ | 2003 12 29 | 699 | 0.4+ | 0.3+ | 2005 04 30 | 691 | 0.4− | 0.8+ |
| 2003 12 01 | 704 | 0.1− | 0.7+ | 2003 12 29 | 699 | 0.1− | 0.4− | 2005 04 30 | 691 | 0.4+ | 0.4+ |
| 2003 12 01 | 704 | 0.7+ | 0.6+ | 2003 12 29 | 699 | 0.1− | 0.0 | 2005 06 09 | 691 | 0.4+ | 0.2+ |
| 2003 12 01 | 703 | 1.7− | 0.8+ | 2004 01 19 | 699 | 0.5+ | 0.5− | 2005 06 09 | 691 | 0.0 | 0.2+ |
| 2003 12 01 | 703 | 1.1− | 0.5+ | 2004 01 19 | 699 | 0.4+ | 0.4+ | 2005 06 09 | 691 | 0.0 | 0.9+ |
| 2003 12 01 | 703 | 1.3− | 1.0+ | 2004 01 19 | 699 | 0.4− | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.5+ |
| 2003 12 01 | 703 | 0.0 | 0.6− | 2004 01 19 | 699 | 0.2+ | 0.3+ | 2005 06 14 | 691 | 0.5+ | 0.2+ |
| 2003 12 16 | 699 | 0.4− | 0.5− | 2004 01 20 | 704 | 0.0 | 0.3+ | 2005 06 14 | 691 | 0.0 | 0.2+ |
| 2003 12 16 | 699 | 0.7+ | 0.3+ | 2004 01 20 | 704 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2003 12 16 | 699 | 0.8+ | 0.6− | 2004 01 20 | 704 | 0.5− | 0.9+ | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2003 12 16 | 699 | 0.3− | 1.6+ | 2004 01 20 | 704 | 0.1− | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.6+ |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2004 01 22 | 704 | 1.7+ | 0.3− | 2006 08 17 | F84 | 0.3− | 0.3+ |
| 2003 12 19 | 704 | 0.3− | 0.3− | 2004 01 22 | 704 | (2.5− | 0.6+) | 2006 08 17 | F84 | 0.5+ | 0.1+ |
| 2003 12 19 | 704 | 0.5+ | 0.0 | 2004 01 22 | 704 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.4− | 0.5+ |
| 2003 12 19 | 691 | 0.2+ | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.4+ |
| 2003 12 19 | 704 | 1.0+ | 0.0 | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.2+ | 0.4+ |
| 2003 12 19 | 704 | 0.2+ | 0.4+ | 2004 01 31 | 704 | 1.6− | 1.1− | 2006 09 26 | 703 | 1.3− | 0.7+ |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2004 01 31 | 704 | 0.7− | 0.3− | 2006 09 26 | 703 | 0.5+ | 0.8− |
| 2003 12 19 | 704 | 0.6+ | 0.1+ | 2004 01 31 | 704 | 0.4− | 0.4− | 2006 09 26 | 703 | 0.7+ | 0.8− |
| 2003 12 19 | 608 | 0.4− | 0.4− | 2004 01 31 | 704 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.5− | 0.4− |

**(143869)∗ 2003 YM$_{20}$**

Discovered 2003 Dec. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.24821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25776514 | $\omega$ | 240.08354 | | −0.64216642 | +0.76651848 | |
| $a$ | 2.4452312 | $\Omega$ | 349.94958 | | −0.68552043 | −0.57918230 | |
| $e$ | 0.1949059 | $i$ | 2.78134 | | −0.34305105 | −0.27748385 | |
| $P$ | 3.82 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.5+ | 0.5− | 2004 01 22 | 704 | 0.4− | 0.6+ | 2006 10 13 | 691 | 0.0 | 0.1− |
| 1993 03 24 | 809 | 0.8+ | 0.3− | 2004 01 22 | 704 | (0.6− | 1.6+) | 2006 10 13 | 691 | 0.2− | 0.1+ |
| 1993 04 17 | 413 | 1.7− | 0.2+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.4+ |
| 2003 12 17 | 691 | 0.1− | 0.1− | 2004 01 27 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.5+ |
| 2003 12 17 | 691 | 0.3− | 0.1+ | 2005 07 29 | E12 | 0.3− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.6+ |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2005 07 29 | E12 | 1.0− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2005 07 29 | E12 | 0.8+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2005 07 29 | E12 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 01 | G96 | 0.2+ | 0.6− |
| 2003 12 21 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.6+ | 0.8− |
| 2003 12 21 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2004 01 15 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.6+ | 0.3− |
| 2004 01 15 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.5− | 0.9− |
| 2004 01 15 | 691 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.4− | 0.5− |
| 2004 01 22 | 704 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.2− | 0.6− |
| 2004 01 22 | 704 | 0.7+ | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.2− | 0.2− |

**(143870)∗ 2003 YO$_{22}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.68539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29026214 | $\omega$ | 38.69655 | | +0.80861689 | −0.58833238 | |
| $a$ | 2.2591364 | $\Omega$ | 357.33997 | | +0.52888781 | +0.72834787 | |
| $e$ | 0.2468714 | $i$ | 2.38971 | | +0.25771382 | +0.35124691 | |
| $P$ | 3.40 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.1− | 1.1+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 1999 07 14 | 704 | 0.6− | 0.8+ | 2006 08 17 | 644 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 1999 07 14 | 704 | 0.3− | 1.2+ | 2006 08 25 | 704 | 0.6+ | 0.6− | 2006 10 19 | G96 | 0.5+ | 0.4− |
| 2000 12 23 | 645 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.8− | 0.5− | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2000 12 23 | 645 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.4− | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2001 03 18 | 691 | 0.1+ | 0.6+ | 2006 08 25 | 704 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2001 03 18 | 691 | 0.4− | 0.4+ | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 03 18 | 691 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2003 11 20 | 704 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 11 20 | 704 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2003 11 20 | 704 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2003 11 20 | 704 | 0.1+ | 0.6− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 11 20 | 704 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 12 18 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 704 | 0.9− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2003 12 18 | 704 | 0.3− | 0.7+ | 2006 09 17 | 704 | 0.9− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 12 18 | 704 | 0.5− | 1.2+ | 2006 09 17 | 704 | 1.3− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2003 12 18 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 1.4− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 1.0+ | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2003 12 19 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2003 12 21 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 12 21 | 691 | 1.0+ | 0.5+ | 2006 09 20 | 704 | 0.7− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 12 21 | 691 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.1− | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 12 21 | 608 | (1.8+ | 0.4+) | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2003 12 21 | 608 | 1.4+ | 1.0+ | 2006 09 20 | 704 | 0.3+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2003 12 21 | 608 | (1.8+ | 0.5+) | 2006 09 20 | 704 | 0.5+ | 0.8− | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 24 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 0.4− | 0.3+ | 2006 09 23 | 691 | 0.3+ | 0.3− | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2003 12 22 | 704 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.3+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2004 01 19 | 699 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.6− | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.1+ |
| 2004 01 19 | 699 | 0.5− | 0.8− | 2006 09 26 | 704 | 0.3+ | 0.3+ | 2006 11 10 | 704 | 0.1− | 0.2+ |
| 2004 01 19 | 699 | (1.8− | 0.3−) | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 11 10 | 704 | 0.3+ | 0.0 |
| 2004 01 19 | 699 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2004 01 22 | 704 | 1.0− | 0.5− | 2006 09 26 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2004 01 22 | 704 | 1.3− | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2004 01 22 | 704 | 1.0− | 0.9− | 2006 09 27 | 704 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2004 01 22 | 704 | (1.6− | 1.0+) | 2006 09 27 | 704 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.5− |
| 2004 01 24 | 704 | 0.7+ | 0.5− | 2006 09 27 | 704 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2004 01 24 | 704 | 0.5+ | 0.4− | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2004 01 24 | 704 | 0.4+ | 0.6− | 2006 09 29 | 704 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2004 01 24 | 704 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2004 01 24 | 704 | (2.5+ | 0.6−) | 2006 09 29 | 704 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2004 01 30 | 704 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2004 01 30 | 704 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.4− | 0.4+ | 2006 11 18 | 704 | 0.2− | 1.8+ |
| 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2004 01 30 | 704 | 0.5+ | 0.3− | 2006 09 30 | 704 | 0.2+ | 0.9+ | 2006 11 18 | 703 | 0.7+ | 0.3− |
| 2004 01 30 | 704 | 0.4− | 0.8+ | 2006 09 30 | 704 | 0.0 | 0.5+ | 2006 11 18 | 703 | 0.3+ | 0.2− |
| 2004 02 15 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.5+ | 2006 11 18 | 704 | 0.9− | 0.8− |
| 2004 02 15 | 704 | 0.4+ | 0.2− | 2006 09 30 | 704 | 0.3+ | 0.6+ | 2006 11 18 | 703 | 0.6− | 0.0 |
| 2004 02 15 | 704 | 0.2− | 0.6+ | 2006 10 01 | 703 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 1.1+ |
| 2004 02 15 | 704 | 0.4+ | 0.1+ | 2006 10 01 | 703 | 0.4+ | 0.5− | 2006 11 18 | 703 | 0.5+ | 0.6+ |
| 2004 02 15 | 704 | 0.0 | 0.7+ | 2006 10 01 | 703 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2006 07 21 | 703 | 1.3− | 1.2− | 2006 10 01 | 703 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2006 07 21 | 703 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1− | 1.2+ |
| 2006 07 21 | 703 | 0.2+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2006 07 21 | 703 | 1.2+ | 0.5− | 2006 10 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.9− | 1.4+ |
| 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.5+ | 1.1+ |
| 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.9− | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2006 08 17 | 644 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 11 21 | 704 | 1.3+ | 0.5+ |
| 2006 08 17 | 644 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 21 | 704 | 1.4+ | 0.3− |

**(143871)∗ 2003 YK$_{23}$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.56918 | | (2000.0) | | +0.63488292 | −0.77173346 |
| $n$ | 0.28683627 | $\omega$ | 68.51670 | | +0.65776100 | +0.56485467 |
| $a$ | 2.2770890 | $\Omega$ | 341.92108 | | +0.40530748 | +0.29217575 |
| $e$ | 0.0871442 | $i$ | 6.80262 | | | |
| $P$ | 3.44 | $H$ | 16.5 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.4− | 0.1− | 2003 12 20 | 704 | 0.5− | 0.9+ | 2006 08 28 | 691 | 0.3− | 0.2+ |
| 2001 02 17 | 704 | 0.1+ | 0.5− | 2003 12 20 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 691 | 0.3− | 0.1− |
| 2001 02 17 | 704 | 1.4− | 0.1+ | 2003 12 20 | 704 | (0.1+ | 2.4+) | 2006 08 28 | 691 | 0.3− | 0.3+ |
| 2001 02 17 | 704 | 0.2+ | 0.1− | 2003 12 21 | 704 | 0.7+ | 1.4+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2001 02 17 | 704 | 0.5+ | 0.2− | 2003 12 21 | 704 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2001 03 28 | 691 | 0.5+ | 0.1+ | 2003 12 21 | 704 | 0.6+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2001 03 28 | 691 | 0.3+ | 0.4+ | 2003 12 21 | 704 | 0.4− | 0.6+ | 2006 09 16 | 699 | 0.7− | 0.2− |
| 2001 03 28 | 691 | 0.1− | 0.5+ | 2003 12 21 | 704 | 0.9+ | 0.3− | 2006 09 16 | 699 | 0.4− | 0.5− |
| 2003 11 19 | 704 | 0.5+ | 1.4− | 2003 12 22 | 704 | 0.8+ | 0.4+ | 2006 09 16 | 699 | 0.7+ | 0.3− |
| 2003 11 19 | 704 | (0.2− | 1.9−) | 2003 12 22 | 704 | 0.1− | 0.7− | 2006 09 16 | 699 | 0.5+ | 0.2− |
| 2003 11 19 | 704 | (0.1+ | 1.6−) | 2003 12 22 | 704 | 1.0+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.9+ |
| 2003 11 19 | 704 | (0.8− | 1.9−) | 2003 12 22 | 704 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.0 | 1.3+ |
| 2003 11 19 | 704 | 0.1− | 1.2− | 2003 12 22 | 704 | 0.7+ | 0.3+ | 2006 09 17 | 704 | 0.3+ | 0.0 |
| 2003 12 03 | 704 | 0.7− | 0.0 | 2003 12 27 | 704 | 0.5− | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.4− |
| 2003 12 03 | 704 | (0.1+ | 1.9−) | 2003 12 27 | 704 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.9− |
| 2003 12 03 | 704 | 0.1+ | 0.3− | 2003 12 27 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.4− |
| 2003 12 03 | 704 | 0.2− | 0.4+ | 2003 12 27 | 704 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.5− | 0.7− |
| 2003 12 03 | 704 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 1.0− | 0.3+ | 2006 09 25 | 699 | (1.5− | 0.1−) |
| 2003 12 17 | 704 | 0.5+ | 0.1+ | 2003 12 29 | 704 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.2− |
| 2003 12 17 | 704 | 0.1− | 0.1+ | 2003 12 29 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 2003 12 17 | 704 | 0.2+ | 0.0 | 2003 12 29 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.6+ |
| 2003 12 17 | 704 | 0.4+ | 0.3− | 2003 12 29 | 704 | 0.2− | 0.7− | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2003 12 17 | 704 | 0.2+ | 0.0 | 2005 05 16 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.8− |
| 2003 12 19 | 704 | 0.6− | 0.0 | 2005 05 16 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.4+ |
| 2003 12 19 | 704 | 0.2− | 0.0 | 2005 05 16 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.4+ |
| 2003 12 19 | 704 | 0.7+ | 0.3− | 2006 08 27 | 699 | 1.5+ | 0.0 | 2006 10 18 | 691 | 0.3− | 0.1+ |
| 2003 12 19 | 704 | 0.7− | 1.0− | 2006 08 27 | 699 | (0.0 | 1.8+) | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2003 12 20 | 704 | 1.4− | 1.0− | 2006 08 27 | 699 | (0.5− | 2.8+) | 2006 10 18 | 691 | 0.1+ | 0.2− |
| 2003 12 20 | 704 | 0.0 | 0.4− | 2006 08 27 | 699 | 1.0+ | 1.3+ | | | | |

**(143872)∗ 2003 YU$_{23}$ = 2005 JD$_{155}$**

Discovered 2003 Dec. 17 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 86192)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.06201 | | (2000.0) | | +0.09359441 | −0.99289655 |
| $n$ | 0.28127407 | $\omega$ | 219.81078 | | +0.93788797 | +0.11268615 |
| $a$ | 2.3070106 | $\Omega$ | 224.95986 | | +0.33407521 | −0.03818726 |
| $e$ | 0.0778760 | $i$ | 5.96739 | | | |
| $P$ | 3.50 | $H$ | 17.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.4− | 0.2− | 2005 06 13 | G96 | 0.3− | 0.5+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2003 12 22 | 704 | 0.3− | 0.9− | 2005 06 13 | G96 | 0.4− | 0.2+ |
| 1999 10 16 | 645 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.1− | 0.4− | 2006 08 21 | 691 | 0.0 | 0.2+ |
| 1999 10 16 | 645 | 0.0 | 0.1+ | 2004 02 10 | 644 | 0.3− | 0.2+ | 2006 08 21 | 691 | 0.1− | 0.1+ |
| 2001 02 22 | 645 | 0.1+ | 0.0 | 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.5+ |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2004 02 10 | 644 | 0.9− | 0.4+ | 2006 08 29 | 703 | 0.1− | 0.1− |
| 2003 12 17 | 699 | 0.2− | 0.7+ | 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | (1.6− | 0.7+) |
| 2003 12 17 | 699 | 0.1+ | 0.8+ | 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 08 29 | 703 | (0.3− | 1.5+) |
| 2003 12 17 | 699 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | (1.8− | 0.1−) |
| 2003 12 17 | 699 | 0.2− | 0.0 | 2005 05 04 | G96 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.6− |
| 2003 12 19 | 704 | 0.6+ | 0.3+ | 2005 05 04 | G96 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.3+ |
| 2003 12 19 | 704 | 0.2+ | 0.7− | 2005 05 04 | G96 | 0.1− | 0.5− | 2006 09 18 | 703 | 0.3+ | 0.1+ |
| 2003 12 19 | 704 | 1.1+ | 0.4− | 2005 05 04 | G96 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.0 | 1.3− |
| 2003 12 19 | 704 | 0.4− | 0.7+ | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 10 19 | 695 | 0.3− | 0.1+ |
| 2003 12 21 | 704 | 0.1− | 0.6− | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 10 19 | 695 | 0.3− | 0.2+ |
| 2003 12 21 | 704 | 0.4+ | 0.3+ | 2005 05 13 | G96 | 0.2− | 0.3+ | 2006 11 10 | 291 | 0.1+ | 0.2+ |
| 2003 12 21 | 704 | 0.4− | 0.2− | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 11 10 | 291 | 0.1+ | 0.4+ |
| 2003 12 21 | 704 | 1.3− | 0.7− | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 11 10 | 291 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.5+ | 1.0+ | 2005 06 13 | G96 | 0.7− | 0.0 | | | | |

**(143873)∗ 2003 YC$_{24}$ = 2002 TH$_{25}$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57469)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 105.34677 | | (2000.0) | | −0.63410947 | +0.76784518 |
| $n$ | 0.22347376 | $\omega$ | 205.14240 | | −0.66931267 | −0.48598146 |
| $a$ | 2.6893770 | $\Omega$ | 25.80714 | | −0.38720244 | −0.41741563 |
| $e$ | 0.1371736 | $i$ | 12.09358 | | | |
| $P$ | 4.41 | $H$ | 15.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 1.0+ | 1.8+ | 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 05 04 | 699 | 0.3+ | 0.3+ |
| 2000 01 29 | 704 | 0.1+ | 1.1+ | 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 05 08 | E12 | 0.0 | 0.3+ |
| 2000 01 29 | 704 | 0.5− | 0.3+ | 2005 04 03 | E12 | 0.4− | 0.2+ | 2005 05 08 | E12 | 0.3− | 0.1− |
| 2000 01 29 | 704 | (0.9− | 2.8+) | 2005 04 03 | E12 | 0.1− | 0.8+ | 2005 05 08 | E12 | 0.1+ | 0.4+ |
| 2002 09 05 | 704 | 0.0 | 1.1+ | 2005 04 03 | E12 | 0.5+ | 0.1+ | 2005 05 08 | E12 | 0.3− | 0.2− |
| 2002 09 05 | 704 | 0.3+ | 1.1+ | 2005 04 03 | E12 | 0.3+ | 0.2+ | 2005 05 16 | 644 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 1.1+ | 2005 04 04 | 704 | 0.1+ | 0.8− | 2005 05 16 | 644 | 0.2+ | 0.2+ |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2005 04 04 | 704 | 0.9+ | 0.3− | 2005 05 16 | 644 | 0.0 | 0.3+ |
| 2002 10 02 | 704 | 0.4− | 0.4+ | 2005 04 04 | 704 | 0.2+ | 0.7+ | 2005 06 02 | 699 | 1.1+ | 0.2− |
| 2002 10 02 | 704 | 0.4+ | 0.6+ | 2005 04 04 | 704 | 0.9+ | 0.5− | 2005 06 02 | 699 | 1.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2005 04 04 | 704 | 1.4+ | 0.0 | 2005 06 02 | 699 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.8− | 0.2+ | 2005 04 05 | 699 | 0.0 | 0.0 | 2005 06 02 | 699 | 0.6− | 0.6+ |
| 2002 10 03 | 704 | 0.7− | 0.1− | 2005 04 05 | 699 | 0.1− | 0.1+ | 2006 08 30 | 699 | (0.6− | 1.7+) |
| 2002 10 03 | 704 | 0.8− | 0.1− | 2005 04 05 | 699 | 0.1− | 0.7+ | 2006 08 30 | 699 | 0.0 | 1.0+ |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2005 04 05 | 699 | 0.4+ | 0.5+ | 2006 08 30 | 699 | 0.6− | 0.6+ |
| 2002 10 12 | 704 | 0.0 | 0.3+ | 2005 04 07 | 704 | 0.3+ | 0.3− | 2006 08 30 | 699 | 0.9− | 0.2+ |
| 2002 10 12 | 704 | 0.6+ | 0.1+ | 2005 04 07 | 704 | 0.3− | 0.3+ | 2006 09 20 | 703 | 0.9− | 0.3− |
| 2002 10 12 | 704 | 0.1− | 0.3+ | 2005 04 07 | 704 | 0.3− | 0.6+ | 2006 09 20 | 703 | 0.8− | 0.0 |
| 2002 10 12 | 704 | 0.0 | 0.3+ | 2005 04 07 | 704 | 0.0 | 0.7+ | 2006 09 20 | 703 | 1.2− | 0.3− |
| 2003 12 17 | 704 | 0.2− | 0.2− | 2005 04 07 | 704 | 0.3+ | 0.2− | 2006 09 20 | 703 | 0.4+ | 0.6+ |
| 2003 12 17 | 704 | 0.7+ | 0.2− | 2005 04 14 | 608 | (2.2− | 1.3+) | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2003 12 17 | 704 | 0.4− | 0.4+ | 2005 04 14 | 608 | 1.5− | 0.9+ | 2006 09 26 | 703 | 0.7+ | 0.3− |
| 2003 12 17 | 704 | 0.5+ | 0.3+ | 2005 04 14 | 608 | (2.3− | 1.4+) | 2006 09 26 | 703 | 0.4+ | 0.2+ |
| 2003 12 17 | 704 | 0.4− | 0.5+ | 2005 04 18 | E12 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 2003 12 19 | 704 | 0.4+ | 0.3− | 2005 04 18 | E12 | 0.3− | 0.1+ | 2006 10 02 | 703 | 1.0− | 0.4+ |
| 2003 12 19 | 704 | 0.2− | 0.3+ | 2005 04 18 | E12 | 0.5− | 0.4− | 2006 10 02 | 703 | 0.7+ | 1.2+ |
| 2003 12 19 | 704 | 0.8− | 0.6+ | 2005 04 18 | E12 | (1.8− | 0.7+) | 2006 10 02 | 703 | (1.9− | 0.9−) |
| 2003 12 29 | 704 | 1.1+ | 0.5+ | 2005 04 19 | 608 | 0.4+ | 0.5− | 2006 10 02 | 703 | 0.8+ | 0.1− |
| 2003 12 29 | 704 | 0.7+ | 0.5+ | 2005 04 19 | 608 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.3+ |
| 2003 12 29 | 704 | 0.7− | 0.2+ | 2005 04 19 | 608 | 0.0 | 0.7− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2005 03 10 | G96 | 0.1+ | 0.4+ | 2005 05 04 | 699 | 0.4+ | 1.2+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2005 03 10 | G96 | 0.1− | 0.2+ | 2005 05 04 | 699 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.1− |

**(143874)∗ 2003 YO$_{24}$ = 1999 TQ$_{264}$**

Discovered 2003 Dec. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57469)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.21304 | | (2000.0) | | | |
| $n$ | 0.27569596 | $\omega$ | 268.20389 | | +0.89680107 | −0.42734828 |
| $a$ | 2.3380248 | $\Omega$ | 117.08080 | | +0.43955234 | +0.83107940 |
| $e$ | 0.1173906 | $i$ | 7.39176 | | +0.05041413 | +0.35592200 |
| $P$ | 3.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 15 | 566 | 0.1+ | 0.9− | 2004 01 21 | 704 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.1+ |
| 1997 01 15 | 566 | 0.1+ | 0.4− | 2004 01 27 | 691 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.2− |
| 1997 01 15 | 566 | 1.2+ | 0.5− | 2004 01 27 | 691 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.6+ | 0.1− |
| 1999 10 02 | 704 | 1.7+ | 0.1+ | 2004 01 27 | 691 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.4+ |
| 1999 10 02 | 704 | 0.6+ | 1.2− | 2004 01 30 | 704 | 0.2− | 0.5− | 2006 09 25 | 703 | (0.2− | 1.9+) |
| 1999 10 02 | 704 | 0.5− | 1.4− | 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 09 25 | 703 | 0.3+ | 1.1+ |
| 1999 10 02 | 704 | 0.7− | 1.0− | 2004 01 30 | 704 | 0.3− | 0.6+ | 2006 09 25 | 703 | 0.5− | 0.7+ |
| 1999 10 09 | 704 | 0.2− | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 09 25 | 703 | (1.0+ | 1.8+) |
| 1999 10 09 | 704 | 0.5− | 0.0 | 2005 04 10 | 691 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.8− | 1.0− |
| 1999 10 09 | 704 | 0.7− | 0.2− | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.4− |
| 1999 10 09 | 704 | 0.6+ | 0.9− | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2003 12 17 | 691 | 0.0 | 0.0 | 2005 04 18 | 691 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.4+ |
| 2003 12 17 | 691 | 0.2− | 0.3+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2003 12 17 | 691 | 0.1+ | 0.1+ | 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2003 12 19 | 704 | (2.0+ | 0.2−) | 2005 05 07 | 703 | (0.6+ | 2.0+) | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2003 12 19 | 704 | 1.3+ | 0.9− | 2005 05 07 | 703 | (0.6+ | 4.1+) | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2003 12 19 | 704 | (0.3− | 2.1+) | 2005 05 07 | 703 | 1.4− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.6+ |
| 2003 12 19 | 704 | (1.8+ | 0.0 ) | 2005 05 07 | 703 | (0.8+ | 1.6+) | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2003 12 19 | 704 | 0.0 | 0.4+ | 2006 08 19 | 644 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2003 12 19 | 704 | 0.2− | 0.7+ | 2006 08 19 | 644 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2003 12 23 | 704 | (1.8+ | 0.0 ) | 2006 08 19 | 644 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2003 12 23 | 704 | (1.6+ | 0.1+) | 2006 09 14 | 644 | 1.0− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2003 12 23 | 704 | 1.1+ | 0.7+ | 2006 09 14 | 644 | 0.7− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2003 12 23 | 704 | 1.1+ | 0.6+ | 2006 09 14 | 644 | 0.6− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2003 12 23 | 704 | 1.4+ | 0.1− | 2006 09 17 | 699 | 0.7+ | 1.4+ | 2006 11 19 | 703 | 0.3− | 0.5+ |
| 2004 01 21 | 704 | 0.4− | 0.0 | 2006 09 17 | 699 | 0.7+ | 0.5+ | 2006 11 19 | 703 | 0.1− | 0.5+ |
| 2004 01 21 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 699 | (1.8+ | 1.2+) | 2006 11 19 | 703 | 0.4− | 0.5+ |
| 2004 01 21 | 704 | 0.7− | 0.1+ | 2006 09 17 | 699 | 1.0+ | 0.8+ | 2006 11 19 | 703 | 0.1− | 0.6− |

**(143875)∗ 2003 YR$_{24}$**

Discovered 2003 Dec. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.90740 | | (2000.0) | | | |
| $n$ | 0.25711117 | $\omega$ | 306.33276 | | −0.03656424 | −0.99874416 |
| $a$ | 2.4493758 | $\Omega$ | 145.71454 | | +0.93525059 | −0.04627533 |
| $e$ | 0.1003107 | $i$ | 3.48592 | | +0.35209287 | +0.01920151 |
| $P$ | 3.83 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.4− | 1.4+ | 2005 06 13 | 691 | 0.2+ | 0.2− |
| 1995 10 28 | 691 | 0.2+ | 0.2− | 2003 12 23 | 704 | 0.7+ | 1.2+ | 2005 06 13 | 691 | 0.1+ | 0.4− |
| 1995 10 28 | 691 | 0.2+ | 0.1− | 2003 12 23 | 704 | 0.5− | 0.3+ | 2005 06 13 | 691 | 0.1+ | 0.5− |
| 1995 11 16 | 691 | 0.3− | 0.3− | 2003 12 24 | 608 | 0.1+ | 0.3− | 2006 08 19 | 691 | 0.2− | 0.6+ |
| 1995 11 16 | 691 | 0.2− | 0.3− | 2003 12 24 | 608 | 0.1+ | 0.3− | 2006 08 19 | 691 | 0.3− | 0.3+ |
| 1995 11 16 | 691 | 0.1+ | 0.2− | 2003 12 24 | 608 | 0.0 | 0.4− | 2006 08 19 | 691 | 0.4+ | 0.3+ |
| 2000 01 05 | 704 | 1.6− | 1.4− | 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2000 01 05 | 704 | 0.8+ | 1.6− | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.7+ | 0.5+ |
| 2000 01 05 | 704 | 1.8+ | 0.6+ | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.6− | 0.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2005 05 15 | G96 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2005 05 15 | G96 | (2.1− | 0.3+) | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2003 12 17 | 691 | 0.1+ | 0.2+ | 2005 05 15 | G96 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2003 12 19 | 704 | 0.0 | 0.2− | 2005 05 15 | G96 | 0.5− | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.6− |
| 2003 12 19 | 704 | 0.6+ | 0.0 | 2005 06 08 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.3− | 0.7− |
| 2003 12 19 | 704 | 0.4− | 0.6+ | 2005 06 08 | 691 | 0.0 | 0.1+ | | | | |
| 2003 12 19 | 704 | 0.1+ | 0.3+ | 2005 06 08 | 691 | 0.4− | 0.0 | | | | |

**(143876)∗ 2003 YE$_{26}$ = 1993 FR$_{57}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57470)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.19289 | | (2000.0) | | | |
| $n$ | 0.26057284 | $\omega$ | 132.79205 | | −0.53340632 | −0.84577902 |
| $a$ | 2.4276344 | $\Omega$ | 349.42547 | | +0.75636557 | −0.47076385 |
| $e$ | 0.1637190 | $i$ | 3.63741 | | +0.37866718 | −0.25107617 |
| $P$ | 3.78 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 1.4+ | 0.1+ | 2003 11 20 | 704 | 0.4− | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.3− |
| 1993 03 20 | 809 | (2.6+ | 0.3+) | 2003 12 18 | 704 | (1.7+ | 0.7+) | 2003 12 28 | 704 | 0.1+ | 0.3− |
| 1993 04 17 | 691 | 0.1− | 0.2+ | 2003 12 18 | 704 | 0.4+ | 0.4+ | 2003 12 28 | 704 | 0.1+ | 0.3− |
| 1993 04 17 | 691 | 0.0 | 0.3− | 2003 12 18 | 704 | 0.2+ | 0.2− | 2004 01 31 | 704 | 0.3− | 0.0 |
| 1993 04 17 | 691 | 0.3− | 0.1− | 2003 12 18 | 704 | 0.1+ | 0.7− | 2004 01 31 | 704 | 0.6+ | 0.6+ |
| 1995 10 24 | 691 | 0.2− | 0.4− | 2003 12 18 | 704 | 0.3− | 0.2− | 2004 01 31 | 704 | 0.9− | 0.5− |
| 1995 10 24 | 691 | 0.4+ | 0.3− | 2003 12 19 | 704 | 0.3+ | 0.8+ | 2004 02 15 | 704 | 0.6+ | 0.0 |
| 1995 10 24 | 691 | 0.3+ | 0.4− | 2003 12 19 | 704 | 0.3+ | 0.1+ | 2004 02 15 | 704 | 0.1+ | 0.4− |
| 2002 08 18 | 644 | 0.3+ | 0.3+ | 2003 12 19 | 704 | 1.2+ | 0.3+ | 2004 02 15 | 704 | 0.3− | 1.0+ |
| 2002 08 18 | 644 | 0.1− | 0.4+ | 2003 12 19 | 704 | 0.2+ | 0.3+ | 2004 02 15 | 704 | 0.1− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2003 12 19 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.5− | 1.1+ |
| 2002 08 29 | 644 | 0.4+ | 0.1+ | 2003 12 19 | 704 | 0.5− | 0.8+ | 2006 08 28 | 691 | 0.3− | 0.3+ |
| 2002 08 29 | 644 | 0.1+ | 0.6+ | 2003 12 19 | 704 | 0.1+ | 0.5+ | 2006 08 28 | 691 | 0.4− | 0.1+ |
| 2002 08 29 | 644 | 0.4+ | 0.5+ | 2003 12 19 | 704 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2002 09 01 | 644 | 0.6− | 0.1+ | 2003 12 19 | 704 | 0.2+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2002 09 01 | 644 | 0.1− | 0.2+ | 2003 12 19 | 704 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.3+ | 0.1+ |
| 2002 09 15 | 644 | 0.4− | 0.2− | 2003 12 23 | 704 | 0.6− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.3+ |
| 2002 09 15 | 644 | 0.5− | 0.2− | 2003 12 23 | 704 | 0.6− | 0.1− | 2006 10 19 | 695 | 0.2− | 0.1− |
| 2002 09 15 | 644 | 0.1− | 0.3− | 2003 12 23 | 704 | 0.8− | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.2− |
| 2003 11 20 | 704 | 0.5+ | 0.6− | 2003 12 23 | 704 | 0.5+ | 1.2+ | 2006 10 20 | 695 | 0.1+ | 0.2− |
| 2003 11 20 | 704 | 0.1+ | 0.9+ | 2003 12 28 | 704 | 0.5+ | 0.0 | | | | |
| 2003 11 20 | 704 | 0.6+ | 0.9− | 2003 12 28 | 704 | 0.0 | 0.3− | | | | |

**(143877)∗ 2003 YF$_{26}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.31491 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28778488 | $\omega$ | 99.41720 | | −0.98765590 | −0.10815951 | |
| $a$ | 2.2720824 | $\Omega$ | 74.43662 | | +0.05039134 | −0.90427384 | |
| $e$ | 0.0459799 | $i$ | 6.75444 | | +0.14831231 | −0.41302584 | |
| $P$ | 3.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 691 | 0.3+ | 0.2− | 2002 09 16 | 644 | 0.2− | 0.3+ | 2004 01 16 | 703 | 0.1+ | 0.4− |
| 1999 09 18 | 691 | 0.2+ | 0.0 | 2002 09 16 | 644 | 0.1+ | 0.3+ | 2004 01 16 | 703 | 0.4+ | 0.6− |
| 1999 09 18 | 691 | 0.2+ | 0.1− | 2003 12 18 | 704 | 0.0 | 0.4− | 2004 01 16 | 703 | 0.3− | 0.4− |
| 1999 10 09 | 704 | 1.2− | 1.5− | 2003 12 18 | 704 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 1999 10 09 | 704 | 0.4− | 0.6+ | 2003 12 18 | 704 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.7− | 0.9+ | 2003 12 19 | 704 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 04 24 | 699 | 0.1+ | 0.2− | 2003 12 19 | 704 | 0.2− | 0.8+ | 2006 11 14 | 704 | (0.1+ | 1.9+) |
| 2001 04 24 | 699 | (1.5+ | 1.5+) | 2003 12 19 | 704 | 0.6− | 0.2− | 2006 11 14 | 704 | 1.2+ | 0.8+ |
| 2001 04 24 | 699 | 0.4+ | 0.9+ | 2003 12 19 | 704 | 0.3+ | 0.5+ | 2006 11 14 | 704 | (0.9+ | 1.8+) |
| 2001 04 24 | 699 | 0.1− | 1.2+ | 2003 12 19 | 704 | 0.1− | 1.4+ | 2006 11 14 | 704 | 1.2+ | 0.9+ |
| 2002 08 19 | 644 | 0.1+ | 0.2+ | 2003 12 19 | 704 | 1.1+ | 0.3+ | 2006 11 14 | 704 | (2.5+ | 1.0+) |
| 2002 08 19 | 644 | 0.9+ | 0.2+ | 2003 12 19 | 704 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2002 08 19 | 644 | 0.2+ | 0.4+ | 2003 12 19 | 704 | 0.5+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 08 30 | 644 | 0.3− | 0.0 | 2003 12 19 | 704 | 1.0+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2002 08 30 | 644 | 0.2− | 0.1− | 2003 12 28 | 704 | 1.1− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2002 08 30 | 644 | 0.2− | 0.4− | 2003 12 28 | 704 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.5− | 0.1− |
| 2002 09 09 | 644 | 0.2− | 0.7+ | 2003 12 28 | 704 | 0.2− | 0.6+ | 2006 11 28 | 704 | 0.5− | 0.3+ |
| 2002 09 09 | 644 | 0.5− | 0.4+ | 2003 12 28 | 704 | 0.4− | 0.3− | 2006 11 28 | 704 | 0.1− | 0.4− |
| 2002 09 09 | 644 | 0.4− | 0.8+ | 2003 12 28 | 704 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.4− | 0.5− |
| 2002 09 16 | 644 | 0.1− | 0.1− | 2004 01 16 | 703 | 0.2+ | 0.1+ | | | | |

**(143878)∗ 2003 YG$_{27}$**

Discovered 2003 Dec. 16 at Crni Vrh.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.88607 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28055249 | $\omega$ | 313.32048 | | +0.66967244 | −0.73301130 | |
| $a$ | 2.3109646 | $\Omega$ | 94.23446 | | +0.71129900 | +0.58687898 | |
| $e$ | 0.1076769 | $i$ | 6.87074 | | +0.21352412 | +0.34390041 | |
| $P$ | 3.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 704 | 0.6+ | 0.2− | 2003 12 22 | 704 | 0.0 | 0.5+ | 2006 08 19 | 644 | 0.3− | 0.2+ |
| 1999 09 13 | 704 | 0.3− | 1.0− | 2003 12 22 | 704 | 0.1+ | 0.9+ | 2006 08 19 | 644 | 0.0 | 0.4+ |
| 1999 09 13 | 704 | 0.2+ | 0.4− | 2003 12 24 | 704 | 0.8− | 0.9+ | 2006 08 19 | 644 | 0.2− | 0.5+ |
| 2001 02 16 | 704 | 0.5+ | 0.4+ | 2003 12 24 | 704 | 0.2+ | 1.0+ | 2006 08 23 | 644 | 0.1+ | 0.1+ |
| 2001 02 16 | 704 | 0.4− | 0.1+ | 2003 12 24 | 704 | 0.6+ | 1.4+ | 2006 08 23 | 644 | 0.2− | 0.4+ |
| 2001 02 16 | 704 | 0.3− | 0.0 | 2003 12 27 | 291 | 0.0 | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.6+ |
| 2001 03 04 | 704 | 0.2+ | 0.8+ | 2003 12 27 | 291 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.6+ | 0.1+ |
| 2001 03 04 | 704 | 0.1+ | 0.1+ | 2003 12 27 | 291 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.4− | 0.3+ |
| 2001 03 04 | 704 | 0.8+ | 0.1+ | 2004 01 21 | 704 | 0.5+ | 0.8− | 2006 08 30 | 699 | 0.5− | 0.7+ |
| 2003 12 16 | 106 | 0.5− | 0.2− | 2004 01 21 | 704 | 1.0− | 0.7+ | 2006 08 30 | 699 | 0.5− | 0.6+ |
| 2003 12 16 | 106 | 0.3+ | 0.0 | 2004 01 21 | 704 | 1.2− | 0.4+ | 2006 09 20 | 703 | 0.2− | 0.0 |
| 2003 12 16 | 106 | 0.1+ | 0.0 | 2005 04 10 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.3+ | 0.4+ |
| 2003 12 19 | 704 | 0.2− | 1.3− | 2005 04 10 | 691 | 0.0 | 0.2− | 2006 09 20 | 703 | 1.1− | 1.0+ |
| 2003 12 19 | 704 | 0.2− | 0.5− | 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 703 | 0.1− | 0.2+ |
| 2003 12 19 | 704 | 0.2− | 1.0− | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 21 | 699 | 1.7+ | 0.2− |
| 2003 12 19 | 704 | 0.1+ | 0.4− | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.6− | 0.5+ |
| 2003 12 19 | 704 | 0.3+ | 0.8− | 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.0 |
| 2003 12 21 | 704 | (2.8+ | 0.4+) | 2005 06 03 | 703 | 0.3+ | 1.0+ | 2006 09 21 | 699 | 0.5− | 0.2− |
| 2003 12 21 | 704 | 0.3+ | 0.5+ | 2005 06 03 | 703 | 1.4− | 0.1− | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 2003 12 21 | 704 | (2.1+ | 1.9+) | 2005 06 03 | 703 | 0.8− | 0.8− | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2003 12 21 | 704 | 0.6+ | 0.3+ | 2005 06 03 | 703 | 0.4− | 0.6− | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2003 12 22 | 704 | 0.0 | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.4+ | 0.4− |
| 2003 12 22 | 704 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.3+ | | | | |
| 2003 12 22 | 704 | 0.1+ | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.6+ | | | | |

**(143879)∗ 2003 YV$_{27}$ = 1999 XA$_{204}$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57473)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.96909 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24282662 | $\omega$ | 129.45313 | | −0.32162951 | −0.94497370 | |
| $a$ | 2.5445160 | $\Omega$ | 339.07277 | | +0.80914580 | −0.24148467 | |
| $e$ | 0.1362186 | $i$ | 9.64220 | | +0.49176979 | −0.22070310 | |
| $P$ | 4.06 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.5+ | 1.0− | 2003 11 19 | 704 | 1.2+ | 0.3+ | 2003 12 30 | 704 | 0.3− | 0.6+ |
| 1999 12 12 | 704 | 0.1+ | 0.7− | 2003 11 19 | 704 | 0.3− | 1.0+ | 2003 12 30 | 704 | 0.0 | 0.6+ |
| 1999 12 12 | 704 | 0.1+ | 1.2− | 2003 11 19 | 704 | 0.0 | 1.2+ | 2003 12 30 | 704 | 0.1+ | 0.5+ |
| 1999 12 12 | 704 | 0.3− | 0.2− | 2003 12 17 | 704 | 0.1+ | 0.2− | 2004 01 02 | 704 | 0.4+ | 0.6+ |
| 1999 12 12 | 704 | 0.6− | 0.8− | 2003 12 17 | 704 | 0.1+ | 0.2− | 2004 01 02 | 704 | 0.3− | 0.8+ |
| 1999 12 15 | 704 | 0.2− | 0.8− | 2003 12 17 | 704 | 0.3+ | 0.1− | 2004 01 02 | 704 | 0.0 | 0.9+ |
| 1999 12 15 | 704 | 0.6− | 0.0 | 2003 12 17 | 704 | 0.1+ | 0.0 | 2004 01 02 | 704 | 0.1− | 1.0+ |
| 1999 12 15 | 704 | 0.3+ | 1.5− | 2003 12 17 | 704 | 0.1+ | 0.0 | 2004 01 19 | 704 | 1.1− | 0.9− |
| 1999 12 15 | 704 | 0.6− | 0.2− | 2003 12 19 | 704 | 0.3+ | 0.1+ | 2004 01 19 | 704 | 0.2+ | 0.5− |
| 1999 12 15 | 704 | 0.3− | 1.9+ | 2003 12 19 | 704 | 0.6− | 0.2− | 2004 01 19 | 704 | 0.1− | 0.8+ |
| 2000 01 29 | 704 | 0.1+ | 0.5− | 2003 12 19 | 704 | 0.0 | 0.2+ | 2004 01 19 | 704 | 0.1+ | 0.1+ |
| 2000 01 29 | 704 | 0.2− | 0.4− | 2003 12 19 | 704 | 0.0 | 0.2− | 2005 06 27 | 644 | 0.5+ | 0.7+ |
| 2000 01 29 | 704 | 0.3+ | 0.1+ | 2003 12 19 | 704 | 0.0 | 0.1+ | 2005 06 27 | 644 | 0.4+ | 0.8+ |
| 2000 01 29 | 704 | 0.2− | 0.0 | 2003 12 20 | 704 | 0.3+ | 0.0 | 2005 06 27 | 644 | 0.2+ | 1.1+ |
| 2000 01 29 | 704 | 0.4+ | 1.7+ | 2003 12 20 | 704 | 0.1+ | 0.3− | 2006 08 15 | 644 | 0.4− | 0.3+ |
| 2002 08 08 | 644 | 0.1− | 0.2+ | 2003 12 20 | 704 | 0.2+ | 0.8− | 2006 08 15 | 644 | 0.2− | 0.2+ |
| 2002 08 08 | 644 | 0.1+ | 0.3+ | 2003 12 20 | 704 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.3− | 0.2+ |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2003 12 20 | 704 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.5− |
| 2002 08 18 | 644 | 0.6− | 0.1+ | 2003 12 28 | 704 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2002 08 18 | 644 | 1.0− | 0.0 | 2003 12 28 | 704 | (0.0 | 1.7+) | 2006 10 20 | G96 | 0.5+ | 0.1+ |
| 2002 08 18 | 644 | 0.5− | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2002 10 10 | 291 | 0.1− | 0.0 | 2003 12 28 | 704 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.8+ | 0.4− |
| 2002 10 10 | 291 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2002 10 10 | 291 | 0.1+ | 0.3+ | 2003 12 30 | 704 | 0.4− | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2003 11 19 | 704 | 0.5+ | 0.2− | 2003 12 30 | 704 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.4+ | 0.3− |

**(143880)∗ 2003 YZ$_{28}$**

Discovered 2003 Dec. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.52181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29986796 | $\omega$ | 110.89923 | | +0.44511043 | −0.89448567 | |
| $a$ | 2.2106297 | $\Omega$ | 312.59833 | | +0.79886840 | +0.41789055 | |
| $e$ | 0.1069138 | $i$ | 3.27835 | | +0.40458124 | +0.15894297 | |
| $P$ | 3.29 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.9+ | 0.3− | 2004 01 22 | 704 | (2.9− | 1.4−) | 2006 11 16 | 704 | 0.1− | 0.2− |
| 1999 09 07 | 704 | 1.0− | 0.7+ | 2004 01 22 | 704 | (0.9− | 1.6+) | 2006 11 17 | 704 | 0.2− | 0.3− |
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2004 01 24 | 704 | 0.7+ | 0.3+ | 2006 11 17 | 704 | 0.8− | 0.4− |
| 1999 10 06 | 704 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.9+ |
| 1999 10 06 | 704 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.4+ |
| 1999 10 06 | 704 | 0.3− | 0.0 | 2004 01 24 | 704 | 1.0+ | 0.4+ | 2006 11 17 | 704 | 0.5− | 0.9− |
| 1999 10 06 | 704 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.8+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 1999 10 06 | 704 | 0.1− | 0.3− | 2004 01 26 | 699 | 0.8+ | 0.9+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2001 03 02 | 699 | 0.6+ | 0.3+ | 2004 01 26 | 699 | 0.6− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2001 03 02 | 699 | 0.6+ | 0.1+ | 2004 01 26 | 699 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 03 02 | 699 | 0.5+ | 0.7+ | 2004 01 26 | 699 | 0.5− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2001 03 02 | 699 | 0.5+ | 0.7− | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2001 04 16 | 645 | 0.2− | 0.1− | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.7− |
| 2001 04 16 | 645 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.3+ | 0.9+ | 2006 11 18 | 704 | 0.2− | 0.4− |
| 2003 12 17 | 644 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.4− | 0.4− |
| 2003 12 17 | 644 | 0.3+ | 0.2− | 2004 01 30 | 704 | 0.5+ | 1.0+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2003 12 17 | 644 | 0.1+ | 0.2− | 2004 02 16 | 704 | 0.2− | 1.2− | 2006 11 19 | 704 | 0.5− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.5+ | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.9− | 2006 11 19 | 704 | 0.5− | 0.2− | 2001 03 18 | 704 | 0.1+ | 0.8+ | 2004 01 21 | 704 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2003 12 19 | 704 | 1.1+ | 0.4− | 2004 02 16 | 704 | 0.2− | 1.4− | 2006 11 19 | 704 | 0.1+ | 0.1+ | 2001 03 18 | 704 | 0.6+ | 0.8− | 2004 01 21 | 704 | 0.4+ | 0.6− | 2006 10 27 | 691 | 0.4+ | 0.4+ |
| 2003 12 19 | 704 | 0.3+ | 0.4− | 2004 02 16 | 704 | (0.4+ | 1.9−) | 2006 11 21 | G96 | 0.2− | 0.2− | 2001 03 26 | 608 | 0.2− | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2003 12 21 | 691 | 0.0 | 0.1− | 2004 02 25 | 097 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− | 2001 03 26 | 608 | 0.6− | 0.6+ | 2004 01 24 | 704 | 0.8+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2004 02 25 | 097 | 0.5+ | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.4+ | 2001 03 26 | 608 | 0.0 | 1.2+ | 2004 01 24 | 704 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2− | 2001 04 23 | 691 | 0.3− | 0.3+ | 2004 01 24 | 704 | 0.6+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2003 12 22 | 704 | 0.3− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.6+ | 2001 04 23 | 691 | 0.0 | 0.2+ | 2004 01 24 | 704 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2003 12 22 | 704 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.6− | 0.1+ | 2001 04 23 | 691 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.3+ | 0.4+ |
| 2003 12 22 | 704 | 0.2− | 0.3− | 2004 02 26 | 704 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.3+ | 2002 08 19 | 644 | 0.1− | 0.7+ | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2003 12 22 | 704 | 0.5− | 1.1+ | 2004 02 26 | 704 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.8+ | 2002 08 19 | 644 | 0.3+ | 0.8+ | 2006 07 21 | G96 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.3+ |
| 2003 12 22 | 704 | 0.3+ | 0.5+ | 2004 04 14 | 645 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.3+ | 1.2− | 2002 08 19 | 644 | 0.1+ | 1.1+ | 2006 07 21 | G96 | 0.8− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 2003 12 27 | 704 | 0.2+ | 1.2+ | 2004 04 14 | 645 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.3+ | 0.2+ | 2002 08 27 | 644 | 0.4− | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.1− | 1.0− |
| 2003 12 27 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.6+ | 2006 11 27 | 704 | 0.0 | 0.3− | 2002 08 27 | 644 | 0.2− | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.2− | 0.6+ |
| 2003 12 27 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | (1.5+ | 0.6−) | 2006 11 27 | 704 | 0.1+ | 0.2+ | 2002 08 27 | 644 | 0.4− | 0.7+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2003 12 27 | 704 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.6+ | 0.5− | 2006 11 27 | 704 | 0.5− | 0.4+ | 2003 12 17 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2003 12 27 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 11 28 | 704 | 1.1− | 0.6− | 2003 12 17 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2004 01 16 | 691 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.5− | 0.8− | 2006 11 28 | 704 | 0.4+ | 0.9− | 2003 12 17 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.7+ | 0.6− |
| 2004 01 16 | 691 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 1.4+ | 0.0 | 2003 12 19 | 704 | 0.3− | 1.0− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2004 01 16 | 691 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.3− | 2003 12 19 | 704 | 0.4− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.5+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2004 01 22 | 704 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.9+ | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.6− | 2003 12 19 | 704 | 0.0 | 0.9− | 2006 10 15 | 691 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.7+ | 0.3+ | | | | | 2003 12 21 | 704 | 0.8+ | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.7+ | 0.2− |
| 2004 01 22 | 704 | 0.4− | 0.5+ | 2006 11 16 | 704 | (1.5+ | 2.6+) | | | | | 2003 12 21 | 704 | (1.6+ | 2.0+) | 2006 10 19 | 691 | 0.0 | 0.2− | | | | |

**(143881)∗ 2003 YO$_{29}$ = 1999 YZ$_{28}$**

Discovered 2003 Dec. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86193)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 218.55905 | | (2000.0) | | | |
| $n$ | 0.26819686 | $\omega$ | 53.64023 | | −0.96920620 | −0.24034994 |
| $a$ | 2.3814068 | $\Omega$ | 112.39819 | | +0.20326992 | −0.90369663 |
| $e$ | 0.1213755 | $i$ | 3.32251 | | +0.13899884 | −0.35435054 |
| $P$ | 3.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.9− | 0.1− | 2001 05 28 | 608 | 0.2+ | 0.6+ | 2004 01 24 | 704 | 0.5+ | 0.1− | 2003 12 19 | 704 | 0.4+ | 0.5+ | 2004 01 21 | 704 | 0.3− | 0.2+ |
| 1999 11 28 | 691 | 0.9− | 0.2− | 2001 05 28 | 608 | 0.1− | 0.7+ | 2004 01 24 | 704 | 0.3+ | 0.4− | 2003 12 19 | 704 | 0.2− | 0.3+ | 2004 01 21 | 704 | 0.4+ | 0.9+ |
| 1999 11 28 | 691 | 1.0− | 0.1− | 2001 05 28 | 608 | 0.4+ | 0.4+ | 2004 01 24 | 704 | 0.3+ | 0.0 | 2003 12 19 | 704 | 0.2+ | 1.4+ | 2004 01 21 | 704 | 0.2+ | 0.3+ |
| 1999 12 09 | 691 | 0.2+ | 0.4+ | 2003 12 17 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.4+ | 1999 11 12 | 704 | 0.2− | 0.3− | 2003 12 19 | 608 | 0.3− | 0.4+ | 2004 01 24 | 704 | 0.1+ | 0.5+ |
| 1999 12 09 | 691 | 0.3+ | 0.4+ | 2003 12 17 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.4+ | 1999 12 07 | 704 | 0.4− | 0.6− | 2003 12 19 | 608 | 0.1+ | 0.6+ | 2004 01 24 | 704 | 0.7+ | 0.4+ |
| 1999 12 09 | 691 | 0.6+ | 0.7+ | 2003 12 17 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.4+ | 1999 12 07 | 704 | 0.4− | 0.9− | 2003 12 19 | 608 | 0.2+ | 0.1− | 2004 01 24 | 704 | 0.4+ | 0.1− |
| 1999 12 27 | 691 | 0.7+ | 0.4− | 2003 12 19 | 704 | (1.4+ | 2.1+) | 2006 10 22 | G96 | 0.2+ | 0.1− | 1999 12 07 | 704 | 0.7− | 0.7− | 2003 12 21 | 704 | 0.6+ | 0.2+ | 2004 01 24 | 704 | 0.8+ | 0.5− |
| 1999 12 27 | 691 | 0.6+ | 0.2− | 2003 12 19 | 704 | 1.0+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.2− | 1999 12 07 | 704 | 0.7− | 0.7− | 2003 12 21 | 704 | 0.4+ | 0.7+ | 2004 01 24 | 704 | 0.3+ | 0.1+ |
| 1999 12 27 | 691 | 0.7+ | 0.2− | 2003 12 19 | 704 | 0.6+ | 0.9+ | 2006 10 22 | G96 | 0.4+ | 0.4− | 2000 01 04 | 704 | 0.3+ | 0.2+ | 2003 12 21 | 704 | 0.7+ | 0.0 | 2004 01 31 | 691 | 0.2− | 0.1− |
| 2001 05 18 | 704 | 0.0 | 0.4+ | 2003 12 28 | 691 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.0 | 2000 01 04 | 704 | 1.4+ | 0.1+ | 2003 12 21 | 704 | 0.6+ | 0.2− | 2004 01 31 | 691 | 0.3− | 0.3− |
| 2001 05 18 | 704 | 0.4− | 0.5+ | 2003 12 28 | 691 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.4− | 2000 01 04 | 704 | 0.8− | 0.6+ | 2003 12 27 | 691 | 0.5+ | 0.1− | 2004 01 31 | 691 | 0.2− | 0.2− |
| 2001 05 18 | 704 | 0.9+ | 0.1− | 2003 12 28 | 691 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.2+ | 2000 01 05 | 704 | (4.2+ | 0.4+) | 2003 12 27 | 691 | 0.2+ | 0.1− | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 2001 05 18 | 704 | 0.2− | 1.4+ | 2004 01 24 | 704 | 0.5− | 0.3− | 2006 11 23 | G96 | 0.2− | 0.2− | 2000 01 05 | 704 | 0.9+ | 0.1− | 2003 12 27 | 691 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.0 | 0.7+ |
| 2001 05 18 | 704 | 0.7+ | 0.7+ | 2004 01 24 | 704 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.4− | 2000 01 05 | 704 | 1.4+ | 0.0 | 2003 12 29 | 699 | 0.1+ | 0.1− | 2006 08 18 | 691 | 0.1− | 0.6+ |
| | | | | | | | | | | | | 2001 04 24 | 691 | 0.1− | 0.0 | 2003 12 29 | 699 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.6− |
| | | | | | | | | | | | | 2001 04 24 | 691 | 0.2+ | 0.4+ | 2003 12 29 | 699 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.8− | 0.6− |
| | | | | | | | | | | | | 2001 04 24 | 691 | 0.2+ | 0.4+ | 2003 12 29 | 699 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| | | | | | | | | | | | | 2003 12 18 | 291 | 0.4− | 0.2+ | 2004 01 13 | 699 | 0.8− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| | | | | | | | | | | | | 2003 12 18 | 291 | 0.3− | 0.2+ | 2004 01 13 | 699 | 0.7− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2003 12 18 | 291 | 0.1− | 0.3+ | 2004 01 13 | 699 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1+ |
| | | | | | | | | | | | | 2003 12 19 | 704 | 0.5− | 0.7+ | 2004 01 13 | 699 | 0.5− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| | | | | | | | | | | | | 2003 12 19 | 704 | 1.3+ | 0.2− | 2004 01 21 | 704 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− |

**(143882)∗ 2003 YP$_{29}$**

Discovered 2003 Dec. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.20753 | | (2000.0) | | | |
| $n$ | 0.28617535 | $\omega$ | 357.06219 | | −0.85656466 | −0.51599994 |
| $a$ | 2.2805936 | $\Omega$ | 151.87058 | | +0.47373380 | −0.79120460 |
| $e$ | 0.0815450 | $i$ | 0.77866 | | +0.20462960 | −0.32823671 |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 691 | 0.1− | 0.6+ | 2003 12 21 | 704 | (1.7− | 1.2+) | 2006 10 19 | 691 | 1.0− | 0.4− |
| 1999 12 12 | 691 | 0.2− | 0.1− | 2003 12 28 | 691 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.5− |
| 1999 12 12 | 691 | 0.1− | 0.2+ | 2003 12 28 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.5− |
| 2001 03 18 | 704 | 0.5+ | 0.4− | 2003 12 28 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.7− | 0.5− |
| 2001 03 18 | 704 | 0.4+ | 0.7+ | 2004 01 21 | 704 | 0.5+ | 0.4− | 2006 10 23 | 691 | 0.7− | 0.4− |
| 2001 03 18 | 704 | 1.0+ | 0.5− | 2004 01 21 | 704 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.4+ |

**(143883)∗ 2003 YB$_{32}$**

Discovered 2003 Dec. 18 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.89739 | | (2000.0) | | | |
| $n$ | 0.25990257 | $\omega$ | 130.54371 | | −0.12016251 | −0.99272192 |
| $a$ | 2.4318064 | $\Omega$ | 326.35523 | | +0.90640850 | −0.10641665 |
| $e$ | 0.1394261 | $i$ | 0.82834 | | +0.40495012 | −0.05637978 |
| $P$ | 3.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.6+ | 0.1+ | 2003 12 19 | 704 | 0.4+ | 0.5+ | 2004 01 21 | 704 | 0.3− | 0.2+ |
| 1999 11 12 | 704 | 0.2− | 0.6− | 2003 12 19 | 704 | 0.2− | 0.3+ | 2004 01 21 | 704 | 0.4+ | 0.9+ |
| 1999 11 12 | 704 | 0.3− | 0.6+ | 2003 12 19 | 704 | 0.2+ | 1.4+ | 2004 01 21 | 704 | 0.2+ | 0.3+ |
| 1999 11 12 | 704 | 0.2− | 0.3− | 2003 12 19 | 608 | 0.3− | 0.4+ | 2004 01 24 | 704 | 0.1+ | 0.5+ |
| 1999 12 07 | 704 | 0.4− | 0.6− | 2003 12 19 | 608 | 0.1+ | 0.6+ | 2004 01 24 | 704 | 0.7+ | 0.4+ |
| 1999 12 07 | 704 | 0.4− | 0.9− | 2003 12 19 | 608 | 0.2+ | 0.1− | 2004 01 24 | 704 | 0.4+ | 0.1− |
| 1999 12 07 | 704 | 0.7− | 0.7− | 2003 12 21 | 704 | 0.6+ | 0.2+ | 2004 01 24 | 704 | 0.8+ | 0.5− |
| 1999 12 07 | 704 | 0.7− | 0.7− | 2003 12 21 | 704 | 0.4+ | 0.7+ | 2004 01 24 | 704 | 0.3+ | 0.1+ |
| 2000 01 04 | 704 | 0.3+ | 0.2+ | 2003 12 21 | 704 | 0.7+ | 0.0 | 2004 01 31 | 691 | 0.2− | 0.1− |
| 2000 01 04 | 704 | 1.4+ | 0.1+ | 2003 12 21 | 704 | 0.6+ | 0.2− | 2004 01 31 | 691 | 0.3− | 0.3− |
| 2000 01 04 | 704 | 0.8− | 0.6+ | 2003 12 27 | 691 | 0.5+ | 0.1− | 2004 01 31 | 691 | 0.2− | 0.2− |
| 2000 01 05 | 704 | (4.2+ | 0.4+) | 2003 12 27 | 691 | 0.2+ | 0.1− | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 2000 01 05 | 704 | 0.9+ | 0.1− | 2003 12 27 | 691 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.0 | 0.7+ |
| 2000 01 05 | 704 | 1.4+ | 0.0 | 2003 12 29 | 699 | 0.1+ | 0.1− | 2006 08 18 | 691 | 0.1− | 0.6+ |
| 2001 04 24 | 691 | 0.1− | 0.0 | 2003 12 29 | 699 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.6− |
| 2001 04 24 | 691 | 0.2+ | 0.4+ | 2003 12 29 | 699 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.8− | 0.6− |
| 2001 04 24 | 691 | 0.2+ | 0.4+ | 2003 12 29 | 699 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2003 12 18 | 291 | 0.4− | 0.2+ | 2004 01 13 | 699 | 0.8− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2003 12 18 | 291 | 0.3− | 0.2+ | 2004 01 13 | 699 | 0.7− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2003 12 18 | 291 | 0.1− | 0.3+ | 2004 01 13 | 699 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.5− | 0.7+ | 2004 01 13 | 699 | 0.5− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2003 12 19 | 704 | 1.3+ | 0.2− | 2004 01 21 | 704 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− |

**(143884)∗ 2003 YD$_{34}$**

Discovered 2003 Dec. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.26924 | | (2000.0) | | | |
| $n$ | 0.30103914 | $\omega$ | 208.83002 | | +0.99850382 | +0.00177465 |
| $a$ | 2.2048924 | $\Omega$ | 150.91361 | | +0.01500817 | +0.95219722 |
| $e$ | 0.1957947 | $i$ | 6.45516 | | −0.05258214 | +0.30547882 |
| $P$ | 3.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 19 | 566 | 0.1− | 0.3− | 2006 08 18 | 699 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.2+ |
| 1996 08 19 | 566 | 0.2− | 0.6− | 2006 08 18 | 699 | 1.1− | 0.3+ | 2006 09 19 | 704 | 0.6− | 0.3+ |
| 1996 08 19 | 566 | 0.3+ | 0.5− | 2006 08 18 | 691 | 0.2− | 0.2+ | 2006 09 19 | 704 | 0.4− | 0.0 |
| 2001 01 15 | 704 | 0.7+ | 0.8+ | 2006 08 18 | 699 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.6− | 0.3− |
| 2001 01 15 | 704 | 0.2+ | 0.9+ | 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 19 | 704 | 1.1− | 0.3− |
| 2001 01 15 | 704 | 0.0 | 0.0 | 2006 08 18 | 699 | 0.5+ | 0.1+ | 2006 09 19 | 704 | 0.5− | 0.2+ |
| 2001 01 15 | 704 | 0.4+ | 0.8+ | 2006 08 18 | 691 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.1+ |
| 2003 12 17 | 699 | 0.5− | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.3− |
| 2003 12 17 | 699 | 0.2+ | 0.3− | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.1− |
| 2003 12 17 | 691 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.2− |
| 2003 12 17 | 699 | 0.5− | 0.1+ | 2006 08 23 | 704 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.1− | 0.0 |
| 2003 12 17 | 699 | 0.0 | 0.4− | 2006 08 23 | 704 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.4+ | 0.0 |
| 2003 12 17 | 691 | 0.1− | 0.1− | 2006 08 23 | 704 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.5+ |
| 2003 12 17 | 691 | 0.0 | 0.3− | 2006 08 23 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.3+ |
| 2003 12 20 | 704 | 0.6+ | 1.3− | 2006 08 23 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.0 |
| 2003 12 20 | 704 | (0.2+ | 1.7−) | 2006 08 28 | 704 | 0.9+ | 0.6+ | 2006 09 22 | 704 | 0.3+ | 1.3+ |
| 2003 12 20 | 704 | 0.2+ | 0.9+ | 2006 08 28 | 704 | 0.7− | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.5+ |
| 2003 12 20 | 704 | 0.6+ | 0.4− | 2006 08 28 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.5+ |
| 2003 12 20 | 704 | 0.5+ | 0.4+ | 2006 08 28 | 704 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.2− | 0.4+ |
| 2004 01 13 | 644 | 0.3− | 0.2− | 2006 08 28 | 704 | 0.1+ | 0.8− | 2006 09 26 | 704 | 0.1− | 0.5+ |
| 2004 01 13 | 644 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.1+ | 1.5+ | 2006 09 26 | 704 | 0.1− | 0.6+ |
| 2004 01 13 | 644 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.6+ | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.3+ |
| 2004 01 18 | 644 | 0.2− | 0.3+ | 2006 08 28 | 699 | 0.6+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.4− |
| 2004 01 18 | 644 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2004 01 18 | 644 | 0.3− | 0.3+ | 2006 08 31 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.3− | 0.7− |
| 2005 03 11 | 691 | 0.0 | 0.3+ | 2006 08 31 | 704 | 1.1+ | 1.4− | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 2005 03 11 | 691 | 0.3+ | 0.4+ | 2006 08 31 | 704 | 0.3− | 1.0− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2005 03 11 | 691 | 0.4+ | 0.4+ | 2006 09 12 | 703 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2005 04 04 | 703 | 1.1− | 0.1− | 2006 09 12 | 703 | 0.7+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3− |
| 2005 04 04 | 703 | 0.8− | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.3+ | 0.2− |
| 2005 04 04 | 703 | (2.9− | 0.4−) | 2006 09 12 | 703 | 1.2− | 1.1− | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2005 04 04 | 703 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.8− | 0.3+ |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 16 | 704 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.6− | 0.7+ | 2006 10 21 | 703 | 0.2− | 0.5+ |
| 2006 07 25 | G96 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.1+ | 1.0− | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2006 07 25 | G96 | 0.4− | 0.1− | 2006 09 18 | 703 | (1.8− | 0.4−) | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2006 07 25 | G96 | 0.3+ | 0.4− | 2006 09 18 | 703 | 0.4+ | 1.1+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 07 25 | G96 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.7− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2006 08 17 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.4+ | | | | |

**(143885)∗ 2003 YW$_{34}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.41360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29226700 | $\omega$ | 336.54487 | | +0.57409372 | −0.81329097 | |
| $a$ | 2.2487932 | $\Omega$ | 78.29091 | | +0.76571099 | +0.49229347 | |
| $e$ | 0.1292854 | $i$ | 5.55179 | | +0.29000530 | +0.31016922 | |
| $P$ | 3.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | 0.2+ | 0.4+ | 2003 12 22 | 704 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.5− | 0.6+ |
| 1998 04 27 | 691 | (3.8+ | 5.6−) | 2003 12 22 | 704 | 1.0+ | 0.3− | 2006 09 26 | 703 | 0.3+ | 0.7+ |
| 1998 04 27 | 691 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.1− | 1.0+ |
| 2001 02 02 | 704 | 0.5+ | 0.0 | 2003 12 27 | 704 | 0.8− | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.5+ |
| 2001 02 02 | 704 | 0.4+ | 0.2− | 2003 12 27 | 704 | 0.9− | 0.4− | 2006 09 29 | 699 | 0.5− | 0.5+ |
| 2001 02 02 | 704 | 1.3+ | 1.3+ | 2003 12 27 | 704 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.2− | 0.5+ |
| 2001 02 16 | 704 | 0.3+ | 0.3+ | 2003 12 27 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 1.0− | 0.1+ |
| 2001 02 16 | 704 | 0.3− | 0.6+ | 2004 01 22 | 704 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 2001 02 16 | 704 | 0.2+ | 1.1+ | 2004 01 22 | 704 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 2001 02 16 | 704 | 0.3+ | 0.0 | 2004 01 22 | 704 | 0.4− | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 2001 02 16 | 704 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2001 03 04 | 704 | 0.2− | 0.1− | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.7+ | 0.8+ |
| 2001 03 04 | 704 | 0.8+ | 0.6+ | 2005 05 08 | G96 | (1.6+ | 0.1+) | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2001 03 04 | 704 | 0.8− | 0.7+ | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 2001 03 04 | 704 | 0.5− | 0.2+ | 2005 05 19 | 644 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.4+ |
| 2001 03 23 | 699 | 0.1− | 0.0 | 2005 05 19 | 644 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2001 03 23 | 699 | 0.0 | 0.5+ | 2005 05 19 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 03 23 | 699 | 0.4− | 1.3+ | 2005 06 16 | G96 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2001 03 23 | 699 | 0.2− | 1.3+ | 2005 06 16 | G96 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.2− | 0.1− | 2005 06 16 | G96 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 12 18 | 704 | 0.2+ | 0.3+ | 2005 06 16 | G96 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2003 12 18 | 704 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.6− | 1.0− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2003 12 18 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 1.0− | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2003 12 20 | 704 | 1.1+ | 1.1+ | 2006 09 18 | 703 | 1.3+ | 0.0 | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2003 12 20 | 704 | 0.4− | 0.5+ | 2006 09 19 | 704 | (1.7− | 0.6+) | 2006 11 10 | 644 | 0.2− | 0.2− |
| 2003 12 20 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 704 | 0.2+ | 0.7− | 2006 11 10 | 704 | 0.7+ | 0.2+ |
| 2003 12 20 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 704 | 0.3− | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2003 12 21 | 704 | 0.7− | 0.4− | 2006 09 19 | 704 | 0.2+ | 1.0+ | 2006 11 10 | 704 | 0.2+ | 1.1+ |
| 2003 12 21 | 704 | 0.3− | 0.4− | 2006 09 19 | 704 | 0.4− | 0.3− | 2006 11 10 | 704 | 0.3− | 0.2+ |
| 2003 12 21 | 704 | 0.3+ | 1.3− | 2006 09 20 | 644 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2003 12 21 | 704 | 0.5− | 0.1− | 2006 09 20 | 644 | 0.4− | 0.3+ | 2006 11 10 | 704 | 0.6+ | 0.7+ |
| 2003 12 21 | 704 | 0.4− | 0.6+ | 2006 09 20 | 644 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.7+ | 1.2− |
| 2003 12 22 | 704 | 0.3+ | 0.2− | 2006 09 21 | 699 | 1.0− | 0.4− | 2006 11 17 | 704 | 0.6− | 0.0 |
| 2003 12 22 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | (1.0+ | 1.7+) | 2006 11 17 | 704 | 0.4+ | 0.9− |
| 2003 12 22 | 704 | 0.3+ | 0.4+ | 2006 09 21 | 699 | 0.7+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.6+ | 0.4− | 2006 09 21 | 699 | 1.1+ | 0.6+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 0.4+ | 0.2− | 2006 09 26 | 704 | 0.6− | 0.3+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2003 12 22 | 704 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.5− | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 1.0+ | 0.1− | 2006 09 26 | 704 | 0.6− | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2003 12 22 | 704 | 0.8− | 0.3− | 2006 09 26 | 703 | 0.0 | 0.9+ | | | | |

**(143886)∗ 2003 YE$_{35}$**

Discovered 2003 Dec. 18 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.44907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27452184 | $\omega$ | 307.17420 | | −0.34906733 | −0.93656581 | |
| $a$ | 2.3446865 | $\Omega$ | 163.17200 | | +0.89062730 | −0.34204527 | |
| $e$ | 0.1993369 | $i$ | 6.26001 | | +0.29143611 | −0.07648220 | |
| $P$ | 3.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 09 | 691 | 0.3− | 0.1+ | 2003 12 20 | 704 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 1994 06 09 | 691 | 0.8+ | 0.4− | 2003 12 20 | 704 | 0.1− | 0.4− | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 1994 06 09 | 691 | 0.4− | 0.2+ | 2003 12 20 | 704 | 0.2+ | 1.3+ | 2006 08 28 | 703 | 1.2− | 0.8− |
| 2001 04 17 | 699 | 0.3+ | 0.5+ | 2004 01 12 | 644 | 0.7− | 1.1+ | 2006 08 28 | 703 | 0.3+ | 0.2+ |
| 2001 04 17 | 699 | 0.9− | 1.3+ | 2004 01 12 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.3− |
| 2001 04 17 | 699 | 0.6− | 0.9+ | 2004 01 12 | 644 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.8+ | 0.4+ |
| 2001 04 17 | 699 | 0.6− | 0.6+ | 2004 01 13 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.3− | 1.1+ |
| 2001 04 27 | 608 | 0.5− | 0.1+ | 2004 01 13 | 644 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.8− |
| 2001 04 27 | 608 | 0.1+ | 0.1− | 2004 01 13 | 644 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 2001 04 27 | 608 | 0.2+ | 0.0 | 2004 01 18 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.9+ |
| 2003 11 01 | 704 | 0.6+ | 1.1+ | 2004 01 18 | 644 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2003 11 01 | 704 | 1.2+ | 0.7+ | 2004 01 18 | 644 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2003 11 01 | 704 | 0.2+ | 0.9+ | 2004 02 17 | 704 | 0.0 | 1.0+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2003 11 30 | 704 | 0.1+ | 0.4− | 2004 02 17 | 704 | 0.5+ | 1.2+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2003 11 30 | 704 | 0.4+ | 0.3+ | 2004 02 17 | 704 | 0.2− | 1.4+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2003 11 30 | 704 | 0.3− | 0.0 | 2004 02 17 | 704 | 0.4+ | 1.4+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2003 11 30 | 704 | 0.0 | 0.2+ | 2004 02 17 | 704 | 1.4− | 0.9+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2003 11 30 | 704 | 0.5+ | 0.4+ | 2005 06 08 | 691 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2003 12 05 | 703 | 0.3+ | 0.8+ | 2005 06 08 | 691 | 0.4+ | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2003 12 05 | 703 | 0.8+ | 0.2+ | 2005 06 08 | 691 | 0.3+ | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2003 12 05 | 703 | 1.1− | 0.5+ | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2003 12 05 | 703 | 0.4+ | 0.4+ | 2005 06 10 | 691 | 0.5+ | 0.9+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2003 12 18 | 608 | 0.5− | 0.5+ | 2005 06 10 | 691 | 0.2− | 1.2+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2003 12 18 | 608 | 0.1− | 0.7+ | 2006 08 18 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.7− | 0.3+ |
| 2003 12 18 | 608 | 0.3− | 0.1+ | 2006 08 18 | 691 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 20 | 704 | 0.1− | 0.5− | 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2003 12 20 | 704 | 0.4+ | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.3+ | | | | |

**(143887)∗ 2003 YJ$_{36}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.49621 | | (2000.0) | | | |
| $n$ | 0.30194105 | $\omega$ | 305.80349 | | +0.93544710 | −0.35021685 |
| $a$ | 2.2004995 | $\Omega$ | 74.73953 | | +0.33818641 | +0.84742988 |
| $e$ | 0.2151680 | $i$ | 2.84127 | | +0.10280402 | +0.39901222 |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 31 | 691 | 0.1− | 0.3− | 2005 03 14 | G96 | 0.4− | 0.5+ | 2006 10 22 | 704 | 1.1+ | 0.7− |
| 2001 01 31 | 691 | 0.3− | 0.1+ | 2005 04 10 | G96 | 0.3− | 0.6+ | 2006 10 22 | 704 | 1.5+ | 0.5− |
| 2001 01 31 | 691 | 0.4− | 0.2+ | 2005 04 10 | G96 | 0.3− | 0.3+ | 2006 10 22 | 704 | 0.3+ | 0.1− |
| 2002 06 05 | 291 | 0.1+ | 0.7+ | 2005 04 10 | G96 | 0.2− | 0.4+ | 2006 10 27 | 704 | 0.3+ | 0.6+ |
| 2002 06 05 | 291 | 0.4+ | 0.4+ | 2005 04 10 | G96 | 0.3− | 0.1− | 2006 10 27 | 704 | 0.2− | 0.7+ |
| 2002 06 05 | 291 | 0.3+ | 0.4+ | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 704 | 0.3− | 0.4+ |
| 2003 12 18 | 704 | 1.1− | 0.2+ | 2005 04 16 | 691 | 0.3+ | 0.6+ | 2006 10 27 | 704 | 0.0 | 0.5− |
| 2003 12 18 | 704 | 0.0 | 0.1− | 2005 04 16 | 691 | 0.4+ | 0.5+ | 2006 10 27 | 704 | 0.6+ | 0.0 |
| 2003 12 18 | 704 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 1.0− | 2006 10 28 | 691 | 0.5+ | 0.1− |
| 2003 12 18 | 704 | 0.7− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 0.1− | 0.5+ | 2006 08 28 | 703 | 1.0− | 0.5− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2003 12 22 | 704 | 0.8+ | 0.2+ | 2006 09 15 | 644 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2003 12 22 | 704 | 0.1− | 0.2+ | 2006 09 15 | 644 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2003 12 22 | 704 | 0.8− | 0.8+ | 2006 09 15 | 644 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2003 12 27 | 704 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2003 12 27 | 704 | 1.3+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2003 12 27 | 704 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2003 12 27 | 704 | 1.0+ | 0.6− | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2003 12 27 | 704 | 0.6− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2003 12 27 | 704 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2003 12 27 | 704 | (1.5+ | 1.0+) | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2003 12 27 | 704 | 0.7+ | 1.2+ | 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 11 13 | 703 | 0.8− | 0.0 |
| 2003 12 27 | 704 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2003 12 28 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.0 |
| 2003 12 28 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.5+ | 2006 11 13 | 703 | 0.5− | 0.0 |
| 2003 12 28 | 704 | (0.5+ | 3.3+) | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.9− | 0.3− |
| 2003 12 28 | 704 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2003 12 28 | 704 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2004 01 17 | 644 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2004 01 17 | 644 | 0.1+ | 1.3+ | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2004 01 22 | 704 | 0.7+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.9+ | 1.1+ |
| 2004 01 22 | 704 | 0.6+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | (1.4− | 1.6−) |
| 2004 01 22 | 704 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.8− | 0.7− |
| 2004 01 30 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.9− | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 26 | 704 | 1.2+ | 0.6+ |
| 2004 01 30 | 691 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 26 | 704 | 0.8+ | 0.2+ |
| 2005 03 14 | G96 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 26 | 704 | 0.9+ | 1.0+ |
| 2005 03 14 | G96 | 0.0 | 0.1− | 2006 10 22 | 704 | 1.3+ | 0.7− | 2006 11 26 | 704 | 0.1+ | 1.2+ |
| 2005 03 14 | G96 | 0.2+ | 0.2− | 2006 10 22 | 704 | 0.8+ | 0.1− | | | | |

**(143888)∗ 2003 YL$_{40}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.42155 | | (2000.0) | | | |
| $n$ | 0.28475152 | $\omega$ | 245.12932 | | +0.97271260 | +0.14781569 |
| $a$ | 2.2881896 | $\Omega$ | 105.96131 | | −0.07896089 | +0.93567759 |
| $e$ | 0.2007242 | $i$ | 10.71958 | | −0.21816363 | +0.32040283 |
| $P$ | 3.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 704 | 0.7− | 0.2− | 2004 01 20 | 704 | 0.7− | 0.0 | 2006 10 17 | 703 | 0.2− | 0.0 |
| 1999 09 30 | 704 | 0.2+ | 0.2+ | 2004 01 22 | 704 | 0.9+ | 1.2+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 1999 09 30 | 704 | 0.4− | 0.2− | 2004 01 22 | 704 | (1.5− | 1.9+) | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 1999 09 30 | 704 | 0.2+ | 0.2− | 2004 01 22 | 704 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 1999 10 16 | 704 | 0.3+ | 0.5− | 2004 01 22 | 704 | 0.1− | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.5− |
| 1999 10 16 | 704 | 0.3+ | 0.2− | 2004 01 31 | 691 | 0.2− | 0.4− | 2006 10 28 | 703 | 0.1+ | 0.6− |
| 1999 10 16 | 704 | 0.1+ | 0.0 | 2004 01 31 | 691 | 0.2− | 0.3− | 2006 10 28 | 703 | 0.1− | 0.1− |
| 1999 10 16 | 704 | 0.2+ | 0.5− | 2004 01 31 | 691 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.9− | 0.4− |
| 1999 10 16 | 704 | 0.3+ | 0.4+ | 2005 04 04 | 703 | 1.2+ | 0.1− | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2003 12 19 | 704 | 1.2+ | 0.0 | 2005 04 04 | 703 | 0.8− | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2003 12 19 | 704 | 0.8+ | 0.7+ | 2005 04 04 | 703 | 0.4+ | 1.3+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.3+ | 0.2+ | 2005 04 04 | 703 | 0.5+ | 1.0− | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2005 04 13 | 703 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2005 04 13 | 703 | (0.1+ | 1.5+) | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2005 04 13 | 703 | 1.4− | 0.9− | 2006 11 10 | 704 | 0.5+ | 0.4+ |
| 2003 12 21 | 691 | 0.1− | 0.2+ | 2005 04 13 | 703 | 0.1− | 0.2− | 2006 11 10 | 704 | 0.1+ | 1.4+ |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.7+ | 0.4+ | 2006 11 10 | 704 | 0.5− | 1.3+ |
| 2003 12 21 | 691 | 0.1− | 0.5− | 2006 09 30 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 704 | 0.0 | 0.1+ |
| 2003 12 27 | 691 | 0.1− | 0.4− | 2006 09 30 | 704 | 0.3+ | 0.4− | 2006 11 10 | 704 | 0.4− | 0.3− |
| 2003 12 27 | 691 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.7+ | 0.9− | 2006 11 16 | 703 | 0.9+ | 0.1− |
| 2003 12 27 | 691 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.2+ | 1.0− |
| 2004 01 20 | 704 | 1.4+ | 0.9+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2004 01 20 | 704 | 0.8− | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.6− |

**(143889)∗ 2003 YR$_{40}$ = 2002 TJ$_{296}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57483)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.04883 | | (2000.0) | | | |
| $n$ | 0.22886488 | $\omega$ | 191.18017 | | +0.38619227 | +0.91991356 |
| $a$ | 2.6469757 | $\Omega$ | 101.56601 | | −0.84086448 | +0.38136747 |
| $e$ | 0.0744094 | $i$ | 3.97600 | | −0.37921294 | +0.09120244 |
| $P$ | 4.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 0.3− | 0.8− | 2004 01 13 | 691 | 0.2− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.4+ |
| 1992 03 25 | 691 | 0.3+ | 0.4− | 2004 01 21 | 704 | 1.3+ | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.0 | 2004 01 21 | 704 | 1.5+ | 0.1− | 2006 08 22 | 644 | 0.3− | 0.3+ |
| 2002 10 11 | 704 | 0.4− | 1.3+ | 2004 01 21 | 704 | 0.6+ | 1.0− | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 2002 10 11 | 704 | 1.0− | 1.0+ | 2004 01 31 | 691 | 0.2+ | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.3+ |
| 2002 10 11 | 704 | 0.5+ | 0.9+ | 2004 01 31 | 691 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.5− | 0.4+ |
| 2002 10 11 | 704 | 0.3+ | 1.0+ | 2004 01 31 | 691 | 0.2− | 0.2+ | 2006 08 22 | 644 | 0.4− | 0.4+ |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2005 04 14 | 691 | 0.1− | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.5+ |
| 2002 10 15 | 644 | 0.5− | 0.6− | 2005 04 14 | 691 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.4− | 0.3+ |
| 2002 10 15 | 644 | 0.5− | 0.6− | 2005 04 18 | 691 | 0.2+ | 0.6+ | 2006 08 28 | 699 | 0.9+ | 1.2+ |
| 2002 10 15 | 644 | 0.4− | 0.4− | 2005 04 18 | 691 | 0.0 | 0.4+ | 2006 08 28 | 699 | 0.7− | 0.5+ |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2005 04 18 | 691 | 0.1+ | 0.7+ | 2006 08 28 | 699 | 0.3− | 0.5+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 04 27 | 599 | 0.1− | 0.6+ | 2006 08 28 | 699 | 0.8− | 1.2+ |
| 2003 12 19 | 691 | 0.3+ | 0.2+ | 2005 04 27 | 599 | 0.5+ | 0.9+ | 2006 09 14 | 703 | 1.1− | 0.0 |
| 2003 12 19 | 691 | 0.1+ | 0.4+ | 2005 04 27 | 599 | 0.2+ | 0.3+ | 2006 09 14 | 703 | (2.3− | 1.2+) |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2005 04 27 | 599 | 0.3+ | 0.9+ | 2006 09 14 | 703 | 0.2+ | 0.0 |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2006 08 20 | 644 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.6+ | 0.4+ |
| 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.4+ | 2006 09 30 | 703 | 1.6+ | 0.8+ |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.9+ | 0.5+ |
| 2004 01 13 | 691 | 0.1+ | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.5+ | 2006 09 30 | 703 | 2.2+ | 0.1− |
| 2004 01 13 | 691 | 0.2− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.5+ | 2006 09 30 | 703 | 2.1+ | 0.1+ |

**(143890)∗ 2003 YE$_{43}$ = 2001 KA$_{25}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57485)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.42824 | | (2000.0) | | | |
| $n$ | 0.24490340 | $\omega$ | 356.95188 | | +0.08458767 | +0.99464589 |
| $a$ | 2.5301106 | $\Omega$ | 277.89499 | | −0.91292143 | +0.05348734 |
| $e$ | 0.1591819 | $i$ | 3.43611 | | −0.39927357 | +0.08842317 |
| $P$ | 4.02 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 16 | 691 | 0.2− | 0.4− | 2002 10 10 | 644 | 0.3− | 0.1+ | 2005 05 30 | 699 | 0.1− | 0.6+ |
| 2000 01 16 | 691 | 0.6− | 0.4− | 2003 12 19 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.1− |
| 2000 01 16 | 691 | 0.3− | 0.3− | 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2001 05 17 | 704 | (0.7+ | 1.7−) | 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.5+ |
| 2001 05 17 | 704 | 0.1− | 0.2+ | 2003 12 21 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2001 05 17 | 704 | 1.0+ | 1.1+ | 2003 12 21 | 691 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2001 05 17 | 704 | 1.4+ | 0.8+ | 2003 12 21 | 691 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2001 05 24 | 699 | 0.4+ | 0.1+ | 2004 01 31 | 691 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2001 05 24 | 699 | 0.1+ | 0.1+ | 2004 01 31 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2001 05 24 | 699 | 0.3− | 0.2− | 2004 01 31 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2001 05 24 | 699 | 0.7+ | 0.1+ | 2005 05 12 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2001 05 24 | 704 | 0.1− | 0.5− | 2005 05 12 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2001 05 24 | 704 | 0.4− | 0.3− | 2005 05 12 | 644 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2001 05 24 | 704 | 0.4− | 0.8− | 2005 05 18 | 644 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.7− |
| 2002 10 04 | 704 | 0.2+ | 0.6− | 2005 05 18 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2002 10 04 | 704 | 0.7− | 0.5+ | 2005 05 18 | 644 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.4+ | 2005 05 30 | 699 | 1.1+ | 0.4+ | 2006 10 21 | 644 | 0.7− | 0.4+ |
| 2002 10 10 | 644 | (2.0+ | 1.7+) | 2005 05 30 | 699 | 0.6− | 1.1+ | | | | |
| 2002 10 10 | 644 | 0.3− | 0.1+ | 2005 05 30 | 699 | 0.2+ | 0.2+ | | | | |

**(143891)∗ 2003 YP$_{43}$ = 2002 TH$_{324}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57487)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 197.03177 | | (2000.0) | | | |
| $n$ | 0.26899975 | $\omega$ | 6.53939 | | −0.96513878 | +0.26169578 |
| $a$ | 2.3766659 | $\Omega$ | 188.63573 | | −0.24154782 | −0.89751464 |
| $e$ | 0.1366212 | $i$ | 1.80882 | | −0.10080571 | −0.35494055 |
| $P$ | 3.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 29 | 704 | 0.2− | 0.3− | 2003 12 19 | 704 | 0.8+ | 0.8+ | 2006 10 12 | 691 | 0.3+ | 0.3+ |
| 2001 04 29 | 704 | 1.3− | 0.6+ | 2003 12 19 | 704 | 0.4+ | 0.7− | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 2001 04 29 | 704 | (1.5+ | 1.1+) | 2003 12 19 | 704 | 1.2− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 2001 04 29 | 704 | 1.2− | 1.2+ | 2003 12 19 | 704 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2001 05 21 | 704 | 0.7+ | 0.6− | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.5+ | 0.6+ |
| 2001 05 21 | 704 | 0.0 | 0.9+ | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.5+ | 0.1− |
| 2001 05 21 | 704 | 0.1+ | 0.2+ | 2003 12 21 | 691 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.5− | 0.2+ |
| 2001 05 29 | 691 | 0.2+ | 0.3+ | 2003 12 21 | 691 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.5− | 0.3+ |
| 2001 05 29 | 691 | 0.3+ | 0.4+ | 2003 12 21 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2001 05 29 | 608 | 0.3+ | 1.4+ | 2003 12 23 | 704 | 0.5− | 1.0+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2001 05 29 | 691 | 0.3+ | 0.5+ | 2003 12 23 | 704 | 0.5+ | 0.0 | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2001 05 29 | 608 | (0.2+ | 1.9+) | 2003 12 23 | 704 | 0.5− | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2001 05 29 | 608 | (0.3+ | 2.0+) | 2003 12 23 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.5+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2003 12 27 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.5+ |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2003 12 27 | 691 | 0.7+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2003 12 27 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.4− | 0.0 |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2004 01 13 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 01 13 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 01 13 | 691 | 0.1+ | 0.3+ | | | | |

**(143892)∗ 2003 YU$_{43}$ = 1999 VH$_{223}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57487)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.81941 | | (2000.0) | | | |
| $n$ | 0.27198791 | $\omega$ | 284.17214 | | +0.79727257 | −0.59917711 |
| $a$ | 2.3592266 | $\Omega$ | 112.68968 | | +0.57986345 | +0.72661950 |
| $e$ | 0.1512109 | $i$ | 4.54426 | | +0.16767478 | +0.33617092 |
| $P$ | 3.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 0.6− | 0.0 | 2004 01 30 | 704 | 0.1+ | 0.5− | 2006 09 22 | 704 | 0.3+ | 0.4− |
| 1999 11 05 | 704 | 0.2− | 0.6− | 2004 01 30 | 704 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.2+ | 0.9+ |
| 1999 11 05 | 704 | 0.1− | 0.4− | 2004 01 30 | 704 | 0.8− | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.8+ |
| 1999 11 05 | 704 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.6− | 0.9+ | 2006 09 25 | 291 | 0.4+ | 0.1− |
| 1999 11 05 | 704 | 0.8− | 0.5− | 2004 02 15 | 704 | 0.7− | 0.9+ | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 1999 11 16 | 703 | 0.9+ | 0.3− | 2004 02 15 | 704 | 0.0 | 0.4+ | 2006 09 25 | 291 | 0.3+ | 0.0 |
| 1999 11 16 | 703 | 0.2+ | 0.7+ | 2005 05 04 | 691 | 0.0 | 0.8+ | 2006 09 25 | 291 | 0.5+ | 0.1− |
| 1999 11 16 | 703 | 0.1+ | 0.6− | 2005 05 04 | 691 | 0.4+ | 1.0+ | 2006 09 25 | 699 | 0.3+ | 0.1− |
| 1999 11 16 | 703 | 1.1+ | 0.0 | 2005 05 04 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.7+ |
| 2002 07 01 | 644 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.5− | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.8+ |
| 2002 07 01 | 644 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.5+ |
| 2002 07 01 | 644 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.6+ |
| 2003 12 19 | 704 | 1.0+ | 0.8+ | 2006 08 20 | 691 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.7+ | 0.3+ |
| 2003 12 19 | 704 | 0.7+ | 0.7+ | 2006 08 20 | 691 | 0.2− | 0.1+ | 2006 10 01 | 291 | 0.1+ | 0.2+ |
| 2003 12 19 | 704 | 0.9− | 0.9+ | 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 10 01 | 291 | 0.4+ | 0.2+ |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 10 01 | 291 | 0.2− | 0.2+ |
| 2003 12 21 | 691 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.3+ | 0.1− |
| 2003 12 21 | 691 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 2003 12 27 | 291 | 0.7− | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.5− | 2006 10 02 | 703 | 0.9− | 0.6+ |
| 2003 12 27 | 291 | 1.0+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.8+ | 2006 10 02 | 703 | 0.2− | 0.6− |
| 2003 12 27 | 291 | 0.3+ | 0.3+ | 2006 08 28 | 699 | (1.6+ | 0.1−) | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2004 01 13 | 699 | 0.8− | 0.5+ | 2006 08 28 | 699 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2004 01 13 | 699 | 1.1− | 0.3− | 2006 09 14 | 703 | 0.2− | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.3− |
| 2004 01 13 | 699 | 0.6+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 10 11 | 291 | 0.0 | 0.4+ |
| 2004 01 13 | 699 | (1.7+ | 0.0 ) | 2006 09 14 | 703 | 0.6− | 0.4− | 2006 10 11 | 291 | 0.1− | 0.4+ |
| 2004 01 21 | 704 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.3− | 2006 10 11 | 291 | 0.1− | 0.4+ |
| 2004 01 21 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.4− | 1.1− | 2006 10 12 | 291 | 0.2+ | 0.2+ |
| 2004 01 21 | 704 | 0.8− | 0.5+ | 2006 09 18 | 703 | 1.0− | 0.1+ | 2006 10 12 | 291 | 0.0 | 0.2+ |
| 2004 01 21 | 704 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 10 12 | 291 | 0.3− | 0.4− |
| 2004 01 21 | 704 | 0.2− | 0.1+ | 2006 09 18 | 703 | 1.1− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.3− |
| 2004 01 24 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.0 | 0.4− |
| 2004 01 24 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 704 | 0.2+ | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2004 01 24 | 704 | 0.8+ | 0.1− | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.6− | 0.5− |
| 2004 01 24 | 704 | 1.1+ | 0.2+ | 2006 09 19 | 704 | 0.6− | 0.8+ | 2006 10 19 | 703 | 0.3+ | 0.9− |
| 2004 01 24 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.4− |
| 2004 01 26 | 699 | 0.8+ | 0.6− | 2006 09 19 | 699 | 0.6− | 0.5− | 2006 10 19 | 703 | 0.3− | 1.3− |
| 2004 01 26 | 699 | 1.1− | 0.4− | 2006 09 19 | 699 | 0.7− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2004 01 26 | 699 | 0.0 | 0.8− | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2004 01 26 | 699 | 0.7− | 1.1+ | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 10 24 | 644 | 0.2+ | 0.3− |
| 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.1+ | 1.2+ | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 10 24 | 644 | 0.2− | 0.3− |
| 2004 01 30 | 704 | 0.5− | 0.3+ | 2006 09 22 | 704 | 0.2+ | 1.2+ | | | | |

**(143893)∗ 2003 YS$_{44}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.56855 | | (2000.0) | | | |
| $n$ | 0.26364298 | $\omega$ | 311.41032 | | +0.57027201 | −0.81115872 |
| $a$ | 2.4087510 | $\Omega$ | 103.36524 | | +0.78782918 | +0.49537333 |
| $e$ | 0.1128900 | $i$ | 7.65848 | | +0.23262635 | +0.31084851 |
| $P$ | 3.74 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.5− | 0.8− | 2004 01 22 | 704 | 0.7− | 0.8− | 2006 08 22 | 644 | 0.3− | 0.4+ |
| 1999 12 06 | 704 | 0.1− | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.3− | 2006 08 22 | 644 | 0.2− | 0.4+ |
| 1999 12 06 | 704 | 0.6+ | 0.4− | 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 08 22 | 644 | 0.1− | 0.1+ |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.1− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1− | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.6+ | 0.8− |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.5+ | 0.5+ | 2006 08 30 | 699 | 0.4+ | 0.1− |
| 2003 12 21 | 291 | 0.2− | 0.3+ | 2004 02 15 | 704 | 0.6+ | 0.3+ | 2006 08 30 | 699 | 0.2+ | 0.5+ |
| 2003 12 21 | 291 | 0.4− | 0.4+ | 2004 02 15 | 704 | 1.1− | 0.2+ | 2006 09 14 | 703 | 0.6− | 1.2+ |
| 2003 12 21 | 291 | 0.2− | 0.7+ | 2004 02 15 | 704 | 0.7+ | 0.3− | 2006 09 14 | 703 | 0.8− | 1.5+ |
| 2003 12 27 | 704 | 0.7+ | 1.2+ | 2005 05 20 | G96 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.4+ |
| 2003 12 27 | 704 | 0.1− | 0.2− | 2005 05 20 | G96 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.7+ |
| 2003 12 27 | 704 | 0.3+ | 0.1− | 2005 05 20 | G96 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.5+ |
| 2003 12 27 | 704 | (1.2− | 2.4+) | 2005 05 20 | G96 | 0.7− | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.7+ |
| 2003 12 28 | 691 | 0.3+ | 0.1+ | 2005 06 08 | 691 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.6+ |
| 2003 12 28 | 691 | 0.4+ | 0.2+ | 2005 06 08 | 691 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 0.4− | 1.2+ |
| 2003 12 28 | 691 | 0.2+ | 0.3+ | 2005 06 08 | 691 | 0.3− | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.9− |
| 2004 01 22 | 704 | 0.9− | 0.0 | 2005 06 12 | 691 | 0.3− | 0.1− | 2006 09 20 | 703 | 1.5+ | 0.2+ |
| 2004 01 22 | 704 | 0.4− | 0.3+ | 2005 06 12 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 703 | 1.2− | 1.0+ |
| 2004 01 22 | 704 | 0.3+ | 0.8− | 2005 06 12 | 691 | 0.4+ | 0.7+ | 2006 09 20 | 703 | 1.5− | 0.7+ |

**(143894)∗ 2003 YT$_{45}$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.56650 | | (2000.0) | | +0.42522750 | −0.90504977 |
| $n$ | 0.28534732 | $\omega$ | 60.75679 | | +0.78582904 | +0.36471305 |
| $a$ | 2.2850034 | $\Omega$ | 4.10389 | | +0.44905935 | +0.21879054 |
| $e$ | 0.0851208 | $i$ | 6.54251 | | | |
| $P$ | 3.45 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.4+ | 0.4+ | 2003 12 27 | 704 | 1.1+ | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.9− |
| 1999 09 07 | 704 | 0.4− | 0.1+ | 2003 12 27 | 704 | 0.6− | 0.3+ | 2006 09 20 | 704 | 0.3+ | 1.1− |
| 1999 09 07 | 704 | 0.4− | 0.4+ | 2003 12 29 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.1− |
| 1999 09 07 | 704 | 0.2− | 0.1+ | 2003 12 29 | 704 | 0.4+ | 0.0 | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2001 02 01 | 704 | 0.1+ | 0.4+ | 2003 12 29 | 704 | 0.4+ | 0.3− | 2006 09 20 | 704 | 0.6+ | 0.3− |
| 2001 02 01 | 704 | 0.9+ | 1.3+ | 2003 12 29 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.4− | 0.2+ |
| 2001 02 01 | 704 | 0.4+ | 0.8+ | 2003 12 29 | 704 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.8− | 1.2− |
| 2001 02 01 | 704 | 0.8+ | 0.9+ | 2006 08 28 | 699 | (0.7− | 2.6−) | 2006 09 20 | 644 | 0.1+ | 0.0 |
| 2001 02 17 | 704 | (1.6+ | 0.7+) | 2006 08 28 | 699 | 0.6− | 1.3+ | 2006 09 25 | 699 | 0.2+ | 0.2− |
| 2001 02 17 | 704 | 0.4+ | 0.6− | 2006 08 28 | 699 | 0.2− | 0.1+ | 2006 09 25 | 699 | (0.7+ | 1.7+) |
| 2001 02 17 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 699 | 0.8+ | 0.8− | 2006 09 25 | 699 | 0.6+ | 0.4+ |
| 2001 02 17 | 704 | 0.6− | 0.8+ | 2006 09 12 | 703 | 0.5+ | 0.3+ | 2006 09 25 | 699 | (2.9− | 0.2+) |
| 2001 02 17 | 704 | 1.1+ | 0.7+ | 2006 09 12 | 703 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2001 03 14 | 699 | (2.0+ | 0.7+) | 2006 09 12 | 703 | 0.6+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2001 03 14 | 699 | 0.8+ | 0.5+ | 2006 09 12 | 703 | 0.9− | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2001 03 14 | 699 | 0.6+ | 0.3+ | 2006 09 16 | 699 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 03 14 | 699 | 0.6+ | 0.8+ | 2006 09 16 | 699 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2001 03 19 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 699 | 0.4− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 03 19 | 704 | 1.1− | 0.0 | 2006 09 17 | 704 | 0.5+ | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 03 19 | 704 | 0.6− | 0.7+ | 2006 09 17 | 704 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2001 03 19 | 704 | 0.6+ | 1.2+ | 2006 09 17 | 704 | 0.0 | 0.3− | 2006 09 30 | 704 | 0.2+ | 0.8+ |
| 2003 12 03 | 704 | (0.8+ | 1.7−) | 2006 09 17 | 704 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.5+ |
| 2003 12 03 | 704 | 0.4− | 1.3+ | 2006 09 17 | 704 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.2− | 0.1− |
| 2003 12 03 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.6− | 0.5+ |
| 2003 12 03 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | 0.1− | 0.3− | 2006 10 13 | 958 | 0.7+ | 0.5+ |
| 2003 12 17 | 704 | 0.4+ | 0.4− | 2006 09 19 | 704 | 0.0 | 0.3− | 2006 10 13 | 958 | 0.6− | 0.3+ |
| 2003 12 17 | 704 | 0.4+ | 0.3− | 2006 09 19 | 704 | 0.1+ | 0.6+ | 2006 10 13 | 958 | 0.5− | 0.3+ |
| 2003 12 17 | 704 | 0.7+ | 0.5− | 2006 09 19 | 699 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.6+ | 0.6+ |
| 2003 12 17 | 704 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.9− |
| 2003 12 17 | 704 | 0.1+ | 1.3+ | 2006 09 19 | 704 | 1.3− | 0.0 | 2006 10 16 | 703 | 0.9− | 1.0− |
| 2003 12 21 | 704 | 0.4− | 0.3− | 2006 09 19 | 704 | 0.8− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2003 12 21 | 704 | 0.9− | 1.2− | 2006 09 19 | 703 | 0.4− | 0.5− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2003 12 21 | 704 | 0.1− | 0.2+ | 2006 09 19 | 704 | 1.0− | 0.5− | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2003 12 21 | 704 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2003 12 21 | 704 | 0.6− | 0.6− | 2006 09 19 | 699 | 0.2− | 0.8+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | 0.1− | 0.3− | 2006 09 19 | 704 | (1.6− | 0.6+) | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2003 12 22 | 704 | 0.2− | 0.6− | 2006 09 19 | 704 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2003 12 22 | 704 | 0.3− | 0.5− | 2006 09 19 | 699 | 0.3+ | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.8− |
| 2003 12 22 | 704 | 0.0 | 0.7− | 2006 09 20 | 704 | 0.6− | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.3+ | 0.3+ |
| 2003 12 27 | 704 | 0.5− | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.2+ | 0.7+ |
| 2003 12 27 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2003 12 27 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.0 |

**(143895)∗ 2003 YY$_{50}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.74858 | | (2000.0) | | +0.69554489 | −0.71364877 |
| $n$ | 0.27452730 | $\omega$ | 317.37734 | | +0.67958413 | +0.61587509 |
| $a$ | 2.3446554 | $\Omega$ | 88.36439 | | +0.23320100 | +0.33377134 |
| $e$ | 0.1406315 | $i$ | 4.77465 | | | |
| $P$ | 3.59 | $H$ | 16.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 691 | 0.2− | 0.2− | 2003 12 24 | 704 | (2.5+ | 0.7+) | 2006 08 28 | 704 | 0.1+ | 0.0 |
| 1997 01 10 | 691 | 0.1− | 0.2− | 2003 12 24 | 704 | 0.9+ | 0.9+ | 2006 08 28 | 704 | 0.1− | 0.2− |
| 1997 01 10 | 691 | 0.1− | 0.0 | 2003 12 24 | 704 | 1.0+ | 0.1− | 2006 08 28 | 704 | 0.1+ | 0.9+ |
| 1999 11 05 | 703 | 0.6− | 1.4+ | 2003 12 24 | 704 | 0.0 | 0.9+ | 2006 08 28 | 704 | 0.2− | 0.4+ |
| 1999 11 05 | 703 | (2.3− | 0.1+) | 2003 12 27 | 106 | 0.0 | 0.3+ | 2006 08 28 | 704 | 0.3+ | 0.2− |
| 1999 11 05 | 703 | 0.5− | 1.3+ | 2003 12 27 | 106 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.4+ | 0.1+ |
| 1999 11 05 | 703 | 0.6− | 1.0+ | 2003 12 27 | 106 | 0.4− | 0.3+ | 2006 08 30 | 699 | 0.7− | 0.9+ |
| 2001 03 02 | 608 | 1.3+ | 0.7+ | 2003 12 27 | 106 | 0.2− | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.1+ |
| 2001 03 02 | 608 | 1.0+ | 0.7+ | 2003 12 27 | 106 | 0.1+ | 0.1+ | 2006 08 31 | 704 | 0.5− | 0.6+ |
| 2001 03 02 | 608 | 0.7+ | 1.5+ | 2003 12 27 | 106 | 0.2− | 0.2+ | 2006 08 31 | 704 | 0.6− | 0.0 |
| 2001 03 19 | 704 | (0.2− | 2.1+) | 2004 01 22 | 704 | 0.1− | 0.4+ | 2006 08 31 | 704 | 0.7+ | 1.0+ |
| 2001 03 19 | 704 | 1.0+ | 0.4+ | 2004 01 22 | 704 | 0.4− | 0.3− | 2006 08 31 | 704 | 0.5− | 0.6+ |
| 2001 03 19 | 704 | 0.5+ | 0.7+ | 2004 01 22 | 704 | 0.1− | 1.0+ | 2006 09 14 | 703 | 0.1+ | 0.1− |
| 2001 03 19 | 704 | 0.5− | 0.4+ | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.7+ |
| 2003 12 18 | 704 | 0.1− | 0.8+ | 2004 01 22 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | 0.1− | 0.3− | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.3− |
| 2003 12 18 | 704 | 0.1+ | 0.1+ | 2005 04 11 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.8− | 0.8+ |
| 2003 12 21 | 704 | 0.4− | 0.5+ | 2005 04 11 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.2− | 0.2+ |
| 2003 12 21 | 704 | 0.3− | 0.9+ | 2005 04 30 | 691 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.6+ | 0.7+ |
| 2003 12 21 | 704 | 0.0 | 0.4+ | 2005 04 30 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.2+ |
| 2003 12 21 | 704 | 0.1− | 0.5+ | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.9+ | 0.3− |
| 2003 12 23 | 106 | 0.2− | 0.1+ | 2005 05 11 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.4− |
| 2003 12 23 | 106 | 0.4− | 0.1− | 2005 05 11 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2003 12 23 | 106 | 0.1+ | 0.3+ | 2005 05 11 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 1.3− | 1.0+ |
| 2003 12 24 | 704 | 0.9+ | 1.2+ | 2006 08 18 | 644 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2003 12 24 | 704 | (2.5+ | 0.6+) | 2006 08 18 | 644 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2003 12 24 | 704 | (0.7+ | 1.6+) | 2006 08 18 | 644 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |

**(143896)∗ 2003 YN$_{55}$ = 2000 AQ$_{73}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57494)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.86721 | | (2000.0) | | −0.77687504 | −0.62702161 |
| $n$ | 0.24465535 | $\omega$ | 264.36447 | | +0.60149260 | −0.71200775 |
| $a$ | 2.5318204 | $\Omega$ | 236.79051 | | +0.18620369 | −0.31605200 |
| $e$ | 0.1458767 | $i$ | 3.94241 | | | |
| $P$ | 4.03 | $H$ | 16.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 691 | 0.0 | 0.6− | 2003 12 19 | 704 | 0.8+ | 0.4+ | 2005 06 01 | 691 | 0.0 | 0.1+ |
| 1998 08 26 | 691 | 0.2+ | 0.6− | 2003 12 21 | 704 | 0.5+ | 0.6+ | 2005 06 13 | G96 | 0.2− | 0.2+ |
| 1998 08 26 | 691 | 0.0 | 0.3− | 2003 12 21 | 704 | 0.5+ | 0.6+ | 2005 06 13 | G96 | 0.2− | 0.6+ |
| 2000 01 05 | 704 | 0.3+ | 0.2− | 2003 12 21 | 704 | 0.3− | 0.1+ | 2005 06 13 | G96 | 0.2− | 0.5+ |
| 2000 01 05 | 704 | 0.1+ | 0.9− | 2003 12 23 | 704 | 1.5− | 0.6+ | 2005 06 13 | G96 | 0.3+ | 0.4+ |
| 2000 01 05 | 704 | 0.1− | 1.1− | 2003 12 23 | 704 | (1.7− | 0.3+) | 2005 06 15 | 691 | 0.1+ | 0.5+ |
| 2000 01 05 | 704 | 0.5+ | 0.4− | 2003 12 23 | 704 | (1.8− | 0.5+) | 2005 06 15 | 691 | 0.2− | 0.3+ |
| 2000 01 05 | 704 | 0.1+ | 0.2− | 2003 12 23 | 704 | 1.6− | 0.2+ | 2005 06 15 | 691 | 0.0 | 0.2+ |
| 2000 01 06 | 704 | 0.6− | 0.5− | 2003 12 23 | 704 | (2.4− | 0.1+) | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2000 01 06 | 704 | 0.7+ | 0.1+ | 2004 01 12 | 644 | 0.2− | 0.6+ | 2006 09 15 | 691 | 0.3+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.2+ | 0.0 | 2004 01 12 | 644 | 0.2− | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.1− |
| 2000 01 06 | 704 | 0.6+ | 0.6+ | 2004 01 12 | 644 | 0.1− | 0.8+ | 2006 09 17 | 691 | 0.5− | 0.3+ |
| 2000 01 06 | 704 | 0.0 | 0.0 | 2004 01 16 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.5− | 0.4+ | 2004 01 16 | 644 | 0.1− | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2004 01 16 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2002 08 28 | 644 | 0.2− | 0.5+ | 2005 01 18 | 809 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 2003 11 21 | 704 | 0.3− | 1.3+ | 2005 01 18 | 809 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.4+ |
| 2003 11 21 | 704 | (0.8− | 1.7+) | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.5+ | 0.2+ |
| 2003 11 21 | 704 | 1.1− | 0.5+ | 2005 05 13 | G96 | 0.5− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2003 11 21 | 704 | 0.1+ | 1.2+ | 2005 05 13 | G96 | 0.4+ | 0.8+ | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2003 12 19 | 704 | 0.5+ | 0.1− | 2005 05 13 | G96 | (2.4− | 1.0+) | 2006 10 23 | 291 | 0.4+ | 0.2+ |
| 2003 12 19 | 704 | 0.8+ | 0.1− | 2005 06 01 | 691 | 0.1+ | 0.0 | 2006 10 23 | 291 | 0.4+ | 0.3+ |
| 2003 12 19 | 704 | 0.1+ | 0.1+ | 2005 06 01 | 691 | 0.2+ | 0.1− | 2006 10 23 | 291 | 0.4− | 0.1− |

**(143897)∗ 2003 YV$_{55}$ = 2002 JO$_{12}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57495)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.29536 | | (2000.0) | | | |
| $n$ | 0.23941024 | $\omega$ | 132.91951 | | +0.91805904 | +0.39580041 |
| $a$ | 2.5686656 | $\Omega$ | 203.79144 | | −0.37808271 | +0.85699003 |
| $e$ | 0.3134913 | $i$ | 3.20801 | | −0.11925212 | +0.33001535 |
| $P$ | 4.12 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 291 | 0.1+ | 0.2+ | 2003 12 19 | 704 | 0.0 | 0.1+ | 2006 03 23 | G96 | 0.3+ | 0.3− |
| 2002 04 09 | 291 | 0.1− | 0.1+ | 2003 12 19 | 704 | 0.3+ | 0.8− | 2006 03 25 | 691 | 0.2+ | 0.2+ |
| 2002 04 09 | 291 | 0.3+ | 0.1+ | 2003 12 19 | 704 | 0.3+ | 0.3− | 2006 03 25 | 691 | 0.1+ | 0.3+ |
| 2002 05 05 | 333 | 0.0 | 0.6+ | 2003 12 21 | 704 | 0.2+ | 0.1+ | 2006 03 25 | 691 | 0.0 | 0.1+ |
| 2002 05 05 | 333 | 0.5+ | 0.5+ | 2003 12 21 | 704 | 0.7− | 0.2+ | 2006 04 09 | 691 | 0.2− | 0.2− |
| 2002 05 05 | 333 | 1.6− | 0.9+ | 2003 12 21 | 704 | 0.3+ | 0.4+ | 2006 04 09 | 691 | 0.3+ | 0.2− |
| 2002 05 09 | 333 | 1.6+ | 0.1+ | 2003 12 21 | 704 | 0.7− | 0.4− | 2006 04 09 | 691 | 0.0 | 0.2+ |
| 2002 05 09 | 333 | 0.5− | 0.9+ | 2003 12 28 | 691 | 0.2− | 0.1+ | 2006 05 01 | 568 | 0.2− | 0.1+ |
| 2003 09 26 | 704 | 0.8+ | 0.9+ | 2003 12 28 | 691 | 0.2+ | 0.0 | 2006 05 01 | 568 | 0.2− | 0.1+ |
| 2003 09 26 | 704 | 0.7+ | 1.2+ | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 05 01 | 568 | 0.2− | 0.2+ |
| 2003 09 26 | 704 | 0.4− | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.6− | 2006 05 02 | 568 | 0.0 | 0.1− |
| 2003 09 26 | 704 | 0.5+ | 0.6+ | 2005 03 11 | G96 | 0.1− | 0.5− | 2006 05 22 | G96 | 0.5− | 0.3− |
| 2003 12 14 | 644 | 0.4− | 0.3+ | 2005 03 11 | G96 | 0.1+ | 0.6− | 2006 05 22 | G96 | 0.3− | 0.1+ |
| 2003 12 14 | 644 | 0.2− | 0.4+ | 2005 03 11 | G96 | 0.1− | 0.3− | 2006 05 22 | G96 | 0.3− | 0.2− |
| 2003 12 14 | 644 | 0.4− | 0.2+ | 2006 03 23 | G96 | 0.7− | 0.4− | 2006 05 22 | G96 | (2.3− | 0.8+) |
| 2003 12 19 | 704 | 0.4− | 0.4+ | 2006 03 23 | G96 | 0.2− | 0.4− | | | | |
| 2003 12 19 | 704 | 0.5+ | 0.3+ | 2006 03 23 | G96 | 0.3+ | 0.3− | | | | |

**(143898)∗ 2003 YG$_{56}$ = 1998 MM$_{23}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 89495)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.09517 | | (2000.0) | | | |
| $n$ | 0.28205585 | $\omega$ | 283.58164 | | −0.98968615 | −0.10522597 |
| $a$ | 2.3027457 | $\Omega$ | 250.44618 | | +0.13375253 | −0.92175345 |
| $e$ | 0.0526560 | $i$ | 5.92083 | | −0.05129904 | −0.37322658 |
| $P$ | 3.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.3− | 0.3− | 2002 08 26 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.3− |
| 1995 07 03 | 691 | 0.2+ | 0.1+ | 2003 12 19 | 704 | 0.4+ | 0.0 | 2006 09 20 | 699 | 0.2− | 0.3− |
| 1995 07 03 | 691 | 0.8− | 0.6+ | 2003 12 19 | 704 | 0.5+ | 0.7+ | 2006 09 20 | 699 | 0.4+ | 0.6− |
| 1998 06 25 | 691 | 0.1− | 0.4+ | 2003 12 19 | 704 | 0.0 | 1.1+ | 2006 09 20 | 699 | (1.6+ | 0.4+) |
| 1998 06 25 | 691 | 0.2+ | 0.6+ | 2003 12 19 | 704 | 0.0 | 0.7+ | 2006 09 20 | 699 | 1.2+ | 0.7+ |
| 1998 06 25 | 691 | 0.3+ | 0.5+ | 2003 12 19 | 704 | 0.2− | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 1999 10 13 | 704 | 0.1+ | 0.2− | 2003 12 21 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.9+ | 0.5− |
| 1999 10 13 | 704 | 0.8+ | 0.3− | 2003 12 21 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.9− |
| 1999 10 13 | 704 | 0.6+ | 0.7− | 2003 12 21 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 1999 10 13 | 704 | 0.7+ | 0.4− | 2003 12 21 | 704 | 0.0 | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.3− |
| 1999 10 13 | 704 | 0.3+ | 0.0 | 2003 12 22 | 704 | 0.6+ | 1.0+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2001 02 17 | 704 | 0.8+ | 1.1+ | 2003 12 22 | 704 | (0.1+ | 1.8+) | 2006 10 03 | G96 | 0.3+ | 0.3− |
| 2001 02 17 | 704 | 0.1− | 1.0+ | 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2001 02 17 | 704 | 0.1+ | 0.9+ | 2003 12 22 | 704 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2001 03 26 | 704 | 0.1+ | 1.3+ | 2003 12 22 | 704 | (0.1− | 1.9−) | 2006 10 04 | G96 | 0.4+ | 0.2− |
| 2001 03 26 | 704 | 1.4+ | 1.3+ | 2003 12 23 | 704 | (2.2− | 0.6+) | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2001 03 26 | 704 | 0.9+ | 0.0 | 2003 12 23 | 704 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2001 03 26 | 704 | (0.1+ | 1.7+) | 2003 12 23 | 704 | 1.4− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2002 07 12 | 644 | 0.3+ | 0.6+ | 2003 12 23 | 704 | 1.1− | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 07 12 | 644 | 0.4+ | 0.7+ | 2003 12 23 | 704 | 0.7− | 1.3+ | 2006 10 13 | 291 | 0.1− | 0.2+ |
| 2002 07 12 | 644 | 0.1− | 0.6+ | 2004 01 16 | 644 | 0.0 | 0.3+ | 2006 10 13 | 291 | 0.1− | 0.1+ |
| 2002 07 21 | 644 | 0.2− | 1.1+ | 2004 01 16 | 644 | 0.0 | 0.3+ | 2006 10 13 | 291 | 0.4− | 0.1+ |
| 2002 07 21 | 644 | 0.3− | 0.8+ | 2004 01 16 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 291 | 0.2− | 0.2+ |
| 2002 07 21 | 644 | 0.2− | 0.8+ | 2005 06 14 | G96 | 0.4− | 0.2+ | 2006 10 16 | 291 | 0.2− | 0.4+ |
| 2002 08 05 | 644 | 0.1− | 0.4+ | 2005 06 14 | G96 | 0.1− | 0.4+ | 2006 10 16 | 291 | 0.1− | 0.4+ |
| 2002 08 05 | 644 | 0.1− | 0.6+ | 2005 06 14 | G96 | 0.3− | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 08 05 | 644 | 0.0 | 0.8+ | 2005 06 14 | G96 | 0.4+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 08 26 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.2+ | 0.4− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 08 26 | 644 | 0.2+ | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.0 | | | | |

**(143899)∗ 2003 YK$_{56}$ = 1997 EL$_{40}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57495)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 217.05598 | | (2000.0) | | | |
| $n$ | 0.26693607 | $\omega$ | 13.53868 | | −0.79047089 | −0.61129512 |
| $a$ | 2.3888994 | $\Omega$ | 128.71156 | | +0.55727622 | −0.74379816 |
| $e$ | 0.1212187 | $i$ | 2.82026 | | +0.25416329 | −0.27033791 |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 08 | 910 | (9.1− | 3.4+) | 2003 12 21 | 704 | 0.8− | 0.5+ | 2005 05 15 | G96 | 0.2+ | 0.3− |
| 1997 02 08 | 910 | (9.0− | 3.5+) | 2003 12 23 | 704 | 0.1+ | 0.3+ | 2005 06 03 | 703 | 1.8− | 0.1− |
| 1997 02 08 | 910 | (9.1− | 3.3+) | 2003 12 23 | 704 | 0.0 | 0.2− | 2005 06 03 | 703 | 0.7+ | 0.5− |
| 1997 03 05 | 704 | 0.4− | 0.7+ | 2003 12 23 | 704 | 0.2− | 0.5+ | 2005 06 03 | 703 | 0.5− | 1.1− |
| 1997 03 05 | 704 | 0.1− | 0.3− | 2003 12 23 | 704 | 0.1− | 0.2+ | 2005 06 03 | 703 | 0.7− | 0.7− |
| 1997 03 06 | 704 | 0.9− | 0.6+ | 2003 12 23 | 704 | 0.1+ | 0.3+ | 2005 06 08 | 691 | 0.1− | 0.5+ |
| 1997 03 06 | 704 | 1.7+ | 1.3+ | 2003 12 29 | 691 | 0.2+ | 0.2+ | 2005 06 08 | 691 | 0.5+ | 0.6+ |
| 2001 03 16 | 691 | 0.0 | 0.1− | 2003 12 29 | 691 | 0.2+ | 0.4+ | 2005 06 08 | 691 | 0.2− | 0.0 |
| 2001 03 16 | 691 | 0.2− | 0.0 | 2003 12 29 | 691 | 0.1− | 0.2− | 2005 06 13 | 691 | 0.3+ | 0.5+ |
| 2001 03 16 | 691 | 0.3− | 0.0 | 2004 01 13 | 699 | 0.5+ | 0.0 | 2005 06 13 | 691 | 0.2+ | 0.4+ |
| 2001 03 29 | 608 | 0.8+ | 0.5− | 2004 01 13 | 699 | 0.3− | 0.7+ | 2005 06 13 | 691 | 0.3+ | 0.2+ |
| 2001 03 29 | 608 | 0.5+ | 0.2− | 2004 01 13 | 699 | 0.7− | 1.0− | 2006 09 14 | 703 | 1.5− | 0.4+ |
| 2001 03 29 | 608 | 0.5+ | 0.7− | 2004 01 13 | 699 | 0.2+ | 0.6− | 2006 09 14 | 703 | (0.6+ | 2.4+) |
| 2003 12 19 | 704 | 0.4− | 0.1+ | 2004 02 10 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 1.8+ | 0.2+ |
| 2003 12 19 | 704 | 0.0 | 0.3− | 2004 02 10 | 644 | 0.2+ | 0.1− | 2006 09 14 | 703 | 1.4− | 0.1+ |
| 2003 12 19 | 704 | 0.4− | 0.1− | 2004 02 10 | 644 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.3+ |
| 2003 12 19 | 704 | 0.4− | 0.0 | 2005 05 15 | G96 | 0.5− | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.0 |
| 2003 12 21 | 704 | 0.0 | 0.2+ | 2005 05 15 | G96 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.4+ |
| 2003 12 21 | 704 | 0.1+ | 0.3+ | 2005 05 15 | G96 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.0 | 0.1+ |

**(143900)∗ 2003 YJ$_{58}$ = 2005 JY$_{96}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76319)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.19048 | | (2000.0) | | | |
| $n$ | 0.26497122 | $\omega$ | 332.10085 | | +0.09190631 | −0.99205423 |
| $a$ | 2.4006946 | $\Omega$ | 112.51805 | | +0.93003718 | +0.05469115 |
| $e$ | 0.1095766 | $i$ | 5.33665 | | +0.35578656 | +0.11330177 |
| $P$ | 3.72 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 1.2− | 0.7+ | 2003 12 21 | 704 | 0.1+ | 0.4+ | 2005 06 08 | 691 | 0.2− | 0.0 |
| 1999 11 05 | 704 | 0.3+ | 0.1+ | 2003 12 21 | 704 | 0.3+ | 0.6+ | 2005 06 08 | 691 | 0.2+ | 0.2− |
| 1999 11 05 | 704 | 0.5+ | 0.9+ | 2003 12 21 | 704 | 0.1+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.4+ |
| 1999 11 05 | 704 | 1.3− | 0.1+ | 2003 12 21 | 704 | 0.0 | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.3+ |
| 2001 03 26 | 704 | 0.5+ | 1.3+ | 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 2001 03 26 | 704 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.2− | 0.7+ |
| 2001 03 26 | 704 | 0.5+ | 0.0 | 2003 12 23 | 704 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2001 03 26 | 704 | 0.8+ | 1.7+ | 2003 12 23 | 704 | 0.9+ | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 2001 03 26 | 704 | 0.1+ | 0.6− | 2004 02 22 | 704 | 1.9− | 1.2+ | 2006 08 18 | 644 | 0.3− | 0.8+ |
| 2001 04 17 | 699 | 0.5+ | 0.5− | 2004 02 22 | 704 | 0.1+ | 0.6+ | 2006 08 18 | 644 | 0.1− | 0.7+ |
| 2001 04 17 | 699 | 0.4+ | 0.8+ | 2004 02 22 | 704 | 0.0 | 0.7+ | 2006 08 18 | 644 | 0.5− | 0.5+ |
| 2001 04 17 | 699 | 0.1− | 0.0 | 2004 02 22 | 704 | 0.3− | 0.1− | 2006 08 22 | 644 | 0.2− | 0.5+ |
| 2001 04 17 | 699 | (2.4+ | 0.8+) | 2005 05 08 | 691 | 0.3+ | 0.4+ | 2006 08 22 | 644 | 0.1+ | 0.9+ |
| 2002 07 14 | 644 | 0.0 | 0.1+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 08 22 | 644 | 0.5− | 0.7+ |
| 2002 07 14 | 644 | 0.1+ | 0.4+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.6+ |
| 2002 07 14 | 644 | 0.1+ | 0.5+ | 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 08 24 | 644 | 0.6− | 0.6+ |
| 2003 12 19 | 704 | 0.2− | 0.3+ | 2005 05 13 | 691 | 0.7− | 0.3+ | 2006 08 24 | 644 | 0.5− | 0.4+ |
| 2003 12 19 | 704 | 0.1− | 0.3+ | 2005 05 13 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.7− | 1.0− |
| 2003 12 19 | 704 | 0.2− | 0.5+ | 2005 05 14 | 644 | 0.7− | 0.0 | 2006 09 14 | 703 | 0.9+ | 1.1− |
| 2003 12 19 | 704 | 0.1+ | 0.4+ | 2005 05 14 | 644 | 0.5− | 0.0 | 2006 09 14 | 703 | 1.2+ | 0.3+ |
| 2003 12 19 | 704 | 0.1− | 0.3+ | 2005 05 14 | 644 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.0 |
| 2003 12 21 | 704 | 0.4+ | 0.3+ | 2005 06 08 | 691 | 0.2+ | 0.3+ | | | | |

**(143901)∗ 2003 YR$_{60}$ = 1999 TC$_{335}$ = 1999 UK$_{64}$ = 2005 JW$_{104}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86198)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 249.07670 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26406882 | $\omega$ | 246.33041 | | | −0.17762753 | | −0.98394932 | |
| $a$ | 2.4061607 | $\Omega$ | 213.91515 | | | +0.91368609 | | −0.15844131 | |
| $e$ | 0.1316276 | $i$ | 1.75558 | | | +0.36554916 | | −0.08209802 | |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.3+ | 0.4+ | 2003 12 19 | 704 | 0.5+ | 0.1− | 2005 05 11 | 691 | 0.1+ | 0.0 |
| 1995 09 24 | 691 | 0.1+ | 0.3+ | 2003 12 19 | 704 | 0.3+ | 0.0 | 2005 05 11 | 691 | 0.1+ | 0.3+ |
| 1995 09 24 | 691 | 0.0 | 0.0 | 2003 12 19 | 704 | 0.6+ | 0.9− | 2005 05 13 | G96 | 0.3− | 0.1+ |
| 1997 03 15 | 691 | 0.2− | 0.0 | 2003 12 19 | 704 | 0.1+ | 0.4+ | 2005 05 13 | G96 | 0.3− | 0.0 |
| 1997 03 15 | 691 | 0.0 | 0.2− | 2003 12 19 | 704 | 0.4− | 0.7+ | 2005 05 13 | G96 | 0.7− | 0.3+ |
| 1997 03 15 | 691 | 0.3+ | 0.1+ | 2003 12 19 | 691 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.4− | 0.3+ |
| 1999 10 12 | 691 | 0.0 | 0.5− | 2003 12 19 | 691 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.2+ | 0.3+ |
| 1999 10 12 | 691 | 0.1− | 0.4− | 2003 12 19 | 691 | 0.3− | 0.2+ | 2006 08 19 | 691 | 0.3+ | 0.0 |
| 1999 10 12 | 691 | 0.1− | 0.5− | 2003 12 21 | 704 | 0.2− | 1.2+ | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 1999 10 19 | 691 | 0.2− | 0.0 | 2003 12 21 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 691 | 0.2+ | 0.3+ |
| 1999 10 19 | 691 | 0.2− | 0.0 | 2003 12 21 | 704 | 1.2+ | 0.8+ | 2006 08 28 | 691 | 0.1− | 0.0 |
| 1999 10 19 | 691 | 0.2− | 0.1− | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.2+ |
| 2003 11 21 | 704 | 0.3+ | 0.4− | 2005 04 11 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2003 11 21 | 704 | 0.6+ | 0.3+ | 2005 04 11 | G96 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.6− | 0.4− |
| 2003 11 21 | 704 | 0.2+ | 0.5+ | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2003 11 21 | 704 | 0.4+ | 0.7+ | 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.5− | 0.0 |

**(143902)∗ 2003 YR$_{61}$ = 2005 FR$_{6}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76321)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 29.07163 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26783121 | $\omega$ | 203.81215 | | | +0.74796657 | | +0.65420341 | |
| $a$ | 2.3835737 | $\Omega$ | 114.84517 | | | −0.58740760 | | +0.73107057 | |
| $e$ | 0.1250549 | $i$ | 7.09536 | | | −0.30902801 | | +0.19378785 | |
| $P$ | 3.68 | $H$ | 15.9 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 24 | 691 | 0.8− | 0.2+ | 2005 03 18 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.2− |
| 1998 07 24 | 691 | 0.9− | 0.3+ | 2005 03 18 | 704 | 1.4+ | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 1999 10 19 | 704 | 0.7+ | 1.4− | 2005 03 18 | 703 | 0.6− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.2− |
| 1999 10 19 | 704 | 1.2+ | 0.6+ | 2005 03 18 | 704 | (0.5+ | 1.5+) | 2006 09 14 | 644 | 0.0 | 0.2− |
| 1999 10 19 | 704 | 0.1− | 0.0 | 2005 03 18 | 703 | 0.3− | 0.9+ | 2006 09 14 | 644 | 0.1+ | 0.1− |
| 1999 10 19 | 704 | 1.6− | 0.0 | 2005 03 18 | 703 | (2.3+ | 0.2−) | 2006 09 21 | 699 | 0.2+ | 0.7− |
| 2002 06 11 | 644 | 0.7+ | 0.0 | 2005 03 18 | 703 | 0.6+ | 0.4+ | 2006 09 21 | 699 | 0.4− | 0.5− |
| 2002 06 11 | 644 | 0.6+ | 0.0 | 2005 03 30 | 703 | (1.8+ | 0.8−) | 2006 09 21 | 699 | 1.0− | 0.1+ |
| 2002 06 11 | 644 | 0.5+ | 0.0 | 2005 03 30 | 703 | 0.8− | 0.9+ | 2006 09 21 | 699 | 0.6− | 0.1+ |
| 2002 06 16 | 644 | 0.1+ | 0.3+ | 2005 03 30 | 703 | 1.3+ | 1.1+ | 2006 09 26 | 703 | 0.1− | 0.8− |
| 2002 06 16 | 644 | 0.4+ | 0.1+ | 2005 03 30 | 703 | 0.6− | 1.1+ | 2006 09 26 | 703 | 0.4+ | 0.4+ |
| 2002 06 16 | 644 | 0.5+ | 0.7+ | 2005 04 05 | 699 | (0.7+ | 1.9+) | 2006 09 26 | 703 | 0.3+ | 0.9− |
| 2002 06 29 | 644 | 0.1− | 0.1− | 2005 04 05 | 699 | 0.6− | 0.5+ | 2006 09 26 | 703 | 0.9− | 0.2− |
| 2002 06 29 | 644 | 0.3+ | 0.2+ | 2005 04 05 | 699 | 0.2− | 0.1+ | 2006 10 02 | 703 | 0.4− | 1.2+ |
| 2002 06 29 | 644 | 0.4+ | 0.1+ | 2005 04 05 | 699 | 1.3+ | 0.1− | 2006 10 02 | 703 | 0.6− | 0.0 |
| 2002 07 05 | 704 | 1.4+ | 0.0 | 2005 04 08 | 704 | 0.5+ | 0.1− | 2006 10 02 | 703 | 0.2− | 0.0 |
| 2002 07 05 | 704 | 0.4+ | 0.9− | 2005 04 08 | 704 | 0.3− | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.0 |
| 2002 07 05 | 704 | 1.2+ | 0.8+ | 2005 04 08 | 704 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 07 05 | 704 | 0.1+ | 0.6+ | 2005 04 08 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2002 07 14 | 704 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 07 14 | 704 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.1+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 07 14 | 704 | 0.5+ | 1.2− | 2006 08 30 | 699 | 0.1+ | 1.0+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 07 14 | 704 | 0.6+ | 0.2− | 2006 08 30 | 699 | 0.8+ | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2002 07 14 | 704 | 0.4− | 0.6+ | 2006 09 12 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2003 12 19 | 704 | 0.7+ | 0.0 | 2006 09 12 | 704 | 0.3− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 12 19 | 704 | 0.8+ | 0.7− | 2006 09 12 | 704 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2003 12 19 | 704 | 0.1+ | 0.2+ | 2006 09 12 | 704 | 0.3+ | 1.3+ | 2006 10 24 | 644 | 0.1+ | 0.4+ |
| 2003 12 21 | 704 | 0.5+ | 0.4− | 2006 09 12 | 704 | 0.2+ | 0.3− | 2006 10 24 | 644 | 0.3− | 0.2+ |
| 2003 12 21 | 704 | 0.1− | 0.5+ | 2006 09 12 | 704 | 0.6− | 1.4+ | 2006 10 24 | 644 | 0.6− | 0.2− |
| 2003 12 21 | 704 | 0.1− | 0.9+ | 2006 09 12 | 704 | 1.1+ | 0.7+ | 2006 11 19 | 703 | 0.2+ | 1.0− |
| 2003 12 23 | 704 | 1.0+ | 1.4+ | 2006 09 12 | 704 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.6− | 1.3+ |
| 2003 12 23 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 11 19 | 703 | 0.8− | 0.3− |
| 2003 12 23 | 704 | 0.3− | 0.9+ | 2006 09 14 | 703 | 0.9− | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.8− |

**(143903)∗ 2003 YZ$_{61}$ = 1995 JD$_{1}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57498)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 343.77981 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29405163 | $\omega$ | 286.73715 | | | +0.82115012 | | −0.55243614 | |
| $a$ | 2.2396853 | $\Omega$ | 107.01109 | | | +0.56387368 | | +0.74658366 | |
| $e$ | 0.1752085 | $i$ | 8.61690 | | | +0.08808497 | | +0.37071167 | |
| $P$ | 3.35 | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 04 | 691 | 0.5+ | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1995 05 04 | 691 | 0.0 | 0.2+ | 2004 01 21 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1995 05 04 | 691 | 0.2− | 0.4+ | 2004 01 24 | 704 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1995 05 06 | 691 | 0.2− | 0.2− | 2004 01 24 | 704 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 1995 05 06 | 691 | 0.3− | 1.4− | 2004 01 24 | 704 | 0.8− | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 1995 05 06 | 691 | 0.3− | 0.6− | 2004 01 30 | 704 | 0.6+ | 0.8− | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 1999 07 14 | 704 | 0.7− | 1.0+ | 2004 01 30 | 704 | 0.5− | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 1999 07 14 | 704 | 0.2+ | 0.8+ | 2004 01 30 | 704 | 0.2− | 0.9− | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 1999 07 14 | 704 | 0.0 | 0.8+ | 2004 01 30 | 704 | 0.9+ | 0.5− | 2006 10 21 | 703 | 0.6+ | 0.5− |
| 2003 12 01 | 704 | 0.5− | 0.4− | 2006 08 28 | 699 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2003 12 01 | 704 | 0.6+ | 0.1+ | 2006 08 28 | 699 | 0.8+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.4− |
| 2003 12 01 | 704 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 2003 12 19 | 704 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2003 12 19 | 704 | 0.1− | 0.5− | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2003 12 19 | 704 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.1− | 0.1+ |
| 2003 12 19 | 704 | 0.7− | 0.5+ | 2006 09 24 | 699 | 0.0 | 0.2+ | 2006 10 31 | 703 | 0.7+ | 0.1− |
| 2003 12 21 | 704 | 0.2− | 0.3+ | 2006 09 24 | 699 | 0.3+ | 0.1− | 2006 10 31 | 703 | 0.0 | 0.0 |
| 2003 12 21 | 704 | 0.2− | 0.5+ | 2006 09 24 | 699 | 1.0− | 0.7+ | 2006 10 31 | 703 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 704 | 0.1− | 0.3+ | 2006 09 24 | 699 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.1+ | | |
| 2003 12 21 | 704 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.1− | | |
| 2003 12 21 | 704 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.0 | 0.1+ | | |
| 2003 12 27 | 704 | 1.4+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.0 | 0.3+ | | |
| 2003 12 27 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 11 23 | 703 | 0.2+ | 0.8− | | |
| 2003 12 27 | 704 | 1.0+ | 0.1− | 2006 10 02 | 703 | 0.9+ | 0.2+ | 2006 11 23 | 703 | 0.1+ | 0.7− | | |
| 2003 12 27 | 704 | (1.9+ | 0.3−) | 2006 10 02 | 703 | 1.0− | 1.1− | 2006 11 23 | 703 | 0.1+ | 0.1− | | |
| 2004 01 21 | 704 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.4− | 0.4− | 2006 11 23 | 703 | 0.5− | 0.6+ | | |
| 2004 01 21 | 704 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 | | | | | | |

**(143904)∗ 2003 YM$_{62}$ = 1999 VH$_{209}$ = 2001 KU$_5$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57499)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.59690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27772012 | $\omega$ | 192.81376 | | −0.87087252 | −0.49131280 | |
| $a$ | 2.3266505 | $\Omega$ | 317.75014 | | +0.45275289 | −0.79088800 | |
| $e$ | 0.1769621 | $i$ | 1.18329 | | +0.19130047 | −0.36483957 | |
| $P$ | 3.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.9+ | 0.9− | 2004 01 02 | 628 | 0.5+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.2− | | |
| 1999 11 14 | 704 | 1.5+ | 0.5− | 2004 01 20 | 704 | 1.2+ | 1.5+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 1999 11 14 | 704 | 0.0 | 0.9− | 2004 01 20 | 704 | 0.5+ | 1.2+ | 2006 10 15 | 691 | 0.3− | 0.1+ | | |
| 1999 11 15 | 691 | 0.1+ | 0.5− | 2004 01 20 | 704 | (1.7+ | 0.0 ) | 2006 10 15 | 691 | 0.3− | 0.3+ | | |
| 1999 11 15 | 691 | 0.1+ | 0.3− | 2004 01 21 | 704 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.1− | | |
| 1999 11 15 | 691 | 0.1+ | 0.6− | 2004 01 21 | 704 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.3+ | 0.2+ | | |
| 2001 05 17 | 704 | 0.1− | 0.9− | 2004 01 21 | 704 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.0 | | |
| 2001 05 17 | 704 | 1.2+ | 0.2+ | 2004 01 21 | 704 | 0.6+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2001 05 17 | 704 | 1.1− | 0.7− | 2004 01 24 | 704 | 0.4+ | 1.2+ | 2006 10 21 | 703 | 0.6+ | 0.7+ | | |
| 2001 05 17 | 704 | 0.6+ | 0.7− | 2004 01 24 | 704 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.5− | 0.4+ | | |
| 2001 05 21 | 704 | 0.7− | 0.9+ | 2004 01 24 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 1.3+ | | |
| 2001 05 21 | 704 | 0.2− | 0.8+ | 2004 01 24 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.6− | 0.1+ | | |
| 2001 05 21 | 704 | 0.5+ | 0.6+ | 2004 01 24 | 704 | (0.2− | 1.6+) | 2006 10 27 | 691 | 0.1− | 0.3− | | |
| 2001 05 21 | 704 | 0.3+ | 0.8+ | 2004 01 30 | 704 | 0.2− | 0.5− | 2006 10 27 | 691 | 0.2+ | 0.1− | | |
| 2002 08 30 | 291 | 0.4− | 0.8+ | 2004 01 30 | 704 | 0.8− | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.1+ | | |
| 2002 08 30 | 291 | 0.4− | 0.7+ | 2004 01 30 | 704 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.0 | | |
| 2002 08 30 | 291 | 0.4− | 0.7+ | 2004 01 30 | 704 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | | |
| 2003 11 21 | 704 | 0.5− | 1.0− | 2004 01 30 | 704 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 2003 11 21 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2003 11 21 | 704 | 0.1+ | 0.0 | 2004 03 18 | 704 | (2.0+ | 1.2+) | 2006 10 31 | 691 | 0.2− | 0.4+ | | |
| 2003 12 19 | 704 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.4− | 0.1− | | |
| 2003 12 19 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.3− | | |
| 2003 12 19 | 704 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.3+ | | |
| 2003 12 19 | 704 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.9− | | |
| 2003 12 19 | 704 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.5+ | | |
| 2003 12 21 | 704 | 0.5− | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | (3.1− | 0.6−) | | |
| 2003 12 21 | 704 | 0.1− | 1.5+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | | |
| 2003 12 21 | 704 | 0.3− | 1.0+ | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.3+ | 0.2− | | |
| 2003 12 21 | 704 | (0.1+ | 1.7+) | 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 11 13 | 691 | 0.5+ | 0.3− | | |
| 2003 12 21 | 704 | 1.3− | 1.1+ | 2006 10 02 | 691 | 0.4+ | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.4− | | |
| 2003 12 25 | 608 | (0.7+ | 3.8+) | 2006 10 02 | 691 | 0.2− | 0.3− | 2006 11 20 | G96 | 0.6+ | 0.2− | | |
| 2003 12 25 | 608 | (0.6+ | 3.9+) | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.3− | | |
| 2003 12 25 | 608 | (0.7+ | 3.7+) | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.0 | 1.0− | | |
| 2003 12 29 | 699 | 0.4− | 0.5− | 2006 10 11 | 691 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.6− | | |
| 2003 12 29 | 699 | 0.4− | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.6− | | |
| 2003 12 29 | 699 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.6− | | |
| 2003 12 29 | 699 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2004 01 02 | 628 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | | | | | |
| 2004 01 02 | 628 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | | | | | |

**(143905)∗ 2003 YS$_{62}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.53955 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27211780 | $\omega$ | 200.84880 | | −0.52031328 | −0.84272369 | |
| $a$ | 2.3584758 | $\Omega$ | 280.73791 | | +0.80206960 | −0.42670135 | |
| $e$ | 0.1025479 | $i$ | 8.08443 | | +0.29318669 | −0.32824189 | |
| $P$ | 3.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 1.5+ | 1.3− | 2003 12 21 | 704 | 0.3− | 0.2− | 2004 03 18 | 291 | 0.2− | 0.3+ | | |
| 1999 11 04 | 704 | 0.4− | 0.7− | 2003 12 21 | 704 | 0.1− | 0.2+ | 2004 03 18 | 291 | 0.1− | 0.3+ | | |
| 1999 11 04 | 704 | 0.9− | 0.4− | 2003 12 27 | 691 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.4+ | 0.3− | | |
| 2002 07 21 | 644 | 0.2− | 0.8+ | 2003 12 27 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.8+ | 0.8− | | |
| 2002 07 21 | 644 | 0.3− | 0.9+ | 2003 12 27 | 691 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.5− | | |
| 2002 07 21 | 644 | 0.2− | 0.9+ | 2004 01 21 | 704 | 0.8+ | 0.0 | 2006 09 16 | 703 | 1.3− | 0.8+ | | |
| 2002 08 26 | 644 | 0.8− | 0.8+ | 2004 01 21 | 704 | 0.2+ | 0.4− | 2006 09 25 | 703 | 1.3+ | 1.0− | | |
| 2002 08 26 | 644 | 0.3− | 0.8+ | 2004 01 21 | 704 | 0.7+ | 0.6− | 2006 09 25 | 703 | 0.2− | 0.2+ | | |
| 2002 08 26 | 644 | 0.4− | 1.2+ | 2004 01 21 | 704 | 0.2+ | 0.5− | 2006 09 25 | 703 | 0.1− | 0.2− | | |
| 2003 12 19 | 704 | 0.3− | 0.2− | 2004 01 21 | 704 | 0.5+ | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.4− | | |
| 2003 12 19 | 704 | 0.2+ | 0.0 | 2004 01 24 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | | |
| 2003 12 19 | 704 | 0.8+ | 0.2− | 2004 01 24 | 704 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.4+ | | |
| 2003 12 19 | 704 | 0.3+ | 0.3− | 2004 01 24 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2003 12 19 | 704 | 0.4− | 0.6+ | 2004 01 24 | 704 | 0.4− | 0.1− | 2006 10 22 | G92 | 0.8− | 0.2+ | | |
| 2003 12 19 | 608 | 0.5− | 0.4− | 2004 01 30 | 704 | 0.7+ | 0.6− | 2006 10 22 | 644 | 0.4− | 0.2+ | | |
| 2003 12 19 | 608 | 0.6− | 0.8− | 2004 01 30 | 704 | 0.7+ | 0.3+ | 2006 10 22 | G92 | 0.5+ | 0.0 | | |
| 2003 12 19 | 608 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.7+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.0 | | |
| 2003 12 21 | 704 | 0.7− | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.4− | 2006 10 22 | G92 | 0.5− | 0.6+ | | |
| 2003 12 21 | 704 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2003 12 21 | 704 | 0.1− | 0.1+ | 2004 03 18 | 291 | 0.1+ | 0.3+ | | | | | | |

**(143906)∗ 2003 YW$_{62}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.91838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28004973 | $\omega$ | 328.11099 | | −0.32841385 | −0.94335913 | |
| $a$ | 2.3137297 | $\Omega$ | 141.00500 | | +0.88156037 | −0.32403767 | |
| $e$ | 0.1370469 | $i$ | 4.29214 | | +0.33911009 | −0.07122594 | |
| $P$ | 3.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | (0.5+ | 2.7+) | 2003 12 21 | 704 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.5+ | 0.6+ | | |
| 2001 03 19 | 704 | 0.0 | 1.1+ | 2003 12 21 | 704 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.4+ | 1.2+ | | |
| 2001 03 19 | 704 | 0.4+ | 0.7+ | 2003 12 21 | 704 | 0.0 | 0.5− | 2006 09 19 | 704 | 0.3+ | 1.4− | | |
| 2001 03 19 | 704 | (2.5+ | 1.0+) | 2003 12 21 | 704 | 0.5− | 0.3− | 2006 09 19 | 704 | 0.5− | 0.4− | | |
| 2002 06 25 | 644 | 0.0 | 0.8+ | 2003 12 21 | 704 | 0.4+ | 0.5− | 2006 09 19 | 704 | 0.8+ | 0.1− | | |
| 2002 06 25 | 644 | 0.2+ | 0.6+ | 2003 12 22 | 704 | 0.3+ | 0.5− | 2006 09 19 | 704 | 0.5+ | 0.5+ | | |
| 2002 07 04 | 644 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.2− | | |
| 2002 07 04 | 644 | 0.1− | 0.4− | 2003 12 22 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.6− | 0.9− | | |
| 2002 07 04 | 644 | (0.6+ | 1.7+) | 2003 12 22 | 704 | 0.3+ | 0.8− | 2006 09 26 | 704 | 0.4− | 0.7+ | | |
| 2002 07 22 | 644 | 0.2− | 0.2+ | 2003 12 23 | 704 | 0.6− | 0.8− | 2006 09 26 | 704 | 0.4− | 0.5+ | | |
| 2002 07 22 | 644 | 0.1+ | 0.2− | 2003 12 23 | 704 | 0.7− | 0.5− | 2006 09 28 | 704 | 0.7− | 0.1− | | |
| 2002 07 22 | 644 | 0.2− | 0.2− | 2003 12 23 | 704 | 1.0− | 0.6− | 2006 09 28 | 704 | 0.0 | 0.4− | | |
| 2002 08 06 | 644 | 0.0 | 0.3+ | 2004 01 21 | 704 | 0.6+ | 0.2+ | 2006 09 28 | 704 | 0.3− | 0.6+ | | |
| 2002 08 06 | 644 | 0.3+ | 0.1+ | 2004 01 21 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 704 | 0.4− | 0.0 | | |
| 2002 08 06 | 644 | 0.3+ | 0.0 | 2004 01 21 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 704 | 0.6+ | 0.0 | | |
| 2002 08 07 | 644 | 0.1− | 0.4+ | 2004 01 21 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 704 | 1.1+ | 1.0+ | | |
| 2002 08 07 | 644 | 0.0 | 0.5+ | 2004 01 21 | 704 | 0.4+ | 0.9+ | 2006 09 30 | 704 | 1.3+ | 0.6+ | | |
| 2002 08 07 | 644 | 0.2− | 0.6+ | 2004 02 22 | 704 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1− | | |
| 2002 08 27 | 644 | 0.1− | 0.0 | 2004 02 22 | 704 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.4− | | |
| 2002 08 27 | 644 | 0.2− | 0.1− | 2004 02 22 | 704 | 0.1− | 1.3− | 2006 10 12 | 644 | 0.3+ | 0.2− | | |
| 2002 08 27 | 644 | 0.0 | 0.4− | 2004 03 18 | 704 | 0.4+ | 1.2+ | 2006 10 16 | 703 | 0.1− | 0.4− | | |
| 2003 12 19 | 704 | 0.4+ | 0.8+ | 2004 03 18 | 704 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.0 | | |
| 2003 12 19 | 704 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 0.1− | 1.2+ | 2006 10 16 | 703 | 0.5− | 0.1− | | |
| 2003 12 19 | 704 | 0.1+ | 0.1− | 2004 03 18 | 704 | (0.3+ | 1.7+) | 2006 10 16 | 703 | 1.0− | 0.2− | | |
| 2003 12 19 | 704 | 0.4+ | 0.4+ | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 10 22 | 703 | 1.1− | 0.8− | | |
| 2003 12 19 | 704 | 0.0 | 1.0+ | 2006 09 12 | 703 | (1.8− | 2.4+) | 2006 10 22 | 703 | 0.8− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 704 | 0.6− | 0.3− | 2006 09 12 | 703 | 1.0− | 1.0− | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 2003 12 21 | 704 | 0.1+ | 0.5+ | 2006 09 12 | 703 | 1.2− | 1.3+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2003 12 21 | 704 | 0.1+ | 0.4− | 2006 09 18 | 703 | 1.0+ | 1.1+ | | | | |
| 2003 12 21 | 704 | 0.2− | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.1+ | | | | |

**(143907)∗ 2003 YV$_{63}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 289.08117 | | (2000.0) | | | |
| $n$ | 0.28070977 | $\omega$ | 342.22791 | | +0.01038269 | −0.99297368 |
| $a$ | 2.3101013 | $\Omega$ | 107.04960 | | +0.93175270 | −0.03318107 |
| $e$ | 0.0799732 | $i$ | 7.08247 | | +0.36294505 | +0.11358823 |
| $P$ | 3.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 704 | 0.4+ | 1.0+ | 2005 05 21 | G96 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.6+ |
| 2001 03 04 | 704 | 0.1+ | 0.9+ | 2005 05 21 | G96 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.6− | 1.1+ |
| 2001 03 04 | 704 | (0.6+ | 2.3+) | 2005 06 06 | 691 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.6− |
| 2002 07 17 | 644 | 0.0 | 0.2− | 2005 06 06 | 691 | 0.2− | 0.5− | 2006 09 26 | 703 | 0.9− | 0.3− |
| 2002 07 17 | 644 | 0.0 | 0.2+ | 2005 06 06 | 691 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.0 | 0.0 |
| 2002 07 17 | 644 | 0.1− | 0.1− | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 0.8+ | 2005 06 10 | 691 | 0.4+ | 0.1− | 2006 09 29 | 699 | 0.5+ | 0.3− |
| 2003 12 19 | 704 | 0.3− | 0.1− | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.3+ |
| 2003 12 19 | 704 | 0.3− | 0.5+ | 2005 06 27 | 691 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.7+ | 1.1+ |
| 2003 12 19 | 704 | 0.5− | 0.5+ | 2005 06 27 | 691 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.2− | 0.5− |
| 2003 12 21 | 704 | 0.6− | 0.7+ | 2005 06 27 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 704 | 0.0 | 0.5− |
| 2003 12 21 | 704 | 0.3+ | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.4− | 1.3+ |
| 2003 12 21 | 704 | 1.2− | 1.1+ | 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.8− | 0.6− |
| 2003 12 21 | 704 | 0.1− | 0.3+ | 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 09 30 | 704 | 1.1− | 0.2+ |
| 2003 12 23 | 704 | 0.3+ | 0.5+ | 2005 07 05 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | (2.1+ | 2.1+) |
| 2003 12 23 | 704 | 0.2+ | 0.2− | 2005 07 05 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2003 12 23 | 704 | 0.4+ | 0.3− | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.5− | 1.3+ |
| 2003 12 23 | 704 | 0.1+ | 0.6+ | 2005 07 12 | G96 | 0.4− | 0.5+ | 2006 10 17 | 703 | (1.9− | 0.6+) |
| 2003 12 23 | 704 | 0.3− | 0.2+ | 2005 07 12 | G96 | 0.3+ | 0.8+ | 2006 10 17 | D35 | 0.3− | 0.7+ |
| 2004 01 21 | 704 | 0.6− | 0.7+ | 2005 07 12 | G96 | 0.1− | 0.1+ | 2006 10 17 | D35 | 0.2− | 0.3+ |
| 2004 01 21 | 704 | 0.6− | 0.6+ | 2005 07 12 | G96 | 0.4+ | 0.9+ | 2006 10 17 | D35 | 0.0 | 0.6+ |
| 2004 01 21 | 704 | 0.1− | 0.5+ | 2006 08 23 | 204 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2004 01 21 | 704 | 0.5− | 0.5+ | 2006 08 23 | 204 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2004 01 24 | 704 | 0.6+ | 0.2− | 2006 09 12 | 682 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2004 01 24 | 704 | 1.1+ | 0.3+ | 2006 09 12 | 682 | 0.1+ | 1.3− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2004 01 24 | 704 | (2.0+ | 0.1+) | 2006 09 12 | 682 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2004 01 30 | 691 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.9− | 0.5+ | 2006 10 24 | 644 | 0.3+ | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.8+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2004 01 30 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.7− | 1.2+ | 2006 10 24 | 644 | 0.0 | 0.5+ |
| 2004 01 30 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2004 01 30 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.1+ | 0.9+ | 2006 10 28 | 703 | 0.3− | 0.1− |
| 2004 01 30 | 704 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.6+ | 0.2− | 2006 10 28 | 703 | 0.6+ | 0.2− |
| 2004 01 30 | 704 | 0.0 | 0.4− | 2006 09 21 | 699 | 0.9+ | 0.5+ | 2006 10 28 | 703 | 0.1− | 1.5− |
| 2005 05 21 | G96 | 0.5− | 0.1− | 2006 09 25 | 699 | (1.6− | 0.2+) | | | | |
| 2005 05 21 | G96 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.5+ | | | | |

**(143908)∗ 2003 YR$_{65}$ = 1999 XQ$_{215}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57504)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.52561 | | (2000.0) | | | |
| $n$ | 0.26853579 | $\omega$ | 240.26353 | | −0.94566438 | −0.30886915 |
| $a$ | 2.3794026 | $\Omega$ | 281.58751 | | +0.32246350 | −0.85088533 |
| $e$ | 0.0513966 | $i$ | 5.95196 | | +0.04166733 | −0.42496353 |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.3+ | 0.9− | 2004 01 15 | 691 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.6+ | 0.5− |
| 1999 12 14 | 704 | 0.0 | 1.3− | 2004 01 15 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.5+ |
| 1999 12 14 | 704 | 0.5− | 1.6− | 2004 01 21 | 704 | 0.6+ | 0.7+ | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 1999 12 15 | 704 | 0.0 | 0.7− | 2004 01 21 | 704 | 0.7+ | 0.7+ | 2006 09 28 | 703 | 0.8− | 0.5− |
| 1999 12 15 | 704 | 0.6+ | 1.3− | 2004 01 21 | 704 | 0.1+ | 0.8+ | 2006 10 12 | 644 | 0.5− | 0.4+ |
| 1999 12 15 | 704 | 0.3+ | 1.2− | 2004 01 21 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.7− | 0.5+ |
| 1999 12 15 | 704 | 0.7− | 0.2− | 2004 01 21 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.5− | 0.5+ |
| 2002 09 05 | 699 | (2.0+ | 0.1+) | 2004 01 24 | 704 | 0.6+ | 0.4− | 2006 10 19 | 703 | 0.8+ | 0.6+ |
| 2002 09 05 | 699 | (0.3− | 2.5+) | 2004 01 24 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.9− | 0.0 |
| 2002 09 05 | 699 | 0.8− | 1.1+ | 2004 01 24 | 704 | 1.0+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.4+ |
| 2002 09 05 | 699 | (0.3− | 1.9+) | 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.4+ |
| 2002 09 13 | 644 | 0.1− | 0.3− | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.6+ |
| 2002 09 13 | 644 | 0.2− | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2002 11 08 | 645 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.7− | 0.4+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.1− | 1.0+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2003 12 19 | 704 | 0.8− | 1.2− | 2004 02 11 | 699 | 0.4− | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.3− | 0.2− | 2004 02 11 | 699 | 0.3− | 0.3− | 2006 10 27 | 703 | 0.9− | 0.9+ |
| 2003 12 19 | 704 | 0.1− | 0.0 | 2004 02 11 | 699 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.3− |
| 2003 12 21 | 704 | 0.4− | 1.1− | 2004 02 11 | 699 | (1.6+ | 0.5−) | 2006 10 27 | 703 | 0.3+ | 1.3− |
| 2003 12 21 | 704 | 0.1− | 0.3− | 2004 02 22 | 704 | 0.2− | 1.3+ | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2003 12 21 | 704 | 1.1− | 0.3+ | 2004 02 22 | 704 | 0.2− | 0.8+ | 2006 11 14 | 703 | 1.1+ | 1.9+ |
| 2003 12 21 | 704 | 0.0 | 0.7+ | 2004 02 22 | 704 | (2.5− | 1.0+) | 2006 11 14 | 703 | 0.2− | 1.4+ |
| 2003 12 21 | 704 | 0.4− | 0.2+ | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.8+ | 1.1− |
| 2003 12 29 | 699 | 0.3+ | 0.2+ | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.5+ | 0.7+ |
| 2003 12 29 | 699 | 1.0+ | 0.1− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.1− | 1.8− |
| 2003 12 29 | 699 | 0.1+ | 1.1+ | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.2− | 0.7− |
| 2003 12 29 | 699 | 0.0 | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.8− | 0.1− |
| 2004 01 15 | 691 | 0.3+ | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 14 | 703 | 1.1+ | 0.4+ |

**(143909)∗ 2003 YS$_{66}$**

Discovered 2003 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.02049 | | (2000.0) | | | |
| $n$ | 0.27564920 | $\omega$ | 152.88828 | | −0.16027447 | −0.98484754 |
| $a$ | 2.3382892 | $\Omega$ | 306.26246 | | +0.89007800 | −0.11519055 |
| $e$ | 0.1902631 | $i$ | 4.71207 | | +0.42670042 | −0.12963976 |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.0 | 0.3− | 2004 02 11 | 703 | 0.0 | 0.5− | 2004 03 18 | 704 | 0.5− | 0.2− |
| 1999 10 12 | 704 | 0.3− | 0.7− | 2004 02 11 | 644 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.9+ | 0.1− |
| 1999 10 12 | 704 | 0.6+ | 0.6− | 2004 02 11 | 703 | 0.8+ | 0.8− | 2004 03 20 | 704 | 1.4+ | 0.2+ |
| 1999 10 12 | 704 | 0.6+ | 0.0 | 2004 02 11 | 644 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.6+ | 0.2− |
| 1999 10 12 | 704 | 0.9− | 0.0 | 2004 02 11 | 644 | 0.1− | 0.1− | 2004 03 20 | 704 | 1.4+ | 0.1+ |
| 1999 11 13 | 703 | 0.1+ | 0.2− | 2004 02 18 | 704 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.3+ | 0.0 |
| 1999 11 13 | 703 | 1.0+ | 0.2+ | 2004 02 18 | 704 | 0.7+ | 0.1+ | 2004 03 21 | 691 | 0.2− | 0.0 |
| 1999 11 13 | 703 | 0.2− | 0.2+ | 2004 02 18 | 704 | 0.1− | 0.5− | 2004 03 21 | 691 | 0.2− | 0.2+ |
| 1999 11 13 | 703 | 0.8− | 0.2+ | 2004 02 18 | 704 | 0.1+ | 0.2+ | 2004 03 21 | 691 | 0.2− | 0.1+ |
| 2002 08 17 | 644 | 0.5− | 1.0+ | 2004 02 26 | 333 | 0.5− | 0.6− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.4− | 0.7+ | 2004 02 26 | 333 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.2+ | 0.9+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2003 12 20 | 704 | 0.6+ | 0.3+ | 2004 02 26 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.1− | 0.6− |
| 2003 12 20 | 704 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.8+ | 1.2+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2003 12 20 | 704 | 0.1+ | 0.9− | 2004 02 26 | 333 | 0.8− | 1.2− | 2006 09 30 | 703 | 0.9− | 1.0− |
| 2003 12 20 | 704 | 0.6+ | 0.0 | 2004 02 26 | 704 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.7− |
| 2003 12 21 | 704 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2003 12 21 | 704 | 0.4+ | 0.2+ | 2004 03 01 | 703 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2003 12 21 | 704 | 0.2− | 0.2+ | 2004 03 01 | 703 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2003 12 21 | 704 | 0.1− | 0.1+ | 2004 03 01 | 703 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2004 01 23 | 699 | 0.2− | 0.4− | 2004 03 01 | 703 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2004 01 23 | 699 | 0.5− | 0.6− | 2004 03 11 | 644 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2004 01 23 | 699 | 1.0− | 0.2+ | 2004 03 11 | 644 | 0.2− | 1.4+ | 2006 10 17 | 703 | 1.0− | 1.4− |
| 2004 01 23 | 699 | 0.2− | 0.1+ | 2004 03 11 | 644 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.7+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.0 | | |
| 2004 01 24 | 704 | 0.1+ | 0.3− | 2004 03 15 | 704 | 0.5+ | 1.0+ | 2006 10 17 | 703 | 0.2+ | 0.2+ | | |
| 2004 01 24 | 704 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.3− | 0.5+ | 2006 11 14 | 703 | 1.1+ | 0.2+ | | |
| 2004 01 24 | 704 | 0.4− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.6+ | 1.5+ | | |
| 2004 01 24 | 704 | 0.2+ | 0.2− | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.0 | 1.6+ | | |
| 2004 02 11 | 703 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.4− | 1.4+ | | |
| 2004 02 11 | 703 | 0.2− | 0.5− | 2004 03 18 | 704 | 0.6+ | 0.3+ | | | | | | |

**(143910)∗ 2003 YD$_{69}$ = 1999 RN$_{80}$**

Discovered 2003 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57508)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.86798 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29170120 | $\omega$ | 195.17046 | | +0.62681863 | | −0.77771564 |
| $a$ | 2.2517002 | $\Omega$ | 216.05069 | | +0.72301019 | | +0.60328821 |
| $e$ | 0.1563069 | $i$ | 4.63014 | | +0.29043875 | | +0.17664008 |
| $P$ | 3.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 0.7+ | 2005 05 19 | G96 | 0.2+ | 0.2+ | 2006 11 02 | 704 | 0.6+ | 0.5+ | | |
| 1999 09 07 | 704 | 0.1+ | 0.6− | 2006 08 29 | 703 | 0.3− | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.0 | | |
| 1999 09 07 | 704 | 1.1− | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.4− | 2006 11 07 | 644 | 0.2+ | 0.2+ | | |
| 1999 09 09 | 704 | 1.3− | 0.1− | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.1+ | | |
| 1999 09 09 | 704 | 0.5− | 1.2+ | 2006 08 29 | 703 | 0.8− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.2+ | | |
| 1999 09 09 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.5+ | | |
| 1999 09 09 | 704 | 1.4− | 1.1+ | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.2+ | | |
| 1999 09 09 | 704 | 1.0− | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 10 | 644 | 0.0 | 0.1− | | |
| 1999 10 13 | 704 | 0.9+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 10 | 644 | 0.0 | 0.0 | | |
| 1999 10 13 | 704 | 1.2+ | 0.4− | 2006 09 29 | 704 | 0.6+ | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 1999 10 13 | 704 | 1.0+ | 0.4− | 2006 09 29 | 704 | 0.6− | 1.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | | |
| 1999 10 13 | 704 | 1.7+ | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 1999 10 13 | 704 | 0.8+ | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2003 12 20 | 704 | (2.1+ | 0.6+) | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4− | | |
| 2003 12 20 | 704 | 1.1+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.4− | | |
| 2003 12 20 | 704 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.5− | | |
| 2003 12 20 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.1− | | |
| 2003 12 20 | 704 | 0.0 | 1.1− | 2006 10 16 | 691 | (2.6− | 0.5+) | 2006 11 13 | 691 | 0.2+ | 0.2+ | | |
| 2003 12 22 | 703 | 0.6− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.0 | | |
| 2003 12 22 | 703 | 1.0− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 2003 12 22 | 703 | (1.7− | 0.5+) | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 1.3+ | | |
| 2003 12 22 | 703 | 0.0 | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | (0.7+ | 1.7+) | | |
| 2004 01 13 | 699 | 0.9− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.5− | 2006 11 17 | 703 | 0.1− | 0.1+ | | |
| 2004 01 13 | 699 | 1.4+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.4− | 0.1− | | |
| 2004 01 13 | 699 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.2− | 0.3+ | | |
| 2004 01 13 | 699 | 1.2− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.3− | 1.2+ | | |
| 2004 01 23 | 704 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 1.0− | 1.2+ | | |
| 2004 01 23 | 704 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.7− | 0.7+ | | |
| 2004 01 23 | 704 | 0.7+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.3+ | | |
| 2004 01 23 | 704 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2004 01 23 | 704 | 0.9− | 0.1− | 2006 10 23 | 704 | 1.3− | 0.4− | 2006 11 19 | 704 | 1.3+ | 0.0 | | |
| 2004 01 24 | 704 | 0.0 | 0.1− | 2006 10 23 | 704 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.9+ | 0.6+ | | |
| 2004 01 24 | 704 | 0.4− | 0.3+ | 2006 10 23 | 704 | 1.1+ | 0.7+ | 2006 11 19 | 704 | (2.9− | 0.3−) | | |
| 2004 01 24 | 704 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.1− | 0.1− | | |
| 2004 01 24 | 704 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2− | 0.3+ | | |
| 2004 01 29 | 704 | (2.0− | 0.2−) | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | (0.8− | 1.6+) | | |
| 2004 01 29 | 704 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.5− | 0.5+ | | |
| 2004 01 29 | 704 | 0.0 | 0.2− | 2006 10 28 | 704 | 1.1− | 0.7+ | 2006 11 21 | 704 | 0.6− | 0.0 | | |
| 2004 02 17 | 704 | 0.9+ | 0.6+ | 2006 10 28 | 704 | 0.5− | 0.5− | 2006 11 22 | 691 | 0.2+ | 0.0 | | |
| 2004 02 17 | 704 | 0.8− | 1.2+ | 2006 10 28 | 704 | 0.7+ | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.2+ | | |
| 2004 02 17 | 704 | (0.2− | 1.9+) | 2006 10 28 | 704 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.5+ | | |
| 2005 02 16 | 809 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.6+ | 0.3− | 2006 11 26 | 704 | 0.6− | 0.5+ | | |
| 2005 02 16 | 809 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.1− | 2006 11 26 | 704 | 0.3+ | 0.2+ | | |
| 2005 02 16 | 809 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.4− | 0.2− | | |
| 2005 05 19 | G96 | 0.0 | 0.6+ | 2006 11 02 | 704 | 0.5+ | 0.1+ | 2006 11 27 | 691 | 0.5− | 0.2− | | |
| 2005 05 19 | G96 | 0.2− | 0.3+ | 2006 11 02 | 704 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.3− | 0.2− | | |
| 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 11 02 | 704 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.7− | 0.9− | | |

**(143911)∗ 2003 YJ$_{69}$**

Discovered 2003 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.67393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27397757 | $\omega$ | 221.45203 | | −0.75908733 | | −0.64516042 |
| $a$ | 2.3477907 | $\Omega$ | 278.15504 | | +0.61800604 | | −0.67221656 |
| $e$ | 0.1761225 | $i$ | 5.03730 | | +0.20458482 | | −0.36317067 |
| $P$ | 3.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2004 02 13 | 333 | 0.4− | 0.7+ | 2006 09 26 | 691 | (0.2+ | 2.0−) | | |
| 2002 09 13 | 644 | 0.7− | 0.6+ | 2004 02 13 | 333 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2004 02 13 | 333 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.5− | 0.9+ | | |
| 2002 10 10 | 645 | 0.1− | 0.1+ | 2004 02 13 | 333 | 0.8− | 0.4+ | 2006 09 28 | 703 | 0.8− | 0.2+ | | |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 02 13 | 333 | 0.8− | 0.8+ | 2006 09 28 | 703 | 0.0 | 0.7− | | |
| 2003 12 20 | 704 | 0.0 | 1.2+ | 2004 02 13 | 333 | 0.8− | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.7− | | |
| 2003 12 20 | 704 | 0.7+ | 0.6+ | 2004 02 13 | 699 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1− | | |
| 2003 12 20 | 704 | 0.6+ | 0.6+ | 2004 02 13 | 699 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− | | |
| 2003 12 20 | 704 | 0.4+ | 0.1+ | 2004 02 13 | 699 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1− | | |
| 2003 12 22 | 703 | 0.2+ | 0.1+ | 2004 02 13 | 699 | 0.3+ | 0.6− | 2006 10 17 | 691 | 0.0 | 0.0 | | |
| 2003 12 22 | 703 | 0.5− | 0.2+ | 2004 02 18 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.7− | | |
| 2003 12 22 | 703 | 0.6+ | 0.3+ | 2004 02 18 | 704 | 0.6− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.1+ | | |
| 2003 12 22 | 703 | 0.2+ | 0.2− | 2004 02 18 | 704 | 0.5− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2003 12 23 | 704 | 0.6+ | 0.2+ | 2004 02 18 | 704 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2003 12 23 | 704 | 0.1− | 0.7+ | 2004 02 18 | 704 | 0.4− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2+ | | |
| 2003 12 23 | 704 | 0.6+ | 0.4+ | 2004 02 18 | 608 | 0.3+ | 0.5− | 2006 10 19 | G96 | 0.3+ | 0.6− | | |
| 2003 12 23 | 704 | 0.2+ | 0.1+ | 2004 02 18 | 608 | 0.7+ | 0.4− | 2006 10 19 | G96 | 0.6+ | 0.5− | | |
| 2004 01 13 | 699 | 0.5− | 0.1− | 2004 02 18 | 608 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.4− | | |
| 2004 01 13 | 699 | 0.6− | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.9+ | 2006 10 19 | G96 | 0.5+ | 0.5− | | |
| 2004 01 13 | 699 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.2− | 1.0+ | 2006 10 21 | 691 | 0.1+ | 0.1− | | |
| 2004 01 13 | 699 | 0.2− | 1.0− | 2004 02 23 | 704 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.2− | | |
| 2004 01 21 | 704 | 0.8+ | 0.3− | 2004 02 26 | 704 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2004 01 21 | 704 | 0.3+ | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1− | | |
| 2004 01 21 | 704 | 0.5+ | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.2+ | | |
| 2004 01 21 | 704 | 0.6+ | 0.3− | 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.0 | | |
| 2004 01 21 | 704 | 0.5+ | 0.4− | 2004 02 26 | 704 | 0.4− | 0.5+ | 2006 10 31 | 703 | (0.6+ | 1.6−) | | |
| 2004 01 24 | 704 | 0.8+ | 0.2− | 2004 04 19 | 704 | 0.1− | 1.1+ | 2006 10 31 | 703 | 0.0 | 0.1− | | |
| 2004 01 24 | 704 | 0.7+ | 0.2+ | 2004 04 19 | 704 | 1.0− | 0.7+ | 2006 10 31 | 703 | 0.5− | 0.4− | | |
| 2004 01 24 | 704 | 0.5+ | 0.5− | 2004 04 19 | 704 | 0.3− | 1.2− | 2006 10 31 | 703 | 0.1+ | 0.1− | | |
| 2004 01 24 | 704 | 0.7+ | 0.3+ | 2004 04 19 | 704 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.2+ | 1.2+ | | |
| 2004 01 29 | 704 | 0.1− | 0.0 | 2005 06 08 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.8+ | 1.0− | | |
| 2004 01 29 | 704 | 0.1+ | 0.2+ | 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 1.4+ | 0.6+ | | |
| 2004 01 29 | 704 | 0.0 | 0.0 | 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.1+ | | |
| 2004 01 29 | 704 | 0.2− | 0.1− | 2005 06 14 | G96 | 0.5− | 0.4+ | 2006 11 19 | 704 | 1.7− | 0.1− | | |
| 2004 01 29 | 704 | 0.5− | 0.3− | 2005 06 14 | G96 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.0 | | |
| 2004 02 03 | 608 | 0.1+ | 0.5− | 2005 06 14 | G96 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.5− | 1.0+ | | |
| 2004 02 03 | 608 | 0.1− | 0.5− | 2005 06 14 | G96 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.9+ | | |
| 2004 02 03 | 608 | 0.3+ | 0.4− | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.2− | 1.5+ | | |

**(143912)∗ 2003 YN$_{70}$ = 1999 NW$_{26}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57509)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.30456 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29376820 | $\omega$ | 227.84863 | | +0.99627364 | | +0.04668120 |
| $a$ | 2.2411256 | $\Omega$ | 129.34457 | | −0.01917241 | | +0.93969496 |
| $e$ | 0.2074705 | $i$ | 5.38105 | | −0.08409072 | | +0.33881301 |
| $P$ | 3.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 08 | 691 | 0.2+ | 0.6+ | 2006 08 19 | 699 | 0.4+ | 0.7− | 2006 09 29 | 699 | 0.3+ | 0.4− |
| 1995 04 08 | 691 | 0.1+ | 0.0 | 2006 08 19 | 699 | 0.0 | 0.1− | 2006 09 29 | 699 | 1.0− | 0.5+ |
| 1995 04 08 | 691 | 0.6− | 0.5+ | 2006 08 19 | 699 | 0.9− | 0.7+ | 2006 09 29 | 699 | 0.7− | 0.9+ |
| 1999 07 14 | 704 | 0.4+ | 0.0 | 2006 08 28 | 704 | 0.2+ | 0.2− | 2006 09 29 | 699 | 0.6+ | 0.3+ |
| 1999 07 14 | 704 | 0.2+ | 0.2− | 2006 08 28 | 704 | 0.3− | 0.7− | 2006 09 30 | 704 | 0.4− | 0.1− |
| 1999 07 14 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 704 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.4− | 0.4− |
| 1999 07 14 | 704 | 0.6− | 1.2+ | 2006 08 28 | 704 | 0.1− | 0.5+ | 2006 09 30 | 704 | 0.2− | 0.2+ |
| 1999 07 14 | 704 | 0.4− | 0.3+ | 2006 09 16 | 704 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.6− | 0.1− |
| 1999 07 16 | 704 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.1− | 0.9+ | 2006 09 30 | 704 | 1.0− | 0.2+ |
| 1999 07 16 | 704 | 0.2+ | 1.1+ | 2006 09 16 | 704 | 1.0+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.1− |
| 1999 07 16 | 704 | 0.5+ | 0.8+ | 2006 09 16 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 1999 07 16 | 704 | 0.3− | 0.0 | 2006 09 16 | 704 | 0.7+ | 0.4− | 2006 10 16 | 703 | 0.7+ | 0.7− |
| 1999 07 16 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 699 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2001 01 04 | 608 | 0.7+ | 0.5− | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2001 01 04 | 608 | 1.2+ | 0.3− | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2001 01 04 | 608 | 1.2+ | 0.0 | 2006 09 16 | 699 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2001 02 02 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 608 | 0.6+ | 0.6− | 2006 10 22 | 703 | 0.2− | 0.1− |
| 2001 02 02 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 608 | 0.6+ | 1.0− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 02 02 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 608 | 0.5+ | 1.0− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2003 12 01 | 704 | 0.3− | 0.9− | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2003 12 01 | 704 | 0.2+ | 0.9− | 2006 09 18 | 703 | 0.4− | 0.9− | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2003 12 01 | 704 | 0.6+ | 1.1− | 2006 09 18 | 703 | 0.2− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2003 12 01 | 704 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.6+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2003 12 01 | 704 | 0.5+ | 0.3− | 2006 09 19 | 704 | 1.2− | 0.5+ | 2006 10 28 | 703 | 1.1+ | 1.1+ |
| 2003 12 19 | 704 | 0.1− | 0.6+ | 2006 09 19 | 704 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.8+ | 0.0 |
| 2003 12 19 | 704 | 0.3+ | 0.0 | 2006 09 19 | 704 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.6+ | 0.8+ |
| 2003 12 19 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.6− | 0.0 | 2006 10 28 | 703 | 0.5+ | 0.6+ |
| 2003 12 23 | 704 | 0.2− | 0.2+ | 2006 09 19 | 704 | 0.5− | 0.4+ | 2006 11 10 | 704 | 0.5+ | 1.0+ |
| 2003 12 23 | 704 | 1.0− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 11 10 | 704 | 0.1− | 0.3− |
| 2003 12 23 | 704 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.2+ | 0.7+ | 2006 11 10 | 704 | 0.3+ | 0.7+ |
| 2003 12 23 | 704 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.0 | 2006 11 10 | 704 | 0.9+ | 0.3− |
| 2003 12 23 | 704 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.0 | 2006 11 10 | 704 | 1.5− | 1.4+ |
| 2003 12 28 | 704 | 0.1− | 0.8+ | 2006 09 26 | 704 | 0.1− | 0.6+ | 2006 11 16 | 703 | 0.5− | 0.3− |
| 2003 12 28 | 704 | 0.3− | 0.5+ | 2006 09 26 | 704 | 0.1+ | 1.0+ | 2006 11 16 | 703 | 0.8− | 0.3− |
| 2003 12 28 | 704 | (0.5+ | 1.8+) | 2006 09 26 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 703 | 1.3− | 0.7− |
| 2006 08 19 | 699 | 0.3− | 0.1+ | 2006 09 26 | 704 | 1.3− | 1.3+ | 2006 11 16 | 703 | 0.1− | 1.1− |

**(143913)∗ 2003 YF$_{74}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.17515 | | (2000.0) | | | |
| $n$ | 0.27046561 | $\omega$ | 34.17771 | | +0.83338145 | −0.55269802 |
| $a$ | 2.3680708 | $\Omega$ | 359.37390 | | +0.49591171 | +0.74816970 |
| $e$ | 0.1651888 | $i$ | 2.71646 | | +0.24402241 | +0.36710625 |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 1.0+ | 1.1+ | 2003 12 05 | 704 | 0.4− | 0.3+ | 2004 01 11 | 644 | 0.7+ | 1.0+ |
| 1999 09 04 | 699 | 0.3+ | 0.3+ | 2003 12 05 | 704 | 0.9+ | 0.6+ | 2004 01 11 | 644 | 0.2+ | 0.2+ |
| 1999 09 04 | 699 | 0.0 | 1.4+ | 2003 12 05 | 704 | 0.6− | 0.3+ | 2004 01 11 | 644 | 0.2+ | 0.4+ |
| 1999 09 16 | 691 | 0.3− | 0.5+ | 2003 12 05 | 704 | 0.7− | 0.3− | 2005 03 11 | G96 | 0.3+ | 0.4+ |
| 1999 09 16 | 691 | 0.1− | 0.5+ | 2003 12 05 | 704 | 0.2− | 1.0+ | 2005 03 11 | G96 | 0.9− | 0.2+ |
| 1999 09 16 | 691 | 0.3− | 0.0 | 2003 12 18 | 704 | 1.0+ | 1.1+ | 2005 03 11 | G96 | 0.5+ | 0.2− |
| 1999 10 30 | 691 | 0.2+ | 0.2− | 2003 12 18 | 704 | 0.9+ | 0.2+ | 2005 03 11 | G96 | 0.9− | 0.6+ |
| 1999 10 30 | 691 | 0.0 | 0.1− | 2003 12 18 | 704 | 1.1+ | 0.5+ | 2005 04 09 | 691 | 0.2+ | 0.4+ |
| 1999 10 30 | 691 | 0.1+ | 0.4− | 2003 12 18 | 704 | 0.1+ | 0.0 | 2005 04 09 | 691 | 0.3+ | 0.3+ |
| 1999 11 14 | 691 | 0.1+ | 0.3− | 2003 12 22 | 704 | 0.4+ | 0.6+ | 2005 04 09 | 691 | 0.2+ | 0.4+ |
| 1999 11 14 | 691 | 0.1+ | 0.5− | 2003 12 22 | 704 | 0.7− | 0.4+ | 2006 08 20 | 644 | 0.3+ | 0.5+ |
| 1999 11 14 | 691 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.8− | 0.5+ | 2006 08 20 | 644 | 0.3− | 0.4+ |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.1− | 0.8+ | 2006 08 20 | 644 | 0.1+ | 0.5+ |
| 2000 12 23 | 645 | 0.1− | 0.1− | 2003 12 27 | 704 | 0.5+ | 0.7− | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2003 11 24 | 704 | 0.4− | 1.2− | 2003 12 27 | 704 | 1.1− | 0.6− | 2006 10 20 | G96 | 0.0 | 0.3+ |
| 2003 11 24 | 704 | 0.6− | 0.4+ | 2003 12 27 | 704 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2003 11 24 | 704 | 0.2− | 0.3− | 2003 12 27 | 704 | 0.1− | 1.2− | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2003 11 24 | 704 | 0.2− | 0.7+ | 2003 12 27 | 704 | 0.0 | 1.1+ | | | | |

**(143914)∗ 2003 YA$_{75}$ = 2001 FE$_{56}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 57513)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.62892 | | (2000.0) | | | |
| $n$ | 0.28484764 | $\omega$ | 164.67145 | | −0.84871961 | −0.52863227 |
| $a$ | 2.2876748 | $\Omega$ | 343.39005 | | +0.47954604 | −0.75739453 |
| $e$ | 0.1707552 | $i$ | 2.99415 | | +0.22295879 | −0.38327724 |
| $P$ | 3.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 23 | 699 | 0.3+ | 0.5+ | 2003 11 24 | 704 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.3+ |
| 2001 03 23 | 699 | 0.5+ | 0.3+ | 2003 12 18 | 704 | 0.8− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2001 03 23 | 704 | 0.1− | 1.1+ | 2003 12 18 | 704 | 0.4− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 03 23 | 699 | 0.4+ | 0.1+ | 2003 12 18 | 704 | 0.7− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2001 03 23 | 704 | 0.0 | 1.3+ | 2003 12 18 | 704 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2001 03 23 | 699 | 0.1− | 0.4+ | 2003 12 18 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2001 03 23 | 704 | 0.6+ | 0.1− | 2003 12 21 | 735 | 0.4+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2001 03 23 | 704 | 0.1− | 0.2+ | 2003 12 21 | 735 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 03 23 | 704 | (2.0− | 0.5−) | 2003 12 22 | 704 | 0.2− | 0.8− | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2001 03 24 | 704 | 1.3− | 0.3+ | 2003 12 22 | 704 | 0.4− | 0.9− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 03 24 | 704 | 0.2+ | 0.5+ | 2003 12 22 | 704 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 03 24 | 704 | 0.4− | 0.3− | 2003 12 22 | 704 | 0.1− | 0.6− | 2006 10 17 | 703 | 0.0 | 1.3− |
| 2001 03 24 | 704 | (0.7− | 2.2+) | 2003 12 24 | 735 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.7− | 0.9+ |
| 2001 03 24 | 704 | 0.7− | 1.3+ | 2003 12 24 | 735 | 0.1− | 0.1− | 2006 10 17 | 703 | (1.8− | 0.4+) |
| 2001 03 26 | 608 | 0.7+ | 0.2− | 2003 12 24 | 735 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.7+ |
| 2001 03 26 | 608 | 0.6+ | 0.3− | 2003 12 30 | 735 | 0.1− | 0.6− | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2001 03 26 | 608 | 0.6+ | 0.2− | 2003 12 30 | 735 | 0.2+ | 0.4− | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2001 04 24 | 699 | 1.0+ | 0.9− | 2003 12 30 | 735 | 0.3− | 0.7− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 04 24 | 699 | 0.7+ | 1.2+ | 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2001 04 24 | 699 | 0.9− | 0.4+ | 2004 01 18 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2001 04 24 | 699 | 1.0+ | 0.2+ | 2004 01 18 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2002 08 09 | 807 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2002 08 09 | 807 | 0.1+ | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2003 11 24 | 704 | 0.7+ | 0.2+ | 2004 01 22 | 704 | 0.3+ | 0.2+ | | | | |
| 2003 11 24 | 704 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.3+ | | | | |

**(143915)∗ 2003 YC$_{79}$ = 1999 VM$_{162}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57517)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.85157 | | (2000.0) | | | |
| $n$ | 0.26996348 | $\omega$ | 173.62676 | | −0.78852050 | −0.61480271 |
| $a$ | 2.3710063 | $\Omega$ | 328.41820 | | +0.56290956 | −0.71106265 |
| $e$ | 0.1485937 | $i$ | 1.74062 | | +0.24772617 | −0.34118550 |
| $P$ | 3.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 26 | 691 | 1.0+ | 0.3+ | 2003 12 22 | 704 | 0.2− | 1.0+ | 2004 01 27 | 691 | 0.0 | 0.0 |
| 1998 06 26 | 691 | 0.1− | 0.9+ | 2003 12 22 | 704 | 0.6− | 1.2+ | 2004 01 27 | 691 | 0.1+ | 0.3− |
| 1998 06 26 | 691 | 0.3+ | 1.1+ | 2003 12 22 | 704 | 0.2− | 0.9− | 2004 01 30 | 704 | 0.9+ | 0.5+ |
| 1999 10 06 | 704 | 0.1+ | 0.3− | 2003 12 27 | 704 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.8+ | 0.8+ |
| 1999 10 06 | 704 | 0.1− | 0.2− | 2003 12 27 | 704 | 0.5− | 0.2− | 2004 01 30 | 704 | 0.8+ | 0.2− |
| 1999 10 06 | 704 | 0.6− | 0.4+ | 2003 12 27 | 704 | 0.1+ | 1.3+ | 2004 01 30 | 704 | 0.4+ | 0.0 |
| 1999 10 06 | 704 | 0.8− | 0.0 | 2003 12 27 | 704 | 0.2− | 0.6− | 2004 01 30 | 704 | 0.2+ | 0.3+ |
| 1999 11 14 | 704 | 0.2− | 0.0 | 2003 12 27 | 704 | 0.6− | 0.4− | 2004 02 26 | 704 | 1.2+ | 0.0 |
| 1999 11 14 | 704 | 0.5− | 0.0 | 2003 12 27 | 704 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.7− | 0.6+ |
| 1999 11 14 | 704 | 1.2− | 0.1− | 2003 12 27 | 704 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.2− |
| 1999 11 14 | 704 | 0.3− | 0.6− | 2003 12 27 | 704 | 0.3+ | 0.6+ | 2004 02 26 | 704 | 0.9+ | 0.4− |
| 1999 11 14 | 704 | 1.0− | 1.0− | 2003 12 27 | 704 | 0.4+ | 0.5− | 2006 09 19 | 699 | 0.2+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 704 | 1.2+ | 0.1− | 2003 12 28 | 704 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.1+ |
| 1999 11 16 | 704 | 0.1− | 0.3+ | 2003 12 28 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.4+ | 1.0+ |
| 1999 11 16 | 704 | 0.6+ | 0.2+ | 2003 12 28 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.2− |
| 1999 12 07 | 691 | 0.1− | 0.1− | 2003 12 28 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 1.1− | 0.4− |
| 1999 12 07 | 691 | 0.0 | 0.2− | 2003 12 28 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 1999 12 07 | 691 | 0.1− | 0.2− | 2003 12 29 | 704 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.6+ |
| 1999 12 07 | 704 | 0.4+ | 0.6− | 2003 12 29 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 1.3+ | 0.1− |
| 1999 12 07 | 704 | 1.0+ | 0.3− | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.2− | 0.2− |
| 1999 12 07 | 704 | 0.8− | 1.9+ | 2003 12 29 | 704 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 05 15 | 699 | 0.7− | 0.1− | 2003 12 29 | 704 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 05 15 | 699 | 1.3− | 0.1+ | 2003 12 29 | 704 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 05 15 | 699 | 0.4− | 0.8+ | 2003 12 29 | 704 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.5− |
| 2001 05 15 | 699 | 1.3− | 0.5+ | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2002 09 04 | 644 | 0.7− | 0.1+ | 2003 12 29 | 704 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2002 09 04 | 644 | 1.1− | 0.1− | 2003 12 29 | 704 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2002 09 04 | 644 | 0.7− | 0.2− | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3− | 0.5+ |
| 2003 12 18 | 704 | 0.9+ | 0.2+ | 2003 12 29 | 704 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.0 |
| 2003 12 18 | 704 | 0.6+ | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2003 12 18 | 704 | 0.8+ | 0.3− | 2004 01 22 | 704 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3+ |
| 2003 12 18 | 704 | 0.4+ | 0.2+ | 2004 01 22 | 704 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2003 12 18 | 704 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2003 12 22 | 704 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2003 12 22 | 704 | 0.1+ | 0.6+ | 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.0 |

**(143916)∗ 2003 YE$_{79}$ = 1996 TP$_4$ = 2001 ET$_4$ = 2001 FQ$_{193}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57518), A. Doppler (d, *MPO* 86201)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.13684 | | (2000.0) | | | |
| $n$ | 0.29290203 | $\omega$ | 4.38041 | | +0.49859730 | −0.86553242 |
| $a$ | 2.2455417 | $\Omega$ | 55.71924 | | +0.79354844 | +0.43371680 |
| $e$ | 0.1836990 | $i$ | 3.29414 | | +0.34882891 | +0.25048624 |
| $P$ | 3.36 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 566 | 0.3+ | 0.1− | 2004 01 16 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 1996 10 08 | 566 | 0.2+ | 0.1− | 2004 01 16 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.0 |
| 1996 10 08 | 566 | 0.2+ | 0.2− | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.0 |
| 1996 10 09 | 566 | 0.1− | 0.2− | 2004 01 22 | 704 | 0.7− | 0.1− | 2006 09 20 | 644 | 0.0 | 0.1− |
| 1996 10 09 | 566 | 0.1+ | 0.4− | 2004 01 22 | 704 | 0.6− | 1.0+ | 2006 09 20 | 644 | 0.1− | 0.1− |
| 1996 10 09 | 566 | 0.2− | 0.6− | 2004 01 22 | 704 | 0.3− | 1.2+ | 2006 09 22 | 704 | 0.5− | 0.2+ |
| 2001 03 02 | 699 | 0.6+ | 0.5+ | 2004 01 22 | 704 | 0.5− | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.0 |
| 2001 03 02 | 699 | 1.4+ | 0.5+ | 2005 05 04 | G96 | 0.4+ | 0.3− | 2006 09 22 | 704 | 0.4+ | 0.1− |
| 2001 03 02 | 699 | 1.3+ | 1.1− | 2005 05 04 | G96 | 0.5− | 0.1+ | 2006 09 22 | 704 | 0.3+ | 0.2− |
| 2001 03 02 | 699 | 0.8+ | 0.3+ | 2005 05 04 | G96 | 0.3− | 0.4+ | 2006 09 22 | 704 | 0.5− | 0.3− |
| 2001 03 03 | 704 | 0.3+ | 0.7+ | 2005 05 04 | G96 | 0.7− | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.5+ |
| 2001 03 03 | 704 | 0.4+ | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.4+ |
| 2001 03 03 | 704 | 0.2+ | 0.8+ | 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.4+ |
| 2001 03 03 | 704 | 0.3+ | 0.1− | 2005 05 10 | G96 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 2001 03 03 | 704 | 0.9+ | 1.0+ | 2005 05 10 | G96 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.2− | 1.2+ |
| 2001 03 18 | 699 | 1.0− | 0.3+ | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 2001 03 18 | 699 | 0.2− | 0.9+ | 2005 06 06 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.9+ |
| 2001 03 18 | 699 | 0.1+ | 0.5+ | 2005 06 06 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.3+ |
| 2001 03 18 | 699 | 0.4− | 1.4+ | 2005 06 11 | 691 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.2+ | 1.0+ |
| 2001 03 27 | 699 | 1.1+ | 0.5+ | 2005 06 11 | 691 | 0.2+ | 0.5− | 2006 09 28 | 704 | 0.3+ | 1.0+ |
| 2001 03 27 | 699 | 0.8− | 0.4+ | 2005 06 11 | 691 | 0.3+ | 1.1+ | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 2001 03 27 | 699 | 0.3− | 0.8+ | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.5+ | 1.2+ |
| 2001 03 27 | 699 | 0.4+ | 0.2− | 2005 06 15 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.5+ | 1.0+ |
| 2003 11 21 | 704 | (2.5+ | 1.2−) | 2005 06 15 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 2003 11 21 | 704 | 0.5+ | 0.7+ | 2006 09 12 | 703 | 0.4+ | 0.4+ | 2006 09 30 | 704 | 0.5+ | 0.6+ |
| 2003 11 21 | 704 | 0.1− | 1.2+ | 2006 09 12 | 703 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.5+ | 0.4+ |
| 2003 11 23 | 704 | 0.5+ | 0.1− | 2006 09 12 | 703 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.3− | 0.4+ |
| 2003 11 23 | 704 | 0.1+ | 0.4− | 2006 09 12 | 703 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.5− | 0.3+ |
| 2003 11 23 | 704 | 0.1+ | 1.4+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | (2.0+ | 0.3+) |
| 2003 11 23 | 704 | (1.5+ | 1.8+) | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2003 12 04 | 704 | 0.0 | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2003 12 04 | 704 | 0.3− | 0.5+ | 2006 09 16 | 704 | 1.3− | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2003 12 04 | 704 | 0.6− | 0.1+ | 2006 09 16 | 704 | 1.2− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2003 12 04 | 704 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.2− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2003 12 04 | 704 | 0.0 | 0.5− | 2006 09 16 | 704 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2003 12 18 | 704 | 0.2+ | 0.3− | 2006 09 16 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.3+ |
| 2003 12 18 | 704 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.2+ | 0.7− | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2003 12 18 | 704 | 0.6+ | 0.4− | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2003 12 18 | 704 | 0.7+ | 0.7− | 2006 09 18 | 703 | 0.1+ | 1.3+ | 2006 11 05 | 644 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.9+ | 0.7+ | 2006 09 18 | 699 | 0.8− | 0.6+ | 2006 11 05 | 644 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 1.0+ | 0.5+ | 2006 09 18 | 699 | 0.0 | 1.0+ | 2006 11 05 | 644 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 1.0+ | 0.7+ | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2003 12 22 | 704 | 1.4+ | 0.5− | 2006 09 18 | 699 | 0.2− | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2003 12 22 | 704 | 1.4+ | 0.0 | 2006 09 19 | 704 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2003 12 27 | 704 | 0.7− | 0.4+ | 2006 09 19 | 704 | 0.5+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2003 12 27 | 704 | 0.8− | 0.1+ | 2006 09 19 | 704 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.5− | 1.9− |
| 2003 12 27 | 704 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.6− | 0.5− | 2006 11 20 | 704 | 0.4− | 0.7+ |
| 2003 12 27 | 704 | 1.2− | 0.2− | 2006 09 19 | 704 | 1.3− | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2003 12 27 | 704 | 0.8− | 0.0 | 2006 09 19 | 703 | (0.6− | 1.5+) | 2006 11 20 | 704 | 0.4+ | 0.0 |
| 2004 01 16 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.2+ | | | | |

**(143917)∗ 2003 YN$_{79}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.21787 | | (2000.0) | | | |
| $n$ | 0.23704430 | $\omega$ | 230.74937 | | −0.59898526 | +0.80075644 |
| $a$ | 2.5857292 | $\Omega$ | 2.45711 | | −0.71631403 | −0.53447250 |
| $e$ | 0.1749412 | $i$ | 3.21703 | | −0.35792578 | −0.27042240 |
| $P$ | 4.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 06 | 809 | (3.5− | 0.0 ) | 2003 12 27 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 1998 10 24 | 691 | 0.4+ | 0.5− | 2004 01 17 | 644 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1998 10 24 | 691 | 0.4+ | 0.2− | 2004 01 17 | 644 | 0.2− | 0.1+ | 2006 09 22 | A50 | 0.0 | 0.0 |
| 1998 10 24 | 691 | 0.4+ | 0.0 | 2004 01 17 | 644 | 0.7− | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2000 02 11 | 704 | 0.3+ | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2000 02 11 | 704 | 1.2− | 0.9+ | 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2000 02 11 | 704 | 0.4+ | 0.3− | 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 0.5+ | 0.1+ | 2004 01 22 | 704 | 0.8− | 1.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 1.1+ | 2004 01 22 | 704 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2005 01 17 | 809 | 0.2− | 0.2+ | 2006 09 30 | 291 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2005 01 17 | 809 | 0.3− | 0.2+ | 2006 09 30 | 291 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2005 01 17 | 809 | 0.2− | 0.2+ | 2006 09 30 | 291 | 0.2− | 0.2+ |
| 2002 10 30 | 644 | 0.3− | 0.3+ | 2005 03 15 | E12 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2002 10 30 | 644 | 0.6− | 0.1+ | 2005 03 15 | E12 | 0.1+ | 0.7+ | 2006 10 17 | G96 | 0.6+ | 1.0− |
| 2002 10 30 | 644 | 0.1− | 0.4+ | 2005 03 15 | E12 | 0.1+ | 1.0+ | 2006 10 17 | G96 | 1.1+ | 0.3− |
| 2002 11 22 | 644 | 0.5− | 0.0 | 2005 03 15 | E12 | 0.8+ | 0.8+ | 2006 10 17 | G96 | 0.7+ | 1.0− |
| 2002 11 22 | 644 | 0.5− | 0.2+ | 2005 05 04 | 644 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.6+ | 0.3+ |
| 2002 11 22 | 644 | 0.1− | 0.1+ | 2005 05 04 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 1.4+ | 0.4+ |
| 2002 12 06 | 291 | 0.1− | 0.1− | 2005 05 04 | 644 | 0.1− | 0.9+ | 2006 10 17 | 703 | 0.5+ | 0.4− |
| 2002 12 06 | 291 | 0.8− | 0.1+ | 2005 05 18 | E12 | (1.8− | 0.4+) | 2006 10 17 | 703 | 0.5− | 0.5− |
| 2002 12 06 | 291 | 1.1− | 0.0 | 2005 05 18 | E12 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2003 12 18 | 704 | 0.4− | 0.3− | 2005 05 18 | E12 | (1.7+ | 0.4−) | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2003 12 18 | 704 | 0.2− | 0.7− | 2005 05 18 | E12 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | 0.1− | 0.9− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2003 12 18 | 704 | 0.5− | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.4− |
| 2003 12 22 | 704 | 0.6− | 1.3+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2003 12 22 | 704 | 0.3+ | 1.2+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2003 12 22 | 704 | 0.6+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.2+ | 1.8+ |
| 2003 12 27 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.4− |
| 2003 12 27 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2003 12 27 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.1+ | 1.4+ | 2006 11 11 | 703 | 0.8− | 2.4− |
| 2003 12 27 | 704 | 1.2+ | 0.7− | 2006 09 18 | 699 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2003 12 27 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.7− |
| 2003 12 27 | 704 | 1.1+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.5− |

**(143918)∗ 2003 YP$_{79}$ = 1999 XD$_{71}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57518)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.00315 | | (2000.0) | | +0.99158580 | +0.01492983 |
| $n$ | 0.26129577 | $\omega$ | 265.15017 | | +0.03621837 | +0.92166001 |
| $a$ | 2.4231547 | $\Omega$ | 93.95407 | | −0.12428125 | +0.38771113 |
| $e$ | 0.1768660 | $i$ | 7.40569 | | | |
| $P$ | 3.77 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 07 | 691 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.5+ | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 1997 03 07 | 691 | 0.3+ | 0.1− | 2003 12 22 | 704 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.2+ |
| 1997 03 07 | 691 | 0.1+ | 0.3− | 2003 12 27 | 704 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2003 12 27 | 704 | 1.1− | 0.3− | 2006 08 17 | 644 | 0.0 | 0.0 |
| 1999 12 07 | 704 | 0.4+ | 1.0− | 2003 12 27 | 704 | 0.4+ | 0.4− | 2006 08 23 | 644 | 0.0 | 0.4+ |
| 1999 12 07 | 704 | 0.1+ | 0.5− | 2004 01 21 | 691 | 0.1− | 0.3+ | 2006 08 23 | 644 | 0.1+ | 0.3+ |
| 1999 12 07 | 704 | 0.3+ | 0.5− | 2004 01 21 | 691 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.1+ | 0.3+ |
| 1999 12 07 | 704 | 0.1− | 0.3− | 2004 01 21 | 691 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 1999 12 08 | 704 | 0.1− | 0.4+ | 2004 01 22 | 704 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.3− | 0.0 |
| 1999 12 08 | 704 | 0.3− | 0.3− | 2004 01 22 | 704 | 0.3− | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.4+ |
| 1999 12 08 | 704 | 0.1+ | 0.3+ | 2004 01 22 | 704 | 0.7− | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.0 |
| 1999 12 08 | 704 | 0.3+ | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 08 24 | 644 | 0.2+ | 0.4+ |
| 1999 12 08 | 704 | 0.1− | 0.5− | 2004 01 27 | 691 | 0.3+ | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 2000 01 06 | 704 | 0.2+ | 0.0 | 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.3+ | 0.2+ |
| 2000 01 06 | 704 | 0.0 | 0.8− | 2004 01 27 | 704 | 0.2− | 0.2+ | 2006 09 13 | 644 | 0.3+ | 0.2+ |
| 2000 01 06 | 704 | 0.2− | 0.4+ | 2004 01 27 | 704 | 0.3− | 0.7− | 2006 09 13 | 644 | 0.2+ | 0.1+ |
| 2000 01 06 | 704 | 0.9− | 0.5− | 2004 01 27 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2002 06 08 | 704 | 0.6+ | 0.3+ | 2004 01 27 | 704 | 0.3− | 1.3+ | 2006 09 14 | 644 | 0.4+ | 0.0 |
| 2002 06 08 | 704 | 0.1+ | 1.1+ | 2005 04 04 | 703 | 1.1− | 0.7+ | 2006 09 14 | 644 | 0.5+ | 0.2+ |
| 2002 06 08 | 704 | 0.2+ | 1.1+ | 2005 04 04 | 703 | 0.2− | 1.1+ | 2006 10 11 | E12 | 0.3− | 1.0− |
| 2003 12 18 | 704 | 0.3+ | 0.0 | 2005 04 04 | 703 | (0.5+ | 1.6+) | 2006 10 11 | E12 | 0.2− | 0.7+ |
| 2003 12 18 | 704 | 0.6+ | 0.2− | 2005 04 04 | 703 | (0.3− | 2.0+) | 2006 10 11 | E12 | 0.4+ | 0.3− |
| 2003 12 18 | 704 | 0.1+ | 0.4− | 2006 08 16 | E12 | 0.0 | 0.0 | 2006 10 11 | E12 | 0.0 | 0.3− |
| 2003 12 18 | 704 | 0.4+ | 0.4+ | 2006 08 16 | E12 | 0.3+ | 0.6− | 2006 10 28 | 703 | 0.5− | 0.4− |
| 2003 12 18 | 704 | 0.6+ | 0.4+ | 2006 08 16 | E12 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.6− | 0.3+ |
| 2003 12 22 | 704 | 1.0+ | 0.4+ | 2006 08 16 | E12 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.1− | 1.0+ |
| 2003 12 22 | 704 | 0.4+ | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 10 28 | 703 | 1.1− | 0.8− |
| 2003 12 22 | 704 | 0.9+ | 0.8− | 2006 08 17 | 644 | 0.1− | 0.3+ | | | | |

**(143919)∗ 2003 YW$_{80}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.26470 | | (2000.0) | | −0.91866315 | +0.36923641 |
| $n$ | 0.23099802 | $\omega$ | 250.49805 | | −0.25521066 | −0.82607457 |
| $a$ | 2.6306549 | $\Omega$ | 310.89985 | | −0.30153861 | −0.42575260 |
| $e$ | 0.1237608 | $i$ | 10.70769 | | | |
| $P$ | 4.27 | $H$ | 15.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.4+ | 0.4− | 2003 12 27 | 704 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.7+ | 0.8− |
| 2000 02 02 | 704 | 0.2+ | 0.4+ | 2003 12 27 | 608 | 0.1+ | 1.0− | 2004 01 30 | 704 | 0.5+ | 0.5+ |
| 2000 02 02 | 704 | 0.3− | 0.4− | 2003 12 27 | 608 | 0.1− | 0.7− | 2004 02 11 | 699 | 0.1+ | 0.4+ |
| 2000 02 02 | 704 | 0.5+ | 0.4+ | 2003 12 27 | 608 | 0.1− | 0.5− | 2004 02 11 | 699 | 0.4+ | 0.2+ |
| 2000 02 02 | 704 | 0.4+ | 0.2− | 2003 12 28 | 704 | 0.5+ | 0.8+ | 2004 02 11 | 699 | 1.5− | 0.1+ |
| 2000 02 12 | 704 | 1.2− | 0.5+ | 2003 12 28 | 704 | 0.6+ | 0.1− | 2004 02 11 | 699 | 0.1− | 0.0 |
| 2000 02 12 | 704 | 0.5+ | 0.2+ | 2003 12 28 | 704 | 0.0 | 0.5+ | 2004 02 15 | 704 | 0.5− | 0.1+ |
| 2000 02 12 | 704 | 0.5+ | 1.2− | 2003 12 28 | 704 | 1.1+ | 0.4+ | 2004 02 15 | 704 | 0.2− | 0.5+ |
| 2000 02 12 | 704 | (3.1+ | 2.0−) | 2003 12 28 | 704 | 0.6+ | 0.5+ | 2004 02 15 | 704 | 0.8− | 0.5+ |
| 2000 03 11 | 699 | 0.5− | 0.1+ | 2004 01 15 | 691 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.2− | 0.2+ |
| 2000 03 11 | 699 | 0.5+ | 0.7+ | 2004 01 15 | 691 | 0.1− | 0.2− | 2004 02 15 | 704 | 0.2+ | 0.1+ |
| 2000 03 11 | 699 | 0.1+ | 0.2+ | 2004 01 15 | 691 | 0.2− | 0.3− | 2004 02 16 | 691 | 0.1− | 0.1− |
| 2000 03 11 | 699 | 0.2+ | 1.4+ | 2004 01 19 | 699 | 0.0 | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.1+ |
| 2001 06 30 | 644 | 0.1− | 0.6+ | 2004 01 19 | 699 | 0.2− | 0.2− | 2004 02 16 | 691 | 0.1− | 0.1− |
| 2001 06 30 | 644 | 0.3+ | 0.4+ | 2004 01 19 | 699 | 0.1− | 0.2− | 2004 02 22 | 704 | 0.5− | 0.4+ |
| 2001 06 30 | 644 | 0.3− | 0.5+ | 2004 01 19 | 699 | 0.9− | 0.6− | 2004 02 22 | 704 | 0.1− | 0.1+ |
| 2001 08 06 | 644 | 0.4− | 0.7+ | 2004 01 22 | 704 | 0.2+ | 0.6+ | 2004 02 22 | 704 | 1.2− | 0.5+ |
| 2001 08 06 | 644 | 0.4− | 0.5+ | 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 02 22 | 704 | 0.0 | 0.3+ |
| 2001 08 06 | 644 | 0.4− | 0.7+ | 2004 01 22 | 704 | 0.0 | 0.9+ | 2004 02 26 | 704 | 0.3− | 0.9− |
| 2003 12 18 | 704 | 0.5− | 0.2+ | 2004 01 22 | 704 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.3− | 0.9− |
| 2003 12 18 | 704 | 0.5− | 0.4− | 2004 01 22 | 704 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.3− | 0.3− |
| 2003 12 18 | 704 | 0.3+ | 0.1− | 2004 01 24 | 704 | (3.2− | 2.0−) | 2004 02 26 | 704 | 0.6+ | 0.1+ |
| 2003 12 22 | 704 | 0.3− | 0.6+ | 2004 01 24 | 704 | (1.9− | 0.3−) | 2004 02 26 | 704 | 0.6− | 0.8+ |
| 2003 12 22 | 704 | 0.4− | 1.0+ | 2004 01 24 | 704 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 2003 12 22 | 704 | 0.2− | 0.3+ | 2004 01 27 | 704 | (2.3− | 1.0+) | 2006 09 19 | 699 | 0.5− | 0.0 |
| 2003 12 27 | 704 | 0.0 | 1.2+ | 2004 01 27 | 704 | 0.8− | 0.5+ | 2006 09 19 | 699 | 0.8− | 0.7+ |
| 2003 12 27 | 704 | 1.3+ | 0.2− | 2004 01 27 | 704 | 0.7+ | 0.6− | 2006 09 19 | 699 | 1.2− | 0.7− |
| 2003 12 27 | 704 | 0.1+ | 0.8+ | 2004 01 27 | 704 | (2.6− | 0.2+) | 2006 09 27 | 703 | 0.1− | 1.0+ |
| 2003 12 27 | 704 | 0.1+ | 0.6+ | 2004 01 27 | 691 | 0.0 | 0.2− | 2006 09 27 | 703 | (0.1− | 1.7+) |
| 2003 12 27 | 704 | 0.6+ | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.5− | 0.9+ |
| 2003 12 27 | 704 | 0.9+ | 0.7− | 2004 01 27 | 691 | 0.8+ | 0.0 | 2006 09 27 | 703 | 0.4− | 0.3− |
| 2003 12 27 | 704 | 0.2+ | 0.6+ | 2004 01 30 | 704 | 0.1− | 0.3− | 2006 10 13 | 941 | 1.0+ | 0.1− |
| 2003 12 27 | 704 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.1+ | 0.7+ | 2006 10 13 | 941 | 0.9+ | 0.1− |
| 2003 12 27 | 704 | 0.6+ | 0.4+ | 2004 01 30 | 704 | 0.3+ | 0.7− | 2006 10 13 | 941 | 0.9+ | 0.4− |

**(143920)∗ 2003 YF$_{82}$**

Discovered 2003 Dec. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.71655 | | (2000.0) | | +0.86348203 | −0.50431049 |
| $n$ | 0.29365961 | $\omega$ | 14.04550 | | +0.45983055 | +0.78030489 |
| $a$ | 2.2416780 | $\Omega$ | 16.24811 | | +0.20725506 | +0.36985836 |
| $e$ | 0.1864777 | $i$ | 1.71014 | | | |
| $P$ | 3.36 | $H$ | 16.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 691 | 0.4− | 1.2− | 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.0 |
| 1997 02 10 | 691 | 0.6+ | 0.9− | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 1997 02 10 | 691 | 0.1− | 0.3− | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 20 | H07 | 0.1− | 0.7+ |
| 1999 08 07 | 691 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 20 | 703 | 0.3− | 0.2+ |
| 1999 08 07 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.6+ | 0.4− | 2006 10 20 | H07 | 0.4− | 0.3+ |
| 1999 08 07 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.4− | 0.7+ | 2006 10 20 | 703 | (1.6− | 2.3−) |
| 2003 12 18 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 1.2− | 2006 10 20 | H07 | 0.2− | 0.4− |
| 2003 12 18 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.2+ | 0.8+ | 2006 10 20 | 703 | (2.0+ | 1.3−) |
| 2003 12 18 | 704 | 0.2− | 0.8+ | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 703 | 0.2− | 0.1− |
| 2003 12 18 | 704 | 0.7+ | 1.2+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2003 12 22 | 704 | 0.7+ | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.1+ |
| 2003 12 22 | 704 | 1.1+ | 0.2− | 2006 09 15 | 644 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2003 12 22 | 704 | 0.7+ | 0.3− | 2006 09 15 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.1− |
| 2003 12 22 | 704 | 0.5− | 0.4− | 2006 09 15 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | 1.2+ | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.3− | 2006 10 21 | 703 | 1.2− | 0.3+ |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.7+ | 0.5− | 2006 10 21 | 703 | 0.4− | 0.4+ |
| 2003 12 22 | 704 | 0.6+ | 0.9+ | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 2003 12 22 | 704 | 0.5− | 0.2+ | 2006 09 20 | 704 | 1.0+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 12 22 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 12 22 | 704 | 0.1− | 0.2+ | 2006 09 21 | 224 | (2.4− | 1.7+) | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 12 27 | 704 | 0.1− | 0.5+ | 2006 09 21 | 224 | (1.8− | 2.0+) | 2006 10 23 | 704 | 0.1− | 0.6+ |
| 2003 12 27 | 704 | 0.2+ | 0.8+ | 2006 09 21 | 224 | (2.9− | 2.6+) | 2006 10 23 | 704 | 1.1− | 0.3+ |
| 2003 12 27 | 704 | 0.4− | 1.0+ | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 10 23 | 704 | 0.6− | 0.6+ |
| 2003 12 27 | 704 | 1.3+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 23 | 704 | 0.2− | 0.6+ |
| 2003 12 27 | 704 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 23 | 704 | 1.4− | 0.7+ |
| 2003 12 27 | 704 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3− |
| 2003 12 27 | 704 | 0.2+ | 0.2− | 2006 09 27 | 958 | 0.5+ | 0.5− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2003 12 27 | 704 | 0.1− | 0.2+ | 2006 09 27 | 958 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2003 12 27 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 958 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.6− | 1.0− |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 704 | (1.8+ | 0.0 ) | 2006 10 28 | G96 | 0.5− | 0.9− |
| 2004 01 22 | 704 | 0.6− | 0.3− | 2006 09 27 | 704 | 0.7+ | 0.2− | 2006 10 28 | G96 | 0.4− | 1.0− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.7− | 0.1− | 2006 09 27 | 704 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 1.2+ | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.5− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.8− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 1.1− | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.7− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2005 04 17 | 691 | 0.4− | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2005 05 07 | G96 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.5+ | 1.1+ | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2005 05 07 | G96 | 0.2− | 0.4+ | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2005 05 07 | G96 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2005 05 07 | G96 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2005 05 16 | G96 | 0.0 | 0.4+ | 2006 10 03 | 704 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2005 05 16 | G96 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.9− | 0.3− | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2005 05 16 | G96 | 0.4− | 0.3+ | 2006 10 03 | 704 | 0.7− | 0.6+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2005 05 16 | G96 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 11 20 | G96 | 0.0 | 0.2− |

**(143921)∗ 2003 YW$_{85}$ = 1999 TU$_{110}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.26252 | | (2000.0) | | +0.88338989 | −0.46336174 |
| $n$ | 0.27861485 | $\omega$ | 161.53737 | | +0.41681785 | +0.84526052 |
| $a$ | 2.3216667 | $\Omega$ | 226.27626 | | +0.21420826 | +0.26614009 |
| $e$ | 0.1144239 | $i$ | 5.56882 | | | |
| $P$ | 3.54 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.0 | 0.4− | 2005 04 17 | 691 | 0.1+ | 0.5+ | 2006 09 11 | 703 | 0.8− | 0.6+ |
| 1999 09 08 | 704 | 0.1+ | 1.1− | 2005 04 17 | 691 | 0.7+ | 0.5+ | 2006 09 13 | 644 | 0.5− | 0.2− |
| 1999 09 08 | 704 | 1.3+ | 0.0 | 2005 05 14 | G96 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.5− | 0.1− |
| 1999 09 08 | 704 | 0.5− | 0.2− | 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.1+ |
| 1999 10 04 | 704 | 0.4− | 1.9+ | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.5− | 0.6− |
| 1999 10 04 | 704 | 0.6− | 0.4− | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.4− | 0.1+ |
| 1999 10 04 | 704 | 0.2− | 0.9+ | 2006 08 18 | 644 | 0.3− | 0.1− | 2006 09 18 | 703 | 1.2− | 1.1− |
| 1999 10 09 | 704 | 0.1− | 0.7+ | 2006 08 18 | 644 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.6− |
| 1999 10 09 | 704 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 30 | 699 | 0.5− | 0.3+ |
| 1999 10 09 | 704 | 0.1− | 0.5+ | 2006 08 27 | 699 | 0.6− | 1.3+ | 2006 09 30 | 699 | 1.2− | 0.0 |
| 1999 10 09 | 704 | 0.4− | 1.0+ | 2006 08 27 | 699 | (1.6− | 0.9−) | 2006 09 30 | 699 | 0.9− | 0.1+ |
| 2003 12 03 | 704 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.2+ | 0.5− | 2006 09 30 | 699 | 0.7− | 0.6+ |
| 2003 12 03 | 704 | 0.4+ | 0.1+ | 2006 08 27 | 699 | 0.5+ | 0.2− | 2006 11 17 | 291 | 0.0 | 0.2− |
| 2003 12 03 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 704 | 0.2− | 0.9− | 2006 11 17 | 291 | 0.3+ | 0.1+ |
| 2003 12 03 | 704 | 0.0 | 0.8+ | 2006 08 28 | 704 | 0.4+ | 0.0 | 2006 11 17 | 291 | 0.5+ | 0.0 |
| 2003 12 03 | 704 | 0.4− | 0.3+ | 2006 08 28 | 704 | 0.6+ | 1.2− | 2006 11 20 | 291 | 0.2+ | 0.1− |
| 2003 12 19 | 704 | 0.2− | 0.1− | 2006 08 28 | 704 | 1.5− | 0.7+ | 2006 11 20 | 291 | 0.4+ | 0.2+ |
| 2003 12 19 | 704 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.8− | 2006 11 20 | 291 | 0.6+ | 0.1+ |
| 2003 12 19 | 704 | 0.6+ | 0.2− | 2006 08 29 | 703 | 0.2− | 0.5− | 2006 11 21 | 291 | 0.0 | 0.1− |
| 2003 12 19 | 704 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.9− | 0.8+ | 2006 11 21 | 291 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.1− | 0.5− | 2006 08 29 | 703 | 0.1− | 1.4− | 2006 11 21 | 291 | 0.3+ | 0.1+ |
| 2003 12 22 | 704 | 0.8− | 0.9+ | 2006 08 30 | 699 | 1.0− | 0.5+ | 2006 11 22 | 291 | 0.6+ | 0.2+ |
| 2003 12 22 | 704 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.0 | 0.4− | 2006 11 22 | 291 | 0.0 | 0.4+ |
| 2003 12 22 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.6− | 0.2+ | 2006 11 22 | 291 | 0.4+ | 0.1+ |
| 2003 12 22 | 704 | 0.5− | 0.1+ | 2006 09 01 | 704 | 1.0+ | 0.3+ | 2006 11 24 | 291 | 0.0 | 0.1+ |
| 2005 03 17 | G96 | 0.2− | 0.0 | 2006 09 01 | 704 | 1.0+ | 0.9− | 2006 11 24 | 291 | 0.1+ | 0.1+ |
| 2005 03 17 | G96 | 0.5− | 0.5+ | 2006 09 01 | 704 | 0.2− | 0.5+ | 2006 11 24 | 291 | 0.0 | 0.2+ |
| 2005 03 17 | G96 | 1.2− | 0.3+ | 2006 09 11 | 703 | 0.5− | 0.5+ | 2006 11 25 | 291 | 0.1− | 0.1+ |
| 2005 03 17 | G96 | 1.4− | 0.3+ | 2006 09 11 | 703 | 0.3− | 0.2+ | 2006 11 25 | 291 | 0.4+ | 0.8+ |
| 2005 04 17 | 691 | 0.9+ | 0.5+ | 2006 09 11 | 703 | (2.1− | 0.1−) | 2006 11 25 | 291 | 0.1+ | 0.2− |

**(143922)∗ 2003 YU$_{87}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 263.07068 | | (2000.0) | | −0.33692689 | −0.93894845 |
| $n$ | 0.25982709 | $\omega$ | 151.27102 | | +0.84256750 | −0.26765499 |
| $a$ | 2.4322774 | $\Omega$ | 318.31169 | | +0.42019076 | −0.21618653 |
| $e$ | 0.0787943 | $i$ | 6.01438 | | | |
| $P$ | 3.79 | $H$ | 16.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 28 | 691 | 0.1− | 0.6+ | 2004 01 16 | 691 | 0.2+ | 0.1− | 2004 02 13 | 691 | 0.3+ | 0.2− |
| 1998 08 28 | 691 | 0.0 | 0.2+ | 2004 01 16 | 691 | 0.3+ | 0.0 | 2004 04 14 | 645 | 0.2+ | 0.1+ |
| 1998 08 28 | 691 | 0.0 | 0.0 | 2004 01 19 | 699 | (1.9+ | 0.5−) | 2004 04 14 | 645 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2004 01 19 | 699 | 1.4+ | 0.6− | 2004 04 15 | 645 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2004 01 19 | 699 | (1.6+ | 2.5−) | 2004 04 15 | 645 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.6− | 0.0 | 2004 01 19 | 699 | 0.2+ | 0.2− | 2006 08 29 | 703 | (0.3+ | 1.6−) |
| 2002 09 05 | 704 | 1.0− | 0.2+ | 2004 01 22 | 704 | 0.6− | 0.4+ | 2006 08 29 | 703 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.1− | 0.3+ | 2004 01 22 | 704 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.6− | 0.8+ |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.4+ | 0.6+ |
| 2002 09 14 | 644 | 0.6− | 0.5+ | 2004 01 22 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.2− | 1.0− |
| 2002 09 14 | 644 | 0.6− | 0.5+ | 2004 01 22 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.3+ | 1.3− |
| 2003 12 19 | 704 | 0.3+ | 0.1+ | 2004 01 26 | 699 | (1.6− | 0.4−) | 2006 09 19 | 699 | 0.7+ | 0.6+ |
| 2003 12 19 | 704 | 0.7+ | 0.8+ | 2004 01 26 | 699 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.3+ |
| 2003 12 19 | 704 | 0.6+ | 0.8+ | 2004 01 26 | 699 | 0.7− | 0.4− | 2006 09 27 | 703 | 0.2+ | 0.3+ |
| 2003 12 22 | 704 | 0.2+ | 0.4+ | 2004 01 26 | 699 | 1.0− | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.7− |
| 2003 12 22 | 704 | 1.2+ | 0.9+ | 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.3− |
| 2003 12 22 | 704 | 0.2− | 1.0+ | 2004 01 27 | 691 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.9− |
| 2003 12 22 | 704 | 0.2− | 0.5− | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 1.0+ | 0.1− |
| 2003 12 27 | 704 | 0.6− | 0.3− | 2004 01 27 | 691 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2003 12 27 | 704 | 0.2+ | 0.9− | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.1− |
| 2003 12 27 | 704 | 0.6− | 0.6+ | 2004 01 27 | 691 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2003 12 27 | 704 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 1.0+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.4− |
| 2003 12 27 | 704 | 0.3− | 0.6+ | 2004 01 30 | 704 | 0.5+ | 0.5+ | 2006 10 09 | 644 | 0.4+ | 0.2− |
| 2004 01 12 | 644 | 0.4+ | 0.1+ | 2004 01 30 | 704 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2004 01 12 | 644 | 0.0 | 0.2+ | 2004 01 30 | 704 | 0.5− | 1.3− | 2006 10 22 | 644 | 0.4− | 0.6− |
| 2004 01 12 | 644 | 0.7+ | 0.4+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2004 01 16 | 691 | 0.1+ | 0.0 | 2004 02 13 | 691 | 0.2− | 0.1+ | | | | |

**(143923)∗ 2003 YE$_{89}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.40950 | | (2000.0) | | −0.84905623 | −0.49377240 |
| $n$ | 0.22630603 | $\omega$ | 204.44130 | | +0.51447980 | −0.69198801 |
| $a$ | 2.6668912 | $\Omega$ | 304.65719 | | +0.12005852 | −0.52663214 |
| $e$ | 0.0603844 | $i$ | 13.20201 | | | |
| $P$ | 4.36 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.1− | 1.0+ | 2003 12 27 | 704 | 0.1− | 0.7+ | 2004 02 11 | 703 | 0.2+ | 0.1− |
| 2000 03 09 | 704 | 0.2− | 0.9+ | 2003 12 27 | 704 | 0.1+ | 0.6+ | 2004 02 11 | 699 | 1.3− | 0.2− |
| 2000 03 09 | 704 | 0.2− | 0.3− | 2003 12 27 | 704 | 0.2+ | 0.1− | 2004 02 11 | 703 | 0.4− | 0.5− |
| 2000 03 09 | 704 | 0.1+ | 0.8− | 2004 01 04 | 699 | 0.2− | 0.4+ | 2004 02 11 | 703 | 0.0 | 0.1− |
| 2000 04 04 | 699 | 1.9+ | 1.1+ | 2004 01 04 | 699 | 1.0+ | 0.7− | 2004 02 11 | 699 | 0.6− | 0.2+ |
| 2000 04 04 | 699 | 1.0+ | 1.3+ | 2004 01 04 | 699 | 0.3+ | 0.3+ | 2004 02 11 | 699 | 1.1− | 1.2− |
| 2000 04 04 | 699 | 0.5+ | 0.8+ | 2004 01 04 | 699 | 0.1− | 0.5+ | 2004 02 11 | 699 | 1.3− | 0.0 |
| 2000 04 04 | 699 | 1.0+ | 1.4+ | 2004 01 13 | 699 | 0.8− | 0.3− | 2004 02 12 | 691 | 0.2+ | 0.1− |
| 2001 07 08 | 644 | (0.6− | 3.2−) | 2004 01 13 | 699 | 0.3− | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.2− |
| 2001 07 08 | 644 | (0.7− | 3.7−) | 2004 01 13 | 699 | 0.1− | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.1− |
| 2001 07 08 | 644 | (0.7− | 3.7−) | 2004 01 13 | 699 | 0.6+ | 1.1+ | 2004 02 16 | 644 | 0.4+ | 0.1+ |
| 2002 09 20 | 644 | 0.0 | 0.1− | 2004 01 17 | 644 | 0.1− | 0.8+ | 2004 02 16 | 644 | 0.1+ | 0.5+ |
| 2002 09 20 | 644 | 0.2− | 0.1+ | 2004 01 17 | 644 | 0.1− | 0.4− | 2004 02 16 | 644 | 0.5+ | 0.2+ |
| 2002 09 20 | 644 | 0.1− | 0.0 | 2004 01 17 | 644 | (0.5− | 3.0−) | 2004 02 22 | 704 | 0.3− | 0.1− |
| 2002 09 27 | 644 | 0.4− | 0.5− | 2004 01 21 | 704 | 0.4+ | 0.4+ | 2004 02 22 | 704 | 0.5− | 0.1+ |
| 2002 09 27 | 644 | 0.1− | 0.0 | 2004 01 21 | 704 | 0.6+ | 0.0 | 2004 02 22 | 704 | 0.2+ | 0.5+ |
| 2002 09 27 | 644 | 0.4− | 0.2− | 2004 01 21 | 704 | 1.0+ | 0.1+ | 2006 08 19 | 644 | 0.2− | 0.1− |
| 2002 10 06 | 704 | 0.7+ | 0.1+ | 2004 01 24 | 704 | 0.3+ | 0.1+ | 2006 08 19 | 644 | 0.3− | 0.4+ |
| 2002 10 06 | 704 | (0.3− | 1.7+) | 2004 01 24 | 704 | 0.7+ | 0.2+ | 2006 08 19 | 644 | 0.4− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.2+ | 0.8− | 2004 01 24 | 704 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.4+ |
| 2002 10 06 | 704 | (1.3+ | 1.8−) | 2004 01 24 | 704 | 0.3+ | 1.0+ | 2006 08 27 | 699 | 0.0 | 0.9− |
| 2002 10 10 | 704 | 0.5− | 0.2+ | 2004 01 24 | 704 | 0.0 | 0.4+ | 2006 08 27 | 699 | 0.4+ | 0.1− |
| 2002 10 10 | 704 | 0.2− | 0.7+ | 2004 01 26 | 699 | 0.4− | 0.1− | 2006 08 27 | 699 | 0.7− | 0.8+ |
| 2002 10 10 | 704 | 0.3+ | 0.4− | 2004 01 26 | 699 | 0.1+ | 1.0− | 2006 08 30 | 699 | 0.1+ | 0.2+ |
| 2002 10 10 | 704 | 0.4+ | 0.3+ | 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.1+ | 1.0+ |
| 2003 12 05 | 703 | 0.4− | 0.1+ | 2004 01 26 | 699 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.4− | 0.9+ |
| 2003 12 05 | 703 | 1.1− | 0.5+ | 2004 01 30 | 691 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.1+ | 0.9+ |
| 2003 12 05 | 703 | 0.9− | 0.8− | 2004 01 30 | 691 | 0.0 | 0.2− | 2006 09 16 | 644 | 0.1− | 0.0 |
| 2003 12 05 | 703 | 0.5− | 0.8+ | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 09 16 | 644 | 0.1− | 0.2+ |
| 2003 12 19 | 704 | 0.7+ | 0.2− | 2004 01 30 | 691 | 0.1− | 0.3− | 2006 09 16 | 644 | 0.0 | 0.2− |
| 2003 12 19 | 704 | 1.0+ | 0.8− | 2004 01 30 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.4− | 0.4− |
| 2003 12 19 | 704 | 0.5+ | 0.4− | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.5+ | 0.5+ |
| 2003 12 19 | 704 | 0.6+ | 0.7− | 2004 01 30 | 704 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.7+ | 0.4+ |
| 2003 12 19 | 704 | 0.3− | 0.1− | 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.5− | 0.4− |
| 2003 12 22 | 704 | 0.3+ | 1.0+ | 2004 02 10 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.6− | 1.4+ |
| 2003 12 22 | 704 | 0.4+ | 0.7+ | 2004 02 10 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.7− | 0.7− |
| 2003 12 22 | 704 | 0.1+ | 1.1+ | 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.7− | 0.8+ |
| 2003 12 22 | 704 | 0.6− | 0.9− | 2004 02 10 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.2− | 1.2+ |
| 2003 12 22 | 704 | 1.3− | 0.7− | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2003 12 27 | 704 | 0.9+ | 0.0 | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2003 12 27 | 704 | 0.2− | 1.3+ | 2004 02 11 | 703 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1+ |

**(143924)∗ 2003 YH$_{89}$ = 2005 JL$_{94}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86203)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.11809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23823002 | $\omega$ | 237.53356 | | +0.11482240 | +0.98705670 | |
| $a$ | 2.5771422 | $\Omega$ | 39.54287 | | −0.84217238 | +0.15649667 | |
| $e$ | 0.0695885 | $i$ | 10.12844 | | −0.52684105 | −0.03504084 | |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 13 | 691 | 0.1− | 0.0 | 2005 04 07 | 691 | 0.0 | 0.2+ | 2006 09 14 | F84 | 1.0− | 0.7− |
| 1994 10 13 | 691 | 0.1− | 0.2+ | 2005 04 07 | 691 | 0.1+ | 0.3+ | 2006 09 14 | F84 | 0.8+ | 0.3− |
| 1994 10 13 | 691 | 0.0 | 0.2+ | 2005 04 18 | 703 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.4+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2005 04 18 | 703 | 1.2+ | 1.1+ | 2006 09 18 | 703 | 0.3− | 0.7+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2005 04 18 | 703 | 0.0 | 0.4+ | 2006 09 18 | 703 | 1.1− | 0.4− |
| 2002 10 03 | 704 | (1.4− | 1.7+) | 2005 04 18 | 703 | 0.1− | 0.8+ | 2006 09 18 | 703 | 1.1− | 0.0 |
| 2002 10 03 | 704 | 1.1− | 0.0 | 2005 05 07 | G96 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.5+ | 1.0+ |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2005 05 07 | G96 | 0.1− | 0.2+ | 2006 09 21 | 699 | (0.4+ | 2.5+) |
| 2002 10 03 | 704 | 0.7+ | 0.2+ | 2005 05 07 | G96 | 0.1− | 0.3+ | 2006 09 21 | 699 | 1.4+ | 0.4− |
| 2002 10 11 | 704 | 0.6− | 0.8+ | 2005 05 07 | G96 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.4− | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.5− | 2005 05 10 | 807 | 0.1− | 0.3+ | 2006 09 25 | 703 | 0.2+ | 0.8+ |
| 2002 10 11 | 704 | 0.2− | 0.7− | 2005 05 11 | 807 | 0.1+ | 0.2+ | 2006 09 25 | 703 | (1.6− | 1.0+) |
| 2003 12 19 | 704 | 0.8− | 1.4+ | 2005 05 11 | 807 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.5− | 0.4+ |
| 2003 12 19 | 704 | (1.1+ | 2.1+) | 2005 05 13 | 704 | 1.1+ | 0.8+ | 2006 09 25 | 703 | (2.7− | 3.2−) |
| 2003 12 19 | 704 | 0.8+ | 0.3+ | 2005 05 13 | 704 | 1.1+ | 0.1− | 2006 10 02 | 703 | 0.8− | 0.8+ |
| 2003 12 19 | 704 | 0.7− | 0.7+ | 2005 05 13 | 704 | 0.1+ | 0.3− | 2006 10 02 | 703 | 1.0− | 0.3+ |
| 2003 12 22 | 704 | 0.7− | 0.5− | 2005 05 13 | 704 | 0.4+ | 0.4+ | 2006 10 02 | 703 | 0.2+ | 0.5+ |
| 2003 12 22 | 704 | 0.1+ | 0.5− | 2005 05 13 | 704 | 1.1+ | 0.3− | 2006 10 02 | 703 | 0.5− | 0.7+ |
| 2003 12 22 | 704 | 0.0 | 1.2+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 02 | 703 | 0.0 | 0.6+ |
| 2003 12 30 | 704 | 0.7+ | 0.7+ | 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.1+ | 1.4+ |
| 2003 12 30 | 704 | 1.0+ | 1.0+ | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 10 02 | 703 | 0.0 | 0.9+ |
| 2003 12 30 | 704 | 0.5+ | 0.3+ | 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.5− |
| 2003 12 30 | 704 | 1.0+ | 1.3+ | 2006 09 14 | 644 | 0.3− | 0.1− | 2006 10 24 | 644 | 0.4− | 0.5+ |
| 2003 12 30 | 704 | 0.8− | 0.4− | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2005 04 07 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.4− | 0.1− | 2006 10 24 | 644 | 0.2+ | 0.0 |

**(143925)∗ 2003 YO$_{89}$ = 1999 TN$_{208}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57528), K. E. Smalley (*MPO* 61748)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.58412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28056265 | $\omega$ | 130.84293 | | −0.01223536 | −0.99452526 | |
| $a$ | 2.3109088 | $\Omega$ | 319.49642 | | +0.86260390 | +0.04199347 | |
| $e$ | 0.1516528 | $i$ | 9.19424 | | +0.50573195 | −0.09568727 | |
| $P$ | 3.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.7+ | 0.7− | 2004 01 30 | 704 | 0.1− | 0.3+ | 2004 03 01 | 704 | 0.4− | 0.3− |
| 1999 10 14 | 704 | 0.1− | 0.2− | 2004 01 30 | 704 | 0.1− | 0.0 | 2004 03 01 | 704 | 0.4+ | 0.6+ |
| 1999 10 14 | 704 | 0.3− | 0.7− | 2004 01 30 | 704 | 0.1+ | 0.5+ | 2004 03 15 | 703 | 0.6− | 0.6+ |
| 1999 10 14 | 704 | 1.0+ | 0.3− | 2004 01 31 | 704 | 0.6− | 0.4+ | 2004 03 15 | 703 | 1.4− | 0.6+ |
| 1999 10 15 | 704 | 0.0 | 0.5− | 2004 01 31 | 704 | (0.7− | 1.6+) | 2004 03 15 | 703 | (0.6+ | 1.9+) |
| 1999 10 15 | 704 | 0.4− | 0.0 | 2004 01 31 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 703 | (1.9− | 1.6−) |
| 1999 10 15 | 704 | 0.6− | 0.8− | 2004 01 31 | 704 | 0.4− | 0.6+ | 2004 03 16 | 704 | 0.5+ | 0.4+ |
| 1999 10 15 | 704 | 0.0 | 0.0 | 2004 01 31 | 704 | 0.2− | 0.3+ | 2004 03 16 | 704 | 1.1+ | 0.3+ |
| 1999 10 15 | 704 | 0.5− | 0.1− | 2004 01 31 | 704 | 0.1+ | 0.4+ | 2004 03 16 | 704 | 0.3+ | 0.5− |
| 1999 11 10 | 703 | 1.1+ | 0.2− | 2004 01 31 | 704 | 0.7+ | 0.9− | 2004 03 16 | 704 | 0.4+ | 0.6− |
| 1999 11 10 | 703 | 1.6+ | 0.3− | 2004 01 31 | 704 | 0.7+ | 0.4− | 2004 03 16 | 704 | 0.2− | 0.1+ |
| 1999 11 10 | 703 | 0.0 | 0.5− | 2004 01 31 | 704 | 0.1+ | 0.4− | 2004 03 16 | 704 | 0.5− | 0.0 |
| 1999 11 10 | 703 | 1.0− | 0.3+ | 2004 01 31 | 704 | (2.3− | 0.2−) | 2004 03 16 | 704 | 0.8− | 0.4+ |
| 2002 07 29 | 644 | 0.1− | 0.1+ | 2004 02 04 | 608 | 0.3+ | 0.1− | 2004 03 16 | 704 | 0.7− | 0.0 |
| 2002 07 29 | 644 | 0.4− | 0.5+ | 2004 02 04 | 608 | 0.2+ | 0.2+ | 2004 03 19 | 644 | 0.2+ | 0.5+ |
| 2002 07 29 | 644 | 0.3− | 0.7+ | 2004 02 04 | 608 | 0.3+ | 0.3− | 2004 03 19 | 644 | 0.5+ | 0.5+ |
| 2002 08 08 | 644 | 0.3− | 0.8+ | 2004 02 09 | 333 | 0.8− | 0.3+ | 2004 03 19 | 644 | 0.6+ | 0.6+ |
| 2002 08 08 | 644 | 0.1+ | 0.5+ | 2004 02 09 | 333 | 0.9− | 0.2− | 2006 08 12 | 644 | 0.6− | 0.1+ |
| 2002 08 08 | 644 | 0.2− | 0.5+ | 2004 02 09 | 333 | 0.8− | 0.3+ | 2006 08 12 | 644 | 0.5− | 0.4+ |
| 2002 08 17 | 644 | 0.5− | 0.8+ | 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 08 12 | 644 | 0.3− | 0.3+ |
| 2002 08 17 | 644 | 0.3− | 0.8+ | 2004 02 10 | 644 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.4− |
| 2002 08 17 | 644 | 0.5− | 0.8+ | 2004 02 10 | 644 | 0.5+ | 0.1− | 2006 09 17 | 703 | 0.5+ | 0.0 |
| 2002 08 27 | 644 | 0.2− | 1.0+ | 2004 02 11 | 699 | 0.3− | 0.3− | 2006 09 17 | 703 | 0.2+ | 0.1+ |
| 2002 08 27 | 644 | 0.6− | 0.6+ | 2004 02 11 | 644 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.0 |
| 2002 08 27 | 644 | 0.4− | 0.7+ | 2004 02 11 | 699 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2003 12 19 | 704 | 0.0 | 0.2− | 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.7− |
| 2003 12 19 | 704 | 0.2+ | 1.0+ | 2004 02 11 | 699 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.1+ | 0.8+ | 2004 02 11 | 699 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.1− | 0.0 |
| 2003 12 19 | 704 | 0.9+ | 0.8+ | 2004 02 11 | 644 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2003 12 22 | 704 | 0.1+ | 0.2− | 2004 02 12 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2003 12 22 | 704 | 0.6+ | 0.3− | 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2003 12 22 | 704 | 0.1− | 0.5− | 2004 02 12 | 691 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.0 | 0.2− | 2004 02 14 | 333 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2003 12 22 | 704 | 0.1− | 1.2− | 2004 02 14 | 333 | 0.1− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2003 12 27 | 704 | 0.6+ | 0.5− | 2004 02 14 | 608 | 0.9+ | 1.2+ | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2003 12 27 | 704 | 0.4− | 0.4+ | 2004 02 14 | 608 | 0.5+ | 1.2+ | 2006 10 19 | 703 | 0.6+ | 0.0 |
| 2003 12 27 | 704 | 0.8+ | 0.4− | 2004 02 14 | 608 | 0.7+ | 0.9+ | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2003 12 27 | 704 | 1.5+ | 0.8− | 2004 02 16 | 333 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.4− |
| 2003 12 27 | 704 | 0.7+ | 0.6− | 2004 02 16 | 333 | 0.0 | 0.3+ | 2006 10 20 | 704 | 0.3+ | 0.6+ |
| 2004 01 05 | 703 | 0.1+ | 0.4+ | 2004 02 17 | 333 | 0.0 | 0.1+ | 2006 10 20 | 704 | 1.1− | 1.4+ |
| 2004 01 05 | 703 | 0.2− | 0.6+ | 2004 02 17 | 333 | 0.2+ | 0.2− | 2006 10 20 | 704 | 1.1+ | 0.5+ |
| 2004 01 05 | 703 | 0.5− | 0.4− | 2004 02 17 | 704 | 0.1− | 0.1− | 2006 10 20 | 704 | (1.6+ | 0.3+) |
| 2004 01 05 | 703 | 0.1− | 1.3+ | 2004 02 17 | 704 | 0.0 | 0.0 | 2006 10 20 | 704 | 0.2− | 0.0 |
| 2004 01 18 | 644 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2004 01 18 | 644 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.3− |
| 2004 01 19 | 703 | 0.0 | 0.1+ | 2004 02 19 | 608 | 0.0 | 0.7− | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2004 01 19 | 703 | 0.7− | 0.4+ | 2004 02 19 | 608 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.1− | 0.8− |
| 2004 01 19 | 703 | 0.7− | 0.2+ | 2004 02 19 | 608 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.3− |
| 2004 01 19 | 703 | 0.4− | 0.3+ | 2004 02 26 | 704 | (1.6+ | 1.6+) | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2004 01 22 | 704 | 0.3+ | 0.3+ | 2004 02 26 | 704 | 0.8+ | 0.0 | 2006 11 22 | 703 | 0.5+ | 0.3+ |
| 2004 01 22 | 704 | 0.1+ | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.3− | 2006 11 22 | 703 | 0.3+ | 0.4− |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2004 02 26 | 704 | 1.0+ | 0.0 | 2006 11 22 | 703 | 0.8− | 0.5+ |
| 2004 01 22 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 1.1− | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.1− |
| 2004 01 22 | 704 | 0.0 | 0.0 | 2004 03 01 | 704 | 0.1− | 0.7+ | 2006 11 23 | G92 | 0.1+ | 1.0+ |
| 2004 01 30 | 704 | 0.4− | 0.0 | 2004 03 01 | 704 | 0.4− | 0.3+ | | | | |
| 2004 01 30 | 704 | 0.5− | 0.3+ | 2004 03 01 | 704 | 0.2− | 0.5− | | | | |

**(143926)∗ 2003 YX$_{89}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.41423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27064324 | $\omega$ | 256.63394 | | −0.91802821 | +0.38469574 | |
| $a$ | 2.3670345 | $\Omega$ | 305.90885 | | −0.30212791 | −0.83559262 | |
| $e$ | 0.0558729 | $i$ | 6.81347 | | −0.25679356 | −0.39216598 | |
| $P$ | 3.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 691 | 0.1− | 0.0 | 2003 12 22 | 704 | 1.3+ | 0.1− | 2004 02 16 | 704 | 0.2+ | 0.8+ |
| 1997 03 10 | 691 | 0.1− | 0.1+ | 2003 12 22 | 704 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.1− | 0.1+ |
| 1997 03 10 | 691 | 0.1+ | 0.2− | 2003 12 27 | 704 | 0.3− | 0.0 | 2004 02 22 | 704 | (1.2+ | 1.6−) |
| 1998 07 27 | 691 | 0.2− | 0.4+ | 2003 12 27 | 704 | 0.2− | 0.5+ | 2004 02 22 | 704 | 1.4+ | 0.8− |
| 1998 07 27 | 691 | 0.1− | 0.5+ | 2003 12 27 | 704 | (0.4+ | 1.8−) | 2004 02 22 | 704 | (1.8+ | 0.5−) |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2003 12 28 | 691 | 0.1+ | 0.0 | 2004 02 22 | 704 | 0.7+ | 1.0− |
| 2002 08 28 | 644 | 0.2+ | 0.3+ | 2003 12 28 | 691 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.5+ |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2003 12 28 | 691 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.3+ |
| 2002 09 06 | 704 | 1.3− | 0.1+ | 2003 12 29 | 699 | 0.1+ | 0.3− | 2004 02 26 | 704 | 0.1+ | 0.7+ |
| 2002 09 06 | 704 | 0.1+ | 0.6+ | 2003 12 29 | 699 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | 0.4− | 0.3+ | 2003 12 29 | 699 | 0.2− | 0.2− | 2004 02 26 | 704 | 0.4− | 0.3+ |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2003 12 29 | 699 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 0.1+ | 0.8+ | 2004 01 22 | 704 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.6− |
| 2002 09 13 | 644 | 0.3− | 0.1+ | 2004 01 22 | 704 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 09 13 | 644 | 0.2− | 0.3− | 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.4+ | 0.2− |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 10 06 | 644 | 0.2+ | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.2− |
| 2002 10 06 | 644 | 0.3− | 0.1− | 2004 01 30 | 704 | 0.4− | 1.1+ | 2006 10 27 | 703 | 0.4+ | 0.1− |
| 2002 10 06 | 644 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.0 | 0.9+ | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2003 12 19 | 704 | 0.2− | 1.0+ | 2004 01 30 | 704 | 1.2− | 0.8+ | 2006 10 27 | 703 | 0.5+ | 0.2− |
| 2003 12 19 | 704 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.7+ |
| 2003 12 19 | 704 | (0.2− | 1.7+) | 2004 02 09 | 185 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.7− | 1.0− |
| 2003 12 19 | 704 | (2.3+ | 2.1−) | 2004 02 09 | 185 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2003 12 19 | 691 | 0.2+ | 0.2− | 2004 02 09 | 185 | 1.0− | 0.4+ | 2006 11 15 | 703 | 0.1− | 1.1− |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 02 11 | 699 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.4− |
| 2003 12 19 | 691 | 0.1+ | 0.0 | 2004 02 11 | 699 | 0.9− | 0.2− | 2006 11 23 | 703 | 0.8+ | 0.7+ |
| 2003 12 22 | 704 | 0.0 | 0.5+ | 2004 02 11 | 699 | 0.1+ | 0.3− | 2006 11 23 | 703 | 0.7− | 1.0− |
| 2003 12 22 | 704 | 0.9+ | 0.3+ | 2004 02 11 | 699 | 0.5− | 0.0 | 2006 11 23 | 703 | 0.2− | 0.7+ |
| 2003 12 22 | 704 | 0.2− | 0.6+ | 2004 02 16 | 704 | 0.1+ | 1.0+ | 2006 11 23 | 703 | 0.0 | 0.2+ |

**(143927)∗ 2003 YE$_{90}$ = 1992 DP$_{12}$ = 2002 TO$_{331}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57530)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.20349 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24078260 | $\omega$ | 99.51125 | | −0.99551539 | +0.07622320 | |
| $a$ | 2.5588961 | $\Omega$ | 84.87523 | | −0.09236902 | −0.91107569 | |
| $e$ | 0.0646637 | $i$ | 3.22476 | | +0.02042254 | −0.40513097 | |
| $P$ | 4.09 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 27 | 691 | 0.1− | 0.2+ | 2004 01 16 | 691 | 0.1+ | 0.2− | 2004 02 23 | 704 | 1.2− | 1.2+ |
| 1992 02 27 | 691 | 0.1+ | 0.1− | 2004 01 19 | 699 | 0.5+ | 0.0 | 2004 03 20 | 941 | 0.1− | 0.1− |
| 1992 02 27 | 691 | 0.3− | 0.1+ | 2004 01 19 | 699 | 0.4− | 0.3− | 2004 03 20 | 941 | 0.0 | 0.2− |
| 1992 03 01 | 809 | 1.2+ | 0.1+ | 2004 01 19 | 699 | 0.1+ | 0.1+ | 2004 03 20 | 941 | 0.1− | 0.1− |
| 2002 09 30 | 704 | 0.2− | 0.3− | 2004 01 19 | 699 | 0.2+ | 0.5− | 2004 03 20 | 941 | 0.1− | 0.1− |
| 2002 09 30 | 704 | 0.1− | 1.0+ | 2004 01 20 | 704 | 0.3− | 1.1+ | 2005 06 28 | G96 | 0.0 | 0.5+ |
| 2002 09 30 | 704 | 0.6− | 0.6+ | 2004 01 20 | 704 | 0.0 | 0.6+ | 2005 06 28 | G96 | 0.4+ | 0.2+ |
| 2002 09 30 | 704 | 0.8− | 1.3+ | 2004 01 20 | 704 | 0.1+ | 0.6+ | 2005 06 28 | G96 | 0.1− | 0.4+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.1+ | 0.5+ | 2005 06 28 | G96 | 0.4+ | 0.3+ |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2004 01 22 | 704 | 0.1+ | 0.3+ | 2006 08 18 | 691 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | (1.2+ | 2.9+) | 2004 01 22 | 704 | 0.1− | 0.6+ | 2006 08 18 | 691 | 0.5− | 0.3+ |
| 2002 10 11 | 704 | (0.7+ | 2.6+) | 2004 01 22 | 704 | 0.2+ | 0.2+ | 2006 08 18 | 691 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | (0.4+ | 3.3+) | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.1− |
| 2002 10 11 | 704 | (1.0+ | 2.2+) | 2004 01 27 | 691 | 0.3− | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.4− | 0.0 |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2004 01 27 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | (2.5− | 1.7+) |
| 2003 12 19 | 704 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.5− | 0.4− | 2006 09 18 | 703 | (0.2− | 2.0+) |
| 2003 12 19 | 704 | 0.1+ | 0.2+ | 2004 01 30 | 704 | 0.5+ | 0.6− | 2006 09 18 | 703 | 0.4− | 0.1+ |
| 2003 12 19 | 704 | 0.5+ | 1.3+ | 2004 01 30 | 704 | 0.3+ | 0.7− | 2006 09 18 | 703 | 0.3+ | 0.3− |
| 2003 12 19 | 704 | 0.4− | 0.2− | 2004 02 15 | 704 | 0.1+ | 1.3+ | 2006 09 30 | 703 | 0.3− | 1.1+ |
| 2003 12 19 | 691 | 0.2+ | 0.4− | 2004 02 15 | 704 | (0.4− | 1.7+) | 2006 09 30 | 703 | 0.0 | 0.2− |
| 2003 12 19 | 691 | 0.1− | 0.4− | 2004 02 15 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.4− | 2004 02 15 | 704 | 0.4− | 0.6+ | 2006 09 30 | 703 | 1.0+ | 0.1− |
| 2003 12 22 | 704 | 0.8+ | 0.7+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2003 12 22 | 704 | 0.8+ | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2003 12 22 | 704 | 0.9+ | 0.5+ | 2004 02 16 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2003 12 22 | 704 | 0.5+ | 0.9+ | 2004 02 23 | 704 | (1.7− | 0.6−) | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.5− | 0.5+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.7− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2004 01 16 | 691 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.6− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.3+ |

**(143928)∗ 2003 YU$_{90}$**

Discovered 2003 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.56987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29317666 | $\omega$ | 143.04840 | | +0.99528759 | −0.07104042 | |
| $a$ | 2.2441392 | $\Omega$ | 221.17759 | | +0.04573086 | +0.94407301 | |
| $e$ | 0.2075247 | $i$ | 5.75312 | | +0.08550616 | +0.32199287 | |
| $P$ | 3.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 608 | 0.2− | 0.3− | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.0 | 0.3− |
| 2001 01 18 | 608 | 0.3− | 0.1− | 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.5+ | 0.1+ |
| 2001 01 18 | 608 | 0.3− | 0.3− | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.4− | 0.2− |
| 2002 04 22 | 691 | 0.1− | 0.1+ | 2006 08 25 | A50 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.2− | 0.3+ |
| 2002 04 22 | 691 | 0.3− | 0.0 | 2006 08 25 | A50 | 0.3− | 0.2− | 2006 09 30 | 704 | 1.1+ | 0.8+ |
| 2002 04 22 | 691 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.9+ | 0.4− |
| 2002 05 09 | 644 | 0.8+ | 0.4+ | 2006 08 27 | 699 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.0 |
| 2002 05 09 | 644 | 0.8+ | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.4+ | 2006 09 30 | 704 | 1.0+ | 0.2+ |
| 2002 05 09 | 644 | 0.9+ | 0.4+ | 2006 08 27 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.1− |
| 2003 12 01 | 704 | 0.2+ | 1.1− | 2006 08 28 | 704 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2003 12 01 | 704 | 1.4+ | 0.8− | 2006 08 28 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 2003 12 01 | 704 | 0.3+ | 0.9− | 2006 08 28 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2003 12 01 | 704 | 0.3+ | 1.0− | 2006 08 28 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | (2.1+ | 2.0−) |
| 2003 12 01 | 704 | 0.3+ | 1.1− | 2006 08 30 | 699 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2003 12 14 | 644 | 0.7− | 0.1+ | 2006 08 30 | 699 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2003 12 14 | 644 | 0.6− | 0.4+ | 2006 08 30 | 699 | 0.5− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2003 12 14 | 644 | 0.4− | 0.3+ | 2006 08 30 | 699 | (1.6− | 1.1+) | 2006 10 22 | 703 | 1.0− | 1.2+ |
| 2003 12 20 | 704 | 0.7+ | 0.9+ | 2006 09 11 | 703 | 0.1+ | 0.7− | 2006 10 22 | 703 | 0.6+ | 0.2+ |
| 2003 12 20 | 704 | 0.1+ | 0.4+ | 2006 09 11 | 703 | 0.6− | 0.3− | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2003 12 20 | 704 | 0.5+ | 1.0+ | 2006 09 11 | 703 | 0.4− | 0.3− | 2006 10 22 | 703 | 0.3+ | 0.6+ |
| 2003 12 22 | 704 | 0.5− | 0.3+ | 2006 09 11 | 703 | 0.4− | 0.7− | 2006 11 10 | 704 | 0.5− | 0.4+ |
| 2003 12 22 | 704 | 0.5− | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.5− | 2006 11 10 | 704 | 0.0 | 0.5− |
| 2003 12 22 | 704 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.8− | 2006 11 10 | 704 | 0.4− | 0.2+ |
| 2004 01 12 | 644 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.7− | 2006 11 10 | 704 | 0.5+ | 0.0 |
| 2004 01 12 | 644 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 11 11 | 703 | 1.1+ | 0.3− |
| 2004 01 12 | 644 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2005 05 12 | G96 | (2.0+ | 1.5+) | 2006 09 19 | 699 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 2005 05 12 | G96 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.3− |
| 2005 05 12 | G96 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.4+ | 0.6− | 2006 11 16 | 704 | (0.2− | 2.2−) |
| 2005 05 12 | G96 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.1+ |
| 2006 07 01 | 703 | (1.5+ | 1.6−) | 2006 09 26 | 703 | 0.9− | 0.6− | 2006 11 16 | 704 | (1.6− | 0.2+) |
| 2006 07 01 | 703 | 0.0 | 1.0+ | 2006 09 26 | 703 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 2006 07 01 | 703 | 1.1+ | 0.5− | 2006 09 26 | 703 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2006 07 01 | 703 | 0.4− | 0.9− | 2006 09 26 | 704 | (1.6+ | 1.1+) | 2006 11 19 | 704 | 0.7− | 1.0+ |
| 2006 08 18 | 644 | 0.2+ | 0.2− | 2006 09 26 | 704 | (2.9+ | 1.5−) | 2006 11 22 | 704 | 0.4− | 1.7+ |
| 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | (2.1+ | 1.7−) | 2006 11 22 | 704 | 1.4+ | 0.5+ |
| 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | (2.3+ | 0.2+) | 2006 11 22 | 704 | 1.3+ | 0.9− |

**(143929)∗ 2003 YP$_{91}$ = 1996 TA$_{13}$**

Discovered 2003 Dec. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57532)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.00189 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30025560 | $\omega$ | 226.08623 | | +0.47527448 | −0.87955242 | |
| $a$ | 2.2087267 | $\Omega$ | 195.58043 | | +0.82924822 | +0.45630990 | |
| $e$ | 0.1320763 | $i$ | 4.78373 | | +0.29404346 | +0.13479177 | |
| $P$ | 3.28 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 566 | 0.1+ | 0.4+ | 2005 07 11 | G96 | 0.3− | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.3+ |
| 1996 10 12 | 566 | 0.1+ | 0.3+ | 2005 07 11 | G96 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.4+ | 0.4+ |
| 1996 10 12 | 566 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 14 | 704 | 0.6+ | 0.6+ |
| 1996 10 18 | 566 | 0.7− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.1− |
| 1996 10 18 | 566 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.1+ |
| 1996 10 18 | 566 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.2+ |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.8− | 0.2+ |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 2003 12 20 | 704 | 0.2+ | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.4− |
| 2003 12 20 | 704 | 0.3+ | 1.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.1− | 0.6− |
| 2003 12 20 | 704 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2003 12 20 | 704 | (0.1− | 2.7+) | 2006 10 16 | 703 | 1.0+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2003 12 22 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2003 12 22 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 19 | 704 | (2.3− | 1.2+) |
| 2003 12 22 | 704 | 0.1− | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.7− | 0.2− |
| 2003 12 22 | 704 | 0.2− | 0.5− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.7+ | 0.0 |
| 2004 01 14 | 644 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.6+ |
| 2004 01 14 | 644 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2004 01 14 | 644 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.3+ | 1.0+ |
| 2004 01 23 | 704 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.1+ | 1.2+ |
| 2004 01 23 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.9+ |
| 2004 01 23 | 704 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.3+ | 1.5+ |
| 2004 01 23 | 704 | 0.9− | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 25 | 704 | 0.2+ | 1.4+ |
| 2004 01 29 | 704 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.0 | 2006 11 25 | 704 | 0.5− | 1.2− |
| 2004 01 29 | 704 | 0.6+ | 0.4+ | 2006 11 02 | 703 | 0.7− | 1.1− | 2006 11 25 | 704 | 0.7− | 0.4+ |
| 2004 01 29 | 704 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.8+ | 1.1− | 2006 11 25 | 704 | 0.1+ | 0.2+ |
| 2004 01 29 | 704 | 0.2+ | 0.5+ | 2006 11 02 | 703 | 0.7+ | 1.2− | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2004 01 29 | 704 | 0.6+ | 0.4− | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.5− | 0.1+ |
| 2005 06 24 | 644 | 0.0 | 0.5+ | 2006 11 10 | 644 | 0.5− | 0.3− | 2006 11 28 | 704 | 0.3+ | 1.0− |
| 2005 06 24 | 644 | 0.1+ | 0.9+ | 2006 11 10 | 644 | 0.6− | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.2− |
| 2005 06 24 | 644 | 0.5− | 0.7+ | 2006 11 13 | 703 | 0.8− | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.4− |
| 2005 07 11 | G96 | 0.0 | 0.0 | 2006 11 13 | 703 | (1.7− | 0.7+) | | | | |
| 2005 07 11 | G96 | 0.7+ | 0.2+ | 2006 11 13 | 703 | 0.5+ | 0.4+ | | | | |

**(143930)∗ 2003 YP$_{98}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.62366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27180111 | $\omega$ | 218.20267 | | +0.15741897 | −0.98661919 | |
| $a$ | 2.3603074 | $\Omega$ | 222.78784 | | +0.92072133 | +0.16217491 | |
| $e$ | 0.1181111 | $i$ | 3.58271 | | +0.35705951 | +0.01678900 | |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.3− | 0.0 | 2003 12 19 | 691 | 0.1− | 0.2− | 2005 05 13 | G96 | 0.1+ | 0.2+ |
| 1995 07 03 | 691 | 0.4− | 0.1− | 2003 12 19 | 691 | 0.6− | 0.0 | 2006 08 16 | 644 | 0.2− | 0.0 |
| 1995 07 03 | 691 | 0.3− | 0.0 | 2003 12 19 | 691 | 0.0 | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.2+ |
| 1995 07 23 | 691 | 0.1− | 0.5− | 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.1− |
| 1995 07 23 | 691 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.2− | 0.9+ | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 1995 07 23 | 691 | 1.0+ | 0.0 | 2003 12 23 | 704 | 0.0 | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 1999 10 13 | 704 | 0.6− | 0.1− | 2003 12 23 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.0 |
| 1999 10 13 | 704 | 0.0 | 0.6+ | 2003 12 23 | 704 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.4− |
| 1999 10 13 | 704 | 1.3+ | 0.0 | 2005 05 04 | G96 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2003 11 21 | 704 | 1.5+ | 0.7+ | 2005 05 04 | G96 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2003 11 21 | 704 | 0.4+ | 0.2− | 2005 05 04 | G96 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 2003 11 21 | 704 | 0.2+ | 0.2+ | 2005 05 04 | G96 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2003 11 26 | 691 | (2.7− | 0.5+) | 2005 05 13 | G96 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.5+ | 0.1− |
| 2003 11 26 | 691 | (3.0− | 1.3+) | 2005 05 13 | G96 | 0.1+ | 0.5+ | | | | |
| 2003 11 26 | 691 | (6.2− | 2.3+) | 2005 05 13 | G96 | 0.1+ | 0.2+ | | | | |

**(143931)∗ 2003 YD$_{102}$ = 1995 SJ$_{8}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69613)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.16686 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27578485 | $\omega$ | 333.11127 | | −0.83621604 | −0.54836744 | |
| $a$ | 2.3375224 | $\Omega$ | 173.62377 | | +0.51235346 | −0.78509955 | |
| $e$ | 0.1043692 | $i$ | 3.09221 | | +0.19554200 | −0.28794419 | |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1− | 0.1+ | 2003 12 19 | 704 | 0.1+ | 1.0+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 1995 09 17 | 691 | 0.4− | 0.1+ | 2003 12 19 | 704 | 0.5+ | 1.2+ | 2006 10 16 | 691 | 0.2+ | 0.3− |
| 1995 09 17 | 691 | 0.3− | 0.1+ | 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2− |
| 1995 09 22 | 691 | 0.1+ | 0.1+ | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 1995 09 22 | 691 | 0.1+ | 0.2+ | 2003 12 23 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 1995 09 22 | 691 | 0.1+ | 0.2+ | 2003 12 23 | 704 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1997 02 01 | 691 | 0.1+ | 0.5− | 2003 12 23 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 1997 02 01 | 691 | 0.4− | 0.3− | 2003 12 23 | 704 | 0.0 | 0.9+ | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 1997 02 01 | 691 | 0.0 | 0.6− | 2004 01 24 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.8− | 1.1− |
| 2001 04 16 | 699 | (2.3− | 0.4+) | 2004 01 24 | 704 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2001 04 16 | 699 | 0.2− | 1.1+ | 2004 01 24 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 04 16 | 699 | 1.3− | 0.9+ | 2004 01 24 | 704 | 0.6+ | 1.4+ | 2006 10 21 | 644 | 0.7+ | 0.1− |
| 2001 04 16 | 699 | 1.1− | 1.2+ | 2004 01 24 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.6+ | 0.2− |
| 2001 05 15 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2001 05 15 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2001 05 15 | 691 | 0.3+ | 0.4− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.2+ |
| 2002 08 15 | 291 | 0.3+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2002 08 15 | 291 | 0.3+ | 0.4− | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2002 08 15 | 291 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.3− | 0.3+ |
| 2002 09 04 | 644 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.5− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 09 04 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2002 09 04 | 644 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2003 12 19 | 704 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2003 12 19 | 704 | 0.1+ | 0.7+ | 2006 10 01 | 691 | 0.3+ | 0.2+ | | | | |
| 2003 12 19 | 704 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.2+ | | | | |

**(143932)∗ 2003 YF$_{102}$ = 2005 LQ$_{16}$**

Discovered 2003 Dec. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 86205)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.46508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23837642 | $\omega$ | 351.90415 | | −0.83928197 | +0.54307354 | |
| $a$ | 2.5760870 | $\Omega$ | 221.02382 | | −0.49658492 | −0.78516427 | |
| $e$ | 0.0460560 | $i$ | 2.27170 | | −0.22138021 | −0.29763768 | |
| $P$ | 4.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 0.0 | 1.4− | 2005 04 11 | G96 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 2000 02 02 | 704 | 0.7+ | 0.2+ | 2005 04 11 | G96 | 0.6− | 0.4+ | 2006 09 16 | 699 | 0.4+ | 0.9− |
| 2000 02 02 | 704 | 0.1− | 0.7+ | 2005 05 10 | 703 | 0.2− | 0.8+ | 2006 09 16 | 699 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 0.2+ | 1.8+ | 2005 05 10 | 703 | (0.9− | 3.0+) | 2006 09 16 | 699 | 0.6− | 0.5− |
| 2000 02 02 | 704 | 0.6+ | 1.8+ | 2005 05 10 | 703 | 0.0 | 0.4+ | 2006 09 16 | 699 | 1.0− | 0.1− |
| 2000 02 02 | 704 | 0.4− | 1.7+ | 2005 05 10 | 703 | (2.0− | 2.3+) | 2006 09 17 | 704 | 0.7+ | 0.5+ |
| 2002 08 12 | 807 | 0.0 | 0.2+ | 2005 06 06 | 691 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 1.4+ | 1.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 807 | 0.1− | 0.3+ | 2005 06 06 | 691 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.6+ |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2005 06 06 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.1+ | 1.1+ | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.4+ |
| 2002 10 03 | 704 | 0.8− | 0.4+ | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.9+ |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.5+ |
| 2002 10 03 | 704 | 1.1− | 0.5+ | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 09 19 | 703 | 1.2+ | 0.3+ |
| 2002 10 11 | 704 | 0.8− | 0.9+ | 2005 06 13 | G96 | 0.5− | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.9+ |
| 2002 10 11 | 704 | 0.5− | 0.9+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 09 19 | 699 | (1.7− | 0.1−) |
| 2002 10 11 | 704 | 0.4+ | 0.4− | 2005 06 13 | G96 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.8+ | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 0.3− | 2005 06 14 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.9+ | 0.4+ |
| 2003 12 19 | 704 | 0.5+ | 0.2+ | 2005 06 14 | 691 | 0.3+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2003 12 19 | 704 | 0.4+ | 1.0+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 09 23 | 691 | 0.3− | 0.1+ |
| 2003 12 19 | 704 | 1.3+ | 1.0− | 2005 06 27 | 644 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.0 |
| 2003 12 19 | 704 | 0.6+ | 0.8+ | 2005 06 27 | 644 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.9− | 1.5+ | 2005 06 27 | 644 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2003 12 23 | 704 | 0.3− | 0.7+ | 2006 08 23 | 644 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.4− | 0.1+ |
| 2003 12 23 | 704 | (0.5+ | 1.6+) | 2006 08 23 | 644 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.4− | 0.3+ |
| 2003 12 23 | 704 | (0.2− | 1.6+) | 2006 08 23 | 644 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2003 12 28 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.4− | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.4− |
| 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.6− | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.6− |
| 2003 12 28 | 691 | 0.0 | 0.5+ | 2006 09 14 | 644 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2005 04 11 | G96 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.1+ | | | | |
| 2005 04 11 | G96 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.0 | | | | |

**(143933)∗ 2003 YC$_{104}$**

Discovered 2003 Dec. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.75477 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29062587 | $\omega$ | 268.25611 | | +0.61995477 | −0.78456073 | |
| $a$ | 2.2572511 | $\Omega$ | 143.42367 | | +0.72701816 | +0.56910938 | |
| $e$ | 0.2010726 | $i$ | 1.05573 | | +0.29512824 | +0.24612798 | |
| $P$ | 3.39 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 09 | 691 | 0.3+ | 0.3− | 2003 12 21 | 704 | 0.3− | 0.1− | 2006 08 21 | 644 | 0.1− | 0.2+ |
| 1994 01 09 | 691 | 0.4− | 0.3− | 2003 12 24 | 608 | (0.6− | 1.8+) | 2006 08 25 | 704 | 0.2+ | 0.3+ |
| 1994 01 09 | 691 | 0.1+ | 0.0 | 2003 12 24 | 608 | (1.0− | 2.9+) | 2006 08 25 | 704 | 0.2+ | 1.1+ |
| 1999 07 19 | 691 | 0.0 | 0.3+ | 2003 12 24 | 608 | (0.4− | 1.9+) | 2006 08 25 | 704 | 0.0 | 0.2+ |
| 1999 07 19 | 691 | (5.1+ | 3.7−) | 2003 12 24 | 106 | 1.0+ | 0.4− | 2006 08 25 | 704 | 0.6+ | 0.3+ |
| 1999 07 19 | 691 | 0.5− | 0.2+ | 2003 12 24 | 106 | 0.2− | 0.6− | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 2001 02 21 | 691 | 0.4+ | 0.4+ | 2003 12 24 | 106 | 0.2− | 0.5− | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 2001 02 21 | 691 | 0.6+ | 0.7+ | 2003 12 25 | 691 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2001 02 21 | 691 | 0.7+ | 0.6+ | 2003 12 25 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.1− |
| 2001 03 31 | 691 | 0.4− | 0.7+ | 2003 12 25 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.8+ |
| 2001 03 31 | 691 | 0.3− | 0.3− | 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.1+ |
| 2001 03 31 | 691 | 0.0 | 0.0 | 2004 01 17 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.4+ |
| 2003 11 23 | 704 | 0.5− | 0.1− | 2004 01 17 | 644 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.0 |
| 2003 11 23 | 704 | 0.2+ | 0.6− | 2005 05 14 | G96 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.0 | 0.4+ |
| 2003 11 23 | 704 | 0.7− | 0.9− | 2005 05 14 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.8− |
| 2003 11 23 | 704 | 0.4− | 0.4− | 2005 05 14 | G96 | 0.5− | 0.6+ | 2006 08 28 | 699 | 0.8+ | 0.1+ |
| 2003 11 23 | 704 | 0.4− | 0.6− | 2005 05 14 | G96 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.3− | 0.1− |
| 2003 12 01 | 704 | 0.1+ | 0.4− | 2006 08 01 | A50 | 0.0 | 0.4− | 2006 08 30 | 704 | 0.1+ | 1.3+ |
| 2003 12 04 | 704 | 0.2+ | 0.6+ | 2006 08 01 | A50 | 0.5− | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.2+ |
| 2003 12 04 | 704 | 0.7− | 0.3+ | 2006 08 06 | A50 | 0.8− | 0.0 | 2006 08 30 | 704 | 0.9− | 0.1+ |
| 2003 12 04 | 704 | 0.1− | 0.1+ | 2006 08 06 | A50 | 0.7+ | 0.0 | 2006 09 17 | 704 | (1.4+ | 1.5+) |
| 2003 12 04 | 704 | 0.6− | 1.5+ | 2006 08 07 | A50 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.8+ |
| 2003 12 04 | 704 | 0.2− | 0.1+ | 2006 08 07 | A50 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.6− | 1.1− |
| 2003 12 04 | 704 | 0.1− | 0.3− | 2006 08 07 | A50 | 0.8+ | 0.1+ | 2006 09 17 | 704 | 0.7− | 0.1− |
| 2003 12 04 | 704 | 0.5+ | 0.1− | 2006 08 14 | A13 | 0.8− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2003 12 04 | 704 | 0.6− | 1.2+ | 2006 08 14 | A13 | 0.0 | 0.5− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2003 12 04 | 704 | 0.2+ | 0.5− | 2006 08 14 | A13 | 0.7− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2003 12 04 | 704 | 0.0 | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2003 12 19 | 704 | 0.7− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.6+ | 0.5− |
| 2003 12 19 | 704 | 0.4+ | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.3− |
| 2003 12 19 | 704 | 0.1− | 0.7+ | 2006 08 18 | 699 | 1.0+ | 0.4− | 2006 10 28 | G96 | 0.5+ | 0.6− |
| 2003 12 19 | 704 | (1.0− | 1.9−) | 2006 08 18 | 699 | 0.6− | 0.6+ | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2003 12 21 | 704 | 0.1− | 0.2− | 2006 08 18 | 699 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2003 12 21 | 704 | 0.4+ | 0.2− | 2006 08 18 | 699 | (1.9+ | 0.1−) | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2003 12 21 | 704 | 0.1− | 0.8− | 2006 08 21 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.7+ |
| 2003 12 21 | 704 | 0.2+ | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.4− |

**(143934)∗ 2003 YD$_{105}$ = 1999 XX$_{240}$**

Discovered 2003 Dec. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57539)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.36730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27617748 | $\omega$ | 187.73874 | | −0.36655038 | −0.92461625 | |
| $a$ | 2.3353064 | $\Omega$ | 283.81022 | | +0.85923435 | −0.29371438 | |
| $e$ | 0.1875545 | $i$ | 6.12209 | | +0.35687133 | −0.24252144 | |
| $P$ | 3.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.2+ | 0.2+ | 2004 02 04 | 608 | 0.3+ | 0.6− | 2006 09 16 | 703 | 0.3− | 0.4+ |
| 1999 10 12 | 704 | 0.6+ | 0.5− | 2004 02 04 | 608 | 0.1+ | 0.1− | 2006 09 16 | 703 | 1.1− | 0.3+ |
| 1999 10 12 | 704 | 0.5− | 1.2− | 2004 02 04 | 608 | 0.2− | 0.5− | 2006 09 16 | 703 | 1.5− | 1.4− |
| 1999 10 12 | 704 | 0.0 | 0.4− | 2004 02 13 | 699 | 0.5− | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.1− |
| 1999 10 12 | 704 | 0.4+ | 1.1− | 2004 02 13 | 699 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.4− |
| 1999 12 08 | 704 | 0.1− | 0.0 | 2004 02 13 | 699 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.3− |
| 1999 12 08 | 704 | 0.0 | 0.0 | 2004 02 13 | 699 | 0.6− | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.4− |
| 1999 12 08 | 704 | 0.9− | 0.7− | 2004 02 18 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 1.1+ | 1.1+ |
| 1999 12 08 | 704 | 1.0+ | 0.1+ | 2004 02 18 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.4− | 0.3− |
| 1999 12 13 | 703 | 0.4+ | 0.8− | 2004 02 18 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.2− |
| 1999 12 13 | 703 | 0.3− | 0.6+ | 2004 02 18 | 704 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.7− |
| 1999 12 13 | 703 | 0.6− | 0.4− | 2004 02 18 | 691 | 0.1− | 0.0 | 2006 09 18 | G92 | 0.3+ | 0.0 |
| 1999 12 13 | 703 | 0.3+ | 0.6+ | 2004 02 18 | 704 | 0.3+ | 0.4+ | 2006 09 18 | G92 | 0.2+ | 0.8+ |
| 2002 08 16 | 644 | 0.4− | 1.0+ | 2004 02 18 | 704 | 0.6− | 0.5+ | 2006 09 18 | G92 | 1.2+ | 0.1+ |
| 2002 08 16 | 644 | 0.2+ | 1.0+ | 2004 02 18 | 704 | 0.3− | 0.5+ | 2006 09 19 | G92 | 0.1+ | 0.3+ |
| 2002 08 16 | 644 | 0.4− | 1.0+ | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 09 19 | G92 | 0.5− | 0.3+ |
| 2002 08 26 | 644 | 0.3− | 0.9+ | 2004 02 23 | 704 | 0.7+ | 0.1+ | 2006 09 19 | G92 | 0.7+ | 0.0 |
| 2002 08 26 | 644 | 0.4− | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.4+ |
| 2002 08 26 | 644 | 0.3− | 0.9+ | 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 09 20 | 699 | 0.2+ | 0.8− |
| 2003 12 21 | 704 | 0.8− | 0.5+ | 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.1− | 0.2+ |
| 2003 12 21 | 704 | 0.1− | 0.2− | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.1+ |
| 2003 12 21 | 704 | 0.7− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2003 12 23 | 704 | 0.6+ | 0.2− | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 2003 12 23 | 704 | 0.3+ | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.0 | 0.9+ |
| 2003 12 23 | 704 | 0.8+ | 0.8− | 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.7− | 0.2+ |
| 2003 12 23 | 704 | 0.3+ | 0.3− | 2004 02 26 | 704 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.6+ |
| 2003 12 23 | 704 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2004 01 14 | 644 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2004 01 14 | 644 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2004 01 14 | 644 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.8+ |
| 2004 01 23 | 704 | 1.2+ | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.6+ |
| 2004 01 23 | 704 | 0.8+ | 0.4− | 2004 03 15 | 704 | 0.7− | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2004 01 23 | 704 | 0.9+ | 0.0 | 2004 03 15 | 704 | 1.0+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2004 01 23 | 704 | 1.3+ | 0.4+ | 2004 03 15 | 704 | (0.3+ | 2.1+) | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2004 01 23 | 704 | 0.8+ | 0.2+ | 2004 03 15 | 704 | 0.1+ | 1.1+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2004 01 29 | 704 | 0.2− | 0.1+ | 2004 04 19 | 704 | 0.0 | 0.4+ | 2006 10 31 | 703 | 0.7− | 0.2+ |
| 2004 01 29 | 704 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.5− | 0.3+ | 2006 10 31 | 703 | 0.4− | 0.2+ |
| 2004 01 29 | 704 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.9+ | 0.6+ | 2006 10 31 | 703 | 0.5− | 0.2+ |
| 2004 01 29 | 704 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 10 31 | 703 | 0.4+ | 0.0 |

**(143935)∗ 2003 YE$_{105}$**

Discovered 2003 Dec. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 320.12156 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.28612122 | $\omega$ | 176.59356 | +0.80219845 | −0.59376431 | |
| $a$ | 2.2808812 | $\Omega$ | 220.04847 | +0.54546352 | +0.77148628 | |
| $e$ | 0.0914716 | $i$ | 5.58518 | +0.24279043 | +0.22858885 | |
| $P$ | 3.44 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 06 | 691 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.2+ | 0.6+ | 2006 09 13 | 644 | 0.1+ | 0.6+ |
| 1996 11 06 | 691 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.6+ | 0.5− | 2006 09 13 | 644 | 0.0 | 0.4+ |
| 1996 11 06 | 691 | 0.1− | 0.2− | 2005 03 17 | G96 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.6+ |
| 2003 11 02 | 704 | 0.9+ | 0.6− | 2005 03 17 | G96 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.1+ |
| 2003 11 02 | 704 | 0.9− | 0.7+ | 2005 03 17 | G96 | 0.1− | 0.3− | 2006 09 18 | 703 | 0.1− | 0.1− |
| 2003 11 02 | 704 | 0.9− | 0.1+ | 2005 03 17 | G96 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.9− | 0.1− |
| 2003 12 01 | 704 | 0.3+ | 1.1+ | 2005 04 12 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.0 |
| 2003 12 01 | 704 | 0.1+ | 0.3+ | 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 1.1− | 0.5+ |
| 2003 12 01 | 704 | 0.3+ | 0.5− | 2005 04 12 | 691 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 1.4− | 1.4− |
| 2003 12 01 | 704 | 0.3− | 0.3+ | 2005 06 13 | G96 | 0.9− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.6− |
| 2003 12 01 | 704 | 0.3− | 0.2+ | 2005 06 13 | G96 | 0.4− | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.3+ |
| 2003 12 17 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.6− | 0.1+ | 2006 09 30 | 699 | 1.4− | 0.6− |
| 2003 12 17 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.8− | 0.1+ | 2006 09 30 | 699 | 1.5+ | 0.3− |
| 2003 12 17 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 09 30 | 699 | 0.0 | 1.2+ |
| 2003 12 22 | 704 | 0.8− | 0.2− | 2006 08 29 | 703 | 0.7− | 0.3+ | 2006 09 30 | 699 | 0.3− | 0.5+ |
| 2003 12 22 | 704 | 0.4− | 0.2− | 2006 08 29 | 703 | (0.7+ | 1.5+) | 2006 10 21 | 644 | 0.0 | 0.7+ |
| 2003 12 22 | 704 | 0.6− | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2003 12 22 | 704 | 0.6+ | 0.3− | 2006 08 30 | 704 | 1.6+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 12 23 | 704 | 0.8− | 0.4+ | 2006 08 30 | 704 | 1.5+ | 0.5+ | | | | |
| 2003 12 23 | 704 | 0.4+ | 1.2+ | 2006 08 30 | 704 | (1.8+ | 0.3−) | | | | |

**(143936)∗ 2003 YR$_{105}$**

Discovered 2003 Dec. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 272.05241 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.27894402 | $\omega$ | 346.97289 | −0.16984946 | −0.97783637 | |
| $a$ | 2.3198399 | $\Omega$ | 112.69927 | +0.91563291 | −0.20252273 | |
| $e$ | 0.1524529 | $i$ | 7.62569 | +0.36437279 | +0.05310906 | |
| $P$ | 3.53 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 1.3− | 0.0 | 2003 12 19 | 704 | 0.7+ | 0.6− | 2004 01 13 | 691 | 0.2+ | 0.0 |
| 1999 09 08 | 703 | 1.4− | 0.5− | 2003 12 19 | 704 | 1.1+ | 0.7− | 2004 01 13 | 691 | 0.4+ | 0.0 |
| 1999 09 08 | 703 | 2.0+ | 0.8+ | 2003 12 19 | 704 | (0.9− | 8.9+) | 2004 01 13 | 691 | 0.3+ | 0.2− |
| 1999 09 08 | 703 | 0.9− | 0.8+ | 2003 12 22 | 704 | 0.4+ | 0.7+ | 2004 01 28 | 691 | 0.2+ | 0.1− |
| 1999 10 16 | 704 | 0.8+ | 0.0 | 2003 12 22 | 704 | 0.3+ | 1.2+ | 2004 01 28 | 691 | 0.3+ | 0.1− |
| 1999 10 16 | 704 | 0.0 | 0.3+ | 2003 12 22 | 704 | 0.1+ | 0.7+ | 2004 01 28 | 691 | 0.2+ | 0.2− |
| 1999 10 16 | 704 | 0.4+ | 0.7+ | 2003 12 22 | 704 | 0.8− | 1.2+ | 2004 02 26 | 704 | 0.5− | 0.5+ |
| 2001 03 04 | 704 | 0.2− | 0.6+ | 2003 12 22 | 704 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.0 | 1.1+ |
| 2001 03 04 | 704 | 0.6− | 0.9+ | 2003 12 24 | 704 | 0.8+ | 0.2− | 2004 02 26 | 704 | 0.1− | 0.9+ |
| 2001 03 04 | 704 | 0.1+ | 0.2+ | 2003 12 24 | 704 | 0.5+ | 0.1− | 2005 06 11 | 691 | 0.1+ | 0.1+ |
| 2001 03 21 | 699 | 0.5− | 1.8+ | 2003 12 24 | 704 | 0.5− | 0.4+ | 2005 06 11 | 691 | 0.3+ | 0.1+ |
| 2001 03 21 | 699 | 0.6+ | 1.0+ | 2003 12 25 | 185 | (3.1− | 0.4−) | 2005 06 11 | 691 | 0.0 | 0.2+ |
| 2001 03 21 | 699 | 0.8+ | 0.9+ | 2003 12 25 | 185 | 1.5− | 1.9− | 2006 09 01 | F84 | 1.7− | 0.9− |
| 2001 03 21 | 699 | 0.5+ | 0.5− | 2003 12 25 | 185 | 0.3− | 0.4− | 2006 09 01 | F84 | 0.3+ | 1.2+ |
| 2003 12 01 | 704 | 0.0 | 1.1+ | 2003 12 25 | 185 | 1.4− | 0.3+ | 2006 09 01 | F84 | 0.4− | 0.5+ |
| 2003 12 01 | 704 | 0.2+ | 0.9+ | 2003 12 25 | 185 | 0.5− | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 2003 12 01 | 704 | 0.4+ | 0.3+ | 2003 12 25 | 185 | 1.1− | 0.8+ | 2006 09 14 | 703 | 0.4+ | 0.1− |
| 2003 12 01 | 704 | 0.4− | 0.1− | 2003 12 25 | 185 | (2.3− | 1.2−) | 2006 09 14 | 703 | 1.0− | 0.2+ |
| 2003 12 01 | 704 | 0.7+ | 0.3+ | 2003 12 25 | 185 | 2.0− | 0.6− | 2006 09 14 | 703 | 0.3+ | 1.7+ |
| 2003 12 19 | 704 | 0.1+ | 0.9− | 2003 12 25 | 185 | 1.1− | 0.1− | | | | |

**(143937)∗ 2003 YK$_{106}$ = 2005 JL$_{139}$**

Discovered 2003 Dec. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86205)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 140.03378 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26250692 | $\omega$ | 311.30464 | −0.66083264 | +0.74495555 | |
| $a$ | 2.4156956 | $\Omega$ | 277.08997 | −0.65817147 | −0.63368679 | |
| $e$ | 0.0807613 | $i$ | 5.28071 | −0.36070838 | −0.20852407 | |
| $P$ | 3.75 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.3+ | 0.5− | 2003 12 22 | 704 | 0.0 | 0.3+ | 2005 05 19 | E12 | 0.1+ | 0.6+ |
| 1999 12 13 | 704 | 0.7+ | 1.7− | 2003 12 22 | 704 | 0.7− | 0.1+ | 2005 05 21 | 644 | 0.3+ | 0.6+ |
| 1999 12 13 | 704 | 0.4− | 0.5+ | 2003 12 22 | 704 | 0.0 | 1.2+ | 2005 05 21 | 644 | 0.0 | 0.5+ |
| 2001 04 15 | 608 | 0.9+ | 0.2+ | 2003 12 22 | 704 | 0.7+ | 1.3+ | 2005 05 21 | 644 | 0.1− | 0.4+ |
| 2001 04 15 | 608 | 0.7+ | 0.4+ | 2003 12 22 | 704 | 0.6+ | 1.4+ | 2006 09 16 | 703 | (1.1− | 1.8−) |
| 2001 04 15 | 608 | 0.7+ | 0.3+ | 2003 12 22 | 704 | 0.1− | 0.7+ | 2006 09 16 | 703 | 1.1+ | 0.5+ |
| 2001 04 24 | 608 | 1.2− | 0.0 | 2003 12 22 | 704 | 0.7− | 0.8+ | 2006 09 16 | 703 | 0.2+ | 1.4+ |
| 2001 04 24 | 608 | 0.9+ | 0.8+ | 2003 12 23 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 703 | 0.1− | 0.4+ |
| 2001 04 24 | 608 | 0.7+ | 0.3+ | 2003 12 23 | 704 | 0.2− | 0.5+ | 2006 09 28 | 291 | 0.1+ | 0.0 |
| 2002 08 19 | 049 | 1.4− | 0.8+ | 2003 12 23 | 704 | 0.4− | 0.6+ | 2006 09 28 | 291 | 0.0 | 0.1− |
| 2002 08 20 | 049 | 1.2− | 0.1− | 2004 01 12 | 926 | 0.2+ | 0.6+ | 2006 09 28 | 291 | 0.0 | 0.1− |
| 2002 08 20 | 049 | 0.9− | 0.1− | 2004 01 12 | 926 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.0 |
| 2002 08 28 | 644 | 0.2+ | 0.5+ | 2004 01 12 | 926 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.5+ | 0.7+ |
| 2002 08 28 | 644 | 0.0 | 0.8+ | 2005 05 13 | E12 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.5+ |
| 2002 08 28 | 644 | 0.4+ | 0.3+ | 2005 05 13 | E12 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 2002 09 06 | 704 | 0.3+ | 0.6+ | 2005 05 13 | E12 | 0.7− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.5− |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2005 05 13 | E12 | 0.4− | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2002 09 06 | 704 | (1.5+ | 1.6+) | 2005 05 18 | E12 | 0.6− | 0.6− | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2005 05 18 | E12 | 0.4− | 0.9+ | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.0 | 0.5+ | 2005 05 18 | E12 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2005 05 18 | E12 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2005 05 19 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 2002 10 05 | 644 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2002 10 05 | 644 | 0.0 | 0.9+ | 2005 05 19 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 10 05 | 644 | 0.3− | 0.7+ | 2005 05 19 | E12 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 11 08 | 645 | 0.1− | 0.1− | 2005 05 19 | E12 | 0.6+ | 0.2+ | | | | |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2005 05 19 | E12 | 0.1+ | 0.2− | | | | |

**(143938)∗ 2003 YV$_{106}$**

Discovered 2003 Dec. 22 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 295.79418 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.29347086 | $\omega$ | 197.67049 | −0.38382045 | −0.91649003 | |
| $a$ | 2.2426391 | $\Omega$ | 275.02080 | +0.86029711 | −0.31051730 | |
| $e$ | 0.1015410 | $i$ | 6.50284 | +0.33551565 | −0.25224004 | |
| $P$ | 3.36 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.2+ | 0.2− | 2004 01 24 | 704 | (1.9+ | 0.8+) | 2006 11 02 | 703 | 0.3+ | 0.9− |
| 1999 09 08 | 704 | 0.2− | 0.5− | 2004 01 24 | 608 | 1.0+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 1999 09 08 | 704 | 1.3+ | 0.7− | 2004 01 24 | 608 | 0.8+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1999 09 08 | 704 | 0.9− | 0.3− | 2004 01 24 | 608 | 0.7+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1999 10 10 | 704 | 1.0+ | 0.8− | 2004 01 29 | 704 | 1.4− | 0.4− | 2006 11 11 | 644 | 0.1− | 0.2− |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2004 01 29 | 704 | 0.4− | 0.0 | 2006 11 11 | 644 | 0.4+ | 0.5+ |
| 1999 10 10 | 704 | 0.5− | 0.3− | 2004 01 29 | 704 | (2.0− | 0.3+) | 2006 11 11 | 644 | 0.0 | 0.3+ |
| 2002 08 16 | 644 | 0.1− | 0.3+ | 2004 01 29 | 704 | 0.5− | 0.8+ | 2006 11 14 | 703 | 0.2+ | 0.4+ |
| 2002 08 16 | 644 | 0.2− | 0.3+ | 2004 02 17 | 704 | 0.6+ | 0.1− | 2006 11 14 | 703 | 0.9+ | 0.2− |
| 2002 08 16 | 644 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.2+ | 0.7− | 2006 11 14 | 703 | 0.5− | 0.7+ |
| 2003 12 01 | 704 | 1.1+ | 0.4− | 2004 02 17 | 704 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.2− |
| 2003 12 01 | 704 | 0.0 | 0.4+ | 2004 02 17 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 1.1+ | 0.8− |
| 2003 12 01 | 704 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.7− | 1.3+ |
| 2003 12 01 | 704 | 0.6+ | 0.2+ | 2004 02 23 | 704 | 1.2− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 2003 12 01 | 704 | 0.9− | 0.7+ | 2004 02 23 | 704 | 0.7− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.7+ |
| 2003 12 18 | 644 | 0.3+ | 0.3+ | 2004 02 23 | 704 | 0.6− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2003 12 18 | 644 | 0.2+ | 0.7+ | 2004 02 23 | 704 | 1.1− | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.4− |
| 2003 12 18 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 703 | (1.9+ | 0.4+) | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 2003 12 22 | 703 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2003 12 22 | 703 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.7− | 2006 11 17 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 703 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.0 | |
| 2003 12 22 | 703 | 0.5+ | 0.3+ | 2006 10 19 | 703 | (1.7− | 0.5−) | 2006 11 19 | 691 | 0.1+ | 0.0 | |
| 2003 12 23 | 704 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.2− | 0.7− | 2006 11 19 | 691 | 0.0 | 0.1− | |
| 2003 12 23 | 704 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.6− | 0.5− | 2006 11 19 | 691 | 0.0 | 0.1− | |
| 2003 12 23 | 704 | 0.6− | 0.9− | 2006 10 19 | 703 | 0.6− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.1+ | |
| 2003 12 23 | 704 | 0.9− | 0.9− | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.3+ | |
| 2003 12 23 | 704 | 0.9− | 1.3− | 2006 10 22 | 644 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.2− | |
| 2004 01 21 | 704 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.1+ | |
| 2004 01 21 | 704 | 0.3+ | 0.3− | 2006 10 28 | D35 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ | |
| 2004 01 21 | 704 | 0.3− | 0.1− | 2006 10 28 | D35 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.2+ | |
| 2004 01 24 | 704 | (1.9+ | 0.9+) | 2006 10 28 | D35 | 0.2− | 0.2+ | 2006 11 22 | 704 | 1.0− | 0.1− | |
| 2004 01 24 | 704 | (1.6+ | 0.3+) | 2006 11 02 | 703 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.5− | 0.2− | |
| 2004 01 24 | 704 | 1.3+ | 0.1+ | 2006 11 02 | 703 | 0.5+ | 0.7+ | 2006 11 22 | 704 | 0.4− | 0.1+ | |
| 2004 01 24 | 704 | (1.7+ | 0.6+) | 2006 11 02 | 703 | 0.6− | 0.5− | 2006 11 22 | 704 | 0.0 | 0.2+ | |

**(143939)∗ 2003 YC$_{107}$ = 1997 EQ$_{29}$**

Discovered 2003 Dec. 22 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65532)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.29805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26636406 | $\omega$ | 280.82363 | | +0.03869785 | −0.99921508 | |
| $a$ | 2.3923183 | $\Omega$ | 166.94965 | | +0.93082297 | +0.03296464 | |
| $e$ | 0.1382456 | $i$ | 2.14908 | | +0.36341585 | +0.02196721 | |
| $P$ | 3.70 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.2+ | 0.2+ | 2003 12 22 | 691 | 0.2+ | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | |
| 1995 10 01 | 691 | 0.1+ | 0.1− | 2003 12 22 | 691 | 0.1− | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.3+ | |
| 1995 10 01 | 691 | 0.1+ | 0.3− | 2003 12 22 | 691 | 0.0 | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.0 | |
| 1997 03 04 | 691 | 0.2− | 0.1+ | 2003 12 23 | 704 | 0.6+ | 1.0+ | 2005 02 16 | 809 | 0.1− | 0.3+ | |
| 1997 03 04 | 691 | 0.0 | 0.1− | 2003 12 23 | 704 | (0.3+ | 2.1+) | 2005 02 16 | 809 | 0.2− | 0.3+ | |
| 1997 03 04 | 691 | 0.1− | 0.3− | 2003 12 23 | 704 | 0.3− | 1.5+ | 2005 02 16 | 809 | 0.2− | 0.2+ | |
| 1997 03 14 | 691 | 0.3− | 0.4− | 2003 12 29 | 699 | 0.6+ | 0.5− | 2005 02 18 | 809 | 0.4− | 0.1− | |
| 1997 03 14 | 691 | 0.2− | 0.7− | 2003 12 29 | 699 | 0.2− | 0.8+ | 2005 02 18 | 809 | 0.2− | 0.2+ | |
| 1997 03 14 | 691 | 0.3− | 0.8− | 2003 12 29 | 699 | 0.0 | 0.0 | 2005 02 18 | 809 | 0.2− | 0.1− | |
| 1999 11 05 | 691 | 0.2− | 0.1− | 2003 12 29 | 699 | 0.0 | 0.6+ | 2006 09 22 | D35 | 0.2− | 0.6+ | |
| 1999 11 05 | 691 | 0.2− | 0.2− | 2004 01 15 | 691 | 0.5− | 0.4+ | 2006 09 22 | D35 | 0.2+ | 0.4+ | |
| 1999 11 05 | 691 | 0.2+ | 0.1− | 2004 01 15 | 691 | 0.3− | 0.3+ | 2006 09 22 | D35 | 0.7− | 0.3+ | |
| 1999 11 28 | 691 | 0.2+ | 0.2− | 2004 01 15 | 691 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.0 | |
| 1999 11 28 | 691 | 0.0 | 0.3− | 2004 01 22 | 704 | 1.5+ | 1.0− | 2006 09 25 | G96 | 0.1− | 0.1− | |
| 1999 11 28 | 691 | 0.2− | 0.4− | 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.2− | |
| 2001 04 16 | 691 | 0.4+ | 0.8+ | 2004 01 22 | 704 | 1.0+ | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.1+ | |
| 2001 04 16 | 691 | 0.2+ | 0.2+ | 2004 01 22 | 704 | 0.7+ | 1.4− | | | | | |
| 2001 04 16 | 691 | 0.1+ | 0.2+ | 2004 01 22 | 704 | 0.4+ | 0.9− | | | | | |

**(143940)∗ 2003 YW$_{113}$**

Discovered 2003 Dec. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.37180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28982719 | $\omega$ | 346.12275 | | +0.61938483 | −0.78323002 | |
| $a$ | 2.2613961 | $\Omega$ | 65.57799 | | +0.72584093 | +0.54508816 | |
| $e$ | 0.0781097 | $i$ | 3.39835 | | +0.29919454 | +0.29904790 | |
| $P$ | 3.40 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 17 | 691 | 0.4+ | 0.4+ | 2003 12 29 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.4+ | |
| 1994 01 17 | 691 | 0.1+ | 0.3− | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.2+ | |
| 1994 01 17 | 691 | 0.2− | 0.1+ | 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.6+ | |
| 2001 02 01 | 704 | 0.3− | 0.5+ | 2005 04 16 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.3− | 1.3+ | |
| 2001 02 01 | 704 | 0.3− | 0.5+ | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | (2.1− | 0.3−) | |
| 2001 02 01 | 704 | (1.3− | 1.9+) | 2005 05 03 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.5+ | |
| 2003 08 05 | 291 | 1.2− | 0.4+ | 2005 05 03 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 704 | (0.3+ | 1.8+) | |
| 2003 08 05 | 291 | 1.4− | 0.7+ | 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.9+ | |
| 2003 08 05 | 291 | 0.5− | 0.4+ | 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.8+ | 0.3+ | |
| 2003 11 21 | 704 | 0.3− | 0.3+ | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.0 | |
| 2003 11 21 | 704 | 0.3+ | 0.3− | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.0 | |
| 2003 11 21 | 704 | 0.5+ | 0.4− | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.8+ | |
| 2003 11 21 | 704 | 0.0 | 0.7+ | 2005 05 10 | G96 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.1− | |
| 2003 11 29 | 691 | 0.0 | 0.1+ | 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3− | |
| 2003 11 29 | 691 | 0.0 | 0.1+ | 2005 05 10 | G96 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.3+ | |
| 2003 11 29 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | (2.3− | 0.4−) | 2006 10 16 | 703 | 0.5+ | 0.5− | |
| 2003 12 18 | 704 | 0.9+ | 0.2+ | 2006 09 18 | 703 | (0.8− | 2.4−) | 2006 10 16 | 703 | 0.9+ | 0.0 | |
| 2003 12 18 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.2− | 1.0− | 2006 10 22 | 644 | 0.1+ | 0.2+ | |
| 2003 12 18 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 1.3− | 1.4− | 2006 10 22 | 644 | 0.0 | 0.7+ | |
| 2003 12 18 | 704 | (0.2+ | 2.4−) | 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.3+ | |
| 2003 12 18 | 704 | 0.5− | 0.4− | 2006 09 18 | 699 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | |
| 2003 12 24 | 704 | 0.2+ | 1.3+ | 2006 09 18 | 699 | 0.9+ | 0.9+ | 2006 10 23 | 644 | 0.3− | 0.2+ | |
| 2003 12 24 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1+ | |
| 2003 12 24 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2− | |
| 2003 12 27 | 704 | 1.2+ | 0.1− | 2006 09 19 | 703 | 1.1− | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.2− | |
| 2003 12 27 | 704 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.1− | 0.0 | |
| 2003 12 27 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 704 | 0.7+ | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.0 | |
| 2003 12 27 | 704 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.3+ | | | | | |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.4− | 1.0+ | | | | | |

**(143941)∗ 2003 YE$_{115}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.12624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28016868 | $\omega$ | 348.24111 | | +0.62320079 | −0.78058059 | |
| $a$ | 2.3130747 | $\Omega$ | 63.18926 | | +0.72182684 | +0.55043635 | |
| $e$ | 0.1588352 | $i$ | 3.09011 | | +0.30097639 | +0.29616512 | |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 09 | 691 | 0.2+ | 0.1+ | 2003 12 27 | 704 | 1.3− | 0.2+ | 2006 09 14 | 703 | 1.1+ | 0.4+ | |
| 1996 12 09 | 691 | 0.2+ | 0.4− | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.2+ | |
| 1996 12 09 | 691 | 0.0 | 0.3− | 2003 12 28 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.8+ | 0.2− | |
| 1996 12 14 | 691 | 0.2− | 0.2− | 2003 12 28 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 1.2− | |
| 1996 12 14 | 691 | 0.2− | 0.4− | 2004 01 22 | 704 | (1.7− | 0.5+) | 2006 09 19 | 699 | 0.5− | 0.3+ | |
| 1996 12 14 | 691 | 0.3− | 0.4− | 2004 01 22 | 704 | 1.2+ | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.3− | |
| 2001 03 14 | 691 | 0.0 | 0.5+ | 2004 01 22 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 1.5+ | |
| 2001 03 14 | 691 | 0.2+ | 0.6+ | 2004 01 22 | 704 | 0.5+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.5+ | |
| 2001 03 14 | 691 | 0.2+ | 0.1− | 2004 01 22 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.1+ | |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 08 28 | 699 | (1.5+ | 2.6+) | 2006 09 25 | 699 | 1.3+ | 0.8+ | |
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2006 08 28 | 699 | (1.6+ | 1.9+) | 2006 09 25 | 699 | 0.5+ | 1.4− | |
| 2003 12 17 | 691 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.3+ | 1.1− | |
| 2003 12 17 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 699 | (0.1− | 2.1+) | 2006 10 16 | 703 | 0.6− | 0.4+ | |
| 2003 12 17 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.4+ | |
| 2003 12 27 | 704 | 1.0− | 1.4+ | 2006 08 29 | 691 | 0.4− | 0.5+ | 2006 10 16 | 703 | 1.8− | 0.9+ | |
| 2003 12 27 | 704 | (1.8− | 0.9−) | 2006 08 29 | 691 | 0.1− | 0.7+ | | | | | |
| 2003 12 27 | 704 | 1.1− | 0.7+ | 2006 09 14 | 703 | 0.1+ | 0.4+ | | | | | |

**(143942)∗ 2003 YF$_{115}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.07279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28715353 | $\omega$ | 328.45683 | | +0.99673457 | −0.02789000 | |
| $a$ | 2.2754115 | $\Omega$ | 33.39740 | | +0.06214991 | +0.86411597 | |
| $e$ | 0.1587417 | $i$ | 7.91292 | | −0.05155184 | +0.50251940 | |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.4− | 0.2− | 2006 09 16 | 704 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.2− | |
| 1999 09 09 | 704 | 0.7+ | 1.0− | 2006 09 16 | 704 | 1.0− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.3+ | |
| 1999 09 09 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 1.0− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.2+ | |
| 1999 09 09 | 704 | 1.2+ | 1.3+ | 2006 09 16 | 699 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.5− | 0.2− | 2006 09 16 | 699 | 0.7− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 1999 10 16 | 704 | 0.8− | 0.5+ | 2006 09 16 | 699 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 1999 10 16 | 704 | 1.4− | 0.9+ | 2006 09 16 | 699 | 0.8− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2003 12 03 | 704 | 0.5+ | 1.0+ | 2006 09 18 | 699 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.4− | | |
| 2003 12 03 | 704 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.9+ | 0.9+ | 2006 10 21 | 703 | 0.2− | 0.1− | | |
| 2003 12 03 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.2− | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.1− | | |
| 2003 12 17 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 699 | 0.6+ | 1.1+ | 2006 10 21 | 703 | 0.4− | 0.7− | | |
| 2003 12 17 | 704 | 0.7− | 0.6+ | 2006 09 22 | 704 | 0.2+ | 0.4− | 2006 10 23 | 704 | 0.2+ | 0.7+ | | |
| 2003 12 17 | 704 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.1+ | 0.0 | 2006 10 23 | 704 | 0.2+ | 0.4+ | | |
| 2003 12 17 | 704 | 0.4− | 0.5+ | 2006 09 22 | 704 | 0.1− | 0.8− | 2006 10 23 | 704 | 0.5− | 0.0 | | |
| 2003 12 27 | 704 | (0.0 | 1.8+) | 2006 09 22 | 704 | 0.2− | 0.4− | 2006 10 23 | 704 | 0.6+ | 0.0 | | |
| 2003 12 27 | 704 | (1.4− | 3.5+) | 2006 09 22 | 704 | 0.8− | 0.8− | 2006 10 23 | 704 | 0.7+ | 0.9+ | | |
| 2003 12 27 | 704 | (0.1+ | 2.3+) | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 28 | 704 | 0.1− | 0.3+ | | |
| 2003 12 27 | 704 | (0.3− | 1.9+) | 2006 09 26 | 704 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.4− | 0.0 | | |
| 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.0 | 2006 10 28 | 704 | 0.5+ | 0.1+ | | |
| 2003 12 28 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.6− | 2006 10 28 | 704 | 0.0 | 0.4+ | | |
| 2003 12 28 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.6− | 0.3− | 2006 10 28 | 704 | 0.8− | 1.1+ | | |
| 2003 12 29 | 704 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.3− | | |
| 2003 12 29 | 704 | 0.5− | 0.6− | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2003 12 29 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.9− | 0.5− | 2006 11 11 | 703 | 0.2− | 0.8− | | |
| 2003 12 29 | 704 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2003 12 29 | 704 | 0.3+ | 0.5− | 2006 09 30 | 703 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.4− | | |
| 2005 03 14 | G96 | 0.6− | 0.1− | 2006 09 30 | 703 | (3.2− | 1.2−) | 2006 11 11 | 703 | 0.2+ | 0.4− | | |
| 2005 03 14 | G96 | 0.6− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 1.4− | 2006 11 11 | 703 | 0.4+ | 1.1− | | |
| 2005 03 14 | G96 | 0.5− | 0.2+ | 2006 10 01 | 704 | 0.6+ | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2005 04 02 | G96 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.7+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.4+ | 2006 11 13 | G96 | 0.3− | 0.2− | | |
| 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.3− | | |
| 2005 04 02 | G96 | 0.5+ | 0.1+ | 2006 10 01 | 704 | (0.8− | 1.6+) | 2006 11 18 | 704 | 0.5− | 1.6+ | | |
| 2005 04 17 | 691 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2005 04 17 | 691 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 2005 04 17 | 691 | 0.6+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3+ | 1.0+ | | |
| 2005 05 08 | G96 | 0.4− | 0.3+ | 2006 10 15 | 703 | 0.9− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.6+ | | |
| 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.9+ | 0.9+ | | |
| 2005 05 08 | G96 | 0.3− | 0.4+ | 2006 10 15 | 703 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.1− | | |
| 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.8+ | | |
| 2005 05 12 | G96 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2+ | 1.0+ | | |
| 2005 05 12 | G96 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.1− | | |
| 2005 05 12 | G96 | 0.4− | 0.1− | 2006 10 16 | 691 | (2.2+ | 0.5+) | 2006 11 22 | G96 | 0.1− | 0.4− | | |
| 2005 05 12 | G96 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.0 | 0.3− | | |
| 2006 09 16 | 704 | 0.5− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.3− | 0.1− | | |
| 2006 09 16 | 704 | 0.8− | 0.7+ | 2006 10 17 | G96 | 0.4+ | 0.1− | | | | | | |

**(143943)∗ 2003 YH$_{115}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.99154 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24171452 | $\omega$ | 151.33028 | | −0.99332581 | −0.10586677 | |
| $a$ | 2.5523147 | $\Omega$ | 22.73021 | | +0.06946787 | −0.86597304 | |
| $e$ | 0.2343231 | $i$ | 6.80483 | | +0.09207630 | −0.48875650 | |
| $P$ | 4.08 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 691 | 0.5− | 0.5+ | 2003 12 14 | 691 | 0.1− | 0.3− | 2004 01 19 | 704 | 1.5+ | 0.7+ | | |
| 1998 09 26 | 691 | 0.7− | 0.3+ | 2003 12 14 | 691 | 0.0 | 0.2− | 2004 01 19 | 704 | 1.3+ | 0.1− | | |
| 1998 09 26 | 691 | 0.4− | 0.2+ | 2003 12 27 | 704 | 1.1− | 0.2+ | 2004 01 19 | 704 | (2.0+ | 0.3−) | | |
| 2000 01 02 | 704 | 1.5+ | 0.5− | 2003 12 27 | 704 | 1.0− | 0.4− | 2004 01 19 | 704 | (1.6+ | 1.0−) | | |
| 2000 01 02 | 704 | 0.1+ | 0.2+ | 2003 12 27 | 704 | 0.5− | 0.7− | 2004 02 02 | 704 | 0.1+ | 1.0+ | | |
| 2000 01 02 | 704 | 0.1+ | 1.1− | 2003 12 27 | 704 | (2.1− | 0.1−) | 2004 02 02 | 704 | 0.9+ | 0.4+ | | |
| 2000 01 02 | 704 | 0.6+ | 0.2+ | 2003 12 27 | 704 | 0.8− | 0.2+ | 2004 02 02 | 704 | 0.3− | 0.5− | | |
| 2000 01 29 | 704 | (0.7− | 8.0−) | 2003 12 28 | 691 | 0.4− | 0.3+ | 2004 02 02 | 704 | 0.6+ | 0.6− | | |
| 2000 01 29 | 704 | 0.2− | 0.9− | 2003 12 28 | 691 | 0.0 | 0.4+ | 2004 02 11 | 704 | 0.3+ | 0.0 | | |
| 2000 01 29 | 704 | 0.5− | 0.8+ | 2003 12 28 | 691 | 0.1+ | 0.4+ | 2004 02 11 | 704 | 0.6− | 0.5− | | |
| 2001 07 24 | 644 | 0.0 | 0.2− | 2003 12 29 | 704 | 1.0− | 1.3− | 2004 02 11 | 704 | 0.2− | 0.4+ | | |
| 2001 07 24 | 644 | 0.5− | 0.4− | 2003 12 29 | 704 | (3.8+ | 1.5+) | 2004 02 11 | 704 | 0.4+ | 0.2− | | |
| 2001 07 24 | 644 | 0.0 | 0.1+ | 2003 12 29 | 704 | (1.7− | 2.3−) | 2004 02 11 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2003 12 29 | 704 | (3.1+ | 1.8+) | 2006 10 18 | 291 | 0.0 | 0.0 | | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2003 12 29 | 704 | (1.6− | 2.0−) | 2006 10 18 | 291 | 0.3+ | 0.1+ | | |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2003 12 29 | 704 | (3.6+ | 1.4+) | 2006 10 18 | 291 | 0.1+ | 0.1+ | | |
| 2002 10 31 | 645 | 0.0 | 0.2− | 2003 12 29 | 704 | 0.1− | 1.2+ | 2006 10 21 | G96 | 0.3− | 0.3− | | |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2004 01 14 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 1.4− | 0.4+ | | |
| 2002 11 08 | 645 | 0.1+ | 0.0 | 2004 01 14 | 644 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.2− | 0.4+ | | |
| 2003 12 14 | 691 | 0.2− | 0.2− | 2004 01 14 | 644 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.3− | 0.2− | | |

**(143944)∗ 2003 YP$_{115}$ = 2001 FZ$_{188}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57546)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.06064 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28502127 | $\omega$ | 349.97669 | | +0.64173808 | −0.75050803 | |
| $a$ | 2.2867457 | $\Omega$ | 59.91275 | | +0.71566418 | +0.51205324 | |
| $e$ | 0.0249624 | $i$ | 10.50991 | | +0.27567557 | +0.41777886 | |
| $P$ | 3.46 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 704 | 0.8+ | 0.6+ | 2004 01 16 | 644 | 0.1− | 0.2+ | 2006 09 29 | 699 | 1.2− | 0.4+ | | |
| 2001 03 16 | 704 | 1.0+ | 0.9+ | 2004 01 19 | 704 | 0.9− | 0.5− | 2006 09 29 | 699 | 0.6− | 1.2+ | | |
| 2001 03 16 | 704 | 0.1− | 0.0 | 2004 01 19 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 699 | 1.0− | 1.4+ | | |
| 2001 03 16 | 704 | 0.0 | 0.8+ | 2004 01 19 | 704 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.5+ | | |
| 2001 03 16 | 704 | 0.5+ | 0.8+ | 2004 01 19 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.3+ | | |
| 2001 03 16 | 704 | 0.1− | 0.4+ | 2004 01 19 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.9+ | | |
| 2001 03 16 | 704 | 0.1− | 0.2+ | 2005 05 11 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.2+ | | |
| 2001 03 23 | 608 | 0.1− | 0.4+ | 2005 05 11 | 644 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.9− | 0.6+ | | |
| 2001 03 23 | 608 | 0.1+ | 0.1+ | 2005 05 11 | 644 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.2− | | |
| 2001 03 23 | 608 | 0.0 | 0.7+ | 2005 05 27 | 599 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 1.2+ | 1.1+ | | |
| 2003 11 20 | 704 | 0.1+ | 0.3+ | 2005 05 27 | 599 | (1.6+ | 0.8+) | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2003 11 20 | 704 | 1.0− | 0.2− | 2005 05 27 | 599 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.5− | 0.3+ | 2005 05 28 | 599 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2003 12 18 | 691 | 0.0 | 0.1− | 2005 05 28 | 599 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.7+ | | |
| 2003 12 18 | 691 | 0.2− | 0.1− | 2005 05 28 | 599 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.7− | | |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2005 05 28 | 599 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.1− | | |
| 2003 12 27 | 704 | 0.7+ | 0.1+ | 2005 05 29 | E12 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.5+ | | |
| 2003 12 27 | 704 | 0.7+ | 0.3+ | 2005 05 29 | E12 | 0.1+ | 0.7+ | 2006 10 22 | 703 | 0.6− | 0.3− | | |
| 2003 12 27 | 704 | 0.8+ | 0.1+ | 2005 05 29 | E12 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 0.5− | 0.4+ | | |
| 2003 12 27 | 704 | 0.2+ | 0.1+ | 2005 05 29 | E12 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.2− | | |
| 2003 12 28 | 691 | 0.0 | 0.1− | 2005 06 26 | 644 | 0.6− | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.4+ | | |
| 2003 12 28 | 691 | 0.1+ | 0.1− | 2005 06 26 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2003 12 28 | 691 | 0.0 | 0.0 | 2005 06 26 | 644 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2003 12 29 | 704 | 0.1+ | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2003 12 29 | 704 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.3− | | |
| 2003 12 29 | 704 | 0.3− | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2003 12 29 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.2− | | |
| 2003 12 29 | 704 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.3− | | |
| 2004 01 16 | 644 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.8+ | | | | | | |
| 2004 01 16 | 644 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.4+ | | | | | | |

**(143945)∗ 2003 YZ$_{115}$ = 1999 XC$_{241}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57547)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.38493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26222958 | $\omega$ | 134.89076 | | −0.01553936 | −0.99805472 | |
| $a$ | 2.4173986 | $\Omega$ | 315.89311 | | +0.89119068 | +0.01355409 | |
| $e$ | 0.1736713 | $i$ | 4.97654 | | +0.45336266 | −0.06085285 | |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 691 | 0.1− | 0.2− | 2003 12 18 | 691 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.2+ | 0.1+ |
| 1995 08 29 | 691 | 0.2+ | 0.1− | 2003 12 18 | 691 | 0.1+ | 0.1− | 2004 01 22 | 704 | 0.2+ | 0.1+ |
| 1995 08 29 | 691 | 0.1+ | 0.2− | 2003 12 23 | 704 | 0.3+ | 0.2− | 2004 01 22 | 704 | 0.2+ | 0.4− |
| 1999 10 13 | 704 | 0.2− | 0.8+ | 2003 12 23 | 704 | 0.5+ | 1.3+ | 2004 01 31 | 691 | 0.0 | 0.2+ |
| 1999 10 13 | 704 | 0.8− | 0.2− | 2003 12 23 | 704 | 0.1− | 0.2+ | 2004 01 31 | 691 | 0.3+ | 0.1+ |
| 1999 10 13 | 704 | 0.1+ | 0.8− | 2003 12 23 | 704 | 0.1+ | 0.6+ | 2004 01 31 | 691 | 0.1+ | 0.2+ |
| 1999 11 13 | 703 | 0.6− | 0.1+ | 2003 12 23 | 704 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.3− |
| 1999 11 13 | 703 | 0.4+ | 0.1+ | 2003 12 27 | 704 | 0.2− | 0.9+ | 2004 02 26 | 704 | 0.3− | 0.5+ |
| 1999 11 13 | 703 | 0.5+ | 0.4+ | 2003 12 27 | 704 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.1+ | 0.1− |
| 1999 11 13 | 703 | 0.5− | 0.3− | 2003 12 27 | 704 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.7+ |
| 1999 12 10 | 704 | 0.5+ | 0.6− | 2003 12 27 | 704 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.0 | 0.0 |
| 1999 12 10 | 704 | 0.2+ | 0.2+ | 2003 12 27 | 704 | 0.0 | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.2+ |
| 1999 12 10 | 704 | 0.2+ | 0.3− | 2003 12 28 | 704 | 0.2+ | 0.3− | 2006 08 13 | 644 | 0.2− | 0.3+ |
| 1999 12 13 | 703 | 0.3− | 0.3+ | 2003 12 28 | 704 | 0.3+ | 0.1− | 2006 08 13 | 644 | 0.0 | 0.0 |
| 1999 12 13 | 703 | 1.0+ | 0.1− | 2003 12 28 | 704 | 0.0 | 0.2− | 2006 08 15 | 644 | 0.1+ | 0.5+ |
| 1999 12 13 | 703 | 1.4+ | 0.0 | 2003 12 28 | 704 | 0.2+ | 0.3− | 2006 08 15 | 644 | 0.2− | 0.2+ |
| 1999 12 13 | 703 | 1.0− | 1.5− | 2003 12 28 | 704 | 0.4− | 0.7− | 2006 08 15 | 644 | 0.5− | 0.0 |
| 2003 12 04 | 704 | 0.4+ | 0.1+ | 2003 12 28 | 704 | 0.9− | 1.4− | 2006 08 19 | 691 | 0.1− | 0.5+ |
| 2003 12 04 | 704 | 0.5− | 0.5+ | 2003 12 28 | 704 | 0.0 | 0.7− | 2006 08 19 | 691 | 0.1+ | 0.5+ |
| 2003 12 04 | 704 | 0.0 | 0.6+ | 2003 12 28 | 704 | 0.1− | 0.5− | 2006 08 19 | 691 | 0.1− | 0.4+ |
| 2003 12 18 | 704 | 1.5+ | 0.5+ | 2003 12 28 | 704 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.1− |
| 2003 12 18 | 704 | 0.3− | 0.3− | 2003 12 28 | 704 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.8− | 0.9− |
| 2003 12 18 | 704 | 0.7+ | 0.2− | 2003 12 28 | 691 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2003 12 18 | 691 | 0.0 | 0.2− | 2003 12 28 | 691 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2003 12 18 | 704 | 0.1+ | 0.0 | 2003 12 28 | 691 | 0.7− | 0.4+ | | | | |
| 2003 12 18 | 704 | 0.8+ | 0.2− | 2004 01 22 | 704 | 0.3− | 0.1− | | | | |

**(143946)∗ 2003 YB$_{117}$ = 1999 TC$_{258}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69614)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.16878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28227695 | $\omega$ | 21.72797 | | +0.30336145 | −0.94818856 | |
| $a$ | 2.3015431 | $\Omega$ | 50.74093 | | +0.85531290 | +0.22729623 | |
| $e$ | 0.0822644 | $i$ | 7.00237 | | +0.42001389 | +0.22197946 | |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2+ | 0.3− | 2003 12 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 1999 10 09 | 704 | 0.4− | 0.0 | 2003 12 28 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.3− | 0.2− |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2003 12 29 | 704 | 1.0+ | 1.2+ | 2006 10 21 | 703 | 0.8− | 0.3+ |
| 1999 10 09 | 704 | 0.8− | 0.7+ | 2003 12 29 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.4+ | 0.7− | 2003 12 29 | 704 | 0.1− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 10 15 | 704 | 0.5− | 1.0− | 2003 12 29 | 704 | (1.4− | 2.0−) | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | 0.5− | 0.3+ | 2003 12 29 | 704 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 1999 10 15 | 704 | 0.6+ | 0.9+ | 2006 09 16 | 699 | 0.6+ | 0.8+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 1999 10 15 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 1999 12 09 | 691 | 0.3− | 0.3− | 2006 09 16 | 699 | 0.1+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 1999 12 09 | 691 | 0.3− | 0.5− | 2006 09 16 | 699 | 0.8+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1999 12 09 | 691 | 0.8+ | 0.7+ | 2006 09 26 | 704 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | (0.4+ | 1.6+) | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1+ | 1.2+ | 2006 11 11 | 703 | 0.2+ | 1.1+ |
| 2001 03 26 | 704 | 0.5+ | 1.3+ | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.9− |
| 2001 03 26 | 704 | 0.2+ | 1.3+ | 2006 09 30 | 703 | 0.9− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2001 03 26 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.4− | 2006 11 11 | 703 | 0.9− | 0.6+ |
| 2001 03 26 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.8− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.8− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 10 01 | 704 | 1.1− | 1.2− | 2006 11 17 | 703 | 0.6− | 0.8− |
| 2003 11 20 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.9− |
| 2003 11 20 | 704 | 0.5+ | 0.6+ | 2006 10 01 | 704 | 1.1− | 1.0− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2003 11 20 | 704 | 0.5+ | 0.7− | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2003 12 18 | 704 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2003 12 18 | 704 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2003 12 18 | 704 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2003 12 18 | 704 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2003 12 18 | 704 | 0.1− | 0.7+ | 2006 10 10 | 644 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2003 12 27 | 704 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 1.3− | 0.4+ |
| 2003 12 27 | 704 | 0.3+ | 0.1− | 2006 10 15 | 703 | 0.4+ | 0.7+ | 2006 11 21 | 704 | 0.8− | 0.6+ |
| 2003 12 27 | 704 | 0.3− | 1.2− | 2006 10 15 | 703 | 0.6+ | 1.2+ | 2006 11 21 | 704 | 0.9+ | 0.4− |
| 2003 12 27 | 704 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2003 12 28 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.1− | | | | |

**(143947)∗ 2003 YQ$_{117}$**

Discovered 2003 Dec. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.28610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30591469 | $\omega$ | 135.57631 | | +0.96467407 | +0.14645534 | |
| $a$ | 2.1814026 | $\Omega$ | 217.67720 | | −0.17379523 | +0.97848318 | |
| $e$ | 0.6547367 | $i$ | 20.99467 | | +0.19798778 | +0.14533240 | |
| $P$ | 3.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 15 | 644 | 0.1+ | 1.0− | 2006 05 29 | J65 | 0.2− | 0.1+ | 2006 06 20 | 379 | 0.1− | 0.0 |
| 2002 04 08 | 644 | 0.6+ | 0.9− | 2006 05 29 | J65 | 0.1+ | 0.3− | 2006 06 20 | 379 | 0.1+ | 0.2− |
| 2002 04 08 | 644 | 0.3− | 0.6− | 2006 05 29 | J65 | 0.3+ | 0.0 | 2006 06 20 | 379 | 0.0 | 0.3− |
| 2002 04 08 | 644 | 0.8− | 0.5− | 2006 05 29 | J65 | 0.4+ | 0.0 | 2006 06 20 | 379 | 0.2+ | 0.3− |
| 2002 04 19 | 644 | 0.5+ | 0.4+ | 2006 05 29 | J65 | 0.0 | 0.1+ | 2006 06 20 | 379 | 0.3+ | 0.4− |
| 2002 04 19 | 644 | 0.0 | 0.4− | 2006 05 29 | J65 | 0.5+ | 0.1+ | 2006 06 20 | 379 | 0.4− | 0.2− |
| 2002 04 19 | 644 | 0.7+ | 0.9+ | 2006 05 29 | J65 | 0.1− | 0.1− | 2006 06 20 | 379 | 0.1− | 0.4− |
| 2003 12 26 | 608 | 0.4+ | 0.0 | 2006 05 30 | 704 | 0.3+ | 0.2+ | 2006 06 20 | 300 | 0.0 | 0.2+ |
| 2003 12 26 | 608 | 0.7+ | 0.3− | 2006 05 30 | 704 | 0.2− | 0.1+ | 2006 06 20 | 300 | 0.1− | 0.2− |
| 2003 12 26 | 608 | 0.4+ | 0.1− | 2006 05 30 | 704 | 0.2+ | 0.1+ | 2006 06 20 | 300 | 0.1− | 0.4+ |
| 2003 12 27 | 474 | 0.7− | 1.1+ | 2006 05 30 | 704 | 0.1+ | 0.1− | 2006 06 20 | 300 | 0.3− | 0.2+ |
| 2003 12 27 | 474 | 0.5− | 0.0 | 2006 05 30 | 704 | 0.2+ | 0.3+ | 2006 06 20 | 300 | 0.4− | 0.2+ |
| 2003 12 27 | 474 | 0.7+ | 0.2+ | 2006 05 30 | 379 | 0.1+ | 0.3− | 2006 06 20 | 300 | 0.2− | 0.2+ |
| 2003 12 27 | 474 | (0.4+ | 1.6−) | 2006 05 30 | 379 | 0.1− | 0.0 | 2006 06 20 | 300 | 0.2− | 0.1− |
| 2003 12 27 | 474 | (1.6+ | 0.3−) | 2006 05 30 | 379 | 0.1+ | 0.0 | 2006 06 20 | 300 | 0.4+ | 0.0 |
| 2003 12 27 | A50 | (2.2+ | 1.1+) | 2006 05 30 | 379 | 0.5+ | 0.1− | 2006 06 21 | 379 | 0.4− | 0.3− |
| 2003 12 28 | A50 | 1.0− | 0.4− | 2006 05 30 | 379 | 0.0 | 0.1+ | 2006 06 21 | 379 | 0.2− | 0.0 |
| 2003 12 28 | A50 | 0.1+ | 0.4+ | 2006 05 30 | 379 | 0.1+ | 0.2+ | 2006 06 21 | 379 | 0.6− | 0.4− |
| 2003 12 28 | A50 | (1.7+ | 0.0 ) | 2006 05 30 | 379 | 0.4+ | 0.2+ | 2006 06 21 | 379 | 0.2− | 0.4+ |
| 2003 12 29 | H36 | 1.4− | 0.7+ | 2006 05 30 | 379 | 0.0 | 0.2− | 2006 06 21 | 379 | 0.1+ | 0.3− |
| 2003 12 29 | H36 | 0.2− | 1.3+ | 2006 05 30 | 379 | 0.0 | 0.1− | 2006 06 21 | A53 | 0.2− | 0.2+ |
| 2003 12 29 | H36 | 0.4− | 0.6− | 2006 05 30 | 379 | 0.2+ | 0.0 | 2006 06 21 | A53 | 0.0 | 0.6+ |
| 2004 01 01 | 474 | 0.5+ | 0.1+ | 2006 05 30 | 300 | 0.3− | 1.0+ | 2006 06 21 | A53 | 0.0 | 0.5+ |
| 2004 01 01 | 474 | 0.2+ | 0.1− | 2006 05 30 | 300 | 0.9− | 0.7+ | 2006 06 21 | A53 | 0.4− | 0.6+ |
| 2004 01 01 | 474 | 0.0 | 0.0 | 2006 05 30 | 379 | 0.1− | 0.1− | 2006 06 22 | H45 | 0.3− | 0.0 |
| 2004 01 01 | 474 | 0.1− | 0.3− | 2006 05 30 | 300 | 0.9− | 1.1+ | 2006 06 22 | H45 | 0.1− | 0.0 |
| 2004 01 02 | 474 | 0.2+ | 0.5− | 2006 05 30 | 379 | 0.1− | 0.1− | 2006 06 22 | H45 | 0.2− | 0.0 |
| 2004 01 02 | 474 | 0.6+ | 0.2− | 2006 05 30 | 379 | 0.1+ | 0.2− | 2006 06 22 | H45 | 0.3− | 0.0 |
| 2004 01 02 | 474 | 0.2+ | 0.2− | 2006 05 30 | 300 | 0.1+ | 1.0+ | 2006 06 22 | H45 | 0.2− | 0.1+ |
| 2004 01 03 | 704 | 0.2+ | 0.4+ | 2006 05 30 | 379 | 0.3+ | 0.2− | 2006 06 22 | 941 | 0.0 | 0.0 |
| 2004 01 03 | 704 | 0.2− | 0.4+ | 2006 05 30 | 300 | 0.3− | 0.7+ | 2006 06 22 | 941 | 0.1− | 0.1+ |
| 2004 01 03 | 704 | 0.0 | 0.0 | 2006 05 30 | 379 | 0.1− | 0.2− | 2006 06 22 | 941 | 0.0 | 0.0 |
| 2004 01 06 | 926 | 0.1+ | 1.1− | 2006 05 30 | 379 | 0.0 | 0.1+ | 2006 06 22 | 941 | 0.0 | 0.0 |
| 2004 01 06 | 926 | 0.5+ | 0.3− | 2006 05 30 | 379 | 0.1+ | 0.1− | 2006 06 22 | 941 | 0.2− | 0.1+ |
| 2004 01 06 | 926 | 0.2+ | 0.1− | 2006 05 30 | 379 | 0.2+ | 0.1− | 2006 06 23 | A53 | 0.4+ | 0.3+ |
| 2004 01 19 | 608 | 0.3+ | 0.0 | 2006 05 30 | 379 | 0.0 | 0.1− | 2006 06 23 | A53 | 0.0 | 0.1+ |
| 2004 01 19 | 608 | 0.0 | 0.2+ | 2006 05 30 | 379 | 0.0 | 0.2− | 2006 06 23 | A53 | 0.2+ | 0.0 |
| 2004 01 19 | 608 | 0.0 | 0.2− | 2006 05 30 | 379 | 0.1− | 0.1− | 2006 06 23 | A53 | 0.4+ | 0.1+ |
| 2004 03 11 | 474 | 0.1+ | 0.7+ | 2006 05 30 | 379 | 0.1+ | 0.1− | 2006 06 23 | A53 | 0.4+ | 0.1− |
| 2004 03 11 | 474 | 0.7− | 0.2+ | 2006 05 30 | 203 | 0.2+ | 0.3− | 2006 06 24 | 203 | 0.1− | 0.0 |
| 2004 03 11 | 474 | 0.5− | 0.4− | 2006 05 30 | 203 | 0.0 | 0.2− | 2006 06 24 | 203 | 0.5− | 0.2− |
| 2004 03 11 | 474 | 0.0 | 0.6+ | 2006 05 31 | 300 | 0.0 | 0.1+ | 2006 06 24 | 379 | 0.1+ | 0.1− |
| 2004 03 11 | 474 | 0.6− | 0.7+ | 2006 05 31 | 300 | 0.2+ | 0.4+ | 2006 06 24 | 379 | 0.3− | 0.1+ |
| 2005 02 17 | F65 | 0.1+ | 0.1+ | 2006 05 31 | 300 | 0.2+ | 0.3+ | 2006 06 24 | 379 | 0.3− | 0.3− |
| 2005 02 17 | F65 | 0.0 | 0.3+ | 2006 05 31 | 300 | 0.1+ | 0.0 | 2006 06 24 | 379 | 0.1+ | 0.3− |
| 2005 02 17 | F65 | 0.0 | 0.0 | 2006 05 31 | 379 | 0.0 | 0.3+ | 2006 06 24 | 379 | 0.3+ | 0.0 |
| 2005 04 09 | 448 | 0.6− | 0.7− | 2006 05 31 | 379 | 0.1− | 0.0 | 2006 06 24 | 379 | 0.0 | 0.1− |
| 2005 04 09 | 448 | 0.4+ | 0.8− | 2006 05 31 | 379 | 0.1− | 0.2+ | 2006 06 24 | 379 | 0.1+ | 0.1− |
| 2005 04 09 | 448 | 0.5+ | 0.9− | 2006 05 31 | 379 | 0.2− | 0.2+ | 2006 06 24 | 379 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 03 05 | G96 | 0.1− | 0.4+ | 2006 05 31 | 379 | 0.3− | 0.1− | 2006 06 24 | 379 | 0.4+ | 0.1+ | 2006 05 20 | J64 | 0.3− | 0.4− | 2006 06 09 | 644 | 0.2− | 0.2+ | 2006 07 02 | 240 | 0.0 | 0.0 |
| 2006 03 05 | 448 | 0.1+ | 0.2+ | 2006 05 31 | 379 | 0.3− | 0.3− | 2006 06 24 | 379 | 0.2+ | 0.1− | 2006 05 20 | 808 | 0.4− | 0.6+ | 2006 06 09 | 644 | 0.2− | 0.2+ | 2006 07 03 | 639 | 0.2+ | 0.1+ |
| 2006 03 05 | G96 | 0.3+ | 0.3+ | 2006 05 31 | 379 | 0.1+ | 0.3− | 2006 06 24 | 379 | 0.1+ | 0.4− | 2006 05 20 | 808 | 0.3− | 1.2+ | 2006 06 09 | H45 | 0.2− | 0.0 | 2006 07 03 | 639 | 0.1− | 0.4+ |
| 2006 03 05 | G96 | 0.3− | 0.2+ | 2006 05 31 | 379 | 0.1+ | 0.2− | 2006 06 24 | 379 | 0.1+ | 0.2− | 2006 05 20 | 808 | 0.4+ | 0.5− | 2006 06 09 | H45 | 0.3− | 0.0 | 2006 07 03 | 639 | 0.1+ | 0.4+ |
| 2006 03 05 | 448 | 0.1− | 0.1+ | 2006 05 31 | 379 | 0.2− | 0.3− | 2006 06 24 | 379 | 0.2+ | 0.2− | 2006 05 20 | 808 | 0.1− | 1.3+ | 2006 06 09 | H45 | 0.4− | 0.0 | 2006 07 03 | 639 | 0.1− | 0.3+ |
| 2006 03 05 | G96 | 0.1+ | 0.2+ | 2006 05 31 | 379 | 0.0 | 0.4− | 2006 06 24 | 379 | 0.2− | 0.4− | 2006 05 20 | 703 | 0.1− | 0.1− | 2006 06 09 | H45 | 0.3− | 0.1+ | 2006 07 04 | A16 | 0.1− | 0.3+ |
| 2006 03 05 | 448 | 0.3− | 0.6− | 2006 05 31 | 379 | 0.2− | 0.0 | 2006 06 24 | A89 | 0.2− | 0.5− | 2006 05 20 | 703 | 0.4− | 0.2+ | 2006 06 09 | H45 | 0.4− | 0.0 | 2006 07 04 | A16 | 0.1− | 0.5+ |
| 2006 03 24 | E12 | 0.3+ | 0.1− | 2006 05 31 | 379 | 0.0 | 0.2− | 2006 06 24 | A89 | 0.0 | 0.2− | 2006 05 20 | 703 | 0.8− | 0.1+ | 2006 06 09 | 644 | 0.1− | 0.2+ | 2006 07 13 | 762 | 0.1− | 0.3− |
| 2006 03 24 | E12 | 0.3+ | 0.0 | 2006 06 02 | J93 | 0.6+ | 0.1− | 2006 06 24 | A89 | 0.3− | 0.2− | 2006 05 20 | 703 | 0.5− | 0.4− | 2006 06 11 | A53 | 0.3+ | 0.1− | 2006 07 13 | 762 | 0.0 | 0.1+ |
| 2006 03 24 | E12 | 0.1− | 0.4− | 2006 06 02 | J93 | (3.0− | 5.9+) | 2006 06 25 | 130 | 0.2− | 0.1− | 2006 05 20 | D44 | 0.1− | 0.1− | 2006 06 11 | A53 | 0.1− | 0.0 | 2006 07 13 | 762 | 0.1− | 0.1+ |
| 2006 03 24 | E12 | 0.0 | 0.2− | 2006 06 02 | J93 | (3.8− | 6.8+) | 2006 06 25 | 130 | 0.1− | 0.1− | 2006 05 20 | D44 | 0.1+ | 0.0 | 2006 06 11 | A53 | 0.1+ | 0.1+ | 2006 07 14 | 762 | 0.3− | 0.1+ |
| 2006 04 09 | 808 | 0.3− | 0.5− | 2006 06 03 | 300 | 1.0+ | 0.4+ | 2006 06 25 | 130 | 0.1− | 0.1− | 2006 05 20 | D44 | 0.0 | 0.0 | 2006 06 11 | A53 | 0.3+ | 0.3− | 2006 07 14 | 762 | 0.5− | 0.0 |
| 2006 04 09 | 808 | 0.8− | 0.1− | 2006 06 03 | 300 | 0.0 | 0.3− | 2006 06 25 | 130 | 0.0 | 0.3− | 2006 05 20 | D44 | 0.1+ | 0.1− | 2006 06 12 | H98 | (0.5+ | 1.5−) | 2006 07 14 | 762 | 0.2− | 0.1− |
| 2006 04 09 | 808 | 0.3− | 1.4− | 2006 06 03 | 300 | 0.0 | 1.4+ | 2006 06 26 | 198 | 0.1+ | 0.3− | 2006 05 20 | D44 | 0.0 | 0.0 | 2006 06 12 | H98 | 0.0 | 0.1+ | 2006 07 14 | 639 | 0.6+ | 0.8+ |
| 2006 04 09 | 808 | 0.9+ | 0.6− | 2006 06 03 | 379 | 0.5+ | 0.0 | 2006 06 26 | 198 | 0.0 | 0.1− | 2006 05 20 | D44 | 0.1+ | 0.1− | 2006 06 12 | H98 | 0.4− | 0.5− | 2006 07 14 | 639 | 0.3+ | 0.4+ |
| 2006 04 13 | 644 | 0.1− | 0.3+ | 2006 06 03 | 379 | 0.1− | 0.1+ | 2006 06 26 | 198 | 0.1+ | 0.0 | 2006 05 20 | D44 | 0.1+ | 0.0 | 2006 06 12 | A81 | 0.3+ | 0.1+ | 2006 07 14 | 639 | 0.6+ | 0.5+ |
| 2006 04 13 | 644 | 0.2− | 0.4+ | 2006 06 05 | 379 | 0.2+ | 0.3+ | 2006 06 26 | 198 | 0.1+ | 0.3− | 2006 05 20 | D44 | 0.1+ | 0.0 | 2006 06 12 | A81 | 0.3+ | 0.0 | 2006 07 14 | 639 | 0.5+ | 0.6+ |
| 2006 04 13 | 644 | 0.0 | 0.3+ | 2006 06 05 | 379 | 0.0 | 0.0 | 2006 06 26 | 198 | 0.0 | 0.0 | 2006 05 20 | D44 | 0.1+ | 0.0 | 2006 06 12 | A81 | 0.4+ | 0.2− | 2006 07 14 | A67 | 0.1− | 0.2− |
| 2006 04 24 | 704 | 0.1− | 0.4− | 2006 06 05 | 379 | 0.4+ | 0.0 | 2006 06 26 | 160 | 0.0 | 0.1+ | 2006 05 20 | D44 | 0.0 | 0.1− | 2006 06 12 | 127 | 0.0 | 0.1− | 2006 07 14 | A67 | 0.4− | 0.6− |
| 2006 04 24 | 704 | 0.4+ | 0.1+ | 2006 06 05 | 379 | 0.2− | 0.3+ | 2006 06 26 | 160 | 0.1− | 0.0 | 2006 05 21 | 300 | 0.6− | 0.2+ | 2006 06 12 | 127 | 0.0 | 0.2− | 2006 07 14 | A67 | 0.2− | 0.4− |
| 2006 04 24 | 704 | 0.4+ | 0.2− | 2006 06 05 | 379 | 0.3− | 0.1− | 2006 06 26 | 160 | 0.0 | 0.1+ | 2006 05 21 | 300 | 0.2− | 0.0 | 2006 06 12 | 127 | 0.0 | 0.1− | 2006 07 14 | A67 | 0.4+ | 0.3− |
| 2006 04 24 | 704 | 0.3+ | 0.3+ | 2006 06 05 | 379 | 0.2− | 0.4− | 2006 06 26 | 160 | 0.1+ | 0.1+ | 2006 05 21 | 300 | 0.5+ | 0.6+ | 2006 06 12 | A81 | 0.2− | 0.1− | 2006 07 14 | A67 | 0.3− | 0.1− |
| 2006 04 25 | 113 | 0.4+ | 0.8+ | 2006 06 05 | 379 | 0.2+ | 0.2− | 2006 06 26 | 160 | 0.0 | 0.1+ | 2006 05 21 | 300 | 0.1− | 0.4+ | 2006 06 12 | 127 | 0.1+ | 0.1− | 2006 07 14 | A67 | 0.2− | 0.3− |
| 2006 04 25 | 113 | 0.7+ | 0.5+ | 2006 06 05 | 379 | 0.6+ | 0.0 | 2006 06 26 | 160 | 0.1+ | 0.1+ | 2006 05 21 | 157 | 0.1+ | 0.3− | 2006 06 13 | 473 | 0.1− | 0.3+ | 2006 07 14 | A67 | 0.2+ | 0.2− |
| 2006 04 25 | 113 | 0.5+ | 0.4+ | 2006 06 05 | 379 | 0.4+ | 0.3− | 2006 06 26 | 160 | 0.1− | 0.0 | 2006 05 21 | 157 | 0.2− | 0.2− | 2006 06 13 | 127 | 0.1+ | 0.3+ | 2006 07 14 | A67 | 0.6− | 0.1+ |
| 2006 04 26 | 084 | 0.6− | 0.1− | 2006 06 05 | 379 | 0.2+ | 0.2− | 2006 06 26 | 203 | 0.1− | 0.4− | 2006 05 21 | 157 | 0.1− | 0.1− | 2006 06 13 | 127 | 0.2+ | 0.4+ | 2006 07 14 | A67 | 0.0 | 0.0 |
| 2006 04 26 | 084 | 0.0 | 0.1− | 2006 06 05 | 379 | 0.0 | 0.2− | 2006 06 26 | 160 | 0.0 | 0.0 | 2006 05 21 | 157 | 0.1− | 0.2− | 2006 06 13 | 127 | 0.2+ | 0.3+ | 2006 07 14 | A67 | 0.2+ | 0.1− |
| 2006 04 27 | 084 | 0.1− | 0.0 | 2006 06 06 | H55 | 0.0 | 0.0 | 2006 06 26 | 160 | 0.0 | 0.1− | 2006 05 21 | 157 | 0.0 | 0.2− | 2006 06 13 | 127 | 0.3+ | 0.2+ | 2006 07 14 | A67 | 0.5+ | 0.5− |
| 2006 04 27 | 084 | 0.8− | 0.2− | 2006 06 06 | H55 | 0.1− | 0.2− | 2006 06 26 | 160 | 0.1− | 0.1+ | 2006 05 21 | A53 | 0.2+ | 0.1+ | 2006 06 14 | 703 | 0.1− | 0.3− | 2006 07 14 | A67 | 0.3− | 0.4− |
| 2006 04 29 | A13 | 0.6− | 0.7+ | 2006 06 06 | H55 | 0.0 | 0.1− | 2006 06 26 | 203 | 0.0 | 0.2− | 2006 05 21 | A53 | 0.0 | 0.4+ | 2006 06 14 | 703 | 0.2− | 0.2− | 2006 07 14 | A67 | 0.3− | 0.4− |
| 2006 04 29 | A13 | 0.6− | 0.7+ | 2006 06 06 | H55 | 0.0 | 0.1− | 2006 06 27 | H45 | 0.1− | 0.0 | 2006 05 21 | A53 | 0.1+ | 0.4+ | 2006 06 14 | 703 | 0.4− | 0.1+ | 2006 07 14 | A67 | 0.3− | 0.1+ |
| 2006 04 30 | 084 | 0.5− | 0.2+ | 2006 06 06 | H55 | 0.4− | 0.9+ | 2006 06 27 | H45 | 0.1− | 0.0 | 2006 05 21 | A53 | 0.1+ | 0.2+ | 2006 06 14 | 703 | 0.1+ | 0.4− | 2006 07 14 | A67 | 0.4+ | 0.4− |
| 2006 04 30 | 084 | 0.2− | 0.2+ | 2006 06 06 | H55 | 0.1+ | 0.2+ | 2006 06 27 | H45 | 0.2− | 0.1− | 2006 05 22 | A81 | 0.4− | 0.2+ | 2006 06 14 | A16 | 0.9− | 1.1+ | 2006 07 14 | A67 | 0.1+ | 0.2+ |
| 2006 05 01 | 084 | 0.2− | 0.2+ | 2006 06 06 | H55 | 0.7+ | 0.7− | 2006 06 27 | H45 | 0.3− | 0.1+ | 2006 05 22 | A81 | 0.1+ | 0.0 | 2006 06 14 | A89 | 0.0 | 0.3− | 2006 07 14 | A67 | 0.0 | 0.2− |
| 2006 05 01 | 084 | 0.4− | 0.4− | 2006 06 06 | H55 | 0.2− | 0.1− | 2006 06 27 | H45 | 0.2− | 0.1− | 2006 05 22 | A81 | 0.9+ | 0.2+ | 2006 06 14 | A89 | 0.1− | 0.0 | 2006 07 14 | A67 | 0.3+ | 0.0 |
| 2006 05 02 | 071 | 0.1− | 0.3− | 2006 06 06 | H55 | 0.0 | 0.2− | 2006 06 27 | 379 | 0.4− | 0.1+ | 2006 05 22 | A81 | 0.0 | 0.2+ | 2006 06 14 | A89 | 0.2− | 0.4− | 2006 07 14 | A67 | 0.2+ | 0.3− |
| 2006 05 02 | 071 | 0.0 | 0.4− | 2006 06 06 | 379 | 0.3+ | 0.4+ | 2006 06 27 | 379 | 0.2+ | 0.2+ | 2006 05 24 | 379 | 0.1+ | 0.2+ | 2006 06 14 | A89 | 0.3+ | 0.3− | 2006 07 14 | A67 | 0.1− | 0.4− |
| 2006 05 02 | 071 | 0.2− | 0.4− | 2006 06 06 | 379 | 0.3+ | 0.4− | 2006 06 27 | 379 | 0.1− | 0.3− | 2006 05 24 | 379 | 0.1+ | 0.0 | 2006 06 14 | A16 | 1.0− | 0.8+ | 2006 07 14 | A67 | 0.4− | 0.3+ |
| 2006 05 08 | H55 | 0.2− | 0.1− | 2006 06 06 | 379 | 0.4− | 0.1+ | 2006 06 27 | 379 | 0.3− | 0.0 | 2006 05 24 | 379 | 0.2+ | 0.2− | 2006 06 14 | A16 | 1.0− | 0.7+ | 2006 07 14 | A67 | 0.6+ | 0.2− |
| 2006 05 08 | H55 | 0.1− | 0.1+ | 2006 06 06 | 379 | 0.0 | 0.1− | 2006 06 27 | 379 | 0.3− | 0.2− | 2006 05 24 | 379 | 0.1− | 0.3+ | 2006 06 14 | 203 | 0.1− | 0.4− | 2006 07 14 | A67 | 0.5− | 0.4− |
| 2006 05 08 | H55 | 0.6+ | 0.7− | 2006 06 06 | 379 | 0.0 | 0.2− | 2006 06 27 | 379 | 0.5− | 0.1+ | 2006 05 24 | 379 | 0.1+ | 0.2− | 2006 06 14 | 203 | 0.2− | 0.2− | 2006 07 14 | A67 | 0.6+ | 0.0 |
| 2006 05 09 | 084 | 0.4− | 0.1+ | 2006 06 06 | 379 | 0.2+ | 0.3− | 2006 06 27 | 379 | 0.3− | 0.0 | 2006 05 24 | 379 | 0.1− | 0.1− | 2006 06 15 | H45 | 0.2− | 0.1− | 2006 07 14 | A67 | 0.2+ | 0.1− |
| 2006 05 09 | 084 | 0.4+ | 0.4− | 2006 06 06 | 300 | 0.1− | 0.2+ | 2006 06 27 | 379 | 0.1− | 0.1+ | 2006 05 24 | 379 | 0.2+ | 0.3+ | 2006 06 15 | H45 | 0.2− | 0.0 | 2006 07 14 | A67 | 0.7+ | 0.1+ |
| 2006 05 11 | H45 | 0.2− | 0.1− | 2006 06 06 | 300 | 0.2− | 0.1− | 2006 06 29 | H45 | 0.3− | 0.0 | 2006 05 24 | 379 | 0.3+ | 0.4+ | 2006 06 15 | H45 | 0.1− | 0.0 | 2006 07 14 | A67 | 0.4− | 0.4− |
| 2006 05 11 | H45 | 0.2+ | 0.1− | 2006 06 06 | 300 | 0.5− | 0.3− | 2006 06 29 | H45 | 0.2− | 0.1+ | 2006 05 24 | 379 | 0.1+ | 0.2+ | 2006 06 15 | H45 | 0.2− | 0.0 | 2006 07 14 | A67 | 0.4− | 0.2+ |
| 2006 05 11 | H45 | 0.2− | 0.2− | 2006 06 06 | 300 | 0.4− | 0.3+ | 2006 06 29 | H45 | 0.3− | 0.2+ | 2006 05 24 | 379 | 0.1+ | 0.2− | 2006 06 15 | H45 | 0.2− | 0.0 | 2006 07 14 | A67 | 0.0 | 0.4− |
| 2006 05 11 | H45 | 0.2+ | 0.2− | 2006 06 06 | 300 | 0.3+ | 0.3− | 2006 06 29 | H45 | 0.2− | 0.0 | 2006 05 24 | 379 | 0.4+ | 0.0 | 2006 06 15 | A89 | 0.1− | 0.2− | 2006 07 14 | A67 | 0.1+ | 0.1+ |
| 2006 05 11 | H45 | 0.1− | 0.1− | 2006 06 06 | 300 | 0.8− | 0.4+ | 2006 06 29 | H45 | 0.2− | 0.1+ | 2006 05 24 | 379 | 0.4+ | 0.2+ | 2006 06 15 | A89 | 0.1− | 0.5− | 2006 07 14 | A67 | 0.5+ | 0.4− |
| 2006 05 12 | E14 | (0.5− | 2.1+) | 2006 06 06 | 185 | 0.0 | 0.6− | 2006 06 29 | 379 | 0.1− | 0.3+ | 2006 05 24 | A30 | 0.2− | 0.4− | 2006 06 15 | A89 | 0.1− | 0.2− | 2006 07 14 | A67 | 0.3+ | 0.2+ |
| 2006 05 12 | E14 | 0.0 | 0.5+ | 2006 06 06 | 185 | 0.1− | 0.6− | 2006 06 29 | 379 | 0.2+ | 0.2− | 2006 05 24 | A30 | 0.1− | 0.3− | 2006 06 15 | A89 | 0.1− | 0.4− | 2006 07 14 | A67 | 0.1− | 0.2+ |
| 2006 05 12 | E14 | 0.1+ | 0.7+ | 2006 06 06 | 185 | 0.0 | 0.7− | 2006 06 29 | 379 | 0.2+ | 0.3− | 2006 05 24 | A30 | 0.0 | 0.2− | 2006 06 15 | A89 | 0.0 | 0.3− | 2006 07 14 | A67 | 0.1+ | 0.2+ |
| 2006 05 18 | H45 | 0.1+ | 0.1+ | 2006 06 06 | 185 | 0.4+ | 0.2− | 2006 06 29 | 379 | 0.3+ | 0.2− | 2006 05 24 | A30 | 0.0 | 0.2− | 2006 06 16 | 704 | 0.6− | 0.2+ | 2006 07 14 | A67 | 0.4+ | 0.2− |
| 2006 05 18 | H45 | 0.3+ | 0.3+ | 2006 06 06 | 185 | 0.4+ | 0.1− | 2006 06 29 | 379 | 0.1+ | 0.0 | 2006 05 25 | H45 | 0.1− | 0.1+ | 2006 06 16 | 704 | 0.6− | 0.1+ | 2006 07 14 | A67 | 0.4− | 0.3+ |
| 2006 05 18 | H45 | 0.4+ | 0.4+ | 2006 06 06 | A16 | (0.7− | 2.1+) | 2006 06 29 | 379 | 0.3+ | 0.3− | 2006 05 25 | H45 | 0.1+ | 0.1− | 2006 06 16 | 704 | 0.7− | 0.2+ | 2006 07 14 | A67 | 0.2− | 0.4− |
| 2006 05 18 | H45 | 0.4+ | 0.4+ | 2006 06 06 | A16 | 1.5− | 0.8+ | 2006 06 29 | 379 | 0.4+ | 0.4− | 2006 05 25 | H45 | 0.1− | 0.0 | 2006 06 16 | 704 | 0.6− | 0.1− | 2006 07 14 | A67 | 0.1+ | 0.1− |
| 2006 05 18 | H45 | 0.0 | 0.2+ | 2006 06 06 | A16 | (1.5− | 0.1+) | 2006 07 01 | 704 | 0.7+ | 0.2+ | 2006 05 25 | H45 | 0.0 | 0.1− | 2006 06 16 | 704 | 0.7− | 0.1+ | 2006 07 14 | A67 | 0.0 | 0.2− |
| 2006 05 19 | D44 | 0.0 | 0.2− | 2006 06 06 | A16 | (1.6− | 1.9+) | 2006 07 01 | 704 | 0.7+ | 0.2+ | 2006 05 25 | H45 | 0.0 | 0.0 | 2006 06 16 | 176 | 0.0 | 0.0 | 2006 07 15 | H68 | 0.3− | 0.7+ |
| 2006 05 19 | D44 | 0.1− | 0.2− | 2006 06 06 | A16 | 0.7− | 0.9+ | 2006 07 01 | 704 | 0.7+ | 0.2+ | 2006 05 25 | H45 | 0.1− | 0.2− | 2006 06 16 | 176 | 0.2− | 0.1+ | 2006 07 15 | H68 | 0.5− | 0.6+ |
| 2006 05 19 | D44 | 0.1− | 0.0 | 2006 06 07 | 639 | 0.0 | 0.2+ | 2006 07 01 | 704 | 0.8+ | 0.4+ | 2006 05 26 | 204 | 0.0 | 0.3− | 2006 06 16 | 176 | 0.0 | 0.2− | 2006 07 15 | H68 | 1.0− | 0.8+ |
| 2006 05 19 | D44 | 0.1+ | 0.1− | 2006 06 07 | 151 | 0.1+ | 0.0 | 2006 07 01 | 704 | 0.7+ | 0.1+ | 2006 05 26 | 204 | 0.0 | 0.2− | 2006 06 16 | 176 | 0.4− | 0.1+ | 2006 07 15 | H68 | 0.4− | 1.2+ |
| 2006 05 19 | D44 | 0.1+ | 0.1− | 2006 06 07 | 151 | 0.1+ | 0.1+ | 2006 07 02 | 240 | 0.2+ | 0.2− | 2006 05 26 | 204 | 0.1− | 0.2− | 2006 06 16 | 176 | 0.2− | 0.0 | 2006 07 17 | 704 | 0.3+ | 0.1+ |
| 2006 05 19 | D44 | 0.2+ | 0.0 | 2006 06 07 | 151 | 0.2+ | 0.0 | 2006 07 02 | 240 | 0.1+ | 0.2− | 2006 05 27 | 071 | 0.1− | 0.6+ | 2006 06 17 | J93 | 0.1+ | 0.0 | 2006 07 17 | 704 | 0.2+ | 0.2+ |
| 2006 05 19 | D44 | 0.0 | 0.1− | 2006 06 07 | 639 | 0.2+ | 0.2+ | 2006 07 02 | 240 | 0.0 | 0.1− | 2006 05 27 | 071 | 0.3− | 0.1− | 2006 06 17 | J93 | 0.4+ | 0.5− | 2006 07 17 | 704 | 0.2+ | 0.2+ |
| 2006 05 19 | D44 | 0.0 | 0.1− | 2006 06 07 | 151 | 0.1+ | 0.0 | 2006 07 02 | 240 | 0.2+ | 0.1− | 2006 05 27 | 071 | 0.8+ | 0.1+ | 2006 06 17 | J93 | 0.4+ | 0.5− | 2006 07 17 | 704 | 0.4+ | 0.3+ |
| 2006 05 19 | D44 | 0.1+ | 0.0 | 2006 06 07 | 151 | 0.0 | 0.1+ | 2006 07 02 | 240 | 0.0 | 0.1− | 2006 05 27 | H55 | 0.2− | 0.1+ | 2006 06 19 | 379 | 0.1+ | 0.2+ | 2006 07 17 | 704 | 0.5+ | 0.1+ |
| 2006 05 19 | D44 | 0.1− | 0.1− | 2006 06 07 | 151 | 0.3+ | 0.1+ | 2006 07 02 | 240 | 0.3+ | 0.1− | 2006 05 27 | H55 | 0.0 | 0.0 | 2006 06 19 | 379 | 0.1+ | 0.0 | 2006 07 17 | J93 | 0.8+ | 0.3+ |
| 2006 05 20 | J64 | 0.2+ | 0.4− | 2006 06 07 | 639 | 0.3+ | 0.2+ | 2006 07 02 | 240 | 0.2+ | 0.2− | 2006 05 27 | H55 | 0.1+ | 0.2− | 2006 06 19 | 379 | 0.0 | 0.0 | 2006 07 17 | J93 | 0.5+ | 0.1− |
| 2006 05 20 | J64 | 0.0 | 0.4− | 2006 06 07 | 639 | 0.2+ | 0.3+ | 2006 07 02 | 240 | 0.1+ | 0.0 | 2006 05 27 | A94 | 0.5+ | 0.0 | 2006 06 19 | 379 | 0.3+ | 0.1− | 2006 07 17 | J93 | 0.5+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 05 27 | A94 | 0.2+ | 0.3+ | 2006 06 19 | 379 | 0.1+ | 0.2− | 2006 09 21 | 703 | 0.3− | 0.2− | | |
| 2006 05 27 | A94 | 0.3+ | 0.3+ | 2006 06 19 | 379 | 0.1+ | 0.3− | 2006 09 21 | 703 | 0.1+ | 0.5− | | |
| 2006 05 27 | 157 | 0.1+ | 0.2− | 2006 06 19 | 379 | 0.1− | 0.0 | 2006 09 21 | 703 | 0.1+ | 0.3− | | |
| 2006 05 27 | 157 | 0.1− | 0.1− | 2006 06 19 | 379 | 0.2+ | 0.2− | 2006 09 25 | 703 | 0.5− | 0.1− | | |
| 2006 05 27 | J65 | 0.3− | 0.6− | 2006 06 19 | 379 | 0.1+ | 0.0 | 2006 09 25 | 703 | 0.2− | 0.2− | | |
| 2006 05 27 | 157 | 0.0 | 0.1− | 2006 06 19 | 379 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.2+ | 0.0 | | |
| 2006 05 27 | 157 | 0.2− | 0.0 | 2006 06 19 | 379 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.0 | | |
| 2006 05 27 | J65 | 0.1− | 0.3− | 2006 06 19 | 379 | 0.1+ | 0.3+ | 2006 10 01 | 703 | 0.3− | 0.1+ | | |
| 2006 05 27 | J65 | 0.1− | 0.1− | 2006 06 19 | 379 | 0.2+ | 0.0 | 2006 10 01 | 703 | 0.2− | 0.7+ | | |
| 2006 05 27 | J65 | 0.0 | 0.1− | 2006 06 19 | 379 | 0.3+ | 0.3− | 2006 10 01 | 703 | 0.0 | 0.1+ | | |
| 2006 05 27 | J65 | 0.7+ | 0.3+ | 2006 06 19 | A99 | 0.4+ | 0.1+ | 2006 10 01 | 703 | 0.3− | 0.2− | | |
| 2006 05 27 | 071 | 0.5+ | 0.2+ | 2006 06 19 | A99 | 0.3+ | 0.2+ | 2006 11 25 | E12 | 0.5+ | 0.5+ | | |
| 2006 05 27 | 071 | 0.9+ | 0.9− | 2006 06 19 | A99 | 0.3+ | 0.2+ | 2006 11 25 | E12 | 0.2− | 0.1+ | | |
| 2006 05 27 | 071 | 0.9+ | 0.4− | 2006 06 19 | A99 | 0.5+ | 0.0 | 2006 11 25 | E12 | 0.5+ | 0.6+ | | |
| 2006 05 29 | J65 | 0.5− | 0.1+ | 2006 06 19 | A99 | 0.2+ | 0.1+ | | | | | | |

**(143948)∗ 2003 YJ$_{118}$**

Discovered 2003 Dec. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.13300 | | (2000.0) | | | |
| $n$ | 0.30230431 | $\omega$ | 309.94622 | | +0.95207623 | −0.27756897 |
| $a$ | 2.1987364 | $\Omega$ | 66.51553 | | +0.30547349 | +0.84178260 |
| $e$ | 0.2169267 | $i$ | 8.05247 | | +0.01538821 | +0.46298759 |
| $P$ | 3.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.1− | 0.7+ | 2004 01 21 | 704 | 0.4− | 0.7− | 2006 11 11 | G96 | 0.2+ | 0.6− | | |
| 2001 02 16 | 704 | 0.1+ | 0.8+ | 2004 01 21 | 704 | 0.1+ | 0.5− | 2006 11 14 | 704 | 0.0 | 0.7+ | | |
| 2001 02 16 | 704 | 0.0 | 1.0+ | 2004 01 22 | 704 | 0.3− | 0.9− | 2006 11 14 | 704 | 0.2+ | 1.0+ | | |
| 2003 10 24 | 704 | 0.5+ | 0.5+ | 2004 01 22 | 704 | 0.5− | 0.9+ | 2006 11 14 | 704 | 0.1+ | 0.4+ | | |
| 2003 10 24 | 704 | 0.8+ | 0.2+ | 2004 01 22 | 704 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.4+ | | |
| 2003 10 24 | 704 | 0.8+ | 0.1+ | 2004 01 22 | 704 | 0.4− | 0.9− | 2006 11 14 | 704 | 0.6− | 1.1+ | | |
| 2003 10 29 | 704 | 0.2+ | 0.7+ | 2004 01 22 | 704 | 0.5− | 0.7− | 2006 11 17 | 704 | 0.3− | 0.7+ | | |
| 2003 10 29 | 704 | 0.5− | 1.1− | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.0 | | |
| 2003 10 29 | 704 | 0.4+ | 0.6+ | 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.2− | | |
| 2003 11 20 | 704 | 0.8+ | 1.1+ | 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.6− | | |
| 2003 11 20 | 704 | 0.3+ | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.1+ | | |
| 2003 11 20 | 704 | 0.2+ | 0.1− | 2005 04 30 | 691 | 0.7+ | 1.0+ | 2006 11 18 | 704 | 0.2+ | 0.7+ | | |
| 2003 11 20 | 704 | (0.3− | 1.6+) | 2005 04 30 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.2− | 0.3+ | | |
| 2003 12 04 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | 1.0− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.2− | | |
| 2003 12 04 | 704 | 0.2− | 0.7+ | 2006 09 19 | 699 | 0.1− | 0.8− | 2006 11 18 | 704 | 0.7+ | 0.8− | | |
| 2003 12 04 | 704 | 0.6+ | 0.3− | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1− | 1.1+ | | |
| 2003 12 04 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 699 | 1.0− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1+ | | |
| 2003 12 04 | 704 | 0.1− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2003 12 18 | 704 | 0.5+ | 1.2− | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2003 12 18 | 704 | 0.4+ | 0.7− | 2006 09 30 | 703 | 0.9+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.9+ | | |
| 2003 12 18 | 704 | 0.4+ | 0.9− | 2006 09 30 | 703 | 1.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4+ | | |
| 2003 12 18 | 704 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.3− | 0.8+ | 2006 11 21 | 704 | 0.7+ | 0.4+ | | |
| 2003 12 23 | 704 | (0.5+ | 1.9−) | 2006 10 03 | 704 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.2+ | | |
| 2003 12 23 | 704 | 0.0 | 0.7+ | 2006 10 03 | 704 | 0.5− | 0.5+ | 2006 11 21 | 704 | 0.4+ | 1.2+ | | |
| 2003 12 23 | 704 | 0.7− | 0.7− | 2006 10 03 | 704 | 0.2+ | 1.0− | 2006 11 26 | 113 | 0.0 | 0.1− | | |
| 2003 12 23 | 704 | (0.5− | 1.7−) | 2006 10 09 | 644 | 0.2− | 0.1+ | 2006 11 26 | 113 | 0.3− | 0.0 | | |
| 2003 12 23 | 704 | 0.1+ | 1.0− | 2006 10 09 | 644 | 0.0 | 0.1+ | 2006 11 26 | 113 | 0.4+ | 0.1− | | |
| 2003 12 27 | 704 | 0.5− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.3+ | 2006 11 26 | 113 | 0.2+ | 0.4− | | |
| 2003 12 27 | 704 | 0.7− | 0.1− | 2006 10 27 | 704 | 1.5− | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2003 12 27 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 704 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2003 12 27 | 704 | 0.4− | 0.6− | 2006 10 27 | 704 | 0.6− | 1.0− | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2003 12 27 | 704 | 0.0 | 0.2− | 2006 10 27 | 704 | 1.1− | 0.7+ | 2006 11 27 | 703 | 0.1− | 0.2+ | | |
| 2003 12 29 | 704 | 0.3+ | 0.8+ | 2006 11 02 | 703 | 0.6− | 0.4+ | 2006 11 27 | 703 | 0.0 | 0.2− | | |
| 2003 12 29 | 704 | 0.6+ | 0.2+ | 2006 11 02 | 703 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.6+ | 0.0 | | |
| 2003 12 29 | 704 | 0.4+ | 0.3+ | 2006 11 02 | 703 | 0.7+ | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.3+ | | |
| 2003 12 29 | 704 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.4+ | 2006 11 27 | 704 | 0.3− | 0.2+ | | |
| 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 27 | 704 | 0.1− | 0.0 | | |
| 2004 01 03 | 704 | (2.1− | 0.5−) | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 27 | 704 | 0.1− | 0.2+ | | |
| 2004 01 03 | 704 | 1.1− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.0 | 0.2+ | | |
| 2004 01 03 | 704 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.7− | 2006 11 29 | 704 | 0.0 | 0.2− | | |
| 2004 01 19 | 704 | (3.9+ | 2.6+) | 2006 11 11 | 703 | 0.4+ | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.2− | | |
| 2004 01 19 | 704 | (4.0+ | 1.5+) | 2006 11 11 | 703 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.1− | 0.1+ | | |
| 2004 01 19 | 704 | (3.5+ | 0.9+) | 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.5+ | | |
| 2004 01 21 | 704 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.3− | | |
| 2004 01 21 | 704 | 0.3− | 0.8− | 2006 11 11 | G96 | 0.0 | 0.4− | | | | | | |
| 2004 01 21 | 704 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.2− | 0.5− | | | | | | |

**(143949)∗ 2003 YO$_{119}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.67312 | | (2000.0) | | | |
| $n$ | 0.29032173 | $\omega$ | 224.15188 | | −0.92595304 | −0.37085966 |
| $a$ | 2.2588273 | $\Omega$ | 293.95635 | | +0.36447430 | −0.82826256 |
| $e$ | 0.0890972 | $i$ | 4.47059 | | +0.09884048 | −0.42005267 |
| $P$ | 3.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 1.2+ | 0.4+ | 2003 12 18 | 704 | 0.1− | 0.3+ | 2004 01 31 | 691 | 0.1− | 0.0 | | |
| 2001 03 03 | 704 | 0.2− | 0.1− | 2003 12 18 | 704 | 0.4− | 0.1− | 2004 01 31 | 691 | 0.6− | 0.2− | | |
| 2001 03 03 | 704 | 0.5+ | 0.5+ | 2003 12 27 | 704 | (1.2− | 1.9+) | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 2001 03 03 | 704 | 0.6+ | 0.2− | 2003 12 27 | 704 | 1.2+ | 0.5+ | 2006 10 04 | G96 | 0.3− | 0.2− | | |
| 2001 03 27 | 608 | 0.1+ | 0.4+ | 2003 12 27 | 704 | (0.1− | 1.7+) | 2006 10 04 | G96 | 0.0 | 0.2− | | |
| 2001 03 27 | 608 | 0.3+ | 0.7+ | 2003 12 27 | 704 | 0.7+ | 0.7+ | 2006 10 04 | G96 | 0.4+ | 0.1− | | |
| 2001 03 27 | 608 | 0.3+ | 0.6+ | 2003 12 28 | 704 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.6+ | | |
| 2001 04 15 | 699 | 0.9− | 0.8+ | 2003 12 28 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.1+ | | |
| 2001 04 15 | 699 | 0.2− | 1.1+ | 2003 12 28 | 704 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.3− | 0.3− | | |
| 2001 04 15 | 699 | 0.3+ | 0.5− | 2003 12 28 | 704 | 0.6+ | 0.7− | 2006 10 27 | 703 | 0.8− | 0.2− | | |
| 2001 04 15 | 699 | 0.3− | 0.6− | 2003 12 28 | 704 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.6− | | |
| 2002 08 08 | 644 | 0.4+ | 0.3+ | 2003 12 29 | 704 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.5− | | |
| 2002 08 08 | 644 | 0.4+ | 0.1+ | 2003 12 29 | 704 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.0 | 0.5− | | |
| 2002 08 17 | 644 | 0.4− | 0.1+ | 2003 12 29 | 704 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.5− | | |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2003 12 29 | 704 | 0.9+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3+ | | |
| 2002 08 17 | 644 | 0.4− | 0.0 | 2004 01 21 | 704 | 0.4+ | 1.0+ | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2002 08 18 | 644 | 0.3− | 0.6+ | 2004 01 21 | 704 | (0.3+ | 1.6+) | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2002 08 18 | 644 | 0.7− | 0.2+ | 2004 01 21 | 704 | 0.7+ | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.7+ | | |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2004 01 24 | 704 | 0.3− | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.7+ | | |
| 2002 08 27 | 644 | 0.0 | 1.0+ | 2004 01 24 | 704 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 1.2+ | | |
| 2002 08 27 | 644 | 0.5− | 1.0+ | 2004 01 24 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.8+ | | |
| 2002 08 27 | 644 | 0.4− | 1.2+ | 2004 01 30 | 704 | 0.7+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.6− | | |
| 2003 12 18 | 704 | 0.5+ | 0.3+ | 2004 01 30 | 704 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2003 12 18 | 704 | 0.6− | 0.5+ | 2004 01 30 | 704 | 0.6− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2003 12 18 | 704 | 0.2− | 0.4+ | 2004 01 31 | 691 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.0 | 0.5− | | |

**(143950)∗ 2003 YR$_{120}$ = 1999 XM$_{256}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57549)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.00007 | | (2000.0) | | | |
| $n$ | 0.26729631 | $\omega$ | 17.22820 | | +0.73783433 | −0.67296348 |
| $a$ | 2.3867526 | $\Omega$ | 25.30479 | | +0.60401854 | +0.62379784 |
| $e$ | 0.1251550 | $i$ | 7.00930 | | +0.30126750 | +0.39748762 |
| $P$ | 3.69 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | (0.4− | 2.3−) | 2003 12 28 | 704 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.2− | 0.9+ | | |
| 1999 10 13 | 704 | 0.1+ | 1.1− | 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.7+ | | |
| 1999 10 13 | 704 | 0.4+ | 0.4− | 2003 12 28 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.7− | 1.0+ | | |
| 1999 10 13 | 704 | 0.0 | 0.4− | 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.3− | 0.9+ | | |
| 1999 10 13 | 704 | 0.7− | 0.7− | 2003 12 28 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.5+ | | |
| 1999 10 13 | 704 | 0.4+ | 1.6− | 2003 12 28 | 704 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.7− | 0.4+ | | |
| 1999 10 13 | 704 | 0.5− | 1.5− | 2003 12 28 | 704 | 0.4− | 0.3+ | 2006 09 22 | 704 | 0.4− | 0.1+ | | |
| 1999 10 13 | 704 | 0.1+ | 1.1− | 2003 12 29 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.9− | 0.7+ | | |
| 1999 10 13 | 704 | 0.1+ | 1.2− | 2003 12 29 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.5+ | 0.7− | 2003 12 29 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.5+ | | |
| 1999 12 07 | 703 | 0.1+ | 0.0 | 2003 12 29 | 704 | 0.9− | 0.8+ | 2006 09 26 | 704 | 0.2+ | 0.4− | | |
| 1999 12 07 | 703 | 0.2− | 0.3− | 2003 12 29 | 704 | 0.2− | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.2+ | | |
| 1999 12 07 | 703 | 0.0 | 0.0 | 2004 01 19 | 704 | 0.6+ | 0.9− | 2006 09 28 | 704 | 0.7− | 0.3− | | |
| 1999 12 07 | 703 | 0.6+ | 0.5+ | 2004 01 19 | 704 | 1.4+ | 0.4− | 2006 09 28 | 704 | 0.2− | 1.1+ | | |
| 1999 12 15 | 704 | 0.2+ | 1.3− | 2004 01 19 | 704 | 1.2+ | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.5+ | | |
| 1999 12 15 | 704 | 0.2+ | 0.0 | 2004 02 14 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 703 | (0.4+ | 2.1+) | | |
| 1999 12 15 | 704 | 0.5+ | 0.6− | 2004 02 14 | 704 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 0.0 | 0.3+ | | |
| 2002 06 20 | 644 | 0.2− | 0.0 | 2004 02 14 | 704 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.6− | 1.0− | | |
| 2002 06 20 | 644 | 0.1+ | 0.3+ | 2005 03 14 | G96 | 0.3− | 0.2− | 2006 09 30 | 703 | (1.5− | 0.9+) | | |
| 2002 06 20 | 644 | 0.6+ | 0.1+ | 2005 03 14 | G96 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2002 08 13 | 644 | 0.1− | 0.1− | 2005 03 14 | G96 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 08 13 | 644 | 0.3+ | 0.3− | 2005 03 14 | G96 | 0.8− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 13 | 644 | 0.3+ | 0.3− | 2006 08 30 | 699 | 0.6+ | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 17 | 699 | 0.4− | 0.5+ | 2006 08 30 | 699 | 1.2+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2003 12 17 | 699 | 0.3+ | 1.4− | 2006 08 30 | 699 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2003 12 17 | 699 | 0.7+ | 0.7− | 2006 08 30 | 699 | 0.6− | 0.6− | 2006 11 11 | 703 | 0.5− | 0.3+ | | |
| 2003 12 17 | 699 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.6− | | |
| 2003 12 27 | 704 | 0.2+ | 1.0+ | 2006 09 14 | 703 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.0 | | |
| 2003 12 27 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.2− | | |
| 2003 12 27 | 704 | 0.8+ | 0.9+ | 2006 09 16 | 704 | (1.3− | 1.8−) | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2003 12 27 | 704 | 0.3+ | 0.7+ | 2006 09 16 | 704 | 0.7+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2003 12 27 | 704 | 0.2− | 1.1+ | 2006 09 16 | 704 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2003 12 28 | 704 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.6− | 0.7− | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2003 12 28 | 704 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.1+ | 1.4+ | | | | | | |
| 2003 12 28 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | 1.2− | 0.5+ | | | | | | |

**(143951)∗ 2003 YC$_{121}$ = 2005 GX$_{102}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 103590)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.23011 | | (2000.0) | | +0.99122834 | −0.11558719 |
| $n$ | 0.27064550 | $\omega$ | 338.38802 | | +0.13211827 | +0.85440424 |
| $a$ | 2.3670214 | $\Omega$ | 28.48145 | | +0.00333779 | +0.50658957 |
| $e$ | 0.1258778 | $i$ | 7.72223 | | | |
| $P$ | 3.64 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.8+ | 0.7− | 2003 12 30 | 704 | 0.2+ | 0.6− | 2006 09 26 | 704 | 0.1+ | 1.0+ | | |
| 1999 10 13 | 704 | 0.5+ | 0.1+ | 2003 12 30 | 704 | 1.0+ | 0.5− | 2006 09 26 | 704 | 0.6− | 0.8+ | | |
| 1999 10 13 | 704 | 0.1+ | 0.3− | 2003 12 30 | 704 | 1.1+ | 0.6− | 2006 09 26 | 704 | 0.7− | 0.6− | | |
| 1999 10 13 | 704 | 1.3+ | 0.3+ | 2003 12 30 | 704 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.6+ | | |
| 1999 10 13 | 704 | 0.2− | 0.6+ | 2005 04 09 | 691 | 0.6+ | 0.5+ | 2006 09 28 | 704 | 0.1+ | 0.2+ | | |
| 1999 12 07 | 703 | 0.2+ | 0.5− | 2005 04 09 | 691 | 0.6+ | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.1+ | | |
| 1999 12 07 | 703 | 0.0 | 0.4− | 2005 04 09 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.7+ | | |
| 1999 12 07 | 703 | 0.5+ | 0.7− | 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.1+ | | |
| 1999 12 07 | 703 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.0 | 0.6+ | 2006 09 28 | 704 | 0.3− | 0.0 | | |
| 2002 07 16 | 644 | 0.2− | 0.2− | 2005 04 11 | G96 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.0 | | |
| 2002 07 16 | 644 | 0.3− | 0.1− | 2005 04 11 | G96 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.9− | | |
| 2002 07 16 | 644 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.2+ | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.1+ | | |
| 2002 07 27 | 644 | 0.6− | 0.1+ | 2006 09 12 | 703 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.4− | | |
| 2002 07 27 | 644 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.9− | 1.7+ | 2006 09 30 | 704 | 0.8− | 0.0 | | |
| 2002 07 27 | 644 | 0.4− | 0.1− | 2006 09 12 | 703 | 1.5+ | 1.9+ | 2006 09 30 | 704 | 0.3− | 0.1+ | | |
| 2002 08 13 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.4− | 2006 09 30 | 704 | 0.1− | 0.2+ | | |
| 2002 08 13 | 644 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.5− | 0.6+ | | |
| 2002 08 13 | 644 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.6− | 0.2+ | | |
| 2003 12 17 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 703 | 0.7− | 0.4− | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2003 12 17 | 704 | 0.2+ | 0.4− | 2006 09 18 | 699 | 0.8+ | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.1− | | |
| 2003 12 17 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 0.7+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2003 12 17 | 704 | (0.8− | 2.6+) | 2006 09 18 | 699 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2003 12 27 | 704 | 1.3− | 1.4+ | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2003 12 27 | 704 | 0.6+ | 1.3+ | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2003 12 27 | 704 | 0.3+ | 0.2− | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3− | | |
| 2003 12 28 | 704 | 1.2− | 1.1+ | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2003 12 28 | 704 | 1.3− | 0.6+ | 2006 09 22 | 704 | 1.1+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | 1.1− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.4− | | |
| 2003 12 28 | 704 | 0.9− | 0.7+ | 2006 09 22 | 704 | 0.9+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.5+ | | |
| 2003 12 28 | 704 | 0.1− | 0.6+ | 2006 09 22 | 704 | 0.9− | 0.6− | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2003 12 29 | 704 | 0.3− | 0.7+ | 2006 09 22 | 704 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2003 12 29 | 704 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.4+ | 0.6− | 2006 11 21 | 704 | 0.9− | 0.3+ | | |
| 2003 12 29 | 704 | 0.7− | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.5− | | |
| 2003 12 29 | 704 | (1.9+ | 2.2+) | 2006 09 26 | 704 | 0.4+ | 0.7+ | 2006 11 21 | 704 | 0.8− | 1.1+ | | |
| 2003 12 30 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.4− | 1.2+ | | | | | | |

**(143952)∗ 2003 YL$_{121}$ = 2005 JC$_{30}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86210)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.23831 | | (2000.0) | | +0.99744936 | +0.06889684 |
| $n$ | 0.28879021 | $\omega$ | 340.45970 | | −0.05272756 | +0.88737618 |
| $a$ | 2.2668063 | $\Omega$ | 15.62468 | | −0.04811013 | +0.45586921 |
| $e$ | 0.1949936 | $i$ | 3.97165 | | | |
| $P$ | 3.41 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.9− | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 1999 08 13 | 699 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.0 | 1.3+ | | |
| 1999 08 13 | 699 | 0.6− | 0.2− | 2006 09 12 | 703 | 0.6− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 1999 09 11 | 704 | 0.2− | 0.3+ | 2006 09 12 | 703 | 1.4− | 0.3− | 2006 09 27 | 704 | 0.3+ | 1.1+ | | |
| 1999 09 11 | 704 | 0.4+ | 0.8− | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 09 27 | 704 | 0.6+ | 1.0+ | | |
| 1999 09 11 | 704 | 1.1+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.2+ | | |
| 1999 09 11 | 704 | 0.6− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.3+ | 1.1+ | | |
| 1999 09 11 | 704 | 1.0+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 28 | 704 | 0.3+ | 0.5+ | | |
| 2003 11 24 | 704 | 0.6+ | 0.8+ | 2006 09 17 | 704 | 0.1− | 0.5− | 2006 09 28 | 704 | 0.3+ | 0.6+ | | |
| 2003 11 24 | 704 | 0.1+ | 0.9+ | 2006 09 17 | 704 | 0.3+ | 0.5− | 2006 09 28 | 704 | 0.1+ | 0.7+ | | |
| 2003 11 24 | 704 | 0.2− | 0.4− | 2006 09 17 | 704 | 0.8+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.2+ | | |
| 2003 11 24 | 704 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.7+ | 0.3− | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2003 12 28 | 704 | 0.5− | 1.1+ | 2006 09 17 | 704 | 0.2− | 1.3− | 2006 10 01 | 691 | 0.3+ | 0.2− | | |
| 2003 12 28 | 704 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.6− | 0.4+ | | |
| 2003 12 28 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.6− | 0.7+ | | |
| 2003 12 28 | 704 | 0.3− | 1.3+ | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.5− | 0.6+ | | |
| 2003 12 28 | 704 | 0.6− | 1.5+ | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.7− | 0.5+ | | |
| 2003 12 29 | 704 | 1.2+ | 0.7− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 1.2− | 0.4+ | | |
| 2003 12 29 | 704 | 0.3+ | 1.0− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2003 12 29 | 704 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 30 | 704 | 0.2− | 0.3− | 2006 09 19 | 703 | (1.5+ | 0.6−) | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 30 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.7− | 1.1− | 2006 10 16 | 703 | (0.0 | 1.9+) | | |
| 2003 12 30 | 704 | 0.5+ | 0.3− | 2006 09 19 | 703 | 0.4− | 0.6− | 2006 10 16 | 703 | (0.3+ | 1.6+) | | |
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.6+ | | |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.1+ | 2006 10 16 | 703 | (1.1− | 4.3+) | | |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.4− | | |
| 2005 04 02 | 691 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.5− | | |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.4− | | |
| 2005 04 02 | 691 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.4− | | |
| 2005 05 04 | 691 | 0.5+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.0 | | |
| 2005 05 04 | 691 | 0.4+ | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.0 | | |
| 2005 05 04 | 691 | 0.4+ | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.0 | | |
| 2005 05 08 | G96 | 0.8− | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.4+ | | |
| 2005 05 08 | G96 | 0.2− | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2005 05 08 | G96 | 0.7− | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.5+ | | |
| 2005 05 08 | G96 | 0.1− | 0.7+ | 2006 09 26 | 704 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 26 | 704 | (1.0+ | 1.8+) | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.5− | | |
| 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.8+ | 0.3+ | | |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.4+ | 1.0+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.6− | | |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.7+ | 2006 11 15 | G96 | 0.4− | 0.8− | | |

**(143953)∗ 2003 YL$_{122}$ = 2002 JY$_{142}$**

Discovered 2003 Dec. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57549)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 52.00490 | | | (2000.0) | | |
| $n$ | 0.30809940 | $\omega$ | 76.55892 | | +0.85541850 | +0.51335184 |
| $a$ | 2.1710783 | $\Omega$ | 252.51520 | | −0.49871672 | +0.78054656 |
| $e$ | 0.0857112 | $i$ | 4.13459 | | −0.13978849 | +0.35667486 |
| $P$ | 3.20 | $H$ | 16.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.5− | 0.2+ | 2003 12 29 | 691 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2001 01 03 | 704 | 0.5− | 0.1− | 2003 12 29 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.6− |
| 2001 01 03 | 704 | 0.5+ | 0.1− | 2004 01 16 | 644 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2002 05 11 | 704 | 0.4− | 1.1+ | 2004 01 16 | 644 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.6− | 0.0 |
| 2002 05 11 | 704 | 0.4+ | 0.1− | 2004 01 16 | 644 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2002 05 11 | 704 | 0.0 | 1.1+ | 2005 04 14 | 703 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.8+ |
| 2002 05 11 | 704 | 0.1− | 0.9+ | 2005 04 14 | 703 | 0.4+ | 0.7− | 2006 11 11 | 703 | 0.3− | 0.8+ |
| 2002 05 12 | 644 | 0.1+ | 0.2+ | 2005 04 14 | 703 | 0.8− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2002 05 12 | 644 | 0.1+ | 0.5+ | 2005 04 14 | 703 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 1.2+ |
| 2002 05 12 | 644 | 0.5+ | 0.5+ | 2005 05 01 | 644 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2003 11 21 | 704 | 0.3+ | 0.1+ | 2005 05 01 | 644 | 0.3+ | 0.7+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2003 11 21 | 704 | 0.0 | 0.0 | 2005 05 01 | 644 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2003 11 21 | 704 | 0.9+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2003 11 21 | 704 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2003 11 21 | 704 | 0.3+ | 0.5− | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2003 12 19 | 704 | 0.4+ | 0.9+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.4+ |
| 2003 12 19 | 704 | (0.6+ | 1.7+) | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2003 12 19 | 704 | 0.2+ | 0.6− | 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 1.1+ |
| 2003 12 19 | 704 | (1.9+ | 1.4−) | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.6+ |
| 2003 12 21 | 704 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.6+ |
| 2003 12 21 | 704 | 0.2+ | 0.9− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | (1.7+ | 0.2−) |
| 2003 12 21 | 704 | 0.7− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.4− | 0.4− |
| 2003 12 21 | 704 | 0.4− | 0.2− | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.7+ | 0.5− |
| 2003 12 27 | 291 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1+ | 1.3+ |
| 2003 12 27 | 291 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2003 12 27 | 291 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.4− | 0.5+ |
| 2003 12 29 | 691 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.3+ | 0.6+ |

**(143954)∗ 2003 YY$_{122}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 262.83748 | | | (2000.0) | | |
| $n$ | 0.22675513 | $\omega$ | 353.86294 | | +0.45886617 | −0.88734957 |
| $a$ | 2.6633688 | $\Omega$ | 68.81550 | | +0.81724008 | +0.40150335 |
| $e$ | 0.0735950 | $i$ | 2.78504 | | +0.34865525 | +0.22672848 |
| $P$ | 4.35 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.1− | 1.0− | 2003 12 22 | 704 | 0.4− | 0.7+ | 2004 01 27 | 704 | 0.6− | 0.3+ |
| 1996 03 12 | 691 | 0.3− | 0.8− | 2003 12 22 | 704 | 0.7− | 0.1+ | 2004 01 27 | 704 | 1.1+ | 0.4+ |
| 1996 03 12 | 691 | 0.5− | 0.4− | 2003 12 22 | 704 | 1.1− | 0.1− | 2004 01 27 | 704 | 0.7+ | 0.1− |
| 1998 09 21 | 809 | (0.8+ | 5.0+) | 2003 12 22 | 704 | 0.8− | 0.4− | 2004 04 13 | 291 | 0.7+ | 0.5+ |
| 1998 09 21 | 809 | (0.2+ | 4.0+) | 2003 12 22 | 704 | 0.0 | 0.8+ | 2004 04 13 | 291 | 0.7+ | 0.4+ |
| 1998 09 21 | 809 | (0.6− | 3.8+) | 2003 12 27 | 704 | (2.7+ | 1.0+) | 2004 04 13 | 291 | 0.9+ | 0.1− |
| 2000 03 04 | 688 | 0.3− | 0.6+ | 2003 12 27 | 704 | 0.7− | 1.3+ | 2005 04 16 | 691 | 0.3+ | 0.7+ |
| 2000 03 04 | 688 | 0.2− | 0.3+ | 2003 12 27 | 704 | 1.4+ | 1.4+ | 2005 04 16 | 691 | 0.0 | 0.7+ |
| 2002 08 29 | 644 | 0.4− | 0.6+ | 2003 12 27 | 704 | 0.7+ | 1.1+ | 2005 04 16 | 691 | 0.2+ | 0.8+ |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2003 12 27 | 704 | 1.0+ | 1.8+ | 2005 05 17 | 850 | 0.3− | 0.8− |
| 2002 08 29 | 644 | 0.5− | 0.4+ | 2003 12 29 | 691 | 0.3− | 0.0 | 2005 05 17 | 850 | 0.4+ | 0.7+ |
| 2002 09 13 | 608 | 0.1+ | 1.7+ | 2003 12 29 | 691 | 0.2− | 0.1− | 2005 05 17 | 850 | 1.2− | 0.6− |
| 2002 09 13 | 608 | 0.3+ | 1.2+ | 2003 12 29 | 691 | 0.3− | 0.0 | 2005 06 27 | 291 | 0.1+ | 0.9+ |
| 2002 09 13 | 608 | (0.6− | 2.3+) | 2004 01 22 | 704 | 0.5+ | 0.6+ | 2005 06 27 | 291 | 0.6+ | 0.6+ |
| 2002 09 15 | 644 | 0.5− | 0.5+ | 2004 01 22 | 704 | 0.1+ | 0.4− | 2005 06 27 | 291 | 0.5+ | 0.7+ |
| 2002 09 15 | 644 | 1.0− | 0.5+ | 2004 01 22 | 704 | 0.2− | 0.5+ | 2006 07 26 | 644 | 0.1− | 0.3+ |
| 2002 09 15 | 644 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.5+ | 0.9+ | 2006 07 26 | 644 | 0.5− | 0.3+ |
| 2003 12 18 | 704 | 0.6+ | 0.6+ | 2004 01 22 | 704 | 0.2− | 0.3− | 2006 07 26 | 644 | 0.2− | 0.7+ |
| 2003 12 18 | 704 | 0.2− | 0.8+ | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.8+ | 0.1+ |
| 2003 12 18 | 704 | 0.3− | 0.6+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.6+ |
| 2003 12 18 | 704 | 0.3+ | 0.4− | 2004 01 27 | 691 | 0.3− | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.9+ |

**(143955)∗ 2003 YC$_{123}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 180.77557 | | | (2000.0) | | |
| $n$ | 0.26877059 | $\omega$ | 222.95550 | | −0.74862634 | +0.66299135 |
| $a$ | 2.3780166 | $\Omega$ | 358.57172 | | −0.59651443 | −0.67424044 |
| $e$ | 0.1426230 | $i$ | 2.37200 | | −0.28935986 | −0.32533414 |
| $P$ | 3.67 | $H$ | 16.6 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 0.5+ | 0.0 | 2005 07 30 | E12 | 0.7− | 0.6+ |
| 1991 10 13 | 691 | 0.2− | 0.3− | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2005 07 30 | E12 | 1.2− | 0.6+ |
| 2001 05 24 | 704 | 0.7+ | 0.7+ | 2004 02 11 | 691 | 0.0 | 0.2+ | 2005 07 30 | E12 | 0.1+ | 0.2+ |
| 2001 05 24 | 704 | 0.2+ | 1.1+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2005 07 30 | E12 | 0.1− | 0.1+ |
| 2001 05 24 | 704 | 0.5+ | 0.1+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2005 08 02 | 704 | 0.3+ | 0.5+ |
| 2001 05 24 | 704 | 0.0 | 1.3+ | 2004 02 15 | 704 | 0.4+ | 0.2+ | 2005 08 02 | 704 | 0.3+ | 0.1+ |
| 2003 12 27 | 704 | 1.1+ | 0.7+ | 2004 02 15 | 704 | 0.5+ | 0.1− | 2005 08 02 | 704 | 0.3+ | 0.4− |
| 2003 12 27 | 704 | 0.9+ | 0.2− | 2004 02 15 | 704 | 0.7− | 0.2− | 2006 10 17 | 691 | 0.3− | 0.2+ |
| 2003 12 27 | 704 | 0.1− | 1.2+ | 2004 02 15 | 704 | 0.7− | 0.3+ | 2006 10 17 | 691 | 0.4− | 0.3+ |
| 2003 12 29 | 691 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.4− | 0.2+ |
| 2003 12 29 | 691 | 0.4− | 0.2+ | 2004 02 23 | 704 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.7− |
| 2003 12 29 | 691 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2004 01 22 | 704 | 0.5+ | 0.9+ | 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2004 01 22 | 704 | 0.7− | 0.9+ | 2004 02 23 | 704 | 0.7− | 0.7− | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.4+ | 0.7+ | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.6+ |
| 2004 01 22 | 704 | 0.3+ | 0.3− | 2004 02 23 | 704 | 0.1+ | 0.4− | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.2− | 1.0+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 11 13 | 691 | 0.4+ | 0.5− |
| 2004 01 28 | 691 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2004 01 28 | 691 | 0.2+ | 0.1− | 2005 07 11 | 691 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.4+ | 0.5+ |
| 2004 01 30 | 704 | 0.5+ | 0.8+ | 2005 07 11 | 691 | 0.4− | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2004 01 30 | 704 | 1.3− | 0.7− | 2005 07 11 | 691 | 0.2− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.2+ |

**(143956)∗ 2003 YL$_{123}$ = 1995 UK$_{58}$ = 1999 XG$_{57}$**

Discovered 2003 Dec. 27 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 57550)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.85004 | | | (2000.0) | | |
| $n$ | 0.26548722 | $\omega$ | 282.71327 | | −0.58901556 | −0.80804460 |
| $a$ | 2.3975829 | $\Omega$ | 203.38477 | | +0.75192217 | −0.54294027 |
| $e$ | 0.1587836 | $i$ | 1.61153 | | +0.29609748 | −0.22864773 |
| $P$ | 3.71 | $H$ | 17.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.4+ | 0.5− | 2004 01 12 | 644 | 0.1+ | 0.2+ | 2004 01 24 | 704 | 1.1+ | 0.2+ |
| 1995 10 17 | 691 | 0.3+ | 0.2− | 2004 01 12 | 644 | 0.2− | 0.1− | 2004 01 24 | 704 | 1.4+ | 0.5+ |
| 1995 10 17 | 691 | 0.2+ | 0.2− | 2004 01 12 | 644 | 0.0 | 0.1+ | 2004 01 24 | 704 | 1.5+ | 0.5+ |
| 1995 10 22 | 691 | 0.1− | 0.1+ | 2004 01 13 | 699 | 0.5+ | 0.6− | 2004 01 24 | 704 | 1.2+ | 0.2+ |
| 1995 10 22 | 691 | 0.2+ | 0.0 | 2004 01 13 | 699 | 0.3+ | 0.6+ | 2004 01 26 | 699 | 0.0 | 0.5− |
| 1995 10 22 | 691 | 0.2− | 0.0 | 2004 01 13 | 699 | 0.1+ | 0.0 | 2004 01 26 | 699 | 0.8− | 0.8+ |
| 1995 10 27 | 691 | 0.1+ | 0.0 | 2004 01 13 | 699 | (1.6− | 0.0 ) | 2004 01 26 | 699 | 0.5− | 0.1− |
| 1995 10 27 | 691 | 0.5− | 0.1+ | 2004 01 17 | 644 | 0.0 | 0.0 | 2004 01 26 | 699 | 1.5+ | 0.3− |
| 1995 10 27 | 691 | 0.0 | 0.1+ | 2004 01 17 | 644 | 0.1− | 0.2+ | 2004 02 16 | 704 | 0.1+ | 1.1+ |
| 1999 12 07 | 704 | 0.4+ | 0.4− | 2004 01 17 | 644 | 0.1− | 0.1+ | 2004 02 16 | 704 | 0.2− | 1.2+ |
| 1999 12 07 | 704 | 0.7− | 0.2− | 2004 01 17 | 644 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.8+ | 0.4+ |
| 1999 12 07 | 704 | 0.8− | 1.2− | 2004 01 17 | 644 | 0.1+ | 0.1− | 2004 02 16 | 704 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.6+ | 1.2− | 2004 01 17 | 644 | 0.2+ | 0.1+ | 2004 03 18 | 645 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.3+ | 1.1− | 2004 01 19 | 703 | 0.5− | 0.0 | 2004 03 18 | 645 | 0.1− | 0.1− |
| 1999 12 08 | 704 | 0.1− | 0.9− | 2004 01 19 | 703 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.3− | 0.1− |
| 1999 12 08 | 704 | 0.8− | 1.1− | 2004 01 19 | 703 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.4− | 0.3+ |
| 1999 12 08 | 704 | 0.5+ | 0.6− | 2004 01 19 | 703 | 0.9− | 0.1+ | 2006 09 17 | 691 | 0.5− | 0.4+ |
| 1999 12 08 | 704 | 0.4+ | 0.7− | 2004 01 21 | 704 | 0.2− | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2003 12 27 | 608 | 0.1− | 0.7+ | 2004 01 21 | 704 | 0.3− | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2003 12 27 | 608 | 0.2+ | 0.2− | 2004 01 21 | 704 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.5+ |
| 2003 12 27 | 608 | 0.5+ | 0.3+ | 2004 01 22 | 644 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.5− |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2004 01 22 | 644 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.4+ |
| 2003 12 29 | 691 | 0.1+ | 0.0 | 2004 01 22 | 644 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.7+ |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2004 01 24 | 704 | 0.9+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.4+ |

**(143957)∗ 2003 YB$_{125}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.20108 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27393669 | $\omega$ | 132.29803 | | +0.22630810 | −0.96139258 | |
| $a$ | 2.3480242 | $\Omega$ | 303.97255 | | +0.82890771 | +0.27449127 | |
| $e$ | 0.0936919 | $i$ | 10.88139 | | +0.51156295 | −0.01946388 | |
| $P$ | 3.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.4+ | 0.3+ | 2003 12 17 | 704 | 0.2− | 0.0 | 2006 08 27 | 699 | 0.3− | 0.9+ |
| 1999 09 08 | 704 | 0.6− | 0.4+ | 2003 12 17 | 704 | 0.5− | 1.1+ | 2006 08 27 | 699 | 0.1+ | 0.3+ |
| 1999 09 08 | 704 | 0.1− | 0.5+ | 2003 12 17 | 704 | 0.9− | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.0 |
| 1999 10 03 | 704 | 2.0+ | 0.5+ | 2003 12 27 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.5− | 0.1− |
| 1999 10 03 | 704 | 1.4+ | 0.9− | 2003 12 27 | 704 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.1− |
| 1999 10 03 | 704 | 0.6− | 1.0+ | 2003 12 27 | 704 | 0.3+ | 0.2− | 2006 08 29 | 703 | 0.1+ | 0.3+ |
| 1999 10 03 | 704 | 0.1+ | 0.6+ | 2003 12 27 | 704 | 0.3− | 0.6− | 2006 08 30 | 699 | 0.5− | 0.3− |
| 1999 10 10 | 704 | 0.4+ | 0.5− | 2003 12 27 | 704 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.2− | 1.0+ |
| 1999 10 10 | 704 | 0.3+ | 1.2− | 2003 12 27 | 704 | 0.2− | 0.5+ | 2006 08 30 | 699 | 0.5− | 0.3− |
| 1999 10 10 | 704 | 0.8+ | 0.3− | 2003 12 27 | 704 | 0.3− | 0.8+ | 2006 08 30 | 699 | 0.0 | 0.4+ |
| 1999 11 04 | 704 | 0.5− | 1.3− | 2003 12 27 | 704 | 0.4+ | 0.5+ | 2006 09 11 | 703 | 0.5+ | 1.1− |
| 1999 11 04 | 704 | (0.1+ | 2.2−) | 2003 12 27 | 704 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.8− | 0.1+ |
| 1999 11 04 | 704 | 1.6− | 1.3− | 2003 12 27 | 704 | 0.7+ | 0.0 | 2006 09 11 | 703 | 0.4− | 0.1− |
| 1999 11 04 | 704 | 0.2− | 1.4− | 2003 12 29 | 704 | 0.1+ | 0.4+ | 2006 09 11 | 703 | 1.6− | 0.0 |
| 2001 03 19 | 699 | 0.4+ | 0.8+ | 2003 12 29 | 704 | 0.6+ | 0.6+ | 2006 09 11 | 703 | 1.8+ | 0.9+ |
| 2001 03 19 | 699 | 0.3− | 0.9+ | 2003 12 29 | 704 | 0.3+ | 0.4+ | 2006 09 11 | 703 | 0.6− | 0.4+ |
| 2001 03 19 | 699 | 0.0 | 1.0+ | 2003 12 29 | 704 | 0.4+ | 0.2− | 2006 09 11 | 703 | 0.8− | 0.9+ |
| 2001 03 19 | 699 | 0.4− | 0.2+ | 2003 12 29 | 704 | 0.2+ | 0.4+ | 2006 09 11 | 703 | 0.0 | 0.1− |
| 2001 03 26 | 704 | 0.5+ | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 2001 03 26 | 704 | 1.3+ | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.1+ | 1.4+ |
| 2001 03 26 | 704 | 1.2+ | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 2003 12 17 | 704 | 0.7− | 0.2+ | 2006 08 27 | 699 | 1.0+ | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.5+ |
| 2003 12 17 | 704 | 0.5− | 1.2− | 2006 08 27 | 699 | 0.3− | 0.7+ | | | | |

**(143958)∗ 2003 YD$_{126}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.91279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29822636 | $\omega$ | 97.24078 | | −0.16317065 | −0.98658897 | |
| $a$ | 2.2187346 | $\Omega$ | 2.16362 | | +0.85577218 | −0.14364449 | |
| $e$ | 0.0153042 | $i$ | 6.36796 | | +0.49094735 | −0.07751424 | |
| $P$ | 3.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 09 | 566 | 0.4− | 0.2− | 2003 12 03 | 704 | 1.1+ | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.2− |
| 1996 10 09 | 566 | 0.1+ | 0.0 | 2003 12 03 | 704 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.2− | 1.1− |
| 1996 10 09 | 566 | 0.0 | 0.1− | 2003 12 03 | 704 | 0.8− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 |
| 1998 03 03 | 704 | (3.3+ | 1.4−) | 2003 12 17 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1998 03 03 | 704 | 0.7+ | 0.6− | 2003 12 17 | 704 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 1998 03 03 | 704 | 0.4+ | 0.6+ | 2003 12 17 | 704 | (1.9+ | 0.1+) | 2006 09 29 | 704 | 0.3+ | 0.5− |
| 1998 03 03 | 704 | (4.6− | 2.1+) | 2003 12 17 | 704 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.4+ | 0.4− |
| 1998 03 22 | 704 | 0.8− | 0.4− | 2003 12 27 | 704 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.5+ |
| 1998 03 22 | 704 | (2.5+ | 3.1−) | 2003 12 27 | 704 | 0.8− | 0.9+ | 2006 09 29 | 704 | 0.1− | 0.1− |
| 1998 03 22 | 704 | 1.4+ | 1.0+ | 2003 12 27 | 704 | 0.2+ | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 1998 03 22 | 704 | (0.5− | 2.1−) | 2003 12 29 | 704 | 0.7+ | 0.5− | 2006 10 17 | 691 | 0.4+ | 0.1+ |
| 1998 03 29 | 704 | 0.1+ | 0.3+ | 2003 12 29 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 1998 03 29 | 704 | (0.8+ | 3.0+) | 2003 12 29 | 704 | 0.7+ | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 1998 03 29 | 704 | 0.5− | 0.6− | 2003 12 29 | 704 | (1.7+ | 0.2−) | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 1998 03 29 | 704 | 0.5+ | 0.0 | 2003 12 29 | 704 | 0.6+ | 1.4− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 1998 03 29 | 704 | 0.5− | 1.5− | 2005 01 20 | 809 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.5− |
| 2001 01 18 | 704 | 0.0 | 0.3+ | 2005 01 20 | 809 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2001 01 18 | 704 | 0.1− | 0.3− | 2005 01 20 | 809 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2001 01 18 | 704 | 0.2− | 0.2− | 2005 05 12 | 703 | 0.8+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2001 01 18 | 704 | 0.6− | 0.0 | 2005 05 12 | 703 | 0.9− | 0.4+ | 2006 10 28 | 152 | (3.9+ | 4.1−) |
| 2001 01 18 | 704 | 0.6− | 0.5− | 2005 05 12 | 703 | 0.3+ | 1.4+ | 2006 10 28 | 152 | (4.6+ | 4.2−) |
| 2001 02 16 | 704 | 0.3− | 0.2+ | 2005 05 12 | 703 | (4.3+ | 2.3+) | 2006 11 10 | 683 | 0.3− | 0.5− |
| 2001 02 16 | 704 | 0.9− | 0.3− | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 11 10 | 683 | 0.5+ | 1.2− |
| 2001 02 16 | 704 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.0 | 2006 11 10 | 683 | (2.5− | 1.0−) |
| 2001 02 16 | 704 | (0.2− | 1.8+) | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.0 | 0.0 |
| 2003 11 19 | 704 | 0.3− | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.6− |
| 2003 11 19 | 704 | 0.3− | 0.8− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 1.1+ |
| 2003 11 19 | 704 | 0.6+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.9+ |
| 2003 11 19 | 704 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 15 | 683 | 1.1− | 0.2+ |
| 2003 11 19 | 704 | (2.8+ | 0.7+) | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 11 15 | 683 | 1.1− | 0.5+ |
| 2003 12 03 | 704 | 0.7− | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 11 15 | 683 | 0.1− | 1.2+ |

**(143959)∗ 2003 YG$_{126}$ = 1997 AS$_{21}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57552)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.00754 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29085532 | $\omega$ | 353.50168 | | +0.94034087 | −0.33945677 | |
| $a$ | 2.2560638 | $\Omega$ | 26.37810 | | +0.31444079 | +0.84127131 | |
| $e$ | 0.2485420 | $i$ | 2.96498 | | +0.12994626 | +0.42075133 | |
| $P$ | 3.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 02 | 327 | 0.1− | 0.1+ | 2006 08 28 | 704 | 0.3− | 0.2− | 2006 09 28 | 704 | 0.3+ | 1.2+ |
| 1997 01 02 | 327 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.3− | 2006 09 28 | 704 | 0.0 | 0.4+ |
| 1997 01 02 | 327 | 0.3+ | 0.2+ | 2006 08 28 | 703 | (0.0 | 1.9−) | 2006 09 28 | 704 | 0.1+ | 0.1− |
| 1997 01 05 | 327 | 0.0 | 0.5− | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.3− | 0.1− |
| 1997 01 05 | 327 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 1997 01 05 | 327 | 0.1+ | 0.4− | 2006 08 30 | 704 | 1.0− | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.0 |
| 2003 12 17 | 699 | (2.2+ | 1.6+) | 2006 08 30 | 704 | 0.4+ | 1.4− | 2006 09 30 | 703 | 0.6− | 0.1+ |
| 2003 12 17 | 699 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.1+ | 1.0− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2003 12 17 | 699 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.6− | 2006 10 09 | 644 | 0.3− | 0.2− |
| 2003 12 17 | 699 | 0.2+ | 1.4− | 2006 08 30 | 704 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.2− |
| 2003 12 18 | 704 | (0.2+ | 1.5−) | 2006 08 31 | 704 | 0.2+ | 0.4− | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2003 12 18 | 704 | 0.3− | 0.2+ | 2006 08 31 | 704 | 1.0− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2003 12 18 | 704 | (0.3+ | 1.6−) | 2006 08 31 | 704 | 0.4− | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2003 12 18 | 704 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.5− |
| 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2003 12 18 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2003 12 23 | 704 | (1.6+ | 1.1+) | 2006 09 16 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2003 12 23 | 704 | 1.4+ | 0.5+ | 2006 09 16 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.4− |
| 2003 12 23 | 704 | 1.2+ | 0.7+ | 2006 09 16 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 12 23 | 704 | (1.9+ | 2.4−) | 2006 09 16 | 704 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.4− |
| 2003 12 23 | 704 | (0.6+ | 2.1−) | 2006 09 16 | 699 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 12 27 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2003 12 27 | 704 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2003 12 27 | 704 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2003 12 29 | 704 | (0.3+ | 2.0+) | 2006 09 16 | 699 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.3− |
| 2003 12 29 | 704 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 11 10 | 704 | 0.1− | 0.4+ |
| 2003 12 29 | 704 | (0.2+ | 1.8+) | 2006 09 19 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 704 | 0.9− | 0.1− |
| 2003 12 29 | 704 | (0.9+ | 2.2+) | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 11 10 | 704 | 0.3− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | (0.5+ | 1.6+) | 2006 09 19 | 704 | 0.4+ | 0.9+ | 2006 11 10 | 704 | 0.1− | 0.2+ |
| 2004 01 17 | 644 | 0.5+ | 1.1+ | 2006 09 19 | 704 | 1.0+ | 0.3+ | 2006 11 10 | 704 | 0.3+ | 0.1− |
| 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2005 04 05 | G96 | 0.4+ | 0.3− | 2006 09 19 | 704 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2005 04 05 | G96 | 0.2− | 0.4+ | 2006 09 19 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.1+ |
| 2005 04 05 | G96 | 0.8− | 0.3+ | 2006 09 22 | 704 | 0.7− | 1.1+ | 2006 11 18 | 704 | 1.4− | 0.5− |
| 2005 04 10 | 691 | 0.6+ | 0.9+ | 2006 09 22 | 704 | 0.2− | 0.6+ | 2006 11 18 | 703 | (2.8+ | 1.2+) |
| 2005 04 10 | 691 | 0.4+ | 0.6+ | 2006 09 22 | 704 | 0.5− | 1.2+ | 2006 11 18 | 703 | 1.2+ | 0.8+ |
| 2005 04 10 | 691 | 0.4+ | 0.8+ | 2006 09 22 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2005 05 12 | G96 | 0.0 | 0.5+ | 2006 09 22 | 704 | 0.3− | 0.2+ | 2006 11 18 | 703 | 0.3+ | 0.8+ |
| 2005 05 12 | G96 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.4+ | 0.9− |
| 2005 05 12 | G96 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 11 18 | 703 | 0.7− | 0.4+ |
| 2005 05 12 | G96 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2006 08 27 | 699 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.7− | 0.6− |
| 2006 08 27 | 699 | 1.2+ | 0.9+ | 2006 09 26 | 704 | 0.5− | 0.6+ | 2006 11 21 | 704 | 0.0 | 1.1+ |
| 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.6+ |
| 2006 08 27 | 699 | 0.7+ | 0.1− | 2006 09 26 | 704 | 0.5− | 0.3− | 2006 11 27 | 703 | 1.0+ | 0.3− |
| 2006 08 28 | 704 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.4− | 0.7− |
| 2006 08 28 | 704 | 0.5+ | 0.9− | 2006 09 28 | 704 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.3+ |
| 2006 08 28 | 704 | 0.8+ | 0.7− | 2006 09 28 | 704 | (0.5+ | 1.7+) | 2006 11 27 | 703 | 0.3+ | 0.1− |

**(143960)∗ 2003 YX$_{126}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.34886 | | (2000.0) | | | |
| $n$ | 0.28693858 | $\omega$ | 176.64857 | | −0.79845205 | −0.59574516 |
| $a$ | 2.2765477 | $\Omega$ | 326.29584 | | +0.54866965 | −0.66055363 |
| $e$ | 0.1587115 | $i$ | 9.01607 | | +0.24786275 | −0.45689890 |
| $P$ | 3.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 608 | 0.0 | 1.0+ | 2003 12 27 | 704 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.6− |
| 2001 03 20 | 608 | 0.1+ | 1.2+ | 2003 12 27 | 704 | 0.0 | 0.9+ | 2006 09 28 | 703 | 0.7− | 0.5− |
| 2001 03 20 | 608 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.6− | 0.0 | 2006 09 28 | 703 | 1.1− | 0.4+ |
| 2001 03 26 | 704 | (3.6+ | 0.9+) | 2003 12 27 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | (1.6− | 0.8+) |
| 2001 03 26 | 704 | 0.9+ | 0.6+ | 2003 12 29 | 704 | 0.0 | 0.2− | 2006 10 17 | A50 | 0.1+ | 0.6+ |
| 2001 03 26 | 704 | 1.1+ | 0.1+ | 2003 12 29 | 704 | 0.1+ | 0.4− | 2006 10 17 | A50 | 0.4− | 0.6+ |
| 2001 03 26 | 704 | (1.6+ | 0.3+) | 2003 12 29 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2001 04 28 | 608 | 0.3− | 0.5− | 2003 12 29 | 704 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 2001 04 28 | 608 | 0.6− | 0.5− | 2003 12 29 | 704 | 0.4− | 0.1+ | 2006 10 19 | 703 | 1.1+ | 0.1+ |
| 2001 04 28 | 608 | 0.5− | 0.2− | 2004 01 16 | 691 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2002 09 02 | 291 | 0.3− | 0.3+ | 2004 01 16 | 691 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 09 02 | 291 | 0.2− | 0.5+ | 2004 01 16 | 691 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.7+ | 0.1− |
| 2002 09 02 | 291 | 0.1− | 0.5+ | 2004 01 19 | 704 | (3.4+ | 0.6+) | 2006 10 22 | 644 | 0.3+ | 0.5+ |
| 2003 12 03 | 704 | 0.2− | 0.4− | 2004 01 19 | 704 | (4.1+ | 0.2+) | 2006 10 27 | 703 | 0.8− | 0.4+ |
| 2003 12 03 | 704 | 0.0 | 0.4+ | 2004 01 19 | 704 | (3.4+ | 0.5+) | 2006 10 27 | 703 | 0.0 | 0.2+ |
| 2003 12 03 | 704 | 0.5+ | 0.4+ | 2004 01 19 | 704 | (3.3+ | 0.4+) | 2006 10 27 | 703 | 1.2+ | 0.2+ |
| 2003 12 03 | 704 | 0.2− | 0.4+ | 2004 02 14 | 704 | 0.5− | 0.2+ | 2006 10 27 | 703 | 1.0+ | 0.5− |
| 2003 12 17 | 704 | 0.6+ | 0.2+ | 2004 02 14 | 704 | 0.4− | 0.6+ | 2006 11 15 | 703 | 0.7− | 1.4− |
| 2003 12 17 | 704 | 0.1+ | 0.2+ | 2004 02 14 | 704 | 1.0+ | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2003 12 17 | 704 | 0.3+ | 0.6+ | 2004 03 19 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.1− |
| 2003 12 17 | 704 | 0.7+ | 0.4+ | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2006 11 15 | 703 | 0.2+ | 1.0− |
| 2003 12 17 | 704 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.8+ | 0.3+ | | | | |
| 2003 12 27 | 704 | 0.4+ | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.3+ | | | | |

**(143961)∗ 2003 YU$_{128}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.24183 | | (2000.0) | | | |
| $n$ | 0.24401514 | $\omega$ | 214.00508 | | −0.86805108 | +0.49638017 |
| $a$ | 2.5362469 | $\Omega$ | 355.72110 | | −0.42168407 | −0.74745369 |
| $e$ | 0.1738801 | $i$ | 7.46801 | | −0.26204936 | −0.44149712 |
| $P$ | 4.04 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 1.2+ | 0.4+ | 2004 01 30 | 703 | (2.7− | 0.0 ) | 2005 07 05 | E12 | 0.1+ | 0.0 |
| 2000 01 03 | 704 | 0.2− | 0.7+ | 2004 01 31 | 704 | 0.4+ | 0.6+ | 2005 07 05 | E12 | 0.2− | 0.5+ |
| 2000 01 03 | 704 | 0.0 | 1.5− | 2004 01 31 | 704 | 0.2− | 0.5+ | 2005 07 05 | E12 | 0.1− | 0.7+ |
| 2001 06 19 | 644 | 0.0 | 1.0− | 2004 01 31 | 704 | 0.0 | 0.4− | 2005 08 04 | 644 | 0.0 | 0.5+ |
| 2001 06 19 | 644 | (0.0 | 1.6−) | 2004 01 31 | 704 | (1.3+ | 1.5+) | 2005 08 04 | 644 | 0.1+ | 0.6+ |
| 2001 06 19 | 644 | (0.0 | 1.8−) | 2004 01 31 | 704 | 0.8+ | 0.1− | 2005 08 04 | 644 | 0.1+ | 0.6+ |
| 2001 07 25 | 644 | 0.1− | 0.6+ | 2004 02 11 | 699 | 0.9+ | 1.1+ | 2006 09 20 | 699 | 0.8+ | 0.7+ |
| 2001 07 25 | 644 | 0.3− | 0.3+ | 2004 02 11 | 699 | 0.4+ | 1.0+ | 2006 09 20 | 699 | 0.3+ | 0.2− |
| 2001 07 25 | 644 | 0.6− | 0.2+ | 2004 02 11 | 699 | 1.2+ | 0.5+ | 2006 09 20 | 699 | 1.3+ | 0.4+ |
| 2002 10 18 | 644 | 0.1+ | 0.2− | 2004 02 11 | 699 | 0.5+ | 0.9+ | 2006 09 20 | 699 | 0.2− | 0.5+ |
| 2002 10 18 | 644 | 0.0 | 0.1+ | 2004 02 14 | 704 | (0.4+ | 1.7+) | 2006 09 28 | 691 | 0.5− | 0.3+ |
| 2002 10 18 | 644 | 0.1+ | 0.0 | 2004 02 14 | 704 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.4− | 0.0 |
| 2003 12 18 | 704 | 0.0 | 0.8+ | 2004 02 14 | 704 | 0.6+ | 0.8− | 2006 09 28 | 691 | 0.4− | 0.1+ |
| 2003 12 18 | 704 | 0.6+ | 0.6+ | 2004 02 14 | 704 | 0.3− | 0.8− | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 2003 12 18 | 704 | (1.6+ | 0.9+) | 2004 02 14 | 704 | 0.2− | 0.7+ | 2006 10 02 | 691 | 0.7+ | 0.7− |
| 2003 12 18 | 704 | 0.1+ | 0.6+ | 2004 02 15 | H06 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.1− | 0.5+ |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2004 02 15 | H06 | 0.2− | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2004 02 15 | H06 | 1.1− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2003 12 27 | 704 | 0.1+ | 0.1+ | 2004 02 16 | H06 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.5+ |
| 2003 12 27 | 704 | 0.3+ | 0.3− | 2004 02 16 | H06 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.6− | 1.0− |
| 2003 12 27 | 704 | 0.2− | 0.0 | 2004 02 16 | H06 | 0.5− | 0.2+ | 2006 10 17 | 703 | 1.4− | 0.0 |
| 2003 12 27 | 704 | 1.5− | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.8+ | 0.8− |
| 2003 12 27 | 704 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.9+ | 2006 10 17 | 703 | (1.0+ | 1.7−) |
| 2003 12 29 | 704 | (0.9+ | 3.2+) | 2004 03 20 | 704 | 0.8− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2003 12 29 | 704 | (0.2+ | 1.6+) | 2004 04 19 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 12 29 | 704 | (0.7− | 2.7+) | 2004 04 19 | 704 | 1.4+ | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2004 01 26 | 699 | 0.4− | 0.0 | 2004 04 19 | 704 | 0.1+ | 1.3+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 01 26 | 699 | 0.3− | 0.1+ | 2004 04 19 | 704 | 1.4+ | 1.0+ | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2004 01 26 | 699 | 0.5− | 0.2+ | 2004 04 22 | 704 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 01 26 | 699 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.2− | 0.7+ | 2006 11 25 | G96 | 0.7+ | 0.4− |
| 2004 01 30 | 703 | (1.6− | 0.1+) | 2004 04 22 | 704 | (0.7+ | 1.6−) | 2006 11 25 | G96 | 0.1− | 0.8− |
| 2004 01 30 | 703 | (2.8− | 0.1−) | 2004 04 22 | 704 | 0.3− | 0.9+ | 2006 11 25 | G96 | 0.3− | 0.4− |
| 2004 01 30 | 703 | 1.0− | 0.5− | 2005 07 05 | E12 | 0.3+ | 0.4+ | 2006 11 25 | G96 | 0.4− | 0.4− |

**(143962)∗ 2003 YT$_{129}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.29948 | | (2000.0) | | | |
| $n$ | 0.26894684 | $\omega$ | 28.85158 | | +0.83681985 | −0.54741578 |
| $a$ | 2.3769776 | $\Omega$ | 4.36540 | | +0.47911695 | +0.72493032 |
| $e$ | 0.1235512 | $i$ | 6.24275 | | +0.26491412 | +0.41810525 |
| $P$ | 3.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.7− | 0.3− | 2006 08 18 | 691 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.6− | 0.2− |
| 1999 12 07 | 703 | 0.5+ | 0.2+ | 2006 08 25 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.4+ |
| 1999 12 07 | 703 | 0.4+ | 0.7− | 2006 08 25 | 704 | 0.6− | 0.3− | 2006 09 28 | 704 | 0.6− | 1.1+ |
| 1999 12 07 | 703 | 0.1− | 0.3+ | 2006 08 25 | 704 | 0.7− | 0.6+ | 2006 09 28 | 704 | 0.4+ | 0.1+ |
| 2001 03 04 | 691 | 0.0 | 0.5+ | 2006 08 25 | 704 | 0.9− | 0.7+ | 2006 09 28 | 704 | 0.5− | 0.5+ |
| 2001 03 04 | 691 | 0.0 | 0.7+ | 2006 08 25 | 704 | 0.5− | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2001 03 04 | 691 | 0.2− | 0.6+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2001 03 14 | 691 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2001 03 14 | 691 | 0.3+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.3− |
| 2001 03 14 | 691 | 0.4+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | 1.3+ | 1.0+ |
| 2002 08 06 | 644 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.0 |
| 2002 08 06 | 644 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2002 08 06 | 644 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.5− | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.2− | 2006 09 30 | 704 | 0.0 | 1.1+ |
| 2003 12 27 | 704 | 0.2− | 0.7+ | 2006 09 17 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 2003 12 27 | 704 | 0.0 | 0.7+ | 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 09 30 | 704 | 0.3− | 0.6+ |
| 2003 12 27 | 704 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.2− | 0.4− | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2003 12 29 | 704 | 0.5+ | 1.1+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2003 12 29 | 704 | (1.6+ | 0.9+) | 2006 09 18 | 699 | 0.0 | 0.9+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2003 12 29 | 704 | (0.8+ | 3.1+) | 2006 09 18 | 699 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.7− | 0.4− |
| 2004 01 16 | 699 | 0.5− | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2004 01 16 | 699 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2004 01 16 | 699 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2004 01 16 | 699 | 0.6+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2004 01 16 | 703 | 0.9+ | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2004 01 16 | 703 | 0.5− | 0.6+ | 2006 09 22 | D35 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2004 01 16 | 703 | 0.4+ | 0.4+ | 2006 09 22 | D35 | 0.3+ | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2004 01 16 | 703 | 1.3− | 1.2+ | 2006 09 22 | D35 | 0.0 | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2004 01 18 | 691 | 0.1+ | 0.0 | 2006 09 22 | A50 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2004 01 18 | 691 | 0.2+ | 0.1− | 2006 09 22 | A50 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2004 01 18 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2004 01 31 | 704 | 0.7+ | 0.0 | 2006 09 25 | 699 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2004 01 31 | 704 | 0.4− | 1.4+ | 2006 09 25 | 699 | (1.5− | 2.6+) | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2004 01 31 | 704 | 1.4+ | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.5− | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2004 01 31 | 704 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.1+ | 1.0+ | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2005 05 19 | 644 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.1− | 0.5+ | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 1.0− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2005 05 19 | 644 | 0.3+ | 0.7+ | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2006 08 18 | 691 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.1+ | 1.3+ | 2006 11 15 | G96 | 0.6+ | 0.9− |
| 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.3− |

**(143963)∗ 2003 YA$_{130}$ = 1997 LO$_{11}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61754)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.31136 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25365328 | $\omega$ | 48.76045 | | −0.53470117 | −0.83122164 | |
| $a$ | 2.4715860 | $\Omega$ | 74.18300 | | +0.72027342 | −0.54249302 | |
| $e$ | 0.0348855 | $i$ | 9.10190 | | +0.44192857 | −0.12153974 | |
| $P$ | 3.89 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 07 | 809 | 1.4+ | 0.7− | 2003 12 29 | 704 | 1.3+ | 0.4+ | 2006 09 25 | 699 | 0.8− | 0.2+ |
| 1997 06 07 | 809 | 0.1+ | 0.9− | 2004 01 31 | 704 | 0.1− | 1.1+ | 2006 09 26 | 703 | 0.1− | 0.5+ |
| 1997 06 07 | 809 | 0.5+ | 0.8− | 2004 01 31 | 704 | 1.4+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| 1997 06 08 | 809 | (1.3− | 3.0−) | 2004 01 31 | 704 | 1.3+ | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 1997 06 08 | 809 | 2.0− | 1.7− | 2004 01 31 | 704 | 1.3+ | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.4− |
| 1997 06 08 | 809 | (1.7− | 2.1−) | 2004 01 31 | 704 | 0.2+ | 0.5− | 2006 09 30 | 704 | 0.2− | 1.2+ |
| 2000 01 03 | 704 | 0.1+ | 0.8+ | 2004 02 09 | 644 | 0.4+ | 0.5+ | 2006 09 30 | 704 | 0.3+ | 1.5+ |
| 2000 01 03 | 704 | 0.3− | 1.6− | 2004 02 09 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 1.1− | 0.6+ |
| 2000 01 03 | 704 | 1.6+ | 1.0− | 2004 02 09 | 644 | 0.0 | 0.5+ | 2006 09 30 | 704 | 1.5− | 0.4− |
| 2000 01 03 | 704 | 0.0 | 1.6− | 2004 02 14 | 704 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2000 01 29 | 704 | 0.5− | 0.4− | 2004 02 14 | 704 | 0.6+ | 1.3+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2000 01 29 | 704 | 0.8− | 0.9− | 2004 02 14 | 704 | 0.6+ | 0.6− | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2000 01 29 | 704 | 0.3− | 0.9− | 2004 02 14 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2000 01 29 | 704 | 1.3− | 1.1− | 2004 02 14 | 704 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2000 01 29 | 704 | 0.9− | 1.1− | 2004 02 16 | 703 | 0.0 | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2001 05 24 | 704 | 0.2− | 1.1+ | 2004 02 16 | 703 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 05 24 | 704 | 0.0 | 0.7+ | 2004 02 16 | 703 | 0.5+ | 0.4− | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2001 05 24 | 704 | (0.5− | 2.1+) | 2004 02 16 | 703 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 09 19 | 644 | 0.4− | 1.2+ | 2004 02 22 | 703 | 0.9− | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.4− |
| 2002 09 19 | 644 | 0.1+ | 1.4+ | 2004 02 22 | 703 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.5− |
| 2002 09 19 | 644 | 0.0 | 1.2+ | 2004 02 22 | 703 | 0.6− | 0.0 | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2002 10 07 | 608 | 0.4− | 0.1− | 2004 02 22 | 703 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2002 10 07 | 608 | 0.5− | 1.0− | 2004 05 14 | 645 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 10 07 | 608 | 0.4− | 1.3− | 2004 05 14 | 645 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.8− | 0.4− |
| 2003 12 27 | 704 | 1.0+ | 0.6− | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 28 | 703 | 0.5+ | 0.3− |
| 2003 12 27 | 704 | 1.2+ | 0.3− | 2006 09 18 | 703 | 0.7+ | 0.1− | 2006 10 28 | 703 | 0.7− | 0.3− |
| 2003 12 27 | 704 | (1.6+ | 0.4−) | 2006 09 18 | 703 | 0.5− | 0.3− | 2006 10 28 | 703 | 0.5+ | 0.1+ |
| 2003 12 27 | 704 | (2.2+ | 0.2+) | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.6+ | 0.2− |
| 2003 12 29 | 704 | 0.6− | 0.6− | 2006 09 25 | 699 | 0.5+ | 0.5− | 2006 11 16 | 703 | 0.1− | 0.5− |
| 2003 12 29 | 704 | 1.1+ | 0.3− | 2006 09 25 | 699 | 0.3− | 0.1− | 2006 11 16 | 703 | 1.2+ | 0.2+ |
| 2003 12 29 | 704 | (1.7+ | 1.5−) | 2006 09 25 | 699 | 0.2− | 0.5+ | 2006 11 16 | 703 | 0.5+ | 0.3+ |

**(143964)∗ 2003 YD$_{130}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.67558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25895726 | $\omega$ | 71.57060 | | −0.58529404 | −0.80426831 | |
| $a$ | 2.4377209 | $\Omega$ | 54.69084 | | +0.68820199 | −0.55985421 | |
| $e$ | 0.0922633 | $i$ | 7.24232 | | +0.42872942 | −0.19928808 | |
| $P$ | 3.81 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.2− | 0.4+ | 2004 02 11 | 644 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.4+ | 0.3− |
| 1992 01 31 | 691 | 0.2− | 0.0 | 2004 02 15 | 704 | 0.6− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 1999 12 10 | 704 | 0.0 | 1.3− | 2004 02 15 | 704 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 1999 12 10 | 704 | 0.4− | 1.7− | 2004 02 15 | 704 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 1999 12 10 | 704 | 1.0− | 1.1− | 2004 02 15 | 704 | 0.8− | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2000 01 29 | 704 | 1.0+ | 1.0− | 2004 02 17 | 608 | 0.9+ | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.7− |
| 2000 01 29 | 704 | 0.3− | 1.1− | 2004 02 17 | 608 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 2000 01 29 | 704 | 0.5+ | 1.5− | 2004 02 17 | 608 | 0.5+ | 0.8+ | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 2000 01 29 | 704 | 0.5− | 0.7− | 2004 03 14 | 704 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.7+ | 0.2− |
| 2000 01 29 | 704 | 0.5+ | 1.3− | 2004 03 14 | 704 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 09 18 | 599 | 0.2− | 0.6+ | 2004 03 14 | 704 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2002 09 18 | 599 | 0.3+ | 0.1+ | 2004 03 14 | 704 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 09 19 | 599 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 09 19 | 599 | 0.2+ | 0.5+ | 2004 03 23 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.7− | 1.3+ | 2004 03 23 | 704 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.5− | 0.7+ | 2004 03 23 | 704 | 0.5+ | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2004 03 23 | 704 | 1.3− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.5+ | 2004 04 14 | 644 | 0.4+ | 0.6+ | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2002 10 04 | 704 | 1.2− | 1.3+ | 2004 04 14 | 644 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 10 29 | 704 | 0.5− | 0.5+ | 2004 04 14 | 644 | 0.1+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.2− |
| 2002 10 29 | 704 | 0.3− | 0.4− | 2004 04 14 | 704 | 0.9+ | 0.6− | 2006 11 07 | 644 | 0.1− | 0.7+ |
| 2002 10 29 | 704 | 0.1− | 0.2+ | 2004 04 14 | 704 | 1.2+ | 0.8− | 2006 11 07 | 644 | 0.2+ | 0.1− |
| 2003 12 19 | 704 | 0.6− | 0.2+ | 2004 04 14 | 704 | 0.5+ | 1.1− | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.2+ | 0.2+ | 2004 04 14 | 704 | 1.0+ | 0.9− | 2006 11 07 | 644 | 0.4− | 0.2+ |
| 2003 12 19 | 704 | 0.2+ | 0.2− | 2004 04 25 | 703 | (2.0− | 1.9−) | 2006 11 07 | 644 | 0.2+ | 0.0 |
| 2003 12 19 | 704 | 0.8+ | 0.1+ | 2004 04 25 | 703 | 0.2− | 1.3+ | 2006 11 11 | 703 | 1.0+ | 0.6− |
| 2003 12 27 | 704 | (0.1− | 1.9+) | 2004 04 25 | 703 | 1.4− | 0.4− | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 0.6+ | 0.1+ | 2004 04 25 | 703 | 1.0− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2003 12 27 | 704 | (0.0 | 1.8+) | 2004 05 22 | 704 | 1.0+ | 0.9− | 2006 11 11 | 703 | 1.4− | 0.9− |
| 2003 12 27 | 704 | 0.9+ | 0.4+ | 2004 05 22 | 704 | 0.3− | 1.1+ | 2006 11 14 | 704 | 0.9+ | 0.2+ |
| 2003 12 27 | 704 | 0.4+ | 0.3+ | 2004 05 22 | 704 | 0.4− | 0.2+ | 2006 11 14 | 704 | 0.7− | 0.8+ |
| 2003 12 29 | 704 | 0.2− | 0.7+ | 2006 09 15 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.8+ |
| 2003 12 29 | 704 | 0.3+ | 0.4+ | 2006 09 15 | 644 | 0.2− | 0.3+ | 2006 11 14 | 704 | 1.1+ | 0.4+ |
| 2003 12 29 | 704 | 0.3+ | 0.7+ | 2006 09 15 | 644 | 0.0 | 0.2+ | 2006 11 17 | 704 | 1.0− | 0.7+ |
| 2003 12 29 | 704 | 0.1+ | 1.1+ | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.6− |
| 2004 01 28 | 703 | 0.8+ | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 11 17 | 704 | 1.0− | 0.0 |
| 2004 01 28 | 703 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 2004 01 28 | 703 | 1.2− | 0.8+ | 2006 09 30 | 703 | 0.9− | 0.6+ | 2006 11 18 | G96 | 0.7+ | 0.1+ |
| 2004 01 28 | 703 | 0.3+ | 1.0+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2004 01 30 | 699 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.5+ | 0.2− |
| 2004 01 30 | 699 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2004 01 30 | 699 | 0.9+ | 0.7− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2004 01 30 | 699 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.6− |
| 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.8− | 0.7+ |
| 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 11 20 | 704 | (1.6− | 1.0+) |
| 2004 01 30 | 704 | 0.8+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.7− | 2006 11 20 | 704 | 0.0 | 0.0 |
| 2004 01 30 | 704 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.6− | 0.4+ | 2006 11 27 | 703 | 0.0 | 0.0 |
| 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.6+ | 2006 11 27 | 703 | 0.1− | 0.7− |
| 2004 02 11 | 644 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.2− |
| 2004 02 11 | 644 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.3+ | 0.8− |

**(143965)∗ 2003 YC$_{133}$ = 1999 VF$_{148}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57557)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 228.62672 | | (2000.0) | | | |
| $n$ | 0.28014478 | $\omega$ | 100.58966 | | −0.96402608 | −0.23837885 |
| $a$ | 2.3132062 | $\Omega$ | 65.70205 | | +0.16387179 | −0.88133545 |
| $e$ | 0.0475166 | $i$ | 7.41339 | | +0.20928392 | −0.40795018 |
| $P$ | 3.52 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 16 | 691 | 0.4− | 0.6− | 2003 12 18 | 704 | 0.6− | 0.8+ | 2006 09 30 | 703 | 0.4+ | 0.2− |
| 1994 05 16 | 691 | 0.5− | 0.1− | 2003 12 18 | 704 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.6− |
| 1994 05 16 | 691 | 0.6− | 0.7− | 2003 12 18 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | (2.2+ | 0.5+) |
| 1999 11 14 | 704 | 0.7+ | 0.3+ | 2003 12 18 | 704 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 1999 11 14 | 704 | 0.2− | 0.4− | 2003 12 23 | 704 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.1+ |
| 1999 11 14 | 704 | 0.2+ | 0.6+ | 2003 12 23 | 704 | 0.4+ | 0.5− | 2006 10 03 | G96 | 0.0 | 0.2− |
| 1999 11 14 | 704 | 0.6+ | 0.1− | 2003 12 23 | 704 | 0.5+ | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1999 11 15 | 704 | 0.6+ | 0.5− | 2003 12 23 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.7− |
| 1999 11 15 | 704 | 0.3+ | 0.5− | 2003 12 23 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | (2.2+ | 0.4−) |
| 1999 11 15 | 704 | 0.2+ | 0.0 | 2003 12 28 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 1999 11 15 | 704 | 0.8+ | 0.1− | 2003 12 28 | 704 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.4+ | 0.9− |
| 1999 11 15 | 704 | 0.9+ | 0.1+ | 2003 12 28 | 704 | 0.3+ | 0.4− | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2001 03 21 | 699 | 0.5+ | 0.6+ | 2003 12 29 | 704 | 0.4+ | 0.1− | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 2001 03 21 | 699 | 0.1− | 0.5+ | 2003 12 29 | 704 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2001 03 21 | 699 | 0.6+ | 1.2+ | 2003 12 29 | 704 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.0 |
| 2001 03 21 | 699 | 0.2+ | 0.4+ | 2003 12 29 | 704 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2001 04 17 | 699 | 1.2+ | 0.8+ | 2004 01 16 | 699 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2001 04 17 | 699 | (2.7+ | 1.4+) | 2004 01 16 | 699 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.7− | 0.6− |
| 2001 04 17 | 699 | 1.0+ | 1.2− | 2004 01 16 | 699 | 0.3− | 0.5+ | 2006 11 11 | 703 | 1.4− | 0.4− |
| 2001 04 17 | 699 | 0.4+ | 1.1+ | 2004 01 16 | 699 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.6− | 0.7− |
| 2001 04 27 | 704 | 0.8+ | 0.2+ | 2004 01 31 | 704 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2001 04 27 | 704 | 0.6+ | 0.5+ | 2004 01 31 | 704 | 0.3+ | 1.0− | 2006 11 14 | 704 | 0.3− | 0.6− |
| 2001 04 27 | 704 | (0.1+ | 1.5+) | 2004 01 31 | 704 | 1.3+ | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.5+ |
| 2001 04 27 | 704 | 0.7+ | 0.6+ | 2004 02 14 | 704 | 0.3+ | 1.4+ | 2006 11 14 | 704 | 0.3− | 1.2+ |
| 2002 09 09 | 644 | 0.1− | 0.1− | 2004 02 14 | 704 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2002 09 09 | 644 | 0.1− | 0.2+ | 2004 02 14 | 704 | 1.3− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2002 09 09 | 644 | 0.1− | 0.5+ | 2004 02 14 | 704 | 0.2− | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2003 12 18 | 704 | 0.6− | 0.7− | 2006 09 30 | 703 | 1.3− | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.1− |

**(143966)∗ 2003 YE$_{133}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.17528 | | (2000.0) | | | |
| $n$ | 0.28346165 | $\omega$ | 359.89260 | | +0.13054562 | −0.98139712 |
| $a$ | 2.2951259 | $\Omega$ | 82.60519 | | +0.90973634 | +0.06212818 |
| $e$ | 0.0839017 | $i$ | 8.16101 | | +0.39412895 | +0.18165840 |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 03 | 691 | 0.1− | 1.8− | 2004 01 26 | 699 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 1996 12 03 | 691 | 0.4− | 1.9− | 2004 01 26 | 699 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 1.3− | 0.3+ |
| 1996 12 03 | 691 | 0.2+ | 1.3− | 2004 01 26 | 699 | 0.6− | 1.0+ | 2006 10 22 | 703 | 1.0− | 0.7− |
| 1996 12 08 | 691 | 0.5− | 0.1− | 2004 01 26 | 699 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 1996 12 08 | 691 | 0.1− | 0.3− | 2004 01 31 | 704 | 0.1− | 0.7+ | 2006 11 08 | 644 | 0.4− | 0.2+ |
| 1996 12 08 | 691 | 0.3+ | 0.8− | 2004 01 31 | 704 | 0.5+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.5+ |
| 1999 10 09 | 704 | 0.1− | 0.2+ | 2004 01 31 | 704 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1999 10 09 | 704 | 0.4− | 0.8− | 2004 01 31 | 704 | 0.1+ | 1.0+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.3− | 0.1− | 2004 01 31 | 704 | 0.1+ | 1.1+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2001 04 17 | 699 | 0.2− | 1.1+ | 2004 02 13 | 699 | 0.2− | 0.7+ | 2006 11 10 | 644 | 0.4− | 0.5+ |
| 2001 04 17 | 699 | 1.2+ | 1.4+ | 2004 02 13 | 699 | 0.1− | 0.8+ | 2006 11 10 | 644 | 0.3− | 0.3+ |
| 2001 04 17 | 699 | 0.0 | 0.6+ | 2004 02 13 | 699 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2001 04 17 | 699 | 0.3+ | 0.8+ | 2004 02 13 | 699 | 0.6− | 0.6+ | 2006 11 13 | 703 | 0.3+ | 1.3+ |
| 2002 08 13 | 644 | 0.2+ | 0.2− | 2004 02 14 | 704 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.6+ |
| 2002 08 13 | 644 | 0.4+ | 0.1− | 2004 02 14 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 1.0+ | 1.2+ |
| 2002 08 13 | 644 | 0.2+ | 0.4− | 2004 02 14 | 704 | 0.7− | 0.5+ | 2006 11 13 | 703 | 0.3− | 1.1+ |
| 2003 10 24 | 691 | 1.0+ | 0.2+ | 2004 02 14 | 704 | 0.1+ | 0.3− | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2003 10 24 | 691 | 0.4+ | 0.3+ | 2004 02 14 | 704 | 1.2+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2003 10 24 | 691 | 0.4+ | 1.2− | 2004 02 17 | 691 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.5+ |
| 2003 12 28 | 704 | (0.2− | 3.7+) | 2004 02 17 | 691 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 2003 12 28 | 704 | (0.2− | 1.6+) | 2004 02 17 | 691 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2003 12 28 | 704 | (0.3+ | 1.8+) | 2006 09 30 | 703 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2003 12 28 | 704 | 0.1+ | 1.4+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.7− | 1.0+ |
| 2003 12 29 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.2+ |
| 2003 12 29 | 704 | 0.4+ | 1.4+ | 2006 09 30 | 703 | 0.5+ | 0.6+ | 2006 11 20 | 704 | 0.2− | 1.1+ |
| 2003 12 29 | 704 | (1.1− | 1.9+) | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | (0.6− | 1.5+) |
| 2003 12 29 | 704 | (2.5+ | 0.4+) | 2006 10 12 | 644 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 1.0− | 1.2+ |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 24 | G96 | 0.5− | 0.2+ |
| 2004 01 17 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 1.1− | 0.6− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2004 01 17 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2004 01 17 | 644 | 0.1− | 0.6+ | 2006 10 16 | 703 | (0.1+ | 3.1−) | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2004 01 17 | 644 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.5− | | | | |
| 2004 01 17 | 644 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.3+ | | | | |

**(143967)∗ 2003 YR$_{134}$ = 2002 TW$_{170}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65536)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.75642 | | (2000.0) | | | |
| $n$ | 0.23765679 | $\omega$ | 305.00417 | | +0.19574415 | +0.97540530 |
| $a$ | 2.5812847 | $\Omega$ | 335.67872 | | −0.80036018 | +0.09919051 |
| $e$ | 0.0657520 | $i$ | 14.24366 | | −0.56666375 | +0.19683939 |
| $P$ | 4.15 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.1− | 0.3+ | 2004 01 19 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.1+ |
| 2002 10 03 | 644 | 0.2− | 0.1+ | 2004 02 09 | 644 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.1+ | 1.1− |
| 2002 10 03 | 644 | 0.2− | 0.3+ | 2004 02 09 | 644 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.0 | 0.5+ |
| 2002 10 06 | 704 | 1.2− | 0.1− | 2004 02 09 | 644 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.7+ | 0.6+ |
| 2002 10 06 | 704 | 0.4− | 0.4+ | 2005 05 02 | E12 | 0.1− | 1.2+ | 2006 09 18 | 704 | 0.0 | 0.2− |
| 2002 10 06 | 704 | 0.5+ | 0.1+ | 2005 05 02 | E12 | 0.5+ | 0.4+ | 2006 09 18 | 704 | 0.5− | 0.2− |
| 2002 10 06 | 704 | 0.0 | 0.2− | 2005 05 02 | E12 | 0.9+ | 0.9+ | 2006 09 18 | 704 | 0.3+ | 0.1− |
| 2002 10 06 | 704 | 0.1+ | 0.6− | 2005 05 02 | E12 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.2− |
| 2002 10 10 | 704 | 0.2− | 0.2+ | 2005 06 09 | E12 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.0 | 0.1− |
| 2002 10 10 | 704 | 0.5+ | 0.1+ | 2005 06 09 | E12 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.2− | 0.0 |
| 2002 10 10 | 704 | 0.0 | 0.6+ | 2005 06 09 | E12 | 0.2+ | 0.9+ | 2006 09 20 | 699 | 0.7− | 0.5+ |
| 2002 10 10 | 704 | 0.1+ | 1.2− | 2005 06 09 | E12 | 0.1− | 0.2+ | 2006 09 20 | 699 | 0.0 | 1.0− |
| 2002 10 10 | 704 | 0.7− | 0.0 | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 24 | 106 | 0.6+ | 0.2+ |
| 2002 10 31 | 644 | 0.1+ | 0.7+ | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 24 | 106 | 0.4+ | 0.5+ |
| 2002 10 31 | 644 | 0.5+ | 0.7+ | 2006 08 21 | 691 | 0.4− | 0.4− | 2006 09 24 | 106 | 0.4+ | 0.8− |
| 2002 10 31 | 644 | 0.1+ | 0.7+ | 2006 08 29 | 703 | 0.1+ | 0.8+ | 2006 09 24 | 106 | 0.3+ | 0.3− |
| 2003 12 28 | 704 | 0.8+ | 0.2− | 2006 08 29 | 703 | 0.7− | 0.6+ | 2006 09 29 | 699 | 0.9− | 0.2+ |
| 2003 12 28 | 704 | 0.4+ | 0.5− | 2006 08 29 | 703 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.7+ | 0.4+ |
| 2003 12 28 | 704 | 0.7+ | 0.0 | 2006 08 29 | 703 | 0.1− | 0.6− | 2006 09 29 | 699 | 0.5− | 0.3− |
| 2003 12 28 | 704 | 0.7+ | 0.6− | 2006 08 30 | 704 | 0.6− | 0.6+ | 2006 09 29 | 699 | 0.9− | 0.4− |
| 2003 12 28 | 704 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.8− | 0.9+ | 2006 10 01 | 703 | 0.0 | 0.1+ |
| 2003 12 29 | 703 | 0.3− | 0.6− | 2006 08 30 | 704 | 0.3+ | 0.9+ | 2006 10 01 | 703 | 0.9− | 0.9− |
| 2003 12 29 | 703 | 0.6+ | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.5+ | 2006 10 01 | 703 | (0.2− | 2.5−) |
| 2003 12 29 | 703 | 0.0 | 0.9+ | 2006 08 30 | 704 | 0.6+ | 1.3+ | 2006 10 01 | 703 | 0.7+ | 0.8− |
| 2003 12 29 | 703 | 0.8+ | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 703 | 0.5+ | 0.2+ |
| 2003 12 30 | 704 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 23 | 703 | 0.8+ | 0.4− |
| 2003 12 30 | 704 | 0.5− | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 703 | 0.3− | 0.1− |
| 2003 12 30 | 704 | 0.3+ | 0.1− | 2006 09 15 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 1.1+ | 1.4− |
| 2003 12 30 | 704 | 0.4+ | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.6− | 2006 10 28 | 291 | 0.1− | 0.2+ |
| 2003 12 30 | 704 | 0.3+ | 0.0 | 2006 09 15 | 704 | 0.5+ | 0.0 | 2006 10 28 | 291 | 0.0 | 0.1+ |
| 2004 01 19 | 704 | 0.8− | 0.5+ | 2006 09 15 | 704 | 0.4− | 0.3+ | 2006 10 28 | 291 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 704 | 1.4− | 1.5+ | 2006 09 15 | 704 | 0.7− | 0.3+ | | | | | | |
| 2004 01 19 | 704 | 0.5− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.0 | | | | | | |

**(143968)∗ 2003 YN$_{136}$**

Discovered 2003 Dec. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.98138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22244676 | $\omega$ | 149.75585 | | +0.28492347 | −0.95726180 | |
| $a$ | 2.6976483 | $\Omega$ | 283.65161 | | +0.86889147 | +0.27981355 | |
| $e$ | 0.0780342 | $i$ | 2.93070 | | +0.40477923 | +0.07317258 | |
| $P$ | 4.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 31 | 691 | 0.0 | 0.6− | 2003 12 29 | 691 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.6+ | 0.1− |
| 1994 12 31 | 691 | 0.0 | 0.7− | 2003 12 29 | 691 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.3+ | 0.4− |
| 1994 12 31 | 691 | 0.3− | 0.4− | 2004 01 13 | 699 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.2+ | 0.2+ |
| 2002 09 06 | 704 | 0.4+ | 0.2− | 2004 01 13 | 699 | (1.7− | 0.9+) | 2004 01 30 | 704 | 0.1− | 0.7+ |
| 2002 09 06 | 704 | 0.5+ | 0.2− | 2004 01 13 | 699 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.0 | 1.2+ |
| 2002 09 06 | 704 | 0.6+ | 1.4− | 2004 01 13 | 699 | 0.0 | 0.3+ | 2004 01 31 | 704 | 1.2− | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 0.9− | 2004 01 16 | 644 | 0.0 | 0.1− | 2004 01 31 | 704 | 0.1− | 0.7+ |
| 2002 09 06 | 704 | 0.6+ | 0.4− | 2004 01 16 | 644 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.2− | 1.0+ |
| 2002 09 14 | 644 | 0.5− | 0.9+ | 2004 01 16 | 644 | 0.2+ | 0.1− | 2004 01 31 | 704 | 0.1+ | 0.7+ |
| 2002 09 14 | 644 | 0.2+ | 0.4+ | 2004 01 19 | 691 | 0.1− | 0.0 | 2004 01 31 | 704 | 1.0+ | 0.7+ |
| 2002 09 14 | 644 | 0.5− | 0.9+ | 2004 01 19 | 691 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.8− | 0.2− |
| 2002 09 14 | 644 | 0.2+ | 0.6+ | 2004 01 19 | 691 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.3+ | 0.3+ |
| 2002 09 14 | 644 | 0.6− | 0.7+ | 2004 01 21 | 704 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.9− | 0.8+ |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2004 01 21 | 704 | 0.2− | 0.9− | 2004 02 16 | 704 | 0.3+ | 0.8− |
| 2002 10 04 | 704 | 0.8− | 0.3− | 2004 01 21 | 704 | 0.1+ | 0.4− | 2004 02 16 | 704 | 0.7− | 0.1− |
| 2002 10 04 | 704 | 0.8− | 0.6− | 2004 01 21 | 704 | 0.0 | 0.3− | 2006 08 14 | 644 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | 0.8− | 0.3+ | 2004 01 21 | 704 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.2+ | 0.5+ |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2004 01 24 | 704 | 0.3+ | 0.9+ | 2006 08 14 | 644 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2004 01 24 | 704 | 0.9+ | 1.0+ | 2006 08 14 | E12 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.0 | 0.2+ | 2004 01 24 | 704 | (3.2− | 1.0+) | 2006 08 14 | E12 | 0.6− | 0.0 |
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2004 01 24 | 704 | 0.2+ | 1.3+ | 2006 08 14 | E12 | 0.3− | 0.1− |
| 2002 10 31 | 704 | 0.8+ | 0.4+ | 2004 01 24 | 704 | 0.4− | 0.3+ | 2006 08 14 | E12 | 0.2+ | 0.1+ |
| 2003 12 17 | 291 | 0.0 | 0.3+ | 2004 01 26 | 699 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.0 | 0.5+ |
| 2003 12 17 | 291 | 0.0 | 0.3+ | 2004 01 26 | 699 | 0.3+ | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.5+ |
| 2003 12 17 | 291 | 0.1+ | 0.3+ | 2004 01 26 | 699 | 0.3− | 0.7− | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 2003 12 18 | 644 | 0.7+ | 0.7+ | 2004 01 26 | 699 | 0.3− | 0.4− | 2006 10 22 | G96 | 0.2+ | 0.9− |
| 2003 12 18 | 644 | 0.4+ | 0.3+ | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2003 12 18 | 644 | 0.4+ | 0.2− | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.5− | 0.1− |
| 2003 12 29 | 691 | 0.2+ | 0.1− | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− |

**(143969)∗ 2003 YS$_{136}$**

Discovered 2003 Dec. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.41675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28910387 | $\omega$ | 128.47560 | | +0.56980776 | −0.81938550 | |
| $a$ | 2.2651664 | $\Omega$ | 286.67551 | | +0.73213108 | +0.54080185 | |
| $e$ | 0.1258234 | $i$ | 3.75056 | | +0.37323342 | +0.19010724 | |
| $P$ | 3.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.0 | 0.4+ | 2004 01 24 | 704 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− |
| 1999 10 07 | 704 | 0.5− | 0.6+ | 2004 01 24 | 704 | (1.1− | 2.4−) | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 10 07 | 704 | 0.4+ | 0.4− | 2004 01 27 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 10 07 | 704 | 0.2− | 0.5+ | 2004 01 27 | 691 | 1.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 1999 10 07 | 704 | 0.1+ | 0.8− | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 07 05 | 291 | 0.1− | 0.5+ | 2004 01 28 | 704 | (0.5+ | 2.8−) | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 07 05 | 291 | 0.1− | 0.3+ | 2004 01 28 | 704 | 0.6+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 07 05 | 291 | 0.3− | 0.3+ | 2004 01 28 | 704 | 0.6+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 07 14 | 704 | 0.2− | 0.3+ | 2004 01 28 | 704 | 1.2+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2002 07 14 | 704 | 1.0+ | 0.3+ | 2004 01 29 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 2002 07 14 | 704 | 0.5− | 0.3+ | 2004 01 29 | 704 | 0.4+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.7− |
| 2003 12 18 | 644 | 0.5− | 0.0 | 2004 01 29 | 704 | 0.8− | 0.2+ | 2006 10 27 | 703 | 0.6− | 1.3− |
| 2003 12 18 | 644 | 0.4− | 0.3+ | 2004 01 29 | 704 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.1+ |
| 2003 12 18 | 644 | 0.4− | 0.1− | 2004 01 29 | 704 | 1.0+ | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2003 12 19 | 704 | 0.7− | 0.7− | 2004 01 30 | 704 | 0.4+ | 1.2+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 0.3+ | 0.1− | 2004 01 30 | 704 | 0.7+ | 0.6+ | 2006 10 31 | 691 | 0.3− | 0.0 |
| 2003 12 19 | 704 | 0.2− | 0.4− | 2004 01 30 | 704 | 0.7+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 0.2− | 0.1+ | 2004 01 30 | 704 | 0.6+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2003 12 27 | 608 | 0.1− | 0.6+ | 2004 01 30 | 704 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2003 12 27 | 608 | 0.7− | 0.9+ | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2003 12 27 | 608 | 0.0 | 0.8+ | 2004 02 13 | 691 | 0.3+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2003 12 29 | 699 | 0.9− | 0.4+ | 2004 02 13 | 691 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2003 12 29 | 699 | 0.1− | 0.1+ | 2004 02 16 | 704 | (1.6− | 1.7+) | 2006 11 14 | 703 | 0.2+ | 0.5+ |
| 2003 12 29 | 699 | 0.9+ | 0.3− | 2004 02 16 | 704 | 0.5− | 1.4+ | 2006 11 14 | 703 | 0.2+ | 1.0+ |
| 2003 12 29 | 699 | 0.8− | 0.0 | 2004 02 16 | 704 | (2.6− | 1.0+) | 2006 11 14 | 703 | (0.2− | 1.9+) |
| 2004 01 12 | 644 | 0.1+ | 0.1+ | 2004 02 16 | 704 | (1.8− | 0.1+) | 2006 11 14 | 703 | 0.3+ | 0.9− |
| 2004 01 12 | 644 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.9+ | 0.4− |
| 2004 01 12 | 644 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2004 01 16 | 691 | 0.3− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.2− |
| 2004 01 16 | 691 | 0.5− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.8+ | 0.8− |
| 2004 01 16 | 691 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 16 | 704 | (1.6+ | 0.6−) |
| 2004 01 19 | 699 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.4+ |
| 2004 01 19 | 699 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2004 01 19 | 699 | (0.3+ | 1.8−) | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2004 01 19 | 699 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | (2.2− | 1.6−) |
| 2004 01 21 | 704 | 0.6− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.6+ | 1.1+ |
| 2004 01 21 | 704 | 0.5− | 0.3− | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 1.1+ |
| 2004 01 21 | 704 | 0.7− | 0.1− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 1.3+ |
| 2004 01 21 | 704 | 0.4− | 0.1− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.9+ |
| 2004 01 21 | 704 | 0.3− | 0.4+ | 2006 10 21 | 704 | 0.2− | 0.8− | 2006 11 19 | 704 | (0.1− | 1.6+) |
| 2004 01 24 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.3+ |
| 2004 01 24 | 704 | 0.3+ | 0.5− | 2006 10 21 | 704 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 1.0− | 0.2+ |
| 2004 01 24 | 704 | 0.0 | 0.2− | 2006 10 21 | 704 | 0.1+ | 0.7+ | 2006 11 29 | 704 | 1.1+ | 0.0 |
| 2004 01 24 | 704 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 29 | 704 | 1.1+ | 0.7+ |
| 2004 01 24 | 704 | 0.0 | 0.6− | 2006 10 21 | 704 | 0.0 | 0.3− | 2006 11 29 | 704 | 2.6− | 0.1− |
| 2004 01 24 | 704 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.3− | 0.0 | | | | |

**(143970)∗ 2003 YJ$_{138}$ = 1995 YW$_{19}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57562)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.23054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24417919 | $\omega$ | 280.41733 | | +0.85049080 | −0.49990156 | |
| $a$ | 2.5351108 | $\Omega$ | 109.74768 | | +0.52438792 | +0.78158965 | |
| $e$ | 0.0927343 | $i$ | 10.00993 | | +0.04102071 | +0.37311668 | |
| $P$ | 4.04 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 22 | 691 | 0.3− | 0.3− | 2003 12 22 | 704 | 0.1+ | 0.8+ | 2004 02 15 | 704 | 0.9+ | 0.9+ |
| 1995 12 22 | 691 | 0.1− | 0.5− | 2003 12 27 | 704 | 1.2+ | 0.5+ | 2004 02 15 | 704 | 0.0 | 1.3+ |
| 1995 12 22 | 691 | 0.1− | 0.5− | 2003 12 27 | 704 | 0.1+ | 0.4+ | 2004 02 15 | 704 | 0.1− | 0.8+ |
| 1995 12 27 | 691 | 0.2+ | 0.6− | 2003 12 27 | 704 | 0.5+ | 0.5− | 2004 02 15 | 704 | 0.5+ | 0.7+ |
| 1995 12 27 | 691 | 0.0 | 0.3− | 2003 12 29 | 699 | 0.5− | 0.1− | 2006 08 15 | 644 | 0.1− | 0.1− |
| 1995 12 27 | 691 | 0.1− | 0.8− | 2003 12 29 | 699 | 0.0 | 0.8+ | 2006 08 15 | 644 | 0.4− | 0.1+ |
| 2000 02 11 | 704 | 0.8+ | 0.8+ | 2003 12 29 | 699 | 0.2+ | 0.1+ | 2006 08 15 | 644 | 0.2− | 0.1+ |
| 2000 02 11 | 704 | 0.3+ | 0.0 | 2003 12 29 | 699 | 0.9+ | 0.5− | 2006 08 16 | E12 | 0.5− | 0.5− |
| 2000 02 11 | 704 | 1.1− | 0.0 | 2004 01 22 | 704 | 0.7+ | 1.0+ | 2006 08 16 | E12 | 1.6− | 0.0 |
| 2000 02 11 | 704 | 1.5− | 1.4+ | 2004 01 22 | 704 | 0.2+ | 0.7+ | 2006 08 16 | E12 | 0.0 | 1.0+ |
| 2000 02 11 | 704 | 0.9− | 0.6+ | 2004 01 22 | 704 | 0.8+ | 1.2+ | 2006 08 16 | E12 | 0.5− | 0.5+ |
| 2002 08 20 | 644 | 0.4+ | 0.1− | 2004 01 22 | 704 | 0.8+ | 0.7+ | 2006 08 28 | E12 | 0.2− | 0.3− |
| 2002 08 20 | 644 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 08 28 | E12 | 0.6+ | 0.1+ |
| 2002 08 20 | 644 | 0.3+ | 0.1− | 2004 01 26 | 699 | 1.0− | 0.2+ | 2006 08 28 | E12 | 0.4− | 0.5− |
| 2002 09 09 | 644 | 0.2+ | 0.1− | 2004 01 26 | 699 | 0.1− | 0.0 | 2006 08 28 | E12 | 0.6− | 0.1+ |
| 2002 09 09 | 644 | 0.0 | 0.3− | 2004 01 26 | 699 | 0.7− | 0.5− | 2006 09 14 | 644 | 0.3+ | 0.3+ |
| 2002 09 09 | 644 | 0.4+ | 0.3− | 2004 01 26 | 699 | 0.8+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 2002 09 17 | 644 | 0.4+ | 0.5− | 2004 01 30 | 704 | 0.3− | 0.7+ | 2006 09 14 | 644 | 0.1− | 0.2− |
| 2002 09 17 | 644 | 0.4+ | 0.1− | 2004 01 30 | 704 | 0.3+ | 0.8− | 2006 09 17 | 699 | 0.3− | 0.1− |
| 2002 09 17 | 644 | 0.3+ | 0.4− | 2004 01 30 | 704 | 0.2− | 0.2+ | 2006 09 17 | 699 | 0.3− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 26 | 291 | 0.0 | 0.4− | 2004 01 30 | 704 | 0.7− | 0.2− | 2006 09 17 | 699 | 0.3− | 0.1− |
| 2003 10 26 | 291 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.0 | 2006 09 17 | 699 | 0.7+ | 0.3− |
| 2003 10 26 | 291 | 0.2+ | 0.5+ | 2004 02 11 | 691 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.3+ | 1.0+ |
| 2003 12 22 | 704 | 0.6− | 0.1− | 2004 02 11 | 691 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.3+ | 0.8+ | 2004 02 11 | 691 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2003 12 22 | 704 | (0.5+ | 2.4+) | 2004 02 15 | 704 | 0.8+ | 0.2+ | 2006 09 26 | 703 | 1.1+ | 1.1+ |

**(143971)∗ 2003 YV$_{138}$**

Discovered 2003 Dec. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 285.10300 | | (2000.0) | | | |
| $n$ | 0.26605496 | $\omega$ | 106.37566 | | −0.14386479 | −0.98923743 |
| $a$ | 2.3941709 | $\Omega$ | 351.75673 | | +0.82199323 | −0.10443909 |
| $e$ | 0.2156643 | $i$ | 10.72746 | | +0.55102636 | −0.10247825 |
| $P$ | 3.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 691 | 0.4− | 0.1+ | 2004 02 16 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.2− | 0.3+ |
| 1995 08 29 | 691 | 0.1+ | 0.3+ | 2004 02 16 | 704 | 0.2− | 0.9+ | 2006 09 16 | 699 | (0.6+ | 2.0+) |
| 1995 08 29 | 691 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.8− |
| 1999 12 13 | 704 | 0.5+ | 1.1− | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.8+ |
| 1999 12 13 | 704 | 0.8+ | 0.9− | 2004 02 16 | 704 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.7− | 0.2− |
| 1999 12 13 | 704 | 0.8+ | 1.1− | 2004 02 16 | 704 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.6− | 0.1− |
| 1999 12 13 | 704 | 0.2− | 0.7− | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 20 | 691 | 0.3− | 0.5+ |
| 1999 12 13 | 704 | 0.4+ | 1.4− | 2004 03 14 | 703 | 0.3− | 0.0 | 2006 09 20 | 691 | 0.1− | 0.6+ |
| 1999 12 30 | 704 | 0.1+ | 0.6− | 2004 03 14 | 703 | 1.4− | 0.0 | 2006 09 20 | 691 | 0.0 | 0.4+ |
| 1999 12 30 | 704 | 0.9− | 0.2− | 2004 03 14 | 703 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.8+ | 0.2− |
| 1999 12 30 | 704 | 1.2− | 0.8+ | 2004 03 14 | 704 | 0.5− | 0.9− | 2006 09 20 | 704 | 0.6− | 0.1− |
| 1999 12 30 | 704 | 0.9+ | 0.5+ | 2004 03 14 | 703 | 1.2− | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.3+ |
| 1999 12 30 | 704 | 0.5+ | 0.2− | 2004 03 14 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.8+ |
| 2003 12 19 | 704 | 0.5− | 0.2− | 2004 03 14 | 704 | 0.5+ | 0.3− | 2006 09 24 | 106 | 0.2− | 0.2+ |
| 2003 12 19 | 704 | 0.2− | 0.6+ | 2004 03 14 | 704 | 0.2− | 0.6+ | 2006 09 24 | 106 | 0.3+ | 0.6+ |
| 2003 12 19 | 704 | 0.3+ | 0.4+ | 2004 03 18 | 691 | 0.3+ | 0.1+ | 2006 09 24 | 106 | 0.3+ | 0.1− |
| 2003 12 19 | 704 | 0.9+ | 1.3+ | 2004 03 18 | 691 | 0.3+ | 0.2+ | 2006 09 24 | 106 | 0.3− | 0.8− |
| 2003 12 27 | 704 | 0.1+ | 0.8− | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.6− | 0.1− |
| 2003 12 27 | 704 | 0.3+ | 0.6− | 2004 03 19 | 704 | 1.3+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2003 12 27 | 704 | 0.3− | 1.0− | 2004 03 19 | 704 | 0.8+ | 0.3− | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2003 12 27 | 704 | 1.0− | 0.3− | 2004 03 19 | 704 | 0.9+ | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2003 12 28 | 699 | 0.7− | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 703 | (0.4+ | 1.5+) |
| 2003 12 28 | 699 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.4− | 2006 10 01 | 703 | 0.7− | 0.0 |
| 2003 12 28 | 699 | 0.4− | 0.8+ | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 10 01 | 703 | 0.3+ | 0.4+ |
| 2003 12 28 | 699 | 1.1− | 0.8− | 2004 03 22 | 704 | 0.7+ | 0.5+ | 2006 10 01 | 703 | 0.7+ | 1.0− |
| 2004 01 23 | 113 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2004 01 23 | 113 | 0.5+ | 0.4+ | 2004 03 22 | 704 | 1.1+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.4+ |
| 2004 01 28 | 703 | 0.7− | 0.6+ | 2004 03 22 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2004 01 28 | 703 | 0.2+ | 0.6− | 2004 03 27 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.6− |
| 2004 01 28 | 703 | 0.5− | 0.7+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2004 01 28 | 703 | 0.4+ | 0.7+ | 2004 03 27 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 703 | (1.9− | 0.1+) |
| 2004 01 30 | 699 | 0.8− | 0.1− | 2006 07 20 | D35 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.7− |
| 2004 01 30 | 699 | 0.2+ | 0.2− | 2006 07 20 | D35 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2004 01 30 | 699 | 0.5− | 0.9+ | 2006 07 20 | D35 | 0.4− | 0.4− | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2004 01 30 | 699 | 0.8− | 0.1− | 2006 08 28 | 703 | (1.1− | 1.9+) | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2004 01 30 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 703 | (1.6− | 1.0+) | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2004 01 30 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 0.9− | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.4+ |
| 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 703 | (2.5− | 1.4+) | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2004 02 10 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 1.4− |
| 2004 02 10 | 644 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2004 02 10 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 699 | (0.3+ | 1.7+) | 2006 10 22 | 703 | 0.9− | 1.9− |
| 2004 02 16 | 704 | 0.4− | 0.8+ | 2006 09 16 | 699 | 0.1+ | 0.6+ | | | | |

**(143972)∗ 2003 YK$_{142}$ = 2002 TQ$_{118}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69616)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.96293 | | (2000.0) | | | |
| $n$ | 0.22277937 | $\omega$ | 301.40183 | | +0.24985992 | +0.96628408 |
| $a$ | 2.6949626 | $\Omega$ | 342.73508 | | −0.80198513 | +0.17054285 |
| $e$ | 0.1578043 | $i$ | 12.09154 | | −0.54257707 | +0.19289948 |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 10 | 644 | 0.4− | 0.3+ | 2003 12 30 | 704 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2001 07 10 | 644 | 0.6+ | 0.9+ | 2003 12 30 | 704 | 0.5− | 0.7− | 2006 08 24 | 644 | 0.1+ | 0.0 |
| 2001 07 10 | 644 | 0.5+ | 0.6+ | 2003 12 30 | 704 | 0.6+ | 0.3− | 2006 09 13 | 644 | 0.2+ | 0.3+ |
| 2002 10 03 | 644 | 0.3+ | 0.5+ | 2003 12 30 | 704 | 0.2− | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2002 10 03 | 644 | 0.0 | 0.1+ | 2004 01 19 | 704 | 0.2+ | 0.0 | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2002 10 03 | 644 | 0.0 | 0.0 | 2004 01 19 | 704 | 1.2− | 0.0 | 2006 09 20 | 704 | 0.3+ | 1.4+ |
| 2002 10 05 | 704 | 1.2+ | 0.7+ | 2004 01 19 | 704 | 0.6+ | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.4+ |
| 2002 10 05 | 704 | 0.2− | 0.1− | 2004 01 19 | 704 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | 0.2− | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.6− |
| 2002 10 05 | 704 | 0.1+ | 0.5+ | 2006 08 15 | 644 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2002 10 12 | 704 | 0.6− | 1.2+ | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2002 10 12 | 704 | 0.3− | 1.0− | 2006 08 16 | 644 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2002 10 12 | 704 | 0.3− | 0.9− | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2002 10 12 | 704 | 0.8+ | 0.7− | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.6− |
| 2002 10 31 | 644 | 0.2+ | 0.2− | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.6− |
| 2002 10 31 | 644 | 0.2− | 0.7− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2002 10 31 | 644 | 0.1+ | 0.5− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.5− |
| 2003 12 17 | 704 | 0.6+ | 0.7+ | 2006 08 19 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2003 12 17 | 704 | 0.5+ | 0.8+ | 2006 08 19 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2003 12 17 | 704 | 0.2+ | 0.9− | 2006 08 19 | 644 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2003 12 28 | 704 | 0.3− | 1.1+ | 2006 08 23 | 704 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2003 12 28 | 704 | 0.2− | 0.5+ | 2006 08 23 | 704 | 1.1− | 1.2+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2003 12 28 | 704 | 1.4+ | 0.5+ | 2006 08 23 | 704 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2003 12 28 | 704 | 0.4− | 1.4+ | 2006 08 23 | 704 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.6+ | 0.1+ |
| 2003 12 30 | 704 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− |

**(143973)∗ 2003 YP$_{142}$ = 2002 RE$_{150}$**

Discovered 2003 Dec. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57567)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 145.98375 | | (2000.0) | | | |
| $n$ | 0.27424704 | $\omega$ | 305.93828 | | −0.43611569 | +0.89586077 |
| $a$ | 2.3462525 | $\Omega$ | 297.99349 | | −0.79149884 | −0.42684659 |
| $e$ | 0.0925361 | $i$ | 5.52844 | | −0.42817368 | −0.12343204 |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 02 | 691 | 0.5− | 0.3− | 2002 09 13 | 644 | 0.0 | 0.2− | 2004 01 30 | 291 | 0.3+ | 0.1− |
| 1997 01 02 | 691 | 0.4− | 0.1+ | 2002 09 13 | 644 | 0.0 | 0.2+ | 2004 01 30 | 291 | 0.5+ | 0.2− |
| 1997 01 02 | 691 | 0.0 | 0.6− | 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.5+ |
| 1997 01 17 | 691 | 0.3+ | 0.0 | 2003 12 28 | 291 | 0.0 | 0.3+ | 2006 10 27 | 703 | (0.3+ | 1.5−) |
| 1997 01 17 | 691 | 0.3+ | 0.3− | 2003 12 28 | 291 | 0.8− | 0.4+ | 2006 10 27 | 703 | 1.1− | 0.0 |
| 1997 01 17 | 691 | 0.2− | 0.0 | 2003 12 28 | 291 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.5+ | 1.1− |
| 1997 01 31 | 691 | 0.0 | 0.5− | 2003 12 29 | 699 | 0.1− | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.0 |
| 1997 01 31 | 691 | 0.1− | 0.3− | 2003 12 29 | 699 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.3+ | 0.5+ |
| 1997 01 31 | 691 | 0.3− | 0.2+ | 2003 12 29 | 699 | (1.5+ | 0.1−) | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 1997 03 04 | 691 | 0.2+ | 0.0 | 2003 12 29 | 699 | 0.7− | 1.0− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 1997 03 04 | 691 | 0.1− | 0.3− | 2004 01 13 | 699 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 1997 03 04 | 691 | 0.0 | 0.0 | 2004 01 13 | 699 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2001 04 27 | 608 | 0.3+ | 0.4+ | 2004 01 13 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 04 27 | 608 | 0.6+ | 1.1+ | 2004 01 13 | 699 | 1.0− | 0.5+ | 2006 11 22 | 703 | 0.1− | 0.4+ |
| 2001 04 27 | 608 | 0.4+ | 1.3+ | 2004 01 13 | 699 | 0.0 | 0.7+ | 2006 11 22 | 703 | 0.5− | 0.1+ |
| 2002 08 18 | 608 | 0.2− | 1.3+ | 2004 01 13 | 691 | 0.5+ | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.3− |
| 2002 08 18 | 608 | 0.6− | 0.9+ | 2004 01 13 | 691 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.3+ | 0.1+ |
| 2002 08 18 | 608 | 0.2− | 0.7+ | 2004 01 24 | 704 | 1.0+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 09 11 | 608 | 0.1− | 0.6− | 2004 01 24 | 704 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2002 09 11 | 608 | 0.3+ | 0.4− | 2004 01 24 | 704 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2002 09 11 | 608 | 0.1− | 0.3+ | 2004 01 30 | 291 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.2− |

**(143974)∗ 2003 YA$_{143}$ = 2002 TB$_{204}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57567)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 128.50999 | | (2000.0) | | | |
| $n$ | 0.23731126 | $\omega$ | 166.85680 | | −0.68330979 | +0.70300353 |
| $a$ | 2.5837896 | $\Omega$ | 59.63163 | | −0.68885052 | −0.53121699 |
| $e$ | 0.1197001 | $i$ | 13.20988 | | −0.24201798 | −0.47285785 |
| $P$ | 4.15 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.6− | 0.3+ | 2004 01 19 | 704 | 0.6− | 0.6+ | 2005 06 08 | G92 | 0.5+ | 0.5+ |
| 2002 10 04 | 704 | 0.6+ | 0.2+ | 2004 02 11 | 704 | 1.2+ | 0.8+ | 2005 06 11 | 704 | 1.4− | 1.2+ |
| 2002 10 04 | 704 | 0.4+ | 1.3− | 2004 02 11 | 704 | 0.0 | 0.9+ | 2005 06 11 | 704 | 0.2+ | 0.5− |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2004 02 11 | 704 | 0.8+ | 0.1+ | 2005 06 11 | 704 | 0.6+ | 1.2+ |
| 2002 10 04 | 704 | 0.1+ | 1.0+ | 2004 02 11 | 704 | 1.0+ | 0.8− | 2005 07 01 | 703 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.8− | 0.1+ | 2005 04 20 | E12 | 0.5+ | 0.1+ | 2005 07 01 | 703 | 0.4− | 0.2− |
| 2002 10 08 | 699 | 0.2+ | 0.5− | 2005 04 20 | E12 | (0.1+ | 1.6−) | 2005 07 01 | 703 | 1.1− | 0.1+ |
| 2002 10 08 | 699 | 0.4+ | 0.4+ | 2005 04 20 | E12 | 0.5+ | 0.2− | 2005 07 01 | 703 | 1.0− | 0.1+ |
| 2002 10 08 | 699 | 0.3− | 0.2+ | 2005 04 20 | E12 | 0.3− | 1.2+ | 2006 09 19 | 703 | 1.2+ | 0.3− |
| 2002 10 11 | 704 | 0.6− | 0.2− | 2005 05 04 | 704 | 0.2+ | 1.0− | 2006 09 19 | 703 | 1.3− | 0.9+ |
| 2002 10 11 | 704 | (1.5− | 0.1+) | 2005 05 04 | 704 | 0.5+ | 1.1− | 2006 09 19 | 703 | 0.6+ | 0.6− |
| 2002 10 11 | 704 | 0.6− | 0.1+ | 2005 05 04 | 704 | (1.6+ | 1.4−) | 2006 09 19 | 703 | 0.7− | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.6+ | 2005 05 04 | 704 | 1.4+ | 1.1− | 2006 09 25 | 703 | 0.5− | 0.3+ |
| 2002 10 15 | 644 | 0.0 | 0.1+ | 2005 05 04 | 704 | 0.1+ | 0.3− | 2006 09 25 | 703 | 0.3+ | 0.1+ |
| 2002 10 15 | 644 | 0.1− | 0.1+ | 2005 05 04 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 703 | 0.1− | 0.2+ |
| 2002 10 15 | 644 | 0.2+ | 0.4+ | 2005 05 04 | 644 | 0.0 | 0.5+ | 2006 09 25 | 703 | 0.6+ | 0.1− |
| 2003 12 28 | 704 | (0.0 | 2.1+) | 2005 05 04 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2003 12 28 | 704 | 0.3+ | 0.7+ | 2005 05 09 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | 0.7− | 0.4+ | 2005 05 09 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 12 28 | 704 | 0.0 | 0.6+ | 2005 05 09 | 704 | 0.6+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2003 12 28 | 704 | 0.7− | 0.3+ | 2005 05 09 | 704 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2003 12 30 | 704 | 0.4− | 0.1− | 2005 05 09 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.4− |
| 2003 12 30 | 704 | 0.2+ | 0.0 | 2005 05 12 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.2+ |
| 2003 12 30 | 704 | 0.2− | 0.2+ | 2005 05 12 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.1− |
| 2003 12 30 | 704 | 0.1− | 0.2− | 2005 05 12 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 1.0+ | 1.4− |
| 2003 12 30 | 704 | 0.6− | 0.9− | 2005 06 06 | G92 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2004 01 19 | 704 | 0.3+ | 0.3− | 2005 06 06 | G92 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.9− | 1.3+ |
| 2004 01 19 | 704 | 0.4− | 0.7+ | 2005 06 06 | G92 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.6− | 0.1− |
| 2004 01 19 | 704 | 0.3− | 1.1+ | 2005 06 08 | G92 | 0.1− | 0.3+ | 2006 10 28 | 703 | 1.4− | 1.6+ |
| 2004 01 19 | 704 | 0.3+ | 0.5+ | 2005 06 08 | G92 | 0.6+ | 0.1+ | 2006 10 28 | 703 | 0.2− | 1.2+ |

**(143975)∗ 2003 YP$_{143}$ = 2002 TG$_{219}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69616)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 113.87569 | | (2000.0) | | | |
| $n$ | 0.23718675 | $\omega$ | 263.00196 | | −0.57989734 | +0.80767330 |
| $a$ | 2.5846938 | $\Omega$ | 330.72801 | | −0.63441878 | −0.52985029 |
| $e$ | 0.1542007 | $i$ | 12.60340 | | −0.51110848 | −0.25869385 |
| $P$ | 4.16 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.4− | 0.1− | 2005 05 02 | E12 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.6+ | 0.0 |
| 2002 10 05 | 704 | 0.6+ | 0.7+ | 2005 05 02 | E12 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.3− | 0.7+ |
| 2002 10 05 | 704 | 0.8− | 1.1+ | 2005 05 02 | E12 | 0.3− | 0.3+ | 2006 09 19 | 699 | 1.2− | 0.5+ |
| 2002 10 05 | 704 | 0.4+ | 0.3+ | 2005 05 29 | E12 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.7+ |
| 2002 10 05 | 704 | 0.1+ | 1.2+ | 2005 05 29 | E12 | 0.6+ | 0.1+ | 2006 09 27 | 703 | 0.7− | 1.3+ |
| 2002 10 09 | 704 | 0.8− | 0.3− | 2005 05 29 | E12 | 0.4+ | 0.2− | 2006 09 27 | 703 | 0.6− | 0.1− |
| 2002 10 09 | 704 | 0.2+ | 0.5− | 2005 05 29 | E12 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.6− | 1.2+ |
| 2002 10 09 | 704 | 0.1− | 0.3− | 2005 06 09 | E12 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.5− | 0.1− |
| 2003 12 17 | 704 | 0.2− | 0.7+ | 2005 06 09 | E12 | 0.3+ | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2003 12 17 | 704 | 0.3+ | 0.6+ | 2005 06 09 | E12 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2003 12 17 | 704 | 0.0 | 0.2− | 2005 06 09 | E12 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.8+ | 0.7− |
| 2003 12 28 | 704 | 1.0+ | 0.6+ | 2005 07 03 | E12 | 0.8− | 0.3− | 2006 10 17 | 703 | 0.1+ | 1.4− |
| 2003 12 28 | 704 | 0.2+ | 0.2+ | 2005 07 03 | E12 | 0.6− | 0.8+ | 2006 10 17 | 703 | (1.8− | 1.1−) |
| 2003 12 28 | 704 | 0.5− | 0.5− | 2005 07 03 | E12 | 0.2+ | 0.1− | 2006 10 17 | 703 | 1.5− | 0.2+ |
| 2003 12 28 | 704 | 0.0 | 1.2+ | 2005 07 03 | E12 | 0.2− | 0.5+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2003 12 30 | 704 | 0.6+ | 0.1− | 2005 07 10 | E12 | 0.1+ | 1.1− | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2003 12 30 | 704 | 0.1+ | 0.3+ | 2005 07 10 | E12 | 0.5+ | 0.2− | 2006 10 21 | 691 | 0.4+ | 0.1+ |
| 2003 12 30 | 704 | 0.4+ | 0.5+ | 2005 07 10 | E12 | 0.1+ | 1.0+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2004 01 19 | 704 | 0.7− | 0.4+ | 2005 07 10 | E12 | 0.4+ | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 01 19 | 704 | 0.2+ | 0.9+ | 2006 08 29 | 699 | (0.7− | 1.7+) | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2004 01 19 | 704 | 0.6− | 1.2+ | 2006 08 29 | 699 | 0.6− | 0.2− | 2006 10 23 | 703 | 0.5+ | 0.3+ |
| 2004 01 19 | 704 | 0.4− | 0.3+ | 2006 08 29 | 699 | 0.7− | 0.3+ | 2006 10 23 | 703 | 0.7− | 0.6− |
| 2005 04 16 | E12 | 0.6+ | 0.2− | 2006 08 29 | 699 | 0.4− | 0.4− | 2006 10 23 | 703 | 1.6+ | 0.8− |
| 2005 04 16 | E12 | 0.4+ | 0.6+ | 2006 09 06 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 703 | 0.5+ | 0.1− |
| 2005 04 16 | E12 | 0.3+ | 0.7+ | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 10 24 | 644 | 0.6+ | 0.3+ |
| 2005 04 16 | E12 | 0.1− | 1.0+ | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 10 24 | 644 | 0.5+ | 0.4+ |
| 2005 05 02 | E12 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 10 24 | 644 | 0.1− | 0.0 |

**(143976)∗ 2003 YG$_{144}$ = 2002 PU$_{147}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57568)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 288.46496 | | (2000.0) | | | |
| $n$ | 0.29077752 | $\omega$ | 140.80085 | | −0.44766254 | −0.89347567 |
| $a$ | 2.2564662 | $\Omega$ | 335.72885 | | +0.79679012 | −0.38027346 |
| $e$ | 0.0859894 | $i$ | 5.03112 | | +0.40586174 | −0.23894209 |
| $P$ | 3.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.7− | 0.6− | 2004 01 22 | 704 | 0.7+ | 0.9− | 2006 10 19 | 703 | 0.6+ | 0.0 |
| 1999 10 10 | 704 | 1.2+ | 1.8− | 2004 01 22 | 704 | 0.5+ | 1.0− | 2006 10 19 | 703 | 0.1− | 0.2− |
| 1999 10 10 | 704 | 1.4− | 0.3− | 2004 01 22 | 704 | 0.6+ | 0.9− | 2006 10 19 | 703 | 0.7+ | 0.2− |
| 1999 10 10 | 704 | (2.7+ | 0.1+) | 2004 01 22 | 704 | 0.7+ | 1.0− | 2006 10 19 | 703 | 0.5− | 0.1− |
| 1999 10 10 | 704 | 0.3+ | 0.2+ | 2004 01 26 | 699 | 0.2+ | 0.5− | 2006 10 27 | 703 | 0.0 | 0.6− |
| 1999 10 10 | 704 | 1.1+ | 0.2− | 2004 01 26 | 699 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.7− | 1.1+ |
| 1999 10 10 | 704 | 0.1− | 1.0+ | 2004 01 26 | 699 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.4+ |
| 1999 10 10 | 704 | 0.2+ | 0.2+ | 2004 01 26 | 699 | 0.7− | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.4+ |
| 2002 08 10 | 807 | 0.2+ | 0.3+ | 2004 01 30 | 704 | 0.2− | 0.5+ | 2006 11 02 | 703 | 0.8− | 0.1+ |
| 2002 08 10 | 807 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.3+ | 1.1+ | 2006 11 02 | 703 | 0.2− | 0.7+ |
| 2002 08 12 | 807 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.6+ | 0.3− |
| 2002 08 12 | 807 | 0.3− | 0.4+ | 2004 01 30 | 704 | 0.0 | 0.5+ | 2006 11 02 | 703 | 1.2− | 0.2− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.6+ | 0.3+ |
| 2002 08 29 | 644 | 0.2− | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.5+ | 0.3+ |
| 2003 12 28 | 704 | 0.1+ | 0.7+ | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 1.3− |
| 2003 12 28 | 704 | 0.3+ | 0.2− | 2004 02 15 | 704 | 0.3− | 1.2+ | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2003 12 28 | 704 | 0.2+ | 0.3− | 2004 02 15 | 704 | 1.2− | 1.4− | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2003 12 28 | 704 | 0.3− | 0.1− | 2004 02 15 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2003 12 28 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 704 | (2.0− | 0.3+) | 2006 11 22 | 703 | 0.5+ | 0.2− |
| 2003 12 29 | 699 | 1.0+ | 1.1+ | 2004 02 23 | 704 | 0.4− | 0.8+ | 2006 11 22 | 703 | 0.5− | 0.3− |
| 2003 12 29 | 699 | 0.9− | 0.5+ | 2004 02 23 | 704 | 0.6− | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.2+ |
| 2003 12 29 | 699 | 0.5− | 0.5+ | 2004 02 23 | 704 | 0.3− | 0.4+ | 2006 11 22 | 703 | 0.2+ | 0.3+ |
| 2003 12 29 | 699 | 0.2+ | 0.6− | 2004 04 13 | 645 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 01 13 | 699 | 0.3− | 0.2+ | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2004 01 13 | 699 | 0.8+ | 0.2− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2004 01 13 | 699 | 0.7+ | 0.2− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2004 01 13 | 699 | 0.2+ | 0.4− | 2004 04 16 | 645 | 0.0 | 0.0 | | | | |
| 2004 01 22 | 704 | 0.9+ | 0.5− | 2004 04 16 | 645 | 0.1− | 0.1− | | | | |

**(143977)∗ 2003 YM$_{145}$ = 1995 VS$_{14}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69617)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.34563 | | (2000.0) | | | |
| $n$ | 0.25974655 | $\omega$ | 10.76592 | | +0.45175468 | −0.88390046 |
| $a$ | 2.4327801 | $\Omega$ | 52.48905 | | +0.80677402 | +0.34686290 |
| $e$ | 0.1263614 | $i$ | 8.77313 | | +0.38083249 | +0.31369749 |
| $P$ | 3.79 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.2− | 0.2+ | 2003 12 28 | 704 | 1.9+ | 1.3+ | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 1995 11 15 | 691 | 0.1− | 0.0 | 2003 12 30 | 704 | 0.2+ | 0.3+ | 2006 08 20 | 644 | 0.4+ | 0.1− |
| 1995 11 15 | 691 | 0.2− | 0.3+ | 2003 12 30 | 704 | 1.2+ | 2.0+ | 2006 08 22 | 644 | 0.5+ | 0.3+ |
| 1995 11 20 | 691 | 0.1+ | 0.2+ | 2003 12 30 | 704 | 0.3+ | 1.6+ | 2006 08 22 | 644 | 0.2+ | 0.4+ |
| 1995 11 20 | 691 | 0.0 | 0.2+ | 2003 12 30 | 704 | 1.4+ | 0.0 | 2006 08 22 | 644 | 0.4− | 0.1− |
| 1995 11 20 | 691 | 0.1+ | 0.1+ | 2003 12 30 | 704 | 0.6+ | 0.4+ | 2006 09 21 | 699 | (0.1+ | 2.3−) |
| 1999 12 12 | 704 | 0.2− | 0.1− | 2004 01 19 | 704 | 1.1+ | 0.4+ | 2006 09 21 | 699 | 1.6− | 0.5+ |
| 1999 12 12 | 704 | 0.5+ | 0.8− | 2004 01 19 | 704 | 0.7− | 0.5− | 2006 09 21 | 699 | 0.1+ | 0.4+ |
| 1999 12 12 | 704 | 0.1− | 0.9− | 2004 01 19 | 704 | 1.5− | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.2− |
| 2001 04 16 | 691 | 0.2+ | 0.2+ | 2004 01 19 | 704 | 1.3− | 0.3+ | 2006 09 26 | 703 | 0.1− | 1.2+ |
| 2001 04 16 | 691 | 0.2+ | 0.5+ | 2004 01 30 | 699 | 0.2+ | 0.9+ | 2006 09 26 | 703 | 0.4− | 2.0+ |
| 2001 04 16 | 691 | 0.2+ | 0.3+ | 2004 01 30 | 699 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.8+ | 1.2+ |
| 2001 05 26 | 691 | 0.3+ | 0.7+ | 2004 01 30 | 699 | 0.5− | 0.0 | 2006 09 26 | 703 | 1.0− | 1.4+ |
| 2001 05 26 | 691 | 0.3+ | 0.7+ | 2004 01 30 | 699 | (2.9+ | 0.9−) | 2006 09 26 | 703 | 0.7− | 0.3+ |
| 2001 05 26 | 691 | 0.3+ | 0.8+ | 2004 02 14 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2002 08 13 | 644 | 0.1+ | 0.2+ | 2004 02 14 | 704 | 0.5− | 0.1− | 2006 09 26 | 703 | 0.9− | 0.0 |
| 2002 08 13 | 644 | 0.1− | 0.0 | 2004 02 14 | 704 | 0.1− | 1.1− | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2002 08 13 | 644 | 0.3+ | 0.0 | 2004 02 14 | 704 | 1.4− | 0.7− | 2006 09 26 | 703 | 0.7− | 0.5+ |
| 2003 12 28 | 704 | 1.2+ | 0.8+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 2003 12 28 | 704 | 0.3+ | 0.9+ | 2006 08 16 | 644 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.9− | 0.0 |
| 2003 12 28 | 704 | 0.5+ | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.3+ | | | | |
| 2003 12 28 | 704 | 0.3+ | 1.4+ | 2006 08 20 | 644 | 0.0 | 0.1+ | | | | |

**(143978)∗ 2003 YS$_{145}$ = 2002 RM$_{226}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61758)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 255.13145 | | (2000.0) | | | |
| $n$ | 0.22397571 | $\omega$ | 89.66982 | | +0.07777139 | −0.99684537 |
| $a$ | 2.6853574 | $\Omega$ | 355.77078 | | +0.80778565 | +0.07231762 |
| $e$ | 0.0886082 | $i$ | 12.40328 | | +0.58432350 | +0.03270263 |
| $P$ | 4.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 703 | 0.2− | 1.6+ | 2003 12 28 | 704 | 0.2− | 0.5− | 2004 02 22 | 703 | 0.2− | 0.7+ |
| 2000 02 27 | 703 | (2.7− | 0.9+) | 2003 12 30 | 704 | 0.3+ | 0.1− | 2004 02 22 | 703 | 0.1+ | 1.1+ |
| 2000 02 27 | 703 | 0.1+ | 0.3− | 2003 12 30 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | (0.2− | 1.7+) |
| 2000 02 27 | 703 | 0.9− | 0.8+ | 2003 12 30 | 704 | 0.0 | 0.5− | 2004 03 20 | 704 | (0.3+ | 2.1+) |
| 2000 03 11 | 704 | 0.5+ | 0.9+ | 2003 12 30 | 704 | 0.3+ | 0.0 | 2004 03 20 | 704 | 1.0− | 0.5+ |
| 2000 03 11 | 704 | 1.3+ | 0.1+ | 2004 01 30 | 703 | 0.1− | 0.2− | 2004 03 20 | 704 | 1.0− | 0.0 |
| 2000 03 11 | 704 | 0.3+ | 0.7+ | 2004 01 30 | 703 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.4+ | 0.9+ |
| 2000 03 11 | 704 | 0.9+ | 0.9− | 2004 01 30 | 703 | 0.1− | 0.2+ | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2000 04 10 | 695 | 0.5+ | 0.7+ | 2004 01 30 | 703 | 0.1− | 0.1− | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2000 04 10 | 695 | 0.3+ | 0.8+ | 2004 01 31 | 699 | 0.2− | 0.0 | 2004 04 16 | 645 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.5− | 0.0 | 2004 01 31 | 699 | 0.3+ | 0.5− | 2004 04 16 | 645 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.3+ | 0.1+ | 2004 01 31 | 699 | 0.2− | 0.5− | 2006 08 16 | E12 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 0.6+ | 0.1+ | 2004 01 31 | 699 | 1.1− | 0.2+ | 2006 08 16 | E12 | 0.5− | 1.2+ |
| 2002 09 05 | 704 | 0.0 | 0.0 | 2004 01 31 | 704 | 0.1+ | 0.4+ | 2006 08 16 | E12 | 0.8− | 0.4− |
| 2002 09 14 | 291 | 0.3− | 0.2+ | 2004 01 31 | 704 | 0.7+ | 0.5+ | 2006 08 16 | E12 | 1.0− | 0.2− |
| 2002 09 14 | 291 | 0.1+ | 0.3+ | 2004 01 31 | 704 | 1.2+ | 0.6+ | 2006 08 20 | 644 | 0.2+ | 0.7+ |
| 2002 09 14 | 291 | 0.4− | 0.2+ | 2004 01 31 | 704 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.6+ |
| 2002 09 17 | 608 | 1.1− | 0.9+ | 2004 02 13 | 699 | 0.1+ | 0.3− | 2006 08 20 | 644 | 0.0 | 0.5+ |
| 2002 09 17 | 608 | 1.1− | 0.4+ | 2004 02 13 | 699 | 0.1+ | 0.9+ | 2006 08 24 | 644 | 0.1+ | 0.6+ |
| 2002 09 17 | 608 | 1.2− | 0.7+ | 2004 02 13 | 699 | 0.1− | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.5+ |
| 2002 10 31 | 704 | 0.7+ | 0.3− | 2004 02 13 | 699 | 0.1− | 0.2− | 2006 08 24 | 644 | 0.2+ | 0.5+ |
| 2002 10 31 | 704 | 0.6+ | 0.2− | 2004 02 14 | 704 | (1.5− | 1.5−) | 2006 10 20 | 695 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.5+ | 0.2− | 2004 02 14 | 704 | 0.0 | 0.3+ | 2006 10 20 | 695 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.7+ | 0.1+ | 2004 02 14 | 704 | 0.3− | 0.5+ | 2006 10 20 | 695 | 0.2− | 0.0 |
| 2003 12 28 | 704 | 0.5+ | 1.0− | 2004 02 14 | 704 | 0.5+ | 0.3− | 2006 10 20 | 695 | 0.2− | 0.1+ |
| 2003 12 28 | 704 | 0.0 | 0.3− | 2004 02 22 | 703 | (0.2− | 1.6+) | | | | |
| 2003 12 28 | 704 | 0.3− | 0.0 | 2004 02 22 | 703 | 0.6+ | 1.0+ | | | | |

**(143979)∗ 2003 YF$_{146}$ = 2002 VJ$_{95}$**

Discovered 2003 Dec. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57569)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.56459 | | (2000.0) | | | |
| $n$ | 0.23490965 | $\omega$ | 317.45298 | | +0.56654982 | +0.82194511 |
| $a$ | 2.6013701 | $\Omega$ | 346.70159 | | −0.67089769 | +0.41884947 |
| $e$ | 0.0903913 | $i$ | 14.74509 | | −0.47845333 | +0.38596808 |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 21 | 644 | 0.5− | 0.4+ | 2005 05 02 | E12 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.5+ | 0.2+ |
| 2002 09 21 | 644 | 0.5− | 0.1+ | 2006 08 18 | 699 | 0.1+ | 0.0 | 2006 09 19 | 699 | 1.4+ | 0.4+ |
| 2002 09 21 | 644 | 0.3− | 0.2− | 2006 08 18 | 699 | 0.3− | 0.9+ | 2006 09 19 | 699 | 0.4− | 0.1− |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2006 08 18 | 699 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.6− | 0.8+ |
| 2002 10 05 | 704 | 0.4− | 1.0− | 2006 08 18 | 699 | 0.2− | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2002 10 05 | 704 | 0.4+ | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.6+ | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.6+ |
| 2002 10 10 | 704 | 0.6+ | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.9− | 2006 09 25 | 704 | 0.3+ | 0.2+ |
| 2002 10 10 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.9− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.7− | 2006 09 25 | 704 | 0.5+ | 0.0 |
| 2002 11 01 | 644 | 0.2− | 0.5+ | 2006 08 28 | 703 | (2.9− | 1.4−) | 2006 09 25 | 704 | 0.4− | 0.8− |
| 2002 11 01 | 644 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 11 01 | 644 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2002 11 11 | 699 | 0.2+ | 0.8+ | 2006 08 30 | 704 | 0.7+ | 0.2− | 2006 09 27 | 699 | 1.0+ | 0.6− |
| 2002 11 11 | 699 | 0.0 | 0.3+ | 2006 08 30 | 704 | (1.8+ | 1.1−) | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 11 11 | 699 | 1.1+ | 0.2− | 2006 09 01 | 704 | 0.4− | 0.9+ | 2006 09 27 | 699 | 0.4+ | 0.0 |
| 2002 11 11 | 699 | 0.2− | 0.3+ | 2006 09 01 | 704 | 1.0− | 1.2+ | 2006 09 27 | 699 | 0.1+ | 1.2+ |
| 2002 11 13 | 644 | 0.2+ | 0.6− | 2006 09 01 | 704 | 0.7+ | 0.4− | 2006 10 01 | 703 | 0.8− | 0.2− |
| 2002 11 13 | 644 | 0.0 | 0.7− | 2006 09 06 | 644 | 0.1− | 0.4− | 2006 10 01 | 703 | 1.1− | 1.0− |
| 2002 11 13 | 644 | 0.2+ | 0.8− | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 10 01 | 703 | 0.9− | 0.0 |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.6− | 0.9− |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2003 12 28 | 704 | 0.5+ | 0.3+ | 2006 09 13 | 644 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2003 12 28 | 704 | 0.1+ | 0.5+ | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2003 12 28 | 704 | 0.8+ | 0.5+ | 2006 09 15 | 704 | 0.6+ | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.4+ |
| 2003 12 30 | 704 | 0.1+ | 0.4+ | 2006 09 15 | 704 | 0.3+ | 0.3− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2003 12 30 | 704 | 0.2− | 0.2+ | 2006 09 15 | 704 | 0.6+ | 0.2− | 2006 10 17 | 691 | 0.3− | 0.4− |
| 2003 12 30 | 704 | 0.1− | 1.3+ | 2006 09 15 | 704 | 0.4+ | 0.8+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2003 12 30 | 704 | 0.0 | 1.1+ | 2006 09 17 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2003 12 30 | 704 | 0.5− | 0.0 | 2006 09 17 | 703 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2004 01 18 | 703 | 1.0+ | 0.2− | 2006 09 17 | 703 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2004 01 18 | 703 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2004 01 18 | 703 | 0.6+ | 0.0 | 2006 09 18 | 704 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1− |
| 2004 01 18 | 703 | 0.1+ | 0.2− | 2006 09 18 | 704 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2005 05 02 | E12 | 0.2+ | 0.7+ | 2006 09 18 | 704 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2005 05 02 | E12 | 0.5+ | 0.3+ | 2006 09 18 | 704 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2005 05 02 | E12 | 0.5+ | 0.9+ | 2006 09 18 | 704 | 0.7+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1− |

**(143980)∗ 2003 YT$_{148}$**

Discovered 2003 Dec. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.64233 | | (2000.0) | | −0.28059721 | +0.94203016 |
| $n$ | 0.23612828 | $\omega$ | 205.19906 | | −0.83424067 | −0.14457527 |
| $a$ | 2.5924122 | $\Omega$ | 49.08210 | | −0.47466589 | −0.30278238 |
| $e$ | 0.1111753 | $i$ | 14.09070 | | | |
| $P$ | 4.17 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 704 | 0.2+ | 0.8− | 2005 04 13 | 699 | 0.4+ | 0.4+ | 2005 06 04 | 703 | 1.1− | 1.3− |
| 2001 05 24 | 704 | 0.7+ | 0.4− | 2005 04 15 | 691 | 0.4+ | 0.3+ | 2005 06 04 | 703 | 1.1− | 1.3− |
| 2001 05 24 | 704 | 1.2− | 0.1− | 2005 04 15 | 691 | 0.3+ | 0.2+ | 2005 06 04 | 703 | 1.4− | 0.2− |
| 2001 05 24 | 704 | 0.2+ | 1.0+ | 2005 04 15 | 691 | 0.5+ | 0.3+ | 2005 06 04 | 703 | 1.4− | 0.0 |
| 2001 05 24 | 704 | 0.5− | 1.0+ | 2005 04 18 | 703 | 0.5− | 1.0− | 2005 06 11 | 703 | 0.3+ | 0.2+ |
| 2002 10 08 | 699 | (0.2− | 1.8+) | 2005 04 18 | 703 | 1.3− | 0.0 | 2005 06 11 | 703 | 0.0 | 0.3− |
| 2002 10 08 | 699 | 0.3+ | 0.0 | 2005 04 18 | 703 | 1.0+ | 0.0 | 2005 06 11 | 703 | (1.7− | 1.6−) |
| 2002 10 08 | 699 | 1.0+ | 0.5+ | 2005 04 18 | 703 | 1.0− | 0.2− | 2005 06 11 | 703 | 0.5− | 0.9− |
| 2002 10 08 | 699 | (1.6− | 1.8+) | 2005 05 04 | 704 | 1.3+ | 0.3+ | 2005 06 14 | 699 | 0.4+ | 0.9− |
| 2003 12 29 | 704 | 0.4+ | 0.2− | 2005 05 04 | 704 | 0.3+ | 0.7+ | 2005 06 14 | 699 | 0.5− | 0.8+ |
| 2003 12 29 | 704 | 0.4− | 1.4+ | 2005 05 04 | 704 | 0.3+ | 0.3+ | 2005 06 14 | 699 | (1.1+ | 1.9+) |
| 2003 12 29 | 704 | (1.6+ | 0.4+) | 2005 05 04 | 704 | 0.6+ | 0.5+ | 2005 06 14 | 699 | 0.0 | 1.3+ |
| 2003 12 29 | 704 | 0.0 | 0.3− | 2005 05 09 | 704 | 0.4− | 0.0 | 2005 06 27 | 644 | 0.3+ | 0.0 |
| 2003 12 30 | 704 | 0.0 | 0.8+ | 2005 05 09 | 704 | 0.3− | 0.3− | 2005 06 27 | 644 | 0.2− | 0.0 |
| 2003 12 30 | 704 | 0.1+ | 0.0 | 2005 05 09 | 704 | 0.1− | 0.5− | 2005 06 27 | 644 | 0.1+ | 0.2+ |
| 2003 12 30 | 704 | 0.6− | 0.9+ | 2005 05 09 | 699 | 0.4+ | 0.0 | 2006 09 20 | 703 | 0.7− | 1.1+ |
| 2003 12 30 | 704 | 0.1+ | 0.3+ | 2005 05 09 | 704 | 0.0 | 0.9− | 2006 09 20 | 703 | 0.2− | 0.2+ |
| 2004 01 11 | 644 | 0.2− | 0.3+ | 2005 05 09 | 699 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.3+ |
| 2004 01 11 | 644 | 0.1− | 0.6+ | 2005 05 09 | 699 | 0.3− | 0.8+ | 2006 09 20 | 703 | 0.3− | 0.3− |
| 2004 01 11 | 644 | 0.2− | 0.3+ | 2005 05 09 | 699 | 1.0+ | 0.7− | 2006 09 26 | 703 | 0.6− | 0.8+ |
| 2004 01 16 | 644 | 0.3+ | 0.2+ | 2005 05 13 | 704 | 0.7+ | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2004 01 16 | 644 | 0.3+ | 0.5+ | 2005 05 13 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 703 | (2.3− | 0.5+) |
| 2004 01 16 | 644 | 0.2+ | 0.3+ | 2005 05 13 | 704 | 1.3+ | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.3+ |
| 2005 04 02 | 691 | 0.2+ | 0.1− | 2005 05 13 | 704 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.7− | 0.6+ |
| 2005 04 02 | 691 | 0.2+ | 0.1− | 2005 05 13 | 704 | 0.6+ | 0.9+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2005 04 02 | 691 | 0.4+ | 0.0 | 2005 05 30 | 699 | 0.6− | 0.4+ | 2006 10 09 | 644 | 0.4− | 0.4+ |
| 2005 04 05 | 703 | 0.6− | 0.8+ | 2005 05 30 | 699 | 0.8− | 0.2− | 2006 10 11 | 644 | 0.4− | 0.7+ |
| 2005 04 05 | 703 | 0.5− | 0.9− | 2005 05 30 | 699 | 1.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2005 04 05 | 703 | (2.6− | 1.3−) | 2005 05 30 | 699 | 1.2− | 1.2+ | 2006 10 11 | 644 | 0.4− | 0.5+ |
| 2005 04 05 | 703 | 0.7− | 0.5− | 2005 05 30 | 699 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2005 04 13 | 699 | 0.1− | 0.7+ | 2005 05 30 | 699 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.5− | 0.5+ |
| 2005 04 13 | 699 | 0.9+ | 0.7+ | 2005 05 30 | 699 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.7− | 0.3+ |
| 2005 04 13 | 699 | 0.7+ | 0.0 | 2005 05 30 | 699 | 0.4− | 1.0+ | | | | |

**(143981)∗ 2003 YH$_{150}$ = 2001 FE$_{166}$**

Discovered 2003 Dec. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69617)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.63884 | | (2000.0) | | −0.00699713 | −0.99937983 |
| $n$ | 0.28253661 | $\omega$ | 73.52054 | | +0.86651576 | −0.02328487 |
| $a$ | 2.3001327 | $\Omega$ | 16.99272 | | +0.49910066 | +0.02641535 |
| $e$ | 0.1436621 | $i$ | 6.78168 | | | |
| $P$ | 3.49 | $H$ | 17.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 691 | 0.5− | 0.2+ | 2003 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.1+ |
| 1999 11 13 | 691 | 0.3+ | 0.5+ | 2003 12 29 | 704 | (0.3+ | 1.6+) | 2006 09 27 | G92 | 0.5− | 0.0 |
| 1999 11 13 | 691 | 0.1− | 0.2− | 2003 12 29 | 704 | 1.0+ | 0.6+ | 2006 09 27 | 704 | 0.3− | 0.1+ |
| 2001 03 19 | 699 | 0.2+ | 0.8+ | 2003 12 29 | 704 | 0.5+ | 0.9+ | 2006 09 27 | 704 | 0.6+ | 1.1− |
| 2001 03 19 | 699 | (0.6+ | 2.2+) | 2003 12 29 | 704 | 0.8+ | 0.4+ | 2006 09 27 | G92 | 0.3− | 0.1− |
| 2001 03 19 | 699 | (2.7+ | 1.0+) | 2003 12 29 | 704 | 0.5− | 0.5+ | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 2001 03 19 | 699 | 0.2− | 0.5+ | 2003 12 30 | 704 | 0.4− | 0.0 | 2006 09 28 | 704 | 0.0 | 1.1− |
| 2001 03 24 | 691 | 0.2− | 0.4+ | 2003 12 30 | 704 | 0.8− | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.6+ |
| 2001 03 24 | 691 | 0.2− | 0.3+ | 2003 12 30 | 704 | 0.9− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2001 03 24 | 691 | 0.1− | 0.4+ | 2003 12 30 | 704 | 1.3+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 2001 04 26 | 691 | 0.7+ | 0.1+ | 2004 01 16 | 644 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.5+ |
| 2001 04 26 | 691 | 0.8+ | 0.3+ | 2004 01 16 | 644 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 04 26 | 691 | 0.5+ | 0.3+ | 2004 01 16 | 644 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2003 12 03 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2003 12 03 | 704 | 0.3− | 0.4+ | 2006 09 20 | 691 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2003 12 03 | 704 | 0.2− | 0.0 | 2006 09 20 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2003 12 03 | 704 | 0.7+ | 0.1− | 2006 09 20 | 644 | 0.4+ | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2003 12 17 | 704 | 0.2+ | 0.3− | 2006 09 20 | 644 | 0.6+ | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2003 12 17 | 704 | 0.0 | 0.3− | 2006 09 20 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 12 17 | 704 | 0.6− | 0.7− | 2006 09 27 | G92 | 1.4− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2003 12 17 | 704 | 0.1− | 0.8− | 2006 09 27 | 704 | 0.7+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.0 |

**(143982)∗ 2003 YK$_{150}$**

Discovered 2003 Dec. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.88732 | | (2000.0) | | −0.12045032 | −0.99271849 |
| $n$ | 0.26486602 | $\omega$ | 269.62321 | | +0.91485823 | −0.11049054 |
| $a$ | 2.4013302 | $\Omega$ | 187.29528 | | +0.38539089 | −0.04797749 |
| $e$ | 0.1439678 | $i$ | 0.59134 | | | |
| $P$ | 3.72 | $H$ | 17.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.2+ | 0.4− | 2003 12 29 | 699 | 1.2− | 0.5+ | 2006 09 25 | G96 | 0.4− | 0.0 |
| 1995 10 01 | 691 | 0.3+ | 1.0− | 2003 12 29 | 699 | 0.6+ | 0.8− | 2006 09 25 | G96 | 0.1− | 0.5− |
| 1995 10 01 | 691 | 0.1− | 0.1− | 2003 12 29 | 699 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.5− | 0.1+ |
| 1995 10 15 | 691 | 0.1− | 0.1+ | 2003 12 30 | 691 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 1995 10 15 | 691 | 0.3− | 0.1+ | 2003 12 30 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 1995 10 15 | 691 | 0.0 | 0.1− | 2003 12 30 | 691 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 1995 10 23 | 691 | 0.0 | 0.4+ | 2004 01 24 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 1995 10 23 | 691 | 0.4− | 0.4+ | 2004 01 24 | 704 | (0.2+ | 1.6+) | 2006 09 30 | 691 | 0.0 | 0.0 |
| 1995 10 23 | 691 | 0.4− | 0.4+ | 2004 01 24 | 704 | 1.0− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1999 11 28 | 691 | 0.6+ | 0.6− | 2004 01 24 | 704 | 0.5− | 0.9+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 1999 11 28 | 691 | 0.1+ | 0.1− | 2004 01 26 | 699 | 0.2+ | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 1999 11 28 | 691 | 0.3+ | 0.1+ | 2004 01 26 | 699 | 0.2+ | 0.7− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2002 08 10 | 807 | 0.1+ | 0.3+ | 2004 01 26 | 699 | 0.1− | 0.6− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2002 08 10 | 807 | 0.2+ | 0.3+ | 2004 01 26 | 699 | 0.9− | 0.8− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 09 02 | 291 | 0.1− | 0.5+ | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.5− |
| 2002 09 02 | 291 | 0.4+ | 0.3− | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1+ |
| 2002 09 02 | 291 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 2003 12 29 | 699 | 0.3+ | 0.5− | 2006 09 25 | G96 | 0.2− | 0.1+ | | | | |

**(143983)∗ 2003 YE$_{152}$ = 2005 GZ$_{143}$**

Discovered 2003 Dec. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76359)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.59880 | | (2000.0) | | −0.56544125 | +0.79643117 |
| $n$ | 0.21939363 | $\omega$ | 176.36402 | | −0.76289359 | −0.40622193 |
| $a$ | 2.7226180 | $\Omega$ | 59.08301 | | −0.31347976 | −0.44797449 |
| $e$ | 0.0286264 | $i$ | 14.47312 | | | |
| $P$ | 4.49 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.0 | 0.3+ | 2004 01 19 | 704 | 0.3− | 0.4+ | 2005 05 03 | 704 | 1.3+ | 0.2+ |
| 2000 03 04 | 704 | 0.1− | 0.4+ | 2004 01 19 | 704 | 0.8+ | 0.7+ | 2005 05 03 | 704 | 0.1+ | 0.4− |
| 2000 03 04 | 704 | 0.5− | 0.8+ | 2004 01 19 | 704 | 0.2+ | 0.2− | 2005 05 03 | 704 | 1.4− | 0.7+ |
| 2002 10 08 | 699 | 0.1+ | 1.5+ | 2004 01 19 | 704 | 0.2+ | 0.6+ | 2005 05 03 | 704 | 1.1+ | 0.3+ |
| 2002 10 08 | 699 | 0.9− | 2.0+ | 2005 04 10 | 691 | 0.0 | 0.2+ | 2005 05 07 | 703 | 1.5− | 0.3− |
| 2002 10 08 | 699 | 0.1− | 0.7+ | 2005 04 10 | 691 | 0.7+ | 0.4+ | 2005 05 07 | 703 | 0.9+ | 0.8− |
| 2002 10 08 | 699 | 0.6− | 0.8+ | 2005 04 10 | 691 | 0.1− | 0.3+ | 2005 05 07 | 703 | 0.6− | 0.1+ |
| 2002 10 16 | 644 | 0.3− | 1.0+ | 2005 04 13 | 699 | 0.0 | 0.1+ | 2005 05 07 | 703 | 1.0− | 0.2− |
| 2002 10 16 | 644 | 0.7− | 0.5+ | 2005 04 13 | 699 | 0.2− | 1.7+ | 2006 07 29 | E12 | 0.5− | 0.1− |
| 2002 10 16 | 644 | 0.4− | 0.5+ | 2005 04 13 | 699 | (0.0 | 2.1+) | 2006 07 29 | E12 | 1.2− | 0.3+ |
| 2003 12 29 | 704 | 0.5+ | 0.5− | 2005 04 13 | 699 | 0.8+ | 0.5+ | 2006 07 29 | E12 | (2.9− | 1.2−) |
| 2003 12 29 | 704 | 0.3− | 0.1+ | 2005 04 15 | 691 | 0.1+ | 0.3+ | 2006 07 29 | E12 | 0.6− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 704 | 0.4+ | 0.7+ | 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 08 25 | E12 | 0.4− | 0.3− |
| 2003 12 30 | 704 | 0.7+ | 1.1+ | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 08 25 | E12 | 0.2+ | 0.0 |
| 2003 12 30 | 704 | 0.0 | 0.3− | 2005 04 30 | 644 | 0.1− | 0.1+ | 2006 08 25 | E12 | 0.5+ | 0.8+ |
| 2003 12 30 | 704 | 0.5− | 0.2+ | 2005 04 30 | 644 | 0.3+ | 0.1− | 2006 08 25 | E12 | 0.6− | 0.2− |
| 2003 12 30 | 704 | 1.0− | 0.3+ | 2005 04 30 | 644 | 0.1− | 0.1+ | | | | |
| 2004 01 19 | 704 | 0.0 | 0.3+ | 2005 05 03 | 704 | 1.1+ | 1.7− | | | | |

**(143984)∗ 2003 YZ$_{152}$**

Discovered 2003 Dec. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.26068 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22452136 | $\omega$ | 217.98574 | | −0.23972513 | +0.95849742 | |
| $a$ | 2.6810049 | $\Omega$ | 38.84326 | | −0.81958921 | −0.11460146 | |
| $e$ | 0.1554512 | $i$ | 14.24380 | | −0.52038965 | −0.26105400 | |
| $P$ | 4.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 23 | 691 | 0.1− | 0.0 | 2003 12 30 | 704 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1996 03 23 | 691 | 0.1− | 0.6− | 2004 01 19 | 704 | 0.9+ | 1.2− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1996 03 23 | 691 | 0.1+ | 0.1+ | 2004 01 19 | 704 | 0.8+ | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2000 02 03 | 704 | 0.2+ | 0.3− | 2004 01 19 | 704 | 0.7+ | 1.3− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2000 02 03 | 704 | 0.5+ | 1.8+ | 2004 01 30 | 699 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2000 02 03 | 704 | 1.0+ | 0.6+ | 2004 01 30 | 699 | 0.8− | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2000 02 03 | 704 | 0.6+ | 0.3+ | 2004 01 30 | 699 | 0.1+ | 1.0− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2000 03 04 | 704 | 0.2+ | 0.1+ | 2004 01 30 | 699 | 0.9− | 1.0− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2000 03 04 | 704 | 0.0 | 0.5+ | 2004 02 02 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2000 03 04 | 704 | 0.2− | 1.3+ | 2004 02 02 | 704 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2000 03 04 | 704 | 0.1− | 0.4+ | 2004 02 02 | 704 | 0.6− | 0.8+ | 2006 10 16 | 703 | 0.7− | 1.2+ |
| 2000 03 04 | 704 | 0.3+ | 1.0+ | 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 1.2− |
| 2000 03 26 | 699 | 0.1− | 0.3+ | 2004 02 10 | 644 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2000 03 26 | 699 | 0.4− | 0.5+ | 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2000 03 26 | 699 | 0.3+ | 0.9+ | 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2000 03 26 | 699 | 0.1− | 1.2+ | 2006 09 18 | 703 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 11 04 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 04 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2002 11 04 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 12 11 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.6− | 2006 10 22 | 703 | 0.6+ | 0.6− |
| 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.4+ |
| 2002 12 11 | 644 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.7+ | 0.9+ | 2006 10 22 | 703 | 0.2+ | 0.8+ |
| 2003 12 29 | 703 | 0.6− | 0.7− | 2006 10 02 | G96 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.8− |
| 2003 12 29 | 703 | 0.5+ | 1.0+ | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2003 12 29 | 703 | 0.6+ | 1.2− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2003 12 29 | 703 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2003 12 30 | 704 | 0.9− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2003 12 30 | 704 | 0.9+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | | | |
| 2003 12 30 | 704 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.3+ | | | | |

**(143985)∗ 2003 YT$_{153}$ = 2000 FT$_{11}$ = 2002 UC$_{53}$**

Discovered 2003 Dec. 29 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 65539)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.01602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22877725 | $\omega$ | 141.98624 | | −0.96096660 | +0.21565523 | |
| $a$ | 2.6476516 | $\Omega$ | 51.36929 | | −0.27506998 | −0.81189584 | |
| $e$ | 0.1377013 | $i$ | 12.81794 | | +0.02965970 | −0.54251080 | |
| $P$ | 4.31 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 10 | 691 | 0.0 | 0.0 | 2002 10 30 | 645 | 0.1+ | 0.0 | 2003 12 29 | 704 | 0.1− | 0.9+ |
| 1996 05 10 | 691 | 0.2− | 0.2+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2003 12 29 | 704 | 0.2+ | 0.3− |
| 1996 05 10 | 691 | 0.3+ | 0.0 | 2002 10 31 | 704 | 1.0− | 0.0 | 2003 12 29 | 704 | 0.2− | 0.7+ |
| 1998 11 21 | 691 | 0.0 | 0.3− | 2002 10 31 | 704 | 0.5− | 0.8+ | 2003 12 29 | 704 | 0.3− | 0.3+ |
| 1998 11 21 | 691 | (3.3+ | 1.3−) | 2002 10 31 | 704 | 0.5− | 0.5+ | 2004 01 02 | 704 | (2.3− | 1.5−) |
| 1998 11 21 | 691 | 0.1− | 0.3− | 2002 10 31 | 704 | 1.0− | 0.8+ | 2004 01 02 | 704 | 0.8− | 0.1+ |
| 2000 03 04 | 704 | 0.3− | 0.9+ | 2002 10 31 | 704 | (0.4+ | 1.6+) | 2004 01 02 | 704 | 0.4+ | 0.5− |
| 2000 03 04 | 704 | 0.0 | 0.3− | 2003 12 03 | 704 | 0.2− | 0.5+ | 2004 01 19 | 704 | 0.1− | 0.1+ |
| 2000 03 04 | 704 | 0.3− | 0.8+ | 2003 12 03 | 704 | 0.4− | 0.8− | 2004 01 19 | 704 | 0.3+ | 0.1+ |
| 2000 03 04 | 704 | 0.1+ | 0.9+ | 2003 12 03 | 704 | 0.3− | 0.5− | 2004 01 19 | 704 | 0.1+ | 0.9+ |
| 2000 03 04 | 704 | 0.2+ | 0.2+ | 2003 12 03 | 704 | 0.1+ | 0.5− | 2004 01 19 | 704 | 0.1+ | 0.1+ |
| 2000 03 28 | 704 | 0.4+ | 0.4+ | 2003 12 17 | 704 | 0.7+ | 0.3+ | 2004 01 19 | 704 | 0.6+ | 0.2+ |
| 2000 03 28 | 704 | 0.8+ | 0.1− | 2003 12 17 | 704 | 0.6+ | 0.6− | 2006 09 19 | 703 | 0.3− | 0.8+ |
| 2000 03 28 | 704 | 0.5+ | 0.3− | 2003 12 17 | 704 | 1.0+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2000 04 02 | 704 | 0.7− | 0.3− | 2003 12 17 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 1.6+ | 0.8− |
| 2000 04 02 | 704 | 0.0 | 0.3− | 2003 12 17 | 699 | 0.4+ | 0.6+ | 2006 09 19 | 703 | (0.1+ | 1.8+) |
| 2000 04 02 | 704 | 0.1− | 0.1− | 2003 12 17 | 699 | 0.2− | 0.1+ | 2006 09 25 | 703 | 0.7− | 1.2+ |
| 2000 04 02 | 704 | (0.1− | 2.2+) | 2003 12 17 | 699 | 0.6− | 0.0 | 2006 09 25 | 703 | 0.5− | 0.7− |
| 2000 05 01 | 699 | 0.4+ | 0.4− | 2003 12 17 | 699 | 0.2− | 0.7+ | 2006 09 25 | 703 | 0.6+ | 0.1− |
| 2000 05 01 | 699 | 0.7− | 0.3+ | 2003 12 29 | 703 | 1.3− | 1.1− | 2006 09 25 | 703 | 1.3− | 0.9+ |
| 2000 05 01 | 699 | 0.0 | 0.2+ | 2003 12 29 | 703 | 0.7− | 0.3− | 2006 10 21 | 703 | 1.1− | 0.3+ |
| 2000 05 01 | 699 | 0.0 | 0.2− | 2003 12 29 | 703 | 0.5− | 1.1− | 2006 10 21 | 703 | 0.5− | 1.3− |
| 2002 10 29 | 645 | 0.1+ | 0.0 | 2003 12 29 | 703 | 0.8+ | 0.2− | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 2002 10 29 | 645 | 0.1+ | 0.0 | 2003 12 29 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.3+ |

**(143986)∗ 2003 YB$_{154}$**

Discovered 2003 Dec. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.79611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24133736 | $\omega$ | 152.38387 | | −0.84386839 | −0.53620501 | |
| $a$ | 2.5549732 | $\Omega$ | 355.05940 | | +0.44181369 | −0.67407167 | |
| $e$ | 0.1031546 | $i$ | 12.91178 | | +0.30444509 | −0.50804682 | |
| $P$ | 4.08 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 07 | 809 | 0.9− | 1.5− | 2004 01 02 | 704 | 0.4− | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.1+ |
| 2000 01 29 | 704 | 0.2+ | 0.4− | 2004 01 02 | 704 | 0.1− | 0.7− | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2000 01 29 | 704 | 0.0 | 0.3+ | 2004 01 18 | 644 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 0.9− | 0.4− |
| 2000 01 29 | 704 | 0.4− | 0.6− | 2004 01 18 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 1.5− | 0.1− |
| 2000 01 29 | 704 | 0.4− | 0.5− | 2004 01 18 | 703 | 1.2+ | 0.9+ | 2006 08 27 | 699 | 1.2− | 0.1+ |
| 2000 01 29 | 704 | 0.3− | 0.6− | 2004 01 18 | 703 | 0.5+ | 0.0 | 2006 08 27 | 699 | 0.6− | 0.2+ |
| 2000 02 02 | 704 | 1.3+ | 0.7+ | 2004 01 18 | 644 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.3− | 0.5+ |
| 2000 02 02 | 704 | 0.2− | 0.5− | 2004 01 18 | 703 | 0.1+ | 0.0 | 2006 09 12 | 703 | (0.0 | 1.6+) |
| 2000 02 02 | 704 | 1.9− | 0.4− | 2004 01 18 | 703 | 0.1− | 0.8+ | 2006 09 12 | 703 | 0.3+ | 0.0 |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2004 01 19 | 704 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 1.0− | 1.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.3+ | 2004 01 19 | 704 | 0.8+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2004 01 19 | 704 | 0.9+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.3− |
| 2002 09 30 | 704 | 0.0 | 1.3− | 2004 01 19 | 704 | (0.4− | 2.1+) | 2006 09 14 | 644 | 0.0 | 0.1− |
| 2002 09 30 | 704 | (1.9− | 0.8−) | 2004 01 19 | 704 | 0.2+ | 1.4+ | 2006 09 16 | 699 | 0.5+ | 0.1− |
| 2002 09 30 | 704 | (2.0− | 0.1−) | 2004 01 20 | 620 | 0.3− | 0.3− | 2006 09 16 | 699 | 0.2+ | 1.4+ |
| 2002 10 03 | 704 | 0.4+ | 0.6− | 2004 01 20 | 620 | 0.2+ | 0.2− | 2006 09 16 | 699 | 1.0+ | 0.3− |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2004 01 20 | 620 | 0.2− | 0.3− | 2006 09 16 | 699 | 0.5− | 1.2+ |
| 2002 10 03 | 704 | 0.9+ | 0.5− | 2004 01 30 | 699 | 0.2− | 0.4− | 2006 09 19 | 699 | 0.8+ | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2004 01 30 | 699 | 0.4− | 0.7− | 2006 09 19 | 703 | 0.8+ | 1.0+ |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2004 01 30 | 699 | 0.6− | 0.3− | 2006 09 19 | 699 | 1.4+ | 0.2− |
| 2002 10 11 | 704 | 0.4− | 0.0 | 2004 01 30 | 699 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.4+ | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 1.1+ | 2004 01 31 | 704 | (1.9− | 0.4−) | 2006 09 19 | 703 | 0.2+ | 0.0 |
| 2003 12 03 | 704 | 0.2− | 0.6+ | 2004 01 31 | 704 | (1.6− | 0.3+) | 2006 09 19 | 699 | 0.0 | 0.2− |
| 2003 12 03 | 704 | 0.9+ | 0.3+ | 2004 01 31 | 704 | (2.1− | 0.6−) | 2006 09 19 | 703 | 0.2− | 0.7+ |
| 2003 12 03 | 704 | 0.4+ | 0.1− | 2004 01 31 | 704 | 1.0− | 0.4− | 2006 09 19 | 699 | 0.5+ | 0.1− |
| 2003 12 03 | 704 | (1.5+ | 0.2+) | 2004 02 02 | 704 | 0.0 | 0.9+ | 2006 09 20 | 704 | 0.4+ | 0.3− |
| 2003 12 03 | 704 | 0.0 | 1.0+ | 2004 02 02 | 704 | 0.1− | 0.9+ | 2006 09 20 | 704 | 1.2+ | 0.1+ |
| 2003 12 17 | 704 | 0.6− | 0.2− | 2004 02 02 | 704 | 0.7+ | 0.7+ | 2006 09 20 | 704 | 0.2− | 0.3+ |
| 2003 12 17 | 704 | 0.4− | 0.0 | 2004 02 02 | 704 | 0.2− | 0.0 | 2006 09 20 | 704 | 1.3+ | 0.2+ |
| 2003 12 17 | 704 | 0.3− | 0.4+ | 2004 02 11 | 704 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.4+ |
| 2003 12 17 | 704 | 0.1− | 0.6+ | 2004 02 11 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.1− |
| 2003 12 29 | 703 | 0.9− | 0.2− | 2004 02 11 | 704 | 0.2− | 0.7+ | 2006 09 25 | 699 | (2.5− | 0.5−) |
| 2003 12 29 | 704 | (1.7+ | 1.6+) | 2004 02 11 | 704 | 0.4− | 0.7− | 2006 09 25 | G96 | 0.3− | 0.5− |
| 2003 12 29 | 703 | 0.9− | 0.4− | 2004 02 11 | 704 | 0.8+ | 0.1− | 2006 09 25 | G96 | 0.2− | 1.1− |
| 2003 12 29 | 704 | 0.0 | 0.3+ | 2004 03 23 | 704 | (0.3− | 1.6+) | 2006 09 25 | G96 | 0.4+ | 0.8− |
| 2003 12 29 | 703 | 0.6− | 0.3− | 2004 03 23 | 704 | 0.9+ | 0.7+ | 2006 09 25 | G96 | 0.4+ | 0.6− |
| 2003 12 29 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 1.0− | 0.6− |
| 2003 12 29 | 703 | 0.3− | 1.1− | 2004 03 23 | 704 | (0.3+ | 1.5+) | 2006 09 25 | 699 | 1.3− | 0.0 |
| 2003 12 29 | 704 | 0.8+ | 0.2− | 2004 04 20 | 704 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.9− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 704 | 0.8+ | 1.0− | 2004 04 20 | 704 | 1.1− | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.6− |
| 2004 01 02 | 704 | 0.4+ | 0.3− | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.9− |
| 2004 01 02 | 704 | 0.3− | 1.3− | 2004 04 20 | 704 | (0.7− | 2.3+) | 2006 10 19 | G96 | 0.2+ | 0.6− |
| 2004 01 02 | 704 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.2− | | | | |

**(143987)∗ 2003 YS$_{154}$**

Discovered 2003 Dec. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 172.88989 | | (2000.0) | | | |
| $n$ | 0.21606446 | $\omega$ | 123.88097 | | −0.97428890 | +0.10215193 |
| $a$ | 2.7505137 | $\Omega$ | 62.72061 | | −0.18911928 | −0.85523438 |
| $e$ | 0.1261811 | $i$ | 13.05831 | | +0.12245425 | −0.50807394 |
| $P$ | 4.56 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 15 | 691 | 0.2− | 0.2− | 2003 12 29 | 704 | (0.6− | 2.1+) | 2004 02 14 | 704 | 0.4+ | 0.0 |
| 1993 12 15 | 691 | 0.1+ | 0.3+ | 2004 01 02 | 704 | 0.2− | 0.8+ | 2004 02 14 | 704 | 0.4+ | 0.0 |
| 2000 05 11 | 699 | 0.5− | 0.0 | 2004 01 02 | 704 | (1.6− | 0.6+) | 2004 02 15 | 644 | 0.1− | 0.3− |
| 2000 05 11 | 699 | 0.5+ | 0.2+ | 2004 01 02 | 704 | 0.5− | 1.1+ | 2004 02 15 | 644 | 0.1+ | 0.0 |
| 2000 05 11 | 699 | 0.9− | 1.1+ | 2004 01 14 | 644 | 0.1− | 0.2− | 2004 02 15 | 644 | 0.3+ | 0.1+ |
| 2000 05 11 | 699 | 0.5+ | 1.2+ | 2004 01 14 | 644 | 0.0 | 0.1− | 2004 04 15 | 152 | 0.2− | 0.5+ |
| 2000 05 27 | 704 | 1.6+ | 0.4+ | 2004 01 14 | 644 | 0.2− | 0.1− | 2004 04 22 | 703 | 1.4+ | 1.1+ |
| 2000 05 27 | 704 | 0.8− | 0.3+ | 2004 01 30 | 703 | 0.1− | 0.7− | 2004 04 22 | 703 | 0.7− | 0.4− |
| 2000 05 27 | 704 | 0.7+ | 0.5− | 2004 01 30 | 703 | 0.3− | 0.4− | 2004 04 22 | 703 | 1.4− | 0.5− |
| 2000 05 27 | 704 | 1.1+ | 0.7+ | 2004 01 30 | 703 | 1.2− | 0.4− | 2004 04 22 | 703 | 0.2+ | 1.1+ |
| 2001 08 16 | 644 | 0.2− | 0.1− | 2004 01 30 | 703 | 0.8− | 0.6− | 2004 05 12 | 704 | 0.4+ | 0.8+ |
| 2001 08 16 | 644 | 0.0 | 0.7− | 2004 01 31 | 704 | 0.8+ | 0.1− | 2004 05 12 | 704 | 0.2− | 0.7− |
| 2001 08 16 | 644 | 0.2+ | 0.8− | 2004 01 31 | 704 | 0.4+ | 0.1+ | 2004 05 12 | 704 | 0.1− | 0.9− |
| 2002 10 30 | 644 | 0.4− | 0.9+ | 2004 01 31 | 704 | 0.6+ | 0.1− | 2004 05 12 | 704 | 1.3+ | 0.0 |
| 2002 10 30 | 644 | 0.3− | 0.8+ | 2004 01 31 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | (1.7− | 0.5+) |
| 2002 10 30 | 644 | 0.9+ | 0.2− | 2004 01 31 | 704 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.7− | 0.3+ |
| 2003 11 19 | 704 | 0.0 | 1.0− | 2004 02 02 | 704 | 0.6+ | 1.3+ | 2006 09 19 | 703 | 0.2− | 0.1− |
| 2003 11 19 | 704 | 0.7+ | 0.4− | 2004 02 02 | 704 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.8+ | 0.3+ |
| 2003 11 19 | 704 | 0.3− | 1.5+ | 2004 02 02 | 704 | (0.4+ | 1.6+) | 2006 10 09 | 644 | 0.5− | 0.2+ |
| 2003 12 18 | 704 | 0.1− | 0.2− | 2004 02 02 | 704 | 0.4+ | 1.1+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.3− | 0.1− | 2004 02 02 | 704 | 0.0 | 0.6+ | 2006 10 09 | 644 | 0.6− | 0.6+ |
| 2003 12 18 | 704 | 0.5− | 0.4+ | 2004 02 10 | 644 | 0.2− | 0.5− | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 2003 12 18 | 704 | 0.4− | 0.2+ | 2004 02 10 | 644 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2003 12 29 | 704 | 1.2− | 0.1+ | 2004 02 10 | 644 | 0.4+ | 0.4− | 2006 10 11 | 644 | 0.5− | 0.7+ |
| 2003 12 29 | 704 | 1.0− | 0.8+ | 2004 02 14 | 704 | 0.6+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2003 12 29 | 704 | (4.5− | 0.9+) | 2004 02 14 | 704 | 0.0 | 0.5− | 2006 10 12 | 644 | 0.3− | 0.6+ |
| 2003 12 29 | 704 | (0.8− | 1.6+) | 2004 02 14 | 704 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.4− | 0.7+ |

**(143988)∗ 2003 YT$_{154}$**

Discovered 2003 Dec. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.29595 | | (2000.0) | | | |
| $n$ | 0.23234401 | $\omega$ | 346.53001 | | +0.16760779 | −0.93254944 |
| $a$ | 2.6204853 | $\Omega$ | 93.10851 | | +0.93158335 | +0.04368023 |
| $e$ | 0.1510074 | $i$ | 18.67811 | | +0.32258346 | +0.35839027 |
| $P$ | 4.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.7− | 0.2+ | 2004 01 31 | 704 | 0.4+ | 0.1+ | 2004 03 01 | 704 | 0.8+ | 0.2− |
| 2000 02 03 | 704 | 0.5+ | 0.6+ | 2004 01 31 | 704 | 0.3+ | 0.4+ | 2004 03 01 | 704 | 0.0 | 0.2+ |
| 2000 02 03 | 704 | 0.2+ | 0.3− | 2004 01 31 | 704 | 0.0 | 0.4+ | 2004 03 01 | 704 | 0.4− | 1.1+ |
| 2000 02 03 | 704 | 1.0+ | 0.8+ | 2004 01 31 | 645 | 0.2− | 0.3− | 2004 03 01 | 704 | 1.3+ | 0.4+ |
| 2000 03 15 | 704 | 0.7− | 0.3− | 2004 01 31 | 645 | 0.2− | 0.3− | 2005 05 09 | 703 | 1.9+ | 1.2− |
| 2000 03 15 | 704 | 0.3+ | 0.2+ | 2004 02 02 | 699 | 0.9+ | 0.8+ | 2005 05 09 | 703 | 1.1− | 0.3− |
| 2000 03 15 | 704 | 0.3+ | 0.2+ | 2004 02 02 | 699 | 0.4+ | 0.4+ | 2005 05 09 | 703 | 1.3− | 0.5− |
| 2000 03 15 | 704 | 0.2+ | 0.3+ | 2004 02 02 | 699 | 0.8− | 1.2+ | 2005 05 09 | 703 | 0.4− | 0.1+ |
| 2003 12 18 | 704 | 0.3+ | 0.3+ | 2004 02 02 | 699 | 0.0 | 0.7+ | 2005 05 30 | H06 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 1.0+ | 0.7− | 2004 02 02 | 704 | 0.9− | 0.5+ | 2005 05 30 | H06 | 0.1− | 0.2+ |
| 2003 12 18 | 704 | 2.0+ | 0.3− | 2004 02 02 | 704 | 0.9− | 0.2+ | 2005 05 30 | H06 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | 1.3+ | 0.5− | 2004 02 02 | 704 | 0.7− | 0.9+ | 2005 06 13 | 691 | 0.1− | 0.0 |
| 2003 12 29 | 704 | 0.7+ | 1.6+ | 2004 02 02 | 704 | 0.1− | 0.5− | 2005 06 13 | 691 | 0.2− | 0.1+ |
| 2003 12 29 | 704 | 0.5+ | 0.2+ | 2004 02 02 | 704 | 0.3− | 0.4+ | 2005 06 13 | 691 | 0.1− | 0.1+ |
| 2003 12 29 | 704 | 0.4+ | 0.5− | 2004 02 11 | 704 | 1.1+ | 0.1− | 2005 06 27 | 691 | 0.2+ | 0.0 |
| 2003 12 29 | 704 | (0.9+ | 2.1+) | 2004 02 11 | 704 | 0.3+ | 0.5− | 2005 06 27 | 691 | 0.3+ | 0.2+ |
| 2003 12 29 | 704 | 0.4+ | 0.4+ | 2004 02 11 | 704 | 0.5+ | 0.2+ | 2005 06 27 | 691 | 0.3+ | 0.0 |
| 2004 01 02 | 704 | 0.4− | 0.4+ | 2004 02 11 | 704 | 0.1− | 0.2+ | 2006 08 25 | E12 | 0.0 | 0.0 |
| 2004 01 02 | 704 | 0.4− | 0.2− | 2004 02 11 | 704 | 0.5+ | 0.7+ | 2006 08 25 | E12 | 0.6+ | 0.1− |
| 2004 01 02 | 704 | 0.1− | 0.1− | 2004 02 14 | 201 | 0.3+ | 0.4+ | 2006 08 25 | E12 | 0.2− | 1.0+ |
| 2004 01 19 | 704 | (4.2− | 0.3+) | 2004 02 14 | 201 | 0.0 | 0.1+ | 2006 08 25 | E12 | 0.2− | 0.8+ |
| 2004 01 19 | 704 | (3.2− | 0.2−) | 2004 02 14 | 201 | 0.2+ | 0.3+ | 2006 09 14 | E12 | 0.2+ | 0.4− |
| 2004 01 19 | 704 | (3.6− | 0.2−) | 2004 02 17 | 644 | 0.2+ | 0.1+ | 2006 09 14 | E12 | 0.3− | 0.1+ |
| 2004 01 19 | 704 | (4.1− | 0.1+) | 2004 02 17 | 644 | 0.1+ | 0.2+ | 2006 09 14 | E12 | 0.9− | 0.0 |
| 2004 01 30 | 703 | 0.1− | 1.0+ | 2004 02 17 | 644 | 0.2+ | 0.0 | 2006 09 14 | E12 | 0.2+ | 0.5+ |
| 2004 01 30 | 703 | 0.6+ | 0.9+ | 2004 02 18 | 703 | 0.1− | 0.0 | 2006 09 28 | E12 | 0.2+ | 0.2+ |
| 2004 01 30 | 703 | 0.4− | 0.9+ | 2004 02 18 | 703 | 0.3+ | 0.1+ | 2006 09 28 | E12 | 0.6− | 1.0+ |
| 2004 01 30 | 703 | 0.2+ | 0.8+ | 2004 02 18 | 703 | 0.2− | 0.2− | 2006 09 28 | E12 | 0.7+ | 0.2+ |
| 2004 01 31 | 704 | 0.3+ | 0.0 | 2004 02 18 | 703 | 0.0 | 0.0 | 2006 09 28 | E12 | 0.1− | 0.4+ |
| 2004 01 31 | 704 | 0.5+ | 0.8+ | 2004 03 01 | 704 | 0.0 | 0.6− | | | | |

**(143989)∗ 2003 YY$_{158}$**

Discovered 2003 Dec. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.63810 | | (2000.0) | | | |
| $n$ | 0.27132754 | $\omega$ | 298.70144 | | +0.26740589 | +0.96300093 |
| $a$ | 2.3630530 | $\Omega$ | 346.68073 | | −0.82552539 | +0.21101455 |
| $e$ | 0.1224470 | $i$ | 8.36517 | | −0.49699287 | +0.16763671 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 1.8+ | 0.3+ | 2005 03 31 | 699 | 0.4+ | 0.0 | 2006 09 18 | 704 | 0.9− | 0.1+ |
| 1999 10 12 | 704 | 0.5+ | 0.9− | 2005 03 31 | 699 | 0.7+ | 1.0+ | 2006 09 18 | 704 | 0.1+ | 0.9− |
| 1999 10 12 | 704 | 0.5+ | 0.4− | 2005 03 31 | 699 | (0.0 | 2.5+) | 2006 09 18 | 704 | 1.3+ | 1.1− |
| 2002 05 16 | 644 | 0.6− | 0.3+ | 2005 03 31 | 699 | 0.2+ | 1.2+ | 2006 09 19 | 699 | 0.6− | 0.9− |
| 2002 05 16 | 644 | 0.4− | 0.1− | 2005 04 02 | 644 | 0.9+ | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.3+ |
| 2002 05 16 | 644 | 0.5− | 0.0 | 2005 04 02 | 644 | 0.5+ | 0.8+ | 2006 09 19 | 699 | 0.5− | 0.2+ |
| 2002 07 06 | 644 | 0.3− | 0.1+ | 2005 04 02 | 644 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.0 |
| 2002 07 06 | 644 | 0.5− | 0.0 | 2006 08 19 | 691 | 0.3− | 0.7+ | 2006 09 24 | 106 | 0.7+ | 0.4− |
| 2002 07 06 | 644 | 0.4− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 24 | 106 | 0.4+ | 0.0 |
| 2002 08 11 | 644 | 0.1+ | 0.0 | 2006 08 19 | 691 | (0.0 | 1.6+) | 2006 09 24 | 106 | 0.2− | 0.0 |
| 2002 08 11 | 644 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 09 24 | 106 | 0.2− | 0.1− |
| 2002 08 11 | 644 | 0.2+ | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.5+ | 2006 10 01 | 703 | 0.4+ | 1.0+ |
| 2003 12 03 | 704 | 1.1− | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.7+ | 2006 10 01 | 703 | 0.2− | 1.1+ |
| 2003 12 03 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.9+ | 0.3+ | 2006 10 01 | 703 | 0.4− | 0.7+ |
| 2003 12 03 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.3− | 2006 10 01 | 703 | 1.0− | 0.0 |
| 2003 12 03 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 10 16 | 703 | (0.9− | 2.0+) |
| 2003 12 03 | 704 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.9− | 0.4− | 2006 10 16 | 703 | (1.3+ | 2.3+) |
| 2003 12 17 | 704 | 0.6− | 0.8+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.0 |
| 2003 12 17 | 704 | 0.6− | 0.3− | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | (1.5+ | 1.8−) |
| 2003 12 17 | 704 | 0.7− | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2003 12 17 | 704 | 0.6+ | 0.3− | 2006 09 12 | 703 | 1.0− | 0.2− | 2006 10 22 | 703 | 0.9− | 0.5+ |
| 2003 12 29 | 704 | 0.2− | 0.6+ | 2006 09 12 | 703 | (2.9− | 2.0−) | 2006 10 22 | 703 | 1.0− | 0.4+ |
| 2003 12 29 | 704 | 0.7− | 1.0+ | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 1.7− | 0.6+ |
| 2003 12 29 | 704 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.8− | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2003 12 29 | 704 | 0.4− | 0.3+ | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 03 13 | 691 | 0.5+ | 0.5+ | 2006 09 16 | 691 | 0.4+ | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2005 03 13 | 703 | 0.1− | 0.4− | 2006 09 16 | 691 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2005 03 13 | 703 | 0.1− | 0.4− | 2006 09 16 | 699 | 0.8+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.8+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2005 03 13 | 703 | 0.1− | 0.5− | 2006 09 16 | 699 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2005 03 13 | 703 | 0.8− | 0.0 | 2006 09 16 | 699 | 0.2+ | 0.4− | | | | |
| 2005 03 13 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 704 | 0.1− | 0.5+ | | | | |

**(143990)∗ 2003 YN$_{175}$**

Discovered 2003 Dec. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.58167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22682603 | $\omega$ | 34.77589 | | +0.93879466 | −0.34431440 | |
| $a$ | 2.6628137 | $\Omega$ | 345.35294 | | +0.30578796 | +0.84711852 | |
| $e$ | 0.0512841 | $i$ | 2.40053 | | +0.15861369 | +0.40476882 | |
| $P$ | 4.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 691 | 0.5+ | 0.4− | 2004 01 22 | 704 | 0.1+ | 1.1+ | 2006 08 12 | D35 | 0.2− | 0.4+ |
| 2000 04 03 | 691 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.7+ | 0.3− | 2006 08 12 | D35 | 0.0 | 1.1+ |
| 2000 04 03 | 691 | 0.1− | 0.3− | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2006 08 12 | D35 | 0.7+ | 0.6+ |
| 2002 10 04 | 644 | 0.4− | 0.0 | 2004 01 22 | 704 | 0.2− | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.6+ |
| 2002 10 04 | 644 | 0.1− | 0.6+ | 2004 02 23 | 704 | 0.6− | 0.8+ | 2006 08 20 | 644 | 0.8+ | 0.3+ |
| 2002 10 04 | 644 | 0.0 | 0.7+ | 2004 02 23 | 704 | 0.7+ | 0.5+ | 2006 08 20 | 644 | 0.4+ | 0.2+ |
| 2002 10 31 | 645 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.3− |
| 2002 10 31 | 645 | 0.1− | 0.0 | 2004 02 23 | 704 | 1.1+ | 0.1+ | 2006 08 28 | 703 | 1.0+ | 1.4+ |
| 2003 12 19 | 691 | 0.0 | 0.3+ | 2005 03 17 | G96 | 0.2− | 0.6+ | 2006 08 28 | 703 | 0.7+ | 1.1− |
| 2003 12 19 | 691 | 0.0 | 0.1+ | 2005 03 17 | G96 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.9+ | 0.4− |
| 2003 12 19 | 691 | 0.3− | 0.0 | 2005 03 17 | G96 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2003 12 28 | 691 | 0.1+ | 0.2+ | 2005 03 17 | G96 | 0.5− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2003 12 28 | 691 | 0.7− | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.8− | 0.2+ |
| 2003 12 28 | 691 | 0.3+ | 0.2+ | 2005 04 14 | 691 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.5− | 0.3− |
| 2004 01 22 | 704 | 1.1+ | 0.3− | 2005 04 14 | 691 | 0.2+ | 0.6+ | | | | |

**(143991)∗ 2003 YO$_{179}$**

Discovered 2003 Dec. 17 at Mauna Kea.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.23892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00332431 | $\omega$ | 66.32388 | | −0.63714461 | −0.70735586 | |
| $a$ | 44.4632782 | $\Omega$ | 66.92336 | | +0.52832486 | −0.68998507 | |
| $e$ | 0.1364386 | $i$ | 19.43390 | | +0.56117696 | −0.15351969 | |
| $P$ | 296 | $H$ | 5.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 03 | 568 | 0.0 | 0.3− | 2003 12 17 | 568 | 0.4+ | 0.1+ | 2005 11 04 | 695 | 0.1− | 0.1− |
| 2003 10 03 | 568 | 0.1+ | 0.3− | 2003 12 17 | 568 | 0.4+ | 0.2+ | 2005 11 04 | 695 | 0.1+ | 0.1− |
| 2003 10 03 | 568 | 0.0 | 0.3− | 2004 12 11 | 568 | 0.1− | 0.1+ | 2005 11 04 | 695 | 0.1+ | 0.0 |
| 2003 12 16 | 568 | 0.2− | 0.1+ | 2004 12 11 | 568 | 0.0 | 0.0 | 2006 11 23 | 695 | 0.0 | 0.1− |
| 2003 12 16 | 568 | 0.2− | 0.1+ | 2004 12 11 | 568 | 0.2− | 0.1+ | 2006 11 23 | 695 | 0.0 | 0.0 |
| 2003 12 16 | 568 | 0.2− | 0.1+ | 2004 12 12 | 568 | 0.1− | 0.2+ | | | | |

**(143992)∗ 2004 AF**

Discovered 2004 Jan. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.88199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35607889 | $\omega$ | 57.82027 | | +0.90678349 | −0.27646005 | |
| $a$ | 1.9713871 | $\Omega$ | 315.80099 | | +0.00094344 | +0.75631081 | |
| $e$ | 0.5530503 | $i$ | 27.16589 | | +0.42159555 | +0.59292816 | |
| $P$ | 2.77 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 01 21 | 260 | 0.3− | 0.8− | 2004 01 09 | J92 | 0.0 | 0.7− | 2004 01 17 | H72 | 0.1− | 0.5− |
| 1985 01 21 | 260 | 1.3+ | 0.1+ | 2004 01 09 | J92 | 0.3− | 0.5− | 2004 01 17 | H72 | 0.4− | 0.2+ |
| 1992 07 28 | 260 | 0.0 | 1.5+ | 2004 01 09 | J92 | 0.3+ | 0.3− | 2004 01 17 | H72 | 0.5− | 0.3+ |
| 1992 07 28 | 260 | 0.2− | 0.8− | 2004 01 09 | J92 | 0.4+ | 0.3− | 2004 01 18 | 938 | 0.1− | 0.2+ |
| 2004 01 05 | 704 | 0.6+ | 0.7+ | 2004 01 09 | J92 | 0.4− | 0.1− | 2004 01 18 | 939 | 0.2− | 0.3+ |
| 2004 01 05 | 704 | 0.6+ | 1.0+ | 2004 01 09 | J92 | 0.6− | 0.1− | 2004 01 18 | 939 | 0.1+ | 0.5+ |
| 2004 01 05 | 704 | 0.4+ | 0.3+ | 2004 01 09 | J92 | 0.1− | 0.4− | 2004 01 23 | 113 | 0.7− | 0.6+ |
| 2004 01 05 | 704 | 0.3+ | 0.7+ | 2004 01 09 | 213 | 0.1+ | 0.3− | 2004 01 23 | 113 | 0.1− | 0.3+ |
| 2004 01 05 | 461 | 0.4− | 0.9+ | 2004 01 09 | 213 | 0.3− | 0.1+ | 2004 01 23 | 113 | 0.1− | 0.5+ |
| 2004 01 05 | 461 | 0.9+ | 0.8+ | 2004 01 09 | 213 | 0.0 | 0.1+ | 2004 01 23 | 113 | 0.3− | 0.2+ |
| 2004 01 05 | 461 | 0.0 | 0.2− | 2004 01 10 | 294 | 0.3+ | 0.3− | 2004 01 23 | 113 | 0.7+ | 0.2− |
| 2004 01 05 | 461 | 0.1+ | 0.3− | 2004 01 10 | 294 | (2.0+ | 1.5−) | 2004 01 23 | 113 | 0.0 | 0.4− |
| 2004 01 05 | 461 | 1.1+ | 0.1− | 2004 01 10 | 294 | (2.5+ | 0.9+) | 2004 01 23 | 113 | 0.1− | 0.2+ |
| 2004 01 05 | 461 | 0.2+ | 0.5− | 2004 01 10 | 673 | 0.2− | 0.1+ | 2004 01 23 | 113 | 0.1+ | 0.0 |
| 2004 01 05 | 461 | 0.8+ | 0.6+ | 2004 01 10 | 673 | 0.6− | 0.1− | 2004 01 23 | 113 | 0.1+ | 0.5+ |
| 2004 01 05 | 461 | 1.0− | 0.3+ | 2004 01 10 | 673 | 0.2− | 0.3− | 2004 01 24 | H72 | 0.6− | 0.2+ |
| 2004 01 06 | 673 | 0.2+ | 0.1− | 2004 01 10 | 673 | 0.9− | 0.1+ | 2004 01 24 | H72 | 0.7− | 0.2− |
| 2004 01 06 | 673 | 0.1− | 0.2− | 2004 01 10 | 355 | 0.0 | 0.4− | 2004 01 24 | H72 | 0.3− | 0.4+ |
| 2004 01 06 | 673 | 0.2− | 0.1− | 2004 01 10 | 355 | 0.0 | 0.1− | 2004 01 24 | H72 | 0.6− | 0.3+ |
| 2004 01 06 | 673 | 0.2+ | 0.3− | 2004 01 10 | 355 | 0.3− | 0.7− | 2004 01 24 | H72 | 0.2− | 0.6+ |
| 2004 01 06 | 673 | 0.2− | 0.2− | 2004 01 10 | 355 | 0.3− | 0.1− | 2004 01 24 | H72 | 0.3+ | 0.3− |
| 2004 01 06 | 673 | 0.6− | 0.1− | 2004 01 10 | 104 | 0.3− | 0.1− | 2004 01 24 | H72 | 0.1+ | 1.1+ |
| 2004 01 06 | 926 | 1.0− | 0.1− | 2004 01 10 | 104 | 0.3− | 0.1− | 2004 01 24 | H72 | 0.4+ | 0.1+ |
| 2004 01 06 | 926 | 0.1− | 0.1− | 2004 01 10 | 104 | 0.3− | 0.1− | 2004 01 24 | 084 | 0.2− | 0.3− |
| 2004 01 06 | 926 | 0.2+ | 0.1− | 2004 01 10 | 104 | 0.3− | 0.1− | 2004 01 25 | 379 | 0.3+ | 0.5+ |
| 2004 01 07 | 932 | 0.1− | 0.1+ | 2004 01 10 | 106 | 0.0 | 0.2+ | 2004 01 25 | 379 | 1.4+ | 0.3+ |
| 2004 01 07 | 926 | 0.5− | 0.1+ | 2004 01 10 | 106 | 0.0 | 0.0 | 2004 01 29 | 132 | 0.4− | 0.1− |
| 2004 01 07 | 926 | 0.1− | 0.1+ | 2004 01 10 | 587 | 0.3+ | 0.0 | 2004 01 29 | 132 | 0.4− | 0.1− |
| 2004 01 07 | 932 | 0.4− | 0.0 | 2004 01 10 | 587 | 0.3+ | 0.3− | 2004 01 29 | 132 | 0.3− | 0.3− |
| 2004 01 07 | 926 | 0.0 | 0.1+ | 2004 01 10 | 587 | 0.2+ | 0.2− | 2004 02 02 | 143 | 0.1+ | 0.2+ |
| 2004 01 07 | 932 | 0.3+ | 0.1+ | 2004 01 10 | 213 | 0.3− | 0.1+ | 2004 02 02 | 143 | 0.3+ | 0.1+ |
| 2004 01 07 | 649 | 0.0 | 0.2+ | 2004 01 10 | 213 | 0.8− | 0.1+ | 2004 02 02 | 143 | 0.1− | 0.5− |
| 2004 01 07 | 649 | 0.1+ | 0.1+ | 2004 01 10 | 294 | 0.2+ | 0.3− | 2004 02 06 | 926 | 0.6− | 0.3+ |
| 2004 01 07 | 649 | 0.1− | 0.1− | 2004 01 10 | 294 | 0.0 | 0.1− | 2004 02 06 | 926 | 0.2+ | 0.1− |
| 2004 01 07 | 185 | 0.7− | 0.4− | 2004 01 10 | 294 | 0.3+ | 0.2− | 2004 02 06 | 926 | 0.7+ | 0.9− |
| 2004 01 07 | 185 | 0.3− | 0.2+ | 2004 01 11 | 670 | 0.3+ | 0.0 | 2004 02 07 | 926 | 0.2− | 0.3+ |
| 2004 01 07 | 185 | 0.1+ | 0.3+ | 2004 01 11 | 670 | 0.2− | 0.0 | 2004 02 07 | 926 | 0.1− | 0.2− |
| 2004 01 07 | 185 | 0.6+ | 0.1− | 2004 01 11 | 670 | 0.4+ | 0.3− | 2004 02 07 | 926 | 0.4+ | 0.5− |
| 2004 01 07 | 185 | 0.4+ | 0.1+ | 2004 01 11 | 670 | 0.2+ | 0.5+ | 2004 02 08 | 932 | 0.2− | 0.2+ |
| 2004 01 07 | 185 | 0.1− | 0.4+ | 2004 01 11 | 649 | 0.1− | 0.3+ | 2004 02 08 | 932 | 0.5+ | 0.3− |
| 2004 01 07 | 185 | 0.4− | 0.4+ | 2004 01 11 | 649 | 0.0 | 0.1+ | 2004 02 08 | 932 | 0.1+ | 0.2− |
| 2004 01 08 | 673 | (2.0+ | 0.1−) | 2004 01 11 | 649 | 0.0 | 0.1+ | 2004 02 10 | 704 | 0.7+ | 0.0 |
| 2004 01 08 | 673 | 0.6+ | 0.1+ | 2004 01 11 | J92 | (4.9− | 1.2+) | 2004 02 10 | 704 | 1.2+ | 0.1+ |
| 2004 01 08 | 750 | 0.2− | 0.2+ | 2004 01 11 | J92 | 0.2− | 0.1− | 2004 02 10 | 704 | 1.1+ | 0.0 |
| 2004 01 08 | 673 | 0.7+ | 0.1+ | 2004 01 11 | J92 | 0.0 | 0.0 | 2004 02 10 | 704 | 0.6+ | 0.4+ |
| 2004 01 08 | 750 | 0.0 | 0.1+ | 2004 01 11 | J92 | 0.2+ | 0.3− | 2004 02 10 | 704 | 0.7+ | 0.1− |
| 2004 01 08 | 750 | 0.0 | 0.1+ | 2004 01 11 | J92 | 0.3− | 0.2− | 2004 02 12 | 170 | 0.2− | 0.0 |
| 2004 01 08 | 673 | 0.9+ | 0.1− | 2004 01 11 | J92 | 0.0 | 0.2− | 2004 02 12 | 170 | 0.0 | 0.1− |
| 2004 01 08 | 750 | 0.0 | 0.0 | 2004 01 11 | J92 | 0.2− | 0.0 | 2004 02 12 | 170 | 0.3+ | 0.2− |
| 2004 01 08 | 750 | 0.0 | 0.2− | 2004 01 11 | J92 | 0.0 | 0.1− | 2004 02 12 | 084 | 0.5+ | 0.4− |
| 2004 01 08 | 673 | 1.3+ | 0.0 | 2004 01 11 | J92 | 0.2− | 0.1− | 2004 02 14 | 830 | 0.5− | 0.8− |
| 2004 01 08 | 673 | 1.0+ | 0.2+ | 2004 01 11 | J92 | 0.5+ | 0.6− | 2004 02 14 | 830 | 0.1− | 0.4− |
| 2004 01 08 | J95 | 0.2− | 0.3+ | 2004 01 11 | J92 | 0.2− | 0.2− | 2004 02 19 | 084 | 0.6− | 0.1+ |
| 2004 01 08 | 540 | 0.2+ | 0.1− | 2004 01 11 | J92 | 0.1+ | 0.1− | 2004 02 20 | 046 | 0.1+ | 0.6− |
| 2004 01 08 | J95 | 0.2− | 0.2+ | 2004 01 11 | J92 | 0.3+ | 0.3− | 2004 02 20 | 046 | 0.3− | 1.1− |
| 2004 01 08 | 540 | 0.2+ | 0.1− | 2004 01 11 | J92 | 0.1+ | 0.2− | 2004 02 20 | 046 | 1.0− | 0.9− |
| 2004 01 08 | J95 | 0.2− | 0.2+ | 2004 01 11 | J92 | 0.3− | 0.0 | 2004 02 20 | 046 | (1.7− | 0.9−) |
| 2004 01 08 | 540 | 0.5+ | 0.3− | 2004 01 11 | J92 | 0.2− | 0.2− | 2004 02 20 | 046 | 0.3− | 0.4− |
| 2004 01 08 | 540 | 0.2+ | 0.0 | 2004 01 11 | J92 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.6+ |
| 2004 01 09 | J92 | 0.1+ | 0.3+ | 2004 01 11 | J92 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.2− | 0.5+ |
| 2004 01 09 | J92 | 0.1+ | 0.1− | 2004 01 11 | J92 | 0.2+ | 0.3− | 2004 03 19 | 704 | 0.1− | 0.8+ |
| 2004 01 09 | J92 | 0.7+ | 0.1+ | 2004 01 11 | J92 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.6+ | 1.1+ |
| 2004 01 09 | J92 | 0.5− | 0.1− | 2004 01 11 | J92 | 0.1− | 0.1− | 2004 03 19 | 704 | 0.2− | 0.2− |
| 2004 01 09 | J92 | 0.2− | 0.2+ | 2004 01 11 | J92 | 0.1− | 0.2− | 2004 04 14 | 704 | 0.7− | 0.8+ |
| 2004 01 09 | J92 | 0.2+ | 0.3− | 2004 01 11 | J92 | 0.3+ | 0.2− | 2004 04 14 | 704 | 0.5+ | 0.3+ |
| 2004 01 09 | J92 | 0.5+ | 0.1− | 2004 01 11 | J92 | 0.0 | 0.3− | 2004 04 14 | 704 | 0.5+ | 0.4+ |
| 2004 01 09 | J92 | 0.2+ | 0.1+ | 2004 01 11 | J92 | 0.4+ | 0.3− | 2006 05 09 | E12 | 0.6− | 0.1+ |
| 2004 01 09 | J92 | 0.6+ | 0.0 | 2004 01 12 | J92 | 0.3+ | 0.3− | 2006 05 09 | E12 | 0.4− | 0.2+ |
| 2004 01 09 | J92 | 0.2− | 0.1+ | 2004 01 12 | J92 | 0.2− | 0.3− | 2006 05 09 | E12 | 0.1− | 0.2+ |
| 2004 01 09 | J92 | 0.0 | 0.2+ | 2004 01 12 | J92 | 0.2+ | 0.0 | 2006 05 09 | E12 | 0.4− | 0.0 |
| 2004 01 09 | J92 | 0.9− | 0.3+ | 2004 01 12 | J92 | 0.4+ | 0.3− | 2006 06 28 | E12 | 0.3− | 0.6+ |
| 2004 01 09 | J92 | 0.3+ | 0.1+ | 2004 01 12 | 926 | 0.5− | 0.1+ | 2006 06 28 | E12 | 0.3+ | 0.3+ |
| 2004 01 09 | J92 | 0.7+ | 0.1− | 2004 01 12 | 926 | 0.0 | 0.0 | 2006 06 28 | E12 | 0.2+ | 0.0 |
| 2004 01 09 | J92 | 0.3− | 0.1− | 2004 01 12 | 926 | 0.4+ | 0.2− | 2006 06 28 | E12 | 0.0 | 0.6− |
| 2004 01 09 | J92 | 0.3+ | 0.0 | 2004 01 13 | 704 | 0.9+ | 0.8− | 2006 07 16 | 198 | 0.3+ | 0.3− |
| 2004 01 09 | J92 | 0.3+ | 0.1− | 2004 01 13 | 649 | 0.1− | 0.1+ | 2006 07 16 | 198 | 0.2+ | 0.2− |
| 2004 01 09 | J92 | 0.1+ | 0.2− | 2004 01 13 | 704 | 0.1+ | 0.7− | 2006 07 16 | 198 | 0.5− | 0.4+ |
| 2004 01 09 | J92 | 0.5+ | 0.0 | 2004 01 13 | 649 | 0.1− | 0.1+ | 2006 07 16 | 198 | 0.4− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 09 | J92 | 0.7− | 0.2− | 2004 01 13 | 704 | 0.9+ | 0.3− | 2006 07 16 | 198 | 0.4− | 0.5+ |
| 2004 01 09 | J92 | 0.6− | 0.1− | 2004 01 13 | 704 | (2.4− | 0.2+) | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2004 01 09 | J92 | 0.3+ | 0.1+ | 2004 01 13 | 704 | 0.3+ | 0.5− | 2006 10 28 | 703 | 0.0 | 0.6+ |
| 2004 01 09 | J92 | 0.5+ | 0.2+ | 2004 01 13 | 704 | (3.0− | 0.1−) | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2004 01 09 | J92 | 0.4+ | 0.1− | 2004 01 13 | 704 | 0.3+ | 0.8− | 2006 10 28 | 703 | 0.1− | 0.6− |
| 2004 01 09 | J92 | 0.5− | 0.2+ | 2004 01 13 | 704 | (2.1− | 0.4−) | 2006 11 17 | 703 | 0.4− | 0.6+ |
| 2004 01 09 | J92 | 0.2+ | 0.1+ | 2004 01 13 | 704 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.5− |
| 2004 01 09 | 926 | 0.6− | 0.1+ | 2004 01 13 | 704 | (2.1− | 0.6−) | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2004 01 09 | 926 | 0.1− | 0.1− | 2004 01 14 | 926 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.8− |
| 2004 01 09 | 926 | 0.1+ | 0.2− | 2004 01 14 | 926 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.5− | 0.2+ |
| 2004 01 09 | J92 | 0.2− | 0.2− | 2004 01 14 | 926 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.2− | 1.4+ |
| 2004 01 09 | J92 | 0.4+ | 0.2− | 2004 01 16 | J95 | 0.3− | 0.4+ | 2006 11 29 | 704 | 1.4+ | 0.3+ |
| 2004 01 09 | J92 | 0.4+ | 0.1− | 2004 01 16 | J95 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2004 01 09 | J92 | 0.3− | 0.0 | 2004 01 16 | J95 | 0.3− | 0.3+ | | | | |
| 2004 01 09 | J92 | 0.1− | 0.3− | 2004 01 17 | H72 | 0.4− | 0.1+ | | | | |

**(143993)∗ 2004 AG$_2$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.31982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26133184 | $\omega$ | 48.95699 | | −0.07550038 | −0.99692903 | |
| $a$ | 2.4229316 | $\Omega$ | 45.38614 | | +0.90587844 | −0.07728880 | |
| $e$ | 0.0868975 | $i$ | 1.67354 | | +0.41675405 | −0.01260758 | |
| $P$ | 3.77 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.5+ | 1.8+ | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 291 | 0.2− | 0.1+ |
| 1997 04 03 | 704 | 0.9+ | 0.4+ | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 291 | 0.5− | 0.0 |
| 1999 12 07 | 704 | 0.7+ | 0.2+ | 2004 01 27 | 691 | 0.3+ | 0.2+ | 2006 10 15 | 291 | 0.5− | 0.1+ |
| 1999 12 07 | 704 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.4+ | 1.4+ | 2006 10 16 | 703 | 0.7− | 1.1− |
| 1999 12 07 | 704 | 0.0 | 0.5− | 2004 01 30 | 704 | 0.2− | 0.7+ | 2006 10 16 | 703 | 1.1− | 0.3− |
| 1999 12 07 | 704 | 0.0 | 0.4− | 2004 01 30 | 704 | (0.1− | 1.8+) | 2006 10 16 | 703 | (1.6− | 1.3−) |
| 2000 01 04 | 704 | 0.6+ | 0.3− | 2004 01 30 | 704 | (1.2+ | 1.8+) | 2006 10 16 | 703 | 0.9− | 0.2− |
| 2000 01 04 | 704 | 0.5− | 0.6− | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2000 01 04 | 704 | 0.4− | 1.2− | 2004 02 13 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 05 02 | 691 | 0.2+ | 0.7+ | 2004 02 13 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2001 05 02 | 691 | 0.2+ | 0.7+ | 2004 02 15 | 704 | 0.1+ | 0.8+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2001 05 02 | 691 | 0.0 | 0.5+ | 2004 02 15 | 704 | 0.6− | 1.1+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2004 02 15 | 704 | 0.2− | 1.5+ | 2006 10 20 | G96 | 0.5+ | 0.0 |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2004 02 15 | 704 | 0.8− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.5− | 0.6+ | 2004 02 23 | 704 | 0.7+ | 1.3+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2003 12 21 | 691 | 1.1− | 1.1− | 2004 02 23 | 704 | 0.3+ | 1.3+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2003 12 21 | 691 | 0.5+ | 1.4− | 2004 02 23 | 704 | 0.7− | 1.1+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2003 12 21 | 691 | 0.3+ | 0.3− | 2004 02 23 | 704 | 0.1+ | 1.1+ | 2006 10 20 | G96 | 0.2− | 0.2+ |
| 2003 12 27 | 704 | 0.6− | 0.8+ | 2005 06 14 | G96 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 0.5+ | 0.5+ | 2005 06 14 | G96 | 0.7+ | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.3+ |
| 2003 12 27 | 704 | 0.9+ | 1.1+ | 2005 06 14 | G96 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.6− | 0.5− | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2004 01 13 | 699 | 0.5− | 0.7+ | 2006 09 15 | 691 | 0.2− | 0.5+ | 2006 10 21 | H55 | 0.9+ | 0.4− |
| 2004 01 13 | 699 | 0.2+ | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 21 | H55 | 0.9+ | 0.1− |
| 2004 01 13 | 699 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 21 | H55 | 0.2+ | 0.6− |
| 2004 01 13 | 699 | 0.8− | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.2+ | 2006 10 21 | 291 | 0.1− | 0.3+ |
| 2004 01 15 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 21 | 291 | 0.1− | 0.3+ |
| 2004 01 15 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 1.1+ | 0.2+ | 2006 10 21 | 291 | 0.2+ | 0.6+ |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | (0.5− | 2.0+) | 2006 09 30 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2004 01 22 | 704 | (0.6− | 2.5+) | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | (0.3− | 1.7+) | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2+ |
| 2004 01 22 | 704 | (0.0 | 2.9+) | 2006 09 30 | G96 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 01 22 | 704 | (0.7− | 2.3+) | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2004 01 26 | 699 | 0.5− | 1.0+ | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.5− | 0.3− |
| 2004 01 26 | 699 | 0.2− | 0.6+ | 2006 10 09 | 644 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.2+ |
| 2004 01 26 | 699 | 0.7− | 0.5+ | 2006 10 09 | 644 | 0.9− | 0.3+ | | | | |
| 2004 01 26 | 699 | 0.9+ | 0.1− | 2006 10 09 | 644 | 0.9− | 0.4+ | | | | |

**(143994)∗ 2004 AU$_2$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.13259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27340385 | $\omega$ | 338.62816 | | −0.46645886 | +0.88283384 | |
| $a$ | 2.3510740 | $\Omega$ | 263.53125 | | −0.80332366 | −0.44881762 | |
| $e$ | 0.0679275 | $i$ | 3.17074 | | −0.37025292 | −0.13844551 | |
| $P$ | 3.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 699 | 0.7− | 0.5+ | 2004 01 13 | 699 | 1.0+ | 1.4+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 04 16 | 699 | 0.7+ | 0.9+ | 2004 01 13 | 699 | 0.9− | 0.9+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2001 04 16 | 699 | 0.9+ | 0.3+ | 2004 01 15 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.3+ | 1.0− |
| 2001 04 16 | 699 | 1.4+ | 0.7+ | 2004 01 15 | 691 | 0.4− | 0.2− | 2006 11 11 | 703 | (1.2− | 2.2−) |
| 2001 04 23 | 704 | 0.8+ | 0.5− | 2004 01 15 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2001 04 23 | 704 | 0.5+ | 0.8+ | 2004 01 15 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.7+ |
| 2001 04 23 | 704 | 1.0− | 0.9+ | 2004 01 15 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 04 23 | 704 | 0.5− | 1.3+ | 2004 01 15 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2002 09 13 | 644 | 0.3+ | 0.7+ | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 09 13 | 644 | 0.0 | 0.5+ | 2004 01 22 | 704 | 0.6− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 09 13 | 644 | 0.1+ | 0.4+ | 2004 01 22 | 704 | 0.5− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 09 19 | 644 | 0.4− | 0.2+ | 2004 01 22 | 704 | 0.7− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 09 19 | 644 | 0.5− | 0.4+ | 2004 01 22 | 704 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2002 09 19 | 644 | 0.4− | 0.7+ | 2004 01 29 | 291 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 09 28 | 608 | 0.4− | 0.2− | 2004 01 29 | 291 | 0.4+ | 0.4+ | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2002 09 28 | 608 | 0.4− | 0.0 | 2004 01 29 | 291 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 2002 09 28 | 608 | 0.6− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.9+ | 1.2+ |
| 2002 10 04 | 704 | 0.7+ | 0.0 | 2006 10 17 | 691 | 0.5− | 0.4− | 2006 11 17 | 703 | 0.6− | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.5+ | 2006 10 17 | 691 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.2− | 1.1+ | 2006 10 27 | 703 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.4− |
| 2002 10 04 | 704 | 0.2− | 0.6+ | 2006 10 27 | 703 | 1.1− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.4+ | 0.1+ | 2006 10 27 | 703 | (1.8− | 0.5−) | 2006 11 22 | 704 | 0.7− | 1.1+ |
| 2003 12 22 | 691 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.5− | 0.5+ | 2006 11 22 | 704 | 0.4− | 0.7+ |
| 2003 12 22 | 691 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.7+ | 0.4− |
| 2003 12 22 | 691 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.5− |
| 2003 12 29 | 699 | 0.1− | 0.7− | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4− | 0.6+ |
| 2003 12 29 | 699 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.1− | 0.7+ |
| 2003 12 29 | 699 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.9+ |
| 2003 12 29 | 699 | 0.5− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.7+ | 0.9+ |
| 2004 01 13 | 699 | 1.0− | 0.7− | 2006 11 08 | 644 | 0.3+ | 0.0 | | | | |
| 2004 01 13 | 699 | 0.9+ | 0.7+ | 2006 11 09 | 644 | 0.4+ | 0.1+ | | | | |

**(143995)∗ 2004 AJ$_3$ = 1999 XJ$_{184}$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61763)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.82042 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26294254 | $\omega$ | 59.76641 | | +0.73556391 | −0.67664363 | |
| $a$ | 2.4130268 | $\Omega$ | 342.74274 | | +0.57680139 | +0.65119286 | |
| $e$ | 0.1558159 | $i$ | 6.41642 | | +0.35531097 | +0.34365865 | |
| $P$ | 3.75 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.1− | 0.2− | 2004 01 31 | 704 | 0.1+ | 0.9+ | 2006 08 28 | 691 | 0.3+ | 0.3− |
| 1999 12 12 | 704 | 0.5+ | 0.0 | 2004 01 31 | 704 | 1.0+ | 0.8+ | 2006 08 28 | 703 | 1.2− | 1.1+ |
| 1999 12 12 | 704 | 0.4+ | 0.4+ | 2004 02 10 | 106 | 0.0 | 0.6+ | 2006 08 28 | 703 | (3.1+ | 1.5+) |
| 1999 12 12 | 704 | 0.2+ | 0.2+ | 2004 02 10 | 106 | 0.2− | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.3− |
| 1999 12 12 | 704 | 0.7+ | 0.1+ | 2004 02 10 | 106 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.2− |
| 1999 12 15 | 704 | 1.3− | 1.9− | 2004 02 15 | 704 | 0.6+ | 0.6− | 2006 08 30 | 704 | (0.4− | 1.8+) |
| 1999 12 15 | 704 | 0.3+ | 1.1− | 2004 02 15 | 704 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.8− | 0.0 |
| 1999 12 15 | 704 | 0.4− | 0.7− | 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.2+ |
| 1999 12 15 | 704 | 0.4+ | 1.0− | 2004 02 15 | 704 | 0.6− | 0.4− | 2006 08 31 | 704 | 0.7− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.4− | 0.7+ | 2004 02 15 | 704 | 0.2+ | 0.1− | 2006 08 31 | 704 | 0.2− | 0.3− |
| 2002 07 06 | 644 | 0.1+ | 0.5+ | 2006 07 25 | 644 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.4+ |
| 2002 07 06 | 644 | 0.5− | 0.5+ | 2006 07 25 | 644 | 0.2− | 0.0 | 2006 08 31 | 704 | 0.3+ | 0.1+ |
| 2002 07 06 | 644 | 0.4− | 0.7+ | 2006 07 25 | 644 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.6+ |
| 2002 07 06 | 644 | 0.4− | 0.8+ | 2006 08 14 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.0 |
| 2002 07 06 | 644 | 0.5− | 0.6+ | 2006 08 14 | 644 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.0 |
| 2003 12 18 | 704 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 1.1− | 0.7+ |
| 2003 12 18 | 704 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.7+ | 0.2− |
| 2003 12 18 | 704 | 0.3+ | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.6+ | 0.1+ |
| 2003 12 18 | 704 | 0.1− | 0.8+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 1.0+ | 0.7+ | 2006 08 18 | 699 | 0.1− | 0.6+ | 2006 09 17 | 704 | 0.4− | 0.4+ |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 08 18 | 699 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.7− | 0.6+ |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 08 18 | 699 | 0.3− | 0.5+ | 2006 09 25 | 699 | 1.0+ | 0.8+ |
| 2003 12 23 | 704 | 0.2+ | 0.7+ | 2006 08 18 | 699 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.6− |
| 2003 12 23 | 704 | 0.5+ | 0.8+ | 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 1.3+ | 0.4− |
| 2003 12 23 | 704 | 0.5+ | 0.9+ | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2003 12 23 | 704 | 0.3− | 0.6+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.2− |
| 2003 12 23 | 704 | 0.7+ | 0.1+ | 2006 08 21 | 704 | (5.7− | 3.0+) | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2003 12 28 | 704 | 0.1+ | 0.4+ | 2006 08 21 | 704 | (0.3− | 2.1+) | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2003 12 28 | 704 | 0.2+ | 0.0 | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.8− | 1.5− |
| 2003 12 28 | 704 | 0.0 | 0.3− | 2006 08 21 | 704 | 1.3+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.3+ |
| 2003 12 28 | 704 | 0.2− | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | (0.6− | 1.8+) |
| 2003 12 28 | 704 | 0.5− | 0.4− | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.2− |
| 2004 01 13 | 699 | (1.1− | 2.1+) | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.3− |
| 2004 01 13 | 699 | 0.2− | 0.0 | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.4− | 0.4+ |
| 2004 01 13 | 699 | 0.6+ | 0.6+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2004 01 13 | 699 | 0.1− | 0.2+ | 2006 08 25 | 704 | 0.7− | 0.5− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2004 01 16 | 703 | 0.1+ | 0.4+ | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 2004 01 16 | 703 | 0.3+ | 0.3+ | 2006 08 25 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.6+ | 0.1+ |
| 2004 01 16 | 703 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2004 01 16 | 703 | 0.3− | 0.4+ | 2006 08 25 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2004 01 31 | 704 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.8− | 0.4+ | | | | |
| 2004 01 31 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.4+ | | | | |

**(143996)∗ 2004 AN$_3$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.25750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29537147 | $\omega$ | 23.26663 | | +0.52756349 | −0.84866283 | |
| $a$ | 2.2330084 | $\Omega$ | 34.92612 | | +0.76859902 | +0.45775338 | |
| $e$ | 0.0548727 | $i$ | 3.81118 | | +0.36184570 | +0.26501555 | |
| $P$ | 3.34 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 691 | 0.3− | 0.0 | 2004 01 16 | 703 | 0.2− | 0.5− | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2001 03 04 | 691 | 0.4+ | 0.5− | 2004 01 16 | 703 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 03 04 | 691 | 0.7− | 0.3+ | 2004 01 16 | 703 | (1.8− | 0.6−) | 2006 11 17 | 691 | 0.7+ | 0.2− |
| 2001 03 18 | 608 | 0.7+ | 0.5+ | 2004 01 26 | 699 | 0.2− | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2001 03 18 | 608 | 0.1+ | 0.2+ | 2004 01 26 | 699 | 0.6− | 1.4+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2001 03 18 | 608 | 0.4+ | 0.1− | 2004 01 26 | 699 | 1.1− | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 07 15 | 644 | 0.1− | 0.4+ | 2004 01 26 | 699 | (1.7+ | 0.1+) | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2002 07 15 | 644 | 0.4− | 0.3− | 2004 02 15 | 704 | 0.8+ | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.3+ |
| 2002 07 15 | 644 | 0.0 | 0.4+ | 2004 02 15 | 704 | 0.6+ | 0.4− | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2002 08 13 | 704 | 1.0− | 0.8+ | 2004 02 15 | 704 | 1.0+ | 0.9− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 08 13 | 704 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2002 08 13 | 704 | 0.5− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2002 08 18 | 644 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2002 08 18 | 644 | 1.3+ | 0.5+ | 2006 09 27 | G96 | 1.1− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | 0.6+ | 1.1+ | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2003 12 18 | 704 | 0.0 | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.3− |
| 2003 12 18 | 704 | 0.4+ | 0.6+ | 2006 11 01 | G96 | 0.5− | 0.3− | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2003 12 18 | 704 | 1.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 25 | 691 | 0.3+ | 0.0 |
| 2003 12 28 | 704 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.4− | 0.2− | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2003 12 28 | 704 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.3− | 2006 11 27 | 704 | 0.2− | 0.1+ |
| 2003 12 28 | 704 | 0.7+ | 1.2+ | 2006 11 10 | 691 | 0.4− | 0.0 | 2006 11 27 | 704 | 0.0 | 1.0+ |
| 2003 12 28 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.4− | 0.1+ | 2006 11 27 | 704 | 0.3+ | 0.1− |
| 2003 12 28 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.2+ | 2006 11 27 | 704 | 1.3− | 0.8+ |
| 2004 01 13 | 699 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.4− | 2006 12 01 | 704 | 0.2− | 0.1− |
| 2004 01 13 | 699 | (0.1+ | 1.6−) | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.7+ | 0.9− |
| 2004 01 13 | 699 | 0.9− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 12 01 | 704 | 1.3− | 0.2− |
| 2004 01 13 | 699 | 1.0+ | 0.8+ | 2006 11 11 | 703 | 0.4+ | 0.3+ | 2006 12 01 | 704 | 1.0+ | 0.7+ |
| 2004 01 16 | 703 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.6+ | 2.5− |

**(143997)∗ 2004 AU$_3$ = 1999 XW$_{63}$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57583)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.09504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26362568 | $\omega$ | 302.35319 | | +0.61730694 | −0.77882050 | |
| $a$ | 2.4088564 | $\Omega$ | 109.12178 | | +0.75557095 | +0.54751971 | |
| $e$ | 0.1153141 | $i$ | 6.76049 | | +0.21919096 | +0.30604052 | |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.4− | 0.1− | 2004 01 15 | 691 | 0.1+ | 0.0 | 2005 05 16 | 691 | 0.1− | 0.4+ |
| 1999 12 07 | 704 | 0.3+ | 0.2− | 2004 01 15 | 691 | 0.0 | 0.1+ | 2005 06 09 | 691 | 0.3− | 0.2+ |
| 1999 12 07 | 704 | 0.3+ | 0.1− | 2004 01 16 | 691 | 0.3+ | 0.2− | 2005 06 09 | 691 | 0.1− | 0.2+ |
| 1999 12 07 | 704 | 0.1+ | 0.4− | 2004 01 16 | 691 | 0.2+ | 0.1− | 2005 06 09 | 691 | 0.1− | 0.2+ |
| 1999 12 08 | 704 | 0.1− | 0.5− | 2004 01 16 | 691 | 0.0 | 0.0 | 2006 08 26 | 104 | 0.3− | 0.5+ |
| 1999 12 08 | 704 | 0.1+ | 0.3+ | 2004 01 24 | 704 | 0.0 | 0.8+ | 2006 08 26 | 104 | 0.7− | 0.7+ |
| 1999 12 08 | 704 | 0.2− | 0.7− | 2004 01 24 | 704 | 0.5+ | 0.8+ | 2006 08 26 | 104 | 0.0 | 0.4+ |
| 1999 12 08 | 704 | 0.6− | 0.7− | 2004 01 24 | 704 | 1.0+ | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.7+ |
| 1999 12 08 | 704 | 0.7+ | 0.4− | 2004 01 24 | 704 | 0.0 | 1.2+ | 2006 09 14 | 644 | 0.3− | 0.9+ |
| 2000 04 03 | 568 | 0.2− | 0.0 | 2004 01 24 | 704 | 0.3− | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.6+ |
| 2000 04 03 | 568 | 0.1− | 0.2+ | 2004 01 30 | 704 | 0.2− | 0.8+ | 2006 09 14 | 703 | 1.4− | 0.3− |
| 2002 08 13 | 704 | 0.7+ | 1.2− | 2004 01 30 | 704 | 0.4− | 1.0+ | 2006 09 14 | 703 | 0.7− | 0.2+ |
| 2002 08 13 | 704 | 1.1+ | 0.5+ | 2004 01 30 | 704 | 0.3+ | 1.5+ | 2006 09 14 | 703 | 0.9− | 0.6− |
| 2002 08 13 | 704 | 0.7+ | 0.6+ | 2004 01 30 | 704 | 0.9+ | 0.3+ | 2006 09 14 | 703 | (0.8+ | 2.9−) |
| 2003 12 21 | 704 | 0.4− | 0.6− | 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 09 20 | 703 | 0.1− | 1.4+ |
| 2003 12 21 | 704 | 0.1+ | 1.0− | 2004 02 23 | 704 | 0.3− | 0.2+ | 2006 09 20 | 703 | 0.1+ | 0.2− |
| 2003 12 21 | 704 | 0.5+ | 0.2+ | 2004 02 23 | 704 | 0.4− | 0.6+ | 2006 09 20 | 703 | 0.9+ | 1.2+ |
| 2004 01 13 | 699 | 0.5+ | 0.5− | 2005 05 08 | 691 | 0.0 | 0.1− | 2006 09 20 | 703 | 1.2+ | 0.4− |
| 2004 01 13 | 699 | 0.8− | 1.1− | 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.5+ |
| 2004 01 13 | 699 | 1.6− | 0.1+ | 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 09 26 | 703 | 1.1− | 0.3+ |
| 2004 01 13 | 699 | 0.0 | 1.5+ | 2005 05 16 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 1.1+ |
| 2004 01 15 | 691 | 0.1+ | 0.0 | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.1+ |

**(143998)∗ 2004 AQ$_4$**

Discovered 2004 Jan. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.72775 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29391674 | $\omega$ | 218.08967 | | +0.91499744 | −0.40304415 | |
| $a$ | 2.2403705 | $\Omega$ | 165.64561 | | +0.38591903 | +0.86108338 | |
| $e$ | 0.1517187 | $i$ | 4.23442 | | +0.11766982 | +0.30998522 | |
| $P$ | 3.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 13 | 566 | 0.3− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.4+ |
| 1996 10 13 | 566 | 0.3− | 0.1− | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.1+ |
| 1996 10 13 | 566 | 0.7+ | 0.5− | 2006 08 20 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.9+ |
| 2003 12 01 | 704 | 0.3+ | 0.1− | 2006 08 20 | 644 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.5− | 0.6+ |
| 2003 12 01 | 704 | 0.4+ | 0.5+ | 2006 08 20 | 644 | 0.2− | 0.3+ | 2006 09 27 | 704 | 1.5− | 0.9+ |
| 2003 12 01 | 704 | 0.6+ | 0.3+ | 2006 09 12 | 703 | 0.3+ | 0.2− | 2006 09 27 | 704 | (1.2+ | 2.6+) |
| 2003 12 01 | 704 | 0.6+ | 0.5+ | 2006 09 12 | 703 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.2− | 0.7+ |
| 2003 12 01 | 704 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 0.1+ | 0.5− | 2006 09 27 | 704 | 0.3− | 1.1+ |
| 2003 12 22 | 704 | 0.3− | 0.8+ | 2006 09 16 | 699 | 0.6− | 0.6− | 2006 09 28 | 704 | (1.6+ | 0.0 ) |
| 2003 12 22 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.5− | 0.2+ | 2006 09 28 | 704 | 0.1− | 0.5+ |
| 2003 12 22 | 704 | 0.4− | 0.5+ | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 09 28 | 704 | 0.4+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 699 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.4+ | 1.0+ | | |
| 2003 12 22 | 704 | 0.6− | 0.8+ | 2006 09 17 | 704 | 0.3− | 0.4− | 2006 09 30 | 704 | 0.0 | 0.6+ | | |
| 2004 01 12 | 644 | 0.4− | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.4− | 0.5+ | | |
| 2004 01 12 | 644 | 0.2− | 0.5+ | 2006 09 17 | 704 | 0.6− | 0.6− | 2006 09 30 | 704 | 0.0 | 0.6+ | | |
| 2004 01 12 | 644 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.3− | 2006 09 30 | 704 | 0.5+ | 1.1+ | | |
| 2004 01 16 | 644 | 0.2− | 0.8+ | 2006 09 17 | 704 | 0.5− | 0.3− | 2006 09 30 | 704 | 0.0 | 0.5+ | | |
| 2004 01 16 | 644 | 0.3− | 0.8+ | 2006 09 19 | 699 | 0.4− | 0.5− | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2004 01 16 | 644 | 0.5− | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.3+ | | |
| 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | | |
| 2005 03 14 | G96 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.5− | 1.0+ | | |
| 2005 03 14 | G96 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.6+ | 0.6+ | | |
| 2005 03 14 | G96 | 0.5− | 0.2− | 2006 09 20 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.5+ | | |
| 2005 04 06 | 691 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.7+ | | |
| 2005 04 06 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.5− | 0.7− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2005 04 06 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2005 04 10 | 691 | 0.5+ | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2005 04 10 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.4− | 0.0 | | |
| 2005 04 10 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.4− | 0.3+ | | |
| 2005 04 11 | G96 | 0.3− | 0.4− | 2006 09 24 | 106 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2005 04 11 | G96 | 0.6− | 0.2− | 2006 09 24 | 106 | 0.2+ | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.1− | | |
| 2005 04 11 | G96 | 0.6− | 0.0 | 2006 09 24 | 106 | 0.6+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.2− | | |
| 2005 04 11 | G96 | 0.5− | 0.2+ | 2006 09 24 | 106 | 0.2+ | 0.6− | 2006 11 17 | G96 | 0.2+ | 0.1− | | |
| 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2005 05 12 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.1+ | | |
| 2005 05 12 | 691 | 0.5+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2005 05 13 | 691 | 0.6− | 1.3+ | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.2+ | | |
| 2005 05 13 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2005 05 13 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2006 08 17 | 644 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.3+ | | | | | | |

**(143999)∗ 2004 AR$_4$ = 2000 AB$_{106}$**

Discovered 2004 Jan. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69621)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.93746 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24101582 | $\omega$ | 53.81851 | | −0.99385260 | −0.04072454 | |
| $a$ | 2.5572450 | $\Omega$ | 123.63120 | | +0.00427364 | −0.94330644 | |
| $e$ | 0.1914388 | $i$ | 7.10250 | | +0.11062884 | −0.32941534 | |
| $P$ | 4.09 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.3+ | 0.5− | 2004 01 12 | 644 | 0.1− | 0.3+ | 2005 07 04 | 703 | 0.4− | 1.6+ | | |
| 1999 12 14 | 704 | 0.8+ | 0.6+ | 2004 01 12 | 644 | 0.1− | 0.4+ | 2005 07 04 | 703 | 0.8− | 1.2+ | | |
| 1999 12 14 | 704 | 0.6+ | 0.1− | 2004 01 16 | 644 | 0.1− | 0.2+ | 2005 07 04 | 703 | 1.6− | 0.1+ | | |
| 2000 01 05 | 704 | 0.0 | 0.0 | 2004 01 16 | 644 | 0.1− | 0.3+ | 2005 07 04 | 703 | (5.7− | 1.6−) | | |
| 2000 01 05 | 704 | 0.4− | 0.3+ | 2004 01 16 | 644 | 0.1− | 0.2+ | 2005 07 11 | G96 | 0.0 | 0.2− | | |
| 2000 01 05 | 704 | 0.4− | 0.2+ | 2004 01 17 | 644 | 0.2− | 0.3+ | 2005 07 11 | G96 | 0.1+ | 0.1− | | |
| 2000 01 05 | 704 | 0.7− | 0.2+ | 2004 01 17 | 644 | 0.3− | 0.4+ | 2005 07 11 | G96 | 0.2− | 0.2− | | |
| 2000 01 07 | 704 | 0.2− | 0.3− | 2004 01 17 | 644 | 0.1− | 0.3+ | 2005 07 11 | G96 | 0.3+ | 0.3− | | |
| 2000 01 07 | 704 | 0.0 | 0.1+ | 2005 05 16 | 704 | 0.2+ | 0.2− | 2005 08 05 | 644 | 0.5+ | 0.1− | | |
| 2000 01 07 | 704 | 0.4− | 0.3− | 2005 05 16 | 704 | 0.9+ | 0.1+ | 2005 08 05 | 644 | 0.3+ | 0.2+ | | |
| 2000 01 07 | 704 | 0.3− | 0.4+ | 2005 05 16 | 704 | 0.5− | 0.5− | 2005 08 05 | 644 | 0.2+ | 0.0 | | |
| 2000 01 07 | 704 | 0.2+ | 0.2+ | 2005 05 16 | 704 | 0.2+ | 0.5+ | 2006 07 30 | H55 | 1.1+ | 0.2+ | | |
| 2000 01 07 | 704 | 0.0 | 0.0 | 2005 06 02 | E12 | 0.2− | 0.1− | 2006 07 30 | H55 | 0.6+ | 1.0+ | | |
| 2000 01 07 | 704 | 0.2+ | 0.4+ | 2005 06 02 | E12 | 0.3+ | 0.0 | 2006 07 30 | H55 | (2.0+ | 2.8+) | | |
| 2000 01 07 | 704 | 0.3− | 0.3+ | 2005 06 02 | E12 | 0.3+ | 0.1+ | 2006 08 23 | 704 | 1.3+ | 1.6+ | | |
| 2000 01 07 | 704 | 0.2+ | 0.5+ | 2005 06 02 | E12 | 0.1− | 0.4+ | 2006 08 23 | 704 | 0.5+ | 0.2+ | | |
| 2003 12 01 | 704 | 0.1− | 0.0 | 2005 06 05 | 704 | 0.3+ | 1.5+ | 2006 08 23 | 704 | 0.3− | 1.4− | | |
| 2003 12 01 | 704 | 0.7+ | 0.2+ | 2005 06 05 | 704 | 0.2+ | 1.4+ | 2006 09 14 | 703 | 0.2− | 0.5+ | | |
| 2003 12 01 | 704 | 0.0 | 0.8− | 2005 06 05 | 704 | 0.2+ | 0.8+ | 2006 09 14 | 703 | 1.1− | 0.2+ | | |
| 2003 12 22 | 704 | 0.2+ | 0.8+ | 2005 06 05 | 704 | 0.4+ | 0.0 | 2006 09 14 | 703 | 1.0− | 0.5− | | |
| 2003 12 22 | 704 | 0.1+ | 0.8+ | 2005 06 08 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.7− | | |
| 2003 12 22 | 704 | 0.3+ | 0.5+ | 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.8+ | 0.8+ | | |
| 2003 12 22 | 704 | 0.3− | 1.9+ | 2005 06 08 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.2+ | | |
| 2004 01 12 | 644 | 0.1− | 0.5+ | 2005 06 11 | 703 | (2.3− | 1.4−) | 2006 09 26 | 703 | 1.8− | 0.3− | | |
| 2004 01 12 | 644 | 0.5− | 0.5+ | 2005 06 11 | 703 | 0.9+ | 1.3− | 2006 09 26 | 703 | 0.8+ | 0.5+ | | |
| 2004 01 12 | 644 | 0.1− | 0.5+ | 2005 06 11 | 703 | 0.6− | 0.2+ | | | | | | |
| 2004 01 12 | 644 | 0.3− | 0.4+ | 2005 06 11 | 703 | 0.5− | 0.3+ | | | | | | |

**(144000)∗ 2004 AV$_4$**

Discovered 2004 Jan. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.73772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29256535 | $\omega$ | 353.06469 | | −0.63042471 | −0.77435082 | |
| $a$ | 2.2472641 | $\Omega$ | 135.99785 | | +0.71589566 | −0.60701478 | |
| $e$ | 0.0770716 | $i$ | 4.48081 | | +0.30009681 | −0.17864450 | |
| $P$ | 3.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.4− | 0.7+ | 2004 01 19 | 703 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.9+ | | |
| 1999 10 09 | 704 | 0.1+ | 0.1− | 2004 01 21 | 704 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.1+ | 1.2− | | |
| 1999 10 09 | 704 | 0.4− | 0.0 | 2004 01 21 | 704 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.6− | 0.4− | | |
| 1999 10 09 | 704 | 0.4+ | 0.9+ | 2004 01 21 | 704 | 0.1− | 0.1+ | 2006 11 13 | 703 | (1.0+ | 2.1+) | | |
| 1999 10 09 | 704 | 0.6− | 0.5+ | 2004 01 21 | 704 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.5+ | 0.2− | | |
| 2001 03 29 | 699 | (1.9+ | 0.7+) | 2004 01 21 | 704 | 0.1− | 0.1+ | 2006 11 14 | 704 | (0.3− | 1.9+) | | |
| 2001 03 29 | 699 | 0.6+ | 0.7+ | 2004 01 22 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.0 | 1.2+ | | |
| 2001 03 29 | 699 | 0.4+ | 0.3+ | 2004 01 22 | 644 | 0.0 | 0.1− | 2006 11 14 | 683 | (1.6− | 2.0−) | | |
| 2001 03 29 | 704 | 0.2+ | 0.6+ | 2004 01 22 | 644 | 0.1+ | 0.6+ | 2006 11 14 | 704 | 0.0 | 0.8+ | | |
| 2001 03 29 | 704 | 0.4+ | 1.1+ | 2004 01 24 | 704 | 0.7+ | 0.8+ | 2006 11 14 | 704 | 0.2− | 0.8− | | |
| 2001 03 29 | 699 | 0.3+ | 1.3+ | 2004 01 24 | 704 | 0.8+ | 0.1− | 2006 11 14 | 683 | 0.8+ | 0.1− | | |
| 2001 03 29 | 704 | (2.6+ | 0.9+) | 2004 01 24 | 704 | 0.5+ | 0.1+ | 2006 11 14 | 683 | 0.2− | 0.9− | | |
| 2001 03 29 | 704 | (2.6+ | 0.7+) | 2004 01 24 | 704 | 0.1− | 1.3+ | 2006 11 15 | 683 | (1.5− | 1.6−) | | |
| 2001 03 29 | 704 | 1.4+ | 0.3+ | 2004 01 24 | 704 | 0.0 | 1.1− | 2006 11 15 | 683 | (0.8− | 2.0−) | | |
| 2002 08 08 | 644 | 0.2− | 0.7+ | 2004 01 30 | 704 | 0.1+ | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.3− | | |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2004 01 30 | 704 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.5− | | |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2004 01 30 | 704 | 1.2+ | 0.4− | 2006 11 15 | 683 | 0.8− | 0.9− | | |
| 2002 08 18 | 644 | 0.0 | 1.4+ | 2004 01 30 | 704 | 0.4+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2002 08 18 | 644 | (0.0 | 1.6+) | 2004 01 30 | 704 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− | | |
| 2002 08 18 | 644 | (0.1+ | 1.6+) | 2004 02 10 | 703 | 0.3− | 0.2− | 2006 11 17 | 704 | (0.6− | 2.4+) | | |
| 2002 08 28 | 644 | 0.4− | 0.5+ | 2004 02 10 | 703 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.4− | 1.4+ | | |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2004 02 10 | 703 | 0.1+ | 0.2− | 2006 11 17 | 704 | (0.1+ | 1.5+) | | |
| 2002 08 28 | 644 | 0.2− | 0.7+ | 2004 02 10 | 703 | 0.3− | 0.6+ | 2006 11 17 | 704 | 0.3+ | 0.0 | | |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2004 02 11 | 699 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.0 | | |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2004 02 11 | 699 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.1− | | |
| 2002 09 15 | 644 | 0.5− | 0.1− | 2004 02 11 | 699 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.6− | 0.4− | | |
| 2003 12 29 | 691 | 0.1+ | 0.1− | 2004 02 11 | 699 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.0 | | |
| 2003 12 29 | 691 | 0.1+ | 0.2− | 2004 02 13 | 291 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.1− | 0.2+ | | |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2004 02 13 | 291 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.5− | | |
| 2004 01 05 | 703 | 0.3+ | 0.4+ | 2004 02 13 | 291 | 0.6− | 0.6− | 2006 11 22 | G96 | 0.2+ | 0.4− | | |
| 2004 01 05 | 703 | (0.0 | 1.6+) | 2004 02 16 | 704 | 0.1+ | 0.8+ | 2006 11 22 | G96 | 0.2+ | 0.5− | | |
| 2004 01 05 | 703 | (1.1− | 1.8+) | 2004 02 16 | 704 | 0.4− | 0.2+ | 2006 11 22 | 683 | 0.5− | 0.2+ | | |
| 2004 01 05 | 703 | 0.0 | 0.3− | 2004 02 16 | 704 | 0.3+ | 0.9− | 2006 11 22 | G96 | 0.3+ | 0.4− | | |
| 2004 01 12 | 644 | 0.2− | 0.1+ | 2004 02 16 | 704 | 1.0+ | 0.2+ | 2006 11 22 | 683 | (0.8− | 1.5+) | | |
| 2004 01 12 | 644 | 0.0 | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 11 22 | 683 | 0.8− | 0.7+ | | |
| 2004 01 12 | 644 | 0.2− | 0.2+ | 2004 02 22 | 704 | 0.7+ | 0.2+ | 2006 11 25 | 683 | 0.6+ | 0.6+ | | |
| 2004 01 16 | 644 | 0.1+ | 0.1+ | 2004 02 22 | 704 | 0.4+ | 0.2− | 2006 11 25 | 683 | 0.4+ | 0.7+ | | |
| 2004 01 16 | 644 | 0.2+ | 0.1+ | 2004 02 22 | 704 | 0.7− | 0.8+ | 2006 11 25 | 683 | 2.0− | 1.1+ | | |
| 2004 01 16 | 644 | 0.7+ | 0.4+ | 2004 04 15 | 645 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.8− | | |
| 2004 01 17 | 644 | 0.5− | 0.3− | 2004 04 15 | 645 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.5+ | | |
| 2004 01 17 | 644 | 0.3− | 0.0 | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.9+ | 0.3+ | | |
| 2004 01 17 | 644 | 0.3− | 0.1+ | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 11 28 | 704 | 1.0+ | 0.6− | | |
| 2004 01 19 | 703 | 0.5+ | 0.2− | 2006 10 22 | 703 | (1.5+ | 1.3+) | 2006 11 28 | 704 | 0.9+ | 0.1− | | |
| 2004 01 19 | 703 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.2− | 1.1+ | | | | | | |
| 2004 01 19 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.7+ | | | | | | |

**(144001)∗ 2004 AC$_5$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.13172 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29700863 | $\omega$ | 266.29349 | | +0.83971311 | | −0.53804634 |
| $a$ | 2.2247950 | $\Omega$ | 126.24255 | | +0.52732966 | | +0.77568113 |
| $e$ | 0.1604374 | $i$ | 5.22183 | | +0.12963531 | | +0.32988623 |
| $P$ | 3.32 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.4+ | 1.3− | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 703 | 0.1+ | 0.4− |
| 1999 09 07 | 704 | 0.9− | 0.0 | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.9+ | 0.9− |
| 1999 09 07 | 704 | 0.4+ | 1.1+ | 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 10 30 | 703 | 0.2− | 0.9− |
| 2004 01 13 | 699 | 0.4+ | 0.0 | 2004 02 11 | 691 | 0.3+ | 0.3+ | 2006 10 30 | 703 | 0.4− | 0.4− |
| 2004 01 13 | 699 | 0.1− | 0.1− | 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 10 30 | 703 | 0.0 | 0.6+ |
| 2004 01 13 | 699 | 0.5− | 0.3+ | 2004 02 11 | 691 | 0.3+ | 0.4+ | 2006 10 30 | 703 | 0.1+ | 0.2− |
| 2004 01 13 | 699 | 0.4− | 1.1+ | 2004 02 17 | 645 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.5− | 0.1+ |
| 2004 01 16 | 644 | 0.5+ | 0.6+ | 2004 02 17 | 645 | 0.0 | 0.2− | 2006 11 15 | 703 | 1.1− | 0.0 |
| 2004 01 16 | 644 | 0.5+ | 0.5+ | 2005 05 14 | 691 | 0.3− | 0.7+ | 2006 11 15 | 703 | 0.1− | 0.4+ |
| 2004 01 16 | 644 | 0.1+ | 0.5+ | 2005 05 14 | 691 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.5+ |
| 2004 01 19 | 699 | 0.6− | 0.7− | 2005 05 14 | 691 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.3+ |
| 2004 01 19 | 699 | 0.3− | 1.0− | 2005 05 16 | G96 | 0.0 | 0.7− | 2006 11 15 | 703 | 0.9+ | 0.1+ |
| 2004 01 19 | 699 | 0.7− | 0.4+ | 2005 05 16 | G96 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2004 01 19 | 699 | 0.3− | 0.2+ | 2005 05 16 | G96 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2004 01 19 | 703 | (1.6+ | 0.4−) | 2005 05 16 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2004 01 19 | 703 | 0.8− | 0.8− | 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2004 01 19 | 703 | (2.6+ | 0.7−) | 2005 06 04 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.9+ |
| 2004 01 19 | 703 | (2.6+ | 0.0 ) | 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2004 01 24 | 704 | 0.3− | 0.1+ | 2005 06 09 | 691 | 0.3+ | 0.1− | 2006 11 25 | 704 | 0.8+ | 0.4+ |
| 2004 01 24 | 704 | 0.4+ | 1.3+ | 2005 06 09 | 691 | 0.1− | 1.0+ | 2006 11 25 | 704 | 1.9+ | 0.5+ |
| 2004 01 24 | 704 | 0.0 | 0.3+ | 2005 06 09 | 691 | 0.5+ | 0.1+ | 2006 11 25 | 704 | 0.6− | 0.8− |
| 2004 01 24 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | (1.0+ | 3.0+) | 2006 11 25 | 704 | 0.2+ | 1.9+ |
| 2004 01 24 | 704 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.8− | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2004 01 26 | 699 | 0.6+ | 1.2− | 2006 09 18 | 703 | 0.1− | 1.2+ | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2004 01 26 | 699 | 0.9− | 0.8− | 2006 09 18 | 703 | 0.0 | 0.9+ | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2004 01 26 | 699 | 0.3− | 1.0+ | 2006 10 01 | 703 | 0.5− | 0.5+ | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2004 01 26 | 699 | 0.2+ | 0.4+ | 2006 10 01 | 703 | 0.8− | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.2+ |

**(144002)∗ 2004 AY$_5$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.20351 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26326236 | $\omega$ | 116.56481 | | −0.99670505 | | −0.03073717 |
| $a$ | 2.4110721 | $\Omega$ | 61.75593 | | −0.00484101 | | −0.90122454 |
| $e$ | 0.0929110 | $i$ | 4.88790 | | +0.08096667 | | −0.43226097 |
| $P$ | 3.74 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 11 | 809 | 0.7+ | 0.6+ | 2004 01 30 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 1997 04 11 | 809 | 0.9+ | 0.4+ | 2004 01 30 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 1997 04 11 | 809 | 0.4− | 0.6+ | 2004 01 31 | 704 | 1.1+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2004 01 31 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2002 09 28 | 644 | 0.4− | 0.3+ | 2004 01 31 | 704 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.2− |
| 2002 09 28 | 644 | 0.6− | 0.0 | 2004 01 31 | 704 | 0.7+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2002 09 28 | 644 | 0.5− | 0.5+ | 2004 02 02 | 704 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 1.0− | 0.1− | 2004 02 02 | 704 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2004 02 02 | 704 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.5+ | 0.4− |
| 2002 10 03 | 704 | 0.2+ | 0.4− | 2004 02 02 | 704 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2004 02 02 | 704 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.4− | 1.2+ | 2004 02 10 | 644 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.3+ |
| 2002 10 11 | 704 | (0.1− | 1.9+) | 2004 02 10 | 644 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.5+ | 1.1+ | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.4+ |
| 2002 10 11 | 704 | 0.8+ | 0.9+ | 2004 02 15 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.4+ | 0.3+ |
| 2003 12 17 | 644 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2003 12 17 | 644 | 0.5+ | 0.3+ | 2004 02 15 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.4− |
| 2003 12 17 | 644 | 0.5+ | 0.1− | 2004 02 15 | 704 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.3+ | 0.3+ |
| 2003 12 28 | 704 | 0.6+ | 1.1+ | 2004 02 15 | 704 | 0.2+ | 0.7+ | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2003 12 28 | 704 | 0.7+ | 0.8+ | 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2003 12 28 | 704 | 0.7+ | 0.8+ | 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2003 12 28 | 704 | 0.1+ | 0.6+ | 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2003 12 28 | 704 | 0.5+ | 0.5+ | 2004 02 17 | 645 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2004 01 04 | 699 | 0.2− | 0.0 | 2004 02 17 | 645 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.8− | 0.0 |
| 2004 01 04 | 699 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 2004 01 04 | 699 | 0.0 | 1.1− | 2006 10 02 | G96 | 0.9+ | 0.3− | 2006 11 11 | 703 | (0.6− | 1.6−) |
| 2004 01 04 | 699 | 0.7− | 1.0− | 2006 10 02 | G96 | 0.6− | 0.3− | 2006 11 11 | 703 | (2.4+ | 0.5−) |
| 2004 01 13 | 699 | 0.4+ | 1.0+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2004 01 13 | 699 | 0.1− | 0.2+ | 2006 10 13 | D35 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2004 01 13 | 699 | 0.3+ | 0.5− | 2006 10 13 | D35 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.2+ |
| 2004 01 13 | 699 | 1.0− | 0.0 | 2006 10 13 | D35 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2004 01 16 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.7+ | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 1.3− | 0.6+ | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 2004 01 16 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.7+ | 0.6− |
| 2004 01 20 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.7+ |
| 2004 01 20 | 704 | 0.4+ | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.6− |
| 2004 01 20 | 704 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.2− | 0.1− | 2006 11 19 | G92 | 0.3− | 1.0+ |
| 2004 01 30 | 704 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 19 | G92 | 0.3− | 0.2+ |
| 2004 01 30 | 704 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 19 | G92 | 0.5+ | 0.3− |

**(144003)∗ 2004 AS$_6$ = 1995 BH$_6$ = 2005 GO$_{207}$**

Discovered 2004 Jan. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69621, *MPO* 76368)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.07530 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21150994 | $\omega$ | 257.18784 | | +0.56877740 | | +0.82211808 |
| $a$ | 2.7898586 | $\Omega$ | 47.50548 | | −0.74098570 | | +0.52525805 |
| $e$ | 0.0517101 | $i$ | 1.92604 | | −0.35697684 | | +0.21960383 |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 28 | 691 | 0.1+ | 0.4+ | 2004 01 16 | 691 | 0.1+ | 0.0 | 2005 04 07 | G96 | 1.5− | 0.8− |
| 1995 01 28 | 691 | 0.2+ | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.3+ | 2005 04 07 | G96 | 0.2− | 0.3− |
| 1995 01 28 | 691 | 0.3+ | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.4+ | 2005 05 08 | G96 | 0.1+ | 0.1+ |
| 1995 02 06 | 691 | 0.1− | 0.3− | 2004 01 27 | 691 | 0.2− | 0.3+ | 2005 05 08 | G96 | 0.0 | 0.0 |
| 1995 02 06 | 691 | 0.3− | 0.2− | 2004 02 16 | 691 | 0.1+ | 0.2− | 2005 05 08 | G96 | 1.6+ | 1.0+ |
| 1995 02 06 | 691 | 0.2− | 0.0 | 2004 02 16 | 691 | 0.3− | 0.0 | 2005 05 08 | G96 | 0.2+ | 0.2+ |
| 2002 10 10 | 644 | 0.3− | 0.1+ | 2004 02 16 | 691 | 0.5+ | 0.2− | 2006 08 14 | 644 | 0.2− | 0.2+ |
| 2002 10 10 | 644 | 0.1− | 0.1+ | 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 644 | 0.2− | 0.0 | 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.0 |
| 2003 12 19 | 691 | 0.3+ | 0.1− | 2005 04 02 | G96 | 0.4− | 0.3+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2003 12 19 | 691 | 0.3+ | 0.2− | 2005 04 06 | G96 | 0.1+ | 0.3+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2004 01 15 | 691 | 0.2− | 0.3+ | 2005 04 06 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.9+ |
| 2004 01 15 | 691 | 0.1+ | 0.1+ | 2005 04 06 | G96 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.7+ | 1.4+ |
| 2004 01 15 | 691 | 0.2− | 0.2+ | 2005 04 06 | G96 | 0.4+ | 0.2− | 2006 08 28 | 703 | 1.0− | 1.2+ |
| 2004 01 16 | 691 | 0.1+ | 0.2+ | 2005 04 07 | G96 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.8+ |
| 2004 01 16 | 691 | 0.1− | 0.1+ | 2005 04 07 | G96 | 0.2− | 0.3+ | | | | |

**(144004)∗ 2004 AH$_7$ = 1999 VE$_{99}$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57585)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.62467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27764441 | $\omega$ | 73.33336 | | −0.39925697 | | −0.91407851 |
| $a$ | 2.3270735 | $\Omega$ | 40.43257 | | +0.79387500 | | −0.38345919 |
| $e$ | 0.1456016 | $i$ | 6.29338 | | +0.45864622 | | −0.13198310 |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 20 | 704 | 0.0 | 0.9− | 2004 01 13 | 699 | 0.8− | 0.4− | 2004 03 23 | 704 | 0.5+ | 0.2− | | |
| 1999 10 20 | 704 | 0.7− | 0.5− | 2004 01 17 | 644 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.1− | 0.7− | | |
| 1999 10 20 | 704 | 0.2− | 0.5+ | 2004 01 17 | 644 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.6+ | | |
| 1999 11 09 | 704 | 0.8− | 0.8− | 2004 01 17 | 644 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.1+ | | |
| 1999 11 09 | 704 | 0.2− | 0.1+ | 2004 01 30 | 699 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.2− | 0.6+ | | |
| 1999 11 09 | 704 | 0.3+ | 0.4+ | 2004 01 30 | 699 | 0.8+ | 0.6− | 2006 10 15 | 703 | 1.2+ | 0.9+ | | |
| 1999 11 12 | 704 | 1.6+ | 0.4− | 2004 01 30 | 699 | 0.5+ | 0.5− | 2006 10 15 | 703 | 0.6− | 0.1+ | | |
| 1999 11 12 | 704 | 0.1+ | 0.6− | 2004 01 30 | 699 | 0.4− | 0.7+ | 2006 10 15 | 703 | (2.5+ | 1.1+) | | |
| 1999 11 12 | 704 | 0.9+ | 0.6+ | 2004 01 30 | 703 | 0.8+ | 0.2+ | 2006 10 15 | 703 | (1.2+ | 1.8+) | | |
| 2002 08 19 | 644 | 0.5+ | 0.3− | 2004 01 30 | 703 | 0.4+ | 0.5− | 2006 10 17 | G96 | (0.2− | 2.0−) | | |
| 2002 08 19 | 644 | 0.0 | 0.2+ | 2004 01 30 | 703 | 0.5− | 0.5+ | 2006 10 17 | G96 | 0.5+ | 0.4− | | |
| 2002 08 19 | 644 | 0.7− | 0.3+ | 2004 01 30 | 703 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.4− | | |
| 2003 11 20 | 704 | 0.1− | 0.9+ | 2004 01 31 | 704 | 0.5+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.2− | | |
| 2003 11 20 | 704 | 0.3− | 1.0− | 2004 01 31 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.5+ | | |
| 2003 11 20 | 704 | (1.9− | 0.8−) | 2004 01 31 | 704 | 1.2+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.0 | | |
| 2003 12 18 | 704 | 1.4− | 0.2+ | 2004 01 31 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 703 | 1.0− | 0.7+ | | |
| 2003 12 18 | 704 | 0.7− | 0.1− | 2004 02 02 | 704 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.0 | | |
| 2003 12 18 | 704 | 0.5− | 0.1− | 2004 02 02 | 704 | 1.2+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.1− | | |
| 2003 12 27 | 704 | 0.8+ | 0.3− | 2004 02 02 | 704 | 0.6− | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.7+ | | |
| 2003 12 27 | 704 | 0.3− | 0.2− | 2004 02 02 | 704 | 0.6− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2003 12 27 | 704 | 0.5+ | 0.2− | 2004 02 14 | 704 | 0.7+ | 1.3+ | 2006 10 21 | 703 | 0.1− | 0.3+ | | |
| 2003 12 27 | 704 | 0.8+ | 0.3− | 2004 02 14 | 704 | 0.5+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2003 12 27 | 704 | 0.5+ | 0.4− | 2004 02 14 | 704 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2004 01 13 | 699 | (1.0− | 2.2−) | 2004 03 23 | 704 | 0.8− | 0.8− | 2006 10 31 | G96 | 0.3− | 0.1− | | |
| 2004 01 13 | 699 | 1.3− | 0.3+ | 2004 03 23 | 704 | 1.1− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2004 01 13 | 699 | 0.0 | 0.7− | 2004 03 23 | 704 | 0.9− | 0.4− | | | | | | |

**(144005)∗ 2004 AB$_8$ = 1999 VC$_{193}$**

Discovered 2004 Jan. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57586)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.19096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27384530 | $\omega$ | 31.62835 | | −0.52152607 | −0.85098660 | |
| $a$ | 2.3485466 | $\Omega$ | 89.87389 | | +0.76934781 | −0.50038423 | |
| $e$ | 0.1758568 | $i$ | 3.54924 | | +0.36893698 | −0.15949115 | |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 691 | 0.0 | 0.1+ | 2004 01 19 | 691 | 0.2+ | 0.1− | 2004 03 18 | 645 | 0.2− | 0.1− |
| 1997 02 06 | 691 | 0.0 | 0.4+ | 2004 01 19 | 691 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.3− |
| 1997 02 06 | 691 | 0.3+ | 0.0 | 2004 01 19 | 691 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.7+ | 0.9+ |
| 1999 11 01 | 703 | 1.3+ | 0.2− | 2004 01 22 | 704 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.3+ |
| 1999 11 01 | 703 | 0.7− | 0.3+ | 2004 01 22 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.7+ | 0.3+ |
| 1999 11 01 | 703 | 1.4+ | 0.4+ | 2004 01 22 | 704 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.5+ | 1.1+ |
| 1999 11 01 | 703 | 0.6− | 0.9− | 2004 01 22 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.5− | 0.2+ |
| 1999 11 04 | 704 | 1.3− | 0.3− | 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.2+ | 1.0+ |
| 1999 11 04 | 704 | 0.7+ | 0.3− | 2004 01 30 | 704 | 0.1+ | 0.5− | 2006 09 25 | 699 | 1.1− | 0.5+ |
| 1999 11 04 | 704 | 0.9+ | 1.3− | 2004 01 30 | 704 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.4− | 0.1+ |
| 1999 12 07 | 704 | 0.2+ | 0.5− | 2004 01 30 | 704 | 0.0 | 0.2− | 2006 09 29 | 699 | 1.1+ | 1.0+ |
| 1999 12 07 | 704 | 0.5− | 0.8− | 2004 01 30 | 704 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.4− | 0.5+ |
| 1999 12 07 | 704 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.5+ | 0.7+ |
| 1999 12 07 | 704 | 0.8− | 0.4+ | 2004 02 10 | 703 | 0.4− | 0.8− | 2006 09 29 | 699 | 0.8− | 0.9+ |
| 1999 12 07 | 704 | 0.1− | 1.1+ | 2004 02 10 | 703 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2003 12 18 | 644 | 0.1+ | 0.1− | 2004 02 10 | 703 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2003 12 18 | 644 | 0.6− | 0.0 | 2004 02 10 | 703 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2003 12 18 | 644 | 0.2− | 0.1+ | 2004 02 13 | 699 | 0.5+ | 0.1+ | 2006 10 16 | 703 | (0.1+ | 1.7−) |
| 2003 12 27 | 704 | 0.3− | 1.3− | 2004 02 13 | 699 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.8+ | 1.3− |
| 2003 12 27 | 704 | 0.8+ | 0.5+ | 2004 02 13 | 699 | 0.1+ | 0.5+ | 2006 10 16 | 703 | (0.4− | 1.6−) |
| 2003 12 27 | 704 | 0.3− | 1.0+ | 2004 02 13 | 699 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2003 12 27 | 704 | 0.5+ | 0.3− | 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.4+ | 0.2+ |
| 2003 12 27 | 704 | 0.1− | 1.0+ | 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.5+ | 0.1− |
| 2004 01 05 | 703 | 1.0− | 0.9+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.5− |
| 2004 01 05 | 703 | 0.8− | 0.7− | 2004 02 15 | 704 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.7− |
| 2004 01 05 | 703 | 1.1− | 0.6+ | 2004 02 15 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2004 01 05 | 703 | 0.3− | 0.1+ | 2004 02 15 | 704 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2004 01 13 | 699 | 0.3− | 0.1+ | 2004 02 15 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.1+ |
| 2004 01 13 | 699 | 0.0 | 0.1+ | 2004 02 15 | 704 | 0.2+ | 0.9+ | 2006 10 22 | 703 | 0.7− | 0.8− |
| 2004 01 13 | 699 | 0.6+ | 0.7− | 2004 02 18 | 608 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.4− | 1.5− |
| 2004 01 13 | 699 | 0.2− | 0.1− | 2004 02 18 | 608 | 0.3− | 0.1− | 2006 10 22 | 703 | (0.2− | 1.9−) |
| 2004 01 13 | 644 | 0.2+ | 0.1+ | 2004 02 18 | 608 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2004 01 13 | 644 | 0.4+ | 0.2+ | 2004 02 23 | 704 | 1.0+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2004 01 13 | 644 | 0.5+ | 0.1+ | 2004 02 23 | 704 | (0.8+ | 1.5+) | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2004 01 17 | 644 | 0.2+ | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2004 01 17 | 644 | 0.4+ | 0.1+ | 2004 02 23 | 704 | 0.8+ | 0.1+ | | | | |
| 2004 01 17 | 644 | 0.4+ | 0.1− | 2004 03 18 | 645 | 0.1− | 0.1− | | | | |

**(144006)∗ 2004 AB$_9$**

Discovered 2004 Jan. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.74834 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24146187 | $\omega$ | 356.28435 | | −0.62180878 | +0.77656443 | |
| $a$ | 2.5540947 | $\Omega$ | 235.23746 | | −0.71532128 | −0.61591402 | |
| $e$ | 0.2476092 | $i$ | 7.09684 | | −0.31885625 | −0.13265595 | |
| $P$ | 4.08 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 691 | 0.3+ | 0.2+ | 2004 01 14 | 644 | 0.8+ | 0.5+ | 2004 03 15 | 703 | 1.3+ | 0.6+ |
| 1998 12 15 | 691 | 0.2− | 0.2− | 2004 01 18 | 703 | 0.2− | 1.0− | 2005 07 31 | 644 | 0.1− | 0.2+ |
| 1998 12 15 | 691 | 0.6− | 0.3− | 2004 01 18 | 703 | 0.0 | 0.8+ | 2005 07 31 | 644 | 0.1+ | 0.3+ |
| 1998 12 23 | 691 | 0.4− | 0.9− | 2004 01 18 | 703 | 1.3− | 1.1+ | 2005 07 31 | 644 | 0.0 | 0.1+ |
| 1998 12 23 | 691 | 0.2− | 0.4− | 2004 01 18 | 703 | 1.0+ | 1.1+ | 2005 08 26 | 699 | 0.3− | 1.2+ |
| 1998 12 23 | 691 | 1.1+ | 1.0+ | 2004 01 27 | 699 | 1.3− | 1.0+ | 2005 08 26 | 699 | 0.7− | 0.2+ |
| 2000 03 01 | 703 | (1.1− | 2.5+) | 2004 01 27 | 699 | 0.3− | 0.5+ | 2005 08 26 | 699 | 0.2+ | 1.4+ |
| 2000 03 01 | 703 | 0.9− | 0.0 | 2004 01 27 | 699 | 0.7− | 0.5− | 2005 08 26 | 699 | 0.3+ | 0.6+ |
| 2000 03 01 | 703 | 0.7+ | 0.8+ | 2004 01 27 | 699 | 0.1+ | 0.5+ | 2006 10 13 | 691 | 0.1+ | 0.2− |
| 2000 03 01 | 703 | 0.1− | 0.3+ | 2004 01 29 | 704 | 1.4+ | 0.2− | 2006 10 13 | 691 | 0.5− | 0.4+ |
| 2000 03 27 | 699 | 0.9+ | 0.4+ | 2004 01 29 | 704 | 0.6+ | 0.2+ | 2006 10 13 | 691 | 0.2+ | 0.0 |
| 2000 03 27 | 699 | 0.5+ | 0.1+ | 2004 01 29 | 704 | 0.8+ | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2000 03 27 | 699 | 0.2− | 0.3+ | 2004 01 29 | 704 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2000 03 27 | 699 | 0.2− | 0.0 | 2004 01 29 | 704 | 0.0 | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 08 25 | 704 | 0.3+ | 1.0+ | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2001 08 25 | 704 | 0.0 | 1.1+ | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.0 | 1.0+ | 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2001 08 25 | 704 | 0.7− | 0.9+ | 2004 02 18 | 704 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2004 02 18 | 704 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2004 02 18 | 704 | 0.1− | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.8− |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.2− | 0.9+ | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2004 03 15 | 703 | (0.9− | 2.5−) | 2006 12 01 | G96 | 0.6− | 0.7− |
| 2004 01 14 | 644 | 0.2+ | 0.2+ | 2004 03 15 | 703 | 0.5+ | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2004 01 14 | 644 | 0.4+ | 0.2+ | 2004 03 15 | 703 | (1.6+ | 1.3+) | | | | |

**(144007)∗ 2004 AP$_9$ = 2002 TN$_{191}$**

Discovered 2004 Jan. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57586)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.30362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22528768 | $\omega$ | 133.15597 | | +0.75413136 | −0.62804639 | |
| $a$ | 2.6749218 | $\Omega$ | 266.69453 | | +0.53283888 | +0.75600428 | |
| $e$ | 0.0766361 | $i$ | 11.08510 | | +0.38388621 | +0.18443227 | |
| $P$ | 4.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 704 | 0.4− | 0.1+ | 2003 12 22 | 704 | (1.0− | 2.6+) | 2004 02 01 | 608 | 0.0 | 0.9− |
| 2002 08 30 | 704 | 0.4+ | 0.1− | 2003 12 22 | 704 | 0.1− | 1.6+ | 2004 02 01 | 608 | 0.4− | 0.3− |
| 2002 08 30 | 704 | 0.9− | 0.3− | 2004 01 14 | 644 | 0.0 | 0.7+ | 2004 02 11 | 644 | 0.3+ | 0.8+ |
| 2002 10 05 | 699 | 0.1+ | 0.0 | 2004 01 14 | 644 | 0.0 | 0.5+ | 2004 02 11 | 644 | 0.4+ | 0.3+ |
| 2002 10 05 | 699 | 0.4+ | 0.3− | 2004 01 14 | 644 | 0.1+ | 0.5+ | 2004 02 11 | 644 | 0.3+ | 0.2+ |
| 2002 10 05 | 699 | 0.0 | 0.1+ | 2004 01 18 | 644 | 0.0 | 0.5+ | 2005 05 04 | 644 | 0.0 | 1.1+ |
| 2002 10 05 | 699 | 0.2+ | 0.0 | 2004 01 18 | 644 | 0.1+ | 0.5+ | 2005 05 04 | 644 | 0.3+ | 0.6+ |
| 2002 10 06 | 704 | 0.4+ | 0.6+ | 2004 01 18 | 644 | 0.4+ | 0.5+ | 2005 05 04 | 644 | 0.1+ | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.1− | 0.2+ | 2004 01 23 | 699 | 0.2+ | 0.1+ | 2005 05 11 | 644 | 0.2+ | 0.6+ |
| 2002 10 06 | 704 | 0.2+ | 0.4+ | 2004 01 23 | 699 | 0.0 | 0.4− | 2005 05 11 | 644 | 0.1+ | 0.6+ |
| 2002 10 06 | 704 | 0.1+ | 0.4+ | 2004 01 23 | 699 | 0.9+ | 0.3+ | 2005 05 11 | 644 | 0.3+ | 0.7+ |
| 2002 10 06 | 704 | 0.5+ | 0.4+ | 2004 01 23 | 699 | 1.0− | 0.5+ | 2006 07 21 | 703 | 0.3− | 0.2− |
| 2002 10 09 | 704 | 0.8− | 0.6+ | 2004 01 27 | 699 | 0.8− | 0.1+ | 2006 07 21 | 703 | 0.0 | 0.4− |
| 2002 10 09 | 704 | 0.2− | 0.6+ | 2004 01 27 | 699 | 0.4− | 0.3+ | 2006 07 21 | 703 | 0.7− | 0.5+ |
| 2002 10 09 | 704 | 0.5− | 0.8+ | 2004 01 27 | 699 | 0.6− | 0.2+ | 2006 07 21 | 703 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | 1.3− | 0.3− | 2004 01 27 | 699 | 0.3− | 0.0 | 2006 07 26 | A50 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.4+ | 0.3+ | 2004 01 29 | 704 | 0.7+ | 0.4− | 2006 07 26 | A50 | 0.6− | 0.0 |
| 2002 10 15 | 644 | 0.1+ | 0.1− | 2004 01 29 | 704 | 2.0+ | 1.8− | 2006 08 22 | 644 | 0.4+ | 0.0 |
| 2002 10 15 | 644 | 0.1− | 0.0 | 2004 01 29 | 704 | 0.3+ | 0.5− | 2006 08 22 | 644 | 0.2+ | 0.3+ |
| 2002 10 15 | 644 | 0.1− | 0.0 | 2004 01 29 | 704 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.2+ | 0.6+ |
| 2003 12 22 | 704 | 0.8− | 1.2+ | 2004 02 01 | 608 | 0.0 | 0.7− | | | | |

**(144008)∗ 2004 AQ$_{10}$ = 2005 GO$_{176}$**

Discovered 2004 Jan. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76369)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.98285 | | (2000.0) | | | |
| $n$ | 0.29619239 | $\omega$ | 249.66554 | | +0.94099871 | −0.32734729 |
| $a$ | 2.2288805 | $\Omega$ | 129.34169 | | +0.33683392 | +0.88154921 |
| $e$ | 0.2044664 | $i$ | 6.37114 | | +0.03262411 | +0.34016870 |
| $P$ | 3.33 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 13 | 691 | 0.1− | 0.1− | 2004 01 24 | 704 | 1.0+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 1.0− |
| 1994 01 13 | 691 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.4− |
| 1994 01 13 | 691 | 0.2− | 0.5− | 2004 01 24 | 704 | 0.7+ | 0.7− | 2006 10 22 | 703 | 0.0 | 0.7− |
| 2003 12 23 | 704 | 0.1+ | 0.5+ | 2004 01 24 | 704 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.5+ | 0.7+ |
| 2003 12 23 | 704 | 0.1+ | 0.3+ | 2004 01 24 | 704 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2003 12 23 | 704 | 0.5− | 0.5+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.6+ |
| 2004 01 15 | 691 | 0.2− | 0.1+ | 2004 02 16 | 691 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.1+ | 1.2+ |
| 2004 01 15 | 691 | 0.1− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.1− | 2006 10 31 | 704 | (0.7− | 1.7+) |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 704 | 1.1− | 0.2+ |
| 2004 01 15 | 691 | 0.1+ | 0.1+ | 2005 04 14 | 691 | 0.5− | 0.0 | 2006 10 31 | 704 | (2.5− | 1.5+) |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.6+ | 0.5+ | 2006 10 31 | 704 | (0.5− | 1.7+) |
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2005 04 18 | 691 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2004 01 21 | 704 | 0.1− | 0.6− | 2005 04 18 | 691 | 0.5− | 0.0 | 2006 11 13 | 703 | 0.4− | 0.1− |
| 2004 01 21 | 704 | 1.1− | 0.3+ | 2005 04 18 | 691 | 0.5− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2004 01 21 | 704 | 0.2− | 0.2− | 2005 04 30 | 691 | 0.4+ | 0.1+ | 2006 11 13 | 703 | 0.5+ | 0.1+ |
| 2004 01 21 | 704 | 0.3+ | 0.1+ | 2005 04 30 | 691 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.1+ | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.1− | 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.6− | 0.4+ |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.4− | 1.1− | 2006 11 20 | 704 | 0.5+ | 0.4+ |
| 2004 01 22 | 704 | 0.5− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2004 01 22 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.7− | 0.8+ |
| 2004 01 22 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.3+ | 1.2+ |
| 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.3+ | | | | |
| 2004 01 22 | 704 | 0.7+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.1+ | | | | |

**(144009)∗ 2004 AX$_{11}$ = 2000 CJ$_{12}$**

Discovered 2004 Jan. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 65540)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 138.25817 | | (2000.0) | | | |
| $n$ | 0.24257998 | $\omega$ | 73.44454 | | −0.62196384 | +0.78175823 |
| $a$ | 2.5462404 | $\Omega$ | 157.90697 | | −0.75622873 | −0.58480124 |
| $e$ | 0.1229492 | $i$ | 6.85466 | | −0.20317254 | −0.21647536 |
| $P$ | 4.06 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.1− | 0.1− | 2004 01 13 | 699 | 0.4− | 0.6+ | 2006 09 18 | 699 | (0.8+ | 2.6+) |
| 2000 02 02 | 704 | 0.5+ | 0.1− | 2004 01 13 | 644 | 0.6+ | 0.2+ | 2006 09 18 | 699 | 1.3+ | 0.2+ |
| 2000 02 02 | 704 | 0.2− | 0.2− | 2004 01 13 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 699 | (2.0+ | 0.3+) |
| 2000 02 02 | 704 | 0.3+ | 0.9+ | 2004 01 13 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.7− |
| 2000 02 02 | 704 | 0.7− | 0.1+ | 2004 01 18 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2000 02 04 | 704 | 0.0 | 0.3− | 2004 01 18 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 2000 02 04 | 704 | 0.5+ | 0.0 | 2004 01 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.0− | 1.2− |
| 2000 02 04 | 704 | 0.6− | 0.2+ | 2004 01 23 | 704 | 0.7+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2000 02 04 | 704 | 0.3+ | 0.1+ | 2004 01 23 | 704 | 0.4− | 0.6− | 2006 10 03 | G96 | 0.3+ | 0.3− |
| 2001 06 24 | 704 | 0.2− | 0.9+ | 2004 01 23 | 704 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2001 06 24 | 704 | 0.1− | 0.3+ | 2004 01 23 | 704 | 0.3+ | 0.4+ | 2006 10 03 | G96 | 0.4+ | 0.1− |
| 2001 06 24 | 704 | 0.4− | 1.1+ | 2004 01 23 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 10 11 | 644 | 0.1− | 0.2+ | 2004 01 30 | 704 | 1.0+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 10 11 | 644 | 0.4− | 0.1+ | 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 11 | 644 | 0.3− | 0.4+ | 2004 01 30 | 704 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2002 10 31 | 699 | 0.0 | 0.3− | 2004 01 30 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 2002 10 31 | 699 | 0.0 | 1.1+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2002 10 31 | 704 | 0.3+ | 0.4+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2002 10 31 | 699 | 1.1+ | 0.3+ | 2005 07 05 | 704 | 0.6+ | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 0.3+ | 2005 07 05 | 704 | 1.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2005 07 05 | 704 | 1.0− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 699 | 1.0− | 0.4+ | 2005 07 05 | 704 | (2.8− | 0.1−) | 2006 10 22 | 703 | 0.0 | 0.7− |
| 2002 10 31 | 704 | 0.6+ | 0.4− | 2005 07 12 | G96 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2002 10 31 | 704 | 1.0+ | 1.1+ | 2005 07 12 | G96 | 0.8− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2004 01 13 | 699 | 0.5− | 0.2+ | 2005 07 12 | G96 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2004 01 13 | 699 | 1.1− | 0.4− | 2005 07 12 | G96 | 0.9+ | 0.3+ | | | | |
| 2004 01 13 | 699 | 0.0 | 1.0− | 2006 09 18 | 699 | 0.1− | 0.5− | | | | |

**(144010)∗ 2004 AG$_{22}$ = 2000 DQ$_{30}$**

Discovered 2004 Jan. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69623)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.07101 | | (2000.0) | | | |
| $n$ | 0.22435466 | $\omega$ | 330.62221 | | −0.13180499 | +0.98903064 |
| $a$ | 2.6823328 | $\Omega$ | 291.73594 | | −0.89489662 | −0.14765191 |
| $e$ | 0.1582921 | $i$ | 4.11627 | | −0.42636543 | +0.00416082 |
| $P$ | 4.39 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.4− | 0.1− | 2005 05 04 | 644 | 0.4+ | 0.7+ | 2006 09 18 | 691 | 0.3− | 0.3+ |
| 2000 02 29 | 704 | 0.6+ | 0.4− | 2005 05 04 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.0 | 1.2+ |
| 2000 02 29 | 704 | 0.2+ | 0.1+ | 2005 05 10 | 699 | 0.3− | 0.2+ | 2006 09 18 | 704 | 0.8+ | 0.1− |
| 2000 02 29 | 704 | 0.4+ | 0.1+ | 2005 05 10 | 699 | 0.5− | 0.7+ | 2006 09 18 | 704 | 1.2+ | 0.4− |
| 2000 02 29 | 704 | 0.4+ | 0.8− | 2005 05 10 | 699 | 0.6+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 1.2+ |
| 2000 03 03 | 704 | 0.0 | 1.2+ | 2005 05 10 | 699 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.8− | 0.3+ |
| 2000 03 03 | 704 | 0.2+ | 0.3+ | 2005 05 11 | 644 | 0.4+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2000 03 03 | 704 | 0.4+ | 0.8+ | 2005 05 11 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 699 | (1.9− | 0.5−) |
| 2000 03 03 | 704 | 0.8+ | 0.9+ | 2005 05 11 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 0.5− | 1.1+ | 2005 05 12 | 703 | 0.3− | 1.0+ | 2006 09 19 | 703 | 0.1− | 0.5+ |
| 2001 06 16 | 704 | 0.4+ | 0.1− | 2005 05 12 | 703 | 0.4+ | 1.1+ | 2006 09 19 | 699 | 0.4− | 0.7+ |
| 2001 06 16 | 704 | 0.7− | 0.3− | 2005 05 12 | 703 | 0.3+ | 1.3+ | 2006 09 19 | 699 | 0.7− | 0.6− |
| 2001 06 16 | 704 | 0.1− | 1.0+ | 2005 05 12 | 703 | 0.0 | 1.0+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2001 06 16 | 704 | 0.1− | 0.4+ | 2005 05 19 | 644 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 10 18 | 644 | 0.7− | 1.3+ | 2005 05 19 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2002 10 18 | 644 | 0.3− | 1.1+ | 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.3− |
| 2002 10 18 | 644 | 0.0 | 0.9+ | 2005 05 30 | 699 | 1.3+ | 0.7− | 2006 09 29 | 704 | 1.4+ | 0.3+ |
| 2003 12 22 | 691 | 0.1− | 0.0 | 2005 05 30 | 699 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.8− |
| 2003 12 22 | 691 | 0.1− | 0.0 | 2005 05 30 | 699 | 1.0− | 0.6+ | 2006 09 29 | 704 | 0.6+ | 0.7+ |
| 2003 12 22 | 691 | 0.3− | 0.1+ | 2005 05 30 | 699 | 0.1− | 1.2+ | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2004 01 15 | 691 | 0.2+ | 0.0 | 2005 06 03 | 703 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2004 01 15 | 691 | 0.1+ | 0.3+ | 2005 06 03 | 703 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2004 01 15 | 691 | 0.1− | 0.2+ | 2005 06 03 | 703 | (1.6− | 0.1+) | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2004 01 21 | 704 | 0.2+ | 0.6+ | 2005 06 03 | 703 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2004 01 21 | 704 | 0.3− | 0.1+ | 2005 06 14 | 699 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2004 01 21 | 704 | (0.7+ | 1.7−) | 2005 06 14 | 699 | 1.1+ | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 704 | 0.1− | 0.8+ | 2005 06 14 | 699 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.8− | 1.1+ | | |
| 2004 01 21 | 704 | 0.1− | 0.7+ | 2005 06 14 | 699 | 0.8+ | 0.8+ | 2006 10 17 | 703 | 0.5− | 0.6+ | | |
| 2004 01 27 | 691 | 0.1+ | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.1+ | | |
| 2004 01 27 | 691 | 0.4+ | 0.0 | 2006 09 06 | 644 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | | |
| 2004 01 27 | 691 | 0.2+ | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2005 04 28 | E12 | 0.4− | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2005 04 28 | E12 | 0.5+ | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.2− | | |
| 2005 04 28 | E12 | 1.1− | 0.2− | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.1− | | |
| 2005 04 28 | E12 | 0.6+ | 0.2− | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.5+ | 0.2− | | |
| 2005 05 04 | 644 | 0.3+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.2− | | |

**(144011)∗ 2004 $BT_2$ = 1995 $UT_{78}$ = 1999 $XF_{236}$**

Discovered 2004 Jan. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57588)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.69212 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26731117 | $\omega$ | 168.24548 | | −0.46315905 | | −0.88602197 |
| $a$ | 2.3866642 | $\Omega$ | 309.34184 | | +0.81090580 | | −0.41400503 |
| $e$ | 0.1670191 | $i$ | 1.56961 | | +0.35765272 | | −0.20872208 |
| $P$ | 3.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 691 | 0.1− | 0.0 | 2004 01 17 | 644 | 0.2+ | 0.4+ | 2004 01 26 | 699 | 0.5+ | 0.4− | | |
| 1995 08 27 | 691 | 0.0 | 0.6− | 2004 01 17 | 644 | 0.1+ | 0.5+ | 2004 01 27 | 691 | 0.0 | 0.2− | | |
| 1995 08 27 | 691 | 0.2− | 0.2− | 2004 01 17 | 644 | 0.0 | 0.4+ | 2004 01 27 | 691 | 0.1− | 0.1− | | |
| 1995 10 23 | 691 | 0.3− | 1.2− | 2004 01 19 | 699 | 1.3+ | 0.7+ | 2004 01 27 | 691 | 0.0 | 0.3− | | |
| 1995 10 23 | 691 | 0.0 | 0.2− | 2004 01 19 | 699 | 0.1+ | 0.3− | 2004 01 30 | 704 | 0.2− | 0.6+ | | |
| 1995 10 23 | 691 | 0.1+ | 0.1− | 2004 01 19 | 699 | (2.1+ | 0.7−) | 2004 01 30 | 704 | 1.4+ | 0.2− | | |
| 1995 10 28 | 691 | 0.5+ | 0.4+ | 2004 01 19 | 699 | 1.2+ | 0.4− | 2004 01 30 | 704 | 0.5− | 0.7+ | | |
| 1995 10 28 | 691 | 0.4+ | 0.1+ | 2004 01 19 | 703 | (0.4− | 1.6+) | 2004 01 30 | 704 | 0.9+ | 0.1− | | |
| 1995 10 28 | 691 | 0.4+ | 0.0 | 2004 01 19 | 703 | 0.4− | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.7+ | | |
| 1999 12 04 | 691 | 0.1+ | 0.3− | 2004 01 19 | 703 | 1.0− | 1.3+ | 2006 09 17 | 691 | 0.3+ | 0.4+ | | |
| 1999 12 04 | 691 | 0.1+ | 0.7− | 2004 01 19 | 703 | (3.1− | 3.1+) | 2006 09 17 | 691 | 0.3− | 0.4+ | | |
| 1999 12 04 | 691 | 0.3− | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.2− | 0.2+ | | |
| 1999 12 07 | 704 | 0.9+ | 1.0+ | 2004 01 21 | 704 | 0.7− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.3+ | | |
| 1999 12 07 | 704 | 0.1− | 1.0− | 2004 01 21 | 704 | 0.5+ | 0.8+ | 2006 09 25 | 691 | 0.1− | 0.5+ | | |
| 1999 12 07 | 704 | 1.0+ | 0.6− | 2004 01 21 | 704 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.0 | | |
| 1999 12 07 | 704 | 0.1− | 0.2− | 2004 01 24 | 704 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.3− | | |
| 2003 12 29 | 691 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.0 | | |
| 2003 12 29 | 691 | 0.0 | 0.0 | 2004 01 24 | 704 | 0.6− | 0.9− | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2003 12 29 | 691 | 0.2+ | 0.1+ | 2004 01 24 | 704 | 0.3− | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.2+ | | |
| 2004 01 16 | 644 | 0.4+ | 0.3+ | 2004 01 26 | 699 | 0.5− | 0.4+ | 2006 10 23 | G96 | 2.5− | 0.2+ | | |
| 2004 01 16 | 644 | 0.1+ | 0.0 | 2004 01 26 | 699 | 1.2− | 1.1− | 2006 10 23 | G96 | 0.1− | 1.1+ | | |
| 2004 01 16 | 644 | 0.2+ | 0.2+ | 2004 01 26 | 699 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.5− | 0.3+ | | |

**(144012)∗ 2004 $BM_3$ = 1998 $QA_{13}$ = 2002 $TM_{182}$**

Discovered 2004 Jan. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57589), A. Doppler (*MPO* 95158)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.20473 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27304293 | $\omega$ | 253.84333 | | −0.87775444 | | +0.47285517 |
| $a$ | 2.3531454 | $\Omega$ | 314.30098 | | −0.38798539 | | −0.79602641 |
| $e$ | 0.0747205 | $i$ | 6.19005 | | −0.28109513 | | −0.37782263 |
| $P$ | 3.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 02 | 691 | 0.1+ | 0.0 | 2004 01 16 | 644 | 0.1+ | 0.3+ | 2004 02 16 | 704 | 0.1+ | 0.3− | | |
| 1991 10 02 | 691 | 0.3− | 0.2− | 2004 01 16 | 644 | 0.3+ | 0.3+ | 2004 02 20 | 333 | 0.4− | 0.1+ | | |
| 1991 10 02 | 691 | 0.2− | 0.1+ | 2004 01 17 | 644 | 0.6+ | 0.4+ | 2004 02 20 | 333 | 0.6− | 0.2+ | | |
| 1998 08 17 | 704 | 1.2− | 0.0 | 2004 01 17 | 644 | 0.4+ | 0.6+ | 2004 02 20 | 333 | 0.6− | 0.3+ | | |
| 1998 08 17 | 704 | (0.2+ | 2.6+) | 2004 01 17 | 644 | 0.5+ | 0.4+ | 2004 02 20 | 333 | 0.2− | 0.3− | | |
| 1998 08 17 | 704 | 0.6− | 0.9+ | 2004 01 19 | 703 | 0.3− | 0.2− | 2004 02 22 | 704 | 0.9− | 0.2− | | |
| 1998 08 17 | 704 | (0.5− | 2.1+) | 2004 01 19 | 703 | 0.3− | 0.3+ | 2004 02 22 | 704 | 0.9− | 0.3− | | |
| 1998 08 17 | 704 | (6.4− | 1.9+) | 2004 01 19 | 703 | 0.2− | 0.1− | 2004 02 22 | 704 | 0.1+ | 1.1− | | |
| 2002 09 06 | 704 | 0.5− | 0.7+ | 2004 01 19 | 703 | 0.9− | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.1+ | | |
| 2002 09 06 | 704 | 0.1− | 0.1− | 2004 01 21 | 704 | 0.5+ | 0.0 | 2004 02 26 | 704 | 0.1− | 0.1− | | |
| 2002 09 06 | 704 | 0.1− | 0.9+ | 2004 01 21 | 704 | 0.4− | 0.5+ | 2004 02 26 | 704 | 0.2− | 0.2− | | |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2004 01 21 | 704 | 0.7+ | 0.9+ | 2004 02 26 | 704 | 0.3− | 0.1− | | |
| 2002 10 04 | 644 | 0.1+ | 0.2− | 2004 01 21 | 704 | 0.8+ | 0.2+ | 2004 02 26 | 704 | 0.1− | 0.4− | | |
| 2002 10 04 | 644 | 0.3+ | 0.4− | 2004 01 24 | 704 | 0.4+ | 0.2+ | 2005 06 06 | E12 | 0.5− | 0.7+ | | |
| 2002 10 04 | 644 | 0.2+ | 0.3− | 2004 01 24 | 704 | 0.4+ | 0.7− | 2005 06 06 | E12 | 0.6− | 1.1+ | | |
| 2002 10 04 | 704 | 1.0+ | 0.2+ | 2004 01 24 | 704 | 0.1+ | 0.0 | 2005 06 06 | E12 | 0.1+ | 0.2− | | |
| 2002 10 04 | 704 | (3.4+ | 0.1−) | 2004 01 24 | 704 | 0.1− | 0.6− | 2005 06 06 | E12 | 0.3+ | 0.9+ | | |
| 2002 10 04 | 704 | 1.3+ | 0.2− | 2004 01 24 | 704 | 0.6+ | 0.5+ | 2005 06 07 | E12 | 0.4− | 0.8+ | | |
| 2002 10 04 | 704 | 1.3+ | 0.5− | 2004 01 26 | 699 | 0.3− | 0.2− | 2005 06 07 | E12 | 0.5− | 0.8+ | | |
| 2002 10 04 | 704 | (2.4+ | 0.0 ) | 2004 01 26 | 699 | 0.0 | 0.2− | 2005 06 07 | E12 | 0.6− | 0.6+ | | |
| 2002 10 07 | 699 | 0.3+ | 0.4+ | 2004 01 26 | 699 | 0.5− | 0.2+ | 2005 06 07 | E12 | 0.5− | 0.6+ | | |
| 2002 10 07 | 699 | 0.2+ | 1.4+ | 2004 01 26 | 699 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.6+ | 0.5+ | | |
| 2002 10 07 | 699 | (0.4− | 1.5−) | 2004 01 30 | 704 | (1.5− | 0.4+) | 2006 10 27 | 703 | (1.5− | 2.0−) | | |
| 2002 10 07 | 699 | 0.3− | 0.1+ | 2004 01 30 | 704 | 0.8− | 0.4+ | 2006 10 27 | 703 | (1.1− | 2.1−) | | |
| 2002 10 12 | 704 | 0.7+ | 0.4− | 2004 01 30 | 704 | 0.2− | 0.7+ | 2006 10 27 | 703 | (0.7+ | 2.3−) | | |
| 2002 10 12 | 704 | 0.4+ | 0.6+ | 2004 01 30 | 704 | (1.6− | 0.3−) | 2006 11 09 | 644 | 0.1− | 0.4− | | |
| 2002 10 12 | 704 | (1.3+ | 2.6+) | 2004 02 01 | A16 | (1.2− | 2.1+) | 2006 11 09 | 644 | 0.0 | 0.6− | | |
| 2002 10 12 | 704 | 1.3− | 0.0 | 2004 02 01 | A16 | 0.6− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.4− | | |
| 2002 10 12 | 704 | 0.6+ | 0.7+ | 2004 02 01 | A16 | 1.0− | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.7+ | | |
| 2002 10 12 | 704 | 1.2+ | 0.8+ | 2004 02 01 | A16 | (1.9− | 0.8+) | 2006 11 11 | 703 | 1.1− | 0.3+ | | |
| 2002 10 12 | 704 | (1.4+ | 1.5+) | 2004 02 01 | A16 | 0.4+ | 1.0− | 2006 11 11 | 703 | 0.1− | 0.4+ | | |
| 2002 10 12 | 704 | 0.3+ | 0.5+ | 2004 02 09 | A16 | 0.5− | 0.9+ | 2006 11 11 | 703 | 0.3+ | 0.3− | | |
| 2002 10 12 | 704 | 0.8+ | 1.0+ | 2004 02 09 | A16 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.3+ | | |
| 2002 10 12 | 704 | 0.9− | 0.3+ | 2004 02 11 | 699 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.3− | | |
| 2003 12 22 | 704 | 0.9+ | 0.6+ | 2004 02 11 | 699 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.7− | | |
| 2003 12 22 | 704 | (0.3+ | 1.8+) | 2004 02 11 | 699 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.0 | | |
| 2003 12 22 | 704 | 0.9+ | 0.2− | 2004 02 11 | 699 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.6− | 0.3+ | | |
| 2003 12 22 | 704 | 0.9+ | 0.1− | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.5+ | | |
| 2003 12 22 | 704 | 0.0 | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 1.3− | 0.3− | | |
| 2003 12 27 | 704 | 0.7+ | 0.2− | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.1− | | |
| 2003 12 27 | 704 | 0.3+ | 0.2+ | 2004 02 14 | 691 | 0.3+ | 0.0 | 2006 11 22 | 703 | 1.0− | 0.5− | | |
| 2003 12 27 | 704 | 0.1− | 0.5+ | 2004 02 14 | 691 | 0.2+ | 0.1− | 2006 11 22 | 703 | 0.0 | 0.1− | | |
| 2004 01 15 | A16 | (2.9− | 0.7−) | 2004 02 14 | 691 | 0.4+ | 0.2− | 2006 11 22 | 703 | 0.6− | 0.1− | | |
| 2004 01 15 | A16 | 1.0− | 0.5+ | 2004 02 16 | 704 | 0.8− | 0.1− | 2006 11 22 | 703 | 0.8− | 1.4− | | |
| 2004 01 15 | A16 | 0.7− | 0.6+ | 2004 02 16 | 704 | 0.8+ | 0.6+ | | | | | | |
| 2004 01 16 | 644 | 0.1+ | 0.4+ | 2004 02 16 | 704 | 0.7+ | 0.4+ | | | | | | |

**(144013)∗ 2004 $BH_4$ = 2000 $DW_{45}$**

Discovered 2004 Jan. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57591)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.74840 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23445073 | $\omega$ | 240.03705 | | −0.96806627 | | +0.24443431 |
| $a$ | 2.6047636 | $\Omega$ | 314.04764 | | −0.19492122 | | −0.87355449 |
| $e$ | 0.0996337 | $i$ | 4.44246 | | −0.15764968 | | −0.42089716 |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.3− | 0.8+ | 2004 01 17 | 644 | 0.1+ | 0.6− | 2004 02 26 | 704 | 0.1+ | 0.1− | | |
| 2000 02 29 | 704 | 0.1− | 0.3+ | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 1.0+ | 0.7− | | |
| 2000 02 29 | 704 | 0.9+ | 0.8− | 2004 01 30 | 704 | 1.4+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | | |
| 2000 02 29 | 704 | 0.6+ | 0.2− | 2004 01 30 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.4+ | | |
| 2000 02 29 | 704 | 0.1+ | 0.1+ | 2004 01 30 | 704 | 0.6+ | 0.2− | 2006 09 18 | 691 | 0.3+ | 0.2+ | | |
| 2000 03 03 | 704 | 0.2+ | 0.2− | 2004 01 30 | 704 | 0.7+ | 0.3− | 2006 09 19 | 703 | 0.2− | 0.2− | | |
| 2000 03 03 | 704 | 0.0 | 0.2+ | 2004 01 30 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 0.9− | 0.2+ | | |
| 2000 03 03 | 704 | 0.2− | 1.0+ | 2004 02 10 | 703 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.1− | 0.0 | | |
| 2000 03 03 | 704 | 0.0 | 0.9+ | 2004 02 10 | 703 | 1.3− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.1+ | | |
| 2000 03 03 | 704 | 0.3+ | 1.0+ | 2004 02 10 | 703 | 1.2− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2001 05 23 | 807 | 0.1− | 0.3+ | 2004 02 10 | 703 | 1.1+ | 0.9+ | 2006 09 26 | 691 | 0.2− | 0.2− | | |
| 2001 05 23 | 807 | 0.2− | 0.3+ | 2004 02 11 | 699 | 1.2− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.0 | | |
| 2001 07 10 | 644 | 0.5− | 1.2+ | 2004 02 11 | 699 | 1.0− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2001 07 10 | 644 | 0.0 | 0.6+ | 2004 02 11 | 699 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | | |
| 2001 07 10 | 644 | 0.2− | 1.3+ | 2004 02 11 | 699 | 0.7− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2004 01 16 | 644 | 0.1− | 0.2+ | 2004 02 14 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.3− | 0.5− | | |
| 2004 01 16 | 644 | 0.0 | 0.2+ | 2004 02 14 | 691 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.5− | 0.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 14 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2004 01 17 | 644 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.3− |

**(144014)∗ 2004 BM$_4$**

Discovered 2004 Jan. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.95233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27110438 | $\omega$ | 108.51422 | | −0.99199097 | +0.11947816 | |
| $a$ | 2.3643496 | $\Omega$ | 78.36348 | | −0.12580187 | −0.90554438 | |
| $e$ | 0.1331680 | $i$ | 2.39761 | | −0.01130507 | −0.40708027 | |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.1+ | 0.2+ | 2004 02 11 | 291 | 0.2+ | 0.0 | 2005 07 07 | 691 | 0.1+ | 0.3+ |
| 1999 12 08 | 704 | 1.1+ | 0.4+ | 2004 02 11 | 291 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.3− | 0.3+ |
| 1999 12 08 | 704 | 1.2− | 0.9+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.2+ |
| 2002 09 28 | 644 | 0.5− | 0.8+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.0 | 0.5+ |
| 2002 09 28 | 644 | 0.8− | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2005 07 11 | 691 | 0.1+ | 0.0 |
| 2002 09 28 | 644 | 0.4− | 0.6+ | 2004 02 12 | 691 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2004 02 12 | 691 | 0.0 | 0.2+ | 2005 07 11 | 691 | 0.0 | 0.1+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 02 12 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2004 02 13 | 699 | 0.9+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2004 02 13 | 699 | (1.9+ | 0.5+) | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 02 13 | 699 | 0.7− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2004 01 16 | 644 | 0.2+ | 0.2+ | 2004 02 13 | 699 | 0.7+ | 0.9+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2004 01 16 | 644 | 0.3+ | 0.3+ | 2004 02 14 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.2+ |
| 2004 01 16 | 644 | 0.2+ | 0.2+ | 2004 02 14 | 691 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.4− | 0.3− |
| 2004 01 17 | 644 | 0.0 | 0.3+ | 2004 02 14 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.5+ |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.8− | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2004 02 16 | 704 | 1.2+ | 0.1− | 2006 10 20 | 691 | 0.3+ | 0.4+ |
| 2004 01 22 | 704 | 1.4+ | 0.5+ | 2004 02 16 | 704 | 0.2+ | 0.4− | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2004 01 22 | 704 | 0.9+ | 0.5+ | 2004 02 16 | 704 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2004 01 22 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 644 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2004 01 22 | 704 | 1.4+ | 0.4− | 2004 02 17 | 644 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.3− | 0.6− |
| 2004 01 22 | 704 | 0.2+ | 0.7− | 2004 02 17 | 644 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2004 02 18 | 608 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2004 01 28 | 691 | 0.3− | 0.1+ | 2004 02 18 | 608 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2004 01 28 | 691 | 0.5− | 0.2+ | 2004 02 18 | 608 | 0.5− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2004 01 30 | 704 | 0.3− | 0.4+ | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2004 01 30 | 704 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 01 30 | 704 | 0.0 | 0.8+ | 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.2− |
| 2004 01 30 | 704 | 0.5− | 0.4+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.4− |
| 2004 01 30 | 704 | 0.3+ | 0.4+ | 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2004 02 10 | 703 | 0.8− | 0.2+ | 2005 07 02 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.5+ | 2.4− |
| 2004 02 10 | 703 | 0.6+ | 0.5+ | 2005 07 02 | 691 | 0.1− | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2004 02 10 | 703 | (0.2+ | 1.7+) | 2005 07 02 | 691 | 0.2− | 0.7+ | 2006 11 12 | G96 | 0.3− | 0.1− |
| 2004 02 10 | 703 | 0.2− | 1.0+ | 2005 07 07 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2004 02 11 | 291 | 0.2+ | 0.2+ | 2005 07 07 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.5− |

**(144015)∗ 2004 BG$_6$ = 2000 EA$_{161}$**

Discovered 2004 Jan. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 95159)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.62098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22524766 | $\omega$ | 36.66958 | | −0.99078875 | −0.13093926 | |
| $a$ | 2.6752386 | $\Omega$ | 135.76690 | | +0.10948527 | −0.92464769 | |
| $e$ | 0.0241624 | $i$ | 2.83756 | | +0.07969077 | −0.35760530 | |
| $P$ | 4.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.3+ | 1.2+ | 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.5− | 0.4+ |
| 2000 03 03 | 704 | 0.7+ | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.6+ | 2006 08 21 | 691 | 0.5− | 0.6+ |
| 2000 03 03 | 704 | 0.2+ | 0.5+ | 2004 01 21 | 704 | 0.4+ | 1.6+ | 2006 08 28 | 691 | 0.1− | 0.6+ |
| 2000 03 03 | 704 | 1.1+ | 1.2+ | 2004 01 21 | 704 | 0.1+ | 1.7+ | 2006 08 28 | 703 | 0.8+ | 0.5+ |
| 2000 03 03 | 704 | 0.6+ | 0.5+ | 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 1.4+ | 0.8− |
| 2000 03 11 | 704 | 0.2+ | 0.2+ | 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.5+ |
| 2000 03 11 | 704 | 0.2+ | 1.8+ | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 1.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 1.8+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.9+ | 0.7+ |
| 2000 03 11 | 704 | 0.5− | 1.3+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.2− | 0.5+ |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2005 05 10 | G96 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2003 12 29 | 691 | 0.2+ | 0.1+ | 2005 05 10 | G96 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2003 12 29 | 691 | 0.2+ | 0.5− | 2005 05 10 | G96 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2004 01 16 | 691 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2005 06 10 | 691 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.2+ |
| 2004 01 16 | 691 | 0.2− | 0.2+ | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.5− | 0.1− |
| 2004 01 17 | 644 | 0.2− | 0.2+ | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 1.1− | 1.9+ |
| 2004 01 17 | 644 | 0.1− | 0.5+ | 2006 08 21 | 691 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.1− |

**(144016)∗ 2004 BC$_8$ = 2005 JX$_{42}$**

Discovered 2004 Jan. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76373)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.64118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25938746 | $\omega$ | 211.32492 | | +0.37921652 | +0.91849906 | |
| $a$ | 2.4350249 | $\Omega$ | 81.16555 | | −0.82377941 | +0.39027026 | |
| $e$ | 0.1026158 | $i$ | 6.51084 | | −0.42140517 | +0.06362859 | |
| $P$ | 3.80 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 644 | 0.0 | 0.8+ | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2002 09 10 | 644 | 0.6− | 0.8+ | 2005 04 18 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | (0.2− | 2.1+) |
| 2002 09 10 | 644 | 0.5− | 0.5+ | 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | (2.2− | 0.1+) |
| 2003 12 21 | 691 | 0.1+ | 0.2+ | 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | (0.8− | 1.7+) |
| 2003 12 21 | 691 | 0.0 | 0.2− | 2005 05 08 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.6+ |
| 2003 12 21 | 691 | 0.1− | 0.4+ | 2005 05 09 | 699 | (0.7+ | 1.6+) | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2003 12 21 | 691 | 0.3− | 0.5+ | 2005 05 09 | 699 | 0.2+ | 1.0+ | 2006 10 16 | 703 | 0.0 | 1.2− |
| 2003 12 21 | 691 | 0.4− | 0.1+ | 2005 05 09 | 699 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 1.2+ |
| 2003 12 21 | 691 | 0.3+ | 0.4− | 2005 05 09 | 699 | (1.3+ | 1.6+) | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2004 01 17 | 691 | 0.1+ | 0.1− | 2005 05 19 | G96 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.8− | 0.5+ |
| 2004 01 17 | 691 | 0.2+ | 0.2+ | 2005 05 19 | G96 | 0.2− | 0.2− | 2006 10 28 | 703 | (0.3− | 1.9−) |
| 2004 01 17 | 691 | 0.2+ | 0.1− | 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.8+ |
| 2004 01 18 | 691 | 0.1− | 0.1− | 2005 05 19 | G96 | 0.6− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2004 01 18 | 691 | 0.0 | 0.4+ | 2005 06 27 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 01 18 | 691 | 0.2+ | 0.0 | 2005 06 27 | 644 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2005 04 18 | 691 | 0.2+ | 0.0 | 2005 06 27 | 644 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1+ |

**(144017)∗ 2004 BS$_9$ = 1999 XJ$_{67}$**

Discovered 2004 Jan. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57592)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.51623 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26642861 | $\omega$ | 342.00341 | | −0.27072444 | −0.96223139 | |
| $a$ | 2.3919319 | $\Omega$ | 123.69492 | | +0.88739393 | −0.26097180 | |
| $e$ | 0.1408740 | $i$ | 1.97120 | | +0.37314916 | −0.07748849 | |
| $P$ | 3.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3+ | 1.2− | 2004 01 16 | 644 | 1.4+ | 0.3− | 2004 02 11 | 691 | 0.4+ | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 0.4− | 2004 01 16 | 644 | 0.4+ | 0.0 | 2004 02 16 | 704 | (1.5+ | 1.0+) |
| 1999 12 07 | 704 | 0.5− | 1.0− | 2004 01 18 | 644 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 1.1+ | 0.9+ |
| 1999 12 07 | 704 | 0.3+ | 0.9− | 2004 01 18 | 644 | 0.3+ | 0.1+ | 2004 02 16 | 704 | 0.4+ | 0.3+ |
| 1999 12 08 | 704 | 0.1+ | 0.6− | 2004 01 18 | 644 | 0.4+ | 0.2+ | 2004 02 16 | 704 | 0.7+ | 0.1− |
| 1999 12 08 | 704 | 0.4− | 0.4− | 2004 01 21 | 704 | (0.1− | 1.6+) | 2004 02 16 | 704 | 0.5+ | 0.6+ |
| 1999 12 08 | 704 | 0.3− | 0.8− | 2004 01 21 | 704 | 0.7+ | 0.6+ | 2004 02 26 | 704 | 1.1+ | 0.6+ |
| 2000 01 05 | 704 | 0.4+ | 1.2− | 2004 01 21 | 704 | 0.2− | 0.7+ | 2004 02 26 | 704 | 1.0+ | 0.4+ |
| 2000 01 05 | 704 | 0.0 | 1.7− | 2004 01 22 | 704 | 0.2+ | 1.3+ | 2004 02 26 | 704 | 0.9+ | 0.5− |
| 2000 01 05 | 704 | 0.5− | 0.4− | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.5+ | 1.3− | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2004 02 26 | 704 | 0.2+ | 0.0 | |
| 2000 01 06 | 704 | 0.3+ | 0.1+ | 2004 01 24 | 704 | 0.7− | 0.3+ | 2006 09 18 | 703 | 0.1− | 1.1+ | |
| 2000 01 06 | 704 | 1.7+ | 1.5+ | 2004 01 24 | 704 | 0.7− | 0.5+ | 2006 09 18 | 703 | 0.6+ | 1.2+ | |
| 2001 05 28 | 691 | 0.6+ | 0.4+ | 2004 01 24 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 1.3+ | |
| 2001 05 28 | 691 | 0.2− | 0.7+ | 2004 01 24 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 1.2− | 1.2+ | |
| 2001 05 28 | 691 | 0.3− | 0.3− | 2004 01 24 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.8+ | 0.1+ | |
| 2002 08 18 | 644 | 0.3− | 0.9+ | 2004 01 30 | 704 | 0.9− | 1.3+ | 2006 09 20 | 704 | 0.9+ | 0.0 | |
| 2002 08 18 | 644 | 0.8− | 0.5− | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.3− | 0.8+ | |
| 2002 08 18 | 644 | 0.4− | 0.6+ | 2004 01 30 | 704 | 0.1− | 0.8+ | 2006 09 20 | 704 | 0.2+ | 0.5+ | |
| 2002 08 29 | 644 | 0.1+ | 1.1+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 0.6− | 0.4+ | |
| 2002 08 29 | 644 | (0.3− | 1.7+) | 2004 01 30 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.4− | 0.1− | |
| 2002 08 29 | 644 | 0.3− | 1.1+ | 2004 01 30 | 704 | 0.2− | 1.1+ | 2006 09 27 | 704 | 0.2+ | 0.1+ | |
| 2003 12 19 | 291 | 0.6− | 0.0 | 2004 01 30 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.7− | 1.4+ | |
| 2003 12 19 | 291 | 0.7− | 0.0 | 2004 01 30 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.4+ | |
| 2003 12 19 | 291 | 1.1− | 0.1+ | 2004 02 10 | 703 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.5+ | |
| 2004 01 13 | 699 | (0.4+ | 2.3−) | 2004 02 10 | 703 | 0.1− | 0.1− | 2006 10 21 | 703 | 1.2− | 0.3+ | |
| 2004 01 13 | 699 | 0.5− | 0.5+ | 2004 02 10 | 703 | 0.1− | 0.2− | 2006 10 21 | 703 | 1.3− | 1.5+ | |
| 2004 01 13 | 699 | 0.3+ | 0.1+ | 2004 02 10 | 703 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.5+ | |
| 2004 01 13 | 699 | 0.8− | 0.5+ | 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | (1.8− | 0.5+) | |
| 2004 01 16 | 644 | 0.3+ | 0.1+ | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | (1.2− | 1.5+) | |

**(144018)∗ 2004 BW$_{10}$**

Discovered 2004 Jan. 17 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 163.98853 | | (2000.0) | | | |
| $n$ | 0.23388767 | $\omega$ | 300.71157 | | −0.96317934 | +0.25236111 |
| $a$ | 2.6089424 | $\Omega$ | 254.04130 | | −0.20166341 | −0.90622897 |
| $e$ | 0.0771691 | $i$ | 5.53480 | | −0.17781289 | −0.33920927 |
| $P$ | 4.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.2− | 0.1− | 2004 01 18 | 644 | 0.1− | 0.2+ | 2005 01 18 | 809 | 0.2+ | 0.3− | |
| 2000 02 02 | 704 | 0.3− | 0.6+ | 2004 01 23 | 704 | 0.1− | 0.1+ | 2005 06 17 | G96 | 0.2− | 0.9+ | |
| 2000 02 02 | 704 | 0.8+ | 1.4+ | 2004 01 23 | 704 | 0.3+ | 0.7+ | 2005 06 17 | G96 | 0.2+ | 0.8+ | |
| 2000 02 02 | 704 | 1.0+ | 0.1− | 2004 01 23 | 704 | 0.3− | 0.5+ | 2005 06 17 | G96 | 0.2− | 0.9+ | |
| 2002 10 09 | 704 | 0.0 | 0.4+ | 2004 01 23 | 704 | 0.1− | 0.5+ | 2005 06 17 | G96 | 0.2+ | 0.8+ | |
| 2002 10 09 | 704 | 0.2− | 0.6+ | 2004 01 29 | 704 | (1.8− | 0.3−) | 2006 08 29 | 703 | 1.2− | 0.4+ | |
| 2002 10 09 | 704 | 0.8− | 0.7− | 2004 01 29 | 704 | 0.0 | 0.2+ | 2006 08 29 | 703 | 1.2− | 0.2− | |
| 2002 10 09 | 704 | 0.8− | 0.1+ | 2004 01 29 | 704 | 1.2− | 0.1+ | 2006 08 29 | 703 | 1.6− | 0.1+ | |
| 2002 10 09 | 704 | 0.7+ | 1.3+ | 2004 01 29 | 704 | 0.2+ | 0.1− | 2006 08 29 | 703 | 1.5− | 0.5+ | |
| 2002 10 31 | 644 | 0.2− | 0.3+ | 2004 01 29 | 704 | (1.6− | 0.7+) | 2006 09 14 | A50 | 0.1− | 0.3− | |
| 2002 10 31 | 644 | 0.6− | 0.7+ | 2004 02 26 | 704 | 0.8+ | 1.1+ | 2006 09 17 | 703 | 1.3+ | 0.3− | |
| 2002 10 31 | 644 | 0.0 | 0.2+ | 2004 02 26 | 704 | (1.6+ | 0.4−) | 2006 09 17 | 703 | 0.9+ | 0.8− | |
| 2004 01 17 | 608 | 0.4+ | 0.3+ | 2004 02 26 | 704 | 0.8+ | 0.2− | 2006 09 17 | 703 | 0.5+ | 0.0 | |
| 2004 01 17 | 608 | 0.4+ | 0.1+ | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 09 17 | 703 | 1.2+ | 0.9− | |
| 2004 01 17 | 608 | 0.7+ | 0.1− | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1+ | |
| 2004 01 18 | 644 | 0.2− | 0.4+ | 2005 01 18 | 809 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.3+ | 0.4+ | |
| 2004 01 18 | 644 | 0.2− | 0.2+ | 2005 01 18 | 809 | 0.1− | 0.9+ | 2006 10 17 | 691 | 0.2+ | 0.0 | |

**(144019)∗ 2004 BK$_{12}$ = 1995 UA$_{23}$**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57594)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 211.86215 | | (2000.0) | | | |
| $n$ | 0.27011899 | $\omega$ | 260.81490 | | −0.99273207 | +0.11114662 |
| $a$ | 2.3700962 | $\Omega$ | 285.55634 | | −0.08272469 | −0.90872891 |
| $e$ | 0.1122165 | $i$ | 2.74557 | | −0.08740516 | −0.40231604 |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.6− | 0.4+ | 2004 01 19 | 699 | (0.4+ | 2.6−) | 2005 06 28 | G96 | 0.4− | 1.1+ | |
| 1995 10 19 | 691 | 0.2+ | 0.4− | 2004 01 19 | 691 | 0.0 | 0.1− | 2005 06 28 | G96 | 0.4− | 0.3− | |
| 1995 10 19 | 691 | 0.2+ | 0.2− | 2004 01 19 | 691 | 0.3+ | 0.0 | 2005 06 28 | G96 | 1.2+ | 0.7− | |
| 1995 10 24 | 691 | 0.1− | 0.6+ | 2004 01 19 | 691 | 0.1+ | 0.2+ | 2005 06 28 | G96 | 0.4− | 0.9+ | |
| 1995 10 24 | 691 | 0.1− | 0.2− | 2004 01 21 | 704 | 0.5+ | 0.3− | 2005 11 03 | 695 | 0.3− | 0.1+ | |
| 1995 10 24 | 691 | 0.2+ | 0.3− | 2004 01 21 | 704 | 0.7− | 0.6− | 2005 11 03 | 695 | 0.4− | 0.1+ | |
| 1995 11 17 | 691 | 0.1− | 0.4+ | 2004 01 21 | 704 | 0.3+ | 0.6− | 2006 10 13 | 691 | 0.0 | 0.1+ | |
| 1995 11 17 | 691 | 0.1+ | 0.3+ | 2004 01 21 | 704 | 0.3− | 0.5− | 2006 10 13 | 691 | 0.2+ | 0.1+ | |
| 1995 11 17 | 691 | 0.2− | 0.3+ | 2004 01 21 | 704 | 0.5+ | 1.0− | 2006 10 13 | 691 | 0.2− | 0.4+ | |
| 2003 12 17 | 291 | 0.6− | 0.5+ | 2004 01 24 | 704 | 0.7+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.4− | |
| 2003 12 17 | 291 | 0.8− | 0.4+ | 2004 01 24 | 704 | 1.3+ | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.1+ | |
| 2003 12 17 | 291 | 1.0− | 0.2+ | 2004 01 24 | 704 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.6− | |
| 2003 12 29 | 691 | 0.4+ | 0.2− | 2004 01 24 | 704 | 0.7+ | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.4− | |
| 2003 12 29 | 691 | 0.1+ | 0.1− | 2004 01 28 | 691 | 1.3− | 0.8− | 2006 10 21 | G96 | 0.2− | 0.3− | |
| 2003 12 29 | 691 | 0.3+ | 0.1+ | 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.0 | |
| 2004 01 13 | 699 | 1.1+ | 0.7+ | 2004 01 28 | 691 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1+ | |
| 2004 01 13 | 699 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.6+ | 1.0+ | 2006 11 01 | G96 | 0.5+ | 0.5− | |
| 2004 01 13 | 699 | 0.0 | 0.8+ | 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.4− | |
| 2004 01 13 | 699 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.5− | |
| 2004 01 17 | 644 | 0.1+ | 0.4+ | 2004 01 31 | 704 | 0.8+ | 0.7+ | 2006 11 01 | G96 | 0.3+ | 0.6− | |
| 2004 01 17 | 644 | 0.4+ | 0.3+ | 2004 01 31 | 704 | 0.3− | 1.2+ | 2006 11 01 | G96 | 0.3− | 0.3+ | |
| 2004 01 17 | 644 | 0.4+ | 0.1+ | 2004 01 31 | 704 | 0.8− | 1.0− | 2006 11 01 | G96 | 0.1+ | 0.5− | |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2005 06 03 | 691 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.4− | |
| 2004 01 17 | 644 | 0.4+ | 0.0 | 2005 06 03 | 691 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.4− | |
| 2004 01 17 | 644 | 0.5+ | 0.2− | 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.1− | |
| 2004 01 19 | 699 | 0.4+ | 0.8+ | 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.2− | |
| 2004 01 19 | 699 | 0.6+ | 0.7− | 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.3− | |
| 2004 01 19 | 699 | 1.0+ | 1.1− | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.4− | |

**(144020)∗ 2004 BO$_{12}$ = 2002 UL$_{14}$**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61770)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.47532 | | (2000.0) | | | |
| $n$ | 0.20607266 | $\omega$ | 258.75539 | | +0.95774056 | −0.28396111 |
| $a$ | 2.8387194 | $\Omega$ | 117.72755 | | +0.27994931 | +0.88368068 |
| $e$ | 0.0320068 | $i$ | 2.96693 | | +0.06604097 | +0.37212167 |
| $P$ | 4.78 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 27 | 691 | 0.3+ | 0.2− | 2004 01 19 | 703 | 1.6− | 1.1+ | 2005 04 12 | G96 | 0.7− | 0.3+ | |
| 1995 02 27 | 691 | 0.2− | 0.3+ | 2004 01 19 | 691 | 0.0 | 0.2+ | 2005 04 12 | G96 | 0.1− | 0.3+ | |
| 1995 02 27 | 691 | 0.2+ | 0.4+ | 2004 01 19 | 703 | 0.1+ | 0.3+ | 2005 04 12 | G96 | 0.2− | 0.0 | |
| 2002 10 11 | 644 | 0.5− | 0.5+ | 2004 01 24 | 704 | 0.4− | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.2+ | |
| 2002 10 11 | 644 | 0.4− | 0.1+ | 2004 01 24 | 704 | 0.0 | 0.2− | 2005 04 16 | 691 | 0.2+ | 0.3+ | |
| 2002 10 11 | 644 | 0.1− | 0.3+ | 2004 01 24 | 704 | 0.6− | 0.3+ | 2005 04 16 | 691 | 0.3+ | 0.2+ | |
| 2002 10 30 | 644 | 0.1− | 0.6+ | 2004 01 24 | 704 | 0.3+ | 0.2+ | 2005 05 11 | 699 | 0.4− | 0.3+ | |
| 2002 10 30 | 644 | 0.0 | 0.3+ | 2004 01 24 | 704 | 0.3− | 1.3+ | 2005 05 11 | 699 | 1.4+ | 0.1− | |
| 2002 10 30 | 644 | 0.1+ | 0.6+ | 2004 01 26 | 699 | 0.7+ | 0.0 | 2005 05 11 | 699 | 1.7− | 1.5+ | |
| 2002 10 31 | 704 | 0.6− | 0.7− | 2004 01 26 | 699 | 0.5+ | 0.3− | 2005 05 11 | 699 | (0.8+ | 2.2+) | |
| 2002 10 31 | 704 | 0.3− | 1.3+ | 2004 01 26 | 699 | 0.1+ | 0.1− | 2006 08 14 | 644 | 0.1+ | 0.3+ | |
| 2002 10 31 | 704 | 0.3− | 0.1+ | 2004 01 26 | 699 | 0.4+ | 0.7− | 2006 08 14 | 644 | 0.0 | 0.3+ | |
| 2002 10 31 | 704 | 0.4+ | 0.1+ | 2004 01 29 | 291 | 0.9+ | 0.6+ | 2006 08 14 | 644 | 0.1+ | 0.5+ | |
| 2002 10 31 | 704 | 0.2− | 0.8+ | 2004 01 29 | 291 | 1.0+ | 0.6+ | 2006 08 16 | 644 | 0.3+ | 0.4+ | |
| 2003 12 18 | 291 | 0.5− | 0.2+ | 2004 01 29 | 291 | 1.0+ | 0.6+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | |
| 2003 12 18 | 291 | 0.1− | 0.4+ | 2004 02 11 | 691 | 0.1− | 0.5− | 2006 08 16 | 644 | 0.1− | 0.1− | |
| 2003 12 18 | 291 | 0.5+ | 0.4+ | 2004 02 11 | 691 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.2+ | 0.4+ | |
| 2004 01 17 | 644 | 0.0 | 0.5+ | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 08 18 | 644 | 0.3− | 0.4+ | |
| 2004 01 17 | 644 | 0.1+ | 0.1+ | 2004 02 12 | 291 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.2− | 0.1− | |
| 2004 01 17 | 644 | 0.0 | 0.3+ | 2004 02 12 | 291 | 0.2− | 0.3− | 2006 08 20 | 644 | 0.2− | 0.3+ | |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2004 02 12 | 291 | 0.6+ | 0.8− | 2006 08 20 | 644 | 0.1− | 0.6+ | |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2004 02 17 | 645 | 0.2− | 0.2− | 2006 08 20 | 644 | 0.2− | 0.1+ | |
| 2004 01 19 | 703 | 0.1− | 1.7+ | 2004 02 17 | 645 | 0.2− | 0.2− | | | | | |
| 2004 01 19 | 703 | 0.5− | 0.6+ | 2005 04 12 | G96 | 0.2− | 0.1+ | | | | | |

**(144021)∗ 2004 BX$_{12}$ = 2001 KQ$_{72}$**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57594)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.05779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28193595 | $\omega$ | 227.32509 | | −0.94719142 | −0.31890088 | |
| $a$ | 2.3033985 | $\Omega$ | 294.05307 | | +0.30392619 | −0.85934857 | |
| $e$ | 0.1643315 | $i$ | 2.11025 | | +0.10226091 | −0.39977777 | |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 704 | 1.1− | 0.3− | 2004 01 28 | H36 | 0.1− | 0.1+ | 2006 10 13 | 691 | 0.3+ | 0.1+ | |
| 2001 05 24 | 704 | 0.7− | 0.6− | 2004 01 28 | H36 | 0.3− | 0.1− | 2006 10 13 | 691 | 0.2+ | 0.0 | |
| 2001 05 24 | 704 | 1.3− | 0.7− | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− | |
| 2001 05 28 | 608 | 0.7+ | 1.0+ | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.5− | 1.3− | |
| 2001 05 28 | 608 | 0.3+ | 1.0+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.1− | |
| 2001 05 28 | 608 | 0.8+ | 1.4+ | 2004 01 30 | 704 | 0.7+ | 0.3− | 2006 10 21 | 691 | 0.3− | 0.2+ | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1+ | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 691 | 0.4− | 0.1+ | |
| 2002 09 14 | 644 | 0.6− | 0.6+ | 2004 01 30 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.3− | 1.2− | |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.2+ | |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2004 02 09 | 185 | 0.2+ | 0.8− | 2006 10 27 | 703 | 0.2+ | 0.5− | |
| 2004 01 05 | 703 | (2.1− | 0.9+) | 2004 02 09 | 185 | 0.0 | 0.3− | 2006 10 27 | 703 | 1.4+ | 0.1− | |
| 2004 01 05 | 703 | 0.2− | 0.7+ | 2004 02 09 | 185 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.5− | |
| 2004 01 05 | 703 | (0.4+ | 1.5+) | 2004 02 11 | 699 | 1.2− | 0.8+ | 2006 11 01 | G96 | 0.9− | 0.5+ | |
| 2004 01 05 | 703 | 0.5+ | 0.1− | 2004 02 11 | 699 | 0.8+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.4− | |
| 2004 01 12 | 644 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.2− | |
| 2004 01 12 | 644 | 0.0 | 0.5+ | 2004 02 11 | 699 | 0.6+ | 0.8+ | 2006 11 10 | 644 | 0.0 | 0.1+ | |
| 2004 01 12 | 644 | 0.1− | 0.7+ | 2004 02 16 | 704 | 0.5+ | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.2+ | |
| 2004 01 17 | 644 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.3+ | 0.3− | |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2004 02 16 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.0 | 0.1+ | |
| 2004 01 17 | 644 | 0.1− | 0.2+ | 2004 02 16 | 704 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.1+ | |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.9− | 1.3+ | 2006 11 11 | 703 | 0.0 | 0.4+ | |
| 2004 01 19 | 703 | 0.7− | 0.2+ | 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2+ | |
| 2004 01 19 | 691 | 0.2+ | 0.0 | 2004 02 17 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− | |
| 2004 01 19 | 703 | 0.4− | 0.0 | 2004 02 17 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3− | |
| 2004 01 19 | 703 | 0.1− | 0.5+ | 2004 02 26 | 704 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.5− | |
| 2004 01 19 | 703 | (0.3− | 1.9−) | 2004 02 26 | 704 | 0.6+ | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.2− | |
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.7+ | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.5− | |
| 2004 01 21 | 704 | 0.3+ | 0.3− | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 11 18 | G96 | 0.3− | 0.4− | |
| 2004 01 21 | 704 | 0.4− | 0.8− | 2004 02 26 | 704 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.4− | 0.5− | |
| 2004 01 21 | 704 | 0.0 | 0.1− | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 11 18 | G96 | 1.1− | 0.5− | |
| 2004 01 21 | 704 | 0.1+ | 0.0 | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1+ | 1.9+ | |
| 2004 01 21 | 704 | 0.2− | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.1+ | 1.2+ | |
| 2004 01 24 | 704 | (2.5+ | 1.1+) | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.4− | 0.9+ | |
| 2004 01 24 | 704 | (0.5− | 1.7+) | 2005 07 09 | 691 | 0.0 | 0.5+ | 2006 11 19 | 704 | 1.1+ | 0.6+ | |
| 2004 01 24 | 704 | (1.5− | 1.3+) | 2005 07 09 | 691 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.7+ | |
| 2004 01 24 | 704 | 0.2− | 1.0+ | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 0.4− | |
| 2004 01 26 | 699 | 0.6+ | 0.1+ | 2005 07 16 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.7− | 0.5+ | |
| 2004 01 26 | 699 | 0.4− | 0.8+ | 2005 07 16 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.9+ | |
| 2004 01 26 | 699 | 0.2+ | 0.4− | 2005 07 16 | 691 | 0.0 | 0.2+ | | | | | |
| 2004 01 26 | 699 | 0.0 | 0.2+ | 2006 10 13 | 691 | 0.2+ | 0.2+ | | | | | |

**(144022)∗ 2004 BW$_{13}$**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.21087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28327430 | $\omega$ | 98.11785 | | −0.90198628 | +0.42419530 | |
| $a$ | 2.2961377 | $\Omega$ | 107.01222 | | −0.42183599 | −0.82604515 | |
| $e$ | 0.1463416 | $i$ | 4.82866 | | −0.09206062 | −0.37108996 | |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 25 | 699 | 0.1− | 1.4+ | 2004 01 22 | 704 | 0.2+ | 1.1+ | 2004 02 15 | 704 | 0.3− | 0.3− | |
| 2001 04 25 | 699 | 0.2− | 0.0 | 2004 01 22 | 704 | (0.8+ | 1.6+) | 2004 02 17 | 645 | 0.1− | 0.1− | |
| 2001 04 25 | 699 | 0.9− | 1.1+ | 2004 01 22 | 704 | 0.1− | 1.4+ | 2004 02 17 | 645 | 0.2− | 0.1− | |
| 2001 04 25 | 699 | 0.9+ | 0.0 | 2004 01 26 | 699 | 1.0+ | 0.8+ | 2004 02 23 | 704 | 0.6+ | 0.5+ | |
| 2001 05 15 | 699 | 0.8− | 0.2+ | 2004 01 26 | 699 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.7+ | 0.3+ | |
| 2001 05 15 | 699 | 0.0 | 0.6+ | 2004 01 26 | 699 | (1.8+ | 0.3−) | 2004 02 23 | 704 | 0.4+ | 0.5+ | |
| 2001 05 15 | 699 | 0.5+ | 0.3+ | 2004 01 26 | 699 | 0.2− | 1.2+ | 2004 02 23 | 704 | 0.7+ | 0.0 | |
| 2001 05 15 | 699 | 0.5+ | 0.1+ | 2004 01 30 | 691 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.5− | 0.2+ | |
| 2001 05 24 | 699 | 0.8− | 0.2− | 2004 01 30 | 691 | 0.2− | 0.1+ | 2005 07 04 | 644 | 0.4+ | 0.4+ | |
| 2001 05 24 | 699 | 0.5+ | 0.3+ | 2004 01 30 | 691 | 0.2− | 0.0 | 2005 07 04 | 644 | 0.4− | 0.6+ | |
| 2001 05 24 | 699 | 0.5+ | 0.5+ | 2004 01 30 | 704 | 0.7+ | 0.1− | 2005 07 04 | 644 | 0.0 | 0.6+ | |
| 2001 05 24 | 699 | 0.5+ | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2005 11 03 | 695 | 0.1− | 0.3+ | |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2004 01 30 | 704 | 1.0+ | 0.1+ | 2005 11 03 | 695 | 0.2+ | 0.5+ | |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2004 01 30 | 704 | 0.9+ | 0.9+ | 2006 10 23 | G96 | 0.0 | 0.2− | |
| 2004 01 17 | 644 | 0.1− | 0.4+ | 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.7+ | 1.3− | |
| 2004 01 17 | 644 | 0.3− | 0.3+ | 2004 02 12 | 691 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.3− | 0.3− | |
| 2004 01 17 | 644 | 0.2− | 0.3+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.0 | |
| 2004 01 19 | 691 | 0.0 | 0.3+ | 2004 02 14 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1− | 0.3− | |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.5− | 0.6− | |
| 2004 01 19 | 691 | 0.1+ | 0.3+ | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.6− | 0.2− | |
| 2004 01 22 | 704 | 0.9+ | 0.6+ | 2004 02 15 | 704 | 0.7+ | 0.6+ | 2006 12 01 | G96 | 0.6− | 0.3− | |
| 2004 01 22 | 704 | (1.6+ | 1.9+) | 2004 02 15 | 704 | 1.4+ | 0.4+ | | | | | |

**(144023)∗ 2004 BZ$_{13}$ = 1994 DQ**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57594)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.52655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29251078 | $\omega$ | 285.96453 | | +0.36319062 | −0.93169892 | |
| $a$ | 2.2475436 | $\Omega$ | 142.73775 | | +0.85823656 | +0.33226604 | |
| $e$ | 0.1043889 | $i$ | 0.51564 | | +0.36266043 | +0.14675284 | |
| $P$ | 3.37 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | 0.2− | 0.5− | 2004 01 30 | 704 | 0.9− | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.5− | |
| 1994 02 16 | 691 | 0.2− | 0.6− | 2004 01 30 | 704 | 0.4− | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.0 | |
| 1994 02 16 | 691 | 0.1+ | 1.1− | 2004 01 30 | 704 | 0.4+ | 0.7− | 2006 11 14 | 691 | 0.1− | 0.0 | |
| 1994 02 19 | 691 | 0.9− | 0.4− | 2004 01 30 | 704 | 0.3+ | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.1+ | |
| 1994 02 19 | 691 | 0.0 | 0.9− | 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.0 | |
| 1994 02 19 | 691 | 0.2+ | 0.2− | 2004 02 17 | 644 | 0.2+ | 0.8+ | 2006 11 18 | 704 | (2.8+ | 2.9+) | |
| 1999 09 18 | 691 | 0.0 | 0.3− | 2004 02 17 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.5+ | |
| 1999 09 18 | 691 | 0.1− | 0.4− | 2004 02 22 | 704 | 0.3+ | 0.8+ | 2006 11 18 | 704 | (1.5+ | 2.2+) | |
| 1999 09 18 | 691 | 0.0 | 0.3− | 2004 02 22 | 704 | 0.4− | 0.1+ | 2006 11 18 | 704 | (1.4+ | 2.4+) | |
| 2001 03 26 | 691 | 0.3+ | 0.3+ | 2004 02 22 | 704 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.1− | 0.0 | |
| 2001 03 26 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.0 | |
| 2001 03 26 | 691 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.1− | |
| 2001 04 18 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.6− | 0.2− | |
| 2001 04 18 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.2+ | |
| 2001 04 18 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1+ | |
| 2004 01 17 | 644 | 0.7+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 21 | 691 | 0.0 | 0.1+ | |
| 2004 01 17 | 644 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 21 | 691 | 0.1+ | 0.0 | |
| 2004 01 17 | 644 | 0.7+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 1.1− | 0.7+ | |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.1− | 0.8+ | |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.4+ | |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.8+ | |
| 2004 01 21 | 704 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.4+ | |
| 2004 01 21 | 704 | 1.1+ | 0.9− | 2006 10 28 | 704 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.5− | |
| 2004 01 21 | 704 | 0.1− | 0.4+ | 2006 10 28 | 704 | 0.5+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.4− | |
| 2004 01 24 | 704 | (0.6− | 3.1+) | 2006 10 28 | 704 | 0.1+ | 0.9− | 2006 11 27 | G96 | 0.5+ | 0.5− | |
| 2004 01 24 | 704 | (1.6− | 1.9+) | 2006 11 09 | 644 | 0.8+ | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.4− | |
| 2004 01 24 | 704 | (0.0 | 2.4+) | 2006 11 09 | 644 | 0.4+ | 0.6− | 2006 11 29 | 704 | 0.4− | 0.2− | |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.6+ | 0.5− | 2006 11 29 | 704 | 0.2+ | 1.1+ | |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.5+ | 2006 11 29 | 704 | 0.5− | 0.4+ | |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.4+ | |
| 2004 01 30 | 691 | 0.4− | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2− | 0.8+ | |
| 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.0 | | | | | |
| 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.6− | 1.2+ | | | | | |

**(144024)∗ 2004 BA$_{14}$ = 1996 FE$_{11}$ = 2002 TT$_{106}$**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 57595)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.24731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23381500 | $\omega$ | 138.14424 | | −0.16244951 | −0.98625207 | |
| $a$ | 2.6094830 | $\Omega$ | 321.17651 | | +0.89199137 | −0.13366410 | |
| $e$ | 0.0080085 | $i$ | 2.76863 | | +0.42185489 | −0.09716359 | |
| $P$ | 4.22 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 22 | 691 | 1.0− | 0.2+ | 2002 10 06 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.2− | 1.2− |
| 1996 03 22 | 691 | 0.6− | 0.0 | 2002 10 06 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 1.3− | 0.2+ |
| 1996 03 22 | 691 | 0.6− | 0.1+ | 2002 10 09 | 704 | (2.2− | 0.4+) | 2006 08 28 | 703 | 0.3+ | 0.5− |
| 1996 03 28 | 691 | 0.1+ | 0.3− | 2002 10 09 | 704 | 0.4− | 0.8+ | 2006 08 28 | 703 | 0.4− | 0.6− |
| 1996 03 28 | 691 | 0.5+ | 0.0 | 2002 10 09 | 704 | 0.4− | 1.0+ | 2006 09 15 | 691 | 0.3+ | 0.2+ |
| 1996 03 28 | 691 | 0.5+ | 0.0 | 2002 10 09 | 704 | 0.5+ | 0.8− | 2006 09 15 | 691 | 0.3+ | 0.3+ |
| 2000 01 12 | 691 | 0.1− | 0.4− | 2004 01 17 | 644 | 0.2− | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.2+ |
| 2000 01 12 | 691 | 0.0 | 0.4− | 2004 01 17 | 644 | 0.3− | 0.4+ | 2006 09 17 | 704 | 0.3+ | 0.8− |
| 2000 01 12 | 691 | 0.1+ | 0.3− | 2004 01 17 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.4− | 0.1+ |
| 2000 02 03 | 691 | 0.1− | 0.1− | 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.5+ |
| 2000 02 03 | 691 | 0.2− | 0.5− | 2004 01 19 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 1.0− | 0.1+ |
| 2000 02 03 | 691 | 0.0 | 0.5− | 2004 01 19 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.1+ |
| 2000 02 11 | 691 | 0.5+ | 0.7− | 2004 01 24 | 704 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.3− |
| 2000 02 11 | 691 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.1+ | 0.6− | 2006 09 19 | 699 | 0.2− | 0.9+ |
| 2000 02 11 | 691 | 0.3+ | 0.1− | 2004 01 24 | 704 | 0.3+ | 1.0+ | 2006 09 20 | 704 | 0.8+ | 0.3+ |
| 2000 03 03 | 704 | 0.8+ | 0.1+ | 2004 01 28 | 691 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.7− |
| 2000 03 03 | 704 | 0.4+ | 0.2− | 2004 01 28 | 691 | 0.2− | 0.3+ | 2006 09 20 | 704 | (0.7− | 1.8−) |
| 2000 03 03 | 704 | 0.6+ | 0.3+ | 2004 01 28 | 691 | 0.3− | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.0 | 2004 01 30 | 704 | 0.4+ | 0.3+ | 2006 09 23 | 691 | 0.4+ | 0.3− |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2004 01 30 | 704 | 0.8+ | 0.9+ | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2002 10 04 | 644 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.8+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.2− |
| 2002 10 04 | 644 | 0.3+ | 0.0 | 2004 02 14 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.4− |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2004 02 14 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.3− |
| 2002 10 05 | 644 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.5− |
| 2002 10 05 | 644 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.3− | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2002 10 05 | 644 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.6+ | 0.7− |
| 2002 10 06 | 644 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.7+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.6− |

**(144025)∗ 2004 BC$_{15}$ = 2002 TU$_{253}$ = 2003 YU$_{137}$**

Discovered 2004 Jan. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.88546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24729171 | $\omega$ | 5.96590 | | +0.67961385 | −0.73336472 | |
| $a$ | 2.5137940 | $\Omega$ | 41.22248 | | +0.67194385 | +0.61285453 | |
| $e$ | 0.0410146 | $i$ | 1.50912 | | +0.29430678 | +0.29425415 | |
| $P$ | 3.99 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.6− | 0.0 | 2004 01 19 | 703 | 0.2+ | 0.2− | 2005 06 14 | G96 | 0.2− | 0.5+ |
| 2000 01 29 | 704 | 0.4+ | 0.7+ | 2004 01 19 | 703 | 0.4− | 0.4+ | 2005 06 14 | G96 | 0.4− | 0.5+ |
| 2000 01 29 | 704 | 0.5+ | 0.7+ | 2004 01 19 | 703 | 0.9− | 0.7− | 2005 06 14 | G96 | 0.6− | 0.5+ |
| 2000 01 29 | 704 | 0.0 | 0.4+ | 2004 01 19 | 703 | 0.7− | 0.3− | 2006 08 23 | 644 | 0.1− | 0.0 |
| 2002 09 12 | 644 | 0.6− | 0.4+ | 2004 01 22 | 704 | 0.1+ | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.0 |
| 2002 09 12 | 644 | 0.5− | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.7+ | 2006 08 23 | 644 | 0.3+ | 0.5+ |
| 2002 09 12 | 644 | 0.2− | 0.4+ | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2006 09 12 | 703 | 1.0− | 1.0− |
| 2002 09 17 | 608 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.5− | 0.5+ | 2006 09 12 | 703 | 0.4− | 0.2+ |
| 2002 09 17 | 608 | 0.7− | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.8+ | 2006 09 12 | 703 | 0.9− | 0.3− |
| 2002 09 17 | 608 | 0.4− | 0.1− | 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.8− | 0.4− |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 09 16 | 699 | 1.1+ | 0.5+ |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.6− | 0.1+ |
| 2002 10 03 | 704 | 0.6− | 1.5+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 699 | 0.9+ | 0.8+ |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2004 01 30 | 704 | 0.1+ | 0.0 | 2006 09 16 | 699 | 1.2+ | 0.6− |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2004 01 30 | 704 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.0 | 0.1+ |
| 2002 10 09 | 291 | 0.2+ | 0.3+ | 2004 02 13 | 691 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.1− | 1.2+ |
| 2002 10 09 | 291 | 0.3+ | 0.2+ | 2004 02 13 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.2+ |
| 2002 10 09 | 291 | 0.3+ | 0.2+ | 2004 02 13 | 691 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.6− | 0.7+ |
| 2002 10 11 | 704 | 0.7− | 0.1+ | 2004 02 15 | 704 | 1.1− | 1.4− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 1.4− | 0.2+ | 2004 02 15 | 704 | (1.5+ | 1.0+) | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 1.2− | 0.2+ | 2004 02 15 | 704 | 0.4+ | 1.0− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2003 12 21 | 691 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.8+ | 0.6− | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2004 02 23 | 704 | 1.2+ | 0.9− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2003 12 21 | 691 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 2003 12 27 | 704 | 1.0+ | 0.9+ | 2004 02 23 | 704 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2003 12 27 | 704 | 0.7+ | 0.9+ | 2004 02 23 | 704 | 0.7+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2003 12 27 | 704 | (0.5− | 2.5+) | 2004 02 23 | 704 | 0.4− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2003 12 27 | 704 | (0.9− | 2.0+) | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2003 12 29 | 699 | 0.3+ | 0.8− | 2005 05 10 | G96 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2003 12 29 | 699 | 1.2− | 0.6+ | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2003 12 29 | 699 | 0.8− | 0.1− | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.7− | 1.1− |
| 2003 12 29 | 699 | 0.3+ | 1.0+ | 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3− | 1.3− |
| 2004 01 16 | 644 | 0.5+ | 0.2+ | 2005 06 06 | 691 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2004 01 16 | 644 | 0.2+ | 0.2+ | 2005 06 06 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2004 01 16 | 644 | 0.3+ | 0.2+ | 2005 06 11 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2005 06 11 | 691 | 0.6+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2004 01 16 | 691 | 0.1+ | 0.1+ | 2005 06 11 | 691 | 0.2+ | 0.1− | | | | |
| 2004 01 16 | 691 | 0.1+ | 0.0 | 2005 06 14 | G96 | 0.4+ | 0.5+ | | | | |

**(144026)∗ 2004 BP$_{15}$**

Discovered 2004 Jan. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.79444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26390091 | $\omega$ | 231.58205 | | +0.86662799 | −0.49866195 | |
| $a$ | 2.4071812 | $\Omega$ | 158.31322 | | +0.47098930 | +0.80626659 | |
| $e$ | 0.1825860 | $i$ | 2.65129 | | +0.16469671 | +0.31823018 | |
| $P$ | 3.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.5+ | 0.2− | 2005 04 30 | 691 | 0.6− | 0.8+ | 2006 08 31 | 704 | 0.0 | 0.8+ |
| 1999 12 08 | 704 | 0.4− | 0.5− | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 09 12 | 704 | 1.3+ | 0.6+ |
| 1999 12 08 | 704 | 0.2− | 0.8− | 2006 08 14 | 644 | 0.3+ | 0.2+ | 2006 09 12 | 704 | 0.0 | 0.6+ |
| 1999 12 08 | 704 | 0.1+ | 0.2− | 2006 08 14 | 644 | 0.1− | 0.3+ | 2006 09 12 | 704 | 0.2− | 1.0+ |
| 1999 12 08 | 704 | 0.8− | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 12 | 704 | 1.0+ | 1.3+ |
| 2001 03 17 | 691 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 12 | 704 | 0.1− | 0.4+ |
| 2001 03 17 | 691 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.2+ |
| 2001 03 17 | 691 | 0.2+ | 0.1− | 2006 08 18 | 699 | 0.8+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.7+ |
| 2002 07 14 | 704 | 0.7+ | 0.2+ | 2006 08 18 | 699 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.6− | 1.1− |
| 2002 07 14 | 704 | 0.6+ | 1.2+ | 2006 08 18 | 699 | 0.9− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.7+ |
| 2002 07 14 | 704 | 0.4+ | 0.5+ | 2006 08 18 | 699 | 0.0 | 0.0 | 2006 09 17 | 704 | (0.2− | 2.1+) |
| 2002 07 20 | 644 | 0.3− | 0.5− | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | (0.7+ | 2.5+) |
| 2002 07 20 | 644 | 0.2− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 1.4− | 0.8+ |
| 2002 07 20 | 644 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.4+ |
| 2004 01 17 | 691 | 0.2+ | 0.2+ | 2006 08 21 | 704 | 0.3+ | 0.5− | 2006 09 18 | 699 | 0.5+ | 0.2− |
| 2004 01 17 | 691 | 0.2+ | 0.3+ | 2006 08 21 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 699 | 1.2− | 0.2− |
| 2004 01 17 | 691 | 0.2+ | 0.4+ | 2006 08 21 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.3− | 1.0+ |
| 2004 01 19 | 703 | 0.5+ | 0.7+ | 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.1+ |
| 2004 01 19 | 703 | 1.0− | 0.7+ | 2006 08 21 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2004 01 19 | 703 | (1.7− | 0.5+) | 2006 08 21 | 691 | 0.3− | 0.8+ | 2006 09 20 | 704 | 0.0 | 0.3+ |
| 2004 01 19 | 703 | 1.0− | 1.5+ | 2006 08 21 | 704 | 0.8+ | 1.0− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2004 01 21 | 704 | 0.5+ | 1.0+ | 2006 08 21 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2004 01 21 | 704 | 0.9+ | 0.6+ | 2006 08 25 | 704 | 0.2+ | 1.4+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2004 01 21 | 704 | 0.6+ | 0.3+ | 2006 08 25 | 704 | 0.4+ | 1.0+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2004 01 22 | 644 | 0.4+ | 0.5+ | 2006 08 25 | 704 | 0.9+ | 0.4− | 2006 09 27 | 704 | 0.3− | 0.0 |
| 2004 01 22 | 644 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.1− | 0.7+ | 2006 09 27 | 704 | 1.2− | 0.2− |
| 2004 01 22 | 644 | 0.2− | 0.5+ | 2006 08 25 | 704 | (0.3− | 1.6+) | 2006 09 27 | 704 | 0.5− | 0.1− |
| 2004 01 24 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.6+ | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.3+ |
| 2004 01 24 | 704 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.3+ | 2006 09 27 | 704 | (1.1− | 1.6+) |
| 2004 01 24 | 704 | 0.6+ | 0.4+ | 2006 08 28 | 703 | (0.7− | 2.6−) | 2006 09 28 | 704 | (2.5− | 0.4+) |
| 2004 01 24 | 704 | 0.9+ | 0.0 | 2006 08 28 | 703 | (2.0+ | 1.2−) | 2006 09 28 | 704 | 1.0− | 0.7+ |
| 2004 01 26 | 699 | (1.6− | 0.5+) | 2006 08 28 | 691 | 0.2− | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.6− |
| 2004 01 26 | 699 | 0.4− | 0.7− | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2004 01 26 | 699 | 0.6− | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2004 01 26 | 699 | 0.4+ | 0.7+ | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2004 01 28 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 699 | 0.5− | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 699 | (2.0− | 1.2+) | 2006 10 22 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 691 | 0.0 | 0.4+ | 2006 08 29 | 704 | 0.8+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 704 | 1.1+ | 0.7+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2004 02 11 | 691 | 0.3+ | 0.6+ | 2006 08 29 | 704 | 0.9+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2004 04 13 | 645 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.5− | 1.0+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2004 04 13 | 645 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 08 30 | 704 | (2.4− | 1.5+) | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 08 31 | 704 | 0.5− | 0.0 | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2005 04 16 | 691 | 0.2+ | 0.5+ | 2006 08 31 | 704 | 0.2− | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2005 04 30 | 691 | 0.1+ | 0.6+ | 2006 08 31 | 704 | 0.5− | 1.3+ | 2006 11 27 | G96 | 0.5− | 0.1− |
| 2005 04 30 | 691 | 0.1+ | 0.5+ | 2006 08 31 | 704 | 0.3+ | 0.6+ | | | | |

**(144027)∗ 2004 BB$_{19}$**

Discovered 2004 Jan. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.79324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24036475 | $\omega$ | 248.15075 | | +0.75560322 | +0.64697055 | |
| $a$ | 2.5618608 | $\Omega$ | 71.38021 | | −0.55397859 | +0.71462145 | |
| $e$ | 0.0352486 | $i$ | 6.20537 | | −0.34953038 | +0.26597986 | |
| $P$ | 4.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 17 | 608 | 1.2− | 0.1+ | 2004 02 17 | 644 | 0.5+ | 0.7+ | 2006 09 26 | 704 | 1.2− | 0.5+ |
| 2002 09 17 | 608 | 0.9− | 0.1+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 09 26 | 704 | (1.6− | 1.1+) |
| 2002 09 17 | 608 | (1.8− | 0.6+) | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.6− | 0.1− |
| 2002 10 15 | 644 | 0.7− | 0.5+ | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.6+ |
| 2002 10 15 | 644 | 0.6− | 0.1+ | 2004 02 18 | 691 | 0.0 | 0.5+ | 2006 09 26 | 703 | 1.1+ | 0.6+ |
| 2002 10 15 | 644 | (0.2+ | 1.5+) | 2004 02 18 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 704 | (0.4+ | 1.9+) |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.8+ |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.8+ | 0.5+ |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.8− |
| 2004 01 16 | 644 | 1.2+ | 1.0+ | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.2− |
| 2004 01 16 | 644 | 0.3+ | 0.2+ | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.2− | 1.5− |
| 2004 01 16 | 644 | 0.2+ | 0.3+ | 2005 06 13 | G96 | 0.5+ | 0.4+ | 2006 10 16 | 703 | (0.2+ | 2.5−) |
| 2004 01 20 | 704 | 0.5+ | 0.3+ | 2005 06 13 | G96 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 01 20 | 704 | 0.8+ | 0.5+ | 2005 06 13 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.7+ |
| 2004 01 20 | 704 | 0.3+ | 1.2+ | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2004 01 26 | 699 | 0.3− | 0.2+ | 2005 06 17 | 691 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.5+ |
| 2004 01 26 | 699 | 0.1+ | 1.1+ | 2005 06 17 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2004 01 26 | 699 | 0.3+ | 0.8+ | 2005 06 17 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2004 01 26 | 699 | (0.0 | 1.8+) | 2006 09 18 | 703 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2004 01 30 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 09 18 | 703 | 1.1+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2004 01 30 | 704 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 1.0+ | 0.2− |
| 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.8− | 1.1+ | 2006 10 22 | 703 | (1.6+ | 1.8+) |
| 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.9− | 0.5+ | 2006 10 22 | 703 | 0.5− | 1.3+ |
| 2004 02 15 | 704 | 0.4+ | 1.4+ | 2006 09 18 | 699 | 0.8− | 0.7+ | 2006 10 22 | 703 | 0.8+ | 1.0+ |
| 2004 02 15 | 704 | 0.1− | 0.0 | 2006 09 18 | 699 | (0.6+ | 2.4+) | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2004 02 15 | 704 | 0.1− | 0.2+ | 2006 09 26 | 704 | 1.1− | 1.0+ | 2006 11 25 | G96 | 0.3+ | 0.0 |
| 2004 02 17 | 644 | 0.3+ | 0.7+ | 2006 09 26 | 704 | 1.1− | 0.5+ | 2006 11 25 | G96 | 0.2− | 0.4+ |
| 2004 02 17 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 1.3− | 0.5− | 2006 11 25 | G96 | 0.2− | 0.1+ |

**(144028)∗ 2004 BF$_{20}$**

Discovered 2004 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.64052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26448226 | $\omega$ | 127.81976 | | −0.94073546 | −0.30728585 | |
| $a$ | 2.4036525 | $\Omega$ | 34.95741 | | +0.17402825 | −0.80056073 | |
| $e$ | 0.1931456 | $i$ | 14.50416 | | +0.29108582 | −0.51446859 | |
| $P$ | 3.73 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.4+ | 0.5− | 2004 01 30 | 703 | (0.9+ | 1.6+) | 2006 09 26 | 704 | 0.2− | 0.1+ |
| 1999 11 01 | 704 | 0.4− | 0.0 | 2004 01 30 | 703 | 0.9− | 0.4+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 1999 11 01 | 704 | 0.2− | 0.1− | 2004 01 30 | 703 | 0.4+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 1999 12 13 | 704 | 0.6+ | 0.6− | 2004 01 30 | 703 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1999 12 13 | 704 | 0.3+ | 1.0− | 2004 02 03 | 704 | 1.0+ | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 1999 12 13 | 704 | 0.2− | 1.0− | 2004 02 03 | 704 | 0.9+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 1999 12 13 | 704 | 0.3+ | 1.1− | 2004 02 03 | 704 | 1.4+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.3− |
| 2002 09 10 | 644 | 0.7− | 0.4− | 2004 02 03 | 704 | 1.4+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2002 09 10 | 644 | 0.8− | 0.5− | 2004 02 03 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 09 10 | 644 | 0.4− | 0.1− | 2004 02 09 | 699 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.3+ | 0.6+ |
| 2002 09 17 | 644 | (0.3− | 1.5+) | 2004 02 09 | 699 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2002 09 17 | 644 | 0.2− | 1.2+ | 2004 02 09 | 699 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 09 17 | 644 | (0.3− | 1.5+) | 2004 02 09 | 699 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.0 | 2004 02 10 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.7− | 0.7+ | 2004 02 10 | 704 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.1+ | 2004 02 10 | 704 | 1.0+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.6− | 1.3+ | 2004 02 10 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 1.5− | 2004 02 10 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.3− |
| 2002 10 05 | 704 | 0.5+ | 0.6+ | 2004 03 01 | 704 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.9− | 0.5− |
| 2002 10 05 | 704 | 0.2+ | 0.5+ | 2004 03 01 | 704 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.5− |
| 2002 10 05 | 704 | 0.5− | 1.4+ | 2004 03 01 | 704 | 0.9+ | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 2003 11 21 | 644 | 0.0 | 0.1+ | 2004 03 01 | 704 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2003 11 21 | 644 | 0.0 | 0.2+ | 2004 03 01 | 704 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.0 | 0.8− |
| 2003 11 21 | 644 | 0.2+ | 0.2+ | 2004 03 23 | 703 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2003 11 24 | 703 | 0.3+ | 1.0− | 2004 03 23 | 703 | 0.7+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.5− |
| 2003 11 24 | 703 | 0.5+ | 0.2− | 2004 03 23 | 703 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 11 24 | 703 | (1.4+ | 1.5+) | 2004 03 23 | 703 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2003 11 24 | 703 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 12 03 | 704 | 0.2− | 0.6+ | 2004 03 28 | 704 | 0.7+ | 0.5− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2003 12 03 | 704 | 1.0− | 0.1− | 2004 03 28 | 704 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2003 12 03 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2003 12 03 | 704 | 0.5− | 0.7− | 2004 03 28 | 704 | 0.5− | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2003 12 17 | 704 | 0.2+ | 0.1− | 2004 04 12 | 704 | (1.7− | 1.8+) | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2003 12 17 | 704 | 0.7+ | 0.5− | 2004 04 12 | 704 | 0.2+ | 1.4+ | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 2003 12 17 | 704 | 0.0 | 0.8− | 2004 04 12 | 704 | 0.7− | 1.5+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2003 12 17 | 704 | 0.8− | 0.4+ | 2004 04 12 | 704 | 0.9− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 01 19 | 704 | 0.1− | 0.3+ | 2004 04 22 | 703 | 0.9− | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2004 01 19 | 704 | 0.6− | 0.0 | 2004 04 22 | 703 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2004 01 19 | 704 | 0.7− | 0.1+ | 2004 04 22 | 703 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 01 19 | 704 | 0.4− | 0.0 | 2004 04 22 | 703 | 0.7− | 1.4+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2004 01 19 | 704 | 0.4− | 0.3− | 2004 05 12 | 704 | 0.4+ | 0.6− | 2006 11 07 | 644 | 0.3+ | 0.0 |
| 2004 01 20 | 704 | 0.6− | 0.1+ | 2004 05 12 | 704 | 0.0 | 1.3+ | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2004 01 20 | 704 | 0.7− | 0.2+ | 2004 05 12 | 704 | 0.4+ | 0.5+ | 2006 11 07 | 644 | 0.4+ | 0.1− |
| 2004 01 20 | 704 | (1.6+ | 1.2+) | 2004 05 12 | 704 | 0.4− | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2004 01 21 | 704 | 0.0 | 0.4− | 2004 05 21 | 703 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.3+ | 0.6− |
| 2004 01 21 | 704 | 0.4− | 0.1− | 2004 05 21 | 703 | (0.1+ | 3.3+) | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 01 21 | 704 | 0.6− | 0.0 | 2004 05 21 | 703 | 1.1− | 0.8+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2004 01 21 | 704 | (1.9− | 0.3−) | 2004 05 21 | 703 | (0.0 | 1.6+) | 2006 11 11 | 703 | 0.3− | 1.5− |
| 2004 01 21 | 704 | 0.5− | 0.6− | 2004 05 23 | 704 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2004 01 21 | 704 | 0.4+ | 0.1− | 2004 05 23 | 704 | 0.7+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2004 01 21 | 704 | 0.3+ | 0.8− | 2004 05 23 | 704 | (0.6− | 1.7+) | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2004 01 23 | 704 | 0.3− | 0.3+ | 2004 05 23 | 704 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.8− |
| 2004 01 23 | 704 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2004 01 23 | 704 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2004 01 23 | 704 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.9+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.6− |
| 2004 01 23 | 704 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.5+ | | | | |

**(144029)∗ 2004 BM$_{20}$**

Discovered 2004 Jan. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.01268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23561609 | $\omega$ | 345.00580 | | +0.61132192 | −0.78262850 | |
| $a$ | 2.5961677 | $\Omega$ | 67.16833 | | +0.73855613 | +0.51092243 | |
| $e$ | 0.1162774 | $i$ | 7.31701 | | +0.28428922 | +0.35559936 | |
| $P$ | 4.18 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 608 | 0.3− | 1.3+ | 2003 12 23 | 704 | 0.1− | 0.4+ | 2004 02 17 | 106 | 0.2− | 0.1− |
| 2002 08 18 | 608 | 1.0− | 0.3+ | 2003 12 23 | 704 | 0.0 | 0.1+ | 2004 02 17 | 106 | 0.3− | 0.3− |
| 2002 08 18 | 608 | 0.3− | 0.6+ | 2003 12 23 | 704 | 0.7− | 0.0 | 2004 02 17 | 106 | 0.0 | 0.2− |
| 2002 08 19 | 644 | 0.1− | 0.2+ | 2003 12 23 | 704 | 0.1− | 0.1+ | 2005 04 02 | 691 | 0.4+ | 0.4+ |
| 2002 08 19 | 644 | 0.2− | 0.2+ | 2003 12 28 | 704 | 0.7+ | 0.0 | 2005 04 02 | 691 | 0.4+ | 0.2+ |
| 2002 08 19 | 644 | 0.1− | 0.3+ | 2003 12 28 | 704 | 0.5+ | 0.4+ | 2005 04 02 | 691 | 0.3+ | 0.0 |
| 2002 09 01 | 608 | 0.1− | 0.1+ | 2003 12 28 | 704 | 0.5+ | 0.2+ | 2005 04 30 | 691 | 0.3− | 0.5+ |
| 2002 09 01 | 608 | 0.6− | 0.4+ | 2003 12 28 | 704 | 0.6+ | 0.3+ | 2005 04 30 | 691 | 0.1− | 0.5+ |
| 2002 09 01 | 608 | 0.7− | 0.6+ | 2004 01 16 | 703 | 0.8− | 0.7+ | 2005 04 30 | 691 | 0.1+ | 0.7+ |
| 2002 09 09 | 644 | 0.1+ | 1.2+ | 2004 01 16 | 703 | 1.0− | 0.7+ | 2006 07 31 | E12 | 0.1− | 0.4+ |
| 2002 09 09 | 644 | 0.2− | 1.6+ | 2004 01 16 | 703 | 0.3− | 0.4− | 2006 07 31 | E12 | 0.7− | 0.1+ |
| 2002 09 09 | 644 | 0.3+ | 1.2+ | 2004 01 16 | 703 | 0.6− | 0.1+ | 2006 07 31 | E12 | 0.1− | 0.4+ |
| 2003 10 24 | 704 | 0.4− | 0.5+ | 2004 01 19 | 699 | 0.3+ | 0.7+ | 2006 07 31 | E12 | 0.8+ | 0.2+ |
| 2003 10 24 | 704 | 1.0− | 0.7+ | 2004 01 19 | 699 | 1.0+ | 0.4+ | 2006 08 12 | 644 | 0.3− | 1.0+ |
| 2003 10 24 | 704 | 0.9− | 0.7+ | 2004 01 19 | 699 | 1.0− | 0.1− | 2006 08 12 | 644 | 0.1− | 0.4+ |
| 2003 11 20 | 704 | 1.1+ | 1.2+ | 2004 01 19 | 699 | 0.2− | 0.3− | 2006 08 12 | 644 | 0.1+ | 0.4+ |
| 2003 11 20 | 704 | 1.0+ | 1.4+ | 2004 01 31 | 704 | 0.4− | 0.3+ | 2006 08 14 | 644 | 0.2− | 0.7+ |
| 2003 11 20 | 704 | 0.9+ | 1.7+ | 2004 01 31 | 704 | 0.1+ | 0.9+ | 2006 08 14 | 644 | 0.1− | 0.6+ |
| 2003 11 20 | 704 | 1.4+ | 0.4+ | 2004 01 31 | 704 | 0.2− | 1.3+ | 2006 08 14 | 644 | 0.2− | 0.3+ |
| 2003 12 18 | 704 | (2.0− | 0.7+) | 2004 01 31 | 704 | 0.0 | 0.8+ | 2006 08 26 | E12 | 0.5− | 0.5+ |
| 2003 12 18 | 704 | 1.5+ | 0.5+ | 2004 01 31 | 704 | 0.8− | 0.7+ | 2006 08 26 | E12 | (1.8− | 2.3−) |
| 2003 12 18 | 704 | 1.4+ | 0.1− | 2004 02 14 | 704 | 0.3− | 1.3+ | 2006 08 26 | E12 | 0.6+ | 0.7+ |
| 2003 12 18 | 704 | 1.3+ | 0.8− | 2004 02 14 | 704 | 0.1− | 0.3− | 2006 08 26 | E12 | 0.3− | 0.6+ |
| 2003 12 18 | 704 | 1.7+ | 0.5+ | 2004 02 14 | 704 | 0.2− | 0.4+ | | | | |
| 2003 12 23 | 704 | 0.4− | 0.2+ | 2004 02 14 | 704 | 1.1− | 0.5+ | | | | |

**(144030)∗ 2004 BP$_{20}$**

Discovered 2004 Jan. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.71299 | | (2000.0) | | | |
| $n$ | 0.28421927 | $\omega$ | 87.49087 | | +0.47531183 | −0.87824947 |
| $a$ | 2.2910454 | $\Omega$ | 333.92454 | | +0.75229055 | +0.43663617 |
| $e$ | 0.0829334 | $i$ | 6.86008 | | +0.45622100 | +0.19500440 |
| $P$ | 3.47 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6− | 0.3+ | 2004 01 16 | 703 | 0.2+ | 0.9+ | 2006 09 17 | 703 | 0.4− | 0.1+ |
| 1999 10 10 | 704 | 0.5− | 0.1+ | 2004 01 16 | 703 | 0.2− | 1.2− | 2006 09 17 | 703 | 0.5− | 0.3− |
| 1999 10 10 | 704 | 0.9+ | 1.1+ | 2004 01 16 | 703 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.3+ |
| 1999 10 10 | 704 | 0.1− | 0.9+ | 2004 01 16 | 703 | 0.2+ | 1.1+ | 2006 09 23 | B01 | 0.1− | 0.5+ |
| 1999 10 10 | 704 | 0.2+ | 0.1+ | 2004 01 19 | 699 | (2.2− | 0.2−) | 2006 09 23 | B01 | 0.3+ | 0.4+ |
| 1999 10 13 | 704 | 1.6− | 0.4− | 2004 01 19 | 699 | 0.3+ | 0.0 | 2006 09 23 | B01 | 0.7+ | 0.1+ |
| 1999 10 13 | 704 | 1.0+ | 1.3− | 2004 01 19 | 699 | 0.7− | 0.4− | 2006 09 28 | 703 | 1.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.6− | 0.2− | 2004 01 19 | 699 | 1.2− | 0.8+ | 2006 09 28 | 703 | 0.3− | 0.7+ |
| 1999 10 13 | 704 | 1.1+ | 0.7− | 2004 02 11 | 699 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.5+ |
| 2002 08 08 | 644 | 0.9+ | 0.6+ | 2004 02 11 | 699 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 0.6− | 0.2− |
| 2002 08 08 | 644 | 1.0+ | 0.1+ | 2004 02 11 | 699 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 08 08 | 644 | 0.8+ | 0.3+ | 2004 02 11 | 703 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2002 08 13 | 704 | 0.8− | 1.4− | 2004 02 11 | 703 | 0.5− | 0.6+ | 2006 10 11 | 644 | 1.3+ | 0.3+ |
| 2002 08 13 | 704 | 1.1− | 0.2− | 2004 02 11 | 699 | 0.4− | 0.1− | 2006 10 19 | A50 | 0.1+ | 0.6+ |
| 2002 08 13 | 704 | 0.5− | 0.0 | 2004 02 11 | 703 | 0.4− | 1.2+ | 2006 10 19 | A50 | 0.1+ | 0.6+ |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2004 02 11 | 703 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.2− | 1.0− |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2004 02 15 | 704 | 0.4− | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.3+ |
| 2003 12 23 | 704 | 0.7+ | 0.7+ | 2004 02 15 | 704 | 0.5− | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.3+ |
| 2003 12 23 | 704 | 0.7+ | 0.4+ | 2004 02 15 | 704 | (0.1+ | 2.1+) | 2006 11 15 | 703 | 0.4− | 0.9− |
| 2003 12 23 | 704 | (1.8+ | 1.5+) | 2004 02 23 | 704 | 0.6+ | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2003 12 23 | 704 | 0.2+ | 0.8+ | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 11 15 | 703 | 1.1− | 1.1− |
| 2003 12 28 | 704 | 0.8+ | 0.4− | 2004 02 23 | 704 | 0.5+ | 0.1− | 2006 11 15 | 703 | 0.1− | 0.4+ |
| 2003 12 28 | 704 | 0.5+ | 0.4− | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.9− |
| 2003 12 28 | 704 | 0.7+ | 0.7− | 2004 02 23 | 704 | 0.3− | 0.3− | | | | |
| 2003 12 28 | 704 | 0.6+ | 0.0 | 2006 09 17 | 703 | 0.3− | 0.0 | | | | |

**(144031)∗ 2004 BA$_{21}$**

Discovered 2004 Jan. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.76920 | | (2000.0) | | | |
| $n$ | 0.27827881 | $\omega$ | 117.03320 | | +0.64182609 | −0.75723648 |
| $a$ | 2.3235354 | $\Omega$ | 292.50655 | | +0.64895045 | +0.62043734 |
| $e$ | 0.1110549 | $i$ | 7.52887 | | +0.40856160 | +0.20408435 |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.2− | 0.1+ | 2004 01 24 | 704 | 0.9+ | 0.7+ | 2004 02 14 | 291 | 0.2+ | 0.3+ |
| 1999 10 13 | 704 | 0.4− | 0.8− | 2004 01 24 | 704 | 0.3− | 0.2− | 2004 03 17 | 645 | 0.1− | 0.2− |
| 1999 10 13 | 704 | 1.2+ | 1.1− | 2004 01 24 | 704 | (1.6+ | 0.5−) | 2004 03 17 | 645 | 0.1− | 0.1− |
| 1999 10 13 | 704 | 0.0 | 0.5− | 2004 01 24 | 704 | (1.8+ | 0.1+) | 2006 09 28 | 703 | 0.4− | 0.2+ |
| 2002 07 12 | 599 | 0.0 | 0.6+ | 2004 01 24 | 704 | 1.1+ | 0.1− | 2006 09 28 | 703 | (0.1+ | 1.9+) |
| 2002 07 12 | 599 | 1.0− | 0.8+ | 2004 01 26 | 699 | 0.1+ | 1.4+ | 2006 09 28 | 703 | 0.9+ | 1.1+ |
| 2002 07 12 | 599 | 0.1+ | 0.6+ | 2004 01 26 | 699 | 0.8− | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.7− |
| 2002 08 07 | 644 | 0.3− | 0.6+ | 2004 01 26 | 699 | 0.4+ | 1.1− | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2002 08 07 | 644 | 0.2− | 0.6+ | 2004 01 26 | 699 | 0.4− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2002 08 07 | 644 | 0.4− | 1.2+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.4+ | 0.4+ |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2004 01 27 | 691 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.1− | 0.5+ |
| 2004 01 16 | 691 | 0.3+ | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2004 01 16 | 691 | 0.3+ | 0.0 | 2004 02 11 | 699 | 0.8+ | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2004 01 19 | 699 | 0.3− | 0.6+ | 2004 02 11 | 699 | (2.3+ | 0.2+) | 2006 10 27 | 703 | 0.1− | 0.7− |
| 2004 01 19 | 699 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 0.5− | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.1− |
| 2004 01 19 | 699 | 0.5− | 0.1− | 2004 02 11 | 699 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.3− |
| 2004 01 19 | 699 | 1.1− | 0.3− | 2004 02 13 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2004 01 21 | 704 | 0.0 | 0.8+ | 2004 02 13 | 691 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.7+ | 0.5− |
| 2004 01 21 | 704 | 0.3+ | 0.2+ | 2004 02 13 | 691 | 0.8+ | 0.0 | 2006 11 14 | 703 | 0.7− | 0.2+ |
| 2004 01 21 | 704 | 0.1+ | 0.2− | 2004 02 14 | 291 | 0.5− | 0.2+ | 2006 11 14 | 703 | 1.0+ | 0.8+ |
| 2004 01 21 | 704 | 0.5+ | 0.2+ | 2004 02 14 | 291 | 0.2− | 0.3+ | 2006 11 14 | 703 | 1.4− | 0.4− |

**(144032)∗ 2004 BN$_{22}$ = 1995 VQ**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Id. A. Doppler (*MPO* 95160)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.56262 | | (2000.0) | | | |
| $n$ | 0.27157430 | $\omega$ | 35.36360 | | +0.94835387 | +0.31526075 |
| $a$ | 2.3616214 | $\Omega$ | 306.22212 | | −0.30014843 | +0.85595048 |
| $e$ | 0.2678975 | $i$ | 2.49728 | | −0.10264430 | +0.40982855 |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 10 | 046 | 0.3− | 0.3+ | 2006 08 25 | 704 | (0.6+ | 2.0+) | 2006 10 23 | 644 | 0.1− | 0.2− |
| 1995 11 10 | 046 | 0.2− | 0.2− | 2006 08 25 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 1995 11 10 | 046 | 0.1+ | 0.0 | 2006 08 25 | 704 | 1.2− | 1.0− | 2006 10 27 | 703 | 0.1+ | 0.7− |
| 1995 11 10 | 046 | 0.1− | 0.1− | 2006 08 30 | 704 | (0.0 | 2.3+) | 2006 10 27 | 703 | (3.2− | 1.4−) |
| 1995 11 11 | 046 | 0.3− | 0.7+ | 2006 08 30 | 704 | (0.1+ | 2.2+) | 2006 10 27 | 703 | (1.9+ | 0.6+) |
| 1995 11 11 | 046 | 0.4− | 0.7+ | 2006 08 30 | 704 | 0.1− | 1.2+ | 2006 10 29 | 704 | 0.4+ | 0.4+ |
| 1995 11 11 | 046 | 0.2− | 0.6+ | 2006 08 30 | 704 | 0.0 | 0.5+ | 2006 10 29 | 704 | 0.3+ | 0.5+ |
| 1995 11 11 | 046 | 0.2− | 0.5+ | 2006 09 29 | 704 | 1.1+ | 0.4+ | 2006 10 29 | 704 | 0.6+ | 0.1− |
| 1995 11 11 | 046 | 0.1− | 0.4+ | 2006 09 29 | 704 | 1.3+ | 0.1− | 2006 10 29 | 704 | 0.1+ | 0.7+ |
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.1+ | 1.3+ | 2006 10 29 | 704 | 0.9− | 0.9+ |
| 2001 04 16 | 645 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.7+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2002 06 06 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 1.4− | 1.1+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2002 06 06 | 704 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 13 | 644 | 0.0 | 0.3− |
| 2002 06 06 | 704 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 14 | 703 | 0.4+ | 0.9− |
| 2002 07 05 | 704 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 14 | 703 | 0.4+ | 0.8− |
| 2002 07 05 | 704 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2002 07 05 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.4− | 1.3+ |
| 2004 01 16 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | (0.5− | 1.6+) |
| 2004 01 16 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2004 01 16 | 691 | 0.2+ | 0.2+ | 2006 10 13 | 691 | 0.3− | 0.1− | 2006 11 16 | 704 | (1.6− | 1.7+) |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.6+ | 0.3+ |
| 2004 01 16 | 691 | 0.1+ | 0.3+ | 2006 10 13 | 691 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2004 01 17 | 644 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 704 | 0.2− | 0.9+ | 2006 11 19 | 704 | 0.2− | 0.2+ | | |
| 2004 01 21 | 704 | 0.5− | 0.2+ | 2006 10 19 | 704 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.2+ | | |
| 2004 01 21 | 704 | 1.2+ | 0.2− | 2006 10 19 | 704 | (0.8+ | 1.6+) | 2006 11 22 | 704 | 0.4+ | 0.0 | | |
| 2004 01 21 | 704 | 0.9− | 0.9+ | 2006 10 19 | 704 | 0.6+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.1+ | | |
| 2004 01 21 | 704 | 0.2− | 0.1− | 2006 10 19 | 704 | 0.0 | 0.6+ | 2006 11 22 | 704 | 0.2+ | 0.1+ | | |
| 2004 01 21 | 704 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.1+ | | |
| 2004 02 17 | 645 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1− | 0.3− | | |
| 2004 02 17 | 645 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.2− | | |
| 2005 03 17 | G96 | 0.6− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.2− | | |
| 2005 03 17 | G96 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.3− | | |
| 2005 03 17 | G96 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.7− | | |
| 2005 03 17 | G96 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.2− | | | | | | |

**(144033)∗ 2004 BO$_{22}$ = 2002 TY$_{70}$**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69631)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.82146 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26222164 | $\omega$ | 326.25018 | | +0.02619893 | | +0.99634928 |
| $a$ | 2.4174474 | $\Omega$ | 305.12226 | | −0.89381547 | | −0.01305100 |
| $e$ | 0.1004509 | $i$ | 5.70104 | | −0.44766898 | | +0.08436695 |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1− | 2004 01 17 | 644 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.6− | | |
| 1998 09 19 | 645 | 0.1+ | 0.2− | 2004 01 17 | 644 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.6− | 0.2− | | |
| 2002 10 03 | 644 | 0.5− | 0.2+ | 2004 01 21 | 704 | 0.5− | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.1− | | |
| 2002 10 03 | 644 | 0.2− | 0.5+ | 2004 01 21 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.6+ | 0.2− | | |
| 2002 10 03 | 644 | 0.3− | 0.2+ | 2004 01 21 | 704 | 0.1− | 0.6− | 2006 11 08 | 644 | 0.0 | 0.3− | | |
| 2002 10 04 | 699 | 0.7− | 0.4+ | 2004 01 21 | 704 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.2− | | |
| 2002 10 04 | 699 | (1.8− | 0.5+) | 2004 01 21 | 704 | 0.8+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.4+ | | |
| 2002 10 04 | 699 | (2.2− | 0.3−) | 2004 01 24 | 704 | (1.4+ | 2.1+) | 2006 11 08 | 644 | 0.4+ | 0.0 | | |
| 2002 10 04 | 699 | 0.7− | 0.5+ | 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2002 10 05 | 704 | 0.2+ | 0.4+ | 2004 01 24 | 704 | 0.3+ | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.2+ | 1.3+ | 2004 01 24 | 704 | 1.2− | 0.9+ | 2006 11 22 | 703 | 0.3− | 0.1− | | |
| 2002 10 05 | 704 | 0.1+ | 1.2+ | 2004 01 24 | 704 | 0.5+ | 0.7+ | 2006 11 22 | 703 | 0.9− | 0.3+ | | |
| 2002 10 31 | 644 | 0.3− | 0.0 | 2004 01 28 | 691 | 0.2− | 0.3− | 2006 11 22 | 703 | 0.5+ | 0.4+ | | |
| 2002 10 31 | 644 | 0.0 | 0.2+ | 2004 01 28 | 691 | 0.0 | 0.3− | 2006 11 22 | 703 | (1.6− | 1.0−) | | |
| 2002 10 31 | 644 | 0.1− | 0.0 | 2004 01 28 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.5− | | |
| 2002 11 22 | 644 | 0.1+ | 1.3+ | 2004 04 15 | 645 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.3− | 0.4− | | |
| 2002 11 22 | 644 | 0.4+ | 1.3+ | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.5− | | |
| 2002 11 22 | 644 | 0.6+ | 1.1+ | 2006 10 19 | 703 | 0.1+ | 0.9− | 2006 11 25 | G96 | 0.0 | 0.2− | | |
| 2003 12 29 | 699 | (3.3− | 2.0+) | 2006 10 19 | 703 | 0.6+ | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2003 12 29 | 699 | (0.5− | 2.9+) | 2006 10 19 | 703 | 0.8− | 0.6− | 2006 11 25 | G96 | 0.5+ | 0.3− | | |
| 2003 12 29 | 699 | 0.0 | 1.0+ | 2006 10 19 | 703 | 0.1+ | 0.4− | 2006 11 25 | G96 | 0.3+ | 0.6− | | |
| 2003 12 29 | 699 | 0.7+ | 0.3− | 2006 10 20 | A50 | 0.4− | 0.4− | 2006 11 25 | G96 | 0.3+ | 0.3− | | |
| 2004 01 17 | 644 | 0.2+ | 0.7+ | 2006 10 20 | A50 | 0.3− | 0.1+ | | | | | | |

**(144034)∗ 2004 BM$_{23}$ = 2000 EV$_{29}$ = 2002 TP$_{209}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61776)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.04309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23000798 | $\omega$ | 328.31665 | | −0.17771340 | | −0.97075234 |
| $a$ | 2.6381984 | $\Omega$ | 131.38309 | | +0.94185429 | | −0.21532015 |
| $e$ | 0.0295207 | $i$ | 12.42402 | | +0.28518143 | | +0.10619385 |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.1− | 1.6+ | 2003 12 25 | 645 | 0.1− | 0.2− | 2004 02 16 | 704 | 0.2− | 0.4− | | |
| 2000 03 05 | 704 | 0.4− | 0.9+ | 2004 01 18 | 644 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 0.3+ | 0.6+ | | |
| 2000 03 05 | 704 | 0.4+ | 0.5+ | 2004 01 18 | 644 | 0.2+ | 0.1+ | 2004 02 17 | 644 | 0.2+ | 0.4+ | | |
| 2000 03 05 | 704 | 0.7+ | 1.2+ | 2004 01 18 | 644 | 0.6+ | 0.1− | 2004 02 17 | 644 | 0.3+ | 0.1+ | | |
| 2000 03 05 | 704 | 0.0 | 0.4+ | 2004 01 21 | 704 | 0.2+ | 1.0+ | 2004 02 17 | 644 | 0.2+ | 0.5+ | | |
| 2000 03 05 | 704 | 0.3− | 0.8+ | 2004 01 21 | 704 | 0.1+ | 0.9+ | 2004 02 23 | 704 | 0.0 | 0.3+ | | |
| 2000 03 05 | 704 | 0.2+ | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.7+ | | |
| 2000 03 05 | 704 | 0.7− | 0.5− | 2004 01 21 | 704 | 0.2− | 0.7+ | 2004 02 23 | 704 | 0.2+ | 0.5+ | | |
| 2000 03 05 | 704 | 0.8− | 0.5+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.6+ | | |
| 2000 03 09 | 704 | 0.7+ | 0.9+ | 2004 01 30 | 704 | 0.2− | 0.1+ | 2004 02 23 | 704 | 1.0+ | 0.0 | | |
| 2000 03 09 | 704 | 0.7+ | 0.2− | 2004 01 30 | 704 | 0.6− | 0.3+ | 2004 04 16 | 645 | 0.2− | 0.1− | | |
| 2000 03 09 | 704 | 0.6+ | 0.1− | 2004 01 30 | 704 | 1.0− | 1.2+ | 2004 04 16 | 645 | 0.1− | 0.1− | | |
| 2000 03 09 | 704 | 1.2+ | 0.6− | 2004 01 30 | 704 | 0.2+ | 0.7− | 2004 04 17 | 291 | 0.9+ | 0.3+ | | |
| 2002 10 06 | 608 | 0.1− | 0.8− | 2004 01 30 | 691 | 0.0 | 0.0 | 2004 04 17 | 291 | 0.6+ | 0.3+ | | |
| 2002 10 06 | 608 | 0.0 | 0.8− | 2004 01 30 | 691 | 0.0 | 0.1− | 2004 04 17 | 291 | 0.6+ | 0.3+ | | |
| 2002 10 06 | 608 | 0.4− | 0.4− | 2004 02 10 | 644 | 0.4+ | 0.2− | 2005 06 29 | 644 | 0.5− | 0.5+ | | |
| 2002 10 08 | 699 | (1.7− | 0.0 ) | 2004 02 10 | 644 | 0.2+ | 0.1− | 2005 06 29 | 644 | 0.4− | 0.7+ | | |
| 2002 10 08 | 699 | 0.9− | 1.0+ | 2004 02 10 | 644 | 0.3+ | 0.5− | 2005 06 29 | 644 | 0.5− | 0.4+ | | |
| 2002 10 08 | 699 | (1.7+ | 0.5+) | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.3− | 0.8+ | | |
| 2002 10 08 | 699 | 0.1+ | 0.3+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.2+ | 0.8+ | | |
| 2002 10 16 | 644 | 0.3− | 0.8+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.2+ | 1.3+ | | |
| 2002 10 16 | 644 | 0.0 | 0.6+ | 2004 02 11 | 699 | 0.1+ | 0.1+ | 2006 09 20 | 703 | (0.3+ | 1.9+) | | |
| 2002 10 16 | 644 | 0.0 | 0.2+ | 2004 02 11 | 699 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4+ | | |
| 2002 11 05 | 644 | 0.4− | 1.0+ | 2004 02 11 | 699 | 0.7− | 0.5− | 2006 11 11 | G96 | 0.8+ | 0.1+ | | |
| 2002 11 05 | 644 | 0.0 | 0.8+ | 2004 02 11 | 699 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 2002 11 05 | 644 | 0.1− | 0.7+ | 2004 02 16 | 704 | (3.1+ | 1.0−) | 2006 11 11 | G96 | 0.4+ | 0.2+ | | |
| 2003 12 25 | 645 | 0.1− | 0.2− | 2004 02 16 | 704 | 1.0+ | 0.7+ | | | | | | |

**(144035)∗ 2004 BA$_{24}$**

Discovered 2004 Jan. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.26752 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26879238 | $\omega$ | 341.40577 | | −0.16316130 | | −0.98367981 |
| $a$ | 2.3778881 | $\Omega$ | 117.92428 | | +0.91572642 | | −0.17960294 |
| $e$ | 0.1507359 | $i$ | 4.92429 | | +0.36718322 | | +0.01080844 |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.0 | 1.1+ | 2004 01 19 | 699 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.2− | 0.3+ | | |
| 1999 12 05 | 704 | 0.5− | 0.2+ | 2004 01 19 | 699 | 0.4− | 0.1+ | 2004 02 15 | 704 | 0.1− | 0.5+ | | |
| 1999 12 05 | 704 | 0.0 | 1.0+ | 2004 01 21 | 704 | 0.4+ | 0.1− | 2004 02 15 | 704 | 0.2− | 0.2+ | | |
| 1999 12 05 | 704 | 0.4− | 0.5+ | 2004 01 21 | 704 | (2.0+ | 1.0−) | 2004 02 16 | 691 | 0.1− | 0.0 | | |
| 2002 07 09 | 829 | 0.4− | 1.3+ | 2004 01 21 | 704 | (1.7+ | 0.8−) | 2004 02 16 | 691 | 0.0 | 0.0 | | |
| 2002 07 09 | 829 | 0.1− | 0.8+ | 2004 01 21 | 704 | (1.6+ | 0.8−) | 2004 02 16 | 691 | 0.2+ | 0.0 | | |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2004 01 24 | 704 | 0.4+ | 0.4− | 2006 09 14 | 703 | 0.0 | 0.9+ | | |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2004 01 24 | 704 | 0.2+ | 0.7− | 2006 09 14 | 703 | 0.0 | 0.1− | | |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2004 01 24 | 704 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.7− | | |
| 2003 12 01 | 704 | 0.2+ | 0.7+ | 2004 01 24 | 704 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.4+ | | |
| 2003 12 01 | 704 | 0.9+ | 0.7− | 2004 01 24 | 704 | 0.0 | 0.3+ | 2006 09 28 | H36 | 0.7+ | 0.2− | | |
| 2003 12 01 | 704 | 1.2+ | 1.1− | 2004 01 30 | 704 | (2.4+ | 0.1−) | 2006 09 28 | H36 | 0.2+ | 0.6− | | |
| 2003 12 21 | 704 | (1.2+ | 1.9−) | 2004 01 30 | 704 | (0.4+ | 1.6+) | 2006 09 28 | H36 | (2.3+ | 1.7−) | | |
| 2003 12 21 | 704 | (0.1− | 2.0−) | 2004 01 30 | 704 | 0.6+ | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.4− | | |
| 2003 12 21 | 704 | 0.4+ | 1.3− | 2004 01 30 | 704 | 0.9+ | 0.1− | 2006 10 03 | G96 | 0.3− | 0.5− | | |
| 2003 12 29 | 699 | 0.3+ | 0.3− | 2004 01 30 | 704 | 0.5+ | 0.5− | 2006 10 03 | G96 | 0.1− | 0.4− | | |
| 2003 12 29 | 699 | 0.4+ | 0.0 | 2004 02 11 | 699 | 0.7− | 0.1− | 2006 10 03 | G96 | 0.2− | 0.3− | | |
| 2003 12 29 | 699 | 0.1− | 0.2+ | 2004 02 11 | 699 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2003 12 29 | 699 | (1.9− | 0.1+) | 2004 02 11 | 699 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.4+ | 0.3− | | |
| 2004 01 13 | 699 | 0.2− | 0.7− | 2004 02 11 | 699 | 0.6− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.3− | | |
| 2004 01 13 | 699 | 0.2+ | 0.1− | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.6− | 0.3+ | | |
| 2004 01 13 | 699 | 0.0 | 0.4+ | 2004 02 13 | 691 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 2004 01 13 | 699 | 0.3− | 0.6− | 2004 02 13 | 691 | 1.3− | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | | |
| 2004 01 19 | 699 | 0.8+ | 0.5− | 2004 02 15 | 704 | 0.3+ | 0.2+ | | | | | | |
| 2004 01 19 | 699 | 0.4− | 0.1− | 2004 02 15 | 704 | 0.1− | 0.1+ | | | | | | |

**(144036)∗ 2004 BE$_{24}$ = 2005 GV$_{47}$**

Discovered 2004 Jan. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 86227)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.82307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23728710 | $\omega$ | 203.47157 | | +0.76963804 | +0.60425677 | |
| $a$ | 2.5839650 | $\Omega$ | 117.72865 | | −0.54266164 | +0.78926323 | |
| $e$ | 0.1970183 | $i$ | 13.47296 | | −0.33641585 | +0.10925797 | |
| $P$ | 4.15 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 13 | 644 | 0.9+ | 0.2− | 2004 01 21 | 704 | 0.6− | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.2+ | |
| 2001 05 13 | 644 | 0.9+ | 0.1− | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.3+ | |
| 2001 05 13 | 644 | 1.0+ | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.4+ | |
| 2002 08 24 | 644 | 0.2+ | 0.2− | 2004 01 27 | 691 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.1+ | |
| 2002 08 24 | 644 | 0.2+ | 0.5− | 2004 02 16 | 691 | 0.2− | 0.2− | 2006 08 21 | 644 | 0.2− | 0.2+ | |
| 2002 08 24 | 644 | 0.2− | 0.2− | 2004 02 16 | 691 | 0.5+ | 0.1+ | 2006 08 21 | 644 | 0.2− | 0.4+ | |
| 2002 09 13 | 704 | 1.1− | 0.1− | 2004 02 16 | 691 | 0.2+ | 0.0 | 2006 08 21 | 644 | 0.2+ | 0.3− | |
| 2002 09 13 | 704 | 1.2− | 0.3− | 2005 03 10 | 703 | (0.1+ | 1.9−) | 2006 08 28 | E12 | 0.1+ | 0.1+ | |
| 2002 09 13 | 704 | 1.3− | 0.2− | 2005 03 10 | 703 | 0.2− | 1.3− | 2006 08 28 | E12 | 0.6+ | 0.4+ | |
| 2002 10 02 | 608 | 0.6− | 0.5+ | 2005 03 10 | 703 | 0.5− | 0.2− | 2006 08 28 | E12 | 0.1+ | 0.1− | |
| 2002 10 02 | 608 | 0.6− | 1.1+ | 2005 03 10 | 703 | (0.3− | 2.1+) | 2006 08 28 | E12 | 0.2+ | 0.3+ | |
| 2002 10 02 | 608 | 0.5− | 0.7+ | 2005 04 05 | 644 | 0.9+ | 1.1+ | 2006 09 27 | E12 | 0.2+ | 0.2− | |
| 2002 10 08 | 644 | 0.2+ | 1.0+ | 2005 04 05 | 644 | 0.4+ | 0.9+ | 2006 09 27 | E12 | 0.5− | 0.0 | |
| 2002 10 08 | 644 | 0.1− | 0.9+ | 2005 04 05 | 644 | 0.4+ | 1.1+ | 2006 09 27 | E12 | 0.2+ | 0.0 | |
| 2002 10 08 | 644 | 0.1+ | 0.9+ | 2005 04 06 | 703 | (1.4− | 1.9+) | 2006 09 27 | E12 | 0.4− | 0.5− | |
| 2002 11 04 | 644 | 0.1+ | 0.1− | 2005 04 06 | 703 | 0.4− | 1.5+ | 2006 10 12 | E12 | 0.1− | 0.1− | |
| 2002 11 04 | 644 | 0.8+ | 0.1− | 2005 04 06 | 703 | 1.3− | 1.1+ | 2006 10 12 | E12 | 0.5− | 0.5− | |
| 2002 11 04 | 644 | 0.1+ | 0.1+ | 2005 04 06 | 703 | 0.3− | 1.1+ | 2006 10 12 | E12 | 0.5+ | 0.1+ | |
| 2004 01 19 | 699 | (1.4+ | 2.4+) | 2005 04 16 | 703 | 1.2− | 0.3+ | 2006 10 12 | E12 | 0.0 | 0.1+ | |
| 2004 01 19 | 699 | 0.5− | 0.1+ | 2005 04 16 | 703 | 0.3+ | 1.4+ | 2006 10 28 | 703 | 0.6− | 0.0 | |
| 2004 01 19 | 699 | 0.1+ | 0.5+ | 2005 04 16 | 703 | 1.4− | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.1+ | |
| 2004 01 19 | 699 | (1.9+ | 0.1+) | 2005 04 16 | 703 | 0.5+ | 0.2− | 2006 10 28 | 703 | 0.2+ | 0.1− | |
| 2004 01 21 | 704 | 0.1+ | 1.2+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.4+ | |
| 2004 01 21 | 704 | 0.9+ | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.2+ | | | | | |

**(144037)∗ 2004 BL$_{24}$**

Discovered 2004 Jan. 19 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.96545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28340366 | $\omega$ | 17.05958 | | −0.75412201 | −0.65082055 | |
| $a$ | 2.2954390 | $\Omega$ | 122.00628 | | +0.58979416 | −0.73005159 | |
| $e$ | 0.1366353 | $i$ | 5.95218 | | +0.28886476 | −0.20846413 | |
| $P$ | 3.48 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.1+ | 0.2+ | 2004 01 19 | 699 | 0.3− | 1.2− | 2004 02 15 | 704 | 0.4+ | 0.7− | |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2004 01 21 | 704 | 0.1− | 0.6+ | 2004 02 15 | 704 | 0.0 | 0.8+ | |
| 2002 08 18 | 644 | 0.3+ | 0.6+ | 2004 01 21 | 704 | 1.1− | 0.4+ | 2004 02 15 | 704 | 0.4+ | 0.9+ | |
| 2002 08 18 | 644 | 0.4+ | 0.7+ | 2004 01 21 | 704 | 0.3− | 0.7− | 2004 02 15 | 704 | 0.6− | 0.6− | |
| 2002 08 18 | 644 | 0.5+ | 0.2+ | 2004 01 24 | 704 | 0.6+ | 1.0+ | 2006 10 16 | 703 | 0.7− | 0.4− | |
| 2002 08 29 | 644 | 0.2+ | 0.9+ | 2004 01 24 | 704 | 1.0+ | 1.2+ | 2006 10 16 | 703 | 0.7− | 0.4− | |
| 2002 08 29 | 644 | 0.7− | 0.6+ | 2004 01 24 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 703 | 1.1− | 0.8+ | |
| 2002 08 29 | 644 | 0.4− | 0.3+ | 2004 01 24 | 704 | 0.7+ | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | |
| 2002 09 15 | 644 | 0.6− | 0.4− | 2004 01 24 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.4− | 1.1+ | |
| 2002 09 15 | 644 | 0.5− | 0.2+ | 2004 01 26 | 699 | 0.9+ | 0.5− | 2006 10 22 | 703 | 0.0 | 0.6+ | |
| 2002 09 15 | 644 | 0.1− | 0.1+ | 2004 01 26 | 699 | 0.1− | 0.7− | 2006 10 22 | 703 | 0.0 | 0.1+ | |
| 2003 12 19 | 704 | 1.0+ | 0.1+ | 2004 01 26 | 699 | 1.4− | 0.4− | 2006 10 22 | 703 | (0.1− | 1.8−) | |
| 2003 12 19 | 704 | 0.4− | 1.1− | 2004 01 26 | 699 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 1.0+ | 0.1− | |
| 2003 12 19 | 704 | 0.6+ | 0.9− | 2004 01 27 | 691 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.6+ | |
| 2003 12 19 | 704 | (1.7− | 2.0−) | 2004 01 27 | 691 | 0.3− | 0.0 | 2006 11 13 | 703 | (0.7+ | 1.7−) | |
| 2003 12 21 | 691 | 0.0 | 0.3+ | 2004 01 27 | 691 | 0.4− | 0.0 | 2006 11 13 | 703 | 1.1+ | 0.1+ | |
| 2003 12 21 | 691 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.9+ | 0.7+ | 2006 11 19 | 703 | 0.3− | 0.7+ | |
| 2003 12 21 | 691 | 0.2− | 0.1− | 2004 01 30 | 704 | 0.9+ | 0.5+ | 2006 11 19 | 703 | 0.1+ | 0.5− | |
| 2004 01 19 | 699 | 0.7− | 0.2− | 2004 01 30 | 704 | 0.5+ | 0.3+ | 2006 11 19 | 703 | 0.6− | 0.3+ | |
| 2004 01 19 | 699 | 0.5+ | 0.1+ | 2004 01 30 | 704 | 1.4+ | 0.5− | 2006 11 19 | 703 | 0.6− | 1.1+ | |
| 2004 01 19 | 699 | 0.2− | 0.1+ | 2004 01 30 | 704 | 0.0 | 0.7+ | | | | | |

**(144038)∗ 2004 BT$_{24}$ = 1994 NT$_3$**

Discovered 2004 Jan. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57599)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.49070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27122666 | $\omega$ | 41.45013 | | −0.69824153 | +0.71586069 | |
| $a$ | 2.3636389 | $\Omega$ | 184.26458 | | −0.66198187 | −0.64648255 | |
| $e$ | 0.1349823 | $i$ | 1.15443 | | −0.27246793 | −0.26382530 | |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 11 | 809 | (2.8+ | 5.1+) | 2004 01 19 | 691 | 0.3+ | 0.1− | 2005 07 04 | G96 | 0.2− | 0.4+ | |
| 1994 07 11 | 809 | (2.9+ | 3.1+) | 2004 01 19 | 691 | 0.2+ | 0.1+ | 2005 07 15 | G96 | 0.5− | 0.1− | |
| 1994 07 11 | 809 | (2.5+ | 3.1+) | 2004 01 19 | 691 | 0.2+ | 0.0 | 2005 07 15 | G96 | 0.3− | 0.4+ | |
| 1994 07 12 | 809 | (2.4− | 3.8+) | 2004 01 21 | 704 | 0.1+ | 0.5+ | 2005 07 15 | G96 | 0.1− | 0.4+ | |
| 1994 07 12 | 809 | (0.6+ | 3.7+) | 2004 01 21 | 704 | 0.1− | 0.2− | 2005 07 15 | G96 | 0.3− | 0.2+ | |
| 1994 07 12 | 809 | (1.1+ | 4.3+) | 2004 01 21 | 704 | 0.1− | 0.1− | 2005 09 30 | G96 | 0.1− | 0.4+ | |
| 1995 12 19 | 691 | 0.2+ | 0.7− | 2004 01 21 | 704 | 0.2+ | 0.1+ | 2005 09 30 | G96 | 0.8− | 0.2− | |
| 1995 12 19 | 691 | 0.2+ | 0.0 | 2004 01 21 | 704 | 0.3− | 0.4+ | 2005 09 30 | G96 | 0.2+ | 0.4− | |
| 1995 12 19 | 691 | 0.3− | 0.1+ | 2004 01 28 | 691 | 0.3+ | 0.1+ | 2005 09 30 | G96 | 1.2+ | 0.4− | |
| 1998 09 20 | 691 | 0.1− | 0.1+ | 2004 01 28 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1+ | |
| 1998 09 20 | 691 | 0.1+ | 0.3− | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 | |
| 1998 09 20 | 691 | 0.2+ | 0.6− | 2004 04 13 | 645 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.5+ | |
| 2001 05 21 | 704 | 0.2+ | 1.1− | 2004 04 13 | 645 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.2+ | |
| 2001 05 21 | 704 | 0.4− | 0.8− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1− | 0.1− | |
| 2001 05 21 | 704 | 0.4+ | 0.9+ | 2004 04 15 | 645 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.6− | 1.2+ | |
| 2001 05 21 | 704 | 0.2− | 0.5+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.0 | |
| 2001 05 29 | 608 | 0.1+ | 0.5+ | 2004 04 16 | 645 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.0 | |
| 2001 05 29 | 608 | 0.1+ | 0.1− | 2005 06 27 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2001 05 29 | 608 | 0.2+ | 0.3+ | 2005 06 27 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.1+ | |
| 2003 12 29 | 691 | 0.0 | 0.0 | 2005 06 27 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.1− | |
| 2003 12 29 | 691 | 0.1+ | 0.2+ | 2005 07 02 | 691 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.1− | |
| 2003 12 29 | 691 | 0.3+ | 0.3+ | 2005 07 02 | 691 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.0 | |
| 2004 01 16 | 644 | 0.3+ | 0.3+ | 2005 07 02 | 691 | 0.1+ | 0.6+ | 2006 11 27 | G96 | 0.3+ | 0.0 | |
| 2004 01 16 | 644 | 0.2+ | 0.4+ | 2005 07 04 | G96 | 0.8− | 0.4+ | | | | | |
| 2004 01 16 | 644 | 0.1+ | 0.3+ | 2005 07 04 | G96 | 0.6− | 0.5+ | | | | | |

**(144039)∗ 2004 BL$_{25}$ = 2002 RU$_{157}$**

Discovered 2004 Jan. 19 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 57600)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.96122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26849547 | $\omega$ | 236.29370 | | −0.96492605 | −0.26125017 | |
| $a$ | 2.3796408 | $\Omega$ | 288.55047 | | +0.24896944 | −0.87950131 | |
| $e$ | 0.1235865 | $i$ | 1.55994 | | +0.08325825 | −0.39777606 | |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 14 | 691 | 0.0 | 0.5− | 2004 01 19 | 703 | 0.3− | 0.4− | 2004 04 14 | 645 | 0.0 | 0.0 | |
| 1991 09 14 | 691 | 0.5+ | 1.1− | 2004 01 19 | 703 | 0.8− | 0.8+ | 2004 04 15 | 645 | 0.0 | 0.0 | |
| 1993 01 23 | 691 | 0.2− | 0.6− | 2004 01 19 | 703 | 0.6− | 0.3+ | 2004 04 15 | 645 | 0.0 | 0.0 | |
| 1993 01 23 | 691 | 0.2− | 0.2− | 2004 01 21 | 704 | (0.6+ | 1.8+) | 2004 04 16 | 645 | 0.0 | 0.0 | |
| 1993 01 23 | 691 | 0.1+ | 0.2− | 2004 01 21 | 704 | 0.8+ | 1.1+ | 2004 04 16 | 645 | 0.0 | 0.0 | |
| 1999 12 07 | 704 | 0.7+ | 0.2+ | 2004 01 21 | 704 | (0.7+ | 1.9+) | 2006 09 28 | 291 | 0.0 | 0.2+ | |
| 1999 12 07 | 704 | 0.5+ | 1.4− | 2004 01 21 | 704 | (1.9+ | 0.9+) | 2006 09 28 | 291 | 0.1− | 0.4+ | |
| 1999 12 07 | 704 | 0.2+ | 0.6− | 2004 01 21 | 704 | (0.8+ | 2.0+) | 2006 09 28 | 291 | 0.1− | 0.2+ | |
| 2002 09 11 | 644 | 0.0 | 0.6+ | 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.4+ | |
| 2002 09 11 | 644 | 0.1− | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.1− | |
| 2002 09 11 | 644 | 0.2− | 0.7+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.4− | 0.3+ | |
| 2002 09 14 | 644 | 0.1− | 0.8+ | 2004 01 30 | 704 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.2+ | |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.2− | |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2004 01 30 | 704 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2+ | |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2004 02 16 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 | |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2004 02 16 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 2003 12 21 | 704 | 0.8+ | 1.1− | 2004 02 16 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 704 | 0.2− | 0.5− | 2004 04 13 | 645 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2− | | |
| 2003 12 21 | 704 | 1.0+ | 0.7− | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2004 01 19 | 703 | 0.1− | 1.2+ | 2004 04 14 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− | | |

**(144040)∗ 2004 BV$_{25}$ = 2002 TT$_{96}$**

Discovered 2004 Jan. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69633)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.41241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22626378 | $\omega$ | 288.18095 | | +0.51755000 | −0.85479357 | |
| $a$ | 2.6672232 | $\Omega$ | 130.58936 | | +0.80289195 | +0.46965834 | |
| $e$ | 0.0675537 | $i$ | 2.89396 | | +0.29581498 | +0.22079177 | |
| $P$ | 4.36 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.0 | 0.4+ | 2004 01 17 | 644 | 0.5+ | 0.3+ | 2004 04 16 | 645 | 0.2− | 0.1− | | |
| 2000 03 03 | 704 | 0.5+ | 1.1+ | 2004 01 17 | 644 | 0.4+ | 0.5+ | 2004 04 16 | 645 | 0.1+ | 0.1− | | |
| 2000 03 03 | 704 | 1.3+ | 0.7+ | 2004 01 19 | 691 | 0.1+ | 0.3+ | 2005 04 18 | 691 | 0.3− | 0.0 | | |
| 2000 03 03 | 704 | 1.0+ | 0.8+ | 2004 01 19 | 691 | 0.1− | 0.2+ | 2005 04 18 | 691 | 0.2+ | 0.2+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2004 01 19 | 691 | 0.1+ | 0.4+ | 2005 04 18 | 691 | 0.0 | 0.4+ | | |
| 2002 09 14 | 608 | 1.2− | 0.9+ | 2004 01 21 | 704 | 0.5+ | 1.1+ | 2005 05 13 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 14 | 608 | 1.1− | 0.5+ | 2004 01 21 | 704 | (2.9+ | 0.7−) | 2005 05 13 | 691 | 0.1− | 0.5+ | | |
| 2002 09 14 | 608 | 1.4− | 0.3+ | 2004 01 21 | 704 | 0.0 | 0.2+ | 2005 05 13 | 691 | 0.1− | 0.2+ | | |
| 2002 10 01 | 699 | (2.0+ | 0.2+) | 2004 01 28 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.4+ | | |
| 2002 10 01 | 699 | 0.3+ | 1.0+ | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.5+ | | |
| 2002 10 01 | 699 | 0.3+ | 0.3+ | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 01 | 699 | 1.0+ | 0.3− | 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.6+ | | |
| 2002 10 05 | 644 | 0.3− | 0.5+ | 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.5− | | |
| 2002 10 05 | 644 | 0.7− | 0.4+ | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2002 10 05 | 644 | 0.5− | 0.1+ | 2004 04 14 | 645 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.2+ | | |
| 2004 01 17 | 644 | 0.2+ | 0.6+ | 2004 04 14 | 645 | 0.0 | 0.3− | | | | | | |

**(144041)∗ 2004 BG$_{26}$ = 2002 TD$_{94}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57600)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.06857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23461395 | $\omega$ | 222.13160 | | +0.11096702 | −0.99367541 | |
| $a$ | 2.6035554 | $\Omega$ | 221.50596 | | +0.91859786 | +0.10915364 | |
| $e$ | 0.0317097 | $i$ | 1.48641 | | +0.37929446 | +0.02635657 | |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.2− | 0.7+ | 2004 01 21 | 704 | 0.3+ | 0.2− | 2006 08 24 | 644 | 0.2+ | 0.3+ | | |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2004 01 22 | 644 | 0.4− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.4+ | | |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2004 01 22 | 644 | 0.3− | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | 0.7− | 0.7+ | 2004 01 22 | 644 | 0.1− | 0.4+ | 2006 08 27 | 691 | 0.3− | 0.1+ | | |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2004 01 24 | 704 | (0.3− | 2.7+) | 2006 08 28 | 699 | (1.9− | 2.2+) | | |
| 2002 10 03 | 704 | 0.7− | 0.3+ | 2004 01 24 | 704 | (1.0+ | 2.9+) | 2006 08 28 | 699 | 0.8+ | 1.3+ | | |
| 2002 10 04 | 644 | 0.1− | 1.0+ | 2004 01 24 | 704 | (0.5+ | 1.7+) | 2006 08 28 | 699 | 0.4+ | 1.3+ | | |
| 2002 10 04 | 644 | 0.4+ | 1.2+ | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.4+ | 1.1− | | |
| 2002 10 04 | 644 | 0.2− | 1.5+ | 2004 01 27 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.4+ | | |
| 2002 10 11 | 291 | 0.3+ | 0.1+ | 2004 01 27 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.2+ | | |
| 2002 10 11 | 291 | 0.0 | 0.3+ | 2005 04 11 | G96 | 0.0 | 0.4− | 2006 08 29 | 691 | 0.0 | 0.7+ | | |
| 2002 10 11 | 291 | 0.0 | 0.1+ | 2005 04 11 | G96 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.5− | | |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2005 04 11 | G96 | 0.6− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.1+ | | |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.3− | 0.3− | | |
| 2002 11 08 | 645 | 0.1+ | 0.2− | 2005 05 04 | G96 | 1.4+ | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.0 | | |
| 2002 11 08 | 645 | 0.0 | 0.3− | 2005 05 04 | G96 | 0.3+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.3− | | |
| 2004 01 16 | 691 | 0.0 | 0.4+ | 2005 05 04 | G96 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | | |
| 2004 01 16 | 691 | 0.1− | 0.3+ | 2005 05 04 | G96 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.0 | 0.4− | | |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.1− | | |
| 2004 01 21 | 704 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.3+ | | |
| 2004 01 21 | 704 | 0.1− | 0.6+ | 2006 08 19 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.5− | 0.4− | | |
| 2004 01 21 | 704 | 0.5+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.1− | | |
| 2004 01 21 | 704 | 1.1+ | 0.3+ | 2006 08 24 | 644 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.6− | 0.1+ | | |

**(144042)∗ 2004 BM$_{26}$ = 1999 TB$_{166}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57600)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.98573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28843789 | $\omega$ | 111.84613 | | +0.59411454 | −0.80300159 | |
| $a$ | 2.2686518 | $\Omega$ | 301.61818 | | +0.71608962 | +0.55465544 | |
| $e$ | 0.1048318 | $i$ | 3.16920 | | +0.36639265 | +0.21804998 | |
| $P$ | 3.42 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.4+ | 1.1− | 2004 01 21 | 704 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.7− | | |
| 1999 10 10 | 704 | 1.2+ | 0.4+ | 2004 01 21 | 704 | 1.1+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 1.0− | | |
| 1999 10 10 | 704 | 0.5− | 0.6+ | 2004 01 22 | 644 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.3+ | 0.3+ | | |
| 1999 10 10 | 704 | 0.2− | 0.1+ | 2004 01 22 | 644 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.5− | 0.4− | | |
| 1999 10 11 | 704 | 0.2− | 0.8− | 2004 01 22 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 703 | (1.6− | 0.0 ) | | |
| 1999 10 11 | 704 | 0.4− | 0.8− | 2004 01 24 | 704 | 1.2+ | 0.2− | 2006 10 27 | 703 | 0.2− | 0.0 | | |
| 1999 10 11 | 704 | 0.3+ | 1.0− | 2004 01 24 | 704 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.2+ | | |
| 1999 10 11 | 704 | 1.3+ | 0.5− | 2004 01 24 | 704 | 0.1+ | 0.9+ | 2006 11 10 | 644 | 0.2− | 0.5+ | | |
| 1999 10 11 | 704 | 0.3− | 0.1+ | 2004 01 24 | 704 | 0.2− | 1.4+ | 2006 11 10 | 644 | 0.2− | 0.1+ | | |
| 1999 10 11 | 704 | 0.9+ | 0.0 | 2004 01 24 | 704 | 0.3− | 1.4+ | 2006 11 10 | 644 | 0.2− | 0.1+ | | |
| 1999 10 11 | 704 | 0.3− | 1.3− | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.2− | 0.4+ | | |
| 2002 07 04 | 291 | 0.2− | 0.7+ | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.3+ | | |
| 2002 07 04 | 291 | 0.2− | 0.7+ | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.1+ | | |
| 2002 07 04 | 291 | (0.8+ | 1.6−) | 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 1.3+ | | |
| 2003 12 29 | 699 | 0.1+ | 0.7+ | 2004 02 11 | 691 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.4− | | |
| 2003 12 29 | 699 | (1.8+ | 0.9−) | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2003 12 29 | 699 | 0.3+ | 0.4− | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2− | 0.3− | | |
| 2003 12 29 | 699 | (1.6+ | 0.2+) | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.4− | | |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2003 12 29 | 691 | 0.1− | 0.3+ | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 2003 12 29 | 691 | 0.3+ | 0.2+ | 2004 04 13 | 645 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.0 | | |
| 2004 01 16 | 644 | 0.0 | 0.5+ | 2004 04 13 | 645 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.2+ | | |
| 2004 01 16 | 644 | 0.3+ | 0.3+ | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 11 18 | 113 | 0.3+ | 0.2− | | |
| 2004 01 16 | 644 | 0.3+ | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 11 18 | 113 | 0.2+ | 0.2− | | |
| 2004 01 16 | 691 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.9+ | 1.5+ | | |
| 2004 01 16 | 691 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.3+ | | |
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 1.1− | 0.3+ | | |
| 2004 01 21 | 704 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.3+ | | |
| 2004 01 21 | 704 | 0.5+ | 0.8+ | 2006 10 19 | 703 | 0.2− | 0.4+ | | | | | | |

**(144043)∗ 2004 BT$_{26}$ = 2005 GL$_{175}$**

Discovered 2004 Jan. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76378)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.29714 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28479088 | $\omega$ | 259.61500 | | +0.97087534 | −0.21096464 | |
| $a$ | 2.2879788 | $\Omega$ | 112.48989 | | +0.23786790 | +0.90541520 | |
| $e$ | 0.1941969 | $i$ | 7.05969 | | −0.02863437 | +0.36839819 | |
| $P$ | 3.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.6+ | 0.8+ | 2004 01 19 | 703 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 1999 09 08 | 703 | 0.7+ | 0.5+ | 2004 01 19 | 703 | 0.7− | 1.2+ | 2006 10 17 | 703 | 0.3+ | 0.5+ | | |
| 1999 09 08 | 703 | 0.7− | 0.6+ | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.2+ | | |
| 1999 09 08 | 703 | 1.2− | 0.1− | 2004 01 22 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.2+ | | |
| 1999 09 14 | 704 | 1.7+ | 1.1− | 2004 01 22 | 704 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.5+ | | |
| 1999 09 14 | 704 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.4− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 1999 09 14 | 704 | 1.3+ | 0.6+ | 2004 01 22 | 704 | 0.8− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 1999 09 14 | 704 | 1.2− | 1.4+ | 2004 02 13 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 1999 10 08 | 704 | 0.3− | 0.6+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.5+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.8− | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.4+ | 0.1+ |
| 1999 10 08 | 704 | 0.5− | 0.4+ | 2005 04 14 | 691 | 0.3− | 1.3+ | 2006 10 28 | 703 | 0.4+ | 0.3− |
| 1999 10 08 | 704 | 0.7− | 1.2+ | 2005 04 14 | 691 | 0.1+ | 0.9+ | 2006 10 28 | 703 | 0.3+ | 0.5+ |
| 1999 10 08 | 704 | 0.6− | 0.1− | 2005 04 14 | 691 | 0.5+ | 0.6+ | 2006 11 10 | 704 | (3.0+ | 0.7+) |
| 1999 11 06 | 703 | 0.5− | 0.5+ | 2005 04 18 | 691 | 0.3+ | 0.7+ | 2006 11 10 | 704 | (2.8+ | 0.2+) |
| 1999 11 06 | 703 | 0.6− | 0.0 | 2005 04 18 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 704 | 0.7− | 1.4+ |
| 1999 11 06 | 703 | 0.2+ | 0.6+ | 2005 04 18 | 691 | 0.3+ | 0.6+ | 2006 11 10 | 704 | (1.7+ | 0.4−) |
| 1999 11 06 | 703 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.9+ | 2006 11 16 | 703 | 0.2− | 0.2− |
| 2003 12 21 | 704 | (0.9− | 2.6+) | 2006 09 29 | 699 | 0.3− | 0.0 | 2006 11 16 | 703 | 0.5− | 0.1+ |
| 2003 12 21 | 704 | (0.9− | 1.5+) | 2006 09 29 | 699 | 0.4− | 0.0 | 2006 11 16 | 703 | 0.2− | 0.7+ |
| 2003 12 21 | 704 | (0.5+ | 2.8+) | 2006 09 29 | 699 | 0.0 | 0.3+ | 2006 11 16 | 703 | 0.1− | 0.2+ |
| 2003 12 21 | 704 | (0.3− | 2.8+) | 2006 10 01 | 704 | 1.1− | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2004 01 16 | 691 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2004 01 16 | 691 | 0.1+ | 0.3− | 2006 10 01 | 704 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.5− | 0.3+ |
| 2004 01 19 | 703 | (0.8+ | 2.6−) | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 1.2− | 0.3− |
| 2004 01 19 | 703 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | | | |

**(144044)∗ 2004 BD$_{27}$ = 1999 XH$_{157}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57600)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.86100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26823562 | $\omega$ | 3.36032 | | −0.92070024 | −0.38945824 | |
| $a$ | 2.3811774 | $\Omega$ | 153.67450 | | +0.35673004 | −0.86597595 | |
| $e$ | 0.0692381 | $i$ | 3.25320 | | +0.15828688 | −0.31370040 | |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 03 | 691 | 0.1+ | 0.5+ | 2004 01 31 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.2− |
| 1991 10 03 | 691 | 0.4− | 0.0 | 2004 02 10 | 644 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 1991 10 03 | 691 | 0.4− | 0.9+ | 2004 02 10 | 644 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.3− |
| 1999 12 08 | 704 | 0.3+ | 0.9− | 2004 02 10 | 644 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 1999 12 08 | 704 | (2.4+ | 0.3+) | 2004 02 10 | 703 | (1.2− | 2.6+) | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 1999 12 08 | 704 | 0.6+ | 0.9− | 2004 02 10 | 703 | (1.8− | 1.5+) | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 1999 12 14 | 704 | 0.3+ | 0.8− | 2004 02 10 | 703 | (0.6− | 2.8+) | 2006 10 02 | G96 | 0.6+ | 0.1− |
| 1999 12 14 | 704 | 0.1+ | 1.5− | 2004 02 10 | 703 | 1.3− | 1.2+ | 2006 10 02 | G96 | 0.5+ | 0.1− |
| 1999 12 14 | 704 | 0.4+ | 1.4− | 2004 02 11 | 699 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 02 11 | 699 | 0.2− | 0.3+ | 2006 10 16 | 703 | 1.4− | 0.6+ |
| 2002 10 04 | 644 | 0.2− | 0.2+ | 2004 02 11 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2004 02 11 | 699 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 644 | 0.9− | 0.7− | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2004 01 13 | 699 | 0.8+ | 0.0 | 2004 02 11 | 699 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2004 01 13 | 699 | (0.1− | 1.5−) | 2004 02 14 | 333 | 0.3+ | 0.9+ | 2006 10 22 | 691 | 0.1+ | 0.3− |
| 2004 01 13 | 699 | 0.5− | 1.1− | 2004 02 14 | 333 | 0.1− | 0.9+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2004 01 13 | 699 | 0.0 | 0.6− | 2004 02 14 | 608 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2004 01 21 | 704 | 0.2+ | 0.4+ | 2004 02 14 | 608 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2004 01 21 | 704 | 0.7+ | 0.8+ | 2004 02 14 | 608 | 0.0 | 0.5− | 2006 10 22 | 691 | 0.2+ | 0.0 |
| 2004 01 21 | 704 | 0.0 | 0.4+ | 2004 02 17 | 704 | 0.7− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2004 01 21 | 704 | 0.5+ | 0.7+ | 2004 02 17 | 704 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.7+ | 0.3+ |
| 2004 01 22 | 106 | (1.2+ | 3.1−) | 2004 02 17 | 704 | 0.5+ | 0.6+ | 2006 11 08 | 644 | 0.4+ | 0.1+ |
| 2004 01 22 | 106 | 0.5− | 0.7− | 2004 02 17 | 704 | 0.8+ | 0.8+ | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2004 01 22 | 106 | 1.4− | 0.7− | 2004 02 17 | 704 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.7+ | 0.0 |
| 2004 01 24 | 704 | 0.6+ | 0.5+ | 2004 02 18 | 608 | 0.3− | 0.6− | 2006 11 13 | 703 | 0.6− | 0.0 |
| 2004 01 24 | 704 | 1.3+ | 1.0+ | 2004 02 18 | 608 | 0.1− | 0.6− | 2006 11 13 | 703 | 0.4− | 0.6− |
| 2004 01 24 | 704 | 0.4+ | 1.1+ | 2004 02 18 | 608 | 0.2− | 0.5− | 2006 11 13 | 703 | 0.6− | 0.4− |
| 2004 01 26 | 699 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2004 01 26 | 699 | 0.4+ | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2004 01 26 | 699 | 1.2− | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2004 01 26 | 699 | (2.5− | 1.2−) | 2004 02 26 | 704 | 0.4+ | 1.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2004 01 29 | 704 | 0.4− | 0.5− | 2004 02 26 | 704 | 0.0 | 0.7+ | 2006 11 17 | 704 | 0.1− | 0.1+ |
| 2004 01 29 | 704 | 0.0 | 0.0 | 2004 05 13 | 291 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2004 01 29 | 704 | 0.1− | 0.1− | 2004 05 13 | 291 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.3+ |
| 2004 01 29 | 704 | 0.3− | 0.2+ | 2004 05 13 | 291 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.2− |
| 2004 01 29 | 704 | 0.3− | 0.6+ | 2004 05 13 | 291 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2004 01 31 | 691 | 0.1− | 0.1+ | 2004 05 13 | 291 | 0.4+ | 0.0 | 2006 11 20 | 704 | 1.2− | 0.3+ |
| 2004 01 31 | 691 | 0.1− | 0.1+ | 2004 05 13 | 291 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.5+ | 0.2− |

**(144045)∗ 2004 BK$_{27}$**

Discovered 2004 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.89669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24451945 | $\omega$ | 151.33143 | | −0.90175188 | −0.43133008 | |
| $a$ | 2.5327585 | $\Omega$ | 3.50179 | | +0.25210578 | −0.57789258 | |
| $e$ | 0.1648700 | $i$ | 27.54650 | | +0.35112139 | −0.69281637 | |
| $P$ | 4.03 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 704 | 0.0 | 1.3+ | 2004 01 23 | 704 | 0.1− | 0.1+ | 2004 03 24 | 703 | (1.0− | 1.7+) |
| 2000 04 02 | 704 | 0.8− | 1.1+ | 2004 01 23 | 704 | 0.1− | 0.2− | 2004 03 25 | 704 | 0.0 | 0.7− |
| 2000 04 02 | 704 | 0.2− | 1.0+ | 2004 01 23 | 704 | 0.4− | 0.1− | 2004 03 25 | 704 | 0.7+ | 0.2+ |
| 2000 04 02 | 704 | 0.2+ | 0.1+ | 2004 01 23 | 704 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 0.6+ | 0.9+ |
| 2000 05 31 | 691 | 0.4+ | 0.1− | 2004 02 09 | 644 | 0.2+ | 0.1+ | 2004 03 25 | 704 | 0.9+ | 0.9− |
| 2000 05 31 | 691 | 0.2+ | 0.1− | 2004 02 09 | 644 | 0.2+ | 0.3+ | 2004 03 25 | 704 | 0.9+ | 0.3+ |
| 2000 05 31 | 691 | 0.5+ | 0.3− | 2004 02 09 | 644 | 0.3+ | 0.1+ | 2004 04 14 | 703 | 0.2+ | 0.3+ |
| 2002 10 04 | 704 | 0.3− | 0.2− | 2004 02 11 | 704 | 0.6+ | 0.3+ | 2004 04 14 | 703 | (0.9+ | 2.0−) |
| 2002 10 04 | 704 | 0.8− | 0.5− | 2004 02 11 | 704 | 0.1+ | 0.7+ | 2004 04 14 | 704 | (0.7+ | 1.8+) |
| 2002 10 04 | 644 | 0.4− | 0.3+ | 2004 02 11 | 704 | 0.1− | 0.3+ | 2004 04 14 | 703 | 0.1− | 1.4+ |
| 2002 10 04 | 704 | 0.6− | 0.3− | 2004 02 11 | 704 | 0.0 | 0.2+ | 2004 04 14 | 704 | 0.1+ | 0.0 |
| 2002 10 04 | 644 | 0.7− | 0.7+ | 2004 02 11 | 704 | 0.1+ | 0.6+ | 2004 04 14 | 703 | 0.5− | 0.7+ |
| 2002 10 04 | 644 | 0.1+ | 0.9− | 2004 02 17 | 645 | 0.1− | 0.1− | 2004 04 14 | 704 | 0.0 | 0.9+ |
| 2002 10 04 | 704 | 0.0 | 0.1− | 2004 02 17 | 645 | 0.1− | 0.1− | 2004 04 14 | 704 | 0.7− | 0.4+ |
| 2002 10 12 | 704 | 1.4+ | 0.4+ | 2004 02 26 | 703 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.8+ | 2004 02 26 | 703 | 0.5− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.5+ |
| 2002 10 12 | 704 | 1.0+ | 0.0 | 2004 02 26 | 703 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2004 01 19 | 704 | 1.1+ | 0.5− | 2004 02 26 | 703 | 1.3− | 1.4+ | 2006 09 26 | 691 | 0.3− | 0.1− |
| 2004 01 19 | 704 | 1.4+ | 0.8− | 2004 03 01 | 704 | (0.1− | 3.5+) | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2004 01 19 | 704 | 0.9+ | 0.2− | 2004 03 01 | 704 | 0.7+ | 1.0+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2004 01 19 | 704 | 0.8+ | 1.2− | 2004 03 01 | 704 | 0.8− | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2004 01 19 | 704 | 1.2+ | 0.9+ | 2004 03 01 | 704 | (1.6+ | 1.8+) | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2004 01 23 | 704 | 0.3− | 0.2+ | 2004 03 01 | 704 | 0.6− | 0.6+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2004 01 23 | 704 | 0.3− | 0.0 | 2004 03 18 | 645 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2004 01 23 | 704 | 0.3− | 0.4− | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.4+ | 0.3− |
| 2004 01 23 | 704 | 0.2− | 0.1− | 2004 03 24 | 703 | 1.3− | 0.2− | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2004 01 23 | 704 | 0.1+ | 0.4− | 2004 03 24 | 703 | (3.2− | 0.5−) | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2004 01 23 | 704 | 0.0 | 0.4+ | 2004 03 24 | 703 | (0.6+ | 3.1+) | | | | |

**(144046)∗ 2004 BC$_{28}$ = 1993 FF$_{85}$ = 1997 GD$_{36}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61778), A. Doppler (*MPO* 95161)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.75177 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26135518 | $\omega$ | 174.10303 | | −0.57197115 | +0.81945072 | |
| $a$ | 2.4227874 | $\Omega$ | 61.00364 | | −0.75429249 | −0.50783714 | |
| $e$ | 0.1471413 | $i$ | 2.40717 | | −0.32232257 | −0.26571028 | |
| $P$ | 3.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 18 | 809 | 0.4− | 0.6− | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1993 03 19 | 691 | 0.1− | 0.2+ | 2004 02 16 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 1993 03 19 | 691 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.5+ |
| 1993 03 19 | 691 | 0.5− | 0.1+ | 2004 02 16 | 704 | 0.5+ | 0.5+ | 2006 11 14 | 691 | (1.6− | 1.9−) |
| 1993 04 16 | 413 | (6.8− | 4.9+) | 2004 02 23 | 704 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 1997 04 06 | 704 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1997 04 06 | 704 | 0.9+ | 0.3+ | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 1997 04 11 | 704 | 0.7+ | 0.0 | 2004 02 23 | 704 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 1997 04 11 | 704 | 1.5+ | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 11 18 | 704 | (0.2+ | 2.3+) |
| 1997 05 07 | 704 | (2.1+ | 0.6+) | 2004 02 26 | 695 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 07 | 704 | 1.4+ | 0.2+ | 2004 02 26 | 695 | 0.4− | 0.0 | 2006 11 18 | 704 | (1.7− | 0.8−) |
| 1997 05 07 | 704 | 2.0+ | 1.2+ | 2005 06 28 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 1997 05 07 | 704 | 0.4+ | 0.5− | 2005 06 28 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | (0.3+ | 2.1+) |
| 2002 10 15 | 644 | 0.1+ | 0.4+ | 2005 06 28 | 644 | 0.3− | 0.3+ | 2006 11 19 | J95 | 0.4+ | 0.1+ |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2005 07 31 | E12 | 0.2+ | 0.5+ | 2006 11 19 | J95 | 0.9+ | 0.4+ |
| 2002 10 15 | 644 | 0.5+ | 0.9+ | 2005 07 31 | E12 | 0.5− | 0.5+ | 2006 11 19 | J95 | 0.4+ | 0.3− |
| 2004 01 18 | 644 | 0.2− | 0.2+ | 2005 07 31 | E12 | 0.7− | 0.0 | 2006 11 20 | 691 | 0.4− | 0.2− |
| 2004 01 18 | 644 | 0.1− | 0.3+ | 2005 07 31 | E12 | 0.7− | 0.6− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2004 01 18 | 644 | 0.2− | 0.0 | 2005 08 02 | 704 | 0.8− | 0.6− | 2006 11 20 | 691 | 1.4− | 0.1+ |
| 2004 01 22 | 704 | 0.5+ | 0.4+ | 2005 08 02 | 704 | 1.4− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.7− |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2005 08 02 | 704 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2005 08 06 | 704 | 0.3− | 0.6− | 2006 11 21 | 704 | 1.0+ | 0.0 |
| 2004 01 22 | 704 | 0.7+ | 0.0 | 2005 08 06 | 704 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.1− |
| 2004 01 22 | 704 | 0.5+ | 0.6+ | 2005 08 06 | 704 | 0.1+ | 0.3− | 2006 11 25 | 926 | 0.2+ | 0.1+ |
| 2004 01 27 | 704 | 1.1− | 0.7+ | 2005 08 06 | 704 | 0.6+ | 0.7+ | 2006 11 25 | 926 | 0.1+ | 0.3+ |
| 2004 01 27 | 704 | 1.1+ | 0.3+ | 2005 11 06 | G96 | 0.6− | 0.2− | 2006 11 25 | 926 | 0.1− | 0.1+ |
| 2004 01 27 | 704 | 0.3+ | 0.3− | 2005 11 06 | G96 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2004 01 27 | 704 | 0.7− | 0.0 | 2005 11 06 | G96 | 0.1+ | 0.9+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 691 | 0.3− | 0.3+ | 2005 11 06 | G96 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 01 30 | 704 | 0.0 | 0.8− | 2006 10 17 | G96 | 0.3− | 0.4+ | 2006 11 27 | 703 | 0.7+ | 0.3− |
| 2004 01 30 | 704 | 0.7− | 0.2− | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.5+ | 0.9+ |
| 2004 01 30 | 704 | 0.8+ | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.2− | 0.3+ |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.3− | 2.4− |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1− | | | | |
| 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− | | | | |

**(144047)∗ 2004 BD$_{28}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.89149 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25572515 | $\omega$ | 207.75887 | | −0.87325409 | | +0.48726417 |
| $a$ | 2.4582182 | $\Omega$ | 1.40314 | | −0.43950784 | | −0.78681657 |
| $e$ | 0.1225873 | $i$ | 2.23883 | | −0.21038096 | | −0.37880510 |
| $P$ | 3.85 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.7− | 0.1+ | 2004 01 31 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2002 10 10 | 644 | 0.8− | 0.3+ | 2004 01 31 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 10 10 | 644 | 0.7− | 0.2+ | 2004 01 31 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2002 12 06 | 291 | 0.2− | 0.4− | 2004 02 10 | 644 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2002 12 06 | 291 | 0.3+ | 0.6− | 2004 02 10 | 644 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.5− | 0.0 |
| 2002 12 06 | 291 | 1.2+ | 0.5− | 2004 02 10 | 644 | 0.4+ | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2004 01 18 | 644 | 0.5− | 0.1+ | 2004 02 11 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2004 01 18 | 644 | 0.6− | 0.3+ | 2004 02 11 | 699 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 01 18 | 644 | 0.2− | 0.4+ | 2004 02 11 | 699 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 1.0+ | 0.4− | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2004 01 22 | 704 | 1.1+ | 0.8− | 2004 02 11 | 699 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.8+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2004 02 11 | 699 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2004 02 16 | 704 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 2004 01 24 | 704 | 0.1− | 0.0 | 2004 02 16 | 704 | (2.6− | 1.2+) | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 01 24 | 704 | 0.2+ | 0.5− | 2004 02 16 | 704 | (1.9− | 0.1−) | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2004 01 24 | 704 | 1.1+ | 0.3+ | 2004 02 16 | 704 | (1.6− | 0.4+) | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2004 01 26 | 699 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.1− | 0.7− | 2006 11 13 | 644 | 0.3− | 0.4+ |
| 2004 01 26 | 699 | 1.3− | 0.5+ | 2004 02 23 | 704 | 0.6− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2004 01 26 | 699 | 0.1− | 0.7− | 2004 02 23 | 704 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.1− |
| 2004 01 26 | 699 | 0.7− | 0.5+ | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2004 01 30 | 704 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.6+ | 0.5+ |
| 2004 01 30 | 704 | 0.6+ | 0.4+ | 2005 07 02 | 691 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 0.5− | 0.5− |
| 2004 01 30 | 704 | 0.1− | 0.0 | 2005 07 02 | 691 | 0.1− | 0.7+ | 2006 11 17 | 703 | 1.0+ | 0.3+ |
| 2004 01 30 | 704 | 0.1+ | 0.0 | 2005 07 02 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2004 01 30 | 704 | 0.1+ | 0.9+ | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.7− | 1.8+ |

**(144048)∗ 2004 BW$_{29}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.14406 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21645205 | $\omega$ | 346.51106 | | +0.69259308 | | +0.71285621 |
| $a$ | 2.7472293 | $\Omega$ | 327.11552 | | −0.64154075 | | +0.53888822 |
| $e$ | 0.0417174 | $i$ | 11.71381 | | −0.32975792 | | +0.44881568 |
| $P$ | 4.55 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 25 | 644 | 0.1− | 0.3+ | 2004 02 11 | 699 | 0.7+ | 0.2− | 2006 09 01 | 704 | 0.5+ | 0.1− |
| 2001 06 25 | 644 | 0.2− | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 09 01 | 704 | 0.7+ | 0.1− |
| 2001 06 25 | 644 | 0.2− | 0.1+ | 2004 02 11 | 699 | 0.7− | 0.0 | 2006 09 01 | 704 | 0.1+ | 0.9+ |
| 2002 10 06 | 704 | (0.0 | 4.0+) | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 09 11 | 703 | (0.2− | 2.0−) |
| 2002 10 06 | 704 | (1.2+ | 5.1+) | 2004 02 16 | 704 | 0.4+ | 0.5− | 2006 09 11 | 703 | 0.7− | 0.0 |
| 2002 10 06 | 704 | (1.0+ | 4.8+) | 2004 02 16 | 704 | 0.4− | 1.4+ | 2006 09 11 | 703 | 0.0 | 0.3− |
| 2002 10 06 | 704 | (1.0+ | 4.8+) | 2004 02 16 | 704 | 0.6− | 0.1+ | 2006 09 11 | 703 | 0.4− | 0.7+ |
| 2002 11 08 | 704 | 0.6+ | 0.6− | 2004 02 16 | 704 | 0.7+ | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2002 11 08 | 704 | 0.7+ | 0.2− | 2004 02 16 | 704 | 0.2+ | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2002 11 08 | 704 | (1.0+ | 1.8−) | 2004 02 19 | 608 | 0.8+ | 1.1+ | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 2002 11 15 | 704 | 0.5− | 0.5+ | 2004 02 19 | 608 | 0.8+ | 1.0+ | 2006 09 16 | 644 | 0.4− | 0.2− |
| 2002 11 15 | 704 | (2.1− | 0.2+) | 2004 02 19 | 608 | 0.6+ | 1.2+ | 2006 09 16 | 644 | 0.4− | 0.1+ |
| 2002 11 15 | 704 | 0.4− | 0.5+ | 2004 02 23 | 704 | 0.3− | 0.2− | 2006 09 16 | 644 | 0.5− | 0.0 |
| 2002 11 15 | 704 | 0.2− | 0.5− | 2004 02 23 | 704 | 0.0 | 0.8+ | 2006 09 17 | 703 | 0.2− | 0.4− |
| 2002 11 25 | 644 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.0 | 0.0 | 2006 09 17 | 703 | 1.1− | 0.4+ |
| 2002 11 25 | 644 | 0.4+ | 0.4− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.1+ |
| 2002 11 25 | 644 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.1− | 0.3+ |
| 2003 12 27 | 704 | 0.9+ | 0.2+ | 2005 05 13 | E12 | 0.2+ | 0.9+ | 2006 09 18 | 704 | 0.3− | 0.8+ |
| 2003 12 27 | 704 | 1.0+ | 0.4+ | 2005 05 13 | E12 | 0.7+ | 1.1+ | 2006 09 18 | 704 | 0.7− | 0.1+ |
| 2003 12 27 | 704 | 0.1− | 0.7+ | 2005 05 13 | E12 | 0.7+ | 0.6+ | 2006 09 18 | 704 | 0.0 | 0.1− |
| 2004 01 18 | 644 | 0.2+ | 0.1+ | 2005 05 13 | E12 | 0.4+ | 1.2+ | 2006 09 18 | 704 | 0.3− | 0.6+ |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.2+ | 0.1− |
| 2004 01 18 | 644 | 0.2+ | 0.4+ | 2006 08 15 | 644 | 0.6− | 0.1− | 2006 09 20 | 699 | 0.2+ | 0.8+ |
| 2004 01 22 | 704 | 0.1+ | 0.0 | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.4+ | 0.2− |
| 2004 01 22 | 704 | 0.1− | 0.6− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 20 | 699 | 1.0+ | 0.4+ |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.4− | 0.0 | 2006 09 25 | 704 | 1.5+ | 0.8+ |
| 2004 01 22 | 704 | 0.6+ | 0.5− | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.2− | 1.4+ |
| 2004 01 22 | 704 | 0.0 | 0.3− | 2006 08 28 | 699 | (0.5+ | 1.5+) | 2006 09 25 | 704 | 0.5+ | 0.6+ |
| 2004 01 26 | 699 | 1.2+ | 0.2+ | 2006 08 28 | 699 | 1.0− | 0.6+ | 2006 09 25 | 704 | 0.7− | 0.2− |
| 2004 01 26 | 699 | 0.4+ | 0.7− | 2006 08 28 | 699 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.1− | 0.5+ |
| 2004 01 26 | 699 | 0.1− | 0.7+ | 2006 08 29 | 703 | 0.7− | 0.4+ | 2006 09 26 | 704 | (0.4+ | 1.7+) |
| 2004 01 26 | 699 | 0.5+ | 0.1− | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.8− |
| 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 08 29 | 703 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.3− |
| 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 08 29 | 703 | 0.3− | 0.0 | 2006 09 26 | 704 | (3.8+ | 1.0−) |
| 2004 01 30 | 704 | 0.4+ | 0.3− | 2006 08 30 | 704 | (0.3+ | 2.4+) | 2006 09 30 | 699 | 0.4− | 0.1− |
| 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 08 30 | 704 | (0.0 | 1.8+) | 2006 09 30 | 699 | 0.5− | 0.8+ |
| 2004 01 30 | 704 | 0.3− | 0.0 | 2006 08 30 | 704 | (2.3+ | 0.5+) | 2006 09 30 | 699 | 0.2− | 0.2+ |
| 2004 02 10 | 644 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.9+ | 1.2− | 2006 09 30 | 699 | 0.4+ | 0.1+ |
| 2004 02 10 | 703 | 0.0 | 0.8+ | 2006 08 31 | 704 | 0.6− | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.3− |
| 2004 02 10 | 644 | 0.6+ | 0.2+ | 2006 08 31 | 704 | 0.0 | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2004 02 10 | 703 | 0.4+ | 0.4+ | 2006 08 31 | 704 | 0.5− | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2004 02 10 | 644 | 0.3+ | 0.3+ | 2006 08 31 | 704 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2004 02 10 | 703 | 1.2− | 0.1− | 2006 08 31 | 704 | 0.4+ | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2004 02 10 | 703 | 0.4+ | 0.1+ | 2006 08 31 | 704 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 02 11 | 699 | 0.2− | 0.0 | 2006 08 31 | 704 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2004 02 11 | 699 | 0.6− | 0.4− | 2006 09 01 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ |

**(144049)∗ 2004 BY$_{29}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.99984 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22694061 | $\omega$ | 222.34535 | | +0.91931620 | | +0.36669562 |
| $a$ | 2.6619173 | $\Omega$ | 115.62375 | | −0.30509103 | | +0.89334999 |
| $e$ | 0.1137510 | $i$ | 9.11268 | | −0.24855017 | | +0.25973087 |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 0.9− | 1.3+ | 2004 04 14 | 291 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.7− | 1.1+ |
| 2002 10 09 | 699 | 0.1+ | 0.2− | 2004 04 14 | 291 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.1− | 0.4+ |
| 2002 10 09 | 699 | 0.3+ | 0.3− | 2004 04 14 | 291 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.7− | 0.6+ |
| 2002 10 09 | 699 | 0.1− | 0.9− | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.2− | 1.1+ |
| 2002 10 31 | 704 | 0.4− | 0.3− | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.4+ | 0.2− |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2005 03 31 | 691 | 0.6+ | 0.4+ | 2006 09 20 | 703 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.3− | 1.2+ | 2005 03 31 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.7+ | 0.2+ |
| 2002 10 31 | 704 | 0.2− | 0.1+ | 2005 03 31 | 691 | 0.5+ | 0.9+ | 2006 09 20 | 703 | 0.7− | 0.4+ |
| 2002 10 31 | 704 | (0.9+ | 1.8+) | 2005 04 09 | 704 | 0.4+ | 0.5+ | 2006 09 21 | 699 | 0.3+ | 1.4+ |
| 2002 11 01 | 608 | (0.8− | 1.9−) | 2005 04 09 | 704 | 0.3+ | 0.2− | 2006 09 21 | 699 | 0.5+ | 1.1+ |
| 2002 11 01 | 608 | 0.4+ | 0.1− | 2005 04 09 | 704 | 0.7+ | 0.1+ | 2006 09 21 | 699 | 1.1− | 0.5− |
| 2002 11 01 | 608 | 0.1+ | 0.6+ | 2005 04 09 | 704 | 0.5+ | 0.8+ | 2006 09 26 | 703 | 0.0 | 1.3+ |
| 2004 01 18 | 644 | 0.0 | 0.1− | 2005 05 11 | 703 | 0.6− | 0.6+ | 2006 09 26 | 703 | (0.3+ | 1.5+) |
| 2004 01 18 | 644 | 0.4+ | 0.2+ | 2005 05 11 | 703 | 1.0− | 0.9+ | 2006 09 26 | 703 | 0.3+ | 1.3+ |
| 2004 01 18 | 644 | 0.2+ | 0.4+ | 2005 05 11 | 703 | 0.5− | 0.1− | 2006 09 26 | 703 | 0.7+ | 1.2+ |
| 2004 01 22 | 704 | 1.3+ | 1.2− | 2005 05 11 | 703 | 1.1− | 0.4+ | 2006 09 26 | 703 | (1.5− | 1.1+) |
| 2004 01 22 | 704 | 0.1+ | 0.7+ | 2005 05 11 | 703 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.8− | 0.9+ |
| 2004 01 22 | 704 | 0.7+ | 0.9+ | 2005 05 11 | 703 | 0.7− | 0.4− | 2006 09 26 | 703 | 0.4− | 1.5+ |
| 2004 01 22 | 704 | 0.3+ | 1.3+ | 2005 05 11 | 703 | (1.6− | 0.8+) | 2006 09 26 | 703 | 0.1− | 0.5+ |
| 2004 01 22 | 704 | 0.3+ | 0.3+ | 2005 05 11 | 703 | 0.5+ | 0.9+ | 2006 09 26 | 703 | 0.2− | 0.2− |
| 2004 01 31 | 691 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.3+ |
| 2004 01 31 | 691 | 0.0 | 0.2− | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.1− |
| 2004 01 31 | 691 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.1− |
| 2004 02 11 | 691 | 0.1− | 0.7+ | 2006 08 16 | 644 | 0.5− | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2004 02 11 | 691 | 0.1+ | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |

**(144050)∗ 2004 BD$_{30}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.24014 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26670678 | $\omega$ | 80.13041 | | −0.07021810 | | −0.99745970 |
| $a$ | 2.3902684 | $\Omega$ | 13.91301 | | +0.89458012 | | −0.06828104 |
| $e$ | 0.1352058 | $i$ | 2.85628 | | +0.44135681 | | −0.02029392 |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 0.7− | 0.9− | 2006 10 11 | 644 | 0.3− | 0.5+ |
| 1995 10 28 | 691 | (1.6− | 4.6−) | 2004 02 11 | 699 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 1995 10 28 | 691 | 0.6+ | 0.4+ | 2004 02 11 | 699 | 0.7− | 0.7− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 1995 11 20 | 691 | 0.6+ | 0.9− | 2004 02 11 | 699 | 0.6− | 0.3− | 2006 10 16 | 106 | (0.8− | 1.7+) |
| 1995 11 20 | 691 | 0.5− | 0.7− | 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 106 | 0.6− | 1.3+ |
| 1995 11 20 | 691 | 0.3− | 0.8− | 2004 02 12 | 691 | 0.2− | 0.0 | 2006 10 16 | 106 | 0.1+ | 0.5+ |
| 2000 01 04 | 704 | 0.1+ | 1.4− | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 16 | 106 | 0.6− | 0.3+ |
| 2000 01 04 | 704 | 0.6+ | 0.6− | 2004 02 16 | 704 | 0.6− | 1.3+ | 2006 10 17 | G96 | (0.7+ | 2.3−) |
| 2000 01 04 | 704 | 0.6+ | 1.9− | 2004 02 16 | 704 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.4− | 1.3− |
| 2004 01 18 | 644 | 0.6+ | 0.5+ | 2004 02 16 | 704 | 0.5− | 0.9+ | 2006 10 17 | 703 | 0.4+ | 0.6− |
| 2004 01 18 | 644 | 0.8+ | 0.6+ | 2004 02 16 | 704 | 0.5− | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.2− |
| 2004 01 18 | 644 | 0.6+ | 0.5+ | 2004 02 23 | 704 | 0.2+ | 1.4− | 2006 10 17 | 703 | 1.1− | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.3− | 0.5− | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2004 01 22 | 704 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.8+ | 2006 10 17 | 703 | 0.1+ | 0.5+ |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.8+ | 1.0+ | 2006 10 17 | 703 | 0.9− | 0.4− |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.5+ | 1.0− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2004 01 26 | 699 | 0.3+ | 0.1− | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2004 01 26 | 699 | 0.5+ | 0.8+ | 2004 02 26 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2004 01 26 | 699 | 0.2− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2004 01 26 | 699 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2004 01 30 | 704 | 0.4+ | 0.0 | 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2004 01 30 | 704 | 0.4− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2004 01 30 | 704 | 0.9+ | 0.6− | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2004 01 30 | 704 | 1.0+ | 0.5− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2004 01 31 | 599 | 1.3− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.6− | 0.2− |
| 2004 01 31 | 599 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2004 01 31 | 599 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4− | 0.1+ |
| 2004 01 31 | 704 | (1.7+ | 0.4+) | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.5− | 0.1+ |
| 2004 01 31 | 704 | 0.9+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.9+ | 0.6− |
| 2004 01 31 | 704 | (2.0− | 2.4+) | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2004 02 10 | 703 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.6+ |
| 2004 02 10 | 703 | 0.8− | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.1− |
| 2004 02 10 | 703 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | | | |
| 2004 02 10 | 703 | (1.6+ | 0.1+) | 2006 10 10 | 644 | 0.2+ | 0.1− | | | | |

**(144051)∗ 2004 BF$_{30}$ = 2000 EE$_{162}$ = 2002 TL$_{87}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61780)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.96965 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23204395 | $\omega$ | 78.41245 | | −0.09647342 | | −0.99525890 |
| $a$ | 2.6227439 | $\Omega$ | 17.13829 | | +0.89608977 | | −0.09224968 |
| $e$ | 0.0434480 | $i$ | 2.40257 | | +0.43326204 | | −0.03081744 |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.6+ | 0.1+ | 2002 10 11 | 704 | 0.0 | 0.2− | 2004 02 12 | 691 | 0.4− | 0.4− |
| 2000 03 03 | 704 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.8− | 2004 02 16 | 704 | 0.4− | 0.3− |
| 2000 03 03 | 704 | 0.3− | 0.9+ | 2002 10 11 | 704 | 0.1+ | 0.5− | 2004 02 16 | 704 | 0.3+ | 0.1− |
| 2000 03 03 | 704 | 0.2+ | 1.0+ | 2004 01 18 | 644 | 0.0 | 0.3− | 2004 02 16 | 704 | 0.1− | 0.4+ |
| 2000 03 03 | 704 | 0.0 | 0.3+ | 2004 01 18 | 644 | 0.0 | 0.3− | 2004 02 16 | 704 | 0.5+ | 0.0 |
| 2000 03 11 | 704 | 0.7+ | 1.9+ | 2004 01 18 | 644 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.1− | 0.0 |
| 2000 03 11 | 699 | 0.0 | 0.7+ | 2004 01 22 | 704 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.3+ | 0.0 |
| 2000 03 11 | 704 | 1.6+ | 1.6+ | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 0.6− | 0.0 |
| 2000 03 11 | 704 | 0.3+ | 0.9+ | 2004 01 22 | 704 | 0.0 | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.7+ |
| 2000 03 11 | 699 | 0.3+ | 0.3− | 2004 01 22 | 704 | 0.7+ | 1.2− | 2004 02 23 | 704 | 0.3+ | 0.4+ |
| 2000 03 11 | 704 | 0.8+ | 0.5+ | 2004 01 22 | 704 | 0.3− | 0.8+ | 2006 08 23 | 644 | 0.4− | 0.3+ |
| 2000 03 11 | 699 | 0.4+ | 0.5+ | 2004 01 30 | 704 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.4− | 0.5+ |
| 2000 03 11 | 704 | 0.0 | 1.1+ | 2004 01 30 | 704 | 0.0 | 0.8− | 2006 08 23 | 644 | 0.0 | 0.2+ |
| 2000 03 11 | 699 | 0.0 | 0.8+ | 2004 01 30 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2004 01 30 | 704 | 0.7+ | 0.3− | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.8+ | 0.4+ | 2004 02 10 | 703 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.5− | 0.7+ |
| 2002 10 03 | 704 | 0.8+ | 0.1+ | 2004 02 10 | 703 | 0.7− | 0.7− | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.7+ | 0.2− | 2004 02 10 | 703 | 0.4+ | 1.0+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2002 10 04 | 704 | 0.6− | 1.0+ | 2004 02 10 | 703 | 0.3+ | 1.2+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.9− | 0.2+ | 2004 02 11 | 699 | (1.5− | 1.8−) | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2002 10 04 | 704 | 0.6− | 1.1+ | 2004 02 11 | 699 | 0.5− | 1.0− | 2006 11 15 | G96 | 0.7+ | 0.7− |
| 2002 10 04 | 704 | 0.6− | 1.3+ | 2004 02 11 | 699 | 0.8+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.6+ |
| 2002 10 04 | 704 | 1.4− | 0.8+ | 2004 02 11 | 699 | (0.7− | 1.8−) | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.8+ | 0.5− | 2004 02 12 | 691 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 10 11 | 704 | 0.3− | 0.9− | 2004 02 12 | 691 | 0.4− | 0.3− | | | | |

**(144052)∗ 2004 BO$_{30}$ = 1976 UK$_{9}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61780)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.14007 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26319621 | $\omega$ | 355.91761 | | +0.99998197 | | −0.00521637 |
| $a$ | 2.4114761 | $\Omega$ | 4.38458 | | +0.00599062 | | +0.90133312 |
| $e$ | 0.2193159 | $i$ | 2.23086 | | −0.00042317 | | +0.43309515 |
| $P$ | 3.74 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 10 22 | 381 | 0.9− | 0.8− | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 1976 10 22 | 381 | 1.3+ | 0.2− | 2004 01 30 | 691 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 1997 03 02 | 691 | 0.5+ | 0.3− | 2004 01 30 | 691 | 0.0 | 0.3+ | 2006 10 29 | 704 | 0.2+ | 0.9+ |
| 1997 03 02 | 691 | 0.5+ | 0.5− | 2004 02 16 | 704 | 0.8− | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.1+ |
| 1997 03 02 | 691 | 0.2+ | 0.3− | 2004 02 16 | 704 | 0.2+ | 0.8+ | 2006 10 29 | 704 | 0.2+ | 0.3+ |
| 2002 08 10 | 704 | 0.7− | 0.6+ | 2004 02 16 | 704 | 1.1− | 1.0+ | 2006 10 29 | 704 | 0.4+ | 0.1+ |
| 2002 08 10 | 704 | 0.4− | 1.1+ | 2004 02 23 | 704 | 0.4− | 1.4+ | 2006 10 29 | 704 | 0.3− | 0.5+ |
| 2002 08 10 | 704 | 0.7− | 1.2+ | 2004 02 23 | 704 | 0.0 | 1.3+ | 2006 11 11 | 703 | 0.0 | 1.5− |
| 2002 08 10 | 704 | 0.7− | 0.3+ | 2004 02 23 | 704 | 1.3− | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2002 08 10 | 704 | 1.3− | 1.2+ | 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.6+ | 1.5+ | 2006 08 25 | 704 | (0.5− | 1.5+) | 2006 11 11 | 703 | 0.1− | 0.7+ | | |
| 2002 08 14 | 704 | (0.2− | 1.7+) | 2006 08 25 | 704 | 0.2+ | 0.6− | 2006 11 13 | 644 | 0.1− | 0.1− | | |
| 2002 08 14 | 704 | 1.2+ | 0.7+ | 2006 08 25 | 704 | 0.7+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2− | | |
| 2002 08 14 | 704 | 0.4− | 0.8+ | 2006 08 25 | 704 | 0.4− | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.7− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2002 08 29 | 644 | 0.1− | 0.3− | 2006 08 28 | 703 | (0.6− | 1.6+) | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.7+ | 0.8+ | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4− | | |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.3+ | | |
| 2002 09 05 | 704 | 0.7− | 0.3+ | 2006 09 27 | 704 | (1.6− | 0.7+) | 2006 11 16 | 704 | 0.6+ | 0.1+ | | |
| 2002 09 11 | 608 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.5+ | 0.5− | 2006 11 16 | 704 | 1.0+ | 0.6+ | | |
| 2002 09 11 | 608 | 0.1− | 0.7− | 2006 09 28 | G96 | 0.4+ | 0.5− | 2006 11 16 | 704 | 0.5+ | 0.7+ | | |
| 2002 09 11 | 608 | 0.2− | 0.5− | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.5− | 0.4− | | |
| 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.0 | 0.6− | | |
| 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.1− | 1.1− | 2006 11 17 | 703 | 0.6− | 0.1− | | |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.2+ | 1.4− | 2006 11 17 | 703 | 0.2− | 0.3− | | |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.2− | 1.1− | 2006 11 18 | 704 | 0.2− | 0.1− | | |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.2+ | 1.1+ | 2006 11 18 | 704 | 0.7− | 0.8+ | | |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 10 19 | 704 | 0.6− | 0.6− | 2006 11 18 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 29 | 704 | 0.7− | 0.2+ | 2006 10 19 | 704 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.5+ | | |
| 2002 10 29 | 704 | 0.9− | 0.5− | 2006 10 19 | 704 | 0.5+ | 1.3+ | 2006 11 19 | 704 | 0.0 | 1.0+ | | |
| 2002 10 29 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 29 | 704 | 0.5− | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.1− | 1.0+ | | |
| 2004 01 18 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.8+ | | |
| 2004 01 18 | 644 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.5+ | | |
| 2004 01 18 | 644 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.9+ | 0.6+ | | |
| 2004 01 22 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.3+ | 2006 11 29 | 704 | 0.0 | 0.5+ | | |
| 2004 01 22 | 704 | 0.7− | 0.2− | 2006 10 21 | H07 | 0.7+ | 0.8− | 2006 11 29 | 704 | 0.5+ | 0.0 | | |
| 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 10 21 | H07 | 0.4+ | 0.0 | 2006 11 29 | 704 | 0.8+ | 1.0− | | |
| 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 10 21 | H07 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.3+ | | |
| 2004 01 22 | 704 | 0.1+ | 1.1+ | 2006 10 22 | 644 | 0.2− | 0.1− | | | | | | |

**(144053)∗ 2004 BZ$_{30}$**

Discovered 2004 Jan. 18 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 106.83885 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.18899553 | | $\omega$ | 149.79333 | | | −0.57852305 | | | +0.81378016 | | | |
| $a$ | 3.0072419 | | $\Omega$ | 84.80536 | | | −0.75905747 | | | −0.51225108 | | | |
| $e$ | 0.1637270 | | $i$ | 3.19088 | | | −0.29856796 | | | −0.27451900 | | | |
| $P$ | 5.21 | | $H$ | 15.4 | | $G$ | 0.15 | | $U$ | 1 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.0 | 0.8+ | 2004 02 16 | 704 | 0.4− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.3+ | | |
| 2001 09 26 | 704 | 0.3− | 0.5+ | 2004 02 16 | 704 | 1.0+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.2+ | | |
| 2001 09 26 | 704 | (1.6− | 0.0 ) | 2004 02 16 | 704 | 0.5+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.5+ | | |
| 2001 09 26 | 704 | 0.4+ | 0.6+ | 2004 02 18 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.0 | | |
| 2001 10 25 | 645 | 0.0 | 0.2− | 2004 02 18 | 704 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.5− | 0.6+ | | |
| 2001 10 25 | 645 | 0.1+ | 0.1− | 2004 02 18 | 704 | 0.7− | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.1− | | |
| 2004 01 18 | 644 | 0.3+ | 0.5+ | 2004 02 18 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.4− | | |
| 2004 01 18 | 644 | 0.1+ | 0.0 | 2004 02 18 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.9− | 0.1+ | | |
| 2004 01 18 | 644 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.6− | 1.0+ | 2006 09 18 | 703 | 0.7− | 0.5− | | |
| 2004 01 22 | 704 | 0.2− | 1.3− | 2004 02 23 | 704 | (0.3+ | 1.7+) | 2006 09 18 | 703 | (2.7− | 2.4+) | | |
| 2004 01 22 | 704 | 0.6+ | 0.6− | 2004 02 23 | 704 | 0.3− | 1.1+ | 2006 09 19 | 703 | 0.3− | 0.2+ | | |
| 2004 01 22 | 704 | 0.4− | 0.8− | 2004 02 23 | 704 | 0.1+ | 1.4+ | 2006 09 19 | 703 | 0.8− | 0.9− | | |
| 2004 01 22 | 704 | 0.0 | 0.7− | 2004 03 19 | 644 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.6+ | 0.9+ | | |
| 2004 01 22 | 704 | 0.0 | 1.1− | 2004 03 19 | 644 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.1− | | |
| 2004 01 23 | 699 | 0.0 | 0.3+ | 2004 03 19 | 644 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.6− | | |
| 2004 01 23 | 699 | 0.3− | 0.4− | 2005 01 24 | 809 | 0.1− | 0.5+ | 2006 09 30 | 703 | (1.4+ | 1.8+) | | |
| 2004 01 23 | 699 | 0.4− | 0.2+ | 2005 01 24 | 809 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.1+ | 0.3− | | |
| 2004 01 23 | 699 | 0.5− | 0.5− | 2005 01 24 | 809 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 1.3+ | | |
| 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 08 18 | 691 | 0.3− | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 08 18 | 691 | 0.2+ | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.5− | | |
| 2004 02 13 | 691 | 0.0 | 0.5+ | 2006 08 18 | 691 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2004 02 16 | 704 | 0.0 | 1.3− | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.5+ | | |

**(144054)∗ 2004 BM$_{34}$**

Discovered 2004 Jan. 19 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 98.41920 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.27004064 | | $\omega$ | 330.07690 | | | +0.39990231 | | | +0.91423625 | | | |
| $a$ | 2.3705546 | | $\Omega$ | 323.38378 | | | −0.81774757 | | | +0.32376132 | | | |
| $e$ | 0.0909044 | | $i$ | 6.27511 | | | −0.41396504 | | | +0.24361997 | | | |
| $P$ | 3.65 | | $H$ | 16.1 | | $G$ | 0.15 | | $U$ | 2 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 17 | 599 | 0.5+ | 0.1+ | 2003 12 22 | 704 | 0.0 | 0.4+ | 2004 01 31 | 704 | 1.1+ | 0.5− | | |
| 1997 01 17 | 599 | 0.2− | 2.0+ | 2003 12 22 | 704 | 0.1+ | 0.3− | 2004 02 01 | A16 | (3.6− | 0.0 ) | | |
| 1998 08 17 | 704 | 0.4+ | 0.7+ | 2003 12 27 | 704 | 0.9+ | 0.8+ | 2004 02 12 | 691 | 0.1− | 0.2− | | |
| 1998 08 17 | 704 | 0.0 | 0.6+ | 2003 12 27 | 704 | 1.4+ | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.2− | | |
| 1998 08 17 | 704 | (3.9+ | 0.4+) | 2003 12 27 | 704 | 0.4− | 1.2− | 2004 02 12 | 691 | 0.1− | 0.1+ | | |
| 1998 08 17 | 704 | 0.4− | 0.4+ | 2003 12 27 | 704 | 0.7+ | 0.9− | 2004 02 22 | 291 | 0.4+ | 0.0 | | |
| 1998 08 17 | 704 | 0.4− | 0.2+ | 2004 01 19 | 703 | 0.0 | 1.3+ | 2004 02 22 | 291 | 0.1+ | 0.3+ | | |
| 1998 09 18 | 691 | 0.0 | 0.6− | 2004 01 19 | 703 | 0.7− | 0.0 | 2004 02 22 | 291 | 0.3− | 0.3− | | |
| 1998 09 18 | 691 | 0.2− | 0.1+ | 2004 01 19 | 703 | 1.2+ | 0.2− | 2004 04 14 | 645 | 0.1− | 0.1+ | | |
| 1998 09 18 | 691 | 0.0 | 0.5+ | 2004 01 19 | 703 | 0.2+ | 0.4+ | 2004 04 14 | 645 | 0.1− | 0.1− | | |
| 2002 10 04 | 644 | 0.1+ | 0.4+ | 2004 01 22 | 704 | (0.2− | 1.9+) | 2006 10 27 | 703 | 1.0+ | 0.4− | | |
| 2002 10 04 | 644 | 0.2− | 0.4+ | 2004 01 22 | 704 | (0.6− | 1.8+) | 2006 10 27 | 703 | 0.6+ | 0.1− | | |
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2004 01 22 | 704 | 0.1+ | 1.4+ | 2006 10 27 | 703 | 0.0 | 0.3− | | |
| 2002 10 04 | 644 | 0.1+ | 0.3+ | 2004 01 22 | 704 | (0.2+ | 1.8+) | 2006 10 27 | 703 | 0.1− | 0.7− | | |
| 2002 10 04 | 704 | 0.3− | 0.0 | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.8− | | |
| 2002 10 04 | 704 | 1.2− | 0.4− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.7− | | |
| 2002 10 04 | 704 | 0.7− | 0.2+ | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.7− | | |
| 2002 10 04 | 704 | 0.9− | 0.4+ | 2004 01 30 | 704 | 0.7+ | 0.7+ | 2006 11 02 | G96 | 0.1− | 0.5− | | |
| 2002 10 09 | 704 | 0.5− | 1.0+ | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2006 11 21 | 703 | 0.5− | 0.4− | | |
| 2002 10 09 | 704 | 1.1+ | 0.3+ | 2004 01 30 | 704 | 0.3− | 0.5+ | 2006 11 21 | 703 | 1.1− | 0.8− | | |
| 2002 10 09 | 704 | 0.1+ | 1.2+ | 2004 01 30 | 704 | 0.5− | 0.4+ | 2006 11 21 | 703 | 0.2− | 0.5− | | |
| 2002 10 09 | 704 | 0.9+ | 0.5+ | 2004 01 31 | 704 | (1.3− | 2.3+) | 2006 11 21 | 703 | 0.2+ | 0.3− | | |
| 2003 12 22 | 704 | 1.1+ | 0.3+ | 2004 01 31 | 704 | (1.0+ | 1.8+) | | | | | | |
| 2003 12 22 | 704 | 0.1+ | 0.2− | 2004 01 31 | 704 | 0.0 | 0.8+ | | | | | | |

**(144055)∗ 2004 BR$_{34}$ = 1995 SG$_{82}$ = 2004 BL$_{34}$**

Discovered 2004 Jan. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57602)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 278.46825 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.27262036 | | $\omega$ | 123.51803 | | | −0.30459754 | | | −0.95241482 | | | |
| $a$ | 2.3555764 | | $\Omega$ | 344.20428 | | | +0.85961935 | | | −0.26979932 | | | |
| $e$ | 0.1487024 | | $i$ | 2.36658 | | | +0.41021325 | | | −0.14182501 | | | |
| $P$ | 3.62 | | $H$ | 17.1 | | $G$ | 0.15 | | $U$ | 1 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 23 | 691 | 0.1− | 0.7+ | 2004 01 22 | 704 | 0.2− | 0.4+ | 2004 02 23 | 704 | 0.0 | 1.2+ | | |
| 1995 09 23 | 691 | 0.1− | 0.1+ | 2004 01 26 | 699 | 0.0 | 0.1− | 2004 03 18 | 645 | 0.1− | 0.1− | | |
| 1995 09 23 | 691 | 0.1− | 0.8+ | 2004 01 26 | 699 | 0.1+ | 0.1− | 2004 03 18 | 645 | 0.1− | 0.2− | | |
| 1995 09 27 | 691 | 0.1− | 0.1− | 2004 01 26 | 699 | 0.8− | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.3+ | | |
| 1995 09 27 | 691 | 0.1− | 0.3− | 2004 01 26 | 699 | 0.4− | 0.7− | 2006 09 15 | 691 | 0.3+ | 0.1+ | | |
| 1995 09 27 | 691 | 0.2+ | 0.5− | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2− | 0.0 | | |
| 1999 10 13 | 704 | 0.2− | 0.8− | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.6− | 0.7+ | | |
| 1999 10 13 | 704 | 0.3− | 1.8− | 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.9+ | 0.0 | | |
| 1999 10 13 | 704 | 1.1+ | 0.2+ | 2004 01 30 | 704 | 0.3+ | 0.4− | 2006 09 18 | 699 | (1.6− | 1.3+) | | |
| 1999 10 13 | 704 | 0.6+ | 0.9− | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.8+ | | |
| 1999 10 13 | 704 | 0.0 | 0.2+ | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ | | |
| 1999 12 08 | 704 | 0.6+ | 0.0 | 2004 01 30 | 704 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 1999 12 08 | 704 | 0.0 | 0.6− | 2004 01 31 | 704 | 0.2− | 1.3+ | 2006 09 19 | 691 | 0.2− | 0.0 | | |
| 1999 12 08 | 704 | 0.9+ | 0.4− | 2004 01 31 | 704 | 0.5− | 1.1+ | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 1999 12 08 | 704 | 1.2− | 1.2− | 2004 01 31 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 2003 12 27 | 704 | 1.2+ | 0.1+ | 2004 01 31 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2+ | | |
| 2003 12 27 | 704 | 0.5+ | 0.2+ | 2004 02 10 | 703 | 0.3+ | 0.1− | 2006 09 27 | 699 | 0.1+ | 0.2− | | |
| 2003 12 27 | 704 | 0.1+ | 0.8+ | 2004 02 10 | 703 | 1.0− | 0.4+ | 2006 09 27 | 699 | 1.3− | 1.1+ | | |
| 2003 12 27 | 704 | 0.4+ | 0.5+ | 2004 02 10 | 703 | 0.3+ | 0.2+ | 2006 09 27 | 699 | 0.5+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.9+ | 0.5+ | 2004 02 10 | 703 | 0.3− | 0.9− | 2006 09 27 | 699 | 0.1+ | 0.2+ |
| 2004 01 12 | 644 | 0.2− | 0.4+ | 2004 02 12 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.3− |
| 2004 01 12 | 644 | 0.4− | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2004 01 12 | 644 | 0.1− | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2004 01 19 | 703 | 0.5− | 0.2− | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2004 01 19 | 703 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2004 01 19 | 703 | 0.5+ | 0.9+ | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2004 01 19 | 703 | (0.1− | 1.7+) | 2004 02 16 | 704 | 0.0 | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2004 01 19 | 691 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.7− |
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2004 02 16 | 704 | 0.6+ | 1.3+ | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2004 01 19 | 691 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.5− |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 0.1+ | 1.2+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2004 01 22 | 704 | 0.6+ | 0.4− | 2004 02 23 | 704 | 0.4+ | 0.4+ | | | | |
| 2004 01 22 | 704 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.5− | 0.8+ | | | | |

**(144056)∗ 2004 BH$_{35}$**

Discovered 2004 Jan. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.30682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27203141 | $\omega$ | 84.38405 | | −0.99793264 | +0.02746007 | |
| $a$ | 2.3589751 | $\Omega$ | 97.17995 | | −0.04802974 | −0.91940078 | |
| $e$ | 0.1314467 | $i$ | 3.35751 | | +0.04270360 | −0.39236228 | |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.1− | 0.4+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2005 07 11 | 691 | (0.6− | 4.1−) |
| 1995 10 27 | 691 | 0.1− | 0.3− | 2004 02 12 | 691 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.0 | 0.6− |
| 1995 10 27 | 691 | 0.2+ | 0.2− | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2001 05 24 | 807 | 0.2− | 0.8+ | 2004 02 13 | 699 | (2.0− | 1.5+) | 2006 10 03 | G96 | 0.2− | 0.9− |
| 2001 05 24 | 807 | 0.0 | 0.7+ | 2004 02 14 | 691 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.9+ | 0.1− |
| 2004 01 19 | 691 | 0.1− | 0.3+ | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.6+ |
| 2004 01 19 | 691 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.4+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.8+ | 0.6+ | 2004 02 15 | 704 | 0.9+ | 1.2+ | 2006 10 19 | 691 | 0.1− | 0.4+ |
| 2004 01 22 | 704 | 0.8+ | 1.2+ | 2004 02 15 | 704 | 0.8+ | 0.8+ | 2006 10 19 | 691 | 0.2+ | 0.4+ |
| 2004 01 22 | 704 | 0.2+ | 0.9+ | 2004 02 15 | 704 | 0.9+ | 0.8+ | 2006 10 19 | 691 | 0.3− | 0.4+ |
| 2004 01 22 | 704 | 0.1+ | 1.4+ | 2004 02 15 | 704 | 0.5+ | 1.2+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2004 01 22 | 704 | 0.4+ | 1.3+ | 2004 02 23 | 704 | 0.2− | 1.0+ | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2004 01 26 | 699 | (1.5+ | 1.6+) | 2004 02 23 | 704 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2004 01 26 | 699 | 0.2− | 1.4− | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2004 01 26 | 699 | (1.8+ | 0.8−) | 2004 02 23 | 704 | (0.2+ | 2.3+) | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2004 01 26 | 699 | (2.5+ | 0.8+) | 2004 02 23 | 704 | (2.8− | 2.3+) | 2006 11 08 | 644 | 0.0 | 0.2− |
| 2004 01 30 | 691 | 0.0 | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2004 01 30 | 691 | 0.1+ | 0.2− | 2004 04 15 | 645 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2004 01 30 | 691 | 0.1+ | 0.2− | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.3− | 0.3− |
| 2004 01 30 | 704 | 0.2+ | 0.0 | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.7− |
| 2004 01 30 | 704 | 0.9+ | 0.3+ | 2005 07 02 | 691 | 1.1− | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2004 01 30 | 704 | 0.6+ | 0.6− | 2005 07 02 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2004 01 30 | 704 | 0.1+ | 0.4− | 2005 07 02 | 691 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2004 02 01 | A16 | (0.8− | 6.6−) | 2005 07 07 | 691 | 0.7+ | 0.6+ | 2006 11 17 | 703 | (2.2− | 0.3−) |
| 2004 02 10 | 703 | 0.8− | 0.5− | 2005 07 07 | 691 | 0.1− | 0.3− | 2006 11 17 | 703 | (0.2− | 3.0−) |
| 2004 02 10 | 703 | (2.7− | 1.8+) | 2005 07 07 | 691 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.2− | 1.2− |
| 2004 02 10 | 703 | (1.6− | 0.6+) | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | (2.2+ | 0.8+) |
| 2004 02 10 | 703 | 0.1− | 1.3+ | 2005 07 11 | 691 | 0.2− | 0.0 | | | | |

**(144057)∗ 2004 BJ$_{36}$ = 2001 KH$_{74}$**

Discovered 2004 Jan. 19 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 57602)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.85247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27244510 | $\omega$ | 199.07637 | | −0.99494856 | −0.09907900 | |
| $a$ | 2.3565865 | $\Omega$ | 335.22057 | | +0.09638339 | −0.89787392 | |
| $e$ | 0.1107090 | $i$ | 2.20781 | | +0.02806418 | −0.42895894 | |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 02 | 704 | 0.3+ | 1.0− | 2004 01 19 | 691 | 0.0 | 0.1+ | 2004 02 16 | 704 | 0.5+ | 0.3+ |
| 1997 04 02 | 704 | 0.1+ | 0.9− | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.5− |
| 1997 04 02 | 704 | 0.4+ | 0.9+ | 2004 01 22 | 704 | 0.4+ | 0.3− | 2004 02 23 | 704 | 0.1− | 0.3− |
| 1997 04 02 | 704 | 0.4+ | 0.8− | 2004 01 22 | 704 | 0.0 | 0.4− | 2004 02 23 | 704 | 0.3− | 0.6− |
| 2001 05 26 | 704 | 0.4− | 0.2− | 2004 01 22 | 704 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.1− | 0.4− |
| 2001 05 26 | 704 | 0.3+ | 0.5+ | 2004 01 26 | 699 | 0.2+ | 0.5− | 2004 02 23 | 704 | 0.1− | 0.1− |
| 2001 05 26 | 704 | 0.7+ | 1.1+ | 2004 01 26 | 699 | 0.5− | 0.4− | 2004 02 27 | 704 | 0.2+ | 0.2+ |
| 2001 05 26 | 704 | 0.4− | 0.2− | 2004 01 26 | 699 | 0.6− | 0.5− | 2004 02 27 | 704 | 0.5+ | 0.1+ |
| 2001 05 29 | 608 | 0.1+ | 0.6− | 2004 01 26 | 699 | 0.2− | 0.2− | 2004 02 27 | 704 | 0.3+ | 0.3− |
| 2001 05 29 | 608 | 0.3+ | 0.4− | 2004 01 30 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2001 05 29 | 608 | 0.4+ | 0.1− | 2004 01 30 | 691 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.4+ |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.2+ | 0.5+ | 2006 10 13 | 691 | 0.2− | 0.4+ |
| 2003 10 24 | 691 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.4+ |
| 2003 10 24 | 691 | 0.2+ | 0.6− | 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2003 10 24 | 691 | 0.3+ | 0.1+ | 2004 01 30 | 291 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2003 12 27 | 704 | 0.2− | 0.0 | 2004 01 30 | 291 | 0.9− | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2003 12 27 | 704 | 0.2+ | 0.5− | 2004 01 30 | 291 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2003 12 27 | 704 | 0.4+ | 0.7+ | 2004 01 31 | 704 | 0.8+ | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2003 12 27 | 704 | 0.9+ | 1.0+ | 2004 01 31 | 704 | 1.0+ | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 2003 12 27 | 704 | 0.4+ | 0.0 | 2004 01 31 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2004 01 05 | 703 | 0.6− | 0.3+ | 2004 01 31 | 704 | 1.1+ | 0.1− | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 2004 01 05 | 703 | 0.6− | 0.2+ | 2004 02 10 | 703 | 0.7+ | 0.4+ | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2004 01 05 | 703 | 0.4− | 1.2− | 2004 02 10 | 703 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.6− |
| 2004 01 05 | 703 | 0.5+ | 0.5− | 2004 02 10 | 703 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.7− | 1.4− |
| 2004 01 12 | 644 | 0.0 | 0.2+ | 2004 02 10 | 703 | 1.0− | 1.0+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2004 01 12 | 644 | 0.1+ | 0.1+ | 2004 02 11 | 699 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.4− |
| 2004 01 12 | 644 | 0.4+ | 0.0 | 2004 02 11 | 699 | 0.8+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2004 01 15 | A16 | 0.0 | 0.6+ | 2004 02 11 | 699 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.8− | 0.3+ |
| 2004 01 15 | A16 | 0.8− | 0.5− | 2004 02 11 | 699 | 0.0 | 0.8+ | 2006 11 19 | 704 | 1.1+ | 0.1+ |
| 2004 01 15 | A16 | (0.8− | 2.7−) | 2004 02 14 | 691 | 0.1+ | 0.8− | 2006 11 19 | 704 | 1.3+ | 0.8+ |
| 2004 01 19 | 703 | 0.5− | 0.0 | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2004 01 19 | 703 | 1.3− | 0.7+ | 2004 02 14 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.3− |
| 2004 01 19 | 703 | 1.0− | 0.7+ | 2004 02 16 | 704 | 0.2− | 0.1+ | 2006 11 21 | 704 | 1.9+ | 0.4+ |
| 2004 01 19 | 703 | 0.8+ | 0.3+ | 2004 02 16 | 704 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.6+ |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2004 02 16 | 704 | 0.2− | 0.5+ | | | | |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 02 16 | 704 | 0.0 | 0.3− | | | | |

**(144058)∗ 2004 BV$_{37}$**

Discovered 2004 Jan. 19 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.60055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22261301 | $\omega$ | 83.82609 | | +0.67510535 | −0.72175237 | |
| $a$ | 2.6963050 | $\Omega$ | 322.20154 | | +0.53906263 | +0.62390467 | |
| $e$ | 0.0212639 | $i$ | 14.42369 | | +0.50363106 | +0.29969398 | |
| $P$ | 4.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 699 | 1.7+ | 0.2+ | 2004 02 10 | 703 | 0.7− | 1.2− | 2004 03 18 | 704 | 0.3+ | 0.3+ |
| 2000 03 12 | 699 | 0.2+ | 1.4+ | 2004 02 10 | 703 | 0.7+ | 1.1+ | 2004 03 18 | 704 | 0.1+ | 0.3+ |
| 2000 03 12 | 699 | 0.3+ | 0.8+ | 2004 02 11 | 699 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.1− | 0.5+ |
| 2000 03 12 | 699 | 0.1+ | 0.7+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2004 03 18 | 049 | 0.4+ | 0.7− |
| 2000 03 12 | 699 | 0.2+ | 0.6+ | 2004 02 11 | 699 | 0.3+ | 0.3+ | 2004 03 18 | 049 | 0.4− | 0.6− |
| 2000 03 12 | 699 | 1.0+ | 0.0 | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2004 03 18 | 049 | 0.2− | 0.9− |
| 2000 03 12 | 699 | 1.0− | 0.5+ | 2004 02 11 | 699 | 0.1+ | 0.3+ | 2006 07 26 | A50 | 0.8− | 0.1+ |
| 2000 03 12 | 699 | 0.7+ | 0.0 | 2004 02 11 | 699 | 0.2+ | 0.1+ | 2006 07 26 | A50 | 0.6− | 0.0 |
| 2002 10 06 | 704 | 0.9− | 0.2+ | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 08 15 | 644 | 0.3− | 0.3+ |
| 2002 10 06 | 704 | 0.1− | 0.2+ | 2004 02 12 | 333 | 0.2− | 0.0 | 2006 08 15 | 644 | 0.2− | 0.4+ |
| 2002 10 06 | 704 | 0.3− | 0.5+ | 2004 02 12 | 333 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.4− | 0.1+ |
| 2002 10 06 | 704 | 0.3− | 0.6+ | 2004 02 12 | 333 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.3− | 0.9+ |
| 2002 10 06 | 704 | 0.8− | 0.6− | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 08 24 | 704 | 0.0 | 0.5+ |
| 2002 11 01 | 704 | 0.2− | 0.3− | 2004 02 13 | 691 | 0.8− | 0.0 | 2006 08 24 | 704 | 0.5+ | 0.4+ |
| 2002 11 01 | 704 | 0.0 | 0.5− | 2004 02 13 | 333 | 0.2+ | 0.0 | 2006 08 24 | 704 | 0.2+ | 0.6+ |
| 2002 11 01 | 704 | 0.1− | 0.4− | 2004 02 13 | 333 | 0.2− | 0.8− | 2006 08 24 | 704 | 0.6+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 699 | 1.1+ | 0.0 | 2004 02 13 | 691 | 0.4− | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.6+ | | |
| 2002 11 12 | 699 | 0.3− | 1.2− | 2004 02 13 | 333 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.9+ | 0.4+ | | |
| 2002 11 12 | 699 | 0.4− | 0.6− | 2004 02 13 | 333 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.5− | 1.1+ | | |
| 2002 11 12 | 699 | 0.1+ | 0.3− | 2004 02 13 | 333 | 0.2− | 0.1− | 2006 08 30 | 704 | 1.3− | 1.3+ | | |
| 2002 12 07 | 704 | 1.1+ | 0.3+ | 2004 02 14 | 106 | 0.1− | 0.4− | 2006 08 30 | 704 | 0.6− | 0.7+ | | |
| 2002 12 07 | 704 | 1.1+ | 0.1− | 2004 02 14 | 106 | 0.0 | 0.2− | 2006 09 04 | A13 | 0.5− | 0.3− | | |
| 2002 12 07 | 704 | 1.2+ | 1.0+ | 2004 02 14 | 106 | 0.0 | 0.5− | 2006 09 04 | A13 | 0.4− | 0.2− | | |
| 2004 01 19 | 703 | 0.8+ | 0.4+ | 2004 02 17 | 704 | 1.4+ | 1.0+ | 2006 09 04 | A13 | 0.3− | 0.1+ | | |
| 2004 01 19 | 703 | 0.3+ | 0.1+ | 2004 02 17 | 704 | 1.1+ | 0.8+ | 2006 09 13 | 644 | 0.4− | 0.0 | | |
| 2004 01 19 | 703 | (3.0− | 0.1−) | 2004 02 17 | 704 | 0.7+ | 0.8+ | 2006 09 13 | 644 | 0.2− | 0.4+ | | |
| 2004 01 19 | 703 | 0.4− | 0.4− | 2004 02 17 | 704 | 1.1+ | 1.0+ | 2006 09 13 | 644 | 0.3− | 0.2+ | | |
| 2004 01 22 | 704 | 0.8+ | 0.4+ | 2004 02 17 | 704 | 0.8+ | 1.1+ | 2006 09 18 | 703 | 0.3− | 0.8− | | |
| 2004 01 22 | 704 | 0.6+ | 0.9+ | 2004 02 17 | 106 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.1− | 0.0 | | |
| 2004 01 22 | 704 | 1.3+ | 0.7+ | 2004 02 17 | 106 | 0.3− | 0.5− | 2006 09 18 | 703 | 1.1− | 0.1− | | |
| 2004 01 22 | 704 | 0.6+ | 0.5+ | 2004 02 17 | 106 | 0.4− | 0.5− | 2006 09 18 | 703 | 0.6− | 0.5− | | |
| 2004 01 22 | 704 | 0.6+ | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.4+ | | |
| 2004 01 31 | 704 | 0.4+ | 1.2− | 2004 02 26 | 704 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.1− | 0.2+ | | |
| 2004 01 31 | 704 | 0.8+ | 0.1+ | 2004 02 26 | 704 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.9− | 0.2− | | |
| 2004 01 31 | 704 | 0.0 | 0.3− | 2004 02 26 | 704 | 0.4− | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.6+ | | |
| 2004 01 31 | 704 | (1.5+ | 0.2−) | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 699 | 1.2+ | 0.8+ | | |
| 2004 02 10 | 644 | 0.3− | 0.4+ | 2004 03 01 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 0.2− | 0.4+ | | |
| 2004 02 10 | 703 | 0.6− | 0.3+ | 2004 03 01 | 691 | 0.1− | 0.2+ | 2006 09 30 | 699 | 0.9− | 0.2+ | | |
| 2004 02 10 | 644 | 0.4− | 0.2+ | 2004 03 01 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 699 | 0.1+ | 1.0+ | | |
| 2004 02 10 | 703 | 0.2− | 0.4− | 2004 03 18 | 704 | 0.5+ | 0.7+ | | | | | | |
| 2004 02 10 | 644 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.2− | 0.2+ | | | | | | |

**(144059)∗ 2004 BL$_{40}$ = 1997 CW$_7$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69638)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.94959 | | (2000.0) | | | |
| $n$ | 0.28017595 | $\omega$ | 105.59440 | | +0.81676263 | −0.57323541 |
| $a$ | 2.3130347 | $\Omega$ | 289.42466 | | +0.49914482 | +0.75901589 |
| $e$ | 0.2255363 | $i$ | 3.98710 | | +0.28940154 | +0.30870056 |
| $P$ | 3.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 691 | 0.0 | 0.7− | 2006 09 15 | 683 | 0.2+ | 0.8− | 2006 09 28 | 704 | 0.3− | 0.0 | | |
| 1997 02 01 | 691 | 0.2− | 0.7− | 2006 09 15 | 683 | 0.7+ | 0.6− | 2006 09 28 | 683 | 0.8+ | 0.8+ | | |
| 1997 02 01 | 691 | 0.0 | 0.4− | 2006 09 15 | 683 | 0.2− | 0.4− | 2006 09 28 | 704 | 0.1+ | 0.5+ | | |
| 1997 02 07 | 691 | 0.2− | 0.2− | 2006 09 16 | 683 | 0.3− | 1.5− | 2006 09 28 | 683 | 1.3+ | 0.9+ | | |
| 1997 02 07 | 691 | 0.1− | 0.3− | 2006 09 16 | 703 | 0.3+ | 0.4− | 2006 09 28 | 683 | 0.5+ | 0.5+ | | |
| 1997 02 07 | 691 | 0.2− | 0.3− | 2006 09 16 | 683 | (0.5+ | 1.7−) | 2006 10 03 | 704 | 1.0− | 1.3+ | | |
| 1999 09 05 | 703 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.4+ | 0.1− | 2006 10 03 | 704 | 0.0 | 1.3+ | | |
| 1999 09 05 | 703 | 0.2− | 0.7+ | 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 10 03 | 704 | 1.3+ | 0.4− | | |
| 1999 09 05 | 703 | 0.7+ | 0.9+ | 2006 09 16 | 683 | 0.1− | 1.2− | 2006 10 04 | G96 | 0.4+ | 0.5− | | |
| 1999 09 05 | 703 | 0.6− | 0.3+ | 2006 09 16 | 703 | 0.3+ | 0.5− | 2006 10 04 | G96 | 0.3+ | 0.3− | | |
| 1999 09 18 | 704 | 1.1+ | 0.4− | 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.4− | | |
| 1999 09 18 | 704 | 0.3+ | 0.4− | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 04 | G96 | (2.0− | 0.9+) | | |
| 1999 09 18 | 704 | 0.1+ | 0.5− | 2006 09 16 | 644 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.0 | | |
| 1999 09 18 | 704 | 0.2− | 0.6+ | 2006 09 17 | 683 | 0.7+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.1− | | |
| 1999 09 18 | 704 | 0.2− | 0.6− | 2006 09 17 | 683 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.3− | | |
| 1999 10 03 | 704 | 0.2+ | 0.9+ | 2006 09 17 | 683 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 1999 10 03 | 704 | 0.2− | 0.5− | 2006 09 18 | 683 | 0.5+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.2− | | |
| 1999 10 03 | 704 | 0.5+ | 0.6− | 2006 09 18 | 683 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2− | | |
| 1999 10 03 | 704 | 0.4+ | 0.8− | 2006 09 18 | 683 | 0.6+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.2− | | |
| 1999 10 10 | 704 | 0.5− | 0.4− | 2006 09 19 | 683 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.2− | | |
| 1999 10 10 | 704 | 0.8− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.4− | | |
| 1999 10 10 | 704 | 0.4− | 0.5+ | 2006 09 19 | 683 | 0.1+ | 0.5− | 2006 10 12 | 644 | 0.3+ | 0.0 | | |
| 1999 10 10 | 704 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.3+ | | |
| 1999 10 10 | 704 | 0.6− | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.3− | | |
| 1999 11 04 | 703 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.4− | | |
| 1999 11 04 | 704 | 0.9+ | 0.5− | 2006 09 21 | 683 | 0.1+ | 1.3− | 2006 10 17 | 703 | 0.2+ | 0.1+ | | |
| 1999 11 04 | 703 | 0.0 | 0.1− | 2006 09 21 | 683 | 0.0 | 1.4− | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 1999 11 04 | 704 | 0.5+ | 1.0− | 2006 09 21 | 683 | (0.5+ | 1.9−) | 2006 10 17 | 703 | 0.3+ | 0.3− | | |
| 1999 11 04 | 703 | 0.2− | 0.3− | 2006 09 22 | 106 | 0.7− | 0.6− | 2006 10 29 | 704 | 0.2+ | 1.1+ | | |
| 1999 11 04 | 704 | 1.1+ | 1.2− | 2006 09 22 | 106 | 0.7− | 0.0 | 2006 10 29 | 704 | 0.1− | 0.6+ | | |
| 1999 11 04 | 703 | 0.2− | 0.3− | 2006 09 22 | 106 | 0.6+ | 0.6+ | 2006 10 29 | 704 | 0.9− | 0.1− | | |
| 1999 11 04 | 704 | 0.4+ | 0.4− | 2006 09 22 | 106 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.2− | 0.4− | | |
| 1999 11 04 | 704 | 0.0 | 1.1− | 2006 09 22 | 683 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2004 01 21 | 704 | 0.2+ | 0.7+ | 2006 09 22 | 683 | 0.9− | 1.1+ | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 2004 01 21 | 704 | 0.6− | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.5− | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2004 01 21 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 291 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.2− | 1.2+ | | |
| 2004 01 21 | 704 | 1.1+ | 0.2− | 2006 09 25 | 291 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.0 | 0.1− | | |
| 2004 01 22 | 704 | 0.1+ | 1.0+ | 2006 09 25 | 704 | 0.1− | 0.6− | 2006 11 15 | 704 | 0.6− | 1.1+ | | |
| 2004 01 22 | 704 | 0.0 | 0.7+ | 2006 09 25 | 291 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.6− | 0.4+ | | |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.1− | 0.4− | 2006 11 15 | 704 | 0.5+ | 0.1− | | |
| 2004 01 22 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 704 | 0.7− | 0.4− | 2006 11 16 | 704 | 0.4− | 0.7+ | | |
| 2004 01 22 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 683 | (1.9+ | 1.0−) | 2006 11 16 | 704 | 0.0 | 0.1+ | | |
| 2004 01 24 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.1− | | |
| 2004 01 24 | 704 | 0.2+ | 0.0 | 2006 09 25 | 683 | 1.1+ | 0.8− | 2006 11 16 | 704 | 0.3+ | 0.2+ | | |
| 2004 01 24 | 704 | 0.2− | 0.6+ | 2006 09 25 | 683 | (1.7+ | 1.2−) | 2006 11 17 | 704 | 0.5+ | 0.7− | | |
| 2004 01 24 | 704 | 0.4− | 0.5− | 2006 09 26 | 683 | 0.5− | 0.6− | 2006 11 17 | 704 | 0.3+ | 0.1+ | | |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 09 26 | 683 | 0.7− | 0.9+ | 2006 11 17 | 704 | 0.1+ | 0.1+ | | |
| 2004 01 28 | 691 | 0.1− | 0.4+ | 2006 09 26 | 683 | 1.1− | 1.1+ | 2006 11 17 | 704 | 0.6− | 0.3− | | |
| 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 699 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.4+ | 1.2+ | | |
| 2004 02 17 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 699 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.0 | 1.4+ | | |
| 2004 02 17 | 644 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.7− | 0.6− | 2006 11 19 | 704 | 0.8− | 0.9+ | | |
| 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 09 27 | 683 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.6+ | | |
| 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.5− | 0.7− | 2006 11 22 | 704 | 0.2+ | 0.6+ | | |
| 2004 02 17 | 644 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.5− | 0.2− | 2006 11 22 | 704 | 0.1− | 0.2+ | | |
| 2004 02 17 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 683 | 0.3+ | 1.4+ | 2006 11 22 | 704 | 0.5− | 0.2+ | | |
| 2006 08 24 | 704 | 1.3− | 0.2− | 2006 09 27 | 703 | 0.5− | 0.5− | 2006 11 22 | 704 | 0.3+ | 1.3+ | | |
| 2006 08 24 | 704 | 1.2− | 0.8+ | 2006 09 27 | 703 | 0.4− | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.6+ | | |
| 2006 08 24 | 704 | 0.1− | 1.4+ | 2006 09 27 | 683 | 0.2− | 1.3+ | | | | | | |
| 2006 08 24 | 704 | 0.2+ | 0.7+ | 2006 09 28 | 704 | 0.2− | 0.3− | | | | | | |

**(144060)∗ 2004 BR$_{41}$**

Discovered 2004 Jan. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 126.49395 | | (2000.0) | | | |
| $n$ | 0.22818334 | $\omega$ | 205.04971 | | −0.33971650 | +0.92573439 |
| $a$ | 2.6522437 | $\Omega$ | 45.59521 | | −0.81900334 | −0.20431133 |
| $e$ | 0.2504200 | $i$ | 13.44899 | | −0.46241348 | −0.31823376 |
| $P$ | 4.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.3+ | 1.1+ | 2004 01 19 | 704 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2000 03 12 | 704 | 0.8− | 0.4− | 2004 01 19 | 704 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− | | |
| 2000 03 12 | 704 | 1.5− | 1.4+ | 2004 01 23 | 704 | 1.2+ | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.5− | | |
| 2000 03 12 | 704 | 0.0 | 0.8+ | 2004 01 23 | 704 | 0.7+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.5+ | | |
| 2001 07 29 | 644 | 0.1+ | 0.4+ | 2004 01 23 | 704 | 0.2+ | 1.1+ | 2006 10 15 | 691 | 0.0 | 0.4+ | | |
| 2001 07 29 | 644 | 0.2+ | 0.2+ | 2004 01 23 | 704 | 0.9+ | 0.3+ | 2006 10 15 | 691 | 0.4+ | 0.2− | | |
| 2001 07 29 | 644 | 0.5+ | 0.1+ | 2004 02 11 | 704 | (2.2+ | 2.6+) | 2006 10 23 | 691 | 0.4− | 0.2+ | | |
| 2001 08 25 | 699 | 0.9− | 0.1+ | 2004 02 11 | 704 | 0.7+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3+ | | |
| 2001 08 25 | 699 | 0.3− | 0.7+ | 2004 02 11 | 704 | 0.8+ | 1.3+ | 2006 10 23 | 691 | 0.5− | 0.3+ | | |
| 2001 08 25 | 699 | 0.2− | 0.2+ | 2004 02 11 | 704 | 0.4+ | 1.1+ | 2006 10 27 | G96 | 1.0+ | 0.2− | | |
| 2001 08 25 | 699 | 0.2+ | 0.3− | 2005 06 08 | E12 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.6− | | |
| 2001 09 11 | 704 | 0.6+ | 0.2+ | 2005 06 08 | E12 | 0.6− | 0.5+ | 2006 10 27 | G96 | 0.6− | 0.4− | | |
| 2001 09 11 | 704 | 0.5+ | 0.6+ | 2005 06 08 | E12 | 0.3+ | 1.5− | 2006 10 27 | G96 | 0.2− | 0.4− | | |
| 2001 09 11 | 704 | 0.5+ | 0.8+ | 2005 06 08 | E12 | (0.0 | 2.7+) | 2006 11 11 | G96 | 0.3− | 0.6− | | |
| 2001 09 11 | 704 | (0.1− | 1.9+) | 2005 07 27 | E12 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.7+ | 0.8− | | |
| 2001 09 11 | 704 | (1.8+ | 0.3+) | 2005 07 27 | E12 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.7− | | |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2005 07 27 | E12 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.6− | | |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2005 08 09 | E12 | 0.1− | 0.9+ | 2006 11 21 | G96 | 1.3− | 0.1− | | |
| 2004 01 19 | 704 | (1.0+ | 1.8−) | 2005 08 09 | E12 | 0.3+ | 0.7+ | 2006 11 21 | G96 | 0.4+ | 0.1− | | |
| 2004 01 19 | 704 | 1.4− | 0.2− | 2005 08 09 | E12 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.4− | 0.5− | | |
| 2004 01 19 | 704 | 1.3+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.5− | 2006 11 21 | G96 | 0.2− | 0.5− | | |

**(144061)∗ 2004 BB$_{42}$**

Discovered 2004 Jan. 19 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.88710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26072456 | $\omega$ | 158.63680 | | −0.91484190 | −0.40379537 | |
| $a$ | 2.4266925 | $\Omega$ | 357.53829 | | +0.35693768 | −0.80434302 | |
| $e$ | 0.1286690 | $i$ | 4.92498 | | +0.18883800 | −0.43586879 | |
| $P$ | 3.78 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.0 | 0.7− | 2004 02 13 | 691 | 0.0 | 0.1− | 2004 03 19 | 691 | 0.1− | 0.1− |
| 2000 01 04 | 704 | 0.6− | 0.1− | 2004 02 15 | 608 | 0.4+ | 1.2− | 2004 03 19 | 691 | 0.0 | 0.1− |
| 2000 01 04 | 704 | (0.4− | 2.2−) | 2004 02 15 | 608 | 0.7+ | 0.6− | 2004 03 19 | 704 | 0.8+ | 0.9+ |
| 2000 01 04 | 704 | 0.4+ | 0.4− | 2004 02 15 | 608 | 0.3+ | 0.8− | 2004 03 19 | 704 | 0.7− | 0.7− |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2004 02 16 | 704 | 0.7+ | 0.4+ | 2004 03 19 | 704 | 0.4− | 0.6− |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2004 02 16 | 704 | 1.0+ | 0.1+ | 2004 03 20 | 691 | 0.1− | 0.0 |
| 2002 09 14 | 644 | 0.4+ | 0.1+ | 2004 02 16 | 704 | 0.6+ | 1.2+ | 2004 03 20 | 691 | 0.0 | 0.3− |
| 2002 09 26 | 644 | 1.0− | 0.2− | 2004 02 16 | 704 | 0.7+ | 0.8+ | 2004 03 20 | 691 | 0.1− | 0.2− |
| 2002 09 26 | 644 | 0.3− | 0.4− | 2004 02 16 | 704 | 0.4− | 1.2+ | 2004 03 20 | 703 | 0.5− | 0.9+ |
| 2002 09 26 | 644 | 0.4− | 0.3+ | 2004 02 19 | 704 | 0.9− | 1.1+ | 2004 03 20 | 703 | 0.1− | 0.9+ |
| 2002 10 05 | 644 | 0.2− | 0.6+ | 2004 02 19 | 704 | 0.9− | 0.2+ | 2004 03 20 | 703 | (0.6+ | 1.6−) |
| 2002 10 05 | 644 | 0.5+ | 0.4+ | 2004 02 19 | 704 | 0.8− | 1.3+ | 2004 03 20 | 703 | 1.5+ | 0.2− |
| 2002 10 05 | 644 | 0.4+ | 0.1+ | 2004 02 19 | 704 | 0.6− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2004 01 19 | 703 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.8− | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2004 01 19 | 703 | 1.5− | 1.2+ | 2004 02 20 | 608 | 0.3− | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 2004 01 19 | 703 | 0.1+ | 0.3− | 2004 02 20 | 608 | 0.4− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2004 01 19 | 703 | 0.6+ | 0.7+ | 2004 02 20 | 608 | 0.3− | 0.6− | 2006 09 25 | 691 | 0.2− | 0.2− |
| 2004 01 23 | 699 | 0.1− | 1.2− | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.2− |
| 2004 01 23 | 699 | 0.3+ | 0.2− | 2004 02 23 | 704 | 0.6+ | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2004 01 23 | 699 | 0.7− | 0.4− | 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2004 01 23 | 704 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.5+ | 1.0+ | 2006 10 17 | 691 | 0.3+ | 0.2− |
| 2004 01 23 | 704 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2004 01 23 | 699 | 0.7− | 0.8− | 2004 03 14 | 703 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2004 01 23 | 704 | 0.2− | 1.2− | 2004 03 14 | 703 | 0.9− | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.4− |
| 2004 01 23 | 704 | 0.1+ | 0.3+ | 2004 03 14 | 703 | 0.8− | 0.6+ | 2006 10 21 | 691 | 0.0 | 0.2+ |
| 2004 01 23 | 704 | 0.2+ | 0.7+ | 2004 03 14 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2004 01 30 | 704 | 1.5+ | 0.5− | 2004 03 14 | 703 | 0.5− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2004 01 30 | 704 | 0.7+ | 0.9+ | 2004 03 14 | 704 | 0.9− | 0.7− | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2004 01 30 | 704 | 0.4− | 0.6+ | 2004 03 14 | 704 | 0.4+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2004 01 30 | 704 | 0.2− | 0.1− | 2004 03 14 | 704 | 0.6+ | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.3− |
| 2004 02 13 | 691 | 0.2+ | 0.2− | 2004 03 14 | 704 | 0.1− | 0.2− | | | | |
| 2004 02 13 | 691 | 0.2+ | 0.1− | 2004 03 19 | 691 | 0.1+ | 0.0 | | | | |

**(144062)∗ 2004 BF$_{42}$**

Discovered 2004 Jan. 19 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.04871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28151402 | $\omega$ | 79.64503 | | −0.41862723 | −0.90756696 | |
| $a$ | 2.3056995 | $\Omega$ | 35.16082 | | +0.80937252 | −0.38921109 | |
| $e$ | 0.1741773 | $i$ | 3.26155 | | +0.41190700 | −0.15759742 | |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.1− | 0.4+ | 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 1.0− | 0.1+ |
| 1999 11 04 | 704 | 1.1+ | 0.4− | 2004 02 16 | 704 | 1.2+ | 1.2+ | 2006 10 29 | 691 | 0.1− | 0.1− |
| 1999 11 04 | 704 | 0.9− | 0.6− | 2004 02 16 | 704 | (1.7+ | 0.9+) | 2006 10 29 | 691 | 1.2− | 0.0 |
| 1999 11 04 | 704 | 0.1− | 0.8+ | 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.3− | 0.2+ | 2004 02 16 | 704 | (2.0+ | 1.0+) | 2006 10 29 | 691 | 0.6− | 0.2− |
| 2002 08 18 | 644 | 0.5− | 0.6+ | 2004 02 16 | 704 | (2.2+ | 0.9+) | 2006 10 29 | 691 | 0.1− | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.3− |
| 2002 08 29 | 644 | 0.1− | 1.1+ | 2004 02 18 | 704 | 0.8+ | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2004 02 18 | 704 | 0.8+ | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.3+ |
| 2002 08 29 | 644 | 0.4− | 0.9+ | 2004 02 18 | 704 | 0.8+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 08 30 | 644 | 0.4− | 0.6+ | 2004 02 18 | 704 | 0.3− | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.1− |
| 2002 08 30 | 644 | 0.4− | 0.7+ | 2004 02 18 | 704 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 08 30 | 644 | 0.1− | 0.5+ | 2004 02 27 | 608 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.4+ | 0.2− |
| 2003 12 22 | 704 | 0.3+ | 0.1+ | 2004 02 27 | 608 | 1.1− | 1.3+ | 2006 11 10 | 644 | 0.3+ | 0.3− |
| 2003 12 22 | 704 | 0.2+ | 0.6− | 2004 02 27 | 608 | 0.2+ | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2003 12 22 | 704 | 0.2+ | 0.2+ | 2004 03 14 | 703 | 0.9+ | 1.0− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2003 12 22 | 704 | 0.7− | 0.4+ | 2004 03 14 | 703 | 1.1− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2004 01 18 | 644 | 0.1− | 0.1− | 2004 03 14 | 703 | 0.2− | 1.2+ | 2006 11 11 | 691 | 0.4+ | 0.0 |
| 2004 01 18 | 644 | 0.1− | 0.2− | 2004 03 14 | 703 | 0.8− | 1.0+ | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 2004 01 18 | 644 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.7+ |
| 2004 01 19 | 703 | 0.4− | 0.3+ | 2004 03 14 | 704 | 1.4+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.7+ |
| 2004 01 19 | 703 | 0.0 | 0.5− | 2004 03 14 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2004 01 19 | 703 | 0.1+ | 0.5+ | 2004 03 14 | 704 | 0.0 | 1.0− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2004 01 19 | 703 | 0.5− | 0.5+ | 2004 03 19 | 644 | 0.0 | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2004 01 23 | 699 | 0.3− | 0.1− | 2004 03 19 | 644 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2004 01 23 | 699 | 0.7− | 0.3− | 2004 03 19 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.4+ | 1.0− |
| 2004 01 23 | 699 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.8− | 0.5+ |
| 2004 01 23 | 704 | 0.1− | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 2004 01 23 | 704 | 0.7+ | 0.8− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.0 |
| 2004 01 23 | 699 | 0.5− | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2004 01 23 | 704 | 0.4− | 0.8− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2004 01 23 | 704 | 0.1− | 0.8− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.1+ | 0.4+ |
| 2004 01 23 | 704 | 0.3+ | 0.8− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2004 01 30 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2004 01 30 | 704 | (1.8+ | 1.4+) | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.2− |
| 2004 01 30 | 704 | (1.2+ | 1.7+) | 2006 10 21 | 644 | 0.6+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 02 15 | 608 | 0.4− | 1.0− | 2006 10 29 | G96 | 0.3+ | 0.6− | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2004 02 15 | 608 | 0.2− | 0.8− | 2006 10 29 | G96 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2004 02 15 | 608 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.5− | | | | |
| 2004 02 16 | 704 | 1.0+ | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.6− | | | | |

**(144063)∗ 2004 BU$_{42}$ = 1998 ME$_{17}$**

Discovered 2004 Jan. 19 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61786)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.83009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27481176 | $\omega$ | 151.35536 | | −0.64958513 | −0.76018106 | |
| $a$ | 2.3430371 | $\Omega$ | 339.14665 | | +0.69051407 | −0.58283953 | |
| $e$ | 0.1657516 | $i$ | 2.06108 | | +0.31816580 | −0.28709377 | |
| $P$ | 3.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 27 | 691 | 0.4− | 0.4+ | 2004 02 11 | 644 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1998 06 27 | 691 | 0.5− | 0.7+ | 2004 02 11 | 644 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.4+ |
| 1998 06 27 | 691 | 0.0 | 0.2+ | 2004 02 11 | 291 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 1998 06 28 | 691 | 0.0 | 0.5+ | 2004 02 11 | 291 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1998 06 28 | 691 | 0.1− | 0.4+ | 2004 02 11 | 291 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 1998 06 28 | 691 | 0.1+ | 0.7+ | 2004 02 12 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.3− | 0.1+ |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2004 02 12 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 1.0+ | 1.1+ |
| 2002 09 14 | 644 | 1.1− | 0.6+ | 2004 02 14 | 703 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.3− |
| 2003 12 22 | 704 | 0.2+ | 0.3− | 2004 02 14 | 703 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2003 12 22 | 704 | 0.2− | 0.4− | 2004 02 14 | 703 | (1.7− | 1.7+) | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | 0.1+ | 0.0 | 2004 02 14 | 703 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 12 22 | 704 | 0.7+ | 0.2+ | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 12 22 | 704 | 0.5+ | 0.3− | 2004 02 17 | 704 | 0.0 | 0.3+ | 2006 11 15 | 691 | 0.4+ | 0.1− |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.3+ |
| 2004 01 19 | 703 | 0.6− | 1.4+ | 2004 02 17 | 704 | 0.6+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2004 01 19 | 703 | 0.4+ | 1.2+ | 2004 03 16 | 184 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2004 01 19 | 703 | 0.2− | 0.3− | 2004 03 16 | 184 | 0.6+ | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.3+ |
| 2004 01 19 | 703 | 0.5− | 0.4− | 2004 03 16 | 184 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.8+ | 0.2+ |
| 2004 01 23 | 699 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 11 17 | 703 | 1.6− | 0.7+ |
| 2004 01 23 | 699 | 0.3− | 0.5+ | 2004 03 18 | 704 | 0.5− | 0.2+ | 2006 11 17 | 703 | (3.4− | 1.4−) |
| 2004 01 23 | 699 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 11 17 | 703 | 1.0− | 0.9− |
| 2004 01 23 | 699 | 0.7− | 0.1+ | 2004 03 18 | 704 | 0.4− | 0.7− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2004 01 24 | 704 | 0.3− | 1.2+ | 2004 03 20 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 1.0− | 0.1+ |
| 2004 01 24 | 704 | (0.3− | 1.6+) | 2004 03 20 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2004 01 24 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.3− | 0.6+ | 2006 09 27 | G96 | 0.4− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.9− |
| 2004 01 24 | 704 | (0.0 | 1.6+) | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2004 01 29 | 704 | (0.6− | 2.0+) | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 01 29 | 704 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 01 29 | 704 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 02 11 | 644 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |

**(144064)∗ 2004 BE$_{43}$ = 2002 TS$_{372}$ = 2002 UF$_{63}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.40768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27554379 | $\omega$ | 189.39304 | | −0.92902813 | −0.36942846 | |
| $a$ | 2.3388855 | $\Omega$ | 328.90129 | | +0.34202788 | −0.83606168 | |
| $e$ | 0.1328149 | $i$ | 2.29910 | | +0.14115119 | −0.40561493 | |
| $P$ | 3.58 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.4− | 0.2+ | 2004 01 31 | 333 | 0.0 | 0.3− | 2004 02 19 | 608 | 0.6− | 0.9− |
| 1995 09 20 | 691 | 0.2− | 0.2+ | 2004 01 31 | 333 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.4+ |
| 1995 09 20 | 691 | 0.2− | 0.3+ | 2004 02 10 | 644 | 0.2− | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.9+ |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2004 02 10 | 703 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.5+ | 1.0+ |
| 2002 10 10 | 645 | 0.1+ | 0.1+ | 2004 02 10 | 644 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.1− | 0.6+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 10 | 703 | 0.2+ | 0.6− | 2004 02 26 | 704 | 0.1− | 0.4+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 02 10 | 644 | 0.1− | 0.6+ | 2005 07 07 | 691 | 0.2− | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2004 02 10 | 703 | 0.3+ | 1.2+ | 2005 07 07 | 691 | 0.1− | 0.2+ |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2004 02 10 | 703 | 0.1+ | 0.3+ | 2005 07 07 | 691 | 0.4− | 0.1+ |
| 2003 12 25 | 645 | 0.2− | 0.2− | 2004 02 11 | 699 | 0.5+ | 0.8+ | 2005 07 11 | 691 | 0.4+ | 0.2− |
| 2003 12 25 | 645 | 0.1− | 0.3− | 2004 02 11 | 699 | 0.2+ | 0.1+ | 2005 07 11 | 691 | 0.3− | 0.4+ |
| 2004 01 22 | 704 | 0.6+ | 0.4− | 2004 02 11 | 699 | 1.3+ | 0.0 | 2005 07 11 | 691 | 0.1− | 0.1+ |
| 2004 01 22 | 704 | 0.4+ | 0.3− | 2004 02 11 | 699 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 0.4+ | 0.2+ | 2004 02 12 | 333 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 02 12 | 333 | 0.3− | 0.4+ | 2006 10 17 | 691 | 0.5− | 0.3− |
| 2004 01 22 | 704 | 0.8+ | 0.3− | 2004 02 12 | 333 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2004 01 23 | 699 | 0.7− | 0.0 | 2004 02 13 | 333 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.6− |
| 2004 01 23 | 699 | 0.4+ | 0.2+ | 2004 02 13 | 333 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.6− |
| 2004 01 23 | 699 | 0.4− | 0.2+ | 2004 02 14 | 106 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2004 01 23 | 699 | 0.6+ | 0.4+ | 2004 02 14 | 106 | 0.0 | 0.6− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2004 01 30 | 704 | 0.3+ | 0.4− | 2004 02 14 | 106 | 0.1− | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2004 01 30 | 704 | 0.6+ | 1.3+ | 2004 02 17 | 704 | 0.7− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2004 01 30 | 704 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2004 01 30 | 704 | 1.4+ | 0.9+ | 2004 02 17 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2004 01 30 | 704 | 0.2− | 1.1+ | 2004 02 17 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 1.2+ | 0.6+ |
| 2004 01 30 | 691 | 0.2+ | 0.2+ | 2004 02 17 | 704 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2004 01 30 | 691 | 0.8+ | 0.8+ | 2004 02 19 | 608 | 0.3− | 0.5− | | | | |
| 2004 01 30 | 691 | 0.3+ | 0.1+ | 2004 02 19 | 608 | 0.6− | 0.7− | | | | |

**(144065)∗ 2004 BS$_{43}$ = 2002 RV$_{221}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61788)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.53471 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28569445 | $\omega$ | 39.23060 | | −0.76057697 | −0.64650507 | |
| $a$ | 2.2831521 | $\Omega$ | 100.38552 | | +0.57938711 | −0.71730378 | |
| $e$ | 0.0559025 | $i$ | 3.47467 | | +0.29297311 | −0.25982010 | |
| $P$ | 3.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 16 | 691 | 1.3− | 1.3− | 2004 02 10 | 644 | 0.0 | 0.2+ | 2005 07 07 | 691 | 0.2+ | 0.1− |
| 1994 05 16 | 691 | 0.3+ | 0.9− | 2004 02 10 | 644 | 0.2+ | 0.6+ | 2005 07 07 | 691 | 0.3+ | 0.1− |
| 1994 05 16 | 691 | 0.7− | 1.9− | 2004 02 10 | 644 | 0.4+ | 0.5+ | 2006 11 02 | G96 | 0.1+ | 0.7− |
| 1999 10 30 | 691 | 0.1− | 0.2− | 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 11 02 | G96 | 0.1+ | 0.7− |
| 1999 10 30 | 691 | 0.1+ | 0.2− | 2004 02 13 | 691 | 0.0 | 0.3+ | 2006 11 02 | G96 | 0.1+ | 0.6− |
| 1999 10 30 | 691 | 0.2− | 0.4− | 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 11 02 | G96 | 0.2− | 0.4− |
| 1999 12 07 | 704 | 1.4+ | 0.5− | 2004 02 14 | 608 | 0.3− | 0.4− | 2006 11 12 | G96 | 0.5− | 0.4− |
| 1999 12 07 | 704 | 0.5+ | 0.5+ | 2004 02 14 | 608 | 0.3− | 0.6− | 2006 11 12 | G96 | 0.3− | 0.7− |
| 1999 12 07 | 704 | 0.3+ | 0.3− | 2004 02 14 | 608 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 1999 12 07 | 704 | 0.5+ | 0.2− | 2004 02 16 | 704 | 0.1+ | 0.6+ | 2006 11 12 | G96 | 0.2− | 0.7− |
| 2002 09 15 | 644 | 0.5− | 0.2+ | 2004 02 16 | 704 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2004 02 16 | 704 | 0.3+ | 1.0+ | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2002 09 15 | 644 | 0.1+ | 0.4+ | 2004 02 16 | 704 | 0.1+ | 1.1+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 09 16 | 644 | 0.5− | 0.1+ | 2004 02 16 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 704 | (2.2+ | 2.2−) |
| 2002 09 16 | 644 | 0.5− | 0.0 | 2004 02 20 | 608 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.5+ | 1.2− |
| 2002 09 16 | 644 | 0.4− | 0.2− | 2004 02 20 | 608 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.7+ | 1.2− |
| 2004 01 22 | 704 | 0.1− | 0.4+ | 2004 02 20 | 608 | 0.6− | 0.7− | 2006 11 20 | 704 | 0.8+ | 0.2− |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2004 03 10 | 644 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.6+ | 0.6− |
| 2004 01 22 | 704 | 0.5+ | 0.1+ | 2004 03 10 | 644 | 0.6+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.5− |
| 2004 01 22 | 704 | 0.2− | 0.6+ | 2004 03 10 | 644 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.6− | 1.2− |
| 2004 01 22 | 704 | 0.7+ | 0.4+ | 2005 06 17 | G96 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.5− | 0.5− |
| 2004 01 23 | 699 | 0.7− | 0.6+ | 2005 06 17 | G96 | 0.7− | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2004 01 23 | 699 | 0.7− | 0.1− | 2005 06 17 | G96 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.5− |
| 2004 01 23 | 699 | 0.4+ | 0.3− | 2005 06 17 | G96 | 0.4− | 0.3+ | | | | |
| 2004 01 23 | 699 | 0.5− | 0.3+ | 2005 07 07 | 691 | 0.1+ | 0.0 | | | | |

**(144066)∗ 2004 BD$_{44}$ = 2000 AK$_{22}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57604)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.21260 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26912975 | $\omega$ | 18.99038 | | +0.46818116 | −0.88278377 | |
| $a$ | 2.3759005 | $\Omega$ | 43.11648 | | +0.80320767 | +0.40689534 | |
| $e$ | 0.1553271 | $i$ | 3.24757 | | +0.36832572 | +0.23479565 | |
| $P$ | 3.66 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.1− | 0.9− | 2004 02 19 | 704 | 0.1+ | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2000 01 03 | 704 | 0.0 | 1.0− | 2004 02 19 | 704 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.3− |
| 2000 01 03 | 704 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.5+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2000 01 04 | 704 | 0.3+ | 0.6− | 2004 02 19 | 704 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2000 01 04 | 704 | 1.1− | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2000 01 04 | 704 | 0.4+ | 0.8− | 2004 02 20 | 704 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.1− | 0.2− |
| 2000 01 04 | 704 | 0.4+ | 0.6− | 2004 02 20 | 704 | 0.2− | 0.2+ | 2006 10 20 | 703 | 0.6+ | 0.1+ |
| 2000 01 04 | 704 | 0.3+ | 0.4− | 2004 02 20 | 704 | 0.7+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 07 30 | 608 | 0.7+ | 1.0+ | 2004 02 20 | 704 | 0.4− | 0.3− | 2006 10 20 | 703 | 0.2+ | 0.4− |
| 2002 07 30 | 608 | 0.1+ | 0.8+ | 2004 03 14 | 703 | 0.3+ | 0.2− | 2006 10 20 | 703 | 0.6− | 0.3− |
| 2002 07 30 | 608 | 0.4+ | 0.7+ | 2004 03 14 | 703 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 08 18 | 644 | 0.1+ | 0.7+ | 2004 03 14 | 703 | 0.2− | 0.6− | 2006 10 21 | 703 | 0.1+ | 0.8+ |
| 2002 08 18 | 644 | 0.1+ | 0.9+ | 2004 03 14 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.7+ | 2004 03 14 | 703 | 0.6+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2002 08 28 | 644 | 0.7− | 0.6+ | 2004 03 14 | 704 | 0.5− | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 2002 08 28 | 644 | 0.8− | 0.4+ | 2004 03 14 | 704 | 0.7+ | 1.2+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 08 28 | 644 | 0.7− | 0.3+ | 2004 03 14 | 704 | 1.2+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.5− | 1.4+ | 2004 03 14 | 704 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2006 10 23 | 704 | 0.9− | 0.4+ |
| 2002 09 05 | 704 | 0.6− | 0.4+ | 2004 03 20 | 704 | 0.6+ | 1.1+ | 2006 10 23 | 704 | 0.8+ | 0.0 |
| 2002 09 05 | 704 | 1.0− | 0.3+ | 2004 03 20 | 704 | (0.8+ | 2.6+) | 2006 10 23 | 704 | 0.4+ | 0.1+ |
| 2002 09 05 | 704 | 1.1− | 1.2+ | 2004 03 20 | 704 | (0.6+ | 1.6+) | 2006 10 23 | 704 | 0.3+ | 0.3− |
| 2002 09 06 | 704 | (3.0+ | 1.2−) | 2004 03 20 | 704 | 0.1+ | 0.7+ | 2006 10 28 | 704 | 0.5− | 0.0 |
| 2002 09 06 | 704 | 1.3+ | 0.6− | 2004 03 27 | 691 | 0.4− | 0.2− | 2006 10 28 | 704 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.4+ | 0.6− | 2004 03 27 | 691 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.7− | 0.5+ | 2004 03 27 | 691 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.1− | 0.7+ |
| 2002 09 15 | 644 | 0.7− | 0.6+ | 2006 08 06 | 699 | 0.2+ | 1.1+ | 2006 10 28 | 704 | 0.3− | 0.3+ |
| 2002 09 15 | 644 | 0.7− | 0.5+ | 2006 08 06 | 699 | 0.9+ | 1.1+ | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 08 06 | 699 | 0.3− | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2004 01 22 | 704 | 0.3+ | 0.3− | 2006 08 06 | 699 | 0.5+ | 0.7− | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2006 09 15 | 644 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.8+ | 0.4+ | 2006 09 15 | 644 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2004 01 22 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 699 | 0.5− | 0.6− | 2006 09 18 | 699 | 0.5+ | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2004 01 23 | 699 | 0.4− | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2004 01 23 | 699 | 0.4− | 0.7+ | 2006 09 18 | 699 | 1.0− | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2004 01 23 | 699 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 1.4− | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2004 01 30 | 704 | 0.6+ | 0.4+ | 2006 09 20 | 704 | 1.3+ | 1.0− | 2006 11 11 | 703 | 0.7+ | 0.2− |
| 2004 01 30 | 704 | 1.4+ | 0.4− | 2006 09 20 | 704 | 0.3− | 0.7− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2004 01 30 | 704 | 0.7+ | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2004 02 11 | 699 | 0.6+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2004 02 11 | 699 | 0.2− | 0.5+ | 2006 09 20 | 644 | 0.4− | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2004 02 11 | 699 | 0.3+ | 0.4+ | 2006 09 20 | 644 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 02 11 | 699 | 0.0 | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.4− |
| 2004 02 11 | 644 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 704 | 0.3− | 0.4− |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 704 | 0.4− | 0.3+ |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 704 | 0.3− | 0.7+ |
| 2004 02 17 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.9− | 0.3− | 2006 11 13 | 704 | 0.4− | 0.6− |
| 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 704 | 0.2− | 0.9+ | 2006 11 13 | 704 | 0.2+ | 0.4+ |
| 2004 02 17 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2004 02 17 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2004 02 17 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2004 02 18 | 704 | 0.2+ | 0.9+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2004 02 18 | 704 | 0.2+ | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.8+ |
| 2004 02 18 | 704 | 0.9+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2004 02 18 | 704 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.3− |
| 2004 02 18 | 704 | 0.2− | 0.3+ | 2006 10 13 | D35 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 0.0 | 0.4− |
| 2004 02 18 | 704 | 0.4+ | 0.4+ | 2006 10 13 | D35 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2004 02 18 | 333 | 0.2+ | 0.1− | 2006 10 13 | D35 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.4− |
| 2004 02 18 | 704 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.5− | 0.0 |
| 2004 02 18 | 704 | 0.2− | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2004 02 18 | 333 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.5− | 0.1− |
| 2004 02 18 | 333 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.4− | | | | |

**(144067)∗ 2004 BP$_{44}$ = 2000 CT$_{16}$**

Discovered 2004 Jan. 22 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61791)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.64439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25265463 | $\omega$ | 239.53381 | | −0.25842708 | −0.96369981 | |
| $a$ | 2.4780946 | $\Omega$ | 225.60426 | | +0.91538390 | −0.22210283 | |
| $e$ | 0.0875081 | $i$ | 5.38593 | | +0.30868717 | −0.14816546 | |
| $P$ | 3.90 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 691 | 0.3− | 0.2+ | 2002 10 04 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 703 | 0.0 | 0.4− |
| 1998 08 30 | 691 | 0.1− | 0.2− | 2004 01 22 | 644 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.3− | 0.0 |
| 1998 08 30 | 691 | 0.1+ | 0.0 | 2004 01 22 | 644 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 01 22 | 644 | 0.5− | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.1+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 01 23 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.2+ |
| 2000 02 02 | 704 | 0.0 | 1.2− | 2004 01 23 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.7+ | 0.5+ |
| 2000 02 02 | 704 | 0.0 | 0.5+ | 2004 01 23 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2000 02 02 | 704 | 0.1− | 0.1+ | 2004 01 23 | 704 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.0 | 2004 01 23 | 704 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2000 02 04 | 704 | 0.9− | 0.1+ | 2004 01 29 | 699 | 0.6− | 0.8− | 2006 09 27 | 699 | 0.1+ | 0.6− |
| 2000 02 04 | 704 | 0.3+ | 0.2+ | 2004 01 29 | 699 | 0.3− | 0.1+ | 2006 09 27 | 699 | 0.7− | 0.1− |
| 2000 02 04 | 704 | 0.2+ | 1.3+ | 2004 01 29 | 699 | 0.3− | 0.3− | 2006 09 27 | 699 | 1.2+ | 1.2− |
| 2000 02 04 | 704 | 0.3+ | 0.0 | 2004 01 29 | 699 | 0.0 | 0.9+ | 2006 09 27 | 699 | 0.2+ | 0.8+ |
| 2002 09 06 | 704 | 0.5− | 0.8− | 2004 02 19 | 608 | 0.6+ | 0.7− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2004 02 19 | 608 | 0.5+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | 0.2− | 0.1+ | 2004 02 19 | 608 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.9+ |
| 2002 09 17 | 644 | 0.2− | 1.2+ | 2004 02 26 | 704 | 0.9− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2002 09 17 | 644 | 0.3+ | 1.0+ | 2004 02 26 | 704 | 0.7+ | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 09 17 | 644 | 0.3+ | 1.2+ | 2004 02 26 | 704 | 0.5+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2002 09 28 | 608 | (1.2− | 1.6−) | 2004 02 26 | 704 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.4+ | 0.6− |
| 2002 09 28 | 608 | (1.1− | 1.8−) | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.6− |
| 2002 09 28 | 608 | (1.7− | 1.6−) | 2004 03 15 | 704 | 1.0+ | 1.1+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2002 10 04 | 704 | 0.5− | 0.1+ | 2004 03 15 | 704 | 0.9− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 10 04 | 704 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.0 | | | | |

**(144068)∗ 2004 BO$_{45}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.94048 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27375328 | $\omega$ | 206.67939 | | −0.48963634 | −0.86918070 | |
| $a$ | 2.3490729 | $\Omega$ | 272.70801 | | +0.81183208 | −0.42552290 | |
| $e$ | 0.1680894 | $i$ | 3.96938 | | +0.31809578 | −0.25190309 | |
| $P$ | 3.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.2− | 0.7− | 2004 01 24 | 704 | 0.3− | 0.3− | 2006 10 01 | 703 | (1.9− | 0.8+) |
| 1995 07 26 | 691 | 0.1− | 0.4− | 2004 01 24 | 704 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.3+ | 0.3+ |
| 1995 07 26 | 691 | 0.4− | 0.4− | 2004 01 24 | 704 | 0.6− | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 1999 10 10 | 704 | 0.3+ | 0.1− | 2004 01 24 | 704 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.3+ | 0.3+ |
| 1999 10 10 | 704 | 1.8+ | 0.2+ | 2004 01 30 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1999 10 10 | 704 | 0.7− | 0.9− | 2004 01 30 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1999 10 10 | 704 | 0.6+ | 0.3− | 2004 01 30 | 704 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.7+ | 0.1− | 2004 01 30 | 704 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− |
| 1999 10 30 | 703 | 0.6− | 0.6+ | 2006 09 06 | 644 | 0.2− | 0.7− | 2006 10 21 | 691 | 0.1− | 0.4− |
| 1999 10 30 | 703 | 0.6+ | 0.6+ | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 1999 10 30 | 703 | 0.8+ | 0.7+ | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.3− |
| 1999 10 30 | 703 | 0.3+ | 0.5− | 2006 09 17 | 703 | 0.7− | 0.4− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 08 17 | 644 | 0.7+ | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.6− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 08 17 | 644 | 0.9+ | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.5− | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 08 17 | 644 | 0.6+ | 0.0 | 2006 09 17 | 703 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.4− |
| 2002 08 27 | 644 | 0.6+ | 1.1+ | 2006 09 18 | 704 | (0.5− | 1.7+) | 2006 10 23 | 691 | 0.6− | 0.1− |
| 2002 08 27 | 644 | 0.2+ | 0.8+ | 2006 09 18 | 704 | 1.0− | 1.4+ | 2006 10 23 | 703 | 1.3+ | 0.8+ |
| 2002 08 27 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 704 | 1.1+ | 0.9+ | 2006 10 23 | 703 | 1.0+ | 0.9− |
| 2003 11 24 | 695 | 0.4− | 0.0 | 2006 09 18 | 704 | 0.2− | 0.4− | 2006 10 23 | 703 | 0.6+ | 1.0− |
| 2003 11 24 | 695 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.7+ | 0.4+ | 2006 10 23 | 703 | 0.2+ | 0.6− |
| 2003 12 21 | 704 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.4− | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.4− | 0.5+ | 2006 10 24 | 644 | 0.3+ | 0.1+ |
| 2003 12 21 | 704 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.2− | 0.5− | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2004 01 21 | 704 | 0.3+ | 0.0 | 2006 10 01 | 703 | 1.0− | 1.2+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2004 01 21 | 704 | 0.2+ | 0.0 | 2006 10 01 | 703 | (0.7+ | 1.8+) | 2006 10 28 | 691 | 0.4− | 0.2+ |
| 2004 01 21 | 704 | 0.0 | 0.4− | 2006 10 01 | 703 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1− |

**(144069)∗ 2004 BQ$_{45}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.32232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25446292 | $\omega$ | 27.60005 | | −0.80684340 | −0.57708255 | |
| $a$ | 2.4663405 | $\Omega$ | 116.59408 | | +0.51262317 | −0.79025937 | |
| $e$ | 0.0956533 | $i$ | 8.12692 | | +0.29363448 | −0.20607247 | |
| $P$ | 3.87 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.8+ | 0.3+ | 2004 01 21 | 704 | 0.5+ | 0.2+ | 2004 03 19 | 704 | 0.4+ | 0.4+ |
| 1999 12 14 | 704 | 0.0 | 0.5− | 2004 01 21 | 704 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 0.8− | 0.1− |
| 1999 12 14 | 704 | 1.0+ | 0.5− | 2004 01 21 | 704 | 0.4+ | 0.1− | 2005 05 20 | G96 | 0.3+ | 0.1+ |
| 2000 01 06 | 704 | 1.0− | 0.7− | 2004 01 21 | 704 | 0.5+ | 0.4+ | 2005 05 20 | G96 | 0.1+ | 0.2+ |
| 2000 01 06 | 704 | 0.1+ | 0.3− | 2004 01 24 | 704 | 0.8+ | 0.6− | 2005 05 20 | G96 | 1.1− | 1.2+ |
| 2000 01 06 | 704 | 0.0 | 0.8− | 2004 01 24 | 704 | 0.8− | 0.1− | 2005 05 20 | G96 | 0.5+ | 1.2+ |
| 2000 01 06 | 704 | 0.6− | 0.7− | 2004 01 24 | 704 | 0.0 | 0.4+ | 2005 07 12 | G96 | 0.1− | 0.4+ |
| 2001 05 23 | 691 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.2+ | 0.7+ | 2005 07 12 | G96 | 0.2+ | 0.0 |
| 2001 05 23 | 691 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.7+ | 2005 07 12 | G96 | 0.6+ | 0.1− |
| 2001 05 23 | 691 | (2.3+ | 0.3−) | 2004 01 30 | 704 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.1− | 0.2− |
| 2003 12 23 | 704 | 0.2− | 0.3− | 2004 01 30 | 704 | 0.8− | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.0 |
| 2003 12 23 | 704 | 0.2+ | 0.5− | 2004 01 30 | 704 | 0.4+ | 0.9+ | 2006 09 19 | 703 | 0.6− | 0.4+ |
| 2003 12 23 | 704 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.3− | 1.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.4+ | 0.1+ | 2004 02 15 | 704 | 0.8− | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.5+ |
| 2003 12 23 | 704 | 0.3+ | 0.1− | 2004 02 15 | 704 | 0.4+ | 0.4− | 2006 10 24 | 644 | 0.2+ | 0.4+ |
| 2003 12 24 | 608 | 0.0 | 0.3+ | 2004 02 15 | 704 | 0.4− | 1.5+ | 2006 10 24 | 644 | 0.3− | 0.7+ |
| 2003 12 24 | 608 | 0.4− | 0.5+ | 2004 02 24 | 113 | 0.2+ | 0.1− | 2006 10 24 | 644 | 0.6− | 0.4+ |
| 2003 12 24 | 608 | 0.6− | 0.5+ | 2004 02 24 | 113 | 0.1− | 0.4+ | | | | |
| 2004 01 21 | 704 | 0.3+ | 0.5+ | 2004 03 19 | 704 | 0.5− | 0.9+ | | | | |

**(144070)∗ 2004 BV$_{46}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.86656 | | (2000.0) | | | |
| $n$ | 0.27131035 | $\omega$ | 121.94664 | | +0.68208620 | −0.72554497 |
| $a$ | 2.3631529 | $\Omega$ | 284.75836 | | +0.63500501 | +0.64960129 |
| $e$ | 0.1130949 | $i$ | 5.42000 | | +0.36266658 | +0.22716221 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.4+ | 0.0 | 2004 01 21 | 704 | 0.9− | 0.4− | 2006 09 16 | 703 | 0.4− | 0.2− |
| 1999 12 07 | 703 | 0.2− | 0.2+ | 2004 01 21 | 704 | 0.0 | 0.6− | 2006 09 20 | 699 | 0.8− | 0.8+ |
| 1999 12 07 | 703 | 0.2− | 0.1+ | 2004 01 21 | 704 | 0.1− | 1.1+ | 2006 09 20 | 699 | 0.1+ | 0.4+ |
| 1999 12 07 | 703 | 1.1− | 0.0 | 2004 01 24 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.4+ | 0.4+ |
| 1999 12 15 | 704 | 0.3− | 0.1+ | 2004 01 24 | 704 | 0.5+ | 0.7+ | 2006 09 20 | 699 | 0.0 | 0.0 |
| 1999 12 15 | 704 | 0.5+ | 0.4− | 2004 01 24 | 704 | 0.4+ | 0.0 | 2006 09 27 | 703 | 0.9+ | 0.7+ |
| 1999 12 15 | 704 | 0.3+ | 0.5− | 2004 01 24 | 704 | 0.7+ | 0.9+ | 2006 09 27 | 703 | 0.4+ | 0.5+ |
| 1999 12 15 | 704 | 0.3+ | 0.7− | 2004 01 26 | 699 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 0.4+ | 0.2− |
| 2002 08 07 | 644 | 0.3− | 0.1− | 2004 01 26 | 699 | 0.8+ | 1.2− | 2006 09 27 | 703 | 0.6+ | 0.2+ |
| 2002 08 07 | 644 | 0.7− | 0.1− | 2004 01 26 | 699 | 0.8− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 08 07 | 644 | 0.6− | 0.1+ | 2004 01 26 | 699 | 0.3+ | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 08 12 | 608 | (1.7− | 0.1−) | 2004 01 30 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 08 12 | 608 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.4+ | 1.0+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 08 12 | 608 | 0.8− | 0.4+ | 2004 01 30 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 08 17 | 644 | 0.5+ | 1.4+ | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.2+ | 1.2+ | 2004 02 11 | 703 | 0.5− | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2002 08 17 | 644 | 0.8+ | 1.2+ | 2004 02 11 | 703 | 1.2− | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2003 10 25 | 691 | 0.6+ | 0.0 | 2004 02 11 | 703 | 0.9− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 2003 10 25 | 691 | 0.2+ | 0.1+ | 2004 02 11 | 703 | 0.6− | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.8− |
| 2003 10 25 | 691 | 0.4+ | 0.0 | 2004 02 17 | 644 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2003 12 21 | 704 | 0.3− | 0.2+ | 2004 02 17 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 12 21 | 704 | 0.8− | 1.1− | 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2003 12 21 | 704 | 0.5− | 0.6+ | 2004 02 17 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2003 12 21 | 704 | 0.5+ | 0.5+ | 2004 02 17 | 704 | 0.5+ | 1.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2003 12 21 | 704 | 0.4− | 0.0 | 2004 02 17 | 704 | 0.4− | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2003 12 30 | 691 | 0.2+ | 0.3− | 2004 02 17 | 704 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2003 12 30 | 691 | 0.3− | 0.4− | 2006 09 01 | 224 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2003 12 30 | 691 | 0.1+ | 0.0 | 2006 09 01 | 224 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2004 01 13 | 699 | 0.2+ | 0.2− | 2006 09 01 | 224 | 0.0 | 0.1− | 2006 11 10 | 683 | 0.6− | 0.2− |
| 2004 01 13 | 699 | (1.9− | 0.1−) | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 11 10 | 683 | 0.2− | 0.1− |
| 2004 01 13 | 699 | (2.0− | 0.3+) | 2006 09 16 | 703 | 0.8+ | 0.4+ | 2006 11 10 | 683 | 0.3+ | 1.1− |
| 2004 01 13 | 699 | 0.6+ | 0.4+ | 2006 09 16 | 703 | 0.1− | 0.6− | | | | |

**(144071)∗ 2004 BY$_{46}$ = 2002 PQ$_{16}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. Minor Planet Center (*MPO* 61794)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.86266 | | (2000.0) | | | |
| $n$ | 0.26744127 | $\omega$ | 261.81199 | | +0.62959751 | −0.76989457 |
| $a$ | 2.3858901 | $\Omega$ | 148.39866 | | +0.76786702 | +0.59620456 |
| $e$ | 0.1839230 | $i$ | 11.47614 | | +0.11826758 | +0.22760157 |
| $P$ | 3.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 23 | 691 | 0.1− | 0.7− | 2004 02 11 | 644 | 0.1− | 0.6+ | 2006 08 28 | 704 | 0.1+ | 0.5+ |
| 1993 02 23 | 691 | 0.3− | 0.3− | 2004 02 11 | 703 | 0.4− | 0.2+ | 2006 08 28 | 704 | 0.0 | 0.2+ |
| 1993 02 23 | 691 | 0.0 | 0.1− | 2004 02 11 | 699 | 0.7+ | 0.3+ | 2006 08 28 | 704 | 0.6+ | 0.3+ |
| 1997 03 02 | 691 | 0.1+ | 0.2− | 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 08 28 | 704 | 0.5− | 0.3+ |
| 1997 03 02 | 691 | 0.3+ | 0.2− | 2004 02 11 | 703 | 0.2− | 1.1+ | 2006 08 28 | 699 | 0.2+ | 0.2+ |
| 1997 03 02 | 691 | 0.1+ | 0.1− | 2004 02 11 | 644 | 0.2+ | 0.8+ | 2006 08 28 | 699 | 0.5+ | 1.1+ |
| 2000 01 11 | 704 | 1.4− | 1.0− | 2004 02 11 | 699 | 1.0+ | 0.5+ | 2006 08 28 | 699 | 0.8+ | 0.8+ |
| 2000 01 11 | 704 | 0.5− | 0.8− | 2004 02 11 | 703 | 0.6+ | 0.5+ | 2006 08 28 | 699 | 0.0 | 0.5− |
| 2000 01 11 | 704 | 0.6+ | 0.5− | 2004 02 11 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.2− | 0.4+ |
| 2000 01 11 | 704 | 0.0 | 0.3− | 2004 02 11 | 699 | 0.0 | 0.1− | 2006 08 30 | 699 | (1.6− | 0.1+) |
| 2000 01 11 | 704 | 0.2− | 0.6− | 2004 02 11 | 644 | 0.1+ | 0.8+ | 2006 08 30 | 699 | 0.0 | 0.2+ |
| 2002 08 06 | 644 | 0.4+ | 0.4+ | 2004 02 11 | 699 | (1.6− | 0.4−) | 2006 08 30 | 699 | 0.2+ | 0.8+ |
| 2002 08 06 | 644 | 0.1+ | 0.4+ | 2004 02 11 | 691 | 0.1+ | 1.4− | 2006 09 12 | 704 | 0.1+ | 0.2− |
| 2002 08 06 | 644 | 0.3+ | 0.4+ | 2004 02 14 | 333 | 0.3− | 0.4+ | 2006 09 12 | 704 | (0.6− | 2.2+) |
| 2002 08 07 | 644 | 0.2+ | 1.4+ | 2004 02 14 | 333 | 0.1+ | 0.7+ | 2006 09 12 | 704 | 0.5+ | 0.3+ |
| 2002 08 07 | 644 | 0.0 | 1.4+ | 2004 02 17 | 704 | 0.0 | 0.5+ | 2006 09 12 | 704 | 0.1− | 0.7− |
| 2002 08 07 | 644 | 0.3+ | 1.1+ | 2004 02 17 | 704 | 0.1+ | 1.3+ | 2006 09 12 | 704 | (1.8− | 1.5+) |
| 2002 08 28 | 644 | 0.2− | 1.2+ | 2004 02 17 | 704 | 0.4+ | 0.8+ | 2006 09 14 | 703 | 0.3− | 0.2− |
| 2002 08 28 | 644 | 0.3+ | 1.4+ | 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.2− |
| 2002 08 28 | 644 | 0.5+ | 1.4+ | 2004 02 17 | 704 | 0.0 | 1.3+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2004 01 21 | 704 | 0.2+ | 0.2− | 2004 02 23 | 608 | 0.4− | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2004 01 21 | 704 | 0.4− | 0.4+ | 2004 02 23 | 608 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2004 01 21 | 704 | 0.0 | 0.1+ | 2004 02 23 | 608 | 0.3− | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.1+ |
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.1+ |
| 2004 01 24 | 704 | 0.3+ | 0.3+ | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 704 | 1.2+ | 1.1+ |
| 2004 01 24 | 704 | 0.1+ | 0.8+ | 2004 02 26 | 704 | 0.2− | 0.5+ | 2006 09 16 | 704 | (0.9+ | 2.6+) |
| 2004 01 29 | 704 | 0.3− | 1.0− | 2004 02 26 | 704 | 0.4− | 0.0 | 2006 09 16 | 704 | (0.1+ | 1.8+) |
| 2004 01 29 | 704 | 0.8+ | 0.1− | 2004 02 26 | 704 | 0.1+ | 1.1+ | 2006 09 16 | 704 | (0.3+ | 1.8+) |
| 2004 01 29 | 704 | 1.2+ | 0.0 | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 21 | 699 | (1.4− | 1.6+) |
| 2004 01 29 | 704 | 1.1+ | 0.5+ | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 0.3− | 1.1+ |
| 2004 01 29 | 704 | 0.1+ | 0.4+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.8− | 0.8+ |
| 2004 01 31 | 704 | 0.5− | 0.1− | 2005 05 02 | 691 | 0.1− | 0.6+ | 2006 09 21 | 699 | 0.5+ | 0.2+ |
| 2004 01 31 | 704 | 0.1+ | 1.1+ | 2005 05 02 | 691 | 0.4− | 0.7+ | 2006 10 02 | 703 | 0.6− | 0.0 |
| 2004 01 31 | 704 | 0.5− | 0.4+ | 2005 05 02 | 691 | 0.4− | 0.6+ | 2006 10 02 | 703 | 0.1− | 0.4+ |
| 2004 01 31 | 704 | 0.7+ | 0.9+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.4+ | 0.4+ |
| 2004 02 02 | 704 | 0.7+ | 0.3− | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.2− | 0.3− |
| 2004 02 02 | 704 | 0.4− | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2004 02 02 | 704 | 0.3− | 0.8+ | 2006 08 21 | 644 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2004 02 02 | 704 | 0.9+ | 1.3+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2004 02 02 | 704 | 1.0− | 0.1− | 2006 08 21 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2004 02 03 | 608 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2004 02 03 | 608 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2004 02 03 | 608 | 0.4− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.8− | 0.4+ |
| 2004 02 11 | 333 | 0.1+ | 1.1+ | 2006 08 23 | 704 | 0.4+ | 0.2− | 2006 11 19 | 703 | 2.0− | 2.1+ |
| 2004 02 11 | 333 | 0.3− | 1.0+ | 2006 08 23 | 704 | 0.4+ | 0.1− | 2006 11 19 | 703 | 0.7− | 0.1+ |
| 2004 02 11 | 333 | 0.1− | 0.6+ | 2006 08 23 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2004 02 11 | 703 | 0.3− | 0.5+ | 2006 08 28 | 704 | 0.2+ | 0.6+ | | | | |

**(144072)∗ 2004 BE$_{47}$ = 2000 EJ$_{162}$ = 2002 TZ$_{293}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. M. Kretlow (*MPO* 61794)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.40171 | | (2000.0) | | | |
| $n$ | 0.21421769 | $\omega$ | 137.36279 | | +0.32454679 | +0.94565013 |
| $a$ | 2.7662992 | $\Omega$ | 151.55744 | | −0.87893831 | +0.30947094 |
| $e$ | 0.0237702 | $i$ | 2.45203 | | −0.34948078 | +0.09986772 |
| $P$ | 4.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 13 | 691 | 0.6− | 0.2+ | 2002 10 12 | 704 | 0.9+ | 0.7+ | 2005 04 06 | 691 | 0.2+ | 0.6+ |
| 1996 05 13 | 691 | 0.1− | 0.1− | 2002 10 12 | 704 | 0.3+ | 0.2− | 2005 04 06 | 691 | 0.2+ | 0.4+ |
| 1996 05 13 | 691 | 0.2− | 0.2− | 2002 10 12 | 704 | 0.3+ | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.4+ |
| 2000 03 03 | 704 | 1.0+ | 0.8+ | 2003 12 21 | 645 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.3+ | 0.4+ |
| 2000 03 03 | 704 | 1.3+ | 0.1− | 2003 12 21 | 645 | 0.1− | 0.1− | 2005 04 18 | 691 | 0.4+ | 0.1+ |
| 2000 03 03 | 704 | 0.1+ | 0.7+ | 2004 01 13 | 691 | 0.1+ | 0.1+ | 2006 05 24 | G96 | 0.2− | 0.2− |
| 2000 03 03 | 704 | (2.1+ | 0.1+) | 2004 01 13 | 691 | 0.2+ | 0.4+ | 2006 05 24 | G96 | 0.2+ | 0.0 |
| 2000 03 11 | 704 | 0.4+ | 0.4− | 2004 01 13 | 691 | 0.1+ | 0.3+ | 2006 05 24 | G96 | 0.1+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 1.2+ | 0.4+ | 2004 01 21 | 704 | 0.6− | 1.5+ | 2006 05 24 | G96 | 0.1− | 0.1− |
| 2000 03 11 | 704 | 0.8+ | 0.2− | 2004 01 21 | 704 | 0.4+ | 1.3+ | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.9+ | 0.1− | 2004 01 21 | 704 | 1.3− | 0.6− | 2006 08 12 | 644 | 0.0 | 0.7+ |
| 2000 03 11 | 704 | 0.4+ | 0.1+ | 2004 01 21 | 704 | 0.2+ | 0.0 | 2006 08 12 | 644 | 0.7− | 0.6+ |
| 2002 10 04 | 704 | 1.1− | 1.3+ | 2004 01 24 | 704 | 0.1+ | 0.7+ | 2006 08 14 | 644 | 0.3− | 0.6+ |
| 2002 10 04 | 704 | 0.3− | 1.1+ | 2004 01 24 | 704 | 0.9− | 0.6− | 2006 08 14 | 644 | 0.4− | 0.6+ |
| 2002 10 04 | 704 | 0.6− | 1.4+ | 2004 01 24 | 704 | 0.7− | 0.1− | 2006 08 14 | 644 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 1.2+ | 2004 01 31 | 691 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.4− | 0.4+ |
| 2002 10 11 | 704 | 0.1+ | 1.5+ | 2004 01 31 | 691 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.3− | 0.5+ |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2004 01 31 | 691 | 0.1− | 0.2+ | 2006 08 14 | 644 | 0.4− | 0.5+ |
| 2002 10 11 | 704 | 0.6− | 1.1+ | 2005 03 14 | G96 | 0.2− | 0.1− | 2006 08 20 | 644 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.5+ | 0.6+ | 2005 03 14 | G96 | 0.7− | 0.2− | 2006 08 20 | 644 | 0.4− | 0.6+ |
| 2002 10 11 | 704 | 0.0 | 1.6+ | 2005 03 14 | G96 | 0.4− | 0.1− | 2006 08 20 | 644 | 0.3− | 0.6+ |
| 2002 10 11 | 704 | 0.3+ | 0.3− | 2005 03 14 | G96 | 0.2− | 0.1− | | | | |
| 2002 10 12 | 704 | 0.8+ | 0.5+ | 2005 04 06 | 691 | 0.3+ | 0.5+ | | | | |

**(144073)∗ 2004 BB$_{48}$ = 1999 SY$_{17}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76383)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.03554 | | (2000.0) | | | |
| $n$ | 0.29402880 | $\omega$ | 250.35761 | | +0.99117746 | −0.09426867 |
| $a$ | 2.2398012 | $\Omega$ | 114.95876 | | +0.12157864 | +0.92658751 |
| $e$ | 0.1458546 | $i$ | 5.89855 | | −0.05278139 | +0.36407281 |
| $P$ | 3.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.0 | 0.9+ | 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.2− |
| 1999 09 04 | 699 | 0.6+ | 1.0+ | 2004 01 24 | 704 | 0.2+ | 0.3− | 2006 11 15 | 703 | 0.1− | 0.7− |
| 1999 09 04 | 699 | 0.2− | 1.8+ | 2004 01 24 | 704 | 0.2− | 0.9− | 2006 11 15 | 703 | 0.4− | 0.1− |
| 1999 09 09 | 704 | 0.2− | 0.0 | 2004 01 24 | 704 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 1999 09 09 | 704 | 0.7− | 0.3+ | 2004 01 27 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 1999 09 09 | 704 | 0.4− | 0.4+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.4− | 0.7− |
| 1999 09 09 | 704 | 0.8+ | 0.7+ | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3− | 1.0+ |
| 1999 09 30 | 704 | 1.1+ | 0.1− | 2004 02 15 | 704 | 0.7+ | 0.3+ | 2006 11 19 | 703 | (1.2− | 2.5+) |
| 1999 09 30 | 704 | 1.2− | 0.3− | 2004 02 15 | 704 | 1.1+ | 0.1+ | 2006 11 19 | 703 | (0.8+ | 1.5+) |
| 1999 09 30 | 704 | 0.9− | 0.2− | 2004 02 15 | 704 | 0.3+ | 0.2− | 2006 11 19 | 703 | 0.1+ | 0.8+ |
| 1999 10 04 | 703 | 0.3− | 0.9+ | 2005 05 04 | 691 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.9+ | 0.2− |
| 1999 10 04 | 703 | 1.2− | 0.7+ | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 1999 10 04 | 703 | 0.5− | 0.7− | 2005 05 04 | 691 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.6− |
| 1999 10 04 | 703 | 0.8+ | 0.0 | 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.8+ | 0.9+ |
| 2003 12 18 | 644 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2003 12 18 | 644 | 0.4+ | 0.5+ | 2005 05 10 | 691 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2003 12 18 | 644 | 0.5+ | 0.1+ | 2005 05 14 | 691 | 0.3− | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2003 12 27 | 291 | 0.4− | 0.4+ | 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2003 12 27 | 291 | 0.8− | 0.7+ | 2005 05 14 | 691 | 0.1+ | 0.8+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2003 12 27 | 291 | 0.7− | 0.3+ | 2006 10 30 | 703 | 1.0− | 0.9− | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2004 01 15 | 691 | 0.2+ | 0.1+ | 2006 10 30 | 703 | 0.7− | 1.1− | 2006 11 25 | 704 | 0.5+ | 1.2+ |
| 2004 01 15 | 691 | 0.1+ | 0.2+ | 2006 10 30 | 703 | 0.2+ | 1.1− | 2006 11 25 | 704 | 0.3+ | 0.6+ |
| 2004 01 15 | 691 | 0.2+ | 0.2+ | 2006 10 30 | 703 | 1.4+ | 0.7+ | 2006 11 25 | 704 | 0.7− | 0.6+ |
| 2004 01 21 | 704 | 0.7+ | 0.2− | 2006 11 15 | 703 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.1− | 0.6+ |
| 2004 01 21 | 704 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.2− | 1.0+ |
| 2004 01 21 | 704 | 0.4+ | 0.4− | 2006 11 15 | 703 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.3− | 0.7+ |
| 2004 01 21 | 704 | 0.0 | 0.5− | 2006 11 15 | 703 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.2+ |
| 2004 01 21 | 704 | 0.2+ | 0.2− | 2006 11 15 | 703 | 0.6− | 0.6+ | 2006 11 28 | 704 | 0.1− | 1.3+ |

**(144074)∗ 2004 BQ$_{48}$ = 2000 AH$_{253}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57604)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 194.80066 | | (2000.0) | | | |
| $n$ | 0.24745367 | $\omega$ | 258.42461 | | −0.98881187 | −0.14891328 |
| $a$ | 2.5126970 | $\Omega$ | 273.01099 | | +0.14003427 | −0.90655451 |
| $e$ | 0.0623504 | $i$ | 0.49994 | | +0.05139546 | −0.39494778 |
| $P$ | 3.98 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 01 | 691 | 0.3− | 0.3− | 2004 01 21 | 704 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1+ |
| 1992 01 01 | 691 | 0.2− | 0.1+ | 2004 01 21 | 704 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.5− |
| 1992 01 01 | 691 | 0.1− | 0.5− | 2004 01 21 | 704 | 0.3+ | 1.2+ | 2006 07 21 | G96 | 0.2− | 0.0 |
| 1998 10 22 | 691 | 0.7− | 0.0 | 2004 01 21 | 704 | 0.4− | 1.1+ | 2006 07 21 | G96 | 0.2− | 0.1− |
| 1998 10 22 | 691 | 0.5− | 0.2+ | 2004 01 24 | 704 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.4− | 0.3+ |
| 1998 10 22 | 691 | 0.5− | 0.2− | 2004 01 24 | 704 | 0.4− | 0.5− | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2000 01 07 | 691 | 0.4+ | 0.4+ | 2004 01 24 | 704 | 1.0− | 0.5− | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2000 01 07 | 691 | 0.6+ | 0.3− | 2004 01 24 | 704 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2000 01 07 | 691 | 0.7+ | 0.4+ | 2004 01 24 | 704 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2000 01 16 | 691 | 0.0 | 0.1+ | 2004 01 25 | A16 | (1.1+ | 2.1+) | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2000 01 16 | 691 | 0.1− | 0.1− | 2004 01 27 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2000 01 16 | 691 | 0.6+ | 1.1− | 2004 01 27 | 691 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2002 09 26 | 644 | 0.5− | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2002 09 26 | 644 | 0.4− | 0.6+ | 2004 02 16 | 691 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2+ |
| 2002 09 26 | 644 | 0.5− | 0.7+ | 2004 02 16 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2002 10 04 | 644 | 0.0 | 0.5− | 2004 02 16 | 691 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.4+ | 0.5− |
| 2002 10 04 | 644 | 0.0 | 0.2− | 2005 06 16 | G96 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2002 10 04 | 644 | 0.1− | 0.2− | 2005 06 16 | G96 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 10 31 | 645 | 0.3+ | 0.0 | 2005 06 16 | G96 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 10 31 | 645 | 0.3+ | 0.0 | 2005 06 16 | G96 | 0.1+ | 0.3+ | | | | |

**(144075)∗ 2004 BS$_{48}$ = 2006 PQ$_{9}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 103602)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.55838 | | (2000.0) | | | |
| $n$ | 0.25530449 | $\omega$ | 105.22690 | | +0.96263963 | −0.27067742 |
| $a$ | 2.4609177 | $\Omega$ | 270.47814 | | +0.24540832 | +0.88403095 |
| $e$ | 0.1720227 | $i$ | 0.43892 | | +0.11445394 | +0.38108138 |
| $P$ | 3.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 28 | 691 | 0.8+ | 0.5+ | 2004 02 16 | 691 | 0.4− | 0.4− | 2006 08 20 | 644 | 0.3− | 0.1+ |
| 2001 04 28 | 691 | 0.4+ | 0.2− | 2005 03 11 | G96 | 0.4− | 0.2+ | 2006 08 20 | 644 | 0.3− | 0.0 |
| 2001 04 28 | 691 | 0.4+ | 0.2+ | 2005 03 11 | G96 | 0.4− | 0.5+ | 2006 08 20 | 644 | 0.4− | 0.2+ |
| 2002 07 18 | 644 | (0.1+ | 2.5+) | 2005 03 11 | G96 | 0.6− | 0.1+ | 2006 08 21 | 644 | 0.2− | 0.1+ |
| 2002 07 18 | 644 | 0.2− | 0.2+ | 2005 03 11 | G96 | 0.3+ | 0.1+ | 2006 08 21 | 644 | 0.3− | 0.1+ |
| 2002 07 18 | 644 | 0.3− | 0.4+ | 2005 05 12 | G96 | 0.7− | 0.1+ | 2006 08 21 | 644 | 0.3− | 0.3+ |
| 2002 08 07 | 644 | 0.8− | 0.1+ | 2005 05 12 | G96 | 0.8− | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.3+ |
| 2002 08 07 | 644 | 0.4− | 0.0 | 2005 05 12 | G96 | 0.4− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2002 08 07 | 644 | 0.7− | 0.2− | 2005 05 12 | G96 | 0.5− | 0.0 | 2006 08 28 | 691 | (0.9− | 3.0+) |
| 2003 12 21 | 704 | 0.1− | 0.9− | 2006 06 20 | G96 | 0.3− | 0.4− | 2006 08 29 | 704 | 1.0− | 1.4+ |
| 2003 12 21 | 704 | 1.3+ | 0.4− | 2006 06 20 | G96 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.4+ | 0.4− |
| 2003 12 21 | 704 | 1.2+ | 0.8− | 2006 06 20 | G96 | 0.3− | 0.2− | 2006 08 29 | 704 | 0.5+ | 0.0 |
| 2003 12 21 | 704 | 0.6+ | 0.1+ | 2006 06 20 | G96 | 0.1− | 0.5− | 2006 08 29 | 704 | 0.3+ | 1.1+ |
| 2003 12 29 | 699 | 0.1− | 0.5+ | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 08 29 | 704 | 0.5+ | 0.9+ |
| 2003 12 29 | 699 | 0.1+ | 0.4+ | 2006 08 13 | 644 | 0.4− | 0.1+ | 2006 08 31 | 704 | 0.1+ | 0.4− |
| 2003 12 29 | 699 | 0.1+ | 0.4− | 2006 08 13 | 644 | 0.3− | 0.2+ | 2006 08 31 | 704 | 0.6+ | 0.1+ |
| 2003 12 29 | 699 | (2.3− | 0.2−) | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.6+ | 1.5− |
| 2004 01 15 | 691 | 0.0 | 0.3+ | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.3− | 0.1+ |
| 2004 01 15 | 691 | 0.0 | 0.3+ | 2006 08 15 | 644 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.2+ |
| 2004 01 15 | 691 | 0.2− | 0.1+ | 2006 08 17 | A50 | 1.1− | 0.3− | 2006 09 17 | 704 | 1.7+ | 0.2+ |
| 2004 01 21 | 704 | (2.1+ | 0.1−) | 2006 08 17 | A50 | 0.9− | 1.0+ | 2006 09 17 | 704 | 0.2+ | 1.0+ |
| 2004 01 21 | 704 | 0.3+ | 0.6+ | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2004 01 21 | 704 | (3.1+ | 0.6−) | 2006 08 17 | 644 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2004 01 21 | 704 | (2.5+ | 0.1−) | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.9+ | 1.4+ | 2006 08 17 | A50 | 1.0+ | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2004 01 24 | 704 | 1.5− | 0.8+ | 2006 08 18 | A50 | 0.7+ | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2004 01 24 | 704 | 0.6− | 0.6+ | 2006 08 19 | 699 | 0.6+ | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2004 01 24 | 704 | 0.2− | 1.5+ | 2006 08 19 | 699 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.2+ |
| 2004 01 27 | 691 | 0.3+ | 0.2+ | 2006 08 19 | 644 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.2+ | 0.7+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 08 19 | 644 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.9− | 0.8+ |
| 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2004 02 16 | 691 | 0.3− | 0.1+ | 2006 08 19 | 699 | 0.3+ | 0.2+ | 2006 11 13 | G96 | (0.4− | 2.1−) |

**(144076)∗ 2004 BY$_{48}$ = 2005 GF$_{150}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76383)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.37183 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29560543 | $\omega$ | 236.11017 | | +0.97239228 | | −0.22572158 |
| $a$ | 2.2318300 | $\Omega$ | 136.85101 | | +0.23227441 | | +0.91190146 |
| $e$ | 0.2008073 | $i$ | 4.96474 | | +0.02240199 | | +0.34276157 |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 699 | 0.3− | 0.2+ | 2005 05 11 | 691 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 1999 08 07 | 699 | 0.3− | 0.4+ | 2005 05 11 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 1999 08 07 | 699 | 0.0 | 1.4+ | 2005 05 11 | 691 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.5− |
| 2003 10 03 | 291 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.9+ | 0.9+ | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2003 10 03 | 291 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.8− | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.3+ |
| 2003 10 03 | 291 | 0.4+ | 1.0+ | 2006 09 18 | 703 | 0.0 | 1.2+ | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2004 01 21 | 704 | 0.2− | 0.1− | 2006 09 18 | 703 | (0.3− | 2.2+) | 2006 11 19 | 704 | 1.0− | 0.2− |
| 2004 01 21 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.7− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.9+ |
| 2004 01 21 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.9− | 0.9+ | 2006 11 19 | 704 | 0.4+ | 1.0− |
| 2004 01 21 | 704 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.5− |
| 2004 01 21 | 704 | 0.5− | 0.6− | 2006 09 19 | 699 | 1.1+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.9+ |
| 2004 01 24 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.9+ | 0.3+ | 2006 11 19 | 703 | 1.0− | 0.8− |
| 2004 01 24 | 704 | 1.1− | 0.8− | 2006 09 30 | 703 | 0.6+ | 1.0+ | 2006 11 19 | 703 | 0.9− | 0.6− |
| 2004 01 24 | 704 | 1.1− | 0.1+ | 2006 09 30 | 703 | 0.0 | 1.1+ | 2006 11 19 | 703 | 1.5− | 0.7− |
| 2004 01 24 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.7− | 0.6+ | 2006 11 19 | 703 | 0.4− | 0.5− |
| 2004 01 24 | 704 | 1.1+ | 0.7− | 2006 10 30 | 703 | 0.9+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 02 13 | 691 | 0.2+ | 0.3+ | 2006 10 30 | 703 | 0.1+ | 0.7+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 10 30 | 703 | (1.2+ | 1.7+) | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 10 30 | 703 | 1.5+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2005 04 11 | 691 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.6− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2005 04 11 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2005 04 15 | 691 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2005 04 15 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.6+ |
| 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.1− | | | | |

**(144077)∗ 2004 BJ$_{49}$ = 1998 SF$_{53}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69641)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.90659 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22631394 | $\omega$ | 209.04132 | | +0.48507014 | | −0.87441136 |
| $a$ | 2.6668291 | $\Omega$ | 211.94497 | | +0.80612372 | | +0.45180793 |
| $e$ | 0.1155539 | $i$ | 1.14473 | | +0.33892701 | | +0.17684560 |
| $P$ | 4.36 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 30 | 691 | 0.8+ | 0.1− | 2004 01 24 | 704 | 0.0 | 0.8− | 2005 05 07 | G96 | 0.2− | 0.1+ |
| 1998 09 30 | 691 | 0.7+ | 0.1+ | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2005 05 07 | G96 | 0.5− | 0.2+ |
| 1998 09 30 | 691 | 0.7+ | 0.4− | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2005 05 07 | G96 | 0.1+ | 0.2+ |
| 1998 10 01 | 691 | 0.6− | 0.2− | 2004 01 27 | 691 | 0.3− | 0.0 | 2005 05 07 | G96 | 0.5+ | 0.3− |
| 1998 10 01 | 691 | 0.5− | 0.3− | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2006 07 20 | 734 | 0.9− | 0.1+ |
| 1998 10 01 | 691 | 1.1− | 0.6+ | 2004 02 13 | 291 | 0.3+ | 0.3+ | 2006 07 20 | 734 | 0.9− | 0.3+ |
| 2003 12 22 | 691 | 0.3− | 0.6+ | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2006 07 20 | 734 | 0.7− | 0.6+ |
| 2003 12 22 | 691 | 0.0 | 0.0 | 2004 02 13 | 291 | 0.1+ | 0.4+ | 2006 07 20 | 734 | 0.9+ | 0.3− |
| 2003 12 22 | 691 | 0.0 | 0.5+ | 2004 02 13 | 691 | 0.3+ | 0.0 | 2006 07 24 | 734 | 0.7+ | 0.6+ |
| 2004 01 21 | 704 | 0.1− | 0.7+ | 2004 02 13 | 291 | 0.1+ | 0.1+ | 2006 07 24 | 734 | 0.0 | 0.0 |
| 2004 01 21 | 704 | 0.1+ | 0.2− | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 07 24 | 734 | 0.0 | 0.6+ |
| 2004 01 21 | 704 | 0.7− | 0.2+ | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2004 01 21 | 704 | 0.0 | 1.3+ | 2005 05 04 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2004 01 21 | 704 | 0.0 | 0.4+ | 2005 05 04 | G96 | 0.7+ | 0.3− | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2004 01 24 | 704 | 0.1+ | 1.1− | 2005 05 04 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2004 01 24 | 704 | 0.3+ | 0.7− | 2005 05 04 | G96 | 0.4− | 0.1+ | | | | |

**(144078)∗ 2004 BM$_{49}$ = 1999 VR$_{109}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69642)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.41270 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27314474 | $\omega$ | 119.58273 | | +0.99317612 | | −0.11491429 |
| $a$ | 2.3525606 | $\Omega$ | 247.02207 | | +0.09812588 | | +0.91559556 |
| $e$ | 0.0754715 | $i$ | 1.23836 | | +0.06302776 | | +0.38533034 |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 02 | 691 | 0.0 | 0.7+ | 2004 01 27 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 1994 05 02 | 691 | 0.3− | 0.6+ | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 1994 05 02 | 691 | 0.4− | 0.4+ | 2004 01 27 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 1999 11 09 | 704 | 0.4+ | 0.3+ | 2004 02 13 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1999 11 09 | 704 | 0.3− | 0.3− | 2004 02 13 | 291 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 11 09 | 704 | 0.6+ | 1.1− | 2004 02 13 | 691 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 0.7+ | 0.2− | 2004 02 13 | 291 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 11 09 | 704 | 0.5+ | 0.4− | 2004 02 13 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1999 11 12 | 704 | 0.8+ | 0.4− | 2004 02 13 | 291 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1999 11 12 | 704 | 0.2+ | 0.5+ | 2004 02 17 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1999 11 12 | 704 | 1.1+ | 0.2+ | 2004 02 17 | 645 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 1.5+ | 0.9+ | 2005 06 11 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2002 08 06 | 644 | 0.5+ | 0.7+ | 2005 06 11 | 691 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.4− | 0.2+ |
| 2002 08 06 | 644 | 0.2+ | 0.6+ | 2005 06 11 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2002 08 06 | 644 | 0.4+ | 0.4+ | 2005 06 13 | G96 | 0.3− | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.2− | 0.3+ | 2005 06 13 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1− | 1.0− |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2005 06 13 | G96 | 0.6− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 1.3− |
| 2002 08 27 | 644 | 0.1− | 0.5+ | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2002 08 27 | 644 | 0.1− | 0.5+ | 2005 06 14 | G96 | 0.6+ | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2002 08 27 | 644 | 0.1− | 0.5+ | 2005 06 14 | G96 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.8− | 0.7− |
| 2002 09 05 | 704 | 0.5− | 0.6+ | 2005 06 14 | G96 | 0.4+ | 0.0 | 2006 11 13 | G96 | 0.4− | 0.5− |
| 2002 09 05 | 704 | 0.8− | 0.3+ | 2006 07 22 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.0 |
| 2002 09 05 | 704 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.4+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 0.0 | 1.0+ | 2006 07 22 | G96 | 0.5+ | 0.5− | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 07 22 | G96 | 0.1+ | 0.8+ | 2006 11 15 | 691 | 0.3+ | 0.3+ |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2003 12 17 | 291 | 1.1− | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2003 12 17 | 291 | 1.1− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.2− | 2.5− |
| 2003 12 17 | 291 | 1.3− | 0.1+ | 2006 10 04 | 703 | 1.0− | 0.0 | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2004 01 16 | 691 | 0.2+ | 0.2+ | 2006 10 04 | 703 | (1.8− | 0.0 ) | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2004 01 16 | 691 | 0.1+ | 0.1+ | 2006 10 04 | 703 | (1.6− | 1.1−) | 2006 11 17 | 703 | 0.1− | 1.2+ |
| 2004 01 16 | 691 | 0.3+ | 0.2+ | 2006 10 04 | 703 | 0.3− | 0.2− | 2006 11 21 | 691 | 0.3− | 0.1+ |
| 2004 01 21 | 704 | 0.4+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2004 01 21 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2004 01 21 | 704 | 1.2− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 11 21 | 704 | 1.3+ | 1.4+ |
| 2004 01 21 | 704 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.6− |
| 2004 01 21 | 704 | 0.8+ | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.3+ |
| 2004 01 24 | 704 | (1.2+ | 1.8+) | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.8− | 1.1− |
| 2004 01 24 | 704 | 0.1− | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2004 01 24 | 704 | 0.0 | 1.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | (1.7+ | 0.1−) | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2004 01 24 | 704 | 1.3+ | 0.5− | 2006 10 20 | 691 | 0.4− | 0.2+ | | | | | | |

**(144079)∗ 2004 $BH_{50}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.47589 | | (2000.0) | | | |
| $n$ | 0.23419666 | $\omega$ | 337.60966 | | +0.26766826 | +0.94514681 |
| $a$ | 2.6066472 | $\Omega$ | 307.40960 | | −0.84444491 | +0.13655206 |
| $e$ | 0.0885463 | $i$ | 13.63290 | | −0.46396820 | +0.29673395 |
| $P$ | 4.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.8− | 0.0 | 2004 01 26 | 699 | (2.1+ | 0.0 ) | 2006 08 29 | 699 | 0.7− | 0.1+ |
| 2002 10 06 | 704 | 0.3− | 0.8− | 2004 01 26 | 699 | 0.6+ | 0.2− | 2006 08 29 | 699 | 1.4+ | 0.3+ |
| 2002 10 06 | 704 | 0.3− | 0.9+ | 2004 01 26 | 699 | 0.3+ | 0.8+ | 2006 09 04 | 958 | 1.1− | 0.8+ |
| 2002 10 06 | 704 | 0.5− | 0.1+ | 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 04 | 958 | 1.4− | 2.0+ |
| 2002 10 06 | 704 | 0.6+ | 0.9+ | 2004 01 28 | 691 | 0.0 | 0.1− | 2006 09 04 | 958 | 0.3− | 1.1+ |
| 2002 11 14 | 644 | 0.2− | 1.0+ | 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 04 | 958 | 0.1− | 0.5− |
| 2002 11 14 | 644 | 0.5− | 1.2+ | 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 09 04 | 958 | 0.6+ | 1.2+ |
| 2002 11 14 | 644 | 0.1+ | 1.3+ | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 09 04 | 958 | 0.6− | 0.8+ |
| 2003 10 22 | 291 | 0.3+ | 1.5− | 2004 01 30 | 704 | 0.1+ | 0.3− | 2006 09 14 | 644 | 0.1− | 0.1− |
| 2003 10 22 | 291 | 1.1− | 0.4+ | 2004 01 30 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.3− |
| 2003 10 22 | 291 | 0.5− | 0.1+ | 2004 01 30 | 704 | 0.6+ | 0.0 | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 0.7− | 0.4− | 2004 02 11 | 691 | 0.1− | 0.2− | 2006 09 22 | 699 | 0.2+ | 0.8− |
| 2003 12 22 | 704 | 0.3+ | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 22 | 699 | 0.5+ | 0.3− |
| 2003 12 22 | 704 | 0.1− | 1.1+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 09 22 | 699 | 0.1− | 0.2+ |
| 2004 01 21 | 704 | 0.0 | 0.3+ | 2005 05 14 | E12 | 0.5− | 1.1+ | 2006 09 22 | 699 | 0.5+ | 0.8+ |
| 2004 01 21 | 704 | 0.7+ | 0.4− | 2005 05 14 | E12 | 0.3+ | 1.0+ | 2006 09 28 | 703 | 0.5− | 0.2− |
| 2004 01 21 | 704 | 0.6+ | 0.4+ | 2005 05 14 | E12 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.1− |
| 2004 01 21 | 704 | 0.6+ | 0.1+ | 2005 05 14 | E12 | 0.4+ | 0.7+ | 2006 09 28 | 703 | 0.0 | 0.6− |
| 2004 01 24 | 704 | 0.6− | 1.2+ | 2005 06 09 | E12 | 0.5+ | 0.6+ | 2006 09 28 | 703 | 0.5− | 0.4− |
| 2004 01 24 | 704 | 1.0− | 0.6+ | 2005 06 09 | E12 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.6− |
| 2004 01 24 | 704 | 0.7− | 1.0+ | 2005 06 09 | E12 | 0.5+ | 0.9+ | 2006 09 28 | 703 | 0.8+ | 0.3+ |
| 2004 01 24 | 704 | 0.4+ | 0.3− | 2005 06 09 | E12 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.3+ | 0.5− |
| 2004 01 24 | 704 | 0.9− | 0.9+ | 2006 08 29 | 699 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.3+ | 0.6− |
| 2004 01 26 | 699 | 0.2+ | 1.7+ | 2006 08 29 | 699 | 0.1+ | 0.6− | | | | |

**(144080)∗ 2004 $BL_{50}$ = 2005 $MH_6$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 86232)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 203.95658 | | (2000.0) | | | |
| $n$ | 0.24582472 | $\omega$ | 266.50155 | | −0.95556292 | −0.29348248 |
| $a$ | 2.5237849 | $\Omega$ | 256.43045 | | +0.28051532 | −0.87638700 |
| $e$ | 0.0310681 | $i$ | 1.63316 | | +0.09061271 | −0.38185581 |
| $P$ | 4.01 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.2+ | 0.1− | 2004 01 24 | 704 | 0.3− | 0.3+ | 2005 06 26 | G96 | 0.5− | 0.3+ |
| 1994 10 09 | 691 | 0.1+ | 0.4− | 2004 01 24 | 704 | 0.4− | 0.3+ | 2005 06 26 | G96 | 0.6− | 0.1− |
| 1994 10 09 | 691 | 0.0 | 0.0 | 2004 01 26 | 699 | 0.7− | 0.3− | 2005 06 28 | G96 | 0.2+ | 0.0 |
| 1999 12 31 | 691 | 0.3− | 1.2− | 2004 01 26 | 699 | 0.1+ | 0.1+ | 2005 06 28 | G96 | 0.2− | 0.1+ |
| 1999 12 31 | 691 | 0.5− | 0.3+ | 2004 01 26 | 699 | 0.2− | 0.1+ | 2005 06 28 | G96 | 0.2− | 0.5+ |
| 1999 12 31 | 691 | 0.2− | 0.2+ | 2004 01 26 | 699 | 0.8+ | 0.8+ | 2005 06 28 | G96 | 0.2− | 0.4− |
| 2000 02 03 | 704 | 0.6+ | 0.1− | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2000 02 03 | 704 | 0.2+ | 0.5− | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 2000 02 03 | 704 | 1.2+ | 0.6+ | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2000 02 03 | 704 | 1.2+ | 1.7+ | 2004 02 23 | 621 | 0.7− | 0.5− | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 02 23 | 621 | 0.5− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.5+ |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2004 02 23 | 621 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2004 02 23 | 621 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.6− |
| 2002 10 03 | 704 | 0.8− | 0.9+ | 2004 02 23 | 621 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2004 01 21 | 704 | 0.8+ | 0.1+ | 2004 04 13 | 645 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2004 01 21 | 704 | 0.8+ | 0.7+ | 2004 04 13 | 645 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2004 01 21 | 704 | 0.6+ | 0.2+ | 2005 06 13 | G96 | 0.5+ | 0.8+ | 2006 10 31 | G96 | 0.4− | 0.5− |
| 2004 01 21 | 704 | 0.0 | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2004 01 21 | 704 | 1.1+ | 0.5+ | 2005 06 13 | G96 | 0.2+ | 1.0+ | 2006 10 31 | G96 | 0.1+ | 0.9− |
| 2004 01 24 | 704 | 0.5− | 0.4+ | 2005 06 13 | G96 | 1.0+ | 0.8+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2004 01 24 | 704 | 0.1− | 1.4+ | 2005 06 26 | G96 | 0.0 | 0.4+ | | | | |
| 2004 01 24 | 704 | 0.0 | 0.3+ | 2005 06 26 | G96 | 0.0 | 0.1+ | | | | |

**(144081)∗ 2004 $BR_{50}$ = 2001 $LB_1$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61796)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 165.73355 | | (2000.0) | | | |
| $n$ | 0.26386897 | $\omega$ | 83.54345 | | −0.56971048 | +0.82153366 |
| $a$ | 2.4073755 | $\Omega$ | 151.68906 | | −0.77163777 | −0.52522343 |
| $e$ | 0.1415243 | $i$ | 2.73584 | | −0.28285176 | −0.22186213 |
| $P$ | 3.74 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 11 | 809 | 0.0 | 1.4− | 2004 02 16 | 704 | 0.5+ | 0.6− | 2005 07 12 | 703 | 0.2+ | 1.0+ |
| 1994 08 11 | 809 | 0.5− | 1.4− | 2004 02 16 | 704 | 0.6+ | 0.4+ | 2005 07 12 | 703 | 0.1+ | 0.1− |
| 1994 08 11 | 809 | 0.9+ | 0.7− | 2004 02 16 | 704 | 0.2+ | 1.1+ | 2005 07 12 | 703 | 0.7− | 0.2+ |
| 2001 06 13 | 704 | 0.0 | 0.5− | 2004 02 16 | 704 | (1.1+ | 2.1+) | 2005 07 15 | G96 | 0.1− | 0.3+ |
| 2001 06 13 | 704 | 1.4+ | 0.0 | 2004 02 17 | 644 | (2.1− | 1.1+) | 2005 07 15 | G96 | 0.2+ | 0.3+ |
| 2001 06 13 | 704 | (1.8− | 0.2+) | 2004 02 17 | 644 | (1.7− | 0.2+) | 2005 07 15 | G96 | 0.2− | 0.2+ |
| 2001 06 13 | 704 | 0.2− | 0.7− | 2004 02 17 | 644 | 0.9− | 0.7+ | 2005 07 15 | G96 | 0.3− | 0.4+ |
| 2001 06 15 | 704 | 0.8+ | 0.7+ | 2004 02 26 | 704 | 0.6+ | 0.4+ | 2005 07 30 | E12 | 0.2− | 0.0 |
| 2001 06 15 | 704 | 0.1− | 0.9+ | 2004 02 26 | 704 | 0.6+ | 0.9+ | 2005 07 30 | E12 | 0.6− | 0.2− |
| 2001 06 15 | 704 | 0.3+ | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2005 07 30 | E12 | 0.1− | 0.5+ |
| 2001 06 15 | 704 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.3+ | 0.6− | 2005 07 30 | E12 | 0.5+ | 0.1+ |
| 2004 01 21 | 704 | 0.4+ | 0.7+ | 2005 05 19 | G96 | 0.5− | 0.0 | 2005 08 06 | 704 | 1.0− | 0.3− |
| 2004 01 21 | 704 | 0.2+ | 0.7+ | 2005 05 19 | G96 | 0.4− | 0.2+ | 2005 08 06 | 704 | 0.7− | 0.2− |
| 2004 01 21 | 704 | 0.2+ | 0.8+ | 2005 05 19 | G96 | 0.4− | 0.0 | 2005 08 06 | 704 | 0.6− | 0.4+ |
| 2004 01 24 | 704 | 0.2+ | 0.1− | 2005 05 19 | G96 | 0.8− | 0.6+ | 2005 08 06 | 704 | 0.6− | 1.0+ |
| 2004 01 24 | 704 | 0.2− | 1.5+ | 2005 06 27 | 691 | 0.3+ | 0.4+ | 2005 08 06 | 704 | (1.7− | 0.5+) |
| 2004 01 24 | 704 | 0.3+ | 0.6+ | 2005 06 27 | 691 | 0.1+ | 0.1+ | 2005 09 29 | G96 | (0.2− | 1.8+) |
| 2004 01 24 | 704 | (0.0 | 1.7+) | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2005 09 29 | G96 | 0.3− | 0.5+ |
| 2004 01 24 | 704 | 0.8− | 0.7− | 2005 06 28 | 644 | 0.1− | 0.4+ | 2005 09 29 | G96 | 0.3− | 0.8+ |
| 2004 01 26 | 699 | 0.9+ | 0.7− | 2005 06 28 | 644 | 0.2− | 0.2+ | 2005 09 29 | G96 | 0.0 | 0.7+ |
| 2004 01 26 | 699 | 1.1+ | 0.6− | 2005 06 28 | 644 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.3+ |
| 2004 01 26 | 699 | 0.3+ | 0.4+ | 2005 06 29 | 699 | 0.3+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2004 01 26 | 699 | 0.6− | 0.5+ | 2005 06 29 | 699 | 0.9− | 1.2+ | 2006 11 12 | G96 | 0.1− | 0.1+ |
| 2004 01 30 | 691 | 0.3+ | 0.0 | 2005 06 29 | 699 | 0.7− | 0.7+ | 2006 11 12 | G96 | 0.5− | 0.3+ |
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2005 06 29 | 699 | (0.2+ | 2.4+) | 2006 11 16 | 691 | 0.2+ | 0.6+ |
| 2004 01 30 | 704 | 0.2+ | 0.1− | 2005 07 04 | G96 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.5+ |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2005 07 04 | G96 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.5+ |
| 2004 01 30 | 704 | 0.9− | 1.1+ | 2005 07 04 | G96 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2004 01 30 | 704 | 0.3− | 0.3+ | 2005 07 04 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2004 01 30 | 704 | 0.0 | 0.9+ | 2005 07 10 | 691 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 02 14 | 691 | 0.0 | 0.3+ | 2005 07 10 | 691 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2004 02 14 | 691 | 0.2+ | 0.4+ | 2005 07 10 | 691 | 0.0 | 0.3+ | | | | |
| 2004 02 14 | 691 | 1.2− | 0.5+ | 2005 07 12 | 703 | 0.4+ | 0.3+ | | | | |

**(144082)∗ 2004 $BP_{51}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.41821 | | (2000.0) | | | |
| $n$ | 0.20061475 | $\omega$ | 340.47693 | | +0.79079247 | +0.61199226 |
| $a$ | 2.8899754 | $\Omega$ | 341.77707 | | −0.55696640 | +0.71227954 |
| $e$ | 0.0584700 | $i$ | 1.94578 | | −0.25384187 | +0.34369074 |
| $P$ | 4.91 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.2− | 0.4+ | 2002 12 01 | 608 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.4+ | 0.4+ |
| 2000 04 06 | 704 | 0.4+ | 0.0 | 2002 12 01 | 608 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 1.0+ | 0.6+ |
| 2000 04 06 | 704 | 0.3− | 0.7+ | 2002 12 06 | 704 | 0.7+ | 0.1− | 2004 02 23 | 704 | 0.9+ | 0.5− |
| 2000 04 06 | 704 | 1.2+ | 0.4+ | 2002 12 06 | 704 | 0.7− | 0.2+ | 2004 02 23 | 704 | 0.7+ | 0.0 |
| 2000 04 06 | 704 | 0.1− | 0.5− | 2002 12 06 | 704 | 0.1− | 0.1+ | 2005 03 17 | G96 | 0.6− | 0.3− |
| 2001 08 07 | 608 | 0.3− | 0.3+ | 2002 12 06 | 704 | 0.1− | 0.2+ | 2005 03 17 | G96 | 1.0− | 0.2+ |
| 2001 08 07 | 608 | 0.1+ | 0.2− | 2003 12 22 | 291 | 1.0− | 0.2+ | 2005 03 17 | G96 | 1.1− | 0.3+ |
| 2001 08 07 | 608 | 0.4− | 0.1− | 2003 12 22 | 291 | 0.7− | 0.2+ | 2005 03 17 | G96 | 1.2− | 0.3+ |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2003 12 22 | 291 | 0.5− | 0.4+ | 2005 04 14 | 691 | 1.4+ | 1.1+ |
| 2002 11 05 | 704 | 1.0− | 1.0+ | 2004 01 21 | 704 | 0.3− | 1.4+ | 2005 04 14 | 691 | 0.1+ | 0.4+ |
| 2002 11 05 | 644 | 0.5+ | 0.9+ | 2004 01 21 | 704 | 0.2+ | 1.2+ | 2005 04 14 | 691 | 0.1+ | 0.4+ |
| 2002 11 05 | 704 | 0.8− | 1.7+ | 2004 01 21 | 704 | 0.7+ | 0.2+ | 2005 05 01 | 644 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.5− | 0.9+ | 2004 01 24 | 704 | 0.2+ | 0.5− | 2005 05 01 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 644 | 0.6+ | 0.8+ | 2004 01 24 | 704 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.3+ |
| 2002 11 05 | 644 | 0.9+ | 1.0+ | 2004 01 24 | 704 | 0.5+ | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.8+ |
| 2002 11 12 | 704 | 0.4+ | 0.1+ | 2004 01 24 | 704 | 0.9− | 1.1+ | 2006 08 14 | 644 | 0.1− | 0.9+ |
| 2002 11 12 | 704 | 1.8− | 0.5− | 2004 02 11 | 291 | 0.6+ | 0.3− | 2006 08 14 | 644 | 0.3− | 0.8+ |
| 2002 11 12 | 704 | 0.7− | 1.3+ | 2004 02 11 | 291 | 0.3+ | 0.3− | 2006 08 15 | 644 | 0.1− | 0.9+ |
| 2002 11 12 | 704 | 0.5+ | 0.2− | 2004 02 11 | 291 | 0.3+ | 0.3− | 2006 08 15 | 644 | 0.3− | 0.7+ |
| 2002 12 01 | 608 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 08 15 | 644 | 0.4− | 0.9+ |

**(144083)∗ 2004 $BR_{51}$ = 1999 $XU_{61}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61797)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.44086 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27097258 | $\omega$ | 294.77317 | | +0.22958774 | −0.97251209 | |
| $a$ | 2.3651162 | $\Omega$ | 141.88859 | | +0.91417017 | +0.20176934 | |
| $e$ | 0.1558697 | $i$ | 3.60940 | | +0.33403946 | +0.11622980 | |
| $P$ | 3.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3+ | 1.1+ | 2004 01 24 | 704 | 0.3+ | 0.8+ | 2004 02 26 | 704 | 0.1+ | 0.6− |
| 1999 12 07 | 704 | 0.1− | 0.0 | 2004 01 24 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | (1.7− | 0.2−) |
| 1999 12 07 | 704 | 0.1− | 0.7− | 2004 01 24 | 704 | 0.1− | 0.6+ | 2006 09 18 | 703 | 1.1− | 0.5− |
| 1999 12 08 | 704 | 0.1− | 1.0− | 2004 01 24 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | (1.7+ | 0.7+) |
| 1999 12 08 | 704 | 0.6+ | 1.0− | 2004 01 26 | 699 | 1.1+ | 1.2− | 2006 09 18 | 703 | 0.3+ | 1.0− |
| 1999 12 08 | 704 | 0.4− | 1.2− | 2004 01 26 | 699 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.0 | 0.4+ |
| 1999 12 08 | 704 | 0.6+ | 0.6− | 2004 01 26 | 699 | (2.3− | 0.7+) | 2006 09 20 | 691 | 0.0 | 0.2+ |
| 1999 12 08 | 704 | (2.4+ | 0.0 ) | 2004 01 26 | 699 | 0.5− | 0.4+ | 2006 09 20 | 691 | 0.1+ | 0.3+ |
| 2002 08 08 | 644 | 0.2− | 0.2+ | 2004 02 10 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.9+ |
| 2002 08 08 | 644 | 0.2+ | 0.3+ | 2004 02 10 | 644 | 0.0 | 0.9+ | 2006 09 30 | 703 | 0.0 | 0.7+ |
| 2002 08 08 | 644 | 0.2+ | 0.4+ | 2004 02 10 | 644 | 0.1+ | 0.3− | 2006 09 30 | 703 | 1.4− | 1.1− |
| 2002 08 17 | 644 | 0.4+ | 0.4+ | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.6+ |
| 2002 08 17 | 644 | 0.3− | 0.7+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2002 08 17 | 644 | 0.3+ | 0.4+ | 2004 02 11 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2002 08 27 | 644 | 0.5− | 0.4− | 2004 02 11 | 291 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 08 27 | 644 | 0.9− | 0.1− | 2004 02 11 | 291 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.7+ | 0.0 |
| 2002 08 27 | 644 | 0.4+ | 0.3+ | 2004 02 11 | 291 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2004 01 21 | 704 | 0.5− | 0.6+ | 2004 02 26 | 704 | 0.9+ | 0.2− | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2004 01 21 | 704 | 0.7+ | 1.1+ | 2004 02 26 | 704 | 0.3− | 0.8+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 01 21 | 704 | 0.0 | 0.1+ | 2004 02 26 | 704 | 1.4+ | 0.0 | | | | |
| 2004 01 24 | 704 | 0.8+ | 0.4+ | 2004 02 26 | 704 | 0.6− | 0.2− | | | | |

**(144084)∗ 2004 $BX_{51}$ = 1999 $TY_{246}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61797)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.87864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27642337 | $\omega$ | 184.17983 | | −0.05852721 | −0.99806310 | |
| $a$ | 2.3339213 | $\Omega$ | 269.17638 | | +0.91651964 | −0.04534942 | |
| $e$ | 0.1689324 | $i$ | 1.20835 | | +0.39568461 | −0.04258497 | |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.1− | 0.2− | 2004 01 24 | 704 | 0.1− | 0.0 | 2006 09 14 | 703 | (0.1− | 1.8+) |
| 1992 11 28 | 691 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 1992 11 28 | 691 | 0.1− | 0.5− | 2004 01 30 | 704 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 1999 10 06 | 704 | 0.0 | 0.5− | 2004 01 30 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1999 10 06 | 704 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.7− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 1999 10 06 | 704 | 0.3− | 1.0+ | 2004 01 30 | 704 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1999 10 06 | 704 | 0.6− | 1.2+ | 2004 01 30 | 704 | 0.4− | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 1999 10 06 | 704 | 1.2− | 0.3− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 1999 10 10 | 691 | 0.2+ | 0.2− | 2004 01 30 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | 1.3+ | 0.7+ |
| 1999 10 10 | 691 | 0.3+ | 0.1− | 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.3− |
| 1999 10 10 | 691 | 0.4+ | 0.1− | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 1999 11 04 | 704 | 0.8+ | 1.2+ | 2004 02 10 | 644 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 1999 11 04 | 704 | 1.1+ | 1.0+ | 2004 02 17 | 704 | (1.6+ | 1.1+) | 2006 10 19 | G96 | 0.0 | 0.4− |
| 1999 11 04 | 704 | 0.1+ | 1.2+ | 2004 02 17 | 704 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.7+ | 0.3− |
| 2003 12 18 | 644 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2003 12 18 | 644 | 0.0 | 0.1+ | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2003 12 18 | 644 | 0.3+ | 0.2+ | 2004 02 17 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2003 12 28 | 291 | 0.7− | 0.0 | 2004 02 26 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 644 | 0.7− | 0.4+ |
| 2003 12 28 | 291 | 0.2− | 0.2− | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2003 12 28 | 291 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2004 01 13 | 699 | 0.6+ | 1.0− | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2004 01 13 | 699 | 0.3− | 0.0 | 2004 02 26 | 704 | 0.5− | 0.3− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2004 01 13 | 699 | 0.5− | 0.9+ | 2004 02 29 | 691 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.5− | 0.3− |
| 2004 01 13 | 699 | 1.1− | 0.7+ | 2004 02 29 | 691 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2004 01 21 | 704 | (0.7− | 2.4+) | 2004 02 29 | 691 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.6− | 0.2− |
| 2004 01 21 | 704 | (0.4+ | 2.5+) | 2004 03 10 | 644 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2004 01 21 | 704 | (0.6− | 1.7+) | 2004 03 10 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2004 01 24 | 704 | 0.1− | 0.7− | 2004 03 10 | 644 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 01 24 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2004 01 24 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | (1.9− | 0.0 ) | | | | |
| 2004 01 24 | 704 | 1.1+ | 1.0+ | 2006 09 14 | 703 | (1.3− | 1.8+) | | | | |

**(144085)∗ 2004 $BO_{52}$ = 1999 $VB_{204}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57605)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.26205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26913625 | $\omega$ | 37.31284 | | −0.94844727 | −0.31679676 | |
| $a$ | 2.3758622 | $\Omega$ | 124.21529 | | +0.28798510 | −0.87376708 | |
| $e$ | 0.1532127 | $i$ | 0.64847 | | +0.13233426 | −0.36901342 | |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.4− | 1.3− | 2004 01 24 | 704 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.8+ | 0.0 |
| 1999 11 09 | 704 | 0.4+ | 1.2− | 2004 01 24 | 704 | (0.0 | 1.6−) | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 1999 11 09 | 704 | 0.1+ | 1.5− | 2004 01 24 | 704 | 0.8+ | 1.5− | 2006 10 17 | G96 | 0.3+ | 0.3+ |
| 1999 11 09 | 704 | 0.1− | 1.1− | 2004 01 24 | 704 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.2− | 0.6− |
| 1999 11 10 | 691 | 0.3+ | 0.8− | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.5+ |
| 1999 11 10 | 691 | 0.2− | 0.3− | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.0 |
| 1999 11 10 | 691 | 0.6+ | 0.6− | 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.5+ |
| 2002 09 13 | 644 | 0.4− | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 09 13 | 644 | 0.0 | 0.5+ | 2004 01 30 | 704 | 0.9+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.6− |
| 2002 09 13 | 644 | 0.7− | 0.5+ | 2004 01 30 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2004 02 09 | 185 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 02 09 | 185 | 0.0 | 0.2+ | 2006 10 23 | 291 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 644 | 0.1+ | 0.5+ | 2004 02 16 | 704 | (2.5− | 0.7−) | 2006 10 23 | 691 | 0.8− | 0.0 | | |
| 2002 09 15 | 644 | 1.0− | 0.1− | 2004 02 16 | 704 | 1.1− | 0.8+ | 2006 10 23 | 291 | 0.2+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2004 02 16 | 704 | 1.2− | 0.7− | 2006 10 23 | 291 | 0.0 | 0.0 | | |
| 2003 12 21 | 691 | 0.0 | 0.2+ | 2004 02 16 | 704 | (1.8− | 0.5−) | 2006 10 27 | 691 | 0.0 | 0.0 | | |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.7+ | 2006 10 27 | 691 | 0.4+ | 0.1− | | |
| 2003 12 21 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.3− | 0.6+ | 2006 10 27 | 691 | 0.4+ | 0.5+ | | |
| 2003 12 27 | 291 | 0.7− | 0.6+ | 2005 06 13 | G96 | 0.1− | 1.1+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | | |
| 2003 12 27 | 291 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.5+ | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2003 12 27 | 291 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.7− | | |
| 2003 12 27 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2003 12 27 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.8− | 0.3− | | |
| 2003 12 27 | 691 | 0.4+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.3− | | |
| 2004 01 13 | 699 | 0.5+ | 0.7+ | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 2004 01 13 | 699 | 0.6+ | 0.6+ | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.1+ | | |
| 2004 01 13 | 699 | (1.5− | 0.3−) | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2004 01 13 | 699 | 0.8− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.0 | | |
| 2004 01 21 | 704 | 0.7+ | 0.7+ | 2006 09 25 | G96 | 0.7+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2004 01 21 | 704 | 0.5+ | 0.8+ | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 11 11 | G96 | 0.8+ | 0.6+ | | |
| 2004 01 21 | 704 | 0.5+ | 1.0+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2004 01 21 | 704 | 0.2+ | 0.7+ | 2006 10 02 | 691 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2004 01 24 | 704 | 0.4+ | 1.4− | 2006 10 02 | 691 | 0.0 | 0.4+ | | | | | | |

**(144086)∗ 2004 BF$_{54}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.50564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27876657 | $\omega$ | 88.44642 | | +0.39718957 | −0.91731342 | |
| $a$ | 2.3208242 | $\Omega$ | 338.08594 | | +0.80952829 | +0.36450013 | |
| $e$ | 0.1296618 | $i$ | 4.28200 | | +0.43232440 | +0.16023652 | |
| $P$ | 3.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 1.5+ | 0.1− | 2004 01 24 | 704 | 0.7− | 0.1+ | 2004 02 15 | 704 | 0.3+ | 0.2+ | | |
| 1999 10 12 | 704 | 0.7+ | 0.2− | 2004 01 24 | 704 | 0.1− | 0.4+ | 2004 03 17 | 645 | 0.1− | 0.2− | | |
| 1999 10 12 | 704 | 0.4− | 0.4− | 2004 01 24 | 704 | 0.1− | 0.9+ | 2004 03 17 | 645 | 0.1− | 0.2− | | |
| 1999 10 12 | 704 | 0.5+ | 0.7− | 2004 01 30 | 704 | 0.4+ | 1.2+ | 2006 09 16 | 703 | 0.2+ | 0.4− | | |
| 1999 10 12 | 704 | 0.1+ | 0.9− | 2004 01 30 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 703 | 1.6− | 1.3− | | |
| 1999 11 03 | 704 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.8+ | 2006 09 16 | 703 | (0.7− | 1.8−) | | |
| 1999 11 03 | 704 | 1.4− | 1.3+ | 2004 01 31 | 704 | 0.5− | 0.1+ | 2006 09 16 | 703 | 0.9− | 1.6− | | |
| 1999 11 03 | 704 | 0.4− | 0.2− | 2004 01 31 | 704 | 0.3− | 0.6− | 2006 10 03 | G96 | 0.2+ | 0.0 | | |
| 2002 08 08 | 644 | 0.0 | 0.3+ | 2004 01 31 | 704 | 0.7− | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.1− | | |
| 2002 08 08 | 644 | 0.3− | 0.5+ | 2004 01 31 | 704 | 0.5+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.0 | | |
| 2002 08 08 | 644 | 0.2− | 0.4+ | 2004 01 31 | 704 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2004 01 17 | 644 | 0.2− | 0.2+ | 2004 02 13 | 699 | 0.5− | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.4+ | | |
| 2004 01 17 | 644 | 0.0 | 0.0 | 2004 02 13 | 699 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2004 01 17 | 644 | 0.1− | 0.1− | 2004 02 13 | 699 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.4+ | 0.3+ | | |
| 2004 01 22 | 704 | 0.3− | 0.7+ | 2004 02 13 | 699 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | | |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 02 14 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2004 01 22 | 704 | 0.2+ | 0.2− | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.3+ | | |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 02 14 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.3+ | | |
| 2004 01 22 | 704 | 0.4+ | 0.7+ | 2004 02 15 | 704 | 1.1+ | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.1+ | | |
| 2004 01 24 | 704 | 0.5+ | 0.2− | 2004 02 15 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.4+ | | |
| 2004 01 24 | 704 | 0.6+ | 0.0 | 2004 02 15 | 704 | 0.1+ | 0.4+ | | | | | | |

**(144087)∗ 2004 BR$_{54}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.61133 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27685130 | $\omega$ | 95.74820 | | −0.99470105 | +0.10188075 | |
| $a$ | 2.3315157 | $\Omega$ | 90.09983 | | −0.09893976 | −0.91215781 | |
| $e$ | 0.1382961 | $i$ | 0.79008 | | −0.02794190 | −0.39697410 | |
| $P$ | 3.56 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 644 | (0.8− | 2.4+) | 2004 02 11 | 333 | 0.2− | 0.2− | 2005 07 18 | 644 | 0.2− | 0.4+ | | |
| 2002 09 28 | 644 | 0.8− | 0.1+ | 2004 02 11 | 333 | 0.1− | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.5+ | | |
| 2002 09 28 | 644 | 0.5− | 0.3+ | 2004 02 11 | 333 | 0.5+ | 0.7+ | 2005 07 27 | 644 | 0.0 | 0.3+ | | |
| 2002 10 05 | 704 | 0.5+ | 0.0 | 2004 02 11 | 333 | 0.6− | 0.2+ | 2005 07 27 | 644 | 0.1− | 0.6+ | | |
| 2002 10 05 | 704 | 0.5− | 0.7+ | 2004 02 11 | 291 | 0.3+ | 0.2+ | 2005 07 27 | 644 | 0.2− | 0.3+ | | |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2004 02 11 | 291 | 0.1+ | 0.2+ | 2005 07 31 | E12 | 0.5+ | 0.7− | | |
| 2002 10 05 | 704 | 0.4+ | 0.2− | 2004 02 11 | 291 | 0.2− | 0.0 | 2005 07 31 | E12 | 0.4+ | 0.1− | | |
| 2002 10 11 | 704 | 0.2+ | 0.6− | 2004 02 16 | 704 | 0.1− | 0.2+ | 2005 07 31 | E12 | 0.3+ | 0.4− | | |
| 2002 10 11 | 704 | 0.5− | 0.7− | 2004 02 16 | 704 | 0.0 | 0.4− | 2005 07 31 | E12 | 0.5+ | 0.3+ | | |
| 2002 10 11 | 704 | 1.1− | 0.3− | 2004 02 16 | 704 | 0.4+ | 0.6− | 2005 08 06 | 704 | 0.4− | 0.9+ | | |
| 2002 10 12 | 291 | 0.1+ | 0.4+ | 2004 02 16 | 704 | 0.8+ | 0.4− | 2005 08 06 | 704 | (0.7− | 1.7+) | | |
| 2002 10 12 | 291 | 0.2− | 0.2+ | 2004 02 16 | 704 | 0.3+ | 0.3− | 2005 08 06 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 12 | 291 | 0.5− | 0.2+ | 2004 02 19 | 608 | 0.9+ | 0.1+ | 2005 08 06 | 704 | 0.7− | 0.1+ | | |
| 2002 11 08 | 645 | 0.1+ | 0.1+ | 2004 02 19 | 608 | 0.6+ | 0.1+ | 2005 09 01 | 691 | 0.2− | 0.2+ | | |
| 2002 11 08 | 645 | 0.1+ | 0.1− | 2004 02 19 | 608 | 0.6+ | 0.4+ | 2005 09 01 | 691 | 0.1− | 0.0 | | |
| 2004 01 13 | 699 | 0.3+ | 0.3+ | 2004 02 23 | 704 | 0.0 | 0.1− | 2005 09 01 | 691 | 0.0 | 0.3+ | | |
| 2004 01 13 | 699 | 0.2− | 0.4+ | 2004 02 23 | 704 | 0.0 | 0.4+ | 2005 10 03 | G96 | 0.1− | 0.5+ | | |
| 2004 01 13 | 699 | 0.6− | 0.8+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2005 10 03 | G96 | 0.3+ | 0.4+ | | |
| 2004 01 13 | 699 | 0.5− | 0.3+ | 2004 02 23 | 704 | 0.1+ | 0.0 | 2005 10 03 | G96 | 0.1+ | 0.1− | | |
| 2004 01 22 | 704 | 0.8− | 1.1+ | 2004 02 23 | 704 | 0.5− | 0.0 | 2005 10 03 | G96 | 0.6+ | 0.1− | | |
| 2004 01 22 | 704 | (0.8− | 1.6+) | 2004 03 01 | 691 | 0.2+ | 0.1− | 2005 10 25 | G96 | 0.3+ | 0.6− | | |
| 2004 01 22 | 704 | 0.3− | 0.2+ | 2004 03 01 | 691 | 0.2+ | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.1− | | |
| 2004 01 24 | 704 | 0.0 | 0.4+ | 2004 03 01 | 691 | 0.2+ | 0.2+ | 2005 10 25 | G96 | 0.2+ | 0.4− | | |
| 2004 01 24 | 704 | 0.3+ | 0.7+ | 2004 04 19 | 704 | 0.5− | 0.1+ | 2005 10 25 | G96 | 0.3+ | 0.8− | | |
| 2004 01 24 | 704 | 0.0 | 0.7+ | 2004 04 19 | 704 | 0.3− | 1.1+ | 2006 10 27 | G96 | 0.3− | 0.6− | | |
| 2004 01 24 | 704 | 0.0 | 0.6+ | 2004 04 19 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.3− | | |
| 2004 01 24 | 704 | 0.9+ | 0.4+ | 2004 04 19 | 704 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.1− | | |
| 2004 01 30 | 704 | 0.5+ | 0.5+ | 2004 04 19 | 704 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.5+ | 0.0 | | |
| 2004 01 30 | 704 | 0.1− | 0.2+ | 2005 06 30 | 691 | (0.2− | 2.2+) | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2004 01 30 | 704 | 0.2+ | 0.3+ | 2005 06 30 | 691 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2004 01 30 | 704 | 0.5+ | 0.1− | 2005 06 30 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2004 01 30 | 704 | 0.6+ | 0.2+ | 2005 07 11 | 691 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2004 01 31 | 691 | 0.1− | 0.3+ | 2005 07 11 | 691 | 0.5− | 0.6+ | 2006 11 18 | 704 | 0.4− | 0.4− | | |
| 2004 01 31 | 691 | 0.1− | 0.2+ | 2005 07 11 | 691 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.2− | 1.4+ | | |
| 2004 01 31 | 691 | 0.0 | 0.3+ | 2005 07 12 | G96 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.1+ | | |
| 2004 02 10 | 644 | 0.1− | 0.4+ | 2005 07 12 | G96 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.2− | | |
| 2004 02 10 | 644 | 0.1− | 0.3+ | 2005 07 12 | G96 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.8+ | 0.9− | | |
| 2004 02 10 | 644 | 0.2− | 0.3+ | 2005 07 12 | G96 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 1.0+ | 0.0 | | |
| 2004 02 10 | 644 | 0.2− | 0.3+ | 2005 07 15 | G96 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.4+ | | |
| 2004 02 10 | 644 | 0.0 | 0.1+ | 2005 07 15 | G96 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.9− | 1.2+ | | |
| 2004 02 10 | 644 | 0.1+ | 0.5+ | 2005 07 15 | G96 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.8− | 0.5+ | | |
| 2004 02 11 | 333 | 0.1+ | 0.6− | 2005 07 15 | G96 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.6+ | | |
| 2004 02 11 | 333 | 0.2− | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.7+ | | | | | | |

**(144088)∗ 2004 BV$_{54}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.84617 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27275346 | $\omega$ | 326.58215 | | +0.53119009 | −0.84465296 | |
| $a$ | 2.3548100 | $\Omega$ | 91.24990 | | +0.79114861 | +0.46648214 | |
| $e$ | 0.1148485 | $i$ | 3.80361 | | +0.30318469 | +0.26259435 | |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.3+ | 0.3− | 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 10 01 | 704 | 0.6− | 0.6+ | | |
| 1999 11 01 | 691 | 0.3+ | 0.4− | 2004 01 22 | 704 | 0.3+ | 1.0+ | 2006 10 01 | 704 | 0.9− | 0.1− | | |
| 1999 11 01 | 691 | 0.5+ | 0.4− | 2004 01 22 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 704 | 0.6− | 0.7+ | | |
| 1999 11 15 | 691 | 0.2− | 0.2− | 2004 01 22 | 704 | 0.1+ | 1.2+ | 2006 10 02 | 691 | 0.1− | 0.3+ | | |
| 1999 11 15 | 691 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.7+ | 1.3+ | 2006 10 02 | 691 | 0.1− | 0.2+ | | |
| 1999 11 15 | 691 | 0.2− | 0.2− | 2004 01 24 | 704 | (1.6− | 0.8+) | 2006 10 02 | 691 | 0.2+ | 0.3+ | | |
| 1999 11 28 | 691 | 0.1− | 0.0 | 2004 01 24 | 704 | 0.5− | 0.8+ | 2006 10 02 | G96 | 0.1− | 0.0 | | |
| 1999 11 28 | 691 | 0.1− | 0.0 | 2004 01 24 | 704 | 0.2+ | 0.6− | 2006 10 02 | G96 | 0.3− | 0.2− | | |
| 1999 11 28 | 691 | 0.1− | 0.1− | 2004 01 26 | 699 | 0.1− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.1− | | |
| 1999 12 09 | 691 | 0.1+ | 0.6− | 2004 01 26 | 699 | 0.6+ | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.5+ | 1.0− | 2004 01 26 | 699 | 0.8− | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 1999 12 09 | 691 | 0.4+ | 0.9− | 2004 01 26 | 699 | 0.7+ | 0.0 | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2002 08 08 | 644 | 0.2+ | 0.5+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 0.1− | 2004 01 30 | 704 | 1.5− | 0.1+ | 2006 10 03 | G96 | 0.5− | 0.2− |
| 2002 08 08 | 644 | 0.4+ | 0.1+ | 2004 01 30 | 704 | 0.7+ | 0.6+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 08 15 | 644 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2002 08 15 | 644 | 0.4+ | 0.6+ | 2004 01 30 | 704 | 0.6+ | 0.9+ | 2006 10 16 | 703 | 0.2+ | 1.2+ |
| 2002 08 15 | 644 | 0.2− | 0.3+ | 2004 01 31 | 704 | 0.3− | 1.2+ | 2006 10 16 | 703 | 0.9− | 0.7+ |
| 2002 08 16 | 644 | 0.6− | 0.2− | 2004 01 31 | 704 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2002 08 16 | 644 | 0.3− | 0.2− | 2004 01 31 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.7+ | 0.3+ |
| 2002 08 16 | 644 | 0.0 | 0.6+ | 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | (0.9− | 1.7+) | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2003 12 27 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 10 22 | 703 | 1.3− | 1.3+ |
| 2003 12 27 | 704 | 0.7+ | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2003 12 27 | 704 | 0.5+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 1.2+ | 2006 10 22 | 703 | 0.3− | 0.5+ |
| 2003 12 27 | 704 | 0.4+ | 0.9+ | 2006 09 28 | 691 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 01 16 | 644 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 01 16 | 644 | 0.2+ | 0.6+ | 2006 09 28 | 691 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 01 16 | 644 | 0.3+ | 0.6+ | 2006 10 01 | 704 | 0.1− | 0.7+ | | | | |

**(144089)∗ 2004 BV$_{55}$ = 2002 VP$_{122}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69644)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.78274 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21224359 | $\omega$ | 6.41084 | | +0.62245689 | +0.77251110 | |
| $a$ | 2.7834259 | $\Omega$ | 302.16155 | | −0.72449959 | +0.50803640 | |
| $e$ | 0.1322477 | $i$ | 8.53193 | | −0.29605365 | +0.38095356 | |
| $P$ | 4.64 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 10 | 644 | 0.1+ | 0.2− | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.8+ |
| 2001 07 10 | 644 | 0.3− | 0.3− | 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.1− | 0.8+ |
| 2001 07 10 | 644 | 0.4− | 0.5− | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 09 11 | 703 | 0.0 | 0.3+ |
| 2002 11 06 | 704 | 0.6+ | 0.6+ | 2005 05 16 | 644 | 1.1+ | 0.3+ | 2006 09 11 | 703 | 0.8− | 0.1+ |
| 2002 11 06 | 704 | 0.5+ | 0.4− | 2005 05 16 | 644 | 1.3+ | 0.7+ | 2006 09 11 | 703 | 0.1− | 0.2− |
| 2002 11 06 | 704 | (1.8+ | 0.4−) | 2005 05 16 | 644 | 0.8+ | 0.6+ | 2006 09 11 | 703 | 0.5− | 0.2+ |
| 2002 11 06 | 704 | 0.5− | 0.5+ | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.2− |
| 2002 11 13 | 644 | 0.3+ | 0.0 | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.5− |
| 2002 11 13 | 644 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.6− |
| 2002 11 13 | 644 | 0.4+ | 0.0 | 2006 08 19 | 644 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.3− |
| 2002 11 15 | 644 | 0.0 | 0.8− | 2006 08 19 | 644 | 0.4− | 0.3+ | 2006 09 20 | 699 | 0.8+ | 0.6+ |
| 2002 11 15 | 704 | 0.1− | 0.4− | 2006 08 19 | 644 | 0.1− | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.0 |
| 2002 11 15 | 644 | 0.0 | 0.5− | 2006 08 24 | 704 | 0.3+ | 0.0 | 2006 09 20 | 699 | 0.4− | 0.3− |
| 2002 11 15 | 704 | 0.5+ | 0.2+ | 2006 08 24 | 704 | 0.7+ | 0.9+ | 2006 09 20 | 699 | (1.7+ | 0.2+) |
| 2002 11 15 | 704 | 0.3+ | 0.2− | 2006 08 24 | 704 | 1.0+ | 0.6− | 2006 09 30 | 699 | 1.3− | 1.1+ |
| 2002 11 15 | 644 | 0.1− | 0.3− | 2006 08 24 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 699 | 0.5− | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 09 30 | 699 | 0.2+ | 0.3+ |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 09 30 | 699 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.7− | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.4− |
| 2002 12 12 | 644 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.2+ | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.0 |
| 2002 12 12 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.1+ |
| 2002 12 12 | 644 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.2− | 2006 10 01 | 704 | 0.3− | 1.0+ |
| 2003 12 19 | 291 | 0.6− | 0.4+ | 2006 08 29 | 703 | (1.7− | 3.0−) | 2006 11 10 | 704 | 0.1+ | 0.0 |
| 2003 12 19 | 291 | 0.7− | 0.4+ | 2006 08 29 | 703 | (1.6+ | 3.1−) | 2006 11 10 | 704 | 0.3+ | 1.2+ |
| 2003 12 19 | 291 | (1.8− | 0.3+) | 2006 08 30 | 699 | 0.4− | 0.6− | 2006 11 10 | 704 | 0.8+ | 0.4+ |
| 2004 01 22 | 704 | 0.2− | 1.1+ | 2006 08 30 | 704 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.4+ | 1.1− |
| 2004 01 22 | 704 | 0.6+ | 1.0+ | 2006 08 30 | 699 | 0.2− | 0.4+ | 2006 11 19 | 703 | 0.1− | 1.3− |
| 2004 01 22 | 704 | (0.6+ | 1.6+) | 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 1.0− | 1.3− |
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.6− | 0.4+ | 2006 11 19 | 703 | 0.1+ | 1.5− |
| 2004 01 24 | 704 | 0.5+ | 1.2+ | 2006 08 30 | 699 | 0.0 | 0.6+ | | | | |
| 2004 01 24 | 704 | 1.0+ | 0.6− | 2006 08 30 | 704 | 0.3+ | 0.2+ | | | | |

**(144090)∗ 2004 BN$_{56}$ = 2002 TS$_{220}$**

Discovered 2004 Jan. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. K. E. Smalley (*MPO* 61801)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.76355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24691595 | $\omega$ | 150.80074 | | −0.22417679 | −0.96218644 | |
| $a$ | 2.5163436 | $\Omega$ | 311.68934 | | +0.84909895 | −0.11491655 | |
| $e$ | 0.0969426 | $i$ | 11.95855 | | +0.47830506 | −0.24696444 | |
| $P$ | 3.99 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.5− | 1.2− | 2004 01 24 | 704 | 0.6+ | 0.1+ | 2004 03 21 | 704 | 1.5+ | 0.4− |
| 2000 01 05 | 704 | (0.4+ | 3.2−) | 2004 01 29 | 704 | 0.1− | 0.1− | 2004 03 21 | 704 | 0.5+ | 0.4− |
| 2000 01 05 | 704 | 0.2+ | 1.4− | 2004 01 29 | 704 | 0.1+ | 0.1+ | 2004 03 21 | 704 | 0.7− | 0.7− |
| 2000 01 05 | 704 | 0.1− | 0.4− | 2004 01 29 | 704 | 0.1− | 0.1+ | 2004 03 21 | 704 | 0.6− | 0.3− |
| 2000 02 04 | 704 | 0.3− | 0.2+ | 2004 01 29 | 704 | 0.1+ | 0.1− | 2004 04 19 | 704 | 0.2+ | 0.7− |
| 2000 02 04 | 704 | 0.3− | 0.9− | 2004 01 29 | 704 | 0.4+ | 0.0 | 2004 04 19 | 704 | 1.0+ | 0.6− |
| 2000 02 04 | 704 | 0.2+ | 0.4+ | 2004 01 31 | 599 | 0.2+ | 0.4+ | 2004 04 19 | 704 | 1.3+ | 0.2− |
| 2000 02 04 | 704 | 0.4− | 0.3+ | 2004 01 31 | 599 | 0.8− | 0.3+ | 2006 08 26 | 104 | 0.3− | 0.4+ |
| 2000 02 04 | 704 | 0.2− | 0.5+ | 2004 01 31 | 599 | 0.0 | 0.0 | 2006 08 26 | 104 | 0.4− | 0.4+ |
| 2002 09 03 | 644 | 0.5− | 0.3+ | 2004 01 31 | 599 | 0.7− | 0.9+ | 2006 08 26 | 104 | 0.4− | 0.5+ |
| 2002 09 03 | 644 | 0.5− | 0.3+ | 2004 02 13 | 333 | 0.5− | 0.3− | 2006 08 26 | 104 | 0.4− | 0.4+ |
| 2002 09 03 | 644 | 0.4− | 0.0 | 2004 02 13 | 333 | 0.5− | 0.2− | 2006 09 01 | 224 | 0.4− | 0.1− |
| 2002 09 12 | 644 | 0.3− | 0.1+ | 2004 02 13 | 333 | 0.6− | 0.3− | 2006 09 01 | 224 | 0.1− | 0.1+ |
| 2002 09 12 | 644 | 0.2− | 0.3+ | 2004 02 18 | 704 | 0.0 | 0.4+ | 2006 09 01 | 224 | 0.0 | 0.2+ |
| 2002 09 12 | 644 | 0.3− | 0.1+ | 2004 02 18 | 704 | 0.3− | 0.2+ | 2006 09 02 | 224 | 1.4+ | 0.6+ |
| 2002 10 06 | 704 | 0.4+ | 0.3− | 2004 02 18 | 704 | 0.2− | 0.7+ | 2006 09 02 | 224 | 0.7+ | 0.5− |
| 2002 10 06 | 704 | 0.3− | 0.3− | 2004 02 18 | 704 | 0.1− | 0.2+ | 2006 09 02 | 224 | 1.3+ | 0.2+ |
| 2002 10 06 | 704 | 0.6+ | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 644 | 0.3− | 0.1− |
| 2002 10 06 | 704 | 0.5− | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 09 14 | 644 | 0.3− | 0.0 |
| 2002 10 06 | 704 | 0.6− | 0.2+ | 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 09 14 | 644 | 0.4− | 0.1− |
| 2002 10 09 | 704 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.2+ | 1.1+ | 2006 09 16 | 703 | 0.7− | 0.3+ |
| 2002 10 09 | 704 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.2+ | 1.1+ | 2006 09 16 | 703 | 0.1− | 1.4+ |
| 2002 10 09 | 704 | 0.3+ | 0.2− | 2004 02 26 | 704 | 0.0 | 0.4− | 2006 09 16 | 703 | 1.0+ | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.6− | 0.4− | 2006 09 16 | 703 | 0.4+ | 0.4+ |
| 2002 10 09 | 704 | 0.9+ | 0.4+ | 2004 02 26 | 704 | 0.3− | 0.4+ | 2006 09 27 | 703 | 1.2− | 1.1− |
| 2003 12 21 | 704 | 0.4+ | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.4− | 0.5− |
| 2003 12 21 | 704 | 0.3+ | 0.5+ | 2004 02 26 | 704 | 0.2− | 0.3+ | 2006 09 27 | 703 | 1.0+ | 0.3− |
| 2003 12 21 | 704 | 0.4+ | 0.4+ | 2004 03 15 | 704 | (0.7+ | 2.1+) | 2006 09 27 | 703 | 0.4− | 1.3− |
| 2003 12 21 | 704 | 0.5+ | 1.0− | 2004 03 15 | 704 | (2.7+ | 1.2+) | 2006 10 09 | 644 | 0.2− | 0.4− |
| 2004 01 23 | 699 | 0.6− | 0.6− | 2004 03 15 | 704 | (1.8+ | 1.2+) | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2004 01 23 | 699 | 1.3− | 0.6− | 2004 03 15 | 704 | 0.6+ | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2004 01 23 | 699 | 0.5− | 0.5− | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 703 | 1.6+ | 0.2+ |
| 2004 01 23 | 699 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.2− | 0.7− | 2006 10 23 | 703 | 0.9− | 0.3− |
| 2004 01 24 | 704 | 0.8+ | 0.3+ | 2004 03 19 | 704 | 0.3− | 0.3− | 2006 10 23 | 703 | 0.9− | 0.0 |
| 2004 01 24 | 704 | 1.0+ | 0.4− | 2004 03 19 | 704 | 0.7+ | 0.0 | 2006 10 23 | 703 | 0.8+ | 0.1− |
| 2004 01 24 | 704 | 0.5+ | 0.1− | 2004 03 19 | 704 | 0.2− | 0.2− | | | | |

**(144091)∗ 2004 BP$_{56}$**

Discovered 2004 Jan. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.20736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17484706 | $\omega$ | 71.31226 | | −0.72733929 | +0.68175857 | |
| $a$ | 3.1673580 | $\Omega$ | 151.50544 | | −0.67524165 | −0.69046438 | |
| $e$ | 0.0455836 | $i$ | 9.48670 | | −0.12258170 | −0.24179370 | |
| $P$ | 5.64 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.6+ | 0.7+ | 2005 05 20 | G96 | 0.1− | 0.0 |
| 1999 03 20 | 645 | 0.1− | 0.2− | 2004 02 26 | 704 | 0.7+ | 0.5+ | 2005 06 04 | 703 | 0.2− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.9+ | 2005 06 04 | 703 | 0.2− | 0.6+ | | |
| 2002 12 12 | 644 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.7+ | 0.8+ | 2005 06 04 | 703 | 0.8− | 0.6− | | |
| 2002 12 12 | 644 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.8+ | 0.4+ | 2005 06 04 | 703 | 0.4− | 0.2+ | | |
| 2004 01 23 | 699 | 1.0− | 0.2+ | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 07 21 | A50 | 0.1− | 0.1− | | |
| 2004 01 23 | 699 | 0.1+ | 0.4− | 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 07 21 | A50 | 0.1+ | 0.2− | | |
| 2004 01 23 | 699 | 0.5− | 0.4+ | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 08 14 | E12 | 0.7+ | 0.9− | | |
| 2004 01 23 | 699 | 0.1− | 1.0+ | 2004 03 14 | 703 | 0.0 | 1.0+ | 2006 08 14 | E12 | 0.1− | 0.7+ | | |
| 2004 01 24 | 704 | 0.7+ | 1.2+ | 2004 03 14 | 703 | (0.1+ | 1.6+) | 2006 08 14 | E12 | 0.4+ | 0.7+ | | |
| 2004 01 24 | 704 | 0.6+ | 0.0 | 2004 03 14 | 703 | (1.7− | 1.3+) | 2006 08 14 | E12 | 0.3+ | 0.5+ | | |
| 2004 01 24 | 704 | 0.0 | 1.0+ | 2004 03 14 | 703 | 0.3+ | 0.8+ | 2006 08 14 | E12 | 0.1+ | 0.6+ | | |
| 2004 01 24 | 704 | 0.2+ | 1.1+ | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.4− | 0.7+ | | |
| 2004 02 11 | 673 | 0.0 | 0.5− | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.5+ | | |
| 2004 02 11 | 673 | 0.2+ | 0.0 | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.5+ | | |
| 2004 02 11 | 673 | 0.0 | 0.3− | 2004 03 18 | 704 | 0.5− | 0.4+ | 2006 08 24 | 644 | 0.1+ | 0.7+ | | |
| 2004 02 12 | 673 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.4+ | | |
| 2004 02 12 | 673 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.3− | 0.8+ | 2006 08 24 | 644 | 0.2− | 0.4+ | | |
| 2004 02 12 | 673 | 0.2+ | 0.3− | 2004 03 18 | 704 | (0.6+ | 1.5+) | 2006 10 20 | G96 | 0.5− | 0.0 | | |
| 2004 02 12 | 691 | 0.1+ | 0.2− | 2004 03 27 | 691 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.4− | 0.5+ | | |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2004 03 27 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.2− | 0.3+ | | |
| 2004 02 12 | 691 | 0.2− | 0.1− | 2004 03 27 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.1− | | |
| 2004 02 14 | 703 | 0.3+ | 0.5+ | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.0 | | |
| 2004 02 14 | 703 | 0.1+ | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.4+ | | |
| 2004 02 14 | 703 | (1.0− | 2.6+) | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.2+ | | |
| 2004 02 14 | 703 | 0.3− | 0.7− | 2005 05 15 | 644 | 0.2+ | 0.8+ | 2006 10 20 | G96 | 0.1− | 0.2+ | | |
| 2004 02 17 | 704 | 0.1− | 0.4− | 2005 05 15 | 644 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.4− | 0.1− | | |
| 2004 02 17 | 704 | 0.1− | 0.1− | 2005 05 15 | 644 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.1+ | | |
| 2004 02 17 | 704 | 0.4+ | 0.1− | 2005 05 20 | G96 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.8− | | |
| 2004 02 17 | 704 | 0.7− | 0.0 | 2005 05 20 | G96 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.6− | 0.5+ | | |
| 2004 02 17 | 704 | 0.2− | 0.2− | 2005 05 20 | G96 | 0.5− | 0.1− | | | | | | |

**(144092)∗ 2004 BX$_{56}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.10616 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27482041 | $\omega$ | 73.53845 | | −0.64699751 | +0.76241441 | |
| $a$ | 2.3429880 | $\Omega$ | 156.13539 | | −0.70943590 | −0.59668417 | |
| $e$ | 0.2134433 | $i$ | 1.54176 | | −0.27945469 | −0.25038424 | |
| $P$ | 3.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 29 | 704 | (0.2+ | 2.8+) | 2004 02 10 | 644 | 0.2− | 0.7+ | 2005 08 26 | 699 | (0.1+ | 1.5+) | | |
| 1997 04 29 | 704 | 0.9+ | 0.2+ | 2004 02 10 | 644 | 0.4+ | 0.0 | 2005 08 26 | 699 | (1.1+ | 1.6+) | | |
| 1997 04 29 | 704 | 0.4+ | 0.2− | 2004 02 11 | 691 | 0.1− | 0.1+ | 2005 08 26 | 699 | 1.4+ | 1.3− | | |
| 1997 04 29 | 704 | 1.5+ | 0.1− | 2004 02 11 | 691 | 0.2− | 0.1− | 2005 08 26 | 699 | 0.8− | 1.0+ | | |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 02 11 | 691 | 0.2− | 0.0 | 2005 08 28 | 691 | 0.5− | 0.8+ | | |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.5+ | 0.9+ | 2005 08 28 | 691 | 0.4− | 0.7+ | | |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2004 02 16 | 704 | (0.1+ | 2.1+) | 2005 08 28 | 691 | 0.3− | 0.7+ | | |
| 1998 09 25 | 645 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.9+ | 0.6− | 2005 09 06 | 699 | 0.6+ | 0.1− | | |
| 2004 01 23 | 704 | 0.0 | 0.4− | 2004 02 18 | 608 | 0.7+ | 0.4+ | 2005 09 06 | 699 | 0.6+ | 0.7+ | | |
| 2004 01 23 | 704 | 0.7− | 0.6− | 2004 02 18 | 608 | 0.8+ | 0.5+ | 2005 09 06 | 699 | 0.4+ | 0.1− | | |
| 2004 01 23 | 704 | 0.7+ | 0.5− | 2004 02 18 | 608 | 0.5+ | 0.6+ | 2005 09 06 | 699 | 0.5+ | 0.8+ | | |
| 2004 01 23 | 704 | 0.3− | 0.3− | 2004 02 26 | 704 | 1.0+ | 0.3+ | 2005 10 01 | G96 | 0.1− | 0.3+ | | |
| 2004 01 24 | 704 | 0.5− | 1.0+ | 2004 02 26 | 704 | 0.3+ | 1.0+ | 2005 10 01 | G96 | 0.8− | 0.5+ | | |
| 2004 01 24 | 704 | 0.0 | 1.3+ | 2004 02 26 | 704 | 0.7+ | 0.4+ | 2005 10 01 | G96 | 0.2+ | 0.2+ | | |
| 2004 01 24 | 704 | 0.4− | 1.1+ | 2004 02 26 | 704 | 0.2− | 0.3+ | 2005 10 01 | G96 | 0.1+ | 0.2+ | | |
| 2004 01 24 | 704 | 0.6− | 0.9+ | 2004 02 26 | 704 | 0.9+ | 0.6+ | 2006 11 11 | 691 | 0.7+ | 0.2− | | |
| 2004 01 24 | 704 | 0.9− | 0.6+ | 2004 03 13 | 703 | 0.6+ | 1.4− | 2006 11 11 | 691 | 0.2+ | 0.1− | | |
| 2004 01 26 | 699 | 0.6− | 0.6+ | 2004 03 13 | 703 | (1.4+ | 1.6+) | 2006 11 11 | 691 | 0.2+ | 0.1− | | |
| 2004 01 26 | 699 | 0.2− | 0.7+ | 2004 03 13 | 703 | (2.7+ | 1.2−) | 2006 11 15 | 691 | 0.5+ | 0.1+ | | |
| 2004 01 26 | 699 | 0.1+ | 0.1+ | 2004 03 13 | 703 | (1.5+ | 2.4−) | 2006 11 15 | 691 | 0.6− | 0.2− | | |
| 2004 01 26 | 699 | 1.4− | 0.1− | 2004 05 13 | 291 | 0.4+ | 0.5+ | 2006 11 15 | 691 | 0.4− | 0.7− | | |
| 2004 01 30 | 704 | 0.6+ | 0.9+ | 2004 05 13 | 291 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2004 01 30 | 704 | 0.6− | 0.8+ | 2004 05 13 | 291 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.1− | | |
| 2004 01 30 | 704 | 0.6− | 0.0 | 2004 05 13 | 291 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.4− | | |
| 2004 01 30 | 704 | 0.1+ | 1.0+ | 2004 05 13 | 291 | 0.4+ | 0.3+ | 2006 12 01 | 691 | 0.4+ | 0.0 | | |
| 2004 01 31 | 691 | 0.2− | 0.1+ | 2004 05 13 | 291 | 0.2− | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.1+ | | |
| 2004 01 31 | 691 | 0.1− | 0.1+ | 2005 08 25 | 644 | 0.4− | 0.6+ | 2006 12 01 | 691 | 0.0 | 0.4+ | | |
| 2004 01 31 | 691 | 0.0 | 0.1+ | 2005 08 25 | 644 | 0.2− | 0.6+ | | | | | | |
| 2004 02 10 | 644 | 0.1− | 0.4+ | 2005 08 25 | 644 | 0.5− | 0.3+ | | | | | | |

**(144093)∗ 2004 BZ$_{56}$ = 1999 VV$_{110}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61802)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.34627 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27092610 | $\omega$ | 204.82357 | | −0.14014362 | −0.99008951 | |
| $a$ | 2.3653867 | $\Omega$ | 253.23364 | | +0.91000479 | −0.12518112 | |
| $e$ | 0.1455504 | $i$ | 0.54365 | | +0.39019361 | −0.06365893 | |
| $P$ | 3.64 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.5− | 0.1− | 2004 01 24 | 704 | 1.5+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 1999 11 09 | 704 | 0.2− | 0.6− | 2004 01 24 | 704 | 0.4+ | 1.5+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | | |
| 1999 11 09 | 704 | 0.1+ | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 1999 11 09 | 704 | 0.9− | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ | | |
| 1999 11 12 | 704 | 0.2− | 0.2− | 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.4− | 0.1+ | | |
| 1999 11 12 | 704 | 0.1+ | 0.3+ | 2004 02 17 | 704 | 0.6− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 1999 11 12 | 704 | 0.3+ | 0.4+ | 2004 02 17 | 704 | 0.1− | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.4+ | | |
| 1999 11 12 | 704 | 0.4+ | 0.1− | 2004 02 17 | 704 | 0.3− | 0.6− | 2006 10 12 | 644 | 0.2− | 0.4+ | | |
| 1999 11 12 | 704 | 0.7+ | 0.6− | 2004 02 17 | 704 | 0.5+ | 0.2− | 2006 10 17 | G96 | (1.9− | 1.5−) | | |
| 1999 12 02 | 049 | 0.3+ | 0.8− | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 1.3− | | |
| 1999 12 02 | 049 | 0.6+ | 0.8− | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 10 17 | G96 | 1.1− | 1.5+ | | |
| 1999 12 02 | 049 | 0.4− | 0.2− | 2004 02 26 | 704 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.6− | 0.3+ | | |
| 2001 04 24 | 691 | 0.2− | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.6+ | | |
| 2001 04 24 | 691 | 0.2+ | 0.2+ | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2001 04 24 | 691 | 0.1+ | 0.1+ | 2004 02 29 | 691 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.8− | 0.4+ | | |
| 2003 12 21 | 645 | 0.2− | 0.2− | 2006 07 22 | G96 | 0.5+ | 1.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.6+ | | |
| 2004 01 23 | 704 | 0.6+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2004 01 23 | 704 | 0.2+ | 0.2− | 2006 07 22 | G96 | 0.7+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2004 01 23 | 704 | 1.2+ | 1.0+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2004 01 23 | 704 | 1.0+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.1+ | | |
| 2004 01 24 | 704 | 0.6+ | 0.4− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.7− | | |
| 2004 01 24 | 704 | 0.5+ | 0.0 | 2006 09 26 | 691 | 0.6+ | 0.9+ | | | | | | |

**(144094)∗ 2004 BC$_{58}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.25811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26372954 | $\omega$ | 234.71480 | | −0.30937266 | −0.94798082 | |
| $a$ | 2.4082239 | $\Omega$ | 233.47909 | | +0.89996092 | −0.26640817 | |
| $e$ | 0.0491920 | $i$ | 5.35300 | | +0.30717895 | −0.17423849 | |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 704 | (2.8+ | 0.0 ) | 2004 01 23 | 704 | 0.4− | 0.0 | 2004 02 23 | 704 | 0.0 | 0.2− | | |
| 1997 04 07 | 704 | 0.3+ | 0.9+ | 2004 01 24 | 704 | 0.9+ | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.1− | | |
| 1999 12 08 | 704 | 0.5− | 0.7− | 2004 01 24 | 704 | (2.4− | 0.4+) | 2004 02 26 | 704 | 0.4− | 0.0 | | |
| 1999 12 08 | 704 | 0.1− | 0.5− | 2004 01 24 | 704 | 0.5+ | 1.4+ | 2004 02 26 | 704 | 0.1− | 0.6− | | |
| 1999 12 08 | 704 | 0.3− | 1.1− | 2004 01 24 | 704 | 0.5+ | 1.0+ | 2004 02 26 | 704 | 0.5+ | 0.8+ | | |
| 1999 12 08 | 704 | 0.2+ | 0.3− | 2004 01 28 | 645 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.3− | 0.4+ | | |
| 2000 01 06 | 704 | 0.4+ | 1.6− | 2004 01 28 | 645 | 0.0 | 0.1− | 2005 01 22 | 809 | 0.4+ | 0.1+ | | |
| 2000 01 06 | 704 | 0.5− | 0.2+ | 2004 01 29 | 704 | 0.5− | 1.2+ | 2005 01 22 | 809 | 0.4− | 0.1− | | |
| 2000 01 06 | 704 | 0.6− | 0.4− | 2004 01 29 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.0 | | |
| 2001 04 27 | 691 | 0.1− | 0.2+ | 2004 01 29 | 704 | 1.1− | 0.2− | 2006 09 30 | 703 | 0.6− | 0.8+ | | |
| 2001 04 27 | 691 | 0.0 | 0.1− | 2004 01 29 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 1.0+ | 0.3− | | |
| 2001 04 27 | 691 | 0.0 | 0.0 | 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2004 02 11 | 644 | 0.0 | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.1− | | |
| 2002 08 28 | 644 | 0.3− | 0.6+ | 2004 02 11 | 644 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.4− | 0.9+ | 2004 02 16 | 735 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 02 16 | 735 | 1.0+ | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 02 16 | 735 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 2003 12 22 | 704 | 0.9+ | 0.1+ | 2004 02 17 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 703 | (1.7− | 0.9−) |
| 2003 12 22 | 704 | 0.7+ | 0.7+ | 2004 02 17 | 704 | 0.8+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.3− | 0.5+ | 2004 02 17 | 704 | 0.4+ | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 0.3+ | 0.7+ | 2004 02 17 | 704 | 1.3+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2004 01 23 | 704 | 0.3− | 0.3− | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 01 23 | 704 | 0.8− | 0.2+ | 2004 02 23 | 704 | 0.6+ | 0.0 | | | | |
| 2004 01 23 | 704 | 1.0− | 0.1− | 2004 02 23 | 704 | 0.4− | 0.2− | | | | |

**(144095)∗ 2004 BO$_{58}$ = 1997 EX$_{28}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61804)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.75416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27083737 | $\omega$ | 314.03093 | | −0.62409374 | | −0.78131665 |
| $a$ | 2.3659033 | $\Omega$ | 174.57046 | | +0.73677928 | | −0.59152052 |
| $e$ | 0.1171098 | $i$ | 4.34075 | | +0.26012170 | | −0.19911744 |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.0 | 0.3− | 2004 01 27 | 704 | 0.3− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.4− |
| 1995 10 26 | 691 | 0.0 | 0.3− | 2004 01 27 | 704 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 1995 10 26 | 691 | 0.2+ | 0.3− | 2004 01 28 | 704 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.1− |
| 1997 03 10 | 691 | 0.2− | 0.3− | 2004 01 28 | 704 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 1997 03 10 | 691 | 0.1− | 0.5− | 2004 01 28 | 704 | 0.0 | 0.6− | 2006 09 23 | 691 | 0.4+ | 0.3+ |
| 1997 03 10 | 691 | 0.1− | 0.2− | 2004 01 28 | 704 | 0.6− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.6+ |
| 1997 03 13 | 691 | 0.3− | 0.5− | 2004 01 28 | 704 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 1997 03 13 | 691 | 0.2− | 0.6− | 2004 01 29 | 704 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 1997 03 13 | 691 | 0.0 | 0.6− | 2004 01 29 | 704 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2004 01 29 | 704 | 0.4+ | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.2− |
| 2002 09 07 | 704 | 0.6+ | 0.9+ | 2004 01 29 | 704 | 0.6+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2002 09 07 | 704 | 0.3− | 1.0+ | 2004 01 29 | 704 | (0.5+ | 1.5+) | 2006 10 01 | 691 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | 1.0− | 0.7− | 2004 01 29 | 704 | 1.1− | 0.5+ | 2006 10 15 | 703 | 0.9− | 0.5− |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2004 01 29 | 704 | 0.6+ | 0.6− | 2006 10 15 | 703 | 0.3− | 0.8− |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2004 01 29 | 704 | 0.0 | 0.4− | 2006 10 15 | 703 | 0.1+ | 0.6+ |
| 2002 09 14 | 644 | 0.2− | 0.7+ | 2004 01 29 | 704 | 1.1+ | 0.1− | 2006 10 15 | 703 | 0.3− | 0.5− |
| 2002 10 10 | 291 | 0.1+ | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.2− | 2006 10 21 | 703 | 1.3− | 0.3− |
| 2002 10 10 | 291 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2002 10 10 | 291 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.9− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2004 01 23 | 704 | 0.6+ | 0.3− | 2004 01 30 | 704 | 0.6− | 0.8+ | 2006 10 21 | 703 | 1.2+ | 0.5+ |
| 2004 01 23 | 704 | 1.2+ | 0.2− | 2004 02 11 | 699 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2004 01 23 | 704 | 1.1+ | 0.0 | 2004 02 11 | 699 | 1.0− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.7− |
| 2004 01 23 | 704 | 1.5+ | 0.2+ | 2004 02 11 | 699 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.6− |
| 2004 01 23 | 704 | 1.2+ | 0.4+ | 2004 02 11 | 699 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2004 01 24 | 704 | 0.4+ | 1.1+ | 2004 02 17 | 704 | 1.2− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2004 01 24 | 704 | 1.3+ | 0.4+ | 2004 02 17 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2004 01 24 | 704 | 0.8+ | 0.9+ | 2004 02 17 | 704 | (0.4− | 2.4+) | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2004 01 24 | 704 | 0.5+ | 0.6+ | 2004 02 17 | 704 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.5− |
| 2004 01 26 | 699 | 0.3− | 0.3− | 2004 02 22 | 704 | 1.2− | 0.3+ | 2006 10 22 | 691 | 0.4+ | 0.2− |
| 2004 01 26 | 699 | 0.2− | 0.0 | 2004 02 22 | 704 | 0.8+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2004 01 26 | 699 | 0.7− | 0.6+ | 2004 02 22 | 704 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2004 01 26 | 699 | 0.5− | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2004 01 27 | 704 | 0.4− | 0.3− | 2006 07 21 | G96 | 0.2− | 0.5− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2004 01 27 | 704 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2004 01 27 | 704 | 0.2− | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.1− | | | | |

**(144096)∗ 2004 BV$_{58}$ = 1997 EB$_{20}$**

Discovered 2004 Jan. 23 by M. Griesser at Eschenberg Observatory, Winterthur.

Id. G. V. Williams (*MPO* 61804)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.72967 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27621654 | $\omega$ | 260.93451 | | +0.10828368 | | −0.99411952 |
| $a$ | 2.3350862 | $\Omega$ | 182.84968 | | +0.91987605 | | +0.10058164 |
| $e$ | 0.2205203 | $i$ | 1.16321 | | +0.37696511 | | +0.04012118 |
| $P$ | 3.57 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 04 | 261 | 0.5− | 0.1− | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.9− | 0.9− |
| 1992 10 05 | 261 | 0.1+ | 0.0 | 2004 01 29 | 620 | 0.4− | 0.0 | 2006 09 12 | 703 | 0.4− | 0.4+ |
| 1997 03 03 | 691 | 0.1+ | 0.4− | 2004 01 29 | 620 | 0.8+ | 0.7− | 2006 09 12 | 703 | 0.5− | 0.2+ |
| 1997 03 03 | 691 | 0.0 | 0.5− | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | (0.8− | 1.5+) |
| 1997 03 03 | 691 | 0.4+ | 0.8− | 2004 01 30 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 1997 03 11 | 691 | 0.4− | 0.1+ | 2004 01 30 | 704 | 0.5− | 0.6+ | 2006 09 15 | 691 | 0.2+ | 0.4+ |
| 1997 03 11 | 691 | 0.6− | 0.1+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1− | 0.6+ |
| 1997 03 11 | 691 | 0.2− | 0.3− | 2004 01 30 | 704 | 0.7+ | 1.0+ | 2006 09 21 | 151 | 0.1− | 0.6− |
| 1999 10 15 | 704 | 0.2− | 0.2− | 2004 01 30 | 704 | 0.8− | 0.8+ | 2006 09 21 | 151 | 0.0 | 0.3− |
| 1999 10 15 | 704 | 0.2− | 1.1+ | 2004 01 30 | 704 | 0.7− | 0.5+ | 2006 09 21 | 151 | 0.5+ | 0.2− |
| 1999 10 15 | 704 | 0.6− | 0.5− | 2004 01 30 | 704 | 0.2− | 0.8+ | 2006 09 22 | 113 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 0.6+ | 0.4+ | 2004 02 01 | 151 | (0.6− | 1.8+) | 2006 09 22 | 113 | 0.1+ | 0.2+ |
| 1999 11 09 | 704 | 1.1+ | 0.1+ | 2004 02 01 | 151 | 0.9− | 1.1+ | 2006 09 25 | 699 | (2.0+ | 1.8+) |
| 1999 11 09 | 704 | 0.2− | 1.1− | 2004 02 01 | 151 | 1.0− | 0.9+ | 2006 09 25 | 699 | 0.9+ | 0.2− |
| 2001 04 24 | 691 | 0.5+ | 0.2+ | 2004 02 09 | 151 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2001 04 24 | 691 | 0.0 | 0.8+ | 2004 02 09 | 151 | 0.1− | 0.8− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2001 04 24 | 691 | 0.3− | 0.3+ | 2004 02 09 | 151 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 1.1− |
| 2004 01 21 | 704 | 0.4+ | 0.9+ | 2004 02 10 | 644 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2004 01 21 | 704 | 0.9+ | 0.1+ | 2004 02 10 | 644 | 0.2+ | 0.2− | 2006 09 25 | 699 | (2.2+ | 0.1+) |
| 2004 01 21 | 704 | 0.2− | 0.6+ | 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 699 | (0.8− | 2.0+) |
| 2004 01 21 | 704 | 0.2− | 0.9+ | 2004 02 11 | 703 | 0.0 | 0.2− | 2006 10 11 | 540 | 0.1− | 0.1− |
| 2004 01 23 | 151 | 0.5− | 0.2− | 2004 02 11 | 703 | 0.3− | 0.7+ | 2006 10 11 | 540 | 0.1− | 0.3+ |
| 2004 01 23 | 151 | 0.7− | 0.2− | 2004 02 11 | 703 | 0.1+ | 0.5− | 2006 10 12 | 151 | 0.1− | 0.9− |
| 2004 01 23 | 151 | 0.0 | 0.3+ | 2004 02 11 | 703 | 0.2+ | 0.5− | 2006 10 12 | 151 | 0.7− | 0.7− |
| 2004 01 24 | J95 | 0.1− | 0.5+ | 2004 02 16 | 151 | 0.2− | 0.2− | 2006 10 12 | 151 | 0.1+ | 0.2− |
| 2004 01 24 | J95 | 0.3+ | 0.3− | 2004 02 16 | 151 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2004 01 24 | J95 | 0.8+ | 0.4− | 2004 02 16 | 151 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2004 01 25 | 151 | 0.6− | 0.1− | 2004 02 26 | 704 | 0.4− | 1.3+ | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2004 01 25 | 151 | 0.9− | 0.0 | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2004 01 28 | 691 | 0.3+ | 0.5+ | 2004 02 26 | 704 | 0.3+ | 0.9+ | | | | |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.2− | 0.2+ | | | | |

**(144097)∗ 2004 BB$_{59}$**

Discovered 2004 Jan. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.19213 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22941627 | $\omega$ | 307.76162 | | −0.23638907 | | −0.96553736 |
| $a$ | 2.6427327 | $\Omega$ | 155.24133 | | +0.95306828 | | −0.25222302 |
| $e$ | 0.0866304 | $i$ | 15.07096 | | +0.18915884 | | +0.06419623 |
| $P$ | 4.30 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 02 17 | 291 | 0.1+ | 0.3+ | 2005 07 01 | 644 | 0.1− | 0.2+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 02 17 | 291 | 0.1− | 0.5+ | 2005 07 01 | 644 | 0.2− | 0.1+ |
| 1998 09 25 | 645 | 0.0 | 0.1− | 2004 02 17 | 291 | 0.0 | 0.3+ | 2005 07 01 | 644 | 0.0 | 0.2+ |
| 1998 09 25 | 645 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.2− | 0.3+ | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 2001 06 21 | 704 | 0.3+ | 0.1− | 2004 02 26 | 704 | 0.4− | 0.6+ | 2006 08 14 | 644 | 0.4− | 0.4+ |
| 2001 06 21 | 704 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.1+ | 0.1− | 2006 08 14 | 644 | 0.3− | 0.4+ |
| 2001 06 21 | 704 | 0.6− | 0.3+ | 2004 02 26 | 704 | 0.7+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.1− | 1.1+ | 2004 03 10 | 644 | 0.2+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | (0.3− | 2.4+) | 2004 03 10 | 644 | 0.0 | 0.5+ | 2006 08 19 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.6− | 0.0 | 2004 03 10 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 1.4+ | 2004 03 13 | 703 | 0.3− | 0.5− | 2006 08 27 | 691 | 0.0 | 0.3+ |
| 2004 01 23 | 699 | 0.2− | 0.2− | 2004 03 13 | 703 | 0.4− | 1.7+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2004 01 23 | 699 | 0.4− | 0.1− | 2004 03 13 | 703 | 0.5− | 1.3+ | 2006 08 28 | 691 | 0.2− | 0.2+ |
| 2004 01 23 | 699 | 0.2− | 0.6+ | 2004 03 13 | 703 | (2.9− | 0.5−) | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2004 01 23 | 699 | 1.3− | 0.2+ | 2004 03 16 | 699 | 0.7+ | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 25 | 608 | 0.1+ | 0.4− | 2004 03 16 | 699 | 1.1+ | 0.8+ | 2006 08 28 | 703 | 0.3+ | 0.2+ |
| 2004 01 25 | 608 | 0.3+ | 0.4− | 2004 03 16 | 699 | 0.2− | 0.6+ | 2006 08 28 | 703 | 1.1− | 0.2+ |
| 2004 01 25 | 608 | 0.6+ | 0.4− | 2004 03 16 | 699 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 1.1+ |
| 2004 01 27 | 699 | 0.2− | 0.5− | 2004 03 20 | 704 | 0.6− | 0.6+ | 2006 08 28 | 703 | 0.9− | 0.4+ |
| 2004 01 27 | 699 | 0.3− | 0.1− | 2004 03 20 | 704 | 0.8− | 0.4+ | 2006 08 28 | 699 | 1.1+ | 0.2− |
| 2004 01 27 | 699 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 699 | 1.3+ | 0.9+ |
| 2004 01 27 | 699 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 699 | 0.3+ | 0.6+ |
| 2004 01 29 | 704 | 0.2− | 0.3+ | 2005 05 04 | 703 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.9+ |
| 2004 01 29 | 704 | 0.2+ | 0.3+ | 2005 05 04 | 703 | 0.1− | 0.9+ | 2006 09 12 | 699 | 1.0+ | 0.8+ |
| 2004 01 29 | 704 | 0.3+ | 0.7+ | 2005 05 04 | 703 | 0.3+ | 0.1+ | 2006 09 12 | 699 | 1.8− | 1.2+ |
| 2004 01 29 | 704 | 0.2− | 0.7+ | 2005 05 04 | 703 | 0.8− | 0.7− | 2006 09 12 | 699 | 1.1+ | 0.8+ |
| 2004 01 29 | 704 | 0.1+ | 0.6+ | 2005 05 20 | 644 | 0.4+ | 0.4+ | 2006 09 12 | 699 | 0.0 | 1.3+ |
| 2004 02 17 | 704 | 0.3+ | 0.6+ | 2005 05 20 | 644 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.8+ |
| 2004 02 17 | 704 | 0.4− | 0.2− | 2005 05 20 | 644 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.3− |
| 2004 02 17 | 704 | 0.5+ | 0.9+ | 2005 07 01 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.4+ |
| 2004 02 17 | 704 | 0.2+ | 0.1+ | 2005 07 01 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.3+ |
| 2004 02 17 | 704 | 1.2+ | 0.8+ | 2005 07 01 | 644 | 0.1+ | 0.1+ | | | | |

**(144098)∗ 2004 BE$_{59}$ = 1999 XN$_{154}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61804)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 244.20143 | | (2000.0) | | −0.85578950 | −0.51591323 |
| $n$ | 0.26630556 | $\omega$ | 294.83002 | | +0.49580004 | −0.79687757 |
| $a$ | 2.3926686 | $\Omega$ | 214.14798 | | +0.14767079 | −0.31435597 |
| $e$ | 0.1606133 | $i$ | 3.90031 | | | |
| $P$ | 3.70 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 29 | 691 | 0.0 | 0.1+ | 2004 02 11 | 644 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 1997 04 29 | 691 | 0.2− | 0.3+ | 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.5− | 0.1+ |
| 1997 04 29 | 691 | 0.2+ | 0.6− | 2004 02 17 | 704 | 0.1− | 0.7+ | 2006 10 15 | 691 | 0.3+ | 0.7+ |
| 1999 12 08 | 704 | 1.2− | 1.3− | 2004 02 17 | 704 | 1.3− | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.4− |
| 1999 12 08 | 704 | 0.9+ | 1.8− | 2004 02 17 | 704 | (0.1+ | 3.3+) | 2006 10 21 | 703 | 0.8− | 1.5− |
| 1999 12 08 | 704 | 0.5− | 1.2− | 2004 02 17 | 704 | 0.1− | 0.9+ | 2006 10 21 | 703 | (1.5− | 1.6+) |
| 1999 12 08 | 704 | 1.2+ | 1.1− | 2004 02 17 | 608 | 0.1− | 0.9− | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 1999 12 08 | 704 | 0.5− | 0.9− | 2004 02 17 | 608 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 12 14 | 704 | 0.3− | 1.3− | 2004 02 17 | 608 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 12 14 | 704 | 1.7+ | 1.2− | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 12 14 | 704 | 0.2+ | 1.4− | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2002 09 11 | 644 | 1.0− | 0.6+ | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 09 11 | 644 | 0.8− | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 09 11 | 644 | 0.5− | 0.2+ | 2004 02 23 | 704 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.5+ | 1.4+ | 2004 02 26 | 704 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2002 09 14 | 644 | 0.1+ | 1.2+ | 2004 02 26 | 704 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 644 | (0.3− | 1.5+) | 2004 02 26 | 704 | 0.8+ | 0.8+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.2+ | 0.6− | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.9+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2003 11 30 | 704 | 1.0− | 0.8+ | 2004 03 08 | 644 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.7− | 0.6+ |
| 2003 11 30 | 704 | 0.5− | 0.1− | 2004 03 08 | 644 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2003 11 30 | 704 | 1.1+ | 0.8+ | 2004 03 08 | 644 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2004 01 23 | 704 | 0.5+ | 1.0+ | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.0 |
| 2004 01 23 | 704 | 0.1+ | 0.7+ | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2004 01 23 | 704 | 0.1+ | 0.8+ | 2004 03 20 | 704 | 0.5+ | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2004 01 23 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2004 01 23 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.9+ | 1.0+ | 2006 11 11 | 703 | 0.5− | 1.4+ |
| 2004 01 25 | 608 | 0.2− | 0.3+ | 2005 05 15 | G96 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2004 01 25 | 608 | 0.4− | 0.1+ | 2005 05 15 | G96 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2004 01 25 | 608 | 0.5− | 0.4+ | 2005 05 15 | G96 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.0 |
| 2004 01 26 | 699 | 1.0+ | 0.3+ | 2005 05 15 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2004 01 26 | 699 | 0.9− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2004 01 26 | 699 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.6− |
| 2004 01 29 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2004 01 29 | 704 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 01 29 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2004 01 29 | 704 | 0.0 | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2004 01 29 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.0 | | | | |

**(144099)∗ 2004 BO$_{61}$ = 2002 TS$_{213}$ = 2005 JE$_{114}$ = 2005 KG$_{12}$**

Discovered 2004 Jan. 22 by NEAT at Palomar.

Id. A. Doppler (*MPO* 86236)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.89574 | | (2000.0) | | −0.59342395 | −0.80479329 |
| $n$ | 0.21718405 | $\omega$ | 321.57012 | | +0.74975453 | −0.55834801 |
| $a$ | 2.7410529 | $\Omega$ | 164.81707 | | +0.29277322 | −0.20138337 |
| $e$ | 0.0120044 | $i$ | 2.73154 | | | |
| $P$ | 4.54 | $H$ | 16.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 08 | 691 | 0.0 | 0.7+ | 2004 01 16 | 691 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.4+ | 0.5+ |
| 1995 01 08 | 691 | 0.3− | 0.2+ | 2004 01 22 | 644 | 0.4+ | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.3+ |
| 1995 01 08 | 691 | 0.2− | 0.1− | 2004 01 22 | 644 | 0.3− | 0.3+ | 2006 08 20 | 644 | 0.4− | 0.2+ |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2004 01 22 | 644 | 0.7+ | 0.2− | 2006 08 20 | 644 | 0.4− | 0.0 |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.8+ |
| 2000 04 05 | 704 | 0.7+ | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 1.2+ | 0.5+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2000 04 05 | 704 | 0.6+ | 0.7+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 0.1+ | 0.6− | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.3− | 0.6+ |
| 2000 04 27 | 691 | 0.2+ | 0.2− | 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2000 04 27 | 691 | 0.2+ | 0.1− | 2005 05 10 | 691 | 0.3+ | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.3+ |
| 2000 04 27 | 691 | 0.3+ | 0.1− | 2005 05 10 | 691 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 1.2− | 1.2+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2005 05 14 | G96 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 1.5+ | 0.0 | 2005 05 14 | G96 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.7+ | 0.3+ | 2005 05 14 | G96 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.9− | 0.5− |
| 2002 10 07 | 644 | 0.2− | 0.4+ | 2005 05 17 | G96 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2002 10 07 | 644 | 0.1− | 0.3+ | 2005 05 17 | G96 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.5− |
| 2002 10 07 | 644 | 0.1− | 0.7+ | 2005 05 17 | G96 | 0.8− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.1+ |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2005 05 17 | G96 | 0.7− | 0.1− | | | | |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.6+ | | | | |

**(144100)∗ 2004 BN$_{62}$ = 2005 GB$_{48}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76388)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.64369 | | (2000.0) | | +0.92558528 | +0.31098426 |
| $n$ | 0.27121457 | $\omega$ | 228.51192 | | −0.23852416 | +0.92186789 |
| $a$ | 2.3637092 | $\Omega$ | 112.34674 | | −0.29393557 | +0.23118908 |
| $e$ | 0.2438158 | $i$ | 13.49439 | | | |
| $P$ | 3.63 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.5+ | 0.2− | 2004 02 15 | 704 | 1.1− | 0.2+ | 2006 10 04 | 703 | 0.1− | 0.1− |
| 1999 12 15 | 704 | 0.9+ | 0.4− | 2004 02 15 | 704 | 0.6− | 0.4+ | 2006 10 04 | 703 | 0.4+ | 0.5− |
| 1999 12 15 | 704 | 0.9− | 1.1− | 2004 02 15 | 704 | 1.2− | 0.6− | 2006 10 04 | 703 | 0.3+ | 0.3+ |
| 2003 12 21 | 691 | 0.0 | 0.1− | 2005 04 05 | 644 | 0.7+ | 0.6+ | 2006 10 04 | 703 | 0.1− | 0.2− |
| 2003 12 21 | 691 | 0.3+ | 0.0 | 2005 04 05 | 644 | 0.7+ | 0.8+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | 0.3− | 1.0+ | 2005 04 05 | 644 | 0.9+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2003 12 21 | 691 | 0.3+ | 0.1− | 2005 04 06 | 703 | 0.6− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.3− |
| 2003 12 21 | 704 | 0.9− | 0.9− | 2005 04 06 | 703 | 1.2− | 0.6+ | 2006 11 01 | 703 | 0.0 | 0.4+ |
| 2003 12 21 | 704 | 1.1− | 0.1− | 2005 04 06 | 703 | 0.8+ | 0.1+ | 2006 11 01 | 703 | 0.5− | 0.2− |
| 2004 01 13 | 699 | 0.3− | 1.1− | 2005 04 06 | 703 | 0.7+ | 1.3− | 2006 11 01 | 703 | 0.5− | 0.6+ |
| 2004 01 13 | 699 | 0.7+ | 0.1− | 2005 04 16 | 703 | 0.3+ | 0.3− | 2006 11 01 | 703 | 0.6+ | 0.5+ |
| 2004 01 13 | 699 | 0.9− | 0.5+ | 2005 04 16 | 703 | 0.6− | 0.0 | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2004 01 13 | 699 | (0.0 | 2.2+) | 2005 04 16 | 703 | (0.6+ | 2.1+) | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2004 01 15 | 691 | 0.1+ | 0.2+ | 2005 04 16 | 703 | 1.3− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.4+ | 2006 11 18 | 703 | 0.4− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.7− | 0.3+ | 2006 11 18 | 703 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.8− | 0.1− | 2006 11 18 | 703 | 0.3− | 0.4− |
| 2004 01 22 | 704 | 0.5+ | 0.2− | 2006 09 12 | 704 | 0.6+ | 0.2− | 2006 11 18 | 703 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.1+ | 0.3− | 2006 09 12 | 704 | 0.4+ | 0.0 | 2006 11 24 | 703 | 0.3+ | 0.4+ |
| 2004 01 22 | 704 | 0.1− | 0.3+ | 2006 09 12 | 704 | 0.6+ | 0.9+ | 2006 11 24 | 703 | 0.3− | 0.5+ |
| 2004 01 22 | 704 | 0.0 | 0.4− | 2006 09 25 | 703 | 0.2+ | 0.1+ | 2006 11 24 | 703 | 0.3− | 0.3+ |
| 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 09 25 | 703 | 0.0 | 0.0 | 2006 11 24 | 703 | 0.2+ | 0.7+ |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.5− | | | | |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.3− | 0.0 | | | | |

**(144101)∗ 2004 BX$_{65}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.99264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23116522 | $\omega$ | 176.64833 | | +0.23796852 | +0.96947931 | |
| $a$ | 2.6293862 | $\Omega$ | 107.11206 | | −0.89255489 | +0.24223346 | |
| $e$ | 0.1736919 | $i$ | 3.53920 | | −0.38303622 | +0.03785256 | |
| $P$ | 4.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 704 | 0.4− | 0.3+ | 2004 02 16 | 691 | 0.3− | 0.5− | 2006 09 18 | 699 | (1.8− | 0.1+) |
| 2001 05 25 | 704 | 0.6+ | 0.3+ | 2004 02 16 | 691 | 0.4− | 0.8− | 2006 09 18 | 699 | 0.9+ | 0.3− |
| 2001 05 25 | 704 | 0.0 | 0.6+ | 2005 04 02 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2001 05 25 | 704 | 0.2− | 0.5+ | 2005 04 02 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2001 06 15 | 704 | 0.8+ | 0.0 | 2005 04 02 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2001 06 15 | 704 | 0.7− | 0.5− | 2005 04 13 | 704 | 0.5+ | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 06 15 | 704 | 0.3− | 0.6− | 2005 04 13 | 704 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 06 15 | 704 | 0.2+ | 0.5+ | 2005 04 13 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2004 01 15 | 691 | 0.1+ | 0.4+ | 2005 04 13 | 704 | 0.7+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2005 05 08 | 703 | 1.0− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2004 01 15 | 691 | 0.2+ | 0.2+ | 2005 05 08 | 703 | 0.7− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2004 01 22 | 704 | 0.3− | 0.4+ | 2005 05 08 | 703 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 2004 01 22 | 704 | 0.1+ | 0.2+ | 2005 05 08 | 703 | 0.7− | 0.9+ | 2006 10 16 | 703 | 1.0− | 0.5− |
| 2004 01 22 | 704 | 0.2− | 1.2+ | 2006 09 18 | 703 | (1.4+ | 1.5+) | 2006 10 16 | 703 | 0.4− | 0.7+ |
| 2004 01 22 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 703 | (1.8− | 0.6+) | 2006 10 16 | 703 | 1.3+ | 0.3+ |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 1.2− | 0.1− |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.2− |
| 2004 01 27 | 691 | 0.2− | 0.3+ | 2006 09 18 | 699 | 1.3− | 0.2+ | 2006 10 22 | 703 | 0.5+ | 1.1+ |
| 2004 02 16 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 1.3+ | 0.9+ | 2006 10 22 | 703 | 0.6− | 0.6− |

**(144102)∗ 2004 BH$_{66}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.07644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26171551 | $\omega$ | 232.26381 | | +0.95579376 | +0.27007012 | |
| $a$ | 2.4205631 | $\Omega$ | 111.80136 | | −0.21461471 | +0.91107395 | |
| $e$ | 0.1354937 | $i$ | 7.19430 | | −0.20099456 | +0.31145847 | |
| $P$ | 3.77 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 30 | 608 | 0.1− | 0.4+ | 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.6− | 1.0− |
| 2002 07 30 | 608 | 0.8+ | 0.2+ | 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.3− |
| 2002 07 30 | 608 | 0.0 | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 1.0+ |
| 2002 08 11 | 644 | 0.1− | 0.1+ | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 2002 08 11 | 644 | 0.2+ | 0.4+ | 2004 02 16 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2002 08 11 | 644 | 0.3− | 0.2+ | 2005 05 15 | 644 | 0.2+ | 0.6+ | 2006 09 26 | 703 | (2.1+ | 2.5+) |
| 2002 08 11 | 644 | 0.0 | 0.5+ | 2005 05 15 | 644 | 0.3+ | 0.8+ | 2006 09 29 | 699 | 0.1+ | 0.6− |
| 2002 08 11 | 644 | 0.2− | 0.2− | 2005 05 15 | 644 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.3+ |
| 2002 08 11 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.8− |
| 2002 08 19 | 644 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.3+ | 1.1+ |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2006 08 28 | 699 | 1.2− | 0.4+ | 2006 10 02 | 703 | 0.1− | 0.5+ |
| 2002 08 19 | 644 | 0.2− | 0.1+ | 2006 08 28 | 699 | 1.0+ | 0.5+ | 2006 10 02 | 703 | 0.9− | 0.5+ |
| 2002 08 30 | 644 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.5+ | 0.7+ | 2006 10 02 | 703 | 0.8− | 0.6− |
| 2002 08 30 | 644 | 0.2− | 0.2− | 2006 09 12 | 703 | 0.8− | 0.2+ | 2006 10 02 | 703 | 0.0 | 0.2+ |
| 2002 08 30 | 644 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.8+ | 0.6− |
| 2003 12 27 | 691 | 0.6+ | 0.2− | 2006 09 12 | 703 | 0.6+ | 0.8− | 2006 10 17 | 703 | 0.4+ | 1.1− |
| 2003 12 27 | 691 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.1+ | 1.2− |
| 2003 12 27 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.9− | 0.9− |
| 2004 01 15 | 691 | 0.1− | 0.3+ | 2006 09 18 | 703 | (1.0− | 1.7+) | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2004 01 15 | 691 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2004 01 15 | 691 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.6− | 0.4+ | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2004 01 22 | 704 | 0.7− | 0.9− | 2006 09 21 | 699 | 0.5− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.2− | 0.7− | 2006 09 21 | 699 | 1.0+ | 0.3− | 2006 10 23 | 644 | 0.4+ | 0.4+ |
| 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.5− | 0.0 | | | | |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.7+ | | | | |

**(144103)∗ 2004 BS$_{68}$**

Discovered 2004 Jan. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.09646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28859357 | $\omega$ | 175.60098 | | +0.66763777 | −0.66097349 | |
| $a$ | 2.2678358 | $\Omega$ | 232.05005 | | +0.66911242 | +0.73449923 | |
| $e$ | 0.2263978 | $i$ | 25.75142 | | +0.32641749 | −0.15370403 | |
| $P$ | 3.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 30 | 644 | 0.0 | 0.1− | 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.1+ |
| 2002 06 30 | 644 | 0.1+ | 0.3− | 2005 05 16 | 691 | 0.1+ | 0.3+ | 2006 10 03 | 704 | 0.5− | 0.1+ |
| 2002 06 30 | 644 | 0.1− | 0.0 | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.5− |
| 2002 07 08 | 644 | 0.2− | 0.1+ | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 10 20 | 704 | 0.4+ | 0.2− |
| 2002 07 08 | 644 | 0.2− | 0.1+ | 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 10 20 | 704 | 0.8+ | 0.2− |
| 2002 07 08 | 644 | 0.1− | 0.2+ | 2005 05 19 | 644 | 0.0 | 0.1− | 2006 10 20 | 704 | 0.6+ | 0.4− |
| 2004 01 03 | 704 | 0.1− | 0.1− | 2006 09 06 | 628 | (2.6− | 1.3−) | 2006 10 20 | 704 | 0.6+ | 0.1+ |
| 2004 01 03 | 704 | 0.9+ | 0.3+ | 2006 09 06 | 628 | 0.0 | 0.4− | 2006 10 20 | 704 | 0.4− | 0.2+ |
| 2004 01 03 | 704 | 0.2+ | 0.1− | 2006 09 06 | 628 | (3.0− | 2.1−) | 2006 10 27 | 703 | 1.2− | 0.5− |
| 2004 01 03 | 704 | 0.5+ | 0.1+ | 2006 09 06 | 628 | 0.4− | 1.2− | 2006 10 27 | 703 | 0.6+ | 0.3− |
| 2004 01 27 | 704 | 1.4− | 0.5− | 2006 09 06 | 628 | (3.0− | 0.7−) | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2004 01 27 | 704 | 0.9− | 0.4+ | 2006 09 06 | 628 | 0.4− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2004 01 27 | 704 | 0.3+ | 1.3+ | 2006 09 18 | 704 | 0.9− | 0.6+ | 2006 11 15 | 703 | 0.5− | 0.0 |
| 2004 01 27 | 704 | 0.6− | 0.1− | 2006 09 18 | 704 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2004 01 27 | 704 | 0.8− | 0.4+ | 2006 09 18 | 704 | 0.9+ | 0.5− | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2004 01 28 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.1+ |
| 2004 01 28 | 704 | 0.1+ | 0.2− | 2006 09 25 | 703 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2004 01 28 | 704 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.0 | 0.4− | 2006 11 18 | 704 | 1.0− | 0.9+ |
| 2004 01 28 | 704 | 0.5− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.3− | 2006 11 18 | 704 | 1.1− | 0.0 |
| 2004 01 30 | 704 | 0.1+ | 0.2− | 2006 09 25 | 703 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.0 | 1.0+ |
| 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 09 27 | 106 | 0.1+ | 0.3− | 2006 11 25 | 703 | 0.9− | 0.1− |
| 2004 01 30 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 106 | 0.7+ | 1.0+ | 2006 11 25 | 703 | 0.1+ | 0.2+ |
| 2004 01 30 | 704 | 0.6+ | 0.1− | 2006 09 27 | 106 | 0.3− | 0.5− | 2006 11 25 | 703 | 0.2− | 0.2− |
| 2004 02 20 | 704 | 0.3− | 0.2− | 2006 09 27 | 106 | 0.1+ | 0.3− | 2006 11 25 | 703 | 0.3− | 0.3− |
| 2004 02 20 | 704 | 0.5+ | 0.8− | 2006 10 02 | 703 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.8+ |
| 2004 02 20 | 704 | 0.7+ | 0.5− | 2006 10 02 | 703 | 0.2+ | 0.7+ | 2006 11 28 | 704 | 0.1+ | 0.7+ |
| 2005 05 10 | G96 | 0.3− | 0.3+ | 2006 10 02 | 703 | 0.4+ | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.8+ |
| 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.8+ | 0.4+ |
| 2005 05 10 | G96 | 0.6− | 0.3+ | 2006 10 03 | 704 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 10 03 | 704 | 0.5+ | 0.3+ | | | | |

**(144104)∗ 2004 BN$_{69}$ = 2002 RP$_{187}$**

Discovered 2004 Jan. 27 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Id. G. V. Williams (*MPO* 61807)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.10454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23534563 | $\omega$ | 165.00273 | | −0.31696461 | −0.94248243 | |
| $a$ | 2.5981564 | $\Omega$ | 303.37094 | | +0.85657198 | −0.23642939 | |
| $e$ | 0.1686045 | $i$ | 7.29997 | | +0.40720743 | −0.23627954 | |
| $P$ | 4.19 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 699 | 0.3+ | 0.8+ | 2004 01 29 | 699 | 1.1− | 0.1+ | 2004 02 20 | 704 | 1.5− | 0.4− |
| 2000 03 12 | 699 | 1.0+ | 0.6+ | 2004 01 29 | 699 | 0.5− | 0.4+ | 2004 02 20 | 704 | 0.6− | 0.7− |
| 2000 03 12 | 699 | 0.6+ | 1.2+ | 2004 01 29 | 699 | 1.1− | 0.8+ | 2004 02 23 | 704 | 0.9+ | 0.0 |
| 2000 03 12 | 699 | 0.4+ | 0.7+ | 2004 01 30 | 683 | 0.4+ | 0.0 | 2004 02 23 | 704 | 0.4− | 0.0 |
| 2002 09 11 | 049 | 0.1+ | 0.8− | 2004 01 30 | 683 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.2+ | 0.0 |
| 2002 09 11 | 049 | 0.3+ | 0.5− | 2004 01 30 | 683 | 0.4+ | 1.0+ | 2004 02 26 | 704 | 0.2+ | 0.3+ |
| 2002 09 11 | 049 | 0.7+ | 0.4− | 2004 01 31 | 683 | 1.5+ | 0.2+ | 2004 02 26 | 704 | 0.6+ | 1.0+ |
| 2002 09 13 | 644 | 0.0 | 0.2− | 2004 01 31 | 683 | 1.1+ | 0.9− | 2004 02 26 | 704 | 0.8− | 0.8+ |
| 2002 09 13 | 644 | 0.2− | 0.0 | 2004 01 31 | 683 | 1.8+ | 0.6+ | 2004 02 26 | 704 | 0.4− | 0.2− |
| 2002 09 13 | 644 | 0.0 | 0.1− | 2004 02 11 | 683 | (0.6+ | 2.2−) | 2004 02 26 | 704 | 0.2− | 0.2+ |
| 2002 10 05 | 704 | 0.5− | 0.2− | 2004 02 11 | 683 | 0.1− | 1.2− | 2004 03 16 | 704 | 0.9+ | 0.1+ |
| 2002 10 05 | 704 | 0.4− | 0.7+ | 2004 02 11 | 683 | 1.6+ | 0.5+ | 2004 03 16 | 704 | 0.5+ | 1.4+ |
| 2002 10 05 | 704 | 0.5+ | 0.2− | 2004 02 12 | 683 | 0.0 | 0.3− | 2004 03 16 | 704 | 1.0+ | 0.7+ |
| 2002 10 05 | 704 | 0.1+ | 0.2+ | 2004 02 12 | 683 | 0.7+ | 0.3+ | 2004 03 16 | 704 | 0.2+ | 1.3+ |
| 2002 10 05 | 704 | 0.1− | 1.1− | 2004 02 12 | 683 | 0.5− | 0.1− | 2004 03 19 | 704 | 0.3− | 0.3+ |
| 2003 11 30 | 691 | 0.1+ | 0.0 | 2004 02 12 | 644 | 0.7− | 0.4+ | 2004 03 19 | 704 | 0.6− | 0.8+ |
| 2003 11 30 | 691 | 0.1− | 0.1− | 2004 02 12 | 644 | 0.4− | 0.6+ | 2004 03 19 | 704 | 0.1− | 0.5+ |
| 2003 11 30 | 691 | 0.3− | 0.2+ | 2004 02 12 | 644 | 0.0 | 0.7+ | 2006 08 27 | 291 | 0.1− | 0.2+ |
| 2003 12 23 | 608 | 0.1+ | 0.2+ | 2004 02 13 | 683 | 0.3− | 0.2− | 2006 08 27 | 291 | 0.2− | 0.6+ |
| 2003 12 23 | 608 | 0.3+ | 1.2+ | 2004 02 13 | 683 | 0.2+ | 0.0 | 2006 08 27 | 291 | 1.4− | 1.0+ |
| 2003 12 23 | 608 | 0.1+ | 0.2+ | 2004 02 13 | 683 | 0.5+ | 0.9+ | 2006 08 29 | 703 | 0.5+ | 1.0+ |
| 2004 01 24 | 704 | 1.1+ | 0.9+ | 2004 02 15 | 703 | 0.0 | 0.7+ | 2006 08 29 | 703 | 1.0− | 0.9− |
| 2004 01 24 | 704 | 1.0+ | 0.5+ | 2004 02 15 | 703 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.0 | 0.3− |
| 2004 01 24 | 704 | 0.7+ | 0.2+ | 2004 02 15 | 703 | 1.0− | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.6+ |
| 2004 01 24 | 704 | 0.5+ | 0.3− | 2004 02 15 | 703 | 0.9− | 0.1− | 2006 08 29 | 691 | 0.1− | 0.3+ |
| 2004 01 27 | 683 | 0.2− | 0.2+ | 2004 02 18 | 683 | (1.2− | 2.5−) | 2006 08 29 | 691 | 0.1− | 0.3+ |
| 2004 01 27 | 683 | 0.4+ | 1.4− | 2004 02 18 | 683 | 0.8− | 1.5− | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2004 01 27 | 683 | 0.5− | 0.9− | 2004 02 18 | 683 | 0.2− | 1.2− | 2006 09 17 | 703 | 0.4+ | 2.3+ |
| 2004 01 28 | 683 | 0.4+ | 1.4− | 2004 02 19 | 704 | 0.8+ | 0.7+ | 2006 09 17 | 703 | 0.1− | 1.8+ |
| 2004 01 28 | 683 | 0.3+ | 0.9− | 2004 02 19 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 703 | 1.1− | 0.3+ |
| 2004 01 29 | 704 | 0.3− | 1.2+ | 2004 02 19 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 0.1+ | 0.9+ |
| 2004 01 29 | 704 | 1.2+ | 0.7+ | 2004 02 19 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 699 | 0.6+ | 0.5+ |
| 2004 01 29 | 704 | 0.1− | 0.1+ | 2004 02 19 | 704 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.4+ | 0.2+ |
| 2004 01 29 | 704 | 0.1− | 1.3+ | 2004 02 20 | 704 | 0.2− | 0.9− | 2006 09 20 | 699 | 0.4− | 0.7+ |
| 2004 01 29 | 704 | 0.2+ | 0.7+ | 2004 02 20 | 704 | 0.9− | 1.0− | 2006 09 20 | 699 | 1.0+ | 0.5− |
| 2004 01 29 | 699 | 0.1− | 0.0 | 2004 02 20 | 704 | 0.5− | 0.8− | | | | |

**(144105)∗ 2004 BV$_{69}$ = 2001 FW$_2$**

Discovered 2004 Jan. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57606)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.33851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29914167 | $\omega$ | 114.10755 | | +0.03437781 | −0.99807568 | |
| $a$ | 2.2142064 | $\Omega$ | 333.76419 | | +0.86932817 | +0.05533689 | |
| $e$ | 0.1333440 | $i$ | 6.70380 | | +0.49303824 | −0.02797808 | |
| $P$ | 3.29 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.6− | 2003 12 28 | 704 | 0.2− | 0.2− | 2004 04 13 | 645 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.3+ | 0.0 | 2003 12 28 | 704 | 0.2+ | 0.1+ | 2004 04 13 | 645 | 0.0 | 0.2− |
| 1999 10 06 | 704 | 0.6− | 0.1+ | 2003 12 28 | 704 | 0.2− | 0.3+ | 2004 04 14 | 645 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.7+ | 0.8− | 2003 12 28 | 704 | 0.2+ | 0.2+ | 2004 04 14 | 645 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 0.0 | 0.4+ | 2004 01 13 | 699 | 0.4+ | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.5+ |
| 2001 03 18 | 704 | 0.5+ | 0.2+ | 2004 01 13 | 699 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.9+ |
| 2001 03 18 | 704 | 0.3+ | 1.0+ | 2004 01 13 | 699 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.4− | 1.5+ |
| 2001 03 18 | 704 | 0.7− | 0.6− | 2004 01 13 | 699 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.5− | 0.6− |
| 2001 03 18 | 699 | 0.3+ | 1.0− | 2004 01 20 | 704 | 0.9+ | 1.0+ | 2006 10 19 | 703 | 0.5− | 0.3+ |
| 2001 03 18 | 704 | 0.6+ | 0.1+ | 2004 01 20 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.5− | 0.6+ |
| 2001 03 18 | 699 | 0.6− | 0.2+ | 2004 01 20 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.6+ | 0.1+ |
| 2001 03 18 | 699 | 0.2− | 0.5+ | 2004 01 26 | 699 | 1.1− | 0.7+ | 2006 10 19 | 703 | (1.5+ | 0.3−) |
| 2001 03 18 | 699 | 0.0 | 0.3+ | 2004 01 26 | 699 | 0.0 | 0.0 | 2006 10 23 | 703 | 0.0 | 0.5− |
| 2001 03 19 | 704 | 0.1+ | 0.6+ | 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 10 23 | 703 | 0.1+ | 0.5− |
| 2001 03 19 | 704 | 0.4− | 0.7− | 2004 01 26 | 699 | 0.1− | 0.7+ | 2006 10 23 | 703 | 0.6+ | 0.0 |
| 2001 03 19 | 704 | 0.4+ | 0.0 | 2004 01 31 | 704 | 0.6+ | 0.6+ | 2006 10 23 | 703 | 0.2− | 0.4− |
| 2001 03 19 | 704 | 1.0− | 0.2− | 2004 01 31 | 704 | 0.4+ | 0.2+ | 2006 10 29 | 703 | 0.4+ | 0.1+ |
| 2001 03 19 | 704 | 0.2− | 0.2+ | 2004 01 31 | 704 | 0.1− | 0.5+ | 2006 10 29 | 703 | 1.1− | 0.5− |
| 2001 03 19 | 704 | 0.2− | 0.3+ | 2004 01 31 | 704 | 0.4+ | 0.7+ | 2006 10 29 | 703 | 0.4− | 0.4+ |
| 2001 03 19 | 704 | 0.2− | 1.1+ | 2004 01 31 | 704 | 0.5+ | 0.3+ | 2006 10 29 | 703 | 0.6− | 0.0 |
| 2001 03 19 | 704 | (0.4− | 1.8+) | 2004 02 11 | 699 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.4+ | 0.1− |
| 2001 03 19 | 704 | (0.7+ | 2.5+) | 2004 02 11 | 699 | 0.4+ | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.0 |
| 2001 03 20 | 704 | 1.3+ | 0.1− | 2004 02 11 | 699 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.4+ | 0.1− |
| 2001 03 20 | 704 | (0.5− | 1.7+) | 2004 02 11 | 699 | 0.4− | 0.5− | 2006 11 02 | G96 | 0.5+ | 0.1− |
| 2001 03 20 | 704 | 1.2+ | 0.1− | 2004 02 13 | 106 | 0.7− | 0.3− | 2006 11 13 | G96 | 0.6+ | 0.2− |
| 2001 03 20 | 704 | (2.0+ | 1.1+) | 2004 02 13 | 106 | 0.6− | 0.5− | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2003 11 20 | 704 | 0.9+ | 0.0 | 2004 02 13 | 106 | 0.6− | 0.5− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2003 11 20 | 704 | 0.6+ | 0.3+ | 2004 02 15 | 704 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.2− |
| 2003 11 20 | 704 | 1.0+ | 0.3+ | 2004 02 15 | 704 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2003 12 04 | 704 | 0.0 | 0.3+ | 2004 02 15 | 704 | 0.6− | 0.4− | 2006 11 15 | 703 | 0.5+ | 0.2− |
| 2003 12 04 | 704 | 0.5− | 0.5+ | 2004 02 15 | 704 | 0.7− | 0.5− | 2006 11 15 | 703 | 0.0 | 0.4+ |
| 2003 12 04 | 704 | 0.3+ | 0.3− | 2004 02 15 | 704 | 0.6− | 0.5− | 2006 11 15 | 704 | (1.1− | 2.6+) |
| 2003 12 04 | 704 | 0.5+ | 0.5+ | 2004 02 23 | 704 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 11 15 | 704 | 1.1− | 1.3+ |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.3− | 1.3+ | 2006 11 15 | 704 | 0.9− | 0.9+ |
| 2003 12 23 | 704 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.9− | 1.4+ |
| 2003 12 23 | 704 | 0.1+ | 1.4+ | 2004 02 23 | 704 | 0.6− | 0.7+ | 2006 11 15 | 704 | (0.5− | 2.2+) |
| 2003 12 23 | 704 | 0.9− | 0.6− | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 11 21 | 703 | 1.3+ | 2.9− |
| 2003 12 23 | 704 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 1.2+ | 0.8+ | 2006 11 21 | 703 | 0.4− | 0.1− |
| 2003 12 23 | 704 | 1.0− | 0.7+ | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 11 21 | 703 | 0.2− | 0.5− |
| 2003 12 28 | 704 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 11 21 | 703 | 0.2− | 0.2+ |

**(144106)∗ 2004 BW$_{70}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.94779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18154548 | $\omega$ | 274.74428 | | −0.53841559 | +0.82744131 | |
| $a$ | 3.0889610 | $\Omega$ | 321.26741 | | −0.63608631 | −0.52323898 | |
| $e$ | 0.2137596 | $i$ | 14.77160 | | −0.55272314 | −0.20386725 | |
| $P$ | 5.43 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.3− | 0.6+ | 2004 01 26 | 699 | 1.1+ | 0.3+ | 2005 07 14 | 423 | 0.4+ | 0.8+ |
| 2000 08 01 | 704 | 0.6− | 1.4+ | 2004 01 26 | 699 | 0.5− | 0.8− | 2005 07 14 | 423 | 0.2+ | 0.5+ |
| 2000 08 01 | 704 | 0.5+ | 0.8+ | 2004 01 26 | 699 | 0.5− | 0.2− | 2006 09 15 | 704 | 1.3+ | 0.6+ |
| 2000 08 20 | 699 | 1.2+ | 0.1+ | 2004 01 30 | 704 | (1.7+ | 0.9+) | 2006 09 15 | 704 | 0.9+ | 0.3+ |
| 2000 08 20 | 699 | 1.3− | 0.0 | 2004 01 30 | 704 | (0.2− | 1.6+) | 2006 09 15 | 704 | 0.7+ | 0.8+ |
| 2000 08 20 | 699 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.3− | 0.4+ | 2006 09 15 | 704 | (1.6+ | 0.2+) |
| 2000 08 20 | 699 | 1.3− | 0.6− | 2004 01 30 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 703 | (2.8− | 1.1−) |
| 2001 10 18 | 704 | 0.6+ | 0.3− | 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.1− |
| 2001 10 18 | 704 | 0.2− | 0.6+ | 2004 02 14 | 608 | 0.3+ | 0.8− | 2006 09 17 | 703 | 0.2− | 0.2− |
| 2001 10 18 | 704 | 0.7− | 0.9+ | 2004 02 14 | 608 | 0.5+ | 0.8− | 2006 09 17 | 703 | (1.9− | 0.1−) |
| 2001 10 18 | 704 | 0.1− | 0.6+ | 2004 02 14 | 608 | 0.3+ | 0.2− | 2006 09 22 | 703 | 1.0+ | 0.6− |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2004 02 16 | 704 | 0.8+ | 0.4+ | 2006 09 22 | 703 | 0.1− | 0.4+ |
| 2001 11 12 | 704 | 0.3− | 0.4+ | 2004 02 16 | 704 | 0.0 | 0.5+ | 2006 09 22 | 703 | 0.4+ | 0.8+ |
| 2001 11 12 | 704 | 0.3− | 0.2− | 2004 02 16 | 704 | 0.2− | 0.6+ | 2006 09 22 | 703 | 0.8− | 0.2− |
| 2001 11 12 | 704 | 1.1+ | 0.3− | 2004 02 16 | 704 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.1− |
| 2004 01 13 | 699 | 0.7− | 0.3− | 2004 02 16 | 704 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.5− | 0.5+ |
| 2004 01 13 | 699 | 0.7+ | 1.1+ | 2004 02 26 | 704 | 0.9+ | 0.4+ | 2006 09 27 | 703 | 0.8− | 0.1− |
| 2004 01 13 | 699 | 0.3− | 0.6− | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 703 | 0.7− | 0.9− |
| 2004 01 13 | 699 | 0.3− | 0.5+ | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.4− |
| 2004 01 22 | 704 | 0.5− | 1.1+ | 2004 02 26 | 704 | 0.5+ | 0.1+ | 2006 10 03 | G96 | 0.2− | 0.3− |
| 2004 01 22 | 704 | 0.7− | 0.4− | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.6− |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.7+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2004 01 26 | 699 | 1.1− | 0.4− | 2004 03 18 | 704 | 0.6− | 0.3− | 2006 10 11 | 644 | 0.4− | 0.1+ |

**(144107)∗ 2004 BZ$_{70}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.34025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26285893 | $\omega$ | 112.23359 | | −0.36027408 | −0.93284619 | |
| $a$ | 2.4135385 | $\Omega$ | 358.88261 | | +0.84100302 | −0.32445342 | |
| $e$ | 0.1315708 | $i$ | 2.21593 | | +0.40362916 | −0.15661404 | |
| $P$ | 3.75 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.2+ | 0.0 | 2004 02 10 | 644 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 1991 10 07 | 691 | 0.2− | 0.3− | 2004 02 10 | 703 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 1991 10 07 | 691 | 0.0 | 0.1+ | 2004 02 10 | 703 | 1.4+ | 1.0+ | 2006 09 15 | 691 | 0.2+ | 0.1+ |
| 1993 03 25 | 691 | 0.5− | 0.7− | 2004 02 10 | 703 | (0.2+ | 3.3+) | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 1993 03 25 | 691 | 0.1− | 0.5− | 2004 02 11 | 291 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 1993 03 25 | 691 | 0.1− | 0.9− | 2004 02 11 | 291 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2002 08 14 | 291 | 0.2− | 0.4+ | 2004 02 11 | 291 | 0.0 | 0.2+ | 2006 09 20 | J75 | 0.9+ | 0.0 |
| 2002 08 14 | 291 | 0.5− | 0.3+ | 2004 02 16 | 704 | 0.1+ | 0.6+ | 2006 09 20 | J75 | 0.4+ | 0.3+ |
| 2002 08 14 | 291 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 09 20 | J75 | 0.3+ | 1.2− |
| 2002 08 29 | 644 | 0.3− | 0.8+ | 2004 02 16 | 704 | 0.1− | 0.5+ | 2006 09 24 | 691 | 0.1− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.9+ | 2004 02 16 | 704 | 0.2+ | 0.6+ | 2006 09 24 | 691 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2004 02 16 | 704 | 0.5+ | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.1− |
| 2004 01 13 | 699 | 0.1− | 0.5− | 2004 02 18 | 644 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2004 01 13 | 699 | 0.4− | 0.0 | 2004 02 18 | 644 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.3− |
| 2004 01 13 | 699 | 1.1+ | 0.2− | 2004 02 18 | 644 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2004 01 13 | 699 | 1.1− | 0.3− | 2004 02 23 | 704 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.3+ |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2004 02 23 | 704 | 0.6+ | 0.7+ | 2006 10 17 | G96 | 0.6+ | 0.2− |
| 2004 01 22 | 704 | 0.4+ | 0.1− | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 703 | (0.4− | 2.4−) |
| 2004 01 22 | 704 | 0.3+ | 0.5+ | 2004 02 23 | 704 | 0.6− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 2004 01 22 | 704 | 0.4+ | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.6+ |
| 2004 01 22 | 704 | 0.3− | 0.9+ | 2004 03 01 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.7+ | 0.8− |
| 2004 01 26 | 699 | 0.0 | 0.5+ | 2004 03 01 | 691 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 1.1− |
| 2004 01 26 | 699 | 0.7− | 0.1− | 2004 03 01 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.2+ | 0.3+ |
| 2004 01 26 | 699 | 0.4+ | 0.6− | 2004 03 10 | 644 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 2004 01 26 | 699 | 0.6+ | 0.0 | 2004 03 10 | 644 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.5+ | 0.4− |
| 2004 01 30 | 704 | 0.3− | 0.1+ | 2004 03 10 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.6− |
| 2004 01 30 | 704 | 0.0 | 0.9+ | 2004 04 14 | 113 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2004 01 30 | 704 | 0.0 | 0.0 | 2004 04 14 | 113 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2004 01 30 | 704 | 0.1− | 0.4+ | 2004 04 14 | 113 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.1− |
| 2004 01 30 | 704 | 0.4− | 0.1+ | 2004 04 19 | 704 | 0.2+ | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2004 01 31 | 691 | 0.1− | 0.3− | 2004 04 19 | 704 | 0.3− | 1.1+ | 2006 10 28 | G96 | 0.0 | 0.5− |
| 2004 01 31 | 691 | 0.3− | 0.2− | 2004 04 19 | 704 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.6− |
| 2004 01 31 | 691 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2004 02 10 | 644 | 0.5+ | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.6− |
| 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.2− | | | | |
| 2004 02 10 | 703 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.4+ | 0.1+ | | | | |

**(144108)∗ 2004 BV$_{71}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.49729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21985702 | $\omega$ | 105.06325 | | +0.92942808 | +0.36405684 | |
| $a$ | 2.7187910 | $\Omega$ | 233.62324 | | −0.36073418 | +0.86206697 | |
| $e$ | 0.0578020 | $i$ | 4.28921 | | −0.07768073 | +0.35256653 | |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1+ | 0.3+ | 2004 02 11 | 644 | 0.5+ | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.3+ |
| 2000 02 12 | 645 | 0.1+ | 0.3+ | 2004 02 11 | 644 | 0.8+ | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 1.2− | 0.1− | 2004 02 11 | 644 | 0.5+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.5+ |
| 2002 10 04 | 704 | 0.6+ | 0.9+ | 2004 04 13 | 645 | 0.0 | 0.1+ | 2006 08 19 | 699 | 0.1− | 1.3+ |
| 2002 10 04 | 704 | 0.5+ | 1.7+ | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | (0.3+ | 2.2+) |
| 2002 10 09 | 704 | 0.0 | 0.5− | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 08 19 | 699 | 0.3− | 0.2+ |
| 2002 10 09 | 704 | 0.3− | 0.9+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.6− | 1.2+ |
| 2002 10 09 | 704 | 0.5− | 0.9− | 2005 04 12 | G96 | 0.2+ | 0.5+ | 2006 08 21 | 644 | 0.1− | 0.3+ |
| 2002 10 09 | 704 | 1.2− | 0.6+ | 2005 04 12 | G96 | 0.0 | 0.7+ | 2006 08 21 | 644 | 0.0 | 0.4+ |
| 2002 10 30 | 644 | 0.1− | 1.5+ | 2005 04 12 | G96 | 0.1− | 0.4+ | 2006 08 21 | 644 | 0.0 | 0.2+ |
| 2002 10 30 | 644 | 0.6− | 1.2+ | 2005 04 12 | G96 | 0.4− | 0.5+ | 2006 08 29 | 703 | 0.1+ | 0.0 |
| 2002 10 30 | 644 | 0.3− | 1.3+ | 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.9− | 0.2+ |
| 2004 01 23 | 704 | 0.9− | 0.8+ | 2005 05 01 | 644 | 0.4+ | 0.4+ | 2006 08 29 | 703 | 0.7− | 0.3+ |
| 2004 01 23 | 704 | 0.7− | 0.6− | 2005 05 01 | 644 | 0.2− | 0.4+ | 2006 08 29 | 703 | 0.4+ | 0.1+ |
| 2004 01 23 | 704 | 1.3− | 0.8− | 2006 08 14 | 644 | 0.1− | 0.2+ | 2006 09 18 | 699 | 2.5− | 0.6+ |
| 2004 01 23 | 704 | 1.2− | 0.4+ | 2006 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.6+ |
| 2004 01 26 | 699 | 0.2− | 1.5− | 2006 08 14 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 2.0+ | 0.2+ |
| 2004 01 26 | 699 | 0.4+ | 0.6− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.7+ | 1.8+ |
| 2004 01 26 | 699 | 1.0+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3+ | | | | |
| 2004 01 26 | 699 | 0.4− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.1+ | | | | |

**(144109)∗ 2004 BA$_{72}$ = 1999 XZ$_{127}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57607)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.40291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27665969 | $\omega$ | 310.22331 | | −0.85959747 | +0.50095227 | |
| $a$ | 2.3325921 | $\Omega$ | 260.06056 | | −0.43225756 | −0.81800366 | |
| $e$ | 0.0627046 | $i$ | 5.86743 | | −0.27248046 | −0.28269564 | |
| $P$ | 3.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 02 | 691 | 0.3− | 0.5+ | 2004 01 23 | 704 | 0.5+ | 0.6+ | 2005 06 05 | 691 | 0.2+ | 0.2+ |
| 1994 05 02 | 691 | 0.4− | 0.4+ | 2004 01 23 | 704 | 0.9− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.0 |
| 1994 05 02 | 691 | 0.2− | 0.3+ | 2004 01 23 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.0 | 0.2− | 2004 01 23 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 691 | 0.5− | 0.1− |
| 1999 12 07 | 704 | 0.9+ | 0.4+ | 2004 01 26 | 699 | 1.3+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 1999 12 07 | 704 | 0.2+ | 0.2− | 2004 01 26 | 699 | 0.3− | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.7+ |
| 1999 12 07 | 704 | 0.7+ | 1.3− | 2004 01 26 | 699 | 0.1− | 0.8− | 2006 10 23 | 691 | 0.2− | 0.3− |
| 1999 12 07 | 704 | 0.4+ | 1.1− | 2004 01 26 | 699 | 0.0 | 0.6− | 2006 10 27 | 691 | 0.6− | 0.0 |
| 1999 12 13 | 704 | 0.8+ | 0.3− | 2004 01 29 | 704 | 0.8− | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1999 12 13 | 704 | 0.6+ | 0.3− | 2004 01 29 | 704 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 1999 12 13 | 704 | 1.4+ | 0.8+ | 2004 01 29 | 704 | 0.8+ | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 1999 12 13 | 704 | 0.1− | 1.5− | 2004 01 29 | 704 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 1999 12 13 | 704 | 1.0+ | 0.2+ | 2004 01 29 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2001 05 15 | 933 | (1.2+ | 3.0−) | 2004 02 01 | 608 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2001 05 15 | 933 | (1.5+ | 1.9−) | 2004 02 01 | 608 | 0.1+ | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2001 05 15 | 933 | 0.7+ | 0.1− | 2004 02 01 | 608 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 2002 09 13 | 644 | 0.4+ | 0.5+ | 2004 02 17 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2002 09 13 | 644 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 10 04 | 644 | 0.1+ | 0.8+ | 2004 02 17 | 704 | 0.6− | 1.0+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 10 04 | 644 | 0.0 | 0.8+ | 2004 02 26 | 704 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2002 10 04 | 644 | 0.3+ | 0.6+ | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2004 01 17 | 644 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2004 01 17 | 644 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2005 06 05 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2004 01 23 | 704 | 0.1− | 0.6+ | 2005 06 05 | 691 | 0.3+ | 0.1+ | | | | |

**(144110)∗ 2004 BN$_{72}$ = 2000 AT$_{117}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 57607)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.32500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25466525 | $\omega$ | 332.35113 | | −0.62523787 | +0.77493656 | |
| $a$ | 2.4650341 | $\Omega$ | 258.80025 | | −0.69750815 | −0.60801660 | |
| $e$ | 0.0892894 | $i$ | 5.40910 | | −0.35008568 | −0.17259531 | |
| $P$ | 3.87 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.1− | 1.3− | 2004 01 26 | 699 | 0.6+ | 0.3+ | 2005 06 11 | 704 | 0.4− | 0.1− | |
| 2000 01 05 | 704 | 0.5+ | 1.4− | 2004 01 26 | 699 | 0.2+ | 0.1− | 2005 06 11 | 704 | 0.5+ | 0.2− | |
| 2000 01 05 | 704 | 0.0 | 1.1− | 2004 01 26 | 699 | 0.3− | 0.4− | 2005 06 11 | 704 | 0.5+ | 0.2− | |
| 2000 01 05 | 704 | 0.3+ | 1.0− | 2004 01 26 | 699 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.4+ | 0.4− | |
| 2000 01 05 | 704 | 0.3− | 1.5− | 2004 01 28 | 608 | 0.1− | 0.7− | 2006 10 04 | G96 | 0.1+ | 0.1+ | |
| 2000 01 07 | 704 | 0.3− | 1.3− | 2004 01 28 | 608 | 0.2+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.4− | |
| 2000 01 07 | 704 | 0.3+ | 0.6− | 2004 01 28 | 608 | 0.4− | 0.6− | 2006 10 04 | G96 | 0.3+ | 0.3− | |
| 2000 01 07 | 704 | 0.5− | 1.8− | 2004 01 29 | 704 | 0.4− | 0.5− | 2006 10 13 | 691 | 0.1− | 0.1− | |
| 2000 01 07 | 704 | 0.1− | 0.6− | 2004 01 29 | 704 | 0.2− | 0.9− | 2006 10 13 | 691 | 0.3+ | 0.2+ | |
| 2000 01 07 | 704 | 0.4− | 1.3− | 2004 01 29 | 704 | (0.1+ | 1.9−) | 2006 10 13 | 691 | 0.6− | 0.2+ | |
| 2000 02 02 | 704 | 0.3− | 0.4+ | 2004 01 29 | 704 | 0.9+ | 0.8− | 2006 10 17 | 691 | 0.3+ | 0.1− | |
| 2000 02 02 | 704 | 1.0− | 0.9+ | 2004 01 29 | 704 | 0.2− | 1.2− | 2006 10 17 | 691 | 0.2+ | 0.1+ | |
| 2000 02 02 | 704 | 0.6− | 0.1+ | 2004 02 11 | 644 | 0.6− | 0.9+ | 2006 10 17 | 691 | 0.1+ | 0.2− | |
| 2000 02 02 | 704 | (2.3− | 0.6+) | 2004 02 11 | 644 | 0.5− | 0.9+ | 2006 10 21 | 691 | 0.1+ | 0.1+ | |
| 2000 02 02 | 704 | 0.3− | 0.6+ | 2004 02 11 | 644 | 0.5− | 1.0+ | 2006 10 21 | 691 | 0.1− | 0.0 | |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2004 02 18 | 704 | 0.8− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1+ | |
| 2002 10 04 | 704 | (1.6+ | 0.5+) | 2004 02 18 | 704 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2002 10 04 | 704 | 0.1− | 1.2+ | 2004 02 18 | 704 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.1− | 0.1+ | |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2004 02 18 | 704 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.2+ | |
| 2002 10 12 | 704 | (1.8+ | 0.9−) | 2004 02 18 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.5+ | |
| 2002 10 12 | 704 | 0.4− | 0.3+ | 2004 02 18 | 608 | 1.1+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 1.1+ | |
| 2002 10 12 | 704 | 0.5+ | 1.0− | 2004 02 18 | 608 | 1.0+ | 0.6+ | 2006 10 27 | 703 | 0.1+ | 0.3+ | |
| 2002 10 12 | 704 | 1.5+ | 0.7− | 2004 02 18 | 608 | 0.7+ | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.3+ | |
| 2002 10 18 | 644 | 0.5− | 0.5− | 2004 02 22 | 704 | 0.6− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.6− | |
| 2002 10 18 | 644 | 0.1− | 0.6− | 2004 02 22 | 704 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.4− | |
| 2002 10 18 | 644 | 0.1− | 0.5− | 2004 02 22 | 704 | 0.7− | 0.9+ | 2006 11 01 | G96 | 0.3+ | 0.5− | |
| 2002 11 08 | 704 | 1.0− | 1.3+ | 2004 02 22 | 704 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.6− | |
| 2002 11 08 | 704 | 0.1− | 0.1− | 2004 02 23 | 608 | 0.8− | 0.4+ | 2006 11 08 | 644 | 0.4− | 0.2+ | |
| 2002 11 08 | 704 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2+ | |
| 2003 11 30 | 704 | 0.5− | 0.1− | 2004 02 23 | 608 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ | |
| 2003 11 30 | 704 | 0.3− | 0.3+ | 2004 02 23 | 704 | 0.2− | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.6− | |
| 2003 11 30 | 704 | 0.1+ | 0.1+ | 2004 02 23 | 608 | 0.9− | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.5+ | |
| 2003 12 22 | 704 | (0.5+ | 1.7+) | 2004 02 23 | 704 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.2− | |
| 2003 12 22 | 704 | (1.8+ | 0.1+) | 2004 02 26 | 704 | 1.3+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.9+ | |
| 2003 12 22 | 704 | 0.8+ | 1.2− | 2004 02 26 | 704 | 1.5+ | 1.4+ | 2006 11 19 | 704 | 0.4+ | 0.2+ | |
| 2003 12 22 | 704 | 0.5+ | 0.1− | 2004 02 26 | 704 | 1.3+ | 0.3+ | 2006 11 19 | 704 | (0.6− | 1.8+) | |
| 2003 12 22 | 704 | 1.1+ | 0.6− | 2004 02 26 | 704 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1− | |
| 2004 01 13 | 699 | 0.4− | 1.1+ | 2004 02 26 | 704 | 0.9+ | 0.0 | 2006 11 19 | 704 | 0.6− | 0.9+ | |
| 2004 01 13 | 699 | 0.4+ | 0.0 | 2004 03 11 | 644 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.3− | |
| 2004 01 13 | 699 | 0.4− | 1.0+ | 2004 03 11 | 644 | 0.2− | 0.7+ | 2006 11 22 | 704 | 1.2− | 0.6+ | |
| 2004 01 13 | 699 | 0.2− | 0.6+ | 2004 03 11 | 644 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.3− | |
| 2004 01 23 | 704 | 0.2+ | 0.5+ | 2004 04 16 | 704 | 0.2− | 1.3+ | 2006 11 22 | 704 | 0.2− | 0.1+ | |
| 2004 01 23 | 704 | 0.3+ | 0.9+ | 2004 04 16 | 704 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.0 | 1.3+ | |
| 2004 01 23 | 704 | 0.2+ | 0.7+ | 2004 04 16 | 704 | 0.7+ | 0.2− | 2006 11 22 | 704 | (1.6+ | 0.8−) | |
| 2004 01 23 | 704 | 0.2+ | 0.5+ | 2005 06 11 | 704 | 0.3− | 0.7+ | | | | | |
| 2004 01 23 | 704 | 0.2+ | 0.5+ | 2005 06 11 | 704 | 0.2− | 0.4+ | | | | | |

**(144111)∗ 2004 BO$_{72}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.18869 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26498744 | $\omega$ | 266.92373 | | +0.20296502 | −0.97903552 | |
| $a$ | 2.4005966 | $\Omega$ | 171.30871 | | +0.93745799 | +0.18922276 | |
| $e$ | 0.0941702 | $i$ | 6.52266 | | +0.28280332 | +0.07539366 | |
| $P$ | 3.72 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.4+ | 0.4+ | 2004 01 29 | 704 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.5− | |
| 1997 04 03 | 704 | 0.7+ | 0.9+ | 2004 01 29 | 704 | 0.2+ | 0.8+ | 2006 09 14 | 703 | 0.4+ | 0.3− | |
| 2000 01 07 | 704 | 0.3− | 0.5− | 2004 02 03 | 608 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.1+ | |
| 2000 01 07 | 704 | 0.1− | 1.6− | 2004 02 03 | 608 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.3+ | 0.4+ | |
| 2000 01 07 | 704 | 0.5− | 0.1+ | 2004 02 03 | 608 | 0.5+ | 0.4− | 2006 09 16 | 644 | 0.2− | 0.4+ | |
| 2000 01 07 | 704 | 0.0 | 1.6− | 2004 02 17 | 704 | 0.2− | 0.1− | 2006 09 16 | 644 | 0.1+ | 0.4+ | |
| 2001 04 15 | 691 | 0.2− | 0.7+ | 2004 02 17 | 704 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | |
| 2001 04 15 | 691 | 0.1− | 0.6+ | 2004 02 17 | 704 | 0.6− | 0.5+ | 2006 09 17 | 691 | 0.3− | 0.0 | |
| 2001 04 15 | 691 | 0.1+ | 0.6+ | 2004 02 17 | 704 | 0.4+ | 0.2− | 2006 09 17 | 691 | 0.5− | 0.1+ | |
| 2002 08 12 | 699 | 0.8+ | 0.5− | 2004 02 17 | 704 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.0 | |
| 2002 08 12 | 699 | (1.8+ | 0.1−) | 2004 02 18 | 608 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.3+ | |
| 2002 08 12 | 699 | (0.1+ | 1.6+) | 2004 02 18 | 608 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.4+ | |
| 2002 08 12 | 699 | 0.6+ | 0.0 | 2004 02 18 | 608 | 0.6− | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.5− | |
| 2002 09 05 | 704 | 0.2+ | 0.8+ | 2004 02 19 | 704 | 1.1+ | 1.1+ | 2006 09 26 | 704 | (3.3+ | 0.4−) | |
| 2002 09 05 | 704 | 0.1+ | 0.7+ | 2004 02 19 | 704 | 1.2+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.5+ | |
| 2002 09 05 | 704 | 0.0 | 0.9+ | 2004 02 19 | 704 | 1.1+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.5− | |
| 2002 09 05 | 704 | 0.4− | 0.3+ | 2004 02 19 | 704 | 1.0+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3+ | |
| 2002 09 05 | 704 | 0.7+ | 0.6+ | 2004 02 19 | 704 | (1.8+ | 0.2−) | 2006 09 27 | 691 | 0.1− | 0.2+ | |
| 2002 09 16 | 644 | 0.2− | 0.7− | 2004 03 18 | 704 | (1.8+ | 1.3−) | 2006 09 27 | 691 | 0.1− | 0.5+ | |
| 2002 09 16 | 644 | 0.4− | 0.4− | 2004 03 18 | 704 | 0.5− | 0.3− | 2006 10 01 | 704 | 0.7− | 0.5+ | |
| 2002 09 16 | 644 | 0.4− | 0.3− | 2004 03 18 | 704 | 0.6+ | 0.2− | 2006 10 01 | 704 | 0.6− | 0.7+ | |
| 2002 10 11 | 704 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.5− | 0.6+ | 2006 10 01 | 704 | 0.4+ | 0.4+ | |
| 2002 10 11 | 704 | 1.2+ | 1.3+ | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 10 01 | 704 | (1.1− | 1.6+) | |
| 2002 10 11 | 704 | 0.7− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 10 01 | 691 | 0.1− | 0.3+ | |
| 2002 10 11 | 704 | (1.8+ | 0.2−) | 2004 03 18 | 704 | 0.8+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.4+ | |
| 2004 01 23 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.0 | 1.0+ | 2006 10 01 | 691 | 0.2− | 0.3+ | |
| 2004 01 23 | 704 | 0.5− | 0.0 | 2004 03 18 | 704 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | |
| 2004 01 23 | 704 | 0.8− | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.2− | |
| 2004 01 23 | 704 | 0.6− | 0.2+ | 2004 03 19 | 704 | 1.4+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1− | |
| 2004 01 26 | 699 | (0.6− | 1.6+) | 2004 03 19 | 704 | (1.7+ | 0.1+) | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2004 01 26 | 699 | 0.2+ | 0.2− | 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | |
| 2004 01 26 | 699 | 1.1− | 0.9+ | 2004 03 20 | 704 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ | |
| 2004 01 26 | 699 | (0.9− | 2.7+) | 2004 03 20 | 704 | 1.0+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.1− | |
| 2004 01 29 | 704 | (0.3+ | 2.4+) | 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.6+ | |
| 2004 01 29 | 704 | 0.9− | 0.5+ | 2004 03 20 | 704 | 0.4+ | 1.4+ | 2006 10 22 | 703 | 0.1− | 0.1− | |
| 2004 01 29 | 704 | 0.7− | 0.0 | 2006 09 14 | 703 | 1.0+ | 0.3− | 2006 10 22 | 703 | 0.0 | 0.6− | |

**(144112)∗ 2004 BM$_{75}$ = 2002 TL$_{355}$**

Discovered 2004 Jan. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57608)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.71389 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27429159 | $\omega$ | 316.59789 | | −0.94233106 | −0.33148019 | |
| $a$ | 2.3459985 | $\Omega$ | 204.15877 | | +0.32955368 | −0.89494847 | |
| $e$ | 0.1417100 | $i$ | 6.47952 | | +0.05836558 | −0.29864379 | |
| $P$ | 3.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 20 | 699 | (0.5+ | 2.3+) | 2004 02 18 | 704 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.0 | |
| 2001 06 20 | 699 | (1.0− | 1.5+) | 2004 02 18 | 704 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.3+ | |
| 2001 06 20 | 699 | 0.2+ | 1.3+ | 2004 02 18 | 704 | 0.1− | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.3+ | |
| 2001 06 20 | 699 | (0.1− | 2.1+) | 2004 03 15 | 704 | 0.5− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 1.1+ | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.1− | |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.1− | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.6− | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.0 | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.7− | 0.2− | |
| 2004 01 23 | 699 | 0.1+ | 0.1− | 2005 06 06 | 691 | 0.1− | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.3+ | |
| 2004 01 23 | 699 | 0.2− | 0.1+ | 2005 06 06 | 691 | 0.0 | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.1− | |
| 2004 01 23 | 699 | 0.9− | 0.4− | 2005 06 06 | 691 | 0.1− | 1.0+ | 2006 10 27 | 691 | 0.3+ | 0.0 | |
| 2004 01 23 | 699 | 0.0 | 0.1+ | 2005 07 01 | 644 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.4+ | |
| 2004 01 27 | 699 | 0.8− | 0.3− | 2005 07 01 | 644 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | |
| 2004 01 27 | 699 | 0.6− | 0.1− | 2005 07 01 | 644 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.3+ | |
| 2004 01 27 | 699 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.6+ | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.1+ | |
| 2004 01 27 | 699 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2004 01 29 | 704 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 01 29 | 704 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2004 01 29 | 704 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2004 01 29 | 704 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2004 02 17 | 608 | 1.2+ | 0.9+ | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.6+ | 1.4− |
| 2004 02 17 | 608 | 1.2+ | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2004 02 17 | 608 | 1.4+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | (1.6+ | 0.2+) |
| 2004 02 18 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2004 02 18 | 704 | 0.4− | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.4+ | | | | |

**(144113)∗ 2004 BN$_{75}$ = 2002 TC$_{221}$**

Discovered 2004 Jan. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 57608)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.09533 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24040478 | $\omega$ | 254.24723 | | −0.69169268 | | −0.69184625 |
| $a$ | 2.5615764 | $\Omega$ | 241.44016 | | +0.71930983 | | −0.63438411 |
| $e$ | 0.0342658 | $i$ | 13.64146 | | +0.06445630 | | −0.34482688 |
| $P$ | 4.10 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.4+ | 0.0 | 2004 01 23 | 699 | 0.6− | 0.2− | 2005 06 27 | 644 | 0.3+ | 0.3+ |
| 2000 03 09 | 704 | 1.1− | 0.1+ | 2004 01 23 | 699 | 0.6− | 0.6+ | 2005 06 27 | 644 | 0.7+ | 0.1+ |
| 2000 03 09 | 704 | 0.7+ | 1.7− | 2004 01 23 | 699 | 0.0 | 0.2− | 2005 06 27 | 644 | 0.7+ | 0.6+ |
| 2000 03 09 | 704 | 0.8− | 0.7+ | 2004 01 27 | 699 | 0.0 | 0.1+ | 2005 06 28 | 599 | 0.3+ | 0.4+ |
| 2002 10 06 | 699 | (2.3− | 1.3+) | 2004 01 27 | 699 | 0.2− | 0.4+ | 2005 06 28 | 599 | 0.1− | 0.3+ |
| 2002 10 06 | 699 | 0.9− | 0.1+ | 2004 01 27 | 699 | 0.1+ | 0.0 | 2005 06 28 | 599 | 0.9− | 0.1− |
| 2002 10 06 | 699 | 0.1+ | 1.3+ | 2004 01 27 | 699 | 0.4+ | 0.0 | 2006 09 16 | 703 | (1.8+ | 0.4+) |
| 2002 10 06 | 699 | 0.8− | 0.1− | 2004 01 28 | 704 | 0.0 | 0.6+ | 2006 09 16 | 703 | 0.1− | 1.3+ |
| 2002 10 06 | 704 | 0.3+ | 0.0 | 2004 01 28 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.3+ | 0.3+ |
| 2002 10 06 | 704 | 0.0 | 0.2− | 2004 01 28 | 704 | 0.9+ | 0.1− | 2006 09 16 | 703 | 0.3+ | 0.8+ |
| 2002 10 06 | 704 | 0.2+ | 0.6+ | 2004 01 28 | 704 | 0.4+ | 0.0 | 2006 09 28 | 703 | (2.3+ | 2.0+) |
| 2002 10 06 | 704 | 0.7+ | 0.1+ | 2004 01 28 | 704 | 0.5+ | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.1+ |
| 2002 10 09 | 704 | 0.3+ | 0.0 | 2004 02 12 | 644 | 0.2+ | 0.6+ | 2006 09 28 | 703 | 1.0− | 0.7+ |
| 2002 10 09 | 704 | 0.1− | 1.2+ | 2004 02 12 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.6+ | 0.2− |
| 2002 10 09 | 704 | 0.2+ | 0.6+ | 2004 02 12 | 644 | 0.4+ | 0.5+ | 2006 10 16 | 106 | 0.0 | 1.6− |
| 2002 10 09 | 704 | 0.4− | 0.1− | 2005 06 05 | 704 | 0.1− | 0.4+ | 2006 10 16 | 106 | 1.3+ | 1.4− |
| 2002 10 09 | 704 | 0.1− | 0.6+ | 2005 06 05 | 704 | 0.5− | 0.1+ | 2006 10 16 | 106 | 0.3+ | 0.6− |
| 2003 12 28 | 699 | 1.3+ | 0.9+ | 2005 06 05 | 704 | 0.2− | 0.7+ | 2006 10 16 | 106 | 0.0 | 0.2− |
| 2003 12 28 | 699 | 0.6− | 0.1− | 2005 06 11 | 703 | 0.1− | 0.4− | 2006 10 20 | 703 | 0.3+ | 0.3− |
| 2003 12 28 | 699 | 0.4+ | 0.1− | 2005 06 11 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.2− |
| 2003 12 28 | 699 | 0.1+ | 0.2+ | 2005 06 11 | 703 | (2.1− | 1.9−) | 2006 10 20 | 703 | 0.5− | 0.5− |
| 2004 01 23 | 699 | 1.2− | 1.2− | 2005 06 11 | 703 | (0.3+ | 2.3−) | 2006 10 20 | 703 | 0.6− | 0.5− |

**(144114)∗ 2004 BW$_{75}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.39667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27688846 | $\omega$ | 111.27171 | | −0.89736041 | | +0.43233119 |
| $a$ | 2.3313071 | $\Omega$ | 94.43467 | | −0.43061256 | | −0.81396810 |
| $e$ | 0.0845906 | $i$ | 5.09319 | | −0.09652525 | | −0.38800217 |
| $P$ | 3.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 05 08 | 260 | 1.8− | 0.2+ | 2004 02 11 | 644 | 0.0 | 0.4+ | 2004 03 17 | 704 | 0.3+ | 0.1− |
| 1983 05 08 | 260 | 1.3+ | 1.1− | 2004 02 11 | 644 | 0.2− | 0.3+ | 2004 03 17 | 704 | 0.2+ | 0.0 |
| 1997 04 13 | 327 | 0.3+ | 0.2+ | 2004 02 11 | 644 | 0.5− | 0.4+ | 2004 03 17 | 704 | 1.3+ | 0.4+ |
| 1997 04 13 | 327 | 0.2− | 0.1+ | 2004 02 11 | 644 | 0.2− | 0.3+ | 2004 03 17 | 704 | 0.4− | 0.3+ |
| 1997 04 13 | 327 | 0.7+ | 0.1− | 2004 02 17 | A17 | 0.7− | 0.3− | 2004 03 17 | 704 | 1.1+ | 0.5− |
| 2002 09 06 | 599 | 0.0 | 0.3+ | 2004 02 17 | A17 | 0.1− | 0.2− | 2004 03 17 | 704 | 0.2− | 0.1+ |
| 2002 09 06 | 599 | 0.4+ | 0.5+ | 2004 02 17 | 704 | 0.4− | 0.1+ | 2004 03 17 | 704 | 0.2− | 0.1+ |
| 2002 09 06 | 599 | 0.4− | 0.6+ | 2004 02 17 | 704 | 0.1+ | 0.5+ | 2004 03 17 | 704 | 0.3+ | 0.6+ |
| 2002 09 06 | 599 | 0.3+ | 0.1− | 2004 02 17 | 704 | 0.1+ | 0.1− | 2004 03 29 | 703 | 0.6− | 0.1+ |
| 2002 10 11 | 644 | 0.6− | 0.6+ | 2004 02 17 | 704 | 0.7− | 0.9− | 2004 03 29 | 703 | (1.5− | 2.3+) |
| 2002 10 11 | 644 | 0.4− | 0.6+ | 2004 02 17 | 704 | 0.4− | 0.1− | 2004 03 29 | 703 | 1.2− | 0.5+ |
| 2002 10 11 | 644 | 0.4− | 0.6+ | 2004 02 18 | 691 | 0.2− | 0.0 | 2004 03 29 | 703 | 0.1− | 0.5+ |
| 2003 12 27 | 704 | 1.4+ | 0.6+ | 2004 02 18 | 608 | 0.5+ | 0.6− | 2005 08 01 | E12 | 0.1− | 0.5+ |
| 2003 12 27 | 704 | 0.8− | 0.5− | 2004 02 18 | 691 | 0.1− | 0.0 | 2005 08 01 | E12 | 0.6− | 0.7+ |
| 2003 12 27 | 704 | 0.0 | 0.8− | 2004 02 18 | 608 | 0.3+ | 0.4− | 2005 08 01 | E12 | 0.3− | 0.5+ |
| 2003 12 27 | 704 | 0.7+ | 0.5− | 2004 02 18 | 608 | 0.4+ | 0.2− | 2005 08 01 | E12 | 0.1− | 0.3+ |
| 2003 12 27 | 704 | 0.0 | 0.5+ | 2004 02 18 | 691 | 0.3− | 0.1− | 2005 08 05 | 644 | 0.5− | 0.3+ |
| 2004 01 23 | 704 | 0.0 | 0.3+ | 2004 03 14 | 704 | 0.5+ | 0.7+ | 2005 08 05 | 644 | 0.4− | 0.4+ |
| 2004 01 23 | 704 | 0.3− | 0.0 | 2004 03 14 | 704 | 0.6+ | 1.0+ | 2005 08 05 | 644 | 0.3− | 0.5+ |
| 2004 01 23 | 704 | 0.3+ | 0.0 | 2004 03 14 | 704 | 0.3+ | 0.7+ | 2005 09 08 | E12 | 0.3− | 1.0+ |
| 2004 01 23 | 704 | 0.6+ | 0.3+ | 2004 03 14 | 704 | 0.0 | 0.1− | 2005 09 08 | E12 | 0.1+ | 0.1+ |
| 2004 01 27 | 704 | 0.8+ | 0.0 | 2004 03 14 | 704 | 0.6+ | 0.3+ | 2005 09 08 | E12 | 0.9+ | 0.1+ |
| 2004 01 27 | 704 | 0.1+ | 1.1− | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2005 09 08 | E12 | 0.3+ | 0.7+ |
| 2004 01 27 | 704 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.4− | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 01 27 | 704 | 0.8+ | 0.3− | 2004 03 15 | 704 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2004 01 28 | 704 | 0.3+ | 0.1− | 2004 03 15 | 704 | 0.7− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 01 28 | 704 | 0.7+ | 0.4+ | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 01 28 | 704 | 0.1+ | 0.0 | 2004 03 16 | 704 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2004 01 28 | 704 | 0.3+ | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2004 01 29 | 704 | 0.6+ | 0.8+ | 2004 03 16 | 704 | 0.2− | 0.6− | 2006 12 01 | 691 | 0.2+ | 0.3− |
| 2004 01 29 | 704 | 0.6+ | 0.3− | 2004 03 16 | 704 | 0.5− | 0.8+ | 2006 12 01 | 691 | 0.2+ | 0.0 |
| 2004 01 29 | 704 | (1.1+ | 1.9+) | 2004 03 16 | 704 | 0.8− | 0.9+ | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2004 03 17 | 704 | 0.7+ | 0.3− | | | | |
| 2004 02 11 | 644 | 0.1− | 0.4+ | 2004 03 17 | 704 | 0.9− | 0.8+ | | | | |

**(144115)∗ 2004 BR$_{76}$ = 2002 VZ$_{7}$**

Discovered 2004 Jan. 25 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 69649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.29123 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24173055 | $\omega$ | 23.44629 | | +0.04119950 | | +0.99114802 |
| $a$ | 2.5522019 | $\Omega$ | 249.11035 | | −0.93675597 | | −0.00562052 |
| $e$ | 0.0676128 | $i$ | 7.76362 | | −0.34754980 | | +0.13264245 |
| $P$ | 4.08 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 0.3+ | 1.0+ | 2004 01 27 | 699 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.0 |
| 1998 11 11 | 704 | (1.4+ | 2.8−) | 2004 01 27 | 699 | (2.3− | 3.4+) | 2006 10 11 | 644 | 0.3− | 0.0 |
| 1998 11 11 | 704 | 0.6− | 0.8− | 2004 02 11 | 644 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1998 11 11 | 704 | (4.0− | 2.2−) | 2004 02 11 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.5− | 0.2+ | 2004 02 11 | 644 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2002 10 12 | 704 | 0.1− | 0.9+ | 2005 06 23 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 1.2− | 1.2− |
| 2002 10 12 | 704 | (1.8− | 1.1+) | 2005 06 23 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.5+ |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2005 06 23 | 644 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2002 11 01 | 644 | 0.0 | 0.3+ | 2005 07 04 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2002 11 01 | 644 | 0.4+ | 0.1+ | 2005 07 04 | 644 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2002 11 01 | 644 | 0.2− | 0.5+ | 2005 07 04 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 11 05 | 704 | 0.6+ | 0.2− | 2005 08 04 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 11 05 | 704 | 0.6+ | 0.5− | 2005 08 04 | 644 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 11 05 | 704 | 0.6+ | 0.4− | 2005 08 04 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 11 05 | 704 | 0.5− | 0.3− | 2006 09 16 | 703 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2004 01 18 | 703 | (0.8− | 1.7+) | 2006 09 16 | 703 | 0.7− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2004 01 18 | 703 | 0.2+ | 0.6+ | 2006 09 16 | 703 | 0.7− | 0.4− | 2006 11 19 | 704 | 1.2− | 0.3+ |
| 2004 01 18 | 703 | 0.8+ | 0.7− | 2006 09 20 | 699 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2004 01 18 | 703 | 0.6− | 1.3+ | 2006 09 20 | 699 | (1.6+ | 0.4−) | 2006 11 19 | 704 | 0.8+ | 0.3+ |
| 2004 01 25 | 608 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.6+ | 0.1+ | 2006 11 22 | 704 | 1.2+ | 0.9+ |
| 2004 01 25 | 608 | 0.2+ | 0.5− | 2006 09 20 | 699 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.9+ | 0.4+ |
| 2004 01 25 | 608 | 0.1+ | 0.5− | 2006 09 28 | 703 | 0.5− | 0.9+ | 2006 11 22 | 704 | 0.2+ | 0.4− |
| 2004 01 27 | 699 | 0.8+ | 0.2+ | 2006 09 28 | 703 | 0.7+ | 1.0− | 2006 11 22 | 704 | 0.4− | 0.9+ |
| 2004 01 27 | 699 | 0.3− | 0.5+ | 2006 09 28 | 703 | (1.3+ | 3.0−) | | | | |

**(144116)∗ 2004 BB$_{77}$**

Discovered 2004 Jan. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 346.11093 | | (2000.0) | | |
| $n$ | 0.25329428 | $\omega$ | 244.19427 | +0.97472182 | −0.20231207 |
| $a$ | 2.4739208 | $\Omega$ | 127.33351 | +0.22247607 | +0.91789248 |
| $e$ | 0.1232016 | $i$ | 6.84758 | −0.02053733 | +0.34138426 |
| $P$ | 3.89 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 699 | 0.9+ | 0.6+ | 2004 01 28 | 691 | 0.4+ | 0.5+ | 2006 09 15 | 704 | 0.6+ | 0.7+ |
| 2002 08 15 | 699 | 0.2− | 0.9+ | 2004 01 28 | 691 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.6− | 0.2+ |
| 2002 08 15 | 699 | 0.5+ | 0.1+ | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2002 08 15 | 699 | (1.7+ | 0.3+) | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.4− | 0.2+ |
| 2002 08 18 | 644 | 0.4− | 0.6+ | 2005 04 18 | 691 | 0.3+ | 0.8+ | 2006 09 21 | 699 | 0.0 | 0.1+ |
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2005 04 18 | 691 | 0.2− | 0.5+ | 2006 09 21 | 699 | 0.5+ | 0.9+ |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2005 04 18 | 691 | 0.4+ | 0.6+ | 2006 09 21 | 699 | 0.5+ | 0.6+ |
| 2002 08 29 | 644 | 0.4− | 0.6+ | 2006 08 21 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.6− |
| 2002 08 29 | 644 | 0.4− | 0.4+ | 2006 08 21 | 644 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.5+ |
| 2002 08 29 | 644 | 0.3− | 0.8+ | 2006 08 21 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.1− |
| 2002 09 11 | 608 | 0.0 | 1.1− | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2002 09 11 | 608 | 0.3+ | 0.7− | 2006 08 22 | 644 | 0.0 | 0.5+ | 2006 10 02 | 703 | 1.3− | 0.1− |
| 2002 09 11 | 608 | 0.1− | 1.0− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.5+ | 0.7+ |
| 2002 09 15 | 608 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.0 | 1.1+ | 2006 10 02 | 703 | 0.9− | 1.3− |
| 2002 09 15 | 608 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.7− | 0.1+ |
| 2002 09 15 | 608 | 0.3− | 0.3− | 2006 08 30 | 699 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2004 01 13 | 699 | 0.2+ | 0.3− | 2006 08 30 | 699 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2004 01 13 | 699 | 0.6+ | 0.5− | 2006 09 14 | 644 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2004 01 13 | 699 | (0.8− | 1.8+) | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2004 01 13 | 699 | (2.2− | 0.6−) | 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.4+ |
| 2004 01 21 | 704 | 0.7+ | 1.0+ | 2006 09 14 | 703 | (0.1− | 1.6+) | 2006 10 24 | 644 | 0.2− | 0.3+ |
| 2004 01 21 | 704 | 0.1+ | 1.3+ | 2006 09 14 | 703 | 0.8− | 0.4+ | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2004 01 21 | 704 | (0.8+ | 1.9+) | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2004 01 21 | 704 | 0.3+ | 1.1+ | 2006 09 14 | 703 | 0.3+ | 0.8+ | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2004 01 21 | 704 | 0.3+ | 1.2+ | 2006 09 15 | 704 | 0.4+ | 0.4+ | | | | |
| 2004 01 28 | 691 | 0.2+ | 0.3+ | 2006 09 15 | 704 | 0.8+ | 0.0 | | | | |

**(144117)∗ 2004 BU$_{79}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 328.63145 | | (2000.0) | | |
| $n$ | 0.26699926 | $\omega$ | 160.94978 | +0.57321223 | −0.81455289 |
| $a$ | 2.3885226 | $\Omega$ | 253.98127 | +0.73924917 | +0.56095848 |
| $e$ | 0.1094234 | $i$ | 5.31641 | +0.35346627 | +0.14774700 |
| $P$ | 3.69 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 10 | 691 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1997 04 10 | 691 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1997 04 10 | 691 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2000 01 05 | 704 | 0.3+ | 0.1− | 2004 02 26 | 704 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2000 01 05 | 704 | 0.2+ | 0.7− | 2005 06 13 | G96 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2000 01 05 | 704 | 0.1+ | 1.0− | 2005 06 13 | G96 | 0.3+ | 0.6+ | 2006 10 26 | 704 | 0.1− | 0.2− |
| 2000 01 05 | 704 | 0.2− | 0.7− | 2005 06 13 | G96 | 0.1+ | 0.7+ | 2006 10 26 | 704 | 0.4− | 1.2+ |
| 2000 01 05 | 704 | 1.1− | 0.5− | 2005 06 13 | G96 | 0.2+ | 0.4+ | 2006 10 26 | 704 | 0.6+ | 1.3+ |
| 2002 08 12 | 704 | 0.1+ | 0.1− | 2005 06 14 | G96 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.5− | 0.5+ |
| 2002 08 12 | 704 | 0.2− | 0.6+ | 2005 06 14 | G96 | 0.2− | 0.2+ | 2006 10 29 | 704 | 1.5− | 0.5+ |
| 2002 08 12 | 704 | 1.0+ | 0.6+ | 2005 06 14 | G96 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.4− | 0.1+ |
| 2002 08 12 | 704 | 0.1− | 0.4+ | 2005 06 28 | G96 | 0.1+ | 0.5+ | 2006 10 29 | 704 | 0.3+ | 0.1− |
| 2002 08 16 | 644 | 0.1− | 0.2− | 2005 06 28 | G96 | 0.2+ | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2002 08 16 | 644 | 0.2+ | 0.1− | 2005 06 28 | G96 | 0.0 | 0.5+ | 2006 11 06 | 644 | 0.2− | 0.1− |
| 2002 08 16 | 644 | 0.1− | 0.0 | 2005 06 28 | G96 | 0.3− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2002 09 05 | 699 | 1.3+ | 0.7+ | 2006 08 12 | 644 | 0.1− | 0.6+ | 2006 11 16 | 704 | 0.3+ | 1.1+ |
| 2002 09 05 | 699 | 0.2+ | 0.2− | 2006 08 12 | 644 | 0.1− | 0.3+ | 2006 11 16 | 704 | (0.1+ | 1.7+) |
| 2002 09 05 | 699 | 0.2+ | 0.9+ | 2006 08 12 | 644 | 0.2− | 0.5+ | 2006 11 16 | 704 | 0.9− | 1.1+ |
| 2002 09 05 | 699 | 0.9− | 0.1+ | 2006 09 18 | 704 | 1.1+ | 0.6+ | 2006 11 16 | 704 | 1.2− | 1.1− |
| 2002 09 13 | 644 | 0.3− | 0.5+ | 2006 09 18 | 704 | (0.1− | 1.8+) | 2006 11 19 | 704 | 0.6+ | 0.5− |
| 2002 09 13 | 644 | 0.2− | 0.7+ | 2006 09 18 | 704 | 0.5+ | 0.9+ | 2006 11 19 | 704 | 0.4+ | 1.0− |
| 2002 09 13 | 644 | 0.4− | 0.5+ | 2006 09 18 | 704 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 0.9+ | 0.9− |
| 2004 01 23 | 704 | 1.0+ | 1.0+ | 2006 09 30 | 703 | 0.8− | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.7− |
| 2004 01 23 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.5+ | 0.5− |
| 2004 01 23 | 704 | 1.4+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.2− | 2006 11 22 | 683 | (1.6+ | 0.2−) |
| 2004 01 23 | 704 | 1.2+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 11 22 | 683 | 0.3+ | 0.1− |
| 2004 01 23 | 704 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 11 22 | 683 | 0.8− | 0.8+ |
| 2004 01 28 | 608 | 0.3+ | 1.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | (1.6+ | 0.8−) |
| 2004 01 28 | 608 | 0.6+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2004 01 28 | 608 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2004 02 11 | 644 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 644 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 02 13 | 333 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2004 02 13 | 333 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.5+ | 1.5+ |
| 2004 02 13 | 333 | 1.1− | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.4+ | 2006 11 28 | 704 | 0.4+ | 0.5+ |
| 2004 02 19 | 608 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 28 | 704 | 1.7+ | 1.0+ |
| 2004 02 19 | 608 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.4− | 0.5− |
| 2004 02 19 | 608 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | | | |
| 2004 02 26 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | | | |

**(144118)∗ 2004 BP$_{81}$**

Discovered 2004 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 150.70474 | | (2000.0) | | |
| $n$ | 0.27059266 | $\omega$ | 162.21115 | −0.41224916 | +0.90347521 |
| $a$ | 2.3673295 | $\Omega$ | 83.30879 | −0.84959959 | −0.33469740 |
| $e$ | 0.0954435 | $i$ | 6.78863 | −0.32898507 | −0.26778761 |
| $P$ | 3.64 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 704 | 0.3+ | 0.1+ | 2003 12 22 | 704 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2001 04 24 | 704 | 0.2+ | 0.4+ | 2003 12 22 | 704 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2001 04 24 | 704 | 0.1+ | 0.3+ | 2003 12 22 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.8+ | 0.4+ |
| 2001 04 24 | 704 | 0.5+ | 0.1+ | 2003 12 22 | 704 | 0.2+ | 1.0− | 2006 10 16 | 703 | 0.2− | 1.3+ |
| 2001 04 24 | 608 | 0.6+ | 0.1+ | 2003 12 22 | 704 | 0.6− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2001 04 24 | 608 | 0.1+ | 0.7+ | 2003 12 28 | 704 | 0.1+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 04 24 | 608 | 0.1− | 0.3+ | 2003 12 28 | 704 | 0.6− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2001 05 17 | 608 | 0.4+ | 1.0− | 2003 12 28 | 704 | 0.9+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2001 05 17 | 608 | 0.5+ | 0.1− | 2003 12 28 | 704 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 05 17 | 608 | 0.4+ | 0.1− | 2004 01 13 | 699 | 0.5− | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 2001 05 18 | 704 | 0.2+ | 1.3+ | 2004 01 13 | 699 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2001 05 18 | 704 | 1.3− | 0.9+ | 2004 01 13 | 699 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 05 18 | 704 | 0.5+ | 0.7+ | 2004 01 13 | 699 | 1.1− | 0.9− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 05 18 | 704 | (1.7+ | 0.9+) | 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 05 18 | 704 | 0.8− | 1.0+ | 2004 01 26 | 699 | 0.2+ | 0.7− | 2006 11 20 | 704 | 0.4− | 1.1+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 01 26 | 699 | 0.1+ | 0.6+ | 2006 11 20 | 704 | (0.2+ | 1.8+) |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 01 26 | 699 | 0.4− | 1.1+ | 2006 11 20 | 704 | (1.7+ | 2.3+) |
| 2002 10 28 | 644 | 0.5− | 0.3− | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.1− |
| 2002 10 28 | 644 | 0.4− | 0.4+ | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.4+ |
| 2002 10 28 | 644 | 0.4− | 0.8+ | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.0 | 0.6+ |

**(144119)∗ 2004 BC$_{82}$ = 2002 VV$_{138}$ = 2006 MX$_{8}$**

Discovered 2004 Jan. 27 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 100703), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.68831 | | (2000.0) | | | |
| $n$ | 0.21476741 | $\omega$ | 182.55120 | | +0.90835966 | +0.41647802 |
| $a$ | 2.7615768 | $\Omega$ | 152.73797 | | −0.38220576 | +0.86348081 |
| $e$ | 0.0755757 | $i$ | 4.73345 | | −0.16971000 | +0.28451177 |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 21 | 691 | 0.1− | 0.4+ | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 05 30 | G96 | 0.1− | 0.0 |
| 1996 04 21 | 691 | 0.2− | 0.3+ | 2004 01 28 | 291 | 0.1+ | 0.3+ | 2006 05 30 | G96 | 0.5− | 0.0 |
| 1996 04 21 | 691 | 0.3+ | 0.0 | 2004 01 28 | 291 | 0.2− | 0.3+ | 2006 05 30 | G96 | 0.2− | 0.5+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 01 28 | 291 | 0.0 | 0.1+ | 2006 06 19 | G96 | 0.4− | 0.2− |
| 2002 10 30 | 645 | 0.1− | 0.1+ | 2005 03 09 | G96 | 0.1− | 0.1+ | 2006 06 19 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.1+ | 0.7− | 2005 03 09 | G96 | 0.1− | 0.1− | 2006 06 19 | G96 | 0.2− | 0.3− |
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2005 03 09 | G96 | 0.0 | 0.0 | 2006 06 19 | G96 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.7− | 0.7+ | 2005 03 09 | G96 | 0.6− | 0.4− | 2006 06 22 | 691 | 0.6− | 0.2+ |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2005 04 01 | 691 | 0.3+ | 0.1+ | 2006 06 22 | 691 | 0.1+ | 0.9+ |
| 2002 11 08 | 645 | 0.1+ | 0.1+ | 2005 04 01 | 691 | 0.1+ | 0.3+ | 2006 06 22 | 691 | 0.2+ | 0.3+ |
| 2003 12 22 | 691 | 0.2− | 0.1+ | 2005 04 01 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.7− | 0.3− |
| 2003 12 22 | 691 | 0.2− | 0.1+ | 2005 04 12 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2003 12 22 | 691 | 0.3− | 0.1− | 2005 04 12 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2005 04 12 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 05 30 | G96 | 0.0 | 0.1+ | | | | |

**(144120)∗ 2004 BE$_{82}$**

Discovered 2004 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 270.16634 | | (2000.0) | | | |
| $n$ | 0.28840046 | $\omega$ | 303.21065 | | −0.79047726 | −0.61128342 |
| $a$ | 2.2688481 | $\Omega$ | 199.19638 | | +0.59365082 | −0.74920077 |
| $e$ | 0.0449038 | $i$ | 6.71515 | | +0.15074618 | −0.25501134 |
| $P$ | 3.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 0.4− | 0.7+ | 2004 01 27 | 699 | 0.7− | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 1999 11 05 | 704 | 0.9− | 0.5− | 2004 01 27 | 699 | 0.1− | 0.6+ | 2006 11 16 | 691 | 0.8− | 0.4− |
| 1999 11 05 | 704 | 0.2− | 0.2+ | 2004 01 27 | 699 | 0.4− | 0.9+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 1999 11 05 | 704 | 0.1− | 0.7+ | 2004 01 27 | 699 | 0.0 | 0.9+ | 2006 11 17 | 704 | 0.7+ | 0.6+ |
| 2001 03 20 | 699 | 0.5+ | 0.6+ | 2004 01 28 | 608 | 0.4+ | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.1+ |
| 2001 03 20 | 699 | 0.6+ | 0.2+ | 2004 01 28 | 608 | 0.1+ | 0.7− | 2006 11 17 | 704 | 1.3− | 0.3− |
| 2001 03 20 | 699 | 0.9+ | 0.3+ | 2004 01 28 | 608 | 0.5+ | 0.5− | 2006 11 17 | 704 | 0.7− | 0.4+ |
| 2001 03 20 | 699 | 1.0− | 0.0 | 2004 01 29 | 704 | 1.0+ | 0.8+ | 2006 11 20 | 691 | 0.5− | 0.6+ |
| 2001 03 20 | 608 | 0.6− | 0.6+ | 2004 01 29 | 704 | 1.3+ | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2001 03 20 | 608 | 0.8− | 0.4+ | 2004 01 29 | 704 | (1.7+ | 0.3−) | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2001 03 20 | 608 | 0.4− | 0.3+ | 2004 01 29 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 704 | (0.7+ | 2.3+) |
| 2001 04 16 | 699 | 0.0 | 0.3+ | 2004 02 14 | 699 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.4− |
| 2001 04 16 | 699 | 0.2− | 0.7+ | 2004 02 14 | 699 | 0.5+ | 0.5+ | 2006 11 20 | 704 | 0.6+ | 0.4+ |
| 2001 04 16 | 699 | 0.1− | 1.3+ | 2004 02 14 | 699 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2001 04 16 | 699 | 1.0− | 1.0+ | 2004 02 14 | 699 | 1.1+ | 0.6− | 2006 11 20 | 704 | 1.1+ | 1.0− |
| 2001 04 27 | 704 | 0.8+ | 1.0+ | 2004 02 18 | 704 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2001 04 27 | 704 | 0.8− | 0.1− | 2004 02 18 | 704 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 04 27 | 704 | 1.3+ | 0.5+ | 2004 02 18 | 704 | 0.7+ | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2001 04 27 | 704 | 0.5− | 0.1+ | 2004 02 18 | 704 | 0.2− | 0.2− | 2006 11 24 | 691 | 0.3− | 0.1− |
| 2002 08 28 | 644 | 0.0 | 0.7+ | 2004 02 18 | 608 | 0.2+ | 0.7− | 2006 11 24 | 691 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.3− | 0.3+ | 2004 02 18 | 608 | 0.4+ | 0.9− | 2006 11 24 | 691 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.1+ | 0.3+ | 2004 02 18 | 608 | 0.2+ | 0.6− | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.7+ | 2006 11 02 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 09 06 | 704 | 0.0 | 0.8+ | 2006 11 02 | G96 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.8+ | 1.3+ | 2006 11 02 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2002 09 06 | 704 | 0.4+ | 0.9+ | 2006 11 02 | G96 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.6+ | 0.1− |
| 2002 09 06 | 704 | 0.0 | 0.8+ | 2006 11 15 | 703 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.1− |
| 2002 09 13 | 644 | 0.2− | 0.2+ | 2006 11 15 | 703 | (0.6− | 1.6+) | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.7+ | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.2+ |
| 2002 09 13 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.8+ | 2006 11 28 | 704 | 0.3− | 0.8+ |

**(144121)∗ 2004 BK$_{82}$**

Discovered 2004 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 261.88210 | | (2000.0) | | | |
| $n$ | 0.22369174 | $\omega$ | 272.17304 | | +0.13559391 | −0.98993346 |
| $a$ | 2.6876296 | $\Omega$ | 169.76272 | | +0.97532625 | +0.12616831 |
| $e$ | 0.0826519 | $i$ | 13.19594 | | +0.17422112 | +0.06413505 |
| $P$ | 4.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | 0.0 | 1.7− | 2004 02 13 | 333 | 0.3− | 0.6+ | 2006 08 19 | 699 | 0.1+ | 0.4− |
| 2002 09 28 | 608 | 0.5− | 1.5− | 2004 02 13 | 333 | 0.0 | 1.0+ | 2006 08 19 | 699 | 0.7− | 0.9+ |
| 2002 09 28 | 608 | 0.5− | 1.5− | 2004 02 14 | 699 | 0.8− | 0.4+ | 2006 08 19 | 699 | 1.6− | 1.9+ |
| 2002 10 04 | 704 | 0.5+ | 0.5− | 2004 02 14 | 699 | 1.0− | 0.7− | 2006 08 28 | 699 | (0.5− | 2.1+) |
| 2002 10 04 | 704 | 0.7+ | 0.2− | 2004 02 14 | 699 | 0.3+ | 0.8+ | 2006 08 28 | 699 | 0.4+ | 1.0+ |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2004 02 14 | 699 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.0 | 0.6+ |
| 2004 01 18 | 703 | 0.3+ | 1.9+ | 2004 02 18 | 704 | 0.9+ | 0.1− | 2006 08 28 | 699 | 0.3+ | 0.5+ |
| 2004 01 18 | 703 | 0.4+ | 1.4+ | 2004 02 18 | 704 | 1.5+ | 0.4− | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 2004 01 18 | 703 | 1.3+ | 1.9+ | 2004 02 18 | 704 | 1.2+ | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.7− |
| 2004 01 18 | 703 | 0.8+ | 1.2+ | 2004 02 18 | 608 | 0.6− | 0.1− | 2006 09 14 | 703 | 1.6− | 0.4− |
| 2004 01 27 | 699 | 0.2+ | 0.4+ | 2004 02 18 | 608 | 0.5− | 0.6− | 2006 09 14 | 703 | 1.0+ | 0.1− |
| 2004 01 27 | 699 | 0.8− | 0.1− | 2004 02 18 | 608 | 0.7− | 0.3− | 2006 09 26 | 691 | 0.6+ | 0.3+ |
| 2004 01 27 | 699 | 0.4− | 0.4+ | 2004 03 19 | 704 | 0.4+ | 0.9+ | 2006 09 26 | 691 | 0.6+ | 0.5+ |
| 2004 01 27 | 699 | 1.0− | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.7− | 2006 09 26 | 691 | 0.3+ | 0.4+ |
| 2004 01 28 | 608 | 0.3− | 0.7− | 2004 03 19 | 704 | 0.3+ | 0.2− | 2006 09 28 | 691 | 0.1− | 0.2− |
| 2004 01 28 | 608 | 0.1+ | 0.6− | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.4+ |
| 2004 01 28 | 608 | 0.0 | 0.1− | 2005 05 02 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2004 01 29 | 704 | 0.9− | 1.2+ | 2005 05 02 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2+ |
| 2004 01 29 | 704 | 0.1+ | 0.0 | 2005 05 02 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2004 01 29 | 704 | 0.6+ | 1.3+ | 2006 07 21 | 703 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2004 01 29 | 704 | 0.3− | 0.2+ | 2006 07 21 | 703 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 2004 01 29 | 704 | 0.1− | 0.6+ | 2006 07 21 | 703 | 0.6− | 0.1− | 2006 09 28 | G96 | (3.0− | 0.0 ) |
| 2004 02 13 | 699 | 0.3− | 0.0 | 2006 07 21 | 703 | (2.3− | 0.2+) | 2006 09 28 | G96 | 2.9− | 0.1+ |
| 2004 02 13 | 699 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 09 28 | G96 | 1.7− | 2.4+ |
| 2004 02 13 | 699 | 0.1+ | 0.5+ | 2006 08 16 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.5+ |
| 2004 02 13 | 699 | 0.1+ | 0.6+ | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.3+ | 0.3+ |
| 2004 02 13 | 333 | 0.1− | 0.7+ | 2006 08 19 | 699 | 0.5− | 0.2− | 2006 10 01 | 691 | 0.1− | 0.4+ |

**(144122)∗ 2004 BX$_{82}$**

Discovered 2004 Jan. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 78.78557 | | (2000.0) | | | |
| $n$ | 0.22694052 | $\omega$ | 299.16108 | | +0.43532113 | +0.90015569 |
| $a$ | 2.6619181 | $\Omega$ | 356.54396 | | −0.71810346 | +0.33735860 |
| $e$ | 0.0645056 | $i$ | 14.08566 | | −0.54297600 | +0.27551569 |
| $P$ | 4.34 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 1.2+ | 0.6+ | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.1− | 0.3− |
| 2000 03 09 | 704 | 0.2− | 0.3+ | 2004 02 17 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.2− |
| 2000 03 09 | 704 | 0.0 | 1.6+ | 2004 02 17 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.7− |
| 2000 03 27 | 699 | 0.4+ | 0.4+ | 2004 02 17 | 704 | 0.4+ | 0.0 | 2006 09 16 | 703 | (0.8− | 1.7−) |
| 2000 03 27 | 699 | 0.3− | 0.2− | 2004 02 17 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.3− | 0.4+ |
| 2000 03 27 | 699 | 0.1+ | 0.0 | 2004 02 18 | 691 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2000 03 27 | 699 | 0.1− | 0.7+ | 2004 02 18 | 608 | 0.1+ | 0.8− | 2006 09 28 | 703 | 0.7− | 0.2− |
| 2000 05 01 | 699 | 0.5+ | 0.2+ | 2004 02 18 | 691 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.7+ |
| 2000 05 01 | 699 | 0.4+ | 0.1− | 2004 02 18 | 608 | 0.3+ | 0.7− | 2006 10 17 | A50 | 0.1+ | 0.1+ |
| 2000 05 01 | 699 | 0.5+ | 0.1+ | 2004 02 18 | 608 | 0.3+ | 0.7− | 2006 10 17 | A50 | 0.6− | 0.4+ |
| 2000 05 01 | 699 | 0.6+ | 0.1− | 2004 02 18 | 691 | 0.0 | 0.1− | 2006 10 18 | A50 | 0.5− | 0.3− |
| 2001 08 20 | 644 | (1.5− | 2.5+) | 2004 03 14 | 704 | 0.1+ | 0.5+ | 2006 10 18 | A50 | 0.6+ | 0.0 |
| 2001 08 20 | 644 | (1.0− | 2.4+) | 2004 03 14 | 704 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.3− | 0.3− |
| 2001 08 20 | 644 | (1.1− | 2.2+) | 2004 03 14 | 704 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.5− | 0.1+ |
| 2002 12 15 | 704 | 0.4+ | 0.8− | 2004 03 14 | 704 | 0.1+ | 0.6− | 2006 10 19 | 703 | 0.5− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 15 | 704 | 0.1− | 0.5− | 2004 03 14 | 704 | 0.6− | 0.7− | 2006 10 19 | 703 | 0.0 | 0.3+ |
| 2002 12 15 | 704 | 0.2− | 0.3+ | 2004 03 20 | 704 | (0.5+ | 1.7+) | 2006 10 21 | 704 | 0.5− | 0.8+ |
| 2004 01 23 | 699 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 704 | 1.2− | 1.0+ |
| 2004 01 23 | 699 | 1.1− | 0.4+ | 2004 03 20 | 704 | (1.0+ | 1.8+) | 2006 10 21 | 704 | (1.5+ | 0.9+) |
| 2004 01 23 | 699 | 0.3− | 0.0 | 2004 03 20 | 704 | (0.8+ | 1.8+) | 2006 10 21 | 704 | 0.4+ | 0.8+ |
| 2004 01 23 | 699 | 0.5− | 0.5− | 2004 03 20 | 704 | (0.8+ | 1.8+) | 2006 10 21 | 704 | (1.7− | 0.4+) |
| 2004 01 29 | 703 | 0.9− | 0.5− | 2004 03 22 | 704 | 0.0 | 0.5− | 2006 10 27 | 703 | 0.5+ | 0.4− |
| 2004 01 29 | 703 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.3+ | 0.4− |
| 2004 01 29 | 703 | 0.5− | 0.4− | 2004 03 22 | 704 | 0.7+ | 0.4− | 2006 10 27 | 703 | 0.4− | 0.5+ |
| 2004 01 29 | 703 | 0.6− | 0.1− | 2004 03 22 | 704 | 1.5+ | 1.0+ | 2006 10 27 | 703 | 0.6− | 0.1+ |
| 2004 01 30 | 704 | 0.5+ | 0.2+ | 2004 03 28 | 704 | 0.2− | 1.5+ | 2006 11 18 | 122 | 0.3+ | 0.3− |
| 2004 01 30 | 704 | 0.0 | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.9+ | 2006 11 18 | 122 | 0.5+ | 0.3− |
| 2004 01 30 | 704 | 0.5− | 0.2+ | 2004 03 28 | 704 | (0.8+ | 1.6+) | 2006 11 18 | 122 | 0.1+ | 0.2− |
| 2004 02 11 | 699 | 0.2− | 0.8− | 2006 08 30 | 699 | 1.3+ | 0.6− | 2006 11 23 | 703 | 0.1− | 0.2− |
| 2004 02 11 | 699 | 1.0+ | 0.7− | 2006 08 30 | 699 | 0.5− | 0.4+ | 2006 11 23 | 703 | 0.8− | 1.0+ |
| 2004 02 11 | 699 | 0.1− | 0.9+ | 2006 08 30 | 699 | 0.6+ | 1.3+ | 2006 11 23 | 703 | 0.5− | 0.2− |
| 2004 02 11 | 699 | 0.8− | 1.0+ | 2006 08 30 | 699 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.4+ | 0.5+ |

**(144123)∗ 2004 BC$_{84}$**

Discovered 2004 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.93151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23366461 | $\omega$ | 163.74276 | | +0.47433737 | +0.86949305 | |
| $a$ | 2.6106025 | $\Omega$ | 134.32966 | | −0.82763244 | +0.49378622 | |
| $e$ | 0.0348794 | $i$ | 11.10591 | | −0.30004768 | +0.01252984 | |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.3− | 0.6+ | 2004 01 31 | 691 | 0.1+ | 0.1− | 2006 09 17 | 699 | 0.3+ | 1.4− |
| 2002 10 10 | 644 | 0.2− | 0.3+ | 2004 01 31 | 691 | 0.1− | 0.0 | 2006 09 17 | 699 | (1.9+ | 1.7−) |
| 2002 10 10 | 644 | 0.3− | 0.2+ | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | (2.0− | 0.4+) |
| 2002 10 15 | 644 | 0.1+ | 0.2+ | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2002 10 15 | 644 | 0.4− | 0.1− | 2004 02 11 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.5+ |
| 2002 10 15 | 644 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.5+ |
| 2003 01 25 | 809 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 09 25 | 703 | 0.1− | 1.2+ |
| 2003 01 25 | 809 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.4− | 0.1− |
| 2003 01 25 | 809 | 0.2+ | 0.4+ | 2004 02 23 | 704 | 0.3+ | 1.0+ | 2006 09 25 | 703 | (0.1+ | 1.5+) |
| 2003 01 25 | 809 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 703 | 0.2− | 0.3+ |
| 2004 01 24 | 704 | 0.7− | 0.9+ | 2004 02 29 | 691 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.7+ |
| 2004 01 24 | 704 | 0.4+ | 0.3+ | 2004 02 29 | 691 | 0.6+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2004 02 29 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.5+ | 0.3+ |
| 2004 01 24 | 704 | 0.1+ | 0.2+ | 2005 06 14 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.8+ |
| 2004 01 24 | 704 | 0.6+ | 0.4+ | 2005 06 14 | 691 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 2004 01 28 | 704 | 0.0 | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.7+ | 2006 10 21 | 703 | (2.2+ | 0.2+) |
| 2004 01 28 | 704 | 0.4− | 0.6+ | 2005 07 01 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2004 01 28 | 704 | 0.1+ | 0.1− | 2005 07 01 | 644 | 0.2+ | 0.7+ | 2006 10 28 | 703 | 1.1− | 1.8+ |
| 2004 01 28 | 704 | 0.4+ | 0.1+ | 2005 07 01 | 644 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.2+ |
| 2004 01 28 | 704 | 0.9+ | 0.7+ | 2006 09 17 | 699 | 0.6− | 1.2+ | 2006 10 28 | 703 | 1.5− | 1.4+ |
| 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 09 17 | 699 | 0.9+ | 1.4− | 2006 10 28 | 703 | 0.4+ | 2.0+ |

**(144124)∗ 2004 BR$_{86}$ = 2002 TM$_{237}$**

Discovered 2004 Jan. 28 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61824)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.50618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22968982 | $\omega$ | 252.61187 | | −0.64986230 | +0.75429884 | |
| $a$ | 2.6406340 | $\Omega$ | 336.06919 | | −0.58024661 | −0.57168874 | |
| $e$ | 0.0432427 | $i$ | 13.30342 | | −0.49091023 | −0.32280837 | |
| $P$ | 4.29 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 704 | 0.1− | 1.3+ | 2004 01 31 | 599 | 0.4+ | 0.0 | 2006 09 06 | 644 | 0.0 | 0.2+ |
| 2000 03 08 | 704 | 1.0+ | 1.1+ | 2004 01 31 | 599 | 0.3+ | 0.1− | 2006 09 14 | 644 | 0.3+ | 0.3+ |
| 2000 03 08 | 704 | 1.1+ | 0.4+ | 2004 02 11 | 699 | 0.1− | 0.7+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2002 10 06 | 704 | 0.2+ | 0.5− | 2004 02 11 | 699 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.0 | 0.4− | 2004 02 11 | 699 | (1.8− | 1.1+) | 2006 09 16 | 703 | 0.2+ | 0.5+ |
| 2002 10 06 | 704 | 0.1+ | 0.0 | 2004 02 11 | 699 | 0.2− | 1.0− | 2006 09 16 | 703 | (1.1− | 1.6+) |
| 2002 10 06 | 704 | 0.4+ | 0.2− | 2004 02 14 | 608 | 1.2+ | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.3+ |
| 2002 10 06 | 704 | 0.0 | 0.5− | 2004 02 14 | 608 | 1.3+ | 0.3− | 2006 09 16 | 703 | 0.3− | 0.1− |
| 2002 10 10 | 704 | (0.1+ | 1.6−) | 2004 02 14 | 608 | 0.8+ | 0.3− | 2006 09 19 | 699 | 0.4+ | 0.2− |
| 2002 10 10 | 704 | 0.3− | 0.4− | 2004 02 16 | 704 | 1.4− | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.7+ |
| 2002 10 10 | 704 | 1.1− | 1.1− | 2004 02 16 | 704 | 1.3− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 2002 10 10 | 704 | 0.2− | 1.1− | 2004 02 16 | 704 | 0.9− | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2002 10 10 | 704 | 0.3− | 1.0− | 2004 02 16 | 704 | 1.2− | 0.2− | 2006 09 21 | 106 | 0.5+ | 0.1+ |
| 2002 11 01 | 704 | 1.1+ | 0.3+ | 2004 02 19 | 608 | 1.4+ | 0.6+ | 2006 09 21 | 106 | 0.0 | 0.6+ |
| 2002 11 01 | 704 | 0.6− | 0.4+ | 2004 02 19 | 608 | (1.6+ | 0.7+) | 2006 09 21 | 106 | 0.1− | 0.4− |
| 2002 11 01 | 704 | (0.1+ | 1.6+) | 2004 02 19 | 608 | (1.9+ | 0.5+) | 2006 09 22 | 106 | 0.2+ | 0.1− |
| 2002 11 01 | 704 | 1.1+ | 1.0− | 2004 03 01 | 291 | 0.4− | 0.3+ | 2006 09 27 | 699 | 0.3+ | 0.8+ |
| 2002 11 08 | 704 | 1.4+ | 0.9+ | 2004 03 01 | 291 | 0.3− | 0.1+ | 2006 09 27 | 699 | 0.4− | 0.3+ |
| 2002 11 08 | 704 | 0.4+ | 0.5− | 2004 03 01 | 291 | 0.1+ | 0.0 | 2006 09 27 | 699 | 0.8+ | 0.9− |
| 2002 11 08 | 704 | 0.1− | 0.4− | 2004 03 19 | 704 | 0.4+ | 0.2− | 2006 09 27 | 699 | 0.0 | 0.5− |
| 2002 11 14 | 644 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.3+ | 0.0 | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 2002 11 14 | 644 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.7+ | 0.3+ | 2006 09 27 | 703 | 0.4+ | 0.3+ |
| 2002 11 14 | 644 | 0.2+ | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.7− | 0.0 |
| 2002 12 11 | 699 | (2.2− | 0.5−) | 2004 04 12 | 699 | (1.6+ | 0.0 ) | 2006 09 27 | 703 | 0.5− | 0.2− |
| 2002 12 11 | 699 | 0.5+ | 1.3− | 2004 04 12 | 699 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2002 12 11 | 699 | 1.0− | 0.0 | 2004 04 12 | 699 | 0.5+ | 1.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 12 11 | 699 | 0.5+ | 0.7+ | 2004 04 12 | 699 | (1.6− | 0.0 ) | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 11 21 | 699 | 1.0+ | 1.0− | 2006 08 29 | 703 | 0.7− | 1.1+ | 2006 10 12 | 644 | 0.4+ | 0.2+ |
| 2003 11 21 | 699 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.6− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2003 11 21 | 699 | 0.4− | 0.3− | 2006 08 29 | 703 | (2.1− | 0.0 ) | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 11 21 | 699 | (1.8+ | 0.1−) | 2006 08 29 | 703 | 0.1+ | 0.4+ | 2006 10 22 | 683 | 0.7− | 0.9− |
| 2004 01 28 | 703 | 0.2+ | 0.7+ | 2006 08 29 | 699 | 0.5+ | 0.0 | 2006 10 22 | 683 | 0.7+ | 0.4+ |
| 2004 01 28 | 703 | 0.6+ | 0.5+ | 2006 08 29 | 699 | 0.3− | 0.6+ | 2006 10 22 | 683 | 0.7− | 0.1− |
| 2004 01 28 | 703 | 0.2− | 0.3+ | 2006 08 29 | 699 | 0.4− | 1.4+ | 2006 10 23 | 703 | 0.1− | 0.5− |
| 2004 01 28 | 703 | 0.2+ | 1.0+ | 2006 08 29 | 699 | 0.0 | 0.5− | 2006 10 23 | 703 | 0.8− | 0.3+ |
| 2004 01 30 | 704 | 0.2+ | 1.0− | 2006 08 31 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 703 | 0.5− | 0.2− |
| 2004 01 30 | 704 | 0.6− | 0.4− | 2006 08 31 | 704 | 0.7− | 1.5+ | 2006 10 23 | 703 | 0.1− | 0.4− |
| 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 08 31 | 704 | 0.8− | 1.4+ | 2006 10 27 | 683 | 0.8+ | 0.7+ |
| 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 08 31 | 704 | 1.1− | 0.9+ | 2006 10 27 | 683 | 1.4− | 0.1− |
| 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 27 | 683 | 1.6− | 0.5− |
| 2004 01 31 | 599 | 0.2+ | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.1+ | | | | |

**(144125)∗ 2004 BS$_{86}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.35809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28624533 | $\omega$ | 19.02422 | | +0.99946763 | +0.02624042 | |
| $a$ | 2.2802219 | $\Omega$ | 339.44312 | | −0.03212631 | +0.89515104 | |
| $e$ | 0.1427918 | $i$ | 3.16522 | | +0.00568878 | +0.44498995 | |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.2− | 0.3− | 2002 08 29 | 644 | 0.8− | 0.7+ | 2006 11 17 | 704 | 0.2− | 0.4− |
| 1999 10 12 | 704 | 0.7+ | 0.4+ | 2002 08 29 | 644 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.5+ | 0.6− |
| 1999 10 12 | 704 | 0.2− | 0.3+ | 2004 01 22 | 704 | 0.3− | 0.7+ | 2006 11 17 | 704 | 0.6− | 0.8− |
| 1999 10 12 | 704 | 0.6+ | 1.1+ | 2004 01 22 | 704 | 0.7+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 1999 10 12 | 704 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 1999 10 22 | 704 | 0.6+ | 1.9− | 2004 01 22 | 704 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.8− | 0.1− |
| 1999 10 22 | 704 | 0.1+ | 0.5− | 2004 01 22 | 704 | 0.7+ | 0.3+ | 2006 11 17 | 644 | 0.5− | 0.3+ |
| 1999 10 22 | 704 | 0.1+ | 0.3− | 2004 02 01 | 413 | 0.2− | 0.2− | 2006 11 17 | 644 | 0.3− | 0.3+ |
| 1999 10 22 | 704 | 1.4− | 0.1+ | 2004 02 01 | 413 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.7− | 0.0 |
| 1999 10 22 | 704 | 0.5+ | 0.7+ | 2004 02 09 | 926 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.0 |
| 1999 11 11 | 703 | 1.6− | 0.0 | 2004 02 09 | 926 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.9− | 0.6− |
| 1999 11 11 | 703 | 0.4+ | 0.1− | 2004 02 09 | 926 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.0 |
| 1999 11 11 | 703 | (2.2+ | 1.7+) | 2004 02 14 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 1999 11 11 | 703 | 0.7+ | 0.6− | 2004 02 14 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2001 02 21 | 691 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2001 02 21 | 691 | 0.1− | 0.0 | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2− | 0.4− |
| 2001 02 21 | 691 | 0.2− | 0.5+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.7+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.4+ |
| 2002 07 05 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.7− | 0.4− |
| 2002 07 05 | 644 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.5− | 0.4− |
| 2002 07 14 | 644 | 0.1+ | 0.8− | 2006 10 20 | G96 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.5− | 0.3− |
| 2002 07 14 | 644 | 0.1− | 0.7− | 2006 10 27 | 703 | (0.2− | 2.5+) | 2006 11 22 | 704 | 1.4− | 0.1+ |
| 2002 07 14 | 644 | 0.1+ | 0.8− | 2006 10 27 | 703 | 0.6+ | 0.9+ | 2006 11 22 | 704 | (1.6− | 0.3+) |
| 2002 07 22 | 644 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2002 07 22 | 644 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2002 07 22 | 644 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.8+ | 1.2+ | 2006 11 22 | 704 | 1.3− | 1.0+ |
| 2002 08 13 | 704 | 1.0+ | 0.5− | 2006 11 16 | 704 | 0.1− | 1.0+ | 2006 11 27 | 704 | 1.2+ | 0.9− |
| 2002 08 13 | 704 | 0.8+ | 0.2− | 2006 11 16 | 704 | 0.7+ | 0.1+ | 2006 11 27 | 704 | 1.7+ | 0.2− |
| 2002 08 13 | 704 | 0.3− | 0.8− | 2006 11 17 | 704 | (1.7− | 2.4−) | 2006 11 27 | 704 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.4− | 0.8+ | 2006 11 17 | 704 | (0.0 | 2.0−) | 2006 11 27 | 704 | 0.9+ | 0.9− |

**(144126)∗ 2004 BJ$_{88}$ = 2000 GJ$_{24}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76393)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.17119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21162163 | $\omega$ | 34.23520 | | −0.53689105 | +0.84280740 | |
| $a$ | 2.7888769 | $\Omega$ | 203.36127 | | −0.79376974 | −0.51979196 | |
| $e$ | 0.0584489 | $i$ | 5.46026 | | −0.28579294 | −0.13961375 | |
| $P$ | 4.66 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.2+ | 0.0 | 2004 01 29 | 704 | 0.6+ | 0.9+ | 2005 06 04 | 703 | 0.0 | 0.1− |
| 1994 01 08 | 691 | 0.5− | 0.2− | 2004 01 29 | 704 | 0.4+ | 2.0+ | 2005 06 04 | 703 | 0.9− | 0.8− |
| 1994 01 08 | 691 | 0.3+ | 0.7− | 2004 01 29 | 704 | 0.5− | 0.8+ | 2005 06 04 | 703 | 0.3− | 0.4+ |
| 2000 03 27 | 699 | 1.5+ | 0.7+ | 2004 02 17 | 704 | 0.7− | 0.5+ | 2005 06 04 | 703 | 0.1− | 1.0− |
| 2000 03 27 | 699 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.2+ | 0.7− | 2005 06 08 | 691 | 0.1+ | 0.2+ |
| 2000 03 27 | 699 | 1.1+ | 0.2− | 2004 02 17 | 704 | 0.4− | 1.1+ | 2005 06 08 | 691 | 0.0 | 0.0 |
| 2000 03 27 | 699 | 0.1− | 1.4+ | 2004 02 17 | 704 | 0.5− | 0.9+ | 2005 06 08 | 691 | 0.0 | 0.2+ |
| 2000 03 30 | 691 | 0.7− | 0.1− | 2004 02 17 | 608 | 1.2− | 0.4− | 2005 06 12 | 691 | 0.3+ | 0.2+ |
| 2000 03 30 | 691 | 0.9− | 0.2− | 2004 02 17 | 608 | 0.1+ | 0.5+ | 2005 06 12 | 691 | 0.1− | 0.0 |
| 2000 03 30 | 691 | 0.9− | 0.3− | 2004 02 17 | 608 | 0.3+ | 0.9− | 2005 06 12 | 691 | 0.1+ | 0.1− |
| 2000 04 05 | 699 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.5− | 0.4+ | 2005 06 16 | 691 | 0.1+ | 0.3− |
| 2000 04 05 | 704 | 0.4+ | 0.6+ | 2004 02 23 | 704 | 0.6− | 0.7+ | 2005 06 16 | 691 | 0.2− | 0.1− |
| 2000 04 05 | 699 | 1.1+ | 0.2+ | 2004 02 23 | 704 | 0.5− | 0.1+ | 2005 06 16 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 1.2+ | 0.2− | 2004 02 23 | 704 | 1.3+ | 1.0− | 2006 08 22 | 644 | 0.4− | 0.4+ |
| 2000 04 05 | 699 | 0.1− | 0.1− | 2004 02 26 | 704 | 1.1+ | 0.7+ | 2006 08 22 | 644 | 0.1− | 0.1+ |
| 2000 04 05 | 704 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.3+ | 0.2− | 2006 08 22 | 644 | 0.6− | 0.2+ |
| 2000 04 05 | 699 | 0.1+ | 1.5+ | 2004 02 26 | 704 | 0.1+ | 0.4− | 2006 08 29 | 691 | 0.3− | 0.5+ |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2004 02 26 | 704 | 1.6+ | 0.8+ | 2006 08 29 | 691 | 0.3− | 0.3+ |
| 2000 04 05 | 704 | 0.7+ | 0.2− | 2005 05 03 | 704 | 0.4− | 0.5− | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2000 04 06 | 704 | 0.7− | 1.2+ | 2005 05 03 | 704 | 0.6+ | 0.4+ | 2006 08 30 | 699 | 0.6+ | 1.7+ |
| 2000 04 06 | 704 | 0.6+ | 0.2− | 2005 05 03 | 704 | 0.9+ | 1.7− | 2006 08 30 | 704 | 0.2+ | 1.3+ |
| 2000 04 06 | 704 | 0.5+ | 0.0 | 2005 05 03 | 704 | 0.7+ | 0.1− | 2006 08 30 | 699 | 0.5− | 0.8+ |
| 2000 04 06 | 704 | 2.0+ | 1.1− | 2005 05 08 | 704 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.6+ | 0.1+ |
| 2000 04 07 | 704 | 0.3− | 1.3+ | 2005 05 08 | 704 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.2+ |
| 2000 04 07 | 704 | 1.8+ | 0.3+ | 2005 05 08 | 704 | 0.5− | 0.5− | 2006 08 30 | 699 | 0.5− | 0.9+ |
| 2000 04 07 | 704 | 1.2+ | 0.8+ | 2005 05 08 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | 1.5+ | 1.5+ |
| 2000 04 07 | 704 | 1.2+ | 1.0+ | 2005 05 10 | G96 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.4− | 0.4+ |
| 2004 01 23 | 704 | 0.4+ | 0.9+ | 2005 05 10 | G96 | 0.3− | 0.1− | 2006 09 11 | 703 | 0.3+ | 0.9+ |
| 2004 01 23 | 704 | 0.0 | 0.7+ | 2005 05 10 | G96 | 0.4− | 0.2− | 2006 09 11 | 703 | 0.7− | 0.1− |
| 2004 01 23 | 704 | 0.7+ | 0.6+ | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 11 | 703 | 1.6− | 0.2− |
| 2004 01 23 | 704 | 0.1− | 1.2+ | 2005 06 04 | 691 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.2− | 0.8+ |
| 2004 01 23 | 704 | 0.4− | 1.1+ | 2005 06 04 | 691 | 0.1− | 0.2− | | | | |
| 2004 01 29 | 704 | 0.5+ | 0.7+ | 2005 06 04 | 691 | 0.1− | 0.5+ | | | | |

**(144127)∗ 2004 BM$_{88}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.78430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21438074 | $\omega$ | 105.77719 | | +0.98114420 | +0.17855308 | |
| $a$ | 2.7648965 | $\Omega$ | 243.98563 | | −0.19326005 | +0.91140949 | |
| $e$ | 0.0043615 | $i$ | 4.72274 | | +0.00256977 | +0.37074458 | |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.3+ | 1.4+ | 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.2+ |
| 2002 10 03 | 644 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.5− | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2002 10 03 | 644 | 0.3− | 0.3+ | 2004 02 23 | 704 | 1.2− | 0.9+ | 2006 08 16 | 644 | 0.4− | 0.2+ |
| 2002 10 11 | 704 | 0.5+ | 0.7+ | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 08 19 | 699 | 0.2− | 0.5− |
| 2002 10 11 | 704 | 0.4− | 1.0+ | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 08 19 | 699 | 1.1+ | 0.2− |
| 2002 10 11 | 704 | 0.6− | 0.3− | 2005 01 26 | 809 | 0.2+ | 0.3+ | 2006 08 19 | 699 | 1.2+ | 0.1− |
| 2002 10 11 | 704 | 0.5+ | 0.2+ | 2005 01 26 | 809 | 0.6− | 0.2+ | 2006 08 19 | 699 | 1.4− | 0.7− |
| 2002 10 18 | 644 | 0.3− | 0.2+ | 2005 01 26 | 809 | 0.3+ | 0.6+ | 2006 08 29 | 703 | 1.4− | 0.8− |
| 2002 10 18 | 644 | 0.3− | 0.3+ | 2005 05 07 | 691 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.0 | 1.1− |
| 2002 10 18 | 644 | 0.7− | 0.5+ | 2005 05 07 | 691 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 1.2− | 0.3− |
| 2004 01 23 | 704 | 0.2+ | 0.9− | 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 08 29 | 703 | 1.0− | 0.3− |
| 2004 01 23 | 704 | 0.6+ | 0.8+ | 2005 05 11 | 691 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.3+ | 0.2+ |
| 2004 01 23 | 704 | 1.1+ | 0.1− | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.3+ |
| 2004 01 23 | 704 | 0.4+ | 0.2+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.9− |
| 2004 01 23 | 704 | 0.4− | 1.2− | 2005 05 19 | 644 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.7+ | 0.6+ |
| 2004 01 29 | 704 | 0.4+ | 1.6+ | 2005 05 19 | 644 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.6+ |
| 2004 01 29 | 704 | 0.7+ | 0.9+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.4+ |
| 2004 01 29 | 704 | 0.2+ | 1.3+ | 2005 06 14 | G96 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.3+ |
| 2004 01 29 | 704 | 0.1− | 2.0+ | 2005 06 14 | G96 | 0.5− | 0.5− | 2006 09 23 | 691 | 0.3− | 0.6+ |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2005 06 14 | G96 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.4+ | 0.5+ | 2005 06 14 | G96 | 0.5+ | 0.3+ | | | | |

**(144128)∗ 2004 BW$_{88}$ = 2000 AM$_{123}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61827)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.84857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25283735 | $\omega$ | 189.77428 | | +0.34740054 | −0.93400865 | |
| $a$ | 2.4769005 | $\Omega$ | 239.93900 | | +0.86670801 | +0.35373820 | |
| $e$ | 0.1285021 | $i$ | 5.52376 | | +0.35795264 | +0.04997133 | |
| $P$ | 3.90 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.2− | 1.3− | 2004 01 14 | 644 | 0.4− | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.5− |
| 2000 01 05 | 704 | 0.9− | 0.6− | 2004 01 23 | 704 | 0.1+ | 0.5+ | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 2000 01 05 | 704 | 0.5+ | 0.3+ | 2004 01 23 | 704 | 0.4− | 0.6+ | 2006 08 18 | 644 | 0.4− | 0.1+ |
| 2000 01 07 | 704 | 0.0 | 0.6− | 2004 01 23 | 704 | 0.3+ | 0.9− | 2006 08 21 | 691 | 0.2+ | 0.3+ |
| 2000 01 07 | 704 | 0.1+ | 0.4− | 2004 01 23 | 704 | 0.6+ | 0.3− | 2006 08 21 | 691 | 0.2− | 0.3+ |
| 2000 01 07 | 704 | 0.0 | 0.5− | 2004 01 23 | 704 | 0.2+ | 0.5+ | 2006 08 21 | 691 | 0.2+ | 0.2+ |
| 2000 02 02 | 704 | 0.4− | 0.3+ | 2004 01 29 | 704 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.5+ |
| 2000 02 02 | 704 | 0.0 | 1.0+ | 2004 01 29 | 704 | 0.7− | 0.0 | 2006 08 29 | 703 | 0.9− | 0.0 |
| 2000 02 02 | 704 | 0.0 | 0.4+ | 2004 01 29 | 704 | 0.1− | 0.9− | 2006 08 29 | 703 | 1.5− | 0.3+ |
| 2002 08 12 | 704 | 1.4+ | 1.5+ | 2004 01 29 | 704 | 0.1+ | 0.7− | 2006 08 29 | 703 | 0.8− | 0.4− |
| 2002 08 12 | 704 | 1.8+ | 0.2+ | 2004 02 14 | 699 | 1.5− | 0.6+ | 2006 09 18 | 703 | 0.3+ | 0.6− |
| 2002 08 12 | 704 | (2.9+ | 0.1+) | 2004 02 14 | 699 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.8− | 0.4− |
| 2002 08 16 | 644 | 0.1+ | 0.5− | 2004 02 14 | 699 | 1.3− | 1.0− | 2006 09 18 | 703 | 0.0 | 0.7− |
| 2002 08 16 | 644 | 0.3− | 0.2− | 2004 02 14 | 699 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.5+ | 0.4− |
| 2002 08 16 | 644 | 0.2− | 0.3− | 2004 02 18 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.9+ | 0.0 |
| 2002 08 26 | 644 | 0.4− | 0.6+ | 2004 02 18 | 704 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.3− |
| 2002 08 26 | 644 | 0.1+ | 1.5+ | 2004 02 18 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.2+ |
| 2002 08 26 | 644 | 0.5− | 0.2+ | 2004 02 18 | 704 | 0.4− | 0.7+ | 2006 09 20 | 699 | 1.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.4− | 1.8− | 2004 02 23 | 704 | 1.2+ | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.2− |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2004 02 23 | 704 | 1.1+ | 1.2+ | 2006 09 25 | 704 | 0.3− | 1.2+ |
| 2002 09 06 | 704 | 0.3− | 0.5− | 2004 02 23 | 704 | 1.1+ | 0.9+ | 2006 09 25 | 704 | 0.4− | 0.0 |
| 2002 09 13 | 644 | 0.6− | 0.1+ | 2004 02 23 | 704 | 1.1+ | 1.2+ | 2006 09 25 | 704 | 0.3+ | 0.3− |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.9+ | 0.5+ | 2006 09 30 | 699 | 0.0 | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.5− | 0.4+ | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 699 | 0.7+ | 0.8+ |
| 2004 01 14 | 644 | 0.0 | 0.1+ | 2004 03 11 | 644 | 0.4− | 0.4+ | 2006 09 30 | 699 | 0.2− | 0.1+ |
| 2004 01 14 | 644 | 0.1+ | 0.1+ | 2004 03 11 | 644 | 0.1− | 0.2− | 2006 09 30 | 699 | 0.8− | 0.3− |

**(144129)∗ 2004 BA$_{89}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.51644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25202867 | $\omega$ | 167.11177 | | +0.67359264 | −0.73520535 | |
| $a$ | 2.4821961 | $\Omega$ | 240.48605 | | +0.67015083 | +0.65078725 | |
| $e$ | 0.1926442 | $i$ | 4.99714 | | +0.31172236 | +0.18960235 | |
| $P$ | 3.91 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.6− | 0.3+ | 2004 01 23 | 704 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.2− |
| 2000 01 07 | 704 | 0.0 | 0.0 | 2004 01 29 | 704 | 1.4+ | 0.2− | 2006 08 28 | 699 | 0.4+ | 1.5+ |
| 2000 01 07 | 704 | 0.3− | 0.4− | 2004 01 29 | 704 | 0.1+ | 0.7+ | 2006 08 28 | 699 | 0.9− | 0.2+ |
| 2000 01 07 | 704 | 0.1+ | 0.5+ | 2004 01 29 | 704 | 1.5+ | 0.3+ | 2006 08 29 | 703 | 0.6+ | 0.1− |
| 2000 01 07 | 704 | 0.6+ | 0.3+ | 2004 01 29 | 704 | (2.2+ | 0.7+) | 2006 08 29 | 703 | 0.3− | 0.0 |
| 2000 02 02 | 704 | 0.1− | 1.3+ | 2004 02 13 | 699 | 0.8− | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.3− |
| 2000 02 02 | 704 | 0.0 | 0.1+ | 2004 02 13 | 699 | 0.0 | 0.8+ | 2006 08 29 | 703 | 0.8− | 0.0 |
| 2000 02 02 | 704 | 0.1+ | 0.6+ | 2004 02 13 | 699 | 0.2− | 0.6+ | 2006 08 30 | 704 | 0.4− | 1.5+ |
| 2000 02 02 | 704 | 0.1− | 0.1− | 2004 02 13 | 699 | 0.7+ | 0.9+ | 2006 08 30 | 704 | (1.1+ | 1.8+) |
| 2000 02 02 | 704 | 1.1− | 0.4+ | 2004 02 18 | 704 | 0.2− | 0.5+ | 2006 08 30 | 704 | 0.4− | 0.2+ |
| 2002 07 21 | 644 | 0.1+ | 0.7+ | 2004 02 18 | 704 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 0.7+ | 0.4+ |
| 2002 07 21 | 644 | 0.2+ | 0.7+ | 2004 02 18 | 704 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.3− | 1.2+ |
| 2002 07 21 | 644 | 0.3+ | 0.5+ | 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.0 | 1.1+ |
| 2002 08 26 | 644 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 1.4− | 1.0+ | 2006 09 14 | 703 | 0.7− | 1.3− |
| 2002 08 26 | 644 | 0.4+ | 0.6+ | 2005 05 10 | G96 | 1.1+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2002 08 26 | 644 | 0.4+ | 0.3+ | 2005 05 10 | G96 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 1.4+ | 0.4+ |
| 2004 01 23 | 704 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.1+ | 1.5− |
| 2004 01 23 | 704 | 0.7+ | 0.5− | 2006 08 16 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 2.0− | 1.2− |
| 2004 01 23 | 704 | 0.2− | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.2+ |
| 2004 01 23 | 704 | 0.6+ | 0.1− | 2006 08 28 | 699 | 0.4− | 0.5+ | | | | |

**(144130)∗ 2004 BM$_{89}$ = 1999 VP$_{206}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61828)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.83940 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27514425 | $\omega$ | 250.71010 | | −0.79510339 | −0.60119914 | |
| $a$ | 2.3411492 | $\Omega$ | 252.25468 | | +0.58313903 | −0.72170731 | |
| $e$ | 0.1992633 | $i$ | 4.80707 | | +0.16661176 | −0.34307166 | |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 10 | 691 | 0.1+ | 0.0 | 2004 02 04 | 608 | 1.0+ | 0.5− | 2005 06 29 | 691 | 0.1+ | 0.4+ |
| 1997 04 10 | 691 | 0.1+ | 0.4+ | 2004 02 04 | 608 | 1.2+ | 0.0 | 2005 07 08 | 691 | 0.1− | 0.6+ |
| 1997 04 10 | 691 | 0.2+ | 0.7+ | 2004 02 12 | 644 | 0.0 | 0.3+ | 2005 07 08 | 691 | 0.3− | 0.6+ |
| 1999 11 09 | 703 | 0.8− | 1.2+ | 2004 02 12 | 644 | 0.0 | 0.3+ | 2005 07 08 | 691 | 0.1− | 0.7+ |
| 1999 11 09 | 703 | 0.4+ | 0.4+ | 2004 02 12 | 644 | 0.1+ | 0.3+ | 2005 07 11 | G96 | 0.4− | 0.2+ |
| 1999 11 09 | 703 | 0.3− | 1.2+ | 2004 02 13 | 699 | 0.3− | 0.3+ | 2005 07 11 | G96 | 0.4− | 1.4− |
| 1999 11 09 | 703 | 0.7+ | 1.1− | 2004 02 13 | 699 | 0.3− | 0.2− | 2005 07 11 | G96 | 0.1+ | 0.0 |
| 1999 11 14 | 704 | 0.2− | 0.3− | 2004 02 13 | 699 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.5− | 0.3+ |
| 1999 11 14 | 704 | 0.3+ | 0.0 | 2004 02 13 | 699 | 0.3− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 1999 11 14 | 704 | 0.4− | 0.2+ | 2004 02 19 | 704 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 1999 11 14 | 704 | 0.0 | 0.5+ | 2004 02 19 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.4+ |
| 1999 11 14 | 704 | 0.4+ | 0.1+ | 2004 02 19 | 704 | 0.7− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 10 11 | 645 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.5+ |
| 2003 11 30 | 704 | 0.5+ | 0.9+ | 2004 02 23 | 704 | 0.4− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2003 11 30 | 704 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2003 11 30 | 704 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.4− | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.1− |
| 2003 12 22 | 704 | 0.8− | 0.0 | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.8− | 0.0 | 2004 03 12 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2003 12 22 | 704 | 0.3− | 0.7+ | 2004 03 12 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2004 01 23 | 704 | 0.1+ | 0.2+ | 2004 03 12 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 01 23 | 704 | 0.5− | 0.2− | 2004 03 15 | 704 | 1.0+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 01 23 | 704 | 0.5+ | 0.9− | 2004 03 15 | 704 | 0.8+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 01 29 | 704 | (0.4+ | 1.6+) | 2004 03 15 | 704 | 1.2+ | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2004 01 29 | 704 | 0.7+ | 1.1+ | 2004 03 15 | 704 | 0.4+ | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2004 01 29 | 704 | 0.5+ | 1.0+ | 2004 03 15 | 704 | 0.6+ | 0.9+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2004 01 29 | 704 | 0.2− | 0.4+ | 2004 04 19 | 704 | 0.2− | 1.1+ | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2004 01 29 | 704 | 0.5+ | 0.8+ | 2004 04 19 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2004 01 30 | 608 | 0.1− | 0.4− | 2004 04 19 | 704 | 0.7+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2004 01 30 | 608 | 0.3− | 0.0 | 2004 04 19 | 704 | 0.5+ | 1.1+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2004 01 30 | 608 | 0.1− | 0.4− | 2005 06 29 | 691 | 0.2+ | 0.8+ | 2006 11 22 | 704 | 1.2+ | 0.0 |
| 2004 02 04 | 608 | 0.6+ | 0.4− | 2005 06 29 | 691 | 0.1− | 0.7+ | 2006 11 22 | 704 | 0.9+ | 0.5+ |

**(144131)∗ 2004 BN$_{89}$ = 2002 VZ$_{20}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61829)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.85066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21392492 | $\omega$ | 177.93535 | | −0.34150312 | −0.93122800 | |
| $a$ | 2.7688226 | $\Omega$ | 292.01386 | | +0.86034485 | −0.25522277 | |
| $e$ | 0.0714015 | $i$ | 7.88853 | | +0.37839445 | −0.26014564 | |
| $P$ | 4.61 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | (0.1− | 2.8−) | 2002 11 05 | 704 | 0.6+ | 0.9+ | 2004 02 26 | 704 | 0.2− | 0.3+ |
| 1998 12 17 | 704 | 0.1+ | 0.9− | 2002 11 06 | 704 | 0.1+ | 1.1− | 2004 02 26 | 704 | 0.4− | 0.1− |
| 1998 12 17 | 704 | 0.0 | 1.5− | 2002 11 06 | 704 | 0.4+ | 1.2− | 2004 02 26 | 704 | 0.0 | 0.2− |
| 1998 12 17 | 704 | 0.5+ | 1.1+ | 2002 11 06 | 704 | 0.1− | 0.5− | 2004 03 12 | 644 | 0.2+ | 0.4+ |
| 2002 10 05 | 704 | 0.6+ | 0.5− | 2002 11 06 | 704 | 0.1− | 1.1− | 2004 03 12 | 644 | 0.2+ | 0.5+ |
| 2002 10 05 | 704 | 0.6− | 1.1− | 2002 11 13 | 644 | 0.3− | 0.3− | 2004 03 12 | 644 | 0.3+ | 0.4+ |
| 2002 10 05 | 704 | 0.0 | 0.3+ | 2002 11 13 | 644 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.3− | 0.6+ |
| 2002 10 05 | 704 | 0.1− | 0.5− | 2002 11 13 | 644 | 0.1− | 0.2− | 2004 03 15 | 704 | 0.7+ | 0.0 |
| 2002 10 11 | 704 | 0.6− | 0.2+ | 2004 01 23 | 704 | 0.5− | 0.2− | 2004 03 15 | 704 | 1.1+ | 0.0 |
| 2002 10 11 | 704 | 0.6+ | 0.1+ | 2004 01 23 | 704 | 0.8− | 0.1+ | 2004 03 15 | 704 | 0.8+ | 0.6+ |
| 2002 10 11 | 704 | 0.0 | 1.7+ | 2004 01 23 | 704 | 0.4− | 0.7+ | 2006 08 27 | 699 | 0.2− | 1.8+ |
| 2002 10 11 | 704 | 1.0− | 0.2+ | 2004 01 23 | 704 | 0.3− | 0.9+ | 2006 08 27 | 699 | 1.5− | 1.2+ |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2004 01 29 | 704 | 0.1− | 0.6+ | 2006 08 27 | 699 | 0.8− | 0.8− |
| 2002 10 11 | 704 | 0.3− | 1.1− | 2004 01 29 | 704 | 0.2+ | 1.1+ | 2006 08 27 | 699 | 0.3+ | 0.8+ |
| 2002 10 11 | 704 | 0.7+ | 0.5+ | 2004 01 29 | 704 | 0.7− | 1.2+ | 2006 09 15 | 691 | 0.4− | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2004 01 29 | 704 | 0.3+ | 2.0+ | 2006 09 15 | 691 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.1+ | 1.3− | 2004 02 11 | 644 | 0.6+ | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.2− |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 09 17 | 691 | 0.8+ | 1.8+ |
| 2002 10 11 | 704 | 0.9+ | 0.9+ | 2004 02 11 | 644 | 0.4+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.8+ | 0.2+ | 2004 02 13 | 699 | 0.3+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2004 02 13 | 699 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.8+ | 0.2− | 2004 02 13 | 699 | 0.3+ | 1.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.1− | 1.1+ | 2004 02 13 | 699 | 0.9+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2004 02 18 | 704 | 1.1+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.1− | 2004 02 18 | 704 | 0.6+ | 0.7+ | 2006 09 25 | 691 | 0.4− | 0.1+ |
| 2002 10 11 | 704 | 0.4+ | 0.4+ | 2004 02 18 | 704 | 1.6+ | 1.2+ | 2006 09 25 | 691 | 0.5− | 0.2− |
| 2002 10 30 | 608 | 0.6− | 0.4− | 2004 02 18 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2002 10 30 | 608 | 1.7− | 0.7− | 2004 02 23 | 704 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2002 10 30 | 608 | 1.2− | 0.4− | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2002 11 05 | 704 | 0.4− | 0.0 | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.2+ |

**(144132)∗ 2004 BO$_{89}$ = 1997 GO$_{43}$ = 2002 TB$_{359}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61829)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.28752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26768837 | $\omega$ | 342.94248 | | −0.92788874 | −0.37278012 | |
| $a$ | 2.3844216 | $\Omega$ | 175.15024 | | +0.35170039 | −0.88180881 | |
| $e$ | 0.1472541 | $i$ | 5.14469 | | +0.12381166 | −0.28887403 | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 02 | 704 | 0.4+ | 1.4+ | 2004 01 29 | 704 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.9− | 1.4+ | |
| 1997 04 02 | 704 | 0.1− | 0.4− | 2004 01 29 | 704 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.8+ | 1.3+ | |
| 1997 04 02 | 704 | 0.4+ | 1.7+ | 2004 01 29 | 704 | 0.4+ | 0.1− | 2004 03 23 | 704 | (0.6− | 1.8+) | |
| 1997 04 02 | 704 | 0.2− | 1.2+ | 2004 02 13 | 333 | 0.1− | 0.8− | 2004 03 23 | 704 | 0.5+ | 1.3+ | |
| 1997 04 06 | 704 | 0.4− | 0.2− | 2004 02 13 | 333 | 0.2+ | 0.6− | 2005 07 06 | 691 | 0.3− | 0.4+ | |
| 1997 04 06 | 704 | 0.5+ | 0.4+ | 2004 02 17 | 333 | 0.1+ | 0.4+ | 2005 07 06 | 691 | 0.5− | 0.4+ | |
| 1998 08 25 | 910 | 1.5+ | 1.1+ | 2004 02 17 | 333 | 0.1− | 0.9+ | 2005 07 06 | 691 | 0.3− | 0.2+ | |
| 1998 08 25 | 910 | 1.6+ | 0.7+ | 2004 02 17 | 333 | 0.3− | 0.6+ | 2006 10 03 | G96 | 0.1+ | 0.2− | |
| 1998 08 26 | 910 | 1.6+ | 1.1+ | 2004 02 18 | 704 | 0.5+ | 0.0 | 2006 10 03 | G96 | 0.5+ | 0.1− | |
| 2000 01 05 | 704 | 0.8− | 0.7− | 2004 02 18 | 704 | 0.2+ | 0.5− | 2006 10 03 | G96 | 0.1− | 0.3− | |
| 2000 01 05 | 704 | 0.9− | 0.1+ | 2004 02 18 | 704 | 1.0+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.3− | |
| 2000 01 05 | 704 | 0.2− | 0.2+ | 2004 02 18 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | (0.6+ | 2.3+) | |
| 2000 01 05 | 704 | 1.0− | 0.2− | 2004 02 18 | 704 | 0.7+ | 0.1− | 2006 10 16 | 703 | (1.8+ | 1.1+) | |
| 2002 09 26 | 644 | 0.2− | 0.4+ | 2004 02 19 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.8+ | |
| 2002 09 26 | 644 | 0.6− | 0.2+ | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 703 | (2.0+ | 1.0−) | |
| 2002 09 26 | 644 | 0.7− | 0.5+ | 2004 02 19 | 704 | 0.3+ | 0.5+ | 2006 10 18 | 691 | 0.4+ | 0.6+ | |
| 2002 10 04 | 644 | 0.2− | 0.6+ | 2004 02 19 | 704 | 0.6+ | 0.5+ | 2006 10 18 | 691 | 0.6+ | 0.2+ | |
| 2002 10 04 | 644 | 0.1− | 0.8+ | 2004 02 19 | 704 | 0.7+ | 0.3+ | 2006 10 18 | 691 | 0.5+ | 0.2+ | |
| 2002 10 04 | 644 | 0.3+ | 0.6+ | 2004 03 15 | 703 | (1.6+ | 1.0+) | 2006 10 22 | 691 | 0.6− | 0.5− | |
| 2002 10 10 | 645 | 0.1− | 0.1+ | 2004 03 15 | 703 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.3+ | |
| 2002 10 10 | 645 | 0.1− | 0.0 | 2004 03 15 | 703 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.2+ | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 03 15 | 703 | 1.0− | 0.9+ | 2006 11 13 | 703 | (4.9+ | 0.7+) | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 1.4− | 2006 11 13 | 703 | 1.0− | 1.1− | |
| 2004 01 23 | 704 | 1.2− | 0.4+ | 2004 03 18 | 704 | 0.4+ | 1.1− | 2006 11 13 | 703 | 0.2+ | 0.2+ | |
| 2004 01 23 | 704 | 1.1− | 0.4+ | 2004 03 18 | 704 | 0.8+ | 0.7− | 2006 11 13 | 703 | 0.9− | 1.4+ | |
| 2004 01 23 | 704 | 1.4− | 1.1+ | 2004 03 18 | 704 | 1.2+ | 0.6− | 2006 11 22 | G96 | 0.2+ | 0.0 | |
| 2004 01 23 | 704 | 0.9− | 0.6+ | 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.3+ | 0.0 | |
| 2004 01 23 | 704 | 1.2− | 0.2+ | 2004 03 23 | 704 | 1.0+ | 1.0− | 2006 11 22 | G96 | 0.1+ | 0.3+ | |
| 2004 01 29 | 704 | 0.3− | 1.0+ | 2004 03 23 | 704 | 0.3+ | 1.0+ | 2006 11 22 | G96 | 0.2− | 0.1+ | |
| 2004 01 29 | 704 | 0.5+ | 0.7− | 2004 03 23 | 704 | (0.7− | 1.6+) | | | | | |

## (144133)∗ 2004 BT$_{89}$

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.39190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20495197 | $\omega$ | 5.89393 | | −0.97071768 | +0.23948657 | |
| $a$ | 2.8490582 | $\Omega$ | 188.03684 | | −0.22552812 | −0.93549095 | |
| $e$ | 0.2392590 | $i$ | 7.72704 | | −0.08272997 | −0.25981312 | |
| $P$ | 4.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 691 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.4− | 0.4+ | 2004 03 27 | 703 | (0.5+ | 1.8+) | |
| 2001 08 27 | 691 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.1− | 0.4+ | 2004 03 27 | 703 | (1.5− | 0.3+) | |
| 2001 08 27 | 691 | 0.5− | 0.6+ | 2004 02 26 | 704 | 0.9− | 0.4+ | 2004 03 27 | 703 | 0.3+ | 1.1+ | |
| 2004 01 23 | 704 | 0.3+ | 0.2+ | 2004 02 26 | 704 | 1.4+ | 0.1+ | 2005 06 13 | 291 | 0.2− | 0.2+ | |
| 2004 01 23 | 704 | 0.5− | 0.3+ | 2004 02 26 | 704 | 1.1− | 0.0 | 2005 06 13 | 291 | 0.2− | 0.3+ | |
| 2004 01 23 | 704 | 0.7− | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.4+ | 2005 06 13 | 291 | 0.1− | 0.3+ | |
| 2004 01 23 | 704 | 0.6+ | 0.0 | 2004 02 26 | 704 | 0.5− | 0.4+ | 2005 07 05 | 691 | 0.3− | 0.4+ | |
| 2004 01 29 | 704 | 0.3− | 0.3− | 2004 03 10 | 608 | 0.5+ | 0.7+ | 2005 07 05 | 691 | 1.0+ | 0.1− | |
| 2004 01 29 | 704 | 1.1+ | 0.3+ | 2004 03 10 | 608 | 0.7+ | 0.9+ | 2005 07 05 | 691 | 0.2+ | 0.2+ | |
| 2004 01 29 | 704 | 1.0+ | 0.2− | 2004 03 10 | 608 | 0.8+ | 0.7+ | 2005 07 09 | 691 | 0.2− | 0.3+ | |
| 2004 01 29 | 704 | 0.0 | 0.4− | 2004 03 12 | 644 | 0.1− | 0.5+ | 2005 07 09 | 691 | 0.1− | 0.2+ | |
| 2004 02 12 | 683 | (0.5− | 1.7−) | 2004 03 12 | 644 | 0.2− | 0.2+ | 2005 07 09 | 691 | 0.3− | 0.1+ | |
| 2004 02 12 | 683 | 1.3+ | 0.6− | 2004 03 12 | 644 | 0.2− | 0.3+ | 2006 09 18 | 291 | 0.1− | 0.7+ | |
| 2004 02 12 | 683 | 1.0+ | 0.5+ | 2004 03 15 | 704 | 0.6+ | 1.2+ | 2006 09 18 | 291 | 0.0 | 0.2+ | |
| 2004 02 13 | 683 | 0.7− | 1.4− | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 291 | 0.1− | 0.3+ | |
| 2004 02 13 | 683 | (1.2+ | 2.9−) | 2004 03 15 | 704 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1+ | |
| 2004 02 13 | 683 | 0.9+ | 0.4− | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2+ | |
| 2004 02 15 | 608 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.9+ | 1.1+ | 2006 09 26 | G96 | 0.5− | 0.0 | |
| 2004 02 15 | 608 | 0.3− | 0.1− | 2004 03 19 | 704 | 0.8− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.5+ | |
| 2004 02 15 | 608 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.1+ | |
| 2004 02 19 | 704 | 0.5+ | 0.4+ | 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2+ | |
| 2004 02 19 | 704 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.5+ | 0.8+ | 2006 09 27 | G96 | 0.5− | 0.6+ | |
| 2004 02 19 | 704 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.9+ | 1.2+ | 2006 09 27 | G96 | 0.1− | 0.3+ | |
| 2004 02 19 | 704 | 0.2+ | 0.2+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.1− | |
| 2004 02 19 | 704 | 0.2− | 0.3+ | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.0 | |
| 2004 02 23 | 704 | 0.3− | 0.5+ | 2004 03 21 | 691 | 0.2− | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.0 | |
| 2004 02 23 | 704 | 0.2− | 0.7+ | 2004 03 27 | 703 | (1.0− | 1.6+) | 2006 10 16 | G96 | 0.3+ | 0.3+ | |

## (144134)∗ 2004 BZ$_{89}$

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.37500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28330727 | $\omega$ | 290.24811 | | −0.99181635 | +0.10159550 | |
| $a$ | 2.2959596 | $\Omega$ | 255.64455 | | −0.06508802 | −0.92337052 | |
| $e$ | 0.0988200 | $i$ | 4.57787 | | −0.10983566 | −0.37022323 | |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 699 | 1.0− | 0.6+ | 2004 02 26 | 704 | 1.3− | 0.0 | 2006 10 20 | G96 | 0.3− | 0.4− | |
| 2001 05 15 | 699 | 0.5+ | 0.9+ | 2004 02 26 | 704 | 0.0 | 1.2+ | 2006 10 20 | G96 | 0.0 | 0.1− | |
| 2001 05 15 | 699 | 0.6+ | 0.0 | 2004 02 26 | 704 | 0.8− | 1.3+ | 2006 10 20 | G96 | (1.6− | 1.0−) | |
| 2001 05 15 | 699 | 0.2− | 0.1− | 2005 05 19 | G96 | 0.3− | 0.8− | 2006 11 01 | G96 | 0.1− | 0.4− | |
| 2004 01 23 | 704 | 0.6+ | 0.0 | 2005 05 19 | G96 | 0.5− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− | |
| 2004 01 23 | 704 | 0.5− | 0.5+ | 2005 05 19 | G96 | 0.2− | 0.9− | 2006 11 01 | G96 | 0.0 | 0.3− | |
| 2004 01 23 | 704 | 0.0 | 0.1+ | 2005 05 19 | G96 | 0.3− | 0.5− | 2006 11 01 | G96 | 0.3+ | 0.2− | |
| 2004 01 29 | 704 | 0.5+ | 0.3+ | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1− | |
| 2004 01 29 | 704 | 1.4+ | 0.0 | 2005 07 01 | 691 | 0.0 | 0.5+ | 2006 11 10 | 691 | 0.5− | 0.3+ | |
| 2004 01 29 | 704 | 1.3+ | 0.2− | 2005 07 01 | 691 | 0.1− | 0.6+ | 2006 11 10 | 691 | 0.4− | 0.0 | |
| 2004 02 13 | 699 | 0.1− | 0.4+ | 2005 07 10 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.4+ | 0.5+ | |
| 2004 02 13 | 699 | (2.4− | 0.2−) | 2005 07 10 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.5+ | |
| 2004 02 13 | 699 | 1.2+ | 0.3− | 2005 07 10 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | |
| 2004 02 13 | 699 | 0.9− | 1.3+ | 2005 07 27 | 644 | 0.2− | 0.6+ | 2006 11 24 | H07 | 0.2+ | 0.8+ | |
| 2004 02 18 | 704 | 1.0+ | 0.2+ | 2005 07 27 | 644 | 0.3− | 0.3+ | 2006 11 24 | H07 | 0.6+ | 1.0− | |
| 2004 02 18 | 704 | 0.1+ | 0.6− | 2005 07 27 | 644 | 0.3− | 0.1+ | 2006 11 24 | H07 | 0.1+ | 0.2− | |
| 2004 02 18 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.2− | | | | | |

## (144135)∗ 2004 BE$_{90}$

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.77345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27999291 | $\omega$ | 280.67564 | | +0.00483525 | −0.99952040 | |
| $a$ | 2.3140427 | $\Omega$ | 168.90951 | | +0.96835737 | −0.00295224 | |
| $e$ | 0.1831405 | $i$ | 9.14954 | | +0.24952080 | +0.03082613 | |
| $P$ | 3.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.9+ | 1.1+ | 2004 02 18 | 704 | 0.1− | 0.3+ | 2004 03 25 | 704 | 0.0 | 0.7+ | |
| 1999 10 04 | 703 | 1.0− | 0.2− | 2004 02 18 | 704 | 0.1+ | 0.4− | 2004 03 25 | 704 | 1.1+ | 0.2+ | |
| 1999 10 04 | 703 | 1.6− | 0.7− | 2004 02 18 | 704 | 0.0 | 0.5+ | 2004 03 25 | 704 | 0.3+ | 0.1− | |
| 1999 10 04 | 703 | 0.3− | 0.3+ | 2004 02 18 | 704 | 0.3− | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.2− | |
| 1999 10 19 | 704 | 0.2+ | 0.1− | 2004 02 18 | 704 | 0.3− | 0.4− | 2004 03 26 | 691 | 0.1− | 0.2− | |
| 1999 10 19 | 704 | 0.4+ | 0.5+ | 2004 02 20 | 704 | 0.2+ | 0.2− | 2004 03 26 | 691 | 0.2+ | 0.2− | |
| 1999 10 19 | 704 | 0.6+ | 0.3+ | 2004 02 20 | 704 | 0.3+ | 0.5− | 2004 03 27 | 704 | 0.0 | 0.2− | |
| 1999 10 19 | 704 | 0.3+ | 0.5+ | 2004 02 20 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.9+ | 1.0+ | |
| 1999 11 17 | 703 | 0.0 | 0.2+ | 2004 02 20 | 704 | 0.4+ | 0.4− | 2004 03 27 | 704 | 0.1+ | 0.0 | |
| 1999 11 17 | 703 | 0.2+ | 0.3+ | 2004 02 25 | 333 | 0.7− | 0.2− | 2004 03 31 | 691 | 0.2+ | 0.4− | |
| 1999 11 17 | 703 | 0.4− | 0.2+ | 2004 02 25 | 333 | 0.0 | 0.6− | 2004 03 31 | 691 | 0.5+ | 0.3− | |
| 1999 11 17 | 703 | 0.7− | 0.1− | 2004 02 25 | 333 | 1.2− | 0.1+ | 2004 03 31 | 691 | 0.1− | 0.1+ | |
| 1999 12 03 | 704 | 0.2− | 0.1+ | 2004 02 25 | 333 | 1.2− | 0.3+ | 2004 04 19 | 704 | 0.8+ | 0.7− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 704 | 0.5+ | 0.9+ | 2004 02 26 | 333 | (1.6− | 0.2+) | 2004 04 19 | 704 | 0.5+ | 0.1− |
| 1999 12 03 | 704 | 0.4+ | 0.6− | 2004 02 26 | 333 | 1.3− | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.7+ |
| 1999 12 03 | 704 | 0.0 | 0.0 | 2004 02 26 | 333 | 0.9− | 0.1− | 2004 04 19 | 704 | 0.5+ | 0.5+ |
| 2001 06 15 | 645 | 0.0 | 0.3+ | 2004 02 26 | 333 | 0.9− | 0.0 | 2006 09 16 | 699 | (1.9− | 1.4+) |
| 2001 06 15 | 645 | 0.0 | 0.3+ | 2004 03 11 | 644 | 0.0 | 0.1− | 2006 09 16 | 699 | 1.3− | 0.1+ |
| 2002 08 06 | 644 | (0.7+ | 2.2+) | 2004 03 11 | 644 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.1− | 0.7− |
| 2002 08 06 | 644 | 0.8+ | 1.5+ | 2004 03 11 | 644 | 0.2− | 0.2− | 2006 09 16 | 699 | 0.1+ | 0.9+ |
| 2002 08 06 | 644 | (1.2+ | 1.7+) | 2004 03 15 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.4+ | 0.9+ |
| 2002 08 26 | 644 | 0.1− | 1.1+ | 2004 03 15 | 704 | 0.4− | 0.4− | 2006 09 26 | 704 | 0.0 | 0.7+ |
| 2002 08 26 | 644 | 0.1− | 1.1+ | 2004 03 15 | 704 | 0.3− | 0.1+ | 2006 09 26 | 704 | 1.0− | 0.9+ |
| 2002 08 26 | 644 | 0.0 | 1.2+ | 2004 03 15 | 704 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.3+ | 0.3− |
| 2003 12 22 | 704 | 0.4− | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.3+ |
| 2003 12 22 | 704 | 0.7+ | 0.8+ | 2004 03 18 | 704 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.7+ | 0.2− |
| 2003 12 22 | 704 | 0.4− | 0.2+ | 2004 03 18 | 704 | 0.2− | 0.6− | 2006 09 29 | 699 | 0.6+ | 0.5− |
| 2003 12 22 | 704 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.4− | 2006 10 01 | 704 | 0.9− | 0.7+ |
| 2004 01 23 | 704 | 0.7− | 0.1− | 2004 03 18 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.6− | 0.1− |
| 2004 01 23 | 704 | 0.7+ | 0.6− | 2004 03 18 | 704 | 0.3− | 0.8− | 2006 10 01 | 704 | 0.6+ | 0.3− |
| 2004 01 23 | 704 | 0.1+ | 0.4− | 2004 03 19 | 704 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.8+ |
| 2004 01 23 | 704 | 0.1− | 0.1− | 2004 03 19 | 704 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2004 01 23 | 704 | 0.9− | 0.4− | 2004 03 19 | 704 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2004 01 29 | 704 | 0.4− | 0.9+ | 2004 03 19 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2004 01 29 | 704 | 0.2− | 0.8+ | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2004 01 29 | 704 | 0.3− | 0.4+ | 2004 03 20 | 704 | 0.1+ | 0.9+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2004 01 29 | 699 | (1.3− | 1.7−) | 2004 03 20 | 704 | 0.0 | 1.4+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2004 01 29 | 699 | 0.1− | 0.6− | 2004 03 20 | 704 | 0.4+ | 0.9+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2004 01 29 | 699 | 0.3+ | 0.6− | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2004 01 29 | 699 | 1.1− | 0.2+ | 2004 03 21 | 704 | 0.9+ | 1.2− | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2004 02 12 | 333 | 0.4+ | 0.3− | 2004 03 21 | 704 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2004 02 12 | 333 | 0.1− | 0.1− | 2004 03 21 | 704 | 0.3− | 1.0+ | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2004 02 12 | 333 | 0.6− | 0.2+ | 2004 03 21 | 704 | 0.7+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.5+ |
| 2004 02 12 | 333 | 0.1− | 0.4− | 2004 03 25 | 704 | 0.9+ | 0.7+ | 2006 10 22 | 703 | 0.2+ | 0.6+ |
| 2004 02 12 | 333 | 0.1− | 0.4+ | 2004 03 25 | 704 | (2.1+ | 0.2+) | 2006 10 22 | 703 | 0.3+ | 0.5+ |
| 2004 02 12 | 333 | 0.2+ | 0.3+ | 2004 03 25 | 704 | (3.0+ | 0.3−) | 2006 11 10 | 704 | 0.3− | 0.6+ |
| 2004 02 12 | 333 | 0.7− | 0.4+ | 2004 03 25 | 704 | 0.8+ | 0.4+ | 2006 11 10 | 704 | (0.2− | 1.6+) |
| 2004 02 12 | 644 | 0.3− | 0.1− | 2004 03 25 | 704 | 1.1+ | 1.2+ | 2006 11 10 | 704 | 1.0− | 0.3+ |
| 2004 02 12 | 333 | 0.0 | 0.5+ | 2004 03 25 | 704 | 0.2− | 0.4− | 2006 11 10 | 704 | 0.6− | 0.5+ |
| 2004 02 12 | 333 | 0.3− | 1.3+ | 2004 03 25 | 704 | (3.2+ | 0.5−) | 2006 11 10 | 704 | 0.9− | 0.3+ |
| 2004 02 12 | 644 | 0.2− | 0.2− | 2004 03 25 | 704 | 0.0 | 0.0 | 2006 11 14 | 644 | 0.0 | 0.2+ |
| 2004 02 12 | 644 | 0.2− | 0.0 | 2004 03 25 | 704 | 1.0+ | 1.4+ | 2006 11 14 | 644 | 0.0 | 0.1− |
| 2004 02 16 | 333 | 0.6− | 0.2+ | 2004 03 25 | 704 | 1.4+ | 0.1+ | 2006 11 14 | 644 | 0.5+ | 0.5+ |
| 2004 02 16 | 333 | 0.5− | 1.0+ | 2004 03 25 | 704 | (2.3+ | 0.6+) | 2006 11 16 | 703 | 0.3− | 0.5+ |
| 2004 02 16 | 333 | 0.4− | 0.9+ | 2004 03 25 | 704 | 0.8+ | 0.4+ | 2006 11 16 | 703 | (1.1+ | 2.1−) |
| 2004 02 16 | 333 | 0.7− | 0.3+ | 2004 03 25 | 704 | 0.8+ | 0.0 | 2006 11 16 | 703 | 0.5+ | 0.1+ |
| 2004 02 16 | 333 | (1.2− | 1.8+) | 2004 03 25 | 704 | 0.8+ | 1.0+ | 2006 11 16 | 703 | 0.3+ | 0.3− |
| 2004 02 16 | 333 | (0.9− | 1.9+) | 2004 03 25 | 704 | (1.8+ | 0.0 ) | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2004 02 16 | 333 | 0.8− | 0.2+ | 2004 03 25 | 704 | 1.2+ | 0.2− | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2004 02 16 | 333 | 0.1− | 0.6+ | 2004 03 25 | 704 | 0.9+ | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.1+ |

**(144136)∗ 2004 BN$_{90}$ = 2000 AU$_{76}$**

Discovered 2004 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61831)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.35296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26215941 | $\omega$ | 261.90554 | | +0.24651005 | −0.96913708 | |
| $a$ | 2.4178299 | $\Omega$ | 173.82171 | | +0.89796779 | +0.22744668 | |
| $e$ | 0.1761312 | $i$ | 1.31588 | | +0.36453619 | +0.09508586 | |
| $P$ | 3.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 03 | 327 | 0.1− | 0.2+ | 2004 02 11 | 644 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.9+ | 0.6+ |
| 1995 09 03 | 327 | 1.1− | 0.6− | 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 1.2− | 1.2+ |
| 1995 09 03 | 327 | 0.7+ | 0.5+ | 2004 02 12 | 691 | 0.3− | 0.9+ | 2006 09 17 | 704 | 0.1− | 0.8+ |
| 1995 11 17 | 327 | 0.6+ | 0.6− | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.9− | 1.2+ |
| 1995 11 17 | 327 | 0.7+ | 0.3− | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.1+ |
| 1995 11 17 | 327 | 0.3− | 0.3− | 2004 02 14 | 333 | 0.5− | 0.5− | 2006 09 19 | 699 | 1.0− | 1.0+ |
| 2000 01 05 | 704 | 0.5+ | 0.8− | 2004 02 14 | 333 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2000 01 05 | 704 | 0.0 | 1.3− | 2004 02 14 | 608 | 0.5− | 0.9+ | 2006 09 19 | 699 | 0.3+ | 0.1− |
| 2000 01 05 | 704 | 0.2− | 0.8− | 2004 02 14 | 608 | 0.0 | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.3+ |
| 2000 01 05 | 704 | 0.2+ | 1.3− | 2004 02 14 | 608 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.0 |
| 2000 01 05 | 704 | 0.0 | 1.0− | 2004 02 17 | 704 | 0.2− | 1.2+ | 2006 09 19 | 699 | 0.3+ | 0.1− |
| 2000 01 06 | 704 | 0.4− | 0.1− | 2004 02 17 | 704 | 0.4− | 0.9+ | 2006 09 19 | 703 | 0.6+ | 0.3− |
| 2000 01 06 | 704 | 0.3− | 0.5− | 2004 02 17 | 704 | (0.4− | 1.8+) | 2006 09 19 | 699 | 0.0 | 0.2+ |
| 2000 01 06 | 704 | 0.5− | 1.0− | 2004 02 17 | 704 | 0.8− | 1.1+ | 2006 09 20 | 704 | 1.1− | 1.3+ |
| 2004 01 13 | 699 | 1.2+ | 0.7+ | 2004 02 17 | 704 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.3− | 0.1− |
| 2004 01 13 | 699 | (0.6− | 1.9+) | 2004 02 19 | 608 | 0.1+ | 0.7− | 2006 09 20 | 704 | 0.0 | 0.1− |
| 2004 01 13 | 699 | 0.9− | 0.1− | 2004 02 19 | 608 | 0.1+ | 0.4− | 2006 09 20 | 704 | 0.6− | 0.7+ |
| 2004 01 13 | 699 | 0.1+ | 0.2− | 2004 02 19 | 608 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.2+ | 0.1+ |
| 2004 01 24 | 704 | 0.6+ | 0.4− | 2004 02 26 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 699 | (0.4+ | 1.7+) |
| 2004 01 24 | 704 | 0.4+ | 0.5+ | 2004 02 26 | 704 | 0.1− | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.6+ |
| 2004 01 24 | 704 | 0.5− | 0.5− | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2004 01 24 | 704 | 0.0 | 0.4− | 2004 02 26 | 704 | 0.4− | 0.4+ | 2006 09 25 | 699 | (1.5+ | 0.3−) |
| 2004 01 29 | 704 | 0.3+ | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2004 01 29 | 704 | 0.5− | 0.8+ | 2004 03 01 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2004 01 29 | 704 | 0.0 | 0.4+ | 2004 03 01 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2004 01 29 | 704 | 1.0+ | 0.0 | 2004 03 01 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2004 01 29 | 704 | 1.0+ | 0.0 | 2004 03 10 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.6+ |
| 2004 01 31 | 691 | 0.2+ | 0.1− | 2004 03 10 | 644 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.0 | 1.0+ |
| 2004 01 31 | 691 | 0.2+ | 0.0 | 2004 03 10 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 1.1+ |
| 2004 01 31 | 691 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.4− | 0.0 | 2006 09 27 | 704 | 0.8+ | 0.7− |
| 2004 01 31 | 333 | 0.4+ | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2004 01 31 | 333 | 0.7+ | 1.1+ | 2006 08 23 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2004 01 31 | 333 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.8− | 0.5− | 2006 10 16 | 703 | 0.7+ | 0.9+ |
| 2004 02 03 | 608 | 0.3+ | 1.1− | 2006 08 28 | 703 | 0.9− | 0.3− | 2006 10 16 | 703 | 0.5+ | 1.1+ |
| 2004 02 03 | 608 | 0.1+ | 0.7− | 2006 08 28 | 703 | (1.6− | 0.5+) | 2006 10 16 | G96 | 0.3+ | 0.5− |
| 2004 02 03 | 608 | 0.2+ | 1.2− | 2006 08 28 | 703 | 0.5− | 0.5− | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2004 02 10 | 703 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.7− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2004 02 10 | 703 | 0.3+ | 0.1+ | 2006 09 12 | 703 | (1.3+ | 1.9+) | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2004 02 10 | 703 | 0.4+ | 0.5+ | 2006 09 12 | 703 | 1.2− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2004 02 10 | 703 | 0.0 | 0.2− | 2006 09 12 | 703 | 1.0− | 0.8+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.6− | 0.9+ | | | | |
| 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.5+ | 0.9+ | | | | |

**(144137)∗ 2004 BW$_{90}$**

Discovered 2004 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.10586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21782484 | $\omega$ | 272.57330 | | −0.78552715 | +0.61415098 | |
| $a$ | 2.7356747 | $\Omega$ | 305.32850 | | −0.52433367 | −0.72571837 | |
| $e$ | 0.0400574 | $i$ | 5.34030 | | −0.32866594 | −0.31008294 | |
| $P$ | 4.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 699 | 0.7+ | 0.1+ | 2004 02 18 | 704 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.5+ | 0.1+ |
| 2000 05 04 | 699 | 0.5+ | 1.5+ | 2004 02 18 | 704 | 0.6− | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 2000 05 04 | 699 | 0.8+ | 0.7+ | 2004 02 18 | 704 | 0.3− | 0.8+ | 2006 09 19 | 699 | 0.1+ | 0.1+ |
| 2000 05 04 | 699 | 0.7+ | 1.6+ | 2004 02 18 | 704 | 0.2− | 0.0 | 2006 09 27 | 699 | 0.1− | 0.4+ |
| 2001 07 27 | 699 | 0.7− | 0.4− | 2004 02 20 | 608 | 0.7+ | 0.4− | 2006 09 27 | 699 | 0.4+ | 1.3− |
| 2001 07 27 | 699 | 0.4+ | 0.4− | 2004 02 20 | 608 | 1.0+ | 0.3+ | 2006 09 27 | 699 | 0.6− | 1.0− |
| 2001 07 27 | 699 | 0.1− | 0.5+ | 2004 02 20 | 608 | 0.5+ | 0.3− | 2006 09 27 | 699 | 0.3+ | 0.5− |
| 2001 07 27 | 699 | 0.7− | 1.2+ | 2004 03 18 | 704 | (0.3− | 1.5−) | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 644 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 11 14 | 644 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 644 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2004 03 20 | 691 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2004 03 20 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.5− | 0.7− | 2004 03 20 | 691 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 1.0− | 2004 03 20 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.7− | 0.0 | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.6+ | 1.0+ | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 2004 01 24 | 704 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.5+ | 0.4− | 2006 10 19 | 691 | 0.0 | 0.4+ |
| 2004 01 24 | 704 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.5− | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.5+ |
| 2004 01 24 | 704 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.7+ | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 2004 01 24 | 704 | 0.3− | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2004 01 29 | 704 | 0.5− | 0.2− | 2006 09 17 | 703 | (0.6+ | 2.9−) | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2004 01 29 | 704 | 0.5+ | 0.9− | 2006 09 17 | 703 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2004 01 29 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 1.0− | 0.5− | 2006 10 24 | 644 | 0.1+ | 0.3+ |
| 2004 01 29 | 704 | 0.5− | 0.6+ | 2006 09 17 | 703 | (2.9− | 0.8−) | | | | |

**(144138)∗ 2004 BB$_{91}$**

Discovered 2004 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 212.54416 | | (2000.0) | | | |
| $n$ | 0.21704430 | $\omega$ | 183.12826 | | −0.80946478 | −0.57268938 |
| $a$ | 2.7422295 | $\Omega$ | 320.98728 | | +0.54308664 | −0.64633132 |
| $e$ | 0.0764685 | $i$ | 11.88011 | | +0.22321218 | −0.50426451 |
| $P$ | 4.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.0 | 0.4+ | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.3+ | 0.1+ |
| 2001 08 20 | 807 | 0.2− | 0.4+ | 2004 02 11 | 644 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.0 |
| 2002 10 06 | 704 | 0.4− | 0.0 | 2004 02 18 | 333 | 0.2− | 0.1+ | 2004 03 27 | 703 | 0.7− | 0.3− |
| 2002 10 06 | 704 | 0.2+ | 0.7− | 2004 02 18 | 333 | 0.3− | 0.2− | 2004 03 27 | 703 | 1.1+ | 0.6+ |
| 2002 10 06 | 704 | 0.1− | 1.0− | 2004 02 18 | 704 | 1.3+ | 1.0+ | 2004 03 27 | 703 | 0.2+ | 0.4− |
| 2002 10 06 | 704 | 0.3− | 0.7− | 2004 02 18 | 333 | 0.8− | 0.2− | 2004 03 27 | 703 | 1.3+ | 1.9+ |
| 2002 10 20 | 644 | 0.0 | 0.3+ | 2004 02 18 | 704 | 0.2+ | 0.6− | 2006 08 18 | 644 | 0.4− | 0.6+ |
| 2002 10 20 | 644 | 0.2+ | 0.1+ | 2004 02 18 | 704 | 0.7− | 0.8− | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2002 10 20 | 644 | 0.1+ | 0.2+ | 2004 02 18 | 333 | 0.2+ | 0.6− | 2006 08 18 | 644 | 0.4− | 0.1− |
| 2002 11 25 | 644 | 0.4+ | 0.1− | 2004 02 18 | 704 | 0.5+ | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.2+ |
| 2002 11 25 | 644 | 0.1+ | 0.1− | 2004 02 18 | 333 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.1− | 0.1+ |
| 2002 11 25 | 644 | 0.1+ | 0.1− | 2004 02 18 | 333 | 0.1+ | 0.1− | 2006 08 21 | 691 | 0.2+ | 0.4+ |
| 2004 01 24 | 704 | 0.8− | 0.0 | 2004 02 22 | 691 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.6− | 0.9+ |
| 2004 01 24 | 704 | 0.6− | 0.4+ | 2004 02 22 | 691 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.6+ | 0.3+ |
| 2004 01 24 | 704 | 0.7− | 0.1+ | 2004 02 22 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 0.2+ | 0.4+ |
| 2004 01 24 | 704 | 0.8− | 0.1+ | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 1.6− | 1.3− |
| 2004 01 24 | 704 | 0.3− | 0.6− | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.3+ | 2.0+ |
| 2004 01 29 | 704 | 0.4+ | 0.4+ | 2004 03 12 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 1.8− | 0.3+ |
| 2004 01 29 | 704 | 0.9+ | 0.3+ | 2004 03 15 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.4+ |
| 2004 01 29 | 704 | 1.3+ | 0.4+ | 2004 03 15 | 704 | 1.5− | 0.5+ | 2006 09 19 | 703 | 0.7+ | 0.5− |
| 2004 01 29 | 704 | 0.4− | 1.1+ | 2004 03 15 | 704 | 0.4+ | 0.9+ | 2006 09 19 | 703 | 1.4+ | 0.3+ |
| 2004 02 11 | 703 | (2.4− | 1.9+) | 2004 03 15 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 699 | 0.9− | 0.4+ |
| 2004 02 11 | 703 | 1.5− | 0.9− | 2004 03 15 | 704 | 0.3− | 0.5− | 2006 09 19 | 703 | 1.8− | 0.6− |
| 2004 02 11 | 703 | 0.8− | 0.1− | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 1.4− | 1.8+ |
| 2004 02 11 | 703 | 0.5− | 0.1− | 2004 03 18 | 704 | 0.1− | 0.0 | | | | |
| 2004 02 11 | 644 | 0.6+ | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.0 | | | | |

**(144139)∗ 2004 BC$_{91}$**

Discovered 2004 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 257.76123 | | (2000.0) | | | |
| $n$ | 0.27510500 | $\omega$ | 17.50002 | | −0.91730832 | −0.39556991 |
| $a$ | 2.3413718 | $\Omega$ | 139.10426 | | +0.35650505 | −0.86681493 |
| $e$ | 0.1577965 | $i$ | 3.98487 | | +0.17734033 | −0.30357261 |
| $P$ | 3.58 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 15 | 327 | 0.9− | 0.5− | 2004 02 17 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.6− | 1.1+ |
| 1997 03 15 | 327 | 0.6− | 0.6− | 2004 02 17 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.3+ | 0.3+ |
| 1997 03 15 | 327 | 0.8− | 0.3− | 2004 02 17 | 704 | 0.3+ | 0.5+ | 2004 03 22 | 704 | 0.6+ | 0.2− |
| 1999 12 08 | 704 | 0.8+ | 1.1− | 2004 02 17 | 704 | 0.0 | 0.2+ | 2004 03 22 | 704 | (1.7+ | 0.6+) |
| 1999 12 08 | 704 | 0.3− | 0.1− | 2004 02 17 | 704 | 0.2+ | 0.7+ | 2004 03 22 | 704 | (1.6+ | 0.7+) |
| 1999 12 08 | 704 | 0.9+ | 0.7− | 2004 02 19 | 049 | 0.2− | 0.6− | 2004 03 26 | 691 | 0.1+ | 0.3− |
| 1999 12 08 | 704 | (1.3+ | 2.7−) | 2004 02 19 | 049 | 0.6− | 0.7− | 2004 03 26 | 691 | 0.1− | 0.2− |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2004 02 19 | 049 | 0.3− | 1.0− | 2004 03 26 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.7− | 0.1+ | 2005 07 04 | 644 | 0.3− | 0.6+ |
| 2002 10 04 | 644 | 0.6− | 0.4+ | 2004 02 23 | 704 | 0.9+ | 0.2+ | 2005 07 04 | 644 | 0.1+ | 0.9+ |
| 2002 10 04 | 644 | 0.8− | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.5+ | 2005 07 04 | 644 | 0.3− | 0.8+ |
| 2002 10 04 | 644 | 0.8− | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2005 07 05 | G96 | 0.1− | 0.6+ |
| 2004 01 24 | 704 | 1.5+ | 1.2+ | 2004 02 23 | 704 | 1.4+ | 1.3− | 2005 07 05 | G96 | 0.2− | 0.9+ |
| 2004 01 24 | 704 | 0.5+ | 0.3+ | 2004 02 29 | 691 | 0.1− | 0.1+ | 2005 07 05 | G96 | 0.2− | 0.9+ |
| 2004 01 24 | 704 | 0.7+ | 0.3+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2005 07 05 | G96 | 0.2− | 0.8+ |
| 2004 01 24 | 704 | 1.0+ | 1.0+ | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.0 |
| 2004 01 29 | 704 | 0.4+ | 0.8+ | 2004 03 14 | 703 | 0.1+ | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.1− |
| 2004 01 29 | 704 | 0.1− | 0.8+ | 2004 03 14 | 703 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.4− | 0.3+ |
| 2004 01 29 | 704 | 0.4− | 0.2− | 2004 03 14 | 703 | 0.9+ | 0.7+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2004 02 11 | 703 | 0.5− | 1.2+ | 2004 03 19 | 704 | 0.5+ | 1.3+ | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2004 02 11 | 703 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.1+ | 1.1+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2004 02 11 | 703 | 0.1− | 0.5+ | 2004 03 19 | 704 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.6− |
| 2004 02 11 | 703 | (1.6+ | 5.6+) | 2004 03 19 | 704 | 0.3+ | 1.2+ | | | | |

**(144140)∗ 2004 BH$_{92}$ = 2002 RX$_{114}$**

Discovered 2004 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69653)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.33094 | | (2000.0) | | | |
| $n$ | 0.26887292 | $\omega$ | 119.42975 | | +0.74846574 | −0.65387718 |
| $a$ | 2.3774132 | $\Omega$ | 281.63855 | | +0.56257580 | +0.71437751 |
| $e$ | 0.1407579 | $i$ | 6.48677 | | +0.35115168 | +0.24921759 |
| $P$ | 3.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.6− | 0.6− | 2004 01 26 | 699 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.7− |
| 2000 01 03 | 704 | 0.9+ | 0.6+ | 2004 01 29 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 704 | (2.2+ | 0.3+) |
| 2000 01 03 | 704 | 0.3− | 0.3+ | 2004 01 29 | 704 | 0.7+ | 0.8+ | 2006 09 30 | 704 | (2.0+ | 1.1+) |
| 2000 01 03 | 704 | 0.0 | 0.6+ | 2004 01 29 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 704 | (2.3+ | 0.3+) |
| 2002 08 05 | 644 | 0.1+ | 0.7+ | 2004 01 29 | 704 | 0.5+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2002 08 05 | 644 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2002 08 05 | 644 | 0.2− | 0.7+ | 2004 02 26 | 704 | 1.2+ | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 08 12 | 704 | 0.4+ | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.2+ |
| 2002 08 12 | 704 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.8− |
| 2002 08 12 | 704 | 0.5− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.0 |
| 2002 08 12 | 704 | 0.1− | 0.7+ | 2006 08 20 | 644 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2002 08 12 | 704 | 0.4− | 0.6+ | 2006 08 20 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2006 08 30 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.7− | 0.4+ | 2006 08 30 | 699 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 09 06 | 704 | 0.8+ | 0.7+ | 2006 08 30 | 699 | 0.3− | 0.4+ | 2006 10 31 | 703 | 0.0 | 0.4− |
| 2002 09 06 | 704 | 0.3− | 0.7+ | 2006 08 30 | 699 | 1.2+ | 0.2− | 2006 10 31 | 703 | 0.5− | 0.5− |
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 0.5+ | 0.2− | 2006 10 31 | 703 | 0.9− | 0.1− |
| 2002 09 08 | 608 | 0.7− | 0.1− | 2006 09 17 | 703 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.2+ | 0.4+ |
| 2002 09 08 | 608 | 0.8− | 0.7− | 2006 09 17 | 703 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.0 |
| 2002 09 08 | 608 | 0.8− | 0.3− | 2006 09 17 | 703 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.5− |
| 2004 01 26 | 699 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 2004 01 26 | 699 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.5− |
| 2004 01 26 | 699 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.1− | | | | |

**(144141)∗ 2004 BS$_{92}$ = 2001 ON$_{45}$**

Discovered 2004 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69653)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 147.47099 | | (2000.0) | | | |
| $n$ | 0.23855456 | $\omega$ | 351.08480 | | −0.57136543 | +0.81347841 |
| $a$ | 2.5748044 | $\Omega$ | 243.99842 | | −0.74532895 | −0.56972615 |
| $e$ | 0.1503065 | $i$ | 6.94016 | | −0.34354956 | −0.11689739 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | (5.7+ | 2.8−) | 2004 01 29 | 704 | 0.9+ | 0.5+ | 2005 07 07 | 704 | 0.4+ | 0.1+ |
| 1998 12 14 | 691 | 0.3+ | 0.5− | 2004 02 18 | 704 | 1.2+ | 0.8+ | 2006 10 04 | G96 | 0.5− | 0.4− |
| 1998 12 14 | 691 | 0.4+ | 0.2− | 2004 02 18 | 704 | 0.3+ | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2001 07 16 | 699 | 0.2− | 0.1+ | 2004 02 18 | 704 | 0.5+ | 1.3+ | 2006 10 04 | G96 | 0.3+ | 0.1+ |
| 2001 07 16 | 699 | 0.3− | 0.8− | 2004 02 18 | 704 | 0.2+ | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.2+ |
| 2001 07 16 | 699 | 0.7− | 0.6− | 2004 03 11 | 644 | 0.0 | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.6+ |
| 2001 07 16 | 699 | (2.2− | 1.2+) | 2004 03 11 | 644 | 0.3− | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.3+ |
| 2001 07 19 | 608 | 0.0 | 0.5− | 2004 03 11 | 644 | 0.1+ | 0.6+ | 2006 10 13 | 691 | 0.1− | 0.3+ |
| 2001 07 19 | 608 | 0.3+ | 0.3− | 2005 06 04 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.0 |
| 2001 07 19 | 608 | 0.0 | 0.0 | 2005 06 04 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2001 08 25 | 704 | 0.1− | 1.2− | 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 08 25 | 704 | 0.4+ | 0.3+ | 2005 06 09 | 691 | (2.7− | 0.1+) | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 08 25 | 704 | 0.1− | 0.0 | 2005 06 09 | 691 | 0.4+ | 1.3− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 08 25 | 704 | 0.6− | 0.7+ | 2005 06 09 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2001 08 25 | 704 | 0.7− | 0.3+ | 2005 06 13 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2004 01 27 | 699 | 0.1+ | 0.8+ | 2005 06 13 | 691 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2004 01 27 | 699 | 0.5− | 0.8− | 2005 06 13 | 691 | 0.4− | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2004 01 27 | 699 | 0.9+ | 0.3+ | 2005 06 17 | 691 | 0.2− | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 01 27 | 699 | 0.3− | 0.2+ | 2005 06 17 | 691 | 0.1− | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 2004 01 29 | 704 | (0.5+ | 1.7+) | 2005 06 17 | 691 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2004 01 29 | 704 | 1.0− | 1.4+ | 2005 07 07 | 704 | 0.5+ | 0.4+ | | | | |
| 2004 01 29 | 704 | 0.0 | 1.3+ | 2005 07 07 | 704 | 0.2− | 0.5+ | | | | |

**(144142)∗ 2004 BU$_{92}$**

Discovered 2004 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.98039 | | (2000.0) | | | |
| $n$ | 0.27508028 | $\omega$ | 188.04078 | | +0.99185089 | −0.12737867 |
| $a$ | 2.3415121 | $\Omega$ | 179.26281 | | +0.12511036 | +0.97002348 |
| $e$ | 0.2604111 | $i$ | 11.41560 | | +0.02406675 | +0.20695196 |
| $P$ | 3.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.3− | 0.1+ | 2006 08 27 | 683 | 0.6+ | 0.5+ | 2006 09 22 | 704 | 0.7− | 0.4+ |
| 1994 04 03 | 691 | 0.5− | 0.2− | 2006 08 27 | 683 | 0.8− | 1.3+ | 2006 09 22 | 704 | 0.3+ | 0.4+ |
| 2000 01 08 | 704 | 0.9+ | 0.1− | 2006 08 27 | 683 | 0.4− | 1.1+ | 2006 09 26 | 704 | 0.2− | 1.2+ |
| 2000 01 08 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 683 | (2.3− | 0.3−) | 2006 09 26 | 704 | (0.1− | 1.5+) |
| 2000 01 08 | 704 | 1.0+ | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.5− | 2006 09 26 | 704 | 0.1+ | 0.5+ |
| 2001 03 21 | 691 | (0.2− | 1.7+) | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.4+ | 1.4+ |
| 2001 03 21 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 683 | (2.6− | 1.4+) | 2006 09 26 | 704 | 0.5− | 0.2+ |
| 2001 03 21 | 691 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.1+ |
| 2004 01 18 | 703 | 0.0 | 1.1− | 2006 08 28 | 703 | 0.4− | 0.7− | 2006 09 29 | 699 | 0.3+ | 0.0 |
| 2004 01 18 | 703 | 0.7− | 0.2+ | 2006 08 28 | 683 | (2.7− | 0.8+) | 2006 09 29 | 699 | 0.3− | 0.2+ |
| 2004 01 18 | 703 | 0.8− | 0.5+ | 2006 08 31 | 704 | 0.1− | 0.8+ | 2006 09 29 | 699 | 0.4+ | 0.2+ |
| 2004 01 18 | 703 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.6− | 0.6+ | 2006 10 16 | 703 | 1.0− | 0.0 |
| 2004 01 27 | 699 | 0.3+ | 0.6− | 2006 08 31 | 704 | 0.4− | 1.4+ | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2004 01 27 | 699 | 0.5− | 0.3+ | 2006 08 31 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2004 01 27 | 699 | 0.6− | 1.4+ | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2004 01 27 | 699 | 0.6− | 1.0+ | 2006 09 14 | 703 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2004 01 29 | 704 | (2.2+ | 0.1−) | 2006 09 14 | 703 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2004 01 29 | 704 | 0.4+ | 0.8− | 2006 09 15 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.4− |
| 2004 01 29 | 704 | 0.8+ | 0.1+ | 2006 09 15 | 703 | 0.1− | 0.5− | 2006 10 28 | 703 | 0.6− | 0.2+ |
| 2004 01 29 | 704 | 0.6+ | 0.2− | 2006 09 15 | 703 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.8− | 0.0 |
| 2004 01 29 | 704 | 0.7+ | 0.8+ | 2006 09 15 | 703 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.1− | 0.1− |
| 2004 02 16 | 703 | 0.9+ | 0.4+ | 2006 09 16 | 704 | 0.5+ | 0.5− | 2006 10 28 | 703 | 0.2+ | 0.2− |
| 2004 02 16 | 703 | 0.2− | 0.2+ | 2006 09 16 | 704 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.1− | 0.2− |
| 2004 02 16 | 703 | 0.1+ | 0.8+ | 2006 09 16 | 704 | 0.5+ | 0.2− | 2006 11 07 | 644 | 0.1− | 0.2− |
| 2004 02 16 | 703 | 0.2+ | 0.2− | 2006 09 16 | 704 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.2− |
| 2005 04 07 | 691 | 0.3+ | 0.5+ | 2006 09 16 | 704 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.2− |
| 2005 04 07 | 691 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.3− | 0.2− |
| 2005 04 07 | 691 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.9+ | 1.1− | 2006 11 08 | 644 | 0.4− | 0.3− |
| 2005 05 15 | 644 | 0.0 | 0.9+ | 2006 09 16 | 699 | 0.7+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2005 05 15 | 644 | 0.3+ | 0.7+ | 2006 09 16 | 703 | 0.6+ | 1.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2005 05 15 | 644 | 0.1− | 0.5+ | 2006 09 16 | 703 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2006 08 21 | 704 | 0.8+ | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.4+ | 2006 11 10 | 704 | 0.1+ | 0.0 |
| 2006 08 21 | 704 | 0.2− | 0.7+ | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 11 10 | 704 | 0.5− | 0.1+ |
| 2006 08 21 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 699 | 0.4− | 0.0 | 2006 11 10 | 704 | 0.4− | 0.4− |
| 2006 08 21 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 704 | 0.4− | 0.4− | 2006 11 10 | 704 | 0.4− | 0.1− |
| 2006 08 21 | 704 | (0.4+ | 2.3+) | 2006 09 19 | 704 | 0.7+ | 0.7+ | 2006 11 10 | 704 | 0.3− | 0.0 |
| 2006 08 25 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2006 08 25 | 704 | 0.5+ | 0.9+ | 2006 09 19 | 704 | 1.2+ | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.5+ |
| 2006 08 25 | 704 | 0.5− | 0.8+ | 2006 09 22 | 704 | (0.5+ | 1.7+) | 2006 11 16 | 703 | 0.1− | 0.2+ |
| 2006 08 25 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 704 | 0.0 | 1.0+ | 2006 11 16 | 703 | 0.7− | 0.2+ |

**(144143)∗ 2004 BG$_{93}$ = 2002 UL$_{44}$**

Discovered 2004 Jan. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61837)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 162.32911 | | (2000.0) | | | |
| $n$ | 0.19916709 | $\omega$ | 323.42131 | | −0.98791749 | −0.12490769 |
| $a$ | 2.9039625 | $\Omega$ | 209.79923 | | +0.14391326 | −0.95904796 |
| $e$ | 0.0836858 | $i$ | 10.63846 | | −0.05751530 | −0.25421463 |
| $P$ | 4.95 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.0 | 1.1− | 2004 02 12 | 644 | 0.1− | 0.3+ | 2005 06 29 | 691 | 0.1+ | 0.4+ |
| 2001 08 25 | 704 | 0.2+ | 0.8− | 2004 02 12 | 644 | 0.1+ | 0.5+ | 2005 06 29 | 691 | 0.3+ | 0.1+ |
| 2001 08 25 | 704 | 1.0− | 0.3− | 2004 02 12 | 644 | 0.0 | 0.6+ | 2005 07 01 | 691 | 1.0− | 1.6− |
| 2001 08 25 | 704 | 0.3+ | 1.2− | 2004 02 13 | 699 | 0.2+ | 0.2+ | 2005 07 01 | 691 | 0.3+ | 0.2+ |
| 2002 10 31 | 950 | 0.1− | 0.4+ | 2004 02 13 | 699 | 1.3+ | 0.3+ | 2005 07 01 | 691 | 0.1+ | 0.3+ |
| 2002 10 31 | 950 | 0.3− | 0.4+ | 2004 02 13 | 699 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.3+ | 1.0− |
| 2002 10 31 | 950 | 0.1− | 0.4+ | 2004 02 13 | 699 | 0.8− | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.5+ |
| 2002 11 04 | 950 | 0.8+ | 0.4+ | 2004 02 19 | 704 | 0.8− | 0.5+ | 2006 08 28 | 703 | (0.1+ | 2.1−) |
| 2002 11 04 | 950 | 0.8+ | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.2− | 2006 08 28 | 703 | 1.2+ | 1.1− |
| 2002 11 04 | 950 | 0.7+ | 0.4+ | 2004 02 19 | 704 | 0.1− | 0.0 | 2006 08 29 | 703 | (0.6− | 4.0+) |
| 2004 01 18 | 703 | 0.0 | 1.4− | 2004 02 19 | 704 | 0.7− | 1.0− | 2006 08 29 | 703 | 0.5+ | 1.0+ |
| 2004 01 18 | 703 | 1.3− | 0.5+ | 2004 02 19 | 704 | 0.1+ | 0.6+ | 2006 08 29 | 703 | 0.5+ | 0.4+ |
| 2004 01 18 | 703 | 0.5− | 0.4+ | 2004 03 16 | 704 | 0.7+ | 0.6+ | 2006 08 29 | 703 | 1.6− | 0.0 |
| 2004 01 18 | 703 | 0.4+ | 0.3+ | 2004 03 16 | 704 | 0.4+ | 1.2+ | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2004 01 27 | 699 | 0.0 | 1.4+ | 2004 03 16 | 704 | 0.6− | 1.2+ | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 2004 01 27 | 699 | 0.6− | 0.5− | 2004 03 16 | 704 | 0.2− | 0.7+ | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2004 01 27 | 699 | 0.7+ | 0.0 | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.0 |
| 2004 01 27 | 699 | 0.4− | 0.2− | 2005 06 11 | 691 | 0.1− | 0.5− | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2004 01 28 | 608 | 0.3+ | 0.1+ | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2004 01 28 | 608 | 0.8+ | 0.1+ | 2005 06 15 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2004 01 28 | 608 | 1.1+ | 0.3+ | 2005 06 15 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.6+ |
| 2004 01 29 | 704 | 0.2− | 0.4− | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2004 01 29 | 704 | (2.7+ | 0.5−) | 2005 06 28 | 644 | 0.5+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 01 29 | 704 | 0.5+ | 0.0 | 2005 06 28 | 644 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2004 01 29 | 704 | 0.5+ | 0.1+ | 2005 06 28 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2004 01 29 | 704 | 0.4− | 0.0 | 2005 06 29 | 691 | 0.1+ | 0.2+ | | | | |

**(144144)∗ 2004 BK$_{93}$**

Discovered 2004 Jan. 27 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.90042 | | (2000.0) | | | |
| $n$ | 0.26060559 | $\omega$ | 45.22638 | | −0.59980937 | −0.78436120 |
| $a$ | 2.4274311 | $\Omega$ | 82.27816 | | +0.68165933 | −0.60440571 |
| $e$ | 0.1340100 | $i$ | 9.18256 | | +0.41900988 | −0.13953942 |
| $P$ | 3.78 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.3+ | 0.4− | 2004 01 29 | 704 | 0.5+ | 0.4+ | 2004 04 14 | 703 | 0.0 | 0.5+ |
| 2000 01 03 | 704 | 0.2− | 0.4+ | 2004 02 02 | 699 | 0.7− | 0.7− | 2004 04 14 | 703 | 0.1+ | 0.2− |
| 2000 01 03 | 704 | 0.1− | 0.7− | 2004 02 02 | 699 | 1.1− | 0.2− | 2004 04 14 | 703 | 0.4− | 1.0+ |
| 2002 09 19 | 644 | 0.8− | 0.1− | 2004 02 02 | 699 | 1.1+ | 0.7− | 2004 04 25 | 699 | 0.2− | 0.9− |
| 2002 09 19 | 644 | 1.0− | 0.0 | 2004 02 02 | 699 | 1.2− | 0.1− | 2004 04 25 | 699 | (1.7− | 0.1−) |
| 2002 09 19 | 644 | 0.8− | 0.1− | 2004 02 17 | 704 | 0.9+ | 0.5+ | 2004 04 25 | 699 | 0.1− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.2+ | 0.6+ | 2004 02 17 | 704 | 1.4+ | 0.5+ | 2004 04 25 | 699 | 0.6+ | 0.6+ | | |
| 2002 10 16 | 644 | 0.3− | 0.5+ | 2004 02 17 | 704 | 0.4+ | 0.1+ | 2005 08 04 | 644 | (0.2− | 1.8+) | | |
| 2002 10 16 | 644 | 0.2− | 0.3+ | 2004 02 17 | 704 | 1.3+ | 0.7+ | 2005 08 04 | 644 | (0.3− | 1.7+) | | |
| 2002 10 29 | 704 | 0.3− | 0.2+ | 2004 02 17 | 704 | 0.8+ | 0.1+ | 2005 08 04 | 644 | (0.1− | 1.9+) | | |
| 2002 10 29 | 704 | 0.4− | 0.9+ | 2004 02 18 | 201 | 0.9− | 0.1− | 2006 09 30 | 699 | 0.9+ | 0.2− | | |
| 2002 10 29 | 704 | 0.4− | 0.6− | 2004 02 18 | 201 | 1.1− | 0.2− | 2006 09 30 | 699 | 0.1+ | 1.4+ | | |
| 2002 10 29 | 704 | 0.3+ | 1.0− | 2004 02 18 | 201 | 0.6− | 0.3− | 2006 09 30 | 703 | 1.0− | 0.8− | | |
| 2002 12 07 | 291 | 0.3+ | 0.5+ | 2004 03 11 | 644 | 0.5− | 0.1− | 2006 09 30 | 699 | 0.4− | 0.6+ | | |
| 2002 12 07 | 291 | 0.1+ | 1.0+ | 2004 03 11 | 644 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.1+ | | |
| 2002 12 07 | 291 | 0.2+ | 0.7+ | 2004 03 11 | 644 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.2+ | | |
| 2002 12 07 | 291 | 0.1− | 0.3+ | 2004 03 14 | 704 | 1.0+ | 0.7+ | 2006 09 30 | 699 | 1.1− | 0.3+ | | |
| 2002 12 07 | 291 | 0.3− | 0.4+ | 2004 03 14 | 704 | 0.8+ | 1.0+ | 2006 09 30 | 703 | 1.4+ | 0.8− | | |
| 2002 12 07 | 291 | 0.7− | 0.5+ | 2004 03 14 | 704 | 0.9+ | 0.1+ | 2006 10 12 | 644 | 0.5+ | 0.1− | | |
| 2003 12 29 | 704 | 0.4+ | 0.6+ | 2004 03 14 | 704 | 1.3+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.3− | | |
| 2003 12 29 | 704 | 0.3+ | 0.3− | 2004 03 25 | 704 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.5+ | 0.5− | | |
| 2003 12 29 | 704 | 0.5+ | 0.4+ | 2004 03 25 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.3− | | |
| 2003 12 29 | 704 | 1.2− | 0.6− | 2004 03 25 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.0 | | |
| 2003 12 29 | 704 | 0.0 | 0.0 | 2004 03 25 | 704 | 0.7+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.4− | | |
| 2004 01 27 | 703 | 0.0 | 0.1+ | 2004 03 26 | 703 | 0.2− | 0.8+ | 2006 11 13 | 703 | 1.1+ | 1.0− | | |
| 2004 01 27 | 703 | 0.6− | 0.0 | 2004 03 26 | 703 | (2.4+ | 1.8+) | 2006 11 13 | 703 | 0.1+ | 1.2− | | |
| 2004 01 27 | 703 | 0.5− | 0.1− | 2004 03 26 | 703 | 0.8− | 0.3− | 2006 11 13 | 703 | 0.3− | 0.4− | | |
| 2004 01 27 | 703 | 0.1+ | 0.3+ | 2004 03 26 | 703 | 1.2− | 0.3− | 2006 11 13 | 703 | 0.3+ | 1.1− | | |
| 2004 01 29 | 704 | 0.0 | 0.3− | 2004 04 08 | 644 | 0.2− | 0.5+ | 2006 11 19 | 703 | 0.8+ | 0.8− | | |
| 2004 01 29 | 704 | 0.2+ | 0.0 | 2004 04 08 | 644 | 0.4− | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.0 | | |
| 2004 01 29 | 704 | 0.3+ | 0.3− | 2004 04 08 | 644 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.3− | 0.5− | | |
| 2004 01 29 | 704 | 0.2− | 0.4− | 2004 04 14 | 703 | 0.9+ | 0.2− | 2006 11 19 | 703 | 0.5+ | 0.8− | | |

**(144145)∗ 2004 BT$_{93}$ = 2001 MP$_{27}$**

Discovered 2004 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61838)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.85946 | | (2000.0) | | | |
| $n$ | 0.25264900 | $\omega$ | 14.61594 | | −0.29710439 | +0.93877851 |
| $a$ | 2.4781314 | $\Omega$ | 238.37349 | | −0.89532999 | −0.33738201 |
| $e$ | 0.1610588 | $i$ | 11.82057 | | −0.33183307 | +0.06977308 |
| $P$ | 3.90 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.0 | 2004 03 13 | 644 | 0.4+ | 0.6+ | 2006 09 27 | G96 | 1.0− | 0.2− | | |
| 2000 03 04 | 645 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.7+ | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.4− | | |
| 2001 06 20 | 608 | 0.0 | 0.3− | 2004 03 16 | 704 | (1.8+ | 0.0 ) | 2006 09 27 | G96 | 0.5− | 0.4− | | |
| 2001 06 20 | 608 | 0.1− | 0.1− | 2004 03 16 | 704 | (1.5+ | 0.6+) | 2006 10 19 | G96 | 0.1− | 0.3− | | |
| 2001 06 20 | 608 | 0.2− | 0.1− | 2004 03 16 | 704 | 0.8+ | 0.1− | 2006 10 19 | G96 | 0.6− | 0.1− | | |
| 2001 06 21 | 704 | 0.0 | 0.2+ | 2005 06 30 | 703 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.6+ | 0.4− | | |
| 2001 06 21 | 704 | 0.3− | 0.2+ | 2005 06 30 | 703 | 1.0− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.1− | | |
| 2001 06 21 | 704 | 0.1− | 0.8+ | 2005 06 30 | 703 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.0 | | |
| 2002 12 10 | 644 | 0.0 | 0.6+ | 2005 06 30 | 703 | 0.2− | 0.7− | 2006 10 28 | G96 | 0.3+ | 0.0 | | |
| 2002 12 10 | 644 | 0.5− | 1.1+ | 2005 06 30 | 644 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1− | | |
| 2002 12 10 | 704 | 0.6− | 0.3+ | 2005 06 30 | 644 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2005 06 30 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2005 07 05 | 699 | 0.6+ | 0.5+ | 2006 10 31 | G96 | 0.9+ | 0.6− | | |
| 2002 12 10 | 704 | (1.6− | 0.1+) | 2005 07 05 | 699 | 0.5+ | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.5− | | |
| 2004 01 28 | 704 | 0.2− | 0.3+ | 2005 07 05 | 699 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.5− | | |
| 2004 01 28 | 704 | 1.0− | 0.4+ | 2005 07 05 | 699 | 0.4+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.4+ | | |
| 2004 01 28 | 704 | 0.1− | 0.3+ | 2005 07 08 | 703 | 1.1− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2004 01 28 | 704 | 0.4+ | 0.3+ | 2005 07 08 | 703 | 0.4− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.2+ | | |
| 2004 01 29 | 704 | 0.3+ | 0.4+ | 2005 07 08 | 703 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.1− | | |
| 2004 01 29 | 704 | 0.3+ | 0.1+ | 2005 07 08 | 703 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.1+ | | |
| 2004 01 29 | 699 | 0.3− | 0.3− | 2005 07 11 | 703 | 0.6− | 0.8+ | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2004 01 29 | 704 | 0.0 | 0.4+ | 2005 07 11 | 703 | 0.6− | 0.1+ | 2006 11 15 | 703 | 1.1+ | 0.2+ | | |
| 2004 01 29 | 699 | 0.1− | 0.2− | 2005 07 11 | 703 | 0.4+ | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.1+ | | |
| 2004 01 29 | 704 | 1.0+ | 0.6+ | 2005 07 11 | 703 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.4+ | 0.3+ | | |
| 2004 01 29 | 699 | 0.3− | 0.8− | 2005 07 16 | 703 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.1+ | | |
| 2004 01 29 | 699 | 1.3− | 0.2+ | 2005 07 16 | 703 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.5− | | |
| 2004 02 13 | 644 | 0.4+ | 0.3+ | 2005 07 16 | 703 | 0.5− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.7− | | |
| 2004 02 13 | 644 | 0.1+ | 0.5+ | 2005 07 28 | 704 | 0.4− | 0.6+ | 2006 11 21 | 704 | (0.8+ | 1.7+) | | |
| 2004 02 13 | 644 | 0.5+ | 0.3+ | 2005 07 28 | 704 | 0.3− | 0.5+ | 2006 11 27 | 703 | 0.5− | 0.5+ | | |
| 2004 02 19 | 704 | 0.1+ | 1.1+ | 2005 07 28 | 704 | 0.4+ | 0.5+ | 2006 11 27 | 703 | 0.2− | 0.2− | | |
| 2004 02 19 | 704 | 0.5− | 0.7+ | 2005 07 28 | 704 | 0.3+ | 0.6+ | 2006 11 27 | 703 | 0.1+ | 0.2+ | | |
| 2004 02 19 | 704 | 0.4+ | 1.0+ | 2005 07 28 | 704 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.6− | 0.2+ | | |
| 2004 02 19 | 704 | 0.1+ | 0.0 | 2005 08 13 | 608 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.2+ | 1.1+ | | |
| 2004 02 19 | 704 | 0.2+ | 0.8+ | 2005 08 13 | 608 | 0.1+ | 0.6+ | 2006 11 29 | 704 | 1.0− | 0.5+ | | |
| 2004 03 13 | 644 | 0.4+ | 0.5+ | 2005 08 13 | 608 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 1.1− | 0.2+ | | |
| 2004 03 13 | 644 | 0.6+ | 0.3+ | 2006 09 27 | G96 | 1.2− | 0.4− | 2006 11 29 | 704 | 0.6+ | 0.3+ | | |

**(144146)∗ 2004 BW$_{93}$**

Discovered 2004 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.84996 | | (2000.0) | | | |
| $n$ | 0.28063926 | $\omega$ | 294.76536 | | −0.12225094 | −0.99178733 |
| $a$ | 2.3104883 | $\Omega$ | 162.13553 | | +0.94911454 | −0.12789706 |
| $e$ | 0.0781138 | $i$ | 7.03749 | | +0.29023488 | +0.00048934 |
| $P$ | 3.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.6− | 0.7+ | 2004 01 29 | 704 | 0.7+ | 1.2+ | 2004 02 17 | 704 | 0.2+ | 0.3+ | | |
| 1995 10 01 | 691 | 0.1− | 0.7+ | 2004 01 29 | 704 | 0.1− | 0.4− | 2004 02 17 | 704 | 0.4+ | 0.1+ | | |
| 1995 10 01 | 691 | 0.3+ | 0.1+ | 2004 01 29 | 704 | 0.7+ | 0.7+ | 2004 02 17 | 704 | 0.1+ | 0.5+ | | |
| 1999 11 17 | 703 | 0.2− | 0.1+ | 2004 01 29 | 704 | 1.0− | 0.2− | 2004 02 17 | 704 | 0.7+ | 0.7+ | | |
| 1999 11 17 | 703 | 1.3− | 0.6− | 2004 01 29 | 704 | 0.4− | 0.6+ | 2004 02 19 | 608 | 1.1+ | 0.7+ | | |
| 1999 11 17 | 703 | 0.5+ | 0.8+ | 2004 01 29 | 704 | 0.5+ | 0.2+ | 2004 02 19 | 608 | 1.2+ | 0.6+ | | |
| 1999 11 17 | 703 | 0.2+ | 0.4− | 2004 01 29 | 704 | (0.5+ | 1.9+) | 2004 02 19 | 608 | 0.9+ | 0.7+ | | |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2004 01 29 | 704 | 0.6− | 0.3+ | 2004 03 19 | 644 | 0.6− | 0.6+ | | |
| 2001 05 24 | 645 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.6− | 0.0 | 2004 03 19 | 644 | 0.1+ | 0.8+ | | |
| 2002 08 29 | 291 | 0.0 | 0.7+ | 2004 01 30 | 704 | 0.5− | 0.3+ | 2004 03 19 | 644 | 0.2+ | 1.0+ | | |
| 2002 08 29 | 291 | 0.1− | 0.5+ | 2004 01 30 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2− | 1.1+ | | |
| 2002 08 29 | 291 | 0.0 | 0.6+ | 2004 01 31 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.3− | | |
| 2002 09 05 | 704 | 0.2− | 1.0+ | 2004 01 31 | 704 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 2002 09 05 | 704 | 0.0 | 0.9+ | 2004 01 31 | 704 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.4+ | | |
| 2002 09 05 | 704 | (1.8− | 0.6+) | 2004 01 31 | 704 | 0.5+ | 0.6− | 2006 10 22 | 703 | 0.1− | 0.9− | | |
| 2002 09 07 | 704 | (2.8+ | 2.8−) | 2004 02 11 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.8+ | 1.0− | | |
| 2002 09 07 | 704 | 0.7+ | 0.6+ | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.5+ | | |
| 2002 09 07 | 704 | (0.1− | 1.6+) | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.3− | | |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.2− | 1.3− | | |
| 2002 09 14 | 644 | 0.1− | 0.6+ | 2004 02 13 | 691 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.0 | | |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2004 02 13 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.1+ | | |
| 2004 01 28 | 704 | 0.8+ | 0.3+ | 2004 02 13 | 699 | 0.5+ | 1.2− | 2006 11 13 | 703 | 0.3− | 0.0 | | |
| 2004 01 28 | 704 | 0.2+ | 0.7+ | 2004 02 13 | 699 | 1.1− | 0.7+ | 2006 11 19 | 703 | 0.5− | 0.2− | | |
| 2004 01 28 | 704 | 0.4+ | 0.2+ | 2004 02 13 | 699 | 0.4− | 0.5+ | 2006 11 19 | 703 | 0.8− | 0.1− | | |
| 2004 01 28 | 704 | 0.9+ | 0.5+ | 2004 02 13 | 699 | 1.0− | 1.0+ | 2006 11 19 | 703 | 0.5− | 0.1− | | |
| 2004 01 29 | 704 | 0.2+ | 0.6+ | 2004 02 17 | 704 | 0.5+ | 0.9+ | 2006 11 19 | 703 | 0.2− | 0.5− | | |

**(144147)∗ 2004 BE$_{94}$**

Discovered 2004 Jan. 28 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 123.31548 | | (2000.0) | | | |
| $n$ | 0.17677968 | $\omega$ | 34.84718 | | −0.91619632 | +0.39720073 |
| $a$ | 3.1442313 | $\Omega$ | 168.19776 | | −0.40054753 | −0.90372231 |
| $e$ | 0.1930839 | $i$ | 15.03702 | | −0.01208262 | −0.15974221 |
| $P$ | 5.58 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.4+ | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.5+ | | |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 02 18 | 608 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.1− | 0.4+ | | |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2004 02 18 | 608 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.3+ | | |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 02 18 | 608 | 0.3− | 0.1− | 2006 08 28 | 703 | (1.9− | 0.4+) | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 03 13 | 608 | 0.1+ | 1.2+ | 2006 08 28 | 703 | 0.1− | 0.5+ | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2004 03 13 | 608 | 0.6+ | 0.8+ | 2006 08 28 | 703 | 0.2+ | 0.5− | | |
| 2004 01 27 | 699 | (3.6+ | 1.4+) | 2004 03 13 | 608 | 0.7+ | 0.9+ | 2006 09 14 | 703 | 0.5+ | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 699 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.4− |
| 2004 01 27 | 699 | 0.7− | 0.4− | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2004 01 27 | 699 | 1.0− | 1.1+ | 2004 03 19 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.2− | 1.1+ |
| 2004 01 28 | 608 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2004 01 28 | 608 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.3+ | 1.1+ | 2006 09 27 | G96 | 0.0 | 0.0 |
| 2004 01 28 | 608 | 0.1+ | 0.0 | 2005 06 06 | 704 | 0.6− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2+ |
| 2004 01 29 | 704 | 0.0 | 0.6+ | 2005 06 06 | 704 | 0.1− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2004 01 29 | 704 | (0.5+ | 1.9+) | 2005 06 06 | 704 | 0.5− | 0.8− | 2006 10 19 | G96 | 0.1− | 0.4+ |
| 2004 01 29 | 704 | (2.4+ | 0.6+) | 2005 06 06 | 704 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2+ |
| 2004 01 29 | 704 | (2.2+ | 2.8+) | 2005 06 06 | 704 | 0.2+ | 0.3− | 2006 10 19 | G96 | 0.4− | 0.4+ |
| 2004 02 11 | 644 | 0.1− | 0.3+ | 2005 06 14 | 608 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2005 06 14 | 608 | 0.5+ | 0.5− | 2006 11 16 | G96 | 0.4+ | 0.1+ |
| 2004 02 11 | 644 | 0.1− | 0.4+ | 2005 06 14 | 608 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.2+ |
| 2004 02 18 | 704 | 0.5+ | 0.7+ | 2006 08 21 | 291 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2004 02 18 | 704 | 0.4+ | 0.3+ | 2006 08 21 | 291 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 02 18 | 704 | 0.1− | 0.0 | 2006 08 21 | 291 | 0.2− | 0.5+ | | | | |
| 2004 02 18 | 704 | 0.4+ | 0.3+ | 2006 08 27 | 691 | 0.3− | 0.4+ | | | | |

**(144148)∗ 2004 BX$_{94}$ = 2002 UT$_{48}$**

Discovered 2004 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61840)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.81019 | | (2000.0) | | | |
| $n$ | 0.22891429 | $\omega$ | 57.60694 | | +0.90985393 | +0.34314835 |
| $a$ | 2.6465947 | $\Omega$ | 281.40127 | | −0.41300086 | +0.80308891 |
| $e$ | 0.1654650 | $i$ | 13.76653 | | +0.03995128 | +0.48713181 |
| $P$ | 4.31 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.1− | 1.0+ | 2004 01 28 | 704 | 0.5− | 0.5− | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2002 10 31 | 704 | 0.2− | 0.9+ | 2004 01 28 | 704 | 0.2+ | 0.3− | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 0.1+ | 2004 01 29 | 699 | 0.0 | 0.7+ | 2006 09 25 | 703 | 0.2− | 0.9− |
| 2002 10 31 | 704 | 0.5+ | 0.3− | 2004 01 29 | 699 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.4− | 0.9− |
| 2002 10 31 | 704 | 0.3+ | 0.8+ | 2004 01 29 | 699 | 1.5+ | 0.3+ | 2006 09 25 | 703 | 0.4+ | 1.1− |
| 2002 11 06 | 704 | 0.7+ | 0.2+ | 2004 01 29 | 699 | 0.2+ | 0.6+ | 2006 10 02 | 704 | 1.2+ | 0.4− |
| 2002 11 06 | 704 | 1.3+ | 0.0 | 2004 02 17 | 703 | 1.2+ | 0.1+ | 2006 10 02 | 704 | 0.1− | 0.4− |
| 2002 11 06 | 704 | 0.9+ | 0.3+ | 2004 02 17 | 703 | 0.5− | 0.4+ | 2006 10 02 | 704 | 0.3+ | 0.3− |
| 2002 11 06 | 704 | 1.2+ | 0.2+ | 2004 02 17 | 703 | 0.2− | 0.8− | 2006 10 02 | 704 | 0.1− | 0.4− |
| 2002 11 06 | 704 | 0.8+ | 0.1− | 2004 02 17 | 703 | 0.5− | 0.3− | 2006 10 02 | 704 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 1.4− | 0.8− | 2004 02 19 | 704 | 0.3+ | 1.3+ | 2006 10 20 | 704 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.4− | 2004 02 19 | 704 | 0.5− | 0.3− | 2006 10 20 | 704 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.5− | 1.0+ | 2004 02 19 | 704 | 0.2− | 0.4− | 2006 10 20 | 704 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.7− | 0.2− | 2004 02 19 | 704 | 0.3+ | 0.0 | 2006 10 20 | 704 | 0.1− | 0.1− |
| 2002 12 15 | 704 | 0.1− | 1.0+ | 2004 02 19 | 704 | 0.3− | 0.9+ | 2006 10 20 | 704 | 0.0 | 0.2− |
| 2002 12 15 | 704 | 0.2+ | 0.1+ | 2005 06 05 | E12 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.4+ |
| 2002 12 15 | 704 | 0.1− | 0.2− | 2005 06 05 | E12 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2002 12 15 | 704 | 0.1+ | 0.0 | 2005 06 05 | E12 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.3+ |
| 2002 12 15 | 704 | 0.2+ | 0.7+ | 2005 06 05 | E12 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.2− |
| 2003 01 05 | 704 | 1.4− | 0.8− | 2005 07 05 | E12 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2003 01 05 | 704 | 0.1+ | 1.2− | 2005 07 05 | E12 | 0.5− | 0.5+ | 2006 11 15 | 703 | 0.6+ | 0.2− |
| 2003 01 05 | 704 | 0.3− | 0.6− | 2005 07 05 | E12 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.5− |
| 2003 01 05 | 704 | 0.2− | 0.8− | 2005 07 05 | E12 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2003 02 01 | 704 | 0.1− | 0.2− | 2006 08 12 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.8+ |
| 2003 02 01 | 704 | 0.6+ | 1.2− | 2006 08 12 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2003 02 01 | 704 | 0.6+ | 0.8+ | 2006 08 12 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.7+ | 0.1− |
| 2003 02 01 | 644 | 0.3− | 0.4+ | 2006 08 23 | 704 | 0.4− | 0.2− | 2006 11 16 | 704 | (3.5− | 4.8+) |
| 2003 02 01 | 704 | 1.2− | 0.5+ | 2006 08 23 | 704 | 0.8+ | 0.6+ | 2006 11 22 | 703 | 0.0 | 0.6− |
| 2003 02 01 | 704 | 0.6+ | 0.9− | 2006 08 23 | 704 | 0.6− | 0.8+ | 2006 11 22 | 703 | 0.2+ | 0.3− |
| 2003 02 01 | 644 | 0.3− | 0.4+ | 2006 08 23 | 704 | 1.5+ | 1.0+ | 2006 11 22 | 703 | 0.1− | 0.4− |
| 2003 02 01 | 644 | 0.5− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.7− |
| 2004 01 28 | 704 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.2− | 0.1− | | | | |
| 2004 01 28 | 704 | 0.3− | 0.8− | 2006 09 19 | 703 | 0.0 | 0.3− | | | | |

**(144149)∗ 2004 BK$_{95}$**

Discovered 2004 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 208.13935 | | (2000.0) | | | |
| $n$ | 0.22611725 | $\omega$ | 228.39190 | | −0.97298823 | −0.16472295 |
| $a$ | 2.6683754 | $\Omega$ | 301.52908 | | +0.22351919 | −0.84741370 |
| $e$ | 0.0974917 | $i$ | 10.93841 | | −0.05773285 | −0.50473396 |
| $P$ | 4.36 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.1− | 0.4− | 2004 01 29 | 699 | 0.7− | 1.1+ | 2004 03 31 | 703 | 0.8− | 1.0+ |
| 1995 02 03 | 691 | 0.2− | 0.4− | 2004 01 29 | 699 | 0.0 | 0.3− | 2004 03 31 | 704 | 0.3+ | 1.0+ |
| 1995 02 03 | 691 | 0.1− | 0.2− | 2004 02 03 | 608 | 0.3+ | 0.7− | 2004 03 31 | 704 | (0.1+ | 1.7+) |
| 2001 08 14 | 608 | 0.1+ | 0.0 | 2004 02 03 | 608 | 0.3+ | 0.1+ | 2004 03 31 | 704 | 0.1− | 0.3+ |
| 2001 08 14 | 608 | 0.0 | 0.0 | 2004 02 03 | 608 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.5− | 0.3+ |
| 2001 08 14 | 608 | 0.2+ | 0.1+ | 2004 02 14 | 644 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.9− | 1.4+ |
| 2002 10 20 | 644 | 0.1+ | 0.1+ | 2004 02 14 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.5+ | 0.1+ |
| 2002 10 20 | 644 | 0.1+ | 0.4+ | 2004 02 14 | 644 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.1− | 1.2+ |
| 2002 10 20 | 644 | 0.1+ | 0.1− | 2004 02 16 | 333 | 0.3− | 0.1+ | 2006 09 22 | 699 | 0.3− | 0.3+ |
| 2002 10 31 | 704 | 0.6− | 0.5+ | 2004 02 16 | 333 | 0.6− | 0.2− | 2006 09 22 | 699 | 0.7+ | 0.5+ |
| 2002 10 31 | 704 | 0.6− | 0.3− | 2004 02 17 | 333 | 0.3− | 0.3− | 2006 09 22 | 699 | 0.2− | 0.3− |
| 2002 10 31 | 704 | 0.7− | 0.8+ | 2004 02 17 | 333 | 0.5− | 0.2+ | 2006 09 22 | 699 | 0.2+ | 1.2+ |
| 2002 11 13 | 644 | 0.5− | 0.9− | 2004 02 19 | 704 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.1− |
| 2002 11 13 | 644 | 0.0 | 0.8− | 2004 02 19 | 704 | 0.4− | 0.0 | 2006 09 28 | 703 | 1.0+ | 1.2+ |
| 2002 11 13 | 644 | 0.3− | 0.6− | 2004 02 19 | 704 | 0.1+ | 0.5− | 2006 09 28 | 703 | 0.6+ | 0.5+ |
| 2002 11 25 | 644 | 0.3− | 0.8− | 2004 02 19 | 704 | 0.1− | 0.1+ | 2006 09 28 | 703 | (0.1+ | 1.6+) |
| 2002 11 25 | 644 | 0.1+ | 0.7− | 2004 02 19 | 704 | 0.7− | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2002 11 25 | 644 | 0.1+ | 0.7− | 2004 03 01 | 703 | 0.7+ | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | (2.1+ | 2.2+) | 2004 03 01 | 703 | 0.9+ | 0.5+ | 2006 10 10 | 644 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | (2.5+ | 2.7+) | 2004 03 01 | 703 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | (2.3+ | 1.4+) | 2004 03 01 | 703 | 1.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | (1.7+ | 2.6+) | 2004 03 16 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 12 06 | 704 | (1.8+ | 2.3+) | 2004 03 16 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 12 11 | 644 | 0.3+ | 0.9+ | 2004 03 16 | 704 | 0.7+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 12 11 | 644 | 0.6+ | 1.1+ | 2004 03 16 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 12 11 | 644 | 0.2+ | 1.1+ | 2004 03 16 | 704 | 0.5+ | 1.2+ | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2004 01 28 | 704 | 0.4+ | 0.4+ | 2004 03 22 | 608 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.8− | 0.6− |
| 2004 01 28 | 704 | 0.6+ | 0.1− | 2004 03 22 | 608 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.2− |
| 2004 01 28 | 704 | 1.0+ | 0.3− | 2004 03 22 | 608 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.4− | 0.7− |
| 2004 01 28 | 704 | 0.3+ | 0.0 | 2004 03 31 | 703 | 0.4− | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2004 01 29 | 699 | 0.1+ | 0.2+ | 2004 03 31 | 703 | 0.1+ | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2004 01 29 | 699 | 0.5+ | 0.2+ | 2004 03 31 | 703 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |

**(144150)∗ 2004 BS$_{95}$ = 1993 TF$_{38}$**

Discovered 2004 Jan. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61841)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.20863 | | (2000.0) | | | |
| $n$ | 0.31495974 | $\omega$ | 269.38611 | | +0.94101880 | +0.32685412 |
| $a$ | 2.1394363 | $\Omega$ | 71.53332 | | −0.26200648 | +0.86748170 |
| $e$ | 0.1334153 | $i$ | 5.29090 | | −0.21409395 | +0.37502251 |
| $P$ | 3.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 1.8− | 1.4− | 2002 07 12 | 644 | 0.7− | 0.3+ | 2004 02 15 | 704 | 0.4+ | 1.1+ |
| 1993 10 09 | 809 | (2.7− | 0.4−) | 2003 12 28 | 704 | 1.0+ | 0.9+ | 2004 02 17 | 691 | 0.2+ | 0.2+ |
| 1993 10 09 | 809 | 0.3− | 1.6− | 2003 12 28 | 704 | 0.1+ | 0.9+ | 2004 02 17 | 691 | 0.1+ | 0.0 |
| 1993 10 11 | 809 | 0.9+ | 0.4+ | 2003 12 28 | 704 | 0.9+ | 0.9− | 2004 02 17 | 691 | 0.1+ | 0.0 |
| 1993 10 11 | 809 | 0.5+ | 0.0 | 2003 12 28 | 704 | 1.4− | 0.8+ | 2004 02 22 | 703 | (0.4+ | 1.8+) |
| 1993 10 11 | 809 | 0.1+ | 0.8+ | 2004 01 16 | 644 | 0.2+ | 0.2+ | 2004 02 22 | 703 | 0.1+ | 0.1+ |
| 1993 10 21 | 809 | 0.3+ | 1.6+ | 2004 01 16 | 644 | 0.1+ | 0.1− | 2004 02 22 | 703 | 0.4− | 0.7+ |
| 1993 10 21 | 809 | 1.0− | 1.2+ | 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 22 | 703 | 0.1− | 0.2+ |
| 1993 10 21 | 809 | 1.0− | 1.5+ | 2004 01 26 | 699 | 1.1− | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.2+ |
| 1999 07 14 | 704 | 0.2+ | 1.3+ | 2004 01 26 | 699 | 1.1+ | 0.0 | 2006 09 24 | 691 | 0.2− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.2− | 0.0 | 2004 01 26 | 699 | 0.2− | 0.7+ | 2006 09 24 | 691 | 0.0 | 0.3− |
| 1999 07 14 | 704 | 0.1− | 1.4+ | 2004 01 26 | 699 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.6− |
| 1999 07 14 | 704 | 0.0 | 1.0+ | 2004 01 31 | 704 | 1.0+ | 0.6+ | 2006 10 23 | G96 | 0.3− | 0.8− |
| 1999 09 11 | 704 | 0.7+ | 0.2+ | 2004 01 31 | 704 | 0.3+ | 1.3+ | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 1999 09 11 | 704 | 0.6+ | 0.4+ | 2004 01 31 | 704 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.4− |
| 1999 09 11 | 704 | 0.6+ | 0.5− | 2004 01 31 | 704 | 0.2− | 0.8+ | 2006 11 02 | G96 | 0.1− | 0.7− |
| 1999 09 11 | 704 | 0.5+ | 0.2+ | 2004 02 15 | 704 | 0.7+ | 0.9+ | 2006 11 02 | G96 | 0.5− | 0.5− |
| 1999 09 11 | 704 | 0.5− | 0.8+ | 2004 02 15 | 704 | (0.9− | 1.8+) | 2006 11 02 | G96 | 0.8+ | 0.0 |
| 2002 07 05 | 704 | 0.5− | 1.0+ | 2004 02 15 | 704 | (0.4+ | 1.7+) | 2006 11 02 | G96 | 0.1− | 0.1− |
| 2002 07 05 | 704 | 0.1− | 0.7+ | 2004 02 15 | 704 | (0.6− | 2.4+) | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2002 07 05 | 704 | 0.4− | 0.8+ | 2004 02 15 | 704 | 0.1+ | 0.8+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2002 07 05 | 704 | 0.3+ | 0.2+ | 2004 02 15 | 704 | 0.7− | 1.3+ | 2006 11 22 | G96 | 0.3− | 0.6− |
| 2002 07 12 | 644 | 0.8− | 0.6+ | 2004 02 15 | 704 | 0.9+ | 0.8+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2002 07 12 | 644 | 0.8− | 0.5+ | 2004 02 15 | 704 | 0.8− | 0.8+ | | | | |

**(144151)∗ 2004 BP$_{96}$**

Discovered 2004 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 324.12300 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.28635519 | $\omega$ | 281.29388 | | +0.40765149 | −0.91297317 |
| $a$ | 2.2796387 | $\Omega$ | 144.63277 | | +0.84903176 | +0.37197992 |
| $e$ | 0.1885027 | $i$ | 1.71549 | | +0.33610315 | +0.16766314 |
| $P$ | 3.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 703 | 0.2− | 0.6+ | 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 |
| 1999 09 14 | 703 | 0.6+ | 1.1+ | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1999 09 14 | 703 | 0.9− | 0.7− | 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1999 09 14 | 703 | 0.0 | 1.3− | 2004 02 16 | 704 | 0.0 | 1.0− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1999 10 15 | 704 | 0.2+ | 0.1+ | 2004 02 16 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 1999 10 15 | 704 | 0.9− | 1.1− | 2004 02 16 | 704 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 1999 10 15 | 704 | 0.9+ | 0.1+ | 2004 02 26 | 704 | (0.9− | 2.0+) | 2006 10 21 | 703 | 0.5− | 0.4− |
| 1999 10 15 | 704 | 0.9+ | 0.5− | 2004 02 26 | 704 | (1.2− | 1.9+) | 2006 10 21 | 703 | 0.5+ | 0.5− |
| 2001 04 18 | 691 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 04 18 | 691 | 0.1+ | 0.5+ | 2004 02 26 | 704 | (2.1− | 1.6+) | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 04 18 | 691 | 0.1+ | 0.4+ | 2004 02 26 | 704 | 1.3− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2003 12 17 | 703 | 1.2− | 0.8− | 2006 09 18 | 699 | 0.4− | 0.5− | 2006 10 23 | 704 | 0.9− | 0.6+ |
| 2003 12 17 | 703 | 0.0 | 0.6− | 2006 09 18 | 699 | 1.1− | 0.7− | 2006 10 23 | 704 | 1.2− | 0.3− |
| 2003 12 17 | 703 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.9− | 0.8− | 2006 10 23 | 704 | (1.7+ | 0.4−) |
| 2003 12 17 | 703 | (1.6+ | 0.2+) | 2006 09 18 | 699 | 0.5+ | 0.2− | 2006 10 23 | 704 | 0.4+ | 0.1− |
| 2004 01 24 | 704 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2004 01 24 | 704 | 0.4− | 0.0 | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2004 01 24 | 704 | 0.6+ | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.3− |
| 2004 01 24 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.7+ | 0.9+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2004 01 24 | 704 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 01 30 | 704 | 0.3− | 0.9+ | 2006 09 27 | 704 | 0.6− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2004 01 30 | 704 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.4− | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.4− |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2004 01 30 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2004 01 30 | 704 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2004 01 30 | 704 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.5+ | 0.3− |
| 2004 02 10 | 644 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.6− |
| 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.6− |
| 2004 02 10 | 644 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.3− |

**(144152)∗ 2004 BY$_{96}$**

Discovered 2004 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 224.80271 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27313013 | $\omega$ | 50.65206 | | −0.99303862 | +0.07956323 |
| $a$ | 2.3526445 | $\Omega$ | 133.72053 | | −0.10336453 | −0.94220716 |
| $e$ | 0.0772265 | $i$ | 6.90247 | | +0.05648069 | −0.32544642 |
| $P$ | 3.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.0 | 0.4− | 2004 02 12 | 333 | 0.4− | 1.0+ | 2004 03 19 | 644 | 0.3+ | 0.4+ |
| 1997 03 02 | 691 | 0.1− | 0.6− | 2004 02 12 | 333 | 0.1+ | 0.7+ | 2004 03 19 | 644 | 0.2+ | 0.2+ |
| 1997 03 02 | 691 | 0.2− | 0.9− | 2004 02 13 | 333 | 0.1− | 0.4− | 2004 03 19 | 644 | 0.3+ | 0.4+ |
| 2000 01 05 | 704 | 0.2+ | 0.1− | 2004 02 13 | 333 | 0.6− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.5− |
| 2000 01 05 | 704 | 0.2− | 0.1− | 2004 02 13 | 333 | 0.3− | 0.2+ | 2004 03 19 | 704 | 0.9+ | 0.9+ |
| 2000 01 05 | 704 | (1.4+ | 2.2−) | 2004 02 13 | 333 | 0.7− | 0.2− | 2004 03 19 | 704 | 1.0+ | 0.1+ |
| 2001 05 17 | 691 | 0.1+ | 0.2+ | 2004 02 13 | 333 | 1.4+ | 0.4+ | 2004 03 19 | 704 | 0.7− | 1.3+ |
| 2001 05 17 | 691 | 0.9− | 1.0+ | 2004 02 16 | 333 | 0.1− | 0.1+ | 2004 04 11 | 644 | 0.3+ | 0.4+ |
| 2001 05 17 | 691 | 0.1+ | 0.2+ | 2004 02 16 | 333 | 0.2+ | 0.4+ | 2004 04 11 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2004 02 16 | 333 | 0.2+ | 0.2− | 2004 04 11 | 644 | 0.2+ | 0.0 |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2004 02 16 | 333 | 0.2+ | 0.3+ | 2005 06 28 | 599 | 0.1− | 0.8+ |
| 2004 01 24 | 704 | 0.2− | 1.2+ | 2004 02 16 | 333 | 0.1− | 0.5− | 2005 06 28 | 599 | 0.5+ | 0.8+ |
| 2004 01 24 | 704 | 1.0+ | 1.2+ | 2004 02 16 | 704 | 0.4+ | 1.4+ | 2005 06 28 | 599 | (1.1− | 2.2+) |
| 2004 01 24 | 704 | 0.0 | 0.6+ | 2004 02 16 | 704 | 0.1− | 1.1+ | 2005 06 28 | 599 | 0.7+ | 1.2+ |
| 2004 01 24 | 704 | 0.3+ | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.2+ | 2005 06 29 | 691 | 0.1+ | 0.5+ |
| 2004 01 24 | 704 | 1.2+ | 0.9+ | 2004 02 16 | 704 | 0.4+ | 0.6+ | 2005 06 29 | 691 | 0.0 | 0.6+ |
| 2004 01 30 | 704 | 0.1+ | 0.7+ | 2004 02 16 | 704 | 0.4+ | 0.1+ | 2005 06 29 | 691 | 0.1+ | 0.6+ |
| 2004 01 30 | 704 | 0.3+ | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.2+ | 2005 07 05 | 691 | (0.9+ | 1.7+) |
| 2004 01 30 | 704 | 0.3− | 0.3− | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2005 07 05 | 691 | 0.4+ | 0.5+ |
| 2004 01 30 | 704 | 0.7− | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.9+ | 2005 07 05 | 691 | 0.4− | 1.2− |
| 2004 01 30 | 704 | 0.8− | 0.6+ | 2004 02 23 | 704 | 0.2+ | 0.4+ | 2005 08 06 | 704 | 0.3− | 0.4+ |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2004 02 23 | 704 | 1.0+ | 0.8+ | 2005 08 06 | 704 | 0.2− | 0.5+ |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.5− | 0.1− | 2005 08 06 | 704 | 1.4+ | 1.0+ |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.3+ | 0.1+ |
| 2004 01 31 | 333 | 0.4+ | 0.2− | 2004 02 26 | 704 | 0.6− | 0.2+ | 2006 10 30 | 703 | 0.6− | 0.5− |
| 2004 01 31 | 333 | 0.1− | 0.4− | 2004 02 26 | 704 | 0.9− | 0.3− | 2006 10 30 | 703 | (0.9− | 2.3−) |
| 2004 02 02 | 333 | 0.6+ | 0.5− | 2004 02 26 | 704 | 0.5− | 0.1+ | 2006 10 30 | 703 | 0.0 | 0.2+ |
| 2004 02 02 | 333 | 0.4+ | 0.5− | 2004 02 27 | 608 | 0.4+ | 0.8− | 2006 11 13 | 703 | 0.3+ | 0.9+ |
| 2004 02 02 | 333 | 0.7+ | 0.2+ | 2004 02 27 | 608 | 0.7+ | 0.1− | 2006 11 13 | 703 | (1.6+ | 1.2+) |
| 2004 02 10 | 644 | 0.2− | 0.1+ | 2004 02 27 | 608 | 0.4+ | 0.3− | 2006 11 13 | 703 | (2.3− | 0.2+) |
| 2004 02 10 | 644 | 0.2− | 0.1+ | 2004 03 10 | 644 | 0.3+ | 0.5+ | 2006 11 13 | 703 | 0.6+ | 0.3− |
| 2004 02 10 | 644 | 0.3− | 0.4+ | 2004 03 10 | 644 | 0.4− | 0.7+ | 2006 11 19 | 703 | 0.2− | 0.7+ |
| 2004 02 11 | 699 | 0.4− | 0.3− | 2004 03 10 | 644 | 0.2+ | 0.7+ | 2006 11 19 | 703 | 0.8− | 0.3− |
| 2004 02 11 | 699 | 0.5− | 0.4+ | 2004 03 10 | 644 | 0.6− | 0.5+ | 2006 11 19 | 703 | 0.9− | 0.7− |
| 2004 02 11 | 699 | 0.4− | 0.2− | 2004 03 10 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.5− | 0.3− |
| 2004 02 11 | 699 | 0.2+ | 0.3− | 2004 03 10 | 644 | 0.4− | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 02 12 | 333 | 0.4− | 0.5+ | 2004 03 14 | 704 | 0.0 | 0.6− | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2004 02 12 | 333 | 0.1− | 0.8+ | 2004 03 14 | 704 | (1.8+ | 0.0 ) | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2004 02 12 | 333 | 0.4− | 0.1+ | 2004 03 14 | 704 | 0.2+ | 0.6+ | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2004 02 12 | 333 | 0.1− | 0.5+ | 2004 03 14 | 704 | 0.6+ | 0.2− | | | | |

**(144153)∗ 2004 BL$_{97}$**

Discovered 2004 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 344.60484 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.26420346 | $\omega$ | 268.66545 | | +0.93667605 | −0.32500352 |
| $a$ | 2.4053432 | $\Omega$ | 110.28748 | | +0.35019691 | +0.86895766 |
| $e$ | 0.1862096 | $i$ | 7.99294 | | +0.00031276 | +0.37320946 |
| $P$ | 3.73 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 09 | 691 | 0.0 | 0.3− | 2004 01 17 | 644 | 0.3− | 0.2+ | 2006 08 10 | 644 | 0.5+ | 0.6+ |
| 1994 05 09 | 691 | 0.2− | 0.2+ | 2004 01 17 | 644 | 0.3+ | 0.1− | 2006 08 10 | 644 | 0.2− | 0.1+ |
| 1994 05 09 | 691 | 0.0 | 0.4− | 2004 01 17 | 644 | 0.3+ | 0.0 | 2006 08 10 | 644 | 0.1− | 0.3+ |
| 2002 07 05 | 704 | 1.1+ | 1.2+ | 2004 01 17 | 644 | 0.5+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.0 |
| 2002 07 05 | 704 | 0.3+ | 0.3+ | 2004 01 22 | 704 | 0.3− | 1.2+ | 2006 08 16 | 644 | 0.1− | 0.2− |
| 2002 07 05 | 704 | (1.7+ | 0.8+) | 2004 01 22 | 704 | 0.7− | 1.1+ | 2006 08 16 | 644 | 0.1− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 704 | 0.8− | 0.6+ | 2004 01 22 | 704 | 0.5− | 0.2+ | 2006 09 12 | 704 | 0.4+ | 0.2− |
| 2002 07 05 | 644 | 0.3+ | 1.5+ | 2004 01 22 | 704 | 0.0 | 1.1+ | 2006 09 12 | 704 | 0.4+ | 0.2+ |
| 2002 07 05 | 644 | 0.5+ | 1.2+ | 2004 01 22 | 704 | 0.2− | 1.2+ | 2006 09 12 | 704 | 0.1+ | 0.3− |
| 2002 07 05 | 644 | 0.2+ | 1.2+ | 2004 01 26 | 699 | 0.9− | 0.1− | 2006 09 12 | 704 | 0.7+ | 0.7− |
| 2002 07 14 | 644 | 0.1+ | 0.2+ | 2004 01 26 | 699 | 0.5− | 0.8+ | 2006 09 12 | 704 | 0.1− | 0.0 |
| 2002 07 14 | 644 | 0.1+ | 0.4+ | 2004 01 26 | 699 | 0.4− | 0.5− | 2006 09 18 | 703 | 0.5− | 0.2− |
| 2002 07 14 | 644 | 0.1+ | 0.4+ | 2004 01 26 | 699 | 0.3− | 0.9− | 2006 09 18 | 703 | 0.3− | 0.6− |
| 2002 08 13 | 704 | 0.6− | 0.5+ | 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.2− |
| 2002 08 13 | 704 | 0.2− | 0.7+ | 2004 01 30 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.1− |
| 2002 08 13 | 704 | 0.1+ | 0.3− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 1.3− |
| 2002 08 13 | 704 | 0.5− | 0.4+ | 2004 01 30 | 704 | (1.3+ | 1.5−) | 2006 09 26 | 703 | 1.0+ | 0.4− |
| 2002 08 13 | 704 | 0.8− | 0.4+ | 2004 01 30 | 704 | 1.3+ | 1.4+ | 2006 09 26 | 703 | 0.8+ | 1.3− |
| 2003 12 22 | 704 | 0.2+ | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 09 26 | 703 | 0.0 | 0.4− |
| 2003 12 22 | 704 | 1.3+ | 0.3− | 2004 02 13 | 699 | 0.9+ | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.9+ |
| 2003 12 22 | 704 | 0.5+ | 0.3+ | 2004 02 13 | 699 | 0.9+ | 0.6+ | 2006 11 19 | 703 | 1.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.5+ | 0.4+ | 2004 02 13 | 699 | 0.2+ | 1.5+ | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2003 12 22 | 704 | 0.2+ | 0.1− | 2004 02 13 | 699 | 1.1+ | 0.6+ | 2006 11 19 | 703 | 1.9− | 2.7+ |
| 2004 01 17 | 644 | 0.1− | 0.2− | 2004 02 17 | 645 | 0.1− | 0.1− | | | | |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2004 02 17 | 645 | 0.1− | 0.1− | | | | |

**(144154)∗ 2004 BN$_{98}$**

Discovered 2004 Jan. 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.97641 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20208877 | $\omega$ | 216.65291 | | +0.91238911 | −0.40705947 | |
| $a$ | 2.8759054 | $\Omega$ | 167.15626 | | +0.40622558 | +0.88757320 | |
| $e$ | 0.1355103 | $i$ | 11.15262 | | +0.05026828 | +0.21567663 | |
| $P$ | 4.88 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3+ | 1.5+ | 2004 03 23 | 691 | 0.5+ | 0.4− | 2006 09 14 | 703 | 0.3+ | 0.6+ |
| 2001 09 20 | 704 | 1.0− | 1.1+ | 2004 03 23 | 691 | 0.5+ | 0.1+ | 2006 09 14 | 703 | (0.4+ | 1.8+) |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2004 03 23 | 691 | 0.7+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.3+ |
| 2004 01 27 | 691 | 0.2− | 0.3+ | 2005 05 15 | 691 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2004 01 27 | 691 | 0.0 | 0.5+ | 2005 05 15 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.6− | 0.4+ |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2005 05 15 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3+ |
| 2004 01 30 | 691 | 0.1+ | 0.3+ | 2005 06 05 | 691 | 0.3+ | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.3+ |
| 2004 01 30 | 691 | 0.7− | 0.1− | 2005 06 05 | 691 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.2+ |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2005 06 05 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.5− | 0.6+ |
| 2004 01 30 | 691 | 0.2+ | 0.2− | 2006 09 12 | 699 | 0.0 | 1.0+ | 2006 10 16 | G96 | 0.1− | 0.2+ |
| 2004 01 30 | 691 | 0.3− | 0.0 | 2006 09 12 | 699 | (0.4+ | 1.7+) | 2006 11 16 | G96 | 0.5+ | 0.6+ |
| 2004 01 30 | 691 | 0.3+ | 0.2+ | 2006 09 12 | 699 | 0.9+ | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2004 02 13 | 291 | 0.3− | 0.4+ | 2006 09 12 | 699 | 1.0− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.5+ |
| 2004 02 13 | 291 | 0.2− | 0.6+ | 2006 09 14 | 703 | (0.2− | 2.1+) | 2006 11 16 | G96 | 0.4− | 0.5+ |
| 2004 02 13 | 291 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.2+ | | | | |

**(144155)∗ 2004 BP$_{98}$**

Discovered 2004 Jan. 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.48610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18630540 | $\omega$ | 5.86594 | | −0.97175523 | −0.22959387 | |
| $a$ | 3.0361211 | $\Omega$ | 160.59645 | | +0.20929065 | −0.94529871 | |
| $e$ | 0.0799579 | $i$ | 9.45505 | | +0.10903759 | −0.23172615 | |
| $P$ | 5.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 24 | 691 | 0.2− | 0.5+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2004 03 20 | 699 | (1.0+ | 1.7−) |
| 1995 06 24 | 691 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.0 | 0.1+ | 2004 03 20 | 699 | 0.2+ | 0.0 |
| 1995 06 24 | 691 | 0.1+ | 0.1+ | 2004 01 30 | 691 | 0.2+ | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.4+ |
| 1995 07 03 | 691 | 0.1+ | 0.1+ | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2004 03 22 | 704 | 0.8+ | 0.5+ |
| 1995 07 03 | 691 | 0.1− | 0.0 | 2004 01 30 | 691 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.1− |
| 1995 07 03 | 691 | 0.0 | 0.2+ | 2004 01 30 | 691 | 0.3+ | 0.0 | 2004 03 22 | 704 | 0.6+ | 0.5+ |
| 1996 10 09 | 691 | 0.1− | 0.6+ | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.4− |
| 1996 10 09 | 691 | 0.3− | 0.4+ | 2004 01 30 | 691 | 0.3+ | 0.0 | 2004 03 23 | 691 | 0.1− | 0.4+ |
| 1996 10 09 | 691 | 0.0 | 0.4+ | 2004 02 16 | 703 | 0.1+ | 0.3+ | 2004 03 23 | 691 | 0.0 | 0.2+ |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 02 16 | 703 | 1.3− | 0.1− | 2004 03 23 | 691 | 0.1− | 0.3+ |
| 2004 01 18 | 691 | 0.2− | 0.1+ | 2004 02 16 | 703 | (0.2− | 1.6+) | 2004 03 28 | 703 | 0.9− | 1.0− |
| 2004 01 18 | 691 | 0.2+ | 0.2+ | 2004 02 16 | 703 | 0.8+ | 0.1− | 2004 03 28 | 703 | 0.2+ | 1.0− |
| 2004 01 18 | 691 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.1− | 2004 03 28 | 703 | 0.4− | 0.5+ |
| 2004 01 18 | 691 | 0.0 | 0.5+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2004 03 28 | 703 | 1.0+ | 0.3− |
| 2004 01 18 | 691 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.2+ | 0.5− | 2004 04 15 | 644 | 0.6+ | 0.0 |
| 2004 01 18 | 691 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.2− | 0.3+ | 2004 04 15 | 644 | 0.5+ | 0.4+ |
| 2004 01 18 | 691 | 0.4+ | 0.2+ | 2004 02 23 | 704 | 1.2+ | 0.2− | 2004 04 15 | 644 | 0.4+ | 0.0 |
| 2004 01 18 | 691 | 0.1− | 0.3+ | 2004 03 15 | 691 | 0.0 | 0.0 | 2006 08 20 | A50 | 0.1− | 0.1+ |
| 2004 01 18 | 691 | 0.2− | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.1− | 2006 08 20 | A50 | 0.2+ | 0.0 |
| 2004 01 18 | 691 | 0.1− | 0.2+ | 2004 03 15 | 691 | 0.5− | 0.0 | 2006 08 23 | 947 | 0.1− | 0.1− |
| 2004 01 18 | 691 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.3− | 0.7+ | 2006 08 23 | 947 | 0.2+ | 0.7+ |
| 2004 01 21 | 309 | 0.2− | 0.0 | 2004 03 15 | 704 | 0.0 | 0.3− | 2006 08 23 | 947 | 0.0 | 0.5+ |
| 2004 01 21 | 309 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.3+ | 1.4+ | 2006 08 27 | 691 | 0.2− | 0.7+ |
| 2004 01 22 | 309 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.7+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.7+ |
| 2004 01 22 | 309 | 0.1− | 0.3− | 2004 03 19 | 704 | 1.0+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.6+ |
| 2004 01 23 | 309 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.4+ |
| 2004 01 23 | 309 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2004 01 27 | 691 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.6+ | 1.3+ | 2006 09 26 | G96 | 0.4− | 0.3+ |
| 2004 01 27 | 691 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2004 03 20 | 699 | 1.4− | 0.8+ | | | | |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2004 03 20 | 699 | 0.5− | 0.1− | | | | |

**(144156)∗ 2004 BE$_{99}$ = 1999 FT$_6$ = 2002 TR$_{371}$ = 2003 BF$_{22}$**

Discovered 2004 Jan. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61846)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.68047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21395057 | $\omega$ | 321.82128 | | −0.22896005 | −0.96238670 | |
| $a$ | 2.7686013 | $\Omega$ | 140.79139 | | +0.94030387 | −0.25752071 | |
| $e$ | 0.1122553 | $i$ | 13.37688 | | +0.25180534 | +0.08657329 | |
| $P$ | 4.61 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 20 | 704 | (2.0+ | 2.2−) | 2003 01 28 | 704 | 0.0 | 1.5+ | 2004 03 15 | 704 | 0.7+ | 0.3+ |
| 1999 01 20 | 704 | 0.1+ | 0.1− | 2003 01 28 | 704 | 0.4+ | 1.8+ | 2004 03 15 | 704 | 0.2+ | 0.7+ |
| 1999 01 20 | 704 | (1.0+ | 2.4−) | 2003 12 22 | 704 | 0.7+ | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.4+ |
| 1999 01 20 | 704 | (4.0− | 0.6−) | 2003 12 22 | 704 | 0.4+ | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.2+ |
| 1999 03 19 | 910 | 1.0− | 0.7− | 2003 12 22 | 704 | 0.4+ | 0.5− | 2004 03 19 | 644 | 0.2− | 0.3− |
| 1999 03 19 | 910 | 1.1− | 1.3− | 2003 12 27 | 704 | 0.8− | 0.3+ | 2004 03 19 | 644 | 0.1− | 0.3− |
| 1999 03 19 | 910 | 0.5− | 1.2− | 2003 12 27 | 704 | 0.4+ | 0.6− | 2004 03 19 | 644 | 0.1+ | 0.1− |
| 1999 03 20 | 910 | 0.2+ | 1.1− | 2003 12 27 | 704 | 1.0+ | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.3+ |
| 1999 03 20 | 910 | 0.7+ | 1.0− | 2003 12 27 | 704 | 0.7− | 1.0− | 2004 03 23 | 704 | 0.1+ | 0.2+ |
| 1999 03 20 | 910 | 0.3+ | 0.8− | 2004 01 27 | 691 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.5+ |
| 2001 06 30 | 644 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.3− | 0.3+ |
| 2001 06 30 | 644 | 0.4− | 0.4+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.0 |
| 2001 06 30 | 644 | 0.3− | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.2+ |
| 2001 07 25 | 608 | 0.5+ | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.0 | 0.4+ |
| 2001 07 25 | 608 | 0.1+ | 0.1− | 2004 01 27 | 691 | 0.4+ | 0.2− | 2004 03 23 | 704 | 0.1− | 0.7+ |
| 2001 07 25 | 608 | 0.6+ | 0.3− | 2004 01 30 | 691 | 0.2− | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.0 |
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.1− | 0.7+ |
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.2− | 0.3+ | 2004 03 25 | 704 | 0.3+ | 0.5+ |
| 2002 10 07 | 608 | 0.6− | 0.2− | 2004 01 30 | 691 | 0.0 | 0.3+ | 2004 03 25 | 704 | 0.6− | 0.1+ |
| 2002 10 07 | 608 | 0.8− | 0.3− | 2004 01 30 | 691 | 0.2− | 0.2+ | 2004 03 25 | 704 | 0.2+ | 0.3+ |
| 2002 10 07 | 608 | 1.0− | 0.0 | 2004 01 30 | 691 | 0.0 | 0.0 | 2004 03 25 | 704 | 0.6− | 0.3+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2004 02 02 | 699 | 0.6+ | 0.2+ | 2004 03 25 | 704 | 0.6− | 0.3+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2004 02 02 | 699 | 1.4− | 1.3+ | 2004 03 26 | 704 | 0.9+ | 0.7+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 02 | 699 | 0.4− | 0.4+ | 2004 03 26 | 704 | 0.2− | 0.4+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 02 | 699 | 1.1+ | 0.7− | 2004 03 26 | 704 | 0.1+ | 0.3+ |
| 2002 10 30 | 704 | 0.5+ | 0.1− | 2004 02 16 | 049 | 0.1− | 0.6− | 2004 03 26 | 704 | 0.5+ | 0.7+ |
| 2002 10 30 | 704 | 1.1− | 0.5+ | 2004 02 16 | 049 | 0.2− | 0.4− | 2004 03 26 | 704 | 0.2+ | 1.2+ |
| 2002 10 30 | 704 | 0.5+ | 0.9− | 2004 02 16 | 049 | 0.3− | 0.7− | 2004 03 26 | 703 | 0.1+ | 0.6+ |
| 2002 10 30 | 704 | 0.1+ | 0.8− | 2004 02 17 | 703 | 0.1+ | 0.2− | 2004 03 26 | 703 | 0.7+ | 0.7+ |
| 2002 10 30 | 704 | 0.6− | 0.9− | 2004 02 17 | 703 | 0.2+ | 0.3+ | 2004 03 26 | 703 | 0.8+ | 0.0 |
| 2002 11 06 | 644 | 0.1− | 0.5+ | 2004 02 17 | 703 | 0.3− | 0.1+ | 2004 03 26 | 703 | 1.0+ | 0.3+ |
| 2002 11 06 | 644 | 0.1+ | 0.3+ | 2004 02 17 | 703 | 0.5− | 0.3+ | 2004 03 27 | 691 | 0.3− | 0.0 |
| 2002 11 06 | 644 | 0.0 | 0.5+ | 2004 02 18 | 704 | 0.6+ | 0.8− | 2004 03 27 | 691 | 0.3− | 0.2+ |
| 2002 11 16 | 644 | 0.5− | 0.3+ | 2004 02 18 | 704 | 0.6+ | 0.7− | 2004 03 27 | 691 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.2− | 0.3+ | 2004 02 18 | 704 | 0.4+ | 0.9− | 2004 04 09 | 644 | 0.3+ | 0.3+ |
| 2002 11 16 | 644 | 0.3− | 0.3+ | 2004 02 18 | 704 | 0.5+ | 0.3− | 2004 04 09 | 644 | 0.1+ | 0.2+ |
| 2002 12 01 | 704 | 0.2+ | 0.8+ | 2004 02 18 | 704 | 0.7+ | 0.2− | 2004 04 09 | 644 | 0.4+ | 0.3+ |
| 2002 12 01 | 704 | 0.9− | 0.4+ | 2004 02 19 | 704 | 0.2− | 0.5− | 2006 08 18 | 644 | 0.5− | 0.8+ |
| 2002 12 01 | 704 | 0.9+ | 0.2− | 2004 02 19 | 704 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.5− | 0.6+ |
| 2002 12 01 | 704 | 0.4− | 1.2+ | 2004 02 19 | 704 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.7+ |
| 2002 12 01 | 704 | (2.7+ | 0.0 ) | 2004 02 19 | 704 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.1− | 0.2− |
| 2002 12 13 | 644 | 0.2+ | 0.5+ | 2004 02 19 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.0 | 0.2+ |
| 2002 12 13 | 644 | 0.0 | 0.2+ | 2004 02 27 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.6+ |
| 2002 12 13 | 644 | 0.4− | 0.2+ | 2004 02 27 | 704 | 1.1− | 0.7+ | 2006 09 14 | 703 | 0.2+ | 0.5+ |
| 2003 01 25 | 644 | 0.0 | 1.4+ | 2004 02 27 | 704 | 0.4+ | 1.2+ | 2006 09 18 | 699 | 0.6− | 1.6+ |
| 2003 01 25 | 644 | 0.1+ | 1.3+ | 2004 03 10 | 644 | 0.0 | 0.4+ | 2006 09 18 | 699 | 2.1− | 2.9+ |
| 2003 01 25 | 644 | 0.2+ | 1.2+ | 2004 03 10 | 644 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.4− | 1.8+ |
| 2003 01 28 | 704 | 0.6+ | 0.2− | 2004 03 10 | 644 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.9+ | 2.1+ |
| 2003 01 28 | 704 | 0.4− | 0.8+ | 2004 03 15 | 704 | 0.4+ | 0.6+ | | | | |

**(144157)∗ 2004 BQ$_{99}$ = 2002 TW$_{363}$**

Discovered 2004 Jan. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61846)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.75080 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25929567 | $\omega$ | 49.52524 | | −0.76100617 | | −0.64577300 |
| $a$ | 2.4355995 | $\Omega$ | 90.15726 | | +0.57486809 | | −0.71556459 |
| $e$ | 0.1402712 | $i$ | 3.55595 | | +0.30065975 | | −0.26635420 |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.9− | 0.8− | 2004 02 25 | 704 | (1.8− | 1.2+) | 2004 03 27 | 691 | 0.3+ | 0.1+ |
| 2000 02 11 | 704 | 0.3+ | 0.5− | 2004 02 25 | 704 | 0.4+ | 0.9+ | 2004 03 27 | 691 | 0.1+ | 0.2+ |
| 2000 02 11 | 704 | 0.5+ | 1.6− | 2004 02 25 | 704 | 0.3+ | 0.9+ | 2004 03 27 | 691 | 0.1+ | 0.3+ |
| 2000 02 11 | 704 | 0.7− | 1.8− | 2004 03 15 | 704 | 1.1− | 0.9− | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.5− | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.7− | 0.8− | 2006 10 03 | G96 | 0.2+ | 0.4− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.6+ | 0.4+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 03 20 | 699 | 0.2− | 0.8+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 01 27 | 691 | 0.3+ | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.6− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2004 01 27 | 691 | 0.1− | 0.2+ | 2004 03 20 | 699 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.8+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2004 01 27 | 691 | 0.2− | 0.2− | 2004 03 20 | 704 | 1.4+ | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.2− |
| 2004 01 27 | 691 | 0.4− | 0.3+ | 2004 03 20 | 699 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 1.4+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 01 30 | 691 | 0.1− | 0.2+ | 2004 03 20 | 704 | (1.7+ | 0.2+) | 2006 11 16 | G96 | 0.5+ | 0.1+ |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2004 03 20 | 699 | 0.5− | 0.5+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2004 01 30 | 691 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 02 25 | 704 | 0.7+ | 0.6+ | 2004 03 22 | 704 | 0.2− | 0.2− | | | | |
| 2004 02 25 | 704 | 0.3+ | 1.4+ | 2004 03 22 | 704 | 0.4+ | 0.7+ | | | | |

**(144158)∗ 2004 BR$_{99}$ = 1995 OA$_{15}$**

Discovered 2004 Jan. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.42084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18445030 | $\omega$ | 184.96195 | | +0.90376643 | | +0.40266063 |
| $a$ | 3.0564442 | $\Omega$ | 149.94576 | | −0.38205996 | | +0.91179495 |
| $e$ | 0.0410065 | $i$ | 16.84835 | | −0.19296741 | | +0.08058776 |
| $P$ | 5.34 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 23 | 691 | 0.5+ | 0.2− | 2004 01 30 | 691 | 0.0 | 0.1+ | 2005 06 24 | 644 | 0.3− | 0.5+ |
| 1995 07 23 | 691 | 0.7+ | 0.1− | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2005 06 24 | 644 | 0.2+ | 0.3+ |
| 1995 07 23 | 691 | 0.9− | 0.8+ | 2004 01 30 | 691 | 0.3+ | 0.1+ | 2005 06 24 | 644 | 0.1− | 0.4+ |
| 1995 07 25 | 691 | 0.4+ | 0.3− | 2004 01 30 | 691 | 0.1− | 0.2+ | 2005 06 24 | 644 | 0.0 | 0.3+ |
| 1995 07 25 | 691 | 0.2+ | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2005 06 24 | 644 | 0.0 | 0.5+ |
| 1995 07 25 | 691 | 0.3+ | 0.3− | 2004 02 25 | 704 | 1.4+ | 0.5− | 2006 08 30 | 699 | 0.3− | 0.7+ |
| 1995 07 26 | 691 | 0.4− | 0.1− | 2004 02 25 | 704 | 0.3− | 0.5− | 2006 08 30 | 699 | 0.3+ | 0.6+ |
| 1995 07 26 | 691 | 0.5− | 0.2− | 2004 02 25 | 704 | 1.0+ | 0.4− | 2006 08 30 | 699 | 0.7− | 0.5+ |
| 1995 07 26 | 691 | 0.4− | 0.0 | 2004 03 11 | 644 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.6+ | 0.5+ |
| 2001 09 16 | 704 | 1.2− | 0.7+ | 2004 03 11 | 644 | 0.2− | 0.8+ | 2006 09 14 | 703 | 0.3+ | 0.4− |
| 2001 09 16 | 704 | 0.1− | 0.6+ | 2004 03 11 | 644 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.9+ | 0.3− |
| 2001 09 16 | 704 | 0.2+ | 2.0+ | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.5+ | 0.8+ | 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.9+ |
| 2001 09 16 | 704 | 0.4− | 1.5+ | 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.6+ |
| 2001 10 15 | 644 | 0.0 | 1.2+ | 2004 03 19 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.5+ |
| 2001 10 15 | 644 | 0.7− | 1.1+ | 2004 03 19 | 644 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.3− | 0.6+ |
| 2001 10 15 | 644 | 0.4− | 1.5+ | 2004 03 19 | 644 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.4+ | 1.1+ |
| 2004 01 18 | 691 | 0.0 | 0.2+ | 2004 03 27 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.4+ | 1.0− |
| 2004 01 18 | 691 | 0.2+ | 0.3+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 1.6+ | 0.9+ |
| 2004 01 18 | 691 | 0.3− | 0.1+ | 2004 03 27 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 1.2+ |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2004 03 28 | 291 | 0.4− | 0.3+ | 2006 09 25 | 699 | 1.9− | 0.1+ |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 03 28 | 291 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.8+ |
| 2004 01 18 | 691 | 0.4+ | 0.1+ | 2004 03 28 | 291 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.2+ | 1.5− |
| 2004 01 27 | 691 | 0.1+ | 0.3− | 2004 03 28 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.3+ | 0.3+ |
| 2004 01 27 | 691 | 0.3+ | 0.2+ | 2004 03 28 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 1.6− | 0.9+ |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2004 03 28 | 691 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 2004 01 27 | 691 | 0.3+ | 0.0 | 2005 05 15 | 644 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2005 05 15 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.6+ | 1.6+ |
| 2004 01 27 | 691 | 0.0 | 0.4+ | 2005 05 15 | 644 | 0.0 | 0.6+ | | | | |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2005 06 24 | 644 | 0.0 | 0.5+ | | | | |

**(144159)∗ 2004 BH$_{100}$ = 1997 TD$_{21}$**

Discovered 2004 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.46409 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20259720 | $\omega$ | 32.99174 | | +0.46335331 | | +0.88599590 |
| $a$ | 2.8710919 | $\Omega$ | 264.61754 | | −0.81686071 | | +0.41926145 |
| $e$ | 0.0417890 | $i$ | 1.02141 | | −0.34357284 | | +0.19806841 |
| $P$ | 4.86 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.0 | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.6− | 0.3− |
| 1997 10 04 | 691 | 0.2+ | 0.5− | 2004 04 15 | 645 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.2+ | 0.2− |
| 1997 10 04 | 691 | 0.2+ | 0.0 | 2005 03 15 | G96 | 0.5− | 0.5− | 2005 06 01 | G96 | 0.1+ | 0.7− |
| 1997 10 10 | 691 | 0.1+ | 0.5− | 2005 03 15 | G96 | 0.1+ | 0.3+ | 2005 06 01 | G96 | 0.4− | 0.6− |
| 1997 10 10 | 691 | 0.4+ | 0.2− | 2005 03 15 | G96 | 0.4− | 0.2− | 2005 06 01 | G96 | 0.0 | 0.4− |
| 1997 10 10 | 691 | 0.3+ | 0.4− | 2005 03 15 | G96 | 0.4+ | 0.5+ | 2005 06 01 | G96 | 0.2− | 0.2− |
| 2002 10 31 | 291 | 0.5− | 0.6+ | 2005 04 10 | G96 | 0.7− | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.6+ |
| 2002 10 31 | 291 | 0.6− | 0.1+ | 2005 04 10 | G96 | 0.4− | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.5+ |
| 2002 10 31 | 291 | 0.9− | 0.4+ | 2005 04 10 | G96 | 0.4− | 0.0 | 2006 08 14 | 644 | 0.5+ | 0.4+ |
| 2004 01 28 | 704 | 0.0 | 0.1+ | 2005 04 10 | G96 | 0.1− | 0.4− | 2006 08 20 | 644 | 0.1+ | 0.5+ |
| 2004 01 28 | 704 | 0.1+ | 0.5+ | 2005 04 11 | G96 | 0.4− | 0.2− | 2006 08 20 | 644 | 0.2− | 0.5+ |
| 2004 01 28 | 704 | 0.3+ | 0.8− | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.4+ |
| 2004 01 28 | 704 | 0.8+ | 0.0 | 2005 04 11 | G96 | 0.6+ | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.1+ |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2005 04 11 | G96 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.7+ | 0.2+ |
| 2004 02 12 | 691 | 0.4+ | 0.1+ | 2005 04 14 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2005 05 11 | 807 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.1+ |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2005 05 11 | 807 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.6+ | 0.0 |
| 2004 04 13 | 645 | 0.0 | 0.2− | 2005 05 14 | G96 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.3+ |
| 2004 04 13 | 645 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.1− | 0.4− | | | | |

**(144160)∗ 2004 BU$_{100}$ = 2000 CC$_{128}$**

Discovered 2004 Jan. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.30771 | | (2000.0) | | | |
| $n$ | 0.22809028 | $\omega$ | 311.76311 | | +0.09549521 | +0.99447093 |
| $a$ | 2.6529651 | $\Omega$ | 323.64752 | | −0.89002952 | +0.06564867 |
| $e$ | 0.1804040 | $i$ | 4.22631 | | −0.44578933 | +0.08196237 |
| $P$ | 4.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.1+ | 0.1− | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2000 02 02 | 691 | 1.1− | 0.3− | 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2000 02 02 | 691 | 0.0 | 0.3− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2000 02 07 | 691 | 0.3+ | 0.6− | 2004 01 30 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.2− |
| 2000 02 07 | 691 | 0.5+ | 0.1− | 2004 02 14 | 691 | 0.1+ | 0.6+ | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 2000 02 07 | 691 | 0.4− | 0.6− | 2004 02 14 | 691 | 0.4− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2001 06 30 | 608 | 0.8− | 0.2+ | 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.5− | 0.2− |
| 2001 06 30 | 608 | 0.2+ | 0.1+ | 2005 05 30 | E12 | 0.8− | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 06 30 | 608 | 0.1+ | 0.7− | 2005 05 30 | E12 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.2+ | 0.1− |
| 2001 07 19 | 644 | (2.5+ | 2.7+) | 2005 05 30 | E12 | 0.4+ | 0.6+ | 2006 10 29 | 691 | 0.6+ | 0.2− |
| 2001 07 19 | 644 | (2.3+ | 2.6+) | 2005 05 30 | E12 | 0.3+ | 0.5+ | 2006 10 29 | 691 | 0.2− | 0.4+ |
| 2001 07 19 | 644 | (2.2+ | 2.4+) | 2005 06 26 | 644 | 0.2+ | 0.7+ | 2006 10 29 | 691 | 0.4+ | 0.3+ |
| 2004 01 19 | 691 | 0.2+ | 0.2+ | 2005 06 26 | 644 | 0.4+ | 0.9+ | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2004 01 19 | 691 | 0.5+ | 0.1+ | 2005 06 26 | 644 | 0.4+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2004 01 28 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | | | |

**(144161)∗ 2004 BP$_{101}$**

Discovered 2004 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 109.24766 | | (2000.0) | | | |
| $n$ | 0.17433028 | $\omega$ | 50.09635 | | −0.74279348 | +0.66699344 |
| $a$ | 3.1736145 | $\Omega$ | 171.17733 | | −0.66898485 | −0.74286953 |
| $e$ | 0.1756542 | $i$ | 22.26661 | | +0.02677920 | −0.05713676 |
| $P$ | 5.65 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.2− | 1.5− | 2004 02 19 | 704 | 0.0 | 0.3− | 2005 06 20 | 644 | 0.3+ | 0.1+ |
| 1995 07 24 | 691 | 0.3+ | 1.0− | 2004 03 15 | 704 | 0.5+ | 1.4+ | 2005 06 23 | 644 | 0.1− | 0.1+ |
| 1995 07 24 | 691 | 0.3+ | 0.8− | 2004 03 15 | 704 | 0.6+ | 0.9+ | 2005 06 23 | 644 | 0.1+ | 0.2+ |
| 1999 05 14 | 704 | 0.3+ | 0.4+ | 2004 03 15 | 704 | 0.6+ | 0.1+ | 2005 06 23 | 644 | 0.0 | 0.3+ |
| 1999 05 14 | 704 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.8− | 1.0+ | 2005 06 25 | 644 | 0.1+ | 0.1+ |
| 1999 05 14 | 704 | 1.1− | 0.4+ | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2005 06 25 | 644 | 0.2+ | 0.3+ |
| 1999 05 14 | 704 | (2.9− | 0.9+) | 2004 03 19 | 704 | 0.5+ | 1.1− | 2005 06 25 | 644 | 0.1+ | 0.1− |
| 2004 01 28 | 704 | 0.7− | 0.0 | 2004 03 19 | 704 | 0.4+ | 1.1+ | 2005 07 09 | 703 | 0.1− | 0.8− |
| 2004 01 28 | 704 | 0.8− | 0.1− | 2004 03 19 | 704 | 0.0 | 0.1− | 2005 07 09 | 703 | (1.1− | 1.7−) |
| 2004 01 28 | 704 | 0.2− | 0.5− | 2004 03 25 | 704 | 1.0+ | 0.0 | 2005 07 09 | 703 | 0.6+ | 0.7− |
| 2004 01 28 | 704 | 0.5+ | 0.2− | 2004 03 25 | 704 | 0.2+ | 0.3− | 2005 07 09 | 703 | 0.6+ | 0.6+ |
| 2004 01 28 | 704 | 0.4+ | 0.4+ | 2004 03 25 | 704 | 0.3− | 0.5− | 2006 08 28 | 703 | 0.3+ | 0.4− |
| 2004 01 30 | 608 | 0.1− | 0.8− | 2004 03 25 | 704 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.9− | 1.1+ |
| 2004 01 30 | 608 | 0.2− | 0.1+ | 2005 05 27 | A17 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.4+ |
| 2004 01 30 | 608 | 0.6+ | 0.1− | 2005 05 27 | A17 | 0.3+ | 0.5− | 2006 08 28 | 703 | 0.1− | 1.1+ |
| 2004 02 12 | 644 | 0.0 | 0.1− | 2005 05 28 | A17 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.2− | 0.4+ |
| 2004 02 12 | 644 | 0.4− | 0.0 | 2005 05 30 | 703 | 0.5− | 0.3− | 2006 08 29 | 691 | 0.1+ | 0.5+ |
| 2004 02 12 | 644 | 0.3− | 0.1+ | 2005 05 30 | 703 | 1.3− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.4+ |
| 2004 02 13 | 699 | 0.8+ | 1.0− | 2005 05 30 | 703 | 0.4− | 0.3+ | 2006 09 12 | 703 | (1.2+ | 1.7+) |
| 2004 02 13 | 699 | 0.1+ | 0.3+ | 2005 05 30 | 703 | 0.6− | 0.9− | 2006 09 12 | 703 | 1.4+ | 0.9+ |
| 2004 02 13 | 699 | 0.0 | 0.4− | 2005 05 31 | A17 | 0.4− | 0.1− | 2006 09 12 | 703 | 0.1− | 1.0+ |
| 2004 02 13 | 699 | 0.1− | 0.3− | 2005 05 31 | A17 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.9− | 0.9+ |
| 2004 02 17 | 703 | 0.5+ | 0.4+ | 2005 05 31 | A17 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.8− | 0.8+ |
| 2004 02 17 | 703 | 0.9− | 0.0 | 2005 06 02 | 704 | 0.5+ | 0.6− | 2006 09 17 | 703 | 0.3− | 0.3+ |
| 2004 02 17 | 703 | (0.1− | 1.6−) | 2005 06 02 | 704 | 0.3− | 0.5− | 2006 09 17 | 703 | 0.3− | 0.7− |
| 2004 02 17 | 703 | 0.3+ | 0.0 | 2005 06 02 | 704 | 1.1+ | 0.6− | 2006 09 17 | 703 | 0.3+ | 0.8+ |
| 2004 02 19 | 704 | 0.2− | 0.1+ | 2005 06 02 | 704 | (1.2+ | 1.8−) | 2006 10 20 | G96 | 0.1+ | 0.3+ |
| 2004 02 19 | 704 | 0.4− | 0.1− | 2005 06 02 | 704 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.4− | 0.2+ |
| 2004 02 19 | 704 | 0.6− | 0.4+ | 2005 06 20 | 644 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3+ |
| 2004 02 19 | 704 | 0.5− | 0.2+ | 2005 06 20 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.2+ |

**(144162)∗ 2004 BA$_{102}$ = 2000 AG$_{110}$**

Discovered 2004 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61848)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.95489 | | (2000.0) | | | |
| $n$ | 0.26221667 | $\omega$ | 36.21028 | | −0.98401864 | −0.17435753 |
| $a$ | 2.4174780 | $\Omega$ | 133.70599 | | +0.14935717 | −0.91871907 |
| $e$ | 0.1892045 | $i$ | 2.86633 | | +0.09695227 | −0.35433702 |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.1+ | 0.3− | 2004 02 14 | 691 | 0.1− | 0.3+ | 2004 04 12 | 703 | 0.4+ | 0.1+ |
| 2000 01 05 | 704 | 0.0 | 0.3− | 2004 02 14 | 691 | 0.0 | 0.1+ | 2004 05 21 | 704 | (2.0+ | 0.1+) |
| 2000 01 05 | 704 | 0.1− | 0.5− | 2004 02 17 | 704 | 0.1+ | 0.6− | 2004 05 21 | 704 | (2.6+ | 1.7+) |
| 2000 01 05 | 704 | 0.6− | 0.5− | 2004 02 17 | 704 | 0.2+ | 0.5− | 2004 05 21 | 704 | 0.5+ | 0.1− |
| 2000 01 05 | 704 | 1.1+ | 0.1+ | 2004 02 17 | 704 | 0.1− | 0.5− | 2004 05 21 | 704 | 0.5+ | 0.3+ |
| 2000 01 07 | 704 | 0.4− | 0.1− | 2004 02 17 | 704 | 0.2+ | 0.6− | 2005 06 30 | 691 | 0.2− | 0.5+ |
| 2000 01 07 | 704 | 0.2− | 0.9− | 2004 02 17 | 704 | 0.2+ | 0.4− | 2005 06 30 | 691 | 0.2− | 0.2+ |
| 2000 01 07 | 704 | 0.3− | 0.4− | 2004 02 17 | 608 | 0.3− | 0.7− | 2005 06 30 | 691 | 0.1− | 0.5+ |
| 2000 01 07 | 704 | 1.2+ | 0.8− | 2004 02 17 | 608 | 0.3− | 0.8− | 2005 07 03 | G96 | 0.1+ | 0.3+ |
| 2000 01 07 | 704 | 0.1− | 0.8− | 2004 02 17 | 608 | 0.2− | 0.7− | 2005 07 03 | G96 | 0.3+ | 0.3+ |
| 2002 10 30 | 645 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.2+ | 2005 07 03 | G96 | 0.5+ | 0.4+ |
| 2002 10 30 | 645 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.1− | 2005 07 03 | G96 | 0.0 | 0.4+ |
| 2003 12 21 | 704 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2003 12 21 | 704 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2003 12 21 | 704 | 0.6+ | 0.7+ | 2004 02 23 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | 0.4− | 1.0− | 2004 03 15 | 704 | 0.4+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2003 12 21 | 704 | 0.0 | 1.1+ | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 10 18 | 691 | 0.4− | 0.6+ |
| 2004 01 24 | 704 | (2.1+ | 1.8+) | 2004 03 15 | 704 | 0.1+ | 0.8+ | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2004 01 24 | 704 | (0.7+ | 2.2+) | 2004 03 15 | 704 | 0.3− | 1.1+ | 2006 10 18 | 691 | 0.3− | 0.7+ |
| 2004 01 24 | 704 | 1.3+ | 1.4+ | 2004 03 15 | 704 | 0.2− | 1.1+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2004 01 24 | 704 | 0.5+ | 0.9+ | 2004 03 17 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 01 24 | 704 | (0.1− | 1.7+) | 2004 03 17 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2004 01 29 | 704 | 0.7+ | 0.2− | 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.6+ |
| 2004 01 29 | 704 | 0.4+ | 0.4+ | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.7− |
| 2004 01 29 | 704 | 0.5+ | 0.4+ | 2004 03 19 | 704 | 1.0+ | 0.9+ | 2006 11 11 | 703 | (0.8+ | 1.9−) |
| 2004 01 29 | 704 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | (1.7− | 0.2−) |
| 2004 01 29 | 704 | 0.8+ | 0.0 | 2004 03 19 | 704 | 0.7+ | 0.6+ | 2006 11 11 | 703 | 0.7− | 1.1− |
| 2004 01 30 | 291 | 0.4− | 0.3− | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2004 01 30 | 291 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.8+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2004 01 30 | 291 | 0.0 | 0.3− | 2004 03 22 | 704 | 0.4+ | 0.7+ | 2006 11 16 | G96 | 0.4− | 0.4+ |
| 2004 02 11 | 703 | 0.5+ | 0.8+ | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.6+ |
| 2004 02 11 | 703 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 1.1+ | 0.5+ | 2006 11 17 | 703 | 0.5+ | 0.4− |
| 2004 02 11 | 703 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.0 | 0.7+ | 2006 11 17 | 703 | 0.8+ | 0.2+ |
| 2004 02 11 | 703 | 0.1+ | 0.5+ | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2004 02 11 | 699 | 0.2− | 0.1− | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.9+ | 0.5− |
| 2004 02 11 | 699 | 0.2− | 0.3− | 2004 03 26 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 02 11 | 699 | 0.8+ | 0.1− | 2004 04 12 | 703 | 0.4+ | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2004 02 11 | 699 | (1.8− | 0.4−) | 2004 04 12 | 703 | 0.1+ | 0.6+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2004 02 14 | 691 | 1.4− | 0.9+ | 2004 04 12 | 703 | 0.2− | 0.2+ | | | | |

**(144163)∗ 2004 BV$_{103}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.55532 | | (2000.0) | | | |
| $n$ | 0.26659064 | $\omega$ | 12.99315 | | +0.40806980 | −0.91148679 |
| $a$ | 2.3909626 | $\Omega$ | 52.94685 | | +0.83171799 | +0.34782153 |
| $e$ | 0.1527140 | $i$ | 3.71285 | | +0.37646277 | +0.21957233 |
| $P$ | 3.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.3+ | 1.2− | 2004 02 16 | 704 | 0.5+ | 0.8+ | 2006 10 01 | 704 | 0.7+ | 0.4− |
| 2000 01 04 | 704 | 0.5− | 1.8− | 2004 02 16 | 691 | 0.3+ | 0.4− | 2006 10 01 | 704 | 0.4− | 0.2+ |
| 2000 01 04 | 704 | 0.7+ | 1.3− | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 704 | (0.1+ | 1.5−) |
| 2002 08 12 | 699 | 0.1+ | 0.6+ | 2004 02 16 | 704 | 0.1− | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2002 08 12 | 699 | 0.2+ | 0.4− | 2004 02 16 | 691 | 0.1− | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.2− |
| 2002 08 12 | 699 | (0.7+ | 2.1+) | 2004 03 10 | 644 | 0.2+ | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2002 08 12 | 699 | 0.6− | 0.0 | 2004 03 10 | 644 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2004 03 10 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2002 08 19 | 644 | 0.2− | 1.3+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2002 08 19 | 644 | 0.2− | 0.5+ | 2006 09 21 | 699 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 08 19 | 644 | 0.0 | 1.0+ | 2006 09 21 | 699 | 0.8+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 08 19 | 644 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.2+ | 0.9+ | 2006 09 21 | 699 | 0.7− | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 08 19 | 644 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 1.0− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 08 30 | 644 | 0.5− | 0.1− | 2006 09 22 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2002 08 30 | 644 | 1.0− | 0.2+ | 2006 09 22 | 704 | 0.2+ | 1.2+ | 2006 10 22 | 703 | 0.6− | 0.0 |
| 2002 08 30 | 644 | 0.9− | 0.1+ | 2006 09 22 | 704 | (0.0 | 2.0+) | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2004 01 18 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.7− | 0.8− |
| 2004 01 18 | 644 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.6− |
| 2004 01 18 | 644 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.5− |
| 2004 01 23 | 704 | 1.5+ | 0.3− | 2006 09 25 | 699 | 0.6+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2004 01 23 | 704 | 0.7+ | 0.7− | 2006 09 26 | 704 | 0.1− | 1.1+ | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2004 01 23 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.8+ | 0.9+ | 2006 10 23 | 704 | 0.3+ | 0.5+ |
| 2004 01 23 | 704 | 0.8− | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 704 | 0.9− | 0.7+ |
| 2004 01 23 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 704 | 0.8+ | 0.9+ | 2006 10 23 | 704 | 0.7− | 0.4+ |
| 2004 01 30 | 704 | 1.0+ | 1.3+ | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 23 | 704 | 0.5− | 0.5+ |
| 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | 1.4+ | 1.3+ |
| 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.3− | 0.5+ |
| 2004 02 10 | 644 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.8+ | 0.2− | 2006 10 28 | 704 | 0.3+ | 1.3+ |
| 2004 02 10 | 644 | 0.5+ | 0.4+ | 2006 09 29 | 699 | (1.7+ | 0.3+) | 2006 10 28 | 704 | 1.0− | 1.0− |
| 2004 02 10 | 644 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 1.0+ | 0.2− | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2004 02 16 | 704 | (0.2− | 1.7+) | 2006 09 29 | 699 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.4− | 0.5− |
| 2004 02 16 | 691 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.5− | 0.4− |
| 2004 02 16 | 704 | (1.6+ | 0.1−) | 2006 10 01 | 704 | 0.6+ | 0.6− | 2006 11 14 | G96 | 0.6+ | 0.3− |

**(144164)∗ 2004 BY$_{103}$ = 2000 AG$_{57}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61850)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.30602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25798656 | $\omega$ | 97.19584 | | −0.95946800 | +0.25966755 | |
| $a$ | 2.4438319 | $\Omega$ | 97.89963 | | −0.28180547 | −0.88041047 | |
| $e$ | 0.1007599 | $i$ | 6.34795 | | −0.00261648 | −0.39679992 | |
| $P$ | 3.82 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 20 | 691 | 0.4+ | 0.4− | 2003 12 28 | 699 | 0.1+ | 0.2+ | 2005 07 02 | 691 | 0.3− | 0.5+ |
| 1993 05 20 | 691 | 1.8− | 1.1− | 2003 12 28 | 699 | 0.3− | 0.4+ | 2005 07 02 | 691 | 0.2+ | 0.6+ |
| 1993 05 20 | 691 | 0.4+ | 0.5− | 2003 12 28 | 699 | 0.1− | 0.5+ | 2005 07 07 | 691 | 0.0 | 0.4+ |
| 2000 01 04 | 704 | 0.2+ | 1.0− | 2004 01 23 | 704 | 0.5+ | 1.1+ | 2005 07 07 | 691 | 0.2+ | 0.6+ |
| 2000 01 04 | 704 | 1.0− | 1.0− | 2004 01 23 | 704 | (1.1+ | 1.7+) | 2005 07 07 | 691 | 0.2− | 0.3+ |
| 2000 01 04 | 704 | 0.3− | 1.0− | 2004 01 23 | 704 | 0.4− | 1.4+ | 2006 09 30 | 703 | 0.4+ | 0.5+ |
| 2000 01 04 | 704 | 0.4+ | 1.5− | 2004 01 23 | 704 | (0.3+ | 1.9+) | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2000 01 04 | 704 | 0.4+ | 0.6− | 2004 01 30 | 704 | 0.9+ | 0.9+ | 2006 09 30 | 703 | (2.2− | 0.0 ) |
| 2000 01 06 | 704 | 0.5+ | 0.8− | 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | (0.0 | 1.7−) |
| 2000 01 06 | 704 | 0.1− | 0.3− | 2004 01 30 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.8− |
| 2000 01 06 | 704 | 0.3+ | 1.1− | 2004 01 30 | 704 | 0.3+ | 1.5+ | 2006 10 22 | 703 | 0.7− | 0.8+ |
| 2000 01 06 | 704 | 0.7+ | 0.9− | 2004 02 16 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2000 01 30 | 704 | 0.2+ | 0.3+ | 2004 02 16 | 704 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2000 01 30 | 704 | 0.2+ | 0.0 | 2004 02 16 | 704 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.4− |
| 2000 01 30 | 704 | 0.3− | 0.7+ | 2004 02 16 | 704 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2000 01 30 | 704 | 0.7+ | 0.3− | 2004 02 16 | 704 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.5+ | 0.0 |
| 2000 02 11 | 704 | 0.3− | 0.2+ | 2004 02 16 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2000 02 11 | 704 | 0.3− | 0.1− | 2004 02 16 | 691 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.6− | 0.0 |
| 2000 02 11 | 704 | 0.2− | 0.1+ | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.1− | 0.3− | 2004 02 17 | 608 | 0.5− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | 0.3+ | 0.2+ | 2004 02 17 | 608 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2002 10 31 | 704 | 0.0 | 1.2+ | 2004 02 17 | 608 | 0.3− | 0.3− | 2006 11 11 | 703 | 1.0+ | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2004 03 09 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.8− | 0.3+) |
| 2002 10 31 | 704 | 0.5− | 0.1− | 2004 03 09 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2004 03 09 | 644 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.2− | 0.6+ | 2004 03 14 | 704 | 0.1− | 0.6− | 2006 11 18 | G96 | 0.4− | 0.2− |
| 2002 11 07 | 704 | 0.8+ | 0.2+ | 2004 03 14 | 704 | 0.6+ | 0.0 | 2006 11 18 | G96 | 0.4− | 0.5− |
| 2002 11 07 | 704 | (0.8+ | 1.7+) | 2004 03 14 | 704 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2003 12 23 | 704 | 1.2+ | 0.7− | 2004 03 14 | 704 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2003 12 23 | 704 | 0.1+ | 0.2− | 2004 03 14 | 704 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2003 12 23 | 704 | 0.4+ | 0.9+ | 2004 03 23 | 704 | 0.3+ | 1.4+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2003 12 28 | 704 | 0.8+ | 0.0 | 2004 03 23 | 704 | (0.5+ | 1.6+) | 2006 11 20 | 704 | 0.7+ | 0.6− |
| 2003 12 28 | 704 | 0.1− | 0.2+ | 2004 03 23 | 704 | (0.1+ | 1.8+) | 2006 11 20 | 704 | 0.6+ | 0.5− |
| 2003 12 28 | 704 | 0.4+ | 0.5+ | 2004 03 23 | 704 | 0.5− | 0.9+ | 2006 11 20 | 704 | 0.5− | 0.2− |
| 2003 12 28 | 704 | 0.4+ | 0.6+ | 2004 03 23 | 704 | 0.4− | 1.4+ | 2006 11 20 | 704 | 0.5+ | 0.1− |
| 2003 12 28 | 699 | 0.7− | 0.1+ | 2005 07 02 | 691 | 0.1− | 0.5+ | | | | |

**(144165)∗ 2004 BZ$_{105}$ = 2000 EP$_{126}$**

Discovered 2004 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 76398)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.85096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22567400 | $\omega$ | 80.02455 | | −0.72281602 | −0.68770681 | |
| $a$ | 2.6718682 | $\Omega$ | 56.48884 | | +0.59789036 | −0.67155892 | |
| $e$ | 0.0334138 | $i$ | 4.66399 | | +0.34650268 | −0.27580419 | |
| $P$ | 4.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 691 | 0.1+ | 0.4− | 2002 10 31 | 704 | 0.8− | 0.4− | 2004 02 17 | 645 | 0.0 | 0.1− |
| 1998 12 11 | 691 | 0.1+ | 0.2− | 2002 10 31 | 704 | 0.8− | 0.8− | 2005 05 04 | G96 | 0.0 | 0.2+ |
| 1998 12 11 | 691 | 0.4+ | 0.3− | 2002 10 31 | 704 | 0.7− | 0.2+ | 2005 05 04 | G96 | 0.3+ | 0.1+ |
| 1998 12 23 | 691 | 0.0 | 0.1+ | 2002 10 31 | 704 | 1.0− | 0.4+ | 2005 05 04 | G96 | 0.2+ | 0.1− |
| 1998 12 23 | 691 | 0.1+ | 0.4− | 2003 12 17 | 644 | 0.0 | 0.5+ | 2005 05 04 | G96 | 0.1+ | 0.1+ |
| 1998 12 23 | 691 | 0.0 | 0.1+ | 2003 12 17 | 644 | 0.3+ | 0.9+ | 2006 08 23 | 704 | 0.0 | 1.3− |
| 2000 03 11 | 699 | 0.2+ | 0.2+ | 2003 12 17 | 644 | 0.1+ | 0.9+ | 2006 08 23 | 704 | 0.6− | 0.0 |
| 2000 03 11 | 699 | 0.6− | 0.9− | 2004 01 26 | 699 | 1.1− | 0.9+ | 2006 08 23 | 704 | 1.3+ | 0.8− |
| 2000 03 11 | 699 | 0.1+ | 0.6+ | 2004 01 26 | 699 | 0.4− | 0.4− | 2006 08 23 | 704 | 0.4− | 0.6+ |
| 2000 03 11 | 699 | 0.1− | 0.6+ | 2004 01 26 | 699 | 0.3+ | 0.7− | 2006 09 14 | 703 | 0.0 | 0.6− |
| 2000 03 12 | 704 | 1.0+ | 0.7+ | 2004 01 26 | 699 | 0.8+ | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.4− |
| 2000 03 12 | 704 | 0.0 | 0.6+ | 2004 01 30 | 704 | 0.8+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.5+ |
| 2000 03 12 | 704 | 0.1+ | 1.5+ | 2004 01 30 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.1− | 0.0 |
| 2000 03 12 | 704 | 0.6+ | 1.3+ | 2004 01 30 | 704 | 0.5+ | 0.5− | 2006 09 14 | 703 | 0.1+ | 0.9− |
| 2002 09 29 | 608 | 0.4− | 0.1+ | 2004 01 30 | 704 | 1.1+ | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.6+ |
| 2002 09 29 | 608 | 0.6− | 0.4+ | 2004 02 15 | 704 | 0.4− | 0.4+ | 2006 09 14 | 644 | 0.2+ | 0.3+ |
| 2002 09 29 | 608 | 0.8− | 0.2+ | 2004 02 15 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 703 | 0.8− | 0.5+ |
| 2002 10 03 | 704 | 0.1− | 1.3+ | 2004 02 15 | 704 | 0.0 | 0.9+ | 2006 09 26 | 703 | 0.7+ | 2.2+ |
| 2002 10 03 | 704 | 0.9− | 1.2+ | 2004 02 15 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.3− | 0.8+ |
| 2002 10 03 | 704 | 1.1+ | 1.2+ | 2004 02 15 | 704 | 0.0 | 1.0+ | 2006 09 26 | 703 | 1.0− | 0.6+ |
| 2002 10 03 | 704 | 0.8+ | 1.5+ | 2004 02 17 | 645 | 0.1− | 0.1− | | | | |

**(144166)∗ 2004 BE$_{106}$**

Discovered 2004 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.00703 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25431293 | $\omega$ | 48.74916 | | +0.54291270 | −0.83973802 | |
| $a$ | 2.4673102 | $\Omega$ | 8.38382 | | +0.75023700 | +0.48003089 | |
| $e$ | 0.1444003 | $i$ | 3.64379 | | +0.37734631 | +0.25379206 | |
| $P$ | 3.88 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.6+ | 1.1− | 2004 01 30 | 704 | 0.6− | 0.1− | 2006 08 28 | 699 | 0.5− | 0.0 |
| 1999 12 10 | 704 | 0.2− | 1.3− | 2004 01 30 | 704 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.0 | 1.0+ |
| 1999 12 10 | 704 | 0.3− | 1.2− | 2004 02 10 | 703 | 1.0+ | 0.6− | 2006 08 28 | 699 | 0.5− | 0.3+ |
| 2002 07 06 | 291 | 0.6− | 0.3+ | 2004 02 10 | 703 | 0.3+ | 0.9+ | 2006 08 28 | 699 | 0.7+ | 0.3− |
| 2002 07 06 | 291 | 0.3− | 0.2+ | 2004 02 10 | 703 | 0.4+ | 0.8− | 2006 09 14 | 291 | 0.1+ | 0.3+ |
| 2002 07 06 | 291 | 0.2− | 0.6+ | 2004 02 10 | 703 | 0.6+ | 1.0+ | 2006 09 14 | 291 | 0.1+ | 0.2+ |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2004 02 13 | 691 | 0.2− | 0.3+ | 2006 09 14 | 291 | 0.2+ | 0.2+ |
| 2002 08 08 | 644 | 0.0 | 0.1+ | 2004 02 13 | 691 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.6+ |
| 2002 08 08 | 644 | 0.0 | 0.3+ | 2004 02 13 | 691 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 2002 08 17 | 644 | 0.2− | 0.6− | 2004 02 15 | 704 | 0.3+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.5+ |
| 2002 08 17 | 644 | 0.1+ | 0.2+ | 2004 02 15 | 704 | 0.6+ | 0.8+ | 2006 09 14 | 703 | 0.3+ | 0.4+ |
| 2002 08 17 | 644 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.0 | 1.0+ | 2006 09 14 | 703 | 0.3+ | 0.3+ |
| 2002 08 18 | 644 | 0.4+ | 0.3+ | 2004 02 15 | 704 | 0.3+ | 1.2+ | 2006 09 14 | 644 | 0.5− | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2004 02 15 | 704 | 0.2− | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.7+ | 0.3+ | 2004 02 18 | 608 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.3+ |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2004 02 18 | 608 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.1+ | 2004 02 18 | 608 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.1− | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2004 02 23 | 704 | 1.0+ | 0.9+ | 2006 09 18 | 699 | 0.3+ | 1.2+ |
| 2002 09 04 | 644 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.3− | 0.6+ | 2006 09 20 | 644 | 0.6− | 0.0 |
| 2002 09 04 | 644 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.1− |
| 2002 09 04 | 644 | 0.2− | 0.2− | 2004 02 23 | 704 | 1.5+ | 0.8+ | 2006 09 20 | 644 | 0.5− | 0.0 |
| 2003 12 28 | 704 | 0.3+ | 0.3− | 2006 08 18 | 699 | 0.6+ | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.6− |
| 2003 12 28 | 704 | (0.4+ | 1.8−) | 2006 08 18 | 699 | 0.8+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 2003 12 28 | 704 | 0.3− | 0.7+ | 2006 08 18 | 699 | 0.7+ | 0.9+ | 2006 09 30 | G96 | 0.3− | 0.5− |
| 2003 12 28 | 704 | 1.0− | 1.3− | 2006 08 18 | 699 | (0.2− | 3.5+) | 2006 09 30 | 703 | 0.5− | 0.1− |
| 2003 12 28 | 704 | 0.1− | 0.3+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.4− |
| 2004 01 05 | 703 | 0.1+ | 0.7+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 2004 01 05 | 703 | (1.8+ | 2.5+) | 2006 08 21 | 644 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.3− | 0.5− |
| 2004 01 05 | 703 | (0.5+ | 2.1+) | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.5− |
| 2004 01 05 | 703 | 0.8+ | 0.3+ | 2006 08 22 | 644 | 0.4− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.2− |
| 2004 01 17 | 644 | 0.4− | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2004 01 17 | 644 | 0.5− | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2004 01 17 | 644 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2004 01 26 | 699 | 0.6− | 0.0 | 2006 08 22 | 644 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2004 01 26 | 699 | 0.2+ | 0.5+ | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.8− |
| 2004 01 26 | 699 | 0.1− | 0.5+ | 2006 08 22 | 644 | 0.5− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.6− |
| 2004 01 26 | 699 | 0.4− | 0.7+ | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.7− |
| 2004 01 30 | 704 | 0.6− | 0.1− | 2006 08 28 | 699 | 0.9+ | 1.1+ | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2004 01 30 | 704 | 1.1+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.8− | 2006 11 16 | G96 | 0.3+ | 0.6− |

**(144167)∗ 2004 BQ$_{106}$**

Discovered 2004 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.19624 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24081919 | $\omega$ | 328.19495 | | +0.22794976 | +0.95916894 |
| $a$ | 2.5586369 | $\Omega$ | 314.36556 | | −0.83702056 | +0.10518772 |
| $e$ | 0.0893976 | $i$ | 13.54490 | | −0.49742887 | +0.26254617 |
| $P$ | 4.09 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.6+ | 0.0 | 2004 02 10 | 703 | 1.3− | 1.0+ | 2004 03 18 | 704 | 0.9− | 1.0+ |
| 2000 02 02 | 704 | 0.8+ | 1.3+ | 2004 02 10 | 703 | 0.4− | 0.1+ | 2004 03 18 | 704 | (1.9− | 0.3−) |
| 2000 02 02 | 704 | 0.2− | 0.1+ | 2004 02 10 | 703 | 0.6− | 0.2+ | 2004 03 19 | 644 | 0.2+ | 0.3+ |
| 2000 02 02 | 704 | 0.2+ | 0.3+ | 2004 02 10 | 703 | 0.9− | 0.2− | 2004 03 19 | 644 | 0.1+ | 0.6+ |
| 2002 10 31 | 704 | (2.4− | 0.3+) | 2004 02 11 | 703 | 0.2− | 0.3+ | 2004 03 19 | 644 | 0.2+ | 0.3+ |
| 2002 10 31 | 704 | 0.2− | 0.4− | 2004 02 11 | 699 | 1.1− | 0.5− | 2006 09 19 | 703 | 0.9+ | 0.7− |
| 2002 10 31 | 704 | 1.1− | 0.5+ | 2004 02 11 | 703 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.6− | 0.7+ |
| 2002 10 31 | 704 | 0.1− | 1.0+ | 2004 02 11 | 644 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.7− | 0.1− |
| 2002 11 15 | 644 | 0.0 | 0.3+ | 2004 02 11 | 691 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2002 11 15 | 644 | 0.1− | 0.1− | 2004 02 11 | 703 | 0.9+ | 0.1− | 2006 09 25 | 703 | (0.8+ | 1.5−) |
| 2002 11 15 | 644 | 1.3+ | 0.7+ | 2004 02 11 | 699 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.8− | 0.5− |
| 2002 11 15 | 704 | 1.0− | 1.0+ | 2004 02 11 | 644 | 0.5+ | 0.0 | 2006 09 25 | 703 | 0.7+ | 0.6+ |
| 2002 11 15 | 704 | (0.4− | 1.7+) | 2004 02 11 | 703 | 0.4− | 0.3+ | 2006 09 25 | 703 | 1.1− | 0.2− |
| 2002 11 15 | 704 | (1.6+ | 2.2+) | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 02 | 704 | 0.1− | 0.7+ |
| 2002 11 15 | 704 | (1.7− | 0.2+) | 2004 02 11 | 699 | 0.1− | 1.0− | 2006 10 02 | 704 | 0.3− | 0.4− |
| 2002 12 07 | 704 | 0.4− | 0.0 | 2004 02 11 | 644 | 0.4+ | 0.0 | 2006 10 02 | 704 | 0.2+ | 0.2+ |
| 2002 12 07 | 704 | 0.1− | 0.5+ | 2004 02 11 | 699 | 0.6− | 0.6− | 2006 10 02 | 703 | 0.4+ | 0.2− |
| 2002 12 07 | 704 | 0.3+ | 0.5− | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 10 02 | 703 | 1.0+ | 0.4+ |
| 2004 01 24 | 704 | 1.1+ | 0.8− | 2004 02 17 | 704 | 1.2+ | 0.4+ | 2006 10 02 | 703 | 0.4− | 0.2+ |
| 2004 01 24 | 704 | 1.0+ | 1.2+ | 2004 02 17 | 704 | 0.3− | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.6+ |
| 2004 01 24 | 704 | (1.2+ | 2.4+) | 2004 02 17 | 704 | 0.3+ | 0.3− | 2006 10 23 | 703 | 0.3− | 0.4+ |
| 2004 01 24 | 704 | 1.1− | 0.6− | 2004 02 17 | 704 | 0.4+ | 0.0 | 2006 10 23 | 703 | 0.2− | 1.0+ |
| 2004 01 24 | 704 | 0.3+ | 1.1+ | 2004 02 17 | 704 | 0.7+ | 0.5+ | 2006 10 23 | 703 | 0.2− | 0.4+ |
| 2004 01 26 | 699 | 0.8− | 0.1+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.3− | 0.0 |
| 2004 01 26 | 699 | 0.0 | 0.8− | 2004 02 29 | 691 | 0.1+ | 0.2− | 2006 10 31 | 703 | 0.7+ | 0.8− |
| 2004 01 26 | 699 | 0.5− | 0.5+ | 2004 02 29 | 691 | 0.0 | 0.2− | 2006 10 31 | 703 | 0.1− | 1.1− |
| 2004 01 26 | 699 | 0.2+ | 0.0 | 2004 03 10 | 644 | 0.3+ | 0.3+ | 2006 10 31 | 703 | 0.0 | 0.8− |
| 2004 01 30 | 704 | 0.6− | 0.5+ | 2004 03 10 | 644 | 0.0 | 0.1− | 2006 10 31 | 703 | 1.0+ | 1.0− |
| 2004 01 30 | 704 | 0.1+ | 0.1− | 2004 03 10 | 644 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.5+ | 0.6+ |
| 2004 01 30 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.4− | 1.4− |
| 2004 01 31 | 691 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.2− | 0.7− | 2006 11 16 | 703 | 0.1+ | 0.1+ |
| 2004 01 31 | 691 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.0 | 0.3− | 2006 11 16 | 703 | 1.1+ | 0.7+ |
| 2004 01 31 | 691 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.7− | 2006 11 22 | 703 | 0.4+ | 0.3+ |
| 2004 02 03 | 608 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.7− | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.3− |
| 2004 02 03 | 608 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.8+ | 0.1− | 2006 11 22 | 703 | 0.9+ | 0.4− |
| 2004 02 03 | 608 | 0.5− | 0.8− | 2004 03 18 | 704 | 0.6+ | 1.4+ | 2006 11 22 | 703 | 0.1− | 1.3− |

**(144168)∗ 2004 BF$_{107}$**

Discovered 2004 Jan. 28 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.64132 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22116373 | $\omega$ | 165.43216 | | −0.98497109 | −0.17222846 |
| $a$ | 2.7080714 | $\Omega$ | 4.70885 | | +0.13832935 | −0.83172418 |
| $e$ | 0.1389210 | $i$ | 9.11992 | | +0.10342601 | −0.52779944 |
| $P$ | 4.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 15 | 691 | 0.2+ | 0.1− | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.2− | 0.2+ |
| 1993 10 15 | 691 | 0.3− | 0.2− | 2004 02 15 | 704 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 1993 10 15 | 691 | 0.4+ | 0.5− | 2004 02 15 | 704 | 0.5+ | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 2000 04 10 | 704 | 0.0 | 0.9+ | 2004 02 15 | 704 | 0.4+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 2000 04 10 | 704 | 0.7+ | 0.5− | 2004 02 15 | 704 | 0.7+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2000 04 10 | 704 | 0.5+ | 0.2+ | 2004 02 15 | 704 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.4− | 0.0 |
| 2000 05 06 | 704 | 0.1− | 0.1− | 2004 02 27 | 704 | 0.6− | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.5+ |
| 2000 05 06 | 704 | 0.3− | 0.3+ | 2004 02 27 | 704 | 0.3− | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.0 |
| 2000 05 06 | 704 | 0.7+ | 1.8+ | 2004 02 27 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.2+ |
| 2000 05 06 | 704 | (0.5− | 2.4+) | 2004 03 10 | 703 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.9+ |
| 2002 10 11 | 644 | 0.5− | 1.4+ | 2004 03 10 | 703 | 0.1− | 0.8+ | 2006 09 19 | 703 | 0.5− | 0.4+ |
| 2002 10 11 | 644 | 0.0 | 1.2+ | 2004 03 10 | 703 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 644 | (0.0 | 1.6+) | 2004 03 10 | 703 | 0.9− | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2004 01 28 | 703 | 0.8− | 0.5− | 2004 03 14 | 704 | 0.5+ | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2004 01 28 | 703 | 0.2− | 0.3− | 2004 03 14 | 704 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2004 01 28 | 703 | 0.2− | 0.0 | 2004 03 14 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2004 01 28 | 703 | 0.4− | 0.1+ | 2004 03 18 | 644 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2004 01 30 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 644 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2004 01 30 | 704 | 0.4− | 0.0 | 2004 03 18 | 644 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.4− | 0.3− |
| 2004 01 30 | 704 | 0.9+ | 0.7− | 2004 03 20 | 704 | 0.7+ | 1.4+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2004 01 30 | 704 | 0.7+ | 0.3− | 2004 03 20 | 704 | 0.5+ | 1.4+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2004 01 30 | 704 | 0.6− | 0.0 | 2004 03 20 | 704 | 0.4− | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.2+ |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.1+ | 1.0+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2004 02 11 | 644 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.4− | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2004 02 11 | 644 | 0.2+ | 0.0 | 2004 04 19 | 704 | 1.5+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.7+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2004 04 19 | 704 | (0.1− | 2.1+) | 2006 11 21 | G96 | 0.1+ | 0.7− |
| 2004 02 11 | 644 | 0.3+ | 0.2+ | 2004 04 19 | 704 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 08 18 | 691 | 0.6− | 0.7+ | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2004 02 13 | 691 | 0.1− | 0.2− | 2006 08 18 | 691 | 0.4− | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.4− |

**(144169)∗ 2004 BX$_{107}$**

Discovered 2004 Jan. 28 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.98385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26583031 | $\omega$ | 146.88174 | | −0.85529761 | +0.51265308 | |
| $a$ | 2.3955195 | $\Omega$ | 64.13500 | | −0.49169199 | −0.75728830 | |
| $e$ | 0.1204478 | $i$ | 4.79296 | | −0.16341658 | −0.40460011 | |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2002 10 10 | 644 | 0.3− | 0.4+ | 2004 02 15 | 704 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 10 10 | 644 | 0.1− | 0.4+ | 2004 02 15 | 704 | 0.6+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2002 10 10 | 644 | 0.3− | 0.6+ | 2004 02 15 | 704 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2002 10 10 | 644 | 0.1− | 0.2+ | 2004 03 17 | 645 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 10 10 | 644 | 0.4− | 0.7+ | 2004 03 17 | 645 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2004 01 18 | 644 | 0.2+ | 0.0 | 2004 04 14 | 291 | (1.9− | 0.2+) | 2006 11 12 | 703 | 0.4− | 0.2− |
| 2004 01 18 | 644 | 0.2− | 0.1+ | 2004 04 14 | 291 | 0.3− | 0.7+ | 2006 11 12 | 703 | 0.3− | 0.3− |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 04 14 | 291 | 0.2− | 0.0 | 2006 11 12 | 703 | 0.1− | 0.5+ |
| 2004 01 18 | 644 | 0.1− | 0.2+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 11 12 | 703 | 1.1+ | 1.0+ |
| 2004 01 18 | 644 | 0.0 | 0.2+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2005 07 03 | 644 | 0.3− | 0.9+ | 2006 11 14 | 691 | 0.2+ | 0.2− |
| 2004 01 28 | 703 | 0.6+ | 0.1+ | 2005 07 03 | 644 | 0.3− | 0.6+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2004 01 28 | 703 | 0.2− | 0.2− | 2005 07 03 | 644 | 0.1+ | 0.7+ | 2006 11 16 | 703 | 0.5− | 0.4− |
| 2004 01 28 | 703 | 0.6+ | 0.5− | 2005 08 12 | E12 | 0.4+ | 0.2− | 2006 11 16 | 703 | 0.1− | 1.3+ |
| 2004 01 28 | 703 | 0.2+ | 0.6+ | 2005 08 12 | E12 | 0.6− | 0.5− | 2006 11 16 | 703 | 0.3− | 1.2− |
| 2004 01 30 | 704 | 0.1− | 0.1+ | 2005 08 12 | E12 | 0.4− | 0.6+ | 2006 11 16 | 703 | 0.9− | 0.1− |
| 2004 01 30 | 704 | 0.1− | 0.7+ | 2005 08 12 | E12 | 0.7+ | 1.2− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 01 30 | 704 | 0.3+ | 0.5− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2004 01 30 | 704 | 0.6− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2004 01 30 | 704 | 0.7− | 0.9+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2004 02 10 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.5+ |
| 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.1+ |
| 2004 02 11 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.5+ |
| 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2004 02 13 | 699 | 0.4− | 0.0 | 2006 10 28 | G96 | (1.3+ | 2.1−) | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2004 02 13 | 699 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2004 02 13 | 699 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.4− | 2006 12 01 | G96 | 0.2− | 0.6− |
| 2004 02 13 | 699 | 0.3+ | 0.6+ | 2006 10 28 | G96 | 0.2− | 0.3− | | | | |
| 2004 02 15 | 704 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | | | |

**(144170)∗ 2004 BK$_{108}$ = 1995 VY$_2$**

Discovered 2004 Jan. 28 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61856)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.19224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26887752 | $\omega$ | 83.98676 | | −0.59039556 | −0.80526255 | |
| $a$ | 2.3773861 | $\Omega$ | 42.35515 | | +0.70472462 | −0.54731556 | |
| $e$ | 0.1116676 | $i$ | 4.65171 | | +0.39344159 | −0.22803050 | |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.2+ | 0.1− | 2004 02 15 | 704 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.0 |
| 1993 01 22 | 691 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.1− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 1993 01 22 | 691 | 1.8− | 1.5− | 2004 02 16 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 1995 11 14 | 691 | 0.2+ | 0.3− | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 1995 11 14 | 691 | 0.1+ | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.1+ |
| 1995 11 14 | 691 | 0.2+ | 0.3− | 2004 02 18 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 1995 11 19 | 691 | 0.9+ | 0.1− | 2004 02 18 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.8− | 0.0 |
| 1995 11 19 | 691 | 0.7+ | 0.2− | 2004 02 18 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 1.3+ |
| 1995 11 19 | 691 | 0.3+ | 0.0 | 2004 03 10 | 703 | 0.0 | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1997 04 11 | 704 | 0.2− | 0.6− | 2004 03 10 | 703 | 0.9+ | 1.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 1997 04 11 | 704 | 0.4− | 0.0 | 2004 03 10 | 703 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 01 18 | 644 | 0.2+ | 0.2− | 2004 03 10 | 703 | 0.5+ | 1.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 01 18 | 644 | 0.2+ | 0.1− | 2004 03 14 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 01 18 | 644 | 0.3+ | 0.0 | 2004 03 14 | 704 | 0.0 | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 01 28 | 703 | 0.6− | 0.1+ | 2004 03 14 | 704 | 0.2+ | 1.3+ | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2004 01 28 | 703 | 0.1− | 0.5− | 2006 09 20 | 699 | 0.5+ | 0.9− | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2004 01 28 | 703 | 0.9− | 0.2− | 2006 09 20 | 699 | (1.9+ | 0.8−) | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2004 01 28 | 703 | 0.2+ | 0.7− | 2006 09 20 | 699 | (0.1+ | 1.9+) | 2006 11 11 | 703 | 0.8+ | 0.7+ |
| 2004 01 30 | 704 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.0 |
| 2004 01 30 | 704 | 0.5− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 0.7+ | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 01 30 | 704 | 0.7− | 1.0+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 01 30 | 704 | 0.5+ | 1.0+ | 2006 09 30 | 703 | (1.6− | 0.0 ) | 2006 11 11 | 703 | 0.1− | 1.0− |
| 2004 02 10 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 1.5+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 02 10 | 644 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2004 02 10 | 644 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.8+ | 2006 11 17 | 703 | 1.6− | 0.5− |
| 2004 02 13 | 691 | 0.0 | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.0+ | 1.6− |
| 2004 02 13 | 691 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.7+ | 1.0− |
| 2004 02 13 | 691 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2004 02 14 | 703 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 02 14 | 703 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2004 02 14 | 703 | 0.7− | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2004 02 14 | 703 | 0.4− | 1.0+ | 2006 10 15 | 691 | 0.1− | 0.0 | | | | |
| 2004 02 15 | 704 | 0.5+ | 0.4− | 2006 10 15 | 691 | 0.3+ | 0.3− | | | | |

**(144171)∗ 2004 BR$_{108}$ = 1999 VP$_{211}$**

Discovered 2004 Jan. 28 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61857)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.63039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28618851 | $\omega$ | 91.36423 | | −0.89178974 | −0.44524326 | |
| $a$ | 2.2805237 | $\Omega$ | 62.20245 | | +0.37049278 | −0.82065879 | |
| $e$ | 0.1325175 | $i$ | 5.21688 | | +0.25970398 | −0.35815860 | |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 0.4− | 0.6+ | 2004 02 10 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | (1.9− | 0.6−) |
| 1999 11 15 | 704 | 0.4+ | 0.0 | 2004 02 10 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.2− | 1.5− |
| 1999 11 15 | 704 | 0.1− | 0.5+ | 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 1999 11 15 | 704 | 0.5+ | 0.7+ | 2004 02 13 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.4− | 1.2− |
| 1999 11 16 | 691 | 0.1− | 0.1+ | 2004 02 13 | 691 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 1999 11 16 | 691 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.1− | 0.4+ | 2006 11 18 | 691 | 0.3+ | 0.1+ |
| 1999 11 16 | 691 | 0.2− | 0.0 | 2004 02 15 | 704 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.1− |
| 2001 05 17 | 704 | 1.2− | 0.2+ | 2004 02 15 | 704 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2001 05 17 | 704 | 0.2+ | 1.2− | 2004 02 15 | 704 | 0.3− | 0.0 | 2006 11 18 | 704 | 1.0− | 0.6+ |
| 2001 05 17 | 704 | 0.2− | 0.4+ | 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.6− |
| 2001 05 28 | 608 | 0.1+ | 0.9− | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.1− | 0.3− |
| 2001 05 28 | 608 | 0.0 | 1.1− | 2004 03 16 | 691 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2001 05 28 | 608 | 0.2− | 1.4− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | (0.4+ | 1.7−) |
| 2004 01 28 | 703 | 0.6− | 0.6+ | 2006 09 28 | G96 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.8− | 1.1− |
| 2004 01 28 | 703 | 0.6+ | 0.9− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.8− |
| 2004 01 28 | 703 | 0.4+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.9+ | 0.6− |
| 2004 01 28 | 703 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2004 01 30 | 704 | 0.9+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2004 01 30 | 704 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.7− |
| 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.9+ | 0.4− |
| 2004 01 30 | 704 | 0.7+ | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 1.2− | 0.5− |
| 2004 02 10 | 644 | 0.1− | 0.1− | 2006 11 10 | 691 | (2.3+ | 0.3+) | 2006 11 27 | 703 | 0.1+ | 0.5− |

**(144172)∗ 2004 BK$_{110}$ = 2002 TX$_{160}$**

Discovered 2004 Jan. 28 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 69659)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.45171 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25427624 | $\omega$ | 28.77522 | | −0.69508847 | −0.67322986 | |
| $a$ | 2.4675476 | $\Omega$ | 106.56959 | | +0.59889387 | −0.73631497 | |
| $e$ | 0.0366933 | $i$ | 15.25674 | | +0.39771617 | −0.06783680 | |
| $P$ | 3.88 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 1.3− | 0.6− | 2004 01 28 | 703 | 1.2− | 0.7− | 2004 03 28 | 704 | 0.1+ | 0.5+ | |
| 2000 01 06 | 704 | 0.7+ | 0.5+ | 2004 01 28 | 703 | 0.3− | 0.6+ | 2004 04 14 | 644 | 0.1− | 0.3+ | |
| 2000 01 06 | 704 | 1.0+ | 1.3− | 2004 01 28 | 703 | 0.2+ | 0.5+ | 2004 04 14 | 644 | 0.2+ | 0.4+ | |
| 2002 09 15 | 699 | (0.3− | 2.2+) | 2004 01 28 | 703 | 0.5− | 0.2− | 2004 04 14 | 644 | 0.2+ | 0.4+ | |
| 2002 09 15 | 699 | (1.6− | 0.2−) | 2004 01 30 | 704 | 0.6+ | 0.0 | 2006 09 19 | 703 | 1.0− | 0.1− | |
| 2002 09 15 | 699 | (1.6+ | 0.0 ) | 2004 01 30 | 704 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.3− | |
| 2002 09 15 | 699 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.8+ | 0.3− | 2006 09 19 | 703 | 0.6+ | 0.2− | |
| 2002 10 05 | 644 | 0.3− | 0.1− | 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.2+ | |
| 2002 10 05 | 644 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1− | |
| 2002 10 05 | 644 | 0.3− | 0.0 | 2004 02 15 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1− | |
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3− | |
| 2002 10 06 | 644 | 0.1− | 0.5+ | 2004 02 15 | 704 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.1− | |
| 2002 10 06 | 644 | 0.4− | 0.2− | 2004 02 15 | 704 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.6+ | |
| 2002 10 16 | 644 | 0.3+ | 0.5+ | 2004 03 18 | 644 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.7+ | 0.0 | |
| 2002 10 16 | 644 | 0.2+ | 0.4+ | 2004 03 18 | 644 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.1+ | |
| 2002 10 16 | 644 | 0.0 | 0.6+ | 2004 03 18 | 644 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.4− | 0.9− | |
| 2002 11 05 | 644 | 0.2− | 0.1+ | 2004 03 28 | 704 | 0.2− | 0.7+ | 2006 11 07 | 644 | 0.5+ | 0.0 | |
| 2002 11 05 | 644 | 0.2− | 0.3+ | 2004 03 28 | 704 | 0.3+ | 0.1− | 2006 11 07 | 644 | 0.6+ | 0.0 | |
| 2002 11 05 | 644 | 0.0 | 0.2+ | 2004 03 28 | 704 | 1.0− | 0.7− | | | | | |

**(144173)∗ 2004 BK$_{111}$ = 2002 RF$_{212}$**

Discovered 2004 Jan. 29 by the Catalina Sky Survey.

Id. K. E. Smalley (*MPO* 61860)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.40403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24194072 | $\omega$ | 126.15614 | | −0.47843952 | −0.87703347 | |
| $a$ | 2.5507236 | $\Omega$ | 352.05490 | | +0.66940907 | −0.33207945 | |
| $e$ | 0.1787558 | $i$ | 18.42158 | | +0.56831956 | −0.34718227 | |
| $P$ | 4.07 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 29 | 704 | (0.3+ | 2.5+) | 2004 01 29 | 703 | 0.4+ | 0.2− | 2004 03 22 | 704 | 0.3− | 0.7+ | |
| 1998 09 29 | 704 | 1.6− | 1.1− | 2004 01 29 | 703 | 0.7+ | 0.0 | 2004 03 28 | 704 | 0.6+ | 0.1+ | |
| 1998 09 29 | 704 | 0.1+ | 0.9+ | 2004 01 30 | 699 | 0.5− | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.6+ | |
| 1998 09 29 | 704 | 0.5− | 0.5+ | 2004 01 30 | 699 | 0.2+ | 1.1− | 2004 03 28 | 704 | 0.6+ | 0.0 | |
| 2000 02 11 | 704 | 0.0 | 0.4+ | 2004 01 30 | 699 | 1.1− | 0.4+ | 2004 03 28 | 704 | 0.2+ | 0.0 | |
| 2000 02 11 | 704 | 0.4+ | 0.2+ | 2004 01 30 | 699 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.6+ | 0.2+ | |
| 2000 02 11 | 704 | 0.3− | 0.6+ | 2004 01 30 | 704 | 0.2+ | 0.0 | 2004 03 29 | 049 | 0.3+ | 0.2− | |
| 2000 02 11 | 704 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.2− | 0.2− | 2004 03 29 | 049 | 0.4+ | 0.4+ | |
| 2000 02 11 | 704 | 0.3+ | 0.9+ | 2004 01 30 | 704 | 0.1+ | 1.2+ | 2004 03 29 | 049 | 0.2+ | 0.4− | |
| 2000 03 11 | 704 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.9− | 0.5− | 2004 03 29 | 049 | 0.3+ | 0.1+ | |
| 2000 03 11 | 699 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.8− | 0.3+ | 2004 03 31 | 691 | 0.1+ | 0.2+ | |
| 2000 03 11 | 704 | 0.3+ | 0.5+ | 2004 02 11 | 644 | 0.3− | 0.1− | 2004 03 31 | 691 | 0.2+ | 0.3+ | |
| 2000 03 11 | 704 | 0.4+ | 0.4+ | 2004 02 11 | 644 | 0.5− | 0.0 | 2004 03 31 | 691 | 0.2− | 0.3+ | |
| 2000 03 11 | 699 | 0.4− | 0.3+ | 2004 02 11 | 644 | 0.2− | 0.0 | 2006 08 22 | 644 | 0.7− | 1.0+ | |
| 2000 03 11 | 704 | 0.2+ | 0.3+ | 2004 02 16 | 704 | 0.6+ | 0.4+ | 2006 08 22 | 644 | 0.5− | 0.6+ | |
| 2000 03 11 | 699 | 0.4− | 0.0 | 2004 02 16 | 704 | 1.0+ | 0.9+ | 2006 08 22 | 644 | 0.5− | 0.6+ | |
| 2000 03 11 | 704 | 0.4+ | 0.3+ | 2004 02 16 | 704 | 0.9+ | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.1− | |
| 2000 03 11 | 699 | 0.1+ | 0.6+ | 2004 02 16 | 704 | 0.8+ | 0.6+ | 2006 08 28 | 703 | 1.1− | 1.2+ | |
| 2000 04 05 | 704 | 1.6+ | 1.0+ | 2004 02 16 | 704 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.9+ | |
| 2000 04 05 | 704 | 1.2+ | 0.7− | 2004 02 18 | 691 | 0.3− | 0.1− | 2006 08 28 | 703 | 1.0− | 0.1+ | |
| 2000 04 05 | 704 | 0.3+ | 0.3− | 2004 02 18 | 691 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.3+ | |
| 2000 04 05 | 704 | 0.1+ | 0.4+ | 2004 02 18 | 608 | 0.3+ | 0.0 | 2006 09 14 | 644 | 0.2− | 0.4+ | |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2004 02 18 | 608 | 0.3+ | 0.0 | 2006 09 14 | 644 | 0.3− | 0.2+ | |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2004 02 18 | 608 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.8− | 0.1+ | |
| 2002 09 05 | 704 | 0.3+ | 0.7+ | 2004 02 18 | 691 | 0.2− | 0.1− | 2006 09 17 | 704 | (1.6− | 0.5−) | |
| 2002 09 05 | 704 | 0.8+ | 1.1+ | 2004 02 20 | 049 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.9+ | |
| 2002 09 05 | 704 | 0.1+ | 0.4+ | 2004 02 20 | 049 | 0.4+ | 0.0 | 2006 09 19 | 703 | (0.9+ | 3.1+) | |
| 2002 09 05 | 704 | 0.1− | 0.0 | 2004 02 20 | 049 | 0.4+ | 0.5− | 2006 09 19 | 703 | 0.6− | 0.1− | |
| 2002 09 15 | 608 | (1.6− | 0.9+) | 2004 02 20 | 049 | 0.3+ | 0.2− | 2006 09 19 | 703 | (0.1+ | 1.6+) | |
| 2002 09 15 | 608 | (1.6− | 1.1+) | 2004 02 23 | 049 | 1.1− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.4+ | |
| 2002 09 15 | 608 | 1.5− | 0.9+ | 2004 02 23 | 049 | 0.5+ | 0.2− | 2006 09 25 | 699 | 0.9+ | 0.8+ | |
| 2002 09 19 | 644 | 1.2− | 0.4+ | 2004 02 23 | 049 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.1+ | |
| 2002 09 19 | 644 | 0.8− | 0.3+ | 2004 02 27 | 704 | 0.4+ | 0.3− | 2006 09 25 | 699 | (0.9− | 1.6+) | |
| 2002 09 19 | 644 | 1.0− | 0.5+ | 2004 02 27 | 704 | 0.5+ | 0.0 | 2006 09 25 | 699 | 0.0 | 1.1+ | |
| 2002 09 30 | 704 | 0.3− | 0.3+ | 2004 02 27 | 704 | 1.0+ | 0.4− | 2006 09 27 | 704 | 0.1+ | 0.3+ | |
| 2002 09 30 | 704 | 0.3− | 0.2+ | 2004 02 27 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.1− | |
| 2002 09 30 | 704 | 0.6+ | 0.1− | 2004 03 14 | 704 | 0.7+ | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.6+ | |
| 2002 09 30 | 704 | 0.8+ | 0.7− | 2004 03 14 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 704 | 1.2− | 0.8+ | |
| 2003 12 19 | 704 | 1.2+ | 0.3+ | 2004 03 14 | 704 | 0.1+ | 1.0+ | 2006 09 28 | G96 | 0.4+ | 0.6− | |
| 2003 12 19 | 704 | 0.3− | 0.3− | 2004 03 14 | 704 | 0.3+ | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.3− | |
| 2003 12 19 | 704 | 0.6− | 0.2+ | 2004 03 14 | 704 | 0.6+ | 0.5+ | 2006 09 28 | G96 | 0.6+ | 0.4− | |
| 2003 12 19 | 704 | 0.3− | 0.1− | 2004 03 19 | 644 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.2− | 0.3− | |
| 2003 12 29 | 704 | 0.9− | 0.5− | 2004 03 19 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4+ | 2.4+ | |
| 2003 12 29 | 704 | 0.4− | 0.1+ | 2004 03 19 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.4+ | |
| 2003 12 29 | 704 | 1.3− | 1.4− | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 2.3− | 0.9+ | |
| 2003 12 29 | 704 | 0.6− | 0.2− | 2004 03 22 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.1+ | 1.2− | |
| 2004 01 29 | 703 | 0.4+ | 0.4− | 2004 03 22 | 704 | 0.3− | 0.2+ | | | | | |
| 2004 01 29 | 703 | 0.1− | 0.5+ | 2004 03 22 | 704 | 0.8− | 0.1− | | | | | |

**(144174)∗ 2004 BW$_{111}$**

Discovered 2004 Jan. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.21441 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24685996 | $\omega$ | 341.55547 | | +0.46366814 | −0.87908225 | |
| $a$ | 2.5167241 | $\Omega$ | 80.69325 | | +0.82634768 | +0.38404439 | |
| $e$ | 0.1514124 | $i$ | 6.43335 | | +0.31962693 | +0.28235494 | |
| $P$ | 3.99 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.3+ | 0.8− | 2004 01 23 | 704 | 1.3+ | 1.2+ | 2005 05 19 | G96 | 0.5− | 0.1+ | |
| 1995 10 26 | 691 | 0.1− | 0.3+ | 2004 01 23 | 704 | 0.5+ | 1.0+ | 2005 05 19 | G96 | (0.0 | 1.7+) | |
| 1995 10 26 | 691 | 0.1+ | 0.2− | 2004 01 30 | 699 | 1.0− | 0.3+ | 2005 05 19 | G96 | 0.5− | 0.1+ | |
| 2000 02 03 | 704 | 0.5+ | 0.1+ | 2004 01 30 | 699 | 0.3+ | 0.8+ | 2005 06 10 | 691 | 0.3+ | 0.1− | |
| 2000 02 03 | 704 | 0.4− | 0.1− | 2004 01 30 | 699 | 0.6− | 0.7+ | 2005 06 10 | 691 | 0.0 | 0.6+ | |
| 2000 02 03 | 704 | 0.2+ | 0.1+ | 2004 01 30 | 699 | 0.1− | 0.3− | 2005 06 10 | 691 | 0.2+ | 0.4+ | |
| 2000 03 04 | 704 | 0.4− | 0.5+ | 2004 02 10 | 644 | 0.3+ | 0.4+ | 2006 08 16 | 644 | 0.2+ | 0.3+ | |
| 2000 03 04 | 704 | 0.0 | 0.4+ | 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.6+ | |
| 2000 03 04 | 704 | 0.8− | 0.1+ | 2004 02 10 | 644 | 0.2− | 0.6+ | 2006 08 16 | 644 | 0.2− | 0.6+ | |
| 2000 03 04 | 704 | 0.7+ | 1.0+ | 2004 02 12 | 644 | 0.2− | 0.1+ | 2006 08 21 | 644 | 0.4+ | 0.2+ | |
| 2002 08 17 | 644 | 0.4− | 0.4+ | 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 08 21 | 644 | 0.1+ | 0.3+ | |
| 2002 08 17 | 644 | 0.7− | 0.6+ | 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.4+ | |
| 2002 08 17 | 644 | 0.4− | 0.8+ | 2004 02 16 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.4+ | |
| 2002 09 09 | 644 | 0.3− | 1.2+ | 2004 02 16 | 704 | (0.3+ | 2.3+) | 2006 09 14 | 703 | 0.3+ | 0.8− | |
| 2002 09 09 | 644 | 0.2− | 1.3+ | 2004 02 16 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.1+ | |
| 2002 09 09 | 644 | 0.3− | 1.2+ | 2004 02 16 | 704 | 0.6+ | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.7+ | |
| 2002 09 17 | 644 | 0.6− | 0.4+ | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 09 21 | 699 | 0.8− | 0.4+ | |
| 2002 09 17 | 644 | 0.9− | 0.7+ | 2004 02 16 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.2+ | |
| 2002 09 17 | 644 | 0.6− | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 09 21 | 699 | (2.5− | 1.4+) | |
| 2004 01 19 | 703 | (0.6− | 1.6+) | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.8+ | 0.2− | |
| 2004 01 19 | 703 | 1.3+ | 0.5+ | 2004 03 14 | 704 | 1.1+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.7+ | |
| 2004 01 19 | 703 | 0.2− | 0.1+ | 2004 03 14 | 704 | 0.4− | 0.8− | 2006 10 12 | 644 | 0.0 | 0.4+ | |
| 2004 01 19 | 703 | (0.5+ | 1.6−) | 2004 03 14 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | |
| 2004 01 23 | 704 | 0.1− | 0.1− | 2004 03 14 | 704 | 0.0 | 1.0− | | | | | |
| 2004 01 23 | 704 | 0.5+ | 0.8+ | 2005 05 19 | G96 | 0.4− | 0.1− | | | | | |

**(144175)∗ 2004 BZ$_{111}$ = 2001 SF$_{216}$**

Discovered 2004 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61862)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.25103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18726002 | $\omega$ | 81.34226 | | −0.60488993 | +0.79611722 | |
| $a$ | 3.0257939 | $\Omega$ | 151.41410 | | −0.74421339 | −0.55737185 | |
| $e$ | 0.1046008 | $i$ | 2.09358 | | −0.28329241 | −0.23565651 | |
| $P$ | 5.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.9− | 2004 02 26 | 704 | (1.7+ | 1.3+) | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.1+ | 1.0− | 2004 02 26 | 704 | (0.3+ | 1.6+) | 2006 08 18 | 644 | 0.0 | 0.3+ |
| 2001 09 19 | 704 | (0.4+ | 1.6−) | 2004 02 26 | 704 | 0.0 | 0.7− | 2006 08 18 | 644 | 0.3+ | 0.5+ |
| 2001 09 19 | 704 | 0.5− | 1.0− | 2004 02 29 | 691 | 0.2− | 0.5+ | 2006 08 19 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.7+ | 0.1− | 2004 02 29 | 691 | 0.0 | 0.5+ | 2006 08 19 | 691 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2004 02 29 | 691 | 0.4+ | 0.2− | 2006 08 19 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2005 05 04 | 704 | 1.3+ | 1.0+ | 2006 08 27 | 691 | 0.2− | 0.6+ |
| 2001 09 21 | 704 | 0.6+ | 0.1− | 2005 05 04 | 704 | 0.8+ | 0.8+ | 2006 08 27 | 691 | 0.1+ | 0.5+ |
| 2001 09 21 | 704 | 0.2− | 0.6− | 2005 05 04 | 704 | 0.7+ | 0.4− | 2006 08 27 | 691 | 0.2− | 0.6+ |
| 2001 09 25 | 704 | 0.4+ | 1.5+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.2− |
| 2001 09 25 | 704 | (0.5+ | 1.9+) | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.8+ |
| 2001 09 25 | 704 | (1.0+ | 2.9+) | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.4− | 1.0+ |
| 2004 01 24 | 704 | 0.5+ | 1.1+ | 2005 05 14 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | (0.3− | 1.9+) |
| 2004 01 24 | 704 | 0.9+ | 0.2+ | 2005 05 18 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 1.0+ | 1.0+ | 2005 05 18 | 644 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2004 01 24 | 704 | 0.4+ | 0.8+ | 2005 05 18 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2004 01 24 | 704 | 0.7+ | 0.7+ | 2005 05 20 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2004 01 31 | 691 | 0.1− | 0.1+ | 2005 05 20 | G96 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 01 31 | 691 | 0.2− | 0.3+ | 2005 05 20 | G96 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2004 01 31 | 691 | 0.0 | 0.1+ | 2005 05 20 | G96 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4+ |
| 2004 02 11 | 691 | 0.0 | 0.2+ | 2005 05 21 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2004 02 11 | 691 | 0.1− | 0.1+ | 2005 05 21 | 644 | 0.3− | 0.0 | | | | |
| 2004 02 11 | 691 | 0.1− | 0.1+ | 2005 05 21 | 644 | 0.2− | 0.3+ | | | | |

**(144176)∗ 2004 BN$_{113}$ = 2001 TD$_{221}$**

Discovered 2004 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61862)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.93354 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18175732 | $\omega$ | 331.52556 | | −0.65352991 | +0.74403944 | |
| $a$ | 3.0865603 | $\Omega$ | 257.30629 | | −0.66463337 | −0.65194361 | |
| $e$ | 0.1501259 | $i$ | 8.18789 | | −0.36216176 | −0.14620138 | |
| $P$ | 5.42 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 0.1+ | 0.8− | 2004 01 30 | 699 | 0.2+ | 0.0 | 2006 09 19 | 699 | 1.3− | 0.3− |
| 1999 05 10 | 704 | 0.8− | 0.2+ | 2004 01 30 | 699 | 0.3+ | 0.1− | 2006 09 19 | 699 | (1.9− | 0.0 ) |
| 1999 05 10 | 704 | (1.1+ | 2.6+) | 2004 02 14 | 644 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 1999 05 10 | 704 | (2.2− | 1.9+) | 2004 02 14 | 644 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.4− | 1.0+ |
| 1999 05 10 | 704 | 1.7− | 1.4+ | 2004 02 14 | 644 | 0.5+ | 0.5+ | 2006 09 21 | 699 | 0.8+ | 0.7+ |
| 2000 08 21 | 699 | 0.7+ | 0.3+ | 2004 02 17 | 703 | 0.5− | 0.3+ | 2006 09 21 | 699 | 0.2+ | 1.1+ |
| 2000 08 21 | 699 | 0.0 | 0.2− | 2004 02 17 | 703 | 0.6+ | 0.1− | 2006 09 21 | 699 | (2.0− | 0.3−) |
| 2000 08 21 | 699 | 0.4+ | 0.8+ | 2004 02 17 | 703 | 0.5+ | 0.3+ | 2006 09 21 | 699 | 1.1+ | 1.0− |
| 2000 08 21 | 699 | 0.5− | 0.7+ | 2004 02 17 | 703 | 0.4− | 0.8− | 2006 09 27 | 703 | 0.2− | 1.4+ |
| 2000 09 03 | 645 | 0.1+ | 0.1+ | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 09 27 | 703 | 0.6− | 0.2+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 703 | 0.4− | 0.4+ |
| 2001 10 14 | 704 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.2+ |
| 2001 10 14 | 704 | 0.2− | 0.2− | 2004 02 19 | 704 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.7+ | 1.2+ | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.9− | 0.5+ | 2004 03 16 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.1+ | 0.0 | 2004 03 16 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 691 | 0.4− | 0.4− |
| 2001 10 20 | 644 | 0.9− | 0.3− | 2004 03 16 | 704 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 10 20 | 644 | 0.6− | 0.2+ | 2004 03 16 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 10 20 | 644 | 0.8− | 0.4− | 2004 03 27 | 703 | 1.2+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2003 01 04 | 704 | 1.4+ | 1.2− | 2004 03 27 | 703 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.4+ |
| 2003 01 04 | 704 | 0.3− | 0.7− | 2004 03 27 | 703 | (3.3− | 8.5+) | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2003 01 04 | 704 | 0.3+ | 0.7− | 2004 03 27 | 703 | (1.8+ | 4.8+) | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2003 01 04 | 704 | 0.6− | 0.5− | 2004 04 14 | 699 | 1.1+ | 1.2+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2004 01 28 | 704 | 0.2+ | 0.5+ | 2004 04 14 | 699 | 0.5− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2004 01 28 | 704 | 0.2+ | 0.6+ | 2004 04 14 | 699 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2004 01 28 | 704 | 0.4+ | 0.7+ | 2004 04 14 | 699 | 0.3− | 0.9+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 01 28 | 704 | 0.4+ | 0.3− | 2006 09 06 | 644 | 0.6− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2004 01 30 | 699 | 0.1+ | 0.3+ | 2006 09 06 | 644 | 0.4− | 0.0 | | | | |
| 2004 01 30 | 699 | 0.4− | 0.9+ | 2006 09 06 | 644 | 0.3+ | 0.1− | | | | |

**(144177)∗ 2004 BV$_{113}$**

Discovered 2004 Jan. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.58664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21843045 | $\omega$ | 62.64868 | | −0.80471646 | +0.59224368 | |
| $a$ | 2.7306158 | $\Omega$ | 153.60591 | | −0.57203257 | −0.75509245 | |
| $e$ | 0.2351355 | $i$ | 5.28849 | | −0.15877707 | −0.28121666 | |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.4− | 1.3− | 2004 03 19 | 704 | (0.8− | 1.8+) | 2004 04 22 | 704 | 1.2+ | 1.1+ |
| 1995 03 25 | 691 | 0.5− | 0.9− | 2004 03 19 | 704 | (0.4− | 1.6+) | 2004 04 22 | 704 | 1.1+ | 1.1+ |
| 1995 03 25 | 691 | 0.4− | 1.3− | 2004 03 19 | 704 | (0.4− | 1.7+) | 2004 04 23 | 703 | 0.3− | 1.0+ |
| 2004 01 28 | 704 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.2+ | 2004 04 23 | 703 | 0.2+ | 1.4+ |
| 2004 01 28 | 704 | 1.2+ | 0.8+ | 2004 03 22 | 704 | 0.5+ | 0.3+ | 2004 04 23 | 703 | (0.5+ | 1.6+) |
| 2004 01 28 | 704 | 0.9+ | 0.2− | 2004 03 22 | 704 | 0.4+ | 0.8+ | 2004 04 23 | 703 | 0.4− | 0.7+ |
| 2004 01 28 | 704 | 0.7+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2004 05 22 | 704 | 0.2+ | 0.1+ |
| 2004 01 28 | 704 | 0.8+ | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.3+ | 2004 05 22 | 704 | 0.6+ | 0.0 |
| 2004 01 30 | 699 | 0.6+ | 0.0 | 2004 03 23 | 683 | 0.4+ | 0.5+ | 2004 05 22 | 704 | 0.6+ | 0.2+ |
| 2004 01 30 | 699 | 1.1− | 0.1+ | 2004 03 23 | 683 | 0.3+ | 0.4+ | 2004 05 22 | 704 | 0.3+ | 0.3+ |
| 2004 01 30 | 699 | 0.4+ | 0.7+ | 2004 03 23 | 683 | 0.8− | 0.9+ | 2004 05 22 | 704 | 1.2+ | 0.3+ |
| 2004 01 30 | 699 | 0.4− | 0.9− | 2004 03 24 | 699 | 0.5− | 0.3+ | 2004 05 23 | 699 | 0.4− | 0.2+ |
| 2004 02 19 | 704 | 0.4+ | 0.6− | 2004 03 24 | 699 | 0.3+ | 0.5+ | 2004 05 23 | 699 | 0.5+ | 1.3+ |
| 2004 02 19 | 704 | 0.6− | 0.4+ | 2004 03 24 | 699 | (0.6− | 1.7+) | 2004 05 23 | 699 | 0.7− | 0.2− |
| 2004 02 19 | 704 | 0.6+ | 0.1− | 2004 03 24 | 699 | (2.9+ | 0.1−) | 2004 05 23 | 699 | 0.4− | 1.3+ |
| 2004 02 19 | 704 | 0.6+ | 1.1+ | 2004 03 28 | 683 | 0.2− | 1.0− | 2004 06 06 | 703 | 0.5− | 1.3− |
| 2004 02 23 | 704 | 0.5+ | 0.5+ | 2004 03 28 | 683 | 0.2+ | 0.9− | 2004 06 06 | 703 | 0.6− | 0.3+ |
| 2004 02 23 | 704 | 0.4+ | 1.5+ | 2004 03 28 | 683 | 0.1− | 1.1− | 2004 06 06 | 703 | 1.1− | 1.0− |
| 2004 02 23 | 704 | 0.8+ | 0.8+ | 2004 03 28 | 704 | (0.4− | 1.7−) | 2004 06 06 | 703 | 0.0 | 0.9+ |
| 2004 02 23 | 704 | 0.3+ | 0.9+ | 2004 03 28 | 704 | 0.5− | 1.2− | 2004 06 16 | 704 | 1.5+ | 1.0− |
| 2004 02 23 | 704 | 0.6+ | 1.0+ | 2004 03 28 | 704 | 0.3− | 0.7+ | 2004 06 16 | 704 | 0.1− | 0.9+ |
| 2004 03 15 | 703 | 0.5− | 0.3− | 2004 03 28 | 704 | 0.0 | 0.7+ | 2004 06 16 | 704 | 0.2− | 1.1+ |
| 2004 03 15 | 703 | 0.4− | 0.3+ | 2004 03 28 | 704 | 0.5− | 0.6+ | 2005 08 28 | 691 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 0.5− | 0.0 | 2004 04 03 | 608 | 0.5+ | 0.1+ | 2005 08 28 | 691 | 0.2− | 0.2+ |
| 2004 03 15 | 703 | 0.5− | 0.1+ | 2004 04 03 | 608 | 0.5+ | 0.2− | 2005 08 28 | 691 | 0.2− | 0.3+ |
| 2004 03 15 | 333 | 0.6+ | 0.7+ | 2004 04 03 | 608 | 0.0 | 0.4+ | 2005 09 01 | 691 | 0.1− | 0.5+ |
| 2004 03 15 | 333 | 0.0 | 1.1− | 2004 04 10 | 644 | 0.0 | 0.0 | 2005 09 01 | 691 | 0.1+ | 0.5+ |
| 2004 03 16 | 704 | 0.1+ | 0.4+ | 2004 04 10 | 644 | 0.2− | 0.1+ | 2005 09 01 | 691 | 0.1+ | 0.4+ |
| 2004 03 16 | 704 | 0.9+ | 0.8+ | 2004 04 10 | 644 | 0.0 | 0.1+ | 2005 10 06 | G96 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 0.0 | 0.4+ | 2004 04 12 | 699 | 0.8− | 0.2− | 2005 10 06 | G96 | 0.5− | 0.4+ |
| 2004 03 16 | 704 | 0.1− | 0.3+ | 2004 04 12 | 699 | 0.4− | 0.2+ | 2005 10 06 | G96 | 0.6− | 0.2+ |
| 2004 03 16 | 704 | 0.2− | 0.5+ | 2004 04 12 | 699 | 0.0 | 0.2+ | 2005 10 06 | G96 | 0.4− | 0.1+ |
| 2004 03 16 | 333 | 0.1+ | 0.4+ | 2004 04 12 | 699 | (1.6− | 0.1+) | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2004 03 16 | 333 | 0.1− | 0.5+ | 2004 04 15 | 704 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.1+ |
| 2004 03 17 | 704 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2004 03 17 | 704 | 0.6− | 0.5+ | 2004 04 15 | 704 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.4+ | 0.1+ |
| 2004 03 17 | 704 | 0.3− | 0.4+ | 2004 04 15 | 704 | 0.2+ | 1.2+ | 2006 10 18 | 691 | 0.2− | 0.4+ |
| 2004 03 17 | 704 | 0.1+ | 0.4+ | 2004 04 15 | 704 | (0.0 | 2.5+) | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2004 03 17 | 704 | 0.3− | 0.3+ | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.4+ |
| 2004 03 17 | 704 | 0.5− | 0.1+ | 2004 04 20 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2004 03 17 | 704 | 0.0 | 0.8+ | 2004 04 20 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.5+ |
| 2004 03 17 | 704 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2004 03 17 | 704 | 0.3− | 0.4+ | 2004 04 20 | 704 | 0.1+ | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.5+ |
| 2004 03 17 | 704 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.8+ | 0.4− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2004 03 19 | 704 | (0.5− | 1.8+) | 2004 04 22 | 704 | 0.4+ | 0.9− | 2006 11 23 | G96 | 0.5+ | 0.2+ |
| 2004 03 19 | 704 | (0.4− | 1.7+) | 2004 04 22 | 704 | 0.8+ | 0.6+ | 2006 11 23 | G96 | 0.5+ | 0.1− |

**(144178)∗ 2004 BD$_{114}$**

Discovered 2004 Jan. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 269.77731 | | (2000.0) | | | |
| $n$ | 0.26604579 | $\omega$ | 283.20269 | | −0.65683530 | −0.75387417 |
| $a$ | 2.3942259 | $\Omega$ | 207.87535 | | +0.70403799 | −0.60578010 |
| $e$ | 0.1649025 | $i$ | 1.90323 | | +0.26999610 | −0.25437020 |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 691 | 0.1− | 0.3+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2005 06 15 | G96 | 0.1+ | 0.7+ | |
| 1991 10 06 | 691 | 0.4− | 0.8− | 2004 02 16 | 691 | 0.9− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | |
| 1991 10 06 | 691 | 0.0 | 0.4+ | 2004 02 18 | 704 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− | |
| 1993 04 17 | 413 | (2.4− | 2.5+) | 2004 02 18 | 704 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.0 | |
| 1999 12 08 | 704 | 1.0+ | 1.8− | 2004 02 18 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.5+ | |
| 1999 12 08 | 704 | 1.7+ | 1.3− | 2004 02 18 | 704 | 0.5+ | 0.3− | 2006 10 20 | 644 | 0.4+ | 0.7+ | |
| 1999 12 08 | 704 | 0.5+ | 0.7− | 2004 02 18 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 | |
| 2002 09 11 | 644 | 0.4− | 0.6+ | 2004 02 18 | 608 | 0.6+ | 0.3− | 2006 10 21 | 703 | 0.4+ | 0.7+ | |
| 2002 09 11 | 644 | 0.1+ | 0.7+ | 2004 02 18 | 608 | 1.0+ | 0.6− | 2006 10 21 | 703 | 1.0− | 0.0 | |
| 2002 09 11 | 644 | 0.3− | 0.6+ | 2004 02 18 | 608 | 0.9+ | 0.7− | 2006 10 21 | 703 | 0.4− | 0.6− | |
| 2002 09 17 | 644 | 0.4− | 0.5+ | 2004 03 12 | 644 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.9+ | 0.2− | |
| 2002 09 17 | 644 | 0.1− | 0.9+ | 2004 03 12 | 644 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2002 09 17 | 644 | 0.1− | 0.6+ | 2004 03 12 | 644 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2004 01 29 | 704 | 0.4+ | 0.8+ | 2004 03 15 | 704 | 0.9+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.6+ | |
| 2004 01 29 | 704 | 0.7+ | 0.3− | 2004 03 15 | 704 | 1.1+ | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.2+ | |
| 2004 01 29 | 704 | 0.6+ | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2004 01 29 | 699 | 0.1+ | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2004 01 29 | 704 | 0.5− | 0.9+ | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.4+ | |
| 2004 01 29 | 699 | 0.5+ | 0.3− | 2004 03 18 | 704 | 1.3− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1+ | |
| 2004 01 29 | 699 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2+ | |
| 2004 01 29 | 699 | 1.0− | 0.0 | 2004 03 18 | 704 | (1.8− | 0.5+) | 2006 10 27 | G96 | 0.0 | 0.0 | |
| 2004 01 30 | 699 | 0.4− | 0.3+ | 2004 03 18 | 704 | 1.2− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | |
| 2004 01 30 | 699 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 1.2− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2004 01 30 | 699 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 1.3+ | 2006 10 27 | G96 | 0.5+ | 0.2− | |
| 2004 01 30 | 699 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.1− | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.0 | |
| 2004 02 12 | 333 | 0.1− | 0.7− | 2004 03 20 | 704 | 0.5− | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2004 02 12 | 333 | 0.1− | 0.4− | 2005 06 10 | 691 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | |
| 2004 02 12 | 333 | 0.0 | 0.1− | 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.3− | |
| 2004 02 12 | 644 | 0.5+ | 0.1+ | 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− | |
| 2004 02 12 | 644 | 0.0 | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− | |
| 2004 02 12 | 644 | 0.2− | 0.3+ | 2005 06 14 | 691 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.1− | |
| 2004 02 14 | 608 | 0.1+ | 0.8+ | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.4+ | |
| 2004 02 14 | 608 | 0.6− | 1.2+ | 2005 06 15 | G96 | 0.5− | 0.8+ | 2006 11 19 | 691 | 0.1− | 0.3+ | |
| 2004 02 14 | 608 | 0.3− | 1.2+ | 2005 06 15 | G96 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.4+ | |
| 2004 02 16 | 691 | 0.3+ | 0.5+ | 2005 06 15 | G96 | 0.4+ | 0.3+ | | | | | |

**(144179)∗ 2004 BO$_{114}$ = 1993 FY$_{60}$**

Discovered 2004 Jan. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61865)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 211.12344 | | (2000.0) | | | |
| $n$ | 0.26504569 | $\omega$ | 28.77582 | | −0.87669563 | +0.48104549 |
| $a$ | 2.4002449 | $\Omega$ | 179.97781 | | −0.45581706 | −0.83069579 |
| $e$ | 0.1771562 | $i$ | 4.79761 | | −0.15373868 | −0.28024941 |
| $P$ | 3.72 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.4− | 0.6− | 2004 02 18 | 704 | 0.6− | 0.2+ | 2004 03 23 | 704 | 0.6+ | 0.5+ | |
| 1993 03 20 | 809 | 1.0+ | 1.2− | 2004 02 18 | 704 | 0.4+ | 0.3+ | 2004 03 26 | 691 | 0.1− | 0.1+ | |
| 1994 09 11 | 691 | 0.8− | 0.7− | 2004 02 18 | 704 | 0.5+ | 0.7+ | 2004 03 26 | 691 | 0.1− | 0.2+ | |
| 1994 09 11 | 691 | 0.2− | 0.9+ | 2004 02 18 | 704 | 0.4+ | 0.2+ | 2004 03 26 | 691 | 0.1− | 0.2+ | |
| 1994 09 11 | 691 | 0.1+ | 0.8+ | 2004 02 23 | 704 | 1.3− | 0.4+ | 2004 03 27 | 704 | 1.3− | 1.1+ | |
| 1998 09 21 | 691 | 0.1− | 0.0 | 2004 02 23 | 704 | 1.3− | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.2+ | |
| 1998 09 21 | 691 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.3+ | |
| 1998 09 21 | 691 | 0.2+ | 0.2− | 2004 02 23 | 704 | 0.8− | 0.2+ | 2004 03 27 | 704 | 0.1− | 0.5+ | |
| 2001 07 13 | 644 | (0.8+ | 1.6+) | 2004 02 25 | 333 | 0.2− | 0.3+ | 2004 03 31 | 691 | 0.0 | 0.0 | |
| 2001 07 13 | 644 | (0.6− | 2.1+) | 2004 02 25 | 333 | 0.0 | 1.0+ | 2004 03 31 | 691 | 0.1− | 0.1− | |
| 2001 07 13 | 644 | (0.8− | 2.1+) | 2004 02 25 | 333 | 0.6− | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.0 | |
| 2004 01 29 | 699 | 0.9− | 1.1+ | 2004 02 25 | 333 | 0.8− | 0.3+ | 2004 07 15 | 807 | 0.3− | 0.3+ | |
| 2004 01 29 | 699 | 0.4+ | 0.4+ | 2004 02 29 | 691 | 0.0 | 0.1+ | 2004 07 16 | 807 | 0.3− | 0.4+ | |
| 2004 01 29 | 699 | 0.1+ | 1.0− | 2004 02 29 | 691 | 0.0 | 0.1+ | 2005 08 10 | 807 | 0.1+ | 0.2+ | |
| 2004 01 29 | 699 | 1.3− | 0.7+ | 2004 02 29 | 691 | 0.0 | 0.1+ | 2005 08 10 | 807 | 0.2+ | 0.4+ | |
| 2004 01 30 | 699 | 0.5+ | 0.2− | 2004 03 01 | 703 | 0.9+ | 0.2− | 2005 08 24 | 644 | 0.2+ | 0.3+ | |
| 2004 01 30 | 699 | 0.2+ | 0.4+ | 2004 03 01 | 703 | 0.1− | 0.1− | 2005 08 24 | 644 | 0.4+ | 0.5+ | |
| 2004 01 30 | 699 | 0.3− | 0.1+ | 2004 03 01 | 703 | 0.8+ | 0.3+ | 2005 08 24 | 644 | 0.3+ | 0.7+ | |
| 2004 01 30 | 699 | 0.3− | 0.1+ | 2004 03 01 | 703 | 0.7+ | 0.3− | 2005 08 29 | 185 | 0.2− | 0.1+ | |
| 2004 02 12 | 333 | 0.1− | 0.3+ | 2004 03 15 | 704 | 1.1+ | 0.7− | 2005 08 29 | 185 | 0.4+ | 0.1− | |
| 2004 02 12 | 333 | 0.4+ | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.1− | 2005 08 31 | 185 | 0.5+ | 0.7+ | |
| 2004 02 12 | 644 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.6+ | 0.5+ | 2005 08 31 | 185 | 1.1− | 0.0 | |
| 2004 02 12 | 333 | 0.3− | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.7+ | 0.4− | |
| 2004 02 12 | 644 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.5+ | 0.9− | |
| 2004 02 12 | 333 | 0.8− | 1.1+ | 2004 03 17 | 691 | 0.8− | 1.1− | 2006 10 23 | G96 | 0.2− | 0.2− | |
| 2004 02 12 | 333 | 0.6− | 0.3+ | 2004 03 17 | 691 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.1+ | |
| 2004 02 12 | 333 | 0.1− | 0.6+ | 2004 03 17 | 691 | 0.2+ | 0.3− | 2006 10 28 | 291 | 0.1+ | 0.2+ | |
| 2004 02 12 | 644 | 0.3+ | 0.5+ | 2004 03 18 | 704 | 0.3+ | 0.4− | 2006 10 28 | 291 | 0.3− | 0.1+ | |
| 2004 02 13 | 644 | 0.3− | 0.0 | 2004 03 18 | 704 | 1.1+ | 0.1− | 2006 10 28 | 291 | 0.2+ | 0.1+ | |
| 2004 02 13 | 644 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.4− | |
| 2004 02 13 | 644 | 0.9+ | 0.9+ | 2004 03 18 | 704 | 0.9+ | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.4− | |
| 2004 02 17 | 608 | 0.0 | 0.4− | 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.4− | |
| 2004 02 17 | 608 | 0.2+ | 0.4− | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.4− | |
| 2004 02 17 | 608 | 0.2− | 0.4− | 2004 03 23 | 704 | 1.1+ | 0.1+ | | | | | |
| 2004 02 18 | 704 | 0.5+ | 1.2+ | 2004 03 23 | 704 | 0.1+ | 0.1+ | | | | | |

**(144180)∗ 2004 BP$_{114}$**

Discovered 2004 Jan. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 163.53375 | | (2000.0) | | | |
| $n$ | 0.18229429 | $\omega$ | 224.08079 | | −0.96278298 | −0.20099329 |
| $a$ | 3.0804962 | $\Omega$ | 303.49052 | | +0.26578711 | −0.82542977 |
| $e$ | 0.1022133 | $i$ | 12.51331 | | −0.04905241 | −0.52751057 |
| $P$ | 5.41 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6+ | 1.2− | 2003 12 22 | 683 | 0.3− | 1.0− | 2004 03 16 | 704 | 0.3+ | 0.1− | |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2004 01 18 | 608 | 0.9+ | 1.2− | 2004 03 16 | 704 | 0.5+ | 1.1− | |
| 2001 09 12 | 704 | 1.5− | 1.6+ | 2004 01 18 | 608 | 0.1− | 0.2− | 2004 03 16 | 704 | 0.5+ | 0.4+ | |
| 2002 12 06 | 704 | 0.4− | 0.7− | 2004 01 18 | 608 | 0.3+ | 0.2− | 2004 03 16 | 704 | 0.8+ | 0.7− | |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2004 01 29 | 699 | 0.8+ | 0.1+ | 2004 03 16 | 704 | 0.8+ | 0.0 | |
| 2002 12 06 | 704 | 1.1+ | 0.4− | 2004 01 29 | 699 | 0.3+ | 1.0+ | 2004 03 27 | 703 | 0.3− | 0.6− | |
| 2002 12 06 | 704 | 0.3− | 0.2+ | 2004 01 29 | 699 | 0.6− | 0.4+ | 2004 03 27 | 703 | 0.5+ | 1.2+ | |
| 2002 12 06 | 704 | 1.0− | 0.1+ | 2004 01 29 | 699 | 0.3+ | 0.1+ | 2004 03 27 | 703 | 0.6− | 0.3+ | |
| 2002 12 06 | 704 | 0.0 | 0.6− | 2004 01 30 | 699 | 0.3+ | 0.4+ | 2004 03 27 | 703 | 1.4− | 0.6− | |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2004 01 30 | 699 | 0.9+ | 0.2− | 2006 07 27 | 224 | 0.8− | 0.4− | |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2004 01 30 | 699 | 0.6− | 0.2+ | 2006 07 27 | 224 | 0.0 | 1.3+ | |
| 2002 12 06 | 704 | 0.5+ | 0.1− | 2004 01 30 | 699 | 0.4− | 0.1− | 2006 07 27 | 224 | 0.6− | 1.4+ | |
| 2002 12 06 | 704 | 0.4− | 0.0 | 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 08 19 | 699 | 0.8− | 0.8+ | |
| 2002 12 06 | 704 | 0.6− | 1.8+ | 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 08 19 | 699 | 1.5− | 1.0+ | |
| 2002 12 06 | 704 | 0.5+ | 0.1+ | 2004 02 12 | 644 | 0.2− | 0.1+ | 2006 08 19 | 699 | (2.8− | 0.4+) | |
| 2002 12 06 | 704 | 0.7− | 0.4− | 2004 02 17 | 608 | 0.3− | 0.3+ | 2006 08 19 | 699 | 0.1+ | 0.4+ | |
| 2002 12 06 | 704 | 0.6+ | 0.1− | 2004 02 17 | 608 | 0.1− | 0.5+ | 2006 08 21 | 958 | 0.1+ | 0.8+ | |
| 2002 12 15 | 704 | 0.6+ | 0.1+ | 2004 02 17 | 608 | 0.2+ | 0.7− | 2006 08 22 | 958 | 0.5+ | 0.5+ | |
| 2002 12 15 | 704 | 0.2+ | 0.3+ | 2004 02 19 | 704 | 0.2− | 0.5+ | 2006 08 22 | 958 | 0.0 | 1.1+ | |
| 2002 12 15 | 704 | 0.0 | 1.0+ | 2004 02 19 | 704 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.4− | 2.9− | |
| 2002 12 15 | 704 | 0.6+ | 1.3− | 2004 02 19 | 704 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.4+ | 0.2+ | |
| 2003 12 21 | 704 | 0.8+ | 0.8+ | 2004 02 19 | 704 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.3+ | |
| 2003 12 21 | 704 | 0.2− | 0.7+ | 2004 02 19 | 704 | 0.9− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.4+ | |
| 2003 12 21 | 704 | 0.9+ | 1.2+ | 2004 03 01 | 704 | 1.2− | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.4+ | |
| 2003 12 21 | 704 | 0.1+ | 0.2− | 2004 03 01 | 704 | 0.6+ | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.6+ | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 683 | 0.2+ | 0.7+ | 2004 03 01 | 704 | 0.5+ | 0.0 | |
| 2003 12 22 | 683 | (2.1− | 0.6−) | 2004 03 01 | 704 | 0.0 | 0.2+ | |

**(144181)∗ 2004 BT$_{115}$ = 2002 RJ$_{216}$**

Discovered 2004 Jan. 30 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61866)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.30465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24063223 | $\omega$ | 7.82626 | | +0.74428443 | −0.65464935 | |
| $a$ | 2.5599620 | $\Omega$ | 34.25962 | | +0.59933012 | +0.56735740 | |
| $e$ | 0.1144180 | $i$ | 13.58125 | | +0.29469323 | +0.49953959 | |
| $P$ | 4.10 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 06 | 691 | 0.3+ | 0.0 | 2002 10 26 | 608 | 0.3+ | 0.1− | 2004 02 11 | 704 | 0.2− | 0.3− | |
| 1994 10 06 | 691 | 0.2− | 0.5− | 2002 10 26 | 608 | 0.8+ | 0.6− | 2004 02 11 | 704 | 0.3− | 1.0+ | |
| 1994 10 06 | 691 | 0.4− | 0.5− | 2002 10 26 | 608 | 0.6+ | 0.1− | 2004 02 11 | 704 | 0.3− | 0.0 | |
| 1998 09 21 | 699 | 0.8+ | 1.4+ | 2003 12 04 | 704 | 0.3+ | 1.4+ | 2004 02 18 | 703 | 0.9+ | 0.9+ | |
| 1998 09 21 | 699 | 0.8+ | 0.2− | 2003 12 04 | 704 | 0.5+ | 0.8+ | 2004 02 18 | 703 | 0.9+ | 0.2+ | |
| 1998 09 21 | 699 | 0.9+ | 1.3+ | 2003 12 04 | 704 | 0.2− | 0.2− | 2004 02 18 | 703 | 0.4− | 0.1− | |
| 2001 06 17 | 644 | (1.5− | 2.9+) | 2003 12 18 | 704 | 0.9− | 0.4− | 2004 02 18 | 703 | 0.9− | 0.6+ | |
| 2001 06 17 | 644 | (1.7− | 2.8+) | 2003 12 18 | 704 | 0.2+ | 0.2+ | 2006 08 28 | E12 | 0.1+ | 0.2− | |
| 2001 06 17 | 644 | (1.3− | 2.9+) | 2003 12 18 | 704 | 0.3+ | 0.0 | 2006 08 28 | E12 | 0.5− | 0.2+ | |
| 2002 09 13 | 699 | 1.1+ | 0.5+ | 2003 12 30 | 704 | 0.1+ | 0.3− | 2006 09 17 | 699 | 0.8− | 1.0− | |
| 2002 09 13 | 699 | 0.6+ | 0.1− | 2003 12 30 | 704 | 0.8+ | 0.4− | 2006 09 17 | 699 | 0.4− | 0.1− | |
| 2002 09 13 | 699 | (1.8− | 1.3+) | 2003 12 30 | 704 | 0.5+ | 0.4− | 2006 09 17 | 699 | 0.9− | 0.3− | |
| 2002 09 13 | 699 | 0.0 | 0.1− | 2003 12 30 | 704 | 0.6+ | 0.0 | 2006 09 17 | 699 | 0.3− | 0.7+ | |
| 2002 09 16 | 608 | 0.4− | 0.6+ | 2003 12 30 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.7− | 0.4− | |
| 2002 09 16 | 608 | 0.5− | 1.3+ | 2004 01 30 | 703 | 0.4− | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.3− | |
| 2002 09 16 | 608 | 0.4− | 0.8+ | 2004 01 30 | 703 | 0.0 | 1.4− | 2006 09 26 | 703 | 0.5+ | 0.7− | |
| 2002 09 17 | 644 | 0.2− | 0.9+ | 2004 01 30 | 703 | 1.2+ | 0.4− | 2006 09 26 | 703 | 0.5+ | 0.7− | |
| 2002 09 17 | 644 | 0.2− | 1.0+ | 2004 01 30 | 703 | 0.5+ | 0.2− | 2006 09 27 | E12 | 0.0 | 0.4+ | |
| 2002 09 17 | 644 | 0.3− | 0.8+ | 2004 01 31 | 699 | 0.2− | 0.8− | 2006 09 27 | E12 | 0.4− | 0.3− | |
| 2002 10 02 | 608 | 0.4− | 0.2+ | 2004 01 31 | 699 | 0.7− | 1.0− | 2006 09 27 | E12 | 0.7− | 0.4+ | |
| 2002 10 02 | 608 | 0.1+ | 0.3− | 2004 01 31 | 699 | 0.4− | 0.2− | 2006 09 27 | E12 | 0.1+ | 0.0 | |
| 2002 10 02 | 608 | 0.1− | 0.3+ | 2004 01 31 | 699 | 0.4− | 0.0 | 2006 10 11 | E12 | 0.0 | 0.1+ | |
| 2002 10 08 | 644 | 0.1− | 0.3+ | 2004 02 02 | 704 | 0.2− | 1.2+ | 2006 10 11 | E12 | 0.2+ | 0.4− | |
| 2002 10 08 | 644 | 0.5− | 0.1+ | 2004 02 02 | 704 | 0.0 | 0.6+ | 2006 10 11 | E12 | 0.5+ | 0.5− | |
| 2002 10 08 | 644 | (2.8− | 1.3+) | 2004 02 02 | 704 | 0.1− | 0.5+ | | | | | |

**(144182)∗ 2004 BX$_{115}$ = 1997 EW**

Discovered 2004 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61867)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.61772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26962226 | $\omega$ | 123.96211 | | −0.36481826 | −0.93090140 | |
| $a$ | 2.3730063 | $\Omega$ | 347.39561 | | +0.82442077 | −0.31389532 | |
| $e$ | 0.1101682 | $i$ | 4.77678 | | +0.43271010 | −0.18679484 | |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.3+ | 1.0− | 2003 12 23 | 704 | 0.2+ | 0.6+ | 2004 02 15 | 704 | (3.6+ | 0.5+) | |
| 1995 10 16 | 691 | 0.3+ | 0.5− | 2003 12 23 | 704 | 0.4+ | 0.5+ | 2004 02 15 | 704 | (2.9+ | 1.4+) | |
| 1995 10 16 | 691 | 0.4+ | 0.4− | 2003 12 23 | 704 | 0.6+ | 1.0+ | 2004 02 15 | 704 | (3.5+ | 0.6+) | |
| 1997 03 02 | 684 | 1.0− | 0.4− | 2003 12 23 | 704 | 0.6− | 0.5+ | 2004 02 15 | 704 | (3.9+ | 0.5−) | |
| 1997 03 02 | 684 | 0.6− | 0.2+ | 2003 12 28 | 704 | 0.8+ | 0.3+ | 2004 02 23 | 704 | 1.0+ | 1.0+ | |
| 1997 03 04 | 684 | 0.5− | 0.6+ | 2003 12 28 | 704 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.5+ | |
| 1997 03 04 | 684 | 0.0 | 0.2+ | 2003 12 28 | 704 | 0.0 | 0.1+ | 2004 02 23 | 704 | 1.2− | 0.1− | |
| 1997 04 10 | 704 | 0.6+ | 1.3+ | 2003 12 28 | 704 | 0.4+ | 0.4+ | 2004 02 23 | 704 | 0.7− | 0.1+ | |
| 1997 04 10 | 704 | 1.0+ | 0.4+ | 2003 12 28 | 704 | 0.2+ | 0.5+ | 2006 07 21 | G96 | 0.0 | 0.4− | |
| 2002 08 08 | 644 | 0.7− | 0.5+ | 2004 01 16 | 703 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.1− | |
| 2002 08 08 | 644 | 0.3− | 0.3+ | 2004 01 16 | 703 | 0.3− | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.2− | |
| 2002 08 08 | 644 | 0.3− | 0.2+ | 2004 01 16 | 703 | 1.2− | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.6− | |
| 2002 08 18 | 644 | 0.3− | 0.7+ | 2004 01 16 | 703 | 0.6+ | 0.5− | 2006 09 19 | 699 | 0.1− | 0.0 | |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2004 01 24 | 704 | 0.4− | 0.2− | 2006 09 19 | 699 | 0.0 | 1.1+ | |
| 2002 08 18 | 644 | 0.5− | 0.3+ | 2004 01 24 | 704 | 0.3+ | 1.2− | 2006 09 19 | 699 | 0.4− | 1.1+ | |
| 2002 08 19 | 644 | 0.9− | 0.2+ | 2004 01 24 | 704 | (0.6+ | 3.7−) | 2006 09 19 | 699 | 0.5+ | 0.2+ | |
| 2002 08 19 | 644 | 0.4− | 0.7+ | 2004 01 24 | 704 | (4.0+ | 1.0−) | 2006 09 25 | 691 | 0.1− | 0.2+ | |
| 2002 08 19 | 644 | 0.5− | 0.3+ | 2004 01 26 | 699 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | |
| 2002 08 27 | 644 | 0.7− | 0.3+ | 2004 01 26 | 699 | 0.4+ | 0.3− | 2006 09 25 | 691 | 0.2− | 0.2+ | |
| 2002 08 27 | 644 | 0.5− | 0.2+ | 2004 01 26 | 699 | 0.4− | 0.1+ | 2006 09 27 | 699 | 0.7− | 0.2− | |
| 2002 08 27 | 644 | 0.5− | 0.0 | 2004 01 26 | 699 | 0.2+ | 0.0 | 2006 09 27 | 699 | 1.0− | 0.4− | |
| 2002 10 11 | 291 | 0.5+ | 0.2+ | 2004 01 31 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 699 | 0.7− | 0.5− | |
| 2002 10 11 | 291 | 0.6+ | 0.8+ | 2004 01 31 | 704 | 0.2+ | 0.4− | 2006 09 27 | 699 | 1.0− | 0.7− | |
| 2002 10 11 | 291 | 0.5+ | 0.4+ | 2004 01 31 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2003 10 25 | 704 | 0.3+ | 0.4− | 2004 01 31 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2003 10 25 | 704 | 0.2+ | 0.6+ | 2004 01 31 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2003 10 25 | 704 | 0.2+ | 0.3− | 2004 02 11 | 703 | 0.4− | 0.8− | 2006 10 22 | G96 | 0.1− | 0.2− | |
| 2003 12 18 | 704 | 0.5+ | 0.7+ | 2004 02 11 | 703 | (2.7+ | 1.4+) | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2003 12 18 | 704 | 1.1+ | 0.4− | 2004 02 11 | 703 | 0.7− | 0.3− | 2006 10 22 | G96 | 0.0 | 0.1− | |
| 2003 12 18 | 704 | 0.0 | 0.4− | 2004 02 11 | 703 | 0.4− | 0.2+ | | | | | |
| 2003 12 23 | 704 | 0.5+ | 0.6+ | 2004 02 15 | 704 | (3.9+ | 1.4+) | | | | | |

**(144183)∗ 2004 BC$_{116}$**

Discovered 2004 Jan. 26 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.85939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27863888 | $\omega$ | 40.41242 | | +0.18599545 | −0.98076060 | |
| $a$ | 2.3215332 | $\Omega$ | 38.97424 | | +0.87542266 | +0.13801863 | |
| $e$ | 0.0278022 | $i$ | 5.40828 | | +0.44613995 | +0.13805617 | |
| $P$ | 3.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.1+ | 1.4− | 2004 01 17 | 644 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 1999 11 04 | 703 | 0.4− | 0.3− | 2004 01 17 | 644 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ | |
| 1999 11 04 | 704 | 0.4+ | 0.5− | 2004 01 26 | 699 | 0.5− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ | |
| 1999 11 04 | 703 | 1.1− | 1.2+ | 2004 01 26 | 699 | 0.3+ | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.1− | |
| 1999 11 04 | 704 | 1.5+ | 0.6+ | 2004 01 26 | 699 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ | |
| 1999 11 04 | 703 | (2.4+ | 0.7−) | 2004 01 26 | 699 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2+ | |
| 1999 11 04 | 703 | 0.1+ | 0.6− | 2004 01 31 | 704 | (0.4− | 2.1−) | 2006 11 09 | 644 | 0.2− | 0.3+ | |
| 2001 03 15 | 691 | 0.2+ | 0.6+ | 2004 01 31 | 704 | 0.2+ | 0.7− | 2006 11 10 | 644 | 0.1+ | 0.3+ | |
| 2001 03 15 | 691 | 0.3+ | 0.7+ | 2004 01 31 | 704 | 0.3+ | 0.5− | 2006 11 10 | 644 | 0.1− | 0.2+ | |
| 2001 03 15 | 691 | 0.1+ | 0.4+ | 2004 02 14 | 704 | 1.0+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.2+ | |
| 2001 03 25 | 695 | 0.1− | 0.4+ | 2004 02 14 | 704 | 0.5− | 0.4− | 2006 11 11 | 703 | 1.2+ | 0.9− | |
| 2001 03 25 | 695 | 0.0 | 0.4+ | 2004 02 14 | 704 | 0.1+ | 0.2− | 2006 11 11 | 703 | (2.4+ | 0.5−) | |
| 2001 04 16 | 699 | 0.9+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 11 | 703 | (1.9+ | 0.3+) | |
| 2001 04 16 | 699 | 0.3− | 0.8+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.6+ | |
| 2001 04 16 | 699 | 0.6+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.5− | |
| 2001 04 16 | 699 | 0.5+ | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.0 | 0.4− | |
| 2002 08 19 | 644 | 0.6− | 0.9+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.3− | |
| 2002 08 19 | 644 | 0.4− | 0.7+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.3− | |
| 2002 08 19 | 644 | 0.4− | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.3+ | |
| 2003 12 23 | 704 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.4+ | |
| 2003 12 23 | 704 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.3+ | |
| 2003 12 23 | 704 | 0.5+ | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.4+ | |
| 2003 12 23 | 704 | 0.9+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.0 | |
| 2003 12 23 | 704 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.7+ | |
| 2003 12 28 | 704 | 0.9− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.7+ | |
| 2003 12 28 | 704 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.1+ | |
| 2003 12 28 | 704 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.9− | 1.4+ | |
| 2003 12 28 | 704 | 0.6+ | 0.2− | 2006 11 01 | 691 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 1.0+ | |
| 2003 12 28 | 704 | 0.7− | 1.3− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.9+ | |
| 2004 01 17 | 644 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.7+ | |

**(144184)∗ 2004 BZ$_{116}$**

Discovered 2004 Jan. 28 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 312.16965 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.25954808 | $\omega$ | 10.48216 | | +0.51362204 | | −0.85292728 | | |
| $a$ | 2.4340202 | $\Omega$ | 48.68312 | | +0.77795059 | | +0.41705717 | | |
| $e$ | 0.1118866 | $i$ | 7.13694 | | +0.36191889 | | +0.31397193 | | |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.1− | 0.0 | 2004 01 28 | 703 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.0 | 0.4+ | |
| 1993 02 26 | 691 | 0.2− | 0.0 | 2004 01 28 | 703 | 0.6− | 1.0+ | 2006 10 09 | 644 | 0.4− | 0.1+ | |
| 1993 02 26 | 691 | 0.1+ | 0.1− | 2004 01 28 | 703 | 0.1− | 1.0+ | 2006 10 09 | 644 | 0.0 | 0.4+ | |
| 1995 11 17 | 327 | 0.8− | 0.2− | 2004 01 31 | 704 | 0.4+ | 1.1+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | |
| 1995 11 17 | 327 | 0.1− | 0.1+ | 2004 01 31 | 704 | 1.0+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1+ | |
| 1995 11 17 | 327 | 0.4− | 0.4+ | 2004 01 31 | 704 | 0.2+ | 0.5− | 2006 10 10 | 644 | 0.2+ | 0.3+ | |
| 1999 12 12 | 704 | 0.3− | 1.6− | 2004 02 09 | 644 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | |
| 1999 12 12 | 704 | 0.4+ | 0.6− | 2004 02 09 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.9− | |
| 1999 12 12 | 704 | 0.0 | 0.6− | 2004 02 09 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 1.0− | 0.9− | |
| 2000 01 08 | 704 | 1.0+ | 1.4− | 2004 02 14 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.6− | |
| 2000 01 08 | 704 | 1.5+ | 0.1− | 2004 02 14 | 704 | 0.3− | 0.9− | 2006 10 16 | 703 | 0.0 | 0.7+ | |
| 2000 01 08 | 704 | 0.2− | 0.8− | 2004 02 14 | 704 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ | |
| 2002 08 30 | 644 | 0.2+ | 0.3+ | 2004 02 14 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− | |
| 2002 08 30 | 644 | 0.2+ | 0.5+ | 2004 02 14 | 704 | 0.0 | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.2+ | |
| 2002 08 30 | 644 | 0.2− | 0.2+ | 2004 02 18 | 691 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.3+ | |
| 2002 09 09 | 644 | 0.3− | 0.2+ | 2004 02 18 | 691 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.1− | |
| 2002 09 09 | 644 | 0.1− | 0.2− | 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.3+ | |
| 2002 09 09 | 644 | 0.2− | 0.4− | 2005 02 16 | 809 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2− | |
| 2003 12 29 | 704 | 0.1+ | 1.3+ | 2005 02 16 | 809 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.0 | |
| 2003 12 29 | 704 | 0.8+ | 0.3+ | 2005 02 16 | 809 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.2− | |
| 2003 12 29 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.4+ | 2006 11 25 | G96 | 0.2+ | 0.2− | |
| 2004 01 28 | 703 | 0.2− | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.8+ | | | | | |

**(144185)∗ 2004 BC$_{117}$ = 2000 EW$_{108}$**

Discovered 2004 Jan. 28 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61869)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 216.37118 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.22219234 | $\omega$ | 134.32311 | | −0.66964384 | | −0.74263875 | | |
| $a$ | 2.6997071 | $\Omega$ | 357.67202 | | +0.61246849 | | −0.54607249 | | |
| $e$ | 0.0359487 | $i$ | 11.43066 | | +0.42007080 | | −0.38767578 | | |
| $P$ | 4.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 691 | 0.2− | 0.1− | 2004 01 28 | 703 | 0.9− | 0.4− | 2006 08 18 | 644 | 0.2+ | 1.0+ | |
| 2000 03 08 | 691 | 0.5− | 0.2− | 2004 01 28 | 703 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.4+ | |
| 2000 03 08 | 691 | 0.3− | 0.1− | 2004 01 28 | 703 | 0.1− | 0.8− | 2006 08 18 | 644 | 0.2+ | 0.7+ | |
| 2000 03 11 | 704 | 0.4+ | 0.3+ | 2004 01 31 | 704 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.5− | |
| 2000 03 11 | 704 | 1.3+ | 0.6+ | 2004 01 31 | 704 | (1.5+ | 0.1−) | 2006 09 14 | 703 | 0.1− | 0.2− | |
| 2000 03 11 | 704 | 0.4+ | 0.0 | 2004 01 31 | 704 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.5− | |
| 2000 03 11 | 704 | 1.2+ | 0.6+ | 2004 01 31 | 704 | 0.6− | 0.0 | 2006 09 14 | 703 | (0.8− | 1.8+) | |
| 2000 04 05 | 704 | 1.1+ | 0.6+ | 2004 01 31 | 704 | 1.2+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.2− | |
| 2000 04 05 | 704 | 0.4+ | 0.1− | 2004 02 15 | 704 | 0.8+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.1+ | |
| 2000 04 05 | 704 | 0.7+ | 0.3+ | 2004 02 15 | 704 | 1.0+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.2− | |
| 2000 04 05 | 704 | (2.2+ | 0.0 ) | 2004 02 15 | 704 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.5+ | |
| 2000 04 05 | 704 | 0.2− | 0.8+ | 2004 02 15 | 704 | 0.6+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.4+ | |
| 2002 10 12 | 704 | 0.2+ | 0.1+ | 2004 04 13 | 291 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.3− | |
| 2002 10 12 | 704 | 0.6+ | 0.1+ | 2004 04 13 | 291 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.4− | 0.5− | |
| 2002 10 12 | 704 | 1.0+ | 0.8− | 2004 04 13 | 291 | 0.2− | 0.0 | 2006 10 28 | G96 | 1.0− | 0.1− | |
| 2002 10 12 | 704 | 0.9− | 0.1− | 2004 04 14 | 291 | 1.1− | 1.0+ | 2006 11 21 | G96 | 0.9+ | 0.2+ | |
| 2002 10 12 | 704 | 0.1− | 0.8− | 2004 04 14 | 291 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.4− | 0.1− | |
| 2002 10 31 | 644 | 0.6− | 0.5+ | 2004 04 14 | 291 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.4+ | |
| 2002 10 31 | 644 | 0.4− | 0.5+ | 2006 08 16 | 644 | 0.0 | 0.8+ | 2006 11 21 | G96 | 0.2− | 0.2+ | |
| 2002 10 31 | 644 | 0.2− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.6+ | | | | | |
| 2004 01 28 | 703 | 0.7+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.4+ | | | | | |

**(144186)∗ 2004 BQ$_{119}$**

Discovered 2004 Jan. 30 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 136.40525 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.23965200 | $\omega$ | 205.89579 | | −0.28558542 | | +0.93877369 | | |
| $a$ | 2.5669378 | $\Omega$ | 48.17130 | | −0.82820915 | | −0.14057486 | | |
| $e$ | 0.1636720 | $i$ | 14.98991 | | −0.48219349 | | −0.31455152 | | |
| $P$ | 4.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 1.4+ | 0.5− | 2004 03 23 | 703 | 0.3− | 1.3+ | 2005 08 25 | E12 | 0.1− | 0.6+ | |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2004 03 23 | 703 | 0.8− | 0.1+ | 2005 08 25 | E12 | 0.3− | 0.5+ | |
| 2002 12 11 | 704 | 0.1− | 0.2− | 2004 03 23 | 703 | 0.7− | 0.6− | 2005 08 25 | E12 | 0.5− | 0.7+ | |
| 2004 01 30 | 703 | 0.6+ | 0.8+ | 2004 03 23 | 703 | 0.8− | 1.0+ | 2005 08 28 | I10 | (3.3+ | 4.2−) | |
| 2004 01 30 | 703 | 0.5+ | 1.1+ | 2005 06 08 | E12 | 0.3− | 0.4+ | 2005 08 28 | I10 | (1.8+ | 2.5−) | |
| 2004 01 30 | 703 | 0.7+ | 1.0+ | 2005 06 08 | E12 | 0.2− | 0.2+ | 2005 08 28 | I10 | (1.9+ | 0.1+) | |
| 2004 01 30 | 703 | 0.9+ | 1.3+ | 2005 06 08 | E12 | 0.2− | 0.7+ | 2005 09 05 | I10 | 0.7+ | 0.0 | |
| 2004 01 31 | 704 | 0.8− | 0.7+ | 2005 06 08 | E12 | 0.1− | 0.4+ | 2005 09 05 | I10 | 0.3+ | 0.8+ | |
| 2004 01 31 | 704 | 0.0 | 1.2+ | 2005 07 04 | E12 | 0.5+ | 0.6+ | 2005 09 05 | I10 | 0.1− | 0.2− | |
| 2004 01 31 | 704 | 0.2+ | 0.9+ | 2005 07 04 | E12 | 0.1− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.3+ | |
| 2004 01 31 | 704 | 0.6+ | 0.4+ | 2005 07 04 | E12 | 0.3− | 1.2+ | 2006 10 16 | 691 | 0.3− | 0.2+ | |
| 2004 02 02 | 704 | 0.1+ | 1.2+ | 2005 07 04 | E12 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | |
| 2004 02 02 | 704 | 0.5+ | 0.0 | 2005 07 27 | E12 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.4+ | |
| 2004 02 02 | 704 | 0.8− | 1.1− | 2005 07 27 | E12 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | |
| 2004 02 11 | 704 | 1.2+ | 0.3+ | 2005 07 27 | E12 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.3+ | |
| 2004 02 11 | 704 | (1.0+ | 1.6+) | 2005 08 07 | 428 | 0.3− | 0.5+ | 2006 11 12 | G96 | 0.2+ | 0.2− | |
| 2004 02 11 | 704 | 0.8+ | 0.5− | 2005 08 08 | 428 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.0 | |
| 2004 02 11 | 704 | 0.8+ | 1.4+ | 2005 08 09 | E12 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.2− | |
| 2004 02 18 | 703 | 0.7+ | 0.3− | 2005 08 09 | E12 | 0.5− | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.2− | |
| 2004 02 18 | 703 | 0.4− | 0.2+ | 2005 08 09 | E12 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.6+ | 0.1− | |
| 2004 02 18 | 703 | 0.2+ | 0.0 | 2005 08 09 | E12 | 0.8− | 0.6+ | 2006 11 13 | 644 | 0.2− | 0.1− | |
| 2004 02 18 | 703 | 0.6+ | 0.3+ | 2005 08 25 | E12 | 0.2− | 0.8+ | 2006 11 13 | 644 | 0.1− | 0.4+ | |

**(144187)∗ 2004 BU$_{119}$ = 2002 VV$_{21}$**

Discovered 2004 Jan. 30 by the Catalina Sky Survey.

Id. T. B. Spahr (*MPO* 61873)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 184.23850 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.24033107 | $\omega$ | 172.98057 | | −0.92592005 | | +0.34621509 | | |
| $a$ | 2.5621002 | $\Omega$ | 28.75669 | | −0.36001847 | | −0.68795789 | | |
| $e$ | 0.1039193 | $i$ | 18.29516 | | −0.11427493 | | −0.63784720 | | |
| $P$ | 4.10 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.3− | 0.2+ | 2004 02 11 | 704 | 0.1+ | 1.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | |
| 2000 03 04 | 704 | 1.1+ | 0.1− | 2004 02 26 | 703 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | |
| 2000 03 04 | 704 | 0.6− | 0.1− | 2004 02 26 | 703 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2+ | |
| 2000 03 04 | 704 | 0.3+ | 0.8+ | 2004 02 26 | 703 | 0.6+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1− | |
| 2000 05 01 | 699 | 1.0+ | 0.6+ | 2004 02 26 | 703 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | |
| 2000 05 01 | 699 | 0.5+ | 0.4− | 2004 03 16 | 645 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.1+ | |
| 2000 05 01 | 699 | 0.0 | 0.7+ | 2004 03 16 | 645 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.2− | |
| 2000 05 01 | 699 | 0.9− | 0.6+ | 2004 04 14 | 644 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 1.4− | 0.1+ | |
| 2002 10 15 | 644 | 0.0 | 0.3+ | 2004 04 14 | 644 | 0.8+ | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.0 | |
| 2002 10 15 | 644 | 0.1+ | 0.5+ | 2004 04 14 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 2002 10 15 | 644 | 0.1+ | 0.3+ | 2005 07 27 | E12 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2002 11 05 | 704 | 0.4+ | 0.3+ | 2005 07 27 | E12 | 0.5+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.4− | |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2005 07 27 | E12 | 0.3− | 1.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | |
| 2002 11 05 | 704 | 0.2− | 0.2− | 2005 07 27 | E12 | (1.2+ | 1.8+) | 2006 10 29 | 691 | 0.1+ | 0.1− | |
| 2002 11 05 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | |
| 2002 11 06 | 704 | 1.1− | 0.2+ | 2006 09 30 | 703 | (1.2− | 1.7−) | 2006 11 11 | 691 | 0.5+ | 0.1+ | |
| 2002 11 06 | 704 | 0.4− | 1.0+ | 2006 09 30 | 703 | 0.8− | 0.3− | 2006 11 11 | 691 | 0.5+ | 0.2− | |
| 2002 11 06 | 704 | (1.6− | 1.4−) | 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.1+ | |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.5+ | 0.0 | |
| 2004 01 30 | 703 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.5+ | 0.2− | |
| 2004 01 30 | 703 | 0.6+ | 1.3+ | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 15 | 691 | 0.1+ | 0.1+ | |
| 2004 01 30 | 703 | (2.2+ | 0.9−) | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.3− | 0.1− | |
| 2004 01 30 | 703 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.3− | 0.1− | |
| 2004 02 02 | 704 | 0.1− | 1.3+ | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 02 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.4− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2004 02 02 | 704 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 02 11 | 704 | 0.1− | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 02 11 | 704 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1− | 0.3+ | | | | |
| 2004 02 11 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | | | |

**(144188)∗ 2004 BW$_{119}$ = 1998 SS$_{165}$**

Discovered 2004 Jan. 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61873)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.18979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23636326 | $\omega$ | 237.01533 | | −0.14922798 | −0.98791340 | |
| $a$ | 2.5906937 | $\Omega$ | 221.63125 | | +0.92696684 | −0.12500965 | |
| $e$ | 0.2540218 | $i$ | 3.61867 | | +0.34418526 | −0.09164983 | |
| $P$ | 4.17 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 16 | 699 | 0.8+ | 0.2+ | 2004 01 29 | 704 | (2.1+ | 0.6+) | 2004 03 16 | 704 | 0.1+ | 0.4+ |
| 1998 09 16 | 699 | 0.4− | 0.3+ | 2004 01 29 | 699 | 0.5− | 0.1+ | 2004 03 16 | 704 | 0.0 | 0.3+ |
| 1998 09 16 | 699 | 0.3+ | 1.7+ | 2004 01 29 | 699 | 0.4− | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.5+ |
| 1998 09 18 | 703 | 1.3− | 1.3− | 2004 01 29 | 699 | 0.4− | 0.6+ | 2004 03 18 | 704 | 0.2+ | 0.6+ |
| 1998 09 18 | 703 | 0.8− | 0.4− | 2004 01 29 | 699 | 1.3− | 0.7− | 2004 03 18 | 704 | 0.9+ | 1.3− |
| 1998 09 18 | 703 | 0.0 | 1.6+ | 2004 01 30 | 699 | 0.2+ | 0.6− | 2004 03 18 | 704 | 0.4+ | 1.8− |
| 1998 09 18 | 703 | 0.9+ | 1.9+ | 2004 01 30 | 699 | 1.3− | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.2− |
| 1998 09 19 | 703 | 1.4− | 0.3+ | 2004 01 30 | 699 | 0.0 | 0.8− | 2004 03 18 | 704 | 0.3+ | 1.6− |
| 1998 09 19 | 703 | 0.6+ | 0.4+ | 2004 01 30 | 699 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.2+ |
| 1998 09 19 | 703 | 0.9− | 0.6− | 2004 02 02 | 608 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.0 | 0.4+ |
| 1998 09 19 | 703 | 0.0 | 0.9− | 2004 02 02 | 608 | 0.5− | 0.5− | 2004 03 20 | 704 | 0.2− | 0.4+ |
| 2000 03 26 | 699 | 0.4+ | 1.0+ | 2004 02 02 | 608 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.0 | 0.0 |
| 2000 03 26 | 699 | 0.4+ | 0.2+ | 2004 02 14 | 699 | 0.4+ | 1.4+ | 2004 03 20 | 704 | 0.4− | 0.1+ |
| 2000 03 26 | 699 | 0.0 | 0.4+ | 2004 02 14 | 699 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.1+ |
| 2000 03 26 | 699 | 0.3+ | 0.5+ | 2004 02 14 | 699 | 0.2− | 0.7− | 2004 03 20 | 704 | 0.2− | 0.0 |
| 2002 08 28 | 644 | 0.4+ | 0.6+ | 2004 02 14 | 699 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.3− | 0.1+ |
| 2002 08 28 | 644 | 0.4+ | 0.9+ | 2004 02 18 | 608 | 0.5− | 1.4+ | 2004 03 20 | 704 | 0.1− | 0.2+ |
| 2002 08 28 | 644 | 0.2+ | 0.8+ | 2004 02 18 | 608 | 0.0 | 0.8+ | 2004 03 20 | 704 | 0.3+ | 0.2+ |
| 2002 09 06 | 704 | 1.0− | 0.3+ | 2004 02 18 | 608 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.8+ | 0.2− |
| 2002 09 06 | 704 | 0.9+ | 0.5+ | 2004 02 19 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.7+ |
| 2002 09 06 | 704 | 0.1− | 0.0 | 2004 02 19 | 704 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.4+ | 0.6+ |
| 2002 09 06 | 704 | 0.8− | 0.6+ | 2004 02 19 | 704 | 0.4+ | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.6+ |
| 2002 09 14 | 644 | 0.8− | 1.5+ | 2004 02 19 | 704 | 0.2− | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.5+ |
| 2002 09 14 | 644 | 0.5− | 1.4+ | 2004 02 19 | 704 | 0.8− | 0.0 | 2006 08 22 | 644 | 0.2− | 0.6+ |
| 2002 09 14 | 644 | 0.3− | 1.4+ | 2004 02 23 | 704 | 0.8+ | 0.5− | 2006 08 22 | 644 | 0.3− | 0.5+ |
| 2003 12 23 | 704 | 0.3+ | 0.9+ | 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 08 22 | 644 | 0.1− | 0.5+ |
| 2003 12 23 | 704 | (2.4+ | 0.1−) | 2004 02 23 | 704 | 1.8+ | 0.5− | 2006 08 23 | 850 | 0.2+ | 0.5− |
| 2003 12 23 | 704 | 0.8+ | 0.6+ | 2004 02 23 | 704 | 0.9+ | 0.2+ | 2006 08 23 | 850 | 0.6− | 0.5+ |
| 2003 12 23 | 704 | 0.6+ | 0.1+ | 2004 03 01 | 683 | 0.0 | 1.0+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2003 12 23 | 704 | 0.7− | 0.6+ | 2004 03 01 | 683 | 0.2− | 1.3+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2004 01 29 | 704 | (2.6+ | 0.0 ) | 2004 03 01 | 683 | 0.7− | 1.7+ | 2006 09 28 | G96 | 0.4− | 0.1+ |
| 2004 01 29 | 704 | (2.7+ | 0.5−) | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.4+ |
| 2004 01 29 | 704 | (3.1+ | 1.7+) | 2004 03 16 | 704 | 0.2+ | 0.7+ | | | | |

**(144189)∗ 2004 BX$_{119}$ = 1997 LW$_{8}$ = 2000 AV$_{23}$**

Discovered 2004 Jan. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61874)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.11621 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27143544 | $\omega$ | 113.84800 | | −0.95469260 | +0.26386788 | |
| $a$ | 2.3624267 | $\Omega$ | 81.68275 | | −0.29743620 | −0.86109446 | |
| $e$ | 0.1820204 | $i$ | 7.99404 | | +0.00968202 | −0.43461486 | |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 07 | 809 | 1.1+ | 1.9+ | 2004 02 16 | 704 | 0.5+ | 0.8+ | 2004 03 30 | 703 | 0.3+ | 0.1+ |
| 1997 06 07 | 809 | 0.7+ | 1.3+ | 2004 02 16 | 704 | 0.2+ | 0.4+ | 2004 03 30 | 703 | 0.7+ | 0.6− |
| 1997 06 07 | 809 | 1.0+ | 1.7+ | 2004 02 16 | 704 | 0.7+ | 0.6+ | 2004 03 30 | 703 | 0.4+ | 0.5+ |
| 1997 06 08 | 809 | (2.0− | 0.3−) | 2004 02 17 | 608 | 0.1− | 0.2+ | 2004 04 14 | 703 | 0.2+ | 1.0− |
| 1997 06 08 | 809 | 0.5− | 0.4+ | 2004 02 17 | 608 | 0.5− | 1.3+ | 2004 04 14 | 703 | 0.3+ | 0.8− |
| 1997 06 08 | 809 | 0.1− | 0.4+ | 2004 02 17 | 608 | 0.0 | 0.5+ | 2004 04 14 | 703 | 0.4+ | 0.7− |
| 2000 01 03 | 704 | 0.7+ | 1.3− | 2004 02 27 | 704 | 0.3− | 0.2+ | 2004 04 14 | 703 | 0.2+ | 1.1− |
| 2000 01 03 | 704 | 0.8− | 0.6− | 2004 02 27 | 704 | 0.2+ | 0.6+ | 2004 05 13 | 704 | 0.4− | 0.7+ |
| 2000 01 03 | 704 | 0.3+ | 1.9− | 2004 02 27 | 704 | 0.1+ | 0.5+ | 2004 05 13 | 704 | 0.3− | 0.4− |
| 2000 01 03 | 704 | 0.5− | 1.6− | 2004 02 27 | 704 | 0.0 | 0.9+ | 2004 05 13 | 704 | 0.8− | 0.6+ |
| 2000 01 04 | 704 | 0.3− | 0.7+ | 2004 02 29 | 704 | 0.5− | 0.6+ | 2004 05 13 | 704 | 0.4+ | 1.1− |
| 2000 01 04 | 704 | 0.4+ | 0.2+ | 2004 02 29 | 704 | 0.6+ | 0.0 | 2005 07 29 | 644 | 0.2− | 0.5+ |
| 2000 01 04 | 704 | 0.3+ | 0.6− | 2004 02 29 | 704 | 0.2− | 1.2+ | 2005 07 29 | 644 | 0.6− | 0.5+ |
| 2000 01 04 | 704 | 0.7+ | 0.4− | 2004 02 29 | 704 | 0.3+ | 0.4− | 2005 07 29 | 644 | 0.4− | 0.7+ |
| 2003 12 29 | 704 | 0.8+ | 1.1+ | 2004 03 01 | 704 | 1.0+ | 0.7− | 2005 09 01 | 644 | 0.2− | 0.4+ |
| 2003 12 29 | 704 | 0.1− | 0.3+ | 2004 03 01 | 704 | 0.7+ | 0.8− | 2005 09 01 | 644 | 0.2− | 0.2+ |
| 2003 12 29 | 704 | (1.7− | 0.3+) | 2004 03 01 | 704 | 0.9− | 0.5+ | 2005 09 01 | 644 | 0.1− | 0.4+ |
| 2003 12 29 | 704 | (0.6+ | 1.9+) | 2004 03 14 | 704 | 0.5+ | 0.4+ | 2006 10 21 | D35 | 0.4+ | 0.1+ |
| 2003 12 29 | 704 | 0.2+ | 0.2− | 2004 03 14 | 704 | 0.6+ | 0.5+ | 2006 10 21 | D35 | 0.0 | 0.3+ |
| 2004 01 28 | 645 | 0.2− | 0.2− | 2004 03 14 | 704 | 0.3+ | 0.9+ | 2006 10 21 | D35 | 0.1− | 0.2+ |
| 2004 01 28 | 645 | 0.2− | 0.2− | 2004 03 14 | 704 | 0.8+ | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2004 01 30 | 704 | 0.5+ | 0.6+ | 2004 03 18 | 703 | 0.1− | 0.9+ | 2006 10 31 | G96 | 0.4+ | 0.4+ |
| 2004 01 30 | 704 | 0.7+ | 0.4+ | 2004 03 18 | 703 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 01 30 | 704 | 0.6+ | 1.0+ | 2004 03 18 | 703 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2004 02 02 | 699 | 1.2+ | 0.6+ | 2004 03 18 | 703 | 0.4− | 0.5− | 2006 11 12 | G96 | 0.2− | 0.1+ |
| 2004 02 02 | 699 | 0.9− | 1.4+ | 2004 03 23 | 704 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.3− | 0.3+ |
| 2004 02 02 | 699 | 0.2+ | 0.6+ | 2004 03 23 | 704 | 0.4− | 0.4− | 2006 11 12 | G96 | 0.1− | 0.2+ |
| 2004 02 02 | 699 | 0.6− | 0.2− | 2004 03 23 | 704 | 0.4− | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.2+ |
| 2004 02 02 | 699 | 1.2+ | 1.0− | 2004 03 23 | 704 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2004 02 02 | 699 | 0.4− | 0.4− | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2004 02 02 | 699 | 1.0+ | 0.1+ | 2004 03 25 | 704 | 0.6+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.4+ |
| 2004 02 02 | 699 | 0.5+ | 0.3− | 2004 03 25 | 704 | 0.2− | 0.5+ | 2006 11 22 | 691 | 0.2− | 0.6+ |
| 2004 02 16 | 704 | 0.4+ | 0.3+ | 2004 03 25 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.6− | 0.6+ |
| 2004 02 16 | 704 | 0.7+ | 0.8+ | 2004 03 30 | 703 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.6+ |

**(144190)∗ 2004 BB$_{120}$ = 2002 VL$_{66}$**

Discovered 2004 Jan. 30 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61874)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.96770 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22494151 | $\omega$ | 217.39264 | | −0.24890325 | +0.96359174 | |
| $a$ | 2.6776654 | $\Omega$ | 38.47167 | | −0.84637162 | −0.16737927 | |
| $e$ | 0.0762802 | $i$ | 9.03181 | | −0.47085268 | −0.20850695 | |
| $P$ | 4.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 809 | 1.7− | 0.6− | 2004 01 31 | 704 | 0.5+ | 0.9− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1996 04 17 | 809 | 1.5− | 0.5− | 2004 01 31 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 1996 04 17 | 809 | 0.8+ | 1.5− | 2004 01 31 | 704 | 0.8+ | 0.0 | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2000 03 12 | 704 | 1.4+ | 1.5+ | 2004 01 31 | 704 | 1.3+ | 0.6+ | 2006 09 28 | 704 | 0.7− | 0.5+ |
| 2000 03 12 | 704 | 0.6+ | 0.7+ | 2004 02 09 | 644 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.6− | 0.6− |
| 2000 03 12 | 704 | 0.7+ | 0.6+ | 2004 02 09 | 644 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.6− |
| 2000 03 12 | 704 | 0.3+ | 1.0+ | 2004 02 09 | 644 | 0.3+ | 0.0 | 2006 09 28 | 704 | (2.2− | 1.4+) |
| 2000 03 12 | 704 | 1.0+ | 0.1+ | 2004 02 14 | 704 | 0.8+ | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 06 25 | 644 | 0.2+ | 0.1− | 2004 02 14 | 704 | 0.4− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 06 25 | 644 | 0.0 | 0.3+ | 2004 02 14 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2001 06 25 | 644 | 0.1+ | 0.4+ | 2004 02 14 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2001 08 24 | 644 | 0.4− | 0.7+ | 2004 02 16 | 703 | 0.5+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2001 08 24 | 644 | 0.0 | 0.5+ | 2004 02 16 | 703 | 0.2− | 0.6+ | 2006 10 16 | 703 | (1.7− | 0.0 ) |
| 2001 08 24 | 644 | 0.1+ | 0.3+ | 2004 02 16 | 703 | 0.7+ | 0.9+ | 2006 10 16 | 703 | (0.1− | 4.0−) |
| 2002 10 28 | 608 | 0.7+ | 0.2+ | 2004 02 16 | 703 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.3− |
| 2002 10 28 | 608 | 0.4+ | 0.1− | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.5− | 0.2− |
| 2002 10 28 | 608 | 0.7+ | 0.1− | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 11 06 | 704 | 1.3+ | 0.9+ | 2006 09 12 | 703 | 1.0+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.8− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.5− | 0.3− | 2006 09 12 | 703 | 0.7+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 0.6− | 2006 09 12 | 703 | 1.2+ | 0.5− | 2006 10 20 | 644 | 0.3− | 0.3− |
| 2002 11 06 | 704 | 0.0 | 1.3− | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 11 10 | 704 | (0.7+ | 2.3−) | 2006 09 18 | 703 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 11 10 | 704 | (0.1+ | 2.4−) | 2006 09 18 | 703 | 0.2− | 0.8− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 11 10 | 704 | (0.1− | 2.3−) | 2006 09 18 | 703 | 0.7− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 12 10 | 644 | 0.3− | 0.2− | 2006 09 18 | 699 | (0.8− | 1.8+) | 2006 10 21 | 644 | 0.6+ | 0.8− |
| 2002 12 10 | 644 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.8+ | 2006 10 22 | 703 | 0.3+ | 1.5+ |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 1.1+ |
| 2003 12 28 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.2− | 0.9+ | 2006 10 22 | 703 | 0.3− | 0.7+ |
| 2003 12 28 | 704 | 0.4− | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.4− | 1.1+ |
| 2003 12 28 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2003 12 28 | 704 | 0.3− | 1.2+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2004 01 30 | 703 | 0.4− | 0.7− | 2006 09 26 | 704 | 1.1+ | 0.3− | 2006 11 17 | G96 | 0.5− | 0.1− |
| 2004 01 30 | 703 | 1.1− | 1.2+ | 2006 09 26 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2004 01 30 | 703 | 1.3− | 0.1− | 2006 09 26 | 704 | 0.5+ | 0.5+ | | | | |
| 2004 01 30 | 703 | 0.6− | 0.9+ | 2006 09 26 | 704 | 1.3+ | 0.5− | | | | |

**(144191)∗ 2004 BQ$_{121}$**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.99924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22575950 | $\omega$ | 327.75280 | | +0.91360834 | +0.39836387 | |
| $a$ | 2.6711936 | $\Omega$ | 9.85498 | | −0.19052815 | +0.59630366 | |
| $e$ | 0.1134320 | $i$ | 28.39806 | | −0.35919190 | +0.69694201 | |
| $P$ | 4.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 704 | 0.1− | 0.6− | 2006 08 30 | 704 | (0.3+ | 2.1+) | 2006 09 28 | 704 | 0.0 | 0.1+ |
| 2002 10 15 | 704 | 0.3+ | 0.5− | 2006 08 30 | 704 | 0.5+ | 0.3− | 2006 09 28 | 704 | 0.2− | 0.3− |
| 2002 10 15 | 704 | 0.4+ | 0.6− | 2006 08 30 | 704 | 0.1− | 0.3− | 2006 09 28 | 704 | 0.2− | 0.0 |
| 2002 10 15 | 704 | 0.8+ | 0.9− | 2006 09 12 | 703 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.2− | 0.3+ |
| 2002 11 11 | 704 | 0.7− | 0.8+ | 2006 09 12 | 703 | 0.1− | 0.4− | 2006 09 30 | 704 | 1.3− | 0.4+ |
| 2002 11 11 | 704 | 0.2− | 0.1+ | 2006 09 12 | 703 | 0.0 | 0.6+ | 2006 09 30 | 704 | 0.3− | 0.2+ |
| 2002 11 11 | 704 | 0.6− | 0.5+ | 2006 09 12 | 703 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.5− | 0.1+ |
| 2002 11 11 | 704 | 0.6− | 0.4+ | 2006 09 16 | 704 | 1.4+ | 0.9− | 2006 09 30 | 704 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 0.5− | 0.2+ | 2006 09 16 | 704 | 0.8+ | 0.0 | 2006 09 30 | 704 | 0.4− | 0.1+ |
| 2002 12 12 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2002 12 12 | 704 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2002 12 12 | 704 | 1.2+ | 0.3+ | 2006 09 16 | 704 | 0.8− | 0.8+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2004 01 17 | 644 | 0.7+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2004 01 17 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2004 01 17 | 644 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2004 01 27 | 703 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 01 27 | 703 | (0.3− | 2.0+) | 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2004 01 27 | 703 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2004 01 27 | 703 | 0.4+ | 1.1+ | 2006 09 18 | 699 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2004 02 11 | 704 | 0.3− | 0.7+ | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2004 02 11 | 704 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.1+ | 0.9− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2004 02 11 | 704 | 1.1+ | 0.4+ | 2006 09 19 | 704 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2004 02 26 | 703 | 0.7+ | 0.6+ | 2006 09 19 | 704 | 0.4− | 0.5+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2004 02 26 | 703 | 0.2+ | 0.7− | 2006 09 19 | 704 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2004 02 26 | 703 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.5+ |
| 2004 02 26 | 703 | 0.3+ | 1.4+ | 2006 09 19 | 703 | 0.5+ | 0.7+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2005 06 02 | E12 | 1.1+ | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2005 06 02 | E12 | 0.7+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.0 | 0.3− |
| 2005 06 02 | E12 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.4+ | 2006 11 13 | 703 | 0.8− | 0.2− |
| 2005 06 02 | E12 | 0.8+ | 1.1+ | 2006 09 22 | 704 | 0.3− | 0.5− | 2006 11 13 | 703 | 0.9− | 1.1− |
| 2005 06 06 | E12 | 0.6+ | 0.1+ | 2006 09 22 | 704 | 0.6+ | 0.2− | 2006 11 13 | 703 | 0.6− | 0.1+ |
| 2005 06 06 | E12 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.1− |
| 2005 06 06 | E12 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.5+ | 0.8+ |
| 2005 06 06 | E12 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.6− | 2006 11 15 | 704 | 0.5+ | 1.2+ |
| 2006 08 10 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.0 | 0.6+ |
| 2006 08 10 | 644 | 0.6− | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.4− | 2006 11 15 | 704 | 0.2− | 0.8+ |
| 2006 08 10 | 644 | 0.6− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2006 08 28 | 699 | (1.6− | 0.3+) | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.5+ | 1.0+ |
| 2006 08 28 | 699 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2006 08 28 | 699 | 0.3+ | 1.2+ | 2006 09 26 | 704 | 0.3+ | 0.4− | 2006 11 22 | 704 | 0.8+ | 0.2− |
| 2006 08 28 | 699 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.3− | | | | |
| 2006 08 30 | 704 | 0.6− | 0.6− | 2006 09 28 | 704 | 0.3+ | 0.0 | | | | |

**(144192)∗ 2004 BT$_{123}$ = 2000 GC$_{180}$**

Discovered 2004 Jan. 22 by L. Allen at Mauna Kea.

Id. G. V. Williams (*MPO* 65556)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.99445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23052132 | $\omega$ | 347.13098 | | +0.96829224 | −0.24582299 | |
| $a$ | 2.6342803 | $\Omega$ | 27.22460 | | +0.23696144 | +0.84733106 | |
| $e$ | 0.0535800 | $i$ | 5.58344 | | +0.07911647 | +0.47074529 | |
| $P$ | 4.28 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.9+ | 0.6+ | 2004 03 27 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2000 04 05 | 704 | 0.3+ | 0.6− | 2004 03 27 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2000 04 05 | 704 | 1.3+ | 0.7− | 2004 03 27 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.8− |
| 2000 04 13 | 691 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 13 | G96 | 0.2− | 0.6− |
| 2000 04 13 | 691 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.6+ | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2000 04 13 | 691 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.1− |
| 2001 07 13 | 644 | 0.4− | 1.2+ | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 07 13 | 644 | 0.4− | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 2001 07 13 | 644 | 0.1− | 0.8+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2004 01 22 | 568 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.4+ | 0.5+ |
| 2004 01 22 | 568 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2004 01 22 | 568 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 20 | 691 | 1.2+ | 0.1+ |
| 2004 01 30 | 568 | 0.4− | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 01 30 | 568 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2004 01 30 | 568 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2004 03 15 | 704 | 1.5+ | 1.1− | 2006 10 29 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2004 03 15 | 704 | 0.4+ | 0.8+ | 2006 10 29 | 691 | 0.2− | 0.3+ | | | | |
| 2004 03 15 | 704 | 0.8− | 0.2+ | 2006 10 29 | 691 | 0.4− | 0.0 | | | | |

**(144193)∗ 2004 BY$_{123}$**

Discovered 2004 Jan. 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.83811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24140993 | $\omega$ | 94.44218 | | +0.39571603 | +0.91514793 | |
| $a$ | 2.5544611 | $\Omega$ | 199.43007 | | −0.90730173 | +0.37661054 | |
| $e$ | 0.1185485 | $i$ | 13.36535 | | −0.14217030 | +0.14376636 | |
| $P$ | 4.08 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 703 | 0.6− | 0.5+ | 2004 02 19 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.0 |
| 2000 03 04 | 703 | 0.5+ | 0.1+ | 2004 02 19 | 704 | 0.1+ | 1.3+ | 2006 09 19 | 699 | 0.7+ | 0.2− |
| 2000 03 04 | 703 | 1.1+ | 0.6+ | 2004 02 19 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.5+ |
| 2000 03 04 | 703 | 0.3+ | 0.1+ | 2004 02 19 | 704 | 0.7+ | 1.0+ | 2006 09 19 | 699 | 1.1− | 0.7+ |
| 2000 03 14 | 703 | 1.5+ | 1.1− | 2004 03 01 | 703 | 0.0 | 1.0+ | 2006 10 22 | 703 | 0.7− | 0.5+ |
| 2000 03 14 | 703 | 1.5− | 0.3− | 2004 03 01 | 703 | (0.8− | 1.5+) | 2006 10 22 | 703 | 0.6− | 1.0+ |
| 2000 03 14 | 703 | 0.4+ | 0.4− | 2004 03 01 | 703 | 0.5− | 1.4+ | 2006 10 22 | 703 | 1.0− | 0.0 |
| 2000 03 14 | 703 | 1.2− | 0.6− | 2004 03 01 | 703 | (0.6− | 2.1+) | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2000 04 04 | 699 | 0.4− | 0.4− | 2004 03 16 | 704 | 0.0 | 0.6− | 2006 10 30 | 703 | 0.4+ | 0.3+ |
| 2000 04 04 | 699 | 1.3− | 0.7+ | 2004 03 16 | 704 | 1.1+ | 0.4− | 2006 10 30 | 703 | 0.0 | 0.1+ |
| 2000 04 04 | 699 | 0.1− | 0.2+ | 2004 03 16 | 704 | 0.3+ | 0.2+ | 2006 10 30 | 703 | 0.4− | 0.8− |
| 2000 04 04 | 699 | 1.3− | 0.7+ | 2004 03 16 | 704 | 0.7+ | 0.2− | 2006 10 30 | 703 | 0.2− | 0.0 |
| 2001 05 29 | 704 | 0.2+ | 0.6+ | 2004 03 16 | 704 | 0.8+ | 0.6+ | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2001 05 29 | 704 | 0.1+ | 0.4− | 2005 02 14 | 809 | 0.6− | 0.6− | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 2001 05 29 | 704 | 0.5− | 0.4+ | 2005 02 14 | 809 | (1.8− | 0.0 ) | 2006 11 13 | 703 | 0.4+ | 0.6+ |
| 2002 12 13 | 644 | 0.9+ | 1.3+ | 2005 06 28 | 704 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.5− | 0.5+ |
| 2002 12 13 | 644 | 0.6+ | 1.3+ | 2005 06 28 | 704 | 0.2− | 0.9+ | 2006 11 19 | 703 | 0.4+ | 0.6− |
| 2002 12 13 | 644 | 0.5+ | 0.8+ | 2005 06 28 | 704 | 0.4− | 1.2+ | 2006 11 19 | 703 | 0.2− | 0.7− |
| 2004 01 16 | 644 | 0.2+ | 0.3+ | 2005 06 28 | 704 | 0.4− | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.3− |
| 2004 01 16 | 644 | 0.3+ | 0.3+ | 2005 06 28 | 704 | 0.5− | 0.3+ | 2006 11 19 | 703 | 0.5+ | 0.1− |
| 2004 01 16 | 644 | 0.2− | 0.2+ | 2005 07 28 | 704 | 0.4+ | 1.0+ | 2006 11 20 | 703 | 0.7− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 704 | (1.7+ | 1.3−) | 2005 07 28 | 704 | 0.4+ | 0.9+ | 2006 11 20 | 703 | 0.7− | 0.2− | | |
| 2004 01 28 | 704 | 0.7+ | 0.1− | 2005 07 28 | 704 | 0.7+ | 0.1+ | 2006 11 20 | 703 | 1.1+ | 0.1− | | |
| 2004 01 28 | 704 | 0.1− | 1.0+ | 2005 07 28 | 704 | 0.1− | 0.8+ | 2006 11 20 | 703 | 0.1+ | 0.3− | | |
| 2004 01 29 | 699 | 0.9− | 0.3− | 2005 07 28 | 704 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.4− | 1.3− | | |
| 2004 01 29 | 699 | 0.0 | 0.7− | 2005 08 07 | E12 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.2− | | |
| 2004 01 29 | 699 | 0.6+ | 1.3− | 2005 08 07 | E12 | 0.6− | 0.4− | 2006 11 20 | 704 | 0.5− | 0.8+ | | |
| 2004 01 29 | 699 | 0.7− | 0.3− | 2005 08 07 | E12 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.5− | 0.4+ | | |
| 2004 02 19 | 704 | 0.6+ | 0.1− | 2005 08 07 | E12 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 1.4− | 0.8+ | | |

**(144194)∗ 2004 BA$_{124}$ = 2000 AU$_{12}$**

Discovered 2004 Jan. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65556)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.97119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26761513 | $\omega$ | 25.95784 | | −0.23966079 | −0.95887831 | |
| $a$ | 2.3848566 | $\Omega$ | 78.21572 | | +0.86151612 | −0.28224527 | |
| $e$ | 0.0628620 | $i$ | 8.93477 | | +0.44760773 | +0.02983265 | |
| $P$ | 3.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5+ | 0.5− | 2004 01 30 | 703 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.3− | 0.8+ | | |
| 1999 12 07 | 704 | 0.2+ | 0.2− | 2004 01 30 | 703 | 0.7− | 0.2+ | 2006 09 29 | 699 | 0.7+ | 0.0 | | |
| 1999 12 07 | 704 | 0.1− | 0.2− | 2004 01 30 | 703 | 0.6− | 0.0 | 2006 09 29 | 699 | 0.5− | 0.3+ | | |
| 2000 01 03 | 704 | 0.5− | 1.2− | 2004 01 30 | 703 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.9+ | | |
| 2000 01 03 | 704 | 0.3+ | 1.4− | 2004 01 31 | 704 | (1.3− | 1.7+) | 2006 10 16 | 703 | 0.4+ | 0.8+ | | |
| 2000 01 03 | 704 | 0.0 | 0.9− | 2004 01 31 | 704 | 0.6− | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.9+ | | |
| 2000 01 03 | 704 | 0.7− | 1.7− | 2004 01 31 | 704 | 1.0+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.9+ | | |
| 2000 01 04 | 704 | 0.1+ | 0.1− | 2004 02 14 | 704 | 0.8+ | 1.2+ | 2006 10 22 | 703 | 0.4+ | 0.0 | | |
| 2000 01 04 | 704 | 0.8+ | 1.2− | 2004 02 14 | 704 | (0.2+ | 1.7+) | 2006 10 22 | 703 | 0.5− | 0.2+ | | |
| 2000 01 04 | 704 | 1.9+ | 0.9− | 2004 02 14 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.2− | | |
| 2002 09 13 | 699 | 0.1+ | 1.0− | 2004 02 14 | 704 | 0.4+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2002 09 13 | 699 | 0.2− | 0.5− | 2006 09 16 | 699 | 0.3− | 1.0+ | 2006 10 22 | 644 | 0.4+ | 0.1+ | | |
| 2002 09 13 | 699 | 0.5− | 0.3+ | 2006 09 16 | 699 | (2.5− | 2.8+) | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2002 09 13 | 699 | 0.2+ | 0.8+ | 2006 09 16 | 699 | (1.7− | 2.0+) | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2003 12 17 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 1.1+ | 0.0 | 2006 10 28 | 703 | 0.2− | 1.4+ | | |
| 2003 12 17 | 644 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.7− | 2006 10 28 | 703 | 0.1− | 0.8+ | | |
| 2003 12 17 | 644 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.6− | 2006 10 28 | 703 | 0.2+ | 0.4+ | | |
| 2003 12 27 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 1.3− | 0.3− | 2006 10 28 | 703 | 0.3+ | 0.2+ | | |
| 2003 12 27 | 704 | 0.3+ | 0.0 | 2006 09 18 | 703 | 1.3− | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.2+ | | |
| 2003 12 27 | 704 | 0.8+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.7− | 2006 11 16 | 703 | 0.9− | 0.8− | | |
| 2003 12 27 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.4+ | 0.1+ | 2006 11 16 | 703 | 0.2− | 0.2+ | | |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.5− | | |
| 2004 01 17 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.7− | | | | | | |
| 2004 01 17 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.6+ | | | | | | |

**(144195)∗ 2004 BV$_{127}$ = 2005 GV$_{147}$**

Discovered 2004 Jan. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86252)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.66828 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22807454 | $\omega$ | 27.60342 | | +0.77688961 | +0.62847804 | |
| $a$ | 2.6530872 | $\Omega$ | 293.40677 | | −0.58507807 | +0.69817423 | |
| $e$ | 0.1125420 | $i$ | 2.38455 | | −0.23265035 | +0.34288205 | |
| $P$ | 4.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 08 21 | 704 | 0.6− | 0.4+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.3+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.3+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.5+ | 2005 03 17 | G96 | 0.8− | 0.0 | 2006 08 28 | 703 | 0.3− | 0.8− | | |
| 2002 10 09 | 704 | 0.2+ | 0.2− | 2005 03 17 | G96 | 1.1− | 0.4+ | 2006 08 28 | 699 | 0.3+ | 0.2− | | |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2005 03 17 | G96 | 0.5− | 0.2− | 2006 08 28 | 703 | 0.6− | 0.9+ | | |
| 2002 10 12 | 704 | (2.3+ | 2.4−) | 2005 03 17 | G96 | 0.8− | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.1+ | | |
| 2002 10 12 | 704 | 1.5− | 0.9− | 2005 04 11 | 691 | 0.2+ | 0.0 | 2006 08 28 | 699 | 0.8+ | 0.8− | | |
| 2002 10 12 | 704 | (1.7+ | 2.9+) | 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 1.4+ | | |
| 2002 10 12 | 704 | (2.5+ | 1.4+) | 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 704 | 0.1+ | 0.0 | | |
| 2002 10 30 | 644 | 0.5− | 0.8+ | 2005 04 15 | 691 | 0.4+ | 0.5+ | 2006 08 29 | 704 | 1.0+ | 0.2+ | | |
| 2002 10 30 | 644 | 0.4+ | 1.8+ | 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 704 | 0.1− | 1.0+ | | |
| 2002 10 30 | 644 | 0.3− | 1.1+ | 2005 04 15 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.3+ | | |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.1− | | |
| 2004 01 16 | 691 | 0.2− | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.1− | | |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.0 | | |
| 2004 01 21 | 704 | 0.2− | 0.3+ | 2006 08 21 | 704 | 0.3− | 1.0+ | 2006 09 27 | G96 | 0.2− | 0.1− | | |
| 2004 01 21 | 704 | 0.2+ | 0.5+ | 2006 08 21 | 704 | 0.1+ | 0.7+ | 2006 09 27 | G96 | 0.2− | 0.3− | | |
| 2004 01 21 | 704 | 0.8+ | 0.8+ | 2006 08 21 | 704 | 1.1+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.0 | | |
| 2004 01 27 | 691 | 0.2+ | 0.4+ | 2006 08 21 | 704 | 0.2− | 0.7+ | 2006 09 27 | G96 | 0.2− | 0.0 | | |

**(144196)∗ 2004 BX$_{135}$ = 2005 GQ$_{83}$**

Discovered 2004 Jan. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76402)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.26056 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24247631 | $\omega$ | 335.04217 | | +0.75883728 | +0.65106728 | |
| $a$ | 2.5469662 | $\Omega$ | 344.30059 | | −0.58673199 | +0.67230583 | |
| $e$ | 0.2127556 | $i$ | 3.52878 | | −0.28268632 | +0.35230138 | |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | (1.8− | 0.2+) | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 09 18 | 699 | 1.4+ | 0.3+ | | |
| 2002 10 04 | 704 | 0.5+ | 0.1+ | 2005 03 14 | G96 | 1.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 04 | 704 | 1.0− | 0.7+ | 2005 03 14 | G96 | 0.7− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 04 | 704 | (2.4− | 1.2+) | 2005 03 14 | G96 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2002 10 12 | 704 | 0.6+ | 1.0+ | 2005 03 14 | G96 | 1.0− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.4+ | | |
| 2002 10 12 | 704 | 0.3− | 0.5+ | 2005 04 04 | 691 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.5+ | | |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2005 04 04 | 691 | 0.1+ | 0.7+ | 2006 10 01 | 691 | 0.3− | 0.4+ | | |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2005 04 04 | 691 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.4+ | | |
| 2002 10 12 | 704 | 0.1− | 0.2+ | 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.7+ | | |
| 2002 10 18 | 644 | 0.3− | 0.3+ | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2002 10 18 | 644 | 0.1− | 0.4+ | 2005 04 10 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.4− | 0.5− | | |
| 2002 10 18 | 644 | 0.4− | 0.2+ | 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 1.5− | | |
| 2002 10 31 | 644 | 0.2− | 0.1+ | 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.7− | | |
| 2002 10 31 | 644 | 0.3− | 0.5+ | 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.4− | | |
| 2002 10 31 | 644 | 0.0 | 0.6+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.5− | | |
| 2003 12 29 | 691 | 0.6+ | 0.2− | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.4− | | |
| 2003 12 29 | 691 | 0.3− | 0.5+ | 2006 07 21 | G96 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.2− | | |
| 2003 12 29 | 691 | 0.3− | 0.4+ | 2006 07 21 | G96 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.4− | | |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | (3.1+ | 0.8−) | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | (1.2+ | 2.2+) | 2006 10 19 | G96 | 0.1− | 0.3− | | |
| 2004 01 19 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | (0.0 | 2.7+) | 2006 10 19 | G96 | 0.2− | 0.3− | | |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | (0.7+ | 3.0+) | 2006 10 19 | G96 | 0.3− | 0.1− | | |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 1.0− | 0.3− | 2006 11 06 | 644 | 0.1+ | 0.2− | | |
| 2004 01 28 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.7− | 2006 11 06 | 644 | 0.2− | 0.2+ | | |
| 2004 02 17 | 645 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.4+ | 0.2− | 2006 11 06 | 644 | 0.1+ | 0.1+ | | |

**(144197)∗ 2004 BZ$_{139}$ = 1995 SR$_{87}$ = 1999 XO$_{53}$**

Discovered 2004 Jan. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69664)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.38138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27067024 | $\omega$ | 216.69638 | | +0.89951188 | −0.43687450 | |
| $a$ | 2.3668771 | $\Omega$ | 169.20565 | | +0.40618154 | +0.83255208 | |
| $e$ | 0.1789574 | $i$ | 1.33568 | | +0.16091907 | +0.34058436 | |
| $P$ | 3.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3− | 0.2+ | 2006 08 28 | 703 | (0.7− | 2.1+) | 2006 09 30 | 704 | 0.8+ | 1.2+ | | |
| 1995 09 26 | 691 | 0.5+ | 0.5− | 2006 08 28 | 703 | (2.5− | 2.1+) | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 1995 09 26 | 691 | 0.3+ | 0.6− | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 1995 10 02 | 691 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 1995 10 02 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.3+ | | |
| 1995 10 02 | 691 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.6+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.3+ | | |
| 1997 03 05 | 691 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.0 | | |
| 1997 03 05 | 691 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 1999 12 07 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 1999 12 07 | 704 | 0.1+ | 1.3− | 2006 09 17 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 1999 12 07 | 704 | 0.3+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.4+ | | |
| 1999 12 08 | 704 | 1.3− | 1.6− | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 1999 12 08 | 704 | 0.0 | 0.7− | 2006 09 18 | 699 | 0.4+ | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.1+ | | |
| 1999 12 08 | 704 | 0.3− | 0.5− | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 1999 12 08 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 2004 01 19 | 691 | 0.1− | 0.3+ | 2006 09 22 | A50 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 09 22 | A50 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.4− | | |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.2− | | |
| 2004 01 28 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.4− | | |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.5+ | 0.2− | 2006 10 24 | 644 | 0.2+ | 0.1− | | |
| 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 24 | 644 | 0.1− | 0.1− | | |
| 2005 05 10 | G96 | 0.4− | 0.4+ | 2006 09 30 | 704 | 1.2+ | 0.7+ | 2006 10 24 | 644 | 0.1− | 0.1+ | | |
| 2005 05 10 | G96 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.8− | 2006 11 15 | G96 | 0.1− | 0.0 | | |
| 2005 05 10 | G96 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.5− | | |
| 2005 05 10 | G96 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2006 08 28 | 703 | (0.1− | 1.6+) | 2006 09 30 | 704 | 0.9+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2006 08 28 | 703 | 1.2− | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.3+ | | | | | | |

**(144198)∗ 2004 BN$_{147}$ = 2005 JV$_{147}$**

Discovered 2004 Jan. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86255)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.83736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24403379 | $\omega$ | 172.85201 | | +0.52048294 | +0.84522775 | |
| $a$ | 2.5361177 | $\Omega$ | 128.43392 | | −0.79087101 | +0.53070703 | |
| $e$ | 0.0781851 | $i$ | 8.90027 | | −0.32190147 | +0.06277020 | |
| $P$ | 4.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 11 | 691 | 0.1− | 0.8− | 2004 01 22 | 704 | 0.3− | 0.1− | 2005 05 20 | 644 | 0.0 | 0.1+ | | |
| 1993 06 11 | 691 | 0.1− | 1.0− | 2004 01 22 | 704 | 0.2− | 0.3+ | 2005 05 20 | 644 | 0.1+ | 0.4+ | | |
| 1993 06 11 | 691 | 0.3− | 0.6− | 2004 01 22 | 704 | 0.7+ | 0.5− | 2006 08 28 | 699 | 1.0− | 1.0+ | | |
| 2000 01 27 | 691 | 0.4− | 0.9− | 2004 01 22 | 704 | 0.1+ | 0.2− | 2006 08 28 | 699 | 1.0+ | 0.5+ | | |
| 2000 01 27 | 691 | 0.7− | 0.5− | 2004 01 22 | 704 | 0.3− | 0.9− | 2006 08 28 | 699 | 0.6− | 0.5− | | |
| 2000 01 27 | 691 | 0.0 | 0.9− | 2004 01 22 | 704 | 1.3+ | 0.6+ | 2006 08 28 | 699 | 1.1+ | 1.1+ | | |
| 2000 02 11 | 691 | 0.2+ | 0.4− | 2004 01 27 | 691 | 0.5+ | 0.2+ | 2006 09 17 | 699 | 0.8+ | 0.1+ | | |
| 2000 02 11 | 691 | 0.3+ | 0.1+ | 2004 01 27 | 691 | 0.6+ | 0.3+ | 2006 09 17 | 699 | 0.2+ | 1.0− | | |
| 2000 02 11 | 691 | 0.2− | 0.3− | 2004 01 27 | 691 | 0.4+ | 0.1+ | 2006 09 17 | 699 | 0.9+ | 0.1− | | |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 699 | 1.0− | 1.1+ | | |
| 2001 05 24 | 645 | 0.1+ | 0.1+ | 2004 02 16 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 1.3− | 1.0− | | |
| 2003 12 22 | 691 | 0.0 | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.0 | 1.8− | | |
| 2003 12 22 | 691 | 0.2+ | 0.1+ | 2005 03 31 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.5− | | |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2005 03 31 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.8− | | |
| 2003 12 27 | 691 | 0.9− | 0.2+ | 2005 03 31 | 691 | 0.1− | 0.4+ | 2006 09 25 | 703 | 0.0 | 1.1+ | | |
| 2003 12 27 | 691 | 0.9− | 0.0 | 2005 05 15 | 644 | 0.1− | 0.2+ | 2006 09 25 | 703 | 0.6+ | 1.1− | | |
| 2003 12 27 | 691 | 0.2+ | 0.5− | 2005 05 15 | 644 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.3− | 1.3+ | | |
| 2004 01 22 | 704 | 0.1+ | 0.5+ | 2005 05 15 | 644 | 0.3+ | 0.2− | 2006 09 25 | 703 | 1.0+ | 0.1+ | | |
| 2004 01 22 | 704 | 0.3− | 0.8+ | 2005 05 20 | 644 | 0.1+ | 0.6+ | | | | | | |

**(144199)∗ 2004 BV$_{161}$ = 2000 CH$_{144}$**

Discovered 2004 Jan. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 95173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 358.98439 | | (2000.0) | | **P** | **Q** | | | | | | | |
| $n$ | 0.23820139 | $\omega$ | 22.90979 | | +0.99632317 | −0.08194605 | | | | | | | |
| $a$ | 2.5773487 | $\Omega$ | 341.73776 | | +0.06090561 | +0.88267700 | | | | | | | |
| $e$ | 0.0763174 | $i$ | 4.57577 | | +0.06025480 | +0.46278090 | | | | | | | |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.0 | 0.2+ | 2006 07 22 | G96 | 0.4− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.2− | | |
| 2000 02 05 | 695 | 0.2− | 0.1+ | 2006 07 22 | G96 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1− | | |
| 2000 02 06 | 691 | 0.1+ | 0.1+ | 2006 07 22 | G96 | 0.5+ | 0.0 | 2006 10 01 | 704 | (0.1+ | 2.3−) | | |
| 2000 02 06 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | (1.5− | 0.2−) | 2006 10 01 | 704 | 1.3+ | 0.2+ | | |
| 2000 02 06 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.1− | 0.8− | 2006 10 01 | 704 | 0.3− | 0.2+ | | |
| 2000 03 03 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 0.7+ | 1.1− | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2000 03 03 | 704 | 0.6− | 1.3+ | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 10 09 | 644 | 0.3− | 0.1− | | |
| 2000 03 03 | 704 | 0.6+ | 0.4− | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.3− | | |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 1.3− | 0.6+ | | |
| 2002 10 09 | 704 | 0.9+ | 0.8+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.6− | 1.1− | | |
| 2002 10 09 | 704 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.7− | | |
| 2002 10 31 | 644 | 0.7− | 0.3− | 2006 09 19 | 699 | 1.2− | 1.0+ | 2006 10 17 | 703 | 0.1− | 0.6− | | |
| 2002 10 31 | 644 | 0.6− | 0.3− | 2006 09 19 | 699 | 1.2+ | 0.7+ | 2006 10 22 | 644 | 0.6− | 0.1− | | |
| 2002 10 31 | 644 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.1+ | | |
| 2004 01 30 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.4− | 0.1+ | | |
| 2004 01 30 | 691 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2004 01 30 | 691 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2004 02 13 | 691 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.1+ | | |
| 2004 02 13 | 691 | 0.6+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2004 02 23 | 704 | 0.2+ | 0.5− | 2006 09 29 | 704 | 0.7+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 09 29 | 704 | (0.0 | 2.4−) | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2004 02 23 | 704 | 0.2− | 0.4+ | 2006 09 29 | 704 | (2.4+ | 0.4+) | 2006 10 23 | 644 | 0.0 | 0.3− | | |
| 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.6− | | |

**(144200)∗ 2004 CH = 2005 JJ$_{139}$**

Discovered 2004 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76404)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 79.59522 | | (2000.0) | | **P** | **Q** | | | | | | | |
| $n$ | 0.19880815 | $\omega$ | 329.75402 | | −0.20028621 | +0.97268660 | | | | | | | |
| $a$ | 2.9074568 | $\Omega$ | 288.47759 | | −0.87228498 | −0.23156452 | | | | | | | |
| $e$ | 0.0975488 | $i$ | 7.10609 | | −0.44609903 | +0.01608285 | | | | | | | |
| $P$ | 4.96 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.0 | 0.3+ | 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 08 27 | 699 | 0.5− | 0.0 | | |
| 2001 08 25 | 704 | 0.6+ | 0.3− | 2004 02 11 | 699 | 0.8+ | 1.0− | 2006 08 27 | 699 | 1.0− | 0.2− | | |
| 2001 08 25 | 704 | 0.5+ | 0.6+ | 2004 02 17 | 704 | 0.9− | 0.9+ | 2006 08 27 | 699 | 0.6+ | 0.1− | | |
| 2001 08 25 | 704 | 1.0+ | 0.7+ | 2004 02 17 | 704 | 0.6+ | 1.0+ | 2006 08 28 | 704 | 0.3+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.4+ | 1.2+ | 2004 02 17 | 704 | 0.6− | 0.9+ | 2006 08 28 | 704 | 0.0 | 1.0+ | | |
| 2001 09 08 | 704 | 0.6− | 0.3− | 2004 02 17 | 704 | 1.1+ | 0.9+ | 2006 08 28 | 704 | 0.6+ | 0.0 | | |
| 2001 09 08 | 704 | 1.1− | 0.5+ | 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 08 29 | 703 | 0.1− | 0.5− | | |
| 2001 09 08 | 704 | 0.2− | 0.2+ | 2005 05 11 | 644 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.4+ | 1.3− | | |
| 2001 09 08 | 704 | 0.6− | 0.5+ | 2005 05 11 | 644 | 0.0 | 0.6+ | 2006 08 29 | 703 | 0.1− | 0.2− | | |
| 2001 09 08 | 704 | 0.4+ | 0.6+ | 2005 05 11 | 644 | 0.1+ | 0.0 | 2006 08 29 | 703 | 1.0+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.4− | 0.5+ | 2005 05 13 | E12 | 0.2− | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.4− | | |
| 2001 09 16 | 704 | 0.9− | 0.3− | 2005 05 13 | E12 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 1.0− | 0.9− | | |
| 2001 09 16 | 704 | 1.1− | 0.2− | 2005 05 13 | E12 | 0.1− | 0.0 | 2006 08 29 | 703 | (2.6− | 0.8+) | | |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2005 05 13 | E12 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.3+ | | |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2005 05 19 | E12 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.6− | 0.8+ | | |
| 2004 02 02 | 704 | 1.3+ | 0.7+ | 2005 05 19 | E12 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.7+ | | |
| 2004 02 02 | 704 | (1.7+ | 1.1+) | 2005 05 19 | E12 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.2+ | | |
| 2004 02 02 | 704 | (0.8+ | 2.1+) | 2005 05 19 | E12 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.4− | 0.7+ | | |
| 2004 02 02 | 704 | 0.3+ | 0.1+ | 2005 05 30 | 428 | (0.5− | 1.9+) | 2006 09 20 | 699 | 0.0 | 0.2+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 03 | 608 | 0.5+ | 0.2+ | 2005 05 30 | 428 | 1.1− | 0.8+ | 2006 09 20 | 699 | 0.6+ | 0.0 |
| 2004 02 03 | 608 | 1.0+ | 0.6− | 2005 05 31 | 428 | 0.6+ | 0.2− | 2006 09 20 | 699 | 1.4+ | 0.3+ |
| 2004 02 03 | 608 | 0.2+ | 0.9− | 2005 05 31 | 428 | 0.3+ | 0.5− | 2006 09 20 | 699 | 1.3− | 0.5+ |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2005 05 31 | 428 | 0.9+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2004 02 11 | 699 | 0.9− | 0.2+ | 2005 06 26 | 644 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2004 02 11 | 699 | 0.9+ | 0.1− | 2005 06 26 | 644 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.8+ |
| 2004 02 11 | 644 | 0.2− | 0.6+ | 2005 06 26 | 644 | 0.2+ | 0.2+ | | | | |
| 2004 02 11 | 699 | 0.5− | 0.4+ | 2006 08 27 | 699 | 0.2+ | 0.5− | | | | |

**(144201)∗ 2004 $CO_1$ = 1997 $LB_9$**

Discovered 2004 Feb. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 61879)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.93466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25748267 | $\omega$ | 57.89392 | | −0.13905977 | +0.99009823 | |
| $a$ | 2.4470192 | $\Omega$ | 204.13470 | | −0.92364150 | −0.13666221 | |
| $e$ | 0.1465827 | $i$ | 2.68862 | | −0.35713970 | −0.03207693 | |
| $P$ | 3.83 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 04 | 809 | (2.0− | 2.2−) | 2005 06 28 | 691 | 0.6− | 0.8+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 1997 05 04 | 809 | (2.0− | 3.0−) | 2005 06 28 | 691 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 1997 05 04 | 809 | (1.3− | 3.1−) | 2005 06 29 | 691 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 1997 06 07 | 809 | (3.2+ | 1.7−) | 2005 06 29 | 691 | 0.2− | 0.4+ | 2006 11 12 | 703 | 0.2− | 0.9+ |
| 1997 06 07 | 809 | 0.9+ | 0.7− | 2005 06 29 | 691 | 0.2− | 0.1+ | 2006 11 12 | 703 | 0.2− | 0.3− |
| 1997 06 07 | 809 | 0.9+ | 1.2− | 2005 06 29 | 703 | (0.4+ | 1.6+) | 2006 11 12 | 703 | 0.2− | 0.7− |
| 1997 06 08 | 809 | 0.4+ | 0.6+ | 2005 06 29 | 703 | (1.2+ | 1.7+) | 2006 11 12 | 703 | 0.1− | 0.1− |
| 1997 06 08 | 809 | 0.5+ | 0.8+ | 2005 06 29 | 703 | 0.8− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 1997 06 08 | 809 | 0.3+ | 0.1+ | 2005 07 07 | 704 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.1− |
| 1998 09 25 | 691 | 0.4− | 0.7− | 2005 07 07 | 704 | 0.9+ | 0.7+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 1998 09 25 | 691 | 0.3− | 0.5− | 2005 07 07 | 704 | 0.4+ | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 1998 09 25 | 691 | 0.2− | 0.5− | 2005 07 07 | 704 | 0.6+ | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 1.3+ | 0.4+ | 2005 07 24 | 608 | 0.4− | 0.6− | 2006 11 13 | G96 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.9+ | 1.3+ | 2005 07 24 | 608 | 0.1+ | 0.7− | 2006 11 13 | G96 | 0.4+ | 0.4+ |
| 2002 10 11 | 704 | 1.0− | 0.5+ | 2005 07 24 | 608 | 0.3+ | 1.1− | 2006 11 13 | G96 | 0.6+ | 0.1+ |
| 2002 11 04 | 644 | 0.0 | 0.5+ | 2005 10 01 | G96 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2002 11 04 | 644 | 0.2− | 0.4+ | 2005 10 01 | G96 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.4− | 0.3+ |
| 2002 11 04 | 644 | 0.1+ | 0.5+ | 2005 10 01 | G96 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2004 02 11 | 333 | 0.2− | 0.3+ | 2005 10 01 | G96 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2004 02 11 | 333 | 0.1+ | 0.2+ | 2005 10 26 | G96 | 0.5− | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2004 02 11 | 333 | 0.2− | 0.5+ | 2005 10 26 | G96 | 0.6− | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2004 02 11 | 699 | 0.6− | 0.3+ | 2005 10 26 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2004 02 11 | 699 | 0.3+ | 0.1− | 2005 10 26 | G96 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2004 02 11 | 699 | 0.1− | 1.1+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2004 02 11 | 699 | 0.5− | 1.0+ | 2006 09 27 | G96 | 0.5+ | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2004 02 12 | 333 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 02 12 | 333 | 0.7− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2004 02 17 | 704 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.6− | 2006 11 23 | 691 | 0.5+ | 0.0 |
| 2004 02 17 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.6+ | 0.2− |
| 2004 02 17 | 704 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2004 02 17 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2004 03 10 | 644 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2004 03 10 | 644 | 0.4− | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.2− | 0.7− |
| 2004 03 10 | 644 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.8− |
| 2005 06 28 | 691 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− | | | | |

**(144202)∗ 2004 $CR_1$**

Discovered 2004 Feb. 11 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.33367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22897522 | $\omega$ | 277.77588 | | −0.95669804 | +0.28709758 | |
| $a$ | 2.6461252 | $\Omega$ | 278.91784 | | −0.24423675 | −0.88145141 | |
| $e$ | 0.0648618 | $i$ | 2.78485 | | −0.15835802 | −0.37499118 | |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 291 | 0.3− | 0.7+ | 2004 02 11 | 644 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.3− | 0.1+ |
| 2001 05 26 | 291 | 0.4− | 0.2+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2001 05 26 | 291 | 0.2− | 0.3+ | 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.2+ |
| 2001 06 26 | 644 | 0.1− | 0.9+ | 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2001 06 26 | 644 | 0.3+ | 0.9+ | 2004 02 12 | 691 | 0.2+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2001 06 26 | 644 | 0.0 | 0.8+ | 2004 02 12 | 333 | 0.3− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 07 21 | 608 | 0.6+ | 1.1− | 2004 02 12 | 333 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 07 21 | 608 | 0.6+ | 0.9− | 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 07 21 | 608 | 0.2+ | 0.6− | 2004 02 14 | 608 | 0.8+ | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 644 | 0.2− | 0.6− | 2004 02 14 | 608 | 0.5+ | 0.9− | 2006 09 30 | 291 | 0.1+ | 0.2+ |
| 2002 10 31 | 644 | 0.2− | 0.8− | 2004 02 14 | 608 | 0.5+ | 0.3− | 2006 09 30 | 291 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.1+ | 0.7+ | 2004 02 17 | 704 | 0.1− | 1.0+ | 2006 09 30 | 291 | 0.2− | 0.1+ |
| 2002 10 31 | 644 | 0.6− | 0.5− | 2004 02 17 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 644 | 0.5+ | 0.7+ | 2004 02 17 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2004 02 17 | 704 | 0.2+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2004 01 24 | 704 | 1.0− | 1.3+ | 2004 02 17 | 704 | 0.3+ | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.7− |
| 2004 01 24 | 704 | 1.4− | 0.3+ | 2004 02 19 | 608 | 0.3− | 0.1− | 2006 10 22 | G96 | (1.6− | 1.7−) |
| 2004 01 24 | 704 | (2.7− | 0.4+) | 2004 02 19 | 608 | 1.0− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2004 02 10 | 703 | 1.3+ | 0.8− | 2004 02 19 | 608 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2004 02 10 | 703 | 0.3+ | 0.9+ | 2004 03 01 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.9− |
| 2004 02 10 | 703 | 0.6− | 0.0 | 2004 03 01 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.9− |
| 2004 02 10 | 703 | (6.8+ | 3.9−) | 2004 03 01 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2004 02 11 | 333 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.5+ | 0.6− | 2006 10 31 | G96 | 1.3+ | 0.0 |
| 2004 02 11 | 333 | 0.1− | 0.1+ | 2006 09 17 | 703 | (0.3− | 1.7−) | | | | |
| 2004 02 11 | 333 | 0.5+ | 0.6− | 2006 09 17 | 703 | 0.9− | 0.5− | | | | |

**(144203)∗ 2004 $CD_7$ = 2002 $SY_{52}$**

Discovered 2004 Feb. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61884)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.63049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24269103 | $\omega$ | 249.62196 | | +0.83438251 | −0.52480402 | |
| $a$ | 2.5454637 | $\Omega$ | 141.49024 | | +0.54986934 | +0.81366252 | |
| $e$ | 0.0703301 | $i$ | 15.69946 | | −0.03807277 | +0.25006809 | |
| $P$ | 4.06 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.1− | 0.8− | 2004 02 10 | 644 | 0.2− | 0.7+ | 2005 07 01 | 644 | 0.1+ | 0.6+ |
| 2000 02 04 | 691 | 0.1− | 0.5− | 2004 02 10 | 644 | 0.0 | 0.9+ | 2005 07 01 | 644 | 0.3− | 0.6+ |
| 2000 02 04 | 691 | 0.1− | 0.5− | 2004 02 10 | 644 | 0.1− | 0.8+ | 2005 07 01 | 644 | 0.2+ | 0.7+ |
| 2000 02 11 | 704 | 0.1− | 0.8− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2000 02 11 | 704 | 0.5+ | 1.3+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2000 02 11 | 704 | 0.9+ | 0.5+ | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.5+ | 0.3+ |
| 2000 02 11 | 704 | 1.7+ | 0.7+ | 2004 02 17 | 704 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.2+ | 0.7+ |
| 2002 09 18 | 644 | 0.4− | 0.5+ | 2004 02 17 | 704 | 0.3+ | 0.1− | 2006 09 17 | 699 | 0.2+ | 0.6+ |
| 2002 09 18 | 644 | 0.4− | 0.7+ | 2004 02 17 | 704 | 0.1+ | 0.6+ | 2006 09 17 | 699 | 0.1+ | 0.9+ |
| 2002 09 18 | 644 | 0.1+ | 0.7+ | 2004 02 17 | 704 | 0.4+ | 1.2+ | 2006 09 17 | 699 | 0.3− | 0.3− |
| 2002 09 19 | 644 | 0.2− | 0.6+ | 2004 02 19 | 608 | 0.3− | 1.1− | 2006 09 20 | 703 | 0.1+ | 0.1− |
| 2002 09 19 | 644 | 0.1− | 0.2+ | 2004 02 19 | 608 | 0.6− | 0.2− | 2006 09 20 | 703 | 0.2− | 0.2− |
| 2002 09 19 | 644 | 0.5− | 0.2+ | 2004 02 19 | 608 | 0.6− | 0.4− | 2006 09 20 | 703 | 0.1+ | 0.2+ |
| 2002 10 08 | 644 | 0.3− | 0.3− | 2004 02 26 | 704 | 0.8+ | 1.5+ | 2006 09 20 | 703 | 0.2− | 0.5+ |
| 2002 10 08 | 644 | 0.3− | 0.6− | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.2+ |
| 2002 10 08 | 644 | 0.3− | 0.3− | 2004 02 26 | 704 | 0.1+ | 1.0+ | 2006 09 20 | 703 | 0.1− | 0.4+ |
| 2004 01 24 | 704 | 0.1− | 1.1+ | 2004 02 26 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.3+ | 0.4− |
| 2004 01 24 | 704 | 1.3+ | 0.2+ | 2004 02 26 | 704 | 0.6− | 0.3− | 2006 09 20 | 703 | 0.2− | 0.5+ |
| 2004 01 24 | 704 | 0.9− | 0.5+ | 2004 03 01 | 691 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.1− | 0.2+ |
| 2004 01 24 | 704 | 0.0 | 0.5+ | 2004 03 01 | 691 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.2− |
| 2004 01 24 | 704 | 0.4+ | 0.8+ | 2004 03 01 | 691 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.3+ | 0.6− |
| 2004 01 31 | 691 | 0.0 | 0.0 | 2005 06 25 | 644 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.3+ | 0.2− |
| 2004 01 31 | 691 | 0.2− | 0.1+ | 2005 06 25 | 644 | 0.0 | 0.7+ | | | | |
| 2004 01 31 | 691 | 0.2− | 0.0 | 2005 06 25 | 644 | 0.1+ | 0.8+ | | | | |

**(144204)∗ 2004 $CF_7$ = 2002 $UE_{47}$ = 2005 $GN_{135}$**

Discovered 2004 Feb. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 76407)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.58505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20650501 | $\omega$ | 241.86545 | | +0.93246665 | −0.35124751 | |
| $a$ | 2.8347558 | $\Omega$ | 138.54223 | | +0.35971246 | +0.88117258 | |
| $e$ | 0.0784177 | $i$ | 7.32798 | | +0.03336012 | +0.31648077 | |
| $P$ | 4.77 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 24 | 691 | 0.1+ | 1.4− | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 08 15 | 644 | 0.0 | 0.2+ | |
| 1995 03 24 | 691 | 0.2− | 1.0− | 2004 02 16 | 704 | 0.3+ | 0.5+ | 2006 08 17 | 644 | 0.3+ | 0.1+ | |
| 1995 03 24 | 691 | 0.9− | 1.0− | 2004 02 16 | 704 | 0.1− | 0.1− | 2006 08 17 | 644 | 0.2+ | 0.5+ | |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2004 02 16 | 704 | 1.2+ | 0.5+ | 2006 08 17 | 644 | 0.3+ | 0.1− | |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.3+ | 0.4− | 2006 08 17 | 644 | 0.2+ | 0.2+ | |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2005 04 10 | 691 | 0.2− | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.1+ | |
| 2002 10 31 | 704 | 0.1+ | 1.1+ | 2005 04 10 | 691 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | |
| 2002 10 31 | 704 | 0.1+ | 0.7+ | 2005 04 14 | 691 | 0.0 | 0.4+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | |
| 2002 10 31 | 704 | 1.0− | 1.1+ | 2005 04 14 | 691 | 0.4− | 0.6+ | 2006 08 18 | 644 | 0.2+ | 0.3+ | |
| 2002 10 31 | 704 | 1.1− | 1.4+ | 2005 04 14 | 691 | 0.1− | 0.6+ | 2006 08 18 | 644 | 0.0 | 0.2+ | |
| 2002 10 31 | 704 | 0.4− | 1.2+ | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.2+ | |
| 2002 11 06 | 699 | 0.1+ | 1.3− | 2005 04 15 | 691 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.3+ | 0.3+ | |
| 2002 11 06 | 699 | 0.4− | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.0 | |
| 2002 11 06 | 699 | 0.1− | 0.2− | 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.2+ | |
| 2002 11 06 | 699 | 0.9− | 0.5− | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− | |
| 2004 01 24 | 704 | 1.0+ | 1.2+ | 2005 04 18 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.1+ | |
| 2004 01 24 | 704 | 0.4+ | 1.1+ | 2006 06 19 | G96 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.2− | 0.1− | |
| 2004 01 24 | 704 | 0.4+ | 0.3+ | 2006 06 19 | G96 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.1− | 0.3− | |
| 2004 01 24 | 704 | 0.2+ | 0.7+ | 2006 06 19 | G96 | 0.3− | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.2− | |
| 2004 01 24 | 704 | 0.4+ | 0.0 | 2006 06 19 | G96 | 0.3− | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.1− | |
| 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 07 26 | 644 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.4+ | 0.1− | |
| 2004 02 10 | 644 | 0.5+ | 0.0 | 2006 07 26 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.3+ | |
| 2004 02 10 | 644 | 0.1− | 0.0 | 2006 07 26 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.6− | |
| 2004 02 12 | 691 | 0.1− | 0.5+ | 2006 08 15 | 644 | 0.5+ | 0.4+ | 2006 10 23 | G96 | 0.6+ | 0.3+ | |
| 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.1− | | | | | |

**(144205)∗ 2004 CS$_7$**

Discovered 2004 Feb. 10 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.05936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27297330 | $\omega$ | 242.04146 | | +0.96149330 | −0.27027925 | |
| $a$ | 2.3535455 | $\Omega$ | 133.59161 | | +0.27007391 | +0.89566211 | |
| $e$ | 0.2080511 | $i$ | 3.94247 | | +0.05089910 | +0.35318340 | |
| $P$ | 3.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.0 | 0.2− | 2004 02 10 | 703 | 0.5+ | 0.1− | 2006 10 22 | 704 | 0.4+ | 0.0 | |
| 1993 01 23 | 691 | 0.5+ | 0.1+ | 2004 02 10 | 703 | (0.2+ | 2.1+) | 2006 10 22 | 704 | 0.5+ | 0.5+ | |
| 1993 01 23 | 691 | 0.2+ | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.1+ | |
| 1995 08 25 | 809 | 1.0− | 0.8+ | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.5+ | |
| 1995 08 26 | 809 | 0.3− | 0.1− | 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 1.1− | |
| 1995 08 29 | 809 | 0.8+ | 0.0 | 2004 02 16 | 704 | 1.0+ | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.0 | |
| 1995 08 31 | 809 | (1.2− | 2.7−) | 2004 02 16 | 704 | (0.5+ | 3.1+) | 2006 11 13 | 703 | 0.0 | 0.7− | |
| 1995 09 01 | 809 | (1.1− | 2.7−) | 2004 02 16 | 704 | (1.9+ | 0.4−) | 2006 11 13 | 703 | 0.1− | 0.5− | |
| 1995 09 23 | 809 | (5.8+ | 1.1−) | 2004 02 16 | 704 | 1.4+ | 0.6− | 2006 11 13 | 703 | 0.6+ | 0.2− | |
| 1999 12 08 | 704 | 1.7− | 1.1− | 2004 03 01 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.8− | |
| 1999 12 08 | 704 | 0.1− | 0.2+ | 2004 03 01 | 691 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.2− | |
| 1999 12 08 | 704 | 0.7− | 0.5− | 2004 03 01 | 691 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.5+ | 0.0 | |
| 1999 12 08 | 704 | 0.7− | 0.8− | 2005 04 04 | G96 | 0.4− | 0.3+ | 2006 11 14 | 704 | 0.7+ | 0.2− | |
| 2000 01 05 | 704 | 0.4− | 1.0− | 2005 04 04 | G96 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.2+ | |
| 2000 01 05 | 704 | 0.2− | 0.0 | 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.6+ | 0.1+ | |
| 2000 01 05 | 704 | 0.6+ | 1.1− | 2005 04 04 | G96 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.9− | 0.6− | |
| 2002 07 14 | 704 | 0.8+ | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.3+ | |
| 2002 07 14 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.7− | 1.2+ | 2006 11 17 | 704 | 0.4+ | 0.4− | |
| 2002 07 14 | 704 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.0 | 0.3+ | |
| 2002 07 14 | 704 | 0.0 | 1.1+ | 2006 09 14 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.4+ | |
| 2002 07 22 | 644 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.1+ | |
| 2002 07 22 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.5− | 0.0 | |
| 2002 07 22 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 20 | 704 | 1.1− | 0.3+ | |
| 2002 07 28 | 608 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 20 | 704 | 0.0 | 1.2+ | |
| 2002 07 28 | 608 | 0.7− | 1.1+ | 2006 10 15 | D35 | 0.1+ | 0.0 | 2006 11 20 | 704 | 1.0− | 1.4+ | |
| 2002 07 28 | 608 | 0.3+ | 0.4− | 2006 10 15 | D35 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 1.2+ | |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2006 10 15 | D35 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.1+ | |
| 2002 08 07 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 20 | 704 | 0.6− | 2.5+ | |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 11 23 | G96 | 0.2+ | 0.1− | |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3− | |
| 2002 08 17 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.1− | |
| 2002 08 17 | 644 | 0.1− | 0.4− | 2006 10 22 | 704 | 0.2+ | 0.7+ | 2006 11 23 | G96 | 0.4+ | 0.3− | |
| 2004 02 10 | 703 | 0.8− | 0.7+ | 2006 10 22 | 704 | 0.3+ | 0.2− | | | | | |
| 2004 02 10 | 703 | 0.6+ | 1.3+ | 2006 10 22 | 704 | 0.8+ | 0.6+ | | | | | |

**(144206)∗ 2004 CB$_9$ = 2002 NQ$_{41}$**

Discovered 2004 Feb. 11 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61885)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.81225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26126748 | $\omega$ | 9.22893 | | +0.95483919 | −0.29704832 | |
| $a$ | 2.4233295 | $\Omega$ | 8.06086 | | +0.26948299 | +0.85634825 | |
| $e$ | 0.1909283 | $i$ | 2.72446 | | +0.12514411 | +0.42240973 | |
| $P$ | 3.77 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 09 | 691 | 0.3− | 0.1− | 2006 08 27 | 699 | 0.6+ | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.6+ | |
| 1997 04 09 | 691 | 0.3+ | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.0 | |
| 1997 04 09 | 691 | 0.2+ | 0.3− | 2006 08 27 | 699 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.1+ | |
| 2002 07 14 | 644 | 0.4− | 0.1+ | 2006 08 27 | 699 | 0.4− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | |
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 1.4+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | |
| 2002 07 14 | 644 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.4+ | 1.0+ | 2006 09 26 | G96 | 0.1+ | 0.1− | |
| 2002 07 15 | 644 | 0.2− | 0.1− | 2006 08 28 | 703 | 1.1− | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | |
| 2002 07 15 | 644 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.2− | |
| 2002 07 15 | 644 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2− | |
| 2002 08 13 | 704 | 0.5− | 0.6+ | 2006 09 12 | 703 | 0.0 | 0.5− | 2006 09 27 | 704 | 0.1− | 0.4+ | |
| 2002 08 13 | 704 | 0.7− | 0.0 | 2006 09 12 | 703 | 0.3− | 1.0− | 2006 09 27 | 704 | 0.3+ | 0.1+ | |
| 2002 08 13 | 704 | 0.6+ | 0.3− | 2006 09 12 | 703 | 0.6− | 0.2− | 2006 09 27 | 704 | 0.3− | 0.8+ | |
| 2002 08 13 | 704 | 0.4− | 0.7+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.4+ | 0.3− | |
| 2002 08 13 | 704 | 0.1+ | 0.6− | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.1− | |
| 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.1− | 0.3+ | |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.8− | 0.1+ | 2006 09 30 | 704 | 0.8+ | 1.4+ | |
| 2004 01 28 | 691 | 0.2− | 0.1+ | 2006 09 16 | 699 | 1.0− | 0.1+ | 2006 09 30 | 704 | 0.6+ | 0.3+ | |
| 2004 02 11 | 291 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.5− | 0.7+ | 2006 09 30 | 704 | 0.9+ | 0.1+ | |
| 2004 02 11 | 291 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.5+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.4− | |
| 2004 02 11 | 291 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2− | |
| 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.2+ | 0.3− | |
| 2004 02 12 | 691 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.6+ | 1.1− | 2006 10 20 | G96 | 0.6+ | 0.1− | |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.3− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2004 02 12 | 691 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2004 02 12 | 691 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.0 | |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.2− | |
| 2004 02 13 | 291 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.7+ | 0.1+ | |
| 2004 02 13 | 291 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.5− | |
| 2004 02 13 | 291 | 0.9+ | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.5− | |
| 2004 02 14 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.2− | 0.2− | |
| 2004 02 14 | 691 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.9− | 0.3+ | 2006 11 11 | 703 | 1.1+ | 1.4− | |
| 2004 02 14 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.7− | |
| 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.6− | 2006 11 11 | 703 | (1.3+ | 3.7+) | |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.3− | |
| 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.2− | |
| 2006 08 25 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 704 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.4− | |
| 2006 08 25 | 704 | (1.5− | 0.4−) | 2006 09 20 | 704 | 0.6+ | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.2− | |
| 2006 08 25 | 704 | 1.4− | 0.2+ | 2006 09 25 | 699 | 1.0− | 0.1+ | | | | | |
| 2006 08 25 | 704 | 1.1− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.2+ | | | | | |

**(144207)∗ 2004 $CT_9$ = 1995 $ER_6$ = 2002 $UT_{25}$**

Discovered 2004 Feb. 11 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61885)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.24015 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21022780 | $\omega$ | 132.55301 | | −0.51773416 | −0.85534566 | |
| $a$ | 2.8011903 | $\Omega$ | 348.58552 | | +0.75534419 | −0.44694626 | |
| $e$ | 0.0149747 | $i$ | 5.30771 | | +0.40175427 | −0.26195963 | |
| $P$ | 4.69 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.3− | 0.2+ | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.1+ | |
| 1995 03 02 | 691 | 0.2− | 0.4+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.1− | |
| 1995 03 02 | 691 | 0.3− | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.8+ | 0.7+ | |
| 1995 03 09 | 691 | 0.4+ | 0.0 | 2004 02 12 | 691 | 0.1− | 0.0 | 2004 03 17 | 645 | 0.1− | 0.0 | |
| 1995 03 09 | 691 | 0.8+ | 0.1− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2004 03 17 | 645 | 0.1− | 0.1− | |
| 1995 03 09 | 691 | 0.0 | 0.3− | 2004 02 12 | 691 | 0.2− | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 | |
| 2002 10 30 | 608 | 0.2− | 0.9− | 2004 02 13 | 699 | 0.9+ | 0.3+ | 2004 04 15 | 645 | 0.0 | 0.1+ | |
| 2002 10 30 | 608 | 0.0 | 1.1− | 2004 02 13 | 699 | 0.1− | 0.0 | 2004 04 16 | 645 | 0.1− | 0.0 | |
| 2002 10 30 | 608 | 0.2− | 0.9− | 2004 02 13 | 699 | 0.3+ | 0.9− | 2004 04 16 | 645 | 0.1− | 0.1− | |
| 2002 10 31 | 644 | 0.1+ | 0.7+ | 2004 02 13 | 699 | 0.1+ | 0.6+ | 2006 08 20 | 644 | 0.0 | 0.3+ | |
| 2002 10 31 | 644 | 0.2+ | 0.7+ | 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.3+ | |
| 2002 10 31 | 644 | 0.2+ | 0.8+ | 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 08 20 | 644 | 0.1− | 0.1− | |
| 2004 01 16 | 644 | 0.3+ | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.0 | 0.6+ | |
| 2004 01 16 | 644 | 0.5+ | 0.4+ | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.8+ | |
| 2004 01 16 | 644 | 0.4+ | 0.0 | 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.6− | 0.2+ | |
| 2004 01 22 | 704 | 0.0 | 0.1− | 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.7+ | |
| 2004 01 22 | 704 | 0.4− | 0.1+ | 2004 02 15 | 704 | 0.0 | 0.8+ | 2006 08 28 | 703 | 0.8− | 0.9− | |
| 2004 01 22 | 704 | 0.5+ | 0.2− | 2004 02 15 | 704 | (0.6+ | 1.8+) | 2006 08 28 | 703 | 0.1+ | 1.2+ | |
| 2004 01 22 | 704 | 0.1+ | 0.4− | 2004 02 15 | 704 | 0.8+ | 0.9+ | 2006 08 28 | 703 | (0.0 | 4.6+) | |
| 2004 01 22 | 704 | 0.3− | 0.1+ | 2004 02 15 | 704 | 0.3− | 0.3+ | 2006 10 22 | G96 | 1.5− | 0.0 | |
| 2004 02 11 | 691 | 0.2+ | 0.2+ | 2004 02 17 | 644 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.7+ | 0.1− | |
| 2004 02 11 | 691 | 0.2+ | 0.1+ | 2004 02 17 | 644 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.0 | |
| 2004 02 11 | 691 | 0.1+ | 0.0 | 2004 02 17 | 644 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.6+ | 0.2+ | |

**(144208)∗ 2004 $CS_{10}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.44633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18121225 | $\omega$ | 208.73582 | | −0.96790111 | −0.18118370 | |
| $a$ | 3.0927466 | $\Omega$ | 319.60474 | | +0.24918053 | −0.78225813 | |
| $e$ | 0.0539091 | $i$ | 15.59157 | | −0.03281006 | −0.59602406 | |
| $P$ | 5.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.4− | 0.6− | 2004 02 12 | 333 | 0.3+ | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.8+ | |
| 1993 01 26 | 691 | 0.2− | 0.2+ | 2004 02 14 | 608 | 0.2+ | 0.6− | 2004 03 16 | 704 | 0.8− | 0.3− | |
| 1993 01 26 | 691 | 0.1+ | 0.5− | 2004 02 14 | 608 | 0.5+ | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.6− | |
| 2001 08 25 | 704 | 0.1− | 0.4+ | 2004 02 14 | 608 | 0.5+ | 0.2− | 2004 03 18 | 704 | 0.5+ | 0.0 | |
| 2001 08 25 | 704 | 0.2+ | 0.2+ | 2004 02 14 | 106 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.4− | 0.3+ | |
| 2001 08 25 | 704 | 0.6− | 0.9+ | 2004 02 14 | 106 | 0.2+ | 0.5− | 2004 03 18 | 704 | 0.8− | 0.1+ | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2004 02 14 | 106 | 0.2− | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.7+ | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.2+ | 1.1+ | 2004 03 20 | 704 | 0.4− | 0.1− | |
| 2004 01 24 | 704 | 0.9− | 0.8+ | 2004 02 17 | 704 | 0.1+ | 0.2− | 2004 03 20 | 704 | 0.3+ | 0.9− | |
| 2004 01 24 | 704 | 0.8+ | 0.8+ | 2004 02 17 | 704 | 0.0 | 0.1+ | 2004 03 20 | 704 | (0.6+ | 1.9−) | |
| 2004 01 24 | 704 | 0.7− | 0.9+ | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 08 20 | 644 | 0.1+ | 0.6+ | |
| 2004 01 24 | 704 | 0.7+ | 0.7+ | 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.1+ | |
| 2004 01 24 | 704 | 0.2− | 1.0+ | 2004 02 19 | 608 | 0.3− | 0.9− | 2006 08 20 | 644 | 0.4− | 0.9+ | |
| 2004 01 31 | 333 | 0.1+ | 0.0 | 2004 02 19 | 608 | 0.0 | 0.9− | 2006 09 26 | G96 | 0.0 | 0.4+ | |
| 2004 01 31 | 333 | 0.2+ | 1.5− | 2004 02 19 | 608 | 0.7− | 0.9− | 2006 09 26 | G96 | 0.4− | 0.1+ | |
| 2004 02 11 | 644 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.7+ | 0.6+ | 2006 09 26 | G96 | 0.4− | 0.3+ | |
| 2004 02 11 | 644 | 0.1− | 0.6+ | 2004 02 26 | 704 | (1.6+ | 1.2+) | 2006 09 26 | G96 | 0.4− | 0.3+ | |
| 2004 02 11 | 644 | 0.4+ | 0.4+ | 2004 02 26 | 704 | 1.5+ | 1.1− | 2006 10 19 | G96 | 0.2+ | 0.6+ | |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2004 02 26 | 704 | 1.2+ | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.1+ | |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2004 03 01 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.4+ | |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2004 03 01 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.6− | 0.0 | |
| 2004 02 12 | 333 | 0.1− | 0.7− | 2004 03 01 | 691 | 0.1− | 0.2+ | | | | | |
| 2004 02 12 | 333 | 0.4− | 0.3+ | 2004 03 16 | 704 | 0.9+ | 0.5+ | | | | | |

**(144209)∗ 2004 $CB_{12}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.23769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21290005 | $\omega$ | 183.58052 | | +0.99656288 | +0.08108257 | |
| $a$ | 2.7777013 | $\Omega$ | 171.71117 | | −0.07277955 | +0.95482249 | |
| $e$ | 0.0613282 | $i$ | 6.76094 | | −0.03956723 | +0.28590144 | |
| $P$ | 4.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2006 08 15 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.7− | 0.2− | |
| 2002 11 11 | 704 | 0.5− | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.8+ | |
| 2002 11 11 | 704 | 0.1− | 0.8+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.4+ | |
| 2002 11 11 | 704 | 0.2+ | 1.0+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2− | |
| 2004 02 11 | 644 | 0.1− | 0.5+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.5− | 0.1− | |
| 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1− | |
| 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.1− | |
| 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.6+ | 2006 10 16 | G96 | 0.0 | 0.1+ | |
| 2004 02 12 | 691 | 0.1+ | 0.5+ | 2006 08 25 | 704 | 1.3− | 0.5− | 2006 10 16 | G96 | 0.1+ | 0.1+ | |
| 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 08 25 | 704 | (2.2− | 0.2+) | 2006 10 16 | G96 | 0.2+ | 0.1− | |
| 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 08 25 | 704 | (2.6− | 0.6+) | 2006 10 19 | 695 | 0.1− | 0.3+ | |
| 2004 02 29 | 691 | 0.1− | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 10 19 | 695 | 0.1− | 0.3+ | |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 10 19 | 695 | 0.0 | 0.3+ | |
| 2004 03 18 | 704 | (3.7+ | 0.5+) | 2006 08 27 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 695 | 0.1− | 0.3+ | |
| 2004 03 18 | 704 | 0.8+ | 0.9+ | 2006 08 28 | 699 | 0.0 | 0.3+ | 2006 10 20 | 695 | 0.1− | 0.2+ | |
| 2004 03 18 | 704 | 0.9+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.5− | |
| 2004 03 18 | 704 | 0.2− | 0.8+ | 2006 08 28 | 699 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4− | |
| 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.4− | |
| 2005 05 20 | G96 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.1− | |
| 2005 05 20 | G96 | 0.2− | 0.1− | 2006 08 28 | 703 | 1.3− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.3− | |
| 2005 05 20 | G96 | 0.5− | 0.1+ | 2006 08 28 | 699 | 0.5+ | 1.1+ | 2006 11 17 | G96 | 0.1− | 0.4− | |
| 2005 06 09 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.7+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.3− | |
| 2005 06 09 | 691 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.2− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.1− | |
| 2005 06 09 | 691 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.6− | 0.3+ | | | | | |
| 2006 08 15 | 644 | 0.1+ | 0.3+ | 2006 09 01 | 704 | 1.3+ | 1.1+ | | | | | |

**(144210)∗ 2004 $CH_{12}$ = 2000 $EF_{165}$**

Discovered 2004 Feb. 11 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61887)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.01815 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23656598 | $\omega$ | 28.85359 | | −0.87804626 | −0.47743123 | |
| $a$ | 2.5892134 | $\Omega$ | 122.59154 | | +0.43120409 | −0.81922386 | |
| $e$ | 0.0514349 | $i$ | 2.25006 | | +0.20760007 | −0.31769749 | |
| $P$ | 4.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 31 | 691 | 0.8− | 0.9+ | 2004 02 12 | 291 | 0.3+ | 0.1− | 2004 03 19 | 704 | (2.1+ | 0.3−) | |
| 1997 07 31 | 691 | 0.6+ | 1.2+ | 2004 02 12 | 291 | 0.2+ | 0.2+ | 2004 03 19 | 704 | 0.1− | 0.8+ | |
| 1997 07 31 | 691 | 0.7− | 1.1+ | 2004 02 12 | 291 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.5+ | |
| 1998 11 22 | 691 | 0.4− | 0.2− | 2004 02 17 | 704 | 0.2− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.0 | |
| 1998 11 22 | 691 | 0.4+ | 0.1− | 2004 02 17 | 704 | 0.9+ | 0.2+ | 2004 03 19 | 704 | 0.6+ | 0.5− | |
| 1998 11 22 | 691 | 0.4− | 0.2+ | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2004 03 27 | 691 | 0.4− | 0.1+ | |
| 2000 03 03 | 704 | 0.6+ | 0.9+ | 2004 02 17 | 704 | 0.8+ | 0.4+ | 2004 03 27 | 691 | 0.4− | 0.0 | |
| 2000 03 03 | 704 | 0.2+ | 1.1+ | 2004 02 17 | 704 | 1.0+ | 0.1− | 2004 03 27 | 691 | 0.1+ | 0.0 | |
| 2000 03 03 | 704 | 0.6+ | 0.9+ | 2004 02 22 | 691 | 0.1− | 0.2+ | 2004 03 27 | 691 | 0.2− | 0.1+ | |
| 2000 03 03 | 704 | 0.6+ | 0.7+ | 2004 02 22 | 691 | 0.0 | 0.2+ | 2004 03 27 | 691 | 0.3+ | 0.1+ | |
| 2000 03 03 | 704 | 0.4+ | 1.1+ | 2004 02 22 | 691 | 0.1− | 0.1+ | 2004 03 27 | 691 | 0.1− | 0.0 | |
| 2000 03 11 | 704 | 0.3+ | 1.4− | 2004 02 23 | 704 | 0.4+ | 0.8+ | 2006 09 14 | 691 | 0.4+ | 0.1− | |
| 2000 03 11 | 704 | 0.3− | 0.7− | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | |
| 2000 03 11 | 704 | 0.3− | 0.7− | 2004 02 23 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 691 | 0.0 | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.1− | 1.1− | 2004 02 23 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2004 02 17 | 608 | 0.3+ | 0.8− | 2005 06 14 | G96 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2000 03 11 | 704 | 0.4+ | 0.6− | 2004 02 25 | 704 | 1.1− | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2004 02 17 | 608 | 0.4+ | 0.9− | 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2002 10 02 | 608 | 0.4+ | 0.2− | 2004 02 25 | 704 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2004 02 17 | 608 | 0.5+ | 0.4− | 2006 07 21 | G96 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2002 10 02 | 608 | 0.7+ | 0.1+ | 2004 02 25 | 704 | 0.4− | 0.7+ | 2006 09 25 | 691 | 0.4− | 0.0 | 2004 02 18 | 704 | 0.6+ | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.6− |
| 2002 10 02 | 608 | 0.7+ | 0.3+ | 2004 02 25 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2004 02 18 | 704 | 0.5+ | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2002 10 03 | 704 | 0.3− | 0.8+ | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2004 02 18 | 704 | (0.2− | 1.6−) | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2002 10 03 | 704 | 0.8+ | 0.4+ | 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 691 | 0.4− | 0.1− | 2004 02 18 | 704 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.2− | 0.0 |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.3− | 0.2+ | 2004 02 18 | 704 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5− | 1.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2004 02 26 | 704 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2004 02 26 | 704 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.7+ | 0.3− |
| 2002 10 11 | 704 | 0.6− | 1.4+ | 2004 02 26 | 704 | 0.1+ | 0.8+ | 2006 10 10 | 644 | 0.4− | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 10 11 | 704 | 0.5− | 0.2− | 2004 03 10 | 644 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.5+ | 2004 02 26 | 704 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | (1.3− | 1.9+) | 2004 03 10 | 644 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 0.4+ | 2004 03 10 | 644 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2004 02 26 | 704 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.6+ |
| 2002 10 31 | 608 | 0.3+ | 0.4− | 2004 03 14 | 703 | 1.0− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.7+ |
| 2002 10 31 | 608 | 0.3+ | 0.9− | 2004 03 14 | 703 | 1.1− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.5− | 1.3− |
| 2002 10 31 | 608 | 0.2+ | 0.5− | 2004 03 14 | 703 | (1.1− | 2.1−) | 2006 10 22 | G96 | 0.0 | 0.4− | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.2− | 1.6− |
| 2004 01 24 | 704 | 1.4+ | 0.8+ | 2004 03 14 | 703 | (1.7− | 0.7−) | 2006 10 22 | G96 | 0.3− | 0.2− | 2004 03 11 | 644 | 0.3+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2004 01 24 | 704 | 0.4+ | 0.5+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.3− | 2004 03 11 | 644 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2004 01 24 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | (0.2− | 1.6+) | 2006 10 22 | G96 | 0.4− | 0.4− | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2004 01 24 | 704 | 0.5+ | 0.0 | 2004 03 15 | 704 | 1.4+ | 1.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− | 2004 03 11 | 644 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2004 02 11 | 703 | 0.4− | 0.9− | 2004 03 15 | 704 | (2.1+ | 0.7+) | 2006 11 17 | G96 | 0.6− | 0.0 | 2004 03 11 | 644 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.4+ | | | | |
| 2004 02 11 | 703 | 1.4− | 0.6+ | 2004 03 19 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.3− | | | | | | | | | | | | |
| 2004 02 11 | 703 | (1.5− | 0.0 ) | 2004 03 19 | 644 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.2− | | | | | | | | | | | | |
| 2004 02 11 | 703 | 0.3− | 0.8+ | 2004 03 19 | 644 | 0.3− | 0.2+ | | | | | | | | | | | | | | | | |

**(144211)∗ 2004 CM$_{12}$ = 2002 RT$_{147}$**

Discovered 2004 Feb. 11 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61887)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.76429 | | (2000.0) | | | |
| $n$ | 0.26919789 | $\omega$ | 288.73037 | | −0.65021811 | −0.75971792 |
| $a$ | 2.3754996 | $\Omega$ | 201.83201 | | +0.70368037 | −0.59887797 |
| $e$ | 0.1302789 | $i$ | 1.03463 | | +0.28644433 | −0.25332560 |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 15 | 691 | 0.0 | 0.5+ | 2004 03 11 | 644 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2004 02 12 | 691 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.3+ |
| 1997 04 15 | 691 | 0.5+ | 0.0 | 2004 03 15 | 704 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2004 02 12 | 291 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.6− | 0.5− |
| 1997 04 15 | 691 | 0.6+ | 0.2− | 2004 03 15 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2004 02 12 | 691 | 0.2− | 0.7− | 2004 03 20 | 691 | 0.1+ | 0.1− |
| 1997 04 30 | 691 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.1− | 0.3+ | 2004 02 12 | 291 | 0.1− | 0.3+ | 2004 03 20 | 691 | 0.1− | 0.1+ |
| 1997 04 30 | 691 | 0.5− | 0.5+ | 2004 03 15 | 704 | 0.3− | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.4+ | 2004 02 12 | 291 | 0.1− | 0.3+ | 2004 03 20 | 691 | 0.0 | 0.2+ |
| 1997 04 30 | 691 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2000 01 05 | 704 | 0.4− | 0.2− | 2004 03 16 | 608 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.7− | 2006 09 15 | 691 | 0.2+ | 0.4+ |
| 2000 01 05 | 704 | 0.5+ | 0.2− | 2004 03 16 | 608 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.8+ | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2000 01 05 | 704 | 0.3+ | 0.0 | 2004 03 16 | 608 | 0.4+ | 0.4− | 2006 10 15 | 691 | 0.3+ | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.7+ | 0.2+ |
| 2000 01 05 | 704 | 0.2− | 0.3− | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.6− | 2004 02 17 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.6− |
| 2002 09 11 | 644 | 0.7− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2004 02 17 | 704 | 0.4+ | 1.1+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2002 09 11 | 644 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.6− | 0.5+ | 2004 02 17 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 699 | 0.7− | 0.5+ |
| 2002 09 11 | 644 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.5+ | 0.2− | 2004 02 26 | 704 | 0.1+ | 1.0+ | 2006 09 23 | 691 | 0.3− | 0.7+ |
| 2002 09 13 | 644 | (0.1− | 2.1+) | 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 10 19 | 691 | 0.3− | 0.1− | 2004 02 26 | 704 | 1.2− | 0.6+ | 2004 02 26 | 704 | 1.1+ | 0.6+ | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 2002 09 13 | 644 | (0.4− | 1.7+) | 2004 03 19 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.3− | 2004 02 26 | 704 | 0.3− | 0.4+ | 2006 09 23 | 691 | 1.3− | 1.4+ | | | | |
| 2002 09 13 | 644 | 0.5− | 1.4+ | 2004 03 19 | 704 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.4− | 2004 02 26 | 704 | 0.8− | 0.4− | 2006 10 19 | G96 | 0.3− | 0.1− | | | | |
| 2004 01 24 | 704 | (1.8+ | 0.4−) | 2004 03 19 | 704 | 0.4+ | 0.6− | 2006 10 23 | 691 | 0.4− | 0.3− | 2004 02 26 | 704 | (1.8− | 0.3+) | 2006 10 19 | G96 | 0.3− | 0.2− | | | | |
| 2004 01 24 | 704 | (2.0+ | 0.8−) | 2004 03 19 | 704 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.5− | 2004 03 18 | 704 | 0.7+ | 1.2+ | 2006 10 19 | G96 | 0.2− | 0.2− | | | | |
| 2004 01 24 | 704 | (2.2+ | 0.2−) | 2004 03 19 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.8+ | 2006 10 19 | G96 | 0.2− | 0.2− | | | | |
| 2004 01 24 | 704 | 0.2− | 1.1− | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− | 2004 03 18 | 704 | 0.6− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.0 | | | | |
| 2004 01 24 | 704 | 1.2+ | 0.6+ | 2004 03 20 | 704 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | | | | | | | | | | | |
| 2004 02 11 | 703 | 0.7− | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.5− | | | | | | | | | | | | |
| 2004 02 11 | 703 | 0.9+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.2+ | 0.1− | | | | | | | | | | | | |
| 2004 02 11 | 703 | 1.1− | 0.7− | 2004 03 25 | 704 | 1.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | | | | | | | | | | | |
| 2004 02 11 | 703 | 0.7− | 0.9− | 2004 03 25 | 704 | 0.3+ | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | | | | | | | | | | | | |
| 2004 02 12 | 291 | 0.2− | 0.3+ | 2004 03 25 | 704 | 0.9+ | 1.2+ | 2006 10 29 | 691 | 0.0 | 0.3+ | | | | | | | | | | | | |
| 2004 02 12 | 291 | 0.7− | 0.2+ | 2004 03 26 | 691 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.3+ | | | | | | | | | | | | |
| 2004 02 12 | 291 | 0.9− | 0.2+ | 2004 03 26 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ | | | | | | | | | | | | |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.3+ | | | | | | | | | | | | |
| 2004 02 17 | 691 | 0.2− | 0.1− | 2005 06 14 | G96 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.7+ | | | | | | | | | | | | |
| 2004 02 17 | 691 | 0.1− | 0.2− | 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.5+ | | | | | | | | | | | | |

**(144212)∗ 2004 CS$_{13}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.65693 | | (2000.0) | | | |
| $n$ | 0.21983785 | $\omega$ | 184.80001 | | −0.91988728 | −0.39124973 |
| $a$ | 2.7189491 | $\Omega$ | 332.11916 | | +0.36171786 | −0.81977001 |
| $e$ | 0.0596089 | $i$ | 3.31460 | | +0.15155061 | −0.41821141 |
| $P$ | 4.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 08 | 691 | 0.2+ | 0.6− | 2004 02 12 | 691 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2002 10 16 | 644 | 1.0− | 0.1+ | 2004 02 17 | 704 | 0.5+ | 0.7− | 2006 09 15 | 691 | 0.2+ | 0.4+ |
| 1993 10 08 | 691 | 0.5+ | 0.6− | 2004 02 12 | 291 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.6− | 0.5− | 2002 10 16 | 644 | 0.5− | 0.1+ | 2004 02 17 | 704 | 0.5+ | 0.8+ | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 1993 10 08 | 691 | 0.2− | 0.7− | 2004 02 12 | 691 | 0.0 | 0.0 | 2004 03 20 | 691 | 0.1+ | 0.1− | 2002 10 16 | 644 | 0.9− | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.7+ | 0.2+ |
| 1993 11 10 | 691 | 0.3+ | 0.0 | 2004 02 12 | 291 | 0.1− | 0.3+ | 2004 03 20 | 691 | 0.1− | 0.1+ | 2002 10 31 | 644 | 0.4+ | 1.1+ | 2004 02 17 | 704 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.6− |
| 1993 11 10 | 691 | 0.4+ | 0.5− | 2004 02 12 | 291 | 0.1− | 0.3+ | 2004 03 20 | 691 | 0.0 | 0.2+ | 2002 10 31 | 644 | 0.1+ | 0.9+ | 2004 02 17 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 1993 11 10 | 691 | 0.3− | 0.3− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2+ | 2002 10 31 | 644 | 0.5+ | 0.8+ | 2004 02 26 | 704 | 0.6− | 0.9+ | 2006 09 19 | 699 | 0.7− | 0.5+ |

**(144213)∗ 2004 CD$_{14}$ = 2002 TE$_{141}$**

Discovered 2004 Feb. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61889)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 176.22545 | | (2000.0) | | | |
| $n$ | 0.17544196 | $\omega$ | 307.27230 | | −0.71593853 | −0.69816139 |
| $a$ | 3.1601939 | $\Omega$ | 188.44847 | | +0.64404407 | −0.65953006 |
| $e$ | 0.1732452 | $i$ | 0.64149 | | +0.26951671 | −0.27855122 |
| $P$ | 5.62 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 16 | 691 | 0.0 | 0.3+ | 2004 01 29 | 704 | 0.0 | 0.1+ | 2004 03 14 | 703 | 0.4+ | 0.8+ |
| 1999 04 16 | 691 | 0.1− | 0.1+ | 2004 02 11 | 699 | 0.3+ | 0.1+ | 2004 03 14 | 703 | 0.4+ | 0.3+ |
| 1999 04 16 | 691 | 0.1− | 0.5+ | 2004 02 11 | 644 | 0.2− | 0.2+ | 2004 03 14 | 703 | 0.3+ | 0.1+ |
| 2001 09 19 | 645 | 0.0 | 0.3+ | 2004 02 11 | 699 | (2.6− | 1.2+) | 2004 03 14 | 703 | 0.7− | 0.6+ |
| 2001 09 19 | 645 | 0.0 | 0.4+ | 2004 02 11 | 644 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.4+ |
| 2002 10 04 | 599 | 0.6+ | 0.1+ | 2004 02 11 | 699 | 1.3− | 0.8+ | 2004 03 15 | 704 | 0.6+ | 1.6+ |
| 2002 10 04 | 599 | 0.0 | 0.3+ | 2004 02 11 | 644 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.9+ |
| 2002 10 04 | 599 | (2.2− | 1.0−) | 2004 02 11 | 699 | 0.6− | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.4+ |
| 2002 10 05 | 291 | 0.3− | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.1− |
| 2002 10 05 | 291 | 0.4− | 0.2− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.4+ |
| 2002 10 05 | 291 | 0.4− | 0.4+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.2− |
| 2002 10 06 | 291 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.5+ | 0.6+ | 2004 03 18 | 704 | 0.3+ | 0.5+ |
| 2002 10 06 | 291 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.6+ | 0.5+ | 2004 03 18 | 704 | 0.2− | 0.3+ |
| 2002 10 06 | 291 | 0.6− | 0.4+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2004 03 27 | 691 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | 0.3− | 0.6− | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2004 03 27 | 691 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.3− | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 691 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.5+ | 1.1− | 2004 02 22 | 691 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.3− | 0.5+ |
| 2003 11 30 | 691 | 0.2+ | 0.6− | 2004 02 22 | 691 | 0.2+ | 0.1− | 2005 06 13 | G96 | 0.3− | 0.2+ |
| 2003 11 30 | 691 | 0.1+ | 0.4− | 2004 02 22 | 691 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.8− | 0.2+ |
| 2003 11 30 | 691 | 0.1+ | 0.4− | 2004 02 26 | 704 | 0.2− | 0.3+ | 2005 06 13 | G96 | 0.6− | 0.7+ |
| 2004 01 24 | 704 | 0.7+ | 0.3+ | 2004 02 26 | 704 | 1.0− | 0.4+ | 2006 07 21 | G96 | 0.1+ | 0.4+ |
| 2004 01 24 | 704 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.7+ | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.0 |
| 2004 01 24 | 704 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.1− | 1.2+ | 2006 07 21 | G96 | 0.1− | 0.1+ |
| 2004 01 24 | 704 | 0.6+ | 1.2+ | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.7− | 0.1+ |
| 2004 01 29 | 704 | 0.9+ | 1.0+ | 2004 03 10 | 644 | 0.2− | 0.2+ | 2006 08 21 | 807 | 0.1− | 0.1+ |
| 2004 01 29 | 704 | 0.2+ | 0.3+ | 2004 03 10 | 644 | 0.3− | 0.3+ | 2006 08 21 | 807 | 0.2− | 0.0 |
| 2004 01 29 | 704 | 0.6+ | 1.5− | 2004 03 10 | 644 | 0.0 | 0.2+ | | | | |

**(144214)∗ 2004 CE$_{15}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.26297 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23757780 | $\omega$ | 142.22893 | | −0.08290933 | | −0.99507616 |
| $a$ | 2.5818567 | $\Omega$ | 312.45640 | | +0.89545248 | | −0.05046970 |
| $e$ | 0.1616131 | $i$ | 4.22138 | | +0.43736815 | | −0.08530086 |
| $P$ | 4.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2004 02 14 | 691 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.9+ |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2004 02 17 | 608 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.3− | 0.6+ |
| 2002 09 19 | 644 | 0.6− | 0.6+ | 2004 02 17 | 608 | 0.6+ | 0.1− | 2004 03 18 | 704 | 0.2− | 0.5− |
| 2002 09 19 | 644 | 0.5− | 0.4+ | 2004 02 17 | 608 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.5− | 1.0+ |
| 2002 09 19 | 644 | 0.7− | 0.9+ | 2004 02 18 | 704 | 0.7+ | 0.1− | 2004 03 18 | 704 | 0.0 | 0.9+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.0 | 0.2+ | 2004 03 26 | 691 | 0.2+ | 0.1− |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2004 02 18 | 704 | 0.2+ | 0.2− | 2004 03 26 | 691 | 0.3+ | 0.3− |
| 2003 11 20 | 691 | 0.5− | 0.6+ | 2004 02 18 | 704 | 0.1− | 0.6+ | 2004 03 26 | 691 | 0.5+ | 0.2+ |
| 2003 11 20 | 691 | 0.2+ | 0.2− | 2004 02 25 | 333 | 0.5− | 0.3− | 2004 03 31 | 691 | 0.2+ | 1.1− |
| 2003 11 20 | 691 | 0.4+ | 0.1− | 2004 02 25 | 333 | 0.4− | 0.3− | 2004 03 31 | 691 | 0.2+ | 0.2+ |
| 2003 11 30 | 691 | 0.3− | 0.0 | 2004 02 25 | 333 | 0.1− | 0.4− | 2004 03 31 | 691 | 0.3+ | 0.3− |
| 2003 11 30 | 691 | 0.2− | 0.1− | 2004 02 26 | 333 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.5+ | 1.8+ |
| 2003 11 30 | 691 | 0.1− | 0.3+ | 2004 02 26 | 333 | 0.4− | 0.2− | 2006 08 27 | 691 | 0.3− | 0.3+ |
| 2004 02 11 | 644 | 0.5+ | 0.1+ | 2004 02 26 | 333 | 0.2− | 0.3− | 2006 08 27 | 691 | 0.3− | 0.4+ |
| 2004 02 11 | 644 | 0.1+ | 0.1− | 2004 03 01 | 703 | 0.3− | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.5+ |
| 2004 02 11 | 644 | 0.1− | 0.8+ | 2004 03 01 | 703 | 0.4− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.3+ |
| 2004 02 12 | 291 | 0.3+ | 0.2+ | 2004 03 01 | 703 | 0.1− | 0.1− | 2006 08 29 | 691 | 1.4− | 0.0 |
| 2004 02 12 | 291 | 0.0 | 0.4+ | 2004 03 01 | 703 | 0.3− | 0.9+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2004 02 12 | 291 | 0.3+ | 0.1+ | 2004 03 11 | 644 | 0.2− | 0.8+ | 2006 09 28 | G96 | 0.6+ | 0.0 |
| 2004 02 14 | 691 | 0.0 | 0.2+ | 2004 03 11 | 644 | 0.1+ | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.2+ |
| 2004 02 14 | 691 | 0.1− | 0.4+ | 2004 03 11 | 644 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.4− | 0.0 |

**(144215)∗ 2004 CJ$_{15}$**

Discovered 2004 Feb. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.31232 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23017613 | $\omega$ | 321.80069 | | −0.28765707 | | −0.95673875 |
| $a$ | 2.6369134 | $\Omega$ | 144.85577 | | +0.89629806 | | −0.28498183 |
| $e$ | 0.0719517 | $i$ | 4.34777 | | +0.33749547 | | −0.05862004 |
| $P$ | 4.28 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 691 | 0.3− | 0.4+ | 2004 01 24 | 704 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.8− | 0.8+ |
| 1996 03 24 | 691 | 0.4− | 0.0 | 2004 01 24 | 704 | 1.3+ | 0.0 | 2004 03 20 | 691 | 0.2+ | 0.3− |
| 1996 03 24 | 691 | 0.1− | 0.5− | 2004 01 24 | 704 | 1.4+ | 0.3+ | 2004 03 20 | 691 | 0.1− | 0.2− |
| 1996 05 19 | 691 | 0.4+ | 0.3+ | 2004 01 24 | 704 | 0.9+ | 0.1− | 2004 03 20 | 691 | 0.1+ | 0.0 |
| 1996 05 19 | 691 | 0.3+ | 0.3+ | 2004 02 11 | 291 | 0.1− | 0.1− | 2005 06 27 | G96 | 0.0 | 0.2+ |
| 1996 05 19 | 691 | 0.3+ | 0.3+ | 2004 02 11 | 291 | 0.2+ | 0.1− | 2005 06 27 | G96 | 1.0+ | 0.4+ |
| 2000 03 11 | 704 | 1.2+ | 1.2+ | 2004 02 11 | 291 | 0.3+ | 0.0 | 2005 06 27 | G96 | 0.0 | 0.5+ |
| 2000 03 11 | 704 | 0.4+ | 1.0+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2005 06 27 | G96 | 0.2− | 0.4+ |
| 2000 03 11 | 704 | 1.1− | 0.9− | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.6− | 0.2+ |
| 2002 10 09 | 012 | 0.1+ | 0.0 | 2004 02 12 | 691 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.1− |
| 2002 10 09 | 012 | 0.8+ | 0.6− | 2004 02 17 | 704 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.1− | 1.1+ |
| 2002 10 09 | 012 | 1.5+ | 0.6− | 2004 02 17 | 704 | 1.3− | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.4+ |
| 2002 10 10 | 012 | 1.3+ | 0.6− | 2004 02 17 | 704 | 0.3− | 1.3+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2004 02 17 | 704 | 0.1− | 0.7+ | 2006 11 25 | G96 | 0.2− | 0.7− |
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2004 02 17 | 704 | 0.2+ | 1.1+ | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2002 10 31 | 704 | 1.2− | 0.7+ | 2004 02 26 | 704 | 0.0 | 0.6+ | 2006 11 25 | G96 | 0.1− | 0.4+ |
| 2002 10 31 | 704 | 0.4− | 1.0+ | 2004 02 26 | 704 | (1.0− | 2.0+) | | | | |
| 2002 10 31 | 704 | 0.8+ | 1.1+ | 2004 02 26 | 704 | 1.1− | 0.7+ | | | | |

**(144216)∗ 2004 CW$_{16}$**

Discovered 2004 Feb. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.79545 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24114816 | $\omega$ | 314.10097 | | +0.67502424 | | +0.73779468 |
| $a$ | 2.5563094 | $\Omega$ | 358.35382 | | −0.66516738 | | +0.60791110 |
| $e$ | 0.1766628 | $i$ | 2.25698 | | −0.31920938 | | +0.29343330 |
| $P$ | 4.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.5+ | 0.8+ | 2004 03 18 | 691 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2000 03 03 | 704 | 0.6+ | 0.2+ | 2004 03 18 | 691 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.6− | 0.7− |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2004 03 18 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.9+ |
| 2000 03 03 | 704 | 0.6− | 1.5+ | 2005 06 23 | 644 | 0.5+ | 0.5+ | 2006 11 16 | 704 | 0.0 | 1.1+ |
| 2000 04 05 | 691 | 0.0 | 0.6− | 2005 06 23 | 644 | 0.0 | 0.8+ | 2006 11 16 | 704 | 0.2+ | 1.0+ |
| 2000 04 05 | 691 | 0.3− | 0.2− | 2005 06 23 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2000 04 05 | 691 | 0.2− | 0.6− | 2005 08 04 | 644 | 0.1− | 0.9+ | 2006 11 19 | 704 | 0.0 | 0.6− |
| 2002 11 24 | 644 | 0.4− | 1.0+ | 2005 08 04 | 644 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 11 24 | 644 | 0.1− | 0.5+ | 2005 08 04 | 644 | 0.1− | 1.1+ | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.1+ | 0.6+ | 2005 08 04 | 644 | 0.3+ | 1.2+ | 2006 11 19 | 704 | 1.1− | 0.2− |
| 2004 02 11 | 291 | 0.1− | 0.2+ | 2005 08 04 | 644 | 0.2+ | 1.1+ | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2004 02 11 | 291 | 0.3− | 0.1+ | 2005 08 04 | 644 | 0.1+ | 0.5+ | 2006 11 20 | 704 | 0.8− | 0.7+ |
| 2004 02 11 | 291 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.7− | 0.3− |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.1+ | 1.0+ |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.0 |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.8+ |
| 2004 02 22 | 691 | 0.5+ | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.8− |
| 2004 02 22 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.6− | 0.3− |
| 2004 02 22 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 24 | 703 | 0.8+ | 0.0 |
| 2004 02 23 | 704 | 0.1− | 0.9+ | 2006 11 09 | 644 | 0.2− | 0.5+ | 2006 11 24 | 703 | 0.1+ | 1.1− |
| 2004 02 23 | 704 | 0.8+ | 0.9+ | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 24 | 703 | 0.6− | 2.0− |
| 2004 02 29 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 24 | 703 | 1.1+ | 1.5− |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.3+ | | | | |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.2+ | | | | |

**(144217)∗ 2004 CD$_{18}$ = 2000 FK$_{71}$**

Discovered 2004 Feb. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61891)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.40923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21781416 | $\omega$ | 137.80455 | | −0.14681997 | +0.98833600 | |
| $a$ | 2.7357641 | $\Omega$ | 123.71448 | | −0.92003552 | −0.12142813 | |
| $e$ | 0.0385298 | $i$ | 2.78701 | | −0.36328851 | −0.09190840 | |
| $P$ | 4.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | (2.5+ | 0.7+) | 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.7+ |
| 2000 03 29 | 704 | 0.7+ | 0.4+ | 2004 01 30 | 691 | 0.1− | 0.4+ | 2006 08 18 | 691 | 0.2− | 0.3+ |
| 2000 03 29 | 704 | 1.7+ | 1.1− | 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 2000 03 29 | 704 | 0.2+ | 0.0 | 2004 02 10 | 644 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.1− | 0.5+ |
| 2000 04 05 | 699 | 0.3− | 0.5+ | 2004 02 10 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.3+ |
| 2000 04 05 | 699 | 0.3+ | 1.1+ | 2004 02 10 | 644 | 0.1+ | 0.4− | 2006 09 18 | 703 | 0.4− | 0.5− |
| 2000 04 05 | 699 | 0.6− | 0.9+ | 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.1− |
| 2000 04 05 | 699 | 0.2+ | 1.5+ | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.4− | 0.8+ |
| 2001 08 16 | 704 | 0.3− | 1.0− | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.4+ |
| 2001 08 16 | 704 | 0.6+ | 1.3− | 2004 02 17 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 1.0+ |
| 2001 08 16 | 704 | 0.5− | 0.5− | 2004 02 17 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.4− | 0.5+ |
| 2001 08 24 | 704 | 0.4+ | 0.3− | 2004 02 17 | 704 | 0.5− | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.7+ |
| 2001 08 24 | 704 | 0.0 | 1.0− | 2004 02 17 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.6− | 0.5− |
| 2001 08 24 | 704 | 0.2− | 0.2− | 2004 02 23 | 704 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.1+ |
| 2002 11 11 | 704 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.6+ | 0.4− | 2006 09 19 | 703 | 0.8+ | 0.4+ |
| 2002 11 11 | 704 | 0.5− | 0.2− | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2004 03 19 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 703 | (0.2+ | 1.7−) |
| 2002 11 22 | 644 | 0.2− | 0.3− | 2004 03 19 | 644 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 1.2− | 1.1+ |
| 2002 11 22 | 644 | 0.0 | 0.6− | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 1.2− | 0.6+ |
| 2002 11 22 | 644 | 0.2− | 0.6− | 2005 05 22 | 644 | 0.2+ | 0.7+ | 2006 09 26 | 704 | 0.9− | 0.6− |
| 2002 12 01 | 704 | 0.6+ | 0.7− | 2005 05 22 | 644 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 1.1+ | 0.0 |
| 2002 12 01 | 704 | 0.0 | 0.6+ | 2005 05 22 | 644 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.8− | 0.5− |
| 2002 12 01 | 704 | 0.3+ | 0.8+ | 2005 06 23 | 644 | 0.2+ | 0.8+ | 2006 10 16 | 703 | 0.6+ | 0.6+ |
| 2002 12 10 | 644 | 0.2+ | 0.4+ | 2005 06 23 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2005 06 23 | 644 | 0.4− | 1.1+ | | | | |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 08 18 | 691 | 0.0 | 0.4+ | | | | |

**(144218)∗ 2004 CF$_{18}$ = 2002 TQ$_{211}$**
Discovered 2004 Feb. 10 by NEAT at Palomar.
Id. G. V. Williams (*MPO* 61892)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.40414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23389244 | $\omega$ | 271.77952 | | +0.70557974 | −0.67948197 | |
| $a$ | 2.6089070 | $\Omega$ | 131.08999 | | +0.70844094 | +0.66980975 | |
| $e$ | 0.0402406 | $i$ | 15.47939 | | +0.01639126 | +0.29943138 | |
| $P$ | 4.21 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.4+ | 2.0+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2005 07 09 | 691 | 0.1− | 0.3+ |
| 2000 03 05 | 704 | 0.3− | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.3+ |
| 2000 03 05 | 704 | 0.0 | 1.0+ | 2004 02 16 | 704 | 0.2+ | 0.7− | 2005 07 09 | 691 | 0.1+ | 0.2+ |
| 2000 03 05 | 704 | 0.6− | 0.1− | 2004 02 16 | 704 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.4+ |
| 2000 03 05 | 704 | 1.1− | 0.5+ | 2004 02 16 | 704 | 0.9+ | 0.2− | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2002 10 05 | 704 | 0.3+ | 0.3− | 2004 02 16 | 704 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 2002 10 05 | 704 | 0.7+ | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.7− | 2006 09 17 | 699 | 0.6− | 0.9+ |
| 2002 10 05 | 704 | 0.5+ | 0.7− | 2004 03 20 | 704 | 0.2+ | 1.2+ | 2006 09 17 | 699 | (1.9− | 0.8+) |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 09 17 | 699 | 0.6− | 0.2+ |
| 2002 10 08 | 608 | 0.0 | 1.4+ | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2006 09 17 | 699 | (2.1− | 1.9+) |
| 2002 10 08 | 608 | 0.5− | 1.4+ | 2005 05 09 | 703 | 0.6− | 0.7+ | 2006 09 20 | 703 | 0.6− | 0.9+ |
| 2002 10 08 | 608 | (0.4+ | 1.7+) | 2005 05 09 | 703 | 0.0 | 0.7+ | 2006 09 20 | 703 | 0.9− | 0.3+ |
| 2002 10 28 | 704 | 0.1− | 1.4+ | 2005 05 09 | 703 | 0.5+ | 0.9− | 2006 09 20 | 703 | 0.7− | 0.1+ |
| 2002 10 28 | 704 | (1.0+ | 2.6+) | 2005 05 09 | 703 | 0.4+ | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.3+ |
| 2002 10 28 | 704 | 0.1+ | 0.6+ | 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.2+ |
| 2002 10 28 | 704 | (0.0 | 2.1+) | 2005 05 15 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2004 01 30 | 691 | 0.2− | 0.1+ | 2005 05 15 | 644 | 0.2+ | 0.2− | 2006 09 26 | 703 | 1.2− | 0.2− |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2005 06 24 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.7− |
| 2004 01 30 | 691 | 0.3− | 0.0 | 2005 06 24 | 644 | 0.1+ | 0.0 | 2006 10 12 | E12 | 0.5+ | 0.5+ |
| 2004 02 10 | 644 | 0.1+ | 0.2+ | 2005 06 24 | 644 | 0.4+ | 0.4+ | 2006 10 12 | E12 | 0.2+ | 1.1+ |
| 2004 02 10 | 644 | 0.1+ | 0.3+ | 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 10 12 | E12 | 0.3+ | 0.1+ |
| 2004 02 10 | 644 | 0.4+ | 0.1+ | 2005 06 30 | 644 | 0.3+ | 0.3+ | 2006 10 12 | E12 | 0.9+ | 0.6+ |
| 2004 02 13 | 691 | 0.2+ | 0.4+ | 2005 06 30 | 644 | 0.3+ | 0.0 | | | | |

**(144219)∗ 2004 CS$_{22}$ = 2001 HD$_{8}$**
Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.
Id. G. V. Williams (*MPO* 61894)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.23416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29849138 | $\omega$ | 72.91905 | | −0.37144683 | −0.92812897 | |
| $a$ | 2.2174212 | $\Omega$ | 38.91419 | | +0.83627403 | −0.34594873 | |
| $e$ | 0.1013916 | $i$ | 2.24201 | | +0.40332742 | −0.13746309 | |
| $P$ | 3.30 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | (2.5− | 0.6−) | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2001 03 19 | 699 | 0.5− | 0.1− | 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2001 03 19 | 699 | 0.7− | 0.6− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.6− |
| 2001 03 19 | 699 | (0.5− | 1.6+) | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2001 04 18 | 691 | 0.4+ | 0.4+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 28 | 291 | 0.4− | 0.1+ |
| 2001 04 18 | 691 | 0.3+ | 0.1+ | 2004 02 13 | 699 | 0.3− | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2001 04 18 | 691 | 0.1+ | 0.2+ | 2004 02 13 | 699 | 0.2+ | 0.3− | 2006 09 28 | 291 | 0.1− | 0.3+ |
| 2001 04 23 | 691 | 0.2+ | 0.8+ | 2004 02 13 | 699 | 0.9− | 0.6+ | 2006 09 28 | 291 | 0.4− | 0.2+ |
| 2001 04 23 | 691 | 0.2+ | 0.4+ | 2004 02 13 | 699 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− |
| 2001 04 23 | 691 | 0.3+ | 0.4+ | 2004 02 13 | 691 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2002 08 16 | 644 | 0.4− | 0.7+ | 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2002 08 16 | 644 | 0.3− | 0.2+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.3− |
| 2002 08 16 | 644 | 0.1− | 0.5+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2004 01 22 | 704 | 0.5+ | 0.9+ | 2004 02 13 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.2+ |
| 2004 01 22 | 704 | 1.1+ | 0.3+ | 2004 02 13 | 691 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | (2.1− | 0.0 ) | 2004 02 14 | 691 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.3+ |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.8+ | 0.6− |
| 2004 01 22 | 704 | 0.4+ | 0.1+ | 2004 02 14 | 691 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2004 01 26 | 699 | 0.1+ | 1.3+ | 2004 02 15 | 704 | 0.3+ | 0.4− | 2006 11 15 | 703 | 0.5− | 0.5+ |
| 2004 01 26 | 699 | 0.8− | 0.1− | 2004 02 15 | 704 | 0.4− | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2004 01 26 | 699 | 0.3+ | 0.8− | 2004 02 15 | 704 | 0.1− | 0.6− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2004 01 26 | 699 | (2.3− | 0.3−) | 2004 02 15 | 704 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2004 01 30 | 704 | 1.0+ | 0.2− | 2004 02 23 | 704 | 0.5− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2004 01 30 | 704 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.4− |
| 2004 01 30 | 704 | 0.3+ | 0.3+ | 2004 02 23 | 704 | 0.7− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 1.5+ |
| 2004 01 30 | 704 | 0.8− | 0.2− | 2004 03 18 | 645 | 0.2− | 0.1− | 2006 11 21 | 704 | 1.2+ | 0.7− |
| 2004 02 12 | 691 | 0.1+ | 0.1− | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.4− |
| 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.6− | 0.3− | 2006 11 22 | 691 | 0.0 | 0.2+ |

**(144220)∗ 2004 CX$_{22}$**
Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.43819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26934660 | $\omega$ | 52.07425 | | +0.83399010 | −0.55056893 | |
| $a$ | 2.3746251 | $\Omega$ | 341.24403 | | +0.46387999 | +0.73544466 | |
| $e$ | 0.1057020 | $i$ | 6.52330 | | +0.29879069 | +0.39496202 | |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.5− | 0.3− | 2004 01 17 | 644 | 0.3+ | 0.4+ | 2004 02 15 | 704 | 0.1+ | 0.1+ |
| 1999 12 12 | 704 | 0.4+ | 0.4− | 2004 01 30 | 704 | 0.7+ | 0.2+ | 2004 02 15 | 704 | 0.1+ | 0.1− |
| 1999 12 12 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 704 | 0.5− | 0.5+ | 2004 02 15 | 704 | 0.6+ | 0.5+ |
| 2002 08 12 | 699 | (1.6+ | 0.7−) | 2004 01 30 | 704 | (1.1+ | 1.6−) | 2004 02 15 | 704 | 0.5+ | 0.1− |
| 2002 08 12 | 699 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.1+ | 0.6+ | 2004 02 15 | 704 | 0.2− | 0.3+ |
| 2002 08 12 | 699 | (2.5− | 0.4+) | 2004 02 10 | 703 | (1.6− | 1.4−) | 2004 02 23 | 704 | 0.0 | 0.1+ |
| 2002 08 12 | 699 | 0.4− | 0.4+ | 2004 02 10 | 703 | 0.6− | 0.7+ | 2004 02 23 | 704 | 0.4+ | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.6+ | 0.5− | 2004 02 10 | 703 | 0.7− | 0.5+ | 2004 02 23 | 704 | 0.5− | 0.1+ | | |
| 2002 08 14 | 704 | 0.1+ | 1.0− | 2004 02 10 | 703 | 1.0− | 1.2+ | 2004 02 23 | 704 | 0.2+ | 0.4+ | | |
| 2002 08 14 | 704 | 0.1− | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.0 | 1.0+ | | |
| 2002 08 14 | 704 | 0.8+ | 0.9+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2004 03 18 | 645 | 0.1− | 0.1− | | |
| 2002 08 29 | 644 | 0.5− | 0.8+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2004 03 18 | 645 | 0.0 | 0.1− | | |
| 2002 08 29 | 644 | 0.7− | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.1− | 0.8+ | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.9− | 0.0 | 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.3− | 0.2− | 2004 02 13 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 1.2− | | |
| 2002 09 05 | 704 | 0.3− | 0.5+ | 2004 02 13 | 699 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.9+ | 0.5− | | |
| 2002 09 05 | 704 | (0.6− | 2.4+) | 2004 02 13 | 699 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.1+ | 1.4− | | |
| 2002 09 05 | 704 | 0.4− | 1.0+ | 2004 02 13 | 699 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.5− | | |
| 2002 09 05 | 704 | (0.3− | 2.0+) | 2004 02 13 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.4− | | |
| 2002 09 15 | 644 | 0.6− | 1.0+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8− | 0.8− | | |
| 2002 09 15 | 644 | 0.6− | 1.2+ | 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.0 | | |
| 2002 09 15 | 644 | 0.1+ | 1.3+ | 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.3− | | |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.1− | | | | | | |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.0 | | | | | | |

**(144221)∗ 2004 CS$_{26}$ = 1997 HV$_{17}$**

Discovered 2004 Feb. 11 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61896)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 240.99752 | | | | | |
| $n$ | 0.26800204 | $\omega$ | 161.99650 | | −0.97554212 | −0.21981100 |
| $a$ | 2.3825608 | $\Omega$ | 5.30578 | | +0.20054465 | −0.89158277 |
| $e$ | 0.1312058 | $i$ | 0.51876 | | +0.08999676 | −0.39593344 |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 30 | 704 | 0.7− | 0.0 | 2004 02 11 | 703 | 0.5+ | 0.5+ | 2004 03 27 | 691 | 0.2+ | 0.1− | | |
| 1997 04 30 | 704 | 0.4− | 0.5+ | 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 03 27 | 691 | 0.2+ | 0.1+ | | |
| 1997 04 30 | 704 | 1.5− | 0.3+ | 2004 02 11 | 644 | 0.4+ | 0.3+ | 2005 07 05 | 691 | 0.2− | 0.5+ | | |
| 1997 04 30 | 704 | (2.6− | 0.8+) | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2005 07 05 | 691 | 0.2− | 0.9+ | | |
| 1997 05 01 | 704 | 1.1+ | 0.6+ | 2004 02 14 | 691 | 0.1− | 0.1− | 2005 07 05 | 691 | 0.3− | 0.7+ | | |
| 1997 05 01 | 704 | 0.4− | 0.8+ | 2004 02 14 | 691 | 0.1− | 0.1+ | 2005 07 12 | G96 | 0.8+ | 0.1+ | | |
| 1997 05 01 | 704 | 1.1+ | 0.9− | 2004 02 14 | 691 | 0.2− | 0.1+ | 2005 07 12 | G96 | 0.3+ | 0.0 | | |
| 1997 05 01 | 704 | 0.1+ | 0.4+ | 2004 02 17 | 704 | (2.5− | 1.2+) | 2005 07 12 | G96 | 0.3+ | 0.1+ | | |
| 1997 05 01 | 704 | 0.9+ | 0.0 | 2004 02 17 | 704 | 0.5+ | 0.6+ | 2005 07 12 | G96 | 0.3+ | 0.1+ | | |
| 1997 05 01 | 704 | 1.3+ | 0.7− | 2004 02 17 | 704 | 1.0− | 0.4+ | 2005 07 16 | 691 | 0.0 | 0.0 | | |
| 1997 05 01 | 704 | 1.3+ | 1.5− | 2004 02 17 | 704 | 0.0 | 0.1+ | 2005 07 16 | 691 | 0.4− | 0.1− | | |
| 1997 05 01 | 704 | 0.0 | 0.5+ | 2004 03 14 | 703 | 0.3+ | 1.1+ | 2005 07 16 | 691 | 0.0 | 0.2+ | | |
| 1997 05 01 | 704 | 1.8− | 0.1+ | 2004 03 14 | 703 | 1.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 | | |
| 1997 05 01 | 704 | 1.0− | 0.3− | 2004 03 14 | 703 | (1.9− | 0.4−) | 2006 10 16 | 691 | 0.2− | 0.7+ | | |
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2004 03 14 | 703 | 0.5+ | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.1− | | |
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2004 01 24 | 704 | 0.8+ | 0.5+ | 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.5− | 0.0 | | |
| 2004 01 24 | 704 | 0.8+ | 0.4+ | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1− | 0.3+ | | |
| 2004 01 24 | 704 | 0.4− | 1.2+ | 2004 03 18 | 704 | (0.5− | 1.9+) | 2006 11 08 | 644 | 0.0 | 0.3+ | | |
| 2004 02 11 | 703 | (2.0+ | 1.2+) | 2004 03 18 | 704 | 0.8− | 0.4+ | 2006 11 08 | 644 | 0.4+ | 0.0 | | |
| 2004 02 11 | 703 | (1.8+ | 1.1+) | 2004 03 18 | 704 | 0.3− | 0.6+ | 2006 11 08 | 644 | 0.9+ | 0.0 | | |
| 2004 02 11 | 703 | 1.2+ | 0.2− | 2004 03 27 | 691 | 0.0 | 0.1− | | | | | | |

**(144222)∗ 2004 CA$_{27}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 191.10758 | | | | | |
| $n$ | 0.27530345 | $\omega$ | 67.17934 | | −0.51835954 | +0.85509719 |
| $a$ | 2.3402465 | $\Omega$ | 171.57471 | | −0.80871611 | −0.48614168 |
| $e$ | 0.1492911 | $i$ | 4.14561 | | −0.27799576 | −0.18020841 |
| $P$ | 3.58 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.6− | 0.2+ | 2004 02 14 | 691 | 0.3+ | 0.0 | 2005 08 29 | 691 | 0.1+ | 0.5+ | | |
| 1995 11 30 | 691 | 0.6− | 0.0 | 2004 02 17 | 608 | 0.2+ | 0.5+ | 2005 08 29 | 691 | 0.1− | 0.4+ | | |
| 1995 11 30 | 691 | 0.6− | 0.5− | 2004 02 17 | 608 | 0.0 | 0.6+ | 2005 09 22 | 644 | 0.4− | 0.5+ | | |
| 1997 03 02 | 691 | 0.1+ | 0.6− | 2004 02 17 | 608 | 0.6+ | 0.2+ | 2005 09 22 | 644 | 0.0 | 0.5+ | | |
| 1997 03 02 | 691 | 0.1− | 0.8− | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2005 09 22 | 644 | 0.2− | 0.4+ | | |
| 1997 03 02 | 691 | 0.1− | 0.0 | 2004 03 17 | 691 | 0.2− | 0.2+ | 2005 09 29 | G96 | 0.5+ | 0.1+ | | |
| 1998 09 25 | 645 | 0.2+ | 0.0 | 2004 03 17 | 691 | 0.0 | 0.2+ | 2005 09 29 | G96 | 0.1+ | 0.4+ | | |
| 1998 09 25 | 645 | 0.2+ | 0.1+ | 2004 03 27 | 691 | 0.4+ | 0.3+ | 2005 09 29 | G96 | 0.2+ | 0.2+ | | |
| 1998 10 14 | 910 | 0.4+ | 0.7− | 2004 03 27 | 691 | 0.2+ | 0.3+ | 2005 09 29 | G96 | 0.2+ | 0.1+ | | |
| 1998 10 14 | 910 | 0.4− | 0.2− | 2004 03 27 | 691 | 0.4+ | 1.3+ | 2005 10 29 | G96 | 0.1+ | 0.0 | | |
| 1998 10 14 | 910 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2005 10 29 | G96 | 0.2− | 0.1− | | |
| 2003 12 22 | 291 | 0.5− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.6+ | 2005 10 29 | G96 | 0.2+ | 0.1+ | | |
| 2003 12 22 | 291 | 0.7− | 0.4+ | 2004 03 27 | 704 | 0.1− | 0.5+ | 2005 10 29 | G96 | 0.1− | 0.5+ | | |
| 2003 12 22 | 291 | 0.6− | 0.4+ | 2005 07 05 | 291 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.4+ | 0.1+ | | |
| 2004 02 11 | 703 | (0.8− | 2.8+) | 2005 07 05 | 291 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.3+ | 0.3+ | | |
| 2004 02 11 | 703 | 1.4− | 1.1+ | 2005 07 05 | 291 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2004 02 11 | 703 | 0.3− | 0.9+ | 2005 07 12 | 291 | 1.1− | 0.5+ | 2006 11 24 | 691 | 0.4+ | 0.2+ | | |
| 2004 02 11 | 703 | 0.5+ | 1.0− | 2005 07 12 | 291 | 0.9− | 0.2+ | 2006 11 24 | 691 | 0.4+ | 0.3+ | | |
| 2004 02 11 | 644 | 0.2+ | 0.4+ | 2005 07 12 | 291 | 0.5− | 0.4+ | 2006 11 24 | 691 | 0.2+ | 0.3+ | | |
| 2004 02 11 | 644 | 0.2+ | 0.5+ | 2005 07 30 | 644 | 0.7− | 0.5+ | 2006 11 28 | 691 | 0.7− | 1.4− | | |
| 2004 02 11 | 644 | 0.6+ | 0.4+ | 2005 07 30 | 644 | 0.0 | 0.0 | 2006 11 28 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 14 | 691 | 0.3+ | 0.0 | 2005 07 30 | 644 | 0.2− | 0.4+ | 2006 11 28 | 691 | 0.3+ | 0.1− | | |
| 2004 02 14 | 691 | 0.1+ | 0.1+ | 2005 08 29 | 691 | 0.0 | 0.4+ | | | | | | |

**(144223)∗ 2004 CH$_{33}$ = 2005 JG$_{24}$**

Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76411)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.67747 | | | | | |
| $n$ | 0.21063679 | $\omega$ | 179.60987 | | +0.18788894 | +0.98051493 |
| $a$ | 2.7975631 | $\Omega$ | 101.21907 | | −0.90130023 | +0.19532253 |
| $e$ | 0.0611335 | $i$ | 3.35143 | | −0.39032762 | +0.02096617 |
| $P$ | 4.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 699 | 0.1− | 0.9+ | 2004 02 14 | 691 | 0.1+ | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.6+ | | |
| 2000 04 02 | 699 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.9− | 0.2− | 2006 08 17 | 644 | 0.4+ | 0.7+ | | |
| 2000 04 02 | 699 | 1.3+ | 0.3− | 2004 02 23 | 704 | 0.1− | 1.5+ | 2006 08 17 | 644 | 0.4+ | 0.2+ | | |
| 2000 04 02 | 699 | 0.5− | 0.6+ | 2004 02 23 | 704 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.7− | 0.3+ | | |
| 2000 05 05 | 645 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.7+ | 2006 08 18 | 644 | 0.4+ | 0.3+ | | |
| 2000 05 05 | 645 | 0.1+ | 0.2− | 2004 04 15 | 645 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.5+ | | |
| 2001 05 26 | 291 | 0.6− | 0.2+ | 2004 04 15 | 645 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.5+ | | |
| 2001 05 26 | 291 | 0.8− | 0.1+ | 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.6+ | | |
| 2001 05 26 | 291 | 0.9− | 0.1− | 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.3− | 0.3+ | | |
| 2002 10 08 | 291 | 0.2+ | 0.4+ | 2005 05 03 | 691 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.2+ | | |
| 2002 10 08 | 291 | 0.3+ | 0.3+ | 2005 05 09 | 699 | 0.1− | 0.1+ | 2006 08 28 | 699 | (0.2+ | 2.7+) | | |
| 2002 10 08 | 291 | 0.0 | 0.2+ | 2005 05 09 | 699 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.2+ | 0.6+ | | |
| 2002 10 31 | 644 | 0.5+ | 1.1+ | 2005 05 09 | 699 | 1.2− | 1.4+ | 2006 08 28 | 699 | 0.2− | 1.1+ | | |
| 2002 10 31 | 644 | 0.1− | 0.9+ | 2005 05 09 | 699 | 1.4+ | 0.4+ | 2006 08 28 | 699 | 1.9+ | 0.5+ | | |
| 2002 10 31 | 644 | 0.2+ | 0.9+ | 2005 05 13 | 691 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.1+ | | |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2005 05 13 | 691 | 0.5+ | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.5+ | | |
| 2004 01 28 | 691 | 0.0 | 0.3+ | 2005 05 13 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.7+ | | |
| 2004 01 28 | 691 | 0.0 | 0.5+ | 2005 05 14 | G96 | 0.4− | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.0 | | |
| 2004 02 12 | 291 | 0.3− | 0.4+ | 2005 05 14 | G96 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.0 | | |
| 2004 02 12 | 291 | 0.0 | 0.5+ | 2005 05 14 | G96 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.2+ | | |
| 2004 02 12 | 291 | 0.1+ | 0.5+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.4+ | | |
| 2004 02 14 | 691 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.0 | | | | | | |
| 2004 02 14 | 691 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.5+ | | | | | | |

**(144224)∗ 2004 CQ$_{35}$**

Discovered 2004 Feb. 11 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 249.85426 | | | | | |
| $n$ | 0.23585850 | $\omega$ | 135.69427 | | −0.51057695 | −0.85736736 |
| $a$ | 2.5943886 | $\Omega$ | 344.63131 | | +0.70483503 | −0.37400348 |
| $e$ | 0.1326302 | $i$ | 14.20962 | | +0.49246194 | −0.35361364 |
| $P$ | 4.18 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 599 | 0.4− | 0.4− | 2004 02 18 | 608 | 1.3+ | 0.9− | 2004 03 31 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 599 | 0.3− | 0.0 | 2004 02 18 | 608 | 1.1+ | 0.6− | 2005 02 09 | 809 | 0.3+ | 0.5+ |
| 2002 10 04 | 644 | 0.5− | 0.2− | 2004 02 18 | 608 | 1.1+ | 0.2+ | 2005 02 09 | 809 | 0.3+ | 0.5+ |
| 2002 10 04 | 644 | 0.4− | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.1− | 2005 02 09 | 809 | 0.3+ | 0.4+ |
| 2002 10 04 | 644 | 0.7− | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.2− |
| 2002 10 09 | 704 | 0.8+ | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.4− |
| 2002 10 09 | 704 | 0.7+ | 0.2+ | 2004 02 23 | 704 | 0.5+ | 0.3− | 2006 07 21 | G96 | 0.2− | 0.5− |
| 2002 10 09 | 704 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.3+ | 2006 07 21 | G96 | 0.5− | 0.1− |
| 2003 12 23 | 704 | 0.5− | 0.1+ | 2004 02 25 | 704 | 1.0− | 0.5+ | 2006 08 27 | 699 | 0.1+ | 0.1+ |
| 2003 12 23 | 704 | 1.2+ | 0.3− | 2004 02 25 | 704 | 0.6− | 0.5+ | 2006 08 27 | 699 | (1.9− | 0.5−) |
| 2003 12 23 | 704 | (1.6+ | 0.2+) | 2004 02 25 | 704 | 0.9− | 0.8+ | 2006 08 27 | 699 | 0.4+ | 1.5+ |
| 2003 12 23 | 704 | 0.5+ | 0.1+ | 2004 02 25 | 704 | 0.5− | 0.9+ | 2006 08 27 | 699 | 0.1− | 0.4+ |
| 2003 12 25 | 645 | 0.2− | 0.1− | 2004 02 25 | 704 | 0.5− | 0.3+ | 2006 09 16 | 699 | 0.9+ | 1.0+ |
| 2003 12 25 | 645 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.2− | 0.5+ | 2006 09 16 | 699 | 0.0 | 0.1+ |
| 2003 12 28 | 704 | 0.1+ | 0.4− | 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 699 | 0.2− | 0.4− |
| 2003 12 28 | 704 | 0.1− | 1.2+ | 2004 02 26 | 704 | 0.7− | 1.1+ | 2006 09 16 | 699 | (1.9− | 0.3−) |
| 2003 12 28 | 704 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.7+ | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.3+ |
| 2004 01 23 | 704 | 0.4+ | 0.6− | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 09 19 | 699 | 1.0+ | 0.6+ |
| 2004 01 23 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 2004 01 23 | 704 | 0.7− | 0.6+ | 2004 03 18 | 704 | 0.3− | 1.4+ | 2006 09 19 | 703 | 1.1− | 0.2+ |
| 2004 01 23 | 704 | 1.0+ | 1.2− | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 09 19 | 699 | (1.9− | 0.3−) |
| 2004 02 11 | 703 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.5− | 0.5+ | 2006 09 19 | 703 | 1.2− | 0.6− |
| 2004 02 11 | 703 | 0.3+ | 1.3− | 2004 03 18 | 704 | 0.8− | 1.3+ | 2006 09 19 | 703 | 0.8− | 0.7+ |
| 2004 02 11 | 703 | 0.1+ | 0.3− | 2004 03 27 | 704 | 0.8+ | 1.1+ | 2006 09 19 | 699 | (0.9− | 1.9+) |
| 2004 02 11 | 703 | 1.1+ | 0.4+ | 2004 03 27 | 704 | 0.7+ | 0.9+ | 2006 09 20 | 691 | 0.3− | 0.3+ |
| 2004 02 14 | 608 | 0.0 | 0.1+ | 2004 03 27 | 704 | (1.6+ | 0.6+) | 2006 09 20 | 691 | 0.4− | 0.3+ |
| 2004 02 14 | 608 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 691 | 0.1− | 0.2+ |
| 2004 02 14 | 608 | 0.2− | 0.2+ | 2004 03 27 | 704 | (1.7+ | 0.1−) | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2004 02 17 | 704 | 0.6+ | 0.4+ | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2004 02 17 | 704 | 0.2+ | 0.5+ | 2004 03 30 | 691 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2004 02 17 | 704 | 0.3+ | 0.2+ | 2004 03 30 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2004 02 17 | 704 | 0.6+ | 0.4+ | 2004 03 31 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2004 02 17 | 704 | 0.3+ | 0.0 | 2004 03 31 | 691 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.3+ |

**(144225)∗ 2004 CL$_{37}$ = 1997 GZ$_{13}$**

Discovered 2004 Feb. 12 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 61900)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.72769 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27070148 | $\omega$ | 162.85571 | | +0.20020276 | −0.97929687 |
| $a$ | 2.3666950 | $\Omega$ | 275.58771 | | +0.89534275 | +0.19527807 |
| $e$ | 0.1676474 | $i$ | 1.72397 | | +0.39784445 | +0.05333023 |
| $P$ | 3.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 1.8+ | 0.6− | 2004 03 16 | 246 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 1997 04 03 | 704 | 1.4+ | 0.1− | 2004 03 16 | 246 | 0.4+ | 1.0+ | 2006 10 20 | 644 | 0.6− | 0.1− |
| 1997 04 07 | 704 | 0.6+ | 0.0 | 2004 03 16 | 246 | 0.2+ | 0.1+ | 2006 10 20 | 701 | 0.0 | 0.1− |
| 1997 04 07 | 704 | 0.4+ | 0.1+ | 2004 03 16 | 246 | 0.8+ | 0.1+ | 2006 10 20 | 701 | 0.3+ | 0.4− |
| 2000 01 04 | 704 | 0.5+ | 0.1+ | 2004 03 16 | 246 | 1.0+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2000 01 04 | 704 | 1.4+ | 0.7− | 2004 03 16 | 246 | 0.5+ | 0.3+ | 2006 10 20 | 701 | 0.1+ | 0.2− |
| 2000 01 04 | 704 | 0.3+ | 0.7− | 2004 03 16 | 246 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2000 01 04 | 704 | 0.1+ | 0.7+ | 2004 03 16 | 012 | 0.6− | 0.1+ | 2006 10 20 | 701 | 0.0 | 0.1− |
| 2000 01 13 | 691 | 0.3− | 0.7− | 2004 03 16 | 012 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.3− |
| 2000 01 13 | 691 | 0.3− | 0.6− | 2004 03 16 | 012 | 1.0− | 0.6+ | 2006 10 20 | 644 | 0.6− | 0.1− |
| 2000 01 13 | 691 | 0.3− | 0.7− | 2004 03 16 | 012 | 0.6− | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.1− | 0.5+ | 2004 03 16 | 012 | 1.2− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 08 17 | 644 | 0.1− | 0.2+ | 2004 03 16 | 012 | 0.5− | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2004 03 16 | 012 | 1.3− | 1.1+ | 2006 10 29 | 704 | 0.5+ | 0.2+ |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2004 03 16 | 012 | (2.0− | 0.8+) | 2006 10 29 | 704 | 0.1− | 0.7+ |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2004 03 17 | 704 | 0.2+ | 0.2− | 2006 10 29 | 704 | 0.2− | 0.5+ |
| 2002 08 28 | 644 | 0.6− | 0.4+ | 2004 03 17 | 704 | 0.7+ | 0.3+ | 2006 10 29 | 704 | 0.3− | 0.2+ |
| 2002 08 28 | 644 | 0.2− | 0.3+ | 2004 03 17 | 704 | 1.3+ | 1.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 08 28 | 644 | 0.5− | 0.3+ | 2004 03 17 | 704 | 1.1+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 1.1− | 0.8+ | 2004 03 17 | 704 | 0.1+ | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.4− | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 0.7− | 0.3+ | 2004 03 17 | 704 | 0.6+ | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.6− | 0.1+ | 2004 03 17 | 704 | 0.3+ | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2004 03 17 | 012 | 1.2− | 0.4+ | 2006 11 07 | 644 | 0.7+ | 0.4+ |
| 2002 09 14 | 644 | 0.4− | 0.1+ | 2004 03 17 | 012 | 0.9− | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.5+ |
| 2002 10 03 | 704 | 0.7+ | 0.7+ | 2004 03 17 | 012 | 0.1+ | 0.8+ | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.3− | 1.3+ | 2004 03 17 | 012 | 0.9− | 1.0+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2003 12 21 | 704 | 0.5+ | 0.7+ | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2003 12 21 | 704 | (2.3− | 0.7−) | 2004 03 18 | 704 | 0.8+ | 0.1− | 2006 11 10 | 683 | 0.2+ | 0.7− |
| 2003 12 21 | 704 | 0.7+ | 0.0 | 2004 03 18 | 704 | 1.0+ | 0.2− | 2006 11 10 | 683 | 1.5− | 0.9+ |
| 2003 12 21 | 704 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.3− | 2006 11 10 | 683 | 1.2− | 0.9+ |
| 2004 02 12 | 333 | 0.6− | 0.5+ | 2004 03 18 | 704 | (1.7+ | 0.2−) | 2006 11 11 | 683 | 0.5+ | 1.0+ |
| 2004 02 12 | 333 | 0.7− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 1.5− | 2006 11 11 | 683 | 0.6− | 1.2+ |
| 2004 02 12 | 333 | 0.2− | 1.2+ | 2004 03 18 | 704 | 0.9+ | 1.3− | 2006 11 11 | 683 | 0.1+ | 1.1+ |
| 2004 02 12 | 644 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.9− | 0.5− |
| 2004 02 12 | 644 | 0.3− | 0.2+ | 2004 03 27 | 704 | 0.4− | 0.0 | 2006 11 11 | 703 | (1.9− | 0.9+) |
| 2004 02 12 | 644 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.4− | 0.3+ | 2006 11 11 | 703 | (0.4+ | 1.6+) |
| 2004 02 14 | 608 | 0.0 | 0.5− | 2004 03 27 | 704 | 0.8− | 1.5+ | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2004 02 14 | 608 | 0.1+ | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 13 | 683 | (1.7+ | 1.2−) |
| 2004 02 14 | 608 | 0.2+ | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 683 | (1.8+ | 0.5+) |
| 2004 02 18 | 704 | 0.0 | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 13 | 683 | 1.4+ | 0.5+ |
| 2004 02 18 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 152 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.0 |
| 2004 02 18 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 152 | (6.4− | 0.1−) | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2004 03 12 | 644 | 0.4− | 0.6+ | 2006 09 29 | 704 | 0.7+ | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.6− |
| 2004 03 12 | 644 | 0.5− | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.2− | 2006 11 16 | 113 | 0.2− | 0.2− |
| 2004 03 12 | 644 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.7+ | 0.0 | 2006 11 16 | 113 | 0.0 | 1.1− |
| 2004 03 15 | 704 | 0.1− | 0.4+ | 2006 09 29 | 704 | 1.2+ | 0.1− | 2006 11 19 | 704 | 1.0− | 0.1+ |
| 2004 03 15 | 704 | 0.3− | 0.5+ | 2006 09 29 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.2+ |
| 2004 03 15 | 704 | 0.3+ | 0.1− | 2006 09 29 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.8− |
| 2004 03 15 | 704 | 0.8+ | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2004 03 15 | 704 | 0.4− | 0.2+ | 2006 10 03 | 704 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2004 03 16 | 704 | 0.0 | 0.5+ | 2006 10 03 | 704 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2004 03 16 | 704 | 0.2+ | 0.1− | 2006 10 03 | 704 | 0.6− | 0.9+ | 2006 11 19 | 704 | 0.9+ | 0.3− |
| 2004 03 16 | 704 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.8+ | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2004 03 16 | 704 | 0.4+ | 0.2− | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3− | 1.0+ |
| 2004 03 16 | 704 | 0.5+ | 0.2− | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2+ | 1.7+ |
| 2004 03 16 | 704 | 0.2− | 0.2+ | 2006 10 03 | 691 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2004 03 16 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 704 | 0.3− | 1.0+ | 2006 11 22 | 704 | 0.8+ | 0.9+ |
| 2004 03 16 | 704 | 0.4− | 0.2+ | 2006 10 19 | 704 | 0.3− | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.5− |
| 2004 03 16 | 704 | 0.2+ | 0.3− | 2006 10 19 | 704 | 1.5+ | 0.4+ | | | | |
| 2004 03 16 | 246 | 0.4+ | 0.8+ | 2006 10 19 | 704 | (1.5− | 0.2−) | | | | |

**(144226)∗ 2004 CZ$_{37}$ = 2000 AR$_{70}$**

Discovered 2004 Feb. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61901)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.93471 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27426304 | $\omega$ | 351.00540 | | −0.18978063 | −0.96497912 |
| $a$ | 2.3461612 | $\Omega$ | 109.77413 | | +0.91235355 | −0.24147760 |
| $e$ | 0.1168016 | $i$ | 11.09592 | | +0.36275932 | +0.10248835 |
| $P$ | 3.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | (0.8− | 2.4−) | 2003 12 28 | 699 | (2.0+ | 0.2+) | 2004 03 23 | 704 | 0.6+ | 0.5+ |
| 1999 12 14 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 699 | (0.7+ | 1.7−) | 2004 03 23 | 704 | 1.2− | 0.8+ |
| 1999 12 14 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 699 | 0.9+ | 0.4+ | 2004 03 23 | 704 | 0.1+ | 1.2+ |
| 1999 12 14 | 704 | 0.0 | 0.8− | 2004 01 30 | 699 | 0.6− | 0.4− | 2004 03 23 | 704 | 0.2+ | 1.4+ |
| 1999 12 14 | 704 | 0.5− | 1.1+ | 2004 01 30 | 699 | 0.4− | 0.2− | 2004 03 25 | 704 | 0.1+ | 0.0 |
| 2000 01 05 | 704 | 0.5+ | 0.7+ | 2004 01 30 | 699 | 0.6+ | 0.5− | 2004 03 25 | 704 | 0.1+ | 1.1+ |
| 2000 01 05 | 704 | 0.7− | 0.4− | 2004 01 30 | 699 | 0.9+ | 0.3− | 2004 03 25 | 704 | 0.4+ | 0.3+ |
| 2000 01 05 | 704 | 0.7+ | 0.1− | 2004 01 30 | 704 | 0.7+ | 0.7+ | 2004 03 25 | 704 | 0.2+ | 0.3+ |
| 2000 01 05 | 704 | 0.3+ | 0.1− | 2004 01 30 | 704 | 0.5+ | 1.2+ | 2006 09 19 | 703 | 0.8− | 0.8+ |
| 2000 01 05 | 704 | 0.1+ | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.3− | 1.5+ |
| 2000 01 06 | 704 | 0.1+ | 1.1+ | 2004 01 30 | 704 | 0.2+ | 1.2+ | 2006 09 19 | 703 | 0.3− | 1.3+ |
| 2000 01 06 | 704 | 0.0 | 0.3− | 2004 01 30 | 704 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.6− |
| 2000 01 06 | 704 | 0.2+ | 0.6− | 2004 02 13 | 644 | 0.4− | 0.2− | 2006 09 30 | 699 | (1.6+ | 1.1+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.5− | 0.8− | 2004 02 13 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 699 | 0.0 | 0.1− |
| 2002 08 20 | 644 | 0.2+ | 0.8+ | 2004 02 13 | 644 | 0.2+ | 0.2− | 2006 09 30 | 699 | 0.3− | 0.1+ |
| 2002 08 20 | 644 | 0.2+ | 0.6+ | 2004 02 14 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.8− |
| 2002 08 20 | 644 | 0.1+ | 0.5+ | 2004 02 14 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 2002 09 17 | 644 | 0.6− | 0.1+ | 2004 02 14 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2002 09 17 | 644 | 0.8− | 0.1− | 2004 02 14 | 608 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2002 09 17 | 644 | 0.4+ | 0.1− | 2004 02 14 | 608 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.5+ |
| 2002 09 17 | 644 | 0.4− | 0.3− | 2004 02 14 | 608 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2002 09 17 | 644 | 0.3− | 0.2− | 2004 02 18 | 608 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.6− | 0.2+ |
| 2002 09 17 | 644 | 0.1− | 0.0 | 2004 02 18 | 608 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.7− | 0.9+ |
| 2003 12 23 | 704 | 1.0+ | 1.0+ | 2004 02 18 | 608 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.2+ | 0.3− |
| 2003 12 23 | 704 | 1.2+ | 0.4+ | 2004 03 14 | 704 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2003 12 23 | 704 | 0.5+ | 0.4− | 2004 03 14 | 704 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2003 12 25 | 645 | 0.2− | 0.2− | 2004 03 14 | 704 | 0.3+ | 0.6+ | 2006 11 16 | 703 | 0.4+ | 0.2+ |
| 2003 12 25 | 645 | 0.2− | 0.2− | 2004 03 14 | 704 | 0.4+ | 0.5+ | | | | |
| 2003 12 28 | 699 | 1.3− | 0.4+ | 2004 03 23 | 704 | 0.0 | 0.3+ | | | | |

**(144227)∗ 2004 CU$_{41}$ = 2001 RX$_{37}$**

Discovered 2004 Feb. 14 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 61903)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.52911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19228206 | $\omega$ | 177.38849 | | −0.47352292 | | −0.87298845 |
| $a$ | 2.9728766 | $\Omega$ | 300.85103 | | +0.80561310 | | −0.37562516 |
| $e$ | 0.0574517 | $i$ | 7.82658 | | +0.35603872 | | −0.31112202 |
| $P$ | 5.13 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.9− | 1.0+ | 2004 03 19 | 704 | 1.6+ | 0.9+ |
| 2001 05 23 | 807 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.4− | 1.0+ | 2004 03 19 | 704 | (3.3+ | 0.6+) |
| 2001 05 23 | 807 | 1.3+ | 0.7+ | 2004 02 26 | 704 | 1.5− | 0.5+ | 2004 03 20 | 704 | 0.5+ | 0.4+ |
| 2001 05 23 | 807 | 0.3+ | 0.2+ | 2004 02 26 | 704 | 0.4− | 1.0+ | 2004 03 20 | 704 | 0.2+ | 1.0+ |
| 2001 09 08 | 704 | 0.6− | 0.5+ | 2004 03 13 | 644 | 0.4+ | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.4+ |
| 2001 09 08 | 704 | 1.5− | 1.4+ | 2004 03 13 | 644 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.8+ |
| 2001 09 08 | 704 | 0.5− | 0.6+ | 2004 03 13 | 644 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.6− | 0.4+ | 2004 03 15 | 703 | 0.5− | 0.3+ | 2006 08 20 | 644 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.4+ | 0.3+ | 2004 03 15 | 703 | 0.1+ | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.1− | 0.9+ | 2004 03 15 | 703 | 0.3+ | 0.1− | 2006 08 20 | 644 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.7− | 0.2+ | 2004 03 15 | 703 | 0.8+ | 0.4+ | 2006 08 20 | 644 | 0.2− | 0.2− |
| 2002 11 15 | 704 | 2.0− | 0.9+ | 2004 03 16 | 704 | 0.6+ | 0.3+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2002 11 15 | 704 | 0.7− | 0.1− | 2004 03 16 | 704 | 0.6+ | 1.4+ | 2006 08 22 | 644 | 0.1+ | 0.3+ |
| 2002 11 15 | 704 | 0.3+ | 0.0 | 2004 03 16 | 704 | 1.6+ | 0.1− | 2006 08 22 | 644 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2004 03 16 | 704 | 0.7+ | 0.7+ | 2006 08 22 | 644 | 0.1+ | 0.6+ |
| 2002 12 05 | 704 | 0.9− | 0.4+ | 2004 03 16 | 704 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.8− | 0.5− |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.2− | 0.9+ | 2006 08 28 | 699 | 0.2− | 1.3+ |
| 2002 12 05 | 704 | 0.4+ | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.3− | 2006 08 28 | 699 | 1.5− | 0.6+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.5− | 0.1− | 2006 08 28 | 699 | 0.2+ | 0.2+ |
| 2003 01 05 | 704 | 0.6+ | 0.6+ | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.1− |
| 2003 01 05 | 704 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.8− | 0.5+ | 2006 08 29 | 703 | 0.7− | 0.2+ |
| 2003 01 05 | 704 | 0.5+ | 0.2+ | 2004 03 18 | 704 | 0.6− | 0.3+ | 2006 08 29 | 703 | 0.5− | 0.4− |
| 2003 01 05 | 704 | 0.7+ | 1.6+ | 2004 03 18 | 704 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.1− | 1.1− |
| 2003 01 05 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 2004 01 30 | 699 | 1.3− | 0.8− | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 2004 01 30 | 699 | 0.3+ | 0.5+ | 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.4+ |
| 2004 01 30 | 699 | 1.0− | 0.2− | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.2− |
| 2004 01 30 | 699 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.6+ |
| 2004 02 14 | 608 | 0.1+ | 0.7− | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 1.0− | 0.3− |
| 2004 02 14 | 608 | 0.4+ | 0.4− | 2004 03 18 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 691 | 0.3− | 0.3+ |
| 2004 02 14 | 608 | 0.1+ | 0.5− | 2004 03 18 | 704 | 0.5− | 0.1− | 2006 09 18 | 699 | 1.3+ | 1.0+ |
| 2004 02 15 | 644 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.5+ | 0.9+ | 2006 09 18 | 691 | 0.2− | 0.5+ |
| 2004 02 15 | 644 | 0.2+ | 0.4+ | 2004 03 19 | 704 | 0.9+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 1.1+ |
| 2004 02 15 | 644 | 0.2+ | 0.2+ | 2004 03 19 | 704 | 0.8+ | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2004 02 19 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.2− | 2006 09 28 | G96 | 0.7− | 0.1+ |
| 2004 02 19 | 704 | 0.4+ | 0.2+ | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2004 02 19 | 704 | 0.5+ | 0.3+ | 2004 03 19 | 704 | (3.0+ | 0.3−) | 2006 09 28 | G96 | 0.6− | 0.2− |
| 2004 02 19 | 704 | 0.1+ | 0.3+ | 2004 03 19 | 704 | 1.8+ | 0.5+ | | | | |
| 2004 02 19 | 704 | 0.3− | 1.1+ | 2004 03 19 | 704 | 1.0+ | 0.0 | | | | |

**(144228)∗ 2004 CN$_{43}$ = 1997 TF$_{22}$**

Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61905)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.23028 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21482203 | $\omega$ | 123.51051 | | −0.13535498 | | −0.99062416 |
| $a$ | 2.7611087 | $\Omega$ | 334.24961 | | +0.89431968 | | −0.11411041 |
| $e$ | 0.0656380 | $i$ | 2.44248 | | +0.42646377 | | −0.07511712 |
| $P$ | 4.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 0.7+ | 0.4− | 2004 02 12 | 291 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.3− |
| 1997 10 05 | 691 | 0.1− | 0.2− | 2004 02 12 | 291 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.3+ |
| 1997 10 05 | 691 | 0.1− | 0.0 | 2004 02 12 | 291 | 0.7− | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.3+ |
| 1997 10 10 | 691 | 0.1+ | 0.2+ | 2004 02 16 | 691 | 0.4+ | 0.2+ | 2004 03 18 | 704 | 0.7+ | 1.4+ |
| 1997 10 10 | 691 | 0.2− | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2004 03 23 | 291 | 0.3+ | 0.1− |
| 1997 10 10 | 691 | 0.4− | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.4+ | 2004 03 23 | 291 | 0.2− | 0.3+ |
| 2002 10 18 | 644 | 0.2− | 0.2− | 2004 02 26 | 704 | 0.6+ | 0.0 | 2004 03 23 | 291 | 0.4− | 0.2+ |
| 2002 10 18 | 644 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.8+ | 0.5− | 2006 08 19 | 691 | 0.3− | 0.8+ |
| 2002 10 18 | 644 | 0.1− | 0.3+ | 2004 02 26 | 704 | 1.3+ | 1.2− | 2006 08 19 | 691 | 0.1− | 0.8+ |
| 2002 11 05 | 704 | 0.1− | 0.1− | 2004 02 26 | 704 | 1.0+ | 0.2− | 2006 08 19 | 691 | 0.4− | 0.7+ |
| 2002 11 05 | 704 | 0.9+ | 1.2+ | 2004 02 29 | 291 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2004 02 29 | 291 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.6+ | 0.1− | 2004 02 29 | 291 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2+ |
| 2002 11 12 | 704 | 0.5− | 0.8+ | 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.2+ | 1.0+ | 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.8− | 0.5− | 2004 03 14 | 691 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.1− | 0.2+ |
| 2002 11 12 | 704 | 0.3− | 0.5− | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2002 12 10 | 644 | 0.3+ | 0.9− | 2004 03 15 | 704 | 0.6+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.2+ |
| 2002 12 10 | 644 | 0.5+ | 0.4− | 2004 03 15 | 704 | 0.4+ | 0.0 | | | | |
| 2002 12 10 | 644 | 0.5− | 0.4− | 2004 03 15 | 704 | 0.0 | 0.9− | | | | |

**(144229)∗ 2004 CU$_{49}$ = 2005 OY$_{11}$**

Discovered 2004 Feb. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86271)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.40576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28945420 | $\omega$ | 315.93786 | | −0.12187560 | | +0.99189068 |
| $a$ | 2.2633383 | $\Omega$ | 307.02909 | | −0.89769696 | | −0.12564859 |
| $e$ | 0.1453101 | $i$ | 2.58779 | | −0.42342237 | | −0.01911310 |
| $P$ | 3.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 1.3+ | 1.7+ | 2004 02 26 | 704 | 1.0+ | 0.9+ | 2005 08 06 | 644 | 0.0 | 0.2+ |
| 2001 03 20 | 699 | 0.4+ | 0.9+ | 2004 02 26 | 704 | 0.7+ | 0.3+ | 2005 08 22 | 644 | 0.2− | 0.3+ |
| 2001 03 20 | 699 | 0.5+ | 0.9+ | 2004 02 26 | 704 | 2.2+ | 0.2+ | 2005 08 22 | 644 | 0.0 | 0.1+ |
| 2001 03 20 | 699 | 0.0 | 0.4+ | 2005 07 29 | 644 | 0.2− | 0.4+ | 2005 08 22 | 644 | 0.1+ | 0.1+ |
| 2001 04 24 | 699 | 0.0 | 0.4+ | 2005 07 29 | 644 | 0.4− | 0.4+ | 2005 08 29 | 704 | 0.1+ | 1.1+ |
| 2001 04 24 | 699 | 0.0 | 0.9+ | 2005 07 29 | 644 | 0.3− | 0.1+ | 2005 08 29 | 704 | 0.7− | 1.5+ |
| 2001 04 24 | 699 | 0.4− | 0.8+ | 2005 07 31 | 644 | 0.2− | 0.2+ | 2005 08 29 | 704 | 0.5− | 0.6+ |
| 2001 04 24 | 699 | 1.3+ | 0.5+ | 2005 07 31 | 644 | 0.4− | 0.2+ | 2005 08 29 | 704 | 1.3− | 1.4+ |
| 2002 10 18 | 644 | 0.4− | 0.6+ | 2005 07 31 | 644 | 0.1− | 0.1+ | 2005 08 29 | 704 | 0.2− | 0.9+ |
| 2002 10 18 | 644 | 0.1− | 0.4+ | 2005 08 01 | E12 | 0.6− | 0.4− | 2005 08 29 | 699 | 0.0 | 0.1− |
| 2002 10 18 | 644 | 0.2− | 0.5+ | 2005 08 01 | E12 | 0.9+ | 0.6− | 2005 08 29 | 699 | 0.3− | 0.1+ |
| 2002 11 09 | 695 | 0.2− | 0.5+ | 2005 08 01 | E12 | 0.1− | 0.3+ | 2005 08 29 | 699 | 0.0 | 0.0 |
| 2002 11 09 | 695 | 0.4− | 0.4+ | 2005 08 01 | E12 | 0.1− | 0.2+ | 2005 08 29 | 699 | 0.2− | 0.6+ |
| 2004 01 24 | 704 | 0.3+ | 1.5+ | 2005 08 01 | E12 | 0.5+ | 0.1− | 2005 09 05 | 703 | 0.4− | 0.8+ |
| 2004 01 24 | 704 | 0.5+ | 0.7+ | 2005 08 01 | E12 | 0.0 | 0.1− | 2005 09 05 | 703 | 0.1− | 0.4+ |
| 2004 01 24 | 704 | 0.3+ | 1.1+ | 2005 08 01 | E12 | 0.0 | 0.3+ | 2005 09 05 | 703 | 0.2− | 0.5+ |
| 2004 01 24 | 704 | 0.2+ | 0.3+ | 2005 08 01 | E12 | 0.0 | 0.0 | 2005 09 05 | 703 | 0.3− | 1.0+ |
| 2004 02 11 | 691 | 0.3− | 0.9+ | 2005 08 02 | 704 | 0.5− | 0.5+ | 2005 09 13 | 703 | 0.8− | 0.3+ |
| 2004 02 11 | 691 | 0.0 | 0.5+ | 2005 08 02 | 704 | 0.8+ | 1.0+ | 2005 09 13 | 703 | 0.1− | 0.7+ |
| 2004 02 11 | 691 | 0.0 | 0.6+ | 2005 08 02 | 704 | 0.4− | 1.2+ | 2005 09 13 | 703 | 0.7− | 0.2+ |
| 2004 02 16 | 704 | (1.4+ | 2.1+) | 2005 08 02 | E12 | 0.2+ | 0.0 | 2005 09 13 | 703 | 0.2− | 1.4+ |
| 2004 02 16 | 704 | 0.2+ | 1.3+ | 2005 08 02 | E12 | 0.0 | 0.6− | 2005 10 25 | G96 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 704 | 0.3+ | 0.6+ | 2005 08 02 | E12 | 0.0 | 0.2+ | 2005 10 25 | G96 | 0.2+ | 0.3+ |
| 2004 02 16 | 704 | 0.1− | 0.6+ | 2005 08 06 | 644 | 0.0 | 0.3+ | 2005 10 25 | G96 | 0.1+ | 0.1+ |
| 2004 02 26 | 704 | 1.1+ | 0.6+ | 2005 08 06 | 644 | 0.1− | 0.3+ | 2005 10 25 | G96 | 0.1+ | 0.3+ |

**(144230)∗ 2004 $CA_{51}$ = 2004 $BG_{161}$ = 2004 $EY_{115}$**

Discovered 2004 Feb. 15 by NEAT at Haleakala.

Id. G. V. Williams (d, *MPO* 76414)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.12456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26491074 | $\omega$ | 4.88092 | | −0.98304666 | +0.18319000 | |
| $a$ | 2.4010599 | $\Omega$ | 185.69250 | | −0.17077192 | −0.93022254 | |
| $e$ | 0.1280281 | $i$ | 4.50475 | | −0.06675491 | −0.31800543 | |
| $P$ | 3.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 09 | 691 | 0.3− | 0.5+ | 2004 02 18 | 704 | 0.1+ | 0.6+ | 2004 03 20 | 704 | 0.1+ | 0.3+ |
| 1997 05 09 | 691 | 0.3− | 0.3+ | 2004 02 18 | 333 | 0.3− | 0.5+ | 2004 03 20 | 704 | 0.1+ | 0.8− |
| 1997 05 09 | 691 | 0.1− | 0.4+ | 2004 02 18 | 333 | 0.4+ | 0.0 | 2004 03 20 | 704 | 1.4+ | 0.4+ |
| 1998 09 19 | 645 | 0.4+ | 0.2+ | 2004 02 18 | 333 | 0.1+ | 0.3+ | 2005 06 30 | 644 | 0.1− | 0.5+ |
| 1998 09 19 | 645 | 0.3+ | 0.2+ | 2004 02 18 | 333 | 0.0 | 0.1− | 2005 06 30 | 644 | 0.2+ | 0.5+ |
| 1998 09 28 | 691 | 0.8− | 0.0 | 2004 03 01 | 703 | 0.5− | 0.2+ | 2005 06 30 | 644 | 0.0 | 0.4+ |
| 1998 09 28 | 691 | 1.0− | 0.1+ | 2004 03 01 | 703 | 0.2− | 0.1+ | 2005 07 04 | 691 | 0.0 | 0.6+ |
| 1998 09 28 | 691 | 1.0− | 0.0 | 2004 03 01 | 703 | 0.7+ | 0.1− | 2005 07 04 | 691 | 0.0 | 0.4+ |
| 2002 10 10 | 644 | 0.1+ | 0.7+ | 2004 03 01 | 703 | 0.1− | 0.4+ | 2005 07 04 | 691 | 0.2− | 0.7+ |
| 2002 10 10 | 644 | 0.2+ | 0.6+ | 2004 03 11 | 644 | 0.6+ | 0.3+ | 2005 07 05 | 644 | 0.0 | 0.5+ |
| 2002 10 10 | 644 | 0.0 | 0.6+ | 2004 03 11 | 644 | 0.2+ | 0.1+ | 2005 07 05 | 644 | 0.3− | 0.2+ |
| 2004 01 24 | 704 | 0.4− | 0.5+ | 2004 03 11 | 644 | 0.0 | 0.2+ | 2005 07 05 | 644 | 0.4− | 0.3+ |
| 2004 01 24 | 704 | 0.3+ | 0.4+ | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2005 07 08 | 691 | 0.1− | 0.5+ |
| 2004 01 24 | 704 | 0.5− | 0.7+ | 2004 03 15 | 704 | 0.4+ | 0.4+ | 2005 07 08 | 691 | 0.1+ | 0.3+ |
| 2004 01 24 | 704 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.5− | 2005 07 08 | 691 | 0.0 | 0.3+ |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2004 02 11 | 644 | 0.4+ | 0.5+ | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.7− | 0.3+ |
| 2004 02 11 | 644 | 0.3+ | 0.4+ | 2004 03 18 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.9− | 0.3+ |
| 2004 02 15 | 608 | 0.5+ | 1.0+ | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 02 15 | 608 | 1.5+ | 1.2+ | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 02 15 | 608 | (1.2+ | 1.5+) | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2004 02 18 | 704 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 02 18 | 704 | 0.5− | 0.4+ | 2004 03 18 | 704 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1− | 1.1+ |
| 2004 02 18 | 704 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 11 20 | 704 | 0.7− | 0.3+ |
| 2004 02 18 | 333 | (1.7− | 0.8−) | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 1.9+ |
| 2004 02 18 | 333 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.2− | 0.1+ | | | | |
| 2004 02 18 | 704 | 0.0 | 1.3+ | 2004 03 20 | 704 | 0.8+ | 0.0 | | | | |

**(144231)∗ 2004 $CV_{52}$ = 1998 $SR_{90}$**

Discovered 2004 Feb. 10 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61908)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.88946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26380604 | $\omega$ | 179.06065 | | −0.64147308 | +0.76586030 | |
| $a$ | 2.4077583 | $\Omega$ | 51.03605 | | −0.70421403 | −0.56491325 | |
| $e$ | 0.1376919 | $i$ | 3.27266 | | −0.30429408 | −0.30713357 | |
| $P$ | 3.74 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.5+ | 1.9− | 2004 02 10 | 703 | 0.5− | 0.3+ | 2005 07 29 | E12 | 0.4− | 0.2+ |
| 1998 09 26 | 704 | 1.4+ | 1.0− | 2004 02 13 | 699 | 0.2+ | 0.8+ | 2005 07 29 | E12 | 0.4− | 1.0+ |
| 1998 09 26 | 704 | (2.4− | 0.2−) | 2004 02 13 | 699 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 1998 09 27 | 704 | (0.4+ | 2.4−) | 2004 02 13 | 699 | 0.5+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.8− |
| 1998 09 27 | 704 | (2.3− | 1.4−) | 2004 02 13 | 699 | 0.8− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 1998 09 27 | 704 | 0.0 | 0.4− | 2004 02 15 | 704 | 0.4− | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.1+ |
| 1998 09 27 | 704 | 1.5+ | 0.4+ | 2004 02 15 | 704 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 1998 09 27 | 704 | 0.9− | 0.9− | 2004 02 15 | 704 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 10 10 | 291 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2002 10 10 | 291 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2002 10 10 | 291 | 0.1+ | 0.1+ | 2004 02 17 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 10 11 | 704 | (0.0 | 2.8+) | 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 10 11 | 704 | 0.4− | 0.5+ | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 2002 10 11 | 704 | 0.7− | 0.8− | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 11 12 | 703 | 0.7− | 0.9+ |
| 2003 12 27 | 704 | 0.4+ | 0.4− | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 11 12 | 703 | 0.4+ | 1.3+ |
| 2003 12 27 | 704 | 0.7+ | 1.0+ | 2005 06 30 | 699 | 0.5+ | 0.4+ | 2006 11 12 | 703 | (0.5− | 1.5+) |
| 2003 12 27 | 704 | 0.2+ | 0.3+ | 2005 06 30 | 699 | 0.7+ | 0.8+ | 2006 11 12 | 703 | 0.8− | 1.2+ |
| 2004 01 17 | 644 | 0.2+ | 0.2+ | 2005 06 30 | 699 | 0.4+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2004 01 17 | 644 | 0.7+ | 0.0 | 2005 06 30 | 699 | 0.3− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2004 01 17 | 644 | 0.1+ | 0.5+ | 2005 07 02 | 691 | 0.1− | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2004 01 30 | 704 | 0.4+ | 0.8+ | 2005 07 02 | 691 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.5− | 0.2+ |
| 2004 01 30 | 704 | 0.7+ | 0.7+ | 2005 07 02 | 691 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.2− | 0.8+ |
| 2004 01 30 | 704 | 0.5+ | 0.6+ | 2005 07 11 | 699 | 1.0− | 0.3+ | 2006 11 16 | 703 | 0.5− | 0.2+ |
| 2004 01 30 | 704 | 0.3− | 0.3+ | 2005 07 11 | 699 | 0.6+ | 0.1− | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2004 01 30 | 704 | 0.9+ | 1.0+ | 2005 07 11 | 699 | (1.6− | 1.5+) | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2004 02 10 | 703 | (1.6− | 0.4−) | 2005 07 11 | 699 | 0.9− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2004 02 10 | 703 | 0.7− | 0.5+ | 2005 07 29 | E12 | 0.1− | 0.7+ | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2004 02 10 | 703 | 0.5+ | 0.4+ | 2005 07 29 | E12 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.3− |

**(144232)∗ 2004 $CN_{54}$ = 2001 $MB_{23}$**

Discovered 2004 Feb. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61909)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.57315 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26213985 | $\omega$ | 191.09256 | | −0.88845673 | +0.45860417 | |
| $a$ | 2.4179502 | $\Omega$ | 16.24153 | | −0.41598634 | −0.78799980 | |
| $e$ | 0.1457456 | $i$ | 3.70622 | | −0.19390720 | −0.41077796 | |
| $P$ | 3.76 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 0.8+ | 0.4+ | 2005 08 05 | 644 | 0.1− | 0.8+ |
| 2000 01 04 | 704 | 0.5+ | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2005 08 05 | 644 | 0.1− | 0.4+ |
| 2000 01 04 | 704 | 0.6− | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2005 08 05 | 644 | 0.1− | 0.5+ |
| 2001 06 30 | 644 | 0.2− | 0.7+ | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2005 08 22 | 644 | 0.4− | 0.5+ |
| 2001 06 30 | 644 | 0.0 | 0.7+ | 2004 02 29 | 691 | 0.4+ | 0.2+ | 2005 08 22 | 644 | 0.1− | 0.4+ |
| 2001 06 30 | 644 | 0.3− | 0.3+ | 2004 02 29 | 691 | 0.3+ | 0.2+ | 2005 08 22 | 644 | 0.3− | 0.5+ |
| 2001 07 01 | 644 | 0.2− | 0.5+ | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2005 08 30 | 644 | 0.5− | 0.8+ |
| 2001 07 01 | 644 | 0.0 | 0.2+ | 2004 03 10 | 644 | 0.0 | 0.0 | 2005 08 30 | 644 | 0.2− | 0.6+ |
| 2001 07 01 | 644 | 0.2− | 0.3+ | 2004 03 10 | 644 | 0.1+ | 0.1+ | 2005 08 30 | 644 | 0.0 | 0.7+ |
| 2002 10 13 | 291 | 0.1− | 0.1+ | 2004 03 10 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.5+ |
| 2002 10 13 | 291 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.7+ | 0.7+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2002 10 13 | 291 | 0.3− | 1.0+ | 2004 03 15 | 704 | 1.0− | 0.7+ | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2004 01 29 | 704 | 0.9+ | 0.6− | 2004 03 15 | 704 | 0.4+ | 0.6− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2004 01 29 | 704 | 1.0+ | 0.7+ | 2004 03 15 | 704 | 0.6− | 0.5+ | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2004 01 29 | 704 | 0.2− | 0.5+ | 2004 03 15 | 704 | 0.7− | 1.2+ | 2006 10 23 | 691 | 0.7− | 0.0 |
| 2004 02 11 | 699 | 0.7+ | 1.1− | 2004 03 19 | 704 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.5+ | 0.2− |
| 2004 02 11 | 699 | 0.7+ | 0.5+ | 2004 03 19 | 704 | 0.2− | 0.5− | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2004 02 11 | 699 | 0.6− | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.1− | 2006 10 27 | 691 | 0.6+ | 0.2− |
| 2004 02 11 | 644 | 0.5+ | 0.0 | 2004 03 19 | 704 | 0.4− | 0.1+ | 2006 11 11 | 703 | 1.1+ | 0.3+ |
| 2004 02 11 | 699 | 0.7− | 0.4− | 2004 03 19 | 704 | 0.3− | 0.4− | 2006 11 11 | 703 | (1.6− | 0.6+) |
| 2004 02 11 | 644 | 0.8+ | 0.0 | 2004 03 22 | 704 | 0.4− | 0.4+ | 2006 11 11 | 703 | 1.4− | 0.7− |
| 2004 02 11 | 644 | 0.7+ | 0.0 | 2004 03 22 | 704 | (1.6+ | 0.3+) | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2004 02 17 | 704 | 0.0 | 0.2+ | 2004 03 22 | 704 | (1.7+ | 0.1−) | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2004 02 17 | 704 | 1.1− | 0.9+ | 2004 03 22 | 704 | (1.7+ | 0.3−) | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2004 02 17 | 704 | 0.1− | 0.5+ | 2004 03 26 | 703 | (1.8− | 0.5+) | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2004 02 17 | 704 | 0.7− | 1.3+ | 2004 03 26 | 703 | 0.4− | 1.2+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2004 02 17 | 704 | 0.1− | 0.7+ | 2004 03 26 | 703 | 0.5+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2004 02 17 | 704 | 0.5− | 1.4+ | 2004 03 26 | 703 | 0.5+ | 0.0 | 2006 11 17 | 691 | 0.1− | 0.4+ |
| 2004 02 17 | 704 | 0.4+ | 0.9+ | 2004 03 28 | 704 | 1.5+ | 1.3+ | 2006 11 19 | 704 | 1.1− | 0.4+ |
| 2004 02 17 | 704 | (1.7− | 0.4−) | 2004 03 28 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2004 02 17 | 704 | 0.2+ | 0.5+ | 2004 03 28 | 704 | (1.7+ | 0.1−) | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2004 03 28 | 704 | (2.3+ | 1.1+) | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 02 17 | 608 | 0.2− | 0.6− | 2005 07 04 | 644 | 0.3− | 0.3+ | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 2004 02 17 | 608 | 0.2+ | 1.0− | 2005 07 04 | 644 | 0.3− | 0.6+ | 2006 11 21 | 691 | 0.1− | 0.2− |
| 2004 02 17 | 691 | 0.3− | 0.3− | 2005 07 04 | 644 | 0.2− | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2004 02 17 | 608 | 0.3− | 0.9− | 2005 08 04 | 644 | 0.3− | 0.5+ | 2006 11 25 | 691 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.2− | 0.1− | 2005 08 04 | 644 | 0.2− | 0.6+ | 2006 11 25 | 691 | 0.1+ | 0.2+ |
| 2004 02 23 | 704 | 0.5+ | 0.6+ | 2005 08 04 | 644 | 0.1− | 0.7+ | | | | |

**(144233)∗ 2004 $CO_{54}$ = 2000 $AA_{81}$**

Discovered 2004 Feb. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 61909)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 295.97673 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26855755 | $\omega$ | 333.42842 | | −0.13656997 | −0.98921022 | |
| *a* | 2.3792741 | $\Omega$ | 124.37688 | | +0.91993481 | −0.14650036 | |
| *e* | 0.1533306 | *i* | 3.68366 | | +0.36751679 | −0.00088601 | |
| *P* | 3.67 | *H* | 16.6 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 1.2− | 0.3− | 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 1999 12 08 | 704 | 0.1− | 0.0 | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.7+ |
| 1999 12 08 | 704 | 1.0+ | 1.6− | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 1999 12 08 | 704 | 0.5+ | 1.2− | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2000 01 05 | 704 | 0.1− | 1.1− | 2004 02 17 | 704 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2000 01 05 | 704 | 0.9+ | 0.6+ | 2004 02 17 | 704 | 0.7− | 0.5− | 2006 10 02 | G96 | 0.2− | 0.2+ |
| 2000 01 05 | 704 | 1.2− | 1.2− | 2004 02 17 | 704 | 0.1− | 0.7− | 2006 10 10 | 644 | 0.1− | 0.7+ |
| 2000 01 05 | 704 | 0.2− | 0.1− | 2004 02 17 | 704 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.7+ |
| 2000 01 06 | 704 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.0 | 0.6− | 2006 10 10 | 644 | 0.1+ | 0.8+ |
| 2000 01 06 | 704 | 0.7+ | 0.5+ | 2004 02 17 | 608 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.7+ |
| 2000 01 06 | 704 | 0.0 | 1.4− | 2004 02 17 | 608 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2000 01 06 | 704 | 0.1+ | 0.8+ | 2004 02 17 | 608 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2001 05 21 | 691 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.3+ |
| 2001 05 21 | 691 | 0.2− | 0.4+ | 2004 02 23 | 704 | 1.0+ | 0.6+ | 2006 10 15 | 703 | 0.7− | 0.2+ |
| 2001 05 21 | 691 | 0.0 | 0.4+ | 2004 02 23 | 704 | 0.5+ | 0.2+ | 2006 10 15 | 703 | (0.6+ | 3.8+) |
| 2002 08 29 | 644 | 0.3− | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 10 15 | 703 | 0.5− | 0.4+ |
| 2002 08 29 | 644 | 0.3− | 0.7+ | 2004 02 23 | 704 | 1.1+ | 0.6+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2004 01 22 | 704 | 0.2+ | 0.5+ | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2004 01 22 | 704 | 0.5+ | 0.8+ | 2004 03 15 | 704 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2004 01 22 | 704 | 0.9+ | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.3+ | 0.8+ | 2004 03 15 | 704 | 0.5− | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2004 02 11 | 699 | 0.9− | 0.8− | 2004 03 15 | 704 | (1.9+ | 1.3+) | 2006 10 22 | G96 | 0.3+ | 0.2+ |
| 2004 02 11 | 699 | 0.3− | 1.3− | 2004 03 19 | 704 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2004 02 11 | 699 | 1.0− | 0.1− | 2004 03 19 | 704 | 1.0− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2004 02 11 | 644 | 0.0 | 0.3+ | 2004 03 19 | 704 | 1.2+ | 0.4− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.8+ | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2004 02 11 | 699 | 0.5− | 0.2− | 2004 03 26 | 691 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.5+ | 0.3+ | 2004 03 26 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.3− | 0.2+ |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2004 03 26 | 691 | 0.1− | 0.1+ | | | | |
| 2004 02 11 | 644 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.9− | 0.0 | | | | |

**(144234)∗ 2004 $CO_{55}$ = 2002 $TR_{18}$**

Discovered 2004 Feb. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61910)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 268.63462 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.27116086 | $\omega$ | 183.01226 | | −0.81941437 | −0.57288219 | |
| *a* | 2.3640213 | $\Omega$ | 322.01551 | | +0.52654990 | −0.73911408 | |
| *e* | 0.1220848 | *i* | 1.78153 | | +0.22650670 | −0.35428290 | |
| *P* | 3.63 | *H* | 16.4 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.4− | 0.3+ | 2004 03 01 | 704 | 0.9− | 1.1+ | 2005 07 12 | G96 | 0.8+ | 0.4− |
| 1995 11 30 | 691 | 0.0 | 0.4+ | 2004 03 12 | 644 | 0.2+ | 0.2+ | 2005 07 12 | G96 | 0.0 | 0.2+ |
| 1995 11 30 | 691 | 0.3− | 0.7+ | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2005 07 16 | 691 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | 0.9− | 1.3+ | 2004 03 12 | 644 | 0.1− | 0.2+ | 2005 07 16 | 691 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | 0.5− | 0.5− | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2005 07 16 | 691 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.1+ | 0.8+ | 2004 03 15 | 704 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.5− | 2004 03 15 | 704 | 0.7+ | 0.3− | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.7+ | 2004 03 15 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | 0.8+ | 0.2+ | 2004 03 15 | 704 | 1.0+ | 0.2− | 2006 10 27 | 691 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.5+ | 0.6+ | 2004 03 15 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.4− | 0.2+ |
| 2002 10 03 | 704 | 0.8+ | 0.1+ | 2004 03 15 | 704 | 0.5+ | 0.2− | 2006 10 27 | 691 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | 0.6− | 0.1+ | 2004 03 15 | 704 | 0.7+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2004 02 12 | 644 | 0.2+ | 0.1+ | 2004 03 15 | 704 | (1.6+ | 0.1+) | 2006 11 09 | 644 | 0.3+ | 0.3− |
| 2004 02 12 | 644 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2004 02 12 | 644 | 0.4+ | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2004 02 17 | 291 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.8+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2004 02 17 | 291 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.1+ |
| 2004 02 17 | 291 | 0.5− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.3− |
| 2004 02 19 | 704 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2004 02 19 | 704 | (1.8+ | 0.6+) | 2004 03 27 | 704 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2004 02 19 | 704 | 0.2+ | 0.7+ | 2004 03 27 | 704 | 0.6+ | 0.7+ | 2006 11 13 | 691 | 0.3− | 0.4− |
| 2004 02 19 | 704 | 0.1− | 0.9+ | 2004 03 27 | 704 | 0.7+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2004 02 19 | 704 | 0.6− | 0.4+ | 2004 03 27 | 704 | 0.8+ | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2004 02 20 | 608 | 0.1+ | 0.3− | 2004 03 27 | 704 | 0.5+ | 0.4− | 2006 11 16 | 691 | 1.3+ | 0.3+ |
| 2004 02 20 | 608 | 0.1+ | 0.4− | 2005 06 30 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.1+ | 1.1+ |
| 2004 02 20 | 608 | 0.2+ | 0.8− | 2005 06 30 | 691 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.8+ |
| 2004 02 26 | 704 | 0.1− | 0.5+ | 2005 06 30 | 691 | 0.5− | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.9+ |
| 2004 02 26 | 704 | 0.2+ | 0.1− | 2005 07 05 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.4+ | 1.1+ |
| 2004 02 26 | 704 | 0.1− | 0.1+ | 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.7+ |
| 2004 02 26 | 704 | 0.0 | 0.5+ | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.0 |
| 2004 02 26 | 704 | 0.1− | 0.1− | 2005 07 09 | 691 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.4− |
| 2004 03 01 | 704 | 0.3+ | 0.9+ | 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.8+ |
| 2004 03 01 | 704 | 0.3+ | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2004 03 01 | 704 | 0.1− | 0.7+ | 2005 07 12 | G96 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.1− |
| 2004 03 01 | 704 | 0.1− | 0.3− | 2005 07 12 | G96 | 0.0 | 0.1+ | | | | |

**(144235)∗ 2004 $CP_{58}$ = 2002 $PF_{110}$**

Discovered 2004 Feb. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65562)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 341.16349 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26309706 | $\omega$ | 303.82734 | | +0.88300651 | −0.45961188 | |
| *a* | 2.4120819 | $\Omega$ | 83.69884 | | +0.45603979 | +0.79216393 | |
| *e* | 0.1520425 | *i* | 5.49412 | | +0.11102797 | +0.40153857 | |
| *P* | 3.75 | *H* | 16.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.2− | 0.1− | 2004 02 10 | 644 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.1− |
| 1995 10 28 | 691 | 0.0 | 0.2+ | 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.2+ |
| 1995 10 28 | 691 | 0.2− | 0.1+ | 2004 02 10 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.3− |
| 1995 11 17 | 691 | 0.3+ | 0.2+ | 2004 02 15 | 704 | 0.7+ | 1.0+ | 2006 09 26 | 703 | 0.4− | 0.1− |
| 1995 11 17 | 691 | 0.1+ | 0.3− | 2004 02 15 | 704 | 0.4+ | 1.3+ | 2006 10 04 | 703 | 0.7+ | 0.2+ |
| 1995 11 17 | 691 | 0.2− | 0.1− | 2004 02 15 | 704 | 1.3− | 1.4+ | 2006 10 04 | 703 | 0.4+ | 0.6− |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2005 05 11 | G96 | 0.0 | 0.2+ | 2006 10 04 | 703 | 0.5+ | 0.1+ |
| 2001 05 24 | 645 | 0.1+ | 0.0 | 2005 05 11 | G96 | 0.0 | 0.1+ | 2006 10 04 | 703 | 0.4− | 0.1− |
| 2002 08 13 | 704 | 0.1+ | 1.1+ | 2005 05 11 | G96 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2002 08 13 | 704 | 0.6− | 0.3+ | 2005 05 11 | G96 | 1.2− | 1.5+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2002 08 13 | 704 | (0.7+ | 2.2+) | 2005 05 13 | 691 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 08 13 | 704 | 0.3+ | 1.2+ | 2005 05 13 | 691 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2002 08 15 | 644 | 0.1+ | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 08 15 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.7+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.5+ |
| 2002 08 15 | 644 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.4− | 2006 10 21 | 703 | 0.6− | 0.9+ |
| 2003 12 29 | 291 | 0.1− | 0.6+ | 2006 08 28 | 699 | (1.6− | 1.6+) | 2006 10 21 | 703 | 1.2+ | 0.4+ |
| 2003 12 29 | 291 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.9− | 1.0+ | 2006 10 21 | 703 | 0.6+ | 0.2− |
| 2003 12 29 | 291 | 0.0 | 0.4+ | 2006 09 17 | 699 | 0.0 | 1.3+ | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 2004 01 18 | 644 | 0.5+ | 0.3+ | 2006 09 17 | 699 | (0.1− | 1.9+) | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2004 01 18 | 644 | 0.6+ | 0.3+ | 2006 09 17 | 699 | (1.2− | 2.0+) | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2004 01 18 | 644 | 0.6+ | 0.3+ | 2006 09 17 | 699 | 0.6− | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.2+ | 0.1− |
| 2004 01 30 | 704 | 0.5+ | 0.8− | 2006 09 19 | 703 | 0.0 | 0.4− | 2006 10 28 | 703 | 0.7− | 0.4+ |
| 2004 01 30 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.2+ | 2006 10 28 | 703 | 0.1− | 1.7+ |
| 2004 01 30 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.0 | 0.2− |

**(144236)∗ 2004 $CU_{65}$**

Discovered 2004 Feb. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 357.98140 | | (2000.0) | | |
| $n$ | 0.27626205 | $\omega$ | 38.77614 | +0.88628437 | −0.46270181 |
| $a$ | 2.3348298 | $\Omega$ | 348.73283 | +0.39503682 | +0.77797840 |
| $e$ | 0.0732939 | $i$ | 5.92697 | +0.24175591 | +0.42503722 |
| $P$ | 3.57 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.5+ | 0.2+ | 2004 02 11 | 699 | 0.9− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 1995 08 20 | 809 | 0.2+ | 0.0 | 2004 02 15 | 704 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 2002 07 06 | 291 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.4− | 0.8+ | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2002 07 06 | 291 | 0.5− | 0.6+ | 2004 02 15 | 704 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.7+ | 0.2+ |
| 2002 07 06 | 291 | 0.5− | 0.3+ | 2004 02 15 | 704 | 0.2+ | 0.7− | 2006 10 19 | 703 | 1.3+ | 0.8+ |
| 2002 08 14 | 704 | 1.2− | 0.1+ | 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 08 14 | 704 | 0.6− | 1.2+ | 2004 02 17 | 691 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 08 14 | 704 | 0.2+ | 0.2− | 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | 0.7− | 0.7− | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 10 21 | 704 | (1.6− | 0.4+) |
| 2002 08 18 | 644 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.3− | 0.0 | 2006 10 21 | 704 | (0.8− | 1.8+) |
| 2002 08 18 | 644 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 10 21 | 704 | 0.9+ | 0.2− |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 10 21 | 704 | 1.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.2+ | 0.8+ | 2004 02 23 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 08 29 | 644 | 0.2+ | 0.7+ | 2005 01 19 | 809 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2005 01 19 | 809 | 1.1+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | (0.0 | 1.6+) | 2005 01 19 | 809 | 0.9+ | 0.3− | 2006 10 23 | 644 | 0.5+ | 0.0 |
| 2002 09 05 | 704 | 0.5− | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2006 08 28 | 703 | 1.3− | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.7+ | 0.2− | 2006 08 28 | 703 | 1.0− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | 0.6+ | 1.3+ | 2006 08 28 | 703 | 0.8− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.3+ |
| 2003 12 28 | 704 | 0.4− | 0.7+ | 2006 09 25 | 704 | 1.2+ | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2003 12 28 | 704 | 0.4+ | 1.4+ | 2006 09 25 | 704 | 0.5+ | 0.4− | 2006 10 27 | 703 | 0.3− | 0.5− |
| 2004 01 17 | 644 | 0.2− | 0.4+ | 2006 09 25 | 704 | 0.6− | 1.2− | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2004 01 17 | 644 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2004 01 17 | 644 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2004 01 30 | 704 | 0.0 | 0.6− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.5− |
| 2004 01 30 | 704 | 0.4+ | 0.7− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.8+ | 1.4− |
| 2004 01 30 | 704 | 0.0 | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.8− | 0.4+ |
| 2004 01 30 | 704 | 0.4+ | 0.7− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.2+ | 0.4− |
| 2004 01 30 | 704 | 0.3+ | 0.4− | 2006 10 13 | 691 | 0.4− | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.5− |
| 2004 02 11 | 699 | 1.4+ | 0.4− | 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.3+ | 0.2+ |
| 2004 02 11 | 699 | 0.2− | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.2− |
| 2004 02 11 | 699 | 0.2+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.6− |

**(144237)∗ 2004 $CA_{73}$ = 2000 $AB_{14}$**

Discovered 2004 Feb. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61916)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 6.82210 | | (2000.0) | | |
| $n$ | 0.27700718 | $\omega$ | 298.76098 | +0.96846871 | −0.24380159 |
| $a$ | 2.3306409 | $\Omega$ | 75.38869 | +0.24304622 | +0.87934794 |
| $e$ | 0.2819111 | $i$ | 3.03745 | +0.05474381 | +0.40903298 |
| $P$ | 3.56 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 10 | 704 | 0.3+ | 0.7− | 2006 08 28 | 704 | 0.5− | 0.1− | 2006 11 02 | 704 | 0.3− | 0.4− |
| 1999 12 10 | 704 | 0.9+ | 0.3− | 2006 08 31 | 704 | 0.2+ | 0.7+ | 2006 11 02 | 704 | 1.0− | 0.0 |
| 1999 12 10 | 704 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.5− | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.1+ |
| 1999 12 10 | 704 | 0.3+ | 0.6− | 2006 08 31 | 704 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.9− | 0.4− |
| 2000 01 03 | 704 | 0.4+ | 0.9− | 2006 09 16 | 704 | (0.4+ | 1.7+) | 2006 11 02 | 703 | 0.6− | 1.2− |
| 2000 01 03 | 704 | 0.1− | 0.9− | 2006 09 16 | 704 | 0.3+ | 0.8+ | 2006 11 02 | 703 | 0.0 | 1.1− |
| 2000 01 03 | 704 | 0.3+ | 1.1− | 2006 09 16 | 704 | 1.1+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2000 01 03 | 704 | 0.3− | 0.7− | 2006 09 16 | 704 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2000 01 03 | 704 | 0.7+ | 0.9− | 2006 09 16 | 704 | 0.7− | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2000 01 04 | 704 | 0.1+ | 0.6− | 2006 09 16 | 703 | 0.9+ | 0.0 | 2006 11 11 | 703 | (3.3− | 3.4−) |
| 2000 01 04 | 704 | 0.2− | 0.5− | 2006 09 16 | 703 | 0.6+ | 0.3− | 2006 11 11 | 703 | (1.5+ | 3.3−) |
| 2000 01 04 | 704 | 0.7− | 0.8− | 2006 09 16 | 703 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2000 01 04 | 704 | 1.1− | 1.5− | 2006 09 16 | 703 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2000 02 11 | 704 | 0.8+ | 0.1+ | 2006 09 22 | 704 | 1.0+ | 0.8+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.3− | 0.4− | 2006 09 22 | 704 | 0.9+ | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2000 02 11 | 704 | 0.2+ | 0.5− | 2006 09 22 | 704 | 0.5− | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2000 02 11 | 704 | 1.7− | 1.1+ | 2006 09 22 | 704 | 0.9− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2001 04 15 | 691 | 0.0 | 1.0+ | 2006 09 22 | 704 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.4− |
| 2001 04 15 | 691 | 0.7+ | 0.9+ | 2006 09 28 | 704 | 0.1+ | 0.8+ | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2001 04 15 | 691 | 0.6+ | 0.7+ | 2006 09 28 | 704 | 0.2− | 1.0+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2002 06 06 | 704 | 0.5− | 0.1+ | 2006 09 28 | 704 | 0.2− | 0.9+ | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2002 06 06 | 704 | 0.6+ | 0.3+ | 2006 09 28 | 704 | 0.3+ | 1.1+ | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2002 06 06 | 704 | 0.0 | 1.1+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2004 02 13 | 691 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2004 02 13 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2004 02 13 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2004 02 16 | 704 | 0.7+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2004 02 16 | 704 | 0.0 | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2004 02 16 | 704 | 0.1− | 0.8+ | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 2004 02 16 | 704 | 0.4+ | 1.2+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2004 02 23 | 704 | 0.1+ | 0.8+ | 2006 10 18 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2004 02 23 | 704 | 0.5+ | 0.3− | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2004 02 25 | 704 | (0.6+ | 2.2+) | 2006 10 20 | 691 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2004 02 25 | 704 | (1.9+ | 1.6+) | 2006 10 20 | 691 | 1.1+ | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2004 02 25 | 704 | 1.3+ | 1.0+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2004 02 25 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 704 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2005 04 11 | 695 | 0.2+ | 0.3+ | 2006 10 22 | 704 | 1.2− | 0.6+ | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2005 04 11 | 695 | 0.2+ | 0.2+ | 2006 10 22 | 704 | 0.0 | 0.9+ | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2005 05 13 | G96 | 0.4+ | 0.0 | 2006 10 22 | 704 | (0.7+ | 1.7+) | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2005 05 13 | G96 | 0.1− | 0.1− | 2006 10 22 | 704 | (0.3− | 1.6+) | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2005 05 13 | G96 | 0.1− | 0.3+ | 2006 10 27 | 704 | (0.3+ | 1.9+) | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2005 05 13 | G96 | 0.5+ | 0.7− | 2006 10 27 | 704 | 0.2+ | 0.9+ | 2006 11 27 | G96 | 0.5− | 0.4− |
| 2005 05 14 | G96 | 0.3− | 0.5+ | 2006 10 27 | 704 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2005 05 14 | G96 | 0.1− | 0.1− | 2006 10 27 | 704 | 0.6+ | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.3− |
| 2005 05 14 | G96 | 0.3− | 0.3+ | 2006 10 27 | 704 | 0.3− | 0.6+ | 2006 11 29 | 704 | 0.3+ | 0.0 |
| 2005 05 14 | G96 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2005 05 19 | G96 | 0.4− | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.3+ |
| 2005 05 19 | G96 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2005 05 19 | G96 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2006 08 28 | 704 | (4.5− | 0.1−) | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2006 08 28 | 704 | 1.3− | 1.2− | 2006 11 02 | 704 | (0.5− | 1.6−) | | | | |
| 2006 08 28 | 704 | 0.5− | 1.0− | 2006 11 02 | 704 | 1.2− | 0.1+ | | | | |

**(144238)∗ 2004 $CJ_{73}$ = 2001 $QA_{292}$**

Discovered 2004 Feb. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61916)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | | **P** | **Q** |
| $M$ | 131.54057 | | (2000.0) | | |
| $n$ | 0.22604284 | $\omega$ | 192.12652 | −0.37171701 | +0.91785121 |
| $a$ | 2.6689609 | $\Omega$ | 56.20407 | −0.83713232 | −0.26659090 |
| $e$ | 0.0877574 | $i$ | 9.64248 | −0.40129283 | −0.29407217 |
| $P$ | 4.36 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.9+ | 0.9+ | 2004 02 14 | 644 | 0.2+ | 0.5+ | 2004 03 25 | 704 | 0.5+ | 0.9+ |
| 2000 04 04 | 699 | 1.9+ | 0.7+ | 2004 02 14 | 644 | 0.2+ | 0.5+ | 2004 03 25 | 704 | 0.4+ | 0.1+ |
| 2000 04 04 | 699 | 0.3+ | 0.0 | 2004 02 14 | 644 | 0.4+ | 0.4+ | 2004 03 25 | 704 | 0.5+ | 0.3+ |
| 2000 04 04 | 699 | 0.2− | 0.4+ | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2004 03 25 | 704 | 0.7− | 0.3+ |
| 2000 05 04 | 704 | 1.0+ | 0.3− | 2004 02 16 | 704 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2000 05 04 | 704 | 0.5− | 1.2+ | 2004 02 16 | 704 | 0.3+ | 0.9+ | 2006 09 30 | 703 | 0.4+ | 1.2+ |
| 2000 05 04 | 704 | 0.4+ | 0.0 | 2004 02 16 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.8+ | 0.3− |
| 2000 05 04 | 704 | 0.7− | 0.6+ | 2004 02 16 | 704 | 0.4+ | 1.4+ | 2006 09 30 | 703 | 0.1+ | 1.2+ |
| 2000 05 04 | 704 | 0.6− | 0.2− | 2004 02 19 | 608 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 02 19 | 608 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 02 19 | 608 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2+ |
| 2001 08 16 | 644 | 0.3− | 0.1+ | 2004 03 14 | 704 | (0.3+ | 1.8+) | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 08 16 | 644 | 0.3− | 0.6+ | 2004 03 14 | 704 | (0.7+ | 2.3+) | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 08 16 | 644 | 0.4− | 0.6+ | 2004 03 14 | 704 | (1.9+ | 0.9+) | 2006 10 22 | 691 | 0.6− | 0.0 |
| 2001 08 19 | 704 | 0.9− | 0.9+ | 2004 03 14 | 704 | (0.9+ | 2.6+) | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 08 19 | 704 | 0.0 | 0.7+ | 2004 03 23 | 704 | 0.2− | 1.2− | 2006 10 22 | 703 | 0.4− | 0.6+ |
| 2001 08 19 | 704 | 0.1+ | 1.2+ | 2004 03 23 | 704 | 0.0 | 0.9+ | 2006 10 22 | 703 | 0.7− | 1.5+ |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2004 03 23 | 704 | (2.3+ | 0.4−) | 2006 10 22 | 703 | 0.9− | 0.3+ |
| 2002 12 06 | 704 | 1.3+ | 0.5− | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.6− |
| 2002 12 06 | 704 | 0.2+ | 1.4− | 2004 03 25 | 704 | 1.0− | 0.5+ | | | | |

**(144239)∗ 2004 CS$_{73}$**

Discovered 2004 Feb. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.47070 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27596273 | $\omega$ | 23.78673 | | +0.17359198 | | −0.98364672 |
| $a$ | 2.3365178 | $\Omega$ | 56.24909 | | +0.89403597 | | +0.13695873 |
| $e$ | 0.2034639 | $i$ | 3.31019 | | +0.41299578 | | +0.11696767 |
| $P$ | 3.57 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 03 | 691 | 0.3+ | 0.5+ | 2004 02 15 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.7− |
| 1994 05 03 | 691 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.9− | 0.5− |
| 1994 05 03 | 691 | 0.1+ | 0.4+ | 2004 02 15 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.3+ |
| 1999 10 19 | 704 | 0.7+ | 1.6− | 2004 02 15 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.3− |
| 1999 10 19 | 704 | 0.1+ | 0.3− | 2004 02 15 | 704 | 0.3− | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.3− |
| 1999 10 19 | 704 | 0.1− | 1.3− | 2004 02 17 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.3− |
| 1999 10 19 | 704 | 0.8+ | 0.1+ | 2004 02 17 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.0 |
| 1999 11 12 | 704 | 0.3− | 0.7+ | 2004 02 17 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.3− |
| 1999 11 12 | 704 | 0.5+ | 1.0+ | 2004 02 18 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.9− | 0.1+ |
| 1999 11 12 | 704 | 0.6− | 0.4+ | 2004 02 18 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.1+ |
| 2003 12 29 | 291 | 0.5− | 0.3+ | 2004 02 18 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2003 12 29 | 291 | 0.5− | 0.6+ | 2004 03 17 | 645 | 0.1+ | 0.1− | 2006 09 30 | 703 | (2.3+ | 0.3+) |
| 2003 12 29 | 291 | 1.4− | 0.8+ | 2004 03 17 | 645 | 0.1+ | 0.2− | 2006 09 30 | 703 | (2.5+ | 0.4−) |
| 2004 01 18 | 644 | 0.2+ | 0.3+ | 2006 08 18 | 691 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.1+ |
| 2004 01 18 | 644 | 0.2+ | 0.0 | 2006 08 18 | 691 | 0.1− | 0.7+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2004 01 18 | 644 | 0.1− | 0.3+ | 2006 08 18 | 691 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2004 01 30 | 704 | (2.0+ | 0.5+) | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2004 01 30 | 704 | 1.1+ | 0.5− | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.6− | 0.1− |
| 2004 01 30 | 704 | (1.9+ | 0.2+) | 2006 08 27 | 691 | 0.3+ | 0.4+ | | | | |
| 2004 01 30 | 704 | 0.4+ | 1.4− | 2006 09 18 | 703 | (1.9+ | 0.7+) | | | | |

**(144240)∗ 2004 CC$_{74}$ = 2002 RE$_{220}$**

Discovered 2004 Feb. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61917)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.17440 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26627875 | $\omega$ | 257.37048 | | +0.80590533 | | −0.58718344 |
| $a$ | 2.3928293 | $\Omega$ | 138.51975 | | +0.57783101 | | +0.75224673 |
| $e$ | 0.0942921 | $i$ | 6.56354 | | +0.12894930 | | +0.29889874 |
| $P$ | 3.70 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.1− | 0.1− | 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.5− | 0.3+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.7+ |
| 2002 09 05 | 704 | (2.1− | 0.2−) | 2004 02 17 | 704 | 0.1+ | 1.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 09 05 | 704 | (2.9− | 0.4+) | 2004 02 17 | 704 | 0.2+ | 1.5+ | 2006 10 11 | 644 | 0.3− | 0.5+ |
| 2002 09 05 | 704 | (2.3− | 0.3+) | 2004 02 17 | 704 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2002 09 05 | 704 | 1.5− | 0.3+ | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | (2.1− | 0.7−) | 2004 02 23 | 704 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.6+ | 0.5+ |
| 2002 09 15 | 644 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.5− | 0.9+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2002 09 15 | 644 | 0.7+ | 0.9+ | 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2002 09 15 | 644 | 0.1− | 0.5+ | 2004 02 23 | 704 | (1.7− | 1.5+) | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2002 09 16 | 644 | 0.1− | 0.7+ | 2005 06 10 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2002 09 16 | 644 | 0.1− | 0.3+ | 2005 06 10 | 691 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.8+ |
| 2002 09 16 | 644 | 0.1− | 0.2+ | 2005 06 10 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.9+ |
| 2004 01 18 | 644 | 0.0 | 0.8+ | 2005 06 14 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.6+ |
| 2004 01 18 | 644 | 0.0 | 0.5+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2004 01 18 | 644 | 0.1+ | 0.6+ | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.5+ | 0.1− |
| 2004 01 24 | 704 | 0.7+ | 1.1+ | 2005 06 28 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.4+ |
| 2004 01 24 | 704 | (0.4+ | 2.3+) | 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.7+ |
| 2004 01 24 | 704 | 0.2+ | 0.7+ | 2005 06 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2004 01 24 | 704 | (1.3+ | 1.7+) | 2005 06 29 | 291 | 0.1+ | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.5+ |
| 2004 02 10 | 644 | 0.5+ | 0.1+ | 2005 06 29 | 291 | 0.3+ | 0.5+ | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2004 02 10 | 644 | 0.1+ | 0.3+ | 2005 06 29 | 291 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.8− | 0.3− |
| 2004 02 10 | 644 | 0.2+ | 0.1− | 2005 07 03 | 691 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.9− | 0.9− |
| 2004 02 13 | 691 | 0.0 | 0.4+ | 2005 07 03 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 703 | (1.1− | 1.6+) |
| 2004 02 13 | 691 | 0.2+ | 0.4+ | 2005 07 03 | 691 | 0.3− | 0.3+ | 2006 11 19 | 703 | 0.7+ | 0.7+ |

**(144241)∗ 2004 CD$_{74}$ = 2002 VU$_{132}$**

Discovered 2004 Feb. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61917)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.50468 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25864105 | $\omega$ | 142.23429 | | −0.59616473 | | +0.80179258 |
| $a$ | 2.4397074 | $\Omega$ | 91.13246 | | −0.74633789 | | −0.53443562 |
| $e$ | 0.1430772 | $i$ | 2.37479 | | −0.29591785 | | −0.26740835 |
| $P$ | 3.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 30 | 691 | 0.1− | 0.2+ | 2004 02 18 | 704 | 0.6+ | 0.2+ | 2005 08 25 | 644 | 0.3− | 0.8+ |
| 1994 09 30 | 691 | 0.2− | 0.4+ | 2004 02 18 | 704 | 0.1+ | 0.2− | 2005 08 25 | 644 | 0.1− | 0.3+ |
| 2001 07 17 | 644 | 0.1− | 0.4+ | 2004 02 18 | 704 | 0.2− | 0.1+ | 2005 10 28 | G96 | 0.1+ | 0.0 |
| 2001 07 17 | 644 | 0.0 | 0.4+ | 2004 02 19 | 704 | 0.0 | 0.4+ | 2005 10 28 | G96 | 0.2+ | 0.2+ |
| 2001 07 17 | 644 | 0.1+ | 0.1+ | 2004 02 19 | 704 | 0.4+ | 0.7− | 2005 10 28 | G96 | 0.2− | 0.5+ |
| 2002 11 01 | 950 | 0.2+ | 0.5+ | 2004 02 19 | 704 | 0.0 | 0.6− | 2005 10 28 | G96 | 0.8− | 0.3+ |
| 2002 11 01 | 950 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.5− |
| 2002 11 01 | 950 | 0.2+ | 0.5+ | 2004 02 23 | 704 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2002 11 07 | 704 | 0.5− | 1.0+ | 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2002 11 07 | 704 | 1.3− | 1.1+ | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | (0.4− | 2.0+) | 2004 02 23 | 704 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2004 01 22 | 704 | 0.2− | 0.6+ | 2004 03 10 | 644 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2004 01 22 | 704 | 0.4− | 0.1+ | 2004 03 10 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2004 01 22 | 704 | 0.3− | 0.9+ | 2004 03 10 | 644 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.7− |
| 2004 01 22 | 704 | 0.4+ | 0.0 | 2004 03 19 | 704 | 0.6+ | 1.0+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.0 | 1.1+ | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2004 01 30 | 704 | 0.7+ | 0.3+ | 2004 03 19 | 704 | 0.6− | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2004 01 30 | 704 | 0.8+ | 0.2+ | 2004 03 19 | 704 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2004 01 30 | 704 | 0.7− | 0.5− | 2004 03 19 | 704 | 0.4− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2004 02 10 | 644 | 0.1+ | 0.1− | 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2004 02 10 | 644 | 0.4+ | 0.1+ | 2004 03 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2004 02 10 | 644 | 0.6+ | 0.0 | 2004 03 20 | 691 | 0.0 | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2004 02 17 | 704 | 0.4+ | 0.2+ | 2005 07 04 | 644 | 0.0 | 0.7+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2004 02 17 | 704 | 0.2− | 0.4+ | 2005 07 04 | 644 | 0.0 | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.3− |
| 2004 02 17 | 704 | 0.3+ | 0.2− | 2005 07 04 | 644 | 0.3− | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2004 02 17 | 704 | 0.2+ | 0.3+ | 2005 07 18 | 644 | 0.4− | 0.9+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 02 17 | 704 | 0.1+ | 0.0 | 2005 07 18 | 644 | 0.3− | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 2004 02 18 | 704 | 0.9+ | 0.6+ | 2005 07 18 | 644 | 0.1− | 0.7+ | | | | |
| 2004 02 18 | 704 | 0.3− | 0.1+ | 2005 08 25 | 644 | 0.3− | 0.4+ | | | | |

**(144242)∗ 2004 CE$_{74}$ = 1996 VL$_{34}$**

Discovered 2004 Feb. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61917)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.44786 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17981554 | $\omega$ | 215.15158 | | −0.44315356 | +0.89629498 | |
| $a$ | 3.1087412 | $\Omega$ | 28.55356 | | −0.81439586 | −0.39486081 | |
| $e$ | 0.1560212 | $i$ | 1.97090 | | −0.37466558 | −0.20184215 | |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 809 | 1.1+ | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.8+ | 0.6− |
| 1996 11 08 | 691 | 0.2+ | 0.3− | 2004 02 23 | 704 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.1+ | 1.2+ |
| 1996 11 08 | 691 | 0.9− | 0.5− | 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 699 | (1.9− | 0.1+) |
| 1996 11 08 | 691 | 0.7− | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.8− | 0.0 |
| 1996 11 09 | 691 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 1.0+ |
| 1996 11 09 | 691 | 0.1− | 0.0 | 2004 02 25 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.5− |
| 1996 11 09 | 691 | 0.8+ | 0.3− | 2004 02 25 | 704 | 0.6− | 1.2+ | 2006 09 19 | 699 | 0.1+ | 1.5+ |
| 2001 09 21 | 704 | 0.8− | 0.8+ | 2004 02 25 | 704 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | (0.3− | 1.5+) | 2004 02 25 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 0.8+ | 0.3+ | 2004 02 26 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.5+ | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2004 02 26 | 704 | 0.7+ | 0.4+ | 2006 09 30 | G96 | 0.6− | 0.1− |
| 2001 10 14 | 704 | 1.4− | 1.4+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 1.0+ | 1.3+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 0.1− | 0.5+ | 2004 03 10 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.6− | 0.0 |
| 2001 10 14 | 704 | 1.0− | 0.6+ | 2004 03 10 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 10 18 | 644 | 0.3− | 0.2+ | 2004 03 10 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2001 10 18 | 644 | 0.5− | 0.2+ | 2004 03 10 | 644 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2001 10 18 | 644 | 0.2− | 0.1− | 2004 03 10 | 644 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 01 22 | 704 | (1.9+ | 1.0−) | 2004 03 10 | 644 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2004 01 22 | 704 | 1.4+ | 1.0+ | 2005 06 04 | 704 | 0.2− | 1.0+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.8+ | 0.6+ | 2005 06 04 | 704 | 0.2− | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2004 02 10 | 644 | 0.7− | 0.3+ | 2005 06 04 | 704 | 0.5+ | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 02 10 | 644 | 0.0 | 0.1+ | 2005 06 04 | 704 | 0.5− | 1.4+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 02 10 | 644 | 0.1− | 0.5+ | 2005 06 04 | 704 | 0.3+ | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2004 02 17 | 704 | 0.7+ | 0.7+ | 2006 08 28 | 703 | 0.4− | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2004 02 17 | 704 | 0.5− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2004 02 17 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 1.4+ | 0.9+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2004 02 17 | 704 | 0.5− | 0.3+ | 2006 08 28 | 703 | (2.0+ | 0.9+) | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2004 02 17 | 704 | 0.3− | 0.7+ | 2006 09 16 | 699 | 0.6− | 0.8+ | | | | |

**(144243)∗ 2004 CA$_{76}$**

Discovered 2004 Feb. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.47469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28476094 | $\omega$ | 251.86372 | | +0.75706826 | −0.65100726 | |
| $a$ | 2.2881392 | $\Omega$ | 148.68505 | | +0.63233407 | +0.70890494 | |
| $e$ | 0.1738964 | $i$ | 6.08679 | | +0.16432063 | +0.27137304 | |
| $P$ | 3.46 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.3− | 1.0+ | 2004 02 19 | 704 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.3− |
| 1999 10 09 | 704 | 0.4+ | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 1999 10 09 | 704 | 0.4+ | 0.6+ | 2004 02 19 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.2+ | 0.2− | 2004 02 19 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.0 |
| 1999 10 09 | 704 | 0.1− | 1.3+ | 2004 02 22 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 1999 11 07 | 704 | 0.7− | 0.4+ | 2004 02 22 | 704 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 1999 11 07 | 704 | (1.3− | 2.1+) | 2004 02 22 | 704 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 1999 11 07 | 704 | (0.1− | 2.4+) | 2004 02 26 | 704 | 0.0 | 1.2+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 1999 11 07 | 704 | 1.6− | 1.0+ | 2004 02 26 | 704 | 0.4− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2004 02 11 | 703 | 0.8+ | 0.6+ | 2004 02 26 | 704 | 1.2+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2004 02 11 | 699 | 0.5− | 0.5+ | 2004 02 26 | 704 | 0.8+ | 0.1− | 2006 10 31 | 704 | 1.0+ | 0.4+ |
| 2004 02 11 | 703 | 0.7− | 1.3+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 10 31 | 704 | 0.1+ | 0.7+ |
| 2004 02 11 | 644 | 0.3+ | 0.1− | 2004 02 29 | 691 | 0.2− | 0.0 | 2006 10 31 | 704 | 0.0 | 0.4+ |
| 2004 02 11 | 691 | 0.0 | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.1− | 2006 10 31 | 704 | 0.2− | 0.4+ |
| 2004 02 11 | 703 | 0.6+ | 0.1+ | 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 11 01 | 703 | 0.8− | 0.3− |
| 2004 02 11 | 699 | 0.4− | 0.6− | 2005 06 04 | 691 | 0.2− | 0.7+ | 2006 11 01 | 703 | 0.3+ | 0.0 |
| 2004 02 11 | 703 | 1.1+ | 0.3− | 2005 06 04 | 691 | 0.0 | 0.8+ | 2006 11 01 | 703 | 0.7+ | 0.5− |
| 2004 02 11 | 644 | 0.0 | 0.3+ | 2005 06 09 | 691 | 0.3+ | 0.5+ | 2006 11 01 | 703 | 0.5+ | 0.1− |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2005 06 09 | 691 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 2004 02 11 | 699 | 0.6− | 0.4− | 2005 06 09 | 691 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.5+ |
| 2004 02 11 | 699 | 0.1+ | 0.0 | 2005 06 14 | 691 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2004 02 11 | 644 | 0.3+ | 0.6+ | 2005 06 14 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.1+ |
| 2004 02 11 | 691 | 0.2− | 0.2+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 1.2+ |
| 2004 02 17 | 704 | 1.5+ | 0.1+ | 2006 09 30 | 699 | 0.2− | 0.2− | 2006 11 13 | 703 | 0.4+ | 0.8+ |
| 2004 02 17 | 704 | (2.3+ | 1.4+) | 2006 09 30 | 699 | 0.0 | 0.9+ | 2006 11 13 | 703 | 0.7− | 0.1+ |
| 2004 02 17 | 704 | 0.5+ | 0.4− | 2006 09 30 | 699 | 0.4− | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.5+ |
| 2004 02 17 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.7− | 0.3+ |
| 2004 02 17 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 11 19 | 703 | 0.2− | 0.2+ |
| 2004 02 19 | 704 | 0.1+ | 1.0+ | 2006 09 30 | 699 | (1.7− | 0.7−) | 2006 11 19 | 703 | 0.2− | 0.9+ |

**(144244)∗ 2004 CW$_{76}$ = 1996 GC$_{11}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69673)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.53490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22924105 | $\omega$ | 140.14552 | | +0.71771837 | +0.69632658 | |
| $a$ | 2.6440792 | $\Omega$ | 175.71750 | | −0.64900573 | +0.67054646 | |
| $e$ | 0.0644408 | $i$ | 2.38328 | | −0.25233293 | +0.25592331 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | (4.3+ | 0.4+) | 2004 02 17 | 704 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1993 09 15 | 809 | (4.4+ | 1.1+) | 2004 03 20 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1993 09 15 | 809 | (3.4+ | 2.1+) | 2004 03 20 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1996 04 13 | 691 | 0.6+ | 1.0+ | 2004 03 20 | 691 | 0.0 | 0.1+ | 2006 09 29 | 691 | 0.2+ | 0.5+ |
| 1996 04 13 | 691 | 0.5+ | 0.9+ | 2004 05 09 | 291 | 0.0 | 0.3+ | 2006 09 29 | 691 | 0.0 | 0.2+ |
| 1996 04 13 | 691 | 0.8+ | 0.3+ | 2004 05 09 | 291 | 0.4+ | 0.2+ | 2006 09 29 | 691 | 0.4+ | 0.2+ |
| 1996 04 20 | 691 | 0.0 | 0.6+ | 2004 05 09 | 291 | 0.3− | 0.3+ | 2006 10 15 | 703 | (0.9+ | 1.8+) |
| 1996 04 20 | 691 | 0.3− | 0.6+ | 2005 02 18 | 809 | 0.5− | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.9+ |
| 1996 04 20 | 691 | 0.1+ | 0.5+ | 2005 02 18 | 809 | 0.4− | 0.2+ | 2006 10 15 | 703 | 0.6− | 1.3+ |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2005 02 18 | 809 | 0.3− | 0.2+ | 2006 10 15 | 703 | (0.5− | 2.1+) |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.6+ | 0.4− | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.1+ | 0.2− | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2000 03 11 | 704 | 0.4+ | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2000 03 11 | 704 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2000 03 11 | 704 | 0.2− | 0.3− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2000 04 03 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2000 04 03 | 691 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2000 04 03 | 691 | 0.0 | 0.3− | 2006 09 18 | 699 | 1.4+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 04 | 608 | 0.0 | 1.1+ | 2006 09 18 | 699 | 1.0− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 11 04 | 608 | 1.0− | 1.3+ | 2006 09 18 | 699 | (1.7− | 0.7+) | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 11 04 | 608 | 0.3− | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.9− | 1.0− | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.3− | 1.0+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2004 02 11 | 644 | 0.2+ | 0.2− | 2006 09 26 | 691 | (0.2+ | 2.5+) | 2006 11 11 | 703 | 0.6+ | 0.5+ |
| 2004 02 11 | 644 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.8− |
| 2004 02 12 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.4− | 0.2+ |
| 2004 02 12 | 691 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2004 02 17 | 704 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2004 02 17 | 704 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− | | | | |

**(144245)∗ 2004 CU$_{78}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.31643 | | (2000.0) | | | |
| $n$ | 0.21671485 | $\omega$ | 175.09638 | | +0.68219236 | +0.73016066 |
| $a$ | 2.7450079 | $\Omega$ | 137.91142 | | −0.67277366 | +0.64743432 |
| $e$ | 0.0467758 | $i$ | 3.28919 | | −0.28633752 | +0.21839005 |
| $P$ | 4.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.3+ | 2005 08 04 | 644 | 0.3+ | 0.5+ |
| 1995 03 28 | 691 | 0.1+ | 0.7− | 2004 02 23 | 704 | 1.5+ | 0.5− | 2006 08 28 | 703 | 0.1+ | 0.4+ |
| 1995 03 28 | 691 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.9− | 0.1+ |
| 2001 08 26 | 608 | 0.3− | 0.7− | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 08 28 | 703 | (1.8− | 0.7+) |
| 2001 08 26 | 608 | 0.1− | 0.3− | 2004 02 26 | 704 | (1.0− | 2.1+) | 2006 08 28 | 703 | 1.3− | 0.3+ |
| 2001 08 26 | 608 | 0.3− | 0.4− | 2004 02 26 | 704 | 1.3− | 1.0+ | 2006 09 18 | 703 | (0.6+ | 1.6+) |
| 2002 12 01 | 704 | 0.9− | 0.8− | 2004 02 26 | 704 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.7+ | 0.5− |
| 2002 12 01 | 704 | (0.8+ | 1.8+) | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 1.2+ |
| 2002 12 01 | 704 | 0.8− | 0.7+ | 2004 02 29 | 691 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.9− | 1.0+ |
| 2002 12 01 | 704 | 0.2− | 0.7+ | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | (0.1− | 1.8−) |
| 2002 12 10 | 644 | 0.3− | 0.6+ | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.6+ | 1.4+ |
| 2002 12 10 | 644 | 0.6− | 0.6+ | 2004 03 17 | 691 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.2− |
| 2002 12 10 | 644 | 0.4− | 0.5+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.6+ |
| 2004 02 11 | 644 | 0.1− | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.0 | 1.2+ |
| 2004 02 11 | 644 | 0.3+ | 0.1− | 2004 03 26 | 691 | 0.2− | 0.5+ | 2006 09 28 | 704 | 0.8+ | 0.9+ |
| 2004 02 11 | 644 | 0.3− | 0.2+ | 2004 03 26 | 691 | 0.0 | 0.4+ | 2006 09 28 | 704 | 0.4+ | 0.1+ |
| 2004 02 14 | 691 | 0.0 | 0.1− | 2005 06 05 | 704 | (1.6− | 1.4+) | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2004 02 14 | 691 | 0.2− | 0.1− | 2005 06 05 | 704 | 0.5− | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.8+ |
| 2004 02 14 | 691 | 0.0 | 0.1− | 2005 06 05 | 704 | 1.4− | 1.4+ | 2006 10 11 | 644 | 0.3− | 0.6+ |
| 2004 02 17 | 704 | 0.7+ | 0.3− | 2005 06 05 | 704 | 0.8− | 1.0+ | 2006 10 17 | 703 | (1.6+ | 1.1+) |
| 2004 02 17 | 704 | (2.1+ | 0.1+) | 2005 06 13 | 599 | 0.9+ | 0.1+ | 2006 10 17 | 703 | (0.7− | 1.8+) |
| 2004 02 17 | 704 | 0.2+ | 0.3+ | 2005 06 13 | 599 | 1.4+ | 0.5+ | 2006 10 17 | 703 | (0.9+ | 2.0+) |
| 2004 02 17 | 704 | 0.7+ | 0.2− | 2005 06 13 | 599 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 1.3+ |
| 2004 02 17 | 704 | 0.2− | 0.8+ | 2005 06 13 | 599 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2004 02 18 | 704 | 0.4+ | 0.3− | 2005 06 17 | G96 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2004 02 18 | 704 | (1.7+ | 0.5+) | 2005 06 17 | G96 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2004 02 18 | 704 | (1.9+ | 0.5+) | 2005 06 17 | G96 | 0.5− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 02 23 | 704 | 0.1− | 0.8+ | 2005 06 17 | G96 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 02 23 | 704 | 0.7+ | 0.1+ | 2005 06 17 | G96 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2004 02 23 | 704 | 0.4− | 0.1− | 2005 06 17 | G96 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 0.5+ | 0.6+ | 2005 06 17 | G96 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.3− | 0.4+ | 2005 08 04 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2004 02 23 | 704 | 1.0+ | 0.5+ | 2005 08 04 | 644 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |

**(144246)∗ 2004 CZ$_{78}$ = 2002 TS$_{173}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61920)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.26896 | | (2000.0) | | | |
| $n$ | 0.26847109 | $\omega$ | 301.36660 | | +0.19741026 | −0.97657593 |
| $a$ | 2.3797849 | $\Omega$ | 136.97863 | | +0.93665605 | +0.16212467 |
| $e$ | 0.0364882 | $i$ | 7.20814 | | +0.28931754 | +0.14147451 |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 691 | 0.5+ | 0.8+ | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.9− | 0.6+ |
| 2001 05 15 | 691 | 0.7+ | 0.7+ | 2004 02 17 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 05 15 | 691 | 0.9− | 1.3+ | 2004 02 17 | 704 | 1.0− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2004 02 17 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2004 02 17 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 10 04 | 704 | (0.9− | 1.6+) | 2004 02 17 | 608 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2002 10 04 | 704 | 0.1+ | 1.2+ | 2004 02 17 | 608 | 0.0 | 0.2+ | 2006 10 30 | 703 | 0.1− | 0.5+ |
| 2002 10 04 | 704 | (1.5− | 1.7+) | 2004 02 17 | 608 | 0.1− | 0.0 | 2006 10 30 | 703 | 1.2− | 0.7− |
| 2002 10 04 | 704 | 1.2− | 0.1− | 2004 02 23 | 704 | 0.6+ | 0.2+ | 2006 10 30 | 703 | 0.3− | 0.1− |
| 2002 10 06 | 704 | (1.1− | 1.7+) | 2004 02 23 | 704 | 0.3+ | 0.1− | 2006 10 30 | 703 | (2.0− | 1.0+) |
| 2002 10 06 | 704 | 1.3− | 0.4+ | 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 11 13 | 703 | 0.9+ | 0.7− |
| 2002 10 06 | 704 | 1.0− | 1.2+ | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 1.0+ |
| 2002 10 06 | 704 | (0.3− | 2.2+) | 2004 02 23 | 704 | 0.7+ | 0.7− | 2006 11 13 | 703 | 1.3− | 0.5+ |
| 2002 10 29 | 704 | (1.6− | 1.9+) | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.8− | 0.6+ |
| 2002 10 29 | 704 | (0.9− | 2.2+) | 2004 02 29 | 691 | 0.4− | 0.4+ | 2006 11 19 | 703 | 0.8+ | 0.8+ |
| 2002 10 29 | 704 | 1.3− | 0.6+ | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.1+ | 0.7+ |
| 2002 10 29 | 704 | 0.2− | 1.5+ | 2004 03 19 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.5+ | 0.5+ |
| 2004 01 22 | 704 | 0.2− | 0.3+ | 2004 03 19 | 644 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.3+ | 0.6+ |
| 2004 01 22 | 704 | 0.7+ | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 01 22 | 704 | 0.2+ | 0.3− | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2004 01 22 | 704 | 0.7+ | 0.9+ | 2004 03 20 | 704 | 0.4+ | 1.4+ | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2004 02 11 | 644 | 0.2+ | 0.1− | 2004 03 20 | 704 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 644 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.5+ | | | | |

**(144247)∗ 2004 CG$_{79}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.81847 | | (2000.0) | | | |
| $n$ | 0.20550883 | $\omega$ | 306.89383 | | +0.51615001 | −0.85491193 |
| $a$ | 2.8439092 | $\Omega$ | 111.95343 | | +0.80261098 | +0.46154327 |
| $e$ | 0.0587516 | $i$ | 3.22039 | | +0.29900631 | +0.23686156 |
| $P$ | 4.80 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 07 | 691 | 0.3+ | 0.2− | 2002 12 10 | 644 | 0.0 | 0.1+ | 2004 02 29 | 691 | 0.1− | 0.3+ |
| 1994 01 07 | 691 | 0.6− | 0.0 | 2002 12 10 | 644 | 0.1− | 0.2+ | 2004 02 29 | 691 | 0.4− | 0.3+ |
| 1994 01 07 | 691 | 1.4− | 0.2− | 2002 12 10 | 644 | 0.3− | 0.1− | 2004 03 26 | 691 | 0.0 | 0.1+ |
| 1998 12 26 | 910 | 0.9+ | 1.2− | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2004 03 26 | 691 | 0.0 | 0.3+ |
| 1998 12 26 | 910 | 0.5+ | 0.6− | 2004 02 11 | 644 | 0.0 | 0.3− | 2004 03 26 | 691 | 0.0 | 0.2+ |
| 1998 12 26 | 910 | 1.0+ | 0.4− | 2004 02 11 | 644 | 0.2− | 0.3+ | 2006 08 19 | 699 | 0.2+ | 0.9+ |
| 1999 01 18 | 691 | 1.0+ | 0.3+ | 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 08 19 | 699 | 0.3− | 0.6+ |
| 1999 01 18 | 691 | 1.0+ | 0.4− | 2004 02 17 | 691 | 0.2− | 0.2+ | 2006 08 19 | 699 | 1.1− | 0.2+ |
| 1999 01 18 | 691 | 1.1+ | 0.0 | 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 08 19 | 699 | 1.4+ | 0.1+ |
| 2002 11 03 | 608 | 0.4− | 0.7+ | 2004 02 17 | 704 | 1.4− | 0.2− | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 2002 11 03 | 608 | 0.2− | 1.0+ | 2004 02 17 | 704 | 0.2− | 0.5− | 2006 08 20 | 644 | 0.2− | 0.3+ |
| 2002 11 03 | 608 | 0.2− | 0.8+ | 2004 02 17 | 704 | 0.2− | 0.4− | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 0.2− | 0.7− | 2004 02 17 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.3+ | 1.0+ |
| 2002 11 11 | 704 | 0.2− | 0.1− | 2004 02 17 | 704 | 0.5− | 0.5− | 2006 08 28 | 703 | 0.2− | 0.8+ |
| 2002 11 11 | 704 | 0.1− | 0.0 | 2004 02 23 | 704 | (1.7+ | 3.7+) | 2006 08 28 | 703 | 0.5+ | 0.2+ |
| 2002 11 11 | 704 | 0.5+ | 0.6− | 2004 02 23 | 704 | 0.3+ | 0.9+ | 2006 08 28 | 703 | (1.1+ | 4.1−) |
| 2002 11 11 | 704 | 0.4+ | 0.8− | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.6− |
| 2002 11 22 | 644 | 0.1− | 0.6+ | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.8+ |
| 2002 11 22 | 644 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.8+ | 0.3− | 2006 09 14 | 703 | 0.0 | 0.5+ |
| 2002 11 22 | 644 | 0.1+ | 0.4+ | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.6− |

**(144248)∗ 2004 CE$_{80}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 211.94550 | | (2000.0) | | | |
| $n$ | 0.22527855 | $\omega$ | 14.14220 | | −0.93308942 | −0.33851102 |
| $a$ | 2.6749941 | $\Omega$ | 145.29572 | | +0.30574799 | −0.92448457 |
| $e$ | 0.0210983 | $i$ | 12.31863 | | +0.18937345 | −0.17532421 |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.0 | 0.4+ | 2004 02 17 | 704 | 0.1− | 0.6+ | 2004 03 26 | 703 | 1.4+ | 0.8+ |
| 2000 04 04 | 699 | 0.0 | 0.1+ | 2004 02 17 | 704 | 0.2− | 0.8− | 2004 03 26 | 703 | 0.1+ | 0.9+ |
| 2000 04 04 | 699 | 0.8− | 0.4− | 2004 02 17 | 704 | 0.3− | 0.2− | 2005 02 17 | 809 | 0.6+ | 0.1+ |
| 2000 04 04 | 699 | 0.0 | 1.0+ | 2004 02 17 | 704 | 0.1− | 0.2+ | 2005 02 17 | 809 | 0.3− | 0.3+ |
| 2000 04 27 | 699 | 1.4+ | 0.2+ | 2004 02 17 | 704 | 0.4− | 0.2+ | 2006 08 28 | 699 | 1.1− | 1.0+ |
| 2000 04 27 | 699 | 0.7− | 1.4+ | 2004 02 19 | 608 | (1.6+ | 0.9−) | 2006 08 28 | 699 | 0.6− | 1.0+ |
| 2000 04 27 | 699 | 0.1+ | 0.2+ | 2004 02 19 | 608 | 1.0+ | 0.4− | 2006 08 28 | 699 | (1.1− | 1.7+) |
| 2000 04 27 | 699 | 0.2− | 0.7+ | 2004 02 19 | 608 | 0.6+ | 0.4− | 2006 08 28 | 699 | 0.9+ | 0.2− |
| 2001 07 19 | 608 | 0.1+ | 0.6− | 2004 02 23 | 704 | 0.2− | 0.6− | 2006 09 12 | 703 | 0.0 | 0.1− |
| 2001 07 19 | 608 | 0.2+ | 0.2− | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.8+ | 1.2+ |
| 2001 07 19 | 608 | 1.0+ | 0.3− | 2004 02 23 | 704 | 0.0 | 0.2− | 2006 09 12 | 703 | 0.5+ | 0.7+ |
| 2001 08 25 | 608 | 0.6− | 1.1+ | 2004 02 23 | 704 | 0.2− | 0.8− | 2006 09 12 | 703 | 0.9− | 0.8+ |
| 2001 08 25 | 608 | 0.2+ | 1.1+ | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 09 20 | 703 | (0.9+ | 1.8+) |
| 2001 08 25 | 608 | 0.5− | 0.3+ | 2004 03 15 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 703 | (0.1+ | 2.4+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.2− | 1.0+ | 2006 09 20 | 703 | (2.3− | 1.2+) |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 09 20 | 703 | 0.9− | 1.4+ |
| 2003 01 06 | 809 | 0.3− | 0.1− | 2004 03 20 | 704 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2003 01 06 | 809 | 0.3− | 0.1+ | 2004 03 20 | 704 | 0.6− | 0.8+ | 2006 09 26 | 703 | 1.1− | 0.0 |
| 2003 01 06 | 809 | 0.3− | 0.1+ | 2004 03 20 | 704 | 0.8− | 1.3+ | 2006 09 26 | 703 | 1.1− | 1.1+ |
| 2003 01 06 | 809 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.8− | 1.1+ | 2006 09 26 | 703 | 0.0 | 1.1+ |
| 2003 01 06 | 809 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2003 01 06 | 809 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.2− | 0.6+ | 2006 10 28 | 703 | 0.8+ | 0.2− |
| 2003 01 06 | 809 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.5+ | 0.1− | 2006 10 28 | 703 | 0.1− | 0.1− |
| 2004 02 11 | 644 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.6− | 0.0 |
| 2004 02 11 | 644 | 0.2+ | 0.0 | 2004 03 26 | 703 | 1.2+ | 0.6+ | | | | |
| 2004 02 11 | 644 | 0.1− | 0.1− | 2004 03 26 | 703 | 1.1+ | 0.5+ | | | | |

**(144249)∗ 2004 CV$_{82}$ = 1995 UJ$_{41}$**

Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.

Id. K. E. Smalley (*MPO* 65565)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.96876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27264932 | $\omega$ | 60.44804 | | +0.66649421 | | −0.74541823 |
| $a$ | 2.3554096 | $\Omega$ | 347.73331 | | +0.66350499 | | +0.60026926 |
| $e$ | 0.1335182 | $i$ | 3.15944 | | +0.33992145 | | +0.28987666 |
| $P$ | 3.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.1+ | 0.2− | 2004 02 23 | 704 | 1.4− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 1995 10 23 | 691 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.9− | 0.8+ | 2006 11 14 | 703 | 0.3+ | 0.1+ |
| 1995 10 23 | 691 | 0.2+ | 0.2− | 2006 08 28 | 703 | (2.1+ | 0.4−) | 2006 11 14 | 703 | 0.1− | 0.7+ |
| 1995 10 28 | 691 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.6+ | 0.3− | 2006 11 14 | 703 | 0.0 | 0.3− |
| 1995 10 28 | 691 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.1+ | 2006 11 14 | 703 | 0.8− | 0.0 |
| 1995 10 28 | 691 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 16 | 704 | 1.3− | 1.0+ |
| 2000 01 03 | 704 | 0.3− | 1.0+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.0 | 0.1− |
| 2000 01 03 | 704 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 16 | 704 | 0.6− | 0.5+ |
| 2000 01 03 | 704 | 0.7− | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.0 | 0.9+ |
| 2000 01 03 | 704 | 0.2+ | 0.8− | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.9+ | 0.0 |
| 2002 08 08 | 644 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.2− | 2006 11 16 | 408 | 0.5+ | 0.5− |
| 2002 08 08 | 644 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 16 | 408 | 0.7+ | 0.4− |
| 2002 08 08 | 644 | 0.5− | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2002 08 09 | 608 | 0.0 | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 08 09 | 608 | 0.9− | 0.0 | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | (0.0 | 1.9+) |
| 2002 08 16 | 608 | 0.5− | 0.5− | 2006 10 20 | 408 | 0.2+ | 0.6− | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2002 08 16 | 608 | 0.3− | 0.1− | 2006 10 20 | 408 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 08 16 | 608 | 0.6− | 0.3− | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.5− |
| 2002 08 18 | 644 | 0.4− | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2002 08 18 | 644 | 0.3− | 0.8+ | 2006 10 21 | 691 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.3+ | 1.1+ |
| 2002 08 18 | 644 | 0.3− | 0.6+ | 2006 10 21 | 408 | 0.5− | 0.8− | 2006 11 17 | 408 | 0.5+ | 1.1− |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2006 10 21 | 408 | 0.3− | 0.5− | 2006 11 17 | 408 | (0.0 | 2.4−) |
| 2002 08 28 | 644 | 0.7− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | (1.6− | 0.3−) | 2006 10 22 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.8− | 1.2+ | 2006 10 23 | 644 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.7− |
| 2002 09 05 | 704 | 0.1+ | 1.2+ | 2006 10 23 | 644 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2002 09 05 | 608 | 1.1+ | 0.9− | 2006 10 23 | 644 | 0.3− | 0.0 | 2006 11 22 | 291 | 0.4+ | 0.2+ |
| 2002 09 15 | 644 | 0.2− | 0.4− | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 22 | 291 | 0.4− | 0.9+ |
| 2002 09 15 | 644 | 0.5− | 0.1− | 2006 10 27 | 703 | 0.2− | 0.9− | 2006 11 22 | 291 | 0.4+ | 0.2+ |
| 2002 09 28 | 608 | 0.7− | 0.2+ | 2006 10 27 | 703 | 0.5− | 0.6− | 2006 11 22 | 704 | 0.3+ | 0.9− |
| 2002 09 28 | 608 | (1.8− | 0.6+) | 2006 10 27 | 703 | 0.5− | 0.9− | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2002 09 28 | 608 | 1.4− | 0.9− | 2006 10 27 | 408 | 1.4+ | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2002 10 07 | 291 | 0.1+ | 1.3+ | 2006 10 27 | 408 | 1.4+ | 0.1− | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2002 10 07 | 291 | 0.0 | 1.1+ | 2006 10 29 | 704 | 1.1− | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2002 10 07 | 291 | 0.0 | 1.1+ | 2006 10 29 | 704 | 0.6− | 0.3− | 2006 11 23 | 291 | 0.3+ | 0.2+ |
| 2004 02 12 | 691 | 0.3+ | 0.6+ | 2006 10 29 | 704 | 0.6− | 0.9+ | 2006 11 23 | 291 | 0.3+ | 0.2+ |
| 2004 02 12 | 691 | 0.4+ | 0.6+ | 2006 10 29 | 704 | 0.8− | 0.3− | 2006 11 23 | 291 | 0.1+ | 0.2+ |
| 2004 02 12 | 691 | 0.2+ | 0.7+ | 2006 10 30 | 408 | 0.7+ | 0.5− | 2006 11 24 | 291 | 0.2+ | 0.0 |
| 2004 02 17 | 704 | (2.2+ | 1.0+) | 2006 10 30 | 408 | 0.9+ | 0.3− | 2006 11 24 | 291 | 0.2+ | 0.1− |
| 2004 02 17 | 704 | (0.6+ | 1.7+) | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 24 | 291 | 0.4+ | 0.0 |
| 2004 02 17 | 704 | 0.2− | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 1.3− | 0.0 |
| 2004 02 17 | 704 | 1.2+ | 1.5+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.7− | 0.4− |
| 2004 02 23 | 704 | 0.6+ | 0.7+ | 2006 10 31 | 408 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 0.4− | 0.7− |
| 2004 02 23 | 704 | 0.6+ | 0.2+ | 2006 10 31 | 408 | 0.6+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2004 02 23 | 704 | 1.0+ | 0.7+ | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.9− | 0.3− |
| 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | | | |

**(144250)∗ 2004 CQ$_{83}$ = 1999 CL$_{157}$**

Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.92189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18959654 | $\omega$ | 53.20217 | | −0.85092146 | | +0.52525797 |
| $a$ | 3.0008834 | $\Omega$ | 158.48142 | | −0.48705665 | | −0.78460886 |
| $e$ | 0.0412808 | $i$ | 0.94670 | | −0.19674472 | | −0.32938275 |
| $P$ | 5.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.1+ | 0.1+ | 2004 01 24 | 704 | 1.1+ | 0.1+ | 2005 06 06 | 691 | 0.1− | 0.2+ |
| 1999 02 08 | 691 | 0.8− | 0.7− | 2004 01 24 | 704 | 0.5+ | 0.2+ | 2005 06 06 | 691 | 0.0 | 0.0 |
| 1999 02 08 | 691 | 0.3− | 0.5− | 2004 02 12 | 691 | 0.1− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.1+ |
| 1999 02 09 | 691 | 0.3+ | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.3+ | 2005 06 10 | 691 | 0.4+ | 0.1+ |
| 1999 02 09 | 691 | 0.0 | 0.0 | 2004 02 12 | 691 | 0.1− | 0.3+ | 2005 06 10 | 691 | 0.2+ | 0.3+ |
| 1999 02 09 | 691 | 0.4+ | 0.0 | 2004 02 17 | 704 | 0.2+ | 0.5+ | 2006 07 18 | G96 | 0.2+ | 0.1− |
| 1999 03 13 | 691 | 0.3− | 0.0 | 2004 02 17 | 704 | 0.0 | 0.6− | 2006 07 18 | G96 | 0.1− | 0.1− |
| 1999 03 13 | 691 | 0.4− | 0.1− | 2004 02 17 | 704 | 0.2+ | 0.4− | 2006 07 18 | G96 | 0.4− | 0.4− |
| 1999 03 13 | 691 | 0.1− | 0.3− | 2004 03 18 | 691 | 0.0 | 0.5+ | 2006 07 18 | G96 | 0.8− | 0.6− |
| 2001 09 19 | 704 | 0.1+ | 1.0+ | 2004 03 18 | 691 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.7− | 0.7− |
| 2001 09 19 | 704 | (0.1− | 2.6+) | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.6− |
| 2001 09 19 | 704 | 0.3+ | 1.8+ | 2005 05 21 | 644 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2001 09 19 | 704 | 0.8+ | 0.9+ | 2005 05 21 | 644 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.4− | 0.3+ |
| 2004 01 24 | 704 | 1.3+ | 1.0− | 2005 05 21 | 644 | 0.2+ | 0.4− | | | | |
| 2004 01 24 | 704 | 1.2+ | 1.8− | 2005 06 06 | 691 | 0.1− | 0.3− | | | | |

**(144251)∗ 2004 CU$_{83}$ = 1995 DC$_{14}$**

Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61923)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.18747 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21462780 | $\omega$ | 100.41138 | | −0.13667989 | | +0.99035480 |
| $a$ | 2.7627742 | $\Omega$ | 161.68607 | | −0.93480961 | | −0.12135852 |
| $e$ | 0.0159731 | $i$ | 4.14553 | | −0.32779507 | | −0.06685418 |
| $P$ | 4.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.4− | 0.4− | 2004 02 29 | 691 | 0.1+ | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1995 02 25 | 691 | 0.1− | 1.0− | 2004 02 29 | 691 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1995 02 25 | 691 | 0.1+ | 0.7− | 2005 06 27 | 644 | 0.7+ | 0.5+ | 2006 09 26 | G96 | 0.6+ | 0.2− |
| 1995 03 02 | 691 | 0.0 | 0.1− | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.3− |
| 1995 03 02 | 691 | 0.3− | 0.2− | 2005 06 27 | 644 | 0.1− | 0.9+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2005 07 11 | G96 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.4− |
| 2004 02 12 | 691 | 0.3+ | 0.2+ | 2005 07 11 | G96 | 0.6− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2004 02 12 | 691 | 0.4+ | 0.2+ | 2005 07 11 | G96 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2004 02 17 | 704 | 0.3+ | 0.6+ | 2005 07 11 | G96 | 0.2− | 0.6+ | 2006 11 17 | G96 | 0.6− | 0.2− |
| 2004 02 17 | 704 | 0.3− | 1.1− | 2006 09 17 | 704 | 0.9− | 0.1+ | 2006 11 17 | G96 | 0.7+ | 0.2− |
| 2004 02 17 | 704 | 0.3− | 0.4+ | 2006 09 17 | 704 | 0.0 | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2004 02 17 | 704 | 0.8+ | 0.1+ | 2006 09 17 | 704 | 0.1− | 1.3+ | | | | |
| 2004 02 29 | 691 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.4+ | | | | |

**(144252)∗ 2004 CC$_{84}$ = 2005 JH$_{20}$**

Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76423)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.53044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17650203 | $\omega$ | 110.63154 | | −0.08444525 | +0.98901038 | |
| $a$ | 3.1475278 | $\Omega$ | 153.61473 | | −0.98528177 | −0.06471304 | |
| $e$ | 0.0977359 | $i$ | 15.84746 | | −0.14862314 | −0.13293116 | |
| $P$ | 5.58 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.1+ | 0.2+ | 2005 05 06 | 704 | 0.2+ | 0.2+ | 2006 08 19 | 691 | 1.5+ | 0.4− |
| 2001 10 15 | 644 | 0.3− | 0.4+ | 2005 05 06 | 704 | 0.4+ | 0.4+ | 2006 08 19 | 691 | 0.4− | 0.6+ |
| 2001 10 15 | 644 | 0.1− | 0.5+ | 2005 05 08 | 699 | 1.3+ | 0.4+ | 2006 08 19 | 691 | 0.3− | 0.6+ |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2005 05 08 | 699 | 1.1− | 0.4− | 2006 08 21 | 644 | 0.5− | 0.5+ |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2005 05 08 | 699 | 0.8− | 1.2− | 2006 08 21 | 644 | 0.0 | 0.0 |
| 2004 02 12 | 691 | 0.0 | 0.0 | 2005 05 08 | 699 | 0.0 | 0.4+ | 2006 08 21 | 644 | 0.7− | 0.5+ |
| 2004 02 14 | 703 | 0.9− | 0.1+ | 2005 05 13 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 1.1+ | 0.4− |
| 2004 02 14 | 703 | 1.1− | 0.4+ | 2005 05 13 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.1− |
| 2004 02 14 | 703 | 0.0 | 1.1+ | 2005 05 13 | 704 | 1.6+ | 0.0 | 2006 08 28 | 703 | 1.2− | 1.1− |
| 2004 02 14 | 703 | 0.5− | 1.3+ | 2005 05 13 | 704 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.1+ | 1.2− |
| 2004 02 17 | 704 | 0.3+ | 0.3+ | 2005 05 13 | 704 | 0.4+ | 0.8+ | 2006 08 28 | 703 | 1.4+ | 0.5+ |
| 2004 02 17 | 704 | 0.4+ | 0.3− | 2005 05 21 | 644 | 0.0 | 0.3+ | 2006 08 28 | 703 | 1.0− | 0.5+ |
| 2004 02 17 | 704 | 1.0+ | 0.2+ | 2005 05 21 | 644 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.8+ |
| 2004 02 26 | 704 | 0.7+ | 0.4+ | 2005 05 21 | 644 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.7+ |
| 2004 02 26 | 704 | 0.0 | 0.4+ | 2005 06 01 | 704 | 0.8+ | 0.9− | 2006 08 29 | 704 | 0.3+ | 0.2+ |
| 2004 02 26 | 704 | 0.7+ | 1.9+ | 2005 06 01 | 699 | 0.4+ | 0.2+ | 2006 08 29 | 704 | 0.1+ | 1.0+ |
| 2004 02 26 | 704 | (1.1+ | 2.5+) | 2005 06 01 | 699 | 0.3− | 0.3+ | 2006 08 29 | 704 | 0.2+ | 0.4+ |
| 2004 03 18 | 704 | 0.5+ | 0.9+ | 2005 06 01 | 704 | 1.2+ | 0.6− | 2006 08 29 | 704 | 0.2+ | 1.4+ |
| 2004 03 18 | 704 | 0.4+ | 1.1+ | 2005 06 01 | 704 | 0.8+ | 0.2− | 2006 09 01 | 704 | 0.5+ | 0.2+ |
| 2004 03 18 | 704 | 0.1− | 0.2+ | 2005 06 01 | 699 | 0.4− | 0.1+ | 2006 09 01 | 704 | 0.5− | 0.4+ |
| 2004 03 18 | 704 | 0.2− | 0.9+ | 2005 06 01 | 699 | 0.1+ | 1.4+ | 2006 09 01 | 704 | 0.1+ | 1.9+ |
| 2005 04 13 | 703 | 1.5− | 0.5+ | 2005 07 01 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.6+ | 1.1− |
| 2005 04 13 | 703 | 0.5− | 0.1+ | 2005 07 01 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2005 04 13 | 703 | 0.8− | 0.3+ | 2005 07 01 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.9− |
| 2005 04 13 | 703 | 0.5− | 0.3− | 2006 07 21 | 703 | 0.4+ | 1.3+ | 2006 09 14 | 703 | 0.3− | 0.3− |
| 2005 05 04 | 703 | 0.6− | 0.2− | 2006 07 21 | 703 | 0.1+ | 1.1− | 2006 09 30 | G96 | 0.6− | 0.6+ |
| 2005 05 04 | 703 | 0.0 | 0.2− | 2006 07 21 | 703 | 1.6+ | 0.5− | 2006 09 30 | G96 | 0.5− | 0.1− |
| 2005 05 04 | 703 | 0.0 | 0.4− | 2006 07 21 | 703 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.5− | 0.2− |
| 2005 05 04 | 703 | 0.1+ | 1.6− | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2005 05 06 | 704 | 0.1− | 0.3+ | 2006 07 25 | 644 | 0.3− | 0.0 | | | | |
| 2005 05 06 | 704 | 1.1− | 0.4− | 2006 07 25 | 644 | 0.4− | 0.3+ | | | | |

**(144253)∗ 2004 CV$_{84}$ = 2000 AS$_{248}$**

Discovered 2004 Feb. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69674)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.93657 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26302789 | $\omega$ | 160.72721 | | −0.07855327 | −0.99501056 | |
| $a$ | 2.4125048 | $\Omega$ | 293.73896 | | +0.90559845 | −0.04542623 | |
| $e$ | 0.0683855 | $i$ | 3.85286 | | +0.41679832 | −0.08882812 | |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 14 | 691 | 0.2+ | 0.2+ | 2002 10 30 | 645 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 1991 10 14 | 691 | 0.3− | 0.3− | 2004 01 29 | 704 | 0.1+ | 1.0+ | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 1991 10 14 | 691 | 0.3− | 0.1− | 2004 01 29 | 704 | 1.1− | 0.3− | 2006 09 30 | 691 | 0.5+ | 0.1+ |
| 2000 01 15 | 691 | 0.0 | 0.5− | 2004 01 29 | 704 | 0.5− | 0.8+ | 2006 09 30 | 691 | 0.4− | 0.3+ |
| 2000 01 15 | 691 | 0.1− | 0.4− | 2004 01 29 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2000 01 15 | 691 | 0.0 | 0.4− | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2000 01 27 | 691 | 0.4+ | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2000 01 27 | 691 | 0.5+ | 0.0 | 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2000 01 27 | 691 | 0.1− | 0.3+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.2+ | 0.2− |
| 2002 09 11 | 644 | 0.2− | 0.1+ | 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2002 09 11 | 644 | 0.2− | 0.2+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 11 | 644 | 0.5− | 0.2− | 2004 02 17 | 704 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2002 10 04 | 704 | 0.3− | 0.4+ | 2004 02 17 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2004 02 17 | 704 | 0.5+ | 0.4− | 2006 10 29 | 691 | 0.1− | 0.2− |
| 2002 10 04 | 704 | 0.8− | 1.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.2− |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | | | | |

**(144254)∗ 2004 CD$_{86}$**

Discovered 2004 Feb. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.64525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22153181 | $\omega$ | 13.53467 | | +0.96342846 | +0.23661802 | |
| $a$ | 2.7050709 | $\Omega$ | 331.79910 | | −0.26389579 | +0.75631242 | |
| $e$ | 0.1526495 | $i$ | 15.43463 | | −0.04652549 | +0.60992084 | |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 06 | 691 | 0.6− | 0.5− | 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 683 | 1.1− | 0.2+ |
| 1995 02 06 | 691 | 0.0 | 0.3− | 2004 03 27 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 0.5− | 0.1− |
| 1995 02 06 | 691 | 0.1+ | 0.2− | 2004 03 27 | 691 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.8+ |
| 2002 12 10 | 704 | 0.6− | 0.3− | 2004 03 27 | 691 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.2− | 0.0 |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 07 21 | 703 | 1.1− | 1.2− | 2006 09 27 | 703 | 0.6− | 0.3+ |
| 2002 12 10 | 704 | 0.7− | 0.2+ | 2006 07 21 | 703 | 0.7+ | 0.0 | 2006 10 03 | 704 | 0.3+ | 0.8+ |
| 2002 12 10 | 704 | 1.2− | 0.4+ | 2006 07 21 | 703 | 0.9− | 0.9− | 2006 10 03 | 704 | 0.3+ | 0.8+ |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 07 21 | 703 | 0.3+ | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.7+ |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 08 25 | D35 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 0.4+ | 0.4+ |
| 2004 01 22 | 704 | 1.0+ | 0.5+ | 2006 08 25 | D35 | 0.1+ | 0.5+ | 2006 10 03 | 704 | 0.4+ | 1.1+ |
| 2004 01 22 | 704 | 0.7− | 0.2+ | 2006 08 25 | D35 | 0.5+ | 0.3+ | 2006 10 03 | 703 | 0.0 | 0.4− |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 699 | 0.5− | 0.6+ | 2006 10 03 | 703 | 0.0 | 0.4+ |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 08 29 | 699 | 1.1+ | 0.5+ | 2006 10 03 | 703 | 0.4+ | 0.1− |
| 2004 02 14 | 691 | 0.3− | 0.1+ | 2006 08 29 | 699 | 0.2+ | 0.6+ | 2006 10 03 | 703 | 0.3− | 0.8+ |
| 2004 02 14 | 691 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 683 | (2.0+ | 0.5−) |
| 2004 02 17 | 704 | (1.6+ | 1.2+) | 2006 08 31 | 704 | 0.1− | 0.7+ | 2006 10 16 | 683 | (1.7+ | 0.3−) |
| 2004 02 17 | 704 | (1.5+ | 1.8+) | 2006 08 31 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 683 | (0.3+ | 1.7+) |
| 2004 02 17 | 704 | 0.0 | 1.3+ | 2006 08 31 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 683 | 0.2− | 1.5− |
| 2004 02 22 | 691 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.3− | 0.7+ | 2006 10 19 | 683 | (1.0− | 1.6−) |
| 2004 02 22 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.7+ | 2006 10 19 | 683 | 1.0− | 1.0− |
| 2004 02 22 | 691 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 683 | 0.4+ | 1.1− |
| 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.6+ | 2006 10 27 | 683 | 0.4− | 0.5− |
| 2004 02 26 | 704 | 0.6+ | 0.9+ | 2006 09 16 | 683 | 0.4− | 0.9− | 2006 10 27 | 683 | 0.7− | 1.1+ |
| 2004 02 26 | 704 | 0.1+ | 0.3− | 2006 09 16 | 703 | 0.7+ | 0.8− | 2006 10 28 | 683 | 0.5− | 1.3− |
| 2004 02 26 | 704 | 0.7+ | 1.0+ | 2006 09 16 | 703 | 0.3+ | 0.4+ | 2006 10 28 | 683 | 0.9− | 0.8+ |
| 2004 02 26 | 704 | 0.6+ | 0.6+ | 2006 09 16 | 683 | 0.2− | 0.9− | 2006 10 28 | 683 | 1.0− | 0.7− |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.5+ | | | | |
| 2004 03 18 | 691 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.7− | 0.3+ | | | | |

**(144255)∗ 2004 CF$_{87}$ = 2000 AT$_{181}$ = 2005 JY$_{164}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 76424, *MPO* 86286)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.06445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25912840 | $\omega$ | 239.53629 | | +0.58739676 | −0.80921003 | |
| $a$ | 2.4366475 | $\Omega$ | 174.44558 | | +0.77854107 | +0.56095871 | |
| $e$ | 0.2155168 | $i$ | 7.12602 | | +0.22099512 | +0.17465524 | |
| $P$ | 3.80 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.2+ |
| 2000 01 07 | 704 | 0.3+ | 1.6+ | 2006 08 15 | 644 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.5− | 0.2− |
| 2000 01 07 | 704 | 0.8+ | 0.4− | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.7− | 0.5− |
| 2000 01 07 | 704 | 0.0 | 1.0+ | 2006 08 19 | 644 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.2+ |
| 2000 01 11 | 704 | 0.1+ | 0.8+ | 2006 08 19 | 644 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.8+ | 1.1− |
| 2000 01 11 | 704 | 0.2− | 1.0+ | 2006 08 19 | 644 | 0.2− | 0.3+ | 2006 09 20 | 704 | 1.3− | 0.0 |
| 2000 01 11 | 704 | 1.1− | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.1− |
| 2002 08 05 | 644 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.4− | 0.4+ | 2006 09 20 | 704 | 1.2+ | 0.2− |
| 2002 08 05 | 644 | 0.3+ | 0.5+ | 2006 08 22 | 644 | 0.5− | 0.2+ | 2006 09 27 | 704 | 0.9+ | 0.3+ |
| 2002 08 05 | 644 | 0.0 | 0.5+ | 2006 08 22 | 644 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.4+ |
| 2004 01 23 | 704 | 0.1− | 0.9+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.7+ | 1.3+ |
| 2004 01 23 | 704 | 0.8+ | 1.0+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.6− | 1.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | (2.1+ | 0.3+) | 2006 08 24 | 704 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2004 01 23 | 704 | 0.5+ | 1.3+ | 2006 08 24 | 704 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2004 01 23 | 704 | 1.2+ | 1.1+ | 2006 08 24 | 704 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 08 24 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 08 24 | 704 | 0.2+ | 0.1− | 2006 10 09 | 644 | 0.2− | 0.6+ |
| 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 08 27 | 691 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 2004 02 18 | 691 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 2004 02 18 | 691 | 0.2+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.0 |
| 2004 02 18 | 691 | 0.4− | 0.3− | 2006 08 29 | 704 | 0.6+ | 0.6+ | 2006 10 28 | G96 | 0.4− | 0.0 |
| 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.7− | 0.1+ |
| 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 704 | 0.0 | 1.1+ | 2006 10 28 | G96 | 0.5− | 0.1+ |
| 2005 05 10 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 704 | 0.6+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2005 05 20 | G96 | 0.4− | 0.1− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2005 05 20 | G96 | 0.5− | 0.1− | 2006 08 30 | 704 | 0.7− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.4+ |
| 2005 05 20 | G96 | 0.8− | 0.1+ | 2006 08 30 | 704 | 1.3+ | 0.7+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2005 06 05 | 691 | 0.1+ | 0.5+ | 2006 08 30 | 704 | 1.5+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2005 06 05 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 1.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2005 06 05 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.1− |

**(144256)∗ 2004 $CL_{87}$ = 2000 $AT_{21}$**

Discovered 2004 Feb. 11 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61924)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.60700 | | (2000.0) | | | |
| $n$ | 0.26701240 | $\omega$ | 163.05833 | | −0.71453979 | −0.69914935 |
| $a$ | 2.3884442 | $\Omega$ | 332.53104 | | +0.63543010 | −0.63366432 |
| $e$ | 0.1199546 | $i$ | 3.10205 | | +0.29267981 | −0.33114908 |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.3− | 0.5− | 2004 02 29 | 691 | 0.1− | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.3+ |
| 2000 01 03 | 704 | 0.3− | 0.3− | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2004 03 31 | 691 | 0.1+ | 0.1− |
| 2000 01 03 | 704 | 0.1+ | 0.6− | 2004 03 15 | 704 | 0.1− | 1.3+ | 2004 03 31 | 691 | 0.6− | 0.3+ |
| 2000 01 04 | 704 | 0.0 | 1.2− | 2004 03 15 | 704 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.6+ | 0.4− |
| 2000 01 04 | 704 | 0.5− | 1.4− | 2004 03 15 | 704 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2000 01 04 | 704 | 0.1− | 1.0− | 2004 03 15 | 704 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2000 01 04 | 704 | 0.6+ | 1.7− | 2004 03 15 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2004 03 16 | 608 | 0.3+ | 0.2− | 2006 10 13 | 691 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.4− | 0.9+ | 2004 03 16 | 608 | 0.2− | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.1− | 1.0+ | 2004 03 16 | 608 | 0.1+ | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 03 17 | 691 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.3− | 0.2+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.5+ |
| 2004 02 11 | 703 | 0.3− | 0.4+ | 2004 03 17 | 691 | 0.2+ | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.4+ |
| 2004 02 11 | 703 | 0.0 | 0.4− | 2004 03 18 | 704 | 1.2+ | 1.0+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2004 02 11 | 703 | 0.3− | 0.0 | 2004 03 18 | 704 | 1.1− | 1.0+ | 2006 10 21 | 691 | 0.2+ | 0.0 |
| 2004 02 11 | 703 | 1.0− | 1.1+ | 2004 03 18 | 704 | 1.0+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2004 02 18 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.6− | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2004 02 18 | 704 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2004 02 18 | 291 | 0.3− | 0.3+ | 2004 03 20 | 704 | 1.1+ | 0.8+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2004 02 18 | 704 | 0.3− | 0.5− | 2004 03 20 | 704 | 0.7+ | 1.3+ | 2006 11 19 | 704 | 0.9− | 0.7− |
| 2004 02 18 | 704 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.7+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2004 02 18 | 291 | 0.2− | 0.2+ | 2004 03 25 | 704 | 1.2+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 1.3+ |
| 2004 02 18 | 291 | 0.2− | 0.2+ | 2004 03 25 | 704 | (2.3+ | 2.3+) | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2004 02 26 | 704 | 0.5+ | 0.0 | 2004 03 25 | 704 | 1.3+ | 0.7− | 2006 11 22 | 104 | 0.2− | 0.4− |
| 2004 02 26 | 704 | 0.3+ | 0.2+ | 2004 03 25 | 704 | 0.3− | 0.3− | 2006 11 22 | 104 | 2.6− | 0.8− |
| 2004 02 26 | 704 | 1.2+ | 0.2+ | 2004 03 25 | 704 | (3.6+ | 1.0+) | 2006 11 22 | 104 | 0.1+ | 0.5+ |
| 2004 02 26 | 704 | 0.1+ | 0.3− | 2004 03 25 | 704 | 1.1+ | 1.4− | 2006 11 22 | 104 | 0.1− | 1.3+ |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2004 03 25 | 704 | (3.6+ | 1.3+) | | | | |
| 2004 02 29 | 691 | 0.0 | 0.0 | 2004 03 25 | 704 | (2.1+ | 0.6+) | | | | |

**(144257)∗ 2004 $CH_{89}$**

Discovered 2004 Feb. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.52509 | | (2000.0) | | | |
| $n$ | 0.25555474 | $\omega$ | 209.86322 | | +0.86880484 | +0.43955643 |
| $a$ | 2.4593109 | $\Omega$ | 122.31496 | | −0.38383607 | +0.88870818 |
| $e$ | 0.1615032 | $i$ | 15.64896 | | −0.31280669 | +0.13033767 |
| $P$ | 3.86 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 608 | 0.1− | 0.2− | 2004 02 11 | 691 | 0.2− | 0.0 | 2006 10 03 | 703 | 0.6− | 0.1+ |
| 2002 09 30 | 608 | 0.0 | 0.3− | 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 10 03 | 703 | 0.5− | 0.9+ |
| 2002 09 30 | 608 | 0.0 | 0.1− | 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 10 08 | 644 | 0.2− | 0.0 | 2004 02 18 | 691 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 10 08 | 644 | 0.3− | 0.2+ | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 10 08 | 644 | 0.2− | 0.0 | 2004 03 18 | 645 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.4+ | 0.2+ |
| 2002 10 28 | 704 | 0.1− | 0.7− | 2005 05 03 | 703 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.8+ | 0.4+ |
| 2002 10 28 | 704 | 0.2− | 0.5+ | 2005 05 03 | 703 | 1.0− | 1.1+ | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2002 10 28 | 704 | 0.5− | 1.0+ | 2005 05 03 | 703 | 0.4+ | 1.3+ | 2006 11 01 | 703 | 0.2− | 1.0− |
| 2002 10 28 | 704 | 0.8+ | 0.2+ | 2005 05 03 | 703 | 0.0 | 0.1− | 2006 11 01 | 703 | 0.7+ | 0.6− |
| 2002 11 04 | 644 | 0.1+ | 0.2+ | 2005 05 09 | 703 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.2+ | 1.1+ |
| 2002 11 04 | 644 | 0.1+ | 0.2− | 2005 05 09 | 703 | 0.1− | 0.1+ | 2006 11 01 | 703 | 1.0− | 0.1+ |
| 2002 11 04 | 644 | 0.0 | 0.2+ | 2005 05 09 | 703 | 1.3− | 0.3− | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2003 12 22 | 291 | 0.2− | 0.4+ | 2005 05 19 | 703 | (0.2− | 1.7+) | 2006 11 17 | 703 | 0.4− | 1.1− |
| 2003 12 22 | 291 | 0.5− | 0.4+ | 2005 05 19 | 703 | 0.7+ | 0.8− | 2006 11 17 | 703 | 0.6− | 0.9− |
| 2003 12 22 | 291 | 0.7− | 0.7+ | 2005 05 19 | 703 | 0.4+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.5+ |
| 2004 01 22 | 704 | 0.4− | 1.0+ | 2005 05 19 | 703 | 0.4− | 0.1+ | 2006 11 23 | 703 | 0.8+ | 0.3− |
| 2004 01 22 | 704 | 1.5+ | 0.3+ | 2005 07 01 | 644 | 1.0+ | 0.7+ | 2006 11 23 | 703 | 0.3− | 0.7+ |
| 2004 01 22 | 704 | 0.6+ | 0.6+ | 2005 07 01 | 644 | 1.0+ | 0.7+ | 2006 11 23 | 703 | 0.6+ | 1.1+ |
| 2004 01 22 | 704 | 0.3+ | 0.9− | 2005 07 01 | 644 | 1.1+ | 0.7+ | 2006 11 23 | 703 | 0.5+ | 1.0+ |
| 2004 02 11 | 691 | 0.2+ | 0.2− | 2006 10 03 | 703 | 0.6− | 0.6+ | | | | |
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2006 10 03 | 703 | 1.0− | 0.4− | | | | |

**(144258)∗ 2004 $CN_{90}$ = 2005 $CK_{77}$**

Discovered 2004 Feb. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86287)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.51349 | | (2000.0) | | | |
| $n$ | 0.21984081 | $\omega$ | 47.11581 | | +0.04249813 | +0.99504885 |
| $a$ | 2.7189247 | $\Omega$ | 225.55838 | | −0.94941793 | +0.01221840 |
| $e$ | 0.1028836 | $i$ | 7.22905 | | −0.31112619 | +0.09863310 |
| $P$ | 4.48 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.3− | 0.1+ | 2004 02 18 | 691 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 1.0+ |
| 1993 12 14 | 691 | 0.1+ | 0.1+ | 2004 02 18 | 691 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.3+ |
| 1993 12 14 | 691 | 0.5− | 0.3+ | 2005 02 09 | 809 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.8+ | 1.4+ |
| 2000 04 07 | 704 | 0.2− | 0.4+ | 2005 02 09 | 809 | 0.5− | 0.3− | 2006 09 19 | 703 | 0.6+ | 1.3+ |
| 2000 04 07 | 704 | 0.3+ | 0.2+ | 2005 02 09 | 809 | 0.6− | 0.2− | 2006 09 19 | 703 | (1.6− | 0.5+) |
| 2000 04 07 | 704 | 1.3+ | 1.1+ | 2005 02 10 | 809 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.1+ |
| 2000 04 07 | 704 | 1.1+ | 0.4+ | 2005 02 10 | 809 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 2000 05 05 | 704 | 1.9+ | 0.3+ | 2005 02 10 | 809 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.7+ |
| 2000 05 05 | 704 | 0.5+ | 0.1+ | 2005 06 27 | G96 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.9− | 0.8− |
| 2000 05 05 | 704 | 0.3+ | 0.6+ | 2005 06 27 | G96 | (1.6− | 0.2−) | 2006 09 30 | 703 | 0.3+ | 1.3− |
| 2000 05 05 | 704 | 0.9− | 1.9+ | 2005 06 27 | G96 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.3− | 0.7+ |
| 2001 08 18 | 644 | 0.3− | 1.0+ | 2005 06 27 | G96 | 0.3− | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.4+ |
| 2001 08 18 | 644 | 0.3− | 0.8+ | 2005 06 28 | G96 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2001 08 18 | 644 | 0.2− | 1.0+ | 2005 06 28 | G96 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2001 08 25 | 704 | 0.6+ | 0.5+ | 2005 06 28 | G96 | 0.2− | 1.2+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2001 08 25 | 704 | 0.7+ | 1.0+ | 2005 06 28 | G96 | 0.1+ | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2001 08 25 | 704 | 0.1+ | 0.6+ | 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 10 16 | 683 | 0.6+ | 0.9+ |
| 2001 08 25 | 704 | 0.4+ | 0.3+ | 2005 07 11 | G96 | 0.4− | 0.4+ | 2006 10 16 | 683 | 0.3− | 0.2− |
| 2004 02 12 | 644 | 0.6+ | 0.9+ | 2005 07 11 | G96 | 0.4− | 0.0 | 2006 10 16 | 683 | 0.8+ | 0.1− |
| 2004 02 12 | 644 | 0.1+ | 0.4+ | 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2004 02 12 | 644 | 0.5+ | 1.4+ | 2006 09 16 | 703 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2004 02 13 | 699 | 0.6− | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2004 02 13 | 699 | 0.2− | 1.0+ | 2006 09 16 | 703 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.8− | 0.3− |
| 2004 02 13 | 699 | 0.5− | 0.0 | 2006 09 16 | 703 | 1.2− | 0.2+ | 2006 11 17 | G96 | 0.7− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 699 | 1.0− | 0.6− | 2006 09 18 | 703 | 0.3+ | 0.9+ | 2006 11 17 | G96 | 0.6− | 0.0 |
| 2004 02 18 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.6+ | 1.0+ | 2006 11 17 | G96 | 0.5− | 0.0 |

**(144259)∗ 2004 CY$_{92}$ = 1998 UT$_{13}$**

Discovered 2004 Feb. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61926)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.61096 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24458489 | $\omega$ | 223.30816 | | +0.19986192 | | +0.97843327 |
| $a$ | 2.5323067 | $\Omega$ | 58.28500 | | −0.88140301 | | +0.20279667 |
| $e$ | 0.0884560 | $i$ | 3.51722 | | −0.42799994 | | +0.03926628 |
| $P$ | 4.03 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.3− | 0.2− | 2004 02 15 | 704 | 0.4− | 0.6+ | 2006 10 15 | 691 | 0.1+ | 0.2− |
| 1994 11 28 | 691 | 0.4+ | 0.8+ | 2004 02 15 | 704 | 0.2+ | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.3+ |
| 1994 11 28 | 691 | 0.5+ | 0.0 | 2004 02 15 | 704 | (1.9− | 1.7+) | 2006 10 15 | 691 | 0.0 | 0.3+ |
| 1998 10 23 | 691 | 0.1− | 0.2− | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 1998 10 23 | 691 | 0.2− | 0.1− | 2004 02 18 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 1998 10 23 | 691 | 0.2− | 0.2− | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 1998 10 24 | 691 | 0.3− | 0.1− | 2004 02 26 | 704 | (1.7+ | 0.5+) | 2006 10 23 | 691 | 0.8− | 0.0 |
| 1998 10 24 | 691 | 0.7− | 0.1− | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.6− | 0.7− |
| 2002 10 03 | 704 | 1.2+ | 0.3+ | 2004 02 26 | 704 | 0.5+ | 0.1− | 2006 10 23 | 691 | 0.6− | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 1.0− | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.7− | 0.3+ | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2002 10 15 | 644 | 0.2+ | 0.1+ | 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2002 10 15 | 644 | 0.4+ | 0.1+ | 2005 06 04 | 704 | 0.9+ | 1.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 10 15 | 644 | 0.3+ | 0.3+ | 2005 06 04 | 704 | 0.5+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 10 30 | 644 | 0.2+ | 1.2+ | 2005 06 04 | 704 | 0.3− | 0.9+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2002 10 30 | 644 | 1.1+ | 1.2+ | 2005 06 04 | 704 | 0.2− | 1.3+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 10 30 | 644 | 0.9+ | 1.5+ | 2005 06 23 | 644 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2002 11 22 | 644 | 0.0 | 0.6+ | 2005 06 23 | 644 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 11 22 | 644 | 0.0 | 0.2+ | 2005 06 23 | 644 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2002 11 22 | 644 | 0.4− | 0.8+ | 2006 09 30 | 703 | (1.7− | 0.0 ) | 2006 11 14 | G96 | 0.7+ | 0.3− |
| 2004 02 13 | 699 | 0.9+ | 0.6− | 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2004 02 13 | 699 | 0.9+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2004 02 13 | 699 | 1.0− | 0.7+ | 2006 09 30 | 703 | 0.1− | 1.5+ | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2004 02 13 | 699 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.0 |
| 2004 02 15 | 704 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.5+ |
| 2004 02 15 | 704 | 0.5− | 1.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 2.0− |

**(144260)∗ 2004 CK$_{93}$**

Discovered 2004 Feb. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.08557 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17773750 | $\omega$ | 270.84081 | | −0.34831117 | | +0.92987680 |
| $a$ | 3.1329250 | $\Omega$ | 337.61796 | | −0.68775395 | | −0.33930351 |
| $e$ | 0.1657133 | $i$ | 18.10915 | | −0.63692530 | | −0.14213465 |
| $P$ | 5.55 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.4+ | 0.7− | 2005 04 17 | E12 | 0.3+ | 0.8+ | 2006 08 28 | 691 | 0.3− | 0.1+ |
| 2001 08 25 | 704 | 0.0 | 0.2+ | 2005 04 17 | E12 | 0.8+ | 0.6+ | 2006 08 28 | 691 | 0.2− | 0.5+ |
| 2001 08 25 | 704 | 0.2+ | 0.2− | 2005 04 17 | E12 | 1.2+ | 0.9+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2001 08 25 | 704 | 0.1+ | 0.4+ | 2005 04 17 | E12 | 0.6+ | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.7− |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2005 07 04 | E12 | 1.2+ | 0.0 | 2006 08 28 | 703 | 0.5− | 0.6− |
| 2001 09 25 | 704 | 0.7− | 1.0+ | 2005 07 04 | E12 | 0.8+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.6− |
| 2001 09 25 | 704 | 1.0− | 0.3− | 2005 07 04 | E12 | 1.0− | 1.1+ | 2006 08 28 | 699 | 0.2+ | 1.0+ |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2005 07 04 | E12 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.7− |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2006 08 14 | 644 | 0.3− | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.0 |
| 2001 10 13 | 644 | 0.3− | 0.6+ | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.3+ |
| 2001 10 13 | 644 | 0.6− | 0.6+ | 2006 08 14 | 644 | 0.5+ | 0.4− | 2006 08 28 | 699 | 0.2− | 0.8+ |
| 2001 10 13 | 644 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 08 29 | 704 | 0.1+ | 0.9+ |
| 2004 01 17 | 644 | 0.4+ | 0.6+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 08 29 | 704 | 0.7− | 0.3+ |
| 2004 01 17 | 644 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 08 29 | 704 | 0.2− | 0.0 |
| 2004 01 17 | 644 | 0.7+ | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 08 29 | 704 | 0.0 | 0.8+ |
| 2004 01 28 | 703 | 0.3− | 0.3+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 08 29 | 704 | 0.1− | 0.8+ |
| 2004 01 28 | 703 | 0.7− | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 12 | 704 | 0.7− | 1.1− |
| 2004 01 28 | 703 | 0.9− | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 704 | 1.2+ | 0.1+ |
| 2004 01 28 | 703 | 0.0 | 1.9+ | 2006 08 18 | 699 | 1.1− | 0.4+ | 2006 09 12 | 704 | 1.6+ | 1.2+ |
| 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.4− |
| 2004 02 15 | 704 | 1.0+ | 0.8+ | 2006 08 18 | 699 | 1.5+ | 0.3− | 2006 09 14 | 703 | 1.3− | 0.1− |
| 2004 02 15 | 704 | 1.0+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 1.3+ | 0.6+ |
| 2004 02 18 | 691 | 0.2+ | 0.5+ | 2006 08 18 | 699 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.4− |
| 2004 02 18 | 691 | 0.2+ | 0.3+ | 2006 08 18 | 699 | 1.2− | 1.3+ | 2006 09 20 | 704 | 0.3− | 0.0 |
| 2004 02 18 | 691 | 0.1+ | 0.4+ | 2006 08 21 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.6+ |
| 2004 02 18 | 691 | 0.4+ | 0.1+ | 2006 08 21 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.6+ |
| 2004 02 18 | 691 | 0.2+ | 0.2+ | 2006 08 21 | 704 | 0.5− | 1.2+ | 2006 09 20 | 704 | 0.4− | 0.7+ |
| 2004 02 18 | 691 | 0.4+ | 0.2+ | 2006 08 21 | 704 | 0.5− | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2005 04 05 | E12 | 0.4+ | 0.9+ | 2006 08 21 | 704 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2005 04 05 | E12 | 1.0− | 1.3+ | 2006 08 21 | 644 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.6− |
| 2005 04 05 | E12 | 0.3+ | 0.4+ | 2006 08 21 | 644 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2005 04 05 | E12 | 0.4+ | 0.3+ | 2006 08 21 | 644 | 0.2+ | 0.0 | | | | |

**(144261)∗ 2004 CX$_{93}$ = 1999 CF$_{129}$ = 2001 SO$_{334}$ = 2005 NN**

Discovered 2004 Feb. 11 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 86288)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.84706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22035088 | $\omega$ | 124.82253 | | +0.17295946 | | +0.97956529 |
| $a$ | 2.7147272 | $\Omega$ | 154.54399 | | −0.96355685 | | +0.18987819 |
| $e$ | 0.0721627 | $i$ | 13.81691 | | −0.20406671 | | −0.06631824 |
| $P$ | 4.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | (2.6+ | 3.3−) | 2004 02 11 | 703 | 0.1− | 0.8+ | 2005 07 03 | 608 | 0.3− | 0.6+ |
| 1995 03 10 | 691 | 0.3+ | 0.6− | 2004 02 11 | 644 | 0.0 | 0.9+ | 2005 07 03 | 608 | 0.1− | 0.8+ |
| 1995 03 10 | 691 | 0.0 | 0.1+ | 2004 02 11 | 703 | 0.4+ | 0.8+ | 2005 07 03 | 608 | 0.0 | 0.7+ |
| 1999 02 06 | 568 | 0.9− | 0.6+ | 2004 02 11 | 644 | 0.0 | 0.8+ | 2005 07 04 | 644 | (0.0 | 1.7−) |
| 1999 02 06 | 568 | 1.3− | 0.6+ | 2004 02 11 | 644 | 0.2+ | 0.9+ | 2005 07 04 | 644 | 0.0 | 0.1− |
| 1999 02 07 | 568 | (8.7− | 7.7+) | 2004 02 18 | 704 | 0.5+ | 1.0+ | 2005 07 04 | 644 | 0.0 | 0.1− |
| 2000 05 03 | 704 | 0.7+ | 0.8+ | 2004 02 18 | 704 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.2+ |
| 2000 05 03 | 704 | 0.5+ | 0.2− | 2004 02 18 | 704 | (1.6+ | 0.4−) | 2006 09 18 | 703 | 1.2− | 0.1+ |
| 2000 05 03 | 704 | 0.1− | 0.4+ | 2004 02 18 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.7− |
| 2001 07 20 | 699 | 0.3− | 0.5+ | 2004 02 22 | 691 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.4− |
| 2001 07 20 | 699 | 0.1− | 0.0 | 2004 02 22 | 691 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.5− | 0.2− |
| 2001 07 20 | 699 | 0.4− | 0.4+ | 2004 02 22 | 691 | 0.1− | 0.4+ | 2006 09 21 | 699 | 0.7+ | 0.8− |
| 2001 07 20 | 699 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.7+ | 0.2− | 2006 09 21 | 699 | 0.2− | 0.9+ |
| 2001 08 14 | 608 | 0.1− | 0.2+ | 2004 02 26 | 704 | (0.9+ | 1.7+) | 2006 09 21 | 699 | 0.1+ | 1.1− |
| 2001 08 14 | 608 | 0.1+ | 0.5+ | 2004 02 26 | 704 | (1.0+ | 2.0+) | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2001 08 14 | 608 | 1.3+ | 0.4+ | 2004 02 26 | 704 | 0.1− | 1.2+ | 2006 09 26 | 703 | (2.0− | 0.6−) |
| 2001 09 20 | 704 | 0.9+ | 0.4+ | 2005 06 24 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.2+ |
| 2001 09 20 | 704 | 0.5+ | 1.1+ | 2005 06 24 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.4+ |
| 2001 09 20 | 704 | 0.6+ | 0.5+ | 2005 06 24 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.3− |
| 2001 09 20 | 704 | 0.6+ | 0.9+ | 2005 06 29 | 644 | 0.1− | 0.1+ | 2006 09 29 | 699 | 1.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2005 06 29 | 644 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.0 | 0.4+ |
| 2001 09 23 | 291 | 0.2− | 0.4+ | 2005 06 29 | 644 | 0.0 | 0.2+ | 2006 09 29 | 699 | 1.0+ | 1.0+ |
| 2001 09 23 | 291 | 0.6− | 0.3+ | 2005 06 29 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.6+ |
| 2001 09 23 | 291 | 0.5− | 0.2+ | 2005 06 29 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.1− | 1.2+ |
| 2002 12 13 | 644 | 0.1− | 0.4+ | 2005 06 29 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.7− | 0.1− |
| 2002 12 13 | 644 | 0.0 | 0.3+ | 2005 07 02 | 703 | 0.1+ | 0.0 | 2006 09 30 | 704 | 1.3+ | 0.8+ |
| 2002 12 13 | 644 | 0.3− | 1.0+ | 2005 07 02 | 703 | 1.2− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2004 02 11 | 703 | 1.0+ | 0.9+ | 2005 07 02 | 703 | 0.4− | 0.7− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2004 02 11 | 703 | (0.1− | 1.7+) | 2005 07 02 | 703 | 1.0+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1+ |

**(144262)∗ 2004 CY$_{93}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.96094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24133730 | $\omega$ | 177.29417 | | −0.52679804 | −0.84093465 | |
| $a$ | 2.5549736 | $\Omega$ | 304.46548 | | +0.77700548 | −0.41741234 | |
| $e$ | 0.1042808 | $i$ | 8.63217 | | +0.34459586 | −0.34437748 | |
| $P$ | 4.08 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.0 | 0.9+ | 2004 02 18 | 704 | 0.7+ | 0.4+ | 2006 09 29 | 699 | 0.6+ | 0.1− |
| 2000 02 08 | 704 | 0.5+ | 0.6− | 2004 02 18 | 704 | 0.7+ | 1.0+ | 2006 09 29 | 699 | 0.2+ | 1.5+ |
| 2000 02 08 | 704 | 0.1+ | 0.6+ | 2004 02 18 | 704 | 0.0 | 0.6− | 2006 09 29 | 699 | 1.5+ | 0.1+ |
| 2000 02 08 | 704 | 1.0+ | 0.1+ | 2004 02 18 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.7+ |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.5+ | 0.3+ |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.9− | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 2000 03 08 | 704 | 0.2− | 1.1− | 2004 02 23 | 704 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.4+ |
| 2000 03 08 | 704 | 1.7+ | 1.0+ | 2004 02 23 | 704 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.6+ | 0.1− |
| 2000 03 08 | 704 | 0.9+ | 0.6− | 2004 02 23 | 704 | 0.5− | 0.4+ | 2006 10 17 | 691 | 0.5+ | 0.1+ |
| 2000 03 08 | 704 | 0.1+ | 1.8+ | 2004 02 26 | 704 | 0.3− | 1.5− | 2006 10 17 | 691 | 0.6+ | 0.1+ |
| 2002 10 03 | 644 | 0.1− | 0.3+ | 2004 02 26 | 704 | (0.4− | 1.9−) | 2006 10 19 | 691 | 0.6+ | 0.1+ |
| 2002 10 03 | 644 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.2+ | 0.7− | 2006 10 19 | 691 | 0.4+ | 0.1− |
| 2002 10 03 | 644 | 0.1+ | 0.5+ | 2004 02 26 | 704 | 1.0− | 0.9− | 2006 10 19 | 691 | 0.4+ | 0.1+ |
| 2002 10 31 | 644 | 0.3− | 0.0 | 2004 02 26 | 704 | 0.8− | 1.1− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2002 10 31 | 644 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2004 01 29 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2004 01 29 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | 0.6− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.3− |
| 2004 01 29 | 704 | 1.0+ | 0.3+ | 2004 03 15 | 704 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2004 01 29 | 704 | 1.0+ | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.5− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2004 02 11 | 644 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.6− | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2004 02 11 | 644 | 0.0 | 0.5+ | 2006 09 16 | 703 | 0.1− | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2004 02 14 | 608 | 0.1− | 0.4− | 2006 09 27 | 703 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.4− | 0.1− |
| 2004 02 14 | 608 | 0.3+ | 0.3− | 2006 09 27 | 703 | 1.2− | 0.3− | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2004 02 14 | 608 | 0.2+ | 0.1− | 2006 09 27 | 703 | (0.9− | 1.9−) | | | | |
| 2004 02 18 | 704 | 0.0 | 0.5+ | 2006 09 27 | 703 | (0.5+ | 2.2−) | | | | |

**(144263)∗ 2004 CR$_{94}$ = 1995 KT$_3$**

Discovered 2004 Feb. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 100708)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.03216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20116035 | $\omega$ | 254.30015 | | −0.26977870 | −0.96166918 | |
| $a$ | 2.8847474 | $\Omega$ | 211.48356 | | +0.91556088 | −0.24037752 | |
| $e$ | 0.0242032 | $i$ | 5.39583 | | +0.29827458 | −0.13195092 | |
| $P$ | 4.90 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 25 | 691 | 0.4− | 0.3− | 2005 05 15 | G96 | 0.5− | 0.0 | 2006 08 29 | 703 | 1.5− | 0.2+ |
| 1995 05 25 | 691 | 0.9− | 0.1− | 2005 05 15 | G96 | 0.3− | 0.2− | 2006 08 29 | 703 | 1.3− | 1.3− |
| 1995 05 31 | 691 | 0.5+ | 0.1− | 2005 05 15 | G96 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.3+ | 0.0 |
| 1995 05 31 | 691 | 0.2+ | 0.1+ | 2005 06 01 | 691 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 1995 05 31 | 691 | 0.6+ | 0.3+ | 2005 06 01 | 691 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.3+ | 0.1− |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2005 06 01 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 2002 12 10 | 644 | 0.1+ | 0.6+ | 2005 06 13 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.1− |
| 2002 12 10 | 644 | 0.3− | 0.7+ | 2005 06 13 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.2+ |
| 2004 02 12 | 644 | 0.3+ | 0.2+ | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2004 02 12 | 644 | 0.5+ | 0.2+ | 2006 08 27 | 699 | 1.8− | 1.7+ | 2006 09 25 | 691 | 0.3+ | 0.3+ |
| 2004 02 12 | 644 | 0.7+ | 0.4+ | 2006 08 27 | 699 | 1.7− | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.1− |
| 2004 02 18 | 704 | 0.3+ | 1.4+ | 2006 08 27 | 699 | 0.1− | 1.3+ | 2006 09 27 | 691 | 0.4+ | 0.2+ |
| 2004 02 18 | 704 | 0.6+ | 1.1+ | 2006 08 27 | 699 | 0.8− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 02 18 | 704 | 0.1− | 0.9+ | 2006 08 29 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2004 03 21 | 691 | 0.0 | 0.5+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2004 03 21 | 691 | 0.0 | 0.5+ | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2004 03 21 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 0.2+ | 1.3− | 2006 09 30 | 691 | 2.0− | 0.6+ |
| 2005 05 15 | G96 | 0.4+ | 1.5− | 2006 08 29 | 703 | 1.0+ | 1.0− | | | | |

**(144264)∗ 2004 CF$_{95}$**

Discovered 2004 Feb. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.93459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21348596 | $\omega$ | 253.47102 | | +0.24154935 | −0.97038474 | |
| $a$ | 2.7726167 | $\Omega$ | 182.55566 | | +0.91191955 | +0.22795079 | |
| $e$ | 0.0735145 | $i$ | 3.49056 | | +0.33174786 | +0.07994935 | |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.4− | 0.1+ | 2004 02 26 | 704 | (0.2+ | 2.5+) | 2004 03 27 | 704 | 0.6− | 1.2+ |
| 2002 10 11 | 704 | 1.0+ | 0.6+ | 2004 02 26 | 704 | (1.3+ | 1.7+) | 2004 03 27 | 704 | 0.4+ | 0.1− |
| 2002 10 11 | 704 | 0.1− | 0.7+ | 2004 02 26 | 333 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.6− | 1.4− |
| 2002 10 11 | 704 | 0.9− | 0.2+ | 2004 02 26 | 704 | 0.7+ | 1.1+ | 2005 06 06 | 691 | 0.2+ | 0.3+ |
| 2002 10 30 | 644 | (0.4+ | 2.0+) | 2004 02 29 | 691 | 0.1+ | 0.2− | 2005 06 06 | 691 | 0.1− | 0.3− |
| 2002 10 30 | 644 | (0.0 | 2.1+) | 2004 02 29 | 691 | 0.1+ | 0.3− | 2005 06 06 | 691 | 0.3+ | 0.1+ |
| 2002 10 30 | 644 | (0.1+ | 1.8+) | 2004 02 29 | 691 | 0.1+ | 0.2− | 2005 06 10 | 691 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.5+ | 0.5+ | 2004 03 01 | 703 | 1.2+ | 0.6+ | 2005 06 10 | 691 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.0 | 0.6+ | 2004 03 01 | 703 | 0.5+ | 0.4+ | 2005 06 10 | 691 | 0.1− | 0.7+ |
| 2002 11 06 | 704 | 1.3− | 0.7+ | 2004 03 01 | 703 | 1.0+ | 0.5+ | 2005 06 16 | 691 | 0.0 | 0.3+ |
| 2002 11 06 | 704 | 0.5+ | 0.0 | 2004 03 01 | 703 | 0.1+ | 1.4+ | 2005 06 16 | 691 | 0.1− | 0.2+ |
| 2002 11 22 | 644 | 0.1− | 0.8+ | 2004 03 11 | 644 | 0.0 | 0.1+ | 2005 06 16 | 691 | 0.1+ | 0.3+ |
| 2002 11 22 | 644 | 0.1− | 1.2+ | 2004 03 11 | 644 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.2+ |
| 2002 11 22 | 644 | 0.3− | 1.0+ | 2004 03 11 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.7+ |
| 2002 11 30 | 608 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.8− | 2006 08 28 | 703 | 0.1− | 0.2+ |
| 2002 11 30 | 608 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 1.0− | 2006 08 28 | 703 | 0.3− | 0.5− |
| 2002 11 30 | 608 | 0.6− | 0.7+ | 2004 03 18 | 704 | (1.6+ | 0.7−) | 2006 08 28 | 699 | 0.3+ | 1.0+ |
| 2003 12 22 | 291 | 0.7− | 0.5+ | 2004 03 23 | 704 | 0.9+ | 0.7+ | 2006 08 28 | 699 | 0.5− | 0.6+ |
| 2003 12 22 | 291 | 1.1− | 0.5+ | 2004 03 23 | 704 | 0.8+ | 0.0 | 2006 08 28 | 699 | (0.0 | 1.6+) |
| 2003 12 22 | 291 | 0.7− | 0.5+ | 2004 03 23 | 704 | 0.9+ | 1.0− | 2006 08 28 | 699 | 0.4+ | 1.5+ |
| 2004 02 13 | 644 | 0.0 | 0.5+ | 2004 03 23 | 704 | 0.7− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.4+ |
| 2004 02 13 | 644 | 1.0+ | 1.1+ | 2004 03 25 | 704 | 0.3+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2004 02 13 | 644 | 0.2+ | 0.2+ | 2004 03 25 | 704 | 0.5+ | 1.0− | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2004 02 18 | 704 | 0.5+ | 0.5+ | 2004 03 25 | 704 | 0.5+ | 0.1− | 2006 09 26 | G96 | 0.8− | 0.2− |
| 2004 02 18 | 704 | 0.0 | 0.8+ | 2004 03 25 | 704 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2004 02 18 | 704 | 0.5− | 1.1+ | 2004 03 26 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2004 02 26 | 333 | 0.0 | 0.4+ | 2004 03 26 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2004 02 26 | 704 | 0.4+ | 1.2+ | 2004 03 26 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 1.0+ | 0.2+ |
| 2004 02 26 | 704 | 0.5+ | 0.5+ | 2004 03 27 | 704 | 0.4+ | 0.8+ | | | | |

**(144265)∗ 2004 CH$_{95}$ = 2000 GZ$_{177}$ = 2002 XV$_{113}$**

Discovered 2004 Feb. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61927)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.95302 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23809320 | $\omega$ | 23.50922 | | +0.98181237 | −0.17944595 | |
| $a$ | 2.5781294 | $\Omega$ | 346.38473 | | +0.10329992 | +0.77890331 | |
| $e$ | 0.1205531 | $i$ | 15.26994 | | +0.15929090 | +0.60092328 | |
| $P$ | 4.14 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.2− | 0.1− | 2002 12 15 | 704 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.4+ |
| 2000 02 12 | 645 | 0.3− | 0.1− | 2002 12 15 | 704 | 0.4+ | 0.7− | 2004 03 27 | 704 | 0.7+ | 0.0 |
| 2000 03 03 | 645 | 0.0 | 0.2− | 2003 12 27 | 704 | 0.7+ | 0.9+ | 2004 03 27 | 704 | 1.0+ | 0.1+ |
| 2000 03 03 | 645 | 0.1+ | 0.4− | 2003 12 27 | 704 | 0.5+ | 1.1+ | 2004 03 27 | 704 | 0.2+ | 0.1− |
| 2000 03 08 | 704 | 0.4− | 1.6+ | 2003 12 27 | 704 | 0.9+ | 0.9+ | 2004 03 27 | 704 | 0.2− | 0.1− |
| 2000 03 08 | 704 | 0.9− | 1.5+ | 2004 01 22 | 704 | 0.5+ | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.1− |
| 2000 03 08 | 704 | 0.2+ | 1.0+ | 2004 01 22 | 704 | 0.8+ | 0.3− | 2004 03 27 | 704 | 0.3+ | 1.3− |
| 2000 04 02 | 699 | 0.8− | 0.2− | 2004 01 22 | 704 | 0.3+ | 0.0 | 2004 04 12 | 703 | (0.3− | 1.9−) |
| 2000 04 02 | 699 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.0 | 2004 04 12 | 703 | 0.4− | 0.3− |
| 2000 04 02 | 699 | 1.5− | 0.2+ | 2004 02 13 | 644 | 1.0+ | 0.1− | 2004 04 12 | 703 | 1.0− | 0.7+ |
| 2000 04 02 | 699 | 0.0 | 0.2+ | 2004 02 13 | 644 | 0.1+ | 0.5+ | 2004 04 14 | 699 | 0.1+ | 0.2− |
| 2000 04 04 | 704 | 0.1+ | 0.1+ | 2004 02 13 | 644 | 0.0 | 0.3+ | 2004 04 14 | 699 | (1.5− | 0.1+) |
| 2000 04 04 | 704 | 0.1+ | 0.2+ | 2004 02 14 | 703 | (1.1− | 2.3+) | 2004 04 14 | 699 | 1.2− | 0.2− |
| 2000 04 04 | 704 | 0.7+ | 1.9− | 2004 02 14 | 703 | (2.0+ | 2.2+) | 2004 04 14 | 699 | (1.6− | 0.0 ) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 704 | 0.4− | 1.0− | 2004 02 14 | 703 | (0.8− | 1.6+) | 2006 09 17 | 703 | 0.2+ | 0.7+ | | |
| 2002 10 06 | 704 | 0.2− | 0.0 | 2004 02 14 | 703 | (0.5+ | 2.3−) | 2006 09 17 | 703 | 0.1− | 0.2+ | | |
| 2002 10 06 | 704 | 0.4− | 0.3+ | 2004 02 18 | 704 | 0.4+ | 0.9+ | 2006 09 17 | 703 | 0.1+ | 0.8+ | | |
| 2002 10 06 | 704 | 1.0− | 0.4− | 2004 02 18 | 704 | 1.0+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.3+ | | |
| 2002 10 06 | 704 | 0.3+ | 1.2+ | 2004 02 18 | 704 | 0.1+ | 0.9+ | 2006 09 28 | 703 | 0.0 | 0.2− | | |
| 2002 10 06 | 704 | 0.7− | 0.4+ | 2004 02 18 | 704 | 0.5+ | 0.8+ | 2006 09 28 | 703 | 0.1− | 0.1+ | | |
| 2002 10 15 | 704 | 0.9− | 1.3− | 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.1− | | |
| 2002 10 15 | 704 | 0.4− | 0.2− | 2004 02 26 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.4+ | 0.1+ | | |
| 2002 10 15 | 704 | 0.8− | 0.6− | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 10 20 | 704 | 0.9− | 0.3+ | | |
| 2002 10 15 | 704 | 0.7− | 0.4− | 2004 02 26 | 704 | 0.2+ | 1.1+ | 2006 10 20 | 704 | 0.1− | 0.7+ | | |
| 2002 10 30 | 704 | 0.5+ | 0.3− | 2004 02 26 | 704 | 0.4+ | 0.9+ | 2006 10 20 | 704 | 1.2− | 0.1+ | | |
| 2002 10 30 | 704 | 0.6+ | 0.0 | 2004 03 12 | 644 | 0.2− | 0.3+ | 2006 10 20 | 704 | 0.2− | 0.2+ | | |
| 2002 10 30 | 704 | 0.8+ | 0.2− | 2004 03 12 | 644 | 0.3− | 0.8+ | 2006 10 20 | 704 | 0.5− | 0.4+ | | |
| 2002 10 30 | 704 | 1.4+ | 0.5− | 2004 03 12 | 644 | 0.1− | 0.2+ | 2006 10 23 | 703 | 0.1+ | 0.1− | | |
| 2002 10 30 | 704 | 0.4+ | 0.5− | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 703 | 0.6+ | 0.3− | | |
| 2002 12 10 | 704 | 0.5+ | 0.6+ | 2004 03 15 | 704 | 1.0+ | 0.2− | 2006 10 23 | 703 | 0.6+ | 0.1− | | |
| 2002 12 10 | 704 | 0.7+ | 0.3+ | 2004 03 15 | 704 | 0.3+ | 0.3− | 2006 10 23 | 703 | 0.1+ | 0.2− | | |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 11 22 | 703 | 0.2− | 0.1− | | |
| 2002 12 10 | 704 | 0.2+ | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 703 | 0.4− | 0.2− | | |
| 2002 12 10 | 704 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 11 22 | 703 | 0.5+ | 0.6− | | |
| 2002 12 15 | 704 | 0.1+ | 0.8− | 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 11 22 | 703 | 0.3+ | 0.4− | | |
| 2002 12 15 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.8+ | 1.1+ | | | | | | |

**(144266)∗ 2004 CZ$_{95}$ = 2002 TE$_{374}$**

Discovered 2004 Feb. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86289)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.10026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26654940 | $\omega$ | 105.04670 | | +0.33051435 | −0.94167930 | |
| $a$ | 2.3912092 | $\Omega$ | 325.44578 | | +0.81742884 | +0.31911420 | |
| $e$ | 0.0873888 | $i$ | 6.40252 | | +0.47177363 | +0.10679988 | |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.6− | 1.2− | 2004 02 18 | 704 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2000 01 04 | 704 | 0.8− | 1.6− | 2004 02 22 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2000 01 04 | 704 | 1.0+ | 0.1− | 2004 02 22 | 691 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2000 01 04 | 704 | 0.5− | 0.3− | 2004 02 22 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 09 04 | 699 | 1.2− | 1.3+ | 2004 02 26 | 704 | 0.7+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 04 | 699 | 1.2+ | 0.3+ | 2004 02 26 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.6+ | 0.2− | | |
| 2002 09 04 | 699 | (1.0− | 3.0+) | 2004 02 26 | 704 | 0.8+ | 0.5− | 2006 10 19 | 703 | 0.8− | 0.1− | | |
| 2002 09 04 | 699 | 1.1− | 0.8+ | 2004 02 26 | 704 | 0.0 | 0.9− | 2006 10 19 | 703 | 0.3+ | 0.0 | | |
| 2002 09 14 | 644 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 703 | 0.8+ | 0.4− | | |
| 2002 09 14 | 644 | 0.5− | 0.8+ | 2004 02 29 | 691 | 0.3+ | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.6+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 1.0− | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 03 18 | 704 | 1.2− | 0.0 | 2006 10 27 | 703 | (2.5− | 1.2+) | | |
| 2004 01 23 | 699 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.8− | 1.1+ | 2006 10 27 | 703 | 0.5− | 1.5+ | | |
| 2004 01 23 | 699 | 1.2− | 0.0 | 2004 03 18 | 704 | 0.2− | 1.2+ | 2006 10 27 | 703 | 1.1+ | 1.4+ | | |
| 2004 01 23 | 699 | 0.5+ | 0.5+ | 2004 03 27 | 691 | 0.1+ | 0.3− | 2006 11 15 | 703 | 0.2− | 0.4− | | |
| 2004 01 23 | 699 | 1.0− | 0.1− | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.1+ | | |
| 2004 02 14 | 691 | 0.1+ | 0.3+ | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.9+ | 0.1+ | | |
| 2004 02 14 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 703 | (0.7− | 1.8−) | 2006 11 15 | 703 | 0.4+ | 0.6+ | | |
| 2004 02 14 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.9− | 2006 11 22 | 703 | 0.2− | 0.6− | | |
| 2004 02 18 | 704 | 0.3− | 1.2+ | 2006 09 28 | 703 | 0.6− | 0.0 | 2006 11 22 | 703 | 0.3− | 0.5− | | |
| 2004 02 18 | 704 | 0.7+ | 0.1+ | 2006 09 28 | 703 | 0.8− | 0.5− | 2006 11 22 | 703 | 0.7− | 0.5− | | |
| 2004 02 18 | 704 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 22 | 703 | 0.6− | 0.7− | | |

**(144267)∗ 2004 CE$_{96}$ = 2001 TJ$_{213}$**

Discovered 2004 Feb. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61928)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.31261 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17021257 | $\omega$ | 329.71564 | | +0.38792767 | +0.91522865 | |
| $a$ | 3.2245935 | $\Omega$ | 322.80009 | | −0.80536849 | +0.27911364 | |
| $e$ | 0.0844535 | $i$ | 10.38090 | | −0.44821169 | +0.29060642 | |
| $P$ | 5.79 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 691 | 0.1+ | 0.1+ | 2004 02 14 | 691 | 0.3+ | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.5+ | | |
| 1998 03 04 | 691 | 0.1+ | 0.5+ | 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.4+ | | |
| 1998 03 04 | 691 | 0.3+ | 0.1+ | 2004 02 14 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 1.4+ | | |
| 1998 03 20 | 691 | 0.1− | 0.1+ | 2004 02 18 | 704 | (2.1+ | 0.5+) | 2006 08 28 | 703 | 1.0− | 0.8+ | | |
| 1998 03 20 | 691 | 0.3+ | 0.3+ | 2004 02 18 | 704 | 0.4− | 0.3− | 2006 08 28 | 703 | 1.0− | 0.4+ | | |
| 1998 03 20 | 691 | 0.0 | 0.0 | 2004 02 18 | 704 | 0.8+ | 0.1+ | 2006 09 13 | 644 | 0.4− | 0.2+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.1− | 2004 02 18 | 704 | 1.1+ | 0.1− | 2006 09 13 | 644 | 0.2− | 0.5+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2004 02 26 | 333 | 0.3− | 0.3− | 2006 09 13 | 644 | 0.4− | 0.6+ | | |
| 2001 09 25 | 704 | 0.7+ | 0.2+ | 2004 02 26 | 333 | 0.5− | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.1− | | |
| 2001 10 13 | 699 | 0.1+ | 0.1− | 2004 02 26 | 333 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.0 | 0.1+ | | |
| 2001 10 13 | 699 | 0.1− | 0.1+ | 2004 03 17 | 691 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.0 | | |
| 2001 10 13 | 699 | 0.1− | 0.3+ | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.0 | | |
| 2001 10 13 | 644 | 0.2− | 0.5+ | 2004 03 17 | 691 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2001 10 13 | 644 | 0.0 | 0.5+ | 2004 03 26 | 691 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.1− | | |
| 2001 10 13 | 699 | (1.6− | 0.9+) | 2004 03 26 | 691 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.1− | 0.2+ | | |
| 2001 10 13 | 644 | 0.0 | 0.1+ | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1− | | |
| 2001 10 18 | 704 | 0.3+ | 0.1− | 2006 08 14 | 644 | 0.3− | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2001 10 18 | 704 | 0.8− | 0.3+ | 2006 08 14 | 644 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.0 | | |
| 2001 10 18 | 704 | 0.4− | 0.2+ | 2006 08 14 | 644 | 0.3− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.0 | | |
| 2001 10 18 | 704 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.1− | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.3+ | | |
| 2001 10 18 | 704 | 0.8− | 0.1− | 2006 08 15 | 644 | 0.2− | 0.5+ | | | | | | |

**(144268)∗ 2004 CG$_{96}$ = 2003 BS$_{25}$**

Discovered 2004 Feb. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61928)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.15977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22205562 | $\omega$ | 172.36564 | | +0.86683017 | +0.48759443 | |
| $a$ | 2.7008152 | $\Omega$ | 157.50665 | | −0.47064639 | +0.86915392 | |
| $e$ | 0.1941593 | $i$ | 15.80461 | | −0.16461299 | +0.08260224 | |
| $P$ | 4.44 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.1+ | 0.8− | 2005 05 06 | 704 | 0.1+ | 0.1− | 2005 07 01 | 644 | 0.1+ | 0.2+ | | |
| 2003 01 02 | 704 | (2.1+ | 1.4+) | 2005 05 06 | 704 | 1.2+ | 0.8+ | 2005 07 01 | 644 | 0.0 | 0.3+ | | |
| 2003 01 02 | 704 | 1.4− | 0.5+ | 2005 05 06 | 704 | 0.7+ | 0.2+ | 2005 07 05 | 703 | 0.0 | 0.5+ | | |
| 2003 01 02 | 704 | 0.7− | 0.8+ | 2005 05 06 | 704 | 0.3− | 0.0 | 2005 07 05 | 703 | 0.4+ | 0.4+ | | |
| 2003 01 02 | 704 | 0.4− | 1.2+ | 2005 05 13 | 703 | 0.2− | 1.2+ | 2005 07 05 | 703 | 0.4+ | 0.7+ | | |
| 2003 01 26 | 644 | 0.1+ | 0.1− | 2005 05 13 | 703 | 1.0− | 1.0+ | 2005 07 05 | 703 | 0.3− | 0.9+ | | |
| 2003 01 26 | 644 | 0.6+ | 0.1− | 2005 05 13 | 703 | (1.6− | 3.0+) | 2006 09 18 | 703 | 0.7+ | 0.5− | | |
| 2003 01 26 | 644 | 0.3+ | 0.5+ | 2005 05 13 | 704 | 1.3+ | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | | |
| 2003 01 28 | 704 | 0.7+ | 0.4− | 2005 05 13 | 703 | 0.1+ | 1.2+ | 2006 09 18 | 703 | 0.2+ | 0.3− | | |
| 2003 01 28 | 704 | 0.1− | 0.1+ | 2005 05 13 | 704 | 0.8+ | 1.1+ | 2006 09 18 | 703 | 0.3+ | 0.0 | | |
| 2003 01 28 | 704 | 0.4− | 0.4+ | 2005 05 13 | 704 | 0.5+ | 0.2− | 2006 09 26 | 703 | 0.8− | 0.2+ | | |
| 2003 01 28 | 704 | 0.1+ | 1.0+ | 2005 05 13 | 704 | (1.7+ | 1.0+) | 2006 09 26 | 703 | 0.2− | 0.2+ | | |
| 2003 01 28 | 704 | 0.1− | 0.6+ | 2005 05 21 | 644 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.1+ | | |
| 2004 02 14 | 691 | 0.3+ | 0.2+ | 2005 05 21 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.2+ | | |
| 2004 02 14 | 691 | 0.0 | 0.0 | 2005 05 21 | 644 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.4+ | | |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2005 05 30 | 703 | 0.4+ | 0.5+ | 2006 09 30 | 704 | 0.5+ | 0.7+ | | |
| 2004 02 18 | 704 | 0.1+ | 0.6+ | 2005 05 30 | 703 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.4+ | 0.9+ | | |
| 2004 02 18 | 704 | 0.1− | 0.3+ | 2005 05 30 | 703 | 0.5− | 0.0 | 2006 09 30 | 704 | 0.6+ | 0.6+ | | |
| 2004 02 18 | 704 | 0.4+ | 0.1− | 2005 05 30 | 703 | 1.2− | 1.2− | 2006 09 30 | 704 | 0.0 | 0.6+ | | |
| 2004 02 18 | 704 | 0.2+ | 0.5− | 2005 06 01 | 704 | 0.1− | 1.3+ | 2006 10 10 | 644 | 0.3− | 0.1+ | | |
| 2004 02 26 | 704 | 0.3− | 0.6+ | 2005 06 01 | 699 | 0.1+ | 1.0+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2004 02 26 | 704 | 1.2− | 0.9+ | 2005 06 01 | 704 | 1.0+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2004 02 26 | 704 | 1.2− | 0.6+ | 2005 06 01 | 704 | 1.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2004 02 26 | 704 | 1.4− | 0.4+ | 2005 06 01 | 699 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.4+ | | |
| 2004 02 26 | 704 | 0.2− | 0.8+ | 2005 06 01 | 704 | 0.6+ | 0.0 | 2006 10 10 | 644 | 0.2− | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1+ | 0.1− | 2005 06 01 | 704 | 0.1+ | 0.7− | 2006 10 21 | 703 | 0.3+ | 0.4+ |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2005 06 01 | 699 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2005 06 01 | 699 | 0.7− | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 0.5+ | 1.1+ | 2005 06 07 | 703 | 0.8− | 0.5− | 2006 10 21 | 703 | 0.6+ | 0.7+ |
| 2004 03 18 | 704 | 0.0 | 0.1+ | 2005 06 07 | 703 | 1.0− | 0.0 | 2006 11 01 | 703 | 0.4+ | 1.1+ |
| 2004 03 18 | 704 | 0.4+ | 1.0+ | 2005 06 07 | 703 | 0.3− | 1.2− | 2006 11 01 | 703 | 0.5− | 0.8+ |
| 2004 03 26 | 691 | 0.3+ | 0.0 | 2005 06 07 | 703 | 0.6− | 0.5+ | 2006 11 01 | 703 | 0.4+ | 0.6+ |
| 2004 03 26 | 691 | 0.0 | 0.3− | 2005 06 07 | 699 | 1.3+ | 1.2+ | 2006 11 01 | 703 | 0.1+ | 0.1− |
| 2004 03 26 | 691 | 0.2+ | 0.5− | 2005 06 07 | 699 | 0.9+ | 0.2− | 2006 11 01 | 703 | 0.5− | 0.3− |
| 2005 04 17 | 683 | (0.2+ | 1.8+) | 2005 06 07 | 699 | 0.5+ | 0.9+ | 2006 11 01 | 703 | 0.6− | 0.2+ |
| 2005 04 17 | 683 | 1.1+ | 1.0+ | 2005 06 07 | 699 | (1.4− | 1.8+) | 2006 11 01 | 703 | 0.2− | 0.2+ |
| 2005 04 17 | 683 | (1.8− | 1.2+) | 2005 06 16 | 703 | 0.0 | 0.7− | 2006 11 01 | 703 | 0.3− | 0.4+ |
| 2005 04 18 | 704 | 0.3+ | 1.0+ | 2005 06 16 | 703 | 1.0− | 0.5− | 2006 11 06 | 644 | 0.5− | 0.2+ |
| 2005 04 18 | 704 | 0.6− | 0.6− | 2005 06 16 | 703 | 0.6− | 1.0− | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2005 04 18 | 704 | 0.5+ | 0.5+ | 2005 06 16 | 703 | 0.4+ | 0.6− | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2005 04 18 | 704 | 0.0 | 0.3− | 2005 06 25 | 644 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.8− | 0.4+ |
| 2005 04 18 | 704 | 0.1− | 0.8+ | 2005 06 25 | 644 | 0.0 | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2005 04 19 | 683 | (0.2+ | 3.4+) | 2005 06 25 | 644 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.3+ | 0.2+ |
| 2005 04 19 | 683 | (2.7− | 0.4+) | 2005 06 27 | 699 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.3+ | 0.2+ |
| 2005 04 19 | 683 | 1.1− | 1.5− | 2005 06 27 | 699 | 0.9− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2005 05 04 | 703 | (2.1+ | 1.7+) | 2005 06 27 | 699 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2005 05 04 | 703 | 0.3− | 0.5+ | 2005 06 27 | 699 | 0.1− | 0.6− | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2005 05 04 | 703 | 0.6− | 0.1+ | 2005 07 01 | 644 | 0.2− | 0.4+ | | | | |

**(144269)∗ 2004 CJ$_{96}$**

Discovered 2004 Feb. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.66416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26557085 | $\omega$ | 337.92829 | | −0.98666709 | −0.16254790 | |
| $a$ | 2.3970795 | $\Omega$ | 192.72499 | | +0.15430000 | −0.91835501 | |
| $e$ | 0.1237038 | $i$ | 2.11747 | | +0.05176457 | −0.36083550 | |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.9− | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2005 07 07 | 691 | 0.3− | 1.1+ |
| 2000 01 05 | 704 | 0.2+ | 1.0− | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2005 07 07 | 691 | 0.2− | 0.4+ |
| 2000 01 05 | 704 | 0.4+ | 0.7− | 2004 02 26 | 704 | 0.1− | 0.1− | 2005 08 28 | 691 | 0.0 | 0.0 |
| 2004 01 29 | 704 | 0.3− | 0.2+ | 2004 02 26 | 333 | 0.3+ | 0.0 | 2005 08 28 | 691 | 0.1− | 0.3+ |
| 2004 01 29 | 704 | 0.5+ | 1.0+ | 2004 02 26 | 704 | 0.8+ | 0.1− | 2005 08 28 | 691 | 0.0 | 0.2− |
| 2004 01 29 | 704 | 0.0 | 0.9+ | 2004 03 01 | 703 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.5− | 0.5+ |
| 2004 01 29 | 704 | 1.1+ | 0.2+ | 2004 03 01 | 703 | 0.4− | 1.0+ | 2006 10 16 | 691 | 0.7− | 0.6+ |
| 2004 02 11 | 644 | 0.4+ | 0.3+ | 2004 03 01 | 703 | 0.5− | 1.1+ | 2006 10 16 | 691 | 0.4− | 0.3+ |
| 2004 02 11 | 644 | 0.4+ | 0.5+ | 2004 03 01 | 703 | 0.0 | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.4− |
| 2004 02 11 | 644 | 0.3+ | 0.5+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2004 02 14 | 691 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.1+ | 0.6− | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2004 02 14 | 691 | 0.0 | 0.4+ | 2004 03 15 | 704 | 0.4+ | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2004 02 14 | 691 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.9− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.3+ |
| 2004 02 18 | 704 | (2.0− | 0.7+) | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2004 02 18 | 704 | (0.6+ | 1.5+) | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2004 02 18 | 704 | 0.9+ | 0.7− | 2004 03 18 | 704 | 0.0 | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2004 02 18 | 704 | 1.1− | 0.1− | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2004 02 18 | 704 | 0.9+ | 0.2+ | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2004 02 25 | 333 | 0.3+ | 0.3− | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2004 02 25 | 333 | 0.3+ | 0.1− | 2005 07 02 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 2.0+ | 0.3+ |
| 2004 02 25 | 333 | 0.5+ | 0.5− | 2005 07 02 | 691 | 0.3− | 0.7+ | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2004 02 26 | 333 | 0.0 | 0.1+ | 2005 07 02 | 691 | 0.1− | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2004 02 26 | 704 | 0.4+ | 0.1+ | 2005 07 07 | 691 | 0.4+ | 0.2+ | | | | |

**(144270)∗ 2004 CM$_{96}$**

Discovered 2004 Feb. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.73151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24132998 | $\omega$ | 108.14589 | | −0.92649859 | +0.33433951 | |
| $a$ | 2.5550253 | $\Omega$ | 91.67128 | | −0.37596112 | −0.84187252 | |
| $e$ | 0.0652907 | $i$ | 9.94779 | | +0.01592461 | −0.42363633 | |
| $P$ | 4.08 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.5+ | 0.3− | 2004 01 30 | 704 | 0.2+ | 0.1+ | 2004 03 18 | 644 | 0.1− | 0.2+ |
| 2000 02 03 | 704 | 1.1+ | 0.4− | 2004 01 30 | 704 | 0.3+ | 0.3− | 2004 03 18 | 644 | 0.1− | 0.0 |
| 2000 02 03 | 704 | 0.2− | 0.1+ | 2004 01 30 | 704 | 0.5+ | 0.0 | 2004 03 23 | 704 | 1.1− | 1.1+ |
| 2000 03 04 | 704 | 0.3+ | 0.3+ | 2004 01 30 | 704 | 0.5+ | 0.6− | 2004 03 23 | 704 | 0.7− | 0.9+ |
| 2000 03 04 | 704 | 0.2− | 0.1+ | 2004 02 14 | 608 | 0.7+ | 0.6+ | 2004 03 23 | 704 | 0.7− | 0.1− |
| 2000 03 04 | 704 | 0.3− | 0.0 | 2004 02 14 | 608 | (0.8+ | 1.8+) | 2004 03 23 | 704 | 0.8− | 0.8+ |
| 2000 03 04 | 704 | 0.2+ | 0.4+ | 2004 02 14 | 608 | (0.5+ | 1.7+) | 2004 03 25 | 704 | 0.0 | 0.6+ |
| 2000 03 04 | 704 | 0.1− | 0.2− | 2004 02 15 | 704 | 0.4+ | 0.3− | 2004 03 25 | 704 | 0.8− | 1.3+ |
| 2000 04 02 | 704 | 0.7+ | 0.6+ | 2004 02 15 | 704 | 0.1+ | 0.4− | 2004 03 25 | 704 | 0.2+ | 1.3+ |
| 2000 04 02 | 704 | 0.9− | 0.5+ | 2004 02 15 | 704 | 0.1− | 0.1− | 2004 03 25 | 704 | 0.1+ | 0.6+ |
| 2000 04 02 | 704 | 1.2− | 0.6− | 2004 02 15 | 704 | 0.3+ | 0.0 | 2005 05 13 | G96 | 0.4− | 0.3+ |
| 2001 06 15 | 644 | 0.4− | 0.2− | 2004 02 15 | 704 | 0.0 | 0.1− | 2005 05 13 | G96 | 0.4− | 0.2− |
| 2001 06 15 | 644 | 0.6− | 0.1− | 2004 02 18 | 704 | 0.8+ | 0.5− | 2005 05 13 | G96 | 0.4− | 0.4− |
| 2001 06 15 | 644 | 0.4− | 0.0 | 2004 02 18 | 704 | 0.1+ | 1.2− | 2005 05 13 | G96 | 0.4− | 0.0 |
| 2001 07 25 | 644 | 0.0 | 0.6+ | 2004 02 18 | 704 | 0.1+ | 1.0− | 2006 10 16 | 703 | (1.3+ | 1.7+) |
| 2001 07 25 | 644 | 0.1+ | 0.0 | 2004 02 18 | 704 | (0.6+ | 1.6−) | 2006 10 16 | 703 | 0.2+ | 0.5+ |
| 2001 07 25 | 644 | 0.1+ | 0.5+ | 2004 02 19 | 704 | 0.5+ | 0.7+ | 2006 10 16 | 703 | 0.7+ | 0.9+ |
| 2001 08 11 | 644 | 0.9+ | 0.1+ | 2004 02 19 | 704 | 1.2+ | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.6+ |
| 2001 08 11 | 644 | 1.0+ | 0.4+ | 2004 02 19 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 2001 08 11 | 644 | 1.2+ | 0.4+ | 2004 02 19 | 704 | 0.2− | 1.4+ | 2006 10 22 | 703 | (0.0 | 1.9−) |
| 2001 08 19 | 704 | 0.8− | 0.7+ | 2004 02 23 | 608 | 0.1+ | 0.7− | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2001 08 19 | 704 | 0.8− | 0.7+ | 2004 02 23 | 608 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2001 08 19 | 704 | 0.6+ | 0.6+ | 2004 02 23 | 608 | 0.0 | 0.7− | 2006 11 16 | 703 | 0.8+ | 0.1+ |
| 2001 08 19 | 704 | 0.1+ | 1.3+ | 2004 03 14 | 704 | 0.5− | 0.5+ | 2006 11 16 | 703 | 0.6− | 0.5+ |
| 2002 10 31 | 704 | 1.0+ | 0.2− | 2004 03 14 | 704 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.5+ |
| 2002 10 31 | 704 | 1.1− | 0.2− | 2004 03 14 | 704 | 0.3+ | 0.1− | 2006 11 16 | 703 | 0.4+ | 0.6+ |
| 2002 10 31 | 704 | 0.5− | 0.0 | 2004 03 14 | 704 | 0.5− | 0.6+ | | | | |
| 2002 10 31 | 704 | 0.4− | 0.3+ | 2004 03 18 | 644 | 0.1− | 0.1+ | | | | |

**(144271)∗ 2004 CY$_{96}$ = 2001 UT$_{89}$**

Discovered 2004 Feb. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61929)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.02819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18554541 | $\omega$ | 33.44676 | | −0.92959755 | +0.36202015 | |
| $a$ | 3.0444061 | $\Omega$ | 167.20957 | | −0.36747431 | −0.92484128 | |
| $e$ | 0.0918664 | $i$ | 18.21690 | | +0.02847861 | −0.11666197 | |
| $P$ | 5.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.8− | 0.0 | 2004 02 19 | 704 | 0.2− | 1.0+ | 2005 06 30 | 644 | 0.1+ | 0.4+ |
| 2001 09 25 | 704 | 0.5− | 0.8− | 2004 02 19 | 704 | 0.4+ | 1.4− | 2005 06 30 | 644 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 0.3− | 1.2+ | 2004 02 19 | 704 | 0.2+ | 1.1+ | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 17 | 291 | 0.1− | 0.4+ | 2004 03 15 | 704 | 0.3+ | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2001 10 17 | 291 | 0.4− | 0.4+ | 2004 03 15 | 704 | 0.5+ | 0.2− | 2006 08 27 | 691 | 0.2+ | 0.1+ |
| 2001 10 17 | 291 | 1.0− | 0.2+ | 2004 03 15 | 704 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.6− | 0.3+ |
| 2001 10 24 | 291 | 0.8+ | 0.1+ | 2004 03 15 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.2+ | 1.2+ |
| 2001 10 24 | 291 | 0.5+ | 0.5+ | 2004 03 15 | 704 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.4+ | 0.1+ |
| 2001 10 24 | 291 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.6+ | 1.1+ | 2006 08 28 | 703 | 0.1+ | 0.4+ |
| 2004 02 12 | 683 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.7+ | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2004 02 12 | 683 | (3.9− | 0.7−) | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2004 02 12 | 644 | 0.1+ | 0.6+ | 2004 03 18 | 704 | 0.1+ | 1.2+ | 2006 08 29 | 691 | 0.1+ | 0.2+ |
| 2004 02 12 | 644 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.8+ | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2004 02 12 | 644 | 0.2+ | 0.4+ | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2004 02 15 | 703 | (1.7− | 1.0+) | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2004 02 15 | 703 | 0.3+ | 0.1− | 2004 03 26 | 691 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2004 02 15 | 703 | 0.3− | 0.2+ | 2005 06 24 | 644 | 0.3+ | 0.6+ | 2006 11 23 | G96 | 0.0 | 2.5− |
| 2004 02 15 | 703 | 0.2+ | 0.3− | 2005 06 24 | 644 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.3+ | 0.3+ | 2005 06 24 | 644 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2004 02 19 | 704 | 0.0 | 0.8+ | 2005 06 30 | 644 | 0.2− | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.5− |

**(144272)∗ 2004 CA$_{97}$ = 2005 MZ$_{41}$**

Discovered 2004 Feb. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 86290)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.12376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23285649 | $\omega$ | 99.36045 | | +0.41887615 | +0.90707420 | |
| $a$ | 2.6166390 | $\Omega$ | 195.60815 | | −0.88225711 | +0.39561729 | |
| $e$ | 0.0614247 | $i$ | 8.96821 | | −0.21486079 | +0.14388660 | |
| $P$ | 4.23 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 608 | 0.4− | 1.0− | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 1.2+ | 0.0 |
| 2002 11 01 | 608 | 0.2− | 0.7− | 2005 06 11 | 691 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.4+ |
| 2002 11 01 | 608 | 0.0 | 0.5− | 2005 06 28 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | (2.2− | 0.5−) |
| 2002 11 07 | 704 | 0.0 | 0.7+ | 2005 06 28 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | 1.4− | 0.2+ |
| 2002 11 07 | 704 | 0.5+ | 1.0+ | 2005 06 28 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.4+ | 1.4+ |
| 2002 11 07 | 704 | 0.4+ | 1.4+ | 2005 07 05 | 644 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.6− | 0.9+ | 2005 07 05 | 644 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 2004 01 29 | 704 | 1.2+ | 0.9− | 2005 07 05 | 644 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2004 01 29 | 704 | 0.7+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 15 | 106 | 0.1+ | 0.2− |
| 2004 01 29 | 704 | 0.1− | 0.8+ | 2006 09 06 | 644 | 0.6+ | 0.0 | 2006 10 15 | 106 | 1.0+ | 0.4− |
| 2004 02 13 | 644 | 0.1+ | 1.1+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 15 | 106 | 0.3+ | 0.1− |
| 2004 02 13 | 644 | 0.3+ | 1.1+ | 2006 09 16 | 644 | 0.0 | 0.3− | 2006 10 15 | 106 | 0.3+ | 0.8− |
| 2004 02 13 | 644 | 0.5− | 1.3+ | 2006 09 16 | 644 | 0.2+ | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.3− |
| 2004 02 14 | 699 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.1+ | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2004 02 14 | 699 | 0.2+ | 0.8+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2004 02 14 | 699 | 0.6− | 0.2− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.3− |
| 2004 02 14 | 699 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.8− |
| 2004 02 16 | 703 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2004 02 16 | 703 | 0.5− | 0.4− | 2006 09 19 | 699 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2004 02 16 | 703 | 0.8+ | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2004 02 16 | 703 | 0.9− | 1.1+ | 2006 09 19 | 699 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.4+ | 0.5+ |
| 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.3− | 1.0+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2005 04 30 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.4− | 1.0+ | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.9− | 1.0+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 05 12 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 05 12 | 704 | 1.5+ | 0.3− | 2006 09 22 | A50 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2005 05 12 | 704 | 0.8+ | 0.1− | 2006 09 25 | 691 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2005 06 03 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.5− | 0.2− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2005 06 03 | 691 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2005 06 03 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 1.0+ | 0.7− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.7+ | 0.8+ | 2006 11 14 | G96 | 0.3+ | 0.4− |

**(144273)∗ 2004 CG$_{97}$**

Discovered 2004 Feb. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.97132 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17380688 | $\omega$ | 226.55774 | | −0.80061550 | +0.59536560 | |
| $a$ | 3.1799826 | $\Omega$ | 349.35716 | | −0.38736452 | −0.60022933 | |
| $e$ | 0.1719524 | $i$ | 21.43342 | | −0.45712531 | −0.53410163 | |
| $P$ | 5.67 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.0 | 0.9+ | 2004 03 16 | 704 | 0.3− | 0.9+ | 2005 07 03 | E12 | 0.3− | 0.1+ |
| 2001 10 15 | 704 | 0.3− | 0.8+ | 2004 03 16 | 704 | 0.0 | 0.8+ | 2005 08 01 | E12 | 0.2− | 0.6+ |
| 2001 10 15 | 704 | 1.4− | 0.7+ | 2004 03 16 | 704 | 0.5+ | 0.8+ | 2005 08 01 | E12 | 0.8+ | 1.0+ |
| 2003 12 19 | 691 | 0.3− | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2005 08 01 | E12 | 1.0− | 0.2− |
| 2003 12 19 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2005 08 01 | E12 | 0.2− | 0.9+ |
| 2003 12 19 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 08 28 | 703 | (1.9− | 0.8+) |
| 2003 12 27 | 704 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.0 |
| 2003 12 27 | 704 | 0.9− | 0.1− | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 08 28 | 703 | 0.6+ | 0.5+ |
| 2003 12 27 | 704 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.2+ |
| 2003 12 27 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2006 09 12 | 703 | 0.3− | 1.3+ |
| 2004 02 13 | 644 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.7+ | 0.3+ | 2006 09 12 | 703 | 0.4− | 1.1+ |
| 2004 02 13 | 644 | 0.3− | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2006 09 12 | 703 | 0.5+ | 0.2+ |
| 2004 02 13 | 644 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.9+ | 0.0 | 2006 09 12 | 703 | 0.7− | 0.0 |
| 2004 02 13 | 644 | 0.3+ | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.1− | 2006 09 19 | 703 | 0.5− | 0.6− |
| 2004 02 13 | 644 | 0.1+ | 0.5+ | 2004 03 27 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2004 02 13 | 644 | 0.2− | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2004 02 16 | 703 | 0.8+ | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.0 | 0.3− |
| 2004 02 16 | 703 | 0.1+ | 0.0 | 2004 03 27 | 704 | 1.5+ | 0.2+ | 2006 09 20 | 691 | 0.5− | 0.1+ |
| 2004 02 16 | 703 | 0.2− | 0.1− | 2004 04 09 | 703 | (1.6+ | 1.0−) | 2006 09 20 | 691 | 0.3− | 0.4+ |
| 2004 02 16 | 703 | 0.1+ | 0.4+ | 2004 04 09 | 703 | 0.3+ | 0.5+ | 2006 09 20 | 691 | 0.3− | 1.2+ |
| 2004 02 19 | 704 | 0.3+ | 0.1+ | 2004 04 09 | 703 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 0.6− | 0.2+ |
| 2004 02 19 | 704 | 0.4+ | 0.3+ | 2004 04 09 | 703 | 0.7+ | 0.7+ | 2006 09 20 | 703 | (0.0 | 1.9+) |
| 2004 02 19 | 704 | 0.2− | 0.2+ | 2004 04 12 | 703 | 1.4+ | 0.0 | 2006 09 20 | 703 | 1.4− | 0.6+ |
| 2004 02 19 | 704 | 0.4− | 0.1+ | 2004 04 12 | 703 | 1.2+ | 0.3+ | 2006 09 20 | 703 | 0.4− | 1.4+ |
| 2004 02 19 | 704 | 0.2− | 0.5+ | 2004 04 12 | 703 | 0.9+ | 0.2− | 2006 09 22 | 703 | 1.3− | 0.0 |
| 2004 02 26 | 704 | 0.2+ | 0.3+ | 2004 04 14 | 699 | 0.4− | 0.1+ | 2006 09 22 | 703 | (1.7− | 1.5+) |
| 2004 02 26 | 704 | 0.2+ | 0.4+ | 2004 04 14 | 699 | 1.0− | 0.2− | 2006 09 22 | 703 | 1.1− | 0.9+ |
| 2004 02 26 | 704 | 0.3+ | 0.2+ | 2004 04 14 | 699 | 0.7− | 0.1− | 2006 09 22 | 703 | 0.4− | 0.3− |
| 2004 02 26 | 704 | 0.4+ | 0.4+ | 2004 04 14 | 699 | 0.6− | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.9− |
| 2004 03 12 | 644 | 0.4+ | 0.0 | 2004 04 16 | 704 | 0.6− | 0.2+ | 2006 09 25 | 699 | 1.1− | 0.8+ |
| 2004 03 12 | 644 | 0.2+ | 0.1− | 2004 04 16 | 704 | 0.7− | 0.1− | 2006 09 25 | 699 | (2.0− | 1.7+) |
| 2004 03 12 | 644 | 0.2+ | 0.2+ | 2004 04 16 | 704 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.3+ | 1.1+ |
| 2004 03 15 | 333 | 0.1− | 0.2+ | 2004 04 16 | 704 | 0.4+ | 0.5− | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 2004 03 15 | 333 | 0.2+ | 0.6+ | 2004 04 19 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 04 19 | 704 | 0.3+ | 0.5− | 2006 10 17 | 703 | 1.7+ | 1.1− |
| 2004 03 15 | 691 | 0.1− | 0.6+ | 2004 04 19 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.9− |
| 2004 03 16 | 333 | 0.5+ | 0.4− | 2004 04 19 | 704 | (1.0− | 1.6+) | 2006 10 17 | 703 | 0.6+ | 0.5− |
| 2004 03 16 | 333 | 0.3+ | 0.1− | 2005 07 03 | E12 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 1.4− | 0.2+ |
| 2004 03 16 | 704 | 0.4+ | 0.6+ | 2005 07 03 | E12 | 0.1+ | 0.0 | | | | |
| 2004 03 16 | 704 | 0.4− | 0.4− | 2005 07 03 | E12 | 0.1+ | 0.0 | | | | |

**(144274)∗ 2004 CQ$_{97}$ = 2002 TH$_{202}$**

Discovered 2004 Feb. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86290)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.86544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22840882 | $\omega$ | 214.93238 | | −0.72744531 | +0.68544692 | |
| $a$ | 2.6504979 | $\Omega$ | 8.55497 | | −0.57162670 | −0.58006880 | |
| $e$ | 0.0447173 | $i$ | 12.18500 | | −0.37956059 | −0.44009398 | |
| $P$ | 4.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 735 | 1.2− | 0.5+ | 2004 02 14 | 704 | 1.0− | 0.6− | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2002 10 08 | 735 | 0.1− | 0.7+ | 2004 02 14 | 704 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.1− |
| 2002 10 08 | 735 | 0.2+ | 0.6− | 2004 02 16 | 703 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.7+ | 0.2− |
| 2002 10 16 | 735 | 0.6+ | 0.5− | 2004 02 16 | 703 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2002 10 16 | 735 | 0.8+ | 0.4− | 2004 02 16 | 703 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 10 16 | 735 | 0.2− | 0.8− | 2004 02 16 | 703 | 0.6+ | 0.7+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2002 10 31 | 735 | (3.7+ | 0.5+) | 2005 01 20 | 809 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2002 10 31 | 735 | (2.0+ | 0.5−) | 2005 01 20 | 809 | 1.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 10 31 | 735 | 0.8+ | 0.5− | 2005 01 20 | 809 | 0.6+ | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2003 12 17 | 644 | 0.3+ | 0.7− | 2006 08 28 | 703 | 0.3− | 0.8+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2003 12 17 | 644 | 0.2− | 0.6− | 2006 08 28 | 703 | 0.4+ | 0.7− | 2006 10 16 | G96 | 0.7+ | 0.4− |
| 2003 12 17 | 644 | 0.5− | 1.1− | 2006 08 28 | 703 | 0.9− | 0.3− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2003 12 30 | 704 | (1.7+ | 1.0+) | 2006 08 28 | 703 | 0.1− | 1.2− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2003 12 30 | 704 | 0.6+ | 0.3− | 2006 09 15 | 691 | 0.8− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 30 | 704 | 0.7+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2003 12 30 | 704 | 0.4+ | 1.1+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 12 30 | 704 | 0.8− | 1.2+ | 2006 09 20 | 704 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2004 01 31 | 704 | (0.1+ | 3.0−) | 2006 09 20 | 704 | (1.9− | 1.1+) | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 01 31 | 704 | 0.9− | 0.2− | 2006 09 20 | 704 | 1.5− | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.6− |
| 2004 01 31 | 704 | 1.4+ | 0.5+ | 2006 09 20 | 704 | (2.0− | 1.2+) | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2004 02 14 | 704 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.6− | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 704 | 0.1+ | 1.3+ | 2006 09 20 | 644 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.5− | 0.6− |
| 2004 02 14 | 704 | 1.1− | 0.2+ | 2006 09 20 | 644 | 0.4+ | 0.4+ | | | | |

**(144275)∗ 2004 CY$_{98}$ = 1999 JV$_{102}$ = 2001 UB$_{209}$**

Discovered 2004 Feb. 14 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 86291)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.27911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17637925 | $\omega$ | 56.65675 | | −0.73014756 | | +0.68288349 |
| $a$ | 3.1489884 | $\Omega$ | 166.36182 | | −0.65540531 | | −0.69018888 |
| $e$ | 0.0993621 | $i$ | 5.73250 | | −0.19320563 | | −0.23939393 |
| $P$ | 5.59 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.0− | 1.0− | 2004 03 15 | 704 | 0.4+ | 0.2+ | 2006 07 25 | G96 | 0.0 | 0.3+ |
| 1999 05 13 | 704 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.4+ | 0.9+ | 2006 07 25 | G96 | 0.3− | 0.1+ |
| 1999 05 13 | 704 | 1.1+ | 1.2+ | 2004 03 15 | 704 | 0.6+ | 0.1− | 2006 08 27 | 691 | 0.5− | 0.8+ |
| 1999 05 18 | 704 | 0.7+ | 1.2+ | 2004 03 15 | 704 | 0.5+ | 0.7+ | 2006 08 27 | 699 | 0.9− | 0.8+ |
| 1999 05 18 | 704 | 0.2+ | 1.0+ | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 08 27 | 691 | 0.4+ | 0.2− |
| 1999 05 18 | 704 | (0.0 | 2.8+) | 2004 03 15 | 599 | 0.0 | 0.1+ | 2006 08 27 | 699 | (2.0+ | 1.3+) |
| 1999 05 18 | 704 | 0.3− | 0.3+ | 2004 03 15 | 599 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.7+ |
| 2001 10 20 | 704 | 0.7− | 0.8+ | 2004 03 15 | 599 | 0.1− | 1.0+ | 2006 08 27 | 699 | 0.1− | 0.9+ |
| 2001 10 20 | 704 | 1.1− | 0.1− | 2004 03 15 | 599 | 0.4+ | 0.3+ | 2006 08 27 | 699 | (0.5− | 2.1−) |
| 2001 10 20 | 704 | (2.2− | 0.6+) | 2004 03 16 | 599 | 0.5+ | 0.5+ | 2006 08 28 | 703 | 0.3− | 0.7+ |
| 2001 10 25 | 691 | 0.0 | 0.2+ | 2004 03 16 | 599 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 1.3+ | 1.5+ |
| 2001 10 25 | 691 | 0.0 | 0.3+ | 2004 03 16 | 599 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.4+ | 0.2+ |
| 2001 10 25 | 691 | 0.1+ | 0.4+ | 2004 03 16 | 599 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.4+ | 0.1− |
| 2004 02 14 | 703 | 0.3− | 0.7− | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2004 02 14 | 703 | 0.5− | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2004 02 14 | 703 | 0.1+ | 0.8+ | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.6− | 0.1+ |
| 2004 02 14 | 703 | 1.2+ | 0.2− | 2004 03 20 | 699 | 0.6− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2004 02 18 | 704 | 0.4+ | 0.6+ | 2004 03 20 | 699 | 1.3− | 0.6− | 2006 10 20 | G96 | 0.1− | 0.6+ |
| 2004 02 18 | 704 | 0.5+ | 0.6+ | 2004 03 20 | 699 | 0.3− | 0.6− | 2006 10 20 | G96 | 0.2− | 0.3+ |
| 2004 02 18 | 704 | 0.8+ | 0.2+ | 2004 03 20 | 699 | 0.6+ | 1.2+ | 2006 10 20 | G96 | 0.1+ | 0.5+ |
| 2004 02 26 | 704 | 0.1+ | 0.1− | 2004 03 21 | 291 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.6− | 0.0 |
| 2004 02 26 | 704 | 0.5+ | 0.6+ | 2004 03 21 | 291 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.5− | 0.2+ |
| 2004 02 26 | 704 | 0.2+ | 0.2+ | 2004 03 21 | 291 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2004 02 26 | 704 | 0.0 | 0.2− | 2006 07 25 | G96 | 0.4− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 07 25 | G96 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2+ |

**(144276)∗ 2004 CN$_{99}$ = 2000 AY$_{107}$**

Discovered 2004 Feb. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61930)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.22715 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27064418 | $\omega$ | 322.09575 | | −0.12187526 | | −0.99090555 |
| $a$ | 2.3670290 | $\Omega$ | 134.82316 | | +0.92916338 | | −0.13410826 |
| $e$ | 0.1215991 | $i$ | 4.61197 | | +0.34900118 | | +0.01100746 |
| $P$ | 3.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.6+ | 1.5+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2000 01 05 | 704 | 0.4+ | 1.0− | 2004 02 23 | 704 | (1.0+ | 1.6+) | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2000 01 05 | 704 | 0.1− | 0.7− | 2004 02 23 | 704 | (0.0 | 1.7+) | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2000 01 05 | 704 | 0.2− | 0.2− | 2004 02 23 | 704 | (0.4+ | 1.7+) | 2006 11 11 | 703 | 0.6+ | 0.1+ |
| 2000 01 07 | 704 | 0.5+ | 0.8− | 2004 03 15 | 704 | 0.1− | 0.5− | 2006 11 11 | 703 | 1.4+ | 0.2− |
| 2000 01 07 | 704 | 0.6+ | 0.8− | 2004 03 15 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.8+ |
| 2000 01 07 | 704 | 0.1− | 0.9− | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2000 01 07 | 704 | 0.1− | 1.3− | 2004 03 15 | 704 | 0.5− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.6+ |
| 2000 01 07 | 704 | 0.7− | 0.4− | 2004 03 15 | 704 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.1+ | 0.3+ |
| 2002 09 05 | 608 | 0.8− | 1.0+ | 2004 03 19 | 704 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.8− | 0.4+ |
| 2002 09 05 | 608 | (1.3− | 1.6+) | 2004 03 19 | 704 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.1− | 0.2+ |
| 2002 09 05 | 608 | (0.9− | 1.8+) | 2004 03 19 | 704 | 0.7− | 0.8+ | 2006 11 14 | 704 | (0.8+ | 1.6+) |
| 2002 09 15 | 644 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.8+ | 1.2+ | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2002 09 15 | 644 | 0.5− | 0.7+ | 2004 03 22 | 704 | 0.7+ | 1.3+ | 2006 11 17 | 704 | 0.2+ | 0.7− |
| 2002 09 15 | 644 | 0.3− | 0.7+ | 2004 03 22 | 704 | 0.0 | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.1+ |
| 2002 10 01 | 699 | 0.1− | 0.9+ | 2004 03 22 | 704 | 0.4+ | 0.4+ | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2002 10 01 | 699 | 0.4+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.8+ |
| 2002 10 01 | 699 | (0.4+ | 1.7+) | 2004 03 26 | 703 | 0.9− | 1.1+ | 2006 11 19 | 703 | 0.4+ | 0.2+ |
| 2002 10 01 | 699 | 0.3− | 0.1+ | 2004 03 26 | 703 | 0.4− | 1.0+ | 2006 11 19 | 703 | 0.5+ | 1.3+ |
| 2004 02 15 | 703 | 0.2− | 1.2+ | 2004 03 26 | 703 | 0.9+ | 1.4+ | 2006 11 19 | 703 | 1.1− | 1.3+ |
| 2004 02 15 | 703 | 0.1+ | 0.6− | 2004 03 26 | 703 | 0.8− | 0.1− | 2006 11 19 | 703 | (1.6+ | 2.0+) |
| 2004 02 15 | 703 | 1.2− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 20 | 704 | 1.0− | 0.7− |
| 2004 02 15 | 703 | (0.5+ | 2.1+) | 2006 10 16 | 703 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2004 02 18 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.7− | 2006 11 20 | 704 | 0.7− | 0.5− |
| 2004 02 18 | 704 | 0.8+ | 0.7+ | 2006 10 16 | 703 | 0.2+ | 1.0+ | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2004 02 18 | 704 | 0.7+ | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.7− |
| 2004 02 18 | 704 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.9+ | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2004 02 19 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.6− | 0.5− |
| 2004 02 19 | 704 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.9+ | 2006 11 20 | 704 | 0.1+ | 0.8+ |
| 2004 02 19 | 704 | 0.7+ | 0.2− | 2006 11 01 | 703 | 0.2− | 0.2+ | 2006 11 20 | 704 | 1.0− | 0.4+ |
| 2004 02 19 | 704 | 0.8+ | 0.0 | 2006 11 01 | 703 | 0.5− | 0.8+ | 2006 11 20 | 704 | 0.6+ | 0.1+ |
| 2004 02 19 | 704 | 0.0 | 0.6− | 2006 11 01 | 703 | 0.9+ | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2004 02 20 | 608 | 0.5+ | 1.5− | 2006 11 01 | 703 | 1.0− | 0.5− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2004 02 20 | 608 | 1.0+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 02 20 | 608 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2004 02 23 | 704 | (0.5+ | 2.5+) | 2006 11 08 | 644 | 0.3+ | 0.2+ | | | | |

**(144277)∗ 2004 CO$_{100}$ = 2000 AA$_{21}$**

Discovered 2004 Feb. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61932)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.19492 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27096022 | $\omega$ | 41.42095 | | −0.14869041 | | −0.98785988 |
| $a$ | 2.3651881 | $\Omega$ | 57.17629 | | +0.89261208 | | −0.15365608 |
| $e$ | 0.1430934 | $i$ | 3.06889 | | +0.42559938 | | −0.02286190 |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.3+ | 0.0 | 2004 03 15 | 704 | 1.0− | 0.9+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2000 01 03 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 0.2+ | 0.8+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2000 01 03 | 704 | 0.2− | 1.4− | 2004 03 15 | 704 | 0.2− | 0.5+ | 2006 11 08 | 644 | 0.3− | 0.1− |
| 2000 01 03 | 704 | 0.4+ | 0.8− | 2004 03 19 | 704 | 1.1+ | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2000 01 04 | 704 | 0.4− | 0.2− | 2004 03 19 | 704 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2000 01 04 | 704 | 0.2+ | 0.5− | 2004 03 19 | 704 | (0.2+ | 1.5+) | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2000 01 04 | 704 | 0.2+ | 0.5− | 2004 03 19 | 704 | 0.6− | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2000 01 04 | 704 | 0.5− | 0.5− | 2004 03 19 | 704 | (0.2+ | 1.5+) | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2002 08 20 | 644 | 0.1+ | 1.2+ | 2004 03 22 | 704 | (2.0+ | 0.2+) | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2002 08 20 | 644 | (0.4+ | 1.6+) | 2004 03 22 | 704 | 1.0+ | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2002 08 20 | 644 | 0.1+ | 0.9+ | 2004 03 22 | 704 | 0.3+ | 0.8+ | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2002 09 14 | 608 | 0.9− | 0.0 | 2004 03 22 | 704 | 0.6+ | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2002 09 14 | 608 | 0.3− | 0.4+ | 2004 03 26 | 703 | (2.2− | 2.0−) | 2006 11 15 | 683 | 0.0 | 1.1− |
| 2002 09 14 | 608 | 0.1− | 0.3+ | 2004 03 26 | 703 | (1.1+ | 2.2−) | 2006 11 15 | 683 | 0.3+ | 1.0− |
| 2003 12 22 | 704 | 1.2+ | 0.5− | 2004 03 26 | 703 | (2.0+ | 0.8+) | 2006 11 15 | 683 | 1.1+ | 0.3− |
| 2003 12 22 | 704 | 0.0 | 0.2− | 2004 03 26 | 703 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2003 12 22 | 704 | 1.2+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.5− |
| 2003 12 22 | 704 | 1.0+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2004 02 15 | 703 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.7+ |
| 2004 02 15 | 703 | 0.0 | 0.0 | 2006 10 15 | 691 | (1.8− | 0.7+) | 2006 11 18 | 704 | 0.2− | 0.7− |
| 2004 02 15 | 703 | 0.2− | 0.9+ | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 1.0+ |
| 2004 02 15 | 703 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.9− | 0.4+ |
| 2004 02 17 | 704 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.3+ | 1.5+ | 2006 11 18 | 704 | 0.3− | 0.8+ |
| 2004 02 17 | 704 | 0.4+ | 0.2− | 2006 10 16 | 703 | (0.4− | 1.6+) | 2006 11 19 | 704 | 0.8− | 1.1+ |
| 2004 02 17 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.4− | 1.2+ |
| 2004 02 17 | 704 | (0.7+ | 1.6+) | 2006 10 16 | 703 | 0.7− | 1.1+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2004 02 17 | 704 | 0.0 | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.8− | 1.0+ |
| 2004 02 23 | 620 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | (0.4+ | 2.1+) |
| 2004 02 23 | 620 | 0.5− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | (0.9− | 2.2+) |
| 2004 02 23 | 620 | 0.6− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | (0.9+ | 1.9+) |
| 2004 02 25 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | (1.8− | 0.7+) |
| 2004 02 25 | 704 | 0.7+ | 0.5− | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2004 02 25 | 704 | (1.5− | 0.2−) | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 0.3+ | 0.4− | 2006 10 23 | 691 | 1.0− | 0.8− | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2004 02 25 | 704 | 0.7− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2004 02 25 | 704 | 0.2− | 0.6− | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 683 | 0.6+ | 0.2+ |
| 2004 02 25 | 704 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.3+ | 2006 11 25 | 683 | 1.6− | 1.0+ |
| 2004 02 25 | 704 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.4+ | 2006 11 25 | 683 | 1.1− | 0.7− |
| 2004 02 25 | 704 | 0.4+ | 0.3− | 2006 10 28 | 704 | 0.7+ | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.3+ |
| 2004 02 25 | 704 | 0.5− | 0.3− | 2006 10 28 | 704 | 0.7− | 0.6− | 2006 11 28 | 704 | 0.6+ | 0.3− |
| 2004 03 10 | 644 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.1− | 0.9− | 2006 11 28 | 704 | 1.0+ | 0.1+ |
| 2004 03 10 | 644 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.6− | 0.5− | 2006 11 28 | 704 | 1.0+ | 0.5+ |
| 2004 03 10 | 644 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | | | |

**(144278)∗ 2004 $CU_{100}$ = 2000 $CY_{122}$**

Discovered 2004 Feb. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61932)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.28566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25683129 | $\omega$ | 68.73016 | | −0.80294803 | −0.59340639 | |
| $a$ | 2.4511549 | $\Omega$ | 74.82863 | | +0.52307144 | −0.74661321 | |
| $e$ | 0.1339198 | $i$ | 3.33018 | | +0.28578092 | −0.30072841 | |
| $P$ | 3.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.2− | 0.3− | 2004 03 10 | 644 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2000 02 03 | 704 | 0.0 | 0.7− | 2004 03 10 | 644 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.9− | 0.7− |
| 2000 02 03 | 704 | 1.0+ | 0.3− | 2004 03 10 | 644 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2000 02 03 | 704 | 0.4+ | 0.3− | 2004 03 10 | 644 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.6− | 0.1− |
| 2000 02 03 | 704 | 0.1+ | 0.3− | 2004 03 10 | 644 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 0.1+ | 0.4− | 2004 03 10 | 644 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.5+ | 0.1− |
| 2000 02 11 | 704 | 1.5− | 0.8− | 2004 03 20 | 704 | 1.0+ | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2000 02 11 | 704 | 0.2− | 0.4− | 2004 03 20 | 704 | (0.2+ | 1.6+) | 2006 10 28 | 691 | 0.3+ | 0.3− |
| 2000 02 11 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.5− | 1.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2000 02 11 | 704 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.5− | 1.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.9+ | 2006 11 01 | G96 | 0.4− | 0.3− |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2004 03 22 | 704 | 1.1− | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.3− | 0.1+ |
| 2004 02 15 | 703 | 0.2+ | 0.6− | 2004 03 22 | 704 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.5+ | 0.4+ |
| 2004 02 15 | 703 | (1.3+ | 1.9−) | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2004 02 15 | 703 | (0.5+ | 2.1−) | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 11 11 | 691 | 0.0 | 1.5+ |
| 2004 02 15 | 703 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2004 02 17 | 704 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2004 02 17 | 704 | 0.3+ | 0.6− | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2004 02 17 | 704 | 0.5− | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2004 02 17 | 704 | 0.9+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2004 02 17 | 704 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ | | | | |

**(144279)∗ 2004 $CG_{101}$ = 2001 $SC_{318}$**

Discovered 2004 Feb. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61933)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.65449 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21325844 | $\omega$ | 22.45496 | | −0.89865782 | +0.43851652 | |
| $a$ | 2.7745884 | $\Omega$ | 183.60966 | | −0.42405537 | −0.87481043 | |
| $e$ | 0.1431281 | $i$ | 9.90899 | | −0.11221035 | −0.20593683 | |
| $P$ | 4.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 691 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.1− | 1.1+ | 2004 04 12 | 699 | 0.1+ | 0.7+ |
| 2001 09 19 | 691 | 0.0 | 0.7+ | 2004 03 16 | 704 | 0.3+ | 0.9+ | 2004 04 15 | 644 | 0.3+ | 0.4+ |
| 2001 09 19 | 691 | 0.0 | 0.5+ | 2004 03 16 | 704 | (2.3+ | 0.5−) | 2004 04 15 | 644 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2004 03 16 | 704 | 1.3+ | 0.5+ | 2004 04 15 | 644 | 0.6+ | 0.3+ |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2004 03 17 | 691 | 0.1− | 0.0 | 2004 04 16 | 704 | (2.1+ | 0.4−) |
| 2001 09 20 | 704 | 0.1− | 1.2+ | 2004 03 17 | 691 | 0.2− | 0.0 | 2004 04 16 | 704 | 0.7+ | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2004 03 17 | 691 | 1.3− | 0.8− | 2004 04 16 | 704 | (1.1+ | 1.6+) |
| 2001 09 20 | 704 | 0.3− | 1.0+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 704 | 1.1+ | 0.0 |
| 2001 09 26 | 704 | 0.8+ | 1.5− | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 704 | 0.5+ | 1.3+ |
| 2001 09 26 | 704 | 0.6+ | 1.2− | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2004 04 22 | 704 | 0.1− | 0.4− |
| 2001 09 26 | 704 | 0.5− | 0.9− | 2004 03 18 | 704 | 1.1+ | 1.0+ | 2004 04 22 | 704 | 1.0− | 0.1− |
| 2001 09 26 | 704 | 0.2− | 0.6− | 2004 03 18 | 704 | 1.1+ | 0.6+ | 2004 04 22 | 704 | 0.3+ | 0.7+ |
| 2001 09 26 | 704 | 0.0 | 0.4− | 2004 03 20 | 699 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.3− | 0.4+ |
| 2001 10 20 | 704 | 0.5− | 0.7+ | 2004 03 20 | 699 | 0.4− | 0.5− | 2004 04 22 | 704 | 0.0 | 0.6+ |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2004 03 20 | 699 | 0.1+ | 0.2− | 2004 04 23 | 703 | 0.3− | 0.3+ |
| 2001 10 20 | 704 | 0.9− | 0.8+ | 2004 03 20 | 699 | (1.5− | 0.4+) | 2004 04 23 | 703 | 0.0 | 1.5− |
| 2001 10 20 | 704 | (0.2− | 1.6+) | 2004 03 27 | 704 | 0.0 | 0.1− | 2004 04 23 | 703 | 1.4− | 0.2− |
| 2002 12 03 | 644 | 0.1+ | 0.3− | 2004 03 27 | 704 | 0.1+ | 0.7+ | 2004 04 23 | 703 | (1.6− | 1.2−) |
| 2002 12 03 | 644 | 0.2− | 0.5− | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2002 12 03 | 644 | 0.3+ | 0.9− | 2004 03 27 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 2004 02 15 | 703 | 1.1+ | 0.4+ | 2004 03 27 | 704 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 2004 02 15 | 703 | 0.3− | 0.6− | 2004 03 30 | 704 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.4− | 0.0 |
| 2004 02 15 | 703 | 0.5− | 0.7− | 2004 03 30 | 704 | 0.4− | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 2004 02 15 | 703 | (0.0 | 1.7+) | 2004 03 30 | 704 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.4− | 0.1− |
| 2004 02 17 | 608 | 0.0 | 0.2+ | 2004 03 30 | 704 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2004 02 17 | 608 | 0.2+ | 0.3+ | 2004 03 30 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.4+ |
| 2004 02 17 | 608 | 0.2+ | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 02 25 | 704 | 0.5+ | 0.2+ | 2004 03 31 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2004 02 25 | 704 | 0.1− | 0.7+ | 2004 03 31 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2004 02 25 | 704 | 0.4+ | 0.7+ | 2004 04 10 | 644 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2004 02 25 | 704 | 0.7+ | 0.6− | 2004 04 10 | 644 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2004 02 25 | 704 | 0.2− | 0.3+ | 2004 04 10 | 644 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2004 03 13 | 644 | 0.0 | 0.0 | 2004 04 12 | 699 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.6+ | 0.0 |
| 2004 03 13 | 644 | 0.0 | 0.1− | 2004 04 12 | 699 | 0.3+ | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2004 03 13 | 644 | 0.2− | 0.0 | 2004 04 12 | 699 | 0.7+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2004 03 15 | 703 | 0.1+ | 0.2− | 2004 04 12 | 699 | 0.5− | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2004 03 15 | 703 | 0.5− | 0.1+ | 2004 04 12 | 699 | 0.6+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2004 03 15 | 703 | 0.4− | 0.0 | 2004 04 12 | 699 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2004 03 15 | 703 | 0.5− | 0.8− | 2004 04 12 | 699 | 0.0 | 0.1+ | | | | |

**(144280)∗ 2004 $CH_{101}$ = 2000 $EE_{69}$**

Discovered 2004 Feb. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61933)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.34904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24275848 | $\omega$ | 340.73069 | | −0.92757818 | −0.37346425 | |
| $a$ | 2.5449921 | $\Omega$ | 177.26361 | | +0.36601046 | −0.91423101 | |
| $e$ | 0.0924705 | $i$ | 13.44267 | | +0.07506705 | −0.15718180 | |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 05 | 691 | 0.2− | 0.1+ | 2004 03 12 | 644 | 0.2+ | 0.2− | 2004 03 28 | 704 | 0.5+ | 0.5+ |
| 1997 07 05 | 691 | 1.0− | 0.1+ | 2004 03 15 | 703 | 0.3− | 0.6− | 2004 03 28 | 704 | 0.1+ | 0.1+ |
| 1997 07 05 | 691 | 0.8+ | 0.4− | 2004 03 15 | 703 | 0.7− | 0.5− | 2004 03 28 | 704 | 0.0 | 0.1+ |
| 2000 03 10 | 704 | 0.8− | 0.2+ | 2004 03 15 | 703 | 0.6− | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.1− |
| 2000 03 10 | 704 | 0.6− | 0.3− | 2004 03 15 | 703 | 0.3− | 0.7− | 2004 03 31 | 691 | 0.5− | 0.2+ |
| 2000 03 10 | 704 | 0.0 | 0.2+ | 2004 03 16 | 704 | 0.6− | 0.7+ | 2004 03 31 | 691 | 0.2− | 0.1− |
| 2000 03 10 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 704 | 0.1− | 0.2− | 2004 04 12 | 699 | 0.0 | 0.4− |
| 2000 03 11 | 704 | 0.9+ | 0.4− | 2004 03 16 | 704 | 0.8+ | 0.0 | 2004 04 12 | 699 | 0.7− | 0.6+ |
| 2000 03 11 | 704 | 0.4+ | 0.6+ | 2004 03 16 | 704 | 0.4− | 0.2+ | 2004 04 12 | 699 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 1.1+ | 0.0 | 2004 03 16 | 704 | 0.4− | 0.4+ | 2004 04 12 | 699 | 1.0− | 0.4+ |
| 2000 03 27 | 699 | 0.1+ | 0.2+ | 2004 03 16 | 599 | 0.1− | 0.2+ | 2004 04 12 | 703 | 0.4+ | 1.1+ |
| 2000 03 27 | 699 | 0.7+ | 0.3− | 2004 03 16 | 599 | 0.1− | 0.1+ | 2004 04 12 | 703 | (0.3+ | 1.6+) |
| 2000 03 27 | 699 | 0.0 | 1.0+ | 2004 03 16 | 599 | 0.1+ | 0.1+ | 2004 04 12 | 703 | (0.1+ | 1.8+) |
| 2000 03 27 | 699 | 0.2− | 0.5+ | 2004 03 16 | 599 | 0.2− | 0.1+ | 2004 04 12 | 703 | (0.7− | 1.9+) |
| 2002 10 31 | 704 | 0.2− | 0.5− | 2004 03 17 | 691 | 0.2− | 0.1+ | 2004 04 20 | 704 | 0.2− | 0.6− |
| 2002 10 31 | 704 | 0.1− | 1.1+ | 2004 03 17 | 691 | 0.1− | 0.0 | 2004 04 20 | 704 | 0.9+ | 0.4+ |
| 2002 10 31 | 704 | 0.7− | 0.1+ | 2004 03 17 | 691 | 0.2− | 0.1+ | 2004 04 20 | 704 | 1.0+ | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.0 | 0.4+ | 2004 04 20 | 704 | 1.0+ | 0.1− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2004 04 20 | 704 | 0.2+ | 0.3+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.2− | 0.2+ | 2004 04 22 | 704 | 0.5+ | 0.1+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.6+ | 2004 04 22 | 704 | 0.1+ | 0.1− |
| 2003 12 27 | 461 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2004 04 22 | 704 | 0.4+ | 0.1+ |
| 2004 02 15 | 703 | 0.6− | 1.1− | 2004 03 19 | 704 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.8+ | 0.4+ |
| 2004 02 15 | 703 | 0.0 | 0.7− | 2004 03 19 | 704 | 0.3+ | 0.1+ | 2004 04 22 | 704 | 0.7+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 703 | (0.2+ | 2.1+) | 2004 03 19 | 704 | 0.3+ | 0.3− | 2005 06 27 | 644 | 0.0 | 0.5+ | | |
| 2004 02 15 | 703 | 1.0+ | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.4+ | 0.8+ | | |
| 2004 02 17 | 608 | 0.4− | 0.5− | 2004 03 19 | 704 | 0.1− | 0.4− | 2005 06 27 | 644 | 0.5+ | 0.8+ | | |
| 2004 02 17 | 608 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.5+ | | |
| 2004 02 17 | 608 | 0.5− | 0.7− | 2004 03 20 | 704 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.3+ | | |
| 2004 02 26 | 704 | 0.3− | 0.8+ | 2004 03 20 | 704 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.6− | | |
| 2004 02 26 | 704 | 0.7+ | 0.2− | 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.1− | 1.0+ | | |
| 2004 02 26 | 704 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 1.6+ | | |
| 2004 02 26 | 704 | 0.1− | 0.7− | 2004 03 23 | 683 | 1.3− | 0.5− | 2006 10 22 | 703 | 0.0 | 0.6+ | | |
| 2004 02 26 | 704 | 0.1− | 0.1− | 2004 03 23 | 683 | (1.7+ | 0.8−) | 2006 10 22 | 703 | 0.6− | 1.7+ | | |
| 2004 03 12 | 644 | 0.3+ | 0.1+ | 2004 03 23 | 683 | 1.3+ | 0.9− | | | | | | |
| 2004 03 12 | 644 | 0.1+ | 0.0 | 2004 03 28 | 704 | 0.1− | 0.6− | | | | | | |

**(144281)∗ 2004 CW$_{103}$ = 2001 SP$_{302}$**

Discovered 2004 Feb. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61934)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 162.14581 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18697910 | ω | 349.10816 | | −0.99811658 | +0.06086695 | |
| *a* | 3.0288237 | Ω | 194.38805 | | −0.05371639 | −0.92738454 | |
| *e* | 0.1658141 | *i* | 1.76393 | | −0.02962836 | −0.36912482 | |
| *P* | 5.27 | *H* | 15.3 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 14 | 691 | 0.1+ | 0.3+ | 2004 02 18 | 683 | 0.2− | 0.9+ | 2004 03 23 | 704 | 0.0 | 0.4+ | | |
| 1999 03 14 | 691 | 0.9− | 1.7+ | 2004 02 18 | 683 | 0.6+ | 0.8+ | 2004 03 23 | 704 | (3.7+ | 1.6+) | | |
| 1999 04 07 | 704 | 1.0+ | 0.4+ | 2004 02 19 | 704 | 0.4+ | 0.7+ | 2004 03 23 | 704 | 0.5+ | 0.1− | | |
| 1999 04 07 | 704 | 1.2− | 0.9− | 2004 02 19 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | | |
| 1999 04 07 | 704 | 0.1+ | 0.6+ | 2004 02 19 | 704 | 0.2+ | 1.4+ | 2004 03 23 | 704 | (3.8+ | 2.4+) | | |
| 1999 04 07 | 704 | 0.4− | 0.5− | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2004 03 23 | 704 | 0.8+ | 0.1+ | | |
| 1999 04 07 | 704 | 0.2− | 0.7+ | 2004 02 19 | 704 | 0.4+ | 0.9+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | | |
| 2000 07 05 | 691 | 0.5+ | 0.6+ | 2004 02 20 | 608 | 0.3+ | 0.3− | 2004 03 23 | 704 | (4.5+ | 2.1+) | | |
| 2000 07 05 | 691 | 0.7+ | 0.4+ | 2004 02 20 | 608 | 0.5+ | 0.5− | 2004 03 23 | 704 | 0.5+ | 0.3− | | |
| 2000 07 05 | 691 | 0.1+ | 0.8+ | 2004 02 20 | 608 | 0.9+ | 0.3+ | 2004 03 23 | 704 | 0.8+ | 0.4+ | | |
| 2001 09 12 | 691 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.3− | 0.0 | 2004 03 23 | 704 | (3.7+ | 2.0+) | | |
| 2001 09 12 | 691 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.4+ | 0.5− | | |
| 2001 09 12 | 691 | 0.1+ | 0.5+ | 2004 02 26 | 704 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 20 | 704 | (0.4− | 1.6+) | 2004 02 26 | 704 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.5+ | 1.4+ | 2004 02 26 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.5+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.1+ | 1.1+ | 2004 03 12 | 644 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.7+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.1+ | 1.1+ | 2004 03 12 | 644 | 0.4− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.6+ | | |
| 2001 09 23 | 704 | 1.4− | 0.4+ | 2004 03 12 | 644 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.6+ | 0.5+ | | |
| 2001 09 23 | 704 | 0.7− | 0.6+ | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2004 03 28 | 691 | 0.1+ | 0.0 | | |
| 2001 09 23 | 704 | 0.3− | 0.9− | 2004 03 15 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 12 | 645 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.1− | 0.2+ | 2004 03 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 11 12 | 645 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2004 04 12 | 703 | 0.4− | 0.8− | | |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2004 03 15 | 704 | 0.2− | 0.3+ | 2004 04 12 | 703 | 0.9− | 1.1− | | |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2004 03 18 | 704 | 1.0+ | 0.1+ | 2004 04 12 | 703 | 1.0+ | 0.7− | | |
| 2002 11 24 | 644 | 0.5− | 0.2+ | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2004 04 12 | 703 | 0.9+ | 1.5− | | |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 1.4+ | 1.1+ | 2006 08 28 | 691 | 0.9− | 0.7+ | | |
| 2002 12 05 | 704 | 0.9− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.3− | 0.1+ | | |
| 2002 12 05 | 704 | 0.6− | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2006 08 28 | 691 | 1.0− | 0.6+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.8+ | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.7− | 0.2+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.2+ | 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.1+ | | |
| 2004 02 12 | 683 | (3.7− | 0.6+) | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.6− | 0.2− | | |
| 2004 02 12 | 683 | 1.3− | 1.4+ | 2004 03 20 | 699 | 0.5− | 0.2+ | 2006 09 25 | G96 | 0.9− | 0.2− | | |
| 2004 02 12 | 683 | 0.4− | 0.9+ | 2004 03 20 | 699 | 0.2− | 0.5+ | 2006 10 16 | G96 | 0.2− | 0.5+ | | |
| 2004 02 12 | 644 | 0.2− | 0.3+ | 2004 03 20 | 699 | 0.4− | 0.0 | 2006 10 16 | G96 | 0.2− | 0.5− | | |
| 2004 02 12 | 644 | 0.0 | 0.6+ | 2004 03 20 | 699 | 0.8− | 0.2− | 2006 10 16 | G96 | 0.4− | 0.1− | | |
| 2004 02 12 | 644 | 0.4− | 0.4+ | 2004 03 23 | 704 | (3.9+ | 2.2+) | 2006 10 16 | G96 | 0.5− | 0.1− | | |
| 2004 02 18 | 683 | 0.9− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.1+ | | | | | | |

**(144282)∗ 2004 CO$_{104}$**

Discovered 2004 Feb. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 113.06301 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18525654 | ω | 281.21067 | | −0.74666551 | +0.63214460 | |
| *a* | 3.0475700 | Ω | 298.35402 | | −0.48057034 | −0.72786917 | |
| *e* | 0.0679302 | *i* | 13.61018 | | −0.45993778 | −0.26570601 | |
| *P* | 5.32 | *H* | 14.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 21 | 691 | 0.8− | 0.1− | 2004 01 29 | 704 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.3+ | 0.6+ | | |
| 1993 01 21 | 691 | 0.2+ | 0.6− | 2004 01 29 | 704 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.8− | | |
| 1993 01 21 | 691 | 0.1− | 0.6− | 2004 01 29 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.6− | 0.7+ | | |
| 2001 09 10 | 704 | 0.1+ | 0.6+ | 2004 01 29 | 704 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.1− | 0.2+ | | |
| 2001 09 10 | 704 | (1.0+ | 2.3+) | 2004 02 13 | 644 | 0.4+ | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.1+ | | |
| 2001 09 10 | 704 | 0.6− | 1.7+ | 2004 02 13 | 644 | 0.6+ | 0.3+ | 2006 09 11 | 703 | (2.3− | 0.2+) | | |
| 2001 09 10 | 704 | 0.4− | 0.0 | 2004 02 13 | 644 | 0.4+ | 0.2− | 2006 09 11 | 703 | 0.1− | 0.2+ | | |
| 2001 09 10 | 704 | 1.1− | 1.4+ | 2004 02 19 | 704 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 0.2− | 0.5+ | | |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.8− | 0.0 | | |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 1.5+ | 1.7+ | | |
| 2001 09 29 | 644 | 0.6+ | 0.7+ | 2004 02 19 | 704 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.2− | 1.6− | | |
| 2001 09 29 | 644 | 0.1+ | 0.7+ | 2004 02 19 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.2− | | |
| 2001 09 29 | 644 | 0.0 | 0.5+ | 2004 02 26 | 683 | (0.0 | 2.1−) | 2006 09 19 | 699 | 0.9+ | 0.9+ | | |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2004 02 26 | 683 | 1.7+ | 0.4− | 2006 09 22 | 691 | 0.0 | 0.3+ | | |
| 2002 12 05 | 704 | 0.8− | 0.2+ | 2004 02 26 | 683 | 0.6+ | 0.5+ | 2006 09 22 | 691 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.5+ | 0.2− | 2004 02 29 | 683 | 0.7+ | 0.7− | 2006 09 22 | 691 | 0.2+ | 0.0 | | |
| 2002 12 15 | 704 | 0.6− | 0.4+ | 2004 02 29 | 683 | 0.5+ | 0.8+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2002 12 15 | 704 | 0.5− | 0.7+ | 2004 02 29 | 683 | (2.3− | 0.1+) | 2006 09 26 | 691 | 0.3− | 0.2+ | | |
| 2002 12 15 | 704 | 0.8+ | 0.3+ | 2004 03 13 | 644 | 0.0 | 0.7+ | 2006 09 26 | 703 | 1.0− | 1.1− | | |
| 2004 01 14 | 644 | 0.5+ | 0.7+ | 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 1.3− | 1.4− | | |
| 2004 01 14 | 644 | 0.1+ | 0.4+ | 2004 03 13 | 644 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.3+ | | |
| 2004 01 14 | 644 | 0.4+ | 0.2+ | 2004 03 14 | 644 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.4+ | | |
| 2004 01 23 | 704 | 0.0 | 0.3+ | 2004 03 14 | 644 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.8− | 0.1+ | | |
| 2004 01 23 | 704 | 0.9+ | 0.2+ | 2004 03 14 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 691 | 0.2+ | 0.5+ | | |
| 2004 01 23 | 704 | 0.8+ | 1.1+ | 2004 03 16 | 704 | 0.1− | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.1+ | | |
| 2004 01 23 | 704 | 0.7− | 0.3+ | 2004 03 16 | 704 | 0.8− | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.1+ | | |

**(144283)∗ 2004 CY$_{106}$ = 2002 TR$_{234}$**

Discovered 2004 Feb. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61937)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 271.64179 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21548442 | ω | 123.58037 | | +0.19733409 | −0.96797491 | |
| *a* | 2.7554475 | Ω | 314.20948 | | +0.81233767 | +0.25007223 | |
| *e* | 0.1764433 | *i* | 12.50383 | | +0.54878662 | −0.02210084 | |
| *P* | 4.57 | *H* | 14.9 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 21 | 704 | 0.5+ | 0.1− | 2002 10 15 | 704 | 1.2− | 0.2− | 2006 08 14 | 644 | 0.3− | 0.6+ | | |
| 1998 12 21 | 704 | 1.4+ | 1.7− | 2002 10 15 | 704 | 0.1− | 0.5+ | 2006 08 14 | 644 | 0.2− | 0.8+ | | |
| 1998 12 21 | 704 | 1.9− | 0.9− | 2002 10 15 | 704 | 0.5− | 0.7+ | 2006 08 14 | 644 | 0.5− | 0.6+ | | |
| 1998 12 21 | 704 | 0.7− | 0.1− | 2002 11 08 | 704 | 0.2+ | 0.6− | 2006 08 14 | 644 | 0.2− | 0.5+ | | |
| 1998 12 21 | 704 | (6.3− | 1.5−) | 2002 11 08 | 704 | 0.9− | 0.0 | 2006 08 14 | 644 | 0.3− | 0.9+ | | |
| 1999 01 10 | 699 | 0.3+ | 0.3+ | 2002 11 08 | 704 | 0.2− | 0.9− | 2006 08 14 | 644 | 0.3− | 0.7+ | | |
| 1999 01 10 | 699 | 1.0+ | 1.2+ | 2002 11 08 | 704 | 1.4− | 1.1− | 2006 08 18 | 644 | 0.0 | 0.3+ | | |
| 1999 01 10 | 699 | 0.7+ | 0.7+ | 2004 01 28 | 704 | 0.6+ | 0.8+ | 2006 08 18 | 644 | 0.0 | 0.6+ | | |
| 1999 01 19 | 704 | 0.5+ | 1.3+ | 2004 01 28 | 704 | 0.7+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.4+ | | |
| 1999 01 19 | 704 | 0.0 | 1.2+ | 2004 01 28 | 704 | 0.8+ | 0.1+ | 2006 08 21 | 644 | 0.3− | 0.6+ | | |
| 1999 01 19 | 704 | 0.4− | 1.1+ | 2004 01 28 | 704 | 0.3+ | 0.1+ | 2006 08 21 | 644 | 0.1+ | 0.5+ | | |
| 1999 01 19 | 704 | 0.4+ | 0.8+ | 2004 01 28 | 704 | 0.9+ | 0.5+ | 2006 08 21 | 644 | 0.2− | 0.3+ | | |
| 1999 02 12 | 699 | 0.4+ | 0.4+ | 2004 02 14 | 644 | 0.2+ | 0.0 | 2006 08 28 | 699 | 0.3+ | 0.8− | | |
| 1999 02 12 | 699 | 0.5+ | 0.1+ | 2004 02 14 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.1+ | | |
| 1999 02 12 | 699 | 0.3+ | 1.0+ | 2004 02 14 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 0.5− | 0.4+ | | |
| 2002 09 27 | 644 | 0.9− | 0.3+ | 2004 02 19 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 699 | 0.5− | 1.0+ | | |
| 2002 09 27 | 644 | 0.7− | 0.0 | 2004 02 19 | 704 | 1.1+ | 1.3+ | 2006 08 28 | 703 | 1.1− | 0.4+ | | |
| 2002 09 27 | 644 | 0.8− | 0.1+ | 2004 02 19 | 704 | 0.9− | 0.8− | 2006 08 28 | 703 | 1.4− | 0.5+ | | |
| 2002 10 06 | 704 | 0.1− | 0.6+ | 2004 02 19 | 704 | 0.7+ | 0.4+ | 2006 08 28 | 703 | 1.1− | 0.5+ | | |
| 2002 10 06 | 704 | 0.2− | 0.4+ | 2004 02 20 | 608 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.4+ | 1.8+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.1+ | 0.8+ | 2004 02 20 | 608 | 0.1− | 0.5− | 2006 08 30 | 704 | 0.4+ | 1.4+ | | |
| 2002 10 06 | 704 | 0.0 | 0.1− | 2004 02 20 | 608 | 0.1− | 0.6− | 2006 08 30 | 704 | 0.1+ | 0.8+ | | |
| 2002 10 06 | 704 | 0.0 | 0.7+ | 2004 03 16 | 704 | 0.5+ | 0.2− | 2006 08 30 | 704 | 0.5+ | 1.1+ | | |
| 2002 10 10 | 704 | 1.8+ | 0.3− | 2004 03 16 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 704 | (0.3− | 2.5+) | | |
| 2002 10 10 | 704 | 1.1+ | 0.4+ | 2004 03 16 | 704 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.4− | | |
| 2002 10 10 | 704 | 1.0+ | 0.2+ | 2004 03 16 | 704 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.1+ | | |
| 2002 10 10 | 704 | 0.9+ | 0.4− | 2004 03 16 | 704 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.2− | 0.1+ | | |
| 2002 10 10 | 704 | 1.0+ | 0.3− | 2004 03 27 | 691 | 0.0 | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.1+ | | |
| 2002 10 15 | 704 | 0.5− | 0.8+ | 2004 03 27 | 691 | 0.1+ | 0.6+ | | | | | | |
| 2002 10 15 | 704 | 0.9− | 0.0 | 2004 03 27 | 691 | 0.0 | 0.4+ | | | | | | |

**(144284)∗ 2004 CP$_{107}$**

Discovered 2004 Feb. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.00411 | | (2000.0) | | | |
| $n$ | 0.25731861 | $\omega$ | 328.17674 | | −0.98461787 | −0.17458107 |
| $a$ | 2.4480592 | $\Omega$ | 201.77225 | | +0.16400557 | −0.90965690 |
| $e$ | 0.1169932 | $i$ | 1.08244 | | +0.06024798 | −0.37688962 |
| $P$ | 3.83 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.0 | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 10 04 | G96 | 0.3+ | 0.3− |
| 2000 02 03 | 691 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.7+ | 0.0 |
| 2000 02 03 | 691 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.7+ |
| 2004 02 14 | 691 | 0.0 | 0.4+ | 2004 03 23 | 704 | (0.4+ | 1.7+) | 2006 10 12 | 691 | 0.5− | 0.2+ |
| 2004 02 14 | 691 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.1− | 0.7− | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2004 02 14 | 691 | 0.0 | 0.4+ | 2004 03 23 | 704 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.1+ |
| 2004 02 19 | 704 | 0.5+ | 0.2+ | 2005 06 14 | G96 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.0 |
| 2004 02 19 | 704 | 0.3− | 0.2− | 2005 06 14 | G96 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2004 02 19 | 704 | 0.6+ | 0.3+ | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2004 02 19 | 704 | 0.7+ | 0.5+ | 2005 06 14 | G96 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2004 02 19 | 704 | 0.9+ | 0.4+ | 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2004 02 20 | 704 | 0.1+ | 0.6+ | 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 2004 02 20 | 704 | 0.1− | 0.0 | 2005 07 04 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2004 02 20 | 704 | 0.5+ | 0.4− | 2005 07 09 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.4+ |
| 2004 02 22 | 691 | 0.2− | 0.2+ | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2004 02 22 | 691 | 0.3− | 0.1+ | 2005 07 09 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2004 02 22 | 691 | 0.4− | 0.2+ | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2004 02 26 | 704 | 1.3+ | 0.7− | 2005 07 10 | 691 | 0.1+ | 0.6+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2004 02 26 | 704 | 1.1+ | 0.4+ | 2005 07 10 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2004 02 26 | 704 | (1.6+ | 0.4−) | 2005 07 15 | G96 | 0.2− | 0.6+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2004 02 26 | 704 | 0.7+ | 0.5− | 2005 07 15 | G96 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 2004 02 26 | 704 | 0.7+ | 0.5+ | 2005 07 15 | G96 | 0.3− | 0.8+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 0.2+ | 0.6+ | 2005 07 15 | G96 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.4− | 0.3+ | | | | |
| 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.5+ | 0.2− | | | | |

**(144285)∗ 2004 CT$_{108}$ = 1995 CH$_6$ = 2001 QM$_{41}$**

Discovered 2004 Feb. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61938)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.41317 | | (2000.0) | | | |
| $n$ | 0.22365167 | $\omega$ | 357.92045 | | +0.62311448 | +0.76361896 |
| $a$ | 2.6879506 | $\Omega$ | 310.57279 | | −0.71433806 | +0.46755890 |
| $e$ | 0.1183360 | $i$ | 12.86763 | | −0.31851136 | +0.44528054 |
| $P$ | 4.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.0 | 0.2+ | 2003 11 21 | 291 | 0.4− | 0.4+ | 2004 02 26 | 704 | (1.6+ | 0.2+) |
| 1995 02 01 | 691 | 0.1− | 0.2− | 2003 11 21 | 291 | 0.2+ | 0.6+ | 2004 03 21 | 691 | 0.4+ | 0.2+ |
| 1995 02 01 | 691 | 0.2+ | 0.1− | 2003 11 21 | 291 | 0.8− | 0.5+ | 2004 03 21 | 691 | 0.4+ | 0.1+ |
| 1995 02 08 | 691 | 0.1− | 0.1+ | 2004 02 15 | 703 | 0.7− | 0.2− | 2004 03 21 | 691 | 0.4+ | 0.2+ |
| 1995 02 08 | 691 | 0.4− | 0.0 | 2004 02 15 | 703 | 0.8+ | 1.0− | 2006 09 19 | 703 | (1.1− | 1.6+) |
| 1995 02 08 | 691 | 0.1+ | 0.5− | 2004 02 15 | 703 | 0.4+ | 1.2− | 2006 09 19 | 703 | 0.6+ | 0.6− |
| 2001 08 02 | 608 | 0.8− | 0.1− | 2004 02 15 | 703 | 1.0− | 0.5+ | 2006 09 19 | 703 | 0.5+ | 0.2+ |
| 2001 08 02 | 608 | 0.5− | 0.3+ | 2004 02 19 | 704 | 0.9+ | 0.2− | 2006 09 19 | 703 | 1.0− | 0.5− |
| 2001 08 02 | 608 | 1.3− | 0.2+ | 2004 02 19 | 704 | 1.4+ | 0.4− | 2006 09 25 | 703 | 0.0 | 0.9− |
| 2001 08 16 | 704 | 0.3+ | 1.1+ | 2004 02 19 | 704 | 0.2+ | 0.3− | 2006 09 25 | 703 | 0.9− | 1.1+ |
| 2001 08 16 | 704 | 0.2+ | 0.9+ | 2004 02 25 | 704 | 0.5− | 0.3+ | 2006 09 25 | 703 | 0.8− | 0.0 |
| 2001 08 16 | 704 | 0.1+ | 0.6+ | 2004 02 25 | 704 | 0.0 | 1.1+ | 2006 09 25 | 703 | 0.1+ | 0.1− |
| 2001 08 16 | 704 | 0.3− | 0.9+ | 2004 02 25 | 704 | 0.6− | 0.8+ | 2006 10 23 | 703 | 0.1+ | 0.7+ |
| 2001 08 19 | 704 | (0.6− | 1.6+) | 2004 02 26 | 704 | 0.6+ | 1.3+ | 2006 10 23 | 703 | (1.7− | 0.9+) |
| 2001 08 19 | 704 | 0.9− | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 703 | 0.6+ | 1.2+ |
| 2001 08 19 | 704 | 1.1+ | 0.7− | 2004 02 26 | 704 | 0.6+ | 0.7+ | 2006 10 23 | 703 | 0.2− | 1.2+ |

**(144286)∗ 2004 CF$_{109}$ = 2001 UC$_{164}$**

Discovered 2004 Feb. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61938)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.64256 | | (2000.0) | | | |
| $n$ | 0.18244984 | $\omega$ | 43.71259 | | −0.78014240 | +0.62545094 |
| $a$ | 3.0787450 | $\Omega$ | 174.94546 | | −0.60827770 | −0.75322030 |
| $e$ | 0.0731045 | $i$ | 8.97610 | | −0.14620562 | −0.20364258 |
| $P$ | 5.40 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.1− | 0.1+ | 2004 03 15 | 683 | 0.1+ | 1.1+ | 2004 04 15 | 699 | 0.5− | 0.3+ |
| 1995 07 26 | 691 | 0.4− | 0.3+ | 2004 03 15 | 703 | 0.0 | 0.3+ | 2004 04 15 | 699 | 1.1+ | 0.3+ |
| 1995 07 26 | 691 | 0.0 | 0.3+ | 2004 03 15 | 703 | 0.2− | 1.1+ | 2006 08 28 | 703 | (1.4+ | 1.6+) |
| 2000 06 01 | 691 | 0.2− | 0.2+ | 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | (2.0+ | 2.8+) |
| 2000 06 01 | 691 | 0.0 | 0.0 | 2004 03 15 | 703 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.2− | 1.0+ |
| 2000 06 01 | 691 | 0.1− | 0.0 | 2004 03 15 | 703 | 0.2− | 0.6+ | 2006 08 28 | 703 | 0.4+ | 1.1+ |
| 2000 06 25 | 691 | 0.5+ | 0.1− | 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 682 | 0.1− | 0.1+ |
| 2000 06 25 | 691 | 0.1+ | 0.6+ | 2004 03 16 | 683 | 0.1− | 0.4+ | 2006 08 28 | 682 | 0.2+ | 0.4+ |
| 2000 06 25 | 691 | 0.2+ | 0.2+ | 2004 03 16 | 683 | 0.8+ | 0.0 | 2006 08 28 | 682 | 0.0 | 0.4+ |
| 2000 08 02 | 704 | 0.0 | 0.8+ | 2004 03 16 | 704 | 0.2− | 0.9+ | 2006 08 29 | 682 | (0.3− | 2.0+) |
| 2000 08 02 | 704 | 0.8− | 1.1− | 2004 03 16 | 683 | 1.1+ | 1.0+ | 2006 08 29 | 682 | 0.3+ | 0.1+ |
| 2000 08 02 | 704 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.9+ | 1.2+ | 2006 08 29 | 682 | 0.4− | 0.2+ |
| 2000 08 02 | 704 | 0.9− | 0.4+ | 2004 03 16 | 704 | 0.1− | 1.1+ | 2006 09 12 | 703 | 0.2− | 1.4− |
| 2001 10 18 | 644 | 0.3− | 0.4+ | 2004 03 16 | 704 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.1− |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2004 03 16 | 704 | 0.3+ | 0.7+ | 2006 09 12 | 703 | 0.0 | 0.9− |
| 2001 10 18 | 644 | 0.1+ | 0.6+ | 2004 03 17 | 683 | 0.6− | 0.1+ | 2006 09 12 | 703 | 0.7− | 0.1− |
| 2001 10 24 | 644 | (0.4+ | 1.6+) | 2004 03 17 | 683 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.5+ |
| 2001 10 24 | 644 | 0.6+ | 1.3+ | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 09 15 | 691 | 0.3− | 0.6+ |
| 2001 10 24 | 644 | (0.1+ | 1.7+) | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.3+ |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.9+ | 0.2− |
| 2001 11 12 | 645 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 09 16 | 699 | 0.8+ | 0.6+ |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 09 16 | 699 | 0.4− | 0.2− |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2004 03 20 | 699 | 0.2− | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.2+ |
| 2003 01 05 | 704 | (2.1− | 0.3+) | 2004 03 20 | 699 | 0.5− | 0.6+ | 2006 09 20 | 644 | 0.6− | 0.6+ |
| 2003 01 05 | 704 | 0.9− | 0.1+ | 2004 03 20 | 699 | 0.4− | 0.1− | 2006 09 20 | 704 | (1.0− | 1.7+) |
| 2003 01 05 | 704 | 0.0 | 0.6− | 2004 03 22 | 704 | 0.3− | 0.7+ | 2006 09 20 | 704 | 0.8− | 0.6+ |
| 2003 01 05 | 704 | 0.9− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.6+ |
| 2003 01 05 | 704 | (1.6− | 0.3−) | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.3− | 1.0+ |
| 2004 02 15 | 703 | 0.8+ | 0.5+ | 2004 03 22 | 704 | 0.6+ | 0.6− | 2006 09 20 | 704 | 1.3+ | 0.4+ |
| 2004 02 15 | 703 | 0.6+ | 1.1+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.8− | 0.1+ |
| 2004 02 15 | 703 | 0.9+ | 0.1+ | 2004 03 27 | 704 | 0.0 | 1.0+ | 2006 09 22 | D35 | 0.4− | 0.8+ |
| 2004 02 15 | 703 | 0.3+ | 1.2+ | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 09 22 | D35 | 0.4− | 1.0+ |
| 2004 02 19 | 704 | 0.7+ | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 09 22 | D35 | 0.5− | 0.5+ |
| 2004 02 19 | 704 | 1.0+ | 0.5+ | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.7+ |
| 2004 02 19 | 704 | (1.8+ | 0.6+) | 2004 04 12 | 699 | 0.6− | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.7+ |
| 2004 02 19 | 704 | 1.2+ | 1.2+ | 2004 04 12 | 699 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 2004 02 26 | 704 | 0.2+ | 0.1− | 2004 04 12 | 699 | 0.9− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2004 02 26 | 704 | 0.7+ | 0.3+ | 2004 04 12 | 699 | 0.0 | 1.0+ | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2004 02 26 | 704 | 0.6+ | 0.3+ | 2004 04 15 | 704 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2004 02 26 | 704 | 0.4+ | 0.1− | 2004 04 15 | 704 | (1.0+ | 2.0+) | 2006 09 25 | G96 | 0.4− | 0.4− |
| 2004 02 26 | 704 | 0.0 | 0.3+ | 2004 04 15 | 699 | 0.7− | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2004 03 15 | 683 | 0.5− | 0.9+ | 2004 04 15 | 704 | (0.3+ | 1.6+) | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 683 | 0.6+ | 0.4+ | 2004 04 15 | 704 | (0.1+ | 2.0+) | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2004 04 15 | 699 | 0.7− | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.1− |

**(144287)∗ 2004 CE$_{110}$**

Discovered 2004 Feb. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 161.44721 | | | (2000.0) | | |
| $n$ | 0.22885317 | $\omega$ | 277.03490 | | −0.66140690 | +0.74294126 |
| $a$ | 2.6470659 | $\Omega$ | 311.02157 | | −0.62302655 | −0.62057318 |
| $e$ | 0.0826110 | $i$ | 7.83548 | | −0.41758692 | −0.25085295 |
| $P$ | 4.31 | $H$ | 15.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 08 | 691 | 0.0 | 0.1+ | 2004 02 20 | 608 | 0.3+ | 0.7− | 2005 07 02 | 691 | 0.1− | 0.2+ |
| 1997 10 08 | 691 | 0.2+ | 0.4+ | 2004 02 26 | 704 | 1.4+ | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.1+ |
| 1997 10 08 | 691 | 0.1− | 0.6+ | 2004 02 26 | 704 | (1.6+ | 1.1+) | 2005 07 07 | 691 | 0.0 | 0.3− |
| 2000 04 30 | 699 | 0.8+ | 1.0− | 2004 02 26 | 704 | 0.1− | 1.1+ | 2005 07 07 | 691 | 0.2+ | 0.1+ |
| 2000 04 30 | 699 | 0.2− | 0.7− | 2004 02 26 | 704 | (0.8+ | 1.6+) | 2005 07 07 | 691 | 0.0 | 0.2− |
| 2000 04 30 | 699 | 0.7+ | 0.4− | 2004 02 26 | 704 | 0.3+ | 0.5+ | 2005 07 07 | 691 | 0.4+ | 0.6+ |
| 2000 04 30 | 699 | 0.5− | 0.4+ | 2004 03 16 | 704 | 0.1+ | 0.7+ | 2005 07 07 | 691 | 0.8+ | 0.4+ |
| 2000 05 03 | 645 | 0.1− | 0.2+ | 2004 03 16 | 704 | 0.5+ | 0.0 | 2005 07 11 | 691 | 0.1− | 0.1− |
| 2000 05 03 | 645 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.0 | 0.7+ | 2005 07 11 | 691 | 0.6− | 0.1− |
| 2001 09 12 | 704 | (0.6+ | 1.8+) | 2004 03 16 | 704 | 0.4+ | 0.6+ | 2005 07 11 | 691 | 0.4− | 0.0 |
| 2001 09 12 | 704 | (0.0 | 1.5+) | 2004 03 16 | 704 | 1.0+ | 0.2− | 2005 07 30 | E12 | 1.1− | 0.1+ |
| 2001 09 12 | 704 | 0.9− | 1.3+ | 2004 03 19 | 704 | 1.3+ | 0.6+ | 2005 07 30 | E12 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | (0.3− | 1.6+) | 2004 03 19 | 704 | 0.6− | 0.8+ | 2005 07 30 | E12 | 0.7+ | 0.5+ |
| 2001 09 12 | 704 | (0.5+ | 1.9+) | 2004 03 19 | 704 | 0.1+ | 0.5+ | 2005 07 30 | E12 | 0.6− | 0.6+ |
| 2004 02 14 | 644 | 0.3+ | 0.2+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.6+ | 1.3+ |
| 2004 02 14 | 644 | 0.4+ | 0.4+ | 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 10 27 | 703 | (1.9− | 0.4−) |
| 2004 02 14 | 644 | 0.4+ | 0.5+ | 2004 03 27 | 691 | 0.2+ | 0.2− | 2006 10 27 | 703 | 1.3− | 0.5+ |
| 2004 02 17 | 703 | 0.5− | 0.6+ | 2004 04 12 | 703 | 0.8+ | 0.2− | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2004 02 17 | 703 | 1.3+ | 0.2− | 2004 04 12 | 703 | 0.7+ | 1.0+ | 2006 11 15 | 703 | 1.1− | 0.3+ |
| 2004 02 17 | 703 | 0.3− | 0.1− | 2004 04 12 | 703 | 0.2− | 0.3+ | 2006 11 15 | 703 | 1.4− | 1.4− |
| 2004 02 17 | 703 | 0.9+ | 0.3+ | 2004 04 12 | 703 | 0.5− | 1.3+ | 2006 11 15 | 703 | 0.7− | 0.6− |
| 2004 02 19 | 704 | (1.8+ | 0.3+) | 2004 04 14 | 699 | 1.4− | 0.3+ | 2006 11 15 | 703 | (1.9− | 0.0 ) |
| 2004 02 19 | 704 | (1.6− | 0.1−) | 2004 04 14 | 699 | 0.7− | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.0 |
| 2004 02 19 | 704 | 0.3+ | 0.9− | 2004 04 14 | 699 | 0.1− | 0.3+ | 2006 11 22 | 703 | 2.2− | 2.3+ |
| 2004 02 19 | 704 | 0.4− | 0.4+ | 2004 04 14 | 699 | 0.7− | 0.1+ | 2006 11 22 | 703 | 0.3+ | 0.3+ |
| 2004 02 20 | 608 | 0.3+ | 0.5− | 2005 07 02 | 691 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.4+ | 0.9+ |
| 2004 02 20 | 608 | 1.0+ | 1.1− | 2005 07 02 | 691 | 0.1+ | 0.1+ | | | | |

**(144288)∗ 2004 CY$_{110}$ = 1998 NJ$_1$**

Discovered 2004 Feb. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61939)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.48541 | | | (2000.0) | | |
| $n$ | 0.26912328 | $\omega$ | 194.88212 | | −0.06359157 | −0.99793254 |
| $a$ | 2.3759385 | $\Omega$ | 258.76452 | | +0.91659248 | −0.05471174 |
| $e$ | 0.1460960 | $i$ | 0.54409 | | +0.39473325 | −0.03372336 |
| $P$ | 3.66 | $H$ | 16.7 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 15 | 691 | 0.1− | 1.1+ | 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 1998 07 15 | 691 | 0.4+ | 0.6+ | 2004 03 15 | 703 | 1.1+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1998 07 15 | 691 | 0.1+ | 0.9+ | 2004 03 15 | 704 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 1998 07 27 | 691 | 0.5− | 0.9+ | 2004 03 15 | 703 | (0.5+ | 1.5+) | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1998 07 27 | 691 | 0.1− | 0.2+ | 2004 03 15 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 1998 07 27 | 691 | 0.7− | 0.7+ | 2004 03 15 | 704 | 1.1+ | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 1999 12 08 | 704 | 0.2− | 0.4+ | 2004 03 15 | 703 | 1.2− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 1999 12 08 | 704 | 1.0− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 12 08 | 704 | 0.9− | 0.2− | 2004 03 18 | 735 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 1999 12 08 | 704 | 1.6+ | 0.2+ | 2004 03 18 | 735 | 1.0− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2000 01 05 | 704 | 0.3− | 1.3− | 2004 03 18 | 735 | 0.3− | 0.5+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2000 01 05 | 704 | 0.4+ | 0.6− | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 10 29 | 691 | 0.6− | 0.7+ |
| 2000 01 05 | 704 | 0.1+ | 0.4− | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2000 01 05 | 704 | 0.1+ | 0.7− | 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 11 09 | 691 | 0.3− | 0.2+ |
| 2002 09 14 | 644 | 0.7− | 0.0 | 2004 03 18 | 704 | 1.2+ | 1.0+ | 2006 11 09 | 691 | 0.1+ | 0.3+ |
| 2002 09 14 | 644 | 1.1− | 0.2+ | 2004 03 18 | 704 | 1.0+ | 1.0+ | 2006 11 09 | 691 | 0.1− | 0.6+ |
| 2002 09 14 | 644 | 0.9− | 0.3+ | 2004 03 20 | 735 | 0.9+ | 0.4− | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2004 02 13 | 291 | 0.0 | 0.2+ | 2004 03 20 | 735 | 0.4− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.4+ |
| 2004 02 13 | 291 | 0.5− | 0.4+ | 2004 03 20 | 735 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2004 02 13 | 291 | 1.0− | 0.5+ | 2004 03 22 | 735 | 0.8− | 0.9+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2004 02 19 | 608 | 0.6+ | 0.2− | 2004 03 22 | 735 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2004 02 19 | 608 | 0.4− | 0.2− | 2004 03 22 | 735 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2004 02 19 | 608 | 0.1− | 0.3− | 2004 03 22 | 735 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2004 02 24 | 608 | 0.4+ | 0.1− | 2004 03 23 | 735 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2004 02 24 | 608 | 0.4+ | 0.2− | 2004 03 23 | 735 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2004 02 24 | 608 | 0.6+ | 0.1+ | 2004 03 23 | 735 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2004 02 26 | 704 | 0.3+ | 0.7+ | 2004 03 27 | 704 | 0.9+ | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2004 02 26 | 704 | 0.5+ | 0.7+ | 2004 03 27 | 704 | 0.3− | 0.8+ | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.9+ | 0.9+ | 2004 03 27 | 704 | 0.1+ | 0.5− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2004 02 26 | 704 | 0.0 | 0.7+ | 2004 03 27 | 704 | 0.5− | 1.3+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2004 02 26 | 704 | 0.4+ | 0.3+ | 2004 03 27 | 704 | 1.4+ | 0.5+ | 2006 11 21 | 704 | (0.5− | 2.1+) |
| 2004 03 11 | 735 | (0.4− | 1.7+) | 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.9+ |
| 2004 03 11 | 735 | 0.7− | 0.7+ | 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2004 03 11 | 735 | 0.5+ | 0.3− | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 03 11 | 735 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 03 12 | 735 | 0.2+ | 1.1+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 03 12 | 735 | 0.2+ | 1.1+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 24 | 291 | 0.0 | 0.2+ |
| 2004 03 12 | 735 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 24 | 291 | 0.2+ | 0.1+ |
| 2004 03 12 | 735 | 0.6+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 24 | 291 | 0.1+ | 0.3+ |
| 2004 03 12 | 735 | 0.9− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 03 12 | 735 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 03 15 | 703 | 1.2+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2− | 0.1+ |

**(144289)∗ 2004 CD$_{113}$**

Discovered 2004 Feb. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 158.63894 | | | (2000.0) | | |
| $n$ | 0.24155673 | $\omega$ | 226.34961 | | −0.76762879 | +0.64082343 |
| $a$ | 2.5534261 | $\Omega$ | 353.48287 | | −0.56110711 | −0.67919543 |
| $e$ | 0.1521663 | $i$ | 4.83088 | | −0.30968507 | −0.35782523 |
| $P$ | 4.08 | $H$ | 15.9 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 24 | 691 | 0.8− | 0.7− | 2003 12 28 | 704 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2− |
| 1992 02 24 | 691 | 0.5− | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.5+ | 0.1+ |
| 1992 02 24 | 691 | 0.5− | 0.3− | 2003 12 28 | 704 | 0.5− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 1996 01 28 | 691 | 0.3+ | 0.2− | 2004 01 13 | 699 | 0.4+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.3− |
| 1996 01 28 | 691 | 0.4+ | 0.2− | 2004 01 13 | 699 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1− |
| 1996 01 28 | 691 | 0.8+ | 0.5− | 2004 01 13 | 699 | 0.1+ | 0.5− | 2006 10 16 | 691 | 0.3− | 0.0 |
| 2000 02 11 | 704 | 0.4− | 1.1+ | 2004 01 13 | 699 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2000 02 11 | 704 | 0.2+ | 0.5+ | 2004 01 30 | 704 | 1.1− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2000 02 11 | 704 | 0.5+ | 0.2+ | 2004 01 30 | 704 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2000 02 11 | 704 | 1.3+ | 0.4+ | 2004 01 30 | 704 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2000 03 04 | 704 | 0.3+ | 0.6+ | 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2000 03 04 | 704 | 0.5+ | 0.3− | 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2000 03 04 | 704 | 0.2+ | 0.9− | 2004 02 13 | 699 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2000 03 04 | 704 | 0.3− | 0.6+ | 2004 02 13 | 699 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2000 03 04 | 704 | 0.7− | 0.5+ | 2004 02 13 | 699 | 0.2− | 0.8− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2000 03 26 | 699 | 0.5+ | 0.8+ | 2004 02 13 | 699 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.4− | 0.2− |
| 2000 03 26 | 699 | 1.0+ | 1.8+ | 2004 02 15 | 704 | 1.1− | 1.3+ | 2006 11 01 | 691 | 0.6+ | 0.2− |
| 2000 03 26 | 699 | 0.3+ | 0.0 | 2004 02 15 | 704 | (1.2+ | 1.9+) | 2006 11 01 | 691 | 0.4− | 0.2− |
| 2000 03 26 | 699 | 0.2− | 0.8+ | 2004 02 15 | 704 | 0.2+ | 0.6+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2001 07 19 | 644 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.6− | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2001 07 19 | 644 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.9− | 1.1+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2001 07 19 | 644 | 0.1− | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.7+ | 2006 11 25 | G96 | 0.6− | 0.3− |
| 2003 12 28 | 704 | 0.2− | 0.3− | 2004 04 19 | 704 | 0.4+ | 0.3− | | | | |

**(144290)∗ 2004 CO$_{116}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.83172 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26024217 | $\omega$ | 199.72466 | | −0.10881450 | | −0.98875358 |
| $a$ | 2.4296904 | $\Omega$ | 256.62786 | | +0.92560659 | | −0.06314279 |
| $e$ | 0.0688797 | $i$ | 6.05334 | | +0.36250770 | | −0.13557047 |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.1+ | 0.9+ | 2004 02 23 | 704 | 0.4− | 0.1− | 2006 09 27 | 703 | 0.8− | 0.0 | |
| 2002 08 28 | 644 | 0.0 | 0.9+ | 2004 02 23 | 704 | 0.5− | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.7+ | |
| 2002 08 28 | 644 | 0.1+ | 1.0+ | 2005 01 17 | 809 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.5− | 0.5+ | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 01 17 | 809 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.1− | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2005 01 17 | 809 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.3− | |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2005 06 17 | G96 | 0.1+ | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.4− | |
| 2004 01 17 | 644 | 0.2− | 0.4+ | 2005 06 17 | G96 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.3− | |
| 2004 01 17 | 644 | 0.0 | 0.3+ | 2005 06 17 | G96 | 0.0 | 0.8+ | 2006 10 09 | 644 | 0.2− | 0.3+ | |
| 2004 01 23 | 704 | 0.3− | 0.1+ | 2005 06 17 | G96 | 0.2+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.4+ | |
| 2004 01 23 | 704 | 1.1+ | 1.1− | 2006 09 16 | 703 | 1.5− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.6+ | |
| 2004 01 23 | 704 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 2004 01 23 | 704 | 0.5− | 1.3+ | 2006 09 16 | 703 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2004 01 23 | 704 | 0.4+ | 0.4− | 2006 09 16 | 703 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2004 01 26 | 699 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.6− | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | |
| 2004 01 26 | 699 | 0.3+ | 0.5− | 2006 09 19 | 699 | (0.2+ | 1.5+) | 2006 10 12 | 644 | 0.3+ | 0.6+ | |
| 2004 01 26 | 699 | 0.5+ | 0.8+ | 2006 09 19 | 699 | 0.4− | 1.2− | 2006 10 12 | 644 | 0.2+ | 0.5+ | |
| 2004 01 26 | 699 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.5+ | 0.1+ | |
| 2004 02 11 | 644 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.5+ | 0.1+ | |
| 2004 02 11 | 644 | 0.4− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.1+ | |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | | | | | |
| 2004 02 23 | 704 | 0.0 | 0.2− | 2006 09 27 | 703 | 0.1+ | 1.2+ | | | | | |

**(144291)∗ 2004 CS$_{116}$**

Discovered 2004 Feb. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.15558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21632944 | $\omega$ | 1.16344 | | −0.25179277 | | +0.96172665 |
| $a$ | 2.7482673 | $\Omega$ | 254.26025 | | −0.88882637 | | −0.27398728 |
| $e$ | 0.1719046 | $i$ | 6.44764 | | −0.38286823 | | +0.00358166 |
| $P$ | 4.56 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 704 | 0.6− | 0.0 | 2001 09 16 | 704 | 0.8− | 0.6+ | 2004 02 11 | 644 | 0.4+ | 0.4+ | |
| 2000 04 07 | 704 | 0.5− | 0.7+ | 2001 09 16 | 704 | 0.3− | 0.3+ | 2004 02 11 | 644 | 0.3+ | 0.4+ | |
| 2000 04 07 | 704 | 0.3− | 0.2− | 2001 09 16 | 704 | 0.2− | 1.1+ | 2004 02 26 | 704 | 0.5− | 0.1+ | |
| 2000 04 28 | 704 | 0.1− | 0.1+ | 2001 09 16 | 704 | (0.3+ | 1.9+) | 2004 02 26 | 704 | 0.4+ | 0.4+ | |
| 2000 04 28 | 704 | 0.2− | 0.0 | 2001 11 18 | 645 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.8+ | 0.4+ | |
| 2000 04 28 | 704 | 0.2− | 1.3+ | 2001 11 18 | 645 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.8+ | |
| 2000 04 28 | 704 | 0.1− | 0.0 | 2002 12 10 | 704 | (0.3− | 1.7+) | 2006 09 30 | 703 | 1.0− | 0.7+ | |
| 2000 04 28 | 704 | 0.9+ | 1.1+ | 2002 12 10 | 704 | 1.0+ | 0.4− | 2006 09 30 | 703 | 1.1− | 0.5− | |
| 2000 05 04 | 699 | 1.1+ | 0.9+ | 2002 12 10 | 704 | 0.9− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.0 | |
| 2000 05 04 | 699 | 1.3+ | 1.3+ | 2002 12 10 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.7+ | 1.0− | |
| 2000 05 04 | 699 | (2.4+ | 0.8+) | 2002 12 10 | 704 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.9− | 0.6+ | |
| 2000 05 04 | 699 | 0.8+ | 0.4+ | 2004 01 29 | 699 | (0.1+ | 1.7+) | 2006 10 17 | 703 | (0.6+ | 2.2+) | |
| 2001 08 25 | 704 | 0.2+ | 0.4+ | 2004 01 29 | 704 | 1.3+ | 0.9+ | 2006 10 17 | 703 | 0.6+ | 0.2+ | |
| 2001 08 25 | 704 | 0.4+ | 0.6+ | 2004 01 29 | 699 | 1.3− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.1+ | |
| 2001 08 25 | 704 | 0.2+ | 0.6+ | 2004 01 29 | 704 | (1.6+ | 1.9+) | 2006 10 19 | G96 | 0.3+ | 0.1+ | |
| 2001 08 25 | 704 | 0.5+ | 0.4+ | 2004 01 29 | 699 | 1.0− | 1.0+ | 2006 10 19 | G96 | 0.0 | 0.0 | |
| 2001 08 25 | 704 | 0.7+ | 0.7+ | 2004 01 29 | 704 | 1.1+ | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.2+ | |
| 2001 09 11 | 699 | 0.7+ | 0.8+ | 2004 01 29 | 699 | 0.8− | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.3+ | |
| 2001 09 11 | 699 | 0.5+ | 0.1+ | 2004 02 11 | 644 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.0 | |
| 2001 09 11 | 699 | 0.3+ | 0.5+ | 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.2+ | |
| 2001 09 11 | 699 | 0.7+ | 0.2− | 2004 02 11 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.1+ | |
| 2001 09 16 | 704 | 0.5− | 0.8+ | 2004 02 11 | 644 | 0.5+ | 0.3+ | | | | | |

**(144292)∗ 2004 CX$_{116}$ = 1993 FZ$_{53}$**

Discovered 2004 Feb. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 72996)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.32730 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26118125 | $\omega$ | 117.89298 | | −0.76613945 | | +0.64116045 |
| $a$ | 2.4238629 | $\Omega$ | 102.02015 | | −0.60435495 | | −0.69542825 |
| $e$ | 0.1260163 | $i$ | 2.58347 | | −0.21859878 | | −0.32448856 |
| $P$ | 3.77 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 1.0− | 0.2− | 2004 01 22 | 704 | 0.2+ | 0.8+ | 2005 06 30 | 691 | 0.1+ | 0.0 | |
| 1993 03 18 | 809 | 0.6− | 1.1− | 2004 01 22 | 704 | 0.2+ | 0.3− | 2005 07 09 | 691 | 0.0 | 0.2+ | |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.2+ | 0.0 | 2005 07 09 | 691 | 0.2− | 0.0 | |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.1+ | 0.2+ | 2005 07 09 | 691 | 0.1+ | 0.0 | |
| 1998 09 25 | 645 | 0.0 | 0.1− | 2004 01 30 | 691 | 0.1+ | 0.1− | 2005 07 16 | 691 | 0.2+ | 0.1+ | |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2004 02 11 | 691 | 0.3+ | 0.1− | 2005 07 16 | 691 | 0.0 | 0.1+ | |
| 2000 01 08 | 691 | 0.1+ | 0.3− | 2004 02 11 | 691 | 0.2+ | 0.2− | 2005 07 16 | 691 | 0.2− | 0.1+ | |
| 2000 01 08 | 691 | 0.1+ | 0.4− | 2004 02 11 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.6+ | |
| 2000 01 08 | 691 | 0.2+ | 0.6− | 2004 02 23 | 704 | 0.4+ | 1.1+ | 2006 10 20 | 691 | 0.4− | 0.4+ | |
| 2003 12 22 | 291 | 0.2− | 0.5+ | 2004 02 23 | 704 | (1.8+ | 0.8+) | 2006 10 20 | 691 | 0.2− | 0.3+ | |
| 2003 12 22 | 291 | 0.6− | 0.5+ | 2004 02 23 | 704 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.0 | |
| 2003 12 22 | 291 | 0.8− | 0.7+ | 2004 02 23 | 704 | 1.0+ | 0.5+ | 2006 11 12 | G96 | 0.1− | 0.5− | |
| 2004 01 22 | 704 | (1.7+ | 0.3+) | 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.6− | |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2005 06 30 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.5− | |

**(144293)∗ 2004 CH$_{121}$**

Discovered 2004 Feb. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.40136 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22711108 | $\omega$ | 317.10990 | | −0.52078708 | | +0.82540285 |
| $a$ | 2.6605852 | $\Omega$ | 280.38166 | | −0.71094811 | | −0.56065493 |
| $e$ | 0.0618003 | $i$ | 12.80016 | | −0.47258185 | | −0.06615273 |
| $P$ | 4.34 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.1− | 0.4+ | 2004 01 28 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 703 | 0.9− | 0.2+ | |
| 2001 08 16 | 644 | 0.3− | 0.3+ | 2004 02 12 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.3− | |
| 2001 08 16 | 644 | 0.3− | 0.5+ | 2004 02 12 | 644 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.6− | 0.9+ | |
| 2001 08 25 | 704 | 0.4− | 1.4+ | 2004 02 12 | 644 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.5+ | 0.8− | |
| 2001 08 25 | 704 | 0.0 | 0.6+ | 2004 02 26 | 704 | 0.2− | 0.2− | 2006 10 19 | 703 | (3.2− | 0.0 ) | |
| 2001 08 25 | 704 | (0.8+ | 1.7+) | 2004 02 26 | 704 | 0.9+ | 1.1+ | 2006 10 19 | 703 | 0.5− | 1.3+ | |
| 2001 08 25 | 704 | 0.6− | 0.8+ | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.6− | |
| 2002 11 13 | 644 | 0.2− | 0.8− | 2004 03 16 | 704 | (0.1+ | 1.6+) | 2006 10 27 | 703 | (1.6+ | 3.2+) | |
| 2002 11 13 | 644 | 0.1− | 0.7− | 2004 03 16 | 704 | 0.1− | 1.2+ | 2006 10 27 | 703 | (1.7− | 1.1+) | |
| 2002 11 13 | 644 | 0.0 | 0.7− | 2004 03 16 | 704 | 0.2− | 0.2− | 2006 10 27 | 703 | 0.7− | 0.5+ | |
| 2002 11 25 | 644 | 0.2− | 0.1− | 2004 03 16 | 704 | 1.1+ | 0.9+ | 2006 10 27 | 703 | (2.0− | 0.4+) | |
| 2002 11 25 | 644 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.9+ | 0.4+ | |
| 2002 11 25 | 644 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.9+ | 2006 11 15 | 703 | 0.9− | 0.9+ | |
| 2004 01 28 | 704 | 0.0 | 0.3+ | 2006 09 17 | 703 | (1.0− | 1.7+) | 2006 11 15 | 703 | 0.7− | 0.6+ | |
| 2004 01 28 | 704 | 0.1+ | 1.3+ | 2006 09 17 | 703 | 1.0+ | 1.0+ | 2006 11 15 | 703 | 0.0 | 0.0 | |
| 2004 01 28 | 704 | 0.8+ | 0.3− | 2006 09 28 | 703 | 0.2+ | 1.0− | | | | | |

**(144294)∗ 2004 CQ$_{121}$ = 2005 LR$_{9}$**

Discovered 2004 Feb. 12 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86301)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.55085 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25350684 | $\omega$ | 201.82922 | | +0.91476611 | | +0.39480368 |
| $a$ | 2.4725378 | $\Omega$ | 134.61744 | | −0.35057463 | | +0.88112302 |
| $e$ | 0.1279740 | $i$ | 6.90958 | | −0.20074961 | | +0.26029268 |
| $P$ | 3.89 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.1− | 0.5− | 2004 02 29 | 691 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 1.5− | 0.3+ | |
| 1995 12 19 | 691 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.3− | 1.2+ | |
| 1995 12 19 | 691 | 0.6− | 0.4− | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.8− | |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2004 03 18 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.7+ | | |
| 2000 02 10 | 691 | 0.1− | 0.0 | 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.2+ | 1.2+ | | |
| 2000 02 10 | 691 | 0.3− | 0.1− | 2005 06 01 | 691 | 0.9+ | 0.1+ | 2006 11 13 | 703 | (0.8− | 1.7+) | | |
| 2000 02 10 | 691 | 0.1+ | 0.1+ | 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 1.3− | 1.1+ | | |
| 2001 04 30 | 691 | 0.4− | 0.2+ | 2005 06 01 | 691 | 0.2− | 0.1+ | 2006 11 19 | 703 | 1.2+ | 0.5+ | | |
| 2001 04 30 | 691 | 0.1+ | 0.2+ | 2005 06 08 | 691 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.8− | 0.6+ | | |
| 2001 04 30 | 691 | 0.3+ | 0.3+ | 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.1+ | 1.1+ | | |
| 2002 10 31 | 704 | 1.0− | 1.1+ | 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | (1.2− | 1.5+) | | |
| 2002 10 31 | 704 | 1.2− | 0.8+ | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.9+ | 0.5+ | | |
| 2002 10 31 | 704 | (1.8− | 1.0+) | 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1+ | | |
| 2002 10 31 | 704 | (1.2− | 2.0+) | 2005 06 14 | 691 | 0.4− | 0.1+ | 2006 11 25 | G96 | 0.4− | 0.1+ | | |
| 2004 02 12 | 691 | 0.3+ | 0.2+ | 2005 06 28 | 691 | 0.2− | 0.4+ | 2006 11 25 | G96 | 0.4− | 0.3+ | | |
| 2004 02 12 | 691 | 0.4+ | 0.3+ | 2005 06 28 | 691 | 0.1+ | 0.3+ | | | | | | |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2005 06 28 | 691 | 0.1− | 0.3+ | | | | | | |

**(144295)∗ 2004 CK$_{128}$**

Discovered 2004 Feb. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.73616 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26988499 | $\omega$ | 328.16044 | | −0.77160126 | +0.63579774 | |
| $a$ | 2.3714659 | $\Omega$ | 251.33181 | | −0.57913903 | −0.71504463 | |
| $e$ | 0.1373927 | $i$ | 1.19858 | | −0.26311495 | −0.29064137 | |
| $P$ | 3.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 25 | 691 | 0.2− | 0.5− | 2004 02 14 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.8− | | |
| 1992 12 25 | 691 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 1992 12 25 | 691 | 0.4− | 0.5− | 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.2− | | |
| 2000 01 11 | 691 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.3+ | 1.1+ | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2000 01 11 | 691 | 0.3+ | 0.3− | 2005 07 07 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.5+ | | |
| 2000 01 11 | 691 | 0.5+ | 0.4− | 2005 07 07 | 691 | 0.0 | 0.5+ | 2006 11 13 | 691 | 0.3− | 0.6+ | | |
| 2001 05 26 | 704 | 0.5− | 0.7− | 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.4+ | | |
| 2001 05 26 | 704 | 0.1− | 0.6− | 2005 07 30 | E12 | 0.5− | 0.1− | 2006 11 18 | 691 | 0.3− | 0.1+ | | |
| 2001 05 26 | 704 | 0.5− | 0.7+ | 2005 07 30 | E12 | 0.6+ | 0.4+ | 2006 11 18 | 691 | 0.4− | 0.0 | | |
| 2004 01 28 | 704 | 0.3− | 0.3+ | 2005 07 30 | E12 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.0 | | |
| 2004 01 28 | 704 | 0.3+ | 0.2+ | 2005 07 30 | E12 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.2− | | |
| 2004 01 28 | 704 | 0.6− | 0.2+ | 2005 08 28 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.1+ | | |
| 2004 01 28 | 704 | 0.6+ | 0.0 | 2005 08 28 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2005 08 28 | 691 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.0 | 0.6− | | |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.9− | 2006 11 27 | G96 | 0.2+ | 0.5− | | |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 27 | G96 | 0.4+ | 0.5− | | |
| 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.6− | | |
| 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.5+ | | | | | | |

**(144296)∗ 2004 DF**

Discovered 2004 Feb. 16 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.08947 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26497333 | $\omega$ | 289.56203 | | −0.96818488 | +0.22313360 | |
| $a$ | 2.4006818 | $\Omega$ | 263.45864 | | −0.16462057 | −0.90884887 | |
| $e$ | 0.1477988 | $i$ | 6.54649 | | −0.18846250 | −0.35242748 | |
| $P$ | 3.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 1.0− | 0.3− | 2004 03 16 | 704 | 0.6+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.0 | | |
| 2000 01 07 | 704 | 1.7+ | 0.0 | 2004 03 16 | 704 | 0.7− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2000 01 07 | 704 | 0.0 | 1.1− | 2004 03 29 | 703 | 0.8− | 0.2− | 2006 11 13 | 691 | 0.2− | 0.0 | | |
| 2000 02 02 | 704 | 0.2+ | 0.8+ | 2004 03 29 | 703 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.3+ | | |
| 2000 02 02 | 704 | 0.0 | 0.4+ | 2004 03 29 | 703 | 0.6− | 0.4+ | 2006 11 13 | 691 | 0.4− | 0.4+ | | |
| 2000 02 02 | 704 | 0.3− | 0.0 | 2004 03 29 | 703 | 0.2+ | 1.1+ | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 2001 07 21 | 608 | 0.4− | 0.1+ | 2004 03 31 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.2− | | |
| 2001 07 21 | 608 | 0.2− | 0.1− | 2004 03 31 | 704 | 0.8+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.4− | | |
| 2001 07 21 | 608 | 0.8− | 0.2+ | 2004 03 31 | 704 | 0.6+ | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.0 | | |
| 2004 02 03 | 608 | 0.9+ | 0.9− | 2004 03 31 | 704 | 1.0+ | 0.2− | 2006 11 15 | 703 | 0.3− | 0.3+ | | |
| 2004 02 03 | 608 | 0.5+ | 0.5− | 2004 03 31 | 704 | 1.2+ | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.8− | | |
| 2004 02 03 | 608 | 0.3+ | 0.5− | 2004 04 16 | 699 | 0.6+ | 0.4+ | 2006 11 15 | 703 | 0.6− | 0.8− | | |
| 2004 02 16 | 333 | 0.3− | 0.3+ | 2004 04 16 | 699 | 0.4− | 0.6+ | 2006 11 17 | 691 | 0.1− | 0.0 | | |
| 2004 02 16 | 333 | 0.3− | 0.0 | 2004 04 16 | 699 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.0 | | |
| 2004 02 17 | 333 | 0.6− | 0.2+ | 2004 04 16 | 699 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1+ | | |
| 2004 02 17 | 333 | 0.1+ | 0.2− | 2004 05 14 | 704 | (2.8+ | 6.7+) | 2006 11 17 | 644 | 0.3− | 0.5+ | | |
| 2004 02 19 | 704 | 0.1+ | 0.3+ | 2004 05 14 | 704 | 1.2+ | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.3+ | | |
| 2004 02 19 | 704 | 0.5− | 0.0 | 2004 05 14 | 704 | 1.0+ | 0.3− | 2006 11 17 | 644 | 0.0 | 0.5+ | | |
| 2004 02 19 | 704 | 0.8− | 0.4+ | 2005 07 30 | 644 | 0.2+ | 0.5+ | 2006 11 18 | 691 | 0.2− | 0.3+ | | |
| 2004 02 19 | 704 | 0.2+ | 0.1− | 2005 07 30 | 644 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.2+ | | |
| 2004 02 19 | 704 | 0.5− | 0.3+ | 2005 07 30 | 644 | 0.0 | 0.6+ | 2006 11 18 | 691 | 0.1− | 0.2+ | | |
| 2004 02 20 | 608 | 0.5+ | 0.6− | 2005 07 31 | 644 | 0.3− | 0.8+ | 2006 11 19 | 704 | 1.2+ | 0.2− | | |
| 2004 02 20 | 608 | 0.4+ | 0.5− | 2005 07 31 | 644 | 0.4− | 0.7+ | 2006 11 19 | 704 | 0.2+ | 1.0− | | |
| 2004 02 20 | 608 | 0.5+ | 0.8− | 2005 07 31 | 644 | 0.2− | 0.4+ | 2006 11 19 | 704 | (0.1+ | 1.9−) | | |
| 2004 03 10 | 084 | 1.2− | 0.6+ | 2005 08 06 | 644 | 0.1+ | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.0 | | |
| 2004 03 11 | 084 | 0.3+ | 1.0+ | 2005 08 06 | 644 | 0.1− | 0.6+ | 2006 11 21 | 691 | 0.1+ | 0.0 | | |
| 2004 03 12 | 084 | 1.0− | 0.5+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 13 | 084 | 0.2+ | 0.1+ | 2005 08 24 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.4+ | 0.3+ | | |
| 2004 03 16 | 704 | 0.1− | 0.4+ | 2005 08 24 | 644 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.5+ | 0.3+ | | |
| 2004 03 16 | 704 | 0.3+ | 0.5+ | 2005 08 24 | 644 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.1+ | 0.1+ | | |
| 2004 03 16 | 704 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.5+ | 0.8+ | | |

**(144297)∗ 2004 DS = 1999 TF$_{245}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61942)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.95314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28896404 | $\omega$ | 72.25624 | | +0.09559474 | −0.99527132 | |
| $a$ | 2.2658971 | $\Omega$ | 12.29645 | | +0.87990302 | +0.07639807 | |
| $e$ | 0.1820940 | $i$ | 4.63873 | | +0.46543778 | +0.05998614 | |
| $P$ | 3.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 703 | 1.2− | 0.2− | 2004 03 14 | 704 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 1999 10 07 | 703 | 0.4+ | 0.1− | 2004 03 14 | 703 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 1999 10 07 | 703 | 0.0 | 0.3+ | 2004 03 14 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.4− | | |
| 1999 10 07 | 703 | 1.4− | 0.3− | 2004 03 14 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.1− | | |
| 1999 10 09 | 704 | 1.4+ | 0.8+ | 2004 03 14 | 704 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.5− | | |
| 1999 10 09 | 704 | 0.5+ | 1.2+ | 2004 03 14 | 704 | 0.8− | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.1− | | |
| 1999 10 09 | 704 | 0.3+ | 0.0 | 2004 03 19 | 644 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.0 | | |
| 1999 10 09 | 704 | 1.1+ | 0.1− | 2004 03 19 | 644 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.0 | | |
| 1999 10 09 | 704 | 0.7+ | 0.5− | 2004 03 19 | 644 | 0.6+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 1999 11 09 | 704 | 0.3− | 0.4− | 2004 03 19 | 704 | 0.8+ | 0.8− | 2006 11 14 | 703 | 0.1− | 0.4− | | |
| 1999 11 09 | 704 | 0.5− | 0.3+ | 2004 03 19 | 704 | 0.5+ | 1.1− | 2006 11 14 | 703 | 0.3− | 0.7− | | |
| 1999 11 09 | 704 | 0.8− | 1.3− | 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− | | |
| 1999 11 09 | 704 | 0.2− | 0.9+ | 2004 03 19 | 704 | 0.4− | 1.1+ | 2006 11 14 | 703 | 0.1+ | 0.1− | | |
| 1999 11 09 | 704 | 1.0− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2002 08 09 | 807 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.1+ | | |
| 2002 08 09 | 807 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− | | |
| 2003 12 25 | 645 | 0.1− | 0.3− | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− | | |
| 2003 12 25 | 645 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 11 15 | 704 | 0.5+ | 1.0+ | | |
| 2004 01 23 | 704 | 0.5− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.5+ | 1.0+ | | |
| 2004 01 23 | 704 | 0.6− | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.4+ | 1.1+ | | |
| 2004 01 23 | 704 | 0.3− | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.3− | 1.4+ | | |
| 2004 01 23 | 699 | 0.7− | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.3+ | 1.1+ | | |
| 2004 01 23 | 704 | 0.4− | 0.6+ | 2006 10 19 | 703 | (3.9+ | 4.2−) | 2006 11 16 | 704 | 0.3+ | 0.5+ | | |
| 2004 01 23 | 699 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.0 | 0.6+ | | |
| 2004 01 23 | 704 | 0.6− | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.4+ | | |
| 2004 01 23 | 699 | 0.5+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.3− | 0.3+ | | |
| 2004 01 23 | 699 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.6− | 0.4− | | |
| 2004 02 16 | 704 | 0.9+ | 0.1− | 2006 10 19 | 703 | 0.5− | 0.4− | 2006 11 17 | 704 | 0.1− | 1.3− | | |
| 2004 02 16 | 704 | 0.0 | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.2+ | 2006 11 17 | 704 | (0.4− | 2.2−) | | |
| 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.4+ | 0.6+ | | |
| 2004 02 16 | 704 | 0.5+ | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2004 02 16 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.4− | 1.0− | 2006 11 19 | 704 | 0.3+ | 0.6+ | | |
| 2004 02 16 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.9− | 1.2− | 2006 11 19 | 704 | 0.0 | 0.9+ | | |
| 2004 02 16 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.6+ | | |
| 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.5+ | | |
| 2004 02 18 | 333 | 0.4+ | 0.5− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.5+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 333 | 0.1− | 0.0 | 2006 10 29 | 704 | (3.0+ | 1.9−) | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2004 02 18 | 333 | 0.8+ | 0.1− | 2006 10 29 | 704 | (2.1+ | 1.2−) | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2004 02 18 | 333 | 0.0 | 0.2+ | 2006 10 29 | 704 | 1.3+ | 1.1− | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2004 02 18 | 333 | 0.2+ | 0.0 | 2006 10 29 | 704 | (1.3+ | 3.6−) | 2006 11 22 | 703 | 0.4+ | 0.1− |
| 2004 02 18 | 333 | 0.7− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 22 | 703 | 0.3+ | 0.7− |
| 2004 03 14 | 703 | 1.5+ | 1.2+ | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2004 03 14 | 703 | 0.9+ | 0.8+ | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.2+ | 0.4− |
| 2004 03 14 | 703 | 0.6− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.2+ | | | | |

**(144298)∗ 2004 DY = 2000 FS = 2002 TP$_{141}$**

Discovered 2004 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 61942)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.91053 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26382945 | $\omega$ | 166.52819 | | −0.88844651 | −0.44713878 | |
| $a$ | 2.4076159 | $\Omega$ | 345.50492 | | +0.37336011 | −0.57280285 | |
| $e$ | 0.2944292 | $i$ | 24.44666 | | +0.26695511 | −0.68699622 | |
| $P$ | 3.74 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 20 | 704 | 0.6+ | 0.5+ | 2004 02 16 | 704 | 0.7+ | 0.3− | 2004 03 27 | 703 | 0.6+ | 0.2+ |
| 1999 12 20 | 704 | 0.6+ | 0.3− | 2004 02 16 | 704 | 0.9+ | 0.4− | 2004 03 28 | 084 | 0.3− | 0.0 |
| 1999 12 20 | 704 | 0.2− | 1.0− | 2004 02 18 | 704 | 0.3+ | 0.3+ | 2004 03 30 | 084 | 0.5− | 0.2+ |
| 1999 12 20 | 704 | 1.0− | 0.4− | 2004 02 18 | 704 | 0.3+ | 0.4+ | 2004 04 01 | 084 | 0.0 | 0.5+ |
| 1999 12 20 | 704 | 1.0− | 0.7− | 2004 02 18 | 704 | 0.3+ | 0.5+ | 2004 04 03 | 084 | 0.1+ | 0.0 |
| 1999 12 28 | 704 | 0.5+ | 0.5− | 2004 02 18 | 704 | 0.1+ | 0.1+ | 2004 04 04 | 084 | 0.7+ | 0.1+ |
| 1999 12 28 | 704 | 0.3+ | 0.7− | 2004 02 18 | 704 | 0.3+ | 0.3+ | 2004 04 05 | 084 | 0.1+ | 0.1− |
| 1999 12 28 | 704 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.1+ | 0.1− | 2004 04 06 | 084 | 0.1+ | 0.2+ |
| 1999 12 28 | 704 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.0 | 0.1− | 2004 04 07 | 608 | 0.2+ | 0.4− |
| 1999 12 28 | 704 | 0.0 | 0.3− | 2004 02 19 | 704 | 0.1+ | 0.2− | 2004 04 07 | 608 | 0.2+ | 0.4− |
| 2000 01 26 | 704 | 0.1+ | 0.6− | 2004 02 19 | 704 | 0.0 | 0.2− | 2004 04 07 | 608 | 0.3+ | 0.5− |
| 2000 01 26 | 704 | 0.0 | 0.9+ | 2004 02 19 | 704 | 0.2− | 0.1− | 2004 04 07 | 084 | 0.3+ | 0.4+ |
| 2000 01 26 | 704 | 0.4+ | 0.8+ | 2004 02 19 | 608 | (0.6− | 1.5+) | 2004 04 08 | 084 | 0.4+ | 0.7+ |
| 2000 03 26 | 704 | 0.0 | 0.5+ | 2004 02 19 | 608 | (2.1− | 2.1+) | 2004 04 09 | 084 | 0.5+ | 0.8+ |
| 2000 03 26 | 704 | 0.3+ | 0.1− | 2004 02 19 | 608 | (0.7− | 1.5+) | 2004 04 10 | 084 | 0.5+ | 0.6+ |
| 2000 03 26 | 704 | 0.9− | 0.0 | 2004 02 20 | 704 | 0.0 | 0.1+ | 2004 04 13 | 084 | 0.2− | 0.6+ |
| 2000 03 26 | 704 | 0.1+ | 0.0 | 2004 02 20 | 704 | 0.1− | 0.0 | 2004 04 14 | 608 | 0.3+ | 0.4− |
| 2000 03 27 | 704 | 0.4+ | 0.6− | 2004 02 20 | 704 | 0.2− | 0.2+ | 2004 04 14 | 608 | 0.4+ | 0.6− |
| 2000 03 27 | 704 | 0.0 | 0.1− | 2004 03 03 | 127 | 0.4+ | 0.1+ | 2004 04 14 | 608 | 0.5+ | 0.4− |
| 2000 03 27 | 704 | 0.6+ | 0.2+ | 2004 03 03 | 127 | 0.3+ | 0.3− | 2004 04 16 | 699 | 0.0 | 0.4+ |
| 2000 03 27 | 704 | 0.3+ | 1.0− | 2004 03 03 | 127 | 0.4+ | 0.1− | 2004 04 16 | 699 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | 1.2− | 0.4− | 2004 03 04 | 084 | 0.5+ | 0.6− | 2004 04 16 | 699 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.2+ | 2004 03 09 | 333 | 0.2− | 0.1− | 2004 04 16 | 704 | 0.2+ | 0.5+ |
| 2002 09 06 | 704 | 0.3− | 0.3+ | 2004 03 09 | 333 | 0.0 | 0.1+ | 2004 04 16 | 704 | 0.4+ | 0.3+ |
| 2002 09 13 | 644 | 0.8− | 0.6+ | 2004 03 09 | 333 | 0.3+ | 0.1− | 2004 04 16 | 704 | 0.5+ | 0.0 |
| 2002 09 13 | 644 | 0.7− | 0.5+ | 2004 03 09 | 333 | 0.5− | 0.3− | 2004 04 16 | 704 | 0.6+ | 0.2+ |
| 2002 09 13 | 644 | 0.5− | 0.6+ | 2004 03 09 | 608 | 0.1− | 0.1+ | 2004 04 16 | 699 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2004 03 09 | 608 | 0.1+ | 0.5− | 2004 04 16 | 704 | 0.7+ | 0.1− |
| 2002 10 04 | 704 | 1.2− | 0.7+ | 2004 03 09 | 608 | (0.7+ | 2.6−) | 2004 04 16 | 084 | 0.5− | 0.4+ |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2004 03 10 | 084 | 0.2− | 0.1− | 2004 04 18 | 084 | 0.4+ | 0.2− |
| 2002 10 06 | 644 | 0.3− | 0.7+ | 2004 03 10 | 084 | 0.3− | 0.1− | 2004 04 19 | 084 | 0.4− | 0.2− |
| 2002 10 06 | 644 | 0.0 | 1.0+ | 2004 03 10 | 084 | 0.4− | 0.1− | 2004 04 20 | 084 | 0.4− | 0.0 |
| 2002 10 06 | 644 | 0.2− | 0.7+ | 2004 03 12 | 084 | 0.1− | 0.3+ | 2004 04 22 | 084 | 0.7− | 0.1+ |
| 2002 10 31 | 704 | 0.4− | 0.6+ | 2004 03 12 | 084 | 0.0 | 0.3− | 2004 04 23 | 084 | 0.0 | 0.3+ |
| 2002 10 31 | 704 | 0.8− | 0.2+ | 2004 03 14 | 084 | 0.2+ | 0.2+ | 2004 04 24 | 084 | 0.5− | 0.5+ |
| 2002 10 31 | 704 | 0.8− | 0.7+ | 2004 03 15 | 704 | 0.1− | 0.2+ | 2004 04 26 | 084 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.2+ | 0.3− | 2004 03 15 | 704 | 0.0 | 0.1+ | 2004 05 14 | 704 | 0.5+ | 0.4+ |
| 2003 10 01 | 699 | (0.3+ | 2.0−) | 2004 03 15 | 704 | 0.1− | 0.0 | 2004 05 14 | 704 | 0.5+ | 0.4+ |
| 2003 10 01 | 699 | 0.0 | 1.3− | 2004 03 15 | 704 | 0.1− | 0.0 | 2004 05 14 | 704 | 0.1+ | 0.2+ |
| 2003 10 01 | 699 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.0 | 0.1− | 2004 05 14 | 704 | 0.4+ | 0.4+ |
| 2003 10 01 | 699 | 0.4− | 0.8− | 2004 03 15 | 127 | 0.2+ | 0.1+ | 2004 05 14 | 704 | 0.6+ | 1.2+ |
| 2003 12 03 | 704 | 0.3− | 0.1+ | 2004 03 15 | 127 | 0.0 | 0.1+ | 2005 08 06 | E12 | 0.4− | 1.2+ |
| 2003 12 03 | 704 | 0.2− | 0.3+ | 2004 03 15 | 127 | 0.0 | 0.3+ | 2005 08 06 | E12 | 0.6− | 0.3+ |
| 2003 12 03 | 704 | 0.7− | 0.6+ | 2004 03 15 | 127 | 0.1+ | 0.0 | 2005 08 06 | E12 | 0.4+ | 0.9+ |
| 2003 12 03 | 704 | 0.1− | 0.6+ | 2004 03 16 | 127 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.6− | 0.1− |
| 2003 12 03 | 704 | 0.1− | 0.6+ | 2004 03 16 | 127 | 0.5+ | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.3+ |
| 2003 12 18 | 704 | 1.0+ | 0.2+ | 2004 03 16 | 127 | 0.1− | 0.1+ | 2006 09 17 | 703 | 1.0− | 0.2− |
| 2003 12 18 | 704 | 1.0+ | 0.3+ | 2004 03 16 | 127 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.2− | 0.6+ |
| 2003 12 18 | 704 | 0.6+ | 0.2+ | 2004 03 16 | 127 | 0.2+ | 0.1− | 2006 09 22 | 699 | 0.2+ | 0.1+ |
| 2003 12 18 | 704 | 0.3+ | 0.4+ | 2004 03 17 | 127 | 0.0 | 0.5− | 2006 09 22 | 699 | 0.8+ | 1.1+ |
| 2003 12 18 | 704 | 0.6+ | 0.3+ | 2004 03 17 | 127 | 0.0 | 0.3− | 2006 09 22 | 699 | 0.2+ | 0.2+ |
| 2004 01 02 | 704 | 0.1+ | 0.5+ | 2004 03 17 | 127 | 0.2− | 0.2− | 2006 09 22 | 699 | 1.1− | 0.4+ |
| 2004 01 02 | 704 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.9+ |
| 2004 01 02 | 704 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.3+ |
| 2004 01 02 | 704 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 09 28 | 703 | 0.8− | 0.2+ |
| 2004 01 02 | 704 | 0.3+ | 0.1− | 2004 03 18 | 704 | 0.3− | 0.1+ | 2006 09 28 | 703 | 1.4− | 0.7+ |
| 2004 01 20 | 704 | 0.2− | 0.6− | 2004 03 18 | 704 | 0.5− | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.9+ |
| 2004 01 20 | 704 | 0.1+ | 0.0 | 2004 03 19 | 084 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2004 01 20 | 704 | 0.2− | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.3− |
| 2004 01 30 | 704 | 0.2− | 0.7+ | 2004 03 20 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2004 01 30 | 704 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2004 01 30 | 704 | 0.2− | 0.7+ | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2004 01 30 | 704 | 0.3− | 0.8+ | 2004 03 25 | 938 | 0.5− | 0.5− | 2006 11 15 | 703 | 0.7− | 0.3− |
| 2004 01 30 | 704 | 0.1− | 0.7+ | 2004 03 25 | 938 | 0.4− | 0.3− | 2006 11 15 | 703 | 0.3− | 0.5− |
| 2004 02 16 | 704 | 0.6+ | 0.3− | 2004 03 27 | 703 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.3− |
| 2004 02 16 | 704 | 0.6+ | 0.3− | 2004 03 27 | 703 | 0.6+ | 1.1+ | 2006 11 15 | 703 | 0.5+ | 0.7− |
| 2004 02 16 | 704 | 0.7+ | 0.3− | 2004 03 27 | 703 | 0.1+ | 0.1− | | | | |

**(144299)∗ 2004 DA$_3$ = 2002 TM$_{164}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69679)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.42582 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24157916 | $\omega$ | 216.43135 | | +0.98562698 | −0.08763626 | |
| $a$ | 2.5532680 | $\Omega$ | 147.67713 | | +0.11242559 | +0.97838396 | |
| $e$ | 0.1382934 | $i$ | 15.67110 | | −0.12609495 | +0.18730915 | |
| $P$ | 4.08 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.0 | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2005 06 25 | 644 | 0.6+ | 0.2− |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.3+ | 0.1− | 2005 07 01 | 644 | 0.2+ | 0.1− |
| 2001 07 10 | 644 | 0.0 | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2005 07 01 | 644 | 0.1+ | 0.2+ |
| 2001 07 10 | 644 | 0.1+ | 0.1+ | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2005 07 01 | 644 | 0.3+ | 0.1− |
| 2001 07 10 | 644 | 0.0 | 0.5+ | 2004 02 17 | 691 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 2002 10 05 | 699 | 1.2+ | 1.0+ | 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.6+ |
| 2002 10 05 | 699 | 0.7+ | 0.7+ | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.1− |
| 2002 10 05 | 699 | (1.6+ | 0.1+) | 2004 02 17 | 704 | 1.0+ | 1.5+ | 2006 09 26 | 703 | 0.1+ | 0.0 |
| 2002 10 05 | 699 | (1.7+ | 0.4+) | 2004 02 17 | 704 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.2− | 0.2+ |
| 2002 10 05 | 644 | 0.4− | 1.1+ | 2004 02 17 | 704 | 0.6+ | 1.1− | 2006 10 02 | 703 | 0.2+ | 0.2+ |
| 2002 10 05 | 644 | 0.3− | 1.0+ | 2004 02 17 | 704 | 0.2− | 0.7+ | 2006 10 02 | 703 | 0.2+ | 0.3− |
| 2002 10 05 | 644 | 0.3− | 0.8+ | 2004 02 23 | 704 | 0.6− | 0.0 | 2006 10 02 | 703 | 0.5− | 0.0 |
| 2002 10 06 | 644 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 10 06 | 644 | (0.1+ | 1.6+) | 2004 02 23 | 704 | 0.1+ | 1.1+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2002 10 06 | 644 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 10 06 | 644 | (0.2− | 1.5+) | 2004 02 23 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.7+ |
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2005 05 11 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | (0.2+ | 1.8+) |
| 2002 10 06 | 644 | 0.3− | 1.3+ | 2005 05 11 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | (0.8+ | 1.9+) |
| 2002 10 07 | 608 | 0.2− | 0.5− | 2005 05 11 | 691 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.9+ |
| 2002 10 07 | 608 | 0.1+ | 0.7− | 2005 05 15 | 644 | 0.1+ | 0.1− | 2006 10 31 | 703 | 0.9− | 1.3+ |
| 2002 10 07 | 608 | 0.1+ | 0.7− | 2005 05 15 | 644 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.3+ | 0.6+ |
| 2002 10 10 | 644 | 0.2− | 0.6+ | 2005 05 15 | 644 | 0.4+ | 0.1+ | 2006 10 31 | 703 | 0.3+ | 0.1− |
| 2002 10 10 | 644 | 0.2− | 0.6+ | 2005 05 16 | 691 | 0.1− | 0.2+ | 2006 10 31 | 703 | 0.5− | 0.5− |
| 2002 10 10 | 644 | 0.2− | 0.6+ | 2005 05 16 | 691 | 0.1− | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.4+ |
| 2002 10 29 | 704 | 0.0 | 0.8+ | 2005 05 16 | 691 | 0.1− | 0.3+ | 2006 11 06 | 644 | 0.5− | 0.2+ |
| 2002 10 29 | 704 | 0.4+ | 1.2− | 2005 05 20 | 644 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.0 |
| 2002 10 29 | 704 | 0.9+ | 0.2− | 2005 05 20 | 644 | 0.6− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 10 29 | 704 | 0.3+ | 0.5+ | 2005 05 20 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2002 11 05 | 644 | 0.6− | 0.4+ | 2005 05 20 | 644 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2002 11 05 | 644 | 0.1− | 0.6+ | 2005 05 20 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 703 | 0.1+ | 0.9− |
| 2002 11 05 | 644 | 0.4− | 0.4+ | 2005 05 20 | 644 | 0.5− | 0.4+ | 2006 11 18 | 703 | 0.2− | 0.6− |
| 2004 02 11 | 644 | 0.3+ | 0.6+ | 2005 06 25 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 703 | 0.0 | 0.1+ |
| 2004 02 11 | 644 | 0.3+ | 0.6+ | 2005 06 25 | 644 | 0.4+ | 0.1+ | 2006 11 18 | 703 | 0.3− | 0.5− |

**(144300)∗ 2004 DC$_3$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.87660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26269023 | $\omega$ | 227.41483 | | −0.82547979 | +0.56433347 | |
| $a$ | 2.4145717 | $\Omega$ | 346.92967 | | −0.50326476 | −0.74434098 | |
| $e$ | 0.0789752 | $i$ | 2.66849 | | −0.25555371 | −0.35704935 | |
| $P$ | 3.75 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 809 | 0.6− | 0.1− | 2004 02 18 | 291 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.3− |
| 1993 03 26 | 809 | (2.5− | 0.8+) | 2004 02 26 | 704 | 1.3+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 1993 03 27 | 809 | 0.9+ | 0.3+ | 2004 02 26 | 704 | 0.9+ | 0.4− | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 1993 04 16 | 413 | (2.5+ | 4.4+) | 2004 02 26 | 704 | (1.6+ | 0.2−) | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2000 02 05 | 695 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.3− | 0.9+ | 2006 11 13 | 691 | 0.3− | 0.0 |
| 2000 02 05 | 695 | 0.3− | 0.1− | 2004 03 27 | 704 | 1.1+ | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2004 02 11 | 644 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.3− | 0.4+ | 2006 11 16 | 704 | (5.2+ | 3.0+) |
| 2004 02 11 | 644 | 0.4− | 0.4+ | 2004 03 27 | 704 | 1.0+ | 0.4+ | 2006 11 16 | 704 | (1.4+ | 2.3+) |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.9+ | 0.7− | 2006 11 16 | 704 | 0.6− | 0.1+ |
| 2004 02 11 | 644 | 0.6− | 0.5− | 2005 06 29 | 644 | 0.7− | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.4+ | 0.6+ | 2005 06 29 | 644 | 0.6− | 0.8+ | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2004 02 11 | 644 | 0.5− | 0.4+ | 2005 06 29 | 644 | 0.5− | 0.7+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2004 02 16 | 691 | 0.2+ | 0.0 | 2005 07 18 | 644 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.9+ |
| 2004 02 16 | 691 | 0.2+ | 0.2+ | 2005 07 18 | 644 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2005 07 18 | 644 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.5+ |
| 2004 02 17 | 691 | 0.0 | 0.2+ | 2005 10 03 | G96 | 0.2+ | 0.9+ | 2006 11 19 | 704 | 1.0+ | 0.1− |
| 2004 02 17 | 691 | 0.1− | 0.2+ | 2005 10 03 | G96 | 0.4− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2004 02 17 | 691 | 0.0 | 0.1+ | 2005 10 03 | G96 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2004 02 18 | 291 | 0.2− | 0.1− | 2005 10 03 | G96 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 02 18 | 291 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.7− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.2− |

**(144301)∗ 2004 DK$_4$**

Discovered 2004 Feb. 16 by Uppsala-DLR Asteroid Survey at Kvistaberg.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.34853 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27411289 | $\omega$ | 28.41429 | | −0.61486842 | −0.78214423 | |
| $a$ | 2.3470180 | $\Omega$ | 99.70741 | | +0.70278940 | −0.60150216 | |
| $e$ | 0.1733283 | $i$ | 5.87727 | | +0.35780426 | −0.16262089 | |
| $P$ | 3.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.6+ | 0.7− | 2004 03 17 | 704 | 0.0 | 0.2+ | 2004 04 08 | A49 | 0.7− | 0.1− |
| 1999 12 08 | 704 | 0.4− | 1.1− | 2004 03 17 | 704 | (1.8+ | 0.5−) | 2004 04 11 | 049 | 0.3+ | 0.6− |
| 1999 12 08 | 704 | 0.3+ | 0.8− | 2004 03 17 | 704 | 0.1+ | 0.1− | 2004 04 11 | 049 | 0.4+ | 0.9− |
| 1999 12 08 | 704 | 0.2− | 0.1− | 2004 03 17 | 704 | 0.1+ | 0.3+ | 2004 04 11 | 049 | 1.0+ | 0.7− |
| 2000 01 06 | 704 | 0.2+ | 1.3− | 2004 03 17 | 704 | (1.6+ | 0.2−) | 2004 04 13 | 703 | 0.6− | 0.4− |
| 2000 01 06 | 704 | 0.1+ | 1.0− | 2004 03 17 | 704 | 0.3+ | 0.0 | 2004 04 13 | 703 | 0.4− | 0.1− |
| 2000 01 06 | 704 | 0.3+ | 0.9− | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2004 04 13 | 703 | 1.0− | 0.7− |
| 2004 02 16 | 049 | (2.5− | 0.6−) | 2004 03 17 | A16 | 1.1+ | 0.2− | 2004 04 13 | 703 | 0.4− | 0.3− |
| 2004 02 16 | 049 | (2.3− | 0.5−) | 2004 03 17 | A16 | (3.2− | 1.6−) | 2005 07 07 | 691 | 0.1+ | 0.2+ |
| 2004 02 16 | 049 | (1.8− | 0.9−) | 2004 03 17 | A16 | (7.4+ | 0.4−) | 2005 07 07 | 691 | 0.2− | 0.2+ |
| 2004 02 17 | 703 | 0.1− | 0.4− | 2004 03 17 | 049 | 1.2− | 1.0− | 2005 07 07 | 691 | 0.1− | 0.2− |
| 2004 02 17 | 703 | 0.7− | 1.1− | 2004 03 17 | 049 | 0.8− | 1.4− | 2006 10 16 | 703 | 1.4+ | 0.3+ |
| 2004 02 17 | 703 | 1.1− | 0.8− | 2004 03 17 | 049 | 1.1− | 1.0− | 2006 10 16 | 703 | 1.1− | 0.4+ |
| 2004 02 17 | 703 | 0.7+ | 1.3− | 2004 03 19 | 049 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.6− |
| 2004 02 17 | 608 | 0.2− | 0.7− | 2004 03 19 | 049 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2004 02 17 | 608 | 0.1− | 0.5− | 2004 03 19 | 049 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2004 02 17 | 608 | 0.1+ | 0.9− | 2004 03 19 | 049 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2004 02 18 | 704 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2004 02 18 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.5+ |
| 2004 02 18 | 704 | 0.5+ | 0.2− | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2004 02 18 | 704 | 0.3+ | 0.1+ | 2004 03 23 | 704 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2004 02 18 | 704 | 0.9+ | 0.6− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.3− |
| 2004 02 24 | 049 | 0.6+ | 0.2− | 2004 03 26 | 691 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2004 02 24 | 049 | 0.5+ | 0.2+ | 2004 03 26 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.6+ |
| 2004 02 24 | 049 | 0.3+ | 0.4− | 2004 03 26 | 691 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 1.0− |
| 2004 02 27 | 704 | 0.4+ | 0.7+ | 2004 03 26 | 703 | 0.7+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 1.2+ |
| 2004 02 27 | 704 | 0.6+ | 0.9+ | 2004 03 26 | 703 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 1.0− | 0.8+ |
| 2004 02 27 | 704 | 1.0+ | 0.3+ | 2004 03 26 | 703 | 0.4− | 1.2+ | 2006 11 17 | 704 | 0.4− | 0.7+ |
| 2004 02 27 | 704 | 1.3− | 1.4+ | 2004 03 26 | 703 | 0.7+ | 1.2+ | 2006 11 17 | 704 | 0.3− | 1.3+ |
| 2004 03 15 | 704 | 0.1− | 0.1+ | 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 11 17 | 704 | 1.1+ | 1.4+ |
| 2004 03 15 | 704 | 0.1+ | 0.2− | 2004 03 27 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.3+ |
| 2004 03 15 | 704 | 0.1+ | 0.3− | 2004 03 27 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.3+ |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2004 03 28 | 691 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 28 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 704 | (2.2− | 0.4+) |
| 2004 03 17 | 704 | (2.1+ | 1.0+) | 2004 04 08 | A49 | 0.5− | 0.2− | 2006 11 20 | 704 | 0.9− | 0.9+ |
| 2004 03 17 | 704 | 1.3+ | 0.7− | 2004 04 08 | A49 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.8− | 0.1+ |
| 2004 03 17 | 704 | 1.4+ | 0.7− | 2004 04 08 | A49 | 0.8− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.9− |

**(144302)∗ 2004 DV$_4$ = 2000 EP$_{114}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61944)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.03623 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23918843 | $\omega$ | 232.31871 | | −0.41897869 | +0.90789437 | |
| $a$ | 2.5702533 | $\Omega$ | 12.93179 | | −0.81278662 | −0.36833248 | |
| $e$ | 0.1404684 | $i$ | 3.48125 | | −0.40476508 | −0.20014742 | |
| $P$ | 4.12 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 09 | 691 | 1.2− | 0.2− | 2004 02 17 | 704 | 0.4− | 0.6+ | 2006 09 30 | G96 | 0.5− | 0.6− |
| 1992 04 09 | 691 | 0.4+ | 0.3+ | 2004 02 17 | 704 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1992 04 09 | 691 | 0.1+ | 0.3− | 2004 02 17 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.5− | 0.4+ |
| 2000 03 09 | 049 | 1.6+ | 1.4− | 2004 02 23 | 704 | 1.5+ | 0.4+ | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 2000 03 09 | 049 | 2.0+ | 1.0− | 2004 02 23 | 704 | (1.7+ | 0.7+) | 2006 10 21 | 691 | 0.5− | 0.0 |
| 2000 03 09 | 049 | 1.7+ | 1.2− | 2004 02 23 | 704 | 1.3+ | 1.1+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2000 03 11 | 704 | 0.3+ | 0.6− | 2004 02 23 | 704 | 0.8+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.0 |
| 2000 03 11 | 704 | 0.5+ | 0.2+ | 2004 02 23 | 704 | 1.1+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.7− |
| 2000 03 11 | 704 | 0.4+ | 0.3+ | 2004 02 25 | 704 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.6− |
| 2000 03 11 | 704 | 1.3+ | 0.8+ | 2004 02 25 | 704 | 0.1− | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.5− |
| 2000 03 11 | 704 | 0.2+ | 0.7+ | 2004 02 25 | 704 | 0.2− | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.6− |
| 2001 08 14 | 608 | 0.1+ | 0.4− | 2004 02 25 | 704 | 0.3− | 0.5+ | 2006 11 09 | 691 | 0.1− | 0.3+ |
| 2001 08 14 | 608 | 0.1+ | 0.3− | 2004 02 25 | 704 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.0 |
| 2001 08 14 | 608 | 0.4+ | 0.7− | 2004 02 26 | 704 | 0.1+ | 0.9− | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2001 08 22 | 608 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2001 08 22 | 608 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.6+ | 0.3+ |
| 2001 08 22 | 608 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2003 12 25 | 645 | 0.3− | 0.2− | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2003 12 25 | 645 | 0.3− | 0.3− | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.7+ | 0.4+ | 2004 03 19 | 704 | 1.4+ | 0.4+ | 2006 11 13 | 691 | 0.3+ | 0.2− |
| 2004 01 22 | 704 | 0.8+ | 0.3+ | 2004 03 19 | 704 | 0.6+ | 1.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2004 01 22 | 704 | 1.5+ | 0.9+ | 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.6+ | 0.7− |
| 2004 01 22 | 704 | 0.7+ | 0.3+ | 2004 03 27 | 691 | 0.7− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2004 01 22 | 704 | 1.1+ | 0.7− | 2004 03 27 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2004 03 27 | 691 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.4+ | 0.2+ |
| 2004 02 16 | 691 | 0.5− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.3+ | 0.3+ |
| 2004 02 16 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2004 02 17 | 704 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.6− | | | | |

**(144303)∗ 2004 DD$_7$**

Discovered 2004 Feb. 16 at San Marcello Pistoiese.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.16058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23486591 | $\omega$ | 254.47963 | | +0.50742238 | −0.85997063 | |
| $a$ | 2.6016931 | $\Omega$ | 164.66340 | | +0.84831298 | +0.48743027 | |
| $e$ | 0.0606515 | $i$ | 11.89707 | | +0.15128651 | +0.15120263 | |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.9+ | 1.0+ | 2004 02 19 | 704 | 0.4− | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.3− |
| 2000 03 11 | 704 | 0.8+ | 0.4+ | 2004 02 19 | 704 | 1.2− | 1.1− | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.6+ | 0.4+ | 2004 03 11 | 644 | 0.1+ | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.7+ | 0.8+ | 2004 03 11 | 644 | 0.2+ | 0.6+ | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 2002 10 04 | 645 | 0.1− | 0.0 | 2004 03 11 | 644 | 0.6− | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2004 03 20 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.5+ | 0.3− |
| 2002 10 15 | 644 | 0.3− | 0.3+ | 2004 03 20 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.3+ | 1.6+ |
| 2002 10 15 | 644 | 0.2− | 0.5+ | 2004 03 20 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.7− |
| 2002 10 15 | 644 | 0.3− | 0.6+ | 2005 05 14 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.3+ | 0.1− |
| 2004 02 16 | 104 | 0.6+ | 0.3+ | 2005 05 14 | 691 | 0.4− | 0.1+ | 2006 09 19 | 699 | 1.8− | 0.1+ |
| 2004 02 16 | 104 | 0.7− | 0.3+ | 2005 05 14 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.1− |
| 2004 02 16 | 104 | 1.4+ | 0.2+ | 2005 06 04 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.8− | 1.0+ |
| 2004 02 16 | 104 | 0.8− | 0.5+ | 2005 06 04 | 691 | 0.2− | 0.0 | 2006 09 22 | 104 | 0.3+ | 0.6+ |
| 2004 02 18 | 691 | 0.1− | 0.1+ | 2005 06 04 | 691 | 0.1− | 0.2+ | 2006 09 22 | 104 | 0.6+ | 0.7+ |
| 2004 02 18 | 691 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 22 | 104 | 0.2+ | 0.5+ |
| 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.1− | | | | |
| 2004 02 19 | 704 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.0 | 0.4− | | | | |

**(144304)∗ 2004 DS$_7$ = 1995 BV$_{13}$**

Discovered 2004 Feb. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61946)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.94074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22619278 | $\omega$ | 182.65862 | | +0.93942756 | +0.34140781 | |
| $a$ | 2.6677813 | $\Omega$ | 157.30625 | | −0.31299909 | +0.89053192 | |
| $e$ | 0.1962090 | $i$ | 4.50073 | | −0.13966900 | +0.30065531 | |
| $P$ | 4.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | 0.2+ | 0.0 | 2005 05 17 | G96 | 0.4− | 0.4+ | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 1995 01 31 | 691 | 0.6+ | 0.3− | 2005 05 17 | G96 | 0.3− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1995 01 31 | 691 | 0.0 | 0.4− | 2005 05 17 | G96 | 0.7− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 1995 02 07 | 691 | 0.6+ | 0.4− | 2005 05 19 | G96 | 0.1− | 0.6− | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 1995 02 07 | 691 | 0.0 | 0.6− | 2005 05 19 | G96 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 1995 02 07 | 691 | 0.2+ | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.3− | 0.4+ |
| 1996 03 27 | 691 | 0.6− | 0.7+ | 2005 05 19 | G96 | 0.8− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1996 03 27 | 691 | 0.6− | 0.2+ | 2005 06 08 | 691 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 1996 03 27 | 691 | 0.3− | 0.0 | 2005 06 08 | 691 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.4+ | 0.2+ |
| 1997 09 26 | 910 | 0.2+ | 0.2− | 2005 06 08 | 691 | 0.5+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 1997 09 26 | 910 | 0.1− | 0.3− | 2006 09 15 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1997 09 27 | 910 | 0.0 | 0.4− | 2006 09 15 | 644 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 644 | 0.3− | 0.6+ | 2006 10 21 | 703 | 1.0+ | 0.7+ |
| 2004 02 17 | 691 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.7+ | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2004 02 17 | 691 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.6− | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.2− |
| 2004 02 18 | 291 | 0.1− | 1.1+ | 2006 09 16 | 699 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.8+ |
| 2004 02 18 | 291 | 0.6− | 0.7+ | 2006 09 16 | 699 | 1.1− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2004 02 18 | 291 | 1.0− | 0.7+ | 2006 09 20 | 699 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.6+ | 1.3+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.5− | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2004 03 17 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 0.4+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 04 04 | G96 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 04 04 | G96 | 0.3− | 0.3+ | 2006 09 23 | 691 | 0.4− | 0.3+ | 2006 10 27 | 704 | 0.2− | 0.8+ |
| 2005 04 04 | G96 | 0.6− | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.3+ | 0.4+ |
| 2005 05 08 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 27 | 704 | 0.4− | 0.7+ |
| 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.0 | 1.0− |
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 11 13 | 703 | 0.4− | 0.6− |
| 2005 05 13 | 691 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.5+ | 2006 11 13 | 703 | 1.1− | 1.4− |
| 2005 05 13 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 13 | 703 | 0.7+ | 1.3− |
| 2005 05 13 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.7+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 05 14 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2005 05 14 | 644 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 1.0+ | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 05 17 | G96 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.3+ | 1.3− | | | | |

**(144305)∗ 2004 DT$_8$**

Discovered 2004 Feb. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.78213 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25826539 | $\omega$ | 215.67658 | | −0.86202636 | +0.50685623 | |
| $a$ | 2.4420727 | $\Omega$ | 354.77590 | | −0.45787519 | −0.78098928 | |
| $e$ | 0.1603932 | $i$ | 1.70223 | | −0.21739565 | −0.36490069 | |
| $P$ | 3.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.4+ | 0.3+ | 2004 03 01 | 333 | 1.1− | 0.1+ | 2005 07 28 | 644 | 0.0 | 0.4+ |
| 2000 02 03 | 704 | 0.7+ | 0.6+ | 2004 03 01 | 333 | 1.1− | 0.3+ | 2005 07 29 | 644 | 0.1+ | 0.6+ |
| 2000 02 03 | 704 | 1.3+ | 0.4+ | 2004 03 01 | 333 | 0.9− | 0.6+ | 2005 07 29 | 644 | 0.6+ | 0.5+ |
| 2000 02 03 | 704 | 0.4− | 1.4+ | 2004 03 01 | 333 | 1.0− | 0.1+ | 2005 07 29 | 644 | 0.0 | 0.7+ |
| 2001 06 28 | 644 | 0.1+ | 1.2+ | 2004 03 15 | 704 | 0.5− | 0.0 | 2005 08 04 | 644 | 0.2− | 1.2+ |
| 2001 06 28 | 644 | 0.2+ | 0.9+ | 2004 03 15 | 704 | 0.2− | 0.8− | 2005 08 04 | 644 | 0.3− | 0.7+ |
| 2001 06 28 | 644 | 0.4− | 1.1+ | 2004 03 15 | 704 | 0.1+ | 0.0 | 2005 08 04 | 644 | 0.1− | 0.7+ |
| 2001 07 28 | 608 | 1.3− | 0.3− | 2004 03 15 | 704 | 0.3+ | 0.0 | 2005 08 05 | 644 | 0.0 | 0.4+ |
| 2001 07 28 | 608 | 0.7− | 0.5+ | 2004 03 18 | 704 | (0.1− | 1.9+) | 2005 08 05 | 644 | 0.1− | 0.8+ |
| 2001 07 28 | 608 | 0.5− | 0.5− | 2004 03 18 | 704 | 1.1+ | 0.8+ | 2005 08 05 | 644 | 0.2− | 0.8+ |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.8− | 1.1+ | 2006 10 17 | G96 | 0.2− | 0.4+ |
| 2004 02 11 | 644 | 0.1− | 0.5+ | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 10 17 | G96 | 0.2− | 0.0 |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 2004 02 17 | 691 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.7+ | 0.3− |
| 2004 02 17 | 691 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.2+ |
| 2004 02 17 | 691 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2004 02 18 | 704 | 0.5+ | 0.8+ | 2004 03 27 | 704 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2004 02 18 | 704 | 0.7+ | 0.4+ | 2004 03 27 | 704 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2004 02 18 | 291 | 0.0 | 0.0 | 2004 03 31 | 691 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2004 02 18 | 704 | 0.4− | 1.0+ | 2004 03 31 | 691 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2004 02 18 | 704 | 0.3− | 0.7+ | 2004 03 31 | 691 | 0.5+ | 0.2− | 2006 11 14 | 691 | 0.3+ | 0.1− |
| 2004 02 18 | 704 | 0.3+ | 1.0+ | 2005 07 12 | G96 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2004 02 18 | 291 | 0.7+ | 0.2− | 2005 07 12 | G96 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2004 02 18 | 291 | 0.5+ | 0.3− | 2005 07 12 | G96 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2005 07 12 | G96 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2004 02 29 | 691 | 0.2− | 0.1+ | 2005 07 28 | 644 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2004 02 29 | 691 | 0.2− | 0.0 | 2005 07 28 | 644 | 0.5− | 0.2+ | 2006 11 22 | 691 | 0.4− | 0.5+ |

**(144306)∗ 2004 DC$_{11}$ = 2000 AQ$_{35}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61949)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.84992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26908139 | $\omega$ | 35.74492 | | −0.33997416 | −0.93897412 | |
| $a$ | 2.3761852 | $\Omega$ | 74.18120 | | +0.84968396 | −0.33056778 | |
| $e$ | 0.1458868 | $i$ | 3.12169 | | +0.40305675 | −0.09514490 | |
| $P$ | 3.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 02 | 910 | 0.3+ | 1.0+ | 2004 03 20 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.2− |
| 1997 05 02 | 910 | 0.3+ | 1.0+ | 2004 03 20 | 704 | 0.7+ | 0.9+ | 2006 10 23 | 683 | 1.3− | 0.8− |
| 1997 05 03 | 910 | 0.2+ | 0.5+ | 2004 03 20 | 704 | 0.5− | 0.3+ | 2006 10 23 | 683 | 0.9+ | 0.3+ |
| 2000 01 03 | 704 | 1.9− | 1.0− | 2004 03 20 | 704 | 0.2+ | 0.8− | 2006 10 23 | 683 | 0.9− | 0.5− |
| 2000 01 03 | 704 | 0.5+ | 1.4− | 2004 03 22 | 704 | 0.4+ | 0.4− | 2006 10 27 | 683 | 0.4− | 0.1+ |
| 2000 01 03 | 704 | 0.0 | 0.4− | 2004 03 22 | 704 | 0.2− | 1.3− | 2006 10 27 | 683 | (2.1− | 1.4+) |
| 2000 01 04 | 704 | 0.4− | 0.7− | 2004 03 22 | 704 | 0.3− | 0.1+ | 2006 10 27 | 683 | (1.5− | 0.5+) |
| 2000 01 04 | 704 | 0.7+ | 0.9+ | 2004 03 22 | 704 | 0.5− | 1.3− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 01 04 | 704 | 0.4− | 0.7− | 2004 03 22 | 704 | 0.6+ | 0.1− | 2006 10 27 | 691 | 0.4+ | 0.3+ |
| 2000 01 04 | 704 | 1.7+ | 1.0+ | 2004 03 26 | 703 | 1.3− | 1.0+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2004 02 15 | 703 | 1.2+ | 1.2− | 2004 03 26 | 703 | 0.6+ | 1.2+ | 2006 10 28 | 683 | (1.8− | 1.5+) |
| 2004 02 15 | 703 | 0.3+ | 0.1+ | 2004 03 26 | 703 | 0.6− | 0.1− | 2006 10 28 | 683 | (0.3+ | 1.8+) |
| 2004 02 15 | 703 | 0.7+ | 0.8− | 2004 03 26 | 703 | 0.3− | 0.7+ | 2006 10 28 | 683 | (2.1− | 2.0+) |
| 2004 02 15 | 703 | 0.3− | 0.3− | 2004 03 28 | 704 | 0.2+ | 1.0+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2004 02 16 | 291 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.2− | 1.4− | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2004 02 16 | 291 | 0.2− | 0.0 | 2004 03 28 | 704 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 291 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2004 02 18 | 704 | 0.3+ | 0.3+ | 2004 03 30 | 704 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2004 02 18 | 704 | 0.4− | 0.2+ | 2004 03 30 | 704 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 1.5+ | 1.0+ | 2004 03 30 | 704 | 0.6+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 0.4+ | 0.2+ | 2004 03 30 | 704 | 0.8− | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2004 02 18 | 704 | 0.5+ | 1.4+ | 2004 03 30 | 704 | 0.3+ | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2004 02 25 | 704 | 0.2− | 0.3− | 2004 04 09 | 644 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2004 02 25 | 704 | 0.1− | 0.2+ | 2004 04 09 | 644 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2004 02 25 | 704 | 0.3− | 0.4+ | 2004 04 09 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2004 02 25 | 704 | 0.0 | 0.2+ | 2004 07 15 | 807 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2004 02 26 | 704 | 0.1− | 0.0 | 2004 07 16 | 807 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2004 02 26 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.4+ |
| 2004 02 26 | 704 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.6+ |
| 2004 02 26 | 704 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2004 02 26 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.5+ | 1.0+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2004 02 27 | 012 | 0.2− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2004 02 27 | 012 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2004 02 27 | 012 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2004 02 27 | 012 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.3+ |
| 2004 02 27 | 012 | 0.6+ | 0.5− | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2004 03 15 | 704 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2004 03 15 | 704 | 0.4+ | 0.4− | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.2+ |
| 2004 03 15 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.1− | 2006 11 18 | 704 | (2.1+ | 1.0+) |
| 2004 03 15 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 18 | 704 | 1.0− | 1.1+ |
| 2004 03 15 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.7− | 0.9+ |
| 2004 03 16 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.9+ |
| 2004 03 16 | 704 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 21 | 704 | (0.6− | 1.6+) |
| 2004 03 16 | 704 | 0.5+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 21 | 704 | 0.1+ | 1.0+ |
| 2004 03 16 | 704 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 21 | 704 | 1.0+ | 1.2+ |
| 2004 03 16 | 704 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 2004 03 16 | 704 | 0.4+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | (0.2+ | 1.9+) |
| 2004 03 16 | 704 | (1.7+ | 0.2−) | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 26 | 704 | 0.2+ | 0.1− |
| 2004 03 16 | 704 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 26 | 704 | 0.6− | 1.2− |
| 2004 03 16 | 704 | 0.4− | 1.0− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 26 | 704 | 0.5− | 0.5− |
| 2004 03 16 | 704 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.2− | 1.1− |
| 2004 03 16 | 704 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.0 | 1.3− |
| 2004 03 16 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 683 | 1.1+ | 1.4− | 2006 11 28 | 704 | 0.2− | 0.7− |
| 2004 03 16 | 704 | 0.0 | 0.1+ | 2006 10 20 | 683 | 0.4+ | 0.6− | 2006 11 28 | 704 | 0.3+ | 0.4− |
| 2004 03 16 | 704 | 0.1− | 0.4− | 2006 10 20 | 683 | 0.9+ | 1.0+ | 2006 11 28 | 704 | 0.4− | 0.6+ |
| 2004 03 16 | 704 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.6− | 0.0 | | | | |
| 2004 03 20 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1− | | | | |

**(144307)∗ 2004 DL$_{11}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 178.06159 | | (2000.0) | | | |
| $n$ | 0.24032340 | $\omega$ | 278.37280 | | −0.78713729 | +0.61510578 |
| $a$ | 2.5621546 | $\Omega$ | 299.59935 | | −0.54335451 | −0.72637346 |
| $e$ | 0.1224078 | $i$ | 2.99199 | | −0.29185745 | −0.30663738 |
| $P$ | 4.10 | $H$ | 16.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.1− | 0.0 | 2005 07 07 | 691 | 0.0 | 0.5+ |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.1− | 2005 09 29 | G96 | 0.5+ | 0.6+ |
| 2000 03 03 | 645 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.7+ | 2005 09 29 | G96 | 0.4+ | 0.8+ |
| 2000 03 03 | 645 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.7+ | 0.7+ | 2005 09 29 | G96 | 0.2+ | 0.5+ |
| 2000 05 05 | 645 | 0.2− | 0.0 | 2004 03 18 | 704 | 1.1+ | 0.9+ | 2005 09 29 | G96 | 0.9− | 0.2+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2004 02 16 | 691 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.8+ | 2006 10 02 | G96 | 0.4− | 0.3− |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.6+ | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2004 02 16 | 691 | 0.4+ | 0.5+ | 2004 03 27 | 704 | (2.2+ | 0.9+) | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2004 02 18 | 704 | 0.0 | 0.4+ | 2004 03 27 | 704 | 1.3+ | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.2+ |
| 2004 02 18 | 704 | 0.9+ | 0.7+ | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.4+ |
| 2004 02 18 | 704 | 0.5+ | 1.2+ | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.2+ |
| 2004 02 18 | 704 | 1.2− | 1.4+ | 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2004 02 23 | 704 | 0.4− | 0.5+ | 2005 02 18 | 809 | 0.7− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2004 02 23 | 704 | 0.0 | 0.4+ | 2005 02 18 | 809 | 0.4− | 0.4+ | 2006 10 17 | 691 | 0.6− | 0.2+ |
| 2004 02 23 | 704 | 0.0 | 0.7+ | 2005 02 18 | 809 | 1.0− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2004 02 23 | 704 | 0.1+ | 0.5− | 2005 06 30 | 691 | 0.4− | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2004 02 23 | 704 | 0.9+ | 0.2− | 2005 06 30 | 691 | 0.3− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2004 02 26 | 333 | 1.0− | 0.7+ | 2005 06 30 | 691 | 0.4− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2004 02 26 | 333 | 0.8− | 0.6+ | 2005 07 03 | G96 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2004 02 26 | 333 | 0.3− | 0.7+ | 2005 07 03 | G96 | 0.4+ | 0.7− | 2006 11 01 | G96 | 0.2+ | 0.2+ |
| 2004 02 26 | 333 | 0.5− | 0.5− | 2005 07 03 | G96 | 0.3+ | 0.7− | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2004 03 15 | 704 | 0.8+ | 0.1+ | 2005 07 03 | G96 | 0.5+ | 0.3− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 704 | 0.3− | 0.2− | 2005 07 04 | 644 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2004 03 15 | 704 | 0.4− | 1.3+ | 2005 07 04 | 644 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 704 | (2.1+ | 0.9+) | 2005 07 04 | 644 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 1.0− |
| 2004 03 16 | 704 | (0.2+ | 1.7+) | 2005 07 07 | 691 | 0.2+ | 0.3− | | | | |
| 2004 03 16 | 704 | 1.3+ | 0.9+ | 2005 07 07 | 691 | 0.1+ | 0.3+ | | | | |

**(144308)∗ 2004 DV$_{11}$**

Discovered 2004 Feb. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.75832 | | (2000.0) | | | |
| $n$ | 0.26687429 | $\omega$ | 123.99695 | | +0.03939088 | −0.99917423 |
| $a$ | 2.3892681 | $\Omega$ | 323.74155 | | +0.91112627 | +0.04000883 |
| $e$ | 0.1497055 | $i$ | 0.96502 | | +0.41024052 | +0.00708183 |
| $P$ | 3.69 | $H$ | 16.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2+ | 0.2− | 2004 03 18 | 704 | 0.6− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.2+ |
| 1995 10 15 | 691 | 0.0 | 0.2− | 2004 03 30 | 691 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.7+ |
| 1995 10 15 | 691 | 0.1− | 0.4− | 2004 03 30 | 691 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.8+ |
| 1995 10 22 | 691 | 0.3+ | 0.1− | 2004 03 30 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 1.0+ |
| 1995 10 22 | 691 | 0.3− | 0.5+ | 2006 09 15 | 691 | 0.5− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1995 10 22 | 691 | (2.8+ | 3.7−) | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1995 11 16 | 691 | 0.3+ | 0.4− | 2006 09 15 | 691 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1995 11 16 | 691 | 0.1− | 0.4− | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.3− | 0.3+ |
| 2000 01 04 | 704 | 0.0 | 0.7+ | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2000 01 04 | 704 | 0.2− | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 0.2+ | 0.3− | 2006 09 28 | 691 | 0.4− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.7+ | 0.4− | 2006 09 28 | 691 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2000 01 04 | 704 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2002 08 30 | 291 | 0.4− | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 08 30 | 291 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.5+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2002 08 30 | 291 | (0.1− | 1.7+) | 2006 10 02 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2002 10 09 | 291 | 0.1− | 0.8+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2002 10 09 | 291 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2002 10 09 | 291 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.8− |
| 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 1.1− | 0.6+ |
| 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 11 | 703 | (1.6− | 0.2−) |
| 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.1− | 1.3− |
| 2004 02 18 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4− | 1.2− |
| 2004 02 18 | 704 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2004 02 18 | 704 | 1.0+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2004 02 18 | 704 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2004 02 26 | 704 | 0.8+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.7− |
| 2004 02 26 | 704 | 0.5− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2004 02 26 | 704 | 1.1+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.2− | 0.4− |
| 2004 02 29 | 291 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.2+ |
| 2004 02 29 | 291 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 02 29 | 291 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.6+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2004 03 18 | 704 | 0.5− | 0.0 | 2006 10 20 | H07 | (4.3− | 1.1−) | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 1.1− | 0.8+ | 2006 10 20 | H07 | (1.9− | 0.2+) | 2006 11 27 | G96 | 0.3+ | 0.6+ |
| 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 10 20 | H07 | 0.6− | 0.6+ | | | | |

**(144309)∗ 2004 DR$_{12}$**

Discovered 2004 Feb. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.58839 | | (2000.0) | | | |
| $n$ | 0.27725864 | $\omega$ | 328.83213 | | −0.37283239 | −0.92568665 |
| $a$ | 2.3292315 | $\Omega$ | 142.94927 | | +0.87171214 | −0.37307024 |
| $e$ | 0.1403019 | $i$ | 6.10063 | | +0.31798421 | −0.06263238 |
| $P$ | 3.55 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.7− | 0.3+ | 2004 03 15 | 704 | 0.3− | 1.1+ | 2004 03 22 | 704 | (0.4− | 2.0+) | |
| 1999 12 14 | 704 | 1.1− | 0.3+ | 2004 03 15 | 704 | 0.6+ | 0.2+ | 2004 03 22 | 704 | 0.5+ | 1.2+ | |
| 1999 12 14 | 704 | 1.4− | 1.2+ | 2004 03 15 | 704 | 0.4+ | 0.2+ | 2005 06 13 | 691 | 0.0 | 0.6+ | |
| 1999 12 14 | 704 | 0.5+ | 0.8+ | 2004 03 15 | 704 | 1.2+ | 0.9+ | 2005 06 13 | 691 | 0.1+ | 0.1− | |
| 1999 12 14 | 704 | 0.3+ | 1.3+ | 2004 03 15 | 704 | 1.0+ | 0.9+ | 2005 06 13 | 691 | 0.0 | 0.2+ | |
| 2000 01 05 | 704 | 1.5+ | 0.6− | 2004 03 17 | 691 | 0.1− | 0.1− | 2005 06 14 | 691 | 0.0 | 0.6+ | |
| 2000 01 05 | 704 | 1.1+ | 0.5+ | 2004 03 17 | 691 | 0.1− | 0.1− | 2005 06 14 | 691 | 0.3− | 0.3+ | |
| 2000 01 05 | 704 | 0.4− | 1.2− | 2004 03 17 | 691 | 0.3− | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.4+ | |
| 2004 02 16 | 703 | 0.3+ | 0.8+ | 2004 03 20 | 699 | 0.9− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.5+ | |
| 2004 02 16 | 703 | (2.3+ | 0.1−) | 2004 03 20 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.3+ | |
| 2004 02 16 | 703 | 0.4− | 0.3+ | 2004 03 20 | 699 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.5+ | |
| 2004 02 16 | 703 | 1.3+ | 0.3− | 2004 03 20 | 704 | (1.3+ | 1.6+) | 2006 11 15 | 703 | 0.8− | 0.8+ | |
| 2004 02 18 | 704 | 0.4− | 0.4− | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.5+ | |
| 2004 02 18 | 704 | 0.6+ | 0.5− | 2004 03 20 | 699 | 0.5− | 0.7− | 2006 11 15 | 703 | 0.2− | 0.8+ | |
| 2004 02 18 | 704 | 0.5+ | 0.3− | 2004 03 20 | 704 | 0.4− | 0.0 | 2006 11 15 | 703 | 0.1− | 0.2− | |
| 2004 02 23 | 704 | 0.6+ | 0.8+ | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.1− | |
| 2004 02 23 | 704 | 0.6+ | 0.1− | 2004 03 20 | 699 | 1.2− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.7+ | |
| 2004 02 23 | 704 | 0.5+ | 0.2− | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.5− | 0.1− | |
| 2004 02 23 | 704 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.3+ | | | | | |
| 2004 02 23 | 704 | 0.4− | 0.6− | 2004 03 22 | 704 | 0.7+ | 0.2+ | | | | | |

**(144310)∗ 2004 DZ$_{12}$**

Discovered 2004 Feb. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 259.51622 | | (2000.0) | | | |
| $n$ | 0.23332887 | $\omega$ | 345.77112 | | −0.49007833 | −0.86496803 |
| $a$ | 2.6131062 | $\Omega$ | 133.44431 | | +0.81358330 | −0.49834950 |
| $e$ | 0.1506150 | $i$ | 8.55071 | | +0.31289847 | −0.05897523 |
| $P$ | 4.22 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 22 | 691 | 0.4+ | 0.4+ | 2004 02 16 | 703 | 1.4+ | 0.1+ | 2004 03 21 | 608 | 0.7+ | 1.1+ | |
| 1996 04 22 | 691 | 0.1+ | 0.3+ | 2004 02 16 | 703 | (2.5+ | 1.0−) | 2004 03 21 | 608 | 0.3+ | 0.4+ | |
| 1996 04 22 | 691 | 0.0 | 0.5+ | 2004 02 16 | 703 | 0.3+ | 0.6+ | 2004 03 21 | 608 | 1.0+ | 0.4− | |
| 2000 04 12 | 691 | 0.2− | 0.5− | 2004 02 16 | 703 | (1.6+ | 0.9+) | 2004 03 23 | 704 | 0.4+ | 0.1+ | |
| 2000 04 12 | 691 | 0.3− | 0.4− | 2004 02 18 | 704 | 0.2+ | 0.5+ | 2004 03 23 | 704 | 0.2+ | 0.1+ | |
| 2000 04 12 | 691 | 0.3− | 0.5− | 2004 02 18 | 704 | 0.4+ | 0.9+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | |
| 2000 04 27 | 699 | 0.1+ | 0.2− | 2004 02 18 | 704 | 0.3− | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.3− | |
| 2000 04 27 | 699 | 0.3− | 0.4+ | 2004 02 18 | 608 | 0.5+ | 0.4− | 2004 03 23 | 704 | 0.6+ | 0.2+ | |
| 2000 04 27 | 699 | 0.4+ | 0.5+ | 2004 02 18 | 608 | 0.6+ | 0.8− | 2004 03 30 | 691 | 0.3− | 0.4+ | |
| 2000 04 27 | 699 | 0.4+ | 0.3− | 2004 02 18 | 608 | 0.1+ | 0.5− | 2004 03 30 | 691 | 0.4− | 0.3+ | |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2004 02 25 | 704 | 0.4+ | 0.3+ | 2004 03 30 | 691 | 0.4− | 0.5+ | |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2004 02 25 | 704 | 0.1+ | 0.2− | 2004 04 13 | 703 | (0.9+ | 2.1−) | |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2004 02 25 | 704 | 0.3− | 0.4+ | 2004 04 13 | 703 | 0.2+ | 0.4− | |
| 2002 10 10 | 645 | 0.1+ | 0.1+ | 2004 02 25 | 704 | 0.3+ | 0.3+ | 2004 04 13 | 703 | 1.4− | 1.3− | |
| 2002 10 15 | 644 | 0.4− | 0.4+ | 2004 02 25 | 704 | 0.1+ | 0.4− | 2004 04 13 | 703 | (1.6− | 1.4+) | |
| 2002 10 15 | 644 | 0.2− | 0.6+ | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.1− | |
| 2002 10 15 | 644 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.2− | |
| 2002 10 30 | 291 | 0.4− | 0.2+ | 2004 03 15 | 704 | 0.0 | 0.3− | 2006 09 26 | 703 | 1.3+ | 1.3− | |
| 2002 10 30 | 291 | 0.3− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.4− | 2006 09 26 | 703 | 0.1+ | 0.2− | |
| 2002 10 30 | 291 | 0.1− | 0.4+ | 2004 03 15 | 704 | (2.0+ | 0.2+) | 2006 10 11 | 644 | 0.1− | 0.7+ | |
| 2003 12 19 | 691 | 0.0 | 0.2− | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.3+ | |
| 2003 12 19 | 691 | 0.3+ | 0.3− | 2004 03 18 | 691 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.4+ | |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2004 03 18 | 691 | 0.0 | 0.0 | | | | | |

**(144311)∗ 2004 DJ$_{14}$ = 2001 SQ$_{187}$**

Discovered 2004 Feb. 16 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61954)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 208.88115 | | (2000.0) | | | |
| $n$ | 0.21483430 | $\omega$ | 112.18188 | | −0.96582532 | −0.25690599 |
| $a$ | 2.7610035 | $\Omega$ | 52.94813 | | +0.21911652 | −0.88009652 |
| $e$ | 0.0686265 | $i$ | 2.46767 | | +0.13845363 | −0.39928616 |
| $P$ | 4.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | (0.1+ | 2.7+) | 2004 03 16 | 333 | 0.0 | 0.7+ | 2004 04 12 | 699 | 0.1+ | 0.9+ | |
| 2001 09 19 | 704 | 0.5− | 1.0+ | 2004 03 16 | 704 | 0.4+ | 0.1− | 2004 04 12 | 699 | 0.4− | 0.6+ | |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2004 03 16 | 333 | 0.2− | 1.3+ | 2004 04 12 | 699 | 0.6+ | 1.2+ | |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2004 03 16 | 599 | 0.2− | 0.2− | 2004 04 12 | 703 | (1.8+ | 0.9+) | |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 03 16 | 599 | 0.2− | 0.2− | 2004 04 12 | 703 | 0.3− | 0.2+ | |
| 2001 09 21 | 704 | 0.6− | 1.1− | 2004 03 16 | 599 | 0.1− | 0.1− | 2004 04 12 | 703 | 1.5+ | 0.1+ | |
| 2001 09 21 | 704 | (0.3+ | 1.8+) | 2004 03 16 | 599 | 0.1− | 0.1− | 2004 04 12 | 703 | 1.2+ | 0.9+ | |
| 2001 09 21 | 704 | 0.1+ | 1.4+ | 2004 03 17 | 691 | 0.1+ | 0.1− | 2004 04 19 | 704 | 0.8+ | 1.4− | |
| 2002 12 05 | 704 | (1.1− | 2.0−) | 2004 03 17 | 691 | 0.1− | 0.2− | 2004 04 19 | 704 | 0.4− | 0.6− | |
| 2002 12 05 | 704 | 0.6+ | 1.2− | 2004 03 17 | 691 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.7+ | 0.2− | |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.0 | 0.1+ | 2004 04 25 | 691 | 0.2+ | 0.4+ | |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.3− | 0.4+ | 2004 04 25 | 691 | 0.0 | 0.2+ | |
| 2004 02 16 | 703 | 1.4+ | 0.7− | 2004 03 19 | 704 | 0.4+ | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.3+ | |
| 2004 02 16 | 703 | 0.1+ | 0.4+ | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | |
| 2004 02 16 | 703 | 0.3+ | 1.1− | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 691 | 0.4+ | 0.3+ | |
| 2004 02 16 | 703 | 0.5+ | 0.0 | 2004 03 20 | 699 | 0.6+ | 0.6+ | 2006 09 14 | 691 | 0.0 | 0.6+ | |
| 2004 02 19 | 704 | 0.2+ | 0.4− | 2004 03 20 | 699 | 0.6− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.4+ | |
| 2004 02 19 | 704 | 0.2− | 0.0 | 2004 03 20 | 699 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1− | 1.1+ | |
| 2004 02 19 | 704 | 0.0 | 0.4+ | 2004 03 20 | 699 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.4+ | |
| 2004 02 23 | 704 | 0.5+ | 0.5+ | 2004 03 22 | 704 | 0.7+ | 0.5− | 2006 09 25 | 691 | 0.3− | 0.1+ | |
| 2004 02 23 | 704 | 1.1+ | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.0 | |
| 2004 02 23 | 704 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.0 | |
| 2004 02 23 | 704 | 0.8+ | 1.0+ | 2004 03 22 | 704 | 0.0 | 0.7− | 2006 10 20 | 644 | 0.3+ | 0.2− | |
| 2004 02 23 | 704 | 0.2+ | 0.4+ | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.0 | |
| 2004 03 15 | 703 | 0.5− | 0.3− | 2004 03 28 | 704 | 0.9− | 0.6+ | 2006 10 20 | 644 | 0.5− | 0.3+ | |
| 2004 03 15 | 703 | (1.6− | 1.5−) | 2004 03 28 | 704 | 0.6− | 0.0 | 2006 10 22 | G96 | 0.4− | 0.4− | |
| 2004 03 15 | 703 | 0.8− | 0.5− | 2004 03 28 | 704 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.4− | |
| 2004 03 15 | 703 | 0.1+ | 0.1− | 2004 03 28 | 704 | 1.5− | 0.5+ | 2006 10 22 | G96 | 0.5− | 0.3− | |
| 2004 03 16 | 704 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.3− | 1.3+ | 2006 10 22 | G96 | 0.3− | 0.3− | |
| 2004 03 16 | 704 | (1.6+ | 0.6+) | 2004 03 31 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.2− | |
| 2004 03 16 | 704 | 0.5+ | 0.2+ | 2004 03 31 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.6− | |
| 2004 03 16 | 333 | 1.0− | 0.7+ | 2004 03 31 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3− | |
| 2004 03 16 | 704 | 0.3+ | 0.1− | 2004 04 12 | 699 | (0.6− | 1.7+) | 2006 11 16 | G96 | 0.0 | 0.4− | |

**(144312)∗ 2004 DO$_{14}$ = 2000 AJ$_{160}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61954)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.46561 | | (2000.0) | | | |
| $n$ | 0.26528072 | $\omega$ | 107.63258 | | −0.05764589 | −0.99828944 |
| $a$ | 2.3988270 | $\Omega$ | 345.66160 | | +0.90037681 | −0.04776607 |
| $e$ | 0.1530869 | $i$ | 2.25739 | | +0.43127550 | −0.03371354 |
| $P$ | 3.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.9− | 0.7− | 2004 02 26 | 704 | 0.5− | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.2+ | |
| 2000 01 03 | 704 | (0.5+ | 2.6−) | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.3+ | |
| 2000 01 03 | 704 | 0.8+ | 1.5− | 2004 02 26 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1+ | |
| 2000 01 04 | 704 | 0.1− | 0.4− | 2004 02 26 | 704 | 0.0 | 0.7+ | 2006 10 11 | 691 | 0.2− | 0.1− | |
| 2000 01 04 | 704 | 0.2− | 1.0− | 2004 02 29 | 291 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.4− | 0.2+ | |
| 2000 01 04 | 704 | 0.4+ | 0.5− | 2004 02 29 | 291 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.0 | |
| 2000 01 04 | 704 | 0.9− | 1.3− | 2004 02 29 | 291 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.1− | |
| 2000 01 04 | 704 | (0.8+ | 2.5−) | 2004 03 14 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.6+ | |
| 2002 08 12 | 807 | 0.8− | 0.5+ | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | |
| 2002 08 12 | 807 | 0.8− | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.1− | 0.4+ | |
| 2002 10 10 | 291 | 0.2+ | 0.2+ | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.1+ | |
| 2002 10 10 | 291 | 0.0 | 0.3+ | 2004 03 30 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.7− | 0.6+ | |
| 2002 10 10 | 291 | 0.1− | 0.2− | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 | | |
| 2004 02 16 | 691 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.0 | | |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.3− | 0.0 | | |
| 2004 02 19 | 704 | 0.8+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2004 02 19 | 704 | 0.6+ | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2004 02 19 | 704 | (1.8+ | 0.5+) | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.6− | | |
| 2004 02 19 | 704 | (1.6+ | 0.6+) | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2004 02 26 | 704 | 1.0+ | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.4+ | | | | | | |

**(144313)∗ 2004 DW$_{15}$ = 2000 FW$_{17}$**

Discovered 2004 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61954)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.33823 | | (2000.0) | | | |
| $n$ | 0.23578272 | $\omega$ | 206.12279 | | +0.97427433 | +0.15617505 |
| $a$ | 2.5949444 | $\Omega$ | 143.70610 | | −0.12644862 | +0.97559399 |
| $e$ | 0.1945044 | $i$ | 15.93154 | | −0.18654830 | +0.15435586 |
| $P$ | 4.18 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.5+ | 1.9− | 2004 03 15 | 691 | 0.0 | 0.1− | 2005 07 02 | 703 | 0.1+ | 0.7+ | | |
| 2000 03 29 | 704 | 0.2+ | 0.2− | 2004 03 15 | 691 | 0.1− | 0.2− | 2005 07 02 | 703 | 1.0+ | 0.5+ | | |
| 2000 03 29 | 704 | 0.1+ | 0.9+ | 2004 03 15 | 691 | 0.3+ | 0.1+ | 2005 07 02 | 703 | 0.2+ | 0.9+ | | |
| 2000 03 29 | 704 | 0.4− | 1.2− | 2004 03 17 | 691 | 0.0 | 0.3− | 2005 07 02 | 703 | 0.6− | 0.3+ | | |
| 2000 03 29 | 704 | 0.3+ | 0.4− | 2004 03 17 | 691 | 0.0 | 0.5− | 2005 07 12 | 703 | 0.3− | 0.3+ | | |
| 2000 04 03 | 704 | 0.3− | 0.1+ | 2004 03 17 | 691 | 0.1+ | 0.3− | 2005 07 12 | 703 | 0.4− | 0.1+ | | |
| 2000 04 03 | 704 | 0.3+ | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.2− | 2005 07 12 | 703 | 0.3− | 0.1− | | |
| 2000 04 03 | 704 | 0.6− | 0.3+ | 2004 03 19 | 644 | 0.3− | 0.6− | 2005 07 12 | 703 | 0.4− | 0.2− | | |
| 2000 04 03 | 704 | 0.2− | 0.6+ | 2004 03 19 | 644 | 0.1− | 0.2− | 2005 08 22 | 644 | 0.2+ | 0.3+ | | |
| 2000 04 28 | 699 | 1.3+ | 0.6+ | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2005 08 22 | 644 | 0.1− | 0.2+ | | |
| 2000 04 28 | 699 | 0.2− | 0.6− | 2004 03 23 | 704 | 0.2− | 0.4+ | 2005 08 22 | 644 | 0.2+ | 0.6+ | | |
| 2000 04 28 | 699 | 0.3+ | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 703 | 0.3+ | 0.8+ | | |
| 2000 04 28 | 699 | 0.2+ | 0.7+ | 2004 03 23 | 704 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.1− | 0.6+ | | |
| 2001 06 21 | 704 | 0.2− | 0.6+ | 2004 03 23 | 704 | 0.2− | 0.1− | 2006 10 23 | 703 | 0.2+ | 0.8+ | | |
| 2001 06 21 | 704 | 0.1− | 0.5+ | 2004 03 23 | 704 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.1− | 0.7+ | | |
| 2001 06 21 | 704 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.0 | 1.4+ | 2006 10 30 | 703 | 0.3− | 0.9+ | | |
| 2001 06 21 | 704 | 0.3+ | 1.2+ | 2004 03 23 | 704 | 0.2− | 0.6+ | 2006 10 30 | 703 | 0.8− | 0.4+ | | |
| 2003 01 01 | 704 | (1.6− | 0.4+) | 2004 03 23 | 704 | 0.0 | 0.4+ | 2006 10 30 | 703 | 0.3+ | 0.9+ | | |
| 2003 01 01 | 704 | 1.0− | 0.3+ | 2004 03 23 | 704 | 0.4− | 0.1+ | 2006 10 30 | 703 | 0.7+ | 0.5+ | | |
| 2003 01 01 | 704 | (1.7− | 1.1+) | 2004 03 25 | 704 | 0.1+ | 0.5+ | 2006 11 10 | 704 | (1.7+ | 0.6−) | | |
| 2003 01 01 | 704 | (1.6− | 0.5+) | 2004 03 25 | 704 | 0.4+ | 0.5+ | 2006 11 10 | 704 | 0.7+ | 0.8− | | |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2004 03 25 | 704 | 0.1− | 0.2+ | 2006 11 10 | 704 | (1.6+ | 0.2−) | | |
| 2003 12 19 | 691 | 0.0 | 0.2− | 2004 03 25 | 704 | 0.2+ | 0.6+ | 2006 11 10 | 704 | 0.6+ | 0.9− | | |
| 2003 12 19 | 691 | 0.3+ | 0.0 | 2004 03 25 | 704 | 0.4+ | 1.4+ | 2006 11 10 | 704 | 0.9+ | 0.6− | | |
| 2004 02 17 | 704 | 0.3+ | 0.6− | 2004 03 26 | 704 | 0.4− | 0.3+ | 2006 11 16 | 703 | 0.0 | 1.0+ | | |
| 2004 02 17 | 704 | 0.7+ | 0.2− | 2004 03 26 | 704 | 0.4+ | 1.0+ | 2006 11 16 | 703 | 0.1+ | 1.0+ | | |
| 2004 02 17 | 704 | 0.4+ | 0.5− | 2004 03 26 | 704 | 0.5+ | 0.3+ | 2006 11 16 | 703 | 0.3+ | 1.4+ | | |
| 2004 02 17 | 704 | 0.9+ | 0.0 | 2004 03 26 | 704 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.5+ | 0.7+ | | |
| 2004 02 17 | 703 | 0.5− | 0.3+ | 2004 03 26 | 704 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.8− | 0.1− | | |
| 2004 02 17 | 703 | (0.9− | 1.6−) | 2004 03 26 | 703 | (1.6+ | 1.1+) | 2006 11 22 | 704 | 0.2− | 0.1− | | |
| 2004 02 17 | 703 | 0.4+ | 0.1− | 2004 03 26 | 703 | (1.8+ | 0.1−) | 2006 11 22 | 704 | 0.4− | 0.0 | | |
| 2004 02 17 | 703 | 0.9− | 0.4+ | 2004 03 26 | 703 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.7− | 1.1− | | |
| 2004 02 17 | 608 | 0.5+ | 0.3− | 2004 03 26 | 703 | 0.6+ | 1.1+ | 2006 11 22 | 704 | 1.1− | 0.5− | | |
| 2004 02 17 | 608 | 0.0 | 0.1− | 2004 03 27 | 691 | 0.2− | 0.1− | 2006 11 22 | 703 | 0.0 | 0.4+ | | |
| 2004 02 17 | 608 | 0.5+ | 1.2− | 2004 03 27 | 691 | 0.2− | 0.4+ | 2006 11 22 | 703 | 0.1− | 0.6+ | | |
| 2004 02 19 | 704 | 0.9− | 0.6+ | 2004 03 27 | 691 | 0.4− | 0.0 | 2006 11 22 | 703 | 0.1+ | 0.2+ | | |
| 2004 02 19 | 704 | 0.9− | 0.4+ | 2005 06 06 | 704 | 0.2− | 0.9+ | 2006 11 22 | 703 | 0.4− | 0.6+ | | |
| 2004 02 19 | 704 | 0.0 | 0.1− | 2005 06 06 | 704 | 0.7+ | 0.9+ | 2006 12 01 | 703 | 0.4− | 0.1− | | |
| 2004 02 19 | 704 | 0.8+ | 0.1− | 2005 06 06 | 704 | (1.8+ | 0.2+) | 2006 12 01 | 703 | 0.7− | 0.6+ | | |
| 2004 03 15 | 704 | 0.0 | 0.3− | 2005 06 06 | 704 | 0.4− | 0.5+ | 2006 12 01 | 703 | 0.0 | 0.7+ | | |
| 2004 03 15 | 704 | 0.4+ | 0.2+ | 2005 06 24 | 644 | 0.3+ | 0.1+ | 2006 12 01 | 703 | 0.2− | 0.4+ | | |
| 2004 03 15 | 704 | 0.0 | 0.5+ | 2005 06 24 | 644 | 0.2+ | 0.0 | | | | | | |
| 2004 03 15 | 704 | 0.1− | 0.0 | 2005 06 24 | 644 | 0.2+ | 0.1+ | | | | | | |

**(144314)∗ 2004 DF$_{16}$ = 1993 FW$_{10}$**

Discovered 2004 Feb. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61955)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.03315 | | (2000.0) | | | |
| $n$ | 0.26807028 | $\omega$ | 50.71077 | | −0.91251750 | +0.40843271 |
| $a$ | 2.3821564 | $\Omega$ | 153.37371 | | −0.38890326 | −0.84946938 |
| $e$ | 0.1719730 | $i$ | 2.84420 | | −0.12675203 | −0.33404266 |
| $P$ | 3.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.4− | 0.7− | 2004 03 16 | 599 | 0.2− | 0.0 | 2004 04 12 | 703 | 1.0+ | 0.2+ | | |
| 1993 03 20 | 809 | 0.1− | 0.1− | 2004 03 16 | 599 | 0.1− | 0.1− | 2004 04 15 | 644 | 0.1− | 0.1+ | | |
| 1993 03 23 | 809 | (2.5− | 2.0+) | 2004 03 16 | 599 | 0.2− | 0.1+ | 2004 04 15 | 644 | 0.1− | 0.2+ | | |
| 1993 04 16 | 413 | (0.1− | 4.6−) | 2004 03 17 | 691 | 0.2− | 0.2− | 2004 04 15 | 644 | 0.0 | 0.1+ | | |
| 2000 02 03 | 704 | 0.4+ | 0.5+ | 2004 03 17 | 691 | 0.0 | 0.3− | 2004 04 15 | 699 | 0.2+ | 0.0 | | |
| 2000 02 03 | 704 | 0.7+ | 0.4+ | 2004 03 17 | 333 | 0.4+ | 0.2− | 2004 04 15 | 699 | 1.0− | 0.4+ | | |
| 2000 02 03 | 704 | 0.4− | 0.1− | 2004 03 17 | 333 | 0.0 | 0.3− | 2004 04 15 | 704 | 1.0+ | 0.2+ | | |
| 2000 02 03 | 704 | 0.1− | 0.3− | 2004 03 17 | 691 | 0.1− | 0.2− | 2004 04 15 | 699 | 0.8− | 0.2+ | | |
| 2004 02 17 | 291 | 0.6− | 0.2+ | 2004 03 17 | 683 | 0.4− | 0.3− | 2004 04 15 | 704 | 0.9+ | 0.1+ | | |
| 2004 02 17 | 291 | 0.0 | 0.2+ | 2004 03 17 | 333 | 0.1+ | 0.1+ | 2004 04 15 | 704 | 0.1+ | 0.1− | | |
| 2004 02 17 | 291 | 0.1− | 0.1+ | 2004 03 17 | 683 | (0.2+ | 1.8−) | 2004 04 15 | 699 | 0.6+ | 0.1− | | |
| 2004 02 19 | 704 | 0.1− | 1.1+ | 2004 03 17 | 683 | 1.2+ | 0.7− | 2004 04 15 | 704 | 0.2+ | 0.1− | | |
| 2004 02 19 | 704 | 1.1+ | 0.2+ | 2004 03 19 | 704 | 0.5+ | 0.5+ | 2004 04 15 | 704 | 0.1+ | 0.0 | | |
| 2004 02 19 | 704 | 0.2+ | 0.2− | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2004 04 19 | 704 | 0.8+ | 0.4− | | |
| 2004 02 19 | 704 | 0.6− | 0.2− | 2004 03 19 | 704 | 1.0+ | 0.5+ | 2004 04 19 | 704 | 1.1+ | 0.1+ | | |
| 2004 02 19 | 704 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.5+ | 0.7+ | 2004 04 19 | 704 | 0.4+ | 0.3− | | |
| 2004 02 26 | 695 | 0.2− | 0.1− | 2004 03 19 | 704 | 1.1+ | 0.3+ | 2004 04 19 | 704 | 0.3− | 1.0+ | | |
| 2004 02 26 | 695 | 0.1− | 0.2− | 2004 03 20 | 699 | 0.3− | 0.1+ | 2004 04 25 | 691 | 0.2− | 0.1− | | |
| 2004 03 12 | 644 | 0.2− | 0.3+ | 2004 03 20 | 699 | 0.0 | 0.1+ | 2004 04 25 | 691 | 0.2− | 0.1− | | |
| 2004 03 12 | 644 | 0.2− | 0.2+ | 2004 03 20 | 699 | 0.3− | 0.4− | 2004 04 25 | 691 | 0.2− | 0.1− | | |
| 2004 03 12 | 644 | 0.2− | 0.1+ | 2004 03 20 | 699 | 0.1− | 0.2− | 2004 05 21 | 704 | 0.5+ | 0.1− | | |
| 2004 03 15 | 683 | 0.7+ | 0.4+ | 2004 03 22 | 704 | 0.3− | 0.3− | 2004 05 21 | 704 | 0.5+ | 0.4+ | | |
| 2004 03 15 | 683 | 0.4+ | 0.6+ | 2004 03 22 | 704 | 0.2+ | 0.4− | 2004 05 21 | 704 | 0.1+ | 0.6+ | | |
| 2004 03 15 | 703 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.4− | 0.1+ | 2004 05 21 | 704 | 0.3+ | 0.5− | | |
| 2004 03 15 | 683 | 0.2+ | 1.3+ | 2004 03 22 | 704 | 0.4− | 0.3− | 2004 05 21 | 704 | 0.5+ | 0.4+ | | |
| 2004 03 15 | 703 | 0.5− | 0.8+ | 2004 03 22 | 704 | 0.1− | 0.3+ | 2005 08 30 | 691 | 0.1− | 0.7+ | | |
| 2004 03 15 | 703 | 1.0− | 0.5+ | 2004 03 28 | 704 | 0.7+ | 0.1− | 2005 08 30 | 691 | 0.4− | 0.5+ | | |
| 2004 03 15 | 703 | 0.3+ | 0.8+ | 2004 03 28 | 704 | 0.7+ | 0.4+ | 2005 08 30 | 691 | 0.3− | 0.6+ | | |
| 2004 03 15 | 333 | 0.1− | 0.4+ | 2004 03 28 | 704 | 0.3+ | 0.2− | 2005 09 01 | 691 | 0.3− | 0.5+ | | |
| 2004 03 15 | 333 | 0.3+ | 0.0 | 2004 03 28 | 704 | 0.7+ | 0.4+ | 2005 09 01 | 691 | 0.2− | 0.6+ | | |
| 2004 03 16 | 683 | 0.4+ | 0.2+ | 2004 03 28 | 704 | 0.6+ | 0.1+ | 2005 09 01 | 691 | 0.4− | 0.7+ | | |
| 2004 03 16 | 704 | 0.4+ | 0.2+ | 2004 03 31 | 691 | 0.1− | 0.3+ | 2005 09 14 | 691 | 0.5− | 1.2− | | |
| 2004 03 16 | 683 | 0.5− | 0.1+ | 2004 03 31 | 691 | 0.3− | 0.1+ | 2005 09 14 | 691 | 0.2+ | 0.0 | | |
| 2004 03 16 | 704 | 0.8+ | 0.6+ | 2004 03 31 | 691 | 0.1− | 0.2− | 2005 09 14 | 691 | 0.2+ | 0.3+ | | |
| 2004 03 16 | 704 | 0.2+ | 0.4− | 2004 04 10 | 644 | 0.1− | 0.1+ | 2005 09 27 | 691 | 0.1+ | 0.4+ | | |
| 2004 03 16 | 683 | 0.3− | 0.1− | 2004 04 10 | 644 | 0.2− | 0.0 | 2005 09 27 | 691 | 0.2+ | 0.3+ | | |
| 2004 03 16 | 704 | 0.3− | 0.4− | 2004 04 10 | 644 | 0.0 | 0.1+ | 2005 09 27 | 691 | 0.3+ | 0.3+ | | |
| 2004 03 16 | 704 | 0.4− | 0.2+ | 2004 04 12 | 699 | 0.6− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.1+ | | |
| 2004 03 16 | 333 | 0.2− | 0.1+ | 2004 04 12 | 699 | 0.2+ | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.1− | | |
| 2004 03 16 | 333 | 0.1+ | 0.1+ | 2004 04 12 | 699 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1− | | |
| 2004 03 16 | 608 | 0.4+ | 0.1+ | 2004 04 12 | 699 | 0.4+ | 0.5+ | 2006 11 16 | G96 | (1.5+ | 1.2+) | | |
| 2004 03 16 | 608 | 1.0+ | 0.4+ | 2004 04 12 | 703 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.4+ | | |
| 2004 03 16 | 608 | 0.1+ | 0.4+ | 2004 04 12 | 703 | 0.4− | 0.5+ | 2006 11 22 | 691 | 0.1− | 0.4+ | | |
| 2004 03 16 | 599 | 0.1− | 0.1− | 2004 04 12 | 703 | 0.6+ | 0.9+ | 2006 11 22 | 691 | 0.0 | 0.5+ | | |

**(144315)∗ 2004 DM$_{16}$**

Discovered 2004 Feb. 17 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.75876 | | (2000.0) | | | |
| $n$ | 0.23605920 | $\omega$ | 278.13021 | | +0.09677943 | −0.99282789 |
| $a$ | 2.5929179 | $\Omega$ | 165.73405 | | +0.98792488 | +0.08725021 |
| $e$ | 0.1782443 | $i$ | 16.54881 | | +0.12098834 | +0.08173241 |
| $P$ | 4.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 19 | 704 | 0.1− | 1.1− | 2004 03 16 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 0.4+ | 0.5+ |
| 1998 12 19 | 704 | 0.5− | 0.0 | 2004 03 16 | 704 | 0.8+ | 0.2− | 2006 09 18 | 703 | 0.5− | 0.9+ |
| 1998 12 19 | 704 | 0.5− | 0.2− | 2004 03 16 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.3+ |
| 1998 12 19 | 704 | 0.4− | 1.4+ | 2004 03 16 | 704 | 1.1+ | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.3+ |
| 2002 09 15 | 699 | 0.1+ | 1.4+ | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 1.0+ | 0.0 |
| 2002 09 15 | 699 | 0.5+ | 0.7+ | 2004 03 18 | 691 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.4+ |
| 2002 09 15 | 699 | 1.0+ | 0.5+ | 2004 03 18 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.9+ |
| 2002 09 15 | 699 | 0.4+ | 0.3− | 2004 03 21 | 691 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.8− | 0.5+ |
| 2002 10 10 | 644 | 0.1+ | 0.0 | 2004 03 21 | 691 | 0.2− | 0.0 | 2006 09 26 | 703 | 1.1− | 0.1− |
| 2002 10 10 | 644 | 0.0 | 0.3+ | 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2002 10 10 | 644 | 0.4+ | 0.2+ | 2004 03 22 | 699 | (1.9− | 0.7+) | 2006 09 26 | 703 | 0.5− | 0.8+ |
| 2002 10 10 | 644 | 0.0 | 0.3+ | 2004 03 22 | 699 | 1.2− | 0.6+ | 2006 10 02 | 703 | 0.7− | 0.2+ |
| 2002 10 10 | 644 | 0.1+ | 0.1− | 2004 03 22 | 699 | 0.4− | 0.2− | 2006 10 02 | 703 | (0.7− | 2.5+) |
| 2002 10 10 | 644 | 0.1− | 0.4+ | 2004 03 22 | 699 | 0.1− | 0.5+ | 2006 10 02 | 703 | (2.9− | 0.3+) |
| 2002 11 05 | 644 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.9+ | 0.6+ | 2006 10 02 | 703 | 0.9− | 0.3+ |
| 2002 11 05 | 644 | 0.3+ | 0.0 | 2004 03 23 | 704 | 1.2+ | 0.3+ | 2006 10 02 | 703 | 0.2+ | 0.4+ |
| 2002 11 05 | 644 | 0.6− | 0.0 | 2004 03 23 | 704 | 0.7− | 0.4+ | 2006 10 02 | 703 | 0.1+ | 0.5+ |
| 2002 12 06 | 644 | 0.7+ | 0.0 | 2004 03 23 | 704 | 0.9− | 0.4+ | 2006 10 02 | 703 | 0.0 | 0.4+ |
| 2002 12 06 | 644 | 0.2+ | 0.4+ | 2004 03 23 | 704 | (1.7− | 0.6+) | 2006 10 02 | 703 | 0.4+ | 0.3− |
| 2002 12 06 | 644 | 0.2− | 0.4− | 2006 08 19 | 699 | (2.8− | 0.0 ) | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 2004 02 17 | 608 | 0.3+ | 0.6− | 2006 08 19 | 699 | 1.5− | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.1+ |
| 2004 02 17 | 608 | 0.2− | 0.5+ | 2006 08 19 | 699 | 0.2+ | 1.2+ | 2006 10 21 | 703 | 0.7+ | 0.6− |
| 2004 02 17 | 608 | 0.2+ | 0.0 | 2006 08 19 | 699 | 1.0− | 0.5− | 2006 10 21 | 703 | (2.8− | 0.8−) |
| 2004 02 19 | 704 | 0.2+ | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2004 02 19 | 704 | 0.3+ | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2004 02 19 | 704 | (1.7+ | 1.1+) | 2006 08 23 | 644 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2004 02 19 | 704 | 0.4− | 0.5− | 2006 09 12 | 703 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.5− | 0.2+ |
| 2004 02 25 | 704 | 0.0 | 0.5+ | 2006 09 12 | 703 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.8− | 0.2− |
| 2004 02 25 | 704 | 0.8+ | 0.4+ | 2006 09 12 | 703 | 0.6− | 0.1− | 2006 10 28 | 703 | 0.9+ | 1.3− |
| 2004 02 25 | 704 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.1+ | 1.0− | 2006 10 28 | 703 | 0.1− | 0.2− |

**(144316)∗ 2004 DX$_{16}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.63558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27956323 | $\omega$ | 95.74649 | | +0.34712822 | | −0.93735966 |
| $a$ | 2.3164131 | $\Omega$ | 333.88237 | | +0.83193373 | | +0.32220992 |
| $e$ | 0.2004657 | $i$ | 3.81719 | | +0.43288366 | | +0.13242978 |
| $P$ | 3.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.7− | 1.1− | 2004 02 19 | 704 | (0.6+ | 3.4−) | 2006 10 21 | 691 | 0.3− | 0.0 |
| 1999 11 03 | 704 | 0.4+ | 0.0 | 2004 02 19 | 704 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 1999 11 03 | 704 | 0.3+ | 0.4− | 2004 02 26 | 704 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3− |
| 1999 11 03 | 704 | 0.9+ | 0.8− | 2004 02 26 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4− |
| 1999 11 03 | 704 | 0.1+ | 0.5− | 2004 02 26 | 704 | 0.9− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2002 07 18 | 644 | 0.0 | 0.9+ | 2004 02 26 | 704 | 0.6− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 07 18 | 644 | 0.3− | 0.7+ | 2004 02 26 | 704 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 07 18 | 644 | 0.3− | 1.0+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2004 03 17 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.3− | 0.7+ |
| 2002 08 08 | 644 | 0.2− | 0.7+ | 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.4+ | 0.3+ |
| 2002 08 08 | 644 | 0.7− | 0.7+ | 2004 03 26 | 691 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.9− | 0.2− |
| 2004 01 24 | 704 | 1.2+ | 1.3+ | 2004 03 26 | 691 | 0.4− | 0.0 | 2006 11 14 | 703 | 1.0+ | 0.1+ |
| 2004 01 24 | 704 | 0.3+ | 0.7+ | 2004 03 26 | 691 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 2004 01 24 | 704 | 0.2− | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.3− | 0.1− |
| 2004 02 18 | 704 | 0.5− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2004 02 18 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2004 02 19 | 704 | (0.1− | 3.2−) | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.9+ | 0.6+ |
| 2004 02 19 | 704 | 0.4+ | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2004 02 19 | 704 | (1.7+ | 2.8−) | 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2004 02 19 | 704 | 0.7+ | 0.1− | 2006 10 19 | 644 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8− | 1.1+ |
| 2004 02 19 | 704 | (0.3− | 2.7−) | 2006 10 20 | 644 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2004 02 19 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2004 02 19 | 704 | (0.8+ | 2.9−) | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.7− | 1.0− |
| 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.8− | 0.8+ |

**(144317)∗ 2004 DT$_{17}$ = 2001 PV$_{39}$**

Discovered 2004 Feb. 18 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61956)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.16190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17137847 | $\omega$ | 215.75460 | | −0.65700349 | | −0.73541627 |
| $a$ | 3.2099520 | $\Omega$ | 275.93853 | | +0.72463508 | | −0.55534681 |
| $e$ | 0.0646784 | $i$ | 9.59916 | | +0.20796734 | | −0.38826902 |
| $P$ | 5.75 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.9− | 0.8+ | 2002 12 06 | 704 | (2.2+ | 0.6+) | 2004 02 18 | 691 | 0.1− | 0.2+ |
| 2001 08 11 | 644 | 0.8− | 0.8+ | 2002 12 11 | 704 | 0.8+ | 0.7− | 2004 02 18 | 691 | 0.0 | 0.2+ |
| 2001 08 11 | 644 | 0.3− | 0.4+ | 2002 12 11 | 704 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.4+ | 0.1+ |
| 2001 08 16 | 644 | 0.0 | 1.1+ | 2002 12 11 | 704 | 0.0 | 0.7− | 2004 02 19 | 704 | 0.5+ | 0.5+ |
| 2001 08 16 | 644 | 0.3+ | 1.1+ | 2002 12 11 | 704 | 0.4+ | 0.4− | 2004 02 19 | 704 | 0.4− | 0.0 |
| 2001 08 16 | 644 | 0.5+ | 0.6+ | 2002 12 11 | 704 | 0.1+ | 0.5− | 2004 02 19 | 704 | 0.9+ | 0.4+ |
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2002 12 31 | 704 | 1.1− | 1.0+ | 2004 02 19 | 704 | 0.6− | 0.7+ |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2002 12 31 | 704 | 0.2+ | 0.2− | 2004 03 16 | 704 | 0.8+ | 0.6+ |
| 2001 09 16 | 704 | 0.9− | 0.1+ | 2002 12 31 | 704 | 0.5+ | 0.9+ | 2004 03 16 | 704 | 0.6− | 0.4− |
| 2001 09 16 | 704 | 0.8− | 0.1− | 2002 12 31 | 704 | 0.1− | 0.7+ | 2004 03 16 | 704 | 0.2− | 0.6+ |
| 2001 09 16 | 704 | 0.3− | 0.8+ | 2002 12 31 | 704 | 0.5+ | 0.6+ | 2004 03 16 | 704 | 0.6− | 0.9+ |
| 2001 09 25 | 704 | 0.7+ | 0.6+ | 2003 12 22 | 704 | 0.4+ | 0.1+ | 2004 03 16 | 704 | 0.0 | 1.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.1− | 2003 12 22 | 704 | 0.3+ | 0.7+ | 2005 05 19 | 644 | 0.2+ | 0.4+ |
| 2001 09 25 | 704 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.9+ | 0.4− | 2005 05 19 | 644 | 0.4+ | 0.9+ |
| 2002 11 12 | 704 | 0.3− | 0.0 | 2004 01 14 | 644 | 0.1+ | 0.0 | 2005 05 19 | 644 | 0.2+ | 0.5+ |
| 2002 11 12 | 704 | 0.2+ | 0.7+ | 2004 01 14 | 644 | 0.3+ | 0.3+ | 2006 05 30 | G96 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.6+ | 0.4+ | 2004 01 14 | 644 | 0.1− | 0.1+ | 2006 05 30 | G96 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.3+ | 1.5+ | 2004 01 29 | 704 | 0.6+ | 0.2+ | 2006 05 30 | G96 | 0.0 | 0.7+ |
| 2002 12 06 | 704 | 0.6− | 0.6− | 2004 01 29 | 704 | 0.8+ | 0.3+ | 2006 05 30 | G96 | 0.4− | 0.9+ |
| 2002 12 06 | 704 | 0.6− | 0.5− | 2004 01 29 | 704 | 0.9+ | 0.0 | 2006 07 23 | G96 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 0.4− | 0.7− | 2004 01 29 | 704 | 0.5+ | 0.1− | 2006 07 23 | G96 | 0.4− | 0.5+ |
| 2002 12 06 | 704 | 0.5− | 0.1+ | 2004 02 18 | 691 | 0.2− | 0.2+ | 2006 07 23 | G96 | 0.3− | 0.5+ |

**(144318)∗ 2004 DL$_{18}$ = 2000 AX$_{249}$**

Discovered 2004 Feb. 18 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 61957)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.17408 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27264537 | $\omega$ | 225.71209 | | −0.72410441 | | −0.68341000 |
| $a$ | 2.3554323 | $\Omega$ | 270.93992 | | +0.65627754 | | −0.64134919 |
| $e$ | 0.1591741 | $i$ | 5.32907 | | +0.21206742 | | −0.34874344 |
| $P$ | 3.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.2+ | 0.1− | 2004 02 18 | 608 | 1.1+ | 0.6− | 2006 10 22 | 644 | 0.6+ | 0.8+ |
| 1999 12 07 | 704 | 0.1− | 0.1+ | 2004 02 19 | 704 | 0.2− | 1.0+ | 2006 10 27 | 703 | 0.6− | 0.2+ |
| 1999 12 07 | 704 | 0.4− | 0.5− | 2004 02 19 | 704 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.8− | 1.0− |
| 2000 01 05 | 704 | 0.6− | 0.9− | 2004 02 19 | 704 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2000 01 05 | 704 | 0.2+ | 0.1− | 2004 02 19 | 704 | 0.6+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2000 01 05 | 704 | 0.4+ | 1.6− | 2004 02 19 | 704 | 0.6− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.7+ |
| 2000 01 05 | 704 | 0.2+ | 0.9− | 2004 03 16 | 704 | (2.7+ | 0.5−) | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2000 01 05 | 704 | 0.0 | 1.1− | 2004 03 16 | 704 | 1.0+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2000 01 12 | 691 | 0.0 | 0.2+ | 2004 03 16 | 704 | (1.9+ | 0.6+) | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2000 01 12 | 691 | 0.1+ | 0.2+ | 2005 07 05 | 691 | 0.3− | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2000 01 12 | 691 | 0.1− | 0.1+ | 2005 07 05 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2004 01 28 | 704 | 0.2+ | 0.9+ | 2005 07 05 | 691 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 01 28 | 704 | 0.5+ | 0.7+ | 2006 10 04 | G96 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2004 01 28 | 704 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2004 01 28 | 704 | 0.5− | 1.0+ | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 01 28 | 704 | 0.1− | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 703 | 1.0− | 0.3+ | 2006 10 19 | 703 | 0.6+ | 1.3+ | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2004 02 17 | 703 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2004 02 17 | 703 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.9− | 0.9+ |
| 2004 02 17 | 703 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 1.3+ | 1.0+ | 2006 11 19 | 704 | 0.1− | 0.7+ |
| 2004 02 18 | 608 | 0.7+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.6− |
| 2004 02 18 | 608 | 1.0+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.5+ | | | | |

**(144319)∗ 2004 DR$_{18}$**

Discovered 2004 Feb. 18 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.49932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21747414 | $\omega$ | 85.35774 | | −0.99806963 | +0.01462035 | |
| $a$ | 2.7386149 | $\Omega$ | 95.47148 | | −0.03715785 | −0.91932504 | |
| $e$ | 0.0767959 | $i$ | 3.47631 | | +0.04976260 | −0.39322731 | |
| $P$ | 4.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 691 | 0.5− | 0.3+ | 2004 03 15 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.7+ | 0.1+ |
| 1999 01 10 | 691 | (1.7− | 5.9−) | 2004 03 15 | 704 | 0.3+ | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.8+ |
| 1999 01 10 | 691 | 0.4− | 0.5− | 2004 03 15 | 333 | 0.2− | 0.4− | 2004 03 28 | 703 | 0.2+ | 1.0+ |
| 1999 01 19 | 691 | 0.3+ | 0.6− | 2004 03 15 | 333 | 0.3+ | 0.4− | 2004 03 28 | 703 | 0.2− | 0.1+ |
| 1999 01 19 | 691 | 0.2− | 0.7− | 2004 03 15 | 333 | 0.4+ | 0.5− | 2004 03 28 | 703 | 0.5+ | 0.1+ |
| 1999 01 19 | 691 | 0.3+ | 0.6− | 2004 03 16 | 704 | 0.5+ | 0.0 | 2004 03 28 | 703 | (1.8− | 0.8+) |
| 2000 05 28 | 704 | 1.2− | 0.5+ | 2004 03 16 | 704 | 0.2− | 0.6+ | 2004 04 10 | 644 | 0.4+ | 0.4+ |
| 2000 05 28 | 704 | 0.6− | 0.5− | 2004 03 16 | 704 | 0.3+ | 0.6+ | 2004 04 10 | 644 | 0.1+ | 0.5+ |
| 2000 05 28 | 704 | 0.2+ | 1.3− | 2004 03 16 | 704 | 1.0+ | 0.2+ | 2004 04 10 | 644 | 0.2+ | 0.5+ |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2004 03 16 | 704 | 0.3− | 0.6+ | 2004 04 12 | 703 | 0.0 | 0.5+ |
| 2002 12 05 | 704 | 0.9+ | 0.3− | 2004 03 16 | 333 | 0.4− | 0.0 | 2004 04 12 | 703 | 0.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2004 03 16 | 333 | 0.2− | 0.1+ | 2004 04 12 | 703 | 0.7− | 0.8− |
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 333 | 0.1+ | 0.1+ | 2004 04 12 | 703 | 0.0 | 0.6+ |
| 2002 12 05 | 704 | 0.3+ | 1.1+ | 2004 03 17 | 704 | 0.1+ | 0.4+ | 2004 04 15 | 704 | (0.4+ | 1.8+) |
| 2003 01 27 | 291 | 0.2− | 0.5+ | 2004 03 17 | 704 | 0.5− | 0.2+ | 2004 04 15 | 704 | 0.5+ | 0.6+ |
| 2003 01 27 | 291 | 0.2− | 0.4+ | 2004 03 17 | 704 | 0.1+ | 0.2+ | 2004 04 15 | 704 | 0.5+ | 0.4+ |
| 2003 01 27 | 291 | 0.0 | 0.4+ | 2004 03 17 | 704 | 0.4− | 0.8+ | 2004 04 15 | 704 | 0.0 | 0.6+ |
| 2004 02 18 | 608 | 0.6+ | 1.0− | 2004 03 17 | 704 | 0.7− | 0.0 | 2005 06 08 | 691 | 0.1+ | 0.1− |
| 2004 02 18 | 608 | 0.7+ | 0.6− | 2004 03 17 | 704 | 0.3+ | 0.0 | 2005 06 08 | 691 | 0.0 | 0.0 |
| 2004 02 18 | 608 | 0.4+ | 0.8− | 2004 03 17 | 704 | 0.2+ | 1.2+ | 2005 06 08 | 691 | 0.2+ | 0.2+ |
| 2004 02 19 | 704 | 0.5− | 0.1+ | 2004 03 17 | 704 | 0.3+ | 0.5+ | 2005 06 16 | 691 | 0.0 | 1.1+ |
| 2004 02 19 | 704 | 0.3+ | 0.2+ | 2004 03 17 | 704 | 0.0 | 0.5+ | 2005 06 16 | 691 | 0.0 | 0.0 |
| 2004 02 19 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2005 06 16 | 691 | 0.1+ | 0.2− |
| 2004 02 19 | 704 | 0.1− | 0.3+ | 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.5+ |
| 2004 02 19 | 704 | 0.3+ | 0.3+ | 2004 03 18 | 691 | 0.6− | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.4+ |
| 2004 02 23 | 704 | (1.8− | 1.2+) | 2004 03 19 | 704 | 1.0+ | 0.6− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2004 02 23 | 704 | (0.6+ | 1.6+) | 2004 03 19 | 704 | 0.8+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2004 02 23 | 704 | 0.5− | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 2004 02 23 | 704 | (1.7− | 0.9+) | 2004 03 19 | 704 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2004 02 23 | 704 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 10 15 | 703 | (1.7− | 0.4−) |
| 2004 02 25 | 704 | (1.6+ | 0.6−) | 2004 03 20 | 699 | 0.2− | 0.4− | 2006 10 15 | 703 | (1.6− | 0.8+) |
| 2004 02 25 | 704 | 0.3− | 0.9− | 2004 03 20 | 699 | 1.3− | 0.4− | 2006 10 15 | 703 | 1.4− | 0.7+ |
| 2004 02 25 | 704 | 0.5+ | 0.3− | 2004 03 20 | 699 | 1.0− | 1.1− | 2006 10 15 | 703 | 0.2+ | 1.0− |
| 2004 02 25 | 704 | 0.5+ | 0.5+ | 2004 03 20 | 699 | 0.6− | 0.5− | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2004 02 25 | 704 | 0.7+ | 0.1− | 2004 03 21 | 699 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2004 02 27 | 097 | 0.4+ | 0.1+ | 2004 03 21 | 704 | (1.6+ | 0.8+) | 2006 10 20 | 644 | 0.0 | 0.9+ |
| 2004 02 27 | 097 | 0.3+ | 0.1+ | 2004 03 21 | 704 | 1.3+ | 1.5+ | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2004 03 15 | 703 | 0.2+ | 1.0+ | 2004 03 21 | 704 | 0.4+ | 0.8+ | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2004 03 15 | 704 | 0.2+ | 0.3+ | 2004 03 21 | 699 | 0.2− | 1.0+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 0.5− | 1.1+ | 2004 03 21 | 704 | 0.7+ | 0.4+ | 2006 10 22 | G96 | 0.5− | 0.1+ |
| 2004 03 15 | 704 | 0.5+ | 0.2− | 2004 03 21 | 699 | 0.6− | 0.9− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2004 03 15 | 703 | 0.5− | 0.7+ | 2004 03 21 | 699 | 0.3− | 0.5+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 704 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 703 | 0.1− | 1.2+ | 2004 03 22 | 704 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.2+ |

**(144320)∗ 2004 DS$_{18}$**

Discovered 2004 Feb. 18 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.27893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24004213 | $\omega$ | 320.59927 | | −0.56902108 | −0.82186059 | |
| $a$ | 2.5641558 | $\Omega$ | 164.02152 | | +0.77749707 | −0.54861929 | |
| $e$ | 0.1065971 | $i$ | 5.74832 | | +0.26779342 | −0.15349931 | |
| $P$ | 4.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 09 | 691 | 0.3+ | 0.3− | 2004 03 16 | 704 | 0.6− | 0.1− | 2004 03 29 | 691 | 0.0 | 0.0 |
| 1996 05 09 | 691 | 0.3+ | 0.1− | 2004 03 16 | 704 | 1.1+ | 0.8− | 2004 04 19 | 704 | 0.2+ | 0.6+ |
| 1996 05 09 | 691 | 0.7+ | 0.0 | 2004 03 16 | 704 | 0.3+ | 0.8+ | 2004 04 19 | 704 | 0.6+ | 0.3+ |
| 2000 04 06 | 699 | (3.2+ | 0.7+) | 2004 03 17 | 683 | 1.2− | 0.7+ | 2004 04 19 | 704 | 0.1− | 0.1+ |
| 2000 04 06 | 699 | 0.3− | 0.2+ | 2004 03 17 | 683 | (0.8− | 1.5+) | 2005 06 04 | 691 | 0.1− | 0.4+ |
| 2000 04 06 | 699 | 0.0 | 0.3+ | 2004 03 17 | 683 | (0.0 | 2.2+) | 2005 06 04 | 691 | 0.2+ | 0.3− |
| 2000 04 06 | 699 | 0.7+ | 0.3− | 2004 03 17 | 691 | 0.0 | 0.4+ | 2005 06 04 | 691 | 0.1− | 0.5+ |
| 2000 05 04 | 645 | 0.3− | 0.1− | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2005 06 09 | 691 | 0.5+ | 0.2− |
| 2000 05 04 | 645 | 0.3− | 0.1− | 2004 03 17 | 691 | 0.0 | 0.4+ | 2005 06 09 | 691 | 0.3− | 0.5+ |
| 2004 02 18 | 608 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.6+ | 0.1+ | 2005 06 09 | 691 | 0.2− | 0.3+ |
| 2004 02 18 | 608 | 0.3− | 0.8+ | 2004 03 19 | 704 | 1.1+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2004 02 18 | 608 | 1.1+ | 0.9+ | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2004 02 19 | 704 | 0.3+ | 0.1− | 2004 03 19 | 704 | 0.7+ | 0.9+ | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2004 02 19 | 704 | 1.5+ | 0.2+ | 2004 03 22 | 704 | 1.1+ | 0.7− | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2004 02 19 | 704 | 0.9+ | 0.6− | 2004 03 22 | 704 | (1.8+ | 3.2+) | 2006 10 21 | 703 | 1.1+ | 0.6+ |
| 2004 02 26 | 704 | 0.2+ | 0.1+ | 2004 03 22 | 704 | (2.3+ | 1.2−) | 2006 10 21 | 703 | 0.9+ | 0.2− |
| 2004 02 26 | 704 | 0.7+ | 0.6+ | 2004 03 22 | 704 | (0.6+ | 2.8+) | 2006 10 21 | 703 | 0.3+ | 0.9− |
| 2004 02 26 | 704 | 0.1+ | 0.3− | 2004 03 22 | 704 | 0.9+ | 0.4− | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2004 02 26 | 704 | 1.1+ | 0.7− | 2004 03 22 | 704 | (0.9+ | 2.6+) | 2006 10 21 | 644 | 0.6− | 0.7+ |
| 2004 02 26 | 695 | 0.2− | 0.0 | 2004 03 22 | 704 | 1.3+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2004 02 26 | 695 | 0.2− | 0.1+ | 2004 03 22 | 704 | (1.1+ | 2.6+) | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2004 03 12 | 644 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.4+ | 0.7− | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2004 03 12 | 644 | 0.1− | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.2+ |
| 2004 03 12 | 644 | 0.2+ | 0.5+ | 2004 03 28 | 704 | 0.1+ | 0.6− | 2006 10 22 | G96 | 0.6− | 0.1+ |
| 2004 03 15 | 703 | 0.1− | 0.9+ | 2004 03 28 | 704 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 0.0 | 0.5− | 2004 03 28 | 704 | 0.7+ | 0.1− | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2004 03 15 | 703 | (2.6− | 0.5+) | 2004 03 28 | 704 | 0.6− | 0.3− | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2004 03 15 | 703 | 0.0 | 0.0 | 2004 03 29 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 03 16 | 704 | 0.4+ | 0.6+ | 2004 03 29 | 691 | 1.4− | 0.8− | 2006 11 23 | G96 | 0.2− | 0.2− |

**(144321)∗ 2004 DJ$_{19}$ = 2002 UU$_{54}$**

Discovered 2004 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.81677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23697690 | $\omega$ | 345.42510 | | −0.55541411 | −0.82861835 | |
| $a$ | 2.5862195 | $\Omega$ | 138.25011 | | +0.77309753 | −0.54555200 | |
| $e$ | 0.0554273 | $i$ | 6.03851 | | +0.30632559 | −0.12555731 | |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 1.1+ | 0.1+ | 2004 02 17 | 704 | (1.6− | 0.7+) | 2004 03 25 | 704 | 0.1− | 1.4+ |
| 2000 03 11 | 699 | 0.3− | 0.4+ | 2004 02 17 | 704 | 1.1− | 0.3− | 2006 09 18 | 703 | 0.5+ | 0.4+ |
| 2000 03 11 | 699 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.2+ | 0.5+ |
| 2000 03 11 | 699 | 0.3− | 0.3− | 2004 02 22 | 691 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 2000 03 12 | 704 | (3.2− | 0.8−) | 2004 02 22 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.3− |
| 2000 03 12 | 704 | 0.5− | 0.5+ | 2004 02 22 | 691 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.5+ | 0.3− |
| 2000 03 12 | 704 | 0.2+ | 0.7+ | 2004 02 23 | 704 | 0.1+ | 0.4− | 2006 09 18 | 699 | (0.2+ | 2.5+) |
| 2002 10 07 | 608 | 0.3− | 1.1+ | 2004 02 23 | 704 | 1.4+ | 0.4− | 2006 09 18 | 699 | (1.6+ | 0.5+) |
| 2002 10 07 | 608 | 0.1+ | 0.4+ | 2004 02 23 | 704 | (1.6+ | 0.1−) | 2006 09 18 | 699 | 1.0+ | 0.0 |
| 2002 10 07 | 608 | 0.4− | 1.0+ | 2004 02 23 | 704 | (2.1+ | 0.7−) | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2002 10 29 | 645 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.9+ | 0.3− | 2006 10 02 | G96 | 0.4− | 0.0 |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 02 26 | 704 | 1.0+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 02 26 | 704 | 1.2+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 02 26 | 704 | (1.8+ | 0.1+) | 2006 10 16 | 703 | 0.8− | 0.6− |
| 2002 10 31 | 704 | (0.9+ | 2.3+) | 2004 03 10 | 644 | 0.3− | 0.0 | 2006 10 16 | 703 | (2.6− | 0.8−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.4− | 1.0+ | 2004 03 10 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.0 | | |
| 2002 10 31 | 704 | 0.8+ | 1.3+ | 2004 03 10 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.2− | 0.5+ | | |
| 2004 01 23 | 699 | 0.0 | 0.8− | 2004 03 17 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.5− | 0.8+ | | |
| 2004 01 23 | 699 | 1.5+ | 0.8+ | 2004 03 17 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2004 01 23 | 699 | 0.6− | 0.4+ | 2004 03 17 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2004 01 23 | 699 | (0.3+ | 1.7−) | 2004 03 19 | 704 | 0.7− | 0.0 | 2006 10 22 | 703 | 1.4− | 0.9+ | | |
| 2004 02 11 | 644 | 0.4− | 0.0 | 2004 03 19 | 704 | 0.7+ | 1.1+ | 2006 10 22 | 703 | 0.4+ | 0.3+ | | |
| 2004 02 11 | 644 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.7+ | 1.1+ | | |
| 2004 02 11 | 644 | 0.5− | 0.1+ | 2004 03 25 | 704 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.8− | | |
| 2004 02 17 | 704 | 1.2+ | 0.8− | 2004 03 25 | 704 | 0.4+ | 0.8− | | | | | | |
| 2004 02 17 | 704 | 0.6− | 0.6+ | 2004 03 25 | 704 | 0.5+ | 0.9+ | | | | | | |

**(144322)∗ 2004 DK$_{20}$ = 2000 CX$_5$**

Discovered 2004 Feb. 17 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 61959)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.12101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27305409 | $\omega$ | 204.29383 | | −0.52364080 | −0.84414031 | |
| $a$ | 2.3530812 | $\Omega$ | 277.46832 | | +0.79939437 | −0.44016950 | |
| $e$ | 0.0694798 | $i$ | 6.66100 | | +0.29456570 | −0.30606853 | |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.2− | 0.3+ | 2004 03 15 | 703 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.6+ | | |
| 2000 02 02 | 704 | 0.2− | 0.2− | 2004 03 15 | 703 | 0.8+ | 0.2− | 2006 11 19 | 704 | 0.7− | 0.1− | | |
| 2000 02 02 | 704 | 0.1+ | 1.2− | 2004 03 16 | 704 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.7− | 0.3− | | |
| 2000 02 02 | 704 | 0.5− | 0.0 | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 1.1− | 0.8+ | | |
| 2000 02 03 | 704 | 0.9− | 0.4+ | 2004 03 16 | 704 | 0.3− | 0.9+ | 2006 11 19 | 704 | 0.8− | 0.5− | | |
| 2000 02 03 | 704 | 0.4+ | 0.6− | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2000 02 03 | 704 | 0.3− | 0.5− | 2004 03 16 | 704 | 0.3− | 0.6+ | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2000 02 03 | 704 | 0.2− | 0.4+ | 2005 06 14 | G96 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.1− | | |
| 2002 10 04 | 644 | 0.1+ | 0.4+ | 2005 06 14 | G96 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2005 06 14 | G96 | 0.1+ | 0.3+ | 2006 11 22 | 704 | (0.8− | 1.7+) | | |
| 2002 10 04 | 644 | 0.1− | 0.5+ | 2005 07 03 | G96 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.8− | 0.2+ | | |
| 2002 10 09 | 704 | 0.1− | 0.4− | 2005 07 03 | G96 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.7+ | 0.4+ | | |
| 2002 10 09 | 704 | 0.6+ | 1.1+ | 2005 07 03 | G96 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.3+ | | |
| 2002 10 09 | 704 | 0.6+ | 1.0+ | 2005 07 06 | 691 | 0.0 | 0.2+ | 2006 11 23 | 644 | 0.0 | 0.0 | | |
| 2002 10 09 | 704 | (0.4+ | 1.8+) | 2005 07 06 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 644 | 0.3− | 0.2+ | | |
| 2004 02 17 | 703 | 0.1− | 0.0 | 2005 07 06 | 691 | 0.0 | 0.2+ | 2006 11 23 | 644 | 0.2− | 0.4+ | | |
| 2004 02 17 | 703 | 0.7− | 0.7+ | 2005 07 10 | 691 | 0.4− | 0.1+ | 2006 11 27 | 704 | 0.2+ | 0.1+ | | |
| 2004 02 17 | 703 | 0.3− | 0.4− | 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.2+ | 0.1− | | |
| 2004 02 17 | 703 | 0.1− | 0.1+ | 2005 07 10 | 691 | 0.4− | 0.0 | 2006 11 27 | 704 | 1.0− | 0.7+ | | |
| 2004 02 19 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 704 | (0.6− | 1.9+) | 2006 11 28 | 704 | 0.1+ | 2.2+ | | |
| 2004 02 19 | 704 | 0.9+ | 1.2+ | 2006 11 15 | 704 | (0.3+ | 4.0+) | 2006 11 28 | 704 | 1.4+ | 1.1− | | |
| 2004 02 19 | 704 | 1.0+ | 0.2− | 2006 11 15 | 704 | (0.1+ | 1.6+) | 2006 11 28 | 704 | 1.2+ | 0.5− | | |
| 2004 02 19 | 704 | (1.9+ | 0.9+) | 2006 11 16 | 704 | (1.0+ | 1.9+) | 2006 11 28 | 704 | 0.0 | 0.7− | | |
| 2004 02 19 | 704 | 1.4+ | 0.4− | 2006 11 16 | 704 | 0.3− | 0.8+ | 2006 11 28 | 704 | 1.9+ | 0.0 | | |
| 2004 03 15 | 703 | 0.7+ | 0.4+ | 2006 11 16 | 704 | (0.8− | 1.6+) | | | | | | |
| 2004 03 15 | 703 | 0.4+ | 0.8+ | 2006 11 16 | 704 | 0.2+ | 0.7+ | | | | | | |

**(144323)∗ 2004 DN$_{20}$**

Discovered 2004 Feb. 17 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.91243 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26240640 | $\omega$ | 323.93355 | | −0.56029765 | +0.82230205 | |
| $a$ | 2.4163125 | $\Omega$ | 271.78793 | | −0.73474515 | −0.54884093 | |
| $e$ | 0.1090133 | $i$ | 5.70901 | | −0.38238214 | −0.15030958 | |
| $P$ | 3.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.1+ | 1.2+ | 2004 02 19 | 704 | 0.3− | 0.6+ | 2005 08 06 | 644 | 0.1− | 0.3+ | | |
| 2000 02 02 | 704 | 0.4+ | 0.1+ | 2004 02 19 | 704 | 1.4+ | 0.1+ | 2005 08 24 | 644 | 0.1− | 0.3+ | | |
| 2000 02 02 | 704 | 0.1− | 0.4− | 2004 02 19 | 704 | 0.3+ | 0.3+ | 2005 08 24 | 644 | 0.2+ | 0.6+ | | |
| 2000 02 02 | 704 | 0.5− | 0.4− | 2004 02 19 | 704 | 0.6+ | 0.9+ | 2005 08 24 | 644 | 0.1+ | 0.6+ | | |
| 2000 02 02 | 704 | 0.5− | 0.3− | 2004 02 19 | 704 | 0.1+ | 0.2+ | 2005 08 29 | A50 | (2.4+ | 0.8+) | | |
| 2000 03 05 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.4− | 0.1− | | |
| 2000 03 05 | 704 | 0.1+ | 1.0− | 2004 03 16 | 704 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 | | |
| 2000 03 05 | 704 | 0.2+ | 0.0 | 2004 03 16 | 704 | 0.7+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.3− | | |
| 2000 03 05 | 704 | 0.3+ | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | | |
| 2001 06 18 | 691 | 0.3− | 0.1+ | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | | |
| 2001 06 18 | 691 | 0.2− | 0.2+ | 2004 04 14 | 699 | 0.5− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | | |
| 2001 06 18 | 691 | 0.1+ | 0.2+ | 2004 04 14 | 699 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.6− | 0.3+ | | |
| 2002 11 23 | 644 | 0.2+ | 0.3+ | 2004 04 14 | 699 | 0.6− | 0.6+ | 2006 11 22 | 704 | 0.2− | 0.0 | | |
| 2002 11 23 | 644 | 0.1+ | 0.1+ | 2004 04 14 | 699 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.1− | | |
| 2002 11 23 | 644 | 0.1+ | 0.3+ | 2005 07 30 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.7− | 0.1− | | |
| 2004 02 17 | 703 | 0.5− | 0.4+ | 2005 07 30 | 644 | 0.4− | 0.3+ | 2006 11 24 | 691 | 0.3+ | 0.2+ | | |
| 2004 02 17 | 703 | 0.4− | 0.5− | 2005 07 30 | 644 | 0.0 | 0.5+ | 2006 11 24 | 691 | 0.3− | 0.4+ | | |
| 2004 02 17 | 703 | (0.4− | 2.0+) | 2005 08 06 | 644 | 0.1− | 0.6+ | 2006 11 24 | 691 | 0.0 | 0.1+ | | |
| 2004 02 17 | 703 | 0.3+ | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.6+ | | | | | | |

**(144324)∗ 2004 DO$_{20}$ = 1997 HU$_8$ = 2000 AG$_{156}$**

Discovered 2004 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61959)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.43680 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26786026 | $\omega$ | 59.54820 | | −0.42061103 | −0.90635914 | |
| $a$ | 2.3834014 | $\Omega$ | 55.37792 | | +0.81482428 | −0.39678199 | |
| $e$ | 0.1735774 | $i$ | 2.78565 | | +0.39893328 | −0.14517978 | |
| $P$ | 3.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 30 | 704 | 1.1+ | 0.7+ | 2004 02 23 | 620 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.9+ | 0.3+ | | |
| 1997 04 30 | 704 | 0.6+ | 1.0+ | 2004 02 23 | 620 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.0 | 0.1+ | | |
| 1997 04 30 | 704 | 0.7+ | 0.4+ | 2004 02 24 | 608 | 0.1+ | 0.8− | 2006 09 27 | 691 | 0.2+ | 0.2− | | |
| 1997 04 30 | 704 | 0.4− | 0.6+ | 2004 02 24 | 608 | 0.4+ | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.1− | | |
| 1997 04 30 | 704 | 0.8− | 0.5+ | 2004 02 24 | 608 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.3+ | 0.1− | | |
| 1997 05 01 | 704 | 1.0+ | 0.5+ | 2004 03 15 | 704 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.6+ | | |
| 1997 05 01 | 704 | 0.2− | 0.7+ | 2004 03 15 | 704 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.5+ | | |
| 1997 05 01 | 704 | (2.4+ | 0.8+) | 2004 03 15 | 703 | 1.4− | 0.2+ | 2006 10 01 | 691 | 0.4− | 0.5+ | | |
| 1997 05 01 | 704 | 0.8+ | 0.3− | 2004 03 15 | 704 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.1− | | |
| 2000 01 03 | 704 | 0.3+ | 0.4− | 2004 03 15 | 703 | 0.8− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.3− | | |
| 2000 01 03 | 704 | 1.5+ | 1.0− | 2004 03 15 | 704 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.4− | | |
| 2000 01 03 | 704 | 1.0− | 0.9− | 2004 03 15 | 703 | 0.6− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.7− | | |
| 2000 01 03 | 704 | 0.6− | 1.4− | 2004 03 15 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.4+ | | |
| 2000 01 04 | 704 | 0.4+ | 0.2− | 2004 03 15 | 703 | 0.8− | 0.1− | 2006 10 21 | 703 | 0.5− | 0.2+ | | |
| 2000 01 04 | 704 | 0.1− | 0.0 | 2004 03 19 | 704 | 1.0+ | 0.5− | 2006 10 21 | 703 | 0.4− | 0.4− | | |
| 2000 01 04 | 704 | 0.5− | 0.6− | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.2− | | |
| 2002 09 12 | 644 | 0.8− | 0.5+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.2+ | | |
| 2002 09 12 | 644 | 0.8− | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2002 09 12 | 644 | 0.8− | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2003 11 20 | 691 | 0.4+ | 0.2− | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1+ | | |
| 2003 11 20 | 691 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.6+ | 0.2+ | 2006 10 22 | 691 | 0.3+ | 0.1− | | |
| 2003 11 20 | 691 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2003 12 20 | 704 | 0.6− | 0.4− | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.5+ | | |
| 2003 12 20 | 704 | 0.5+ | 0.1+ | 2004 03 26 | 703 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.5+ | | |
| 2003 12 20 | 704 | 0.4− | 1.1+ | 2004 03 26 | 703 | 0.1+ | 0.8− | 2006 11 09 | 644 | 0.0 | 0.4+ | | |
| 2003 12 27 | 704 | 0.8+ | 0.5+ | 2004 03 26 | 703 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.7+ | 0.4− | | |
| 2003 12 27 | 704 | 0.4+ | 0.7− | 2004 03 26 | 703 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.6+ | | |
| 2003 12 27 | 704 | 0.4+ | 0.0 | 2004 03 28 | 704 | 1.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 1.3+ | | |
| 2003 12 27 | 704 | 1.2+ | 1.2+ | 2004 03 28 | 704 | 0.5+ | 0.9+ | 2006 11 11 | 703 | 0.5− | 0.3+ | | |
| 2004 02 02 | 699 | (0.6+ | 1.5−) | 2004 03 28 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 0.5− | 0.7− | | |
| 2004 02 02 | 699 | 1.1− | 1.4− | 2004 03 28 | 704 | 0.4+ | 0.4− | 2006 11 17 | 703 | 0.7− | 0.1+ | | |
| 2004 02 02 | 699 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.8− | 0.2+ | | |
| 2004 02 02 | 699 | 0.8− | 0.9+ | 2004 05 17 | 704 | (0.1− | 1.7+) | 2006 11 17 | 703 | 0.4− | 0.7+ | | |
| 2004 02 17 | 704 | 0.4− | 1.1+ | 2004 05 17 | 704 | 0.3− | 0.9+ | 2006 11 18 | 704 | 0.6+ | 0.1− | | |
| 2004 02 17 | 704 | 0.1+ | 0.2+ | 2004 05 17 | 704 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.3− | | |
| 2004 02 17 | 704 | 0.2+ | 0.0 | 2004 05 21 | 704 | 0.8+ | 0.7+ | 2006 11 18 | 704 | 0.7− | 0.3+ | | |
| 2004 02 17 | 704 | 0.1+ | 0.3+ | 2004 05 21 | 704 | 0.4+ | 0.7+ | 2006 11 18 | 704 | 1.1+ | 0.9+ | | |
| 2004 02 17 | 704 | 0.4+ | 0.7+ | 2004 05 21 | 704 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 1.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 20 | 608 | 0.1− | 0.8+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.7+ |
| 2004 02 20 | 608 | 0.1+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 1.0+ |
| 2004 02 20 | 608 | 0.2+ | 0.9+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | (0.3+ | 1.6+) |
| 2004 02 23 | 620 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.0 |

**(144325)∗ 2004 DX$_{20}$ = 2002 TK$_{168}$**

Discovered 2004 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61960)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.85937 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27639351 | $\omega$ | 84.20853 | | −0.41547559 | | −0.90788826 |
| $a$ | 2.3340894 | $\Omega$ | 30.53384 | | +0.78498874 | | −0.38889737 |
| $e$ | 0.0899090 | $i$ | 6.31105 | | +0.45953532 | | −0.15651757 |
| $P$ | 3.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 09 | 385 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 704 | 0.0 | 0.7+ |
| 1997 03 09 | 385 | 0.2− | 0.4− | 2004 03 20 | 704 | 0.0 | 0.7+ | 2006 11 15 | 704 | 0.4− | 0.1− |
| 2002 09 17 | 608 | 0.4− | 0.0 | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 11 16 | 704 | 0.7− | 0.1+ |
| 2002 09 17 | 608 | 0.8− | 0.0 | 2004 03 20 | 704 | 0.6+ | 1.3− | 2006 11 16 | 704 | 0.2− | 0.1− |
| 2002 09 17 | 608 | 1.0− | 0.8− | 2004 03 22 | 704 | 0.6− | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.0 |
| 2002 09 29 | 608 | 1.0− | 1.3+ | 2004 03 22 | 704 | 1.2+ | 0.4+ | 2006 11 16 | 704 | 0.8+ | 0.1− |
| 2002 09 29 | 608 | 0.6− | 1.5+ | 2004 03 22 | 704 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.7− | 1.5− |
| 2002 09 29 | 608 | 0.2− | 0.7+ | 2004 03 22 | 704 | 0.3+ | 0.9− | 2006 11 16 | 704 | 0.6− | 0.9+ |
| 2002 10 03 | 704 | 0.0 | 1.2+ | 2004 03 22 | 704 | 1.0+ | 0.3− | 2006 11 16 | 704 | 0.2− | 0.0 |
| 2002 10 03 | 704 | (2.1+ | 0.8+) | 2004 03 25 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.7+ | 0.1− |
| 2002 10 03 | 704 | (1.7+ | 1.6+) | 2004 03 25 | 704 | 0.1− | 0.6− | 2006 11 17 | 691 | 0.3+ | 0.1− |
| 2002 10 06 | 704 | 0.2− | 1.2+ | 2004 03 25 | 704 | 0.5− | 0.5− | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2002 10 06 | 704 | (1.1+ | 2.1+) | 2004 03 25 | 704 | 0.1− | 0.5− | 2006 11 17 | 691 | 0.4+ | 0.1− |
| 2002 10 06 | 704 | 0.3+ | 1.4+ | 2004 03 25 | 704 | 0.1− | 0.6− | 2006 11 17 | 644 | 0.3− | 0.2− |
| 2003 12 28 | 704 | 0.8+ | 0.6+ | 2004 04 13 | 703 | 0.7+ | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.5− |
| 2003 12 28 | 704 | 0.1− | 0.6+ | 2004 04 13 | 703 | 0.5+ | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.3− |
| 2003 12 28 | 704 | 0.2+ | 0.7+ | 2004 04 13 | 703 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2004 02 17 | 704 | 0.0 | 0.4+ | 2004 04 13 | 703 | 0.6+ | 0.5− | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2004 02 17 | 704 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.1+ | 1.3+ |
| 2004 02 17 | 704 | 0.2− | 0.5− | 2006 09 28 | G96 | 0.2− | 0.6− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2004 02 17 | 704 | 0.3− | 1.3+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2004 02 20 | 608 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2004 02 20 | 608 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2004 02 20 | 608 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.9+ | 0.1− |
| 2004 03 14 | 703 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.6− | 1.1+ |
| 2004 03 14 | 703 | 0.3+ | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.3+ | 0.6− |
| 2004 03 14 | 703 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.1− | 0.2− |
| 2004 03 14 | 703 | 0.7+ | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.2− | 2006 11 27 | 704 | 0.1+ | 0.1+ |
| 2004 03 15 | 704 | 0.5− | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.3+ | 0.3− |
| 2004 03 15 | 704 | 0.7− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.4− |
| 2004 03 15 | 704 | 1.1− | 0.9+ | 2006 11 13 | 691 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.3− | 1.0+ |
| 2004 03 15 | 704 | 0.4− | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.3− |
| 2004 03 15 | 704 | 1.2− | 0.2+ | 2006 11 15 | 704 | 0.0 | 0.4− | | | | |
| 2004 03 20 | 704 | (1.6+ | 0.2+) | 2006 11 15 | 704 | 0.3− | 0.2− | | | | |

**(144326)∗ 2004 DZ$_{21}$**

Discovered 2004 Feb. 17 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.19744 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28021410 | $\omega$ | 31.37390 | | −0.84154726 | | −0.53038721 |
| $a$ | 2.3128248 | $\Omega$ | 116.25535 | | +0.46895043 | | −0.81142079 |
| $e$ | 0.0963876 | $i$ | 6.55690 | | +0.26811135 | | −0.24553149 |
| $P$ | 3.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 1.4+ | 1.1− | 2004 02 18 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.4− | 0.1− |
| 1999 12 07 | 704 | 1.1− | 0.9+ | 2004 02 18 | 704 | 0.9+ | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.4− |
| 1999 12 07 | 704 | 0.1+ | 1.2− | 2004 02 18 | 704 | 0.5+ | 0.2− | 2004 03 26 | 703 | 0.7− | 0.3+ |
| 1999 12 07 | 704 | 0.5− | 0.1+ | 2004 02 18 | 704 | 0.1+ | 0.7− | 2004 03 26 | 703 | 0.1− | 0.4+ |
| 1999 12 07 | 704 | 0.1− | 0.4+ | 2004 02 18 | 704 | 0.7+ | 0.4− | 2004 03 26 | 703 | 0.1− | 0.5+ |
| 2000 01 05 | 704 | 0.7+ | 1.0− | 2004 03 15 | 704 | 0.4+ | 0.7+ | 2004 03 26 | 703 | 0.1− | 0.8+ |
| 2000 01 05 | 704 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 691 | 0.2− | 0.1+ |
| 2000 01 05 | 704 | 0.4− | 0.9− | 2004 03 15 | 704 | 0.8+ | 1.0+ | 2004 03 27 | 691 | 0.2− | 0.1− |
| 2000 01 05 | 704 | 0.7+ | 1.5− | 2004 03 15 | 704 | 0.2+ | 0.9+ | 2004 03 27 | 691 | 0.1− | 0.1− |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.5+ | 0.5+ | 2005 07 04 | 644 | 0.0 | 0.2+ |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.1+ | 2005 07 04 | 644 | 0.2− | 0.6+ |
| 2002 10 05 | 704 | 0.3+ | 1.3+ | 2004 03 15 | 691 | 0.0 | 0.2+ | 2005 07 04 | 644 | 0.4− | 0.7+ |
| 2002 10 05 | 704 | 0.0 | 0.8+ | 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2004 03 22 | 704 | 1.0+ | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.7+ | 0.7+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.8+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 704 | 0.7+ | 0.4− |
| 2004 01 23 | 704 | 0.7+ | 1.2− | 2004 03 23 | 704 | 0.2+ | 0.7− | 2006 11 20 | 704 | 0.5− | 0.6+ |
| 2004 01 23 | 704 | 0.5+ | 0.9− | 2004 03 23 | 704 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.9+ |
| 2004 01 23 | 704 | (0.7+ | 1.7−) | 2004 03 23 | 704 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2004 01 23 | 704 | 0.7+ | 0.1− | 2004 03 23 | 704 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.2+ | 1.6+ |
| 2004 02 17 | 703 | 0.1− | 1.1+ | 2004 03 23 | 704 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 2004 02 17 | 703 | 0.9− | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.8− | 2006 11 29 | 704 | 0.9− | 1.0+ |
| 2004 02 17 | 703 | 1.1− | 1.0+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | | | | |
| 2004 02 17 | 703 | 1.5− | 1.1+ | 2004 03 23 | 704 | 0.8+ | 0.7+ | | | | |

**(144327)∗ 2004 DD$_{22}$**

Discovered 2004 Feb. 17 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.54453 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26254228 | $\omega$ | 88.46563 | | −0.95283964 | | −0.29651747 |
| $a$ | 2.4154787 | $\Omega$ | 74.28233 | | +0.24485485 | | −0.87693385 |
| $e$ | 0.1199063 | $i$ | 3.84837 | | +0.17928393 | | −0.37823857 |
| $P$ | 3.75 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 1.2− | 1.2− | 2004 03 11 | 644 | 0.2− | 0.5− | 2004 07 16 | 807 | 0.0 | 0.1+ |
| 2000 01 04 | 704 | 0.1− | 1.5− | 2004 03 15 | 704 | 0.3+ | 0.0 | 2005 07 03 | 644 | 0.7− | 0.8+ |
| 2000 01 04 | 704 | 0.4− | 1.1− | 2004 03 15 | 704 | 0.0 | 0.2+ | 2005 07 03 | 644 | 0.3− | 1.0+ |
| 2000 01 04 | 704 | 0.8+ | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.3− | 2005 07 03 | 644 | 0.3− | 0.7+ |
| 2000 02 11 | 704 | 0.1− | 0.5− | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2000 02 11 | 704 | 0.3− | 0.3− | 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 2000 02 11 | 704 | 0.2+ | 0.4+ | 2004 03 17 | 704 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 1.2− | 0.9+ | 2004 03 17 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.9+ | 2004 03 17 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 1.1+ | 2004 03 17 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 691 | (1.3− | 2.1+) |
| 2002 10 31 | 704 | 0.2− | 0.9+ | 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2004 01 18 | 691 | 0.0 | 0.1− | 2004 03 17 | 704 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2004 01 18 | 691 | 0.2+ | 0.1− | 2004 03 17 | 704 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2004 01 18 | 691 | 0.0 | 0.0 | 2004 03 17 | 704 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 01 27 | 691 | 0.2− | 0.2− | 2004 03 17 | 704 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2004 03 17 | 704 | 0.4+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2004 01 27 | 691 | 0.2− | 0.0 | 2004 03 17 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2004 01 30 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2004 01 30 | 691 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2004 02 17 | 703 | 0.3+ | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2004 02 17 | 703 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.7− | 0.8+ |
| 2004 02 17 | 703 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.1− | 0.5− | 2006 11 11 | 703 | (1.3− | 2.6−) |
| 2004 02 17 | 703 | 0.1+ | 0.2− | 2004 03 20 | 704 | 0.8− | 0.7+ | 2006 11 12 | 703 | 0.2+ | 0.3− |
| 2004 02 18 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.9− | 0.1− | 2006 11 12 | 703 | 0.3− | 0.4− |
| 2004 02 18 | 704 | 0.7+ | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.3− | 2006 11 12 | 703 | 0.7− | 0.0 |
| 2004 02 18 | 704 | 0.6+ | 0.6+ | 2004 03 22 | 704 | 0.5+ | 0.3− | 2006 11 12 | 703 | 0.6+ | 1.2− |
| 2004 02 18 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2004 02 21 | 608 | 0.2+ | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2004 02 21 | 608 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 11 13 | G96 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 21 | 608 | (0.8− | 3.0+) | 2004 03 22 | 704 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.2− | 0.5− | | |
| 2004 02 25 | 704 | 0.8+ | 0.5+ | 2004 03 28 | 703 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.0 | | |
| 2004 02 25 | 704 | 0.2+ | 0.4+ | 2004 03 28 | 703 | 0.6+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.2+ | | |
| 2004 02 25 | 704 | 0.1− | 1.1+ | 2004 03 28 | 703 | 0.4− | 1.3− | 2006 11 13 | 644 | 0.0 | 0.0 | | |
| 2004 02 25 | 704 | 0.6+ | 0.8+ | 2004 03 28 | 703 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 2004 02 26 | 704 | 0.2+ | 0.1+ | 2004 04 09 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 691 | 0.4− | 0.2− | | |
| 2004 02 26 | 704 | 0.0 | 0.4+ | 2004 04 09 | 644 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.3− | 2004 04 09 | 644 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.2+ | | |
| 2004 02 26 | 704 | 0.3− | 0.7+ | 2004 04 13 | 703 | 0.8− | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.2− | | |
| 2004 02 26 | 704 | 0.2+ | 0.1− | 2004 04 13 | 703 | 1.0− | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.2− | | |
| 2004 02 27 | 704 | 0.4+ | 0.9+ | 2004 04 13 | 703 | 1.0− | 0.6+ | 2006 11 18 | 704 | 0.6− | 0.1+ | | |
| 2004 02 27 | 704 | 0.0 | 0.3+ | 2004 04 13 | 703 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.6+ | | |
| 2004 02 27 | 704 | 0.5+ | 0.6+ | 2004 05 13 | 704 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.2− | | |
| 2004 02 27 | 704 | 0.1− | 0.3+ | 2004 05 13 | 704 | 0.0 | 0.9+ | 2006 11 21 | 704 | 0.8− | 0.2+ | | |
| 2004 03 11 | 644 | 0.1− | 0.4− | 2004 05 13 | 704 | 0.0 | 0.8+ | 2006 11 21 | 704 | 0.3+ | 0.5+ | | |
| 2004 03 11 | 644 | 0.5− | 0.2− | 2004 07 16 | 807 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.8+ | | |

**(144328)∗ 2004 DU$_{22}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 279.61192 | | (2000.0) | | | |
| $n$ | 0.27809774 | $\omega$ | 38.89381 | | −0.76281458 | −0.64317690 |
| $a$ | 2.3245439 | $\Omega$ | 100.94518 | | +0.57502544 | −0.72186492 |
| $e$ | 0.1117229 | $i$ | 3.89039 | | +0.29573581 | −0.25541048 |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 02 | 691 | 0.1− | 0.4− | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.3+ | | |
| 2000 01 02 | 691 | 0.0 | 0.4− | 2004 03 22 | 704 | 1.3+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.2+ | | |
| 2000 01 02 | 691 | 0.3+ | 0.4− | 2004 03 22 | 704 | 0.6− | 0.6− | 2006 11 16 | G96 | 0.1− | 0.2+ | | |
| 2004 02 02 | 699 | 1.0− | 0.5− | 2004 03 22 | 704 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2004 02 02 | 699 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.0 | 0.2+ | | |
| 2004 02 02 | 699 | (2.2− | 0.5+) | 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.2+ | | |
| 2004 02 02 | 699 | (1.6− | 2.3+) | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.9+ | | |
| 2004 02 18 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.2+ | 0.8+ | | |
| 2004 02 18 | 704 | 0.8+ | 1.1+ | 2004 03 23 | 704 | 0.6+ | 0.3− | 2006 11 17 | 704 | 0.8− | 0.3+ | | |
| 2004 02 18 | 704 | 0.7+ | 1.3+ | 2004 03 25 | 704 | 0.3+ | 1.0+ | 2006 11 17 | 704 | 0.5− | 0.2+ | | |
| 2004 02 18 | 704 | 0.4+ | 0.6+ | 2004 03 25 | 704 | 0.3+ | 0.6+ | 2006 11 17 | H07 | 0.4+ | 0.8+ | | |
| 2004 02 18 | 704 | 0.2+ | 0.6+ | 2004 03 25 | 704 | 0.4+ | 1.1+ | 2006 11 17 | H07 | 0.1− | 0.6+ | | |
| 2004 02 20 | 608 | 0.6− | 0.6− | 2004 03 25 | 704 | 1.0+ | 1.1+ | 2006 11 17 | H07 | (3.0+ | 1.4−) | | |
| 2004 02 20 | 608 | 0.2− | 0.5− | 2005 06 30 | 691 | 0.4+ | 0.1− | 2006 11 17 | H07 | 0.0 | 0.5+ | | |
| 2004 02 20 | 608 | 0.1− | 0.8− | 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 11 20 | H07 | 0.1+ | 0.4+ | | |
| 2004 03 15 | 704 | 0.8− | 0.3− | 2005 06 30 | 691 | 0.1− | 0.3+ | 2006 11 20 | H07 | 0.4+ | 0.6+ | | |
| 2004 03 15 | 704 | 0.6− | 0.1+ | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 20 | H07 | 0.0 | 0.9+ | | |
| 2004 03 15 | 704 | 0.1− | 0.0 | 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 11 20 | H07 | 0.1+ | 0.8+ | | |
| 2004 03 15 | 704 | (0.7− | 2.2+) | 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 11 20 | H07 | 0.0 | 0.6+ | | |
| 2004 03 15 | 704 | 1.0− | 0.8+ | 2005 07 16 | 691 | 0.6− | 0.3+ | 2006 11 20 | H07 | 0.4+ | 0.5+ | | |
| 2004 03 19 | 644 | 0.1− | 0.2− | 2005 07 16 | 691 | 0.0 | 0.3+ | 2006 11 20 | H07 | 0.2− | 0.6+ | | |
| 2004 03 19 | 644 | 0.2− | 0.1+ | 2005 07 16 | 691 | 0.2+ | 0.1+ | 2006 11 20 | H07 | 0.5− | 0.8+ | | |
| 2004 03 19 | 644 | 0.2− | 0.0 | 2005 07 30 | E12 | 0.7− | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.2− | | |
| 2004 03 20 | 704 | 0.2+ | 0.8+ | 2005 07 30 | E12 | 0.6+ | 0.0 | 2006 12 01 | G96 | 0.2− | 0.1+ | | |
| 2004 03 20 | 704 | 0.8+ | 0.8+ | 2005 07 30 | E12 | 1.4− | 0.8− | 2006 12 01 | G96 | 0.3− | 0.2+ | | |
| 2004 03 20 | 704 | 0.1+ | 0.8+ | 2005 07 30 | E12 | 0.2+ | 0.7+ | 2006 12 01 | G96 | 0.0 | 0.0 | | |
| 2004 03 20 | 704 | (0.6+ | 2.2+) | 2006 10 23 | G96 | 0.0 | 0.0 | | | | | | |
| 2004 03 22 | 704 | 0.6+ | 0.8− | 2006 10 23 | G96 | 0.4− | 0.1− | | | | | | |

**(144329)∗ 2004 DD$_{23}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.62513 | | (2000.0) | | | |
| $n$ | 0.23252673 | $\omega$ | 270.83892 | | +0.46127526 | −0.87810536 |
| $a$ | 2.6191124 | $\Omega$ | 150.60511 | | +0.88160413 | +0.43746319 |
| $e$ | 0.1062246 | $i$ | 15.00864 | | +0.09999647 | +0.19379611 |
| $P$ | 4.24 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 20 | 809 | 0.2− | 1.6+ | 2003 12 27 | 704 | 0.6+ | 0.4− | 2006 09 19 | 703 | 0.6− | 0.4+ | | |
| 1993 08 20 | 809 | 0.7+ | 0.9+ | 2004 01 23 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.1− | | |
| 1993 08 20 | 809 | 0.1+ | 1.1+ | 2004 01 23 | 704 | 0.5+ | 1.5+ | 2006 09 19 | 703 | 0.5+ | 0.4− | | |
| 1999 01 20 | 704 | 0.0 | 0.1+ | 2004 01 23 | 704 | 1.0+ | 1.3+ | 2006 09 19 | 703 | 0.3− | 0.4+ | | |
| 1999 01 20 | 704 | 0.6− | 0.2− | 2004 01 23 | 704 | 0.2− | 0.6+ | 2006 09 21 | 699 | 0.2+ | 0.2− | | |
| 1999 01 20 | 704 | 0.9− | 1.1− | 2004 01 23 | 704 | 0.6− | 1.4+ | 2006 09 21 | 699 | 0.3− | 0.0 | | |
| 1999 01 20 | 704 | 1.7− | 0.9− | 2004 01 29 | 704 | 0.3+ | 0.5+ | 2006 09 21 | 699 | 0.9− | 0.6+ | | |
| 2001 07 27 | 608 | 0.6− | 0.0 | 2004 01 29 | 704 | 0.3− | 0.3+ | 2006 09 21 | 699 | 1.2+ | 0.4+ | | |
| 2001 07 27 | 608 | 0.7− | 0.3+ | 2004 01 29 | 704 | 0.7+ | 1.1+ | 2006 09 25 | 699 | 0.3− | 0.7+ | | |
| 2001 07 27 | 608 | 0.8− | 0.3+ | 2004 02 18 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.5+ | | |
| 2002 09 13 | 699 | 0.8+ | 0.4+ | 2004 02 18 | 704 | 1.3+ | 0.0 | 2006 09 25 | 699 | 0.4− | 0.3+ | | |
| 2002 09 13 | 699 | 1.0+ | 1.0+ | 2004 02 18 | 704 | (1.2+ | 1.7−) | 2006 09 25 | 699 | 0.6+ | 0.1+ | | |
| 2002 09 13 | 699 | (1.6+ | 1.2+) | 2004 02 18 | 704 | 0.9+ | 1.0− | 2006 09 26 | 703 | 1.0+ | 0.8+ | | |
| 2002 09 13 | 699 | (2.8+ | 1.8+) | 2004 02 20 | 608 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.6+ | | |
| 2002 10 30 | 704 | 0.2− | 1.4− | 2004 02 20 | 608 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.4+ | 0.6+ | | |
| 2002 10 30 | 704 | 0.1+ | 0.4+ | 2004 02 20 | 608 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.5− | 0.0 | | |
| 2002 10 30 | 704 | 0.1− | 0.6− | 2004 03 15 | 704 | 0.3+ | 0.8+ | 2006 09 29 | 699 | 0.1− | 0.5− | | |
| 2002 10 30 | 704 | 0.5+ | 0.9− | 2004 03 15 | 704 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.9+ | 0.2− | | |
| 2002 11 06 | 644 | 0.0 | 0.3− | 2004 03 15 | 704 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.3− | 0.1+ | | |
| 2002 11 06 | 644 | 0.1− | 0.4− | 2004 03 15 | 704 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.5− | 0.7+ | | |
| 2002 11 06 | 644 | 0.1− | 0.4− | 2004 03 18 | A15 | 0.4− | 1.0− | 2006 10 02 | 703 | (3.3− | 0.6−) | | |
| 2002 11 16 | 644 | 0.0 | 0.7+ | 2004 03 18 | A15 | 0.3− | 0.6− | 2006 10 02 | 703 | 0.1+ | 0.4− | | |
| 2002 11 16 | 644 | 0.1− | 0.7+ | 2004 03 18 | A15 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.5− | 0.0 | | |
| 2002 11 16 | 644 | 0.1+ | 0.7+ | 2004 03 23 | 704 | 0.9+ | 0.3− | 2006 10 10 | 644 | 0.3− | 0.4+ | | |
| 2002 11 23 | 644 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.6+ | 0.9+ | 2006 10 10 | 644 | 0.4− | 0.3+ | | |
| 2002 11 23 | 644 | 0.2+ | 0.3+ | 2004 03 23 | 704 | 0.6+ | 0.6+ | 2006 10 10 | 644 | 0.4− | 0.1+ | | |
| 2002 11 23 | 644 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.7+ | 2006 10 10 | 644 | 0.4− | 0.1+ | | |
| 2002 11 30 | 704 | 1.4+ | 0.6− | 2004 03 23 | 704 | 0.0 | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.4+ | | |
| 2002 11 30 | 704 | 0.6− | 0.2− | 2004 03 25 | 704 | 0.7− | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.3+ | | |
| 2002 11 30 | 704 | 0.9− | 0.7+ | 2004 03 25 | 704 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.9+ | 0.1− | | |
| 2002 11 30 | 704 | 0.6− | 0.1− | 2004 03 25 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.4+ | | |
| 2003 01 02 | 704 | 0.6+ | 1.0+ | 2004 03 30 | 703 | (0.4− | 2.5+) | 2006 10 21 | 703 | (2.4− | 0.2−) | | |
| 2003 01 02 | 704 | 0.5+ | 0.0 | 2004 03 30 | 703 | (2.0− | 0.4+) | 2006 10 21 | 703 | 0.0 | 0.7+ | | |
| 2003 01 02 | 704 | 0.4+ | 0.4− | 2004 03 30 | 703 | (1.2− | 2.4+) | 2006 10 31 | 703 | 0.5− | 0.3+ | | |
| 2003 01 02 | 704 | 0.1+ | 0.1− | 2004 03 30 | 703 | (1.3− | 1.8+) | 2006 10 31 | 703 | 0.2− | 0.7+ | | |
| 2003 01 28 | 704 | 0.3+ | 0.0 | 2004 04 15 | 704 | 0.5− | 0.8+ | 2006 10 31 | 703 | 0.5− | 0.7+ | | |
| 2003 01 28 | 704 | 0.6− | 0.2+ | 2004 04 15 | 704 | 0.4+ | 0.8+ | 2006 10 31 | 703 | 0.6− | 0.7+ | | |
| 2003 01 28 | 704 | 0.1− | 0.9− | 2004 04 15 | 704 | 0.2− | 0.6− | 2006 11 18 | 703 | 0.8− | 0.0 | | |
| 2003 01 28 | 704 | 0.9+ | 0.1+ | 2004 04 15 | 704 | 1.0− | 1.4+ | 2006 11 18 | 703 | 0.7− | 0.2+ | | |
| 2003 01 28 | 704 | 1.0+ | 0.3− | 2004 04 25 | 699 | 0.2− | 1.0+ | 2006 11 18 | 703 | 0.3+ | 0.5+ | | |
| 2003 12 27 | 704 | 0.5+ | 0.2+ | 2004 04 25 | 699 | 0.1− | 0.8+ | 2006 11 18 | 703 | 0.1− | 0.5− | | |
| 2003 12 27 | 704 | 0.2+ | 0.3+ | 2004 04 25 | 699 | 0.4− | 1.2+ | | | | | | |
| 2003 12 27 | 704 | 0.2− | 0.4+ | 2004 04 25 | 699 | 0.0 | 0.1+ | | | | | | |

**(144330)∗ 2004 DE$_{24}$ = 2002 TO$_{351}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61965)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.33640 | | (2000.0) | | | |
| $n$ | 0.28708567 | $\omega$ | 208.10344 | | −0.47741024 | −0.87285893 |
| $a$ | 2.2757700 | $\Omega$ | 270.57008 | | +0.82391360 | −0.40475028 |
| $e$ | 0.1502192 | $i$ | 5.79584 | | +0.30536182 | −0.27257018 |
| $P$ | 3.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.1+ | 0.1− | 2004 03 14 | 644 | 0.3− | 0.7+ | 2006 11 16 | 704 | 0.6− | 0.4+ |
| 1999 11 03 | 704 | 0.0 | 0.2+ | 2004 03 14 | 644 | 0.2− | 0.6+ | 2006 11 16 | 704 | 0.7− | 0.0 |
| 1999 11 03 | 704 | 0.4+ | 0.5+ | 2004 03 16 | 704 | 0.9+ | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 1999 11 03 | 704 | 0.7+ | 1.0− | 2004 03 16 | 704 | 0.8+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 1999 12 13 | 703 | 0.6− | 0.8+ | 2004 03 16 | 704 | 0.7+ | 0.9+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 1999 12 13 | 703 | 0.1− | 0.8+ | 2004 03 16 | 704 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 1999 12 13 | 703 | 0.4− | 1.3+ | 2004 03 16 | 704 | 1.1+ | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 1999 12 13 | 703 | (2.6− | 0.7−) | 2004 03 29 | 703 | 0.3− | 1.1+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2002 09 13 | 644 | 0.2+ | 1.4+ | 2004 03 29 | 703 | 0.8− | 0.8+ | 2006 11 22 | 704 | 0.8− | 1.1+ |
| 2002 09 13 | 644 | (0.1+ | 1.6+) | 2004 03 29 | 703 | 1.2− | 0.9+ | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2002 09 13 | 644 | (0.5− | 1.6+) | 2004 03 29 | 703 | 1.1− | 0.6− | 2006 11 22 | 704 | 0.7− | 1.4+ |
| 2002 09 26 | 644 | 0.5− | 0.1+ | 2005 06 18 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | (0.3− | 2.0+) |
| 2002 09 26 | 644 | 0.6− | 0.2+ | 2005 06 18 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 1.0+ | 0.3+ |
| 2002 09 26 | 644 | 0.4− | 0.8+ | 2005 06 18 | G96 | 0.3− | 0.5− | 2006 11 24 | 408 | 0.8+ | 0.7− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 06 18 | G96 | 0.6+ | 0.0 | 2006 11 24 | 408 | 0.4+ | 0.9− |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2005 07 05 | 691 | 0.2− | 0.5+ | 2006 11 25 | 408 | 1.0+ | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 07 05 | 691 | 0.1+ | 0.4+ | 2006 11 25 | 408 | 0.6+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 07 05 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 704 | 0.0 | 0.6− |
| 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 11 12 | G96 | 0.3− | 0.4− | 2006 11 27 | 704 | 0.3+ | 0.0 |
| 2004 02 19 | 704 | 0.4+ | 0.2− | 2006 11 12 | G96 | 0.4− | 0.4− | 2006 11 27 | 704 | 1.8+ | 0.1+ |
| 2004 02 19 | 704 | 0.8+ | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.4− |
| 2004 02 19 | 704 | 0.6+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2004 02 20 | 608 | 0.6+ | 0.2+ | 2006 11 15 | 704 | 1.3− | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.2− |
| 2004 02 20 | 608 | 0.1+ | 0.3− | 2006 11 15 | 704 | 0.7− | 0.6− | 2006 11 28 | 704 | 0.0 | 0.6+ |
| 2004 02 20 | 608 | 0.1+ | 0.4− | 2006 11 15 | 704 | 0.8− | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.5− |
| 2004 03 14 | 644 | 0.2− | 0.5+ | 2006 11 15 | 704 | (1.5− | 0.3+) | | | | |

**(144331)∗ 2004 DR$_{24}$ = 2000 AF$_{118}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61966)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 281.98681 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26776182 | $\omega$ | 312.79715 | | −0.66773207 | | −0.74439984 | |
| $a$ | 2.3839855 | $\Omega$ | 179.09018 | | +0.70989647 | | −0.63745144 | |
| $e$ | 0.0636219 | $i$ | 6.01220 | | +0.22401091 | | −0.19880778 | |
| $P$ | 3.68 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.7+ | 1.1+ | 2004 02 25 | 704 | 0.3− | 0.4+ | 2004 04 15 | 704 | 1.4+ | 1.1+ |
| 2000 01 05 | 704 | 0.1− | 0.3− | 2004 02 25 | 704 | 1.0+ | 1.0+ | 2005 06 30 | 691 | 0.2+ | 0.3+ |
| 2000 01 05 | 704 | 0.3+ | 0.1+ | 2004 02 25 | 704 | 0.1+ | 0.3− | 2005 06 30 | 691 | 0.3+ | 0.1+ |
| 2000 01 05 | 704 | 0.1+ | 0.2+ | 2004 02 25 | 704 | 1.1+ | 0.6+ | 2005 06 30 | 691 | 0.1− | 0.3+ |
| 2000 01 05 | 704 | 0.2− | 0.2− | 2004 03 14 | 691 | 0.1− | 0.0 | 2005 07 06 | 691 | 0.0 | 0.3+ |
| 2000 01 07 | 704 | 0.9− | 0.0 | 2004 03 14 | 691 | 0.3− | 0.0 | 2005 07 06 | 691 | 0.1− | 0.4+ |
| 2000 01 07 | 704 | 0.2− | 0.3+ | 2004 03 14 | 691 | 0.3− | 0.0 | 2005 07 06 | 691 | 0.1+ | 0.4+ |
| 2000 01 07 | 704 | 0.2+ | 0.8+ | 2004 03 16 | 704 | 0.5+ | 0.0 | 2005 07 11 | 691 | 0.3− | 0.6+ |
| 2000 01 07 | 704 | 0.3− | 0.4+ | 2004 03 16 | 704 | 0.6− | 0.7− | 2005 07 11 | 691 | 0.3− | 0.4+ |
| 2000 02 02 | 704 | (2.3+ | 0.4+) | 2004 03 16 | 704 | 0.3+ | 0.5− | 2005 07 11 | 691 | 0.3− | 0.3+ |
| 2000 02 02 | 704 | 0.2+ | 1.5+ | 2004 03 16 | 704 | 1.2+ | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.3+ |
| 2000 02 02 | 704 | 0.2+ | 0.4+ | 2004 03 16 | 704 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2000 02 02 | 704 | 0.9+ | 0.7− | 2004 03 18 | 704 | (2.1+ | 0.3+) | 2006 10 23 | G96 | 0.2− | 0.2+ |
| 2002 10 02 | 704 | 0.7− | 1.2+ | 2004 03 18 | 704 | (0.5− | 2.8+) | 2006 10 23 | G96 | 0.3− | 0.2+ |
| 2002 10 02 | 704 | 0.2− | 0.5− | 2004 03 18 | 704 | 1.5+ | 1.0+ | 2006 11 20 | 704 | 0.6− | 0.2+ |
| 2002 10 02 | 704 | 0.4− | 0.9+ | 2004 03 18 | 704 | (0.2+ | 2.7+) | 2006 11 20 | 704 | 0.6+ | 0.7+ |
| 2002 10 02 | 704 | 0.1+ | 0.9+ | 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2002 10 31 | 704 | (1.0− | 2.7+) | 2004 03 21 | 691 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | (0.7+ | 2.3+) | 2004 03 21 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2002 10 31 | 704 | (0.6− | 2.6+) | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.3+ |
| 2002 10 31 | 704 | (0.4+ | 1.6+) | 2004 03 27 | 704 | 0.7+ | 1.4+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2004 02 19 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 1.0− | 1.0+ | 2006 11 22 | G96 | 0.2− | 0.3+ |
| 2004 02 19 | 704 | 0.5+ | 0.4+ | 2004 03 27 | 704 | 0.4− | 0.5+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2004 02 19 | 704 | 0.2+ | 0.9+ | 2004 03 27 | 704 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.9+ |
| 2004 02 19 | 704 | 0.7+ | 0.3+ | 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2004 02 20 | 608 | 0.2+ | 0.1− | 2004 03 28 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.9+ |
| 2004 02 20 | 608 | 0.9+ | 0.5− | 2004 03 28 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.0 |
| 2004 02 20 | 608 | 0.2+ | 0.3− | 2004 04 15 | 704 | 0.3+ | 0.5− | 2006 11 28 | 704 | 0.0 | 0.6+ |
| 2004 02 25 | 704 | (1.6+ | 0.6+) | 2004 04 15 | 704 | 0.9+ | 0.8+ | | | | |

**(144332)∗ 2004 DV$_{24}$ = 2001 EA$_{18}$**

Discovered 2004 Feb. 21 by NEAT at Haleakala.

Id. T. B. Spahr (*MPO* 61966)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 333.19633 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.58086012 | $\omega$ | 186.31869 | | +0.99161133 | | −0.02315870 | |
| $a$ | 1.4226181 | $\Omega$ | 171.16555 | | −0.04785312 | | +0.84813545 | |
| $e$ | 0.2894730 | $i$ | 55.89357 | | −0.12007103 | | −0.52927302 | |
| $P$ | 1.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1955 04 24 | 261 | 0.9+ | 1.8− | 2004 03 12 | 084 | 0.8+ | 0.3− | 2004 03 31 | 691 | 0.2+ | 0.2− |
| 1955 04 24 | 261 | 0.5+ | 0.2+ | 2004 03 13 | 084 | 0.2+ | 0.1− | 2004 04 14 | 704 | 0.8+ | 0.5− |
| 2001 03 02 | 699 | 1.3− | 0.9+ | 2004 03 13 | 170 | 0.6− | 0.9− | 2004 04 14 | 704 | 1.2− | 0.0 |
| 2001 03 02 | 699 | 0.1+ | 0.5+ | 2004 03 13 | 170 | 0.2− | 0.6− | 2004 04 14 | 704 | 1.2+ | 0.6− |
| 2001 03 02 | 699 | 0.4+ | 0.3+ | 2004 03 13 | 170 | 0.2− | 1.1− | 2004 04 14 | 704 | 0.3− | 0.3+ |
| 2001 03 02 | 699 | (1.7− | 0.5−) | 2004 03 15 | 703 | 0.1− | 0.1+ | 2004 04 14 | 704 | 0.1− | 0.2+ |
| 2001 03 04 | 918 | 0.1+ | 0.8− | 2004 03 15 | 703 | 0.1− | 0.2+ | 2004 04 20 | 704 | 0.9− | 0.3+ |
| 2001 03 04 | 918 | 0.1− | 0.2− | 2004 03 15 | 703 | 0.4+ | 0.0 | 2004 04 20 | 704 | (1.2− | 2.1+) |
| 2001 03 04 | 918 | 1.0+ | 0.4− | 2004 03 15 | 703 | 0.5+ | 0.7+ | 2004 04 20 | 704 | 0.2− | 1.1+ |
| 2001 03 04 | 918 | 1.2+ | 0.1− | 2004 03 15 | 151 | 0.3− | 0.2+ | 2004 04 20 | 704 | 0.8− | 1.4+ |
| 2004 02 21 | 608 | 0.3+ | 0.8− | 2004 03 15 | 151 | 0.4− | 0.1+ | 2004 04 20 | 704 | 0.3− | 1.3+ |
| 2004 02 21 | 608 | 0.5+ | 0.3− | 2004 03 15 | 151 | 0.0 | 0.4+ | 2006 01 25 | 291 | 0.5− | 0.4+ |
| 2004 02 21 | 608 | 0.3+ | 0.4− | 2004 03 15 | 151 | 0.8+ | 1.4+ | 2006 01 25 | 291 | 0.4− | 0.8+ |
| 2004 02 21 | A50 | 0.7+ | 0.8− | 2004 03 15 | 151 | 0.1− | 0.6+ | 2006 01 25 | 291 | 0.2+ | 0.8+ |
| 2004 02 21 | A50 | 0.2− | 0.7− | 2004 03 15 | 151 | 0.1− | 0.4+ | 2006 02 19 | A13 | 0.7+ | 0.3+ |
| 2004 02 21 | A50 | (3.3− | 1.7+) | 2004 03 16 | 704 | 0.4− | 1.0− | 2006 02 19 | A13 | 0.8+ | 0.9+ |
| 2004 02 21 | A50 | (1.6− | 1.9−) | 2004 03 16 | 704 | 0.1+ | 1.0− | 2006 02 19 | A13 | 0.2+ | 0.1− |
| 2004 02 21 | 493 | 0.1− | 0.2− | 2004 03 16 | 704 | 0.2− | 0.5+ | 2006 02 22 | 704 | 0.6+ | 0.3+ |
| 2004 02 21 | 493 | 0.5+ | 0.5− | 2004 03 16 | 704 | 0.2− | 0.5− | 2006 02 22 | 704 | 0.1+ | 0.7+ |
| 2004 02 21 | 493 | 0.4− | 0.2− | 2004 03 16 | 704 | 0.1+ | 0.0 | 2006 02 22 | 704 | 0.2+ | 1.1+ |
| 2004 02 23 | 620 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.0 | 0.1− | 2006 02 22 | 704 | 0.6+ | 0.1− |
| 2004 02 23 | 620 | 0.1− | 0.2− | 2004 03 16 | 240 | 0.1− | 0.2− | 2006 02 24 | 704 | 0.3+ | 0.4+ |
| 2004 02 23 | 620 | 0.1+ | 0.1+ | 2004 03 16 | 240 | 0.4− | 0.3+ | 2006 02 24 | 704 | 0.6+ | 0.4+ |
| 2004 02 23 | 785 | 1.0+ | 1.0+ | 2004 03 16 | 240 | 0.1− | 0.1− | 2006 02 24 | 704 | (0.7− | 1.8+) |
| 2004 02 23 | 785 | 1.2+ | 0.5− | 2004 03 16 | 240 | 0.1− | 0.0 | 2006 02 24 | 704 | 0.9− | 0.3+ |
| 2004 02 23 | 785 | (0.9+ | 2.3−) | 2004 03 16 | 240 | 0.2− | 0.2+ | 2006 02 25 | 704 | 0.1− | 0.2− |
| 2004 02 23 | 785 | (0.8+ | 2.0−) | 2004 03 16 | 240 | 0.2− | 0.3+ | 2006 02 25 | 704 | 0.4− | 0.1+ |
| 2004 02 23 | 608 | 0.7− | 0.7+ | 2004 03 16 | 240 | 0.1− | 0.4+ | 2006 02 25 | 704 | 1.3+ | 0.8− |
| 2004 02 23 | 608 | 0.5− | 1.1+ | 2004 03 16 | 240 | 0.1− | 0.2+ | 2006 03 04 | G96 | 0.4− | 0.3− |
| 2004 02 23 | 608 | 0.4+ | 0.8+ | 2004 03 16 | 240 | 0.1− | 0.1− | 2006 03 04 | G96 | 0.6− | 0.1+ |
| 2004 02 25 | 540 | 0.0 | 0.0 | 2004 03 16 | 240 | 0.1+ | 0.3− | 2006 03 04 | G96 | 1.0+ | 1.4− |
| 2004 02 25 | 540 | 0.2+ | 0.7− | 2004 03 17 | 215 | 0.5− | 0.6− | 2006 03 04 | G96 | 0.4− | 0.0 |
| 2004 02 25 | 540 | 0.0 | 0.2+ | 2004 03 17 | 215 | 0.2− | 0.9− | 2006 03 12 | 941 | 0.3− | 0.5− |
| 2004 02 25 | 540 | 0.1− | 0.2− | 2004 03 17 | 215 | 0.7− | 1.1− | 2006 03 12 | 941 | 0.1+ | 0.4− |
| 2004 02 25 | 540 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 03 12 | 941 | 0.5+ | 0.2+ |
| 2004 02 26 | 649 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.6+ | 2006 03 12 | 941 | 0.9+ | 0.1+ |
| 2004 02 26 | 649 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.2− | 2006 04 18 | 699 | 0.9+ | 0.1− |
| 2004 02 26 | 649 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.2− | 2006 04 18 | 699 | 1.2+ | 0.1+ |
| 2004 02 27 | 649 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.7− | 0.7− | 2006 04 18 | 699 | 1.3+ | 0.2+ |
| 2004 02 27 | 649 | 0.2− | 0.1+ | 2004 03 18 | 071 | 0.9− | 1.3+ | 2006 04 18 | 699 | 0.5− | 1.0+ |
| 2004 02 27 | 649 | 0.3− | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.2− | 2006 04 21 | 151 | 0.8− | 1.0− |
| 2004 02 27 | A16 | (2.2− | 1.0+) | 2004 03 19 | 704 | 0.6+ | 0.2− | 2006 04 21 | 151 | 0.8− | 0.7− |
| 2004 02 27 | A16 | (2.2− | 0.3−) | 2004 03 19 | 704 | 0.4+ | 0.2− | 2006 04 21 | 151 | 0.4− | 0.3− |
| 2004 02 28 | 176 | 0.5− | 0.2+ | 2004 03 19 | 704 | 0.5+ | 0.4− | 2006 04 21 | 151 | 0.2+ | 0.6+ |
| 2004 02 28 | 176 | 0.3− | 0.2+ | 2004 03 19 | 704 | 0.4+ | 0.6− | 2006 05 01 | 703 | 0.1− | 0.7− |
| 2004 02 28 | 176 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.6− | 2006 05 01 | 703 | 0.8− | 0.0 |
| 2004 02 28 | 176 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.1− | 0.4− | 2006 05 01 | 703 | 0.4− | 0.3− |
| 2004 02 28 | 176 | 0.2− | 0.1+ | 2004 03 19 | 704 | 0.2− | 0.3− | 2006 05 01 | 703 | 0.1− | 0.0 |
| 2004 02 29 | 926 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.6+ | 0.0 | 2006 05 01 | 703 | 0.4− | 0.2+ |
| 2004 02 29 | 926 | 0.6+ | 0.2+ | 2004 03 19 | 704 | 0.6+ | 0.8− | 2006 05 01 | 703 | 0.5− | 0.2− |
| 2004 02 29 | 926 | 0.4+ | 0.5+ | 2004 03 19 | 941 | 0.6− | 0.1− | 2006 05 01 | 703 | 0.1+ | 0.2− |
| 2004 02 29 | 291 | 0.2+ | 0.4+ | 2004 03 19 | 941 | 0.4− | 0.3− | 2006 05 01 | 703 | 0.1− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 291 | 0.2+ | 0.5+ | 2004 03 19 | 941 | 0.2− | 0.0 | 2006 05 03 | H55 | 0.3− | 0.2− |
| 2004 02 29 | 291 | 0.6− | 0.2− | 2004 03 19 | 941 | 0.2− | 0.1+ | 2006 05 03 | H55 | 0.2− | 0.2+ |
| 2004 03 02 | 587 | 1.4− | 1.0+ | 2004 03 19 | 941 | 0.3− | 0.1+ | 2006 05 03 | H55 | 0.0 | 0.5+ |
| 2004 03 02 | 587 | 1.4− | 0.4− | 2004 03 19 | 130 | 0.7+ | 0.3+ | 2006 06 06 | H55 | 0.9− | 0.2− |
| 2004 03 03 | 926 | 0.7+ | 0.3− | 2004 03 19 | 130 | 0.1− | 0.3+ | 2006 06 06 | H55 | 1.0− | 0.3− |
| 2004 03 03 | 926 | (0.1− | 2.4−) | 2004 03 19 | 130 | 0.2− | 0.9− | 2006 06 06 | H55 | 0.6− | 0.3+ |
| 2004 03 03 | 413 | 0.2− | 0.0 | 2004 03 19 | 084 | 0.4+ | 0.3− | 2006 09 17 | 703 | 0.5+ | 0.1− |
| 2004 03 03 | 413 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.7+ | 0.3− | 2006 09 17 | 703 | 0.8− | 0.3− |
| 2004 03 03 | 413 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.2− | 0.4− |
| 2004 03 03 | 413 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.4− |
| 2004 03 03 | 413 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 1.1− | 0.1− |
| 2004 03 03 | 413 | 0.2− | 0.0 | 2004 03 20 | 704 | 1.0+ | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.2+ |
| 2004 03 04 | 413 | 0.1− | 0.1− | 2004 03 25 | A32 | 0.5+ | 0.2+ | 2006 09 21 | 113 | 0.1+ | 0.6− |
| 2004 03 04 | 413 | 0.0 | 0.2− | 2004 03 25 | A32 | 0.3+ | 0.1+ | 2006 09 21 | 113 | 0.5− | 0.3− |
| 2004 03 04 | 413 | 0.1− | 0.1− | 2004 03 26 | A32 | 0.5+ | 0.0 | 2006 09 21 | 113 | 0.1− | 0.5− |
| 2004 03 04 | 620 | 0.6− | 0.4− | 2004 03 26 | A32 | 0.8+ | 0.3+ | 2006 09 21 | 113 | 0.2− | 0.4− |
| 2004 03 04 | 620 | 0.4+ | 0.1− | 2004 03 27 | 704 | 1.3− | 0.7+ | 2006 09 21 | 113 | 0.3− | 0.3− |
| 2004 03 05 | 118 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2004 03 05 | 118 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.9− | 0.4− |
| 2004 03 08 | 649 | 0.5− | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2004 03 08 | 649 | 0.8− | 0.1− | 2004 03 28 | 046 | (2.1+ | 0.7−) | 2006 09 28 | 703 | 0.5− | 0.3− |
| 2004 03 08 | 649 | 0.3+ | 0.4+ | 2004 03 28 | 046 | 1.4+ | 0.5− | 2006 10 03 | 704 | 0.9+ | 0.4+ |
| 2004 03 08 | 649 | 1.2− | 0.7− | 2004 03 28 | 046 | 0.5+ | 0.2+ | 2006 10 03 | 704 | 1.2+ | 0.5+ |
| 2004 03 09 | 649 | 0.2− | 0.2− | 2004 03 28 | 046 | 0.3+ | 0.2− | 2006 10 03 | 704 | 0.8+ | 0.2+ |
| 2004 03 09 | 649 | 0.5− | 0.2− | 2004 03 28 | 046 | (1.6+ | 0.9−) | 2006 10 03 | 704 | 0.0 | 0.3+ |
| 2004 03 09 | 649 | 0.2− | 0.1+ | 2004 03 28 | A41 | 0.7− | 0.1+ | 2006 10 09 | 198 | 0.0 | 0.3− |
| 2004 03 09 | 649 | 0.3− | 0.1− | 2004 03 28 | A41 | 0.7+ | 0.4− | 2006 10 09 | 198 | 0.1− | 0.4− |
| 2004 03 09 | 084 | 0.2+ | 0.6− | 2004 03 28 | A41 | 0.5− | 0.5− | 2006 10 09 | 198 | 0.1− | 0.3− |
| 2004 03 10 | 084 | 0.3+ | 0.2+ | 2004 03 31 | 691 | 0.4+ | 0.0 | 2006 10 09 | 198 | 0.1+ | 0.0 |
| 2004 03 11 | 084 | 0.9+ | 0.2+ | 2004 03 31 | 691 | 0.3+ | 0.2− | 2006 10 09 | 198 | 0.1+ | 0.0 |

**(144333)∗ 2004 DT$_{25}$ = 2000 FT$_{50}$**

Discovered 2004 Feb. 20 by W. Ries at Altschwendt.

Id. G. V. Williams (*MPO* 61967)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 8.92714 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22365177 | $\omega$ | 348.57701 | | | +0.99777963 | | +0.05808724 | |
| $a$ | 2.6879498 | $\Omega$ | 8.30244 | | | −0.02753078 | | +0.80519030 | |
| $e$ | 0.1519156 | $i$ | 13.04104 | | | −0.06064536 | | +0.59016477 | |
| $P$ | 4.41 | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 09 27 | 704 | 1.1+ | 0.2− |
| 2000 03 29 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.3− | 2006 09 27 | 699 | 0.3− | 0.7+ |
| 2000 03 29 | 691 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.1+ |
| 2000 04 05 | 691 | 0.3+ | 0.3− | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.1− | 0.1+ |
| 2000 04 05 | 691 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.9− | 0.6− | 2006 09 29 | 704 | 0.1+ | 1.5+ |
| 2000 04 05 | 691 | 0.4+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.2− | 0.7+ |
| 2000 04 05 | 704 | 0.1− | 0.7+ | 2006 09 14 | 703 | 0.6− | 0.9− | 2006 09 29 | 704 | 0.2− | 0.4+ |
| 2000 04 05 | 704 | 0.9+ | 1.1+ | 2006 09 14 | 703 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.1− | 0.8+ |
| 2000 04 05 | 704 | 0.6+ | 1.0+ | 2006 09 14 | 703 | 0.6− | 0.9− | 2006 09 29 | 704 | 0.2+ | 0.5+ |
| 2000 04 05 | 704 | 0.3+ | 0.9+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2002 12 07 | 704 | 0.4+ | 0.9+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2002 12 07 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 644 | 0.6− | 0.0 | 2006 09 30 | 691 | 0.3− | 0.0 |
| 2002 12 07 | 704 | 1.1+ | 0.2+ | 2006 09 17 | 704 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.9+ | 0.1+ | 2006 10 17 | 703 | (2.1− | 0.7−) |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.9+ | 0.6− | 2006 10 17 | 703 | 0.7− | 0.8− |
| 2004 02 20 | A44 | 1.0− | 0.6+ | 2006 09 17 | 704 | 1.0+ | 0.2− | 2006 10 17 | 703 | (1.9+ | 1.5−) |
| 2004 02 20 | A44 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.8+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 21 | A44 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2004 02 24 | A44 | 0.6− | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2004 02 25 | A44 | 0.5− | 0.5− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 25 | A44 | 0.1− | 0.7− | 2006 09 20 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 03 10 | A44 | 0.6+ | 0.9+ | 2006 09 20 | 704 | (1.0− | 2.2+) | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 03 10 | A44 | 0.5+ | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.6+ | 2006 11 06 | 644 | 0.1+ | 1.3− |
| 2004 03 14 | A44 | 0.1+ | 0.5− | 2006 09 20 | 704 | (0.5+ | 1.8+) | 2006 11 06 | 644 | 0.2− | 0.2− |
| 2004 03 14 | A44 | 0.5+ | 0.3− | 2006 09 20 | 704 | 0.5+ | 0.5+ | 2006 11 06 | 644 | 0.1+ | 0.1− |
| 2004 03 14 | A44 | 0.4+ | 0.6− | 2006 09 21 | 138 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 21 | 138 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.8− |
| 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 22 | 138 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.5+ |
| 2006 08 25 | 704 | 0.3− | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2006 08 25 | 704 | 0.6− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2006 08 25 | 704 | 0.1− | 0.4+ | 2006 09 27 | 699 | 0.8+ | 0.6+ | 2006 11 20 | G96 | 0.3+ | 0.3− |
| 2006 08 28 | 703 | 0.0 | 0.1− | 2006 09 27 | 699 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.2− | 1.0+ | | | | |

**(144334)∗ 2004 DM$_{26}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 330.83447 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22643281 | $\omega$ | 30.44264 | | | +0.87498818 | | −0.48413734 | |
| $a$ | 2.6658956 | $\Omega$ | 358.50604 | | | +0.42174678 | | +0.76483598 | |
| $e$ | 0.0323229 | $i$ | 5.70543 | | | +0.23775058 | | +0.42501406 | |
| $P$ | 4.35 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 691 | 0.2+ | 0.2+ | 2004 02 23 | 704 | 1.1+ | 0.3− | 2006 09 19 | 699 | 0.4+ | 0.3+ |
| 2000 03 11 | 691 | 0.3+ | 0.0 | 2004 02 23 | 704 | 1.2+ | 0.4− | 2006 09 20 | 704 | 1.2− | 1.4+ |
| 2000 03 11 | 691 | 0.3− | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.4+ | 1.5+ |
| 2000 04 05 | 704 | 0.1− | 1.4+ | 2004 02 23 | 704 | 0.8− | 0.7+ | 2006 09 20 | 704 | 0.5+ | 0.3+ |
| 2000 04 05 | 704 | 0.1− | 1.0+ | 2004 02 23 | 704 | 0.5+ | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.3+ |
| 2000 04 05 | 704 | 0.7+ | 1.0+ | 2004 03 14 | 703 | (2.1− | 0.3+) | 2006 09 22 | D35 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.8+ | 0.1+ | 2004 03 14 | 703 | 1.2− | 0.9+ | 2006 09 22 | D35 | 0.3− | 0.1+ |
| 2002 10 15 | 644 | 0.1− | 0.5− | 2004 03 14 | 703 | 0.2+ | 1.2+ | 2006 09 22 | D35 | 0.2− | 0.0 |
| 2002 10 15 | 644 | 0.2− | 0.5− | 2004 03 14 | 703 | 0.6+ | 0.6− | 2006 09 25 | 699 | 0.6+ | 0.2+ |
| 2002 10 15 | 644 | 0.0 | 0.3− | 2006 08 18 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.7+ | 0.0 |
| 2002 11 01 | 644 | 0.2+ | 0.0 | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.4+ | 0.7− |
| 2002 11 01 | 644 | 0.2+ | 0.4− | 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2002 11 01 | 644 | 0.6+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2004 01 23 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 644 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2004 01 23 | 704 | 0.7+ | 0.9+ | 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.8− | 1.1+ |
| 2004 01 23 | 704 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.3− |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 16 | 699 | 1.0− | 0.7− | 2006 10 16 | G96 | 0.4− | 0.6− |
| 2004 02 16 | 704 | 0.4+ | 0.2− | 2006 09 16 | 699 | 0.2− | 1.5+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2004 02 16 | 704 | 0.6+ | 0.6+ | 2006 09 16 | 699 | 1.1− | 0.8+ | 2006 10 16 | G96 | 0.0 | 0.6− |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 1.2− | 1.3+ | 2006 10 16 | G96 | 0.1− | 0.6− |
| 2004 02 16 | 704 | 1.1− | 0.5+ | 2006 09 19 | 699 | 0.7− | 1.4+ | | | | |
| 2004 02 16 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.6− | 0.4+ | | | | |

**(144335)∗ 2004 DS$_{28}$**

Discovered 2004 Feb. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 293.19822 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21831583 | $\omega$ | 65.40729 | | | +0.53056142 | | −0.84755780 | |
| $a$ | 2.7315714 | $\Omega$ | 352.51376 | | | +0.73968610 | | +0.47000287 | |
| $e$ | 0.0840746 | $i$ | 5.40037 | | | +0.41396746 | | +0.24646112 | |
| $P$ | 4.51 | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 691 | 0.0 | 0.2− | 2002 11 23 | 644 | 0.1− | 0.6− | 2004 03 26 | 691 | 0.2− | 0.2+ |
| 1993 10 09 | 691 | 0.2+ | 0.3− | 2002 11 23 | 644 | 0.1+ | 0.6− | 2004 03 26 | 691 | 0.1− | 0.4+ |
| 1993 10 09 | 691 | 0.1+ | 0.1− | 2004 02 17 | 691 | 0.2− | 0.3+ | 2004 03 26 | 691 | 0.3− | 0.2− |
| 1993 11 09 | 691 | 0.1+ | 0.2+ | 2004 02 17 | 691 | 0.3− | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.0 |
| 1993 11 09 | 691 | 0.0 | 0.1+ | 2004 02 17 | 691 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.4− | 0.2+ |
| 1993 11 09 | 691 | 1.0− | 0.0 | 2004 02 17 | 704 | 0.8+ | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 1995 02 26 | 691 | 0.1+ | 0.5− | 2004 02 17 | 704 | 1.2+ | 0.3− | 2006 08 28 | 691 | 0.1− | 0.5+ |
| 1995 02 26 | 691 | 0.4− | 0.3− | 2004 02 17 | 704 | 1.0+ | 0.1− | 2006 08 28 | 691 | 0.1− | 0.6+ |
| 1995 02 26 | 691 | 0.4+ | 0.9− | 2004 02 17 | 704 | 1.4+ | 0.2− | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 2002 11 01 | 644 | 0.4+ | 0.1+ | 2004 02 23 | 704 | (0.5− | 1.8+) | 2006 09 30 | G96 | 0.2− | 0.5− |
| 2002 11 01 | 644 | 0.9+ | 0.2+ | 2004 02 23 | 704 | 0.7− | 1.4+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2002 11 01 | 644 | 0.6+ | 0.7+ | 2004 02 23 | 704 | 0.9+ | 1.5+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2002 11 12 | 704 | 0.3+ | 1.0+ | 2004 02 23 | 704 | 0.6+ | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.1− | 0.4− | 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2002 11 12 | 704 | 1.0+ | 1.0+ | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2002 11 12 | 704 | 0.5+ | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.9− | 0.9− |
| 2002 11 23 | 644 | 0.1− | 0.5− | 2004 02 29 | 691 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.1+ | 0.0 |

**(144336)∗ 2004 DE$_{30}$**

Discovered 2004 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.43204 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17163805 | $\omega$ | 304.27126 | | +0.25287890 | +0.96336089 | |
| $a$ | 3.2067148 | $\Omega$ | 339.80149 | | −0.78060380 | +0.14858118 | |
| $e$ | 0.1311122 | $i$ | 15.00215 | | −0.57158549 | +0.22329226 | |
| $P$ | 5.74 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2004 03 10 | 644 | 0.1− | 0.4+ | 2006 08 28 | 704 | 0.4− | 1.4− |
| 2001 09 25 | 704 | 0.2− | 0.7+ | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 691 | 0.5− | 0.5+ |
| 2001 09 25 | 704 | 0.1− | 0.4+ | 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 08 28 | 704 | 1.2+ | 1.5+ |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.5+ | 1.0+ |
| 2001 09 25 | 704 | 0.6− | 0.3+ | 2004 03 26 | 691 | 0.5+ | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.5+ |
| 2001 10 15 | 704 | (0.9− | 2.6−) | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.4− | 0.5+ |
| 2001 10 15 | 704 | (2.2− | 0.7−) | 2004 03 26 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2001 10 15 | 704 | (0.3− | 2.8−) | 2005 05 29 | E12 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.8− | 0.5− |
| 2001 10 15 | 704 | (2.3− | 0.1+) | 2005 05 29 | E12 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.8− | 0.5− |
| 2001 11 11 | 704 | (0.3+ | 2.7+) | 2005 05 29 | E12 | 0.1− | 1.0+ | 2006 08 28 | 703 | 0.2− | 0.2+ |
| 2001 11 11 | 704 | (2.0+ | 2.4+) | 2005 05 29 | E12 | 1.5+ | 0.8+ | 2006 08 29 | 704 | (1.5− | 2.3+) |
| 2001 11 11 | 704 | (1.5+ | 2.3+) | 2005 06 09 | E12 | (0.3− | 2.0−) | 2006 08 29 | 704 | (1.6− | 0.2−) |
| 2001 11 11 | 704 | (1.9− | 3.6+) | 2005 06 09 | E12 | 0.2− | 0.4+ | 2006 08 29 | 704 | 0.1+ | 0.4+ |
| 2001 11 11 | 704 | (0.6+ | 3.6+) | 2005 06 09 | E12 | 0.3− | 0.1+ | 2006 08 29 | 704 | 0.9− | 0.1+ |
| 2002 12 12 | 644 | 0.5+ | 0.8+ | 2005 06 09 | E12 | 0.1− | 0.2+ | 2006 09 17 | 704 | (1.6− | 0.5+) |
| 2002 12 12 | 644 | 0.0 | 0.4+ | 2006 06 24 | 699 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.5+ |
| 2002 12 12 | 644 | 0.0 | 0.5+ | 2006 06 24 | 699 | 0.1− | 1.1+ | 2006 09 17 | 704 | 0.8− | 0.2− |
| 2004 01 22 | 704 | 0.9+ | 1.1+ | 2006 06 24 | 699 | (0.1− | 1.6+) | 2006 09 17 | 704 | 0.1− | 0.5+ |
| 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 06 24 | 699 | (1.5+ | 2.3+) | 2006 09 18 | 699 | 1.4+ | 0.6+ |
| 2004 01 22 | 704 | 0.8+ | 0.9+ | 2006 07 21 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 699 | 0.4+ | 0.7+ |
| 2004 01 22 | 704 | 0.1− | 1.0+ | 2006 07 21 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.2− |
| 2004 02 17 | 704 | 0.1− | 0.0 | 2006 07 21 | 704 | 0.3− | 1.2+ | 2006 09 18 | 699 | (1.6+ | 0.6+) |
| 2004 02 17 | 704 | 0.6+ | 0.1− | 2006 07 25 | 644 | 0.5− | 0.3+ | 2006 09 25 | G96 | 0.7− | 0.3− |
| 2004 02 17 | 704 | 0.9+ | 0.9+ | 2006 07 25 | 644 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.4− |
| 2004 02 17 | 704 | 0.9+ | 0.6+ | 2006 07 25 | 644 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.5− | 0.1− |
| 2004 02 23 | 704 | 0.2+ | 1.1+ | 2006 08 18 | 699 | (1.6− | 0.2+) | 2006 09 25 | G96 | 0.4− | 0.1− |
| 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 08 18 | 699 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 08 18 | 699 | 0.2− | 0.9+ | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2004 02 23 | 704 | 0.8+ | 0.6− | 2006 08 18 | 699 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 08 23 | 704 | 0.4+ | 0.6− | 2006 09 26 | G96 | 0.4− | 0.5− |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 08 23 | 704 | 1.5+ | 0.5− | 2006 10 19 | G96 | 1.0− | 0.3− |
| 2004 02 29 | 691 | 0.3− | 0.4+ | 2006 08 23 | 704 | (0.6− | 1.9+) | 2006 10 19 | G96 | 1.1− | 0.1− |
| 2004 02 29 | 691 | 0.2− | 0.4+ | 2006 08 23 | 704 | 0.5− | 1.4+ | 2006 10 19 | G96 | 1.1− | 0.9− |
| 2004 03 10 | 644 | 0.2+ | 0.4+ | 2006 08 23 | 704 | 0.9+ | 0.4+ | | | | |
| 2004 03 10 | 644 | 0.4+ | 0.6+ | 2006 08 28 | 704 | 1.4+ | 0.8+ | | | | |

**(144337)∗ 2004 DG$_{30}$ = 2000 AK$_{160}$**

Discovered 2004 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61969)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.61654 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26690378 | $\omega$ | 115.19658 | | −0.66596169 | −0.74579471 | |
| $a$ | 2.3890922 | $\Omega$ | 16.59432 | | +0.66137904 | −0.60075264 | |
| $e$ | 0.0814714 | $i$ | 3.39048 | | +0.34506925 | −0.28790019 | |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.6+ | 0.4− | 2004 02 26 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2000 01 03 | 704 | (2.3+ | 0.5−) | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2000 01 03 | 704 | 0.0 | 1.3− | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2000 01 04 | 704 | (0.4− | 2.4−) | 2004 03 10 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2000 01 04 | 704 | 0.7− | 1.2− | 2004 03 10 | 644 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2000 01 04 | 704 | 0.7+ | 1.1− | 2004 03 10 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 0.6− | 1.6− | 2004 03 15 | 703 | (3.5+ | 1.1+) | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2000 01 04 | 704 | 0.7− | 0.9− | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2002 09 26 | 644 | 0.6− | 0.7+ | 2004 03 15 | 704 | 0.6+ | 1.4+ | 2006 11 13 | 104 | 0.3− | 0.5+ |
| 2002 09 26 | 644 | 0.5− | 0.5+ | 2004 03 15 | 703 | 0.9− | 0.8+ | 2006 11 13 | 104 | 0.9+ | 0.1+ |
| 2002 09 26 | 644 | 0.6− | 0.5+ | 2004 03 15 | 704 | 0.8+ | 0.6− | 2006 11 13 | 104 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.4+ | 0.7+ | 2004 03 15 | 703 | (2.5+ | 0.2−) | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.2− | 0.9− | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.9− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 1.2+ | 2004 03 15 | 703 | (1.6− | 0.5+) | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.6− | 2004 03 19 | 644 | 0.2+ | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | (1.9− | 0.6+) | 2004 03 19 | 644 | 0.0 | 0.7+ | 2006 11 17 | 703 | 0.6− | 1.0− |
| 2002 10 11 | 291 | 0.3+ | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2002 10 11 | 291 | 0.1+ | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2002 10 11 | 291 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 176 | 0.4− | 0.2− |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.7− | 2006 11 17 | 176 | 0.4− | 0.3− |
| 2004 01 22 | 704 | 0.2+ | 0.3+ | 2004 03 19 | 704 | 0.5− | 0.7+ | 2006 11 17 | 176 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.3+ | 0.3+ | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 11 18 | J95 | 0.2+ | 0.5− |
| 2004 01 22 | 704 | 0.1+ | 0.1− | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 11 18 | J95 | 0.5+ | 1.2− |
| 2004 01 22 | 704 | 0.2+ | 0.4− | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 11 18 | J95 | 0.5+ | 0.2− |
| 2004 02 17 | 704 | (0.4+ | 2.2+) | 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 18 | J95 | 0.4+ | 0.1− |
| 2004 02 17 | 704 | 1.2− | 1.4+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 18 | 682 | 0.1− | 0.2− |
| 2004 02 17 | 704 | 0.5+ | 0.7+ | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 682 | 0.4+ | 0.0 |
| 2004 02 17 | 704 | (1.1− | 1.9+) | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2004 02 23 | 704 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2004 02 23 | 704 | 0.4− | 0.5− | 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.6+ |
| 2004 02 23 | 704 | 0.0 | 1.0− | 2006 10 21 | 691 | 0.0 | 0.4+ | 2006 11 19 | J95 | 0.1+ | 0.4+ |
| 2004 02 23 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 19 | J95 | 0.0 | 0.6+ |
| 2004 02 23 | 704 | (0.1+ | 1.7−) | 2006 11 01 | G96 | 0.5+ | 0.4− | 2006 11 19 | 682 | 0.5− | 0.3− |
| 2004 02 25 | 704 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 19 | 682 | 0.2− | 0.1+ |
| 2004 02 25 | 704 | 1.1+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 19 | 682 | 0.3− | 0.2+ |
| 2004 02 25 | 704 | 1.2+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2004 02 25 | 704 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.6− | 0.5− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2004 02 25 | 704 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 11 08 | 644 | 1.2− | 0.1− | 2006 11 19 | 704 | 0.3− | 1.2− |
| 2004 02 26 | 704 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.5− | 0.1− | 2006 11 19 | 704 | 1.0− | 0.8+ |

**(144338)∗ 2004 DO$_{30}$**

Discovered 2004 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.35538 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20503980 | $\omega$ | 23.88085 | | +0.98521103 | −0.15734470 | |
| $a$ | 2.8482445 | $\Omega$ | 344.70170 | | +0.08347180 | +0.78648713 | |
| $e$ | 0.1510783 | $i$ | 14.89866 | | +0.14963852 | +0.59722746 | |
| $P$ | 4.81 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 25 | 644 | 0.5− | 1.1+ | 2004 03 15 | 703 | 0.3+ | 1.1+ | 2006 08 28 | E12 | 0.2− | 0.0 |
| 2001 06 25 | 644 | 0.5− | 0.7+ | 2004 03 15 | 703 | 0.7+ | 0.4+ | 2006 09 16 | 704 | 0.9+ | 1.1+ |
| 2001 06 25 | 644 | 0.6− | 1.2+ | 2004 03 15 | 703 | 0.0 | 1.2+ | 2006 09 16 | 704 | 0.5− | 1.2+ |
| 2002 12 10 | 704 | 0.2+ | 0.9+ | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 09 16 | 704 | (1.2− | 1.8+) |
| 2002 12 10 | 704 | (0.3− | 2.0+) | 2004 03 30 | 691 | 0.3+ | 0.2+ | 2006 09 16 | 704 | 0.5− | 0.2− |
| 2002 12 10 | 704 | (0.2+ | 2.0+) | 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 09 22 | 699 | 0.1+ | 0.8− |
| 2002 12 10 | 704 | 0.8− | 1.0+ | 2006 07 18 | E12 | 0.2− | 0.2− | 2006 09 22 | 699 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | 0.5+ | 1.1+ | 2006 07 18 | E12 | 0.5− | 0.3− | 2006 09 22 | 699 | 0.0 | 1.3+ |
| 2002 12 28 | 704 | 0.3− | 0.1− | 2006 07 18 | E12 | 0.9− | 0.2− | 2006 09 22 | 699 | 0.1− | 0.7+ |
| 2002 12 28 | 704 | 0.8− | 0.7+ | 2006 07 18 | E12 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.2+ |
| 2002 12 28 | 704 | 0.2+ | 0.6+ | 2006 08 14 | 428 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.8− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 28 | 704 | 0.0 | 0.2+ | 2006 08 14 | 428 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.6+ | 0.3− |
| 2004 01 22 | 704 | 0.7+ | 0.2+ | 2006 08 15 | 428 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.7+ |
| 2004 01 22 | 704 | 0.6+ | 0.3− | 2006 08 16 | E12 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.4− |
| 2004 01 22 | 704 | 0.4+ | 0.2+ | 2006 08 16 | E12 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.2+ |
| 2004 01 22 | 704 | 0.8+ | 0.1+ | 2006 08 16 | E12 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.8− |
| 2004 02 17 | 704 | 0.3− | 1.4+ | 2006 08 16 | E12 | 0.2+ | 0.3− | 2006 09 28 | 704 | 0.3− | 0.4+ |
| 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 704 | 0.4− | 0.2− |
| 2004 02 17 | 704 | 0.8− | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 704 | 0.1− | 1.0− |
| 2004 02 23 | 704 | 0.0 | 0.3− | 2006 08 17 | 644 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.4+ | 0.5+ | 2006 08 28 | 704 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.9− | 0.7+ |
| 2004 02 23 | 704 | 0.5− | 0.5+ | 2006 08 28 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.5− | 1.0+ |
| 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.3− | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.9+ |
| 2004 02 23 | 704 | 0.5+ | 0.1− | 2006 08 28 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 1.2− | 0.6+ |
| 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 08 28 | E12 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 08 28 | E12 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2004 03 15 | 703 | (0.0 | 2.2+) | 2006 08 28 | E12 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |

**(144339)∗ 2004 DY$_{31}$**

Discovered 2004 Feb. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.66532 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18027679 | $\omega$ | 294.39047 | | −0.12430244 | | −0.99087212 |
| $a$ | 3.1034364 | $\Omega$ | 162.51015 | | +0.96162117 | | −0.13326021 |
| $e$ | 0.0741443 | $i$ | 9.99591 | | +0.24460916 | | +0.02035092 |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 08 | 644 | 0.9− | 1.2+ | 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 08 15 | D35 | 0.2− | 0.2+ |
| 2001 10 08 | 644 | 0.1+ | 0.9+ | 2004 03 20 | 691 | 0.3− | 0.1+ | 2006 08 15 | D35 | 0.1− | 0.4+ |
| 2001 10 08 | 644 | 0.3− | 1.0+ | 2004 03 20 | 691 | 0.2− | 0.0 | 2006 08 19 | 699 | (0.8− | 2.8+) |
| 2001 10 16 | 644 | 0.2− | 1.1+ | 2004 03 23 | 704 | 1.4+ | 0.4+ | 2006 08 19 | 699 | 0.1− | 1.0+ |
| 2001 10 16 | 644 | 0.1− | 1.3+ | 2004 03 23 | 704 | 1.3+ | 0.9+ | 2006 08 19 | 699 | 0.1+ | 0.1− |
| 2001 10 16 | 644 | 0.2− | 0.9+ | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 08 19 | 699 | 0.0 | 0.2+ |
| 2004 02 17 | 291 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.7+ | 0.8+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2004 02 17 | 291 | 0.1+ | 0.2+ | 2004 03 24 | 699 | (1.6− | 0.8+) | 2006 08 20 | 644 | 0.0 | 0.5+ |
| 2004 02 17 | 291 | 0.0 | 0.1+ | 2004 03 24 | 699 | 0.5− | 0.7− | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 2004 02 23 | 704 | (2.2+ | 0.7−) | 2004 03 24 | 699 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.4+ | 0.7+ |
| 2004 02 23 | 704 | (1.6+ | 0.4−) | 2004 03 24 | 699 | 0.9− | 0.4+ | 2006 08 22 | 644 | 0.1+ | 0.3+ |
| 2004 02 23 | 704 | (1.9+ | 1.1+) | 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.3+ | 0.6+ |
| 2004 02 23 | 704 | 0.9+ | 0.2+ | 2004 04 16 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2004 03 12 | 644 | 0.1− | 0.5+ | 2004 04 16 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.7− | 0.0 |
| 2004 03 12 | 644 | 0.0 | 0.3+ | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 2004 03 12 | 644 | 0.3+ | 0.2+ | 2004 04 21 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.2+ |
| 2004 03 19 | 704 | 0.4+ | 0.3+ | 2004 04 21 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.6+ |
| 2004 03 19 | 704 | 0.3+ | 0.9+ | 2005 07 11 | 691 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2004 03 19 | 704 | 0.3+ | 0.3+ | 2005 07 11 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 1.0+ | 1.3+ |
| 2004 03 19 | 704 | 0.3+ | 0.2+ | 2005 07 11 | 691 | 0.4− | 0.5− | 2006 11 17 | G96 | 2.1− | 0.7+ |
| 2004 03 19 | 704 | 0.5+ | 0.4+ | 2006 08 15 | D35 | 0.0 | 0.1+ | | | | |

**(144340)∗ 2004 DG$_{32}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.72925 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26694903 | $\omega$ | 335.55601 | | −0.78411240 | | +0.61703800 |
| $a$ | 2.3888221 | $\Omega$ | 242.70984 | | −0.55636567 | | −0.74640767 |
| $e$ | 0.1442400 | $i$ | 4.29605 | | −0.27499999 | | −0.24927835 |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 09 | 695 | 0.2+ | 0.1− | 2004 02 26 | 704 | (1.2+ | 2.8−) | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2002 11 09 | 695 | 0.1− | 0.2− | 2004 02 26 | 704 | 0.2− | 1.1− | 2006 10 17 | G96 | 0.7+ | 0.1− |
| 2004 01 23 | 704 | 0.2− | 1.0+ | 2005 07 29 | 644 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.8+ | 0.1+ |
| 2004 01 23 | 704 | 0.8+ | 0.1− | 2005 07 29 | 644 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2004 01 23 | 704 | 0.2+ | 0.1+ | 2005 07 29 | 644 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2004 01 23 | 704 | 0.5− | 1.2+ | 2005 07 30 | 644 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.6− |
| 2004 02 13 | 699 | 0.1− | 0.2+ | 2005 07 30 | 644 | 0.1− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2004 02 13 | 699 | 0.6+ | 0.2− | 2005 07 30 | 644 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2004 02 13 | 699 | 0.1− | 0.1− | 2005 08 24 | 644 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2004 02 13 | 699 | 0.2+ | 0.6+ | 2005 08 24 | 644 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2004 02 18 | 704 | 0.6− | 0.8+ | 2005 08 24 | 644 | 0.0 | 0.7+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2004 02 18 | 704 | 0.4+ | 0.7+ | 2005 09 03 | 644 | 0.2− | 0.6+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2004 02 18 | 704 | 0.5+ | 0.5+ | 2005 09 03 | 644 | 0.1− | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2004 02 18 | 704 | 0.2− | 1.0+ | 2005 09 03 | 644 | 0.1+ | 0.5+ | 2006 11 27 | 703 | 1.4− | 0.7− |
| 2004 02 23 | 704 | 0.3+ | 0.5+ | 2005 11 01 | G96 | 0.4− | 0.3− | 2006 11 27 | 703 | 0.6− | 0.2− |
| 2004 02 23 | 704 | 0.2+ | 0.1+ | 2005 11 01 | G96 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.3− | 0.1+ | 2005 11 01 | G96 | 1.0− | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.2+ |
| 2004 02 26 | 704 | 0.2− | 0.1− | 2005 11 01 | G96 | 0.2− | 0.0 | | | | |
| 2004 02 26 | 704 | 1.2+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.6− | | | | |

**(144341)∗ 2004 DS$_{32}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.70987 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24329589 | $\omega$ | 197.04535 | | −0.32117540 | | +0.94659139 |
| $a$ | 2.5412430 | $\Omega$ | 54.22950 | | −0.86472954 | | −0.28087313 |
| $e$ | 0.0891751 | $i$ | 2.01156 | | −0.38612068 | | −0.15835095 |
| $P$ | 4.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 644 | 0.2+ | 0.0 | 2004 03 15 | 703 | 0.6+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2001 08 12 | 644 | 0.4− | 0.0 | 2004 03 15 | 703 | 0.3+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2001 08 12 | 644 | 0.3+ | 0.1+ | 2004 03 15 | 703 | 0.0 | 0.1− | 2006 10 21 | 691 | (2.4− | 1.3+) |
| 2001 08 24 | 644 | (1.0− | 3.0−) | 2004 03 15 | 703 | 0.4+ | 1.0− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2001 08 24 | 644 | (0.7− | 2.9−) | 2004 03 19 | 704 | (1.6− | 0.9−) | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2001 08 24 | 644 | (0.7− | 2.6−) | 2004 03 19 | 704 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2+ |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 02 16 | 691 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.5− | 0.4− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2004 03 29 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2004 02 18 | 704 | 0.5+ | 1.1+ | 2004 03 29 | 691 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 02 18 | 704 | 0.0 | 0.8+ | 2004 03 29 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2004 02 18 | 704 | 0.5+ | 0.3+ | 2005 07 07 | 691 | 0.0 | 0.4+ | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2004 02 23 | 704 | 0.1+ | 0.1− | 2005 07 07 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.5+ |
| 2004 02 23 | 704 | 0.2− | 0.0 | 2005 07 07 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | (2.6− | 1.4−) |
| 2004 02 23 | 704 | 0.1+ | 0.4+ | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 11 16 | 703 | (2.0+ | 0.6+) |
| 2004 02 23 | 704 | 0.7+ | 1.0− | 2005 07 11 | 691 | 0.0 | 0.1− | 2006 11 16 | 703 | (1.8+ | 0.2+) |
| 2004 02 23 | 704 | 0.2+ | 0.4+ | 2005 07 11 | 691 | 0.1− | 0.3+ | 2006 11 16 | 703 | (1.6+ | 0.7+) |
| 2004 03 14 | 691 | 0.2+ | 0.4+ | 2005 08 06 | 704 | 1.4+ | 0.7+ | 2006 11 16 | 703 | (1.4+ | 2.6+) |
| 2004 03 14 | 691 | 0.1− | 0.1− | 2005 08 06 | 704 | 0.2+ | 1.2+ | | | | |
| 2004 03 14 | 691 | 0.5− | 0.0 | 2005 08 06 | 704 | (1.3− | 2.1+) | | | | |

**(144342)∗ 2004 DW$_{32}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.47012 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23975761 | $\omega$ | 95.87042 | | −0.59872986 | | +0.79689761 |
| $a$ | 2.5661839 | $\Omega$ | 137.01070 | | −0.77362253 | | −0.54935160 |
| $e$ | 0.0608304 | $i$ | 6.77826 | | −0.20743850 | | −0.25133049 |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 06 | 688 | 1.2+ | 0.0 | 2004 03 14 | 703 | 1.3− | 0.8+ | 2004 03 23 | 704 | 0.5− | 0.0 |
| 1997 07 06 | 688 | 0.5+ | 0.0 | 2004 03 15 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.9− | 0.1+ |
| 1997 07 06 | 688 | 0.2+ | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.2− |
| 1997 07 06 | 688 | 0.6+ | 0.2+ | 2004 03 15 | 704 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.1+ |
| 2000 03 12 | 704 | 0.8− | 1.0+ | 2004 03 15 | 704 | 0.2+ | 0.9+ | 2004 03 23 | 704 | 0.8− | 0.3− |
| 2000 03 12 | 704 | 1.1− | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2005 06 18 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 1.2− | 0.9− | 2004 03 16 | 704 | 0.2+ | 1.3+ | 2005 06 18 | G96 | 0.2+ | 0.1+ |
| 2000 03 26 | 699 | 0.5+ | 1.1+ | 2004 03 16 | 704 | 0.0 | 0.3− | 2005 06 18 | G96 | 0.2− | 0.2+ |
| 2000 03 26 | 699 | 0.1− | 0.8+ | 2004 03 16 | 704 | 1.5+ | 0.2+ | 2005 06 18 | G96 | 0.0 | 0.1− |
| 2000 03 26 | 699 | 0.0 | 0.6− | 2004 03 16 | 704 | (2.4− | 0.1−) | 2005 07 08 | 691 | 0.1− | 0.4+ |
| 2000 03 26 | 699 | 0.6+ | 1.1+ | 2004 03 16 | 704 | 0.0 | 0.1+ | 2005 07 08 | 691 | 0.0 | 0.3+ |
| 2000 04 03 | 704 | 0.9+ | 0.5− | 2004 03 16 | 704 | (1.0− | 2.5+) | 2005 07 08 | 691 | 0.0 | 0.3+ |
| 2000 04 03 | 704 | 0.3+ | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.4+ | 2005 08 01 | E12 | 0.2− | 0.4+ |
| 2000 04 03 | 704 | 0.1+ | 0.4+ | 2004 03 16 | 704 | 0.9− | 1.0− | 2005 08 01 | E12 | 0.8− | 0.0 |
| 2000 04 03 | 704 | 0.6+ | 0.3+ | 2004 03 17 | 704 | 0.1+ | 0.5+ | 2005 08 01 | E12 | 0.8+ | 0.1− |
| 2000 04 03 | 704 | 1.0− | 1.1+ | 2004 03 17 | 704 | 0.9+ | 0.6− | 2005 08 01 | E12 | 0.6+ | 0.5− |
| 2001 08 16 | 704 | 0.0 | 0.0 | 2004 03 17 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | (1.0− | 2.1−) |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2004 03 17 | 704 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.5+ | 0.8− |
| 2001 08 16 | 704 | 0.7− | 0.2− | 2004 03 17 | 704 | 0.9+ | 0.5− | 2006 10 16 | 703 | 0.7− | 1.4+ |
| 2001 08 27 | 644 | 0.5− | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | (1.8− | 0.3−) |
| 2001 08 27 | 644 | 0.6− | 0.3+ | 2004 03 19 | 704 | 0.8+ | 0.6− | 2006 11 01 | 703 | 0.5+ | 0.9+ |
| 2001 08 27 | 644 | 0.6− | 0.2+ | 2004 03 19 | 704 | 1.0+ | 0.5− | 2006 11 01 | 703 | 0.0 | 0.9+ |
| 2004 02 18 | 704 | 0.4− | 0.2+ | 2004 03 19 | 704 | 0.2− | 0.1− | 2006 11 01 | 703 | 1.0+ | 1.2+ |
| 2004 02 18 | 704 | 0.1− | 0.9+ | 2004 03 19 | 704 | 0.2− | 0.4+ | 2006 11 01 | 703 | 0.2− | 0.8+ |
| 2004 02 18 | 704 | 0.9+ | 0.2+ | 2004 03 20 | 704 | 0.2− | 0.4− | 2006 11 19 | 703 | (2.0− | 1.4+) |
| 2004 02 23 | 704 | 0.7+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.5− | 2006 11 19 | 703 | 0.2− | 0.3+ |
| 2004 02 23 | 704 | 0.6+ | 0.2+ | 2004 03 20 | 704 | (1.7+ | 2.6+) | 2006 11 19 | 703 | 0.6− | 1.0− |
| 2004 02 23 | 704 | 0.5+ | 0.1+ | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 1.5− | 0.6+ |
| 2004 02 23 | 704 | 0.4+ | 0.3− | 2004 03 22 | 704 | 0.4+ | 0.9+ | 2006 11 24 | G96 | 0.5− | 0.2+ |
| 2004 02 23 | 704 | 0.6+ | 0.0 | 2004 03 22 | 704 | 0.8+ | 0.1− | 2006 11 24 | G96 | 0.5− | 0.2+ |
| 2004 03 14 | 703 | 1.0− | 0.4− | 2004 03 22 | 704 | 0.5− | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2004 03 14 | 703 | 0.4− | 0.7+ | 2004 03 22 | 704 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.0 | 0.3+ |
| 2004 03 14 | 703 | 0.6− | 0.2− | 2004 03 22 | 704 | 0.2− | 0.4− | | | | |

**(144343)∗ 2004 DM$_{33}$ = 2002 VS$_{52}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61969)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.66943 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26019635 | $\omega$ | 164.49430 | | −0.93433600 | +0.35576934 |
| $a$ | 2.4299756 | $\Omega$ | 36.36845 | | −0.33064878 | −0.84325150 |
| $e$ | 0.1157978 | $i$ | 2.03739 | | −0.13299482 | −0.40293310 |
| $P$ | 3.79 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 1.1− | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2005 08 22 | 644 | 0.3− | 0.8+ |
| 2000 02 03 | 704 | 0.2+ | 0.4+ | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2005 08 30 | 644 | 0.2− | 0.8+ |
| 2000 02 03 | 704 | 1.2+ | 0.6− | 2004 03 19 | 704 | 0.1− | 0.0 | 2005 08 30 | 644 | 0.1− | 0.7+ |
| 2000 02 11 | 704 | 0.1− | 0.6− | 2004 03 19 | 704 | 0.0 | 0.3+ | 2005 08 30 | 644 | 0.3− | 0.3+ |
| 2000 02 11 | 704 | 0.5− | 0.4+ | 2004 03 20 | 699 | 0.8− | 0.0 | 2005 10 28 | G96 | 0.3− | 0.8− |
| 2000 02 11 | 704 | 0.1− | 0.8− | 2004 03 20 | 699 | 0.8− | 0.2+ | 2005 10 28 | G96 | 1.2− | 0.0 |
| 2000 02 11 | 704 | 0.5− | 0.6+ | 2004 03 20 | 699 | 0.3− | 0.5+ | 2005 10 28 | G96 | 0.2− | 0.2+ |
| 2001 07 27 | 608 | 0.3+ | 0.5− | 2004 03 20 | 699 | 0.4− | 0.2− | 2005 10 28 | G96 | 0.1− | 0.2+ |
| 2001 07 27 | 608 | 0.4+ | 0.9− | 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 07 27 | 608 | 0.0 | 0.7− | 2004 03 21 | 691 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.7− |
| 2002 11 06 | 704 | 0.5+ | 1.2+ | 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 1.2− | 0.6+ | 2004 03 22 | 704 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2002 11 06 | 704 | (0.2− | 1.6+) | 2004 03 22 | 704 | 0.1+ | 0.6+ | 2006 10 29 | G96 | 0.4− | 0.0 |
| 2002 11 07 | 704 | 0.7+ | 1.4+ | 2004 03 22 | 704 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.2− | 0.1− |
| 2002 11 07 | 704 | (1.1+ | 2.1+) | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.4− | 0.3− |
| 2002 11 07 | 704 | (0.3− | 1.8+) | 2004 03 22 | 704 | 0.2− | 0.4+ | 2006 10 29 | G96 | 0.5+ | 0.2− |
| 2004 02 18 | 704 | 0.2+ | 0.1− | 2004 03 28 | 704 | 0.2+ | 1.2+ | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2004 02 18 | 704 | 0.4− | 0.9− | 2004 03 28 | 704 | 0.6− | 1.0+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2004 02 18 | 704 | 0.4+ | 0.2− | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2004 02 18 | 704 | 0.3− | 0.1− | 2004 03 28 | 704 | 0.5+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.7− |
| 2004 02 18 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2004 02 23 | 704 | 0.1+ | 0.8− | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2004 02 23 | 704 | 0.9+ | 0.4− | 2004 03 30 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2004 02 23 | 704 | 0.6+ | 0.3− | 2004 03 30 | 691 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.4− | 0.2+ |
| 2004 02 23 | 704 | 0.7+ | 0.6− | 2005 07 28 | 644 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2004 02 23 | 704 | 0.6+ | 0.0 | 2005 07 28 | 644 | 0.3− | 0.6+ | 2006 11 15 | 691 | 0.4− | 0.2− |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2005 07 28 | 644 | 0.1− | 0.9+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2005 08 04 | 644 | 0.4− | 0.8+ | 2006 11 19 | 691 | 0.7+ | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2005 08 04 | 644 | 0.1− | 0.7+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2004 03 15 | 704 | 0.1+ | 0.3+ | 2005 08 04 | 644 | 0.4− | 0.8+ | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | 0.3+ | 0.1+ | 2005 08 05 | 644 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 03 15 | 704 | 1.0+ | 0.3+ | 2005 08 05 | 644 | 0.4− | 0.8+ | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2004 03 15 | 704 | 0.5+ | 0.9+ | 2005 08 05 | 644 | 0.1− | 0.8+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2004 03 15 | 704 | 0.3+ | 0.7+ | 2005 08 22 | 644 | 0.1− | 0.5+ | 2006 11 27 | 691 | 0.4+ | 0.0 |
| 2004 03 19 | 704 | 0.1+ | 0.1+ | 2005 08 22 | 644 | 0.1− | 0.8+ | 2006 11 27 | 691 | 0.3+ | 0.3+ |

**(144344)∗ 2004 DQ$_{33}$ = 2000 CN$_{37}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61970)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.93363 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26643513 | $\omega$ | 294.30961 | | +0.26757860 | −0.95996970 |
| $a$ | 2.3918929 | $\Omega$ | 139.88030 | | +0.92406415 | +0.23131600 |
| $e$ | 0.1181126 | $i$ | 7.38478 | | +0.27295998 | +0.15795914 |
| $P$ | 3.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2004 04 08 | 198 | 0.4− | 0.5− |
| 1991 10 07 | 691 | 0.1− | 0.0 | 2004 02 23 | 704 | (2.0− | 0.9+) | 2004 04 08 | 198 | 0.6− | 0.3− |
| 1991 10 07 | 691 | 0.0 | 1.1+ | 2004 02 23 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | (0.7− | 2.1+) |
| 2000 01 07 | 704 | 0.2+ | 0.5− | 2004 03 11 | 644 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 1.2− | 0.2− |
| 2000 01 07 | 704 | 0.3− | 0.7− | 2004 03 11 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.6+ |
| 2000 01 07 | 704 | 0.2+ | 0.2− | 2004 03 11 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 1.1− |
| 2000 02 03 | 704 | 0.6+ | 1.1− | 2004 03 11 | 644 | 0.3− | 0.1− | 2006 11 13 | 703 | (0.6+ | 3.8+) |
| 2000 02 03 | 704 | 0.8− | 0.0 | 2004 03 11 | 644 | 0.1+ | 0.6+ | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2000 02 03 | 704 | 0.2− | 0.0 | 2004 03 11 | 644 | 0.4− | 0.1− | 2006 11 13 | 703 | 0.4+ | 1.2+ |
| 2000 02 03 | 704 | 0.1− | 1.1− | 2004 03 15 | 704 | 0.6− | 1.2+ | 2006 11 13 | 703 | 1.3− | 0.1− |
| 2000 02 05 | 704 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.8+ | 1.1+ | 2006 11 19 | 703 | 0.6+ | 0.2+ |
| 2000 02 05 | 704 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.9+ | 0.8+ | 2006 11 19 | 703 | 0.8+ | 0.5− |
| 2000 02 05 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.7+ | 1.1+ | 2006 11 19 | 703 | 0.4+ | 0.1+ |
| 2000 02 05 | 704 | 0.4+ | 0.6+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.7+ | 0.2+ |
| 2004 02 18 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.5+ | 0.3− | 2006 11 20 | 703 | 0.7− | 0.1− |
| 2004 02 18 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.3− | 2006 11 20 | 703 | 0.8+ | 0.7− |
| 2004 02 18 | 704 | 0.8+ | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.0 | 2006 11 20 | 703 | 0.7+ | 0.2− |
| 2004 02 18 | 704 | 0.8+ | 0.7− | 2004 03 20 | 704 | 0.3− | 0.9+ | 2006 11 20 | 703 | 0.8− | 0.7− |
| 2004 02 23 | 704 | 1.4− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.0 | | | | |
| 2004 02 23 | 704 | 0.1+ | 0.4− | 2004 04 08 | 198 | 0.1+ | 0.5− | | | | |

**(144345)∗ 2004 DJ$_{34}$ = 2002 VU$_{7}$**

Discovered 2004 Feb. 18 by NEAT at Haleakala.

Id. A. Doppler (*MPO* 69681)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.33532 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23167546 | $\omega$ | 61.59601 | | +0.54265069 | −0.83985490 |
| $a$ | 2.6255242 | $\Omega$ | 355.47310 | | +0.70028350 | +0.46102967 |
| $e$ | 0.0868442 | $i$ | 9.61992 | | +0.46382459 | +0.28652292 |
| $P$ | 4.25 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.2+ | 0.3− | 2006 08 18 | 691 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.2− | 1.0+ |
| 1998 12 17 | 704 | 0.3+ | 1.1− | 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 704 | (0.3+ | 1.6+) |
| 1998 12 17 | 704 | 1.2− | 0.7+ | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 29 | 704 | (0.3− | 1.7+) |
| 1998 12 17 | 704 | 0.9− | 0.5− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 1.5+ | 0.6+ |
| 2002 10 04 | 704 | (2.2+ | 2.2−) | 2006 08 24 | 644 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.7+ | 0.1− |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.4+ | 1.0+ |
| 2002 10 04 | 704 | 0.4+ | 0.9− | 2006 08 25 | 704 | 1.2− | 0.3− | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2002 10 04 | 704 | 0.1+ | 0.5− | 2006 08 25 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 704 | (0.7− | 2.0+) |
| 2002 10 04 | 704 | 1.4+ | 1.0− | 2006 08 25 | 704 | 1.3+ | 0.5− | 2006 09 30 | 704 | 0.6+ | 0.3+ |
| 2002 10 10 | 704 | 0.6+ | 0.8+ | 2006 08 25 | 704 | 1.0− | 0.0 | 2006 09 30 | 704 | 0.6+ | 0.1+ |
| 2002 10 10 | 704 | 0.9+ | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.6− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.5− | 1.5+ | 2006 09 13 | 644 | 0.5− | 0.0 | 2006 10 01 | 703 | (1.8− | 0.5+) |
| 2002 11 01 | 644 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 01 | 703 | 0.2− | 0.4+ |
| 2002 11 01 | 644 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.0 | 0.2− |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.4− | 0.7+ |
| 2002 11 05 | 704 | 0.2− | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 11 05 | 704 | 0.7+ | 0.7− | 2006 09 16 | 699 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.0 | 1.1− | 2006 09 16 | 699 | 0.7− | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.1− | 0.8− | 2006 09 16 | 699 | 0.1+ | 1.0+ | 2006 10 16 | 703 | (1.6− | 0.6−) |
| 2002 11 14 | 704 | 0.4− | 0.1− | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.7+ |
| 2002 11 14 | 704 | (1.9+ | 0.4+) | 2006 09 19 | 699 | 0.3− | 0.9+ | 2006 10 16 | 703 | 1.2− | 0.1− |
| 2002 11 14 | 704 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 10 16 | 703 | (2.0− | 0.3+) |
| 2002 11 14 | 704 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.5− | 0.5+ | 2006 10 23 | 644 | 0.4− | 0.3+ |
| 2002 11 14 | 704 | 0.0 | 0.4− | 2006 09 19 | 699 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2004 02 18 | 608 | 0.6+ | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2004 02 18 | 608 | 0.6+ | 1.0− | 2006 09 20 | 704 | 1.1− | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2004 02 18 | 608 | 0.6+ | 1.0− | 2006 09 20 | 704 | 0.6− | 0.8− | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2004 02 23 | 704 | (0.7+ | 1.8+) | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2004 02 23 | 704 | 0.1+ | 1.3+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2004 02 23 | 704 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2004 02 23 | 704 | 0.3+ | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2004 03 14 | 691 | 0.1+ | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2004 03 14 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.6− | 2006 11 14 | G96 | 0.1− | 0.9− |
| 2004 03 14 | 691 | 0.4+ | 0.6+ | 2006 09 26 | 704 | 0.3+ | 0.6− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 703 | 1.1+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 703 | 1.4− | 0.1− | 2006 09 26 | 704 | 0.7− | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2004 03 15 | 703 | 1.0+ | 0.3− | 2006 09 26 | 704 | 0.5− | 0.4− | | | | |
| 2004 03 15 | 703 | 0.6− | 0.4+ | 2006 09 27 | 704 | 0.4− | 0.3+ | | | | |

**(144346)∗ 2004 DH$_{35}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.08877 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26018465 | $\omega$ | 325.76847 | | −0.96978838 | +0.23323482 | |
| $a$ | 2.4300485 | $\Omega$ | 227.88742 | | −0.19665302 | −0.92087474 | |
| $e$ | 0.0761550 | $i$ | 5.53083 | | −0.14435405 | −0.31239594 | |
| $P$ | 3.79 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 26 | 691 | 0.3+ | 0.5− | 2004 02 23 | 704 | 0.2+ | 0.0 | 2005 07 06 | 691 | 0.1− | 0.6+ |
| 1993 04 26 | 691 | 0.2+ | 0.2− | 2004 02 23 | 704 | 0.2− | 0.2− | 2005 08 25 | 599 | 0.2− | 0.7+ |
| 1993 04 26 | 691 | 0.6− | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2005 08 25 | 599 | 0.4− | 0.3+ |
| 2000 02 02 | 704 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2005 08 25 | 599 | 0.2− | 0.3+ |
| 2000 02 02 | 704 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2000 02 02 | 704 | 0.1+ | 0.1+ | 2004 02 24 | 097 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2000 02 02 | 704 | 0.0 | 0.7− | 2004 02 24 | 097 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.5− | 0.2− |
| 2000 02 02 | 704 | 0.5− | 0.3+ | 2004 02 26 | 683 | (0.1− | 1.8+) | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2002 10 09 | 704 | (0.3− | 1.7+) | 2004 02 26 | 683 | 0.4+ | 1.1+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.6+ | 0.8+ | 2004 02 26 | 683 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2002 10 09 | 704 | 0.4+ | 1.0+ | 2004 02 29 | 683 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2002 10 09 | 704 | 1.2+ | 0.8− | 2004 02 29 | 683 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2002 10 12 | 704 | 0.6+ | 0.6+ | 2004 02 29 | 683 | (3.0+ | 1.4+) | 2006 11 12 | 703 | 0.9− | 0.0 |
| 2002 10 12 | 704 | (2.6− | 1.3+) | 2004 03 10 | 608 | 0.1− | 0.9− | 2006 11 12 | 703 | 0.7− | 0.4+ |
| 2002 10 12 | 704 | 1.7− | 0.1+ | 2004 03 10 | 608 | 0.1+ | 1.1− | 2006 11 12 | 703 | 1.3− | 0.0 |
| 2002 10 12 | 704 | 0.3− | 0.8+ | 2004 03 10 | 608 | 0.6+ | 0.3+ | 2006 11 12 | 703 | 0.4− | 0.5+ |
| 2002 10 12 | 704 | 0.5− | 0.2+ | 2004 03 12 | 644 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.5+ |
| 2002 10 31 | 644 | 0.3+ | 0.4+ | 2004 03 12 | 644 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.8+ |
| 2002 10 31 | 644 | 0.4− | 0.3+ | 2004 03 12 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.5− | 0.1+ |
| 2002 10 31 | 644 | 0.2+ | 0.6+ | 2004 03 15 | 704 | (0.2− | 1.9+) | 2006 11 17 | 703 | 0.8− | 0.4− |
| 2002 12 07 | 291 | 0.1− | 0.1− | 2004 03 15 | 704 | 1.1+ | 1.5+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2002 12 07 | 291 | 0.1− | 0.2+ | 2004 03 15 | 704 | (1.6+ | 0.5+) | 2006 11 17 | 703 | 0.8− | 0.9− |
| 2002 12 07 | 291 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.5+ | 1.2+ | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 2004 01 18 | 608 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.4+ | 1.5+ |
| 2004 01 18 | 608 | 0.3+ | 0.4+ | 2004 03 19 | 704 | 0.4+ | 0.3− | 2006 11 18 | 704 | 1.3− | 0.4+ |
| 2004 01 18 | 608 | 0.1− | 0.1− | 2004 03 19 | 704 | 0.3− | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.5− |
| 2004 01 23 | 704 | 0.5+ | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.7− | 0.4+ |
| 2004 01 23 | 704 | 1.1+ | 0.7− | 2004 03 19 | 704 | 0.2+ | 1.1+ | 2006 11 18 | 704 | 1.0− | 0.2− |
| 2004 01 23 | 704 | 0.2+ | 0.3− | 2004 03 19 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | 1.2+ | 1.0− |
| 2004 01 23 | 704 | 1.1− | 0.0 | 2004 03 21 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2004 01 29 | 704 | 0.5− | 0.5+ | 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2004 01 29 | 704 | 0.8+ | 0.5+ | 2004 03 21 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2004 01 29 | 704 | 0.1+ | 0.5+ | 2004 03 27 | 703 | 1.4+ | 0.9+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2004 02 19 | 704 | 0.2+ | 0.1+ | 2004 03 27 | 703 | (0.7+ | 1.8+) | 2006 11 21 | 704 | 0.8+ | 0.5− |
| 2004 02 19 | 704 | 0.0 | 0.0 | 2004 03 27 | 703 | (0.8+ | 1.5+) | 2006 11 21 | 704 | 2.4+ | 0.7− |
| 2004 02 19 | 704 | 0.7− | 0.0 | 2004 03 27 | 703 | (0.5+ | 2.2+) | 2006 11 21 | 704 | 2.8+ | 0.1+ |
| 2004 02 19 | 704 | 0.2− | 0.1− | 2005 07 06 | 691 | 0.2− | 0.6+ | 2006 11 21 | 704 | 2.8+ | 0.9− |
| 2004 02 19 | 704 | 0.2− | 0.7+ | 2005 07 06 | 691 | 0.1− | 0.6+ | 2006 11 21 | 704 | 2.4+ | 0.6− |

**(144347)∗ 2004 DO$_{36}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.73912 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20605887 | $\omega$ | 281.73646 | | −0.32811012 | −0.94446040 | |
| $a$ | 2.8388460 | $\Omega$ | 187.49506 | | +0.91229979 | −0.31176617 | |
| $e$ | 0.0133223 | $i$ | 8.10599 | | +0.24505682 | −0.10390573 | |
| $P$ | 4.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.6− | 1.0+ | 2004 02 23 | 704 | 0.8+ | 0.6+ | 2005 06 14 | 691 | 0.2+ | 0.1+ |
| 1992 10 03 | 691 | 0.0 | 0.5+ | 2004 02 26 | 704 | 0.2− | 0.7+ | 2005 07 04 | 691 | 0.1+ | 0.1+ |
| 1992 10 03 | 691 | 0.4+ | 0.4+ | 2004 02 26 | 704 | 0.2− | 0.1− | 2005 07 04 | 691 | 0.1+ | 0.1+ |
| 1996 06 20 | 691 | 0.3− | 0.3+ | 2004 02 26 | 704 | 0.1− | 0.0 | 2005 07 04 | 691 | 0.1+ | 0.1+ |
| 1996 06 20 | 691 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.4− | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 1996 06 20 | 691 | 0.2− | 0.0 | 2004 03 16 | 704 | 0.5+ | 0.8+ | 2006 08 29 | 691 | 0.1+ | 0.2+ |
| 2002 11 23 | 644 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.3+ | 0.6− | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2002 11 23 | 644 | 0.2− | 0.7+ | 2004 03 16 | 704 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.6− | 0.1− |
| 2002 11 23 | 644 | 0.4− | 0.7+ | 2004 03 16 | 704 | 0.3+ | 0.7+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2004 02 15 | 644 | 0.1+ | 0.2+ | 2004 03 30 | 691 | 0.0 | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2004 02 15 | 644 | 0.2+ | 0.7+ | 2004 03 30 | 691 | 0.1− | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2004 02 15 | 644 | 0.5+ | 0.7+ | 2004 03 30 | 691 | 0.1+ | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 2004 02 19 | 704 | 0.6− | 0.2+ | 2005 06 10 | 691 | 0.4− | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2004 02 19 | 704 | 0.0 | 0.5+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.9− | 0.1+ |
| 2004 02 19 | 704 | 1.2+ | 1.1+ | 2005 06 10 | 691 | 0.2+ | 0.0 | 2006 09 17 | 703 | 1.9+ | 2.9− |
| 2004 02 23 | 704 | 0.4− | 0.7− | 2005 06 14 | 691 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.7+ | 0.3+ |
| 2004 02 23 | 704 | 0.1+ | 0.1− | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.6+ | 0.1+ |

**(144348)∗ 2004 DR$_{36}$ = 1999 XP$_{254}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61971)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.24666 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26490069 | $\omega$ | 248.64084 | | −0.99288067 | −0.11714192 | |
| $a$ | 2.4011207 | $\Omega$ | 284.62692 | | +0.11587243 | −0.90790356 | |
| $e$ | 0.1472523 | $i$ | 1.27804 | | +0.02759641 | −0.40247845 | |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 691 | 0.0 | 0.4− | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2005 07 28 | 644 | 0.1− | 0.8+ |
| 1999 12 12 | 691 | 0.3− | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2005 08 06 | 644 | 0.3− | 1.0+ |
| 1999 12 12 | 691 | 0.2− | 0.4− | 2004 03 18 | 704 | 0.1− | 0.3+ | 2005 08 06 | 644 | 0.4− | 0.2+ |
| 1999 12 17 | 691 | 0.0 | 0.6− | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2005 08 06 | 644 | 0.1− | 0.1+ |
| 1999 12 17 | 691 | 0.2− | 0.5− | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 1999 12 17 | 691 | 0.1− | 1.1− | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.5+ |
| 2004 02 18 | 683 | 0.1− | 0.1− | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.5− |
| 2004 02 18 | 683 | 0.2+ | 1.5+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2004 02 18 | 683 | 0.1+ | 1.4− | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2004 02 19 | 704 | 0.3− | 0.6− | 2004 03 20 | 704 | 0.2− | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2004 02 19 | 704 | 0.2− | 1.1+ | 2004 03 20 | 704 | 0.6+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.4+ |
| 2004 02 19 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2004 02 19 | 704 | 0.7+ | 0.1− | 2004 03 20 | 704 | 0.0 | 0.7+ | 2006 10 31 | G96 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.5− | 0.6+ | 2004 03 22 | 704 | 0.8+ | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.2− |
| 2004 02 23 | 704 | 0.4− | 1.1+ | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2006 11 09 | 691 | 0.2− | 0.5+ |
| 2004 02 23 | 704 | 0.2− | 1.4+ | 2004 03 22 | 704 | 0.1+ | 0.1− | 2006 11 09 | 691 | 0.2− | 0.5+ |
| 2004 02 23 | 704 | 0.6+ | 1.5+ | 2004 03 22 | 704 | 0.2− | 1.0+ | 2006 11 09 | 691 | 0.2+ | 0.2+ |
| 2004 02 23 | 704 | 0.1+ | 0.9+ | 2004 03 23 | 704 | 0.0 | 1.2+ | 2006 11 13 | 691 | 0.1+ | 0.7+ |
| 2004 02 23 | 704 | 0.1+ | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.7+ |
| 2004 02 26 | 704 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.6+ |
| 2004 02 26 | 704 | 0.6+ | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 11 18 | A13 | 0.2+ | 0.2− |
| 2004 02 26 | 704 | 0.4+ | 0.2− | 2004 03 23 | 704 | 0.5+ | 0.4+ | 2006 11 18 | A13 | 0.1− | 0.1− |
| 2004 02 26 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.4− | 0.4− | 2006 11 18 | A13 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.7+ | 0.8+ | 2004 03 27 | 704 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2004 03 12 | 644 | 0.0 | 0.4+ | 2004 03 27 | 704 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2004 03 12 | 644 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2004 03 12 | 644 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 704 | 0.5− | 0.4− | 2005 07 09 | 691 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.4− | 0.6+ |
| 2004 03 15 | 704 | 1.1+ | 0.1+ | 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.8+ |
| 2004 03 15 | 704 | 0.6+ | 0.1− | 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.8− | 0.3+ |
| 2004 03 15 | 704 | 0.3+ | 0.8− | 2005 07 28 | 644 | 0.2+ | 0.6+ | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2004 03 15 | 704 | 0.1− | 0.3+ | 2005 07 28 | 644 | 0.1− | 0.6+ | | | | |

**(144349)∗ 2004 DU$_{36}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.32158 | | (2000.0) | | +0.98922108 | +0.09775880 |
| $n$ | 0.23495155 | $\omega$ | 18.16393 | | −0.14398254 | +0.78492556 |
| $a$ | 2.6010608 | $\Omega$ | 335.42969 | | +0.02665860 | +0.61182930 |
| $e$ | 0.1327190 | $i$ | 15.19957 | | | |
| $P$ | 4.19 | $H$ | 14.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 02 | 566 | 0.3− | 0.9+ | 2002 12 28 | 704 | 0.4− | 0.5− | 2004 03 19 | 704 | 0.2− | 0.7+ |
| 1997 09 02 | 566 | 0.5− | 1.0+ | 2003 02 02 | 704 | 1.4− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.7+ |
| 1997 09 02 | 566 | 0.7− | 0.9+ | 2003 02 02 | 704 | 0.6− | 0.8− | 2004 03 19 | 704 | 1.1+ | 0.3− |
| 1998 12 12 | 704 | 0.2+ | 0.0 | 2003 02 02 | 704 | 1.5− | 0.5− | 2004 03 19 | 704 | 0.1+ | 0.0 |
| 1998 12 12 | 704 | 0.3+ | 0.5− | 2003 02 02 | 704 | (2.0− | 1.5−) | 2004 03 19 | 704 | 0.1+ | 0.0 |
| 1998 12 12 | 704 | (1.5+ | 2.5−) | 2004 02 19 | 704 | 0.7− | 0.9+ | 2004 03 20 | 704 | 0.9+ | 0.3− |
| 1998 12 12 | 704 | 0.3+ | 0.7− | 2004 02 19 | 704 | 0.2− | 1.1+ | 2004 03 20 | 704 | 0.6− | 0.5− |
| 1998 12 12 | 704 | (4.7− | 1.0−) | 2004 02 19 | 704 | 0.3+ | 1.0+ | 2004 03 20 | 704 | 0.3+ | 0.2− |
| 1999 01 19 | 704 | 1.4− | 0.2+ | 2004 02 19 | 704 | 1.2+ | 1.2+ | 2004 03 20 | 704 | 0.5+ | 0.2− |
| 1999 01 19 | 704 | 0.4+ | 0.1+ | 2004 02 23 | 704 | 0.2− | 0.6− | 2004 03 20 | 704 | 0.4− | 0.9+ |
| 1999 01 19 | 704 | 0.3+ | 0.7− | 2004 02 23 | 704 | 0.8− | 0.2− | 2004 04 14 | 699 | 0.2− | 0.5+ |
| 1999 01 19 | 704 | 1.2+ | 0.7+ | 2004 02 23 | 704 | 1.1− | 0.1− | 2004 04 14 | 699 | 0.0 | 0.3− |
| 2002 10 06 | 704 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.4− | 0.4− | 2004 04 14 | 699 | (0.3− | 1.7+) |
| 2002 10 06 | 704 | 0.6+ | 0.0 | 2004 02 23 | 704 | 0.0 | 0.0 | 2004 04 14 | 699 | 0.5+ | 0.3+ |
| 2002 10 06 | 704 | 0.6+ | 0.4+ | 2004 02 25 | 704 | 1.2+ | 0.2− | 2006 08 27 | 291 | 0.6− | 0.2+ |
| 2002 10 14 | 704 | 1.1+ | 0.0 | 2004 02 25 | 704 | 0.2+ | 0.6− | 2006 08 27 | 291 | 0.6− | 0.2+ |
| 2002 10 14 | 704 | 0.4+ | 0.1− | 2004 02 25 | 704 | 1.2+ | 0.3− | 2006 08 27 | 291 | 0.5− | 0.0 |
| 2002 10 14 | 704 | 0.4+ | 0.2+ | 2004 02 25 | 704 | 0.1− | 0.4+ | 2006 10 16 | 704 | 0.8+ | 0.3− |
| 2002 10 14 | 704 | (1.7+ | 0.1+) | 2004 02 25 | 704 | (1.5+ | 0.1+) | 2006 10 16 | 704 | 0.9+ | 1.0+ |
| 2002 11 08 | 704 | 0.3− | 0.1− | 2004 02 25 | 704 | 0.5+ | 0.7− | 2006 10 16 | 704 | 0.4+ | 0.7+ |
| 2002 11 08 | 704 | 0.3+ | 0.0 | 2004 02 25 | 704 | 0.8+ | 0.1+ | 2006 10 16 | 704 | 0.6− | 0.7+ |
| 2002 11 08 | 704 | 0.8− | 0.3− | 2004 02 25 | 704 | (1.7+ | 0.4−) | 2006 11 13 | 704 | 0.4+ | 0.2+ |
| 2002 12 10 | 704 | 0.8− | 0.0 | 2004 02 25 | 704 | 1.1+ | 0.1+ | 2006 11 13 | 704 | 0.1+ | 1.1+ |
| 2002 12 10 | 704 | 0.6− | 0.3+ | 2004 03 14 | 703 | 0.3+ | 1.5+ | 2006 11 13 | 704 | 0.2+ | 0.4+ |
| 2002 12 10 | 704 | 0.3− | 0.1− | 2004 03 14 | 703 | 0.2+ | 0.0 | 2006 11 13 | 704 | 1.3+ | 0.8− |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2004 03 14 | 703 | 1.0− | 0.5+ | 2006 11 20 | 703 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | 0.5− | 0.0 | 2004 03 14 | 703 | 1.3− | 0.5+ | 2006 11 20 | 703 | 0.9+ | 0.3+ |
| 2002 12 28 | 704 | 0.7+ | 0.0 | 2004 03 16 | 704 | 0.2+ | 0.2+ | 2006 11 20 | 703 | 0.3+ | 0.4+ |
| 2002 12 28 | 704 | 0.3+ | 0.9− | 2004 03 16 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 703 | 0.3− | 0.3+ |
| 2002 12 28 | 704 | 0.1+ | 0.5− | 2004 03 16 | 704 | 0.3+ | 0.6− | | | | |
| 2002 12 28 | 704 | (0.4− | 1.6−) | 2004 03 16 | 704 | 0.3+ | 0.2+ | | | | |

**(144350)∗ 2004 DV$_{36}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 206.59853 | | (2000.0) | | −0.99277874 | −0.11017087 |
| $n$ | 0.22495639 | $\omega$ | 254.64944 | | +0.11995052 | −0.90676201 |
| $a$ | 2.6775473 | $\Omega$ | 279.00798 | | +0.00149565 | −0.40699514 |
| $e$ | 0.2096842 | $i$ | 2.75445 | | | |
| $P$ | 4.38 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 06 | 691 | 0.3− | 0.6+ | 2004 03 16 | 704 | 0.2+ | 0.1− | 2004 05 14 | 704 | 0.5+ | 0.8+ |
| 1993 11 06 | 691 | 0.2+ | 0.6− | 2004 03 16 | 704 | 0.4+ | 0.3− | 2004 05 14 | 704 | 0.6+ | 0.2− |
| 2001 05 23 | 807 | 0.1+ | 0.2+ | 2004 03 16 | 704 | 0.1− | 0.1+ | 2005 06 13 | G96 | 0.3− | 0.6+ |
| 2001 05 23 | 807 | 0.8+ | 0.3+ | 2004 03 16 | 704 | 0.2− | 0.4+ | 2005 06 13 | G96 | 0.2− | 0.0 |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2004 03 16 | 113 | 0.5+ | 0.4+ | 2005 06 13 | G96 | 0.5+ | 0.3+ |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2004 03 16 | 113 | 0.4+ | 0.1− | 2005 06 13 | G96 | 0.2+ | 0.1− |
| 2004 02 19 | 704 | 0.4− | 1.8+ | 2004 03 16 | 113 | 0.4+ | 0.1− | 2005 06 15 | G96 | 0.4− | 0.0 |
| 2004 02 19 | 704 | 0.7− | 0.1− | 2004 03 16 | 113 | 0.5+ | 0.1− | 2005 06 15 | G96 | 0.1− | 0.4+ |
| 2004 02 19 | 704 | 0.3+ | 0.0 | 2004 03 16 | 113 | 0.2+ | 0.0 | 2005 06 15 | G96 | 0.6− | 0.3+ |
| 2004 02 19 | 704 | 0.1− | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.6− | 2005 06 15 | G96 | 0.0 | 0.3− |
| 2004 02 19 | 704 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.5− | 2005 06 27 | 691 | 0.1− | 0.5+ |
| 2004 02 20 | 608 | 1.6+ | 0.7+ | 2004 03 18 | 704 | 0.6+ | 0.4+ | 2005 06 27 | 691 | 0.2− | 0.3+ |
| 2004 02 20 | 608 | 0.8+ | 0.7+ | 2004 03 18 | 704 | 0.3+ | 0.2− | 2005 06 27 | 691 | 0.2+ | 0.3+ |
| 2004 02 20 | 608 | 1.2+ | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.1− | 2005 07 04 | G96 | 0.1+ | 0.3− |
| 2004 02 23 | 704 | 0.7+ | 0.0 | 2004 03 20 | 699 | 0.1+ | 0.3− | 2005 07 04 | G96 | 0.1− | 0.2− |
| 2004 02 23 | 704 | 0.1− | 0.4+ | 2004 03 20 | 699 | 0.5− | 1.8− | 2005 07 04 | G96 | 1.8+ | 1.2− |
| 2004 02 23 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.0 | 2005 07 04 | G96 | 0.0 | 0.3− |
| 2004 02 23 | 704 | 0.1− | 0.4− | 2004 03 20 | 699 | 0.4− | 0.1+ | 2005 07 15 | G96 | 0.6− | 0.4− |
| 2004 02 23 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2005 07 15 | G96 | 0.1+ | 0.3− |
| 2004 02 25 | 704 | 0.7− | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.2+ | 2005 07 15 | G96 | 0.3− | 0.4− |
| 2004 02 25 | 704 | 0.9− | 0.2− | 2004 03 20 | 699 | 1.1− | 0.2− | 2005 07 15 | G96 | 0.6− | 0.3− |
| 2004 02 25 | 704 | 0.7− | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.3+ |
| 2004 02 25 | 704 | 0.7− | 0.1− | 2004 03 20 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.7+ |
| 2004 02 25 | 704 | 0.4− | 0.2− | 2004 03 21 | 704 | 0.6+ | 1.4+ | 2006 09 17 | 691 | 0.2− | 0.6+ |
| 2004 02 25 | 704 | 0.8− | 0.0 | 2004 03 21 | 704 | 0.5+ | 1.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2004 02 25 | 704 | 0.0 | 0.7− | 2004 03 21 | 704 | (0.6+ | 2.1+) | 2006 09 19 | 691 | 0.3+ | 0.2+ |
| 2004 02 25 | 704 | 0.3− | 0.3+ | 2004 03 21 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2004 02 25 | 704 | 0.1− | 0.8− | 2004 03 21 | 704 | 0.2+ | 1.9+ | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2004 02 25 | 704 | 1.2− | 1.0− | 2004 03 27 | 704 | 0.0 | 1.4+ | 2006 09 25 | 691 | 0.3− | 0.0 |
| 2004 03 15 | 333 | 0.4− | 0.1+ | 2004 03 27 | 704 | 0.6+ | 1.9+ | 2006 09 25 | 691 | 1.0− | 0.2+ |
| 2004 03 15 | 333 | 0.4− | 1.3+ | 2004 03 27 | 704 | 0.6+ | 1.3+ | | | | |
| 2004 03 16 | 704 | 0.4+ | 0.0 | 2004 05 14 | 704 | 0.1+ | 0.0 | | | | |

**(144351)∗ 2004 DY$_{36}$ = 2000 EK$_{64}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61972)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.72198 | | (2000.0) | | −0.74051532 | −0.67198443 |
| $n$ | 0.24302288 | $\omega$ | 133.10794 | | +0.58204080 | −0.64769217 |
| $a$ | 2.5431459 | $\Omega$ | 4.69561 | | +0.33595472 | −0.35907071 |
| $e$ | 0.1393327 | $i$ | 6.03133 | | | |
| $P$ | 4.06 | $H$ | 16.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 16 | 691 | 0.0 | 0.3+ | 2004 03 15 | 333 | 0.1+ | 0.1− | 2004 03 29 | 291 | 0.1− | 0.0 |
| 1996 03 16 | 691 | 0.3− | 0.0 | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 03 29 | 291 | 0.2− | 0.1+ |
| 2000 02 12 | 645 | 0.1− | 0.2− | 2004 03 15 | 333 | 0.2+ | 0.2− | 2004 04 09 | 413 | 0.4− | 0.3− |
| 2000 02 12 | 645 | 0.2− | 0.3− | 2004 03 15 | 703 | 0.3− | 0.3+ | 2004 04 24 | 691 | 0.2+ | 0.0 |
| 2000 03 10 | 704 | 0.4+ | 0.6− | 2004 03 15 | 704 | 0.2+ | 0.1− | 2004 04 24 | 691 | 0.2+ | 0.0 |
| 2000 03 10 | 704 | 0.7+ | 1.1+ | 2004 03 15 | 691 | 0.0 | 0.1+ | 2004 04 24 | 691 | 0.3+ | 0.1+ |
| 2000 03 10 | 704 | 0.4+ | 0.3− | 2004 03 15 | 703 | 0.5− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 2000 03 10 | 704 | 0.1+ | 0.7+ | 2004 03 15 | 704 | 0.4+ | 0.3− | 2006 09 15 | 691 | 0.9+ | 0.0 |
| 2000 03 10 | 704 | 0.7+ | 0.6− | 2004 03 15 | 703 | (2.8− | 0.6+) | 2006 09 15 | 691 | 0.3+ | 1.4+ |
| 2000 03 11 | 704 | 0.8− | 1.3− | 2004 03 15 | 704 | 0.6− | 1.0+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.7+ | 0.0 | 2004 03 15 | 704 | 0.5− | 0.7+ | 2006 09 19 | 691 | 0.3− | 0.6+ |
| 2000 03 11 | 704 | 0.0 | 0.7− | 2004 03 15 | 691 | (2.6+ | 0.2+) | 2006 09 19 | 691 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.1− | 0.5− | 2004 03 15 | 703 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.3− | 0.1+ | | |
| 2000 03 11 | 704 | 0.3+ | 0.2− | 2004 03 15 | 704 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.2− | | |
| 2000 04 05 | 704 | 0.4+ | 0.1+ | 2004 03 16 | 333 | 0.4− | 0.6− | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.7+ | 2004 03 16 | 333 | 0.2+ | 0.9+ | 2006 10 11 | 691 | 0.0 | 0.1+ | | |
| 2000 04 05 | 704 | 0.4+ | 0.5+ | 2004 03 19 | 704 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.2− | | |
| 2000 04 05 | 704 | 0.3+ | 0.4+ | 2004 03 19 | 704 | 0.9+ | 0.9+ | 2006 10 11 | 691 | 0.1+ | 0.3− | | |
| 2002 10 31 | 644 | 0.3− | 0.3− | 2004 03 19 | 704 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.1− | | |
| 2002 10 31 | 644 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.6+ | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.4− | | |
| 2002 10 31 | 644 | 0.2+ | 0.1− | 2004 03 19 | 704 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.2+ | | |
| 2004 02 19 | 704 | 0.3+ | 0.7+ | 2004 03 20 | 699 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.5− | 0.0 | | |
| 2004 02 19 | 704 | 0.6+ | 0.3+ | 2004 03 20 | 699 | 0.4− | 0.6+ | 2006 10 17 | 703 | 1.1− | 1.0+ | | |
| 2004 02 19 | 704 | 0.2+ | 0.8+ | 2004 03 20 | 699 | 0.5− | 0.1+ | 2006 10 17 | 703 | 1.0+ | 0.1− | | |
| 2004 02 19 | 704 | 0.5+ | 0.1+ | 2004 03 20 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.1+ | | |
| 2004 02 19 | 704 | 0.3+ | 0.3− | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2004 02 23 | 704 | 0.0 | 0.7+ | 2004 03 23 | 691 | (0.6+ | 1.6−) | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2004 02 23 | 704 | 0.5− | 0.7+ | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.6− | | |
| 2004 02 23 | 704 | 0.4+ | 1.1+ | 2004 03 27 | 704 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.2− | 0.4− | | |
| 2004 02 23 | 704 | 0.2− | 0.8+ | 2004 03 27 | 704 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.6− | | |
| 2004 02 23 | 704 | 0.9+ | 0.5+ | 2004 03 27 | 704 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.5− | | |
| 2004 03 11 | 644 | 0.3− | 0.2+ | 2004 03 27 | 704 | 0.1− | 1.0− | 2006 11 18 | G96 | 0.2− | 0.7− | | |
| 2004 03 11 | 644 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.0 | 0.4− | | |
| 2004 03 11 | 644 | 0.1+ | 0.2+ | 2004 03 29 | 291 | 0.1+ | 0.1+ | | | | | | |

**(144352)∗ 2004 DY$_{37}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.58859 | | (2000.0) | | | |
| $n$ | 0.19155775 | $\omega$ | 75.22436 | | −0.57871760 | +0.81275377 |
| $a$ | 2.9803657 | $\Omega$ | 158.98245 | | −0.80160662 | −0.55174102 |
| $e$ | 0.0460016 | $i$ | 10.80087 | | −0.15004255 | −0.18711801 |
| $P$ | 5.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 23 | 691 | 0.1+ | 0.7+ | 2004 03 15 | 704 | 0.3+ | 0.0 | 2004 04 15 | 644 | 0.3+ | 0.5+ | | |
| 1995 06 23 | 691 | 0.4− | 0.9+ | 2004 03 15 | 704 | 0.3− | 0.3+ | 2004 04 21 | 691 | 0.0 | 0.6+ | | |
| 1995 06 23 | 691 | 0.6− | 0.3+ | 2004 03 15 | 704 | 1.0+ | 0.1+ | 2004 04 21 | 691 | 0.2− | 0.3+ | | |
| 1995 06 30 | 691 | 0.4+ | 0.3− | 2004 03 15 | 704 | 0.7+ | 0.6+ | 2004 04 21 | 691 | 0.0 | 0.5+ | | |
| 1995 06 30 | 691 | 0.2+ | 0.5− | 2004 03 15 | 704 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.3+ | 0.1+ | | |
| 1995 06 30 | 691 | 0.3+ | 0.2− | 2004 03 20 | 704 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.8− | 0.0 | | |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 1.3− | 1.1+ | | |
| 1999 03 21 | 645 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.8+ | 0.8+ | 2006 09 26 | 703 | 0.8− | 0.8+ | | |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.8− | 0.8− | 2006 09 30 | 703 | 0.4+ | 0.9+ | | |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.9− | 1.1+ | 2006 09 30 | 703 | 0.7− | 0.4+ | | |
| 2001 10 23 | 644 | 0.2+ | 0.7+ | 2004 03 21 | 704 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.5+ | | |
| 2001 10 23 | 644 | 0.3+ | 0.9+ | 2004 03 21 | 704 | 0.8+ | 0.8+ | 2006 09 30 | 703 | 0.3+ | 0.6+ | | |
| 2001 10 23 | 644 | 0.7+ | 0.7+ | 2004 03 21 | 704 | 0.0 | 1.1+ | 2006 10 02 | G96 | 0.2− | 0.0 | | |
| 2004 02 19 | 704 | (1.8+ | 1.6+) | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 2004 02 19 | 704 | 0.7+ | 0.4+ | 2004 03 22 | 704 | 0.7+ | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.2− | | |
| 2004 02 19 | 704 | 1.4+ | 0.6+ | 2004 03 22 | 704 | 0.4− | 0.6− | 2006 10 02 | G96 | 0.0 | 0.1− | | |
| 2004 02 23 | 704 | (1.6+ | 1.2+) | 2004 03 22 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.4+ | | |
| 2004 02 23 | 704 | 1.0+ | 0.9+ | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | (0.1+ | 1.7−) | | |
| 2004 02 23 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | (0.2− | 1.9−) | | |
| 2004 02 23 | 704 | 0.5+ | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.4+ | | |
| 2004 02 23 | 704 | 0.7+ | 1.0+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.6+ | 0.5+ | | |
| 2004 02 23 | 704 | 0.7− | 0.3− | 2004 03 23 | 704 | 0.2− | 0.8+ | 2006 10 22 | 703 | 1.4− | 0.8+ | | |
| 2004 02 23 | 704 | 0.8+ | 0.8+ | 2004 04 15 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.5+ | 1.8+ | | |
| 2004 02 23 | 704 | 0.4+ | 0.7+ | 2004 04 15 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.8− | 0.4− | | |

**(144353)∗ 2004 DY$_{39}$ = 2000 AB$_{251}$ = 2000 EW$_{177}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 61974), A. Doppler (d, *MPO* 76439)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 186.50684 | | (2000.0) | | | |
| $n$ | 0.26003388 | $\omega$ | 58.94746 | | −0.61229508 | +0.79062577 |
| $a$ | 2.4309877 | $\Omega$ | 173.29540 | | −0.73214160 | −0.56586384 |
| $e$ | 0.1494778 | $i$ | 1.16516 | | −0.29843494 | −0.23389957 |
| $P$ | 3.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.2− | 0.1− | 2004 02 16 | 691 | 0.0 | 0.4+ | 2004 03 18 | 704 | 1.1+ | 0.2+ | | |
| 1994 10 09 | 691 | 0.3− | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.6− | 0.2− | | |
| 1994 10 09 | 691 | 0.2− | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.2− | | |
| 1998 10 12 | 691 | 0.1− | 0.5+ | 2004 02 25 | 333 | 0.8− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 1.1+ | | |
| 1998 10 12 | 691 | 0.5− | 0.2+ | 2004 02 25 | 333 | 0.8− | 0.9+ | 2004 03 18 | 704 | 0.8+ | 0.1− | | |
| 1998 10 12 | 691 | 0.4− | 0.3+ | 2004 02 25 | 333 | 0.4− | 0.3+ | 2005 09 30 | G96 | 0.1+ | 0.0 | | |
| 2000 01 03 | 691 | 0.0 | 0.3− | 2004 02 26 | 704 | 0.0 | 1.3+ | 2005 09 30 | G96 | 0.4+ | 0.1− | | |
| 2000 01 03 | 691 | 0.0 | 0.3− | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2005 09 30 | G96 | 0.4− | 0.5+ | | |
| 2000 01 03 | 691 | 0.1− | 0.4− | 2004 02 26 | 704 | (0.7− | 1.5+) | 2005 09 30 | G96 | 0.1− | 0.3− | | |
| 2000 03 04 | 691 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.0 | 1.0+ | 2006 11 11 | 691 | 0.4+ | 0.2+ | | |
| 2000 03 04 | 691 | 0.4+ | 0.3− | 2004 02 26 | 704 | 1.4+ | 1.3+ | 2006 11 11 | 691 | 0.1− | 0.1− | | |
| 2000 03 04 | 691 | 0.3+ | 0.2− | 2004 03 11 | 644 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.1+ | | |
| 2000 03 12 | 691 | 0.1+ | 0.2− | 2004 03 11 | 644 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2000 03 12 | 691 | 0.2− | 0.5− | 2004 03 11 | 644 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.5+ | 0.1− | | |
| 2000 03 12 | 691 | 0.1− | 0.3− | 2004 03 14 | 691 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.3+ | | |
| 2001 05 24 | 807 | 0.4+ | 0.8+ | 2004 03 14 | 691 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.2− | | |
| 2001 05 24 | 807 | 1.1+ | 0.2+ | 2004 03 14 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2+ | | |
| 2001 06 20 | 644 | 0.2− | 1.1+ | 2004 03 15 | 704 | 0.0 | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2001 06 20 | 644 | 0.3+ | 0.6+ | 2004 03 15 | 704 | 1.0+ | 0.8+ | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2001 06 20 | 644 | 0.1− | 1.1+ | 2004 03 15 | 704 | 0.4− | 0.4− | | | | | | |

**(144354)∗ 2004 DB$_{41}$**

Discovered 2004 Feb. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 150.15836 | | (2000.0) | | | |
| $n$ | 0.17549630 | $\omega$ | 75.64512 | | −0.96007842 | +0.26138039 |
| $a$ | 3.1595416 | $\Omega$ | 119.42272 | | −0.27973058 | −0.89648664 |
| $e$ | 0.1324080 | $i$ | 6.56924 | | −0.00047783 | −0.35775968 |
| $P$ | 5.62 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.4+ | 0.1− | 2004 01 23 | 704 | 0.4+ | 0.2− | 2004 03 23 | 704 | 1.0− | 1.1+ | | |
| 1999 05 13 | 704 | (2.5+ | 1.2+) | 2004 01 23 | 704 | 0.7+ | 0.5+ | 2004 04 02 | 608 | 0.8+ | 0.7+ | | |
| 1999 05 13 | 704 | (0.8+ | 2.4+) | 2004 02 18 | 704 | 0.5− | 0.5− | 2004 04 02 | 608 | 0.6− | 0.7+ | | |
| 1999 05 13 | 704 | 1.3+ | 1.4+ | 2004 02 18 | 704 | 0.2+ | 0.1+ | 2004 04 02 | 608 | 0.2+ | 0.9+ | | |
| 1999 06 14 | 704 | 0.1− | 0.7+ | 2004 02 18 | 704 | 0.1− | 0.2− | 2004 04 09 | 644 | 0.2+ | 0.2− | | |
| 1999 06 14 | 704 | 0.1+ | 0.3+ | 2004 02 18 | 704 | 0.6+ | 0.4− | 2004 04 09 | 644 | 0.3+ | 0.2− | | |
| 1999 06 14 | 704 | 0.0 | 1.1+ | 2004 02 18 | 704 | 0.1− | 0.3− | 2004 04 09 | 644 | 0.3+ | 0.3− | | |
| 1999 06 14 | 704 | 1.4− | 1.4+ | 2004 02 25 | 704 | 0.2+ | 0.1+ | 2004 04 23 | 704 | 0.6+ | 0.6+ | | |
| 2001 10 10 | 644 | 0.6− | 0.5+ | 2004 02 25 | 704 | 0.1+ | 0.9+ | 2004 04 23 | 704 | 0.2+ | 0.9+ | | |
| 2001 10 10 | 644 | 0.2− | 0.1+ | 2004 02 25 | 704 | 0.6+ | 0.5+ | 2004 04 23 | 704 | 0.4+ | 1.3+ | | |
| 2001 10 10 | 644 | 0.0 | 0.5+ | 2004 02 25 | 704 | 0.0 | 0.9+ | 2004 04 25 | 699 | 0.8− | 0.4+ | | |
| 2001 11 12 | 645 | 0.1− | 0.1+ | 2004 02 25 | 704 | 0.1− | 0.2+ | 2004 04 25 | 699 | 1.1− | 0.9+ | | |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.6+ | 0.7+ | 2004 04 25 | 699 | 0.4− | 0.3+ | | |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 1.3+ | 1.3− | 2004 04 25 | 699 | 0.4− | 0.4+ | | |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.7+ | 0.0 | 2006 08 30 | 699 | 0.5− | 1.1+ | | |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2004 03 20 | 691 | 0.0 | 0.1− | 2006 08 30 | 699 | 1.0+ | 1.3+ | | |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2004 03 20 | 691 | 0.1+ | 0.5− | 2006 08 30 | 699 | (0.5− | 2.3+) | | |
| 2003 12 22 | 704 | 1.1+ | 0.1+ | 2004 03 20 | 691 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.0 | 1.8+ | | |
| 2003 12 22 | 704 | 0.4+ | 0.3+ | 2004 03 21 | 699 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.2− | | |
| 2003 12 22 | 704 | 1.0+ | 0.4− | 2004 03 21 | 699 | 0.3− | 0.5+ | 2006 09 14 | 703 | 1.2+ | 1.4− | | |
| 2003 12 27 | 704 | 0.9+ | 1.5+ | 2004 03 21 | 699 | 1.3− | 1.4− | 2006 09 14 | 703 | 0.2− | 0.7+ | | |
| 2003 12 27 | 704 | 0.4+ | 0.6+ | 2004 03 21 | 699 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.7+ | 0.2− | | |
| 2003 12 27 | 704 | 0.5+ | 0.5− | 2004 03 23 | 704 | 0.3− | 0.8+ | 2006 09 26 | 703 | 1.1− | 1.0− | | |
| 2003 12 27 | 704 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.2− | | |
| 2003 12 27 | 704 | 1.2+ | 1.2+ | 2004 03 23 | 704 | 0.4− | 0.6+ | 2006 09 26 | 703 | 0.8− | 0.1+ | | |
| 2004 01 23 | 704 | 0.0 | 0.4− | 2004 03 23 | 704 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.5− | 1.1+ | | |

**(144355)∗ 2004 DH$_{41}$ = 2000 SE$_{253}$**

Discovered 2004 Feb. 18 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 61976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 115.70354 | | (2000.0) | | | |
| $n$ | 0.17211488 | $\omega$ | 50.22156 | | −0.48884993 | +0.87183629 |
| $a$ | 3.2007894 | $\Omega$ | 190.64095 | | −0.84230270 | −0.48079946 |
| $e$ | 0.1908244 | $i$ | 9.49176 | | −0.22705046 | −0.09345248 |
| $P$ | 5.73 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 06 | 809 | (2.9− | 1.8+) | 2004 03 16 | 704 | 0.1+ | 0.6− | 2004 04 15 | 699 | 0.5− | 0.3+ |
| 1994 09 06 | 809 | (2.7− | 1.4+) | 2004 03 17 | 691 | 0.1+ | 0.2− | 2004 04 15 | 699 | 1.3+ | 0.3− |
| 1994 09 06 | 809 | (3.3− | 0.9+) | 2004 03 17 | 691 | 0.2+ | 0.2− | 2004 04 15 | 699 | 0.3+ | 0.3+ |
| 1998 03 04 | 704 | 0.4+ | 1.1− | 2004 03 17 | 691 | 0.2+ | 0.2− | 2004 04 15 | 699 | 0.3+ | 0.6+ |
| 1998 03 04 | 704 | 1.2− | 0.0 | 2004 03 18 | 704 | 0.0 | 0.3+ | 2004 04 21 | 704 | (2.2+ | 0.5−) |
| 1998 03 04 | 704 | 1.6− | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.3− | 0.2+ |
| 1998 03 04 | 704 | (2.3− | 1.9−) | 2004 03 18 | 704 | 0.5+ | 1.0+ | 2004 04 21 | 704 | 0.6− | 0.3− |
| 1999 07 13 | 704 | 0.5+ | 0.7− | 2004 03 18 | 704 | 0.1− | 0.2+ | 2004 04 21 | 704 | 0.6− | 1.1+ |
| 1999 07 13 | 704 | 0.2− | 0.4− | 2004 03 18 | 704 | 0.6+ | 0.9+ | 2004 04 21 | 704 | 1.4+ | 0.4+ |
| 1999 07 13 | 704 | 0.7− | 0.2+ | 2004 03 20 | 699 | 0.1− | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.3+ |
| 1999 07 13 | 704 | 0.2− | 0.1+ | 2004 03 20 | 699 | 0.3− | 0.9+ | 2004 04 25 | 691 | 0.0 | 0.4+ |
| 1999 07 13 | 704 | 0.2+ | 0.4− | 2004 03 20 | 699 | 0.1+ | 0.4+ | 2004 04 25 | 691 | 0.1+ | 0.3+ |
| 2000 09 24 | 704 | 1.3+ | 1.2+ | 2004 03 20 | 699 | 0.0 | 0.6+ | 2004 04 26 | 608 | 0.2+ | 0.4− |
| 2000 09 24 | 704 | 0.2+ | 1.3+ | 2004 03 20 | 704 | 0.4− | 0.4+ | 2004 04 26 | 608 | 0.0 | 0.8− |
| 2000 09 24 | 704 | 1.4+ | 0.8+ | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2004 04 26 | 608 | 0.5+ | 0.1− |
| 2000 09 24 | 704 | 0.9+ | 1.9+ | 2004 03 20 | 704 | 0.0 | 0.6+ | 2005 05 21 | 644 | 1.2− | 0.2+ |
| 2000 10 02 | 704 | 0.3− | 1.0+ | 2004 03 20 | 704 | 0.2− | 0.3+ | 2005 05 21 | 644 | 1.1− | 0.3+ |
| 2000 10 02 | 704 | 0.2− | 1.3+ | 2004 03 20 | 704 | 0.3− | 0.6+ | 2005 05 21 | 644 | 1.2− | 0.2+ |
| 2000 10 02 | 704 | 0.4− | 0.9+ | 2004 03 21 | 608 | 1.1+ | 0.5− | 2006 09 18 | 691 | 0.2− | 0.3+ |
| 2000 10 02 | 704 | 0.2− | 1.9+ | 2004 03 21 | 608 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.3− | 1.0+ |
| 2000 10 02 | 704 | 0.4− | 1.5+ | 2004 03 21 | 608 | 0.6+ | 0.9− | 2006 09 18 | 691 | 0.3− | 0.3+ |
| 2001 10 19 | 291 | 0.2+ | 0.2+ | 2004 03 23 | 291 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.1+ |
| 2001 10 19 | 291 | 0.3− | 0.1+ | 2004 03 23 | 291 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2001 10 19 | 291 | 0.7− | 0.1+ | 2004 03 23 | 291 | 0.6− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2004 02 18 | 608 | 0.3+ | 0.3− | 2004 03 26 | 699 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2004 02 18 | 608 | 0.2+ | 0.1− | 2004 03 26 | 699 | 0.7− | 1.0+ | 2006 10 15 | 703 | 0.1− | 0.5+ |
| 2004 02 18 | 608 | 0.4+ | 0.3− | 2004 03 26 | 699 | 0.5− | 0.7− | 2006 10 15 | 703 | (0.1+ | 2.1+) |
| 2004 02 25 | 704 | 0.9+ | 0.2− | 2004 03 26 | 699 | 0.4− | 0.0 | 2006 10 15 | 703 | 0.9− | 0.4+ |
| 2004 02 25 | 704 | 1.2+ | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.0 |
| 2004 02 25 | 704 | 1.2+ | 0.4− | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.5− |
| 2004 02 25 | 704 | 0.3+ | 0.6+ | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 10 21 | G96 | (2.1+ | 0.0 ) |
| 2004 02 25 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.5+ | 0.0 |
| 2004 03 15 | 703 | 0.8+ | 0.6+ | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 703 | (0.0 | 1.8+) | 2004 04 12 | 699 | 0.8+ | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2004 03 15 | 703 | 1.3+ | 0.9+ | 2004 04 12 | 699 | 0.7− | 0.7+ | 2006 11 14 | G96 | 1.0+ | 0.2− |
| 2004 03 15 | 703 | 0.2+ | 0.6+ | 2004 04 12 | 699 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2004 03 16 | 704 | 0.1− | 0.5− | 2004 04 12 | 699 | (1.9+ | 0.2+) | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2004 03 16 | 704 | 0.7− | 0.7− | 2004 04 15 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.4+ | 0.1+ |
| 2004 03 16 | 704 | 0.1− | 0.0 | 2004 04 15 | 691 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.1+ |
| 2004 03 16 | 704 | 0.1+ | 0.2− | 2004 04 15 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 1.2− | 1.2− |

**(144356)∗ 2004 DJ$_{41}$**

Discovered 2004 Feb. 18 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 119.56413 | | (2000.0) | | | |
| $n$ | 0.20452215 | $\omega$ | 111.23078 | | −0.16880689 | +0.97732047 |
| $a$ | 2.8530485 | $\Omega$ | 148.19643 | | −0.97014817 | −0.14183199 |
| $e$ | 0.1206118 | $i$ | 14.04124 | | −0.17411711 | −0.15725264 |
| $P$ | 4.82 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.0 | 1.1+ | 2004 03 15 | 704 | 0.3− | 0.2− | 2005 07 15 | 691 | 0.8− | 0.8+ |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2004 03 15 | 704 | 0.5+ | 0.3+ | 2005 07 15 | 691 | 0.1+ | 0.4+ |
| 2001 09 12 | 704 | 0.3− | 1.3+ | 2004 03 15 | 106 | 0.5− | 0.2− | 2005 07 30 | 185 | 0.0 | 0.7+ |
| 2001 10 15 | 644 | 0.2− | 0.6+ | 2004 03 15 | 106 | 0.2− | 0.3− | 2005 07 30 | 185 | 0.2+ | 0.8+ |
| 2001 10 15 | 644 | 0.6− | 0.7+ | 2004 03 15 | 106 | 0.1− | 0.4− | 2005 07 30 | 185 | 0.7− | 0.3− |
| 2001 10 15 | 644 | 0.3− | 0.5+ | 2004 03 16 | 106 | 0.4− | 0.3+ | 2006 09 26 | 703 | 1.4+ | 0.0 |
| 2003 12 19 | 691 | 0.2+ | 0.4+ | 2004 03 16 | 106 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.3− | 1.1+ |
| 2003 12 19 | 691 | 0.3+ | 0.3+ | 2004 03 16 | 106 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.4− | 0.9+ |
| 2003 12 19 | 691 | 0.1+ | 0.4+ | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.6+ |
| 2003 12 25 | 291 | 0.7+ | 0.1+ | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.4− |
| 2003 12 25 | 291 | 1.0− | 0.2+ | 2004 03 18 | 691 | 0.2− | 0.2+ | 2006 09 29 | 699 | (0.5− | 2.0+) |
| 2003 12 25 | 291 | 0.3− | 0.6+ | 2004 03 23 | 704 | (1.1+ | 2.2+) | 2006 09 29 | 699 | (2.4− | 1.3+) |
| 2004 01 23 | 704 | 0.9+ | 1.2+ | 2004 03 23 | 704 | (1.1+ | 1.9+) | 2006 09 29 | 699 | 0.8− | 1.3− |
| 2004 01 23 | 704 | (0.2+ | 1.6+) | 2004 03 23 | 704 | (1.6+ | 1.4+) | 2006 10 17 | 703 | (0.2+ | 2.3+) |
| 2004 01 23 | 704 | (1.0+ | 1.9+) | 2004 03 23 | 704 | (1.0+ | 1.7+) | 2006 10 17 | 703 | (0.5− | 1.8+) |
| 2004 02 18 | 704 | 0.7+ | 0.2+ | 2004 03 26 | 703 | 0.0 | 1.2+ | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 2004 02 18 | 704 | 0.4+ | 0.1− | 2004 03 26 | 703 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 1.4− | 0.4− |
| 2004 02 18 | 704 | 0.6+ | 0.2+ | 2004 03 26 | 703 | 0.4− | 1.1+ | 2006 10 20 | 703 | 1.5+ | 1.3+ |
| 2004 02 18 | 704 | 0.9+ | 0.3− | 2004 03 26 | 703 | 0.5+ | 0.8+ | 2006 10 20 | 703 | 0.3+ | 1.3+ |
| 2004 02 18 | 704 | 0.5+ | 0.1+ | 2005 05 12 | 644 | 0.5+ | 0.1− | 2006 10 20 | 703 | 0.3+ | 0.3+ |
| 2004 02 18 | 608 | 0.1+ | 0.1+ | 2005 05 12 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 703 | (1.2+ | 1.6+) |
| 2004 02 18 | 608 | 0.3+ | 0.1+ | 2005 05 12 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.0 |
| 2004 02 18 | 608 | 0.4+ | 0.0 | 2005 06 27 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.3+ |
| 2004 02 25 | 704 | 0.0 | 0.6+ | 2005 06 27 | 644 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.3− |
| 2004 02 25 | 704 | 0.1− | 0.7+ | 2005 06 27 | 644 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.3− | 1.1+ |
| 2004 02 25 | 704 | 0.3− | 0.8+ | 2005 06 30 | 703 | 0.0 | 0.7− | 2006 10 28 | 703 | 0.3+ | 1.2+ |
| 2004 02 25 | 704 | 0.2− | 0.5+ | 2005 06 30 | 703 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.1− |
| 2004 02 25 | 704 | 0.5− | 0.0 | 2005 06 30 | 703 | 0.4+ | 0.2− | 2006 10 28 | 703 | (1.3+ | 2.2+) |
| 2004 03 11 | 644 | 0.2+ | 0.2+ | 2005 06 30 | 703 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.6+ | 0.9+ |
| 2004 03 11 | 644 | 0.3+ | 0.2+ | 2005 07 14 | 608 | 0.3+ | 0.7+ | 2006 11 16 | 703 | 0.8− | 0.3+ |
| 2004 03 11 | 644 | 0.2+ | 0.0 | 2005 07 14 | 608 | 0.6+ | 0.8+ | 2006 11 16 | 703 | 1.4− | 0.1+ |
| 2004 03 15 | 704 | 1.3+ | 0.4+ | 2005 07 14 | 608 | 0.3+ | 0.8+ | 2006 11 16 | 703 | (0.1+ | 2.0−) |
| 2004 03 15 | 704 | 0.5+ | 1.1+ | 2005 07 15 | 691 | 0.0 | 0.3+ | 2006 11 16 | 703 | 1.2− | 0.4+ |

**(144357)∗ 2004 DB$_{42}$ = 2001 SV$_{283}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.97272 | | (2000.0) | | | |
| $n$ | 0.24354772 | $\omega$ | 258.51383 | | −0.93376531 | +0.35633939 |
| $a$ | 2.5394909 | $\Omega$ | 302.35374 | | −0.31110667 | −0.85410892 |
| $e$ | 0.1126972 | $i$ | 2.25477 | | −0.17690391 | −0.37884058 |
| $P$ | 4.05 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 17 | 691 | 0.0 | 0.7+ | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2004 03 31 | 691 | 0.1− | 0.3+ |
| 1993 08 17 | 691 | 0.9− | 1.3+ | 2004 03 12 | 644 | 0.7+ | 0.3+ | 2005 07 11 | 691 | 0.2− | 0.4+ |
| 1993 08 17 | 691 | 0.7− | 0.5+ | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2005 07 11 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.1+ | 0.1− | 2004 03 16 | 704 | 0.2+ | 0.3− | 2005 07 11 | 691 | 0.1− | 0.3+ |
| 2000 03 11 | 704 | 0.1+ | 0.5− | 2004 03 16 | 704 | 0.0 | 0.5− | 2005 07 15 | G96 | 0.5− | 0.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.4+ | 2004 03 16 | 704 | 0.4+ | 0.6+ | 2005 07 15 | G96 | 0.4− | 0.0 |
| 2000 03 11 | 704 | 0.0 | 0.5+ | 2004 03 16 | 704 | 0.3− | 0.1− | 2005 07 15 | G96 | 0.6− | 0.2+ |
| 2000 03 11 | 704 | 0.8+ | 0.4+ | 2004 03 16 | 704 | 0.4+ | 0.2− | 2005 07 15 | G96 | 0.5− | 0.7− |
| 2000 03 26 | 699 | 1.0− | 1.0+ | 2004 03 18 | 704 | 0.4+ | 0.7+ | 2005 09 04 | 701 | 0.3+ | 0.2− |
| 2000 03 26 | 699 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.5+ | 0.5+ | 2005 09 04 | 701 | 0.4− | 0.5+ |
| 2000 03 26 | 699 | 0.1− | 0.8+ | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2005 09 04 | 701 | 0.4− | 0.8+ |
| 2000 03 26 | 699 | 0.3+ | 1.5+ | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.6+ |
| 2001 09 22 | 691 | 0.2− | 0.4+ | 2004 03 18 | 704 | 1.4+ | 1.0+ | 2006 10 17 | 691 | 0.2− | 0.4+ |
| 2001 09 22 | 691 | 0.2+ | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.8+ |
| 2001 09 22 | 691 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2001 09 23 | 291 | 0.6+ | 0.4+ | 2004 03 20 | 704 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.5− | 0.2+ |
| 2001 09 23 | 291 | 0.4+ | 0.4+ | 2004 03 20 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 691 | 0.5− | 0.2+ |
| 2001 09 23 | 291 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.1+ |
| 2002 12 28 | 291 | 0.2+ | 0.5+ | 2004 03 22 | 704 | (1.5+ | 0.9+) | 2006 10 27 | 703 | 0.5+ | 1.0+ |
| 2002 12 28 | 291 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.4− | 0.3+ | 2006 10 27 | 703 | (1.5− | 0.1+) |
| 2002 12 28 | 291 | 0.4+ | 0.3+ | 2004 03 22 | 704 | 0.6+ | 0.3− | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2004 02 19 | 704 | 0.6+ | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2004 02 19 | 704 | 1.2− | 0.5− | 2004 03 27 | 704 | 0.7+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 1.0− | 1.1− | 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2004 02 19 | 704 | 1.1− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2004 02 19 | 704 | 0.4− | 0.7+ | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.5+ |
| 2004 02 25 | 704 | (2.5+ | 1.2+) | 2004 03 29 | 683 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2004 02 25 | 704 | (1.8+ | 0.9+) | 2004 03 29 | 683 | 1.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2004 02 25 | 704 | (2.1+ | 0.5+) | 2004 03 29 | 683 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2004 02 25 | 704 | (1.8+ | 0.8+) | 2004 03 30 | 691 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2004 02 25 | 704 | (1.9+ | 0.9+) | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2004 03 12 | 644 | 0.7+ | 0.3+ | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2004 03 12 | 644 | 0.1+ | 0.5+ | 2004 03 31 | 691 | 0.1− | 0.3+ | | | | |
| 2004 03 12 | 644 | 0.6+ | 0.3+ | 2004 03 31 | 691 | 0.0 | 0.3+ | | | | |

**(144358)∗ 2004 DD$_{42}$ = 2000 EZ$_{152}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61978)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 220.30447 | | (2000.0) | | −0.99930076 | +0.01293776 |
| $n$ | 0.24570151 | $\omega$ | 65.10378 | | −0.02537158 | −0.92379709 |
| $a$ | 2.5246286 | $\Omega$ | 115.62105 | | +0.02746402 | −0.38266377 |
| $e$ | 0.0687883 | $i$ | 2.22968 | | | |
| $P$ | 4.01 | $H$ | 16.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 06 | 608 | 0.2− | 0.1+ | 2004 03 17 | 704 | 0.6+ | 0.3+ | 2005 06 30 | 691 | 0.1− | 0.2+ |
| 2000 03 06 | 608 | 0.0 | 1.1− | 2004 03 17 | 704 | 0.3− | 0.0 | 2005 07 04 | 644 | 0.3+ | 0.6+ |
| 2000 03 06 | 608 | 0.2+ | 0.2+ | 2004 03 17 | 704 | 0.4+ | 0.5+ | 2005 07 04 | 644 | 0.0 | 0.3+ |
| 2000 03 11 | 699 | 0.4− | 0.4− | 2004 03 17 | 704 | 0.0 | 0.6+ | 2005 07 04 | 644 | 0.1+ | 0.7+ |
| 2000 03 11 | 699 | 0.2− | 0.1− | 2004 03 17 | 704 | 0.1+ | 0.6+ | 2005 07 09 | 691 | 0.1− | 0.3+ |
| 2000 03 11 | 699 | 0.3− | 0.4− | 2004 03 17 | 704 | 0.1+ | 0.1− | 2005 07 09 | 691 | 0.3− | 0.7+ |
| 2000 03 11 | 699 | 0.2+ | 0.2− | 2004 03 17 | 704 | 0.3+ | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.3+ |
| 2004 02 19 | 704 | 0.6+ | 0.7+ | 2004 03 17 | 704 | 0.7+ | 0.2+ | 2005 07 16 | 691 | 0.0 | 0.2+ |
| 2004 02 19 | 704 | 0.5+ | 0.3+ | 2004 03 17 | 704 | 0.6+ | 0.2+ | 2005 07 16 | 691 | 0.3− | 0.4+ |
| 2004 02 19 | 704 | 1.2+ | 0.1− | 2004 03 18 | 704 | 0.7+ | 0.2+ | 2005 07 16 | 691 | 0.1+ | 0.4+ |
| 2004 02 19 | 704 | 0.2+ | 0.9+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2004 02 23 | 704 | 0.4+ | 1.3+ | 2004 03 18 | 704 | 0.7+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2004 02 23 | 704 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 0.4− | 0.6− | 2004 03 18 | 704 | 0.6+ | 0.5− | 2006 09 30 | G96 | 0.5− | 0.1− |
| 2004 02 23 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.2− | 1.3+ | 2006 10 18 | 691 | 0.0 | 0.6+ |
| 2004 02 25 | 704 | (1.5+ | 0.7−) | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.8+ |
| 2004 02 25 | 704 | 0.2+ | 0.3− | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2004 02 25 | 704 | 1.0+ | 0.6+ | 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2004 02 25 | 704 | 0.4+ | 0.0 | 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.5+ |
| 2004 02 26 | 704 | 0.5+ | 0.0 | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.4+ |
| 2004 02 26 | 704 | 0.7− | 0.1− | 2004 03 19 | 704 | 0.1− | 0.8+ | 2006 11 02 | 703 | 1.4− | 0.1+ |
| 2004 02 26 | 704 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.9+ | 2006 11 02 | 703 | 0.8+ | 0.2− |
| 2004 02 26 | 704 | 0.2+ | 0.2+ | 2004 03 22 | 704 | 0.2− | 0.5+ | 2006 11 02 | 703 | 0.2− | 0.2+ |
| 2004 02 26 | 704 | 0.1− | 0.4− | 2004 03 22 | 704 | 0.3− | 0.3− | 2006 11 02 | 703 | 0.4+ | 0.7+ |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.5+ | 0.3+ |
| 2004 03 15 | 703 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.2− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2004 03 15 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.7− | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2004 03 15 | 703 | 0.3+ | 0.1− | 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2004 03 15 | 704 | 0.3+ | 0.2+ | 2004 03 23 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2004 03 15 | 703 | 0.4+ | 0.6− | 2004 03 28 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 704 | 0.4+ | 0.2+ | 2004 03 28 | 704 | 0.3− | 0.7− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 0.6− | 0.5− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 03 15 | 703 | 0.1− | 0.1− | 2004 03 28 | 704 | 0.4− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2004 03 15 | 704 | 0.2+ | 0.1+ | 2005 06 30 | 691 | 0.3− | 0.2− | | | | |
| 2004 03 15 | 704 | 0.4+ | 0.6+ | 2005 06 30 | 691 | 0.1+ | 0.2+ | | | | |

**(144359)∗ 2004 DJ$_{42}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 262.83553 | | (2000.0) | | −0.60764877 | −0.78407538 |
| $n$ | 0.24529303 | $\omega$ | 156.29899 | | +0.68119752 | −0.43268155 |
| $a$ | 2.5274306 | $\Omega$ | 330.64124 | | +0.40832941 | −0.44498594 |
| $e$ | 0.0714280 | $i$ | 14.94602 | | | |
| $P$ | 4.02 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1+ | 0.0 | 2004 02 25 | 704 | 0.3− | 0.4− | 2004 03 28 | 291 | 0.0 | 0.0 |
| 2000 02 12 | 645 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.3− | 0.2− | 2004 03 28 | 291 | 0.3− | 0.1− |
| 2000 04 04 | 699 | 0.7− | 1.2+ | 2004 02 26 | 704 | 0.7− | 0.4+ | 2004 03 29 | 703 | 0.4− | 0.2− |
| 2000 04 04 | 699 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.8− | 0.3+ | 2004 03 29 | 703 | 1.0+ | 0.0 |
| 2000 04 04 | 699 | 0.6− | 0.7+ | 2004 02 26 | 704 | 0.9− | 1.1+ | 2004 03 29 | 703 | 0.3− | 0.4− |
| 2000 04 04 | 699 | 0.5− | 0.9+ | 2004 03 16 | 691 | 0.1− | 0.3− | 2004 03 29 | 703 | 0.5+ | 0.7− |
| 2002 10 06 | 704 | 0.1+ | 0.5− | 2004 03 16 | 704 | 0.6+ | 0.3− | 2006 09 28 | 703 | 0.0 | 0.4+ |
| 2002 10 06 | 704 | 0.7+ | 0.3+ | 2004 03 16 | 691 | 0.0 | 0.3− | 2006 09 28 | 703 | 1.2− | 0.5− |
| 2002 10 06 | 704 | 0.8+ | 0.2+ | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.7− |
| 2002 10 06 | 704 | 0.1+ | 1.0+ | 2004 03 16 | 704 | 0.9+ | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.4− |
| 2002 10 06 | 704 | 0.1+ | 0.7+ | 2004 03 16 | 691 | 0.1− | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.8+ |
| 2002 10 11 | 644 | 0.5− | 0.4+ | 2004 03 16 | 704 | 1.3+ | 0.2+ | 2006 10 19 | 703 | 0.6+ | 0.2+ |
| 2002 10 11 | 644 | 0.3− | 0.0 | 2004 03 16 | 704 | 0.5+ | 0.4− | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2002 10 11 | 644 | 0.6− | 0.2+ | 2004 03 17 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.2+ |
| 2004 02 19 | 704 | (1.0− | 1.7+) | 2004 03 17 | 704 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.4− | 0.5− |
| 2004 02 19 | 704 | 0.2− | 0.9+ | 2004 03 17 | 704 | 1.4+ | 0.9+ | 2006 10 27 | 703 | 1.4− | 0.1+ |
| 2004 02 19 | 704 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.1− | 0.5− |
| 2004 02 19 | 704 | 0.1+ | 0.5− | 2004 03 19 | 704 | 0.9− | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.7+ |
| 2004 02 25 | 704 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.9− | 0.2+ | 2006 11 22 | 703 | 0.4+ | 0.8− |
| 2004 02 25 | 704 | 0.6+ | 0.6+ | 2004 03 19 | 704 | 0.6− | 0.5− | 2006 11 22 | 703 | 1.5+ | 1.0− |
| 2004 02 25 | 704 | 0.8+ | 0.2+ | 2004 03 19 | 704 | (1.6− | 0.0 ) | 2006 11 22 | 703 | 1.7+ | 0.3+ |
| 2004 02 25 | 704 | (0.7+ | 1.9+) | 2004 03 28 | 291 | 0.2− | 0.0 | 2006 11 22 | 703 | 0.6− | 0.3− |

**(144360)∗ 2004 DF$_{44}$**

Discovered 2004 Feb. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.13648 | | (2000.0) | | −0.21418573 | +0.97523722 |
| $n$ | 0.17170376 | $\omega$ | 251.01014 | | −0.65102254 | −0.10046573 |
| $a$ | 3.2058966 | $\Omega$ | 7.31674 | | −0.72821297 | −0.19702539 |
| $e$ | 0.2404572 | $i$ | 25.63968 | | | |
| $P$ | 5.74 | $H$ | 14.5 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 691 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2005 06 05 | E12 | 0.4− | 0.2− |
| 2000 09 21 | 691 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2005 06 05 | E12 | 0.1− | 0.4+ |
| 2000 09 21 | 691 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.2+ | 2005 07 03 | E12 | 0.3− | 0.1+ |
| 2000 10 01 | 704 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2005 07 03 | E12 | 0.0 | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.8+ | 2005 07 03 | E12 | 0.1− | 0.1− |
| 2000 10 01 | 704 | 0.3+ | 0.7+ | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2005 07 03 | E12 | 0.5+ | 0.1+ |
| 2000 10 01 | 704 | 0.4+ | 0.7+ | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2005 07 16 | E12 | 0.6− | 0.5+ |
| 2000 10 01 | 704 | 0.4− | 1.1+ | 2004 03 22 | 704 | 0.1− | 0.0 | 2005 07 16 | E12 | 0.3− | 0.3+ |
| 2004 02 17 | 704 | 1.2+ | 0.2+ | 2004 03 22 | 704 | 0.8− | 0.0 | 2005 07 16 | E12 | 0.0 | 0.0 |
| 2004 02 17 | 704 | 0.7+ | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.0 | 2005 07 16 | E12 | 0.4+ | 0.0 |
| 2004 02 17 | 704 | 0.2− | 0.2+ | 2004 03 26 | 691 | 0.0 | 0.2+ | 2005 07 28 | E12 | 0.6+ | 0.2− |
| 2004 02 17 | 704 | 0.6+ | 0.0 | 2004 03 26 | 691 | 0.2− | 0.2+ | 2005 07 28 | E12 | 0.5− | 0.1+ |
| 2004 02 17 | 704 | 1.5+ | 0.3− | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2005 07 28 | E12 | 0.2+ | 0.1− |
| 2004 02 24 | 049 | 1.1+ | 0.3+ | 2004 04 09 | 644 | 0.4+ | 0.4+ | 2005 07 28 | E12 | 0.0 | 0.4+ |
| 2004 02 24 | 049 | 0.0 | 0.3+ | 2004 04 09 | 644 | 0.3+ | 0.1+ | 2005 08 09 | E12 | 0.3− | 0.0 |
| 2004 02 24 | 049 | 0.3+ | 0.1+ | 2004 04 09 | 644 | 0.4+ | 0.2+ | 2005 08 09 | E12 | 0.6− | 0.1− |
| 2004 02 27 | 704 | 0.4− | 0.7− | 2004 04 15 | 644 | 0.2+ | 0.3+ | 2005 08 09 | E12 | 0.2− | 0.2+ |
| 2004 02 27 | 704 | 0.4+ | 0.9− | 2004 04 15 | 644 | 0.4+ | 0.1+ | 2005 08 09 | E12 | 0.1− | 0.0 |
| 2004 02 27 | 704 | 0.3− | 0.5− | 2004 04 15 | 644 | 0.7+ | 0.2+ | 2005 08 25 | E12 | 0.4+ | 0.5+ |
| 2004 03 11 | 644 | 0.1+ | 0.2+ | 2004 04 15 | 704 | 1.1− | 0.3+ | 2005 08 25 | E12 | 0.4− | 0.4+ |
| 2004 03 11 | 644 | 0.2+ | 0.3+ | 2004 04 15 | 704 | 0.6+ | 0.7+ | 2005 08 25 | E12 | 0.3− | 0.6+ |
| 2004 03 11 | 644 | 0.1+ | 0.0 | 2004 04 15 | 704 | 0.9+ | 0.7− | 2005 08 25 | E12 | 0.5− | 0.8+ |
| 2004 03 12 | 644 | 0.0 | 0.0 | 2004 04 15 | 704 | 0.3− | 1.2+ | 2006 09 20 | 699 | 0.4− | 1.1+ |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2004 04 15 | 704 | 1.2+ | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 699 | (0.0 | 1.7+) |
| 2004 03 15 | 704 | 0.3+ | 0.2+ | 2004 04 19 | 704 | 0.7+ | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.1+ |
| 2004 03 15 | 704 | 0.3+ | 0.1− | 2004 04 19 | 704 | 0.2+ | 0.3− | 2006 09 28 | 703 | 1.2− | 1.0+ |
| 2004 03 15 | 704 | 0.1+ | 0.0 | 2004 04 19 | 704 | 0.1+ | 0.1− | 2006 09 28 | 703 | (1.2+ | 2.1−) |
| 2004 03 15 | 704 | 0.0 | 0.2− | 2004 04 19 | 704 | 0.0 | 0.0 | 2006 09 28 | 703 | 1.2− | 0.6− |
| 2004 03 15 | 704 | 0.5+ | 0.1+ | 2004 04 22 | 704 | 0.5+ | 0.9+ | 2006 09 28 | 703 | 0.3− | 0.2+ |
| 2004 03 15 | 691 | 0.3− | 0.0 | 2004 04 22 | 704 | 0.8+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.8+ |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2004 04 22 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 703 | 0.3− | 1.4+ |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.9+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.6+ |
| 2004 03 16 | 608 | 0.4− | 0.5− | 2004 04 22 | 704 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.0 |
| 2004 03 16 | 608 | 0.1− | 0.2− | 2005 06 05 | E12 | 0.4− | 0.6+ | | | | |
| 2004 03 16 | 608 | 0.7− | 0.5− | 2005 06 05 | E12 | 0.4+ | 0.3− | | | | |

**(144361)∗ 2004 DV$_{44}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.09425 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28511676 | $\omega$ | 317.51134 | | −0.93130064 | −0.35737733 | |
| $a$ | 2.2862351 | $\Omega$ | 201.85332 | | +0.36378528 | −0.90277646 | |
| $e$ | 0.1920000 | $i$ | 10.90689 | | +0.01842247 | −0.23932426 | |
| $P$ | 3.46 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 691 | 0.0 | 0.0 | 2004 02 17 | 644 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.5+ | 0.5+ |
| 2000 01 08 | 691 | 0.3− | 0.5+ | 2004 02 17 | 644 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.3− |
| 2000 01 08 | 691 | 0.1+ | 0.5+ | 2004 02 17 | 644 | 0.1− | 0.3+ | 2004 03 23 | 683 | 0.4− | 1.5− |
| 2001 05 31 | 691 | 0.8+ | 0.0 | 2004 02 19 | 704 | 0.4+ | 0.0 | 2004 03 23 | 683 | 1.0− | 0.6+ |
| 2001 05 31 | 691 | 0.2+ | 0.3+ | 2004 02 19 | 704 | 0.1+ | 0.6+ | 2004 03 23 | 683 | 1.4− | 0.1− |
| 2001 05 31 | 691 | 1.0− | 0.5+ | 2004 02 19 | 704 | 0.4+ | 0.7+ | 2006 10 03 | G96 | 0.2+ | 0.2+ |
| 2001 06 15 | 691 | 0.0 | 0.3+ | 2004 02 19 | 704 | 0.5+ | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2001 06 15 | 691 | 0.2+ | 0.2+ | 2004 02 19 | 704 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.1+ |
| 2001 06 15 | 691 | 0.2− | 0.3− | 2004 02 26 | 333 | 0.4− | 0.0 | 2006 11 15 | G92 | 0.1+ | 0.2+ |
| 2004 01 16 | 644 | 0.5+ | 0.1+ | 2004 02 26 | 333 | 0.2− | 0.0 | 2006 11 15 | G92 | 0.0 | 0.2+ |
| 2004 01 16 | 644 | 0.6+ | 0.2+ | 2004 02 26 | 333 | 0.4− | 0.0 | 2006 11 15 | G92 | 0.2+ | 0.6+ |
| 2004 01 16 | 644 | 0.7+ | 0.3+ | 2004 02 27 | 608 | 0.2− | 1.1− | 2006 11 19 | 703 | 0.7− | 1.1+ |
| 2004 01 28 | 704 | 0.5− | 0.3− | 2004 02 27 | 608 | 0.0 | 0.9− | 2006 11 19 | 703 | 0.9+ | 1.1− |
| 2004 01 28 | 704 | 0.3+ | 0.3+ | 2004 02 27 | 608 | 0.1− | 0.8− | 2006 11 19 | 703 | 0.8− | 0.2− |
| 2004 01 28 | 704 | 1.1+ | 0.1− | 2004 03 13 | 644 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.8− | 0.6− |
| 2004 01 28 | 704 | 0.5+ | 0.0 | 2004 03 13 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.1+ |
| 2004 01 28 | 704 | 0.5+ | 0.1+ | 2004 03 13 | 644 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2004 02 04 | 608 | 0.1− | 0.2− | 2004 03 16 | 704 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3+ |
| 2004 02 04 | 608 | 0.1+ | 0.2− | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 02 04 | 608 | 0.2+ | 0.1− | 2004 03 16 | 704 | 1.3− | 0.2+ | | | | |

**(144362)∗ 2004 DG$_{45}$**

Discovered 2004 Feb. 26 by D. S. Dixon at Jornada Observatory, Las Cruces.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.25025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17862247 | $\omega$ | 27.33990 | | −0.98433460 | +0.14746501 | |
| $a$ | 3.1225686 | $\Omega$ | 160.40865 | | −0.15950781 | −0.97836219 | |
| $e$ | 0.0367530 | $i$ | 16.75106 | | +0.07511755 | −0.14512580 | |
| $P$ | 5.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 28 | 691 | 0.3+ | 0.3− | 2001 10 16 | 644 | 0.3− | 0.3+ | 2005 05 01 | 715 | 1.0+ | 0.3− |
| 1995 06 28 | 691 | 0.2+ | 0.1− | 2001 10 16 | 644 | 0.6+ | 0.1+ | 2005 05 01 | 715 | 0.3+ | 0.4+ |
| 1995 06 28 | 691 | 0.0 | 0.2− | 2001 10 24 | 644 | 0.2− | 0.5+ | 2005 05 01 | 715 | 0.9+ | 0.3+ |
| 1995 08 27 | 691 | 0.0 | 0.4− | 2001 10 24 | 644 | 0.7− | 0.5+ | 2005 05 10 | 715 | 0.4+ | 0.4− |
| 1995 08 27 | 691 | 0.2− | 0.0 | 2001 10 24 | 644 | 0.2+ | 0.2+ | 2005 05 10 | 715 | 0.1− | 0.2+ |
| 1995 08 27 | 691 | 0.3− | 0.1− | 2004 01 29 | 704 | 1.0+ | 1.0+ | 2005 05 10 | 715 | 0.0 | 0.2+ |
| 2001 08 24 | 704 | 0.4− | 0.7+ | 2004 01 29 | 704 | 0.7− | 1.3+ | 2005 05 13 | 703 | 0.9+ | 0.6− |
| 2001 08 24 | 704 | 0.0 | 1.8+ | 2004 01 29 | 704 | 0.1− | 0.8+ | 2005 05 13 | 703 | 0.8− | 0.9+ |
| 2001 08 24 | 704 | 0.2+ | 1.7+ | 2004 01 29 | 704 | 0.4+ | 0.7− | 2005 05 13 | 703 | 0.3− | 0.9+ |
| 2001 09 19 | 644 | 0.1− | 0.0 | 2004 02 26 | 715 | 0.4− | 0.2− | 2005 05 13 | 703 | 1.2− | 1.3+ |
| 2001 09 19 | 644 | 0.2+ | 0.1− | 2004 02 26 | 715 | 0.2− | 0.1− | 2006 08 18 | 644 | 0.3− | 0.5+ |
| 2001 09 24 | 644 | 0.3− | 0.3+ | 2004 02 26 | 715 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.5+ |
| 2001 09 24 | 644 | 0.3+ | 0.4+ | 2004 02 27 | 715 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.3+ |
| 2001 09 24 | 644 | 1.0+ | 0.8− | 2004 02 27 | 715 | 0.4+ | 0.1+ | 2006 09 11 | 715 | 0.2− | 0.0 |
| 2001 09 27 | 644 | 0.0 | 0.9+ | 2004 02 27 | 715 | 0.1− | 0.1+ | 2006 09 11 | 715 | 0.4+ | 0.0 |
| 2001 09 27 | 644 | 0.4+ | 0.2− | 2004 03 07 | 715 | 0.1+ | 0.2+ | 2006 09 11 | 715 | 0.3+ | 0.1+ |
| 2001 10 10 | 644 | 0.1+ | 0.3− | 2004 03 07 | 715 | 1.2− | 0.0 | 2006 09 19 | 715 | 0.4− | 0.3− |
| 2001 10 10 | 644 | 0.4− | 0.0 | 2004 03 07 | 715 | 0.4+ | 0.0 | 2006 09 19 | 715 | 0.5− | 0.8+ |
| 2001 10 10 | 644 | 0.0 | 0.1+ | 2004 04 16 | 715 | 0.8+ | 0.9+ | | | | |
| 2001 10 16 | 644 | 0.4− | 0.1+ | 2004 04 16 | 715 | 0.4+ | 0.4− | | | | |

**(144363)∗ 2004 DX$_{46}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.22344 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18448336 | $\omega$ | 281.63408 | | −0.69201915 | +0.71135148 | |
| $a$ | 3.0560790 | $\Omega$ | 303.86128 | | −0.59120156 | −0.65612472 | |
| $e$ | 0.0363172 | $i$ | 8.50671 | | −0.41423448 | −0.25195123 | |
| $P$ | 5.34 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 05 | 046 | 0.6+ | 1.5− | 2003 01 05 | 704 | 0.2+ | 1.0+ | 2004 03 16 | 704 | 0.3+ | 1.6+ |
| 1998 02 05 | 046 | 1.3− | 1.1− | 2004 01 30 | 699 | 1.1− | 0.4− | 2006 08 18 | 644 | 0.4− | 0.2+ |
| 1998 02 05 | 046 | 0.3− | 0.2− | 2004 01 30 | 699 | 0.2+ | 0.4− | 2006 08 18 | 644 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.5+ | 0.5− | 2004 01 30 | 699 | 0.5+ | 0.0 | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2001 09 25 | 704 | 0.6+ | 0.4− | 2004 01 30 | 699 | 0.2+ | 1.1− | 2006 08 22 | 644 | 0.2+ | 0.2+ |
| 2001 09 25 | 704 | 0.8− | 0.6− | 2004 02 19 | 704 | 0.4− | 0.1− | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2001 09 29 | 644 | 0.5+ | 0.2+ | 2004 02 19 | 704 | 0.8− | 0.5− | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 2001 09 29 | 644 | 0.4+ | 0.3+ | 2004 02 19 | 704 | 0.3+ | 0.3+ | 2006 08 27 | 699 | 0.6− | 0.4+ |
| 2001 09 29 | 644 | 0.8+ | 0.2+ | 2004 02 19 | 704 | 1.1+ | 0.4− | 2006 08 27 | 699 | 0.5+ | 0.4+ |
| 2001 10 23 | 644 | 0.4− | 0.2+ | 2004 02 19 | 704 | 0.4+ | 0.5− | 2006 08 27 | 699 | 0.6+ | 0.4− |
| 2001 10 23 | 644 | 0.6− | 0.0 | 2004 02 26 | 704 | 0.8+ | 0.9+ | 2006 08 27 | 699 | 0.1+ | 0.4+ |
| 2001 10 23 | 644 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.6− | 0.6+ |
| 2002 12 11 | 704 | 0.1− | 0.7− | 2004 02 26 | 704 | 0.0 | 0.7+ | 2006 08 29 | 703 | 0.5− | 0.1− |
| 2002 12 11 | 704 | 0.5− | 0.7+ | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2004 03 16 | 704 | 0.4+ | 0.7+ | 2006 08 29 | 703 | 0.6− | 0.6+ |
| 2002 12 11 | 704 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.0 | 1.0+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2003 01 05 | 704 | 0.0 | 1.0+ | 2004 03 16 | 704 | 0.1− | 0.5+ | 2006 09 13 | 644 | 0.3− | 0.2+ |
| 2003 01 05 | 704 | 0.0 | 0.5+ | 2004 03 16 | 704 | 0.1+ | 0.9+ | 2006 09 13 | 644 | 0.0 | 0.0 |

**(144364)∗ 2004 DE$_{47}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.19902 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21501634 | $\omega$ | 130.90426 | | +0.91369681 | +0.40342514 | |
| $a$ | 2.7594450 | $\Omega$ | 205.41852 | | −0.39870098 | +0.86646235 | |
| $e$ | 0.0338187 | $i$ | 6.56236 | | −0.07871256 | +0.29409378 | |
| $P$ | 4.58 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.0 | 0.2− | 2004 03 13 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 699 | 0.1+ | 0.4+ |
| 2000 04 05 | 704 | 0.0 | 1.0− | 2004 03 16 | 691 | 0.0 | 0.1− | 2006 09 29 | 704 | (2.9+ | 0.8−) |
| 2000 04 05 | 704 | 0.7− | 0.2− | 2004 03 16 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2000 04 29 | 704 | 0.1+ | 0.6+ | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.6− | 0.4+ |
| 2000 04 29 | 704 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.1− | 0.4− | 2006 10 15 | 106 | 0.4− | 0.1− |
| 2000 04 29 | 704 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.1+ | 0.0 | 2006 10 15 | 106 | 0.1− | 0.3− |
| 2000 04 29 | 704 | 0.6− | 1.2+ | 2004 03 16 | 691 | 0.1+ | 0.2− | 2006 10 15 | 106 | 0.8+ | 0.5− |
| 2001 08 25 | 704 | (1.8− | 1.3−) | 2004 03 16 | 704 | 0.7+ | 0.2− | 2006 10 15 | 106 | 0.5− | 1.5− |
| 2001 08 25 | 704 | (0.3+ | 1.9+) | 2004 03 16 | 704 | 0.1+ | 0.2− | 2006 10 17 | 703 | (2.3− | 1.0+) |
| 2001 08 25 | 704 | 0.4+ | 0.1− | 2004 03 19 | 704 | 0.4− | 1.0+ | 2006 10 17 | 703 | 0.5− | 0.5+ |
| 2001 08 25 | 704 | 0.4+ | 0.1− | 2004 03 19 | 704 | 0.2+ | 1.2+ | 2006 10 17 | 703 | 0.4− | 1.4+ |
| 2001 08 25 | 704 | 0.4+ | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2001 10 18 | 644 | (0.9+ | 2.9+) | 2004 03 19 | 704 | 1.0+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | (0.9+ | 2.8+) | 2004 03 19 | 704 | (0.4+ | 2.1+) | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2001 10 18 | 644 | (1.3+ | 3.2+) | 2004 03 27 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.6+ |
| 2002 12 01 | 704 | 0.5− | 0.6− | 2004 03 27 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 12 01 | 704 | (0.3+ | 1.8−) | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2002 12 01 | 704 | (0.4− | 1.6−) | 2006 08 29 | 699 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 608 | 0.1− | 0.0 | 2006 08 29 | 699 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 608 | 0.0 | 0.6− | 2006 08 29 | 699 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 12 05 | 608 | 0.2+ | 0.4− | 2006 08 29 | 699 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 02 19 | 704 | 0.4− | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.6− |
| 2004 02 19 | 704 | 1.2− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2004 02 19 | 704 | 0.7− | 0.2− | 2006 09 25 | 704 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2004 02 19 | 704 | 0.9− | 0.8+ | 2006 09 25 | 704 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2004 02 19 | 608 | 0.3+ | 0.6− | 2006 09 25 | 704 | 1.0− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2004 02 19 | 608 | 0.6+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.7− |
| 2004 02 19 | 608 | 0.7+ | 0.1− | 2006 09 25 | 704 | 0.5− | 1.1− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2004 02 26 | 704 | 0.0 | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 11 27 | 701 | 0.5+ | 0.2+ |
| 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 09 27 | 699 | 0.4− | 0.1+ | 2006 11 27 | 701 | (2.2+ | 1.4−) |
| 2004 03 13 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 699 | 0.6− | 0.6+ | 2006 11 27 | 701 | 0.1− | 0.0 |
| 2004 03 13 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.1− | 0.2+ | 2006 11 27 | 701 | 0.2+ | 0.1− |

## (144365)∗ 2004 DN$_{47}$

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.17101 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23971844 | $\omega$ | 358.46249 | | | −0.94087024 | +0.33574279 |
| $a$ | 2.5664635 | $\Omega$ | 201.32651 | | | −0.30947228 | −0.90606938 |
| $e$ | 0.1020576 | $i$ | 7.13404 | | | −0.13780458 | −0.25751711 |
| $P$ | 4.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 02 | 691 | 0.1+ | 1.1+ | 2004 03 16 | 704 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.1+ |
| 1992 05 02 | 691 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.6− | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 1992 05 02 | 691 | 0.4+ | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 1996 04 08 | 327 | 0.7+ | 0.1− | 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.9+ |
| 1996 04 08 | 327 | 0.4+ | 0.4− | 2004 03 19 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.3− |
| 1996 04 08 | 327 | 0.6+ | 0.1+ | 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | (1.6+ | 1.0+) |
| 2000 03 09 | 704 | 0.9+ | 0.1− | 2004 03 19 | 704 | 0.7+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 2000 03 09 | 704 | 0.4− | 0.1− | 2004 03 19 | 704 | 0.8+ | 0.1+ | 2006 10 17 | G96 | 1.2+ | 0.7− |
| 2000 03 09 | 704 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 2000 03 09 | 704 | 0.3+ | 0.3− | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 2000 05 04 | 645 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.5+ | 1.4+ | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2001 08 17 | 644 | (0.1+ | 1.9+) | 2004 03 20 | 704 | 0.6+ | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2001 08 17 | 644 | 0.2+ | 1.4+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2001 08 17 | 644 | 0.1− | 1.4+ | 2004 03 20 | 704 | 0.4− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 02 19 | 704 | 0.1+ | 0.7+ | 2004 03 20 | 704 | 1.3+ | 0.5+ | 2006 10 22 | 691 | 0.3+ | 0.2+ |
| 2004 02 19 | 704 | 0.2− | 0.0 | 2005 07 05 | 644 | 0.1− | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2004 02 19 | 704 | 0.5+ | 0.4− | 2005 07 05 | 644 | 0.5− | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2004 02 19 | 704 | 0.3+ | 0.9− | 2005 07 05 | 644 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2004 02 26 | 704 | 0.2+ | 1.3+ | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 02 26 | 704 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2004 03 13 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2004 03 13 | 644 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.2− |
| 2004 03 13 | 644 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 17 | 703 | 1.0− | 0.3+ |
| 2004 03 16 | 704 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 1.0+ |
| 2004 03 16 | 704 | 0.0 | 0.3+ | 2006 09 28 | 291 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.4+ | 1.7+ |
| 2004 03 16 | 704 | 0.2− | 0.5+ | 2006 09 28 | 291 | 0.2− | 0.6+ | 2006 11 17 | 703 | 0.0 | 0.9− |
| 2004 03 16 | 704 | 0.1− | 0.2− | 2006 09 28 | 291 | 0.6− | 0.4+ | | | | |

## (144366)∗ 2004 DA$_{48}$ = 2002 XM$_{99}$

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61983)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.56016 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19814103 | $\omega$ | 255.05403 | | | −0.09290577 | −0.99562254 |
| $a$ | 2.9139791 | $\Omega$ | 200.28513 | | | +0.92446043 | −0.08244733 |
| $e$ | 0.0320692 | $i$ | 1.68783 | | | +0.36978566 | −0.04402493 |
| $P$ | 4.97 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 11 | 691 | 0.2+ | 0.3− | 2004 02 26 | 704 | 0.3− | 0.6+ | 2004 03 27 | 704 | 0.7+ | 0.6+ |
| 1999 03 11 | 691 | 0.3+ | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 691 | 0.0 | 0.3+ |
| 1999 03 11 | 691 | 0.3+ | 0.3+ | 2004 02 26 | 704 | 0.1− | 0.1− | 2004 03 28 | 691 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 1.3− | 0.7− | 2004 02 26 | 704 | 0.5− | 0.4+ | 2004 03 28 | 691 | 0.0 | 0.4+ |
| 2001 09 12 | 704 | 0.2− | 0.9+ | 2004 03 12 | 644 | 0.5− | 0.4+ | 2006 08 15 | D35 | 0.4− | 0.8+ |
| 2001 09 12 | 704 | 0.9+ | 1.0+ | 2004 03 12 | 644 | 0.7− | 0.1+ | 2006 08 15 | D35 | 0.0 | 1.0+ |
| 2001 09 12 | 704 | (0.6− | 1.5+) | 2004 03 12 | 644 | 0.6− | 0.1− | 2006 08 15 | D35 | 0.4− | 0.8+ |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.0 | 0.6− | 2006 08 19 | 691 | 0.1− | 0.4+ |
| 2001 09 19 | 645 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.4− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.2− | 2004 03 15 | 704 | 0.1− | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 1.1+ | 0.9− | 2004 03 15 | 704 | 0.3+ | 1.0+ | 2006 08 24 | 644 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.6+ | 1.1+ | 2004 03 15 | 704 | 0.5+ | 0.4− | 2006 08 24 | 644 | 0.4− | 0.5+ |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2004 03 18 | 704 | 1.4+ | 1.3+ | 2006 08 24 | 644 | 0.3− | 0.2+ |
| 2002 11 14 | 704 | 0.3+ | 0.0 | 2004 03 18 | 704 | (1.6+ | 0.5+) | 2006 08 24 | 644 | 0.3− | 0.0 |
| 2002 11 14 | 704 | 0.0 | 0.1+ | 2004 03 18 | 704 | (1.6+ | 1.3+) | 2006 08 24 | 644 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 1.0− | 1.0+ | 2004 03 18 | 704 | (0.2+ | 1.9+) | 2006 08 24 | 644 | 0.5− | 0.6+ |
| 2002 12 05 | 704 | 0.5− | 0.2+ | 2004 03 18 | 704 | (0.3− | 1.6+) | 2006 08 24 | 644 | 0.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.9− | 0.3− | 2004 03 18 | 691 | 0.4− | 0.4+ | 2006 08 24 | 644 | 0.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.2− | 0.5− | 2004 03 18 | 691 | 0.2− | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.5+ |
| 2002 12 05 | 704 | 0.4− | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.8+ | 2006 08 27 | 691 | 0.2+ | 0.5+ |
| 2002 12 10 | 704 | 0.3− | 0.4+ | 2004 03 23 | 704 | 1.0+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2002 12 10 | 704 | 1.2− | 1.3+ | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | (3.0+ | 1.1−) |
| 2002 12 10 | 704 | 1.4− | 1.1− | 2004 03 23 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 703 | 0.1+ | 0.8− |
| 2002 12 10 | 704 | 0.4+ | 0.6+ | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 703 | (0.5− | 1.6−) |
| 2002 12 10 | 704 | 0.5− | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.4+ |
| 2003 01 29 | 291 | 0.4+ | 0.0 | 2004 03 23 | 704 | 0.1+ | 1.0+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2003 01 29 | 291 | 0.6+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 2003 01 29 | 291 | 0.7+ | 0.1+ | 2004 03 23 | 704 | 0.7+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2004 02 19 | 704 | (0.8+ | 2.3+) | 2004 03 23 | 704 | 0.8+ | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2004 02 19 | 704 | (0.9− | 1.7+) | 2004 03 27 | 704 | 1.3+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2004 02 19 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2004 02 19 | 704 | 0.2+ | 1.4+ | 2004 03 27 | 704 | 1.3+ | 0.8+ | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2004 02 19 | 704 | 0.4+ | 0.0 | 2004 03 27 | 704 | 0.8− | 0.5− | 2006 11 16 | G96 | 0.1− | 0.1+ |

## (144367)∗ 2004 DG$_{48}$ = 1996 TD$_{24}$

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.25152 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18825205 | $\omega$ | 189.86587 | | | −0.99003383 | +0.14082752 |
| $a$ | 3.0151546 | $\Omega$ | 358.22930 | | | −0.12741349 | −0.89808074 |
| $e$ | 0.1906619 | $i$ | 1.45733 | | | −0.05999010 | −0.41667565 |
| $P$ | 5.24 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.3+ | 0.5+ | 2004 02 26 | 704 | 0.3+ | 0.2+ | 2004 03 22 | 704 | 1.3+ | 0.0 |
| 1996 10 06 | 691 | 0.3+ | 0.4+ | 2004 03 11 | 644 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.5+ |
| 1996 10 06 | 691 | 0.4+ | 0.2− | 2004 03 11 | 644 | 0.6− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.3+ |
| 1996 10 16 | 691 | 0.1+ | 0.4− | 2004 03 11 | 644 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.4+ |
| 1996 10 16 | 691 | 0.3− | 0.2− | 2004 03 16 | 291 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 16 | 691 | 0.3− | 0.7− | 2004 03 16 | 704 | 1.2+ | 0.2− | 2004 03 27 | 704 | 0.1+ | 0.5+ | | |
| 1999 04 07 | 704 | 0.5+ | 0.6+ | 2004 03 16 | 291 | 0.3− | 0.0 | 2004 03 29 | 291 | 0.3− | 0.2+ | | |
| 1999 04 07 | 704 | 0.1− | 0.6− | 2004 03 16 | 704 | 0.6+ | 0.4− | 2004 03 29 | 291 | 0.7− | 0.0 | | |
| 1999 04 07 | 704 | 0.3− | 0.6− | 2004 03 16 | 704 | 0.2− | 0.5− | 2004 03 29 | 291 | 0.7− | 0.1− | | |
| 1999 04 07 | 704 | 0.6+ | 1.0+ | 2004 03 16 | 704 | 0.8+ | 0.9+ | 2004 04 12 | 691 | 0.4− | 0.2+ | | |
| 1999 04 22 | 691 | 0.2− | 0.2+ | 2004 03 16 | 291 | 0.2− | 0.0 | 2004 04 12 | 691 | 0.0 | 0.0 | | |
| 1999 04 22 | 691 | (3.9+ | 1.9+) | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2004 04 12 | 691 | 0.4− | 0.4+ | | |
| 1999 04 22 | 691 | 0.2+ | 0.2+ | 2004 03 16 | 704 | 0.7+ | 0.3+ | 2004 04 12 | 699 | 0.8− | 0.8+ | | |
| 2001 10 17 | 691 | 0.6− | 0.4+ | 2004 03 16 | 704 | (2.4+ | 0.4+) | 2004 04 12 | 699 | 0.4− | 0.1− | | |
| 2001 10 17 | 691 | 0.5− | 0.3+ | 2004 03 16 | 704 | 0.8+ | 1.0+ | 2004 04 12 | 699 | 0.7− | 0.2+ | | |
| 2001 10 17 | 691 | 0.2− | 0.3+ | 2004 03 16 | 704 | (1.8+ | 0.2−) | 2004 04 12 | 699 | 0.3− | 0.2+ | | |
| 2004 02 13 | 644 | 0.3− | 0.0 | 2004 03 16 | 704 | 0.0 | 0.0 | 2004 05 13 | 704 | 0.3− | 0.2− | | |
| 2004 02 13 | 644 | 0.7− | 0.2− | 2004 03 18 | 704 | 1.4+ | 0.1− | 2004 05 13 | 704 | 0.8+ | 0.5+ | | |
| 2004 02 13 | 644 | 0.5− | 0.3+ | 2004 03 18 | 704 | (1.8+ | 0.1+) | 2004 05 13 | 704 | 0.1+ | 0.3− | | |
| 2004 02 19 | 704 | (0.0 | 1.8+) | 2004 03 18 | 704 | 1.5+ | 0.1+ | 2004 05 13 | 704 | 0.8+ | 0.1− | | |
| 2004 02 19 | 704 | 1.0+ | 0.7+ | 2004 03 18 | 704 | 0.6− | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.9+ | | |
| 2004 02 19 | 704 | 1.3+ | 0.2+ | 2004 03 18 | 704 | 1.3+ | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.5+ | | |
| 2004 02 19 | 704 | 1.3+ | 0.7+ | 2004 03 20 | 704 | (0.4+ | 1.7−) | 2006 09 15 | 691 | 0.7− | 0.2+ | | |
| 2004 02 19 | 704 | 0.2+ | 1.1+ | 2004 03 20 | 704 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.6+ | | |
| 2004 02 26 | 683 | 1.5+ | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.0 | | |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2004 03 20 | 704 | (0.9+ | 2.8−) | 2006 09 23 | 691 | 0.1− | 0.4+ | | |
| 2004 02 26 | 683 | 0.4− | 0.8+ | 2004 03 20 | 704 | 0.7+ | 0.5− | 2006 10 16 | G96 | 0.6− | 0.2− | | |
| 2004 02 26 | 704 | 0.5+ | 0.0 | 2004 03 22 | 704 | 1.0− | 0.4− | 2006 10 16 | G96 | 0.7− | 0.6− | | |
| 2004 02 26 | 683 | 0.3+ | 0.5+ | 2004 03 22 | 704 | 1.1+ | 0.6− | 2006 10 16 | G96 | 0.2− | 0.5+ | | |
| 2004 02 26 | 704 | 1.2+ | 0.2− | 2004 03 22 | 704 | 1.1+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.3+ | | |
| 2004 02 26 | 704 | 0.9+ | 0.2− | 2004 03 22 | 704 | 0.8+ | 0.4+ | | | | | | |

**(144368)∗ 2004 DK$_{48}$ = 2000 CK$_{8}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 268.81807 | | (2000.0) | | | |
| *n* | 0.26552184 | $\omega$ | 332.51374 | | −0.78543232 | −0.61886732 |
| *a* | 2.3973745 | $\Omega$ | 169.23557 | | +0.57721914 | −0.73819644 |
| *e* | 0.1659933 | *i* | 3.05851 | | +0.22341471 | −0.26845716 |
| *P* | 3.71 | *H* | 17.1 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 14 | 691 | (4.2+ | 5.0−) | 2004 03 15 | 683 | 0.8+ | 1.0− | 2004 03 28 | 704 | 0.2+ | 1.2+ | | |
| 1995 12 14 | 691 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.2− | 0.4+ | 2004 03 28 | 704 | 1.0+ | 1.0+ | | |
| 1995 12 20 | 691 | 0.4+ | 0.3− | 2004 03 15 | 683 | 0.2− | 0.6− | 2005 07 05 | 691 | 0.2− | 0.1+ | | |
| 1995 12 20 | 691 | 0.0 | 0.2− | 2004 03 15 | 703 | 0.7− | 0.4+ | 2005 07 05 | 691 | 0.1− | 0.5+ | | |
| 1995 12 20 | 691 | 0.3− | 0.6− | 2004 03 15 | 703 | 0.7+ | 0.7+ | 2005 07 05 | 691 | 0.0 | 0.2+ | | |
| 1998 09 23 | 691 | 0.0 | 0.1− | 2004 03 15 | 691 | 0.2− | 0.5+ | 2005 07 10 | 691 | 0.3− | 0.1+ | | |
| 1998 09 23 | 691 | 0.4− | 0.2+ | 2004 03 15 | 703 | 0.4− | 0.7+ | 2005 07 10 | 691 | 0.1+ | 0.7+ | | |
| 1998 09 23 | 691 | 0.4− | 0.2− | 2004 03 15 | 703 | 0.2+ | 0.6+ | 2005 07 10 | 691 | 0.0 | 0.5+ | | |
| 2000 02 02 | 704 | 1.0− | 0.0 | 2004 03 15 | 691 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.1− | | |
| 2000 02 02 | 704 | 0.7+ | 0.7− | 2004 03 16 | 704 | 0.5+ | 1.2+ | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 2000 02 02 | 704 | 0.1+ | 0.1+ | 2004 03 16 | 704 | 0.1+ | 1.0+ | 2006 09 30 | G96 | 0.2− | 0.1− | | |
| 2000 02 02 | 704 | 0.2+ | 0.5− | 2004 03 16 | 704 | 0.7− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 2000 02 03 | 704 | 0.2− | 1.0− | 2004 03 16 | 704 | 0.2+ | 0.5+ | 2006 10 03 | G96 | 0.2− | 0.3− | | |
| 2000 02 03 | 704 | 0.2+ | 0.2− | 2004 03 17 | 683 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.4− | | |
| 2000 02 03 | 704 | 0.5+ | 0.5+ | 2004 03 17 | 683 | 0.5+ | 0.7− | 2006 10 03 | G96 | 0.2− | 0.2− | | |
| 2000 02 03 | 704 | 0.2− | 0.2− | 2004 03 17 | 683 | 0.4+ | 1.4+ | 2006 10 03 | G96 | 0.0 | 0.3− | | |
| 2000 02 03 | 704 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.4+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.3+ | | |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.4+ | | |
| 2002 10 30 | 645 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.4− | 0.2+ | | |
| 2002 11 08 | 645 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.6+ | | |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.4+ | | |
| 2004 02 19 | 704 | 0.3− | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.5+ | | |
| 2004 02 19 | 704 | 0.6+ | 0.4+ | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2+ | | |
| 2004 02 19 | 704 | 0.7+ | 1.3+ | 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.3+ | | |
| 2004 02 19 | 704 | 0.1+ | 0.6+ | 2004 03 27 | 704 | 0.8+ | 0.3− | 2006 10 23 | 691 | 0.5− | 0.3+ | | |
| 2004 02 19 | 704 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.5+ | | |
| 2004 02 26 | 704 | 0.3+ | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.5+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.3+ | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 691 | 0.3− | 0.5+ | | |
| 2004 02 26 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2004 02 26 | 704 | 0.4+ | 1.1− | 2004 03 28 | 704 | 0.9+ | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.3− | | |
| 2004 02 26 | 704 | 0.3− | 0.7+ | 2004 03 28 | 704 | (0.7+ | 1.6+) | 2006 11 15 | G96 | 0.4+ | 0.0 | | |
| 2004 03 15 | 683 | (0.4− | 2.1−) | 2004 03 28 | 704 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.2− | | |

**(144369)∗ 2004 DW$_{48}$ = 2001 QK$_{331}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65581)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 207.90509 | | (2000.0) | | | |
| *n* | 0.21858237 | $\omega$ | 212.91113 | | −0.96493177 | −0.26062191 |
| *a* | 2.7293504 | $\Omega$ | 311.94896 | | +0.24903178 | −0.87110283 |
| *e* | 0.0550933 | *i* | 2.41592 | | +0.08300510 | −0.41624040 |
| *P* | 4.51 | *H* | 15.6 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.5− | 1.3+ | 2004 03 16 | 704 | 0.9− | 0.7+ | 2006 09 17 | 703 | 0.8− | 0.6+ | | |
| 2001 08 24 | 644 | 0.5− | 0.7+ | 2004 03 16 | 704 | 0.8− | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.7+ | | |
| 2001 08 24 | 644 | 0.2− | 0.9+ | 2004 03 16 | 704 | 0.4− | 0.3− | 2006 09 17 | 703 | 0.1+ | 0.2− | | |
| 2002 12 02 | 704 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.5+ | | |
| 2002 12 02 | 704 | 1.0− | 0.5− | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.4− | 0.4+ | | |
| 2002 12 02 | 704 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.3+ | | |
| 2002 12 02 | 704 | 0.1+ | 0.3− | 2004 03 18 | 704 | 0.1+ | 0.6− | 2006 09 19 | 699 | 0.8+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.3− | 1.2− | 2004 03 18 | 704 | 0.1− | 0.6− | 2006 09 19 | 699 | 0.8− | 0.7− | | |
| 2002 12 11 | 704 | 0.3+ | 0.5− | 2004 03 18 | 704 | 0.5+ | 1.1+ | 2006 09 19 | 699 | (1.6+ | 0.3+) | | |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2004 03 20 | 699 | (1.9+ | 0.2−) | 2006 09 19 | 699 | 0.9+ | 0.9+ | | |
| 2002 12 11 | 644 | 0.2+ | 0.3− | 2004 03 20 | 699 | 0.2− | 0.1− | 2006 09 22 | A50 | 0.1− | 0.7+ | | |
| 2002 12 11 | 704 | 1.1+ | 1.3+ | 2004 03 20 | 704 | 0.3− | 0.2+ | 2006 10 15 | 106 | 0.1+ | 0.5− | | |
| 2002 12 11 | 644 | 0.0 | 0.3+ | 2004 03 20 | 699 | 0.1+ | 0.4− | 2006 10 15 | 106 | 0.5+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 0.3− | 0.4+ | 2006 10 15 | 106 | 0.6+ | 0.2+ | | |
| 2002 12 11 | 644 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 10 15 | 106 | 0.0 | 0.6− | | |
| 2004 02 19 | 704 | (1.6+ | 0.4−) | 2004 03 20 | 699 | 0.2− | 0.6+ | 2006 10 17 | 703 | (1.4+ | 2.0+) | | |
| 2004 02 19 | 704 | (2.2+ | 0.8+) | 2004 03 20 | 704 | 1.1− | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.9+ | | |
| 2004 02 19 | 704 | 1.4+ | 0.5+ | 2004 03 20 | 704 | 0.4+ | 0.4− | 2006 10 17 | 703 | 0.6+ | 0.0 | | |
| 2004 02 26 | 704 | 0.7+ | 0.7+ | 2004 03 21 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.2+ | | |
| 2004 02 26 | 704 | 0.1− | 0.6+ | 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.4− | 2004 03 21 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.4+ | | |
| 2004 02 26 | 704 | 0.5+ | 0.5+ | 2004 03 27 | 704 | (0.5+ | 1.7+) | 2006 10 21 | 644 | 0.4− | 0.6+ | | |
| 2004 02 26 | 704 | 1.2+ | 0.0 | 2004 03 27 | 704 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.7− | | |
| 2004 03 12 | 644 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 0.2+ | 1.3+ | 2006 10 31 | G96 | 0.2− | 0.1− | | |
| 2004 03 12 | 644 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.5+ | 1.1+ | 2006 10 31 | G96 | 0.3− | 0.3− | | |
| 2004 03 12 | 644 | 0.3+ | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2004 03 14 | 691 | 0.3+ | 0.1− | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.1− | | |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2004 04 12 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.1− | | |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2004 04 12 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.6− | 0.4− | | |
| 2004 03 16 | 704 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.1− | 0.6− | 2006 11 15 | G96 | 0.1+ | 0.5− | | |

**(144370)∗ 2004 DH$_{49}$ = 1993 FP$_{49}$ = 2002 VW$_{136}$ = 2002 VS$_{90}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61986)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 218.83614 | | (2000.0) | | | |
| *n* | 0.26646099 | $\omega$ | 0.95182 | | −0.91137301 | +0.41156748 |
| *a* | 2.3917381 | $\Omega$ | 203.35242 | | −0.37767492 | −0.83953238 |
| *e* | 0.1222250 | *i* | 0.48907 | | −0.16358757 | −0.35467957 |
| *P* | 3.70 | *H* | 16.7 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.8+ | 1.1− | 2004 03 14 | 691 | 0.1+ | 0.3− | 2004 03 28 | 704 | (1.7+ | 0.5+) | | |
| 1993 03 20 | 809 | 0.0 | 0.4+ | 2004 03 14 | 691 | 0.3+ | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.2+ | | |
| 1993 03 24 | 809 | 0.8+ | 0.7− | 2004 03 14 | 691 | 0.4+ | 0.0 | 2004 03 30 | 704 | 0.1+ | 0.8+ | | |
| 1993 04 17 | 691 | 0.7− | 0.7− | 2004 03 15 | 704 | 0.0 | 0.9+ | 2004 03 30 | 704 | 0.4− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.5− | 0.7− | 2004 03 15 | 704 | (0.6+ | 1.7+) | 2004 03 30 | 704 | 1.3+ | 0.4+ |
| 1993 04 17 | 691 | 0.7− | 0.7− | 2004 03 15 | 704 | 0.2+ | 1.2+ | 2004 03 30 | 704 | 1.3+ | 0.2+ |
| 1998 09 14 | 691 | 0.1+ | 0.1− | 2004 03 15 | 704 | (1.3− | 1.6+) | 2005 06 17 | G96 | 1.0− | 0.1− |
| 1998 09 14 | 691 | 0.1− | 0.4+ | 2004 03 15 | 704 | 0.3− | 0.3+ | 2005 06 17 | G96 | 0.0 | 0.2+ |
| 1998 09 14 | 691 | 0.0 | 0.3+ | 2004 03 15 | 599 | 0.1− | 0.1+ | 2005 06 17 | G96 | 0.0 | 0.1− |
| 2000 01 16 | 691 | 0.0 | 0.2− | 2004 03 15 | 599 | 0.3+ | 0.1+ | 2005 06 17 | G96 | 1.0− | 0.2+ |
| 2000 01 16 | 691 | 0.1+ | 0.1− | 2004 03 15 | 599 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.6− |
| 2000 01 16 | 691 | 0.1− | 0.1− | 2004 03 15 | 599 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 11 04 | 291 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 11 04 | 291 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.7− |
| 2002 11 04 | 291 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2002 11 11 | 291 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.6− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 291 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.7− | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2002 11 11 | 291 | 0.2+ | 0.1+ | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.7− |
| 2002 11 13 | 291 | 0.3+ | 0.5− | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3− | 1.1− |
| 2002 11 13 | 291 | 0.0 | 0.4− | 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.2− | 1.0− |
| 2002 11 13 | 291 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.8+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.9− |
| 2004 02 19 | 704 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 0.7+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2004 02 19 | 704 | 0.9− | 0.1− | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 11 19 | 691 | 0.7+ | 1.4+ |
| 2004 02 19 | 704 | 1.3− | 0.6− | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 12 01 | 691 | 0.3− | 0.3+ |
| 2004 02 26 | 704 | 0.2+ | 0.4+ | 2004 03 28 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.6− | 0.5− |
| 2004 02 26 | 704 | 0.0 | 0.2+ | 2004 03 28 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.5− | 0.1+ |
| 2004 02 26 | 704 | 0.4+ | 0.2+ | 2004 03 28 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 02 26 | 704 | 0.4+ | 0.1− | 2004 03 28 | 704 | (1.7+ | 0.3−) | | | | |

**(144371)∗ 2004 DJ$_{49}$**

Discovered 2004 Feb. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.56323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21794241 | $\omega$ | 79.68602 | | +0.45246461 | −0.89149796 | |
| $a$ | 2.7346907 | $\Omega$ | 343.35600 | | +0.78434044 | +0.40984171 | |
| $e$ | 0.0377877 | $i$ | 4.50955 | | +0.42436524 | +0.19303147 | |
| $P$ | 4.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.5− | 1.4+ | 2004 03 16 | 333 | 0.5+ | 0.7+ | 2006 08 28 | 703 | (0.5− | 1.8+) |
| 2001 07 27 | 699 | 0.7+ | 0.9+ | 2004 03 16 | 333 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.5+ |
| 2001 07 27 | 699 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 09 17 | 704 | 0.9− | 1.0+ |
| 2001 07 27 | 699 | 0.9− | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.1+ | 2006 09 17 | 704 | 1.2− | 1.5+ |
| 2002 11 12 | 704 | 0.5+ | 1.2− | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 704 | 0.5− | 0.2+ |
| 2002 11 12 | 704 | 0.2− | 1.4− | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 09 17 | 704 | 0.3+ | 0.7+ |
| 2002 11 12 | 704 | 0.2+ | 0.7− | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 704 | 0.9− | 0.3+ |
| 2002 11 12 | 704 | 0.8+ | 1.4− | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2002 12 02 | 704 | 0.0 | 0.2− | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2002 12 02 | 704 | 0.2+ | 0.5+ | 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 2002 12 02 | 704 | 0.1+ | 0.1− | 2004 03 20 | 699 | 1.2+ | 0.4− | 2006 09 19 | 699 | 1.0+ | 0.8+ |
| 2002 12 02 | 704 | 0.4− | 0.7+ | 2004 03 20 | 699 | 0.7+ | 0.5+ | 2006 09 19 | 699 | 0.4− | 1.2+ |
| 2002 12 02 | 704 | 1.1− | 0.4+ | 2004 03 20 | 699 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.7− | 0.6− |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2004 03 20 | 699 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.5+ |
| 2002 12 11 | 704 | 0.1− | 0.7+ | 2004 03 27 | 704 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.1+ |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2004 03 27 | 704 | 0.8+ | 0.8+ | 2006 09 20 | 704 | (1.6− | 1.9+) |
| 2002 12 11 | 704 | 0.0 | 1.1− | 2004 03 27 | 704 | 0.8+ | 0.7+ | 2006 09 20 | 704 | 1.0− | 1.2+ |
| 2004 02 19 | 704 | 0.9+ | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2004 02 19 | 704 | 0.4− | 0.2+ | 2004 03 27 | 704 | 0.8+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2004 02 19 | 704 | 0.3+ | 0.2− | 2004 03 28 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.5+ |
| 2004 02 26 | 704 | 0.6− | 0.1+ | 2004 03 28 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.5− |
| 2004 02 26 | 704 | 0.1+ | 0.1+ | 2004 03 28 | 691 | 0.2+ | 0.8+ | 2006 09 29 | 704 | 0.2− | 0.8+ |
| 2004 02 26 | 704 | 0.4+ | 0.4+ | 2004 03 31 | 291 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.7− | 0.4− |
| 2004 02 26 | 704 | 0.4+ | 0.5+ | 2004 03 31 | 291 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.0 |
| 2004 02 26 | 704 | 0.1− | 0.7+ | 2004 03 31 | 291 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.9− | 0.3− |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.3− | 0.5+ |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.6− | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.7+ |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.3+ | 0.8+ | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 2004 03 15 | 333 | 0.2+ | 0.8+ | 2006 07 21 | G96 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.5− | 0.1− |
| 2004 03 15 | 333 | 0.0 | 0.8+ | 2006 07 21 | G96 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.6− | 0.5+ |
| 2004 03 15 | 704 | 0.8+ | 0.3+ | 2006 07 21 | G96 | 0.9− | 0.4+ | 2006 10 11 | 644 | 0.6− | 0.1+ |
| 2004 03 15 | 704 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.5+ | 1.2+ |
| 2004 03 15 | 704 | 0.1+ | 0.9+ | 2006 07 21 | G96 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2004 03 15 | 704 | 0.8+ | 0.5+ | 2006 07 22 | G96 | 0.2− | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.9+ |
| 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 07 22 | G96 | 0.5− | 0.0 | 2006 10 17 | 703 | (0.4+ | 2.3+) |
| 2004 03 15 | 599 | 0.1+ | 0.6+ | 2006 07 22 | G96 | 0.1− | 0.6− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 599 | 0.1− | 0.3+ | 2006 07 22 | G96 | 0.2− | 0.5− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2004 03 15 | 599 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.9− | 1.0+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2004 03 15 | 599 | 0.2− | 0.2+ | 2006 08 28 | 703 | (1.5− | 0.6+) | 2006 10 23 | G96 | 0.1− | 0.2− |

**(144372)∗ 2004 DN$_{51}$ = 2000 CW$_{10}$ = 2002 RJ$_{198}$**

Discovered 2004 Feb. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61987)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.55824 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26506418 | $\omega$ | 312.19700 | | −0.05743031 | −0.99733623 | |
| $a$ | 2.4001333 | $\Omega$ | 141.02689 | | +0.93574726 | −0.06947378 | |
| $e$ | 0.1555028 | $i$ | 4.10001 | | +0.34796383 | +0.02222234 | |
| $P$ | 3.72 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 26 | 691 | 0.1− | 0.2− | 2004 03 15 | 703 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 1995 12 26 | 691 | 0.1+ | 0.3− | 2004 03 15 | 704 | 1.0− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 1995 12 26 | 691 | 0.0 | 0.3− | 2004 03 15 | 703 | 0.2− | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1996 01 15 | 691 | 0.1− | 0.2− | 2004 03 15 | 704 | 0.9+ | 0.5− | 2006 10 19 | 644 | 0.4− | 0.2− |
| 1996 01 15 | 691 | 0.0 | 0.3− | 2004 03 15 | 703 | 0.8− | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1996 01 15 | 691 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.2− | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2000 01 05 | 704 | 0.0 | 0.4+ | 2004 03 15 | 703 | 0.2− | 1.4+ | 2006 10 19 | 644 | 0.1− | 0.6+ |
| 2000 01 05 | 704 | 0.2+ | 0.7− | 2004 03 15 | 704 | 0.8− | 1.5+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2000 01 05 | 704 | 0.1+ | 0.6− | 2004 03 15 | 704 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 01 05 | 704 | 0.4+ | 0.3+ | 2004 03 16 | 704 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2000 01 05 | 704 | 0.3+ | 0.6− | 2004 03 16 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2000 02 02 | 704 | 0.2+ | 0.5− | 2004 03 16 | 704 | (1.6+ | 0.8+) | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 02 02 | 704 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2000 02 02 | 704 | 0.4− | 0.3− | 2004 03 16 | 704 | (0.2+ | 2.7+) | 2006 10 22 | 703 | 0.7− | 0.6− |
| 2000 02 02 | 704 | 0.0 | 1.1+ | 2004 03 16 | 704 | 0.5− | 0.4− | 2006 10 22 | 703 | (1.5+ | 0.3−) |
| 2000 02 02 | 704 | 0.1+ | 0.4+ | 2004 03 16 | 704 | 0.8− | 0.6+ | 2006 10 22 | 703 | 1.5+ | 0.7+ |
| 2000 02 03 | 704 | 1.4+ | 1.1− | 2004 03 16 | 704 | (1.6+ | 1.0+) | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2000 02 03 | 704 | 0.6+ | 0.7− | 2004 03 16 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.1+ |
| 2000 02 03 | 704 | (2.7+ | 1.7−) | 2004 03 17 | 704 | 1.2+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2002 09 13 | 644 | 0.5− | 0.7+ | 2004 03 17 | 704 | 0.6− | 0.1+ | 2006 11 13 | 703 | 0.6+ | 0.4+ |
| 2002 09 13 | 644 | 0.0 | 0.9+ | 2004 03 17 | 704 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2002 09 13 | 644 | 0.3− | 0.9+ | 2004 03 17 | 704 | 0.6− | 0.2− | 2006 11 13 | 644 | 0.2− | 0.4− |
| 2002 09 15 | 644 | 0.0 | 0.8+ | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2006 11 13 | 703 | 0.4− | 0.4+ |
| 2002 09 15 | 644 | 0.0 | 0.9+ | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2006 11 13 | 703 | 0.3+ | 0.8+ |
| 2002 09 15 | 644 | 0.1− | 0.7+ | 2004 03 19 | 704 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 1.3+ | 0.6+ |
| 2004 02 23 | 704 | 0.6− | 0.4− | 2004 03 19 | 704 | 0.8− | 0.5+ | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2004 02 23 | 704 | 0.2− | 0.7+ | 2004 03 19 | 704 | 0.3+ | 0.7+ | 2006 11 14 | 704 | 0.7+ | 0.7+ |
| 2004 02 23 | 704 | 0.5+ | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.4+ |
| 2004 02 23 | 704 | 1.1− | 1.3+ | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 1.6− | 0.4+ |
| 2004 02 23 | 704 | 0.5− | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.9− | 1.0+ |
| 2004 02 26 | 704 | 0.2+ | 0.3− | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.7− |
| 2004 02 26 | 704 | 0.4+ | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.7+ | 2006 11 17 | 704 | 0.6− | 1.3+ |
| 2004 02 26 | 704 | 0.7+ | 0.3+ | 2004 03 30 | 691 | 0.2+ | 0.5− | 2006 11 19 | 703 | 0.3− | 0.7+ |
| 2004 02 26 | 704 | 0.3− | 0.4+ | 2004 03 30 | 691 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.6− | 0.2+ |
| 2004 02 26 | 704 | 0.5+ | 0.3+ | 2004 03 30 | 691 | 0.1+ | 0.2− | 2006 11 19 | 703 | 1.6− | 0.2− |
| 2004 03 11 | 644 | 0.3− | 0.2+ | 2004 03 31 | 691 | 0.3+ | 0.2− | 2006 11 19 | 703 | 0.1+ | 1.1+ |
| 2004 03 11 | 644 | 0.0 | 0.2+ | 2004 03 31 | 691 | 0.5+ | 0.4− | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2004 03 11 | 644 | 0.1− | 0.2+ | 2004 03 31 | 691 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2004 03 15 | 691 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.1+ | | | | |

**(144373)∗ 2004 DX$_{52}$ = 2002 TK$_{204}$**

Discovered 2004 Feb. 20 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 61989)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.25469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26813860 | $\omega$ | 54.18744 | | −0.43067459 | −0.89572750 | |
| $a$ | 2.3817517 | $\Omega$ | 61.68139 | | +0.78229990 | −0.43151317 | |
| $e$ | 0.1287665 | $i$ | 7.20538 | | +0.45002918 | −0.10709165 | |
| $P$ | 3.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.0 | 0.2− | 2004 03 25 | 704 | 0.1− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2000 01 29 | 704 | 0.2− | 0.8− | 2004 03 25 | 704 | 0.1− | 0.6− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2000 01 29 | 704 | 0.0 | 0.4− | 2004 03 25 | 704 | 0.1− | 0.7− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2000 01 29 | 704 | 0.5+ | 0.3+ | 2004 03 26 | 704 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2000 01 29 | 704 | 0.0 | 0.7+ | 2004 03 26 | 704 | 0.6− | 0.4− | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2004 03 26 | 704 | 0.2− | 0.5− | 2006 11 02 | 703 | 0.3+ | 1.3+ |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2004 03 26 | 704 | 0.1− | 0.3− | 2006 11 02 | 703 | 0.9− | 0.2+ |
| 2002 09 11 | 608 | 0.4− | 0.6+ | 2004 03 26 | 704 | 0.5− | 0.8+ | 2006 11 02 | 703 | (1.6− | 0.6+) |
| 2002 09 11 | 608 | 0.8− | 0.5+ | 2004 03 28 | 704 | 1.0+ | 1.0+ | 2006 11 02 | 703 | 0.1+ | 0.2− |
| 2002 09 11 | 608 | 0.9− | 0.5+ | 2004 03 28 | 704 | 1.0− | 1.4+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.1+ | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 1.0− | 0.1+ | 2004 03 28 | 704 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2004 03 28 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 0.2+ | 0.9+ | 2004 04 15 | 644 | 0.4+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2002 10 08 | 699 | 0.5− | 0.4+ | 2004 04 15 | 644 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2002 10 08 | 699 | 0.1− | 0.3+ | 2004 04 15 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.1+ |
| 2002 10 08 | 699 | 0.4− | 0.2+ | 2004 04 15 | 704 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.6+ | 0.1− |
| 2003 12 28 | 704 | 0.1+ | 0.0 | 2004 04 15 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2003 12 28 | 704 | 1.1− | 0.8+ | 2004 04 15 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | 0.9+ | 0.8+ | 2004 04 21 | 691 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2003 12 28 | 704 | 1.2+ | 1.1+ | 2004 04 21 | 703 | 0.5− | 0.9− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2003 12 28 | 704 | (1.3+ | 1.8+) | 2004 04 21 | 703 | 1.3− | 0.8− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2004 02 20 | 608 | 0.0 | 0.1− | 2004 04 21 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2004 02 20 | 608 | 0.2− | 0.1+ | 2004 04 21 | 703 | 0.8− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2004 02 20 | 608 | 0.2− | 0.2− | 2004 04 21 | 703 | 0.6− | 0.6− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2004 02 27 | 704 | 1.0+ | 0.2+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2004 02 27 | 704 | 0.6+ | 0.2+ | 2004 04 23 | 704 | 0.3+ | 0.9− | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2004 02 27 | 704 | 0.2+ | 0.3+ | 2004 04 23 | 704 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2004 03 12 | 644 | 0.1+ | 0.1+ | 2004 04 23 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 704 | (1.9+ | 0.5+) |
| 2004 03 12 | 644 | 0.1+ | 0.1+ | 2004 04 23 | 704 | 0.1+ | 0.5− | 2006 11 18 | 704 | 1.1+ | 0.3+ |
| 2004 03 12 | 644 | 0.0 | 0.1+ | 2004 04 25 | 699 | 0.5− | 1.3− | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2004 03 15 | 704 | 0.7+ | 0.5+ | 2004 04 25 | 699 | 0.7− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2004 03 15 | 704 | 0.2+ | 0.1+ | 2004 04 25 | 699 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2004 03 15 | 704 | 0.7+ | 0.2+ | 2004 04 25 | 699 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.5− |
| 2004 03 15 | 704 | 1.0+ | 0.5+ | 2004 05 23 | 291 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2004 03 15 | 704 | 0.0 | 0.1− | 2004 05 23 | 291 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2004 03 21 | 699 | 0.2+ | 0.3− | 2004 05 23 | 291 | 0.2+ | 0.3+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2004 03 21 | 699 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2004 03 21 | 699 | 0.8− | 1.0+ | 2006 10 03 | G96 | 0.5+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2004 03 21 | 699 | 1.4− | 0.6− | 2006 10 03 | G96 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2004 03 23 | 704 | 0.3+ | 0.8+ | 2006 10 03 | G96 | 0.7+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 695 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 695 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 10 20 | 695 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.2− | 0.4− |
| 2004 03 23 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.7− | 0.1− |
| 2004 03 25 | 704 | (0.6+ | 1.6−) | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.1− | 0.7− |

**(144374)∗ 2004 DF$_{55}$**

Discovered 2004 Feb. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.90088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24402574 | $\omega$ | 248.72010 | | +0.23175571 | +0.97277386 | |
| $a$ | 2.5361735 | $\Omega$ | 34.68037 | | −0.89214511 | +0.21277120 | |
| $e$ | 0.0763706 | $i$ | 0.05522 | | −0.38777107 | +0.09186637 | |
| $P$ | 4.04 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 28 | 691 | 0.0 | 0.1− | 2002 11 13 | 291 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 1994 12 28 | 691 | 0.3− | 0.7− | 2002 11 13 | 291 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 1994 12 28 | 691 | 0.7− | 0.5− | 2002 11 13 | 291 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 1996 03 26 | 691 | 0.3+ | 0.2− | 2004 01 30 | 291 | 0.3− | 0.6+ | 2006 10 27 | G96 | 0.7+ | 0.2− |
| 1996 03 26 | 691 | 0.1+ | 0.8− | 2004 01 30 | 291 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 1996 03 26 | 691 | 0.3+ | 0.6+ | 2004 01 30 | 291 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 1998 11 16 | 691 | 0.5+ | 0.5− | 2004 02 22 | 691 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.1− |
| 1998 11 16 | 691 | 0.0 | 0.7− | 2004 02 22 | 691 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1998 11 16 | 691 | 0.2− | 0.6− | 2004 02 22 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 1998 11 23 | 691 | 0.4+ | 0.2− | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 1998 11 23 | 691 | 0.5+ | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1998 11 23 | 691 | 0.9+ | 0.1− | 2004 02 29 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.6− | 0.3+ |
| 2000 01 12 | 691 | 0.2+ | 0.2− | 2004 03 27 | 691 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2000 01 12 | 691 | 0.1+ | 0.2− | 2004 03 27 | 691 | 0.5+ | 0.5+ | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 2000 01 12 | 691 | 0.0 | 0.1− | 2004 03 27 | 691 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2000 02 04 | 691 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.8+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2000 02 04 | 691 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 12 | 703 | 0.4− | 0.1+ |
| 2000 02 04 | 691 | 0.4− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 12 | 703 | 0.2− | 0.6− |
| 2000 04 03 | 691 | 0.7− | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 12 | 703 | 0.0 | 1.8− |
| 2000 04 03 | 691 | 0.6− | 0.8− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 12 | 703 | 1.2− | 0.8+ |
| 2000 04 03 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.3+ | | | | |

**(144375)∗ 2004 DL$_{56}$**

Discovered 2004 Feb. 22 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.27886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20485965 | $\omega$ | 122.52709 | | +0.18661952 | +0.97732462 | |
| $a$ | 2.8499141 | $\Omega$ | 157.57263 | | −0.96619044 | +0.20102121 | |
| $e$ | 0.1377908 | $i$ | 15.20316 | | −0.17790219 | −0.06653610 | |
| $P$ | 4.81 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1− | 0.0 | 2005 05 20 | 644 | 0.4+ | 0.3+ | 2005 07 05 | 703 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.1+ | 0.4− | 2005 05 20 | 644 | 0.2+ | 0.2+ | 2005 07 05 | 703 | 1.3+ | 0.2+ |
| 2001 09 12 | 704 | 0.2+ | 0.5− | 2005 05 20 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.6+ | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2005 05 20 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 0.5+ |
| 2004 02 12 | 691 | 0.1+ | 0.1+ | 2005 05 20 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.3− |
| 2004 02 12 | 691 | 0.4− | 0.1− | 2005 05 20 | 644 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.7+ |
| 2004 02 12 | 691 | 0.7− | 0.4+ | 2005 05 31 | 703 | 0.9− | 0.0 | 2006 09 25 | 699 | 1.6+ | 0.1+ |
| 2004 02 22 | 691 | 0.1+ | 0.2− | 2005 05 31 | 703 | 0.6− | 0.5+ | 2006 09 25 | 699 | 0.4− | 0.6+ |
| 2004 02 22 | 691 | 0.1− | 0.2− | 2005 05 31 | 703 | 0.7− | 0.6+ | 2006 09 25 | 699 | 0.1+ | 0.6+ |
| 2004 02 22 | 691 | 0.1+ | 0.0 | 2005 05 31 | 703 | 0.8− | 0.6+ | 2006 09 25 | 699 | 0.2+ | 0.3+ |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2005 06 11 | 703 | 0.5− | 0.2− | 2006 10 10 | 644 | 0.8− | 0.3+ |
| 2004 02 29 | 691 | 0.3− | 0.0 | 2005 06 11 | 703 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2004 02 29 | 691 | 0.2− | 0.1+ | 2005 06 11 | 703 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.6− | 0.2+ |
| 2004 03 18 | 691 | 0.4+ | 0.3+ | 2005 06 11 | 703 | 0.7− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.6+ |
| 2004 03 18 | 691 | 0.5+ | 0.2− | 2005 06 24 | 644 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 1.1+ | 0.5+ |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2005 06 24 | 644 | 0.4+ | 0.1− | 2006 10 17 | 703 | 1.6− | 1.3− |
| 2004 03 27 | 691 | 0.6+ | 0.3+ | 2005 06 24 | 644 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2004 03 27 | 691 | 0.3+ | 0.3− | 2005 07 01 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.8+ |
| 2004 03 27 | 691 | 0.0 | 0.6+ | 2005 07 01 | 644 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.4− |
| 2005 05 15 | 644 | 0.1− | 0.1+ | 2005 07 01 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.6− | 1.1+ |
| 2005 05 15 | 644 | 0.4+ | 0.0 | 2005 07 05 | 703 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.6− | 0.8+ |
| 2005 05 15 | 644 | 0.4+ | 0.2+ | 2005 07 05 | 703 | 0.2+ | 1.2− | | | | |

**(144376)∗ 2004 DR$_{59}$**

Discovered 2004 Feb. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.04722 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21573458 | $\omega$ | 285.91980 | | +0.88252400 | +0.46324408 | |
| $a$ | 2.7533169 | $\Omega$ | 46.56384 | | −0.37744088 | +0.80045005 | |
| $e$ | 0.0536157 | $i$ | 6.40229 | | −0.28051695 | +0.38037433 | |
| $P$ | 4.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.5− | 1.1− | 2004 02 25 | 704 | (0.2+ | 1.6+) | 2006 10 01 | 691 | 0.0 | 0.1− |
| 1995 03 25 | 691 | 0.4− | 1.6− | 2004 02 25 | 704 | (0.9+ | 1.8+) | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 1995 03 25 | 691 | (0.0 | 2.3−) | 2004 02 25 | 704 | (0.1− | 1.5+) | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 1997 10 29 | 704 | 0.2− | 0.3− | 2004 02 25 | 704 | 0.4+ | 1.3+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 1997 10 29 | 704 | 1.5+ | 1.7− | 2004 02 25 | 704 | 0.4+ | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1997 10 29 | 704 | 0.1− | 0.6− | 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 1997 10 29 | 704 | 0.7− | 0.7− | 2004 02 29 | 691 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2000 04 25 | 699 | 1.0+ | 0.7+ | 2004 02 29 | 691 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 04 25 | 699 | 1.1+ | 0.6+ | 2004 03 25 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.3− |
| 2000 04 25 | 699 | (2.5+ | 1.6+) | 2004 03 25 | 704 | 0.4− | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2000 04 25 | 699 | 1.0+ | 0.0 | 2004 03 25 | 704 | 0.4+ | 0.8− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2000 05 11 | 691 | 0.2+ | 0.5− | 2004 03 25 | 704 | 0.2− | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2000 05 11 | 691 | 0.0 | 0.5− | 2004 03 27 | 704 | 1.4+ | 0.2− | 2006 10 19 | 644 | 0.5+ | 0.3+ |
| 2000 05 11 | 691 | 1.2− | 0.4− | 2004 03 27 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2000 05 25 | 691 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.8+ | 0.7+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2000 05 25 | 691 | 0.1+ | 0.2+ | 2004 03 29 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2000 05 25 | 691 | 0.2− | 0.3− | 2004 03 29 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 08 25 | 699 | (0.8− | 1.6+) | 2004 03 29 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 08 25 | 699 | 0.5+ | 0.1− | 2004 03 30 | 704 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.6− |
| 2001 08 25 | 699 | 0.3− | 0.7− | 2004 03 30 | 704 | 0.7+ | 1.3+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2001 08 25 | 699 | 0.1+ | 0.7+ | 2004 03 30 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.8+ |
| 2001 08 25 | 608 | 0.2− | 1.0+ | 2004 03 30 | 704 | 0.7− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2001 08 25 | 608 | 0.4− | 0.1+ | 2006 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 08 25 | 608 | 0.5− | 0.8+ | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.3− |
| 2001 09 10 | 699 | 0.3− | 0.3− | 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2001 09 10 | 699 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.2− |
| 2001 09 10 | 699 | (1.9− | 0.7+) | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.6− | 0.6+ |
| 2001 09 10 | 699 | 0.8− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2002 12 11 | 704 | 0.3− | 0.4− | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | (1.8+ | 3.6−) |
| 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.1− |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2002 12 11 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 01 05 | 704 | (0.4− | 1.6−) | 2006 09 30 | 703 | 0.3+ | 1.5+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2003 01 05 | 704 | 1.1+ | 1.1− | 2006 09 30 | 703 | 1.0− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2003 01 05 | 704 | (1.6+ | 2.1−) | 2006 09 30 | 703 | 0.2− | 0.2+ | | | | |

**(144377)∗ 2004 DW$_{59}$ = 1997 AK$_{20}$**

Discovered 2004 Feb. 26 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. A. Doppler (*MPO* 76442)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.18007 | | (2000.0) | | | |
| $n$ | 0.28718973 | $\omega$ | 233.60059 | | +0.38556546 | −0.92265505 |
| $a$ | 2.2752203 | $\Omega$ | 193.72551 | | +0.85551983 | +0.36027211 |
| $e$ | 0.1940036 | $i$ | 1.65478 | | +0.34557937 | +0.13751973 |
| $P$ | 3.43 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 11 | 691 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.6− |
| 1997 01 11 | 691 | 0.0 | 0.2− | 2006 11 02 | 703 | (0.3+ | 1.6−) | 2006 11 19 | 691 | 0.0 | 0.0 |
| 1997 01 11 | 691 | 0.2+ | 0.3− | 2006 11 02 | 703 | 1.1− | 0.6− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 1997 01 17 | 691 | 0.3− | 0.3− | 2006 11 02 | 703 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.3− |
| 1997 01 17 | 691 | 0.2− | 0.2+ | 2006 11 02 | 703 | 0.1+ | 0.6− | 2006 11 21 | 704 | 1.0− | 0.1+ |
| 1997 01 17 | 691 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.3+ |
| 1999 10 09 | 704 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.5− | 0.4+ |
| 1999 10 09 | 704 | 0.9− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3− | 0.3− |
| 1999 10 09 | 704 | 1.4+ | 0.7− | 2006 11 09 | 644 | 0.6− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 0.1− | 0.6− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 1999 11 09 | 704 | 0.5− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 1999 11 09 | 704 | 0.7− | 0.5+ | 2006 11 11 | 691 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 1999 11 09 | 704 | 0.3+ | 1.0+ | 2006 11 11 | 691 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2004 02 26 | 333 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2004 02 26 | 333 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 333 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2004 02 29 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2004 02 29 | 691 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.3− | 0.7− |
| 2004 03 18 | 704 | 0.7− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.7− |
| 2004 03 18 | 704 | 0.4+ | 0.7+ | 2006 11 11 | G96 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.4− | 0.6− |
| 2004 03 18 | 704 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.5− | 0.4+ |
| 2004 03 18 | 704 | 0.3− | 0.9− | 2006 11 18 | 704 | 0.9+ | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.5+ |
| 2004 03 26 | 691 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.5− | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2004 03 26 | 691 | 0.1− | 0.6+ | 2006 11 18 | 704 | 1.2+ | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2004 03 26 | 691 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.9+ | 0.4+ | 2006 11 29 | 704 | 0.6+ | 1.1+ |
| 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.4+ | 1.0− | 2006 11 29 | 704 | 0.4− | 0.1− |
| 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.3+ | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 18 | 704 | 1.5+ | 0.6− | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | (2.1+ | 0.1+) | | | | |
| 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 1.4+ | 0.8− | | | | |

**(144378)∗ 2004 DK$_{60}$ = 1997 SX$_{19}$**

Discovered 2004 Feb. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61991)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 273.29439 | | (2000.0) | | | |
| $n$ | 0.21200001 | $\omega$ | 186.39464 | | +0.30751010 | −0.95147024 |
| $a$ | 2.7855575 | $\Omega$ | 245.69664 | | +0.87360337 | +0.28726209 |
| $e$ | 0.0755833 | $i$ | 0.74895 | | +0.37716665 | +0.11038509 |
| $P$ | 4.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.4− | 0.2+ | 2003 11 21 | 291 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 0.2+ | 0.0 |
| 1997 09 28 | 691 | 0.4− | 0.1+ | 2003 11 21 | 291 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.4+ | 0.5+ |
| 1997 09 28 | 691 | 0.3− | 0.1+ | 2003 11 21 | 291 | 0.8− | 0.7+ | 2004 03 18 | 704 | 1.1+ | 0.2+ |
| 1997 10 03 | 691 | 0.1− | 0.3+ | 2004 02 14 | 691 | 0.0 | 0.5+ | 2005 06 17 | 691 | 0.5+ | 0.3+ |
| 1997 10 03 | 691 | 0.2− | 0.1+ | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2005 06 17 | 691 | 0.1+ | 0.3+ |
| 1997 10 03 | 691 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.2+ | 0.2+ | 2005 06 17 | 691 | 0.1+ | 0.5− |
| 1998 12 10 | 691 | 0.6+ | 0.5− | 2004 02 26 | 704 | 0.4+ | 1.0+ | 2006 08 28 | 703 | 0.1− | 0.6+ |
| 1998 12 10 | 691 | 0.3+ | 0.6− | 2004 02 26 | 704 | 1.7− | 1.4+ | 2006 08 28 | 703 | 0.4− | 0.3+ |
| 1998 12 10 | 691 | 0.5− | 0.3− | 2004 02 26 | 704 | 1.4− | 0.1− | 2006 08 28 | 703 | 1.4+ | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.1− | 0.9+ | 2006 08 28 | 703 | 1.0− | 0.5+ |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2004 02 29 | 691 | 0.4+ | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2002 10 11 | 704 | 1.3+ | 0.6− | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.7− | 0.2+ |
| 2002 11 06 | 704 | 1.5+ | 0.3− | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.7− | 0.2− |
| 2002 11 06 | 704 | 0.7− | 0.3+ | 2004 03 17 | 691 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.4− | 0.3− |
| 2002 11 06 | 704 | 0.6− | 0.7+ | 2004 03 17 | 691 | 0.1+ | 0.1− | | | | |
| 2002 11 06 | 704 | 0.6+ | 0.1+ | 2004 03 17 | 691 | 0.0 | 0.3− | | | | |

**(144379)∗ 2004 DW$_{60}$ = 1993 FP$_{6}$ = 2000 LW$_{22}$**

Discovered 2004 Feb. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69682, *MPO* 86333)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.38456 | | (2000.0) | | | |
| $n$ | 0.17421610 | $\omega$ | 76.28549 | | −0.54121948 | +0.83920045 |
| $a$ | 3.1750009 | $\Omega$ | 160.66324 | | −0.82013527 | −0.51285979 |
| $e$ | 0.0403618 | $i$ | 9.23545 | | −0.18563299 | −0.18087963 |
| $P$ | 5.66 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 2.0− | 1.1− | 2004 02 14 | 608 | 1.1+ | 0.1− | 2005 05 09 | 703 | 1.6− | 0.2− |
| 1993 03 18 | 809 | 1.3− | 2.0− | 2004 02 14 | 608 | 0.7+ | 0.5+ | 2005 05 09 | 703 | 1.4− | 1.8− |
| 1993 03 23 | 809 | 1.8+ | 1.0− | 2004 02 26 | 704 | 0.5+ | 0.8− | 2005 05 13 | 691 | 0.1+ | 0.0 |
| 1995 10 16 | 691 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.4+ | 0.0 | 2005 05 13 | 691 | 0.1+ | 0.1+ |
| 1995 10 16 | 691 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2005 05 13 | 691 | 0.1− | 0.8+ |
| 1995 10 16 | 691 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.5− | 2005 05 14 | G96 | 0.2− | 0.2− |
| 1995 10 19 | 413 | 0.1− | 0.2− | 2004 02 26 | 704 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.2− | 0.2− |
| 1995 10 19 | 413 | 0.1+ | 0.7− | 2004 02 29 | 291 | 0.1+ | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.3− |
| 1995 10 19 | 413 | 0.3− | 0.2− | 2004 02 29 | 291 | 0.1+ | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 413 | 0.6− | 0.0 | 2004 02 29 | 291 | 0.2+ | 0.0 | 2005 06 03 | 691 | 0.1+ | 0.1− |
| 2000 06 05 | 691 | 0.3+ | 0.2+ | 2004 03 30 | 691 | 0.2− | 0.4+ | 2005 06 03 | 691 | 0.2+ | 0.0 |
| 2000 06 05 | 691 | 0.1+ | 0.0 | 2004 03 30 | 691 | 0.0 | 0.2+ | 2005 06 03 | 691 | 0.1− | 0.1− |
| 2000 06 05 | 691 | 0.2+ | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.6+ |
| 2000 06 10 | 691 | 0.1+ | 0.2− | 2005 05 03 | 691 | 0.2− | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.4+ |
| 2000 06 10 | 691 | 0.2+ | 0.2− | 2005 05 03 | 691 | 0.2− | 0.3+ | 2006 08 14 | 644 | 0.4+ | 0.1+ |
| 2000 06 10 | 691 | 0.2+ | 0.0 | 2005 05 03 | 691 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 1.1− | 1.1+ | 2005 05 09 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 0.8− | 0.4+ | 2005 05 09 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2002 12 14 | 704 | 0.7− | 0.5+ | 2005 05 09 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.7+ | 0.5− | 2005 05 09 | 703 | 0.3− | 1.4− | | | | |
| 2004 02 14 | 608 | 0.3− | 0.0 | 2005 05 09 | 703 | 1.3− | 0.7− | | | | |

**(144380)∗ 2004 DC$_{61}$ = 1997 PO$_{6}$ = 2000 EW$_{67}$**

Discovered 2004 Feb. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61991), A. Doppler (*MPO* 95183)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.66030 | | (2000.0) | | | |
| $n$ | 0.23682354 | $\omega$ | 176.80403 | | −0.84756233 | −0.53044639 |
| $a$ | 2.5873358 | $\Omega$ | 331.14183 | | +0.48615329 | −0.76376462 |
| $e$ | 0.0986844 | $i$ | 1.93186 | | +0.21282170 | −0.36781822 |
| $P$ | 4.16 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 07 | 691 | 0.1− | 0.7+ | 2004 02 26 | 704 | 1.0+ | 0.3+ | 2006 09 17 | 691 | 0.5− | 0.5+ |
| 1997 08 07 | 691 | 0.4− | 0.3+ | 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 1997 08 07 | 691 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.1− | 0.9+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2004 02 26 | 704 | 0.3− | 1.3+ | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2000 02 12 | 645 | 0.2− | 0.1− | 2004 02 26 | 704 | 0.6+ | 0.0 | 2006 10 19 | G96 | 0.6+ | 0.1+ |
| 2000 03 10 | 704 | 1.7+ | 1.6+ | 2004 02 29 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2000 03 10 | 704 | 0.8+ | 0.4+ | 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.6+ | 0.0 |
| 2000 03 10 | 704 | 1.5+ | 0.4+ | 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.8+ | 0.7+ | 2004 03 18 | 704 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2000 03 11 | 704 | 0.6+ | 1.1+ | 2004 03 18 | 704 | 1.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2000 03 11 | 704 | (1.1+ | 3.1+) | 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2000 03 11 | 704 | 0.6+ | 1.7+ | 2004 03 18 | 704 | 1.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2004 03 18 | 704 | (1.8+ | 0.8+) | 2006 11 15 | G96 | 0.5− | 0.4+ |
| 2004 02 17 | 691 | 0.1− | 0.0 | 2004 03 26 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2004 02 17 | 691 | 0.4+ | 0.0 | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.5+ |
| 2004 02 18 | 704 | 0.6+ | 0.5− | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 02 18 | 704 | 0.2+ | 0.8+ | 2006 09 17 | 691 | 0.4− | 0.3+ | | | | |
| 2004 02 18 | 704 | 0.7+ | 0.7+ | 2006 09 17 | 691 | 0.4− | 0.4+ | | | | |

**(144381)∗ 2004 DK$_{61}$**

Discovered 2004 Feb. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.87284 | | (2000.0) | | | |
| $n$ | 0.23384086 | $\omega$ | 188.25305 | | +0.96982989 | +0.22814004 |
| $a$ | 2.6092906 | $\Omega$ | 157.97765 | | −0.20853755 | +0.95892201 |
| $e$ | 0.1752357 | $i$ | 13.24628 | | −0.12626191 | +0.16858440 |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.3+ | 0.0 | 2005 05 04 | 703 | 1.3− | 0.6− | 2006 09 30 | 699 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.2+ | 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.8+ |
| 2002 10 31 | 704 | 0.0 | 0.0 | 2005 05 04 | 703 | 1.1− | 0.3− | 2006 10 01 | 704 | (1.6+ | 1.8−) |
| 2002 10 31 | 704 | 0.6+ | 0.1+ | 2005 05 04 | 703 | 0.1+ | 1.2+ | 2006 10 01 | 704 | 1.0+ | 0.1+ |
| 2002 12 14 | 608 | 0.1+ | 0.2+ | 2005 05 04 | 703 | 0.8− | 0.1+ | 2006 10 01 | 704 | (0.8+ | 1.8−) |
| 2002 12 14 | 608 | 0.7− | 0.2+ | 2005 05 06 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2002 12 14 | 608 | 0.9− | 0.9+ | 2005 05 06 | 691 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2004 02 16 | 691 | 0.2+ | 0.1− | 2005 05 06 | 691 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2005 05 14 | 691 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.7+ | 0.9+ |
| 2004 02 16 | 691 | 0.4+ | 0.4+ | 2005 05 14 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.7+ |
| 2004 02 26 | 704 | 0.4− | 1.2+ | 2005 05 14 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.7− |
| 2004 02 26 | 704 | 0.5− | 0.6+ | 2005 05 15 | 644 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.6+ | 0.3+ |
| 2004 02 26 | 704 | 0.8− | 0.5+ | 2005 05 15 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.1+ | 1.0+ |
| 2004 02 29 | 291 | 0.1− | 0.0 | 2005 05 15 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.9+ |
| 2004 02 29 | 291 | 0.2+ | 0.2+ | 2005 05 20 | 644 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 0.8− | 0.5+ |
| 2004 02 29 | 291 | 0.3+ | 0.2+ | 2005 05 20 | 644 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.3− |
| 2004 03 14 | 691 | 0.2+ | 0.1− | 2005 05 20 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.4− | 0.4+ |
| 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.4+ | 2006 11 16 | 703 | 0.4+ | 0.2− |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.6+ | 0.4+ |
| 2004 03 30 | 691 | 0.3− | 0.3− | 2006 09 26 | 703 | 1.2− | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.3+ |
| 2004 03 30 | 691 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.8− | 0.1− | 2006 11 23 | 703 | 1.0− | 0.6+ |
| 2004 03 30 | 691 | 0.3− | 0.2− | 2006 09 30 | 699 | 1.0− | 1.5+ | 2006 11 23 | 703 | 0.3+ | 1.4+ |
| 2005 05 04 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 699 | 1.2− | 1.4− | 2006 11 23 | 703 | 0.1− | 0.4+ |
| 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 699 | 0.3− | 0.9+ | 2006 11 23 | 703 | 0.6− | 0.7+ |

**(144382)∗ 2004 DZ$_{62}$ = 2001 NM$_{8}$ = 2005 JE$_{175}$ = 2005 LG$_{32}$**

Discovered 2004 Feb. 29 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86334), G. V. Williams (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.04055 | | (2000.0) | | | |
| $n$ | 0.21980970 | $\omega$ | 202.83872 | | +0.87866351 | +0.46979530 |
| $a$ | 2.7191812 | $\Omega$ | 128.86088 | | −0.41943723 | +0.84470754 |
| $e$ | 0.1169453 | $i$ | 6.27466 | | −0.22808516 | +0.25644014 |
| $P$ | 4.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.4+ | 0.1+ | 2004 03 17 | 691 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.0 | 1.1− |
| 2001 07 14 | 644 | 0.0 | 0.2+ | 2005 05 08 | 691 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.7− | 0.3+ |
| 2001 07 14 | 644 | 0.4+ | 0.2+ | 2005 05 08 | 691 | 0.3− | 0.1− | 2006 09 18 | 703 | (1.9+ | 0.7−) |
| 2001 07 17 | 644 | 0.3− | 0.4+ | 2005 05 08 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.2+ |
| 2001 07 17 | 644 | 0.2− | 0.4+ | 2005 05 17 | G96 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.6− |
| 2001 07 17 | 644 | 0.5− | 0.3+ | 2005 05 17 | G96 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2004 02 29 | 691 | 0.1+ | 0.2+ | 2005 05 17 | G96 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1+ | 1.2− |
| 2004 02 29 | 691 | 0.2− | 0.1+ | 2005 05 17 | G96 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2004 02 29 | 691 | 0.4+ | 0.2+ | 2005 06 09 | 691 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.7+ | 0.5+ |
| 2004 03 01 | 291 | 0.1+ | 0.2+ | 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 10 22 | 703 | 1.2+ | 1.5+ |
| 2004 03 01 | 291 | 0.9− | 0.3+ | 2005 06 09 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.1+ | 1.4+ |
| 2004 03 01 | 291 | 0.0 | 0.1− | 2005 06 14 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 03 17 | 691 | 0.4+ | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.1+ | | | | |

**(144383)∗ 2004 DK$_{65}$ = 2002 UM$_{30}$**

Discovered 2004 Feb. 22 by M. W. Buie at Kitt Peak.

Id. G. V. Williams (*MPO* 61993)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 220.15274 | | (2000.0) | | | |
| $n$ | 0.26402407 | $\omega$ | 182.47108 | | −0.96643170 | +0.25688839 |
| $a$ | 2.4064326 | $\Omega$ | 12.41693 | | −0.23538200 | −0.87863841 |
| $e$ | 0.1185310 | $i$ | 1.13446 | | −0.10298099 | −0.40249585 |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 691 | 0.2− | 0.2− | 2004 02 26 | 704 | 1.1+ | 1.4+ | 2004 03 29 | 691 | 0.1+ | 0.1+ |
| 1998 09 25 | 691 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.6+ | 1.3+ | 2005 07 18 | 644 | 0.4+ | 0.3+ |
| 1998 09 25 | 691 | 0.2+ | 0.1− | 2004 03 15 | 704 | 0.5+ | 0.6+ | 2005 07 18 | 644 | 0.5− | 0.3+ |
| 1998 10 24 | 691 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.3+ | 1.0+ | 2005 07 18 | 644 | 0.1− | 0.0 |
| 1998 10 24 | 691 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.5+ | 2006 09 27 | G96 | 0.9− | 0.1+ |
| 1998 10 24 | 691 | 0.1+ | 0.4+ | 2004 03 15 | 704 | 0.9+ | 1.1+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2000 01 11 | 691 | 0.2− | 1.0− | 2004 03 18 | 704 | (1.7+ | 0.3+) | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2000 01 11 | 691 | 0.2− | 0.9− | 2004 03 18 | 704 | 1.3+ | 0.7+ | 2006 09 27 | G96 | 0.4+ | 0.4+ |
| 2000 01 11 | 691 | 0.2− | 0.9− | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.3+ |
| 2002 10 30 | 291 | 0.3+ | 0.9+ | 2004 03 18 | 704 | 1.2+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2002 10 30 | 291 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.4+ |
| 2002 10 30 | 291 | 0.6− | 0.6+ | 2004 03 19 | 704 | 0.2− | 0.9+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2002 10 31 | 291 | 0.8− | 0.4+ | 2004 03 19 | 704 | 0.1− | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 291 | 0.5− | 0.3+ | 2004 03 19 | 704 | 1.0− | 1.1+ | 2006 10 28 | G96 | 0.5− | 0.3− |
| 2002 10 31 | 291 | 0.4− | 0.3+ | 2004 03 19 | 704 | (1.2+ | 1.7+) | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2004 02 22 | 695 | 0.2− | 0.1− | 2004 03 19 | 704 | (0.4− | 1.5+) | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2004 02 22 | 695 | 0.2− | 0.0 | 2004 03 27 | 704 | 0.5− | 0.4− | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2004 02 25 | 333 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2004 02 25 | 333 | 0.5+ | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2004 02 26 | 704 | (0.3+ | 1.7+) | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2004 02 26 | 704 | 0.2+ | 0.9+ | 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.4+ | 0.1− |
| 2004 02 26 | 704 | (0.2− | 1.7+) | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.0 |

**(144384)∗ 2004 DZ$_{65}$ = 2000 KR$_{13}$**

Discovered 2004 Feb. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 61993)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.74761 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21921964 | $\omega$ | 104.69946 | | −0.90787819 | | +0.41783905 |
| $a$ | 2.7240584 | $\Omega$ | 100.00827 | | −0.39675613 | | −0.83001017 |
| $e$ | 0.0966685 | $i$ | 1.98856 | | −0.13543178 | | −0.36945046 |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 04 | 691 | 0.3+ | 1.1+ | 2004 03 11 | 644 | 0.4+ | 0.5+ | 2005 06 13 | G96 | 0.2− | 1.1+ |
| 1995 02 04 | 691 | 0.2− | 0.8− | 2004 03 11 | 644 | 0.3+ | 1.1+ | 2005 06 13 | G96 | 0.1− | 0.0 |
| 1995 02 04 | 691 | 0.2− | 0.5− | 2004 03 11 | 644 | 0.1+ | 0.7+ | 2005 06 13 | G96 | 0.0 | 0.1+ |
| 1995 03 23 | 691 | 0.5− | 1.0− | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2005 06 28 | G96 | 0.1− | 0.2+ |
| 1995 03 23 | 691 | 0.1+ | 0.3+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2005 06 28 | G96 | 0.2+ | 0.4+ |
| 1995 03 23 | 691 | 0.2− | 0.3− | 2004 03 14 | 691 | 0.0 | 0.2+ | 2005 06 28 | G96 | 0.3+ | 0.4+ |
| 1998 11 18 | 950 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.8+ | 2005 06 28 | G96 | 0.1− | 1.0+ |
| 1998 11 18 | 950 | 0.0 | 0.0 | 2004 03 18 | 704 | 1.3+ | 0.4+ | 2006 09 14 | 691 | 0.3− | 0.4+ |
| 1998 11 18 | 950 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.4+ |
| 2000 05 28 | 704 | 0.6+ | 0.3+ | 2004 03 18 | 704 | 0.1+ | 1.2+ | 2006 09 14 | 691 | 0.3− | 0.7+ |
| 2000 05 28 | 704 | 0.8+ | 0.5− | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 691 | 0.4+ | 0.5+ |
| 2000 05 28 | 704 | 0.1− | 1.2+ | 2004 03 19 | 704 | (2.2+ | 0.7−) | 2006 10 16 | 691 | 0.8− | 0.6+ |
| 2000 05 28 | 704 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2000 05 29 | 704 | 0.2+ | 0.2+ | 2004 03 19 | 704 | 0.7− | 0.3− | 2006 10 17 | G96 | 0.4− | 0.0 |
| 2000 05 29 | 704 | 0.1+ | 0.6+ | 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 1.0+ | 0.3− |
| 2000 05 29 | 704 | 0.6+ | 0.5+ | 2004 03 19 | 704 | 1.1− | 0.3− | 2006 10 17 | G96 | 0.2− | 0.4+ |
| 2000 05 29 | 704 | 0.4+ | 0.7+ | 2004 07 15 | 807 | 0.8− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 2000 05 29 | 704 | 1.3+ | 1.5+ | 2004 07 16 | 807 | 0.7+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2004 02 23 | 704 | 0.7+ | 0.8+ | 2005 06 03 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2004 02 23 | 704 | 0.1+ | 1.4+ | 2005 06 03 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2004 02 23 | 704 | 0.2− | 0.3− | 2005 06 03 | 691 | 0.5− | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2004 02 23 | 704 | 0.9+ | 0.8+ | 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.5− | 0.2+ |
| 2004 02 23 | 704 | 0.3− | 0.6+ | 2005 06 08 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2004 02 26 | 695 | 0.0 | 0.1− | 2005 06 08 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.7+ | 0.1− |
| 2004 02 26 | 695 | 0.2− | 0.1− | 2005 06 13 | G96 | 0.8− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.1+ |

**(144385)∗ 2004 DJ$_{69}$**

Discovered 2004 Feb. 26 by M. W. Buie at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.58044 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21223852 | $\omega$ | 10.25150 | | +0.96862016 | | +0.24338085 |
| $a$ | 2.7834702 | $\Omega$ | 335.48364 | | −0.23577141 | | +0.83556218 |
| $e$ | 0.1235513 | $i$ | 6.97717 | | −0.07865644 | | +0.49254604 |
| $P$ | 4.64 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.5+ |
| 2002 10 04 | 704 | 0.6+ | 0.7− | 2004 01 22 | 704 | 0.4+ | 1.0− | 2006 08 23 | 704 | 0.0 | 0.8− |
| 2002 10 04 | 704 | 0.4+ | 0.6− | 2004 01 22 | 704 | 0.4+ | 0.6+ | 2006 08 23 | 704 | 0.2+ | 0.2− |
| 2002 10 10 | 704 | 1.3− | 0.3− | 2004 02 11 | 699 | 0.6+ | 0.4− | 2006 08 23 | 704 | 0.4− | 0.6+ |
| 2002 10 10 | 704 | 0.4− | 1.2− | 2004 02 11 | 699 | (0.3− | 1.8+) | 2006 08 23 | 704 | 0.1+ | 0.5+ |
| 2002 10 10 | 704 | 0.6+ | 0.4− | 2004 02 11 | 699 | 0.5− | 0.8+ | 2006 08 23 | 704 | 0.7+ | 0.2+ |
| 2002 10 10 | 704 | 0.3+ | 0.8− | 2004 02 11 | 699 | 0.7− | 0.9+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2004 02 23 | 704 | 1.2− | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.5+ |
| 2002 11 06 | 704 | (0.7− | 2.0+) | 2004 02 23 | 704 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.5+ |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.5− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | (0.6− | 2.3+) | 2004 02 23 | 704 | 0.8+ | 0.4− | 2006 09 30 | G96 | 0.6− | 0.2− |
| 2002 11 06 | 704 | 0.0 | 0.4+ | 2004 02 26 | 695 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2002 11 14 | 704 | 0.7− | 1.1+ | 2004 02 26 | 695 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2002 11 14 | 644 | 0.2− | 0.2− | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.5+ | 0.0 | 2004 02 29 | 691 | 0.4+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.3+ |
| 2002 11 14 | 644 | 0.3− | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.1− | 0.9+ | 2005 05 01 | 644 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.1+ | 0.3+ | 2006 10 28 | G96 | (0.7+ | 2.2−) |
| 2002 11 14 | 644 | 0.2− | 0.1− | 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 08 12 | 644 | 1.0+ | 0.0 | 2006 10 28 | G96 | 0.5− | 0.1+ |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 08 12 | 644 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.7+ |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 08 12 | 644 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 1.0+ | 2006 08 14 | 644 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | (0.2+ | 1.6+) | 2006 08 14 | 644 | 0.5− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 12 05 | 704 | 0.2+ | 0.6+ | 2006 08 14 | 644 | 0.5− | 0.6+ | 2006 11 18 | G96 | 0.5+ | 0.2− |
| 2004 01 22 | 704 | 0.1+ | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.5+ | | | | |
| 2004 01 22 | 704 | 0.7+ | 0.9+ | 2006 08 17 | 644 | 0.2− | 0.4+ | | | | |

**(144386)∗ 2004 DB$_{71}$ = 1999 VP$_{126}$**

Discovered 2004 Feb. 27 by M. W. Buie at Kitt Peak.

Id. A. Doppler (*MPO* 69683)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.75679 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28755156 | $\omega$ | 332.91963 | | +0.68339899 | | −0.72980448 |
| $a$ | 2.2733112 | $\Omega$ | 73.96401 | | +0.67328488 | | +0.62013345 |
| $e$ | 0.1717550 | $i$ | 1.11734 | | +0.28222914 | | +0.28778449 |
| $P$ | 3.43 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.0 |
| 1999 11 09 | 691 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 1999 11 09 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 1999 11 13 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 1999 11 13 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 1.4− | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 1999 11 13 | 691 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 1.2+ |
| 2001 03 29 | 691 | 0.2+ | 1.2+ | 2006 11 01 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2001 03 29 | 691 | 0.1− | 0.7+ | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2001 03 29 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.4− |
| 2001 04 26 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2001 04 26 | 691 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2001 04 26 | 691 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.5+ |
| 2004 01 22 | 704 | 1.2+ | 1.2− | 2006 11 09 | 644 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2004 01 22 | 704 | 1.4+ | 0.9− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.3+ |
| 2004 01 22 | 704 | (0.0 | 1.5−) | 2006 11 11 | 703 | 0.6+ | 1.1− | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2004 02 12 | 691 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.1+ | 1.1− |
| 2004 02 12 | 691 | 0.4− | 0.4− | 2006 11 11 | 703 | 1.1+ | 0.5+ | 2006 11 22 | 704 | 0.3+ | 0.8− |
| 2004 02 12 | 691 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.7− | 0.8− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2004 02 27 | 695 | 0.1− | 0.4− | 2006 11 12 | 703 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.5− | 0.3− |
| 2004 02 27 | 695 | 0.2− | 0.3− | 2006 11 12 | 703 | (1.6+ | 2.6−) | 2006 11 23 | 204 | 0.2− | 0.1+ |
| 2004 03 01 | 691 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.2+ | 0.3+ | 2006 11 23 | 204 | 0.2− | 0.0 |
| 2004 03 01 | 691 | 0.1− | 0.5+ | 2006 11 12 | 703 | 0.3− | 0.3+ | 2006 11 27 | 204 | 0.3− | 0.2+ |
| 2004 03 01 | 691 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.2+ | 0.2+ | 2006 11 27 | 204 | 0.2− | 0.0 |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.9+ | 0.7− |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.2− |
| 2006 09 25 | G96 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.5− | 0.3− | 2006 11 29 | 704 | 0.8+ | 0.2− |
| 2006 09 25 | G96 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 14 | 691 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.5− | 0.5− |
| 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 16 | 703 | 1.3− | 1.2+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 16 | 703 | (0.2− | 1.9+) | | | | |
| 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 16 | 703 | 1.0− | 1.0− | | | | |

**(144387)∗ 2004 DT$_{71}$**

Discovered 2004 Feb. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.18801 | | (2000.0) | | | |
| $n$ | 0.23033518 | $\omega$ | 212.00636 | | +0.81989448 | +0.51904585 |
| $a$ | 2.6356993 | $\Omega$ | 114.84472 | | −0.45294062 | +0.84616758 |
| $e$ | 0.1149147 | $i$ | 15.43986 | | −0.35016830 | +0.12079665 |
| $P$ | 4.28 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 26 | 644 | 0.2− | 0.3− | 2003 01 07 | 704 | (2.0+ | 0.7+) | 2004 04 14 | 703 | 0.4+ | 0.5− |
| 2001 07 26 | 644 | 0.4− | 0.4− | 2004 01 28 | 645 | 0.2− | 0.0 | 2004 04 14 | 703 | (0.1+ | 1.6+) |
| 2001 07 26 | 644 | 0.1+ | 0.2− | 2004 01 28 | 645 | 0.2− | 0.0 | 2004 04 14 | 703 | 1.3− | 0.4− |
| 2001 08 16 | 644 | 0.2+ | 0.1+ | 2004 02 16 | 704 | 0.8+ | 0.3+ | 2004 04 14 | 703 | 0.3+ | 0.4+ |
| 2001 08 16 | 644 | 0.0 | 0.3+ | 2004 02 16 | 704 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.2+ |
| 2001 08 16 | 644 | 0.2+ | 0.3+ | 2004 02 16 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.3− |
| 2001 08 28 | 644 | 0.3+ | 0.1+ | 2004 03 18 | 644 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.5+ |
| 2001 08 28 | 644 | 0.2+ | 0.3+ | 2004 03 18 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 1.2− | 1.4− |
| 2001 08 28 | 644 | 0.3+ | 0.4+ | 2004 03 18 | 644 | 0.7+ | 0.5+ | 2006 10 29 | G96 | 0.1+ | 0.1+ |
| 2001 09 11 | 704 | 0.4− | 0.2+ | 2004 03 18 | 644 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.1+ |
| 2001 09 11 | 704 | 0.3− | 0.5+ | 2004 03 18 | 644 | 0.7+ | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.1− |
| 2001 09 11 | 704 | 0.1+ | 0.4+ | 2004 03 18 | 644 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.1+ |
| 2001 09 11 | 704 | 0.2− | 0.3+ | 2004 03 28 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 703 | 0.8+ | 0.6+ |
| 2001 09 11 | 704 | 0.1− | 0.3+ | 2004 03 28 | 704 | 0.4+ | 0.1− | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2003 01 07 | 704 | 0.4− | 0.2− | 2004 03 28 | 704 | 0.3+ | 0.5− | 2006 11 19 | 703 | 0.3+ | 0.2+ |
| 2003 01 07 | 704 | 0.8+ | 0.6+ | 2004 03 28 | 704 | 0.5+ | 0.9+ | 2006 11 19 | 703 | 0.3+ | 0.1+ |
| 2003 01 07 | 704 | 0.5− | 1.0+ | 2004 03 28 | 704 | 1.2+ | 0.4− | | | | |

**(144388)∗ 2004 DD$_{72}$ = 2000 QJ$_{106}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69684)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.88381 | | (2000.0) | | | |
| $n$ | 0.17517661 | $\omega$ | 121.99602 | | +0.31242179 | +0.94984402 |
| $a$ | 3.1633844 | $\Omega$ | 166.18896 | | −0.88982983 | +0.29768678 |
| $e$ | 0.2156228 | $i$ | 3.30121 | | −0.33255902 | +0.09580671 |
| $P$ | 5.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.3+ | 0.5+ | 2004 03 23 | 291 | 0.8+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.1− |
| 2000 07 29 | 807 | 0.1+ | 0.4+ | 2005 05 12 | 704 | 1.3+ | 0.9+ | 2006 09 18 | 699 | 0.4− | 0.9− |
| 2000 08 29 | 704 | 0.3− | 0.5+ | 2005 05 12 | 704 | 1.2+ | 1.0− | 2006 09 18 | 699 | 1.3− | 0.7− |
| 2000 08 29 | 704 | 0.9− | 0.1+ | 2005 05 12 | 704 | 1.1+ | 1.0− | 2006 09 18 | 699 | 0.3+ | 0.5+ |
| 2000 08 29 | 704 | 0.3− | 0.5+ | 2005 05 21 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.0 | 0.1+ |
| 2000 08 29 | 704 | 0.3− | 0.9+ | 2005 05 21 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 1.2+ | 0.3+ |
| 2000 08 29 | 704 | 0.3+ | 0.0 | 2005 05 21 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.5+ | 0.2+ |
| 2000 08 31 | 704 | 0.5− | 0.8+ | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.8+ | 0.5+ |
| 2000 08 31 | 704 | 0.5− | 1.5+ | 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.5+ |
| 2000 08 31 | 704 | 0.3− | 0.2+ | 2005 06 01 | 691 | 0.6− | 0.8+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2000 08 31 | 704 | 0.4+ | 1.1+ | 2005 06 03 | 703 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2004 02 16 | 691 | 0.2+ | 0.6+ | 2005 06 03 | 703 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2004 02 16 | 691 | 0.0 | 0.6+ | 2005 06 03 | 703 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2004 02 16 | 691 | 0.4− | 0.2+ | 2005 06 03 | 703 | 1.0− | 0.7− | 2006 09 30 | 691 | 0.2− | 0.6+ |
| 2004 02 29 | 291 | 0.1− | 0.6+ | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.5+ |
| 2004 02 29 | 291 | 0.0 | 0.5+ | 2005 07 05 | 644 | 0.1− | 0.2− | 2006 10 15 | 106 | 0.7− | 1.7+ |
| 2004 02 29 | 291 | 0.4+ | 0.4+ | 2005 07 05 | 644 | 0.1+ | 0.3+ | 2006 10 15 | 106 | 1.2− | 0.9+ |
| 2004 03 23 | 291 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 106 | 0.1+ | 0.8+ |
| 2004 03 23 | 291 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 15 | 106 | 0.1+ | 0.2+ |

**(144389)∗ 2004 DT$_{72}$ = 2000 JE$_{90}$**

Discovered 2004 Feb. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 72997)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 116.22065 | | (2000.0) | | | |
| $n$ | 0.23106257 | $\omega$ | 100.04109 | | +0.05602928 | +0.99836902 |
| $a$ | 2.6301649 | $\Omega$ | 173.14238 | | −0.94822027 | +0.05664425 |
| $e$ | 0.1131468 | $i$ | 5.26435 | | −0.31263243 | +0.00712231 |
| $P$ | 4.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 15 | 691 | (1.1+ | 4.4−) | 2001 08 23 | 699 | 0.7− | 1.3+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 1996 05 15 | 691 | 0.2− | 0.3+ | 2001 08 23 | 699 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.3+ |
| 1996 05 15 | 691 | 0.0 | 0.2+ | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.6+ |
| 2000 04 05 | 704 | 0.1+ | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 0.0 | 0.5+ | 2004 02 16 | 691 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2000 04 05 | 704 | 0.4+ | 0.4+ | 2004 02 26 | 704 | 1.1− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2000 04 05 | 704 | 0.6+ | 0.5+ | 2004 02 26 | 704 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2000 04 05 | 704 | 0.5+ | 1.0+ | 2004 02 26 | 704 | 0.7+ | 1.4+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.5− | 1.4+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2004 03 18 | 704 | 1.5+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 03 18 | 704 | (0.9+ | 2.0+) | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.0 | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 08 16 | 704 | 0.0 | 0.6+ | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2001 08 16 | 704 | 0.5+ | 1.1+ | 2005 06 13 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2001 08 16 | 704 | 0.6− | 0.9+ | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2001 08 16 | 704 | (0.8+ | 1.6+) | 2005 06 13 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2001 08 23 | 699 | 0.4+ | 0.8+ | 2006 10 02 | G96 | 0.4− | 0.1− | | | | |
| 2001 08 23 | 699 | 0.5+ | 0.6+ | 2006 10 02 | G96 | 0.3+ | 0.0 | | | | |

**(144390)∗ 2004 DK$_{75}$ = 2002 PV$_{39}$**

Discovered 2004 Feb. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69684)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.62324 | | (2000.0) | | | |
| $n$ | 0.26994554 | $\omega$ | 175.20034 | | +0.73125746 | −0.68161016 |
| $a$ | 2.3711113 | $\Omega$ | 227.80456 | | +0.62464724 | +0.68442551 |
| $e$ | 0.2043582 | $i$ | 2.00240 | | +0.27400428 | +0.25878431 |
| $P$ | 3.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 010 | 1.8+ | 1.0− | 2006 09 25 | 691 | 0.2− | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 1995 10 20 | 010 | (2.9+ | 0.2−) | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 1995 10 20 | 010 | (1.5+ | 2.4−) | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 1999 12 08 | 704 | 0.0 | 0.7− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | (1.2− | 1.7−) |
| 1999 12 08 | 704 | 1.2− | 0.6− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | (1.8− | 0.7−) |
| 1999 12 08 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1− | 1.0− |
| 1999 12 08 | 704 | 0.5+ | 0.8+ | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2000 01 05 | 704 | 0.7− | 1.4− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2000 01 05 | 704 | 0.7− | 1.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2000 01 05 | 704 | 1.3− | 0.3− | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2002 08 07 | 644 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.1− |
| 2002 08 07 | 644 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.7+ | 0.9+ |
| 2002 08 07 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.2− | 1.1+ |
| 2002 08 07 | 599 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.4− | 1.1+ |
| 2002 08 07 | 599 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.8+ |
| 2002 08 07 | 599 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.7− | 0.5+ |
| 2002 08 08 | 644 | 0.7− | 0.4+ | 2006 10 21 | 703 | 0.9− | 1.0+ | 2006 11 18 | 704 | 0.7− | 1.6+ |
| 2002 08 08 | 644 | 0.8− | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.1+ | 2006 11 18 | 704 | 1.4− | 0.4+ |
| 2002 08 08 | 644 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.5− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2002 08 27 | 644 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 08 27 | 644 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.6+ | 1.1− |
| 2002 08 27 | 644 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2004 02 17 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 704 | (1.0− | 1.6+) | 2006 11 21 | 704 | 0.6− | 0.2+ |
| 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 1.2+ | 1.0+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2004 02 17 | 691 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 0.4+ | 0.1− | 2006 11 21 | 704 | 1.0− | 0.1+ |
| 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 02 29 | 691 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 704 | 0.7+ | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2004 03 17 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− | | | | |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.2− | 0.6+ | | | | |

**(144391)∗ 2004 EK**

Discovered 2004 Mar. 11 at George Observatory, Needville.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.91865 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20348800 | $\omega$ | 254.42554 | | −0.01801767 | −0.99981136 | |
| $a$ | 2.8627067 | $\Omega$ | 196.61193 | | +0.92677958 | −0.01397883 | |
| $e$ | 0.0334841 | $i$ | 1.45366 | | +0.37517326 | −0.01348436 | |
| $P$ | 4.84 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.2− | 0.5− | 2004 03 12 | 735 | 0.7+ | 1.3+ | 2004 03 29 | 691 | 0.6+ | 0.2− |
| 1992 10 25 | 691 | 0.1− | 0.2+ | 2004 03 12 | 735 | (0.2− | 1.9+) | 2004 03 29 | 691 | 0.1+ | 0.3− |
| 1992 10 25 | 691 | 0.3− | 0.0 | 2004 03 12 | 735 | 0.8+ | 0.5− | 2006 07 25 | G96 | 0.2− | 0.0 |
| 1997 12 06 | 910 | 1.1+ | 0.3+ | 2004 03 12 | 735 | 0.7− | 0.9+ | 2006 07 25 | G96 | 0.2− | 0.3+ |
| 1997 12 06 | 910 | 0.9+ | 0.6+ | 2004 03 15 | 184 | 0.3+ | 0.9+ | 2006 07 25 | G96 | 0.3− | 0.1+ |
| 1997 12 06 | 910 | 1.4+ | 0.6+ | 2004 03 15 | 184 | 0.1− | 0.6+ | 2006 07 25 | G96 | 0.3− | 0.1− |
| 1999 02 09 | 691 | 0.1+ | 0.4− | 2004 03 15 | 184 | 0.1+ | 0.3+ | 2006 08 15 | D35 | 0.3− | 0.1+ |
| 1999 02 09 | 691 | 0.3− | 0.1− | 2004 03 17 | 184 | 0.3+ | 0.4+ | 2006 08 15 | D35 | 0.2− | 0.4+ |
| 1999 02 09 | 691 | 0.4− | 0.1− | 2004 03 17 | 184 | 1.3+ | 0.5+ | 2006 08 15 | D35 | 0.0 | 0.1+ |
| 2001 08 21 | 691 | 0.2− | 0.7+ | 2004 03 17 | 184 | 0.1+ | 0.8− | 2006 08 27 | 691 | 0.5− | 0.3+ |
| 2001 08 21 | 691 | 0.4+ | 0.9+ | 2004 03 18 | 735 | 0.9+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2001 08 21 | 691 | 0.1+ | 0.7+ | 2004 03 18 | 735 | 0.2− | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.6+ |
| 2002 11 13 | 644 | 0.3− | 0.2− | 2004 03 18 | 735 | 0.5− | 0.0 | 2006 08 28 | 122 | 0.1− | 0.0 |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.2− | 0.1+ | 2006 08 28 | 122 | 0.6− | 0.2+ |
| 2002 11 13 | 644 | 0.4− | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.8+ | 2006 08 28 | 122 | 0.0 | 0.4+ |
| 2002 11 24 | 644 | 0.9+ | 0.8+ | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 1.4+ | 1.4− |
| 2002 11 24 | 644 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 1.0− | 0.4− |
| 2002 11 24 | 644 | 0.5− | 0.5+ | 2004 03 18 | 704 | (1.8+ | 0.6−) | 2006 08 28 | 699 | (1.8− | 0.1+) |
| 2002 12 05 | 704 | 0.1− | 0.7+ | 2004 03 20 | 735 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.0 | 1.2− |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2004 03 20 | 735 | 0.8− | 0.3+ | 2006 08 28 | 703 | 1.1− | 1.1− |
| 2002 12 05 | 704 | 0.1+ | 0.8+ | 2004 03 20 | 735 | 0.3− | 0.5− | 2006 08 28 | 703 | 1.1− | 0.4− |
| 2004 02 13 | 291 | 0.2− | 0.1+ | 2004 03 21 | 291 | 0.5+ | 0.3+ | 2006 08 28 | 699 | 0.1+ | 1.5+ |
| 2004 02 13 | 291 | 0.7− | 0.3+ | 2004 03 21 | 291 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.8+ | 1.1+ |
| 2004 02 13 | 291 | 0.7− | 0.3+ | 2004 03 21 | 291 | 1.2+ | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.2+ |
| 2004 02 26 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 735 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2004 02 26 | 704 | 0.6+ | 0.1+ | 2004 03 22 | 735 | 0.7+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.2+ |
| 2004 02 26 | 704 | 0.7+ | 0.7+ | 2004 03 22 | 735 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2004 02 26 | 704 | 0.8+ | 0.6+ | 2004 03 22 | 735 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2004 03 11 | 735 | 0.2+ | 0.5+ | 2004 03 23 | 735 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2004 03 11 | 735 | 0.3+ | 0.4+ | 2004 03 23 | 735 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2004 03 11 | 735 | 1.4− | 1.4+ | 2004 03 23 | 735 | 0.4− | 0.7+ | 2006 11 21 | G96 | 1.2− | 0.1+ |
| 2004 03 11 | 735 | (1.4+ | 1.9+) | 2004 03 29 | 691 | 0.1+ | 0.5+ | | | | |

**(144392)∗ 2004 EO$_1$**

Discovered 2004 Mar. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.40275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22696660 | $\omega$ | 260.74328 | | +0.96788498 | −0.22839122 | |
| $a$ | 2.6617142 | $\Omega$ | 112.40242 | | +0.25103618 | +0.90034567 | |
| $e$ | 0.0286411 | $i$ | 6.52452 | | −0.01339786 | +0.37042560 | |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 03 14 | 703 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.1+ | 0.4+ |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 03 14 | 703 | 0.6+ | 1.1+ | 2006 10 01 | 704 | 0.2− | 0.6+ |
| 2001 08 12 | 644 | 0.5− | 0.4+ | 2004 03 14 | 703 | 0.7− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.7+ |
| 2001 08 12 | 644 | 0.5− | 0.6+ | 2004 03 15 | 704 | (0.1− | 1.6−) | 2006 10 01 | 704 | (0.4+ | 1.6+) |
| 2001 08 12 | 644 | 0.5− | 0.4+ | 2004 03 15 | 704 | 0.3− | 1.0− | 2006 10 01 | 704 | 0.4− | 0.6+ |
| 2001 08 24 | 704 | 0.3− | 0.0 | 2004 03 15 | 704 | 0.4− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2001 08 24 | 704 | 1.2+ | 0.0 | 2004 03 15 | 704 | 0.6− | 0.9− | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2001 08 24 | 704 | 0.0 | 0.6− | 2004 03 20 | 704 | 0.7+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.3+ |
| 2002 11 07 | 704 | (2.0+ | 1.4−) | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2002 11 07 | 704 | 0.9+ | 0.9− | 2004 03 20 | 704 | 1.1+ | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.9− |
| 2002 11 07 | 704 | 0.4+ | 1.5− | 2004 03 20 | 704 | 0.2− | 0.9+ | 2006 10 16 | 703 | 0.8− | 0.6+ |
| 2002 11 07 | 704 | 0.2+ | 1.0− | 2004 03 20 | 704 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2002 11 23 | 644 | 0.2+ | 0.5+ | 2004 03 23 | 704 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2002 11 23 | 644 | 0.2+ | 0.2− | 2004 03 23 | 704 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2002 11 23 | 644 | 0.1− | 0.5− | 2004 03 23 | 704 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 12 01 | 704 | 0.3+ | 0.3− | 2004 03 23 | 704 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2002 12 01 | 704 | 0.5− | 0.1+ | 2004 03 23 | 704 | 0.5− | 0.7+ | 2006 10 22 | 703 | 0.2+ | 0.1− |
| 2002 12 01 | 704 | 0.1+ | 0.2+ | 2004 03 25 | 704 | 1.0+ | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.1+ |
| 2002 12 01 | 704 | 0.4− | 0.1+ | 2004 03 25 | 704 | 0.6+ | 0.5− | 2006 10 22 | 703 | 0.8+ | 0.8+ |
| 2003 12 22 | 691 | 0.2− | 0.0 | 2004 03 25 | 704 | 0.1+ | 1.2+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2003 12 22 | 691 | 0.1− | 0.1− | 2004 03 25 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2003 12 22 | 691 | 0.2− | 0.1− | 2004 03 25 | 704 | 0.2+ | 1.0+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2003 12 27 | 704 | (1.3+ | 1.9+) | 2006 09 16 | 699 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 1.1+ | 0.4+ | 2006 09 16 | 699 | 0.8+ | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2003 12 27 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 699 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2004 02 17 | 703 | 0.8− | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.5+ |
| 2004 02 17 | 703 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.8− | 2006 10 28 | 703 | 0.0 | 0.5+ |
| 2004 02 17 | 703 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.3+ | 1.1+ | 2006 10 28 | 703 | 0.4− | 0.6− |
| 2004 02 17 | 703 | (1.2− | 2.0+) | 2006 09 26 | 703 | 0.4+ | 0.7− | 2006 10 28 | 703 | 0.3− | 0.6− |
| 2004 03 10 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.3− |
| 2004 03 10 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.6+ | 2006 11 16 | 703 | 0.2+ | 0.0 |
| 2004 03 10 | 644 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.2+ | 2006 11 16 | 703 | 1.0+ | 0.0 |
| 2004 03 14 | 703 | 0.4+ | 0.1− | 2006 09 29 | 699 | 0.3− | 0.6+ | 2006 11 16 | 703 | 0.8− | 0.4+ |

**(144393)∗ 2004 EW$_1$ = 2000 GA$_{37}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69685)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.91382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23279319 | $\omega$ | 154.95904 | | −0.25910768 | +0.96551111 | |
| $a$ | 2.6171133 | $\Omega$ | 100.01553 | | −0.89045543 | −0.22856255 | |
| $e$ | 0.1050453 | $i$ | 1.48525 | | −0.37410204 | −0.12468944 | |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.2− | 1.6+ | 2004 03 28 | 691 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.5− | 0.6+ |
| 2000 04 05 | 704 | 1.3+ | 0.4− | 2004 03 28 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.6+ |
| 2000 04 05 | 704 | 0.7− | 0.3+ | 2005 07 05 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2000 04 05 | 704 | 0.9+ | 0.4− | 2005 07 05 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2000 04 06 | 704 | 0.0 | 0.7+ | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2000 04 06 | 704 | 1.5+ | 0.6+ | 2005 07 11 | 699 | 0.8− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2000 04 06 | 704 | 0.6+ | 0.8+ | 2005 07 11 | 699 | 1.2+ | 0.0 | 2006 11 01 | 691 | 0.5− | 0.3+ |
| 2000 04 06 | 704 | 1.2+ | 0.5+ | 2005 07 11 | 699 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2000 04 06 | 704 | 0.1− | 1.3+ | 2005 07 11 | 699 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2000 04 29 | 704 | 0.1+ | 0.3− | 2005 07 12 | G96 | 0.0 | 0.4+ | 2006 11 12 | 703 | 0.6− | 0.3− |
| 2000 04 29 | 704 | 0.6− | 1.2− | 2005 07 12 | G96 | 0.3− | 0.4+ | 2006 11 12 | 703 | 0.1+ | 0.8− |
| 2000 04 29 | 704 | 0.1− | 1.0+ | 2005 07 12 | G96 | 0.2− | 0.5+ | 2006 11 12 | 703 | 1.8+ | 0.5+ |
| 2000 04 29 | 704 | 1.3− | 0.8+ | 2005 07 12 | G96 | 0.1− | 0.5+ | 2006 11 12 | 703 | 0.1− | 0.8− |
| 2000 04 29 | 704 | 1.0− | 0.8+ | 2005 07 16 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 1.4− | 0.7+ |
| 2001 08 16 | 704 | 0.4+ | 1.1+ | 2005 07 16 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2001 08 16 | 704 | 0.1− | 0.7+ | 2005 07 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2001 08 16 | 704 | 0.7− | 1.3+ | 2005 07 30 | E12 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2004 03 11 | 644 | 0.4+ | 0.6+ | 2005 07 30 | E12 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2004 03 11 | 644 | 0.3+ | 0.7+ | 2005 07 30 | E12 | 0.2+ | 0.4− | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2004 03 11 | 644 | 0.4+ | 0.6+ | 2005 07 30 | E12 | 0.1− | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.4+ |
| 2004 03 14 | 691 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.6− |
| 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.2− |
| 2004 03 14 | 691 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2004 03 28 | 691 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 16 | 703 | 0.6− | 0.2+ |

**(144394)∗ 2004 EO$_2$ = 2002 XC$_9$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69685)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.09700 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22129685 | $\omega$ | 214.86309 | | −0.58708293 | −0.80821830 | |
| $a$ | 2.7069853 | $\Omega$ | 271.13004 | | +0.75279748 | −0.52415831 | |
| $e$ | 0.0473847 | $i$ | 2.63756 | | +0.29770721 | −0.26840502 | |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.1− | 0.1− | 2004 02 19 | 704 | 1.1+ | 0.4+ | 2006 08 31 | A13 | 0.1− | 0.4− |
| 1997 10 04 | 691 | 0.1− | 0.2− | 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 08 31 | A13 | 0.2+ | 0.4− |
| 1997 10 04 | 691 | 0.2+ | 0.5− | 2004 02 19 | 704 | (1.6+ | 1.3+) | 2006 08 31 | A13 | 0.4+ | 0.1+ |
| 1997 10 04 | 691 | 0.0 | 0.2− | 2004 03 13 | 644 | 0.0 | 0.3+ | 2006 09 04 | A13 | 0.2− | 0.5− |
| 1997 10 04 | 691 | 0.2+ | 0.2+ | 2004 03 13 | 644 | 0.7+ | 0.8+ | 2006 09 04 | A13 | 0.4+ | 0.7− |
| 1997 10 04 | 691 | 0.0 | 0.2+ | 2004 03 13 | 644 | 0.3+ | 0.2+ | 2006 09 04 | A13 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 1.1+ | 0.9− | 2004 03 14 | 703 | 0.6+ | 1.5+ | 2006 09 17 | 703 | 0.9− | 0.3+ |
| 2002 11 05 | 704 | 0.3− | 0.4− | 2004 03 14 | 703 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.0 |
| 2002 11 05 | 704 | 0.1− | 1.1+ | 2004 03 14 | 703 | 0.1− | 0.7+ | 2006 09 17 | 703 | 0.7− | 0.5− |
| 2002 11 05 | 704 | 0.5− | 0.3+ | 2004 03 14 | 703 | 0.9− | 0.3− | 2006 09 17 | 703 | 0.8+ | 1.1+ |
| 2002 11 14 | 704 | 1.4− | 0.7+ | 2004 03 16 | 704 | 0.5+ | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | (2.3− | 1.6−) | 2004 03 16 | 704 | 0.7− | 1.4− | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 2002 11 14 | 704 | 0.8− | 0.7− | 2004 03 16 | 704 | 0.8+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | 0.8− | 0.3− | 2004 03 16 | 704 | 1.2+ | 0.8− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.4+ | 0.1+ | 2004 03 18 | 704 | 0.5− | 0.4+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2002 11 24 | 644 | 0.2− | 0.2− | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2002 11 24 | 644 | 0.5+ | 0.4+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2002 11 24 | 644 | 0.4+ | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 09 30 | 291 | 0.0 | 0.1+ |
| 2002 12 02 | 704 | (1.9− | 1.9+) | 2004 03 20 | 704 | 0.1− | 0.8+ | 2006 09 30 | 291 | 0.2− | 0.0 |
| 2002 12 02 | 704 | (2.1− | 3.0+) | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 09 30 | 291 | 0.2− | 0.0 |
| 2002 12 02 | 704 | (0.2− | 1.8+) | 2004 03 20 | 699 | 0.2− | 1.0− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 12 02 | 704 | (1.6− | 2.3+) | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.5+ | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2004 03 20 | 699 | 0.7+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2002 12 05 | 704 | 0.1− | 1.2+ | 2004 03 20 | 699 | 0.2+ | 0.9+ | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 2002 12 28 | 291 | 0.2+ | 0.4− | 2004 03 20 | 704 | 0.9− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2002 12 28 | 291 | 0.4+ | 0.5− | 2004 03 20 | 704 | (0.5+ | 1.8+) | 2006 10 31 | G96 | 0.8+ | 0.5− |
| 2002 12 28 | 291 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.4− | 0.6+ | | | | |
| 2004 02 19 | 704 | (0.5+ | 2.1−) | 2004 03 20 | 699 | 0.1− | 0.2+ | | | | |

**(144395)∗ 2004 ER$_2$ = 2002 XR$_{99}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61996)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.69199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22916224 | $\omega$ | 64.75062 | | −0.89056811 | −0.45168459 | |
| $a$ | 2.6446853 | $\Omega$ | 88.35820 | | +0.39566042 | −0.82738112 | |
| $e$ | 0.0651329 | $i$ | 3.07192 | | +0.22436862 | −0.33379862 | |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.6+ | 0.5+ | 2004 03 25 | 699 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.3− | 2004 03 25 | 699 | 0.8− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 0.5− | 2004 03 25 | 699 | 1.3− | 1.0+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.8+ | 2004 03 25 | 699 | 0.8− | 0.0 | 2006 10 16 | 703 | (2.9+ | 1.7−) |
| 2002 12 05 | 704 | 0.7− | 1.2− | 2004 03 26 | 691 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.3− | 0.1− |
| 2002 12 10 | 704 | 0.4+ | 0.6− | 2004 03 26 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2002 12 10 | 704 | 0.6− | 0.4− | 2004 03 26 | 691 | 0.4+ | 0.3− | 2006 10 17 | G96 | 0.4− | 0.3− |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 2002 12 10 | 704 | 0.4+ | 0.3− | 2004 03 28 | 704 | 0.2+ | 1.5+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2004 03 13 | 644 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2004 03 13 | 644 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 1.4+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.4+ |
| 2004 03 13 | 644 | 0.2+ | 0.3+ | 2004 03 28 | 704 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2004 03 14 | 703 | 0.2− | 0.5+ | 2004 04 11 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 03 14 | 703 | 1.2− | 0.7− | 2004 04 11 | 644 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 03 14 | 703 | 0.5+ | 0.6+ | 2004 04 11 | 644 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2004 03 14 | 703 | 0.3− | 0.2+ | 2004 04 19 | 704 | (0.0 | 1.6+) | 2006 11 13 | 703 | 0.9+ | 1.3+ |
| 2004 03 19 | 704 | 0.6+ | 0.1− | 2004 04 19 | 704 | (1.8+ | 0.4+) | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2004 03 19 | 704 | 1.2+ | 0.1− | 2004 04 19 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.7+ |
| 2004 03 19 | 704 | 0.6+ | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.9+ | 2006 11 13 | 703 | 0.2+ | 2.3+ |
| 2004 03 19 | 704 | 0.6+ | 0.2+ | 2005 07 02 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.5− | 0.2− |
| 2004 03 20 | 699 | 0.5− | 0.9+ | 2005 07 02 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2004 03 20 | 699 | (2.5+ | 0.6−) | 2005 07 02 | 691 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2004 03 20 | 699 | 1.4+ | 0.3− | 2005 07 11 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 03 20 | 699 | 0.1+ | 0.5+ | 2005 07 11 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.2+ |
| 2004 03 22 | 704 | 1.2+ | 0.3+ | 2005 07 11 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.6− | 0.2+ |
| 2004 03 22 | 704 | 0.5+ | 0.6+ | 2006 09 30 | 703 | (0.6− | 1.8+) | 2006 11 16 | G96 | 0.2− | 0.2+ |
| 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 1.1+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.6+ |
| 2004 03 22 | 704 | (1.7+ | 0.4+) | 2006 09 30 | 703 | 0.4− | 0.5+ | 2006 11 17 | 703 | 0.8+ | 0.9+ |
| 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 1.3− | 1.0+ | 2006 11 17 | 703 | 1.3+ | 1.5+ |
| 2004 03 24 | 699 | 1.0− | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 1.7+ |
| 2004 03 24 | 699 | 0.9− | 1.1+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2004 03 24 | 699 | 0.7− | 1.1+ | 2006 09 30 | G96 | 0.3− | 0.2+ | | | | |
| 2004 03 24 | 699 | 0.0 | 1.4+ | 2006 09 30 | G96 | 0.2+ | 0.2+ | | | | |

**(144396)∗ 2004 EG$_3$ = 2002 TT$_{162}$**

Discovered 2004 Mar. 10 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69685)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.17400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22246860 | $\omega$ | 308.60254 | | +0.11468306 | −0.97570298 | |
| $a$ | 2.6974718 | $\Omega$ | 133.70555 | | +0.97269994 | +0.07212684 | |
| $e$ | 0.1173570 | $i$ | 14.96597 | | +0.20174892 | +0.20688501 | |
| $P$ | 4.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 0.6− | 0.5+ | 2004 02 17 | 704 | 0.7− | 0.6+ | 2005 06 03 | E12 | 0.1− | 0.6+ |
| 2002 09 15 | 699 | 0.9+ | 0.4+ | 2004 02 17 | 704 | 0.2+ | 0.0 | 2005 06 03 | E12 | (1.1− | 1.9+) |
| 2002 09 15 | 699 | 0.1+ | 0.8+ | 2004 02 17 | 704 | 0.4+ | 1.1+ | 2005 06 03 | E12 | 0.1− | 0.2+ |
| 2002 09 15 | 699 | 0.0 | 0.6+ | 2004 02 17 | 704 | 0.2− | 0.4+ | 2005 06 03 | E12 | 0.1+ | 0.9+ |
| 2002 10 05 | 644 | 0.1− | 0.1+ | 2004 02 17 | 704 | 0.2+ | 0.7+ | 2005 06 09 | 703 | 0.6− | 0.7+ |
| 2002 10 05 | 644 | 0.1− | 0.2+ | 2004 02 17 | 703 | 1.3+ | 0.0 | 2005 06 09 | 703 | 0.1− | 0.5+ |
| 2002 10 05 | 644 | 0.3− | 0.0 | 2004 02 17 | 703 | 0.4+ | 0.1+ | 2005 06 09 | 703 | 0.7− | 1.3− |
| 2002 10 06 | 704 | 0.1+ | 0.2+ | 2004 02 17 | 703 | 0.7+ | 0.2− | 2005 06 09 | 703 | 0.2− | 1.3+ |
| 2002 10 06 | 704 | 0.3− | 0.5+ | 2004 02 17 | 703 | 0.3− | 0.7+ | 2005 06 29 | 644 | 0.1+ | 0.5+ |
| 2002 10 06 | 704 | 1.4− | 0.7+ | 2004 02 27 | 704 | (0.8+ | 1.9−) | 2005 06 29 | 644 | 0.2+ | 0.5+ |
| 2002 10 06 | 704 | 0.6− | 0.2+ | 2004 02 27 | 704 | (0.3+ | 2.0−) | 2005 06 29 | 644 | 0.3+ | 0.4+ |
| 2002 10 06 | 644 | 0.0 | 0.1+ | 2004 02 27 | 704 | (2.3+ | 1.7−) | 2006 08 19 | 644 | 0.1+ | 0.3+ |
| 2002 10 06 | 644 | 0.0 | 0.4+ | 2004 02 27 | 704 | 1.3+ | 0.6− | 2006 08 19 | 644 | 0.0 | 0.5+ |
| 2002 10 06 | 644 | 0.1− | 0.1+ | 2004 02 27 | 704 | 1.2+ | 1.2− | 2006 08 19 | 644 | 0.6+ | 0.4+ |
| 2002 10 16 | 644 | 0.1+ | 0.2+ | 2004 03 10 | 644 | 0.7− | 0.1+ | 2006 08 30 | 699 | (0.7− | 1.6+) |
| 2002 10 16 | 644 | 0.0 | 0.1+ | 2004 03 10 | 644 | 0.5− | 0.2+ | 2006 08 30 | 699 | (1.1− | 1.6+) |
| 2002 10 16 | 644 | 0.2+ | 0.2+ | 2004 03 10 | 703 | 1.1+ | 0.9+ | 2006 08 30 | 699 | 0.2− | 1.0+ |
| 2002 10 29 | 704 | 0.1− | 0.2+ | 2004 03 10 | 703 | (1.7− | 0.5+) | 2006 08 30 | 699 | 1.2− | 0.2− |
| 2002 10 29 | 704 | 0.1+ | 0.0 | 2004 03 10 | 703 | (2.7− | 0.5−) | 2006 09 17 | 699 | 0.5+ | 1.0+ |
| 2002 10 29 | 704 | 0.5− | 0.9+ | 2004 03 10 | 644 | 0.6− | 0.4+ | 2006 09 17 | 699 | 0.6− | 0.4+ |
| 2002 11 05 | 644 | 0.1− | 1.1+ | 2004 03 10 | 703 | 1.1− | 0.4− | 2006 09 17 | 699 | (1.7+ | 0.2−) |
| 2002 11 05 | 644 | 0.0 | 1.2+ | 2004 03 14 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 699 | 1.0+ | 0.5+ |
| 2002 11 05 | 644 | 0.1+ | 1.1+ | 2004 03 14 | 704 | 0.2− | 0.3+ | 2006 09 20 | 703 | 1.1+ | 0.1− |
| 2002 12 06 | 699 | 0.4− | 0.8+ | 2004 03 14 | 704 | 0.3+ | 1.0+ | 2006 09 20 | 703 | 0.1− | 0.3− |
| 2002 12 06 | 699 | 0.7+ | 0.4− | 2004 03 14 | 704 | 0.2+ | 0.8+ | 2006 09 20 | 703 | 0.8+ | 0.5− |
| 2002 12 06 | 699 | 0.9− | 1.1− | 2004 03 23 | 704 | 0.3+ | 1.4+ | 2006 09 20 | 703 | 0.4− | 0.2+ |
| 2002 12 06 | 699 | 0.4+ | 1.3− | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.8− | 0.3+ |
| 2002 12 06 | 644 | 0.2− | 0.3− | 2004 03 23 | 704 | 1.2+ | 0.9+ | 2006 09 26 | 703 | 1.0− | 0.7+ |
| 2002 12 06 | 644 | 0.3+ | 0.7− | 2004 03 23 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 703 | (2.2− | 0.6+) |
| 2002 12 06 | 644 | 0.5+ | 0.5− | 2004 03 23 | 704 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.8− | 0.6+ |
| 2003 11 20 | 691 | 0.1− | 0.1− | 2004 04 14 | 644 | 0.2+ | 0.5+ | 2006 10 11 | E12 | 0.4− | 1.3+ |
| 2003 11 20 | 691 | 0.3− | 0.1− | 2004 04 14 | 644 | 0.1+ | 0.5+ | 2006 10 11 | E12 | 0.1+ | 0.1+ |
| 2003 11 20 | 691 | 0.0 | 0.1− | 2004 04 14 | 644 | 0.1+ | 0.8+ | 2006 10 11 | E12 | 0.2+ | 0.3− |
| 2004 01 23 | 704 | (1.7+ | 0.0 ) | 2004 04 14 | 703 | 0.1− | 0.1+ | 2006 10 11 | E12 | 0.7+ | 0.5+ |
| 2004 01 23 | 704 | (1.6+ | 0.9+) | 2004 04 14 | 703 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2004 01 23 | 704 | 0.2− | 1.1+ | 2004 04 14 | 703 | (1.8− | 1.0+) | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2004 01 23 | 704 | 0.2− | 1.0+ | 2004 04 14 | 703 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.5+ |

**(144397)∗ 2004 EP$_3$ = 2000 EW$_{166}$**

Discovered 2004 Mar. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61996)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 250.38701 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25250274 | $\omega$ | 62.37848 | | −0.84138798 | | −0.50619916 | |
| $a$ | 2.4790882 | $\Omega$ | 86.65113 | | +0.40444435 | | −0.82209819 | |
| $e$ | 0.0906975 | $i$ | 10.92993 | | +0.35845646 | | −0.26060884 | |
| $P$ | 3.90 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.5− | 0.4− | 2004 03 14 | 704 | 0.5+ | 0.6+ | 2004 04 14 | 703 | 0.5+ | 0.3+ |
| 2000 03 04 | 704 | 0.2− | 0.2+ | 2004 03 14 | 704 | 1.3+ | 1.2− | 2004 04 14 | 703 | 0.0 | 0.4− |
| 2000 03 04 | 704 | 0.3− | 0.6− | 2004 03 14 | 704 | 0.3+ | 0.3− | 2004 04 14 | 703 | 0.2− | 0.1+ |
| 2000 03 12 | 704 | 0.1+ | 0.1− | 2004 03 14 | 704 | 0.4+ | 0.0 | 2004 04 14 | 703 | 0.3− | 0.2− |
| 2000 03 12 | 704 | 0.2− | 0.4+ | 2004 03 14 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2000 03 12 | 704 | 0.1+ | 1.0− | 2004 03 18 | 703 | 0.2− | 1.1− | 2006 09 30 | 703 | 0.3− | 0.6− |
| 2000 03 12 | 704 | 0.6+ | 0.1+ | 2004 03 18 | 644 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.8− |
| 2000 03 12 | 704 | 0.1+ | 0.5− | 2004 03 18 | 703 | 0.8− | 0.1− | 2006 09 30 | 703 | 1.3− | 0.4+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2004 03 18 | 703 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2004 03 18 | 644 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 10 15 | 644 | 0.3− | 0.4+ | 2004 03 18 | 703 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.5+ | 0.0 |
| 2002 10 15 | 644 | 0.5− | 0.4+ | 2004 03 18 | 644 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2002 10 15 | 644 | 0.3− | 0.6+ | 2004 03 25 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.9+ | 0.2− |
| 2002 10 30 | 704 | 0.7− | 0.1− | 2004 03 25 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.7− |
| 2002 10 30 | 704 | 0.9− | 0.3+ | 2004 03 25 | 704 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2002 10 30 | 704 | 0.9− | 0.4+ | 2004 03 25 | 704 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2002 10 30 | 704 | 0.4+ | 0.5+ | 2004 03 25 | 704 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2004 02 02 | 699 | 0.6+ | 0.9− | 2004 03 25 | 704 | 0.4− | 1.1+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2004 02 02 | 699 | 1.1− | 0.5+ | 2004 03 25 | 704 | 0.6+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2004 02 02 | 699 | 0.8− | 0.4− | 2004 03 25 | 704 | 0.7+ | 1.0+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2004 02 02 | 699 | 0.7− | 1.1− | 2004 03 25 | 704 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.5+ | 0.4+ |
| 2004 02 16 | 704 | 0.5+ | 0.2+ | 2004 04 08 | 644 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2004 02 16 | 704 | 0.5+ | 0.6+ | 2004 04 08 | 644 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.5+ | 0.1− |
| 2004 02 16 | 704 | 0.0 | 0.8+ | 2004 04 08 | 644 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.3+ | 0.4+ |
| 2004 02 16 | 704 | 0.1+ | 0.4+ | 2004 04 14 | 704 | 0.1+ | 0.4− | 2006 11 19 | 703 | 0.4− | 0.3+ |
| 2004 02 16 | 704 | 0.3+ | 0.1− | 2004 04 14 | 704 | 0.2+ | 0.4− | 2006 11 19 | 703 | 0.6− | 0.6− |
| 2004 03 10 | 644 | 1.0− | 0.4− | 2004 04 14 | 704 | 0.6+ | 0.0 | 2006 11 19 | 703 | 0.3− | 0.3+ |
| 2004 03 10 | 644 | 0.0 | 0.1− | 2004 04 14 | 704 | 0.1− | 0.6+ | 2006 11 19 | 703 | (2.2− | 1.4+) |
| 2004 03 10 | 644 | 0.2+ | 0.1− | 2004 04 14 | 704 | 0.1+ | 0.3− | | | | |

**(144398)∗ 2004 EY$_4$ = 2001 SL$_{181}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 61998)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 353.33888 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20906973 | $\omega$ | 233.78435 | | +0.98210385 | | −0.18279209 | |
| $a$ | 2.8115250 | $\Omega$ | 136.69635 | | +0.18694620 | | +0.91685951 | |
| $e$ | 0.0619247 | $i$ | 3.79348 | | +0.02287226 | | +0.35490236 | |
| $P$ | 4.71 | $H$ | 15.5 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.2− | 1.2− | 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.5+ |
| 1994 01 10 | 691 | 0.3+ | 0.7− | 2004 03 11 | 644 | 0.1+ | 0.7+ | 2006 09 13 | 644 | 0.2+ | 0.4+ |
| 2001 08 16 | 704 | 0.1− | 0.3+ | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.3+ | 0.3+ |
| 2001 08 16 | 704 | 0.2− | 0.6+ | 2004 03 11 | 644 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 1.4− | 0.0 |
| 2001 08 16 | 704 | 0.0 | 0.4+ | 2004 03 11 | 644 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.8+ | 0.3+ |
| 2001 08 16 | 704 | 0.3− | 0.8+ | 2004 03 11 | 644 | 0.8+ | 0.6+ | 2006 09 18 | 699 | 0.9− | 1.1+ |
| 2001 08 27 | 699 | 0.2− | 0.9+ | 2004 03 11 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.8+ | 0.5− |
| 2001 08 27 | 699 | 0.4− | 0.6+ | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.5− | 0.5+ |
| 2001 08 27 | 699 | 0.6− | 0.7+ | 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.5+ |
| 2001 08 27 | 699 | 0.7− | 0.1+ | 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.7+ |
| 2001 09 19 | 704 | 0.5+ | 0.1+ | 2004 03 15 | 703 | 0.5− | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.1+ | 0.7− | 2004 03 15 | 704 | 0.3+ | 1.4+ | 2006 09 28 | 704 | (0.8− | 1.5+) |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2004 03 15 | 703 | 0.9− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 704 | 0.1+ | 1.1+ |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2004 03 15 | 703 | 1.1+ | 0.3+ | 2006 09 30 | 704 | 0.6− | 1.0+ |
| 2001 09 21 | 704 | 0.2+ | 0.3− | 2004 03 15 | 704 | (0.1+ | 1.9+) | 2006 09 30 | 704 | (0.0 | 1.6+) |
| 2001 09 21 | 704 | 0.5− | 1.2− | 2004 03 15 | 703 | 0.3+ | 0.5− | 2006 09 30 | 704 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.4− | 2004 03 15 | 704 | (0.4+ | 1.8+) | 2006 09 30 | 704 | (0.0 | 1.7+) |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2004 03 17 | 704 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 2003 01 02 | 704 | 0.8− | 1.0+ | 2004 03 17 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 1.0+ | 0.0 |
| 2003 01 02 | 704 | 0.1+ | 1.2+ | 2004 03 17 | 704 | 1.1+ | 0.7+ | 2006 10 16 | 703 | 1.0+ | 0.4+ |
| 2003 01 02 | 704 | 1.2− | 0.4+ | 2004 03 17 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 1.3− |
| 2003 01 02 | 704 | 0.1− | 0.3+ | 2004 03 20 | 699 | 0.2− | 1.3− | 2006 10 22 | 644 | 0.6+ | 0.6+ |
| 2003 01 02 | 704 | (0.1+ | 2.4+) | 2004 03 20 | 699 | (1.9− | 0.3−) | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2003 01 02 | 704 | 0.9− | 1.3+ | 2004 03 20 | 699 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2003 01 02 | 704 | (1.7− | 0.9+) | 2004 03 20 | 699 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2004 02 19 | 704 | 1.4+ | 0.4− | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.5+ |
| 2004 02 19 | 704 | 1.2+ | 0.7+ | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.4+ |
| 2004 02 19 | 704 | 0.1+ | 0.2+ | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.3+ |
| 2004 02 19 | 704 | 0.3− | 1.2− | 2006 08 28 | 703 | 0.8+ | 1.0− | 2006 11 25 | G96 | 0.5− | 0.2− |
| 2004 02 23 | 704 | 0.0 | 1.4+ | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.7+ |
| 2004 02 23 | 704 | (0.4+ | 1.8+) | 2006 08 28 | 703 | 0.1+ | 1.0− | 2006 11 25 | G96 | 0.3− | 0.2+ |
| 2004 02 23 | 704 | 1.0− | 0.7+ | 2006 08 28 | 703 | (0.8− | 1.6+) | 2006 11 25 | G96 | 0.2+ | 0.3+ |

**(144399)∗ 2004 ES$_6$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 118.56545 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18810880 | $\omega$ | 21.85879 | | −0.32963557 | | +0.94375527 | |
| $a$ | 3.0166851 | $\Omega$ | 228.90455 | | −0.87119642 | | −0.31460112 | |
| $e$ | 0.1901785 | $i$ | 1.96301 | | −0.36380927 | | −0.10174544 | |
| $P$ | 5.24 | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 291 | 0.2− | 0.2+ | 2004 03 23 | 691 | 0.1− | 0.2+ | 2005 07 15 | G96 | 0.5− | 0.2+ |
| 2001 11 12 | 291 | 0.0 | 0.6− | 2004 03 26 | 699 | 0.1− | 0.3+ | 2005 07 15 | G96 | 0.3+ | 0.2+ |
| 2001 11 12 | 291 | 0.2+ | 0.3+ | 2004 03 26 | 699 | 1.3+ | 0.2+ | 2005 07 30 | E12 | 0.5− | 0.3− |
| 2004 03 12 | 644 | 0.4+ | 0.0 | 2004 03 26 | 699 | 0.1− | 0.4+ | 2005 07 30 | E12 | 0.5− | 0.5+ |
| 2004 03 12 | 644 | 0.1+ | 0.2+ | 2004 03 26 | 699 | (2.0− | 0.7+) | 2005 07 30 | E12 | 0.0 | 0.4+ |
| 2004 03 12 | 644 | 0.2+ | 0.3+ | 2004 03 27 | 704 | (2.3+ | 0.7+) | 2005 07 30 | E12 | 0.9− | 0.2− |
| 2004 03 15 | 691 | 0.3+ | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2005 08 28 | 691 | 0.3+ | 0.7+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.7+ | 1.0+ | 2005 08 28 | 691 | 0.1+ | 0.6+ |
| 2004 03 15 | 703 | 0.7+ | 1.2+ | 2004 03 27 | 704 | 0.9+ | 0.8+ | 2005 08 28 | 691 | 0.1− | 0.5+ |
| 2004 03 15 | 703 | (1.6− | 0.8−) | 2004 04 12 | 699 | 0.7− | 1.0− | 2006 09 26 | G96 | 0.5− | 0.1− |
| 2004 03 15 | 691 | 0.3+ | 0.1+ | 2004 04 12 | 699 | 0.4− | 1.0+ | 2006 09 26 | G96 | 0.5+ | 0.6+ |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2004 04 12 | 699 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 703 | 0.7+ | 1.1+ | 2004 04 12 | 699 | 0.1− | 0.9+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2004 03 15 | 703 | 1.4− | 0.7+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.5− | 0.5+ |
| 2004 03 15 | 691 | 0.3+ | 0.0 | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.4− | 0.2+ |
| 2004 03 15 | 691 | 0.3+ | 0.3+ | 2004 04 13 | 691 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.9+ |
| 2004 03 16 | 704 | 0.1+ | 0.7+ | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.4− | 1.0+ |
| 2004 03 16 | 704 | 0.2+ | 0.8+ | 2004 04 21 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.6− | 0.5+ |
| 2004 03 16 | 704 | 0.3− | 0.8+ | 2004 04 21 | 691 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.4+ |
| 2004 03 18 | 704 | 0.8+ | 1.1+ | 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2004 03 18 | 704 | (2.0+ | 0.7+) | 2005 06 27 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2004 03 18 | 704 | (1.8+ | 0.8+) | 2005 06 27 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2004 03 18 | 704 | 0.1− | 1.2+ | 2005 06 28 | 644 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2004 03 18 | 704 | 0.8+ | 0.2− | 2005 06 28 | 644 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.7+ |
| 2004 03 20 | 704 | 1.0+ | 0.5+ | 2005 06 28 | 644 | 0.6− | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.0 | 0.3+ | 2005 07 04 | G96 | 0.3− | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.5+ |
| 2004 03 20 | 704 | 0.8+ | 0.0 | 2005 07 04 | G96 | 0.0 | 0.3+ | 2006 11 15 | 691 | 0.2+ | 1.1+ |
| 2004 03 20 | 704 | 0.8+ | 0.2+ | 2005 07 04 | G96 | 0.2− | 0.5+ | 2006 11 15 | 691 | 0.6− | 0.1− |
| 2004 03 20 | 704 | 0.2+ | 0.6+ | 2005 07 04 | G96 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2005 07 15 | G96 | 0.4− | 0.3+ | | | | |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2005 07 15 | G96 | 0.1− | 0.3+ | | | | |

**(144400)∗ 2004 EZ$_6$ = 1997 GX$_8$ = 1999 XF$_{65}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62000)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.27036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27821588 | $\omega$ | 256.97086 | | −0.38153779 | −0.92424485 | |
| $a$ | 2.3238857 | $\Omega$ | 215.46854 | | +0.85725116 | −0.34807087 | |
| $e$ | 0.1852740 | $i$ | 1.39788 | | +0.34575912 | −0.15690165 | |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 1.2+ | 0.5+ | 2004 03 16 | 704 | 1.0+ | 0.4+ | 2006 10 27 | G96 | 0.6− | 0.3− |
| 1997 04 03 | 704 | 1.3+ | 0.3− | 2004 03 16 | 704 | 0.9+ | 1.0+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 1997 04 07 | 704 | 0.6+ | 1.3− | 2004 03 16 | 704 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 1997 04 07 | 704 | 1.0+ | 1.2− | 2004 03 16 | 704 | (2.0+ | 0.6+) | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 1997 05 08 | 691 | 0.8− | 0.2− | 2004 03 17 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1997 05 08 | 691 | 0.4− | 0.1− | 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1997 05 08 | 691 | 0.8− | 0.1− | 2004 03 17 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 1999 12 07 | 704 | 0.8+ | 0.8− | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 1999 12 07 | 704 | 0.4+ | 0.6− | 2004 03 18 | 704 | 0.8+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 1999 12 07 | 704 | 0.5+ | 1.2− | 2004 03 18 | 704 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 0.4− | 1.3− | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.6− | 0.8+ |
| 1999 12 08 | 704 | 0.3+ | 0.6− | 2004 03 18 | 704 | 0.3+ | 1.4+ | 2006 11 18 | 704 | 0.1+ | 1.0+ |
| 1999 12 08 | 704 | 0.6− | 0.3− | 2004 03 20 | 699 | 0.5+ | 0.9− | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 1999 12 08 | 704 | 0.2+ | 1.2− | 2004 03 20 | 699 | 0.3− | 0.2− | 2006 11 18 | 704 | 1.3+ | 1.2+ |
| 2002 09 12 | 644 | (0.1+ | 1.7+) | 2004 03 20 | 699 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.5+ |
| 2002 09 12 | 644 | (0.0 | 2.0+) | 2004 03 20 | 699 | 1.4− | 0.2− | 2006 11 21 | 704 | 0.7− | 0.1− |
| 2002 09 12 | 644 | (0.0 | 1.8+) | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2002 09 14 | 644 | 0.0 | 1.0+ | 2004 03 27 | 704 | 0.5− | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2002 09 14 | 644 | 0.1− | 1.2+ | 2004 03 27 | 704 | 1.1+ | 1.1− | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2004 02 26 | 704 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.5+ | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2004 02 26 | 704 | 0.3− | 0.6+ | 2004 04 25 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.5− | 1.0− |
| 2004 02 26 | 704 | 0.3+ | 0.6+ | 2004 04 25 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2004 03 12 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.9+ | 0.1+ |
| 2004 03 12 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.5− |
| 2004 03 12 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.5+ |
| 2004 03 15 | 703 | 0.0 | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2004 03 15 | 703 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 1.2+ | 0.0 | 2006 10 21 | 691 | 0.4− | 0.5+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2004 03 15 | 703 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.4− | | | | |
| 2004 03 16 | 704 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− | | | | |

**(144401)∗ 2004 ED$_7$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.50214 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22656062 | $\omega$ | 24.15720 | | −0.97000896 | +0.24286697 | |
| $a$ | 2.6648930 | $\Omega$ | 169.88353 | | −0.23118922 | −0.90923940 | |
| $e$ | 0.0903529 | $i$ | 3.23507 | | −0.07506109 | −0.33808186 | |
| $P$ | 4.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 08 | 691 | 0.1− | 0.1+ | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2005 07 05 | 691 | 0.1+ | 0.3+ |
| 1995 02 08 | 691 | 0.1− | 0.1+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2005 07 05 | 691 | 0.3+ | 0.5+ |
| 1995 02 08 | 691 | 0.6+ | 0.3− | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2005 07 11 | G96 | 0.1− | 0.4+ |
| 1995 02 21 | 691 | 0.3+ | 0.3− | 2004 03 27 | 704 | 0.6+ | 0.1+ | 2005 07 11 | G96 | 0.4+ | 0.4+ |
| 1995 02 21 | 691 | 0.4− | 0.3− | 2004 03 27 | 704 | (1.7+ | 0.1+) | 2005 07 11 | G96 | 0.0 | 0.4+ |
| 1995 02 21 | 691 | 0.6− | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2005 07 11 | G96 | 0.1− | 0.5+ |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 1.1+ | 0.1− | 2006 10 02 | G96 | 0.8− | 0.8+ |
| 2004 03 12 | 644 | 0.4+ | 0.4+ | 2004 03 27 | 704 | 0.7+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 04 12 | 699 | 0.3− | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 703 | 0.1− | 1.2+ | 2004 04 12 | 699 | 0.4− | 1.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 1.1+ | 1.3+ | 2004 04 12 | 699 | 0.3− | 1.3+ | 2006 10 19 | 691 | 0.5− | 0.1+ |
| 2004 03 15 | 703 | 0.1+ | 0.6+ | 2004 04 12 | 699 | 0.9− | 0.4+ | 2006 10 19 | 691 | 0.5− | 0.4+ |
| 2004 03 15 | 703 | 0.5− | 1.1+ | 2004 07 16 | 807 | 0.5− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 2004 03 16 | 704 | 0.4− | 1.4+ | 2004 07 16 | 807 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2004 03 16 | 704 | 0.8+ | 1.0+ | 2005 06 18 | G96 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.6+ |
| 2004 03 16 | 704 | (0.2− | 2.4+) | 2005 06 18 | G96 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2004 03 16 | 704 | 1.1+ | 0.8+ | 2005 06 18 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.7+ |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2005 06 18 | G96 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2004 03 17 | 691 | 0.2+ | 0.5+ | 2005 06 28 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.8+ |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2005 06 28 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2004 03 18 | 704 | 0.9+ | 0.4+ | 2005 06 28 | 691 | 0.6− | 0.4− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 0.4+ | 0.6+ | 2005 06 29 | 691 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2004 03 18 | 704 | 0.1+ | 0.5+ | 2005 06 29 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.6+ |
| 2004 03 18 | 704 | 0.4+ | 0.7+ | 2005 06 29 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 704 | 0.4+ | 0.1− | 2005 07 05 | 691 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2004 03 23 | 683 | 0.0 | 0.0 | 2005 07 05 | 691 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.1− | 0.3+ |
| 2004 03 23 | 683 | 0.4− | 0.2− | 2005 07 05 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2004 03 23 | 683 | (2.9+ | 2.6−) | 2005 07 05 | 691 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.2+ |

**(144402)∗ 2004 EG$_7$ = 1998 BV$_{39}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62001)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.37052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17991106 | $\omega$ | 79.30278 | | −0.77219069 | +0.63507784 | |
| $a$ | 3.1076407 | $\Omega$ | 140.11871 | | −0.59444127 | −0.71098386 | |
| $e$ | 0.1304785 | $i$ | 1.78224 | | −0.22441283 | −0.30195710 | |
| $P$ | 5.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 31 | 691 | 0.5− | 0.4− | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2004 04 22 | 691 | 0.2+ | 0.1+ |
| 1998 01 31 | 691 | 0.2− | 0.2− | 2004 03 17 | 691 | 0.0 | 0.1+ | 2005 06 03 | 691 | 0.2− | 0.0 |
| 1998 01 31 | 691 | 0.6− | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2005 06 03 | 691 | 0.0 | 0.1− |
| 1998 02 03 | 691 | 0.5+ | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.0 | 2005 06 03 | 691 | 0.1− | 0.2− |
| 1998 02 03 | 691 | 0.3+ | 0.5− | 2004 03 18 | 704 | 0.0 | 0.0 | 2005 06 08 | 691 | 0.1− | 0.1+ |
| 1998 02 03 | 691 | 0.0 | 0.6− | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2005 06 08 | 691 | 0.3− | 0.1− |
| 2000 08 09 | 691 | 0.9+ | 0.2− | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2005 06 08 | 691 | 0.1− | 0.1− |
| 2000 08 09 | 691 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.7+ | 0.6+ | 2005 06 12 | 691 | 0.2− | 0.0 |
| 2000 08 09 | 691 | 0.1+ | 0.0 | 2004 03 22 | 704 | 1.0+ | 0.6+ | 2005 06 12 | 691 | 0.1− | 0.1− |
| 2001 10 23 | 691 | 0.7− | 0.1+ | 2004 03 22 | 704 | 0.8+ | 0.5+ | 2005 06 12 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 691 | 0.8− | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2006 09 23 | 691 | 0.2+ | 0.9+ |
| 2001 10 23 | 691 | 0.7− | 0.8+ | 2004 03 24 | 699 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.4− | 0.9+ |
| 2004 02 26 | 704 | 1.0+ | 0.8+ | 2004 03 24 | 699 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.0 | 0.3+ |
| 2004 02 26 | 704 | 0.1− | 0.1+ | 2004 03 24 | 699 | 1.0+ | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 704 | 0.3+ | 0.4+ | 2004 03 24 | 699 | 0.9+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2004 03 12 | 644 | 0.3+ | 0.7+ | 2004 03 26 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 03 26 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2004 03 12 | 644 | 0.5+ | 0.5+ | 2004 03 26 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.7+ |
| 2004 03 15 | 703 | 1.1− | 0.6+ | 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.5+ |
| 2004 03 15 | 703 | 0.2− | 1.0+ | 2004 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.6+ |
| 2004 03 15 | 703 | 0.4− | 0.2+ | 2004 04 12 | 691 | 0.6− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.7+ |
| 2004 03 15 | 703 | 0.2+ | 1.2+ | 2004 04 15 | 699 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2004 03 16 | 704 | 0.3+ | 0.3− | 2004 04 15 | 699 | 0.8− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.8+ |
| 2004 03 16 | 704 | 0.0 | 0.5− | 2004 04 15 | 699 | 0.3− | 0.8− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2004 03 16 | 704 | 0.3+ | 0.1− | 2004 04 15 | 699 | 1.3+ | 0.3− | 2006 10 27 | 291 | 0.2+ | 0.4+ |
| 2004 03 16 | 704 | 0.2− | 0.0 | 2004 04 22 | 691 | 0.2− | 0.0 | 2006 10 27 | 291 | 0.3+ | 0.1− |
| 2004 03 17 | 691 | 0.2+ | 0.3+ | 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 291 | 0.0 | 0.3+ |

**(144403)∗ 2004 EH$_7$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.64167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24173261 | $\omega$ | 308.42204 | | −0.23151144 | −0.97190731 | |
| $a$ | 2.5521874 | $\Omega$ | 154.86610 | | +0.92078327 | −0.23298518 | |
| $e$ | 0.1533770 | $i$ | 5.73060 | | +0.31394365 | −0.03337799 | |
| $P$ | 4.08 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 27 | 691 | 0.5+ | 0.5− | 2004 03 15 | 703 | (1.9− | 0.2−) | 2004 04 12 | 703 | 0.5− | 0.0 |
| 1992 04 27 | 691 | 0.2+ | 0.5− | 2004 03 15 | 703 | 0.5− | 0.5+ | 2004 04 19 | 704 | 0.0 | 0.1+ |
| 1992 04 27 | 691 | (2.8− | 5.4−) | 2004 03 15 | 703 | 0.4− | 0.0 | 2004 04 19 | 704 | 0.0 | 0.6− |
| 1996 04 24 | 691 | 0.8− | 0.1+ | 2004 03 16 | 704 | 1.0+ | 0.1+ | 2004 04 19 | 704 | 0.2+ | 0.4+ |
| 1996 04 24 | 691 | 0.5− | 0.0 | 2004 03 16 | 704 | 0.6+ | 1.0− | 2004 04 19 | 704 | 1.2+ | 0.6+ |
| 1996 04 24 | 691 | 0.9− | 0.4− | 2004 03 16 | 704 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.1− | 0.2+ |
| 2000 03 03 | 645 | 0.1+ | 0.2− | 2004 03 16 | 704 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.6+ | 0.1− |
| 2000 03 03 | 645 | 0.1+ | 0.2− | 2004 03 17 | 333 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.9+ |
| 2002 10 01 | 699 | 0.3− | 0.2+ | 2004 03 17 | 333 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.7− | 0.1− |
| 2002 10 01 | 699 | 0.4+ | 0.1+ | 2004 03 17 | 333 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.8+ | 0.0 |
| 2002 10 01 | 699 | 1.0+ | 1.0− | 2004 03 19 | 704 | 1.1+ | 0.6+ | 2006 09 18 | 703 | (0.3+ | 3.1+) |
| 2002 10 01 | 699 | (1.5+ | 0.2−) | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.8+ |
| 2002 10 02 | 608 | 0.8− | 1.2− | 2004 03 19 | 704 | 1.0+ | 0.7+ | 2006 09 18 | 703 | 0.8− | 1.2− |
| 2002 10 02 | 608 | 0.7− | 1.3− | 2004 03 19 | 704 | 1.1+ | 0.3+ | 2006 09 18 | 699 | 0.6+ | 0.7− |
| 2002 10 02 | 608 | 1.1− | 0.9− | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | (0.4+ | 1.8+) |
| 2002 10 15 | 644 | 0.6+ | 0.5+ | 2004 03 21 | 608 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.7− |
| 2002 10 15 | 644 | 0.1− | 0.6+ | 2004 03 21 | 608 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.3+ | 1.4+ |
| 2002 10 15 | 644 | 0.2+ | 0.5+ | 2004 03 21 | 608 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.8− | 0.2− |
| 2002 10 28 | 644 | 0.6+ | 1.0+ | 2004 03 22 | 704 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 2002 10 28 | 644 | (0.0 | 1.7+) | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.4− | 0.7− |
| 2002 10 28 | 644 | (1.4+ | 1.8+) | 2004 03 22 | 704 | 0.4− | 0.3+ | 2006 09 26 | 704 | 1.5− | 0.2+ |
| 2002 10 31 | 645 | 0.0 | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2002 10 31 | 645 | 0.0 | 0.2− | 2004 03 22 | 704 | 0.7− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2004 03 28 | 704 | 1.0+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2002 11 08 | 645 | 0.1+ | 0.0 | 2004 03 28 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | (1.6− | 2.1+) |
| 2004 02 23 | 704 | 0.1+ | 0.7− | 2004 03 28 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 1.4+ |
| 2004 02 23 | 704 | 0.3− | 0.2+ | 2004 03 28 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | (2.1− | 0.6+) |
| 2004 02 23 | 704 | 0.7+ | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.3+ |
| 2004 02 23 | 704 | 0.3+ | 0.9+ | 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2004 02 23 | 704 | 0.2− | 0.3+ | 2004 03 30 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2004 03 12 | 644 | 0.1+ | 0.3+ | 2004 03 30 | 691 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2004 03 12 | 644 | 0.1− | 0.3+ | 2004 04 12 | 703 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 03 12 | 644 | 0.2− | 0.3+ | 2004 04 12 | 703 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2004 03 15 | 703 | 0.2+ | 1.5− | 2004 04 12 | 703 | 1.4− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |

**(144404)∗ 2004 EK$_7$ = 2001 SB$_{332}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62002)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.36958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22268828 | $\omega$ | 55.30208 | | −0.76810052 | +0.63983122 | |
| $a$ | 2.6956974 | $\Omega$ | 164.42666 | | −0.61395030 | −0.72468305 | |
| $e$ | 0.1094248 | $i$ | 5.39688 | | −0.18189727 | −0.25583293 | |
| $P$ | 4.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 691 | 0.3− | 0.3+ | 2004 03 18 | 704 | 0.4+ | 1.0+ | 2005 07 01 | 691 | 0.2− | 0.1+ |
| 2001 08 28 | 691 | 0.6− | 0.3+ | 2004 03 19 | 704 | 0.2+ | 1.0+ | 2005 07 01 | 691 | 0.3− | 0.3+ |
| 2001 08 28 | 691 | 0.7− | 0.3+ | 2004 03 19 | 704 | 1.1+ | 0.6+ | 2005 07 01 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2004 03 19 | 704 | 1.1+ | 1.0+ | 2005 07 09 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 1.0+ | 1.4− | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2005 07 09 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.3− | 2005 07 09 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 1.5+ | 0.5− | 2004 03 22 | 704 | 1.0+ | 0.1+ | 2005 07 18 | 644 | 0.0 | 0.1+ |
| 2001 09 20 | 291 | 0.5+ | 0.6+ | 2004 03 22 | 704 | 0.5+ | 0.4− | 2005 07 18 | 644 | 0.3+ | 0.1+ |
| 2001 09 20 | 291 | 0.2− | 0.3+ | 2004 03 22 | 704 | 0.2+ | 0.5+ | 2005 07 18 | 644 | 0.3+ | 0.2+ |
| 2001 09 20 | 291 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.1− | 0.5+ | 2005 08 06 | 644 | 0.0 | 0.0 |
| 2004 02 26 | 704 | 0.9+ | 0.6+ | 2004 03 28 | 704 | 0.7+ | 0.3− | 2005 08 06 | 644 | 0.1+ | 0.2+ |
| 2004 02 26 | 704 | 0.2+ | 0.7+ | 2004 03 28 | 704 | 0.1− | 0.7+ | 2005 08 06 | 644 | 0.2+ | 0.2+ |
| 2004 02 26 | 704 | 0.4+ | 0.0 | 2004 03 28 | 704 | 0.1+ | 0.5− | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2004 02 26 | 704 | 0.4− | 0.5+ | 2004 03 28 | 704 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.1− | 0.2+ |
| 2004 03 12 | 644 | 0.0 | 0.7+ | 2004 03 28 | 704 | 0.0 | 0.6+ | 2006 10 03 | G96 | 0.5− | 0.0 |
| 2004 03 12 | 644 | 0.1+ | 0.4+ | 2004 04 12 | 699 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2004 03 12 | 644 | 0.0 | 0.4+ | 2004 04 12 | 699 | 1.0− | 0.5+ | 2006 10 18 | 691 | 0.2− | 0.6+ |
| 2004 03 15 | 703 | 0.0 | 0.7− | 2004 04 12 | 699 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.7+ |
| 2004 03 15 | 703 | 0.5− | 0.3+ | 2004 04 12 | 699 | (1.7+ | 1.6−) | 2006 10 18 | 691 | 0.1− | 0.7+ |
| 2004 03 15 | 703 | 0.9− | 0.9+ | 2004 04 15 | 691 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.2+ |
| 2004 03 15 | 703 | 0.3− | 0.4+ | 2004 04 15 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.1− | 0.7+ | 2004 04 15 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.5− | 0.5+ |
| 2004 03 18 | 704 | 0.8+ | 1.5+ | 2005 06 30 | 644 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2004 03 18 | 704 | (0.1+ | 2.3+) | 2005 06 30 | 644 | 0.0 | 0.1− | | | | |
| 2004 03 18 | 704 | 0.6+ | 0.5+ | 2005 06 30 | 644 | 0.2− | 0.2+ | | | | |

**(144405)∗ 2004 EP$_7$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.07530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17469158 | $\omega$ | 150.17282 | | +0.73032742 | +0.68197753 | |
| $a$ | 3.1692371 | $\Omega$ | 166.60260 | | −0.65536504 | +0.71567148 | |
| $e$ | 0.0610513 | $i$ | 9.71419 | | −0.19266169 | +0.15073479 | |
| $P$ | 5.64 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 1.4+ | 0.3+ | 2004 03 23 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 1999 05 12 | 704 | 0.9− | 0.7− | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 1999 05 12 | 704 | 1.1+ | 1.4− | 2004 03 26 | 691 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.0 | 0.5+ |
| 1999 05 12 | 704 | 1.0− | 0.3− | 2004 03 26 | 691 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.6− | 0.0 |
| 1999 05 12 | 704 | (3.3− | 1.2−) | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.2+ | 0.3+ |
| 2000 08 21 | 699 | 1.2− | 0.8− | 2004 03 28 | 704 | 1.0+ | 0.8− | 2006 09 17 | 704 | (1.0+ | 2.1+) |
| 2000 08 21 | 699 | 0.8− | 0.5+ | 2004 03 28 | 704 | (1.8+ | 0.1+) | 2006 09 17 | 704 | 0.2+ | 1.1+ |
| 2000 08 21 | 699 | 0.7+ | 1.0+ | 2004 03 28 | 704 | 0.2+ | 0.3− | 2006 09 17 | 704 | (0.8− | 1.8+) |
| 2000 08 21 | 699 | (2.3− | 0.1−) | 2004 03 28 | 704 | 1.3+ | 0.7+ | 2006 09 17 | 704 | 0.3+ | 0.1+ |
| 2000 08 29 | 704 | 1.1+ | 0.6+ | 2004 03 28 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 1.0− |
| 2000 08 29 | 704 | 1.0− | 0.1+ | 2004 04 12 | 699 | (2.7− | 0.5+) | 2006 09 19 | 703 | 0.7− | 0.1− |
| 2000 08 29 | 704 | (2.6− | 1.4−) | 2004 04 12 | 699 | (0.8− | 2.1+) | 2006 09 19 | 703 | 0.4+ | 0.3− |
| 2001 09 17 | 704 | 0.9+ | 0.4+ | 2004 04 12 | 699 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 2001 09 17 | 704 | 0.1+ | 0.5+ | 2004 04 12 | 699 | (2.1− | 0.1−) | 2006 09 19 | 703 | 0.7− | 0.3− |
| 2001 09 17 | 704 | 0.9− | 0.2− | 2004 04 16 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.7− |
| 2001 09 17 | 704 | 1.0− | 0.2− | 2004 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.6− | 0.3+ |
| 2001 10 16 | 704 | 0.7− | 0.9+ | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.3+ |
| 2001 10 16 | 704 | 0.1− | 0.2+ | 2004 04 21 | 691 | 0.3− | 0.4+ | 2006 09 20 | 704 | 1.1+ | 1.0− |
| 2001 10 16 | 704 | 1.0− | 0.2− | 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 1.0+ | 0.5− |
| 2001 10 16 | 704 | 0.6+ | 0.9+ | 2004 04 21 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.7+ |
| 2001 11 20 | 699 | 0.6+ | 0.8+ | 2005 06 03 | E12 | (2.0− | 0.8−) | 2006 09 20 | 704 | 0.2− | 0.5+ |
| 2001 11 20 | 699 | 0.5+ | 0.9+ | 2005 06 03 | E12 | 1.3− | 1.4+ | 2006 09 20 | 704 | 0.1+ | 0.8+ |
| 2001 11 20 | 699 | 1.1+ | 1.0+ | 2005 06 03 | E12 | 0.8+ | 0.3+ | 2006 09 25 | 699 | 0.9+ | 0.9+ |
| 2001 11 20 | 699 | 1.1− | 0.5+ | 2006 08 22 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.1+ | 1.4+ |
| 2004 03 12 | 644 | 0.1+ | 0.7+ | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.2+ | 1.2+ |
| 2004 03 12 | 644 | 0.3+ | 0.3+ | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 1.1− | 0.8+ |
| 2004 03 12 | 644 | 0.2+ | 0.6+ | 2006 08 23 | 644 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2004 03 15 | 703 | 0.2− | 0.8+ | 2006 08 23 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2004 03 15 | 703 | 0.1+ | 0.9− | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2004 03 15 | 703 | (1.6+ | 0.6+) | 2006 08 25 | 704 | 1.3+ | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2004 03 15 | 703 | (0.6− | 1.7+) | 2006 08 25 | 704 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.1+ |
| 2004 03 22 | 704 | 0.6− | 0.9− | 2006 08 25 | 704 | 0.9+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2004 03 22 | 704 | 1.0− | 0.3+ | 2006 08 25 | 704 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.8− | 0.1− |
| 2004 03 22 | 704 | 0.6+ | 0.8− | 2006 08 27 | 699 | 0.8− | 0.7− | 2006 09 30 | 703 | 0.6+ | 0.1− |
| 2004 03 22 | 704 | (1.7− | 0.8−) | 2006 08 27 | 699 | 0.7+ | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2004 03 22 | 704 | 0.1− | 1.5+ | 2006 08 27 | 699 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 2004 03 22 | 704 | 0.3+ | 0.7+ | 2006 08 27 | 699 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2004 03 22 | 704 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.5− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2004 03 22 | 704 | 0.3− | 0.0 | 2006 08 28 | 703 | 1.1+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2004 03 22 | 704 | 0.4+ | 1.4+ | 2006 08 28 | 703 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2004 03 23 | 683 | (1.8+ | 0.4+) | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2004 03 23 | 704 | 0.1+ | 0.7+ | 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.4− | 0.1− |
| 2004 03 23 | 683 | (2.0+ | 1.5+) | 2006 09 12 | 703 | 0.7− | 0.5− | 2006 11 25 | G96 | 0.6− | 0.1+ |
| 2004 03 23 | 704 | 1.0+ | 0.6+ | 2006 09 12 | 703 | 0.9− | 0.6+ | 2006 11 25 | G96 | 0.3+ | 0.2+ |
| 2004 03 23 | 683 | 1.1− | 0.6+ | 2006 09 12 | 703 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.3+ |
| 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.2+ | | | | |

**(144406)∗ 2004 EQ$_8$ = 2002 VK$_{120}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65587)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.70187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23901907 | $\omega$ | 84.08595 | | −0.02045752 | | −0.99955783 |
| $a$ | 2.5714674 | $\Omega$ | 7.19305 | | +0.83552086 | | −0.02894556 |
| $e$ | 0.0541981 | $i$ | 9.92362 | | +0.54907776 | | +0.00680439 |
| $P$ | 4.12 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 699 | 1.8+ | 0.4+ | 2004 02 26 | 704 | 0.2− | 0.4− | 2004 04 12 | 699 | 1.2− | 0.3+ |
| 2000 04 06 | 699 | 0.5+ | 0.5+ | 2004 02 26 | 704 | 0.1− | 0.1− | 2004 04 12 | 699 | 0.4− | 0.8+ |
| 2000 04 06 | 699 | 0.0 | 0.2+ | 2004 03 13 | 644 | 0.2+ | 0.2− | 2004 04 12 | 691 | 0.0 | 0.1+ |
| 2000 04 06 | 699 | 0.4+ | 1.1+ | 2004 03 13 | 644 | 0.1+ | 0.2− | 2004 04 12 | 699 | 1.0− | 0.0 |
| 2001 07 21 | 644 | 0.0 | 0.6+ | 2004 03 13 | 644 | 0.1+ | 0.1− | 2004 04 12 | 691 | 0.2+ | 0.2+ |
| 2001 07 21 | 644 | 0.2− | 0.1− | 2004 03 15 | 703 | 0.1+ | 0.6+ | 2004 04 21 | 704 | 0.9+ | 0.0 |
| 2001 07 21 | 644 | 0.3− | 0.1+ | 2004 03 15 | 703 | 0.0 | 0.6+ | 2004 04 21 | 704 | 0.3+ | 0.9+ |
| 2002 11 06 | 704 | 0.0 | 1.3− | 2004 03 15 | 703 | 0.4− | 0.3+ | 2004 04 21 | 704 | 0.4− | 0.7+ |
| 2002 11 06 | 704 | (0.4+ | 1.7−) | 2004 03 15 | 703 | 0.0 | 0.9+ | 2004 04 22 | 691 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | (0.2− | 2.2−) | 2004 03 16 | 704 | 0.1− | 0.7− | 2004 04 22 | 691 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.7− | 1.1− | 2004 03 16 | 704 | 0.6+ | 0.8− | 2004 04 22 | 691 | 0.2− | 0.1+ |
| 2002 11 12 | 644 | 0.2− | 0.1− | 2004 03 16 | 704 | 0.8+ | 1.0+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 11 12 | 644 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 11 12 | 644 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2002 11 15 | 704 | 1.1+ | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.5− | 2006 10 19 | 291 | 0.1− | 0.3+ |
| 2002 11 15 | 704 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.0 | 2006 10 19 | 291 | 0.0 | 0.2+ |
| 2002 11 15 | 704 | 0.3+ | 0.4− | 2004 03 18 | 704 | 0.4+ | 0.4− | 2006 10 19 | 291 | 0.1+ | 0.2+ |
| 2002 11 15 | 704 | 1.0+ | 0.1+ | 2004 03 26 | 691 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.7+ | 0.7+ |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2004 03 26 | 691 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.2− | 0.7+ |
| 2002 12 06 | 704 | 0.5− | 0.5+ | 2004 03 26 | 691 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.0 | 0.7+ |
| 2002 12 06 | 704 | 0.0 | 1.1+ | 2004 03 27 | 704 | 0.9+ | 0.9− | 2006 10 19 | 703 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2004 03 27 | 704 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.5− |
| 2002 12 06 | 704 | 0.1− | 0.7− | 2004 03 27 | 704 | 0.3+ | 0.6− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 12 12 | 644 | 0.3− | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.6− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 12 12 | 644 | 0.3− | 0.3− | 2004 03 27 | 704 | 0.4+ | 1.0− | 2006 11 15 | 703 | 0.4− | 0.4+ |
| 2002 12 12 | 644 | 0.3− | 0.3− | 2004 03 27 | 185 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.9− | 0.0 | 2004 03 27 | 185 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.2+ |
| 2004 02 26 | 704 | 0.5+ | 0.2+ | 2004 04 12 | 699 | 0.4− | 0.1+ | 2006 11 15 | 703 | 1.4− | 0.6+ |
| 2004 02 26 | 704 | 0.7+ | 0.3− | 2004 04 12 | 691 | 0.1+ | 0.1+ | | | | |

**(144407)∗ 2004 EV$_8$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.69940 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21985153 | $\omega$ | 163.95361 | | −0.69341883 | | +0.68008019 |
| $a$ | 2.7188363 | $\Omega$ | 61.41792 | | −0.68729833 | | −0.52511876 |
| $e$ | 0.1337188 | $i$ | 15.72800 | | −0.21631305 | | −0.51160651 |
| $P$ | 4.48 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 01 | 691 | 0.3− | 0.5− | 2004 03 16 | 704 | 0.7+ | 0.1− | 2004 05 21 | 703 | 0.4− | 0.3+ |
| 1997 11 01 | 691 | 0.3+ | 0.5− | 2004 03 16 | 704 | 1.1+ | 1.1+ | 2004 05 21 | 703 | 0.3+ | 0.4+ |
| 1997 11 01 | 691 | 0.2+ | 0.0 | 2004 03 27 | 699 | 0.6− | 0.5+ | 2004 05 23 | 704 | 1.0+ | 0.1+ |
| 1997 12 06 | 910 | 0.9+ | 0.1− | 2004 03 27 | 699 | 0.7− | 0.1− | 2004 05 23 | 704 | 0.4− | 0.8+ |
| 1997 12 06 | 910 | 0.8+ | 0.1− | 2004 03 27 | 699 | 0.6+ | 0.1− | 2004 05 23 | 704 | 1.1+ | 0.4− |
| 1997 12 07 | 910 | 0.8+ | 0.0 | 2004 03 27 | 699 | 0.1− | 0.3− | 2004 05 23 | 704 | 0.2+ | 0.4+ |
| 1999 02 18 | 704 | 1.3− | 0.4− | 2004 04 10 | 644 | 0.1+ | 0.4+ | 2004 05 23 | 704 | 0.5+ | 0.3+ |
| 1999 02 18 | 704 | (1.6+ | 2.2+) | 2004 04 10 | 644 | 0.1− | 0.4+ | 2004 05 24 | 699 | 0.2− | 0.9+ |
| 1999 02 18 | 704 | (0.1+ | 2.6+) | 2004 04 10 | 644 | 0.1− | 0.4+ | 2004 05 24 | 699 | 0.1− | 0.6+ |
| 1999 02 18 | 704 | (0.2+ | 2.3+) | 2004 04 15 | 704 | 0.3− | 0.2− | 2004 05 24 | 699 | 0.4+ | 0.4− |
| 1999 02 18 | 704 | 1.1+ | 0.5+ | 2004 04 15 | 704 | 0.4+ | 0.3− | 2004 05 24 | 699 | 0.8− | 0.4− |
| 2001 09 21 | 704 | 0.3+ | 0.8− | 2004 04 15 | 704 | 0.4+ | 0.0 | 2005 08 05 | 644 | 0.2− | 0.7+ |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2004 04 15 | 704 | 0.2+ | 0.4+ | 2005 08 05 | 644 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2004 04 15 | 704 | 0.2+ | 0.8− | 2005 08 05 | 644 | 0.8− | 0.8+ |
| 2004 03 13 | 644 | 0.1+ | 0.2+ | 2004 04 23 | 703 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 2004 03 13 | 644 | 0.3+ | 0.2+ | 2004 04 23 | 703 | 0.3+ | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2004 03 13 | 644 | 0.2+ | 0.2+ | 2004 04 23 | 703 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.0 |
| 2004 03 15 | 704 | 0.1− | 0.1− | 2004 04 23 | 703 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 704 | 0.5+ | 0.6+ | 2004 04 24 | 704 | 1.0− | 0.8− | 2006 10 22 | 691 | 0.5− | 0.5+ |
| 2004 03 15 | 704 | 0.4+ | 0.2+ | 2004 04 24 | 704 | 1.1− | 1.3− | 2006 10 22 | 691 | 0.9− | 0.6+ |
| 2004 03 15 | 704 | 0.1+ | 0.2− | 2004 04 24 | 704 | 0.7− | 1.3− | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2004 03 15 | 703 | 0.9− | 0.2+ | 2004 04 24 | 704 | (0.6− | 2.4−) | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2004 03 15 | 703 | 1.4+ | 0.3− | 2004 05 13 | 704 | (1.9− | 0.6+) | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2004 03 15 | 703 | 0.1+ | 0.1− | 2004 05 13 | 704 | 0.3− | 0.7+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2004 03 15 | 703 | 0.2− | 0.6− | 2004 05 13 | 704 | (1.4+ | 1.5+) | 2006 11 13 | G96 | 0.9+ | 0.3− |
| 2004 03 16 | 704 | 0.9+ | 1.5+ | 2004 05 13 | 704 | 0.0 | 0.5− | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2004 03 16 | 704 | 0.2+ | 1.1+ | 2004 05 21 | 703 | (0.2− | 1.7−) | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2004 03 16 | 704 | 0.1− | 0.3− | 2004 05 21 | 703 | 0.8− | 0.6− | 2006 11 13 | G96 | 0.1− | 0.4− |

**(144408)∗ 2004 EZ$_8$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.11815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18042988 | $\omega$ | 5.19567 | | −0.27776937 | | +0.95195460 |
| $a$ | 3.1016806 | $\Omega$ | 248.72563 | | −0.88628658 | | −0.30573017 |
| $e$ | 0.0378770 | $i$ | 7.95376 | | −0.37059449 | | +0.01764925 |
| $P$ | 5.46 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 0.5− | 0.9− | 2004 03 17 | 704 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.5+ | 0.3− |
| 1998 03 04 | 704 | 1.4+ | 1.0− | 2004 03 17 | 704 | 0.9+ | 1.3+ | 2006 09 16 | 683 | 1.4− | 0.5+ |
| 1998 03 04 | 704 | (2.4− | 0.4−) | 2004 03 17 | 704 | 0.7+ | 0.8+ | 2006 09 16 | 703 | 0.4+ | 0.5− |
| 1998 03 04 | 704 | (5.4− | 1.2+) | 2004 03 27 | 699 | 0.6+ | 0.3− | 2006 09 16 | 703 | 0.7− | 0.5− |
| 2000 08 03 | 704 | 0.0 | 0.5+ | 2004 03 27 | 699 | 0.2− | 1.4+ | 2006 09 16 | 683 | 0.1+ | 0.9− |
| 2000 08 03 | 704 | 0.7− | 0.4− | 2004 03 27 | 699 | 0.5+ | 0.6+ | 2006 09 16 | 683 | 0.4− | 1.0+ |
| 2000 08 03 | 704 | 0.0 | 0.2+ | 2004 03 27 | 699 | 0.8− | 1.3+ | 2006 09 18 | 683 | 0.0 | 0.6− |
| 2000 08 03 | 704 | 0.1− | 0.5− | 2004 03 31 | 704 | 1.2+ | 1.1+ | 2006 09 18 | 683 | 0.2− | 1.0+ |
| 2000 09 03 | 704 | 0.4+ | 1.5+ | 2004 03 31 | 704 | (0.3+ | 2.2+) | 2006 09 18 | 683 | 0.3+ | 0.8+ |
| 2000 09 03 | 704 | 0.1+ | 0.6+ | 2004 03 31 | 704 | 0.2− | 0.6− | 2006 09 19 | 683 | 1.0+ | 0.2− |
| 2000 09 03 | 704 | 0.8+ | 0.8+ | 2004 03 31 | 704 | 0.2− | 0.7+ | 2006 09 19 | 683 | (0.7− | 1.6+) |
| 2000 09 03 | 704 | 1.2− | 0.7+ | 2004 03 31 | 704 | (1.6+ | 0.7+) | 2006 09 19 | 683 | 0.5− | 0.3+ |
| 2001 10 14 | 704 | 0.3+ | 0.2− | 2004 04 15 | 703 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.3+ | 0.4+ |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2004 04 15 | 703 | 0.7+ | 1.1+ | 2006 09 19 | 699 | 1.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.0 | 0.5+ | 2004 04 15 | 703 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.2+ | 0.9− |
| 2001 10 14 | 704 | 0.1− | 0.8+ | 2004 04 15 | 703 | 0.2− | 1.3+ | 2006 09 19 | 699 | 0.6+ | 0.1+ |
| 2001 11 10 | 704 | 0.0 | 0.1+ | 2004 04 17 | 704 | 0.4+ | 1.2− | 2006 09 20 | 106 | 0.8− | 0.2− |
| 2001 11 10 | 704 | 0.6− | 0.1+ | 2004 04 17 | 704 | 0.3− | 0.7+ | 2006 09 20 | 106 | 0.0 | 0.4+ |
| 2001 11 10 | 704 | 0.4− | 0.3− | 2004 04 17 | 704 | 0.5+ | 0.5− | 2006 09 20 | 106 | 0.4+ | 0.1− |
| 2001 11 10 | 704 | 0.3− | 0.4− | 2004 04 17 | 704 | 0.8+ | 0.9+ | 2006 09 20 | 106 | 0.5+ | 0.1− |
| 2001 11 10 | 704 | 0.3− | 0.4+ | 2004 04 17 | 699 | 0.8+ | 0.0 | 2006 09 27 | 703 | 1.0− | 0.7− |
| 2001 11 10 | 644 | 0.4− | 0.4+ | 2004 04 17 | 699 | 0.5+ | 0.7+ | 2006 09 27 | 703 | (0.3− | 1.7+) |
| 2001 11 10 | 644 | 0.4− | 0.0 | 2004 04 17 | 699 | 1.2− | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.1+ |
| 2001 11 10 | 644 | 0.7− | 0.3+ | 2004 04 17 | 699 | 1.0− | 1.0+ | 2006 09 27 | 703 | 0.2− | 1.3+ |
| 2003 01 07 | 704 | 0.5+ | 0.0 | 2006 08 22 | 807 | 0.0 | 0.1+ | 2006 10 03 | 703 | (0.7− | 2.1+) |
| 2003 01 07 | 704 | 0.1− | 0.8+ | 2006 08 23 | 807 | 0.1− | 0.1+ | 2006 10 03 | 703 | 1.5− | 1.0+ |
| 2003 01 07 | 704 | 0.3− | 0.4+ | 2006 08 23 | 807 | 0.1− | 0.2+ | 2006 10 03 | 703 | (2.0− | 1.4+) |
| 2003 01 07 | 704 | 0.2− | 0.3− | 2006 08 29 | 703 | 0.2− | 0.5+ | 2006 10 03 | 703 | 0.4+ | 1.1+ |
| 2003 01 27 | 704 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.1− | 0.7+ | 2006 10 03 | 703 | 0.4− | 1.3+ |
| 2003 01 27 | 704 | 0.7+ | 0.8+ | 2006 08 29 | 703 | 0.0 | 0.7+ | 2006 10 03 | 703 | 0.4− | 1.0+ |
| 2003 01 27 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 1.0− | 0.0 | 2006 10 03 | 703 | 0.8− | 0.2+ |
| 2003 01 27 | 704 | 0.2+ | 1.1+ | 2006 08 29 | 699 | 0.4− | 0.2+ | 2006 10 03 | 703 | 0.2− | 1.2+ |
| 2003 01 27 | 704 | 0.0 | 0.8+ | 2006 08 29 | 699 | 1.3− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2004 03 14 | 644 | 0.1− | 0.2+ | 2006 08 29 | 699 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2004 03 14 | 644 | 0.3− | 0.3+ | 2006 08 29 | 699 | 0.9+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2004 03 14 | 644 | 0.2− | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2004 03 15 | 644 | 0.2+ | 0.3+ | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2004 03 15 | 644 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2004 03 15 | 644 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2004 03 17 | 703 | (3.8− | 0.4−) | 2006 09 14 | 644 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2004 03 17 | 703 | (0.6+ | 2.4−) | 2006 09 14 | 644 | 0.1+ | 0.4+ | 2006 10 23 | 703 | 1.0+ | 0.6+ |
| 2004 03 17 | 703 | 0.5− | 1.5+ | 2006 09 15 | 683 | 0.8+ | 0.2− | 2006 10 23 | 703 | 0.2− | 1.2− |
| 2004 03 17 | 703 | 0.2+ | 1.1+ | 2006 09 15 | 683 | (0.9+ | 1.9−) | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2004 03 17 | 704 | 0.2+ | 0.4+ | 2006 09 15 | 683 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.5− | 0.4+ |
| 2004 03 17 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 703 | (1.7+ | 0.0 ) | 2006 10 23 | 703 | 0.2− | 0.2− |

**(144409)∗ 2004 EC$_9$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.46594 | | | (2000.0) | | |
| $n$ | 0.23948616 | $\omega$ | 305.24332 | | −0.76790281 | −0.63904822 |
| $a$ | 2.5681227 | $\Omega$ | 195.19603 | | +0.62866944 | −0.73865531 |
| $e$ | 0.0867612 | $i$ | 9.68018 | | +0.12288207 | −0.21448942 |
| $P$ | 4.12 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.3− | 1.1+ | 2004 03 31 | 704 | 0.4− | 0.7+ | 2004 04 22 | 704 | 0.2+ | 1.2+ |
| 2001 08 18 | 644 | 0.1+ | 0.9+ | 2004 03 31 | 704 | 1.4+ | 0.2+ | 2004 04 22 | 704 | 0.5+ | 0.1− |
| 2001 08 18 | 644 | 0.3− | 0.4+ | 2004 03 31 | 704 | 0.5− | 0.2+ | 2005 06 27 | 691 | 0.1− | 0.2+ |
| 2002 11 15 | 644 | 0.4+ | 0.9+ | 2004 03 31 | 704 | 0.4− | 0.6+ | 2005 06 27 | 691 | 0.1− | 0.3+ |
| 2002 11 15 | 644 | 0.3+ | 1.4+ | 2004 04 09 | E12 | 0.0 | 0.3− | 2005 06 27 | 691 | 0.3− | 0.2+ |
| 2002 11 15 | 644 | 0.2+ | 0.9+ | 2004 04 09 | E12 | 0.5− | 0.2− | 2005 07 29 | 644 | 0.1+ | 0.5+ |
| 2002 11 25 | 644 | 0.9− | 0.1+ | 2004 04 09 | E12 | 0.7+ | 1.4− | 2005 07 29 | 644 | 0.1+ | 0.5+ |
| 2002 11 25 | 644 | 1.0− | 0.1+ | 2004 04 09 | E12 | 0.1− | 0.8− | 2005 07 29 | 644 | 0.2+ | 0.6+ |
| 2002 11 25 | 644 | 0.7− | 0.4+ | 2004 04 10 | 703 | 0.4− | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2002 12 02 | 704 | 0.3+ | 0.3+ | 2004 04 10 | 703 | 0.8− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2002 12 02 | 704 | 0.4+ | 0.5+ | 2004 04 10 | 703 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 2002 12 02 | 704 | 0.5− | 0.6+ | 2004 04 10 | 703 | 0.5− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2002 12 02 | 704 | 0.5+ | 0.1+ | 2004 04 12 | 699 | 0.9− | 0.3+ | 2006 11 01 | 703 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | 0.3+ | 0.6+ | 2004 04 12 | 699 | 0.0 | 0.3+ | 2006 11 01 | 703 | 0.4− | 0.7+ |
| 2002 12 14 | 704 | 0.8+ | 0.5+ | 2004 04 12 | 699 | 1.1− | 0.2− | 2006 11 01 | 703 | 0.3− | 1.0+ |
| 2002 12 14 | 704 | 0.5− | 0.2− | 2004 04 12 | 699 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.2− | 1.0+ |
| 2002 12 14 | 704 | 0.2− | 0.9− | 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2004 03 14 | 644 | 0.1+ | 0.5+ | 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2004 03 14 | 644 | 0.5+ | 0.5+ | 2004 04 13 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2004 03 14 | 644 | 0.6+ | 0.8+ | 2004 04 15 | 699 | 0.3+ | 0.4+ | 2006 11 11 | 703 | (2.0− | 0.4−) |
| 2004 03 15 | 703 | 0.2+ | 0.5− | 2004 04 15 | 699 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2004 03 15 | 703 | (2.0− | 3.1+) | 2004 04 15 | 699 | 0.6− | 0.8− | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2004 03 15 | 703 | 1.0+ | 1.1+ | 2004 04 15 | 699 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.8+ |
| 2004 03 15 | 703 | 0.4− | 0.3− | 2004 04 16 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 704 | 0.5+ | 0.8+ |
| 2004 03 20 | 699 | 1.3+ | 0.2+ | 2004 04 16 | 704 | 0.7+ | 0.5+ | 2006 11 14 | 704 | 1.2+ | 1.3+ |
| 2004 03 20 | 699 | 1.2− | 0.3− | 2004 04 16 | 704 | 0.7+ | 1.5+ | 2006 11 14 | 704 | 0.0 | 0.3+ |
| 2004 03 20 | 699 | 0.0 | 0.8+ | 2004 04 16 | 704 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.6+ | 0.7+ |
| 2004 03 20 | 699 | 0.6− | 1.1− | 2004 04 16 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 704 | (2.0+ | 0.3+) |
| 2004 03 25 | 699 | 0.1− | 0.1+ | 2004 04 16 | 644 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.9− | 0.3− |
| 2004 03 25 | 699 | 1.0− | 0.2+ | 2004 04 16 | 644 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 0.8− | 0.0 |
| 2004 03 25 | 699 | 0.3− | 1.0+ | 2004 04 19 | 704 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2004 03 25 | 699 | (2.0− | 1.0+) | 2004 04 19 | 704 | 0.8− | 0.7+ | 2006 11 19 | 703 | 0.6− | 0.5+ |
| 2004 03 27 | 704 | 1.3+ | 0.6− | 2004 04 19 | 704 | 0.5+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2004 03 27 | 704 | 0.3− | 1.3+ | 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2004 03 27 | 704 | 0.8+ | 0.8+ | 2004 04 19 | 704 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.5− | 0.0 |
| 2004 03 27 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 704 | 0.8+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.7+ | 1.0− | | | | |

**(144410)∗ 2004 EF$_9$ = 2001 SZ$_{236}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62004)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 199.40099 | | | (2000.0) | | |
| $n$ | 0.19925341 | $\omega$ | 350.15283 | | −0.99803002 | −0.06143227 |
| $a$ | 2.9031237 | $\Omega$ | 186.36663 | | +0.06248034 | −0.95485282 |
| $e$ | 0.1462852 | $i$ | 6.59421 | | +0.00568270 | −0.29065816 |
| $P$ | 4.95 | $H$ | 15.6 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 23 | 703 | 0.2− | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.5− | 2005 07 08 | 691 | 0.1− | 0.0 |
| 1999 03 23 | 703 | 0.0 | 1.0+ | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2005 07 08 | 691 | 0.2− | 0.0 |
| 1999 03 23 | 703 | 0.2+ | 0.3− | 2004 03 31 | 704 | 1.3+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 1999 03 23 | 703 | 0.3− | 1.9− | 2004 03 31 | 704 | 0.8+ | 0.9+ | 2006 09 18 | 691 | 0.3− | 0.1− |
| 1999 04 07 | 699 | 0.2+ | 0.6+ | 2004 04 16 | 704 | 0.7+ | 0.6+ | 2006 09 18 | 691 | 1.0+ | 0.3− |
| 1999 04 07 | 699 | 0.6+ | 0.9+ | 2004 04 16 | 704 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.0 |
| 1999 04 07 | 699 | 0.3+ | 1.3+ | 2004 04 16 | 704 | 1.1− | 0.8+ | 2006 09 25 | 691 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.8− | 0.0 | 2004 04 16 | 704 | 0.6+ | 0.4− | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 1.2+ | 2004 04 16 | 704 | 0.3+ | 0.9+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 09 19 | 704 | 0.4− | 1.4+ | 2004 04 17 | 699 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.8+ | 0.2− |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2004 04 17 | 699 | (1.6+ | 0.3−) | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2001 09 21 | 704 | 0.7− | 0.8− | 2004 04 17 | 699 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2004 04 17 | 699 | 0.7− | 0.1+ | 2006 10 01 | 291 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.5− | 2004 04 19 | 704 | 0.1− | 0.2− | 2006 10 01 | 291 | 0.2− | 0.2+ |
| 2001 09 21 | 291 | 0.0 | 0.1− | 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 01 | 291 | 0.2− | 0.1− |
| 2001 09 21 | 291 | 0.2+ | 0.6+ | 2004 04 19 | 704 | 0.8− | 0.5− | 2006 10 01 | 291 | 0.1− | 0.2+ |
| 2001 09 21 | 291 | 0.1− | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.3+ | 2006 10 01 | 291 | 0.2− | 0.3+ |
| 2004 03 14 | 644 | 0.0 | 0.2+ | 2004 04 19 | 704 | (1.6− | 0.1+) | 2006 10 01 | 291 | 0.1+ | 0.3+ |
| 2004 03 14 | 644 | 0.2− | 0.2+ | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 01 | 291 | 0.1+ | 0.2− |
| 2004 03 14 | 644 | 0.0 | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 291 | 0.2+ | 0.3− |
| 2004 03 15 | 703 | 0.9− | 0.2− | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 01 | 291 | 0.4+ | 0.4− |
| 2004 03 15 | 703 | (0.6− | 1.7+) | 2004 04 22 | 704 | (1.9+ | 0.9−) | 2006 10 02 | 291 | 0.0 | 0.1+ |
| 2004 03 15 | 703 | 0.4− | 0.4+ | 2004 04 22 | 704 | (1.1+ | 1.7−) | 2006 10 02 | 291 | 0.3− | 0.2+ |
| 2004 03 15 | 703 | 1.1− | 0.3+ | 2004 04 22 | 704 | 1.1+ | 0.9− | 2006 10 02 | G96 | 0.5− | 0.1− |
| 2004 03 24 | 699 | 1.1− | 0.6− | 2004 04 22 | 704 | 0.4+ | 0.4− | 2006 10 02 | 291 | 0.0 | 0.4+ |
| 2004 03 24 | 699 | 0.1+ | 0.3+ | 2004 05 08 | 703 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.0 |
| 2004 03 24 | 699 | 0.0 | 0.0 | 2004 05 08 | 703 | 1.2+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2004 03 24 | 699 | 1.1− | 0.1+ | 2004 05 08 | 703 | 0.9+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2004 03 25 | 699 | 0.0 | 0.0 | 2004 05 08 | 703 | 1.0+ | 0.5+ | 2006 10 02 | 291 | 0.0 | 0.1+ |
| 2004 03 25 | 699 | 0.3+ | 0.4+ | 2005 06 29 | 691 | 0.0 | 0.2− | 2006 10 02 | 291 | 0.1− | 0.1+ |
| 2004 03 25 | 699 | (0.8+ | 1.6−) | 2005 06 29 | 691 | 0.2+ | 0.0 | 2006 10 02 | 291 | 0.0 | 0.2+ |
| 2004 03 25 | 699 | 0.7− | 0.4− | 2005 06 29 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2004 03 27 | 704 | 0.2+ | 0.2+ | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.6− | 0.1− |
| 2004 03 27 | 704 | 0.3− | 0.3− | 2005 07 04 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2004 03 27 | 704 | 0.1+ | 0.1− | 2005 07 04 | 691 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.5+ |
| 2004 03 27 | 704 | 0.1− | 0.2+ | 2005 07 08 | 691 | 0.1− | 0.0 | | | | |

**(144411)∗ 2004 EW$_9$**

Discovered 2004 Mar. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 290.71645 | | | (2000.0) | | |
| $n$ | 0.37114459 | $\omega$ | 7.96780 | | +0.45121408 | +0.88065407 |
| $a$ | 1.9176704 | $\Omega$ | 288.95254 | | −0.82696410 | +0.35178162 |
| $e$ | 0.5327155 | $i$ | 8.78271 | | −0.33546422 | +0.31732965 |
| $P$ | 2.66 | $H$ | 16.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 14 | 608 | 0.5− | 0.7− | 2004 09 12 | 918 | 0.0 | 0.1+ | 2004 09 27 | 160 | 0.2− | 0.1+ |
| 2001 03 14 | 608 | 0.4− | 0.8− | 2004 09 12 | 918 | 0.7− | 0.3− | 2004 09 27 | 160 | 0.0 | 0.4+ |
| 2001 03 14 | 608 | 0.0 | 0.8+ | 2004 09 12 | 918 | 0.3+ | 0.0 | 2004 09 27 | 160 | 0.2− | 0.3+ |
| 2003 01 12 | 644 | 1.0− | 0.1+ | 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 27 | 160 | 0.3− | 0.2+ |
| 2003 01 12 | 644 | 0.3− | 0.1+ | 2004 09 12 | 918 | 0.1+ | 0.1+ | 2004 09 27 | 160 | 0.1− | 0.2+ |
| 2004 01 29 | 699 | 0.1− | 0.5+ | 2004 09 12 | 918 | 0.3+ | 0.1− | 2004 09 27 | 160 | 0.1− | 0.1+ |
| 2004 01 29 | 699 | 1.3+ | 0.4+ | 2004 09 12 | 918 | 0.3+ | 0.3− | 2004 09 27 | 160 | 0.0 | 0.1+ |
| 2004 01 29 | 699 | 0.2− | 0.1+ | 2004 09 12 | 918 | 0.2+ | 0.1+ | 2004 09 27 | 160 | 0.1+ | 0.2+ |
| 2004 01 29 | 699 | 0.9+ | 0.1− | 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 27 | 160 | 0.2− | 0.1+ |
| 2004 03 15 | 644 | 0.1+ | 0.1− | 2004 09 12 | 918 | 0.0 | 0.1− | 2004 09 27 | 160 | 0.2− | 0.4+ |
| 2004 03 15 | 644 | 0.0 | 0.3− | 2004 09 12 | 918 | 0.2+ | 0.1+ | 2004 09 27 | 160 | 0.1− | 0.4+ |
| 2004 03 15 | 644 | 0.3+ | 0.1− | 2004 09 12 | 918 | 0.2+ | 0.1− | 2004 09 27 | 160 | 0.1+ | 0.2+ |
| 2004 03 15 | 198 | 0.5+ | 0.1+ | 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 27 | 160 | 0.1− | 0.2+ |
| 2004 03 15 | 198 | 0.6+ | 0.4+ | 2004 09 12 | 918 | 0.2+ | 0.1+ | 2004 09 28 | H41 | 0.2− | 0.3− |
| 2004 03 15 | 198 | 0.6+ | 0.5+ | 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 28 | H41 | 0.3− | 0.1− |
| 2004 03 15 | 198 | 0.6+ | 0.3+ | 2004 09 12 | 918 | 0.2+ | 0.1− | 2004 09 28 | H41 | 0.0 | 0.1− |
| 2004 03 15 | 938 | 0.4− | 0.6+ | 2004 09 12 | 918 | 0.4+ | 0.1− | 2004 09 28 | H41 | 0.3− | 0.2− |
| 2004 03 15 | 132 | 0.4+ | 0.4− | 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 28 | H41 | 0.0 | 0.0 |
| 2004 03 15 | 132 | 0.1− | 0.1− | 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 28 | A13 | 0.4− | 0.3− |
| 2004 03 15 | 132 | 0.2− | 0.1+ | 2004 09 12 | 918 | 0.3+ | 0.0 | 2004 09 28 | A13 | 0.4− | 0.4− |
| 2004 03 16 | 938 | 0.0 | 0.5+ | 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 28 | A13 | 0.4− | 0.6− |
| 2004 03 16 | 204 | 0.1− | 0.4+ | 2004 09 12 | 918 | 0.3+ | 0.0 | 2004 09 28 | A13 | 0.4− | 0.5− |
| 2004 03 16 | 204 | 0.1− | 0.4+ | 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 28 | A13 | 0.2− | 0.5− |
| 2004 03 16 | 204 | 0.3− | 0.2+ | 2004 09 12 | 918 | (1.1+ | 2.0−) | 2004 09 29 | 750 | 0.1− | 0.2− |
| 2004 03 16 | H06 | 0.2+ | 0.1+ | 2004 09 12 | 918 | 0.6+ | 0.6+ | 2004 09 29 | 750 | 0.2− | 0.1− |
| 2004 03 16 | H06 | 0.2+ | 0.3+ | 2004 09 12 | 918 | (1.2+ | 2.0−) | 2004 09 29 | 750 | 0.2− | 0.0 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | H06 | 0.2+ | 0.3+ | 2004 09 12 | 918 | (1.0+ | 1.9−) | 2004 09 29 | 750 | 0.2− | 0.1− | 2004 04 09 | 300 | 0.0 | 0.1+ | 2004 09 13 | 160 | 0.1− | 0.0 | 2004 10 05 | A35 | 0.0 | 0.3+ |
| 2004 03 16 | 701 | 0.1+ | 0.2+ | 2004 09 12 | 918 | 0.5− | 0.1− | 2004 09 29 | 750 | 0.0 | 0.0 | 2004 04 09 | 300 | 0.7+ | 0.9+ | 2004 09 13 | 160 | 0.2− | 0.1− | 2004 10 05 | A35 | 0.1+ | 0.3+ |
| 2004 03 16 | 701 | 0.3− | 0.4+ | 2004 09 12 | 918 | 0.0 | 0.1− | 2004 09 29 | 750 | 0.1− | 0.1− | 2004 04 12 | 428 | 0.1− | 0.0 | 2004 09 13 | 160 | 0.2− | 0.1+ | 2004 10 05 | A35 | 0.1+ | 0.1+ |
| 2004 03 16 | 854 | 0.7+ | 0.1+ | 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 29 | A30 | 0.1− | 0.1− | 2004 04 12 | 428 | 0.2+ | 0.0 | 2004 09 13 | 160 | 0.0 | 0.2− | 2004 10 05 | 557 | 0.1− | 0.2− |
| 2004 03 16 | 854 | 0.1+ | 0.3− | 2004 09 12 | 918 | (1.1+ | 2.0−) | 2004 09 29 | A30 | 0.2− | 0.1− | 2004 04 12 | 428 | 0.1− | 0.1+ | 2004 09 13 | 160 | 0.2− | 0.0 | 2004 10 05 | 557 | 0.1− | 0.1− |
| 2004 03 16 | 854 | 0.3+ | 0.3− | 2004 09 12 | 918 | (1.2+ | 2.3−) | 2004 09 29 | A30 | (7.9+ | 2.1+) | 2004 04 12 | 428 | 0.1− | 0.1+ | 2004 09 13 | 160 | 0.1− | 0.5− | 2004 10 05 | 557 | 0.1− | 0.1− |
| 2004 03 16 | 673 | 0.2+ | 0.2− | 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 29 | A30 | (2.2+ | 1.1+) | 2004 04 16 | H72 | 0.5+ | 0.5− | 2004 09 13 | 160 | 0.1− | 0.4− | 2004 10 05 | 557 | 0.1− | 0.0 |
| 2004 03 16 | 673 | 0.2+ | 0.1− | 2004 09 12 | 918 | 0.2+ | 0.1− | 2004 09 30 | H41 | 0.1+ | 0.1+ | 2004 04 16 | H72 | 0.1− | 0.9+ | 2004 09 13 | 160 | 0.2+ | 0.1− | 2004 10 05 | 557 | 0.1− | 0.1− |
| 2004 03 16 | 673 | 0.2+ | 0.3− | 2004 09 12 | 918 | 0.2+ | 0.2+ | 2004 09 30 | H41 | 0.3+ | 0.1+ | 2004 04 16 | H72 | 0.8+ | 1.2+ | 2004 09 14 | H41 | 0.2− | 0.8− | 2004 10 05 | 557 | 0.1− | 0.0 |
| 2004 03 16 | 673 | 0.4+ | 0.2− | 2004 09 12 | 918 | 0.4+ | 0.0 | 2004 09 30 | H41 | 0.1+ | 0.2+ | 2004 04 16 | H72 | 0.3+ | 0.3− | 2004 09 14 | H41 | 0.1+ | 0.2− | 2004 10 05 | 557 | 0.0 | 0.1− |
| 2004 03 16 | 701 | 1.0− | 1.1− | 2004 09 12 | 918 | 0.1− | 0.1+ | 2004 09 30 | H41 | 0.1+ | 0.1+ | 2004 04 16 | H41 | 0.1− | 0.5− | 2004 09 14 | H41 | 0.1+ | 0.0 | 2004 10 06 | 557 | 0.0 | 0.1− |
| 2004 03 16 | E12 | 0.2− | 0.3+ | 2004 09 12 | 918 | 0.5+ | 0.8− | 2004 09 30 | H41 | 0.2+ | 0.2+ | 2004 04 16 | H41 | 0.0 | 0.0 | 2004 09 14 | H41 | 0.3+ | 0.0 | 2004 10 06 | 557 | 0.1− | 0.1− |
| 2004 03 16 | E12 | 0.3+ | 0.8− | 2004 09 12 | 918 | 0.5+ | 0.9− | 2004 09 30 | 379 | 0.1− | 0.2+ | 2004 04 16 | H41 | 1.0+ | 0.1− | 2004 09 14 | H41 | 0.1+ | 0.1+ | 2004 10 06 | 557 | 0.1− | 0.2− |
| 2004 03 16 | E12 | 0.3− | 0.0 | 2004 09 12 | 918 | 0.0 | 0.1− | 2004 09 30 | 379 | 0.3+ | 0.3− | 2004 04 16 | H41 | 0.7+ | 0.2− | 2004 09 14 | H41 | 0.1+ | 0.2+ | 2004 10 06 | 557 | 0.0 | 0.1− |
| 2004 03 16 | E12 | 0.1− | 0.0 | 2004 09 12 | 240 | 0.2− | 0.0 | 2004 09 30 | 379 | 0.2+ | 0.1+ | 2004 04 17 | 704 | 0.1− | 0.0 | 2004 09 14 | 379 | 0.0 | 0.1+ | 2004 10 06 | 557 | 0.1+ | 0.2− |
| 2004 03 16 | E12 | 0.1− | 0.2+ | 2004 09 12 | 240 | 0.3− | 0.0 | 2004 09 30 | 379 | 0.0 | 0.1− | 2004 04 17 | 704 | 0.2+ | 0.3+ | 2004 09 14 | 379 | 0.3+ | 0.4− | 2004 10 06 | H41 | 0.1− | 0.1+ |
| 2004 03 16 | E12 | 0.3− | 0.2+ | 2004 09 12 | 240 | 0.2− | 0.0 | 2004 09 30 | 379 | 0.2+ | 0.1− | 2004 04 17 | 704 | 0.1+ | 0.2− | 2004 09 14 | 379 | 0.4− | 0.1+ | 2004 10 06 | H41 | 0.3− | 0.2+ |
| 2004 03 16 | E12 | 0.4+ | 0.8+ | 2004 09 12 | 240 | 0.3− | 0.2+ | 2004 09 30 | 379 | 0.1+ | 0.2− | 2004 04 17 | 704 | 0.3+ | 0.1− | 2004 09 14 | 379 | 0.2− | 0.4− | 2004 10 06 | H41 | 0.1− | 0.2+ |
| 2004 03 16 | E12 | 0.1+ | 0.5+ | 2004 09 12 | 240 | 0.3− | 0.0 | 2004 09 30 | 379 | 0.1+ | 0.1− | 2004 04 17 | 704 | 0.1+ | 0.1− | 2004 09 14 | 379 | 0.1+ | 0.1+ | 2004 10 06 | H41 | 0.0 | 0.0 |
| 2004 03 16 | 246 | 0.3+ | 0.2+ | 2004 09 12 | 240 | 0.3− | 0.1+ | 2004 09 30 | 379 | 0.3+ | 0.1− | 2004 04 18 | H72 | 0.6+ | 0.0 | 2004 09 14 | 379 | 0.4− | 0.3− | 2004 10 06 | H41 | 0.1− | 0.2− |
| 2004 03 16 | 246 | 0.0 | 0.3+ | 2004 09 12 | 240 | 0.4− | 0.1+ | 2004 09 30 | 379 | 0.1− | 0.1+ | 2004 04 18 | H72 | 0.8+ | 0.1+ | 2004 09 14 | 057 | 0.2− | 0.2+ | 2004 10 06 | 379 | 0.3+ | 0.3+ |
| 2004 03 16 | 246 | 0.0 | 0.3− | 2004 09 12 | 240 | 0.2− | 0.2+ | 2004 10 01 | 379 | 0.2+ | 0.3+ | 2004 04 18 | H72 | 1.3+ | 0.3+ | 2004 09 14 | 057 | 0.2− | 0.2+ | 2004 10 06 | 379 | 0.1+ | 0.1+ |
| 2004 03 16 | 246 | 0.3− | 0.1− | 2004 09 12 | 240 | 0.3− | 0.1+ | 2004 10 01 | 379 | 0.2− | 0.0 | 2004 04 18 | H72 | 0.7+ | 0.0 | 2004 09 14 | 057 | 0.1− | 0.1+ | 2004 10 06 | 379 | 0.0 | 0.0 |
| 2004 03 16 | 246 | 0.3+ | 0.2− | 2004 09 13 | H41 | 0.4+ | 0.4+ | 2004 10 01 | 379 | 0.1+ | 0.0 | 2004 04 18 | H41 | 0.4− | 0.5− | 2004 09 14 | 057 | 0.0 | 0.1− | 2004 10 06 | 379 | 0.2− | 0.0 |
| 2004 03 16 | 246 | 0.1− | 0.8− | 2004 09 13 | H41 | 0.4+ | 0.3+ | 2004 10 01 | 379 | 0.2+ | 0.1+ | 2004 04 18 | H41 | 0.4+ | 0.0 | 2004 09 14 | 057 | 0.2− | 0.2+ | 2004 10 06 | 379 | 0.1+ | 0.1− |
| 2004 03 17 | 704 | 0.1− | 0.2+ | 2004 09 13 | H41 | 0.5+ | 0.0 | 2004 10 01 | 379 | 0.1+ | 0.1− | 2004 04 18 | H41 | (1.8− | 0.9+) | 2004 09 14 | 057 | 0.1− | 0.4+ | 2004 10 06 | 379 | 0.1− | 0.2+ |
| 2004 03 17 | 704 | 1.3+ | 0.4− | 2004 09 13 | H41 | 0.3+ | 0.2− | 2004 10 01 | 379 | 0.2− | 0.2− | 2004 04 18 | H41 | 0.8− | 0.1+ | 2004 09 14 | 057 | 0.3− | 0.3+ | 2004 10 06 | 118 | 0.0 | 0.1− |
| 2004 03 17 | 704 | 0.0 | 0.0 | 2004 09 13 | H41 | 0.3+ | 0.2+ | 2004 10 01 | 379 | 0.3+ | 0.0 | 2004 04 20 | 428 | 0.0 | 0.2− | 2004 09 14 | 084 | 0.2− | 0.2+ | 2004 10 06 | 118 | 0.1− | 0.2− |
| 2004 03 17 | 704 | 0.2+ | 0.2− | 2004 09 13 | H41 | 0.4+ | 0.3− | 2004 10 01 | 379 | 0.0 | 0.0 | 2004 04 20 | 428 | 0.1− | 0.0 | 2004 09 15 | H41 | 0.3+ | 0.1+ | 2004 10 06 | 118 | 0.0 | 0.1− |
| 2004 03 17 | 704 | 0.2+ | 0.1− | 2004 09 13 | 379 | 0.1− | 0.2− | 2004 10 01 | 084 | 0.1− | 0.1+ | 2004 04 20 | 428 | 0.0 | 0.1+ | 2004 09 15 | H41 | 0.2+ | 0.2+ | 2004 10 06 | 118 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.2− | 0.0 | 2004 09 13 | 379 | 0.1− | 0.1+ | 2004 10 02 | 928 | 0.1− | 0.1− | 2004 04 20 | 428 | 0.1− | 0.1+ | 2004 09 15 | H41 | 0.2+ | 0.2+ | 2004 10 07 | 379 | 0.3+ | 0.1− |
| 2004 03 18 | 704 | 0.3− | 0.1+ | 2004 09 13 | 379 | 0.1− | 0.1− | 2004 10 02 | 928 | 0.1− | 0.0 | 2004 04 21 | 379 | 0.5+ | 0.2+ | 2004 09 15 | H41 | 0.5+ | 0.4+ | 2004 10 07 | 379 | 0.5+ | 0.2− |
| 2004 03 18 | 704 | 0.1− | 0.2− | 2004 09 13 | 379 | 0.1− | 0.5+ | 2004 10 02 | 928 | 0.0 | 0.1− | 2004 04 21 | 379 | (1.6+ | 0.5−) | 2004 09 15 | H41 | 0.3+ | 0.2+ | 2004 10 07 | 379 | 0.0 | 0.1+ |
| 2004 03 18 | 704 | 0.3− | 0.1− | 2004 09 13 | 379 | 0.4+ | 0.2+ | 2004 10 02 | 928 | 0.2+ | 0.2− | 2004 04 23 | J87 | 0.1+ | 0.3+ | 2004 09 15 | H41 | 0.2+ | 0.3+ | 2004 10 07 | 379 | 0.3− | 0.1+ |
| 2004 03 18 | 704 | 0.1− | 0.1− | 2004 09 13 | 379 | 0.1− | 0.2+ | 2004 10 03 | 118 | 0.3− | 0.2− | 2004 04 23 | J87 | 0.2− | 0.3+ | 2004 09 15 | H41 | 0.2+ | 0.2+ | 2004 10 07 | 379 | 0.3+ | 0.3− |
| 2004 03 18 | 704 | 0.2− | 0.5+ | 2004 09 13 | 379 | 0.2− | 0.1+ | 2004 10 03 | 118 | 0.0 | 0.1− | 2004 04 23 | J87 | 0.0 | 0.2+ | 2004 09 15 | A32 | 0.4+ | 0.2− | 2004 10 07 | 379 | 0.4+ | 0.0 |
| 2004 03 18 | 704 | 0.1− | 0.1− | 2004 09 13 | 379 | 0.2− | 0.5+ | 2004 10 03 | 118 | 0.0 | 0.2− | 2004 04 25 | 704 | 0.5− | 0.6− | 2004 09 15 | A32 | 0.2+ | 0.1+ | 2004 10 07 | 379 | 0.3+ | 0.2+ |
| 2004 03 18 | 704 | 0.2− | 0.2+ | 2004 09 13 | 379 | 0.3+ | 0.5+ | 2004 10 03 | 118 | 0.1+ | 0.1− | 2004 04 25 | 704 | 0.3− | 0.1+ | 2004 09 15 | A32 | 0.2+ | 0.0 | 2004 10 07 | 379 | 0.3+ | 0.2− |
| 2004 03 18 | 704 | 0.0 | 0.1− | 2004 09 13 | 057 | 0.4− | 0.5+ | 2004 10 03 | 557 | 0.1− | 0.1− | 2004 04 25 | 704 | 0.2− | 0.6− | 2004 09 15 | A32 | 0.1+ | 0.0 | 2004 10 07 | J92 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.1− | 0.1+ | 2004 09 13 | 057 | 0.4− | 0.5+ | 2004 10 03 | 557 | 0.1− | 0.2− | 2004 04 25 | 151 | 0.0 | 0.1− | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 07 | J92 | 0.3+ | 0.1+ |
| 2004 03 20 | H72 | 0.9− | 0.6+ | 2004 09 13 | 057 | 0.5− | 0.6+ | 2004 10 03 | 557 | 0.1− | 0.1− | 2004 04 25 | 151 | 0.2− | 0.1+ | 2004 09 16 | 918 | 0.6+ | 1.2− | 2004 10 07 | J92 | 0.0 | 0.1+ |
| 2004 03 20 | H72 | 0.5+ | 0.2+ | 2004 09 13 | 057 | 0.6− | 0.4+ | 2004 10 03 | 557 | 0.2− | 0.2− | 2004 04 25 | 151 | 0.2+ | 0.2+ | 2004 09 16 | 918 | 0.3− | 0.2+ | 2004 10 07 | J92 | 0.1+ | 0.1+ |
| 2004 03 20 | H72 | 0.2+ | 0.4+ | 2004 09 13 | 057 | 0.4− | 0.3+ | 2004 10 03 | 557 | 0.0 | 0.3− | 2004 04 25 | 151 | 0.3+ | 0.1− | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 07 | J92 | 0.0 | 0.0 |
| 2004 03 20 | H72 | 1.0− | 1.3+ | 2004 09 13 | 057 | 0.3− | 0.6+ | 2004 10 03 | 557 | 0.2− | 0.1− | 2004 04 27 | H41 | 0.2− | 0.3− | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 07 | J92 | 0.0 | 0.1+ |
| 2004 03 21 | H72 | (1.2− | 3.0−) | 2004 09 13 | 057 | 0.3− | 0.7+ | 2004 10 03 | 557 | 0.0 | 0.3− | 2004 04 27 | H41 | 0.2+ | 0.0 | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 07 | J92 | 0.0 | 0.2+ |
| 2004 03 21 | H72 | (1.5− | 1.5−) | 2004 09 13 | 057 | 0.6− | 0.5+ | 2004 10 03 | 557 | 0.0 | 0.3− | 2004 04 27 | H41 | 0.4− | 0.5+ | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 07 | J92 | 0.1+ | 0.0 |
| 2004 03 21 | H72 | 0.6+ | 0.3+ | 2004 09 13 | 057 | 0.5− | 0.3+ | 2004 10 04 | 557 | 0.0 | 0.3− | 2004 04 27 | H41 | 0.6− | 0.2+ | 2004 09 16 | 918 | 0.1+ | 0.4+ | 2004 10 07 | J92 | 0.3+ | 0.1+ |
| 2004 03 26 | 704 | 0.1+ | 0.0 | 2004 09 13 | 057 | 0.3− | 0.7+ | 2004 10 04 | 557 | 0.2− | 0.2− | 2004 04 28 | 608 | 0.2− | 0.5− | 2004 09 16 | 918 | 0.0 | 0.4+ | 2004 10 07 | J92 | 0.0 | 0.1+ |
| 2004 03 26 | 704 | 0.1+ | 0.0 | 2004 09 13 | 160 | 0.3− | 0.1+ | 2004 10 04 | 557 | 0.1− | 0.3− | 2004 04 28 | 608 | 0.0 | 0.4− | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 07 | J92 | 0.3+ | 0.1+ |
| 2004 03 26 | 704 | 0.0 | 0.1+ | 2004 09 13 | 160 | 0.2− | 0.2− | 2004 10 04 | G90 | 0.2+ | 0.5+ | 2004 04 28 | 608 | 0.1− | 0.5− | 2004 09 16 | 918 | 0.0 | 0.3+ | 2004 10 07 | J92 | 0.1+ | 0.1− |
| 2004 03 26 | 704 | 0.2+ | 0.1+ | 2004 09 13 | 160 | 0.2+ | 0.2− | 2004 10 04 | G90 | 0.3+ | 0.3+ | 2004 05 01 | 130 | 0.8+ | 0.1+ | 2004 09 16 | H41 | 0.1+ | 0.3+ | 2004 10 07 | J92 | 0.0 | 0.1− |
| 2004 03 26 | 704 | 0.2− | 0.1+ | 2004 09 13 | 160 | 0.1− | 0.1+ | 2004 10 04 | G90 | 0.3+ | 0.4+ | 2004 05 01 | 130 | 1.3+ | 0.4+ | 2004 09 16 | H41 | 0.1+ | 0.5+ | 2004 10 07 | J92 | 0.2+ | 0.1+ |
| 2004 03 28 | 670 | 0.2− | 0.8− | 2004 09 13 | 160 | 0.1+ | 0.3+ | 2004 10 04 | 557 | 0.1− | 0.1− | 2004 05 04 | H41 | 1.4+ | 0.9− | 2004 09 16 | H41 | 0.1+ | 0.3+ | 2004 10 07 | 084 | 0.4− | 0.3+ |
| 2004 03 28 | 670 | 0.5+ | 0.1− | 2004 09 13 | 160 | 0.0 | 0.1+ | 2004 10 04 | 557 | 0.1− | 0.1− | 2004 05 04 | H41 | (2.5+ | 1.8−) | 2004 09 16 | H41 | 0.0 | 0.3+ | 2004 10 09 | 557 | 0.1− | 0.1− |
| 2004 03 28 | 046 | 0.5− | 0.1+ | 2004 09 13 | 160 | 0.4− | 0.2+ | 2004 10 04 | 557 | 0.1− | 0.0 | 2004 05 04 | H41 | 0.7+ | 1.1− | 2004 09 16 | H41 | 0.1+ | 0.4+ | 2004 10 09 | 557 | 0.2− | 0.0 |
| 2004 03 28 | 046 | 0.1− | 0.1+ | 2004 09 13 | 160 | 0.1− | 0.2− | 2004 10 04 | 557 | 0.1− | 0.3− | 2004 05 04 | H41 | 0.3− | 0.0 | 2004 09 16 | H41 | 0.2+ | 0.5+ | 2004 10 09 | 557 | 0.0 | 0.0 |
| 2004 03 28 | 046 | 0.4− | 0.1− | 2004 09 13 | 160 | 0.0 | 0.1− | 2004 10 04 | 557 | 0.2− | 0.1− | 2004 05 04 | E25 | (2.4− | 0.5−) | 2004 09 16 | 918 | 0.1+ | 0.2+ | 2004 10 09 | 557 | 0.1− | 0.1− |
| 2004 03 28 | 046 | 0.4− | 0.9− | 2004 09 13 | 160 | 0.2− | 0.2+ | 2004 10 04 | 557 | 0.1− | 0.3− | 2004 05 04 | E25 | 0.3− | 0.3+ | 2004 09 16 | 918 | 0.1+ | 0.2+ | 2004 10 10 | 557 | 0.0 | 0.1− |
| 2004 03 28 | 046 | 0.0 | 0.8− | 2004 09 13 | 160 | 0.1+ | 0.3− | 2004 10 05 | 557 | 0.1− | 0.1− | 2004 05 04 | E25 | (4.5− | 2.2+) | 2004 09 16 | 918 | 0.1+ | 0.4+ | 2004 10 10 | 557 | 0.0 | 0.1− |
| 2004 04 08 | D85 | 0.2+ | 0.4+ | 2004 09 13 | 160 | 0.1− | 0.1− | 2004 10 05 | 557 | 0.2− | 0.1− | 2004 05 05 | H41 | 0.2− | 1.2+ | 2004 09 16 | 918 | 0.0 | 0.3+ | 2004 10 10 | 557 | 0.0 | 0.2− |
| 2004 04 08 | D85 | 0.7− | 0.4− | 2004 09 13 | 160 | 0.0 | 0.0 | 2004 10 05 | 557 | 0.2− | 0.2− | 2004 05 05 | H41 | 0.4+ | 0.3+ | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 10 | 557 | 0.0 | 0.2− |
| 2004 04 08 | D85 | 0.8+ | 0.1+ | 2004 09 13 | 160 | 0.2− | 0.1+ | 2004 10 05 | 557 | 0.2− | 0.2− | 2004 05 05 | H41 | 0.6+ | 1.1+ | 2004 09 16 | 918 | 0.4+ | 0.7− | 2004 10 10 | 557 | 0.0 | 0.3− |
| 2004 04 09 | H41 | 0.1− | 0.1− | 2004 09 13 | 160 | 0.1− | 0.3− | 2004 10 05 | 557 | 0.2− | 0.1− | 2004 05 05 | H41 | 0.8− | 1.3+ | 2004 09 16 | 918 | 0.1+ | 0.2− | 2004 10 10 | 557 | 0.0 | 0.2− |
| 2004 04 09 | H41 | 0.2− | 0.5− | 2004 09 13 | 160 | 0.1− | 0.1− | 2004 10 05 | 557 | 0.1− | 0.1− | 2004 05 05 | H41 | 0.5− | 0.5+ | 2004 09 16 | 918 | 0.0 | 0.3+ | 2004 10 10 | 557 | 0.0 | 0.2− |
| 2004 04 09 | H41 | 0.1+ | 0.1+ | 2004 09 13 | 160 | 0.1− | 0.1+ | 2004 10 05 | 557 | 0.2− | 0.2− | 2004 05 05 | E25 | 0.3− | 0.1+ | 2004 09 16 | 918 | 0.0 | 0.4+ | 2004 10 10 | 557 | 0.0 | 0.2− |
| 2004 04 09 | H41 | 0.2+ | 0.6+ | 2004 09 13 | 160 | 0.2− | 0.1− | 2004 10 05 | G90 | 0.1+ | 0.2+ | 2004 05 05 | E25 | 0.5− | 0.2− | 2004 09 16 | 918 | 0.0 | 0.2+ | 2004 10 10 | 557 | 0.0 | 0.3− |
| 2004 04 09 | 300 | 0.9− | 0.7+ | 2004 09 13 | 160 | 0.1− | 0.1− | 2004 10 05 | G90 | 0.1+ | 0.2+ | 2004 05 05 | E25 | 0.9− | 1.0− | 2004 09 16 | 918 | 0.1+ | 0.4+ | 2004 10 11 | 557 | 0.1+ | 0.2− |
| 2004 04 09 | 300 | 0.3− | 1.0+ | 2004 09 13 | 160 | 0.1− | 0.4− | 2004 10 05 | G90 | 0.1+ | 0.2+ | 2004 05 10 | 428 | 0.1− | 0.2+ | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 11 | 557 | 0.0 | 0.2− |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 10 | 428 | 0.1+ | 0.0 | 2004 09 16 | 918 | 0.1+ | 0.3+ | 2004 10 11 | 557 | 0.0 | 0.2− | 2004 08 26 | 434 | 0.0 | 0.3+ | 2004 09 18 | 151 | 0.3− | 0.4+ | 2004 10 17 | 379 | 0.1+ | 0.0 |
| 2004 05 10 | 428 | 0.1+ | 0.1+ | 2004 09 16 | 918 | 0.0 | 0.2+ | 2004 10 11 | 557 | 0.0 | 0.2− | 2004 08 26 | 434 | 0.5+ | 0.4− | 2004 09 18 | 151 | 0.2− | 0.2+ | 2004 10 17 | 379 | 0.1− | 0.0 |
| 2004 05 13 | 807 | 0.4+ | 0.5+ | 2004 09 16 | 918 | 0.2+ | 0.2+ | 2004 10 11 | 557 | 0.0 | 0.3− | 2004 08 27 | 240 | 0.2+ | 0.3− | 2004 09 18 | 151 | 0.3− | 0.2+ | 2004 10 17 | 379 | 0.4+ | 0.1− |
| 2004 05 13 | 807 | 0.8+ | 1.0+ | 2004 09 16 | 918 | 0.6− | 1.4+ | 2004 10 11 | 750 | 0.0 | 0.1− | 2004 08 27 | 240 | 0.2− | 0.1− | 2004 09 18 | 151 | 0.4− | 0.2+ | 2004 10 17 | 379 | 0.0 | 0.3+ |
| 2004 05 15 | 704 | 0.8+ | 0.1− | 2004 09 16 | 918 | 0.6− | 1.3− | 2004 10 11 | 750 | 0.1− | 0.0 | 2004 08 27 | 240 | 0.2− | 0.1+ | 2004 09 18 | 151 | 0.2− | 0.3+ | 2004 10 17 | 379 | 0.2+ | 0.3+ |
| 2004 05 15 | 704 | 1.1− | 0.2− | 2004 09 16 | 918 | 0.4+ | 0.1− | 2004 10 11 | 750 | 0.0 | 0.1+ | 2004 08 27 | 240 | 0.0 | 0.2+ | 2004 09 18 | 151 | 0.3− | 0.2+ | 2004 10 17 | 379 | 0.1+ | 0.2− |
| 2004 05 15 | 704 | 0.1+ | 0.4+ | 2004 09 16 | 240 | 0.4− | 0.1− | 2004 10 11 | 557 | 0.1− | 0.1− | 2004 08 27 | 240 | 0.1− | 0.2+ | 2004 09 18 | 151 | 0.2− | 0.1+ | 2004 10 17 | 355 | 0.1+ | 0.3− |
| 2004 05 15 | 704 | 0.8− | 0.8+ | 2004 09 16 | 240 | 0.3− | 0.1+ | 2004 10 11 | 557 | 0.0 | 0.1− | 2004 08 27 | 240 | 0.0 | 0.3+ | 2004 09 18 | 151 | 0.2− | 0.1+ | 2004 10 17 | 355 | 0.2− | 0.5− |
| 2004 05 15 | 704 | 0.4+ | 0.2− | 2004 09 16 | 240 | 0.4− | 0.1+ | 2004 10 11 | 557 | 0.1− | 0.2− | 2004 08 27 | 240 | 0.2− | 0.1+ | 2004 09 18 | 151 | 0.2− | 0.1− | 2004 10 17 | 355 | 0.1− | 0.1+ |
| 2004 05 15 | 170 | 0.1− | 0.2+ | 2004 09 16 | 240 | 0.3− | 0.1+ | 2004 10 11 | 557 | 0.1− | 0.2− | 2004 08 27 | 240 | 0.0 | 0.1− | 2004 09 18 | 151 | 0.1− | 0.1− | 2004 10 17 | 355 | 0.0 | 0.1− |
| 2004 05 15 | 170 | 0.2− | 0.2+ | 2004 09 16 | 240 | 0.3− | 0.1+ | 2004 10 11 | 084 | 0.1+ | 0.1− | 2004 08 27 | 240 | 0.3− | 0.1− | 2004 09 18 | 151 | 0.0 | 0.2− | 2004 10 17 | 557 | 0.0 | 0.4− |
| 2004 05 16 | H41 | 0.1+ | 0.3+ | 2004 09 16 | 240 | 0.3− | 0.1+ | 2004 10 11 | A32 | 0.1+ | 0.0 | 2004 08 27 | 240 | 0.1− | 0.0 | 2004 09 18 | 118 | 0.5− | 0.4− | 2004 10 17 | 557 | 0.0 | 0.0 |
| 2004 05 16 | H41 | 0.1+ | 1.2+ | 2004 09 16 | 240 | 0.2− | 0.1+ | 2004 10 11 | A32 | 0.1+ | 0.2+ | 2004 08 27 | 240 | 0.1− | 0.1+ | 2004 09 18 | 118 | 0.5− | 0.3− | 2004 10 17 | 557 | 0.1− | 0.2− |
| 2004 05 16 | H41 | 0.1+ | 0.4+ | 2004 09 16 | 240 | 0.2− | 0.0 | 2004 10 11 | 557 | 0.1− | 0.2− | 2004 08 27 | 240 | 0.2− | 0.0 | 2004 09 18 | 118 | 0.5− | 0.2− | 2004 10 17 | 557 | 0.1− | 0.1− |
| 2004 05 16 | H41 | 0.2+ | 0.1+ | 2004 09 16 | 240 | 0.2− | 0.0 | 2004 10 11 | A32 | 0.0 | 0.2+ | 2004 08 27 | 240 | 0.1− | 0.0 | 2004 09 18 | 118 | 0.4− | 0.2− | 2004 10 17 | 557 | 0.1− | 0.1+ |
| 2004 05 16 | H41 | 0.7+ | 0.3+ | 2004 09 16 | 240 | 0.1− | 0.0 | 2004 10 11 | A32 | 0.0 | 0.0 | 2004 08 28 | A32 | 0.3+ | 0.4− | 2004 09 18 | 118 | 0.3− | 0.2− | 2004 10 17 | 557 | 0.2− | 0.2+ |
| 2004 05 17 | H41 | (1.9− | 0.1−) | 2004 09 16 | 118 | 0.3− | 0.3− | 2004 10 11 | A32 | 0.0 | 0.0 | 2004 08 28 | A32 | 0.2+ | 0.8− | 2004 09 18 | J94 | 0.3+ | 0.5− | 2004 10 17 | 557 | 0.1− | 0.1− |
| 2004 05 17 | H41 | 0.3+ | 0.4+ | 2004 09 16 | 118 | 0.0 | 0.1− | 2004 10 11 | 557 | 0.1− | 0.1− | 2004 08 28 | A32 | 0.5+ | 1.3− | 2004 09 18 | J94 | 0.1+ | 1.1− | 2004 10 18 | 379 | 0.5+ | 0.4− |
| 2004 05 17 | H41 | (1.6− | 0.3−) | 2004 09 16 | 118 | 0.1− | 0.1− | 2004 10 11 | 557 | 0.0 | 0.1− | 2004 08 28 | A32 | 0.4+ | 0.1+ | 2004 09 18 | J94 | 0.4− | 0.5− | 2004 10 18 | 379 | 0.8+ | 0.4− |
| 2004 05 17 | 151 | 0.6− | 0.2+ | 2004 09 16 | 151 | 0.0 | 0.1+ | 2004 10 11 | 557 | 0.1− | 0.2− | 2004 08 31 | 198 | 0.4− | 0.2+ | 2004 09 18 | 240 | 0.3− | 0.1+ | 2004 10 18 | 557 | 0.2− | 0.3+ |
| 2004 05 17 | 151 | 0.1+ | 0.3− | 2004 09 16 | 151 | 0.1− | 0.2− | 2004 10 11 | 557 | 0.1− | 0.1− | 2004 08 31 | 198 | 0.3− | 0.1+ | 2004 09 18 | 240 | 0.3− | 0.2+ | 2004 10 18 | 557 | 0.2− | 0.1+ |
| 2004 05 17 | 151 | 0.4+ | 0.1+ | 2004 09 16 | 151 | 0.2− | 0.0 | 2004 10 12 | 557 | 0.0 | 0.3− | 2004 08 31 | 198 | 0.2− | 0.1+ | 2004 09 18 | 240 | 0.3− | 0.2+ | 2004 10 18 | 557 | 0.3− | 0.0 |
| 2004 05 18 | 434 | 0.4+ | 0.3− | 2004 09 16 | 151 | 0.1− | 0.0 | 2004 10 12 | 557 | 0.0 | 0.2− | 2004 08 31 | 198 | 0.3− | 0.2+ | 2004 09 18 | 240 | 0.3− | 0.2+ | 2004 10 18 | 557 | 0.2− | 0.1+ |
| 2004 05 18 | 434 | 0.0 | 0.1+ | 2004 09 16 | 151 | 0.1− | 0.0 | 2004 10 12 | 557 | 0.0 | 0.1− | 2004 08 31 | 198 | 0.2− | 0.1+ | 2004 09 18 | 240 | 0.3− | 0.1+ | 2004 10 18 | 557 | 0.1− | 0.0 |
| 2004 05 18 | 434 | 0.5+ | 0.5− | 2004 09 16 | 151 | 0.1− | 0.1− | 2004 10 12 | 557 | 0.1+ | 0.3− | 2004 09 01 | A32 | 0.1− | 0.0 | 2004 09 18 | 240 | 0.3− | 0.1+ | 2004 10 19 | 557 | 0.2− | 0.1+ |
| 2004 05 19 | H41 | 0.3+ | 0.3+ | 2004 09 16 | 151 | 0.1− | 0.0 | 2004 10 12 | 704 | 0.1+ | 0.1+ | 2004 09 01 | A32 | 0.1+ | 0.0 | 2004 09 18 | 240 | 0.4− | 0.1+ | 2004 10 19 | 557 | 0.2− | 0.0 |
| 2004 05 19 | H41 | 0.1− | 0.1+ | 2004 09 16 | 151 | 0.2− | 0.0 | 2004 10 12 | 704 | 0.2+ | 0.2+ | 2004 09 01 | A32 | 0.1+ | 0.0 | 2004 09 18 | 240 | 0.3− | 0.1+ | 2004 10 19 | 557 | 0.1− | 0.0 |
| 2004 05 19 | H41 | 0.7− | 0.3− | 2004 09 16 | 151 | 0.1− | 0.0 | 2004 10 12 | 704 | 0.4+ | 0.1+ | 2004 09 01 | A32 | 0.0 | 0.1− | 2004 09 18 | 240 | 0.2− | 0.3+ | 2004 10 19 | H41 | 0.1− | 0.1− |
| 2004 05 19 | H41 | 0.1+ | 0.1− | 2004 09 16 | 151 | 0.1− | 0.1+ | 2004 10 12 | 704 | 0.4+ | 0.2+ | 2004 09 01 | A32 | 0.0 | 0.0 | 2004 09 18 | 240 | 0.2− | 0.2+ | 2004 10 19 | H41 | 0.1− | 0.3− |
| 2004 05 19 | H41 | 0.1− | 0.5− | 2004 09 16 | 118 | 0.1− | 0.0 | 2004 10 12 | 704 | 0.2+ | 0.2+ | 2004 09 01 | A48 | 1.5+ | 1.0+ | 2004 09 18 | 240 | 0.3− | 0.2+ | 2004 10 19 | H41 | 0.0 | 0.4− |
| 2004 05 21 | H41 | 0.0 | 0.7+ | 2004 09 16 | 118 | 0.2− | 0.1+ | 2004 10 12 | 557 | 0.0 | 0.1− | 2004 09 01 | A48 | 1.3+ | 0.7+ | 2004 09 18 | 160 | 0.0 | 0.3+ | 2004 10 19 | H41 | 0.2+ | 0.2− |
| 2004 05 21 | H41 | 0.3+ | 0.1+ | 2004 09 17 | H41 | 0.3+ | 0.3+ | 2004 10 12 | 557 | 0.1− | 0.1− | 2004 09 01 | A48 | 1.4+ | 0.5+ | 2004 09 18 | 160 | 0.0 | 0.0 | 2004 10 19 | H41 | 0.0 | 0.4− |
| 2004 05 21 | H41 | 0.7− | 0.4+ | 2004 09 17 | H41 | 0.1+ | 0.2+ | 2004 10 12 | 557 | 0.1− | 0.1− | 2004 09 02 | A32 | 0.2+ | 0.2− | 2004 09 18 | 160 | 0.0 | 0.1+ | 2004 10 19 | 557 | 0.1− | 0.2− |
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| 2004 05 21 | H41 | 0.1− | 0.2− | 2004 09 17 | H41 | 0.2+ | 0.2+ | 2004 10 12 | J81 | 0.3+ | 0.2+ | 2004 09 02 | A32 | 0.3+ | 0.2− | 2004 09 18 | 160 | 0.1+ | 0.1+ | 2004 10 19 | 557 | 0.0 | 0.1− |
| 2004 05 23 | H41 | 0.0 | 0.1+ | 2004 09 17 | H41 | 0.0 | 0.2+ | 2004 10 12 | 557 | 0.1− | 0.1− | 2004 09 02 | A32 | 0.3+ | 0.0 | 2004 09 18 | 160 | 0.2− | 0.2+ | 2004 10 19 | 557 | 0.1− | 0.1− |
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| 2004 05 23 | H41 | 0.3− | 0.5+ | 2004 09 17 | 118 | 0.2− | 0.0 | 2004 10 12 | J81 | 0.1− | 0.3− | 2004 09 04 | 048 | 0.3− | 0.0 | 2004 09 18 | 160 | 0.0 | 0.0 | 2004 10 19 | 557 | 0.1− | 0.1− |
| 2004 05 23 | H41 | 0.1− | 0.2+ | 2004 09 17 | 118 | 0.0 | 0.1− | 2004 10 12 | 557 | 0.1− | 0.1− | 2004 09 04 | 048 | 0.2− | 0.4− | 2004 09 18 | 160 | 0.1− | 0.0 | 2004 10 19 | 557 | 0.1− | 0.1− |
| 2004 05 23 | H41 | 0.1− | 0.1− | 2004 09 17 | 118 | 0.1+ | 0.0 | 2004 10 12 | J81 | 0.2+ | 0.3+ | 2004 09 04 | 048 | 0.0 | 0.1− | 2004 09 18 | 160 | 0.2+ | 0.1− | 2004 10 20 | 557 | 0.1− | 0.1− |
| 2004 05 27 | 428 | 0.2− | 0.1+ | 2004 09 17 | 048 | 0.2− | 0.0 | 2004 10 12 | 928 | 0.3− | 0.9+ | 2004 09 04 | 048 | 0.2− | 0.1− | 2004 09 18 | 160 | 0.5− | 0.3+ | 2004 10 20 | 557 | 0.1− | 0.1− |
| 2004 05 27 | 428 | 0.4− | 0.3+ | 2004 09 17 | 048 | 0.1+ | 0.2− | 2004 10 12 | 928 | 0.3− | 0.8+ | 2004 09 04 | 048 | 0.1− | 0.2− | 2004 09 18 | 160 | 0.1+ | 0.1− | 2004 10 20 | 557 | 0.0 | 0.1− |
| 2004 05 27 | 428 | 0.4− | 0.3+ | 2004 09 17 | 048 | 0.1+ | 0.0 | 2004 10 12 | 928 | 0.3− | 0.7+ | 2004 09 04 | 048 | 0.1+ | 0.4− | 2004 09 18 | 160 | 0.1− | 0.2+ | 2004 10 20 | 557 | 0.2− | 0.2− |
| 2004 05 27 | 428 | 0.0 | 0.5+ | 2004 09 17 | 048 | 0.3+ | 0.5+ | 2004 10 13 | A30 | 0.0 | 0.2− | 2004 09 05 | 127 | 0.0 | 0.0 | 2004 09 18 | 215 | 0.2+ | 0.5− | 2004 10 20 | H41 | 0.2+ | 0.2− |
| 2004 06 04 | J87 | 0.1+ | 0.1− | 2004 09 17 | A39 | 0.1+ | 0.0 | 2004 10 13 | A30 | 0.2− | 0.0 | 2004 09 05 | 127 | 0.1+ | 0.0 | 2004 09 18 | 215 | 0.0 | 0.1+ | 2004 10 20 | H41 | 0.0 | 0.0 |
| 2004 06 04 | J87 | 0.1− | 0.1+ | 2004 09 17 | 048 | 0.0 | 0.2− | 2004 10 13 | A30 | 0.0 | 0.0 | 2004 09 05 | 127 | 0.2+ | 0.2+ | 2004 09 18 | 215 | 0.0 | 0.1+ | 2004 10 20 | H41 | 0.1− | 0.9− |
| 2004 06 04 | J87 | 0.2+ | 0.1+ | 2004 09 17 | A39 | 0.0 | 0.0 | 2004 10 13 | A30 | 0.0 | 0.2− | 2004 09 06 | 048 | 0.0 | 0.0 | 2004 09 19 | H41 | 0.1+ | 0.1+ | 2004 10 20 | H41 | 0.0 | 0.2− |
| 2004 06 11 | H41 | 0.1+ | 0.1+ | 2004 09 17 | A39 | 0.1− | 0.0 | 2004 10 14 | H41 | 0.2− | 0.1+ | 2004 09 06 | 048 | 0.0 | 0.2+ | 2004 09 19 | H41 | 0.1+ | 0.1+ | 2004 10 20 | H41 | 0.0 | 0.2+ |
| 2004 06 11 | H41 | 0.1− | 0.1− | 2004 09 17 | A16 | 0.1+ | 0.3− | 2004 10 14 | H41 | 0.0 | 0.3+ | 2004 09 06 | 048 | 0.1− | 0.0 | 2004 09 19 | H41 | 0.0 | 0.1+ | 2004 10 22 | 379 | 0.0 | 0.4− |
| 2004 06 11 | H41 | 0.1− | 0.3+ | 2004 09 17 | A16 | 0.1− | 0.0 | 2004 10 14 | H41 | 0.1+ | 0.5+ | 2004 09 06 | 048 | 0.1+ | 0.0 | 2004 09 19 | H41 | 0.1+ | 0.1+ | 2004 10 22 | 379 | 0.2+ | 0.0 |
| 2004 06 11 | H41 | 0.4− | 0.0 | 2004 09 17 | A16 | 0.1+ | 0.1+ | 2004 10 14 | H41 | 0.1+ | 0.1+ | 2004 09 06 | 048 | 0.1+ | 0.0 | 2004 09 19 | H41 | 0.1+ | 0.2+ | 2004 10 22 | 379 | 0.4+ | 0.1− |
| 2004 06 11 | H41 | 0.2+ | 0.3− | 2004 09 17 | A16 | 0.2+ | 0.2− | 2004 10 14 | H41 | 0.1+ | 0.3+ | 2004 09 06 | 048 | 0.1− | 0.1+ | 2004 09 19 | 084 | 0.2− | 0.3+ | 2004 10 22 | 379 | 0.2+ | 0.4+ |
| 2004 06 15 | 807 | 0.9+ | 0.2+ | 2004 09 17 | A16 | 0.1+ | 0.1− | 2004 10 14 | H41 | 0.0 | 0.0 | 2004 09 06 | 048 | 0.0 | 0.0 | 2004 09 19 | 163 | 0.5− | 0.0 | 2004 10 22 | 557 | 0.1− | 0.0 |
| 2004 06 15 | 807 | 0.6+ | 0.1− | 2004 09 18 | A39 | 0.1− | 0.2+ | 2004 10 14 | 379 | 0.5+ | 0.3+ | 2004 09 06 | 048 | 0.1− | 0.1+ | 2004 09 19 | 163 | 0.4− | 0.1− | 2004 10 22 | 113 | 0.0 | 0.3+ |
| 2004 07 18 | E12 | 0.2+ | 0.0 | 2004 09 18 | A39 | 0.0 | 0.2+ | 2004 10 14 | 379 | 0.1− | 0.1− | 2004 09 06 | 127 | 0.1− | 0.1− | 2004 09 19 | 163 | 0.8− | 0.2+ | 2004 10 22 | 113 | 0.0 | 0.3+ |
| 2004 07 18 | E12 | 0.0 | 0.1− | 2004 09 18 | H41 | 0.3+ | 0.1+ | 2004 10 14 | 379 | 0.3+ | 0.1+ | 2004 09 06 | 127 | 0.0 | 0.0 | 2004 09 19 | 163 | 0.2− | 0.1+ | 2004 10 22 | 113 | 0.1+ | 0.3+ |
| 2004 07 18 | E12 | 0.0 | 0.2− | 2004 09 18 | H41 | 0.3+ | 0.2+ | 2004 10 14 | 379 | 0.2− | 0.1+ | 2004 09 06 | 127 | 0.1− | 0.1− | 2004 09 19 | 163 | 0.6− | 0.0 | 2004 10 22 | 113 | 0.0 | 0.5+ |
| 2004 07 18 | E12 | 0.0 | 0.0 | 2004 09 18 | H41 | 0.0 | 0.1− | 2004 10 15 | 355 | 0.5− | 0.0 | 2004 09 06 | 127 | 0.2+ | 0.1+ | 2004 09 20 | 928 | (0.8+ | 3.0−) | 2004 10 22 | 113 | 0.0 | 0.3+ |
| 2004 07 19 | 322 | 0.3+ | 0.1+ | 2004 09 18 | H41 | 0.0 | 0.1+ | 2004 10 15 | 355 | 0.2+ | 0.1+ | 2004 09 06 | 127 | 0.3+ | 0.3+ | 2004 09 20 | 928 | (0.6+ | 2.7−) | 2004 10 22 | 557 | 0.1− | 0.1+ |
| 2004 07 19 | 322 | 0.2+ | 0.2+ | 2004 09 18 | H41 | 0.1+ | 0.1+ | 2004 10 15 | 355 | 0.3+ | 0.6− | 2004 09 06 | 118 | 0.1+ | 0.1− | 2004 09 20 | 928 | (0.7+ | 3.1−) | 2004 10 22 | 557 | 0.1− | 0.0 |
| 2004 07 19 | 322 | 0.5+ | 0.7+ | 2004 09 18 | H41 | 0.1+ | 0.0 | 2004 10 15 | 084 | 0.6+ | 0.1− | 2004 09 06 | 118 | 0.2+ | 0.0 | 2004 09 20 | G72 | 0.0 | 0.4− | 2004 10 22 | A16 | 0.0 | 0.2+ |
| 2004 07 27 | 322 | 0.3+ | 1.6+ | 2004 09 18 | 355 | 0.3− | 0.4+ | 2004 10 15 | J87 | 0.0 | 0.2+ | 2004 09 06 | 118 | 0.1+ | 0.0 | 2004 09 20 | G72 | 0.1+ | 0.1− | 2004 10 22 | A16 | 0.1+ | 0.2− |
| 2004 07 27 | 322 | (0.7+ | 1.9+) | 2004 09 18 | 355 | 0.2− | 0.2+ | 2004 10 15 | J87 | 0.1+ | 0.2+ | 2004 09 06 | 118 | 0.2+ | 0.0 | 2004 09 20 | G72 | 0.1+ | 0.1− | 2004 10 22 | A16 | 0.2+ | 0.2− |
| 2004 08 07 | 762 | 0.6+ | 0.6+ | 2004 09 18 | 355 | 0.3− | 0.3− | 2004 10 15 | J87 | 0.3+ | 0.2+ | 2004 09 06 | 118 | 0.1+ | 0.0 | 2004 09 20 | G72 | 0.1+ | 0.2− | 2004 10 22 | A16 | 0.0 | 0.4− |
| 2004 08 07 | 762 | (2.0+ | 0.1+) | 2004 09 18 | 355 | 0.4− | 0.1+ | 2004 10 15 | J87 | 0.0 | 0.0 | 2004 09 06 | 057 | 0.3− | 0.2− | 2004 09 20 | G72 | 0.1+ | 0.2− | 2004 10 22 | 557 | 0.1− | 0.1− |
| 2004 08 07 | 762 | (1.9+ | 0.2−) | 2004 09 18 | 151 | 0.3− | 0.3+ | 2004 10 17 | 704 | 0.1+ | 0.2+ | 2004 09 07 | 057 | 0.1− | 0.1− | 2004 09 20 | G72 | 0.1+ | 0.1− | 2004 10 22 | 557 | 0.1− | 0.0 |
| 2004 08 26 | 434 | 0.6+ | 0.6− | 2004 09 18 | 151 | 0.3− | 0.2+ | 2004 10 17 | 704 | 0.8+ | 0.2− | 2004 09 07 | 057 | 0.1− | 0.3+ | 2004 09 20 | G72 | 0.1+ | 0.1− | 2004 10 22 | 557 | 0.0 | 0.1− |
| 2004 08 26 | 434 | 1.0+ | 1.4− | 2004 09 18 | 151 | 0.1− | 0.1+ | 2004 10 17 | 704 | 0.1− | 0.4+ | 2004 09 07 | 057 | 0.4− | 0.8− | 2004 09 20 | G72 | 0.1+ | 0.1− | 2004 10 22 | 557 | 0.0 | 0.0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 07 | 057 | 0.0 | 0.1+ | 2004 09 20 | G72 | 0.0 | 0.1− | 2004 10 22 | 557 | 0.1− | 0.0 | 2004 09 10 | A32 | 0.1+ | 0.2+ | 2004 09 21 | H41 | 0.2+ | 0.3+ |
| 2004 09 07 | 057 | 0.4− | 0.2+ | 2004 09 20 | G72 | 0.1+ | 0.2− | 2004 10 22 | 557 | 0.0 | 0.2− | 2004 09 10 | A32 | 0.1+ | 0.1+ | 2004 09 21 | A30 | 0.2+ | 0.3+ |
| 2004 09 07 | 057 | 0.1+ | 0.1− | 2004 09 20 | G72 | 0.1+ | 0.1+ | 2004 10 22 | A06 | 0.3− | 0.3+ | 2004 09 10 | A32 | 0.1+ | 0.1+ | 2004 09 21 | A30 | 0.1− | 0.4− |
| 2004 09 07 | 057 | 0.5− | 0.2− | 2004 09 20 | G72 | 0.1+ | 0.2− | 2004 10 23 | A06 | 0.3− | 0.3− | 2004 09 10 | A32 | 0.2+ | 0.1− | 2004 09 21 | A30 | 0.2+ | 0.1+ |
| 2004 09 07 | 057 | 0.3− | 0.1+ | 2004 09 20 | G72 | 0.1+ | 0.0 | 2004 10 23 | 379 | 0.5− | 0.1− | 2004 09 10 | H41 | 0.0 | 0.6− | 2004 09 21 | A30 | 0.1+ | 0.3− |
| 2004 09 07 | 057 | 0.3− | 0.3− | 2004 09 20 | G72 | 0.1+ | 0.2− | 2004 10 23 | 379 | 0.4− | 0.1+ | 2004 09 10 | H41 | 0.1+ | 0.6− | 2004 09 21 | 938 | 0.4− | 0.2− |
| 2004 09 07 | 084 | 0.9− | 0.9+ | 2004 09 20 | G72 | 0.0 | 0.1− | 2004 10 23 | 379 | 0.1− | 0.3− | 2004 09 10 | H41 | 0.3+ | 0.2− | 2004 09 21 | 938 | 0.2+ | 0.4− |
| 2004 09 07 | 434 | 0.3+ | 0.2− | 2004 09 20 | 932 | 0.0 | 0.1+ | 2004 10 23 | 379 | 0.3− | 0.2+ | 2004 09 10 | H41 | 0.3+ | 0.6− | 2004 09 21 | 938 | 0.1− | 0.2− |
| 2004 09 07 | 434 | 0.1+ | 0.2− | 2004 09 20 | 932 | 0.1+ | 0.1+ | 2004 10 23 | A16 | 0.2+ | 0.4− | 2004 09 10 | H41 | 0.4+ | 0.2− | 2004 09 21 | 938 | 0.0 | 0.1− |
| 2004 09 07 | 434 | 0.1+ | 0.1+ | 2004 09 20 | 932 | 0.0 | 0.1+ | 2004 10 23 | A16 | 0.4+ | 0.4− | 2004 09 10 | H41 | 0.0 | 0.3− | 2004 09 21 | 938 | 0.0 | 0.2− |
| 2004 09 07 | 434 | 0.3− | 0.1+ | 2004 09 20 | 932 | 0.1+ | 0.2+ | 2004 10 23 | A16 | 1.0+ | 0.3+ | 2004 09 10 | H41 | 0.3+ | 0.0 | 2004 09 21 | 938 | 0.2+ | 0.2− |
| 2004 09 07 | 434 | 0.1− | 0.0 | 2004 09 20 | H41 | 0.2+ | 0.0 | 2004 10 23 | A16 | 0.6+ | 0.2− | 2004 09 10 | H41 | 0.1+ | 0.5− | 2004 09 21 | 938 | 0.0 | 0.0 |
| 2004 09 07 | 434 | 0.3+ | 0.0 | 2004 09 20 | H41 | 0.1+ | 0.1+ | 2004 10 23 | A16 | 0.6+ | 0.1− | 2004 09 10 | 084 | 0.8+ | 0.2+ | 2004 09 21 | 938 | 0.1− | 0.1− |
| 2004 09 07 | 434 | 0.1+ | 0.1− | 2004 09 20 | H41 | 0.1+ | 0.1+ | 2004 10 23 | J87 | 0.0 | 0.1− | 2004 09 10 | 589 | 0.3− | 0.6+ | 2004 09 21 | 938 | 0.1− | 0.2− |
| 2004 09 07 | A48 | 1.2+ | 1.0− | 2004 09 20 | H41 | 0.1+ | 0.0 | 2004 10 23 | J87 | 0.6− | 0.5− | 2004 09 10 | 589 | 0.4− | 0.6+ | 2004 09 22 | 294 | 0.2− | 0.3− |
| 2004 09 07 | A48 | 1.1+ | 0.9− | 2004 09 20 | H41 | 0.2+ | 0.1+ | 2004 10 23 | J87 | 0.3− | 0.1− | 2004 09 10 | 589 | 0.3− | 0.4+ | 2004 09 22 | 294 | 1.3− | 0.2− |
| 2004 09 07 | A48 | 1.0+ | 0.8− | 2004 09 20 | 084 | 0.0 | 0.3+ | 2004 10 24 | 704 | 0.1+ | 0.4+ | 2004 09 10 | 046 | 0.0 | 0.1+ | 2004 09 22 | H41 | 0.2+ | 0.2+ |
| 2004 09 07 | 118 | 0.4+ | 0.1− | 2004 09 20 | 057 | 0.3+ | 0.2+ | 2004 10 24 | 704 | 0.0 | 0.2+ | 2004 09 10 | 046 | 0.0 | 0.0 | 2004 09 22 | H41 | 0.0 | 0.0 |
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| 2004 09 07 | 118 | 0.4+ | 0.2− | 2004 09 20 | 057 | 0.2+ | 0.1+ | 2004 10 24 | 704 | 0.5+ | 0.4+ | 2004 09 10 | 046 | 0.0 | 0.0 | 2004 09 22 | H41 | 0.2+ | 0.1+ |
| 2004 09 07 | 118 | 0.4+ | 0.2− | 2004 09 20 | 057 | 0.2+ | 0.4+ | 2004 10 24 | 704 | 0.4+ | 0.6+ | 2004 09 10 | 046 | 0.1− | 0.2+ | 2004 09 22 | H41 | 0.2+ | 0.0 |
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| 2004 09 08 | H41 | 0.1− | 0.2− | 2004 09 20 | 057 | 0.2+ | 0.2+ | 2004 10 24 | 151 | 0.0 | 0.2+ | 2004 09 11 | H41 | 0.3+ | 0.4+ | 2004 09 22 | 379 | 0.1− | 0.1+ |
| 2004 09 08 | H41 | 0.0 | 0.2+ | 2004 09 20 | 160 | 0.3− | 0.1− | 2004 10 24 | 151 | 0.3− | 0.2+ | 2004 09 11 | H41 | 0.1− | 0.2+ | 2004 09 22 | 379 | 0.1− | 0.3+ |
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| 2004 09 08 | 379 | 0.3− | 0.4− | 2004 09 20 | 160 | 0.1− | 0.0 | 2004 10 24 | 151 | 0.4− | 0.1+ | 2004 09 11 | H41 | 0.2+ | 0.3+ | 2004 09 22 | 160 | 0.2− | 0.0 |
| 2004 09 08 | 379 | 0.3− | 0.2+ | 2004 09 20 | 160 | 0.4− | 0.0 | 2004 10 24 | 151 | 0.3− | 0.0 | 2004 09 11 | 379 | 0.6− | 0.3+ | 2004 09 22 | 160 | 0.3− | 0.3− |
| 2004 09 08 | 379 | 0.1+ | 0.7− | 2004 09 20 | 160 | 0.2− | 0.0 | 2004 10 24 | 151 | 0.2− | 0.1+ | 2004 09 11 | 379 | 0.6− | 0.3− | 2004 09 22 | 160 | 0.1− | 0.1+ |
| 2004 09 08 | 379 | 0.5− | 0.5− | 2004 09 20 | 160 | 0.0 | 0.0 | 2004 10 24 | 151 | 0.5− | 0.0 | 2004 09 11 | 379 | 0.2− | 0.2+ | 2004 09 22 | 160 | 0.3− | 0.2− |
| 2004 09 08 | 379 | 0.0 | 0.2− | 2004 09 20 | 160 | 0.2− | 0.1− | 2004 10 24 | 151 | 0.6− | 0.6+ | 2004 09 11 | 379 | 0.8− | 0.5− | 2004 09 22 | 160 | 0.2− | 0.0 |
| 2004 09 08 | 048 | 0.6+ | 0.0 | 2004 09 20 | 160 | 0.2− | 0.1+ | 2004 10 24 | A16 | 0.7− | 0.3− | 2004 09 11 | 379 | 0.0 | 0.1+ | 2004 09 22 | 160 | 0.1+ | 0.1+ |
| 2004 09 08 | 048 | 0.4+ | 0.2+ | 2004 09 20 | 160 | 0.2− | 0.1− | 2004 10 24 | 151 | 0.7− | 0.4+ | 2004 09 11 | 379 | 0.1+ | 0.2+ | 2004 09 22 | 160 | 0.1− | 0.4+ |
| 2004 09 08 | 048 | 0.3+ | 0.1+ | 2004 09 20 | 160 | 0.4− | 0.0 | 2004 10 24 | A16 | 0.0 | 0.1− | 2004 09 11 | 057 | 0.0 | 0.2+ | 2004 09 22 | 160 | 0.2− | 0.0 |
| 2004 09 08 | 048 | 0.6+ | 0.0 | 2004 09 20 | 160 | 0.3− | 0.1− | 2004 10 24 | A16 | 0.3− | 0.3− | 2004 09 11 | 057 | 0.1+ | 0.1− | 2004 09 23 | 294 | 0.1+ | 0.2− |
| 2004 09 08 | 048 | 0.5+ | 0.3+ | 2004 09 20 | 160 | 0.0 | 0.3− | 2004 10 24 | A16 | 0.6− | 0.0 | 2004 09 11 | 057 | 0.1+ | 0.0 | 2004 09 23 | 294 | (2.4− | 1.6−) |
| 2004 09 08 | 048 | 0.3+ | 0.0 | 2004 09 20 | 160 | 0.3− | 0.0 | 2004 10 24 | A16 | 0.4− | 0.4− | 2004 09 11 | 057 | 0.1+ | 0.3+ | 2004 09 23 | J92 | 0.3+ | 0.0 |
| 2004 09 08 | A30 | 0.1− | 0.0 | 2004 09 20 | 160 | 0.2− | 0.2+ | 2004 10 25 | 084 | 1.0− | 0.2+ | 2004 09 11 | 057 | 0.1− | 0.3+ | 2004 09 23 | J92 | 0.0 | 0.1+ |
| 2004 09 08 | A30 | 0.0 | 0.2− | 2004 09 20 | 160 | 0.0 | 0.1+ | 2004 10 28 | 084 | 0.1− | 0.3− | 2004 09 11 | 057 | 0.0 | 0.0 | 2004 09 23 | J92 | 0.0 | 0.0 |
| 2004 09 08 | A30 | 0.1− | 0.0 | 2004 09 20 | 160 | 0.0 | 0.1+ | 2004 10 30 | 185 | 0.2− | 0.2− | 2004 09 11 | 057 | 0.0 | 0.1+ | 2004 09 23 | J92 | 0.2+ | 0.0 |
| 2004 09 08 | A30 | 0.2+ | 0.0 | 2004 09 20 | 160 | 0.1+ | 0.1+ | 2004 10 30 | 185 | 0.1− | 0.2− | 2004 09 11 | 057 | 0.0 | 0.1+ | 2004 09 23 | J92 | 0.1+ | 0.0 |
| 2004 09 08 | A30 | 0.1+ | 0.0 | 2004 09 20 | 160 | 0.0 | 0.1+ | 2004 10 30 | 185 | 0.0 | 0.1− | 2004 09 11 | 057 | 0.2+ | 0.1+ | 2004 09 23 | J94 | 0.3+ | 0.3− |
| 2004 09 08 | 118 | 0.2+ | 0.0 | 2004 09 20 | 160 | 0.4− | 0.1− | 2004 10 30 | 185 | 0.2− | 0.3− | 2004 09 11 | 057 | 0.1− | 0.3+ | 2004 09 23 | J92 | 0.1+ | 0.1+ |
| 2004 09 08 | 118 | 0.1− | 0.4+ | 2004 09 20 | 160 | 0.1− | 0.1+ | 2004 10 30 | 185 | 0.5− | 0.0 | 2004 09 11 | 057 | 0.0 | 0.1− | 2004 09 23 | J92 | 0.2+ | 0.2+ |
| 2004 09 08 | 118 | 0.2+ | 0.1+ | 2004 09 20 | 160 | 0.6− | 0.2+ | 2004 10 30 | 084 | 0.2+ | 0.6+ | 2004 09 11 | 084 | 0.3− | 0.1− | 2004 09 23 | J92 | 0.1+ | 0.1+ |
| 2004 09 08 | 118 | 0.2+ | 0.0 | 2004 09 20 | 160 | 0.1+ | 0.3+ | 2004 10 30 | 185 | 0.4− | 0.0 | 2004 09 12 | 918 | 0.7+ | 0.1− | 2004 09 23 | J94 | 0.6+ | 0.1− |
| 2004 09 08 | 118 | 0.1+ | 0.2+ | 2004 09 20 | 160 | 0.0 | 0.0 | 2004 11 01 | 084 | 0.1− | 0.1+ | 2004 09 12 | 918 | (0.4− | 1.6+) | 2004 09 23 | J92 | 0.1+ | 0.1+ |
| 2004 09 08 | 084 | 0.9− | 0.5− | 2004 09 20 | 160 | 0.1− | 0.2+ | 2004 11 02 | 084 | 0.1+ | 0.3+ | 2004 09 12 | 918 | 0.3+ | 0.0 | 2004 09 23 | J92 | 0.0 | 0.0 |
| 2004 09 09 | A32 | 0.3+ | 0.1− | 2004 09 20 | 160 | 0.3− | 0.0 | 2004 11 03 | 355 | 0.2+ | 0.2− | 2004 09 12 | 918 | 0.1+ | 0.2+ | 2004 09 23 | J92 | 0.0 | 0.1+ |
| 2004 09 09 | A32 | 0.4+ | 0.1− | 2004 09 20 | 160 | 0.1− | 0.3+ | 2004 11 03 | 355 | 0.3+ | 0.5− | 2004 09 12 | 918 | 0.2+ | 0.2+ | 2004 09 23 | J92 | 0.1+ | 0.2+ |
| 2004 09 09 | A32 | 0.3+ | 0.1+ | 2004 09 20 | 160 | 0.2+ | 0.1+ | 2004 11 03 | 355 | 0.1− | 0.0 | 2004 09 12 | 918 | 0.1+ | 0.1+ | 2004 09 23 | J94 | 0.5+ | 0.3− |
| 2004 09 09 | A32 | 0.4+ | 0.1− | 2004 09 21 | 294 | 0.1+ | 0.1+ | 2004 11 03 | 355 | 0.4+ | 0.0 | 2004 09 12 | 918 | 0.3+ | 0.2+ | 2004 09 23 | J92 | 0.2+ | 0.1+ |
| 2004 09 09 | H41 | 0.1− | 0.3+ | 2004 09 21 | 294 | 0.1− | 0.4+ | 2004 11 03 | 104 | 0.1− | 0.7− | 2004 09 12 | 918 | 0.4+ | 0.1+ | 2004 09 23 | J92 | 0.2+ | 0.1+ |
| 2004 09 09 | H41 | 0.2− | 0.2+ | 2004 09 21 | 294 | 0.1+ | 0.1+ | 2004 11 03 | 104 | 0.2− | 0.0 | 2004 09 12 | 918 | 0.2+ | 0.1+ | 2004 09 23 | J92 | 0.0 | 0.2+ |
| 2004 09 09 | H41 | 0.1+ | 0.1+ | 2004 09 21 | H06 | 0.1− | 0.3+ | 2004 11 03 | 104 | 0.2− | 0.1+ | 2004 09 12 | 918 | 0.1+ | 0.1+ | 2004 09 23 | J92 | 0.1+ | 0.1+ |
| 2004 09 09 | H41 | 0.5− | 0.0 | 2004 09 21 | H06 | 0.1− | 0.5+ | 2004 11 03 | 104 | 0.1− | 0.1+ | 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 23 | J92 | 0.2+ | 0.1+ |
| 2004 09 09 | H41 | 0.3− | 0.2+ | 2004 09 21 | H06 | 0.1− | 0.5+ | 2004 11 04 | 644 | 0.2+ | 0.2+ | 2004 09 12 | 918 | 0.4+ | 0.1− | 2004 09 23 | J92 | 0.1+ | 0.2+ |
| 2004 09 09 | H41 | 0.1− | 0.0 | 2004 09 21 | H06 | 0.2− | 0.5+ | 2004 11 04 | 644 | (1.0− | 1.9+) | 2004 09 12 | 918 | 0.3+ | 0.1+ | 2004 09 23 | J92 | 0.1+ | 0.1+ |
| 2004 09 09 | H41 | 0.2− | 0.2+ | 2004 09 21 | H41 | 0.4+ | 0.2+ | 2004 11 04 | 644 | (0.9− | 1.9+) | 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 23 | J92 | 0.1+ | 0.1+ |
| 2004 09 09 | 379 | 0.2− | 0.0 | 2004 09 21 | H41 | 0.3+ | 0.2+ | 2004 11 04 | 355 | 0.5+ | 0.1− | 2004 09 12 | 918 | 0.2+ | 0.1+ | 2004 09 23 | J92 | 0.1+ | 0.2+ |
| 2004 09 09 | 379 | 0.1− | 0.4+ | 2004 09 21 | H41 | 0.3+ | 0.3+ | 2004 11 04 | 355 | 0.2+ | 0.0 | 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 23 | J92 | 0.1+ | 0.2+ |
| 2004 09 09 | 379 | 0.0 | 0.4+ | 2004 09 21 | H41 | 0.4+ | 0.3+ | 2004 11 04 | 355 | 0.6− | 0.5− | 2004 09 12 | 918 | (2.3− | 1.7+) | 2004 09 24 | J92 | 0.3+ | 0.1− |
| 2004 09 09 | 379 | 0.5− | 0.1− | 2004 09 21 | H41 | 0.3+ | 0.4+ | 2004 11 04 | 355 | 0.3+ | 0.4− | 2004 09 12 | 918 | (1.1+ | 1.9−) | 2004 09 24 | J92 | 0.1+ | 0.0 |
| 2004 09 09 | 084 | 0.1− | 0.1− | 2004 09 21 | H41 | 0.2+ | 0.4+ | 2004 11 04 | A30 | 0.4+ | 0.4+ | 2004 09 12 | 918 | (0.8+ | 1.8−) | 2004 09 24 | J92 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 04 | A30 | 0.2− | 0.2− | | | | | | | | | | | | | | | | |
| 2004 11 04 | A30 | 0.3− | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 04 | A30 | 0.3− | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 06 | H41 | 0.1+ | 0.2− | | | | | | | | | | | | | | | | |
| 2004 11 06 | H41 | 0.2+ | 0.1− | | | | | | | | | | | | | | | | |
| 2004 11 06 | H41 | 0.2+ | 0.1− | | | | | | | | | | | | | | | | |
| 2004 11 06 | H41 | 0.2+ | 0.1+ | | | | | | | | | | | | | | | | |
| 2004 11 06 | H41 | 0.3− | 0.9+ | | | | | | | | | | | | | | | | |
| 2004 11 07 | 185 | 0.3+ | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 07 | 185 | 0.0 | 0.3− | | | | | | | | | | | | | | | | |
| 2004 11 07 | 185 | 0.2− | 0.1− | | | | | | | | | | | | | | | | |
| 2004 11 08 | 300 | 0.1+ | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 08 | 300 | 0.4+ | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 08 | 300 | 0.3− | 0.1− | | | | | | | | | | | | | | | | |
| 2004 11 08 | 300 | 0.3+ | 0.1− | | | | | | | | | | | | | | | | |
| 2004 11 08 | A16 | 0.2+ | 0.3− | | | | | | | | | | | | | | | | |
| 2004 11 08 | A16 | 0.2− | 0.3− | | | | | | | | | | | | | | | | |
| 2004 11 08 | A16 | 0.3+ | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 08 | A16 | 0.1+ | 0.2− | | | | | | | | | | | | | | | | |
| 2004 11 08 | A16 | 0.2+ | 0.3− | | | | | | | | | | | | | | | | |
| 2004 11 08 | 565 | 0.1− | 0.2+ | | | | | | | | | | | | | | | | |
| 2004 11 08 | 565 | 0.4− | 0.3+ | | | | | | | | | | | | | | | | |
| 2004 11 08 | 565 | 0.1− | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 08 | 565 | 0.2− | 0.1+ | | | | | | | | | | | | | | | | |
| 2004 11 08 | 565 | 0.2+ | 0.1+ | | | | | | | | | | | | | | | | |
| 2004 11 09 | 703 | 0.1− | 0.1− | | | | | | | | | | | | | | | | |
| 2004 11 09 | 703 | 0.3− | 0.1− | | | | | | | | | | | | | | | | |
| 2004 11 09 | 703 | 0.1− | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 09 | 703 | 0.1− | 0.2− | | | | | | | | | | | | | | | | |
| 2004 11 09 | H41 | 0.3− | 0.1+ | | | | | | | | | | | | | | | | |
| 2004 11 09 | H41 | 0.2− | 0.7− | | | | | | | | | | | | | | | | |
| 2004 11 09 | H41 | 0.3− | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 09 | H41 | 0.3− | 0.4− | | | | | | | | | | | | | | | | |
| 2004 11 09 | H41 | 0.5+ | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 10 | 704 | 0.1− | 0.8+ | | | | | | | | | | | | | | | | |
| 2004 11 10 | 704 | 0.1− | 0.5+ | | | | | | | | | | | | | | | | |
| 2004 11 10 | 704 | 0.0 | 0.4+ | | | | | | | | | | | | | | | | |
| 2004 11 10 | 704 | 0.0 | 0.4+ | | | | | | | | | | | | | | | | |
| 2004 11 10 | 704 | 0.5− | 0.8+ | | | | | | | | | | | | | | | | |
| 2004 11 13 | A16 | 0.3− | 0.4− | | | | | | | | | | | | | | | | |
| 2004 11 13 | A16 | 0.3− | 0.3− | | | | | | | | | | | | | | | | |
| 2004 11 13 | A16 | 0.4− | 0.5− | | | | | | | | | | | | | | | | |
| 2004 11 13 | A16 | 0.5− | 0.6− | | | | | | | | | | | | | | | | |
| 2004 11 13 | A16 | 0.2− | 0.5− | | | | | | | | | | | | | | | | |
| 2004 11 14 | A43 | 0.5− | 0.3+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | A43 | 0.4− | 0.9+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | A43 | (0.5− | 1.6+) | | | | | | | | | | | | | | | | |
| 2004 11 14 | A43 | 0.5− | 1.2+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | A43 | 0.4− | 1.3+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | A43 | 0.4− | 1.0+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | A16 | 0.5− | 0.3+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | A16 | 0.1+ | 0.3+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | 151 | 0.2− | 0.2+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | 151 | 0.2− | 0.4+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | 151 | 0.4− | 0.4+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | A16 | 0.3− | 0.3+ | | | | | | | | | | | | | | | | |
| 2004 11 14 | A16 | 0.1+ | 0.7− | | | | | | | | | | | | | | | | |
| 2004 11 14 | A16 | 0.3+ | 0.3− | | | | | | | | | | | | | | | | |
| 2004 11 14 | 084 | 0.2+ | 0.3+ | | | | | | | | | | | | | | | | |
| 2004 11 15 | A16 | 0.2+ | 0.3− | | | | | | | | | | | | | | | | |
| 2004 11 15 | A16 | 0.3+ | 0.2− | | | | | | | | | | | | | | | | |
| 2004 11 15 | A16 | 0.4+ | 0.4− | | | | | | | | | | | | | | | | |
| 2004 11 15 | A16 | 0.2+ | 0.0 | | | | | | | | | | | | | | | | |
| 2004 11 15 | A16 | 0.7+ | 0.2− | | | | | | | | | | | | | | | | |
| 2004 11 19 | 106 | 0.0 | 0.1− | | | | | | | | | | | | | | | | |
| 2004 11 19 | 106 | 1.0+ | 0.3− | | | | | | | | | | | | | | | | |
| 2004 11 19 | 106 | 0.7− | 0.2+ | | | | | | | | | | | | | | | | |
| 2004 11 21 | 084 | 0.4+ | 0.4− | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 12 | 918 | (1.0+ | 1.7−) | 2004 09 24 | J92 | 0.0 | 0.2+ | 2004 11 21 | A53 | 0.0 | 0.1− |
| 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 24 | J92 | 0.1+ | 0.1+ | 2004 11 21 | A53 | 0.3− | 0.0 |
| 2004 09 12 | 918 | 0.3+ | 0.2− | 2004 09 24 | J92 | 0.1+ | 0.1+ | 2004 12 04 | 704 | (1.1+ | 1.8+) |
| 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 24 | J92 | 0.1+ | 0.1+ | 2004 12 04 | 704 | 0.3+ | 0.2+ |
| 2004 09 12 | 918 | 0.1+ | 0.1+ | 2004 09 24 | J92 | 0.0 | 0.2+ | 2004 12 04 | 704 | 0.2+ | 0.3+ |
| 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 24 | J92 | 0.1+ | 0.0 | 2004 12 04 | 704 | 0.0 | 0.6+ |
| 2004 09 12 | 918 | 0.2+ | 0.1− | 2004 09 24 | J92 | 0.3+ | 0.0 | 2004 12 04 | 704 | 0.2− | 0.1+ |
| 2004 09 12 | 918 | 0.4+ | 1.3− | 2004 09 24 | J92 | 0.1+ | 0.1− | 2004 12 09 | 704 | (0.3+ | 1.7+) |
| 2004 09 12 | 918 | 0.8− | 0.1− | 2004 09 24 | J92 | 0.0 | 0.1+ | 2004 12 09 | 704 | 0.2− | 0.7+ |
| 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 24 | J92 | 0.1− | 0.0 | 2004 12 09 | 704 | 0.1+ | 0.3− |
| 2004 09 12 | 918 | 0.3+ | 0.1+ | 2004 09 24 | J92 | 0.1− | 0.1− | 2004 12 09 | 704 | 0.2+ | 1.1+ |
| 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 24 | J92 | 0.2− | 0.2+ | 2004 12 09 | 704 | 0.4− | 1.5− |
| 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 24 | J92 | 0.2+ | 0.1− | 2004 12 09 | A53 | 0.7− | 1.1− |
| 2004 09 12 | 918 | 0.3+ | 0.1− | 2004 09 24 | J92 | 0.2+ | 0.1− | 2004 12 09 | A53 | 1.0+ | 1.3+ |
| 2004 09 12 | 918 | 0.2+ | 0.3− | 2004 09 24 | J92 | 0.1+ | 0.1− | 2004 12 15 | 246 | 0.3− | 0.6+ |
| 2004 09 12 | 918 | 0.1− | 0.4+ | 2004 09 24 | J92 | 0.1+ | 0.1+ | 2004 12 15 | 246 | 0.4− | 0.3+ |
| 2004 09 12 | 918 | 0.5+ | 0.9− | 2004 09 24 | 084 | 0.0 | 0.2− | 2004 12 15 | 246 | 0.7− | 0.7+ |
| 2004 09 12 | 918 | 0.7+ | 0.9− | 2004 09 26 | H41 | 0.3− | 0.1− | 2004 12 15 | 246 | 0.4− | 0.3+ |
| 2004 09 12 | 918 | 0.7+ | 0.8− | 2004 09 26 | H41 | 0.3+ | 0.6− | 2004 12 15 | 246 | 0.2− | 0.5+ |
| 2004 09 12 | 918 | 0.3+ | 0.1− | 2004 09 26 | H41 | 0.2+ | 0.0 | 2004 12 15 | 246 | 0.3− | 0.4+ |
| 2004 09 12 | 918 | 0.2+ | 0.1+ | 2004 09 26 | H41 | 0.2+ | 0.1− | 2005 01 07 | 704 | 0.1+ | 0.5+ |
| 2004 09 12 | 918 | 0.4+ | 0.2− | 2004 09 26 | H41 | 0.1+ | 0.1+ | 2005 01 07 | 704 | 1.3− | 0.2+ |
| 2004 09 12 | 918 | 1.2+ | 0.7− | 2004 09 26 | H41 | 0.1+ | 0.0 | 2005 01 07 | 704 | 0.4+ | 1.1+ |
| 2004 09 12 | H41 | 0.1+ | 0.1− | 2004 09 26 | A48 | 0.3+ | 0.6− | 2005 01 07 | 704 | 0.7− | 1.0+ |
| 2004 09 12 | 918 | 0.5− | 0.7+ | 2004 09 26 | A48 | 0.2+ | 0.8− | 2006 01 08 | G96 | 1.4− | 0.1+ |
| 2004 09 12 | H41 | 0.5+ | 0.1− | 2004 09 26 | A48 | 0.2+ | 0.5− | 2006 01 08 | G96 | 0.4+ | 0.2+ |
| 2004 09 12 | 918 | 0.2+ | 0.1+ | 2004 09 27 | 750 | 0.0 | 0.2− | 2006 01 08 | G96 | 0.4− | 0.3− |
| 2004 09 12 | H41 | 0.2+ | 0.1+ | 2004 09 27 | 750 | 0.1− | 0.2− | 2006 01 08 | G96 | 0.2− | 0.1− |
| 2004 09 12 | H41 | 0.1+ | 0.1− | 2004 09 27 | 750 | 0.3− | 0.1− | 2006 01 09 | 291 | 0.5+ | 0.5+ |
| 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 27 | 750 | 0.1− | 0.1− | 2006 01 09 | 291 | 0.2+ | 0.5+ |
| 2004 09 12 | H41 | 0.1+ | 0.2+ | 2004 09 27 | 750 | 0.2− | 0.1− | 2006 01 09 | 291 | 0.3+ | 0.5+ |
| 2004 09 12 | H41 | 0.4+ | 0.2− | 2004 09 27 | 750 | 0.1− | 0.1− | 2006 01 09 | G96 | 0.1− | 0.0 |
| 2004 09 12 | 918 | 0.0 | 0.0 | 2004 09 27 | 750 | 0.1− | 0.0 | 2006 01 09 | G96 | 0.1− | 0.3+ |
| 2004 09 12 | H41 | 0.1+ | 0.3+ | 2004 09 27 | 750 | 0.1− | 0.1− | 2006 01 09 | G96 | 0.6− | 0.4+ |
| 2004 09 12 | 918 | 0.2− | 0.2− | 2004 09 27 | 750 | 0.1− | 0.0 | 2006 01 09 | G96 | 1.2− | 0.9+ |
| 2004 09 12 | 918 | 0.0 | 0.1− | 2004 09 27 | 750 | 0.0 | 0.1− | 2006 01 10 | G96 | 0.1− | 0.2+ |
| 2004 09 12 | 918 | 0.3+ | 0.1+ | 2004 09 27 | 750 | 0.0 | 0.1− | 2006 01 10 | G96 | 0.1− | 0.2− |
| 2004 09 12 | 918 | 0.1+ | 0.0 | 2004 09 27 | 750 | 0.0 | 0.0 | 2006 01 10 | G96 | 0.5+ | 0.2− |
| 2004 09 12 | 918 | 0.2+ | 0.1− | 2004 09 27 | 750 | 0.1− | 0.2− | 2006 01 10 | G96 | 0.1+ | 0.2− |
| 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 27 | 750 | 0.1− | 0.2− | 2006 01 10 | G96 | 0.2+ | 0.3+ |
| 2004 09 12 | 918 | 0.6+ | 0.7− | 2004 09 27 | 750 | 0.1− | 0.0 | 2006 01 10 | G96 | 0.4+ | 0.3+ |
| 2004 09 12 | 918 | 0.5− | 1.2+ | 2004 09 27 | 750 | 0.0 | 0.1− | 2006 01 10 | G96 | 0.2+ | 0.2− |
| 2004 09 12 | 918 | 0.1− | 0.1− | 2004 09 27 | 750 | 0.0 | 0.2− | 2006 01 10 | G96 | 0.1− | 0.1+ |
| 2004 09 12 | 918 | 0.6+ | 1.2− | 2004 09 27 | 750 | 0.1− | 0.0 | 2006 01 30 | 711 | 1.2− | 1.0+ |
| 2004 09 12 | 918 | 0.8− | 1.2+ | 2004 09 27 | 750 | 0.0 | 0.1− | 2006 01 30 | 711 | 0.0 | 0.5+ |
| 2004 09 12 | 918 | 0.1+ | 0.1+ | 2004 09 27 | H41 | 0.0 | 0.2− | 2006 01 30 | 711 | 0.7− | 0.9+ |
| 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 27 | H41 | 0.1− | 0.1− | 2006 01 31 | G96 | 0.3+ | 0.2− |
| 2004 09 12 | 918 | (0.8− | 1.9+) | 2004 09 27 | H41 | 0.1− | 0.0 | 2006 01 31 | G96 | 0.1+ | 0.0 |
| 2004 09 12 | 918 | 0.3+ | 0.5− | 2004 09 27 | H41 | 0.2− | 0.0 | 2006 01 31 | G96 | 0.4+ | 0.1+ |
| 2004 09 12 | 918 | 0.3+ | 0.0 | 2004 09 27 | H41 | 0.0 | 0.0 | 2006 01 31 | G96 | 0.0 | 0.4+ |
| 2004 09 12 | 918 | 0.2+ | 0.2+ | 2004 09 27 | 160 | 0.2− | 0.1+ | 2006 01 31 | G96 | 0.1+ | 0.3+ |
| 2004 09 12 | 918 | 0.1+ | 0.2+ | 2004 09 27 | 160 | 0.2− | 0.0 | 2006 01 31 | G96 | 0.8+ | 0.1+ |
| 2004 09 12 | 918 | 0.1+ | 0.3+ | 2004 09 27 | 160 | 0.2− | 0.1+ | 2006 01 31 | G96 | 0.4+ | 0.2+ |
| 2004 09 12 | 918 | 0.3+ | 0.1+ | 2004 09 27 | 160 | 0.2− | 0.3+ | 2006 03 03 | G96 | 0.2− | 0.2+ |
| 2004 09 12 | 918 | 0.2+ | 0.0 | 2004 09 27 | 160 | 0.1− | 0.2+ | 2006 03 03 | G96 | 0.1+ | 0.3+ |
| 2004 09 12 | 918 | (1.2+ | 1.9−) | 2004 09 27 | 160 | 0.2− | 0.2+ | 2006 03 03 | G96 | 0.1− | 0.1+ |
| 2004 09 12 | 918 | (1.2+ | 1.8−) | 2004 09 27 | 160 | 0.1− | 0.1+ | 2006 03 03 | G96 | 0.4− | 0.0 |

**(144412)∗ 2004 EH$_{10}$ = 2001 QO$_{120}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69686)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 36.43007 | | (2000.0) | | | | |
| $n$ | 0.22747857 | $\omega$ | 176.64077 | | +0.96176115 | | +0.27184927 |
| $a$ | 2.6577190 | $\Omega$ | 167.43186 | | −0.25472777 | | +0.93258032 |
| $e$ | 0.1541227 | $i$ | 8.82102 | | −0.10064423 | | +0.23746982 |
| $P$ | 4.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.0 | 2003 01 05 | 704 | (1.0− | 2.2+) | 2006 09 30 | 699 | 0.6− | 0.6+ |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2003 01 05 | 704 | (1.0− | 1.9+) | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 2000 05 05 | 645 | 0.1− | 0.0 | 2003 01 05 | 704 | (1.4− | 2.2+) | 2006 09 30 | 703 | 1.5− | 0.2+ |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2003 01 11 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 699 | 0.6− | 0.5+ |
| 2001 06 29 | 608 | 0.2+ | 0.3− | 2003 01 11 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.9− |
| 2001 06 29 | 608 | 0.3+ | 0.3− | 2003 01 11 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.6− |
| 2001 06 29 | 608 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.9+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2001 07 17 | 608 | 0.5− | 0.9+ | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.7+ |
| 2001 07 17 | 608 | 0.5− | 1.5+ | 2004 02 26 | 704 | 1.0+ | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2001 07 17 | 608 | 0.5− | 1.1+ | 2004 02 26 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2001 07 27 | 608 | 0.1− | 0.1− | 2004 03 14 | 691 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2001 07 27 | 608 | 0.1− | 0.1− | 2004 03 14 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2001 07 27 | 608 | 0.5− | 0.0 | 2004 03 14 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2001 08 19 | 704 | 0.3+ | 0.5+ | 2004 03 15 | 599 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.5− | 0.8+ |
| 2001 08 19 | 704 | 1.2+ | 0.2+ | 2004 03 15 | 599 | 0.7+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2001 08 19 | 704 | (1.8+ | 0.5−) | 2004 03 15 | 599 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2001 08 19 | 704 | (2.2+ | 1.9+) | 2004 03 15 | 599 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2001 08 25 | 704 | 1.0+ | 0.4+ | 2004 03 18 | 691 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.5− | 0.2− |
| 2001 08 25 | 704 | (0.1+ | 1.8+) | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.7+ | 0.1+ |
| 2001 08 25 | 704 | 0.1+ | 1.3+ | 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 1.3+ | 2005 07 04 | 599 | (0.1− | 2.0+) | 2006 11 13 | 703 | 0.0 | 0.5+ |
| 2001 08 25 | 704 | (0.6− | 1.6+) | 2005 07 04 | 599 | (1.8+ | 0.4+) | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2002 12 14 | 704 | (0.8+ | 2.2+) | 2005 07 04 | 599 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.8+ | 0.1+ |
| 2002 12 14 | 704 | 0.9+ | 0.3+ | 2005 07 04 | 599 | 0.2+ | 0.8+ | 2006 11 19 | 703 | 0.6+ | 0.2+ |
| 2002 12 14 | 704 | (2.2+ | 0.0 ) | 2006 09 30 | 699 | 0.6+ | 1.1− | 2006 11 19 | 703 | 0.2− | 0.2+ |
| 2003 01 05 | 704 | (2.6− | 1.6+) | 2006 09 30 | 699 | 0.6− | 0.2+ | | | | |

**(144413)∗ 2004 EF$_{11}$ = 1999 TU$_{196}$**

Discovered 2004 Mar. 10 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69686)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 327.65576 | | (2000.0) | | | | |
| $n$ | 0.28192520 | $\omega$ | 67.51719 | | +0.26463530 | | −0.96414653 |
| $a$ | 2.3034571 | $\Omega$ | 7.22310 | | +0.81700478 | | +0.21328027 |
| $e$ | 0.1844198 | $i$ | 9.03225 | | +0.51231958 | | +0.15790184 |
| $P$ | 3.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | (1.0+ | 1.8+) | 2006 11 15 | 704 | 0.2+ | 0.4+ |
| 1999 10 12 | 704 | 0.4− | 0.7+ | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 11 15 | 704 | 0.0 | 0.1+ |
| 1999 10 12 | 704 | 0.6− | 0.5− | 2004 03 15 | 704 | 0.5− | 0.8+ | 2006 11 15 | 704 | 0.0 | 0.9+ |
| 1999 10 13 | 704 | 0.6+ | 0.7− | 2006 09 22 | 699 | 0.8+ | 0.9+ | 2006 11 15 | 704 | 0.3− | 0.1+ |
| 1999 10 13 | 704 | 0.3+ | 1.2+ | 2006 09 22 | 699 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.1+ | 0.9− | 2006 09 22 | 699 | 1.2− | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.4+ |
| 1999 10 13 | 704 | 1.3− | 0.0 | 2006 09 22 | 699 | 0.6− | 1.3+ | 2006 11 15 | 703 | 0.4+ | 0.4− |
| 1999 10 13 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 704 | 0.4− | 0.5− | 2006 11 15 | 703 | 0.4+ | 0.2− |
| 1999 11 08 | 699 | 0.1+ | 0.6− | 2006 09 25 | 704 | 0.0 | 0.7+ | 2006 11 15 | 703 | 0.0 | 0.3− |
| 1999 11 08 | 699 | 0.2+ | 1.1+ | 2006 09 25 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.0 |
| 1999 11 08 | 699 | 0.0 | 1.3− | 2006 10 19 | 703 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.4+ | 0.8− |
| 2002 08 13 | 644 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.5− |
| 2002 08 13 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.0 | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2002 08 13 | 644 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.3+ | 2006 11 17 | 644 | 0.1+ | 0.2− |
| 2003 12 25 | 645 | 0.0 | 0.1− | 2006 10 20 | A50 | 0.1+ | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.4− |
| 2003 12 25 | 645 | 0.0 | 0.1− | 2006 10 20 | A50 | 0.3+ | 0.4− | 2006 11 21 | 703 | 0.7+ | 0.4− |
| 2004 02 17 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 704 | 0.8− | 0.2+ | 2006 11 21 | 703 | 0.2+ | 0.6− |
| 2004 02 17 | 704 | 0.0 | 0.9+ | 2006 10 20 | 704 | (1.8− | 0.6+) | 2006 11 21 | 703 | 0.7+ | 0.5− |
| 2004 02 17 | 704 | 0.7+ | 0.6+ | 2006 10 20 | 704 | 0.3− | 0.5+ | 2006 11 21 | 703 | 0.1− | 0.3− |
| 2004 02 17 | 704 | 1.0+ | 1.0+ | 2006 10 20 | 704 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.5− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 10 | 644 | 0.1− | 0.2+ | 2006 11 15 | 703 | (5.1− | 2.7+) | 2006 11 29 | 704 | 0.7− | 0.4− |
| 2004 03 10 | 644 | 0.1− | 0.3+ | 2006 11 15 | 703 | (0.6− | 2.6+) | 2006 11 29 | 704 | 0.0 | 0.8− |
| 2004 03 10 | 644 | 0.3− | 0.4+ | 2006 11 15 | 703 | 0.4− | 1.1+ | 2006 11 29 | 704 | 0.6− | 0.5+ |
| 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 11 15 | 703 | 0.1− | 0.3− | | | | |

**(144414)∗ 2004 EM$_{11}$ = 2000 QX$_{249}$**

Discovered 2004 Mar. 10 by NEAT at Palomar.

Id. A. Doppler (*MPO* 72998)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.44567 | | (2000.0) | | | |
| $n$ | 0.18663292 | $\omega$ | 117.69404 | | −0.20025068 | +0.97157164 |
| $a$ | 3.0325680 | $\Omega$ | 140.10345 | | −0.95389960 | −0.16393092 |
| $e$ | 0.1311591 | $i$ | 11.35518 | | −0.22355137 | −0.17080750 |
| $P$ | 5.28 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.5− | 0.7+ | 2004 02 15 | 703 | 0.1− | 0.7+ | 2005 07 05 | 704 | 0.3− | 0.4+ |
| 1995 07 24 | 691 | 0.1+ | 0.1+ | 2004 02 15 | 703 | 0.2− | 0.5+ | 2005 07 05 | 704 | 0.4+ | 0.1+ |
| 1995 07 24 | 691 | 0.0 | 0.1+ | 2004 02 15 | 703 | 1.2− | 1.0+ | 2005 07 05 | 704 | 0.9− | 0.1+ |
| 1996 10 09 | 691 | 0.5− | 0.4− | 2004 02 17 | 704 | 1.2− | 1.1+ | 2006 08 28 | 699 | 0.5− | 0.6+ |
| 1996 10 09 | 691 | 0.5− | 0.2− | 2004 02 17 | 704 | 0.0 | 1.1+ | 2006 08 28 | 699 | 0.7+ | 0.6+ |
| 1996 10 09 | 691 | 0.5− | 0.2− | 2004 02 17 | 704 | 0.0 | 0.5+ | 2006 08 28 | 699 | 0.6− | 1.3+ |
| 1999 03 20 | 699 | 1.1+ | 0.8+ | 2004 02 17 | 704 | (0.3− | 3.0+) | 2006 08 28 | 699 | 0.0 | 0.3− |
| 1999 03 20 | 699 | 0.8+ | 0.1+ | 2004 02 17 | 704 | 0.2− | 0.7+ | 2006 09 12 | 703 | 0.1+ | 0.3+ |
| 1999 03 20 | 699 | 1.1+ | 0.1+ | 2004 02 17 | 333 | 0.6+ | 0.5+ | 2006 09 12 | 703 | 0.1− | 0.6+ |
| 1999 03 20 | 699 | 0.6+ | 1.1+ | 2004 02 17 | 333 | 0.8+ | 0.0 | 2006 09 12 | 703 | (2.4− | 0.1+) |
| 1999 03 20 | 699 | (2.3+ | 0.3+) | 2004 02 17 | 333 | 0.4− | 0.1− | 2006 09 12 | 703 | 0.4− | 0.2− |
| 1999 03 20 | 699 | 1.9+ | 0.6+ | 2004 03 10 | 644 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.8+ | 0.0 |
| 2000 07 10 | 691 | 0.3− | 0.4+ | 2004 03 10 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.0 | 0.7− |
| 2000 07 10 | 691 | 0.1− | 0.5+ | 2004 03 10 | 644 | 0.9+ | 0.0 | 2006 09 18 | 703 | 0.6− | 0.6− |
| 2000 07 10 | 691 | 0.2− | 0.4+ | 2004 03 14 | 703 | 0.2+ | 1.0+ | 2006 09 18 | 703 | 0.7+ | 0.3− |
| 2000 08 01 | 704 | 0.4− | 0.6+ | 2004 03 14 | 703 | 0.5− | 0.9+ | 2006 09 20 | 703 | 0.4− | 0.1− |
| 2000 08 01 | 704 | 0.2− | 0.4+ | 2004 03 14 | 703 | 0.1+ | 0.6+ | 2006 09 20 | 703 | 1.1− | 0.9− |
| 2000 08 01 | 704 | 0.7+ | 0.6+ | 2004 03 14 | 703 | 0.2− | 0.5+ | 2006 09 20 | 703 | 0.4− | 1.2+ |
| 2000 08 01 | 704 | 0.3− | 0.0 | 2004 03 15 | 704 | 0.6+ | 1.4+ | 2006 09 20 | 703 | 0.0 | 1.3+ |
| 2000 08 01 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 1.1+ | 1.5+ | 2006 09 21 | 699 | 0.1− | 1.0+ |
| 2000 08 26 | 704 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.5+ | 2006 09 21 | 699 | 0.6+ | 0.1+ |
| 2000 08 26 | 704 | 0.2+ | 0.1− | 2004 03 15 | 704 | (0.4− | 1.7+) | 2006 09 21 | 699 | 0.7− | 0.3+ |
| 2000 08 26 | 704 | 1.0+ | 0.3+ | 2004 03 15 | 704 | (0.1− | 1.8+) | 2006 09 21 | 699 | 0.1− | 0.2− |
| 2000 08 26 | 704 | 0.2+ | 0.4− | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.6+ |
| 2001 09 18 | 645 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 2001 09 18 | 645 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.4+ |
| 2001 09 19 | 645 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.2− |
| 2001 09 19 | 645 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.0 | 0.6+ |
| 2001 10 15 | 644 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.7+ | 0.4+ | 2006 10 02 | 703 | 0.1+ | 0.0 |
| 2001 10 15 | 644 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2006 10 02 | 703 | 0.4+ | 0.3+ |
| 2001 10 15 | 644 | 0.2+ | 0.4+ | 2004 03 22 | 704 | 1.1+ | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.3+ |
| 2001 10 23 | 699 | 0.2− | 1.2+ | 2004 03 22 | 704 | 0.6− | 0.8− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 10 23 | 699 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.8+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2001 10 23 | 699 | 1.2− | 0.6− | 2004 03 26 | 703 | 0.4+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 10 23 | 699 | 0.4− | 1.3+ | 2004 03 26 | 703 | 0.9− | 0.2− | 2006 10 28 | 703 | 0.9− | 0.4− |
| 2001 10 23 | 644 | 0.4− | 0.6+ | 2004 03 26 | 703 | 0.4− | 0.5+ | 2006 10 28 | 703 | 0.7− | 0.1− |
| 2001 10 23 | 644 | 0.3− | 0.8+ | 2004 03 26 | 703 | 1.5− | 0.1+ | 2006 10 28 | 703 | 0.4− | 0.7+ |
| 2001 10 23 | 644 | 0.3− | 0.7+ | 2005 07 05 | 704 | 0.3− | 0.4− | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 2004 02 15 | 703 | 0.5− | 1.2+ | 2005 07 05 | 704 | 0.6+ | 0.1− | | | | |

**(144415)∗ 2004 ES$_{11}$ = 2001 UF$_{129}$**

Discovered 2004 Mar. 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62007)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 122.02398 | | (2000.0) | | | |
| $n$ | 0.21224898 | $\omega$ | 232.48122 | | −0.18867407 | +0.97677513 |
| $a$ | 2.7833788 | $\Omega$ | 27.17203 | | −0.81619415 | −0.09846642 |
| $e$ | 0.1247962 | $i$ | 12.84852 | | −0.54610365 | −0.19030165 |
| $P$ | 4.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.8+ | 0.6+ | 2004 03 21 | 704 | 0.6+ | 0.2+ | 2005 06 08 | E12 | 0.1+ | 0.4+ |
| 2001 08 27 | 699 | 0.8+ | 0.2+ | 2004 03 21 | 704 | 0.3+ | 0.4+ | 2005 07 04 | E12 | 0.0 | 0.6+ |
| 2001 08 27 | 699 | 0.6+ | 0.2+ | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2005 07 04 | E12 | 0.8− | 1.0+ |
| 2001 08 27 | 699 | 0.2+ | 1.0+ | 2004 03 22 | 704 | 0.4+ | 0.4+ | 2005 07 04 | E12 | 0.9− | 1.0+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.9+ | 0.4+ | 2005 07 04 | E12 | 0.4− | 0.4+ |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2005 07 25 | E12 | 0.0 | 0.8+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.7+ | 1.1+ | 2005 07 25 | E12 | 0.5+ | 0.5+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.0 | 2005 07 25 | E12 | 0.3− | 0.8+ |
| 2001 10 20 | 704 | 0.6− | 0.3+ | 2004 03 23 | 704 | 0.4+ | 0.7− | 2005 07 25 | E12 | 0.0 | 0.6+ |
| 2001 10 20 | 704 | 0.5− | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.6− | 2005 08 06 | E12 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 1.3− | 0.1− | 2004 03 23 | 704 | 0.2− | 0.1+ | 2005 08 06 | E12 | 0.6− | 0.7+ |
| 2001 10 20 | 704 | 0.5− | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.8− | 2005 08 06 | E12 | 1.0− | 0.2+ |
| 2001 10 20 | 704 | 1.0− | 0.6+ | 2004 03 23 | 704 | 0.0 | 0.2− | 2005 08 06 | E12 | 0.5+ | 0.6+ |
| 2001 10 24 | 704 | 0.5− | 1.2− | 2004 03 23 | 704 | 0.8+ | 0.7− | 2005 08 24 | E12 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.3− | 1.3− | 2004 03 23 | 704 | 0.5+ | 0.4+ | 2005 08 24 | E12 | 0.0 | 0.8+ |
| 2001 10 24 | 704 | 0.4+ | 1.1− | 2004 03 23 | 704 | 0.5+ | 0.7− | 2005 08 24 | E12 | 0.0 | 0.4+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.8− | 2005 08 24 | E12 | 0.1− | 0.8+ |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2004 03 26 | 703 | 0.4+ | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2001 12 10 | 645 | 0.1+ | 0.0 | 2004 03 26 | 703 | 0.2− | 0.4− | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2001 12 10 | 645 | 0.0 | 0.1− | 2004 03 26 | 703 | 0.5+ | 0.2− | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2004 02 17 | 704 | 0.3− | 0.1− | 2004 03 26 | 703 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2004 02 17 | 704 | 0.3+ | 0.4+ | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2004 02 17 | 704 | 0.1− | 0.6+ | 2004 03 27 | 691 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 2004 02 17 | 704 | 0.6− | 0.2+ | 2004 03 27 | 691 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.1+ |
| 2004 03 10 | 644 | 0.2+ | 0.0 | 2004 03 28 | 691 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2004 03 10 | 644 | 0.2+ | 0.1+ | 2004 03 28 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.9+ |
| 2004 03 10 | 644 | 0.2+ | 0.2+ | 2004 03 28 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 704 | 0.6+ | 0.6+ | 2004 03 29 | 049 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1+ |
| 2004 03 15 | 704 | 0.1+ | 0.6+ | 2004 03 29 | 049 | 1.1− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 704 | 0.2− | 1.0+ | 2004 03 29 | 049 | 1.4− | 0.2− | 2006 10 19 | 691 | 0.4− | 0.3+ |
| 2004 03 15 | 704 | 0.5+ | 0.4− | 2004 04 13 | 703 | 0.0 | 1.0+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2004 03 15 | 704 | 0.4+ | 0.5+ | 2004 04 13 | 703 | (0.1+ | 1.9+) | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.3+ | 2004 04 13 | 703 | (0.6− | 1.6+) | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2004 04 13 | 703 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.4+ |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2004 04 15 | 704 | 0.7+ | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2004 03 20 | 704 | 0.8+ | 1.1+ | 2004 04 15 | 704 | 0.8− | 0.3− | 2006 10 31 | 691 | 0.2− | 0.5+ |
| 2004 03 20 | 704 | 0.5+ | 0.7+ | 2004 04 15 | 704 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2004 03 20 | 704 | 0.8+ | 0.9+ | 2004 04 15 | 704 | 1.4+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 0.7+ | 0.7+ | 2005 06 08 | E12 | 0.1− | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2004 03 20 | 704 | (0.3+ | 1.5+) | 2005 06 08 | E12 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 03 21 | 704 | 0.6+ | 0.2− | 2005 06 08 | E12 | 0.1− | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.2− |

**(144416)∗ 2004 EZ$_{11}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.86275 | | (2000.0) | | | |
| $n$ | 0.27653193 | $\omega$ | 103.01134 | | +0.32038640 | −0.94615034 |
| $a$ | 2.3333105 | $\Omega$ | 328.18181 | | +0.83145040 | +0.30433771 |
| $e$ | 0.1644183 | $i$ | 5.04798 | | +0.45391936 | +0.11035439 |
| $P$ | 3.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.1− | 0.1− | 2004 02 26 | 704 | 0.7− | 0.0 | 2006 09 28 | 703 | 0.5+ | 1.4− |
| 1999 12 12 | 704 | 0.4+ | 0.8− | 2004 02 26 | 704 | 0.7− | 0.7+ | 2006 09 28 | 703 | 0.1− | 0.2− |
| 1999 12 12 | 704 | 0.3− | 0.4− | 2004 03 11 | 644 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.8− | 0.2+ |
| 1999 12 12 | 704 | 0.1+ | 0.3− | 2004 03 11 | 644 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.4− | 0.2+ |
| 2000 01 04 | 704 | 1.1+ | 0.6+ | 2004 03 11 | 644 | 0.4+ | 0.2+ | 2006 10 27 | 703 | 1.0− | 0.4− |
| 2000 01 04 | 704 | 1.0− | 0.1+ | 2004 03 15 | 704 | 1.2+ | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.2− | 0.6− | 2004 03 15 | 704 | 0.8+ | 0.0 | 2006 10 27 | 703 | 0.7− | 0.3− |
| 2002 08 17 | 644 | 0.0 | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2002 08 17 | 644 | 0.3− | 0.7+ | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.7+ |
| 2002 08 17 | 644 | 0.3+ | 0.5+ | 2004 03 18 | 704 | (2.0+ | 1.4+) | 2006 11 15 | 703 | 0.5+ | 0.2+ |
| 2002 09 02 | 291 | 0.1− | 0.2+ | 2004 03 18 | 704 | (1.9+ | 0.4+) | 2006 11 15 | 703 | 0.5+ | 1.2+ |
| 2002 09 02 | 291 | 0.2− | 0.2+ | 2004 03 18 | 704 | 1.1+ | 1.1+ | 2006 11 15 | 703 | (0.5− | 1.9+) |
| 2002 09 02 | 291 | 0.2− | 0.2+ | 2004 03 18 | 704 | 1.3+ | 1.3+ | 2006 11 16 | 704 | (1.0− | 1.7+) |
| 2004 02 14 | 608 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 0.2+ | 1.0− | 2006 11 16 | 704 | 0.5− | 0.3+ |
| 2004 02 14 | 608 | 0.1+ | 0.3+ | 2004 03 18 | 704 | 0.2− | 0.4− | 2006 11 16 | 704 | 0.6+ | 0.1+ |
| 2004 02 14 | 608 | 0.1+ | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.7− | 2006 11 22 | 703 | 0.4+ | 0.7+ |
| 2004 02 26 | 704 | 0.7− | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.2− | 0.7+ |
| 2004 02 26 | 704 | 0.5− | 0.4+ | 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.4+ | 0.4+ |
| 2004 02 26 | 704 | 1.3− | 0.6− | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.5− | 0.4+ |

**(144417)∗ 2004 EU$_{12}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 117.90440 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18697963 | $\omega$ | 211.94948 | | −0.45778853 | | +0.88786475 | | |
| $a$ | 3.0288180 | $\Omega$ | 30.87678 | | −0.79561925 | | −0.38597923 | | |
| $e$ | 0.1753481 | $i$ | 5.15458 | | −0.39676148 | | −0.25043206 | | |
| $P$ | 5.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.6+ | 0.7− | 2006 09 18 | 691 | 0.2− | 0.9+ |
| 2001 10 14 | 691 | 0.1+ | 0.4− | 2004 03 15 | 704 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.3− | 0.1+ |
| 2001 10 14 | 691 | 0.0 | 0.5− | 2004 03 20 | 699 | 0.7− | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2001 11 15 | 691 | 0.2− | 0.3+ | 2004 03 20 | 704 | (1.7− | 0.7−) | 2006 09 25 | 691 | 0.2− | 0.2− |
| 2001 11 15 | 691 | 0.3+ | 0.4− | 2004 03 20 | 699 | (1.9+ | 0.0 ) | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2001 11 15 | 691 | 0.2+ | 0.4+ | 2004 03 20 | 704 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.8+ | 0.1− |
| 2004 02 15 | 703 | 0.7+ | 0.7+ | 2004 03 20 | 704 | 0.0 | 1.1+ | 2006 10 27 | G96 | 0.6− | 0.7− |
| 2004 02 15 | 703 | (1.1− | 1.6+) | 2004 03 20 | 699 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2004 02 15 | 703 | 0.8− | 0.0 | 2004 03 20 | 704 | 0.7+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2004 02 15 | 703 | 1.1+ | 0.3+ | 2004 03 20 | 704 | 0.6− | 0.4+ | 2006 10 29 | 291 | 0.2+ | 0.2+ |
| 2004 02 23 | 704 | 0.2+ | 0.4+ | 2004 03 20 | 699 | 0.7− | 0.5+ | 2006 10 29 | 291 | 0.2+ | 0.2+ |
| 2004 02 23 | 704 | 0.1− | 0.2+ | 2004 03 22 | 704 | (1.5+ | 0.4−) | 2006 10 29 | 291 | 0.1+ | 0.2+ |
| 2004 02 23 | 704 | 0.8+ | 0.2+ | 2004 03 22 | 704 | 1.4+ | 0.6− | 2006 11 11 | G96 | 0.6− | 0.3− |
| 2004 02 23 | 704 | 0.2− | 1.1+ | 2004 03 22 | 704 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.7+ | 0.4− |
| 2004 02 23 | 704 | 0.0 | 1.2+ | 2004 03 22 | 704 | 0.7+ | 0.3− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2004 03 11 | 644 | 0.2+ | 0.4− | 2005 07 29 | E12 | 0.7− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 03 11 | 644 | 0.3+ | 0.1+ | 2005 07 29 | E12 | 0.1+ | 0.5+ | 2006 11 22 | G96 | 0.5+ | 0.0 |
| 2004 03 11 | 644 | 0.3+ | 0.3− | 2005 07 29 | E12 | 0.6− | 0.8+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 704 | 0.4− | 0.8+ | 2005 07 29 | E12 | 0.7+ | 0.7+ | 2006 11 22 | G96 | 0.3− | 0.3+ |
| 2004 03 15 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 691 | 0.6− | 0.8+ | 2006 11 22 | G96 | 0.4− | 0.0 |

**(144418)∗ 2004 EF$_{14}$ = 2000 CE$_{90}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62009)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 233.60354 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26161374 | $\omega$ | 101.54993 | | −0.98913305 | | +0.11268499 | | |
| $a$ | 2.4211908 | $\Omega$ | 84.97199 | | −0.14151086 | | −0.90392188 | | |
| $e$ | 0.1338056 | $i$ | 5.43978 | | +0.03988091 | | −0.41258615 | | |
| $P$ | 3.77 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 14 | 691 | 0.4+ | 0.9− | 2004 03 15 | 704 | 1.1+ | 0.7+ | 2005 07 04 | 644 | 0.7− | 0.7+ |
| 1991 12 14 | 691 | 0.2− | 1.1− | 2004 03 15 | 106 | 0.4− | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.4+ |
| 1991 12 14 | 691 | 0.2+ | 1.2− | 2004 03 15 | 106 | 0.4− | 0.4− | 2005 08 04 | 644 | 0.0 | 0.2+ |
| 1998 09 25 | 645 | 0.1− | 0.1+ | 2004 03 15 | 106 | 0.7− | 0.4− | 2005 08 04 | 644 | 0.2− | 0.0 |
| 1998 09 25 | 645 | 0.0 | 0.2+ | 2004 03 18 | 691 | 0.1− | 0.1− | 2005 08 04 | 644 | 0.4− | 0.7+ |
| 2000 01 04 | 704 | 0.4+ | 1.2− | 2004 03 18 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2000 01 04 | 704 | (0.8+ | 2.1−) | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2000 01 04 | 704 | 0.3+ | 0.2− | 2004 03 21 | 608 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2000 02 06 | 704 | 0.3+ | 0.1+ | 2004 03 21 | 608 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2000 02 06 | 704 | 0.4− | 0.3+ | 2004 03 21 | 608 | 0.3+ | 0.5+ | 2006 11 12 | 703 | (2.1+ | 0.6+) |
| 2000 02 06 | 704 | 0.9− | 0.5+ | 2004 03 21 | 608 | 0.3+ | 0.7+ | 2006 11 12 | 703 | 0.4− | 0.4+ |
| 2000 02 06 | 704 | 0.4− | 0.5+ | 2004 03 21 | 608 | 0.2+ | 0.9+ | 2006 11 12 | 703 | 0.4− | 0.8+ |
| 2000 02 06 | 704 | 0.4+ | 0.3+ | 2004 03 21 | 608 | 0.4+ | 0.7+ | 2006 11 12 | 703 | (1.8+ | 0.4−) |
| 2000 02 11 | 704 | 0.5+ | 0.7+ | 2004 03 23 | 704 | 0.5+ | 1.5+ | 2006 11 23 | 691 | 0.2+ | 0.4+ |
| 2000 02 11 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.5+ | 1.0+ | 2006 11 23 | 691 | 0.2+ | 0.4+ |
| 2000 02 11 | 704 | 0.9+ | 0.0 | 2004 03 23 | 704 | 0.4+ | 1.2+ | 2006 11 23 | 691 | 0.2− | 0.4+ |
| 2004 02 27 | 704 | 0.2+ | 0.4+ | 2004 03 23 | 704 | (0.3− | 1.8+) | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2004 02 27 | 704 | 0.3+ | 0.4+ | 2004 03 23 | 704 | (0.2+ | 1.8+) | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 02 27 | 704 | 1.0− | 0.6− | 2004 04 09 | 644 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.5+ |
| 2004 03 11 | 644 | 0.2+ | 0.0 | 2004 04 09 | 644 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.9− | 0.2+ |
| 2004 03 11 | 644 | 0.2+ | 0.1+ | 2004 04 09 | 644 | 0.1− | 0.4+ | 2006 11 27 | 703 | 1.1− | 0.4+ |
| 2004 03 11 | 644 | 0.2− | 0.2+ | 2004 04 13 | 703 | 0.4+ | 0.9− | 2006 11 27 | 703 | 0.6− | 0.3+ |
| 2004 03 15 | 704 | 0.3− | 0.7+ | 2004 04 13 | 703 | (1.9+ | 1.7−) | 2006 11 27 | 703 | 0.0 | 0.3+ |
| 2004 03 15 | 704 | 0.9+ | 0.4+ | 2004 04 13 | 703 | 0.4+ | 1.3− | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 2004 03 15 | 704 | 1.0+ | 0.6+ | 2004 04 13 | 703 | (1.3+ | 1.6−) | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2004 03 15 | 704 | 0.3− | 0.8− | 2005 07 04 | 644 | 0.6− | 0.6+ | 2006 11 29 | 704 | 0.0 | 0.1+ |

**(144419)∗ 2004 ER$_{14}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 192.38622 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20476814 | $\omega$ | 148.25465 | | −0.98383551 | | −0.14072711 | | |
| $a$ | 2.8507630 | $\Omega$ | 24.39890 | | +0.04511919 | | −0.79325869 | | |
| $e$ | 0.0780992 | $i$ | 15.55014 | | +0.17329729 | | −0.59239896 | | |
| $P$ | 4.81 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 2.0+ | 0.2− | 2004 03 25 | 012 | 0.5+ | 0.7+ | 2004 04 23 | 703 | (0.1− | 2.3−) |
| 1999 02 18 | 704 | 0.6+ | 0.6+ | 2004 03 25 | 012 | 0.2− | 0.2+ | 2004 05 13 | 704 | 0.7+ | 0.5− |
| 1999 02 18 | 704 | (1.6+ | 2.9−) | 2004 03 25 | 012 | 0.5+ | 0.8− | 2004 05 13 | 704 | 0.0 | 0.4+ |
| 1999 02 18 | 704 | (3.4− | 3.7−) | 2004 03 25 | 012 | 0.2− | 0.1+ | 2004 05 13 | 704 | 0.5+ | 0.7+ |
| 2001 10 10 | 644 | 1.1− | 0.0 | 2004 03 25 | 012 | 1.0− | 0.7− | 2004 05 13 | 704 | 0.9+ | 0.2+ |
| 2001 10 10 | 644 | 1.2− | 0.6+ | 2004 03 25 | 012 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.5+ | 0.5+ |
| 2001 10 10 | 644 | 1.2− | 0.3+ | 2004 03 25 | 012 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.7− |
| 2002 12 06 | 704 | (2.6+ | 0.7+) | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.1+ | 1.2− |
| 2002 12 06 | 704 | 0.4+ | 1.3+ | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 1.3− | 0.6+ |
| 2002 12 06 | 704 | (1.6+ | 1.3+) | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.8− | 0.5+ |
| 2002 12 06 | 704 | 0.5+ | 1.3+ | 2004 04 09 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.5+ |
| 2002 12 06 | 704 | (1.9+ | 0.6+) | 2004 04 09 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 644 | 0.6− | 1.0+ |
| 2002 12 15 | 704 | 0.7+ | 0.3+ | 2004 04 09 | 644 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.2+ |
| 2002 12 15 | 704 | (0.2− | 1.9+) | 2004 04 12 | 703 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.9+ | 0.1+ |
| 2002 12 15 | 704 | (0.0 | 1.6+) | 2004 04 12 | 703 | 0.4+ | 1.1+ | 2006 09 26 | 704 | 1.4+ | 0.6− |
| 2002 12 15 | 704 | 0.7− | 0.8+ | 2004 04 12 | 703 | (1.5− | 0.3−) | 2006 09 26 | 704 | (1.6+ | 2.0−) |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2004 04 12 | 703 | 1.0+ | 1.1+ | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2004 04 15 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.7− | 0.1− |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2004 04 15 | 704 | 0.8+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.7+ |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2004 04 15 | 704 | 0.2− | 1.0+ | 2006 09 30 | 703 | 0.2− | 1.2+ |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2004 04 15 | 704 | 0.5− | 0.1+ | 2006 09 30 | 704 | 0.1− | 0.2− |
| 2003 02 01 | 645 | 0.1− | 0.1− | 2004 04 15 | 704 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.4− | 1.0+ |
| 2004 03 11 | 644 | 0.1+ | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.2− | 2006 09 30 | 703 | (3.4+ | 0.9+) |
| 2004 03 11 | 644 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 704 | 0.7− | 0.7+ |
| 2004 03 11 | 644 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2004 03 15 | 704 | 0.4+ | 0.5+ | 2004 04 20 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.9− | 0.7+ |
| 2004 03 15 | 704 | 0.1− | 0.3+ | 2004 04 20 | 704 | 0.3+ | 0.1− | 2006 09 30 | 703 | 1.2+ | 0.9+ |
| 2004 03 15 | 704 | 0.1+ | 0.5− | 2004 04 22 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | 1.0+ | 0.9+ |
| 2004 03 15 | 704 | 0.5+ | 0.1+ | 2004 04 22 | 704 | 0.3− | 0.7+ | 2006 10 16 | 703 | (1.8− | 0.1−) |
| 2004 03 15 | 704 | 0.2+ | 0.6− | 2004 04 22 | 704 | 0.9− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2004 03 23 | 704 | 0.2+ | 0.9+ | 2004 04 22 | 704 | (0.0 | 1.7−) | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2004 03 23 | 704 | 0.0 | 0.9+ | 2004 04 22 | 704 | 0.3− | 0.7− | 2006 11 17 | G96 | 0.4− | 0.6+ |
| 2004 03 23 | 704 | 0.1− | 0.7+ | 2004 04 23 | 703 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.5− | 0.3+ |
| 2004 03 23 | 704 | 0.1+ | 0.6+ | 2004 04 23 | 703 | 0.3+ | 1.3− | 2006 11 17 | G96 | 0.5− | 0.2+ |
| 2004 03 23 | 704 | 0.3+ | 0.9+ | 2004 04 23 | 703 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.4+ |

**(144420)∗ 2004 ET$_{14}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.30535 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22198049 | $\omega$ | 145.80797 | | −0.62261271 | | +0.77553186 |
| $a$ | 2.7014246 | $\Omega$ | 85.45884 | | −0.73933865 | | −0.53926774 |
| $e$ | 0.2270219 | $i$ | 6.01275 | | −0.25638208 | | −0.32823869 |
| $P$ | 4.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.1− | 2005 07 30 | 644 | 0.3− | 0.5+ |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.7+ | 0.2− | 2005 08 27 | 644 | 0.4− | 0.8+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 1.0+ | 0.1+ | 2005 08 27 | 644 | 0.3− | 0.7+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 03 30 | 691 | 0.0 | 0.1+ | 2005 08 27 | 644 | 0.5− | 0.4+ |
| 2003 01 02 | 291 | 0.1− | 0.2− | 2004 03 30 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.4− |
| 2003 01 02 | 291 | 0.2− | 0.1+ | 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2003 01 02 | 291 | 0.0 | 0.3+ | 2004 04 15 | 704 | 0.2+ | 0.9− | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2004 03 11 | 644 | 0.1− | 0.3+ | 2004 04 15 | 704 | 0.4− | 0.8+ | 2006 09 30 | G96 | 0.6+ | 0.2− |
| 2004 03 11 | 644 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.5+ | 0.3+ |
| 2004 03 11 | 644 | 0.1+ | 0.4+ | 2004 04 15 | 704 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.3− | 0.5− |
| 2004 03 15 | 704 | (1.7+ | 1.0−) | 2004 04 23 | 703 | (3.1+ | 0.1+) | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 2004 03 15 | 704 | 1.4+ | 0.7− | 2004 04 23 | 703 | (2.5+ | 0.7+) | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2004 03 15 | 704 | (1.6+ | 0.7−) | 2004 04 23 | 703 | 0.3+ | 0.7− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2004 03 15 | 704 | 1.1+ | 0.1− | 2004 04 23 | 703 | 0.7+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.9+ |
| 2004 03 15 | 704 | 0.4+ | 0.5+ | 2004 04 25 | 699 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 03 20 | 691 | 0.4− | 0.2+ | 2004 04 25 | 699 | 0.5+ | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2004 03 20 | 691 | 0.3− | 0.2+ | 2004 04 25 | 699 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.7+ | 0.5− |
| 2004 03 20 | 691 | 0.4− | 0.2+ | 2004 04 25 | 699 | 0.7− | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2004 03 23 | 704 | 0.7+ | 0.2− | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2004 03 23 | 704 | 0.4+ | 0.4− | 2005 07 30 | 644 | 0.6− | 0.2+ | | | | |

**(144421)∗ 2004 EU$_{16}$ = 2001 WA$_{79}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62013)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.62397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17254250 | $\omega$ | 199.44787 | | +0.04219579 | | +0.99428139 |
| $a$ | 3.1954988 | $\Omega$ | 73.06679 | | −0.90254807 | | +0.08004688 |
| $e$ | 0.1183299 | $i$ | 5.88592 | | −0.42851662 | | −0.07068959 |
| $P$ | 5.71 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 0.3+ | 0.7+ | 2002 12 31 | 645 | 0.1− | 0.0 | 2004 04 21 | 691 | 0.0 | 0.2+ |
| 1999 06 15 | 704 | 0.3− | 1.3+ | 2003 01 05 | 704 | 0.4− | 1.2+ | 2004 04 21 | 691 | 0.0 | 0.2+ |
| 1999 06 15 | 704 | 0.1+ | 1.1+ | 2003 01 05 | 704 | 0.6+ | 0.3− | 2004 04 22 | 704 | 0.5+ | 0.1+ |
| 1999 06 15 | 704 | 0.2+ | 1.1+ | 2003 01 05 | 704 | 1.0+ | 0.8− | 2004 04 22 | 704 | 0.3− | 0.2− |
| 2000 09 24 | 704 | 0.3+ | 0.2+ | 2003 01 05 | 704 | 0.9+ | 0.7− | 2004 04 22 | 704 | 0.2+ | 0.2− |
| 2000 09 24 | 704 | 0.1+ | 0.9+ | 2004 03 12 | 644 | 0.3− | 0.4+ | 2004 04 22 | 704 | 0.4+ | 0.5+ |
| 2000 09 24 | 704 | 0.1+ | 0.8+ | 2004 03 12 | 644 | 0.2− | 0.2+ | 2004 06 12 | 644 | 0.3+ | 0.9+ |
| 2000 09 24 | 704 | 1.2− | 0.2− | 2004 03 12 | 644 | 0.1− | 0.8+ | 2004 06 12 | 644 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.9− | 0.3− | 2004 03 15 | 704 | 0.2+ | 0.4− | 2004 06 12 | 644 | 0.4+ | 0.8+ |
| 2001 11 09 | 704 | 0.4− | 0.9+ | 2004 03 15 | 704 | 0.5− | 0.6+ | 2006 09 18 | 703 | 1.1− | 1.1+ |
| 2001 11 09 | 704 | 0.3+ | 0.4− | 2004 03 15 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 703 | (2.1− | 0.8+) |
| 2001 11 20 | 704 | 1.2+ | 0.2− | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.3− | 2004 03 15 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 0.1+ | 2004 03 20 | 704 | 1.0+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.6− | 2004 03 20 | 704 | 1.0+ | 0.5− | 2006 09 30 | 703 | 0.9− | 0.2+ |
| 2001 11 20 | 704 | 0.6− | 0.9− | 2004 03 20 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.6+ | 2004 03 20 | 704 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.8+ | 2004 03 20 | 704 | 1.1+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.5+ | 0.7+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.4+ | 2004 03 22 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 12 14 | 704 | (0.3− | 1.6+) | 2004 03 22 | 704 | 0.6− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.2+ | 1.3+ | 2004 03 22 | 704 | (1.6+ | 0.0 ) | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2001 12 14 | 704 | 0.3+ | 1.4+ | 2004 04 20 | 704 | 0.3− | 0.0 | 2006 10 22 | 703 | (1.7+ | 1.4+) |
| 2001 12 14 | 704 | 0.0 | 1.0+ | 2004 04 20 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 703 | (0.3+ | 3.7+) |
| 2001 12 18 | 691 | 0.1− | 0.5+ | 2004 04 20 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 1.6+ | 1.6+ |
| 2001 12 18 | 691 | 0.1− | 0.3+ | 2004 04 20 | 704 | 0.5+ | 0.3− | 2006 10 22 | 703 | (0.8− | 2.1+) |
| 2001 12 18 | 691 | 0.4− | 0.5+ | 2004 04 20 | 704 | 0.5+ | 1.0+ | | | | |
| 2002 12 31 | 645 | 0.2− | 0.1− | 2004 04 21 | 691 | 0.0 | 0.1+ | | | | |

**(144422)∗ 2004 EL$_{18}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.34566 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23196994 | $\omega$ | 299.89476 | | +0.01846075 | | −0.99201980 |
| $a$ | 2.6233017 | $\Omega$ | 148.30129 | | +0.97954132 | | −0.00705754 |
| $e$ | 0.1263780 | $i$ | 13.73100 | | +0.20039463 | | +0.12588451 |
| $P$ | 4.25 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 699 | 0.5+ | 0.9+ | 2003 02 04 | 644 | 0.4− | 0.0 | 2004 04 15 | 704 | 0.8+ | 1.2+ |
| 2000 04 28 | 699 | 0.2+ | 0.9+ | 2003 02 04 | 644 | 0.1− | 0.3+ | 2004 04 15 | 704 | (0.5+ | 1.7+) |
| 2000 04 28 | 699 | 0.5− | 0.2+ | 2003 02 04 | 644 | 0.1+ | 0.1+ | 2004 04 25 | 699 | 0.2− | 0.4− |
| 2000 04 28 | 699 | 0.4− | 0.9+ | 2004 03 13 | 644 | 0.3+ | 0.0 | 2004 04 25 | 699 | 1.4− | 0.8+ |
| 2002 10 09 | 699 | 0.9+ | 0.4+ | 2004 03 13 | 644 | 0.4+ | 1.2− | 2004 04 25 | 699 | 0.4− | 0.8− |
| 2002 10 09 | 699 | 1.3− | 0.6+ | 2004 03 13 | 644 | 0.6+ | 0.0 | 2004 04 25 | 699 | 1.4+ | 0.3+ |
| 2002 10 09 | 699 | (0.1− | 1.6−) | 2004 03 15 | 704 | (0.1− | 2.2+) | 2006 09 19 | 703 | (0.2− | 1.5+) |
| 2002 10 09 | 699 | (2.2− | 0.8−) | 2004 03 15 | 704 | (0.6− | 2.1+) | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2002 10 30 | 704 | 1.0+ | 0.0 | 2004 03 15 | 704 | 0.1− | 1.0+ | 2006 09 19 | 703 | 0.1+ | 0.7+ |
| 2002 10 30 | 704 | 0.9+ | 0.1− | 2004 03 15 | 704 | (1.0+ | 1.9+) | 2006 09 19 | 703 | 0.7− | 0.9+ |
| 2002 10 30 | 704 | 1.1− | 0.7− | 2004 03 15 | 704 | (0.1+ | 3.0+) | 2006 09 30 | 704 | 0.6+ | 0.4+ |
| 2002 11 23 | 644 | 0.4+ | 0.9+ | 2004 03 22 | 699 | 0.9− | 0.8− | 2006 09 30 | 704 | 0.2+ | 0.0 |
| 2002 11 23 | 644 | 0.6+ | 0.7+ | 2004 03 22 | 699 | 0.1+ | 0.5+ | 2006 09 30 | 704 | 0.2+ | 1.0+ |
| 2002 11 23 | 644 | 0.6+ | 0.9+ | 2004 03 22 | 699 | 0.5+ | 0.7− | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2002 11 30 | 704 | 0.6+ | 0.9− | 2004 03 22 | 699 | 1.1− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2002 11 30 | 704 | (2.4+ | 2.1−) | 2004 03 23 | 704 | 0.2− | 0.6− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 11 30 | 704 | (2.9+ | 2.3−) | 2004 03 23 | 704 | 0.4− | 0.2+ | 2006 10 31 | 703 | 0.3+ | 0.1− |
| 2002 11 30 | 704 | (2.3+ | 2.2−) | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2006 10 31 | 703 | 0.2− | 0.2+ |
| 2003 01 02 | 704 | 0.5+ | 1.3− | 2004 04 12 | 703 | 0.5+ | 1.2+ | 2006 10 31 | 703 | (1.9− | 1.2−) |
| 2003 01 02 | 704 | 1.3− | 0.3− | 2004 04 12 | 703 | 1.1+ | 1.1+ | 2006 10 31 | 703 | 0.2− | 0.5− |
| 2003 01 02 | 704 | 0.8− | 0.1+ | 2004 04 12 | 703 | 1.1− | 0.2− | 2006 11 17 | 703 | 0.9− | 0.7− |
| 2003 01 26 | 644 | 0.1− | 0.2+ | 2004 04 12 | 703 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 1.3− | 0.3− |
| 2003 01 26 | 644 | 0.4− | 0.4+ | 2004 04 15 | 704 | 0.4+ | 1.2+ | 2006 11 17 | 703 | 0.4+ | 0.1− |
| 2003 01 26 | 644 | 0.1− | 0.2+ | 2004 04 15 | 704 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.0 | 1.1+ |

**(144423)∗ 2004 ET$_{18}$ = 2001 TU$_{55}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69687)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.32145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19562227 | $\omega$ | 142.50479 | | +0.51869620 | | +0.85194520 |
| $a$ | 2.9389386 | $\Omega$ | 158.45207 | | −0.82407174 | | +0.52053921 |
| $e$ | 0.1026075 | $i$ | 11.26056 | | −0.22772795 | | +0.05681818 |
| $P$ | 5.04 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.2+ | 0.5− | 2004 03 15 | 704 | 0.1+ | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.2+ |
| 2001 10 11 | 704 | 0.5− | 0.7+ | 2004 03 15 | 704 | 0.1+ | 0.5+ | 2005 07 04 | 644 | 0.0 | 0.5+ |
| 2001 10 11 | 704 | 0.7+ | 0.3+ | 2004 03 15 | 704 | 0.7+ | 0.2− | 2005 07 04 | 644 | 0.1− | 0.6+ |
| 2001 10 11 | 704 | (8.5− | 0.3+) | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2001 10 15 | 704 | 0.1− | 0.7+ | 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.4− | 1.4+ |
| 2001 10 15 | 704 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 0.2+ | 0.7+ |
| 2001 10 15 | 704 | 0.2+ | 0.8+ | 2004 03 18 | 704 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.5− | 0.4+ |
| 2001 10 15 | 704 | 0.3− | 1.0+ | 2004 03 19 | 704 | 0.3− | 0.0 | 2006 09 30 | H06 | 1.2+ | 0.9+ |
| 2001 10 16 | 704 | 0.2+ | 1.4− | 2004 03 19 | 704 | 0.3+ | 0.8+ | 2006 09 30 | H06 | 0.4− | 0.5− |
| 2001 10 16 | 704 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.0 | 1.2+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2001 10 16 | 704 | 0.9− | 1.0+ | 2005 06 03 | E12 | 0.4− | 0.5+ | 2006 10 17 | 703 | 0.2+ | 1.1+ |
| 2004 02 23 | 704 | 0.4+ | 0.5− | 2005 06 03 | E12 | 1.0+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.9+ |
| 2004 02 23 | 704 | 0.7+ | 0.5+ | 2005 06 03 | E12 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2004 02 23 | 704 | 0.9+ | 0.1− | 2005 06 03 | E12 | 0.1+ | 0.3− | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2004 02 23 | 704 | 1.1+ | 0.4+ | 2005 06 09 | 703 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.5+ | 1.1− |
| 2004 03 14 | 691 | 0.0 | 0.4+ | 2005 06 09 | 703 | 0.7− | 1.4+ | 2006 10 28 | 703 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.1− | 0.3+ | 2005 06 09 | 703 | 0.6+ | 0.7+ | 2006 10 28 | 703 | 1.2− | 0.9+ | | |
| 2004 03 14 | 691 | 0.2− | 0.3+ | 2005 06 09 | 703 | 0.3− | 1.1− | | | | | | |

**(144424)∗ 2004 EU$_{19}$ = 2002 XR$_{71}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62015)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.28610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22426756 | $\omega$ | 186.74549 | | +0.99989055 | −0.00649388 | |
| $a$ | 2.6830272 | $\Omega$ | 173.58146 | | +0.01003136 | +0.95801590 | |
| $e$ | 0.0734376 | $i$ | 6.82929 | | −0.01087433 | +0.28664153 | |
| $P$ | 4.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.4− | 0.7+ | 2004 03 18 | 704 | 0.6− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.9+ | | |
| 1996 04 14 | 691 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 1.4− | 0.4− | 2006 09 30 | 703 | 0.3− | 0.5+ | | |
| 1996 04 14 | 691 | 0.1− | 0.6+ | 2004 03 18 | 704 | 0.9− | 0.6+ | 2006 09 30 | 703 | 1.0− | 0.5+ | | |
| 2001 08 07 | 608 | 0.5+ | 0.2+ | 2004 03 18 | 704 | 1.0+ | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.4+ | | |
| 2001 08 07 | 608 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 2001 08 07 | 608 | 0.6+ | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 08 | 704 | 0.5+ | 1.2+ | 2004 03 18 | 704 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2001 09 08 | 704 | 0.7+ | 0.4+ | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.4+ | | |
| 2001 09 08 | 704 | 0.5+ | 0.8+ | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2002 12 01 | 704 | 0.4− | 0.3+ | 2004 03 21 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2002 12 01 | 704 | 1.0− | 0.5+ | 2004 03 25 | 704 | (0.1+ | 2.0+) | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2002 12 01 | 704 | 0.0 | 0.7+ | 2004 03 25 | 704 | 1.3+ | 1.0+ | 2006 10 11 | 644 | 0.3− | 0.4+ | | |
| 2002 12 10 | 644 | 0.3+ | 0.4+ | 2004 03 25 | 704 | (2.0+ | 1.5+) | 2006 10 21 | 703 | 0.2− | 0.8− | | |
| 2002 12 10 | 644 | 0.1− | 0.9+ | 2004 03 25 | 704 | (2.0+ | 0.0 ) | 2006 10 21 | 703 | (1.8− | 1.4+) | | |
| 2002 12 10 | 644 | 0.1+ | 0.4+ | 2004 03 30 | 691 | 0.4− | 0.1+ | 2006 10 21 | 703 | (0.3+ | 1.9+) | | |
| 2002 12 14 | 704 | 0.9− | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | (1.8− | 0.1+) | | |
| 2002 12 14 | 704 | 0.2+ | 0.5− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2002 12 14 | 704 | 0.6+ | 0.3+ | 2004 03 31 | 691 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2002 12 14 | 704 | 0.1+ | 0.7+ | 2004 03 31 | 691 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.4− | 0.6+ | | |
| 2004 02 26 | 704 | (1.6+ | 0.5−) | 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 2004 02 26 | 704 | 0.5− | 0.7+ | 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2004 02 26 | 704 | 0.6+ | 1.3+ | 2004 04 12 | 691 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.6+ | | |
| 2004 03 14 | 691 | 0.1− | 0.0 | 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.4− | 0.2+ | | |
| 2004 03 14 | 691 | 0.3− | 0.1+ | 2005 07 12 | G96 | 0.4− | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.3+ | | |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.9− | 0.7+ | 2006 10 22 | G96 | 0.4− | 0.1+ | | |
| 2004 03 15 | 704 | 1.4+ | 0.3− | 2005 07 12 | G96 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.1+ | | |
| 2004 03 15 | 704 | 0.7+ | 0.6+ | 2005 07 12 | G96 | 0.6− | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.2+ | | |
| 2004 03 15 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.3− | 1.1+ | 2006 11 07 | 644 | 0.4− | 0.4+ | | |
| 2004 03 15 | 704 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 11 07 | 644 | 0.1+ | 0.2+ | | |
| 2004 03 15 | 704 | 1.3+ | 1.0+ | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.4+ | 0.6+ | | |
| 2004 03 16 | 291 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.7+ | 0.3+ | 2006 11 16 | 703 | 0.8− | 0.8− | | |
| 2004 03 16 | 291 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.6+ | 0.1− | | |
| 2004 03 16 | 291 | 0.6+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.3− | | |
| 2004 03 17 | 291 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.4− | | |
| 2004 03 17 | 291 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.8− | 1.3− | 2006 11 24 | G96 | 0.4+ | 0.1+ | | |
| 2004 03 17 | 291 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.2− | 1.0− | 2006 11 24 | G96 | 0.5+ | 0.1− | | |
| 2004 03 18 | 704 | 1.2− | 0.4− | 2006 09 26 | 704 | 0.5+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2004 03 18 | 704 | 0.5− | 0.8− | 2006 09 30 | 703 | 0.5+ | 0.5− | | | | | | |

**(144425)∗ 2004 EH$_{20}$ = 2002 VC$_{112}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62016)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.37887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22735330 | $\omega$ | 271.62591 | | −0.75317167 | −0.65754749 | |
| $a$ | 2.6586952 | $\Omega$ | 227.26152 | | +0.61339675 | −0.69153575 | |
| $e$ | 0.0364607 | $i$ | 1.48799 | | +0.23764862 | −0.29901439 | |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.6+ | 1.3+ | 2004 03 15 | 704 | 1.1+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.3+ | | |
| 2000 04 06 | 704 | 0.1+ | 0.2− | 2004 03 15 | 333 | 0.6− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.0 | | |
| 2000 04 06 | 704 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.1+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.3− | | |
| 2000 04 29 | 704 | 0.2− | 1.4+ | 2004 03 15 | 333 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.2− | 0.3+ | | |
| 2000 04 29 | 704 | 1.4+ | 1.6+ | 2004 03 15 | 704 | 0.2− | 0.5− | 2006 09 19 | 691 | 0.1− | 0.6+ | | |
| 2000 04 29 | 704 | 0.5+ | 1.3+ | 2004 03 15 | 599 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.4+ | | |
| 2002 10 28 | 291 | 0.2− | 0.3− | 2004 03 15 | 599 | 0.2− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.0 | | |
| 2002 10 28 | 291 | 0.3− | 0.1+ | 2004 03 15 | 599 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.0 | | |
| 2002 10 28 | 291 | 0.5− | 0.0 | 2004 03 16 | 333 | 0.4− | 1.2− | 2006 09 26 | 691 | 0.3− | 0.2+ | | |
| 2002 11 13 | 291 | 0.0 | 0.0 | 2004 03 16 | 333 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 13 | 291 | 0.4+ | 0.0 | 2004 03 16 | 599 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.2− | 0.3+ | | |
| 2002 11 13 | 291 | 1.0+ | 0.3− | 2004 03 16 | 599 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.3+ | | |
| 2002 11 14 | 291 | 0.1− | 0.0 | 2004 03 16 | 599 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1− | | |
| 2002 11 14 | 291 | 0.3− | 0.2+ | 2004 03 16 | 599 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.8− | | |
| 2002 11 14 | 291 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.9+ | 0.6− | 2006 10 17 | 703 | 1.2− | 0.1− | | |
| 2002 11 14 | 704 | (2.5+ | 0.2−) | 2004 03 18 | 704 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.6− | 0.7− | | |
| 2002 11 14 | 704 | 1.2+ | 0.5+ | 2004 03 18 | 704 | 0.2+ | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.1− | | |
| 2002 11 14 | 704 | 0.3+ | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.8− | 2006 10 17 | 703 | 0.5+ | 1.0− | | |
| 2002 12 01 | 608 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.3+ | | |
| 2002 12 01 | 608 | 0.8− | 0.2+ | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.6− | 0.4+ | | |
| 2002 12 01 | 608 | 0.6− | 0.2+ | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.3− | | |
| 2002 12 10 | 644 | 0.3+ | 0.3+ | 2004 03 18 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.0 | | |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2004 03 23 | 704 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3+ | | |
| 2002 12 10 | 644 | 0.0 | 0.6+ | 2004 03 23 | 704 | 1.0− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2004 02 23 | 704 | 0.3− | 0.9+ | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.7+ | 0.1− | | |
| 2004 02 23 | 704 | 0.4+ | 1.0+ | 2004 03 23 | 704 | 0.5− | 0.2+ | 2006 11 13 | G96 | 1.2+ | 0.5+ | | |
| 2004 02 23 | 704 | 0.5+ | 1.2+ | 2006 09 14 | 703 | (0.2− | 1.7+) | 2006 11 13 | G96 | 0.4+ | 0.1+ | | |
| 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.5+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 1.7− | | |
| 2004 03 15 | 704 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.4− | | | | | | |
| 2004 03 15 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 1.0− | 0.4− | | | | | | |

**(144426)∗ 2004 EG$_{23}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.58198 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18168860 | $\omega$ | 298.34532 | | +0.49192635 | +0.87061725 | |
| $a$ | 3.0873386 | $\Omega$ | 1.17125 | | −0.66483786 | +0.37996588 | |
| $e$ | 0.0953258 | $i$ | 16.59044 | | −0.56213796 | +0.31249244 | |
| $P$ | 5.42 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 809 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 09 12 | 703 | 0.7− | 1.0+ | | |
| 2001 10 15 | 704 | 0.0 | 1.3− | 2004 03 18 | 704 | 0.5− | 0.2− | 2006 09 12 | 703 | 0.6− | 0.1+ | | |
| 2001 10 15 | 704 | 0.7− | 0.6− | 2004 03 18 | 704 | 0.5− | 0.0 | 2006 09 15 | 704 | 0.0 | 1.5+ | | |
| 2001 10 15 | 704 | 1.3− | 0.8− | 2004 03 18 | 704 | 0.1− | 0.5+ | 2006 09 15 | 704 | 0.2+ | 1.0+ | | |
| 2001 10 15 | 704 | 0.5− | 0.2+ | 2004 03 18 | 704 | 0.7− | 0.5+ | 2006 09 15 | 704 | (1.6− | 1.3+) | | |
| 2001 11 11 | 704 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.8+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.3+ | | |
| 2001 11 11 | 704 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 1.1+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.2+ | | |
| 2001 11 11 | 704 | 0.4+ | 0.1+ | 2004 03 19 | 704 | 0.2+ | 1.1+ | 2006 09 17 | 691 | 0.2− | 0.0 | | |
| 2001 11 11 | 704 | 0.2+ | 0.1− | 2004 03 19 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.1+ | | |
| 2001 11 11 | 699 | 0.6+ | 0.3+ | 2004 03 19 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.4+ | | |
| 2001 11 11 | 699 | 1.4+ | 0.3− | 2004 03 22 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.3+ | | |
| 2001 11 11 | 699 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.9+ | 0.8+ | 2006 09 19 | 699 | 0.5− | 1.1+ | | |
| 2001 11 11 | 699 | 1.0+ | 0.5+ | 2004 03 22 | 704 | (2.0+ | 0.5−) | 2006 09 29 | 704 | (0.3+ | 2.9+) | | |
| 2002 01 08 | 704 | 0.3+ | 0.0 | 2004 03 26 | 704 | 1.0− | 1.5+ | 2006 09 29 | 704 | 0.2− | 1.0+ | | |
| 2002 01 08 | 704 | 0.1+ | 0.6− | 2004 03 26 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 1.5+ | 0.7− | | |
| 2002 01 08 | 704 | 0.1− | 0.1− | 2004 03 26 | 704 | 1.0+ | 0.9− | 2006 09 29 | 704 | 0.5− | 1.3+ | | |
| 2004 02 26 | 695 | 0.1− | 0.1− | 2004 03 26 | 704 | 0.0 | 0.6+ | 2006 10 01 | 704 | 0.3− | 0.7+ | | |
| 2004 02 26 | 695 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.9+ | 0.4− | 2006 10 01 | 704 | 0.7− | 0.1+ | | |
| 2004 03 15 | 703 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.8− | 0.4− | | |
| 2004 03 15 | 703 | 0.7− | 0.2− | 2004 03 27 | 704 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.6− | 0.7+ | | |
| 2004 03 15 | 703 | 0.1+ | 0.3− | 2004 03 27 | 704 | 1.0+ | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.4+ | | |
| 2004 03 15 | 703 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.1− | 0.9+ | 2006 10 02 | 691 | 0.5− | 0.4+ | | |
| 2004 03 16 | 704 | 1.0+ | 0.2− | 2004 03 28 | 704 | 0.3+ | 0.7+ | 2006 10 02 | 691 | 0.3− | 0.3+ | | |
| 2004 03 16 | 704 | 1.5+ | 0.7− | 2004 03 28 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2004 03 16 | 704 | 1.3+ | 0.4− | 2004 03 28 | 704 | (1.1+ | 1.8+) | 2006 10 12 | 644 | 0.1+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.8+ | 0.6− | 2004 03 31 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2004 03 16 | 599 | 0.4+ | 0.3+ | 2004 03 31 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2004 03 16 | 599 | 0.2− | 0.4+ | 2004 03 31 | 691 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.4− | | |
| 2004 03 16 | 599 | 0.1+ | 0.5+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 1.5− | | |
| 2004 03 16 | 599 | 0.2+ | 0.5+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.4− | | |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 11 06 | 644 | 0.3− | 0.4+ | | |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.0 | 0.6+ | 2006 11 06 | 644 | 0.0 | 0.6+ | | |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 1.2− | 0.9+ | 2006 11 06 | 644 | 0.1− | 0.3+ | | |

**(144427)∗ 2004 EC$_{26}$ = 2002 VB$_{116}$**

Discovered 2004 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65594)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.16118 | | (2000.0) | | | |
| $n$ | 0.23985331 | $\omega$ | 147.55450 | | −0.58197304 | +0.80441878 |
| $a$ | 2.5655013 | $\Omega$ | 86.58545 | | −0.76927496 | −0.49703993 |
| $e$ | 0.0944617 | $i$ | 6.86039 | | −0.26367293 | −0.32536399 |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 0.1− | 0.7+ | 2004 06 09 | 926 | 0.5− | 0.1+ | | |
| 2000 03 09 | 704 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.7+ | 0.5+ | 2004 06 09 | 926 | 0.4+ | 0.1− | | |
| 2000 03 09 | 704 | 0.9+ | 0.8+ | 2004 01 30 | 704 | 0.4− | 0.1− | 2005 07 10 | E12 | 0.3+ | 1.1+ | | |
| 2000 03 09 | 704 | 0.9+ | 0.6+ | 2004 01 30 | 704 | 1.3+ | 0.8+ | 2005 07 10 | E12 | 0.3+ | 0.8+ | | |
| 2000 03 09 | 704 | 0.4+ | 0.7+ | 2004 02 16 | 691 | 0.2− | 0.3+ | 2005 07 10 | E12 | 1.0+ | 0.1− | | |
| 2001 07 13 | 644 | 0.5− | 0.3+ | 2004 02 16 | 704 | (0.7− | 3.0+) | 2005 07 10 | E12 | 0.6+ | 1.1+ | | |
| 2001 07 13 | 644 | 0.5− | 0.5+ | 2004 02 16 | 704 | 0.2+ | 0.5+ | 2005 07 10 | E12 | 0.1− | 0.5+ | | |
| 2001 07 13 | 644 | 0.6− | 0.4+ | 2004 02 16 | 691 | 0.1− | 0.2+ | 2005 07 10 | E12 | 0.4− | 0.7+ | | |
| 2001 08 11 | 644 | 0.8− | 1.2+ | 2004 02 16 | 704 | 0.1+ | 0.7+ | 2005 07 10 | E12 | 0.8− | 1.2+ | | |
| 2001 08 11 | 644 | 0.0 | 0.8+ | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 10 15 | D35 | 0.2+ | 0.6+ | | |
| 2001 08 11 | 644 | 0.2+ | 0.7+ | 2004 02 16 | 704 | 0.6− | 0.5+ | 2006 10 15 | D35 | 0.2− | 0.4+ | | |
| 2002 11 11 | 704 | 0.8+ | 1.0+ | 2004 02 16 | 691 | 0.3− | 0.2+ | 2006 10 15 | D35 | 0.6− | 0.2+ | | |
| 2002 11 11 | 704 | 0.4− | 0.4+ | 2004 03 14 | 704 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.5− | 1.1+ | | |
| 2002 11 11 | 704 | (0.0 | 1.7+) | 2004 03 14 | 704 | (1.8+ | 1.1+) | 2006 10 16 | 703 | 1.3− | 0.0 | | |
| 2002 11 14 | 644 | 0.3− | 0.7+ | 2004 03 14 | 704 | 1.4+ | 0.1− | 2006 10 16 | 703 | 1.4− | 0.3− | | |
| 2002 11 14 | 644 | 0.1− | 0.7+ | 2004 03 14 | 704 | 0.8+ | 1.1+ | 2006 10 16 | 703 | 0.0 | 0.2+ | | |
| 2002 11 14 | 644 | 0.2− | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.4+ | | |
| 2004 01 18 | 644 | 0.2+ | 0.3+ | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2004 01 18 | 644 | 0.2+ | 0.4+ | 2004 03 16 | 691 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.5+ | | |
| 2004 01 18 | 644 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.6+ | 0.2− | | |
| 2004 01 23 | 699 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.8+ | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.5+ | | |
| 2004 01 23 | 699 | 1.3− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.8− | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2004 01 23 | 699 | 1.2− | 0.5+ | 2004 03 23 | 704 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.2+ | | |
| 2004 01 23 | 699 | 0.4+ | 0.4+ | 2004 06 09 | 926 | 0.5− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.2− | | |

**(144428)∗ 2004 EC$_{27}$ = 2000 HJ$_{60}$ = 2002 UG**

Discovered 2004 Mar. 14 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62020)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 264.64098 | | (2000.0) | | | |
| $n$ | 0.23830825 | $\omega$ | 101.44870 | | −0.67903454 | −0.73358585 |
| $a$ | 2.5765782 | $\Omega$ | 31.37573 | | +0.65113973 | −0.61925158 |
| $e$ | 0.1441949 | $i$ | 3.04299 | | +0.33901202 | −0.27996301 |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 699 | 1.1+ | 0.9+ | 2004 03 27 | 704 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1+ | | |
| 2000 04 25 | 699 | 0.1+ | 1.1+ | 2004 03 27 | 704 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.3− | 0.4+ | | |
| 2000 04 25 | 699 | 0.2+ | 0.9+ | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.3+ | | |
| 2000 04 25 | 699 | 0.1+ | 0.6+ | 2004 03 27 | 704 | 0.6− | 0.6− | 2006 09 28 | 691 | 0.4− | 0.8− | | |
| 2000 04 29 | 704 | 0.7+ | 0.9+ | 2004 04 08 | 608 | 0.5+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.4+ | | |
| 2000 04 29 | 704 | 0.4+ | 0.2+ | 2004 04 08 | 608 | 0.3+ | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.4+ | | |
| 2000 04 29 | 704 | 0.1+ | 0.9+ | 2004 04 08 | 608 | 0.7+ | 1.0+ | 2006 10 11 | 691 | 0.4− | 0.7+ | | |
| 2000 04 29 | 704 | 0.2− | 1.2+ | 2004 04 12 | 699 | 0.6− | 0.9+ | 2006 10 15 | 691 | 0.5+ | 0.3− | | |
| 2000 04 29 | 704 | 0.2+ | 0.3+ | 2004 04 12 | 699 | 0.8+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ | | |
| 2002 10 18 | 644 | 0.1+ | 0.5− | 2004 04 12 | 699 | 0.3+ | 1.3+ | 2006 10 15 | 691 | 0.2− | 0.0 | | |
| 2002 10 18 | 644 | 0.1+ | 0.2− | 2004 04 12 | 699 | 0.5+ | 0.2− | 2006 10 19 | 691 | 0.6− | 0.2+ | | |
| 2002 10 18 | 644 | 0.5+ | 0.5− | 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.3− | | |
| 2002 10 19 | 644 | 0.4− | 0.7+ | 2004 04 13 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.4− | 0.1+ | | |
| 2002 10 19 | 644 | 0.1− | 0.9+ | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.6+ | | |
| 2002 10 19 | 644 | 0.1− | 0.9+ | 2004 04 21 | 704 | 0.3− | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 31 | 291 | 0.2− | 0.1− | 2004 04 21 | 704 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2002 10 31 | 644 | 0.1+ | 0.9+ | 2004 04 21 | 704 | 0.4+ | 1.3+ | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 2002 10 31 | 291 | 0.5− | 0.2− | 2004 04 21 | 704 | 0.9+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 2002 10 31 | 644 | 0.2+ | 1.0+ | 2004 04 22 | 704 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1+ | | |
| 2002 10 31 | 291 | 0.7− | 0.1− | 2004 04 22 | 704 | 0.5+ | 0.2+ | 2006 10 24 | A44 | 0.7+ | 0.6+ | | |
| 2002 10 31 | 644 | 0.1+ | 0.7+ | 2004 04 22 | 704 | 0.5+ | 0.5+ | 2006 10 24 | A44 | 0.8+ | 0.3+ | | |
| 2002 11 14 | 291 | 0.1+ | 0.1+ | 2004 04 22 | 704 | 0.6+ | 0.7+ | 2006 10 27 | 691 | 0.3+ | 0.2+ | | |
| 2002 11 14 | 291 | 0.3+ | 0.2+ | 2004 04 22 | 703 | (1.3+ | 1.9−) | 2006 10 27 | 691 | 0.3+ | 0.2− | | |
| 2002 11 14 | 291 | 0.4+ | 0.3+ | 2004 04 22 | 703 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.1− | | |
| 2002 12 10 | 644 | 0.0 | 0.0 | 2004 04 22 | 704 | 0.5+ | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.1+ | | |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2004 04 22 | 703 | (0.0 | 1.8+) | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2002 12 10 | 644 | 0.1− | 0.0 | 2004 04 22 | 703 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2004 03 14 | 703 | (2.1− | 0.2+) | 2004 05 14 | 701 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2004 03 14 | 703 | 1.2− | 0.7+ | 2004 05 14 | 701 | 0.5− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2− | | |
| 2004 03 14 | 703 | 0.5− | 0.1− | 2004 05 14 | 701 | 0.0 | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 2004 03 14 | 703 | 1.5− | 1.1− | 2006 09 18 | 691 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.3− | | |
| 2004 03 16 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.5+ | 0.6− | | |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.3− | 0.6− | | |
| 2004 03 24 | 699 | 0.1− | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.6+ | 2006 11 13 | G96 | 0.6+ | 0.2− | | |
| 2004 03 24 | 699 | 0.0 | 0.6+ | 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.1− | | |
| 2004 03 24 | 699 | 0.1+ | 1.0− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4− | | |
| 2004 03 24 | 699 | (2.0− | 1.1+) | 2006 09 25 | G96 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.3− | | |
| 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.0 | 0.8− | | |

**(144429)∗ 2004 EK$_{28}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.05120 | | (2000.0) | | | |
| $n$ | 0.17743935 | $\omega$ | 126.26745 | | +0.41786038 | +0.90827126 |
| $a$ | 3.1364335 | $\Omega$ | 168.37697 | | −0.86324913 | +0.40410179 |
| $e$ | 0.1198550 | $i$ | 5.94900 | | −0.28318481 | +0.10837466 |
| $P$ | 5.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.3− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.3− | 0.4+ | | |
| 1995 10 01 | 691 | 0.0 | 0.2− | 2004 03 23 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.3− | 0.1+ | | |
| 1995 10 01 | 691 | 0.1− | 0.3− | 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1+ | | |
| 1995 10 19 | 691 | 0.3+ | 0.0 | 2004 03 30 | 291 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.0 | | |
| 1995 10 19 | 691 | 0.2+ | 0.4− | 2004 03 30 | 291 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.6− | 0.3− | | |
| 1995 10 19 | 691 | 0.2+ | 0.1+ | 2004 03 30 | 291 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.6+ | | |
| 2001 10 17 | 704 | 0.4+ | 0.6− | 2004 04 12 | 691 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.5+ | | |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2004 04 12 | 691 | 0.6+ | 0.1− | 2006 09 30 | 703 | (0.4− | 1.8+) | | |
| 2001 10 17 | 704 | (0.9− | 1.7−) | 2004 04 12 | 691 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.9− | 0.1+ | | |
| 2004 01 30 | 691 | 0.1+ | 0.4+ | 2004 04 24 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | (3.3− | 1.5+) | | |
| 2004 01 30 | 691 | 0.2+ | 0.2+ | 2004 04 24 | 691 | 0.5+ | 0.0 | 2006 10 16 | 703 | 1.3− | 0.8+ | | |
| 2004 01 30 | 691 | 0.1− | 0.6+ | 2004 04 24 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.8+ | | |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.2− | | |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.6+ | | |
| 2004 03 15 | 691 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.8+ | | |
| 2004 03 16 | 291 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.4+ | | |
| 2004 03 16 | 291 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.2− | 0.3− | | |
| 2004 03 16 | 291 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2004 03 17 | 291 | 0.5− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.0 | | |
| 2004 03 17 | 291 | 0.4− | 0.1− | 2006 09 20 | 644 | 0.5− | 1.1+ | 2006 11 23 | G96 | 0.4+ | 0.4− | | |
| 2004 03 17 | 291 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.5+ | | | | | | |

**(144430)∗ 2004 EM$_{31}$ = 2003 AS$_{43}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62023)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.73936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20215128 | $\omega$ | 306.28876 | | −0.43010642 | +0.89361135 | |
| $a$ | 2.8753125 | $\Omega$ | 297.75746 | | −0.77481656 | −0.43834500 | |
| $e$ | 0.0861557 | $i$ | 8.33795 | | −0.46332253 | −0.09650083 | |
| $P$ | 4.88 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 691 | 0.1− | 0.2− | 2004 03 16 | 703 | 0.9+ | 0.3+ | 2006 09 17 | 703 | 0.9+ | 1.3+ |
| 1996 11 09 | 691 | 0.2+ | 0.6+ | 2004 03 17 | 704 | 0.6+ | 0.2− | 2006 09 28 | 703 | 0.6+ | 1.0− |
| 1996 11 09 | 691 | 0.2+ | 0.1− | 2004 03 17 | 704 | 1.0+ | 0.5+ | 2006 09 28 | 703 | (1.0− | 1.6−) |
| 2001 09 29 | 644 | 0.8− | 0.7+ | 2004 03 17 | 704 | (1.6+ | 0.4+) | 2006 09 28 | 703 | 0.8+ | 0.4+ |
| 2001 09 29 | 644 | 0.6− | 0.7+ | 2004 03 17 | 704 | 1.4+ | 0.4+ | 2006 09 28 | 703 | 0.7− | 0.7− |
| 2001 09 29 | 644 | 0.4− | 0.9+ | 2004 03 17 | 704 | 1.4+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 10 26 | 644 | 0.9− | 0.2+ | 2004 03 26 | 699 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 10 26 | 644 | 0.9− | 0.1+ | 2004 03 26 | 699 | 0.2+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 10 26 | 644 | 0.9− | 0.2− | 2004 03 26 | 699 | 0.3− | 1.0+ | 2006 10 17 | A50 | 0.3− | 0.0 |
| 2002 12 07 | 695 | 0.1− | 0.0 | 2004 03 26 | 699 | 0.4− | 0.2+ | 2006 10 18 | A50 | 0.4− | 1.0− |
| 2002 12 07 | 695 | 0.0 | 0.0 | 2004 03 28 | 608 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.8− | 0.1− |
| 2003 01 05 | 704 | 0.5+ | 0.4− | 2004 03 28 | 608 | 0.0 | 0.2+ | 2006 10 19 | 703 | 1.4− | 0.3+ |
| 2003 01 05 | 704 | (0.3+ | 1.7−) | 2004 03 28 | 608 | 1.1− | 1.3+ | 2006 10 19 | 703 | 0.0 | 0.4− |
| 2003 01 05 | 704 | 0.6+ | 0.1+ | 2004 04 17 | 704 | 0.6+ | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2003 01 09 | 704 | 0.4+ | 0.2+ | 2004 04 17 | 704 | 1.0+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 01 09 | 704 | 0.4− | 0.3− | 2004 04 17 | 704 | 0.7+ | 0.8− | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2003 01 09 | 704 | 1.0− | 0.1+ | 2004 04 17 | 704 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2003 01 09 | 704 | 0.4− | 0.4− | 2005 06 11 | 703 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.9+ |
| 2004 03 14 | 644 | 0.3+ | 0.3+ | 2005 06 11 | 703 | 0.6− | 0.2+ | 2006 10 27 | 703 | 1.0+ | 1.1+ |
| 2004 03 14 | 644 | 0.3+ | 0.7+ | 2005 06 11 | 703 | 1.2− | 0.2+ | 2006 10 27 | 703 | 0.2+ | 1.4+ |
| 2004 03 14 | 644 | 0.4+ | 0.5+ | 2005 06 11 | 703 | 1.5− | 1.2+ | 2006 10 27 | 703 | 0.3+ | 0.3+ |
| 2004 03 16 | 703 | 0.8− | 0.8− | 2005 08 06 | 704 | 0.5+ | 1.0+ | 2006 11 09 | 104 | 0.4− | 0.6+ |
| 2004 03 16 | 703 | 0.7− | 0.6+ | 2005 08 06 | 704 | 0.0 | 0.0 | 2006 11 09 | 104 | 0.1− | 0.8+ |
| 2004 03 16 | 703 | (2.7− | 2.0+) | 2005 08 06 | 704 | 0.6+ | 0.5− | 2006 11 09 | 104 | 0.3− | 1.1+ |
| 2004 03 16 | 703 | (2.4+ | 0.1+) | 2005 08 06 | 704 | 1.1+ | 0.1− | 2006 11 13 | 104 | 0.6+ | 0.1− |
| 2004 03 16 | 703 | 0.7− | 0.1− | 2006 09 17 | 703 | (2.0− | 0.8+) | 2006 11 13 | 104 | 0.2− | 0.0 |
| 2004 03 16 | 703 | 0.8− | 0.0 | 2006 09 17 | 703 | (1.9− | 0.6+) | 2006 11 13 | 104 | 0.5− | 0.2− |
| 2004 03 16 | 703 | 0.2+ | 0.9+ | 2006 09 17 | 703 | (1.3− | 2.2+) | | | | |

**(144431)∗ 2004 EP$_{31}$**
Discovered 2004 Mar. 14 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.84612 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27052714 | $\omega$ | 25.15961 | | +0.71916580 | +0.68882741 | |
| $a$ | 2.3677117 | $\Omega$ | 290.98278 | | −0.65288060 | +0.62497388 | |
| $e$ | 0.1152427 | $i$ | 5.60540 | | −0.23779713 | +0.36732064 | |
| $P$ | 3.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.8− | 1.0+ | 2005 08 26 | 699 | 0.1+ | 0.5+ | 2005 09 30 | 703 | 0.4− | 0.6+ |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2005 08 29 | 691 | 0.2− | 0.2+ | 2005 09 30 | 703 | 0.5− | 0.4+ |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2005 08 29 | 691 | 0.1− | 0.4+ | 2005 10 01 | 699 | 0.5− | 0.8− |
| 2002 12 11 | 704 | 0.2− | 0.5+ | 2005 08 29 | 691 | 0.2− | 0.3+ | 2005 10 01 | 699 | (1.7− | 0.3+) |
| 2002 12 11 | 704 | 0.2− | 0.5+ | 2005 08 29 | 699 | 0.4+ | 0.0 | 2005 10 01 | 699 | 1.1− | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 0.3− | 2005 08 29 | 699 | 0.6− | 0.8+ | 2005 10 01 | 699 | 0.7− | 0.8− |
| 2003 01 05 | 704 | 0.1− | 0.8+ | 2005 08 29 | 699 | 0.2− | 0.3− | 2005 10 08 | 704 | 0.8+ | 0.3+ |
| 2003 01 05 | 704 | 0.2+ | 1.0+ | 2005 08 29 | 699 | 0.0 | 0.3+ | 2005 10 08 | 704 | 0.3+ | 0.7+ |
| 2003 01 05 | 704 | 0.4+ | 0.9+ | 2005 09 06 | 699 | 0.3+ | 0.0 | 2005 10 08 | 704 | 0.3− | 0.5+ |
| 2003 01 05 | 704 | 0.7+ | 0.7+ | 2005 09 06 | 699 | 1.3+ | 0.4− | 2005 10 30 | 699 | 0.5− | 0.2+ |
| 2004 03 14 | 644 | 0.1+ | 0.7+ | 2005 09 06 | 699 | 0.3− | 0.2+ | 2005 10 30 | 699 | 0.5− | 1.0+ |
| 2004 03 14 | 644 | 0.1− | 0.8+ | 2005 09 06 | 699 | 0.4+ | 0.3+ | 2005 10 30 | 704 | (2.0− | 0.1+) |
| 2004 03 14 | 644 | 0.0 | 0.5+ | 2005 09 09 | 704 | 0.3+ | 0.5+ | 2005 10 30 | 704 | 0.3+ | 0.5+ |
| 2004 03 16 | 703 | 1.4+ | 1.4+ | 2005 09 09 | 704 | 0.9+ | 0.6+ | 2005 10 30 | 699 | (0.5− | 1.9+) |
| 2004 03 16 | 703 | 0.4+ | 0.8− | 2005 09 09 | 704 | 0.5+ | 0.1+ | 2005 10 30 | 704 | 0.3+ | 0.4+ |
| 2004 03 16 | 703 | 1.2+ | 1.2+ | 2005 09 09 | 704 | 0.2+ | 0.1+ | 2005 10 30 | 704 | 0.9− | 0.6− |
| 2004 03 16 | 703 | (0.3− | 2.0+) | 2005 09 09 | 704 | 0.6+ | 0.1+ | 2005 10 30 | 699 | 1.2− | 1.2+ |
| 2004 03 17 | 704 | 1.0+ | 0.1− | 2005 09 14 | 703 | 0.5− | 0.1− | 2005 10 30 | 704 | 0.7+ | 0.3+ |
| 2004 03 17 | 704 | 0.1+ | 1.0+ | 2005 09 14 | 703 | 0.1− | 0.7+ | 2005 11 22 | 703 | 1.4− | 0.6− |
| 2004 03 17 | 704 | (2.9+ | 0.0 ) | 2005 09 14 | 703 | 0.2− | 0.2− | 2005 11 22 | 703 | (0.2− | 1.6−) |
| 2004 03 17 | 704 | 0.4− | 0.8− | 2005 09 14 | 703 | 0.2+ | 0.2+ | 2005 11 22 | 703 | 0.0 | 1.4− |
| 2004 04 19 | 704 | 0.6− | 1.1+ | 2005 09 23 | 644 | 0.2+ | 0.2+ | 2005 11 22 | 703 | (2.1− | 1.4−) |
| 2004 04 19 | 704 | 0.9+ | 0.6+ | 2005 09 23 | 644 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2004 04 19 | 704 | 0.2+ | 1.3+ | 2005 09 23 | 644 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2+ |
| 2004 04 19 | 704 | (0.3− | 1.5+) | 2005 09 24 | 703 | (0.4− | 2.6−) | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2004 04 20 | 704 | 0.2+ | 0.1− | 2005 09 24 | 699 | 0.1+ | 0.8− | 2006 09 28 | G96 | 0.4− | 0.2− |
| 2004 04 20 | 704 | 0.1+ | 0.7+ | 2005 09 24 | 703 | (0.3− | 2.1−) | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2004 04 20 | 704 | 0.3− | 1.0+ | 2005 09 24 | 703 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.2+ |
| 2004 04 20 | 704 | 0.7+ | 1.4+ | 2005 09 24 | 699 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2004 04 22 | 704 | 0.1− | 0.6+ | 2005 09 24 | 703 | 1.0− | 0.7− | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2004 04 22 | 704 | 0.9+ | 0.1+ | 2005 09 24 | 699 | 0.4− | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2004 04 22 | 704 | 0.2+ | 0.9+ | 2005 09 24 | 699 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 04 22 | 704 | 0.1− | 0.1− | 2005 09 26 | A50 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2004 04 22 | 704 | 0.0 | 0.1+ | 2005 09 26 | A50 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2005 08 26 | 699 | 0.4− | 0.5− | 2005 09 30 | 703 | 0.5+ | 0.5+ | | | | |
| 2005 08 26 | 699 | 0.3− | 1.1+ | 2005 09 30 | 703 | 0.7− | 0.1− | | | | |

**(144432)∗ 2004 EP$_{32}$**
Discovered 2004 Mar. 15 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.81848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23802648 | $\omega$ | 245.72806 | | −0.94125672 | −0.28853894 | |
| $a$ | 2.5786112 | $\Omega$ | 277.11649 | | +0.33637086 | −0.84701493 | |
| $e$ | 0.2110371 | $i$ | 10.18386 | | −0.02984018 | −0.44644259 | |
| $P$ | 4.14 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | 0.3− | 0.4+ | 2004 03 26 | 704 | 0.1− | 0.5− | 2005 07 26 | 644 | 0.3+ | 0.0 |
| 2001 08 10 | 644 | 0.0 | 0.4+ | 2004 03 26 | 704 | 0.0 | 0.4− | 2005 07 26 | 644 | 0.1+ | 0.2+ |
| 2001 08 10 | 644 | 0.3− | 0.1+ | 2004 03 26 | 704 | 0.7+ | 0.4− | 2005 07 26 | 644 | 0.2+ | 0.2+ |
| 2004 01 27 | 704 | 0.6− | 1.3− | 2004 03 26 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 1.3+ | 0.9− |
| 2004 01 27 | 704 | 1.1+ | 1.4+ | 2004 04 14 | 608 | 0.0 | 0.6+ | 2006 09 17 | 703 | 1.0+ | 0.7+ |
| 2004 01 27 | 704 | 0.5+ | 0.9+ | 2004 04 14 | 608 | 0.3+ | 0.8+ | 2006 09 17 | 703 | 1.2+ | 0.1+ |
| 2004 01 27 | 704 | 0.8+ | 1.3+ | 2004 04 14 | 608 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 1.1− | 0.2− |
| 2004 02 02 | 703 | (1.6+ | 1.0+) | 2004 04 17 | 704 | 0.8+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.9+ |
| 2004 02 02 | 703 | 0.6+ | 0.3+ | 2004 04 17 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2004 02 02 | 703 | 0.2− | 0.4+ | 2004 04 17 | 704 | 0.5− | 0.7+ | 2006 10 19 | 703 | 0.0 | 0.9+ |
| 2004 02 02 | 703 | 0.2+ | 0.6+ | 2004 04 17 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.0 | 1.2+ |
| 2004 03 15 | 644 | 0.2− | 0.2+ | 2004 04 24 | 703 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.4− | 0.7+ |
| 2004 03 15 | 644 | 0.0 | 0.3+ | 2004 04 24 | 703 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.7− | 0.3+ |
| 2004 03 15 | 644 | 0.0 | 0.2+ | 2004 04 24 | 703 | 0.6− | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2004 03 16 | E12 | 0.4− | 0.1+ | 2004 04 24 | 703 | 0.1− | 0.3+ | 2006 10 27 | 703 | 1.2− | 0.5+ |
| 2004 03 16 | E12 | 0.4− | 0.2− | 2004 04 25 | 608 | 0.6+ | 0.8− | 2006 10 27 | 703 | 0.2− | 0.6+ |
| 2004 03 16 | E12 | 0.5− | 0.1+ | 2004 04 25 | 608 | 0.4+ | 0.7− | 2006 10 27 | 703 | 1.1− | 0.7− |
| 2004 03 16 | E12 | 0.3− | 0.2+ | 2004 04 25 | 608 | 0.5+ | 0.8− | 2006 10 27 | 703 | 0.7− | 0.9+ |
| 2004 03 17 | 704 | 0.6− | 0.1− | 2004 05 15 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.9− | 1.0+ |
| 2004 03 17 | 704 | 0.1+ | 0.5+ | 2004 05 15 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 703 | 0.2+ | 1.1− |
| 2004 03 17 | 704 | 0.4− | 0.0 | 2004 05 15 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 703 | 0.3+ | 0.2+ |
| 2004 03 17 | 704 | 0.0 | 0.2− | 2005 07 01 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.8+ |
| 2004 03 17 | 704 | 0.2+ | 0.0 | 2005 07 01 | 691 | 0.4− | 0.1+ | | | | |
| 2004 03 26 | 704 | 0.2+ | 0.5− | 2005 07 01 | 691 | 0.2+ | 0.2+ | | | | |

**(144433)∗ 2004 EC$_{33}$ = 2001 PV$_{45}$**
Discovered 2004 Mar. 15 by NEAT at Palomar.
Id. G. V. Williams (*MPO* 62025)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.61577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23475995 | $\omega$ | 262.99831 | | −0.75482672 | −0.62102446 | |
| $a$ | 2.6024758 | $\Omega$ | 238.37343 | | +0.65572703 | −0.70655802 | |
| $e$ | 0.0752718 | $i$ | 14.35481 | | +0.01608351 | −0.33927036 | |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.5− | 0.7+ | 2004 03 17 | 704 | 0.6− | 0.5+ | 2006 10 12 | 644 | 0.4+ | 0.1+ | |
| 2001 07 14 | 644 | 0.5− | 1.0+ | 2004 03 18 | 704 | 0.3− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | |
| 2001 07 14 | 644 | 0.3− | 0.6+ | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.3+ | |
| 2001 08 12 | 644 | 0.0 | 0.6+ | 2004 03 18 | 704 | 0.5− | 0.9+ | 2006 10 19 | 703 | 0.6+ | 1.6− | |
| 2001 08 12 | 644 | 0.3− | 0.5+ | 2004 03 18 | 704 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.5− | 0.3− | |
| 2001 08 12 | 644 | 0.3+ | 0.8+ | 2004 03 26 | 704 | 0.5+ | 0.6− | 2006 10 19 | 703 | 0.7− | 0.1− | |
| 2001 08 18 | 644 | 0.2− | 0.7+ | 2004 03 26 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2001 08 18 | 644 | 0.2− | 0.6+ | 2004 03 26 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2001 08 18 | 644 | 0.2− | 0.9+ | 2004 03 26 | 704 | 0.1+ | 1.2− | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2002 12 05 | 704 | 0.2− | 0.9+ | 2004 03 27 | 704 | (0.0 | 1.8+) | 2006 10 27 | 703 | 0.9− | 0.4− | |
| 2002 12 05 | 704 | 0.2− | 1.1+ | 2004 03 27 | 704 | 1.4+ | 0.0 | 2006 10 27 | 703 | 0.6+ | 0.7+ | |
| 2002 12 05 | 704 | 0.2− | 0.7+ | 2004 03 27 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.5− | |
| 2002 12 05 | 704 | 0.2− | 1.0+ | 2004 03 27 | 704 | 0.8− | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.1− | |
| 2002 12 27 | 644 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.3+ | 0.8− | 2006 11 01 | G96 | 0.3+ | 0.0 | |
| 2002 12 27 | 644 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.5− | 2006 11 01 | G96 | 0.3− | 0.1− | |
| 2002 12 27 | 644 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 1.1+ | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.2− | |
| 2004 03 15 | 644 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− | |
| 2004 03 15 | 644 | 0.4+ | 0.1+ | 2004 03 27 | 704 | 0.4− | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.1− | |
| 2004 03 15 | 644 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.7− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2004 03 16 | E12 | 0.0 | 0.5− | 2004 03 28 | 699 | 1.3+ | 0.6+ | 2006 11 18 | G96 | 0.2− | 0.3− | |
| 2004 03 16 | E12 | 0.5− | 0.1+ | 2004 03 28 | 699 | (1.6− | 0.5+) | 2006 11 18 | G96 | 0.2− | 0.1− | |
| 2004 03 16 | E12 | 0.5− | 0.3+ | 2004 03 28 | 699 | 0.5− | 1.2+ | 2006 11 19 | 704 | 0.5+ | 1.0+ | |
| 2004 03 16 | E12 | 0.2− | 0.4+ | 2004 03 28 | 699 | 0.3+ | 1.1+ | 2006 11 19 | 704 | 0.4+ | 1.2+ | |
| 2004 03 17 | 704 | 0.3+ | 0.9+ | 2004 04 13 | 644 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 1.2+ | 1.2+ | |
| 2004 03 17 | 704 | 0.3− | 0.0 | 2004 04 13 | 644 | 0.6+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.9+ | |
| 2004 03 17 | 704 | 0.0 | 0.8+ | 2004 04 13 | 644 | 0.7+ | 0.1+ | | | | | |
| 2004 03 17 | 704 | 0.5− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.3+ | | | | | |

**(144434)∗ 2004 EF$_{33}$ = 2003 BH$_{78}$**

Discovered 2004 Mar. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.53850 | | (2000.0) | | | |
| $n$ | 0.24032087 | $\omega$ | 91.88695 | | +0.74290172 | −0.64649866 |
| $a$ | 2.5621726 | $\Omega$ | 308.43937 | | +0.49144826 | +0.70283184 |
| $e$ | 0.1420719 | $i$ | 12.80504 | | +0.45450594 | +0.29676066 |
| $P$ | 4.10 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.0 | 0.5− | 2002 12 06 | 704 | 0.3+ | 0.1+ | 2004 03 15 | 644 | 0.6+ | 0.8+ | |
| 1998 12 17 | 704 | 0.7− | 0.8− | 2002 12 06 | 704 | 0.2− | 0.1+ | 2004 03 16 | E12 | 0.0 | 0.4+ | |
| 1998 12 17 | 704 | 0.1+ | 0.6− | 2002 12 15 | 704 | 0.3+ | 0.5+ | 2004 03 16 | E12 | 0.3− | 0.7+ | |
| 1998 12 17 | 704 | 0.7+ | 0.8− | 2002 12 15 | 704 | 0.0 | 0.6+ | 2004 03 16 | E12 | 0.8+ | 0.2+ | |
| 1998 12 17 | 704 | 0.6+ | 1.7− | 2002 12 15 | 704 | 0.1+ | 0.4+ | 2004 03 16 | E12 | 0.2− | 0.2+ | |
| 2001 07 01 | 644 | 0.2− | 0.3+ | 2002 12 15 | 704 | 0.3− | 0.6+ | 2004 03 17 | 704 | 0.2− | 0.1+ | |
| 2001 07 01 | 644 | 0.1+ | 0.4+ | 2002 12 15 | 704 | 0.5− | 0.9+ | 2004 03 17 | 704 | 0.1+ | 0.1− | |
| 2001 07 01 | 644 | 0.5+ | 0.1+ | 2003 01 04 | 704 | 0.9− | 0.4− | 2004 03 17 | 704 | 0.8− | 0.2+ | |
| 2001 07 18 | 644 | 0.3− | 0.1+ | 2003 01 04 | 704 | 1.1+ | 0.9− | 2004 03 26 | 704 | 0.0 | 0.6− | |
| 2001 07 18 | 644 | 0.4− | 0.0 | 2003 01 04 | 704 | 0.4− | 0.7− | 2004 03 26 | 704 | 0.7− | 0.5+ | |
| 2001 07 18 | 644 | 0.3− | 0.3+ | 2003 01 04 | 704 | 0.5− | 0.7− | 2004 03 26 | 704 | 0.2− | 1.3+ | |
| 2001 08 19 | 704 | 0.0 | 0.2+ | 2003 01 04 | 704 | (1.8− | 0.5−) | 2004 04 17 | 704 | 0.9+ | 0.4+ | |
| 2001 08 19 | 704 | 0.4+ | 0.1− | 2003 01 31 | 704 | 0.6+ | 0.7− | 2004 04 17 | 704 | 0.3+ | 0.1+ | |
| 2001 08 19 | 704 | 0.0 | 0.7+ | 2003 01 31 | 704 | 0.6+ | 0.4− | 2004 04 17 | 704 | 0.1+ | 0.6− | |
| 2002 10 12 | 704 | 0.2− | 0.8+ | 2003 01 31 | 704 | 0.2+ | 0.4− | 2004 04 17 | 704 | (1.6+ | 0.8+) | |
| 2002 10 12 | 704 | 0.3− | 0.4+ | 2003 01 31 | 704 | 0.4+ | 0.1− | 2006 10 16 | 704 | 0.6+ | 0.6− | |
| 2002 10 12 | 704 | 0.5− | 1.0+ | 2003 01 31 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 704 | 0.0 | 0.5+ | |
| 2002 10 12 | 704 | 0.3− | 0.8+ | 2003 02 01 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 704 | (1.7+ | 0.8+) | |
| 2002 11 15 | 704 | 0.1− | 0.6+ | 2003 02 01 | 704 | 0.3− | 0.0 | 2006 10 16 | 704 | 0.7+ | 0.2+ | |
| 2002 11 15 | 704 | 1.1− | 1.3+ | 2003 02 01 | 704 | 0.1− | 0.3− | 2006 11 20 | 703 | 0.2− | 0.2+ | |
| 2002 11 15 | 704 | 1.0− | 1.2+ | 2003 02 01 | 704 | 0.2+ | 0.8+ | 2006 11 20 | 703 | 0.7+ | 0.0 | |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2003 02 01 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 703 | 0.4+ | 0.4+ | |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2004 03 15 | 644 | 0.4+ | 0.2+ | 2006 11 20 | 703 | 0.1− | 0.1+ | |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2004 03 15 | 644 | 0.6+ | 0.2+ | | | | | |

**(144435)∗ 2004 EV$_{33}$ = 2002 XM$_{114}$ = 2003 AR$_{15}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.35500 | | (2000.0) | | | |
| $n$ | 0.19858908 | $\omega$ | 348.94234 | | +0.56104379 | −0.82639468 |
| $a$ | 2.9095945 | $\Omega$ | 66.91302 | | +0.76340235 | +0.49412725 |
| $e$ | 0.0410271 | $i$ | 2.98950 | | +0.32007300 | +0.27001871 |
| $P$ | 4.96 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.0 | 0.3− | 2004 03 11 | 644 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.8− | 0.6− | |
| 1994 04 03 | 691 | 0.5− | 0.2− | 2004 03 11 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.2− | |
| 2001 08 12 | 644 | 0.5− | 0.5+ | 2004 03 16 | 704 | 1.4+ | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.6− | |
| 2001 08 12 | 644 | 0.4− | 0.4+ | 2004 03 16 | 704 | 0.9+ | 0.4− | 2006 09 14 | 703 | 0.7+ | 1.3− | |
| 2001 08 12 | 644 | 0.4− | 0.2+ | 2004 03 16 | 704 | 1.1+ | 1.0+ | 2006 09 14 | 703 | (1.6+ | 0.5+) | |
| 2001 08 23 | 699 | 0.2+ | 0.4− | 2004 03 16 | 333 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.7− | 0.2− | |
| 2001 08 23 | 699 | 0.1− | 0.5+ | 2004 03 16 | 704 | 0.9+ | 0.2− | 2006 09 14 | 703 | 0.4− | 0.7+ | |
| 2001 08 23 | 699 | 1.0+ | 0.1+ | 2004 03 16 | 333 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.7+ | |
| 2001 08 23 | 699 | 0.1+ | 0.3+ | 2004 03 16 | 333 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.5+ | 1.3+ | |
| 2001 09 12 | 704 | 0.3+ | 1.0+ | 2004 03 19 | 704 | 0.6− | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.5+ | |
| 2001 09 12 | 704 | 1.0− | 0.3+ | 2004 03 19 | 704 | 0.4− | 0.2+ | 2006 09 16 | 699 | 0.6− | 1.1+ | |
| 2001 09 12 | 704 | 0.4+ | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.5+ | |
| 2001 09 12 | 704 | 0.4− | 1.3+ | 2004 03 19 | 704 | 1.1− | 0.6+ | 2006 09 19 | 699 | 0.3+ | 0.5− | |
| 2001 09 21 | 704 | 0.7+ | 0.3− | 2004 03 19 | 704 | 0.5− | 0.7+ | 2006 09 19 | 699 | 0.2− | 1.2+ | |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.8+ | |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2004 03 22 | 704 | 0.7+ | 0.1− | 2006 09 25 | 699 | (0.2+ | 2.1+) | |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 699 | (1.9− | 0.9+) | |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 03 22 | 704 | 1.0+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 1.4+ | |
| 2002 12 05 | 704 | 0.1− | 0.5+ | 2004 03 22 | 704 | 0.5+ | 1.0+ | 2006 09 25 | 699 | 0.5+ | 1.4+ | |
| 2002 12 05 | 704 | 0.1+ | 1.2+ | 2004 03 29 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 1.1− | 0.1− | |
| 2003 01 04 | 704 | 0.1− | 0.3− | 2004 03 29 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.3+ | |
| 2003 01 04 | 704 | 0.4+ | 0.5+ | 2004 03 29 | 691 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.9− | 0.9+ | |
| 2003 01 04 | 704 | 0.3+ | 0.1+ | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.6− | |
| 2003 01 04 | 704 | 0.6+ | 0.7+ | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.3− | |
| 2003 01 05 | 704 | 0.3+ | 0.7− | 2004 03 30 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.4+ | 0.3− | |
| 2003 01 05 | 704 | 0.7− | 0.0 | 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.3− | |
| 2003 01 05 | 704 | 0.3− | 0.0 | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.4+ | 0.3− | |
| 2003 01 05 | 704 | (1.7− | 0.0 ) | 2004 04 25 | 691 | 0.1+ | 0.2+ | | | | | |
| 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.1− | | | | | |

**(144436)∗ 2004 ED$_{34}$ = 2000 CB$_{117}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 290.19998 | | (2000.0) | | | |
| $n$ | 0.25701640 | $\omega$ | 118.09588 | | −0.25297934 | −0.96683366 |
| $a$ | 2.4499779 | $\Omega$ | 346.41997 | | +0.82683865 | −0.19720964 |
| $e$ | 0.1628134 | $i$ | 8.60464 | | +0.50233385 | −0.16229920 |
| $P$ | 3.83 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | (3.4+ | 3.5−) | 2004 03 12 | 644 | 0.1+ | 0.1+ | 2004 04 12 | 691 | 0.5+ | 0.1− | |
| 1998 09 14 | 691 | 0.2− | 0.1+ | 2004 03 16 | 704 | 0.8+ | 0.3+ | 2004 04 24 | 691 | 0.2− | 0.2+ | |
| 1998 09 14 | 691 | 0.1− | 0.5+ | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2004 04 24 | 691 | 0.2− | 0.1+ | |
| 2000 02 03 | 704 | 0.4− | 1.6− | 2004 03 16 | 704 | (0.6+ | 1.8+) | 2004 04 24 | 691 | 0.0 | 0.3+ | |
| 2000 02 03 | 704 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.1− | 0.1+ | 2006 09 23 | 152 | 0.0 | 0.2− | |
| 2000 02 03 | 704 | 0.7− | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 09 23 | 152 | 0.9+ | 1.0+ | |
| 2000 02 06 | 703 | 0.7− | 1.0− | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 09 23 | 152 | (2.1+ | 1.1+) | |
| 2000 02 06 | 703 | 0.6+ | 0.4− | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 09 24 | 152 | 0.3− | 0.3− | |
| 2000 02 06 | 703 | 0.0 | 0.1+ | 2004 03 26 | 699 | 0.0 | 1.0+ | 2006 09 24 | 152 | 1.3− | 1.1+ | |
| 2000 02 06 | 703 | 0.7− | 1.3+ | 2004 03 26 | 699 | 1.4− | 0.8+ | 2006 09 25 | 152 | 0.6− | 0.2+ | |
| 2000 03 09 | 704 | 0.9− | 0.6− | 2004 03 26 | 699 | (1.6− | 0.2+) | 2006 09 25 | 152 | 0.4− | 0.1− | |
| 2000 03 09 | 704 | 0.7+ | 0.0 | 2004 03 26 | 699 | 0.3+ | 0.2− | 2006 09 26 | 152 | 0.1− | 0.4− | |
| 2000 03 09 | 704 | 0.4+ | 0.6− | 2004 03 27 | 704 | 0.9+ | 1.0− | 2006 10 17 | 703 | 0.5− | 1.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.1− | 0.4+ | 2004 03 27 | 704 | 1.2+ | 0.3− | 2006 10 17 | 703 | (0.6− | 2.8+) | | |
| 2004 02 26 | 704 | 0.2− | 0.1− | 2004 03 27 | 704 | 1.4+ | 0.3− | 2006 10 17 | 703 | (0.8− | 2.6−) | | |
| 2004 02 26 | 704 | 0.2+ | 0.8+ | 2004 03 27 | 704 | 1.4+ | 0.1+ | 2006 10 17 | 703 | 1.1+ | 0.2− | | |
| 2004 02 26 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 704 | (2.5+ | 0.3−) | 2006 10 22 | 644 | 0.5− | 0.3+ | | |
| 2004 03 12 | 644 | 0.2+ | 0.2+ | 2004 04 12 | 691 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.7− | 0.8+ | | |
| 2004 03 12 | 644 | 0.1+ | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.2− | 0.5+ | | |

**(144437)∗ 2004 EH$_{34}$ = 2002 XT$_{109}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.38371 | | (2000.0) | | | |
| $n$ | 0.21396688 | $\omega$ | 49.82182 | | +0.59913670 | −0.80063679 |
| $a$ | 2.7684606 | $\Omega$ | 3.37750 | | +0.71243768 | +0.53084571 |
| $e$ | 0.0989461 | $i$ | 3.88707 | | +0.36533241 | +0.27781931 |
| $P$ | 4.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 1.1− | 0.9− | 2004 03 20 | 699 | (0.4− | 1.8+) | 2006 09 19 | 703 | 0.3− | 0.4+ | | |
| 2001 07 25 | 608 | 0.4− | 0.7− | 2004 03 20 | 699 | 0.6− | 0.6+ | 2006 09 19 | 703 | 0.6− | 0.7+ | | |
| 2001 07 25 | 608 | 0.5− | 1.1− | 2004 03 27 | 291 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.1+ | | |
| 2001 08 24 | 644 | 0.6+ | 0.8+ | 2004 03 27 | 291 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.1+ | 1.2+ | | |
| 2001 08 24 | 644 | 0.7+ | 0.9+ | 2004 03 27 | 291 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.5+ | 0.4+ | | |
| 2001 08 24 | 644 | 0.9+ | 0.6+ | 2004 03 27 | 704 | 0.1+ | 1.3+ | 2006 09 20 | 644 | 0.1− | 0.2+ | | |
| 2002 12 06 | 704 | 0.7+ | 0.4− | 2004 03 27 | 704 | 1.1+ | 0.6+ | 2006 09 20 | 704 | 0.5− | 1.2− | | |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 1.2+ | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.1− | | |
| 2002 12 06 | 704 | 1.1+ | 0.3+ | 2004 03 27 | 704 | 1.5+ | 0.3− | 2006 09 20 | 644 | 0.0 | 0.5+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.4+ | 2004 04 12 | 699 | 0.9− | 0.7− | 2006 09 20 | 704 | 0.2− | 0.4− | | |
| 2002 12 06 | 704 | 0.4− | 0.3+ | 2004 04 12 | 699 | 0.9− | 1.3+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.3− | 1.0+ | 2004 04 12 | 699 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.4− | 1.3+ | | |
| 2002 12 11 | 704 | 0.7− | 0.1− | 2004 04 12 | 699 | (1.7− | 2.4+) | 2006 09 25 | 699 | 0.3+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.4+ | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.5+ | 0.4+ | | |
| 2002 12 11 | 704 | 0.5− | 0.0 | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.3− | 0.7+ | | |
| 2002 12 11 | 704 | 0.1− | 0.8− | 2004 04 13 | 691 | 0.5+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2+ | | |
| 2003 01 05 | 704 | 0.6+ | 0.3+ | 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.2+ | | |
| 2003 01 05 | 704 | 0.4− | 0.1+ | 2004 04 21 | 691 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2+ | | |
| 2003 01 05 | 704 | 1.2− | 0.2+ | 2004 04 21 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.0 | | |
| 2004 02 26 | 704 | 0.8+ | 0.4− | 2006 08 15 | 644 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.4+ | | |
| 2004 02 26 | 704 | 1.1+ | 0.2− | 2006 08 15 | 644 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.3+ | 0.4+ | | |
| 2004 02 26 | 704 | 1.2+ | 0.5− | 2006 08 15 | 644 | 0.6+ | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.0 | | |
| 2004 02 26 | 704 | 1.4+ | 0.5+ | 2006 08 25 | 704 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.2+ | | |
| 2004 02 26 | 704 | 1.4+ | 1.0− | 2006 08 25 | 704 | 1.0− | 0.6+ | 2006 10 16 | G96 | 0.3− | 0.1− | | |
| 2004 03 12 | 644 | 0.1− | 0.6+ | 2006 08 25 | 704 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.1− | | |
| 2004 03 12 | 644 | 0.0 | 0.7+ | 2006 08 27 | 699 | 0.8+ | 1.0+ | 2006 10 16 | G96 | 0.7− | 0.3+ | | |
| 2004 03 12 | 644 | 0.0 | 0.4+ | 2006 08 27 | 699 | 1.4− | 1.1+ | 2006 10 16 | G96 | 0.2− | 0.2+ | | |
| 2004 03 15 | 691 | 0.3− | 0.3+ | 2006 08 27 | 699 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1+ | | |
| 2004 03 15 | 703 | (1.3+ | 2.2+) | 2006 08 27 | 699 | (0.9− | 1.6+) | 2006 10 27 | G96 | 0.4+ | 0.4+ | | |
| 2004 03 15 | 703 | 0.3+ | 0.7+ | 2006 09 12 | 703 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 09 12 | 703 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 15 | 703 | 0.5− | 0.8− | 2006 09 12 | 703 | (1.5− | 0.5+) | 2006 11 11 | 703 | 1.1− | 0.8− | | |
| 2004 03 15 | 703 | 1.4+ | 1.0+ | 2006 09 12 | 703 | 0.0 | 0.5− | 2006 11 11 | 703 | 1.4− | 0.1+ | | |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.6+ | 2006 11 11 | 703 | 1.1+ | 0.3− | | |
| 2004 03 16 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.7+ | 2006 11 11 | 703 | 0.3+ | 0.1− | | |
| 2004 03 16 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.5− | 0.0 | | |
| 2004 03 16 | 704 | 1.4+ | 1.1− | 2006 09 16 | 699 | (0.4− | 1.7+) | 2006 11 15 | G96 | 0.0 | 0.0 | | |
| 2004 03 16 | 704 | 0.6+ | 0.4+ | 2006 09 16 | 699 | 0.1+ | 1.4+ | 2006 11 15 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 18 | 704 | 0.3+ | 0.3− | 2006 09 16 | 699 | 0.3− | 1.2+ | 2006 11 15 | G96 | 0.0 | 0.2− | | |
| 2004 03 18 | 704 | 0.4− | 0.3− | 2006 09 16 | 699 | 0.2+ | 0.9+ | 2006 11 21 | G96 | 0.1+ | 0.2+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 18 | 704 | (1.6+ | 0.5−) | 2006 09 17 | 704 | 0.5− | 0.8+ | 2006 11 21 | G96 | 0.3+ | 0.2+ | | |
| 2004 03 18 | 704 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.6− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2+ | | |
| 2004 03 20 | 699 | 1.0+ | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.2− | | | | | | |
| 2004 03 20 | 699 | 0.5− | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.6− | | | | | | |

**(144438)∗ 2004 EA$_{35}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 234.10175 | | (2000.0) | | | |
| $n$ | 0.27984162 | $\omega$ | 195.25417 | | −0.75262317 | +0.65684400 |
| $a$ | 2.3148766 | $\Omega$ | 25.98308 | | −0.59260169 | −0.64526123 |
| $e$ | 0.2322146 | $i$ | 6.02464 | | −0.28702197 | −0.39012038 |
| $P$ | 3.52 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 01 | 809 | 0.9− | 1.1− | 2004 03 22 | 704 | 0.8+ | 0.9+ | 2004 04 21 | 704 | 0.2+ | 0.1+ | | |
| 1997 04 01 | 809 | 1.4− | 2.1− | 2004 03 22 | 704 | 1.2+ | 0.8+ | 2004 04 21 | 704 | 0.6+ | 0.0 | | |
| 1997 04 01 | 809 | 1.0− | 2.3− | 2004 03 24 | 699 | 0.1+ | 0.0 | 2004 04 23 | 691 | 0.3− | 0.2− | | |
| 2001 07 21 | 644 | 0.3− | 0.1− | 2004 03 24 | 699 | 0.1− | 0.2+ | 2004 04 23 | 691 | 0.4− | 0.1− | | |
| 2001 07 21 | 644 | 0.1+ | 0.3− | 2004 03 24 | 699 | 0.5− | 0.1+ | 2004 04 23 | 691 | 0.2− | 0.2− | | |
| 2001 07 21 | 644 | 0.1− | 0.2− | 2004 03 24 | 699 | 0.1+ | 0.0 | 2004 04 28 | 608 | 0.0 | 0.4− | | |
| 2001 08 10 | 644 | 0.4+ | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.3− | 2004 04 28 | 608 | 0.1+ | 0.8− | | |
| 2001 08 10 | 644 | 0.4+ | 0.7+ | 2004 03 28 | 704 | 0.1+ | 0.2− | 2004 04 28 | 608 | 0.3− | 0.5− | | |
| 2001 08 10 | 644 | 0.4+ | 0.7+ | 2004 03 28 | 704 | 0.2+ | 0.1− | 2004 05 14 | 704 | 0.0 | 1.4+ | | |
| 2004 01 23 | 704 | 1.0+ | 0.5+ | 2004 03 28 | 704 | 0.2− | 0.3+ | 2004 05 14 | 704 | 0.1+ | 1.9+ | | |
| 2004 01 23 | 704 | 0.4+ | 0.0 | 2004 03 28 | 704 | 0.3− | 0.1− | 2004 05 14 | 704 | 1.4+ | 1.4+ | | |
| 2004 01 23 | 704 | 1.5+ | 0.2+ | 2004 04 02 | 608 | 0.8+ | 0.3+ | 2004 05 16 | 704 | 0.1+ | 1.0+ | | |
| 2004 03 12 | 644 | 0.1− | 0.1+ | 2004 04 02 | 608 | 0.9+ | 0.2+ | 2004 05 16 | 704 | 1.1+ | 1.4+ | | |
| 2004 03 12 | 644 | 0.1− | 0.2+ | 2004 04 02 | 608 | 0.6+ | 0.3+ | 2004 05 16 | 704 | 0.8+ | 0.7+ | | |
| 2004 03 12 | 644 | 0.1+ | 0.2+ | 2004 04 11 | 644 | 0.2+ | 0.0 | 2004 05 16 | 704 | 0.9+ | 1.0+ | | |
| 2004 03 14 | 691 | 0.1− | 0.0 | 2004 04 11 | 644 | 0.0 | 0.2+ | 2004 05 23 | 699 | 1.2− | 1.1+ | | |
| 2004 03 14 | 691 | 0.1+ | 0.2+ | 2004 04 11 | 644 | 0.1+ | 0.3+ | 2004 05 23 | 699 | 1.0− | 0.5− | | |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2004 04 12 | 699 | 0.4− | 0.2+ | 2004 05 23 | 699 | 0.4+ | 0.5+ | | |
| 2004 03 16 | 704 | 0.0 | 0.3− | 2004 04 12 | 699 | 0.7− | 0.6+ | 2004 05 23 | 699 | 0.9− | 0.0 | | |
| 2004 03 16 | 704 | 0.1+ | 0.0 | 2004 04 12 | 699 | 0.2− | 0.2+ | 2005 10 01 | 691 | 0.4− | 0.5+ | | |
| 2004 03 16 | 704 | 0.3+ | 0.3− | 2004 04 12 | 699 | 0.4− | 0.1− | 2005 10 01 | 691 | 0.3− | 0.3+ | | |
| 2004 03 16 | 704 | 0.5+ | 0.1+ | 2004 04 14 | 691 | 0.2− | 0.1− | 2005 10 01 | 691 | 0.3− | 0.2− | | |
| 2004 03 16 | 704 | 0.3+ | 1.1− | 2004 04 14 | 691 | 0.1− | 0.1− | 2005 10 06 | 691 | 0.0 | 0.4+ | | |
| 2004 03 19 | 704 | 1.3+ | 0.2+ | 2004 04 14 | 691 | 0.2− | 0.1− | 2005 10 06 | 691 | 0.1− | 0.0 | | |
| 2004 03 19 | 704 | 0.2− | 0.3+ | 2004 04 15 | 699 | 0.4− | 0.0 | 2005 10 06 | 691 | 0.1+ | 0.0 | | |
| 2004 03 19 | 704 | 0.6− | 0.3+ | 2004 04 15 | 699 | 0.4+ | 0.1+ | 2005 10 26 | G96 | 0.1+ | 0.6+ | | |
| 2004 03 19 | 704 | 0.2− | 0.9+ | 2004 04 15 | 699 | 0.4− | 0.5− | 2005 10 26 | G96 | 0.2+ | 0.8+ | | |
| 2004 03 19 | 704 | 0.4− | 0.7+ | 2004 04 15 | 699 | 0.1− | 0.3− | 2005 10 26 | G96 | 0.8− | 0.5+ | | |
| 2004 03 22 | 704 | 0.9+ | 0.2+ | 2004 04 21 | 704 | 0.4+ | 0.1+ | 2005 10 26 | G96 | 0.2− | 0.3+ | | |
| 2004 03 22 | 704 | 0.7+ | 1.1+ | 2004 04 21 | 704 | 0.4+ | 0.0 | | | | | | |
| 2004 03 22 | 704 | 1.4+ | 0.3+ | 2004 04 21 | 704 | 0.4+ | 0.1+ | | | | | | |

**(144439)∗ 2004 EB$_{35}$ = 2000 KC$_{83}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62027)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.43259 | | (2000.0) | | | |
| $n$ | 0.21577459 | $\omega$ | 260.92554 | | +0.73771416 | −0.67116958 |
| $a$ | 2.7529766 | $\Omega$ | 141.18008 | | +0.65604326 | +0.68721711 |
| $e$ | 0.0336235 | $i$ | 6.67482 | | +0.15932688 | +0.27796408 |
| $P$ | 4.57 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.1− | 0.3− | 2004 03 30 | 703 | 0.7− | 1.5+ | 2006 10 04 | G96 | 0.2+ | 0.0 | | |
| 1999 02 07 | 691 | 0.0 | 0.3− | 2004 03 30 | 703 | 0.7− | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.1− | | |
| 1999 02 07 | 691 | 0.4− | 0.5− | 2004 03 30 | 703 | 0.1− | 1.3+ | 2006 10 04 | G96 | 0.3+ | 0.3+ | | |
| 1999 02 12 | 699 | 0.5+ | 1.9+ | 2004 03 30 | 703 | 1.0− | 1.3+ | 2006 10 16 | 703 | 0.8+ | 0.4− | | |
| 1999 02 12 | 699 | 0.9+ | 0.3+ | 2004 04 15 | 644 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 1999 02 12 | 699 | 0.5+ | 0.4− | 2004 04 15 | 644 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.7− | | |
| 2000 05 25 | 699 | 0.1− | 0.3+ | 2004 04 15 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 1.1− | | |
| 2000 05 25 | 699 | 0.2− | 0.1− | 2004 04 16 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2000 05 25 | 699 | 0.4− | 0.1− | 2004 04 16 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2000 05 25 | 699 | 0.1− | 1.1+ | 2004 04 16 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2000 06 06 | 699 | 0.2+ | 0.1− | 2004 04 21 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.1+ | | |
| 2000 06 06 | 699 | 0.5− | 0.0 | 2004 04 21 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 1.1+ | | |
| 2000 06 06 | 699 | 0.2− | 0.0 | 2004 04 21 | 691 | 0.3+ | 0.5+ | 2006 10 22 | 703 | (0.4− | 1.6+) | | |
| 2000 06 06 | 699 | 1.1+ | 0.5− | 2006 09 20 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 703 | (0.8+ | 2.0+) | | |
| 2001 09 12 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 09 12 | 704 | 0.7− | 0.6+ | 2006 09 21 | 699 | 1.2+ | 0.8− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2004 02 23 | 704 | 1.0− | 0.8+ | 2006 09 21 | 699 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2004 02 23 | 704 | 0.9+ | 0.2+ | 2006 09 21 | 699 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.4− | 0.3+ |
| 2004 02 23 | 704 | 1.3+ | 1.0− | 2006 09 21 | 699 | 1.2− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2004 02 23 | 704 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2004 03 12 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.4+ | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.7+ |
| 2004 03 12 | 644 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.6+ | 0.9+ | 2006 10 23 | 644 | 0.3− | 0.4+ |
| 2004 03 12 | 644 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.6+ | 0.1− |
| 2004 03 16 | 704 | (0.8+ | 1.6+) | 2006 09 26 | 703 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.5− | 0.0 |
| 2004 03 16 | 704 | 0.7+ | 0.0 | 2006 09 26 | 703 | 1.1− | 1.1+ | 2006 10 28 | 703 | 1.3− | 0.7+ |
| 2004 03 16 | 704 | 1.0+ | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.6+ | 2006 10 28 | 703 | 0.3− | 0.4+ |
| 2004 03 20 | 704 | 0.1− | 1.2− | 2006 09 26 | 703 | 0.6+ | 1.3− | 2006 11 16 | 703 | 0.3− | 0.4+ |
| 2004 03 20 | 704 | 0.8− | 0.9− | 2006 10 01 | 704 | (0.1+ | 2.2+) | 2006 11 16 | 703 | 0.7+ | 1.6+ |
| 2004 03 20 | 704 | (0.3− | 1.8−) | 2006 10 01 | 704 | 1.0− | 1.3+ | 2006 11 16 | 703 | 0.5− | 0.3+ |
| 2004 03 20 | 704 | 0.4− | 1.0− | 2006 10 01 | 704 | 1.2− | 0.7+ | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.0 | | | | |

**(144440)∗ 2004 EC$_{35}$ = 2006 QP$_{20}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103614)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.25065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18116315 | $\omega$ | 238.88226 | | +0.83162590 | −0.54933969 | |
| $a$ | 3.0933055 | $\Omega$ | 154.16813 | | +0.55153934 | +0.79991244 | |
| $e$ | 0.0270686 | $i$ | 10.76541 | | +0.06482843 | +0.24159054 | |
| $P$ | 5.44 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.6+ | 1.0+ | 2003 01 10 | 704 | 0.6− | 0.5+ | 2004 03 23 | 704 | 1.1− | 0.1+ |
| 2001 09 25 | 704 | 0.7+ | 0.2+ | 2004 03 12 | 644 | 0.3− | 0.9+ | 2004 03 23 | 704 | 1.0+ | 1.2+ |
| 2001 09 25 | 704 | 0.3− | 0.6+ | 2004 03 12 | 644 | 0.1+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 1.8− | 0.2+ | 2004 03 12 | 644 | 0.0 | 1.0+ | 2006 08 18 | 691 | 0.2+ | 0.2+ |
| 2001 10 15 | 644 | 0.2− | 0.6− | 2004 03 16 | 704 | 0.4− | 0.6+ | 2006 08 18 | 691 | 0.0 | 0.5+ |
| 2001 10 15 | 644 | 0.3− | 0.8− | 2004 03 16 | 704 | 0.7+ | 0.5− | 2006 08 18 | 691 | 0.1+ | 0.2+ |
| 2001 10 15 | 644 | 0.3+ | 0.5− | 2004 03 16 | 704 | 1.2− | 1.0− | 2006 08 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 23 | 644 | 0.1− | 1.2+ | 2004 03 16 | 704 | 0.2+ | 0.4+ | 2006 08 21 | 644 | 0.0 | 0.0 |
| 2001 10 23 | 644 | 0.2− | 1.3+ | 2004 03 20 | 704 | 1.2+ | 0.7+ | 2006 08 21 | 644 | 0.0 | 0.4+ |
| 2001 10 23 | 644 | 0.1+ | 1.3+ | 2004 03 20 | 704 | 1.5+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.1+ |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 703 | (2.2+ | 1.6+) |
| 2002 01 13 | 645 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.8+ | 0.6− |
| 2002 12 14 | 704 | 0.8+ | 1.0− | 2004 03 20 | 704 | 1.3+ | 1.0+ | 2006 09 14 | 703 | 0.6+ | 1.1+ |
| 2002 12 14 | 704 | 1.0+ | 0.6− | 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.5− | 0.0 |
| 2002 12 14 | 704 | 0.3+ | 0.8− | 2004 03 21 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1− | 1.0− |
| 2003 01 10 | 704 | 0.2− | 0.7+ | 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.6− | 0.6− |
| 2003 01 10 | 704 | 0.2+ | 0.4+ | 2004 03 23 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.7− | 0.0 |
| 2003 01 10 | 704 | 1.2− | 0.4+ | 2004 03 23 | 704 | 0.4− | 0.3+ | | | | |

**(144441)∗ 2004 EM$_{35}$ = 2003 AA$_{45}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62028)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.90690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18489915 | $\omega$ | 57.65410 | | −0.69065212 | −0.71594673 | |
| $a$ | 3.0514958 | $\Omega$ | 76.38853 | | +0.62320287 | −0.66081871 | |
| $e$ | 0.0552375 | $i$ | 6.02877 | | +0.36690304 | −0.22525300 | |
| $P$ | 5.33 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 05 | 644 | (0.5− | 2.3−) | 2003 01 09 | 704 | 0.6− | 0.1+ | 2004 04 20 | 704 | 0.2− | 0.7+ |
| 2001 08 05 | 644 | 0.9− | 0.2− | 2004 03 12 | 644 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.3− | 0.8+ |
| 2001 08 05 | 644 | 0.1+ | 0.3+ | 2004 03 12 | 644 | 0.5+ | 0.6+ | 2004 04 22 | 704 | 0.4− | 0.5− |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2004 03 12 | 644 | 0.8+ | 0.2+ | 2004 04 22 | 704 | 0.1− | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.6+ | 1.1+ | 2004 04 22 | 704 | 1.3+ | 0.4− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.5− | 0.2+ | 2004 04 22 | 704 | 0.8+ | 0.5+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.3+ | 0.5+ | 2004 04 25 | 699 | 0.4+ | 0.1− |
| 2001 10 24 | 644 | 0.0 | 1.7+ | 2004 03 16 | 704 | 0.6+ | 1.1+ | 2004 04 25 | 699 | 0.2− | 0.5− |
| 2001 10 24 | 644 | 0.0 | 2.0+ | 2004 03 20 | 704 | 0.2+ | 0.0 | 2004 04 25 | 699 | 1.5− | 0.5+ |
| 2001 10 24 | 644 | 0.1− | 1.6+ | 2004 03 20 | 704 | 0.3+ | 0.2+ | 2004 04 25 | 699 | 0.5− | 0.3+ |
| 2001 10 25 | 645 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.3− | 0.0 | 2006 08 30 | 699 | 0.6+ | 1.2+ |
| 2001 10 25 | 645 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.7+ | 0.5+ | 2006 08 30 | 699 | 0.6+ | 1.1+ |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.7− | 0.8+ | 2006 08 30 | 699 | 0.8− | 0.6− |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.9+ | 2006 08 30 | 699 | 0.3+ | 0.5+ |
| 2003 01 05 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.2+ | 1.5− | 2006 09 14 | 644 | 0.7− | 0.2+ |
| 2003 01 05 | 704 | 0.3− | 0.0 | 2004 03 22 | 704 | 0.6+ | 0.8+ | 2006 09 14 | 644 | 0.4− | 0.1− |
| 2003 01 05 | 704 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2003 01 05 | 704 | 0.7+ | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 1.0+ |
| 2003 01 05 | 704 | 0.2+ | 0.6− | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 2003 01 09 | 704 | 1.0+ | 0.1+ | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| 2003 01 09 | 704 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.9+ | 0.6+ | 2006 09 26 | 703 | 0.2− | 1.6− |
| 2003 01 09 | 704 | 0.2− | 0.0 | 2004 04 20 | 704 | 0.7+ | 0.3− | | | | |
| 2003 01 09 | 704 | 0.3− | 0.1+ | 2004 04 20 | 704 | 1.1+ | 1.1+ | | | | |

**(144442)∗ 2004 EA$_{37}$ = 1990 SX$_{23}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65598)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.51092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18796943 | $\omega$ | 134.96754 | | +0.59794849 | +0.80110560 | |
| $a$ | 3.0181760 | $\Omega$ | 171.63519 | | −0.77674961 | +0.58722018 | |
| $e$ | 0.0924988 | $i$ | 10.38299 | | −0.19778182 | +0.11576817 | |
| $P$ | 5.24 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 25 | 809 | (0.4+ | 2.3+) | 2004 03 22 | 704 | 0.4+ | 0.9− | 2004 04 25 | 699 | 0.3+ | 0.2− |
| 1990 09 25 | 809 | 0.9+ | 1.0+ | 2004 03 22 | 704 | 1.0+ | 0.8+ | 2006 09 15 | 644 | 0.0 | 0.8+ |
| 1990 09 25 | 809 | 0.7+ | 0.9+ | 2004 03 22 | 704 | 0.1+ | 0.6− | 2006 09 15 | 644 | 0.2+ | 0.2+ |
| 1995 07 25 | 691 | 1.0− | 0.2− | 2004 03 24 | 699 | 0.6− | 0.4− | 2006 09 15 | 644 | 0.1+ | 0.2− |
| 1995 07 25 | 691 | 0.7− | 0.1− | 2004 03 24 | 699 | (1.7− | 0.3−) | 2006 09 20 | 699 | 0.6− | 0.7− |
| 1995 07 25 | 691 | 1.0− | 0.6+ | 2004 03 24 | 699 | (1.9− | 2.0+) | 2006 09 20 | 699 | 0.8− | 1.2+ |
| 1995 10 02 | 691 | 0.5+ | 0.3+ | 2004 03 24 | 699 | (1.8− | 0.1+) | 2006 09 20 | 699 | 0.7− | 0.5+ |
| 1995 10 02 | 691 | 0.3+ | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.5− | 0.2+ |
| 1995 10 02 | 691 | 0.2+ | 0.3+ | 2004 03 28 | 704 | 0.4+ | 0.2− | 2006 09 26 | 704 | 1.0+ | 0.1− |
| 1998 03 02 | 691 | 0.1+ | 0.1+ | 2004 03 28 | 704 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.7+ |
| 1998 03 02 | 691 | 0.2+ | 0.1− | 2004 03 28 | 704 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.7+ |
| 1998 03 02 | 691 | 0.2+ | 0.1− | 2004 03 28 | 691 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.4− | 1.0+ |
| 2000 09 03 | 704 | 1.1+ | 0.7+ | 2004 03 28 | 704 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.9+ |
| 2000 09 03 | 704 | 0.2+ | 0.9+ | 2004 03 28 | 691 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2000 09 03 | 704 | 0.7+ | 1.3+ | 2004 03 28 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2000 09 03 | 704 | 1.3+ | 1.1+ | 2004 03 29 | 246 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.6+ |
| 2001 09 17 | 704 | (0.1− | 2.1+) | 2004 03 29 | 246 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.2− |
| 2001 09 17 | 704 | (0.1− | 1.6+) | 2004 03 29 | 246 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.6+ |
| 2001 09 17 | 704 | 0.0 | 0.8+ | 2004 03 29 | 246 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.4− |
| 2001 09 26 | 704 | 0.9− | 0.8+ | 2004 03 29 | 246 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.8+ |
| 2001 09 26 | 704 | 0.4− | 1.2+ | 2004 03 29 | 246 | 0.2− | 0.2+ | 2006 10 01 | 704 | (2.1− | 0.9+) |
| 2001 09 26 | 704 | 0.5− | 0.9+ | 2004 04 12 | 699 | 0.4− | 0.6+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.8− | 0.2− | 2004 04 12 | 699 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.1− |
| 2001 10 17 | 704 | 0.2− | 0.5+ | 2004 04 12 | 699 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2001 10 17 | 704 | 0.0 | 0.2+ | 2004 04 12 | 699 | 0.6− | 1.1+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 0.4− | 0.8+ | 2004 04 20 | 704 | 0.1− | 1.0+ | 2006 10 10 | 644 | 0.2+ | 0.4+ |
| 2001 10 17 | 704 | 0.7− | 0.4− | 2004 04 20 | 704 | (0.5+ | 1.5+) | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2001 11 18 | 704 | 0.5+ | 0.7+ | 2004 04 20 | 704 | 0.8+ | 0.4− | 2006 10 10 | 644 | 0.5+ | 0.2+ |
| 2001 11 18 | 704 | 1.0+ | 0.2+ | 2004 04 20 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2001 11 18 | 704 | 0.9+ | 0.5+ | 2004 04 20 | 704 | (2.9− | 3.1+) | 2006 10 16 | 703 | 0.2+ | 0.9− |
| 2001 11 19 | 699 | 0.1− | 0.3+ | 2004 04 20 | E12 | 0.6− | 0.4− | 2006 10 16 | 703 | 0.5− | 0.9− |
| 2001 11 19 | 699 | 0.6+ | 0.5+ | 2004 04 20 | E12 | 0.8− | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 11 19 | 699 | 0.0 | 0.5− | 2004 04 20 | E12 | 0.3− | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 11 19 | 699 | 1.0− | 0.1+ | 2004 04 20 | E12 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 11 20 | 699 | 0.0 | 0.4+ | 2004 04 22 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 11 20 | 699 | 0.5− | 1.0+ | 2004 04 22 | 704 | (0.8+ | 1.9+) | 2006 10 22 | 703 | 0.3+ | 0.4+ |
| 2001 11 20 | 699 | 0.5− | 0.5+ | 2004 04 22 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.7+ |
| 2001 11 20 | 699 | 0.7− | 0.4+ | 2004 04 22 | 704 | (1.6+ | 0.3+) | 2006 10 22 | 703 | 1.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.1− | 0.6+ | 2004 04 23 | 683 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.4+ | | |
| 2004 03 13 | 644 | 0.0 | 0.3+ | 2004 04 23 | 683 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2004 03 13 | 644 | 0.0 | 0.5+ | 2004 04 23 | 683 | (2.2+ | 3.6+) | 2006 10 23 | 644 | 0.3+ | 0.1+ | | |
| 2004 03 16 | 704 | 0.1− | 0.6− | 2004 04 24 | E12 | (1.3− | 1.7+) | 2006 10 23 | 644 | 0.2+ | 0.2+ | | |
| 2004 03 16 | 704 | 0.1+ | 1.2+ | 2004 04 24 | E12 | 1.4− | 1.1+ | 2006 10 28 | 703 | 0.1+ | 0.3+ | | |
| 2004 03 16 | 704 | 0.1+ | 0.3+ | 2004 04 24 | E12 | (1.6− | 1.9+) | 2006 10 28 | 703 | 0.7+ | 0.4+ | | |
| 2004 03 16 | 704 | (1.6+ | 0.5+) | 2004 04 24 | E12 | 0.1− | 1.4+ | 2006 10 28 | 703 | 0.2− | 1.1− | | |
| 2004 03 16 | 704 | 0.0 | 0.8+ | 2004 04 25 | 683 | (3.3+ | 4.9−) | 2006 10 28 | 703 | 0.1− | 0.4+ | | |
| 2004 03 21 | 691 | 0.3+ | 0.4+ | 2004 04 25 | 683 | (1.4+ | 1.8−) | 2006 11 13 | 703 | 0.7− | 0.3+ | | |
| 2004 03 21 | 691 | 0.1+ | 0.4+ | 2004 04 25 | 699 | 1.1− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.5− | | |
| 2004 03 21 | 691 | 0.1+ | 0.3+ | 2004 04 25 | 683 | 0.9+ | 0.7− | 2006 11 13 | 703 | 0.7− | 0.2− | | |
| 2004 03 22 | 704 | 0.7+ | 0.6+ | 2004 04 25 | 699 | 0.5+ | 0.9+ | 2006 11 13 | 703 | 0.8− | 0.4− | | |
| 2004 03 22 | 704 | 0.5+ | 1.3+ | 2004 04 25 | 699 | 0.8− | 0.6− | | | | | | |

**(144443)∗ 2004 EG$_{38}$**

Discovered 2004 Mar. 14 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 140.92122 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.16699807 | $\omega$ | 51.60357 | −0.85397692 | +0.51988105 |
| $a$ | 3.2658413 | $\Omega$ | 159.69385 | −0.49435605 | −0.79803242 |
| $e$ | 0.2148762 | $i$ | 3.49318 | −0.16228219 | −0.30474242 |
| $P$ | 5.90 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 06 | 809 | 0.5− | 0.2+ | 2004 03 28 | 704 | 0.4− | 0.5+ | 2005 06 27 | 691 | 0.4+ | 0.1− |
| 1998 03 22 | 704 | 0.0 | 1.6− | 2004 04 08 | 608 | 0.2− | 0.7− | 2005 06 27 | 691 | 0.2+ | 0.1− |
| 1998 03 22 | 704 | 1.1− | 1.2− | 2004 04 08 | 608 | 0.2+ | 1.0− | 2005 06 27 | 691 | 0.4+ | 0.3− |
| 1998 03 22 | 704 | 0.5+ | 0.9− | 2004 04 08 | 608 | 0.4+ | 0.2− | 2005 07 04 | G96 | 0.1− | 0.4− |
| 1998 03 22 | 704 | (1.0− | 4.0−) | 2004 04 11 | 644 | 0.2− | 0.5+ | 2005 07 04 | G96 | 0.2− | 0.2− |
| 1998 04 19 | 704 | 0.5+ | 0.1− | 2004 04 11 | 644 | 0.3− | 0.2+ | 2005 07 04 | G96 | 0.3− | 0.3− |
| 1998 04 19 | 704 | 0.5− | 1.8− | 2004 04 11 | 644 | 0.1− | 0.5+ | 2005 07 04 | G96 | 0.2+ | 0.3− |
| 1998 04 19 | 704 | 0.1+ | 0.8− | 2004 04 16 | 704 | (0.4+ | 1.7+) | 2005 07 05 | 644 | 0.1+ | 0.1+ |
| 1998 04 19 | 704 | 0.9− | 0.5− | 2004 04 16 | 704 | 0.1− | 0.6+ | 2005 07 05 | 644 | 0.2+ | 0.1− |
| 2004 01 28 | 704 | 0.6+ | 0.3− | 2004 04 16 | 704 | 1.1− | 0.7− | 2005 07 05 | 644 | 0.1+ | 0.1+ |
| 2004 01 28 | 704 | 0.4+ | 0.2+ | 2004 04 16 | 704 | 0.6− | 1.2+ | 2005 07 15 | G96 | 0.3− | 0.2− |
| 2004 01 28 | 704 | 0.3+ | 0.3+ | 2004 04 16 | 704 | 0.4− | 0.4+ | 2005 07 15 | G96 | 0.4− | 0.4− |
| 2004 01 28 | 704 | 0.8− | 0.0 | 2004 04 19 | 704 | 0.0 | 0.9+ | 2005 07 15 | G96 | 0.1− | 0.2+ |
| 2004 01 28 | 704 | 0.4+ | 0.2+ | 2004 04 19 | 704 | 0.1− | 0.3+ | 2005 07 30 | E12 | 0.5− | 0.2+ |
| 2004 03 14 | 703 | 1.0− | 0.4+ | 2004 04 19 | 704 | 0.3− | 0.2+ | 2005 07 30 | E12 | 0.4− | 0.1+ |
| 2004 03 14 | 703 | 0.9− | 0.6− | 2004 04 19 | 704 | 0.0 | 1.5+ | 2005 07 30 | E12 | 0.4− | 0.2− |
| 2004 03 14 | 703 | 1.4− | 0.4− | 2004 04 19 | 704 | 0.2− | 0.3+ | 2005 07 30 | E12 | 0.1+ | 0.3− |
| 2004 03 14 | 703 | (2.6− | 1.4+) | 2004 04 22 | 704 | 0.5+ | 1.0+ | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2004 03 16 | 704 | 1.0+ | 0.4+ | 2004 04 22 | 704 | 1.1+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.7+ |
| 2004 03 16 | 704 | 0.3+ | 0.5− | 2004 04 22 | 704 | 0.8+ | 0.9+ | 2006 09 15 | 691 | 0.1+ | 0.6+ |
| 2004 03 16 | 704 | 0.2+ | 0.9+ | 2004 04 22 | 704 | 0.9+ | 1.4+ | 2006 09 19 | 691 | 0.2+ | 0.5+ |
| 2004 03 16 | 704 | 0.2− | 0.9+ | 2004 04 22 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.1− | 0.3+ | 2004 04 30 | 608 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.0 | 0.5+ |
| 2004 03 19 | 704 | 0.4+ | 0.4+ | 2004 04 30 | 608 | 0.5+ | 0.6− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 0.1+ | 0.8+ | 2004 04 30 | 608 | 0.5+ | 0.2− | 2006 09 26 | G96 | 0.8− | 0.2− |
| 2004 03 19 | 704 | 0.1− | 0.4+ | 2004 06 15 | 704 | 0.1+ | 1.2+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 03 19 | 704 | 0.2+ | 0.3+ | 2004 06 15 | 704 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2004 03 22 | 704 | 1.1+ | 0.5− | 2004 06 15 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 691 | 0.5− | 0.2+ |
| 2004 03 22 | 704 | 1.2+ | 0.1− | 2005 05 19 | G96 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.4− | 0.0 |
| 2004 03 22 | 704 | 1.4+ | 0.2− | 2005 05 19 | G96 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.4− | 0.5+ |
| 2004 03 22 | 704 | 0.6+ | 0.1− | 2005 05 19 | G96 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.4+ |
| 2004 03 22 | 704 | 0.8+ | 0.4− | 2005 05 19 | G96 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 03 28 | 704 | 0.1− | 1.2+ | 2005 06 18 | G96 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2004 03 28 | 704 | 0.4− | 1.1+ | 2005 06 18 | G96 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2004 03 28 | 704 | 0.4− | 0.7+ | 2005 06 18 | G96 | 0.0 | 0.0 | | | | |
| 2004 03 28 | 704 | 0.0 | 1.0+ | 2005 06 18 | G96 | 0.3− | 0.1− | | | | |

**(144444)∗ 2004 EN$_{38}$ = 1999 BO$_{27}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62032)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 212.38697 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.21592275 | $\omega$ | 41.90464 | −0.98624061 | −0.14033569 |
| $a$ | 2.7517171 | $\Omega$ | 129.81328 | +0.10448520 | −0.93875291 |
| $e$ | 0.0541480 | $i$ | 6.53192 | +0.12811048 | −0.31472030 |
| $P$ | 4.56 | $H$ | 15.4 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 16 | 691 | 0.1− | 0.4− | 2004 03 21 | 691 | 0.1− | 0.1+ | 2005 07 03 | G96 | 0.2+ | 0.0 |
| 1999 01 16 | 691 | 0.1− | 0.4− | 2004 03 21 | 699 | (0.3+ | 2.2+) | 2005 07 10 | 691 | 0.4+ | 0.0 |
| 1999 01 16 | 691 | 0.3− | 0.3− | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2005 07 10 | 691 | 0.2+ | 0.0 |
| 1999 01 19 | 691 | 0.1+ | 0.1− | 2004 03 21 | 699 | 1.2+ | 0.1+ | 2005 07 10 | 691 | 0.4+ | 0.0 |
| 1999 01 19 | 691 | 0.2− | 0.1− | 2004 03 21 | 691 | 0.0 | 0.0 | 2005 07 15 | 691 | 0.2+ | 0.1− |
| 1999 01 19 | 691 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.0 | 0.1+ | 2005 07 15 | 691 | 0.9− | 1.3+ |
| 2000 06 04 | 608 | 0.5− | 0.9− | 2004 03 22 | 704 | 0.0 | 1.0+ | 2005 07 15 | 691 | 0.2+ | 0.1− |
| 2000 06 04 | 608 | 0.9− | 0.5− | 2004 03 22 | 704 | (1.8+ | 0.9+) | 2006 09 18 | 703 | 0.3− | 0.2− |
| 2000 06 04 | 608 | 0.4− | 0.5− | 2004 03 22 | 704 | 0.8− | 0.2− | 2006 09 18 | 703 | 0.2− | 1.1+ |
| 2002 12 11 | 704 | (0.6+ | 1.7+) | 2004 03 22 | 704 | 0.7− | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.9− |
| 2002 12 11 | 704 | (0.0 | 2.0+) | 2004 03 30 | 703 | 1.4+ | 0.4− | 2006 09 18 | 703 | 0.8− | 0.1− |
| 2002 12 11 | 704 | 0.8+ | 1.3+ | 2004 03 30 | 703 | 0.7− | 0.2− | 2006 09 30 | 703 | 1.3− | 0.5− |
| 2002 12 11 | 704 | 1.2+ | 1.1+ | 2004 03 30 | 703 | 1.1+ | 0.4− | 2006 09 30 | 703 | (0.3+ | 2.2−) |
| 2002 12 11 | 704 | (1.8+ | 0.9+) | 2004 03 30 | 703 | 0.6+ | 0.3− | 2006 09 30 | 703 | (3.3− | 2.1−) |
| 2004 02 25 | 704 | (2.4+ | 0.9+) | 2004 04 21 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.8− |
| 2004 02 25 | 704 | 0.4+ | 0.1− | 2004 04 21 | 704 | 0.6+ | 1.2+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2004 02 25 | 704 | (0.8+ | 2.0+) | 2004 04 21 | 704 | (1.4+ | 1.7+) | 2006 10 04 | G96 | 0.0 | 0.1+ |
| 2004 02 25 | 704 | (1.6+ | 1.1+) | 2004 04 21 | 704 | 0.5− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.1+ |
| 2004 02 25 | 704 | 0.5+ | 0.6+ | 2004 04 22 | 704 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.1+ |
| 2004 03 14 | 691 | 0.6− | 0.2+ | 2004 04 22 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.9+ |
| 2004 03 14 | 691 | 0.4− | 0.2+ | 2004 04 22 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 1.2+ |
| 2004 03 14 | 691 | 0.3− | 0.2+ | 2004 04 22 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2004 03 16 | 704 | 0.4+ | 0.3− | 2004 04 23 | 704 | 1.0+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.8+ |
| 2004 03 16 | 704 | 0.5− | 0.8+ | 2004 04 23 | 704 | 0.8+ | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2004 03 16 | 704 | 0.4− | 0.0 | 2004 04 23 | 704 | 0.8+ | 0.5− | 2006 10 22 | 703 | 0.8+ | 0.7+ |
| 2004 03 16 | 704 | 0.4+ | 0.3+ | 2004 04 23 | 704 | (1.0+ | 1.9+) | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2004 03 16 | 704 | 0.1+ | 0.1− | 2004 04 23 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.1− |
| 2004 03 20 | 704 | 0.4+ | 0.3+ | 2005 06 15 | G96 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2004 03 20 | 704 | 0.8+ | 0.4+ | 2005 06 15 | G96 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 0.6+ | 0.0 | 2005 06 15 | G96 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2004 03 20 | 704 | 0.3+ | 0.6+ | 2005 06 15 | G96 | 0.3− | 0.1− | 2006 11 16 | 703 | 1.0− | 0.7+ |
| 2004 03 20 | 704 | 0.5+ | 0.8+ | 2005 07 03 | G96 | 0.5+ | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.3+ |
| 2004 03 21 | 699 | 0.1+ | 0.5+ | 2005 07 03 | G96 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.3+ | 1.1+ |
| 2004 03 21 | 699 | 0.7− | 0.2− | 2005 07 03 | G96 | 0.0 | 0.9− | 2006 11 16 | 703 | 0.2+ | 0.9+ |

**(144445)∗ 2004 EQ$_{38}$ = 2003 AQ$_{31}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62032)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 157.18168 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.19083878 | $\omega$ | 162.16409 | −0.85271128 | +0.51597823 |
| $a$ | 2.9878466 | $\Omega$ | 49.17977 | −0.49144774 | −0.73945781 |
| $e$ | 0.1269598 | $i$ | 6.18607 | −0.17709487 | −0.43239866 |
| $P$ | 5.16 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 07 | 691 | 0.1− | 0.2− | 2004 03 21 | 699 | 1.0− | 0.3+ | 2004 04 20 | 683 | (0.0 | 1.7+) |
| 1991 11 07 | 691 | 0.0 | 0.2+ | 2004 03 21 | 691 | 0.0 | 0.0 | 2004 04 20 | 683 | (2.0− | 1.6+) |
| 1991 11 07 | 691 | 0.2− | 0.3+ | 2004 03 21 | 699 | 0.4− | 0.4− | 2004 04 20 | 683 | 0.1− | 1.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.4− | 2004 03 21 | 691 | 0.0 | 0.1+ | 2004 04 21 | 704 | 1.2+ | 0.0 |
| 2001 09 21 | 704 | 0.7− | 0.4+ | 2004 03 21 | 699 | 0.8− | 0.1− | 2004 04 21 | 704 | 0.3+ | 0.5+ |
| 2001 09 21 | 704 | (0.1+ | 1.5+) | 2004 03 21 | 691 | 0.1− | 0.1+ | 2004 04 21 | 704 | 0.2− | 0.5+ |
| 2001 10 20 | 704 | 0.4+ | 0.2− | 2004 03 22 | 704 | 0.0 | 0.5− | 2004 04 22 | 683 | (2.3+ | 0.7−) |
| 2001 10 20 | 704 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.8− | 0.1+ | 2004 04 22 | 683 | (1.1+ | 1.7+) |
| 2001 10 20 | 704 | 0.1− | 0.6+ | 2004 03 22 | 704 | 0.8− | 0.6+ | 2004 04 22 | 683 | 0.9+ | 0.1− |
| 2001 10 20 | 704 | 0.1− | 0.5+ | 2004 03 22 | 704 | 0.0 | 0.0 | 2004 04 22 | 704 | (2.3+ | 0.0 ) |
| 2001 10 20 | 704 | 0.8+ | 0.8+ | 2004 03 22 | 704 | 0.5+ | 0.0 | 2004 04 22 | 704 | 1.1+ | 0.3+ |
| 2001 10 23 | 704 | (0.3+ | 1.5+) | 2004 03 24 | 699 | 0.3+ | 0.0 | 2004 04 22 | 704 | 1.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.9+ | 0.8+ | 2004 03 24 | 699 | 0.2+ | 0.1+ | 2004 04 22 | 704 | 1.2− | 0.1− |
| 2001 10 23 | 704 | (0.8+ | 1.8−) | 2004 03 24 | 699 | 0.3− | 0.6− | 2004 04 22 | 704 | 0.8+ | 0.5+ |
| 2003 01 05 | 704 | 0.3− | 1.1− | 2004 03 24 | 699 | 0.4− | 0.3− | 2004 04 25 | 699 | 0.3− | 1.0+ |
| 2003 01 05 | 704 | 0.2− | 0.2− | 2004 03 28 | 704 | 0.7+ | 0.1+ | 2004 04 25 | 699 | 0.7− | 0.5+ |
| 2003 01 05 | 704 | 0.6+ | 0.1+ | 2004 03 28 | 704 | 1.2+ | 0.4+ | 2004 04 25 | 699 | (0.8− | 1.5+) |
| 2003 01 08 | 704 | 1.1+ | 1.0− | 2004 03 28 | 704 | 1.4+ | 0.9+ | 2004 04 25 | 699 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 0.4− | 1.0− | 2004 03 28 | 704 | 0.1− | 0.5+ | 2004 04 29 | 608 | 0.6+ | 0.5− |
| 2003 01 08 | 704 | 0.3+ | 0.8+ | 2004 03 28 | 704 | 0.7+ | 0.3+ | 2004 04 29 | 608 | 0.3+ | 0.2− |
| 2003 01 08 | 704 | 0.2− | 0.5+ | 2004 03 30 | 703 | 0.9+ | 0.2+ | 2004 04 29 | 608 | 0.9+ | 0.6+ |
| 2004 03 14 | 691 | 0.2− | 0.1− | 2004 03 30 | 703 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.7+ |
| 2004 03 14 | 691 | 0.1− | 0.0 | 2004 03 30 | 703 | 1.0+ | 0.8+ | 2006 09 28 | 691 | 0.2− | 0.5+ |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2004 03 30 | 703 | 0.1+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.9+ |
| 2004 03 16 | 704 | 0.1− | 0.2+ | 2004 04 02 | 608 | 0.7+ | 1.4+ | 2006 10 02 | 691 | 0.5− | 0.2− |
| 2004 03 16 | 704 | 0.0 | 0.4+ | 2004 04 02 | 608 | 0.1+ | 1.4+ | 2006 10 02 | 691 | 0.6− | 0.5+ |
| 2004 03 16 | 704 | 0.4+ | 0.1− | 2004 04 02 | 608 | 0.4+ | 1.3+ | 2006 10 02 | 691 | 0.4− | 0.3+ |
| 2004 03 16 | 704 | 0.4− | 0.7+ | 2004 04 19 | 683 | (1.2+ | 2.6+) | 2006 10 22 | 703 | (2.3− | 0.9−) |
| 2004 03 16 | 704 | (1.8+ | 1.6+) | 2004 04 19 | 683 | (0.1− | 1.6+) | 2006 10 22 | 703 | 0.5+ | 1.4+ |
| 2004 03 20 | 704 | 0.3− | 0.3+ | 2004 04 19 | 683 | 0.5− | 1.2+ | 2006 10 22 | 703 | (3.2− | 0.9−) |
| 2004 03 20 | 704 | 0.9+ | 0.5+ | 2004 04 19 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 1.4− | 1.2+ |
| 2004 03 20 | 704 | 0.2+ | 0.4+ | 2004 04 19 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2004 03 20 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.3+ |
| 2004 03 20 | 704 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.4+ | 1.0− | 2006 11 16 | G96 | 0.2− | 0.3+ |
| 2004 03 21 | 699 | 0.1+ | 0.2− | 2004 04 19 | 704 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2+ |

**(144446)∗ 2004 EA$_{39}$**

Discovered 2004 Mar. 14 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.62363 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17832314 | $\omega$ | 214.08792 | | −0.27547696 | +0.93975251 | |
| $a$ | 3.1260620 | $\Omega$ | 40.98844 | | −0.79878228 | −0.10661096 | |
| $e$ | 0.1661728 | $i$ | 17.97640 | | −0.53484513 | −0.32480658 | |
| $P$ | 5.53 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.0 | 0.2− | 2004 04 20 | 704 | 0.2+ | 0.7+ | 2005 09 06 | E12 | 0.5− | 0.5+ |
| 1993 04 17 | 691 | 0.4− | 0.2− | 2004 04 20 | 703 | 1.0+ | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.4− |
| 1993 04 17 | 691 | 0.1− | 0.1− | 2004 04 20 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.7− | 0.8+ |
| 2000 09 26 | 645 | 0.1− | 0.0 | 2004 04 20 | 703 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2004 04 22 | 704 | 0.2− | 1.0+ | 2006 09 30 | 703 | (1.1− | 2.0−) |
| 2001 12 22 | 704 | 0.9+ | 0.5+ | 2004 04 22 | 704 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2001 12 22 | 704 | 0.1+ | 0.1+ | 2004 04 22 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2001 12 22 | 704 | 0.7− | 0.9+ | 2004 04 22 | 704 | 0.5+ | 0.4− | 2006 10 02 | G96 | 0.4− | 0.2− |
| 2001 12 22 | 704 | 0.1− | 1.3+ | 2004 04 22 | 704 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2004 05 10 | 608 | 0.8+ | 0.6+ | 2006 10 13 | D35 | 0.1+ | 0.2+ |
| 2002 11 07 | 645 | 0.1+ | 0.2− | 2004 05 10 | 608 | 0.7+ | 0.2+ | 2006 10 13 | D35 | 0.2+ | 0.1+ |
| 2004 01 19 | 608 | 0.2+ | 0.1− | 2004 05 10 | 608 | 0.9+ | 0.4+ | 2006 10 13 | D35 | 0.1+ | 0.0 |
| 2004 01 19 | 608 | 0.4+ | 0.3+ | 2004 05 21 | 704 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.3− | 0.1+ |
| 2004 01 19 | 608 | 0.2+ | 0.5+ | 2004 05 21 | 704 | 0.5− | 0.5+ | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2004 03 14 | 703 | 0.6+ | 0.3+ | 2004 05 21 | 704 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2004 03 14 | 703 | (0.4+ | 1.6+) | 2004 05 21 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2004 03 14 | 703 | (0.2+ | 2.0+) | 2004 05 21 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2004 03 14 | 703 | 0.4− | 1.1+ | 2004 05 24 | 699 | 0.8− | 0.0 | 2006 10 21 | 644 | (0.4+ | 1.7+) |
| 2004 03 16 | 704 | 0.5+ | 0.1− | 2004 05 24 | 699 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2004 03 16 | 704 | 0.3+ | 0.2− | 2004 05 24 | 699 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2004 03 16 | 704 | 0.8+ | 0.7+ | 2004 05 24 | 699 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2004 03 16 | 704 | 0.6+ | 0.0 | 2004 06 12 | 703 | 0.4− | 1.3− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2004 03 16 | 704 | 0.4+ | 1.2+ | 2004 06 12 | 703 | 0.5+ | 0.6− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 03 22 | 699 | 0.3− | 0.8+ | 2004 06 12 | 703 | 1.0+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 03 22 | 699 | 0.3− | 0.6+ | 2004 06 12 | 703 | (0.2+ | 1.6−) | 2006 11 09 | 691 | 0.1− | 0.4+ |
| 2004 03 22 | 699 | 0.4+ | 0.1− | 2004 06 14 | 704 | 0.6+ | 0.7+ | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2004 03 22 | 699 | 0.5+ | 0.6+ | 2004 06 14 | 704 | 0.3+ | 1.1+ | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2004 03 23 | 704 | 0.7+ | 0.9+ | 2004 06 14 | 704 | 0.1+ | 1.4+ | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2004 03 23 | 704 | 0.5+ | 0.6+ | 2004 06 14 | 704 | 1.3+ | 1.0+ | 2006 11 09 | 644 | 0.5− | 0.4+ |
| 2004 03 23 | 704 | 0.4+ | 0.7+ | 2004 06 14 | 704 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2004 03 23 | 704 | 0.5+ | 0.6+ | 2005 07 27 | E12 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2004 04 08 | E12 | 0.4+ | 0.2+ | 2005 07 27 | E12 | 0.2+ | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2004 04 08 | E12 | 0.7+ | 1.1+ | 2005 07 27 | E12 | 0.7+ | 0.9+ | 2006 11 11 | 691 | 1.2− | 0.6+ |
| 2004 04 08 | E12 | 0.5+ | 0.7+ | 2005 07 27 | E12 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2004 04 08 | E12 | 0.3+ | 0.1+ | 2005 08 08 | E12 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.4− | 0.4+ |
| 2004 04 10 | 703 | 0.7− | 1.5+ | 2005 08 08 | E12 | 0.7− | 0.9+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2004 04 10 | 703 | (0.8+ | 2.1+) | 2005 08 08 | E12 | 0.4− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 2004 04 10 | 703 | 0.3− | 1.1+ | 2005 08 08 | E12 | 0.6+ | 0.3− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2004 04 10 | 703 | 0.2+ | 1.3+ | 2005 09 02 | E12 | 1.1+ | 0.4− | 2006 11 22 | 691 | 0.1− | 0.4+ |
| 2004 04 20 | 704 | 0.3+ | 0.7+ | 2005 09 02 | E12 | 0.7+ | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2004 04 20 | 704 | 0.4+ | 1.0+ | 2005 09 02 | E12 | (1.9+ | 1.8+) | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2004 04 20 | 703 | 0.6− | 0.2− | 2005 09 02 | E12 | 0.3+ | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2004 04 20 | 704 | 0.5+ | 0.7+ | 2005 09 06 | E12 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2004 04 20 | 703 | 0.2+ | 0.1+ | 2005 09 06 | E12 | 0.1+ | 0.1− | | | | |

**(144447)∗ 2004 EG$_{39}$ = 2002 XK$_{46}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62033)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.11858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21862728 | $\omega$ | 179.79037 | | −0.98534504 | −0.17039538 | |
| $a$ | 2.7289767 | $\Omega$ | 350.38827 | | +0.15642975 | −0.88451440 | |
| $e$ | 0.0319536 | $i$ | 2.67126 | | +0.06800645 | −0.43428066 | |
| $P$ | 4.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.6− | 0.9+ | 2004 03 15 | 691 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.4− | 1.3+ |
| 2001 08 24 | 644 | 0.3− | 1.3+ | 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | (1.6− | 0.7−) |
| 2001 08 24 | 644 | 0.5− | 1.2+ | 2004 03 15 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.8+ | 0.1− |
| 2002 11 24 | 644 | 0.6− | 1.3− | 2004 03 16 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | (1.6− | 1.3+) |
| 2002 11 24 | 644 | 0.4− | 0.7− | 2004 03 16 | 704 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 2002 11 24 | 644 | 0.0 | 0.9− | 2004 03 16 | 704 | 0.7+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2002 12 07 | 704 | 1.0+ | 0.3+ | 2004 03 16 | 704 | 0.3− | 0.5− | 2006 09 15 | 691 | 0.4− | 0.4+ |
| 2002 12 07 | 704 | 1.0+ | 0.6+ | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2002 12 07 | 704 | 0.3+ | 0.4− | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2002 12 11 | 704 | 0.8− | 0.2− | 2004 03 18 | 704 | 0.6+ | 0.3− | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 2002 12 11 | 704 | 0.5− | 1.0− | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.5− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2004 01 18 | 691 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2004 01 18 | 691 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 01 18 | 691 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.6+ | 1.2+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2004 01 22 | 568 | 0.3− | 0.3− | 2004 03 20 | 704 | 1.2+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2004 01 22 | 568 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.7− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2004 01 22 | 568 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 1.1+ |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.7+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.7− | 2006 10 17 | 703 | (0.8− | 1.8+) |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | (0.8− | 2.1+) |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.5− |
| 2004 01 27 | 691 | 0.0 | 0.1− | 2004 03 30 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.1+ |
| 2004 01 30 | 691 | 0.2− | 0.4+ | 2004 04 12 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2004 01 30 | 691 | 0.3− | 0.6+ | 2004 04 12 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2004 01 30 | 691 | 0.4+ | 0.4+ | 2004 04 12 | 691 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2004 01 30 | 691 | 0.5+ | 0.7+ | 2004 04 24 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2004 01 30 | 691 | 0.4− | 0.0 | 2004 04 24 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2004 01 30 | 691 | 0.2− | 0.0 | 2004 04 24 | 691 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2004 02 26 | 683 | 0.7+ | 1.1− | 2006 07 21 | G96 | 1.1− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2004 02 26 | 704 | 0.1+ | 0.4− | 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2004 02 26 | 683 | 1.5− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 2004 02 26 | 704 | 0.7+ | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 683 | 0.3− | 1.5+ | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.1− |
| 2004 02 26 | 704 | 0.0 | 0.3− | 2006 07 22 | G96 | 0.7− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 704 | 0.2+ | 0.7− | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.6− | 0.0 |
| 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 07 22 | G96 | 0.2+ | 0.1+ | | | | |

**(144448)∗ 2004 EJ$_{40}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.76609 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21716276 | $\omega$ | 297.91383 | | −0.36731615 | | −0.92973743 |
| $a$ | 2.7412321 | $\Omega$ | 173.47456 | | +0.91310330 | | −0.36575036 |
| $e$ | 0.1218303 | $i$ | 13.13705 | | +0.17697801 | | −0.04260257 |
| $P$ | 4.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.2+ |
| 2002 10 31 | 704 | 1.0− | 0.4− | 2004 03 18 | 704 | 0.3+ | 1.4+ | 2004 04 19 | 704 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.4+ | 0.3− | 2004 03 20 | 699 | 0.1− | 1.4− | 2004 04 21 | 691 | 0.3− | 0.4+ |
| 2002 10 31 | 704 | 0.6− | 0.1+ | 2004 03 20 | 699 | 0.0 | 0.1− | 2004 04 21 | 691 | 0.4− | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.5− | 0.0 | 2004 04 21 | 691 | 0.1− | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.2+ | 2004 03 20 | 699 | 0.7− | 0.5− | 2005 06 27 | G96 | 0.1− | 0.6+ |
| 2004 02 15 | 703 | 0.5− | 0.0 | 2004 03 22 | 704 | 0.0 | 0.0 | 2005 06 27 | G96 | 0.1− | 0.1+ |
| 2004 02 15 | 703 | (1.4− | 1.8−) | 2004 03 22 | 704 | 0.6− | 0.0 | 2005 06 27 | G96 | 0.3− | 0.2+ |
| 2004 02 15 | 703 | 0.1− | 0.6+ | 2004 03 22 | 704 | 0.3− | 0.9− | 2005 06 27 | G96 | 0.2+ | 0.4+ |
| 2004 02 15 | 703 | 0.0 | 0.9− | 2004 03 22 | 704 | 0.9+ | 0.3+ | 2006 08 19 | 691 | 0.3− | 0.7+ |
| 2004 02 26 | 704 | 0.3− | 1.3+ | 2004 03 22 | 704 | 0.1− | 0.7+ | 2006 08 19 | 691 | 0.1− | 0.7+ |
| 2004 02 26 | 704 | 0.1+ | 0.1+ | 2004 03 23 | 691 | 0.3− | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.9+ |
| 2004 02 26 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 691 | 0.4− | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 2004 03 15 | 683 | (0.9+ | 1.6+) | 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 08 28 | 691 | 0.2+ | 0.4+ |
| 2004 03 15 | 683 | 1.0+ | 0.8− | 2004 03 27 | 704 | (0.3− | 1.9+) | 2006 08 28 | 691 | 0.3+ | 0.4+ |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.6− | 0.9+ | 2006 09 19 | 703 | 0.1− | 0.9+ |
| 2004 03 15 | 683 | 0.2− | 0.5+ | 2004 03 27 | 704 | 0.1− | 1.2+ | 2006 09 19 | 703 | 0.4+ | 0.7− |
| 2004 03 15 | 703 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 703 | 1.1− | 0.2− |
| 2004 03 15 | 703 | 0.6− | 1.4+ | 2004 03 29 | 291 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2004 03 15 | 691 | 0.7+ | 0.1+ | 2004 03 29 | 291 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.2+ |
| 2004 03 15 | 703 | (0.1+ | 1.5+) | 2004 03 29 | 291 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 0.2+ | 0.9+ | 2004 03 30 | 291 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 30 | 291 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.3+ |
| 2004 03 16 | 704 | 0.6+ | 0.5− | 2004 03 30 | 291 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2004 03 16 | 704 | 0.1+ | 0.2− | 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2+ |
| 2004 03 16 | 704 | 1.2+ | 0.0 | 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 1.3− | 1.2+ |
| 2004 03 16 | 704 | 1.4+ | 0.6+ | 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.5+ |
| 2004 03 16 | 704 | (2.2+ | 0.9−) | 2004 04 15 | 704 | 1.1+ | 0.1− | 2006 11 27 | G96 | 0.3− | 1.1− |
| 2004 03 18 | 704 | 0.8+ | 0.0 | 2004 04 15 | 704 | (1.5+ | 0.2+) | 2006 11 27 | G96 | 0.5− | 0.1+ |
| 2004 03 18 | 704 | 0.7+ | 0.1+ | 2004 04 15 | 704 | 0.8+ | 0.3− | 2006 11 27 | G96 | 0.7− | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 0.3− | 2004 04 19 | 704 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.2− |

### (144449)∗ 2004 EV$_{40}$ = 1993 FH$_{79}$

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 65601)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.02383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26633856 | $\omega$ | 155.51655 | | −0.99953305 | | −0.02769516 |
| $a$ | 2.3924710 | $\Omega$ | 22.90760 | | +0.01957086 | | −0.90470550 |
| $e$ | 0.1116605 | $i$ | 1.90063 | | +0.02346626 | | −0.42513638 |
| $P$ | 3.70 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.3+ | 0.5− | 2004 03 16 | 704 | 0.3+ | 0.9+ | 2004 04 13 | 691 | 0.1+ | 0.2− |
| 1993 03 22 | 809 | 1.6+ | 0.0 | 2004 03 17 | 704 | 1.1− | 0.4+ | 2004 04 13 | 691 | 0.3+ | 0.1− |
| 1993 04 18 | 691 | 0.5− | 0.3− | 2004 03 17 | 704 | (1.7− | 0.9−) | 2004 04 21 | 691 | 0.0 | 0.1− |
| 1993 04 18 | 691 | 0.5− | 0.6− | 2004 03 17 | 704 | 0.9− | 0.1− | 2004 04 21 | 691 | 0.0 | 0.2− |
| 1993 04 18 | 691 | 0.2− | 0.6− | 2004 03 17 | 704 | 0.5+ | 0.9− | 2004 04 21 | 691 | 0.1+ | 0.0 |
| 2002 10 31 | 291 | 1.3− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.8+ | 0.1− |
| 2002 10 31 | 291 | 0.1+ | 0.3− | 2004 03 18 | 704 | 0.4− | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.8− |
| 2002 10 31 | 291 | 0.8+ | 0.8+ | 2004 03 18 | 704 | 0.8+ | 1.4+ | 2006 11 01 | G96 | 0.5+ | 0.4− |
| 2004 02 23 | 704 | 0.1+ | 0.6− | 2004 03 18 | 704 | 0.9+ | 0.9+ | 2006 11 01 | G96 | 0.3− | 0.7− |
| 2004 02 23 | 704 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 11 01 | G96 | 0.6+ | 0.7− |
| 2004 02 23 | 704 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.8− |
| 2004 02 23 | 704 | 0.6+ | 0.7− | 2004 03 19 | 704 | 0.3+ | 1.2+ | 2006 11 01 | G96 | 0.3− | 0.7− |
| 2004 02 23 | 704 | 0.2− | 0.4+ | 2004 03 19 | 704 | (0.2+ | 1.7+) | 2006 11 01 | G96 | 0.4+ | 0.7− |
| 2004 03 15 | 703 | (1.6+ | 0.1+) | 2004 03 19 | 704 | 0.3+ | 0.9+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2004 03 15 | 703 | 0.3+ | 1.5+ | 2004 03 19 | 704 | 0.3+ | 0.9+ | 2006 11 14 | 691 | 0.3+ | 0.1− |
| 2004 03 15 | 703 | (2.9+ | 2.1+) | 2004 03 23 | 704 | 0.8− | 0.3− | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2004 03 15 | 703 | 1.3+ | 0.5+ | 2004 03 23 | 704 | 0.4− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 704 | (2.1+ | 1.0+) | 2004 03 23 | 704 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2004 03 16 | 704 | (0.4− | 2.4−) | 2004 03 23 | 704 | 1.3− | 0.3− | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2004 03 16 | 704 | 0.1+ | 1.0− | 2004 04 13 | 691 | 0.1+ | 0.0 | | | | |

### (144450)∗ 2004 EX$_{40}$

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.77919 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20235252 | $\omega$ | 308.34362 | | −0.77604166 | | −0.63065715 |
| $a$ | 2.8734058 | $\Omega$ | 192.56101 | | +0.58632086 | | −0.71818139 |
| $e$ | 0.0742509 | $i$ | 1.46464 | | +0.23235142 | | −0.29408680 |
| $P$ | 4.87 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 691 | 0.3− | 0.6+ | 2004 03 16 | 704 | 1.4+ | 0.7+ | 2004 04 13 | 691 | 0.2− | 0.3+ |
| 2001 09 16 | 691 | 0.3− | 0.2+ | 2004 03 16 | 704 | 0.4− | 0.6+ | 2004 04 13 | 691 | 0.2− | 0.3+ |
| 2001 09 16 | 691 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.7+ | 0.0 | 2004 04 21 | 691 | 0.4+ | 0.0 |
| 2001 09 19 | 704 | 0.6+ | 1.3+ | 2004 03 16 | 704 | 0.4+ | 0.2− | 2004 04 21 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.1− | 1.5+ | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2004 04 21 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | (0.1+ | 1.5+) | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 0.6+ | 2004 03 18 | 704 | 0.7+ | 0.9+ | 2006 09 25 | G96 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | (0.3− | 1.8+) | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.3+ |
| 2002 11 07 | 695 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.4− | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2002 11 07 | 695 | 0.2+ | 0.1+ | 2004 03 20 | 699 | 0.0 | 1.0− | 2006 10 19 | G96 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.3+ | 0.8+ | 2004 03 20 | 699 | 1.5− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.6− | 0.8+ | 2004 03 20 | 699 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.6− | 0.4+ | 2004 03 20 | 699 | 0.3− | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.7+ | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2004 03 27 | 704 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.7− | 0.1+ |
| 2004 03 15 | 703 | 0.3+ | 0.5+ | 2004 03 27 | 704 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.4+ |
| 2004 03 15 | 703 | 1.4+ | 0.7+ | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2004 03 15 | 703 | (1.2+ | 3.6+) | 2004 03 27 | 704 | 0.2− | 0.3+ | | | | |
| 2004 03 15 | 703 | 0.5+ | 0.3+ | 2004 04 13 | 691 | 0.2− | 0.2+ | | | | |

### (144451)∗ 2004 EA$_{41}$ = 2004 EH$_{36}$ = 2004 FG$_{147}$ = 2001 QR$_{47}$

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62034), A. Doppler (d, *MPO* 76450)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.43907 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21474828 | $\omega$ | 242.89697 | | −0.03914610 | | −0.99874409 |
| $a$ | 2.7617408 | $\Omega$ | 209.39740 | | +0.93785872 | | −0.02592510 |
| $e$ | 0.0374560 | $i$ | 3.65246 | | +0.34480227 | | −0.04287342 |
| $P$ | 4.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.8− | 0.5+ | 2004 03 15 | 703 | 1.4+ | 1.0+ | 2004 04 13 | 691 | 0.1− | 0.4+ |
| 2000 05 07 | 704 | 0.2+ | 0.2+ | 2004 03 15 | 703 | 0.3− | 0.7+ | 2004 04 13 | 691 | 0.0 | 0.1+ |
| 2000 05 07 | 704 | 0.8+ | 0.9+ | 2004 03 15 | 691 | 0.1+ | 0.0 | 2004 04 21 | 691 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.5+ | 1.3+ | 2004 03 15 | 703 | 1.0− | 1.0+ | 2004 04 21 | 691 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.0 | 1.0+ | 2004 03 15 | 703 | 0.0 | 0.5− | 2004 04 21 | 691 | 0.1− | 0.4+ |
| 2001 08 16 | 704 | 0.9+ | 0.9+ | 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.6+ |
| 2001 08 16 | 704 | (0.3− | 2.2+) | 2004 03 16 | 704 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.0 | 0.2+ |
| 2001 08 19 | 704 | 1.4− | 0.3+ | 2004 03 16 | 704 | 0.8+ | 0.7+ | 2006 09 06 | 644 | 0.3− | 0.7+ |
| 2001 08 19 | 704 | (2.0− | 0.3−) | 2004 03 16 | 704 | (0.3− | 2.6+) | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2001 08 19 | 704 | 1.0− | 0.2+ | 2004 03 16 | 704 | 0.0 | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | (2.0− | 0.2+) | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2002 11 14 | 704 | (1.8− | 0.1+) | 2004 03 18 | 704 | (1.0+ | 1.9+) | 2006 09 17 | 703 | 0.9− | 0.1+ |
| 2002 11 14 | 704 | 1.2− | 0.7+ | 2004 03 18 | 704 | 0.4− | 1.1+ | 2006 09 17 | 703 | 0.2+ | 0.2− |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.8− | 0.4− |
| 2002 11 24 | 644 | 0.4+ | 0.3+ | 2004 03 18 | 704 | (1.8+ | 0.3+) | 2006 09 17 | 703 | 1.4− | 0.2− |
| 2002 11 24 | 644 | 0.2+ | 0.2+ | 2004 03 18 | 704 | (1.1− | 1.9+) | 2006 10 17 | 703 | (2.2− | 3.5−) |
| 2002 12 05 | 608 | 0.2− | 0.2− | 2004 03 19 | 704 | 0.7+ | 0.7− | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2002 12 05 | 608 | 0.1− | 0.6− | 2004 03 19 | 704 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.0 | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 608 | 0.6− | 0.6− | 2004 03 19 | 704 | 0.4+ | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2002 12 10 | 644 | 0.7+ | 0.7+ | 2004 03 19 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.5+ |
| 2002 12 10 | 644 | 0.0 | 0.7+ | 2004 03 19 | 704 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.7− | 0.8+ |
| 2002 12 10 | 644 | 0.3+ | 0.8+ | 2004 03 27 | 704 | 0.1+ | 1.1+ | 2006 10 20 | 644 | 0.4− | 0.5+ |
| 2004 03 13 | 644 | 0.3+ | 0.0 | 2004 03 27 | 704 | (0.0 | 1.5+) | 2006 10 22 | G96 | 0.1− | 0.6+ |
| 2004 03 13 | 644 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2004 03 13 | 644 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 1.2+ | 0.3− | 2006 10 22 | G96 | 0.2− | 0.5+ |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.5+ |

**(144452)∗ 2004 EC$_{41}$ = 2004 EQ$_{72}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (d, *MPO* 62580)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.29637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19193308 | $\omega$ | 279.31041 | | −0.32260841 | +0.94607577 | |
| $a$ | 2.9764790 | $\Omega$ | 331.81412 | | −0.84216139 | −0.30107633 | |
| $e$ | 0.1808533 | $i$ | 3.56884 | | −0.43207407 | −0.11955620 | |
| $P$ | 5.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.3− | 0.5+ | 2004 03 27 | 703 | 1.4− | 0.3+ | 2005 07 31 | E12 | 1.1+ | 0.4+ |
| 2000 08 30 | 691 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.9+ | 0.5+ | 2005 07 31 | E12 | 0.4+ | 0.5− |
| 2000 08 30 | 691 | 0.0 | 0.8+ | 2004 03 27 | 703 | 0.9+ | 0.5+ | 2005 07 31 | E12 | 0.3− | 0.6+ |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.6+ | 2005 10 25 | G96 | 0.1− | 0.0 |
| 2004 03 15 | 703 | 0.5+ | 0.7+ | 2004 03 27 | 703 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.7− | 0.0 |
| 2004 03 15 | 703 | 0.1+ | 0.4+ | 2004 03 27 | 704 | 0.4− | 0.2+ | 2005 10 25 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2004 03 27 | 703 | 0.2− | 0.6+ | 2005 10 25 | G96 | 0.2+ | 0.1+ |
| 2004 03 15 | 703 | 0.2+ | 0.3− | 2004 04 15 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2004 03 15 | 703 | 0.0 | 0.9+ | 2004 04 15 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2004 04 15 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2004 03 16 | 704 | 0.8+ | 0.7+ | 2004 04 16 | 704 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 0.7− | 1.5+ | 2004 04 16 | 704 | 0.9+ | 0.2− | 2006 10 17 | 691 | 0.4− | 0.2+ |
| 2004 03 16 | 704 | 0.8+ | 1.0+ | 2004 04 16 | 704 | (3.0+ | 1.9+) | 2006 10 17 | 691 | 0.2− | 0.9+ |
| 2004 03 16 | 704 | 0.3+ | 0.9+ | 2004 04 21 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2004 03 18 | 704 | 0.4+ | 1.1+ | 2004 04 21 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.4+ |
| 2004 03 18 | 704 | 0.5+ | 1.2+ | 2004 04 21 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.7− | 0.2+ |
| 2004 03 18 | 704 | 0.5+ | 0.8+ | 2005 06 30 | 691 | 0.5− | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.4+ |
| 2004 03 18 | 704 | (0.6+ | 1.6+) | 2005 06 30 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2004 03 18 | 704 | 0.2+ | 1.1+ | 2005 06 30 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2004 03 20 | 704 | 0.3− | 1.0+ | 2005 07 05 | 691 | 0.5+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.9+ |
| 2004 03 20 | 704 | 0.0 | 1.0+ | 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2004 03 20 | 704 | 0.7+ | 0.2− | 2005 07 05 | 691 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2004 03 20 | 704 | 0.5+ | 1.2+ | 2005 07 09 | 691 | 0.2+ | 1.0+ | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2004 03 20 | 704 | 0.2− | 1.3+ | 2005 07 09 | 691 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2005 07 09 | 691 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.9+ |
| 2004 03 23 | 691 | 0.3+ | 0.4+ | 2005 07 16 | 691 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2005 07 16 | 691 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2004 03 27 | 704 | 0.0 | 0.5+ | 2005 07 16 | 691 | 1.0+ | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2004 03 27 | 704 | 0.2+ | 0.5+ | 2005 07 31 | E12 | 0.7− | 0.5− | | | | |

**(144453)∗ 2004 EQ$_{41}$ = 2002 XA$_{109}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.32372 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23001619 | $\omega$ | 123.42311 | | +0.16764368 | −0.98545813 | |
| $a$ | 2.6381356 | $\Omega$ | 316.89877 | | +0.89050037 | +0.16342968 | |
| $e$ | 0.0264811 | $i$ | 2.32424 | | +0.42297127 | +0.04650822 | |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.6− | 0.4+ | 2004 03 16 | 704 | 0.3− | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.9+ |
| 1997 08 11 | 691 | 0.1+ | 0.0 | 2004 03 16 | 704 | 0.6+ | 0.4+ | 2004 04 21 | 691 | 0.1+ | 0.1+ |
| 1997 08 11 | 691 | 0.1+ | 0.4+ | 2004 03 16 | 704 | 0.7− | 0.3− | 2004 04 21 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 1.0− | 0.4− | 2004 03 18 | 704 | 0.5− | 0.1+ | 2004 04 21 | 691 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.3− | 0.5− | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2002 11 12 | 704 | 0.1− | 0.2+ | 2004 03 18 | 704 | 1.4− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.5+ |
| 2002 11 12 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.8+ | 1.2+ | 2006 09 25 | 691 | 0.2− | 0.4+ |
| 2002 11 24 | 644 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.7− | 0.4− | 2006 10 20 | 644 | 0.5− | 0.3+ |
| 2002 11 24 | 644 | 0.2+ | 0.3− | 2004 03 20 | 699 | 0.6− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2004 03 20 | 699 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.5− | 0.3+ |
| 2002 12 06 | 704 | 0.5− | 0.0 | 2004 03 20 | 699 | 0.5− | 0.8+ | 2006 11 07 | 644 | 0.4− | 0.4+ |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2004 03 20 | 608 | 0.2− | 0.2+ | 2006 11 07 | 644 | 0.5− | 0.1− |
| 2002 12 06 | 704 | 0.6+ | 0.3+ | 2004 03 20 | 608 | 0.1− | 0.6+ | 2006 11 07 | 644 | 0.3− | 0.3− |
| 2002 12 06 | 704 | 0.0 | 0.9− | 2004 03 20 | 699 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 1.4+ | 1.0− | 2004 03 20 | 608 | 0.6+ | 0.7− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.3− | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 704 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.5+ | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.6− | 0.4− | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.3− |
| 2004 02 26 | 704 | 1.1+ | 0.5+ | 2004 03 20 | 704 | 0.5+ | 0.6− | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2004 02 26 | 704 | 1.2+ | 0.2− | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.8− | 1.4+ |
| 2004 02 26 | 704 | 1.1+ | 1.1+ | 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.0− | 1.2+ |
| 2004 02 26 | 704 | 0.7+ | 0.5+ | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2004 03 15 | 703 | 0.3− | 0.8+ | 2004 03 27 | 704 | 0.8+ | 0.6+ | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 703 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2004 03 15 | 703 | (2.0− | 1.0−) | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.4+ | 0.1− |
| 2004 03 15 | 703 | 0.1− | 0.5− | 2004 03 27 | 704 | 0.1+ | 1.0+ | | | | |

**(144454)∗ 2004 EC$_{42}$ = 2002 RB$_{146}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.20989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26747536 | $\omega$ | 127.54853 | | −0.50421084 | −0.86347919 | |
| $a$ | 2.3856874 | $\Omega$ | 352.69414 | | +0.75587689 | −0.43386433 | |
| $e$ | 0.1927670 | $i$ | 5.97317 | | +0.41763807 | −0.25722644 | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 02 | 704 | 1.8+ | 1.6+ | 2004 03 18 | 704 | 0.7+ | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.4+ |
| 2000 01 02 | 704 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.6− | 2004 04 25 | 691 | 0.2+ | 0.3+ |
| 2000 01 02 | 704 | 0.4+ | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 691 | 0.0 | 0.3+ |
| 2000 01 29 | 704 | 0.3− | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2000 01 29 | 704 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2000 01 29 | 704 | 1.5− | 1.1+ | 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2004 03 20 | 704 | 1.1+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1− |
| 2002 09 11 | 644 | 0.0 | 1.5+ | 2004 03 20 | 704 | 0.3+ | 0.1− | 2006 10 17 | 691 | 1.6− | 0.8+ |
| 2002 09 11 | 644 | (0.1+ | 1.6+) | 2004 03 21 | 608 | 0.6+ | 0.7− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2002 09 11 | 644 | (0.2− | 2.4+) | 2004 03 21 | 608 | 0.4+ | 0.7− | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 2002 09 13 | 644 | (0.2− | 2.2+) | 2004 03 21 | 608 | 0.6+ | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2002 09 13 | 644 | (0.1+ | 1.8+) | 2004 03 23 | 291 | 0.2− | 0.1− | 2006 10 19 | 703 | 1.1+ | 0.3+ |
| 2002 09 13 | 644 | (0.3− | 1.8+) | 2004 03 23 | 291 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.1− |
| 2003 12 19 | 691 | 0.1− | 0.5− | 2004 03 23 | 291 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 19 | 691 | 0.2+ | 0.3− | 2004 03 26 | 699 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.2− | 2004 03 26 | 699 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2004 02 26 | 704 | 0.3− | 0.1− | 2004 03 26 | 699 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 02 26 | 704 | 0.8+ | 0.0 | 2004 03 26 | 699 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2004 02 26 | 704 | 0.5+ | 0.6− | 2004 03 27 | 704 | 0.8− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 02 26 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 704 | 0.2− | 0.4− | 2006 10 23 | 644 | 0.5+ | 0.2− |
| 2004 02 26 | 704 | 1.1+ | 0.4− | 2004 03 27 | 704 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 0.9− | 0.8+ | 2004 03 27 | 704 | 0.7− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 0.7− | 1.0+ | 2004 03 27 | 704 | 0.3− | 1.1+ | 2006 10 27 | 703 | 0.7+ | 0.3− |
| 2004 03 15 | 703 | (1.5− | 1.0+) | 2004 03 28 | 333 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.8− | 0.2+ |
| 2004 03 15 | 703 | 0.2− | 1.4+ | 2004 03 28 | 333 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2004 03 16 | 704 | (1.7+ | 0.3−) | 2004 03 28 | 333 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 0.2+ | 0.3+ | 2004 04 12 | 703 | 1.1+ | 0.6+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2004 03 16 | 704 | 1.3+ | 0.1+ | 2004 04 12 | 703 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2004 03 16 | 704 | 0.4+ | 0.3+ | 2004 04 12 | 703 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2004 03 18 | 704 | 0.5+ | 0.0 | 2004 04 12 | 703 | 0.6− | 0.0 | | | | |

**(144455)∗ 2004 EF$_{42}$ = 1999 FX$_{55}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62036)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.63805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20346546 | $\omega$ | 176.03116 | | −0.99840121 | +0.04685672 | |
| $a$ | 2.8629180 | $\Omega$ | 6.89694 | | −0.05633990 | −0.77975709 | |
| $e$ | 0.0800251 | $i$ | 15.26418 | | −0.00456551 | −0.62432630 | |
| $P$ | 4.84 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 704 | 1.9− | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.6+ | 2004 04 19 | 704 | 0.6+ | 0.6+ | |
| 1999 03 20 | 704 | 0.8+ | 0.7+ | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2004 04 22 | 703 | 0.6− | 1.0+ | |
| 1999 03 20 | 704 | 0.8− | 1.3− | 2004 03 18 | 704 | 0.6+ | 0.3− | 2004 04 22 | 703 | 0.5+ | 1.1+ | |
| 1999 03 20 | 704 | 1.7+ | 1.6− | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 703 | 1.0− | 0.9+ | |
| 1999 03 20 | 704 | 0.3+ | 0.8− | 2004 03 18 | 704 | 0.6+ | 0.1− | 2004 04 22 | 703 | 0.1+ | 0.2+ | |
| 1999 03 23 | 704 | 0.2− | 1.1− | 2004 03 18 | 106 | 0.3− | 1.4+ | 2004 04 25 | 185 | 0.5+ | 0.2+ | |
| 1999 03 23 | 704 | 0.9− | 0.2− | 2004 03 18 | 106 | 0.0 | 0.6+ | 2004 04 25 | 185 | 0.1− | 0.9+ | |
| 1999 03 23 | 704 | 1.5− | 0.7+ | 2004 03 18 | 106 | 0.8+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.4+ | |
| 1999 03 23 | 704 | 0.9+ | 1.2+ | 2004 03 19 | 291 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.3+ | |
| 2001 09 21 | 704 | 0.6− | 1.4+ | 2004 03 19 | 291 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.1+ | |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2004 03 19 | 291 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.4− | 0.5+ | |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2004 03 24 | 699 | 0.4− | 1.5+ | 2006 09 19 | 691 | 0.2− | 0.6+ | |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2004 03 24 | 699 | 1.0− | 0.4+ | 2006 09 19 | 691 | 0.4− | 0.3+ | |
| 2001 10 17 | 644 | 0.3− | 0.6+ | 2004 03 24 | 699 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.3+ | |
| 2001 10 17 | 644 | 0.7− | 0.3+ | 2004 03 24 | 699 | 0.5− | 0.6+ | 2006 09 25 | 691 | 0.6− | 0.2+ | |
| 2001 10 17 | 644 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.4− | 0.3+ | |
| 2001 12 10 | 645 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 1.0− | 0.6+ | |
| 2001 12 10 | 645 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.3+ | |
| 2004 02 23 | 704 | 0.2− | 0.4+ | 2004 03 27 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.5+ | |
| 2004 02 23 | 704 | 1.5+ | 0.8+ | 2004 03 27 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.6− | 0.4+ | |
| 2004 02 23 | 704 | 0.3+ | 0.3+ | 2004 04 15 | 699 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 2004 02 23 | 704 | 1.3+ | 0.4+ | 2004 04 15 | 699 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | |
| 2004 03 15 | 703 | 0.5+ | 1.4+ | 2004 04 15 | 699 | 0.4− | 0.6+ | 2006 10 31 | G96 | 0.6+ | 0.1− | |
| 2004 03 15 | 703 | 0.4+ | 1.1+ | 2004 04 15 | 699 | 0.8− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.4+ | |
| 2004 03 15 | 703 | 0.5+ | 0.2− | 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1+ | |
| 2004 03 15 | 703 | 0.2− | 0.9+ | 2004 04 19 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1+ | |
| 2004 03 16 | 704 | 0.9− | 0.6+ | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 11 20 | G96 | 0.3+ | 0.1− | |
| 2004 03 16 | 704 | 0.5− | 0.1+ | 2004 04 19 | 691 | 0.5+ | 0.2− | 2006 11 20 | G96 | 0.6+ | 0.0 | |
| 2004 03 16 | 704 | 1.1+ | 0.4+ | 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 11 20 | G96 | 0.2− | 0.0 | |
| 2004 03 16 | 704 | 0.3+ | 0.9− | 2004 04 19 | 704 | 0.4+ | 0.0 | 2006 11 20 | G96 | 0.7+ | 0.3− | |
| 2004 03 16 | 704 | 0.2− | 0.5− | 2004 04 19 | 704 | 0.3+ | 0.3+ | | | | | |

**(144456)∗ 2004 EZ$_{42}$ = 2002 XQ$_{91}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62037)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.88163 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20566486 | $\omega$ | 354.96600 | | +0.35748811 | −0.93241014 | |
| $a$ | 2.8424706 | $\Omega$ | 74.08011 | | +0.85876647 | +0.30586888 | |
| $e$ | 0.0277398 | $i$ | 3.16197 | | +0.36704551 | +0.19249820 | |
| $P$ | 4.79 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 644 | 0.7− | 0.8+ | 2004 03 22 | 704 | 0.7+ | 0.6− | 2006 09 26 | 704 | 0.8+ | 0.8+ | |
| 2001 08 12 | 644 | 0.2− | 0.6+ | 2004 03 22 | 704 | 0.0 | 1.2+ | 2006 09 26 | 704 | 1.2− | 0.2− | |
| 2001 08 12 | 644 | 0.1− | 0.6+ | 2004 03 22 | 704 | 1.3+ | 1.3+ | 2006 09 26 | 704 | 0.1− | 1.0+ | |
| 2001 08 12 | 644 | 0.6− | 0.4+ | 2004 03 22 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 704 | 0.4+ | 0.8+ | |
| 2001 08 12 | 644 | 0.3+ | 0.7+ | 2004 03 28 | 704 | 0.0 | 1.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | |
| 2001 08 12 | 644 | 0.4− | 1.0+ | 2004 03 28 | 704 | 0.9+ | 1.0+ | 2006 09 26 | 691 | 0.1− | 0.3+ | |
| 2001 09 12 | 704 | 0.7− | 0.1+ | 2004 03 28 | 704 | (0.8+ | 2.0+) | 2006 09 26 | 691 | 0.4− | 0.0 | |
| 2001 09 12 | 704 | 0.1− | 0.9+ | 2004 03 28 | 704 | (1.6+ | 0.3+) | 2006 09 27 | 691 | 0.1+ | 0.1+ | |
| 2001 09 12 | 704 | (0.0 | 1.6+) | 2004 03 28 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ | |
| 2002 12 04 | 695 | 0.2+ | 0.1+ | 2004 04 12 | 699 | 1.0+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | |
| 2002 12 04 | 695 | 0.1+ | 0.1+ | 2004 04 12 | 699 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.4+ | 0.0 | |
| 2002 12 05 | 704 | 0.8+ | 0.8+ | 2004 04 12 | 699 | 0.5− | 1.4+ | 2006 09 28 | 704 | 0.3+ | 1.1+ | |
| 2002 12 05 | 704 | 0.0 | 0.5− | 2004 04 12 | 699 | 0.3− | 0.5+ | 2006 09 28 | 704 | 0.6+ | 0.9− | |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2004 04 19 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 691 | 0.1− | 0.0 | |
| 2002 12 31 | 704 | 0.7− | 0.3+ | 2004 04 19 | 704 | 0.3+ | 1.3+ | 2006 09 30 | 691 | 0.1− | 0.0 | |
| 2002 12 31 | 704 | 0.2− | 0.5+ | 2004 04 19 | 704 | 1.1+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.0 | |
| 2002 12 31 | 704 | 0.1− | 1.0+ | 2004 04 19 | 704 | 0.9+ | 0.5+ | 2006 10 01 | 704 | 1.0+ | 1.0+ | |
| 2004 03 15 | 703 | 0.8− | 1.5+ | 2004 04 19 | 704 | 0.8+ | 1.2+ | 2006 10 01 | 704 | 0.6+ | 1.2+ | |
| 2004 03 15 | 703 | 1.1− | 1.1+ | 2006 08 23 | 644 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.7+ | |
| 2004 03 15 | 703 | 0.8− | 0.6− | 2006 08 23 | 644 | 0.4− | 0.1+ | 2006 10 01 | 704 | (0.9− | 2.6+) | |
| 2004 03 15 | 703 | 0.0 | 0.6+ | 2006 08 23 | 644 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.2− | |
| 2004 03 16 | 704 | 0.8+ | 0.2− | 2006 09 12 | 703 | 0.1− | 1.2+ | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 2004 03 16 | 704 | 0.6+ | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.4− | |
| 2004 03 16 | 704 | 0.4− | 0.3− | 2006 09 12 | 703 | (0.5− | 1.7−) | 2006 10 21 | 703 | (0.6+ | 1.6+) | |
| 2004 03 16 | 704 | 0.4+ | 0.2− | 2006 09 12 | 703 | 0.3+ | 1.4− | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 2004 03 17 | 704 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 21 | 703 | (1.9+ | 1.5+) | |
| 2004 03 17 | 704 | 0.9+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.6+ | 1.0+ | |
| 2004 03 17 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.2− | |
| 2004 03 17 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.9− | 0.5− | 2006 11 16 | G96 | 0.1− | 0.5− | |
| 2004 03 19 | 704 | 0.4− | 0.6+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.2− | |
| 2004 03 19 | 704 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.5− | 0.2− | |
| 2004 03 19 | 704 | 0.5− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.2+ | | | | | |
| 2004 03 19 | 704 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.7+ | | | | | |

**(144457)∗ 2004 EQ$_{43}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.72840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17998900 | $\omega$ | 174.98240 | | −0.88016195 | +0.46192195 | |
| $a$ | 3.1067435 | $\Omega$ | 33.23930 | | −0.44214675 | −0.71406625 | |
| $e$ | 0.1356056 | $i$ | 11.50035 | | −0.17268814 | −0.52605846 | |
| $P$ | 5.48 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 14 | 691 | 0.6− | 0.7− | 2004 03 28 | 704 | 0.6+ | 0.4+ | 2004 04 22 | 599 | 0.0 | 0.1− | |
| 1993 04 14 | 691 | 0.6− | 0.6− | 2004 03 28 | 704 | 0.2+ | 0.8+ | 2004 04 22 | 599 | 0.1− | 0.0 | |
| 1993 04 14 | 691 | 0.6− | 0.7− | 2004 03 28 | 704 | 0.7+ | 0.2+ | 2004 04 22 | 599 | 0.1+ | 0.2− | |
| 1993 04 18 | 413 | 1.1+ | 0.9− | 2004 03 28 | 704 | 0.3+ | 0.5+ | 2004 05 10 | 691 | 0.1− | 0.1− | |
| 2001 10 21 | 704 | 0.0 | 1.1+ | 2004 03 28 | 704 | 1.0+ | 0.1+ | 2004 05 10 | 691 | 0.3− | 0.1− | |
| 2001 10 21 | 704 | 0.9− | 1.2+ | 2004 03 31 | 704 | 0.3+ | 0.1+ | 2004 05 10 | 691 | 0.0 | 0.1− | |
| 2001 10 21 | 704 | 0.1+ | 0.6+ | 2004 03 31 | 704 | 0.3+ | 0.0 | 2004 05 10 | 608 | (1.0+ | 1.5−) | |
| 2001 10 21 | 704 | 0.3+ | 1.4+ | 2004 03 31 | 704 | 1.3+ | 0.6+ | 2004 05 10 | 608 | 0.3+ | 0.8− | |
| 2001 11 19 | 704 | 0.3+ | 0.6+ | 2004 03 31 | 704 | 0.1+ | 0.7+ | 2004 05 10 | 608 | 0.8+ | 0.1+ | |
| 2001 11 19 | 704 | 0.4− | 0.3+ | 2004 03 31 | 704 | 0.1+ | 0.4+ | 2004 05 11 | 699 | 0.4− | 1.4− | |
| 2001 11 19 | 704 | 0.7− | 0.1− | 2004 04 09 | E12 | 0.0 | 0.1− | 2004 05 11 | 699 | 0.1+ | 0.4+ | |
| 2001 11 19 | 704 | 0.3− | 0.7+ | 2004 04 09 | E12 | 0.4− | 0.1+ | 2004 05 11 | 699 | 0.0 | 1.2+ | |
| 2001 11 19 | 704 | 0.3− | 0.5+ | 2004 04 09 | E12 | 0.6− | 0.7+ | 2004 05 11 | 699 | 0.2− | 0.1+ | |
| 2003 01 13 | 704 | 0.6+ | 0.1− | 2004 04 09 | E12 | 0.8− | 0.1− | 2004 05 14 | 704 | 0.9+ | 0.7+ | |
| 2003 01 13 | 704 | 0.0 | 0.4+ | 2004 04 10 | 703 | (1.6+ | 0.5−) | 2004 05 14 | 704 | 0.9− | 0.9+ | |
| 2003 01 13 | 704 | 0.5+ | 0.4+ | 2004 04 10 | 703 | 0.0 | 0.5+ | 2004 05 14 | 704 | 0.3− | 0.2− | |
| 2003 01 13 | 704 | 0.1+ | 0.4+ | 2004 04 10 | 703 | 0.5+ | 0.3+ | 2004 05 14 | 704 | 0.4− | 1.1− | |
| 2003 01 13 | 704 | 0.4− | 0.2+ | 2004 04 10 | 703 | 0.1+ | 0.3+ | 2004 05 16 | 704 | 0.6+ | 0.4− | |
| 2003 01 13 | 704 | 0.6− | 0.4− | 2004 04 12 | 699 | 0.2− | 0.4+ | 2004 05 16 | 704 | 0.2− | 0.7− | |
| 2003 01 13 | 704 | 0.8+ | 1.0+ | 2004 04 12 | 699 | 0.2− | 0.2− | 2004 05 16 | 704 | 0.2+ | 0.1− | |
| 2003 01 13 | 704 | 0.0 | 0.5− | 2004 04 12 | 691 | 0.0 | 0.1+ | 2004 05 16 | 704 | 0.1+ | 0.6+ | |
| 2004 01 23 | 704 | 1.2− | 0.8+ | 2004 04 12 | 699 | 0.0 | 0.4+ | 2004 05 16 | 704 | 0.3− | 0.2− | |
| 2004 01 23 | 704 | 0.5+ | 0.1− | 2004 04 12 | 691 | 0.0 | 0.1+ | 2004 05 19 | 701 | 0.3+ | 0.1− | |
| 2004 01 23 | 704 | 0.4− | 0.5− | 2004 04 12 | 699 | 0.4− | 0.2− | 2004 05 19 | 701 | 0.5+ | 0.6− | |
| 2004 01 23 | 704 | 0.2+ | 0.6− | 2004 04 12 | 691 | 0.0 | 0.2+ | 2004 05 19 | 701 | 0.4+ | 0.6+ | |
| 2004 03 15 | 703 | 0.7+ | 0.8+ | 2004 04 16 | 704 | 0.5− | 1.0+ | 2004 05 19 | 701 | 0.1+ | 0.1− | |
| 2004 03 15 | 703 | 1.1+ | 0.6+ | 2004 04 16 | 704 | 0.8− | 1.0+ | 2004 05 19 | 701 | 0.8+ | 0.4+ | |
| 2004 03 15 | 703 | 0.2+ | 0.8+ | 2004 04 16 | 704 | 0.3− | 0.6+ | 2005 08 07 | E12 | 1.0+ | 0.9+ | |
| 2004 03 15 | 703 | 0.3− | 0.2− | 2004 04 16 | 704 | 0.2− | 0.6+ | 2005 08 07 | E12 | 0.4− | 0.7− | |
| 2004 03 16 | 704 | 0.2+ | 0.4+ | 2004 04 16 | 704 | 0.6− | 1.0+ | 2005 08 07 | E12 | 0.0 | 1.0+ | |
| 2004 03 16 | 704 | 1.1+ | 0.4+ | 2004 04 16 | 644 | 0.4+ | 0.1+ | 2005 08 07 | E12 | 0.1+ | 0.5+ | |
| 2004 03 16 | 704 | (1.6+ | 0.3−) | 2004 04 16 | 644 | 0.5+ | 0.1+ | 2006 09 18 | 703 | (1.7+ | 0.3−) | |
| 2004 03 16 | 704 | 0.7+ | 1.2+ | 2004 04 16 | 644 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.9− | 0.1− | |
| 2004 03 19 | 704 | 0.5+ | 0.0 | 2004 04 19 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | (1.7− | 0.9+) | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.3− | 0.7+ | 2004 04 19 | 704 | 0.9+ | 0.7+ | 2006 09 18 | 703 | 0.2+ | 0.1+ | | |
| 2004 03 19 | 704 | 0.7+ | 1.0− | 2004 04 19 | 704 | 0.7+ | 0.6+ | 2006 09 30 | 703 | 1.5− | 0.5+ | | |
| 2004 03 19 | 704 | 0.5+ | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 703 | (1.9+ | 0.2+) | | |
| 2004 03 19 | 704 | 1.0+ | 0.0 | 2004 04 19 | 704 | 0.3+ | 1.1+ | 2006 09 30 | 703 | (1.7− | 0.8+) | | |
| 2004 03 19 | 704 | (0.4− | 1.6+) | 2004 04 20 | 704 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.1− | | |
| 2004 03 19 | 704 | 0.3+ | 0.5+ | 2004 04 20 | 704 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.4− | 0.1+ | | |
| 2004 03 19 | 704 | 0.5− | 0.2− | 2004 04 20 | 704 | 0.7− | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.4+ | | |
| 2004 03 19 | 704 | 0.3− | 0.3− | 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2+ | | |
| 2004 03 19 | 704 | 0.6− | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2+ | | |
| 2004 03 22 | 704 | 1.1+ | 0.5+ | 2004 04 20 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.8+ | | |
| 2004 03 22 | 704 | 0.8+ | 0.2− | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.8− | 1.0+ | | |
| 2004 03 22 | 704 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | (1.5− | 1.9+) | | |
| 2004 03 22 | 704 | 0.0 | 0.3+ | 2004 04 20 | 703 | 0.0 | 0.3+ | 2006 10 16 | 703 | (2.6+ | 0.3+) | | |
| 2004 03 22 | 704 | 0.1+ | 0.3+ | 2004 04 20 | 704 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.3− | | |
| 2004 03 24 | 699 | 0.1− | 0.5+ | 2004 04 20 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 1.2− | 1.0+ | | |
| 2004 03 24 | 699 | 0.4− | 0.2− | 2004 04 20 | 703 | 0.6− | 0.4+ | 2006 10 22 | 703 | 1.2− | 0.6+ | | |
| 2004 03 24 | 699 | 0.9− | 0.7− | 2004 04 20 | 703 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.3+ | | |
| 2004 03 24 | 699 | 0.6− | 0.0 | 2004 04 20 | 703 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.2+ | | |
| 2004 03 28 | 704 | 0.5+ | 0.2− | 2004 04 22 | 704 | 1.3+ | 0.3+ | 2006 11 17 | G96 | 0.6+ | 0.3+ | | |
| 2004 03 28 | 704 | 0.7+ | 0.7− | 2004 04 22 | 704 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.3+ | | |
| 2004 03 28 | 704 | 0.7+ | 0.6+ | 2004 04 22 | 704 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.2+ | | |
| 2004 03 28 | 704 | 0.0 | 0.0 | 2004 04 22 | 704 | 0.0 | 0.9− | | | | | | |
| 2004 03 28 | 704 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.5+ | 0.5− | | | | | | |

**(144458)∗ 2004 ET$_{43}$ = 2000 AO$_{253}$**

Discovered 2004 Mar. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 209.29674 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26232169 | $\omega$ | 310.28181 | | −0.90715974 | | +0.42076801 | | |
| $a$ | 2.4168326 | $\Omega$ | 254.60160 | | −0.38481492 | | −0.83335674 | | |
| $e$ | 0.1477233 | $i$ | 0.23384 | | −0.17023126 | | −0.35842826 | | |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 691 | 0.3+ | 0.1+ | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2005 08 27 | 644 | 0.2− | 0.5+ | | |
| 2000 01 07 | 691 | 0.2+ | 0.1+ | 2004 03 17 | 691 | 0.2− | 0.3− | 2005 08 27 | 644 | 0.1+ | 0.7+ | | |
| 2000 01 07 | 691 | 0.3+ | 0.0 | 2004 03 17 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.0 | | |
| 2000 01 16 | 691 | 0.2− | 0.0 | 2004 03 17 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.3− | | |
| 2000 01 16 | 691 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2000 01 16 | 691 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.1+ | | |
| 2004 02 18 | 704 | 1.2+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2004 02 18 | 704 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.8− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.1+ | | |
| 2004 02 18 | 704 | 0.0 | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.0 | | |
| 2004 02 18 | 704 | 0.5+ | 1.0+ | 2004 03 25 | 704 | 1.0− | 1.5+ | 2006 11 22 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 26 | 704 | 0.7+ | 0.0 | 2004 03 25 | 704 | 0.4− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 2004 02 26 | 704 | 0.6+ | 0.3− | 2004 03 25 | 704 | 0.3+ | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.1+ | | |
| 2004 02 26 | 704 | 0.5+ | 0.4− | 2005 07 11 | G96 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− | | |
| 2004 02 26 | 704 | 0.2+ | 0.7− | 2005 07 11 | G96 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2004 02 26 | 704 | 0.6+ | 0.0 | 2005 07 11 | G96 | 0.5+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2004 03 11 | 644 | 0.1+ | 0.2+ | 2005 07 11 | G96 | 0.3− | 0.4+ | 2006 11 24 | G96 | 1.2− | 0.3− | | |
| 2004 03 11 | 644 | 0.2+ | 0.1− | 2005 08 27 | 644 | 0.4− | 0.7+ | | | | | | |

**(144459)∗ 2004 EW$_{43}$ = 1998 BL$_{34}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 139.78964 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17417979 | $\omega$ | 210.26296 | | −0.92518354 | | +0.37935512 | | |
| $a$ | 3.1754422 | $\Omega$ | 352.00668 | | −0.33008594 | | −0.81886952 | | |
| $e$ | 0.0492152 | $i$ | 4.61364 | | −0.18729305 | | −0.43074633 | | |
| $P$ | 5.66 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 22 | 691 | 0.1− | 0.2− | 2004 03 15 | 703 | 0.2− | 0.8+ | 2006 08 21 | 691 | 0.1− | 0.3+ | | |
| 1998 01 22 | 691 | 0.0 | 0.3− | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 08 23 | 807 | 0.1+ | 0.2+ | | |
| 1998 01 22 | 691 | 0.3− | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 08 23 | 807 | 0.1− | 0.2+ | | |
| 1998 02 02 | 691 | 0.2− | 0.0 | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.3− | 0.9+ | | |
| 1998 02 02 | 691 | 0.0 | 0.1+ | 2004 03 18 | 704 | (1.6+ | 0.7+) | 2006 08 28 | 703 | (1.6− | 0.1−) | | |
| 1998 02 02 | 691 | 0.6+ | 0.1+ | 2004 03 18 | 704 | 1.2+ | 0.1+ | 2006 08 28 | 703 | (0.9− | 2.4−) | | |
| 2001 10 21 | 704 | 0.4+ | 1.3+ | 2004 03 18 | 704 | 1.1+ | 0.4+ | 2006 08 28 | 691 | 0.3− | 0.3+ | | |
| 2001 10 21 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 1.1+ | 0.2+ | 2006 08 28 | 703 | (0.5+ | 1.8−) | | |
| 2001 10 21 | 704 | (1.6− | 0.7+) | 2004 03 18 | 704 | 1.3+ | 0.4− | 2006 08 28 | 703 | 0.7+ | 0.9+ | | |
| 2001 10 21 | 704 | 0.4− | 0.6+ | 2004 03 26 | 699 | 0.7− | 0.2− | 2006 08 28 | 691 | 0.2− | 0.4+ | | |
| 2001 10 21 | 704 | 0.9− | 0.6+ | 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.1− | | |
| 2001 11 16 | 691 | 0.4− | 0.7+ | 2004 03 27 | 704 | 1.1+ | 0.9+ | 2006 09 26 | G96 | 0.3+ | 0.0 | | |
| 2001 11 16 | 691 | 0.1− | 0.6+ | 2004 03 27 | 704 | 1.4+ | 1.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | | |
| 2001 11 16 | 691 | 0.5− | 0.4+ | 2004 03 27 | 704 | 0.3+ | 0.8+ | 2006 09 26 | G96 | 0.6− | 0.2+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.3+ | 2004 03 27 | 704 | 0.4+ | 1.0− | 2006 10 16 | G96 | 0.8− | 0.3+ | | |
| 2004 02 26 | 704 | 0.1+ | 0.1+ | 2004 03 31 | 691 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.6− | | |
| 2004 02 26 | 704 | 0.8+ | 0.6+ | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.5− | | |
| 2004 03 12 | 644 | 0.3+ | 0.2+ | 2004 03 31 | 691 | 0.1+ | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.3− | | |
| 2004 03 12 | 644 | 0.2+ | 0.2+ | 2004 04 25 | 691 | 0.7− | 0.3+ | 2006 11 21 | G96 | 0.6+ | 0.1− | | |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 04 25 | 691 | 0.3− | 0.6+ | 2006 11 21 | G96 | 0.6− | 0.4− | | |
| 2004 03 15 | 703 | (1.9− | 1.2+) | 2004 04 25 | 691 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.1− | | |
| 2004 03 15 | 703 | 1.0+ | 0.2− | 2006 08 21 | 691 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.1− | | |
| 2004 03 15 | 703 | 0.5+ | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.3+ | | | | | | |

**(144460)∗ 2004 EZ$_{43}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 186.31521 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21973733 | $\omega$ | 37.11944 | | −0.94636185 | | +0.32203045 | | |
| $a$ | 2.7197782 | $\Omega$ | 161.61303 | | −0.31288093 | | −0.89297150 | | |
| $e$ | 0.0482988 | $i$ | 4.79640 | | −0.08065218 | | −0.31448099 | | |
| $P$ | 4.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 691 | 0.2− | 0.6+ | 2004 03 22 | 704 | 1.3+ | 1.1+ | 2006 09 19 | 691 | 0.0 | 0.3+ | | |
| 2001 09 18 | 691 | 0.2− | 0.4+ | 2004 03 22 | 704 | 1.0+ | 0.6− | 2006 09 19 | 691 | 0.1− | 0.0 | | |
| 2001 09 18 | 691 | 0.1− | 0.4+ | 2004 03 22 | 704 | (1.6+ | 0.0 ) | 2006 09 19 | 691 | 0.2+ | 0.1− | | |
| 2004 02 26 | 704 | 0.4+ | 0.6− | 2004 03 22 | 704 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.8+ | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.6+ | 0.2+ | | |
| 2004 02 26 | 704 | 0.5+ | 1.0+ | 2004 03 26 | 691 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.3+ | | |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 12 | 644 | 0.2+ | 0.6+ | 2005 06 17 | 691 | 0.6− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.2+ | | |
| 2004 03 12 | 644 | 0.5+ | 0.1+ | 2005 06 17 | 691 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1+ | | |
| 2004 03 15 | 703 | 0.8+ | 0.9+ | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | | |
| 2004 03 15 | 703 | 0.2+ | 0.4− | 2005 07 08 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1+ | | |
| 2004 03 15 | 703 | (1.5− | 1.2+) | 2005 07 08 | 691 | 0.9+ | 0.7− | 2006 10 22 | 691 | 0.0 | 0.5+ | | |
| 2004 03 15 | 703 | (1.2− | 1.5−) | 2005 07 08 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.6− | 0.1+ | | |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2005 07 11 | G96 | (2.0− | 0.1+) | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2005 07 11 | G96 | (1.6− | 0.1+) | 2006 10 31 | G96 | 0.2+ | 0.1+ | | |
| 2004 03 17 | 691 | 0.1− | 0.1+ | 2005 07 11 | G96 | (1.7− | 0.3+) | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2004 03 19 | 704 | 1.0− | 0.2− | 2005 07 11 | G96 | (1.8− | 0.1−) | 2006 10 31 | G96 | 0.2− | 0.0 | | |
| 2004 03 19 | 704 | 1.1+ | 0.9+ | 2005 11 03 | 695 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.5+ | | |
| 2004 03 19 | 704 | 0.7+ | 1.5+ | 2005 11 03 | 695 | 0.3− | 0.1+ | | | | | | |

**(144461)∗ 2004 EO$_{44}$ = 2002 QG$_{26}$ = 2004 EX$_{72}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62039), A. Doppler (*MPO* 76450)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 310.15841 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27512223 | $\omega$ | 106.41352 | | −0.13335659 | | −0.99105489 | | |
| $a$ | 2.3412741 | $\Omega$ | 351.24530 | | +0.89596652 | | −0.11834952 | | |
| $e$ | 0.1670885 | $i$ | 1.92817 | | +0.42362722 | | −0.06167332 | | |
| $P$ | 3.58 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 703 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.2+ | 1.3+ | 2006 10 21 | 691 | 0.1− | 0.4+ |
| 1999 12 15 | 703 | 0.4− | 1.1+ | 2004 03 15 | 704 | 0.9+ | 1.0+ | 2006 10 21 | 691 | 0.2− | 0.6+ |
| 1999 12 15 | 703 | 0.2− | 1.6− | 2004 03 15 | 704 | (0.4− | 1.7+) | 2006 10 27 | 703 | 1.2+ | 0.9− |
| 1999 12 15 | 703 | 0.5+ | 0.3− | 2004 03 15 | 704 | (1.9+ | 0.5+) | 2006 10 27 | 703 | 0.6+ | 0.2− |
| 2000 01 03 | 704 | 0.3+ | 1.8− | 2004 03 17 | 291 | 0.1+ | 0.2+ | 2006 10 27 | 703 | (2.3− | 0.0 ) |
| 2000 01 03 | 704 | 0.1− | 1.6− | 2004 03 17 | 291 | 0.0 | 0.2+ | 2006 10 27 | 703 | 1.3− | 0.5− |
| 2000 01 03 | 704 | 0.4+ | 1.0− | 2004 03 17 | 704 | 1.4+ | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 05 23 | 807 | 0.1− | 0.1+ | 2004 03 17 | 291 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 05 23 | 807 | 0.3− | 0.3+ | 2004 03 17 | 704 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 08 21 | 807 | 0.0 | 0.1+ | 2004 03 17 | 704 | 1.5+ | 1.0+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2001 08 21 | 807 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2002 08 29 | 291 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.4+ | 0.6− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 08 29 | 291 | 0.5− | 0.6+ | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 08 29 | 291 | 0.5− | 0.9+ | 2004 03 18 | 704 | 0.9+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 08 30 | 291 | 0.2+ | 1.0+ | 2004 03 18 | 704 | 1.0+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 08 30 | 291 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.5− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2002 08 30 | 291 | 0.1− | 0.3+ | 2004 03 20 | 699 | 1.4+ | 0.1− | 2006 11 10 | 644 | 0.2+ | 0.2− |
| 2004 01 18 | 691 | 0.2− | 0.4+ | 2004 03 20 | 699 | 1.4− | 1.0− | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2004 01 18 | 691 | 0.7− | 0.6+ | 2004 03 20 | 699 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2004 01 18 | 691 | 0.1− | 0.5+ | 2004 03 20 | 699 | 0.8− | 1.5+ | 2006 11 11 | 703 | 0.7− | 1.3+ |
| 2004 01 18 | 691 | 0.1− | 0.3+ | 2004 03 25 | 704 | 0.8+ | 0.6− | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 2004 01 18 | 691 | 0.0 | 0.2+ | 2004 03 25 | 704 | 0.9+ | 1.0+ | 2006 11 11 | 703 | 0.7− | 0.3− |
| 2004 01 18 | 691 | 0.3− | 0.4+ | 2004 03 25 | 704 | 0.4+ | 1.3+ | 2006 11 11 | 703 | 0.0 | 1.3− |
| 2004 01 30 | 568 | 0.2− | 0.1+ | 2004 03 25 | 704 | 0.9+ | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2004 01 30 | 568 | 0.6− | 0.5− | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 568 | 0.4− | 0.1+ | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2004 02 26 | 704 | 0.2− | 0.2− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 02 26 | 704 | 0.2+ | 0.5− | 2004 04 12 | 691 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.4+ | 1.4+ |
| 2004 02 26 | 704 | 0.4+ | 0.6− | 2004 04 12 | 691 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.1− | 0.2+ |
| 2004 02 26 | 704 | 1.3+ | 0.3+ | 2004 04 12 | 691 | 0.2+ | 0.5− | 2006 11 15 | 704 | 0.2+ | 0.2+ |
| 2004 02 26 | 704 | 0.4− | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 1.1− | 0.3− |
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2004 03 14 | 691 | 0.3+ | 0.1+ | 2006 10 13 | 691 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.4− |
| 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.4− | 1.3+ |

**(144462)∗ 2004 EP$_{47}$ = 2002 XZ$_{106}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62039)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.07004 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19058652 | $\omega$ | 33.29715 | | −0.18190704 | −0.98195557 | |
| $a$ | 2.9904825 | $\Omega$ | 67.23011 | | +0.88948786 | −0.18673658 | |
| $e$ | 0.0514853 | $i$ | 3.21436 | | +0.41919111 | −0.02987828 | |
| $P$ | 5.17 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 0.4+ | 2004 03 15 | 704 | 0.5− | 0.3+ | 2004 03 30 | 691 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2004 03 15 | 703 | 0.9+ | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2004 03 15 | 704 | 0.8− | 0.5− | 2004 03 30 | 691 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 0.7− | 0.2+ | 2004 03 15 | 703 | 0.1+ | 0.9+ | 2004 04 19 | 704 | 1.4+ | 0.4+ |
| 2001 09 12 | 704 | 0.5− | 0.5+ | 2004 03 15 | 704 | 1.5+ | 0.2− | 2004 04 19 | 704 | 0.7+ | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2004 03 15 | 704 | 0.8+ | 0.2+ | 2004 04 19 | 704 | 0.2+ | 1.1+ |
| 2001 09 21 | 704 | 0.0 | 1.2+ | 2004 03 17 | 691 | 0.3− | 0.1− | 2004 04 19 | 704 | 0.4+ | 0.1+ |
| 2001 09 21 | 704 | 0.1− | 1.1+ | 2004 03 17 | 691 | 0.1+ | 0.1− | 2004 04 25 | 691 | 0.3− | 0.1+ |
| 2002 12 05 | 704 | 0.5+ | 1.5+ | 2004 03 17 | 691 | 0.0 | 0.0 | 2004 04 25 | 691 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.6+ | 0.3− | 2004 03 19 | 704 | 0.4+ | 0.2− | 2004 04 25 | 691 | 0.3− | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 08 20 | 644 | 0.3+ | 0.8+ |
| 2002 12 05 | 704 | 0.5+ | 0.7+ | 2004 03 19 | 704 | 0.7+ | 0.4− | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 0.7− | 1.0+ | 2004 03 19 | 704 | 0.4+ | 0.5− | 2006 08 20 | 644 | 0.1− | 0.8+ |
| 2002 12 11 | 704 | 0.2+ | 0.8+ | 2004 03 19 | 704 | 0.8+ | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.7+ |
| 2002 12 11 | 704 | 0.1+ | 0.9+ | 2004 03 21 | 608 | 0.3+ | 1.4+ | 2006 08 24 | 644 | 0.2− | 1.0+ |
| 2003 01 08 | 704 | 0.5− | 0.1− | 2004 03 21 | 608 | 0.6+ | 1.9+ | 2006 08 24 | 644 | 0.6− | 0.9+ |
| 2003 01 08 | 704 | 0.2− | 0.5− | 2004 03 21 | 608 | 0.5+ | 1.0+ | 2006 08 28 | 699 | 0.9− | 0.6+ |
| 2003 01 08 | 704 | 0.0 | 0.6− | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.2+ |
| 2003 01 08 | 704 | 0.4− | 0.3− | 2004 03 22 | 704 | 0.5− | 0.8− | 2006 08 28 | 699 | 0.3− | 1.8+ |
| 2004 02 23 | 704 | 0.6− | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.1− | 2006 08 28 | 699 | 1.1+ | 0.0 |
| 2004 02 23 | 704 | 0.5− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.1− |
| 2004 02 23 | 704 | 0.8+ | 0.7− | 2004 03 28 | 704 | 0.4− | 1.1+ | 2006 09 14 | 703 | 0.2− | 1.2+ |
| 2004 02 23 | 704 | 0.9− | 1.3+ | 2004 03 28 | 704 | 0.7+ | 0.9+ | 2006 09 14 | 703 | 1.1− | 0.2− |
| 2004 03 15 | 703 | 1.3− | 0.4+ | 2004 03 28 | 704 | 0.3+ | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.4− |
| 2004 03 15 | 704 | 1.3+ | 0.1− | 2004 03 28 | 704 | 0.5− | 0.4+ | | | | |
| 2004 03 15 | 703 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.3+ | 0.3− | | | | |

**(144463)∗ 2004 EA$_{48}$ = 2000 OG$_{35}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.61648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18388313 | $\omega$ | 111.28241 | | +0.05335259 | +0.99413006 | |
| $a$ | 3.0627258 | $\Omega$ | 161.03164 | | −0.98942404 | +0.06536000 | |
| $e$ | 0.1090654 | $i$ | 16.83189 | | −0.13488352 | −0.08621767 | |
| $P$ | 5.36 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.5− | 0.8+ | 2004 03 15 | 704 | 0.5− | 0.5+ | 2005 07 05 | 644 | 0.6+ | 0.2+ |
| 2000 07 30 | 704 | 1.3− | 0.7+ | 2004 03 15 | 704 | 0.4− | 0.6+ | 2005 07 05 | 644 | 0.6+ | 0.2+ |
| 2000 07 30 | 704 | 0.4− | 0.1− | 2004 03 17 | 691 | 0.0 | 0.1− | 2005 07 05 | 644 | 0.5+ | 0.3+ |
| 2000 08 02 | 704 | 0.3+ | 0.7+ | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.1− | 0.9+ |
| 2000 08 02 | 704 | 0.5+ | 0.7+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.1− | 1.0+ |
| 2000 08 02 | 704 | 0.5− | 1.0+ | 2004 03 18 | 704 | 1.4+ | 0.7+ | 2006 08 28 | 699 | 0.4− | 1.4+ |
| 2001 09 19 | 645 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 699 | 0.1− | 0.6+ |
| 2001 09 19 | 645 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.5− | 2006 09 12 | 703 | 0.1+ | 0.8+ |
| 2001 10 22 | 644 | 0.2− | 0.9− | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 1.1− | 0.8+ |
| 2001 10 22 | 644 | 0.3− | 0.5− | 2004 03 18 | 704 | 0.4+ | 0.8+ | 2006 09 12 | 703 | 1.6− | 0.2+ |
| 2001 10 22 | 644 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.8+ | 1.1+ | 2006 09 12 | 703 | 1.2− | 0.4+ |
| 2004 01 27 | 691 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.9+ |
| 2004 01 27 | 691 | 0.4− | 0.4+ | 2004 03 19 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 703 | 0.4+ | 1.4+ |
| 2004 01 27 | 691 | 0.1+ | 0.5+ | 2004 03 19 | 704 | 0.0 | 0.9− | 2006 09 19 | 703 | 0.7− | 1.1+ |
| 2004 01 27 | 691 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.5+ | 0.7+ |
| 2004 01 27 | 691 | 0.1− | 0.3+ | 2004 03 20 | 699 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.3+ |
| 2004 01 27 | 691 | 0.2− | 0.3+ | 2004 03 20 | 699 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.5− | 0.7+ |
| 2004 02 18 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 699 | 0.1− | 0.4− | 2006 09 26 | 703 | 0.1− | 1.1+ |
| 2004 02 18 | 704 | 0.5− | 0.4+ | 2004 03 20 | 699 | 0.7− | 1.0+ | 2006 09 26 | 703 | 0.9− | 0.1+ |
| 2004 02 18 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 703 | 1.0+ | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.6+ |
| 2004 02 18 | 704 | 0.6+ | 0.7+ | 2004 03 28 | 703 | 1.2− | 0.9+ | 2006 10 02 | 703 | 0.8+ | 0.7+ |
| 2004 02 18 | 704 | 0.1− | 0.2+ | 2004 03 28 | 703 | 0.7− | 0.3− | 2006 10 02 | 703 | 0.8+ | 0.3+ |
| 2004 02 23 | 704 | 0.4− | 1.2+ | 2004 03 28 | 703 | 0.6+ | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.5− |
| 2004 02 23 | 704 | 0.5− | 0.2− | 2004 04 09 | 644 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.4+ | 0.1+ |
| 2004 02 23 | 704 | 0.5+ | 1.5+ | 2004 04 09 | 644 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.3+ |
| 2004 02 23 | 704 | 1.7+ | 0.3+ | 2004 04 09 | 644 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 1.4− | 0.2+ |
| 2004 03 15 | 704 | 0.1− | 0.1− | 2005 06 06 | 704 | 0.7+ | 0.9+ | 2006 10 02 | 703 | 0.1− | 2.5+ |
| 2004 03 15 | 704 | 0.4− | 0.3− | 2005 06 06 | 704 | 0.2+ | 0.4+ | | | | |
| 2004 03 15 | 704 | 0.3+ | 0.8+ | 2005 06 06 | 704 | 0.1+ | 0.6+ | | | | |

**(144464)∗ 2004 EL$_{48}$ = 2000 HN$_{98}$ = 2001 QX$_{326}$ = 2002 XJ$_{41}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.81858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22436776 | $\omega$ | 232.07258 | | +0.77608885 | +0.62769847 | |
| $a$ | 2.6822283 | $\Omega$ | 88.96350 | | −0.55787818 | +0.72823563 | |
| $e$ | 0.0554358 | $i$ | 3.47878 | | −0.29403747 | +0.27507725 | |
| $P$ | 4.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 691 | 0.0 | 0.4+ | 2004 03 15 | 703 | 0.4+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2000 04 27 | 691 | 0.3− | 0.3+ | 2004 03 15 | 704 | 1.5− | 1.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2000 04 27 | 691 | 0.1+ | 0.2− | 2004 03 15 | 703 | 0.5− | 1.2+ | 2006 10 22 | 691 | 0.2− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 691 | 0.1+ | 0.3− | 2004 03 15 | 703 | (1.7− | 0.0 ) | 2006 10 22 | 691 | 0.4− | 0.1+ | |
| 2000 05 07 | 691 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.8− | 1.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− | |
| 2000 05 07 | 691 | 0.3+ | 0.2+ | 2004 03 15 | 704 | 0.1− | 1.2+ | 2006 10 31 | G96 | 0.3+ | 0.4− | |
| 2001 08 23 | 608 | 0.4+ | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− | |
| 2001 08 23 | 608 | 0.2+ | 0.9+ | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− | |
| 2001 08 23 | 608 | 0.7+ | 0.1− | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ | |
| 2001 08 23 | 608 | 0.1− | 0.8− | 2004 03 27 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.1− | |
| 2001 08 23 | 608 | 0.2− | 0.8− | 2004 03 27 | 691 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.0 | |
| 2001 08 23 | 608 | 0.0 | 0.6− | 2004 03 27 | 691 | 0.4+ | 0.2− | 2006 11 11 | 703 | (1.6+ | 1.4−) | |
| 2001 08 25 | 704 | 0.3− | 0.3− | 2004 04 12 | 291 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4− | 0.9− | |
| 2001 08 25 | 704 | 0.3+ | 1.0+ | 2004 04 12 | 291 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.5− | |
| 2001 08 25 | 704 | 1.2− | 0.0 | 2004 04 12 | 291 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.3− | |
| 2002 12 06 | 704 | 0.1− | 0.3+ | 2004 04 13 | 291 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.2− | 0.1+ | |
| 2002 12 06 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 291 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.1− | 0.3+ | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2004 04 13 | 291 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.0 | |
| 2002 12 06 | 704 | 0.4− | 0.6− | 2006 09 27 | G96 | 0.7+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.2− | |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.3− | |
| 2002 12 10 | 704 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.6+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.4− | |
| 2002 12 10 | 704 | 0.6− | 0.8− | 2006 09 27 | G96 | 0.6+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.3− | |
| 2002 12 11 | 704 | 0.6+ | 1.3− | 2006 10 16 | 703 | (3.1− | 0.1+) | 2006 11 17 | 703 | 1.1+ | 0.1− | |
| 2002 12 11 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.7+ | |
| 2002 12 11 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.3− | 1.0+ | 2006 11 17 | 703 | 1.3− | 0.5+ | |
| 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 0.1− | 0.4+ | |
| 2004 03 15 | 703 | 0.5− | 1.2− | 2006 10 18 | 691 | 0.2+ | 0.0 | | | | | |
| 2004 03 15 | 704 | 1.4− | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.1+ | | | | | |

**(144465)∗ 2004 EM$_{48}$ = 2002 XD$_{112}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62040)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.95942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22295147 | $\omega$ | 344.93812 | | +0.98791971 | −0.14848733 | |
| $a$ | 2.6935756 | $\Omega$ | 23.73823 | | +0.15111848 | +0.85973818 | |
| $e$ | 0.0420126 | $i$ | 6.32391 | | +0.03431992 | +0.48867349 | |
| $P$ | 4.42 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.4− | 1.0+ | 2004 03 22 | 704 | 1.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | |
| 2001 08 19 | 704 | 0.8+ | 0.8+ | 2004 03 22 | 704 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | |
| 2001 08 19 | 704 | 0.8− | 0.6+ | 2004 03 22 | 704 | 0.7+ | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.1− | |
| 2001 09 11 | 704 | 0.0 | 0.6+ | 2004 03 22 | 704 | 0.4− | 0.6− | 2006 10 20 | 644 | 0.3− | 0.2+ | |
| 2001 09 11 | 704 | 0.8− | 0.7+ | 2004 03 22 | 704 | 0.8+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | |
| 2001 09 11 | 704 | 0.3− | 0.0 | 2004 03 28 | 704 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.1− | |
| 2002 12 06 | 704 | 0.2− | 0.7− | 2004 03 28 | 704 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.8+ | 0.1− | |
| 2002 12 06 | 704 | 0.9− | 0.5− | 2004 03 28 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.2− | 1.2− | |
| 2002 12 06 | 704 | 0.4− | 0.3+ | 2004 03 28 | 704 | 1.3+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.6− | |
| 2002 12 11 | 704 | 0.8− | 0.5− | 2004 03 28 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 703 | (2.0+ | 0.1+) | |
| 2002 12 11 | 704 | 0.4+ | 0.8− | 2004 03 30 | 691 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2002 12 11 | 704 | 0.3+ | 0.6− | 2004 03 30 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 2002 12 11 | 704 | 0.1+ | 0.3− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2004 03 31 | 691 | 0.3− | 0.3+ | 2006 10 28 | 704 | 0.1− | 0.4− | |
| 2003 01 05 | 704 | 0.0 | 0.1− | 2004 03 31 | 691 | 0.4− | 0.3+ | 2006 10 28 | 704 | 0.1+ | 0.5+ | |
| 2003 01 05 | 704 | 0.8+ | 0.3− | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.7+ | 0.6− | |
| 2003 01 05 | 704 | 0.5+ | 0.3+ | 2004 04 15 | 699 | 0.0 | 0.4+ | 2006 10 28 | 704 | 0.7+ | 1.4+ | |
| 2003 01 05 | 704 | 0.7+ | 0.1+ | 2004 04 15 | 699 | 1.2− | 0.6+ | 2006 10 28 | 704 | 0.4− | 0.4+ | |
| 2004 02 19 | 704 | 0.7+ | 0.6− | 2004 04 15 | 699 | 0.7+ | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.2+ | |
| 2004 02 19 | 704 | 0.3+ | 1.4+ | 2004 04 15 | 699 | 0.5− | 0.7+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | |
| 2004 02 19 | 704 | 1.5+ | 1.2+ | 2004 04 19 | 704 | 0.7+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 | |
| 2004 02 19 | 704 | (0.9+ | 2.9+) | 2004 04 19 | 704 | 0.8+ | 0.4− | 2006 11 07 | 644 | 0.3− | 0.4+ | |
| 2004 02 23 | 704 | 0.0 | 0.6+ | 2004 04 19 | 704 | (1.9+ | 0.2+) | 2006 11 07 | 644 | 0.1− | 0.0 | |
| 2004 02 23 | 704 | (0.0 | 2.2+) | 2004 04 19 | 704 | 1.0+ | 0.2− | 2006 11 07 | 644 | 0.2− | 0.1− | |
| 2004 02 23 | 704 | (1.9+ | 0.4+) | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.1− | |
| 2004 02 23 | 704 | 0.1− | 0.4+ | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.6− | |
| 2004 02 23 | 704 | (0.6+ | 2.2+) | 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | (0.4− | 2.9−) | |
| 2004 03 15 | 703 | (1.6− | 0.4+) | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | (3.9+ | 1.8−) | |
| 2004 03 15 | 704 | 1.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.5+ | |
| 2004 03 15 | 703 | (1.6− | 1.7+) | 2006 09 26 | G96 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | |
| 2004 03 15 | 704 | (1.9+ | 1.9−) | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.2+ | |
| 2004 03 15 | 703 | 1.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.1− | |
| 2004 03 15 | 704 | 0.5+ | 0.6− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.2+ | |
| 2004 03 15 | 703 | 0.5+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 | |
| 2004 03 15 | 704 | 0.6+ | 0.8− | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.5− | |
| 2004 03 17 | 691 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.1− | |
| 2004 03 17 | 691 | 0.1− | 0.2− | 2006 10 13 | 958 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.5+ | |
| 2004 03 17 | 691 | 0.0 | 0.4− | 2006 10 13 | 958 | (3.2+ | 2.6−) | 2006 11 19 | 704 | 0.5− | 0.0 | |
| 2004 03 19 | 704 | 0.6− | 0.6− | 2006 10 14 | 958 | 0.2+ | 1.1+ | 2006 11 19 | 704 | 0.2− | 0.0 | |
| 2004 03 19 | 704 | 0.5+ | 0.2− | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.1− | |
| 2004 03 19 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 | |
| 2004 03 19 | 704 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.5− | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.1+ | |

**(144466)∗ 2004 EO$_{49}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.66470 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21887737 | $\omega$ | 3.98238 | | +0.86874932 | −0.49468679 | |
| $a$ | 2.7268975 | $\Omega$ | 25.70918 | | +0.45286516 | +0.77415488 | |
| $e$ | 0.0770385 | $i$ | 3.12595 | | +0.20046887 | +0.39492936 | |
| $P$ | 4.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 608 | 0.3− | 0.4− | 2004 03 28 | 704 | 0.5− | 0.6+ | 2006 10 15 | 703 | 0.5+ | 0.1+ | |
| 2001 08 22 | 608 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.9− | 0.5+ | 2006 10 15 | 703 | 0.0 | 0.3− | |
| 2001 08 22 | 608 | 0.5+ | 0.6− | 2004 03 28 | 704 | (1.7+ | 1.6+) | 2006 10 15 | 703 | 0.2+ | 0.3+ | |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2004 03 29 | 691 | 0.1− | 0.4+ | 2006 10 15 | 703 | 0.1+ | 0.7+ | |
| 2002 12 11 | 704 | 0.8+ | 0.5− | 2004 03 29 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 2002 12 11 | 704 | 0.1− | 0.8− | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2002 12 11 | 704 | 0.6+ | 0.9− | 2004 04 15 | 691 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1− | |
| 2003 01 05 | 704 | 0.7+ | 0.5− | 2004 04 15 | 691 | 0.2+ | 1.0− | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 2003 01 05 | 704 | 0.9− | 0.7− | 2004 04 15 | 691 | 0.3− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.1− | |
| 2003 01 05 | 704 | 0.0 | 1.3− | 2004 04 22 | 691 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− | |
| 2003 01 05 | 704 | 0.3− | 0.6− | 2004 04 22 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.2− | |
| 2004 03 15 | 703 | 1.1− | 0.1− | 2004 04 22 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.4+ | |
| 2004 03 15 | 703 | (2.1− | 0.6+) | 2004 04 25 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.4− | 0.1+ | |
| 2004 03 15 | 703 | 1.2− | 1.1− | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.3+ | |
| 2004 03 15 | 703 | 0.4− | 0.1+ | 2004 04 25 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.5− | 0.1+ | |
| 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1+ | |
| 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.5+ | 1.0+ | 2006 10 28 | 691 | 0.2− | 0.0 | |
| 2004 03 17 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ | |
| 2004 03 18 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.7+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.2+ | |
| 2004 03 18 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 09 20 | 704 | 0.9+ | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 2004 03 18 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.7− | 2006 11 11 | G96 | 0.3+ | 0.4− | |
| 2004 03 18 | 704 | 0.1+ | 0.4− | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.4− | |
| 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.5− | |
| 2004 03 18 | 704 | 0.4− | 0.7− | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− | |
| 2004 03 18 | 704 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.4− | |
| 2004 03 18 | 704 | 0.3− | 0.6− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.5+ | |
| 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.4− | 0.5+ | |
| 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.5− | 0.2+ | |
| 2004 03 18 | 704 | 1.2+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.2+ | |
| 2004 03 18 | 704 | (2.2+ | 0.2+) | 2006 09 27 | 704 | 0.7+ | 0.7+ | 2006 11 13 | 691 | 0.2− | 0.2+ | |
| 2004 03 18 | 704 | 0.9+ | 0.9− | 2006 09 27 | 704 | 1.0− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.4− | |
| 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 0.6+ | 1.1+ | 2006 11 22 | G96 | 0.0 | 0.5− | |
| 2004 03 19 | 704 | 1.0+ | 0.8− | 2006 09 27 | 704 | 1.2− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.2− | |
| 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.3− | |
| 2004 03 19 | 704 | (1.9+ | 0.7−) | 2006 09 29 | 691 | 0.1− | 0.2+ | | | | | |
| 2004 03 28 | 704 | 0.1+ | 0.6+ | 2006 09 29 | 691 | 0.1− | 0.4+ | | | | | |

**(144467)∗ 2004 EV$_{51}$ = 2000 CC$_{38}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69689)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.81733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26098380 | $\omega$ | 50.14645 | | +0.18715046 | −0.98213370 | |
| $a$ | 2.4250853 | $\Omega$ | 29.08490 | | +0.88844361 | +0.16067324 | |
| $e$ | 0.1488049 | $i$ | 2.32265 | | +0.41909744 | +0.09796685 | |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 704 | 0.4− | 1.0− | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 10 20 | 703 | 0.2− | 0.1+ | |
| 2000 01 06 | 704 | 0.1− | 0.3− | 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 703 | 0.1− | 0.1− | |
| 2000 01 06 | 704 | 0.8+ | 0.1− | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.7− | 0.1− | |
| 2000 02 03 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.4+ | 1.2− | 2006 10 21 | 703 | 0.3− | 0.1− | |
| 2000 02 03 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.2+ | 1.0+ | 2006 10 21 | 703 | 0.1+ | 0.2− | |
| 2000 02 03 | 704 | 0.2− | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.4− | |
| 2000 02 03 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 | |
| 2000 02 03 | 704 | 0.3− | 0.5− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2000 02 05 | 704 | 0.6+ | 0.1− | 2006 09 18 | 699 | 0.0 | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2000 02 05 | 704 | 0.4+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 | |
| 2000 02 05 | 704 | 1.1− | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1+ | |
| 2000 02 05 | 704 | 0.0 | 0.3− | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 | |
| 2000 02 05 | 704 | 0.6− | 1.3+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1+ | |
| 2000 02 05 | 704 | 0.8+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ | |
| 2000 02 05 | 704 | 0.5− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.2+ | |
| 2000 02 05 | 704 | 1.2+ | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.2− | 0.5− | |
| 2002 09 07 | 704 | 0.3− | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.4− | 0.4− | |
| 2002 09 07 | 704 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.4− | 2006 10 31 | 691 | 0.2− | 0.5− | |
| 2002 09 07 | 704 | 0.8− | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2− | |
| 2002 09 17 | 608 | (2.1− | 1.0−) | 2006 09 27 | 704 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.4− | 0.1+ | |
| 2002 09 17 | 608 | (2.0− | 1.5−) | 2006 09 27 | 704 | 0.6+ | 1.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ | |
| 2002 09 17 | 608 | (1.9− | 1.4−) | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.2− | |
| 2002 10 03 | 704 | 1.0− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2− | |
| 2002 10 03 | 704 | 0.5− | 0.9+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.4+ | 0.1+ | |
| 2002 10 03 | 704 | 1.0− | 1.4+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.4− | |
| 2002 10 03 | 704 | 0.4+ | 0.9+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.6− | |
| 2002 10 09 | 291 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.7− | |
| 2002 10 09 | 291 | 0.0 | 0.3+ | 2006 10 13 | G98 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.4− | |
| 2002 10 09 | 291 | 0.1− | 0.6+ | 2006 10 13 | G98 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.0 | |
| 2004 02 18 | 704 | 0.6+ | 0.7+ | 2006 10 13 | G98 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.1− | |
| 2004 02 18 | 704 | 0.4+ | 0.4+ | 2006 10 13 | G98 | 0.5+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 | |
| 2004 02 18 | 704 | 0.8+ | 0.6+ | 2006 10 13 | G98 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.5− | |
| 2004 02 23 | 704 | (1.8+ | 0.2−) | 2006 10 15 | 691 | 0.1+ | 0.3− | 2006 11 20 | G96 | 0.4+ | 0.6− | |
| 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 11 20 | G96 | 0.4− | 0.3− | |
| 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.6− | |
| 2004 02 23 | 704 | 0.8+ | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.0 | |
| 2004 02 23 | 704 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.1− | |
| 2004 03 15 | 704 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.7+ | |
| 2004 03 15 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.7− | 0.2+ | |
| 2004 03 15 | 704 | 0.4− | 0.8− | 2006 10 20 | 703 | 0.9+ | 0.2+ | | | | | |

**(144468)∗ 2004 ET$_{52}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.34619 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21725709 | $\omega$ | 84.74520 | | −0.89858313 | +0.43509969 | |
| $a$ | 2.7404386 | $\Omega$ | 121.03542 | | −0.42429768 | −0.82848459 | |
| $e$ | 0.1167367 | $i$ | 3.80701 | | −0.11189210 | −0.35256424 | |
| $P$ | 4.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 691 | 0.1− | 0.6− | 2004 03 20 | 704 | 0.2+ | 0.3− | 2005 07 03 | G96 | 0.9+ | 0.1− | |
| 1998 12 26 | 691 | 0.4+ | 0.7− | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2005 07 03 | G96 | 0.7+ | 0.4− | |
| 1998 12 26 | 691 | 0.2− | 0.3− | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2005 07 03 | G96 | 0.5+ | 0.5− | |
| 1999 01 15 | 691 | 0.3+ | 0.4− | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2005 07 03 | G96 | 0.8+ | 1.0− | |
| 1999 01 15 | 691 | 0.4− | 0.2− | 2004 03 22 | 704 | 0.2− | 1.1+ | 2005 07 03 | G96 | 0.1+ | 1.0− | |
| 1999 01 15 | 691 | 0.3− | 0.3− | 2004 03 22 | 704 | 0.1− | 0.3+ | 2005 07 09 | 691 | 0.2− | 0.1+ | |
| 2004 02 23 | 704 | 0.7+ | 0.3+ | 2004 03 22 | 704 | 0.6+ | 0.1− | 2005 07 09 | 691 | 0.0 | 0.1− | |
| 2004 02 23 | 704 | 0.7+ | 0.5+ | 2004 03 22 | 704 | 1.0+ | 1.1+ | 2005 07 09 | 691 | 0.1− | 0.3− | |
| 2004 02 23 | 704 | 1.3+ | 0.9+ | 2004 03 23 | 704 | 0.1− | 0.1+ | 2005 07 16 | 691 | 0.3− | 0.3− | |
| 2004 02 23 | 704 | 0.9+ | 1.5+ | 2004 03 23 | 704 | 0.6− | 0.1+ | 2005 07 16 | 691 | 0.2− | 0.9+ | |
| 2004 02 23 | 704 | 0.1− | 0.2− | 2004 03 23 | 704 | 0.6+ | 0.4− | 2005 07 16 | 691 | 0.0 | 0.2+ | |
| 2004 03 15 | 703 | 0.7− | 0.9+ | 2004 03 23 | 704 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.4+ | |
| 2004 03 15 | 704 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.6+ | 0.2+ | 2006 10 02 | G96 | 0.6− | 0.1+ | |
| 2004 03 15 | 703 | 0.0 | 1.0+ | 2004 03 28 | 703 | 1.4+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.5+ | |
| 2004 03 15 | 704 | 0.3+ | 0.2− | 2004 03 28 | 703 | (2.6− | 0.6−) | 2006 10 02 | G96 | 0.4− | 0.8+ | |
| 2004 03 15 | 703 | (1.7− | 0.7+) | 2004 03 28 | 703 | (2.0+ | 1.1−) | 2006 10 22 | 691 | 0.2− | 0.7+ | |
| 2004 03 15 | 704 | 0.0 | 0.4− | 2004 03 28 | 703 | 0.5− | 0.9− | 2006 10 22 | 691 | 0.6− | 0.7+ | |
| 2004 03 15 | 703 | 0.4+ | 0.3− | 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.9+ | |
| 2004 03 15 | 704 | 0.9+ | 0.4+ | 2004 03 30 | 691 | 0.7− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.2+ | |
| 2004 03 15 | 704 | 1.3+ | 0.7+ | 2004 03 30 | 691 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2+ | |
| 2004 03 18 | 691 | 0.1+ | 0.1+ | 2005 07 03 | G96 | 0.5− | 0.6− | 2006 10 31 | G96 | 0.6+ | 0.4+ | |
| 2004 03 18 | 691 | 0.1+ | 0.2+ | 2005 07 03 | G96 | 0.4+ | 0.6− | 2006 10 31 | G96 | 0.1+ | 0.4+ | |
| 2004 03 18 | 691 | 0.1− | 0.2+ | 2005 07 03 | G96 | 0.5+ | 0.1− | | | | | |

**(144469)∗ 2004 EC$_{55}$ = 2005 MB$_{20}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.
Id. A. Doppler (*MPO* 86363)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.35901 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17146525 | $\omega$ | 59.39423 | | +0.11068931 | +0.98112828 | |
| $a$ | 3.2088689 | $\Omega$ | 217.99234 | | −0.97705063 | +0.07821373 | |
| $e$ | 0.1536673 | $i$ | 14.92515 | | −0.18198886 | +0.17683299 | |
| $P$ | 5.75 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 0.7+ | 0.2+ | 2000 10 03 | 704 | 0.5− | 0.6+ | 2005 06 09 | 703 | 0.6− | 0.4− | |
| 1999 05 10 | 704 | 0.6− | 0.9− | 2000 10 03 | 704 | 0.3+ | 0.5+ | 2005 06 29 | 644 | 0.2+ | 0.2+ | |
| 1999 05 10 | 704 | 0.6− | 1.2+ | 2000 10 03 | 704 | 0.3+ | 0.2+ | 2005 06 29 | 644 | 0.2+ | 0.3+ | |
| 1999 05 10 | 704 | (2.1− | 0.3+) | 2000 10 03 | 704 | 0.7+ | 1.4+ | 2005 06 29 | 644 | 0.3+ | 0.2+ | |
| 1999 05 10 | 704 | (3.7− | 1.1−) | 2001 10 24 | 704 | 0.4− | 0.7+ | 2005 07 02 | 703 | 0.7− | 0.0 | |
| 1999 05 18 | 704 | 1.4− | 1.0− | 2001 10 24 | 704 | 0.6+ | 0.7− | 2005 07 02 | 703 | 1.2− | 0.9− | |
| 1999 05 18 | 704 | 0.7− | 1.2+ | 2001 10 24 | 704 | 0.6− | 0.1+ | 2005 07 02 | 703 | 0.4+ | 0.4− | |
| 1999 05 18 | 704 | 1.0+ | 0.8− | 2001 10 24 | 704 | 0.9− | 0.1− | 2006 08 29 | 699 | 1.1− | 0.0 | |
| 1999 05 18 | 704 | 0.8+ | 0.6+ | 2001 12 11 | 704 | 0.9− | 1.0− | 2006 08 29 | 699 | 0.8− | 1.3+ | |
| 1999 05 18 | 704 | 0.5− | 0.2− | 2001 12 11 | 704 | (0.1− | 1.5−) | 2006 08 29 | 699 | 0.1+ | 1.0− | |
| 1999 06 05 | 703 | 0.4+ | 0.1− | 2001 12 11 | 704 | 1.1− | 1.2+ | 2006 08 29 | 699 | 1.2+ | 0.1− | |
| 1999 06 05 | 703 | 0.7+ | 0.2+ | 2001 12 11 | 704 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.5+ | |
| 1999 06 05 | 703 | 0.9+ | 0.1− | 2004 03 14 | 644 | 0.7+ | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.5+ | |
| 1999 06 05 | 703 | 0.2+ | 1.5− | 2004 03 14 | 644 | 0.5+ | 0.7+ | 2006 09 13 | 644 | 0.0 | 0.5+ | |
| 1999 06 07 | 699 | 0.2+ | 0.0 | 2004 03 14 | 644 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.3+ | 0.4− | |
| 1999 06 07 | 699 | 0.1+ | 0.2+ | 2004 03 17 | 704 | (2.0− | 3.0+) | 2006 09 16 | 703 | 0.1+ | 0.4− | |
| 1999 06 07 | 699 | 0.1+ | 0.4+ | 2004 03 17 | 704 | (1.1+ | 1.7+) | 2006 09 16 | 703 | 0.3+ | 0.1+ | |
| 1999 06 14 | 704 | 0.6+ | 0.2+ | 2004 03 17 | 704 | (0.7− | 3.8+) | 2006 09 16 | 703 | 0.4+ | 0.7− | |
| 1999 06 14 | 704 | 0.7− | 0.4− | 2004 03 17 | 704 | (0.9+ | 3.5+) | 2006 10 11 | 644 | 0.1− | 0.1+ | |
| 1999 06 14 | 704 | 1.1− | 0.2+ | 2004 03 17 | 704 | (0.6− | 3.8+) | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 1999 06 14 | 704 | 0.2− | 0.2+ | 2004 03 29 | 703 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.4+ | |
| 2000 09 01 | 704 | 0.4− | 0.1− | 2004 03 29 | 703 | 0.8+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.3+ | |
| 2000 09 01 | 704 | 0.1+ | 0.3+ | 2004 03 29 | 703 | 0.2− | 0.3+ | 2006 10 23 | 703 | 0.1− | 0.7+ | |
| 2000 09 01 | 704 | 0.2− | 0.2+ | 2004 03 29 | 703 | 0.1+ | 1.2+ | 2006 10 23 | 644 | 0.2+ | 0.1− | |
| 2000 09 01 | 704 | 0.1− | 0.1+ | 2005 06 09 | 704 | 0.1− | 0.4+ | 2006 10 23 | 703 | 0.5− | 1.7− | |
| 2000 09 01 | 704 | 0.2− | 0.5+ | 2005 06 09 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 703 | 0.4+ | 0.1− | |
| 2000 09 23 | 704 | 0.2+ | 0.0 | 2005 06 09 | 704 | 0.5− | 0.5+ | 2006 10 23 | 703 | 0.7+ | 0.2+ | |
| 2000 09 23 | 704 | 0.1+ | 0.2− | 2005 06 09 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.2+ | |
| 2000 09 23 | 704 | 0.5+ | 0.6+ | 2005 06 09 | 703 | 0.1+ | 0.0 | | | | | |
| 2000 09 23 | 704 | 0.0 | 0.0 | 2005 06 09 | 703 | 0.5− | 0.3− | | | | | |

**(144470)∗ 2004 ED$_{55}$ = 2001 QJ$_{255}$ = 2002 XM$_{56}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.
Id. A. Doppler (*MPO* 69690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 192.33292 | | (2000.0) | | −0.94576388 | +0.27928307 |
| $n$ | 0.22777583 | $\omega$ | 255.60226 | | −0.17007173 | −0.86085818 |
| $a$ | 2.6554062 | $\Omega$ | 300.37633 | | −0.27677842 | −0.42535181 |
| $e$ | 0.1107483 | $i$ | 11.08874 | | | |
| $P$ | 4.33 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.2− | 1.0+ | 2004 03 17 | 704 | 0.5+ | 0.8+ | 2005 07 16 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.3+ | 0.7+ | 2004 03 17 | 704 | 0.5+ | 0.2+ | 2005 07 16 | 691 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.9+ | 0.1+ | 2004 03 17 | 704 | 0.0 | 1.0+ | 2005 07 30 | E12 | 0.7− | 0.3− |
| 2001 08 25 | 704 | 0.2− | 0.3+ | 2004 03 17 | 704 | 0.7+ | 0.3+ | 2005 07 30 | E12 | 0.1− | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 0.4− | 2004 03 17 | 704 | 0.1+ | 0.6+ | 2005 07 30 | E12 | 0.8− | 0.1− |
| 2001 08 27 | 699 | 0.3+ | 0.1− | 2004 03 31 | 704 | 0.0 | 0.1+ | 2005 07 30 | E12 | 0.4− | 0.1+ |
| 2001 08 27 | 699 | (0.9+ | 1.6−) | 2004 03 31 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 703 | 0.5+ | 0.1− |
| 2001 08 27 | 699 | 0.1+ | 0.1+ | 2004 03 31 | 704 | (2.0+ | 0.8+) | 2006 10 19 | 703 | 1.0+ | 0.7+ |
| 2001 08 27 | 699 | 0.7− | 0.4+ | 2004 03 31 | 704 | 0.7+ | 0.7+ | 2006 10 19 | 703 | 0.6+ | 0.2− |
| 2002 12 10 | 704 | 0.6+ | 0.7+ | 2004 03 31 | 704 | 0.6+ | 0.9+ | 2006 10 19 | 703 | 0.2+ | 0.2+ |
| 2002 12 10 | 704 | 0.9− | 0.1+ | 2005 06 27 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2002 12 10 | 704 | 0.7− | 0.2+ | 2005 06 27 | 644 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2002 12 10 | 704 | (2.1− | 0.5+) | 2005 06 27 | 644 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2002 12 10 | 704 | 0.5− | 0.6+ | 2005 06 28 | 644 | 0.1+ | 0.1− | 2006 11 15 | 703 | 1.1+ | 1.4+ |
| 2002 12 12 | 644 | 0.5− | 0.4+ | 2005 06 28 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | 1.3− | 0.0 |
| 2002 12 12 | 644 | 0.2− | 0.4+ | 2005 06 28 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 1.1− | 0.5+ |
| 2002 12 12 | 644 | 0.0 | 0.5+ | 2005 07 04 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.9− | 0.8− |
| 2004 03 10 | 649 | 0.3+ | 0.1− | 2005 07 04 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 1.3− | 0.5+ |
| 2004 03 10 | 649 | 0.7− | 0.1− | 2005 07 04 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.4+ |
| 2004 03 10 | 649 | 0.5− | 0.3− | 2005 07 05 | 691 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.3+ | 0.6− |
| 2004 03 14 | 644 | 0.2+ | 0.3+ | 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 11 22 | 703 | 1.4+ | 0.4− |
| 2004 03 14 | 644 | 0.5+ | 0.3+ | 2005 07 05 | 691 | 0.1− | 0.1+ | | | | |
| 2004 03 14 | 644 | 0.5+ | 0.3+ | 2005 07 16 | 691 | 0.1+ | 0.4+ | | | | |

**(144471)∗ 2004 EE$_{55}$ = 2002 TY$_{119}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.91218 | | (2000.0) | | −0.27404896 | −0.94924824 |
| $n$ | 0.23125669 | $\omega$ | 215.01347 | | +0.91536454 | −0.20823331 |
| $a$ | 2.6286928 | $\Omega$ | 251.32507 | | +0.29496597 | −0.23572584 |
| $e$ | 0.1429682 | $i$ | 9.37710 | | | |
| $P$ | 4.26 | $H$ | 15.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 699 | (2.1+ | 1.0+) | 2002 10 10 | 704 | 0.3+ | 1.5+ | 2006 09 06 | 644 | 0.1− | 0.7− |
| 1998 11 25 | 699 | 1.3+ | 1.3+ | 2002 10 10 | 704 | 0.4+ | 0.2− | 2006 09 06 | 644 | 0.2+ | 0.2− |
| 1998 11 25 | 699 | (1.0+ | 2.1+) | 2002 10 31 | 644 | 0.5− | 0.4+ | 2006 09 18 | G92 | 0.4+ | 0.7− |
| 1998 12 26 | 691 | 0.5− | 0.1+ | 2002 10 31 | 644 | 0.3− | 0.5+ | 2006 09 18 | G92 | 0.4+ | 0.7− |
| 1998 12 26 | 691 | 0.0 | 0.2− | 2002 10 31 | 644 | 0.1+ | 0.5+ | 2006 09 18 | G92 | 0.1+ | 0.5− |
| 1998 12 26 | 691 | 0.1− | 0.1− | 2004 03 14 | 644 | 0.4+ | 0.0 | 2006 09 22 | 703 | (1.5− | 1.3−) |
| 1999 01 07 | 691 | 0.1− | 0.2− | 2004 03 14 | 644 | 0.4+ | 0.2− | 2006 09 22 | 703 | 0.5− | 0.3+ |
| 1999 01 07 | 691 | 0.0 | 0.2− | 2004 03 14 | 644 | 0.4+ | 0.1− | 2006 09 22 | 703 | 0.6− | 0.3+ |
| 1999 01 07 | 691 | 0.1+ | 0.2− | 2004 03 17 | 704 | 0.6+ | 0.4− | 2006 09 22 | 703 | (0.0 | 2.0+) |
| 2002 10 03 | 644 | 0.3+ | 0.2+ | 2004 03 17 | 704 | 0.6− | 0.3− | 2006 09 27 | 703 | 0.1+ | 0.8+ |
| 2002 10 03 | 644 | 0.6+ | 0.2+ | 2004 03 17 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.3+ | 0.4− |
| 2002 10 03 | 644 | 0.0 | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.4+ | 0.2+ |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2004 03 29 | 703 | 1.1− | 0.6+ | 2006 09 27 | 703 | 0.8− | 0.0 |
| 2002 10 05 | 704 | 0.1+ | 1.0+ | 2004 03 29 | 703 | 1.2− | 0.5− | 2006 10 22 | 691 | 0.1+ | 0.3− |
| 2002 10 05 | 704 | 0.6− | 0.1+ | 2004 03 29 | 703 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.4+ | 0.4− |
| 2002 10 10 | 704 | 0.3+ | 0.5+ | 2004 03 29 | 703 | 0.3− | 1.1− | 2006 10 22 | 691 | 0.2− | 0.4− |
| 2002 10 10 | 704 | 0.7+ | 0.3− | 2006 09 06 | 644 | 0.0 | 0.3− | | | | |

**(144472)∗ 2004 EW$_{55}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 293.12060 | | (2000.0) | | +0.37278897 | −0.91801201 |
| $n$ | 0.20672922 | $\omega$ | 117.51159 | | +0.77694726 | +0.38847437 |
| $a$ | 2.8327058 | $\Omega$ | 309.94105 | | +0.50732764 | +0.07963425 |
| $e$ | 0.1358898 | $i$ | 10.15751 | | | |
| $P$ | 4.77 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.4+ | 0.5− | 2004 04 12 | 644 | 0.6+ | 0.4+ | 2006 08 30 | 699 | 0.9− | 0.4+ |
| 2001 08 16 | 704 | 0.6+ | 0.8− | 2004 04 12 | 644 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.1− |
| 2001 08 16 | 704 | 0.4− | 1.0− | 2004 04 12 | 644 | 0.5+ | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.4+ |
| 2001 08 16 | 704 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.6− | 0.5+ |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2006 08 24 | 704 | 0.7+ | 0.3+ | 2006 09 11 | 703 | 0.8− | 0.4− |
| 2001 09 20 | 704 | 0.8+ | 0.5+ | 2006 08 24 | 704 | 0.4− | 0.1+ | 2006 09 11 | 703 | 1.0− | 1.3− |
| 2001 09 20 | 704 | 0.4− | 0.2− | 2006 08 24 | 704 | 0.2+ | 0.9+ | 2006 09 11 | 703 | 0.2− | 0.5+ |
| 2002 11 06 | 704 | 0.9− | 0.9+ | 2006 08 24 | 704 | 0.3− | 0.6− | 2006 09 11 | 703 | 1.0− | 1.0− |
| 2002 11 06 | 704 | 0.4− | 0.9+ | 2006 08 27 | 699 | 0.6+ | 0.9+ | 2006 09 17 | 703 | 0.3+ | 0.9+ |
| 2002 11 06 | 704 | 0.2− | 1.4+ | 2006 08 27 | 699 | 0.4− | 0.7+ | 2006 09 17 | 703 | 0.3− | 0.5+ |
| 2002 12 15 | 704 | 0.3+ | 0.4+ | 2006 08 27 | 699 | 0.6− | 0.1+ | 2006 09 17 | 703 | 0.3+ | 1.2+ |
| 2002 12 15 | 704 | 0.2+ | 0.8+ | 2006 08 27 | 699 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.4− | 0.8+ |
| 2002 12 15 | 704 | 0.7+ | 0.5− | 2006 08 29 | 703 | 0.0 | 0.4− | 2006 09 18 | 704 | 0.3+ | 0.1− |
| 2002 12 15 | 704 | 0.0 | 0.8+ | 2006 08 29 | 703 | 1.1− | 0.6− | 2006 09 18 | 704 | 0.8+ | 0.6− |
| 2004 03 14 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 1.0− | 0.8− | 2006 09 18 | 704 | 0.1+ | 0.2− |
| 2004 03 14 | 644 | 0.6+ | 0.5+ | 2006 08 29 | 703 | 0.6− | 1.1− | 2006 09 18 | 704 | 1.1− | 0.0 |
| 2004 03 14 | 644 | 0.6+ | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.3+ | 2006 09 20 | 699 | 1.4+ | 0.6+ |
| 2004 03 17 | 704 | 0.2+ | 1.2+ | 2006 08 29 | 703 | 0.5− | 0.0 | 2006 09 20 | 699 | 0.4− | 0.9+ |
| 2004 03 17 | 704 | 0.4− | 1.6+ | 2006 08 29 | 703 | 1.4− | 0.6+ | 2006 09 20 | 699 | 0.6+ | 1.6+ |
| 2004 03 17 | 704 | 0.7+ | 0.4+ | 2006 08 29 | 703 | 0.7− | 0.3+ | 2006 09 20 | 699 | 0.4+ | 0.5− |
| 2004 03 17 | 704 | 0.4+ | 1.1+ | 2006 08 30 | 699 | 0.8− | 0.3+ | 2006 09 25 | 704 | 1.4+ | 0.0 |
| 2004 03 17 | 704 | 0.3+ | 1.4+ | 2006 08 30 | 704 | 0.1+ | 1.6+ | 2006 09 25 | 704 | 0.8+ | 0.4+ |
| 2004 03 19 | 291 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.0 | 0.7+ | 2006 09 25 | 704 | 0.1− | 0.4+ |
| 2004 03 19 | 291 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.3+ | | | | |
| 2004 03 19 | 291 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.5+ | 1.5+ | | | | |

**(144473)∗ 2004 ED$_{56}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.30765 | | (2000.0) | | +0.38260545 | −0.91949311 |
| $n$ | 0.21795406 | $\omega$ | 209.12671 | | +0.87322813 | +0.39179680 |
| $a$ | 2.7345933 | $\Omega$ | 218.57618 | | +0.30180408 | +0.03205754 |
| $e$ | 0.1198204 | $i$ | 8.32213 | | | |
| $P$ | 4.52 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 21 | 699 | 0.1− | 1.3+ | 2004 03 14 | 644 | 0.2+ | 0.8+ | 2006 09 17 | 703 | 0.1+ | 0.9+ |
| 1999 02 21 | 699 | 0.2+ | 0.9+ | 2004 03 17 | 703 | (0.7+ | 1.6+) | 2006 09 18 | 691 | 0.1+ | 0.2+ |
| 1999 02 21 | 699 | 1.4+ | 0.4+ | 2004 03 17 | 703 | 0.1+ | 1.1+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2001 08 25 | 704 | 1.1− | 0.2+ | 2004 03 17 | 704 | 0.5+ | 1.1+ | 2006 09 18 | 704 | 0.2+ | 1.1+ |
| 2001 08 25 | 704 | 0.1+ | 1.3+ | 2004 03 17 | 703 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 0.2− | 0.1− |
| 2001 08 25 | 704 | 0.1− | 0.1− | 2004 03 17 | 703 | 0.5+ | 1.2+ | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2001 08 25 | 704 | 0.5+ | 0.6+ | 2004 03 17 | 704 | 0.3+ | 0.4− | 2006 09 18 | 704 | 0.4+ | 0.9+ |
| 2002 10 11 | 704 | 0.5− | 0.5− | 2004 03 17 | 704 | 0.2+ | 0.2− | 2006 09 18 | 704 | 1.0+ | 0.2+ |
| 2002 10 11 | 704 | 0.5+ | 0.8− | 2004 03 17 | 704 | 1.5− | 1.3+ | 2006 09 19 | 699 | 0.4+ | 0.2− |
| 2002 10 11 | 704 | 1.4− | 1.4− | 2004 03 27 | 699 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.3+ | 0.9− | 2004 03 27 | 699 | 1.3+ | 1.2+ | 2006 09 19 | 699 | 0.3− | 0.0 |
| 2002 10 11 | 704 | (0.6+ | 2.0−) | 2004 03 27 | 699 | 0.4+ | 0.3− | 2006 09 19 | 699 | (0.0 | 4.5−) |
| 2002 11 19 | 644 | 0.6− | 0.1+ | 2004 03 27 | 699 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2002 11 19 | 644 | 0.4− | 0.2+ | 2004 04 16 | 644 | 0.2+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2002 11 19 | 644 | 0.5− | 0.6+ | 2004 04 16 | 644 | 0.0 | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2002 11 28 | 608 | 0.7− | 0.4− | 2004 04 16 | 644 | 0.1− | 0.4+ | 2006 09 27 | 699 | 0.7− | 0.2+ |
| 2002 11 28 | 608 | 0.6− | 0.6− | 2006 08 29 | 699 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.5− | 0.3− |
| 2002 11 28 | 608 | 0.2+ | 0.4− | 2006 08 29 | 683 | 1.1+ | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.0 |
| 2002 12 05 | 608 | 0.5− | 1.4− | 2006 08 29 | 683 | 0.7+ | 0.5− | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2002 12 05 | 608 | 0.3− | 0.9− | 2006 08 29 | 699 | 0.6− | 0.3− | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2002 12 05 | 608 | 0.5− | 1.0− | 2006 08 29 | 683 | 1.0− | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2003 01 01 | 704 | 1.2+ | 1.3+ | 2006 08 29 | 699 | 0.0 | 1.0+ | 2006 10 09 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.4+ | 1.2+ | 2006 08 29 | 699 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2003 01 01 | 704 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2003 01 01 | 704 | 0.5− | 1.3+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.4− | 0.8+ | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 01 07 | 704 | 0.9+ | 1.2+ | 2006 09 16 | 703 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2003 01 07 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 703 | 0.6− | 1.2− | 2006 11 06 | 644 | 0.4− | 0.3+ |
| 2003 01 07 | 704 | 0.7+ | 0.5+ | 2006 09 16 | 703 | 0.3+ | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.5+ |
| 2003 01 07 | 704 | 1.4+ | 0.4+ | 2006 09 16 | 703 | 0.6− | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2003 01 07 | 704 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.7+ | 1.0+ | 2006 11 22 | 704 | 0.8− | 0.3+ |
| 2004 03 14 | 644 | 0.1+ | 0.7+ | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.9− | 0.0 |
| 2004 03 14 | 644 | 0.0 | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.1− |

**(144474)∗ 2004 EE$_{56}$ = 2000 AP$_{132}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65607)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.28345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28251359 | $\omega$ | 256.63378 | | −0.97976207 | +0.19241901 | |
| $a$ | 2.3002576 | $\Omega$ | 294.43764 | | −0.15206607 | −0.89467515 | |
| $e$ | 0.0958479 | $i$ | 3.47275 | | −0.13016222 | −0.40315171 | |
| $P$ | 3.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.6+ | 0.0 | 2004 03 19 | 704 | 0.1− | 0.1− | 2005 07 31 | 644 | 0.3− | 0.3+ |
| 2000 01 03 | 704 | 0.5+ | 0.8+ | 2004 03 19 | 704 | 0.3− | 0.7+ | 2005 07 31 | 644 | 0.2− | 0.0 |
| 2000 01 03 | 704 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.1− | 0.2− | 2005 08 31 | 691 | 0.2+ | 0.2+ |
| 2000 01 03 | 704 | 1.1+ | 1.6+ | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2005 08 31 | 691 | 0.2− | 0.1+ |
| 2000 01 08 | 704 | 0.9− | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.5+ | 2005 08 31 | 691 | 0.1+ | 0.2+ |
| 2000 01 08 | 704 | 0.6+ | 0.2− | 2004 03 31 | 704 | 0.2− | 0.4+ | 2005 09 22 | 644 | 0.3+ | 0.3+ |
| 2000 01 08 | 704 | 0.9+ | 0.0 | 2004 03 31 | 704 | (0.9+ | 2.1+) | 2005 09 22 | 644 | 0.0 | 0.7+ |
| 2002 10 15 | 644 | 0.5− | 0.4− | 2004 03 31 | 704 | 0.3+ | 0.1− | 2005 09 22 | 644 | 0.2− | 0.4+ |
| 2002 10 15 | 644 | 0.9− | 0.1− | 2004 03 31 | 704 | 0.5+ | 0.9+ | 2005 09 26 | 691 | 0.1− | 0.4+ |
| 2002 10 15 | 644 | 1.0− | 0.3− | 2004 03 31 | 704 | 0.0 | 0.5+ | 2005 09 26 | 691 | 0.0 | 0.3+ |
| 2002 11 05 | 704 | 0.9− | 0.8− | 2004 04 19 | 704 | 0.2+ | 0.7+ | 2005 09 26 | 691 | 0.0 | 0.4+ |
| 2002 11 05 | 704 | 0.5− | 0.5+ | 2004 04 19 | 704 | 0.4− | 0.6+ | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2002 11 05 | 704 | 1.0− | 0.1− | 2004 04 19 | 704 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.5− | 1.0− |
| 2004 03 14 | 644 | 0.3− | 0.6+ | 2004 04 19 | 704 | (1.5− | 0.0 ) | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2004 03 14 | 644 | 0.2− | 0.6+ | 2004 04 26 | 699 | 0.8− | 0.8− | 2006 10 23 | G96 | 0.1+ | 0.3+ |
| 2004 03 14 | 644 | 0.2− | 0.7+ | 2004 04 26 | 699 | 0.7− | 0.7+ | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2004 03 17 | 704 | 0.3+ | 0.4+ | 2004 04 26 | 699 | 1.2+ | 1.1− | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2004 03 17 | 704 | 1.1+ | 0.8+ | 2004 04 26 | 699 | 0.5+ | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 704 | 0.7+ | 0.6+ | 2005 07 31 | 644 | 0.6− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2− |

**(144475)∗ 2004 EJ$_{56}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.72874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18240246 | $\omega$ | 226.53921 | | −0.71323296 | +0.70089734 | |
| $a$ | 3.0792781 | $\Omega$ | 357.92776 | | −0.58047364 | −0.59580081 | |
| $e$ | 0.0741093 | $i$ | 10.28170 | | −0.39287287 | −0.39212793 | |
| $P$ | 5.40 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.5− | 0.6− | 2004 03 31 | 704 | 0.2+ | 0.6+ | 2006 09 14 | A50 | 0.4+ | 0.3+ |
| 1993 03 25 | 691 | 0.3− | 0.5− | 2004 03 31 | 704 | 1.4+ | 1.2+ | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 1993 03 25 | 691 | 0.2− | 0.6− | 2004 03 31 | 704 | (0.7+ | 1.6+) | 2006 09 17 | 703 | 0.0 | 0.8+ |
| 1998 02 27 | 566 | 0.3+ | 0.4− | 2004 03 31 | 704 | 0.4+ | 0.8+ | 2006 09 17 | 703 | 0.7− | 0.0 |
| 1998 02 27 | 566 | 0.4+ | 0.0 | 2004 03 31 | 704 | 1.0+ | 1.1+ | 2006 09 17 | 703 | 0.7− | 0.4− |
| 1998 02 27 | 566 | 0.2− | 1.2+ | 2004 04 09 | E12 | (0.2− | 1.9+) | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 2000 08 31 | 704 | 0.7+ | 0.9+ | 2004 04 09 | E12 | 0.0 | 1.1+ | 2006 09 19 | 699 | 0.5− | 0.9+ |
| 2000 08 31 | 704 | 0.6− | 0.1− | 2004 04 09 | E12 | 0.7− | 1.1+ | 2006 09 19 | 699 | 1.3+ | 0.7+ |
| 2000 08 31 | 704 | 0.4+ | 0.1+ | 2004 04 09 | E12 | (0.7− | 1.7+) | 2006 09 19 | 699 | 0.6− | 0.7+ |
| 2000 08 31 | 704 | 0.1− | 0.0 | 2004 04 17 | 704 | 0.3+ | 0.5+ | 2006 09 21 | A50 | 0.6− | 0.5− |
| 2001 10 14 | 704 | 0.9− | 0.4+ | 2004 04 17 | 704 | 0.1+ | 0.0 | 2006 09 22 | A50 | 0.4+ | 0.3+ |
| 2001 10 14 | 704 | 1.0− | 0.2+ | 2004 04 17 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 704 | (0.5− | 2.5+) |
| 2001 10 14 | 704 | 0.3− | 0.3+ | 2004 04 17 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 704 | 0.1− | 0.5+ |
| 2001 10 14 | 704 | 0.4− | 0.6+ | 2004 04 19 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.6− | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.6+ | 2004 04 19 | 704 | 1.3+ | 1.3+ | 2006 09 25 | 704 | 0.3+ | 0.2− |
| 2001 11 12 | 704 | 0.4− | 0.5+ | 2004 04 19 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.6− | 0.7+ | 2004 04 21 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 699 | 0.4− | 0.3+ |
| 2001 11 12 | 704 | 0.3− | 0.5+ | 2004 04 21 | 704 | 0.9+ | 0.5+ | 2006 09 27 | 699 | 0.4− | 0.2− |
| 2004 03 14 | 644 | 0.4+ | 0.4+ | 2004 04 21 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 699 | 0.8− | 1.1+ |
| 2004 03 14 | 644 | 0.3+ | 0.3+ | 2004 04 21 | 704 | 0.7+ | 0.5+ | 2006 09 27 | 699 | 0.1+ | 0.6+ |
| 2004 03 14 | 644 | 0.5+ | 0.5+ | 2004 04 21 | 704 | 1.0+ | 0.4+ | 2006 09 29 | 704 | 1.1+ | 0.5+ |
| 2004 03 17 | 704 | 0.4+ | 0.7+ | 2004 04 22 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 1.0− | 1.5+ |
| 2004 03 17 | 704 | 0.4+ | 1.1+ | 2004 04 22 | 704 | 0.4+ | 0.8+ | 2006 09 29 | 704 | 0.7+ | 0.3− |
| 2004 03 17 | 704 | 0.5+ | 1.0+ | 2004 04 22 | 704 | 0.4+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.5+ |
| 2004 03 17 | 704 | 0.6− | 1.3+ | 2004 04 22 | 704 | 0.3+ | 0.9+ | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2004 03 17 | 704 | 0.4+ | 0.6+ | 2004 04 22 | 704 | 0.8+ | 0.8+ | 2006 10 17 | 703 | 0.1+ | 0.8+ |
| 2004 03 18 | 704 | 0.9+ | 0.5+ | 2005 06 08 | E12 | 0.2− | 1.1− | 2006 10 17 | 703 | 1.0− | 0.4+ |
| 2004 03 18 | 704 | 0.3+ | 0.6+ | 2005 06 08 | E12 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.8− | 1.2− |
| 2004 03 18 | 704 | 0.4+ | 1.2− | 2005 06 08 | E12 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2004 03 18 | 704 | 0.8+ | 0.1− | 2005 06 08 | E12 | (0.4− | 2.2−) | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2004 03 18 | 704 | 0.5+ | 0.9+ | 2006 07 22 | G96 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2004 03 20 | 704 | 1.1+ | 0.4+ | 2006 07 22 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | (1.7+ | 0.8+) | 2006 07 22 | G96 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 0.4− | 0.4+ | 2006 07 22 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 03 27 | 703 | (1.7− | 0.5−) | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 1.0− | 1.3+ |
| 2004 03 27 | 703 | 0.8− | 1.0+ | 2006 09 06 | 644 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 1.1− | 0.3− |
| 2004 03 27 | 703 | 0.3− | 0.5+ | 2006 09 06 | 644 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2004 03 27 | 703 | 0.7− | 0.0 | 2006 09 14 | A50 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.7− |

**(144476)∗ 2004 EK$_{56}$ = 2002 VF$_{135}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62042)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.79875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23069840 | $\omega$ | 124.26071 | | −0.56931050 | −0.82212102 | |
| $a$ | 2.6329321 | $\Omega$ | 0.45103 | | +0.67096221 | −0.46576403 | |
| $e$ | 0.1468046 | $i$ | 11.79756 | | +0.47507396 | −0.32738495 | |
| $P$ | 4.27 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 14 | 691 | 0.1+ | 0.8− | 2004 03 17 | 704 | 0.0 | 0.8+ | 2006 07 22 | G96 | 0.2− | 0.1− |
| 1993 10 14 | 691 | 0.2+ | 0.0 | 2004 03 17 | 704 | (1.7+ | 1.3+) | 2006 07 22 | G96 | 0.0 | 0.1− |
| 1993 10 14 | 691 | 0.2+ | 0.2+ | 2004 03 17 | 704 | 0.0 | 0.3− | 2006 07 22 | G96 | 0.8− | 0.1+ |
| 1998 11 16 | 704 | 0.7+ | 0.4− | 2004 03 20 | 699 | 0.1+ | 1.0− | 2006 07 22 | G96 | 0.1− | 0.0 |
| 1998 11 16 | 704 | (0.1− | 2.4+) | 2004 03 20 | 699 | 0.6+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 1998 11 16 | 704 | 0.3+ | 1.2− | 2004 03 20 | 704 | 0.1− | 1.3+ | 2006 09 17 | 691 | 0.1− | 0.3+ |
| 1998 11 16 | 704 | (4.2− | 1.4+) | 2004 03 20 | 699 | 0.3− | 0.3− | 2006 09 17 | 691 | (2.4+ | 2.6−) |
| 1998 12 19 | 327 | 0.0 | 0.6+ | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 691 | 0.4− | 0.2+ |
| 1998 12 19 | 327 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.8− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 1998 12 19 | 327 | 0.3+ | 0.2+ | 2004 03 20 | 699 | 0.6− | 0.5− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.3− | 2006 10 01 | 691 | 0.2− | 0.4+ |
| 2002 11 07 | 699 | 0.6+ | 0.3+ | 2004 03 27 | 699 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.8− | 2004 03 27 | 699 | 0.8+ | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2002 11 07 | 699 | (0.9− | 2.7+) | 2004 03 27 | 699 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.5+ |
| 2002 11 07 | 704 | 0.4+ | 0.4− | 2004 03 27 | 703 | (1.2− | 2.3+) | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 11 07 | 699 | 0.0 | 0.1+ | 2004 03 27 | 699 | 0.1+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.5+ |
| 2002 11 07 | 704 | 1.1+ | 0.5− | 2004 03 27 | 703 | (1.8− | 1.4+) | 2006 10 17 | 683 | 0.2+ | 0.6− |
| 2002 11 07 | 699 | 0.4+ | 0.7+ | 2004 03 27 | 703 | (0.1+ | 2.0+) | 2006 10 17 | 683 | 0.1− | 1.2+ |
| 2002 11 07 | 704 | 0.3− | 0.7− | 2004 03 27 | 703 | 0.5− | 0.6+ | 2006 10 17 | 703 | 1.0− | 0.2− |
| 2002 11 12 | 699 | 0.0 | 0.3+ | 2004 03 31 | 704 | 1.1+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2002 11 12 | 699 | 1.0− | 0.1− | 2004 03 31 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2002 11 12 | 699 | 0.8− | 0.9+ | 2004 03 31 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2002 11 12 | 699 | (1.7− | 2.3+) | 2004 03 31 | 704 | 0.8+ | 0.5+ | 2006 10 19 | 683 | 1.0+ | 0.3− |
| 2002 11 25 | 644 | 0.3− | 0.4+ | 2004 03 31 | 704 | 0.3+ | 0.2− | 2006 10 19 | 683 | 0.4− | 0.5+ |
| 2002 11 25 | 644 | 0.2− | 0.5+ | 2004 04 09 | E12 | 0.5− | 0.7+ | 2006 10 19 | 683 | 0.8+ | 0.6+ |
| 2002 11 25 | 644 | 0.3− | 0.5+ | 2004 04 09 | E12 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2002 12 06 | 704 | 0.4+ | 1.0− | 2004 04 09 | E12 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2002 12 06 | 704 | 0.5− | 1.3− | 2004 04 09 | E12 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | (0.8− | 1.8−) | 2004 04 17 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.4+ | | |
| 2002 12 06 | 704 | 0.7− | 1.0− | 2004 04 17 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2002 12 06 | 704 | 1.1− | 1.0− | 2004 04 17 | 704 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2002 12 11 | 644 | 0.1− | 0.4+ | 2004 04 17 | 704 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2002 12 11 | 644 | 0.5− | 0.3+ | 2004 04 19 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.5+ | | |
| 2002 12 11 | 644 | 0.3− | 0.3+ | 2004 04 19 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2004 03 14 | 644 | 0.5+ | 0.3+ | 2004 04 19 | 704 | 0.9+ | 0.5+ | 2006 11 06 | 644 | 0.7+ | 0.1+ | | |
| 2004 03 14 | 644 | 0.6+ | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.1− | 0.8+ | | |
| 2004 03 14 | 644 | 0.8+ | 0.3+ | 2004 04 21 | 704 | 0.6+ | 0.6+ | 2006 11 06 | 644 | 0.4− | 0.3+ | | |
| 2004 03 17 | 704 | 1.2− | 0.9− | 2004 04 21 | 704 | 0.4+ | 1.1+ | | | | | | |
| 2004 03 17 | 704 | 0.2− | 0.3+ | 2004 04 21 | 704 | 1.3+ | 0.8+ | | | | | | |

**(144477)∗ 2004 EL$_{56}$ = 2001 SR$_{300}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62043)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.58771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22686658 | $\omega$ | 6.90152 | | −0.93611185 | +0.34824759 | |
| $a$ | 2.6624964 | $\Omega$ | 193.79010 | | −0.33173901 | −0.92073954 | |
| $e$ | 0.2308481 | $i$ | 11.90578 | | −0.11680685 | −0.17596112 | |
| $P$ | 4.34 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2004 04 01 | 704 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.6+ | 0.4− | | |
| 2001 09 20 | 704 | 0.1+ | 0.6+ | 2004 04 08 | E12 | 0.6+ | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.2− | | |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2004 04 08 | E12 | (2.0+ | 1.2+) | 2004 05 08 | 703 | 0.6− | 0.5+ | | |
| 2001 09 20 | 704 | 0.7− | 0.6+ | 2004 04 08 | E12 | (1.6+ | 1.2+) | 2004 05 08 | 703 | 0.0 | 0.1+ | | |
| 2001 09 20 | 704 | 0.4− | 0.8+ | 2004 04 08 | E12 | 0.2+ | 0.3+ | 2004 05 08 | 703 | 0.4+ | 0.8+ | | |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2004 04 09 | E12 | 0.4− | 0.8− | 2004 05 08 | 703 | 1.0+ | 1.4+ | | |
| 2001 09 20 | 704 | 0.5− | 0.1− | 2004 04 09 | E12 | 0.1− | 0.3− | 2004 05 10 | 608 | 0.2− | 0.6+ | | |
| 2001 09 20 | 704 | 0.7+ | 0.9+ | 2004 04 09 | E12 | 0.4− | 0.6− | 2004 05 10 | 608 | 0.1− | 0.8+ | | |
| 2001 09 23 | 704 | 0.3+ | 0.2− | 2004 04 09 | E12 | 0.3− | 0.9− | 2004 05 10 | 608 | 0.1− | 0.7+ | | |
| 2001 09 23 | 704 | 0.4− | 0.4+ | 2004 04 10 | 703 | 0.1− | 0.4+ | 2004 05 14 | 704 | 1.0+ | 0.2+ | | |
| 2001 09 23 | 704 | 0.4+ | 0.8+ | 2004 04 10 | 703 | 1.4− | 0.3+ | 2004 05 14 | 704 | (1.7+ | 0.1+) | | |
| 2004 03 14 | 644 | 0.2+ | 0.7+ | 2004 04 10 | 703 | 0.4− | 0.4+ | 2004 05 14 | 704 | 0.7+ | 0.3+ | | |
| 2004 03 14 | 644 | 0.2+ | 0.6+ | 2004 04 10 | 703 | 0.8− | 1.2− | 2004 05 14 | 704 | 0.6+ | 0.2+ | | |
| 2004 03 14 | 644 | 0.4+ | 0.7+ | 2004 04 13 | 691 | 0.1− | 0.1− | 2004 05 14 | 704 | 0.0 | 1.3+ | | |
| 2004 03 17 | 704 | 0.4+ | 0.3+ | 2004 04 13 | 691 | 0.1− | 0.1− | 2004 06 16 | 704 | 0.8+ | 0.4+ | | |
| 2004 03 17 | 704 | 0.2+ | 0.5+ | 2004 04 13 | 691 | 0.1− | 0.1− | 2004 06 16 | 704 | 0.2+ | 0.4− | | |
| 2004 03 17 | 704 | 1.2+ | 0.3+ | 2004 04 15 | 699 | 0.1− | 0.5− | 2004 06 16 | 704 | 0.7+ | 0.0 | | |
| 2004 03 17 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.0 | 0.4− | 2004 06 16 | 704 | 0.6+ | 0.3+ | | |
| 2004 03 17 | 704 | 0.4+ | 0.2+ | 2004 04 15 | 699 | 0.2− | 0.6− | 2004 06 16 | 704 | 0.1− | 0.3− | | |
| 2004 03 18 | 704 | 0.6− | 0.6+ | 2004 04 15 | 699 | 0.2− | 0.4− | 2005 08 26 | 644 | 0.2+ | 0.2− | | |
| 2004 03 18 | 704 | 0.1+ | 0.3+ | 2004 04 16 | 704 | 0.2− | 0.4− | 2005 08 26 | 644 | 0.1+ | 0.2− | | |
| 2004 03 18 | 704 | 0.2− | 0.3+ | 2004 04 16 | 704 | 0.1− | 0.4− | 2005 08 26 | 644 | 0.1+ | 0.3− | | |
| 2004 03 18 | 704 | 0.1+ | 0.1+ | 2004 04 16 | 704 | 0.3+ | 0.6− | 2005 10 05 | 691 | 0.1− | 0.3+ | | |
| 2004 03 18 | 704 | 0.0 | 0.8+ | 2004 04 16 | 704 | 0.2− | 0.8− | 2005 10 05 | 691 | 0.1− | 0.1− | | |
| 2004 03 24 | 699 | 0.1− | 0.3+ | 2004 04 16 | 704 | 0.4− | 0.4− | 2005 10 05 | 691 | 0.4− | 1.0+ | | |
| 2004 03 24 | 699 | 0.5− | 0.1+ | 2004 04 19 | 704 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.3− | 0.4+ | | |
| 2004 03 24 | 699 | 0.3− | 0.5+ | 2004 04 19 | 704 | 0.0 | 1.0+ | 2006 10 03 | G96 | 0.1− | 0.1− | | |
| 2004 03 24 | 699 | 0.4− | 0.6+ | 2004 04 19 | 704 | 0.6+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.2+ | | |
| 2004 03 27 | 704 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.4+ | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.2+ | | |
| 2004 03 27 | 704 | 0.0 | 0.6+ | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.6+ | | |
| 2004 03 27 | 704 | 0.3− | 0.6+ | 2004 04 20 | 704 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.5+ | | |
| 2004 03 27 | 704 | 0.3− | 0.6+ | 2004 04 20 | 704 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.5+ | | |
| 2004 03 27 | 704 | 0.2− | 0.8+ | 2004 04 20 | 704 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.6+ | | |
| 2004 03 31 | 704 | 0.1− | 0.7+ | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.5+ | | |
| 2004 03 31 | 704 | 0.2+ | 0.4+ | 2004 04 20 | 703 | 0.6− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.5+ | | |
| 2004 03 31 | 704 | 0.0 | 0.3+ | 2004 04 20 | 703 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1− | 0.7+ | | |
| 2004 03 31 | 704 | 0.3− | 0.3+ | 2004 04 20 | 703 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.2− | 0.4+ | | |
| 2004 04 01 | 704 | 0.5− | 0.6+ | 2004 04 20 | 703 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.0 | 0.3+ | | |
| 2004 04 01 | 704 | 0.5− | 0.5+ | 2004 04 22 | 704 | 0.5+ | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.4+ | | |
| 2004 04 01 | 704 | 0.4+ | 1.0+ | 2004 04 22 | 704 | 1.2+ | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.4+ | | |
| 2004 04 01 | 704 | 0.1− | 0.3+ | 2004 04 22 | 704 | 0.5+ | 0.2− | | | | | | |

**(144478)∗ 2004 ER$_{56}$ = 2002 RA$_{218}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62043)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.86544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27418285 | $\omega$ | 293.81958 | | −0.39994969 | −0.91653690 | |
| $a$ | 2.3466187 | $\Omega$ | 179.75311 | | +0.88299667 | −0.38548690 | |
| $e$ | 0.2550975 | $i$ | 7.90598 | | +0.24567686 | −0.10658308 | |
| $P$ | 3.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.2− | 0.2+ | 2004 03 20 | 699 | 1.0+ | 1.1+ | 2004 04 09 | E12 | (1.0+ | 1.7−) | | |
| 1995 10 01 | 691 | 0.1− | 0.1+ | 2004 03 20 | 699 | 0.0 | 0.1− | 2004 04 09 | E12 | 0.5+ | 0.6− | | |
| 1995 10 01 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.8+ | 2004 04 16 | 704 | 0.3+ | 0.4− | | |
| 1999 12 05 | 704 | (0.4− | 2.1+) | 2004 03 20 | 699 | 0.1+ | 0.8+ | 2004 04 16 | 704 | 0.1+ | 0.1− | | |
| 1999 12 05 | 704 | 1.0+ | 0.4− | 2004 03 20 | 704 | 0.2+ | 0.6+ | 2004 04 16 | 704 | 0.1− | 0.2+ | | |
| 1999 12 05 | 704 | 0.2+ | 0.4− | 2004 03 20 | 699 | 0.8− | 0.4+ | 2004 04 16 | 704 | 0.3+ | 0.8− | | |
| 2000 01 08 | 704 | 0.6+ | 0.1− | 2004 03 20 | 704 | 0.1− | 0.1+ | 2004 04 20 | 704 | 0.7+ | 0.9+ | | |
| 2000 01 08 | 704 | 0.8− | 0.2+ | 2004 03 20 | 704 | 0.5+ | 0.5+ | 2004 04 20 | 704 | 0.8− | 1.2+ | | |
| 2000 01 08 | 704 | 0.5+ | 0.1− | 2004 03 20 | 699 | 0.0 | 1.2+ | 2004 04 20 | 704 | 0.0 | 0.7− | | |
| 2000 01 08 | 704 | 0.1− | 0.2− | 2004 03 20 | 699 | 0.9− | 0.0 | 2004 04 20 | 704 | 0.1− | 0.3+ | | |
| 2000 01 08 | 704 | 0.2+ | 0.4− | 2004 03 20 | 704 | 0.7− | 0.0 | 2004 04 20 | 704 | 0.6+ | 0.5− | | |
| 2000 01 11 | 704 | 0.3− | 0.2− | 2004 03 22 | 704 | 1.0− | 1.1+ | 2004 04 22 | 704 | 0.2+ | 0.3+ | | |
| 2000 01 11 | 704 | 0.7− | 0.9− | 2004 03 22 | 704 | 0.4+ | 0.8+ | 2004 04 22 | 704 | 0.5+ | 0.3+ | | |
| 2000 01 11 | 704 | 0.0 | 0.3+ | 2004 03 22 | 704 | (2.1+ | 0.5+) | 2004 04 22 | 704 | 0.3+ | 0.1− | | |
| 2000 01 11 | 704 | 0.4− | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2004 05 08 | 703 | 1.3+ | 0.5− | | |
| 2000 01 11 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.1− | 2004 05 08 | 703 | 0.6− | 0.0 | | |
| 2002 09 14 | 644 | (1.8+ | 0.8+) | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2004 05 08 | 703 | (0.4− | 2.2+) | | |
| 2002 09 14 | 644 | 0.0 | 0.7+ | 2004 03 23 | 704 | 0.8+ | 0.6+ | 2004 05 08 | 703 | 0.5+ | 0.8+ | | |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.9− | | |
| 2002 09 16 | 644 | 0.2+ | 0.3+ | 2004 03 25 | 699 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.5− | | |
| 2002 09 16 | 644 | 0.4− | 0.6+ | 2004 03 25 | 699 | 1.2− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.1− | | |
| 2002 09 16 | 644 | 0.2− | 0.8+ | 2004 03 25 | 699 | 0.1+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.4+ | | |
| 2002 09 17 | 644 | 0.4− | 0.3+ | 2004 03 25 | 699 | 1.1− | 0.1+ | 2006 11 01 | 703 | 0.8+ | 0.9+ | | |
| 2002 09 17 | 644 | 0.1+ | 0.8+ | 2004 03 28 | 704 | 0.3+ | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.5+ | | |
| 2002 09 17 | 644 | 0.0 | 0.8+ | 2004 03 28 | 704 | 0.6+ | 0.2− | 2006 11 01 | 703 | 0.7− | 0.5+ | | |
| 2004 03 14 | 644 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.4+ | 0.5+ | 2006 11 01 | 703 | 0.0 | 0.5+ | | |
| 2004 03 14 | 644 | 0.1+ | 0.2+ | 2004 03 28 | 704 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3+ | | |
| 2004 03 14 | 644 | 0.2+ | 0.2+ | 2004 03 31 | 704 | 0.0 | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.4+ | | |
| 2004 03 17 | 704 | 0.6− | 0.8+ | 2004 03 31 | 704 | 0.5− | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.4+ | | |
| 2004 03 17 | 704 | 0.0 | 0.7+ | 2004 03 31 | 704 | 1.3+ | 0.3+ | 2006 11 13 | 703 | 0.5− | 0.2+ | | |
| 2004 03 17 | 704 | 0.1− | 1.3+ | 2004 03 31 | 704 | 0.3− | 0.7− | 2006 11 13 | 703 | 0.8− | 0.7+ | | |
| 2004 03 19 | 704 | 0.6+ | 0.6+ | 2004 03 31 | 704 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.0 | 1.1+ | | |
| 2004 03 19 | 704 | 0.4− | 0.4+ | 2004 04 08 | E12 | 0.7+ | 0.6− | 2006 11 13 | 703 | 0.1+ | 0.8+ | | |
| 2004 03 19 | 704 | 0.3− | 0.0 | 2004 04 08 | E12 | 0.3− | 1.1− | 2006 11 19 | 703 | 0.0 | 0.1+ | | |
| 2004 03 19 | 704 | (2.4+ | 0.6+) | 2004 04 08 | E12 | (1.6+ | 1.7−) | 2006 11 19 | 703 | 0.3− | 0.6+ | | |
| 2004 03 19 | 704 | 0.4− | 1.4+ | 2004 04 08 | E12 | 0.3− | 0.6− | 2006 11 19 | 703 | 0.3− | 0.0 | | |
| 2004 03 20 | 699 | 0.4− | 0.0 | 2004 04 09 | E12 | 0.8− | 0.3− | 2006 11 19 | 703 | 0.0 | 0.2+ | | |
| 2004 03 20 | 699 | 0.1+ | 0.6− | 2004 04 09 | E12 | 0.1+ | 1.0− | | | | | | |

**(144479)∗ 2004 EW$_{57}$ = 2005 JG$_{38}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76451)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.67924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17760033 | $\omega$ | 165.60552 | | +0.88028061 | +0.46872667 | |
| $a$ | 3.1345380 | $\Omega$ | 165.73581 | | −0.45944897 | +0.88080068 | |
| $e$ | 0.1000228 | $i$ | 17.35427 | | −0.11837522 | +0.06697370 | |
| $P$ | 5.55 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 02 | 691 | 0.2− | 0.3− | 2005 05 11 | 691 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.0 | 0.6+ | | |
| 1998 02 02 | 691 | 0.1− | 0.0 | 2005 05 11 | 691 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.4+ | | |
| 1998 02 02 | 691 | 0.2− | 0.2+ | 2005 05 21 | 644 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.1+ | 0.5+ | | |
| 1999 03 20 | 645 | 0.1− | 0.1− | 2005 05 21 | 644 | 0.2− | 0.3− | 2006 08 30 | 704 | 0.4+ | 0.6− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.1− | 2005 05 21 | 644 | 0.5+ | 0.6− | 2006 08 30 | 704 | 0.2− | 0.1+ | | |
| 2000 08 03 | 704 | 0.3+ | 0.4− | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.5+ | 0.9− | | |
| 2000 08 03 | 704 | 1.0+ | 0.8+ | 2006 08 15 | 644 | 0.0 | 0.1− | 2006 09 01 | 704 | 1.0+ | 0.3− | | |
| 2000 08 03 | 704 | 0.5− | 0.1− | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 09 01 | 704 | 0.6+ | 0.3+ | | |
| 2000 08 03 | 704 | 0.2+ | 0.1− | 2006 08 19 | A50 | 0.6+ | 0.0 | 2006 09 01 | 704 | 0.6+ | 0.1− | | |
| 2001 09 19 | 645 | 0.2+ | 0.1+ | 2006 08 19 | A50 | 0.1− | 0.3+ | 2006 09 01 | 704 | 0.9− | 0.8− | | |
| 2001 09 19 | 645 | 0.2+ | 0.1+ | 2006 08 21 | 704 | 0.2− | 1.3+ | 2006 09 14 | 703 | 1.1− | 0.2− | | |
| 2001 10 22 | 644 | 0.5− | 0.0 | 2006 08 21 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.2− | | |
| 2001 10 22 | 644 | 0.8− | 0.1− | 2006 08 21 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.5− | 0.2− | | |
| 2001 10 22 | 644 | 1.0− | 0.2+ | 2006 08 21 | 704 | 0.4− | 0.7+ | 2006 09 14 | 703 | 0.7− | 0.5− | | |
| 2004 03 15 | 691 | 0.0 | 0.5+ | 2006 08 21 | 704 | 0.3− | 0.9+ | 2006 09 17 | 704 | 0.4− | 0.0 | | |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.5+ | | |
| 2004 03 15 | 704 | 1.0− | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.5+ | | |
| 2004 03 15 | 704 | 0.0 | 1.1+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2− | 0.1+ | | |
| 2004 03 15 | 691 | 0.2− | 0.6+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.5+ | | |
| 2004 03 15 | 704 | 0.4+ | 0.9+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 1.2− | 1.2+ | | |
| 2004 03 17 | 704 | 0.7+ | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.2+ | 1.0− | | |
| 2004 03 17 | 704 | 0.6+ | 0.5− | 2006 08 25 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.7+ | | |
| 2004 03 17 | 704 | 1.0+ | 1.1+ | 2006 08 25 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.7− | | |
| 2004 03 17 | 704 | 0.4− | 0.9+ | 2006 08 25 | 704 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.0 | | |
| 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 1.0+ | 0.3− | 2006 09 25 | 699 | 0.2− | 1.2+ | | |
| 2004 03 22 | 704 | 1.1+ | 0.2− | 2006 08 25 | 704 | 0.1− | 0.6− | 2006 09 25 | 699 | 1.0+ | 1.0− | | |
| 2004 03 22 | 704 | 0.7+ | 1.0+ | 2006 08 25 | 104 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2004 03 22 | 704 | 1.1+ | 0.3+ | 2006 08 25 | 104 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2004 03 26 | 691 | 0.1− | 0.5+ | 2006 08 25 | 104 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.0 | | |
| 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | | |
| 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.7+ | 0.2− | | |
| 2005 05 06 | 691 | 0.2− | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2− | 0.9+ | | |
| 2005 05 06 | 691 | 0.1− | 0.6+ | 2006 08 27 | 699 | 0.7− | 0.1− | 2006 09 27 | 704 | 0.0 | 1.1+ | | |
| 2005 05 06 | 691 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.2− | | |
| 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.5+ | | |
| 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 1.3− | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.9− | | |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.8− | 0.6+ | 2006 09 30 | 703 | 0.7+ | 0.6+ | | |
| 2005 05 09 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.2+ | | |
| 2005 05 09 | 691 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1− | | |
| 2005 05 09 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.0 | | |
| 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 08 29 | J95 | 0.9− | 1.3+ | 2006 10 22 | G96 | 0.2+ | 0.3− | | |
| 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 08 29 | J95 | 0.0 | 0.7− | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2005 05 10 | 691 | 0.5+ | 0.3− | 2006 08 29 | J95 | 0.2+ | 0.0 | | | | | | |
| 2005 05 11 | 691 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.4+ | 0.5+ | | | | | | |

**(144480)∗ 2004 ET$_{58}$ = 2001 UW$_{191}$**

Discovered 2004 Mar. 15 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.61033 | | (2000.0) | | | |
| $n$ | 0.17656902 | $\omega$ | 82.72615 | | +0.55051988 | −0.81753570 |
| $a$ | 3.1467316 | $\Omega$ | 331.72194 | | +0.55295649 | +0.50876332 |
| $e$ | 0.0439155 | $i$ | 20.90021 | | +0.62543343 | +0.26980598 |
| $P$ | 5.58 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.5− | 0.4− | 2004 03 15 | 644 | 0.7+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.0 | | |
| 2001 10 18 | 704 | 0.7− | 0.3− | 2004 03 15 | 644 | 0.9+ | 0.5+ | 2006 08 28 | 703 | 0.2+ | 0.4+ | | |
| 2001 10 18 | 704 | 0.2− | 0.5+ | 2004 03 17 | 704 | 0.8+ | 0.4+ | 2006 08 28 | 703 | 0.5+ | 1.1+ | | |
| 2001 10 18 | 704 | 1.3− | 0.5+ | 2004 03 17 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.1+ | | |
| 2001 10 20 | 699 | 0.0 | 0.1+ | 2004 03 17 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.8− | 0.5+ | | |
| 2001 10 20 | 699 | 0.2− | 0.1+ | 2004 04 12 | 644 | 0.4+ | 1.0+ | 2006 09 14 | 644 | 0.2− | 0.1− | | |
| 2001 10 20 | 699 | 0.6+ | 0.2− | 2004 04 12 | 644 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.8− | 0.4+ | | |
| 2001 10 20 | 699 | 0.7+ | 0.0 | 2004 04 12 | 644 | 0.9+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.3+ | | |
| 2001 11 12 | 704 | 0.0 | 0.5− | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.5− | 0.0 | | |
| 2001 11 12 | 704 | 0.5+ | 0.6+ | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.5− | 0.1+ | | |
| 2001 11 12 | 704 | 0.8+ | 0.6+ | 2006 08 13 | 644 | 0.1− | 0.2+ | 2006 09 24 | 699 | 0.7− | 0.0 | | |
| 2002 12 28 | 704 | 0.6− | 0.5+ | 2006 08 28 | 699 | 0.1+ | 0.3− | 2006 09 24 | 699 | 0.5− | 1.1+ | | |
| 2002 12 28 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.7+ | 0.4− | 2006 09 24 | 699 | 0.7+ | 0.4+ | | |
| 2002 12 28 | 704 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.2− | 2006 09 24 | 699 | 0.3− | 0.3+ | | |
| 2002 12 28 | 704 | 1.0+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.1− | | |
| 2003 01 10 | 704 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.2− | 0.1− | | |
| 2003 01 10 | 704 | 1.1+ | 0.7+ | 2006 08 28 | 699 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.0 | | |
| 2003 01 10 | 704 | 0.1− | 0.6+ | 2006 08 28 | 703 | 1.2− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.1+ | | |
| 2003 01 10 | 704 | 0.3+ | 1.0+ | 2006 08 28 | 703 | 0.5− | 0.2+ | | | | | | |
| 2004 03 15 | 644 | 0.7+ | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.2+ | | | | | | |

**(144481)∗ 2004 EV$_{58}$**

Discovered 2004 Mar. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 140.08597 | | (2000.0) | | | |
| $n$ | 0.17553265 | $\omega$ | 313.71966 | | −0.85201496 | +0.46291145 |
| $a$ | 3.1591053 | $\Omega$ | 255.26828 | | −0.37743158 | −0.86680679 |
| $e$ | 0.0720440 | $i$ | 14.64430 | | −0.36278907 | −0.18536176 |
| $P$ | 5.61 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.2+ | 0.3+ | 2004 03 17 | 704 | 0.4+ | 0.2+ | 2004 05 15 | 704 | 0.9+ | 0.1+ | | |
| 2000 09 01 | 704 | 0.1− | 0.2− | 2004 03 17 | 704 | 0.6+ | 0.1− | 2004 05 15 | 704 | 0.8+ | 1.5+ | | |
| 2000 09 01 | 704 | 0.5+ | 0.5− | 2004 03 17 | 704 | 0.1+ | 0.0 | 2006 08 29 | 699 | 0.0 | 0.0 | | |
| 2001 09 25 | 704 | 0.4+ | 0.7+ | 2004 03 17 | 704 | 0.6+ | 0.2− | 2006 08 29 | 699 | 1.0− | 0.2− | | |
| 2001 09 25 | 704 | 0.4+ | 0.0 | 2004 03 17 | 704 | 0.3+ | 0.3− | 2006 08 29 | 699 | 0.5+ | 0.3− | | |
| 2001 09 25 | 704 | 0.4− | 0.8+ | 2004 03 26 | 704 | 0.8− | 0.4+ | 2006 08 29 | 699 | 1.2− | 0.2+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.7+ | 2004 03 26 | 704 | 0.6− | 0.9+ | 2006 09 06 | 644 | 0.1− | 0.6+ | | |
| 2001 10 18 | 704 | 0.7+ | 0.4− | 2004 03 26 | 704 | 0.3− | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.1+ | | |
| 2001 10 18 | 704 | 0.5+ | 0.3+ | 2004 03 26 | 704 | 0.4− | 1.8+ | 2006 09 06 | 644 | 0.3− | 0.3+ | | |
| 2001 10 18 | 704 | 0.9+ | 0.7− | 2004 03 26 | 704 | 0.4− | 1.1+ | 2006 09 16 | 703 | 0.4− | 0.5− | | |
| 2001 10 18 | 704 | 0.1− | 1.2− | 2004 04 17 | 644 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.4+ | | |
| 2001 10 18 | 704 | 0.4+ | 0.7− | 2004 04 17 | 644 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.6+ | 0.5+ | | |
| 2001 11 12 | 704 | 0.8− | 0.3+ | 2004 04 17 | 644 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.2+ | | |
| 2001 11 12 | 704 | 0.6− | 1.3+ | 2004 05 12 | E12 | 0.1− | 0.2− | 2006 09 21 | 699 | 1.3+ | 0.6+ | | |
| 2001 11 12 | 704 | 0.6− | 1.3+ | 2004 05 12 | E12 | 0.4+ | 0.9− | 2006 09 21 | 699 | 0.2− | 1.8+ | | |
| 2001 12 10 | 704 | 0.5− | 0.1− | 2004 05 12 | E12 | 0.3− | 0.8− | 2006 09 21 | 699 | 0.1− | 0.9+ | | |
| 2001 12 10 | 704 | 1.0− | 0.8− | 2004 05 12 | E12 | 0.6− | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.2− | | |
| 2001 12 10 | 704 | 0.4+ | 0.3− | 2004 05 14 | 699 | 1.1+ | 0.2− | 2006 09 27 | 703 | 0.2+ | 1.4+ | | |
| 2001 12 10 | 704 | 0.2− | 1.2+ | 2004 05 14 | 699 | 1.7+ | 1.7+ | 2006 09 27 | 703 | 0.4− | 0.5+ | | |
| 2001 12 10 | 704 | 0.7− | 0.2+ | 2004 05 14 | 699 | 0.5+ | 1.4+ | 2006 09 27 | 703 | 0.0 | 0.6− | | |
| 2004 03 15 | 644 | 0.1− | 0.1+ | 2004 05 14 | 699 | 0.3− | 0.4− | 2006 09 27 | 703 | 0.6− | 0.7− | | |
| 2004 03 15 | 644 | 0.3− | 0.1+ | 2004 05 15 | 704 | 0.2− | 0.0 | | | | | | |
| 2004 03 15 | 644 | 0.3− | 0.2+ | 2004 05 15 | 704 | 0.1− | 0.6− | | | | | | |

**(144482)∗ 2004 EW$_{59}$ = 1999 CO$_{35}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62047)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 203.90144 | | (2000.0) | | | |
| $n$ | 0.21258155 | $\omega$ | 161.75012 | | −0.99819583 | +0.02468804 |
| $a$ | 2.7804750 | $\Omega$ | 19.90557 | | −0.05004745 | −0.84571618 |
| $e$ | 0.2026548 | $i$ | 9.25065 | | +0.03317147 | −0.53306158 |
| $P$ | 4.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.3− | 0.4− | 2004 03 27 | 704 | 0.2− | 0.6+ | 2004 05 12 | 699 | 0.2− | 0.1+ | | |
| 1999 02 10 | 704 | 0.4− | 0.3− | 2004 03 27 | 704 | 0.5− | 0.6+ | 2004 05 12 | 699 | 0.1− | 0.1+ | | |
| 1999 02 10 | 704 | 0.1+ | 0.8+ | 2004 03 31 | 704 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.3+ | 0.6+ | | |
| 1999 02 10 | 704 | 0.8− | 0.3+ | 2004 03 31 | 704 | 0.6+ | 0.3− | 2004 05 15 | 704 | 0.1+ | 0.1+ | | |
| 1999 02 10 | 704 | 0.8− | 1.5− | 2004 03 31 | 704 | 0.1+ | 0.3− | 2004 05 15 | 704 | 0.7− | 0.7+ | | |
| 1999 02 13 | 704 | 1.0+ | 0.9− | 2004 03 31 | 704 | 0.3− | 0.0 | 2004 05 15 | 704 | 0.1− | 0.9+ | | |
| 1999 02 13 | 704 | 0.3− | 0.5+ | 2004 03 31 | 704 | 0.0 | 0.4− | 2004 05 15 | 704 | 0.6− | 0.3− | | |
| 1999 02 13 | 704 | 0.5− | 0.2+ | 2004 04 08 | E12 | 0.8+ | 0.7− | 2004 05 16 | 704 | 0.6+ | 0.4− | | |
| 1999 02 13 | 704 | 1.4+ | 0.1+ | 2004 04 08 | E12 | 0.6+ | 0.3− | 2004 05 16 | 704 | 0.9+ | 0.6− | | |
| 1999 02 13 | 704 | 0.0 | 0.2+ | 2004 04 08 | E12 | 0.6+ | 0.8− | 2004 05 16 | 704 | 1.5+ | 0.5− | | |
| 2002 12 05 | 704 | 0.8− | 1.1+ | 2004 04 08 | E12 | 1.2+ | 0.1− | 2004 05 16 | 704 | 0.6− | 0.4+ | | |
| 2002 12 05 | 704 | 0.6+ | 1.0− | 2004 04 09 | E12 | 0.0 | 0.2+ | 2004 05 24 | 691 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2004 04 09 | E12 | 0.2+ | 0.2− | 2004 05 24 | 691 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.0 | 0.4+ | 2004 04 09 | E12 | 0.4+ | 0.1− | 2004 05 24 | 691 | 0.2+ | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2+ | 0.8+ | 2004 04 09 | E12 | 0.7− | 0.1+ | 2004 06 14 | 704 | 0.3+ | 0.4+ | | |
| 2003 12 27 | 704 | 1.3+ | 0.6+ | 2004 04 10 | 703 | 0.0 | 0.2− | 2004 06 14 | 704 | (1.0+ | 2.5+) | | |
| 2003 12 27 | 704 | 0.4+ | 0.3− | 2004 04 10 | 703 | 0.4− | 0.4+ | 2004 06 14 | 704 | 0.3+ | 0.6+ | | |
| 2003 12 27 | 704 | (1.6+ | 0.7+) | 2004 04 10 | 703 | 0.5− | 0.2− | 2004 06 14 | 704 | 1.0+ | 0.8+ | | |
| 2003 12 27 | 704 | 0.0 | 0.5+ | 2004 04 10 | 703 | 0.2− | 0.2+ | 2004 06 14 | 704 | 0.1+ | 0.2− | | |
| 2003 12 27 | 704 | 0.8+ | 0.5+ | 2004 04 12 | 699 | 0.1+ | 0.1+ | 2005 07 03 | 644 | 0.1+ | 0.4+ | | |
| 2004 01 22 | 704 | 0.8+ | 0.4+ | 2004 04 12 | 699 | 0.2+ | 0.3+ | 2005 07 03 | 644 | 0.3+ | 0.7+ | | |
| 2004 01 22 | 704 | 1.5+ | 0.2− | 2004 04 12 | 699 | 0.5− | 0.1− | 2005 07 03 | 644 | 0.1− | 0.2+ | | |
| 2004 01 22 | 704 | 1.5+ | 1.1+ | 2004 04 12 | 699 | 0.2− | 0.1− | 2005 08 04 | 644 | 0.1− | 0.5+ | | |
| 2004 01 22 | 704 | 0.7+ | 0.6+ | 2004 04 13 | 691 | 0.1− | 0.1+ | 2005 08 04 | 644 | 0.3− | 0.3+ | | |
| 2004 02 19 | 704 | 0.0 | 0.2+ | 2004 04 13 | 691 | 0.2− | 0.1+ | 2005 08 04 | 644 | 0.1− | 0.4+ | | |
| 2004 02 19 | 704 | 0.3+ | 0.4− | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.4− | 0.1+ | | |
| 2004 02 19 | 704 | 1.1+ | 1.2+ | 2004 04 15 | 699 | 0.1+ | 0.2− | 2006 09 14 | 691 | 0.4− | 0.3+ | | |
| 2004 02 19 | 704 | 0.5− | 0.3+ | 2004 04 15 | 699 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.3− | 0.1+ | | |
| 2004 02 19 | 704 | 1.3+ | 0.6+ | 2004 04 15 | 699 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.2− | 0.3+ | | |
| 2004 02 23 | 704 | 0.6+ | 1.3+ | 2004 04 15 | 699 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.1+ | | |
| 2004 02 23 | 704 | 0.9+ | 0.0 | 2004 04 17 | 704 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.0 | | |
| 2004 02 23 | 704 | (1.5+ | 0.1+) | 2004 04 17 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.3+ | | |
| 2004 02 23 | 704 | (1.3+ | 1.5−) | 2004 04 17 | 704 | 0.6+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.1− | | |
| 2004 03 15 | 703 | 0.6− | 0.6+ | 2004 04 17 | 704 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.1+ | | |
| 2004 03 15 | 703 | 0.2− | 0.1− | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.3+ | | |
| 2004 03 15 | 703 | 0.3− | 0.8+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.5− | 0.4+ | | |
| 2004 03 15 | 703 | 0.7− | 0.6+ | 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2004 03 17 | 704 | 0.6+ | 0.3+ | 2004 04 20 | 703 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.5+ | | |
| 2004 03 17 | 704 | 1.3− | 0.7+ | 2004 04 20 | 703 | 0.3− | 0.6− | 2006 10 13 | A50 | 0.3+ | 0.2− | | |
| 2004 03 17 | 704 | (1.6− | 0.2+) | 2004 04 20 | 703 | 0.1− | 0.0 | 2006 10 13 | A50 | 0.5+ | 0.5− | | |
| 2004 03 17 | 704 | 0.2− | 0.2+ | 2004 04 20 | 703 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.9+ | | |
| 2004 03 17 | 704 | 1.0− | 0.0 | 2004 04 20 | 704 | 0.9+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.7+ | | |
| 2004 03 18 | 704 | (1.6+ | 1.3+) | 2004 04 20 | 704 | 1.0+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.2+ | | |
| 2004 03 18 | 704 | 0.9+ | 1.3+ | 2004 04 20 | 704 | 1.3+ | 0.6+ | 2006 10 28 | 691 | 0.3− | 0.4+ | | |
| 2004 03 18 | 704 | 1.2+ | 0.9+ | 2004 04 20 | 704 | 0.9+ | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.0 | | |
| 2004 03 18 | 704 | 1.0+ | 1.5+ | 2004 04 20 | 704 | 1.3+ | 0.8+ | 2006 10 28 | 691 | 0.0 | 0.5+ | | |
| 2004 03 18 | 704 | 1.0+ | 0.5+ | 2004 04 20 | 152 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.4+ | | |
| 2004 03 24 | 699 | 0.2− | 0.1− | 2004 04 20 | 152 | 1.1− | 0.9+ | 2006 11 01 | 691 | 0.4− | 0.0 | | |
| 2004 03 24 | 699 | 0.3+ | 0.7− | 2004 04 20 | 152 | 1.1− | 0.5− | 2006 11 01 | 691 | 0.8− | 0.3+ | | |
| 2004 03 24 | 699 | 0.0 | 0.1+ | 2004 05 07 | 703 | 0.4+ | 0.3− | 2006 11 13 | 691 | 0.5− | 0.4+ | | |
| 2004 03 24 | 699 | 0.5+ | 0.3− | 2004 05 07 | 703 | 0.3− | 0.6− | 2006 11 13 | 691 | 0.2− | 0.6+ | | |
| 2004 03 25 | 699 | 0.2− | 0.3+ | 2004 05 07 | 703 | 0.9− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 25 | 699 | 0.2− | 0.1+ | 2004 05 07 | 703 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.0 | | |
| 2004 03 25 | 699 | 0.2− | 0.7− | 2004 05 09 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.3− | | |
| 2004 03 25 | 699 | (3.4− | 2.2−) | 2004 05 09 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2004 03 27 | 704 | 0.2+ | 0.6+ | 2004 05 09 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.0 | | |
| 2004 03 27 | 704 | 0.1+ | 0.3+ | 2004 05 12 | 699 | 0.2− | 0.3+ | | | | | | |
| 2004 03 27 | 704 | 0.2− | 0.2+ | 2004 05 12 | 699 | 0.6− | 0.2+ | | | | | | |

**(144483)∗ 2004 EE$_{60}$**

Discovered 2004 Mar. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.60930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21191358 | $\omega$ | 214.84544 | | −0.12383930 | −0.98794512 | |
| $a$ | 2.7863148 | $\Omega$ | 242.42932 | | +0.93257666 | −0.08388878 | |
| $e$ | 0.0984662 | $i$ | 6.01496 | | +0.33906431 | −0.13010427 | |
| $P$ | 4.65 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | 1.1+ | 1.5− | 2004 03 15 | 644 | 0.3+ | 1.0+ | 2004 04 21 | 704 | 0.3+ | 1.3+ | | |
| 1997 10 29 | 704 | (2.1− | 1.0−) | 2004 03 17 | 704 | 1.0+ | 0.9+ | 2004 04 21 | 704 | 0.6− | 0.6+ | | |
| 1997 10 29 | 704 | 0.8− | 1.2+ | 2004 03 17 | 704 | 0.4− | 1.5+ | 2006 08 29 | 699 | 1.0− | 0.6+ | | |
| 1997 10 29 | 704 | (3.8− | 0.7+) | 2004 03 17 | 704 | 0.5+ | 0.7+ | 2006 08 29 | 699 | 1.0+ | 0.8+ | | |
| 1997 10 31 | 704 | 0.9− | 1.5+ | 2004 03 17 | 704 | 0.5+ | 0.3+ | 2006 08 29 | 699 | 1.4+ | 0.5+ | | |
| 1997 10 31 | 704 | 0.1+ | 0.7− | 2004 03 19 | 704 | 1.0+ | 1.0+ | 2006 08 29 | 699 | 0.3− | 0.6+ | | |
| 1997 10 31 | 704 | 0.0 | 0.5+ | 2004 03 19 | 704 | 0.7+ | 0.5+ | 2006 09 16 | 703 | 0.5− | 0.3− | | |
| 1997 10 31 | 704 | (0.0 | 3.1+) | 2004 03 19 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 703 | 0.9− | 0.9+ | | |
| 1997 11 06 | 704 | (4.3− | 0.6−) | 2004 03 19 | 704 | 0.3+ | 0.9+ | 2006 09 16 | 703 | 0.1− | 0.3+ | | |
| 1997 11 06 | 704 | (5.3− | 0.4+) | 2004 03 20 | 699 | 0.1− | 0.9+ | 2006 09 16 | 703 | 1.1− | 0.8+ | | |
| 1997 11 06 | 704 | (5.2− | 0.4+) | 2004 03 20 | 699 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.5+ | | |
| 1997 11 06 | 704 | (5.1− | 0.9−) | 2004 03 20 | 699 | 0.7+ | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.2+ | | |
| 1997 11 06 | 704 | (5.7− | 1.5+) | 2004 03 20 | 699 | 0.1− | 0.5− | 2006 09 19 | 699 | 0.8− | 0.4+ | | |
| 2001 08 25 | 704 | 1.4+ | 0.3− | 2004 03 25 | 699 | 0.8+ | 0.3− | 2006 09 19 | 699 | 0.6− | 0.5+ | | |
| 2001 08 25 | 704 | (1.0+ | 2.0−) | 2004 03 25 | 699 | 0.2+ | 0.9+ | 2006 09 25 | 704 | 0.6+ | 1.5+ | | |
| 2001 08 25 | 704 | 1.2+ | 1.0− | 2004 03 25 | 699 | 0.7− | 0.6+ | 2006 09 25 | 704 | 0.0 | 0.6+ | | |
| 2001 08 25 | 704 | (2.2+ | 0.5−) | 2004 03 25 | 699 | 1.0+ | 1.3+ | 2006 09 25 | 704 | 0.2+ | 0.4+ | | |
| 2001 08 25 | 704 | (1.5+ | 0.9−) | 2004 03 26 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.4+ | 0.3+ | | |
| 2001 09 08 | 704 | 1.2− | 0.4− | 2004 03 26 | 704 | 0.5+ | 0.6+ | 2006 09 25 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 08 | 704 | 0.6− | 0.7+ | 2004 03 26 | 704 | 0.9+ | 0.0 | 2006 09 27 | 699 | 0.4− | 0.1− | | |
| 2001 09 08 | 704 | 0.3− | 0.1− | 2004 03 26 | 704 | 1.1− | 0.9+ | 2006 09 27 | 699 | 0.3− | 1.1+ | | |
| 2001 09 08 | 704 | 0.5− | 0.9+ | 2004 04 09 | E12 | 0.2− | 0.5+ | 2006 09 27 | 699 | (2.2+ | 0.8+) | | |
| 2001 09 08 | 704 | 0.5− | 0.4+ | 2004 04 09 | E12 | 0.2− | 0.6− | 2006 09 28 | 683 | (2.0− | 0.7−) | | |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2004 04 09 | E12 | 0.2− | 0.5+ | 2006 09 28 | 683 | (0.7− | 2.4−) | | |
| 2001 09 20 | 645 | 0.1− | 0.1+ | 2004 04 09 | E12 | 0.7− | 0.6+ | 2006 09 28 | 683 | (1.6− | 1.4−) | | |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2004 04 14 | 699 | 0.2− | 0.6+ | 2006 10 04 | G96 | 0.3− | 0.1+ | | |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2004 04 14 | 699 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.0 | | |
| 2002 12 11 | 704 | 0.3− | 0.5+ | 2004 04 14 | 699 | 0.1+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.0 | | |
| 2002 12 11 | 704 | 0.4− | 0.4+ | 2004 04 14 | 699 | 0.2+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.5+ | 0.7+ | 2004 04 17 | 704 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2002 12 11 | 704 | 0.5− | 1.4+ | 2004 04 17 | 704 | 0.4+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2003 01 07 | 704 | (1.8+ | 0.4−) | 2004 04 17 | 704 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 2003 01 07 | 704 | 0.6+ | 0.0 | 2004 04 19 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.0 | | |
| 2003 01 07 | 704 | 0.1+ | 0.8+ | 2004 04 19 | 704 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.5+ | | |
| 2003 01 07 | 704 | 0.1− | 1.3+ | 2004 04 19 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.4+ | | |
| 2003 01 07 | 704 | 0.3+ | 1.5+ | 2004 04 19 | 704 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.3+ | | |
| 2004 03 15 | 644 | 0.2+ | 0.5+ | 2004 04 21 | 704 | 0.4+ | 1.3+ | | | | | | |
| 2004 03 15 | 644 | 0.2+ | 0.8+ | 2004 04 21 | 704 | 0.0 | 0.8+ | | | | | | |

**(144484)∗ 2004 ER$_{61}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.18873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20333376 | $\omega$ | 211.13657 | | +0.73351206 | −0.67965030 | |
| $a$ | 2.8641542 | $\Omega$ | 191.68562 | | +0.62948772 | +0.68262931 | |
| $e$ | 0.0702963 | $i$ | 1.68642 | | +0.25633039 | +0.26850084 | |
| $P$ | 4.85 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.1+ | 0.2− | 2004 04 21 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.6+ | | |
| 2001 08 23 | 691 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.2− | | |
| 2001 08 23 | 691 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− | | |
| 2001 09 22 | 704 | 0.4− | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− | | |
| 2001 09 22 | 704 | 0.5+ | 1.5+ | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.1− | | |
| 2001 09 22 | 704 | 0.7− | 1.0+ | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.4+ | | |
| 2003 01 04 | 704 | 0.1− | 1.4+ | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2003 01 04 | 704 | 0.2+ | 0.8+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2003 01 04 | 704 | 0.4− | 1.2+ | 2006 08 23 | 644 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.3− | 0.4− | | |
| 2004 03 12 | 644 | 0.1+ | 0.3+ | 2006 08 23 | 644 | 0.1− | 0.5+ | 2006 10 16 | G96 | 0.2− | 0.0 | | |
| 2004 03 12 | 644 | 0.3+ | 0.3+ | 2006 08 27 | 699 | 1.1− | 1.0+ | 2006 10 16 | G96 | 0.4+ | 0.3− | | |
| 2004 03 12 | 644 | 0.5+ | 0.4+ | 2006 08 27 | 699 | 0.5− | 1.1− | 2006 10 16 | G96 | 0.1− | 0.1− | | |
| 2004 03 15 | 691 | 0.1− | 0.5+ | 2006 08 27 | 699 | 0.7− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.1+ | | |
| 2004 03 15 | 691 | 0.3+ | 0.5+ | 2006 08 27 | 699 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.0 | | |
| 2004 03 18 | 704 | 0.1+ | 0.6− | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1− | | |
| 2004 03 18 | 704 | 0.5+ | 0.4− | 2006 08 28 | 691 | 0.5+ | 0.5+ | 2006 10 23 | 701 | 0.3+ | 0.4− | | |
| 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 701 | 0.4− | 0.2− | | |
| 2004 03 18 | 704 | 0.7− | 1.4+ | 2006 08 29 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 701 | 0.3− | 0.3− | | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 08 29 | 704 | 0.2+ | 0.8+ | 2006 10 23 | 701 | 1.2+ | 0.0 | | |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.2+ | | |
| 2004 03 23 | 691 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.8− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1+ | | |
| 2004 03 27 | 704 | (2.0+ | 1.5+) | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.0 | | |
| 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 09 16 | 699 | 1.3− | 1.1+ | 2006 11 11 | G96 | 0.1− | 0.4− | | |
| 2004 03 27 | 704 | 0.6+ | 0.1+ | 2006 09 16 | 699 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1+ | | |
| 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.9+ | 2006 11 21 | G96 | 0.3− | 0.1− | | |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.8− | 1.2+ | 2006 11 21 | G96 | 0.1− | 0.1+ | | |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.5− | 2006 11 21 | G96 | 0.5− | 0.1− | | |
| 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 1.3+ | | | | | | |
| 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.3+ | | | | | | |

**(144485)∗ 2004 ES$_{61}$**

Discovered 2004 Mar. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.52176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22596852 | $\omega$ | 50.25542 | | +0.76891581 | −0.63802560 | |
| $a$ | 2.6695461 | $\Omega$ | 349.17280 | | +0.49891846 | +0.63901277 | |
| $e$ | 0.0694129 | $i$ | 12.64813 | | +0.39981103 | +0.42963474 | |
| $P$ | 4.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.5− | 0.5+ | 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 09 28 | 703 | 0.4+ | 0.1+ |
| 1997 09 28 | 691 | 0.3− | 0.5+ | 2004 03 12 | 644 | 0.2− | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.9+ |
| 1997 09 28 | 691 | 0.5− | 0.4+ | 2004 03 12 | 644 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.1− | 0.3+ |
| 2001 07 14 | 644 | 0.2− | 0.3+ | 2004 03 12 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.2+ |
| 2001 07 14 | 644 | 0.5− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.6+ | 2006 10 04 | 703 | 0.5− | 0.1− |
| 2001 07 14 | 644 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 10 04 | 703 | 0.1− | 0.1+ |
| 2001 08 24 | 644 | 0.5+ | 0.2− | 2004 03 18 | 704 | 1.0+ | 0.7+ | 2006 10 04 | 703 | 1.3− | 0.5− |
| 2001 08 24 | 644 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.5− | 2006 10 04 | 703 | 0.4− | 0.2+ |
| 2001 08 24 | 644 | 0.3+ | 0.9+ | 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 12 15 | 704 | 0.9− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 12 15 | 704 | 0.1+ | 0.7+ | 2004 03 19 | 704 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.4+ | 0.4+ |
| 2002 12 15 | 704 | 0.7− | 1.2+ | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.6+ |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.7+ |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.2− | 1.5+ | 2006 10 12 | 644 | 0.3− | 0.7+ |
| 2003 12 19 | 691 | 0.5+ | 0.2− | 2004 03 20 | 704 | 0.5+ | 0.9+ | 2006 10 17 | 703 | 1.1+ | 0.1+ |
| 2003 12 19 | 691 | 0.5− | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.6+ |
| 2003 12 19 | 691 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2004 02 15 | 703 | 0.0 | 0.7− | 2004 03 20 | 704 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2004 02 15 | 703 | 0.5+ | 1.5+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2004 02 15 | 703 | (0.7+ | 1.6+) | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2004 02 15 | 703 | 0.8+ | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2004 02 26 | 704 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.4− | 0.0 | 2006 10 31 | 703 | 0.4− | 0.3− |
| 2004 02 26 | 704 | 0.8+ | 0.3+ | 2004 04 24 | 691 | 0.1− | 0.4+ | 2006 10 31 | 703 | 0.3+ | 0.6− |
| 2004 02 26 | 704 | 0.9+ | 0.1− | 2004 04 24 | 691 | 0.3+ | 0.5+ | 2006 10 31 | 703 | 2.1− | 0.1− |
| 2004 02 26 | 704 | 0.6+ | 0.2+ | 2004 04 24 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 0.9− | 0.3+ |

**(144486)∗ 2004 EC$_{63}$ = 2001 SV$_{297}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69691)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.21403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18967546 | $\omega$ | 194.23942 | | −0.74546743 | −0.66512243 | |
| $a$ | 3.0000509 | $\Omega$ | 303.98397 | | +0.61655634 | −0.66330970 | |
| $e$ | 0.0375712 | $i$ | 3.00572 | | +0.25325203 | −0.34297580 | |
| $P$ | 5.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.4− | 0.3+ | 2003 01 27 | 291 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.0 | 0.7+ |
| 2001 08 23 | 691 | 0.4− | 0.2+ | 2003 01 27 | 291 | 0.1+ | 0.3− | 2004 03 20 | 704 | 1.1+ | 0.2+ |
| 2001 08 23 | 691 | 0.1− | 0.3+ | 2004 02 17 | 703 | 1.3+ | 1.3+ | 2006 08 21 | 291 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.3+ | 1.0+ | 2004 02 17 | 703 | 0.8+ | 1.5+ | 2006 08 21 | 291 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2004 02 17 | 703 | 0.4− | 0.9− | 2006 08 21 | 291 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.3+ | 0.7+ | 2004 02 17 | 703 | 0.0 | 0.2− | 2006 08 28 | 703 | 2.0− | 0.1− |
| 2001 09 20 | 704 | 0.1− | 0.4− | 2004 03 13 | 644 | 0.0 | 0.8+ | 2006 08 28 | 703 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.0 | 0.7− | 2004 03 13 | 644 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 1.2+ | 0.2− |
| 2001 09 23 | 704 | 0.2+ | 0.0 | 2004 03 13 | 644 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.5+ |
| 2001 09 23 | 704 | 1.4+ | 0.9− | 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2002 12 06 | 704 | 0.5− | 0.3+ | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 1.6− | 1.5+ | 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.5+ | 0.2− |
| 2002 12 06 | 704 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 0.0 | 0.6+ | | | | |
| 2003 01 27 | 291 | 0.4+ | 0.2− | 2004 03 20 | 704 | 0.0 | 0.4− | | | | |

**(144487)∗ 2004 EO$_{63}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.45490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27407226 | $\omega$ | 232.37572 | | −0.71578199 | −0.69778016 | |
| $a$ | 2.3472499 | $\Omega$ | 263.35644 | | +0.64912074 | −0.65028448 | |
| $e$ | 0.1629641 | $i$ | 1.58936 | | +0.25748477 | −0.30038798 | |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.7− | 0.8+ | 2004 03 27 | 704 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.2+ |
| 1995 11 24 | 691 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 1995 11 24 | 691 | 0.3− | 0.9+ | 2004 04 12 | 699 | 0.7− | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.1+ |
| 1995 11 30 | 691 | 0.3+ | 0.1+ | 2004 04 12 | 699 | 0.8+ | 0.7− | 2006 11 14 | 691 | 0.3− | 0.1+ |
| 1995 11 30 | 691 | (1.3− | 3.4−) | 2004 04 12 | 699 | 1.4− | 0.5− | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 1995 11 30 | 691 | (3.9+ | 0.6−) | 2004 04 12 | 699 | (1.3+ | 1.7−) | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2004 03 13 | 644 | 0.1− | 0.3+ | 2004 04 22 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2004 03 13 | 644 | 0.2+ | 0.3+ | 2004 04 22 | 691 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2004 03 13 | 644 | 0.1+ | 0.4+ | 2004 04 22 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.0 | 0.4− |
| 2004 03 15 | 703 | (2.3− | 2.0+) | 2005 07 05 | G96 | 0.1+ | 0.5+ | 2006 11 18 | 691 | 0.5+ | 0.2− |
| 2004 03 15 | 703 | (0.9+ | 2.5+) | 2005 07 05 | G96 | 0.4− | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2004 03 15 | 703 | 0.4− | 0.4− | 2005 07 05 | G96 | 0.3− | 0.7+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 703 | 0.7− | 0.0 | 2005 07 05 | G96 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 1.0+ | 0.6+ | 2005 07 07 | 691 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.8− | 0.4+ |
| 2004 03 18 | 704 | 0.4+ | 0.5+ | 2005 07 07 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | (1.8+ | 1.7+) |
| 2004 03 18 | 704 | 0.7+ | 1.0+ | 2005 07 07 | 691 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2004 03 18 | 704 | 0.4+ | 1.0+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2004 03 18 | 704 | (0.6+ | 1.8+) | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.3+ |
| 2004 03 20 | 704 | 0.5+ | 1.2+ | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2004 03 20 | 704 | 1.2+ | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2004 03 20 | 704 | 0.4+ | 1.0+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2004 03 24 | 699 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2004 03 24 | 699 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.4+ | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2004 03 24 | 699 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2004 03 24 | 699 | 0.5+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.0 |
| 2004 03 27 | 704 | 0.8+ | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2004 03 27 | 704 | 0.7+ | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2+ | | | | |
| 2004 03 27 | 704 | 0.1+ | 0.9+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | | | |

**(144488)∗ 2004 EP$_{63}$ = 2001 SA$_{183}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62049)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.82597 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21964369 | $\omega$ | 163.90323 | | −0.92224172 | −0.38645717 | |
| $a$ | 2.7205512 | $\Omega$ | 353.33136 | | +0.34344208 | −0.80585841 | |
| $e$ | 0.0113147 | $i$ | 5.43670 | | +0.17753236 | −0.44860124 | |
| $P$ | 4.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 25 | 910 | 0.3+ | 0.7− | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2004 04 22 | 691 | 0.1− | 0.2+ |
| 1997 10 25 | 910 | 0.5+ | 0.8− | 2004 03 13 | 644 | 0.1− | 0.6+ | 2004 04 22 | 691 | 0.1− | 0.2+ |
| 1997 10 25 | 910 | 0.1+ | 0.5− | 2004 03 13 | 644 | 0.1− | 0.4+ | 2006 09 28 | 291 | 0.2+ | 0.3+ |
| 2001 08 24 | 704 | 0.0 | 0.1− | 2004 03 13 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 291 | 0.1+ | 0.2+ |
| 2001 08 24 | 704 | 0.8− | 0.1+ | 2004 03 13 | 644 | 0.4+ | 0.2+ | 2006 09 28 | 291 | 0.2− | 0.2+ |
| 2001 08 24 | 704 | 0.1+ | 0.5− | 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 10 03 | 691 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.3− | 1.3+ | 2004 03 18 | 704 | 0.2+ | 0.4− | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 1.4+ | 2004 03 18 | 704 | 0.1+ | 1.1+ | 2006 10 03 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.4− | 1.1+ | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 09 19 | 704 | 0.8− | 1.6+ | 2004 03 18 | 704 | 0.4− | 1.1+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2001 09 21 | 704 | (0.5+ | 2.6+) | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2001 09 21 | 704 | (0.5− | 1.7+) | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.6− | 0.3+ |
| 2001 09 21 | 704 | (1.5− | 1.7+) | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 1.3+ | 2004 03 27 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2004 02 26 | 704 | 1.4+ | 0.2− | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 10 29 | 691 | 0.2− | 0.1− |
| 2004 02 26 | 704 | (1.0+ | 2.1+) | 2004 03 27 | 704 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2004 02 26 | 704 | 1.1+ | 1.0+ | 2004 03 27 | 704 | 0.8+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 0.6+ | 0.5+ | |
| 2004 03 13 | 644 | 0.1− | 0.4+ | 2004 04 22 | 691 | 0.0 | 0.4+ | |

**(144489)∗ 2004 EW$_{63}$ = 2001 WC$_{48}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62049)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 27.48710 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18074291 | $\omega$ | 149.68647 | | +0.89066288 | +0.45452350 | |
| *a* | 3.0980984 | $\Omega$ | 183.34081 | | −0.44632201 | +0.86930496 | |
| *e* | 0.1264719 | *i* | 11.19514 | | −0.08669656 | +0.19420935 | |
| *P* | 5.45 | *H* | 15.2 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 704 | 0.1− | 0.6+ | 2004 04 28 | 691 | 0.2− | 0.3+ | 2006 09 24 | 691 | 0.0 | 0.3+ | |
| 2000 08 03 | 704 | 0.0 | 0.9+ | 2005 06 09 | 703 | 0.2− | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.3+ | |
| 2000 08 03 | 704 | 0.5+ | 0.3+ | 2005 06 09 | 703 | (1.9− | 0.0 ) | 2006 09 24 | 691 | 0.1− | 0.3+ | |
| 2001 10 17 | 704 | 0.4+ | 0.3− | 2005 06 09 | 703 | (0.8− | 2.1−) | 2006 09 26 | 691 | 0.2+ | 0.1− | |
| 2001 10 17 | 704 | 0.2− | 0.5+ | 2005 06 09 | 703 | 0.9− | 1.0− | 2006 09 26 | 691 | 0.0 | 0.2− | |
| 2001 10 17 | 704 | 0.1+ | 0.2− | 2006 08 17 | 644 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.4+ | 0.0 | |
| 2001 11 19 | 699 | 0.2+ | 1.1+ | 2006 08 17 | 644 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | |
| 2001 11 19 | 699 | 0.9− | 0.2+ | 2006 08 17 | 644 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.0 | |
| 2001 11 19 | 699 | 0.6+ | 0.6+ | 2006 08 18 | 644 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | |
| 2001 11 19 | 699 | 0.5− | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.0 | |
| 2001 11 20 | 699 | 0.3+ | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.1+ | 1.4+ | |
| 2001 11 20 | 699 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.1− | |
| 2001 11 20 | 699 | 0.8− | 0.8− | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.1− | |
| 2001 11 20 | 699 | 0.7− | 0.3+ | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 09 28 | 704 | 0.5− | 0.4+ | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.2− | 0.4− | |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.1+ | |
| 2004 03 13 | 644 | 0.1+ | 0.6+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.0 | |
| 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 0.5+ | 0.6− | 2006 09 28 | 704 | 0.2− | 0.2+ | |
| 2004 03 13 | 644 | 0.1+ | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1− | |
| 2004 03 18 | 704 | 1.0+ | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.8− | 2006 09 30 | 691 | 0.2+ | 0.0 | |
| 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 09 17 | H07 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.0 | |
| 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 09 17 | 704 | 1.2− | 1.1+ | 2006 10 01 | 704 | 0.3+ | 0.1− | |
| 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 1.0− | 0.2+ | 2006 10 01 | 704 | 0.6+ | 0.6− | |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 09 17 | H07 | 0.1+ | 1.0− | 2006 10 01 | 704 | 1.3+ | 0.1+ | |
| 2004 03 19 | 291 | 0.0 | 0.3+ | 2006 09 17 | H07 | 0.3− | 0.2+ | 2006 10 01 | 704 | 1.3+ | 0.3+ | |
| 2004 03 19 | 291 | 0.1− | 0.2+ | 2006 09 17 | H07 | 0.1− | 0.7+ | 2006 10 15 | 106 | 0.1+ | 0.4− | |
| 2004 03 19 | 291 | 0.1− | 0.1+ | 2006 09 18 | H07 | 0.1+ | 0.1+ | 2006 10 15 | 106 | 0.1− | 0.1+ | |
| 2004 03 23 | 291 | 0.0 | 0.4+ | 2006 09 18 | H07 | 0.1− | 0.0 | 2006 10 15 | 106 | 0.5− | 0.3− | |
| 2004 03 23 | 291 | 0.3+ | 0.4+ | 2006 09 18 | H07 | 0.1− | 0.2− | 2006 10 15 | 106 | 0.7− | 1.2− | |
| 2004 03 23 | 291 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 | |
| 2004 03 24 | 699 | 0.1− | 1.0+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.3+ | |
| 2004 03 24 | 699 | (2.0− | 0.6−) | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 2004 03 24 | 699 | (0.8− | 1.7+) | 2006 09 19 | 699 | 0.8+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2004 03 24 | 699 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2004 03 27 | 704 | 0.8+ | 0.8+ | 2006 09 19 | 699 | 0.3+ | 0.6+ | 2006 10 21 | 703 | (0.4+ | 2.3+) | |
| 2004 03 27 | 704 | 0.4− | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.5+ | 0.8+ | |
| 2004 03 27 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2004 03 27 | 704 | 0.6+ | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 703 | 0.4+ | 1.4+ | |
| 2004 03 27 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 704 | 1.1− | 0.3− | 2006 10 21 | 703 | (2.0+ | 0.7+) | |
| 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.3+ | |
| 2004 04 14 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.2+ | |
| 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.6+ | |
| 2004 04 28 | 691 | 0.4− | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.5+ | | | | | |
| 2004 04 28 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.7− | 0.0 | | | | | |

**(144490)∗ 2004 EX$_{63}$ = 2000 KP$_{68}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62049)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 301.30556 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21587341 | $\omega$ | 249.00376 | | +0.30716757 | −0.95161957 | |
| *a* | 2.7521364 | $\Omega$ | 183.14282 | | +0.91950035 | +0.29901559 | |
| *e* | 0.0990715 | *i* | 8.66830 | | +0.24529001 | +0.07078045 | |
| *P* | 4.57 | *H* | 16.0 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 29 | 691 | 0.4+ | 0.4− | 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 24 | 291 | 0.0 | 0.3+ | |
| 2000 05 29 | 691 | 0.2+ | 0.4− | 2004 04 19 | 704 | 0.2+ | 0.4+ | 2006 09 24 | 291 | 0.1+ | 0.2+ | |
| 2000 05 29 | 691 | 0.0 | 0.3− | 2004 04 19 | 704 | 0.9+ | 0.5+ | 2006 09 24 | 291 | 0.1− | 0.3+ | |
| 2000 06 05 | 691 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.4+ | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.4− | |
| 2000 06 05 | 691 | 0.3− | 0.4+ | 2004 04 19 | 704 | (1.7− | 0.5+) | 2006 09 25 | G96 | 0.2+ | 0.4− | |
| 2000 06 05 | 691 | 0.2− | 0.4+ | 2004 04 28 | 691 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.4− | |
| 2002 12 01 | 704 | 0.3+ | 0.8+ | 2004 04 28 | 691 | 0.3− | 0.7+ | 2006 09 25 | G96 | 0.2+ | 0.3− | |
| 2002 12 01 | 704 | 0.0 | 0.5+ | 2004 04 28 | 691 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.9− | 0.2+ | |
| 2002 12 01 | 704 | 0.1+ | 1.1+ | 2006 08 28 | 703 | 0.1− | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.5− | |
| 2002 12 14 | 704 | 0.7− | 0.8+ | 2006 08 28 | 703 | 1.1− | 0.6+ | 2006 09 27 | 704 | 0.7+ | 0.0 | |
| 2002 12 14 | 704 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.4− | 1.1+ | |
| 2002 12 14 | 704 | 0.4− | 0.3− | 2006 08 28 | 703 | 0.5− | 1.4− | 2006 09 29 | 704 | 0.1+ | 1.0+ | |
| 2002 12 14 | 704 | 0.3+ | 0.8− | 2006 09 12 | 703 | (1.7− | 0.1−) | 2006 09 29 | 704 | 0.5+ | 1.1+ | |
| 2002 12 14 | 704 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.7− | 0.7− | 2006 09 29 | 704 | 0.1+ | 1.0+ | |
| 2004 03 13 | 644 | 0.3+ | 1.0+ | 2006 09 12 | 703 | 0.6− | 1.2− | 2006 10 01 | 704 | 0.1− | 1.2+ | |
| 2004 03 13 | 644 | 0.4+ | 0.9+ | 2006 09 12 | 703 | 0.6− | 1.1− | 2006 10 01 | 704 | 0.1− | 0.5+ | |
| 2004 03 13 | 644 | 0.4+ | 0.9+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.7+ | |
| 2004 03 18 | 704 | 0.6+ | 1.2+ | 2006 09 15 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 704 | (1.6− | 0.4+) | |
| 2004 03 18 | 704 | 0.8+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 704 | (0.6+ | 2.2−) | |
| 2004 03 18 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 699 | 0.6− | 0.4− | 2006 10 01 | 704 | (1.8− | 1.4+) | |
| 2004 03 18 | 704 | (2.0− | 2.8+) | 2006 09 18 | 699 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ | |
| 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | |
| 2004 03 23 | 704 | 1.0− | 0.3+ | 2006 09 18 | 699 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.3+ | |
| 2004 03 23 | 704 | 0.5+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.5+ | |
| 2004 03 23 | 704 | 1.1+ | 0.1− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ | |
| 2004 03 23 | 704 | 0.5+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2004 03 24 | 699 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2004 03 24 | 699 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4+ | |
| 2004 03 24 | 699 | 0.5+ | 1.0+ | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2004 03 24 | 699 | 0.8− | 1.1+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.0 | |
| 2004 03 27 | 704 | (1.9− | 1.9−) | 2006 09 20 | 644 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.1− | |
| 2004 03 27 | 704 | 0.7+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1− | |
| 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.0 | |
| 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.2+ | | | | | |
| 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.3+ | | | | | |

**(144491)∗ 2004 EF$_{65}$ = 1978 NR$_{4}$**

Discovered 2004 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86367)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 86.61469 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18005842 | $\omega$ | 146.58583 | | −0.04598625 | +0.95566100 | |
| *a* | 3.1059450 | $\Omega$ | 119.20166 | | −0.97390561 | +0.02188732 | |
| *e* | 0.1101000 | *i* | 19.46334 | | −0.22224566 | −0.29365454 | |
| *P* | 5.47 | *H* | 14.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 07 10 | 675 | 1.9+ | 1.3+ Y | 2003 01 27 | 704 | 0.4− | 0.1+ | 2004 03 26 | 704 | 0.7− | 0.4+ | |
| 1978 07 11 | 675 | (0.7+ | 5.8−)Y | 2003 01 27 | 704 | 0.2+ | 0.2+ | 2004 04 14 | 644 | 0.7− | 0.0 | |
| 1978 07 13 | 675 | (4.0− | 5.0−)Y | 2003 12 25 | 645 | 1.1+ | 0.2+ | 2004 04 14 | 644 | 0.6− | 0.2− | |
| 1999 04 10 | 704 | 0.3+ | 2.0+ | 2003 12 25 | 645 | 1.1+ | 0.3+ | 2004 04 14 | 704 | 0.3+ | 0.2+ | |
| 1999 04 10 | 704 | 1.3− | 0.8− | 2004 01 30 | 704 | 0.2− | 1.3− | 2004 04 14 | 703 | 1.0− | 0.5− | |
| 1999 04 10 | 704 | 0.8+ | 0.5+ | 2004 01 30 | 704 | (0.3− | 1.8−) | 2004 04 14 | 704 | 0.2− | 0.5+ | |
| 1999 04 10 | 704 | (2.8− | 0.6+) | 2004 01 30 | 704 | (2.0− | 1.1−) | 2004 04 14 | 644 | 0.7− | 0.1− | |
| 1999 06 12 | 704 | 0.6− | 0.4+ | 2004 02 16 | 704 | 0.9− | 0.1+ | 2004 04 14 | 644 | 0.9− | 0.4− | |
| 1999 06 12 | 704 | 0.8− | 0.6+ | 2004 02 16 | 704 | 1.3− | 0.5+ | 2004 04 14 | 703 | (0.5+ | 1.8+) | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 12 | 704 | 1.4− | 1.4+ | 2004 02 16 | 704 | 1.0− | 0.5+ | 2004 04 14 | 704 | (0.6+ | 1.8+) |
| 1999 06 12 | 704 | 0.1− | 0.9+ | 2004 02 16 | 704 | 0.3− | 0.4+ | 2004 04 14 | 703 | 0.5− | 0.6− |
| 1999 06 12 | 704 | 1.5− | 1.3+ | 2004 02 16 | 704 | 1.0− | 0.8+ | 2004 04 14 | 704 | 0.2+ | 0.0 |
| 2000 08 02 | 704 | 0.1+ | 1.8+ | 2004 03 14 | 704 | 0.5− | 0.4+ | 2004 04 14 | 644 | 0.8− | 0.3− |
| 2000 08 02 | 704 | 0.6− | 0.7+ | 2004 03 14 | 704 | 0.7− | 0.7+ | 2004 04 14 | 644 | 0.9− | 0.3− |
| 2000 08 02 | 704 | 1.3− | 1.6+ | 2004 03 14 | 704 | 1.4− | 0.7+ | 2004 04 14 | 703 | 1.0− | 0.0 |
| 2000 08 02 | 704 | 0.4− | 2.0+ | 2004 03 14 | 704 | 1.1− | 0.4+ | 2004 04 14 | 704 | 0.4− | 0.1+ |
| 2000 08 02 | 704 | (1.0− | 2.7+) | 2004 03 14 | 704 | 0.8− | 0.6+ | 2005 07 05 | 704 | (2.1+ | 0.8+) |
| 2001 11 17 | 699 | 0.9− | 1.4+ | 2004 03 18 | 703 | 0.9− | 0.7+ | 2005 07 05 | 704 | 0.9+ | 0.5+ |
| 2001 11 17 | 699 | 0.5+ | 0.7+ | 2004 03 18 | 703 | 0.5− | 0.4+ | 2005 07 05 | 704 | 0.7+ | 0.7+ |
| 2001 11 17 | 699 | 1.1− | 1.4+ | 2004 03 18 | 644 | 0.7− | 0.1− | 2005 07 05 | 704 | 1.1+ | 0.0 |
| 2001 11 17 | 699 | 0.5− | 0.1− | 2004 03 18 | 703 | (2.2− | 0.9+) | 2006 09 27 | 703 | 0.7− | 1.0+ |
| 2001 11 19 | 608 | 1.0− | 0.1− | 2004 03 18 | 703 | 1.4− | 0.1+ | 2006 09 27 | 703 | (0.2− | 2.0+) |
| 2001 11 19 | 608 | 1.1− | 0.5+ | 2004 03 18 | 644 | 0.7− | 0.2− | 2006 09 27 | 703 | 0.4+ | 1.0+ |
| 2001 11 19 | 608 | 0.7− | 0.6+ | 2004 03 18 | 644 | 0.7− | 0.3− | 2006 09 27 | 703 | 0.2− | 0.8+ |
| 2003 01 07 | 704 | 0.8− | 0.0 | 2004 03 26 | 704 | 0.1− | 0.1+ | 2006 10 12 | E12 | 0.3+ | 1.4+ |
| 2003 01 07 | 704 | 0.4− | 0.2+ | 2004 03 26 | 704 | 0.4− | 0.1+ | 2006 10 12 | E12 | 0.7+ | 0.5+ |
| 2003 01 07 | 704 | 0.6− | 0.1+ | 2004 03 26 | 704 | 0.7− | 0.1+ | 2006 10 12 | E12 | 0.1+ | 0.8+ |
| 2003 01 27 | 704 | 0.4− | 0.9− | 2004 03 26 | 704 | 0.7− | 0.4+ | 2006 10 12 | E12 | 0.1+ | 1.4+ |

**(144492)∗ 2004 EQ$_{65}$ = 2002 XR$_{77}$**

Discovered 2004 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69691)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.95117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23904477 | $\omega$ | 247.45590 | | +0.66595369 | | +0.71043665 |
| $a$ | 2.5712830 | $\Omega$ | 66.37021 | | −0.56001410 | | +0.67763028 |
| $e$ | 0.1764440 | $i$ | 14.38230 | | −0.49283861 | | +0.18999201 |
| $P$ | 4.12 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.5+ | 0.4+ | 2003 01 05 | 704 | 0.4+ | 0.6− | 2005 07 17 | 423 | 0.0 | 0.7+ |
| 2000 03 04 | 704 | 0.1− | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2005 07 17 | 423 | 0.0 | 0.9+ |
| 2000 03 04 | 704 | 0.3+ | 0.2+ | 2004 02 16 | 291 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.0 | 0.6+ |
| 2000 03 04 | 704 | 0.3+ | 0.7+ | 2004 02 16 | 291 | 0.3− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.3− |
| 2000 03 04 | 704 | 0.6+ | 1.0+ | 2004 02 16 | 291 | 0.3− | 0.5− | 2006 11 15 | 703 | 0.9− | 0.2+ |
| 2000 03 29 | 704 | 0.9+ | 0.5+ | 2004 03 14 | 704 | 0.9+ | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2000 03 29 | 704 | 0.5+ | 1.1+ | 2004 03 14 | 704 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.6− | 0.9+ |
| 2000 03 29 | 704 | 1.1− | 0.7+ | 2004 03 14 | 704 | (0.2− | 2.5−) | 2006 11 18 | 704 | (0.4− | 1.9+) |
| 2000 03 29 | 704 | 0.4− | 0.6+ | 2004 03 14 | 704 | 0.1− | 0.2− | 2006 11 18 | 704 | (0.1+ | 2.0+) |
| 2001 06 23 | 644 | (1.2+ | 2.0+) | 2004 03 18 | 644 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 06 23 | 644 | (1.2+ | 1.8+) | 2004 03 18 | 644 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 06 23 | 644 | (1.1+ | 2.0+) | 2004 03 18 | 644 | 0.2+ | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.7− | 0.7+ | 2004 04 14 | 704 | (0.7+ | 2.3+) | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2002 12 11 | 704 | 0.4+ | 0.4− | 2004 04 14 | 704 | 0.5+ | 0.6+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 12 11 | 704 | 0.2+ | 0.6− | 2004 04 14 | 704 | 0.3+ | 1.0+ | 2006 11 21 | 704 | 0.3+ | 0.5− |
| 2002 12 11 | 704 | 0.6+ | 0.3− | 2004 04 14 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 1.0− | 0.4− |
| 2002 12 14 | 704 | 0.5+ | 0.3+ | 2004 04 14 | 703 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2002 12 14 | 704 | 0.2− | 0.4− | 2004 04 14 | 703 | (0.2+ | 2.4−) | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 0.1+ | 0.2− | 2004 04 14 | 703 | 1.1− | 0.3− | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 0.3+ | 0.3+ | 2004 04 14 | 703 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.5− | 0.1+ | 2005 07 16 | 423 | 0.3+ | 0.4+ | | | | |
| 2003 01 05 | 704 | 0.2+ | 0.5+ | 2005 07 16 | 423 | 0.1+ | 0.2+ | | | | |

**(144493)∗ 2004 ES$_{65}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.88648 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24095519 | $\omega$ | 113.26321 | | −0.15659048 | | +0.98750470 |
| $a$ | 2.5576740 | $\Omega$ | 147.71208 | | −0.91785269 | | −0.13887457 |
| $e$ | 0.0650691 | $i$ | 1.90066 | | −0.36472710 | | −0.07448703 |
| $P$ | 4.09 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2004 03 14 | 691 | 0.3+ | 0.4+ | 2005 07 15 | G96 | 0.5− | 0.2+ |
| 2000 02 12 | 645 | 0.1+ | 0.1− | 2004 03 14 | 691 | 0.1+ | 0.5+ | 2005 07 15 | G96 | 0.5− | 0.0 |
| 2000 04 27 | 691 | 0.4− | 0.2+ | 2004 03 14 | 691 | 0.0 | 0.4+ | 2005 07 15 | G96 | 0.4− | 0.0 |
| 2000 04 27 | 691 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2000 04 27 | 691 | 0.5− | 0.1− | 2004 03 18 | 704 | 0.3+ | 1.0+ | 2006 10 19 | G96 | 0.5+ | 0.1+ |
| 2004 01 30 | 691 | 0.4+ | 0.3− | 2004 03 18 | 704 | (1.1+ | 1.7+) | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2004 01 30 | 691 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.8− | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 691 | 0.2+ | 0.2+ | 2004 03 22 | 704 | 0.3− | 0.5+ | 2006 10 20 | 695 | 0.3− | 0.1+ |
| 2004 02 26 | 704 | 0.4− | 0.2+ | 2004 03 22 | 704 | (1.9− | 0.6+) | 2006 10 20 | 695 | 0.3− | 0.2+ |
| 2004 02 26 | 704 | 0.2+ | 1.3− | 2005 06 27 | 691 | 0.1+ | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.5+ |
| 2004 02 26 | 704 | 0.9− | 0.5+ | 2005 06 27 | 691 | 0.1+ | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.7+ |
| 2004 02 26 | 704 | 0.2+ | 0.3+ | 2005 06 27 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2004 02 26 | 704 | 1.3+ | 0.2+ | 2005 07 15 | G96 | 0.6− | 0.0 | | | | |

**(144494)∗ 2004 EW$_{65}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.77338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22634641 | $\omega$ | 113.77270 | | +0.55231850 | | +0.83357706 |
| $a$ | 2.6665740 | $\Omega$ | 189.77088 | | −0.78409250 | | +0.51552043 |
| $e$ | 0.0697140 | $i$ | 3.26732 | | −0.28309580 | | +0.19846402 |
| $P$ | 4.35 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.1+ | 0.3− | 2004 03 18 | 704 | 0.3+ | 0.8+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2000 04 06 | 704 | 0.3+ | 0.6+ | 2004 03 18 | 704 | 1.2+ | 1.0+ | 2006 10 27 | 691 | 0.1− | 0.5+ |
| 2000 04 06 | 704 | 1.2+ | 0.5+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 10 29 | 291 | 0.2+ | 0.2+ |
| 2000 04 06 | 704 | 1.4+ | 0.5+ | 2004 03 18 | 704 | 0.9+ | 0.6+ | 2006 10 29 | 291 | 0.3+ | 0.2+ |
| 2000 04 26 | 691 | 0.1− | 0.5+ | 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 10 29 | 291 | 0.1+ | 0.0 |
| 2000 04 26 | 691 | 0.1+ | 0.6+ | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.2− |
| 2000 04 26 | 691 | 0.2+ | 0.6+ | 2004 03 21 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.3− |
| 2000 05 02 | 691 | 0.1− | 0.2+ | 2004 03 28 | 691 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2000 05 02 | 691 | 0.1+ | 0.4+ | 2004 03 28 | 691 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2000 05 02 | 691 | 0.0 | 0.3+ | 2004 03 28 | 691 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 08 16 | 704 | 0.1− | 0.9+ | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 08 16 | 704 | 0.3− | 1.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 08 16 | 704 | (1.4− | 1.8+) | 2006 09 26 | G96 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.8+ | 0.3+ |
| 2001 08 16 | 704 | 1.1− | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.2− |
| 2001 09 20 | 704 | 0.7− | 1.1+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7− | 1.4− |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.8− | 0.7+ |
| 2001 09 20 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.5− | 1.3− |
| 2004 02 26 | 695 | 0.5− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 02 26 | 695 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2004 03 14 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2004 03 14 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.4+ | | | | |
| 2004 03 18 | 704 | (1.9+ | 0.3−) | 2006 10 27 | 691 | 0.6+ | 0.8+ | | | | |

**(144495)∗ 2004 EP$_{66}$ = 2004 FQ$_{146}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Id. G. V. Williams (d, *MPO* 62051)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.74371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30256178 | $\omega$ | 227.05716 | | −0.76767344 | | −0.64004559 |
| $a$ | 2.1974888 | $\Omega$ | 273.12168 | | +0.59687775 | | −0.69598801 |
| $e$ | 0.0954952 | $i$ | 1.83214 | | +0.23326905 | | −0.32548784 |
| $P$ | 3.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1+ | 0.4− | 2004 03 18 | 704 | 1.0+ | 0.2− | 2004 04 16 | 704 | 0.3− | 0.4+ |
| 1999 10 13 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.5+ | 0.4− | 2004 04 16 | 704 | 0.1− | 0.1+ |
| 1999 10 13 | 704 | 0.5− | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.0 | 2004 04 16 | 704 | 0.1+ | 0.2− |
| 1999 10 13 | 704 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.8+ | 2004 04 16 | 704 | 0.3− | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 1.3+ | 0.8− | 2004 03 24 | 699 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.6+ | 0.1+ | |
| 1999 10 15 | 704 | 0.9+ | 0.3− | 2004 03 24 | 699 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.4+ | 0.6− | |
| 1999 10 15 | 704 | 0.3− | 0.2+ | 2004 03 24 | 699 | 0.8− | 0.5− | 2004 04 20 | 704 | 0.1+ | 0.1− | |
| 1999 10 15 | 704 | 0.5− | 1.5+ | 2004 03 24 | 699 | 0.3− | 0.5+ | 2004 04 20 | 704 | 0.2+ | 0.5− | |
| 1999 11 04 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.6+ | 0.1+ | 2004 04 20 | 704 | 0.3+ | 0.2− | |
| 1999 11 04 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.2− | |
| 1999 11 04 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.2+ | 0.4+ | 2004 04 22 | 691 | 0.3− | 0.3− | |
| 1999 11 04 | 704 | 0.7− | 0.4+ | 2004 03 27 | 704 | 0.0 | 0.5+ | 2004 04 22 | 691 | 0.3− | 0.2− | |
| 2002 09 14 | 644 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.1− | 0.1+ | 2004 04 23 | 291 | 0.3− | 0.0 | |
| 2002 09 14 | 644 | 0.2− | 0.8+ | 2004 03 31 | 704 | 0.6+ | 0.2+ | 2004 04 23 | 291 | 0.3− | 0.1− | |
| 2002 09 14 | 644 | 0.3− | 0.7+ | 2004 03 31 | 704 | 0.4+ | 1.0+ | 2004 04 23 | 291 | 0.3− | 0.1− | |
| 2002 10 03 | 704 | 0.2+ | 0.9+ | 2004 03 31 | 704 | 0.5+ | 0.7+ | 2005 08 06 | 644 | 0.2− | 0.4+ | |
| 2002 10 03 | 704 | 0.3+ | 1.5− | 2004 03 31 | 704 | 0.6+ | 0.6− | 2005 08 06 | 644 | 0.1− | 0.5+ | |
| 2002 10 03 | 704 | 0.0 | 0.8− | 2004 03 31 | 704 | 0.4+ | 0.1− | 2005 08 06 | 644 | 0.1+ | 0.1+ | |
| 2002 10 07 | 704 | 0.8− | 1.2− | 2004 04 08 | 608 | 0.2+ | 0.4− | 2006 10 17 | G96 | 0.7+ | 0.5− | |
| 2002 10 07 | 704 | 0.1+ | 1.0+ | 2004 04 08 | 608 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.4− | 0.0 | |
| 2002 10 07 | 704 | 0.0 | 1.4+ | 2004 04 08 | 608 | 1.0+ | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.1+ | |
| 2002 10 07 | 704 | (3.0+ | 0.9+) | 2004 04 11 | 644 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.5+ | 0.4− | |
| 2004 03 14 | 644 | 0.2+ | 0.2+ | 2004 04 11 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.3− | |
| 2004 03 14 | 644 | 0.1+ | 0.0 | 2004 04 11 | 644 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.1− | |
| 2004 03 14 | 644 | 0.3+ | 0.2+ | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.2− | |
| 2004 03 16 | 704 | 0.1+ | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.1+ | |
| 2004 03 16 | 703 | 0.3+ | 1.2+ | 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1− | |
| 2004 03 16 | 704 | 0.3+ | 0.5+ | 2004 04 15 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2+ | |
| 2004 03 16 | 703 | (1.6+ | 1.0+) | 2004 04 15 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.1− | |
| 2004 03 16 | 704 | 0.5− | 0.0 | 2004 04 15 | 699 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.5− | 0.5− | |
| 2004 03 16 | 703 | 0.5+ | 0.8+ | 2004 04 15 | 691 | 0.1− | 0.0 | 2006 11 28 | G96 | 0.6− | 0.0 | |
| 2004 03 16 | 704 | 0.6+ | 0.1− | 2004 04 15 | 699 | 0.4− | 0.4+ | 2006 11 28 | G96 | 0.1− | 0.1− | |
| 2004 03 16 | 703 | (1.9+ | 0.2+) | 2004 04 15 | 699 | 0.4+ | 0.3− | 2006 11 28 | G96 | 0.2− | 0.1− | |
| 2004 03 16 | 704 | 0.5+ | 1.1− | 2004 04 15 | 699 | 0.5− | 0.3+ | 2006 11 28 | G96 | 0.2+ | 0.2+ | |
| 2004 03 18 | 704 | 0.4+ | 0.2− | 2004 04 16 | 704 | 0.6− | 1.0+ | | | | | |

**(144496)∗ 2004 EZ$_{66}$ = 1991 GS$_4$ = 2000 JL$_{48}$**

Discovered 2004 Mar. 14 at Wildberg.

Id. G. V. Williams (*MPO* 62052)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.55824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22385883 | $\omega$ | 192.15526 | | −0.79375120 | | +0.60140636 |
| $a$ | 2.6862920 | $\Omega$ | 25.49953 | | −0.53886555 | | −0.62596950 |
| $e$ | 0.1244883 | $i$ | 12.19459 | | −0.28210451 | | −0.49646004 |
| $P$ | 4.40 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 08 | 809 | 1.4− | 0.6− | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.0 | |
| 1991 04 08 | 809 | 0.1+ | 0.9− | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− | |
| 1991 04 08 | 809 | 1.2+ | 1.0− | 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.2− | |
| 1991 04 10 | 809 | 0.8+ | 1.1+ | 2004 03 23 | 704 | 0.9+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.2− | |
| 1991 04 10 | 809 | 1.1− | 0.1− | 2004 03 23 | 704 | 0.9+ | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.4+ | |
| 1991 04 10 | 809 | 1.6− | 0.4+ | 2004 03 23 | 704 | 0.7+ | 0.7+ | 2006 10 11 | 691 | 0.3− | 0.2+ | |
| 1991 04 15 | 675 | (2.4− | 1.2+) | 2004 03 23 | 704 | 1.1+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.1− | |
| 1991 04 15 | 675 | 1.4− | 0.0 | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.0 | |
| 1991 04 19 | 809 | 1.4+ | 0.8− | 2004 03 26 | 703 | 0.6+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2+ | |
| 1991 04 19 | 809 | 1.6− | 0.8− | 2004 03 26 | 703 | 0.5− | 0.6− | 2006 10 17 | 691 | 0.2+ | 0.0 | |
| 1991 04 19 | 809 | 1.1+ | 0.9− | 2004 03 26 | 703 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.2+ | |
| 2000 05 09 | 704 | 1.1− | 0.0 | 2004 03 26 | 703 | 1.1+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.3+ | |
| 2000 05 09 | 704 | 0.7+ | 1.3+ | 2004 03 27 | 691 | 0.1+ | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.0 | |
| 2000 05 09 | 704 | 0.4+ | 0.3+ | 2004 03 27 | 691 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.2+ | |
| 2000 05 09 | 704 | 0.6− | 0.9+ | 2004 03 27 | 691 | 0.0 | 0.4− | 2006 10 19 | 691 | 0.7− | 0.9+ | |
| 2000 05 09 | 704 | 1.0+ | 0.1+ | 2004 03 28 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2+ | |
| 2000 05 10 | 704 | 1.6+ | 1.8+ | 2004 03 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.4+ | |
| 2000 05 10 | 704 | 1.1+ | 1.4+ | 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1+ | |
| 2000 05 10 | 704 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.6+ | 1.2+ | 2006 10 23 | 691 | 0.5− | 0.2+ | |
| 2004 02 27 | 704 | 1.2− | 0.3− | 2004 04 15 | 704 | 0.9− | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.1+ | |
| 2004 02 27 | 704 | 0.4− | 0.1− | 2004 04 15 | 704 | 1.0+ | 1.2+ | 2006 10 23 | 691 | 0.6− | 0.2+ | |
| 2004 02 27 | 704 | 0.3+ | 0.9+ | 2004 04 15 | 704 | 0.4+ | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.1− | |
| 2004 03 14 | 198 | 0.1− | 1.5+ | 2004 04 20 | 704 | 0.9+ | 0.9− | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2004 03 14 | 198 | 0.8− | 0.5+ | 2004 04 20 | 704 | 0.8+ | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | |
| 2004 03 14 | 198 | 1.3− | 0.4− | 2004 04 20 | 704 | 0.7+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2− | |
| 2004 03 15 | 704 | 0.5− | 0.3− | 2004 04 20 | 704 | 0.6+ | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.3− | |
| 2004 03 15 | 704 | 0.0 | 0.4+ | 2004 04 20 | 704 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.0 | |
| 2004 03 15 | 704 | 0.3− | 0.7+ | 2006 09 21 | 198 | 0.9− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2− | |
| 2004 03 15 | 704 | 0.1+ | 0.2− | 2006 09 21 | 198 | 0.7− | 0.2− | 2006 11 18 | G96 | 1.0+ | 0.0 | |
| 2004 03 15 | 704 | 1.3− | 0.2− | 2006 09 21 | 198 | 0.6− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.2− | |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 09 21 | 198 | 0.5− | 0.3− | 2006 11 18 | G96 | 0.4+ | 0.3− | |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 09 24 | 198 | 0.8− | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.3− | |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 09 24 | 198 | 0.7− | 0.2+ | 2006 11 27 | 691 | 0.7+ | 0.0 | |
| 2004 03 18 | 704 | 0.0 | 0.1− | 2006 09 24 | 198 | 0.5− | 0.3+ | 2006 11 27 | 691 | 0.2+ | 0.5− | |
| 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.3+ | | | | | |

**(144497)∗ 2004 EO$_{67}$ = 2001 SJ$_{299}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69691)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.52967 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20941931 | $\omega$ | 301.35843 | | +0.10015345 | | +0.99471715 |
| $a$ | 2.8083953 | $\Omega$ | 334.36074 | | −0.89428104 | | +0.08007390 |
| $e$ | 0.0589468 | $i$ | 2.98308 | | −0.43615446 | | +0.06423364 |
| $P$ | 4.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 19 | 691 | 0.7− | 1.2− | 2004 02 26 | 704 | (1.8+ | 0.5+) | 2004 07 16 | 807 | 0.0 | 0.2+ | |
| 1994 01 19 | 691 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.9+ | 0.5+ | 2006 09 14 | 291 | 0.1− | 0.2+ | |
| 1994 01 19 | 691 | 0.8+ | 0.0 | 2004 02 26 | 704 | 0.9+ | 0.2− | 2006 09 14 | 291 | 0.0 | 0.2+ | |
| 1999 02 12 | 691 | 0.4− | 0.1− | 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 291 | 0.2+ | 0.2+ | |
| 1999 02 12 | 691 | 0.1− | 0.0 | 2004 03 15 | 691 | 0.6+ | 0.4+ | 2006 09 14 | 291 | 0.0 | 0.2+ | |
| 1999 02 12 | 691 | 0.3− | 0.4− | 2004 03 15 | 691 | 0.2+ | 0.6+ | 2006 09 14 | 291 | 0.2− | 0.1− | |
| 2001 09 20 | 704 | 0.1+ | 0.8+ | 2004 03 18 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 291 | 0.4− | 0.1+ | |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2004 03 18 | 704 | (1.6+ | 0.6+) | 2006 10 20 | 644 | 0.1+ | 0.3+ | |
| 2001 09 20 | 704 | (0.6+ | 1.7+) | 2004 03 18 | 704 | 1.0+ | 0.7+ | 2006 10 20 | 644 | 0.5− | 0.5+ | |
| 2001 09 20 | 704 | 0.1− | 1.4+ | 2004 03 18 | 704 | 0.1− | 1.3+ | 2006 10 20 | 644 | 0.7− | 0.3+ | |
| 2001 09 20 | 704 | 0.9− | 1.5+ | 2004 03 18 | 704 | 0.9+ | 1.1+ | 2006 11 16 | 691 | 0.6− | 0.4+ | |
| 2001 09 23 | 704 | 0.4− | 0.1+ | 2004 03 31 | 291 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.4+ | |
| 2001 09 23 | 704 | 0.3+ | 0.0 | 2004 03 31 | 291 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.3+ | |
| 2001 09 23 | 704 | 1.1− | 0.1+ | 2004 03 31 | 291 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.3− | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 04 24 | 691 | 0.3− | 0.5+ | 2006 11 27 | G96 | 0.5+ | 0.2− | |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2004 04 24 | 691 | 0.3− | 0.5+ | 2006 11 27 | G96 | 0.3− | 0.5− | |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 04 24 | 691 | 0.4− | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.0 | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 07 15 | 807 | 0.8− | 0.4+ | | | | | |

**(144498)∗ 2004 ES$_{67}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.70524 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25919568 | $\omega$ | 276.56241 | | −0.36181938 | | −0.93210010 |
| $a$ | 2.4362258 | $\Omega$ | 194.68286 | | +0.87913849 | | −0.33522197 |
| $e$ | 0.1496850 | $i$ | 3.75901 | | +0.31016489 | | −0.13717008 |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.4− | 0.8+ | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1+ | |
| 2000 02 04 | 704 | 0.8+ | 0.5− | 2004 03 27 | 704 | 0.9+ | 0.0 | 2006 10 11 | 691 | 0.3− | 0.1− | |
| 2000 02 04 | 704 | 1.6− | 0.7− | 2004 03 27 | 704 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.0 | |
| 2000 02 04 | 704 | (1.8− | 3.2−) | 2004 03 27 | 704 | 1.5+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | |
| 2000 02 04 | 704 | (1.7− | 3.1−) | 2004 03 27 | 704 | 0.9+ | 0.8+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | |
| 2000 02 06 | 704 | 0.1− | 0.6− | 2004 03 27 | 704 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | |
| 2000 02 06 | 704 | 0.1− | 1.0− | 2004 03 31 | 291 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.5− | 0.1− | |
| 2000 02 06 | 704 | 0.4+ | 0.9− | 2004 03 31 | 291 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1− | |
| 2000 02 06 | 704 | 0.5− | 0.8− | 2004 03 31 | 291 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.7+ | 1.3− | |
| 2000 02 06 | 704 | 0.3+ | 0.4+ | 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | (2.1+ | 0.1−) | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2004 04 12 | 691 | 0.7− | 0.1− | 2006 10 21 | 703 | 1.4+ | 0.2+ | |
| 2002 10 11 | 645 | 0.1− | 0.1+ | 2004 04 12 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 1.2+ | 0.9+ | |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 04 24 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.0 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 04 24 | 691 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.3− | | |
| 2004 02 26 | 704 | 0.7+ | 0.0 | 2004 04 24 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.5− | 0.2− | | |
| 2004 02 26 | 704 | 0.8− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2004 02 26 | 704 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.5+ | 0.2+ | | |
| 2004 02 26 | 704 | 1.4+ | 0.1− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.2+ | 1.2+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5− | | |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.3+ | 1.0+ | 2006 11 16 | G96 | 0.3− | 0.5− | | |
| 2004 03 15 | 691 | 0.1− | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.6− | | |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.5− | 0.4− | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2004 03 18 | 704 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.2− | | |
| 2004 03 18 | 704 | 0.7+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2004 03 18 | 704 | 1.4+ | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2004 03 18 | 704 | 0.9+ | 0.6− | 2006 10 11 | 691 | 0.2− | 0.1+ | | | | | | |

**(144499)∗ 2004 EE$_{68}$ = 2005 MK$_6$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86369)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.93280 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19630044 | $\omega$ | 320.29464 | | −0.99715983 | | +0.07346866 |
| $a$ | 2.9321658 | $\Omega$ | 223.92735 | | −0.06159616 | | −0.92215743 |
| $e$ | 0.0223089 | $i$ | 1.36879 | | −0.04333803 | | −0.37977366 |
| $P$ | 5.02 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.6− | 0.1+ | 2005 06 26 | G96 | 0.5− | 0.0 |
| 1994 03 10 | 691 | (3.4− | 0.3−) | 2004 02 26 | 704 | 0.0 | 0.0 | 2005 06 26 | G96 | 0.3− | 0.3+ |
| 1994 03 10 | 691 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.9+ | 0.5+ | 2005 06 26 | G96 | 0.6− | 0.0 |
| 1996 09 06 | 691 | 0.2− | 0.2+ | 2004 02 26 | 704 | 1.4− | 0.3− | 2005 06 26 | G96 | 0.8− | 0.0 |
| 1996 09 06 | 691 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.1− | 1.1− | 2005 06 28 | G96 | 0.3− | 0.0 |
| 1996 09 06 | 691 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.7− | 0.2+ | 2005 06 28 | G96 | 0.0 | 0.0 |
| 2001 08 21 | 807 | 0.3+ | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2005 06 28 | G96 | 0.2− | 0.3− |
| 2001 08 21 | 807 | 0.3+ | 0.2− | 2004 03 15 | 704 | 0.2+ | 0.3+ | 2005 06 28 | G96 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.9− | 0.5+ | 2004 03 15 | 704 | 0.9+ | 0.8+ | 2006 08 27 | 691 | 0.2+ | 0.5+ |
| 2001 09 23 | 704 | 0.4+ | 0.9+ | 2004 03 15 | 704 | 0.0 | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.4+ |
| 2001 09 23 | 704 | 1.1+ | 0.7+ | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 08 27 | 691 | 0.1+ | 0.4+ |
| 2002 12 09 | 012 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2002 12 09 | 012 | (1.8− | 0.4+) | 2004 03 18 | 704 | 0.3− | 0.4− | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2002 12 09 | 012 | 0.9− | 0.9− | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2006 09 27 | G96 | 1.3− | 0.8− |
| 2002 12 09 | 012 | 1.4− | 0.0 | 2004 03 18 | 704 | 0.9+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2004 02 16 | 691 | 0.3+ | 0.3+ | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2004 02 16 | 691 | 0.2+ | 0.3+ | 2004 03 30 | 691 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.7− | 0.4− |
| 2004 02 16 | 691 | 0.0 | 0.3+ | 2004 03 30 | 691 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.7− | 0.0 |

**(144500)∗ 2004 EV$_{68}$ = 1995 DC$_8$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69692)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.10242 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21907704 | $\omega$ | 76.36090 | | +0.44048356 | | −0.89729024 |
| $a$ | 2.7252403 | $\Omega$ | 347.38387 | | +0.76366250 | | +0.39151075 |
| $e$ | 0.0612525 | $i$ | 7.64561 | | +0.47201041 | | +0.20393516 |
| $P$ | 4.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.2− | 0.7+ | 2004 02 13 | 291 | 0.4+ | 0.8+ | 2006 09 14 | 644 | 0.0 | 0.9+ |
| 1995 02 24 | 691 | 0.4− | 0.2+ | 2004 02 13 | 291 | 0.3− | 0.8+ | 2006 09 14 | 644 | 0.9− | 0.6+ |
| 1995 02 24 | 691 | 0.2− | 0.2− | 2004 02 13 | 291 | 0.2− | 0.6+ | 2006 09 17 | 704 | 0.7− | 0.6+ |
| 1995 03 02 | 691 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.9+ | 0.5+ | 2006 09 17 | 704 | 0.8− | 0.8+ |
| 1995 03 02 | 691 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.1− |
| 1995 03 02 | 691 | 0.3− | 0.1+ | 2004 03 15 | 291 | 0.1− | 0.0 | 2006 09 17 | 704 | 1.0− | 0.8+ |
| 1995 03 27 | 691 | 0.2− | 0.7− | 2004 03 15 | 291 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.4+ |
| 1995 03 27 | 691 | 0.7+ | 0.2− | 2004 03 15 | 704 | 1.1+ | 0.4− | 2006 09 19 | 703 | 0.5− | 0.6− |
| 1995 03 27 | 691 | 0.1+ | 0.3− | 2004 03 15 | 291 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2004 03 15 | 704 | (1.0+ | 1.6+) | 2006 09 19 | 703 | 0.7− | 0.2− |
| 2002 11 13 | 644 | 0.3+ | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.2+ |
| 2002 11 13 | 644 | 0.2+ | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.1+ |
| 2002 12 12 | 644 | 0.3− | 0.0 | 2004 03 18 | 704 | 1.2+ | 0.7− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2002 12 12 | 644 | 0.0 | 0.4− | 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.3+ |
| 2002 12 12 | 644 | 0.8+ | 0.2− | 2006 08 22 | 644 | 0.2− | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.5+ |
| 2003 11 20 | 691 | 0.2− | 0.0 | 2006 08 22 | 644 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2003 11 20 | 691 | 0.2− | 0.1− | 2006 08 22 | 644 | 0.4− | 0.8+ | 2006 10 23 | G96 | 0.5+ | 0.0 |
| 2003 11 20 | 691 | 0.5− | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.2− |

**(144501)∗ 2004 EF$_{69}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.14398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18015782 | $\omega$ | 340.88792 | | +0.83213573 | | +0.54899325 |
| $a$ | 3.1048024 | $\Omega$ | 345.02044 | | −0.46103547 | | +0.60619169 |
| $e$ | 0.1904165 | $i$ | 17.67183 | | −0.30821490 | | +0.57544596 |
| $P$ | 5.47 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.8− | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 17 | 704 | (4.6+ | 0.7+) |
| 2001 11 11 | 704 | 1.0− | 0.5+ | 2006 08 19 | 691 | 0.5+ | 0.6+ | 2006 09 17 | 704 | (0.2+ | 2.1+) |
| 2001 11 11 | 704 | 0.0 | 0.2− | 2006 08 21 | 704 | (2.4+ | 0.1+) | 2006 09 17 | 704 | (4.3+ | 2.2+) |
| 2001 11 11 | 704 | 0.1+ | 0.5+ | 2006 08 21 | 704 | 1.5+ | 0.5− | 2006 09 17 | 704 | (0.2− | 1.8+) |
| 2001 11 11 | 704 | 1.2− | 0.5+ | 2006 08 21 | 704 | (2.2+ | 0.8−) | 2006 09 18 | 704 | 1.1+ | 0.3− |
| 2001 12 22 | 704 | 0.3− | 0.2− | 2006 08 21 | 704 | (1.6+ | 0.8+) | 2006 09 18 | 704 | 0.9− | 0.4− |
| 2001 12 22 | 704 | 1.0+ | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.2− | 0.3+ |
| 2001 12 22 | 704 | 0.7+ | 1.4+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.7+ | 0.7+ |
| 2001 12 22 | 704 | (0.8+ | 1.8+) | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.6+ | 0.7+ |
| 2004 02 26 | 704 | 0.2− | 0.2− | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2004 02 26 | 704 | 0.8+ | 0.9+ | 2006 08 23 | 644 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.9+ | 0.1+ | 2006 08 23 | 644 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1+ |
| 2004 02 26 | 704 | 1.4+ | 0.6+ | 2006 08 25 | 704 | 0.4− | 0.3+ | 2006 09 19 | 699 | (0.6+ | 1.6+) |
| 2004 02 26 | 704 | 0.7+ | 0.2+ | 2006 08 25 | 704 | 0.8− | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.4+ |
| 2004 03 15 | 704 | 0.2+ | 0.2+ | 2006 08 25 | 704 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.8+ | 0.3+ |
| 2004 03 15 | 704 | 0.2− | 1.3+ | 2006 08 25 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.5+ |
| 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 08 25 | 704 | 0.4− | 0.2+ | 2006 09 25 | 704 | 1.1− | 0.9− |
| 2004 03 15 | 704 | 1.2+ | 0.5+ | 2006 08 27 | 699 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.1− | 0.1+ |
| 2004 03 18 | 704 | (0.5+ | 1.7+) | 2006 08 27 | 699 | 0.2− | 0.4+ | 2006 09 25 | 704 | 0.5+ | 0.9− |
| 2004 03 18 | 704 | 0.6+ | 0.2− | 2006 08 27 | 699 | 0.3− | 0.4+ | 2006 09 25 | 704 | 1.3− | 0.0 |
| 2004 03 18 | 704 | 1.1+ | 0.1− | 2006 08 27 | 699 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.5− |
| 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2004 03 28 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.4− | 0.2+ |
| 2004 03 28 | 691 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.6− | 2006 09 25 | 699 | 0.4+ | 0.1− |
| 2004 03 28 | 691 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.7− | 2006 09 25 | 699 | 1.0− | 0.9+ |
| 2005 06 09 | E12 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.1+ |
| 2005 06 09 | E12 | 0.5+ | 0.4+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.5− |
| 2005 06 09 | E12 | 0.4+ | 0.7+ | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.7− | 1.0+ |
| 2005 06 09 | E12 | 0.0 | 0.2+ | 2006 08 29 | 704 | 0.0 | 0.4+ | 2006 09 26 | 704 | 1.0− | 0.1− |
| 2006 07 19 | 644 | 0.2+ | 0.0 | 2006 08 29 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.7+ |
| 2006 07 19 | 644 | 0.4− | 0.3− | 2006 08 29 | 704 | 0.9− | 1.0+ | 2006 09 29 | 704 | 0.7− | 0.7+ |
| 2006 07 19 | 644 | 0.2− | 0.2+ | 2006 09 01 | 704 | 0.4− | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.0 |
| 2006 07 21 | 703 | 0.8+ | 0.2− | 2006 09 01 | 704 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2006 07 21 | 703 | 0.4+ | 0.3− | 2006 09 01 | 704 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.4− | 0.4+ |
| 2006 07 21 | 703 | 0.7− | 0.1− | 2006 09 01 | 704 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.1− | 0.6− |
| 2006 07 21 | 703 | (1.8− | 0.3+) | 2006 09 01 | 704 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.0 | 0.1− |
| 2006 08 06 | 699 | 0.8− | 0.3− | 2006 09 12 | 703 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2006 08 06 | 699 | 1.0− | 0.3+ | 2006 09 12 | 703 | 0.8− | 0.3− | 2006 09 30 | 704 | 0.4− | 0.7+ |
| 2006 08 06 | 699 | (2.5− | 0.6+) | 2006 09 12 | 703 | 0.7− | 0.2− | 2006 09 30 | 704 | 0.4+ | 0.5+ |
| 2006 08 06 | 699 | (1.6− | 0.5+) | 2006 09 12 | 703 | 0.4− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2006 08 15 | 644 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2006 08 15 | 644 | 0.3− | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | (4.9+ | 3.7−) |
| 2006 08 18 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 699 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2006 08 18 | 704 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.1− | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 18 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.5− | | |
| 2006 08 18 | 704 | 0.6+ | 0.3− | 2006 09 16 | 699 | 0.0 | 0.2+ | | | | | | |
| 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 17 | 704 | (4.8+ | 2.1+) | | | | | | |

**(144502)∗ 2004 EO$_{69}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.47350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23078753 | $\omega$ | 40.42876 | | +0.61414591 | −0.78915987 | |
| $a$ | 2.6322541 | $\Omega$ | 11.68734 | | +0.71462376 | +0.55223510 | |
| $e$ | 0.0769337 | $i$ | 2.03037 | | +0.33486966 | +0.26881796 | |
| $P$ | 4.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.9+ | 0.2+ | 2006 09 29 | 691 | 0.5− | 0.3− | | |
| 2000 04 26 | 691 | 0.3+ | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.3+ | | |
| 2000 04 26 | 691 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.1+ | 0.7+ | 2006 10 03 | 691 | 0.1− | 0.4+ | | |
| 2002 11 06 | 704 | 1.4+ | 0.9− | 2004 04 24 | 691 | 0.3+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.1+ | | |
| 2002 11 06 | 704 | 0.5+ | 0.2− | 2004 04 24 | 691 | 0.1− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2002 11 06 | 704 | 0.9− | 0.1− | 2004 04 24 | 691 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.4+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.2+ | 0.3− | 2006 07 21 | G96 | 0.6− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.0 | 0.5− | 2006 07 21 | G96 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.1− | 0.5− | 2006 07 21 | G96 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2006 07 21 | G96 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 12 06 | 704 | 0.3+ | 1.0− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 13 | A50 | 0.3− | 0.2+ | | |
| 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 09 18 | 691 | (1.8+ | 0.3−) | 2006 10 13 | A50 | 0.6− | 0.4+ | | |
| 2002 12 06 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 10 13 | A50 | 0.4+ | 0.3− | | |
| 2002 12 06 | 704 | 1.1− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.0 | 0.3+ | | |
| 2002 12 06 | 704 | 0.3+ | 1.0+ | 2006 09 18 | 699 | (0.9+ | 1.8+) | 2006 10 15 | 703 | 0.6− | 1.3+ | | |
| 2002 12 06 | 704 | 0.6− | 1.1+ | 2006 09 18 | 699 | 0.6− | 0.3+ | 2006 10 15 | 703 | 0.8− | 0.5+ | | |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.3− | 0.4+ | | |
| 2004 03 15 | 703 | 1.1− | 0.7+ | 2006 09 21 | 152 | 1.4+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2004 03 15 | 691 | 0.1+ | 0.2− | 2006 09 21 | 152 | 0.9− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2004 03 15 | 703 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.5+ | | |
| 2004 03 15 | 703 | 0.1− | 1.0+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2004 03 15 | 703 | 0.2+ | 0.5− | 2006 09 25 | 691 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.0 | | |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.0 | | |
| 2004 03 18 | 704 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.0 | | |
| 2004 03 18 | 704 | 0.1+ | 0.5− | 2006 09 25 | 691 | 0.5− | 0.3− | 2006 11 01 | 691 | 0.3+ | 0.0 | | |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.1− | 1.3+ | 2006 11 11 | 703 | (2.1− | 1.1−) | | |
| 2004 03 18 | 704 | 0.1− | 0.7− | 2006 09 29 | 704 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 2004 03 23 | 691 | 0.1− | 0.1− | 2006 09 29 | 704 | 1.0− | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.4− | | |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.6− | | |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 691 | 0.3− | 0.2− | | | | | | |

**(144503)∗ 2004 EY$_{69}$ = 2002 WH$_{13}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62053)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.55849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23216202 | $\omega$ | 224.47105 | | +0.76214037 | −0.64726011 | |
| $a$ | 2.6218546 | $\Omega$ | 175.79188 | | +0.63438688 | +0.74231195 | |
| $e$ | 0.1808132 | $i$ | 11.01044 | | +0.12921044 | +0.17328392 | |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.2− | 0.3− | 2004 03 27 | 291 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.8+ | | |
| 2002 10 04 | 704 | 0.7+ | 0.5+ | 2004 03 27 | 704 | 0.8+ | 0.9+ | 2006 09 20 | 704 | 0.6− | 1.1+ | | |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.0 | 0.2+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.2+ | 2004 03 27 | 704 | (0.1− | 1.6+) | 2006 09 20 | 704 | 0.0 | 0.5+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.3− | 2004 03 27 | 704 | 0.7+ | 0.8+ | 2006 09 20 | 704 | 0.2− | 0.9+ | | |
| 2002 10 31 | 704 | 0.1+ | 0.9+ | 2004 03 27 | 704 | 0.4− | 0.8+ | 2006 09 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 31 | 704 | 0.5+ | 0.0 | 2004 04 21 | 691 | 0.3− | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.3+ | | |
| 2002 10 31 | 704 | 0.3+ | 0.5− | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.3+ | | |
| 2002 10 31 | 704 | 0.9+ | 0.2+ | 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | (1.7+ | 0.1+) | | |
| 2002 11 30 | 704 | 0.1+ | 0.2+ | 2005 06 13 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 704 | (1.8+ | 0.7−) | | |
| 2002 11 30 | 704 | 0.3+ | 0.5− | 2005 06 13 | 691 | 1.0− | 0.5+ | 2006 09 27 | 704 | (1.5+ | 0.3−) | | |
| 2002 11 30 | 704 | 0.0 | 0.2− | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | (2.2+ | 1.3−) | | |
| 2002 11 30 | 704 | 0.3+ | 0.1− | 2005 06 28 | 691 | 0.3+ | 0.0 | 2006 09 27 | 704 | (2.6+ | 1.1−) | | |
| 2002 12 01 | 608 | 0.6− | 0.2− | 2005 06 28 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.1+ | | |
| 2002 12 01 | 608 | 0.8− | 0.1− | 2005 06 28 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.7− | 0.2+ | | |
| 2002 12 01 | 608 | 0.6− | 0.2+ | 2005 07 01 | 691 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.1− | 0.1− | | |
| 2002 12 08 | 644 | 0.4− | 0.4+ | 2005 07 01 | 691 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.8− | 0.2+ | | |
| 2002 12 08 | 644 | 0.6− | 0.5+ | 2005 07 01 | 691 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.0 | 0.5− | | |
| 2002 12 08 | 644 | 0.5+ | 0.8+ | 2006 08 25 | 704 | (1.9+ | 0.5+) | 2006 09 30 | 704 | 0.6− | 0.5+ | | |
| 2002 12 13 | 644 | 0.2+ | 0.5+ | 2006 08 25 | 704 | 1.0+ | 1.1+ | 2006 09 30 | 704 | 0.6− | 0.9+ | | |
| 2002 12 13 | 644 | 0.2− | 0.6+ | 2006 08 25 | 704 | 0.4+ | 0.0 | 2006 09 30 | 704 | 0.6− | 0.8+ | | |
| 2002 12 13 | 644 | 0.4+ | 0.6+ | 2006 08 25 | 704 | 0.5+ | 0.2− | 2006 09 30 | 704 | 0.7− | 1.0+ | | |
| 2003 01 02 | 704 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.6− | 0.5+ | | |
| 2003 01 02 | 704 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2003 01 02 | 704 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2003 01 02 | 704 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.5+ | 1.2− | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2003 01 02 | 704 | 0.8− | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.1− | | |
| 2004 03 15 | 691 | 0.1+ | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.4+ | | |
| 2004 03 15 | 703 | 0.4+ | 1.2+ | 2006 09 13 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.0 | | |
| 2004 03 15 | 703 | 0.6+ | 1.3+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.4+ | | |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2004 03 15 | 703 | 1.2+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2004 03 15 | 703 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.4+ | | |
| 2004 03 18 | 704 | 0.6+ | 1.2+ | 2006 09 17 | 704 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.6− | | |
| 2004 03 18 | 704 | 0.5+ | 1.0+ | 2006 09 17 | 704 | 0.3− | 1.0+ | 2006 10 22 | 703 | 0.6+ | 0.3+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.9+ | 2006 09 17 | 704 | 0.7− | 0.8+ | 2006 10 22 | 703 | 0.2− | 0.2+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.4+ | | |
| 2004 03 27 | 291 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2004 03 27 | 291 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.0 | | |

**(144504)∗ 2004 EA$_{70}$ = 2001 OC$_{15}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69692)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.12262 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21743129 | $\omega$ | 15.42414 | | +0.97527108 | −0.22088094 | |
| $a$ | 2.7389747 | $\Omega$ | 357.30157 | | +0.18179532 | +0.82132675 | |
| $e$ | 0.1467504 | $i$ | 9.30425 | | +0.12568529 | +0.52596005 | |
| $P$ | 4.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 27 | 557 | 0.4+ | 0.6− | 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 09 24 | 104 | 0.1− | 0.1− | | |
| 1997 10 27 | 557 | 0.3+ | 0.4− | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.1− | 0.7+ | | |
| 2001 07 18 | 644 | 0.5+ | 0.8+ | 2006 08 06 | 699 | 1.0+ | 0.6− | 2006 09 25 | 704 | 0.2− | 0.2+ | | |
| 2001 07 18 | 644 | 0.0 | 0.6+ | 2006 08 06 | 699 | 0.4+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.0 | | |
| 2001 07 18 | 644 | 0.5+ | 0.9+ | 2006 08 06 | 699 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.4+ | | |
| 2001 07 18 | 644 | 0.1− | 0.7+ | 2006 08 06 | 699 | 0.5+ | 0.6− | 2006 09 25 | 704 | 0.3+ | 0.4− | | |
| 2001 07 18 | 644 | 0.1+ | 0.7+ | 2006 08 19 | 699 | 1.1+ | 0.9− | 2006 09 27 | 958 | 0.6− | 0.3− | | |
| 2001 07 18 | 644 | 0.1+ | 0.9+ | 2006 08 19 | 699 | 1.5− | 0.7+ | 2006 09 27 | 958 | 0.1+ | 0.3+ | | |
| 2001 07 22 | 644 | 0.5− | 0.2− | 2006 08 19 | 699 | 1.1− | 0.7+ | 2006 09 27 | 958 | 0.3+ | 0.5− | | |
| 2001 07 22 | 644 | 0.3− | 0.3+ | 2006 08 19 | 699 | 0.3+ | 0.7+ | 2006 09 27 | 699 | 0.7− | 0.0 | | |
| 2001 07 22 | 644 | 0.2− | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 27 | 699 | 0.3− | 0.4+ | | |
| 2001 07 22 | 644 | 0.5− | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.5+ | 2006 09 27 | 699 | 0.5− | 0.0 | | |
| 2001 07 22 | 644 | 0.7− | 0.4+ | 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 2001 07 22 | 644 | 0.6− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2001 08 24 | 644 | 0.4− | 1.0− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 24 | 644 | 0.1+ | 1.0− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.5− | 0.4− | | |
| 2001 08 24 | 644 | 0.1+ | 1.1− | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.6+ | | |
| 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 09 16 | 644 | 0.6− | 0.5+ | 2006 09 29 | 704 | 0.4− | 0.1− | | |
| 2004 03 15 | 703 | (1.0+ | 1.6+) | 2006 09 16 | 644 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.3+ | | |
| 2004 03 15 | 703 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.7+ | | |
| 2004 03 15 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1− | | |
| 2004 03 15 | 703 | (0.5+ | 2.2+) | 2006 09 17 | 703 | 0.3− | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.2− | | |
| 2004 03 15 | 703 | 0.6+ | 1.0+ | 2006 09 17 | 703 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.5+ | 0.4+ | 2006 09 18 | 704 | 0.2+ | 1.2+ | 2006 10 17 | 703 | (1.9− | 0.0 ) | | |
| 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.6− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 2004 03 18 | 704 | (1.8+ | 0.6+) | 2006 09 18 | 704 | 0.0 | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2004 03 18 | 704 | (1.8+ | 0.8+) | 2006 09 18 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 644 | 0.4− | 0.3+ | | |
| 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.8+ | | |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2004 04 13 | 691 | 0.7+ | 0.2+ | 2006 09 21 | 224 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 09 21 | 224 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2004 04 13 | 691 | 0.5+ | 0.4+ | 2006 09 22 | 224 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.0 | | |
| 2006 07 21 | G96 | 0.4− | 0.1− | 2006 09 24 | 104 | 0.3− | 0.3+ | | | | | | |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 24 | 104 | 0.0 | 0.3+ | | | | | | |

**(144505)∗ 2004 ES$_{71}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.36509 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22946748 | $\omega$ | 262.85030 | | +0.19367002 | −0.98089067 | |
| $a$ | 2.6423395 | $\Omega$ | 175.84225 | | +0.97050909 | +0.18877972 | |
| $e$ | 0.1462067 | $i$ | 14.85319 | | +0.14354104 | +0.04707143 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.5− | | |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.1− | 0.6+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | | |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.3+ | | |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2004 03 27 | 704 | (1.3− | 2.2+) | 2006 09 23 | 691 | 0.1− | 0.1+ | | |
| 2002 10 10 | 644 | 0.1+ | 0.6+ | 2004 03 27 | 704 | 0.8+ | 0.5− | 2006 09 24 | 106 | 0.4+ | 0.5+ | | |
| 2002 10 10 | 644 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.4+ | 1.2+ | 2006 09 24 | 106 | 0.2+ | 0.3+ | | |
| 2002 10 10 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.8+ | 0.2− | 2006 09 24 | 106 | 0.7+ | 0.7+ | | |
| 2002 10 15 | 644 | 0.2+ | 0.3+ | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 09 24 | 106 | 0.4+ | 0.2+ | | |
| 2002 10 15 | 644 | 0.0 | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.1+ | 2006 09 25 | 699 | 1.3− | 0.9+ | | |
| 2002 10 15 | 644 | 0.2+ | 0.1+ | 2004 03 31 | 691 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.4+ | 0.7+ | | |
| 2002 10 30 | 704 | 0.5− | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.3− | | |
| 2002 10 30 | 704 | 0.1− | 0.3− | 2006 08 23 | 644 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 1.1− | 0.6+ | | |
| 2002 10 30 | 704 | 0.1+ | 0.5+ | 2006 08 23 | 644 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.9+ | | |
| 2004 02 26 | 704 | 1.2− | 0.7− | 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.6+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.9+ | 2006 08 24 | 644 | 0.3− | 0.3+ | 2006 10 16 | 703 | (0.7− | 2.3+) | | |
| 2004 02 26 | 704 | 0.1− | 0.9+ | 2006 08 24 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | (0.9− | 1.7+) | | |
| 2004 02 26 | 704 | 1.1+ | 1.0+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2004 02 26 | 704 | 0.7+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2004 03 15 | 703 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2004 03 15 | 703 | 0.5− | 1.4+ | 2006 09 16 | 699 | 0.8+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2004 03 15 | 703 | 0.2− | 0.9+ | 2006 09 16 | 699 | (1.6− | 0.6+) | 2006 10 20 | 644 | 0.1− | 0.7+ | | |
| 2004 03 15 | 703 | 1.3+ | 0.7+ | 2006 09 16 | 699 | (1.8+ | 0.9+) | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 09 16 | 699 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.2− | 0.2+ | | |
| 2004 03 18 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 699 | (2.2− | 0.1+) | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2004 03 18 | 704 | 0.6+ | 1.4+ | 2006 09 19 | 699 | 0.6− | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.2+ | | |
| 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2004 03 18 | 704 | 0.8+ | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.2+ | 2006 10 28 | 941 | 0.1− | 0.0 | | |
| 2004 03 20 | 699 | 0.0 | 0.4+ | 2006 09 20 | 704 | 1.3− | 0.8+ | 2006 10 28 | 941 | 0.0 | 0.1+ | | |
| 2004 03 20 | 699 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.0 | 0.2− | 2006 10 28 | 941 | 0.0 | 0.1+ | | |
| 2004 03 20 | 699 | 0.9− | 0.4+ | 2006 09 20 | 704 | 0.6− | 1.2+ | 2006 10 28 | 941 | 0.1− | 0.0 | | |
| 2004 03 20 | 699 | 0.1+ | 0.8+ | 2006 09 20 | 704 | 0.5− | 1.0+ | | | | | | |

**(144506)∗ 2004 EY$_{71}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.44735 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24386346 | $\omega$ | 48.53563 | | −0.39019751 | +0.92070798 | |
| $a$ | 2.5372985 | $\Omega$ | 198.50072 | | −0.85077562 | −0.36325610 | |
| $e$ | 0.1213983 | $i$ | 1.18029 | | −0.35203231 | −0.14262476 | |
| $P$ | 4.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 1.3+ | 0.8− | 2004 02 26 | 704 | (1.4+ | 2.0+) | 2005 08 27 | 644 | 0.3− | 0.5+ | | |
| 2000 03 03 | 704 | 0.4+ | 1.0− | 2004 02 26 | 704 | 0.6+ | 0.4+ | 2005 08 27 | 644 | 0.0 | 0.6+ | | |
| 2000 03 03 | 704 | 0.6− | 0.7+ | 2004 02 26 | 704 | 0.4+ | 0.7+ | 2006 10 28 | G96 | 0.5− | 0.0 | | |
| 2000 03 03 | 704 | 0.1+ | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2000 03 11 | 704 | 1.1− | 0.3− | 2004 02 26 | 704 | 0.1+ | 0.8+ | 2006 10 28 | G96 | 0.3+ | 0.5− | | |
| 2000 03 11 | 704 | 0.4+ | 1.2+ | 2004 03 15 | 704 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.7− | | |
| 2000 03 11 | 704 | 0.3− | 1.5+ | 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.0 | | |
| 2000 03 11 | 704 | (0.3+ | 2.5+) | 2004 03 15 | 704 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− | | |
| 2000 03 25 | 691 | 0.1− | 0.4− | 2004 03 15 | 704 | 0.6+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.1+ | | |
| 2000 03 25 | 691 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.8+ | 0.3+ | 2006 11 11 | G96 | 0.7+ | 0.1− | | |
| 2000 03 25 | 691 | 0.2− | 0.4− | 2004 03 18 | 704 | 1.3+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 08 16 | 704 | 0.3− | 1.2+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.4+ | | |
| 2001 08 16 | 704 | 0.2− | 1.5+ | 2004 03 18 | 704 | 0.0 | 0.6+ | 2006 11 15 | 691 | 0.6− | 0.3+ | | |
| 2001 08 16 | 704 | 0.3− | 1.1+ | 2004 03 18 | 704 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2001 08 24 | 644 | 0.6− | 0.2+ | 2004 03 18 | 704 | 1.2+ | 0.6− | 2006 11 23 | 691 | 0.1− | 0.0 | | |
| 2001 08 24 | 644 | 0.1− | 0.4+ | 2004 03 27 | 704 | 1.3+ | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 2001 08 24 | 644 | 0.3− | 0.4+ | 2004 03 27 | 704 | 1.1+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2002 11 07 | 695 | 0.2+ | 0.2+ | 2004 03 27 | 704 | 0.9+ | 1.1− | 2006 11 24 | G96 | 0.5+ | 0.3− | | |
| 2002 11 07 | 695 | 0.0 | 0.2+ | 2004 03 28 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.5+ | 0.5− | | |
| 2004 02 13 | 291 | 0.1− | 0.5+ | 2004 03 28 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.1− | | |
| 2004 02 13 | 291 | 0.5− | 0.4+ | 2004 03 28 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2004 02 13 | 291 | 0.3− | 0.5+ | 2005 08 27 | 644 | 0.3− | 0.7+ | | | | | | |

**(144507)∗ 2004 EZ$_{71}$ = 2005 MD$_{16}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 86371)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.76774 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22627956 | $\omega$ | 187.44565 | | +0.99383592 | −0.11075550 | |
| $a$ | 2.6670992 | $\Omega$ | 178.87854 | | +0.11011421 | +0.98114757 | |
| $e$ | 0.2090790 | $i$ | 14.30331 | | +0.01284617 | +0.15837505 | |
| $P$ | 4.36 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.5+ | 0.3− | 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.4− | | |
| 2003 01 02 | 704 | 0.2− | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.0 | 1.0+ | | |
| 2003 01 02 | 704 | 0.6− | 0.6− | 2004 04 25 | 691 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.2+ | | |
| 2003 01 28 | 704 | 0.3− | 0.8− | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.6+ | | |
| 2003 01 28 | 704 | 0.3− | 1.3− | 2005 06 24 | 644 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.9+ | | |
| 2003 01 28 | 704 | 0.3+ | 0.5− | 2005 06 24 | 644 | 0.0 | 0.5+ | 2006 10 01 | 704 | 0.1− | 0.0 | | |
| 2003 01 28 | 704 | 0.4+ | 0.5− | 2005 06 24 | 644 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2004 03 15 | 703 | 0.8+ | 1.3+ | 2005 06 30 | 644 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.5+ | | |
| 2004 03 15 | 703 | 0.0 | 1.1− | 2005 06 30 | 644 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.7+ | | |
| 2004 03 15 | 703 | 0.1− | 1.2+ | 2005 06 30 | 644 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.0 | | |
| 2004 03 15 | 703 | (0.1+ | 1.9+) | 2005 08 06 | 644 | 0.4+ | 0.7+ | 2006 11 10 | 704 | (0.8− | 2.1+) | | |
| 2004 03 18 | 704 | 0.0 | 1.2+ | 2005 08 06 | 644 | 0.3− | 0.6+ | 2006 11 10 | 704 | 1.3− | 0.5+ | | |
| 2004 03 18 | 704 | 0.3+ | 0.4+ | 2005 08 06 | 644 | 0.2− | 0.3+ | 2006 11 10 | 704 | 0.7− | 0.2+ | | |
| 2004 03 18 | 704 | (1.6+ | 0.0 ) | 2006 08 31 | 704 | 1.0+ | 0.4− | 2006 11 10 | 704 | 0.2− | 0.8+ | | |
| 2004 03 18 | 704 | 0.8+ | 1.0+ | 2006 08 31 | 704 | (0.2+ | 1.6+) | 2006 11 10 | 704 | 0.2+ | 0.2− | | |
| 2004 03 18 | 704 | 0.5+ | 1.1+ | 2006 08 31 | 704 | 0.2+ | 0.6+ | 2006 11 16 | 703 | 0.7− | 0.4+ | | |
| 2004 03 22 | 704 | (2.3+ | 1.5+) | 2006 08 31 | 704 | 0.7+ | 0.5+ | 2006 11 16 | 703 | (3.5+ | 2.8+) | | |
| 2004 03 22 | 704 | 1.2+ | 0.3− | 2006 09 18 | 703 | 0.5− | 1.1+ | 2006 11 16 | 703 | 0.3+ | 0.7+ | | |
| 2004 03 22 | 704 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.9+ | 0.4− | 2006 11 16 | 703 | 0.2+ | 0.0 | | |
| 2004 03 22 | 704 | 1.2− | 0.9+ | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 11 19 | 715 | 0.3+ | 0.1+ | | |
| 2004 03 27 | 704 | 0.6− | 0.1− | 2006 09 18 | 703 | 1.2− | 1.0+ | 2006 11 19 | 715 | 0.1+ | 0.1+ | | |
| 2004 03 27 | 704 | 0.0 | 0.8− | 2006 09 30 | 699 | 0.5− | 0.7+ | 2006 11 19 | 715 | 0.0 | 0.0 | | |
| 2004 03 27 | 704 | 1.0+ | 0.4− | 2006 09 30 | 699 | 0.0 | 0.2+ | 2006 11 19 | 715 | 0.2+ | 0.1+ | | |
| 2004 03 27 | 704 | 0.0 | 0.4+ | 2006 09 30 | 699 | (1.6− | 1.6+) | 2006 11 22 | 704 | 0.8+ | 0.6− | | |
| 2004 03 27 | 704 | 0.0 | 1.0+ | 2006 09 30 | 703 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 2.2+ | | |
| 2004 03 31 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 22 | 704 | 1.1− | 0.7+ | | |
| 2004 03 31 | 691 | 0.0 | 0.2− | 2006 09 30 | 699 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.7+ | 0.2− | | |

**(144508)∗ 2004 EC$_{72}$ = 2001 OZ$_{83}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 65614)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.67512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22014064 | $\omega$ | 224.40185 | | +0.73556110 | −0.67741873 | |
| $a$ | 2.7164553 | $\Omega$ | 178.19238 | | +0.66806370 | +0.72352259 | |
| $e$ | 0.0702540 | $i$ | 13.43671 | | +0.11243109 | +0.13273628 | |
| $P$ | 4.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 699 | 0.5− | 0.3− | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 09 21 | 699 | (0.2− | 1.7+) |
| 2001 07 17 | 699 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.8+ |
| 2001 07 17 | 699 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.1− | 0.4+ |
| 2001 07 17 | 699 | 1.4− | 0.4+ | 2004 03 19 | 704 | 0.4+ | 0.4− | 2006 09 22 | 704 | (1.1+ | 1.9+) |
| 2001 08 25 | 704 | 1.3+ | 0.5− | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 09 22 | 704 | 0.7− | 0.6+ |
| 2001 08 25 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.3+ | 0.7+ | 2006 09 22 | 704 | 1.0+ | 1.2+ |
| 2001 08 25 | 704 | 0.2+ | 0.7+ | 2004 03 19 | 704 | 0.1− | 0.9+ | 2006 09 25 | 699 | (0.6− | 1.9+) |
| 2001 08 25 | 704 | 0.3+ | 0.5+ | 2004 03 26 | 704 | (2.0+ | 0.1−) | 2006 09 25 | 699 | 0.5− | 0.6+ |
| 2001 08 25 | 704 | 0.1+ | 1.4+ | 2004 03 26 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | (2.6− | 0.8+) | 2004 03 26 | 704 | 0.9+ | 1.0+ | 2006 09 25 | 699 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | 0.4− | 1.3+ | 2004 03 26 | 704 | 0.9+ | 1.0+ | 2006 09 28 | 691 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.6+ | 0.9+ | 2004 03 26 | 704 | 0.8− | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2002 11 30 | 704 | 0.4+ | 0.0 | 2004 03 29 | 691 | 0.0 | 0.6+ | 2006 10 01 | 704 | 0.7+ | 0.4+ |
| 2002 11 30 | 704 | 0.3+ | 0.5− | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.1+ |
| 2002 11 30 | 704 | 0.0 | 0.7+ | 2004 04 12 | 699 | (0.4− | 1.5−) | 2006 10 01 | 704 | 0.1− | 0.0 |
| 2002 12 15 | 608 | 0.3− | 0.1+ | 2004 04 12 | 699 | (1.7+ | 0.3+) | 2006 10 01 | 704 | 0.0 | 0.3− |
| 2002 12 15 | 608 | 0.1− | 0.3− | 2004 04 12 | 699 | 0.9+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.5+ |
| 2002 12 15 | 608 | 0.4− | 0.6− | 2004 04 12 | 699 | 1.2+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.6+ |
| 2004 02 26 | 704 | 0.4+ | 0.7+ | 2004 04 25 | 691 | 0.4− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.6+ |
| 2004 02 26 | 704 | 0.5+ | 1.2+ | 2004 04 25 | 691 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2004 02 26 | 704 | 0.2− | 0.8+ | 2004 04 25 | 691 | 0.8− | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2004 02 26 | 704 | (1.8+ | 1.4+) | 2005 02 17 | 809 | 0.4− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2004 03 15 | 703 | 0.2− | 0.6+ | 2005 02 17 | 809 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2004 03 15 | 703 | (1.7+ | 1.7+) | 2006 07 22 | G96 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2004 03 15 | 703 | 0.2+ | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2004 03 15 | 703 | 1.3+ | 0.5+ | 2006 07 22 | G96 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2004 03 18 | 704 | 0.3− | 0.9+ | 2006 07 22 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 1.0+ | 0.1+ | 2006 09 21 | 699 | 0.4+ | 0.9+ | 2006 10 22 | 703 | 0.8− | 0.4+ |
| 2004 03 18 | 704 | 0.5+ | 0.3− | 2006 09 21 | 699 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.2− |

**(144509)∗ 2004 ER$_{73}$ = 2001 PC$_{19}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76453)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.82818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21808886 | $\omega$ | 304.91552 | | +0.99030431 | −0.05479673 | |
| $a$ | 2.7334664 | $\Omega$ | 58.54119 | | +0.10855134 | +0.87865607 | |
| $e$ | 0.1006352 | $i$ | 8.60643 | | −0.08668316 | +0.47430036 | |
| $P$ | 4.52 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 699 | 1.0+ | 0.7+ | 2004 03 27 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2000 05 01 | 699 | 0.1+ | 0.7− | 2004 03 27 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2000 05 01 | 699 | 1.9+ | 0.1− | 2004 03 28 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2000 05 01 | 699 | (2.1+ | 0.9+) | 2004 03 28 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2001 07 19 | 644 | 0.0 | 0.1+ | 2004 03 28 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2001 07 19 | 644 | 0.8− | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 07 19 | 644 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 2001 08 10 | 644 | 0.6− | 0.9+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2001 08 10 | 644 | 0.7− | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 08 10 | 644 | 0.3− | 0.7+ | 2006 09 21 | 699 | (1.9− | 0.1−) | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 08 14 | 644 | (1.3− | 3.7−) | 2006 09 21 | 699 | 0.7− | 1.3− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2001 08 14 | 644 | (1.2− | 3.4−) | 2006 09 21 | 699 | 1.2+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 08 14 | 644 | (0.9− | 3.8−) | 2006 09 25 | 699 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.9− | 2006 09 25 | 699 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.5− | 2006 09 25 | 699 | 0.8− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 06 | 704 | 0.4− | 0.4− | 2006 09 26 | 703 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.5+ | 2006 10 22 | 291 | 0.3+ | 0.2+ |
| 2003 01 05 | 704 | 0.5+ | 0.8+ | 2006 09 26 | 703 | (0.7− | 4.3+) | 2006 10 22 | 291 | 0.2+ | 0.2+ |
| 2003 01 05 | 704 | 0.6− | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.3+ | 2006 10 22 | 291 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.6+ | 0.4− | 2006 09 29 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.5− |
| 2004 03 15 | 691 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.7− | 0.8+ | 2006 10 22 | 703 | 0.5+ | 0.0 |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.4+ |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.9− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 09 30 | 704 | 0.2− | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 704 | 0.4− | 0.6− | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2004 03 18 | 704 | (2.1+ | 0.7+) | 2006 09 30 | 704 | (0.3+ | 1.6+) | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.8+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2004 03 18 | 704 | 0.6+ | 1.2+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 25 | 246 | 0.3− | 0.1+ |
| 2004 03 22 | 704 | (2.3+ | 0.9+) | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 25 | 246 | 0.3− | 0.3− |
| 2004 03 22 | 704 | (1.6+ | 1.6+) | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 25 | 246 | 0.3− | 0.2+ |
| 2004 03 22 | 704 | (1.8+ | 1.2+) | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 25 | 246 | 0.0 | 0.0 |
| 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 25 | 246 | 0.0 | 0.0 |
| 2004 03 23 | 704 | (0.4− | 1.8+) | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 10 25 | 246 | 0.7− | 0.2− |
| 2004 03 23 | 704 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 25 | 246 | 0.1− | 0.6+ |
| 2004 03 23 | 704 | (1.2− | 1.5+) | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.3− |
| 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2004 03 23 | 704 | (1.7+ | 0.0 ) | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2004 03 23 | 704 | 0.3+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.9+ | 0.3+ |
| 2004 03 23 | 704 | (0.8+ | 1.9+) | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.5+ | 1.5+ |
| 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 1.2− | 1.1+ |
| 2004 03 27 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.4+ |

**(144510)∗ 2004 EM$_{75}$ = 1995 UB$_{75}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76453)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.71929 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17733205 | $\omega$ | 119.88779 | | −0.30750686 | +0.95014400 | |
| $a$ | 3.1376986 | $\Omega$ | 132.10923 | | −0.89527164 | −0.27051113 | |
| $e$ | 0.1407036 | $i$ | 3.99090 | | −0.32237901 | −0.15508098 | |
| $P$ | 5.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 14 | 691 | 0.4− | 0.8− | 2004 03 22 | 704 | 0.5+ | 0.1+ | 2005 06 27 | 691 | 0.2− | 0.2+ |
| 1993 04 14 | 691 | 0.9− | 0.5− | 2004 03 22 | 704 | 0.1− | 0.3+ | 2005 06 27 | 691 | 0.1− | 0.6− |
| 1993 04 14 | 691 | 0.7− | 0.7− | 2004 03 22 | 704 | 0.1+ | 0.2− | 2005 06 27 | 691 | 0.2− | 0.1− |
| 1995 10 21 | 691 | 0.0 | 0.1− | 2004 04 24 | 683 | 1.3+ | 0.2+ | 2005 06 27 | 691 | 0.0 | 0.1− |
| 1995 10 21 | 691 | 0.3+ | 0.6− | 2004 04 24 | 683 | (2.4− | 0.7+) | 2005 06 27 | 691 | 0.1+ | 0.2− |
| 1995 10 21 | 691 | 0.5+ | 0.2+ | 2004 04 24 | 683 | 0.2− | 0.8+ | 2005 07 09 | 691 | 0.0 | 0.0 |
| 1995 10 26 | 691 | 0.4+ | 0.1− | 2005 05 19 | G96 | 0.2− | 0.0 | 2005 07 09 | 691 | 0.0 | 0.1+ |
| 1995 10 26 | 691 | 0.4+ | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.3+ | 2005 07 09 | 691 | 0.1− | 0.0 |
| 1995 10 26 | 691 | 0.6+ | 0.0 | 2005 05 19 | G96 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.8− | 0.3+ |
| 2004 03 14 | 691 | 0.1− | 0.3+ | 2005 05 19 | G96 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.7− | 0.1+ |
| 2004 03 14 | 691 | 0.3+ | 0.3+ | 2005 06 14 | G96 | 0.3+ | 0.6+ | 2006 10 01 | 691 | 0.6− | 0.2+ |
| 2004 03 14 | 691 | 0.1+ | 0.4+ | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.5− | 0.1− |
| 2004 03 19 | 704 | 0.7+ | 0.4+ | 2005 06 14 | G96 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 2004 03 19 | 704 | 1.2+ | 0.4+ | 2005 06 14 | G96 | 0.3− | 0.6+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2004 03 19 | 704 | 0.8+ | 0.1+ | 2005 06 14 | G96 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2004 03 21 | 691 | 0.0 | 0.3+ | 2005 06 14 | G96 | 0.1− | 0.5+ | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 2004 03 21 | 691 | 0.2+ | 0.2+ | 2005 06 14 | G96 | 0.5+ | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2004 03 21 | 691 | 0.3+ | 0.2+ | 2005 06 14 | G96 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2004 03 22 | 704 | 0.7+ | 0.3+ | 2005 06 27 | 691 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.4− |

**(144511)∗ 2004 EO$_{75}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.76569 | | (2000.0) | | | |
| $n$ | 0.17809326 | $\omega$ | 289.39446 | | +0.72321135 | +0.68458795 |
| $a$ | 3.1287514 | $\Omega$ | 27.63782 | | −0.53669389 | +0.64014760 |
| $e$ | 0.1168095 | $i$ | 11.32952 | | −0.43465505 | +0.34864077 |
| $P$ | 5.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 809 | (2.8− | 0.2−) | 2004 04 12 | 699 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.5+ | |
| 1995 10 28 | 691 | 0.2+ | 0.2− | 2004 04 12 | 699 | 1.3− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 1995 10 28 | 691 | 0.1− | 0.3− | 2004 04 12 | 699 | (2.0− | 1.5−) | 2006 10 15 | 703 | 1.2− | 0.7+ | |
| 1995 10 28 | 691 | 0.0 | 0.3− | 2004 04 15 | 699 | 0.3− | 0.5− | 2006 10 15 | 703 | 0.3− | 0.2− | |
| 1995 11 27 | 691 | 0.6+ | 0.0 | 2004 04 15 | 699 | 0.7+ | 1.2+ | 2006 10 15 | 703 | 0.6− | 0.1− | |
| 1995 11 27 | 691 | 0.1− | 0.1+ | 2004 04 15 | 699 | 0.4− | 0.4− | 2006 10 15 | 703 | 0.9− | 0.7+ | |
| 1995 11 27 | 691 | 0.0 | 0.3− | 2004 04 15 | 699 | 0.8− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.5+ | |
| 2001 11 24 | 704 | 0.1+ | 0.4− | 2004 04 19 | 704 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.3− | 0.3+ | |
| 2001 11 24 | 704 | 0.5− | 1.1+ | 2004 04 19 | 704 | (2.2+ | 0.7+) | 2006 10 19 | 644 | 0.2− | 0.6+ | |
| 2001 11 24 | 704 | 0.2− | 0.4+ | 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.3+ | |
| 2001 11 24 | 704 | 0.5− | 0.3+ | 2004 04 19 | 704 | 1.5+ | 1.0+ | 2006 10 20 | 644 | 0.3− | 0.5+ | |
| 2001 12 09 | 704 | 0.4+ | 0.0 | 2004 04 20 | 691 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1− | |
| 2001 12 09 | 704 | 0.0 | 0.1+ | 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 291 | 0.0 | 0.4+ | |
| 2001 12 09 | 704 | 0.7− | 0.8+ | 2004 04 20 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.8+ | 0.1− | |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2004 04 23 | 291 | 0.2− | 0.2+ | 2006 10 21 | 291 | 0.2− | 0.3+ | |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2004 04 23 | 291 | 0.2− | 0.2+ | 2006 10 21 | 291 | 0.1− | 0.4+ | |
| 2004 03 14 | 691 | 0.5+ | 0.4+ | 2004 04 23 | 291 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.3+ | |
| 2004 03 14 | 691 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 703 | (1.7− | 0.0 ) | |
| 2004 03 14 | 691 | 0.2+ | 0.6+ | 2006 09 06 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.4+ | |
| 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1− | |
| 2004 03 19 | 704 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.7+ | 0.0 | |
| 2004 03 19 | 704 | 0.9+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1− | |
| 2004 03 19 | 704 | (1.7+ | 0.2+) | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.0 | |
| 2004 03 21 | 691 | 0.5+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2004 03 21 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1+ | |
| 2004 03 21 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.9− | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2004 03 22 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 699 | 0.7− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2004 03 22 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2004 03 22 | 704 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2004 03 22 | 704 | 1.2− | 0.6+ | 2006 09 22 | 704 | 0.4+ | 0.6− | 2006 11 11 | 703 | 0.6− | 0.4+ | |
| 2004 03 22 | 704 | (0.3+ | 1.9+) | 2006 09 27 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.4+ | |
| 2004 03 23 | 704 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.8− | |
| 2004 03 23 | 704 | 0.5+ | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.2− | |
| 2004 03 23 | 704 | (2.0+ | 0.6+) | 2006 09 27 | 704 | 0.5− | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.2− | |
| 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.4+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.3− | |
| 2004 03 23 | 704 | 0.9+ | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.3− | |
| 2004 03 28 | 704 | 0.8+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.3− | |
| 2004 03 28 | 704 | 0.1− | 0.8+ | 2006 10 01 | 704 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.4+ | |
| 2004 03 28 | 704 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.1+ | 1.0+ | 2006 11 21 | 704 | 0.9− | 1.8+ | |
| 2004 03 28 | 704 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.8− | 0.6+ | 2006 11 21 | 704 | 0.6+ | 1.4+ | |
| 2004 03 28 | 704 | 0.8+ | 0.4+ | 2006 10 01 | 704 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.7− | 0.3+ | |
| 2004 04 11 | 644 | 0.5+ | 0.2+ | 2006 10 01 | 691 | 0.5− | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.0 | |
| 2004 04 11 | 644 | 0.8+ | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.3− | |
| 2004 04 11 | 644 | 0.4+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1− | |
| 2004 04 12 | 699 | 0.8− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.0 | |

**(144512)∗ 2004 EQ$_{75}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.87795 | | (2000.0) | | | |
| $n$ | 0.18702083 | $\omega$ | 320.16968 | | +0.93419846 | +0.34063437 |
| $a$ | 3.0283733 | $\Omega$ | 20.67559 | | −0.19916030 | +0.74453263 |
| $e$ | 0.1302324 | $i$ | 17.47511 | | −0.29598719 | +0.57414230 |
| $P$ | 5.27 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.5− | 1.5+ | 2004 03 28 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.1+ | |
| 2001 08 22 | 704 | 0.2− | 1.2+ | 2004 03 28 | 704 | 0.1+ | 1.3+ | 2006 10 16 | 691 | 0.3− | 0.2+ | |
| 2001 08 22 | 704 | 0.9− | 0.0 | 2004 03 28 | 704 | 0.6− | 0.0 | 2006 10 18 | 106 | 0.8− | 0.0 | |
| 2001 10 09 | 704 | 1.2− | 0.2− | 2004 03 28 | 691 | 0.3+ | 0.2+ | 2006 10 18 | 106 | 0.2+ | 0.2− | |
| 2001 10 09 | 704 | (1.6− | 0.3+) | 2004 03 28 | 704 | 0.8− | 0.4+ | 2006 10 18 | 106 | 0.3+ | 0.5− | |
| 2001 10 09 | 704 | 0.6− | 0.3+ | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 106 | 1.0+ | 1.4+ | |
| 2001 10 15 | 704 | 0.8− | 0.3− | 2004 03 28 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.2+ | |
| 2001 10 15 | 704 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.8+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.4+ | |
| 2001 10 15 | 704 | 0.2+ | 0.5− | 2004 04 19 | 704 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.4− | 0.1− | |
| 2001 10 15 | 704 | 0.6+ | 0.6+ | 2004 04 19 | 704 | 1.0− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 2001 10 19 | 704 | 0.7− | 0.2+ | 2004 04 19 | 704 | 0.7+ | 0.4− | 2006 10 20 | 644 | 0.3− | 0.3+ | |
| 2001 10 19 | 704 | 0.1− | 0.3+ | 2004 04 20 | 691 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.3+ | |
| 2001 10 19 | 704 | 0.3+ | 0.4− | 2004 04 20 | 691 | 0.7+ | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.1− | |
| 2001 10 19 | 704 | 0.6+ | 0.1+ | 2004 04 20 | 691 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.2− | |
| 2001 11 11 | 704 | 0.2+ | 0.3+ | 2006 09 06 | 644 | 1.2− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.2− | |
| 2001 11 11 | 704 | 0.6− | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2− | |
| 2001 11 11 | 704 | 0.6− | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.5− | 0.3− | |
| 2001 11 11 | 704 | 0.0 | 0.8+ | 2006 09 17 | 704 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.3− | |
| 2001 11 11 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2− | |
| 2001 11 11 | 644 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.5+ | 0.8+ | 2006 10 20 | G96 | 0.3− | 0.2− | |
| 2001 11 11 | 644 | 0.3− | 0.4+ | 2006 09 17 | 704 | 0.3− | 0.3− | 2006 10 21 | 703 | 0.6− | 0.0 | |
| 2001 11 11 | 644 | 0.1− | 0.5+ | 2006 09 18 | 691 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.3− | 0.2+ | |
| 2002 12 31 | 645 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.6− | |
| 2002 12 31 | 645 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.1+ | |
| 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 2004 03 14 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 2004 03 14 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2004 03 16 | 704 | 0.1+ | 0.6− | 2006 09 20 | 704 | 0.1+ | 0.5− | 2006 10 27 | 691 | 0.0 | 0.1− | |
| 2004 03 16 | 704 | 0.9+ | 0.8− | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.1− | |
| 2004 03 16 | 704 | (2.6+ | 0.4+) | 2006 09 20 | 704 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.0 | |
| 2004 03 19 | 704 | 0.5+ | 0.7+ | 2006 09 20 | 704 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.4− | |
| 2004 03 19 | 704 | 0.7+ | 0.6+ | 2006 09 20 | 644 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.7+ | |
| 2004 03 19 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.3+ | |
| 2004 03 21 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.6− | |
| 2004 03 21 | 691 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.0 | |
| 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.0 | |
| 2004 03 22 | 704 | (0.9− | 2.2+) | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1+ | |
| 2004 03 22 | 704 | 0.2− | 0.8+ | 2006 09 27 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.0 | |
| 2004 03 22 | 704 | (0.1+ | 2.1+) | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.6− | |
| 2004 03 22 | 704 | (0.1+ | 1.9+) | 2006 09 27 | 704 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.8+ | |
| 2004 03 23 | 704 | 0.1+ | 0.9+ | 2006 09 27 | 704 | 1.0+ | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.1+ | |
| 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 10 03 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.3+ | |
| 2004 03 23 | 704 | 1.0+ | 0.4+ | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.3+ | |
| 2004 03 23 | 704 | 1.0+ | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.0 | | | | | |
| 2004 03 28 | 704 | 0.3+ | 1.0+ | 2006 10 16 | 691 | 0.5− | 0.2+ | | | | | |

**(144513)∗ 2004 ES$_{75}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 142.00257 | | (2000.0) | | | |
| $n$ | 0.17949523 | $\omega$ | 186.39611 | | −0.67797256 | +0.73358875 |
| $a$ | 3.1124384 | $\Omega$ | 40.93308 | | −0.67121671 | −0.59178325 |
| $e$ | 0.1462359 | $i$ | 4.10603 | | −0.29970208 | −0.33412591 |
| $P$ | 5.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 807 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 0.9+ | 0.2− | 2004 04 21 | 704 | 0.5+ | 0.4+ | |
| 2000 08 26 | 807 | 0.3− | 0.3+ | 2004 03 31 | 704 | 0.7− | 0.6+ | 2004 04 21 | 704 | 0.2+ | 0.9+ | |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2004 03 31 | 704 | 0.5− | 0.4+ | 2004 05 24 | 691 | 0.1+ | 0.4+ | |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2004 04 10 | 703 | 0.1− | 0.5+ | 2004 05 24 | 691 | 0.1+ | 0.6+ | |
| 2002 12 13 | 645 | 0.0 | 0.1+ | 2004 04 10 | 703 | 0.4− | 0.2+ | 2004 05 24 | 691 | 0.1+ | 0.5+ | |
| 2002 12 13 | 645 | 0.0 | 0.1+ | 2004 04 10 | 703 | 1.0− | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.5+ | |
| 2004 03 14 | 644 | 0.1− | 0.2+ | 2004 04 10 | 703 | 0.3− | 1.2+ | 2006 09 14 | 691 | 0.1− | 0.2+ | |
| 2004 03 14 | 644 | 0.0 | 0.2+ | 2004 04 11 | 644 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.5+ | 0.4+ | |
| 2004 03 14 | 644 | 0.4+ | 0.6+ | 2004 04 11 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.6+ | |
| 2004 03 19 | 704 | 1.1+ | 0.4+ | 2004 04 11 | 644 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1+ | |
| 2004 03 19 | 704 | (0.8+ | 1.6+) | 2004 04 12 | 699 | 0.6+ | 0.6− | 2006 09 18 | 691 | 0.2− | 0.4+ | |
| 2004 03 19 | 704 | 0.7+ | 0.7+ | 2004 04 12 | 699 | 0.5− | 0.3+ | 2006 10 03 | 691 | 0.7− | 0.2− | |
| 2004 03 19 | 704 | 0.6+ | 1.1+ | 2004 04 12 | 699 | 0.3− | 0.4− | 2006 10 03 | 691 | 0.5− | 0.5+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.1− | 0.9+ | 2004 04 12 | 699 | (1.5− | 0.7−) | 2006 10 03 | 691 | 0.5− | 0.5+ | | |
| 2004 03 27 | 704 | 0.2+ | 0.8+ | 2004 04 16 | 704 | 0.6+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2004 03 27 | 704 | 0.1+ | 0.0 | 2004 04 16 | 704 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2− | | |
| 2004 03 27 | 704 | 0.6+ | 0.7+ | 2004 04 16 | 704 | 0.9+ | 0.5− | 2006 10 28 | 691 | 0.3− | 0.5+ | | |
| 2004 03 27 | 704 | 0.2− | 0.3+ | 2004 04 16 | 704 | 0.0 | 0.5+ | | | | | | |
| 2004 03 31 | 704 | 1.2+ | 0.1+ | 2004 04 21 | 704 | 0.9+ | 1.0− | | | | | | |

**(144514)∗ 2004 ET$_{75}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.69638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19049767 | $\omega$ | 359.33727 | | −0.99998137 | +0.00519811 | |
| $a$ | 2.9914123 | $\Omega$ | 180.97790 | | −0.00437239 | −0.97578534 | |
| $e$ | 0.0692208 | $i$ | 10.80886 | | −0.00425985 | −0.21866857 | |
| $P$ | 5.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7− | 0.5− | 2004 03 26 | 704 | 0.6+ | 0.8+ | 2004 04 20 | 704 | 0.0 | 0.2− | | |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2004 03 26 | 704 | 0.5+ | 0.6+ | 2004 04 20 | 704 | 0.0 | 0.2− | | |
| 2001 09 21 | 704 | 0.5− | 0.3+ | 2004 03 26 | 704 | 0.2+ | 0.6+ | 2006 07 22 | G96 | 0.6+ | 0.6− | | |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2004 03 26 | 704 | 1.0+ | 0.6− | 2006 07 22 | G96 | 0.0 | 0.5− | | |
| 2001 10 12 | 699 | (1.1− | 2.5+) | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.0 | | |
| 2001 10 12 | 699 | 0.7+ | 0.8+ | 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 07 22 | G96 | 0.0 | 0.0 | | |
| 2001 10 12 | 699 | 0.7− | 1.3+ | 2004 03 27 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.5− | 0.3+ | | |
| 2001 10 12 | 699 | 0.8+ | 1.0− | 2004 03 27 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 691 | 0.6− | 0.2+ | | |
| 2001 10 18 | 291 | 0.4− | 0.3− | 2004 03 27 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.2+ | | |
| 2001 10 18 | 291 | 0.4+ | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.3− | 2006 09 26 | 691 | 0.1− | 1.3− | | |
| 2001 10 18 | 291 | 0.8+ | 0.2+ | 2004 03 28 | 704 | 0.7+ | 0.8+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | | |
| 2001 10 24 | 644 | 0.0 | 1.1+ | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.4+ | | |
| 2001 10 24 | 644 | 0.0 | 0.6+ | 2004 03 28 | 704 | 0.9− | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 24 | 644 | 0.0 | 0.8+ | 2004 03 28 | 704 | 0.9− | 0.7− | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2004 03 28 | 704 | 0.6+ | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2001 11 21 | 645 | 0.2− | 0.1+ | 2004 03 28 | 704 | 1.4− | 1.2+ | 2006 10 01 | 704 | 0.5+ | 0.5− | | |
| 2002 12 14 | 704 | 0.2− | 0.5− | 2004 03 28 | 704 | (1.9+ | 0.3+) | 2006 10 01 | 704 | 0.4+ | 0.0 | | |
| 2002 12 14 | 704 | 0.7+ | 0.3+ | 2004 03 28 | 704 | 0.9+ | 0.2− | 2006 10 01 | 704 | 0.9− | 0.3+ | | |
| 2002 12 14 | 704 | 0.3− | 0.2− | 2004 04 08 | E12 | 0.9− | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.4+ | | |
| 2004 03 14 | 644 | 0.4+ | 0.5+ | 2004 04 08 | E12 | 0.5− | 0.5+ | 2006 10 15 | 106 | 0.8+ | 0.9+ | | |
| 2004 03 14 | 644 | 0.1+ | 0.6+ | 2004 04 08 | E12 | (2.0− | 0.7+) | 2006 10 15 | 106 | 0.6− | 0.8+ | | |
| 2004 03 14 | 644 | 0.4+ | 0.2+ | 2004 04 08 | E12 | 0.5− | 0.6+ | 2006 10 15 | 106 | 0.7+ | 0.5+ | | |
| 2004 03 19 | 704 | 1.2+ | 0.5− | 2004 04 09 | E12 | 1.3− | 0.1+ | 2006 10 15 | 106 | 0.1− | 0.9+ | | |
| 2004 03 19 | 704 | 0.6+ | 0.5+ | 2004 04 09 | E12 | 0.9− | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2004 03 19 | 704 | 0.6− | 0.5+ | 2004 04 09 | E12 | 1.1− | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2004 03 19 | 704 | (0.6− | 1.6+) | 2004 04 09 | E12 | 1.1− | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.3− | | |
| 2004 03 20 | 699 | 0.5− | 0.2+ | 2004 04 17 | 699 | 0.2− | 1.2− | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2004 03 20 | 699 | 0.7+ | 0.6+ | 2004 04 17 | 699 | 0.3− | 0.5− | 2006 11 17 | G96 | 0.0 | 0.2+ | | |
| 2004 03 20 | 699 | 0.0 | 0.1− | 2004 04 17 | 699 | 0.6− | 0.6+ | 2006 11 17 | G96 | 0.0 | 0.2+ | | |
| 2004 03 20 | 699 | 0.9− | 0.3+ | 2004 04 17 | 699 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.4+ | 0.1+ | | |
| 2004 03 22 | 704 | 1.2+ | 1.1+ | 2004 04 20 | 704 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.2+ | | |
| 2004 03 22 | 704 | 1.2+ | 0.3− | 2004 04 20 | 704 | 0.5+ | 0.1+ | | | | | | |
| 2004 03 22 | 704 | 0.0 | 0.3+ | 2004 04 20 | 704 | 0.1− | 0.6+ | | | | | | |

**(144515)∗ 2004 EY$_{76}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.07785 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22156499 | $\omega$ | 77.91965 | | −0.96371160 | +0.26121395 | |
| $a$ | 2.7048008 | $\Omega$ | 117.20129 | | −0.26260880 | −0.89069814 | |
| $e$ | 0.0752699 | $i$ | 3.54668 | | −0.04792247 | −0.37205388 | |
| $P$ | 4.45 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 21 | 691 | 0.0 | 0.1+ | 2004 03 15 | 703 | 0.8− | 0.1+ | 2005 06 13 | G96 | 0.5+ | 0.5+ | | |
| 1993 11 21 | 691 | 0.3+ | 0.2+ | 2004 03 15 | 704 | 0.1− | 0.1− | 2005 06 28 | G96 | 0.3− | 0.3+ | | |
| 1993 11 21 | 691 | 0.7− | 0.8+ | 2004 03 19 | 704 | 0.8+ | 0.3+ | 2005 06 28 | G96 | 0.1− | 0.4+ | | |
| 2000 05 24 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2005 06 28 | G96 | 0.4− | 0.9+ | | |
| 2000 05 24 | 691 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.5− | 2005 06 28 | G96 | 0.9− | 0.5+ | | |
| 2000 05 24 | 691 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.4− | 2005 07 15 | G96 | 0.1+ | 0.5+ | | |
| 2000 05 25 | 699 | 0.3+ | 0.1− | 2004 03 19 | 704 | 1.2+ | 0.1+ | 2005 07 15 | G96 | 0.5− | 0.3+ | | |
| 2000 05 25 | 699 | 1.7+ | 1.0+ | 2004 03 22 | 704 | 1.2+ | 0.1+ | 2005 07 15 | G96 | (1.4− | 3.5+) | | |
| 2000 05 25 | 699 | (3.5+ | 1.0−) | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.8+ | | |
| 2000 05 25 | 699 | (2.8+ | 0.2+) | 2004 03 22 | 704 | 1.0+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.6+ | | |
| 2002 11 25 | 644 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.9+ | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.4+ | | |
| 2002 11 25 | 644 | 0.5+ | 0.2+ | 2004 03 22 | 704 | 0.7+ | 1.0− | 2006 10 02 | G96 | 0.3+ | 0.5+ | | |
| 2002 11 25 | 644 | 0.7+ | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.2+ | | |
| 2003 12 25 | 291 | 1.1− | 0.6+ | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.4+ | | |
| 2003 12 25 | 291 | 0.9− | 0.5+ | 2004 03 30 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.4− | 0.3+ | | |
| 2003 12 25 | 291 | 0.5− | 0.7+ | 2004 04 12 | 703 | 1.4− | 0.9− | 2006 10 21 | G96 | 0.2− | 0.2+ | | |
| 2004 03 15 | 703 | 0.2− | 0.1+ | 2004 04 12 | 703 | 0.7− | 0.8+ | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2004 03 15 | 704 | 0.6+ | 0.0 | 2004 04 12 | 703 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.9− | 0.5− | | |
| 2004 03 15 | 703 | 0.3− | 0.1+ | 2004 04 12 | 703 | 1.2+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2004 03 15 | 704 | 1.0+ | 0.5− | 2005 06 13 | G96 | 0.3− | 0.6+ | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2004 03 15 | 703 | 0.6− | 0.9+ | 2005 06 13 | G96 | 0.2+ | 0.7+ | | | | | | |
| 2004 03 15 | 704 | 0.3+ | 0.5+ | 2005 06 13 | G96 | 0.1+ | 0.6+ | | | | | | |

**(144516)∗ 2004 EH$_{77}$ = 2000 EV$_{175}$ = 2002 RZ$_{27}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69692)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.05597 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25639354 | $\omega$ | 264.18752 | | +0.61121234 | −0.78961630 | |
| $a$ | 2.4539441 | $\Omega$ | 147.93603 | | +0.76049675 | +0.56699269 | |
| $e$ | 0.0573983 | $i$ | 5.84787 | | +0.21923542 | +0.23457492 | |
| $P$ | 3.84 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 20 | 691 | 0.9− | 0.0 | 2002 11 11 | 704 | 1.3− | 1.5+ | 2004 03 23 | 704 | (1.0+ | 1.9−) | | |
| 1993 05 20 | 691 | 0.4− | 0.1+ | 2002 11 11 | 704 | 0.1+ | 0.5+ | 2004 03 23 | 704 | 0.7+ | 0.4− | | |
| 1993 05 20 | 691 | 0.4− | 0.1+ | 2002 11 11 | 704 | 0.0 | 0.3− | 2006 10 16 | 703 | 1.1− | 0.2− | | |
| 1995 11 21 | 691 | 0.6+ | 0.3− | 2002 11 11 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | (2.1− | 0.4+) | | |
| 1995 11 21 | 691 | 0.0 | 0.5− | 2004 02 23 | 704 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.5+ | 0.1+ | | |
| 1995 11 21 | 691 | 0.6− | 0.5− | 2004 02 23 | 704 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.8− | | |
| 1998 09 19 | 645 | 0.2+ | 0.0 | 2004 02 23 | 704 | 1.1+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 1998 09 19 | 645 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.4+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.4− | | |
| 2000 03 03 | 704 | 0.5− | 0.5+ | 2004 02 29 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.1+ | | |
| 2000 03 03 | 704 | 0.1+ | 0.2+ | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 10 30 | 703 | 0.6− | 0.8+ | | |
| 2000 03 03 | 704 | 0.0 | 0.2+ | 2004 02 29 | 691 | 0.0 | 0.1− | 2006 10 30 | 703 | 0.9+ | 0.4+ | | |
| 2000 03 03 | 704 | 0.7+ | 1.1+ | 2004 03 15 | 704 | 0.5+ | 0.2− | 2006 10 30 | 703 | 0.7− | 0.2− | | |
| 2000 03 03 | 704 | 0.8− | 1.2+ | 2004 03 15 | 704 | 0.2+ | 0.3− | 2006 10 30 | 703 | 0.2− | 0.0 | | |
| 2000 03 12 | 691 | 0.4− | 0.4− | 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.8− | | |
| 2000 03 12 | 691 | 0.2− | 0.5− | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2006 11 13 | 703 | 0.5− | 0.1− | | |
| 2000 03 12 | 691 | 0.2− | 0.3− | 2004 03 19 | 704 | 0.7+ | 0.6− | 2006 11 13 | 703 | 0.8− | 0.3− | | |
| 2002 09 04 | 599 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.7+ | 0.0 | 2006 11 13 | 703 | 0.5− | 0.9− | | |
| 2002 09 04 | 599 | 0.5− | 0.3+ | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 11 17 | G92 | 1.1− | 0.2+ | | |
| 2002 09 05 | 599 | 0.0 | 0.2+ | 2004 03 19 | 704 | 1.3+ | 0.1+ | 2006 11 17 | G92 | 0.8− | 0.4+ | | |
| 2002 09 06 | 599 | 0.5− | 0.4+ | 2004 03 20 | 699 | 0.9+ | 0.5+ | 2006 11 17 | G92 | 0.4− | 0.4+ | | |
| 2002 09 06 | 599 | 0.1− | 0.1+ | 2004 03 20 | 699 | 0.2+ | 0.8+ | 2006 11 18 | G92 | 0.6− | 0.1+ | | |
| 2002 09 06 | 599 | 0.6− | 0.2+ | 2004 03 20 | 699 | (2.0− | 0.2−) | 2006 11 18 | G92 | 0.4− | 0.2− | | |
| 2002 09 06 | 599 | 0.2− | 0.3+ | 2004 03 20 | 699 | 0.8− | 0.2− | 2006 11 18 | G92 | 0.4− | 0.3− | | |
| 2002 10 31 | 704 | 0.1+ | 0.8+ | 2004 03 22 | 704 | 1.1+ | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2002 10 31 | 704 | 0.7+ | 1.4+ | 2004 03 22 | 704 | 1.0+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2002 10 31 | 704 | 0.1+ | 1.0+ | 2004 03 22 | 704 | 0.6+ | 1.1+ | 2006 11 23 | G96 | 0.2− | 0.3− | | |
| 2002 10 31 | 704 | (0.1+ | 1.7+) | 2004 03 23 | 704 | 1.0+ | 0.3− | 2006 11 23 | G96 | 0.4− | 0.4− | | |
| 2002 10 31 | 704 | (0.0 | 2.1+) | 2004 03 23 | 704 | 0.5− | 0.7+ | | | | | | |

**(144517)∗ 2004 EN$_{77}$ = 1997 RL$_{4}$ = 2004 EO$_{71}$ = 2004 FU$_{41}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62058)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.08247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22608554 | $\omega$ | 192.03010 | | +0.82612918 | −0.56270043 | |
| $a$ | 2.6686248 | $\Omega$ | 202.29134 | | +0.52324686 | +0.78560209 | |
| $e$ | 0.0816408 | $i$ | 4.48241 | | +0.20910117 | +0.25728893 | |
| $P$ | 4.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 910 | 0.3+ | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 1997 09 08 | 910 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 1997 09 08 | 910 | 0.2+ | 0.1− | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 1997 09 08 | 910 | 0.3+ | 0.0 | 2004 03 27 | 704 | 0.8− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 1997 09 08 | 910 | 0.2+ | 0.1− | 2004 03 27 | 704 | 0.3+ | 1.2+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 1997 09 08 | 910 | 0.3+ | 0.2+ | 2004 03 27 | 704 | (1.6+ | 1.4+) | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2000 04 02 | 691 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2000 04 02 | 691 | 0.5− | 1.0− | 2004 04 13 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.5+ |
| 2000 04 02 | 691 | 0.1+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2002 11 14 | 704 | 1.1− | 0.2− | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 1.1+ | 0.2+ | 2006 09 14 | 703 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2002 11 14 | 704 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.8− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 24 | 644 | 0.2− | 0.3− | 2006 09 14 | 703 | 1.0− | 1.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.2− | 0.4− | 2006 09 15 | 691 | 0.9− | 0.3+ | 2006 10 27 | G96 | (2.0+ | 3.6−) |
| 2002 11 24 | 644 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.6− |
| 2002 12 05 | 608 | 0.1+ | 0.9− | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2002 12 05 | 608 | 0.1+ | 1.0− | 2006 09 18 | 699 | 1.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 12 05 | 608 | 0.4+ | 0.8− | 2006 09 18 | 699 | (1.7+ | 2.8−) | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 12 10 | 644 | 0.1+ | 0.6− | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2002 12 10 | 644 | 0.1− | 0.6− | 2006 09 18 | 699 | 0.9+ | 0.8− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2002 12 10 | 644 | 0.1− | 0.5− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 03 15 | 703 | (0.1− | 1.6+) | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | (1.5+ | 0.3−) | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2004 03 15 | 703 | (0.8+ | 2.1+) | 2006 09 26 | 691 | 0.3+ | 1.2+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2004 03 15 | 703 | 0.0 | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.0 |
| 2004 03 16 | 704 | 1.2+ | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 0.8− | 1.4+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2004 03 16 | 704 | 1.1+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2004 03 16 | 704 | 0.8+ | 1.2− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.5+ | 0.6− |
| 2004 03 19 | 704 | 0.0 | 1.0+ | 2006 10 13 | A50 | 0.8+ | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.1− |
| 2004 03 19 | 704 | 0.1+ | 0.3+ | 2006 10 13 | A50 | 0.3+ | 0.7− | 2006 11 20 | G96 | 0.6+ | 0.9− |
| 2004 03 19 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | | | | |
| 2004 03 19 | 704 | 0.7+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.2+ | | | | |

**(144518)∗ 2004 EF$_{78}$ = 1993 TL$_{42}$ = 2000 HY$_{15}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62059)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.42037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22922603 | $\omega$ | 21.98208 | | +0.79757975 | −0.59965515 | |
| $a$ | 2.6441947 | $\Omega$ | 15.40821 | | +0.51027546 | +0.61287484 | |
| $e$ | 0.1377565 | $i$ | 14.25491 | | +0.32169163 | +0.51458540 | |
| $P$ | 4.30 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 809 | 1.3+ | 1.4− | 2004 03 19 | 704 | 1.1− | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.4+ |
| 1993 10 10 | 809 | 0.6+ | 1.5− | 2004 03 20 | 704 | 0.9+ | 1.0− | 2006 09 20 | 704 | 0.6− | 0.1+ |
| 1993 10 10 | 809 | 1.4− | 1.6− | 2004 03 20 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.7− | 0.0 |
| 1993 10 22 | 809 | (0.5+ | 3.4+) | 2004 03 20 | 704 | 0.3+ | 0.1− | 2006 09 20 | 699 | 0.1− | 0.1− |
| 1993 10 22 | 809 | (0.1− | 2.6+) | 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 09 20 | 699 | 0.7− | 0.2+ |
| 1993 10 22 | 809 | (1.2− | 2.4+) | 2004 03 22 | 704 | 1.0+ | 0.5+ | 2006 09 20 | 699 | 0.2+ | 0.3+ |
| 1998 12 24 | 699 | 0.2+ | 0.4− | 2004 03 22 | 704 | 0.7+ | 0.8+ | 2006 09 24 | 608 | 0.8+ | 0.9− |
| 1998 12 24 | 699 | 0.5+ | 0.6− | 2004 03 22 | 704 | 1.4+ | 0.2+ | 2006 09 24 | 608 | 0.8+ | 1.3− |
| 1998 12 24 | 699 | 0.6+ | 0.4− | 2004 03 22 | 704 | 0.9+ | 0.4+ | 2006 09 24 | 608 | 0.6+ | 1.0− |
| 1999 01 14 | 704 | 0.0 | 1.0− | 2004 03 22 | 704 | 0.2+ | 0.8+ | 2006 09 29 | 704 | 0.0 | 1.5+ |
| 1999 01 14 | 704 | 0.4− | 0.7− | 2004 03 24 | 699 | 0.5+ | 0.4− | 2006 09 29 | 704 | 1.2+ | 1.2+ |
| 1999 01 14 | 704 | 0.9− | 1.2− | 2004 03 24 | 699 | 0.4− | 0.7+ | 2006 09 29 | 704 | (0.2+ | 1.9+) |
| 1999 01 14 | 704 | 0.9− | 1.7− | 2004 03 24 | 699 | 0.8+ | 0.2+ | 2006 09 29 | 704 | 0.8− | 1.2+ |
| 1999 01 14 | 704 | 0.8+ | 1.5− | 2004 03 24 | 699 | 0.6− | 0.4+ | 2006 09 29 | 704 | 0.4− | 1.3+ |
| 1999 02 11 | 704 | 0.1+ | 0.2− | 2004 03 28 | 704 | 0.3− | 0.9− | 2006 09 29 | 691 | 0.2+ | 0.3+ |
| 1999 02 11 | 704 | 1.1+ | 1.2− | 2004 03 28 | 704 | 0.1− | 0.9+ | 2006 09 29 | 691 | 0.1− | 0.3+ |
| 1999 02 11 | 704 | 0.1+ | 0.8+ | 2004 03 28 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 691 | 0.3− | 0.2+ |
| 1999 02 11 | 704 | 1.3− | 1.4+ | 2004 03 28 | 704 | 0.8+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 1999 02 11 | 704 | 1.5+ | 0.3+ | 2004 03 28 | 704 | 0.8+ | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2000 04 29 | 704 | 0.7+ | 0.0 | 2004 03 29 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.3+ |
| 2000 04 29 | 704 | 1.0+ | 0.4+ | 2004 03 29 | 704 | 0.0 | 0.0 | 2006 10 19 | 704 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 0.8+ | 0.4+ | 2004 03 29 | 704 | 0.5− | 0.4+ | 2006 10 19 | 704 | 0.3− | 0.7− |
| 2000 04 30 | 699 | 1.7+ | 0.0 | 2004 03 29 | 704 | 0.0 | 0.3+ | 2006 10 19 | 704 | 0.5− | 0.2− |
| 2000 04 30 | 704 | 1.1+ | 0.7+ | 2004 03 29 | 704 | 1.0− | 0.7+ | 2006 10 19 | 704 | 0.2− | 0.1− |
| 2000 04 30 | 699 | 0.5+ | 0.4− | 2004 03 30 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 704 | 0.6− | 0.0 |
| 2000 04 30 | 704 | 1.3+ | 0.4+ | 2004 03 30 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2000 04 30 | 704 | 0.6+ | 0.1+ | 2004 03 30 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 2000 04 30 | 699 | 1.0+ | 0.5− | 2004 03 30 | 704 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 2000 04 30 | 699 | 0.6+ | 0.2− | 2004 03 30 | 704 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2002 09 06 | 704 | 0.5+ | 0.8+ | 2004 04 01 | 704 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2002 09 06 | 704 | 0.0 | 0.1+ | 2004 04 01 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.4+ |
| 2002 09 06 | 704 | 0.2− | 1.3+ | 2004 04 01 | 704 | 0.5+ | 0.0 | 2006 10 21 | 691 | 0.5− | 0.2+ |
| 2002 09 06 | 704 | 0.2+ | 0.3+ | 2004 04 12 | 691 | 0.2− | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2002 10 05 | 704 | 0.3− | 0.6+ | 2004 04 12 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.7+ | 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2002 10 05 | 704 | 0.3− | 1.2+ | 2004 04 15 | 644 | 0.0 | 0.8+ | 2006 10 22 | G96 | 0.5− | 0.2+ |
| 2002 10 30 | 704 | 0.1− | 0.5+ | 2004 04 15 | 644 | 0.1+ | 0.7+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2002 10 30 | 704 | 0.1+ | 0.2− | 2004 04 15 | 644 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2002 10 30 | 704 | 0.6+ | 0.2+ | 2004 04 19 | 704 | 1.0+ | 1.2+ | 2006 10 25 | 106 | 0.1+ | 0.0 |
| 2002 10 30 | 704 | 0.4+ | 0.2− | 2004 04 19 | 704 | (0.3+ | 2.2+) | 2006 10 25 | 106 | 0.1− | 0.8+ |
| 2002 11 07 | 704 | 0.3+ | 0.7+ | 2004 04 19 | 704 | 0.7+ | 1.1+ | 2006 10 25 | 106 | 0.4− | 0.5− |
| 2002 11 07 | 704 | 0.7+ | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.5+ | 2006 10 26 | 106 | 0.2+ | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.1+ | 2004 04 23 | 703 | (1.5+ | 1.7+) | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2004 04 23 | 703 | 0.6− | 0.7− | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | (2.0+ | 0.5−) | 2004 04 23 | 703 | 0.2− | 0.4+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2002 11 25 | 704 | 0.1− | 0.1− | 2004 04 23 | 703 | 0.9− | 1.3+ | 2006 10 29 | 704 | 0.1+ | 0.2+ |
| 2002 11 25 | 704 | 0.0 | 0.7− | 2006 08 18 | G92 | 0.1− | 0.9+ | 2006 10 29 | 704 | 0.8+ | 0.2+ |
| 2002 11 25 | 704 | 0.7− | 0.0 | 2006 08 18 | G92 | 0.3− | 0.6+ | 2006 10 29 | 704 | 0.3− | 1.0− |
| 2002 11 25 | 704 | 0.2+ | 1.0− | 2006 08 18 | G92 | 0.4+ | 0.2+ | 2006 10 29 | 704 | 0.0 | 0.0 |
| 2002 12 07 | 704 | 0.3+ | 0.2− | 2006 08 21 | 704 | 0.3− | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.0 |
| 2002 12 07 | 704 | 0.3+ | 0.4− | 2006 08 21 | 704 | (0.1+ | 1.6+) | 2006 10 31 | 703 | 0.2+ | 0.2+ |
| 2002 12 07 | 704 | 0.3+ | 0.4− | 2006 08 21 | 704 | 0.8− | 0.4+ | 2006 10 31 | 703 | 0.4+ | 0.0 |
| 2002 12 07 | 704 | 0.6− | 1.5− | 2006 08 21 | 704 | (0.7− | 2.0+) | 2006 10 31 | 703 | 0.0 | 0.2− |
| 2002 12 07 | 704 | 0.2+ | 0.1− | 2006 08 21 | 704 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 0.1− | 0.3+ |
| 2002 12 28 | 704 | 0.3− | 0.1− | 2006 08 25 | 704 | (0.7+ | 2.0+) | 2006 11 02 | 704 | 0.1− | 0.7+ |
| 2002 12 28 | 704 | 0.5− | 0.1+ | 2006 08 25 | 704 | (0.6− | 1.9+) | 2006 11 02 | 704 | 0.3− | 1.3+ |
| 2002 12 28 | 704 | 0.0 | 0.4+ | 2006 08 25 | 704 | 0.8− | 1.0+ | 2006 11 02 | 704 | 0.5− | 0.2− |
| 2002 12 28 | 704 | 0.6− | 0.2+ | 2006 08 25 | 704 | (1.0− | 1.8+) | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2003 01 10 | 704 | 0.6− | 1.4− | 2006 08 25 | 704 | (0.8− | 1.8+) | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2003 01 10 | 704 | (0.4− | 1.6−) | 2006 08 27 | 683 | (2.2− | 3.5−) | 2006 11 07 | 644 | 0.2− | 0.4+ |
| 2003 01 10 | 704 | 0.7− | 1.5− | 2006 08 27 | 683 | (2.2− | 2.6−) | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 08 27 | 683 | (1.9− | 1.7−) | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2004 02 23 | 704 | 0.7+ | 1.0+ | 2006 08 31 | 704 | 0.5− | 0.5+ | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 2004 02 23 | 704 | 0.4+ | 0.8+ | 2006 08 31 | 704 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.3− | 0.0 |
| 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 08 31 | 704 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.8− |
| 2004 02 23 | 704 | 0.2− | 0.2− | 2006 08 31 | 704 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.8− |
| 2004 03 15 | 703 | 0.0 | 0.9+ | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2004 03 15 | 703 | (0.1− | 1.8+) | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2004 03 15 | 703 | 0.7− | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2004 03 15 | 703 | 0.8− | 0.0 | 2006 09 17 | 704 | 0.6− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.3+ |
| 2004 03 19 | 704 | 0.6− | 0.1− | 2006 09 17 | 704 | 0.2− | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.2− |
| 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.2− | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2004 03 19 | 704 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.4+ | 2.0+ |
| 2004 03 19 | 704 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.6+ |

**(144519)∗ 2004 EM$_{78}$ = 2002 VD$_{39}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62060)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.38502 | | | (2000.0) | | |
| $n$ | 0.21434153 | $\omega$ | 298.53865 | | −0.34235410 | −0.93889412 |
| $a$ | 2.7652337 | $\Omega$ | 171.25471 | | +0.92301348 | −0.34317212 |
| $e$ | 0.1233657 | $i$ | 13.56384 | | +0.17561262 | −0.02665953 |
| $P$ | 4.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 699 | 0.3+ | 0.7+ | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2004 04 16 | 691 | 0.1+ | 0.2+ |
| 2000 05 27 | 699 | 1.0− | 0.1+ | 2004 02 26 | 704 | 0.0 | 0.4+ | 2004 04 16 | 691 | 0.2+ | 0.2+ |
| 2000 05 27 | 699 | 0.6+ | 0.0 | 2004 02 26 | 704 | 1.0+ | 0.2− | 2004 04 20 | 704 | 0.4+ | 0.5+ |
| 2000 05 27 | 699 | 0.0 | 0.0 | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.8+ | 0.5+ |
| 2002 10 31 | 704 | 0.6+ | 0.0 | 2004 02 26 | 704 | 0.6+ | 0.7− | 2004 04 20 | 704 | (1.6+ | 0.3+) |
| 2002 10 31 | 704 | 0.9+ | 1.0+ | 2004 03 15 | 333 | 1.0+ | 1.3− | 2006 08 28 | 703 | (2.4− | 1.9−) |
| 2002 10 31 | 704 | 0.3− | 0.4− | 2004 03 15 | 333 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.1− | 1.4+ |
| 2002 10 31 | 704 | 0.2− | 1.1+ | 2004 03 15 | 333 | 0.3− | 0.6− | 2006 08 28 | 703 | (2.0− | 0.1−) |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2004 03 15 | 703 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.3+ |
| 2002 11 05 | 704 | 0.6+ | 0.0 | 2004 03 15 | 703 | 0.3+ | 0.4+ | 2006 09 16 | 699 | (2.1− | 0.9+) |
| 2002 11 05 | 704 | (1.7− | 2.6+) | 2004 03 15 | 703 | 1.3− | 0.5+ | 2006 09 16 | 699 | 0.5− | 1.3+ |
| 2002 11 05 | 704 | 0.2− | 0.0 | 2004 03 15 | 703 | 0.7− | 0.0 | 2006 09 16 | 699 | 0.3− | 0.5+ |
| 2002 11 05 | 704 | 0.7− | 0.5− | 2004 03 19 | 704 | 0.2− | 0.6− | 2006 09 16 | 699 | (0.1− | 1.7+) |
| 2002 11 06 | 699 | 0.8− | 0.9+ | 2004 03 19 | 704 | 0.9− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2002 11 06 | 699 | 1.1− | 0.9+ | 2004 03 19 | 704 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.3+ |
| 2002 11 06 | 699 | 1.2− | 0.1+ | 2004 03 19 | 704 | 0.6− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2002 11 06 | 699 | 0.2− | 1.2+ | 2004 03 19 | 704 | 0.5− | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2004 03 21 | 699 | 0.5− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.4+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 03 21 | 699 | 0.6+ | 0.8− | 2006 09 30 | G96 | 0.2− | 0.2+ |
| 2002 11 30 | 704 | 0.4+ | 1.3− | 2004 03 21 | 699 | 0.2− | 0.6− | 2006 09 30 | G96 | 0.0 | 0.3+ |
| 2002 11 30 | 704 | 0.6+ | 0.1+ | 2004 03 21 | 699 | 0.2+ | 0.8+ | 2006 09 30 | G96 | 0.0 | 0.3+ |
| 2002 11 30 | 704 | 1.2+ | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2003 01 02 | 704 | 0.4− | 0.3− | 2004 03 22 | 704 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.4+ |
| 2003 01 02 | 704 | 0.6− | 0.2− | 2004 03 22 | 704 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2003 01 02 | 704 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.7+ | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.4+ |
| 2003 01 02 | 704 | 0.7− | 0.5+ | 2004 03 22 | 704 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2003 01 02 | 704 | 0.2− | 1.5+ | 2004 03 30 | 703 | 1.3− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.3+ |
| 2004 02 18 | 703 | 0.2− | 0.2+ | 2004 03 30 | 703 | 0.5− | 1.4+ | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2004 02 18 | 703 | 0.4+ | 0.8− | 2004 03 30 | 703 | 0.4− | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2004 02 18 | 703 | 0.9+ | 1.0+ | 2004 03 30 | 703 | 0.1+ | 0.1+ | | | | |
| 2004 02 18 | 703 | 0.3− | 1.3+ | 2004 04 16 | 691 | 0.1+ | 0.0 | | | | |

**(144520)∗ 2004 EO$_{78}$ = 2000 CO$_{15}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.
Id. G. V. Williams (*MPO* 62060)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.20464 | | | (2000.0) | | |
| $n$ | 0.26863012 | $\omega$ | 324.82627 | | −0.23188916 | −0.97228255 |
| $a$ | 2.3788455 | $\Omega$ | 138.55913 | | +0.90250625 | −0.22651241 |
| $e$ | 0.2042233 | $i$ | 2.58939 | | +0.36291857 | −0.05795493 |
| $P$ | 3.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.6− | 0.7− | 2004 03 19 | 704 | (2.0− | 0.1−) | 2004 04 22 | 691 | 0.1+ | 0.2+ |
| 1993 03 23 | 691 | 0.1− | 0.9− | 2004 03 19 | 704 | (0.1− | 2.0+) | 2006 09 30 | 703 | 0.7+ | 0.7− |
| 1993 03 23 | 691 | 0.1− | 0.5− | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.5+ |
| 2000 01 05 | 704 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.7+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2000 01 05 | 704 | 0.5− | 0.5− | 2004 03 22 | 704 | 0.9+ | 1.1− | 2006 09 30 | 703 | 0.2+ | 0.0 |
| 2000 01 05 | 704 | 1.2+ | 0.1− | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2000 01 05 | 704 | 1.2− | 0.6− | 2004 03 22 | 704 | 0.9− | 1.4+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2000 01 13 | 699 | 1.1+ | 0.3− | 2004 03 24 | 699 | 0.4− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2000 01 13 | 699 | 0.1− | 0.2− | 2004 03 24 | 699 | 0.6+ | 0.0 | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2000 01 13 | 699 | 0.5+ | 0.5− | 2004 03 24 | 699 | 0.0 | 1.4+ | 2006 10 18 | 691 | 0.3− | 0.0 |
| 2000 02 02 | 704 | 0.9− | 0.3− | 2004 03 24 | 699 | 0.8+ | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2000 02 02 | 704 | 0.2− | 0.0 | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2000 02 02 | 704 | 0.0 | 0.3− | 2004 03 26 | 691 | 0.0 | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2000 02 02 | 704 | 0.7+ | 0.5+ | 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2000 02 03 | 704 | 0.7− | 0.2− | 2004 03 28 | 704 | 1.0+ | 1.2+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2000 02 03 | 704 | 0.3− | 1.0+ | 2004 03 28 | 704 | (1.0+ | 2.3+) | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2000 02 03 | 704 | 0.2+ | 0.8+ | 2004 03 28 | 704 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2004 03 15 | 703 | (1.8+ | 0.3−) | 2004 03 28 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2004 03 15 | 703 | (1.5− | 0.9+) | 2004 04 16 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | (1.6− | 0.3+) | 2004 04 16 | 691 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.4+ | 0.1+ |
| 2004 03 15 | 703 | 0.5+ | 1.2− | 2004 04 16 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.4− | 1.3+ |
| 2004 03 19 | 704 | 0.7+ | 1.5+ | 2004 04 22 | 691 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.7+ | 1.4+ |
| 2004 03 19 | 704 | 0.7+ | 0.3+ | 2004 04 22 | 691 | 0.3− | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.8− |

**(144521)∗ 2004 ED$_{79}$**

Discovered 2004 Mar. 15 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 109.53782 | | | (2000.0) | | |
| $n$ | 0.17764498 | $\omega$ | 271.97201 | | −0.29696802 | +0.95343292 |
| $a$ | 3.1340127 | $\Omega$ | 340.50133 | | −0.80130707 | −0.27883294 |
| $e$ | 0.0435396 | $i$ | 9.08152 | | −0.51934283 | −0.11496892 |
| $P$ | 5.55 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 691 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2000 08 02 | 691 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2000 08 02 | 691 | 0.3− | 0.1+ | 2004 03 20 | 699 | 0.3− | 1.4+ | 2006 09 19 | 699 | 0.1+ | 0.3+ |
| 2000 08 24 | 704 | 0.4− | 0.5− | 2004 03 20 | 699 | 1.4+ | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.7+ |
| 2000 08 24 | 704 | 0.7+ | 1.0− | 2004 03 20 | 699 | 0.1+ | 0.6− | 2006 09 19 | 699 | 0.3− | 1.4+ |
| 2000 08 24 | 704 | 0.7+ | 1.0+ | 2004 03 20 | 699 | 0.6+ | 0.6+ | 2006 09 19 | 699 | (0.4+ | 1.6−) |
| 2001 11 11 | 704 | 0.4− | 0.2− | 2004 03 31 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2001 11 11 | 699 | 1.0+ | 0.2+ | 2004 03 31 | 704 | 0.8+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2001 11 11 | 704 | 0.2+ | 0.4+ | 2004 03 31 | 704 | 0.5− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 0.4− | 0.0 | 2004 03 31 | 704 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2001 11 11 | 699 | 0.1− | 0.3+ | 2004 04 17 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 11 11 | 704 | 0.2− | 0.5+ | 2004 04 17 | 704 | 0.2− | 0.6+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2001 11 11 | 699 | 0.2− | 0.8− | 2004 04 17 | 704 | 0.3− | 0.4− | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2001 11 11 | 704 | 0.1− | 0.5+ | 2004 04 17 | 699 | 0.4− | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2001 11 11 | 699 | 0.4− | 0.2+ | 2004 04 17 | 699 | (0.6− | 1.8+) | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2003 01 10 | 704 | 1.1+ | 0.8+ | 2004 04 17 | 699 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2003 01 10 | 704 | 0.2+ | 1.4+ | 2004 04 17 | 699 | 1.3− | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2003 01 10 | 704 | (0.6+ | 1.9+) | 2004 04 29 | 608 | 1.1+ | 1.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2003 01 10 | 704 | 0.3− | 1.4+ | 2004 04 29 | 608 | 1.3+ | 1.4+ | 2006 10 12 | 644 | 0.5+ | 0.5+ |
| 2003 02 01 | 704 | 0.8− | 0.5− | 2004 04 29 | 608 | 0.3+ | 1.3+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2003 02 01 | 704 | 0.0 | 0.1+ | 2006 09 16 | 644 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.3+ |
| 2003 02 01 | 704 | 0.2+ | 0.5− | 2006 09 16 | 644 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2003 02 01 | 704 | 0.2− | 0.6+ | 2006 09 16 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2003 02 01 | 704 | 1.1+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 1.2− | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2004 03 15 | 644 | 0.4+ | 0.4+ | 2006 09 17 | 703 | (2.8− | 0.4+) | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2004 03 15 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2004 03 15 | 644 | 0.5+ | 0.7+ | 2006 09 17 | 703 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2004 03 19 | 704 | 0.3− | 1.1− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.3− |

**(144522)∗ 2004 EF$_{79}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.44609 | | | (2000.0) | | |
| $n$ | 0.23042181 | $\omega$ | 274.08938 | | −0.26432918 | −0.96141780 |
| $a$ | 2.6350386 | $\Omega$ | 192.08994 | | +0.96416979 | −0.26158711 |
| $e$ | 0.1109763 | $i$ | 21.33365 | | +0.02251005 | −0.08513516 |
| $P$ | 4.28 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 06 | 691 | 0.1− | 0.1+ | 2004 03 20 | 699 | 0.7+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.1− |
| 1997 10 06 | 691 | 0.5+ | 0.3+ | 2004 03 20 | 699 | 0.3+ | 0.7+ | 2006 09 16 | 699 | (1.7+ | 0.4−) |
| 1997 10 06 | 691 | 0.2+ | 0.1− | 2004 03 22 | 704 | (2.0+ | 0.2−) | 2006 09 16 | 699 | 0.4− | 0.7+ |
| 2000 05 04 | 704 | 0.4+ | 0.8− | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 09 16 | 699 | 0.9− | 1.1+ |
| 2000 05 04 | 704 | 0.8+ | 0.2+ | 2004 03 22 | 704 | 1.2+ | 0.3+ | 2006 09 16 | 699 | 0.6− | 0.3− |
| 2000 05 04 | 704 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2004 03 22 | 704 | 1.0+ | 0.7+ | 2006 09 20 | 644 | 0.5+ | 0.4+ | | |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2004 03 28 | 704 | 1.3+ | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | | |
| 2000 05 10 | 645 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.9+ | | |
| 2000 05 10 | 645 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.7+ | 0.5− | 2006 09 26 | 704 | 0.1+ | 0.6+ | | |
| 2001 10 15 | 645 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.6+ | 0.5+ | | |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.8+ | 0.9+ | | |
| 2002 10 30 | 704 | 0.3+ | 0.5− | 2004 03 29 | 704 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.3− | 0.2+ | | |
| 2002 10 30 | 704 | 0.1− | 0.1+ | 2004 03 29 | 704 | 0.0 | 0.8+ | 2006 09 29 | 699 | 0.2+ | 0.7− | | |
| 2002 10 30 | 704 | 0.6+ | 0.4+ | 2004 03 29 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 699 | 0.2+ | 0.3− | | |
| 2002 10 30 | 704 | 0.7− | 0.4− | 2004 03 29 | 704 | 0.6+ | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.3+ | | |
| 2002 11 16 | 644 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1+ | | |
| 2002 11 16 | 644 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.3− | | |
| 2002 11 16 | 644 | 0.0 | 0.3+ | 2004 03 31 | 704 | 0.7+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.3− | | |
| 2002 12 13 | 608 | 0.2+ | 0.8+ | 2004 03 31 | 704 | 1.0+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.1+ | | |
| 2002 12 13 | 608 | 0.5+ | 0.5+ | 2004 03 31 | 704 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.1− | 1.4− | | |
| 2002 12 13 | 608 | 0.2− | 0.9+ | 2004 04 09 | E12 | 0.4− | 0.1− | 2006 09 30 | 703 | 1.1− | 0.6− | | |
| 2003 01 03 | 699 | 0.3+ | 0.5− | 2004 04 09 | E12 | 0.7− | 0.1− | 2006 09 30 | 703 | 0.8− | 1.5− | | |
| 2003 01 03 | 699 | 0.3+ | 0.5+ | 2004 04 09 | E12 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 2003 01 03 | 699 | 0.6− | 1.1+ | 2004 04 09 | E12 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.0 | | |
| 2003 01 03 | 699 | 0.8+ | 0.8+ | 2004 04 17 | 699 | 1.4+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2003 01 24 | 644 | 0.1+ | 0.6+ | 2004 04 17 | 699 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2003 01 24 | 644 | 0.2+ | 0.7+ | 2004 04 17 | 699 | 0.3− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2003 01 24 | 644 | 0.0 | 0.8+ | 2004 04 17 | 699 | (1.3+ | 1.5+) | 2006 10 12 | 644 | 0.3− | 0.1+ | | |
| 2003 01 29 | 704 | 1.2− | 0.2+ | 2004 04 20 | 704 | (1.6+ | 0.6+) | 2006 10 16 | 703 | 0.2+ | 1.1+ | | |
| 2003 01 29 | 704 | (0.7− | 1.5+) | 2004 04 20 | 704 | 1.1+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 1.3+ | | |
| 2003 01 29 | 704 | 0.0 | 0.5+ | 2004 04 20 | 703 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.8+ | 0.2− | | |
| 2003 01 29 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | (1.6+ | 0.3+) | 2006 10 16 | 703 | 0.6+ | 0.4+ | | |
| 2004 02 26 | 704 | 0.1+ | 0.1+ | 2004 04 20 | 703 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.8− | 0.0 | | |
| 2004 02 26 | 704 | 1.2− | 0.5+ | 2004 04 20 | 704 | (1.5+ | 0.6+) | 2006 10 22 | 703 | 0.3− | 0.2− | | |
| 2004 02 26 | 704 | 0.2− | 0.1+ | 2004 04 20 | 703 | 0.8− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.6− | | |
| 2004 02 26 | 704 | 0.1− | 0.5+ | 2004 04 20 | 704 | 0.7+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.2− | | |
| 2004 02 26 | 704 | 0.7+ | 0.7+ | 2004 04 20 | 703 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.4+ | 1.2+ | | |
| 2004 03 15 | 703 | (0.9+ | 1.9+) | 2004 04 22 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.6+ | | |
| 2004 03 15 | 703 | 0.3− | 0.7+ | 2004 04 22 | 704 | 0.6− | 0.7+ | 2006 10 28 | 703 | 0.9− | 0.1− | | |
| 2004 03 15 | 703 | 0.6+ | 0.4+ | 2004 04 22 | 704 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.8+ | 0.0 | | |
| 2004 03 15 | 703 | 0.6− | 0.8+ | 2004 04 22 | 704 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2004 03 16 | 704 | 0.4+ | 0.6− | 2004 05 10 | 683 | 1.1+ | 1.5+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2004 03 16 | 704 | 0.4− | 1.2+ | 2004 05 10 | 683 | (1.8+ | 1.4−) | 2006 11 08 | 644 | 0.2− | 0.0 | | |
| 2004 03 16 | 704 | 0.2− | 0.1+ | 2004 05 10 | 683 | (2.3+ | 0.7−) | 2006 11 10 | 704 | 1.2+ | 1.0+ | | |
| 2004 03 16 | 704 | 0.7+ | 0.2+ | 2004 05 11 | 683 | 0.5− | 1.4− | 2006 11 10 | 704 | 0.4− | 0.7+ | | |
| 2004 03 16 | 704 | (2.4+ | 0.8−) | 2004 05 11 | 683 | 1.4− | 0.0 | 2006 11 10 | 704 | (2.1− | 0.8+) | | |
| 2004 03 19 | 704 | 0.6− | 0.0 | 2004 05 11 | 683 | 1.3+ | 0.1− | 2006 11 10 | 704 | 0.2+ | 0.2+ | | |
| 2004 03 19 | 704 | 0.5− | 0.0 | 2004 05 14 | 704 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.3+ | | |
| 2004 03 19 | 704 | 0.7− | 0.4+ | 2004 05 14 | 704 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.4− | 1.0+ | | |
| 2004 03 19 | 704 | 1.0− | 0.6+ | 2004 05 14 | 704 | 0.2+ | 0.9+ | 2006 11 16 | 703 | 0.7+ | 0.7+ | | |
| 2004 03 19 | 704 | 0.8− | 0.3− | 2006 09 14 | 703 | 0.2+ | 1.3+ | 2006 11 16 | 703 | 0.1+ | 0.5+ | | |
| 2004 03 20 | 699 | 1.2− | 0.5− | 2006 09 14 | 703 | 0.2+ | 0.4+ | | | | | | |
| 2004 03 20 | 699 | (1.8+ | 0.2+) | 2006 09 14 | 703 | 0.7− | 0.7+ | | | | | | |

**(144523)∗ 2004 EK$_{79}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.36767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22684737 | $\omega$ | 85.05006 | | −0.76160081 | +0.64676852 | |
| $a$ | 2.6626467 | $\Omega$ | 135.24072 | | −0.61511545 | −0.70171892 | |
| $e$ | 0.1259963 | $i$ | 3.31184 | | −0.20395389 | −0.29879933 | |
| $P$ | 4.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.1+ | 0.2− | 2004 03 25 | 699 | 0.1+ | 0.8+ | 2004 04 22 | 704 | 0.1− | 0.4+ | | |
| 1995 02 25 | 691 | 0.0 | 0.3− | 2004 03 25 | 699 | 0.3+ | 0.8− | 2004 04 22 | 704 | 0.2+ | 0.7+ | | |
| 1995 02 25 | 691 | 0.0 | 0.5− | 2004 03 28 | 704 | 0.8+ | 0.0 | 2004 06 09 | E12 | (1.3− | 2.3+) | | |
| 1999 01 14 | 691 | 0.3+ | 0.1− | 2004 03 28 | 704 | 0.3+ | 0.6− | 2004 06 09 | E12 | 0.0 | 0.6+ | | |
| 1999 01 14 | 691 | 0.9− | 0.3− | 2004 03 28 | 704 | 0.8+ | 1.0+ | 2004 06 09 | E12 | 0.2+ | 0.8+ | | |
| 1999 01 14 | 691 | 0.3− | 0.7− | 2004 03 28 | 704 | 0.2− | 0.3− | 2004 06 09 | E12 | 1.0− | 0.3+ | | |
| 2001 09 21 | 704 | 0.3− | 0.8+ | 2004 03 28 | 704 | 1.2+ | 0.8− | 2005 08 27 | 644 | 0.4− | 0.7+ | | |
| 2001 09 21 | 704 | 1.3− | 1.0+ | 2004 03 31 | 704 | 0.5+ | 0.1− | 2005 08 27 | 644 | 0.2− | 0.6+ | | |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2004 03 31 | 704 | 0.5+ | 1.2+ | 2005 08 27 | 644 | 0.4− | 0.6+ | | |
| 2004 03 15 | 703 | 0.6+ | 0.2+ | 2004 03 31 | 704 | (0.1+ | 1.6−) | 2005 10 06 | G96 | 0.4+ | 0.1− | | |
| 2004 03 15 | 703 | 0.8+ | 0.1+ | 2004 03 31 | 704 | 1.1− | 0.5− | 2005 10 06 | G96 | 0.6− | 0.3+ | | |
| 2004 03 15 | 703 | (0.4+ | 1.6+) | 2004 03 31 | 704 | 0.3+ | 0.1+ | 2005 10 06 | G96 | 0.3− | 0.6+ | | |
| 2004 03 15 | 703 | 0.9− | 0.3+ | 2004 04 09 | E12 | 0.0 | 0.8+ | 2005 10 06 | G96 | 0.0 | 0.6+ | | |
| 2004 03 19 | 704 | (0.3+ | 1.6+) | 2004 04 09 | E12 | 0.4− | 0.7+ | 2006 10 19 | 695 | 0.2− | 0.3+ | | |
| 2004 03 19 | 704 | 0.2− | 0.2− | 2004 04 09 | E12 | 0.7− | 1.0+ | 2006 10 19 | 695 | 0.2− | 0.2+ | | |
| 2004 03 19 | 704 | 0.1+ | 1.2+ | 2004 04 09 | E12 | 0.5− | 1.1+ | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2004 03 19 | 704 | 0.2− | 0.5+ | 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.0 | | |
| 2004 03 19 | 704 | 0.1− | 0.0 | 2004 04 14 | 691 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2004 03 20 | 699 | 0.5+ | 0.9+ | 2004 04 14 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1+ | | |
| 2004 03 20 | 699 | 0.5− | 1.1+ | 2004 04 16 | 704 | 0.5+ | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2004 03 20 | 699 | 0.5− | 1.4+ | 2004 04 16 | 704 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.5− | 0.1− | | |
| 2004 03 20 | 699 | 0.4− | 0.5+ | 2004 04 16 | 704 | 0.5+ | 1.3+ | 2006 11 12 | G96 | 0.4− | 0.1− | | |
| 2004 03 22 | 704 | 0.4+ | 0.2+ | 2004 04 17 | 699 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 2004 03 22 | 704 | 0.4+ | 0.6+ | 2004 04 17 | 699 | 0.5− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.5+ | | |
| 2004 03 22 | 704 | 0.5+ | 0.8+ | 2004 04 17 | 699 | 0.2+ | 1.3+ | 2006 11 16 | 691 | 0.2+ | 0.5+ | | |
| 2004 03 22 | 704 | 0.3+ | 0.4+ | 2004 04 17 | 699 | 0.4− | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.5+ | | |
| 2004 03 22 | 704 | 0.1+ | 0.2+ | 2004 04 19 | 704 | 1.4+ | 1.3− | 2006 11 23 | 691 | 0.2− | 0.4+ | | |
| 2004 03 23 | 704 | 0.4+ | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.5− | 2006 11 23 | 691 | 0.2− | 0.6+ | | |
| 2004 03 23 | 704 | 0.2+ | 0.2+ | 2004 04 19 | 704 | 0.5+ | 0.8− | 2006 11 23 | 691 | 0.1+ | 0.6+ | | |
| 2004 03 23 | 704 | 1.2+ | 0.5+ | 2004 04 19 | 704 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.3+ | | |
| 2004 03 23 | 704 | 0.4+ | 1.4− | 2004 04 19 | 704 | 1.3+ | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.6+ | | |
| 2004 03 23 | 704 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.6− | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.8+ | | |
| 2004 03 25 | 699 | 0.1+ | 0.7+ | 2004 04 22 | 704 | 0.2− | 0.5+ | | | | | | |
| 2004 03 25 | 699 | 0.5− | 0.4+ | 2004 04 22 | 704 | 1.2+ | 0.1− | | | | | | |

**(144524)∗ 2004 ER$_{79}$**

Discovered 2004 Mar. 15 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.76706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22121567 | $\omega$ | 250.23493 | | −0.23281499 | −0.96336506 | |
| $a$ | 2.7076475 | $\Omega$ | 214.11835 | | +0.95726883 | −0.20285628 | |
| $e$ | 0.1038114 | $i$ | 13.73066 | | +0.17156213 | −0.17543403 | |
| $P$ | 4.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 17 | 704 | 0.0 | 0.3+ | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.5− | | |
| 1999 02 17 | 704 | 1.8− | 0.6+ | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.0 | | |
| 1999 02 17 | 704 | 0.7− | 0.7− | 2004 04 15 | 699 | 0.7− | 0.1− | 2006 10 17 | 703 | (3.6− | 5.2+) | | |
| 1999 02 17 | 704 | (5.0− | 0.4+) | 2004 04 15 | 699 | 0.5+ | 0.5+ | 2006 10 19 | 683 | 1.1+ | 0.9− | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 04 15 | 699 | 1.1− | 1.4+ | 2006 10 19 | 683 | 0.2+ | 0.0 | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 04 15 | 699 | 0.5− | 1.3+ | 2006 10 19 | 683 | 0.8+ | 0.3− | | |
| 2000 07 05 | 691 | 0.2− | 0.3− | 2004 04 17 | 704 | 0.0 | 0.2+ | 2006 10 20 | 683 | 0.2+ | 0.5+ | | |
| 2000 07 05 | 691 | 0.1− | 0.2+ | 2004 04 17 | 704 | 0.3− | 0.1− | 2006 10 20 | 683 | 1.1+ | 0.4+ | | |
| 2000 07 05 | 691 | 0.0 | 0.1+ | 2004 04 17 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2001 07 13 | 644 | (0.9+ | 2.3+) | 2004 04 17 | 704 | 0.1− | 0.0 | 2006 10 20 | 683 | 0.6+ | 0.8+ | | |
| 2001 07 13 | 644 | (1.4+ | 1.9+) | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2001 07 13 | 644 | (1.0+ | 1.9+) | 2004 04 19 | 691 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2001 08 09 | 644 | 0.5+ | 0.1+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.4+ | | |
| 2001 08 09 | 644 | 0.3+ | 0.0 | 2004 04 20 | 703 | (2.0+ | 0.5−) | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2001 08 09 | 644 | 0.7+ | 0.4+ | 2004 04 20 | 703 | 0.1+ | 1.2+ | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 2001 09 25 | 704 | 0.5− | 0.1+ | 2004 04 20 | 703 | (0.6+ | 2.2+) | 2006 10 21 | 644 | 0.3− | 0.5+ | | |
| 2001 09 25 | 704 | 0.3− | 0.4+ | 2004 04 20 | 703 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.6+ | 2004 04 20 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 2001 09 25 | 704 | (0.2+ | 1.5+) | 2004 04 20 | 704 | 0.2− | 0.4− | 2006 10 22 | 683 | 0.7+ | 0.0 | | |
| 2002 11 14 | 291 | 0.1− | 0.0 | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 683 | 0.3+ | 0.2− | | |
| 2002 11 14 | 291 | 0.1− | 0.0 | 2004 04 20 | 704 | 0.7+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1− | | |
| 2002 11 14 | 291 | 0.0 | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 2002 12 01 | 704 | 0.6+ | 0.2+ | 2004 04 22 | 704 | 0.0 | 1.2+ | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2002 12 01 | 704 | 0.4+ | 0.2+ | 2004 04 22 | 704 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1− | | |
| 2002 12 01 | 704 | 0.4− | 0.5+ | 2004 04 22 | 704 | 0.5− | 1.0+ | 2006 10 27 | 691 | 0.3− | 0.3− | | |
| 2002 12 14 | 704 | 1.3+ | 0.4+ | 2004 04 22 | 704 | 0.6− | 0.5− | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2002 12 14 | 704 | 0.3+ | 0.3− | 2004 05 09 | 691 | 0.1− | 0.4+ | 2006 10 29 | 704 | 1.1+ | 0.3+ | | |
| 2002 12 14 | 704 | 0.6+ | 0.2− | 2004 05 09 | 691 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.1+ | 0.1− | | |
| 2003 01 26 | 644 | 0.2− | 0.6+ | 2004 05 09 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 704 | 0.5+ | 0.1+ | | |
| 2003 01 26 | 644 | 0.4− | 0.3+ | 2004 05 11 | 699 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 644 | 0.1+ | 0.1− | 2004 05 11 | 699 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.6+ | | |
| 2003 02 04 | 644 | 0.1− | 0.0 | 2004 05 11 | 699 | 0.6+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 2003 02 04 | 644 | 0.5− | 0.2− | 2004 05 11 | 699 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 2003 02 04 | 644 | 0.1+ | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.0 | | |
| 2004 03 15 | 644 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.4+ | | |
| 2004 03 15 | 644 | 0.3+ | 0.5+ | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.2− | | |
| 2004 03 15 | 644 | 0.8+ | 0.7+ | 2006 09 16 | 703 | 0.1+ | 1.0− | 2006 11 11 | 703 | 1.1− | 0.6− | | |
| 2004 03 17 | 703 | (2.5+ | 1.3−) | 2006 09 20 | 699 | 0.1− | 0.3− | 2006 11 13 | 691 | 0.4− | 0.3+ | | |
| 2004 03 17 | 703 | (0.6+ | 1.5−) | 2006 09 20 | 699 | 0.5− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.2+ | | |
| 2004 03 17 | 703 | (2.1+ | 0.3−) | 2006 09 20 | 699 | 0.2+ | 1.0+ | 2006 11 13 | 691 | 0.2− | 0.3+ | | |
| 2004 03 17 | 703 | 0.7− | 0.6− | 2006 09 20 | 699 | 0.2− | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.5+ | | |
| 2004 03 19 | 704 | 1.2+ | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.1+ | 1.2+ | | |
| 2004 03 19 | 704 | 1.1+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.4− | 1.4+ | | |
| 2004 03 19 | 704 | 0.1− | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.3− | 0.9+ | | |
| 2004 03 19 | 704 | 1.5+ | 1.0+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.0 | | |
| 2004 03 19 | 704 | 0.6+ | 1.0+ | 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.6− | | |
| 2004 03 31 | 704 | 0.2− | 1.3− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.4− | 0.0 | | |
| 2004 03 31 | 704 | 1.1+ | 0.4+ | 2006 09 30 | 703 | 1.0− | 0.4+ | 2006 11 18 | 704 | 0.8− | 0.0 | | |
| 2004 03 31 | 704 | 0.9+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2004 03 31 | 704 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.5− | 0.3− | | |
| 2004 03 31 | 704 | 0.2− | 0.5+ | 2006 10 02 | 691 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.5− | 0.0 | | |
| 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.2+ | 2006 11 27 | G96 | 0.5− | 0.5+ | | |

**(144525)∗ 2004 EF$_{80}$ = 2003 BN$_{25}$**

Discovered 2004 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.73113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23782678 | $\omega$ | 224.54393 | | +0.98209253 | −0.06607586 | |
| $a$ | 2.5800545 | $\Omega$ | 138.27082 | | +0.10183433 | +0.97406603 | |
| $e$ | 0.1113164 | $i$ | 15.37099 | | −0.15850563 | +0.21640089 | |
| $P$ | 4.14 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.3− | 0.5+ | 2004 01 23 | 704 | 0.1− | 0.6+ | 2006 09 30 | 704 | (1.0+ | 1.6+) | | |
| 2000 03 29 | 704 | 0.1− | 0.3− | 2004 02 17 | 704 | 0.0 | 0.4+ | 2006 09 30 | 704 | 1.4− | 0.2+ | | |
| 2000 03 29 | 704 | 0.5+ | 0.2− | 2004 02 17 | 704 | 0.0 | 0.0 | 2006 10 01 | 704 | 1.4+ | 0.5+ | | |
| 2000 04 28 | 699 | 1.3− | 1.7+ | 2004 02 17 | 704 | 0.2− | 0.9+ | 2006 10 01 | 704 | 1.2+ | 0.2+ | | |
| 2000 04 28 | 699 | 0.5− | 0.2+ | 2004 02 17 | 704 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.2− | | |
| 2000 04 28 | 699 | 0.6− | 0.0 | 2004 02 17 | 704 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | | |
| 2000 04 28 | 699 | 1.0− | 0.9− | 2004 03 14 | 704 | 0.1+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.5+ | | |
| 2002 10 30 | 704 | (2.7+ | 1.3+) | 2004 03 14 | 704 | 0.4− | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2002 10 30 | 704 | 0.9+ | 0.8+ | 2004 03 14 | 704 | 0.6− | 0.4− | 2006 10 20 | 703 | 0.4− | 0.2− | | |
| 2002 10 30 | 704 | 0.9+ | 0.1− | 2004 03 19 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 703 | 0.3− | 0.4+ | | |
| 2002 11 06 | 644 | 0.3+ | 0.8− | 2004 03 19 | 644 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.1− | 0.3− | | |
| 2002 11 06 | 644 | 0.5+ | 0.8− | 2004 03 19 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.6− | | |
| 2002 11 06 | 644 | 0.7+ | 0.9− | 2004 03 23 | 704 | 0.7+ | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.5+ | | |
| 2002 11 12 | 699 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.6+ | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.4+ | | |
| 2002 11 12 | 699 | 0.8− | 0.5− | 2004 03 23 | 704 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.6− | 0.1− | | |
| 2002 11 12 | 699 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.3− | 2006 10 21 | 703 | 0.4− | 0.2− | | |
| 2002 11 12 | 699 | 0.2− | 0.0 | 2004 03 23 | 704 | 1.0+ | 0.5− | 2006 10 21 | 703 | 0.8− | 0.0 | | |
| 2002 11 16 | 644 | 0.2+ | 0.0 | 2004 03 25 | 704 | 0.5+ | 0.6− | 2006 10 21 | 703 | 0.3− | 0.3+ | | |
| 2002 11 16 | 644 | 0.3+ | 0.1+ | 2004 03 25 | 704 | 0.7+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.2− | | |
| 2002 11 16 | 644 | 0.4+ | 0.2− | 2004 03 25 | 704 | 0.4+ | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.2+ | | |
| 2002 11 30 | 704 | 0.7− | 0.2+ | 2004 03 25 | 704 | 0.2+ | 0.0 | 2006 10 31 | 703 | 0.3− | 0.4+ | | |
| 2002 11 30 | 704 | 0.7− | 0.6− | 2004 03 25 | 704 | (0.7+ | 1.7−) | 2006 10 31 | 703 | 0.5− | 0.0 | | |
| 2002 11 30 | 704 | 0.3+ | 0.4− | 2005 06 09 | 704 | 0.9+ | 0.4+ | 2006 10 31 | 703 | 0.3+ | 0.4+ | | |
| 2003 01 26 | 644 | 0.1− | 0.3+ | 2005 06 09 | 704 | 1.0− | 1.2+ | 2006 10 31 | 703 | 0.2− | 0.1− | | |
| 2003 01 26 | 644 | 0.1+ | 0.2− | 2005 06 09 | 704 | 0.3+ | 0.2+ | 2006 11 06 | 644 | 0.2+ | 0.1+ | | |
| 2003 01 26 | 644 | 0.1− | 0.1+ | 2005 06 09 | 704 | 0.8+ | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.1− | | |
| 2003 01 28 | 704 | 0.3− | 0.9− | 2006 09 28 | 703 | 0.3− | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.3+ | | |
| 2003 01 28 | 704 | 0.6+ | 0.0 | 2006 09 28 | 703 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.1+ | | |
| 2003 01 28 | 704 | 1.2+ | 0.6+ | 2006 09 28 | 703 | 0.5− | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.1+ | | |
| 2003 01 28 | 704 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.2+ | 2006 11 17 | 703 | (0.8− | 1.7+) | | |
| 2004 01 23 | 704 | 0.8− | 0.1− | 2006 09 30 | 704 | 0.0 | 0.1− | 2006 11 17 | 703 | (0.5+ | 2.0+) | | |
| 2004 01 23 | 704 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.3− | 0.4+ | | | | | | |
| 2004 01 23 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.5+ | 0.2− | | | | | | |

**(144526)∗ 2004 ER$_{80}$ = 2002 TX$_{245}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69693)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.24497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23425338 | $\omega$ | 346.06140 | | −0.22103707 | −0.97226496 | |
| $a$ | 2.6062264 | $\Omega$ | 116.66220 | | +0.90278482 | −0.23363235 | |
| $e$ | 0.0744940 | $i$ | 4.90696 | | +0.36894740 | −0.01080604 | |
| $P$ | 4.21 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.1− | 0.3+ | 2004 02 17 | 704 | 0.2+ | 1.0− | 2006 09 19 | 703 | 0.3− | 0.2− | | |
| 2000 03 29 | 704 | 0.0 | 0.2− | 2004 02 17 | 704 | 0.2+ | 0.4− | 2006 09 22 | 704 | 0.8+ | 0.1+ | | |
| 2000 03 29 | 704 | 0.3+ | 1.6+ | 2004 03 15 | 704 | 0.1− | 1.3+ | 2006 09 22 | 704 | 0.6+ | 0.9− | | |
| 2000 03 29 | 704 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 1.0+ | 1.1+ | 2006 09 22 | 704 | 0.5− | 0.3− | | |
| 2002 09 06 | 599 | 0.2− | 0.6+ | 2004 03 15 | 704 | 0.5+ | 0.1− | 2006 09 28 | 704 | 1.0+ | 0.5+ | | |
| 2002 09 06 | 599 | 0.1+ | 0.0 | 2004 03 15 | 704 | 1.2+ | 0.9+ | 2006 09 28 | 704 | 0.1+ | 0.9+ | | |
| 2002 09 06 | 599 | 0.2+ | 0.1− | 2004 03 19 | 644 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.7+ | | |
| 2002 09 06 | 599 | 0.4+ | 0.1+ | 2004 03 19 | 644 | 0.2+ | 0.1− | 2006 09 28 | 704 | (0.0 | 1.6+) | | |
| 2002 09 19 | 599 | 0.2+ | 0.1+ | 2004 03 19 | 644 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.7+ | 0.1+ | | |
| 2002 09 19 | 599 | 0.0 | 0.3+ | 2004 03 20 | 704 | 0.8− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2002 09 19 | 599 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.5− | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2002 10 09 | 699 | 0.1− | 0.8− | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.6− | 0.4− | | |
| 2002 10 09 | 699 | 0.0 | 1.0+ | 2004 03 20 | 704 | 0.6− | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.9+ | | |
| 2002 10 09 | 699 | 0.1− | 0.6+ | 2004 03 22 | 704 | 0.1− | 1.3− | 2006 09 30 | 703 | 0.5+ | 0.3+ | | |
| 2002 10 09 | 699 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.8− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.3− | | |
| 2002 10 11 | 644 | 0.1+ | 0.7− | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.0 | | |
| 2002 10 11 | 644 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 1.4− | 0.0 | | |
| 2002 10 11 | 644 | 0.1− | 0.3− | 2004 03 26 | 703 | (0.3+ | 2.3−) | 2006 10 16 | 703 | 0.6+ | 0.8+ | | |
| 2002 10 31 | 704 | 0.6− | 0.4− | 2004 03 26 | 703 | 0.6− | 1.1+ | 2006 10 16 | 703 | (2.3− | 0.1+) | | |
| 2002 10 31 | 704 | 0.8+ | 1.3− | 2004 03 26 | 703 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.1− | | |
| 2002 10 31 | 704 | 0.1+ | 0.8− | 2004 03 26 | 703 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.4+ | | |
| 2004 01 22 | 704 | 0.6− | 0.7+ | 2006 08 28 | 699 | 0.4− | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2004 01 22 | 704 | 0.8+ | 0.0 | 2006 08 28 | 699 | (2.0− | 1.7+) | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2004 01 22 | 704 | 0.3− | 0.4+ | 2006 08 28 | 699 | 1.0− | 0.7+ | 2006 10 21 | 644 | 0.6− | 0.0 | | |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 1.4+ | 1.2+ | 2006 10 21 | 644 | 0.6− | 0.1+ | | |
| 2004 02 17 | 704 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.4− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2004 02 17 | 704 | 1.4+ | 1.2− | 2006 09 19 | 703 | 0.0 | 0.7− | | | | | | |
| 2004 02 17 | 704 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.2+ | | | | | | |

**(144527)∗ 2004 EX$_{80}$ = 1995 GE$_{5}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.30556 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21515288 | $\omega$ | 188.10174 | | −0.54092844 | +0.83650758 | |
| $a$ | 2.7582774 | $\Omega$ | 49.20006 | | −0.76504292 | −0.44615530 | |
| $e$ | 0.2277069 | $i$ | 6.63550 | | −0.34943634 | −0.31812028 | |
| $P$ | 4.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 05 | 691 | 0.3+ | 0.2+ | 2004 03 23 | 704 | 0.8+ | 1.0+ | 2006 10 20 | 691 | 0.2+ | 0.2− | | |
| 1995 04 05 | 691 | 0.2− | 0.2− | 2004 03 23 | 704 | 0.9+ | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.0 | | |
| 1995 04 05 | 691 | 0.2− | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 10 27 | G96 | (1.9+ | 0.2−) | | |
| 1995 04 08 | 691 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.3− | 1.2+ | 2006 10 27 | G96 | 0.5− | 0.0 | | |
| 1995 04 08 | 691 | 0.1+ | 0.1− | 2004 03 26 | 703 | 0.2− | 0.9+ | 2006 10 27 | G96 | 0.5+ | 0.1− | | |
| 1995 04 08 | 691 | 0.3− | 0.0 | 2004 03 26 | 703 | 0.5+ | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.3+ | | |
| 2001 10 20 | 704 | 0.6+ | 1.2+ | 2004 03 26 | 703 | (1.0+ | 1.7+) | 2006 10 28 | 691 | 0.3− | 0.4+ | | |
| 2001 10 20 | 704 | 0.3− | 0.5+ | 2004 03 26 | 703 | 0.9+ | 1.0+ | 2006 10 28 | 691 | 0.1− | 0.6+ | | |
| 2001 10 20 | 704 | 0.1− | 1.0+ | 2004 04 13 | 703 | 0.2− | 0.7+ | 2006 11 01 | 691 | 0.3+ | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2004 04 13 | 703 | 0.9+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 20 | 704 | 0.7− | 0.7+ | 2004 04 13 | 703 | 0.4+ | 1.0+ | 2006 11 01 | 691 | 0.4− | 0.2+ | | |
| 2004 02 17 | 704 | 0.1+ | 0.3+ | 2004 04 13 | 703 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 1.0− | | |
| 2004 02 17 | 704 | 0.5− | 0.1− | 2005 08 04 | 644 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.9− | 1.2− | | |
| 2004 02 17 | 704 | 0.3+ | 1.0+ | 2005 08 04 | 644 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.5− | | |
| 2004 02 17 | 704 | 0.4+ | 1.2+ | 2005 08 04 | 644 | 0.4− | 0.4+ | 2006 11 11 | G96 | 1.0+ | 0.2− | | |
| 2004 02 17 | 704 | 0.2+ | 0.3+ | 2005 08 04 | 644 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.2− | 0.1− | | |
| 2004 02 17 | 703 | 0.6− | 1.0− | 2005 08 04 | 644 | 0.2− | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.2− | | |
| 2004 02 17 | 703 | 0.7− | 0.2− | 2005 08 04 | 644 | 0.2− | 0.5+ | 2006 11 12 | G96 | 0.2+ | 0.4− | | |
| 2004 02 17 | 703 | 0.4− | 0.8+ | 2005 09 01 | 644 | 0.5− | 0.8+ | 2006 11 12 | G96 | 0.3− | 0.5− | | |
| 2004 02 17 | 703 | 0.6− | 0.3+ | 2005 09 01 | 644 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.2− | | |
| 2004 02 27 | 704 | 0.2− | 0.1− | 2005 09 01 | 644 | 0.5− | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.6− | | |
| 2004 02 27 | 704 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.3− | | |
| 2004 02 27 | 704 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.5− | 0.2− | | |
| 2004 02 27 | 704 | 0.6+ | 0.7− | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 21 | G96 | 0.1− | 0.0 | | |
| 2004 03 15 | 704 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.4+ | 0.3+ | | |
| 2004 03 15 | 704 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.0 | | |
| 2004 03 15 | 704 | 0.3+ | 0.3− | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.1− | | |
| 2004 03 15 | 704 | 0.5+ | 0.7− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.5+ | 0.3− | | |
| 2004 03 15 | 704 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.1− | | |
| 2004 03 19 | 644 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.4− | | |
| 2004 03 19 | 644 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.0 | | |
| 2004 03 19 | 644 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− | | | | | | |
| 2004 03 23 | 704 | 1.0+ | 0.9+ | 2006 10 20 | 691 | 0.1+ | 0.2− | | | | | | |

**(144528)∗ 2004 EF$_{81}$ = 2001 RC$_{63}$ = 2003 BT$_{87}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62062)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.91100 | | (2000.0) | | | |
| $n$ | 0.19000918 | $\omega$ | 139.60645 | | −0.08321148 | +0.98296781 |
| $a$ | 2.9965371 | $\Omega$ | 125.00318 | | −0.95809700 | −0.03368743 |
| $e$ | 0.0161900 | $i$ | 11.53953 | | −0.27409119 | −0.18066388 |
| $P$ | 5.19 | $H$ | 13.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 0.6+ | 2003 12 23 | 704 | 0.4− | 0.7+ | 2004 03 29 | 704 | 0.5+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.6− | 0.4+ | 2003 12 23 | 704 | 0.7+ | 0.6− | 2004 03 29 | 704 | 0.6+ | 0.7+ | | |
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2003 12 23 | 704 | 0.3+ | 0.9+ | 2004 03 29 | 704 | 0.5+ | 1.3+ | | |
| 2001 09 16 | 704 | 0.3+ | 0.3− | 2003 12 23 | 704 | 0.3+ | 0.1− | 2004 03 29 | 704 | 0.3+ | 1.1+ | | |
| 2001 09 16 | 704 | 0.3− | 0.1+ | 2003 12 28 | 704 | 0.5+ | 0.9+ | 2004 03 30 | 704 | 0.8+ | 0.6+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.7+ | 2003 12 28 | 704 | 0.1− | 0.5+ | 2004 03 30 | 704 | 0.0 | 0.7+ | | |
| 2001 09 16 | 704 | 0.1− | 0.6+ | 2003 12 28 | 704 | 1.3+ | 0.5+ | 2004 03 30 | 704 | 0.7+ | 1.0+ | | |
| 2001 09 16 | 704 | 0.6− | 0.6+ | 2004 01 27 | 703 | 0.1− | 0.1− | 2004 03 30 | 704 | 0.1− | 0.7+ | | |
| 2001 10 11 | 704 | 0.1− | 0.8+ | 2004 01 27 | 703 | 0.9− | 0.2− | 2004 03 30 | 704 | 0.3+ | 0.5+ | | |
| 2001 10 11 | 704 | 0.3− | 0.9+ | 2004 01 27 | 703 | 0.2+ | 0.9− | 2004 04 15 | 704 | 0.5+ | 0.3+ | | |
| 2001 10 11 | 704 | 0.1− | 1.3+ | 2004 01 27 | 703 | 0.4− | 1.1− | 2004 04 15 | 704 | 0.2− | 0.2− | | |
| 2001 10 11 | 704 | 0.5− | 0.5+ | 2004 02 18 | 704 | 0.4+ | 0.5+ | 2004 04 15 | 704 | 0.2− | 0.0 | | |
| 2001 10 11 | 704 | 0.4− | 0.0 | 2004 02 18 | 704 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.2− | 0.4+ | | |
| 2001 10 23 | 644 | 0.6− | 0.8+ | 2004 02 18 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 704 | 0.7− | 0.4+ | | |
| 2001 10 23 | 644 | 0.3− | 0.9+ | 2004 02 18 | 704 | 0.6− | 0.4+ | 2004 04 24 | 704 | (0.0 | 1.6−) | | |
| 2001 10 23 | 644 | 0.8− | 0.9+ | 2004 02 18 | 704 | 0.0 | 0.3+ | 2004 04 24 | 704 | 0.5− | 0.1+ | | |
| 2001 11 07 | 644 | 0.2+ | 1.1+ | 2004 03 15 | 704 | 1.2+ | 0.0 | 2004 04 24 | 704 | 0.0 | 0.0 | | |
| 2001 11 07 | 644 | 0.2+ | 0.9+ | 2004 03 15 | 704 | 0.9+ | 0.3+ | 2004 04 24 | 704 | 0.2+ | 1.0+ | | |
| 2001 11 07 | 644 | 0.2− | 0.9+ | 2004 03 15 | 704 | 0.3+ | 1.4+ | 2004 04 24 | 704 | 0.1+ | 0.6+ | | |
| 2002 01 12 | 704 | 0.5− | 0.4− | 2004 03 15 | 704 | 0.2− | 0.2+ | 2006 09 17 | 699 | 0.4− | 0.4− | | |
| 2002 01 12 | 704 | (0.6+ | 1.6+) | 2004 03 15 | 704 | 0.2− | 0.3+ | 2006 09 17 | 699 | 0.7− | 0.6+ | | |
| 2002 01 12 | 704 | 0.7− | 0.3− | 2004 03 16 | 184 | (4.4+ | 2.4−) | 2006 09 17 | 699 | 0.8− | 0.5+ | | |
| 2002 01 12 | 704 | 0.7+ | 0.8+ | 2004 03 16 | 184 | (4.1+ | 4.8−) | 2006 09 17 | 699 | 0.4− | 0.6+ | | |
| 2003 01 07 | 704 | 0.2+ | 1.1− | 2004 03 17 | 184 | (5.9+ | 3.3−) | 2006 09 19 | 703 | 0.0 | 0.0 | | |
| 2003 01 07 | 704 | 0.8+ | 1.1− | 2004 03 19 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.2+ | | |
| 2003 01 07 | 704 | 0.7+ | 1.6− | 2004 03 19 | 644 | 0.1+ | 0.7+ | 2006 09 19 | 703 | 0.1− | 0.4+ | | |
| 2003 01 07 | 704 | 0.1− | 1.3− | 2004 03 19 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.0 | | |
| 2003 01 07 | 704 | (0.4− | 2.0−) | 2004 03 23 | 704 | 0.2− | 0.6+ | 2006 09 26 | 703 | 0.6+ | 1.2+ | | |
| 2003 01 27 | 704 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.2+ | 1.2+ | | |
| 2003 01 27 | 704 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.1− | 1.2+ | | |
| 2003 01 27 | 704 | 0.4− | 0.3+ | 2004 03 23 | 704 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.9+ | | |
| 2003 01 27 | 704 | 0.1+ | 0.6+ | 2004 03 23 | 704 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2003 01 27 | 704 | 0.0 | 1.1+ | 2004 03 25 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.6+ | | |
| 2003 02 02 | 704 | 0.3+ | 0.6− | 2004 03 25 | 704 | 0.3− | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 2003 02 02 | 704 | 0.6+ | 0.5+ | 2004 03 25 | 704 | 0.2− | 0.5+ | | | | | | |
| 2003 02 02 | 704 | 0.4+ | 0.3− | 2004 03 29 | 704 | 0.7+ | 0.9+ | | | | | | |

**(144529)∗ 2004 EH$_{81}$ = 1998 EC$_{19}$ = 2000 QP$_{231}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62062), A. Doppler (*MPO* 95187)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.01545 | | (2000.0) | | | |
| $n$ | 0.17607922 | $\omega$ | 112.49063 | | −0.04287469 | +0.98381991 |
| $a$ | 3.1525645 | $\Omega$ | 153.20075 | | −0.99810266 | −0.03447711 |
| $e$ | 0.0375408 | $i$ | 22.69484 | | −0.04419091 | −0.17581158 |
| $P$ | 5.60 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 809 | 0.5+ | 0.1+ | 2004 03 15 | 704 | 0.6− | 1.3+ | 2005 07 29 | 644 | 0.1− | 0.2− | | |
| 1998 03 03 | 809 | 0.7− | 1.3+ | 2004 03 15 | 704 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.3− | | |
| 1998 03 03 | 809 | (0.3− | 2.8+) | 2004 03 15 | 704 | 0.5− | 0.5+ | 2005 07 29 | 644 | 0.0 | 0.4− | | |
| 1998 03 04 | 809 | 0.9+ | 0.1− | 2004 03 15 | 704 | 0.4+ | 0.5+ | 2006 08 17 | 644 | 0.5+ | 0.4+ | | |
| 1998 03 04 | 809 | 0.1+ | 0.7+ | 2004 03 15 | 704 | 0.3+ | 0.3− | 2006 08 17 | 644 | 0.8+ | 0.6+ | | |
| 1998 03 04 | 809 | 0.0 | 1.3− | 2004 03 19 | 644 | 0.3− | 0.3+ | 2006 08 17 | 644 | 0.6+ | 0.4+ | | |
| 1999 05 14 | 704 | 1.6− | 0.4+ | 2004 03 19 | 644 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.4− | | |
| 1999 05 14 | 704 | 0.7+ | 0.2− | 2004 03 19 | 644 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.4+ | | |
| 1999 05 14 | 704 | (0.2+ | 2.2−) | 2004 03 24 | 703 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.2− | | |
| 1999 05 14 | 704 | 0.4+ | 1.9− | 2004 03 24 | 703 | 0.3− | 0.3− | 2006 09 14 | 703 | 1.3− | 0.7+ | | |
| 2000 08 29 | 704 | 0.2+ | 0.4+ | 2004 03 24 | 703 | 0.0 | 0.7+ | 2006 09 20 | 703 | 0.5+ | 0.4+ | | |
| 2000 08 29 | 704 | 0.8+ | 0.4− | 2004 03 24 | 703 | 1.0− | 0.1− | 2006 09 20 | 703 | 0.3− | 0.9+ | | |
| 2000 08 29 | 704 | (2.1+ | 2.1+) | 2004 03 25 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 703 | 0.0 | 0.4+ | | |
| 2000 09 03 | 704 | 0.3− | 0.6+ | 2004 03 25 | 704 | 0.1− | 0.4+ | 2006 09 20 | 703 | 0.7− | 0.9+ | | |
| 2000 09 03 | 704 | 0.0 | 1.6+ | 2004 03 25 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 703 | (2.5+ | 0.3−) | | |
| 2000 09 03 | 704 | 0.1+ | 0.8+ | 2004 03 25 | 704 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.2+ | 0.4+ | | |
| 2000 09 03 | 704 | 1.1− | 1.0+ | 2004 03 30 | 703 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.3+ | 1.3+ | | |
| 2004 02 18 | 704 | 1.0− | 0.0 | 2004 03 30 | 703 | 1.3+ | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.3− | | |
| 2004 02 18 | 704 | 0.9− | 0.1+ | 2004 03 30 | 703 | 0.2+ | 0.5− | 2006 10 02 | 703 | 0.1− | 1.0− | | |
| 2004 02 18 | 704 | (2.5− | 0.7−) | 2004 03 30 | 703 | 1.2+ | 0.8+ | 2006 10 02 | 703 | 0.7+ | 0.4+ | | |
| 2004 02 27 | 704 | 0.5+ | 1.2+ | 2005 07 04 | 644 | 0.2+ | 0.6− | 2006 10 02 | 703 | 0.6− | 0.5+ | | |
| 2004 02 27 | 704 | 0.2+ | 0.3+ | 2005 07 04 | 644 | 0.2− | 0.3− | 2006 10 02 | 703 | 0.0 | 0.2− | | |
| 2004 02 27 | 704 | 0.7+ | 1.2+ | 2005 07 04 | 644 | 0.1+ | 0.3− | | | | | | |

**(144530)∗ 2004 EG$_{82}$ = 1994 LB$_{5}$**

Discovered 2004 Mar. 15 by W. K. Y. Yeung at Desert Eagle Observatory.

Id. G. V. Williams (*MPO* 62062)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.12953 | | (2000.0) | | | |
| $n$ | 0.18596616 | $\omega$ | 173.69371 | | −0.17026412 | +0.98350080 |
| $a$ | 3.0398123 | $\Omega$ | 86.49115 | | −0.90674013 | −0.13208580 |
| $e$ | 0.1663381 | $i$ | 3.51100 | | −0.38578812 | −0.12361033 |
| $P$ | 5.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 03 | 809 | 0.1+ | 1.2+ | 2004 03 20 | 691 | 0.1− | 0.4+ | 2005 07 02 | 691 | 0.1+ | 0.1+ | | |
| 1994 06 03 | 809 | 0.7− | 0.5+ | 2004 03 20 | 691 | 0.0 | 0.3+ | 2005 07 02 | 691 | 0.0 | 0.3+ | | |
| 1994 06 03 | 809 | 0.7− | 1.3+ | 2004 03 20 | 704 | 0.9+ | 0.2− | 2005 07 02 | 691 | 0.1+ | 0.0 | | |
| 1994 06 04 | 809 | 1.4+ | 1.6+ | 2004 03 20 | 704 | 0.2− | 0.3+ | 2005 07 07 | 691 | 0.1− | 0.1+ | | |
| 1994 06 04 | 809 | (0.5+ | 2.2+) | 2004 03 20 | 704 | 0.9+ | 0.2+ | 2005 07 07 | 691 | 0.2− | 0.2+ | | |
| 1994 06 04 | 809 | (1.5+ | 2.5+) | 2004 03 20 | 704 | 0.1+ | 0.0 | 2005 07 07 | 691 | 0.1− | 0.0 | | |
| 2000 08 29 | 704 | 0.6+ | 1.3+ | 2004 03 20 | 704 | 0.6+ | 0.1− | 2005 08 02 | 704 | 0.9− | 0.5+ | | |
| 2000 08 29 | 704 | 0.0 | 0.9+ | 2004 03 22 | 704 | 0.4+ | 0.4+ | 2005 08 02 | 704 | 0.9− | 0.5+ | | |
| 2000 08 29 | 704 | 0.4+ | 1.0+ | 2004 03 22 | 704 | 0.0 | 0.8+ | 2005 08 02 | 704 | 1.2+ | 0.1− | | |
| 2001 10 09 | 691 | 0.3− | 0.3+ | 2004 03 22 | 704 | 0.2− | 0.3+ | 2005 08 02 | 704 | 0.6− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 09 | 691 | 0.2+ | 0.4+ | 2004 03 22 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.6− |
| 2001 10 09 | 691 | 0.3− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.4− | 2006 09 30 | 703 | 1.4− | 0.5+ |
| 2001 10 24 | 704 | 0.2− | 1.0+ | 2004 03 22 | 704 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.3− | 1.4− |
| 2001 10 24 | 704 | 0.7+ | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 2004 02 23 | 704 | 0.2− | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.8+ | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2004 02 23 | 704 | 0.2− | 0.5+ | 2004 03 22 | 704 | 0.1+ | 0.7− | 2006 10 21 | G96 | 0.5+ | 0.1+ |
| 2004 02 23 | 704 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.1+ |
| 2004 02 23 | 704 | 0.2+ | 0.9+ | 2004 03 23 | 704 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2004 02 23 | 704 | 0.8+ | 1.3+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.7+ |
| 2004 02 23 | 704 | 0.1− | 0.8+ | 2004 03 23 | 704 | 0.6+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.5+ |
| 2004 02 23 | 704 | 0.8+ | 0.5+ | 2004 03 23 | 704 | 0.5+ | 1.1− | 2006 11 01 | 691 | 0.3− | 0.9+ |
| 2004 02 23 | 704 | 0.5− | 1.2+ | 2004 03 25 | 704 | 0.5+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 2004 02 23 | 704 | 0.1− | 0.5+ | 2004 03 25 | 704 | 0.7+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2004 02 23 | 704 | 0.6− | 0.5+ | 2004 03 25 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2004 03 15 | 333 | 0.0 | 0.2+ | 2004 04 15 | 704 | 0.1+ | 1.1+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 03 15 | 333 | 0.0 | 0.1− | 2004 04 15 | 704 | 1.1+ | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2004 03 15 | 333 | 0.6− | 0.1− | 2004 04 15 | 704 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2004 03 20 | 691 | 0.2− | 0.4+ | 2004 04 15 | 704 | 0.0 | 0.8+ | | | | |

**(144531)∗ 2004 EN$_{82}$ = 2005 NM$_{67}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. T. B. Spahr (*MPO* 86377)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.22591 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23149883 | $\omega$ | 214.80139 | | +0.98290333 | +0.09778023 | |
| $a$ | 2.6268595 | $\Omega$ | 138.70227 | | −0.06128668 | +0.97276188 | |
| $e$ | 0.1727327 | $i$ | 13.67378 | | −0.17362314 | +0.21017455 | |
| $P$ | 4.26 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 327 | 1.0+ | 0.6− | 2004 03 23 | 704 | 0.3+ | 1.2+ | 2006 09 20 | 699 | 1.1− | 0.2− |
| 1996 04 13 | 327 | 0.1+ | 0.6− | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 1996 04 13 | 327 | 0.2− | 0.3+ | 2004 03 25 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.2− |
| 2001 06 19 | 608 | 0.3− | 0.6+ | 2004 03 25 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.3− |
| 2001 06 19 | 608 | 0.2− | 0.9+ | 2004 03 25 | 704 | 0.2− | 1.3+ | 2006 09 30 | 703 | 1.4− | 0.3− |
| 2001 06 19 | 608 | 0.4− | 0.4+ | 2004 03 25 | 704 | 0.4+ | 0.7− | 2006 10 01 | 704 | 0.5+ | 0.9− |
| 2002 12 14 | 704 | 0.6− | 0.6− | 2004 03 26 | 703 | 0.2+ | 1.1+ | 2006 10 01 | 704 | 1.3+ | 1.1− |
| 2002 12 14 | 704 | 0.7+ | 1.0− | 2004 03 26 | 703 | 0.7+ | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.9− |
| 2002 12 14 | 704 | 0.1− | 0.2− | 2004 03 26 | 703 | 0.2+ | 1.3− | 2006 10 01 | 704 | (1.0+ | 1.8−) |
| 2003 01 28 | 704 | 0.3− | 1.0+ | 2004 03 26 | 703 | 0.3+ | 1.4− | 2006 10 20 | 703 | 0.1− | 0.5+ |
| 2003 01 28 | 704 | 0.4+ | 0.8+ | 2004 03 27 | 691 | 0.5− | 0.1+ | 2006 10 20 | 703 | 0.7+ | 0.4+ |
| 2003 01 28 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 691 | 0.3− | 0.1+ | 2006 10 20 | 703 | 0.4+ | 0.1+ |
| 2003 01 28 | 704 | (1.6− | 1.1+) | 2004 03 27 | 691 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.0 | 0.6+ |
| 2003 01 28 | 704 | 1.1− | 1.2+ | 2005 06 09 | 703 | 0.4+ | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2005 06 09 | 703 | 0.5+ | 0.9+ | 2006 10 28 | 703 | 0.6− | 0.2+ |
| 2003 12 19 | 691 | 0.2− | 0.2− | 2005 06 09 | 703 | 0.9− | 1.0+ | 2006 10 28 | 703 | 0.2+ | 0.1− |
| 2003 12 19 | 691 | 0.5+ | 0.1+ | 2005 06 09 | 703 | 0.1− | 1.3+ | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2005 07 03 | 644 | 0.0 | 0.1+ | 2006 11 10 | 704 | 0.6+ | 0.8+ |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2005 07 03 | 644 | 0.3+ | 0.2+ | 2006 11 10 | 704 | 0.4− | 0.5+ |
| 2004 03 15 | 691 | 0.0 | 0.6+ | 2005 07 03 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.2+ | 0.3+ |
| 2004 03 19 | 644 | 0.2+ | 0.2− | 2005 07 11 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 704 | 0.2− | 0.0 |
| 2004 03 19 | 644 | 0.3+ | 0.0 | 2005 07 11 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 703 | 0.6+ | 0.9+ |
| 2004 03 19 | 644 | 0.5+ | 0.3− | 2005 07 11 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.6+ | 0.5+ |
| 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.2− | 1.2+ | 2006 11 16 | 703 | 0.4− | 1.1+ |
| 2004 03 23 | 704 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.3+ | 0.8+ |
| 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.8+ | 2006 11 22 | 704 | 2.2− | 0.5− |
| 2004 03 23 | 704 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.5+ | 1.0+ | 2006 11 22 | 704 | 1.3− | 0.7+ |
| 2004 03 23 | 704 | 0.1+ | 0.2− | 2006 09 20 | 699 | 0.5+ | 0.5+ | 2006 11 22 | 704 | 2.8+ | 0.8+ |
| 2004 03 23 | 704 | 0.5− | 0.3− | 2006 09 20 | 699 | 1.3− | 0.7+ | 2006 11 22 | 704 | 0.3− | 1.9+ |
| 2004 03 23 | 704 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.5− | 0.7+ | 2006 11 22 | 704 | 0.1− | 0.6+ |

**(144532)∗ 2004 EX$_{82}$ = 2000 SV$_{349}$**

Discovered 2004 Mar. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69694)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.95467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18545602 | $\omega$ | 288.16478 | | +0.75849159 | +0.63241173 | |
| $a$ | 3.0453842 | $\Omega$ | 33.13812 | | −0.43397501 | +0.67024447 | |
| $e$ | 0.2090333 | $i$ | 16.72409 | | −0.48616479 | +0.38836548 | |
| $P$ | 5.31 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 25 | 691 | 0.4− | 0.0 | 2004 04 11 | 644 | 0.0 | 0.3+ | 2005 07 27 | E12 | 0.2+ | 0.1+ |
| 1995 11 25 | 691 | 0.3− | 0.0 | 2004 04 11 | 644 | 0.1− | 0.3+ | 2005 07 27 | E12 | 0.2+ | 0.3− |
| 1995 11 25 | 691 | 0.5− | 0.0 | 2004 04 11 | 644 | 0.1+ | 0.3+ | 2005 07 27 | E12 | 0.2− | 0.6+ |
| 2000 08 26 | 704 | 0.3+ | 0.7− | 2004 04 11 | 644 | 0.1+ | 0.4+ | 2005 08 09 | E12 | 0.5+ | 0.8− |
| 2000 08 26 | 704 | 0.3+ | 0.2− | 2004 04 20 | 704 | 0.7+ | 0.8+ | 2005 08 09 | E12 | 0.1− | 0.2− |
| 2000 08 26 | 704 | 0.4+ | 0.0 | 2004 04 20 | 704 | 0.4− | 0.7+ | 2005 08 09 | E12 | 0.2+ | 0.3− |
| 2000 08 26 | 704 | 0.5+ | 0.4− | 2004 04 20 | 704 | (1.5+ | 0.2−) | 2005 08 25 | E12 | 0.1− | 0.4+ |
| 2000 08 26 | 704 | 0.3+ | 0.9+ | 2004 04 20 | 704 | 0.5+ | 0.9+ | 2005 08 25 | E12 | 0.2+ | 0.2− |
| 2000 09 20 | 704 | 0.2− | 0.1− | 2004 04 26 | 691 | 0.5+ | 0.2+ | 2005 08 25 | E12 | 0.2− | 0.3+ |
| 2000 09 20 | 704 | 0.4+ | 1.3+ | 2004 04 26 | 691 | 0.2+ | 0.0 | 2005 08 25 | E12 | 0.5+ | 0.1+ |
| 2000 09 20 | 704 | 0.5− | 0.5+ | 2004 04 26 | 691 | 0.6+ | 0.2+ | 2005 09 23 | E12 | 0.3+ | 0.0 |
| 2000 09 20 | 704 | 0.0 | 0.7+ | 2005 06 08 | I10 | (0.4− | 1.6+) | 2005 09 23 | E12 | 0.0 | 0.3− |
| 2000 09 29 | 699 | 0.5− | 0.7+ | 2005 06 08 | I10 | (1.3− | 3.9+) | 2005 09 23 | E12 | 0.1+ | 0.1− |
| 2000 09 29 | 699 | 0.4+ | 1.0+ | 2005 06 08 | I10 | 1.0− | 0.3+ | 2005 09 23 | E12 | 0.1+ | 0.5− |
| 2000 09 29 | 699 | 1.3− | 0.4+ | 2005 06 08 | I10 | (1.0− | 3.0+) | 2006 10 19 | 703 | 0.6− | 0.0 |
| 2000 09 29 | 699 | 0.1+ | 0.9+ | 2005 06 08 | I10 | (0.6− | 2.3+) | 2006 10 19 | 703 | 1.2+ | 0.5− |
| 2000 09 30 | 699 | 0.2− | 1.0+ | 2005 06 08 | I10 | 1.4− | 1.3+ | 2006 10 19 | 703 | 0.9− | 0.1− |
| 2000 09 30 | 699 | 0.4+ | 0.9+ | 2005 06 08 | I10 | (0.2− | 2.3+) | 2006 10 19 | 703 | 0.8+ | 0.7− |
| 2000 09 30 | 699 | 0.2− | 0.6+ | 2005 06 08 | I10 | (1.6− | 2.5+) | 2006 10 27 | 703 | 0.2+ | 0.9+ |
| 2000 09 30 | 699 | 0.2+ | 1.1+ | 2005 06 08 | E12 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.1+ |
| 2003 03 07 | 645 | 0.1+ | 0.1+ | 2005 06 08 | E12 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.1+ |
| 2003 03 07 | 645 | 0.1+ | 0.1+ | 2005 06 08 | E12 | 0.5+ | 0.7− | 2006 10 27 | 703 | 1.3− | 0.5+ |
| 2004 03 13 | 644 | 0.3+ | 0.2+ | 2005 06 08 | E12 | 0.3− | 0.4+ | 2006 11 02 | 703 | 0.3− | 1.4+ |
| 2004 03 13 | 644 | 0.1+ | 0.8+ | 2005 06 09 | I10 | 0.8− | 0.6+ | 2006 11 02 | 703 | (0.1+ | 1.6+) |
| 2004 03 13 | 644 | 0.2+ | 0.4+ | 2005 06 09 | I10 | 0.6− | 0.4+ | 2006 11 02 | 703 | 0.4− | 1.2+ |
| 2004 03 20 | 704 | 0.0 | 0.1+ | 2005 06 09 | I10 | 0.5+ | 0.7− | 2006 11 02 | 703 | 1.0+ | 0.4− |
| 2004 03 20 | 704 | 0.8+ | 0.6+ | 2005 06 09 | I10 | (0.8− | 1.7+) | 2006 11 15 | 703 | 0.3− | 0.5+ |
| 2004 03 20 | 704 | 0.6− | 0.5+ | 2005 06 09 | I10 | 0.7− | 1.2+ | 2006 11 15 | 703 | 0.7− | 0.3− |
| 2004 03 20 | 704 | 0.9− | 0.3+ | 2005 06 09 | I10 | 0.3− | 0.4+ | 2006 11 15 | 703 | 1.2− | 0.8− |
| 2004 04 09 | E12 | 0.7+ | 0.1− | 2005 06 09 | I10 | 1.5− | 0.2− | 2006 11 15 | 703 | 0.7− | 0.2− |
| 2004 04 09 | E12 | 0.2− | 0.0 | 2005 06 09 | I10 | 0.3− | 0.1+ | 2006 11 21 | 703 | 0.9+ | 0.4+ |
| 2004 04 09 | E12 | 0.0 | 0.0 | 2005 07 03 | E12 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.7− | 0.8+ |
| 2004 04 09 | E12 | 0.1+ | 0.2− | 2005 07 03 | E12 | 0.8+ | 0.4− | 2006 11 21 | 703 | 0.1− | 0.7+ |
| 2004 04 11 | 644 | 0.1+ | 0.0 | 2005 07 03 | E12 | 0.8− | 0.5+ | 2006 11 21 | 703 | 0.1+ | 0.4+ |
| 2004 04 11 | 644 | 0.2+ | 0.1+ | 2005 07 03 | E12 | 0.1+ | 0.0 | | | | |

**(144533)∗ 2004 EB$_{83}$**

Discovered 2004 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.56614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23451642 | $\omega$ | 189.85476 | | −0.62658418 | +0.77785769 | |
| $a$ | 2.6042773 | $\Omega$ | 41.36888 | | −0.70997912 | −0.54416943 | |
| $e$ | 0.1226804 | $i$ | 4.18813 | | −0.32143726 | −0.31435180 | |
| $P$ | 4.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.7+ | 0.4+ | 2004 03 20 | 704 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.4+ |
| 2000 03 12 | 704 | 0.8− | 1.7+ | 2004 03 20 | 704 | (1.6+ | 1.4+) | 2006 10 19 | 691 | 0.3+ | 0.5+ |
| 2000 03 12 | 704 | 0.0 | 0.3+ | 2005 07 10 | E12 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2000 04 07 | 699 | 0.1− | 0.8+ | 2005 07 10 | E12 | 0.7+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2000 04 07 | 699 | 1.6+ | 0.0 | 2005 07 10 | E12 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2000 04 07 | 699 | 1.1+ | 0.2+ | 2005 07 10 | E12 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2000 04 07 | 699 | 1.1+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 08 23 | 608 | 0.7− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2001 08 23 | 608 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2001 08 23 | 608 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2003 12 25 | 645 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.8− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 645 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.7− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 09 30 | G96 | 0.7− | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 02 11 | 644 | 0.2− | 0.9+ | 2006 09 30 | G96 | 0.6− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2004 02 11 | 644 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2004 02 17 | 608 | 0.5+ | 0.3− | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2004 02 17 | 608 | 0.2+ | 0.8− | 2006 10 04 | G96 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.1+ |
| 2004 02 17 | 608 | 0.2+ | 1.0− | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.4− | 0.3− |
| 2004 03 14 | 704 | 0.5− | 0.7− | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2004 03 14 | 704 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2004 03 14 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 03 14 | 704 | 0.3− | 0.7+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.6+ | 0.2− |
| 2004 03 14 | 704 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.2− | | | | |
| 2004 03 20 | 704 | 0.0 | 1.0+ | 2006 10 15 | 691 | 0.2− | 0.4+ | | | | |

**(144534)∗ 2004 EM$_{83}$ = 2002 TL$_{75}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62063)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.62835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28675437 | $\omega$ | 312.31408 | | +0.41109894 | −0.90707401 | |
| $a$ | 2.2775225 | $\Omega$ | 113.20366 | | +0.86269347 | +0.35499524 | |
| $e$ | 0.1388901 | $i$ | 5.65913 | | +0.29454649 | +0.22626340 | |
| $P$ | 3.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.6− | 0.8+ | 2004 03 20 | 704 | 0.6+ | 0.5− | 2005 06 13 | G96 | 0.2+ | 0.1+ |
| 2000 01 05 | 704 | 0.6+ | 1.0+ | 2004 03 20 | 704 | 0.5+ | 0.1− | 2005 06 13 | G96 | 0.3− | 0.4+ |
| 2000 01 05 | 704 | 2.0− | 1.1− | 2004 03 20 | 704 | 0.7+ | 0.3+ | 2005 06 17 | G96 | 0.4− | 0.3− |
| 2002 09 14 | 608 | 0.7− | 0.7+ | 2004 03 20 | 704 | 0.1+ | 0.5− | 2005 06 17 | G96 | 0.7− | 0.2− |
| 2002 09 14 | 608 | 0.6− | 0.6+ | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2005 06 17 | G96 | 0.4− | 0.3− |
| 2002 09 14 | 608 | 0.4− | 0.1− | 2004 03 21 | 691 | 0.4− | 0.3+ | 2005 06 17 | G96 | 0.6− | 0.4− |
| 2002 10 01 | 699 | 0.4+ | 1.0+ | 2004 03 21 | 691 | 0.1+ | 0.2+ | 2005 06 28 | G96 | 0.3− | 0.2+ |
| 2002 10 01 | 699 | 0.8+ | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2005 06 28 | G96 | 0.1− | 0.2+ |
| 2002 10 01 | 699 | 0.2+ | 0.9+ | 2004 03 23 | 704 | 1.1+ | 0.3− | 2005 06 28 | G96 | 0.4− | 0.5+ |
| 2002 10 01 | 699 | 0.8+ | 0.6+ | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2005 06 28 | G96 | 0.6+ | 0.7+ |
| 2002 10 04 | 704 | 0.2− | 1.2+ | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2005 07 06 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.7+ | 0.0 | 2004 03 23 | 704 | 0.5+ | 0.1− | 2005 07 06 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.7+ | 0.9+ | 2004 03 30 | 703 | (1.7− | 0.3+) | 2005 07 06 | 691 | 0.4− | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 0.8+ | 2004 03 30 | 703 | 1.4− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2002 10 16 | 644 | 0.9− | 0.8+ | 2004 03 30 | 703 | 1.0+ | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 10 16 | 644 | 0.5− | 0.5+ | 2004 03 30 | 703 | (0.4+ | 2.5+) | 2006 11 15 | G96 | 0.7− | 0.5− |
| 2002 10 16 | 644 | 0.5− | 0.7+ | 2004 04 15 | 644 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2004 03 14 | 691 | 0.3+ | 0.4+ | 2004 04 15 | 644 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2004 03 14 | 691 | 0.2+ | 0.4+ | 2004 04 15 | 644 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.5− | 0.1− |
| 2004 03 14 | 691 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.6+ | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.1+ | 0.2− | 2005 06 13 | G96 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.0 |

**(144535)∗ 2004 ER$_{83}$ = 2001 SL$_{352}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86378)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.85526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21439675 | $\omega$ | 251.83764 | | +0.63547236 | +0.76507735 | |
| $a$ | 2.7647588 | $\Omega$ | 58.07050 | | −0.65394840 | +0.60496497 | |
| $e$ | 0.0451404 | $i$ | 7.04382 | | −0.41051964 | +0.22062192 | |
| $P$ | 4.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3− | 0.6+ | 2003 01 05 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.3− |
| 2001 09 12 | 704 | 0.7+ | 0.4− | 2004 03 14 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2004 03 14 | 691 | 0.0 | 0.6+ | 2006 10 16 | 703 | (1.8− | 0.5−) |
| 2001 09 25 | 704 | (0.7+ | 1.9+) | 2004 03 20 | 704 | 0.6+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | (0.6+ | 1.9+) | 2004 03 20 | 704 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | 1.1+ | 1.4+ | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | (0.7− | 2.7+) | 2004 03 20 | 704 | 0.2− | 0.7+ | 2006 10 26 | 151 | 0.7+ | 0.4− |
| 2001 09 25 | 644 | 0.9− | 0.8+ | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 09 25 | 704 | (1.2− | 1.8+) | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2001 09 25 | 644 | 0.7− | 0.4+ | 2004 03 21 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 09 25 | 644 | 0.6− | 0.5+ | 2004 04 20 | 704 | (1.7+ | 0.3+) | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2001 09 27 | 644 | 0.7− | 0.9+ | 2004 04 20 | 704 | 0.8+ | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.7+ |
| 2001 09 27 | 644 | 0.5− | 0.6+ | 2004 04 20 | 704 | 0.5+ | 1.1+ | 2006 11 11 | 703 | 0.1+ | 0.7+ |
| 2001 09 27 | 644 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2001 10 16 | 644 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2001 10 16 | 644 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 10 16 | 644 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 644 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 10 24 | 644 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 2001 10 24 | 644 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2003 01 05 | 704 | 1.0+ | 0.7− | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.7− | 0.3− |
| 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1− | | | | |
| 2003 01 05 | 704 | 0.3+ | 0.4− | 2006 10 15 | 691 | (1.0+ | 3.1−) | | | | |

**(144536)∗ 2004 EZ$_{83}$**

Discovered 2004 Mar. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.82426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22382774 | $\omega$ | 200.86238 | | −0.82953547 | −0.55694675 | |
| $a$ | 2.6865408 | $\Omega$ | 305.22631 | | +0.51921944 | −0.74213989 | |
| $e$ | 0.1402399 | $i$ | 2.87713 | | +0.20562607 | −0.37287892 | |
| $P$ | 4.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 691 | 0.1+ | 0.1+ | 2004 03 25 | 699 | 0.1− | 0.5+ | 2004 04 22 | 704 | 0.3− | 0.8+ |
| 1993 10 11 | 691 | 0.0 | 0.3+ | 2004 03 25 | 699 | 0.7− | 0.9− | 2004 04 22 | 704 | 0.7+ | 1.0+ |
| 2002 11 24 | 644 | 0.2− | 0.6+ | 2004 03 31 | 704 | 0.4+ | 0.2− | 2004 04 22 | 704 | 1.0+ | 0.7+ |
| 2002 11 24 | 644 | 0.3− | 0.8+ | 2004 03 31 | 704 | 0.4+ | 0.3− | 2004 05 09 | 691 | 0.1+ | 0.4+ |
| 2002 11 24 | 644 | 0.4− | 0.7+ | 2004 03 31 | 704 | 0.2− | 0.6− | 2004 05 09 | 691 | 0.1+ | 0.4+ |
| 2002 12 06 | 704 | 0.3− | 1.5+ | 2004 03 31 | 704 | 1.2+ | 1.5+ | 2004 05 09 | 691 | 0.1+ | 0.4+ |
| 2002 12 06 | 704 | 0.9− | 0.4+ | 2004 03 31 | 704 | 0.1+ | 0.0 | 2005 07 04 | 691 | 0.5− | 0.3+ |
| 2002 12 06 | 704 | 0.0 | 0.6+ | 2004 04 15 | 699 | 0.5− | 0.3− | 2005 07 04 | 691 | 0.3− | 0.5+ |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 699 | 0.6− | 1.4+ | 2005 07 04 | 691 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.6− | 0.1+ | 2004 04 15 | 699 | 0.1− | 0.5+ | 2005 07 09 | 691 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.6− | 0.7+ | 2004 04 15 | 699 | 0.2+ | 0.0 | 2005 07 09 | 691 | 0.1+ | 0.6+ |
| 2002 12 11 | 704 | 0.1− | 0.6+ | 2004 04 17 | 704 | 0.7+ | 0.4− | 2005 07 09 | 691 | 0.1+ | 0.2− |
| 2002 12 11 | 704 | 0.7+ | 0.1+ | 2004 04 17 | 704 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 12 27 | 644 | 0.2− | 0.7+ | 2004 04 17 | 704 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.4+ |
| 2002 12 27 | 644 | 0.8− | 1.2+ | 2004 04 17 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.3+ |
| 2002 12 27 | 644 | 0.4− | 1.0+ | 2004 04 20 | 703 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 2004 03 14 | 644 | 0.1− | 0.1+ | 2004 04 20 | 703 | (0.4+ | 1.5+) | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2004 03 14 | 644 | 0.1− | 0.2+ | 2004 04 20 | 703 | 1.1+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2004 03 14 | 644 | 0.2− | 0.3+ | 2004 04 20 | 703 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.6+ | 0.1− |
| 2004 03 20 | 704 | 0.5+ | 0.7+ | 2004 04 20 | 704 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.6− |
| 2004 03 20 | 704 | 0.1+ | 0.8+ | 2004 04 20 | 704 | 0.4− | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2004 03 20 | 704 | 0.7+ | 0.3− | 2004 04 20 | 704 | 0.3+ | 1.0+ | 2006 10 17 | 703 | 0.5+ | 0.4− |
| 2004 03 20 | 704 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2004 03 20 | 704 | 0.1+ | 0.1− | 2004 04 20 | 704 | 0.9+ | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2004 03 25 | 699 | 0.0 | 0.8− | 2004 04 20 | 113 | 0.4+ | 0.9+ | 2006 11 18 | G96 | 0.4− | 0.1+ |
| 2004 03 25 | 699 | 1.3− | 0.2− | 2004 04 20 | 113 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4− | 0.2− |

**(144537)∗ 2004 EB$_{84}$ = 1993 TL$_{10}$**

Discovered 2004 Mar. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62063)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.11702 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22821299 | $\omega$ | 15.01506 | | +0.80450217 | −0.58908678 | |
| $a$ | 2.6520140 | $\Omega$ | 21.61950 | | +0.52152184 | +0.63950268 | |
| $e$ | 0.0252916 | $i$ | 11.88008 | | +0.28423799 | +0.49397681 | |
| $P$ | 4.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 13 | 691 | 0.1+ | 0.9+ | 2004 03 20 | 704 | 1.0+ | 0.6+ | 2004 04 23 | 691 | 0.3+ | 0.1+ |
| 1993 10 13 | 691 | 0.1− | 0.8+ | 2004 03 20 | 704 | 0.7+ | 0.3+ | 2005 08 06 | E12 | 0.3+ | 0.5+ |
| 1993 10 13 | 691 | 0.3− | 0.7+ | 2004 03 21 | 691 | 0.0 | 0.2+ | 2005 08 06 | E12 | 0.7+ | 0.8+ |
| 1993 10 16 | 691 | 0.5− | 0.3+ | 2004 03 21 | 691 | 0.0 | 0.1+ | 2005 08 06 | E12 | 0.2− | 0.9+ |
| 1993 10 16 | 691 | 0.5− | 0.5+ | 2004 03 21 | 691 | 0.0 | 0.2+ | 2005 08 06 | E12 | 0.2− | 0.1− |
| 1993 10 16 | 691 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1+ |
| 2001 08 16 | 644 | 0.3− | 0.6+ | 2004 03 22 | 704 | (0.2+ | 1.9+) | 2006 10 04 | G96 | 0.2+ | 0.1+ |
| 2001 08 16 | 644 | 0.6− | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2001 08 16 | 644 | 0.6− | 0.5+ | 2004 03 22 | 704 | 0.8+ | 1.3+ | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2001 08 27 | 644 | 0.6− | 0.6+ | 2004 03 22 | 704 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.3− | 1.1− |
| 2001 08 27 | 644 | 0.7− | 0.3+ | 2004 03 28 | 704 | 0.6+ | 0.8+ | 2006 10 27 | 703 | 0.3+ | 0.9− |
| 2001 08 27 | 644 | 0.9− | 0.3+ | 2004 03 28 | 704 | 0.3+ | 1.1+ | 2006 10 27 | 703 | 0.6− | 0.9− |
| 2002 12 06 | 704 | 0.7− | 0.4− | 2004 03 28 | 704 | (0.7− | 1.5+) | 2006 10 27 | 703 | 0.4− | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.9+ | 0.1− | 2006 11 02 | 703 | 0.3+ | 0.1+ |
| 2002 12 06 | 704 | 0.4+ | 0.4− | 2004 03 28 | 704 | 0.5+ | 0.7+ | 2006 11 02 | 703 | 0.1− | 0.4− |
| 2002 12 06 | 704 | 0.0 | 0.4− | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.4+ | 0.6+ |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.4+ | 0.2− |
| 2004 03 14 | 691 | 0.0 | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2004 04 08 | 673 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.9+ |
| 2004 03 14 | 691 | 0.0 | 0.1− | 2004 04 08 | 673 | 0.2− | 0.4+ | 2006 11 13 | 644 | 0.3+ | 0.4+ |
| 2004 03 19 | 704 | 0.4− | 0.1+ | 2004 04 08 | 673 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.4+ | 0.0 |
| 2004 03 19 | 704 | 0.4+ | 0.2+ | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.0 | 1.1− |
| 2004 03 19 | 704 | 0.1− | 0.6+ | 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 2.5− | 0.3− |
| 2004 03 19 | 704 | 0.0 | 0.2+ | 2004 04 20 | 691 | 0.1+ | 0.0 | 2006 11 22 | 703 | (3.3+ | 0.2+) |
| 2004 03 19 | 704 | 0.1− | 0.1+ | 2004 04 23 | 691 | 0.1− | 0.1− | | | | |
| 2004 03 20 | 704 | 0.8+ | 0.1+ | 2004 04 23 | 691 | 0.2+ | 0.2+ | | | | |

**(144538)∗ 2004 EQ$_{84}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.34237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27149254 | $\omega$ | 24.24879 | | −0.75968190 | −0.64655913 | |
| $a$ | 2.3620955 | $\Omega$ | 115.28456 | | +0.58335262 | −0.72486400 | |
| $e$ | 0.0670051 | $i$ | 4.41491 | | +0.28737281 | −0.23776766 | |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.2− | 0.2− | 2004 03 15 | 704 | 1.3+ | 0.8+ | 2005 06 13 | G96 | 0.8+ | 0.0 |
| 1991 09 30 | 691 | 0.2− | 0.4− | 2004 03 15 | 704 | 0.2− | 0.4− | 2005 06 13 | G96 | 0.5+ | 0.5+ |
| 2000 01 05 | 704 | 1.1− | 0.3− | 2004 03 15 | 704 | 0.1− | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.0 |
| 2000 01 05 | 704 | 0.8− | 0.8− | 2004 03 20 | 704 | 0.5− | 0.1− | 2005 07 09 | 691 | 0.0 | 0.2+ |
| 2000 01 05 | 704 | 0.8− | 0.4− | 2004 03 20 | 704 | 0.9− | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.1+ |
| 2000 01 05 | 704 | 1.5− | 0.5− | 2004 03 20 | 704 | 1.0− | 0.7− | 2005 07 30 | E12 | 0.7+ | 0.4− |
| 2000 01 26 | 691 | 1.2+ | 0.2− | 2004 03 20 | 704 | 1.0− | 0.2+ | 2005 07 30 | E12 | 0.2− | 0.1− |
| 2000 01 26 | 691 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 1.0+ | 0.2+ | 2005 07 30 | E12 | 0.6+ | 0.6+ |
| 2000 01 26 | 691 | 1.4+ | 0.0 | 2004 03 23 | 704 | 0.0 | 1.1+ | 2005 07 30 | E12 | 0.8+ | 0.3+ |
| 2002 10 05 | 645 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.9+ | 2005 08 08 | 807 | 0.2+ | 0.3+ |
| 2002 10 05 | 645 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.4− | 0.8+ | 2005 08 08 | 807 | 0.3+ | 0.2+ |
| 2004 02 18 | 704 | 0.9− | 1.0+ | 2004 03 23 | 704 | 0.3− | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2004 02 18 | 704 | 0.3− | 0.1− | 2004 03 25 | 704 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2004 02 18 | 704 | 0.1− | 1.1+ | 2004 03 25 | 704 | 0.3+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2004 03 14 | 703 | 0.1+ | 0.3+ | 2004 03 25 | 704 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2004 03 14 | 703 | 0.1− | 0.2− | 2004 03 25 | 704 | 0.4+ | 0.0 | 2006 11 18 | G96 | 1.4+ | 0.9+ |
| 2004 03 14 | 703 | (2.5− | 0.5+) | 2004 03 25 | 704 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2004 03 14 | 703 | (1.8− | 1.1−) | 2005 06 13 | G96 | 1.0+ | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2004 03 15 | 704 | 0.8− | 0.7+ | 2005 06 13 | G96 | 0.6+ | 0.1+ | 2006 11 18 | G96 | 0.5− | 0.2− |

**(144539)∗ 2004 EZ$_{85}$ = 1998 XW$_7$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.58902 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23941032 | $\omega$ | 68.16951 | | −0.59230446 | −0.80236163 | |
| $a$ | 2.5686650 | $\Omega$ | 58.36088 | | +0.70372446 | −0.55955419 | |
| $e$ | 0.1485704 | $i$ | 4.94754 | | +0.39236119 | −0.20764132 | |
| $P$ | 4.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 27 | 691 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.2− | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.6+ |
| 1998 10 27 | 691 | 0.2− | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.8+ | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 1998 10 27 | 691 | 0.0 | 0.4− | 2004 03 15 | 704 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.6+ |
| 1998 12 09 | 691 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.7+ | 2006 10 02 | 691 | 0.5− | 0.5+ |
| 1998 12 09 | 691 | (2.0+ | 3.3−) | 2004 03 20 | 704 | 0.1+ | 0.9+ | 2006 10 02 | 691 | 0.1− | 0.5+ |
| 1998 12 09 | 691 | 0.4+ | 0.0 | 2004 03 20 | 704 | 0.5+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.6+ |
| 1998 12 13 | 691 | 0.4+ | 0.2− | 2004 03 20 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 1.3+ |
| 1998 12 13 | 691 | 0.2+ | 0.5− | 2004 03 20 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 1.4− | 0.5+ |
| 1998 12 13 | 691 | 0.2+ | 0.3− | 2004 03 20 | 704 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.6+ | 1.1+ |
| 2000 03 15 | 691 | 0.1+ | 0.1− | 2004 03 30 | 703 | 1.3− | 1.0+ | 2006 10 16 | 703 | 1.0+ | 0.4− |
| 2000 03 15 | 691 | 0.2− | 0.2+ | 2004 03 30 | 703 | 0.7+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 1.0+ |
| 2000 03 15 | 691 | 0.0 | 0.3+ | 2004 03 30 | 703 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.3− | 0.9+ |
| 2002 10 30 | 644 | 0.4− | 0.4+ | 2004 03 30 | 703 | 1.0− | 1.1+ | 2006 10 22 | 703 | 1.5− | 1.4− |
| 2002 10 30 | 644 | 1.0− | 0.8+ | 2004 04 16 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2002 10 30 | 644 | 0.3+ | 0.9+ | 2004 04 16 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2004 02 25 | 704 | 1.4+ | 0.5− | 2004 04 16 | 691 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2004 02 25 | 704 | 1.1+ | 1.3+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2004 02 25 | 704 | 0.8+ | 0.8− | 2004 04 21 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2004 02 25 | 704 | 1.1+ | 1.2+ | 2004 04 21 | 691 | 0.1+ | 0.1+ | | | | |

**(144540)∗ 2004 EV$_{86}$ = 2000 CL$_{124}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.29638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26343053 | $\omega$ | 343.60063 | | +0.38484416 | −0.92056390 | |
| $a$ | 2.4100459 | $\Omega$ | 83.72596 | | +0.85418310 | +0.32782255 | |
| $e$ | 0.1678620 | $i$ | 3.85109 | | +0.34966585 | +0.21235461 | |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.2− | 0.3− | 2004 03 20 | 704 | (0.9− | 1.7+) | 2006 10 22 | 683 | (2.3+ | 1.2−) |
| 2000 02 03 | 704 | 0.3− | 0.4− | 2004 03 20 | 704 | 0.9+ | 1.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2000 02 03 | 704 | 0.6− | 1.3− | 2004 03 22 | 704 | 0.4+ | 1.4− | 2006 10 27 | 704 | 0.2+ | 1.4+ |
| 2000 02 11 | 704 | 0.2− | 1.2− | 2004 03 22 | 704 | 0.5− | 0.6− | 2006 10 27 | 704 | 0.6+ | 0.8+ |
| 2000 02 11 | 704 | 0.5+ | 0.2+ | 2004 03 22 | 704 | 0.6− | 0.1+ | 2006 10 27 | 704 | 0.0 | 0.4− |
| 2000 02 11 | 704 | 0.2− | 0.6+ | 2004 03 22 | 704 | 0.2+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2000 02 11 | 704 | 0.6+ | 0.2− | 2004 03 26 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2000 02 11 | 704 | 0.6− | 1.1− | 2004 03 26 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2002 09 04 | 699 | 0.5− | 0.5− | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2002 09 04 | 699 | (0.3+ | 1.8+) | 2004 03 28 | 703 | 1.0+ | 0.5− | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2002 09 04 | 699 | 0.5− | 0.1− | 2004 03 28 | 703 | (3.4+ | 0.4−) | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 1.2+ | 1.4+ | 2004 03 28 | 703 | 1.0+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.9+ |
| 2002 09 11 | 608 | 0.4− | 0.3− | 2004 03 28 | 703 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2002 09 11 | 608 | 0.3− | 0.3− | 2004 04 13 | 291 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2002 09 11 | 608 | 0.7− | 0.2− | 2004 04 13 | 291 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 1.3− | 0.7− |
| 2002 09 19 | 644 | 0.4− | 0.6+ | 2004 04 13 | 291 | 0.9+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 09 19 | 644 | 0.5− | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2002 09 19 | 644 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.8+ | 2006 10 02 | G96 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.5+ | 0.8+ | 2006 10 15 | A44 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 1.3+ | 1.2− | 2006 10 15 | A44 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.5− | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2004 02 25 | 704 | (2.1+ | 1.2+) | 2006 10 16 | 703 | 1.0− | 0.6− | 2006 11 17 | 704 | 0.3+ | 0.3+ |
| 2004 02 25 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.3− | 2006 11 17 | 704 | 0.0 | 0.2− |
| 2004 02 25 | 704 | 0.2+ | 1.1+ | 2006 10 16 | 703 | 0.8− | 0.9− | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2004 02 25 | 704 | (1.6+ | 0.2−) | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.6− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.1− | 1.2+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.1+ | 0.7+ | | |
| 2004 03 15 | 704 | 1.2− | 1.3+ | 2006 10 17 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | (1.9+ | 0.2−) | | |
| 2004 03 15 | 703 | 0.7+ | 1.4− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 1.3+ | 0.5− | | |
| 2004 03 15 | 704 | 0.2− | 0.5+ | 2006 10 20 | 683 | 0.6− | 0.2+ | 2006 11 19 | 704 | 1.4+ | 0.6− | | |
| 2004 03 15 | 703 | 0.8− | 0.9+ | 2006 10 20 | 683 | (1.6+ | 0.9+) | 2006 11 19 | 704 | 1.3+ | 0.6+ | | |
| 2004 03 15 | 704 | 0.3− | 0.3− | 2006 10 20 | 683 | (1.5− | 0.5+) | 2006 11 20 | 704 | (1.6+ | 0.8+) | | |
| 2004 03 15 | 703 | 0.3− | 1.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.1− | | |
| 2004 03 15 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | (1.8+ | 1.1+) | | |
| 2004 03 15 | 704 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 1.2+ | | |
| 2004 03 15 | 691 | 0.3− | 0.3+ | 2006 10 22 | 683 | (2.6+ | 0.4−) | 2006 11 28 | 704 | 0.2+ | 0.2− | | |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 28 | 704 | 1.2+ | 0.4+ | | |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 10 22 | 683 | (4.2+ | 1.4+) | 2006 11 28 | 704 | 0.5− | 0.4− | | |
| 2004 03 20 | 704 | (0.3+ | 1.6+) | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.8− | 0.3− | | |

**(144541)∗ 2004 EZ$_{93}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.70414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19260094 | $\omega$ | 219.40328 | | +0.73435493 | +0.67192071 | |
| $a$ | 2.9695942 | $\Omega$ | 98.10083 | | −0.59565802 | +0.70586258 | |
| $e$ | 0.1124301 | $i$ | 5.57347 | | −0.32544485 | +0.22423331 | |
| $P$ | 5.12 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.3− | 0.7− | 2003 01 13 | 291 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.2+ | | |
| 1993 01 26 | 691 | 0.2+ | 0.3− | 2003 01 13 | 291 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.6+ | | |
| 1993 01 26 | 691 | 0.1− | 0.9− | 2003 01 13 | 291 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.0 | | |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.1− | | |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.9+ | 0.6+ | 2006 09 30 | 703 | 0.8+ | 0.6− | | |
| 2000 07 08 | 608 | 0.8− | 1.3− | 2004 03 15 | 704 | (1.8+ | 0.3+) | 2006 09 30 | 703 | (2.2− | 0.9−) | | |
| 2000 07 08 | 608 | 1.2− | 0.6− | 2004 03 20 | 704 | (2.1+ | 1.3+) | 2006 10 16 | 703 | 0.6+ | 0.1− | | |
| 2000 07 08 | 608 | 0.5+ | 0.8− | 2004 03 20 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.1− | | |
| 2001 10 17 | 704 | 1.1+ | 1.0+ | 2004 03 20 | 704 | 0.8+ | 1.4+ | 2006 10 16 | 703 | 0.0 | 0.3− | | |
| 2001 10 17 | 704 | 0.0 | 0.9+ | 2004 03 20 | 704 | (0.7+ | 1.8+) | 2006 10 16 | 703 | 0.5+ | 0.4− | | |
| 2001 10 17 | 704 | 0.6+ | 0.6+ | 2004 03 20 | 704 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2001 10 17 | 704 | 0.4+ | 0.4+ | 2004 03 22 | 704 | 0.1+ | 1.1− | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2001 10 17 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2001 12 07 | 704 | 0.8− | 1.0+ | 2004 03 22 | 704 | (1.6+ | 0.5−) | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2001 12 07 | 704 | 1.0+ | 1.2+ | 2004 03 22 | 704 | 0.8+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2001 12 07 | 704 | 1.0+ | 1.2+ | 2004 04 16 | 691 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2001 12 07 | 704 | 0.8− | 0.2+ | 2004 04 16 | 691 | 0.5+ | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.3− | | |
| 2002 12 31 | 291 | 0.5− | 0.0 | 2004 04 16 | 691 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2002 12 31 | 291 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.7− | 1.1− | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2002 12 31 | 291 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.7− | 0.6+ | 2006 11 24 | G96 | 0.0 | 0.1− | | |

**(144542)∗ 2004 EQ$_{94}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.78801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19453422 | $\omega$ | 263.56462 | | +0.79604212 | +0.57291988 | |
| $a$ | 2.9498870 | $\Omega$ | 61.30889 | | −0.42900769 | +0.76154853 | |
| $e$ | 0.0511251 | $i$ | 12.85315 | | −0.42693014 | +0.30299613 | |
| $P$ | 5.07 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | (1.6+ | 0.6+) | 2006 09 25 | 699 | 0.9+ | 0.0 | | |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.9+ | 0.1+ | 2006 09 26 | 703 | 1.3− | 0.5+ | | |
| 2001 09 25 | 704 | 0.7+ | 0.4− | 2004 03 22 | 699 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.9+ | | |
| 2001 09 25 | 704 | 0.3+ | 0.2− | 2004 03 22 | 699 | 0.9− | 1.1+ | 2006 09 26 | 703 | 0.2− | 0.2+ | | |
| 2001 09 25 | 704 | 0.5− | 0.2− | 2004 03 22 | 699 | 0.4− | 0.2+ | 2006 09 26 | 703 | 1.4− | 0.4− | | |
| 2001 09 25 | 704 | 0.8+ | 0.2− | 2004 03 22 | 699 | 0.3+ | 0.9− | 2006 09 29 | 699 | 0.3+ | 0.9+ | | |
| 2001 09 25 | 704 | 0.6+ | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.1− | 2006 09 29 | 699 | 1.0+ | 0.8+ | | |
| 2001 10 19 | 699 | 0.7− | 0.8+ | 2004 03 23 | 704 | 0.4− | 0.5− | 2006 09 29 | 699 | 0.6− | 0.4+ | | |
| 2001 10 19 | 699 | 0.5− | 0.9+ | 2004 03 23 | 704 | 0.3+ | 0.5− | 2006 09 29 | 699 | (0.1+ | 2.2+) | | |
| 2001 10 19 | 699 | 0.8+ | 1.3+ | 2004 03 23 | 704 | 1.3+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.9+ | | |
| 2001 10 19 | 699 | 0.8+ | 0.4+ | 2004 03 23 | 704 | 0.8− | 1.4+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | | |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2004 04 21 | 703 | 0.0 | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.1− | | |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2004 04 21 | 703 | (2.6− | 4.0+) | 2006 10 16 | 703 | 0.5− | 0.1+ | | |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 04 21 | 703 | 0.1− | 0.7− | 2006 10 22 | 703 | 0.4− | 0.1+ | | |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2004 04 21 | 703 | (1.7+ | 1.8+) | 2006 10 22 | 703 | 0.6− | 0.6− | | |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.8+ | 0.4+ | | |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.4+ | | |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.3− | | |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.5− | 0.2+ | | |
| 2003 01 10 | 704 | 0.4− | 0.1− | 2006 09 21 | 699 | (0.6− | 1.5+) | 2006 10 22 | 644 | 0.5− | 0.3+ | | |
| 2003 01 10 | 704 | 0.3+ | 0.9+ | 2006 09 21 | 699 | 0.6− | 0.3− | 2006 11 16 | 703 | 0.3+ | 0.1− | | |
| 2003 01 10 | 704 | 0.2− | 0.3− | 2006 09 21 | 699 | 0.7− | 0.3+ | 2006 11 16 | 703 | 1.4− | 0.7− | | |
| 2003 01 10 | 704 | 0.9+ | 0.7+ | 2006 09 21 | 699 | 0.9+ | 0.9+ | 2006 11 16 | 703 | 0.6+ | 1.9+ | | |
| 2004 03 15 | 704 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.8+ | 1.4+ | 2006 11 16 | 703 | 0.1+ | 0.8+ | | |
| 2004 03 15 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 699 | (1.2+ | 2.0+) | | | | | | |
| 2004 03 15 | 704 | 0.8+ | 1.0+ | 2006 09 25 | 699 | 0.7− | 0.9− | | | | | | |

**(144543)∗ 2004 EV$_{94}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.11065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18926469 | $\omega$ | 85.88202 | | −0.52949871 | +0.83801464 | |
| $a$ | 3.0043900 | $\Omega$ | 150.91207 | | −0.84526577 | −0.50804561 | |
| $e$ | 0.0801646 | $i$ | 15.72625 | | −0.07181144 | −0.19905057 | |
| $P$ | 5.21 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.7+ | 2005 07 05 | 704 | 0.2− | 0.9+ | | |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.3− | 0.6+ | 2005 07 05 | 704 | 0.5− | 1.6+ | | |
| 2001 10 28 | 644 | 0.1− | 0.8+ | 2004 03 23 | 704 | 0.2+ | 0.9+ | 2005 07 05 | 704 | 0.3− | 0.7+ | | |
| 2001 10 28 | 644 | 0.4− | 0.6+ | 2004 04 12 | 703 | 0.2+ | 0.1+ | 2005 07 05 | 704 | 0.4− | 1.1+ | | |
| 2001 10 28 | 644 | 0.2+ | 1.3+ | 2004 04 12 | 703 | 1.2+ | 0.8+ | 2005 07 05 | 704 | 0.4+ | 0.0 | | |
| 2003 12 28 | 704 | 1.2+ | 1.1+ | 2004 04 12 | 703 | 1.1+ | 0.1− | 2006 09 26 | 703 | 1.2− | 0.6+ | | |
| 2003 12 28 | 704 | 0.6+ | 0.2+ | 2004 04 12 | 703 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.1− | | |
| 2003 12 28 | 704 | 0.1− | 0.5+ | 2004 04 15 | 704 | 0.6+ | 1.5+ | 2006 09 26 | 703 | 0.2− | 1.1+ | | |
| 2004 02 19 | 704 | 0.4− | 0.8+ | 2004 04 15 | 704 | 0.3+ | 1.1+ | 2006 09 26 | 703 | 0.6+ | 0.3+ | | |
| 2004 02 19 | 704 | 0.4− | 0.5+ | 2004 04 15 | 704 | 0.3+ | 1.1+ | 2006 09 29 | 699 | 0.1+ | 0.1+ | | |
| 2004 02 19 | 704 | 0.6+ | 0.7+ | 2004 04 15 | 704 | 0.3− | 1.1+ | 2006 09 29 | 699 | 0.3+ | 0.9+ | | |
| 2004 02 19 | 704 | 0.6+ | 0.6+ | 2004 04 15 | 704 | 0.3+ | 1.2+ | 2006 09 29 | 699 | 0.6+ | 0.2+ | | |
| 2004 02 19 | 704 | 0.8+ | 0.8+ | 2004 04 24 | 704 | (0.5− | 1.7−) | 2006 09 29 | 699 | 0.2+ | 0.9+ | | |
| 2004 03 15 | 704 | 0.3+ | 1.1+ | 2004 04 24 | 704 | 0.3+ | 0.7− | 2006 10 02 | 703 | 0.7+ | 0.2+ | | |
| 2004 03 15 | 704 | 0.3− | 0.2− | 2004 04 24 | 704 | 0.0 | 0.6− | 2006 10 02 | 703 | 0.4+ | 0.2− | | |
| 2004 03 15 | 704 | 0.7− | 0.2− | 2004 04 24 | 703 | 0.7− | 0.8− | 2006 10 02 | 703 | 0.6− | 0.9+ | | |
| 2004 03 15 | 704 | 0.1− | 0.2+ | 2004 04 24 | 704 | (0.5− | 1.7−) | 2006 10 02 | 703 | 1.3− | 1.2− | | |
| 2004 03 15 | 704 | 0.2− | 0.0 | 2004 04 24 | 703 | 0.9− | 0.1− | 2006 10 21 | 703 | 0.6− | 1.2+ | | |
| 2004 03 22 | 699 | 0.1+ | 0.6+ | 2004 04 24 | 703 | 1.4+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 0.6+ | | |
| 2004 03 22 | 699 | 0.2− | 0.6+ | 2004 04 24 | 704 | 0.6+ | 0.7− | 2006 10 21 | 703 | 0.0 | 0.2+ | | |
| 2004 03 22 | 699 | 1.0− | 0.1+ | 2004 04 24 | 703 | 0.5− | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.5− | | |
| 2004 03 22 | 699 | 0.4− | 0.4+ | 2004 05 12 | 644 | 0.5+ | 0.5+ | 2006 11 14 | 291 | 0.1+ | 0.8+ | | |
| 2004 03 23 | 704 | 0.4+ | 0.5+ | 2004 05 12 | 644 | 0.0 | 0.6+ | 2006 11 14 | 291 | 0.0 | 0.6+ | | |
| 2004 03 23 | 704 | 0.2− | 1.0+ | 2004 05 12 | 644 | 0.2− | 0.5+ | 2006 11 14 | 291 | 0.1+ | 0.7+ | | |

**(144544)∗ 2004 EM$_{95}$ = 2000 FZ$_{71}$**

Discovered 2004 Mar. 15 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62068)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.70183 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26015298 | $\omega$ | 160.62407 | | −0.98650253 | +0.16239947 | |
| $a$ | 2.4302457 | $\Omega$ | 28.74715 | | −0.15539771 | −0.88816592 | |
| $e$ | 0.1296496 | $i$ | 2.49735 | | −0.05161691 | −0.42986941 | |
| $P$ | 3.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.8− | 0.6− | 2004 03 31 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 691 | 0.2− | 0.1− |
| 1994 10 09 | 691 | 0.4− | 0.4− | 2004 04 09 | E12 | 0.9+ | 0.6− | 2004 05 10 | 691 | 0.1− | 0.3− |
| 1994 10 09 | 691 | 0.2− | 0.0 | 2004 04 09 | E12 | 0.3− | 0.2+ | 2004 05 10 | 691 | 0.2− | 0.2− |
| 1996 02 16 | 691 | 0.3+ | 0.2+ | 2004 04 09 | E12 | 0.4− | 0.4− | 2004 05 10 | 691 | 0.2− | 0.0 |
| 1996 02 16 | 691 | 0.3+ | 0.1+ | 2004 04 09 | E12 | 0.5− | 0.4+ | 2004 05 11 | 699 | (1.8+ | 0.9+) |
| 1996 02 16 | 691 | 0.3+ | 0.1− | 2004 04 12 | 644 | 0.1+ | 0.4+ | 2004 05 11 | 699 | (1.8+ | 0.0 ) |
| 1998 10 19 | 691 | 0.0 | 0.3− | 2004 04 12 | 644 | 0.2− | 0.2+ | 2004 05 11 | 699 | 0.3+ | 0.8+ |
| 1998 10 19 | 691 | 0.0 | 0.1− | 2004 04 12 | 644 | 0.3+ | 0.3+ | 2004 05 11 | 699 | 0.2− | 0.2+ |
| 1998 10 19 | 691 | 0.1− | 0.3− | 2004 04 12 | 699 | 0.0 | 0.4+ | 2004 05 12 | 699 | (2.9− | 0.9+) |
| 2000 03 23 | 049 | 0.9+ | 0.6− | 2004 04 12 | 699 | 0.5+ | 0.3− | 2004 05 12 | 699 | 0.4+ | 0.4+ |
| 2000 03 23 | 049 | 0.7+ | 0.6− | 2004 04 12 | 699 | 0.0 | 0.0 | 2004 05 12 | 699 | 0.7+ | 0.9− |
| 2000 03 23 | 049 | 1.1+ | 0.8− | 2004 04 12 | 699 | 1.0− | 0.5+ | 2004 05 12 | 699 | 0.1− | 1.2+ |
| 2000 04 03 | 699 | (2.3+ | 0.4−) | 2004 04 15 | 699 | 0.4− | 0.2− | 2004 05 19 | 691 | 0.4− | 0.0 |
| 2000 04 03 | 699 | 1.4+ | 0.6− | 2004 04 15 | 699 | 0.3+ | 0.0 | 2004 05 19 | 691 | 0.2− | 0.2− |
| 2000 04 03 | 699 | 0.7+ | 0.8+ | 2004 04 15 | 699 | 0.5+ | 0.1− | 2004 05 19 | 691 | 0.2− | 0.2− |
| 2000 04 03 | 699 | 0.2+ | 0.3+ | 2004 04 15 | 699 | 0.1− | 0.5+ | 2004 06 04 | 644 | 0.1+ | 0.1− |
| 2004 03 15 | 703 | 0.1+ | 0.4− | 2004 04 17 | 704 | 0.0 | 0.7+ | 2004 06 04 | 644 | 0.2− | 0.1+ |
| 2004 03 15 | 703 | 1.0+ | 0.1+ | 2004 04 17 | 704 | 0.3+ | 0.9+ | 2004 06 04 | 644 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | 1.2+ | 0.2+ | 2004 04 17 | 704 | 0.4+ | 0.9+ | 2005 08 31 | 691 | 0.4+ | 0.8+ |
| 2004 03 15 | 703 | 0.7+ | 0.1− | 2004 04 17 | 704 | 0.1+ | 0.6+ | 2005 08 31 | 691 | 0.2+ | 0.5+ |
| 2004 03 20 | 699 | 0.7+ | 0.2+ | 2004 04 19 | 691 | 0.2− | 0.1+ | 2005 08 31 | 691 | 0.2+ | 0.7+ |
| 2004 03 20 | 699 | 0.1+ | 0.1+ | 2004 04 19 | 691 | 0.4− | 0.0 | 2005 09 14 | 691 | 0.3− | 0.3+ |
| 2004 03 20 | 699 | (1.5+ | 0.9+) | 2004 04 19 | 691 | 0.0 | 0.1+ | 2005 09 14 | 691 | 0.5+ | 1.0+ |
| 2004 03 20 | 699 | 0.8+ | 0.2− | 2004 04 20 | 703 | 0.9− | 0.3+ | 2005 09 14 | 691 | 0.1+ | 0.4+ |
| 2004 03 27 | 704 | 0.2− | 0.1+ | 2004 04 20 | 703 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2004 03 27 | 704 | 0.3− | 0.3+ | 2004 04 20 | 703 | 1.1− | 1.1+ | 2006 11 11 | 691 | 0.7− | 0.3+ |
| 2004 03 27 | 704 | 0.3− | 0.5+ | 2004 04 20 | 703 | 0.6− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 0.3− | 0.6+ | 2004 04 21 | 704 | 0.3+ | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2004 03 27 | 704 | 1.4+ | 1.2+ | 2004 04 21 | 704 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2004 03 31 | 704 | 0.2+ | 0.2+ | 2004 04 21 | 704 | 0.3+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 03 31 | 704 | 0.9+ | 0.3+ | 2004 04 21 | 704 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.3− | 0.5+ |
| 2004 03 31 | 704 | 0.3+ | 1.2+ | 2004 04 25 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2004 03 31 | 704 | 0.2+ | 0.8− | 2004 04 25 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.2+ |

**(144545)∗ 2004 EZ$_{95}$ = 2000 GQ$_{84}$**

Discovered 2004 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65622)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.77388 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23439606 | $\omega$ | 153.04381 | | −0.83135455 | +0.50646544 | |
| $a$ | 2.6051686 | $\Omega$ | 59.23985 | | −0.54572238 | −0.66615774 | |
| $e$ | 0.0450387 | $i$ | 15.44067 | | −0.10505571 | −0.54747294 | |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 20 | 691 | 0.2− | 1.4− | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2005 07 04 | E12 | (0.0 | 2.2+) |
| 1996 05 20 | 691 | 1.0+ | 0.4+ | 2002 12 05 | 704 | 0.1− | 0.7− | 2005 07 04 | E12 | 0.4− | 1.3+ |
| 1996 05 20 | 691 | 1.1+ | 0.8+ | 2002 12 05 | 704 | 0.4− | 0.5− | 2005 07 04 | E12 | 0.0 | 1.0+ |
| 1996 05 23 | 691 | 0.5− | 0.7+ | 2002 12 05 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | (0.7+ | 1.6+) |
| 1996 05 23 | 691 | 0.4− | 0.5+ | 2002 12 05 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 1996 05 23 | 691 | 0.0 | 0.3+ | 2002 12 05 | 704 | 0.5− | 1.1+ | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2000 04 03 | 704 | 0.0 | 0.2− | 2004 03 14 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2000 04 03 | 704 | 0.2+ | 0.0 | 2004 03 14 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 2000 04 03 | 704 | 0.3− | 0.2+ | 2004 03 14 | 704 | 0.2− | 0.8+ | 2006 10 22 | 703 | 0.6− | 1.0+ |
| 2000 04 08 | 704 | 0.6− | 0.0 | 2004 03 28 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 1.4− | 0.5+ |
| 2000 04 08 | 704 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.5+ |
| 2000 04 08 | 704 | 0.3− | 0.1+ | 2004 03 28 | 704 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.7+ |
| 2000 04 08 | 704 | 0.2− | 0.3− | 2004 03 28 | 704 | 1.1+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2004 04 14 | 703 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2002 11 13 | 644 | 0.2+ | 0.2+ | 2004 04 14 | 704 | 0.6+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 11 13 | 644 | 0.2− | 0.3+ | 2004 04 14 | 703 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2004 04 14 | 704 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.6+ |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2004 04 14 | 703 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.6− | 0.8+ |
| 2002 11 24 | 644 | 0.2+ | 0.3− | 2004 04 14 | 704 | 0.8− | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.6− | 0.2− | 2004 04 14 | 703 | 0.3− | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.8+ |
| 2002 12 05 | 704 | 0.4− | 0.4+ | 2004 04 14 | 704 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.5+ |
| 2002 12 05 | 704 | 0.5− | 0.1+ | 2005 07 04 | E12 | 0.6− | 0.3+ | | | | |

**(144546)∗ 2004 EP$_{101}$ = 2005 MC$_{10}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86383)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.27959 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21678536 | $\omega$ | 195.68187 | | +0.94032803 | −0.33989005 | |
| $a$ | 2.7444126 | $\Omega$ | 184.29065 | | +0.33069913 | +0.92397802 | |
| $e$ | 0.1535495 | $i$ | 12.39611 | | +0.08013285 | +0.17532649 | |
| $P$ | 4.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 04 | 644 | 0.2− | 0.7+ | 2006 08 30 | 704 | 0.9− | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.7+ |
| 2003 02 04 | 644 | 0.2− | 0.4+ | 2006 09 01 | 704 | 0.9− | 1.1− | 2006 09 29 | 704 | 0.5− | 0.9+ |
| 2003 02 04 | 644 | 0.4+ | 1.4+ | 2006 09 01 | 704 | (0.8− | 1.6−) | 2006 09 29 | 704 | 0.5− | 0.3+ |
| 2004 03 15 | 691 | 0.3− | 0.6+ | 2006 09 01 | 704 | 0.2+ | 1.0− | 2006 09 29 | 704 | 0.4− | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.5+ | 2006 09 01 | 704 | 0.3+ | 0.4− | 2006 09 29 | 704 | 1.2+ | 0.5+ |
| 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.1+ | 0.6− | 2006 09 30 | 608 | 0.7+ | 0.8− |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.7− | 0.1− | 2006 09 30 | 608 | 0.7+ | 0.9− |
| 2004 03 23 | 691 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.1− | 2006 09 30 | 608 | 0.6+ | 1.1− |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.0 | 0.4− | 2006 10 01 | 704 | 0.1+ | 1.4+ |
| 2004 04 24 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 691 | 0.2− | 0.1+ | 2006 10 01 | 704 | 1.4+ | 0.5+ |
| 2004 04 24 | 691 | 0.2+ | 0.6+ | 2006 09 16 | 691 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.7+ |
| 2004 04 24 | 691 | 0.5+ | 0.3+ | 2006 09 16 | 691 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.5+ |
| 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.5+ |
| 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | (1.8− | 1.4+) | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2005 06 04 | 691 | 0.0 | 0.1+ | 2006 09 17 | 704 | 1.1− | 0.2− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2005 06 24 | 644 | 0.2+ | 0.1− | 2006 09 17 | 704 | (1.9− | 0.8+) | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2005 06 24 | 644 | 0.0 | 0.1+ | 2006 09 17 | 704 | (1.3− | 1.7+) | 2006 10 17 | 703 | 0.3+ | 0.6− |
| 2005 06 24 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2005 06 29 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2005 06 29 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.9− |
| 2005 06 29 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.5− | 0.1+ |
| 2006 07 21 | 703 | 1.0− | 1.2+ | 2006 09 20 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2006 07 21 | 703 | 0.4+ | 0.3− | 2006 09 20 | 704 | 0.9+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2006 07 21 | 703 | 0.9− | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2006 07 21 | 703 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.9+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2006 08 18 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | (1.6+ | 0.5−) | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | (2.0+ | 0.0 ) | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2006 08 21 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | (1.6+ | 0.8+) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 1.2+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 1.1+ | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2006 08 29 | 703 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2006 08 29 | 703 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2006 08 29 | 703 | 0.4+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2006 08 30 | 704 | 0.4− | 0.6+ | 2006 09 27 | 704 | 0.1− | 0.7− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2006 08 30 | 704 | 0.8− | 0.1+ | 2006 09 27 | 704 | (0.5+ | 1.9−) | 2006 10 24 | 644 | 0.1+ | 0.3+ |
| 2006 08 30 | 704 | (1.5− | 0.6−) | 2006 09 27 | 704 | 0.3− | 0.8− | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2006 08 30 | 704 | 0.9− | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.6+ |
| 2006 08 30 | 704 | (0.5− | 2.3−) | 2006 09 27 | 704 | 0.6+ | 0.5− | 2006 11 23 | G96 | 0.7+ | 0.4− |
| 2006 08 30 | 704 | 0.5− | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2006 08 30 | 704 | 1.2− | 1.1− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.6− |
| 2006 08 30 | 704 | 0.6− | 1.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.6+ | 0.1− |

**(144547)∗ 2004 ED$_{103}$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.76940 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22274143 | $\omega$ | 216.65618 | | +0.98856120 | | −0.14501994 |
| $a$ | 2.6952686 | $\Omega$ | 151.59830 | | +0.15057421 | | +0.93330834 |
| $e$ | 0.1105076 | $i$ | 4.99621 | | +0.00861192 | | +0.32848860 |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 0.6− | 0.6− | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 1995 03 10 | 691 | 0.4− | 0.4− | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 1995 03 10 | 691 | 0.1+ | 0.1− | 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.3+ |
| 1995 03 10 | 691 | 0.1− | 0.1− | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 1.0− |
| 1995 03 10 | 691 | 0.1+ | 0.6− | 2004 04 13 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.9+ | 0.1+ |
| 1995 03 10 | 691 | 0.0 | 0.4− | 2005 07 12 | G96 | 0.7− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2001 07 27 | 699 | 0.8+ | 0.2+ | 2005 07 12 | G96 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2001 07 27 | 699 | 0.5− | 0.6− | 2005 07 12 | G96 | (1.8− | 0.8−) | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2001 07 27 | 699 | 0.2+ | 1.1+ | 2005 07 12 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.4+ | 0.6+ |
| 2001 07 27 | 699 | 0.4− | 0.2+ | 2006 09 20 | 699 | (0.7− | 2.2−) | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 08 16 | 704 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.1+ | 0.4+ | 2006 11 07 | 644 | 0.3+ | 0.4+ |
| 2001 08 16 | 704 | 0.7− | 0.2+ | 2006 09 20 | 699 | 0.8+ | 0.8+ | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2001 08 16 | 704 | 1.0+ | 0.4− | 2006 09 20 | 699 | 0.3− | 0.0 | 2006 11 07 | 644 | 0.6− | 0.1+ |
| 2001 08 16 | 704 | 0.1− | 1.1+ | 2006 09 30 | 703 | 1.0− | 0.4+ | 2006 11 13 | 703 | 0.4− | 0.3+ |
| 2004 02 13 | 291 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 1.0+ | 1.0+ | 2006 11 13 | 703 | (2.1− | 1.6+) |
| 2004 02 13 | 291 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 11 13 | 703 | 0.6− | 0.8+ |
| 2004 02 13 | 291 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.5− | 2006 11 13 | 703 | 0.2− | 1.0+ |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 691 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.1− |

**(144548)∗ 2004 ED$_{105}$ = 2005 LS$_2$**

Discovered 2004 Mar. 15 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86383)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.38172 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17867613 | $\omega$ | 188.69957 | | +0.99455042 | | +0.09296459 |
| $a$ | 3.1219434 | $\Omega$ | 165.70724 | | −0.08040097 | | +0.97206985 |
| $e$ | 0.0606269 | $i$ | 11.02015 | | −0.06637120 | | +0.21549432 |
| $P$ | 5.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 691 | 0.2− | 0.7− | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.3+ |
| 1993 03 20 | 691 | 0.4− | 0.5− | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.7+ | 0.2+ |
| 1993 03 20 | 691 | 0.3− | 0.3− | 2004 04 21 | 691 | 0.2+ | 0.2− | 2006 08 28 | 699 | 1.0− | 1.0+ |
| 1995 10 01 | 691 | 1.0+ | 0.8− | 2004 04 21 | 691 | 0.2− | 0.1− | 2006 08 28 | 699 | (1.5− | 1.6+) |
| 1995 10 01 | 691 | 0.1− | 0.5− | 2004 04 21 | 691 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.6− | 0.2+ |
| 1995 10 01 | 691 | 0.2− | 0.5− | 2005 06 02 | 703 | 0.9− | 0.8+ | 2006 08 28 | 699 | 0.1+ | 1.4+ |
| 2001 10 16 | 644 | 0.3− | 1.4+ | 2005 06 02 | 703 | (2.3− | 1.4+) | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2001 10 16 | 644 | 0.3− | 0.7+ | 2005 06 02 | 703 | 0.3− | 0.7+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2001 10 16 | 644 | 0.4− | 1.3+ | 2005 06 02 | 703 | 1.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2004 02 29 | 291 | 0.2− | 0.3+ | 2005 06 04 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.4− | 0.1+ |
| 2004 02 29 | 291 | 0.3− | 0.4+ | 2005 06 04 | 691 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.4− | 0.3+ |
| 2004 02 29 | 291 | 0.3− | 0.3+ | 2005 06 04 | 691 | 0.0 | 0.5− | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2004 02 29 | 291 | 0.9+ | 0.5+ | 2005 06 14 | 691 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.2+ |
| 2004 02 29 | 291 | 0.4+ | 0.5+ | 2005 06 14 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 2004 02 29 | 291 | 0.5+ | 0.8+ | 2005 06 14 | 691 | 1.3+ | 1.2+ | 2006 11 16 | G96 | 0.3+ | 0.3+ |
| 2004 03 15 | 691 | 0.2+ | 0.1− | 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2004 03 15 | 704 | 0.1− | 0.8− | 2005 07 05 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 704 | 0.6− | 0.2− | 2005 07 27 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.8− | 0.2+ |
| 2004 03 15 | 704 | 0.3+ | 0.6− | 2005 07 27 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2005 07 27 | 644 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 2004 03 15 | 704 | 0.7+ | 0.5+ | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.6+ |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 08 28 | 703 | 1.0− | 0.6+ | | | | |

**(144549)∗ 2004 EJ$_{112}$**

Discovered 2004 Mar. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.58878 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17837075 | $\omega$ | 6.62082 | | −0.71575600 | | −0.68491947 |
| $a$ | 3.1255057 | $\Omega$ | 129.19877 | | +0.63238720 | | −0.71848844 |
| $e$ | 0.0484388 | $i$ | 10.13017 | | +0.29627653 | | −0.12107717 |
| $P$ | 5.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 645 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.2− | 1.2+ | 2004 04 12 | 703 | 0.3− | 1.1+ |
| 2001 09 21 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.6+ | 0.3− | 2006 08 22 | F84 | 0.0 | 0.2+ |
| 2001 10 15 | 644 | 0.6+ | 0.4+ | 2004 03 15 | 704 | 1.2+ | 0.1− | 2006 08 22 | F84 | 0.7− | 0.5− |
| 2001 10 15 | 644 | 0.4+ | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.4+ | 2006 08 22 | F84 | 0.6+ | 0.8+ |
| 2001 10 15 | 644 | 0.3+ | 0.4+ | 2004 03 15 | 704 | 0.4+ | 0.5− | 2006 09 14 | 644 | 0.4− | 0.7+ |
| 2001 10 23 | 644 | 0.9− | 0.2+ | 2004 03 15 | 704 | 0.9+ | 0.9+ | 2006 09 14 | 644 | 0.5− | 0.4+ |
| 2001 10 23 | 644 | 0.4− | 0.4+ | 2004 03 23 | 704 | 0.8+ | 0.8+ | 2006 09 14 | 703 | (0.1− | 2.9−) |
| 2001 10 23 | 644 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.5+ | 1.2+ | 2006 09 14 | 703 | 1.4+ | 1.4− |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.9+ | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.6+ |
| 2002 01 13 | 645 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.1+ | 1.8+ |
| 2003 01 07 | 704 | 0.3+ | 1.0− | 2004 03 29 | 703 | (2.8− | 2.7+) | 2006 09 14 | 703 | 1.1− | 0.7− |
| 2003 01 07 | 704 | 1.3+ | 0.3− | 2004 03 29 | 703 | 1.1− | 0.9+ | 2006 09 20 | 703 | 2.1− | 0.4+ |
| 2003 01 07 | 704 | 0.1+ | 0.5+ | 2004 03 29 | 703 | 0.4− | 1.4+ | 2006 09 20 | 703 | 0.1+ | 1.4− |
| 2003 01 07 | 704 | 0.6− | 0.6− | 2004 03 29 | 703 | (1.0− | 2.2+) | 2006 09 20 | 703 | 1.6+ | 1.1+ |
| 2003 01 07 | 704 | 0.3+ | 0.6− | 2004 04 12 | 703 | 0.5− | 0.1+ | 2006 09 20 | 703 | 0.6+ | 0.1− |
| 2003 01 27 | 704 | (2.4− | 2.3−) | 2004 04 12 | 703 | 0.2− | 0.2+ | | | | |
| 2003 01 27 | 704 | 1.0− | 0.8− | 2004 04 12 | 703 | 1.0− | 0.8+ | | | | |

**(144550)∗ 2004 EJ$_{114}$**

Discovered 2004 Mar. 9 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.58711 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22039643 | $\omega$ | 278.63229 | | +0.74398184 | | +0.63430051 |
| $a$ | 2.7143531 | $\Omega$ | 42.37230 | | −0.42131031 | | +0.68937757 |
| $e$ | 0.1833429 | $i$ | 18.16703 | | −0.51864116 | | +0.34988774 |
| $P$ | 4.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 910 | 0.1− | 0.3− | 2002 12 07 | 704 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.1− |
| 1997 10 05 | 910 | 0.5− | 0.2− | 2004 03 09 | 644 | 0.2+ | 0.8− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 1997 10 05 | 910 | 0.4− | 0.0 | 2004 03 09 | 644 | 0.2+ | 0.6− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 1997 10 30 | 704 | 1.2+ | 0.5+ | 2004 03 09 | 644 | 0.3+ | 0.4− | 2006 11 14 | 703 | 0.3+ | 0.1− |
| 1997 10 30 | 704 | 1.5+ | 0.7+ | 2004 03 14 | 704 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 1997 10 30 | 704 | 0.7+ | 1.7− | 2004 03 14 | 704 | 0.8+ | 0.5+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 1997 10 30 | 704 | 0.4− | 0.4− | 2004 03 14 | 704 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.0 |
| 1997 11 06 | 704 | (6.5− | 1.0−) | 2004 03 14 | 704 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 1997 11 06 | 704 | (3.9− | 0.3+) | 2004 03 14 | 704 | (1.9+ | 0.3+) | 2006 11 14 | G96 | 0.2− | 0.2− |
| 1997 11 06 | 704 | (5.8− | 2.4−) | 2004 03 18 | 644 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1997 11 06 | 704 | (3.9− | 1.0−) | 2004 03 18 | 644 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2000 04 04 | 704 | 1.8+ | 0.4+ | 2004 03 18 | 644 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2000 04 04 | 704 | 0.7− | 1.2+ | 2004 03 18 | 644 | 0.7+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2000 04 04 | 704 | 0.1− | 0.6+ | 2004 03 18 | 644 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2000 04 04 | 704 | 0.4+ | 1.6+ | 2004 03 18 | 644 | 0.3− | 0.4− | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2000 04 27 | 704 | (3.4+ | 1.8−) | 2004 04 08 | 644 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2000 04 27 | 704 | 0.3+ | 1.7+ | 2004 04 08 | 644 | 0.2+ | 0.6− | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2000 04 27 | 704 | (1.0+ | 3.4+) | 2004 04 08 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.5+ |
| 2000 04 27 | 704 | (1.0− | 5.0+) | 2005 01 23 | 809 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 2001 08 27 | 644 | 0.5+ | 1.0+ | 2005 01 23 | 809 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2001 08 27 | 644 | 0.3+ | 1.3+ | 2005 01 23 | 809 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2001 08 27 | 644 | (0.2+ | 1.6+) | 2006 10 21 | 704 | 0.2− | 1.0+ | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2001 09 25 | 644 | 0.1− | 0.0 | 2006 10 21 | 704 | 0.3− | 1.1+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2001 09 25 | 644 | 0.0 | 0.7+ | 2006 10 21 | 704 | (1.9− | 0.3−) | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2001 09 25 | 644 | 0.1+ | 0.6+ | 2006 10 29 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2001 10 18 | 699 | 0.4− | 0.1− | 2006 10 29 | 704 | 0.5+ | 0.9+ | 2006 11 22 | 704 | 0.4− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 699 | 0.3− | 0.7− | 2006 10 29 | 704 | 0.6− | 0.2− | 2006 11 22 | 704 | 0.6− | 0.0 | | |
| 2001 10 18 | 699 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.6− | 0.0 | | |
| 2001 10 18 | 699 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.2− | 1.0− | | |
| 2001 11 07 | 704 | (0.2− | 2.0+) | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 12 01 | 704 | 0.6+ | 0.1+ | | |
| 2001 11 07 | 704 | 0.6− | 0.7+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.8+ | 0.6+ | | |
| 2001 11 07 | 704 | 1.3− | 1.0− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.3− | 0.4+ | | |
| 2002 12 07 | 704 | 0.8− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 | | | | | | |
| 2002 12 07 | 704 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.2− | 0.2+ | | | | | | |

**(144551)∗ 2004 EL$_{115}$**

Discovered 2004 Mar. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.10703 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24747131 | $\omega$ | 26.02702 | | −0.28647448 | −0.95328010 | |
| $a$ | 2.5125775 | $\Omega$ | 80.74247 | | +0.86120560 | −0.30005756 | |
| $e$ | 0.0554472 | $i$ | 5.57373 | | +0.41983008 | −0.03496457 | |
| $P$ | 3.98 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 23 | 691 | 0.0 | 0.0 | 2004 01 23 | 704 | 0.3+ | 1.0+ | 2006 10 04 | G96 | 0.1+ | 0.1+ | | |
| 1992 02 23 | 691 | 0.0 | 0.4− | 2004 02 16 | 704 | 0.5+ | 0.2− | 2006 10 04 | G96 | 0.3− | 0.2+ | | |
| 1992 02 23 | 691 | 0.4− | 1.3− | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.1− | | |
| 1996 01 24 | 691 | 0.1+ | 0.2− | 2004 02 16 | 704 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.1− | | |
| 1996 01 24 | 691 | 0.0 | 0.2+ | 2004 02 16 | 704 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 1996 01 24 | 691 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.7+ | 2006 10 10 | 644 | 0.5+ | 0.4+ | | |
| 2002 10 01 | 699 | 0.6− | 0.4− | 2004 02 18 | 608 | 0.2+ | 0.5− | 2006 10 10 | 644 | 0.3+ | 0.3+ | | |
| 2002 10 01 | 699 | 0.5− | 0.9+ | 2004 02 18 | 608 | 0.4+ | 0.5− | 2006 10 11 | 644 | 0.4+ | 0.3+ | | |
| 2002 10 01 | 699 | 1.3+ | 1.4+ | 2004 02 18 | 608 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.0 | | |
| 2002 10 01 | 699 | (0.6+ | 2.9+) | 2004 03 14 | 704 | 0.7− | 1.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 1.4+ | 0.4− | | |
| 2002 10 11 | 704 | 1.0− | 0.5+ | 2004 03 14 | 704 | 0.8− | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.5− | | |
| 2002 10 11 | 704 | (1.8− | 0.4+) | 2004 03 23 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.2+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.8+ | 2004 03 23 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.4+ | | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2004 03 23 | 704 | 1.2+ | 0.9+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 31 | 645 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.5− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.3+ | | |
| 2002 10 31 | 704 | 0.7− | 1.0+ | 2004 03 23 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.4+ | 0.4+ | | |
| 2002 10 31 | 704 | 0.7+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.5− | | |
| 2002 10 31 | 704 | 0.0 | 1.4+ | 2006 09 25 | 699 | (1.6+ | 0.2+) | 2006 10 22 | 703 | 0.7− | 0.2+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 699 | 1.1− | 0.7− | 2006 10 22 | 703 | (1.9− | 0.8−) | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.2− | 1.0+ | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.1+ | | |
| 2004 01 23 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.2− | 1.3− | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2004 01 23 | 704 | 0.1+ | 1.1+ | 2006 09 30 | 703 | 0.8+ | 0.4− | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2004 01 23 | 704 | 0.4+ | 0.9+ | 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.1+ | | |

**(144552)∗ 2004 FS$_4$**

Discovered 2004 Mar. 19 by R. Holmes at Astronomical Research Observatory, Charleston.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.41209 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21387139 | $\omega$ | 145.41682 | | +0.25416298 | +0.96643979 | |
| $a$ | 2.7692846 | $\Omega$ | 139.27119 | | −0.89977793 | +0.25044248 | |
| $e$ | 0.0280764 | $i$ | 3.28193 | | −0.35468415 | +0.05720751 | |
| $P$ | 4.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 691 | 0.2− | 0.2− | 2002 11 14 | 704 | 1.0+ | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.3+ | | |
| 1999 01 17 | 691 | 0.2− | 0.0 | 2002 11 14 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 0.9− | 0.8− | | |
| 2000 04 24 | 699 | 0.4− | 0.8+ | 2002 12 03 | 644 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.5+ | | |
| 2000 04 24 | 699 | (2.4+ | 0.2−) | 2002 12 03 | 644 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.5− | 0.9+ | | |
| 2000 04 24 | 699 | (0.5+ | 2.9+) | 2002 12 03 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.3+ | | |
| 2000 04 24 | 699 | (3.0+ | 0.9+) | 2004 02 29 | 926 | 0.0 | 0.6+ | 2006 10 01 | 704 | (2.2+ | 0.8+) | | |
| 2001 08 15 | 104 | 0.7− | 0.0 | 2004 02 29 | 926 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2001 08 16 | 104 | 0.8− | 1.1− | 2004 02 29 | 926 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 2001 08 16 | 104 | 1.2− | 1.0+ | 2004 02 29 | 926 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.4+ | | |
| 2001 08 16 | 704 | 0.1+ | 0.6− | 2004 02 29 | 926 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 2001 08 16 | 704 | 0.1+ | 0.4+ | 2004 02 29 | 926 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2001 08 16 | 704 | 1.0− | 0.2− | 2004 03 19 | H55 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2001 08 16 | 704 | 1.4+ | 0.2+ | 2004 03 19 | H55 | 1.3+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 16 | 704 | 0.5+ | 1.1− | 2004 03 19 | H55 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2001 08 23 | 699 | 0.4− | 0.7+ | 2004 03 21 | H55 | 0.5+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.4− | | |
| 2001 08 23 | 699 | 0.6+ | 1.0+ | 2004 03 21 | H55 | 0.9− | 1.3+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 08 23 | 699 | 0.1− | 0.7+ | 2004 03 21 | H55 | 1.5+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2001 08 23 | 699 | 1.3+ | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2006 09 18 | 703 | 0.9+ | 0.7+ | 2006 10 22 | 703 | 0.2− | 0.3+ | | |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.7− | 0.8− | 2006 10 22 | 703 | 0.4− | 1.1+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 1.1+ | 0.9− | 2006 10 22 | 703 | 0.0 | 0.8+ | | |
| 2002 11 14 | 704 | 0.2− | 1.2− | 2006 09 18 | 699 | (1.7− | 2.1+) | | | | | | |

**(144553)∗ 2004 FB$_6$**

Discovered 2004 Mar. 23 by L. Ball at Emerald Lane Observatory, Decatur.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.20054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21495056 | $\omega$ | 236.01438 | | +0.60231238 | −0.79814344 | |
| $a$ | 2.7600079 | $\Omega$ | 176.84715 | | +0.78953672 | +0.59311800 | |
| $e$ | 0.0810854 | $i$ | 14.39077 | | +0.11769266 | +0.10572649 | |
| $P$ | 4.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 645 | 0.1− | 0.1− | 2004 03 23 | 843 | 0.1− | 0.9+ | 2006 09 13 | 644 | 0.0 | 0.3+ | | |
| 2001 06 15 | 645 | 0.0 | 0.0 | 2004 03 24 | 843 | (1.4− | 1.9+) | 2006 09 13 | 644 | 0.1− | 0.4+ | | |
| 2002 10 10 | 644 | 0.5+ | 0.2− | 2004 03 24 | 843 | (1.8− | 2.6+) | 2006 09 16 | 699 | 1.1+ | 0.8+ | | |
| 2002 10 10 | 644 | 0.1+ | 1.1+ | 2004 03 24 | 843 | (3.1− | 2.2+) | 2006 09 16 | 699 | 0.5+ | 1.3+ | | |
| 2002 10 10 | 644 | 0.1− | 0.7+ | 2004 03 26 | 843 | 0.6− | 0.6+ | 2006 09 16 | 699 | 1.5+ | 0.1+ | | |
| 2002 10 31 | 704 | 0.5+ | 0.7+ | 2004 03 26 | 843 | 1.5− | 1.4+ | 2006 09 16 | 699 | 0.6− | 0.1− | | |
| 2002 10 31 | 704 | 0.1+ | 0.7+ | 2004 03 26 | 843 | 0.5+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.4+ | | |
| 2002 10 31 | 704 | (0.6+ | 1.6+) | 2004 03 26 | 843 | (0.0 | 1.8+) | 2006 09 19 | 699 | 0.3− | 0.7+ | | |
| 2002 11 06 | 699 | (0.4− | 2.1+) | 2004 04 17 | 843 | 0.2− | 1.0+ | 2006 09 19 | 699 | 0.4− | 0.7+ | | |
| 2002 11 06 | 699 | 0.4− | 1.2+ | 2004 04 17 | 843 | (0.7+ | 1.8+) | 2006 09 19 | 699 | (0.1− | 1.5+) | | |
| 2002 11 06 | 699 | 0.2+ | 1.1+ | 2004 04 17 | 843 | (0.6+ | 1.6+) | 2006 09 20 | 699 | 1.0+ | 0.8+ | | |
| 2002 11 06 | 699 | 0.3+ | 0.6− | 2005 06 16 | 691 | 0.0 | 0.4+ | 2006 09 20 | 704 | (1.8− | 0.2+) | | |
| 2004 03 16 | 599 | (1.0− | 1.5−) | 2005 06 16 | 691 | 0.2− | 0.1+ | 2006 09 20 | 699 | 1.3+ | 0.5− | | |
| 2004 03 16 | 599 | 0.0 | 0.1+ | 2005 06 16 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.5− | 0.2+ | | |
| 2004 03 16 | 599 | 0.1− | 0.5+ | 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.9− | 0.2− | | |
| 2004 03 16 | 599 | 0.2+ | 0.0 | 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.1− | 0.6+ | | |
| 2004 03 18 | 704 | 0.6+ | 0.1− | 2005 07 04 | 691 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 1.2− | 0.8+ | | |
| 2004 03 18 | 704 | 0.6+ | 0.6+ | 2006 08 27 | 699 | 0.6− | 0.1+ | 2006 09 20 | 699 | (0.8+ | 1.6+) | | |
| 2004 03 18 | 704 | 0.7+ | 0.4− | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 10 16 | 703 | (0.2+ | 1.9−) | | |
| 2004 03 18 | 704 | 0.2− | 0.0 | 2006 08 27 | 699 | 1.1+ | 1.1+ | 2006 10 16 | 703 | 0.1+ | 0.4− | | |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 08 27 | 699 | (2.8− | 2.4+) | 2006 10 16 | G96 | 0.1+ | 0.1+ | | |
| 2004 03 18 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 0.6− | 0.6− | 2006 10 16 | 703 | 0.6+ | 0.2+ | | |
| 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.9− | 0.7− | 2006 10 16 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.5+ | 0.6− | 2006 08 29 | 703 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.1− | | |
| 2004 03 20 | 704 | 0.8− | 1.2− | 2006 08 29 | 703 | 1.2− | 0.0 | 2006 10 16 | G96 | 0.2− | 0.0 | | |
| 2004 03 20 | 704 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 1.2− | 0.3− | 2006 10 16 | G96 | 0.3− | 0.2+ | | |
| 2004 03 20 | 704 | 1.2− | 0.2+ | 2006 09 12 | 703 | 0.4+ | 0.1+ | 2006 11 27 | G96 | 0.5− | 0.7− | | |
| 2004 03 23 | 843 | (1.1− | 2.4+) | 2006 09 12 | 703 | 1.3− | 0.8+ | 2006 11 27 | G96 | 0.1+ | 0.4− | | |
| 2004 03 23 | 843 | (1.5− | 1.9+) | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.6+ | 0.1− | | |
| 2004 03 23 | 843 | (1.2− | 2.1+) | 2006 09 13 | 644 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.0 | | |

**(144554)∗ 2004 FP$_6$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.75920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23767692 | $\omega$ | 196.86771 | | −0.99082846 | +0.13105936 | |
| $a$ | 2.5811389 | $\Omega$ | 350.48033 | | −0.08913467 | −0.81691619 | |
| $e$ | 0.1039704 | $i$ | 11.47431 | | −0.10155776 | −0.56166840 | |
| $P$ | 4.15 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 699 | 0.2+ | 1.1+ | 2004 03 16 | 608 | 1.4+ | 1.0+ | 2004 03 28 | 704 | 0.2− | 0.1+ |
| 2000 05 05 | 699 | 0.9+ | 0.1+ | 2004 03 17 | 691 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.1− | 0.1− |
| 2000 05 05 | 699 | 1.8+ | 0.2+ | 2004 03 17 | 691 | 0.3− | 0.1− | 2004 03 28 | 704 | 0.5+ | 0.1− |
| 2000 05 05 | 699 | (0.2+ | 2.5+) | 2004 03 17 | 691 | 0.2− | 0.1− | 2004 03 28 | 691 | 0.1− | 0.1− |
| 2001 08 15 | 608 | 0.7− | 0.0 | 2004 03 18 | 704 | 0.5+ | 0.1+ | 2004 03 28 | 704 | 0.3− | 0.6+ |
| 2001 08 15 | 608 | 0.4− | 0.8− | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2004 03 28 | 704 | 0.5+ | 0.4− |
| 2001 08 15 | 608 | 0.6− | 0.5+ | 2004 03 18 | 704 | 0.3+ | 0.1+ | 2004 03 28 | 691 | 0.1− | 0.1− |
| 2002 11 25 | 644 | 0.7− | 0.6+ | 2004 03 18 | 704 | (0.5+ | 2.6+) | 2004 03 28 | 691 | 0.1− | 0.1− |
| 2002 11 25 | 644 | 0.6− | 0.6+ | 2004 03 18 | 704 | 0.1− | 0.1− | 2004 04 19 | 704 | 0.7+ | 0.2+ |
| 2002 11 25 | 644 | 0.7− | 0.8+ | 2004 03 20 | 704 | 0.6− | 0.1+ | 2004 04 19 | 704 | 0.8+ | 0.7+ |
| 2002 12 06 | 704 | (0.8− | 1.6+) | 2004 03 20 | 704 | 0.4− | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.1+ |
| 2002 12 06 | 704 | (0.4− | 2.2+) | 2004 03 20 | 704 | 0.1− | 0.7+ | 2004 04 19 | 704 | 0.8+ | 0.2+ |
| 2002 12 06 | 704 | 0.4− | 1.2+ | 2004 03 25 | 704 | 0.2− | 0.2+ | 2004 04 20 | 703 | 0.2+ | 0.7+ |
| 2002 12 06 | 704 | 0.1+ | 1.1+ | 2004 03 25 | 704 | 0.2− | 0.3− | 2004 04 20 | 703 | 0.5− | 1.0+ |
| 2004 02 15 | 703 | 0.5− | 0.4+ | 2004 03 25 | 704 | 0.7− | 0.1+ | 2004 04 20 | 703 | (0.3− | 2.1+) |
| 2004 02 15 | 703 | (1.9+ | 0.8−) | 2004 03 26 | 699 | 0.0 | 0.1− | 2004 04 20 | 703 | (0.1− | 1.9−) |
| 2004 02 15 | 703 | 0.5+ | 0.4+ | 2004 03 26 | 699 | 0.3− | 0.1+ | 2005 07 03 | 644 | 0.4− | 1.0+ |
| 2004 02 15 | 703 | 0.1− | 0.5− | 2004 03 26 | 704 | 0.2+ | 0.2− | 2005 07 03 | 644 | 0.2− | 0.7+ |
| 2004 02 26 | 704 | 0.1− | 0.0 | 2004 03 26 | 704 | 0.3− | 0.3− | 2005 07 03 | 644 | 0.2− | 0.9+ |
| 2004 02 26 | 704 | 1.1+ | 0.6− | 2004 03 26 | 699 | 0.2− | 0.1− | 2005 07 10 | E12 | 0.3+ | 1.5+ |
| 2004 02 26 | 704 | 0.3− | 0.6+ | 2004 03 26 | 704 | 0.0 | 0.3− | 2005 07 10 | E12 | 0.8− | 0.9+ |
| 2004 02 26 | 704 | 0.1+ | 0.1− | 2004 03 26 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2004 02 26 | 704 | 0.3+ | 0.1− | 2004 03 26 | 699 | 0.3− | 0.5− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2004 03 16 | 703 | 0.2− | 0.4+ | 2004 03 26 | 704 | 0.5− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2004 03 16 | 703 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.9− | 0.8− |
| 2004 03 16 | 703 | 0.6+ | 0.4+ | 2004 03 27 | 704 | 0.2+ | 0.8+ | 2006 11 15 | 703 | 0.6+ | 0.4− |
| 2004 03 16 | 703 | 0.1+ | 0.1+ | 2004 03 27 | 703 | 0.1+ | 0.7+ | 2006 11 15 | 703 | 0.5+ | 0.2+ |
| 2004 03 16 | 704 | 1.2+ | 0.1− | 2004 03 27 | 704 | 0.5− | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 0.6+ | 1.4− | 2004 03 27 | 703 | 0.1− | 1.0+ | 2006 11 22 | 703 | 0.2− | 0.5+ |
| 2004 03 16 | 704 | 0.5+ | 0.7− | 2004 03 27 | 704 | 0.0 | 0.5+ | 2006 11 22 | 703 | 0.9− | 0.5− |
| 2004 03 16 | 704 | 0.1− | 0.2− | 2004 03 27 | 703 | 0.3+ | 0.9+ | 2006 11 22 | 703 | (0.2+ | 5.4+) |
| 2004 03 16 | 608 | 0.4+ | 0.4− | 2004 03 27 | 704 | 0.5− | 0.4+ | 2006 11 22 | 703 | 0.3− | 0.4− |
| 2004 03 16 | 608 | 0.4+ | 1.0− | 2004 03 27 | 703 | 0.1+ | 1.1+ | | | | |

**(144555)∗ 2004 FQ$_8$ = 1997 LW$_4$ = 2000 AW$_{205}$ = 2004 DR**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 95191), G. V. Williams (*ibid.*), A. Doppler (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 187.32846 | | (2000.0) | | | |
| $n$ | 0.26340997 | $\omega$ | 138.64667 | | −0.63936496 | +0.76678714 |
| $a$ | 2.4101713 | $\Omega$ | 91.52871 | | −0.71959531 | −0.57059376 |
| $e$ | 0.1665384 | $i$ | 3.26927 | | −0.27091518 | −0.29404124 |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 1.9+ | 1.6− | 2000 01 16 | 734 | 0.8− | 0.1− | 2004 03 18 | 291 | 0.3+ | 0.5+ |
| 1993 03 18 | 809 | 1.0− | 0.1− | 2000 01 16 | 734 | 0.9− | 0.8− | 2004 03 18 | 291 | 0.6+ | 0.6+ |
| 1993 03 18 | 809 | (2.1+ | 4.0−) | 2000 01 16 | 734 | 0.2− | 0.0 | 2004 03 20 | 704 | 1.2+ | 1.3+ |
| 1993 03 23 | 809 | 1.1+ | 1.2− | 2000 01 21 | 734 | (0.3− | 4.0−) | 2004 03 20 | 704 | 0.7+ | 0.8+ |
| 1993 04 16 | 413 | (0.9+ | 2.8−) | 2000 01 21 | 734 | (1.3− | 6.0−) | 2004 03 20 | 704 | 1.1+ | 0.5+ |
| 1997 06 10 | 684 | 0.0 | 0.4− | 2001 07 21 | 608 | 0.6− | 0.6+ | 2004 03 20 | 704 | 0.6+ | 1.3+ |
| 1997 06 10 | 684 | 0.3− | 0.1+ | 2001 07 21 | 608 | 0.3− | 0.1+ | 2004 03 20 | 704 | 0.8+ | 0.6+ |
| 1997 06 10 | 684 | 0.8− | 0.5− | 2001 07 21 | 608 | 0.3− | 0.2+ | 2005 08 27 | 644 | 0.1− | 0.5+ |
| 1997 06 11 | 684 | 0.4+ | 0.1− | 2004 01 22 | 704 | 0.4+ | 1.0+ | 2005 08 27 | 644 | 0.1− | 0.2+ |
| 1997 06 11 | 684 | 0.3+ | 0.1+ | 2004 01 22 | 704 | 0.9− | 0.1+ | 2005 08 27 | 644 | 0.4− | 0.2+ |
| 1997 06 11 | 684 | 0.4− | 0.1+ | 2004 01 22 | 704 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.5+ |
| 1999 12 31 | 691 | 0.2− | 1.2− | 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.5− | 0.4+ |
| 1999 12 31 | 691 | 1.5− | 1.3− | 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.3+ |
| 1999 12 31 | 691 | 0.2− | 1.0− | 2004 02 16 | 691 | 0.5− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2000 01 13 | 734 | 0.5− | 0.2+ | 2004 02 18 | 333 | 0.7+ | 1.0− | 2006 11 24 | G96 | 0.0 | 0.3+ |
| 2000 01 13 | 734 | 2.0− | 0.7+ | 2004 02 18 | 333 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2000 01 13 | 734 | 0.9− | 0.7− | 2004 02 18 | 333 | 0.3− | 0.2+ | 2006 11 24 | G96 | (1.7+ | 3.4+) |
| 2000 01 13 | 691 | 0.2+ | 0.2− | 2004 03 16 | 704 | 0.2+ | 0.5+ | 2006 12 01 | 691 | 0.0 | 0.5+ |
| 2000 01 13 | 691 | 0.3+ | 0.2− | 2004 03 16 | 704 | 0.4− | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.6+ |
| 2000 01 13 | 691 | 0.2+ | 0.2− | 2004 03 16 | 704 | 0.5+ | 1.1+ | 2006 12 01 | 691 | 0.5+ | 1.2+ |
| 2000 01 16 | 734 | 0.2+ | 1.1− | 2004 03 16 | 704 | 0.2+ | 0.1+ | | | | |
| 2000 01 16 | 734 | 0.5− | 0.7− | 2004 03 18 | 291 | 0.4+ | 0.4+ | | | | |

**(144556)∗ 2004 FT$_8$ = 2005 LT**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76455)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.54072 | | (2000.0) | | | |
| $n$ | 0.17488010 | $\omega$ | 98.04889 | | +0.02175324 | +0.99865748 |
| $a$ | 3.1669590 | $\Omega$ | 172.68697 | | −0.99916383 | +0.02334437 |
| $e$ | 0.1235205 | $i$ | 21.67374 | | −0.03461856 | −0.04624145 |
| $P$ | 5.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.5+ | 0.3+ | 2005 06 02 | 704 | 0.0 | 0.8+ | 2005 07 09 | 703 | 0.4− | 0.5− |
| 2000 09 03 | 704 | 0.5+ | 0.6+ | 2005 06 05 | 704 | 0.5+ | 0.1+ | 2005 07 09 | 703 | 0.7− | 0.4− |
| 2000 09 03 | 704 | 0.5− | 0.8+ | 2005 06 05 | 704 | 0.5+ | 0.2− | 2006 08 19 | 691 | 0.1− | 0.4− |
| 2000 09 03 | 704 | 0.9+ | 0.5+ | 2005 06 05 | 704 | 0.9+ | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.7+ |
| 2000 09 03 | 704 | 0.1− | 0.3+ | 2005 06 05 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 06 06 | 704 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 06 06 | 704 | 0.2+ | 0.6− | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2005 06 06 | 704 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2005 06 06 | 704 | 0.0 | 0.2− | 2006 09 15 | 691 | (2.5− | 2.2+) |
| 2004 03 16 | 704 | 0.2+ | 0.0 | 2005 06 07 | 703 | (1.6− | 0.5−) | 2006 09 15 | 691 | 0.2− | 0.1− |
| 2004 03 16 | 704 | 0.6− | 1.2− | 2005 06 07 | 703 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2004 03 16 | 704 | 0.8− | 0.7+ | 2005 06 07 | 703 | 0.7− | 0.3− | 2006 09 19 | 699 | 0.8− | 0.0 |
| 2004 03 16 | 704 | 0.4− | 0.1− | 2005 06 07 | 703 | (0.3− | 1.7+) | 2006 09 19 | 703 | 1.3+ | 0.2+ |
| 2004 03 18 | 704 | 0.5− | 0.6+ | 2005 06 16 | 703 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.9− |
| 2004 03 18 | 704 | 0.3+ | 0.6+ | 2005 06 16 | 703 | 0.6− | 0.1+ | 2006 09 19 | 703 | (0.7+ | 1.8+) |
| 2004 03 18 | 704 | 0.0 | 0.9+ | 2005 06 16 | 703 | 0.6+ | 0.2− | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 2004 03 18 | 704 | 0.5+ | 0.1+ | 2005 06 16 | 703 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.8− |
| 2004 03 18 | 704 | (0.1+ | 1.7+) | 2005 06 23 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.3+ | 1.4+ |
| 2004 03 18 | 691 | 0.1+ | 0.5+ | 2005 06 23 | 644 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.9+ | 0.6+ |
| 2004 03 18 | 691 | 0.0 | 0.5+ | 2005 06 23 | 644 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.8+ | 1.4+ |
| 2004 03 18 | 691 | 0.3− | 0.5+ | 2005 06 25 | 644 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.1− | 0.6+ |
| 2004 03 23 | 704 | (2.2+ | 0.3+) | 2005 06 25 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.8+ |
| 2004 03 23 | 704 | 0.6+ | 0.3+ | 2005 06 25 | 644 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.3+ | 1.1+ |
| 2004 03 23 | 704 | 0.0 | 0.1− | 2005 06 25 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2004 03 23 | 704 | (1.9+ | 2.4+) | 2005 06 25 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.7+ |
| 2004 03 27 | 704 | 0.5+ | 0.6+ | 2005 06 25 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 1.0− |
| 2004 03 27 | 704 | 1.4+ | 0.2+ | 2005 06 29 | 703 | 0.7− | 0.0 | 2006 09 30 | 703 | 0.4− | 1.1− |
| 2004 03 27 | 704 | 0.1+ | 0.2− | 2005 06 29 | 703 | (1.7− | 0.4−) | 2006 10 16 | 703 | 0.6+ | 0.9− |
| 2004 03 27 | 704 | 0.7+ | 0.9− | 2005 06 29 | 703 | 0.9− | 0.6− | 2006 10 16 | 703 | (1.0− | 1.6−) |
| 2005 06 01 | 704 | 1.0− | 0.6+ | 2005 06 29 | 703 | 0.1+ | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.6+ |
| 2005 06 01 | 704 | 0.2− | 0.1+ | 2005 07 03 | 703 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2005 06 01 | 704 | 0.3− | 0.6− | 2005 07 03 | 703 | 0.0 | 0.9− | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2005 06 01 | 704 | 0.1− | 0.8− | 2005 07 03 | 703 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2005 06 02 | 704 | 0.1− | 0.6− | 2005 07 03 | 703 | 0.9+ | 1.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2005 06 02 | 704 | 0.1+ | 0.1+ | 2005 07 09 | 703 | 0.5+ | 0.1+ | | | | |
| 2005 06 02 | 704 | 0.4− | 0.2+ | 2005 07 09 | 703 | 1.0− | 0.1+ | | | | |

**(144557)∗ 2004 FW$_8$ = 2001 QH$_{221}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62072)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.14111 | | (2000.0) | | | |
| $n$ | 0.22031109 | $\omega$ | 265.26381 | | +0.29610855 | −0.95368770 |
| $a$ | 2.7150540 | $\Omega$ | 167.13061 | | +0.94316294 | +0.28319207 |
| $e$ | 0.0960566 | $i$ | 13.74224 | | +0.15087541 | +0.10140031 |
| $P$ | 4.47 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.9− | 0.6− | 2004 03 23 | 704 | 0.8+ | 0.1− | 2006 09 21 | 699 | 0.6− | 0.7+ |
| 2001 07 20 | 699 | 1.1− | 0.0 | 2004 03 23 | 704 | 1.3+ | 0.0 | 2006 09 21 | 699 | 0.6− | 0.2+ |
| 2001 07 20 | 699 | 0.4+ | 0.7+ | 2004 03 23 | 704 | 0.4+ | 0.1− | 2006 09 21 | 699 | 0.0 | 0.3+ |
| 2001 07 20 | 699 | 0.2+ | 0.9+ | 2004 03 23 | 704 | 0.9+ | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.9+ |
| 2001 08 24 | 699 | 0.6− | 0.6− | 2004 03 28 | 704 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.2− | 0.5+ |
| 2001 08 24 | 699 | 0.3− | 0.4+ | 2004 03 28 | 704 | 0.7− | 0.2+ | 2006 09 22 | 704 | 0.3− | 0.3+ |
| 2001 08 24 | 699 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.2+ | 1.0+ | 2006 09 22 | 704 | 0.1− | 0.2+ |
| 2001 08 24 | 699 | 0.8− | 0.0 | 2004 03 28 | 704 | 0.4− | 0.4+ | 2006 09 22 | 704 | (1.6− | 1.0+) |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.3+ |
| 2001 08 25 | 704 | 0.6+ | 1.0+ | 2004 03 28 | 704 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.6+ |
| 2001 08 25 | 704 | 0.3+ | 0.9+ | 2004 03 28 | 691 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 1.2+ |
| 2001 08 25 | 704 | 0.5+ | 0.0 | 2004 03 28 | 691 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2001 08 25 | 704 | 0.8+ | 0.5+ | 2004 03 30 | 703 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.4+ |
| 2001 10 18 | 644 | 0.2+ | 0.1− | 2004 03 30 | 703 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2001 10 18 | 644 | 0.1− | 0.0 | 2004 03 30 | 703 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2001 10 18 | 644 | 0.1+ | 0.2− | 2004 03 30 | 703 | 0.2− | 0.6+ | 2006 09 29 | 699 | 0.6+ | 0.4+ |
| 2003 01 26 | 644 | 0.0 | 0.6+ | 2004 04 15 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.3− |
| 2003 01 26 | 644 | 0.2+ | 0.3+ | 2004 04 15 | 704 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.5+ | 0.4+ |
| 2003 01 26 | 644 | 0.1+ | 0.6+ | 2004 04 15 | 704 | 0.4+ | 0.1− | 2006 09 29 | 699 | 0.5− | 0.6+ |
| 2004 02 23 | 704 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.6+ | 1.3+ | 2006 09 30 | 704 | 0.6− | 0.4+ |
| 2004 02 23 | 704 | 0.6+ | 0.1+ | 2004 04 21 | 703 | (0.3+ | 1.9−) | 2006 09 30 | 704 | 0.6− | 0.2− |
| 2004 02 23 | 704 | 0.5+ | 1.0+ | 2004 04 21 | 703 | 0.3+ | 1.2− | 2006 09 30 | 704 | 0.1+ | 0.6+ |
| 2004 02 23 | 704 | 0.0 | 0.2+ | 2004 04 21 | 703 | 1.3− | 0.8− | 2006 09 30 | 704 | 0.1+ | 0.1− |
| 2004 03 16 | 704 | 0.3+ | 0.3− | 2004 04 21 | 703 | 0.8− | 1.0− | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 2004 03 16 | 704 | 0.5+ | 0.5+ | 2004 04 23 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2004 03 16 | 704 | 0.6+ | 0.5+ | 2004 04 23 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 0.4+ | 0.4+ | 2004 04 23 | 704 | 0.2+ | 0.8+ | 2006 10 16 | 703 | (1.9+ | 1.3+) |
| 2004 03 16 | 704 | (1.9+ | 0.0 ) | 2004 04 23 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2004 03 18 | 691 | 0.0 | 0.4+ | 2004 05 12 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2004 03 18 | 691 | 0.1− | 0.3+ | 2004 05 12 | 644 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2004 03 18 | 691 | 0.1− | 0.4+ | 2004 05 12 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2004 03 20 | 704 | 0.7+ | 0.3− | 2006 08 19 | 699 | 1.5+ | 1.4+ | 2006 10 22 | 703 | (1.6+ | 3.2−) |
| 2004 03 20 | 704 | 0.2− | 0.2+ | 2006 08 19 | 699 | 0.5− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 0.3+ | 0.1− | 2006 08 19 | 699 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.5+ | 0.4+ |
| 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 08 19 | 699 | (2.1+ | 0.1+) | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2004 03 20 | 704 | 0.9+ | 0.6+ | 2006 09 16 | 704 | 0.2− | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2004 03 22 | 699 | 0.4+ | 0.1+ | 2006 09 16 | 704 | (0.6+ | 1.8+) | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2004 03 22 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2004 03 22 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 704 | 0.1− | 0.9+ | 2006 10 28 | 703 | 0.3− | 0.8+ |
| 2004 03 22 | 699 | 0.5− | 0.1− | 2006 09 16 | 704 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.1− | 0.7+ |
| 2004 03 22 | 699 | 0.3+ | 0.8+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 28 | 703 | 1.0− | 0.0 |
| 2004 03 22 | 704 | 0.2+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.9+ |
| 2004 03 22 | 699 | 0.7− | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.3+ | | | | |
| 2004 03 23 | 704 | 1.1+ | 0.2− | 2006 09 21 | 699 | 0.0 | 0.2− | | | | |

**(144558)∗ 2004 FU$_9$**

Discovered 2004 Mar. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.97052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20002725 | $\omega$ | 97.65123 | | −0.99297211 | +0.10976064 | |
| $a$ | 2.8956313 | $\Omega$ | 88.65781 | | −0.11829786 | −0.90957792 | |
| $e$ | 0.1462465 | $i$ | 2.53746 | | −0.00346364 | −0.40077501 | |
| $P$ | 4.93 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.0 | 2004 04 20 | 691 | 0.0 | 0.1− |
| 1999 03 20 | 645 | 0.1− | 0.1− | 2004 03 23 | 691 | 0.0 | 0.1− | 2004 04 20 | 691 | 0.2+ | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2004 03 23 | 691 | 0.3+ | 0.0 | 2004 04 20 | 691 | 0.2+ | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.2− | 2004 03 28 | 704 | 0.8− | 0.5− | 2004 04 20 | 703 | 0.3− | 1.6+ |
| 2000 07 29 | 807 | 0.3− | 0.2+ | 2004 03 28 | 704 | 0.5+ | 1.2+ | 2004 04 20 | 703 | 0.0 | 0.6+ |
| 2000 07 29 | 807 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.0 | 0.3+ | 2004 04 20 | 703 | 0.3+ | 0.4+ |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2004 03 28 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 703 | 0.7+ | 0.6+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 04 09 | E12 | 0.2− | 0.4+ | 2004 04 22 | 704 | 0.3− | 0.5+ |
| 2001 10 15 | 645 | 0.1+ | 0.1+ | 2004 04 09 | E12 | 0.0 | 0.5+ | 2004 04 22 | 704 | 0.1− | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2004 04 09 | E12 | 0.2+ | 0.7+ | 2004 04 22 | 704 | 0.2+ | 0.7+ |
| 2002 12 09 | 291 | 0.3− | 0.3+ | 2004 04 09 | E12 | 0.2+ | 0.0 | 2004 04 22 | 704 | 0.5− | 0.8+ |
| 2002 12 09 | 291 | 0.2− | 0.3+ | 2004 04 11 | 644 | 0.3+ | 0.4+ | 2005 07 09 | 691 | 0.2− | 0.3+ |
| 2002 12 09 | 291 | 0.2− | 0.2+ | 2004 04 11 | 644 | 0.2+ | 0.5+ | 2005 07 09 | 691 | 0.2− | 0.2+ |
| 2002 12 28 | 291 | 0.2+ | 0.3+ | 2004 04 11 | 644 | 0.4+ | 0.4+ | 2005 07 09 | 691 | 0.3− | 0.3+ |
| 2002 12 28 | 291 | 0.1− | 0.4+ | 2004 04 16 | 704 | 0.3+ | 1.0+ | 2005 07 16 | 691 | 0.2− | 0.1+ |
| 2002 12 28 | 291 | 0.3− | 0.4+ | 2004 04 16 | 704 | 0.8+ | 0.5+ | 2005 07 16 | 691 | 0.1− | 0.1− |
| 2004 03 16 | 691 | 0.2+ | 0.1+ | 2004 04 16 | 704 | 0.6− | 0.2− | 2005 07 16 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.0 | 0.7+ | 2004 04 17 | 699 | 1.6− | 1.0− | 2006 09 14 | 691 | 0.0 | 0.2+ |
| 2004 03 16 | 691 | 0.7+ | 0.5− | 2004 04 17 | 699 | 0.8− | 0.2− | 2006 09 14 | 691 | 0.8− | 0.8+ |
| 2004 03 18 | 291 | 0.1+ | 0.5+ | 2004 04 17 | 699 | 0.0 | 0.7+ | 2006 09 14 | 691 | 0.3− | 0.0 |
| 2004 03 18 | 291 | 0.1+ | 0.5+ | 2004 04 17 | 699 | (2.3+ | 0.6+) | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2004 03 18 | 291 | 0.3+ | 0.6+ | 2004 04 19 | 704 | 0.6− | 1.4+ | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2004 03 22 | 704 | 0.3+ | 0.6− | 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2004 03 22 | 704 | 1.7+ | 0.2− | 2004 04 19 | 704 | 0.8− | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2004 03 22 | 704 | 0.9+ | 1.1+ | 2004 04 19 | 704 | 0.7− | 0.2+ | 2006 09 28 | 691 | 0.4+ | 0.5+ |
| 2004 03 22 | 704 | 1.6+ | 0.9+ | 2004 04 19 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.1+ |

**(144559)∗ 2004 FK$_{10}$**

Discovered 2004 Mar. 16 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.23652 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21641233 | $\omega$ | 183.34328 | | +0.41552631 | +0.90781677 | |
| $a$ | 2.7475655 | $\Omega$ | 111.21551 | | −0.83310896 | +0.40483931 | |
| $e$ | 0.1106869 | $i$ | 3.48250 | | −0.36505800 | +0.10942508 | |
| $P$ | 4.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 08 | 644 | (0.1+ | 1.5+) | 2004 04 15 | 644 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2001 10 08 | 644 | 0.5− | 1.3+ | 2004 04 15 | 644 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2001 10 08 | 644 | 0.4− | 1.0+ | 2005 05 20 | G96 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2004 03 16 | 599 | 0.0 | 0.3+ | 2005 05 20 | G96 | 0.5+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 2004 03 16 | 599 | 0.2− | 0.1+ | 2005 05 20 | G96 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.1+ |
| 2004 03 16 | 599 | 0.2− | 0.0 | 2005 05 20 | G96 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.5+ |
| 2004 03 18 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.4+ |
| 2004 03 18 | 691 | 0.0 | 0.1+ | 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2004 03 19 | 704 | 0.6+ | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.5+ |
| 2004 03 19 | 704 | 0.4+ | 0.5+ | 2005 07 07 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 0.7+ | 0.7+ | 2005 07 07 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2004 03 19 | 704 | 0.1+ | 0.8+ | 2005 07 07 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2004 03 22 | 704 | 0.5− | 0.5+ | 2005 07 15 | G96 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2004 03 22 | 704 | 0.8+ | 1.0+ | 2005 07 15 | G96 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2004 03 22 | 704 | 0.8+ | 0.8+ | 2005 07 15 | G96 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 03 22 | 704 | 0.3− | 0.3− | 2005 07 15 | G96 | (1.8− | 1.6+) | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 04 15 | 644 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.3− | | | | |

**(144560)∗ 2004 FH$_{12}$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.53414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19141682 | $\omega$ | 229.84362 | | −0.99239270 | −0.01612644 | |
| $a$ | 2.9818284 | $\Omega$ | 308.87659 | | +0.07359739 | −0.87244466 | |
| $e$ | 0.0449703 | $i$ | 9.01995 | | −0.09869219 | −0.48844677 | |
| $P$ | 5.15 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 25 | 691 | 0.0 | 0.4− | 2003 01 05 | 704 | 0.2+ | 1.0+ | 2006 08 25 | D35 | 0.0 | 0.8+ |
| 1993 01 25 | 691 | 0.2− | 0.1+ | 2004 03 01 | 703 | 0.5+ | 0.3− | 2006 08 25 | D35 | 0.2+ | 0.7+ |
| 1993 01 25 | 691 | (2.8− | 0.7+) | 2004 03 01 | 703 | (2.4− | 1.0+) | 2006 08 25 | D35 | 0.3+ | 0.7+ |
| 2001 08 27 | 644 | 0.4− | 0.3+ | 2004 03 01 | 703 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.4− | 0.5+ |
| 2001 08 27 | 644 | 0.5− | 0.7+ | 2004 03 01 | 703 | (0.6+ | 2.5+) | 2006 09 20 | 699 | 0.0 | 0.6− |
| 2001 08 27 | 644 | 0.3− | 0.6+ | 2004 03 16 | 703 | 1.1+ | 0.2− | 2006 09 20 | 699 | 1.2− | 0.3+ |
| 2001 09 25 | 704 | 0.3− | 0.5− | 2004 03 16 | 703 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.6− | 0.6+ |
| 2001 09 25 | 704 | 0.7+ | 0.6+ | 2004 03 16 | 703 | (0.5+ | 1.9+) | 2006 09 29 | 699 | (0.5+ | 2.1+) |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2004 03 16 | 703 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 0.2+ | 0.6+ |
| 2001 09 25 | 704 | 0.0 | 0.8+ | 2004 03 17 | 704 | 0.8+ | 0.2+ | 2006 09 29 | 699 | 0.8− | 0.2+ |
| 2001 09 29 | 644 | 0.3+ | 0.1− | 2004 03 17 | 704 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 644 | 0.2+ | 0.0 | 2004 03 17 | 704 | 0.2+ | 0.0 | 2006 10 01 | 703 | (2.4− | 0.7−) |
| 2001 09 29 | 644 | 0.4+ | 0.2+ | 2004 03 17 | 704 | 0.2− | 1.0+ | 2006 10 01 | 703 | (1.7− | 0.5+) |
| 2001 10 13 | 644 | 0.2− | 0.6+ | 2004 03 17 | 704 | 0.2− | 0.5+ | 2006 10 01 | 703 | 0.6+ | 0.6+ |
| 2001 10 13 | 644 | 0.7− | 0.5+ | 2004 03 31 | 704 | 0.9+ | 0.4+ | 2006 10 01 | 703 | 1.2+ | 0.6+ |
| 2001 10 13 | 644 | 0.1+ | 0.5+ | 2004 03 31 | 704 | (0.8− | 2.2+) | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2004 03 31 | 704 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.4+ | 1.3− | 2004 03 31 | 704 | 0.7+ | 1.0+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 0.7− | 2004 03 31 | 704 | (1.2− | 1.7+) | 2006 10 17 | 691 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.7− | 1.2+ | 2004 04 12 | 644 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.1− | 1.2+ | 2004 04 12 | 644 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.4− | 0.2− |
| 2003 01 05 | 704 | 0.5− | 0.8+ | 2004 04 12 | 644 | 0.1− | 0.7+ | | | | |

**(144561)∗ 2004 FK$_{12}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 224.78960 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21559802 | $\omega$ | 213.88775 | | | −0.62073974 | | −0.77360193 | |
| $a$ | 2.7544795 | $\Omega$ | 274.81623 | | | +0.74469169 | | −0.53096785 | |
| $e$ | 0.2581235 | $i$ | 7.34351 | | | +0.24518656 | | −0.34585141 | |
| $P$ | 4.57 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.5+ | 1.7+ | 2003 11 29 | 704 | 0.1+ | 0.3− | 2004 03 17 | 704 | 0.1− | 0.6+ |
| 1998 12 14 | 704 | 1.0− | 0.3− | 2003 11 29 | 704 | 0.5− | 0.7+ | 2004 03 17 | 704 | 0.4− | 0.9+ |
| 1998 12 14 | 704 | (1.8+ | 2.5−) | 2004 02 17 | 703 | 0.0 | 0.4+ | 2004 03 31 | 703 | 1.1+ | 0.8+ |
| 1998 12 14 | 704 | (4.2− | 2.2+) | 2004 02 17 | 703 | 0.1− | 0.4− | 2004 03 31 | 703 | 1.6+ | 0.3+ |
| 1998 12 17 | 704 | 1.0+ | 0.8+ | 2004 02 17 | 703 | 1.4− | 0.3− | 2004 03 31 | 703 | 0.7− | 0.1− |
| 1998 12 17 | 704 | 0.3+ | 0.6− | 2004 02 17 | 703 | 0.3+ | 0.2+ | 2004 03 31 | 703 | 1.0+ | 1.4− |
| 1998 12 17 | 704 | 0.1− | 0.9− | 2004 03 01 | 703 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 1.2+ | 0.6+ |
| 1998 12 17 | 704 | 0.1− | 1.1− | 2004 03 01 | 703 | 1.1+ | 1.0+ | 2004 03 31 | 704 | 0.1− | 0.4− |
| 1998 12 17 | 704 | 0.1− | 0.3− | 2004 03 01 | 703 | 0.4+ | 0.5+ | 2004 03 31 | 704 | 1.1+ | 0.3− |
| 2002 10 05 | 704 | 0.3− | 0.6+ | 2004 03 01 | 703 | 0.8+ | 0.3+ | 2004 03 31 | 704 | 0.1− | 0.2+ |
| 2002 10 05 | 704 | 0.2+ | 1.3+ | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2004 03 31 | 704 | 0.0 | 0.8+ |
| 2002 10 05 | 704 | 1.1− | 0.5+ | 2004 03 16 | 704 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.1− | 0.6− |
| 2002 10 05 | 704 | 0.1− | 0.3+ | 2004 03 16 | 704 | 0.4− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.2+ |
| 2002 10 05 | 704 | 1.0− | 0.8− | 2004 03 16 | 704 | 0.1+ | 0.4− | 2006 08 29 | 703 | 0.5− | 0.3+ |
| 2002 10 05 | 599 | 0.7− | 0.8+ | 2004 03 16 | 704 | 0.0 | 0.2− | 2006 08 29 | 703 | 1.2− | 1.1− |
| 2002 10 05 | 599 | 0.8− | 0.5+ | 2004 03 17 | 704 | 0.6+ | 0.7+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2002 10 05 | 599 | 0.4− | 0.3+ | 2004 03 17 | 704 | 0.2− | 1.0+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 10 31 | 644 | 0.3− | 1.0+ | 2004 03 17 | 704 | 0.5− | 0.9+ | 2006 09 27 | 691 | 0.3+ | 0.3+ |
| 2002 10 31 | 644 | 0.1− | 0.7+ | 2004 03 17 | 704 | 0.5− | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 2002 10 31 | 644 | 0.3− | 0.5+ | 2004 03 17 | 704 | 0.4− | 0.7+ | 2006 09 30 | 691 | 0.6+ | 0.6+ |
| 2003 11 29 | 704 | 1.0− | 0.1− | 2004 03 17 | 704 | 0.0 | 0.8+ | 2006 09 30 | 691 | 0.7− | 0.0 |
| 2003 11 29 | 704 | 0.2− | 1.0− | 2004 03 17 | 704 | 0.5− | 0.5+ | | | | |

**(144562)∗ 2004 FS$_{12}$ = 2000 FA$_{63}$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62074)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 275.74034 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24486721 | $\omega$ | 263.72988 | | | −0.29649679 | | −0.95282843 | |
| $a$ | 2.5303599 | $\Omega$ | 203.83025 | | | +0.92738696 | | −0.27102455 | |
| $e$ | 0.2386162 | $i$ | 9.23876 | | | +0.22812954 | | −0.13661507 | |
| $P$ | 4.03 | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 699 | 0.4− | 1.4+ | 2004 03 16 | 703 | (0.5+ | 1.8+) | 2004 04 12 | 699 | 1.1− | 1.3− |
| 2000 03 27 | 699 | 0.6− | 0.1− | 2004 03 16 | 703 | (0.1− | 2.0+) | 2004 04 12 | 691 | 0.2− | 0.2+ |
| 2000 03 27 | 699 | 0.4− | 0.1+ | 2004 03 16 | 703 | 1.0+ | 1.0+ | 2004 04 12 | 699 | 0.1− | 0.3− |
| 2000 03 27 | 699 | 0.4+ | 0.1+ | 2004 03 17 | 704 | 0.6+ | 0.3+ | 2004 04 12 | 699 | 0.1+ | 0.7− |
| 2000 04 07 | 699 | 1.5+ | 0.6+ | 2004 03 17 | 704 | 0.6+ | 0.7+ | 2004 04 12 | 691 | 0.3− | 0.3+ |
| 2000 04 07 | 699 | 0.5+ | 1.0+ | 2004 03 17 | 704 | 0.7+ | 0.3+ | 2004 04 12 | 699 | 0.5+ | 0.6− |
| 2000 04 07 | 699 | 1.3+ | 0.1− | 2004 03 17 | 704 | 0.1+ | 0.3+ | 2004 04 12 | 691 | 0.2− | 0.3+ |
| 2000 04 07 | 704 | 0.4− | 0.9+ | 2004 03 19 | 704 | 1.0+ | 0.5+ | 2004 04 22 | 691 | 0.3− | 0.0 |
| 2000 04 07 | 699 | 0.6+ | 0.4+ | 2004 03 19 | 704 | 0.1+ | 0.8+ | 2004 04 22 | 691 | 0.3− | 0.3− |
| 2000 04 07 | 704 | 0.8+ | 0.9+ | 2004 03 19 | 704 | 0.9+ | 1.1+ | 2004 04 22 | 691 | 0.1− | 0.0 |
| 2000 04 07 | 704 | 0.2+ | 1.9+ | 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.6+ | 0.4+ |
| 2000 04 07 | 704 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 1.4+ | 0.6+ |
| 2000 04 07 | 704 | 0.2+ | 0.1+ | 2004 03 26 | 699 | 0.7+ | 0.7+ | 2006 09 19 | 703 | 0.6+ | 0.7− |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2004 03 26 | 699 | 0.0 | 0.6− | 2006 09 19 | 703 | (1.7− | 0.1+) |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2004 03 26 | 699 | 0.5− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.4+ |
| 2002 09 13 | 644 | 0.1− | 0.1+ | 2004 03 26 | 699 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.7− | 0.0 |
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.2+ |
| 2002 11 08 | 645 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2004 03 16 | 703 | 0.1+ | 1.2+ | 2004 03 27 | 704 | 0.2− | 0.2+ | | | | |

**(144563)∗ 2004 FV$_{12}$ = 2002 TX$_{273}$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62074)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 275.35462 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28879077 | $\omega$ | 255.43907 | | | −0.98081083 | | −0.17585969 | |
| $a$ | 2.2668034 | $\Omega$ | 274.38017 | | | +0.19490888 | | −0.89453202 | |
| $e$ | 0.0893023 | $i$ | 4.84210 | | | −0.00454340 | | −0.41095721 | |
| $P$ | 3.41 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.0 | 0.9+ | 2004 03 17 | 704 | 0.1− | 1.4+ | 2004 05 17 | 704 | 0.1− | 0.6+ |
| 2002 10 03 | 644 | 0.3+ | 1.2+ | 2004 03 21 | 608 | 0.4+ | 0.5− | 2004 05 17 | 704 | 0.2+ | 0.7− |
| 2002 10 03 | 644 | 0.0 | 0.4+ | 2004 03 21 | 608 | 0.1+ | 0.6− | 2004 05 17 | 704 | 1.4+ | 0.4− |
| 2002 10 09 | 704 | 0.5− | 1.1+ | 2004 03 21 | 608 | 0.3+ | 0.1− | 2005 07 31 | 644 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 1.1− | 0.6+ | 2004 03 27 | 703 | 0.2+ | 0.7+ | 2005 07 31 | 644 | 0.2− | 0.4+ |
| 2002 10 09 | 704 | 0.9− | 1.0− | 2004 03 27 | 703 | 0.6− | 0.8+ | 2005 07 31 | 644 | 0.1− | 0.6+ |
| 2002 10 12 | 704 | 0.1− | 0.3+ | 2004 03 27 | 703 | 0.9+ | 0.6+ | 2005 08 06 | 644 | 0.0 | 0.3+ |
| 2002 10 12 | 704 | 0.3− | 0.8+ | 2004 03 27 | 703 | 0.4+ | 0.1+ | 2005 08 06 | 644 | 0.1− | 0.2+ |
| 2002 10 12 | 704 | 0.8− | 1.2+ | 2004 03 31 | 704 | 0.4+ | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.4+ |
| 2002 10 12 | 704 | 0.8− | 0.5+ | 2004 03 31 | 704 | 0.4+ | 0.8+ | 2005 08 24 | 644 | 0.2− | 0.3+ |
| 2002 11 08 | 704 | 0.3+ | 1.3+ | 2004 03 31 | 704 | 0.7+ | 0.2+ | 2005 08 24 | 644 | 0.2− | 0.4+ |
| 2002 11 08 | 704 | 0.2+ | 1.0+ | 2004 03 31 | 704 | 0.0 | 0.2+ | 2005 08 24 | 644 | 0.2+ | 0.3+ |
| 2002 11 08 | 704 | (0.2− | 2.6+) | 2004 03 31 | 704 | 0.3+ | 0.3− | 2005 08 30 | 704 | 1.0− | 0.6+ |
| 2002 11 22 | 644 | (0.1− | 1.8+) | 2004 04 11 | 644 | 0.6+ | 0.3+ | 2005 08 30 | 704 | 0.2− | 0.4+ |
| 2002 11 22 | 644 | (0.2− | 1.6+) | 2004 04 11 | 644 | 0.9+ | 0.3+ | 2005 08 30 | 704 | 0.2− | 0.8+ |
| 2002 11 22 | 644 | 0.0 | 1.5+ | 2004 04 11 | 644 | 0.3+ | 0.2+ | 2005 08 30 | 704 | 0.2+ | 0.9+ |
| 2004 03 01 | 703 | 0.0 | 0.2+ | 2004 04 16 | 644 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2004 03 01 | 703 | 0.0 | 0.7+ | 2004 04 16 | 644 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.5+ |
| 2004 03 01 | 703 | (1.7+ | 0.5+) | 2004 04 16 | 704 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2004 03 01 | 703 | 0.9+ | 0.3+ | 2004 04 16 | 644 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2004 03 16 | 703 | 0.1+ | 0.6+ | 2004 04 16 | 704 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2004 03 16 | 703 | 0.7− | 0.1+ | 2004 04 16 | 704 | 0.6− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2004 03 16 | 703 | 0.8− | 1.1− | 2004 04 16 | 704 | 0.2+ | 0.8+ | 2006 10 22 | G96 | 0.9+ | 1.1− |
| 2004 03 16 | 703 | 0.2+ | 0.4+ | 2004 04 16 | 704 | (0.2+ | 2.1+) | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2004 03 17 | 704 | 1.0− | 1.0+ | 2004 04 25 | 703 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2004 03 17 | 704 | 0.3− | 1.4+ | 2004 04 25 | 703 | 0.1+ | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 704 | 0.0 | 1.4+ | 2004 04 25 | 703 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2004 03 17 | 704 | 0.1− | 1.3+ | 2004 04 25 | 703 | 0.4− | 0.3+ | | | | |

**(144564)∗ 2004 FE$_{13}$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 141.66790 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27659736 | $\omega$ | 11.48073 | | | +0.66346535 | | +0.74366819 | |
| $a$ | 2.3329425 | $\Omega$ | 300.14380 | | | −0.69378035 | | +0.57029158 | |
| $e$ | 0.1459575 | $i$ | 5.46033 | | | −0.28014737 | | +0.34889130 | |
| $P$ | 3.56 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.7+ | 0.5+ | 2005 08 30 | 644 | 0.1− | 0.0 | 2005 10 06 | 703 | 0.1− | 0.1+ |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2005 08 30 | 644 | 0.0 | 0.0 | 2005 10 06 | 699 | 0.4− | 0.4+ |
| 2000 03 03 | 704 | 0.6+ | 0.8+ | 2005 08 30 | 644 | 0.0 | 0.1+ | 2005 10 08 | 704 | 0.3− | 0.4+ |
| 2000 03 03 | 704 | 0.2− | 0.5+ | 2005 08 31 | 704 | (0.1− | 2.2+) | 2005 10 08 | 704 | 0.1− | 0.7+ |
| 2002 12 15 | 704 | 0.8− | 0.3+ | 2005 08 31 | 704 | 0.7− | 0.6+ | 2005 10 08 | 704 | 0.1− | 0.6+ |
| 2002 12 15 | 704 | 0.2+ | 0.2− | 2005 08 31 | 704 | 0.1+ | 1.0+ | 2005 10 08 | 704 | 0.2− | 0.1+ |
| 2002 12 15 | 704 | (1.1− | 1.7+) | 2005 08 31 | 704 | 0.7− | 1.0+ | 2005 10 08 | 704 | 0.5− | 0.3+ |
| 2002 12 15 | 704 | 0.4+ | 0.5+ | 2005 08 31 | 704 | 1.2− | 0.8+ | 2005 10 30 | 704 | 0.2− | 0.0 |
| 2004 03 16 | 703 | 0.5+ | 0.8+ | 2005 09 10 | 699 | 0.6+ | 0.2+ | 2005 10 30 | 699 | 0.3− | 0.5− |
| 2004 03 16 | 703 | 1.1− | 1.0+ | 2005 09 10 | 699 | 0.1+ | 0.2− | 2005 10 30 | 704 | 0.5− | 0.1− |
| 2004 03 16 | 703 | 0.2+ | 0.4+ | 2005 09 10 | 699 | 0.2− | 0.1− | 2005 10 30 | 704 | 0.0 | 0.4+ |
| 2004 03 16 | 703 | 0.0 | 1.4+ | 2005 09 11 | 704 | 0.1− | 0.7+ | 2005 10 30 | 699 | 0.2− | 0.5+ |
| 2004 03 17 | 704 | 1.3+ | 1.2+ | 2005 09 11 | 704 | 0.3+ | 0.0 | 2005 10 30 | 704 | 0.2− | 0.1− |
| 2004 03 17 | 704 | 1.4+ | 0.3+ | 2005 09 11 | 704 | 0.1− | 0.6− | 2005 10 30 | 704 | 0.8− | 0.3− |
| 2004 03 17 | 704 | 1.2+ | 0.7+ | 2005 09 11 | 704 | 0.2− | 0.3− | 2005 10 30 | 699 | 0.0 | 0.1+ |
| 2004 03 17 | 704 | 1.0+ | 1.3+ | 2005 09 11 | 704 | 0.5+ | 0.0 | 2005 10 30 | 699 | 0.6− | 0.7+ |
| 2004 03 26 | 699 | 0.3− | 0.1− | 2005 09 23 | 644 | 0.1− | 0.1+ | 2005 11 02 | 704 | 0.3− | 0.0 |
| 2004 03 26 | 699 | 1.0− | 0.0 | 2005 09 23 | 683 | 0.1− | 0.2− | 2005 11 02 | 704 | 0.5− | 0.4− |
| 2004 03 26 | 699 | 0.5− | 0.7+ | 2005 09 23 | 683 | 0.4− | 0.2− | 2005 11 02 | 704 | 0.3− | 0.5+ |
| 2004 03 26 | 699 | 0.2+ | 1.1− | 2005 09 23 | 683 | 0.3− | 0.2− | 2005 11 02 | 704 | 0.2+ | 0.5− |
| 2004 04 16 | 644 | 0.1− | 0.5+ | 2005 09 23 | 644 | 0.3− | 0.3+ | 2005 11 02 | 704 | 0.8− | 0.0 |
| 2004 04 16 | 644 | 0.3+ | 0.6+ | 2005 09 23 | 644 | 0.1+ | 0.3+ | 2005 11 18 | 699 | 0.1+ | 0.1− |
| 2004 04 16 | 644 | 0.2+ | 0.3+ | 2005 09 24 | 683 | 0.5− | 1.1− | 2005 11 18 | 699 | 0.1+ | 0.9+ |
| 2004 04 17 | 704 | 0.8+ | 1.0+ | 2005 09 24 | 683 | (0.0 | 1.8−) | 2005 11 18 | 699 | 0.1− | 0.0 |
| 2004 04 17 | 704 | (1.5+ | 0.1+) | 2005 09 24 | 683 | 0.7− | 0.4+ | 2005 11 18 | 699 | 0.1− | 0.2− |
| 2004 04 17 | 704 | 0.8+ | 0.1+ | 2005 09 25 | 683 | 0.6+ | 0.0 | 2005 12 02 | 704 | 0.5− | 0.0 |
| 2004 04 19 | 704 | 0.4+ | 1.3+ | 2005 09 25 | 683 | 1.5+ | 0.7− | 2005 12 02 | 704 | 0.5− | 0.1− |
| 2004 04 19 | 704 | 0.3+ | 0.7+ | 2005 09 25 | 683 | 0.6+ | 0.8− | 2005 12 02 | 704 | 1.5+ | 0.3+ |
| 2004 04 19 | 704 | 0.0 | 0.5+ | 2005 09 26 | 683 | 0.1− | 0.2+ | 2005 12 02 | 704 | (0.8+ | 1.8−) |
| 2004 04 19 | 704 | 0.4− | 1.0+ | 2005 09 26 | 683 | 0.8+ | 0.5+ | 2005 12 02 | 703 | 1.3− | 0.2− |
| 2004 04 19 | 704 | 0.1− | 0.7+ | 2005 09 26 | 683 | 0.1− | 0.6+ | 2005 12 02 | 703 | 0.3− | 0.3+ |
| 2005 05 14 | 691 | 0.0 | 0.6+ | 2005 09 26 | 644 | 0.1− | 0.4+ | 2005 12 02 | 703 | 0.7− | 0.7+ |
| 2005 05 14 | 691 | 0.3+ | 0.6+ | 2005 09 26 | 644 | 0.2− | 0.4+ | 2005 12 02 | 703 | 0.3+ | 1.2+ |
| 2005 05 14 | 691 | 0.4+ | 0.4+ | 2005 09 26 | 644 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.4− | 0.0 |
| 2005 07 07 | 704 | 0.2+ | 0.0 | 2005 09 29 | 683 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 07 07 | 704 | 0.4− | 0.0 | 2005 09 29 | 683 | (0.6− | 1.6+) | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2005 07 07 | 704 | 0.4− | 0.1− | 2005 09 29 | 699 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.1− | 0.3+ |
| 2005 07 16 | 699 | 0.4− | 0.9+ | 2005 09 29 | 699 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2005 07 16 | 699 | 0.0 | 0.3− | 2005 09 29 | 699 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2005 07 16 | 699 | 0.1− | 0.4+ | 2005 09 29 | 699 | 0.6+ | 0.4− | 2006 11 16 | G96 | 0.5+ | 0.1+ |
| 2005 07 16 | 699 | 0.4− | 0.9+ | 2005 09 30 | 683 | 0.9+ | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2005 08 17 | 224 | 0.1+ | 0.5− | 2005 09 30 | 683 | 0.3+ | 0.6+ | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2005 08 17 | 224 | 0.1+ | 0.2− | 2005 10 06 | 699 | 0.0 | 0.7+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2005 08 17 | 224 | 0.8− | 0.2− | 2005 10 06 | 699 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2005 08 29 | 644 | 0.2− | 0.0 | 2005 10 06 | 703 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2005 08 29 | 644 | 0.2− | 0.1− | 2005 10 06 | 703 | 0.1− | 0.5− | | | | |
| 2005 08 29 | 644 | 0.3− | 0.1− | 2005 10 06 | 699 | 0.1− | 0.1− | | | | |

**(144565)∗ 2004 FH$_{13}$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.82706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21320989 | $\omega$ | 358.28381 | | −0.62005619 | +0.77805490 | |
| $a$ | 2.7750096 | $\Omega$ | 233.38205 | | −0.71831295 | −0.61466792 | |
| $e$ | 0.1556692 | $i$ | 7.21475 | | −0.31552626 | −0.12966855 | |
| $P$ | 4.62 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.1− | 0.7+ | 2004 04 08 | 608 | 0.2− | 0.9− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2001 09 28 | 644 | 0.2− | 0.6+ | 2004 04 08 | 608 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3− | 0.0 |
| 2001 09 28 | 644 | 0.0 | 0.7+ | 2004 04 08 | 608 | 0.2− | 0.7− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.8− | 0.7+ | 2004 04 16 | 644 | 0.4+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 0.2+ | 0.5+ | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | 1.3− | 0.6+ | 2004 04 16 | 644 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.2− | 0.2+ | 2004 04 19 | 704 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2001 10 14 | 704 | 0.1+ | 0.6+ | 2004 04 19 | 704 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2001 10 21 | 691 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2001 10 21 | 691 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 10 21 | 691 | 0.0 | 0.2+ | 2004 04 19 | 704 | 0.1+ | 1.0+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2004 01 29 | 699 | 0.1− | 0.8+ | 2004 04 26 | 699 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2004 01 29 | 699 | 0.4+ | 1.2+ | 2004 04 26 | 699 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2004 01 29 | 699 | 1.0− | 0.5+ | 2004 04 26 | 699 | 1.3− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2004 01 29 | 699 | (0.9+ | 1.6−) | 2004 04 26 | 699 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.1− |
| 2004 03 16 | 703 | 0.5+ | 0.3+ | 2005 07 30 | 644 | 0.3− | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 03 16 | 703 | 0.6+ | 0.7+ | 2005 07 30 | 644 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 03 16 | 703 | 0.9+ | 0.9+ | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2004 03 16 | 703 | 0.7+ | 0.9+ | 2005 08 06 | 644 | 0.1− | 0.6+ | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2004 03 17 | 704 | 0.3+ | 0.7+ | 2005 08 06 | 644 | 0.0 | 0.8+ | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2004 03 17 | 704 | 0.1− | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.8+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2004 03 17 | 704 | 0.4+ | 0.9+ | 2005 08 24 | 644 | 0.2+ | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2004 03 17 | 704 | 0.0 | 0.9+ | 2005 08 24 | 644 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2004 03 17 | 704 | 0.1+ | 1.4+ | 2005 08 24 | 644 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2004 03 26 | 699 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2004 03 26 | 699 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2004 03 26 | 699 | 0.4− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2004 03 26 | 699 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.6− |
| 2004 03 31 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.5− |
| 2004 03 31 | 704 | 0.3+ | 1.4− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2004 03 31 | 704 | 0.5+ | 1.0+ | 2006 10 12 | 691 | 0.1+ | 0.0 | | | | |
| 2004 03 31 | 704 | 0.2+ | 1.0+ | 2006 10 16 | 691 | 0.1− | 0.1− | | | | |

**(144566)∗ 2004 FT$_{13}$ = 2002 XL$_{114}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 73000)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.70428 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21830027 | $\omega$ | 121.34613 | | −0.97982384 | −0.18695665 | |
| $a$ | 2.7317012 | $\Omega$ | 47.98080 | | +0.13523477 | −0.88048110 | |
| $e$ | 0.0513322 | $i$ | 5.45751 | | +0.14716253 | −0.43566070 | |
| $P$ | 4.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.3− | 1.0− | 2004 03 22 | 704 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1995 03 25 | 691 | 0.4− | 0.9− | 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1995 03 25 | 691 | 1.0− | 1.7− | 2004 03 22 | 704 | 0.4+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2002 10 30 | 291 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 2002 10 30 | 291 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 09 23 | 691 | 0.3− | 0.4+ |
| 2002 10 30 | 291 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.3+ | 1.1+ | 2006 09 23 | 691 | 0.4− | 0.1+ |
| 2002 12 10 | 644 | 0.3− | 0.1+ | 2004 03 22 | 704 | 0.6− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2002 12 10 | 644 | 0.3− | 0.4− | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2002 12 10 | 644 | 0.4+ | 0.4+ | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2004 02 23 | 704 | 0.7+ | 0.2+ | 2004 03 23 | 704 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.7+ | 0.1+ | 2004 03 23 | 704 | 0.7+ | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2004 02 23 | 704 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.1− |
| 2004 02 23 | 704 | 0.6+ | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2004 02 23 | 704 | 0.3+ | 0.3+ | 2004 03 24 | 699 | 0.8− | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.9+ |
| 2004 03 16 | 704 | 0.7+ | 0.2− | 2004 03 24 | 699 | 1.1− | 0.8+ | 2006 10 17 | G96 | 1.1− | 1.0− |
| 2004 03 16 | 704 | (0.4+ | 1.7+) | 2004 03 24 | 699 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.7+ | 0.8− |
| 2004 03 16 | 704 | 1.0+ | 1.1+ | 2004 03 24 | 699 | 0.5− | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.7− |
| 2004 03 16 | 704 | 0.8+ | 1.4+ | 2004 03 28 | 704 | 0.9+ | 0.4− | 2006 10 21 | 703 | 0.5+ | 0.5− |
| 2004 03 17 | 704 | 0.3+ | 1.1+ | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.6+ | 1.0+ |
| 2004 03 17 | 704 | 1.4− | 1.2+ | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 2004 03 17 | 704 | 0.6+ | 0.8+ | 2004 03 28 | 704 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.6+ |
| 2004 03 17 | 704 | 0.0 | 0.2+ | 2004 04 12 | 699 | 0.6− | 1.2− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 03 17 | 704 | 0.6+ | 0.6+ | 2004 04 12 | 699 | 0.7+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2004 03 17 | 704 | 1.3+ | 0.8+ | 2004 04 12 | 699 | 0.8+ | 0.9− | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2004 03 17 | 704 | 0.5+ | 0.1+ | 2004 04 12 | 699 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2004 03 20 | 704 | 0.4− | 0.3− | 2004 04 16 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.3+ |
| 2004 03 20 | 704 | 0.6+ | 0.0 | 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2004 03 20 | 704 | 0.1− | 1.1+ | 2004 04 16 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2004 03 22 | 704 | 0.2+ | 0.6+ | 2004 04 21 | 691 | 0.3+ | 0.6+ | 2006 11 19 | 691 | 0.2− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 704 | 0.2+ | 0.0 | 2004 04 21 | 691 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.4+ | 0.0 |
| 2004 03 22 | 704 | 0.7+ | 0.2+ | 2004 04 21 | 691 | 0.1+ | 0.6+ | 2006 11 20 | G96 | 0.8− | 0.4− |
| 2004 03 22 | 704 | 0.3− | 0.9+ | 2005 07 06 | E12 | 0.1− | 0.4+ | 2006 11 20 | G96 | 1.4+ | 0.7− |
| 2004 03 22 | 704 | 0.2+ | 0.1− | 2005 07 06 | E12 | 1.2− | 1.0+ | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2004 03 22 | 704 | 0.5+ | 0.8− | 2005 07 06 | E12 | 0.5− | 0.0 | | | | |
| 2004 03 22 | 704 | 1.3+ | 0.4+ | 2005 07 06 | E12 | 0.1+ | 0.8+ | | | | |

**(144567)∗ 2004 FE$_{14}$ = 2000 GN$_{166}$**

Discovered 2004 Mar. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62075)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.28208 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23266908 | $\omega$ | 257.76930 | | −0.10872006 | | −0.98841862 |
| $a$ | 2.6180439 | $\Omega$ | 199.44666 | | +0.98994760 | | −0.09796114 |
| $e$ | 0.0892083 | $i$ | 18.54186 | | +0.09046383 | | −0.11589759 |
| $P$ | 4.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 11 | 691 | 0.3+ | 0.6+ | 2002 12 08 | 644 | 0.1+ | 1.0+ | 2006 10 17 | 703 | 0.8+ | 0.9− |
| 1996 04 11 | 691 | 0.5+ | 1.4+ | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.9− | 0.5− |
| 1996 04 11 | 691 | 0.5+ | 0.2+ | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.7− |
| 1996 05 14 | 691 | 0.5− | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 1996 05 14 | 691 | 0.9− | 0.5− | 2004 03 17 | 704 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 1996 05 14 | 691 | 0.2+ | 0.2+ | 2004 03 17 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2000 04 05 | 704 | 0.5+ | 0.2+ | 2004 03 17 | 704 | 0.4− | 1.3+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2004 03 17 | 704 | 0.2+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2000 04 05 | 704 | 0.4+ | 0.2+ | 2004 03 17 | 704 | 0.3+ | 0.5− | 2006 10 27 | G96 | 0.1− | 0.3+ |
| 2000 04 05 | 704 | 0.4− | 0.2− | 2004 03 26 | 699 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2000 04 07 | 699 | 1.0− | 0.1− | 2004 03 26 | 699 | (2.0− | 0.8−) | 2006 10 27 | G96 | 0.5− | 0.1− |
| 2000 04 07 | 699 | 0.9+ | 0.9+ | 2004 03 26 | 699 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.4+ |
| 2000 04 07 | 699 | 0.6+ | 0.8+ | 2004 03 26 | 699 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2000 04 07 | 699 | 0.8− | 0.4− | 2006 09 14 | 703 | 0.8− | 1.1+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | (1.9+ | 0.5−) | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | 0.8− | 0.5+ | 2006 09 14 | 703 | 0.3− | 1.1+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 10 31 | 704 | 0.6+ | 1.4+ | 2006 09 14 | 703 | 0.2− | 1.1+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.5− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 12 08 | 644 | 0.7− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 12 08 | 644 | 0.7+ | 0.7+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | | | | |

**(144568)∗ 2004 FN$_{14}$ = 1999 FQ$_{39}$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62075)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.25751 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20536597 | $\omega$ | 203.70344 | | −0.92090010 | | +0.38979401 |
| $a$ | 2.8452280 | $\Omega$ | 359.23047 | | −0.33103067 | | −0.78463790 |
| $e$ | 0.2479206 | $i$ | 8.17439 | | −0.20581961 | | −0.48208297 |
| $P$ | 4.80 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 704 | 0.4− | 0.7+ | 2004 03 27 | 704 | 0.4− | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.7− |
| 1999 03 20 | 704 | 0.2+ | 1.2+ | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2004 04 19 | 704 | 0.3+ | 0.1− |
| 1999 03 20 | 704 | 0.9+ | 1.5− | 2004 03 27 | 704 | 0.1− | 0.2+ | 2004 04 19 | 704 | 0.2+ | 0.0 |
| 1999 03 20 | 704 | 0.7+ | 1.4− | 2004 03 27 | 704 | 0.4− | 0.0 | 2004 04 21 | 704 | 0.4+ | 0.2+ |
| 1999 03 23 | 704 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 0.3+ | 0.3− | 2004 04 21 | 704 | 0.4+ | 0.2+ |
| 1999 03 23 | 704 | 0.3+ | 0.6− | 2004 03 31 | 704 | 0.5+ | 0.5+ | 2004 04 21 | 704 | 0.5+ | 0.7+ |
| 1999 03 23 | 704 | 0.8− | 1.2+ | 2004 03 31 | 704 | 0.7+ | 0.5− | 2004 04 21 | 704 | 0.5+ | 0.1+ |
| 1999 03 23 | 704 | 0.4− | 1.3+ | 2004 03 31 | 704 | 0.6+ | 0.2− | 2004 04 21 | 704 | 0.1+ | 0.2+ |
| 2004 03 16 | 703 | 1.1− | 0.5− | 2004 03 31 | 704 | 0.9+ | 0.4− | 2004 04 30 | 608 | 0.4+ | 0.8− |
| 2004 03 16 | 703 | 0.5− | 0.5− | 2004 04 01 | 704 | 0.6− | 0.5− | 2004 04 30 | 608 | 0.5+ | 0.8− |
| 2004 03 16 | 703 | 0.4− | 0.4+ | 2004 04 01 | 704 | 0.7+ | 0.1+ | 2004 04 30 | 608 | 0.2+ | 0.7− |
| 2004 03 16 | 703 | 0.6− | 0.0 | 2004 04 01 | 704 | (0.3+ | 1.9−) | 2004 05 09 | 608 | 1.1+ | 0.0 |
| 2004 03 17 | 704 | 1.1− | 0.6+ | 2004 04 08 | E12 | (2.1− | 0.9+) | 2004 05 09 | 608 | 0.9+ | 0.2+ |
| 2004 03 17 | 704 | 0.8− | 1.1+ | 2004 04 08 | E12 | 0.5+ | 0.8+ | 2004 05 09 | 608 | 0.2+ | 0.9+ |
| 2004 03 17 | 704 | 0.7− | 0.3+ | 2004 04 08 | E12 | 0.4− | 0.1+ | 2005 08 05 | 644 | 0.3+ | 0.9+ |
| 2004 03 18 | 704 | 0.1+ | 0.1+ | 2004 04 08 | E12 | (1.7− | 0.6+) | 2005 08 05 | 644 | 0.1+ | 0.5+ |
| 2004 03 18 | 704 | 0.1+ | 0.3+ | 2004 04 09 | E12 | (1.6− | 1.4+) | 2005 08 05 | 644 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.5+ | 0.1− | 2004 04 09 | E12 | (1.9− | 1.0+) | 2005 08 30 | 644 | 0.7− | 0.5+ |
| 2004 03 18 | 704 | 0.4− | 0.5+ | 2004 04 09 | E12 | 1.0− | 1.2+ | 2005 08 30 | 644 | 0.5− | 0.5+ |
| 2004 03 18 | 704 | 0.7+ | 0.5+ | 2004 04 09 | E12 | 1.2− | 0.7+ | 2005 08 30 | 644 | 0.8− | 0.5+ |
| 2004 03 20 | 704 | 1.0+ | 0.3+ | 2004 04 14 | 699 | 0.7− | 0.3+ | 2006 09 25 | 691 | 0.6− | 0.5+ |
| 2004 03 20 | 704 | 0.0 | 1.2+ | 2004 04 14 | 699 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.5− | 0.4+ |
| 2004 03 20 | 704 | 0.5+ | 1.0+ | 2004 04 14 | 699 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.2+ |
| 2004 03 20 | 704 | 0.7+ | 1.1+ | 2004 04 14 | 699 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | 0.6− | 1.0+ | 2004 04 17 | 704 | 0.5+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2004 03 25 | 699 | 0.3+ | 0.0 | 2004 04 17 | 704 | 0.7+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.3+ |
| 2004 03 25 | 699 | 0.4− | 0.2+ | 2004 04 17 | 704 | 1.0+ | 0.1+ | 2006 10 19 | G96 | 0.5− | 0.2− |
| 2004 03 25 | 699 | 0.2+ | 0.1+ | 2004 04 17 | 704 | 0.8+ | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.7+ |
| 2004 03 25 | 699 | 0.1− | 0.9− | 2004 04 19 | 704 | 0.5+ | 0.0 | 2006 10 29 | 691 | 0.2− | 0.9+ |
| 2004 03 27 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.2− | 0.5+ | 2006 10 29 | 691 | 0.2− | 0.5+ |

**(144569)∗ 2004 FO$_{14}$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.59417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18871666 | $\omega$ | 319.82800 | | −0.85460237 | | +0.51832999 |
| $a$ | 3.0102037 | $\Omega$ | 251.41901 | | −0.46751544 | | −0.79435147 |
| $e$ | 0.1350642 | $i$ | 1.90111 | | −0.22601791 | | −0.31676453 |
| $P$ | 5.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 0.9− | 0.4− | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2005 07 05 | 644 | 0.1− | 0.4− |
| 1999 05 13 | 704 | 0.9+ | 0.4+ | 2004 03 31 | 704 | 0.8+ | 0.2+ | 2005 07 05 | 644 | 0.3− | 0.2+ |
| 1999 05 13 | 704 | 0.2+ | 1.1− | 2004 03 31 | 704 | 0.7+ | 0.6+ | 2005 07 05 | 644 | 0.0 | 0.2+ |
| 1999 05 13 | 704 | (0.1− | 2.4−) | 2004 03 31 | 704 | 0.2− | 0.7+ | 2005 07 07 | 691 | 0.2+ | 0.2+ |
| 1999 05 13 | 704 | 0.3− | 1.7− | 2004 03 31 | 704 | 0.1+ | 0.6+ | 2005 07 07 | 691 | 0.0 | 0.3+ |
| 2000 08 21 | 699 | 1.9− | 0.7− | 2004 04 13 | 691 | 0.0 | 0.2+ | 2005 07 07 | 691 | 0.2+ | 0.4+ |
| 2000 08 21 | 699 | 1.2− | 0.9+ | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2005 09 11 | 691 | 0.1− | 0.2+ |
| 2000 08 21 | 699 | 1.1− | 0.3+ | 2004 04 13 | 691 | 0.3+ | 0.6− | 2005 09 11 | 691 | 0.2+ | 0.3− |
| 2000 08 21 | 699 | 1.8+ | 0.6+ | 2004 04 17 | 704 | 0.3+ | 0.3− | 2005 09 11 | 691 | 0.2− | 0.3− |
| 2001 10 23 | 049 | 1.0− | 0.5+ | 2004 04 17 | 704 | 0.3+ | 0.4+ | 2005 10 26 | G96 | 0.6− | 0.5− |
| 2001 10 23 | 049 | 1.1− | 0.5+ | 2004 04 17 | 704 | 0.1+ | 0.1+ | 2005 10 26 | G96 | 0.4+ | 0.1− |
| 2001 10 23 | 049 | 1.0− | 0.6− | 2004 04 17 | 704 | 0.1+ | 0.6+ | 2005 10 26 | G96 | 0.5− | 0.0 |
| 2001 11 16 | 691 | 0.3+ | 0.8+ | 2004 04 19 | 704 | 0.1− | 0.0 | 2005 10 26 | G96 | 0.9+ | 0.2+ |
| 2001 11 16 | 691 | 0.2+ | 0.4+ | 2004 04 19 | 704 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.5− | 0.4+ |
| 2001 11 16 | 691 | 0.0 | 0.5+ | 2004 04 19 | 704 | 1.3+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 703 | 1.5− | 0.2+ | 2004 04 19 | 704 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2004 03 16 | 703 | 0.9+ | 0.8+ | 2004 04 19 | 704 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 703 | 1.0− | 0.6− | 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 703 | 1.3− | 0.4+ | 2004 04 20 | 704 | 0.6+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2004 03 17 | 704 | 0.0 | 0.8+ | 2004 04 20 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2004 03 17 | 704 | 0.0 | 1.1+ | 2004 04 20 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 704 | 0.1+ | 1.0+ | 2004 04 20 | 691 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2004 03 17 | 704 | (1.3+ | 1.8+) | 2004 04 20 | 703 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2004 03 17 | 704 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.8+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.4+ | 0.3− | 2004 04 20 | 703 | 0.2+ | 0.5− | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 0.9+ | 0.2+ | 2004 04 20 | 704 | 1.0+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 0.3+ | 1.2+ | 2004 04 20 | 703 | (1.0+ | 1.5−) | 2006 10 27 | 691 | 0.2− | 0.6+ |
| 2004 03 20 | 704 | 0.8− | 0.9+ | 2004 04 20 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.5− | 0.3+ |
| 2004 03 20 | 704 | 0.0 | 0.5+ | 2004 04 20 | 703 | 0.8+ | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.4+ |
| 2004 03 20 | 704 | 0.1− | 0.3− | 2004 04 20 | 704 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2004 03 23 | 691 | 0.2− | 0.3+ | 2004 04 20 | 704 | 0.1+ | 0.8+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.4+ |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2004 03 27 | 704 | 0.6+ | 0.2− | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2004 03 27 | 704 | 0.1+ | 0.6+ | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.7− | 0.3+ |
| 2004 03 27 | 704 | 0.5+ | 0.3+ | 2004 05 09 | 691 | 0.4− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2004 03 27 | 704 | 0.5+ | 0.2+ | 2004 05 09 | 691 | 0.0 | 0.3+ | | | | |

**(144570)∗ 2004 FX$_{18}$ = 1993 TV$_{7}$**

Discovered 2004 Mar. 16 at Valmeca Observatory, Puimichel.

Id. G. V. Williams (*MPO* 62080)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 242.04461 | (2000.0) | | | |
| $n$ | 0.22538188 | $\omega$ | 132.69041 | −0.78082853 | −0.62381632 |
| $a$ | 2.6741764 | $\Omega$ | 8.90258 | +0.48929750 | −0.64452844 |
| $e$ | 0.1485967 | $i$ | 12.71382 | +0.38845174 | −0.44208176 |
| $P$ | 4.37 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 691 | 0.2− | 0.4+ | 2004 03 17 | 184 | 0.1+ | 0.5+ | 2004 04 26 | 699 | 0.3− | 0.4+ |
| 1993 09 16 | 691 | 0.7− | 0.5+ | 2004 03 17 | 184 | 0.2+ | 0.1+ | 2004 04 26 | 704 | 0.4+ | 0.4+ |
| 1993 09 16 | 691 | 0.4− | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.1− | 2004 04 26 | 704 | 0.7− | 0.3+ |
| 1993 10 10 | 691 | 0.2− | 0.3+ | 2004 03 18 | 704 | 1.1+ | 0.1+ | 2004 04 26 | 704 | 0.3− | 0.2− |
| 1993 10 10 | 691 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.0 | 2004 04 26 | 704 | 0.5+ | 0.2+ |
| 1993 10 10 | 691 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.2− | 2004 04 26 | 704 | 0.1− | 0.3+ |
| 1993 10 16 | 691 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.5+ | 2004 04 26 | 704 | 0.3+ | 0.3− |
| 1993 10 16 | 691 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.9+ | 0.3+ | 2004 04 26 | 704 | 1.0+ | 0.1− |
| 1993 10 16 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | (0.3− | 1.6+) | 2004 04 26 | 704 | 0.2− | 0.1− |
| 1998 12 12 | 704 | 0.9− | 0.5− | 2004 03 27 | 704 | 1.0+ | 0.5+ | 2004 04 26 | 704 | 0.1+ | 0.2− |
| 1998 12 12 | 704 | 0.1− | 0.4− | 2004 03 27 | 704 | 0.2− | 1.0+ | 2004 04 26 | 704 | 0.2+ | 0.6+ |
| 1998 12 12 | 704 | 0.0 | 0.5− | 2004 03 27 | 704 | 0.2− | 0.3− | 2004 04 28 | 608 | 0.1− | 0.5+ |
| 1998 12 12 | 704 | 1.2+ | 0.4− | 2004 03 28 | 704 | 0.3+ | 0.4+ | 2004 04 28 | 608 | 0.9+ | 0.1− |
| 1998 12 12 | 704 | (2.8− | 0.1−) | 2004 03 28 | 704 | 0.1+ | 0.9+ | 2004 04 28 | 608 | 0.2− | 0.3− |
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2004 03 28 | 704 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.4− | 0.4− | 2004 03 28 | 704 | 0.5+ | 0.9+ | 2006 09 14 | 691 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 0.5+ | 1.0+ | 2006 09 14 | 691 | 0.0 | 0.3+ |
| 2002 11 25 | 644 | 0.0 | 0.2− | 2004 03 31 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.4+ |
| 2002 11 25 | 644 | 0.0 | 0.2+ | 2004 03 31 | 704 | 0.3− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.4+ |
| 2002 11 25 | 644 | 0.2+ | 0.1+ | 2004 03 31 | 704 | 0.5+ | 0.9+ | 2006 09 18 | 691 | 0.1− | 0.5+ |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2004 03 31 | 704 | 0.3− | 0.5+ | 2006 09 20 | J75 | 0.0 | 0.3− |
| 2002 12 06 | 704 | 0.4− | 0.4− | 2004 03 31 | 704 | 0.2+ | 0.3+ | 2006 09 20 | J75 | 1.1+ | 1.2− |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2004 04 03 | 608 | 0.8+ | 0.6− | 2006 09 20 | J75 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.0 | 0.2+ | 2004 04 03 | 608 | 1.0+ | 0.6− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.5+ | 2004 04 03 | 608 | 0.7+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2002 12 11 | 644 | 0.3+ | 0.2− | 2004 04 11 | 703 | (0.8− | 1.6+) | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2002 12 11 | 644 | 0.1+ | 0.2+ | 2004 04 11 | 703 | 0.2+ | 0.9+ | 2006 09 25 | G96 | 0.8− | 0.3− |
| 2002 12 11 | 644 | 0.0 | 0.1− | 2004 04 11 | 703 | (0.1+ | 1.6+) | 2006 10 02 | 691 | 0.7− | 0.2+ |
| 2004 02 26 | 704 | 0.3+ | 0.4+ | 2004 04 11 | 703 | 0.4− | 1.2+ | 2006 10 02 | 691 | 0.6− | 0.2+ |
| 2004 02 26 | 704 | 0.5+ | 0.0 | 2004 04 14 | 691 | 0.1− | 0.7+ | 2006 10 02 | 691 | 0.7− | 0.4+ |
| 2004 02 26 | 704 | 0.5− | 0.6− | 2004 04 14 | 691 | 0.0 | 0.6+ | 2006 10 13 | 122 | 0.0 | 0.4− |
| 2004 02 26 | 704 | 0.3+ | 0.6+ | 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 10 13 | 122 | 0.3+ | 0.3− |
| 2004 02 26 | 704 | 0.2− | 0.9+ | 2004 04 16 | 704 | 0.4+ | 0.6− | 2006 10 15 | 106 | 1.1+ | 1.2+ |
| 2004 03 14 | 703 | (3.8+ | 0.6+) | 2004 04 16 | 704 | 0.9− | 0.8− | 2006 10 15 | 106 | 0.0 | 1.2+ |
| 2004 03 14 | 703 | (1.0+ | 1.5+) | 2004 04 16 | 704 | 0.4+ | 0.6+ | 2006 10 15 | 106 | 0.3+ | 0.7+ |
| 2004 03 14 | 703 | 1.1+ | 0.8+ | 2004 04 16 | 704 | 0.2− | 1.0+ | 2006 10 15 | 106 | 0.1+ | 0.5− |
| 2004 03 14 | 703 | (1.6+ | 1.0+) | 2004 04 20 | 704 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2004 03 16 | 184 | 0.2− | 0.4− | 2004 04 20 | 704 | 0.4− | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2004 03 16 | 184 | 0.0 | 0.3+ | 2004 04 20 | 704 | 0.6− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2004 03 16 | 184 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.2− | 0.6− | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 0.1+ | 1.3− | 2004 04 20 | 704 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2004 03 16 | 704 | 0.1+ | 0.4− | 2004 04 26 | 699 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2004 03 16 | 704 | 0.9+ | 0.0 | 2004 04 26 | 699 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2004 03 17 | 184 | 0.4+ | 0.2+ | 2004 04 26 | 699 | 0.7− | 0.5− | | | | |

**(144571)∗ 2004 FA$_{20}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 302.17637 | (2000.0) | | | |
| $n$ | 0.24519124 | $\omega$ | 100.34708 | +0.08385639 | −0.99403203 |
| $a$ | 2.5281301 | $\Omega$ | 344.32407 | +0.78299272 | +0.10903931 |
| $e$ | 0.1103981 | $i$ | 14.96538 | +0.61635258 | −0.00327904 |
| $P$ | 4.02 | $H$ | 16.3 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.2− | 0.0 | 2004 03 16 | 704 | 0.4− | 0.4− | 2006 09 20 | 699 | (2.0− | 0.4+) |
| 2000 02 12 | 645 | 0.2− | 0.0 | 2004 03 16 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.2+ |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.1− |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.1− | 0.7+ | 2006 09 28 | 703 | 1.4− | 0.5− |
| 2002 10 05 | 704 | 0.5− | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.5− | 2006 09 28 | 703 | 0.4− | 0.2− |
| 2002 10 05 | 704 | 0.7− | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 2002 10 05 | 704 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2002 10 05 | 704 | 0.1− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 703 | 1.4+ | 0.6+ |
| 2002 11 01 | 644 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.6+ | 0.7+ | 2006 10 19 | 703 | 1.1+ | 0.7+ |
| 2002 11 01 | 644 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.4+ | 1.0+ | 2006 10 19 | 703 | 0.4+ | 0.5+ |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.5+ | 0.2− | 2006 10 19 | 703 | 0.7+ | 0.4+ |
| 2004 02 15 | 703 | 0.5− | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.5+ | 0.9+ |
| 2004 02 15 | 703 | 0.6− | 0.9+ | 2006 09 16 | 703 | 0.9− | 0.8− | 2006 11 15 | 703 | 0.2− | 0.8− |
| 2004 02 15 | 703 | 0.3+ | 1.2+ | 2006 09 16 | 703 | 1.2+ | 0.9− | 2006 11 15 | 703 | 0.3− | 0.7− |
| 2004 02 15 | 703 | 0.0 | 0.9+ | 2006 09 16 | 703 | 0.7− | 0.9+ | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2004 03 16 | 704 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.7− | 1.3+ | | | | |
| 2004 03 16 | 704 | 0.5+ | 0.5− | 2006 09 20 | 699 | 1.0− | 0.7+ | | | | |

**(144572)∗ 2004 FH$_{20}$ = 2001 QO$_{306}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62081)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 188.39175 | (2000.0) | | | |
| $n$ | 0.21517399 | $\omega$ | 268.23322 | −0.98852186 | +0.14591795 |
| $a$ | 2.7580970 | $\Omega$ | 280.15583 | −0.11791503 | −0.90717354 |
| $e$ | 0.1476356 | $i$ | 2.27926 | −0.09444880 | −0.39464430 |
| $P$ | 4.58 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 691 | 0.3− | 0.5+ | 2004 03 16 | 704 | 0.9− | 1.0+ | 2004 04 24 | 691 | 0.1− | 0.0 |
| 1997 10 02 | 691 | 0.0 | 0.3+ | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.1− |
| 1997 10 02 | 691 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2005 06 13 | G96 | 0.1+ | 0.1− |
| 1998 12 23 | 691 | 0.3+ | 0.5− | 2004 03 18 | 704 | 1.0+ | 0.0 | 2005 06 13 | G96 | 0.6− | 0.0 |
| 1998 12 23 | 691 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 0.7+ | 0.7+ | 2005 06 13 | G96 | 0.2+ | 0.5− |
| 1998 12 23 | 691 | 0.8+ | 0.1− | 2004 03 18 | 704 | 0.6+ | 1.3+ | 2005 06 13 | G96 | 0.1− | 0.1+ |
| 1999 01 08 | 691 | 0.7− | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.8+ | 2005 07 09 | 691 | 0.1+ | 0.2− |
| 1999 01 08 | 691 | 0.3− | 0.5− | 2004 03 20 | 704 | 0.4+ | 0.6− | 2005 07 09 | 691 | 0.1+ | 0.2− |
| 1999 01 08 | 691 | 0.6− | 0.2− | 2004 03 20 | 704 | 0.0 | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.0 |
| 2001 08 19 | 807 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.4− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 08 19 | 807 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2001 08 20 | 807 | 0.1+ | 0.5+ | 2004 03 20 | 704 | 0.7− | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2001 08 20 | 807 | 0.2− | 0.6− | 2004 03 27 | 704 | 0.3− | 1.0− | 2006 10 19 | G96 | 0.1− | 0.4+ |
| 2001 08 21 | 807 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2001 08 21 | 807 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.2+ | 1.3+ | 2006 10 19 | G96 | 0.5− | 0.4+ |
| 2004 02 15 | 703 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 0.8+ | 1.1+ | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2004 02 15 | 703 | (1.7+ | 2.6+) | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.7+ | 0.3− |
| 2004 02 15 | 703 | 0.6+ | 1.1+ | 2004 04 17 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2004 02 15 | 703 | (1.4+ | 1.8+) | 2004 04 17 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.2− |
| 2004 03 16 | 704 | 0.2+ | 0.4+ | 2004 04 17 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 0.0 | 0.7+ | 2004 04 24 | 691 | 0.0 | 0.0 | | | | |

**(144573)∗ 2004 FG$_{21}$ = 2003 AE$_{43}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62082)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | MPC | |
|---|---|---|---|---|---|
| | | | **P** | **Q** | |
| $M$ | 148.50829 | (2000.0) | | | |
| $n$ | 0.17731825 | $\omega$ | 221.32539 | −0.91322493 | +0.40663200 |
| $a$ | 3.1378615 | $\Omega$ | 342.61510 | −0.34736119 | −0.81018355 |
| $e$ | 0.1209416 | $i$ | 4.97221 | −0.21297988 | −0.42220022 |
| $P$ | 5.56 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 25 | 691 | 0.3− | 0.2+ | 2004 03 27 | 704 | (1.6+ | 0.6+) | 2004 04 16 | 704 | 0.6− | 0.5+ |
| 1998 01 25 | 691 | 0.0 | 1.3− | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2004 04 16 | 704 | 0.9− | 0.5+ |
| 1998 03 22 | 691 | 0.2− | 0.4+ | 2004 03 27 | 704 | (2.3+ | 0.4+) | 2004 04 20 | 704 | 0.2+ | 0.9+ |
| 1998 03 22 | 691 | 0.4+ | 0.1− | 2004 03 27 | 704 | (2.9+ | 0.9+) | 2004 04 20 | 704 | 0.4+ | 0.7+ |
| 1998 03 22 | 691 | 0.2− | 0.3+ | 2004 03 27 | 704 | (2.1+ | 0.6+) | 2004 04 20 | 704 | 0.7+ | 1.1+ |
| 2001 10 23 | 333 | 0.5− | 0.0 | 2004 03 28 | 704 | 0.6+ | 0.2+ | 2004 04 20 | 704 | 0.3+ | 1.0+ |
| 2001 10 23 | 333 | 0.5+ | 0.6+ | 2004 03 28 | 704 | 1.0+ | 0.1− | 2004 04 28 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 333 | 0.4+ | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.4+ | 2004 04 28 | 691 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.2− | 0.9+ | 2004 03 28 | 704 | 1.1+ | 0.4+ | 2004 04 28 | 691 | 0.1− | 0.1+ |
| 2003 01 05 | 704 | 0.3− | 0.9+ | 2004 03 28 | 704 | 1.1+ | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.2− |
| 2003 01 05 | 704 | 0.2− | 0.6+ | 2004 03 29 | 704 | 0.9− | 0.3− | 2006 08 19 | 691 | 0.1+ | 0.5+ |
| 2003 01 05 | 704 | 0.2+ | 1.0+ | 2004 03 29 | 704 | 0.6− | 0.6+ | 2006 08 19 | 691 | 0.5− | 0.5+ |
| 2003 01 05 | 704 | 0.3− | 0.8+ | 2004 03 29 | 704 | 0.3− | 0.0 | 2006 08 28 | 691 | 0.4− | 0.2+ |
| 2003 01 09 | 704 | 0.6+ | 1.0+ | 2004 03 29 | 704 | 0.3− | 0.5+ | 2006 08 28 | 691 | 0.6− | 0.5+ |
| 2003 01 09 | 704 | 0.1+ | 1.0+ | 2004 03 29 | 704 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.4− | 0.3+ |
| 2003 01 09 | 704 | (0.9− | 2.0+) | 2004 03 30 | 704 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.3− | 0.6+ |
| 2004 03 16 | 703 | 0.7+ | 0.8+ | 2004 03 30 | 704 | 0.2+ | 0.0 | 2006 09 13 | 644 | 0.7− | 0.4+ |
| 2004 03 16 | 703 | 0.2+ | 0.8+ | 2004 03 30 | 704 | 0.4+ | 0.0 | 2006 09 13 | 644 | 0.4− | 0.2− |
| 2004 03 16 | 704 | 1.0+ | 0.9+ | 2004 03 30 | 704 | 0.4+ | 0.1− | 2006 09 16 | 691 | 0.0 | 0.4+ |
| 2004 03 16 | 703 | 0.0 | 0.4− | 2004 03 30 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 691 | 0.3+ | 0.3+ |
| 2004 03 16 | 704 | 1.2+ | 0.2− | 2004 03 31 | 704 | 1.1− | 0.7+ | 2006 09 16 | 691 | 0.0 | 0.6+ |
| 2004 03 16 | 703 | (1.3+ | 1.7+) | 2004 03 31 | 704 | 0.6− | 0.4− | 2006 09 28 | 691 | 0.0 | 0.7+ |
| 2004 03 16 | 704 | 0.1+ | 0.3+ | 2004 03 31 | 704 | 0.3+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.4+ |
| 2004 03 18 | 704 | 0.8+ | 0.2+ | 2004 03 31 | 704 | 0.5− | 0.6− | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2004 03 18 | 704 | 1.0+ | 0.1+ | 2004 03 31 | 704 | 0.3+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.4+ | 0.3− | 2004 03 31 | 704 | 0.8− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 0.8+ | 0.4+ | 2004 03 31 | 704 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.8+ | 0.4+ | 2004 03 31 | 704 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.2+ |
| 2004 03 20 | 704 | 0.3+ | 0.0 | 2004 04 11 | 644 | 0.5+ | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | 0.6+ | 0.6+ | 2004 04 11 | 644 | 0.4+ | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2004 03 20 | 704 | 0.7+ | 0.1+ | 2004 04 11 | 644 | 0.6+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2004 03 20 | 704 | 0.6− | 0.4+ | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2004 03 20 | 704 | 0.1+ | 0.8+ | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.8− | 0.0 |
| 2004 03 24 | 699 | 0.8− | 0.1− | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2004 03 24 | 699 | 0.2+ | 0.3− | 2004 04 16 | 704 | 0.3− | 0.8+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2004 03 24 | 699 | 0.5− | 0.2− | 2004 04 16 | 704 | 0.3− | 0.5− | 2006 10 23 | G96 | 0.8− | 0.1− |
| 2004 03 24 | 699 | 0.4− | 0.8+ | 2004 04 16 | 704 | 1.1− | 0.9+ | | | | |

**(144574)∗ 2004 FS$_{22}$ = 2004 FA$_{164}$**

Discovered 2004 Mar. 16 by CINEOS at Campo Imperatore.

Id. A. Doppler (d, *MPO* 86394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 127.67441 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20251595 | $\omega$ | 257.19970 | | −0.41143454 | | +0.91143642 | | |
| $a$ | 2.8718597 | $\Omega$ | 348.50451 | | −0.83169615 | | −0.37646695 | | |
| $e$ | 0.0761190 | $i$ | 0.66021 | | −0.37283123 | | −0.16600088 | | |
| $P$ | 4.87 | $H$ | 16.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.3− | 2004 04 25 | 691 | 0.2+ | 0.2+ |
| 1999 02 08 | 691 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.3+ |
| 1999 02 08 | 691 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1999 03 13 | 691 | 0.6− | 0.5− | 2004 03 18 | 704 | 1.3+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1999 03 13 | 691 | 0.4− | 0.1− | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 1999 03 13 | 691 | 0.2− | 0.3− | 2004 03 20 | 735 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2001 09 12 | 695 | 0.2− | 0.2+ | 2004 03 20 | 735 | 0.7− | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2001 09 12 | 695 | 0.1− | 0.1+ | 2004 03 20 | 735 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 09 21 | 691 | 0.1− | 0.3+ | 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 691 | 0.1− | 0.4+ | 2004 03 31 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.4− |
| 2001 09 21 | 691 | 0.3− | 0.5+ | 2004 03 31 | 691 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2004 03 16 | 599 | 0.6+ | 0.5+ | 2004 04 25 | 691 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.5+ | 0.1− |
| 2004 03 16 | 599 | 0.4+ | 0.4+ | 2004 04 25 | 691 | 0.3− | 0.3+ | | | | |

**(144575)∗ 2004 FR$_{25}$ = 2001 TM$_{232}$**

Discovered 2004 Mar. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62084)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 161.50298 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17601373 | $\omega$ | 331.77923 | | −0.98089644 | | +0.18960700 | | |
| $a$ | 3.1533464 | $\Omega$ | 219.22762 | | −0.16303171 | | −0.92322505 | | |
| $e$ | 0.1273633 | $i$ | 3.94329 | | −0.10612651 | | −0.33422251 | | |
| $P$ | 5.60 | $H$ | 15.0 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.7− | 0.1+ | 2002 12 11 | 704 | 0.5− | 0.1− | 2004 04 16 | 704 | 0.3− | 1.4+ |
| 1995 10 17 | 691 | 0.5− | 0.1− | 2004 03 17 | 704 | 0.6+ | 0.8+ | 2004 04 16 | 704 | 0.7+ | 0.1+ |
| 1995 10 17 | 691 | 0.6− | 0.2− | 2004 03 17 | 704 | 0.1+ | 0.8+ | 2004 04 20 | 704 | 0.4+ | 0.6+ |
| 1995 10 27 | 691 | 1.0+ | 0.2− | 2004 03 17 | 704 | 1.3+ | 0.8+ | 2004 04 20 | 704 | 1.1+ | 0.9+ |
| 1995 10 27 | 691 | 0.5+ | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 0.0 | 0.8+ |
| 1995 10 27 | 691 | 1.0+ | 0.6− | 2004 03 18 | 704 | 0.5+ | 0.8+ | 2004 04 20 | 704 | 0.2− | 0.5+ |
| 1998 03 03 | 704 | 0.4− | 2.0+ | 2004 03 18 | 704 | 0.8+ | 0.5+ | 2004 04 20 | 704 | 0.5+ | 0.7+ |
| 1998 03 03 | 704 | 0.2+ | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.0 | 2004 04 22 | 703 | 0.2+ | 0.1+ |
| 1998 03 03 | 704 | 1.0+ | 1.2− | 2004 03 20 | 704 | 0.1− | 0.2− | 2004 04 22 | 703 | 0.7+ | 0.8+ |
| 1998 03 03 | 704 | 0.1− | 0.6− | 2004 03 20 | 704 | 0.3− | 0.3− | 2004 04 22 | 703 | 1.0+ | 0.0 |
| 1998 03 03 | 704 | (6.0− | 0.4−) | 2004 03 20 | 704 | 0.7− | 0.0 | 2004 04 22 | 703 | 0.8+ | 1.0+ |
| 1998 03 04 | 704 | 0.9+ | 0.4+ | 2004 03 20 | 704 | 0.9− | 0.2− | 2004 04 26 | 699 | 0.9+ | 0.5− |
| 1998 03 04 | 704 | 0.7+ | 0.6+ | 2004 03 27 | 699 | 0.0 | 0.4+ | 2004 04 26 | 699 | 0.1+ | 0.7+ |
| 1998 03 04 | 704 | 0.7+ | 0.1− | 2004 03 27 | 699 | 1.5− | 0.6− | 2004 04 26 | 699 | 0.4− | 0.2− |
| 1998 03 04 | 704 | 0.5+ | 0.9+ | 2004 03 27 | 699 | 0.2− | 0.8− | 2004 04 26 | 699 | 0.0 | 0.4+ |
| 1998 03 04 | 704 | 0.3− | 0.4− | 2004 03 27 | 699 | 0.2+ | 0.0 | 2005 06 10 | 691 | 0.2+ | 0.3+ |
| 2000 09 27 | 645 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.9+ | 0.1+ | 2005 06 10 | 691 | 0.1+ | 0.1+ |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.0 | 0.2+ | 2005 06 10 | 691 | 0.1+ | 0.2+ |
| 2001 10 15 | 691 | 0.2− | 0.2+ | 2004 03 27 | 704 | 0.3− | 0.6− | 2006 09 20 | 691 | 0.1− | 0.7+ |
| 2001 10 15 | 691 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.4− | 0.1− | 2006 09 20 | 691 | 0.0 | 0.6+ |
| 2001 10 15 | 691 | 0.0 | 0.5+ | 2004 03 27 | 704 | 0.4− | 0.1− | 2006 09 20 | 691 | 0.5+ | 0.8+ |
| 2001 10 21 | 704 | 0.3− | 1.3+ | 2004 03 31 | 704 | 1.2− | 0.9+ | 2006 09 25 | 699 | 0.1+ | 1.0+ |
| 2001 10 21 | 704 | 0.8− | 0.1+ | 2004 03 31 | 704 | 0.7− | 1.0+ | 2006 09 25 | 699 | 0.8− | 0.4+ |
| 2001 10 21 | 704 | 0.0 | 0.6+ | 2004 03 31 | 704 | 1.2− | 0.4+ | 2006 09 25 | 699 | (1.7+ | 2.1+) |
| 2001 10 21 | 704 | 0.4+ | 0.8+ | 2004 03 31 | 704 | 0.9− | 0.3+ | 2006 09 25 | 699 | (1.8+ | 0.8+) |
| 2001 10 21 | 704 | 0.1− | 0.8+ | 2004 03 31 | 704 | 0.9− | 0.1− | 2006 10 03 | G96 | 0.5− | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2004 04 11 | 644 | 0.4+ | 0.5+ | 2006 10 03 | G96 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 1.0− | 1.1+ | 2004 04 11 | 644 | 0.4+ | 0.7+ | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2001 11 21 | 704 | 1.2− | 0.9+ | 2004 04 11 | 644 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.5+ | 2004 04 11 | 703 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2001 11 21 | 704 | 0.4− | 0.5+ | 2004 04 11 | 703 | 1.3− | 0.7− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2002 10 04 | 644 | 0.4− | 0.1− | 2004 04 11 | 703 | (2.4− | 0.4−) | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2002 10 04 | 644 | 0.0 | 0.2+ | 2004 04 11 | 703 | 0.3− | 0.6+ | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2002 10 04 | 644 | 0.1− | 0.1+ | 2004 04 16 | 704 | 0.1+ | 0.9+ | 2006 10 23 | G96 | 0.3+ | 0.2+ |
| 2002 12 11 | 704 | 0.6+ | 0.2− | 2004 04 16 | 704 | 0.6+ | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 0.9− | 2004 04 16 | 704 | 1.2+ | 0.2− | 2006 10 23 | G96 | 0.0 | 0.0 |

**(144576)∗ 2004 FH$_{27}$ = 2002 VE$_{112}$**

Discovered 2004 Mar. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62086)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 299.11757 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24412042 | $\omega$ | 228.22546 | | −0.20015552 | | −0.97975796 | | |
| $a$ | 2.5355177 | $\Omega$ | 233.32092 | | +0.90019828 | | −0.18249788 | | |
| $e$ | 0.0507660 | $i$ | 0.24861 | | +0.38675680 | | −0.08227312 | | |
| $P$ | 4.04 | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 691 | 0.5+ | 0.6− | 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1998 11 24 | 691 | 0.1+ | 0.5− | 2004 03 18 | 704 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 1998 11 24 | 691 | 0.4+ | 0.4− | 2004 03 18 | 704 | 0.1+ | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 1998 12 08 | 691 | 0.0 | 0.3− | 2004 03 21 | 291 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 1998 12 08 | 691 | 0.2− | 0.4− | 2004 03 21 | 291 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 08 | 691 | 0.3− | 0.5− | 2004 03 21 | 291 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2000 04 05 | 704 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2000 04 05 | 704 | 0.3− | 0.2+ | 2004 03 27 | 704 | 1.0+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2000 04 05 | 704 | 0.1+ | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2000 04 05 | 704 | 0.4− | 0.0 | 2004 04 15 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2+ | | |
| 2000 04 05 | 704 | 1.4+ | 0.6+ | 2004 04 15 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.7+ | | |
| 2002 10 28 | 291 | 0.6− | 0.0 | 2004 04 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.4− | | |
| 2002 10 28 | 291 | 0.4+ | 0.1− | 2004 04 22 | 691 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.2− | | |
| 2002 10 28 | 291 | 0.0 | 0.1+ | 2004 04 22 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.0 | | |
| 2002 11 13 | 291 | 0.1− | 0.1+ | 2004 04 22 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2002 11 13 | 291 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2002 11 13 | 291 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.3− | | |
| 2002 11 14 | 704 | 1.1+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 12 | 703 | 0.5− | 0.2− | | |
| 2002 11 14 | 704 | 0.7− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 12 | 703 | 0.2+ | 0.1− | | |
| 2002 11 14 | 704 | 1.1+ | 0.8− | 2006 10 16 | 691 | 0.5+ | 0.1+ | 2006 11 12 | 703 | 0.0 | 0.6− | | |
| 2002 11 14 | 704 | 0.8− | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 12 | 703 | 0.4+ | 0.2+ | | |
| 2002 11 14 | 704 | 0.3+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.3− | | |
| 2004 02 26 | 704 | 1.1+ | 1.3− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.3− | | |
| 2004 02 26 | 704 | 0.8+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.2− | | |
| 2004 02 26 | 704 | 1.2+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.3− | | |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 1.2+ | 2006 11 17 | 703 | 1.0− | 1.3− | | |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.1− | | |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.0 | | |
| 2004 03 18 | 704 | 0.9+ | 1.0− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.6+ | | |
| 2004 03 18 | 704 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.3− | 0.1+ | | | | | | |

**(144577)∗ 2004 FB$_{28}$**

Discovered 2004 Mar. 17 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.13594 | | (2000.0) | | +0.43342585 | +0.90108183 |
| $n$ | 0.20192695 | $\omega$ | 107.63378 | | −0.85976131 | +0.40882467 |
| $a$ | 2.8774417 | $\Omega$ | 188.09316 | | −0.27009726 | +0.14461651 |
| $e$ | 0.0278873 | $i$ | 5.67167 | | | |
| $P$ | 4.88 | $H$ | 16.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.1− | 2004 03 23 | 291 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.6− | | |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 03 23 | 291 | 0.1− | 0.4+ | 2006 10 17 | G96 | 1.0+ | 0.2+ | | |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2004 04 12 | 691 | 0.5+ | 0.1− | 2006 10 21 | 291 | 0.1− | 0.3+ | | |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2004 04 12 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 291 | 0.5− | 0.4+ | | |
| 2001 09 21 | 291 | 0.1− | 0.2+ | 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 291 | 0.1+ | 0.4+ | | |
| 2001 09 21 | 291 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2001 09 21 | 291 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2001 10 16 | 291 | 0.4− | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.0 | | |
| 2001 10 16 | 291 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.4− | 0.3− | | |
| 2001 10 16 | 291 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.8− | | |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.5− | | |
| 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.7− | 2006 10 31 | G96 | 0.5+ | 0.0 | | |
| 2004 03 17 | 691 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.4− | 0.1+ | | |
| 2004 03 19 | 291 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.1− | | |
| 2004 03 19 | 291 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.4− | | |
| 2004 03 19 | 291 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 1.2− | 2006 11 16 | G96 | 0.2− | 0.7− | | |
| 2004 03 23 | 291 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 1.1+ | 1.0− | 2006 11 16 | G96 | 0.1+ | 0.3− | | |

**(144578)∗ 2004 FH$_{28}$ = 2001 SU$_{184}$ = 2003 AL$_{32}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76456)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.34332 | | (2000.0) | | +0.96552823 | −0.25936127 |
| $n$ | 0.21317183 | $\omega$ | 0.51996 | | +0.23850131 | +0.84753068 |
| $a$ | 2.7753399 | $\Omega$ | 14.56975 | | +0.10427065 | +0.46305882 |
| $e$ | 0.0845000 | $i$ | 5.03265 | | | |
| $P$ | 4.62 | $H$ | 15.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.1− | 0.2+ | 2004 03 19 | 291 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2001 08 21 | 807 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.1− | | |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2004 03 23 | 704 | 0.8− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2004 03 23 | 704 | 0.8− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | | |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2004 03 26 | 704 | 1.3+ | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.2− | | |
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2004 03 26 | 704 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.1+ | | |
| 2001 09 21 | 704 | 0.1+ | 1.1+ | 2004 03 26 | 704 | 1.1+ | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.7+ | | |
| 2001 09 21 | 704 | 0.7+ | 0.7+ | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.6− | 0.1+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1− | | |
| 2001 10 17 | 644 | 0.6− | 0.2− | 2006 07 21 | G96 | 0.7− | 0.2− | 2006 10 28 | 691 | 0.6− | 0.4+ | | |
| 2001 10 17 | 644 | (1.2− | 1.7+) | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2001 10 17 | 644 | 0.8− | 0.0 | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2+ | | |
| 2001 10 17 | 644 | (1.0− | 1.7+) | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2001 10 17 | 644 | 0.8− | 0.2+ | 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2001 10 17 | 644 | (1.3− | 1.9+) | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.2− | | |
| 2003 01 05 | 704 | 0.3− | 0.4− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2+ | | |
| 2003 01 05 | 704 | 0.4+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8+ | 1.0− | | |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.8− | | |
| 2003 01 05 | 704 | 0.3+ | 0.5− | 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | (5.6+ | 0.6−) | | |
| 2003 01 08 | 704 | 0.5− | 0.2− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | (5.0+ | 1.6−) | | |
| 2003 01 08 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.5+ | 2006 11 19 | 704 | (4.7+ | 0.8−) | | |
| 2003 01 08 | 704 | 0.4− | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.4− | 0.7+ | | |
| 2004 03 18 | 704 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 11 22 | 704 | 1.0− | 1.0+ | | |
| 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9− | 1.1+ | | |
| 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.7− | 0.1+ | | |
| 2004 03 19 | 291 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.0 | | | | | | |
| 2004 03 19 | 291 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.2− | | | | | | |

**(144579)∗ 2004 FO$_{32}$**

Discovered 2004 Mar. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.81576 | | (2000.0) | | +0.26208308 | −0.96324422 |
| $n$ | 0.22702172 | $\omega$ | 213.58790 | | +0.90389852 | +0.26641057 |
| $a$ | 2.6612833 | $\Omega$ | 221.30496 | | +0.33805315 | +0.03443807 |
| $e$ | 0.0266277 | $i$ | 5.12233 | | | |
| $P$ | 4.34 | $H$ | 16.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.3− | 0.1+ | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1− | | |
| 2000 04 26 | 691 | 0.9− | 0.4− | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | | |
| 2000 04 26 | 691 | 0.7− | 0.1+ | 2005 05 15 | G96 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.3+ | | |
| 2000 05 10 | 704 | 0.9− | 1.1+ | 2005 05 15 | G96 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.5+ | | |
| 2000 05 10 | 704 | 0.7− | 0.1+ | 2005 05 15 | G96 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.7− | 0.5+ | | |
| 2000 05 10 | 704 | 0.9+ | 0.5+ | 2005 05 15 | G96 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.6− | 0.7+ | | |
| 2000 05 10 | 704 | 0.1+ | 1.8+ | 2005 06 13 | 691 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.5− | 0.4+ | | |
| 2000 05 10 | 704 | 0.8+ | 0.2+ | 2005 06 13 | 691 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2000 05 26 | 691 | 0.3+ | 0.3− | 2005 06 13 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 2000 05 26 | 691 | 0.6+ | 0.0 | 2005 06 17 | 691 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.4− | | |
| 2000 05 26 | 691 | 0.8+ | 0.1+ | 2005 06 17 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2001 08 25 | 704 | (0.3− | 2.3+) | 2005 06 17 | 691 | 0.3− | 0.5+ | 2006 11 17 | 703 | (0.4+ | 2.2+) | | |
| 2001 08 25 | 704 | (0.2− | 2.5+) | 2006 09 27 | G96 | 0.6+ | 0.3− | 2006 11 17 | 703 | 1.2+ | 1.4+ | | |
| 2001 08 25 | 704 | (0.9+ | 2.4+) | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 1.4+ | 0.0 | | |
| 2001 08 25 | 704 | 0.2+ | 1.5+ | 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | (0.2+ | 2.1+) | | |
| 2001 08 25 | 704 | (0.5+ | 2.6+) | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.4− | | |
| 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.1− | | |
| 2004 03 27 | 704 | 0.5+ | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.3− | | |
| 2004 03 27 | 704 | 1.3+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2004 03 30 | 291 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− | | |
| 2004 03 30 | 291 | 0.6+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2004 03 30 | 291 | 0.8+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2− | | |
| 2004 03 31 | 291 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.5− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2004 03 31 | 291 | 0.6− | 0.4+ | 2006 10 20 | 691 | 0.5− | 0.4+ | 2006 11 27 | 703 | 0.1+ | 1.2+ | | |
| 2004 03 31 | 291 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.6− | 0.5+ | 2006 11 27 | 703 | 0.6− | 0.2+ | | |
| 2004 04 01 | 413 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.2− | 2006 11 27 | 703 | 0.3− | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 01 | 413 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.0 | 2.1+ | | |
| 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | | | | | |

**(144580)∗ 2004 FY$_{32}$ = 1993 FH$_{63}$**

Discovered 2004 Mar. 16 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62091)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.48492 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26807296 | $\omega$ | 254.25639 | | −0.66142235 | | −0.74720572 |
| $a$ | 2.3821405 | $\Omega$ | 237.33617 | | +0.71424191 | | −0.60113775 |
| $e$ | 0.1755019 | $i$ | 4.41726 | | +0.22886451 | | −0.28340256 |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 1.4− | 0.7+ | 2004 03 19 | 704 | 1.0− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 1993 03 22 | 809 | 0.4+ | 0.5− | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.2+ | | |
| 2000 01 05 | 704 | 0.2+ | 0.7− | 2004 03 19 | 704 | 0.0 | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2000 01 05 | 704 | 0.2− | 0.8− | 2004 03 19 | 704 | (0.1− | 2.1+) | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2000 01 05 | 704 | 1.0− | 0.4− | 2004 03 26 | 699 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2000 01 05 | 704 | 0.3− | 0.5+ | 2004 03 26 | 699 | 0.2− | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2000 01 05 | 704 | 0.3− | 0.0 | 2004 03 26 | 699 | 0.5− | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.2+ | | |
| 2000 02 03 | 704 | 0.5+ | 0.1+ | 2004 03 26 | 699 | 0.7+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.2+ | | |
| 2000 02 03 | 704 | 0.1− | 0.0 | 2004 03 27 | 703 | 1.0+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2000 02 03 | 704 | 1.2+ | 0.1+ | 2004 03 27 | 703 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2000 02 03 | 704 | 0.5+ | 0.4− | 2004 03 27 | 703 | 0.7+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2002 11 05 | 291 | 0.2− | 0.6+ | 2004 03 27 | 703 | (0.7− | 2.1+) | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2002 11 05 | 291 | 0.6+ | 0.5+ | 2004 03 28 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3− | 0.5− | | |
| 2002 11 05 | 291 | 0.0 | 0.4+ | 2004 03 28 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2004 02 16 | 703 | 0.9+ | 1.0− | 2004 03 28 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2004 02 16 | 703 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.7+ | 1.3+ | 2006 11 15 | G96 | 0.5+ | 0.2− | | |
| 2004 02 16 | 703 | (1.9+ | 1.6−) | 2004 04 19 | 704 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.3− | | |
| 2004 02 16 | 703 | 0.2− | 0.4+ | 2004 04 19 | 704 | 0.3+ | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.0 | | |
| 2004 02 26 | 704 | (0.9+ | 1.9−) | 2004 04 19 | 704 | 0.5+ | 1.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− | | |
| 2004 02 26 | 704 | 0.2+ | 0.2− | 2005 07 11 | G96 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2004 02 26 | 704 | 0.8+ | 1.4− | 2005 07 11 | G96 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.7− | 0.2+ | | |
| 2004 02 26 | 704 | 0.6+ | 0.1− | 2005 07 11 | G96 | 0.3− | 0.6+ | 2006 11 18 | 704 | 0.4+ | 0.6+ | | |
| 2004 03 16 | 703 | 0.7− | 0.1+ | 2005 07 11 | G96 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3− | 1.0+ | | |
| 2004 03 16 | 703 | 0.5− | 0.7+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2004 03 16 | 703 | 0.3− | 1.1+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.4− | | |
| 2004 03 16 | 703 | 0.4− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.3− | | |
| 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |

**(144581)∗ 2004 FG$_{34}$ = 2000 DY$_{79}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62092)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.07226 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26170880 | $\omega$ | 21.71270 | | −0.40621897 | | −0.91273800 |
| $a$ | 2.4206045 | $\Omega$ | 92.27685 | | +0.83183047 | | −0.38909068 |
| $e$ | 0.1445545 | $i$ | 2.49726 | | +0.37821187 | | −0.12457040 |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 24 | 691 | 0.2− | 0.4+ | 2004 03 28 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 1993 04 24 | 691 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.2+ | | |
| 1993 04 24 | 691 | 0.0 | 0.2+ | 2004 03 28 | 704 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.1− | | |
| 2000 02 03 | 704 | 0.6+ | 0.4+ | 2004 03 28 | 704 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.1− | | |
| 2000 02 03 | 704 | 0.1− | 0.5− | 2004 03 28 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.3− | | |
| 2000 02 03 | 704 | 0.6− | 0.6+ | 2004 03 29 | 691 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 2000 02 03 | 704 | 0.2− | 0.3+ | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1− | | |
| 2000 02 28 | 704 | 0.0 | 1.0+ | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | | |
| 2000 02 28 | 704 | 0.2+ | 0.6− | 2004 03 30 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.0 | 1.3− | | |
| 2000 02 28 | 704 | 0.3− | 0.0 | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.4− | | |
| 2000 02 28 | 704 | 0.1− | 0.2− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 1.1− | | |
| 2000 02 28 | 704 | 0.3− | 0.3+ | 2004 04 15 | 699 | 0.6+ | 0.1+ | 2006 11 11 | 703 | (0.3− | 1.8−) | | |
| 2000 03 04 | 704 | 0.0 | 0.0 | 2004 04 15 | 699 | 0.4+ | 0.8+ | 2006 11 15 | G96 | 0.4− | 0.4− | | |
| 2000 03 04 | 704 | 0.1+ | 0.2− | 2004 04 15 | 699 | 0.6− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2000 03 04 | 704 | 0.4+ | 0.4− | 2004 04 15 | 699 | 0.1+ | 1.3+ | 2006 11 15 | G96 | 0.1+ | 0.5− | | |
| 2000 03 04 | 704 | 0.4+ | 0.6− | 2005 06 08 | 691 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.2− | 0.4− | | |
| 2000 03 04 | 704 | 0.4+ | 1.0− | 2005 06 08 | 691 | 0.1− | 0.4+ | 2006 11 15 | A44 | 0.7+ | 0.3− | | |
| 2002 10 05 | 645 | 0.1+ | 0.1+ | 2005 06 08 | 691 | 0.4− | 0.1+ | 2006 11 15 | A44 | 0.7+ | 0.0 | | |
| 2002 10 05 | 645 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 15 | A44 | 0.0 | 0.0 | | |
| 2004 02 23 | 704 | 0.6− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.6− | 0.1− | | |
| 2004 02 23 | 704 | 1.0− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | (1.5− | 0.5−) | | |
| 2004 02 23 | 704 | 0.9− | 0.3− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | (1.2− | 1.7−) | | |
| 2004 03 16 | 704 | 1.2+ | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.4− | | |
| 2004 03 16 | 704 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 1.0+ | | |
| 2004 03 16 | 704 | 1.0+ | 0.5+ | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.2+ | | |
| 2004 03 16 | 704 | 0.8+ | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.0 | | |
| 2004 03 19 | 704 | 0.8+ | 0.8+ | 2006 10 15 | 691 | 0.6− | 1.0+ | 2006 11 18 | 704 | 0.1− | 0.3− | | |
| 2004 03 19 | 704 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 1.3+ | 0.4+ | | |
| 2004 03 19 | 704 | 0.9+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 1.4+ | 2006 11 21 | 704 | 1.0+ | 0.4+ | | |
| 2004 03 19 | 704 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.8+ | 0.6− | 2006 11 21 | 704 | 0.7+ | 0.3+ | | |
| 2004 03 19 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.8+ | 2006 11 21 | 704 | 0.1− | 0.4+ | | |
| 2004 03 22 | 704 | 1.2+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.3+ | | |
| 2004 03 22 | 704 | 0.5+ | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 291 | 0.6− | 0.0 | | |
| 2004 03 22 | 704 | 0.9+ | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 27 | 291 | 0.6− | 0.1+ | | |
| 2004 03 22 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 27 | 291 | 0.4− | 0.1+ | | |
| 2004 03 22 | 704 | 0.4+ | 1.1+ | 2006 10 27 | 691 | 0.1− | 0.1+ | | | | | | |

**(144582)∗ 2004 FG$_{35}$**

Discovered 2004 Mar. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.83882 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28468628 | $\omega$ | 154.84453 | | −0.08039013 | | −0.99411906 |
| $a$ | 2.2885392 | $\Omega$ | 299.69229 | | +0.89980933 | | −0.04106178 |
| $e$ | 0.1495353 | $i$ | 4.79124 | | +0.42881300 | | −0.10020589 |
| $P$ | 3.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.5+ | 0.6− | 2004 02 19 | 704 | (2.1+ | 0.4−) | 2005 06 08 | 691 | 0.2− | 0.2+ | | |
| 1999 12 07 | 703 | 0.4− | 0.0 | 2004 03 16 | 704 | (1.6+ | 0.7+) | 2005 07 07 | 691 | 0.0 | 0.2+ | | |
| 1999 12 07 | 703 | 0.5− | 0.8+ | 2004 03 16 | 704 | (1.1+ | 2.3−) | 2005 07 07 | 691 | 0.1− | 0.4+ | | |
| 1999 12 07 | 703 | 0.7− | 0.2+ | 2004 03 16 | 704 | 1.0+ | 0.3+ | 2005 07 07 | 691 | 0.2− | 0.2− | | |
| 2000 01 04 | 704 | 0.7+ | 0.3− | 2004 03 16 | 704 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.7+ | | |
| 2000 01 04 | 704 | 0.0 | 0.2+ | 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 1.4+ | | |
| 2000 01 04 | 704 | 0.5− | 0.4+ | 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 1.1+ | | |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.5+ | | |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.7+ | 0.1− | 2004 03 19 | 704 | 0.6+ | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.8− | | |
| 2002 09 06 | 704 | 0.4+ | 0.4− | 2004 03 19 | 704 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.1− | | |
| 2002 09 06 | 704 | 0.5− | 0.1− | 2004 03 19 | 704 | 1.1+ | 0.1+ | 2006 11 26 | 691 | 0.2+ | 0.0 | | |
| 2002 09 06 | 704 | 0.9− | 0.9− | 2004 03 19 | 704 | 0.8+ | 0.8+ | 2006 11 26 | 691 | 0.1+ | 0.1− | | |
| 2002 09 13 | 644 | 0.3− | 0.5+ | 2004 03 26 | 699 | 0.2− | 0.4+ | 2006 11 26 | 691 | 0.2− | 0.0 | | |
| 2002 09 13 | 644 | 0.1+ | 0.4+ | 2004 03 26 | 699 | 0.3− | 0.4+ | 2006 11 27 | 704 | 0.1− | 0.7− | | |
| 2002 09 13 | 644 | 0.3− | 0.4+ | 2004 03 26 | 699 | 1.3− | 0.3+ | 2006 11 27 | 704 | 1.2− | 0.2+ | | |
| 2004 02 19 | 704 | 0.2− | 0.0 | 2004 03 26 | 699 | 0.2− | 0.8+ | 2006 11 27 | 704 | 0.4− | 0.2+ | | |
| 2004 02 19 | 704 | 0.2− | 1.0+ | 2005 06 08 | 691 | 0.1+ | 0.0 | | | | | | |
| 2004 02 19 | 704 | 0.9+ | 1.1− | 2005 06 08 | 691 | 0.1− | 0.3− | | | | | | |

**(144583)∗ 2004 FR$_{35}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.50909 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18953282 | $\omega$ | 352.92129 | | −0.97428904 | | −0.22456836 |
| $a$ | 3.0015559 | $\Omega$ | 174.00827 | | +0.21430162 | | −0.94858707 |
| $e$ | 0.0439355 | $i$ | 10.02091 | | +0.06953909 | | −0.22305072 |
| $P$ | 5.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.1− | 0.6− | 2004 03 19 | 704 | 0.1+ | 0.7+ | 2004 04 25 | 699 | 0.6− | 0.4− |
| 1995 07 27 | 691 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.8+ | 2006 08 19 | 691 | 0.6− | 0.3− |
| 1995 07 27 | 691 | 0.2+ | 0.3− | 2004 03 22 | 704 | 1.3− | 1.0− | 2006 08 19 | 691 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.3− | 0.7+ | 2004 03 22 | 704 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | (1.6− | 0.9+) | 2004 03 22 | 704 | 0.3− | 0.8− | 2006 08 28 | 691 | 0.1− | 0.6+ |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2004 03 22 | 704 | 0.1− | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2004 03 22 | 704 | 0.3− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.6+ |
| 2001 09 21 | 704 | 0.3− | 0.3+ | 2004 03 28 | 704 | 0.9+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.5+ |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2004 03 28 | 704 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2004 03 28 | 704 | 0.5− | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2001 10 16 | 644 | 0.5+ | 0.9− | 2004 03 28 | 704 | 0.9+ | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2001 10 16 | 644 | 1.3+ | 0.6− | 2004 03 28 | 704 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.3+ |
| 2001 10 16 | 644 | 1.2+ | 0.3− | 2004 04 15 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2004 04 15 | 644 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2004 04 15 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.2+ |
| 2004 03 16 | 704 | 1.0+ | 0.9+ | 2004 04 19 | 704 | 0.4+ | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2004 03 16 | 704 | 1.1+ | 1.1+ | 2004 04 19 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 1.0− | 0.7+ |
| 2004 03 16 | 704 | (1.7+ | 1.7+) | 2004 04 19 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.4+ | 1.2+ |
| 2004 03 16 | 704 | (1.8+ | 1.6+) | 2004 04 19 | 704 | 1.0+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 03 16 | 704 | (1.6+ | 1.7+) | 2004 04 19 | 704 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.0 | 0.0 | 2004 04 25 | 699 | 0.7− | 0.8− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2004 03 19 | 704 | 0.4+ | 0.8+ | 2004 04 25 | 699 | 0.3− | 0.9+ | 2006 10 20 | G96 | 0.6− | 0.1+ |
| 2004 03 19 | 704 | 0.2− | 0.1− | 2004 04 25 | 699 | 0.4− | 0.2+ | | | | |

**(144584)∗ 2004 FV$_{35}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.73680 | | (2000.0) | | +0.98955657 | +0.08027740 |
| $n$ | 0.16845793 | $\omega$ | 338.27618 | | +0.02651189 | +0.71503422 |
| $a$ | 3.2469461 | $\Omega$ | 18.37923 | | −0.14168596 | +0.69446498 |
| $e$ | 0.0480530 | $i$ | 22.31521 | | | |
| $P$ | 5.85 | $H$ | 14.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.0 | 0.0 | 2004 03 14 | 691 | 0.2+ | 0.0 | 2004 04 12 | 699 | 1.0− | 0.5+ |
| 2001 09 25 | 704 | 0.5− | 0.4− | 2004 03 14 | 691 | 0.2+ | 0.0 | 2004 04 12 | 699 | (0.9− | 2.9+) |
| 2001 09 25 | 704 | 0.5+ | 0.1+ | 2004 03 14 | 691 | 0.0 | 0.2+ | 2004 04 12 | 699 | 0.0 | 0.8+ |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.4− | 0.9− | 2004 04 12 | 699 | 0.3− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 1.5+ | 2004 03 16 | 704 | 0.7+ | 0.9+ | 2004 04 15 | 699 | 0.1+ | 1.3+ |
| 2001 10 15 | 704 | 0.3− | 0.1+ | 2004 03 16 | 704 | 0.3+ | 0.7+ | 2004 04 15 | 699 | 0.5− | 0.3+ |
| 2001 10 15 | 704 | 0.2+ | 0.1+ | 2004 03 16 | 704 | (1.6+ | 0.5+) | 2004 04 15 | 699 | 0.1+ | 0.4+ |
| 2001 10 15 | 704 | 0.2+ | 0.4+ | 2004 03 16 | 704 | 0.9+ | 0.3+ | 2004 04 15 | 699 | 0.4+ | 0.6− |
| 2001 10 15 | 704 | 0.3− | 0.1+ | 2004 03 19 | 704 | 1.4− | 0.4+ | 2004 04 21 | 704 | 0.2+ | 0.1− |
| 2001 10 15 | 704 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.5− | 0.8+ | 2004 04 21 | 704 | 1.0+ | 0.2+ |
| 2001 11 11 | 704 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.7+ | 2004 04 21 | 704 | 0.6+ | 0.4+ |
| 2001 11 11 | 704 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.5+ | 2004 04 21 | 704 | 0.5+ | 0.2+ |
| 2001 11 11 | 699 | 0.4+ | 0.7+ | 2004 03 19 | 704 | 0.0 | 0.4+ | 2004 04 21 | 704 | 0.8+ | 0.4+ |
| 2001 11 11 | 704 | 0.3− | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.3− | 2006 08 14 | 644 | 0.9− | 0.8+ |
| 2001 11 11 | 699 | 0.6− | 0.5+ | 2004 03 20 | 704 | 0.6+ | 0.4− | 2006 08 14 | 644 | 0.9− | 0.8+ |
| 2001 11 11 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.3− | 2006 08 14 | 644 | 0.6− | 0.7+ |
| 2001 11 11 | 704 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.8− | 2006 08 28 | E12 | 0.4+ | 0.6+ |
| 2001 11 11 | 699 | 0.6− | 0.4+ | 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 08 28 | E12 | 0.5− | 0.3+ |
| 2001 11 11 | 699 | 0.8− | 0.2+ | 2004 03 21 | 691 | 0.1+ | 0.4+ | 2006 08 28 | E12 | 1.1− | 0.8+ |
| 2001 11 20 | 291 | 0.1+ | 0.5+ | 2004 03 21 | 691 | 0.3+ | 0.5+ | 2006 08 28 | E12 | 0.0 | 0.9+ |
| 2001 11 20 | 291 | 0.1− | 0.0 | 2004 03 22 | 704 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.2+ |
| 2001 11 20 | 291 | 1.2− | 0.9− | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.5− |
| 2001 12 09 | 704 | 0.5+ | 0.5+ | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.5+ |
| 2001 12 09 | 704 | 0.8+ | 0.9+ | 2004 03 22 | 704 | 0.2+ | 0.5− | 2006 09 26 | 703 | 1.0− | 0.4+ |
| 2001 12 09 | 704 | 0.7+ | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 1.1+ |
| 2001 12 09 | 704 | 0.4+ | 1.1+ | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.8+ |
| 2003 02 07 | 699 | 0.3+ | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | (0.5− | 1.8+) |
| 2003 02 07 | 699 | 0.5+ | 0.5− | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.9+ |
| 2003 02 07 | 699 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2006 10 12 | E12 | 0.6− | 0.8+ |
| 2003 02 07 | 699 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 10 12 | E12 | 1.1− | 0.2− |
| 2003 02 23 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 704 | 0.3+ | 0.2− | 2006 10 12 | E12 | 0.8− | 0.9+ |
| 2003 02 23 | 704 | 0.9+ | 0.3+ | 2004 03 28 | 704 | 0.6+ | 0.0 | 2006 10 12 | E12 | 0.3− | 0.7+ |
| 2003 02 23 | 704 | 0.0 | 0.5+ | 2004 03 28 | 704 | 0.0 | 0.7− | 2006 10 28 | E12 | 0.1− | 0.2+ |
| 2003 02 23 | 704 | 0.7− | 0.1− | 2004 03 28 | 704 | 0.3+ | 0.1− | 2006 10 28 | E12 | 1.0− | 0.5+ |
| 2003 02 23 | 704 | 0.4− | 1.4+ | 2004 03 28 | 691 | 0.3+ | 0.3+ | 2006 10 28 | E12 | 0.1+ | 1.2+ |
| 2003 03 09 | 644 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 0.7+ | 0.4− | 2006 10 28 | E12 | 0.8− | 1.3+ |
| 2003 03 09 | 644 | 0.0 | 0.3+ | 2004 03 28 | 691 | 0.3+ | 0.1+ | | | | |
| 2003 03 09 | 644 | 0.1− | 0.2+ | 2004 03 28 | 691 | 0.2+ | 0.1+ | | | | |

**(144585)∗ 2004 FJ$_{38}$**

Discovered 2004 Mar. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 182.98406 | | (2000.0) | | −0.92506892 | +0.37551730 |
| $n$ | 0.21381480 | $\omega$ | 257.18211 | | −0.31602223 | −0.84410419 |
| $a$ | 2.7697732 | $\Omega$ | 304.84712 | | −0.21065953 | −0.38272035 |
| $e$ | 0.1048841 | $i$ | 3.97360 | | | |
| $P$ | 4.61 | $H$ | 15.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.8+ | 2004 03 31 | 704 | 0.7+ | 0.1+ | 2005 07 16 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 1.1+ | 2004 04 11 | 644 | 0.4+ | 0.9+ | 2005 07 16 | 691 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.4− | 1.0+ | 2004 04 11 | 644 | 0.5+ | 0.4+ | 2005 07 16 | 691 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.4− | 1.2+ | 2004 04 11 | 644 | 0.2+ | 0.6+ | 2005 08 28 | 691 | 0.1+ | 0.5− |
| 2001 09 20 | 704 | 0.1+ | 1.0+ | 2004 04 19 | 704 | 0.6− | 0.7+ | 2005 08 28 | 691 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.5− | 0.1+ | 2004 04 19 | 704 | 0.2+ | 0.0 | 2005 08 28 | 691 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.8− | 0.3− | 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.7− | 0.7− | 2004 04 19 | 704 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2004 03 17 | 704 | 0.3+ | 1.2+ | 2004 04 19 | 704 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2004 03 17 | 704 | 0.2+ | 0.1− | 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 03 17 | 704 | 0.5− | 0.5+ | 2005 06 30 | 691 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 2004 03 17 | 704 | 0.9+ | 0.3+ | 2005 06 30 | 691 | 0.4− | 0.0 | 2006 09 30 | 691 | 0.4+ | 0.2− |
| 2004 03 17 | 704 | 0.3+ | 0.1− | 2005 07 04 | 644 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.5− | 0.1− |
| 2004 03 19 | 704 | 0.7+ | 0.6− | 2005 07 04 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | 0.5+ | 0.8+ | 2005 07 04 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.5− | 0.0 |
| 2004 03 19 | 704 | 0.9+ | 0.5+ | 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2004 03 19 | 704 | 0.6+ | 0.9+ | 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2004 03 19 | 704 | 0.9+ | 0.2+ | 2005 07 05 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2004 03 27 | 699 | 0.2− | 0.2+ | 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2004 03 27 | 699 | 0.3+ | 0.7+ | 2005 07 09 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2004 03 27 | 699 | 0.2− | 0.5+ | 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2004 03 27 | 699 | 0.3− | 0.1− | 2005 07 12 | G96 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2004 03 31 | 704 | 0.3+ | 1.0+ | 2005 07 12 | G96 | 0.3+ | 0.6− | | | | |
| 2004 03 31 | 704 | 0.5− | 1.0+ | 2005 07 12 | G96 | 0.1+ | 0.4− | | | | |

**(144586)∗ 2004 FP$_{38}$ = 1995 BM$_3$ = 2002 UV$_{49}$**

Discovered 2004 Mar. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62095)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.09039 | | (2000.0) | | +0.86982638 | −0.48959419 |
| $n$ | 0.23760617 | $\omega$ | 52.13746 | | +0.38954142 | +0.75720645 |
| $a$ | 2.5816512 | $\Omega$ | 336.98466 | | +0.30275329 | +0.43236086 |
| $e$ | 0.1554965 | $i$ | 8.94984 | | | |
| $P$ | 4.15 | $H$ | 14.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 372 | 1.6− | 1.4+ | 2003 01 04 | 704 | 0.9+ | 0.2− | 2004 04 16 | 644 | 0.2+ | 0.2+ |
| 1995 01 31 | 372 | (0.7− | 2.4+) | 2003 01 04 | 704 | 0.8+ | 0.0 | 2004 04 17 | 699 | 0.7− | 0.4+ |
| 1995 01 31 | 372 | 0.0 | 1.2+ | 2003 01 04 | 704 | 1.2+ | 0.3+ | 2004 04 17 | 699 | 0.0 | 0.8− |
| 1998 12 17 | 699 | 0.9+ | 1.5− | 2003 01 13 | 704 | 0.1+ | 0.7+ | 2004 04 17 | 699 | 0.3− | 0.3+ |
| 1998 12 17 | 699 | 0.3+ | 0.2+ | 2003 01 13 | 704 | 0.0 | 0.4+ | 2004 04 17 | 699 | 1.0− | 0.4− |
| 1998 12 17 | 699 | 0.5+ | 0.7− | 2003 01 13 | 704 | 0.7+ | 0.5+ | 2004 04 19 | 704 | 0.8− | 0.3− |
| 2001 06 30 | 644 | 0.6− | 0.7+ | 2003 01 31 | 704 | 0.5− | 0.8+ | 2004 04 19 | 704 | 0.6+ | 0.1− |
| 2001 06 30 | 644 | 0.4− | 0.7+ | 2003 01 31 | 704 | 0.0 | 0.6+ | 2004 04 19 | 704 | 0.4− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 0.2− | 0.9+ | 2003 01 31 | 704 | 0.1+ | 0.5+ | 2004 04 19 | 704 | 0.2+ | 0.5− |
| 2001 07 18 | 644 | 0.0 | 0.6+ | 2003 01 31 | 704 | 0.1+ | 1.0+ | 2004 04 19 | 704 | 0.4− | 0.6+ |
| 2001 07 18 | 644 | 0.2+ | 0.4+ | 2004 03 17 | 703 | 0.5+ | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.7+ |
| 2001 07 18 | 644 | 0.0 | 0.5+ | 2004 03 17 | 703 | (0.4+ | 3.8−) | 2006 11 14 | 704 | 0.6− | 0.6+ |
| 2002 10 31 | 704 | 0.3− | 0.1− | 2004 03 17 | 703 | 1.4+ | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 2002 10 31 | 704 | 0.0 | 0.2− | 2004 03 17 | 704 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.8+ |
| 2002 10 31 | 704 | 0.1− | 0.6− | 2004 03 17 | 703 | 1.0+ | 0.9+ | 2006 11 14 | 704 | 0.1+ | 0.4+ |
| 2002 10 31 | 704 | 0.8− | 0.5− | 2004 03 17 | 704 | 0.1− | 0.1+ | 2006 11 16 | 951 | 0.1− | 1.3+ |
| 2002 11 06 | 704 | 0.7− | 0.0 | 2004 03 17 | 704 | 0.8− | 0.1− | 2006 11 16 | 951 | 0.1− | 0.7+ |
| 2002 11 06 | 704 | 0.6+ | 0.7− | 2004 03 17 | 704 | 0.4− | 0.2− | 2006 11 17 | 951 | 0.1+ | 0.5+ |
| 2002 11 06 | 704 | 0.3+ | 1.1− | 2004 03 17 | 704 | 0.1+ | 1.3+ | 2006 11 20 | 703 | 0.4− | 0.2+ |
| 2002 11 06 | 704 | 0.3+ | 1.1− | 2004 03 19 | 704 | 0.1− | 0.8+ | 2006 11 20 | 703 | 0.4− | 0.1+ |
| 2002 12 05 | 704 | 0.9− | 0.8− | 2004 03 19 | 704 | 0.1− | 0.1+ | 2006 11 20 | 703 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.9− | 0.5− | 2004 03 19 | 704 | 0.3− | 0.4− | 2006 11 20 | 703 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 1.3− | 2004 03 19 | 704 | 0.8+ | 0.1+ | 2006 11 28 | 951 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.3− | 0.6− | 2004 03 19 | 704 | 0.1− | 0.2− | 2006 11 28 | 951 | 0.2− | 0.9+ |
| 2002 12 05 | 704 | 0.2− | 0.6− | 2004 03 31 | 704 | (1.7+ | 0.4+) | 2006 11 28 | 951 | 0.2+ | 0.6+ |
| 2002 12 15 | 704 | 0.7+ | 0.6+ | 2004 03 31 | 704 | 1.4+ | 0.2+ | 2006 12 01 | 704 | 0.5− | 0.3− |
| 2002 12 15 | 704 | 0.1− | 0.3− | 2004 03 31 | 704 | 0.3+ | 0.4− | 2006 12 01 | 704 | 1.6− | 0.0 |
| 2002 12 15 | 704 | 0.8+ | 0.4− | 2004 04 16 | 644 | 0.3+ | 0.0 | 2006 12 01 | 704 | 0.6+ | 0.3+ |
| 2002 12 15 | 704 | 1.1− | 0.1+ | 2004 04 16 | 644 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.5− |

**(144587)∗ 2004 FV$_{38}$**

Discovered 2004 Mar. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 197.78996 | | (2000.0) | | | |
| $n$ | 0.23183306 | $\omega$ | 257.48106 | | −0.83426806 | +0.54959365 |
| $a$ | 2.6243342 | $\Omega$ | 315.83732 | | −0.47810429 | −0.76093452 |
| $e$ | 0.2027354 | $i$ | 3.62806 | | −0.27461445 | −0.34485574 |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.1+ | 0.5+ | 2004 03 27 | 699 | 0.0 | 0.7+ | 2004 04 29 | 608 | 0.5+ | 0.0 |
| 1993 10 12 | 691 | 0.1− | 0.4+ | 2004 03 31 | 704 | 0.7+ | 0.2+ | 2005 07 30 | 644 | 0.2− | 0.4+ |
| 1993 10 12 | 691 | 0.3− | 0.0 | 2004 03 31 | 704 | 0.4+ | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.2+ |
| 2002 12 03 | 644 | 0.0 | 0.5+ | 2004 03 31 | 704 | 0.9+ | 0.6+ | 2005 07 30 | 644 | 0.2− | 0.3+ |
| 2002 12 03 | 644 | 0.3+ | 0.6+ | 2004 03 31 | 704 | 0.5+ | 0.7+ | 2005 08 25 | 644 | 0.1− | 0.5+ |
| 2002 12 03 | 644 | 0.1+ | 0.7+ | 2004 03 31 | 704 | 1.1+ | 0.3+ | 2005 08 25 | 644 | 0.2− | 0.0 |
| 2003 11 24 | 291 | 0.3+ | 0.6+ | 2004 04 17 | 704 | 0.3− | 0.5+ | 2005 08 25 | 644 | 0.6− | 0.4+ |
| 2003 11 24 | 291 | 0.4− | 0.8+ | 2004 04 17 | 704 | 0.2+ | 0.1+ | 2005 08 29 | 691 | 0.1− | 0.4+ |
| 2003 11 24 | 291 | 0.1+ | 0.3+ | 2004 04 17 | 704 | 0.0 | 0.1− | 2005 08 29 | 691 | 0.2− | 0.4+ |
| 2004 03 17 | 704 | 0.2+ | 0.0 | 2004 04 17 | 704 | 0.0 | 0.5+ | 2005 08 29 | 691 | 0.1− | 0.3+ |
| 2004 03 17 | 704 | 0.5− | 0.1− | 2004 04 17 | 699 | 0.1+ | 0.1+ | 2005 09 13 | 691 | 0.3− | 0.3+ |
| 2004 03 17 | 704 | 0.2− | 0.1+ | 2004 04 17 | 699 | 0.8+ | 0.2+ | 2005 09 13 | 691 | 0.4− | 0.2+ |
| 2004 03 17 | 704 | 0.3− | 0.4− | 2004 04 17 | 699 | 0.5+ | 0.5+ | 2005 09 13 | 691 | 0.1− | 0.1+ |
| 2004 03 17 | 704 | 0.1+ | 0.5− | 2004 04 17 | 699 | 0.6+ | 0.2− | 2005 09 26 | 691 | 0.0 | 0.4+ |
| 2004 03 19 | 704 | 0.2+ | 0.3+ | 2004 04 19 | 704 | 0.1− | 0.2+ | 2005 09 26 | 691 | 0.3+ | 0.2+ |
| 2004 03 19 | 704 | 0.6+ | 0.4+ | 2004 04 19 | 704 | 0.3− | 1.0+ | 2005 09 26 | 691 | 0.2− | 0.1+ |
| 2004 03 19 | 704 | 0.5+ | 0.1− | 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2004 03 19 | 704 | 0.1− | 0.9+ | 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.2+ |
| 2004 03 20 | 699 | 0.4− | 0.6+ | 2004 04 21 | 704 | 0.3+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 2004 03 20 | 699 | 0.4− | 0.0 | 2004 04 21 | 704 | 0.2+ | 0.1+ | 2006 11 02 | 691 | 0.1+ | 0.2+ |
| 2004 03 20 | 699 | 0.2− | 0.3+ | 2004 04 21 | 704 | 0.2+ | 0.4+ | 2006 11 02 | 691 | 0.2+ | 0.1+ |
| 2004 03 20 | 699 | 0.3− | 0.1+ | 2004 04 21 | 704 | 0.1− | 0.3− | 2006 11 02 | 691 | 0.0 | 0.0 |
| 2004 03 27 | 699 | 0.0 | 0.3− | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2004 03 27 | 699 | 0.4− | 0.3+ | 2004 04 29 | 608 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 699 | 0.2− | 0.4+ | 2004 04 29 | 608 | 0.5+ | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.0 |

**(144588)∗ 2004 FY$_{38}$**

Discovered 2004 Mar. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 182.27348 | | (2000.0) | | | |
| $n$ | 0.18958045 | $\omega$ | 95.03844 | | −0.99847362 | −0.04677314 |
| $a$ | 3.0010531 | $\Omega$ | 82.28287 | | +0.03107991 | −0.91543934 |
| $e$ | 0.1329977 | $i$ | 1.69850 | | +0.04565590 | −0.39972877 |
| $P$ | 5.20 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2005 06 08 | 691 | 0.3− | 0.0 |
| 2001 10 16 | 291 | 0.4− | 0.4+ | 2004 03 27 | 704 | 0.8+ | 0.2− | 2005 06 08 | 691 | 0.1+ | 0.1+ |
| 2001 10 16 | 291 | 0.8+ | 0.5+ | 2004 03 27 | 704 | 0.3+ | 0.6+ | 2005 06 08 | 691 | 0.3− | 0.2+ |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.6+ | 0.8+ | 2006 08 27 | 691 | 0.1− | 1.0+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.8+ | 0.6− | 2006 08 27 | 691 | 0.4− | 0.2+ |
| 2002 12 08 | 291 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.9+ | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 2002 12 08 | 291 | 0.2− | 0.3+ | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2002 12 08 | 291 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.6+ |
| 2002 12 28 | 291 | 0.7− | 0.1+ | 2004 03 29 | 291 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.4− | 0.2+ |
| 2002 12 28 | 291 | 0.4+ | 0.1+ | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 1.4− | 0.2− |
| 2002 12 28 | 291 | 0.6+ | 0.5+ | 2004 03 29 | 291 | 0.2+ | 0.5+ | 2006 09 19 | 703 | (1.4+ | 2.9+) |
| 2004 03 17 | 704 | 0.1+ | 0.3+ | 2004 03 29 | 291 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.6+ | 1.3+ |
| 2004 03 17 | 704 | 0.8+ | 0.8+ | 2004 04 11 | 703 | 0.7+ | 0.7+ | 2006 09 19 | 703 | 0.2+ | 0.4+ |
| 2004 03 17 | 704 | (2.3+ | 0.3+) | 2004 04 11 | 703 | 0.5− | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 704 | 1.3+ | 0.9+ | 2004 04 11 | 703 | (2.1− | 0.6−) | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2004 03 19 | 704 | 0.3+ | 0.6+ | 2004 04 11 | 703 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2004 03 19 | 704 | 0.5− | 0.0 | 2004 04 12 | 699 | 0.6− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.8+ | 0.6+ | 2004 04 12 | 699 | 1.0− | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2004 03 19 | 704 | 0.7+ | 1.1+ | 2004 04 12 | 699 | 0.1− | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2004 03 19 | 704 | 0.8+ | 0.1+ | 2004 04 12 | 699 | 0.8+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2004 03 22 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 0.7− | 0.4+ | 2006 10 20 | G96 | 0.7+ | 0.4+ |
| 2004 03 22 | 704 | 0.3− | 0.1+ | 2004 04 19 | 704 | 0.4+ | 0.5− | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2004 03 22 | 704 | 0.1+ | 0.1− | 2004 04 19 | 704 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.4+ | 0.3+ |
| 2004 03 22 | 704 | 0.6+ | 0.1+ | 2004 04 19 | 704 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.4+ |

**(144589)∗ 2004 FJ$_{41}$ = 2001 SL$_{79}$ = 2002 XR$_{100}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62097)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.70545 | | (2000.0) | | | |
| $n$ | 0.21746109 | $\omega$ | 151.06306 | | +0.25967506 | −0.96493243 |
| $a$ | 2.7387245 | $\Omega$ | 283.86435 | | +0.87822323 | +0.25250235 |
| $e$ | 0.0552466 | $i$ | 2.26655 | | +0.40161278 | +0.07174935 |
| $P$ | 4.53 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 15 | 608 | 0.3− | 0.0 | 2004 03 19 | 704 | 1.0+ | 1.0+ | 2006 09 17 | 691 | 0.2− | 0.1− |
| 2001 08 15 | 608 | 0.2+ | 0.4− | 2004 03 20 | 704 | (1.8+ | 0.4−) | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2001 08 15 | 608 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.6− |
| 2001 08 16 | 704 | 1.0+ | 0.8+ | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2001 08 16 | 704 | (1.7+ | 0.1−) | 2004 03 20 | 704 | 0.2− | 0.9+ | 2006 09 17 | 703 | (2.1− | 0.4+) |
| 2001 08 16 | 704 | (2.0+ | 0.8−) | 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.5+ | 0.1+ |
| 2001 08 16 | 704 | (3.3+ | 0.1−) | 2004 03 26 | 699 | (1.0+ | 1.6+) | 2006 09 19 | 699 | 0.5+ | 0.6+ |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2004 03 26 | 704 | 0.8− | 1.2− | 2006 09 19 | 699 | 0.5− | 1.0+ |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2004 03 26 | 699 | 0.4− | 1.1+ | 2006 09 19 | 699 | (0.2− | 1.6+) |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2004 03 26 | 704 | (2.0− | 0.4−) | 2006 09 19 | 699 | 0.4+ | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2004 03 26 | 704 | 1.0− | 1.4+ | 2006 09 19 | 699 | 0.2+ | 1.4+ |
| 2001 09 20 | 704 | 0.2+ | 0.0 | 2004 03 26 | 704 | (1.8− | 0.3−) | 2006 09 19 | 699 | 0.0 | 0.7− |
| 2001 09 22 | 704 | 0.7− | 0.6+ | 2004 03 26 | 704 | (3.4+ | 0.2+) | 2006 09 19 | 699 | 0.8+ | 0.1+ |
| 2001 09 22 | 704 | 0.3− | 1.2+ | 2004 03 26 | 699 | 0.1− | 1.0− | 2006 09 21 | A50 | 0.4− | 0.2− |
| 2001 09 22 | 704 | 0.1− | 0.7+ | 2004 03 26 | 704 | (1.8− | 0.5−) | 2006 09 22 | A50 | 0.8− | 0.3− |
| 2001 09 22 | 704 | 0.7− | 0.6+ | 2004 03 26 | 704 | (2.0+ | 2.1−) | 2006 09 25 | 704 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2004 03 26 | 704 | (5.5+ | 0.5+) | 2006 09 25 | 704 | 1.0+ | 0.5+ |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2004 03 26 | 699 | 0.5+ | 0.6− | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2004 03 26 | 704 | 1.1− | 1.5+ | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2002 12 05 | 704 | 0.4− | 0.5− | 2004 03 26 | 704 | 0.1+ | 1.0− | 2006 09 25 | 704 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.2− | 2004 03 26 | 704 | (0.9− | 1.8+) | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2002 12 10 | 704 | 0.2+ | 0.2+ | 2004 03 26 | 704 | (2.2− | 0.4−) | 2006 09 29 | 704 | 0.5+ | 0.4− |
| 2002 12 10 | 704 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 2002 12 10 | 704 | 0.7+ | 0.5+ | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 704 | (1.8− | 1.5+) |
| 2002 12 10 | 704 | 0.1+ | 0.6+ | 2004 03 27 | 704 | 0.3+ | 0.8+ | 2006 10 17 | 703 | 0.6+ | 0.6+ |
| 2002 12 10 | 704 | 0.3+ | 1.1+ | 2004 03 27 | 704 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2002 12 31 | 704 | 0.5+ | 0.1+ | 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 1.0+ |
| 2002 12 31 | 704 | 0.2− | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2004 04 25 | 691 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.7− | 0.7− | 2006 08 29 | 699 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2004 03 18 | 704 | 1.3+ | 0.3+ | 2006 08 29 | 699 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2004 03 18 | 704 | 0.0 | 0.3− | 2006 08 29 | 699 | (1.1+ | 1.7+) | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 08 29 | 699 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 03 18 | 704 | 0.1+ | 0.9+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | (1.6+ | 1.0+) | 2006 09 16 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 1.3+ | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 03 19 | 704 | 1.0+ | 0.5+ | 2006 09 17 | 703 | 0.8− | 0.1+ | | | | |
| 2004 03 19 | 704 | (0.3+ | 1.8+) | 2006 09 17 | 703 | 0.4+ | 0.4+ | | | | |

**(144590)∗ 2004 FM$_{41}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.07793 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25648481 | $\omega$ | 274.80374 | | −0.56429186 | | −0.82197848 |
| $a$ | 2.4533619 | $\Omega$ | 209.96317 | | +0.80532224 | | −0.52752318 |
| $e$ | 0.2473209 | $i$ | 8.86655 | | +0.18174375 | | −0.21464079 |
| $P$ | 3.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 0.5− | 0.8+ | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 2000 03 09 | 704 | 0.4− | 0.1+ | 2004 03 28 | 704 | 0.2− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2000 03 09 | 704 | 0.2+ | 0.0 | 2004 03 31 | 704 | 0.0 | 1.2− | 2006 09 19 | 691 | 0.4+ | 0.3+ |
| 2000 03 09 | 704 | 0.3+ | 0.1+ | 2004 03 31 | 704 | 0.2+ | 1.2− | 2006 09 19 | 691 | 0.2+ | 0.4+ |
| 2000 03 09 | 704 | 0.1− | 0.2+ | 2004 03 31 | 704 | 0.7+ | 1.3− | 2006 09 19 | 691 | 0.3+ | 0.4+ |
| 2000 04 02 | 699 | 0.9− | 0.3− | 2004 03 31 | 704 | 0.2+ | 1.1− | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2000 04 02 | 699 | 0.3− | 0.0 | 2004 03 31 | 704 | 0.1+ | 0.7− | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2000 04 02 | 699 | 0.6− | 1.0+ | 2004 04 09 | E12 | 0.6− | 0.7+ | 2006 09 26 | 691 | 0.4− | 0.2+ |
| 2000 04 02 | 699 | 0.5− | 0.1− | 2004 04 09 | E12 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2004 04 09 | E12 | 1.0+ | 1.3+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2000 05 05 | 645 | 0.1+ | 0.1− | 2004 04 09 | E12 | 0.6− | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.1+ | 0.5+ | 2004 04 12 | 699 | 0.8+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2002 09 07 | 704 | (0.1+ | 1.5+) | 2004 04 12 | 699 | 0.5− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2002 09 07 | 704 | 0.0 | 0.7+ | 2004 04 12 | 699 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2002 10 04 | 704 | 0.6+ | 0.8− | 2004 04 12 | 699 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.4− | 0.3+ |
| 2002 10 04 | 704 | (0.1+ | 1.6+) | 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | (0.2+ | 2.5+) | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.4− | 0.1− |
| 2002 10 04 | 704 | (1.4+ | 2.4+) | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.7+ |
| 2004 03 18 | 704 | 0.0 | 0.6+ | 2004 04 15 | 699 | 0.0 | 0.5− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2004 03 18 | 704 | 0.4+ | 1.2+ | 2004 04 15 | 699 | 0.5+ | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 2004 03 18 | 704 | 0.1− | 0.3+ | 2004 04 15 | 699 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2004 03 18 | 704 | (1.6+ | 1.4+) | 2004 04 15 | 699 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.3− |
| 2004 03 18 | 704 | 0.1+ | 0.2− | 2004 04 16 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 1.1− | 0.9− |
| 2004 03 19 | 704 | 0.4+ | 0.8+ | 2004 04 16 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | (2.3− | 1.0+) |
| 2004 03 19 | 704 | 0.1+ | 0.2− | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.2− |
| 2004 03 19 | 704 | 0.9+ | 0.3+ | 2004 04 17 | 704 | 0.4+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2004 03 19 | 704 | (1.0+ | 2.0+) | 2004 04 17 | 704 | 0.9+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 0.6+ | 0.9+ | 2004 04 17 | 704 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.5+ |
| 2004 03 20 | 699 | 0.4+ | 0.7− | 2004 04 17 | 704 | 0.6+ | 0.6+ | 2006 11 01 | 691 | (1.1− | 2.3+) |
| 2004 03 20 | 699 | 0.2− | 0.0 | 2004 04 20 | 691 | (1.7+ | 0.4+) | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2004 03 20 | 699 | 0.4− | 0.2+ | 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2004 03 20 | 699 | 0.1− | 0.3+ | 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 2004 03 27 | 704 | 0.2+ | 0.4+ | 2004 04 20 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2004 03 27 | 704 | 0.2+ | 0.2+ | 2004 04 20 | 704 | (0.5+ | 1.8+) | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2004 03 27 | 704 | 0.4+ | 0.8+ | 2004 04 20 | 704 | (0.8+ | 2.1+) | 2006 11 13 | G96 | 0.2+ | 0.2+ |
| 2004 03 27 | 704 | 0.1+ | 0.5+ | 2004 04 20 | 704 | 1.1+ | 0.9+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2004 03 27 | 704 | 0.4− | 0.6+ | 2004 04 20 | 704 | 0.9+ | 0.4+ | 2006 11 13 | G96 | 0.9+ | 0.3− |
| 2004 03 28 | 704 | 0.9− | 0.4+ | 2004 04 21 | 704 | 0.5+ | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2004 03 28 | 704 | 0.3− | 1.1+ | 2004 04 21 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 1.0+ | 0.1− |
| 2004 03 28 | 704 | 0.4+ | 0.7+ | 2004 04 21 | 704 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.7− | 1.0+ |
| 2004 03 28 | 704 | 0.8− | 0.5− | 2004 04 21 | 704 | 0.3+ | 1.0+ | 2006 11 17 | 703 | 0.6+ | 0.5+ |
| 2004 03 28 | 704 | 0.1− | 0.0 | 2004 05 11 | 699 | 0.1+ | 0.8+ | 2006 11 17 | 703 | 1.7− | 0.1+ |
| 2004 03 28 | 704 | (0.7− | 1.5+) | 2004 05 11 | 699 | 0.9+ | 0.6+ | 2006 11 21 | 704 | 0.7− | 1.2+ |
| 2004 03 28 | 704 | 1.1− | 0.4+ | 2004 05 11 | 699 | 0.5− | 0.4− | 2006 11 21 | 704 | 0.8− | 0.6+ |
| 2004 03 28 | 704 | 0.5− | 0.4+ | 2004 05 11 | 699 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.9+ |
| 2004 03 28 | 704 | 0.4− | 0.5+ | 2004 05 12 | 699 | 0.4− | 0.9+ | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2004 03 28 | 704 | 0.2− | 0.7+ | 2004 05 12 | 699 | 0.6− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2004 03 28 | 704 | 0.2− | 0.6+ | 2004 05 12 | 699 | 1.0− | 1.3− | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2004 03 28 | 704 | 0.0 | 0.1+ | 2004 05 12 | 699 | 0.7− | 0.5− | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2004 03 28 | 704 | 0.7− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.1− |

**(144591)∗ 2004 FV$_{41}$**

Discovered 2004 Mar. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.22716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24443465 | $\omega$ | 178.10269 | | +0.11904172 | | +0.98796967 |
| $a$ | 2.5333442 | $\Omega$ | 98.72467 | | −0.91226832 | | +0.14807830 |
| $e$ | 0.1256942 | $i$ | 5.73183 | | −0.39191272 | | −0.04459547 |
| $P$ | 4.03 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 05 | 809 | 0.8− | 0.2+ | 2004 02 16 | 704 | 0.4− | 0.4+ | 2006 10 04 | G96 | 0.6− | 0.1+ |
| 1998 12 12 | 691 | 0.1+ | 0.6− | 2004 03 16 | 691 | 0.1− | 0.4− | 2006 10 04 | G96 | 0.1− | 0.4− |
| 1998 12 12 | 691 | 0.2+ | 0.8− | 2004 03 16 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.8− |
| 1998 12 12 | 691 | 0.4+ | 0.9− | 2004 03 16 | 691 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2001 06 15 | 608 | 0.4− | 0.5− | 2004 03 16 | 704 | 0.2+ | 1.1+ | 2006 10 16 | 703 | 0.9− | 0.2− |
| 2001 06 15 | 608 | 0.1− | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | (0.5− | 2.0+) |
| 2001 06 15 | 608 | 1.2+ | 1.0− | 2004 03 16 | 704 | 0.9+ | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2001 07 10 | 644 | 0.1+ | 0.5+ | 2004 03 16 | 704 | 0.4+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2001 07 10 | 644 | 0.2− | 0.6+ | 2004 03 16 | 704 | 0.9− | 0.2− | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2001 07 10 | 644 | 0.0 | 0.6+ | 2004 03 16 | 704 | 0.4+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2001 07 18 | 644 | (1.9− | 0.8−) | 2004 03 16 | 704 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.9+ | 0.4+ |
| 2001 07 18 | 644 | (2.0− | 0.4−) | 2004 03 16 | 704 | 0.2+ | 1.3+ | 2006 11 09 | 644 | 0.5+ | 0.0 |
| 2001 07 18 | 644 | (2.1− | 0.5−) | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.9− | 0.1+ |
| 2002 11 16 | 644 | 0.0 | 0.3+ | 2004 03 19 | 644 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.5+ |
| 2002 11 16 | 644 | 0.3+ | 0.5+ | 2004 03 19 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2002 11 16 | 644 | 0.2+ | 0.3+ | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2002 12 10 | 644 | 0.3+ | 0.9+ | 2004 03 20 | 704 | (2.3+ | 2.6+) | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2002 12 10 | 644 | 0.1− | 0.3+ | 2004 03 20 | 704 | (2.6+ | 2.4+) | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 01 23 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 704 | (2.3+ | 3.1+) | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2004 01 23 | 704 | 0.7+ | 0.5− | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2004 01 23 | 704 | 0.4+ | 0.0 | 2005 06 03 | 691 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2004 02 16 | 704 | 0.2− | 0.8− | 2005 06 03 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2004 02 16 | 704 | 0.7− | 0.5+ | 2005 06 03 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.5+ |
| 2004 02 16 | 704 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2004 02 16 | 704 | 0.4+ | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.7− | 0.3+ |

**(144592)∗ 2004 FG$_{42}$ = 2000 KO$_{49}$**

Discovered 2004 Mar. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69699)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.14395 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21442132 | $\omega$ | 244.93615 | | +0.47318640 | | +0.87581137 |
| $a$ | 2.7645476 | $\Omega$ | 53.63788 | | −0.75971875 | | +0.46034505 |
| $e$ | 0.0831382 | $i$ | 6.78407 | | −0.44600679 | | +0.14504097 |
| $P$ | 4.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.2− | 1.0− | 2004 03 19 | 644 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 1995 03 26 | 691 | 0.7− | 0.6− | 2004 03 19 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.5+ | 0.5− | 2004 03 19 | 644 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 1995 04 02 | 691 | 0.7− | 0.4− | 2004 03 23 | 704 | 1.0+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1995 04 02 | 691 | (0.2− | 6.3−) | 2004 03 23 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 1995 04 02 | 691 | (5.5+ | 3.1+) | 2004 03 23 | 704 | 0.5− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.7+ |
| 2000 05 30 | 691 | 0.6+ | 0.9+ | 2004 03 23 | 704 | (0.1+ | 1.8+) | 2006 10 23 | 691 | 0.5− | 0.4+ |
| 2000 05 30 | 691 | 0.4+ | 0.7+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2000 05 30 | 691 | 0.5+ | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2000 06 04 | 691 | 0.1+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2000 06 04 | 691 | 0.1+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.4− | 0.1+ |
| 2000 06 04 | 691 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.6− | 0.1+ |
| 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.5− | 0.8+ | 2006 11 01 | G96 | 0.5− | 0.1+ |
| 2004 02 13 | 691 | 0.3+ | 0.6+ | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.4+ |
| 2004 02 13 | 691 | 0.0 | 0.7+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2004 02 29 | 691 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2004 02 29 | 691 | 0.2+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.7+ | 1.0− |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.3+ |
| 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3+ |

**(144593)∗ 2004 FB$_{44}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.17335 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22231279 | $\omega$ | 352.29508 | | −0.71396562 | +0.69535001 | |
| $a$ | 2.6987319 | $\Omega$ | 232.09941 | | −0.63672654 | −0.69356222 | |
| $e$ | 0.2188645 | $i$ | 5.97264 | | −0.29126004 | −0.18830778 | |
| $P$ | 4.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.4+ | 0.0 | 2004 03 20 | 704 | 0.1+ | 0.4− | 2004 05 14 | 704 | 0.9+ | 0.2− |
| 1997 11 22 | 691 | 0.3+ | 0.4− | 2004 03 20 | 704 | 0.0 | 0.0 | 2004 05 14 | 704 | 0.2− | 0.7+ |
| 1997 11 22 | 691 | 1.7− | 0.5+ | 2004 03 26 | 699 | 0.5− | 0.0 | 2004 05 14 | 704 | 0.1+ | 0.7− |
| 2001 10 20 | 691 | 0.6+ | 0.7+ | 2004 03 26 | 699 | 0.8− | 0.4+ | 2004 05 14 | 704 | (1.7+ | 0.7+) |
| 2001 10 20 | 691 | 0.3+ | 0.1+ | 2004 03 26 | 699 | 0.6− | 0.0 | 2005 08 25 | 599 | 0.1+ | 0.9+ |
| 2001 10 20 | 691 | 0.5+ | 0.5+ | 2004 03 26 | 699 | 0.6− | 0.5+ | 2005 08 25 | 599 | 0.4− | 1.1+ |
| 2001 11 17 | 691 | 0.1+ | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.7+ | 2005 08 25 | 599 | (0.2− | 2.1+) |
| 2001 11 17 | 691 | 0.4− | 0.0 | 2004 04 19 | 704 | 1.0+ | 0.0 | 2005 08 25 | 599 | 0.5− | 0.9+ |
| 2001 11 17 | 691 | 0.2− | 0.4+ | 2004 04 19 | 704 | 0.7+ | 0.6+ | 2005 08 26 | 644 | 0.5− | 0.8+ |
| 2004 02 26 | 704 | 0.5+ | 0.1− | 2004 04 19 | 704 | 0.6− | 0.0 | 2005 08 26 | 644 | 0.6− | 0.7+ |
| 2004 02 26 | 704 | 0.3+ | 1.4+ | 2004 04 20 | 704 | 0.3+ | 0.0 | 2005 08 26 | 644 | 0.5− | 0.7+ |
| 2004 02 26 | 704 | 0.1− | 0.4+ | 2004 04 20 | 704 | 0.2+ | 0.9+ | 2005 08 30 | 701 | 1.4− | 0.6− |
| 2004 02 26 | 704 | 0.3+ | 1.4+ | 2004 04 20 | 704 | 0.6+ | 0.4+ | 2005 08 30 | 701 | 0.4− | 0.0 |
| 2004 03 16 | 703 | (2.0− | 3.3−) | 2004 04 20 | 704 | 0.7− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.2− |
| 2004 03 16 | 703 | 0.8+ | 0.7+ | 2004 04 20 | 704 | 0.7+ | 1.3+ | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2004 03 16 | 703 | 0.2− | 0.1+ | 2004 04 20 | 704 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.5+ |
| 2004 03 16 | 703 | 0.3− | 0.3− | 2004 04 20 | 704 | 1.0− | 0.1− | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2004 03 16 | 704 | 0.1+ | 0.5+ | 2004 04 20 | 704 | 0.1+ | 1.0+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 0.4+ | 0.8+ | 2004 04 26 | 699 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2004 03 16 | 704 | 0.0 | 0.1+ | 2004 04 26 | 699 | 0.1− | 0.7− | 2006 11 13 | G96 | 0.1− | 0.2+ |
| 2004 03 16 | 704 | 0.3+ | 0.9+ | 2004 04 26 | 699 | 0.7+ | 0.9− | 2006 11 13 | G96 | 0.2− | 0.6− |
| 2004 03 20 | 704 | 0.2+ | 0.0 | 2004 04 26 | 699 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.6+ | 0.8− |
| 2004 03 20 | 704 | 0.2+ | 0.3+ | 2004 05 14 | 704 | 1.2+ | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.0 |

**(144594)∗ 2004 FD$_{44}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.27440 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26886078 | $\omega$ | 253.66554 | | +0.05505198 | −0.99793753 | |
| $a$ | 2.3774848 | $\Omega$ | 193.30964 | | +0.96208965 | +0.06186203 | |
| $e$ | 0.1683785 | $i$ | 8.24513 | | +0.26711940 | −0.01713981 | |
| $P$ | 3.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 704 | 0.4− | 0.6− | 2004 03 20 | 704 | 1.4+ | 0.8− | 2006 10 16 | 703 | 0.2− | 0.7+ |
| 2000 01 11 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 1.1+ | 0.5− | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2000 01 11 | 704 | (3.2− | 0.0 ) | 2004 03 20 | 704 | (1.9+ | 0.6−) | 2006 10 18 | 691 | 0.3+ | 0.2− |
| 2002 09 06 | 704 | 0.5+ | 1.0+ | 2004 03 20 | 704 | 0.7+ | 0.5− | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 0.8− | 0.9+ | 2004 03 27 | 704 | 0.5+ | 0.1− | 2006 10 18 | 691 | 0.3− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 1.0+ | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.9− | 1.0+ | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.6− | 0.8+ | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 09 13 | 644 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 704 | (1.1− | 2.3−) |
| 2002 09 13 | 644 | 0.1+ | 0.5+ | 2004 03 31 | 691 | 0.0 | 0.3+ | 2006 10 27 | 704 | 1.1+ | 0.5− |
| 2002 09 13 | 644 | 0.1+ | 0.4+ | 2004 03 31 | 691 | 0.0 | 0.1+ | 2006 10 27 | 704 | (0.8− | 2.6−) |
| 2002 10 11 | 704 | 0.1− | 0.2− | 2004 03 31 | 691 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.5+ | 0.2+ | 2004 04 12 | 691 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.6+ | 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2004 02 26 | 704 | 0.3+ | 1.0+ | 2004 04 12 | 691 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2004 02 26 | 704 | 0.7− | 0.6+ | 2004 04 24 | 691 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.6− |
| 2004 02 26 | 704 | 0.1− | 0.7+ | 2004 04 24 | 691 | 0.3− | 0.5+ | 2006 11 13 | 703 | 0.2+ | 0.5− |
| 2004 02 26 | 704 | 0.1+ | 0.4− | 2004 04 24 | 691 | 0.5− | 0.5+ | 2006 11 13 | 703 | 0.1− | 0.0 |
| 2004 03 16 | 704 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.3+ |
| 2004 03 16 | 704 | 0.9+ | 0.9+ | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.2+ | 0.1+ |
| 2004 03 16 | 704 | 0.1− | 0.3− | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.9+ | 0.3+ |
| 2004 03 16 | 704 | 0.6− | 0.3+ | 2006 07 22 | G96 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.6+ | 0.2+ |
| 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 14 | 704 | 0.4+ | 0.5+ |
| 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.8− | 0.2+ |
| 2004 03 18 | 704 | (2.1+ | 0.3+) | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | (0.6+ | 1.7+) |
| 2004 03 18 | 704 | 0.4+ | 0.6− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.3− | 0.1− |
| 2004 03 18 | 704 | 1.4+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.7− | 0.1+ |
| 2004 03 20 | 699 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2004 03 20 | 699 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 1.0+ |
| 2004 03 20 | 699 | 0.6− | 0.7− | 2006 10 02 | G96 | 0.3− | 0.0 | 2006 11 20 | 704 | (0.2− | 2.1+) |
| 2004 03 20 | 699 | 1.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.1− | 1.0+ |
| 2004 03 20 | 704 | 0.8+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.0 | | | | |

**(144595)∗ 2004 FQ$_{44}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.58922 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25384394 | $\omega$ | 50.74193 | | −0.97668145 | −0.20792204 | |
| $a$ | 2.4703483 | $\Omega$ | 117.19777 | | +0.17376263 | −0.91189098 | |
| $e$ | 0.1727720 | $i$ | 3.44817 | | +0.12609478 | −0.35386898 | |
| $P$ | 3.88 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 13 | 691 | 0.1− | 0.3− | 2004 03 16 | 704 | 0.0 | 0.3− | 2004 04 20 | 704 | 1.2+ | 0.3+ |
| 1992 01 13 | 691 | 0.1− | 0.1− | 2004 03 16 | 704 | 0.2+ | 0.3− | 2004 04 20 | 704 | 0.3+ | 0.5+ |
| 1992 01 13 | 691 | 0.1− | 0.5− | 2004 03 20 | 704 | 0.4− | 0.1+ | 2004 04 20 | 704 | 0.4+ | 0.7− |
| 2000 03 05 | 704 | 0.2+ | 1.4− | 2004 03 20 | 704 | 0.7− | 0.0 | 2004 04 20 | 704 | 0.4+ | 0.1+ |
| 2000 03 05 | 704 | 0.7− | 1.1+ | 2004 03 20 | 704 | 0.2− | 0.5− | 2004 04 20 | 704 | 0.5+ | 0.6+ |
| 2000 03 05 | 704 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2000 03 05 | 704 | 1.2− | 0.0 | 2004 03 20 | 704 | 1.2− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.5+ |
| 2000 03 05 | 704 | 0.6− | 1.4+ | 2004 03 22 | 704 | 0.5+ | 0.5− | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2000 03 12 | 704 | 0.2+ | 0.7+ | 2004 03 22 | 704 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.2+ |
| 2000 03 12 | 704 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.9+ | 0.1+ | 2006 10 03 | G96 | 0.4− | 0.3− |
| 2000 03 12 | 704 | 1.0+ | 0.1+ | 2004 03 22 | 704 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2000 03 12 | 704 | 0.4+ | 0.6+ | 2004 03 22 | 704 | 1.1+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.1+ |
| 2000 03 12 | 704 | 0.2− | 0.8+ | 2004 03 24 | 699 | 0.6− | 0.0 | 2006 10 03 | G96 | 0.8− | 0.1− |
| 2000 04 03 | 699 | 1.6+ | 0.4− | 2004 03 24 | 699 | 0.3+ | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2000 04 03 | 699 | 0.8+ | 1.2+ | 2004 03 24 | 699 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.4+ |
| 2000 04 03 | 699 | (2.2+ | 0.7−) | 2004 03 24 | 699 | 1.1− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2000 04 03 | 699 | 1.9+ | 0.3− | 2004 04 12 | 699 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.7− | 0.2+ |
| 2004 03 16 | 704 | 0.2+ | 0.5+ | 2004 04 12 | 699 | 0.7− | 0.8− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2004 03 16 | 704 | (1.0+ | 1.6−) | 2004 04 12 | 699 | 1.3− | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 03 16 | 704 | 0.3− | 0.6+ | 2004 04 12 | 699 | (2.5− | 0.4+) | | | | |

**(144596)∗ 2004 FR$_{44}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.05172 | | (2000.0) | | | |
| $n$ | 0.28953956 | $\omega$ | 330.21435 | | −0.02900631 | −0.99765538 |
| $a$ | 2.2628935 | $\Omega$ | 121.38366 | | +0.93084631 | −0.04955801 |
| $e$ | 0.1259855 | $i$ | 4.16389 | | +0.36425786 | +0.04719894 |
| $P$ | 3.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.3− | 0.9+ | 2004 03 20 | 704 | 0.5+ | 1.1+ | 2005 07 05 | 691 | 0.1− | 0.1− |
| 1999 12 06 | 704 | 0.3− | 0.1+ | 2004 03 22 | 704 | 0.9+ | 1.2− | 2005 07 05 | 691 | 0.0 | 0.0 |
| 1999 12 06 | 704 | 0.1+ | 0.8+ | 2004 03 22 | 704 | 0.5+ | 0.3− | 2005 07 15 | G96 | (1.5+ | 0.3+) |
| 1999 12 06 | 704 | 0.6− | 0.3+ | 2004 03 22 | 704 | 0.4− | 1.1+ | 2005 07 15 | G96 | 0.0 | 0.1+ |
| 1999 12 06 | 704 | 0.3− | 0.9+ | 2004 03 22 | 704 | 0.6+ | 0.9+ | 2005 07 15 | G96 | 0.1+ | 0.2+ |
| 2000 01 06 | 704 | 0.6+ | 0.3− | 2004 03 22 | 704 | 0.1− | 0.3+ | 2005 07 15 | G96 | 0.4− | 0.1+ |
| 2000 01 06 | 704 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2005 07 16 | 691 | 0.1− | 0.1+ |
| 2000 01 06 | 704 | 0.3+ | 0.5− | 2004 03 23 | 704 | 0.8+ | 0.5+ | 2005 07 16 | 691 | 0.1− | 0.1+ |
| 2000 01 06 | 704 | 0.2+ | 0.4− | 2004 03 23 | 704 | 0.4+ | 0.8+ | 2005 07 16 | 691 | 0.2+ | 0.0 |
| 2000 01 06 | 704 | 1.2+ | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2001 06 11 | 691 | 0.1+ | 0.8− | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 06 11 | 691 | 0.6− | 0.0 | 2004 04 21 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2001 06 11 | 691 | 0.4− | 0.0 | 2004 04 21 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2002 09 15 | 644 | 0.4− | 0.7+ | 2004 04 21 | 691 | 0.0 | 0.3− | 2006 11 16 | 703 | 1.5− | 1.4+ |
| 2002 09 15 | 644 | 0.5− | 0.9+ | 2005 06 30 | 691 | 0.3+ | 0.4+ | 2006 11 16 | 703 | 1.0− | 0.0 |
| 2002 09 15 | 644 | 0.5− | 0.9+ | 2005 06 30 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 703 | 0.1− | 0.4− |
| 2004 03 16 | 704 | 0.1− | 0.6+ | 2005 06 30 | 691 | 0.1− | 0.5− | 2006 11 16 | 703 | 1.5+ | 0.9− |
| 2004 03 16 | 704 | 0.4+ | 0.1− | 2005 07 03 | G96 | 0.3+ | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 0.1+ | 0.6+ | 2005 07 03 | G96 | 0.2− | 1.0+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 0.5− | 0.3+ | 2005 07 03 | G96 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.3− | 0.4+ | 2005 07 03 | G96 | 0.5+ | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | 0.3+ | 0.5+ | 2005 07 05 | 691 | 0.1− | 0.1+ | | | | |

**(144597)∗ 2004 FS$_{44}$ = 1998 FW$_7$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 135.50387 | | (2000.0) | | | |
| $n$ | 0.17465271 | $\omega$ | 59.60733 | | −0.82254208 | +0.56402272 |
| $a$ | 3.1697073 | $\Omega$ | 154.50956 | | −0.56235724 | −0.78758951 |
| $e$ | 0.0406807 | $i$ | 9.74185 | | −0.08472819 | −0.24815546 |
| $P$ | 5.64 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 1.1− | 1.4− | 2003 01 28 | 704 | 0.3+ | 0.5+ | 2004 04 15 | 704 | (0.6+ | 2.1+) |
| 1998 03 04 | 704 | 1.6− | 1.0− | 2004 02 25 | 704 | 0.1− | 0.4− | 2004 04 21 | 704 | 0.5+ | 1.0+ |
| 1998 03 04 | 704 | 1.5− | 0.7− | 2004 02 25 | 704 | (1.5+ | 0.4−) | 2004 04 21 | 704 | 0.1+ | 0.3+ |
| 1998 03 04 | 704 | (2.2− | 0.2−) | 2004 02 25 | 704 | 0.6− | 0.0 | 2004 04 21 | 704 | 0.9− | 0.7+ |
| 1998 03 20 | 691 | 0.5+ | 0.2− | 2004 02 25 | 704 | 1.0− | 1.0+ | 2004 04 21 | 704 | 0.3− | 1.4+ |
| 1998 03 20 | 691 | 0.6+ | 0.2− | 2004 02 25 | 704 | 0.3− | 1.0+ | 2004 04 21 | 704 | 0.4+ | 0.7+ |
| 1998 03 20 | 691 | 0.4+ | 0.7− | 2004 03 16 | 683 | 0.4− | 0.9+ | 2004 04 23 | 704 | (1.1− | 1.9+) |
| 1998 03 25 | 691 | 0.4− | 0.0 | 2004 03 16 | 683 | 0.0 | 1.5+ | 2004 04 23 | 704 | 1.2− | 0.8+ |
| 1998 03 25 | 691 | 0.7− | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.1− | 2004 04 23 | 704 | 0.1+ | 0.5+ |
| 1998 03 25 | 691 | 0.1− | 0.4− | 2004 03 16 | 683 | (3.8+ | 1.0+) | 2004 04 23 | 704 | 0.2− | 0.7+ |
| 1999 05 12 | 704 | 1.5+ | 1.5− | 2004 03 16 | 704 | 0.3+ | 1.0+ | 2004 04 25 | 699 | (1.6− | 1.0+) |
| 1999 05 12 | 704 | (0.4− | 2.3+) | 2004 03 16 | 704 | 0.7+ | 0.1− | 2004 04 25 | 699 | 0.9− | 1.0+ |
| 1999 05 12 | 704 | 0.2− | 0.3− | 2004 03 16 | 704 | 1.2+ | 0.4+ | 2004 04 25 | 699 | 0.2− | 0.5+ |
| 1999 05 12 | 704 | (6.1− | 3.9+) | 2004 03 16 | 704 | 1.1+ | 0.1− | 2004 04 25 | 699 | 0.3+ | 0.3− |
| 2000 08 29 | 704 | 0.7− | 0.8+ | 2004 03 20 | 704 | 1.5+ | 0.2− | 2004 04 25 | 699 | 0.3+ | 0.1+ |
| 2000 08 29 | 704 | 0.4− | 0.3+ | 2004 03 20 | 704 | 0.0 | 0.7+ | 2004 04 25 | 699 | 0.1+ | 0.7+ |
| 2000 08 29 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.6+ | 2004 04 25 | 699 | 0.5− | 0.1+ |
| 2001 10 23 | 644 | 0.5+ | 0.0 | 2004 03 20 | 704 | 0.1− | 0.1+ | 2004 04 25 | 699 | 1.1− | 0.7+ |
| 2001 10 23 | 644 | 0.8+ | 0.5+ | 2004 03 20 | 704 | 0.7+ | 0.5+ | 2006 08 23 | 644 | 0.5− | 0.8+ |
| 2001 10 23 | 644 | 0.9+ | 0.3− | 2004 03 22 | 704 | 0.3+ | 0.4− | 2006 08 23 | 644 | 0.1− | 0.8+ |
| 2001 11 18 | 704 | 0.5− | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2006 08 23 | 644 | 0.4− | 0.5+ |
| 2001 11 18 | 704 | 0.8− | 0.1− | 2004 03 22 | 704 | 0.5+ | 0.3− | 2006 09 25 | 699 | 0.0 | 0.5+ |
| 2001 11 18 | 704 | 0.0 | 1.0+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.6+ |
| 2001 11 18 | 704 | 0.1− | 1.2+ | 2004 03 22 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 699 | 1.2− | 1.4+ |
| 2001 12 14 | 209 | 0.9− | 1.0+ | 2004 03 24 | 699 | 1.1+ | 0.1− | 2006 09 25 | 699 | 0.8− | 1.2+ |
| 2001 12 14 | 209 | 0.8− | 0.6+ | 2004 03 24 | 699 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.8+ | 1.3+ |
| 2001 12 14 | 209 | 0.1− | 0.4+ | 2004 03 24 | 699 | 0.6− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 2003 01 13 | 644 | 0.2+ | 0.7+ | 2004 03 24 | 699 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.5+ |
| 2003 01 13 | 644 | 0.1+ | 0.8+ | 2004 04 15 | 644 | 0.1− | 0.6+ | 2006 09 30 | 703 | (1.6+ | 1.6+) |
| 2003 01 13 | 644 | 0.1+ | 0.8+ | 2004 04 15 | 644 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2003 01 28 | 704 | 0.5+ | 0.3+ | 2004 04 15 | 704 | 0.5+ | 0.9+ | 2006 10 19 | 703 | 0.5− | 0.1+ |
| 2003 01 28 | 704 | 0.1+ | 1.0+ | 2004 04 15 | 644 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.8− |
| 2003 01 28 | 704 | 0.2+ | 0.0 | 2004 04 15 | 704 | 1.3+ | 1.3+ | 2006 10 19 | 703 | 0.2− | 1.1− |

**(144598)∗ 2004 FY$_{44}$ = 2000 SK$_{321}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 135.03872 | | (2000.0) | | | |
| $n$ | 0.17605858 | $\omega$ | 53.90180 | | −0.58445324 | +0.81142540 |
| $a$ | 3.1528109 | $\Omega$ | 180.34928 | | −0.80642027 | −0.58109095 |
| $e$ | 0.1155055 | $i$ | 17.14535 | | −0.09000426 | −0.06262684 |
| $P$ | 5.60 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.0 | 0.0 | 2004 04 01 | 704 | 0.2− | 0.4+ | 2004 05 07 | 703 | 1.3+ | 0.1− |
| 2000 09 28 | 691 | 0.2− | 0.1+ | 2004 04 01 | 704 | 0.3− | 0.9+ | 2004 05 21 | 703 | 0.4− | 0.3+ |
| 2000 09 28 | 691 | 0.1− | 0.0 | 2004 04 14 | 691 | 0.1− | 0.2+ | 2004 05 21 | 703 | (0.4+ | 1.8+) |
| 2000 10 01 | 704 | 0.3+ | 1.3+ | 2004 04 14 | 691 | 0.2− | 0.3+ | 2004 05 21 | 703 | 0.4− | 0.2+ |
| 2000 10 01 | 704 | 0.3− | 0.4+ | 2004 04 14 | 691 | 0.3− | 0.2+ | 2004 05 21 | 703 | 0.0 | 0.2− |
| 2000 10 01 | 704 | 0.1− | 1.5+ | 2004 04 15 | 644 | 0.2− | 0.2+ | 2005 06 29 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2004 04 15 | 644 | 0.1+ | 0.3+ | 2005 06 29 | 644 | 0.2+ | 0.2+ |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2004 04 15 | 644 | 0.0 | 0.1+ | 2005 06 29 | 644 | 0.1+ | 0.5+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2004 04 21 | 683 | (1.4+ | 1.9−) | 2006 08 24 | D35 | 0.5+ | 0.5+ |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2004 04 21 | 683 | (2.4+ | 0.3−) | 2006 08 24 | D35 | 0.4+ | 0.5+ |
| 2001 12 18 | 645 | 0.0 | 0.1+ | 2004 04 21 | 683 | (0.2+ | 1.6−) | 2006 08 24 | D35 | 0.3+ | 0.3+ |
| 2001 12 18 | 645 | 0.1− | 0.0 | 2004 04 21 | 703 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 0.6+ | 0.3+ |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2004 04 21 | 703 | 0.4− | 0.2+ | 2006 09 30 | 703 | (1.0− | 2.2+) |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2004 04 21 | 703 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.8+ |
| 2003 01 28 | 704 | (2.2+ | 0.1+) | 2004 04 21 | 703 | 0.3+ | 1.2+ | 2006 09 30 | 703 | 0.1− | 0.7− |
| 2003 01 28 | 704 | 0.6− | 0.2+ | 2004 04 22 | 683 | (1.0+ | 2.4−) | 2006 10 04 | G96 | 0.1+ | 0.2+ |
| 2003 01 28 | 704 | 1.0+ | 1.1+ | 2004 04 22 | 683 | 0.7+ | 1.2− | 2006 10 04 | G96 | 0.3− | 0.2+ |
| 2003 01 28 | 704 | 0.3+ | 0.3− | 2004 04 22 | 683 | (1.0+ | 1.9−) | 2006 10 04 | G96 | 0.2− | 0.4+ |
| 2004 03 16 | 704 | 0.3− | 0.4+ | 2004 04 23 | 704 | 0.7− | 1.4+ | 2006 10 04 | G96 | 0.1+ | 0.3+ |
| 2004 03 16 | 704 | 0.1+ | 0.2+ | 2004 04 23 | 704 | 1.0+ | 1.3+ | 2006 10 10 | 644 | 0.1− | 0.6+ |
| 2004 03 16 | 704 | 0.5+ | 0.5− | 2004 04 23 | 704 | (1.1+ | 2.0+) | 2006 10 10 | 644 | 0.2− | 0.8+ |
| 2004 03 16 | 704 | 0.1+ | 0.2− | 2004 04 23 | 704 | 0.6+ | 1.1+ | 2006 10 10 | 644 | 0.2− | 0.5+ |
| 2004 03 16 | 704 | 0.2+ | 0.1+ | 2004 04 25 | 704 | 0.8+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 0.3− | 0.2+ | 2004 04 25 | 704 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.7− | 0.3+ |
| 2004 03 20 | 704 | 0.2− | 0.7+ | 2004 04 25 | 683 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2004 03 20 | 704 | 0.5+ | 1.3+ | 2004 04 25 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 03 20 | 704 | 0.6− | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | (0.1+ | 1.7+) | 2004 04 25 | 704 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2004 03 22 | 704 | 0.4− | 0.2+ | 2004 04 25 | 683 | 1.5+ | 1.2− | 2006 10 22 | 703 | (1.9− | 2.0+) |
| 2004 03 22 | 704 | 0.1+ | 0.4+ | 2004 04 25 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 703 | (1.7− | 0.3+) |
| 2004 03 22 | 704 | 0.6+ | 0.2+ | 2004 04 25 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | (2.7− | 1.2+) |
| 2004 03 22 | 704 | 0.6− | 0.2+ | 2004 04 25 | 683 | (0.1+ | 1.9+) | 2006 10 22 | 703 | 0.2− | 1.0+ |
| 2004 03 22 | 704 | 0.1− | 0.5+ | 2004 04 25 | 704 | 0.3− | 0.4+ | 2006 11 16 | 703 | 1.2− | 0.9+ |
| 2004 03 27 | 699 | 0.7− | 0.6− | 2004 04 25 | 704 | 0.3− | 0.0 | 2006 11 16 | 703 | 0.9+ | 1.9+ |
| 2004 03 27 | 699 | 0.3− | 0.3+ | 2004 04 25 | 704 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.2+ | 1.3+ |
| 2004 03 27 | 699 | 0.6− | 1.0+ | 2004 05 07 | 703 | 0.9+ | 0.6− | 2006 11 16 | 703 | 1.0− | 0.8+ |
| 2004 03 27 | 699 | 1.1− | 0.7+ | 2004 05 07 | 703 | 1.0+ | 0.0 | | | | |
| 2004 04 01 | 704 | (1.4+ | 2.6+) | 2004 05 07 | 703 | 0.9+ | 0.2+ | | | | |

**(144599)∗ 2004 FZ$_{44}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 226.42314 | | | (2000.0) | | |
| $n$ | 0.21232772 | $\omega$ | 22.00194 | | −0.86775068 | −0.49177396 |
| $a$ | 2.7826906 | $\Omega$ | 128.33923 | | +0.44124165 | −0.82885938 |
| $e$ | 0.1476206 | $i$ | 5.25832 | | +0.22872380 | −0.26674053 |
| $P$ | 4.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 699 | 1.2+ | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2004 04 25 | 699 | 0.2− | 0.0 |
| 1999 02 12 | 699 | 0.0 | 1.5+ | 2004 03 22 | 699 | 0.5− | 0.1+ | 2004 04 25 | 699 | 0.3+ | 0.3+ |
| 1999 02 12 | 699 | 0.9+ | 0.7+ | 2004 04 15 | 644 | 0.4+ | 0.2+ | 2005 06 14 | G96 | 0.3+ | 1.0+ |
| 1999 02 23 | 699 | 0.4− | 0.3+ | 2004 04 15 | 644 | 0.4+ | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.2+ |
| 1999 02 23 | 699 | 0.4− | 0.7+ | 2004 04 15 | 644 | 0.4+ | 0.0 | 2005 06 14 | G96 | 0.4− | 0.3+ |
| 1999 02 23 | 699 | 0.1− | 1.0+ | 2004 04 20 | 683 | 1.1− | 1.3+ | 2005 06 14 | G96 | 0.2− | 0.2+ |
| 2002 11 23 | 644 | 0.1− | 1.0+ | 2004 04 20 | 683 | (0.8− | 2.2+) | 2005 07 15 | G96 | 0.0 | 0.0 |
| 2002 11 23 | 644 | 0.2− | 0.7+ | 2004 04 20 | 683 | (2.3− | 1.7+) | 2005 07 15 | G96 | 0.0 | 0.1− |
| 2002 11 23 | 644 | 0.2− | 0.8+ | 2004 04 20 | 704 | 0.3+ | 0.2+ | 2005 07 15 | 691 | 0.0 | 0.1− |
| 2002 11 28 | 699 | 1.5− | 0.9− | 2004 04 20 | 704 | 0.1+ | 0.3+ | 2005 07 15 | G96 | 0.6− | 0.7+ |
| 2002 11 28 | 699 | 0.0 | 0.6+ | 2004 04 20 | 704 | 0.6+ | 0.2+ | 2005 07 15 | 691 | 0.2− | 0.1− |
| 2002 11 28 | 699 | 0.1+ | 0.9+ | 2004 04 20 | 704 | 0.4+ | 0.1+ | 2005 07 15 | G96 | 0.3− | 0.3+ |
| 2002 11 28 | 699 | 0.5+ | 0.8+ | 2004 04 20 | 704 | 0.2+ | 0.3+ | 2005 07 15 | 691 | 0.1+ | 1.0+ |
| 2002 12 27 | 644 | 0.3− | 1.0+ | 2004 04 20 | E12 | (2.1− | 1.0+) | 2006 08 23 | 850 | (0.8− | 2.4+) |
| 2002 12 27 | 644 | 0.3− | 0.6+ | 2004 04 20 | E12 | 0.4+ | 0.1+ | 2006 08 23 | 850 | (2.9− | 2.2+) |
| 2002 12 27 | 644 | 0.3+ | 0.4+ | 2004 04 20 | E12 | 0.6+ | 0.3+ | 2006 09 18 | 703 | 0.9− | 0.1+ |
| 2004 03 16 | 704 | 1.1+ | 0.1− | 2004 04 20 | E12 | 0.1− | 0.4+ | 2006 09 18 | 703 | (0.6− | 2.2+) |
| 2004 03 16 | 704 | 0.6− | 0.4+ | 2004 04 21 | 683 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.1− |
| 2004 03 16 | 704 | 0.6+ | 1.0+ | 2004 04 21 | 683 | (2.1+ | 1.2+) | 2006 09 18 | 703 | 0.6+ | 0.8− |
| 2004 03 16 | 704 | 0.3+ | 0.2+ | 2004 04 21 | 683 | 0.5+ | 0.4+ | 2006 09 20 | 691 | 0.0 | 0.5+ |
| 2004 03 20 | 704 | 0.1+ | 0.1− | 2004 04 22 | 683 | (2.2+ | 1.0−) | 2006 09 20 | 691 | 0.2+ | 0.6+ |
| 2004 03 20 | 704 | 0.1− | 0.1− | 2004 04 22 | 683 | (2.8+ | 1.0+) | 2006 09 20 | 691 | 0.3− | 0.9+ |
| 2004 03 20 | 704 | 0.2+ | 0.2− | 2004 04 22 | 683 | (2.4+ | 0.3−) | 2006 09 30 | 703 | 1.6− | 0.8+ |
| 2004 03 20 | 704 | 0.2− | 0.0 | 2004 04 23 | 683 | 1.7+ | 0.3+ | 2006 09 30 | 703 | 0.7+ | 0.1+ |
| 2004 03 20 | 704 | 0.2+ | 0.6+ | 2004 04 23 | 683 | (2.1+ | 1.5−) | 2006 09 30 | 703 | 0.3+ | 1.7+ |
| 2004 03 22 | 699 | 0.9− | 1.1− | 2004 04 23 | 683 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.6− | 0.1− |
| 2004 03 22 | 699 | 1.5− | 0.1+ | 2004 04 25 | 683 | 1.6+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2004 03 22 | 704 | 0.5− | 0.6− | 2004 04 25 | 699 | 0.2− | 0.9+ | 2006 10 02 | G96 | 0.4− | 0.1+ |
| 2004 03 22 | 704 | 0.3+ | 0.0 | 2004 04 25 | 683 | 1.2+ | 0.2− | 2006 10 02 | G96 | 0.2− | 0.2+ |
| 2004 03 22 | 699 | 0.4− | 0.6+ | 2004 04 25 | 699 | 1.5− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2004 03 22 | 704 | 1.0+ | 0.8+ | 2004 04 25 | 683 | 1.1− | 1.0+ | | | | |

**(144600)∗ 2004 FM$_{45}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 273.94810 | | | (2000.0) | | |
| $n$ | 0.23552585 | $\omega$ | 358.24741 | | −0.33486474 | −0.93818204 |
| $a$ | 2.5968308 | $\Omega$ | 111.30922 | | +0.86565269 | −0.34303901 |
| $e$ | 0.2113415 | $i$ | 5.39763 | | +0.37217070 | −0.04624609 |
| $P$ | 4.18 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 30 | 704 | 0.4+ | 0.6− | 2004 03 20 | 704 | 0.9+ | 0.2− | 2004 03 30 | 703 | 0.1+ | 0.5+ |
| 2000 04 30 | 704 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.2+ | 1.2+ | 2004 04 20 | E12 | 0.6− | 0.4− |
| 2000 04 30 | 704 | 0.3− | 0.8+ | 2004 03 20 | 704 | 0.9+ | 0.5− | 2004 04 20 | E12 | 0.4− | 0.6+ |
| 2000 04 30 | 704 | 0.2− | 1.1+ | 2004 03 22 | 699 | 0.1+ | 1.0+ | 2004 04 20 | E12 | 1.1− | 1.0+ |
| 2002 09 29 | 608 | 0.8− | 1.1+ | 2004 03 22 | 699 | 0.5+ | 0.1+ | 2004 04 20 | E12 | 0.9− | 0.3+ |
| 2002 09 29 | 608 | 0.7− | 1.4+ | 2004 03 22 | 704 | 0.4+ | 0.5+ | 2004 04 23 | 704 | 0.8+ | 0.6+ |
| 2002 09 29 | 608 | 0.6− | 1.2+ | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2004 04 23 | 704 | 0.5+ | 0.3− |
| 2002 10 04 | 704 | 0.4+ | 0.9+ | 2004 03 22 | 699 | 0.1− | 0.5− | 2004 04 23 | 704 | 0.1+ | 0.4− |
| 2002 10 04 | 704 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.6+ | 0.5+ | 2004 04 26 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.4+ | 0.7− | 2004 03 22 | 704 | 0.3− | 0.8+ | 2004 04 26 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.4− | 0.3+ | 2004 03 22 | 699 | 0.2+ | 0.9+ | 2004 04 26 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.9+ | 2004 03 22 | 704 | 0.5+ | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2002 10 15 | 644 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.1− | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2002 10 15 | 644 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.3− | 0.2+ | 2006 08 29 | 691 | 0.2+ | 0.3+ |
| 2002 10 15 | 644 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.7− | 0.8− |
| 2002 10 28 | 644 | 1.4− | 0.5+ | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.1− |
| 2002 10 28 | 644 | 0.1+ | 1.1+ | 2004 03 23 | 704 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.8+ | 1.0+ |
| 2002 10 28 | 644 | 0.1+ | 1.0+ | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.7− |
| 2002 11 06 | 644 | 0.1+ | 0.5+ | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5− |
| 2002 11 06 | 644 | 0.2+ | 0.1+ | 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.8− | 0.9+ |
| 2002 11 06 | 644 | 0.2+ | 0.0 | 2004 03 28 | 683 | 0.6+ | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2004 02 25 | 704 | (2.3+ | 0.8+) | 2004 03 28 | 683 | (1.8− | 1.8+) | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 02 25 | 704 | (1.8+ | 1.6+) | 2004 03 28 | 683 | 0.7− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 02 25 | 704 | (1.9+ | 3.0+) | 2004 03 29 | 683 | 0.7+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 03 16 | 704 | (1.7+ | 1.4+) | 2004 03 29 | 683 | 1.1+ | 0.2− | 2006 10 24 | 644 | 0.4− | 0.2+ |
| 2004 03 16 | 704 | 0.6− | 0.1+ | 2004 03 29 | 683 | (1.1− | 2.2+) | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2004 03 16 | 704 | 0.2− | 0.4− | 2004 03 30 | 703 | 0.5+ | 1.1+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2004 03 16 | 704 | 0.1− | 0.2+ | 2004 03 30 | 703 | 0.8+ | 1.2+ | | | | |
| 2004 03 20 | 704 | 1.3+ | 0.6− | 2004 03 30 | 703 | 0.5+ | 0.8+ | | | | |

**(144601)∗ 2004 FH$_{46}$ = 2002 TG$_{177}$**

Discovered 2004 Mar. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69700)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.49939 | | | (2000.0) | | |
| $n$ | 0.23594172 | $\omega$ | 238.30629 | | +0.84807649 | −0.51344472 |
| $a$ | 2.5937785 | $\Omega$ | 151.93750 | | +0.52909573 | +0.83395984 |
| $e$ | 0.1683584 | $i$ | 16.15889 | | −0.02870497 | +0.20220164 |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 19 | 704 | 1.5− | 1.4+ | 2004 02 25 | 704 | (0.0 | 2.0−) | 2005 07 06 | 691 | 0.0 | 0.2+ |
| 1998 12 19 | 704 | 0.0 | 0.1− | 2004 02 25 | 704 | (1.6+ | 0.2−) | 2005 07 06 | 691 | 0.1− | 0.1+ |
| 1998 12 19 | 704 | 0.7− | 1.6− | 2004 02 25 | 704 | 0.8+ | 0.7+ | 2005 07 06 | 691 | 0.1− | 0.4− |
| 1998 12 19 | 704 | 0.1− | 0.2− | 2004 02 29 | 691 | 0.1− | 0.2+ | 2005 07 09 | 691 | 0.1− | 0.4+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 02 29 | 691 | 0.1− | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 02 29 | 691 | 0.1− | 0.4+ | 2005 07 09 | 691 | 0.1+ | 0.0 |
| 2002 10 05 | 699 | 1.0+ | 0.3+ | 2004 03 17 | 691 | 0.1− | 0.0 | 2006 09 25 | 703 | 1.0− | 0.3− |
| 2002 10 05 | 699 | 0.6− | 1.2− | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.2− |
| 2002 10 05 | 699 | 0.1− | 0.3+ | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 703 | (0.3+ | 2.1−) |
| 2002 10 05 | 699 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.8+ | 0.3− | 2006 09 25 | 703 | 1.3+ | 0.4+ |
| 2002 10 05 | 644 | 0.2− | 0.5+ | 2004 03 20 | 704 | 0.7+ | 0.7+ | 2006 10 04 | 703 | 0.9− | 0.2− |
| 2002 10 05 | 644 | 0.0 | 0.5+ | 2004 03 20 | 704 | 0.6− | 0.0 | 2006 10 04 | 703 | 0.7− | 0.4− |
| 2002 10 05 | 644 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.3− | 2006 10 04 | 703 | 0.1− | 0.4− |
| 2002 10 06 | 704 | 0.1− | 0.3+ | 2005 05 16 | 691 | 0.2+ | 0.3+ | 2006 10 04 | 703 | 1.6+ | 1.5− |
| 2002 10 06 | 704 | 0.9+ | 0.7+ | 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 2002 10 06 | 704 | 0.8+ | 1.5+ | 2005 05 16 | 691 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.5+ |
| 2002 10 06 | 644 | 0.0 | 0.5+ | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 10 06 | 644 | 0.2− | 0.4+ | 2005 05 19 | 644 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2002 10 06 | 644 | 0.3− | 0.7+ | 2005 05 19 | 644 | 0.0 | 0.5+ | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2002 10 10 | 644 | 0.1+ | 0.2+ | 2005 07 01 | 644 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.7− | 0.5+ |
| 2002 10 10 | 644 | 0.0 | 0.5+ | 2005 07 01 | 644 | 0.0 | 0.5+ | | | | |
| 2002 10 10 | 644 | 0.2+ | 0.4+ | 2005 07 01 | 644 | 0.1+ | 0.2+ | | | | |

**(144602)∗ 2004 FV$_{47}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 153.74441 | | | (2000.0) | | |
| $n$ | 0.24044468 | $\omega$ | 3.50962 | | −0.59454218 | +0.80300250 |
| $a$ | 2.5612931 | $\Omega$ | 230.01524 | | −0.73902133 | −0.56596940 |
| $e$ | 0.0836692 | $i$ | 3.09063 | | −0.31680762 | −0.18672338 |
| $P$ | 4.10 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 691 | 0.4+ | 0.4+ | 2004 03 01 | 703 | 0.1− | 0.6+ | 2006 10 11 | 691 | 0.3+ | 0.5+ |
| 1998 12 15 | 691 | 0.1+ | 0.2− | 2004 03 01 | 703 | (0.1− | 1.7+) | 2006 10 15 | 691 | 0.2− | 0.4+ |
| 1998 12 15 | 691 | 0.8+ | 0.3− | 2004 03 01 | 703 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.5+ | 0.4+ |
| 1998 12 23 | 691 | 0.9− | 0.2+ | 2004 03 18 | 704 | 0.4+ | 1.2+ | 2006 10 15 | 691 | 0.6− | 0.2+ |
| 1998 12 23 | 691 | (3.7+ | 5.6−) | 2004 03 18 | 704 | 1.4+ | 1.2+ | 2006 10 19 | 291 | 0.7− | 0.4+ |
| 1998 12 23 | 691 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.2− | 2006 10 19 | 291 | 0.8− | 0.2+ |
| 2000 03 11 | 699 | 0.9− | 0.5− | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 291 | 0.6− | 0.3+ |
| 2000 03 11 | 699 | 0.1− | 1.4+ | 2004 03 20 | 704 | (1.6− | 1.7+) | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2000 03 11 | 699 | 0.7− | 1.2+ | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2000 03 11 | 699 | 0.9+ | 1.5+ | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 06 24 | 691 | 0.1− | 0.9+ | 2004 03 20 | 704 | 1.1− | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2001 06 24 | 691 | 0.1− | 0.6+ | 2004 03 21 | 691 | 0.6+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2001 06 24 | 691 | 0.2− | 0.7+ | 2004 03 21 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 11 05 | 291 | 0.1− | 0.1+ | 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 11 05 | 291 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 11 05 | 291 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.7+ | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2002 11 25 | 291 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2002 11 25 | 291 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.9+ | 0.2− |
| 2002 11 25 | 291 | 0.0 | 0.6− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2004 03 01 | 703 | (1.5+ | 1.9+) | 2006 10 11 | 691 | 0.5+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− |

**(144603)∗ 2004 FZ$_{47}$ = 2002 TN$_{300}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69700)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.82669 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22784375 | $\omega$ | 274.84668 | | +0.19974443 | | −0.97700040 |
| $a$ | 2.6548784 | $\Omega$ | 163.06399 | | +0.96950045 | | +0.18601820 |
| $e$ | 0.0579229 | $i$ | 14.84803 | | +0.14202481 | | +0.10424702 |
| $P$ | 4.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 10 | 691 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.1+ |
| 1993 09 10 | 691 | 0.1+ | 0.3− | 2004 03 20 | 704 | 0.3− | 1.4+ | 2006 08 27 | 691 | 1.0− | 0.7+ |
| 1993 09 10 | 691 | 0.1+ | 0.4− | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 08 27 | 691 | 0.4− | 0.5+ |
| 1998 12 19 | 704 | 1.4− | 1.1+ | 2004 03 20 | 704 | 0.8+ | 1.4+ | 2006 08 27 | 691 | 0.4− | 0.5+ |
| 1998 12 19 | 704 | (0.2− | 2.1+) | 2005 05 13 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.2+ |
| 1998 12 19 | 704 | (3.0− | 1.5+) | 2005 05 13 | 691 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 1.1+ | 0.4+ |
| 1998 12 19 | 704 | 1.8− | 1.1+ | 2005 05 13 | 691 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.2+ | 0.1− |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2005 05 15 | 644 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.9+ | 0.3− |
| 2002 10 15 | 644 | 0.4+ | 0.6+ | 2005 05 15 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2002 10 15 | 644 | 0.3+ | 0.5+ | 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.0 | 0.3− |
| 2002 10 16 | 644 | 1.2+ | 1.2+ | 2005 06 24 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.5+ |
| 2002 10 16 | 644 | 1.0+ | 1.3+ | 2005 06 24 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.6+ |
| 2002 10 16 | 644 | 1.1+ | 1.4+ | 2005 06 24 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 2004 01 29 | 704 | 0.5− | 0.4− | 2005 06 30 | 644 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.6− |
| 2004 01 29 | 704 | 0.8+ | 0.9+ | 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.5− |
| 2004 01 29 | 704 | 0.1+ | 0.7+ | 2005 06 30 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.5+ |
| 2004 01 29 | 704 | 0.6+ | 1.0+ | 2005 06 30 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.5+ |
| 2004 02 18 | 704 | 0.6+ | 0.8+ | 2005 06 30 | 644 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.7− | 0.4+ |
| 2004 02 18 | 704 | 0.6− | 0.1− | 2005 06 30 | 644 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.9+ | 0.2− |
| 2004 02 18 | 704 | 0.1− | 1.4+ | 2005 07 06 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.2− |
| 2004 03 18 | 704 | (1.7+ | 2.2+) | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.2+ |
| 2004 03 18 | 704 | 0.9− | 1.7+ | 2005 07 06 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | (0.2+ | 2.2+) | 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.2+ |
| 2004 03 18 | 704 | 0.2+ | 1.6+ | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.3+ |

**(144604)∗ 2004 FW$_{48}$ = 1993 OX$_{13}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62102)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.82921 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24239363 | $\omega$ | 125.65859 | | +0.92580037 | | +0.37690190 |
| $a$ | 2.5475453 | $\Omega$ | 212.22787 | | −0.36199993 | | +0.86191632 |
| $e$ | 0.0269927 | $i$ | 3.11286 | | −0.10885644 | | +0.33918316 |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 22 | 691 | 0.6+ | 0.6+ | 2004 03 20 | 704 | (3.2+ | 1.9+) | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 1993 07 22 | 691 | 0.3− | 0.7+ | 2004 03 20 | 704 | 0.1+ | 1.4+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 1993 07 24 | 691 | 0.5− | 0.3− | 2004 03 20 | 704 | 0.9+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 1993 07 24 | 691 | 0.5− | 0.3+ | 2004 03 30 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 1993 07 24 | 691 | 0.3− | 0.2+ | 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 0.5+ | 0.7+ | 2004 03 30 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 0.6+ | 0.2− | 2004 03 31 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2000 03 11 | 704 | 1.6+ | 0.2+ | 2004 03 31 | 691 | 0.5− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.8− |
| 2000 03 11 | 704 | 0.3+ | 0.0 | 2004 03 31 | 691 | 0.2− | 0.4+ | 2006 11 16 | 703 | 0.4+ | 0.1+ |
| 2000 04 05 | 704 | 0.9+ | 0.6+ | 2004 04 12 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.2− | 0.2+ |
| 2000 04 05 | 704 | 1.2+ | 0.1− | 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 11 16 | 703 | 0.2+ | 0.5− |
| 2000 04 05 | 704 | 0.8+ | 0.2+ | 2004 04 12 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.0 |
| 2000 04 05 | 704 | 0.0 | 0.5+ | 2004 04 24 | 691 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.2− | 1.2+ |
| 2001 07 25 | 691 | 0.1+ | 0.8+ | 2004 04 24 | 691 | 0.6− | 0.4+ | 2006 11 17 | 703 | 0.2+ | 1.0+ |
| 2001 07 25 | 691 | 0.2− | 0.6+ | 2004 04 24 | 691 | 0.7− | 0.3+ | 2006 11 17 | 703 | 1.1+ | 1.3+ |
| 2001 07 25 | 691 | 0.1+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | (1.4+ | 1.8+) |
| 2004 03 18 | 704 | 0.4+ | 1.5+ | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 18 | 704 | (0.5− | 1.9+) |
| 2004 03 18 | 704 | (1.1+ | 1.7+) | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2004 03 18 | 704 | 0.8+ | 1.0+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2004 03 18 | 704 | 1.3+ | 0.4+ | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 18 | 704 | (0.3+ | 1.5+) |
| 2004 03 20 | 699 | 0.8+ | 1.1− | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3+ | 1.3+ |
| 2004 03 20 | 699 | 0.3+ | 0.4− | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.8+ |
| 2004 03 20 | 699 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2004 03 20 | 699 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.5− | 0.1+ | 2006 11 21 | 704 | 1.2+ | 1.5+ |
| 2004 03 20 | 704 | 1.3+ | 0.3+ | 2006 10 28 | G96 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2004 03 20 | 704 | 0.7+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 1.3+ | 1.0+ |

**(144605)∗ 2004 FX$_{49}$ = 2000 GE$_{42}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62103)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.46202 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23787566 | $\omega$ | 332.56787 | | +0.71908987 | | +0.69479290 |
| $a$ | 2.5797010 | $\Omega$ | 343.40004 | | −0.62885101 | | +0.64256453 |
| $e$ | 0.0319291 | $i$ | 2.63557 | | −0.29572988 | | +0.32306910 |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 22 | 809 | (0.9+ | 2.8+) | 2004 03 18 | 704 | 0.0 | 0.3+ | 2005 07 11 | 691 | 0.2− | 0.3+ |
| 1993 09 22 | 809 | 0.5+ | 0.8+ | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.4− |
| 1993 09 22 | 809 | 1.7− | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.5− |
| 1998 12 18 | 561 | 0.2− | 0.5− | 2004 03 20 | 704 | 1.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 1998 12 18 | 561 | 1.0+ | 0.1− | 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2000 04 05 | 704 | 1.3+ | 0.2− | 2004 03 20 | 704 | 0.2+ | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.3− | 0.9+ | 2004 03 24 | 699 | 0.7+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.2+ | 0.9+ | 2004 03 24 | 699 | 0.7+ | 0.6− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2000 04 05 | 704 | 0.5− | 0.0 | 2004 03 24 | 699 | 0.9− | 1.4+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2000 04 06 | 704 | 0.3− | 0.7+ | 2004 03 24 | 699 | 0.9+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.6+ |
| 2000 04 06 | 704 | 0.6− | 0.7+ | 2004 03 27 | 704 | 0.9+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 0.5+ | 0.8+ | 2004 03 27 | 704 | 0.8+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2000 04 06 | 704 | 0.0 | 0.4+ | 2004 03 27 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 08 16 | 704 | (0.0 | 1.6+) | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 11 18 | 691 | 0.1− | 0.4+ |
| 2001 08 16 | 704 | 0.2+ | 0.8+ | 2004 03 27 | 704 | 1.1+ | 0.6− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2001 08 16 | 704 | 0.2+ | 1.4+ | 2004 04 12 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2001 08 16 | 704 | 0.6+ | 1.3+ | 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.6− | 0.9+ | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.4− | 0.6+ | 2004 04 19 | 691 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 2001 08 24 | 699 | 0.3+ | 0.0 | 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.1+ |
| 2001 08 24 | 699 | 0.1− | 1.3+ | 2004 04 19 | 691 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.5+ | 0.3− |
| 2001 08 24 | 699 | 0.6− | 0.2− | 2005 07 11 | 691 | 0.2− | 0.3+ | 2006 11 27 | 704 | 0.0 | 0.3+ |
| 2004 03 18 | 704 | 0.4− | 0.8+ | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 11 27 | 704 | 0.4+ | 1.0+ |

**(144606)∗ 2004 FF$_{50}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.15961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17270796 | $\omega$ | 291.18612 | | +0.36141167 | +0.93240635 | |
| $a$ | 3.1934575 | $\Omega$ | 0.00082 | | −0.75120155 | +0.29117659 | |
| $e$ | 0.2119910 | $i$ | 12.88669 | | −0.55233851 | +0.21409015 | |
| $P$ | 5.71 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.1− | 0.7− | 2004 03 20 | 704 | 0.0 | 0.3− | 2005 08 15 | E12 | 0.0 | 0.2− |
| 1998 03 29 | 704 | 1.1+ | 0.2− | 2004 03 20 | 704 | 0.5− | 0.9− | 2005 08 15 | E12 | 0.6− | 0.4+ |
| 1998 03 29 | 704 | (2.1− | 0.2+) | 2004 03 20 | 704 | 0.3− | 0.9+ | 2005 08 15 | E12 | 0.1− | 0.2+ |
| 1998 03 29 | 704 | 1.1− | 0.8+ | 2004 03 20 | 704 | 0.0 | 0.5− | 2005 08 15 | E12 | 0.4− | 0.2− |
| 1998 03 29 | 704 | (4.3− | 0.5−) | 2004 03 20 | 704 | 0.3+ | 0.5+ | 2005 08 24 | E12 | 0.2− | 0.6+ |
| 2000 10 03 | 704 | 0.5− | 0.6+ | 2004 03 20 | 704 | 0.8+ | 0.1+ | 2005 08 24 | E12 | 0.7− | 1.2− |
| 2000 10 03 | 704 | 0.3+ | 1.0+ | 2004 03 20 | 704 | 0.7− | 0.6+ | 2005 08 24 | E12 | 0.1+ | 0.4+ |
| 2000 10 03 | 704 | 0.3− | 0.9+ | 2004 03 27 | 699 | (1.1+ | 2.2−) | 2005 08 24 | E12 | 0.0 | 0.5+ |
| 2000 10 03 | 704 | 1.0− | 0.8+ | 2004 03 27 | 699 | 0.8+ | 0.2+ | 2005 08 31 | 699 | (0.5− | 1.7+) |
| 2003 02 01 | 644 | 0.8− | 0.8+ | 2004 03 31 | 704 | (2.1+ | 1.6+) | 2005 08 31 | 699 | 0.3− | 0.6+ |
| 2003 02 01 | 644 | 0.1+ | 0.7+ | 2004 03 31 | 704 | (0.2− | 1.5+) | 2005 08 31 | 699 | 1.0− | 0.4− |
| 2003 02 01 | 644 | 0.3− | 0.6+ | 2004 03 31 | 704 | 0.1+ | 0.6+ | 2005 08 31 | 699 | 0.1− | 0.6− |
| 2004 03 18 | 704 | (1.5+ | 0.1+) | 2004 03 31 | 704 | 0.7+ | 0.3− | 2005 09 05 | E12 | 0.4+ | 0.4+ |
| 2004 03 18 | 704 | 0.2+ | 0.8+ | 2004 03 31 | 704 | 0.2+ | 0.0 | 2005 09 05 | E12 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | 0.7+ | 0.4+ | 2004 04 17 | 704 | 0.4− | 0.4− | 2005 09 05 | E12 | 0.2− | 1.1+ |
| 2004 03 18 | 704 | 0.7+ | 0.6+ | 2004 04 17 | 704 | 0.2− | 0.1+ | 2005 09 05 | E12 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.0 | 1.5+ | 2004 04 17 | 704 | 0.2− | 1.0+ | 2006 09 28 | 703 | 1.0+ | 0.6− |
| 2004 03 20 | 704 | 0.2+ | 0.0 | 2004 04 17 | 704 | 0.5− | 0.3+ | 2006 09 28 | 703 | 1.0− | 0.6+ |
| 2004 03 20 | 704 | 0.7− | 0.0 | 2004 04 21 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.4+ | 0.3+ |
| 2004 03 20 | 704 | 0.3− | 0.5+ | 2004 04 21 | 704 | 0.0 | 0.9+ | 2006 09 28 | 703 | (3.1− | 3.2+) |
| 2004 03 20 | 704 | 0.9+ | 0.1+ | 2004 04 21 | 704 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.4− | 0.7+ |
| 2004 03 20 | 704 | 0.0 | 0.5+ | 2004 04 21 | 704 | 0.2+ | 0.2− | 2006 10 19 | 703 | (1.6− | 1.0+) |
| 2004 03 20 | 704 | 0.6+ | 0.6+ | 2005 07 05 | E12 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.5+ | 0.5+ |
| 2004 03 20 | 704 | 0.9+ | 0.1+ | 2005 07 05 | E12 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 1.0− | 0.2+ |
| 2004 03 20 | 704 | 0.0 | 0.7+ | 2005 07 05 | E12 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.1+ |
| 2004 03 20 | 704 | 0.0 | 0.4− | 2005 07 05 | E12 | 0.2− | 0.5+ | 2006 11 15 | 703 | 0.9+ | 1.1+ |
| 2004 03 20 | 704 | 0.1− | 0.7− | 2005 07 27 | E12 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.8+ | 1.1+ |
| 2004 03 20 | 704 | 0.2− | 0.9− | 2005 07 27 | E12 | 0.2− | 0.1− | 2006 11 15 | 703 | 1.1− | 0.6− |
| 2004 03 20 | 704 | 0.6+ | 0.4+ | 2005 07 27 | E12 | 0.3− | 0.2− | 2006 11 21 | 703 | 0.2− | 0.2+ |
| 2004 03 20 | 704 | 0.4+ | 0.8+ | 2005 07 27 | E12 | 0.2+ | 0.1+ | 2006 11 21 | 703 | 1.0− | 0.5+ |
| 2004 03 20 | 704 | 0.3+ | 0.6+ | 2005 08 10 | E12 | 0.2+ | 0.2+ | 2006 11 21 | 703 | 0.0 | 0.6− |
| 2004 03 20 | 704 | 0.7+ | 0.5− | 2005 08 10 | E12 | 0.3+ | 0.2+ | 2006 11 21 | 703 | 0.4− | 0.8+ |
| 2004 03 20 | 704 | 1.3+ | 0.0 | 2005 08 10 | E12 | 0.1− | 0.2+ | | | | |
| 2004 03 20 | 704 | 0.4− | 0.8− | 2005 08 10 | E12 | 0.0 | 0.2+ | | | | |

**(144607)∗ 2004 FW$_{51}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.28758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22079284 | $\omega$ | 62.00969 | | +0.48397102 | −0.87507378 | |
| $a$ | 2.7111032 | $\Omega$ | 359.01462 | | +0.69122529 | +0.38524933 | |
| $e$ | 0.1484279 | $i$ | 14.25278 | | +0.53663735 | +0.29296558 | |
| $P$ | 4.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.5− | 0.5− | 2004 02 26 | 704 | (0.8+ | 1.7+) | 2004 03 30 | 691 | 0.3+ | 0.4+ |
| 1995 03 23 | 691 | 0.3− | 0.8− | 2004 03 19 | 704 | 0.2+ | 0.6− | 2004 04 12 | 691 | 0.3+ | 0.4+ |
| 1995 03 23 | 691 | 0.2− | 0.6− | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2004 04 12 | 691 | 0.2+ | 0.8+ |
| 1995 03 29 | 691 | (3.1+ | 4.9−) | 2004 03 19 | 704 | 0.2+ | 0.5− | 2004 04 12 | 691 | 0.3+ | 0.5+ |
| 1995 03 29 | 691 | 0.0 | 0.2− | 2004 03 20 | 704 | 0.1+ | 0.0 | 2004 04 24 | 691 | 0.3+ | 0.3+ |
| 1995 03 29 | 691 | 1.4− | 1.3− | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2004 04 24 | 691 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | (0.1− | 1.5−) | 2004 04 24 | 691 | 0.3− | 0.1+ |
| 2002 10 05 | 704 | 0.6− | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 08 16 | 644 | 0.2+ | 0.5+ |
| 2002 10 05 | 704 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.5− | 0.3− | 2006 08 16 | 644 | 0.3+ | 0.6+ |
| 2002 10 10 | 704 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.8+ | 0.3− | 2006 08 16 | 644 | 0.0 | 0.6+ |
| 2002 10 10 | 704 | 1.0− | 0.1+ | 2004 03 22 | 704 | 1.2+ | 0.9+ | 2006 08 17 | 644 | 0.2− | 0.7+ |
| 2002 10 10 | 704 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.7+ | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 2002 10 15 | 704 | (2.0+ | 0.4−) | 2004 03 22 | 704 | 0.8+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.5+ |
| 2002 10 15 | 704 | 0.5+ | 0.6− | 2004 03 22 | 704 | 1.1+ | 0.5+ | 2006 08 30 | 699 | 0.4− | 0.8− |
| 2002 10 15 | 704 | 0.0 | 0.6− | 2004 03 22 | 704 | 0.7+ | 0.1+ | 2006 08 30 | 699 | 1.4− | 1.3+ |
| 2002 10 15 | 704 | 0.1+ | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.2− | 2006 08 30 | 699 | 0.1− | 0.9+ |
| 2002 11 07 | 704 | 0.7− | 0.3+ | 2004 03 23 | 691 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 0.0 | 0.3+ |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.9+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.7− | 0.1+ | 2004 03 23 | 691 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2002 11 25 | 644 | 0.2+ | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2002 11 25 | 644 | 0.2+ | 0.7+ | 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2002 11 25 | 644 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.4− | 0.5− |
| 2004 02 26 | 704 | 0.6+ | 0.4+ | 2004 03 30 | 691 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2004 02 26 | 704 | 0.4− | 0.8+ | 2004 03 30 | 691 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.1− |

**(144608)∗ 2004 FN$_{52}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.54129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22582031 | $\omega$ | 156.29668 | | −0.97154381 | −0.23261170 | |
| $a$ | 2.6707140 | $\Omega$ | 10.55053 | | +0.15881998 | −0.77963829 | |
| $e$ | 0.0268762 | $i$ | 14.11690 | | +0.17572375 | −0.58142578 | |
| $P$ | 4.36 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 704 | 0.8+ | 0.8− | 2004 03 22 | 704 | 0.7+ | 0.4+ | 2006 10 19 | A50 | 0.8+ | 0.4− |
| 1999 01 14 | 704 | 0.4− | 0.6+ | 2004 03 22 | 704 | (1.5+ | 1.1+) | 2006 10 19 | A50 | 0.2+ | 0.7+ |
| 1999 01 14 | 704 | (0.1+ | 2.8+) | 2004 03 22 | 704 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.7+ |
| 1999 01 14 | 704 | 0.6− | 1.7− | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.3+ |
| 1999 01 14 | 704 | 1.4− | 0.6+ | 2004 03 22 | 704 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2001 08 17 | 644 | 0.1− | 0.5+ | 2004 03 24 | 699 | 0.6− | 0.8− | 2006 10 21 | 644 | 0.2− | 0.6+ |
| 2001 08 17 | 644 | 0.1+ | 0.5+ | 2004 03 24 | 699 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 08 17 | 644 | 0.1− | 0.4+ | 2004 03 24 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.8+ |
| 2001 09 11 | 704 | (2.0− | 0.2−) | 2004 03 24 | 699 | 0.8− | 0.8+ | 2006 10 22 | 644 | 0.5− | 0.6+ |
| 2001 09 11 | 704 | (2.0− | 0.8−) | 2004 03 28 | 704 | 0.6+ | 0.7− | 2006 10 22 | 644 | 0.5− | 0.6+ |
| 2001 09 11 | 704 | 1.2− | 1.3+ | 2004 03 28 | 704 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2001 09 11 | 704 | (1.7− | 1.8+) | 2004 03 28 | 704 | 0.8− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 12 07 | 704 | (1.6+ | 1.7+) | 2004 03 28 | 704 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2002 12 07 | 704 | 0.7− | 0.0 | 2004 04 21 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.6+ |
| 2002 12 07 | 704 | 1.2+ | 0.7+ | 2004 04 21 | 704 | 0.9+ | 0.7− | 2006 10 27 | 703 | 0.3+ | 0.4+ |
| 2002 12 07 | 704 | 0.1+ | 0.3− | 2004 04 21 | 704 | 0.8+ | 0.8+ | 2006 10 27 | 703 | 0.5− | 1.0+ |
| 2003 01 27 | 645 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.6− |
| 2003 01 27 | 645 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.6− | 0.8− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 23 | 703 | 0.2− | 1.2− |
| 2003 01 28 | 645 | 0.1+ | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.2− | 2006 11 23 | 703 | 0.6− | 0.5− |
| 2004 03 19 | 704 | 0.3− | 0.3+ | 2004 04 22 | 691 | 0.4+ | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 0.5− | 0.9+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.4− | 0.4+ |
| 2004 03 19 | 704 | 0.5+ | 0.6+ | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 26 | 104 | 0.6+ | 0.2− |
| 2004 03 19 | 704 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.2+ | 2006 11 26 | 104 | 0.9+ | 0.3+ |
| 2004 03 20 | 704 | 0.9+ | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 26 | 104 | 1.2− | 0.5+ |
| 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.1− | 2006 11 27 | 104 | 0.0 | 0.6+ |
| 2004 03 20 | 704 | 1.4+ | 0.9+ | 2006 10 19 | 703 | 0.2− | 1.4+ | 2006 11 27 | 104 | 0.1− | 0.5+ |
| 2004 03 20 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 1.4− | 0.7− | 2006 11 27 | 104 | 0.3− | 0.2− |
| 2004 03 20 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.2+ | | | | |

**(144609)∗ 2004 FT$_{52}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 158.46278 | | | (2000.0) | | |
| $n$ | 0.22906425 | $\omega$ | 205.18271 | | −0.45207443 | +0.89041933 |
| $a$ | 2.6454395 | $\Omega$ | 38.00229 | | −0.80319208 | −0.38064286 |
| $e$ | 0.0199336 | $i$ | 4.91451 | | −0.38795771 | −0.24952843 |
| $P$ | 4.30 | $H$ | 15.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | 0.4− | 0.7+ | 2004 03 28 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2001 08 25 | 644 | 0.5− | 0.6+ | 2004 03 28 | 704 | 0.3+ | 0.9+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2001 08 25 | 644 | 0.3− | 0.9+ | 2004 03 28 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 0.1+ | 0.4+ | 2004 03 28 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | (0.3+ | 2.0+) | 2004 04 19 | 704 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | (0.3+ | 2.3+) | 2004 04 19 | 704 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 09 16 | 704 | (0.3+ | 3.9+) | 2004 04 19 | 704 | 0.7+ | 1.3− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2004 03 19 | 704 | 0.4+ | 0.4+ | 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 0.0 | 0.7+ | 2004 04 20 | 704 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2004 03 19 | 704 | 0.7+ | 0.1+ | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.4− | 0.9− | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2004 03 20 | 704 | 1.1+ | 0.2+ | 2005 06 28 | 644 | 0.0 | 0.8+ | 2006 11 13 | 691 | 0.2− | 0.3+ |
| 2004 03 20 | 704 | 0.0 | 0.2+ | 2005 06 28 | 644 | 0.7− | 1.0+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | 0.7− | 0.4+ | 2005 06 28 | 644 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2004 03 20 | 704 | 0.4− | 0.8+ | 2005 07 10 | E12 | 0.1+ | 1.1+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2004 03 28 | 704 | 0.8+ | 1.1+ | 2005 07 10 | E12 | 0.5− | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2004 03 28 | 704 | (1.7− | 1.3+) | 2005 07 10 | E12 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.1+ |
| 2004 03 28 | 704 | (1.8− | 0.9+) | 2005 07 10 | E12 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2004 03 28 | 704 | (1.5− | 0.2+) | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.3− |

**(144610)∗ 2004 FV$_{52}$ = 2001 QW$_{251}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62104)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.27871 | | | (2000.0) | | |
| $n$ | 0.22398088 | $\omega$ | 229.40890 | | +0.73705157 | −0.67545708 |
| $a$ | 2.6853161 | $\Omega$ | 172.97397 | | +0.66242252 | +0.71537499 |
| $e$ | 0.0958062 | $i$ | 10.66772 | | +0.13398277 | +0.17887528 |
| $P$ | 4.40 | $H$ | 15.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | (1.2− | 1.6+) | 2004 03 22 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 1.2+ | 0.4+ |
| 2001 07 25 | 608 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 0.3+ | 0.2− |
| 2001 07 25 | 608 | 0.4− | 0.7+ | 2004 03 22 | 704 | 0.7+ | 1.2+ | 2006 09 26 | 704 | 0.2+ | 0.7+ |
| 2001 07 25 | 608 | (0.3− | 2.1+) | 2004 03 24 | 699 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.3− | 0.7− |
| 2001 07 25 | 608 | 0.4− | 1.3+ | 2004 03 24 | 699 | 0.9− | 0.9− | 2006 09 29 | 699 | 1.2+ | 0.1+ |
| 2001 07 25 | 608 | 0.1− | 1.2+ | 2004 03 24 | 699 | 0.8− | 0.1+ | 2006 09 29 | 699 | 0.8+ | 0.5+ |
| 2001 08 16 | 644 | (0.5− | 2.4+) | 2004 03 24 | 699 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.7+ | 0.2− |
| 2001 08 16 | 644 | (1.1− | 2.5+) | 2004 03 28 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.6− | 0.2+ |
| 2001 08 16 | 644 | (0.6− | 2.1+) | 2004 03 28 | 704 | 0.8+ | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.2− |
| 2001 08 25 | 704 | 0.4+ | 0.8+ | 2004 03 28 | 704 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.2− | 0.6+ | 2004 03 28 | 704 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 1.3+ | 2004 03 28 | 704 | 0.7− | 0.7− | 2006 09 30 | 703 | 0.5+ | 0.5− |
| 2001 08 25 | 704 | 0.1− | 0.6+ | 2004 03 29 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.8− |
| 2001 08 27 | 644 | (1.1− | 2.6−) | 2004 03 29 | 704 | 0.7+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.5− |
| 2001 08 27 | 644 | (1.4− | 2.6−) | 2004 03 29 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.4+ | 0.8− |
| 2001 08 27 | 644 | (1.3− | 2.5−) | 2004 03 29 | 704 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.8+ | 1.0− |
| 2002 11 30 | 704 | 0.5− | 0.8+ | 2004 03 29 | 704 | 1.1− | 0.2− | 2006 10 01 | 704 | (0.2+ | 1.5+) |
| 2002 11 30 | 704 | 0.1− | 0.4+ | 2004 03 30 | 704 | 1.4+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.0 |
| 2002 11 30 | 704 | 0.0 | 0.2+ | 2004 03 30 | 704 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2002 11 30 | 704 | (1.0+ | 2.1−) | 2004 03 30 | 704 | 0.5+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.2+ | 0.5− | 2004 03 30 | 704 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2002 12 14 | 704 | (1.6+ | 0.1+) | 2004 03 30 | 704 | 0.4+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 12 14 | 704 | 0.2+ | 0.1− | 2004 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2004 04 16 | 691 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 12 14 | 704 | (1.5− | 0.8−) | 2004 04 16 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 12 16 | 608 | 0.3+ | 0.3+ | 2004 04 21 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 12 16 | 608 | 0.4+ | 0.3+ | 2004 04 21 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 12 16 | 608 | 0.3+ | 0.4+ | 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2003 01 26 | 644 | 0.3− | 0.7+ | 2006 08 06 | 699 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2003 01 26 | 644 | 0.0 | 0.6+ | 2006 08 06 | 699 | 1.1− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2003 01 26 | 644 | 0.1− | 0.2− | 2006 08 06 | 699 | 0.1+ | 1.5+ | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2003 02 04 | 644 | 0.1+ | 0.2− | 2006 08 06 | 699 | (1.6+ | 0.1+) | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 02 04 | 644 | 0.7− | 0.5− | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 02 04 | 644 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 02 26 | 704 | 0.7− | 0.4+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2004 02 26 | 704 | 1.1+ | 1.3+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2004 02 26 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.7+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2004 02 26 | 704 | 0.9+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2004 02 26 | 704 | 0.5− | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.9− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2004 03 12 | 644 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2004 03 12 | 644 | 0.0 | 0.1+ | 2006 09 16 | 699 | (0.2− | 1.6+) | 2006 10 28 | 703 | 0.0 | 0.8+ |
| 2004 03 12 | 644 | 0.1− | 0.3+ | 2006 09 16 | 699 | 1.1+ | 0.9+ | 2006 10 28 | 703 | 0.2− | 0.7+ |
| 2004 03 15 | 703 | (1.7+ | 0.5+) | 2006 09 16 | 699 | 0.1− | 1.4+ | 2006 10 28 | 703 | 0.4+ | 0.9+ |
| 2004 03 15 | 703 | 0.4− | 0.9+ | 2006 09 18 | 703 | 0.9− | 0.1− | 2006 10 28 | 703 | 0.8+ | 0.4− |
| 2004 03 15 | 703 | 0.3+ | 0.8+ | 2006 09 18 | 703 | 1.0− | 0.7+ | 2006 11 07 | 644 | 0.8+ | 0.2− |
| 2004 03 15 | 703 | 0.6− | 1.4+ | 2006 09 18 | 703 | 0.6− | 0.6+ | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2004 03 19 | 704 | (2.1+ | 0.9+) | 2006 09 18 | 703 | 0.5− | 0.8+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2004 03 19 | 704 | 1.0+ | 0.5+ | 2006 09 18 | 699 | 0.7+ | 0.8+ | 2006 11 10 | 704 | 0.5− | 0.4+ |
| 2004 03 19 | 704 | 1.3+ | 1.2− | 2006 09 18 | 699 | 0.5− | 0.6+ | 2006 11 10 | 704 | 0.6− | 0.2+ |
| 2004 03 20 | 704 | 0.9+ | 1.2+ | 2006 09 18 | 699 | (0.2− | 1.6−) | 2006 11 10 | 704 | 0.6+ | 0.7+ |
| 2004 03 20 | 704 | 0.7+ | 1.1+ | 2006 09 18 | 699 | 0.7+ | 0.1+ | 2006 11 10 | 704 | 0.3− | 0.6+ |
| 2004 03 20 | 704 | 0.3− | 0.4+ | 2006 09 22 | 704 | 0.2− | 0.4− | 2006 11 10 | 704 | 0.7− | 0.2+ |
| 2004 03 20 | 704 | 0.5− | 0.1− | 2006 09 22 | 704 | 0.3− | 0.5+ | 2006 11 16 | 703 | 0.6+ | 0.2− |
| 2004 03 20 | 704 | 0.1− | 0.8+ | 2006 09 22 | 704 | 1.0+ | 1.4− | 2006 11 16 | 703 | 0.2+ | 0.3+ |
| 2004 03 22 | 704 | 0.3+ | 1.0+ | 2006 09 22 | 704 | 0.9− | 1.2+ | 2006 11 16 | 703 | 1.4− | 0.1+ |
| 2004 03 22 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.8+ |

**(144611)∗ 2004 FZ$_{52}$ = 2000 AT$_{76}$ = 2002 TW$_{251}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62105)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.64759 | | | (2000.0) | | |
| $n$ | 0.28803549 | $\omega$ | 340.86569 | | −0.06606518 | −0.99616440 |
| $a$ | 2.2707643 | $\Omega$ | 112.88866 | | +0.92340622 | −0.08282570 |
| $e$ | 0.1135092 | $i$ | 3.57061 | | +0.37809569 | +0.02822033 |
| $P$ | 3.42 | $H$ | 16.9 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 21 | 691 | 0.4+ | 0.1+ | 2004 03 19 | 704 | 1.1+ | 0.3− | 2005 07 12 | G96 | 0.8− | 0.0 |
| 1992 11 21 | 691 | 0.2+ | 0.4− | 2004 03 19 | 704 | 0.4+ | 0.2− | 2005 07 12 | G96 | 0.1− | 0.1+ |
| 1992 11 21 | 691 | 0.8− | 0.1− | 2004 03 20 | 704 | 0.6− | 0.7+ | 2005 07 12 | G96 | 0.4− | 0.0 |
| 2000 01 05 | 704 | 0.2+ | 0.6+ | 2004 03 20 | 704 | (2.0− | 1.0−) | 2005 07 18 | 644 | 0.4− | 0.4+ |
| 2000 01 05 | 704 | 0.3+ | 0.4+ | 2004 03 20 | 704 | 0.4− | 0.1+ | 2005 07 18 | 644 | 0.7− | 0.0 |
| 2000 01 05 | 704 | 0.2− | 0.7+ | 2004 03 20 | 704 | 1.0− | 0.4− | 2005 07 18 | 644 | 0.5− | 0.6+ |
| 2000 01 05 | 704 | 0.3+ | 1.0+ | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2005 07 27 | 644 | 0.4− | 0.2+ |
| 2000 01 05 | 704 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2005 07 27 | 644 | 0.5− | 0.2+ |
| 2000 01 06 | 704 | 0.2+ | 0.5− | 2004 03 22 | 704 | (0.2− | 1.9+) | 2005 07 27 | 644 | 0.2− | 0.2+ |
| 2000 01 06 | 704 | 0.6− | 0.8+ | 2004 03 22 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.6+ | 0.3+ |
| 2000 01 06 | 704 | 0.3− | 0.5+ | 2004 03 26 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.8+ |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2004 03 26 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.8+ |
| 2002 10 03 | 704 | 0.1− | 0.3− | 2004 03 26 | 691 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2004 03 28 | 704 | (0.7+ | 2.0+) | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 10 08 | 699 | 0.4− | 1.4+ | 2004 03 28 | 704 | 0.9+ | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2002 10 08 | 699 | 0.9+ | 0.6+ | 2004 03 28 | 704 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 10 08 | 699 | 0.2+ | 1.2+ | 2004 03 28 | 704 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2002 10 08 | 699 | 0.2+ | 0.4+ | 2004 03 28 | 704 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.1− | 0.1− | 2004 04 11 | 644 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 10 11 | 704 | 0.3− | 0.6+ | 2004 04 11 | 644 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.8− | 0.1+ |
| 2002 10 11 | 704 | (2.5− | 0.2+) | 2004 04 11 | 644 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2004 04 20 | 704 | 1.4+ | 0.6+ | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2002 10 11 | 704 | 0.4+ | 0.8+ | 2004 04 20 | 704 | 0.3+ | 0.5+ | 2006 11 27 | 703 | 2.5− | 0.9− |
| 2002 10 11 | 645 | 0.1− | 0.2+ | 2004 04 20 | 704 | 0.5+ | 0.3− | 2006 11 27 | 703 | 0.5− | 0.9− |
| 2002 10 11 | 645 | 0.1− | 0.2+ | 2004 04 26 | 691 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 03 19 | 704 | (1.7+ | 0.7+) | 2004 04 26 | 691 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2004 03 19 | 704 | 1.2+ | 0.3+ | 2004 04 26 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2004 03 19 | 704 | 0.1− | 0.0 | 2005 07 12 | G96 | 0.9− | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.2− |

**(144612)∗ 2004 FD$_{56}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.91346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20928662 | $\omega$ | 88.88998 | | −0.70447437 | +0.70805013 | |
| $a$ | 2.8095822 | $\Omega$ | 136.18380 | | −0.67597559 | −0.64843300 | |
| $e$ | 0.1263520 | $i$ | 4.04137 | | −0.21627037 | −0.27964203 | |
| $P$ | 4.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 03 24 | 699 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.1+ | 0.0 |
| 2001 10 14 | 645 | 0.1− | 0.0 | 2004 03 24 | 699 | 0.4+ | 0.3+ | 2005 07 12 | G96 | 0.1+ | 0.0 |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2004 03 24 | 699 | 0.1+ | 0.8+ | 2005 07 12 | G96 | 0.2+ | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 04 10 | 644 | 0.7+ | 1.1+ | 2005 07 12 | G96 | 0.1+ | 0.1+ |
| 2001 10 25 | 645 | 0.0 | 0.1+ | 2004 04 10 | 644 | 0.1− | 0.7+ | 2005 07 12 | G96 | 0.1+ | 0.1+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2004 04 10 | 644 | 0.2+ | 0.8+ | 2005 07 12 | G96 | 0.6+ | 0.1+ |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2005 07 07 | 599 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.6+ | 0.2− |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2005 07 07 | 599 | 0.1+ | 0.3− | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 0.1+ | 0.7+ | 2005 07 07 | 599 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 0.2− | 0.8+ | 2005 07 07 | 599 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.2− | 0.1+ |
| 2004 03 16 | 704 | 0.0 | 0.5+ | 2005 07 11 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.4+ |
| 2004 03 16 | 704 | 0.6+ | 0.2+ | 2005 07 11 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2004 03 22 | 704 | 0.4+ | 0.7+ | 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.5+ |
| 2004 03 22 | 704 | 0.4+ | 0.1− | 2005 07 12 | 291 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.4− | 0.2+ |
| 2004 03 22 | 704 | 0.2− | 0.2+ | 2005 07 12 | 291 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2004 03 22 | 704 | 0.1− | 0.9+ | 2005 07 12 | 291 | 0.5− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2004 03 22 | 704 | 0.1− | 0.8+ | 2005 07 12 | G96 | 0.6+ | 0.0 | 2006 11 01 | G96 | 0.8− | 0.4− |
| 2004 03 24 | 699 | 1.3+ | 1.2+ | 2005 07 12 | G96 | 0.6+ | 0.1− | 2006 11 01 | G96 | 0.1− | 1.2+ |

**(144613)∗ 2004 FJ$_{58}$**

Discovered 2004 Mar. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.83050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17474833 | $\omega$ | 119.08877 | | −0.18877983 | +0.98179322 | |
| $a$ | 3.1685510 | $\Omega$ | 140.01202 | | −0.91200221 | −0.16732048 | |
| $e$ | 0.1809464 | $i$ | 1.87954 | | −0.36416226 | −0.08992174 | |
| $P$ | 5.64 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 691 | 0.1+ | 0.1+ | 2004 03 29 | 691 | 0.0 | 0.1+ | 2005 07 12 | 703 | 0.3+ | 0.2− |
| 1998 03 24 | 691 | 0.4+ | 0.1+ | 2004 03 29 | 691 | 0.3+ | 0.1+ | 2005 07 12 | 703 | 0.9− | 0.3+ |
| 1998 03 24 | 691 | 0.2+ | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2005 07 12 | 703 | 0.1+ | 0.3− |
| 1998 04 03 | 691 | 0.1+ | 0.3− | 2004 04 11 | 644 | 0.7+ | 0.4+ | 2005 07 12 | 703 | (0.1+ | 1.7−) |
| 1998 04 03 | 691 | 0.0 | 0.3+ | 2004 04 11 | 644 | 0.4+ | 0.2+ | 2005 09 29 | G96 | 0.3+ | 0.3+ |
| 1998 04 03 | 691 | 0.0 | 0.2+ | 2004 04 11 | 644 | 0.1+ | 0.4+ | 2005 09 29 | G96 | 0.2+ | 0.7+ |
| 2000 09 26 | 704 | 0.2+ | 0.6− | 2004 04 12 | 699 | (1.1− | 1.6+) | 2005 09 29 | G96 | 0.6+ | 0.5+ |
| 2000 09 26 | 704 | 0.5+ | 0.7− | 2004 04 12 | 699 | 0.8+ | 0.8+ | 2005 09 29 | G96 | 0.0 | 0.6+ |
| 2000 09 26 | 704 | 0.8− | 0.5− | 2004 04 12 | 699 | 0.1− | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2003 02 01 | 645 | 0.2− | 0.1+ | 2004 04 12 | 699 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.4+ |
| 2003 02 01 | 645 | 0.1− | 0.0 | 2004 04 19 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.5+ |
| 2004 03 17 | 704 | 0.7+ | 0.1+ | 2004 04 19 | 704 | 0.8− | 1.0+ | 2006 09 26 | G96 | 0.3+ | 0.4+ |
| 2004 03 17 | 704 | 1.4− | 1.4+ | 2004 04 19 | 704 | 0.5− | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2004 03 17 | 704 | 0.1− | 0.1− | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2004 03 17 | 704 | 0.7− | 1.1+ | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2004 03 17 | 704 | 0.7+ | 0.1+ | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 2004 03 17 | 704 | 0.0 | 1.3+ | 2004 04 20 | 691 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.7+ |
| 2004 03 17 | 704 | 0.2+ | 0.6− | 2005 06 27 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.2− | 0.7+ |
| 2004 03 17 | 704 | 0.2− | 0.3+ | 2005 06 27 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.6+ |
| 2004 03 17 | 704 | 0.3+ | 0.7+ | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 0.1+ | 0.2+ | 2005 07 02 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.4+ | 0.2− |
| 2004 03 18 | 704 | 0.8+ | 1.1+ | 2005 07 02 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.7+ |
| 2004 03 18 | 704 | (1.2− | 3.0+) | 2005 07 02 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.3+ |
| 2004 03 18 | 704 | (2.1− | 1.9−) | 2005 07 03 | G96 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2004 03 22 | 704 | 0.4+ | 0.1+ | 2005 07 03 | G96 | 0.7− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2004 03 22 | 704 | 0.2+ | 0.2− | 2005 07 03 | G96 | 1.3− | 0.8− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2004 03 22 | 704 | 0.3− | 0.9− | 2005 07 03 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2004 03 22 | 704 | 0.4+ | 0.4− | 2005 07 04 | 644 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2004 03 22 | 704 | 1.4+ | 0.8+ | 2005 07 04 | 644 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.5+ |
| 2004 03 27 | 704 | (1.7+ | 2.4+) | 2005 07 04 | 644 | 0.1− | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2004 03 27 | 704 | (0.1+ | 1.8+) | 2005 07 07 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2004 03 27 | 704 | 1.2− | 1.0+ | 2005 07 07 | 691 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2004 03 27 | 704 | 1.5+ | 0.3+ | 2005 07 07 | 691 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.3− |

**(144614)∗ 2004 FM$_{61}$ = 2002 YY$_{22}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69701)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.88740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20286541 | $\omega$ | 225.39511 | | +0.77619144 | +0.62789957 | |
| $a$ | 2.8685607 | $\Omega$ | 95.62454 | | −0.56098085 | +0.72915879 | |
| $e$ | 0.0573976 | $i$ | 3.29354 | | −0.28779737 | +0.27215729 | |
| $P$ | 4.86 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1+ | 0.5− | 2004 02 23 | 704 | 1.2+ | 0.9+ | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2001 09 16 | 704 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.7+ | 1.3+ | 2006 10 01 | 691 | 0.4− | 0.6+ |
| 2001 09 16 | 704 | 1.4+ | 0.6+ | 2004 03 19 | 704 | 0.7+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 2001 10 17 | 644 | 0.1− | 0.9+ | 2004 03 19 | 704 | 1.4+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 10 17 | 644 | 0.3− | 1.1+ | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 10 17 | 644 | 0.1− | 0.9+ | 2004 03 19 | 704 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.6− | 0.3− | 2004 03 22 | 704 | 0.2− | 1.0− | 2006 10 21 | 703 | 0.6+ | 0.9− |
| 2001 10 24 | 704 | 0.4− | 0.8− | 2004 03 22 | 704 | 1.0+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 1.2− |
| 2001 10 24 | 704 | 0.9− | 0.2− | 2004 03 22 | 704 | 0.3− | 0.5− | 2006 10 21 | 703 | 0.5− | 0.1+ |
| 2002 12 31 | 704 | 0.7+ | 1.1− | 2004 03 22 | 704 | 0.4+ | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | 0.2− | 1.0− | 2004 03 28 | 704 | 1.1− | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | 0.5− | 0.5− | 2004 03 28 | 704 | 0.8+ | 0.8+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2003 01 04 | 704 | 0.8+ | 0.0 | 2004 03 28 | 704 | 0.6− | 0.9+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.0 | 0.4+ | 2004 03 28 | 704 | 1.0− | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.9− | 2004 03 28 | 704 | 0.3− | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2003 01 04 | 704 | 0.3− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.6− | 0.9+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.2− |

**(144615)∗ 2004 FD$_{62}$ = 2002 VM$_{130}$ = 2002 VT$_{92}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62106)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.94644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22542384 | $\omega$ | 21.41630 | | −0.96621236 | −0.25581589 | |
| $a$ | 2.6738446 | $\Omega$ | 143.71549 | | +0.22807572 | −0.90549532 | |
| $e$ | 0.1390902 | $i$ | 3.05066 | | +0.12006310 | −0.33858007 | |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.1+ | 0.5− | 2004 04 03 | 608 | 0.1+ | 0.0 | 2004 04 25 | 683 | 0.6− | 1.3+ |
| 1995 02 02 | 691 | 0.2− | 0.5− | 2004 04 10 | 644 | 0.2+ | 0.1+ | 2004 04 25 | 683 | (1.5− | 1.0+) |
| 1995 02 02 | 691 | 0.2− | 0.4− | 2004 04 10 | 644 | 0.2+ | 0.1+ | 2004 04 28 | 691 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.8+ | 0.5− | 2004 04 10 | 644 | 0.2+ | 0.2+ | 2004 04 28 | 691 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 1.0− | 0.6− | 2004 04 12 | 699 | 0.6− | 0.3+ | 2004 04 28 | 691 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.2+ | 0.4+ | 2004 04 12 | 699 | 0.1+ | 0.0 | 2004 05 23 | 699 | 0.1+ | 0.6+ |
| 2002 11 07 | 704 | (2.2− | 0.3−) | 2004 04 12 | 699 | 0.2− | 0.2+ | 2004 05 23 | 699 | 0.1+ | 0.3+ |
| 2002 11 11 | 704 | 0.2− | 0.8+ | 2004 04 12 | 699 | 0.1− | 0.8− | 2004 05 23 | 699 | 1.2+ | 0.3+ |
| 2002 11 11 | 704 | 0.6− | 0.9+ | 2004 04 13 | 683 | 0.6+ | 0.7+ | 2004 05 23 | 699 | 0.5− | 0.7− |
| 2002 11 11 | 704 | 0.6− | 0.6+ | 2004 04 13 | 683 | 0.3− | 1.4+ | 2005 05 19 | G96 | 0.0 | 0.1+ |
| 2002 11 11 | 704 | 1.2− | 0.3+ | 2004 04 13 | 683 | 0.3− | 0.0 | 2005 05 19 | G96 | 0.2+ | 0.1− |
| 2002 11 11 | 704 | 0.2− | 1.2+ | 2004 04 14 | 683 | 0.5− | 0.5+ | 2005 05 19 | G96 | 0.1− | 0.1− |
| 2002 11 13 | 704 | 0.0 | 0.5+ | 2004 04 14 | 683 | 1.2− | 0.1− | 2005 05 19 | G96 | 0.0 | 0.0 |
| 2002 11 13 | 704 | 0.0 | 0.4− | 2004 04 14 | 683 | 0.8− | 0.0 | 2005 06 15 | G96 | 0.2− | 0.4+ |
| 2002 11 13 | 704 | 0.0 | 0.1+ | 2004 04 15 | 644 | 0.4+ | 0.4+ | 2005 06 15 | G96 | 0.4− | 0.3+ |
| 2002 11 13 | 704 | 0.1+ | 0.3− | 2004 04 15 | 644 | 0.1+ | 0.3+ | 2005 06 15 | G96 | 0.3− | 0.4+ |
| 2002 11 13 | 704 | 0.5+ | 0.4− | 2004 04 15 | 699 | 0.5− | 0.1+ | 2005 06 15 | G96 | 0.3− | 0.3+ |
| 2002 12 27 | 644 | 0.0 | 0.8+ | 2004 04 15 | 683 | 0.6+ | 0.7− | 2005 07 15 | G96 | 0.0 | 1.3+ |
| 2002 12 27 | 644 | 0.3− | 1.1+ | 2004 04 15 | 644 | 0.2+ | 0.2+ | 2005 07 15 | G96 | 0.1+ | 0.3+ |
| 2002 12 27 | 644 | 0.2− | 1.0+ | 2004 04 15 | 683 | 1.3+ | 0.6− | 2005 07 15 | G96 | (0.4− | 2.5+) |
| 2004 03 19 | 704 | 0.4+ | 0.1+ | 2004 04 15 | 699 | 0.1− | 0.2− | 2005 07 15 | G96 | 0.4− | 1.4− |
| 2004 03 19 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 683 | 0.2− | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.5+ | 0.3+ | 2004 04 15 | 699 | 0.3− | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.4+ |
| 2004 03 19 | 704 | 0.5+ | 0.1+ | 2004 04 15 | 699 | 0.4− | 0.9+ | 2006 09 17 | 691 | 0.2+ | 0.6+ |
| 2004 03 19 | 704 | 0.5+ | 0.1+ | 2004 04 16 | 683 | 0.7+ | 0.8+ | 2006 10 01 | 691 | 0.2− | 0.4+ |
| 2004 03 21 | 699 | 0.3− | 0.3+ | 2004 04 16 | 683 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.4+ |
| 2004 03 21 | 699 | 1.2− | 0.4+ | 2004 04 16 | 683 | 0.1− | 0.9+ | 2006 10 01 | 691 | 0.3− | 0.6+ |
| 2004 03 21 | 699 | 0.7− | 0.8+ | 2004 04 18 | 683 | 0.2− | 1.3+ | 2006 10 21 | 703 | (1.4+ | 2.1−) |
| 2004 03 21 | 699 | (1.7− | 1.1+) | 2004 04 18 | 683 | (1.6+ | 0.5−) | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 03 22 | 704 | 0.2+ | 0.4+ | 2004 04 18 | 683 | 0.6− | 1.1+ | 2006 10 21 | 703 | 1.0+ | 0.9+ |
| 2004 03 22 | 704 | 0.4+ | 0.6+ | 2004 04 19 | 683 | 0.9+ | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2004 03 22 | 704 | 0.4+ | 0.4+ | 2004 04 19 | 683 | (1.7+ | 2.0−) | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2004 03 22 | 704 | 0.4+ | 0.4+ | 2004 04 19 | 683 | 0.2+ | 1.1− | 2006 10 21 | 703 | 0.9− | 1.3+ |
| 2004 03 22 | 704 | 1.1+ | 0.8+ | 2004 04 19 | 704 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2004 03 28 | 704 | 0.8+ | 0.5+ | 2004 04 19 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 1.3− | 0.4+ |
| 2004 03 28 | 704 | 0.7+ | 0.5+ | 2004 04 19 | 704 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2004 03 28 | 704 | 0.7+ | 0.3+ | 2004 04 22 | 683 | 0.7+ | 0.5+ | 2006 10 22 | G96 | 0.5− | 0.2+ |
| 2004 03 28 | 704 | 0.6+ | 0.6+ | 2004 04 22 | 683 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2004 03 28 | 704 | 0.2+ | 0.1+ | 2004 04 22 | 683 | 0.8+ | 0.4− | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2004 04 02 | 608 | 0.4+ | 0.1+ | 2004 04 22 | 704 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2004 04 02 | 608 | 0.5+ | 0.1− | 2004 04 22 | 704 | 0.7+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2004 04 02 | 608 | 0.2+ | 0.5+ | 2004 04 22 | 704 | (0.8+ | 2.5+) | 2006 11 18 | G96 | 0.2+ | 0.2+ |
| 2004 04 03 | 608 | 0.3+ | 0.2+ | 2004 04 22 | 704 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 04 03 | 608 | 0.2+ | 0.3+ | 2004 04 25 | 683 | 0.7− | 0.1+ | | | | |

**(144616)∗ 2004 FJ$_{62}$ = 2001 SG$_{352}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76458)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.69033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23913360 | $\omega$ | 104.70533 | | −0.27112197 | +0.96221571 | |
| $a$ | 2.5706463 | $\Omega$ | 149.52762 | | −0.90111854 | −0.24453917 | |
| $e$ | 0.1045552 | $i$ | 2.84555 | | −0.33834635 | −0.11975610 | |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 699 | 0.6+ | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.4+ | 2005 07 11 | G96 | 0.5− | 0.5+ |
| 2000 04 06 | 699 | 1.5− | 0.4− | 2004 03 19 | 704 | 0.2+ | 0.9+ | 2005 07 11 | G96 | 0.1+ | 0.6+ |
| 2000 04 06 | 699 | 0.8+ | 0.2+ | 2004 03 19 | 704 | 1.0+ | 0.5+ | 2005 07 28 | 644 | 0.3− | 0.3+ |
| 2000 04 06 | 699 | 0.3+ | 0.2+ | 2004 03 22 | 704 | (1.5+ | 1.9+) | 2005 07 28 | 644 | 0.8− | 0.5+ |
| 2001 08 24 | 704 | 0.3− | 0.4+ | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2005 07 28 | 644 | 0.3− | 0.3+ |
| 2001 08 24 | 704 | (0.5− | 1.6+) | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.1+ |
| 2001 08 24 | 704 | 0.5− | 1.4+ | 2004 03 22 | 704 | 1.2+ | 0.4+ | 2005 08 06 | 644 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 1.4+ | 2004 03 22 | 704 | 0.2− | 0.4+ | 2005 08 06 | 644 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 1.1+ | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | (1.7− | 2.3+) | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 1.4+ | 2004 03 29 | 691 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.3+ |
| 2001 09 19 | 704 | 1.4− | 1.1+ | 2004 03 31 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2004 02 17 | 291 | 0.2− | 0.3+ | 2004 03 31 | 691 | 0.5− | 0.3− | 2006 11 16 | G96 | 0.6− | 0.1− |
| 2004 02 17 | 291 | 0.1+ | 0.2+ | 2004 03 31 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2004 02 17 | 291 | 0.2− | 0.4+ | 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 02 26 | 695 | 0.1+ | 0.1+ | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.6+ | 0.7− |
| 2004 02 26 | 695 | 0.1+ | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2004 03 17 | 683 | (0.0 | 2.2−) | 2004 07 16 | 807 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2004 03 17 | 683 | 0.1− | 0.5− | 2004 07 16 | 807 | 0.2+ | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.3+ |
| 2004 03 17 | 683 | 1.4+ | 0.6− | 2005 07 11 | G96 | 0.1+ | 0.6+ | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 0.5− | 0.5+ | 2005 07 11 | G96 | 0.0 | 0.7+ | 2006 11 24 | 691 | 0.3− | 0.8+ |

**(144617)∗ 2004 FD$_{63}$ = 1996 JF$_{16}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62108)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.90756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24008969 | $\omega$ | 301.72155 | | −0.61819739 | −0.78577654 | |
| $a$ | 2.5638171 | $\Omega$ | 186.56887 | | +0.76675858 | −0.59734867 | |
| $e$ | 0.1253739 | $i$ | 9.90486 | | +0.17295455 | −0.16040509 | |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 691 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.8+ | 0.4+ | 2004 04 20 | 704 | 0.6+ | 0.1+ |
| 1993 09 16 | 691 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.5− | 0.4− | 2004 04 21 | 703 | (1.2− | 2.0−) |
| 1993 09 16 | 691 | 1.4+ | 0.4+ | 2004 03 22 | 704 | 0.3− | 0.8+ | 2004 04 21 | 703 | 1.4− | 0.9− |
| 1996 05 15 | 691 | 0.5− | 0.1− | 2004 03 22 | 704 | 0.5− | 0.0 | 2004 04 21 | 703 | 0.7− | 0.4− |
| 1996 05 15 | 691 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.3− | 0.8− | 2004 04 21 | 703 | (1.6− | 0.8−) |
| 1996 05 15 | 691 | 0.2− | 0.2− | 2004 03 31 | 691 | 0.0 | 0.0 | 2004 04 22 | 704 | 0.2− | 0.3− |
| 1996 05 17 | 691 | 0.9− | 0.2− | 2004 03 31 | 691 | 0.0 | 0.0 | 2004 04 22 | 704 | 0.1− | 1.2+ |
| 1996 05 17 | 691 | 0.2− | 0.1− | 2004 03 31 | 691 | 0.2− | 0.3+ | 2004 04 22 | 704 | 0.2+ | 1.2+ |
| 1996 05 23 | 691 | 0.9+ | 0.3+ | 2004 04 16 | 704 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.6− | 0.7+ |
| 1996 05 23 | 691 | 1.6− | 0.0 | 2004 04 16 | 704 | 0.2+ | 0.5− | 2005 07 29 | 644 | 0.2− | 0.8+ |
| 1996 05 23 | 691 | (4.6+ | 5.8−) | 2004 04 16 | 704 | 0.1− | 0.5+ | 2005 07 29 | 644 | 0.4− | 0.6+ |
| 2000 04 28 | 699 | 0.5+ | 0.3+ | 2004 04 16 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | (0.7− | 3.5+) |
| 2000 04 28 | 699 | 0.9+ | 0.3+ | 2004 04 16 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 1.2− | 0.2− |
| 2000 04 28 | 699 | 0.1+ | 0.9− | 2004 04 16 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 1.3+ |
| 2000 04 28 | 699 | 0.0 | 0.5+ | 2004 04 16 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 1.0+ |
| 2002 11 12 | 704 | (1.6+ | 1.6+) | 2004 04 16 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 1.6+ | 0.1− |
| 2002 11 12 | 704 | 0.8+ | 0.8+ | 2004 04 17 | 699 | 0.3+ | 0.7− | 2006 10 22 | 703 | 0.8− | 0.5+ |
| 2002 11 12 | 704 | 0.2+ | 0.2− | 2004 04 17 | 699 | 0.3+ | 0.8− | 2006 10 22 | 703 | (1.6− | 0.5−) |
| 2002 11 24 | 644 | 0.5+ | 0.4+ | 2004 04 17 | 699 | 0.9+ | 0.8− | 2006 10 22 | 703 | 1.3− | 0.7− |
| 2002 11 24 | 644 | 0.7+ | 0.5+ | 2004 04 17 | 699 | 1.1− | 0.6− | 2006 11 01 | 703 | 0.1− | 0.8+ |
| 2002 11 24 | 644 | 0.5+ | 0.4+ | 2004 04 19 | 704 | 0.9+ | 0.5+ | 2006 11 01 | 703 | 0.8− | 0.2+ |
| 2004 03 19 | 704 | 1.3+ | 1.3+ | 2004 04 19 | 704 | 0.9+ | 0.4+ | 2006 11 01 | 703 | 0.5− | 0.2+ |
| 2004 03 19 | 704 | 0.2+ | 0.4− | 2004 04 19 | 704 | 1.0+ | 0.0 | 2006 11 01 | 703 | 1.2− | 0.3− |
| 2004 03 19 | 704 | 0.4+ | 0.8+ | 2004 04 19 | 704 | 0.7+ | 0.9+ | 2006 11 19 | 703 | 0.6− | 0.7+ |
| 2004 03 19 | 704 | 1.4+ | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.1− | 2006 11 19 | 703 | 1.7− | 1.9− |
| 2004 03 19 | 704 | (1.7+ | 1.3+) | 2004 04 20 | 704 | 0.1− | 1.2+ | 2006 11 19 | 703 | 1.4+ | 1.2− |
| 2004 03 19 | 704 | 0.4+ | 0.7+ | 2004 04 20 | 704 | 0.3+ | 0.8− | 2006 11 19 | 703 | 0.9− | 1.1+ |
| 2004 03 19 | 704 | 0.3+ | 0.2+ | 2004 04 20 | 704 | 0.4+ | 0.5− | | | | |
| 2004 03 19 | 704 | 1.0+ | 1.3+ | 2004 04 20 | 704 | 0.5+ | 0.3+ | | | | |

**(144618)∗ 2004 FB$_{65}$ = 1995 FX$_{16}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62109)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.78211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22103194 | $\omega$ | 122.64251 | | −0.94816134 | −0.27731453 | |
| $a$ | 2.7091478 | $\Omega$ | 41.84541 | | +0.15165996 | −0.82403205 | |
| $e$ | 0.0971974 | $i$ | 13.45250 | | +0.27926568 | −0.49403222 | |
| $P$ | 4.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.4− | 0.2− | 2004 04 12 | 644 | 0.1+ | 0.5+ | 2004 05 29 | 691 | 0.6+ | 0.4+ | |
| 1995 03 28 | 691 | 0.6− | 0.8− | 2004 04 12 | 644 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.2− | |
| 1995 03 28 | 691 | 0.5− | 0.3− | 2004 04 15 | 699 | 0.3+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.2− | |
| 1995 04 07 | 691 | 0.0 | 0.2− | 2004 04 15 | 699 | 0.3− | 0.7− | 2006 09 30 | G96 | 0.4− | 0.0 | |
| 1995 04 07 | 691 | 0.0 | 0.4− | 2004 04 15 | 699 | 0.2− | 0.6− | 2006 09 30 | G96 | 0.6− | 0.2− | |
| 1995 04 07 | 691 | 0.0 | 0.4− | 2004 04 15 | 699 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.3+ | |
| 1999 02 18 | 704 | 0.6+ | 0.0 | 2004 04 19 | 152 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.2− | 0.2+ | |
| 1999 02 18 | 704 | 0.1− | 0.5+ | 2004 04 19 | 704 | 0.1+ | 1.0+ | 2006 10 11 | 644 | 0.4− | 0.3+ | |
| 1999 02 18 | 704 | 0.4− | 0.4+ | 2004 04 19 | 704 | 0.4+ | 1.1+ | 2006 10 11 | 691 | 0.1− | 0.4+ | |
| 1999 02 18 | 704 | (3.8− | 1.3−) | 2004 04 19 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.0 | |
| 2002 12 05 | 704 | 0.4+ | 0.7+ | 2004 04 19 | 704 | 0.9− | 1.0+ | 2006 10 11 | 691 | 0.2− | 0.5+ | |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2004 04 19 | 704 | 0.1− | 0.5+ | 2006 10 15 | 691 | 0.4− | 0.3+ | |
| 2002 12 05 | 704 | 0.0 | 0.9+ | 2004 04 21 | 704 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.3+ | |
| 2004 03 19 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.4+ | 1.0+ | 2006 10 15 | 691 | 0.2− | 0.2+ | |
| 2004 03 19 | 704 | 0.0 | 0.4+ | 2004 04 21 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.4− | 0.1− | |
| 2004 03 19 | 704 | 0.4+ | 0.4− | 2004 04 21 | 704 | 0.7+ | 0.8+ | 2006 10 19 | 691 | 0.4− | 0.2+ | |
| 2004 03 19 | 704 | 0.1− | 0.7− | 2004 04 21 | 704 | 1.2+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 1.1+ | |
| 2004 03 22 | 704 | 0.1− | 1.0+ | 2004 04 22 | 704 | 1.4+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.5+ | |
| 2004 03 22 | 704 | 0.2+ | 1.2+ | 2004 04 22 | 704 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1+ | |
| 2004 03 22 | 704 | 0.4+ | 0.1− | 2004 04 22 | 704 | 0.7− | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.5+ | |
| 2004 03 22 | 704 | (0.9+ | 1.8+) | 2004 04 22 | 704 | 0.8+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.1− | |
| 2004 03 28 | 704 | 0.7+ | 0.4+ | 2004 04 22 | 704 | (2.6+ | 1.1+) | 2006 10 27 | 691 | 0.5− | 0.4+ | |
| 2004 03 28 | 704 | 0.3+ | 0.2− | 2004 04 22 | 704 | (2.7+ | 0.6+) | 2006 10 27 | G96 | 0.2+ | 0.3− | |
| 2004 03 28 | 704 | 0.5+ | 0.1+ | 2004 04 22 | 704 | (1.9+ | 0.6+) | 2006 10 27 | G96 | 0.3− | 0.2− | |
| 2004 03 28 | 704 | 0.2− | 0.0 | 2004 04 22 | 704 | (2.6+ | 0.1+) | 2006 10 31 | 691 | 0.1− | 0.0 | |
| 2004 03 28 | 704 | 0.3− | 0.8− | 2004 04 22 | 704 | (1.6+ | 0.2−) | 2006 10 31 | 691 | 0.2− | 0.1+ | |
| 2004 04 11 | 703 | 0.0 | 0.7+ | 2004 04 25 | 703 | 0.7+ | 0.7+ | 2006 10 31 | 691 | 0.2− | 0.2+ | |
| 2004 04 11 | 703 | 0.3− | 1.0+ | 2004 04 25 | 703 | 0.9+ | 1.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | |
| 2004 04 11 | 703 | 0.4+ | 0.3+ | 2004 04 25 | 703 | 1.0+ | 1.1+ | 2006 11 08 | 644 | 0.3− | 0.2+ | |
| 2004 04 11 | 703 | 0.9+ | 1.2+ | 2004 04 25 | 703 | 0.8+ | 0.9+ | 2006 11 08 | 644 | 0.3− | 0.0 | |
| 2004 04 12 | 699 | 0.3− | 0.5+ | 2004 05 15 | 704 | 0.7− | 0.6+ | 2006 11 13 | 644 | 0.3− | 0.2+ | |
| 2004 04 12 | 699 | 0.1− | 0.8+ | 2004 05 15 | 704 | 0.2− | 1.0+ | 2006 11 13 | 644 | 0.0 | 0.2+ | |
| 2004 04 12 | 644 | 0.3+ | 0.6+ | 2004 05 15 | 704 | 0.3+ | 0.2− | 2006 11 13 | 644 | 0.1− | 0.6+ | |
| 2004 04 12 | 644 | 0.3+ | 0.8+ | 2004 05 21 | 691 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 0.5+ | 1.2+ | |
| 2004 04 12 | 699 | 0.5+ | 0.0 | 2004 05 21 | 691 | 0.5+ | 0.5+ | 2006 11 17 | 703 | (0.5+ | 2.4+) | |
| 2004 04 12 | 644 | 0.1+ | 0.5+ | 2004 05 21 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 1.1+ | 0.9+ | |
| 2004 04 12 | 644 | 0.1− | 0.4+ | 2004 05 29 | 691 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 1.3+ | 0.5+ | |
| 2004 04 12 | 699 | 0.1+ | 0.7− | 2004 05 29 | 691 | 0.6+ | 0.1+ | | | | | |

**(144619)∗ 2004 FR$_{65}$ = 2002 XM$_{95}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62110)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.29915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22663322 | $\omega$ | 64.25844 | | −0.72736416 | −0.68417438 | |
| $a$ | 2.6643238 | $\Omega$ | 72.51987 | | +0.60788122 | −0.67842917 | |
| $e$ | 0.1440358 | $i$ | 3.20672 | | +0.31846790 | −0.26765516 | |
| $P$ | 4.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.4− | 0.4+ | 2004 04 14 | 691 | 0.0 | 0.3+ | 2004 05 19 | 691 | 0.2− | 0.2+ | |
| 2002 11 23 | 644 | 0.4− | 0.7+ | 2004 04 16 | 704 | 1.2− | 0.3+ | 2004 05 28 | 691 | 0.1− | 0.1+ | |
| 2002 11 23 | 644 | 0.0 | 0.2+ | 2004 04 16 | 704 | 0.1+ | 0.3+ | 2004 05 28 | 691 | 0.2− | 0.1− | |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2004 04 16 | 704 | 1.2+ | 1.0+ | 2004 05 28 | 691 | 0.3− | 0.2+ | |
| 2002 12 05 | 704 | 0.0 | 0.9+ | 2004 04 17 | 699 | 0.7+ | 0.5− | 2005 07 07 | 691 | 0.1− | 0.4+ | |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2004 04 17 | 699 | 0.5− | 0.1+ | 2005 07 07 | 691 | 0.1+ | 0.4+ | |
| 2002 12 10 | 704 | 0.2+ | 0.9+ | 2004 04 17 | 699 | 0.6− | 0.5− | 2005 07 07 | 691 | 0.3− | 0.4+ | |
| 2002 12 10 | 704 | 0.3− | 0.9+ | 2004 04 17 | 699 | 0.8− | 0.6+ | 2006 09 30 | 703 | 0.9+ | 0.1− | |
| 2002 12 10 | 704 | 0.7− | 0.9+ | 2004 04 19 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.1− | |
| 2002 12 10 | 704 | 0.2+ | 1.2+ | 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.4− | 0.5+ | |
| 2002 12 10 | 704 | 0.5− | 0.8+ | 2004 04 19 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.9− | 0.3− | |
| 2004 03 19 | 704 | 0.2+ | 0.4− | 2004 04 19 | 704 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2+ | |
| 2004 03 19 | 704 | 0.0 | 0.0 | 2004 04 19 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.5+ | |
| 2004 03 19 | 704 | 0.5− | 0.0 | 2004 04 19 | 704 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.3+ | |
| 2004 03 19 | 704 | 0.3+ | 0.1+ | 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.4+ | |
| 2004 03 22 | 704 | 1.0+ | 0.2+ | 2004 04 20 | 703 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− | |
| 2004 03 22 | 704 | 1.0+ | 0.8+ | 2004 04 20 | 703 | 1.1+ | 0.4+ | 2006 10 31 | G96 | 0.5+ | 0.1− | |
| 2004 03 22 | 704 | 0.1+ | 0.5− | 2004 04 20 | 703 | (2.0− | 1.3+) | 2006 10 31 | G96 | 0.4+ | 0.2+ | |
| 2004 03 28 | 704 | 0.4+ | 1.1+ | 2004 04 20 | 703 | (0.5− | 2.1+) | 2006 10 31 | G96 | 0.1+ | 0.1+ | |
| 2004 03 28 | 704 | 0.9+ | 0.9− | 2004 04 22 | 704 | 0.5+ | 1.1+ | 2006 11 16 | G96 | 0.4− | 0.2+ | |
| 2004 03 28 | 704 | 0.3+ | 0.3+ | 2004 04 22 | 704 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.3+ | |
| 2004 03 28 | 704 | 0.3+ | 0.5+ | 2004 04 22 | 704 | 0.5− | 0.4− | 2006 11 16 | G96 | 0.0 | 0.2+ | |
| 2004 03 28 | 704 | 0.2+ | 0.2− | 2004 04 22 | 704 | 0.6+ | 0.5− | 2006 11 16 | G96 | 0.0 | 0.0 | |
| 2004 04 14 | 691 | 0.0 | 0.2+ | 2004 05 19 | 691 | 0.2− | 0.2− | | | | | |
| 2004 04 14 | 691 | 0.0 | 0.2+ | 2004 05 19 | 691 | 0.5+ | 0.3− | | | | | |

**(144620)∗ 2004 FU$_{65}$ = 2002 YW$_{13}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62110)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.58484 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19845700 | $\omega$ | 56.61492 | | −0.91189544 | −0.40715342 | |
| $a$ | 2.9108854 | $\Omega$ | 99.31215 | | +0.35700969 | −0.84904084 | |
| $e$ | 0.0597674 | $i$ | 3.00307 | | +0.20246183 | −0.33668343 | |
| $P$ | 4.97 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 691 | 0.5− | 0.5+ | 2003 01 02 | 704 | 0.4− | 0.7+ | 2004 04 25 | 704 | (1.4+ | 1.8+) | |
| 2001 09 18 | 691 | 0.3− | 0.5+ | 2003 01 08 | 704 | (2.8+ | 0.3−) | 2004 04 25 | 704 | 0.7+ | 0.1+ | |
| 2001 09 18 | 691 | 0.2− | 0.4+ | 2003 01 08 | 704 | 0.8+ | 0.1+ | 2004 04 25 | 704 | 0.2− | 0.3− | |
| 2001 10 15 | 704 | 0.6− | 0.3+ | 2003 01 08 | 704 | 0.9+ | 0.1+ | 2004 04 25 | 704 | 0.1− | 0.3+ | |
| 2001 10 15 | 704 | 1.3− | 0.9+ | 2003 01 08 | 704 | 0.6+ | 0.3+ | 2004 04 25 | 704 | 0.1− | 0.4+ | |
| 2001 10 15 | 704 | (2.3− | 1.5+) | 2003 01 08 | 704 | (1.3+ | 2.9+) | 2004 04 30 | 691 | 0.4+ | 0.5+ | |
| 2001 10 15 | 704 | 1.0− | 0.1− | 2003 01 08 | 704 | (1.2+ | 2.2+) | 2004 04 30 | 691 | 0.1+ | 0.3+ | |
| 2001 10 20 | 704 | (0.5− | 1.8+) | 2003 01 08 | 704 | (0.9− | 4.8+) | 2004 04 30 | 691 | 0.1− | 0.6+ | |
| 2001 10 20 | 704 | 0.7+ | 0.2− | 2003 01 08 | 704 | (0.3− | 5.6+) | 2004 05 23 | 691 | 0.1+ | 0.3+ | |
| 2001 10 20 | 704 | (0.9+ | 2.5−) | 2004 03 19 | 704 | 0.1− | 0.4+ | 2004 05 23 | 691 | 0.2+ | 0.3+ | |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.7+ | 0.6+ | 2004 05 23 | 691 | 0.3+ | 0.7+ | |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.4+ | 2005 07 07 | 691 | 0.1+ | 0.1+ | |
| 2001 11 12 | 645 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.3− | 2005 07 07 | 691 | 0.1− | 0.2+ | |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.0 | 0.5− | 2005 07 07 | 691 | 0.2+ | 0.0 | |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.3+ | |
| 2001 12 10 | 645 | 0.1− | 0.2− | 2004 03 31 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.3+ | |
| 2001 12 10 | 645 | 0.1− | 0.1− | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.5+ | |
| 2002 12 31 | 704 | 1.0− | 1.3+ | 2004 04 16 | 704 | 0.5+ | 0.6− | 2006 09 27 | 691 | (2.0− | 1.7+) | |
| 2002 12 31 | 704 | 0.3+ | 0.0 | 2004 04 16 | 704 | 1.0+ | 0.4+ | 2006 09 27 | 691 | 0.6− | 0.5+ | |
| 2002 12 31 | 704 | 0.3+ | 0.8+ | 2004 04 16 | 704 | (0.1+ | 1.7+) | 2006 10 01 | 691 | 0.0 | 0.6+ | |
| 2002 12 31 | 704 | 0.2− | 0.7+ | 2004 04 16 | 704 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.3− | 0.8+ | |
| 2003 01 02 | 704 | 0.7+ | 1.2+ | 2004 04 23 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.5− | 0.5+ | |
| 2003 01 02 | 704 | 0.3− | 0.7+ | 2004 04 23 | 691 | 0.3− | 0.4+ | | | | | |
| 2003 01 02 | 704 | 0.0 | 1.1+ | 2004 04 23 | 691 | 0.1− | 0.2+ | | | | | |

**(144621)∗ 2004 FU$_{66}$ = 2003 AF$_{35}$**

Discovered 2004 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62111)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.18450 | | (2000.0) | | +0.97556699 | −0.21056978 |
| $n$ | 0.24269185 | $\omega$ | 250.97055 | | +0.21884258 | +0.90614230 |
| $a$ | 2.5454579 | $\Omega$ | 121.14128 | | +0.01941595 | +0.36683305 |
| $e$ | 0.2564388 | $i$ | 4.20006 | | | |
| $P$ | 4.06 | $H$ | 15.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 19 | 691 | 0.3− | 0.6− | 2003 01 08 | 704 | 0.6+ | 0.0 | 2005 06 17 | G96 | 0.3+ | 0.3+ |
| 1996 03 19 | 691 | 0.6− | 0.9− | 2003 01 08 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 1.0− | 0.6+ |
| 1996 03 19 | 691 | 0.5− | 0.6− | 2004 02 23 | 704 | 1.0+ | 0.3+ | 2006 11 14 | 704 | 1.1− | 1.2+ |
| 1998 12 15 | 704 | 0.6− | 1.5− | 2004 02 23 | 704 | (1.5+ | 0.1−) | 2006 11 14 | 704 | 0.9− | 1.1+ |
| 1998 12 15 | 704 | (2.6+ | 0.8−) | 2004 02 23 | 704 | 0.5+ | 0.5− | 2006 11 14 | 704 | 1.2− | 1.0+ |
| 1998 12 15 | 704 | 0.4− | 0.3+ | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.6− |
| 1998 12 15 | 704 | (4.6− | 1.0+) | 2004 02 23 | 704 | 1.0+ | 0.4+ | 2006 11 17 | 704 | (1.9− | 2.0+) |
| 1998 12 17 | 704 | 0.6+ | 0.4+ | 2004 03 11 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.8+ | 0.5− |
| 1998 12 17 | 704 | (1.3+ | 2.7−) | 2004 03 11 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.3− |
| 1998 12 17 | 704 | (1.5− | 2.4−) | 2004 03 11 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 704 | (1.7− | 1.8+) |
| 1998 12 17 | 704 | (1.5− | 2.3−) | 2004 03 15 | 333 | 0.5− | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.3− |
| 1998 12 17 | 704 | 1.2− | 1.7− | 2004 03 15 | 333 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.5+ | 0.6+ | 2004 03 15 | 333 | 1.0+ | 0.0 | 2006 11 17 | 704 | (0.5− | 1.6+) |
| 2002 12 11 | 704 | 0.3+ | 1.0+ | 2004 03 20 | 704 | 0.6− | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.2− |
| 2002 12 11 | 704 | 0.7+ | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.8− |
| 2002 12 11 | 704 | (0.9+ | 1.7+) | 2004 03 20 | 704 | 0.1− | 0.5+ | 2006 11 17 | 704 | (1.5− | 1.6+) |
| 2002 12 11 | 704 | (0.1+ | 1.7+) | 2004 03 20 | 704 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.3− | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.7+ | 2004 03 22 | 704 | 1.5+ | 0.8+ | 2006 11 17 | 704 | 0.5+ | 0.5− |
| 2002 12 11 | 704 | 0.9− | 0.6− | 2004 03 22 | 704 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2002 12 11 | 704 | 0.9− | 0.2+ | 2004 03 22 | 704 | 1.0− | 0.7+ | 2006 11 20 | 704 | 0.3+ | 1.1+ |
| 2002 12 14 | 704 | 0.8− | 0.0 | 2004 03 25 | 704 | 1.0+ | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2002 12 14 | 704 | (0.9+ | 1.9−) | 2004 03 25 | 704 | 0.7+ | 0.5+ | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2002 12 14 | 704 | 0.6+ | 1.2− | 2004 03 25 | 704 | 1.2+ | 0.6+ | 2006 11 20 | 704 | 0.5+ | 0.9+ |
| 2002 12 14 | 704 | 0.4+ | 0.5− | 2004 03 30 | 691 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2002 12 14 | 704 | (2.6+ | 0.3−) | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2003 01 07 | 704 | 0.8+ | 0.1− | 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.6− | 0.7− |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2004 04 20 | 704 | 0.6+ | 1.0− | 2006 11 29 | 704 | 0.5+ | 0.0 |
| 2003 01 07 | 704 | 0.6+ | 0.5+ | 2004 04 20 | 704 | 0.3− | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 2003 01 07 | 704 | 1.1+ | 0.3+ | 2004 04 20 | 704 | 0.8+ | 1.0+ | 2006 11 29 | 704 | 0.1− | 0.8− |
| 2003 01 07 | 704 | 0.5+ | 0.2+ | 2005 06 17 | G96 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.2− |
| 2003 01 08 | 704 | 0.5+ | 0.7− | 2005 06 17 | G96 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2003 01 08 | 704 | 0.2+ | 0.2+ | 2005 06 17 | G96 | 0.3+ | 0.4+ | | | | |

**(144622)∗ 2004 FZ$_{66}$ = 2001 RF$_{148}$**

Discovered 2004 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62111)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 273.52942 | | (2000.0) | | −0.28405230 | −0.95571638 |
| $n$ | 0.21702535 | $\omega$ | 333.00205 | | +0.89770337 | −0.29328229 |
| $a$ | 2.7423891 | $\Omega$ | 133.38938 | | +0.33681292 | −0.02432490 |
| $e$ | 0.0219622 | $i$ | 6.07799 | | | |
| $P$ | 4.54 | $H$ | 15.5 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 22 | 691 | 0.2− | 0.4− | 2004 03 20 | 704 | 0.6− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 1999 01 22 | 691 | 0.5+ | 0.2− | 2004 03 20 | 704 | 0.9+ | 0.7+ | 2006 10 04 | G96 | 0.3+ | 0.1+ |
| 1999 01 22 | 691 | 0.0 | 0.8+ | 2004 03 20 | 704 | 0.8+ | 1.1+ | 2006 10 04 | G96 | 0.1+ | 0.2+ |
| 2001 08 13 | 608 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.1− |
| 2001 08 13 | 608 | 0.6+ | 0.3− | 2004 03 22 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.7+ | 0.4+ |
| 2001 08 13 | 608 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 1.2+ | 0.3− |
| 2001 09 10 | 699 | 0.7− | 0.5+ | 2004 03 22 | 704 | 0.5− | 0.7+ | 2006 10 16 | 703 | 0.8+ | 0.7− |
| 2001 09 10 | 699 | 1.2− | 0.6− | 2004 04 10 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 09 10 | 699 | (0.3+ | 1.5+) | 2004 04 10 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 09 10 | 699 | 0.6− | 0.5+ | 2004 04 10 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.7− | 0.1+ |
| 2001 09 12 | 704 | 1.3+ | 0.9+ | 2004 04 16 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2001 09 12 | 704 | (0.1+ | 1.7+) | 2004 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2001 09 12 | 704 | 0.8− | 0.8+ | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2004 04 20 | 704 | 0.6+ | 0.0 | 2006 10 22 | 703 | (2.7+ | 0.1−) |
| 2002 12 05 | 644 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.6+ | 0.4− | 2006 10 22 | 703 | 0.5− | 0.8+ |
| 2002 12 05 | 644 | 0.3− | 0.2− | 2004 04 20 | 704 | 1.3− | 1.2− | 2006 10 22 | 703 | (1.1+ | 2.3+) |
| 2002 12 05 | 644 | 1.1− | 0.1+ | 2004 04 20 | 704 | 1.1+ | 0.2− | 2006 10 22 | 703 | (1.5− | 1.7+) |
| 2002 12 11 | 704 | 0.7− | 0.9− | 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | 0.7+ | 0.1− | 2004 04 21 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 1.0+ | 0.5− | 2006 09 18 | 703 | (1.8− | 0.3+) | 2006 10 23 | 644 | 0.6− | 0.7+ |
| 2004 02 25 | 704 | 0.3− | 0.6− | 2006 09 18 | 703 | (0.5− | 2.4+) | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2004 02 25 | 704 | 0.0 | 0.9− | 2006 09 18 | 703 | 0.1+ | 1.2+ | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2004 02 25 | 704 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.7− | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2004 03 15 | 704 | 0.8− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.9+ | 2006 10 28 | 703 | 0.1− | 0.3− |
| 2004 03 15 | 704 | 1.3− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 1.3+ | 2006 10 28 | 703 | 0.2− | 1.9+ |
| 2004 03 15 | 704 | (1.5+ | 0.7+) | 2006 09 26 | 703 | 0.2− | 1.0+ | 2006 10 28 | 703 | 1.5− | 1.1− |
| 2004 03 15 | 704 | 0.8+ | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.1+ | | | | |
| 2004 03 20 | 704 | (0.1− | 1.6+) | 2006 10 04 | G96 | 0.1+ | 0.1− | | | | |

**(144623)∗ 2004 FO$_{68}$**

Discovered 2004 Mar. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 115.64053 | | (2000.0) | | +0.36595820 | +0.92887038 |
| $n$ | 0.23011429 | $\omega$ | 193.10282 | | −0.84853690 | +0.35829519 |
| $a$ | 2.6373858 | $\Omega$ | 98.38686 | | −0.38217762 | +0.09393810 |
| $e$ | 0.0550197 | $i$ | 3.31590 | | | |
| $P$ | 4.28 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2004 03 28 | 704 | 0.6− | 0.7+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 704 | 1.0+ | 0.5− | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2001 09 12 | 704 | 1.3− | 0.5+ | 2004 04 15 | 644 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.5− | 0.3− |
| 2001 09 12 | 704 | 0.6+ | 0.5+ | 2004 04 15 | 644 | 0.3+ | 0.7+ | 2006 11 12 | G96 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | 0.9− | 0.7+ | 2004 04 15 | 644 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.6− | 0.5− |
| 2001 09 12 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 644 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2004 04 15 | 644 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.5+ | 0.3+ | 2004 04 15 | 644 | 0.2+ | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.6+ |
| 2001 09 12 | 704 | (2.5+ | 1.1+) | 2005 07 04 | 644 | 0.3− | 0.7+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 0.3+ | 0.9+ | 2005 07 04 | 644 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.8− | 0.7+ | 2005 07 04 | 644 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.3+ | 0.2− | 2005 11 06 | G96 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2005 11 06 | G96 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2004 03 21 | 691 | 0.1− | 0.3+ | 2005 11 06 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2004 03 21 | 691 | 0.3− | 0.2+ | 2005 11 06 | G96 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.5+ |
| 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.7+ |
| 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.6+ |
| 2004 03 22 | 704 | 1.0+ | 0.0 | 2006 09 28 | G96 | 0.6− | 0.3− | 2006 12 01 | G96 | 0.7− | 0.2− |
| 2004 03 22 | 704 | 0.1+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.3− | 0.1+ |
| 2004 03 28 | 704 | 1.0+ | 0.4− | 2006 10 31 | G96 | 0.5− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2004 03 28 | 704 | 1.0+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2+ | | | | |

**(144624)∗ 2004 FP$_{68}$**

Discovered 2004 Mar. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.40239 | | (2000.0) | | +0.00124133 | +0.99825355 |
| $n$ | 0.18772315 | $\omega$ | 162.95617 | | −0.92453477 | +0.02365392 |
| $a$ | 3.0208152 | $\Omega$ | 107.08428 | | −0.38109568 | −0.05413261 |
| $e$ | 0.1635663 | $i$ | 3.54247 | | | |
| $P$ | 5.25 | $H$ | 15.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.7+ | 0.8+ | 2004 04 10 | 644 | 0.3+ | 0.4+ | 2005 08 22 | 644 | 0.1− | 0.0 |
| 2001 11 20 | 704 | (0.3− | 2.0+) | 2004 04 11 | 644 | 0.3+ | 0.3+ | 2005 08 22 | 644 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 1.0+ | 2004 04 11 | 644 | 0.5+ | 0.6+ | 2005 08 22 | 644 | 0.2− | 0.1− |
| 2003 01 25 | 645 | 0.1− | 0.0 | 2004 04 11 | 644 | 0.1− | 0.5+ | 2005 08 28 | 699 | 0.2− | 1.0+ |
| 2003 01 25 | 645 | 0.1− | 0.0 | 2004 04 15 | 644 | 0.0 | 0.4+ | 2005 08 28 | 699 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.8− | 0.5− | 2004 04 15 | 644 | 0.0 | 0.1+ | 2005 08 28 | 699 | 0.7− | 0.2+ | | |
| 2004 03 16 | 704 | 1.1+ | 0.2+ | 2004 04 15 | 644 | 0.1+ | 0.3+ | 2005 08 28 | 699 | 1.2+ | 0.0 | | |
| 2004 03 16 | 704 | (1.6+ | 1.2+) | 2004 04 19 | 704 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.2+ | | |
| 2004 03 21 | 691 | 0.0 | 0.2+ | 2004 04 19 | 704 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 2004 03 21 | 691 | 0.1− | 0.0 | 2004 04 19 | 704 | 0.1− | 0.6− | 2006 09 30 | G96 | 0.2+ | 0.3− | | |
| 2004 03 21 | 691 | 0.2− | 0.1+ | 2004 04 19 | 704 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.0 | | |
| 2004 03 22 | 704 | 0.0 | 0.0 | 2004 04 19 | 704 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.2− | | |
| 2004 03 22 | 704 | 0.0 | 0.1+ | 2004 04 21 | 704 | 1.3+ | 0.7+ | 2006 10 17 | G96 | (1.8− | 0.1+) | | |
| 2004 03 22 | 704 | 0.9+ | 0.4− | 2004 04 21 | 704 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.7+ | 0.2− | | |
| 2004 03 22 | 704 | 0.7+ | 0.3− | 2004 04 21 | 704 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.1+ | | |
| 2004 03 22 | 704 | 0.8− | 0.3+ | 2004 04 21 | 704 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.1+ | 0.4+ | | |
| 2004 03 28 | 704 | 0.0 | 0.7− | 2005 07 18 | 644 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.4+ | | |
| 2004 03 28 | 704 | 0.2+ | 0.2+ | 2005 07 18 | 644 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.6− | 0.4+ | | |
| 2004 03 28 | 704 | (2.7+ | 0.9−) | 2005 07 18 | 644 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.1+ | | |
| 2004 03 28 | 704 | 0.2− | 0.0 | 2005 08 01 | E12 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1− | | |
| 2004 03 28 | 704 | 0.3− | 0.1− | 2005 08 01 | E12 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.0 | | |
| 2004 04 10 | 644 | 0.1+ | 0.5+ | 2005 08 01 | E12 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.9+ | 0.5+ | | |
| 2004 04 10 | 644 | 0.1+ | 0.1+ | 2005 08 01 | E12 | 0.5− | 0.2+ | | | | | | |

**(144625)∗ 2004 FK$_{69}$ = 2003 AT$_{32}$**

Discovered 2004 Mar. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69701)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 138.60559 | | (2000.0) | | | |
| $n$ | 0.19450872 | $\omega$ | 189.05980 | | −0.51054264 | +0.85920622 |
| $a$ | 2.9501448 | $\Omega$ | 50.24781 | | −0.78615892 | −0.45073524 |
| $e$ | 0.0703306 | $i$ | 2.48467 | | −0.34828202 | −0.24207935 |
| $P$ | 5.07 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 05 | 691 | 0.2+ | 0.2− | 2004 04 13 | 691 | 0.3+ | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.0 | | |
| 1997 12 05 | 691 | 0.3− | 0.4− | 2004 04 13 | 691 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.0 | 0.2+ | | |
| 1997 12 05 | 691 | 0.3+ | 0.7− | 2005 07 02 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2001 10 16 | 691 | 0.2− | 0.2+ | 2005 07 02 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2001 10 16 | 691 | 0.5− | 0.1+ | 2005 07 02 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2+ | | |
| 2001 10 16 | 691 | 0.5− | 0.3+ | 2005 07 07 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2005 07 07 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.4+ | | |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2005 07 07 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.2− | | |
| 2003 01 05 | 704 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.4− | | |
| 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2003 01 05 | 704 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.5+ | | |
| 2003 01 08 | 704 | 1.3+ | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.3+ | | |
| 2003 01 08 | 704 | 1.3− | 0.3− | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2+ | | |
| 2003 01 08 | 704 | 0.4− | 0.8+ | 2006 09 24 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.4− | | |
| 2003 01 08 | 704 | 0.5+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.2− | | |
| 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.0 | | |
| 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2004 03 16 | 691 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 21 | 691 | 0.3+ | 0.0 | | |
| 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.3− | 0.6+ | 2006 11 21 | 691 | 0.0 | 0.4+ | | |
| 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.6+ | 0.5− | | |
| 2004 03 23 | 691 | 1.0− | 0.1− | 2006 10 19 | 691 | 0.3− | 0.0 | | | | | | |
| 2004 04 13 | 691 | 0.3+ | 0.7+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | | | | | |

**(144626)∗ 2004 FG$_{70}$ = 1995 UX$_{39}$ = 2001 WV$_{58}$**

Discovered 2004 Mar. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62113)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.13106 | | (2000.0) | | | |
| $n$ | 0.16955963 | $\omega$ | 218.43234 | | −0.96101600 | +0.27612415 |
| $a$ | 3.2328663 | $\Omega$ | 337.58420 | | −0.24352331 | −0.86973940 |
| $e$ | 0.0204348 | $i$ | 2.14496 | | −0.13093755 | −0.40903402 |
| $P$ | 5.81 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.6− | 0.6+ | 2004 03 16 | 691 | 0.5+ | 0.4+ | 2006 08 28 | 703 | 0.5− | 1.4+ | | |
| 1995 10 22 | 691 | 0.5− | 0.3+ | 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 1.3− | 0.1+ | | |
| 1995 10 22 | 691 | 0.6+ | 0.9+ | 2004 03 23 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.7+ | | |
| 1995 10 23 | 691 | 0.3+ | 0.5+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.3+ | | |
| 1995 10 23 | 691 | 0.2− | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.1+ | | |
| 1995 10 23 | 691 | 0.3− | 0.2+ | 2004 04 19 | 704 | 0.4+ | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | | |
| 2001 11 19 | 704 | 0.1+ | 0.2− | 2004 04 19 | 704 | 0.8− | 0.3− | 2006 09 29 | 704 | (1.7− | 0.5+) | | |
| 2001 11 19 | 704 | 0.2+ | 1.0− | 2004 04 19 | 704 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.4− | 0.5+ | | |
| 2001 11 19 | 704 | 1.1+ | 0.8− | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | (4.8+ | 2.2−) | | |
| 2001 11 19 | 704 | 0.4+ | 0.1− | 2004 04 20 | 691 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.6− | 0.4− | | |
| 2001 11 21 | 704 | 0.3− | 0.5+ | 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1− | | |
| 2001 11 21 | 704 | 0.7− | 0.1+ | 2004 05 24 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.6− | | |
| 2001 11 21 | 704 | 0.3− | 0.8+ | 2004 05 24 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.5− | 0.3+ | 2004 05 24 | 691 | 0.2+ | 0.2+ | | | | | | |
| 2004 03 16 | 691 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.1− | | | | | | |

**(144627)∗ 2004 FK$_{71}$ = 2005 NM$_{87}$**

Discovered 2004 Mar. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86415)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.25813 | | (2000.0) | | | |
| $n$ | 0.22887260 | $\omega$ | 217.41090 | | +0.99460741 | −0.09957511 |
| $a$ | 2.6469161 | $\Omega$ | 148.26722 | | +0.10337803 | +0.92945748 |
| $e$ | 0.2291490 | $i$ | 3.16056 | | +0.00831179 | +0.35523738 |
| $P$ | 4.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 12 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.2− | 0.0 | | |
| 1997 08 12 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.7− | | |
| 1997 08 12 | 691 | 0.1+ | 0.1− | 2006 11 02 | 703 | 1.0+ | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2004 02 26 | 695 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.9+ | 1.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2004 02 26 | 695 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.7+ | 1.3+ | 2006 11 17 | 704 | 0.2− | 0.0 | | |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 11 02 | 703 | (1.6+ | 1.0+) | 2006 11 17 | 704 | 0.1− | 0.1+ | | |
| 2004 03 17 | 691 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 17 | 704 | 0.8− | 0.2+ | | |
| 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.8− | 0.9+ | | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.1− | | |
| 2004 03 23 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 1.3− | 0.4− | | |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | (1.7− | 0.3+) | | |
| 2005 05 20 | G96 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.8− | 0.5+ | | |
| 2005 05 20 | G96 | 0.3+ | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.6+ | | |
| 2005 05 20 | G96 | 0.9+ | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.5− | 0.5+ | | |
| 2005 05 20 | G96 | 0.4+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.7− | 0.5+ | | |
| 2005 07 04 | 691 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.4+ | | |
| 2005 07 04 | 691 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.2− | | |
| 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.9− | 0.5+ | 2006 11 28 | 704 | 0.0 | 2.0+ | | |
| 2005 07 05 | G96 | (0.3− | 3.4+) | 2006 11 13 | 703 | 0.6+ | 0.4+ | 2006 11 28 | 704 | 0.9− | 0.8+ | | |
| 2005 07 05 | G96 | (1.1− | 1.7+) | 2006 11 14 | 704 | 0.8+ | 0.1+ | 2006 11 28 | 704 | 0.1− | 0.2− | | |
| 2005 07 05 | G96 | (0.7− | 1.8+) | 2006 11 14 | 704 | 0.4+ | 0.6− | 2006 11 28 | 704 | 0.2+ | 1.1+ | | |
| 2005 07 05 | G96 | 0.5− | 0.9+ | 2006 11 14 | 704 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.7− | 0.3+ | | |
| 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.9+ | 0.7− | | | | | | |

**(144628)∗ 2004 FE$_{77}$ = 2000 BY$_{2}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69702)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.73249 | | (2000.0) | | | |
| $n$ | 0.26446283 | $\omega$ | 69.48573 | | −0.15232340 | −0.98832390 |
| $a$ | 2.4037703 | $\Omega$ | 29.27661 | | +0.90395914 | −0.14081899 |
| $e$ | 0.1746174 | $i$ | 0.42965 | | +0.39956908 | −0.05818831 |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 26 | 120 | 0.5+ | 0.4− | 2004 03 18 | 704 | 0.9+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2000 01 26 | 120 | 0.7− | 0.1− | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2000 01 26 | 120 | 0.3− | 0.9− | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2000 01 27 | 120 | 0.8− | 1.2− | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2000 01 27 | 120 | 0.3− | 1.0− | 2004 03 31 | 291 | 0.2+ | 0.6+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2000 02 09 | 120 | 0.7+ | 0.4− | 2004 03 31 | 291 | 0.1− | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.4+ |
| 2000 02 09 | 120 | 0.1+ | 0.4+ | 2004 03 31 | 291 | 0.3− | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2002 09 13 | 644 | 0.3+ | 0.3+ | 2004 04 21 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 09 13 | 644 | 0.5− | 0.7+ | 2004 04 21 | 691 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.1− | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 2002 09 15 | 644 | 0.0 | 0.7+ | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.8+ |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.8− |
| 2002 09 15 | 644 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 2002 09 15 | 644 | 0.8− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 09 16 | 644 | 0.1− | 0.5+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2002 09 16 | 644 | 0.4− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 09 16 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 02 26 | 704 | (1.9+ | 0.2−) | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 25 | 703 | 0.5+ | 0.4− |
| 2004 02 26 | 704 | 1.1+ | 0.9+ | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 25 | 703 | 0.3+ | 0.4+ |
| 2004 02 26 | 704 | 1.0+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 25 | 703 | 0.6− | 0.3+ |
| 2004 02 26 | 704 | 0.7+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 25 | 703 | 0.8− | 0.5− |
| 2004 03 18 | 704 | 0.4+ | 1.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2004 03 18 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | | | |

**(144629)∗ 2004 FJ$_{77}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.17708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18414345 | $\omega$ | 128.81193 | | +0.66265295 | +0.74886394 | |
| $a$ | 3.0598386 | $\Omega$ | 182.74955 | | −0.73438489 | +0.64719515 | |
| $e$ | 0.1697082 | $i$ | 11.65197 | | −0.14686697 | +0.14262272 | |
| $P$ | 5.35 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 704 | 0.4− | 0.3+ | 2005 06 26 | G96 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.7+ |
| 2000 08 03 | 704 | 1.1− | 0.7+ | 2005 06 26 | G96 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.4+ |
| 2000 08 03 | 704 | (2.9− | 1.3+) | 2005 06 26 | G96 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2000 08 03 | 704 | (3.3− | 0.1+) | 2005 07 04 | 644 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2000 09 03 | 704 | 1.3+ | 0.0 | 2005 07 04 | 644 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 09 03 | 704 | 0.8+ | 0.3− | 2005 07 04 | 644 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2000 09 03 | 704 | 0.8− | 0.7+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.1− |
| 2000 09 03 | 704 | 0.3+ | 0.3− | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.9− |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 1.5− | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.6+ |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.9− | 0.3− | 2006 10 19 | 644 | 0.5− | 0.4+ |
| 2004 03 18 | 704 | 0.6+ | 0.5− | 2006 09 30 | 703 | (0.9+ | 2.3+) | 2006 10 19 | 644 | 0.2− | 0.5+ |
| 2004 03 18 | 704 | (1.8+ | 0.1−) | 2006 09 30 | 703 | (3.7− | 0.2+) | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 10 01 | 704 | 0.7+ | 1.1+ | 2006 10 21 | 703 | 0.0 | 0.4− |
| 2004 03 18 | 704 | 0.4− | 0.5− | 2006 10 01 | 704 | 0.9+ | 1.2+ | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.7− | 0.3+ |
| 2004 03 23 | 691 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2004 03 23 | 691 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 03 27 | 704 | 0.6+ | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.6− | 0.9+ |
| 2004 03 27 | 704 | 1.4+ | 0.9+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2004 04 25 | 691 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.1+ |
| 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 13 | 703 | (1.5− | 2.0+) |
| 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1− | | | | |

**(144630)∗ 2004 FU$_{77}$**

Discovered 2004 Mar. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.21096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23727269 | $\omega$ | 146.47276 | | −0.98877740 | −0.13146259 | |
| $a$ | 2.5840697 | $\Omega$ | 26.24918 | | +0.07508575 | −0.84799038 | |
| $e$ | 0.1079914 | $i$ | 9.23401 | | +0.12915643 | −0.51344902 | |
| $P$ | 4.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.9+ | 0.8+ | 2004 03 27 | 704 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.3− | 0.3− |
| 1998 12 17 | 704 | 0.5− | 0.5− | 2004 03 31 | 704 | 0.1− | 0.8+ | 2006 10 04 | G96 | 0.3− | 0.0 |
| 1998 12 17 | 704 | 1.6− | 1.0− | 2004 03 31 | 704 | 0.4− | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.1− |
| 1998 12 17 | 704 | 1.0+ | 0.1+ | 2004 03 31 | 704 | 0.2+ | 0.4− | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2000 05 10 | 704 | (0.9+ | 2.4+) | 2004 03 31 | 704 | 0.1+ | 0.8− | 2006 10 23 | 691 | 0.4− | 0.4+ |
| 2000 05 10 | 704 | 0.6− | 0.9+ | 2004 03 31 | 704 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2000 05 10 | 704 | 0.5+ | 0.1− | 2004 04 15 | 699 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2001 08 19 | 704 | (1.8− | 1.2+) | 2004 04 15 | 699 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.8− | 0.1− |
| 2001 08 19 | 704 | 0.6− | 1.0+ | 2004 04 15 | 699 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2001 08 19 | 704 | 0.9− | 0.5+ | 2004 04 15 | 699 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2001 08 19 | 704 | 0.2− | 0.8+ | 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.6+ | 0.7+ |
| 2002 12 05 | 704 | (2.2+ | 1.0+) | 2004 04 20 | 704 | 1.0+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.3− | 2004 04 20 | 704 | 0.0 | 1.0+ | 2006 11 09 | 644 | 0.5+ | 0.2+ |
| 2002 12 05 | 704 | 0.3+ | 0.4+ | 2004 04 20 | 704 | 0.8+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2004 04 20 | 704 | 0.4+ | 0.9+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2003 01 04 | 704 | 0.1− | 1.2− | 2004 04 25 | 703 | 0.3+ | 1.2+ | 2006 11 11 | 691 | 0.8− | 0.0 |
| 2003 01 04 | 704 | 0.4+ | 0.3− | 2004 04 25 | 703 | 0.4+ | 0.9+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2003 01 04 | 704 | 0.4− | 1.2− | 2004 04 25 | 703 | 0.1− | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2003 01 04 | 704 | 0.4− | 1.4− | 2004 04 25 | 703 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.6+ | 1.0+ |
| 2004 03 18 | 704 | 0.3− | 0.3− | 2004 04 28 | 608 | 1.0+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2004 03 18 | 704 | 0.3+ | 0.7+ | 2004 04 28 | 608 | 1.2+ | 0.7− | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2004 03 18 | 704 | 1.3+ | 0.1− | 2004 04 28 | 608 | 1.0+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2004 03 18 | 704 | 0.1+ | 0.4− | 2004 05 11 | 699 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2004 03 22 | 699 | 0.4− | 0.4− | 2004 05 11 | 699 | 0.2+ | 0.0 | 2006 11 19 | 704 | (1.2− | 2.0+) |
| 2004 03 22 | 699 | 0.4− | 0.3− | 2004 05 11 | 699 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.9− |
| 2004 03 22 | 699 | 0.3− | 0.3+ | 2004 05 11 | 699 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2004 03 22 | 699 | 0.4− | 1.2− | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2004 03 23 | 291 | 0.3+ | 0.7+ | 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2004 03 23 | 291 | 0.1− | 0.2+ | 2004 05 13 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.7+ | 1.1+ |
| 2004 03 23 | 291 | 0.1− | 0.1+ | 2004 05 15 | 704 | 0.5+ | 0.0 | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2004 03 24 | 699 | 1.0+ | 0.2+ | 2004 05 15 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 704 | (0.8+ | 1.7+) |
| 2004 03 24 | 699 | 0.2− | 0.9− | 2004 05 15 | 704 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2004 03 24 | 699 | 0.1+ | 0.6− | 2004 05 15 | 704 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2004 03 24 | 699 | 0.0 | 0.5− | 2004 05 15 | 704 | 0.5+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2004 03 25 | 699 | 0.6− | 0.1+ | 2004 05 16 | 704 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.1− |
| 2004 03 25 | 699 | 0.4− | 0.9− | 2004 05 16 | 704 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2004 03 25 | 699 | 0.8− | 0.7+ | 2004 05 16 | 704 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.7+ | 1.0− |
| 2004 03 25 | 699 | 0.1+ | 0.1− | 2004 05 16 | 704 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.3+ |
| 2004 03 27 | 704 | 0.2− | 0.1+ | 2004 05 16 | 704 | 0.4+ | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2004 03 27 | 704 | 1.2− | 0.4− | 2005 07 04 | 644 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.2− |
| 2004 03 27 | 704 | (0.3+ | 2.3−) | 2005 07 04 | 644 | 0.1+ | 0.4+ | | | | |
| 2004 03 27 | 704 | 0.0 | 0.3+ | 2005 07 04 | 644 | 0.4+ | 0.3+ | | | | |

**(144631)∗ 2004 FX$_{77}$ = 2000 ED$_{66}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62114)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.88589 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24312047 | $\omega$ | 14.32456 | | −0.43973547 | −0.89735994 | |
| $a$ | 2.5424653 | $\Omega$ | 101.77356 | | +0.82023913 | −0.41809240 | |
| $e$ | 0.0988337 | $i$ | 2.17301 | | +0.36584216 | −0.14122279 | |
| $P$ | 4.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 0.9− | 1.2+ | 2004 03 15 | 704 | 0.3+ | 0.6+ | 2004 04 15 | 644 | 0.4− | 0.5− |
| 2000 03 10 | 704 | 0.3+ | 0.3+ | 2004 03 15 | 704 | 0.1+ | 0.7+ | 2004 04 15 | 644 | 0.0 | 0.1− |
| 2000 03 10 | 704 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.7− | 0.9+ | 2004 04 21 | 691 | 0.3− | 0.3− |
| 2000 03 10 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2004 04 21 | 691 | 0.1− | 0.2+ |
| 2000 03 11 | 704 | 0.0 | 0.6− | 2004 03 19 | 704 | 0.3− | 0.2− | 2004 04 21 | 691 | 0.3+ | 0.3+ |
| 2000 03 11 | 704 | 0.3+ | 0.8+ | 2004 03 19 | 704 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.2− | 0.0 |
| 2000 03 29 | 704 | (2.4+ | 0.6+) | 2004 03 19 | 704 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2000 03 29 | 704 | 1.1+ | 0.4− | 2004 03 23 | 691 | 0.2− | 0.5− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2000 03 29 | 704 | 0.3− | 0.9+ | 2004 03 23 | 691 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2000 03 29 | 704 | 0.3+ | 1.0+ | 2004 03 23 | 691 | 0.2− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 10 31 | 608 | 0.6+ | 0.5− | 2004 03 27 | 704 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.7+ | 0.1− |
| 2002 10 31 | 608 | 0.5+ | 0.6− | 2004 03 27 | 704 | 0.9− | 0.9+ | 2006 10 15 | 703 | 0.4− | 0.6+ |
| 2002 10 31 | 608 | 0.3− | 0.5− | 2004 03 27 | 704 | 0.7− | 0.9+ | 2006 10 15 | 703 | 0.0 | 0.6− |
| 2004 02 23 | 704 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.8− | 2006 10 15 | 703 | 0.1− | 0.8+ |
| 2004 02 23 | 704 | 0.6+ | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.3− | 0.7− | 2004 04 13 | 691 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.2+ | 0.0 | 2004 04 13 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2− | 0.2− |
| 2004 03 15 | 704 | 1.3+ | 0.1− | 2004 04 15 | 644 | 0.7+ | 0.4+ | | | | |

**(144632)∗ 2004 FM$_{79}$**

Discovered 2004 Mar. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.78587 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23437415 | $\omega$ | 216.29336 | | +0.80688975 | −0.59070205 | |
| $a$ | 2.6053310 | $\Omega$ | 179.91314 | | +0.56076143 | +0.76591945 | |
| $e$ | 0.2472513 | $i$ | 5.10830 | | +0.18567594 | +0.25384735 | |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 23 | 691 | 0.8+ | 0.4+ | 2006 07 22 | G96 | 0.6− | 0.1− | 2006 10 15 | 703 | 0.0 | 0.2− |
| 1993 07 23 | 691 | 0.7− | 0.6+ | 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.3+ | 0.0 |
| 1993 07 23 | 691 | 0.4− | 0.4+ | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2002 10 11 | 704 | 1.1+ | 1.1+ | 2006 08 25 | 704 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | (1.6+ | 0.2+) | 2006 08 25 | 704 | 0.1+ | 0.6− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.6+ | 0.5− | 2006 08 25 | 704 | 1.1− | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 0.0 | 2006 08 25 | 704 | 1.5+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 11 | 704 | 0.0 | 0.9+ | 2006 08 28 | 703 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.4− | 0.3− | 2006 08 28 | 703 | 0.9− | 0.2+ | 2006 10 21 | 703 | 1.3+ | 0.7+ |
| 2002 11 11 | 704 | 0.6− | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2002 11 11 | 704 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.6− | 0.2− | 2006 10 21 | 703 | 0.5− | 0.1− |
| 2002 11 11 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 12 01 | 704 | 0.4− | 1.2+ | 2006 08 30 | 699 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.9− |
| 2002 12 01 | 704 | 0.5+ | 1.1+ | 2006 08 30 | 699 | 0.8+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2002 12 01 | 704 | 1.0− | 1.0+ | 2006 08 30 | 699 | 0.5− | 1.0+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2002 12 01 | 704 | 0.8− | 1.5+ | 2006 08 31 | 704 | 1.3+ | 0.7+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2002 12 05 | 608 | (2.4+ | 1.0+) | 2006 08 31 | 704 | 1.5+ | 0.3+ | 2006 10 21 | G96 | 0.5− | 0.2− |
| 2002 12 05 | 608 | (2.4+ | 0.5+) | 2006 08 31 | 704 | (1.5+ | 0.5+) | 2006 10 21 | G96 | 0.7− | 0.0 |
| 2002 12 05 | 608 | (2.7+ | 0.2+) | 2006 08 31 | 704 | (1.8+ | 0.1+) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 12 10 | 644 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.7+ | 0.3− | 2006 10 27 | 704 | 0.1+ | 0.0 |
| 2002 12 16 | 608 | 0.2− | 0.8− | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 10 27 | 704 | 0.1− | 0.1− |
| 2002 12 16 | 608 | 0.2+ | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.2+ | 0.3− |
| 2002 12 16 | 608 | 0.4− | 0.6− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.8− | 0.1+ |
| 2002 12 31 | 699 | 1.4+ | 0.6− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 31 | 704 | 0.6+ | 0.5+ |
| 2002 12 31 | 699 | 0.5+ | 0.3− | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 31 | 704 | (2.0− | 1.7−) |
| 2002 12 31 | 699 | 0.4+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 31 | 704 | 0.8− | 0.7+ |
| 2002 12 31 | 699 | (1.6+ | 0.5−) | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | 704 | 0.4+ | 0.4+ |
| 2004 03 19 | 291 | 0.2− | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2004 03 19 | 291 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2004 03 19 | 291 | 0.1− | 0.2+ | 2006 09 27 | 704 | 1.2+ | 0.3− | 2006 11 07 | 644 | 0.2+ | 0.1− |
| 2004 03 23 | 291 | 0.2+ | 0.9+ | 2006 09 27 | 704 | 0.6+ | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.2− |
| 2004 03 23 | 291 | 0.3+ | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2004 03 23 | 291 | 0.9+ | 1.0+ | 2006 10 01 | 691 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.6− | 0.5− |
| 2004 07 15 | 807 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.7− | 0.2− |
| 2004 07 16 | 807 | 0.5+ | 0.3− | 2006 10 15 | 703 | 0.1+ | 0.2− | | | | |
| 2006 07 22 | G96 | 0.2+ | 0.5− | 2006 10 15 | 703 | 0.5− | 0.0 | | | | |

**(144633)∗ 2004 FH$_{80}$ = 2002 XN$_{36}$**

Discovered 2004 Mar. 21 at Stony Ridge.

Id. G. V. Williams (*MPO* 62114)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.98789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23405326 | $\omega$ | 56.32339 | | +0.24430399 | −0.96671952 | |
| $a$ | 2.6077118 | $\Omega$ | 19.95635 | | +0.79964037 | +0.15653328 | |
| $e$ | 0.1544828 | $i$ | 12.85820 | | +0.54853518 | +0.20236278 | |
| $P$ | 4.21 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 24 | 699 | 0.5+ | 0.5+ | 2004 03 24 | 699 | 0.5+ | 0.9+ | 2006 09 25 | 704 | 0.8+ | 0.0 |
| 1998 12 24 | 699 | 0.9+ | 0.7− | 2004 03 27 | 704 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 1998 12 24 | 699 | 0.0 | 0.5+ | 2004 03 27 | 704 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 1999 01 14 | 704 | 1.1− | 1.2− | 2004 03 27 | 704 | 0.7+ | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.0 |
| 1999 01 14 | 704 | 0.7− | 1.2− | 2004 03 27 | 704 | 1.0+ | 0.0 | 2006 10 02 | G96 | 0.2− | 0.0 |
| 1999 01 14 | 704 | 0.3− | 0.9− | 2004 03 27 | 704 | 0.8+ | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 1999 01 14 | 704 | 1.0+ | 0.5− | 2004 04 12 | 644 | 0.6+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1999 01 14 | 704 | 0.4− | 0.2− | 2004 04 12 | 644 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 1999 02 20 | 699 | 0.1− | 0.1+ | 2004 04 12 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 704 | 0.6− | 0.3+ |
| 1999 02 20 | 699 | 0.3+ | 1.2+ | 2004 04 12 | 644 | 0.1− | 0.5+ | 2006 10 19 | 704 | 0.1+ | 1.1+ |
| 1999 02 20 | 699 | 0.4− | 1.8+ | 2004 04 12 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 704 | 0.8− | 0.7+ |
| 2002 11 07 | 704 | 1.3− | 0.2+ | 2004 04 12 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 704 | 0.0 | 0.9+ |
| 2002 11 07 | 704 | 1.5− | 0.4− | 2004 04 15 | 699 | 1.1+ | 0.3+ | 2006 10 19 | 704 | 0.4− | 0.7+ |
| 2002 11 07 | 704 | 1.2− | 0.3+ | 2004 04 15 | 699 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.5− | 0.8− | 2004 04 15 | 699 | 0.6+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 1.3− | 0.1+ | 2004 04 15 | 699 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.3+ |
| 2002 11 15 | 704 | (2.1+ | 0.3+) | 2004 04 16 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 704 | 0.3− | 0.3+ |
| 2002 11 15 | 704 | (3.0+ | 2.5+) | 2004 04 16 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 704 | 0.6− | 0.2+ |
| 2002 11 15 | 704 | 0.8+ | 1.1− | 2004 04 16 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 704 | 0.5+ | 0.7+ |
| 2002 11 15 | 704 | 0.1− | 0.7− | 2004 04 17 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 704 | 0.6− | 0.4+ |
| 2002 11 15 | 704 | 0.6+ | 0.1+ | 2004 04 17 | 704 | 0.0 | 0.1+ | 2006 10 21 | 704 | 0.5− | 0.6+ |
| 2002 12 06 | 704 | 1.2+ | 0.5− | 2004 04 17 | 704 | 0.1+ | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 12 06 | 704 | (1.6+ | 0.4−) | 2004 04 20 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.2+ |
| 2002 12 06 | 704 | (1.8+ | 1.0−) | 2004 04 20 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 12 06 | 704 | (1.8+ | 0.4−) | 2004 04 20 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2002 12 06 | 704 | (2.1+ | 0.4−) | 2004 04 20 | 704 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 12 07 | 704 | 0.5+ | 0.1− | 2004 04 20 | 704 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.5− | 0.2+ |
| 2002 12 07 | 704 | 0.6+ | 0.4− | 2004 04 30 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.3+ |
| 2002 12 07 | 704 | (1.4+ | 3.1+) | 2004 04 30 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2002 12 07 | 704 | 0.5+ | 0.2− | 2004 04 30 | 691 | 0.4+ | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2002 12 07 | 704 | 0.9+ | 0.4+ | 2005 07 04 | E12 | 0.2+ | 0.8+ | 2006 10 27 | 703 | 0.1− | 0.2+ |
| 2002 12 07 | 704 | 0.5+ | 0.4− | 2005 07 04 | E12 | 0.9+ | 0.8+ | 2006 11 14 | 644 | 0.0 | 0.2+ |
| 2002 12 07 | 704 | 0.5+ | 0.2− | 2005 07 04 | E12 | (0.4− | 2.0+) | 2006 11 14 | 644 | 0.4− | 0.3+ |
| 2002 12 07 | 704 | 0.8+ | 0.4− | 2005 07 04 | E12 | 0.5− | 0.6+ | 2006 11 14 | 644 | 0.2− | 0.4+ |
| 2002 12 07 | 704 | 1.2+ | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.9− | 2006 11 15 | 703 | (1.7− | 1.3+) |
| 2002 12 28 | 704 | 1.0− | 0.0 | 2006 08 29 | 703 | 0.6− | 0.8− | 2006 11 15 | 703 | 0.4− | 1.3+ |
| 2002 12 28 | 704 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.2− | 0.5− | 2006 11 15 | 703 | 0.9+ | 1.2+ |
| 2002 12 28 | 704 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.4− | 0.9− | 2006 11 15 | 703 | 0.1+ | 0.5+ |
| 2002 12 28 | 704 | (1.7− | 0.3+) | 2006 09 18 | 704 | 0.3− | 1.0− | 2006 11 16 | 704 | 0.3+ | 0.7− |
| 2002 12 28 | 704 | 1.2− | 0.4− | 2006 09 18 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2004 03 21 | 671 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.3− | 0.5− | 2006 11 16 | 704 | 0.2+ | 0.5+ |
| 2004 03 21 | 671 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.8− | 2006 11 16 | 704 | 0.0 | 1.2+ |
| 2004 03 21 | 671 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.4− | 0.7+ | 2006 11 22 | 703 | 0.3− | 0.2+ |
| 2004 03 21 | 671 | 0.6+ | 0.3+ | 2006 09 21 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.0 |
| 2004 03 21 | 671 | 0.3+ | 0.3+ | 2006 09 21 | 704 | (1.5− | 1.6+) | 2006 11 22 | 703 | 0.5− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 291 | 1.2− | 0.5− | 2006 09 21 | 704 | 0.0 | 0.5+ | 2006 11 22 | 703 | (2.2− | 1.0+) | | |
| 2004 03 23 | 291 | 0.2− | 0.4+ | 2006 09 21 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.4− | | |
| 2004 03 23 | 291 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 1.1− | 1.7+ | | |
| 2004 03 24 | 699 | 1.2− | 1.1− | 2006 09 25 | 704 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 0.1+ | 0.3+ | | |
| 2004 03 24 | 699 | 0.3+ | 0.5− | 2006 09 25 | 704 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 0.6− | 1.4+ | | |
| 2004 03 24 | 699 | 1.4+ | 0.6− | 2006 09 25 | 704 | 0.5− | 0.7+ | 2006 11 28 | 704 | 1.0− | 0.7+ | | |

**(144634)∗ 2004 FJ$_{80}$ = 2001 QM$_{254}$**

Discovered 2004 Mar. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65652)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.28081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20141885 | $\omega$ | 346.76178 | | +0.89293892 | −0.44847889 | |
| $a$ | 2.8822787 | $\Omega$ | 39.95862 | | +0.41837429 | +0.79467928 | |
| $e$ | 0.0603063 | $i$ | 3.48807 | | +0.16620181 | +0.40908621 | |
| $P$ | 4.89 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.4+ | 0.5+ | 2004 03 20 | 699 | 1.0− | 1.3+ | 2006 09 16 | 704 | 0.2+ | 0.9+ | | |
| 2001 08 25 | 704 | 0.6− | 0.4+ | 2004 03 20 | 699 | 0.4− | 0.2− | 2006 09 22 | 704 | 1.2− | 0.5− | | |
| 2001 08 25 | 704 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.9+ | 2006 09 22 | 704 | 0.2+ | 1.0+ | | |
| 2001 08 25 | 704 | 0.4− | 0.5+ | 2004 03 22 | 704 | (1.8+ | 1.7+) | 2006 09 22 | 704 | 0.3+ | 1.2+ | | |
| 2001 08 27 | 699 | 0.2− | 0.9+ | 2004 03 22 | 704 | 1.0+ | 0.3+ | 2006 09 22 | 704 | 1.0− | 0.1+ | | |
| 2001 08 27 | 699 | 0.8+ | 0.7− | 2004 03 22 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.0 | | |
| 2001 08 27 | 699 | 1.3− | 0.8+ | 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 1.1+ | | |
| 2001 08 27 | 699 | 0.2− | 1.2+ | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | (1.0+ | 1.5+) | | |
| 2002 12 14 | 704 | (2.3− | 1.0+) | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | (1.6− | 0.3+) | | |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2004 03 28 | 704 | (1.4+ | 1.8+) | 2006 09 30 | 703 | 0.4− | 1.1+ | | |
| 2002 12 14 | 704 | 0.1− | 0.1− | 2004 03 28 | 704 | 1.1+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 1.3+ | | |
| 2002 12 14 | 704 | 0.4+ | 0.9+ | 2004 03 28 | 704 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.6+ | 0.7+ | | |
| 2003 01 05 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.7+ | | |
| 2003 01 05 | 704 | 0.2+ | 0.3− | 2004 04 13 | 691 | 0.5+ | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.5+ | | |
| 2003 01 05 | 704 | 0.4+ | 0.0 | 2004 04 13 | 691 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.4− | 0.4+ | | |
| 2003 01 05 | 704 | 0.5− | 0.2+ | 2004 04 13 | 691 | 0.3+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.3+ | | |
| 2003 12 19 | 691 | 0.1+ | 0.6+ | 2004 04 21 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.6− | 0.5+ | | |
| 2003 12 19 | 691 | 0.1+ | 0.5+ | 2004 04 21 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.7+ | | |
| 2003 12 19 | 691 | 0.3− | 0.1+ | 2004 04 21 | 691 | 0.1− | 0.7− | 2006 10 20 | 644 | 0.3− | 0.3+ | | |
| 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 08 31 | 958 | 1.0− | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.5+ | | |
| 2004 02 23 | 704 | 1.0+ | 0.8+ | 2006 08 31 | 958 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.6+ | | |
| 2004 02 23 | 704 | 0.9+ | 1.0− | 2006 08 31 | 958 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2004 02 23 | 704 | (0.7− | 2.2+) | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.0 | | |
| 2004 03 11 | 644 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.9+ | 0.7− | | |
| 2004 03 11 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2004 03 11 | 644 | 0.6+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2004 03 20 | 699 | (0.0 | 1.8+) | 2006 09 16 | 704 | 0.7− | 0.2− | | | | | | |
| 2004 03 20 | 699 | 0.3+ | 0.3+ | 2006 09 16 | 704 | 0.6− | 0.6+ | | | | | | |

**(144635)∗ 2004 FG$_{85}$**

Discovered 2004 Mar. 18 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.18859 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23529171 | $\omega$ | 288.29228 | | −0.04021308 | −0.99646066 | |
| $a$ | 2.5985533 | $\Omega$ | 163.48166 | | +0.98645868 | −0.05134848 | |
| $e$ | 0.0932652 | $i$ | 15.04794 | | +0.15900374 | +0.06655442 | |
| $P$ | 4.19 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 10 | 691 | 0.3− | 0.6+ | 2003 01 28 | 704 | 0.5− | 0.1+ | 2004 04 15 | 704 | 0.3+ | 1.2+ | | |
| 1993 09 10 | 691 | 0.2− | 0.7+ | 2004 02 25 | 704 | 0.1− | 0.3− | 2004 04 25 | 699 | (1.8− | 0.3+) | | |
| 1993 09 10 | 691 | 0.0 | 0.4+ | 2004 02 25 | 704 | 0.7+ | 0.1+ | 2004 04 25 | 699 | (1.6− | 1.5−) | | |
| 2000 04 07 | 699 | 0.1− | 0.1+ | 2004 02 25 | 704 | 0.5− | 0.1+ | 2004 04 25 | 699 | 0.5+ | 0.6+ | | |
| 2000 04 07 | 699 | 0.2+ | 0.1+ | 2004 02 25 | 704 | 0.7− | 0.0 | 2004 04 25 | 699 | 1.1+ | 0.1+ | | |
| 2000 04 07 | 699 | 0.4− | 0.0 | 2004 02 25 | 704 | 0.3− | 0.2− | 2006 09 26 | 703 | (3.1+ | 0.5−) | | |
| 2000 04 07 | 699 | 0.9+ | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.0 | | |
| 2000 05 04 | 704 | 0.4+ | 0.4+ | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.6+ | | |
| 2000 05 04 | 704 | 0.4+ | 0.4− | 2004 03 18 | 691 | 0.4− | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.3− | | |
| 2000 05 04 | 704 | 0.2− | 0.8+ | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 703 | 0.1+ | 0.2− | | |
| 2000 05 04 | 704 | 0.4+ | 0.9+ | 2004 03 23 | 704 | 1.1+ | 0.4+ | 2006 10 20 | 703 | 1.1− | 0.7+ | | |
| 2000 05 04 | 704 | 0.1+ | 0.9+ | 2004 03 23 | 704 | 1.0+ | 0.1− | 2006 10 20 | 703 | 0.4+ | 0.7+ | | |
| 2002 10 06 | 608 | 0.3+ | 0.5+ | 2004 03 23 | 704 | 0.6+ | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.8− | | |
| 2002 10 06 | 608 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.6− | 0.3− | | |
| 2002 10 06 | 608 | 0.2+ | 0.9+ | 2004 03 26 | 704 | 0.1+ | 1.0+ | 2006 10 28 | 703 | 0.8− | 0.7− | | |
| 2002 11 06 | 644 | 0.0 | 0.6− | 2004 03 26 | 704 | 0.7− | 0.9+ | 2006 10 28 | 703 | 1.0+ | 0.1+ | | |
| 2002 11 06 | 644 | 0.2+ | 0.9− | 2004 03 26 | 704 | (0.9− | 2.0+) | 2006 10 28 | 703 | 0.8− | 0.0 | | |
| 2002 11 06 | 644 | 0.4+ | 0.8− | 2004 03 26 | 704 | 1.0− | 1.4+ | 2006 10 28 | 703 | 0.2− | 0.0 | | |
| 2002 11 16 | 644 | 0.5+ | 0.8+ | 2004 03 26 | 704 | 0.8− | 0.6+ | 2006 10 28 | 703 | 0.5− | 0.7+ | | |
| 2002 11 16 | 644 | 0.3+ | 0.7+ | 2004 03 30 | 703 | (1.9− | 0.2+) | 2006 10 28 | 703 | 0.4− | 0.6+ | | |
| 2002 11 16 | 644 | 0.5+ | 0.7+ | 2004 03 30 | 703 | 0.1+ | 1.4+ | 2006 11 09 | 644 | 0.2+ | 0.4+ | | |
| 2002 11 23 | 644 | 0.0 | 0.7+ | 2004 03 30 | 703 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 2002 11 23 | 644 | 0.1− | 0.9+ | 2004 03 30 | 703 | 0.4+ | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 2002 11 23 | 644 | 0.5− | 1.0+ | 2004 04 12 | 703 | 0.6+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.7+ | | |
| 2002 11 30 | 704 | 0.3+ | 0.5− | 2004 04 12 | 703 | 1.3− | 0.6− | 2006 11 17 | 703 | 0.2+ | 0.3− | | |
| 2002 11 30 | 704 | 0.5+ | 0.4+ | 2004 04 12 | 703 | 0.1− | 0.8+ | 2006 11 17 | 703 | 0.2+ | 0.5− | | |
| 2002 11 30 | 704 | 0.2+ | 0.6− | 2004 04 12 | 703 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.5− | 1.0+ | | |
| 2002 11 30 | 704 | 0.1+ | 0.0 | 2004 04 15 | 704 | 0.2+ | 0.8+ | 2006 11 23 | 703 | 0.5+ | 0.9+ | | |
| 2003 01 28 | 704 | 0.4− | 0.3+ | 2004 04 15 | 704 | 0.5+ | 0.0 | 2006 11 23 | 703 | 0.6+ | 0.1− | | |
| 2003 01 28 | 704 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.2+ | 0.6+ | 2006 11 23 | 703 | 0.3− | 1.5+ | | |
| 2003 01 28 | 704 | 0.5− | 0.4+ | 2004 04 15 | 704 | 0.7+ | 0.5+ | 2006 11 23 | 703 | 0.4+ | 0.3+ | | |

**(144636)∗ 2004 FP$_{88}$ = 2002 XE$_{104}$**

Discovered 2004 Mar. 20 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69704)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.68715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21961087 | $\omega$ | 314.98394 | | +0.73022395 | −0.67507620 | |
| $a$ | 2.7208221 | $\Omega$ | 87.78114 | | +0.65269495 | +0.64385031 | |
| $e$ | 0.1156524 | $i$ | 6.03722 | | +0.20189674 | +0.36017898 | |
| $P$ | 4.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.1+ | 0.3+ | 2002 12 10 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.1− | 0.4− | | |
| 2001 07 13 | 644 | 0.0 | 0.3− | 2002 12 10 | 704 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.4− | 0.2+ | | |
| 2001 07 13 | 644 | 0.0 | 0.3− | 2002 12 10 | 704 | (0.3− | 1.9−) | 2006 09 19 | 703 | 0.6− | 0.0 | | |
| 2001 07 26 | 644 | 0.6− | 0.2− | 2002 12 31 | 704 | 0.1− | 1.4+ | 2006 09 19 | 703 | 0.9+ | 0.5− | | |
| 2001 07 26 | 644 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.8− | 0.3+ | 2006 09 19 | 703 | 1.4− | 0.5+ | | |
| 2001 07 26 | 644 | 0.3+ | 0.3+ | 2002 12 31 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 703 | 0.7+ | 0.2+ | | |
| 2002 11 06 | 704 | 0.7− | 0.2+ | 2004 03 20 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.3− | | |
| 2002 11 06 | 704 | 0.6+ | 0.1− | 2004 03 20 | 691 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.6− | | |
| 2002 11 06 | 704 | 0.3+ | 1.0+ | 2004 03 20 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.1+ | | |
| 2002 11 28 | 608 | 0.5− | 0.9+ | 2004 03 23 | 704 | 0.4− | 0.3+ | 2006 10 02 | 703 | 0.0 | 0.2+ | | |
| 2002 11 28 | 608 | 0.4− | 0.7+ | 2004 03 23 | 704 | 0.6+ | 0.0 | 2006 10 02 | 703 | 0.2+ | 0.4+ | | |
| 2002 11 28 | 608 | 0.2− | 0.5+ | 2004 03 23 | 704 | (0.3− | 2.2+) | 2006 10 02 | 703 | 0.3− | 0.1+ | | |
| 2002 12 05 | 704 | 0.8+ | 0.4− | 2004 03 30 | 691 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.7− | 0.7− | | |
| 2002 12 05 | 704 | 0.9+ | 0.4− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.4+ | | |
| 2002 12 05 | 704 | 0.6+ | 1.0− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2002 12 05 | 704 | 0.0 | 1.5− | 2006 09 18 | 699 | 0.6+ | 1.0+ | 2006 10 22 | 644 | 1.0+ | 0.4+ | | |
| 2002 12 10 | 704 | 0.4− | 0.4− | 2006 09 18 | 699 | 0.4+ | 1.2+ | | | | | | |
| 2002 12 10 | 704 | 0.4− | 0.7− | 2006 09 18 | 699 | 0.8− | 0.2+ | | | | | | |

**(144637)∗ 2004 FS$_{90}$ = 2001 SK$_{185}$**

Discovered 2004 Mar. 20 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 62116)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.59306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22602073 | $\omega$ | 353.54182 | | −0.90107995 | −0.42788614 | |
| $a$ | 2.6691350 | $\Omega$ | 160.64611 | | +0.40677908 | −0.89032878 | |
| $e$ | 0.1102525 | $i$ | 12.28019 | | +0.15028542 | −0.15565385 | |
| $P$ | 4.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 699 | 0.7+ | 1.2+ | 2004 04 16 | 704 | 0.5+ | 0.9+ | 2005 07 05 | 644 | 0.1+ | 0.1+ |
| 1999 01 14 | 699 | 1.0+ | 0.5+ | 2004 04 16 | 683 | 0.1− | 0.2+ | 2005 07 05 | 644 | 0.0 | 0.2− |
| 1999 01 14 | 699 | (0.6− | 3.3+) | 2004 04 16 | 704 | 0.2+ | 0.6+ | 2005 07 10 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2004 04 19 | 683 | (0.0 | 2.3−) | 2005 07 10 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.3− | 0.8+ | 2004 04 19 | 683 | 1.2+ | 1.1− | 2005 07 10 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.9+ | 0.9− | 2004 04 19 | 683 | 0.7− | 1.2+ | 2005 07 15 | 691 | 0.2+ | 0.2+ |
| 2001 09 20 | 691 | 0.4− | 0.3+ | 2004 04 21 | 703 | 0.8− | 0.8− | 2005 07 15 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 691 | 0.2− | 0.3+ | 2004 04 21 | 703 | 0.1+ | 0.5+ | 2005 07 15 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 691 | 0.1− | 0.1+ | 2004 04 21 | 703 | 0.2− | 0.1− | 2005 07 29 | 644 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.3− | 2004 04 21 | 703 | 0.8− | 0.1+ | 2005 07 29 | 644 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2004 04 24 | 704 | 1.4− | 1.3− | 2005 07 29 | 644 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.4− | 2004 04 24 | 704 | 0.5+ | 0.3− | 2005 08 06 | 644 | 0.1+ | 0.2− |
| 2003 01 26 | 644 | 0.6− | 0.2+ | 2004 04 24 | 704 | 0.7+ | 0.4− | 2005 08 06 | 644 | 0.2− | 0.5+ |
| 2003 01 26 | 644 | 0.2− | 0.5+ | 2004 04 24 | 704 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.0 |
| 2003 01 26 | 644 | 0.4− | 0.6+ | 2004 04 26 | 699 | 0.0 | 0.6− | 2005 08 06 | 644 | 0.1− | 0.2+ |
| 2004 03 20 | E12 | 0.2+ | 1.1+ | 2004 04 26 | 699 | 1.0− | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.1− |
| 2004 03 20 | E12 | 0.4+ | 1.2+ | 2004 04 26 | 699 | 0.1+ | 0.2− | 2005 08 06 | 644 | 0.0 | 0.3+ |
| 2004 03 20 | E12 | (0.8− | 2.3+) | 2004 04 26 | 699 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.8− | 0.6+ |
| 2004 03 20 | E12 | 0.4+ | 1.0+ | 2004 05 13 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2004 03 23 | 704 | 1.2− | 0.6− | 2004 05 13 | 704 | 0.4− | 0.1− | 2006 10 16 | 703 | 1.9− | 0.6− |
| 2004 03 23 | 704 | 0.5− | 0.0 | 2004 05 13 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.6+ | 1.0+ |
| 2004 03 23 | 704 | 0.5+ | 0.4− | 2004 05 13 | 704 | 0.7− | 0.5− | 2006 10 22 | 703 | 1.4− | 1.7− |
| 2004 04 16 | 704 | 0.9+ | 0.8+ | 2004 05 13 | 704 | 0.5+ | 1.1+ | 2006 10 22 | 703 | 1.2+ | 0.1+ |
| 2004 04 16 | 683 | 0.3− | 0.6− | 2004 05 24 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 1.7+ | 0.8+ |
| 2004 04 16 | 704 | 0.7+ | 0.9+ | 2004 05 24 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 1.1+ | 1.2+ |
| 2004 04 16 | 704 | 0.6+ | 0.8+ | 2004 05 24 | 704 | 0.9− | 0.3− | | | | |
| 2004 04 16 | 683 | 0.3+ | 0.2− | 2005 07 05 | 644 | 0.4+ | 0.0 | | | | |

**(144638)∗ 2004 FB$_{93}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 107.33403 | | (2000.0) | | | |
| $n$ | 0.18437996 | $\omega$ | 213.41692 | | +0.00628781 | +0.99923401 |
| $a$ | 3.0572215 | $\Omega$ | 56.97144 | | −0.90707630 | +0.02195783 |
| $e$ | 0.1685374 | $i$ | 2.64052 | | −0.42091929 | −0.03239204 |
| $P$ | 5.35 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 691 | 0.0 | 0.4+ | 2004 04 12 | 699 | (1.9− | 1.4+) | 2006 10 11 | 691 | 0.0 | 0.5+ |
| 2001 11 15 | 691 | 0.2+ | 0.0 | 2004 04 12 | 699 | 0.7− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2001 11 15 | 691 | 0.0 | 0.1+ | 2004 04 19 | 704 | 1.0+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.5+ |
| 2001 11 19 | 704 | 0.5− | 0.1− | 2004 04 19 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.4+ |
| 2001 11 19 | 704 | 1.2− | 0.2+ | 2004 04 19 | 704 | 1.1+ | 0.1− | 2006 10 19 | 691 | 0.4+ | 0.2− |
| 2001 11 19 | 704 | 0.3− | 0.7− | 2004 04 19 | 704 | 0.3+ | 0.6− | 2006 10 19 | 691 | 0.5+ | 0.4+ |
| 2001 12 18 | 704 | 0.1− | 0.3− | 2004 04 19 | 704 | 0.2− | 0.9− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.1− | 0.5+ | 2004 04 20 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.5+ |
| 2001 12 18 | 704 | 1.3+ | 0.5− | 2004 04 20 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2003 12 25 | 291 | 0.1− | 0.5+ | 2004 04 20 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2003 12 25 | 291 | (1.6− | 1.3+) | 2005 06 29 | 644 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.4+ | 0.5− |
| 2003 12 25 | 291 | 1.3− | 0.5+ | 2005 06 29 | 644 | 0.3− | 0.4+ | 2006 10 27 | 691 | 0.3− | 0.4− |
| 2004 03 19 | 704 | (1.4+ | 1.7−) | 2005 06 29 | 644 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.7− | 0.3− |
| 2004 03 19 | 704 | (0.9+ | 2.3−) | 2005 07 04 | 644 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | 1.4+ | 0.4− | 2005 07 04 | 644 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2004 03 19 | 704 | (0.4− | 2.2−) | 2005 07 04 | 644 | 0.3− | 0.4+ | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 2004 03 24 | 699 | 0.3+ | 0.9+ | 2005 07 31 | E12 | 0.4+ | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2004 03 24 | 699 | 0.3− | 0.9+ | 2005 07 31 | E12 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2004 03 24 | 699 | 0.4+ | 0.1+ | 2005 07 31 | E12 | 0.4+ | 1.0+ | 2006 11 13 | G96 | 0.4+ | 0.1+ |
| 2004 03 24 | 699 | 0.4− | 1.3+ | 2005 07 31 | E12 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.9+ | 0.6− |
| 2004 03 28 | 704 | (1.6+ | 0.6+) | 2005 08 06 | 704 | 0.6+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2004 03 28 | 704 | 0.6+ | 0.2+ | 2005 08 06 | 704 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2004 03 28 | 704 | 1.3+ | 0.4+ | 2005 08 06 | 704 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2004 03 28 | 704 | 1.4+ | 0.2+ | 2005 08 06 | 704 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.6+ | 0.1+ |
| 2004 04 11 | 703 | 0.6− | 0.4+ | 2005 11 06 | G96 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2004 04 11 | 703 | 0.9+ | 1.3+ | 2005 11 06 | G96 | 1.3− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2004 04 11 | 703 | 1.0− | 0.6− | 2005 11 06 | G96 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2004 04 11 | 703 | 0.7− | 1.2− | 2005 11 06 | G96 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2004 04 12 | 699 | 0.9+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.5+ | | | | |
| 2004 04 12 | 699 | 1.0− | 0.9+ | 2006 10 11 | 691 | 0.0 | 0.5+ | | | | |

**(144639)∗ 2004 FH$_{93}$ = 2002 YN$_{32}$**

Discovered 2004 Mar. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62119)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 269.49812 | | (2000.0) | | | |
| $n$ | 0.23264771 | $\omega$ | 35.72374 | | −0.61679365 | −0.78086057 |
| $a$ | 2.6182043 | $\Omega$ | 92.56838 | | +0.69717355 | −0.60040980 |
| $e$ | 0.1136317 | $i$ | 5.69354 | | +0.36539655 | −0.17252490 |
| $P$ | 4.24 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.9+ | 1.2− | 2004 03 25 | 699 | 0.3− | 1.3+ | 2006 10 16 | 703 | 0.4+ | 0.9+ |
| 2002 11 11 | 704 | 0.5+ | 1.4− | 2004 03 25 | 699 | 1.3− | 0.5− | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2002 11 11 | 704 | (0.9+ | 2.3−) | 2004 03 25 | 699 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2002 11 11 | 704 | 0.4− | 1.4− | 2004 03 25 | 699 | 1.2− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2002 11 23 | 644 | 0.5− | 0.8+ | 2004 04 20 | 704 | 0.8+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 11 23 | 644 | 0.3− | 0.8+ | 2004 04 20 | 704 | (1.9+ | 1.0+) | 2006 10 20 | 644 | 0.3− | 0.8+ |
| 2002 11 23 | 644 | 0.3− | 0.9+ | 2004 04 20 | 704 | 0.7+ | 1.2+ | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 2002 12 27 | 644 | 0.5− | 0.3+ | 2004 04 20 | 704 | 1.1+ | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.7+ |
| 2002 12 27 | 644 | 0.7− | 0.1+ | 2004 04 20 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.8+ |
| 2002 12 27 | 644 | 0.1− | 0.6+ | 2004 04 22 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.7+ | 0.5+ |
| 2002 12 31 | 704 | 1.0+ | 0.4− | 2004 04 22 | 704 | (0.2− | 1.7+) | 2006 10 22 | 703 | 0.6+ | 0.4− |
| 2002 12 31 | 704 | (0.6+ | 1.5−) | 2004 04 22 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2002 12 31 | 704 | 1.2+ | 1.5− | 2004 04 22 | 704 | 0.7− | 0.6− | 2006 10 22 | 703 | 0.8− | 0.7+ |
| 2002 12 31 | 704 | 0.2+ | 1.0− | 2005 07 07 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.7− | 1.2+ |
| 2004 03 20 | 704 | 0.3+ | 0.5+ | 2005 07 07 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.5− | 1.0+ |
| 2004 03 20 | 704 | 1.2+ | 0.1− | 2005 07 07 | 691 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.7− | 0.5− |
| 2004 03 20 | 704 | 1.0+ | 0.5+ | 2005 07 11 | 691 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.9− | 0.2− |
| 2004 03 20 | 704 | 0.6+ | 0.4+ | 2005 07 11 | 691 | 0.3+ | 0.9− | 2006 11 13 | 703 | (0.1+ | 1.6+) |
| 2004 03 20 | 704 | 0.4+ | 0.4− | 2005 07 11 | 691 | (2.4+ | 2.8−) | 2006 11 23 | G96 | 0.2+ | 0.4+ |
| 2004 03 24 | 699 | 0.6− | 0.2+ | 2006 09 30 | 703 | 1.1− | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2004 03 24 | 699 | 0.2+ | 1.4+ | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 03 24 | 699 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2004 03 24 | 699 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.3− | | | | |

**(144640)∗ 2004 FO$_{93}$ = 2005 LU$_{34}$**

Discovered 2004 Mar. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86421)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.70881 | | (2000.0) | | | |
| $n$ | 0.21306435 | $\omega$ | 150.08641 | | +0.49820717 | +0.86560876 |
| $a$ | 2.7762731 | $\Omega$ | 149.71284 | | −0.81392008 | +0.48681398 |
| $e$ | 0.0300583 | $i$ | 5.70233 | | −0.29887075 | +0.11719053 |
| $P$ | 4.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 06 | 691 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.8+ |
| 1999 03 06 | 691 | 0.0 | 0.4− | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 1999 03 06 | 691 | 0.3− | 0.1+ | 2004 03 22 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.9+ |
| 1999 03 14 | 691 | 0.3+ | 0.1− | 2004 03 22 | 704 | 0.9+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 1999 03 14 | 691 | 0.3+ | 0.0 | 2004 03 24 | 699 | 0.3− | 0.9+ | 2006 09 30 | 703 | 0.8− | 1.0+ |
| 1999 03 14 | 691 | 0.0 | 0.3+ | 2004 03 24 | 699 | 0.8− | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2001 09 12 | 704 | 0.7− | 0.3− | 2004 03 24 | 699 | 0.8+ | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2001 09 12 | 704 | 0.4+ | 0.5+ | 2004 03 24 | 699 | 1.2− | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2004 03 28 | 704 | (2.2+ | 1.4+) | 2006 10 16 | 703 | 1.3− | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 0.3+ | 2004 03 28 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.7− | 0.2− | 2004 03 28 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2004 03 28 | 704 | 0.3+ | 0.7− | 2006 10 22 | 644 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2004 04 21 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.5+ | |
| 2001 09 12 | 704 | 0.1+ | 0.6+ | 2004 04 21 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.9+ | |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2004 04 21 | 691 | 0.1− | 0.5+ | 2006 11 17 | 644 | 0.2+ | 0.8+ | |
| 2001 09 12 | 704 | 0.6− | 0.8+ | 2005 06 10 | 691 | 0.0 | 0.6+ | 2006 11 17 | 644 | 0.5+ | 0.6+ | |
| 2001 09 21 | 704 | 0.1− | 0.3+ | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.5+ | |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2+ | |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.0 | |
| 2001 09 21 | 704 | 0.3− | 0.6− | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.0 | |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.2+ | |
| 2004 03 22 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | | | | | |

**(144641)∗ 2004 FN$_{94}$ = 2000 AL$_{83}$**

Discovered 2004 Mar. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62119)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.30304 | | (2000.0) | | | |
| $n$ | 0.27600732 | $\omega$ | 354.41730 | | −0.75441178 | −0.65633786 |
| $a$ | 2.3362661 | $\Omega$ | 144.55609 | | +0.60284460 | −0.69829796 |
| $e$ | 0.1584345 | $i$ | 0.90276 | | +0.25969454 | −0.28565814 |
| $P$ | 3.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 20 | 010 | (1.4− | 3.9−) | 2004 03 27 | 704 | 0.1+ | 0.0 | 2005 08 14 | 673 | 0.7− | 0.4+ | |
| 1993 02 20 | 010 | (2.2− | 2.5−) | 2004 03 27 | 704 | 0.7+ | 0.4− | 2005 08 14 | 673 | 0.6− | 1.0+ | |
| 1993 02 20 | 010 | (3.8− | 3.8−) | 2004 03 27 | 704 | 0.2+ | 0.7− | 2005 08 14 | 673 | 0.4− | 0.5+ | |
| 1997 05 01 | 704 | 0.1+ | 0.8+ | 2004 03 27 | 704 | 0.6+ | 0.1+ | 2005 08 16 | 673 | 0.3− | 0.3+ | |
| 1997 05 01 | 704 | 0.3+ | 1.2+ | 2004 03 27 | 704 | 1.2+ | 0.8− | 2005 08 16 | 673 | 0.2+ | 0.6+ | |
| 1997 05 01 | 704 | 0.4+ | 0.8+ | 2004 03 31 | 704 | 0.3+ | 0.1+ | 2005 08 16 | 673 | 0.4− | 0.7+ | |
| 1997 05 01 | 704 | 0.8+ | 0.7+ | 2004 03 31 | 704 | 1.5+ | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.5− | |
| 2000 01 05 | 704 | 0.0 | 1.1+ | 2004 03 31 | 704 | (0.3+ | 1.7−) | 2006 11 11 | G96 | 0.2+ | 0.5− | |
| 2000 01 05 | 704 | 0.1− | 1.4+ | 2004 03 31 | 704 | 1.1+ | 1.2+ | 2006 11 11 | G96 | 0.7+ | 0.4− | |
| 2000 01 05 | 704 | 0.2− | 0.9+ | 2004 04 12 | 699 | 0.3− | 0.6− | 2006 11 11 | G96 | 0.0 | 0.4− | |
| 2000 01 05 | 704 | 0.1− | 1.8+ | 2004 04 12 | 699 | 0.9− | 0.7− | 2006 11 18 | 704 | 0.6+ | 0.5− | |
| 2000 01 05 | 704 | 0.1+ | 1.5+ | 2004 04 12 | 699 | 1.2− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.5− | |
| 2000 01 06 | 704 | 0.1+ | 0.2− | 2004 04 12 | 699 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.9− | 0.6+ | |
| 2000 01 06 | 704 | 0.7− | 1.1− | 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.5+ | |
| 2000 01 06 | 704 | 0.3− | 0.1− | 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | |
| 2000 01 26 | 691 | 0.0 | 0.3− | 2004 04 13 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.3+ | 0.1+ | |
| 2000 01 26 | 691 | 0.1− | 0.3− | 2004 04 16 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 2000 01 26 | 691 | 0.2+ | 0.4− | 2004 04 16 | 704 | 0.7+ | 0.8+ | 2006 11 27 | 691 | 0.0 | 0.2+ | |
| 2002 11 06 | 291 | 0.2− | 0.5+ | 2004 04 16 | 704 | 1.2+ | 1.1+ | 2006 11 27 | 691 | 0.1− | 0.1− | |
| 2002 11 06 | 291 | 0.1− | 0.6+ | 2004 04 16 | 704 | 0.7+ | 0.5− | 2006 11 27 | 691 | 0.7− | 0.0 | |
| 2002 11 06 | 291 | 0.1+ | 0.5+ | 2004 04 16 | 704 | 0.2+ | 0.5+ | 2006 12 01 | 704 | 0.7+ | 0.2− | |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2004 04 22 | 704 | 1.4+ | 0.5− | 2006 12 01 | 704 | 0.4+ | 0.5− | |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.2+ | 0.4+ | 2006 12 01 | 704 | 0.4+ | 0.2+ | |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2004 04 22 | 704 | 0.5+ | 1.2+ | 2006 12 01 | 691 | 0.2+ | 0.0 | |
| 2004 03 24 | 699 | 0.0 | 0.0 | 2004 04 22 | 704 | 1.0− | 0.5− | 2006 12 01 | 691 | 0.5− | 1.0+ | |
| 2004 03 24 | 699 | 0.7− | 0.2− | 2005 08 06 | 644 | 0.7− | 0.5+ | 2006 12 01 | 691 | 0.0 | 0.2+ | |
| 2004 03 24 | 699 | 0.2− | 0.5+ | 2005 08 06 | 644 | 0.2− | 0.4+ | | | | | |
| 2004 03 24 | 699 | 1.4− | 0.4+ | 2005 08 06 | 644 | 0.2− | 0.3+ | | | | | |

**(144642)∗ 2004 FO$_{96}$**

Discovered 2004 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.70722 | | (2000.0) | | | |
| $n$ | 0.23891034 | $\omega$ | 283.86003 | | +0.40009968 | −0.90353515 |
| $a$ | 2.5722475 | $\Omega$ | 141.38742 | | +0.90677784 | +0.36599270 |
| $e$ | 0.0493913 | $i$ | 14.23388 | | +0.13294433 | +0.22287568 |
| $P$ | 4.13 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 24 | 097 | 0.0 | 0.8− | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.3+ | 0.7+ | |
| 1998 12 24 | 097 | 0.5+ | 0.9− | 2004 03 15 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 703 | 0.5+ | 0.6+ | |
| 2000 03 11 | 699 | 0.1− | 0.6− | 2004 03 15 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.6+ | |
| 2000 03 11 | 699 | 0.5− | 0.3+ | 2004 03 15 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.1+ | |
| 2000 03 11 | 699 | 0.7+ | 0.6+ | 2004 03 15 | 704 | 0.5− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.4+ | |
| 2000 03 11 | 699 | 0.1− | 1.0+ | 2004 03 23 | 704 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.1− | |
| 2000 04 03 | 704 | 0.2− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.5− | 0.6+ | |
| 2000 04 03 | 704 | 0.5− | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.4− | 2006 10 28 | 703 | 0.8+ | 1.3+ | |
| 2000 04 03 | 704 | 0.6+ | 0.8+ | 2004 03 23 | 704 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.5+ | |
| 2000 04 03 | 704 | (1.1+ | 3.5+) | 2004 03 23 | 704 | 0.6− | 0.0 | 2006 10 28 | 703 | 0.5− | 0.2− | |
| 2001 08 09 | 644 | 0.5− | 1.1+ | 2004 03 25 | 704 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.5+ | 1.0− | |
| 2001 08 09 | 644 | (0.4− | 1.6+) | 2004 03 25 | 704 | 0.3− | 0.7+ | 2006 11 17 | 703 | 0.0 | 0.1+ | |
| 2001 08 09 | 644 | 0.3+ | 1.4+ | 2004 03 25 | 704 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.1+ | |
| 2002 10 30 | 704 | 0.2− | 0.3+ | 2004 04 13 | 703 | 0.7+ | 0.4+ | 2006 11 17 | 703 | 0.7+ | 0.1+ | |
| 2002 10 30 | 704 | 0.9− | 0.1+ | 2004 04 13 | 703 | 0.6+ | 1.0+ | 2006 11 18 | G96 | 0.0 | 0.3− | |
| 2002 10 30 | 704 | 0.2+ | 0.2− | 2004 04 13 | 703 | (3.0− | 0.2−) | 2006 11 18 | G96 | 0.2+ | 0.3− | |
| 2002 10 30 | 704 | 0.5+ | 0.1− | 2004 04 13 | 703 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.3− | |
| 2002 11 06 | 644 | 1.3+ | 0.9+ | 2006 09 18 | 703 | 0.4+ | 1.3+ | 2006 11 18 | G96 | 0.2− | 0.3− | |
| 2002 11 06 | 644 | (1.3+ | 1.6+) | 2006 09 18 | 703 | 0.4− | 1.2− | 2006 11 23 | 703 | 0.3− | 0.1− | |
| 2002 11 06 | 644 | 0.4+ | 1.2+ | 2006 09 18 | 703 | 0.2− | 0.7+ | 2006 11 23 | 703 | 0.6− | 0.6− | |
| 2002 11 30 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.7+ | 2006 11 23 | 703 | 1.6− | 0.5− | |
| 2002 11 30 | 704 | 1.2− | 0.3− | 2006 10 21 | 703 | 0.2− | 1.3+ | 2006 11 23 | 703 | 0.1+ | 0.2− | |
| 2002 11 30 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.2+ | | | | | |

**(144643)∗ 2004 FV$_{97}$ = 2002 UV$_{44}$**

Discovered 2004 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69705)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 273.45140 | | (2000.0) | | | |
| $n$ | 0.21790629 | $\omega$ | 338.90357 | | +0.02255245 | −0.98791922 |
| $a$ | 2.7349929 | $\Omega$ | 109.54514 | | +0.93896768 | −0.03172535 |
| $e$ | 0.1830854 | $i$ | 9.36334 | | +0.34326533 | +0.15168754 |
| $P$ | 4.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 566 | (0.6+ | 2.3−) | 2002 11 05 | 704 | 0.6+ | 0.7+ | 2004 03 23 | 704 | 0.8− | 0.4+ | |
| 1999 02 18 | 566 | 0.6+ | 1.8− | 2002 11 05 | 704 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.1− | 0.6+ | |
| 1999 02 18 | 566 | (0.6+ | 2.6−) | 2002 11 07 | 645 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.5+ | |
| 2000 04 10 | 691 | 0.0 | 0.2− | 2002 11 07 | 645 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.2− | 0.2+ | |
| 2000 04 10 | 691 | 0.3− | 0.4− | 2002 11 12 | 704 | 0.1+ | 0.2+ | 2004 03 25 | 704 | 0.0 | 1.1+ | |
| 2000 04 10 | 691 | 0.2− | 0.2+ | 2002 11 12 | 704 | 0.4− | 0.5+ | 2004 03 25 | 704 | 1.6+ | 0.3− | |
| 2001 07 19 | 644 | 0.1− | 0.2+ | 2002 11 12 | 704 | 0.2+ | 0.5− | 2004 03 25 | 704 | 0.1+ | 0.2+ | |
| 2001 07 19 | 644 | 0.1+ | 0.2+ | 2002 11 12 | 704 | 0.0 | 0.0 | 2004 03 28 | 704 | 0.7+ | 0.1− | |
| 2001 07 19 | 644 | 0.2+ | 0.1+ | 2002 11 12 | 704 | 0.0 | 0.3− | 2004 03 28 | 704 | 0.5− | 0.8+ | |
| 2002 10 06 | 608 | 0.7− | 0.1+ | 2002 11 22 | 644 | 0.3− | 0.5− | 2004 03 28 | 704 | 0.4− | 0.4+ | |
| 2002 10 06 | 608 | 0.5− | 0.2+ | 2002 11 22 | 644 | 0.2− | 0.7− | 2004 03 28 | 704 | 0.5+ | 0.6+ | |
| 2002 10 06 | 608 | 0.5− | 0.0 | 2002 11 22 | 644 | 0.1− | 0.3− | 2004 03 28 | 704 | 0.0 | 0.7+ | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2002 11 30 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 704 | 0.2+ | 0.1− | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2002 11 30 | 704 | 0.3− | 0.6+ | 2004 04 15 | 704 | 0.6− | 0.3− | |
| 2002 10 15 | 644 | 0.0 | 0.5− | 2002 11 30 | 704 | 0.8− | 0.9+ | 2004 04 15 | 704 | 0.1− | 0.2+ | |
| 2002 10 15 | 644 | 0.1− | 0.7− | 2002 11 30 | 704 | 0.2− | 0.5+ | 2006 08 28 | E12 | 0.1− | 1.4− | |
| 2002 10 15 | 644 | 0.1+ | 0.7− | 2004 01 29 | 704 | 0.5+ | 0.3− | 2006 08 28 | E12 | 0.5+ | 0.5+ | |
| 2002 10 30 | 704 | 0.7+ | 0.8+ | 2004 01 29 | 704 | 0.4+ | 1.5+ | 2006 08 28 | E12 | 0.4+ | 0.6+ | |
| 2002 10 30 | 704 | 0.5− | 0.6+ | 2004 01 29 | 704 | 0.7+ | 0.6+ | 2006 08 28 | E12 | 0.1− | 1.6+ | |
| 2002 10 30 | 704 | 0.2− | 0.6+ | 2004 01 29 | 704 | 0.9+ | 0.5+ | 2006 09 20 | 703 | 0.3− | 0.8+ | |
| 2002 10 30 | 704 | 0.2− | 1.0+ | 2004 03 15 | 704 | (4.0+ | 5.8+) | 2006 09 20 | 703 | 1.1− | 1.0+ | |
| 2002 10 30 | 704 | 0.3− | 1.3+ | 2004 03 15 | 704 | (0.2+ | 2.3+) | 2006 09 20 | 703 | 0.5− | 0.4+ | |
| 2002 11 05 | 704 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.7+ | 0.8+ | |
| 2002 11 05 | 704 | 0.9− | 0.9+ | 2004 03 15 | 704 | 0.6+ | 0.5+ | | | | | |
| 2002 11 05 | 704 | 1.2− | 0.6+ | 2004 03 23 | 704 | 0.2+ | 0.6+ | | | | | |

**(144644)∗ 2004 FT$_{99}$ = 2001 TR$_{172}$**

Discovered 2004 Mar. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62121)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.46880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19933406 | $\omega$ | 238.99245 | | −0.11060489 | +0.99290955 | |
| $a$ | 2.9023406 | $\Omega$ | 24.76953 | | −0.87273656 | −0.07606395 | |
| $e$ | 0.0503749 | $i$ | 5.96734 | | −0.47549705 | −0.09135044 | |
| $P$ | 4.94 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 691 | 0.2− | 0.1+ | 2004 03 30 | 704 | (0.4− | 1.6+) | 2006 10 03 | 691 | 0.2+ | 0.3+ | |
| 2001 09 21 | 691 | 0.3+ | 0.2+ | 2004 03 30 | 704 | 0.3− | 0.6+ | 2006 10 13 | A50 | 0.4+ | 0.2− | |
| 2001 09 21 | 691 | 0.1− | 0.2+ | 2004 04 12 | 691 | 0.4+ | 0.3+ | 2006 10 13 | A50 | 0.5− | 0.4− | |
| 2001 10 13 | 704 | 0.4− | 0.3+ | 2004 04 12 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.5− | 0.2− | |
| 2001 10 13 | 704 | 0.8− | 0.9+ | 2004 04 12 | 691 | 0.7+ | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.1+ | |
| 2001 10 13 | 704 | 0.1+ | 0.9+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.2− | |
| 2001 10 13 | 704 | 0.1− | 0.3+ | 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 10 16 | G96 | 0.3− | 0.5− | |
| 2001 10 20 | 704 | 0.4− | 0.9− | 2004 04 19 | 691 | 0.4+ | 0.6+ | 2006 10 16 | G96 | 0.2+ | 0.2− | |
| 2001 10 20 | 704 | 0.3− | 0.1− | 2005 07 03 | 644 | 0.2− | 1.2+ | 2006 10 16 | G96 | 0.4− | 0.4− | |
| 2001 10 20 | 704 | (1.9− | 1.4+) | 2005 07 03 | 644 | 0.1− | 0.8+ | 2006 10 16 | G96 | 0.2+ | 0.3− | |
| 2004 03 20 | 704 | 0.1− | 0.8+ | 2005 07 03 | 644 | 0.2− | 1.0+ | 2006 10 19 | 695 | 0.0 | 0.1+ | |
| 2004 03 20 | 704 | 0.2− | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 695 | 0.2− | 0.1+ | |
| 2004 03 20 | 704 | 0.5+ | 1.0+ | 2006 09 14 | 691 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1− | |
| 2004 03 20 | 704 | (1.9+ | 1.9+) | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.2+ | |
| 2004 03 22 | 704 | 0.6− | 0.7+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1− | |
| 2004 03 22 | 704 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.2− | |
| 2004 03 22 | 704 | 0.9+ | 1.2+ | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.0 | |
| 2004 03 22 | 704 | 1.2− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.5− | 0.2− | |
| 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.2− | |
| 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.0 | 0.1+ | |
| 2004 03 26 | 691 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.4− | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.1+ | |
| 2004 03 29 | 704 | 0.5+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 13 | 691 | 0.2− | 0.8+ | |
| 2004 03 29 | 704 | 0.6+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 27 | G96 | 0.3− | 0.1+ | |
| 2004 03 29 | 704 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.4− | 0.3+ | |
| 2004 03 30 | 704 | 1.3− | 0.0 | 2006 10 03 | 691 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.5− | |
| 2004 03 30 | 704 | 0.4− | 0.7+ | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.0 | |

**(144645)∗ 2004 FZ$_{100}$ = 1995 DB$_9$ = 2002 XB$_{78}$**

Discovered 2004 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62122)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.35843 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22326965 | $\omega$ | 21.09138 | | +0.83694840 | −0.54720713 | |
| $a$ | 2.6910158 | $\Omega$ | 12.09670 | | +0.49574417 | +0.75103142 | |
| $e$ | 0.0705261 | $i$ | 2.47245 | | +0.23185144 | +0.36948093 | |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.7− | 0.9+ | 2004 04 12 | 691 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 1995 02 24 | 691 | 0.1+ | 0.4+ | 2004 04 12 | 691 | 0.3− | 1.3+ | 2006 10 21 | 703 | 0.2− | 0.1− | |
| 1995 02 24 | 691 | 0.3− | 0.2− | 2004 04 12 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.6− | 1.2+ | |
| 1995 03 02 | 691 | 0.4+ | 0.0 | 2004 04 22 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.6+ | |
| 1995 03 02 | 691 | 0.1+ | 0.7− | 2004 04 22 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.3+ | |
| 1995 03 02 | 691 | 1.0+ | 0.6− | 2004 04 22 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 2000 05 24 | 691 | 0.4− | 0.3− | 2006 07 22 | G96 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2000 05 24 | 691 | 1.0− | 0.6− | 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2000 05 24 | 691 | 0.7− | 0.8− | 2006 07 22 | G96 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.0 | |
| 2001 08 16 | 704 | (0.2+ | 1.9+) | 2006 07 22 | G96 | 1.0− | 0.3+ | 2006 10 29 | 691 | 0.3+ | 0.0 | |
| 2001 08 16 | 704 | 0.5+ | 0.2+ | 2006 09 22 | 184 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.1− | |
| 2001 08 16 | 704 | 0.3+ | 1.1+ | 2006 09 22 | 184 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1− | 0.4− | |
| 2001 08 16 | 704 | 0.0 | 1.1+ | 2006 09 22 | 184 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1− | |
| 2002 12 11 | 704 | (1.8− | 0.5−) | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.0 | |
| 2002 12 11 | 704 | 0.2− | 1.1− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.3+ | 0.1− | |
| 2002 12 11 | 704 | 0.5− | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.1− | |
| 2002 12 14 | 704 | 0.6− | 0.7− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.1− | |
| 2002 12 14 | 704 | 0.7− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.2− | |
| 2002 12 14 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.1− | |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 21 | 691 | 0.4− | 0.1− | |
| 2004 03 15 | 703 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.1+ | |
| 2004 03 15 | 703 | 1.1+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.0 | |
| 2004 03 15 | 703 | 0.3+ | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.0 | |
| 2004 03 15 | 703 | 1.5− | 0.9− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.8+ | |
| 2004 03 23 | 704 | 1.2− | 1.4− | 2006 10 16 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 1.2+ | |
| 2004 03 23 | 704 | 0.2+ | 0.5− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.3+ | |
| 2004 03 23 | 704 | 1.0− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 1.1+ | |
| 2004 03 23 | 704 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.1− | |
| 2004 03 26 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.2− | |
| 2004 03 26 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2− | |
| 2004 03 26 | 691 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ | | | | | |

**(144646)∗ 2004 FB$_{102}$ = 2003 AL$_{60}$**

Discovered 2004 Mar. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65658)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.47894 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21285153 | $\omega$ | 255.42213 | | −0.70827924 | +0.70371400 | |
| $a$ | 2.7781234 | $\Omega$ | 329.24141 | | −0.59826753 | −0.64041917 | |
| $e$ | 0.0704205 | $i$ | 6.27748 | | −0.37472186 | −0.30765224 | |
| $P$ | 4.63 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | (1.1+ | 2.1+) | 2004 03 17 | 704 | (0.8− | 1.7+) | 2005 07 04 | 644 | 0.4− | 0.5+ | |
| 2001 09 19 | 704 | 0.8− | 1.5+ | 2004 03 17 | 704 | (1.6− | 0.9+) | 2005 07 04 | 644 | 0.2− | 0.2+ | |
| 2001 09 19 | 704 | (2.1+ | 1.7+) | 2004 03 19 | 704 | 0.2+ | 0.8+ | 2005 07 18 | 644 | 0.1− | 0.3+ | |
| 2001 09 19 | 704 | (1.1+ | 2.4+) | 2004 03 19 | 704 | (1.2+ | 1.7+) | 2005 07 18 | 644 | 0.2− | 0.1+ | |
| 2001 09 28 | 644 | 0.3+ | 0.9+ | 2004 03 19 | 704 | (0.1− | 2.2+) | 2005 07 18 | 644 | 0.3− | 0.3+ | |
| 2001 09 28 | 644 | 0.5+ | 0.9+ | 2004 03 19 | 704 | (0.1+ | 2.0+) | 2005 08 06 | 704 | 0.3− | 0.7− | |
| 2001 09 28 | 644 | 0.2+ | 1.0+ | 2004 03 26 | 704 | 0.3+ | 0.7+ | 2005 08 06 | 704 | 0.2− | 0.2+ | |
| 2003 01 07 | 704 | 0.8+ | 0.4+ | 2004 03 26 | 704 | 1.4+ | 1.2+ | 2005 08 06 | 704 | 0.4− | 0.6+ | |
| 2003 01 07 | 704 | 0.4+ | 1.1+ | 2004 03 26 | 704 | 0.4+ | 1.3+ | 2005 08 06 | 704 | 1.1− | 0.5+ | |
| 2003 01 07 | 704 | 0.9− | 0.8+ | 2004 04 09 | E12 | 0.6+ | 0.2− | 2006 11 22 | 703 | 0.6+ | 0.9− | |
| 2003 01 07 | 704 | 0.1+ | 0.9+ | 2004 04 09 | E12 | 0.2+ | 0.7− | 2006 11 22 | 703 | 0.1+ | 0.6+ | |
| 2003 01 09 | 704 | 0.5− | 0.1+ | 2004 04 09 | E12 | 0.0 | 0.8− | 2006 11 22 | 703 | 0.6− | 0.4+ | |
| 2003 01 09 | 704 | 0.6− | 0.4+ | 2004 04 09 | E12 | 0.5+ | 0.1− | 2006 11 22 | 703 | 0.4+ | 0.6+ | |
| 2003 01 09 | 704 | 1.1− | 0.8+ | 2004 04 17 | 704 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.0 | |
| 2003 01 09 | 704 | 1.1− | 0.5− | 2004 04 17 | 704 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.1− | |
| 2004 03 17 | 704 | 0.8+ | 1.4+ | 2004 04 17 | 704 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.4+ | 0.2+ | |
| 2004 03 17 | 704 | (1.5+ | 1.8+) | 2004 04 17 | 704 | 0.3− | 0.8+ | 2006 11 25 | G96 | 0.6+ | 0.1+ | |
| 2004 03 17 | 704 | 0.2− | 0.1− | 2005 07 04 | 644 | 0.8− | 0.2+ | | | | | |

**(144647)∗ 2004 FT$_{102}$ = 1995 TB$_2$ = 2002 QO$_{31}$**

Discovered 2004 Mar. 23 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69705)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.66692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26816230 | $\omega$ | 24.63406 | | +0.31409092 | −0.94822261 | |
| $a$ | 2.3816114 | $\Omega$ | 47.09817 | | +0.86003693 | +0.26315528 | |
| $e$ | 0.2167875 | $i$ | 3.68855 | | +0.40209871 | +0.17782910 | |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 14 | 327 | 0.3+ | 0.2+ | 2004 03 27 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.1− | |
| 1995 10 14 | 327 | 1.1+ | 0.1− | 2004 03 27 | 691 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.1+ | |
| 1995 10 14 | 327 | 0.3+ | 0.2− | 2004 03 27 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.1+ | |
| 1995 10 15 | 327 | 0.5− | 1.0− | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 1995 10 15 | 327 | 1.1− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 1995 10 15 | 327 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2000 01 31 | 704 | 0.3− | 0.8− | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.1+ | |
| 2000 01 31 | 704 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.0 | |
| 2000 01 31 | 704 | 0.4+ | 0.1− | 2006 09 23 | 691 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.6− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2001 05 23 | 807 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.4− | 0.6+ | 2006 09 27 | 704 | 0.7− | 0.7− | 2006 10 28 | 704 | (1.9− | 0.6−) |
| 2002 08 29 | 644 | 0.2− | 0.9+ | 2006 09 27 | 704 | 0.8− | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 704 | 0.4+ | 1.5+ |
| 2002 08 30 | 644 | 0.3− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 704 | (1.7− | 0.1+) |
| 2002 08 30 | 644 | 0.5− | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 10 28 | 704 | 0.6− | 0.3+ |
| 2002 08 30 | 644 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2003 12 19 | 691 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2003 12 19 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.8+ |
| 2003 12 19 | 691 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.7− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2004 02 26 | 704 | 1.3+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2004 02 26 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2004 02 26 | 704 | 0.2+ | 1.0+ | 2006 10 11 | 691 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.5+ | 0.7− |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2004 03 20 | 699 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2004 03 20 | 699 | 1.2+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.3− |
| 2004 03 20 | 704 | (1.7+ | 0.3+) | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.6− |
| 2004 03 20 | 704 | 1.3+ | 1.2+ | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2004 03 20 | 699 | 0.6+ | 0.8+ | 2006 10 15 | 691 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2004 03 20 | 704 | 0.2+ | 0.8+ | 2006 10 15 | 691 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2004 03 20 | 699 | 0.7+ | 0.8− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2004 03 23 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.6+ |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | (1.5+ | 1.1+) |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.5− |

**(144648)∗ 2004 FH$_{105}$ = 1999 LT$_{15}$ = 2000 SC$_{312}$**

Discovered 2004 Mar. 24 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 62123)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.13057 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17229911 | $\omega$ | 50.55597 | | +0.10488067 | | +0.93463802 |
| $a$ | 3.1985074 | $\Omega$ | 229.06997 | | −0.99312301 | | +0.08055992 |
| $e$ | 0.1821377 | $i$ | 26.72690 | | −0.05202623 | | +0.34635512 |
| $P$ | 5.72 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 22 | 691 | 0.1− | 0.2− | 2004 03 24 | E12 | 0.1+ | 0.8+ | 2006 10 19 | 703 | 0.1+ | 0.6− |
| 1995 11 22 | 691 | 0.1+ | 0.0 | 2004 03 24 | E12 | 0.3− | 0.4+ | 2006 10 19 | 703 | (2.3+ | 1.3+) |
| 1995 11 22 | 691 | 0.0 | 0.2− | 2004 03 26 | 704 | 0.5+ | 0.3+ | 2006 10 19 | A50 | 0.6− | 0.6+ |
| 1999 06 12 | 704 | 0.3− | 0.6− | 2004 03 26 | 704 | 0.1+ | 0.5+ | 2006 10 19 | A50 | 0.2− | 0.8+ |
| 1999 06 12 | 704 | 0.3− | 0.0 | 2004 03 26 | 704 | 0.7− | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 1999 06 12 | 704 | 0.7− | 0.0 | 2004 03 26 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 06 12 | 704 | 0.0 | 1.7− | 2004 03 26 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 06 12 | 704 | 0.5− | 0.2− | 2004 04 12 | E12 | 0.3+ | 0.8− | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 1999 06 14 | 704 | 0.1+ | 0.1+ | 2004 04 12 | E12 | 0.4+ | 1.4− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 1999 06 14 | 704 | 0.2+ | 0.5− | 2004 04 12 | E12 | 0.4+ | 0.6− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 1999 06 14 | 704 | 1.2+ | 0.1− | 2004 04 12 | E12 | 0.3+ | 0.7− | 2006 10 22 | 644 | 0.5− | 0.1− |
| 1999 06 14 | 704 | 0.5+ | 1.5+ | 2004 04 16 | 699 | 0.5+ | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2000 09 27 | 704 | 0.3− | 0.6+ | 2004 04 16 | 699 | 0.8− | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2000 09 27 | 704 | 0.4+ | 0.6+ | 2004 04 16 | 699 | 0.7+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.5+ |
| 2000 09 27 | 704 | 0.4+ | 0.8+ | 2004 04 16 | 699 | 0.8− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2000 09 27 | 704 | 0.2− | 0.6+ | 2004 05 15 | 704 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2000 10 04 | 704 | 0.1− | 0.0 | 2004 05 15 | 704 | 0.5− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 2000 10 04 | 704 | 0.2+ | 0.2− | 2004 05 15 | 704 | 0.8− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.2+ |
| 2000 10 04 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 1.1+ | 1.0− | 2006 10 27 | 703 | (2.0− | 0.8−) |
| 2001 12 20 | 209 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.8− | 0.7+ | 2006 10 27 | 703 | (1.2− | 2.8+) |
| 2001 12 20 | 209 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.7+ | 0.3− | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2001 12 20 | 209 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.7+ | 0.7− | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2004 03 24 | E12 | (1.6− | 1.0+) | 2006 10 19 | 703 | 0.7− | 0.4− | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2004 03 24 | E12 | 1.0+ | 0.8− | 2006 10 19 | 703 | 0.5+ | 1.3− | 2006 11 25 | G96 | 0.0 | 0.3− |

**(144649)∗ 2004 FO$_{105}$ = 1997 NB$_9$**

Discovered 2004 Mar. 24 by the Siding Spring Survey at Siding Spring.

Id. A. Doppler (*MPO* 69706)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.82506 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24018658 | $\omega$ | 153.67571 | | −0.30913707 | | −0.93644411 |
| $a$ | 2.5631275 | $\Omega$ | 313.81613 | | +0.82697139 | | −0.17857656 |
| $e$ | 0.1092741 | $i$ | 13.28821 | | +0.46963027 | | −0.30196495 |
| $P$ | 4.10 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 691 | 0.6− | 0.1− | 2002 12 15 | 704 | 0.5− | 0.2− | 2004 04 24 | E12 | 0.4− | 1.0+ |
| 1993 09 16 | 691 | 0.6− | 0.0 | 2002 12 15 | 704 | 0.4+ | 0.2− | 2004 04 24 | E12 | (2.0+ | 0.3−) |
| 1993 09 16 | 691 | 0.4− | 0.0 | 2002 12 15 | 704 | 0.1− | 0.2− | 2004 04 24 | E12 | 0.6+ | 0.5+ |
| 1997 07 13 | 910 | 0.8+ | 0.0 | 2002 12 15 | 704 | 0.8+ | 0.3− | 2004 04 24 | E12 | 1.5+ | 0.2+ |
| 1997 07 13 | 910 | 0.9+ | 0.3+ | 2003 01 22 | 644 | 0.2+ | 0.4+ | 2006 10 03 | 703 | 0.6− | 0.4− |
| 1997 07 13 | 910 | 0.8+ | 0.5+ | 2003 01 22 | 644 | 0.2− | 0.1+ | 2006 10 03 | 703 | 0.4− | 0.3− |
| 1997 07 14 | 910 | 0.8+ | 0.4+ | 2003 01 22 | 644 | 0.3− | 0.1− | 2006 10 03 | 703 | 0.6− | 0.6+ |
| 1997 07 14 | 910 | 0.9+ | 0.3+ | 2003 01 29 | 644 | 0.7− | 0.1+ | 2006 10 03 | 703 | 0.8− | 0.5+ |
| 1997 07 14 | 910 | 0.9+ | 0.1+ | 2003 01 29 | 644 | 0.8− | 0.0 | 2006 10 16 | 704 | 0.5+ | 0.1+ |
| 1998 12 17 | 704 | 0.3+ | 1.5− | 2003 01 29 | 644 | 0.4− | 0.4+ | 2006 10 16 | 704 | 0.0 | 0.6− |
| 1998 12 17 | 704 | 1.3+ | 1.7− | 2004 03 24 | E12 | 0.1+ | 0.5+ | 2006 10 16 | 704 | 0.6− | 0.5+ |
| 1998 12 17 | 704 | 0.0 | 0.3+ | 2004 03 24 | E12 | 0.3+ | 0.2+ | 2006 10 16 | 704 | 0.3+ | 0.2+ |
| 1998 12 17 | 704 | 0.9+ | 0.7− | 2004 03 24 | E12 | 0.5+ | 0.2− | 2006 10 23 | G92 | 0.0 | 0.1− |
| 2001 08 16 | 704 | 0.7+ | 0.5+ | 2004 03 24 | E12 | 0.2− | 0.2− | 2006 10 23 | G92 | 0.0 | 0.0 |
| 2001 08 16 | 704 | 0.4+ | 0.4+ | 2004 03 26 | 704 | 0.2− | 0.5− | 2006 10 23 | G92 | 0.6− | 1.4+ |
| 2001 08 16 | 704 | (1.6+ | 0.5+) | 2004 03 26 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.3− | 0.1− |
| 2002 10 01 | 704 | (1.9+ | 0.9−) | 2004 03 26 | 704 | 0.1− | 0.6+ | 2006 11 20 | 703 | 0.8− | 0.7+ |
| 2002 10 01 | 704 | 0.5+ | 0.5− | 2004 04 12 | E12 | 0.0 | 0.0 | 2006 11 20 | 703 | 0.5+ | 0.3− |
| 2002 10 01 | 704 | 0.3− | 0.4− | 2004 04 12 | E12 | 0.8+ | 0.5+ | 2006 11 20 | 703 | 0.4− | 0.2− |
| 2002 12 07 | 704 | 0.4− | 1.1+ | 2004 04 12 | E12 | (0.9− | 2.2−) | 2006 11 21 | 703 | 0.0 | 2.0+ |
| 2002 12 07 | 704 | 0.1− | 0.4+ | 2004 04 12 | E12 | 0.7+ | 0.6+ | 2006 11 21 | 703 | 0.6+ | 0.4+ |
| 2002 12 07 | 704 | (0.8+ | 1.6+) | 2004 04 22 | E12 | 0.5− | 0.8+ | 2006 11 21 | 703 | 0.2+ | 0.3+ |
| 2002 12 07 | 704 | 1.0− | 0.6+ | 2004 04 22 | E12 | 0.5− | 0.8+ | 2006 11 21 | 703 | 0.3+ | 0.2+ |
| 2002 12 07 | 704 | 0.2+ | 0.7+ | 2004 04 22 | E12 | 0.3− | 0.7+ | | | | |
| 2002 12 15 | 704 | 0.6− | 0.5+ | 2004 04 22 | E12 | 0.2− | 0.4+ | | | | |

**(144650)∗ 2004 FX$_{105}$ = 2001 QA$_{324}$ = 2001 TE$_{227}$**

Discovered 2004 Mar. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69706, d, *MPO* 76459)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.72856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21600023 | $\omega$ | 232.02230 | | +0.81396516 | | +0.55181542 |
| $a$ | 2.7510590 | $\Omega$ | 93.77903 | | −0.45943075 | | +0.80275803 |
| $e$ | 0.1085590 | $i$ | 10.48311 | | −0.35550542 | | +0.22600728 |
| $P$ | 4.56 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 29 | 691 | 0.1− | 0.1+ | 2001 09 22 | 644 | 0.6− | 0.7+ | 2004 03 26 | 703 | 0.4− | 0.6+ |
| 1998 01 29 | 691 | 0.1+ | 0.4− | 2001 10 15 | 644 | 0.1+ | 0.2+ | 2004 03 26 | 703 | 0.2+ | 0.8+ |
| 2000 04 27 | 704 | 0.4− | 1.0+ | 2001 10 15 | 644 | 0.0 | 0.1− | 2004 03 26 | 703 | (1.8+ | 0.9+) |
| 2000 04 27 | 704 | 0.1− | 0.5+ | 2001 10 15 | 644 | 0.1+ | 0.1+ | 2004 04 14 | 703 | 1.1− | 0.1− |
| 2000 04 27 | 704 | 0.1+ | 0.7+ | 2001 10 18 | 699 | 0.4+ | 0.4− | 2004 04 14 | 703 | 0.1− | 0.1+ |
| 2000 04 27 | 704 | 0.2+ | 0.9+ | 2001 10 18 | 699 | 0.2− | 0.3− | 2004 04 14 | 703 | 0.8+ | 0.3+ |
| 2000 04 27 | 704 | 1.1+ | 1.4+ | 2001 10 18 | 699 | 0.2+ | 0.0 | 2004 04 14 | 703 | 0.2+ | 0.7+ |
| 2000 06 05 | 699 | 0.2+ | 1.0− | 2001 10 18 | 699 | 1.2+ | 0.6+ | 2006 09 30 | 699 | 0.7− | 0.1− |
| 2000 06 05 | 699 | 0.5− | 1.1+ | 2001 12 05 | 704 | (0.2+ | 1.6+) | 2006 09 30 | 699 | 0.6+ | 0.8+ |
| 2000 06 05 | 699 | 0.3− | 0.7+ | 2001 12 05 | 704 | 0.0 | 0.4+ | 2006 09 30 | 699 | 0.5− | 0.4+ |
| 2000 06 05 | 699 | 0.1− | 0.6− | 2001 12 05 | 704 | 0.6+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.5− |
| 2001 07 29 | 644 | 0.3− | 0.5+ | 2001 12 05 | 704 | 0.6+ | 0.8− | 2006 09 30 | 703 | 0.6+ | 0.5− |
| 2001 07 29 | 644 | 0.6− | 0.6+ | 2002 12 05 | 704 | 0.6+ | 1.2+ | 2006 09 30 | 699 | 0.4− | 0.2− |
| 2001 07 29 | 644 | 0.2− | 0.7+ | 2002 12 05 | 704 | 0.1− | 1.2+ | 2006 09 30 | 703 | 0.3+ | 0.6− |
| 2001 08 19 | 704 | 1.3− | 1.3+ | 2002 12 05 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 0.2+ | 0.0 |
| 2001 08 19 | 704 | 0.6− | 0.5+ | 2002 12 05 | 704 | 0.1+ | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2001 08 19 | 704 | (1.6− | 1.0+) | 2004 02 17 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 1.0− | 0.1+ |
| 2001 08 25 | 644 | (0.3+ | 1.6+) | 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | (0.5+ | 1.7+) | 2004 02 17 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.3− | | |
| 2001 08 25 | 644 | (0.6+ | 1.7+) | 2004 02 17 | 704 | (1.2+ | 1.6+) | 2006 10 22 | 703 | 1.0+ | 0.1+ | | |
| 2001 09 11 | 704 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.3− | 2006 10 22 | 703 | (2.5− | 1.4−) | | |
| 2001 09 11 | 704 | 0.4+ | 0.3+ | 2004 03 15 | 704 | (2.4+ | 0.5+) | 2006 10 22 | 703 | 0.6− | 0.1+ | | |
| 2001 09 11 | 704 | 0.3− | 0.3+ | 2004 03 15 | 704 | (2.3+ | 1.4+) | 2006 10 22 | 703 | 0.3− | 0.1+ | | |
| 2001 09 11 | 704 | 0.3− | 0.4+ | 2004 03 25 | 704 | 1.2+ | 0.2− | 2006 11 13 | 703 | 0.0 | 0.0 | | |
| 2001 09 11 | 704 | 0.1− | 0.3+ | 2004 03 25 | 704 | 1.0+ | 0.6+ | 2006 11 13 | 703 | 0.1− | 0.8+ | | |
| 2001 09 22 | 644 | 0.4− | 0.8+ | 2004 03 25 | 704 | 0.0 | 0.6+ | 2006 11 13 | 703 | 0.1− | 0.5− | | |
| 2001 09 22 | 644 | 0.7− | 1.0+ | 2004 03 26 | 703 | 0.3+ | 1.2+ | 2006 11 13 | 703 | 0.0 | 0.1+ | | |

**(144651)∗ 2004 FE$_{106}$ = 1996 JY$_{13}$**

Discovered 2004 Mar. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76460)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.60647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24653210 | $\omega$ | 320.11444 | | −0.81530067 | −0.57900617 | |
| $a$ | 2.5189550 | $\Omega$ | 184.51745 | | +0.54893761 | −0.76954882 | |
| $e$ | 0.1125895 | $i$ | 4.40911 | | +0.18426153 | −0.26934451 | |
| $P$ | 4.00 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.0 | 0.1+ | 2004 03 26 | 291 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.0 | 0.3− | | |
| 1996 05 11 | 691 | 0.1+ | 0.1+ | 2004 03 26 | 291 | 0.2− | 0.1− | 2006 11 02 | G96 | 0.3− | 0.2− | | |
| 1996 05 11 | 691 | 0.3+ | 0.2+ | 2004 03 26 | 291 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.5+ | 0.2− | | |
| 1996 05 20 | 691 | 0.2− | 0.6− | 2004 03 27 | 291 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 1996 05 20 | 691 | 0.2− | 0.2− | 2004 03 27 | 291 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 1996 05 20 | 691 | 0.2− | 0.2− | 2004 03 27 | 291 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2002 12 01 | 704 | 0.4+ | 0.4− | 2004 04 22 | 704 | 0.5+ | 0.3+ | 2006 11 24 | 703 | 1.2− | 1.3+ | | |
| 2002 12 01 | 704 | 0.3+ | 0.5− | 2004 04 22 | 704 | 0.3+ | 0.3− | 2006 11 24 | 703 | 0.7− | 1.0+ | | |
| 2002 12 01 | 704 | 0.1− | 0.0 | 2004 04 22 | 704 | 0.4− | 0.3+ | 2006 11 24 | 703 | 0.8+ | 1.3− | | |
| 2002 12 05 | 608 | 0.0 | 0.8− | 2004 04 22 | 599 | 1.4+ | 0.3+ | 2006 11 24 | 703 | 0.8− | 0.1− | | |
| 2002 12 05 | 608 | 0.1− | 0.7− | 2004 04 22 | 599 | 0.5+ | 0.0 | 2006 11 25 | 703 | 0.6+ | 1.3− | | |
| 2002 12 05 | 608 | 0.1− | 0.4− | 2004 04 23 | 599 | 0.2+ | 0.3+ | 2006 11 25 | 703 | 0.0 | 0.3− | | |
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2004 04 23 | 599 | 0.3+ | 0.2+ | 2006 11 25 | 703 | 0.2− | 1.3+ | | |
| 2002 12 10 | 644 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.3+ | 0.3+ | 2006 11 25 | 703 | 0.2+ | 2.4+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 11 02 | G96 | 0.4+ | 0.2− | | | | | | |

**(144652)∗ 2004 FF$_{106}$**

Discovered 2004 Mar. 26 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.45684 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17169963 | $\omega$ | 54.21405 | | −0.20608833 | +0.97461292 | |
| $a$ | 3.2059480 | $\Omega$ | 204.33872 | | −0.95228269 | −0.22033050 | |
| $e$ | 0.0854155 | $i$ | 12.25867 | | −0.22513391 | +0.03980106 | |
| $P$ | 5.74 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 10 | 691 | 0.3− | 0.2− | 2004 05 18 | 704 | 0.0 | 0.9+ | 2006 10 19 | 691 | 0.2− | 0.1+ | | |
| 2000 09 10 | 691 | 0.1− | 0.6− | 2004 05 18 | 704 | 0.3− | 0.9+ | 2006 10 19 | 691 | 0.2− | 0.3+ | | |
| 2000 09 10 | 691 | 0.2− | 0.3− | 2004 05 18 | 704 | 1.2+ | 1.0+ | 2006 10 21 | 703 | 0.5− | 0.1− | | |
| 2000 11 24 | 691 | 0.1+ | 0.1+ | 2004 05 18 | 704 | 0.8− | 0.1+ | 2006 10 21 | 703 | 0.9+ | 0.5− | | |
| 2000 11 24 | 691 | 0.3+ | 0.2− | 2004 05 18 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.2+ | | |
| 2000 11 24 | 691 | 0.4+ | 0.0 | 2004 05 22 | 704 | 0.3+ | 0.3− | 2006 10 21 | 703 | 1.3− | 0.1+ | | |
| 2004 03 26 | 291 | 0.5− | 0.8+ | 2004 05 22 | 704 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2004 03 26 | 291 | 0.3− | 0.5+ | 2004 05 22 | 704 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2004 03 26 | 291 | 0.4− | 0.4+ | 2004 05 22 | 704 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.8+ | | |
| 2004 03 27 | 291 | 0.0 | 0.0 | 2005 07 11 | 703 | 1.1− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2004 03 27 | 291 | 0.3+ | 0.3+ | 2005 07 11 | 703 | 0.7+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2004 03 27 | 291 | 0.1− | 0.2+ | 2005 07 11 | 703 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2004 04 19 | 704 | 0.3− | 0.9+ | 2005 07 11 | 703 | 0.7− | 0.8− | 2006 10 28 | 691 | 0.0 | 0.4+ | | |
| 2004 04 19 | 704 | 0.5+ | 0.6+ | 2005 08 26 | 644 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.4+ | | |
| 2004 04 19 | 704 | 1.1+ | 0.7+ | 2005 08 26 | 644 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.5+ | | |
| 2004 04 19 | 704 | 0.1+ | 0.3+ | 2005 08 26 | 644 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2004 04 19 | 704 | 0.9+ | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.5+ | | |
| 2004 04 22 | 704 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | | |
| 2004 04 22 | 704 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2004 04 22 | 704 | 0.2+ | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.2− | | |
| 2004 04 22 | 704 | 0.5+ | 1.2+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.1+ | | |
| 2004 05 13 | 699 | 0.3− | 0.4+ | 2006 10 11 | 691 | 0.3− | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2004 05 13 | 699 | 0.4+ | 0.8+ | 2006 10 11 | 691 | 0.3+ | 0.8+ | 2006 11 16 | G96 | 0.1+ | 0.2+ | | |
| 2004 05 13 | 699 | (1.5− | 1.4−) | 2006 10 12 | 644 | 0.6+ | 0.4+ | 2006 11 16 | G96 | 0.7+ | 0.1− | | |
| 2004 05 13 | 699 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1+ | | |
| 2004 05 15 | 704 | (1.6+ | 0.2−) | 2006 10 12 | 644 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1+ | | |
| 2004 05 15 | 704 | 1.1+ | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.8+ | | |
| 2004 05 15 | 704 | 0.6− | 0.8− | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.7+ | | |
| 2004 05 15 | 704 | (1.7− | 0.5−) | 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.9+ | | |
| 2004 05 15 | 704 | 0.7− | 1.2+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 1.2− | 0.8+ | | |

**(144653)∗ 2004 FD$_{108}$ = 2001 OJ$_{31}$**

Discovered 2004 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69707)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.47322 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22664708 | $\omega$ | 35.17744 | | +0.66503889 | −0.74598260 | |
| $a$ | 2.6642152 | $\Omega$ | 13.25670 | | +0.64529103 | +0.55033027 | |
| $e$ | 0.0842460 | $i$ | 8.80901 | | +0.37592920 | +0.37502874 | |
| $P$ | 4.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.2+ | 0.6− | 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 1993 10 12 | 691 | 0.1+ | 0.2− | 2004 04 19 | 691 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.3+ | | |
| 1993 10 12 | 691 | 0.3+ | 0.1− | 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ | | |
| 2001 07 19 | 644 | 1.0+ | 1.3+ | 2006 07 22 | G96 | 0.4− | 0.9+ | 2006 10 21 | 691 | 0.3− | 0.3+ | | |
| 2001 07 19 | 644 | 1.0+ | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 07 19 | 644 | 0.8+ | 0.5+ | 2006 07 22 | G96 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2001 07 24 | 644 | 0.7− | 0.2+ | 2006 07 22 | G96 | 0.7− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 07 24 | 644 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.2− | | |
| 2001 07 24 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 2001 08 14 | 644 | 0.6− | 0.9− | 2006 09 25 | 691 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.2− | | |
| 2001 08 14 | 644 | 1.3− | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.4+ | | |
| 2001 08 14 | 644 | 1.2− | 0.4− | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.4+ | | |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 10 03 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.8− | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.6+ | | |
| 2002 12 05 | 704 | 0.3− | 0.7− | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.6+ | | |
| 2004 03 23 | 704 | 1.1+ | 0.5+ | 2006 10 17 | 691 | 0.7+ | 0.3− | 2006 11 22 | 704 | 0.7− | 1.0+ | | |
| 2004 03 23 | 704 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.3− | 1.0+ | | |
| 2004 03 23 | 704 | 1.4+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.3− | 0.3− | | |
| 2004 03 23 | 704 | (2.2+ | 0.8+) | 2006 10 19 | 644 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.2− | | |
| 2004 03 27 | 704 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.5− | | |
| 2004 03 27 | 704 | (1.9− | 0.7+) | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.6− | | |
| 2004 03 27 | 704 | (0.4− | 1.8+) | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.3− | | |
| 2004 03 27 | 704 | 1.1+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | | | | | |
| 2004 03 27 | 704 | 0.9− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.4+ | | | | | | |

**(144654)∗ 2004 FV$_{108}$**

Discovered 2004 Mar. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.30070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21674189 | $\omega$ | 2.92530 | | +0.85555900 | −0.51492914 | |
| $a$ | 2.7447796 | $\Omega$ | 28.27029 | | +0.47266099 | +0.73473610 | |
| $e$ | 0.0532837 | $i$ | 6.49096 | | +0.21121172 | +0.44160032 | |
| $P$ | 4.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 25 | 691 | 0.7− | 0.5− | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 1997 11 25 | 691 | 0.9+ | 0.1+ | 2004 04 13 | 691 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2001 05 24 | 807 | 0.2− | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2001 05 24 | 807 | 0.4− | 0.0 | 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.3− | 0.1+ | | |
| 2001 09 12 | 704 | 0.5− | 1.5+ | 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.3− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.7− | 0.7+ | 2004 04 20 | 691 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.3+ | | |
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.0 | 0.6− | | |
| 2001 09 12 | 704 | 0.2+ | 1.1+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.0 | 1.2+ | | |
| 2001 09 21 | 704 | 0.4− | 0.9− | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.7+ | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.7− | 1.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | 0.7− | 1.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.1− | | |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 1.2− | | |
| 2004 03 16 | 691 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.8− | 0.4+ | | |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.4− | | |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.1− | | |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 1.0+ | 0.4+ | | |
| 2004 03 27 | 704 | 0.8+ | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 1.2+ | 0.2+ | | |
| 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.3+ | | |
| 2004 03 27 | 704 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.8+ | | |
| 2004 03 27 | 704 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | | | | | | |

**(144655)∗ 2004 FE$_{110}$ = 2002 TW$_{270}$**

Discovered 2004 Mar. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 62126)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.84771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23521234 | $\omega$ | 232.54436 | | −0.65364442 | −0.75361358 | |
| $a$ | 2.5991379 | $\Omega$ | 258.42064 | | +0.71480028 | −0.58464500 | |
| $e$ | 0.2781920 | $i$ | 4.06200 | | +0.24861523 | −0.30042770 | |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 0.1− | 0.4+ | 2004 04 14 | 699 | 0.0 | 0.5+ | 2004 05 11 | 699 | (0.5− | 1.8−) | | |
| 1998 11 11 | 704 | 0.6+ | 0.1+ | 2004 04 14 | 699 | 0.0 | 0.4+ | 2004 05 11 | 699 | 0.2− | 0.6+ | | |
| 1998 11 11 | 704 | 0.1+ | 1.2+ | 2004 04 17 | 704 | 0.4+ | 1.2+ | 2004 05 11 | 699 | 0.9+ | 0.6− | | |
| 1998 11 11 | 704 | (2.1− | 0.5−) | 2004 04 17 | 704 | 1.0− | 0.3− | 2004 05 15 | 704 | 0.7+ | 1.1+ | | |
| 1998 11 24 | 691 | 0.4− | 0.4+ | 2004 04 17 | 704 | 0.4− | 0.1− | 2004 05 15 | 704 | 0.3+ | 0.2− | | |
| 1998 11 24 | 691 | 0.0 | 0.3+ | 2004 04 20 | 704 | 0.2− | 0.8+ | 2004 05 15 | 704 | 0.2+ | 0.9+ | | |
| 1998 11 24 | 691 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.2− | 0.0 | 2004 05 15 | 704 | 0.2− | 0.1− | | |
| 2002 10 04 | 704 | 0.1− | 0.5+ | 2004 04 20 | 704 | 0.1− | 0.2+ | 2004 05 16 | 704 | 0.1+ | 0.2− | | |
| 2002 10 04 | 704 | 0.3+ | 0.5+ | 2004 04 20 | 704 | 0.1+ | 0.1+ | 2004 05 16 | 704 | 0.9+ | 1.3− | | |
| 2002 10 04 | 704 | (0.0 | 1.6+) | 2004 04 20 | 704 | 0.7− | 0.3+ | 2004 05 16 | 704 | 0.5− | 0.6+ | | |
| 2002 10 04 | 704 | 0.2+ | 0.1+ | 2004 04 20 | 704 | 0.1− | 0.0 | 2004 05 16 | 704 | 0.4− | 0.5− | | |
| 2002 10 09 | 704 | 0.3− | 0.6+ | 2004 04 20 | 704 | 0.1− | 0.1− | 2004 05 18 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 09 | 704 | 0.5− | 0.2+ | 2004 04 20 | 704 | 0.4− | 0.2− | 2004 05 18 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 09 | 704 | 1.0− | 0.6− | 2004 04 20 | 704 | 0.3− | 0.1+ | 2004 05 18 | 704 | 0.3− | 0.7+ | | |
| 2002 10 09 | 704 | 0.2+ | 1.3+ | 2004 04 20 | 704 | 0.5− | 0.4− | 2005 07 08 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 12 | 704 | (1.6− | 0.3−) | 2004 04 21 | 704 | 0.5− | 0.9+ | 2005 07 08 | 691 | 0.2− | 0.1− | | |
| 2002 10 12 | 704 | 0.5− | 0.3− | 2004 04 21 | 704 | 0.1+ | 0.1+ | 2005 07 08 | 691 | 0.1+ | 0.0 | | |
| 2002 10 12 | 704 | 0.9+ | 0.8+ | 2004 04 21 | 704 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2002 10 12 | 704 | 0.7− | 1.0− | 2004 04 21 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.0 | | |
| 2002 10 12 | 704 | 0.4− | 0.6− | 2004 04 25 | 704 | 0.4+ | 1.2− | 2006 09 25 | 691 | 0.0 | 0.1− | | |
| 2002 11 22 | 644 | 0.3− | 0.4+ | 2004 04 25 | 704 | 0.0 | 0.8− | 2006 09 27 | 691 | 0.1+ | 0.0 | | |
| 2002 11 22 | 644 | 0.8− | 0.3+ | 2004 04 25 | 704 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ | | |
| 2002 11 22 | 644 | 0.5− | 0.4+ | 2004 04 25 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2004 03 24 | 699 | 0.2+ | 0.4− | 2004 04 25 | 704 | 0.1+ | 1.0− | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2004 03 24 | 699 | 0.5+ | 0.3+ | 2004 04 26 | 704 | 0.0 | 1.0+ | 2006 10 01 | 703 | (2.0+ | 0.1−) | | |
| 2004 03 24 | 699 | 0.8+ | 0.2+ | 2004 04 26 | 704 | 1.1+ | 1.1+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 24 | 699 | 0.9− | 0.2− | 2004 04 26 | 704 | 0.9− | 0.2+ | 2006 10 01 | 703 | (1.8+ | 0.1−) | | |
| 2004 03 25 | 699 | 0.0 | 0.4− | 2004 04 26 | 704 | 0.7− | 0.1+ | 2006 10 01 | 703 | (0.4+ | 3.5−) | | |
| 2004 03 25 | 699 | 0.6+ | 0.8− | 2004 04 26 | 704 | 0.7+ | 0.0 | 2006 10 01 | 691 | 0.4+ | 0.0 | | |
| 2004 03 25 | 699 | 0.1+ | 0.6+ | 2004 04 26 | 704 | 0.4+ | 0.8+ | 2006 10 01 | 703 | 1.3− | 0.7− | | |
| 2004 03 25 | 699 | 1.2+ | 0.4+ | 2004 04 26 | 704 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.8+ | 0.4− | | |
| 2004 04 13 | 644 | 0.3− | 0.4+ | 2004 04 26 | 704 | 1.2+ | 0.6+ | 2006 10 23 | G96 | 0.4+ | 0.2− | | |
| 2004 04 13 | 644 | 0.0 | 0.3+ | 2004 04 27 | 735 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.5− | | |
| 2004 04 13 | 644 | 0.2− | 0.6+ | 2004 04 27 | 735 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 2004 04 14 | 699 | 0.3− | 0.4− | 2004 04 27 | 735 | 0.6+ | 0.1− | | | | | | |
| 2004 04 14 | 699 | 0.9− | 0.2− | 2004 05 11 | 699 | 0.4+ | 0.4+ | | | | | | |

**(144656)∗ 2004 FS$_{110}$ = 1999 GX$_{62}$**

Discovered 2004 Mar. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 62127)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.75731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20465484 | $\omega$ | 156.65316 | | −0.98165676 | −0.18729405 | |
| $a$ | 2.8518152 | $\Omega$ | 12.70762 | | +0.13915292 | −0.83165940 | |
| $e$ | 0.0676432 | $i$ | 9.32675 | | +0.13033215 | −0.52274620 | |
| $P$ | 4.82 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 13 | 809 | (5.5+ | 1.4−) | 2004 03 27 | 704 | 0.8+ | 1.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | | |
| 1994 02 13 | 809 | (5.2+ | 1.0−) | 2004 03 27 | 704 | 0.4+ | 1.1+ | 2006 09 26 | 691 | 0.1− | 0.0 | | |
| 1994 02 13 | 809 | (3.8+ | 1.9−) | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.0 | | |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2004 04 12 | 699 | (1.1− | 3.3−) | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2004 04 12 | 699 | 0.7− | 0.5− | 2006 09 30 | 691 | 0.3− | 0.2+ | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 04 12 | 699 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.3+ | | |
| 1999 04 12 | 691 | 0.5− | 0.1− | 2004 04 12 | 691 | 0.4+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.2+ | | |
| 1999 04 12 | 691 | 0.5− | 0.6− | 2004 04 12 | 699 | 0.9− | 0.7− | 2006 10 11 | 691 | 0.2+ | 0.1+ | | |
| 1999 04 12 | 691 | 0.4− | 0.1+ | 2004 04 12 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.5− | | |
| 1999 04 19 | 691 | 0.7− | 0.4− | 2004 04 12 | 691 | 0.3+ | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.1+ | | |
| 1999 04 19 | 691 | 0.0 | 0.1− | 2004 04 17 | 704 | 0.8+ | 0.7+ | 2006 10 15 | 691 | 1.0+ | 0.4− | | |
| 1999 04 19 | 691 | 0.2− | 0.3− | 2004 04 17 | 704 | 0.9− | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.4+ | | |
| 2001 09 19 | 704 | (3.2− | 0.7−) | 2004 04 17 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 1.3+ | 0.5− | 2004 04 17 | 704 | 0.7+ | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.1− | 0.6− | 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.5+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.6− | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.5− | | |
| 2001 09 22 | 291 | 0.1+ | 0.3+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.8− | | |
| 2001 09 22 | 291 | 0.2− | 0.0 | 2004 05 28 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.3− | | |
| 2001 09 22 | 291 | 0.3− | 0.1+ | 2004 05 28 | 691 | 0.7+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.2+ | | |
| 2001 10 18 | 691 | 0.3− | 0.2+ | 2004 05 28 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 1.3− | 0.2+ | | |
| 2001 10 18 | 691 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.4− | 1.2+ | | |
| 2001 10 18 | 691 | 0.7+ | 0.5− | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.6− | 0.3+ | | |
| 2004 03 25 | 699 | 0.2− | 0.7+ | 2006 07 21 | G96 | 0.5− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2004 03 25 | 699 | 0.0 | 1.1+ | 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.4− | 0.1− | | |
| 2004 03 25 | 699 | 0.7− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.1− | | |
| 2004 03 25 | 699 | 0.9+ | 0.4− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.4− | 0.1+ | | |

**(144657)∗ 2004 FO$_{112}$ = 2000 EE$_{188}$**

Discovered 2004 Mar. 26 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62127)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.62158 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25568782 | $\omega$ | 204.99069 | | −0.59359627 | −0.80454429 | |
| $a$ | 2.4584574 | $\Omega$ | 281.42734 | | +0.74153479 | −0.53775270 | |
| $e$ | 0.1357909 | $i$ | 1.09671 | | +0.31268133 | −0.25205263 | |
| $P$ | 3.85 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.1− | 0.4− | 2004 03 27 | 704 | (0.3+ | 1.8+) | 2006 09 28 | G96 | 0.5+ | 0.2− | | |
| 2000 02 02 | 691 | 0.2− | 0.2− | 2004 04 12 | 691 | 0.0 | 0.4− | 2006 09 28 | G96 | 0.2− | 0.1+ | | |
| 2000 02 02 | 691 | 0.7− | 0.5− | 2004 04 12 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.5− | 0.1+ | | |
| 2000 03 03 | 704 | 0.7+ | 0.3+ | 2004 04 12 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | | |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.4+ | | |
| 2000 03 03 | 704 | 0.2+ | 0.2− | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.5+ | | |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2004 04 19 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.7− | 0.6+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.3+ | 2004 04 22 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.8+ | | |
| 2000 03 11 | 704 | 0.0 | 0.1+ | 2004 04 22 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2000 03 11 | 704 | 0.4− | 0.2+ | 2004 04 22 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2000 03 11 | 704 | 0.2+ | 0.4+ | 2005 07 07 | 568 | 0.5− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2000 03 11 | 704 | 0.0 | 1.4− | 2005 07 07 | 568 | 0.4− | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.1+ | | |
| 2004 03 26 | 691 | 0.2+ | 0.5+ | 2005 07 07 | 568 | 0.5− | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2004 03 26 | 691 | 0.1+ | 0.5+ | 2005 07 15 | G96 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.1− | 0.5+ | 2005 07 15 | G96 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 03 27 | 704 | 1.3+ | 0.6+ | 2005 07 15 | G96 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 03 27 | 704 | 0.5+ | 1.4+ | 2005 07 15 | G96 | 0.4+ | 1.0+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 03 27 | 704 | 0.8+ | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2004 03 27 | 704 | 0.8+ | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.5+ | 0.5− |

**(144658)∗ 2004 FF$_{116}$**

Discovered 2004 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 135.63991 | | (2000.0) | | | |
| $n$ | 0.19180539 | $\omega$ | 88.52553 | | −0.56304439 | +0.81959968 |
| $a$ | 2.9777999 | $\Omega$ | 146.49278 | | −0.81385149 | −0.52760498 |
| $e$ | 0.0643763 | $i$ | 11.07105 | | −0.14362022 | −0.22335922 |
| $P$ | 5.14 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3− | 0.8+ |
| 1999 03 20 | 645 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.5− |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.9− | 0.4− |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2004 03 28 | 703 | 0.0 | 0.5+ | 2006 09 18 | 703 | (2.3− | 0.0 ) |
| 2001 10 15 | 644 | 0.6− | 0.4− | 2004 03 28 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.5+ | 1.0+ |
| 2001 10 15 | 644 | 0.3− | 0.4− | 2004 03 28 | 703 | 0.9− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.1+ |
| 2001 10 15 | 644 | 0.3− | 0.4− | 2004 03 28 | 703 | 0.5+ | 0.7+ | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2002 01 13 | 645 | 0.1+ | 0.0 | 2004 03 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.9+ |
| 2002 01 13 | 645 | 0.1+ | 0.0 | 2004 03 28 | 703 | 0.1− | 0.2+ | 2006 09 26 | 703 | 1.1− | 0.1− |
| 2004 01 23 | 704 | 0.4+ | 0.5+ | 2004 03 28 | 691 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.1− | 0.7+ |
| 2004 01 23 | 704 | 0.0 | 0.6− | 2004 04 15 | 704 | 0.0 | 0.9+ | 2006 09 26 | 703 | 0.3+ | 1.2+ |
| 2004 01 23 | 704 | 0.0 | 0.5+ | 2004 04 15 | 704 | 0.2+ | 1.4+ | 2006 09 26 | 703 | 1.3+ | 0.5+ |
| 2004 01 23 | 704 | 0.1+ | 0.2− | 2004 04 15 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | (0.5+ | 1.9−) |
| 2004 01 23 | 704 | 0.6− | 0.3− | 2004 04 15 | 704 | 0.6− | 0.9+ | 2006 10 16 | 703 | 0.7+ | 0.8− |
| 2004 02 19 | 704 | 0.9+ | 0.2+ | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2004 02 19 | 704 | 0.2+ | 0.2− | 2004 04 16 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2004 02 19 | 704 | 1.4+ | 0.1+ | 2004 04 16 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2004 03 15 | 704 | 0.4+ | 0.1− | 2004 04 25 | 699 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 03 15 | 704 | 0.7+ | 0.2− | 2004 04 25 | 699 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.7− | 0.1+ |
| 2004 03 15 | 704 | 0.5+ | 0.6+ | 2004 04 25 | 699 | 0.7− | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.2+ |
| 2004 03 15 | 704 | 0.9+ | 0.6+ | 2004 04 25 | 699 | 0.6− | 0.3− | 2006 10 22 | 703 | 1.2− | 0.2− |
| 2004 03 15 | 704 | 0.7+ | 0.2− | 2004 05 12 | 644 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.4+ |
| 2004 03 23 | 704 | 0.2+ | 0.2+ | 2004 05 12 | 644 | 0.0 | 0.6+ | 2006 10 22 | 703 | 1.0+ | 0.4+ |
| 2004 03 23 | 704 | 0.3− | 0.1− | 2004 05 12 | 644 | 0.3+ | 0.7+ | | | | |

**(144659)∗ 2004 FP$_{116}$ = 1998 FY$_{131}$**

Discovered 2004 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 62128)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 178.89826 | | (2000.0) | | | |
| $n$ | 0.17558031 | $\omega$ | 7.22457 | | −0.99854700 | −0.02544585 |
| $a$ | 3.1585336 | $\Omega$ | 170.90201 | | +0.02022854 | −0.99402593 |
| $e$ | 0.1537619 | $i$ | 17.48208 | | +0.04994683 | −0.10613647 |
| $P$ | 5.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | 0.9+ | 0.5− | 2004 03 23 | 704 | 0.6+ | 0.1+ | 2004 04 21 | 703 | 0.8− | 0.5+ |
| 1998 03 03 | 704 | 0.0 | 0.4− | 2004 03 23 | 704 | 0.6+ | 0.1+ | 2004 04 21 | 703 | 0.7− | 0.7+ |
| 1998 03 03 | 704 | 1.1− | 0.5− | 2004 03 23 | 704 | 0.2+ | 0.4+ | 2004 04 21 | 703 | 0.0 | 0.3− |
| 1998 03 03 | 704 | 0.8+ | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2004 04 24 | 704 | 0.5+ | 0.3+ |
| 1998 03 03 | 704 | 0.2+ | 0.9− | 2004 03 23 | 704 | 0.0 | 0.1+ | 2004 04 24 | 704 | 0.0 | 0.9+ |
| 1998 03 04 | 704 | 1.6− | 1.8+ | 2004 03 27 | 699 | 1.5+ | 1.0+ | 2004 04 24 | 704 | 0.1+ | 0.1+ |
| 1998 03 04 | 704 | (4.2− | 0.7+) | 2004 03 27 | 699 | 0.9+ | 1.1+ | 2004 04 24 | 704 | 0.4+ | 1.6+ |
| 1998 03 04 | 704 | (5.5− | 0.9+) | 2004 03 27 | 699 | 1.9+ | 1.4+ | 2004 04 24 | 704 | 0.9+ | 0.1+ |
| 1998 03 04 | 704 | (4.4− | 1.3+) | 2004 03 27 | 699 | 0.5− | 1.2+ | 2004 05 21 | 703 | 0.6− | 0.3− |
| 1998 03 04 | 704 | (7.1− | 1.7+) | 2004 03 28 | 703 | 1.3+ | 0.1+ | 2004 05 21 | 703 | 0.0 | 0.7+ |
| 1998 03 20 | 704 | 1.3− | 0.1+ | 2004 03 28 | 703 | 0.6− | 0.2+ | 2004 05 21 | 703 | 0.4− | 0.3+ |
| 1998 03 20 | 704 | 0.1+ | 0.2+ | 2004 03 28 | 703 | 0.1+ | 0.1− | 2004 05 21 | 703 | 0.4− | 0.4+ |
| 1998 03 20 | 704 | 1.8+ | 0.8+ | 2004 03 28 | 703 | 0.7+ | 1.6+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 1998 03 20 | 704 | 0.3+ | 1.1+ | 2004 03 30 | 691 | 0.3− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 1998 03 20 | 704 | 0.7+ | 1.3+ | 2004 03 30 | 691 | 0.2− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.1− |
| 1998 03 26 | 704 | 0.5− | 0.4+ | 2004 03 30 | 691 | 0.4− | 0.2+ | 2006 09 22 | 104 | 0.6− | 0.6+ |
| 1998 03 26 | 704 | 1.1− | 0.4− | 2004 04 15 | 704 | 0.4− | 0.3+ | 2006 09 22 | 104 | 0.0 | 0.3+ |
| 1998 03 26 | 704 | 0.5− | 0.5− | 2004 04 15 | 704 | 0.1− | 0.1− | 2006 09 22 | 104 | 0.7− | 0.2+ |
| 2001 09 18 | 645 | 0.1+ | 0.2+ | 2004 04 15 | 704 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2001 09 18 | 645 | 0.1+ | 0.2+ | 2004 04 15 | 704 | 0.7+ | 1.3− | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2001 09 21 | 645 | 0.1+ | 0.4+ | 2004 04 15 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2001 09 21 | 645 | 0.1− | 0.1+ | 2004 04 21 | 703 | 0.4+ | 0.9+ | | | | |

**(144660)∗ 2004 FO$_{117}$**

Discovered 2004 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 188.86796 | | (2000.0) | | | |
| $n$ | 0.21245500 | $\omega$ | 101.59504 | | −0.81096146 | +0.56317591 |
| $a$ | 2.7815790 | $\Omega$ | 112.87272 | | −0.58112461 | −0.74371619 |
| $e$ | 0.0717207 | $i$ | 9.91603 | | −0.06808587 | −0.36016541 |
| $P$ | 4.64 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.5− | 0.5+ | 2004 03 28 | 703 | 0.5+ | 0.3+ | 2005 07 18 | 644 | 0.2− | 0.2+ |
| 2001 10 15 | 644 | 0.9− | 0.7+ | 2004 03 28 | 703 | (2.1+ | 1.1+) | 2005 07 27 | 644 | 0.1+ | 0.1+ |
| 2001 10 15 | 644 | 0.3− | 0.5+ | 2004 03 28 | 703 | (1.7+ | 1.3+) | 2005 07 27 | 644 | 0.2− | 0.3+ |
| 2001 10 23 | 644 | 0.5+ | 0.9+ | 2004 03 28 | 703 | 0.3− | 0.0 | 2005 07 27 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 644 | (0.6+ | 1.9+) | 2004 04 16 | 704 | 0.3− | 0.3+ | 2005 08 05 | 644 | 0.0 | 0.2+ |
| 2001 10 23 | 644 | 0.3+ | 1.2+ | 2004 04 16 | 704 | 0.4+ | 0.2+ | 2005 08 05 | 644 | 0.2− | 0.5+ |
| 2003 01 08 | 704 | 0.2+ | 0.1+ | 2004 04 16 | 704 | 0.4+ | 0.6+ | 2005 08 05 | 644 | 0.1+ | 0.3+ |
| 2003 01 08 | 704 | 0.5+ | 0.5− | 2004 04 16 | 704 | 0.3+ | 0.3− | 2005 08 28 | E12 | 0.2− | 0.2+ |
| 2003 01 08 | 704 | 1.0− | 1.2+ | 2004 04 16 | 704 | 0.6+ | 0.0 | 2005 08 28 | E12 | 0.4− | 0.3+ |
| 2003 01 08 | 704 | 0.5− | 1.0+ | 2004 04 24 | 704 | 0.4− | 0.8+ | 2005 08 28 | E12 | 0.1− | 0.3− |
| 2004 03 27 | 704 | 0.6+ | 1.0+ | 2004 04 24 | 704 | 0.6+ | 0.7+ | 2005 08 28 | E12 | 0.2+ | 0.3− |
| 2004 03 27 | 704 | 0.3+ | 0.4+ | 2004 04 24 | 704 | (0.4+ | 1.7+) | 2006 10 30 | 703 | 0.7− | 0.6+ |
| 2004 03 27 | 704 | 0.1+ | 0.2− | 2004 04 24 | 704 | 0.2+ | 1.0+ | 2006 10 30 | 703 | 0.6− | 0.3+ |
| 2004 03 27 | 704 | 0.5+ | 0.1− | 2004 04 24 | 704 | 0.3+ | 0.8+ | 2006 10 30 | 703 | 0.3+ | 0.5− |
| 2004 03 27 | 704 | 0.1− | 0.2+ | 2004 04 26 | 699 | 0.5− | 0.0 | 2006 10 30 | 703 | 0.5− | 0.1+ |
| 2004 03 27 | 704 | 0.3+ | 0.0 | 2004 04 26 | 699 | 0.5+ | 0.0 | 2006 11 19 | 703 | 0.1− | 1.0+ |
| 2004 03 27 | 704 | 0.4− | 0.3− | 2004 04 26 | 699 | 1.1− | 0.1− | 2006 11 19 | 703 | 1.0+ | 2.4+ |
| 2004 03 27 | 704 | 0.5+ | 0.4+ | 2004 04 26 | 699 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.7+ | 0.2+ |
| 2004 03 27 | 704 | 0.3+ | 1.1+ | 2005 07 18 | 644 | 0.5− | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.8− |
| 2004 03 27 | 704 | 0.2+ | 0.3+ | 2005 07 18 | 644 | 0.4− | 0.1+ | | | | |

**(144661)∗ 2004 FU$_{117}$**

Discovered 2004 Mar. 22 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.52971 | | (2000.0) | | | |
| $n$ | 0.21094598 | $\omega$ | 56.69926 | | +0.16387818 | −0.98595135 |
| $a$ | 2.7948288 | $\Omega$ | 23.93122 | | +0.87653449 | +0.13050929 |
| $e$ | 0.0421719 | $i$ | 4.56843 | | +0.45258284 | +0.10424615 |
| $P$ | 4.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2+ | 0.2− | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 1.3− | 0.8− |
| 1997 09 28 | 691 | 0.0 | 0.2− | 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 699 | (2.4− | 0.4+) |
| 1997 09 28 | 691 | 0.1+ | 0.3− | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 1.1− | 0.6− |
| 1997 10 21 | 691 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 1.3− | 0.4− |
| 1997 10 21 | 691 | 0.2+ | 0.1− | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 1.3− | 0.5+ |
| 1997 10 21 | 691 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 1.0− | 0.7+ |
| 2001 08 27 | 608 | 0.3+ | 0.5− | 2004 03 22 | 704 | 1.1+ | 0.4− | 2006 09 19 | 699 | (0.0 | 2.0+) |
| 2001 08 27 | 608 | 0.3+ | 0.1− | 2004 03 22 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2001 08 27 | 608 | 0.5+ | 0.1+ | 2004 03 28 | 704 | (1.0+ | 1.8+) | 2006 09 25 | 699 | (0.2− | 1.5+) |
| 2002 11 24 | 644 | 0.7+ | 0.5+ | 2004 03 28 | 704 | (0.7− | 2.1+) | 2006 09 25 | 699 | 1.0+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.2+ | 1.1+ | 2004 03 28 | 704 | (0.4− | 1.6+) | 2006 09 25 | 699 | 0.7+ | 0.6+ | | |
| 2002 11 24 | 644 | 0.3+ | 1.1+ | 2004 03 28 | 704 | (0.1− | 1.9+) | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.5+ | | |
| 2002 12 06 | 704 | 0.3+ | 0.6− | 2006 08 22 | 644 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2002 12 06 | 704 | 0.0 | 0.4− | 2006 08 22 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.1+ | | |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2002 12 06 | 704 | 0.2− | 0.6+ | 2006 08 27 | 691 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | | |
| 2004 02 23 | 704 | 0.1− | 0.8+ | 2006 08 27 | 691 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | | |
| 2004 02 23 | 704 | 0.1+ | 0.9+ | 2006 08 29 | 691 | 0.3− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2004 02 23 | 704 | 0.1− | 1.0+ | 2006 08 29 | 691 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 08 29 | 691 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.7− | 0.1− | | |
| 2004 02 23 | 704 | 0.5+ | 0.9+ | 2006 09 19 | 699 | (0.6− | 1.7+) | 2006 11 17 | G96 | 0.2− | 0.5− | | |

**(144662)∗ 2004 FA$_{121}$ = 2002 YZ$_{34}$**

Discovered 2004 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 73002)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.01473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27776324 | $\omega$ | 226.84878 | | +0.95768688 | +0.25581327 | |
| $a$ | 2.3264097 | $\Omega$ | 117.92778 | | −0.20110868 | +0.92260469 | |
| $e$ | 0.1134535 | $i$ | 8.58501 | | −0.20589107 | +0.28872160 | |
| $P$ | 3.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 699 | 0.4− | 0.5+ | 2004 03 29 | 703 | 0.6+ | 1.2+ | 2005 09 27 | 704 | 0.0 | 0.3+ | | |
| 1998 09 27 | 699 | 0.4+ | 0.4+ | 2004 03 29 | 703 | 1.0− | 0.6+ | 2005 09 27 | 704 | 0.6+ | 0.5− | | |
| 1998 09 27 | 699 | 0.2− | 0.1+ | 2004 04 15 | 644 | 0.1+ | 0.7+ | 2005 09 27 | 704 | 0.4+ | 0.3− | | |
| 2000 02 03 | 704 | 0.2− | 0.1+ | 2004 04 15 | 644 | 0.1− | 0.9+ | 2005 09 27 | 704 | 0.0 | 0.2− | | |
| 2000 02 03 | 704 | 0.2− | 0.5+ | 2004 04 15 | 644 | 0.1+ | 0.8+ | 2005 10 03 | 703 | 0.1+ | 0.0 | | |
| 2000 02 03 | 704 | 1.1− | 0.8+ | 2005 07 09 | 703 | 1.2− | 1.2+ | 2005 10 03 | 703 | 0.0 | 0.6+ | | |
| 2000 02 03 | 704 | 0.2− | 1.1+ | 2005 07 09 | 703 | 0.7− | 0.5+ | 2005 10 03 | 703 | 0.4+ | 0.1+ | | |
| 2000 03 04 | 704 | 0.1+ | 0.2+ | 2005 07 09 | 703 | (1.8− | 0.5−) | 2005 10 03 | 703 | 0.7− | 0.4+ | | |
| 2000 03 04 | 704 | 0.4− | 0.4+ | 2005 07 09 | 703 | 0.9+ | 0.0 | 2005 10 07 | 699 | 0.2+ | 0.9+ | | |
| 2000 03 04 | 704 | 0.3+ | 1.8+ | 2005 08 27 | 699 | (3.2− | 0.5+) | 2005 10 07 | 699 | 0.2+ | 0.2− | | |
| 2000 03 04 | 704 | 1.6+ | 1.5+ | 2005 08 27 | 699 | 0.7− | 1.0+ | 2005 10 07 | 699 | 0.2+ | 0.3+ | | |
| 2002 12 31 | 704 | 0.4− | 0.5− | 2005 08 27 | 644 | 0.1− | 0.4+ | 2005 10 10 | 703 | 0.6+ | 0.1+ | | |
| 2002 12 31 | 704 | 0.0 | 1.2+ | 2005 08 27 | 699 | 0.4− | 0.0 | 2005 10 10 | 703 | 0.1− | 0.1+ | | |
| 2002 12 31 | 704 | 0.4− | 0.6+ | 2005 08 27 | 644 | 0.1− | 0.6+ | 2005 10 10 | 703 | 0.4− | 0.0 | | |
| 2003 01 07 | 704 | 0.4+ | 0.0 | 2005 08 27 | 699 | 0.8+ | 0.2+ | 2005 11 05 | 699 | 0.5− | 0.4+ | | |
| 2003 01 07 | 704 | 0.4+ | 0.6+ | 2005 08 27 | 644 | 0.2− | 0.4+ | 2005 11 05 | 699 | 1.0− | 0.1+ | | |
| 2003 01 07 | 704 | 0.7+ | 0.0 | 2005 09 24 | 644 | 0.2− | 0.2+ | 2005 11 05 | 699 | 0.5− | 0.7+ | | |
| 2003 01 07 | 704 | 0.7+ | 0.6+ | 2005 09 24 | 644 | 0.2− | 0.3+ | 2005 11 05 | 699 | 0.1+ | 0.3− | | |
| 2003 01 07 | 704 | 0.2− | 0.7+ | 2005 09 24 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.6− | | |
| 2004 03 16 | 704 | 0.7− | 1.0− | 2005 09 25 | 703 | (0.3+ | 2.2+) | 2006 10 27 | G96 | 0.6+ | 0.6− | | |
| 2004 03 16 | 704 | 1.2+ | 1.0− | 2005 09 25 | 703 | 0.7− | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.1+ | | |
| 2004 03 16 | 704 | 0.4+ | 0.2+ | 2005 09 25 | 703 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.1− | | |
| 2004 03 16 | 704 | (1.6+ | 1.2+) | 2005 09 26 | 703 | 0.6− | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.0 | | |
| 2004 03 16 | 704 | 1.0+ | 1.0+ | 2005 09 26 | 703 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.2− | | |
| 2004 03 23 | 704 | 0.5+ | 1.3+ | 2005 09 26 | 703 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.0 | | |
| 2004 03 23 | 704 | 0.0 | 0.4+ | 2005 09 26 | 703 | 0.6− | 0.9+ | 2006 11 16 | G96 | 0.3+ | 0.7− | | |
| 2004 03 23 | 704 | (0.6− | 2.3+) | 2005 09 27 | I10 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.7− | | |
| 2004 03 23 | 704 | 0.7+ | 1.0+ | 2005 09 27 | I10 | 0.1+ | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2004 03 29 | 703 | 0.5+ | 1.4+ | 2005 09 27 | I10 | 0.6+ | 0.6− | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2004 03 29 | 703 | (1.3+ | 1.8+) | 2005 09 27 | 704 | 0.1+ | 0.5− | | | | | | |

**(144663)∗ 2004 FT$_{121}$**

Discovered 2004 Mar. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.18644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28439246 | $\omega$ | 177.41389 | | −0.88753553 | +0.46014119 | |
| $a$ | 2.2901152 | $\Omega$ | 30.01785 | | −0.42355754 | −0.79480554 | |
| $e$ | 0.1039686 | $i$ | 2.68884 | | −0.18132759 | −0.39566935 | |
| $P$ | 3.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.1− | 0.4+ | 2004 04 16 | 704 | 0.4− | 0.1− | 2005 10 01 | 703 | 0.1+ | 0.3+ | | |
| 1995 11 16 | 691 | 0.0 | 0.2+ | 2004 04 16 | 704 | 0.6+ | 0.1+ | 2005 10 01 | 703 | 0.2+ | 0.3− | | |
| 1995 11 16 | 691 | 0.1− | 0.0 | 2004 04 16 | 704 | 0.3+ | 0.4− | 2005 10 01 | 703 | (1.9− | 0.7−) | | |
| 2004 03 24 | 699 | 0.4− | 0.6− | 2004 04 16 | 704 | 0.6− | 0.1− | 2005 10 01 | 703 | (3.0+ | 3.1−) | | |
| 2004 03 24 | 699 | 0.5+ | 0.7+ | 2004 04 20 | 691 | 0.6+ | 0.0 | 2005 10 06 | G96 | 0.0 | 0.1+ | | |
| 2004 03 24 | 699 | 0.2− | 0.3+ | 2004 04 20 | 691 | 0.4− | 0.2+ | 2005 10 06 | G96 | 0.3+ | 0.1+ | | |
| 2004 03 24 | 699 | 0.4+ | 1.0+ | 2004 04 20 | 691 | 0.4− | 0.2+ | 2005 10 06 | G96 | 0.1+ | 0.2+ | | |
| 2004 03 27 | 704 | (2.1+ | 0.2+) | 2004 04 21 | 704 | 0.4− | 0.2− | 2005 10 06 | G96 | 0.1+ | 0.1+ | | |
| 2004 03 27 | 704 | 0.1− | 0.6+ | 2004 04 21 | 704 | 0.3+ | 0.4+ | 2005 10 28 | G96 | 0.8− | 0.2+ | | |
| 2004 03 27 | 704 | 0.3+ | 0.6+ | 2004 04 21 | 704 | 0.4+ | 1.1+ | 2005 10 28 | G96 | 0.0 | 0.1− | | |
| 2004 03 27 | 704 | 0.2+ | 0.7+ | 2004 04 21 | 704 | 0.4+ | 0.0 | 2005 10 28 | G96 | 0.2− | 0.1− | | |
| 2004 03 27 | 704 | 1.0+ | 0.6+ | 2004 04 21 | 704 | 0.5− | 0.5− | 2005 10 28 | G96 | 0.1+ | 0.5− | | |
| 2004 03 28 | 704 | 0.2− | 0.2− | 2004 04 22 | 703 | 0.2+ | 0.7+ | 2006 10 23 | G96 | 0.4− | 0.2− | | |
| 2004 03 28 | 704 | 0.3+ | 0.2+ | 2004 04 22 | 703 | (0.7+ | 1.6+) | 2006 10 23 | G96 | 0.0 | 0.1+ | | |
| 2004 03 28 | 704 | 0.6+ | 0.4− | 2004 04 22 | 703 | 0.8+ | 1.4+ | 2006 10 23 | G96 | 0.6− | 0.1+ | | |
| 2004 03 28 | 704 | 0.1+ | 1.5+ | 2004 04 22 | 703 | 0.7+ | 0.5− | 2006 10 23 | G96 | 0.6− | 0.2+ | | |
| 2004 03 29 | 704 | 0.4+ | 0.6+ | 2004 04 24 | E12 | 0.1− | 1.2− | 2006 11 22 | G96 | 0.1− | 0.3+ | | |
| 2004 03 29 | 704 | 0.3− | 0.3+ | 2004 04 24 | E12 | 0.2+ | 0.7− | 2006 11 22 | G96 | 0.0 | 0.3+ | | |
| 2004 03 29 | 704 | 0.3− | 0.4+ | 2004 04 24 | E12 | 0.2− | 1.2− | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2004 03 29 | 704 | 0.4+ | 1.0+ | 2004 04 24 | E12 | 0.4+ | 0.5− | 2006 11 22 | G96 | 0.3+ | 0.3+ | | |
| 2004 03 29 | 704 | 0.2− | 0.1+ | 2005 08 28 | 691 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.4+ | | |
| 2004 03 31 | 704 | (1.9+ | 0.3+) | 2005 08 28 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.5+ | 0.3+ | | |
| 2004 03 31 | 704 | 0.1− | 0.4+ | 2005 08 28 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.4+ | | |
| 2004 03 31 | 704 | 0.4− | 0.5− | 2005 09 11 | 691 | 0.3− | 0.5+ | 2006 11 25 | G96 | 0.8+ | 0.5+ | | |
| 2004 03 31 | 704 | 0.3− | 0.9+ | 2005 09 11 | 691 | 0.6− | 0.4+ | | | | | | |
| 2004 04 16 | 704 | 0.9+ | 0.2+ | 2005 09 11 | 691 | 0.5− | 0.5+ | | | | | | |

**(144664)∗ 2004 FV$_{122}$**

Discovered 2004 Mar. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.37716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19174820 | $\omega$ | 358.76450 | | −0.49808669 | +0.85252805 | |
| $a$ | 2.9783919 | $\Omega$ | 241.34145 | | −0.79401697 | −0.52184909 | |
| $e$ | 0.0746731 | $i$ | 10.40286 | | −0.34849204 | −0.02948659 | |
| $P$ | 5.14 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 27 | 691 | 0.2+ | 0.8+ | 2004 03 28 | 704 | 0.1− | 0.7+ | 2005 06 06 | 691 | 0.1+ | 0.1− | | |
| 1991 11 27 | 691 | (3.6+ | 0.6+) | 2004 03 28 | 704 | 0.3+ | 0.6+ | 2005 06 06 | 691 | 0.1− | 0.2− | | |
| 1991 11 27 | 691 | 0.2− | 0.7+ | 2004 03 28 | 704 | (0.1− | 1.6+) | 2005 06 06 | 691 | 0.1− | 0.0 | | |
| 2001 10 14 | 704 | 0.4+ | 0.3+ | 2004 03 28 | 704 | 1.1− | 0.0 | 2005 06 11 | 691 | 0.8+ | 0.5− | | |
| 2001 10 14 | 704 | 1.4− | 1.0+ | 2004 03 28 | 704 | (1.1− | 1.8+) | 2005 06 11 | 691 | 0.2− | 0.3+ | | |
| 2001 10 14 | 704 | (0.6− | 1.6+) | 2004 03 28 | 704 | 0.6+ | 0.6− | 2005 06 11 | 691 | 0.1− | 0.3+ | | |
| 2001 10 24 | 704 | 0.5+ | 0.5+ | 2004 03 28 | 704 | 0.3− | 0.2− | 2005 06 15 | 691 | 0.2− | 0.2+ | | |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 703 | 0.1+ | 1.1+ | 2005 06 15 | 691 | 0.1− | 0.3+ | | |
| 2001 10 24 | 704 | 0.8− | 0.0 | 2004 04 15 | 703 | 0.4− | 1.2+ | 2005 06 15 | 691 | 0.3− | 0.6+ | | |
| 2001 10 24 | 704 | 0.5− | 0.0 | 2004 04 15 | 703 | 0.2− | 1.4+ | 2006 09 28 | 703 | 1.2− | 0.1− | | |
| 2001 10 24 | 704 | 0.5− | 0.6+ | 2004 04 15 | 703 | 0.0 | 0.8+ | 2006 09 28 | 703 | 0.8− | 0.1+ | | |
| 2004 03 17 | 704 | 0.8− | 0.0 | 2004 04 17 | 704 | 1.2+ | 1.2+ | 2006 09 28 | 703 | 0.5− | 0.7+ | | |
| 2004 03 17 | 704 | 0.2− | 0.7+ | 2004 04 17 | 704 | 0.9+ | 0.1+ | 2006 09 28 | 703 | 0.4+ | 0.5+ | | |
| 2004 03 17 | 704 | (1.2+ | 1.9−) | 2004 04 17 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.1+ | | |
| 2004 03 17 | 704 | (1.8− | 0.3+) | 2004 04 17 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 1.0+ | | |
| 2004 03 17 | 704 | 0.1+ | 0.2− | 2005 05 13 | G96 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.1− | 1.1+ | | |
| 2004 03 26 | 704 | 0.2− | 1.0+ | 2005 05 13 | G96 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.5− | 1.0+ | | |
| 2004 03 26 | 704 | 0.2+ | 1.4+ | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.1− | | |
| 2004 03 26 | 704 | 0.9+ | 0.4+ | 2005 05 13 | G96 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.7− | | |
| 2004 03 26 | 704 | 0.2+ | 0.4+ | 2005 06 06 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 704 | 0.4+ | 0.2+ | 2005 06 06 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.6+ |
| 2004 03 28 | 704 | 0.3+ | 0.4+ | 2005 06 06 | 691 | 0.2+ | 0.1+ | | | | |

**(144665)∗ 2004 FO$_{125}$**

Discovered 2004 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.24358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19168552 | $\omega$ | 122.33136 | | +0.78538467 | +0.61612735 | |
| $a$ | 2.9790412 | $\Omega$ | 199.84000 | | −0.61041458 | +0.75487635 | |
| $e$ | 0.1039893 | $i$ | 10.12240 | | −0.10278603 | +0.22483059 | |
| $P$ | 5.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 19 | 691 | 0.2+ | 0.1− | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 1995 07 19 | 691 | 0.4− | 0.0 | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1995 07 19 | 691 | (5.8+ | 1.5−) | 2003 01 28 | 645 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1996 12 12 | 691 | 0.3+ | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1996 12 12 | 691 | 0.1− | 0.0 | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.5+ | 0.3+ |
| 1996 12 12 | 691 | 0.5+ | 0.3+ | 2004 03 27 | 704 | 0.5− | 0.0 | 2006 10 15 | 691 | 0.3− | 0.6+ |
| 2001 10 17 | 704 | 0.3+ | 0.2+ | 2004 03 27 | 704 | 1.0+ | 0.3− | 2006 10 15 | 691 | 0.4+ | 0.4+ |
| 2001 10 17 | 704 | 0.4− | 0.1+ | 2004 03 27 | 704 | 0.6+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 0.6− | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2001 10 17 | 704 | 0.3+ | 0.1− | 2004 03 29 | 691 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2001 11 19 | 608 | 0.7− | 0.3+ | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2001 11 19 | 608 | 0.5− | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 1.1− | 0.7+ |
| 2001 11 19 | 608 | 0.0 | 0.5+ | 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.8− |
| 2002 11 13 | 645 | 0.0 | 0.0 | 2004 04 20 | 691 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 1.4− | 0.4− |

**(144666)∗ 2004 FQ$_{125}$**

Discovered 2004 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.63022 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24223925 | $\omega$ | 258.22174 | | −0.86764522 | −0.49476023 | |
| $a$ | 2.5486276 | $\Omega$ | 252.10730 | | +0.47386717 | −0.79307711 | |
| $e$ | 0.1238366 | $i$ | 2.95338 | | +0.15047151 | −0.35530412 | |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 691 | 0.4+ | 0.0 | 2004 03 28 | 704 | 0.3+ | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 1998 12 11 | 691 | 0.0 | 0.1− | 2004 03 31 | 704 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 1998 12 11 | 691 | (2.4− | 0.2+) | 2004 03 31 | 704 | 1.5+ | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.1− |
| 1999 02 14 | 691 | 0.2− | 0.1+ | 2004 03 31 | 704 | 0.4− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2− |
| 1999 02 14 | 691 | 0.3− | 0.5− | 2004 03 31 | 704 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.2+ |
| 1999 02 14 | 691 | 0.2− | 0.2+ | 2004 03 31 | 704 | 0.9+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2002 11 04 | 644 | 0.5+ | 0.4+ | 2004 04 17 | 704 | 0.1+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 2002 11 04 | 644 | (1.7+ | 0.5+) | 2004 04 17 | 704 | 0.0 | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2002 11 04 | 644 | (2.3+ | 1.4+) | 2004 04 17 | 704 | 1.0+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | 0.4− | 1.4+ | 2004 04 26 | 699 | 1.0+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | 1.0− | 0.2+ | 2004 04 26 | 699 | (1.5− | 1.7+) | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 1.2− | 0.3− | 2004 04 26 | 699 | (0.0 | 1.9+) | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 699 | 0.1− | 0.3+ | 2004 04 26 | 699 | 1.0− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2004 03 27 | 699 | 0.3+ | 0.2− | 2005 05 19 | G96 | 0.8− | 0.7− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2004 03 27 | 699 | 0.3− | 0.9+ | 2005 05 19 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2004 03 27 | 699 | 0.0 | 1.1+ | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2004 03 27 | 704 | 0.2+ | 0.8+ | 2005 05 19 | G96 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2004 03 27 | 704 | 0.1+ | 0.7+ | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2004 03 27 | 704 | 0.4+ | 0.2+ | 2005 07 01 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2004 03 27 | 704 | 0.0 | 0.5+ | 2005 07 01 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2004 03 27 | 704 | 0.6+ | 0.7+ | 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.7− | 0.9+ |
| 2004 03 28 | 704 | 0.5+ | 0.2+ | 2005 07 10 | 691 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2004 03 28 | 704 | 0.5+ | 0.0 | 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2004 03 28 | 704 | (2.0+ | 0.8+) | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 2.1− | 0.3+ |
| 2004 03 28 | 704 | 0.2− | 1.1− | 2006 09 30 | G96 | 0.4+ | 0.1− | | | | |

**(144667)∗ 2004 FQ$_{127}$ = 2003 BX$_{35}$**

Discovered 2004 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65667)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.76971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16902107 | $\omega$ | 159.32653 | | +0.64604258 | +0.76316844 | |
| $a$ | 3.2397300 | $\Omega$ | 150.91183 | | −0.70436589 | +0.60324777 | |
| $e$ | 0.1175734 | $i$ | 1.67910 | | −0.29410488 | +0.23165938 | |
| $P$ | 5.83 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.3− | 0.1− | 2004 03 29 | 291 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.2− |
| 1995 12 18 | 691 | 0.4− | 0.1+ | 2004 03 29 | 291 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 1995 12 18 | 691 | 0.7− | 0.0 | 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2000 08 26 | 807 | 0.2− | 0.8+ | 2004 04 14 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2000 08 26 | 807 | 0.5− | 0.7+ | 2004 04 14 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2000 10 02 | 704 | 0.6+ | 0.7+ | 2004 04 23 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2000 10 02 | 704 | 1.1+ | 0.2− | 2004 04 23 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2000 10 02 | 704 | 0.8+ | 0.5+ | 2004 04 23 | 691 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2001 11 18 | 691 | 0.9+ | 0.0 | 2006 09 12 | 703 | 0.6+ | 0.2+ | 2006 10 01 | 704 | (1.7+ | 0.7−) |
| 2001 11 18 | 691 | 0.6+ | 0.5− | 2006 09 12 | 703 | 0.2− | 0.5− | 2006 10 01 | 704 | 1.1+ | 0.2+ |
| 2001 11 18 | 691 | 0.7+ | 0.1− | 2006 09 12 | 703 | 0.3− | 1.0+ | 2006 10 01 | 704 | 0.2+ | 1.0+ |
| 2003 01 26 | 291 | 0.3− | 0.5+ | 2006 09 12 | 703 | 0.5− | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.3+ |
| 2003 01 26 | 291 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.5− | 0.3+ | 2006 10 16 | 703 | (0.6− | 2.5+) |
| 2003 01 26 | 291 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.2− | 1.1+ |
| 2003 01 30 | 291 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.2+ | 2006 10 16 | 703 | (0.2− | 1.7+) |
| 2003 01 30 | 291 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2003 01 30 | 291 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2004 03 27 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 691 | 0.4− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2004 03 27 | 704 | 0.1− | 1.0+ | 2006 09 19 | 703 | 0.8+ | 0.7− | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2004 03 27 | 704 | 0.7− | 0.3− | 2006 09 19 | 703 | 0.6− | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2004 03 29 | 291 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.0 | | | | |

**(144668)∗ 2004 FK$_{128}$ = 2001 SR$_{333}$**

Discovered 2004 Mar. 27 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62133)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.06029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22290763 | $\omega$ | 94.49285 | | −0.67378528 | +0.73788465 | |
| $a$ | 2.6939286 | $\Omega$ | 133.06570 | | −0.69746877 | −0.61754768 | |
| $e$ | 0.1427670 | $i$ | 3.07877 | | −0.24403015 | −0.27232535 | |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 23 | 691 | 0.6+ | 0.2+ | 2004 03 31 | 691 | 0.0 | 0.3+ | 2004 05 17 | 704 | 0.5+ | 0.6+ |
| 1997 10 23 | 691 | 0.1+ | 0.2− | 2004 03 31 | 691 | 0.4− | 0.2+ | 2004 05 17 | 704 | 0.1− | 0.1− |
| 1997 10 23 | 691 | 0.3− | 0.1− | 2004 04 11 | 703 | 0.7+ | 0.3− | 2004 05 17 | 704 | 0.1+ | 0.5+ |
| 1999 01 18 | 691 | 0.1− | 0.3− | 2004 04 11 | 703 | 0.5− | 0.5− | 2004 05 23 | 691 | 0.0 | 0.3+ |
| 1999 01 18 | 691 | 0.1− | 0.3− | 2004 04 11 | 703 | 0.9+ | 0.1+ | 2004 05 23 | 691 | 0.3+ | 0.2+ |
| 1999 01 18 | 691 | 0.3− | 0.2− | 2004 04 11 | 703 | (2.2− | 0.0 ) | 2004 05 23 | 691 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.6+ | 0.7+ | 2004 04 16 | 704 | 0.2− | 0.2+ | 2005 07 30 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | (1.6− | 2.0+) | 2004 04 16 | 704 | 0.6+ | 0.6+ | 2005 07 30 | 644 | 0.5− | 0.2+ |
| 2001 09 19 | 704 | (1.9− | 0.6+) | 2004 04 16 | 704 | 0.2+ | 0.9+ | 2005 07 30 | 644 | 0.7− | 0.1+ |
| 2001 09 19 | 704 | (1.6− | 0.7−) | 2004 04 16 | 704 | 0.5+ | 0.2− | 2005 08 26 | 644 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2005 08 26 | 644 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.9− | 0.0 | 2004 04 16 | 704 | 0.0 | 0.5+ | 2005 08 26 | 644 | 0.1− | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.2− | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2005 08 29 | 704 | (0.4+ | 1.7+) |
| 2001 09 21 | 704 | 0.7− | 0.5+ | 2004 04 16 | 644 | 0.3+ | 0.5+ | 2005 08 29 | 704 | 1.0+ | 0.7+ |
| 2001 10 20 | 704 | (1.6+ | 0.6+) | 2004 04 17 | 699 | 0.5− | 0.1+ | 2005 08 29 | 704 | 0.8+ | 0.5+ |
| 2001 10 20 | 704 | 1.1+ | 0.4− | 2004 04 17 | 699 | 0.2− | 0.5+ | 2005 09 14 | 691 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.1+ | 0.0 | 2004 04 17 | 699 | 0.3+ | 0.5+ | 2005 09 14 | 691 | 0.2− | 0.3+ |
| 2001 11 18 | 645 | 0.1− | 0.1+ | 2004 04 17 | 699 | 0.2− | 0.0 | 2005 09 14 | 691 | 0.0 | 0.2+ |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2004 04 19 | 704 | 0.2− | 0.6+ | 2005 09 22 | 644 | 0.4− | 0.4+ |
| 2004 03 27 | 703 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.9+ | 0.4+ | 2005 09 22 | 644 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 703 | 0.6− | 0.9− | 2004 04 19 | 704 | 0.2− | 0.7+ | 2005 09 22 | 644 | 0.4− | 0.5+ | | |
| 2004 03 27 | 703 | 0.8+ | 0.2− | 2004 04 19 | 704 | 0.2− | 0.7+ | 2005 10 06 | G96 | 0.0 | 0.0 | | |
| 2004 03 27 | 699 | 0.1+ | 1.2+ | 2004 04 22 | 704 | 0.1− | 0.1+ | 2005 10 06 | G96 | 0.1− | 0.2− | | |
| 2004 03 27 | 703 | 1.1− | 0.1− | 2004 04 22 | 704 | 0.6− | 0.4+ | 2005 10 06 | G96 | 0.3− | 0.2+ | | |
| 2004 03 27 | 699 | 1.3− | 0.4+ | 2004 04 22 | 704 | 0.1− | 0.1+ | 2005 10 06 | G96 | 0.4− | 0.1− | | |
| 2004 03 27 | 699 | 0.3− | 0.3+ | 2004 04 22 | 704 | 0.5− | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | | |
| 2004 03 27 | 699 | (3.0− | 2.7+) | 2004 04 22 | 704 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2004 03 28 | 704 | 0.6+ | 0.8+ | 2004 04 23 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.7+ | | |
| 2004 03 28 | 704 | 0.6+ | 0.0 | 2004 04 23 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.4− | 0.3+ | | |
| 2004 03 28 | 704 | 0.5− | 0.7− | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.4+ | | |
| 2004 03 28 | 704 | 0.4+ | 0.4+ | 2004 04 28 | 608 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.2+ | | |
| 2004 03 28 | 704 | 0.2− | 0.2+ | 2004 04 28 | 608 | 0.5+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.5+ | | |
| 2004 03 31 | 704 | 0.2− | 1.2− | 2004 04 28 | 608 | 0.3+ | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.7+ | | |
| 2004 03 31 | 704 | 1.2+ | 0.5− | 2004 05 14 | 704 | 0.6+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.7+ | | |
| 2004 03 31 | 704 | 1.1+ | 0.9+ | 2004 05 14 | 704 | 0.3+ | 1.2+ | 2006 11 27 | 691 | 0.0 | 0.6+ | | |
| 2004 03 31 | 704 | (1.5+ | 0.8+) | 2004 05 14 | 704 | 0.4+ | 0.5− | 2006 11 27 | 691 | 0.5− | 0.4+ | | |
| 2004 03 31 | 704 | 0.6+ | 0.1+ | 2004 05 14 | 704 | 0.1+ | 1.1+ | 2006 11 27 | 691 | 0.0 | 0.6+ | | |
| 2004 03 31 | 691 | 0.1− | 0.3+ | 2004 05 14 | 704 | 0.4+ | 0.8+ | | | | | | |

**(144669)∗ 2004 FN$_{129}$**

Discovered 2004 Mar. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.17827 | | (2000.0) | | | |
| $n$ | 0.27361716 | $\omega$ | 343.45072 | | −0.67534237 | −0.73146812 |
| $a$ | 2.3498519 | $\Omega$ | 148.83912 | | +0.69559266 | −0.67417927 |
| $e$ | 0.2049886 | $i$ | 10.48520 | | +0.24507862 | −0.10216013 |
| $P$ | 3.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 26 | 691 | 0.3+ | 0.0 | 2004 03 23 | 704 | 0.7+ | 0.2− | 2005 08 05 | 644 | 0.4− | 0.0 | | |
| 1998 07 26 | 691 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.1− | 1.0+ | 2005 08 05 | 644 | 0.3− | 0.1+ | | |
| 1998 07 26 | 691 | 0.2− | 0.5− | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 1.4+ | | |
| 2000 01 11 | 704 | 0.7− | 0.0 | 2004 03 23 | 704 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.3+ | | |
| 2000 01 11 | 704 | 0.2+ | 0.3− | 2004 04 12 | 703 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.9+ | | |
| 2000 01 11 | 704 | 0.4+ | 0.1− | 2004 04 12 | 703 | 0.4+ | 1.3+ | 2006 10 17 | 703 | 0.1+ | 0.8+ | | |
| 2000 01 11 | 704 | 0.1− | 1.3− | 2004 04 12 | 703 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.3+ | 1.2− | | |
| 2002 09 08 | 599 | 0.2− | 0.4+ | 2004 04 12 | 703 | 0.3− | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.7+ | | |
| 2002 09 08 | 599 | (1.9+ | 1.1−) | 2004 04 15 | 704 | 0.2+ | 0.9+ | 2006 10 28 | 703 | 0.7+ | 0.9+ | | |
| 2002 09 08 | 599 | 0.5+ | 0.9+ | 2004 04 15 | 704 | 0.7− | 0.7+ | 2006 10 28 | 703 | 0.0 | 1.0+ | | |
| 2004 02 19 | 704 | 0.9− | 0.0 | 2004 04 15 | 704 | 0.2+ | 0.8+ | 2006 10 30 | 703 | 0.2+ | 0.4+ | | |
| 2004 02 19 | 704 | 0.1− | 0.0 | 2004 04 15 | 704 | (0.9− | 2.1+) | 2006 10 30 | 703 | 0.2− | 0.2+ | | |
| 2004 02 19 | 704 | 0.0 | 0.0 | 2004 04 24 | 704 | 0.0 | 0.2+ | 2006 10 30 | 703 | 0.1− | 0.6− | | |
| 2004 02 19 | 704 | 0.2+ | 0.3− | 2004 04 24 | 704 | 0.3+ | 0.2+ | 2006 10 30 | 703 | 0.1+ | 0.2+ | | |
| 2004 03 16 | 704 | 0.2+ | 0.0 | 2004 04 24 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.1− | 0.7+ | | |
| 2004 03 16 | 704 | 0.1+ | 0.1− | 2004 04 24 | 704 | 0.4+ | 0.4− | 2006 11 13 | 703 | 0.1+ | 1.0+ | | |
| 2004 03 16 | 704 | 0.2+ | 0.0 | 2004 04 24 | 704 | 0.1+ | 0.3− | 2006 11 13 | 703 | 0.3− | 1.0+ | | |
| 2004 03 16 | 704 | 0.3− | 0.1+ | 2004 05 12 | 644 | 0.6+ | 0.0 | 2006 11 13 | 703 | 0.8− | 0.8+ | | |
| 2004 03 16 | 704 | 0.0 | 0.2+ | 2004 05 12 | 644 | 0.1− | 0.7+ | 2006 11 19 | 703 | 0.3− | 0.3+ | | |
| 2004 03 22 | 699 | 0.8− | 0.6− | 2004 05 12 | 644 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.8− | 0.3− | | |
| 2004 03 22 | 699 | 0.7− | 0.8+ | 2005 07 10 | 691 | 0.4− | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.4+ | | |
| 2004 03 22 | 699 | 0.4+ | 0.8− | 2005 07 10 | 691 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.6+ | 0.1− | | |
| 2004 03 22 | 699 | 1.2+ | 0.5− | 2005 07 10 | 691 | 0.2− | 0.0 | | | | | | |
| 2004 03 23 | 704 | 0.5+ | 0.5+ | 2005 08 05 | 644 | 0.6− | 0.7+ | | | | | | |

**(144670)∗ 2004 FB$_{130}$ = 2005 NM$_{72}$**

Discovered 2004 Mar. 21 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 89539)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.96468 | | (2000.0) | | | |
| $n$ | 0.21133831 | $\omega$ | 247.18667 | | +0.87017484 | +0.43357558 |
| $a$ | 2.7913688 | $\Omega$ | 86.43015 | | −0.32022828 | +0.85871436 |
| $e$ | 0.1545906 | $i$ | 13.56605 | | −0.37449914 | +0.27317002 |
| $P$ | 4.66 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 24 | 691 | 0.4− | 0.5+ | 2001 12 15 | 704 | (0.9+ | 1.7+) | 2005 07 06 | E12 | 0.5+ | 0.4+ | | |
| 1995 04 24 | 691 | 0.3− | 0.0 | 2001 12 15 | 704 | 0.4− | 0.2− | 2005 07 06 | E12 | 0.7+ | 0.4+ | | |
| 1995 04 24 | 691 | 0.3+ | 0.3− | 2003 01 05 | 699 | 0.1+ | 0.5+ | 2005 07 06 | E12 | 0.5+ | 0.4+ | | |
| 2000 06 24 | 704 | 0.7− | 1.0− | 2003 01 05 | 699 | 0.5+ | 0.6+ | 2005 07 11 | E12 | 0.3+ | 1.0+ | | |
| 2000 06 24 | 704 | 0.2− | 0.1− | 2003 01 05 | 699 | 0.0 | 0.0 | 2005 07 11 | E12 | 0.9− | 0.6+ | | |
| 2000 06 24 | 704 | 0.4+ | 0.3+ | 2003 01 05 | 699 | (0.6− | 2.1+) | 2005 07 11 | E12 | 0.2+ | 0.8+ | | |
| 2000 06 24 | 704 | 0.2− | 0.6+ | 2003 01 10 | 704 | 0.5− | 1.2+ | 2005 07 11 | E12 | 0.2− | 0.3+ | | |
| 2000 06 24 | 704 | 0.7− | 0.6− | 2003 01 10 | 704 | 0.4− | 0.5+ | 2005 07 16 | 428 | 0.0 | 0.1+ | | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2003 01 10 | 704 | 0.2+ | 0.0 | 2005 07 16 | 428 | 0.4− | 0.0 | | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2003 01 10 | 704 | 0.4+ | 0.6+ | 2005 07 29 | E12 | 0.4− | 0.9− | | |
| 2001 09 23 | 699 | 0.1+ | 0.8+ | 2003 01 10 | 704 | 0.2+ | 1.3+ | 2005 07 29 | E12 | 0.3− | 0.3− | | |
| 2001 09 23 | 699 | 0.1+ | 0.8+ | 2004 03 15 | 704 | (2.3+ | 1.3−) | 2005 07 29 | E12 | 0.1− | 0.1− | | |
| 2001 09 23 | 699 | 0.3+ | 1.1+ | 2004 03 15 | 704 | (1.7+ | 0.0 ) | 2005 07 29 | E12 | 0.4− | 0.3+ | | |
| 2001 09 23 | 699 | 0.6+ | 0.7+ | 2004 03 15 | 704 | 1.3+ | 0.2+ | 2005 08 06 | E12 | 0.1− | 0.6+ | | |
| 2001 10 16 | 704 | 0.7− | 0.3− | 2004 03 15 | 704 | 0.6+ | 0.1+ | 2005 08 06 | E12 | 0.2− | 1.0+ | | |
| 2001 10 16 | 704 | 0.6+ | 0.8− | 2004 03 15 | 704 | 1.2+ | 0.9− | 2005 08 06 | E12 | 0.3− | 0.8+ | | |
| 2001 10 16 | 704 | 0.3+ | 1.3− | 2004 03 21 | 691 | 0.3+ | 0.0 | 2005 08 24 | E12 | 0.4+ | 0.1+ | | |
| 2001 10 16 | 704 | 0.4− | 0.3+ | 2004 03 21 | 691 | 0.3+ | 0.0 | 2005 08 24 | E12 | 0.4+ | 0.2− | | |
| 2001 10 20 | 608 | 0.4− | 0.6− | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2005 08 24 | E12 | 0.1− | 0.3+ | | |
| 2001 10 20 | 608 | 0.0 | 0.6− | 2004 03 22 | 699 | 0.4− | 0.7+ | 2005 08 24 | E12 | 0.2+ | 0.1+ | | |
| 2001 10 20 | 608 | 0.1− | 0.6− | 2004 03 22 | 699 | 0.7+ | 0.2+ | 2005 09 24 | E12 | 0.5+ | 0.3+ | | |
| 2001 11 12 | 608 | 0.4− | 1.4+ | 2004 03 22 | 699 | 0.3+ | 0.3+ | 2005 09 24 | E12 | 0.2− | 0.2+ | | |
| 2001 11 12 | 608 | (0.3+ | 1.6+) | 2004 03 22 | 699 | 0.3− | 0.4+ | 2005 09 24 | E12 | 0.4− | 0.1+ | | |
| 2001 11 12 | 608 | 0.2+ | 1.5+ | 2004 04 12 | 703 | (0.9− | 1.5+) | 2005 09 24 | E12 | 0.1− | 0.1− | | |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2004 04 12 | 703 | 0.2+ | 0.2− | 2005 10 08 | E12 | 0.4+ | 0.2+ | | |
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2004 04 12 | 703 | 0.7+ | 0.9+ | 2005 10 08 | E12 | 0.3− | 0.6− | | |
| 2001 12 07 | 704 | 0.4− | 0.4+ | 2004 04 12 | 703 | 1.0− | 0.8+ | 2005 10 08 | E12 | 0.0 | 0.6+ | | |
| 2001 12 07 | 704 | 0.1+ | 0.4+ | 2004 04 24 | 703 | 1.2− | 0.7− | 2005 10 08 | E12 | 0.7− | 0.6+ | | |
| 2001 12 07 | 704 | 0.1− | 0.6+ | 2004 04 24 | 703 | 0.4+ | 0.6− | 2006 11 17 | G96 | 0.5− | 0.3− | | |
| 2001 12 07 | 704 | 0.1+ | 0.2+ | 2004 04 24 | 703 | (0.2+ | 1.8−) | 2006 11 17 | G96 | 0.6− | 0.3− | | |
| 2001 12 07 | 704 | 0.1+ | 0.9+ | 2004 04 24 | 703 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2001 12 14 | 209 | 0.1− | 0.3+ | 2005 05 19 | E12 | 0.5+ | 0.2− | 2006 11 17 | G96 | 0.6− | 0.2− | | |
| 2001 12 14 | 209 | 0.2+ | 0.7+ | 2005 05 19 | E12 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.2+ | | |
| 2001 12 14 | 209 | 0.2− | 0.3+ | 2005 05 19 | E12 | 0.7− | 0.9− | 2006 11 18 | 691 | 0.1+ | 0.4+ | | |
| 2001 12 15 | 704 | 0.0 | 1.3− | 2005 05 19 | E12 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2001 12 15 | 704 | 0.6− | 0.3− | 2005 06 08 | E12 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.8− | 1.7− | | |
| 2001 12 15 | 704 | 0.6+ | 0.5+ | 2005 06 08 | E12 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.3+ | 0.7+ | | |
| 2001 12 15 | 704 | 1.2− | 0.0 | 2005 06 08 | E12 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.5+ | 1.0+ | | |
| 2001 12 15 | 704 | 0.4− | 1.3+ | 2005 06 08 | E12 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.5− | | |
| 2001 12 15 | 704 | 0.3+ | 0.7− | 2005 07 06 | E12 | 0.6+ | 0.0 | 2006 11 20 | 704 | 0.8− | 0.1− | | |

**(144671)∗ 2004 FE$_{130}$**

Discovered 2004 Mar. 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 189.76016 | | (2000.0) | | | |
| $n$ | 0.17470490 | $\omega$ | 111.93549 | | −0.91843970 | −0.31182278 |
| $a$ | 3.1690760 | $\Omega$ | 50.77681 | | +0.12947768 | −0.81837727 |
| $e$ | 0.0677643 | $i$ | 18.31061 | | +0.37377005 | −0.48272683 |
| $P$ | 5.64 | $H$ | 14.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 25 | 691 | 0.4+ | 0.2+ | 2003 02 18 | 644 | 0.2+ | 0.6+ | 2004 04 25 | 699 | 0.4− | 0.3+ | | |
| 1993 04 25 | 691 | 0.0 | 0.3+ | 2003 02 18 | 644 | 0.0 | 0.2− | 2004 04 25 | 699 | 0.5− | 0.9+ | | |
| 1993 04 25 | 691 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.1− | 0.7+ | 2004 05 09 | 703 | 0.4− | 0.4− | | |
| 2001 10 10 | 644 | 0.0 | 1.0+ | 2004 03 16 | 704 | 0.5− | 0.7+ | 2004 05 09 | 703 | 0.5+ | 0.7− | | |
| 2001 10 10 | 644 | 0.0 | 0.8+ | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2004 05 09 | 703 | (2.8− | 1.2+) | | |
| 2001 10 10 | 644 | 0.2+ | 0.9+ | 2004 03 22 | 699 | 0.3+ | 0.9− | 2004 05 09 | 703 | 0.3− | 0.2+ | | |
| 2001 10 24 | 644 | 0.2+ | 0.5− | 2004 03 22 | 699 | 0.1− | 0.5+ | 2004 05 23 | 704 | 0.5+ | 0.6− | | |
| 2001 10 24 | 644 | 0.0 | 0.4− | 2004 03 22 | 699 | 0.1+ | 0.0 | 2004 05 23 | 704 | 0.2+ | 0.4+ | | |
| 2001 10 24 | 644 | 0.3+ | 0.6− | 2004 03 22 | 699 | 0.1− | 0.0 | 2004 05 23 | 704 | 0.7+ | 1.0+ | | |
| 2001 12 17 | 704 | 0.7− | 1.5+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | 2004 05 23 | 704 | 0.1+ | 1.5+ | | |
| 2001 12 17 | 704 | 1.0− | 1.3+ | 2004 03 23 | 704 | 0.2+ | 0.0 | 2004 06 09 | E12 | 0.5− | 0.3− | | |
| 2001 12 17 | 704 | 0.3+ | 1.8+ | 2004 03 23 | 704 | 0.1− | 0.4+ | 2004 06 09 | E12 | 0.5+ | 1.0+ | | |
| 2002 12 28 | 704 | 0.4− | 0.5− | 2004 03 23 | 704 | 0.7+ | 0.3+ | 2004 06 09 | E12 | 1.3+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 28 | 704 | 0.2− | 0.3− | 2004 03 23 | 704 | 0.5+ | 0.6+ | 2004 06 09 | E12 | 0.2+ | 0.5− |
| 2002 12 28 | 704 | 0.5− | 0.5− | 2004 04 15 | 704 | 0.7+ | 0.1− | 2006 08 20 | 644 | 1.0− | 0.5+ |
| 2002 12 28 | 704 | 0.1+ | 0.4+ | 2004 04 15 | 704 | 0.3− | 0.3− | 2006 08 20 | 644 | 0.6− | 0.6+ |
| 2002 12 28 | 704 | 0.7− | 0.8+ | 2004 04 15 | 704 | 0.8+ | 0.1+ | 2006 08 20 | 644 | 0.5− | 0.5+ |
| 2003 01 31 | 644 | 0.2− | 1.1+ | 2004 04 15 | 704 | 0.0 | 0.1+ | 2006 09 28 | E12 | 1.5− | 0.8+ |
| 2003 01 31 | 644 | 0.0 | 1.1+ | 2004 04 15 | 704 | 0.5+ | 0.6+ | 2006 09 28 | E12 | 0.8− | 1.0+ |
| 2003 01 31 | 644 | 0.1− | 1.1+ | 2004 04 25 | 699 | 0.4− | 0.1+ | 2006 09 28 | E12 | 0.2− | 0.1− |
| 2003 02 18 | 644 | 0.0 | 0.0 | 2004 04 25 | 699 | 1.0+ | 1.4− | 2006 09 28 | E12 | 1.0− | 1.2+ |

**(144672)∗ 2004 FS$_{130}$ = 2001 XG$_{11}$**

Discovered 2004 Mar. 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 62134)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.21540 | | (2000.0) | | | |
| $n$ | 0.17800125 | $\omega$ | 281.86716 | | +0.69843945 | +0.66159636 |
| $a$ | 3.1298296 | $\Omega$ | 37.71293 | | −0.34661448 | +0.64632173 |
| $e$ | 0.1809073 | $i$ | 26.49528 | | −0.62613156 | +0.38020848 |
| $P$ | 5.54 | $H$ | 14.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 10 | 704 | 1.2+ | 1.0+ | 2004 05 12 | 644 | 0.7+ | 0.4+ | 2006 10 23 | 683 | 0.6− | 1.1+ |
| 1999 05 10 | 704 | 0.7− | 0.8− | 2004 05 12 | 644 | 0.4+ | 0.5+ | 2006 10 27 | 683 | 0.2− | 0.9− |
| 1999 05 10 | 704 | 0.3− | 1.7+ | 2004 05 12 | 644 | 0.8+ | 0.7+ | 2006 10 27 | 683 | 0.0 | 0.1+ |
| 1999 05 10 | 704 | (2.0− | 2.5+) | 2004 05 13 | 704 | 0.8+ | 0.3+ | 2006 10 27 | 683 | 0.1− | 0.6+ |
| 2001 10 25 | 704 | 1.1+ | 0.1+ | 2004 05 13 | 704 | 0.9+ | 0.7+ | 2006 10 28 | 704 | (3.5− | 0.8+) |
| 2001 10 25 | 704 | 0.5+ | 1.1+ | 2004 05 13 | 704 | 0.6+ | 1.4+ | 2006 10 28 | 683 | 0.2− | 0.9− |
| 2001 10 25 | 704 | 0.8+ | 1.2+ | 2004 05 13 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 704 | 0.3+ | 0.8− |
| 2001 12 08 | 704 | 0.4+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 28 | 704 | 1.4+ | 0.7− |
| 2001 12 08 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 1.1− | 0.3+ | 2006 10 28 | 683 | (0.2− | 1.7−) |
| 2001 12 08 | 704 | 0.2+ | 0.5− | 2006 09 14 | 703 | 0.3− | 0.8− | 2006 10 28 | 704 | 0.7− | 0.1+ |
| 2001 12 08 | 704 | 0.3+ | 0.7− | 2006 09 14 | 703 | 0.2− | 0.3− | 2006 10 28 | 683 | 0.2+ | 0.9− |
| 2001 12 08 | 704 | 0.9+ | 0.3− | 2006 09 22 | 704 | 0.3− | 1.0+ | 2006 10 28 | 704 | 0.7− | 0.3+ |
| 2001 12 11 | 704 | 0.0 | 0.6− | 2006 09 22 | 704 | 0.2− | 1.4+ | 2006 10 29 | 691 | 0.3− | 0.0 |
| 2001 12 11 | 704 | 0.5− | 0.2− | 2006 09 22 | 704 | 0.9− | 1.0+ | 2006 10 29 | 691 | 0.3− | 0.0 |
| 2001 12 11 | 704 | 0.2− | 1.0− | 2006 09 22 | 704 | 0.2+ | 0.6+ | 2006 10 29 | 691 | 0.2− | 0.0 |
| 2001 12 11 | 704 | 0.4− | 0.9− | 2006 09 22 | 704 | 1.1− | 0.9+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2001 12 11 | 704 | 0.1+ | 0.8− | 2006 09 22 | 699 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2001 12 23 | 704 | (0.7+ | 1.7−) | 2006 09 22 | 699 | 0.4+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2001 12 23 | 704 | (0.6+ | 1.6−) | 2006 09 22 | 699 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2001 12 23 | 704 | 0.5+ | 1.1− | 2006 09 22 | 699 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 2001 12 23 | 704 | 0.6+ | 0.9− | 2006 09 26 | 704 | 0.7− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.0 |
| 2001 12 23 | 704 | (0.9+ | 2.7−) | 2006 09 26 | 704 | 0.1− | 0.7+ | 2006 11 11 | 703 | 1.1+ | 0.4+ |
| 2003 03 10 | 644 | 0.4− | 0.6− | 2006 09 26 | 704 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2003 03 10 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.4− | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2003 03 10 | 644 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.7− | 0.7− | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2003 03 13 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2003 03 13 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2004 02 23 | 608 | 0.9+ | 0.3− | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2004 02 23 | 608 | 0.6+ | 0.7− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2004 02 23 | 608 | 0.1− | 1.1− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2004 03 15 | 704 | 0.0 | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.4− |
| 2004 03 15 | 704 | 0.7+ | 0.7+ | 2006 10 13 | D35 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.5− |
| 2004 03 15 | 704 | 0.4+ | 0.1+ | 2006 10 13 | D35 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2004 03 15 | 704 | 1.2+ | 0.5+ | 2006 10 13 | D35 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2004 03 22 | 699 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2004 03 22 | 699 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2004 03 22 | 699 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2004 03 22 | 699 | 1.0+ | 0.8+ | 2006 10 20 | 683 | 1.2− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2004 03 28 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 683 | 0.8− | 1.1+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2004 03 28 | 703 | 0.1− | 0.0 | 2006 10 20 | 683 | (1.3− | 1.5+) | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2004 03 28 | 703 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2004 03 28 | 703 | 1.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2004 04 15 | 704 | 0.9+ | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2004 04 15 | 704 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.5− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 04 15 | 704 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.7− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2004 04 15 | 704 | 1.1+ | 0.9+ | 2006 10 22 | 683 | 1.4+ | 0.5− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.7− | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.0 |
| 2004 04 16 | 644 | 0.3+ | 0.6+ | 2006 10 22 | 683 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.4+ | 0.0 |
| 2004 04 16 | 644 | 0.3+ | 0.6+ | 2006 10 22 | 683 | 0.6+ | 0.7− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2004 04 23 | 703 | 0.4− | 1.0+ | 2006 10 23 | 704 | (0.9+ | 2.1+) | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2004 04 23 | 703 | (0.1+ | 1.5+) | 2006 10 23 | 704 | 0.7− | 0.6− | 2006 11 28 | 704 | 0.3− | 0.5+ |
| 2004 04 23 | 703 | 0.7+ | 0.1− | 2006 10 23 | 704 | 0.3+ | 0.9+ | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2004 04 23 | 703 | 1.3− | 0.0 | 2006 10 23 | 683 | 0.7− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.2+ |
| 2004 05 09 | 608 | 0.5+ | 0.2− | 2006 10 23 | 704 | 0.3− | 1.2+ | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2004 05 09 | 608 | 0.5+ | 0.3+ | 2006 10 23 | 683 | 1.1− | 1.0+ | | | | |
| 2004 05 09 | 608 | 0.6+ | 0.3+ | 2006 10 23 | 704 | (0.0 | 1.6+) | | | | |

**(144673)∗ 2004 FA$_{131}$**

Discovered 2004 Mar. 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.82006 | | (2000.0) | | | |
| $n$ | 0.17473171 | $\omega$ | 236.60631 | | +0.09801820 | +0.94062066 |
| $a$ | 3.1687518 | $\Omega$ | 42.99745 | | −0.67864120 | +0.30203894 |
| $e$ | 0.1238925 | $i$ | 28.46123 | | −0.72790010 | −0.15493627 |
| $P$ | 5.64 | $H$ | 13.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 699 | 0.5+ | 1.1+ | 2004 04 15 | 704 | 0.6+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2000 09 28 | 699 | 1.4− | 0.8+ | 2004 04 15 | 704 | 0.9+ | 1.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2000 09 28 | 699 | 0.6− | 0.3− | 2004 04 15 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2000 09 28 | 699 | 0.1− | 0.1− | 2004 04 23 | 703 | 0.6+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 12 09 | 704 | 0.3− | 0.2+ | 2004 04 23 | 703 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2001 12 09 | 704 | (1.5− | 0.1−) | 2004 04 23 | 703 | 0.6− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 12 09 | 704 | 0.1− | 0.3− | 2004 04 23 | 703 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2001 12 09 | 704 | 1.3− | 1.3+ | 2004 04 24 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.7+ | 0.7− |
| 2001 12 22 | 704 | 0.1− | 0.8− | 2004 04 24 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.9− |
| 2001 12 22 | 704 | 0.5+ | 0.6− | 2004 04 24 | 704 | (1.9+ | 0.4+) | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | 1.3+ | 0.6− | 2004 04 24 | 704 | (1.6+ | 0.2+) | 2006 10 22 | 703 | 0.7− | 0.2− |
| 2003 03 10 | 644 | 0.1− | 0.6− | 2004 04 24 | 704 | 0.7+ | 0.7+ | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2003 03 10 | 644 | 0.4+ | 0.4+ | 2004 05 21 | 703 | 0.3+ | 0.1− | 2006 10 22 | 703 | 1.1− | 0.4− |
| 2003 03 10 | 644 | 0.0 | 0.6− | 2004 05 21 | 703 | 0.4− | 0.6− | 2006 10 22 | 703 | 1.0− | 0.0 |
| 2003 03 10 | 644 | 0.3+ | 0.4+ | 2004 05 21 | 703 | (0.2− | 1.6+) | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2003 03 10 | 644 | 0.2− | 0.7− | 2004 05 21 | 703 | 0.1+ | 1.5+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2003 03 10 | 644 | 0.9+ | 0.2+ | 2004 05 23 | 704 | (0.7+ | 1.8+) | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2004 03 13 | 644 | 0.2+ | 0.1+ | 2004 05 23 | 704 | 0.7+ | 0.5− | 2006 10 28 | 703 | (2.5− | 0.2+) |
| 2004 03 13 | 644 | 0.1+ | 0.1+ | 2004 05 23 | 704 | 0.1+ | 1.0+ | 2006 10 28 | 703 | (1.7+ | 0.1−) |
| 2004 03 13 | 644 | 0.1+ | 0.2+ | 2004 05 23 | 704 | (0.2+ | 1.9+) | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2004 03 22 | 699 | 0.1+ | 0.1+ | 2005 08 29 | E12 | 0.1− | 0.7+ | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2004 03 22 | 699 | 0.2+ | 0.4+ | 2005 08 29 | E12 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.9+ | 0.7+ |
| 2004 03 22 | 699 | 0.5+ | 0.7+ | 2005 08 29 | E12 | 0.0 | 0.7+ | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 2004 03 22 | 699 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.7+ | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 2004 03 28 | 704 | 1.0+ | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 11 07 | 644 | 0.4− | 0.1− |
| 2004 03 28 | 704 | 1.0+ | 1.1+ | 2006 09 18 | 703 | 0.5+ | 0.5+ | 2006 11 07 | 644 | 0.5− | 0.3+ |
| 2004 03 28 | 704 | 0.9+ | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.6− | 2006 11 10 | 704 | 0.2− | 0.3+ |
| 2004 03 28 | 704 | 0.8+ | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.6+ | 0.9+ |
| 2004 03 28 | 704 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.1+ | 2006 11 10 | 704 | 0.6− | 0.1− |
| 2004 03 28 | 608 | 0.0 | 0.5− | 2006 09 26 | 703 | 1.3− | 0.5− | 2006 11 16 | 703 | 0.8− | 0.8+ |
| 2004 03 28 | 608 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.0 | 1.0+ |
| 2004 03 28 | 608 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.9− | 1.5+ | 2006 11 16 | 703 | 0.2+ | 0.6+ |
| 2004 04 12 | 703 | 1.0+ | 0.6+ | 2006 09 29 | 699 | 1.1− | 0.8+ | 2006 11 16 | 703 | 0.7− | 0.4+ |
| 2004 04 12 | 703 | 0.2− | 1.3+ | 2006 09 29 | 699 | 1.2− | 1.4+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2004 04 12 | 703 | 1.0+ | 0.3+ | 2006 09 29 | 699 | (0.1− | 3.7+) | 2006 11 21 | 704 | 0.3− | 0.6− |
| 2004 04 12 | 703 | 0.8+ | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.4− | 0.4− |
| 2004 04 15 | 704 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 1.3+ |
| 2004 04 15 | 704 | 1.0+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.2+ | | | | |

**(144674)∗ 2004 FN$_{131}$**

Discovered 2004 Mar. 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.93297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24138699 | $\omega$ | 170.36422 | | −0.96415901 | +0.26352323 | |
| $a$ | 2.5546230 | $\Omega$ | 24.98117 | | −0.24803879 | −0.85391383 | |
| $e$ | 0.1258108 | $i$ | 4.19173 | | −0.09420274 | −0.44876127 | |
| $P$ | 4.08 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 699 | 0.4− | 0.2+ | 2004 04 11 | 703 | 0.8+ | 0.5+ | 2004 05 13 | 691 | 0.0 | 0.2+ | |
| 2000 05 28 | 699 | 0.4− | 0.1− | 2004 04 11 | 703 | 1.2+ | 0.9− | 2004 05 15 | 704 | 1.5+ | 0.8− | |
| 2000 05 28 | 699 | 0.4+ | 0.5+ | 2004 04 15 | 699 | 0.2+ | 0.4+ | 2004 05 15 | 704 | 0.1+ | 0.1− | |
| 2000 05 28 | 699 | 0.2− | 0.0 | 2004 04 15 | 699 | 0.0 | 0.4+ | 2004 05 15 | 704 | 0.3+ | 0.4+ | |
| 2000 06 04 | 608 | 0.3+ | 0.9− | 2004 04 15 | 699 | 0.4− | 0.1− | 2004 05 15 | 704 | 0.6+ | 1.0+ | |
| 2000 06 04 | 608 | 0.4+ | 0.8− | 2004 04 15 | 699 | 0.6− | 0.2+ | 2004 05 15 | 704 | 0.2− | 1.2+ | |
| 2000 06 04 | 608 | 0.3+ | 0.8− | 2004 04 21 | 704 | 0.5+ | 0.1+ | 2005 07 28 | 644 | 0.2+ | 0.4+ | |
| 2001 05 24 | 807 | 0.6+ | 0.3+ | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2005 07 28 | 644 | 0.3− | 0.8+ | |
| 2001 05 24 | 807 | 0.5+ | 0.2+ | 2004 04 21 | 704 | 0.4+ | 1.1+ | 2005 07 28 | 644 | 0.5+ | 0.6+ | |
| 2001 09 19 | 645 | 0.1− | 0.1+ | 2004 04 21 | 704 | 0.4+ | 0.4+ | 2005 08 08 | 807 | 0.3− | 0.3+ | |
| 2001 09 19 | 645 | 0.1− | 0.1+ | 2004 04 21 | 704 | 0.4+ | 0.1+ | 2005 08 08 | 807 | 0.2− | 0.3+ | |
| 2004 03 22 | 699 | 0.3− | 0.1+ | 2004 04 22 | 691 | 0.3− | 0.3+ | 2005 08 09 | 807 | 0.1− | 0.3+ | |
| 2004 03 22 | 699 | 1.4− | 0.2− | 2004 04 22 | 691 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.3+ | |
| 2004 03 22 | 699 | 0.2+ | 0.2+ | 2004 04 22 | 691 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.1+ | |
| 2004 03 22 | 699 | 0.4+ | 0.1+ | 2004 04 28 | 608 | 0.3− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.2+ | |
| 2004 03 27 | 704 | 0.7+ | 0.6+ | 2004 04 28 | 608 | 0.1+ | 0.3− | 2006 09 28 | G96 | 0.1− | 0.5+ | |
| 2004 03 27 | 704 | (0.7+ | 1.7−) | 2004 04 28 | 608 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1+ | |
| 2004 03 27 | 704 | 0.7+ | 0.1− | 2004 05 09 | 703 | 1.1+ | 0.8+ | 2006 10 20 | G96 | 0.1− | 0.4+ | |
| 2004 03 27 | 704 | 0.6+ | 1.3+ | 2004 05 09 | 703 | 0.6+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.1− | |
| 2004 03 27 | 704 | 0.3+ | 0.4− | 2004 05 09 | 703 | 0.7+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.3+ | |
| 2004 03 31 | 704 | 0.0 | 0.2− | 2004 05 09 | 703 | 0.6− | 0.7+ | 2006 11 14 | 691 | 0.2+ | 0.3+ | |
| 2004 03 31 | 704 | 1.1+ | 0.2− | 2004 05 12 | 699 | 0.9− | 0.9− | 2006 11 14 | 691 | 0.2− | 0.4+ | |
| 2004 03 31 | 704 | 0.2+ | 0.6+ | 2004 05 12 | 699 | 0.9− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1+ | |
| 2004 03 31 | 704 | 0.0 | 0.1− | 2004 05 12 | 699 | 0.5+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.3+ | |
| 2004 03 31 | 704 | 0.1− | 0.0 | 2004 05 12 | 699 | 1.1+ | 1.3− | 2006 11 22 | 691 | 0.0 | 0.8+ | |
| 2004 04 11 | 703 | 0.5− | 0.2− | 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.5+ | |
| 2004 04 11 | 703 | 0.3− | 1.1+ | 2004 05 13 | 691 | 0.2+ | 0.3+ | | | | | |

**(144675)∗ 2004 FZ$_{132}$**

Discovered 2004 Mar. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.32046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18386976 | $\omega$ | 293.10278 | | +0.08084609 | −0.98748246 | |
| $a$ | 3.0628743 | $\Omega$ | 151.23089 | | +0.98606470 | +0.05941827 | |
| $e$ | 0.0813067 | $i$ | 16.34393 | | +0.14539710 | +0.14610908 | |
| $P$ | 5.36 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | (0.1+ | 2.1+) | 2004 02 18 | 608 | 0.0 | 1.3+ | 2006 08 18 | 644 | 0.4− | 0.0 | |
| 2001 09 12 | 704 | 0.7− | 0.8+ | 2004 03 11 | 644 | 0.6+ | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.4+ | |
| 2001 09 12 | 704 | (3.2+ | 2.8+) | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.3+ | 1.2+ | |
| 2001 09 12 | 704 | 0.4+ | 0.4− | 2004 03 11 | 644 | 0.3+ | 0.1+ | 2006 08 19 | 699 | (0.4+ | 2.2+) | |
| 2001 09 12 | 704 | (1.8+ | 1.0+) | 2004 03 23 | 704 | 1.3+ | 0.6− | 2006 08 19 | 699 | 0.9+ | 0.4− | |
| 2001 09 25 | 704 | 0.6− | 0.8+ | 2004 03 23 | 704 | (0.4+ | 1.9+) | 2006 08 19 | 699 | 0.8+ | 0.2+ | |
| 2001 09 25 | 704 | 0.7+ | 0.8+ | 2004 03 23 | 704 | 0.6+ | 0.0 | 2006 08 28 | 699 | 1.0− | 0.7+ | |
| 2001 09 25 | 704 | 0.2− | 1.2+ | 2004 03 23 | 704 | (1.7+ | 1.4+) | 2006 08 28 | 699 | 0.4+ | 0.5+ | |
| 2001 09 25 | 704 | (0.6− | 1.9+) | 2004 03 23 | 704 | 1.5+ | 0.0 | 2006 08 28 | 703 | 0.7+ | 0.5+ | |
| 2002 12 01 | 704 | 1.5+ | 0.5+ | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.4+ | 0.1+ | |
| 2002 12 01 | 704 | 0.2+ | 0.3− | 2004 03 30 | 691 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.6− | 0.5− | |
| 2002 12 01 | 704 | 0.3+ | 0.1+ | 2004 03 30 | 691 | 0.3− | 0.2+ | 2006 08 28 | 703 | (1.7− | 0.3−) | |
| 2003 01 02 | 704 | 0.4− | 0.0 | 2005 06 16 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.5+ | |
| 2003 01 02 | 704 | 0.4+ | 0.7+ | 2005 06 16 | 691 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.5− | 0.6+ | |
| 2003 01 02 | 704 | 0.5− | 1.1+ | 2005 06 16 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1− | 0.0 | |
| 2003 01 02 | 704 | 0.9− | 1.4− | 2006 08 13 | 644 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.4+ | |
| 2003 01 02 | 704 | 1.0− | 0.7+ | 2006 08 13 | 644 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.1+ | |
| 2003 02 04 | 644 | 0.3− | 0.7+ | 2006 08 13 | 644 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.2+ | |
| 2003 02 04 | 644 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.3− | |
| 2003 02 04 | 644 | 0.1+ | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1− | |
| 2004 02 18 | 608 | 0.2+ | 1.3+ | 2006 08 17 | 644 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.2+ | |
| 2004 02 18 | 608 | 0.2+ | 1.0+ | 2006 08 18 | 644 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.1− | |

**(144676)∗ 2004 FU$_{134}$**

Discovered 2004 Mar. 26 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.77269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19261807 | $\omega$ | 224.10746 | | −0.78648022 | +0.61647405 | |
| $a$ | 2.9694182 | $\Omega$ | 353.61171 | | −0.43072846 | −0.59103315 | |
| $e$ | 0.1430914 | $i$ | 19.71323 | | −0.44263060 | −0.52023030 | |
| $P$ | 5.12 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 644 | 0.2+ | 0.3+ | 2004 03 31 | 704 | 0.3− | 0.3− | 2006 09 22 | 104 | (0.1+ | 1.9+) | |
| 2003 01 31 | 644 | 0.0 | 0.4+ | 2004 04 13 | 644 | 0.5+ | 0.2+ | 2006 09 22 | 104 | 0.1− | 0.2+ | |
| 2003 01 31 | 644 | 0.1− | 0.7+ | 2004 04 13 | 644 | 0.4+ | 0.3+ | 2006 09 22 | 104 | 0.2+ | 0.9+ | |
| 2004 03 17 | 704 | 0.0 | 0.1− | 2004 04 13 | 644 | 0.5+ | 0.4+ | 2006 09 22 | 104 | 0.4+ | 0.1+ | |
| 2004 03 17 | 704 | 0.3+ | 0.5− | 2004 04 17 | 644 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.0 | |
| 2004 03 17 | 704 | 0.3+ | 0.1+ | 2004 04 17 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.9+ | |
| 2004 03 17 | 704 | 0.2− | 0.6− | 2004 04 17 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.8− | 0.5+ | |
| 2004 03 17 | 704 | 0.3− | 0.6− | 2004 04 29 | 608 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.8− | 1.5+ | |
| 2004 03 26 | 704 | 0.3+ | 0.3− | 2004 04 29 | 608 | 0.3+ | 0.3− | 2006 10 19 | 703 | (1.8− | 0.3+) | |
| 2004 03 26 | 704 | 0.1− | 0.5− | 2004 04 29 | 608 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.3− | |
| 2004 03 26 | 704 | 0.3+ | 0.5+ | 2004 05 13 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.7− | |
| 2004 03 26 | 704 | (2.0− | 1.8+) | 2004 05 13 | 644 | 1.1+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.2+ | |
| 2004 03 26 | 704 | 0.9− | 0.5+ | 2004 05 13 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.7+ | |
| 2004 03 30 | 704 | 0.0 | 0.3+ | 2005 08 22 | 644 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.2− | |
| 2004 03 30 | 704 | 0.3+ | 0.7+ | 2005 08 22 | 644 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.9− | |
| 2004 03 30 | 704 | 0.7− | 0.7+ | 2005 08 22 | 644 | 0.6− | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.0 | |
| 2004 03 30 | 704 | 0.3+ | 0.4+ | 2005 09 08 | E12 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.8− | 0.0 | |
| 2004 03 30 | 704 | 0.1− | 0.2− | 2005 09 08 | E12 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.7− | |
| 2004 03 31 | 704 | 0.2− | 0.2+ | 2005 09 08 | E12 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.8+ | |
| 2004 03 31 | 704 | 0.0 | 0.2+ | 2005 09 08 | E12 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.2− | 1.3− | |
| 2004 03 31 | 704 | 0.2+ | 0.1+ | 2006 09 22 | 104 | 0.4+ | 0.6+ | | | | | |
| 2004 03 31 | 704 | 0.6− | 0.4+ | 2006 09 22 | 104 | 0.2+ | 0.7+ | | | | | |

**(144677)∗ 2004 FM$_{136}$ = 1999 CK$_2$**

Discovered 2004 Mar. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 62136)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.31750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22592256 | $\omega$ | 17.86749 | | −0.82166312 | −0.54299819 | |
| $a$ | 2.6699081 | $\Omega$ | 127.98334 | | +0.49243649 | −0.82936944 | |
| $e$ | 0.1333304 | $i$ | 12.69926 | | +0.28701222 | −0.13152684 | |
| $P$ | 4.36 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 05 | 327 | 0.5+ | 0.0 | 2004 03 28 | 703 | 0.0 | 1.4+ | 2004 05 21 | 703 | (3.6+ | 0.4−) | |
| 1999 02 05 | 327 | 0.8+ | 1.1+ | 2004 03 28 | 703 | 1.0+ | 0.3− | 2005 06 27 | 691 | 0.1− | 0.3− | |
| 1999 02 05 | 327 | 0.6+ | 0.4+ | 2004 04 15 | 704 | 0.5+ | 0.7− | 2005 06 27 | 691 | 0.3+ | 0.4+ | |
| 1999 02 06 | 327 | 0.7− | 0.0 | 2004 04 15 | 704 | 0.6+ | 0.3− | 2005 06 27 | 691 | 0.3− | 0.3+ | |
| 1999 02 06 | 327 | 0.8− | 0.8− | 2004 04 15 | 704 | 1.0+ | 0.2− | 2005 06 27 | 691 | 0.0 | 0.1+ | |
| 1999 02 06 | 327 | 1.0− | 0.5+ | 2004 04 15 | 704 | 1.4+ | 0.9+ | 2005 06 27 | 691 | 0.0 | 0.3− | |
| 2002 12 08 | 644 | 1.0+ | 0.3+ | 2004 04 15 | 704 | 0.9+ | 0.3+ | 2005 06 27 | 691 | 0.1+ | 0.3+ | |
| 2002 12 08 | 644 | 0.3+ | 0.1− | 2004 04 23 | 608 | 0.5− | 0.1+ | 2005 07 03 | G96 | 0.1− | 0.4− | |
| 2002 12 08 | 644 | 0.6+ | 0.2+ | 2004 04 23 | 608 | 0.1− | 0.0 | 2005 07 03 | G96 | 0.3+ | 0.3− | |
| 2002 12 14 | 704 | 0.4+ | 0.6+ | 2004 04 23 | 608 | 0.1+ | 0.5+ | 2005 07 03 | G96 | 0.0 | 0.2− | |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2004 04 24 | 704 | 1.3− | 1.2+ | 2005 07 03 | G96 | 0.2− | 0.2− | |
| 2002 12 14 | 704 | 0.5− | 0.3+ | 2004 04 24 | 704 | 0.8− | 0.9+ | 2005 07 04 | 644 | 0.4+ | 0.1− | |
| 2003 01 05 | 704 | (2.9− | 0.5+) | 2004 04 24 | 704 | 1.3− | 0.7− | 2005 07 04 | 644 | 0.1+ | 0.1+ | |
| 2003 01 05 | 704 | 0.9− | 0.9+ | 2004 04 24 | 704 | 0.8− | 0.6+ | 2005 07 04 | 644 | 0.0 | 0.2+ | |
| 2003 01 05 | 704 | 0.4− | 0.6+ | 2004 04 24 | 704 | 1.0− | 0.9+ | 2005 07 07 | 691 | 0.1− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | (3.7+ | 0.8+) | 2004 04 26 | 699 | 0.4+ | 0.3− | 2005 07 07 | 691 | 0.3− | 0.3+ | | |
| 2004 03 15 | 704 | (2.6+ | 0.5+) | 2004 04 26 | 699 | 0.0 | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.1+ | | |
| 2004 03 15 | 704 | (2.5+ | 2.2+) | 2004 04 26 | 699 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2004 03 15 | 704 | (2.3+ | 1.7+) | 2004 04 26 | 699 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2004 03 15 | 704 | (1.6+ | 2.2+) | 2004 05 13 | 704 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.6+ | | |
| 2004 03 27 | 699 | (2.0− | 0.6+) | 2004 05 13 | 704 | 0.7− | 0.5+ | 2006 10 20 | 703 | 0.0 | 0.1− | | |
| 2004 03 27 | 699 | 0.2− | 0.5+ | 2004 05 13 | 704 | 0.7+ | 0.6+ | 2006 10 20 | 703 | 0.3− | 0.6+ | | |
| 2004 03 27 | 699 | 0.8− | 0.6− | 2004 05 13 | 704 | 0.5+ | 1.3− | 2006 10 20 | 703 | 0.6− | 2.2+ | | |
| 2004 03 27 | 699 | (1.8− | 0.2−) | 2004 05 21 | 703 | 0.8+ | 0.2+ | 2006 10 20 | 703 | 0.9− | 0.6+ | | |
| 2004 03 28 | 703 | 0.3+ | 0.0 | 2004 05 21 | 703 | 0.8+ | 0.7+ | | | | | | |
| 2004 03 28 | 703 | 0.4+ | 0.3+ | 2004 05 21 | 703 | (1.0+ | 2.2−) | | | | | | |

**(144678)∗ 2004 FG$_{137}$ = 2000 AH$_{159}$**

Discovered 2004 Mar. 29 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69709)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.97862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26635253 | $\omega$ | 58.78669 | | +0.63045146 | | −0.77612688 |
| $a$ | 2.3923873 | $\Omega$ | 352.09353 | | +0.67746771 | | +0.55807093 |
| $e$ | 0.2375101 | $i$ | 5.24331 | | +0.37890429 | | +0.29357094 |
| $P$ | 3.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.5− | 0.8+ | 2004 03 19 | 704 | 0.8+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 1999 12 15 | 704 | 1.1− | 0.6+ | 2004 03 19 | 704 | 0.2+ | 1.0+ | 2006 09 25 | 704 | 0.1+ | 0.3− | | |
| 1999 12 15 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.2+ | | |
| 1999 12 15 | 704 | 1.1+ | 0.7− | 2004 03 19 | 704 | (0.0 | 1.6+) | 2006 09 25 | 691 | 0.2− | 0.0 | | |
| 2000 01 03 | 704 | 0.5+ | 0.8− | 2004 03 29 | 691 | 0.5+ | 0.1+ | 2006 09 27 | 699 | 0.2− | 0.1+ | | |
| 2000 01 03 | 704 | 0.1+ | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.2− | 0.1+ | | |
| 2000 01 03 | 704 | 0.3− | 0.1+ | 2004 03 29 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 699 | 0.4− | 0.2+ | | |
| 2000 01 03 | 704 | 0.5+ | 0.3+ | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.3+ | | |
| 2000 01 03 | 704 | 0.5+ | 0.9− | 2004 03 30 | 691 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.3− | | |
| 2000 01 04 | 704 | 0.4− | 0.9− | 2004 03 30 | 691 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.1+ | | |
| 2000 01 04 | 704 | 0.0 | 0.2− | 2006 08 18 | 699 | 1.0+ | 1.4+ | 2006 09 29 | 704 | 0.1− | 0.1+ | | |
| 2000 01 04 | 704 | 0.4− | 0.1+ | 2006 08 18 | 699 | 0.5+ | 0.6+ | 2006 09 29 | 704 | 0.9− | 0.8+ | | |
| 2000 01 04 | 704 | 0.0 | 1.1+ | 2006 08 18 | 699 | 0.4+ | 0.7+ | 2006 09 30 | 691 | 0.7− | 0.2+ | | |
| 2002 08 11 | 644 | 0.3− | 0.0 | 2006 08 18 | 699 | 0.5+ | 0.1− | 2006 09 30 | 691 | 0.4− | 0.2+ | | |
| 2002 08 11 | 644 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.3− | 0.2+ | 2006 09 30 | 691 | 1.1+ | 0.3+ | | |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2002 08 13 | 644 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2002 08 13 | 704 | 0.7− | 0.5+ | 2006 09 14 | A50 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 13 | 704 | (0.6− | 1.8+) | 2006 09 14 | A50 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.3− | | |
| 2002 08 13 | 644 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.4− | | |
| 2002 08 13 | 704 | 0.5− | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2− | | |
| 2002 08 13 | 704 | 0.9− | 1.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.3− | | |
| 2002 08 13 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.4− | | |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.5− | 0.8− | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2002 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2006 09 18 | 704 | 0.8− | 1.5+ | 2006 11 06 | 644 | 0.1− | 0.1+ | | |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.7− | 0.2− | 2006 11 06 | 644 | 0.3− | 0.1− | | |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.8− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.3+ | | |
| 2004 02 23 | 704 | 0.8− | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2004 02 23 | 704 | 0.8+ | 0.1− | 2006 09 21 | 704 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | | |
| 2004 02 23 | 704 | 0.6+ | 0.9+ | 2006 09 21 | 704 | 0.3− | 1.1− | 2006 11 20 | G96 | 0.1− | 0.5− | | |
| 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 09 21 | 704 | 1.0− | 0.9+ | 2006 11 20 | G96 | 0.4+ | 0.3− | | |
| 2004 02 23 | 704 | 0.5+ | 0.3− | 2006 09 21 | 704 | 0.4+ | 0.0 | 2006 11 20 | G96 | 0.2− | 0.4− | | |
| 2004 03 14 | 691 | 0.2− | 0.1+ | 2006 09 24 | 608 | 1.0+ | 0.9− | 2006 11 20 | G96 | 0.2− | 0.3− | | |
| 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 09 24 | 608 | 0.7+ | 0.7− | 2006 11 22 | 704 | 0.3+ | 0.1− | | |
| 2004 03 14 | 691 | 0.0 | 0.4+ | 2006 09 24 | 608 | 0.5+ | 0.8− | 2006 11 22 | 704 | 0.3+ | 0.0 | | |
| 2004 03 15 | 704 | 0.1+ | 0.7− | 2006 09 25 | 704 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.5+ | | |
| 2004 03 15 | 704 | 0.5+ | 1.1+ | 2006 09 25 | 704 | 0.7+ | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.5− | | |
| 2004 03 15 | 704 | 0.6+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2004 03 15 | 704 | (0.9+ | 2.1+) | 2006 09 25 | 704 | 0.2− | 0.2− | | | | | | |

**(144679)∗ 2004 FH$_{140}$ = 2000 HM$_{91}$**

Discovered 2004 Mar. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 69710)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.36107 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23181712 | $\omega$ | 278.77174 | | −0.77027532 | | −0.62207282 |
| $a$ | 2.6244545 | $\Omega$ | 222.92359 | | +0.63546389 | | −0.73027451 |
| $e$ | 0.1843822 | $i$ | 11.89414 | | +0.05349378 | | −0.28235536 |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 704 | 0.5+ | 1.2+ | 2002 11 22 | 644 | 0.4− | 0.5+ | 2004 04 16 | 699 | 0.5+ | 0.7+ | | |
| 1998 11 11 | 704 | 0.6− | 0.1− | 2003 11 29 | 704 | 1.1+ | 0.4− | 2004 04 16 | 704 | 1.3+ | 1.2− | | |
| 1998 11 11 | 704 | 1.0− | 0.2+ | 2003 11 29 | 704 | 0.1+ | 0.2− | 2004 04 16 | 704 | 0.5− | 0.6+ | | |
| 1998 11 11 | 704 | (3.7− | 1.4−) | 2003 11 29 | 704 | 0.8+ | 0.5+ | 2004 04 16 | 704 | 0.3− | 0.0 | | |
| 2000 04 06 | 704 | 0.4− | 0.2− | 2003 11 29 | 704 | 0.2+ | 0.4− | 2004 04 16 | 699 | 1.0− | 0.2+ | | |
| 2000 04 06 | 704 | 0.1− | 0.1+ | 2004 01 16 | 644 | 0.0 | 0.2+ | 2004 04 16 | 704 | 0.8+ | 0.1− | | |
| 2000 04 06 | 704 | 0.7+ | 0.5+ | 2004 01 16 | 644 | 0.3+ | 0.2+ | 2004 05 14 | 704 | 0.3+ | 0.5+ | | |
| 2000 04 06 | 704 | 0.3− | 0.5+ | 2004 01 16 | 644 | 0.1+ | 0.1+ | 2004 05 14 | 704 | 0.6+ | 0.9+ | | |
| 2000 04 30 | 699 | 1.0+ | 0.6+ | 2004 02 18 | 703 | 0.0 | 0.0 | 2004 05 14 | 704 | 0.3+ | 0.4+ | | |
| 2000 04 30 | 699 | 0.8+ | 0.6+ | 2004 02 18 | 703 | 0.8+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.9− | | |
| 2000 04 30 | 699 | 0.5+ | 0.2+ | 2004 02 18 | 703 | 0.0 | 0.6+ | 2006 09 16 | 703 | 0.1− | 0.0 | | |
| 2000 04 30 | 699 | 0.1+ | 1.7+ | 2004 02 18 | 703 | 0.0 | 0.1+ | 2006 09 16 | 703 | 1.4− | 1.3− | | |
| 2000 05 09 | 704 | 0.5+ | 0.2+ | 2004 03 17 | 704 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.5− | 0.6+ | | |
| 2000 05 09 | 704 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.5− | 0.4+ | 2006 09 27 | 703 | 0.6+ | 1.4+ | | |
| 2000 05 09 | 704 | 0.2+ | 1.6+ | 2004 03 17 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 1.3+ | 1.0+ | | |
| 2000 05 09 | 704 | 1.1− | 1.5+ | 2004 03 17 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 1.0+ | | |
| 2002 10 04 | 644 | 0.3+ | 0.1− | 2004 03 17 | 704 | 0.8− | 1.2+ | 2006 09 27 | 703 | 0.7+ | 0.4− | | |
| 2002 10 04 | 644 | 0.7+ | 0.6+ | 2004 03 27 | 699 | 0.1+ | 0.3− | 2006 10 03 | 703 | 0.6− | 0.2− | | |
| 2002 10 04 | 644 | 0.6+ | 0.2+ | 2004 03 27 | 699 | 0.8− | 0.4+ | 2006 10 03 | 703 | 0.2+ | 0.6− | | |
| 2002 10 09 | 704 | 0.0 | 0.1+ | 2004 03 27 | 699 | 0.7− | 0.3− | 2006 10 03 | 703 | 0.0 | 1.2+ | | |
| 2002 10 09 | 704 | 0.1− | 0.2+ | 2004 03 27 | 699 | 1.3− | 0.5− | 2006 10 03 | 703 | 0.7− | 0.8− | | |
| 2002 10 09 | 704 | 0.3− | 0.4+ | 2004 03 31 | 704 | 0.7+ | 0.1+ | 2006 10 09 | 644 | 0.4+ | 0.2+ | | |
| 2002 10 09 | 704 | 0.7− | 0.2+ | 2004 03 31 | 704 | 0.1− | 0.5+ | 2006 10 09 | 644 | 0.3− | 0.3+ | | |
| 2002 10 15 | 704 | 0.1− | 0.5+ | 2004 03 31 | 704 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.4+ | | |
| 2002 10 15 | 704 | 0.2− | 0.3+ | 2004 03 31 | 704 | (0.2+ | 1.8+) | 2006 10 11 | 644 | 0.4− | 0.3+ | | |
| 2002 10 15 | 704 | 0.4− | 0.3+ | 2004 03 31 | 704 | 0.9− | 1.2+ | 2006 10 11 | 644 | 0.4− | 0.5+ | | |
| 2002 10 30 | 644 | 0.6+ | 0.8+ | 2004 04 08 | 608 | (1.6+ | 1.5−) | 2006 10 11 | 644 | 0.2− | 0.5+ | | |
| 2002 10 30 | 644 | 0.4− | 0.4+ | 2004 04 08 | 608 | 1.5+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 30 | 644 | 0.3+ | 0.6+ | 2004 04 08 | 608 | 0.5+ | 1.4− | 2006 10 12 | 644 | 0.3+ | 0.5+ | | |
| 2002 11 22 | 644 | 0.2+ | 0.4+ | 2004 04 16 | 699 | 1.1− | 0.6− | 2006 10 12 | 644 | 0.5− | 0.3+ | | |
| 2002 11 22 | 644 | 0.3− | 0.4+ | 2004 04 16 | 699 | 0.5− | 1.0− | | | | | | |

**(144680)∗ 2004 FP$_{140}$**

Discovered 2004 Mar. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.55317 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21286692 | $\omega$ | 265.96341 | | −0.81435301 | | +0.57789690 |
| $a$ | 2.7779895 | $\Omega$ | 309.33019 | | −0.50124591 | | −0.74681534 |
| $e$ | 0.0954055 | $i$ | 3.96752 | | −0.29254352 | | −0.32909273 |
| $P$ | 4.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 27 | 691 | 0.2− | 0.8− | 2004 04 17 | 699 | 0.6+ | 0.6− | 2005 07 18 | 644 | 0.7− | 0.1+ | | |
| 1997 12 27 | 691 | 0.8+ | 0.1− | 2004 04 17 | 699 | 0.3− | 0.1− | 2005 07 18 | 644 | 0.0 | 0.0 | | |
| 1997 12 27 | 691 | 0.3+ | 0.0 | 2004 04 17 | 699 | 0.3+ | 0.8+ | 2005 07 18 | 644 | 0.1− | 0.0 | | |
| 2001 09 15 | 843 | (2.5+ | 0.7−) | 2004 04 17 | 699 | 0.0 | 0.7+ | 2006 10 04 | G96 | 0.3+ | 0.1− | | |
| 2001 09 15 | 843 | 0.8+ | 1.0+ | 2004 04 19 | 704 | 0.9+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.0 | | |
| 2001 10 11 | 691 | 0.3− | 0.0 | 2004 04 19 | 704 | 0.2− | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.1+ | | |
| 2001 10 11 | 691 | 0.3− | 0.4− | 2004 04 19 | 704 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.0 | | |
| 2001 10 11 | 691 | 0.4− | 0.2− | 2004 04 21 | 704 | 0.4+ | 0.9+ | 2006 10 13 | 691 | 0.1− | 0.2+ | | |
| 2001 10 20 | 691 | 0.1− | 0.2− | 2004 04 21 | 704 | 0.2+ | 0.8+ | 2006 10 13 | 691 | 0.1− | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 691 | 0.0 | 0.1+ | 2004 04 21 | 704 | 0.3− | 0.6+ | 2006 10 13 | 691 | 0.4− | 0.3+ |
| 2001 10 20 | 691 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.3− | 0.1+ |
| 2004 03 20 | 699 | 0.6+ | 0.3− | 2004 04 21 | 704 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 699 | 0.2− | 0.4− | 2004 04 29 | 608 | 0.5+ | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2004 03 20 | 699 | 0.9+ | 0.4+ | 2004 04 29 | 608 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2004 03 20 | 699 | 0.3− | 0.9+ | 2004 04 29 | 608 | 0.9+ | 0.0 | 2006 10 21 | 691 | 0.7− | 0.5+ |
| 2004 03 27 | 699 | 0.9− | 0.4− | 2005 06 30 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.4− | 0.6+ |
| 2004 03 27 | 699 | 0.9− | 0.5+ | 2005 06 30 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2004 03 27 | 699 | 0.6− | 1.1+ | 2005 06 30 | 691 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2004 03 27 | 699 | 0.7− | 0.3+ | 2005 07 11 | 691 | 0.3+ | 0.5+ | 2006 10 31 | 691 | 0.5+ | 0.4+ |
| 2004 03 31 | 704 | 0.1− | 0.4− | 2005 07 11 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2004 03 31 | 704 | 0.5− | 0.9+ | 2005 07 11 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.1− |
| 2004 03 31 | 704 | 1.1+ | 1.3+ | 2005 07 15 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2004 04 17 | 704 | 1.1+ | 0.2+ | 2005 07 15 | G96 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2004 04 17 | 704 | 0.3+ | 0.2+ | 2005 07 15 | G96 | 0.3− | 0.1+ | | | | |
| 2004 04 17 | 704 | (1.2+ | 1.6−) | 2005 07 15 | G96 | 0.3+ | 0.0 | | | | |

**(144681)∗ 2004 FR$_{141}$**

Discovered 2004 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.27689 | | (2000.0) | | | |
| $n$ | 0.25319809 | $\omega$ | 266.29803 | | −0.98716264 | −0.15593373 |
| $a$ | 2.4745474 | $\Omega$ | 264.72877 | | +0.15682923 | −0.90536519 |
| $e$ | 0.1284179 | $i$ | 1.98913 | | +0.03024109 | −0.39496651 |
| $P$ | 3.89 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 0.5+ | 0.3− | 2004 03 31 | 704 | 1.1+ | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 1998 11 17 | 691 | 0.2+ | 0.1+ | 2004 04 12 | 699 | 0.9− | 0.2+ | 2006 10 29 | G96 | 0.2− | 0.2− |
| 1998 11 27 | 691 | 0.2− | 0.1− | 2004 04 12 | 699 | 0.1+ | 0.2− | 2006 10 29 | G96 | 0.2− | 0.2− |
| 1998 11 27 | 691 | 0.3+ | 0.0 | 2004 04 12 | 699 | 0.6− | 0.4+ | 2006 10 29 | G96 | 0.5+ | 0.6− |
| 1998 11 27 | 691 | 0.5− | 0.4+ | 2004 04 12 | 699 | 0.3+ | 0.6− | 2006 10 29 | G96 | 0.3+ | 0.4− |
| 1998 12 17 | 691 | 0.2+ | 0.4− | 2004 04 17 | 704 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1998 12 17 | 691 | 0.3+ | 0.4− | 2004 04 17 | 704 | 0.2− | 0.4− | 2006 11 11 | 691 | 0.4− | 0.2− |
| 1998 12 17 | 691 | 0.1− | 0.4− | 2004 04 17 | 704 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2000 03 09 | 704 | 0.1+ | 0.2+ | 2004 04 17 | 704 | 0.9+ | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.3+ |
| 2000 03 09 | 704 | 0.3− | 0.1− | 2004 04 19 | 691 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2000 03 09 | 704 | 0.2− | 0.3− | 2004 04 19 | 691 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.0 | 0.4+ |
| 2000 03 09 | 704 | 1.0− | 0.4+ | 2004 04 19 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.8− | 0.5− |
| 2000 03 09 | 704 | 0.3+ | 0.3− | 2004 04 20 | 704 | 0.7+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2000 04 07 | 699 | 0.2− | 0.7− | 2004 04 20 | 704 | 0.6+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2000 04 07 | 699 | 1.3− | 0.5+ | 2004 04 20 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | (0.1− | 2.4+) |
| 2000 04 07 | 699 | 0.4− | 0.8− | 2004 04 20 | 704 | 0.5+ | 0.5− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2000 04 07 | 699 | 0.5− | 1.0− | 2004 04 20 | 704 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2000 04 25 | 699 | 0.2+ | 1.2+ | 2004 04 30 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2000 04 25 | 699 | 0.1− | 0.1− | 2004 04 30 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | (1.3− | 1.6+) |
| 2000 04 25 | 699 | 0.1− | 0.1− | 2004 04 30 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | (2.1− | 1.6+) |
| 2000 04 25 | 699 | 0.3+ | 0.3− | 2004 05 15 | 704 | 0.8− | 0.1− | 2006 11 21 | 704 | (2.8− | 3.1+) |
| 2004 03 15 | 644 | 0.2+ | 0.0 | 2004 05 15 | 704 | 0.6− | 0.1+ | 2006 11 21 | 704 | (1.8− | 0.1+) |
| 2004 03 15 | 644 | 0.3+ | 0.2+ | 2004 05 15 | 704 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.3− |
| 2004 03 15 | 644 | 0.3+ | 0.1+ | 2004 05 15 | 704 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 703 | 0.7+ | 1.2+ | 2004 05 19 | 691 | 0.3+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2004 03 17 | 703 | 0.5− | 0.2+ | 2004 05 19 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2004 03 17 | 703 | 1.0+ | 0.7− | 2004 05 19 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 03 17 | 703 | 0.9− | 0.2− | 2005 07 29 | 644 | 1.0− | 0.8+ | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2004 03 27 | 704 | 0.8+ | 0.1+ | 2005 07 29 | 644 | 1.1− | 1.0+ | 2006 12 01 | 691 | 0.2+ | 0.4+ |
| 2004 03 27 | 704 | 0.1− | 0.8+ | 2005 07 29 | 644 | 0.3− | 0.7+ | 2006 12 01 | 691 | 0.3− | 0.4+ |
| 2004 03 27 | 704 | 0.8+ | 0.8+ | 2006 09 27 | G96 | 0.2− | 0.6− | 2006 12 01 | 691 | 0.0 | 0.4+ |
| 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 12 01 | 704 | 1.3+ | 0.6+ |
| 2004 03 27 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.1+ |
| 2004 03 31 | 704 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.5− | 0.3− | 2006 12 01 | 704 | 0.2+ | 0.0 |
| 2004 03 31 | 704 | (1.7+ | 0.5−) | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.1+ |
| 2004 03 31 | 704 | 0.4+ | 0.8+ | 2006 10 19 | G96 | 0.6+ | 0.1+ | | | | |
| 2004 03 31 | 704 | 1.0+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.0 | | | | |

**(144682)∗ 2004 FN$_{142}$**

Discovered 2004 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.68646 | | (2000.0) | | | |
| $n$ | 0.22979303 | $\omega$ | 291.30742 | | −0.14170415 | −0.98984623 |
| $a$ | 2.6398433 | $\Omega$ | 166.82433 | | +0.92539187 | −0.13646078 |
| $e$ | 0.0467771 | $i$ | 2.80439 | | +0.35152500 | −0.03978558 |
| $P$ | 4.29 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 608 | 0.3− | 0.2+ | 2004 04 19 | 691 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 08 12 | 608 | 0.5− | 0.5+ | 2004 04 20 | 703 | 0.4− | 0.9− | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2001 08 12 | 608 | 0.5− | 0.3+ | 2004 04 20 | 703 | (0.1− | 1.6+) | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 0.8− | 2004 04 20 | 703 | 0.4+ | 1.4+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.8+ | 2004 04 20 | 703 | 0.5− | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 05 19 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.8+ | 0.5+ | 2004 05 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.1− |
| 2001 09 19 | 704 | 0.1− | 1.1+ | 2004 05 19 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 0.5+ | 0.8− | 2004 05 28 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2004 05 28 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 0.2− | 0.3− | 2004 05 28 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.6− | 2005 06 27 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.3− | 0.5− | 2005 06 27 | 644 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2004 03 27 | 704 | 0.1− | 1.5+ | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2004 03 27 | 704 | 0.8− | 0.1− | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 1.0+ | 0.8+ |
| 2004 03 27 | 704 | 0.7+ | 0.4+ | 2005 06 27 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 704 | (0.2− | 1.6+) |
| 2004 03 27 | 704 | 0.0 | 0.2+ | 2005 06 27 | 644 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.6− | 1.1+ |
| 2004 03 31 | 704 | 0.3+ | 0.6+ | 2005 07 04 | G96 | 0.5− | 0.2+ | 2006 11 17 | 704 | 0.7− | 0.8+ |
| 2004 03 31 | 704 | (0.2+ | 1.7+) | 2005 07 04 | G96 | 0.3− | 0.1+ | 2006 11 17 | 704 | (2.1+ | 0.7+) |
| 2004 03 31 | 704 | (1.2+ | 2.2+) | 2005 07 04 | G96 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2004 04 09 | E12 | 1.2+ | 1.2− | 2005 07 04 | G96 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2004 04 09 | E12 | 0.5+ | 1.3− | 2005 07 15 | G96 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.2− |
| 2004 04 09 | E12 | 0.8− | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 2004 04 09 | E12 | 0.1+ | 1.0− | 2005 07 15 | G96 | 0.4− | 0.0 | 2006 11 18 | 704 | 1.2+ | 0.2+ |
| 2004 04 12 | 691 | 0.0 | 0.5+ | 2005 07 15 | G96 | 1.3− | 0.5+ | 2006 11 18 | 704 | 0.3− | 1.2+ |
| 2004 04 12 | 691 | 0.9+ | 0.9+ | 2006 10 12 | 691 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.4+ | 0.9+ |
| 2004 04 16 | 704 | (0.2+ | 1.6+) | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2004 04 16 | 704 | 1.0+ | 1.4+ | 2006 10 20 | 644 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.3+ |
| 2004 04 16 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2004 04 16 | 704 | 0.9+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 04 16 | 704 | 0.1− | 1.3+ | 2006 11 01 | 691 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2004 04 19 | 704 | (1.9− | 1.5+) | 2006 11 01 | 691 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.5− | 0.6+ |
| 2004 04 19 | 691 | 0.9− | 1.2+ | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.9− | 1.2+ |
| 2004 04 19 | 704 | 1.5− | 0.6+ | 2006 11 02 | 703 | 0.3− | 0.6+ | 2006 11 28 | 704 | 0.6− | 0.8+ |
| 2004 04 19 | 704 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 1.0− | 0.2− | 2006 11 28 | 704 | 1.0− | 0.9+ |
| 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 11 02 | 703 | 0.0 | 1.1− | 2006 11 28 | 704 | 0.8− | 0.3+ |
| 2004 04 19 | 704 | 0.3+ | 1.3+ | 2006 11 02 | 703 | (1.8− | 0.9+) | | | | |

**(144683)∗ 2004 FS$_{142}$**

Discovered 2004 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 145.13191 | | (2000.0) | | | |
| $n$ | 0.17780106 | $\omega$ | 41.08574 | | −0.66124924 | +0.75007882 |
| $a$ | 3.1321783 | $\Omega$ | 187.54417 | | −0.70905794 | −0.62992583 |
| $e$ | 0.0892164 | $i$ | 5.00514 | | −0.24492098 | −0.20143289 |
| $P$ | 5.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 608 | 0.0 | 0.1− | 2004 05 12 | 699 | 0.5− | 0.6+ | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2003 02 01 | 608 | 0.5− | 0.0 | 2004 05 12 | 699 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.2+ |
| 2003 02 01 | 608 | 0.5+ | 0.0 | 2004 05 21 | 704 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.0 | 0.4+ |
| 2004 03 27 | 704 | 0.9− | 0.4− | 2004 05 21 | 704 | 0.6+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.9+ | 0.8+ | 2004 05 21 | 704 | 0.0 | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.4+ | | |
| 2004 03 27 | 704 | 0.8− | 0.0 | 2004 05 21 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 27 | 704 | 1.3+ | 0.4+ | 2005 06 28 | 644 | 0.1− | 0.5− | 2006 09 25 | 691 | 0.4+ | 0.1− | | |
| 2004 03 27 | 704 | 0.5+ | 0.3+ | 2005 06 28 | 644 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | | |
| 2004 03 31 | 704 | 0.0 | 0.1+ | 2005 06 28 | 644 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 31 | 704 | 0.9+ | 1.0− | 2005 07 01 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1+ | | |
| 2004 03 31 | 704 | 1.2+ | 0.4− | 2005 07 01 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.0 | | |
| 2004 04 15 | 699 | 1.1− | 0.7+ | 2005 07 01 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.4+ | | |
| 2004 04 15 | 699 | 0.8− | 0.3+ | 2005 07 10 | 691 | 0.7− | 0.5− | 2006 10 21 | 703 | 0.3+ | 0.0 | | |
| 2004 04 15 | 699 | 0.3− | 0.3− | 2005 07 10 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.1− | | |
| 2004 04 15 | 699 | 0.3− | 0.1− | 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.8+ | 1.5− | | |
| 2004 04 19 | 704 | 0.1− | 0.5+ | 2005 07 15 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.2+ | | |
| 2004 04 19 | 704 | 0.3+ | 0.6+ | 2005 07 15 | 691 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2004 04 19 | 704 | 1.0+ | 0.3− | 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2004 04 19 | 704 | 0.6− | 0.2− | 2005 07 18 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2004 04 19 | 704 | 0.3+ | 0.1+ | 2005 07 18 | 644 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2− | | |
| 2004 04 22 | 704 | 0.8+ | 0.8+ | 2005 07 18 | 644 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2004 04 22 | 704 | 0.4+ | 1.3+ | 2005 08 05 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.8+ | | |
| 2004 04 22 | 704 | 0.9+ | 0.1+ | 2005 08 05 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.2+ | | |
| 2004 04 22 | 704 | 0.6+ | 1.5+ | 2005 08 05 | 644 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.0 | | |
| 2004 04 24 | 691 | 0.1− | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.3+ | | |
| 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 07 21 | G96 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2004 04 24 | 691 | 0.1− | 0.4+ | 2006 07 21 | G96 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.1− | | |
| 2004 05 12 | 699 | 0.6− | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2004 05 12 | 699 | 0.7− | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.3+ | | | | | | |

**(144684)∗ 2004 FA$_{143}$ = 1999 CJ$_{58}$ = 2003 AA$_{92}$**

Discovered 2004 Mar. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65674)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 302.36589 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.22092046 | $\omega$ | 58.53806 | | +0.07064194 | −0.99465716 | |
| *a* | 2.7100591 | $\Omega$ | 27.71154 | | +0.85145245 | +0.02081214 | |
| *e* | 0.2025925 | *i* | 9.31615 | | +0.51965223 | +0.10111371 | |
| *P* | 4.46 | *H* | 14.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.0 | 0.9− | 2003 01 31 | 704 | 0.9− | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.1+ | | |
| 1999 02 10 | 704 | 1.4− | 1.5− | 2003 01 31 | 704 | 0.8− | 0.3+ | 2006 09 19 | 704 | (1.3− | 2.9+) | | |
| 1999 02 10 | 704 | 1.7− | 1.4− | 2003 01 31 | 704 | 0.4− | 0.5+ | 2006 09 19 | 704 | 0.2− | 0.2− | | |
| 1999 02 10 | 704 | (3.5− | 1.2−) | 2003 01 31 | 704 | 0.9− | 0.1+ | 2006 09 19 | 704 | 0.1+ | 0.5+ | | |
| 1999 02 13 | 704 | 0.1+ | 1.1− | 2004 03 27 | 704 | 0.1− | 1.2+ | 2006 09 19 | 704 | (0.6+ | 1.6+) | | |
| 1999 02 13 | 704 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 09 22 | 704 | (0.7+ | 1.6+) | | |
| 1999 02 13 | 704 | (1.9− | 2.1−) | 2004 03 27 | 704 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.3+ | | |
| 1999 02 13 | 704 | 1.5− | 0.8− | 2004 03 27 | 704 | 1.2+ | 0.8− | 2006 09 22 | 704 | 0.2+ | 0.4− | | |
| 2001 07 20 | 644 | 0.3− | 0.4+ | 2004 03 31 | 704 | 0.1+ | 0.7+ | 2006 09 22 | 704 | 0.0 | 0.8− | | |
| 2001 07 20 | 644 | 0.5− | 0.5+ | 2004 03 31 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.5− | 0.4+ | | |
| 2001 07 20 | 644 | 0.4− | 0.1+ | 2004 03 31 | 704 | 0.0 | 1.0+ | 2006 09 26 | 704 | 0.8− | 0.8+ | | |
| 2001 08 10 | 644 | 0.6+ | 0.2+ | 2004 04 12 | 699 | 1.0+ | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.3+ | | |
| 2001 08 10 | 644 | 0.4+ | 0.2+ | 2004 04 12 | 644 | 0.3+ | 0.9+ | 2006 09 26 | 704 | 0.2+ | 0.5+ | | |
| 2001 08 10 | 644 | 0.0 | 0.5+ | 2004 04 12 | 699 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.7+ | | |
| 2002 10 04 | 704 | 0.1+ | 1.0+ | 2004 04 12 | 644 | 0.4+ | 1.0+ | 2006 09 27 | 691 | 0.2+ | 0.0 | | |
| 2002 10 04 | 704 | 0.2− | 1.3+ | 2004 04 12 | 699 | 0.0 | 0.6+ | 2006 09 27 | 691 | 0.2+ | 0.0 | | |
| 2002 10 04 | 704 | 0.3+ | 0.2+ | 2004 04 12 | 699 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 10 | 704 | (1.8+ | 1.5+) | 2004 04 12 | 644 | 0.3+ | 0.8+ | 2006 09 28 | 704 | 0.0 | 0.3− | | |
| 2002 10 10 | 704 | (1.8+ | 0.9+) | 2004 04 25 | 703 | (1.7+ | 1.3+) | 2006 09 28 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 10 | 704 | (1.1+ | 1.7+) | 2004 04 25 | 703 | (0.1+ | 1.5+) | 2006 09 28 | 704 | 0.2+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2004 04 25 | 703 | 0.8+ | 0.9+ | 2006 09 28 | 704 | 0.4+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.3− | 0.3+ | 2004 04 25 | 703 | 0.5+ | 1.4+ | 2006 09 28 | 704 | 0.3− | 0.2− | | |
| 2002 11 06 | 704 | 0.3+ | 0.3− | 2004 05 13 | 704 | (0.2− | 1.8+) | 2006 09 30 | 704 | 0.3+ | 0.1+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.0 | 2004 05 13 | 704 | (0.2+ | 1.8+) | 2006 09 30 | 704 | 0.2− | 0.1+ | | |
| 2002 11 06 | 704 | 0.0 | 0.4− | 2004 05 13 | 704 | (0.9+ | 1.6+) | 2006 09 30 | 704 | 0.3+ | 0.3+ | | |
| 2002 11 15 | 704 | 0.4+ | 1.1+ | 2004 05 13 | 704 | (0.2− | 1.9+) | 2006 09 30 | 704 | 0.2+ | 0.2+ | | |
| 2002 11 15 | 704 | 0.3− | 0.7+ | 2004 05 13 | 704 | (0.2+ | 2.0+) | 2006 09 30 | 704 | 0.2+ | 0.2− | | |
| 2002 11 15 | 704 | 0.8+ | 0.7+ | 2004 05 15 | 704 | (1.8+ | 0.3+) | 2006 10 15 | 106 | 0.0 | 0.3− | | |
| 2002 12 05 | 704 | 0.4− | 1.3+ | 2004 05 15 | 704 | 0.2− | 0.4+ | 2006 10 15 | 106 | 0.0 | 0.5− | | |
| 2002 12 05 | 704 | 0.5+ | 1.1+ | 2004 05 15 | 704 | 0.9+ | 1.0+ | 2006 10 15 | 106 | 0.1+ | 0.3− | | |
| 2002 12 05 | 704 | (1.8− | 2.0+) | 2004 05 15 | 704 | (0.4+ | 1.6+) | 2006 10 15 | 106 | 0.1+ | 0.1− | | |
| 2002 12 05 | 704 | 0.1+ | 1.2+ | 2004 05 21 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 12 05 | 704 | 0.1+ | 1.0+ | 2004 05 21 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 12 15 | 704 | 0.2− | 0.7+ | 2004 05 21 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.8+ | | |
| 2002 12 15 | 704 | 0.3− | 0.3+ | 2006 08 31 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 1.0− | 1.1+ | | |
| 2002 12 15 | 704 | 0.0 | 0.5+ | 2006 08 31 | 704 | 0.5− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 12 15 | 704 | 0.1− | 0.1+ | 2006 08 31 | 704 | 1.1− | 0.7+ | 2006 10 21 | 703 | (1.5− | 0.2+) | | |
| 2002 12 15 | 704 | 0.0 | 0.2+ | 2006 08 31 | 704 | 0.7− | 0.6+ | 2006 10 21 | 703 | 0.9− | 0.6+ | | |
| 2002 12 29 | 704 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.0 | 0.1− | 2006 10 23 | 704 | 0.9− | 0.4− | | |
| 2002 12 29 | 704 | 0.5+ | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 10 23 | 704 | 0.7+ | 0.4+ | | |
| 2002 12 29 | 704 | 0.3− | 0.4− | 2006 09 12 | 703 | (0.8+ | 2.9−) | 2006 10 23 | 704 | 0.3− | 0.2− | | |
| 2002 12 29 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 704 | 0.0 | 0.7+ | 2006 10 23 | 704 | 0.4− | 0.3+ | | |
| 2003 01 07 | 704 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.2+ | 0.2− | 2006 11 10 | 704 | 0.1− | 0.0 | | |
| 2003 01 07 | 704 | 0.3− | 0.2+ | 2006 09 16 | 704 | 0.1+ | 0.8+ | 2006 11 10 | 704 | 0.7− | 1.3− | | |
| 2003 01 07 | 704 | 0.2− | 0.1+ | 2006 09 16 | 704 | 0.3− | 0.5− | 2006 11 10 | 704 | (0.9+ | 2.2+) | | |
| 2003 01 07 | 704 | 0.2− | 0.1+ | 2006 09 16 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 704 | 0.6− | 0.1+ | | |
| 2003 01 07 | 704 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.4− | 2006 11 14 | G96 | 0.1− | 0.4− | | |
| 2003 01 13 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | (1.5+ | 0.6+) | 2006 11 14 | G96 | 0.1+ | 0.5− | | |
| 2003 01 13 | 704 | 1.0+ | 0.0 | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.6− | | |
| 2003 01 13 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2003 01 13 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.9+ | 0.7− | | | | | | |
| 2003 01 31 | 704 | 0.8− | 0.1+ | 2006 09 18 | 699 | 0.7+ | 0.4− | | | | | | |

**(144685)∗ 2004 FE$_{144}$ = 2001 SM$_{325}$**

Discovered 2004 Mar. 29 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 62140)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 214.88051 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.20395208 | $\omega$ | 184.71865 | | −0.81765437 | −0.55366261 | |
| *a* | 2.8583624 | $\Omega$ | 320.29440 | | +0.53595641 | −0.63196275 | |
| *e* | 0.0813197 | *i* | 14.30007 | | +0.21021909 | −0.54229216 | |
| *P* | 4.83 | *H* | 14.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.3− | 0.1− | 2004 03 01 | 703 | 0.4− | 0.5− | 2006 08 26 | D35 | 0.2+ | 0.0 | | |
| 2001 09 08 | 704 | 0.7− | 0.8+ | 2004 03 01 | 703 | 0.1− | 0.8+ | 2006 08 26 | D35 | 0.1+ | 0.0 | | |
| 2001 09 08 | 704 | 0.6− | 0.4+ | 2004 03 17 | 704 | 0.9+ | 0.7+ | 2006 08 29 | 703 | 1.0− | 1.1+ | | |
| 2001 09 17 | 704 | 0.2− | 0.4− | 2004 03 17 | 704 | 0.4+ | 1.2+ | 2006 08 29 | 703 | 0.3− | 0.7+ | | |
| 2001 09 17 | 704 | 0.7− | 0.3+ | 2004 03 17 | 704 | 0.1+ | 0.6+ | 2006 08 29 | 703 | 0.8− | 0.3+ | | |
| 2001 09 17 | 704 | 0.4− | 0.2+ | 2004 03 29 | 703 | 1.1+ | 0.4+ | 2006 08 29 | 703 | 1.3− | 0.9+ | | |
| 2001 09 18 | 699 | 0.1+ | 0.3− | 2004 03 29 | 703 | 0.6+ | 0.6+ | 2006 09 06 | 644 | 0.0 | 0.2− | | |
| 2001 09 18 | 699 | 0.6− | 0.5+ | 2004 03 29 | 703 | 0.4+ | 0.7+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 18 | 699 | 0.3+ | 0.6− | 2004 03 29 | 703 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 18 | 699 | (0.6+ | 1.8+) | 2004 03 31 | 704 | 0.4− | 0.7− | 2006 09 14 | 703 | 0.2− | 0.5+ | | |
| 2001 10 14 | 704 | 0.5+ | 0.0 | 2004 03 31 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 1.0− | 1.2+ | | |
| 2001 10 14 | 704 | 0.1+ | 1.4+ | 2004 03 31 | 704 | 0.3+ | 0.5− | 2006 09 14 | 703 | 0.9− | 0.3+ | | |
| 2001 10 14 | 704 | 0.7+ | 1.5+ | 2004 03 31 | 704 | 0.9+ | 0.1− | 2006 09 14 | 703 | 0.1− | 0.1+ | | |
| 2002 12 15 | 704 | 0.3− | 0.3+ | 2004 03 31 | 704 | 1.1+ | 0.1− | 2006 09 15 | 704 | 0.5− | 0.3+ | | |
| 2002 12 15 | 704 | 0.2− | 0.0 | 2004 04 15 | 703 | 0.2− | 1.0+ | 2006 09 15 | 704 | 0.4+ | 0.3− | | |
| 2002 12 15 | 704 | 0.2− | 0.2+ | 2004 04 15 | 703 | 0.1+ | 0.2+ | 2006 09 15 | 704 | 0.1− | 0.4− | | |
| 2002 12 15 | 704 | 0.3− | 1.0+ | 2004 04 15 | 703 | 1.2− | 0.5− | 2006 09 20 | 699 | 0.4+ | 0.2− | | |
| 2004 01 23 | 704 | 0.1+ | 0.8+ | 2004 04 15 | 703 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 1.1+ | 0.0 | | |
| 2004 01 23 | 704 | 0.1− | 0.6+ | 2004 04 17 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 699 | 0.6+ | 0.2+ | | |
| 2004 01 23 | 704 | 0.2+ | 0.5+ | 2004 04 17 | 704 | 0.2+ | 0.2− | 2006 09 20 | 699 | 0.3+ | 0.3+ | | |
| 2004 01 23 | 704 | (1.6+ | 1.1+) | 2004 04 17 | 704 | 0.6+ | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2004 03 01 | 703 | 0.0 | 0.1+ | 2004 04 17 | 704 | 0.2− | 1.2+ | 2006 10 11 | 644 | 0.4− | 0.1+ | | |
| 2004 03 01 | 703 | 0.8+ | 0.2− | 2006 08 26 | D35 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3− | 0.0 | | |

**(144686)∗ 2004 FG$_{144}$**

Discovered 2004 Mar. 29 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.80720 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17939260 | $\omega$ | 169.60620 | | −0.50003293 | −0.85144312 | |
| $a$ | 3.1136254 | $\Omega$ | 310.19861 | | +0.77894671 | −0.36239893 | |
| $e$ | 0.1123831 | $i$ | 11.94981 | | +0.37842977 | −0.37909317 | |
| $P$ | 5.49 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.5− | 0.6+ | 2002 12 15 | 704 | 0.4− | 0.1+ | 2004 03 31 | 704 | 0.1− | 0.8+ |
| 2001 08 11 | 644 | 0.3− | 0.9+ | 2002 12 15 | 704 | 0.0 | 0.1− | 2004 03 31 | 704 | 0.8+ | 0.1+ |
| 2001 08 11 | 644 | 0.8+ | 1.0+ | 2002 12 15 | 704 | 0.4− | 0.8+ | 2004 04 15 | 703 | 0.2+ | 0.0 |
| 2001 08 24 | 699 | 0.8− | 0.9+ | 2003 01 04 | 704 | 0.4− | 0.7+ | 2004 04 15 | 703 | 0.8− | 0.6+ |
| 2001 08 24 | 699 | 1.4− | 0.7+ | 2003 01 04 | 704 | 0.1+ | 0.9+ | 2004 04 15 | 703 | 0.0 | 1.1+ |
| 2001 08 24 | 699 | 1.1− | 0.5+ | 2003 01 04 | 704 | 0.9− | 0.0 | 2004 04 15 | 703 | 0.9+ | 0.9+ |
| 2001 08 24 | 699 | (1.8− | 1.4+) | 2003 01 04 | 704 | 1.1− | 0.1+ | 2004 04 16 | 644 | 0.2+ | 0.2+ |
| 2001 09 16 | 704 | (0.0 | 1.7+) | 2003 01 31 | 704 | 1.1+ | 1.4− | 2004 04 16 | 644 | 0.4+ | 0.2+ |
| 2001 09 16 | 704 | 0.0 | 1.1+ | 2003 01 31 | 704 | 0.4+ | 0.9+ | 2004 04 16 | 644 | 0.3+ | 0.1− |
| 2001 09 16 | 704 | 0.1+ | 0.6+ | 2003 01 31 | 704 | 0.1+ | 0.9+ | 2006 06 19 | G96 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.4+ | 0.8+ | 2004 03 01 | 703 | 1.1+ | 1.5− | 2006 06 19 | G96 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.2+ | 0.7+ | 2004 03 01 | 703 | 0.6+ | 0.2+ | 2006 06 19 | G96 | 0.4+ | 0.3− |
| 2001 09 25 | 704 | 0.4− | 0.4+ | 2004 03 01 | 703 | 0.6+ | 0.1− | 2006 06 19 | G96 | 0.2+ | 0.3− |
| 2001 09 25 | 704 | 0.8− | 0.1− | 2004 03 01 | 703 | 0.7− | 0.7+ | 2006 07 20 | A50 | 0.1− | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2004 03 17 | 703 | 0.4− | 0.7+ | 2006 07 21 | A50 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.1+ | 0.9+ | 2004 03 17 | 703 | 0.2− | 0.4+ | 2006 07 21 | A50 | 0.2+ | 0.2− |
| 2001 09 25 | 704 | 0.2− | 0.3− | 2004 03 17 | 704 | 0.1− | 0.5+ | 2006 07 21 | A50 | 0.1+ | 0.2+ |
| 2001 10 16 | 704 | 1.1− | 0.1− | 2004 03 17 | 703 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.8− | 0.8+ |
| 2001 10 16 | 704 | 0.5+ | 0.6− | 2004 03 17 | 704 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 1.0− |
| 2001 10 16 | 704 | 0.5− | 0.5+ | 2004 03 17 | 703 | 0.5− | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.5+ |
| 2001 10 16 | 704 | 0.2− | 0.1+ | 2004 03 17 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.5+ | 0.3+ |
| 2002 11 07 | 704 | 1.1+ | 0.2− | 2004 03 17 | 704 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.6+ | 0.9+ |
| 2002 11 07 | 704 | (1.8+ | 0.4+) | 2004 03 17 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.0 |
| 2002 11 07 | 704 | (2.1+ | 0.4+) | 2004 03 29 | 703 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 2002 11 07 | 704 | 1.2+ | 0.6+ | 2004 03 29 | 703 | 1.0+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.1− |
| 2002 12 06 | 704 | 0.7− | 0.0 | 2004 03 29 | 703 | 0.7+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.4+ |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2004 03 29 | 703 | 0.6+ | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.5− | 0.2− | 2004 03 31 | 704 | 0.7+ | 0.6+ | 2006 09 28 | G96 | 0.0 | 0.6+ |
| 2002 12 06 | 704 | 0.4− | 0.6− | 2004 03 31 | 704 | 0.2+ | 1.2+ | 2006 09 28 | G96 | 0.1+ | 0.2+ |
| 2002 12 15 | 704 | 0.2+ | 0.1− | 2004 03 31 | 704 | 0.3− | 0.1− | | | | |

**(144687)∗ 2004 FE$_{145}$ = 2001 PK$_{39}$**

Discovered 2004 Mar. 29 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86443)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.62197 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23685384 | $\omega$ | 63.89446 | | −0.94245933 | −0.20334248 | |
| $a$ | 2.5871152 | $\Omega$ | 103.42122 | | +0.11126280 | −0.93928859 | |
| $e$ | 0.0392552 | $i$ | 15.83230 | | +0.31526340 | −0.27638519 | |
| $P$ | 4.16 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.8− | 0.3− | 2004 03 15 | 703 | 0.4+ | 0.7+ | 2004 04 26 | 704 | 0.4+ | 0.4− |
| 2000 05 28 | 704 | 0.7− | 0.1+ | 2004 03 15 | 703 | 0.1− | 0.5+ | 2004 05 12 | 644 | 0.1− | 0.3+ |
| 2000 05 28 | 704 | 0.6+ | 0.8+ | 2004 03 15 | 703 | 0.6+ | 0.3− | 2004 05 12 | 644 | 0.3+ | 0.5+ |
| 2001 08 11 | 644 | 0.2+ | 0.5+ | 2004 03 29 | 704 | 1.3− | 0.1− | 2004 05 12 | 644 | 0.2+ | 0.7+ |
| 2001 08 11 | 644 | 0.1+ | 0.6+ | 2004 03 29 | 704 | 0.1− | 0.4+ | 2004 05 24 | 703 | 0.1+ | 1.4+ |
| 2001 08 11 | 644 | 0.1+ | 0.7+ | 2004 03 29 | 704 | 0.4− | 0.2− | 2004 05 24 | 703 | 0.7+ | 0.2+ |
| 2001 08 17 | 644 | 0.3− | 0.6+ | 2004 03 29 | 704 | 0.7− | 0.2− | 2004 05 24 | 703 | 1.2+ | 1.0+ |
| 2001 08 17 | 644 | 0.4− | 0.3+ | 2004 03 29 | 704 | 0.6− | 0.2− | 2004 05 24 | 703 | 0.3− | 0.4+ |
| 2001 08 17 | 644 | 0.4− | 0.3+ | 2004 03 31 | 704 | 0.7+ | 0.4+ | 2005 07 26 | 644 | 0.2− | 0.9+ |
| 2002 12 10 | 704 | 0.1− | 0.4+ | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2005 07 26 | 644 | 0.3− | 0.7+ |
| 2002 12 10 | 704 | 0.4+ | 0.3+ | 2004 03 31 | 704 | 0.5+ | 0.5− | 2005 07 26 | 644 | 0.2− | 1.2+ |
| 2002 12 10 | 704 | 0.3+ | 0.0 | 2004 03 31 | 704 | 0.0 | 0.1− | 2006 11 13 | 703 | 1.1+ | 1.3+ |
| 2003 01 07 | 704 | 0.3− | 0.6+ | 2004 03 31 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.4+ |
| 2003 01 07 | 704 | 0.3− | 0.8+ | 2004 04 15 | 704 | 0.7− | 0.2+ | 2006 11 13 | 703 | 0.9+ | 0.8+ |
| 2003 01 07 | 704 | 0.8+ | 0.9+ | 2004 04 15 | 704 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.4− |
| 2003 01 07 | 704 | 0.4− | 0.8+ | 2004 04 15 | 704 | 0.0 | 1.2+ | 2006 11 19 | 703 | 0.4− | 0.5+ |
| 2003 01 07 | 704 | 0.9− | 0.7+ | 2004 04 15 | 704 | 0.6− | 0.4+ | 2006 11 19 | 703 | 0.9− | 0.6+ |
| 2004 03 15 | 704 | 0.4− | 0.5− | 2004 04 15 | 704 | 0.5− | 0.8+ | 2006 11 19 | 703 | 0.4− | 0.1− |
| 2004 03 15 | 704 | 0.4− | 0.2− | 2004 04 26 | 704 | 1.2+ | 0.6− | 2006 11 19 | 703 | 0.9− | 0.1+ |
| 2004 03 15 | 704 | 0.5+ | 0.2+ | 2004 04 26 | 704 | 1.4+ | 0.2− | 2006 12 01 | A13 | 0.9− | 0.0 |
| 2004 03 15 | 704 | 0.4+ | 0.3+ | 2004 04 26 | 704 | 1.1+ | 0.9− | 2006 12 01 | A13 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 0.6− | 1.3+ | 2004 04 26 | 704 | 0.6+ | 0.0 | 2006 12 01 | A13 | 0.7− | 0.8− |

**(144688)∗ 2004 FG$_{145}$**

Discovered 2004 Mar. 29 by Deep Lens Survey at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.63433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23241109 | $\omega$ | 309.15843 | | −0.86897373 | −0.49437910 | |
| $a$ | 2.6199810 | $\Omega$ | 201.24000 | | +0.47054154 | −0.81185231 | |
| $e$ | 0.1414653 | $i$ | 3.44522 | | +0.15321657 | −0.31062056 | |
| $P$ | 4.24 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 910 | 0.4+ | 0.4+ | 2004 04 12 | 699 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 1997 09 08 | 910 | 0.7+ | 0.1− | 2004 04 12 | 699 | (0.4+ | 1.7+) | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1997 09 08 | 910 | 0.3+ | 0.0 | 2004 04 12 | 699 | 1.1− | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.0 |
| 2001 08 24 | 644 | 1.1− | 0.7+ | 2004 04 12 | 699 | 0.7− | 0.4− | 2006 10 12 | 691 | 0.2+ | 0.2+ |
| 2001 08 24 | 644 | 0.9− | 0.6+ | 2004 04 17 | 704 | 0.6+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.6+ |
| 2001 08 24 | 644 | 1.0− | 0.7+ | 2004 04 17 | 704 | 0.9+ | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2002 11 23 | 644 | 0.2− | 0.4+ | 2004 04 17 | 704 | 0.9+ | 1.2+ | 2006 10 16 | 691 | 0.4− | 0.2+ |
| 2002 11 23 | 644 | 0.2− | 0.4+ | 2004 04 21 | 704 | 0.2− | 1.3+ | 2006 10 16 | 691 | 0.3− | 0.2+ |
| 2002 11 23 | 644 | 0.2− | 0.4+ | 2004 04 21 | 704 | 0.2+ | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2004 04 21 | 704 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 12 10 | 644 | 0.1− | 0.7+ | 2004 04 21 | 704 | (1.0+ | 1.9+) | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 12 10 | 644 | 0.3− | 0.5+ | 2004 04 21 | 704 | 0.3− | 1.2+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2002 12 10 | 644 | 0.3− | 0.3+ | 2004 04 30 | 691 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 12 10 | 644 | 0.3+ | 0.2− | 2004 04 30 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2002 12 10 | 644 | 0.2− | 0.6+ | 2004 04 30 | 691 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2004 03 29 | 695 | 0.1+ | 0.9+ | 2004 05 15 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2004 03 29 | 695 | 0.2− | 0.7+ | 2004 05 15 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2004 03 29 | 695 | 0.0 | 0.8+ | 2004 05 15 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.5+ |
| 2004 03 31 | 704 | 0.3− | 0.7+ | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2004 03 31 | 704 | (2.4+ | 0.8+) | 2005 07 01 | 691 | 0.1− | 0.0 | 2006 11 25 | 703 | 0.8− | 1.0− |
| 2004 03 31 | 704 | 0.5+ | 1.2+ | 2005 07 01 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 703 | 0.1− | 0.0 |
| 2004 03 31 | 704 | 0.4+ | 1.0+ | 2005 07 10 | 691 | 0.1+ | 0.2− | 2006 11 25 | 703 | (0.7− | 3.1+) |
| 2004 03 31 | 704 | 0.0 | 1.1+ | 2005 07 10 | 691 | 0.1− | 0.4+ | 2006 11 25 | 703 | 1.2− | 1.7+ |
| 2004 04 12 | 644 | 0.3+ | 0.6+ | 2005 07 10 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.4+ |
| 2004 04 12 | 644 | 0.5+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.6+ |
| 2004 04 12 | 644 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.7+ |

**(144689)∗ 2004 FD$_{146}$**

Discovered 2004 Mar. 31 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.73509 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16867070 | $\omega$ | 221.36770 | | +0.51755070 | +0.85444841 | |
| $a$ | 3.2442150 | $\Omega$ | 79.84672 | | −0.77242889 | +0.48936921 | |
| $e$ | 0.1501883 | $i$ | 2.64229 | | −0.36809630 | +0.17445830 | |
| $P$ | 5.84 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 699 | 0.2+ | 0.0 | 2004 05 18 | 599 | 0.2+ | 0.5+ | 2005 08 29 | 704 | 0.1+ | 0.7+ |
| 2003 03 07 | 699 | 1.0− | 0.2− | 2004 05 18 | 599 | 0.3+ | 0.4+ | 2005 08 29 | 704 | 0.3− | 0.6+ |
| 2003 03 07 | 699 | 0.6+ | 0.2+ | 2004 05 19 | 704 | 1.2+ | 0.7+ | 2005 09 24 | 644 | 0.2− | 0.3+ |
| 2003 03 07 | 699 | 0.1+ | 0.1+ | 2004 05 19 | 704 | 0.1+ | 0.1+ | 2005 09 24 | 644 | 0.0 | 0.1− |
| 2004 03 31 | 704 | 0.5− | 0.1+ | 2004 05 19 | 704 | 1.4+ | 0.2+ | 2005 09 24 | 644 | 0.3+ | 0.3+ |
| 2004 03 31 | 704 | 0.7− | 0.6− | 2005 08 01 | E12 | 0.1− | 0.3− | 2005 11 03 | G96 | 0.3− | 0.3− |
| 2004 03 31 | 704 | 0.6− | 0.3− | 2005 08 01 | E12 | 0.2+ | 0.4− | 2005 11 03 | G96 | 0.1− | 0.5− |
| 2004 03 31 | 704 | 0.4− | 0.5+ | 2005 08 01 | E12 | 0.2− | 0.3+ | 2005 11 03 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 01 | 291 | 0.0 | 0.3+ | 2005 08 01 | E12 | 0.3− | 0.4− | 2005 11 03 | G96 | 0.2+ | 0.3− |
| 2004 04 01 | 291 | 0.0 | 0.3+ | 2005 08 02 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2004 04 01 | 291 | 1.3− | 1.0− | 2005 08 02 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.2− |
| 2004 04 21 | 704 | 0.8+ | 0.6+ | 2005 08 02 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2004 04 21 | 704 | 1.0+ | 0.4+ | 2005 08 02 | 704 | 0.7− | 0.4+ | 2006 11 09 | 644 | 0.6− | 0.3+ |
| 2004 04 21 | 704 | 0.4− | 0.5+ | 2005 08 06 | 704 | 0.7− | 0.8− | 2006 11 09 | 644 | 0.5− | 0.3+ |
| 2004 04 21 | 704 | 0.0 | 0.5− | 2005 08 06 | 704 | 0.0 | 0.9− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2004 04 21 | 704 | 0.6+ | 0.4+ | 2005 08 06 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2004 04 22 | 691 | 0.4+ | 0.2+ | 2005 08 06 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.2− | 0.7+ |
| 2004 04 22 | 691 | 0.2+ | 0.0 | 2005 08 15 | E12 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.6− | 0.8+ |
| 2004 04 22 | 691 | 0.2+ | 0.2+ | 2005 08 15 | E12 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.6+ |
| 2004 05 10 | 608 | 0.4+ | 0.3− | 2005 08 15 | E12 | 0.4− | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.1− |
| 2004 05 10 | 608 | 0.5+ | 0.1− | 2005 08 15 | E12 | 0.7+ | 0.3− | 2006 11 12 | G96 | 0.1− | 0.1+ |
| 2004 05 10 | 608 | 0.5+ | 0.1+ | 2005 08 22 | 644 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2004 05 11 | 699 | 0.3+ | 0.4+ | 2005 08 22 | 644 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.3− | 0.1+ |
| 2004 05 11 | 699 | 0.8− | 0.7+ | 2005 08 22 | 644 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.1− | 0.7+ |
| 2004 05 11 | 699 | 0.8− | 0.1− | 2005 08 26 | 699 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.6+ |
| 2004 05 11 | 699 | 0.4− | 0.2+ | 2005 08 26 | 699 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2004 05 12 | 699 | 0.5− | 1.3+ | 2005 08 26 | 699 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.1+ |
| 2004 05 12 | 699 | 0.2− | 0.1− | 2005 08 26 | 699 | 0.1− | 0.6+ | 2006 11 17 | 703 | (0.5+ | 1.6+) |
| 2004 05 12 | 699 | 0.6− | 0.9− | 2005 08 27 | E12 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.7− | 0.0 |
| 2004 05 12 | 699 | 0.4− | 0.2+ | 2005 08 27 | E12 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.8+ |
| 2004 05 15 | 704 | 0.3+ | 0.1+ | 2005 08 27 | E12 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.7+ |
| 2004 05 15 | 704 | 0.4− | 0.1− | 2005 08 27 | E12 | 0.9+ | 0.6− | 2006 11 18 | 704 | 0.3+ | 1.3+ |
| 2004 05 15 | 704 | 1.1+ | 0.3+ | 2005 08 29 | 699 | 1.0− | 0.4− | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2004 05 16 | 704 | 0.7+ | 1.5+ | 2005 08 29 | 704 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2004 05 16 | 704 | 0.5+ | 1.1+ | 2005 08 29 | 699 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2004 05 16 | 704 | 1.4+ | 0.8+ | 2005 08 29 | 704 | 0.4+ | 0.1+ | 2006 11 21 | 704 | (1.0− | 2.9+) |
| 2004 05 16 | 704 | 0.1+ | 1.4+ | 2005 08 29 | 699 | 0.0 | 0.1+ | 2006 11 21 | 704 | (1.0− | 2.2+) |
| 2004 05 18 | 599 | 0.3+ | 0.4+ | 2005 08 29 | 704 | 0.4− | 1.1+ | 2006 11 21 | 704 | (2.0− | 2.6+) |
| 2004 05 18 | 599 | 0.3+ | 0.3+ | 2005 08 29 | 699 | 0.8+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 1.4+ |

**(144690)∗ 2004 FV$_{147}$ = 2002 YV$_3$**

Discovered 2004 Mar. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65678)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.36696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18469188 | $\omega$ | 200.24920 | | −0.97923805 | | +0.19252741 |
| $a$ | 3.0537784 | $\Omega$ | 350.18117 | | −0.09241219 | | −0.70256970 |
| $e$ | 0.0436668 | $i$ | 21.84360 | | −0.18042404 | | −0.68507591 |
| $P$ | 5.34 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 30 | 809 | 0.3+ | 0.3− | 2003 02 07 | 699 | 0.0 | 0.1− | 2006 09 16 | 703 | (4.2+ | 4.4−) |
| 2001 09 19 | 644 | 0.0 | 0.4− | 2003 02 07 | 699 | 1.0+ | 0.6− | 2006 09 16 | 703 | 0.0 | 0.6+ |
| 2001 09 19 | 644 | 0.1+ | 0.3− | 2003 02 07 | 699 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.9+ | 0.0 |
| 2001 09 19 | 644 | 0.1− | 0.7− | 2003 02 07 | 699 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.1− | 0.6+ |
| 2001 10 15 | 704 | 0.6− | 0.4+ | 2004 03 16 | 644 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.2− | 1.2+ |
| 2001 10 15 | 704 | 0.4+ | 0.3− | 2004 03 16 | 644 | 0.4+ | 0.4+ | 2006 09 27 | 703 | 0.8− | 0.4+ |
| 2001 10 15 | 704 | 0.2− | 0.6+ | 2004 03 16 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.7+ |
| 2001 10 15 | 704 | 0.1− | 0.2+ | 2004 04 12 | E12 | (1.2− | 2.5+) | 2006 09 27 | 703 | 0.1− | 0.6+ |
| 2001 10 15 | 704 | 0.1+ | 0.1− | 2004 04 12 | E12 | 0.8+ | 1.0+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.7− | 0.3+ | 2004 04 12 | E12 | 0.9+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 0.5+ | 0.0 | 2004 04 12 | E12 | 1.1+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.3+ |
| 2001 11 11 | 704 | 0.3− | 0.1+ | 2004 04 24 | E12 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2001 11 11 | 704 | 0.4+ | 0.2+ | 2004 04 24 | E12 | 0.0 | 0.4+ | 2006 10 17 | 703 | 1.3− | 0.1+ |
| 2001 11 11 | 704 | 1.0+ | 0.3+ | 2004 04 24 | E12 | 1.3+ | 1.0+ | 2006 10 17 | 703 | 1.2− | 0.4+ |
| 2002 12 28 | 704 | 0.6+ | 0.5− | 2004 04 24 | E12 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.4+ | 0.5+ |
| 2002 12 28 | 704 | 0.2− | 0.4+ | 2004 05 06 | 644 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 12 28 | 704 | (1.8+ | 0.6+) | 2004 05 06 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 12 30 | 704 | 0.2+ | 0.2+ | 2004 05 06 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2002 12 30 | 704 | 0.2+ | 1.1+ | 2006 08 29 | 703 | 1.2− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2002 12 30 | 704 | 0.4− | 0.6+ | 2006 08 29 | 703 | 1.0− | 0.3+ | 2006 10 23 | 703 | 0.6− | 0.4+ |
| 2002 12 30 | 704 | 0.2− | 0.4+ | 2006 08 29 | 703 | 1.5− | 0.8− | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2003 01 14 | 704 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.9− | 0.4− | 2006 10 23 | 703 | 1.3+ | 0.1+ |
| 2003 01 14 | 704 | 0.6− | 0.5+ | 2006 08 29 | 699 | 0.4+ | 0.8− | 2006 10 23 | 703 | 0.4+ | 0.2+ |
| 2003 01 14 | 704 | 0.1+ | 0.0 | 2006 08 29 | 699 | 0.4+ | 0.1− | 2006 10 23 | 703 | (1.9− | 0.6−) |
| 2003 01 14 | 704 | 0.0 | 0.5+ | 2006 08 29 | 699 | 0.8− | 0.8+ | 2006 10 23 | 644 | 0.4− | 0.6+ |
| 2003 01 14 | 704 | 0.0 | 0.5+ | 2006 08 29 | 699 | 1.0+ | 0.2+ | | | | |

**(144691)∗ 2004 FR$_{154}$ = 2003 AE$_{90}$**

Discovered 2004 Mar. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69711)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.38486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19070545 | $\omega$ | 220.88991 | | −0.95972566 | | −0.23873963 |
| $a$ | 2.9892391 | $\Omega$ | 304.69737 | | +0.28085791 | | −0.82798684 |
| $e$ | 0.0309750 | $i$ | 10.37666 | | −0.00674458 | | −0.50738663 |
| $P$ | 5.17 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1− | 0.8+ | 2003 01 05 | 704 | 0.0 | 0.0 | 2004 04 17 | 704 | 0.8− | 0.1− |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2003 01 05 | 704 | 0.1− | 0.0 | 2004 04 17 | 704 | 0.2− | 0.2+ |
| 2001 09 25 | 704 | 0.3− | 0.2+ | 2003 01 10 | 704 | 0.2+ | 1.0− | 2004 04 17 | 704 | 0.7+ | 0.2+ |
| 2001 09 25 | 704 | 1.1+ | 0.3− | 2003 01 10 | 704 | 0.5− | 0.7+ | 2006 09 16 | 703 | 0.6+ | 0.2− |
| 2001 09 29 | 644 | 0.6− | 0.6+ | 2003 01 10 | 704 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.5− | 0.3+ |
| 2001 09 29 | 644 | 0.4− | 0.4+ | 2003 01 10 | 704 | 1.1− | 0.0 | 2006 09 16 | 703 | 0.1− | 0.8+ |
| 2001 09 29 | 644 | 0.5− | 1.0+ | 2004 03 17 | 704 | 0.0 | 0.7+ | 2006 09 16 | 703 | 0.6− | 0.5− |
| 2001 10 13 | 644 | 0.4− | 0.7+ | 2004 03 17 | 704 | 0.7+ | 0.7+ | 2006 09 29 | 699 | 0.0 | 0.9+ |
| 2001 10 13 | 644 | 0.5− | 0.4+ | 2004 03 17 | 704 | 1.0+ | 1.0+ | 2006 09 29 | 699 | 1.3+ | 0.9+ |
| 2001 10 13 | 644 | 0.1− | 0.0 | 2004 03 17 | 704 | 0.6+ | 0.1− | 2006 09 29 | 699 | 1.2+ | 0.5− |
| 2001 10 26 | 644 | 0.2− | 0.6+ | 2004 03 26 | 704 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 1.6+ | 1.3− |
| 2001 10 26 | 644 | 0.2− | 0.1+ | 2004 03 26 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.5+ |
| 2001 10 26 | 644 | 0.3− | 0.3+ | 2004 03 26 | 704 | 0.3− | 0.8+ | 2006 10 22 | 691 | 0.5− | 0.3− |
| 2003 01 05 | 704 | 0.7+ | 0.6− | 2004 03 26 | 704 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.2+ | 2004 04 17 | 704 | 0.9+ | 0.8+ | | | | |

**(144692)∗ 2004 GC**

Discovered 2004 Apr. 9 by J. W. Young at Table Mountain Observatory, Wrightwood.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.17054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22535626 | $\omega$ | 35.35708 | | −0.63324247 | | +0.77382762 |
| $a$ | 2.6743791 | $\Omega$ | 195.36892 | | −0.72165903 | | −0.59687559 |
| $e$ | 0.1348735 | $i$ | 3.01855 | | −0.27966448 | | −0.21196779 |
| $P$ | 4.37 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.3+ | 0.4+ | 2004 04 21 | 704 | 0.3+ | 0.2− | 2005 08 28 | 691 | 0.2− | 0.0 |
| 2001 09 12 | 695 | 0.3+ | 0.8+ | 2004 04 21 | 704 | 0.6+ | 0.4− | 2005 08 28 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 691 | 0.5− | 0.3+ | 2004 04 21 | 704 | 0.8+ | 1.1− | 2005 08 28 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 691 | 0.1− | 0.2+ | 2004 04 21 | 704 | 0.4− | 0.1+ | 2005 09 01 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 691 | 0.0 | 0.2+ | 2004 04 22 | 691 | 0.2+ | 0.1− | 2005 09 01 | 691 | 0.1+ | 0.0 |
| 2001 10 16 | 691 | 0.2− | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.1− | 2005 09 01 | 691 | 0.0 | 0.1+ |
| 2001 10 16 | 691 | 0.2− | 0.5+ | 2004 04 22 | 691 | 0.2+ | 0.1− | 2005 09 11 | 691 | 0.0 | 0.1+ |
| 2001 10 16 | 691 | 0.2+ | 0.2+ | 2004 04 25 | 291 | 0.2− | 0.5+ | 2005 09 11 | 691 | 0.0 | 0.0 |
| 2004 03 31 | 704 | 0.7+ | 1.0+ | 2004 04 25 | 291 | 0.4− | 0.5+ | 2005 09 11 | 691 | 0.1+ | 0.0 |
| 2004 03 31 | 704 | 0.3+ | 1.0+ | 2004 04 25 | 291 | 0.4− | 0.6+ | 2006 10 22 | G96 | 0.4+ | 0.8+ |
| 2004 03 31 | 704 | 0.6+ | 0.9+ | 2004 05 09 | 703 | (0.6− | 1.6+) | 2006 10 22 | G96 | 0.5− | 0.3+ |
| 2004 04 09 | 673 | 0.4+ | 0.1+ | 2004 05 09 | 703 | 1.1− | 1.1+ | 2006 10 22 | G96 | 0.1− | 0.4+ |
| 2004 04 09 | 673 | 0.5+ | 0.1+ | 2004 05 09 | 703 | 0.1− | 0.8+ | 2006 10 22 | G96 | 0.7− | 0.3+ |
| 2004 04 09 | 673 | 0.7+ | 0.3+ | 2004 05 09 | 703 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.7+ |
| 2004 04 10 | 673 | 0.1+ | 0.3+ | 2004 05 11 | 699 | 0.6+ | 0.7− | 2006 11 11 | G96 | 0.1+ | 0.5+ |
| 2004 04 10 | 673 | 0.2− | 0.3+ | 2004 05 11 | 699 | 0.6+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.6+ |
| 2004 04 10 | 673 | 0.2− | 0.2+ | 2004 05 11 | 699 | 0.3+ | 0.7− | 2006 11 11 | G96 | (2.3− | 0.9+) |
| 2004 04 16 | 644 | 0.3+ | 0.4+ | 2004 05 11 | 699 | (1.4− | 1.5+) | 2006 12 01 | G96 | 0.1− | 0.4+ |
| 2004 04 16 | 644 | 0.3+ | 0.4+ | 2004 05 23 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.3+ |
| 2004 04 16 | 644 | 0.2+ | 0.3+ | 2004 05 23 | 691 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.4+ |
| 2004 04 21 | 704 | 0.7+ | 0.1− | 2004 05 23 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.1− |

**(144693)∗ 2004 GF = 1997 TG$_8$**

Discovered 2004 Apr. 8 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 62141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 210.93180 | | | (2000.0) | | |
| $n$ | 0.22458034 | $\omega$ | 335.87283 | | −0.97756474 | +0.13832876 |
| $a$ | 2.6805355 | $\Omega$ | 213.31941 | | −0.11293526 | −0.98078510 |
| $e$ | 0.1293758 | $i$ | 16.80872 | | −0.17779991 | −0.13757089 |
| $P$ | 4.39 | $H$ | 16.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 691 | 0.8− | 0.8− | 2004 04 09 | E12 | 1.4+ | 1.0− | 2004 05 09 | 691 | 0.3− | 0.2+ |
| 1997 10 03 | 691 | 0.3+ | 0.1− | 2004 04 14 | 699 | 0.0 | 0.2+ | 2004 05 09 | 691 | 0.3− | 0.2+ |
| 1997 10 03 | 691 | 0.5− | 0.1− | 2004 04 14 | 699 | 0.5+ | 0.3− | 2004 05 10 | 608 | 0.6+ | 0.3+ |
| 1997 10 05 | 691 | 0.3+ | 0.2− | 2004 04 14 | 699 | 0.2− | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.8− |
| 1997 10 05 | 691 | 0.1+ | 0.1− | 2004 04 14 | 699 | 0.8− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1997 10 05 | 691 | 0.6+ | 0.1− | 2004 04 17 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.6+ | 0.3− |
| 2002 11 28 | 608 | 0.2− | 0.7+ | 2004 04 17 | 704 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2002 11 28 | 608 | 0.1− | 0.1+ | 2004 04 17 | 704 | 0.5+ | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.2+ |
| 2002 11 28 | 608 | 0.2− | 0.3+ | 2004 04 17 | 704 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.2− | 0.0 |
| 2002 11 28 | 608 | 0.0 | 0.2+ | 2004 04 19 | 704 | 0.9+ | 0.0 | 2006 10 04 | G96 | 0.5− | 0.3− |
| 2002 11 28 | 608 | 0.1+ | 0.3− | 2004 04 19 | 704 | 0.4− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2002 12 10 | 644 | 0.3+ | 0.5− | 2004 04 19 | 704 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2002 12 10 | 644 | 0.3+ | 0.9− | 2004 04 19 | 704 | 0.8+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2002 12 10 | 644 | 0.2+ | 0.8− | 2004 04 19 | 704 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2004 03 26 | 704 | 0.8− | 1.1− | 2004 04 20 | 703 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2004 03 26 | 704 | 1.0− | 0.1+ | 2004 04 20 | 703 | 0.4− | 0.3− | 2006 10 27 | 691 | 0.5− | 0.4+ |
| 2004 03 26 | 704 | 0.6− | 0.2+ | 2004 04 20 | 703 | 0.1+ | 0.5− | 2006 10 27 | 691 | 0.2− | 0.5+ |
| 2004 04 08 | E12 | 1.4+ | 0.9− | 2004 04 20 | 703 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2004 04 08 | E12 | (0.3+ | 1.6−) | 2004 04 22 | 704 | 1.3− | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 04 08 | E12 | (1.3+ | 2.3−) | 2004 04 22 | 704 | 1.0− | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2004 04 08 | E12 | (0.1+ | 1.8−) | 2004 04 22 | 704 | 0.6− | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 04 09 | E12 | 1.0+ | 1.0− | 2004 04 22 | 704 | 0.6− | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.1+ |
| 2004 04 09 | E12 | 0.7+ | 1.0− | 2004 04 22 | 704 | 0.4− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 04 09 | E12 | 1.1+ | 0.6− | 2004 05 09 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.4− |

**(144694)∗ 2004 GL$_1$**

Discovered 2004 Apr. 10 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.28928 | | | (2000.0) | | |
| $n$ | 0.17813027 | $\omega$ | 282.31386 | | +0.67631595 | +0.73007471 |
| $a$ | 3.1283180 | $\Omega$ | 30.96137 | | −0.57997303 | +0.60972417 |
| $e$ | 0.0660614 | $i$ | 10.97197 | | −0.45412335 | +0.30858929 |
| $P$ | 5.53 | $H$ | 15.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.4− | 0.7+ | 2003 04 26 | 645 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 1995 10 27 | 691 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1995 10 27 | 691 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.6+ | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 1995 11 14 | 691 | 0.5+ | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 1995 11 14 | 691 | 0.2− | 0.2+ | 2004 04 10 | 703 | 1.4+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 1995 11 14 | 691 | 0.1+ | 0.0 | 2004 04 10 | 703 | 1.3+ | 1.0+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2000 08 26 | 704 | 0.1+ | 0.3+ | 2004 04 10 | 703 | (1.7+ | 0.4−) | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2000 08 26 | 704 | 0.2+ | 0.4+ | 2004 04 10 | 703 | (0.6− | 1.6−) | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2000 08 26 | 704 | 0.1− | 0.6+ | 2004 04 12 | 699 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.5+ |
| 2000 08 26 | 704 | (0.3+ | 2.2+) | 2004 04 12 | 699 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2001 11 11 | 704 | 0.3+ | 0.4+ | 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2001 11 11 | 704 | 0.3+ | 0.5− | 2004 04 12 | 699 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2001 11 11 | 704 | 0.4+ | 0.2+ | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2001 11 11 | 704 | 0.2− | 0.7+ | 2004 04 12 | 699 | 0.1− | 1.2− | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2001 11 24 | 704 | 0.4+ | 0.4− | 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2001 11 24 | 704 | 0.1+ | 0.7− | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 11 24 | 704 | 0.5+ | 0.3− | 2004 04 25 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2001 11 24 | 704 | 0.7− | 0.7− | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 11 24 | 704 | 0.7− | 0.4+ | 2004 05 16 | 691 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2003 01 24 | 644 | 0.2− | 0.9+ | 2004 05 16 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2003 01 24 | 644 | 0.4+ | 0.8+ | 2004 05 16 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2003 01 24 | 644 | 0.0 | 0.7+ | 2005 07 05 | E12 | 0.6− | 0.8+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2003 02 01 | 644 | 0.4− | 0.5+ | 2005 07 05 | E12 | 0.1− | 0.9+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2003 02 01 | 644 | 0.2+ | 0.5+ | 2005 07 05 | E12 | 0.6+ | 0.3− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2003 02 01 | 644 | 0.6− | 0.2+ | 2005 07 05 | E12 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 02 01 | 644 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2003 02 01 | 644 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.4− | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2003 02 01 | 644 | 0.1+ | 0.6+ | 2006 10 01 | 691 | 0.3− | 0.3+ | | | | |
| 2003 04 26 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2− | 0.4+ | | | | |

**(144695)∗ 2004 GY$_2$ = 1997 WZ$_{53}$ = 2003 AC$_4$**

Discovered 2004 Apr. 8 by the Siding Spring Survey at Siding Spring.

Id. T. B. Spahr (*MPO* 62143)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.40727 | | | (2000.0) | | |
| $n$ | 0.21364601 | $\omega$ | 129.69558 | | +0.88494269 | −0.06121043 |
| $a$ | 2.7712318 | $\Omega$ | 238.79363 | | +0.02809584 | +0.99653603 |
| $e$ | 0.1695687 | $i$ | 32.66726 | | +0.46485165 | +0.05629581 |
| $P$ | 4.61 | $H$ | 14.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 30 | 566 | 1.1+ | 0.2+ | 2004 04 21 | E12 | 0.8+ | 0.2− | 2005 07 01 | 691 | 0.4+ | 0.0 |
| 1997 11 30 | 566 | 0.8+ | 0.3+ | 2004 04 21 | E12 | 0.2+ | 0.3− | 2005 07 01 | 691 | 0.3+ | 0.0 |
| 1997 11 30 | 566 | 0.5+ | 0.6+ | 2005 06 01 | G96 | 0.0 | 0.2− | 2005 07 02 | 703 | 0.4− | 0.6+ |
| 1997 12 04 | 704 | 0.8− | 0.4− | 2005 06 01 | G96 | 0.1+ | 0.3+ | 2005 07 02 | 703 | 0.2+ | 0.1+ |
| 1997 12 04 | 704 | 0.1− | 0.6+ | 2005 06 01 | G96 | 0.1+ | 0.0 | 2005 07 02 | 703 | 1.5− | 0.2− |
| 1997 12 04 | 704 | 0.3− | 0.2− | 2005 06 01 | G96 | 0.1− | 0.2− | 2005 07 02 | 703 | 0.1+ | 0.6− |
| 1997 12 04 | 704 | 0.1− | 2.0+ | 2005 06 02 | G96 | 0.9− | 0.3− | 2005 07 05 | 704 | 0.8+ | 0.2+ |
| 2003 01 03 | 704 | 0.8− | 0.3+ | 2005 06 02 | G96 | 0.0 | 0.1− | 2005 07 05 | 704 | 0.3+ | 0.7+ |
| 2003 01 03 | 704 | 0.3− | 0.2+ | 2005 06 02 | G96 | 0.6− | 0.5− | 2005 07 05 | 704 | 0.6+ | 0.1+ |
| 2003 01 03 | 704 | 0.3+ | 0.1+ | 2005 06 02 | G96 | 0.3− | 0.4− | 2006 07 17 | 704 | 0.6− | 0.1+ |
| 2003 01 03 | 704 | 0.3− | 0.2+ | 2005 06 02 | 703 | (3.1− | 1.9−) | 2006 07 17 | 704 | 0.1+ | 0.5+ |
| 2003 01 04 | 704 | 0.2+ | 0.2+ | 2005 06 02 | G96 | 0.3− | 0.2+ | 2006 07 17 | 704 | (0.2+ | 1.6−) |
| 2003 01 04 | 704 | 0.1+ | 0.0 | 2005 06 02 | 703 | 0.7− | 0.2− | 2006 07 17 | 704 | 0.4− | 0.2+ |
| 2003 01 04 | 704 | 0.1+ | 0.2+ | 2005 06 02 | G96 | 0.6+ | 0.4− | 2006 09 17 | 704 | 0.5+ | 0.1+ |
| 2003 01 04 | 704 | 0.1+ | 0.0 | 2005 06 02 | 703 | 0.2− | 0.4− | 2006 09 17 | 704 | 0.4+ | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.1− | 2005 06 02 | G96 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.6+ |
| 2004 03 18 | E12 | 0.1− | 0.1− | 2005 06 02 | G96 | 0.2− | 0.3− | 2006 10 04 | 704 | 0.6− | 0.2+ |
| 2004 03 18 | E12 | 0.3+ | 0.3− | 2005 06 02 | 703 | 0.5− | 0.6+ | 2006 10 04 | 704 | 0.0 | 0.3+ |
| 2004 03 18 | E12 | 0.0 | 0.0 | 2005 06 05 | 704 | 0.5− | 0.2+ | 2006 10 04 | 704 | 0.9+ | 0.1+ |
| 2004 03 18 | E12 | 0.1+ | 0.6− | 2005 06 05 | 704 | 0.3− | 0.6+ | 2006 10 04 | 704 | 0.5+ | 0.1+ |
| 2004 04 08 | E12 | 0.3+ | 0.0 | 2005 06 05 | 704 | 0.7+ | 0.8+ | 2006 10 16 | 704 | 0.5+ | 0.3+ |
| 2004 04 08 | E12 | 0.2− | 0.2− | 2005 06 05 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 704 | 0.5+ | 0.1− |
| 2004 04 08 | E12 | 0.4+ | 0.8+ | 2005 06 09 | 703 | 0.2− | 0.9− | 2006 10 16 | 704 | 0.8+ | 0.1− |
| 2004 04 08 | E12 | 0.5+ | 0.4+ | 2005 06 09 | 703 | 1.1− | 0.5− | 2006 10 16 | 704 | 1.0+ | 0.2− |
| 2004 04 08 | 413 | 0.0 | 0.0 | 2005 06 09 | 703 | 0.4− | 0.2− | 2006 10 16 | 704 | 0.6+ | 0.1+ |
| 2004 04 08 | 413 | 0.1+ | 0.1− | 2005 06 09 | 703 | 0.2− | 0.1+ | 2006 10 21 | 704 | 0.6− | 0.5+ |
| 2004 04 08 | 413 | 0.1+ | 0.2− | 2005 06 11 | 691 | 0.1− | 0.1+ | 2006 10 21 | 704 | 0.9− | 0.2− |
| 2004 04 08 | 413 | 0.3+ | 0.1+ | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 21 | 704 | 0.5− | 0.2+ |
| 2004 04 08 | 413 | 0.1+ | 0.1+ | 2005 06 11 | 691 | 0.1− | 0.0 | 2006 10 21 | 704 | (2.3− | 0.9+) |
| 2004 04 08 | 413 | 0.2+ | 0.2− | 2005 06 17 | 691 | 0.1− | 0.2+ | 2006 10 21 | 704 | 0.7− | 0.3− |
| 2004 04 09 | 413 | 0.1+ | 0.2+ | 2005 06 17 | 691 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2004 04 09 | 413 | 0.0 | 0.2+ | 2005 06 17 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.1− |
| 2004 04 09 | 413 | 0.2+ | 0.0 | 2005 06 24 | 644 | 0.4+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2004 04 13 | E12 | 1.1− | 1.2+ | 2005 06 24 | 644 | 0.5+ | 0.0 | 2006 11 16 | 703 | 0.0 | 0.0 |
| 2004 04 13 | E12 | (0.1− | 1.6+) | 2005 06 24 | 644 | 0.3+ | 0.0 | 2006 11 22 | 703 | 0.2− | 0.6+ |
| 2004 04 13 | E12 | 0.0 | 1.3+ | 2005 06 28 | 691 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.4− | 0.6+ |
| 2004 04 13 | E12 | 0.6− | 1.2+ | 2005 06 28 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.4+ |
| 2004 04 21 | E12 | 0.9+ | 0.4+ | 2005 06 28 | 691 | 0.2+ | 0.0 | | | | |
| 2004 04 21 | E12 | 0.0 | 0.2+ | 2005 07 01 | 691 | 0.3+ | 0.2+ | | | | |

**(144696)∗ 2004 GZ$_3$ = 1997 SM$_{19}$**

Discovered 2004 Apr. 11 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69713)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.05927 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22610388 | $\omega$ | 272.92562 | | −0.57940053 | | −0.81472226 |
| $a$ | 2.6684805 | $\Omega$ | 212.51692 | | +0.76366657 | | −0.53286299 |
| $e$ | 0.0897496 | $i$ | 2.43752 | | +0.28479535 | | −0.22865844 |
| $P$ | 4.36 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.1+ | 0.2− | 2004 04 13 | 691 | 0.3+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.0 | |
| 1997 09 28 | 691 | 0.2− | 0.1− | 2004 04 13 | 691 | 0.2+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.2+ | |
| 1997 09 28 | 691 | 0.1− | 0.0 | 2005 06 15 | G96 | 0.5− | 0.3− | 2006 10 15 | 691 | 0.5+ | 0.2+ | |
| 1997 10 03 | 691 | 0.0 | 0.3+ | 2005 06 15 | G96 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.3− | |
| 1997 10 03 | 691 | 0.3− | 0.5+ | 2005 06 15 | G96 | 0.4− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.0 | |
| 1997 10 03 | 691 | 0.0 | 0.5+ | 2005 06 15 | G96 | 0.2+ | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.0 | |
| 2001 07 26 | 691 | 0.5− | 0.6+ | 2005 07 06 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.0 | |
| 2001 07 26 | 691 | 0.1− | 0.2+ | 2005 07 06 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1− | |
| 2001 07 26 | 691 | 0.5− | 0.4+ | 2005 07 06 | 691 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.2− | |
| 2001 08 17 | 644 | 0.8+ | 0.1+ | 2005 07 15 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.3− | |
| 2001 08 17 | 644 | 0.8+ | 0.4+ | 2005 07 15 | 691 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.1− | |
| 2001 08 17 | 644 | 0.6+ | 0.4+ | 2005 07 15 | 691 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.1− | 0.2+ | |
| 2004 03 16 | 691 | 0.1− | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ | |
| 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.5+ | 0.5+ | |
| 2004 03 16 | 691 | 0.1+ | 0.7+ | 2006 09 18 | 691 | 0.6− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.2− | |
| 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.4− | |
| 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.3− | |
| 2004 03 27 | 704 | 0.6+ | 0.4− | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.7− | 0.1+ | |
| 2004 03 27 | 704 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.6− | |
| 2004 04 11 | 644 | 0.4+ | 0.8+ | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.0 | |
| 2004 04 11 | 644 | 0.1+ | 0.7+ | 2006 09 28 | 691 | 0.1+ | 0.4+ | 2006 11 20 | G96 | 0.5− | 0.2− | |
| 2004 04 11 | 644 | 0.7+ | 1.1+ | 2006 10 02 | 691 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.5− | 0.4− | |
| 2004 04 13 | 691 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.3+ | | | | | |

## (144697)∗ 2004 GZ$_5$ = 2000 GJ$_{69}$

Discovered 2004 Apr. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65682)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.47244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23342756 | $\omega$ | 105.13950 | | −0.72767925 | | −0.68579759 |
| $a$ | 2.6123696 | $\Omega$ | 31.56537 | | +0.61953277 | | −0.66516463 |
| $e$ | 0.1132518 | $i$ | 1.40428 | | +0.29438419 | | −0.29536025 |
| $P$ | 4.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1+ | 0.3+ | 2004 03 15 | 703 | (1.9+ | 0.7−) | 2006 07 21 | G96 | 0.1+ | 0.7+ | |
| 2000 04 05 | 704 | 1.6+ | 0.5− | 2004 03 15 | 703 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.5+ | |
| 2000 04 05 | 704 | 0.1− | 0.6+ | 2004 03 15 | 703 | (0.9− | 3.1−) | 2006 09 25 | G96 | 0.2− | 0.2+ | |
| 2000 04 05 | 704 | 0.2+ | 0.9+ | 2004 03 18 | 704 | 0.7+ | 1.1+ | 2006 09 25 | G96 | 0.1+ | 0.5+ | |
| 2000 04 06 | 704 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.4+ | |
| 2000 04 06 | 704 | 0.3+ | 0.1+ | 2004 03 18 | 704 | (0.1+ | 2.0+) | 2006 09 25 | G96 | 0.0 | 0.3+ | |
| 2000 04 06 | 704 | 1.5+ | 0.7+ | 2004 03 18 | 704 | 0.8+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.3+ | |
| 2000 04 25 | 699 | 0.3− | 0.7− | 2004 03 18 | 704 | 0.7+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.7+ | |
| 2000 04 25 | 699 | 0.2− | 0.6+ | 2004 03 27 | 704 | 0.3− | 0.0 | 2006 10 15 | 703 | 0.5+ | 0.4− | |
| 2000 04 25 | 699 | 0.2+ | 0.9+ | 2004 03 27 | 704 | 0.3+ | 0.8+ | 2006 10 15 | 703 | (1.9+ | 1.5+) | |
| 2000 04 25 | 699 | 0.5− | 1.7+ | 2004 03 27 | 704 | 0.1− | 0.1+ | 2006 10 15 | 703 | (0.3− | 2.2+) | |
| 2001 08 20 | 807 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.7− | 0.4+ | 2006 10 15 | 703 | (0.6+ | 1.6+) | |
| 2001 08 20 | 807 | 0.4− | 0.6+ | 2004 03 27 | 704 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.8− | 0.2− | |
| 2001 08 20 | 807 | 0.2− | 0.7+ | 2004 04 12 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.4+ | |
| 2001 08 20 | 807 | 0.3− | 0.7+ | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.0 | |
| 2002 11 06 | 704 | 0.3+ | 0.1− | 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 | |
| 2002 11 06 | 704 | 0.3− | 0.0 | 2004 04 13 | 644 | 0.4+ | 0.5+ | 2006 11 11 | G96 | 0.2− | 0.1− | |
| 2002 11 06 | 704 | 0.6+ | 0.4− | 2004 04 13 | 644 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.7− | |
| 2002 11 14 | 291 | 0.2− | 0.5+ | 2004 04 13 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.3− | |
| 2002 11 14 | 291 | 0.2− | 0.3+ | 2004 04 22 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.5− | 0.3− | |
| 2002 11 14 | 291 | 0.1− | 0.4+ | 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.1− | |
| 2004 02 26 | 704 | (0.1+ | 1.6+) | 2004 04 22 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1+ | |
| 2004 02 26 | 704 | 0.7− | 0.2+ | 2006 07 21 | G96 | 0.5+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.1− | |
| 2004 02 26 | 704 | 0.5+ | 0.3− | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.3+ | |
| 2004 03 15 | 703 | 0.7− | 0.1+ | 2006 07 21 | G96 | 0.3+ | 0.4+ | | | | | |

## (144698)∗ 2004 GX$_{10}$

Discovered 2004 Apr. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.63336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23165948 | $\omega$ | 351.58023 | | −0.06936114 | | −0.95793959 |
| $a$ | 2.6256450 | $\Omega$ | 102.05668 | | +0.93105731 | | −0.16239460 |
| $e$ | 0.0838966 | $i$ | 16.54345 | | +0.35821966 | | +0.23660035 |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.2− | 1.2+ | 2004 03 16 | 704 | (2.1+ | 0.1+) | 2006 09 25 | 703 | 0.2+ | 0.5+ | |
| 2001 07 14 | 644 | 0.3− | 1.1+ | 2004 03 18 | 703 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.3− | 1.0+ | |
| 2001 07 14 | 644 | 0.1− | 0.6+ | 2004 03 18 | 703 | 1.3+ | 0.6+ | 2006 09 25 | 703 | 0.9− | 0.3+ | |
| 2002 10 31 | 704 | 0.3+ | 0.5+ | 2004 03 18 | 703 | 0.7− | 0.9+ | 2006 10 21 | 703 | 0.7+ | 0.0 | |
| 2002 10 31 | 704 | 0.3− | 0.3+ | 2004 03 18 | 703 | (2.3+ | 2.5−) | 2006 10 21 | 703 | 0.4+ | 1.2+ | |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2004 03 29 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.2− | |
| 2002 10 31 | 704 | 0.3− | 0.0 | 2004 03 29 | 704 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.4+ | 0.5+ | |
| 2002 11 30 | 704 | 0.4− | 0.3+ | 2004 03 29 | 704 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.2− | |
| 2002 11 30 | 704 | 0.3− | 0.2+ | 2004 03 29 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.5− | 0.1+ | |
| 2002 11 30 | 704 | 0.1+ | 0.5+ | 2004 04 08 | 644 | 0.0 | 0.2+ | 2006 11 19 | 703 | (0.9− | 1.7−) | |
| 2002 11 30 | 704 | 0.0 | 0.7+ | 2004 04 08 | 644 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.8+ | 0.6− | |
| 2002 12 13 | 644 | 0.0 | 0.3+ | 2004 04 08 | 644 | 0.2+ | 0.5− | 2006 11 24 | 703 | 0.5+ | 0.7− | |
| 2002 12 13 | 644 | 0.1− | 0.4+ | 2004 04 14 | 704 | 0.6− | 0.3− | 2006 11 24 | 703 | 0.2− | 0.8− | |
| 2002 12 13 | 644 | 0.1+ | 0.2+ | 2004 04 14 | 704 | 0.2− | 0.5− | 2006 11 24 | 703 | 0.3− | 0.6− | |
| 2004 03 16 | 704 | 0.3− | 0.4+ | 2004 04 14 | 704 | 0.2+ | 0.9+ | 2006 11 24 | 703 | 0.0 | 0.6− | |
| 2004 03 16 | 704 | 1.1+ | 0.6+ | 2004 04 14 | 704 | 0.5+ | 0.4+ | | | | | |
| 2004 03 16 | 704 | (0.3+ | 2.0−) | 2006 09 25 | 703 | 0.3− | 0.2− | | | | | |

## (144699)∗ 2004 GE$_{11}$ = 2005 MW$_7$

Discovered 2004 Apr. 12 by the Siding Spring Survey at Siding Spring.

Id. A. Doppler (*MPO* 86450)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.95332 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21464042 | $\omega$ | 316.74632 | | −0.66078870 | | +0.72179141 |
| $a$ | 2.7626660 | $\Omega$ | 270.76336 | | −0.62024995 | | −0.67956165 |
| $e$ | 0.0219754 | $i$ | 11.88051 | | −0.42266807 | | −0.13119877 |
| $P$ | 4.59 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.0 | 0.0 | 2004 04 14 | 644 | 0.2− | 0.3− | 2006 10 23 | 703 | 0.1− | 0.1+ | |
| 1996 09 06 | 691 | 0.6− | 0.1+ | 2004 04 14 | 644 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.6− | 0.2− | |
| 1996 09 06 | 691 | 0.3+ | 0.3− | 2004 04 25 | 704 | (1.7− | 0.1+) | 2006 10 23 | 703 | 0.7− | 0.7− | |
| 2001 09 19 | 644 | 0.7+ | 0.2− | 2004 04 25 | 704 | (1.7+ | 1.3−) | 2006 11 02 | G96 | 0.5− | 0.4− | |
| 2001 09 19 | 644 | 0.8+ | 0.0 | 2004 04 25 | 704 | 0.1− | 0.5− | 2006 11 02 | G96 | 0.2− | 0.1− | |
| 2001 09 19 | 644 | 0.5+ | 0.4− | 2004 04 25 | 704 | 0.3+ | 0.1− | 2006 11 02 | G96 | 0.1− | 0.3− | |
| 2001 09 29 | 644 | 0.4− | 0.4+ | 2004 05 13 | 644 | 0.3− | 0.5+ | 2006 11 02 | G96 | 0.2− | 0.1− | |
| 2001 09 29 | 644 | 0.4− | 0.4+ | 2004 05 13 | 644 | 0.4− | 0.3+ | 2006 11 02 | G96 | 0.1− | 0.4− | |
| 2001 09 29 | 644 | 0.8− | 0.3+ | 2004 05 13 | 644 | 0.1− | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.1− | |
| 2003 01 07 | 704 | 1.2+ | 0.1+ | 2004 06 13 | 644 | 0.1+ | 0.4+ | 2006 11 02 | G96 | 0.3− | 0.2− | |
| 2003 01 07 | 704 | 1.1+ | 0.3+ | 2004 06 13 | 644 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.1+ | 0.2+ | |
| 2003 01 07 | 704 | 0.9+ | 0.7+ | 2004 06 13 | 644 | 0.4− | 0.1+ | 2006 11 02 | 703 | (0.7+ | 2.0+) | |
| 2003 01 07 | 704 | 1.2+ | 0.2+ | 2005 06 27 | 691 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.1+ | 0.5+ | |
| 2003 01 07 | 704 | 1.3+ | 0.5+ | 2005 06 27 | 691 | 0.1+ | 0.3+ | 2006 11 02 | 703 | 0.2− | 0.3− | |
| 2003 01 13 | 644 | 0.2− | 0.6+ | 2005 06 27 | 691 | 0.2+ | 0.4+ | 2006 11 02 | 703 | 1.0+ | 0.1+ | |
| 2003 01 13 | 644 | 0.1− | 0.8+ | 2005 06 28 | 644 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.5− | 0.1− | |
| 2003 01 13 | 644 | 0.0 | 0.9+ | 2005 06 28 | 644 | 0.3− | 0.1+ | 2006 11 15 | 703 | 0.2+ | 1.0− | |
| 2004 03 16 | 644 | 0.6− | 0.6+ | 2005 06 28 | 644 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.9− | 0.2+ | |
| 2004 03 16 | 644 | 0.6− | 0.0 | 2005 07 30 | 644 | 0.0 | 0.0 | 2006 11 15 | 703 | 1.1− | 0.6− | |
| 2004 03 16 | 644 | 0.5− | 0.0 | 2005 07 30 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 703 | 0.7+ | 0.6+ | |
| 2004 04 12 | E12 | 0.6− | 1.3+ | 2005 07 30 | 644 | 0.2+ | 1.1+ | 2006 11 21 | 703 | 0.0 | 0.1+ | |
| 2004 04 12 | E12 | 0.4+ | 1.4− | 2005 09 02 | 644 | 0.0 | 0.1+ | 2006 11 21 | 703 | 0.3− | 0.5+ | |
| 2004 04 12 | E12 | (2.5− | 2.4+) | 2005 09 02 | 644 | 0.1− | 0.3+ | 2006 11 21 | 703 | 0.1− | 0.5+ | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | E12 | 1.2+ | 0.4+ | 2005 09 02 | 644 | 0.1+ | 0.3+ | |
| 2004 04 14 | 644 | 0.1− | 0.1+ | 2006 10 23 | 703 | 0.6− | 0.1− | |

**(144700)∗ 2004 GF$_{13}$**

Discovered 2004 Apr. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.84220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20419476 | $\omega$ | 355.92110 | | −0.37706092 | +0.92428900 | |
| $a$ | 2.8560973 | $\Omega$ | 251.91901 | | −0.84798696 | −0.37025959 | |
| $e$ | 0.1339497 | $i$ | 3.57565 | | −0.37248245 | −0.09272371 | |
| $P$ | 4.83 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 10 | 691 | 1.2− | 0.2+ | 2004 04 20 | 704 | 0.3− | 1.2− | 2005 08 24 | 644 | 0.1− | 0.2+ | |
| 1991 10 10 | 691 | 0.3+ | 0.3− | 2004 04 20 | 704 | (0.7− | 1.9−) | 2005 08 27 | 699 | 1.1− | 0.4− | |
| 1991 10 10 | 691 | 0.2+ | 0.6− | 2004 04 20 | 704 | 0.0 | 0.8− | 2005 08 27 | 699 | 0.8+ | 1.4+ | |
| 1996 10 04 | 691 | 0.3+ | 0.5+ | 2004 04 25 | 691 | 0.6+ | 0.3− | 2005 08 27 | 699 | 0.5+ | 1.3+ | |
| 1996 10 04 | 691 | 0.1+ | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.2+ | 2005 08 27 | 699 | 0.5− | 0.4+ | |
| 1996 10 04 | 691 | 0.4+ | 0.3+ | 2004 04 25 | 691 | 0.0 | 0.2+ | 2005 10 30 | G96 | 0.1− | 0.2+ | |
| 2001 10 21 | 704 | 0.0 | 1.0− | 2004 05 09 | 703 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.1− | 0.5+ | |
| 2001 10 21 | 704 | 0.4+ | 0.3− | 2004 05 09 | 703 | 0.7− | 0.7+ | 2005 10 30 | G96 | 0.1− | 0.3− | |
| 2001 10 21 | 704 | 0.1+ | 0.8+ | 2004 05 09 | 703 | 0.3− | 1.2+ | 2005 10 30 | G96 | 0.2− | 0.2+ | |
| 2001 10 21 | 704 | 0.7− | 0.7− | 2004 05 09 | 703 | 0.6− | 0.5+ | 2005 10 31 | G96 | 0.2+ | 0.2+ | |
| 2002 12 31 | 645 | 0.1+ | 0.1− | 2004 05 10 | 691 | 0.4+ | 0.1+ | 2005 10 31 | G96 | 0.3+ | 0.1+ | |
| 2002 12 31 | 645 | 0.1+ | 0.1− | 2004 05 10 | 691 | 0.3+ | 0.2+ | 2005 10 31 | G96 | 0.3+ | 0.1+ | |
| 2004 03 31 | 704 | 0.1+ | 0.5+ | 2004 05 10 | 691 | 0.3+ | 0.1+ | 2005 10 31 | G96 | 0.4+ | 0.1+ | |
| 2004 03 31 | 704 | (0.2− | 1.5−) | 2004 05 12 | 699 | 0.9+ | 0.5+ | 2006 10 13 | 691 | 0.4− | 0.2+ | |
| 2004 03 31 | 704 | 0.2+ | 0.1− | 2004 05 12 | 699 | 1.1+ | 0.1− | 2006 10 13 | 691 | 0.4− | 0.2+ | |
| 2004 03 31 | 704 | 0.2− | 1.3+ | 2004 05 12 | 699 | 0.2− | 0.0 | 2006 10 13 | 691 | 0.6− | 0.3+ | |
| 2004 04 12 | 691 | 0.0 | 0.4+ | 2004 05 12 | 699 | (1.3+ | 2.0−) | 2006 10 17 | 691 | 0.0 | 0.1+ | |
| 2004 04 12 | 691 | 0.1+ | 0.1+ | 2004 05 19 | 691 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.5− | 0.1− | |
| 2004 04 12 | 691 | 0.2− | 0.2+ | 2004 05 19 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.8− | 0.2+ | |
| 2004 04 13 | 291 | 0.1− | 0.0 | 2004 05 19 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.1+ | |
| 2004 04 13 | 291 | 0.3− | 0.3+ | 2004 05 28 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.0 | |
| 2004 04 13 | 291 | 0.2− | 0.4+ | 2004 05 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 | |
| 2004 04 14 | 699 | 0.5− | 0.7− | 2004 05 28 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.2− | |
| 2004 04 14 | 699 | 0.5− | 0.1− | 2005 07 19 | 147 | 1.0+ | 0.9− | 2006 11 09 | 691 | 0.3+ | 0.3+ | |
| 2004 04 14 | 699 | 0.0 | 0.3+ | 2005 07 19 | 147 | 0.9+ | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.6+ | |
| 2004 04 14 | 699 | 0.5+ | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.4+ | 2006 11 09 | 691 | 0.2+ | 0.2+ | |
| 2004 04 17 | 704 | 0.6+ | 0.4+ | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.2+ | |
| 2004 04 17 | 704 | 0.5+ | 0.9+ | 2005 07 30 | 644 | 0.1+ | 0.4+ | 2006 11 13 | 691 | 0.4− | 0.3+ | |
| 2004 04 17 | 704 | 0.2− | 0.7+ | 2005 07 30 | 644 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.5+ | |
| 2004 04 17 | 704 | 0.2− | 0.7+ | 2005 07 30 | 644 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.5+ | |
| 2004 04 20 | 703 | 0.3− | 0.3+ | 2005 07 30 | 644 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.4+ | |
| 2004 04 20 | 703 | 0.5− | 0.4+ | 2005 08 06 | 644 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.6+ | |
| 2004 04 20 | 703 | 0.7− | 0.3− | 2005 08 06 | 644 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.8+ | 0.2+ | |
| 2004 04 20 | 703 | 0.1− | 0.6+ | 2005 08 06 | 644 | 0.1− | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.3− | |
| 2004 04 20 | 704 | (0.3− | 2.0−) | 2005 08 24 | 644 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.1− | 0.5+ | |
| 2004 04 20 | 704 | (0.6− | 1.9−) | 2005 08 24 | 644 | 0.2− | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.2+ | |

**(144701)∗ 2004 GF$_{14}$**

Discovered 2004 Apr. 13 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.85835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23222364 | $\omega$ | 23.66594 | | −0.96466781 | −0.24925310 | |
| $a$ | 2.6213907 | $\Omega$ | 141.58119 | | +0.21443637 | −0.93104684 | |
| $e$ | 0.1393114 | $i$ | 7.89687 | | +0.15307858 | −0.26650455 | |
| $P$ | 4.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | 0.0 | 0.1− | 2004 04 13 | 703 | 0.0 | 0.8+ | 2005 07 04 | G96 | 0.5+ | 0.4− | |
| 1995 01 31 | 691 | 0.1+ | 0.2+ | 2004 04 13 | 703 | 0.6− | 1.0+ | 2005 07 04 | G96 | 0.6− | 0.0 | |
| 1995 01 31 | 691 | 0.1− | 0.3− | 2004 04 13 | 703 | 0.9− | 0.8+ | 2005 07 28 | 644 | 0.3− | 0.1− | |
| 2001 09 22 | 291 | 0.0 | 0.6+ | 2004 04 14 | 699 | 0.0 | 0.1− | 2005 07 28 | 644 | 0.2− | 0.1− | |
| 2001 09 22 | 291 | 0.0 | 0.3+ | 2004 04 14 | 699 | 0.0 | 0.2+ | 2005 07 28 | 644 | 0.5− | 0.0 | |
| 2001 09 22 | 291 | 0.1− | 0.3+ | 2004 04 14 | 699 | 0.1+ | 0.3− | 2005 08 06 | 644 | 0.3− | 0.4− | |
| 2002 11 28 | 608 | 0.1− | 0.3− | 2004 04 14 | 699 | 0.5− | 0.1− | 2005 08 06 | 644 | 0.2− | 0.1− | |
| 2002 11 28 | 608 | 0.4− | 0.7+ | 2004 04 16 | 704 | 0.2− | 0.2− | 2005 08 06 | 644 | 0.3− | 0.1− | |
| 2002 11 28 | 608 | 1.3− | 0.1+ | 2004 04 16 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.1− | |
| 2002 12 10 | 644 | 0.0 | 1.4+ | 2004 04 16 | 704 | 0.5+ | 1.3+ | 2006 10 16 | 703 | 0.4+ | 1.1− | |
| 2002 12 10 | 644 | (0.4+ | 1.5+) | 2004 04 16 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.8− | 0.5+ | |
| 2002 12 10 | 644 | (0.8+ | 1.5+) | 2004 04 16 | 704 | 0.5− | 0.9+ | 2006 10 16 | 703 | 0.0 | 0.8+ | |
| 2002 12 14 | 704 | 1.2+ | 0.3+ | 2004 04 23 | 704 | 0.7− | 0.4+ | 2006 11 08 | 644 | 0.5+ | 0.3+ | |
| 2002 12 14 | 704 | 0.1+ | 0.2+ | 2004 04 23 | 704 | 0.0 | 1.2− | 2006 11 08 | 644 | 0.4+ | 0.7+ | |
| 2002 12 14 | 704 | (0.7+ | 1.8+) | 2004 04 23 | 704 | 0.1+ | 0.8− | 2006 11 08 | 644 | 0.4+ | 0.5+ | |
| 2002 12 14 | 704 | 0.8− | 0.4+ | 2004 05 01 | 608 | 0.8+ | 0.4− | 2006 11 13 | 703 | 0.9+ | 0.5− | |
| 2004 02 25 | 704 | 1.4+ | 1.2+ | 2004 05 01 | 608 | 0.7+ | 0.3− | 2006 11 13 | 703 | 0.3− | 0.2+ | |
| 2004 02 25 | 704 | 0.3+ | 1.1+ | 2004 05 01 | 608 | 0.9+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.8+ | |
| 2004 02 25 | 704 | 1.3− | 1.0+ | 2004 05 14 | 704 | 0.2+ | 0.8+ | 2006 11 13 | 703 | 0.1+ | 0.9+ | |
| 2004 02 25 | 704 | 0.2− | 0.3+ | 2004 05 14 | 704 | 0.5+ | 0.2− | 2006 11 19 | 703 | 0.1− | 0.4+ | |
| 2004 03 26 | 699 | 0.4− | 0.2+ | 2004 05 14 | 704 | 0.6+ | 1.0+ | 2006 11 19 | 703 | 1.1− | 0.7+ | |
| 2004 03 26 | 699 | 0.3− | 0.3+ | 2004 05 14 | 704 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.5− | 0.3− | |
| 2004 03 26 | 699 | 0.2+ | 0.4+ | 2004 05 14 | 704 | 0.6+ | 0.6− | 2006 11 19 | 703 | 0.4− | 0.5+ | |
| 2004 03 26 | 699 | 0.1+ | 0.4+ | 2005 07 04 | G96 | 0.3+ | 0.4− | | | | | |
| 2004 04 13 | 703 | 0.5+ | 0.7+ | 2005 07 04 | G96 | 0.1+ | 0.4− | | | | | |

**(144702)∗ 2004 GS$_{15}$**

Discovered 2004 Apr. 9 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.37317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22036181 | $\omega$ | 62.77000 | | −0.97800335 | +0.04556993 | |
| $a$ | 2.7146374 | $\Omega$ | 119.21042 | | −0.10321272 | −0.95373067 | |
| $e$ | 0.1177604 | $i$ | 13.48594 | | +0.18126386 | −0.29718881 | |
| $P$ | 4.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 691 | 0.2− | 0.6+ | 2004 03 28 | 704 | 0.3+ | 0.3− | 2004 04 26 | 704 | 0.5+ | 0.5+ | |
| 1998 12 22 | 691 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.5+ | 0.3+ | 2004 06 10 | 704 | 0.0 | 1.2+ | |
| 1998 12 22 | 691 | 0.1− | 0.1+ | 2004 04 09 | 644 | 0.1+ | 0.3+ | 2004 06 10 | 704 | 0.2− | 0.1+ | |
| 2000 06 04 | 704 | 0.3− | 0.7+ | 2004 04 09 | 644 | 0.2+ | 0.2+ | 2004 06 10 | 704 | 0.2+ | 0.6+ | |
| 2000 06 04 | 704 | 0.7+ | 0.2− | 2004 04 09 | 644 | 0.3+ | 0.2+ | 2004 06 10 | 704 | 0.3− | 1.0+ | |
| 2000 06 04 | 704 | 0.2+ | 0.1+ | 2004 04 13 | 703 | (2.4− | 2.6−) | 2004 06 14 | 703 | 0.7− | 1.3+ | |
| 2000 06 04 | 704 | 0.6+ | 0.1− | 2004 04 13 | 703 | 0.8− | 0.7− | 2004 06 14 | 703 | 0.2− | 1.0− | |
| 2000 06 04 | 704 | 0.4− | 1.2− | 2004 04 13 | 703 | 0.7− | 0.6+ | 2004 06 14 | 703 | 0.5− | 0.4− | |
| 2002 12 01 | 704 | 0.5− | 0.4+ | 2004 04 13 | 703 | 0.0 | 0.3+ | 2004 06 14 | 703 | 0.9− | 0.3− | |
| 2002 12 01 | 704 | 0.4+ | 0.1− | 2004 04 15 | 704 | 0.4+ | 0.3− | 2005 06 29 | 644 | 0.1+ | 0.5+ | |
| 2002 12 01 | 704 | 0.2+ | 0.4+ | 2004 04 15 | 704 | 0.0 | 0.1− | 2005 06 29 | 644 | 0.4− | 0.4+ | |
| 2002 12 14 | 704 | 0.8+ | 0.4+ | 2004 04 15 | 704 | 0.3+ | 0.0 | 2005 06 29 | 644 | 0.0 | 0.5+ | |
| 2002 12 14 | 704 | 0.5− | 0.2+ | 2004 04 15 | 704 | 1.1+ | 0.7− | 2005 07 04 | 644 | 0.0 | 0.7+ | |
| 2002 12 14 | 704 | 0.5+ | 0.4+ | 2004 04 15 | 704 | 0.1+ | 0.7+ | 2005 07 04 | 644 | 0.6− | 0.3+ | |
| 2002 12 14 | 704 | 0.0 | 0.4+ | 2004 04 23 | A17 | 0.9+ | 0.3− | 2005 07 04 | 644 | 0.2− | 0.5+ | |
| 2003 01 05 | 704 | 0.4+ | 0.6− | 2004 04 24 | 703 | 0.7− | 0.6− | 2006 09 19 | 703 | 0.0 | 0.0 | |
| 2003 01 05 | 704 | 1.5+ | 0.2− | 2004 04 24 | 703 | 0.7− | 0.6− | 2006 09 19 | 703 | 0.3+ | 0.9− | |
| 2003 01 05 | 704 | 1.3+ | 0.5− | 2004 04 24 | 703 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.3− | 0.2+ | |
| 2004 02 18 | 704 | (0.0 | 1.5−) | 2004 04 24 | 703 | 0.5− | 0.1− | 2006 09 19 | 703 | 1.1− | 0.3+ | |
| 2004 02 18 | 704 | 0.4+ | 0.7− | 2004 04 25 | 699 | 0.6− | 0.3+ | 2006 10 20 | 703 | 0.2+ | 0.5+ | |
| 2004 02 18 | 704 | 0.8+ | 0.2− | 2004 04 25 | 699 | 0.4− | 0.2− | 2006 10 20 | 703 | 1.5− | 0.5+ | |
| 2004 03 15 | 704 | 0.0 | 0.2+ | 2004 04 25 | 699 | 0.2− | 0.2− | 2006 10 20 | 703 | (1.7− | 1.5+) | |
| 2004 03 15 | 704 | 0.4+ | 0.7+ | 2004 04 25 | 699 | 0.3− | 0.3− | 2006 10 20 | 703 | 0.4− | 1.3+ | |
| 2004 03 15 | 704 | 1.0+ | 0.7+ | 2004 04 25 | 608 | 0.2+ | 0.6+ | 2006 11 23 | 703 | 0.6− | 0.6− | |
| 2004 03 15 | 704 | 0.3+ | 0.3+ | 2004 04 25 | 608 | 0.4+ | 0.6+ | 2006 11 23 | 703 | 0.0 | 0.9− | |
| 2004 03 28 | 704 | 1.2+ | 0.0 | 2004 04 25 | 608 | 0.3+ | 0.7+ | 2006 11 23 | 703 | 0.0 | 0.7+ | |
| 2004 03 28 | 704 | 1.4− | 0.3+ | 2004 04 26 | 704 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.1+ | 1.7+ | |
| 2004 03 28 | 704 | 0.4+ | 0.1− | 2004 04 26 | 704 | 0.2+ | 0.1− | | | | | |

**(144703)∗ 2004 GY$_{15}$ = 2001 SX$_{342}$**

Discovered 2004 Apr. 9 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 62149)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.27765 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21746793 | $\omega$ | 23.01425 | | −0.89000193 | | +0.45584628 |
| $a$ | 2.7386671 | $\Omega$ | 184.14663 | | −0.43694465 | | −0.85897486 |
| $e$ | 0.1418632 | $i$ | 7.97857 | | −0.13029173 | | −0.23316595 |
| $P$ | 4.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 291 | 0.3− | 0.6+ | 2004 04 14 | 691 | 0.1− | 0.4+ | 2005 08 06 | 644 | 0.7− | 0.2− |
| 2001 09 21 | 291 | 0.2− | 0.2− | 2004 04 19 | 704 | 0.6+ | 0.4− | 2005 08 06 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 291 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 1.5+ | 0.5+ | 2005 08 06 | 644 | 0.1+ | 0.1+ |
| 2001 09 22 | 291 | 0.5− | 0.1− | 2004 04 19 | 704 | 0.7+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.6+ |
| 2001 09 22 | 291 | 0.6+ | 0.5+ | 2004 04 19 | 704 | 0.9+ | 1.0+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2001 09 22 | 291 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.8+ | 1.1+ | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2001 10 20 | 704 | (5.9+ | 0.3+) | 2004 04 20 | 703 | 0.4+ | 0.8+ | 2006 10 02 | G96 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | (2.3+ | 1.4+) | 2004 04 20 | 703 | 0.5+ | 0.9+ | 2006 10 03 | G96 | 0.4+ | 0.0 |
| 2001 10 20 | 704 | 0.8− | 1.3+ | 2004 04 20 | 703 | (0.9+ | 1.8+) | 2006 10 03 | G96 | 0.4+ | 0.1+ |
| 2004 03 28 | 704 | 0.7+ | 1.0+ | 2004 04 20 | 703 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.9+ | 0.1+ |
| 2004 03 28 | 704 | (1.1+ | 1.6+) | 2004 04 22 | 704 | 1.0− | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2004 03 28 | 704 | 0.2− | 1.1+ | 2004 04 22 | 704 | 0.4+ | 1.4+ | 2006 10 22 | 691 | 0.3− | 0.8+ |
| 2004 03 28 | 704 | 0.4+ | 0.8+ | 2004 04 22 | 704 | (1.7+ | 1.7+) | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2004 04 09 | E12 | 0.6− | 0.3− | 2004 04 22 | 704 | 0.9− | 1.5+ | 2006 10 22 | 691 | 0.5− | 0.4+ |
| 2004 04 09 | E12 | 0.4− | 0.5+ | 2004 05 17 | 185 | (2.6− | 13.1−) | 2006 11 23 | G96 | 0.1+ | 0.5+ |
| 2004 04 09 | E12 | 0.1+ | 0.5− | 2004 05 17 | 185 | 0.4+ | 1.1− | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2004 04 09 | E12 | 0.8− | 0.1− | 2005 07 30 | 644 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2004 04 14 | 691 | 0.0 | 0.4+ | 2005 07 30 | 644 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 04 14 | 691 | 0.1− | 0.3+ | 2005 07 30 | 644 | 0.5− | 0.1− | | | | |

**(144704)∗ 2004 GA$_{17}$**

Discovered 2004 Apr. 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.84364 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22429265 | $\omega$ | 351.18710 | | −0.59612852 | | −0.78245644 |
| $a$ | 2.6828271 | $\Omega$ | 135.15113 | | +0.75131511 | | −0.62268600 |
| $e$ | 0.1971836 | $i$ | 14.78566 | | +0.28311904 | | +0.00490535 |
| $P$ | 4.39 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 699 | 0.9− | 0.2− | 2004 03 15 | 704 | 0.8− | 0.4+ | 2004 04 26 | 704 | 0.1− | 0.5+ |
| 1999 01 10 | 699 | 0.2− | 0.3− | 2004 03 15 | 704 | 0.7− | 0.2+ | 2004 04 26 | 704 | 0.4+ | 0.8+ |
| 1999 01 10 | 699 | 0.6− | 0.4− | 2004 03 15 | 704 | 0.4− | 1.1− | 2004 04 26 | 704 | 0.3− | 0.5+ |
| 2002 10 30 | 704 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.9+ | 0.4+ | 2004 05 13 | 704 | 0.7− | 0.5+ |
| 2002 10 30 | 704 | (0.7+ | 1.8−) | 2004 03 28 | 704 | (0.3− | 1.8+) | 2004 05 13 | 704 | 0.6+ | 0.0 |
| 2002 10 30 | 704 | 0.5+ | 0.7+ | 2004 03 28 | 704 | 0.5− | 0.4+ | 2004 05 13 | 704 | 0.3− | 0.2− |
| 2002 10 30 | 704 | 0.4− | 0.7+ | 2004 03 28 | 704 | 0.6+ | 1.1+ | 2004 05 13 | 704 | 0.4+ | 0.0 |
| 2002 11 06 | 644 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 0.5− | 0.1+ | 2004 05 24 | 703 | 0.6+ | 1.1+ |
| 2002 11 06 | 644 | 0.3+ | 0.2+ | 2004 04 10 | 644 | 0.5+ | 0.4− | 2004 05 24 | 703 | 0.1+ | 0.4− |
| 2002 11 06 | 644 | 0.1+ | 0.4+ | 2004 04 10 | 644 | 0.1+ | 0.2− | 2004 05 24 | 703 | 1.4+ | 1.0+ |
| 2002 11 16 | 644 | 0.4+ | 0.0 | 2004 04 10 | 644 | 0.5+ | 0.1− | 2004 05 24 | 703 | 0.3− | 0.7− |
| 2002 11 16 | 644 | 0.2+ | 0.0 | 2004 04 15 | 704 | 1.0+ | 0.2+ | 2006 09 20 | 703 | (2.3+ | 0.6+) |
| 2002 11 16 | 644 | 0.3+ | 0.0 | 2004 04 15 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 703 | 0.5+ | 0.0 |
| 2002 11 30 | 704 | 0.3+ | 0.6+ | 2004 04 15 | 704 | 0.5+ | 0.6− | 2006 09 20 | 703 | (2.3− | 0.2−) |
| 2002 11 30 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 704 | 0.8+ | 0.0 | 2006 09 20 | 703 | (0.7+ | 1.9−) |
| 2002 11 30 | 704 | 0.2+ | 0.5+ | 2004 04 15 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.1+ | 1.2+ |
| 2003 01 02 | 704 | 0.5+ | 0.7+ | 2004 04 22 | 703 | 0.5+ | 0.4+ | 2006 09 25 | 703 | 0.2+ | 0.4+ |
| 2003 01 02 | 704 | 0.0 | 0.7+ | 2004 04 22 | 703 | 0.7+ | 0.2− | 2006 09 25 | 703 | (0.9− | 1.7+) |
| 2003 01 02 | 704 | 0.2+ | 0.1− | 2004 04 22 | 703 | 0.5− | 0.3+ | 2006 09 25 | 703 | 0.1+ | 0.0 |
| 2003 01 02 | 704 | 0.4+ | 0.0 | 2004 04 22 | 703 | 0.8− | 0.1+ | 2006 10 12 | 644 | 0.6− | 0.3− |
| 2003 01 02 | 704 | 0.6+ | 0.0 | 2004 04 24 | 608 | 0.9− | 0.7+ | 2006 10 12 | 644 | 0.6− | 0.2− |
| 2003 01 28 | 704 | 0.3− | 0.3− | 2004 04 24 | 608 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.8− | 0.3+ |
| 2003 01 28 | 704 | 0.4− | 0.6+ | 2004 04 24 | 608 | 0.6− | 0.6− | 2006 10 22 | 644 | 0.5− | 0.1− |
| 2003 01 28 | 704 | 0.3− | 0.0 | 2004 04 26 | 699 | (0.6+ | 1.6−) | 2006 10 22 | 644 | 0.7− | 0.2− |
| 2003 01 28 | 704 | 0.2− | 0.2+ | 2004 04 26 | 699 | 0.1− | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2004 03 01 | 703 | 0.0 | 0.0 | 2004 04 26 | 699 | (1.7− | 0.0 ) | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2004 03 01 | 703 | 1.3+ | 0.7− | 2004 04 26 | 699 | (1.9− | 0.5+) | 2006 10 23 | 644 | 0.7− | 0.1− |
| 2004 03 01 | 703 | 0.5− | 0.5− | 2004 04 26 | 704 | 0.9− | 0.2+ | 2006 10 23 | 644 | 0.7− | 0.2− |
| 2004 03 01 | 703 | 0.9+ | 0.4+ | 2004 04 26 | 704 | 0.4− | 0.4+ | | | | |

**(144705)∗ 2004 GE$_{18}$ = 2002 XT$_{103}$**

Discovered 2004 Apr. 12 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 65691)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.32415 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21655550 | $\omega$ | 91.29382 | | −0.96125207 | | −0.21111827 |
| $a$ | 2.7463543 | $\Omega$ | 76.53985 | | +0.11729727 | | −0.89515744 |
| $e$ | 0.0434110 | $i$ | 10.50221 | | +0.24947104 | | −0.39258404 |
| $P$ | 4.55 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.7− | 0.5+ |
| 2002 12 05 | 704 | 0.4− | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2002 12 05 | 704 | 0.1+ | 0.7+ | 2004 04 12 | 703 | 0.8− | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2002 12 05 | 704 | 0.1− | 0.2− | 2004 04 12 | 703 | 0.1− | 0.9− | 2006 09 26 | 703 | 0.1+ | 1.3+ |
| 2002 12 05 | 704 | 0.6− | 0.5+ | 2004 04 12 | 703 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 12 10 | 704 | 0.0 | 0.2− | 2004 04 12 | 703 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 12 10 | 704 | 0.0 | 0.7+ | 2004 04 15 | 704 | 0.1+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.7+ |
| 2002 12 10 | 704 | 0.0 | 0.3+ | 2004 04 15 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 703 | 0.9− | 1.2+ |
| 2002 12 10 | 704 | 0.9+ | 0.2+ | 2004 04 15 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 703 | (1.9− | 1.7+) |
| 2003 01 05 | 704 | 0.2− | 0.0 | 2004 04 15 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.1− |
| 2003 01 05 | 704 | 0.3− | 0.4+ | 2004 04 25 | 699 | 0.3+ | 1.3− | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2003 01 05 | 704 | 0.2+ | 0.4+ | 2004 04 25 | 699 | 0.7− | 0.5− | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2003 01 05 | 704 | 0.4− | 0.1+ | 2004 04 25 | 699 | 0.9+ | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2004 04 25 | 699 | 0.5+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2004 03 15 | 704 | 0.8− | 0.7+ | 2005 07 06 | E12 | 0.4+ | 0.1− | 2006 10 28 | 703 | 0.1− | 1.4− |
| 2004 03 15 | 704 | 0.5− | 0.6+ | 2005 07 06 | E12 | 0.2− | 0.8+ | 2006 10 28 | 703 | 1.0+ | 0.6− |
| 2004 03 15 | 704 | 0.4+ | 0.2+ | 2005 07 06 | E12 | 0.4− | 1.0+ | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2004 03 15 | 704 | 0.4+ | 0.7+ | 2005 07 06 | E12 | 0.2− | 0.3+ | 2006 10 28 | 703 | (1.6− | 0.7−) |
| 2004 03 15 | 704 | 0.1+ | 0.8+ | 2005 07 29 | E12 | 0.1− | 1.3+ | 2006 11 19 | 703 | 0.4+ | 0.6+ |
| 2004 03 23 | 704 | 0.6+ | 0.1+ | 2005 07 29 | E12 | 0.4− | 0.2+ | 2006 11 19 | 703 | 0.9− | 0.8+ |
| 2004 03 23 | 704 | 0.4+ | 0.7+ | 2005 07 29 | E12 | 0.2+ | 0.6+ | 2006 11 19 | 703 | 0.4+ | 1.4− |
| 2004 03 23 | 704 | 0.7+ | 0.6+ | 2005 07 29 | E12 | 0.0 | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.1− |

**(144706)∗ 2004 GF$_{18}$**

Discovered 2004 Apr. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.73640 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21415711 | $\omega$ | 96.35692 | | −0.88552990 | | −0.41652245 |
| $a$ | 2.7668209 | $\Omega$ | 59.20227 | | +0.27130854 | | −0.82320015 |
| $e$ | 0.1453609 | $i$ | 13.86083 | | +0.37713191 | | −0.38581156 |
| $P$ | 4.60 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 25 | 691 | 0.3+ | 0.1+ | 2004 04 17 | 704 | 0.3+ | 0.6+ | 2004 05 17 | 704 | 0.5+ | 0.7+ |
| 1997 10 25 | 691 | 0.1− | 0.2− | 2004 04 17 | 704 | 0.7+ | 0.1+ | 2004 05 17 | 704 | 0.1− | 0.4+ |
| 1997 10 25 | 691 | 0.2− | 0.3− | 2004 04 17 | 704 | 0.7+ | 0.2+ | 2004 05 19 | 704 | 0.1+ | 0.3+ |
| 2001 10 23 | 644 | 0.0 | 0.4+ | 2004 04 17 | 704 | 0.3+ | 0.4+ | 2004 05 19 | 704 | 0.1− | 0.5+ |
| 2001 10 23 | 644 | 0.1− | 0.6+ | 2004 04 17 | 704 | 0.2+ | 1.0+ | 2004 05 19 | 704 | 0.0 | 0.2− |
| 2001 10 23 | 644 | 0.0 | 0.8+ | 2004 04 22 | 704 | 0.8+ | 0.7+ | 2004 05 19 | 704 | 0.2− | 0.7+ |
| 2002 12 05 | 704 | 0.4+ | 0.7+ | 2004 04 22 | 704 | 1.5+ | 0.5+ | 2004 05 19 | 704 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.8+ | 2004 04 22 | 704 | 0.1+ | 0.9+ | 2004 06 07 | 699 | 0.7− | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2004 04 29 | 704 | 0.5+ | 0.0 | 2004 06 07 | 699 | (1.0+ | 1.7+) |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2004 04 29 | 704 | 0.0 | 0.5− | 2004 06 07 | 699 | 0.3+ | 0.6+ |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2004 04 29 | 704 | 0.3+ | 0.4− | 2004 06 07 | 699 | 0.6− | 0.5− |
| 2002 12 15 | 704 | 0.7+ | 0.7+ | 2004 04 29 | 704 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 2002 12 15 | 704 | 0.0 | 1.0+ | 2004 05 10 | 703 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 1.4− | 0.8+ |
| 2002 12 15 | 704 | (0.1+ | 2.1+) | 2004 05 10 | 703 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.9+ |
| 2003 01 04 | 704 | 0.3− | 0.6− | 2004 05 10 | 703 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.8− | 0.7+ |
| 2003 01 04 | 704 | 0.3− | 0.3− | 2004 05 10 | 703 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2003 01 04 | 704 | 0.3− | 0.2− | 2004 05 11 | 699 | 0.8+ | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2003 01 04 | 704 | 0.3− | 0.2− | 2004 05 11 | 699 | 0.8+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.6− | 0.2− | 2004 05 11 | 699 | 0.6− | 0.8+ | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2003 01 13 | 704 | 0.5+ | 0.6+ | 2004 05 11 | 699 | 0.3+ | 0.2+ | 2006 10 22 | 703 | (0.7− | 2.2−) |
| 2003 01 13 | 704 | 0.4− | 0.8+ | 2004 05 13 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2003 01 13 | 704 | 0.1+ | 0.5+ | 2004 05 13 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2003 01 13 | 704 | 0.5− | 0.4+ | 2004 05 13 | 691 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2004 04 12 | 644 | 0.1− | 0.2− | 2004 05 15 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2004 04 12 | 644 | 0.3+ | 0.0 | 2004 05 15 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.5− | 0.5+ |
| 2004 04 12 | 644 | 0.4− | 0.0 | 2004 05 15 | 704 | 0.8− | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 04 15 | 703 | 0.9− | 0.3− | 2004 05 15 | 704 | 0.7+ | 0.4− | 2006 11 23 | G96 | 0.4− | 0.1+ |
| 2004 04 15 | 703 | 0.3− | 1.0− | 2004 05 17 | 704 | 0.5− | 0.3− | 2006 11 23 | G96 | 0.4− | 0.7+ |
| 2004 04 15 | 703 | (1.7− | 1.3−) | 2004 05 17 | 704 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2004 04 15 | 703 | (0.5− | 2.3−) | 2004 05 17 | 704 | 0.6+ | 0.5+ | | | | |

**(144707)∗ 2004 GG$_{18}$**

Discovered 2004 Apr. 12 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.08113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19236704 | $\omega$ | 41.52479 | | −0.78126139 | +0.62384648 | |
| $a$ | 2.9720009 | $\Omega$ | 176.84204 | | −0.62417063 | −0.78112210 | |
| $e$ | 0.1045543 | $i$ | 22.54725 | | +0.00645455 | −0.02576507 | |
| $P$ | 5.12 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 14 | 704 | 1.2+ | 1.2+ | 2004 04 15 | 704 | 0.1+ | 0.2+ | 2005 08 26 | 699 | 0.2− | 0.2+ |
| 1999 05 14 | 704 | (2.2− | 1.0−) | 2004 04 15 | 704 | 0.3+ | 0.2+ | 2005 08 26 | 699 | 1.0− | 0.9− |
| 1999 05 14 | 704 | 0.1− | 1.0− | 2004 04 15 | 704 | 0.8− | 0.6− | 2005 08 26 | 699 | 0.5− | 0.5− |
| 1999 05 14 | 704 | 0.7+ | 1.1+ | 2004 04 16 | 699 | 1.0− | 0.2− | 2005 08 26 | 699 | 0.4+ | 1.0− |
| 2000 09 03 | 704 | 0.3− | 0.3+ | 2004 04 16 | 699 | 0.4− | 0.6+ | 2005 08 29 | 644 | 0.2− | 0.2− |
| 2000 09 03 | 704 | 0.3+ | 1.2+ | 2004 04 16 | 699 | 0.4− | 0.5− | 2005 08 29 | 644 | 0.3− | 0.3− |
| 2000 09 03 | 704 | 0.4− | 0.5+ | 2004 04 16 | 699 | 0.1+ | 0.1+ | 2005 08 29 | 644 | 0.3− | 0.3− |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2004 04 26 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.5+ | 0.4− |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2004 04 26 | 704 | 0.3+ | 0.3− | 2006 10 28 | 703 | 1.3+ | 0.1− |
| 2001 09 21 | 645 | 0.0 | 0.1+ | 2004 04 26 | 704 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.8+ | 0.7− |
| 2001 09 21 | 645 | 0.1− | 0.1+ | 2004 04 26 | 704 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.4+ | 0.2− |
| 2004 03 16 | 704 | (0.3+ | 2.4+) | 2004 05 13 | 704 | 0.7+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2004 03 16 | 704 | 0.9− | 1.3+ | 2004 05 13 | 704 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2004 03 16 | 704 | 0.2+ | 0.3− | 2004 05 13 | 704 | 0.5+ | 1.1+ | 2006 11 17 | 703 | 0.7+ | 0.5− |
| 2004 03 16 | 704 | 0.3+ | 0.4+ | 2004 05 13 | 704 | 0.9+ | 0.4+ | 2006 11 17 | 703 | 0.4+ | 1.4+ |
| 2004 04 12 | 703 | (1.1+ | 1.7+) | 2004 05 13 | 704 | 0.1− | 0.7+ | 2006 11 23 | 703 | 0.8+ | 1.2− |
| 2004 04 12 | 703 | 0.3− | 0.0 | 2005 07 29 | 699 | 0.8+ | 0.6+ | 2006 11 23 | 703 | 0.7− | 0.0 |
| 2004 04 12 | 703 | 1.2− | 0.9+ | 2005 07 29 | 699 | 0.6+ | 0.0 | 2006 11 23 | 703 | 0.1− | 1.3+ |
| 2004 04 12 | 703 | 0.9+ | 0.0 | 2005 07 29 | 699 | 0.7− | 0.2− | 2006 11 23 | 703 | 0.7− | 0.6+ |
| 2004 04 15 | 704 | 0.2− | 0.8+ | 2005 07 29 | 699 | 0.4+ | 0.2+ | | | | |

**(144708)∗ 2004 GM$_{18}$**

Discovered 2004 Apr. 13 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.03241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18151356 | $\omega$ | 53.81570 | | −0.95770108 | −0.21973811 | |
| $a$ | 3.0893231 | $\Omega$ | 112.83362 | | +0.15303061 | −0.93571620 | |
| $e$ | 0.0746020 | $i$ | 11.63080 | | +0.24370118 | −0.27595353 | |
| $P$ | 5.43 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.1− | 0.7+ | 2004 04 15 | 704 | 0.6+ | 1.4+ | 2004 05 12 | 644 | 0.3+ | 0.3+ |
| 2001 10 23 | 644 | 0.8− | 0.1+ | 2004 04 22 | 704 | 0.4+ | 0.1+ | 2004 05 12 | 703 | 0.3+ | 0.7− |
| 2001 10 23 | 644 | 0.4− | 0.2+ | 2004 04 22 | 704 | 0.0 | 0.1− | 2004 05 12 | 703 | 1.1+ | 0.6− |
| 2002 12 11 | 704 | 0.3− | 1.5+ | 2004 04 22 | 704 | 0.3+ | 0.2− | 2004 05 12 | 703 | 0.4+ | 0.6+ |
| 2002 12 11 | 704 | 1.1− | 0.4+ | 2004 04 22 | 704 | 0.2+ | 0.1+ | 2004 05 12 | 703 | (3.3− | 0.5+) |
| 2002 12 11 | 704 | 0.6− | 1.1+ | 2004 04 22 | 704 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.8− | 0.3+ |
| 2002 12 31 | 704 | 0.9+ | 0.0 | 2004 04 23 | 012 | 0.9+ | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.4+ |
| 2002 12 31 | 704 | 0.4+ | 0.8+ | 2004 04 23 | 012 | 0.3− | 0.6− | 2006 08 16 | 644 | 0.2− | 0.6+ |
| 2002 12 31 | 704 | 0.5+ | 0.9+ | 2004 04 23 | 012 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.3+ |
| 2002 12 31 | 704 | 0.8+ | 1.3+ | 2004 04 23 | 012 | 0.5+ | 0.4+ | 2006 08 16 | 644 | 0.7+ | 0.3− |
| 2004 03 15 | 704 | 0.6+ | 1.4+ | 2004 04 23 | 012 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.4+ | 0.4+ |
| 2004 03 15 | 704 | 0.4+ | 0.6+ | 2004 04 23 | 012 | 0.2− | 0.3− | 2006 08 22 | 644 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | 1.0+ | 0.4+ | 2004 04 23 | 012 | 0.4+ | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.7+ |
| 2004 03 15 | 704 | 0.5+ | 0.5+ | 2004 04 23 | 012 | 0.3− | 0.5+ | 2006 08 22 | 644 | 0.3− | 0.5+ |
| 2004 03 16 | 106 | 0.3− | 0.1+ | 2004 04 24 | 704 | 0.3− | 0.3+ | 2006 08 30 | 699 | 0.3− | 1.3+ |
| 2004 03 16 | 106 | 0.1+ | 0.4+ | 2004 04 24 | 704 | 0.4− | 0.3− | 2006 08 30 | 699 | 0.6− | 0.8+ |
| 2004 03 16 | 106 | 0.0 | 0.2− | 2004 04 24 | 704 | 0.4+ | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.6+ |
| 2004 03 22 | 699 | (2.3− | 0.7−) | 2004 04 24 | 703 | 0.8+ | 0.5− | 2006 08 30 | 699 | (3.5+ | 0.5+) |
| 2004 03 22 | 699 | 0.1− | 0.4+ | 2004 04 24 | 704 | (2.0+ | 0.3+) | 2006 09 20 | 703 | 0.9− | 0.6+ |
| 2004 03 22 | 699 | 0.2− | 0.0 | 2004 04 24 | 703 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.6− | 0.5+ |
| 2004 03 22 | 699 | 0.7− | 0.0 | 2004 04 24 | 704 | 0.1− | 0.9+ | 2006 09 20 | 703 | 1.0− | 0.7+ |
| 2004 03 28 | 703 | 0.4− | 0.6+ | 2004 04 24 | 703 | 0.9+ | 0.7+ | 2006 09 20 | 703 | 0.7− | 1.6+ |
| 2004 03 28 | 703 | 0.6+ | 0.5+ | 2004 04 24 | 703 | 0.1− | 1.3− | 2006 09 26 | 703 | 0.4+ | 0.3+ |
| 2004 03 28 | 703 | 0.9− | 0.2+ | 2004 04 24 | 012 | 0.5+ | 0.1− | 2006 09 26 | 703 | 1.0+ | 0.9+ |
| 2004 03 28 | 703 | 0.9+ | 0.3− | 2004 04 24 | 012 | 1.2+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 1.5− |
| 2004 03 28 | 703 | 0.1− | 0.4+ | 2004 04 24 | 012 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 2.0− | 0.2− |
| 2004 03 28 | 703 | 1.4− | 0.0 | 2004 04 24 | 012 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.7+ | 1.2+ |
| 2004 03 28 | 703 | 0.1− | 0.2+ | 2004 04 24 | 012 | 1.1− | 0.2− | 2006 09 26 | 703 | 0.7+ | 1.2+ |
| 2004 03 28 | 703 | 0.4− | 0.1+ | 2004 04 24 | 012 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.9− | 0.1− |
| 2004 04 13 | 703 | 0.3+ | 0.5+ | 2004 04 24 | 012 | 1.5− | 1.0+ | 2006 09 26 | 703 | 0.1+ | 0.9+ |
| 2004 04 13 | 703 | 0.4+ | 0.4+ | 2004 04 25 | 699 | 1.5− | 1.7+ | 2006 09 26 | 703 | 1.7− | 1.0+ |
| 2004 04 13 | 703 | 0.2+ | 0.1+ | 2004 04 25 | 699 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 0.5+ | 1.1+ |
| 2004 04 13 | 703 | 0.4+ | 0.0 | 2004 04 25 | 699 | 1.0− | 0.3+ | 2006 09 26 | 703 | 0.5+ | 0.3+ |
| 2004 04 15 | 704 | 0.9+ | 0.7+ | 2004 04 25 | 699 | 0.9− | 1.0+ | 2006 09 26 | 703 | 0.4+ | 0.0 |
| 2004 04 15 | 704 | 0.0 | 0.4+ | 2004 05 12 | 644 | 0.3+ | 0.7+ | | | | |
| 2004 04 15 | 704 | 0.8+ | 0.2+ | 2004 05 12 | 644 | 0.1+ | 0.2− | | | | |

**(144709)∗ 2004 GL$_{21}$ = 1999 CM$_{108}$ = 2001 SP$_{6}$**

Discovered 2004 Apr. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62151)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.50290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22588631 | $\omega$ | 327.84625 | | −0.77653771 | −0.62983670 | |
| $a$ | 2.6701937 | $\Omega$ | 173.03925 | | +0.60392107 | −0.75180341 | |
| $e$ | 0.0760713 | $i$ | 8.14654 | | +0.17963445 | −0.19518547 | |
| $P$ | 4.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | (2.3+ | 0.6+) | 2002 12 14 | 704 | 0.0 | 0.4− | 2004 05 23 | 704 | 0.1+ | 0.4+ |
| 1999 02 12 | 704 | (3.0+ | 0.4+) | 2002 12 14 | 704 | 0.9− | 0.6+ | 2004 05 23 | 704 | 0.1+ | 0.3+ |
| 1999 02 12 | 704 | 0.8− | 0.5+ | 2002 12 14 | 704 | 0.2+ | 0.6+ | 2004 05 23 | 704 | 0.4+ | 1.4+ |
| 1999 02 16 | 704 | 0.8+ | 0.9− | 2004 04 11 | 644 | 0.5− | 0.9+ | 2005 07 08 | 691 | 0.1+ | 0.3− |
| 1999 02 16 | 704 | 1.0− | 0.8+ | 2004 04 11 | 644 | 0.2− | 0.2+ | 2005 07 08 | 691 | 0.3− | 0.1+ |
| 1999 02 16 | 704 | 0.6− | 0.1+ | 2004 04 11 | 644 | 0.1+ | 0.2− | 2005 07 08 | 691 | 0.0 | 0.3− |
| 1999 02 16 | 704 | 1.6+ | 0.3− | 2004 04 16 | 704 | (1.6+ | 0.0 ) | 2005 08 06 | 644 | 0.2− | 0.5− |
| 2001 09 18 | 691 | 0.6− | 0.3+ | 2004 04 16 | 704 | 0.4+ | 0.5− | 2005 08 06 | 644 | 0.1+ | 0.4− |
| 2001 09 18 | 691 | 0.4− | 0.2+ | 2004 04 16 | 704 | 0.8+ | 0.2+ | 2005 08 06 | 644 | 0.2+ | 0.1− |
| 2001 09 18 | 691 | 0.1− | 0.2+ | 2004 04 16 | 704 | 1.0+ | 0.9+ | 2005 08 11 | A50 | (2.5− | 2.3−) |
| 2001 09 19 | 704 | 0.5− | 0.2+ | 2004 04 23 | 704 | 0.7+ | 0.3+ | 2005 08 11 | A50 | (1.6− | 1.8−) |
| 2001 09 19 | 691 | 0.4+ | 0.4+ | 2004 04 23 | 704 | (2.0+ | 1.2+) | 2006 10 22 | 703 | (0.6+ | 2.5+) |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2004 04 23 | 704 | 1.0+ | 0.4− | 2006 10 22 | 703 | 0.6+ | 0.9+ |
| 2001 09 19 | 704 | 0.5+ | 0.6+ | 2004 04 23 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.1− |
| 2001 09 19 | 691 | 0.2+ | 0.3+ | 2004 04 26 | 691 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.7+ | 0.3− |
| 2001 09 19 | 704 | 0.5− | 0.2+ | 2004 04 26 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.6− | 0.2+ |
| 2001 09 19 | 691 | 0.4+ | 0.1+ | 2004 04 26 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | (3.0− | 0.1+) |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2004 05 13 | 699 | 0.8− | 0.8+ | 2006 11 13 | 703 | 1.1− | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2004 05 13 | 699 | 1.0− | 0.6+ | 2006 11 13 | 703 | (1.8+ | 1.3+) |
| 2001 09 21 | 704 | 0.8− | 0.2− | 2004 05 13 | 699 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.2− | 0.9+ |
| 2001 09 21 | 704 | 0.2+ | 0.4− | 2004 05 13 | 699 | 0.2+ | 0.6− | 2006 11 19 | 703 | 1.5+ | 0.5+ |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2004 05 23 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 1.5− | 1.1+ |
| 2002 12 14 | 704 | 0.1+ | 1.2+ | 2004 05 23 | 704 | 0.5+ | 1.1+ | 2006 11 19 | 703 | 0.5+ | 1.9+ |

**(144710)∗ 2004 GR$_{21}$ = 2002 WA$_{18}$**

Discovered 2004 Apr. 11 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65694)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.09460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23192357 | $\omega$ | 10.50829 | | −0.86159359 | −0.50004431 | |
| $a$ | 2.6236514 | $\Omega$ | 139.10813 | | +0.45550978 | −0.83751573 | |
| $e$ | 0.2303983 | $i$ | 7.65902 | | +0.22398064 | −0.22027959 | |
| $P$ | 4.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.0 | 0.5+ | 2002 12 02 | 704 | 0.4− | 0.3+ | 2004 05 23 | 704 | 0.3+ | 0.5+ |
| 1998 12 15 | 704 | 0.3+ | 0.7− | 2002 12 02 | 704 | 0.1− | 1.1+ | 2004 05 23 | 704 | 0.1+ | 0.7+ |
| 1998 12 15 | 704 | (0.4+ | 2.2−) | 2002 12 02 | 704 | 1.2− | 0.2− | 2004 05 23 | 704 | 0.7− | 0.8+ |
| 1998 12 15 | 704 | (0.6− | 2.5−) | 2002 12 02 | 704 | 0.4+ | 1.4+ | 2004 05 23 | 704 | 0.3+ | 0.5+ |
| 1998 12 15 | 704 | (3.8− | 0.5−) | 2002 12 02 | 704 | (1.6− | 0.7+) | 2004 05 23 | 704 | 0.4+ | 1.0+ |
| 1998 12 22 | 704 | (2.5− | 0.3+) | 2004 03 23 | 704 | 0.2+ | 0.7− | 2005 07 09 | 691 | 0.4− | 0.7− |
| 1998 12 22 | 704 | 0.5+ | 0.8− | 2004 03 23 | 704 | 0.0 | 0.4+ | 2005 07 09 | 691 | 0.1+ | 0.1+ |
| 1998 12 22 | 704 | 0.8− | 0.2+ | 2004 03 23 | 704 | 0.3− | 0.2+ | 2005 07 09 | 691 | 0.3+ | 0.3+ |
| 1998 12 22 | 704 | 0.1− | 1.5− | 2004 04 11 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | (1.7+ | 3.1−) |
| 1998 12 22 | 704 | (0.6+ | 2.2−) | 2004 04 11 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2001 05 23 | 807 | 0.0 | 0.0 | 2004 04 11 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | (1.9+ | 0.6−) |
| 2001 05 23 | 807 | 0.2− | 0.1− | 2004 04 16 | 704 | 0.8+ | 0.4− | 2006 10 16 | 703 | 1.0+ | 0.3+ |
| 2002 11 06 | 291 | 0.2− | 0.2+ | 2004 04 16 | 704 | 1.2+ | 0.0 | 2006 10 22 | 703 | 0.5+ | 0.5+ |
| 2002 11 06 | 291 | 0.0 | 0.4+ | 2004 04 16 | 704 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.7− | 0.8− |
| 2002 11 06 | 291 | 0.3− | 0.3+ | 2004 05 12 | 699 | 0.0 | 0.8+ | 2006 10 22 | 703 | (0.2+ | 1.8−) |
| 2002 11 30 | 704 | 0.0 | 0.3+ | 2004 05 12 | 699 | 0.3− | 1.1+ | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2002 11 30 | 704 | 0.3+ | 0.3+ | 2004 05 12 | 699 | 1.1− | 0.1+ | 2006 11 16 | 703 | 1.0− | 0.7− |
| 2002 11 30 | 704 | 0.5+ | 0.1+ | 2004 05 12 | 699 | 0.3− | 0.6− | 2006 11 16 | 703 | 0.6− | 0.5− |
| 2002 11 30 | 704 | 0.0 | 0.8+ | 2004 05 14 | 704 | 0.8+ | 0.6+ | 2006 11 16 | 703 | 1.4+ | 0.4+ |
| 2002 12 02 | 704 | 0.2+ | 0.3+ | 2004 05 14 | 704 | 0.1− | 0.0 | 2006 11 16 | 703 | (0.9− | 1.5+) |
| 2002 12 02 | 704 | 0.8+ | 1.3+ | 2004 05 14 | 704 | 0.0 | 0.1− | | | | |
| 2002 12 02 | 704 | (2.0+ | 1.3−) | 2004 05 14 | 704 | 0.3+ | 0.4+ | | | | |

**(144711)∗ 2004 GV$_{21}$ = 2001 TO$_{197}$**

Discovered 2004 Apr. 12 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 65694)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.62898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21534440 | $\omega$ | 352.60361 | | −0.57854636 | +0.80579602 | |
| $a$ | 2.7566417 | $\Omega$ | 241.96572 | | −0.74081966 | −0.58396158 | |
| $e$ | 0.2281233 | $i$ | 8.23318 | | −0.34127751 | −0.09839538 | |
| $P$ | 4.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.0 | 1.4+ | 2004 03 14 | 644 | 0.4− | 0.0 | 2004 04 16 | 704 | 0.8+ | 0.0 |
| 2001 09 28 | 644 | 0.2+ | 1.2+ | 2004 03 14 | 644 | 0.3− | 0.3+ | 2004 04 16 | 704 | 0.1+ | 0.1+ |
| 2001 09 28 | 644 | 0.1− | 1.4+ | 2004 03 14 | 644 | 0.3− | 0.0 | 2004 04 16 | 704 | 0.7− | 0.2+ |
| 2001 10 12 | 599 | 1.0− | 0.2− | 2004 03 23 | 704 | 0.4+ | 0.2+ | 2004 04 16 | 704 | 0.5− | 0.2− |
| 2001 10 12 | 599 | 0.3− | 1.3+ | 2004 03 23 | 704 | 0.9+ | 0.4− | 2005 08 29 | 644 | 0.0 | 0.4+ |
| 2001 10 12 | 599 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.6+ | 0.1− | 2005 08 29 | 644 | 0.1+ | 0.4+ |
| 2001 10 13 | 599 | 0.8− | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2005 08 29 | 644 | 0.2− | 0.4+ |
| 2001 10 13 | 599 | 0.5+ | 0.9− | 2004 03 23 | 704 | 0.7+ | 0.4+ | 2006 10 20 | 695 | 0.2− | 0.2+ |
| 2001 10 13 | 599 | 0.1− | 0.6+ | 2004 03 31 | 703 | 0.1+ | 0.1− | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 2004 02 17 | 703 | 0.1− | 0.6+ | 2004 03 31 | 703 | 0.7− | 0.3+ | 2006 10 21 | 691 | 0.3+ | 0.1+ |
| 2004 02 17 | 703 | 0.1+ | 0.2− | 2004 03 31 | 703 | 1.1+ | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2004 02 17 | 703 | (0.0 | 1.6−) | 2004 03 31 | 703 | 0.8− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2004 02 17 | 703 | 0.1− | 0.3− | 2004 03 31 | 704 | 0.6− | 1.2+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2004 03 01 | 703 | 1.2+ | 0.1+ | 2004 03 31 | 704 | 0.4+ | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2004 03 01 | 703 | 1.3+ | 1.0+ | 2004 03 31 | 704 | 0.1+ | 0.5− | 2006 11 01 | G96 | 0.3+ | 0.5− |
| 2004 03 01 | 703 | 0.2+ | 0.4+ | 2004 03 31 | 704 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2004 03 01 | 703 | 0.6+ | 0.4+ | 2004 04 12 | 703 | 0.9− | 1.3− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2004 03 14 | 644 | 0.2− | 0.0 | 2004 04 12 | 703 | 0.2+ | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2004 03 14 | 644 | 0.2− | 0.0 | 2004 04 12 | 703 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 1.2− |
| 2004 03 14 | 644 | 0.3− | 0.2+ | 2004 04 12 | 703 | 1.3− | 0.6− | 2006 11 18 | G96 | 0.1− | 0.0 |

**(144712)∗ 2004 GN$_{22}$**

Discovered 2004 Apr. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.54064 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19759302 | $\omega$ | 157.79472 | | −0.18848132 | +0.98126824 | |
| $a$ | 2.9193644 | $\Omega$ | 101.32326 | | −0.90703611 | −0.15838242 | |
| $e$ | 0.1506395 | $i$ | 2.32877 | | −0.37651067 | −0.10967064 | |
| $P$ | 4.99 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 23 | 691 | 0.1− | 0.6+ | 2004 04 19 | 704 | 0.7+ | 1.4+ | 2005 08 05 | 644 | 0.4− | 0.4+ |
| 1998 01 23 | 691 | 0.2− | 0.2− | 2004 04 19 | 704 | 0.2− | 1.0+ | 2005 08 29 | 699 | 0.8− | 0.8+ |
| 1998 01 23 | 691 | 0.4− | 0.0 | 2004 04 19 | 704 | 0.6+ | 0.8+ | 2005 08 29 | 699 | 0.4+ | 0.5+ |
| 2000 08 29 | 704 | 0.2+ | 0.6+ | 2004 04 22 | 704 | 0.4+ | 0.2+ | 2005 08 29 | 699 | 0.4+ | 0.1+ |
| 2000 08 29 | 704 | 0.6− | 1.1+ | 2004 04 22 | 704 | 0.6+ | 0.9+ | 2005 08 29 | 699 | (0.0 | 1.6+) |
| 2000 08 29 | 704 | 0.3+ | 0.0 | 2004 04 22 | 704 | 1.0+ | 0.6+ | 2005 11 06 | G96 | 0.1− | 0.1+ |
| 2000 08 29 | 704 | 0.4+ | 0.8+ | 2004 04 23 | 691 | 0.0 | 0.0 | 2005 11 06 | G96 | 0.7− | 0.1− |
| 2001 11 21 | 704 | (0.0 | 1.6+) | 2004 04 23 | 691 | 0.0 | 0.1+ | 2005 11 06 | G96 | 0.3− | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 1.1+ | 2004 04 23 | 691 | 0.0 | 0.3+ | 2005 11 06 | G96 | 0.3− | 0.2+ |
| 2001 11 21 | 704 | 0.5+ | 0.7+ | 2004 04 25 | 704 | 1.4+ | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.4+ |
| 2003 02 01 | 645 | 0.1+ | 0.0 | 2004 04 25 | 704 | 1.1+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 2003 02 01 | 645 | 0.1+ | 0.1− | 2004 04 25 | 704 | 0.9+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2004 04 12 | 644 | 0.1+ | 0.2+ | 2004 04 25 | 704 | 0.9+ | 0.8+ | 2006 09 28 | G96 | 0.6− | 0.2+ |
| 2004 04 12 | 644 | 0.1− | 0.2+ | 2004 04 25 | 704 | 1.0+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.5+ |
| 2004 04 12 | 644 | 0.0 | 0.3+ | 2004 05 12 | 699 | 0.3+ | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2004 04 12 | 699 | 0.4+ | 0.2− | 2004 05 12 | 699 | 0.9− | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2004 04 12 | 699 | 0.2+ | 0.2+ | 2004 05 12 | 699 | 0.0 | 0.8+ | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2004 04 12 | 699 | 0.5− | 0.2− | 2004 05 12 | 699 | 0.0 | 0.5− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2004 04 12 | 699 | (1.7− | 0.1+) | 2004 05 15 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2004 04 16 | 704 | 0.2− | 0.2+ | 2004 05 15 | 691 | 0.4− | 0.4+ | 2006 11 17 | 703 | 1.5− | 0.8+ |
| 2004 04 16 | 704 | 0.0 | 0.8+ | 2004 05 15 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.5+ |
| 2004 04 16 | 704 | 0.2− | 0.1+ | 2005 07 29 | 644 | 0.3− | 0.8+ | 2006 11 17 | 703 | 0.7+ | 0.7+ |
| 2004 04 16 | 704 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.3− | 0.4+ | 2006 11 17 | 703 | 1.2− | 0.7+ |
| 2004 04 16 | 704 | 0.3− | 0.4+ | 2005 07 29 | 644 | 0.3− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.5+ |
| 2004 04 19 | 704 | 0.4+ | 0.9+ | 2005 08 05 | 644 | 0.3− | 0.5+ | 2006 11 21 | 691 | 0.5− | 0.4+ |
| 2004 04 19 | 704 | 0.4− | 0.1+ | 2005 08 05 | 644 | 0.1− | 0.4+ | 2006 11 21 | 691 | 0.5− | 0.2+ |

**(144713)∗ 2004 GF$_{23}$ = 1998 TM$_{13}$**

Discovered 2004 Apr. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 62152)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.80330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24434061 | $\omega$ | 10.31627 | | −0.69346414 | −0.72041991 | |
| $a$ | 2.5339942 | $\Omega$ | 123.58956 | | +0.66016832 | −0.64097370 | |
| $e$ | 0.1635718 | $i$ | 0.69686 | | +0.28859190 | −0.26485442 | |
| $P$ | 4.03 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 05 | 691 | 0.2− | 0.2+ | 2004 04 16 | 704 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.3− |
| 1997 08 05 | 691 | 0.0 | 0.3+ | 2004 04 16 | 704 | 0.2+ | 1.0+ | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 1997 08 05 | 691 | 0.1− | 0.5+ | 2004 04 16 | 644 | 0.6+ | 0.9+ | 2006 10 12 | 691 | 0.4+ | 0.4− |
| 1998 10 13 | 691 | 0.9− | 0.1− | 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.8+ |
| 1998 10 13 | 691 | 0.6− | 0.1+ | 2004 04 16 | 644 | 0.6+ | 1.0+ | 2006 10 12 | 691 | 0.0 | 0.3+ |
| 1998 10 13 | 691 | 1.1− | 0.3+ | 2004 04 16 | 644 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 1998 10 18 | 691 | 0.3− | 0.1+ | 2004 04 16 | 644 | 0.5+ | 0.9+ | 2006 10 20 | 691 | 0.5− | 0.3+ |
| 1998 10 18 | 691 | 0.5+ | 0.1− | 2004 04 16 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.3− |
| 1998 10 18 | 691 | 0.0 | 0.1+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.4+ |
| 1998 11 25 | 691 | 0.4+ | 0.3− | 2004 04 19 | 691 | 0.2+ | 0.6+ | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 1998 11 25 | 691 | 0.6+ | 0.0 | 2004 04 19 | 691 | 0.1− | 0.6+ | 2006 10 29 | 691 | 0.2− | 0.3+ |
| 1998 11 25 | 691 | 0.7+ | 0.9− | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 1998 12 09 | 691 | 0.3+ | 0.4+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 1998 12 09 | 691 | 0.1+ | 0.2− | 2004 04 25 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.6− | 0.1+ |
| 1998 12 09 | 691 | 0.5+ | 0.1− | 2004 04 26 | 568 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.5+ |
| 2004 04 12 | 644 | 0.3+ | 0.3+ | 2004 04 26 | 568 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2004 04 12 | 644 | 0.8+ | 0.2+ | 2004 04 26 | 568 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2004 04 12 | 644 | 0.6+ | 0.2+ | 2004 04 27 | 568 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.3+ | 0.8+ |
| 2004 04 12 | 691 | 0.1+ | 0.2+ | 2004 05 19 | 691 | 0.6− | 0.1+ | 2006 11 22 | 691 | 0.4− | 0.1+ |
| 2004 04 12 | 691 | 0.2+ | 0.2+ | 2004 05 19 | 691 | 0.4− | 0.7+ | 2006 11 22 | 691 | 0.2+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.3+ | 0.1+ | 2004 05 19 | 691 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.5+ |
| 2004 04 16 | 704 | 0.2− | 0.6− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2004 04 16 | 704 | 1.0+ | 0.8− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.2− | 0.3+ |

**(144714)∗ 2004 GH$_{24}$**

Discovered 2004 Apr. 13 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.62658 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21294471 | $\omega$ | 114.34744 | | −0.95888416 | +0.22840878 | |
| $a$ | 2.7773129 | $\Omega$ | 79.20921 | | −0.27952149 | −0.86275176 | |
| $e$ | 0.0919196 | $i$ | 9.87317 | | +0.04908052 | −0.45109735 | |
| $P$ | 4.63 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.1− | 0.7+ | 2004 04 16 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2001 10 15 | 644 | 0.0 | 0.7+ | 2004 04 16 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 2001 10 15 | 644 | 0.1− | 0.9+ | 2004 04 16 | 704 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 1.2− |
| 2001 10 23 | 644 | 0.4− | 0.4− | 2004 04 16 | 704 | 0.4− | 0.4− | 2006 10 22 | 703 | 1.3− | 0.1+ |
| 2001 10 23 | 644 | 0.1− | 0.1− | 2004 04 23 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 703 | (1.7− | 1.4−) |
| 2001 10 23 | 644 | 0.4− | 0.1− | 2004 04 23 | 704 | 0.1− | 0.8+ | 2006 10 22 | 703 | (2.1− | 1.2+) |
| 2002 12 11 | 704 | 1.4− | 0.1− | 2004 04 23 | 704 | 0.8− | 0.9+ | 2006 10 22 | 703 | 0.4− | 0.6− |
| 2002 12 11 | 704 | 0.9+ | 0.2− | 2004 04 23 | 704 | 0.1− | 0.8+ | 2006 11 01 | 703 | 0.5+ | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.7− | 2004 04 23 | 704 | 0.2+ | 0.6+ | 2006 11 01 | 703 | 0.1− | 1.0+ |
| 2002 12 11 | 704 | 0.7− | 0.1+ | 2004 04 30 | 608 | 0.2+ | 0.3− | 2006 11 01 | 703 | 0.5− | 0.8− |
| 2002 12 11 | 704 | 0.8− | 0.8+ | 2004 04 30 | 608 | 0.1− | 0.6− | 2006 11 01 | 703 | 1.2+ | 0.1+ |
| 2003 01 09 | 704 | 0.1+ | 1.0+ | 2004 04 30 | 608 | 0.7+ | 0.8− | 2006 11 10 | 644 | 0.0 | 0.8+ |
| 2003 01 09 | 704 | 1.0+ | 0.2− | 2004 05 14 | 704 | 0.8+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2003 01 09 | 704 | 0.2+ | 0.1− | 2004 05 14 | 704 | 0.5− | 0.4− | 2006 11 10 | 644 | 0.3− | 0.5+ |
| 2003 01 09 | 704 | 0.9+ | 0.1+ | 2004 05 14 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2004 01 23 | 704 | (0.1+ | 1.7+) | 2004 05 14 | 704 | 0.9+ | 1.2+ | 2006 11 11 | 703 | 0.7+ | 1.2+ |
| 2004 01 23 | 704 | (0.6+ | 1.9+) | 2004 05 14 | 704 | 0.7+ | 0.4+ | 2006 11 11 | 703 | 1.3− | 0.2+ |
| 2004 01 23 | 704 | 0.3− | 0.4+ | 2004 05 18 | 704 | 0.8+ | 1.3+ | 2006 11 11 | 703 | (0.7− | 1.6+) |
| 2004 03 27 | 699 | (1.9+ | 0.0 ) | 2004 05 18 | 704 | 0.0 | 1.0+ | 2006 11 19 | 703 | 0.2+ | 0.6+ |
| 2004 03 27 | 699 | 0.0 | 0.7− | 2004 05 18 | 704 | 0.1− | 0.9+ | 2006 11 19 | 703 | 0.3+ | 0.7+ |
| 2004 03 27 | 699 | 0.3+ | 0.2− | 2004 05 18 | 704 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.8− | 1.0+ |
| 2004 03 27 | 699 | 0.4− | 1.2+ | 2004 05 18 | 704 | 0.2− | 0.9+ | 2006 11 19 | 703 | 0.9+ | 0.4+ |
| 2004 04 13 | 703 | 0.4+ | 1.1− | 2004 05 22 | 704 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2004 04 13 | 703 | 0.5+ | 0.2− | 2004 05 22 | 704 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 04 13 | 703 | 0.2+ | 0.8− | 2004 05 22 | 704 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 04 13 | 703 | 1.1− | 0.2+ | 2004 05 22 | 704 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 04 16 | 704 | 0.2+ | 0.8− | 2006 10 16 | 703 | 0.4− | 0.5+ | | | | |

**(144715)∗ 2004 GN$_{26}$ = 2001 VS$_{126}$**

Discovered 2004 Apr. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 65697)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.25617 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20227549 | $\omega$ | 196.88026 | | −0.14041405 | +0.97503740 | |
| $a$ | 2.8741353 | $\Omega$ | 65.32389 | | −0.88512775 | −0.04577259 | |
| $e$ | 0.0864554 | $i$ | 10.91143 | | −0.44365839 | −0.21727157 | |
| $P$ | 4.87 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.2+ | 2004 04 16 | 704 | 1.1+ | 1.1+ | 2005 07 04 | 644 | 1.1− | 0.5+ |
| 1999 03 20 | 645 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.5+ | 0.3+ | 2005 07 04 | 644 | 0.9− | 0.2+ |
| 2001 11 10 | 704 | (1.5− | 0.6−) | 2004 04 20 | 704 | 0.7+ | 0.1− | 2005 07 04 | 644 | 1.0− | 0.2+ |
| 2001 11 10 | 704 | 0.9− | 0.5+ | 2004 04 20 | 704 | 0.5+ | 0.6− | 2005 07 27 | 644 | 0.6− | 0.1− |
| 2001 11 10 | 704 | 1.0− | 0.7− | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2005 07 27 | 644 | 0.8− | 0.6+ |
| 2001 11 10 | 704 | (0.4− | 2.0+) | 2004 04 22 | 704 | 0.4+ | 0.3+ | 2005 07 27 | 644 | 1.0− | 0.2+ |
| 2001 11 10 | 704 | 1.1− | 1.1+ | 2004 04 22 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.5+ | 0.3+ | 2004 04 22 | 704 | 0.3+ | 0.8− | 2006 10 12 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.6+ | 0.7+ | 2004 04 22 | 704 | 0.1− | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.6+ | 0.5+ | 2004 04 22 | 704 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | (1.6+ | 1.0+) | 2004 04 23 | 704 | 0.6− | 1.0− | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.5+ | 1.3+ | 2004 04 23 | 704 | 0.9− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2001 12 10 | 691 | 0.5+ | 1.3+ | 2004 04 23 | 704 | 1.4+ | 1.5− | 2006 11 14 | 691 | 0.4− | 0.1− |
| 2001 12 10 | 691 | 0.4+ | 1.5+ | 2004 04 23 | 704 | 0.5+ | 0.9− | 2006 11 14 | 691 | 0.3− | 0.2− |
| 2001 12 10 | 691 | 0.3+ | 1.5+ | 2004 05 18 | 704 | 0.5+ | 0.1+ | 2006 11 14 | 691 | 0.3− | 0.1− |
| 2004 04 14 | 699 | (1.4+ | 1.6+) | 2004 05 18 | 704 | 0.5+ | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.3− |
| 2004 04 14 | 699 | 0.1+ | 0.0 | 2004 05 18 | 704 | 1.0+ | 0.1+ | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2004 04 14 | 699 | (0.7+ | 2.3+) | 2004 05 22 | 704 | 0.7+ | 1.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 04 14 | 699 | 0.8+ | 0.2+ | 2004 05 22 | 704 | 0.8+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 1.5− |
| 2004 04 16 | 704 | 0.8+ | 1.2+ | 2004 05 22 | 704 | 0.7− | 0.6− | 2006 11 27 | 703 | 0.1− | 1.3− |
| 2004 04 16 | 704 | 0.0 | 0.8+ | 2004 05 22 | 704 | 0.4+ | 0.6+ | 2006 11 27 | 703 | 0.7− | 0.6− |
| 2004 04 16 | 704 | 1.0+ | 0.4+ | 2004 05 22 | 704 | 1.4+ | 0.1− | 2006 11 27 | 703 | 0.2− | 2.0− |
| 2004 04 16 | 704 | 0.4− | 0.1+ | 2004 05 22 | 704 | 0.2+ | 0.2+ | | | | |

**(144716)∗ 2004 GW$_{28}$**

Discovered 2004 Apr. 13 by V. Reddy at the Goodricke-Pigott Observatory, Tucson.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.84640 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19274207 | $\omega$ | 51.06983 | | −0.55621008 | −0.80731915 | |
| $a$ | 2.9681445 | $\Omega$ | 73.82833 | | +0.68474164 | −0.57963556 | |
| $e$ | 0.0489320 | $i$ | 11.84513 | | +0.47091318 | −0.11071774 | |
| $P$ | 5.11 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 10 | 691 | 1.0− | 0.1− | 2003 01 31 | 704 | 0.1+ | 0.6− | 2004 04 24 | 683 | (1.8− | 2.2+) |
| 1994 06 10 | 691 | 0.2+ | 1.3− | 2003 01 31 | 704 | 0.1− | 0.5− | 2004 04 24 | 683 | 0.3+ | 0.9− |
| 1994 06 10 | 691 | 0.5+ | 0.7− | 2003 01 31 | 704 | 1.3+ | 0.5+ | 2004 04 24 | 683 | 0.5− | 0.4+ |
| 1999 05 13 | 704 | 0.8− | 0.3+ | 2003 01 31 | 704 | 0.4+ | 0.7− | 2004 04 25 | 699 | 0.2+ | 0.2− |
| 1999 05 13 | 704 | 1.8− | 0.6+ | 2003 01 31 | 704 | 0.3− | 0.2− | 2004 04 25 | 699 | 0.2+ | 1.3+ |
| 1999 05 13 | 704 | 0.1+ | 1.1+ | 2004 03 23 | 704 | 0.2+ | 1.0+ | 2004 04 25 | 699 | 0.8+ | 0.1+ |
| 1999 05 13 | 704 | 1.0− | 0.0 | 2004 03 23 | 704 | 0.8− | 1.4+ | 2004 04 25 | 699 | 0.0 | 0.0 |
| 1999 05 13 | 704 | (5.2− | 0.2−) | 2004 03 23 | 704 | 0.1− | 1.3+ | 2004 05 13 | 683 | 0.3+ | 1.2− |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.6− | 0.9+ | 2004 05 13 | 683 | 0.8− | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 1.3− | 2004 03 23 | 704 | 0.0 | 1.2+ | 2004 05 13 | 683 | 0.4+ | 0.3+ |
| 2001 09 12 | 704 | 0.7+ | 0.0 | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2004 05 14 | 683 | (0.3− | 2.5+) |
| 2001 09 12 | 704 | 0.0 | 0.1− | 2004 03 30 | 691 | 0.3+ | 0.4+ | 2004 05 14 | 683 | (2.3+ | 2.7+) |
| 2001 09 21 | 644 | 0.0 | 1.2+ | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2004 05 14 | 683 | 1.3+ | 1.1+ |
| 2001 09 21 | 644 | 0.3+ | 0.7+ | 2004 04 13 | 683 | 0.9− | 1.2+ | 2006 09 25 | 703 | 0.2+ | 0.0 |
| 2001 09 21 | 644 | 0.3+ | 0.8+ | 2004 04 13 | 683 | 0.4+ | 0.6+ | 2006 09 25 | 703 | 0.0 | 0.3+ |
| 2001 10 15 | 644 | 1.0− | 0.2+ | 2004 04 13 | 683 | 0.5− | 0.6− | 2006 09 25 | 703 | 0.1− | 0.4− |
| 2001 10 15 | 644 | 0.7− | 0.2+ | 2004 04 20 | 683 | 1.1+ | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.4− |
| 2001 10 15 | 644 | 0.9− | 0.3+ | 2004 04 20 | 683 | (2.6+ | 0.6−) | 2006 10 21 | 703 | (2.3− | 2.0+) |
| 2001 10 23 | 644 | 0.5− | 0.0 | 2004 04 20 | 683 | 1.0+ | 0.4+ | 2006 10 21 | 703 | 0.9+ | 0.2+ |
| 2001 10 23 | 644 | 0.8− | 0.2+ | 2004 04 21 | 683 | 0.7+ | 0.5− | 2006 10 21 | 703 | 0.1− | 1.2+ |
| 2001 10 23 | 644 | 0.7− | 0.3+ | 2004 04 21 | 683 | (2.0+ | 0.3−) | 2006 10 21 | 703 | (1.6+ | 1.8+) |
| 2003 01 10 | 704 | 1.0− | 0.3+ | 2004 04 21 | 683 | 0.9+ | 0.6− | 2006 10 28 | 703 | 0.1+ | 1.0+ |
| 2003 01 10 | 704 | 0.3− | 1.0− | 2004 04 23 | 683 | (0.3+ | 2.1+) | 2006 10 28 | 703 | 0.9− | 0.2+ |
| 2003 01 10 | 704 | 0.4+ | 0.8− | 2004 04 23 | 683 | 0.5+ | 0.5− | 2006 10 28 | 703 | 0.2+ | 1.0+ |
| 2003 01 10 | 704 | 1.0+ | 0.5+ | 2004 04 23 | 683 | 1.2+ | 1.0+ | 2006 10 28 | 703 | 0.9− | 1.1+ |

**(144717)∗ 2004 GG$_{29}$**

Discovered 2004 Apr. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.87295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19275106 | $\omega$ | 64.64913 | | +0.01000265 | +0.99666099 | |
| $a$ | 2.9680522 | $\Omega$ | 206.31084 | | −0.97054712 | −0.00983098 | |
| $e$ | 0.0952899 | $i$ | 10.53440 | | −0.24070364 | +0.08105687 | |
| $P$ | 5.11 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 14 | 691 | 1.7− | 0.5+ | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.0 |
| 1994 05 14 | 691 | 0.4+ | 0.5+ | 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 1994 05 14 | 691 | 1.0+ | 0.4− | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.4− | 0.3− |
| 2000 09 03 | 704 | 0.1+ | 1.3+ | 2004 04 21 | 704 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2000 09 03 | 704 | 0.8+ | 0.1+ | 2004 04 21 | 704 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.3− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.8− | 1.1+ | 2004 04 21 | 704 | 0.0 | 0.8+ | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2000 09 03 | 704 | (0.9− | 2.4+) | 2004 04 21 | 704 | 0.6+ | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2000 09 23 | 704 | (1.2− | 2.7+) | 2004 04 21 | 704 | 0.8+ | 0.9+ | 2006 10 03 | G96 | 0.2− | 0.0 |
| 2000 09 23 | 704 | 0.6+ | 0.9+ | 2004 04 30 | 691 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.2− | 0.1− |
| 2000 09 23 | 704 | 0.2+ | 0.2+ | 2004 04 30 | 691 | 0.0 | 0.6+ | 2006 10 11 | 691 | 0.2− | 0.3+ |
| 2001 10 19 | 691 | 0.2− | 0.3+ | 2004 04 30 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2001 10 19 | 691 | 0.1+ | 0.5+ | 2004 05 15 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.4+ |
| 2001 10 19 | 691 | 0.2+ | 0.3+ | 2004 05 15 | 691 | 0.1− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.0 |
| 2001 12 11 | 704 | (2.2+ | 0.2−) | 2004 05 15 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.1− | 0.5+ |
| 2001 12 11 | 704 | 1.2+ | 0.2− | 2004 05 19 | 691 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 0.4+ | 0.0 | 2004 05 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 2004 03 31 | 704 | 1.2− | 1.2+ | 2004 05 19 | 691 | 0.5+ | 0.0 | 2006 10 19 | 691 | 0.4− | 0.5+ |
| 2004 03 31 | 704 | 0.1+ | 0.2+ | 2004 05 28 | 691 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2004 03 31 | 704 | 0.2+ | 0.5− | 2004 05 28 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2004 04 12 | 644 | 0.3+ | 0.6+ | 2004 05 28 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2004 04 12 | 644 | 0.3+ | 0.7+ | 2005 09 02 | 644 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 04 12 | 644 | 0.1+ | 0.6+ | 2005 09 02 | 644 | 0.5− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2004 04 15 | 699 | 0.7+ | 0.0 | 2005 09 02 | 644 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.4+ | 0.3+ |
| 2004 04 15 | 699 | 0.1− | 1.1+ | 2006 10 01 | 291 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2004 04 15 | 699 | 0.1− | 0.3+ | 2006 10 01 | 291 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2004 04 15 | 699 | 0.5− | 0.6+ | 2006 10 01 | 291 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.4+ | 0.0 |

**(144718)∗ 2004 GR$_{30}$ = 2001 SF$_{191}$**

Discovered 2004 Apr. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 62156)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 234.30009 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.23963411 | $\omega$ | 53.48517 | | −0.97976694 | +0.19433694 | |
| *a* | 2.5670655 | $\Omega$ | 137.66167 | | −0.19870832 | −0.91597075 | |
| *e* | 0.1241770 | *i* | 4.07432 | | −0.02391136 | −0.35104237 | |
| *P* | 4.11 | *H* | 16.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 31 | 691 | 0.0 | 0.5− | 2004 04 20 | 704 | 0.5+ | 0.0 | 2004 05 22 | 704 | 0.1+ | 0.1+ |
| 2000 05 31 | 691 | 0.1+ | 0.5− | 2004 04 20 | 704 | 0.4+ | 0.4− | 2005 07 30 | 644 | 0.0 | 0.4− |
| 2000 05 31 | 691 | 0.1+ | 0.6− | 2004 04 20 | 704 | 0.1− | 0.2+ | 2005 07 30 | 644 | 0.1− | 0.1− |
| 2000 06 23 | 691 | 0.2− | 0.3− | 2004 04 22 | 704 | 0.6+ | 0.1− | 2005 07 30 | 644 | 0.1− | 0.1− |
| 2000 06 23 | 691 | 0.2− | 0.2− | 2004 04 22 | 704 | 0.5+ | 0.0 | 2005 08 28 | 699 | 1.2+ | 0.1+ |
| 2000 06 23 | 691 | 0.2− | 0.3− | 2004 04 22 | 704 | 0.9− | 0.5+ | 2005 08 28 | 699 | (0.9− | 3.2+) |
| 2000 07 03 | 691 | 0.0 | 0.2− | 2004 04 22 | 704 | 0.4+ | 0.8+ | 2005 08 28 | 699 | 1.0− | 0.5+ |
| 2000 07 03 | 691 | 0.1− | 0.1− | 2004 05 01 | 703 | 0.7− | 1.3+ | 2005 08 28 | 699 | 1.1− | 1.3+ |
| 2000 07 03 | 691 | 0.1− | 0.0 | 2004 05 01 | 703 | 0.1− | 0.0 | 2005 09 11 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2004 05 01 | 703 | 0.1− | 1.1+ | 2005 09 11 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 1.2− | 0.0 | 2004 05 01 | 703 | 0.8− | 0.2+ | 2005 09 11 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2004 05 13 | 699 | 0.0 | 0.3+ | 2006 11 02 | G96 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.5− | 0.2− | 2004 05 13 | 699 | 0.7+ | 0.4+ | 2006 11 02 | G96 | 0.4+ | 0.2− |
| 2001 09 19 | 704 | 0.6− | 0.3− | 2004 05 13 | 699 | 0.1− | 0.2+ | 2006 11 02 | G96 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 1.2+ | 2004 05 13 | 699 | 0.3+ | 0.3+ | 2006 11 02 | G96 | 0.5+ | 0.4− |
| 2001 09 21 | 704 | 0.4+ | 0.9+ | 2004 05 14 | 704 | 1.0+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2004 05 14 | 704 | 0.8− | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.1+ | 1.0+ | 2004 05 14 | 704 | 0.3+ | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.1+ |
| 2004 04 12 | 699 | 0.5+ | 0.2− | 2004 05 14 | 704 | 0.1+ | 0.7+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2004 04 12 | 699 | 0.0 | 0.5+ | 2004 05 18 | 704 | 0.0 | 0.4+ | 2006 11 25 | H55 | 0.5− | 0.4+ |
| 2004 04 12 | 699 | 0.4+ | 0.5+ | 2004 05 18 | 704 | 0.2+ | 0.1− | 2006 11 25 | H55 | 0.2− | 0.6+ |
| 2004 04 12 | 699 | 0.5+ | 0.4− | 2004 05 18 | 704 | 0.1+ | 0.3+ | 2006 11 25 | H55 | 0.1− | 0.4+ |
| 2004 04 15 | 699 | 0.1+ | 1.1+ | 2004 05 18 | 704 | 0.2+ | 0.4+ | 2006 11 25 | H55 | 0.2− | 0.3+ |
| 2004 04 15 | 699 | 1.2− | 0.1− | 2004 05 18 | 704 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2004 04 15 | 699 | 0.5− | 0.6− | 2004 05 22 | 704 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2004 04 15 | 699 | 0.3+ | 0.4+ | 2004 05 22 | 704 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.4+ |
| 2004 04 20 | 704 | 0.6+ | 0.6+ | 2004 05 22 | 704 | 0.1+ | 1.2+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2004 04 20 | 704 | 0.2+ | 0.5+ | 2004 05 22 | 704 | 0.4+ | 1.2+ | | | | |

**(144719)∗ 2004 GC$_{31}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 93.22362 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18904239 | $\omega$ | 250.79947 | | +0.48758805 | +0.86177420 | |
| *a* | 3.0067449 | $\Omega$ | 49.19544 | | −0.71534955 | +0.48627040 | |
| *e* | 0.1178264 | *i* | 10.65934 | | −0.50053263 | +0.14452102 | |
| *P* | 5.21 | *H* | 15.2 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 04 | 608 | 0.6− | 1.2+ | 2005 08 22 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 2000 08 04 | 608 | 0.1− | 0.1+ | 2005 08 22 | 644 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2000 08 04 | 608 | 0.6− | 0.8+ | 2005 08 22 | 644 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.3+ |
| 2004 04 13 | 691 | 0.1− | 0.2+ | 2005 09 01 | 644 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.5− | 0.4+ |
| 2004 04 13 | 691 | 0.1− | 0.1+ | 2005 09 01 | 644 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.3+ |
| 2004 04 13 | 691 | 0.3− | 0.4+ | 2005 09 01 | 644 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.3+ |
| 2004 04 15 | 699 | 0.6+ | 0.3− | 2005 09 01 | E12 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2004 04 15 | 699 | 0.2+ | 0.1+ | 2005 09 01 | E12 | 0.0 | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2004 04 15 | 699 | 0.2− | 0.4+ | 2005 09 01 | E12 | 0.6+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.2− |
| 2004 04 15 | 699 | 0.2− | 0.2− | 2005 09 01 | E12 | 0.9+ | 0.4− | 2006 10 31 | G96 | 0.6+ | 0.0 |
| 2004 04 19 | 704 | 0.1+ | 0.2+ | 2005 09 08 | E12 | 0.6− | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2004 04 19 | 704 | 0.8+ | 1.1− | 2005 09 08 | E12 | 0.7+ | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 04 19 | 704 | 0.6− | 0.2+ | 2005 09 08 | E12 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2004 04 22 | 704 | 0.4− | 0.1+ | 2005 09 08 | E12 | 0.4+ | 0.6− | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2004 04 22 | 704 | 0.9− | 0.5+ | 2006 09 27 | G96 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2004 04 22 | 704 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.6+ | 0.1− | 2006 11 18 | 704 | (1.0+ | 1.8+) |
| 2004 04 22 | 704 | 0.9+ | 0.5− | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2004 04 25 | 703 | 1.0+ | 0.7+ | 2006 09 27 | G96 | 0.6− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2004 04 25 | 703 | 0.5− | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2004 04 25 | 703 | 0.8− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2004 04 25 | 703 | (2.8− | 0.1+) | 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.2+ |
| 2004 05 29 | 691 | 0.8+ | 0.5− | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2004 05 29 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 1.1+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2004 05 29 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.2− |

**(144720)∗ 2004 GE$_{32}$ = 2005 NZ$_{66}$**

Discovered 2004 Apr. 12 by NEAT at Palomar.

Id. A. Doppler (*MPO* 86460)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 203.20080 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.21710720 | $\omega$ | 229.31195 | | −0.98545793 | −0.04478912 | |
| *a* | 2.7416998 | $\Omega$ | 307.48093 | | +0.12275849 | −0.85463195 | |
| *e* | 0.1358145 | *i* | 11.92035 | | −0.11748630 | −0.51729891 | |
| *P* | 4.54 | *H* | 15.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | (1.7− | 1.4+) | 2004 04 12 | 644 | 0.4− | 0.5+ | 2006 09 28 | 703 | (2.3+ | 0.8+) |
| 2001 08 25 | 704 | (0.7+ | 1.9+) | 2004 04 17 | 704 | 0.9− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2001 08 25 | 704 | 1.1− | 0.5+ | 2004 04 17 | 704 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 2001 08 25 | 704 | (0.4− | 1.9+) | 2004 04 17 | 704 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2002 12 03 | 644 | 0.0 | 1.1+ | 2004 04 17 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 12 03 | 644 | 0.3+ | 1.0+ | 2004 04 24 | 703 | 0.1+ | 1.2+ | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2002 12 03 | 644 | 0.1+ | 1.4+ | 2004 04 24 | 703 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2002 12 12 | 644 | 0.0 | 0.4+ | 2004 04 24 | 703 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2002 12 12 | 644 | 0.3− | 0.2+ | 2004 04 24 | 703 | 1.1+ | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 12 12 | 644 | 0.1− | 0.1+ | 2004 05 14 | 644 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.9+ |
| 2004 01 19 | 608 | 0.2− | 0.8+ | 2004 05 14 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 703 | (0.3+ | 1.6+) |
| 2004 01 19 | 608 | 0.4− | 0.7+ | 2004 05 14 | 644 | 0.5+ | 0.6+ | 2006 10 19 | 703 | 1.3− | 0.4− |
| 2004 01 19 | 608 | 0.0 | 0.5+ | 2005 07 02 | 691 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.3− | 1.0− |
| 2004 03 17 | 704 | 0.6+ | 0.1+ | 2005 07 02 | 691 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.8+ | 0.4− |
| 2004 03 17 | 704 | 0.2+ | 0.4+ | 2005 07 02 | 691 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.8− |
| 2004 03 17 | 704 | 0.6+ | 0.2− | 2005 07 11 | 691 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2004 03 17 | 704 | 0.2+ | 0.0 | 2005 07 11 | 691 | 0.4− | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.3+ |
| 2004 03 17 | 704 | 1.3+ | 0.5+ | 2005 07 11 | 691 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.6− |
| 2004 03 26 | 704 | 1.0+ | 0.6+ | 2006 09 22 | 699 | 1.0+ | 0.2− | 2006 10 23 | 644 | 0.4− | 0.6+ |
| 2004 03 26 | 704 | 0.4+ | 0.6+ | 2006 09 22 | 699 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.6+ |
| 2004 03 26 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 699 | 0.7− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.9+ |
| 2004 03 26 | 704 | 0.1+ | 0.9+ | 2006 09 22 | 699 | (0.0 | 1.7+) | 2006 10 23 | 644 | 0.0 | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 704 | 0.4+ | 0.7− | 2006 09 28 | 703 | (1.9+ | 4.9+) | 2006 10 23 | 644 | 0.5− | 0.6+ | | |
| 2004 04 12 | 644 | 0.2− | 0.5+ | 2006 09 28 | 703 | 0.8− | 0.5− | 2006 10 23 | 644 | 0.3− | 0.4+ | | |
| 2004 04 12 | 644 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.8+ | | | | | | |

**(144721)∗ 2004 GD$_{34}$**

Discovered 2004 Apr. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.62932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17674999 | $\omega$ | 332.87199 | | −0.99061061 | +0.03950407 | |
| $a$ | 3.1445834 | $\Omega$ | 210.27444 | | −0.01565862 | −0.98382752 | |
| $e$ | 0.0390427 | $i$ | 15.04709 | | −0.13581396 | −0.17470786 | |
| $P$ | 5.58 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 0.3+ | 0.8− | 2004 05 23 | 704 | 0.5− | 0.3− | 2006 10 21 | 703 | 0.2− | 0.5− | | |
| 2000 09 27 | 704 | 0.7− | 0.4+ | 2004 05 23 | 704 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.6− | 1.5− | | |
| 2000 09 27 | 704 | 0.5+ | 0.7+ | 2004 06 09 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.4− | 0.3− | | |
| 2000 09 27 | 704 | 0.4+ | 1.6+ | 2004 06 09 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 1.0+ | 0.1+ | | |
| 2000 10 02 | 699 | 0.5− | 0.1− | 2004 06 09 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2000 10 02 | 699 | 0.7− | 0.8+ | 2004 06 16 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2000 10 02 | 699 | 1.4− | 1.2+ | 2004 06 16 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2000 10 02 | 699 | 1.1+ | 2.0− | 2004 06 16 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2− | | |
| 2001 12 11 | 704 | 0.4− | 0.5+ | 2005 07 11 | 703 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.2− | | |
| 2001 12 11 | 704 | 0.4− | 0.5+ | 2005 07 11 | 703 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2001 12 11 | 704 | 0.9+ | 0.5− | 2005 07 11 | 703 | 0.2− | 0.7+ | 2006 10 25 | 106 | (0.1+ | 2.1+) | | |
| 2003 02 06 | 644 | 0.0 | 0.8+ | 2005 07 11 | 703 | 1.3+ | 0.6+ | 2006 10 25 | 106 | 0.0 | 0.3+ | | |
| 2003 02 06 | 644 | 0.9+ | 1.1+ | 2005 08 25 | 644 | 0.3− | 0.3− | 2006 10 25 | 106 | 0.3+ | 0.3+ | | |
| 2003 02 06 | 644 | 0.4+ | 1.4+ | 2005 08 25 | 644 | 0.2− | 0.4− | 2006 10 25 | 106 | 1.2+ | 0.8+ | | |
| 2004 04 12 | 644 | 0.3− | 0.5+ | 2005 08 25 | 644 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.3− | | |
| 2004 04 12 | 644 | 0.1− | 0.5+ | 2005 08 26 | 644 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 2004 04 12 | 644 | 0.2− | 0.7+ | 2005 08 26 | 644 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.3+ | | |
| 2004 04 17 | 704 | 0.1− | 0.5− | 2005 08 26 | 644 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.0 | | |
| 2004 04 17 | 704 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.3+ | 0.7− | 2006 10 28 | G96 | 0.2− | 0.0 | | |
| 2004 04 17 | 704 | 0.5− | 0.2− | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.0 | | |
| 2004 04 17 | 704 | 1.0− | 1.3+ | 2006 09 18 | 699 | 0.4− | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2004 04 17 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 2004 04 20 | 704 | 0.5− | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.0 | | |
| 2004 04 20 | 704 | 0.5− | 0.1+ | 2006 10 11 | 691 | 0.6+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2004 04 20 | 704 | 0.3− | 0.6− | 2006 10 11 | 691 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.5− | 0.5+ | | |
| 2004 04 23 | 704 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2004 04 23 | 704 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2004 04 23 | 704 | 0.1− | 0.7+ | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 11 | 703 | (1.5− | 1.2−) | | |
| 2004 04 23 | 704 | 0.6+ | 1.2+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 1.0+ | | |
| 2004 04 23 | 704 | 0.6+ | 0.3− | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.3+ | | |
| 2004 05 15 | 704 | 0.8+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.2− | | |
| 2004 05 15 | 704 | 0.1+ | 1.1− | 2006 10 17 | 703 | 0.2+ | 0.6− | 2006 11 20 | G96 | 0.2+ | 0.3+ | | |
| 2004 05 15 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.4− | 2006 11 20 | G96 | 0.2− | 0.1+ | | |
| 2004 05 15 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.0 | | |
| 2004 05 15 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 1.1− | 0.0 | 2006 11 20 | G96 | 0.3− | 0.1− | | |
| 2004 05 15 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 1.9+ | 0.1− | | |
| 2004 05 15 | 704 | 0.7+ | 0.0 | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 27 | 703 | 0.7− | 0.1− | | |
| 2004 05 15 | 704 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.5− | 1.5+ | | |
| 2004 05 23 | 704 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.2+ | 1.0+ | | |
| 2004 05 23 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | | | | | |
| 2004 05 23 | 704 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.4− | 0.4+ | | | | | | |

**(144722)∗ 2004 GL$_{34}$**

Discovered 2004 Apr. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.13359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22772816 | $\omega$ | 156.38258 | | −0.33833223 | −0.92394713 | |
| $a$ | 2.6557767 | $\Omega$ | 312.85557 | | +0.81992680 | −0.19637048 | |
| $e$ | 0.0518313 | $i$ | 14.09090 | | +0.46179145 | −0.32826868 | |
| $P$ | 4.33 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.2− | 0.7+ | 2004 03 26 | 704 | 0.1+ | 0.1− | 2004 04 26 | 608 | 0.4− | 0.3− | | |
| 2001 08 17 | 644 | 0.5− | 0.6+ | 2004 03 26 | 704 | 0.4+ | 0.6+ | 2004 04 26 | 608 | 0.4− | 0.5− | | |
| 2001 08 17 | 644 | 0.1− | 0.4+ | 2004 03 26 | 704 | 0.2+ | 0.3+ | 2005 07 29 | E12 | 0.1− | 0.2+ | | |
| 2001 09 08 | 704 | 0.4− | 0.7+ | 2004 03 26 | 704 | 0.1− | 0.0 | 2005 07 29 | E12 | 0.4− | 0.3− | | |
| 2001 09 08 | 704 | 0.2+ | 1.1+ | 2004 03 26 | 704 | 0.1+ | 0.5+ | 2005 07 29 | E12 | 0.7− | 0.1+ | | |
| 2001 09 08 | 704 | 0.8+ | 0.3− | 2004 04 13 | 644 | 0.2+ | 0.1+ | 2005 07 29 | E12 | 1.1− | 0.6+ | | |
| 2002 12 07 | 704 | 0.4− | 0.3− | 2004 04 13 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.7+ | 0.5+ | | |
| 2002 12 07 | 704 | 0.3− | 0.4− | 2004 04 13 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.4+ | 0.7− | | |
| 2002 12 07 | 704 | 0.3− | 0.3+ | 2004 04 16 | 699 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.3− | 1.3− | | |
| 2002 12 07 | 704 | 0.3− | 0.7− | 2004 04 16 | 699 | 0.6+ | 0.4− | 2006 09 25 | 703 | (0.5− | 2.1−) | | |
| 2002 12 15 | 704 | 0.0 | 0.5+ | 2004 04 16 | 699 | 0.6− | 0.4+ | 2006 10 23 | 703 | 0.3− | 0.6+ | | |
| 2002 12 15 | 704 | 0.2− | 0.4− | 2004 04 16 | 699 | 0.4+ | 0.1+ | 2006 10 23 | 703 | 0.1+ | 0.7+ | | |
| 2002 12 15 | 704 | 0.4− | 0.9+ | 2004 04 16 | E12 | 0.1+ | 0.4+ | 2006 10 23 | 703 | 0.4− | 0.2+ | | |
| 2002 12 15 | 704 | 0.3− | 0.2+ | 2004 04 16 | E12 | 0.3+ | 0.7+ | 2006 10 23 | 703 | 0.5+ | 0.6+ | | |
| 2003 01 13 | 704 | (2.4− | 0.6−) | 2004 04 16 | E12 | 0.3− | 0.4+ | 2006 11 14 | 704 | 0.4− | 0.2− | | |
| 2003 01 13 | 704 | 0.5− | 0.0 | 2004 04 16 | E12 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.6+ | | |
| 2003 01 13 | 704 | 0.3+ | 0.6+ | 2004 04 17 | 644 | 0.4+ | 0.0 | 2006 11 14 | 704 | 0.1− | 0.7+ | | |
| 2003 01 13 | 704 | 0.4+ | 0.1+ | 2004 04 17 | 644 | 0.4+ | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.4+ | | |
| 2003 01 13 | 704 | 0.1− | 0.2+ | 2004 04 17 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.8+ | 0.1− | | |
| 2003 01 31 | 704 | 0.3+ | 1.3+ | 2004 04 17 | 644 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.2− | 0.1− | | |
| 2003 01 31 | 704 | 0.4− | 1.0+ | 2004 04 17 | 644 | 0.4+ | 0.3+ | 2006 11 22 | 703 | 0.4− | 0.2+ | | |
| 2003 01 31 | 704 | 0.0 | 0.3− | 2004 04 17 | 644 | 0.4+ | 0.3+ | 2006 11 22 | 703 | 0.7− | 0.4+ | | |
| 2003 01 31 | 704 | 0.2+ | 0.5− | 2004 04 26 | 608 | 0.4+ | 0.5− | 2006 11 22 | 703 | 0.0 | 0.4+ | | |

**(144723)∗ 2004 GQ$_{34}$ = 2005 ND$_{83}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86463)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.25296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23063890 | $\omega$ | 224.64577 | | −0.85498314 | −0.51761438 | |
| $a$ | 2.6333849 | $\Omega$ | 284.15534 | | +0.48482603 | −0.77511086 | |
| $e$ | 0.1004239 | $i$ | 1.94153 | | +0.18424860 | −0.36232376 | |
| $P$ | 4.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.3+ | 0.3+ | 2005 07 05 | 691 | 0.0 | 0.6+ | | |
| 2002 11 07 | 695 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.0 | 0.5+ | 2005 07 05 | 691 | 0.1− | 0.6+ | | |
| 2002 11 24 | 644 | 0.2− | 0.3+ | 2004 03 27 | 704 | 0.6+ | 0.5+ | 2005 07 05 | 691 | 0.0 | 0.6+ | | |
| 2002 11 24 | 644 | 0.4− | 0.7+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.1+ | | |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.1+ | | |
| 2002 12 05 | 704 | 0.7+ | 1.5− | 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.3− | 0.7+ | 2004 04 17 | 704 | 0.4+ | 0.9+ | 2006 09 28 | G96 | 0.5− | 0.1− | | |
| 2002 12 05 | 704 | 0.0 | 1.3+ | 2004 04 17 | 704 | 0.1+ | 1.5+ | 2006 10 21 | 691 | 0.4− | 0.4+ | | |
| 2002 12 05 | 704 | 0.4− | 0.9+ | 2004 04 17 | 704 | (0.1+ | 1.6+) | 2006 10 21 | 691 | 0.0 | 0.2+ | | |
| 2002 12 10 | 704 | 0.7+ | 0.2+ | 2004 04 17 | 704 | 1.5+ | 0.8+ | 2006 10 21 | 691 | 0.5− | 0.1+ | | |
| 2002 12 10 | 704 | 0.1− | 1.0+ | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.3+ | | |
| 2002 12 10 | 704 | 0.5− | 0.9+ | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.3+ | | |
| 2004 03 16 | 691 | 0.3+ | 0.3+ | 2004 04 20 | 704 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.4− | 0.3+ | | |
| 2004 03 16 | 691 | 0.1− | 0.6+ | 2005 07 03 | G96 | 0.5− | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.1− | | |
| 2004 03 16 | 691 | 0.3+ | 0.4+ | 2005 07 03 | G96 | 0.9− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.4+ | | |
| 2004 03 27 | 704 | 0.2+ | 0.2+ | 2005 07 03 | G96 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.4+ | 0.7+ | | |
| 2004 03 27 | 704 | 0.6− | 0.0 | 2005 07 03 | G96 | 0.1− | 0.3+ | | | | | | |

**(144724)∗ 2004 GX$_{34}$ = 2000 SL$_{304}$**

Discovered 2004 Apr. 13 by NEAT at Palomar.

Id. A. Doppler (*MPO* 69715)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.18793 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17642123 | $\omega$ | 62.25207 | | +0.30340471 | +0.93209599 | |
| $a$ | 3.1484888 | $\Omega$ | 226.87054 | | −0.94150185 | +0.26128850 | |
| $e$ | 0.2051734 | $i$ | 15.72919 | | −0.14669644 | +0.25084934 | |
| $P$ | 5.59 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.2+ | 0.2+ | 2005 07 04 | 703 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2000 09 30 | 704 | 0.6− | 0.0 | 2005 07 04 | 703 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2000 09 30 | 704 | 0.2− | 0.0 | 2005 07 04 | 703 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2000 10 03 | 704 | 0.2+ | 0.7+ | 2005 07 28 | 704 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2000 10 03 | 704 | 0.3− | 0.2− | 2005 07 28 | 704 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2000 10 03 | 704 | 0.2+ | 0.2− | 2005 07 28 | 704 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2000 10 25 | 704 | 1.3+ | 0.4− | 2005 07 28 | 704 | 0.7+ | 1.4+ | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 2000 10 25 | 704 | 0.6− | 0.4+ | 2005 08 06 | 644 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2000 10 25 | 704 | 0.1+ | 0.4+ | 2005 08 06 | 644 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2000 10 25 | 704 | 0.3− | 0.2− | 2005 08 06 | 644 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2004 03 26 | 704 | (1.0+ | 2.9+) | 2005 08 25 | 644 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2004 03 26 | 704 | (2.1+ | 0.7+) | 2005 08 25 | 644 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2004 03 26 | 704 | 1.4+ | 1.0+ | 2005 08 25 | 644 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2004 03 26 | 704 | 0.5− | 0.5+ | 2005 09 25 | 644 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.4− |
| 2004 03 27 | 699 | 0.1− | 0.2+ | 2005 09 25 | 644 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.1− | 1.1+ |
| 2004 03 27 | 699 | 1.0− | 1.1+ | 2005 09 25 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | (1.7− | 0.4−) |
| 2004 03 27 | 699 | (1.6− | 1.1−) | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3+ | 1.0+ |
| 2004 03 27 | 699 | 0.8− | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | (0.9+ | 1.9+) |
| 2004 04 13 | 644 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.5+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2004 04 13 | 644 | 0.3+ | 0.7+ | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2004 04 13 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2004 04 17 | 704 | 1.0+ | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.5+ |
| 2004 04 17 | 704 | (0.1+ | 1.6+) | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2004 04 17 | 704 | 0.6+ | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.6− |
| 2004 04 17 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2005 07 04 | 703 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | | | | |

**(144725)∗ 2004 GL$_{35}$ = 2001 ST$_{310}$ = 2003 AT$_{43}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76463, *MPO* 89545)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 358.77184 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22849878 | $\omega$ | 79.23986 | | +0.67692777 | −0.73553594 |
| $a$ | 2.6498022 | $\Omega$ | 328.10137 | | +0.65335272 | +0.61765369 |
| $e$ | 0.0199217 | $i$ | 2.98202 | | +0.33896759 | +0.27837170 |
| $P$ | 4.31 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | (0.1+ | 1.6+) | 2004 04 12 | 699 | (1.6+ | 1.0−) | 2005 07 09 | 691 | 0.3− | 0.0 |
| 2001 08 01 | 644 | 0.3+ | 1.3+ | 2004 04 13 | 691 | 0.3+ | 0.2+ | 2005 07 12 | 703 | (0.6+ | 1.6−) |
| 2001 08 01 | 644 | (0.0 | 1.6+) | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2005 07 12 | 703 | (1.3− | 2.1−) |
| 2001 09 20 | 704 | 0.8+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2005 07 12 | 703 | 0.6− | 0.1− |
| 2001 09 20 | 704 | 0.5+ | 0.1+ | 2004 04 17 | 704 | 0.8+ | 1.0+ | 2005 07 12 | 703 | 1.4− | 0.8+ |
| 2001 09 20 | 704 | 0.1+ | 0.8+ | 2004 04 17 | 704 | 1.1+ | 1.2+ | 2006 10 20 | G96 | 0.7− | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2004 04 17 | 704 | 1.4+ | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.1+ |
| 2001 09 20 | 704 | 0.9+ | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 1.0+ | 0.0 |
| 2001 10 11 | 644 | 0.5− | 0.1+ | 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2001 10 11 | 644 | 0.6− | 0.6+ | 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2001 10 11 | 644 | 0.6− | 0.1+ | 2004 05 24 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2003 01 05 | 704 | 1.0− | 0.5+ | 2004 05 24 | 691 | 0.3+ | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | 0.1+ | 1.0+ | 2004 05 24 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 1.0+ | 1.2+ |
| 2003 01 05 | 704 | 0.4− | 0.2+ | 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2003 01 05 | 704 | 1.0− | 0.4+ | 2005 06 30 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.1+ |
| 2003 01 09 | 704 | 0.5+ | 1.0+ | 2005 06 30 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2003 01 09 | 704 | 0.8− | 1.2+ | 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.0+ | 1.2+ |
| 2003 01 09 | 704 | 1.3− | 0.1+ | 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.3− | 0.3+ |
| 2004 04 12 | 699 | 0.6− | 0.5+ | 2005 07 05 | 691 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.2+ |
| 2004 04 12 | 699 | 0.3− | 0.0 | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.2− | 0.1+ |
| 2004 04 12 | 699 | 1.0− | 0.4− | 2005 07 09 | 691 | 0.1− | 0.1+ | | | | |

**(144726)∗ 2004 GN$_{35}$ = 1991 XZ$_{1}$**

Discovered 2004 Apr. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65707)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 147.05325 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19308171 | $\omega$ | 316.53575 | | −0.55950797 | +0.81322995 |
| $a$ | 2.9646628 | $\Omega$ | 278.81992 | | −0.70922043 | −0.56967157 |
| $e$ | 0.0914770 | $i$ | 9.31949 | | −0.42890234 | −0.11887536 |
| $P$ | 5.10 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 03 | 691 | (1.2+ | 2.1+) | 2004 04 16 | E12 | 0.4− | 0.4+ | 2006 09 28 | 703 | (0.6+ | 4.0+) |
| 1991 12 03 | 691 | 0.1+ | 0.5− | 2004 04 16 | E12 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.0 | 0.7− |
| 1991 12 03 | 691 | 0.1+ | 0.4− | 2004 04 16 | E12 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.7− | 0.4− |
| 1996 12 01 | 691 | 0.0 | 0.1− | 2004 04 25 | 704 | 0.8− | 0.2− | 2006 10 19 | 703 | 0.6+ | 1.1+ |
| 1996 12 01 | 691 | 0.1+ | 0.3− | 2004 04 25 | 704 | 0.2+ | 0.9− | 2006 10 19 | 703 | (1.6− | 0.3−) |
| 1996 12 01 | 691 | 0.1− | 0.2+ | 2004 04 25 | 704 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.4− | 0.3− |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2004 04 25 | 704 | 0.5− | 0.8− | 2006 10 19 | 703 | 0.1− | 0.3+ |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2004 04 25 | 704 | 1.4− | 1.3− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2001 11 17 | 704 | 1.2+ | 0.2+ | 2004 05 14 | 699 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 11 17 | 704 | 0.3+ | 0.2+ | 2004 05 14 | 699 | 1.1+ | 0.4− | 2006 10 22 | 644 | 0.3− | 0.4− |
| 2001 11 17 | 704 | 1.1+ | 1.2+ | 2004 05 14 | 699 | 0.7+ | 1.1− | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2001 11 17 | 704 | (2.1+ | 0.0 ) | 2004 05 14 | 699 | 0.7− | 0.9+ | 2006 10 27 | 703 | 0.0 | 0.6+ |
| 2003 01 08 | 704 | 0.3+ | 1.1+ | 2005 07 08 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.4− |
| 2003 01 08 | 704 | 0.2+ | 0.2− | 2005 07 08 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.4+ |
| 2003 01 08 | 704 | 0.2+ | 0.5− | 2005 07 08 | 691 | 0.1− | 0.2+ | 2006 10 30 | 104 | 0.3− | 0.6+ |
| 2003 01 08 | 704 | 0.3− | 1.0− | 2005 08 09 | 185 | 0.2+ | 0.5− | 2006 10 30 | 104 | 0.6+ | 0.2− |
| 2004 03 26 | 704 | 1.2+ | 0.2+ | 2005 08 09 | 185 | 1.1+ | 0.2+ | 2006 10 30 | 104 | 0.6− | 0.2− |
| 2004 03 26 | 704 | 0.3+ | 0.0 | 2005 08 09 | 185 | (0.1+ | 2.2−) | 2006 11 15 | 703 | 1.0− | 0.3+ |
| 2004 03 26 | 704 | 0.4− | 0.1− | 2005 08 09 | 185 | 0.1+ | 0.7− | 2006 11 15 | 703 | 2.1− | 0.8+ |
| 2004 04 13 | 644 | 0.1+ | 0.5+ | 2005 09 03 | 644 | 0.3− | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.1+ |
| 2004 04 13 | 644 | 0.4+ | 0.8+ | 2005 09 03 | 644 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.3+ | 1.8+ |
| 2004 04 13 | 644 | 0.5− | 0.5+ | 2005 09 03 | 644 | 0.0 | 0.2+ | | | | |
| 2004 04 16 | E12 | 0.2+ | 0.0 | 2006 09 28 | 703 | (0.2− | 7.0+) | | | | |

**(144727)∗ 2004 GS$_{36}$**

Discovered 2004 Apr. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 147.53025 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18544458 | $\omega$ | 351.32112 | | −0.35684026 | +0.93012893 |
| $a$ | 3.0455095 | $\Omega$ | 257.73690 | | −0.85166342 | −0.36207582 |
| $e$ | 0.2396411 | $i$ | 5.09305 | | −0.38384169 | −0.06132923 |
| $P$ | 5.31 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.0 | 0.1+ | 2004 04 25 | 704 | 0.1+ | 0.0 | 2004 07 06 | E12 | 1.1+ | 1.2− |
| 2001 11 17 | 291 | 0.1− | 0.2+ | 2004 04 25 | 704 | 0.2− | 0.0 | 2004 07 06 | E12 | 0.3+ | 0.5− |
| 2001 11 17 | 291 | 0.0 | 0.4+ | 2004 05 10 | 608 | 0.4+ | 0.3− | 2004 07 06 | E12 | 0.3+ | 1.4− |
| 2001 12 18 | 704 | (0.9+ | 2.1+) | 2004 05 10 | 608 | 0.0 | 1.1+ | 2004 07 06 | E12 | 0.0 | 0.5− |
| 2001 12 18 | 704 | 0.2− | 1.3+ | 2004 05 10 | 608 | 0.3+ | 0.5− | 2005 09 24 | 703 | 1.1− | 1.1+ |
| 2001 12 18 | 704 | 0.7+ | 0.4+ | 2004 05 12 | E12 | 0.5− | 0.5+ | 2005 09 24 | 703 | (1.7− | 1.6−) |
| 2003 01 27 | 704 | 0.5− | 0.5+ | 2004 05 12 | E12 | 0.1+ | 0.6+ | 2005 09 24 | 703 | 0.7− | 0.5+ |
| 2003 01 27 | 704 | 0.2+ | 1.1+ | 2004 05 12 | E12 | 0.4− | 0.8+ | 2005 09 24 | 703 | 0.3− | 0.4+ |
| 2003 01 27 | 704 | 0.7+ | 0.6+ | 2004 05 12 | E12 | 0.7− | 0.7+ | 2005 09 26 | 291 | 0.1− | 0.4+ |
| 2003 01 27 | 644 | 0.0 | 0.3+ | 2004 05 15 | 704 | 0.0 | 0.4+ | 2005 09 26 | 291 | 0.1− | 0.4+ |
| 2003 01 27 | 644 | 0.3− | 0.5+ | 2004 05 15 | 704 | 0.2− | 0.3+ | 2005 09 26 | 291 | 0.1+ | 0.5+ |
| 2003 01 27 | 644 | 0.2− | 0.4+ | 2004 05 15 | 704 | 0.0 | 0.5+ | 2005 10 01 | 703 | 0.9− | 0.3+ |
| 2004 04 13 | 644 | 0.0 | 0.2+ | 2004 05 15 | 704 | 0.1+ | 0.6+ | 2005 10 01 | 703 | 0.5− | 0.1− |
| 2004 04 13 | 644 | 0.0 | 0.3+ | 2004 05 15 | 704 | 0.1− | 0.3+ | 2005 10 01 | 703 | (2.9− | 2.5+) |
| 2004 04 13 | 644 | 0.4+ | 0.4+ | 2004 05 16 | 704 | 0.1+ | 0.3+ | 2005 10 01 | 703 | (1.8− | 3.6+) |
| 2004 04 16 | E12 | 0.1− | 0.1+ | 2004 05 16 | 704 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2004 04 16 | E12 | 0.0 | 0.2+ | 2004 05 16 | 704 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2004 04 16 | E12 | 0.1− | 0.1+ | 2004 05 16 | 704 | 0.5+ | 0.5− | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2004 04 16 | E12 | 0.4− | 0.5− | 2004 05 18 | 704 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2004 04 17 | 704 | 0.1− | 0.2+ | 2004 05 18 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.9+ |
| 2004 04 17 | 704 | 0.0 | 0.3+ | 2004 05 18 | 704 | 0.1− | 0.5− | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2004 04 17 | 704 | 0.4+ | 0.7+ | 2004 05 18 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.2− |
| 2004 04 17 | 704 | 0.3− | 0.6+ | 2004 05 28 | 691 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.2− |
| 2004 04 17 | 704 | 0.3+ | 1.1+ | 2004 05 28 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.4+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 644 | 0.0 | 0.5+ | 2004 05 28 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 691 | 0.5+ | 0.3− |
| 2004 04 17 | 644 | 0.1− | 0.6+ | 2004 05 29 | 703 | 1.2+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2004 04 17 | 644 | 0.2− | 1.5+ | 2004 05 29 | 703 | 0.6+ | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2004 04 19 | 704 | 0.7+ | 0.4+ | 2004 05 29 | 703 | 0.6+ | 0.9− | 2006 11 18 | 691 | 0.1− | 0.4+ |
| 2004 04 19 | 704 | 0.1+ | 0.3+ | 2004 05 29 | 703 | (0.5+ | 1.5−) | 2006 11 20 | 691 | 0.3− | 0.2+ |
| 2004 04 19 | 704 | 0.4+ | 0.0 | 2004 06 07 | 699 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2004 04 25 | 704 | 0.0 | 0.4+ | 2004 06 07 | 699 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.4+ |
| 2004 04 25 | 704 | 0.0 | 0.2− | 2004 06 07 | 699 | 0.2− | 0.3− | | | | |
| 2004 04 25 | 704 | 0.3− | 0.1− | 2004 06 07 | 699 | 0.4+ | 1.2+ | | | | |

**(144728)∗ 2004 GE$_{37}$**

Discovered 2004 Apr. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.16054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18127085 | $\omega$ | 13.53800 | | −0.53013787 | +0.83747616 | |
| $a$ | 3.0920801 | $\Omega$ | 224.64675 | | −0.79445951 | −0.54525867 | |
| $e$ | 0.1069399 | $i$ | 10.87793 | | −0.29629026 | −0.03642340 | |
| $P$ | 5.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.2− | 1.4+ | 2004 05 12 | 699 | (1.6− | 0.5+) | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 2001 11 18 | 704 | (0.4− | 1.6+) | 2004 05 12 | 699 | 1.3+ | 1.4+ | 2006 10 02 | 691 | 0.3+ | 0.4+ |
| 2001 11 18 | 704 | 0.2− | 0.1− | 2004 05 12 | 699 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2001 12 09 | 691 | 0.3− | 0.2+ | 2004 05 12 | 699 | (1.5− | 0.3+) | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2001 12 09 | 691 | 0.3+ | 0.4+ | 2004 05 19 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2001 12 09 | 691 | 0.1+ | 0.3+ | 2004 05 19 | 691 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.4− | 0.2+ |
| 2004 04 14 | 699 | 0.1+ | 0.4+ | 2004 05 19 | 691 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.4+ |
| 2004 04 14 | 699 | 0.8+ | 0.5− | 2004 05 28 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2004 04 14 | 699 | 0.1− | 0.5+ | 2004 05 28 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2004 04 14 | 699 | 0.6+ | 0.2− | 2004 05 28 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2004 04 17 | 704 | 0.7+ | 0.2+ | 2005 06 27 | 644 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.6+ | 0.2− |
| 2004 04 17 | 704 | 0.1− | 0.1− | 2005 06 27 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2004 04 17 | 704 | 0.4+ | 0.3− | 2005 06 27 | 644 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2004 04 19 | 704 | 0.4+ | 0.9+ | 2005 06 28 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2004 04 19 | 704 | 0.1− | 0.1+ | 2005 06 28 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.9− | 0.6+ |
| 2004 04 19 | 704 | 0.6− | 0.8+ | 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2004 04 21 | 704 | 0.1− | 0.6+ | 2005 07 29 | 644 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.5+ | 0.2− |
| 2004 04 21 | 704 | 0.1− | 1.1+ | 2005 07 29 | 644 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.3+ |
| 2004 04 21 | 704 | 0.2− | 0.5+ | 2005 07 29 | 644 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2004 04 21 | 704 | 0.7+ | 1.2+ | 2005 08 24 | 644 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2004 04 21 | 704 | 0.5+ | 0.1+ | 2005 08 24 | 644 | 0.6− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2004 04 30 | 691 | 0.0 | 0.2+ | 2005 08 24 | 644 | 0.3+ | 0.4+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2004 04 30 | 691 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.0 | | | | |
| 2004 04 30 | 691 | 0.1+ | 0.6+ | 2006 09 28 | 691 | 0.3− | 0.0 | | | | |

**(144729)∗ 2004 GU$_{37}$**

Discovered 2004 Apr. 14 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.04530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21082905 | $\omega$ | 357.38532 | | −0.65328934 | +0.73713687 | |
| $a$ | 2.7958621 | $\Omega$ | 231.75819 | | −0.69058108 | −0.67369314 | |
| $e$ | 0.1222826 | $i$ | 12.70604 | | −0.31033984 | −0.05260016 | |
| $P$ | 4.67 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 04 | 691 | 0.0 | 0.1+ | 2004 05 16 | 704 | 0.3− | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 1996 11 04 | 691 | 0.2− | 0.2+ | 2004 05 18 | 704 | 0.7+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 1996 11 04 | 691 | 0.6+ | 0.1+ | 2004 05 18 | 704 | 0.5+ | 0.6+ | 2006 11 09 | 644 | 0.4+ | 0.3+ |
| 2001 10 14 | 704 | 0.5− | 0.1+ | 2004 05 18 | 704 | 0.1+ | 1.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.1− | 0.3+ | 2004 05 18 | 704 | 0.6+ | 1.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.8− | 0.7+ | 2004 05 18 | 704 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2001 11 10 | 704 | 1.1− | 0.0 | 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 0.3+ | 0.1− | 2004 05 23 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | (1.2+ | 2.8+) |
| 2001 11 10 | 704 | 0.6+ | 0.9+ | 2004 05 23 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (0.1+ | 1.8+) |
| 2001 11 17 | 704 | 0.8− | 0.6+ | 2004 05 29 | 703 | (2.5+ | 0.4+) | 2006 11 11 | 703 | 1.5− | 0.8− |
| 2001 11 17 | 704 | 0.8− | 0.5+ | 2004 05 29 | 703 | 0.2− | 0.8+ | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2001 11 17 | 704 | 0.9− | 0.2+ | 2004 05 29 | 703 | 0.1+ | 1.3+ | 2006 11 14 | 691 | (0.4− | 1.9+) |
| 2001 11 17 | 704 | 0.1− | 0.6+ | 2004 05 29 | 703 | 0.9+ | 0.9+ | 2006 11 14 | 691 | 0.3− | 0.4+ |
| 2001 11 17 | 704 | 0.0 | 1.0+ | 2004 06 14 | 704 | 0.4+ | 0.4− | 2006 11 18 | G96 | (2.2− | 0.4−) |
| 2004 04 14 | 699 | 0.2− | 0.2+ | 2004 06 14 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.9+ | 1.0+ |
| 2004 04 14 | 699 | 1.3− | 0.4+ | 2004 06 14 | 704 | (1.6+ | 0.0 ) | 2006 11 18 | G96 | 1.4+ | 1.3+ |
| 2004 04 14 | 699 | 1.1− | 0.1+ | 2004 06 14 | 704 | 0.3+ | 0.9+ | 2006 11 18 | 704 | 0.1+ | 0.6− |
| 2004 04 14 | 699 | 1.3− | 0.6+ | 2004 06 14 | 704 | 0.1+ | 0.8+ | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2004 04 17 | 704 | 0.1− | 0.4− | 2005 08 29 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2004 04 17 | 704 | 0.1− | 0.0 | 2005 08 29 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1− | 0.5− |
| 2004 04 17 | 704 | 1.4+ | 0.2− | 2005 08 29 | 644 | 0.5+ | 0.1+ | 2006 11 18 | 711 | 0.4− | 0.5+ |
| 2004 04 17 | 704 | 0.1+ | 0.4− | 2005 11 04 | G96 | 0.0 | 0.4− | 2006 11 18 | 711 | 0.4− | 0.3+ |
| 2004 04 25 | 704 | 0.1+ | 0.3− | 2005 11 04 | G96 | 0.1− | 0.2+ | 2006 11 18 | 711 | 0.5− | 0.6+ |
| 2004 04 25 | 704 | 0.4− | 0.4+ | 2005 11 04 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2004 04 25 | 704 | 0.0 | 0.1+ | 2005 11 04 | G96 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3+ |
| 2004 04 25 | 704 | 0.6− | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.4+ |
| 2004 04 25 | 704 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3+ |
| 2004 04 30 | 608 | 0.1− | 0.5− | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2004 04 30 | 608 | 0.4+ | 0.5− | 2006 10 17 | G96 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.2+ |
| 2004 04 30 | 608 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 1.9+ | 1.9− |
| 2004 05 13 | 644 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2004 05 13 | 644 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2004 05 13 | 644 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | (2.9− | 3.5−) |
| 2004 05 15 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 27 | 703 | 1.0+ | 1.4− |
| 2004 05 15 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2004 05 15 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2004 05 15 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 29 | 704 | 1.0+ | 0.6+ |
| 2004 05 15 | 704 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.8+ |
| 2004 05 16 | 704 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.3+ | 1.4+ |
| 2004 05 16 | 704 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4+ | 1.8+ |
| 2004 05 16 | 704 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.4+ | 0.1+ | | | | |
| 2004 05 16 | 704 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− | | | | |

**(144730)∗ 2004 GZ$_{38}$ = 2000 VY$_{40}$**

Discovered 2004 Apr. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 65711)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.50647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17143859 | $\omega$ | 78.17642 | | +0.46919925 | +0.87193067 | |
| $a$ | 3.2092015 | $\Omega$ | 220.77390 | | −0.87047145 | +0.42994875 | |
| $e$ | 0.1680384 | $i$ | 12.37504 | | −0.14876667 | +0.23426688 | |
| $P$ | 5.75 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.3+ | 0.0 | 2004 05 19 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.1+ |
| 2000 10 03 | 704 | 0.8+ | 0.2− | 2004 05 19 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.3− |
| 2000 10 03 | 704 | 0.2+ | 0.5− | 2004 05 19 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2000 10 03 | 704 | 1.4− | 0.5− | 2005 06 09 | 704 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2000 11 01 | 704 | 0.3− | 0.7+ | 2005 06 09 | 704 | 0.2− | 1.0− | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2000 11 01 | 704 | 0.7− | 0.6+ | 2005 06 09 | 704 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2000 11 01 | 704 | 0.5− | 0.2− | 2005 06 27 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2000 11 03 | 704 | 0.0 | 1.1+ | 2005 06 27 | 644 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2000 11 03 | 704 | 0.4+ | 0.8+ | 2005 06 27 | 644 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2000 11 03 | 704 | 0.2− | 0.5+ | 2005 08 12 | 608 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2000 11 03 | 704 | 1.0+ | 0.1− | 2005 08 12 | 608 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2004 04 15 | 699 | 0.0 | 1.1+ | 2005 08 12 | 608 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2004 04 15 | 699 | 1.3− | 0.2− | 2005 08 25 | 644 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2004 04 15 | 699 | 0.3− | 0.9+ | 2005 08 25 | 644 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2004 04 15 | 699 | 0.3− | 0.5+ | 2005 08 25 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2004 04 17 | 704 | (3.1− | 1.7+) | 2005 09 22 | 644 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2004 04 17 | 704 | (3.3− | 3.6+) | 2005 09 22 | 644 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.5+ |
| 2004 04 17 | 704 | (2.9− | 3.2+) | 2005 09 22 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2004 04 17 | 704 | (2.9− | 2.6+) | 2005 09 27 | 644 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 704 | 0.8+ | 1.0+ | 2005 09 27 | 644 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.4+ | | |
| 2004 04 20 | 704 | 0.5+ | 0.7+ | 2005 09 27 | 644 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.7+ | 0.4+ | | |
| 2004 04 20 | 704 | 0.9+ | 1.0+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.3+ | | |
| 2004 04 20 | 704 | 0.8+ | 1.2+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 2004 05 16 | 704 | (2.7+ | 0.7−) | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.2− | | |
| 2004 05 16 | 704 | (2.8+ | 0.9+) | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1− | 1.1− | | |
| 2004 05 16 | 704 | (2.5+ | 0.8+) | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (2.1− | 0.2−) | | |

**(144731)∗ 2004 GA$_{39}$**

Discovered 2004 Apr. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.55933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21708159 | $\omega$ | 7.87759 | | −0.81266523 | +0.57829329 | |
| $a$ | 2.7419154 | $\Omega$ | 207.83996 | | −0.54267503 | −0.79592004 | |
| $e$ | 0.0691822 | $i$ | 8.84136 | | −0.21231822 | −0.17913167 | |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2004 04 17 | 704 | 0.5+ | 0.0 | 2005 07 31 | 644 | 0.1− | 0.1− | | |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2004 04 19 | 691 | 0.2− | 0.4+ | 2005 09 02 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2004 04 19 | 691 | 0.2− | 0.4+ | 2005 09 02 | 644 | 0.3+ | 0.2+ | | |
| 2001 10 18 | 644 | 0.6− | 0.8+ | 2004 04 19 | 691 | 0.3− | 0.4+ | 2005 09 02 | 644 | 0.8− | 0.9+ | | |
| 2001 10 18 | 644 | 0.5− | 0.7+ | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.2− | | |
| 2001 10 18 | 644 | 0.7− | 0.7+ | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.3+ | | |
| 2002 02 07 | 695 | 0.6+ | 0.5+ | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.1− | | |
| 2002 02 07 | 695 | 0.1+ | 0.7+ | 2004 05 10 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.2+ | | |
| 2004 03 27 | 704 | (0.1+ | 1.9+) | 2004 05 10 | 691 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.5+ | | |
| 2004 03 27 | 704 | 0.0 | 0.6+ | 2004 05 10 | 691 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.4+ | | |
| 2004 03 27 | 704 | 1.0+ | 0.3+ | 2004 05 28 | 691 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.4+ | | |
| 2004 03 27 | 704 | 1.2+ | 0.6+ | 2004 05 28 | 691 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.3+ | | |
| 2004 04 15 | 699 | 1.1+ | 1.3+ | 2004 05 28 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.3− | 0.3+ | | |
| 2004 04 15 | 699 | 0.1+ | 0.6+ | 2005 07 30 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 2004 04 15 | 699 | 0.2+ | 0.3− | 2005 07 30 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1+ | | |
| 2004 04 15 | 699 | 0.1+ | 0.7+ | 2005 07 30 | 644 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2004 04 17 | 704 | 0.5+ | 0.0 | 2005 07 31 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.8+ | 0.1+ | | |
| 2004 04 17 | 704 | 0.7+ | 0.1− | 2005 07 31 | 644 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |

**(144732)∗ 2004 GN$_{40}$ = 2002 XH$_{37}$ = 2002 YE$_{30}$**

Discovered 2004 Apr. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 65714)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.76874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17614349 | $\omega$ | 145.71786 | | −0.88389910 | −0.46767688 | |
| $a$ | 3.1517975 | $\Omega$ | 6.39871 | | +0.42736498 | −0.80844346 | |
| $e$ | 0.1349951 | $i$ | 0.43547 | | +0.18995145 | −0.35734789 | |
| $P$ | 5.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.0 | 0.2+ | 2001 10 17 | 291 | 1.4+ | 0.5− | 2004 04 16 | 644 | 0.2+ | 0.6+ | | |
| 1995 09 24 | 691 | 0.7− | 0.8+ | 2002 12 08 | 926 | 0.2− | 0.4+ | 2004 04 16 | 644 | 0.3+ | 0.7+ | | |
| 1995 09 24 | 691 | 0.7− | 0.4+ | 2002 12 08 | 926 | 0.6− | 2.0+ | 2004 05 19 | 691 | 0.2+ | 0.2− | | |
| 1998 03 03 | 704 | 0.6+ | 1.9+ | 2002 12 31 | 704 | 1.0− | 1.2+ | 2004 05 19 | 691 | 0.6+ | 0.5− | | |
| 1998 03 03 | 704 | 0.1+ | 0.5− | 2002 12 31 | 704 | 0.3+ | 0.2+ | 2004 05 19 | 691 | 0.3+ | 0.2− | | |
| 1998 03 03 | 704 | 1.7− | 1.0− | 2002 12 31 | 704 | 0.2− | 0.5+ | 2004 05 28 | 691 | 0.0 | 0.2+ | | |
| 1998 03 03 | 704 | (4.0− | 1.0−) | 2002 12 31 | 704 | 0.1− | 0.1− | 2004 05 28 | 691 | 0.2− | 0.0 | | |
| 1998 03 04 | 704 | (2.6− | 1.5+) | 2003 01 04 | 704 | 0.2+ | 0.7+ | 2004 05 28 | 691 | 0.1+ | 0.1+ | | |
| 1998 03 04 | 704 | 0.0 | 1.3+ | 2003 01 04 | 704 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.4+ | | |
| 1998 03 04 | 704 | 0.1− | 0.5− | 2003 01 04 | 704 | 0.5− | 0.8+ | 2006 08 27 | 691 | 0.3− | 0.0 | | |
| 1998 03 04 | 704 | 0.3− | 1.5− | 2004 04 12 | 699 | 0.7− | 1.2+ | 2006 08 27 | 691 | 0.6− | 0.3− | | |
| 2000 08 25 | 807 | 0.3+ | 0.4+ | 2004 04 12 | 699 | 0.1− | 1.3+ | 2006 09 26 | G96 | 1.1− | 0.6− | | |
| 2000 08 25 | 807 | 0.2+ | 0.4+ | 2004 04 12 | 699 | 0.9+ | 0.6+ | 2006 09 26 | G96 | 0.5− | 0.6− | | |
| 2001 10 17 | 291 | 0.5+ | 0.1+ | 2004 04 12 | 699 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.2+ | | |
| 2001 10 17 | 291 | 0.7+ | 0.2+ | 2004 04 16 | 644 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.6− | | |

**(144733)∗ 2004 GS$_{40}$**

Discovered 2004 Apr. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.29156 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21443068 | $\omega$ | 22.70773 | | −0.95150618 | −0.30307835 | |
| $a$ | 2.7644672 | $\Omega$ | 139.53068 | | +0.26830153 | −0.90142829 | |
| $e$ | 0.0460873 | $i$ | 4.65922 | | +0.15050009 | −0.30914486 | |
| $P$ | 4.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 683 | 1.8− | 0.1+ | 2004 04 17 | 621 | 0.1− | 0.5− | 2005 07 06 | 691 | 0.2− | 0.0 | | |
| 1999 03 13 | 683 | 0.1− | 0.1− | 2004 04 20 | 704 | 0.1− | 0.7+ | 2005 07 06 | 691 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | (0.1+ | 1.6+) | 2004 04 20 | 704 | 0.4+ | 0.7+ | 2005 07 06 | 691 | 0.2− | 0.2− | | |
| 2001 09 21 | 704 | 0.1− | 1.1+ | 2004 04 20 | 704 | 0.4+ | 0.2− | 2005 07 09 | 691 | 0.1+ | 0.1− | | |
| 2001 09 21 | 704 | 0.6− | 1.1+ | 2004 04 20 | 704 | 0.5+ | 0.1− | 2005 07 09 | 691 | 0.1− | 0.0 | | |
| 2001 09 21 | 704 | 0.7+ | 1.2+ | 2004 04 22 | 599 | 0.1+ | 0.2+ | 2005 07 09 | 691 | 0.2+ | 0.3+ | | |
| 2001 09 21 | 704 | (0.6− | 1.5+) | 2004 04 22 | 599 | 0.1− | 0.7+ | 2005 07 28 | 644 | 0.3+ | 0.3+ | | |
| 2003 01 08 | 704 | 0.5+ | 1.3+ | 2004 04 22 | 599 | 0.1− | 0.2+ | 2005 07 28 | 644 | 0.1+ | 0.1+ | | |
| 2003 01 08 | 704 | 0.3+ | 0.4− | 2004 04 22 | 599 | 0.0 | 0.6+ | 2005 07 28 | 644 | 0.3+ | 0.1+ | | |
| 2003 01 08 | 704 | (0.2− | 1.6+) | 2004 04 25 | 621 | 0.1− | 0.4+ | 2006 11 01 | 703 | 1.3− | 0.2+ | | |
| 2003 01 08 | 704 | 1.0+ | 0.3+ | 2004 04 25 | 621 | 0.6− | 0.0 | 2006 11 01 | 703 | 1.1− | 0.1− | | |
| 2003 01 08 | 704 | 0.5− | 0.9+ | 2004 04 25 | 621 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.9− | 1.1+ | | |
| 2003 01 13 | 644 | 0.1+ | 0.6+ | 2004 05 22 | 704 | 0.9+ | 0.9− | 2006 11 01 | 703 | 0.1− | 0.7+ | | |
| 2003 01 13 | 644 | 0.4+ | 0.6+ | 2004 05 22 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2003 01 13 | 644 | 0.4+ | 0.6+ | 2004 05 22 | 704 | 0.4+ | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.4+ | | |
| 2004 04 12 | 644 | 0.2+ | 0.6+ | 2004 05 22 | 704 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.4+ | | |
| 2004 04 12 | 644 | 0.1+ | 0.6+ | 2005 05 19 | G96 | 0.3− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.1+ | | |
| 2004 04 12 | 644 | 0.3+ | 0.8+ | 2005 05 19 | G96 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1+ | | |
| 2004 04 16 | 644 | 0.2+ | 0.6+ | 2005 05 19 | G96 | 0.6− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.0 | | |
| 2004 04 16 | 644 | 0.5+ | 0.7+ | 2005 05 19 | G96 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.0 | | |
| 2004 04 16 | 644 | 0.4+ | 0.8+ | 2005 07 01 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | (0.8+ | 2.9+) | | |
| 2004 04 17 | 621 | 0.3+ | 0.7+ | 2005 07 01 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | (0.3+ | 2.0+) | | |
| 2004 04 17 | 621 | 0.4− | 0.3− | 2005 07 01 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | (0.2+ | 1.7+) | | |

**(144734)∗ 2004 GM$_{41}$ = 2001 UO$_{85}$ = 2002 YC$_{14}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65715)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.72392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19518446 | $\omega$ | 105.69800 | | −0.96031436 | −0.27589390 | |
| $a$ | 2.9433318 | $\Omega$ | 58.30263 | | +0.23390269 | −0.87660883 | |
| $e$ | 0.0319933 | $i$ | 2.76029 | | +0.15194031 | −0.39425818 | |
| $P$ | 5.05 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.6+ | 0.6− | 2003 01 02 | 704 | 0.8+ | 0.6− | 2004 05 24 | 691 | 0.0 | 0.6+ | | |
| 2001 10 15 | 704 | 0.9+ | 1.2− | 2004 03 23 | 691 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.6+ | | |
| 2001 10 15 | 704 | 1.2+ | 0.5+ | 2004 03 23 | 691 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.3+ | 0.6+ | | |
| 2001 10 16 | 691 | 0.1− | 0.6+ | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.5+ | 0.5+ | | |
| 2001 10 16 | 691 | 0.1− | 0.2+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.5− | 0.2− | | |
| 2001 10 16 | 691 | 0.4− | 0.3+ | 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.4− | 0.0 | | |
| 2001 10 18 | 644 | 0.5− | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.3− | | |
| 2001 10 18 | 644 | 0.8− | 0.1− | 2004 04 16 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.5+ | | |
| 2001 10 18 | 644 | 0.6− | 0.1− | 2004 04 16 | 644 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.5+ | | |
| 2001 10 23 | 291 | 0.1− | 0.3+ | 2004 04 16 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2001 10 23 | 291 | 0.2− | 0.3+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2001 10 23 | 291 | 0.0 | 0.1− | 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.6− | | |
| 2002 12 31 | 704 | 0.6+ | 0.1− | 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.1− | | |
| 2002 12 31 | 704 | 0.4− | 0.2− | 2004 05 09 | 691 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.5− | 0.1− | | |
| 2002 12 31 | 704 | 0.0 | 0.9+ | 2004 05 09 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.5− | 0.1+ | | |
| 2002 12 31 | 704 | 0.8− | 0.6+ | 2004 05 09 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.2+ | | |
| 2003 01 02 | 704 | 0.4+ | 0.3+ | 2004 05 24 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.1− | | |
| 2003 01 02 | 704 | 0.2− | 0.8+ | 2004 05 24 | 691 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.3+ | | |

**(144735)∗ 2004 GB$_{42}$**

Discovered 2004 Apr. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.25944 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21691964 | $\omega$ | 60.18652 | | +0.02233299 | +0.99947084 | |
| $a$ | 2.7432800 | $\Omega$ | 211.12009 | | −0.93232208 | +0.01228076 | |
| $e$ | 0.1243299 | $i$ | 2.62264 | | −0.36093874 | +0.03012019 | |
| $P$ | 4.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.0 | 0.2+ | 2005 07 31 | 644 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.0 | |
| 2001 10 14 | 691 | 0.2− | 0.2+ | 2005 07 31 | 644 | 0.2− | 0.2+ | 2006 11 11 | 291 | 0.1− | 0.3− | |
| 2001 10 14 | 691 | 0.3− | 0.1+ | 2005 07 31 | 644 | 0.0 | 0.2− | 2006 11 11 | 291 | 0.1− | 0.2− | |
| 2003 01 25 | 645 | 0.1+ | 0.0 | 2005 08 08 | 807 | 0.2− | 0.1− | 2006 11 11 | 291 | 0.2− | 0.2+ | |
| 2003 01 25 | 645 | 0.1+ | 0.1+ | 2005 08 08 | 807 | 0.1− | 0.0 | 2006 11 11 | 291 | 0.3+ | 0.1+ | |
| 2004 04 12 | 699 | 0.5+ | 1.3+ | 2005 08 24 | 644 | 0.2− | 0.2+ | 2006 11 11 | 291 | 0.1+ | 0.2− | |
| 2004 04 12 | 699 | 0.8− | 0.1+ | 2005 08 24 | 644 | 0.3+ | 0.4+ | 2006 11 11 | 291 | 0.2+ | 0.1+ | |
| 2004 04 12 | 699 | 0.0 | 0.0 | 2005 08 24 | 644 | 0.4− | 0.2+ | 2006 11 11 | 291 | 0.1+ | 0.0 | |
| 2004 04 12 | 699 | 0.1+ | 0.9− | 2005 08 25 | 644 | 0.0 | 0.2+ | 2006 11 11 | 291 | 0.0 | 0.2− | |
| 2004 04 14 | 291 | 0.3+ | 0.4+ | 2005 08 25 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 291 | 0.0 | 0.4+ | |
| 2004 04 14 | 291 | 0.6+ | 0.5+ | 2005 08 25 | 644 | 0.0 | 0.3+ | 2006 11 11 | 291 | 0.0 | 0.1− | |
| 2004 04 14 | 291 | 0.8+ | 0.5+ | 2005 09 13 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 291 | 0.2− | 0.2− | |
| 2004 04 16 | 644 | 0.2+ | 0.9+ | 2005 09 13 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 291 | 0.3− | 0.7− | |
| 2004 04 16 | 644 | 0.3+ | 0.5+ | 2005 09 13 | 691 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.0 | |
| 2004 04 16 | 644 | (1.7+ | 0.2+) | 2005 09 22 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.1+ | |
| 2004 04 21 | 704 | 0.1− | 0.6+ | 2005 09 22 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.4+ | |
| 2004 04 21 | 704 | 1.2+ | 0.3+ | 2005 09 22 | 644 | 0.4− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.1+ | |
| 2004 04 21 | 704 | 0.6+ | 0.9+ | 2005 09 26 | 691 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.1+ | |
| 2004 04 21 | 704 | 0.5+ | 0.7+ | 2005 09 26 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.1+ | |
| 2004 04 21 | 704 | (3.3+ | 0.5−) | 2005 09 26 | 691 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.3+ | |
| 2004 04 30 | 691 | 0.1+ | 0.4+ | 2005 10 10 | 691 | 0.4− | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.1− | |
| 2004 04 30 | 691 | 0.5− | 0.7+ | 2005 10 10 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.4− | |
| 2004 04 30 | 691 | 1.0− | 0.5+ | 2005 10 10 | 691 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.3− | |
| 2004 05 15 | 691 | 0.0 | 0.1+ | 2005 10 30 | G96 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2+ | |
| 2004 05 15 | 691 | 0.0 | 0.0 | 2005 10 30 | G96 | 0.7− | 0.1− | 2006 11 27 | 691 | 0.3− | 1.1+ | |
| 2004 05 15 | 691 | 0.2− | 0.1+ | 2005 10 30 | G96 | 0.6− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.4+ | |
| 2004 05 19 | 691 | 0.2+ | 0.0 | 2005 10 30 | G96 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.3− | 0.3+ | |
| 2004 05 19 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 12 01 | 691 | 0.3− | 0.2+ | |
| 2004 05 19 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.4− | 0.9+ | |

**(144736)∗ 2004 GG$_{42}$**

Discovered 2004 Apr. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.36101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21439132 | $\omega$ | 21.94839 | | −0.94326752 | −0.32373549 | |
| $a$ | 2.7648055 | $\Omega$ | 138.92912 | | +0.28549805 | −0.90422467 | |
| $e$ | 0.0278426 | $i$ | 6.44684 | | +0.16952064 | −0.27851945 | |
| $P$ | 4.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 0.1− | 2004 04 17 | 699 | 0.3+ | 0.4− | 2005 07 12 | 703 | (1.9+ | 0.5−) | |
| 2001 09 12 | 704 | 0.1+ | 0.9+ | 2004 04 17 | 699 | 0.5− | 0.3+ | 2005 07 12 | 703 | (0.2− | 1.6−) | |
| 2001 09 12 | 704 | 1.1+ | 0.7+ | 2004 04 17 | 699 | (1.8− | 0.7−) | 2005 07 12 | 703 | 1.2+ | 0.6− | |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2004 04 17 | 699 | 1.1+ | 0.7+ | 2005 07 12 | 703 | 1.1+ | 0.1− | |
| 2001 09 21 | 704 | 1.0− | 0.7+ | 2004 04 23 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | (1.4+ | 2.4+) | |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.0 | |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2004 04 23 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | (2.7− | 0.5+) | |
| 2001 09 21 | 704 | 0.1+ | 0.8+ | 2004 04 25 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 1.4− | 0.8− | |
| 2001 09 21 | 704 | 1.0− | 0.1+ | 2004 04 25 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 1.1+ | 0.5+ | |
| 2001 10 19 | 699 | (0.2− | 2.7+) | 2004 04 25 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.4+ | |
| 2001 10 19 | 699 | (2.1− | 0.4+) | 2004 04 25 | 704 | 0.2+ | 0.0 | 2006 10 22 | 703 | 1.2+ | 0.5+ | |
| 2001 10 19 | 699 | 0.3− | 1.0+ | 2004 04 25 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.4+ | |
| 2001 10 19 | 699 | (1.3− | 1.7+) | 2005 06 27 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 1.0+ | 0.7− | |
| 2004 03 20 | 704 | 0.1− | 0.2− | 2005 06 27 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.1+ | 1.2− | |
| 2004 03 20 | 704 | 0.7+ | 0.4+ | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.8+ | 0.6+ | |
| 2004 03 20 | 704 | 0.2+ | 0.2− | 2005 07 05 | 644 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.2− | 1.1+ | |
| 2004 03 20 | 704 | 0.7+ | 1.0+ | 2005 07 05 | 644 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.9− | 0.5− | |
| 2004 03 20 | 704 | 0.2− | 1.4+ | 2005 07 05 | 644 | 0.6− | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.5+ | |
| 2004 04 14 | 691 | 0.1− | 0.0 | 2005 07 07 | 691 | 0.2− | 0.7− | 2006 11 19 | 703 | 1.0− | 1.3+ | |
| 2004 04 14 | 691 | 0.1− | 0.1+ | 2005 07 07 | 691 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.4+ | 0.1− | |
| 2004 04 14 | 691 | 0.1− | 0.0 | 2005 07 07 | 691 | 0.0 | 0.1+ | | | | | |

**(144737)∗ 2004 GY$_{42}$**

Discovered 2004 Apr. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.88892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22176454 | $\omega$ | 4.99306 | | −0.85133804 | −0.49895147 | |
| $a$ | 2.7031780 | $\Omega$ | 143.57947 | | +0.47138174 | −0.86313186 | |
| $e$ | 0.1129041 | $i$ | 15.84298 | | +0.23026678 | −0.07778701 | |
| $P$ | 4.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 22 | 699 | 0.6+ | 0.9+ | 2004 04 15 | 704 | 0.8− | 0.0 | 2006 09 28 | 703 | (1.7+ | 1.7−) | |
| 1999 01 22 | 699 | 1.6+ | 0.0 | 2004 04 15 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.0 | |
| 1999 01 22 | 699 | (2.8+ | 0.3+) | 2004 04 16 | 699 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2+ | |
| 1999 02 12 | 691 | 0.4− | 0.1+ | 2004 04 16 | 699 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.1− | |
| 1999 02 12 | 691 | 0.7− | 0.1− | 2004 04 16 | 699 | 0.3− | 1.0− | 2006 10 21 | 703 | (1.5− | 1.2−) | |
| 1999 02 12 | 691 | 0.7− | 0.0 | 2004 04 16 | 699 | 1.0− | 0.7+ | 2006 10 21 | 703 | 0.0 | 1.0+ | |
| 1999 02 12 | 699 | (2.1+ | 0.3+) | 2004 04 26 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 1.0− | 0.3+ | |
| 1999 02 12 | 699 | 1.0+ | 0.8+ | 2004 04 26 | 704 | 0.3− | 0.7+ | 2006 10 21 | 703 | 0.1− | 1.0+ | |
| 1999 02 12 | 699 | 0.9+ | 0.6+ | 2004 04 26 | 704 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.4− | |
| 1999 02 13 | 704 | 0.2− | 0.9− | 2004 04 26 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.7+ | |
| 1999 02 13 | 704 | 0.6+ | 1.7+ | 2004 04 26 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.7− | 0.1− | |
| 1999 02 13 | 704 | 0.2− | 0.3+ | 2004 05 24 | 703 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.2+ | |
| 1999 02 13 | 704 | 1.6− | 1.0− | 2004 05 24 | 703 | 0.8+ | 0.8+ | 2006 10 22 | G96 | 0.3+ | 0.4− | |
| 1999 02 13 | 704 | (5.2− | 0.5−) | 2004 05 24 | 703 | 0.9+ | 0.7+ | 2006 10 22 | G96 | 0.0 | 0.3− | |
| 1999 02 23 | 699 | 1.0+ | 0.1− | 2004 05 24 | 703 | (0.8+ | 1.7+) | 2006 10 22 | G96 | 0.2+ | 0.2− | |
| 1999 02 23 | 699 | 1.1+ | 0.1− | 2004 06 07 | 703 | 0.5+ | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.7− | |
| 1999 02 23 | 699 | 1.3+ | 0.2+ | 2004 06 07 | 703 | 0.2+ | 0.4− | 2006 10 28 | 703 | 0.2+ | 0.3− | |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2004 06 07 | 703 | 1.4+ | 0.3+ | 2006 10 28 | 703 | (2.1− | 0.2−) | |
| 2001 09 12 | 704 | 1.1+ | 1.1+ | 2004 06 07 | 703 | 1.0+ | 0.3+ | 2006 10 28 | 703 | 0.0 | 0.8+ | |
| 2001 09 12 | 704 | 0.2+ | 1.3+ | 2005 07 11 | 703 | 0.4+ | 0.8− | 2006 11 17 | 703 | (1.1− | 3.6+) | |
| 2001 09 12 | 704 | 0.3+ | 0.1+ | 2005 07 11 | 703 | 1.3− | 0.2− | 2006 11 17 | 703 | 1.1+ | 1.1+ | |
| 2001 09 12 | 704 | 0.8− | 0.5+ | 2005 07 11 | 703 | (1.9− | 0.1+) | 2006 11 17 | 703 | 0.8− | 0.7+ | |
| 2003 01 28 | 704 | 0.2+ | 0.1+ | 2005 07 11 | 703 | 0.9− | 0.1− | 2006 11 17 | 703 | 0.2+ | 1.2+ | |
| 2003 01 28 | 704 | 0.8+ | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.4− | |
| 2003 01 28 | 704 | 0.8+ | 0.0 | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1− | |
| 2003 01 28 | 704 | 0.0 | 0.6− | 2005 07 18 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.6+ | 0.2− | |
| 2004 03 28 | 699 | 0.2− | 0.6+ | 2005 07 28 | 644 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− | |
| 2004 03 28 | 699 | 0.2− | 1.5+ | 2005 07 28 | 644 | 0.3− | 0.0 | 2006 11 23 | 703 | 1.1− | 0.7− | |
| 2004 03 28 | 699 | 1.4+ | 0.8+ | 2005 07 28 | 644 | 0.2− | 0.2− | 2006 11 23 | 703 | 0.5− | 1.4+ | |
| 2004 03 28 | 699 | 1.3+ | 0.5− | 2006 09 28 | 703 | 0.7+ | 0.3+ | 2006 11 23 | 703 | 0.3+ | 0.1− | |
| 2004 04 15 | 704 | 0.8− | 1.2+ | 2006 09 28 | 703 | 0.3+ | 0.1− | 2006 11 23 | 703 | 1.1− | 0.7+ | |
| 2004 04 15 | 704 | 0.4− | 0.7+ | 2006 09 28 | 703 | 0.1− | 0.1+ | | | | | |

**(144738)∗ 2004 GB$_{50}$**

Discovered 2004 Apr. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.79414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18846368 | $\omega$ | 33.16999 | | +0.26577403 | +0.96362663 | |
| $a$ | 3.0128969 | $\Omega$ | 252.25641 | | −0.89077537 | +0.23433948 | |
| $e$ | 0.0536695 | $i$ | 1.68883 | | −0.36862366 | +0.12848631 | |
| $P$ | 5.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.3+ | 0.8+ | 2004 05 19 | 691 | 0.0 | 0.0 | 2005 07 15 | G96 | 0.7− | 1.4− | |
| 2001 10 16 | 291 | 0.2+ | 0.9+ | 2004 05 28 | 691 | 0.5+ | 0.1+ | 2005 07 15 | G96 | 0.7− | 0.5+ | |
| 2001 10 16 | 291 | 0.1− | 0.7+ | 2004 05 28 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.3− | 0.7+ | |
| 2001 12 08 | 691 | 0.2− | 0.1− | 2004 05 28 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.4− | 0.3+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 691 | 0.4− | 0.1− | 2005 06 15 | G96 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.6+ |
| 2001 12 08 | 691 | 0.1− | 0.3− | 2005 06 15 | G96 | 0.3− | 0.9+ | 2006 10 20 | A44 | 0.3+ | 0.7− |
| 2002 01 09 | 291 | 0.0 | 0.4+ | 2005 06 15 | G96 | 0.0 | 0.5+ | 2006 10 20 | A44 | 0.1+ | 0.7− |
| 2002 01 09 | 291 | 0.1+ | 0.0 | 2005 06 15 | G96 | 0.1+ | 0.5+ | 2006 10 20 | A44 | 0.3− | 0.4− |
| 2002 01 09 | 291 | 0.2− | 0.5+ | 2005 07 04 | G96 | 0.3− | 0.6+ | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2004 04 12 | 691 | 0.1+ | 0.6+ | 2005 07 04 | G96 | 0.4+ | 0.7+ | 2006 10 29 | 691 | 0.0 | 0.6+ |
| 2004 04 12 | 691 | 0.2− | 0.5+ | 2005 07 04 | G96 | 0.6+ | 0.6+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.1+ | 0.5+ | 2005 07 04 | G96 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2004 04 19 | 691 | 0.5+ | 0.5+ | 2005 07 09 | 691 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2004 04 19 | 691 | 0.3+ | 0.5+ | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2004 04 19 | 691 | 0.4+ | 0.5+ | 2005 07 09 | 691 | 0.5− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2004 05 19 | 691 | 0.0 | 0.4+ | 2005 07 15 | G96 | 0.0 | 0.2+ | | | | |
| 2004 05 19 | 691 | 0.3− | 0.6+ | 2005 07 15 | G96 | 0.1− | 0.4+ | | | | |

**(144739)∗ 2004 GM$_{50}$**

Discovered 2004 Apr. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.84756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20105698 | $\omega$ | 276.69759 | | +0.09347699 | +0.99562001 | |
| $a$ | 2.8857361 | $\Omega$ | 358.66259 | | −0.88254987 | +0.08207693 | |
| $e$ | 0.1236151 | $i$ | 4.14275 | | −0.46083378 | +0.04476795 | |
| $P$ | 4.90 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.6+ | 0.0 | 2004 05 19 | 691 | 0.2+ | 0.2+ | 2005 08 31 | 704 | 0.4− | 0.6+ |
| 2000 08 26 | 704 | 0.1+ | 0.4− | 2004 05 19 | 691 | 0.3+ | 0.4+ | 2005 09 05 | 703 | 0.0 | 0.1+ |
| 2000 08 26 | 704 | 0.1+ | 0.5− | 2004 05 19 | 691 | 0.1+ | 0.1+ | 2005 09 05 | 703 | 0.8− | 0.4+ |
| 2001 11 12 | 704 | 1.2+ | 0.5+ | 2004 05 28 | 691 | 0.0 | 0.0 | 2005 09 05 | 703 | 0.8− | 0.8− |
| 2001 11 12 | 704 | 0.0 | 0.8+ | 2004 05 28 | 691 | 0.2+ | 0.1+ | 2005 09 05 | 703 | 0.9+ | 0.3− |
| 2001 11 12 | 704 | (0.4− | 1.6+) | 2004 05 28 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.5+ |
| 2003 02 01 | 645 | 0.1− | 0.1+ | 2005 08 02 | 704 | 0.9− | 0.5− | 2006 10 23 | 691 | 0.0 | 0.5+ |
| 2003 02 01 | 645 | 0.2− | 0.4− | 2005 08 02 | 704 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2005 08 02 | 704 | 0.9− | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.6+ |
| 2004 04 12 | 691 | 0.0 | 0.3+ | 2005 08 02 | 704 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.7+ |
| 2004 04 12 | 691 | 0.3− | 0.4+ | 2005 08 05 | 644 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.8+ |
| 2004 04 16 | 333 | 0.4+ | 0.3+ | 2005 08 05 | 644 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 2004 04 16 | 333 | 0.3+ | 0.5− | 2005 08 05 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.7− | 0.4− |
| 2004 04 19 | 691 | 0.1+ | 0.4+ | 2005 08 05 | 644 | 0.2− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2004 04 19 | 691 | 0.1− | 0.3+ | 2005 08 05 | 644 | 0.2− | 0.1+ | 2006 11 24 | 703 | 0.4+ | 1.0+ |
| 2004 04 19 | 691 | 0.2+ | 0.4+ | 2005 08 05 | 644 | 0.2− | 0.2+ | 2006 11 24 | 703 | 1.7+ | 0.8+ |
| 2004 04 25 | 691 | 0.0 | 0.5+ | 2005 08 28 | E12 | 0.9− | 0.4+ | 2006 11 24 | 703 | 1.9+ | 0.8+ |
| 2004 04 25 | 691 | 0.1− | 0.1+ | 2005 08 28 | E12 | 0.7+ | 0.4+ | 2006 11 24 | 703 | 0.7+ | 1.9+ |
| 2004 04 25 | 691 | 0.2+ | 0.4+ | 2005 08 28 | E12 | 0.1− | 1.1− | 2006 11 25 | 691 | 0.2− | 0.7+ |
| 2004 05 09 | 291 | 0.5+ | 0.4+ | 2005 08 28 | E12 | 0.0 | 0.3+ | 2006 11 25 | 691 | 0.1− | 0.3+ |
| 2004 05 09 | 291 | 0.6+ | 0.4+ | 2005 08 31 | 704 | 0.4− | 0.9+ | 2006 11 25 | 691 | 0.2− | 0.2+ |
| 2004 05 09 | 291 | 0.9+ | 0.3+ | 2005 08 31 | 704 | 0.1+ | 0.9+ | | | | |

**(144740)∗ 2004 GU$_{51}$ = 2005 MN$_{34}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 89547)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.60456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17677628 | $\omega$ | 171.37941 | | +0.33494170 | +0.94139672 | |
| $a$ | 3.1442716 | $\Omega$ | 118.18137 | | −0.86715895 | +0.32451194 | |
| $e$ | 0.1917908 | $i$ | 2.58976 | | −0.36857756 | +0.09200120 | |
| $P$ | 5.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 28 | 691 | 0.2− | 0.2+ | 2005 07 05 | G96 | 0.2− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 1995 12 28 | 691 | 0.3− | 0.0 | 2005 07 05 | G96 | 0.6− | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.3+ |
| 1995 12 28 | 691 | 0.2+ | 0.8+ | 2005 07 05 | G96 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.6+ | 0.7− |
| 2004 04 13 | 691 | 0.1+ | 0.5+ | 2005 07 05 | G96 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2004 04 13 | 691 | 0.2− | 0.1− | 2005 07 27 | 644 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2004 04 13 | 691 | 0.2− | 0.0 | 2005 07 27 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.5+ |
| 2004 04 19 | 691 | 0.3+ | 0.1+ | 2005 07 27 | 644 | 0.3+ | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2005 08 25 | 644 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2005 08 25 | 644 | 0.5− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2004 05 24 | 691 | 0.1+ | 0.3+ | 2005 08 25 | 644 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2004 05 24 | 691 | 0.2+ | 0.1− | 2005 10 06 | G96 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2004 05 24 | 691 | 0.0 | 0.2+ | 2005 10 06 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2005 06 29 | 644 | 0.1+ | 0.3+ | 2005 10 06 | G96 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2005 06 29 | 644 | 0.1+ | 0.2+ | 2005 10 06 | G96 | 0.0 | 0.1+ | 2006 11 23 | G96 | 1.0− | 0.1+ |
| 2005 06 29 | 644 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.5− | | | | |

**(144741)∗ 2004 GL$_{59}$ = 1999 NS$_{23}$**

Discovered 2004 Apr. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 65718)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.17147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18008704 | $\omega$ | 147.48543 | | −0.08876664 | +0.99446792 | |
| $a$ | 3.1056159 | $\Omega$ | 117.36695 | | −0.92684904 | −0.06181833 | |
| $e$ | 0.2340039 | $i$ | 3.62572 | | −0.36478946 | −0.08492384 | |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.2− | 0.5− | 2004 05 15 | 704 | 0.3+ | 0.7+ | 2005 09 29 | 699 | 1.1+ | 0.6+ |
| 1999 07 14 | 704 | 0.7− | 0.5− | 2004 05 15 | 704 | 0.3− | 0.7+ | 2005 10 01 | 704 | 0.1+ | 0.4+ |
| 1999 07 14 | 704 | 0.9− | 0.3+ | 2004 05 15 | 704 | 0.2− | 0.1+ | 2005 10 01 | 704 | 0.1+ | 0.1+ |
| 1999 07 14 | 704 | 0.3− | 0.8− | 2004 05 15 | 704 | 0.1+ | 0.6+ | 2005 10 01 | 704 | 0.2+ | 0.3+ |
| 1999 07 14 | 704 | 0.0 | 0.2− | 2004 05 15 | 704 | 0.4− | 0.0 | 2005 10 01 | 704 | 0.6+ | 0.0 |
| 1999 07 16 | 704 | 0.1− | 0.0 | 2004 05 17 | 704 | 0.2− | 0.3+ | 2005 10 01 | 704 | 0.4+ | 0.6+ |
| 1999 07 16 | 704 | 0.4+ | 0.5+ | 2004 05 17 | 704 | 0.1+ | 0.1+ | 2005 10 01 | 703 | 0.5− | 0.7− |
| 1999 07 16 | 704 | 0.2− | 0.2− | 2004 05 17 | 704 | 0.4− | 0.1− | 2005 10 01 | 703 | 0.1− | 0.2+ |
| 1999 07 16 | 704 | 0.1+ | 0.8− | 2004 05 17 | 704 | 0.6− | 0.3+ | 2005 10 01 | 703 | 0.3− | 0.1− |
| 1999 07 16 | 704 | 0.5+ | 0.1+ | 2004 05 17 | 704 | 0.1− | 0.4− | 2005 10 01 | 703 | 1.0− | 0.3− |
| 1999 07 20 | 699 | 0.8+ | 0.0 | 2004 05 18 | 704 | 0.2+ | 0.7+ | 2005 10 01 | 703 | 0.5− | 0.4+ |
| 1999 07 20 | 699 | 0.8+ | 0.1− | 2004 05 18 | 704 | 0.1+ | 0.8+ | 2005 10 01 | 703 | 0.5− | 0.4− |
| 1999 07 20 | 699 | (2.1− | 1.1−) | 2004 05 18 | 704 | 0.5− | 0.7+ | 2005 10 01 | 703 | (0.1+ | 1.9−) |
| 2003 01 31 | 644 | 0.2+ | 0.4+ | 2004 05 18 | 704 | 0.3− | 0.7+ | 2005 10 13 | 691 | 0.5− | 0.2+ |
| 2003 01 31 | 644 | 0.4+ | 0.6+ | 2004 05 18 | 704 | 0.3− | 0.9+ | 2005 10 13 | 691 | 0.1+ | 0.4+ |
| 2003 01 31 | 644 | 0.5+ | 0.5+ | 2004 05 22 | 704 | 0.1+ | 0.9+ | 2005 10 13 | 691 | 0.3+ | 0.2− |
| 2004 04 12 | 699 | 0.5+ | 0.6+ | 2004 05 22 | 704 | 0.5− | 0.5+ | 2006 10 22 | G96 | 0.7− | 0.8− |
| 2004 04 12 | 699 | 0.6− | 0.2+ | 2004 05 22 | 704 | 0.3+ | 0.8+ | 2006 10 22 | G96 | 0.5− | 0.5− |
| 2004 04 12 | 699 | 0.1− | 0.5+ | 2004 05 22 | 704 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.4− | 0.6− |
| 2004 04 12 | 699 | 0.1− | 1.2+ | 2004 05 22 | 704 | 0.8+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2004 04 19 | 704 | 1.0+ | 0.7+ | 2004 06 05 | 699 | 0.3+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2004 04 19 | 704 | 0.9+ | 0.8+ | 2004 06 05 | 699 | 0.3+ | 0.6+ | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2004 04 19 | 704 | 0.4+ | 0.1− | 2004 06 05 | 699 | 0.4− | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2004 04 19 | 704 | 0.3− | 0.3+ | 2004 06 05 | 699 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.5+ |
| 2004 04 22 | 704 | 0.3+ | 0.7+ | 2005 08 25 | 644 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2004 04 22 | 704 | 0.9+ | 0.7+ | 2005 08 25 | 644 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.3− | 0.2− |
| 2004 04 22 | 704 | 1.1+ | 0.5+ | 2005 08 25 | 644 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2004 04 22 | 704 | 0.5+ | 0.9+ | 2005 08 30 | 691 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.3+ |
| 2004 04 22 | 704 | (1.1+ | 1.7+) | 2005 08 30 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2004 05 01 | 703 | 1.0+ | 0.3+ | 2005 08 30 | 691 | 0.0 | 0.5+ | 2006 11 19 | 691 | 0.3+ | 0.8+ |
| 2004 05 01 | 703 | 0.0 | 0.1+ | 2005 09 13 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2004 05 01 | 703 | 1.0− | 0.5+ | 2005 09 13 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2004 05 01 | 703 | 0.3− | 0.1− | 2005 09 13 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.6+ |
| 2004 05 10 | 608 | 1.5+ | 1.1+ | 2005 09 29 | 699 | 0.2− | 0.5+ | 2006 11 23 | 691 | 0.2− | 0.4+ |
| 2004 05 10 | 608 | 1.2+ | 1.0+ | 2005 09 29 | 699 | 0.0 | 0.7− | 2006 11 23 | 691 | 0.1− | 0.6+ |
| 2004 05 10 | 608 | 1.4+ | 0.8+ | 2005 09 29 | 699 | 0.4− | 1.0+ | | | | |

**(144742)∗ 2004 GZ$_{60}$ = 1999 HW$_{5}$**

Discovered 2004 Apr. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 62162)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.00155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19177544 | $\omega$ | 136.19785 | | −0.84714591 | +0.52832119 | |
| $a$ | 2.9781099 | $\Omega$ | 75.77525 | | −0.50221290 | −0.76121038 | |
| $e$ | 0.0716354 | $i$ | 3.35628 | | −0.17356844 | −0.37607908 | |
| $P$ | 5.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.2+ | 0.2− | 2004 03 28 | 704 | 1.4+ | 1.0+ | 2004 05 29 | 691 | 0.1+ | 0.3+ |
| 1996 11 07 | 691 | 0.0 | 0.3+ | 2004 03 28 | 704 | 1.4+ | 1.4+ | 2004 05 29 | 691 | 0.4+ | 0.3+ |
| 1996 11 07 | 691 | 0.2+ | 0.2+ | 2004 03 28 | 704 | (0.5+ | 2.2+) | 2005 09 01 | 291 | 0.5− | 0.3+ |
| 1998 01 08 | 688 | 1.4+ | 0.8+ | 2004 03 28 | 704 | 0.5+ | 0.3+ | 2005 09 01 | 291 | 0.2− | 0.4+ |
| 1998 01 08 | 688 | 1.3+ | 0.0 | 2004 04 15 | 699 | 0.5− | 0.5− | 2005 09 01 | 291 | 0.0 | 0.7+ |
| 1999 04 17 | 691 | 0.5− | 0.2+ | 2004 04 15 | 699 | 0.8− | 0.7− | 2006 09 19 | 691 | 0.2− | 0.5+ |
| 1999 04 17 | 691 | 0.5− | 0.0 | 2004 04 15 | 699 | (1.8− | 0.1+) | 2006 09 19 | 691 | 0.3− | 0.3+ |
| 1999 04 17 | 691 | 0.7− | 0.1+ | 2004 04 15 | 699 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.4+ |
| 1999 04 22 | 691 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.9+ | 1.0+ | 2006 09 23 | 691 | 0.2− | 0.5+ |
| 1999 04 22 | 691 | 0.8+ | 1.0+ | 2004 04 19 | 704 | 0.8+ | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.6+ |
| 1999 04 22 | 691 | 0.1+ | 0.4− | 2004 04 19 | 704 | 0.2+ | 0.7+ | 2006 09 23 | 691 | 0.3− | 0.6+ |
| 2001 10 24 | 704 | 0.4+ | 1.0+ | 2004 04 19 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.5− | 0.4+ |
| 2001 10 24 | 704 | 0.4− | 0.0 | 2004 04 19 | 704 | 1.2+ | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2001 10 24 | 704 | 0.3− | 0.2+ | 2004 04 22 | 704 | (1.9+ | 1.6+) | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2002 12 31 | 291 | 0.2− | 0.2+ | 2004 04 22 | 704 | (1.9+ | 0.8+) | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 12 31 | 291 | 0.9− | 0.2+ | 2004 04 22 | 704 | 1.2+ | 1.4+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 12 31 | 291 | 0.3− | 0.6+ | 2004 04 22 | 704 | (3.3+ | 3.0+) | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2003 01 05 | 704 | 1.2+ | 0.9+ | 2004 05 12 | 699 | 1.3+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2003 01 05 | 704 | 0.4+ | 1.0+ | 2004 05 12 | 699 | (1.7+ | 1.3−) | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.3− | 1.0+ | 2004 05 12 | 699 | 1.1− | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 1.3+ | 1.4+ | 2004 05 12 | 699 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2004 03 28 | 704 | 0.0 | 0.1+ | 2004 05 29 | 691 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.2− |

**(144743)∗ 2004 GD$_{61}$**

Discovered 2004 Apr. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.54185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18731732 | $\omega$ | 162.69656 | | −0.34316983 | +0.93773486 | |
| $a$ | 3.0251768 | $\Omega$ | 87.20707 | | −0.86800681 | −0.29475244 | |
| $e$ | 0.1829247 | $i$ | 3.08412 | | −0.35888529 | −0.18377791 | |
| $P$ | 5.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 691 | 0.0 | 0.2+ | 2004 05 11 | 699 | 0.5+ | 0.5+ | 2005 08 28 | 699 | 0.7+ | 0.6+ |
| 2000 09 29 | 691 | 0.3− | 0.4+ | 2004 05 11 | 699 | 0.2− | 0.4+ | 2005 08 28 | 699 | 0.2− | 0.4− |
| 2000 09 29 | 691 | 0.2− | 0.3+ | 2004 05 12 | 699 | 0.4+ | 1.1+ | 2005 08 28 | 699 | 0.4− | 0.5+ |
| 2001 11 16 | 691 | 0.2− | 0.2+ | 2004 05 12 | 699 | 0.6+ | 0.8+ | 2005 08 28 | 699 | 0.6− | 0.5+ |
| 2001 11 16 | 691 | 0.1+ | 0.3+ | 2004 05 12 | 699 | 0.4− | 0.3− | 2005 08 30 | 691 | 0.2+ | 0.3− |
| 2001 11 16 | 691 | 0.4+ | 0.1− | 2004 05 12 | 699 | 0.5+ | 0.5+ | 2005 08 30 | 691 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.3− | 0.9+ | 2004 05 15 | 704 | 0.2+ | 0.2+ | 2005 08 30 | 691 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.8+ | 0.6+ | 2004 05 15 | 704 | 0.6+ | 0.4+ | 2005 09 14 | 691 | 0.1− | 0.2+ |
| 2001 12 14 | 704 | 1.0− | 0.4+ | 2004 05 15 | 704 | 1.2+ | 0.3+ | 2005 09 14 | 691 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.4+ | 0.5− | 2004 05 15 | 704 | 1.4− | 0.8+ | 2005 09 14 | 691 | 0.1+ | 0.1+ |
| 2003 01 05 | 460 | 1.2− | 0.6+ | 2004 05 15 | 704 | 0.1+ | 0.1+ | 2005 09 23 | 703 | 0.3− | 0.0 |
| 2003 01 05 | 460 | 0.1− | 0.4+ | 2004 05 17 | 704 | 0.3− | 0.9+ | 2005 09 23 | 703 | (2.1− | 1.0−) |
| 2004 04 15 | 699 | 0.4+ | 0.3− | 2004 05 17 | 704 | 0.0 | 0.2+ | 2005 09 23 | 703 | 1.2− | 0.8− |
| 2004 04 15 | 699 | 0.1+ | 0.4− | 2004 05 17 | 704 | 0.3− | 0.2+ | 2005 09 23 | 703 | 0.7− | 0.5+ |
| 2004 04 15 | 699 | 1.4+ | 0.2+ | 2004 05 17 | 704 | 0.7− | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2004 04 15 | 699 | 0.5+ | 0.1− | 2004 05 17 | 704 | 0.4− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.6+ |
| 2004 04 19 | 704 | 0.5+ | 0.6+ | 2004 05 21 | 704 | 0.7+ | 1.1+ | 2006 10 12 | 691 | 0.3− | 0.3+ |
| 2004 04 19 | 704 | 0.9− | 0.2+ | 2004 05 21 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.4+ |
| 2004 04 19 | 704 | 0.4− | 1.2+ | 2004 05 21 | 704 | 0.6+ | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.5+ |
| 2004 04 19 | 704 | 0.1− | 0.6+ | 2004 05 21 | 704 | 1.1+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 2004 04 19 | 704 | 0.2+ | 1.2+ | 2004 05 21 | 704 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.6+ |
| 2004 04 22 | 704 | 0.5+ | 0.0 | 2004 06 12 | 704 | (2.1+ | 0.6−) | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 04 22 | 704 | 0.5+ | 0.7+ | 2004 06 12 | 704 | 1.4+ | 0.1− | 2006 11 01 | 691 | 0.3− | 0.7+ |
| 2004 04 22 | 704 | 0.2+ | 0.0 | 2004 06 12 | 704 | 0.3− | 0.5+ | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2004 04 22 | 704 | 0.3+ | 0.1+ | 2005 08 26 | 644 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2004 04 22 | 704 | 0.3+ | 0.1− | 2005 08 26 | 644 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2005 08 26 | 644 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.6+ | 0.1+ |
| 2004 04 25 | 691 | 0.0 | 0.4+ | 2005 08 26 | 699 | 0.6− | 0.6− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2004 04 25 | 691 | 0.2+ | 0.2+ | 2005 08 26 | 699 | 0.2− | 0.6+ | 2006 11 14 | 691 | 0.1+ | 0.6+ |
| 2004 05 11 | 699 | 0.2− | 0.3+ | 2005 08 26 | 699 | (0.2− | 1.6+) | 2006 11 14 | 691 | 0.5− | 0.4+ |
| 2004 05 11 | 699 | 0.4− | 1.0+ | 2005 08 26 | 699 | 0.9− | 0.6− | | | | |

**(144744)∗ 2004 GC$_{62}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.10787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19244203 | $\omega$ | 320.06867 | | +0.99945437 | −0.00454538 | |
| $a$ | 2.9712288 | $\Omega$ | 40.22819 | | +0.01826449 | +0.90132890 | |
| $e$ | 0.0164096 | $i$ | 2.90363 | | −0.02752043 | +0.43311147 | |
| $P$ | 5.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 12 | 691 | 0.4− | 0.1− | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 |
| 1991 11 12 | 691 | 0.2+ | 0.3− | 2002 12 31 | 645 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.5− | 0.3− |
| 1991 11 12 | 691 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 0.6− | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 1994 04 13 | 691 | 0.5+ | 0.9+ | 2004 03 27 | 704 | 0.6− | 1.3+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 1994 04 13 | 691 | 0.4+ | 0.4+ | 2004 03 27 | 704 | 0.8+ | 0.3+ | 2006 10 15 | 703 | 1.4− | 0.2+ |
| 1994 04 13 | 691 | 0.3− | 0.3+ | 2004 03 27 | 704 | 0.4+ | 1.3− | 2006 10 15 | 703 | 1.1− | 1.4+ |
| 2001 09 19 | 704 | 0.3+ | 1.1+ | 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 10 15 | 703 | (0.8+ | 1.6−) |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2004 04 13 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.6− | 0.2+ | 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.7+ | 0.8+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.6+ | 0.5+ | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.6− |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2001 10 20 | 704 | 0.3− | 0.8+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 10 20 | 704 | 0.4+ | 0.9+ | 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2001 11 20 | 691 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.5− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2001 11 20 | 691 | 0.9− | 0.8− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2001 11 20 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | (0.4− | 1.5+) | 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.1− | 1.3+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | | | |

**(144745)∗ 2004 GR$_{65}$ = 2001 SX$_{326}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 73005)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.34585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21818193 | $\omega$ | 184.37088 | | +0.99904814 | −0.04361372 | |
| $a$ | 2.7326889 | $\Omega$ | 178.12822 | | +0.04073518 | +0.92615419 | |
| $e$ | 0.0467672 | $i$ | 1.41951 | | +0.01560308 | +0.37461482 | |
| $P$ | 4.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 291 | 0.2− | 0.1+ | 2004 04 20 | 691 | 0.2− | 0.1− | 2005 07 15 | G96 | 0.1− | 0.1+ |
| 2001 09 18 | 291 | 0.3− | 0.0 | 2004 04 20 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.5+ | 0.3− |
| 2001 09 18 | 291 | 0.5− | 0.0 | 2005 06 14 | G96 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.6− |
| 2001 09 21 | 704 | 1.0+ | 0.2+ | 2005 06 14 | G96 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | (1.9+ | 0.3+) | 2005 06 14 | G96 | 0.4− | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 1.0+ | 1.0− | 2005 06 14 | G96 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.4− | 0.3+ |
| 2001 09 21 | 704 | 1.3+ | 0.4+ | 2005 07 04 | 691 | 0.6+ | 0.0 | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.8+ | 0.5+ | 2005 07 04 | 691 | 0.1+ | 0.4− | 2006 11 16 | 703 | 0.9+ | 0.0 |
| 2004 03 16 | 691 | 0.1− | 0.4+ | 2005 07 04 | 691 | 0.0 | 0.3− | 2006 11 16 | 703 | (2.1+ | 0.1+) |
| 2004 03 16 | 691 | 0.0 | 0.2+ | 2005 07 07 | 568 | 0.7− | 1.2+ | 2006 11 16 | 703 | 1.1+ | 0.4− |
| 2004 03 16 | 691 | 0.7+ | 0.2+ | 2005 07 07 | 568 | 0.7− | 1.2+ | 2006 11 16 | 703 | 0.5− | 0.5+ |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2005 07 07 | 568 | 0.7− | 1.3+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2005 07 15 | G96 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.1+ | 0.1− | 2005 07 15 | G96 | 0.4− | 0.2− | 2006 11 27 | G96 | 0.1− | 0.3+ |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2005 07 15 | G96 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.3+ |

**(144746)∗ 2004 $GA_{67}$ = 2003 $AX_{45}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69718)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.77206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22752324 | $\omega$ | 35.02786 | | +0.75074807 | | −0.66054806 |
| $a$ | 2.6573711 | $\Omega$ | 6.32904 | | +0.58990692 | | +0.66539090 |
| $e$ | 0.1398022 | $i$ | 3.80762 | | +0.29729978 | | +0.34775164 |
| $P$ | 4.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 09 | 327 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 15 | 704 | 0.2− | 0.5+ |
| 1997 10 09 | 327 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.2− | 0.3+ |
| 1997 10 09 | 327 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 15 | 704 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.6− | 0.3+ |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.6− | 0.6− | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.5+ | 2006 10 04 | G96 | 0.6− | 0.3− | 2006 11 16 | 704 | 0.0 | 0.4− |
| 2003 01 05 | 704 | 0.2− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2003 01 05 | 704 | 0.1− | 1.0− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 17 | 711 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.2− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 711 | 0.1− | 0.2− |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 17 | 711 | 0.4+ | 0.1− |
| 2003 01 09 | 704 | (0.7+ | 1.8−) | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.1+ | 0.8− |
| 2003 01 09 | 704 | 0.4+ | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 0.1+ | 0.6− |
| 2004 04 20 | 691 | 0.1− | 0.4− | 2006 11 14 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.8+ | 0.1− |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2004 04 20 | 691 | 0.1− | 0.3− | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 1.3− | 0.3+ |
| 2004 05 09 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.5+ |
| 2004 05 09 | 691 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.6− | 0.9+ | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2004 05 09 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 704 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.1+ |

**(144747)∗ 2004 $GX_{74}$ = 1992 $EW_{29}$ = 2000 $FK_{60}$**

Discovered 2004 Apr. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 62163)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.17594 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25210164 | $\omega$ | 339.22958 | | −0.55506995 | | −0.82818221 |
| $a$ | 2.4817171 | $\Omega$ | 144.35948 | | +0.78070578 | | −0.55087030 |
| $e$ | 0.0918921 | $i$ | 7.64651 | | +0.28704675 | | −0.10322857 |
| $P$ | 3.91 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 0.9+ | 0.2− | 2004 04 20 | 683 | (1.8+ | 3.3−) | 2005 07 09 | 691 | 0.1− | 0.2+ |
| 1992 03 07 | 809 | 0.0 | 1.7+ | 2004 04 21 | 703 | 0.7− | 0.6+ | 2005 07 09 | 691 | 0.2− | 0.0 |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2004 04 21 | 703 | 0.1+ | 1.0+ | 2005 07 28 | 644 | 0.1− | 0.0 |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2004 04 21 | 703 | 0.2− | 0.7+ | 2005 07 28 | 644 | 0.0 | 0.1− |
| 2000 03 29 | 704 | 0.0 | 0.3+ | 2004 04 21 | 703 | 0.1− | 0.6+ | 2005 07 28 | 644 | 0.0 | 0.0 |
| 2000 03 29 | 704 | 0.8− | 0.9+ | 2004 04 23 | 704 | 0.9+ | 1.1− | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2000 03 29 | 704 | 0.2+ | 0.0 | 2004 04 23 | 704 | 0.8+ | 0.0 | 2006 11 15 | 703 | 0.0 | 0.1− |
| 2000 03 29 | 704 | 0.1+ | 0.4+ | 2004 04 23 | 704 | 0.2− | 0.3+ | 2006 11 15 | 703 | (2.2− | 0.4+) |
| 2000 03 29 | 704 | (1.6+ | 2.1+) | 2004 04 23 | 704 | 0.4+ | 0.2+ | 2006 11 15 | 703 | (0.1+ | 1.8+) |
| 2000 04 08 | 704 | 1.0+ | 0.2+ | 2004 04 23 | 704 | 0.1+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.5+ |
| 2000 04 08 | 704 | 0.0 | 0.8+ | 2004 04 25 | 699 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.7+ |
| 2000 04 08 | 704 | 1.7+ | 0.4− | 2004 04 25 | 699 | (1.0− | 2.2−) | 2006 11 25 | G96 | 0.2− | 0.6+ |
| 2000 04 08 | 704 | 0.3− | 0.4+ | 2004 04 25 | 699 | 0.9+ | 0.6− | 2006 11 25 | G96 | 0.2+ | 0.7+ |
| 2004 04 15 | 644 | 0.2+ | 0.2− | 2004 04 25 | 699 | 0.7− | 0.2+ | 2006 11 25 | 703 | 0.4− | 0.1+ |
| 2004 04 15 | 644 | 0.4+ | 0.0 | 2005 07 06 | 691 | 0.0 | 0.1+ | 2006 11 25 | 703 | 0.5+ | 0.1− |
| 2004 04 15 | 644 | 0.5+ | 0.0 | 2005 07 06 | 691 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.3− | 0.8+ |
| 2004 04 20 | 683 | (2.7+ | 2.5−) | 2005 07 06 | 691 | 0.0 | 0.3+ | 2006 11 25 | 703 | 0.1− | 0.4+ |
| 2004 04 20 | 683 | (0.8+ | 3.0−) | 2005 07 09 | 691 | 0.2+ | 0.0 | | | | |

**(144748)∗ 2004 $GR_{80}$ = 2005 $NK_{16}$**

Discovered 2004 Apr. 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86475)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.66062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23826542 | $\omega$ | 263.73441 | | +0.39465347 | | +0.91852760 |
| $a$ | 2.5768870 | $\Omega$ | 29.54490 | | −0.82297975 | | +0.36477657 |
| $e$ | 0.0717706 | $i$ | 2.74007 | | −0.40859879 | | +0.15246344 |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.3− | 0.2− | 2004 03 30 | 291 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.4+ |
| 2000 04 05 | 704 | 0.1+ | 0.2+ | 2004 03 30 | 291 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.5− | 0.2+ |
| 2000 04 05 | 704 | 0.9+ | 0.6+ | 2004 04 13 | 691 | 0.0 | 0.5+ | 2006 10 17 | G96 | 1.0− | 0.3+ |
| 2000 04 05 | 704 | 0.3+ | 0.1− | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.3+ |
| 2001 07 16 | 608 | 0.1+ | 0.3+ | 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.8− | 0.1+ |
| 2001 07 16 | 608 | 0.2+ | 0.2− | 2004 04 21 | 691 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2001 07 16 | 608 | 0.1− | 0.1− | 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 08 14 | 608 | 0.0 | 0.6− | 2005 07 02 | 691 | 0.4+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2001 08 14 | 608 | 0.2+ | 0.7− | 2005 07 02 | 691 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.6− | 0.1+ |
| 2001 08 14 | 608 | 0.3− | 0.1− | 2005 07 02 | 691 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.5− | 0.2− |
| 2001 08 22 | 608 | 0.0 | 0.0 | 2005 07 07 | 691 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 08 22 | 608 | 0.0 | 0.4+ | 2005 07 07 | 691 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2001 08 22 | 608 | 0.5− | 0.5+ | 2005 07 07 | 691 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2004 03 23 | 691 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.2+ |
| 2004 03 23 | 691 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.3− | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.1+ |
| 2004 03 30 | 291 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.1− |

**(144749)∗ 2004 $GF_{83}$ = 2001 $UU_{100}$**

Discovered 2004 Apr. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65724)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.99198 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19940058 | $\omega$ | 323.92723 | | +0.76139862 | | −0.64586574 |
| $a$ | 2.9016951 | $\Omega$ | 76.40120 | | +0.60745627 | | +0.68064598 |
| $e$ | 0.0975463 | $i$ | 3.29956 | | +0.22642664 | | +0.34580123 |
| $P$ | 4.94 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.3+ | 0.8+ | 2003 02 01 | 645 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.8+ | 0.2− |
| 2001 09 16 | 704 | 0.2+ | 0.8+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.4− | 0.3+ |
| 2001 09 16 | 704 | 0.2− | 0.4+ | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.4− | 0.2+ |
| 2001 09 16 | 704 | 0.9− | 0.0 | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.2− | 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2001 10 15 | 645 | 0.0 | 0.2− | 2004 07 15 | 807 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2001 10 20 | 704 | 0.4− | 0.5+ | 2004 07 15 | 807 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2004 07 16 | 807 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.1+ | 2004 07 17 | 807 | 0.3− | 1.1+ | 2006 10 20 | 644 | 0.5+ | 0.3+ |
| 2001 10 20 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.6− | 0.4+ |
| 2001 10 20 | 704 | 0.9− | 0.5+ | 2006 09 18 | 699 | 1.2− | 1.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 1.4+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 1.1− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 10 23 | 704 | 0.1+ | 1.2+ | 2006 09 18 | 699 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.7− | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.4− | 0.5+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2− | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | (0.3+ | 2.0+) | 2006 10 22 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.6− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.7− | 1.1+ | | | | |

**(144750)∗ 2004 GN$_{87}$ = 2003 BU$_{82}$**

Discovered 2004 Apr. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69719)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.60538 | | | (2000.0) | | |
| $n$ | 0.18963385 | $\omega$ | 201.79181 | | +0.49671862 | +0.84177159 |
| $a$ | 3.0004897 | $\Omega$ | 98.55318 | | −0.76138854 | +0.53954799 |
| $e$ | 0.0609376 | $i$ | 12.34399 | | −0.41660304 | +0.01756581 |
| $P$ | 5.20 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 08 | 703 | 0.1+ | 0.3+ | 2003 02 04 | 699 | 1.2− | 0.5− | 2005 07 29 | E12 | (0.6− | 1.6+) |
| 1999 05 08 | 703 | 1.3+ | 0.2+ | 2003 02 04 | 699 | 0.7− | 0.2− | 2006 09 18 | 703 | 0.0 | 1.3+ |
| 1999 05 08 | 703 | 0.1− | 0.4+ | 2003 02 04 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.7+ | 0.9− |
| 1999 05 08 | 703 | 0.6+ | 0.7− | 2003 02 04 | 704 | (2.2+ | 0.6−) | 2006 09 18 | 703 | 1.0− | 0.6− |
| 2000 07 10 | 699 | 0.2+ | 0.0 | 2003 02 04 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.8− |
| 2000 07 10 | 699 | 0.3− | 0.6+ | 2003 02 04 | 704 | 0.5+ | 0.4− | 2006 10 12 | 644 | 0.4− | 0.7+ |
| 2000 07 10 | 699 | 0.2+ | 0.9− | 2004 03 15 | 704 | 0.6− | 1.1+ | 2006 10 12 | 644 | 0.2− | 0.8+ |
| 2000 07 10 | 699 | 1.3− | 1.4− | 2004 03 15 | 704 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.7+ |
| 2001 11 15 | 704 | 0.0 | 0.6+ | 2004 03 15 | 704 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.3+ |
| 2001 11 15 | 704 | 0.5+ | 0.6+ | 2004 03 15 | 704 | 0.1− | 0.6+ | 2006 10 28 | 703 | 0.2+ | 0.9+ |
| 2001 11 15 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 1.2− | 0.9+ | 2006 10 28 | 703 | 0.7+ | 0.1− |
| 2001 11 15 | 704 | 0.0 | 0.2− | 2004 04 15 | 704 | 0.5+ | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.3− |
| 2001 11 15 | 704 | 0.4+ | 0.1+ | 2004 04 15 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2001 11 19 | 699 | 0.5− | 0.0 | 2004 04 15 | 704 | 1.2+ | 0.7− | 2006 11 09 | 644 | 0.4− | 0.6+ |
| 2001 11 19 | 699 | 1.2− | 0.4+ | 2004 04 26 | 608 | 1.0+ | 1.1+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2001 11 19 | 699 | 0.3+ | 0.2− | 2004 04 26 | 608 | (0.5+ | 1.6+) | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2001 11 19 | 699 | (1.0+ | 1.7+) | 2004 04 26 | 608 | 1.0+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.6+ |
| 2003 01 31 | 699 | 0.1+ | 0.4− | 2004 05 12 | 644 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2003 01 31 | 699 | 0.4− | 0.1+ | 2004 05 12 | 644 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.3+ |
| 2003 01 31 | 699 | 1.2+ | 0.4− | 2004 05 12 | 644 | 0.1+ | 1.0+ | 2006 11 16 | 703 | 0.5− | 0.2+ |
| 2003 01 31 | 699 | 0.2+ | 1.2− | 2005 07 29 | E12 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.0 | 0.2+ |
| 2003 02 04 | 699 | 0.3+ | 0.3− | 2005 07 29 | E12 | 0.1+ | 0.3+ | 2006 11 16 | 703 | 0.3− | 0.3+ |
| 2003 02 04 | 699 | 1.0− | 1.0+ | 2005 07 29 | E12 | 0.1− | 0.4+ | | | | |

**(144751)∗ 2004 GZ$_{87}$**

Discovered 2004 Apr. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 165.95736 | | | (2000.0) | | |
| $n$ | 0.22558492 | $\omega$ | 336.47766 | | −0.58082430 | +0.78159619 |
| $a$ | 2.6725716 | $\Omega$ | 257.25453 | | −0.70493061 | −0.62269337 |
| $e$ | 0.1192213 | $i$ | 13.48757 | | −0.40708225 | −0.03688308 |
| $P$ | 4.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 04 | 608 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.0 | 0.1− | 2005 07 08 | 703 | 0.4− | 0.6− |
| 2000 06 04 | 608 | 0.1+ | 0.8− | 2004 03 26 | 704 | 0.6+ | 0.8− | 2005 07 16 | 703 | 0.2− | 0.2− |
| 2000 06 04 | 608 | 0.3+ | 0.2− | 2004 03 26 | 704 | 0.1+ | 0.2+ | 2005 07 16 | 703 | 0.0 | 1.0− |
| 2001 08 22 | 704 | 1.1− | 0.0 | 2004 03 26 | 704 | 0.4+ | 0.3+ | 2005 07 16 | 703 | 0.4− | 0.5− |
| 2001 08 22 | 704 | 0.8− | 0.4− | 2004 03 26 | 704 | 0.8+ | 0.2− | 2005 07 16 | 703 | 0.1− | 0.3+ |
| 2001 08 22 | 704 | 0.4− | 0.2+ | 2004 03 26 | 704 | 0.1+ | 0.2− | 2006 11 01 | A50 | 0.4− | 0.3− |
| 2001 08 22 | 704 | 0.6− | 0.6+ | 2004 04 13 | 644 | 0.3+ | 0.2+ | 2006 11 01 | A50 | 0.1+ | 0.3− |
| 2001 09 29 | 644 | 0.1+ | 0.9+ | 2004 04 13 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 2001 09 29 | 644 | 0.0 | 1.1+ | 2004 04 13 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.7− | 0.8+ |
| 2001 09 29 | 644 | 0.4+ | 0.8+ | 2004 04 24 | 703 | 0.1+ | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.5+ |
| 2002 12 05 | 704 | 0.4+ | 0.8+ | 2004 04 24 | 703 | 0.1+ | 1.0+ | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2004 04 24 | 703 | (0.3+ | 1.7+) | 2006 11 19 | 704 | 0.9+ | 1.7− |
| 2002 12 05 | 704 | 0.6− | 0.3− | 2004 04 24 | 703 | (0.1− | 2.0+) | 2006 11 19 | 704 | 1.4+ | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 1.0+ | 2005 06 30 | 644 | 0.4+ | 0.0 | 2006 11 19 | 704 | 2.4+ | 0.4+ |
| 2004 03 17 | 704 | 0.4+ | 0.8+ | 2005 06 30 | 644 | 0.6+ | 0.1+ | 2006 11 22 | 703 | 0.2+ | 0.3− |
| 2004 03 17 | 704 | 0.5− | 1.3+ | 2005 06 30 | 644 | 0.6+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2004 03 17 | 704 | 0.7− | 0.7+ | 2005 07 06 | 699 | 0.9− | 1.0+ | 2006 11 22 | 703 | 0.7+ | 0.2− |
| 2004 03 17 | 704 | 0.6− | 0.5+ | 2005 07 06 | 699 | (2.0+ | 0.3+) | 2006 11 22 | 703 | 0.8− | 0.7− |
| 2004 03 17 | 704 | 0.1− | 1.1− | 2005 07 06 | 699 | 0.7− | 0.5+ | 2006 11 22 | 703 | 0.6− | 1.0− |
| 2004 03 18 | 704 | 0.0 | 0.1− | 2005 07 06 | 699 | 1.0+ | 1.1+ | 2006 11 22 | 703 | 0.7− | 0.3− |
| 2004 03 18 | 704 | 0.0 | 0.1− | 2005 07 08 | 703 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.4− | 0.1− |
| 2004 03 18 | 704 | 0.4− | 0.1− | 2005 07 08 | 703 | (1.9+ | 1.4−) | 2006 11 22 | 703 | 1.4− | 1.5+ |
| 2004 03 18 | 704 | 0.4− | 0.2+ | 2005 07 08 | 703 | 0.0 | 0.3− | | | | |

**(144752)∗ 2004 HK = 2000 QW$_{15}$ = 2001 XW$_{124}$**

Discovered 2004 Apr. 16 at Moletai Astronomical Observatory.

Id. G. V. Williams (*MPO* 65724)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 93.78789 | | | (2000.0) | | |
| $n$ | 0.19099141 | $\omega$ | 191.09392 | | +0.42016143 | +0.90669939 |
| $a$ | 2.9862545 | $\Omega$ | 103.75937 | | −0.82963487 | +0.40028350 |
| $e$ | 0.0608210 | $i$ | 2.17639 | | −0.36765521 | +0.13292607 |
| $P$ | 5.16 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 21 | 691 | 0.5− | 0.0 | 2001 12 17 | 704 | 0.3+ | 0.7− | 2005 07 27 | 644 | 0.1− | 0.4+ |
| 1999 04 21 | 691 | (2.0− | 3.5−) | 2001 12 17 | 704 | 0.2+ | 0.8+ | 2005 07 27 | 644 | 0.2− | 1.2+ |
| 1999 04 21 | 691 | 1.0− | 0.2− | 2004 04 16 | 152 | 0.2− | 0.2− | 2005 10 03 | G96 | 0.4− | 0.4− |
| 2000 08 24 | 704 | 1.7+ | 0.3− | 2004 04 16 | 152 | 0.5− | 0.8+ | 2005 10 03 | G96 | 0.1− | 0.6− |
| 2000 08 24 | 704 | 0.6− | 0.1+ | 2004 04 16 | 152 | (2.0− | 0.0 ) | 2005 10 03 | G96 | 0.3− | 0.2− |
| 2000 08 24 | 704 | 1.5+ | 0.3+ | 2004 04 16 | 152 | (2.2− | 0.1+) | 2005 10 03 | G96 | 0.5− | 0.5− |
| 2000 08 24 | 704 | 0.5+ | 0.6− | 2004 04 17 | 152 | 1.0− | 0.6+ | 2005 10 28 | G96 | 0.7− | 0.0 |
| 2000 08 24 | 704 | 0.1− | 0.3+ | 2004 04 19 | 704 | 1.2+ | 0.0 | 2005 10 28 | G96 | 0.1+ | 0.2− |
| 2000 08 26 | 704 | 0.4− | 0.7− | 2004 04 19 | 704 | 0.8+ | 0.2− | 2005 10 28 | G96 | 0.6− | 0.3− |
| 2000 08 26 | 704 | 0.2+ | 0.6+ | 2004 04 19 | 704 | 0.8+ | 0.1+ | 2005 10 28 | G96 | 0.7− | 0.2+ |
| 2000 08 26 | 704 | 0.7+ | 0.4− | 2004 04 20 | 704 | 0.7− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2000 08 26 | 704 | 0.2− | 0.5+ | 2004 04 20 | 704 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2000 08 26 | 704 | 0.0 | 0.6+ | 2004 04 20 | 704 | (0.2+ | 1.5+) | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2000 08 26 | 704 | 1.8− | 0.0 | 2004 04 20 | 704 | (0.3+ | 2.4+) | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2000 08 26 | 704 | 0.6+ | 0.5+ | 2004 04 20 | 704 | 0.3+ | 0.9+ | 2006 10 11 | 691 | 0.5− | 0.1+ |
| 2000 08 26 | 704 | 0.7+ | 1.4+ | 2004 04 21 | 704 | 1.2+ | 0.2− | 2006 10 11 | 691 | 0.3− | 0.3+ |
| 2001 11 14 | 691 | 0.3− | 0.4+ | 2004 04 21 | 704 | 0.2+ | 0.9+ | 2006 10 11 | 691 | 0.4− | 0.1+ |
| 2001 11 14 | 691 | 0.0 | 0.4+ | 2004 04 21 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 11 14 | 691 | 0.3− | 0.4+ | 2004 04 21 | 704 | 0.7+ | 0.2− | 2006 11 08 | 644 | 0.3+ | 0.6+ |
| 2001 11 21 | 704 | (1.7+ | 0.1+) | 2004 04 22 | 704 | 0.7+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.7+ |
| 2001 11 21 | 704 | (2.0+ | 0.1+) | 2004 04 22 | 704 | 0.8+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2001 11 21 | 704 | 1.1+ | 0.1+ | 2004 04 22 | 704 | 1.1+ | 1.0+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2001 11 21 | 704 | (2.0+ | 0.9+) | 2004 04 22 | 704 | (2.2− | 0.3+) | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.9+ | 0.8− | 2004 05 21 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 2001 12 14 | 704 | 0.5+ | 0.2+ | 2004 05 21 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.9− |
| 2001 12 14 | 704 | 0.3− | 0.5+ | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | (2.1− | 0.7+) |
| 2001 12 14 | 704 | 0.4+ | 0.9+ | 2005 07 18 | 644 | 0.4+ | 0.4+ | 2006 11 17 | 703 | 0.7+ | 1.0− |
| 2001 12 14 | 704 | 0.3− | 0.1− | 2005 07 18 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 1.0− |
| 2001 12 17 | 704 | 0.5+ | 0.2− | 2005 07 18 | 644 | 0.2+ | 0.1+ | | | | |
| 2001 12 17 | 704 | 0.4− | 0.7+ | 2005 07 27 | 644 | 0.2− | 0.2+ | | | | |

**(144753)∗ 2004 HF$_{1}$**

Discovered 2004 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.49058 | | | (2000.0) | | |
| $n$ | 0.26492939 | $\omega$ | 313.65653 | | +0.15069635 | −0.91803443 |
| $a$ | 2.4009472 | $\Omega$ | 124.06679 | | +0.98548670 | +0.11017940 |
| $e$ | 0.3161401 | $i$ | 26.27789 | | +0.07814462 | +0.38088487 |
| $P$ | 3.72 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 15 | 704 | 0.4+ | 0.7− | 2004 02 16 | 704 | 0.6+ | 1.5− | 2006 10 11 | E12 | 0.6− | 0.1+ |
| 2000 03 15 | 704 | 0.5− | 0.6+ | 2004 03 29 | 703 | 0.0 | 0.1− | 2006 10 11 | E12 | 0.3− | 0.1+ |
| 2000 03 15 | 704 | 0.1+ | 0.4− | 2004 03 29 | 703 | 0.2+ | 0.8+ | 2006 10 11 | E12 | 0.2+ | 0.5− |
| 2000 03 15 | 704 | 0.5− | 0.1+ | 2004 03 29 | 703 | 0.4− | 0.0 | 2006 10 14 | E12 | 0.0 | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 15 | 704 | 0.3− | 0.2+ | 2004 03 29 | 703 | 0.7− | 0.6− | 2006 10 14 | E12 | 0.2− | 0.0 |
| 2000 03 27 | 704 | 0.5+ | 1.6− | 2004 04 16 | 704 | (1.4+ | 2.1+) | 2006 10 14 | E12 | 0.1+ | 0.3+ |
| 2000 03 27 | 704 | 0.4− | 0.3− | 2004 04 16 | 704 | 0.2− | 0.6+ | 2006 10 31 | E12 | 0.3− | 0.1+ |
| 2000 03 27 | 704 | 0.0 | 0.1+ | 2004 04 16 | 704 | 0.2− | 0.1+ | 2006 10 31 | E12 | 0.1− | 0.1+ |
| 2000 03 27 | 704 | 0.4+ | 0.8+ | 2004 04 16 | 704 | 0.9+ | 0.4+ | 2006 10 31 | E12 | 0.0 | 0.0 |
| 2000 03 27 | 704 | 0.7+ | 0.2+ | 2004 04 20 | 704 | 0.2+ | 0.6+ | 2006 10 31 | E12 | 0.2− | 0.0 |
| 2000 04 12 | 699 | 0.1+ | 0.6+ | 2004 04 20 | 704 | 0.5+ | 0.7+ | 2006 11 20 | E12 | 0.1+ | 0.0 |
| 2000 04 12 | 699 | 0.6− | 0.1+ | 2004 04 20 | 704 | 0.1+ | 0.6+ | 2006 11 20 | E12 | 0.0 | 0.3+ |
| 2000 04 12 | 699 | 0.1− | 1.1+ | 2004 05 22 | 645 | 0.1− | 0.0 | 2006 11 20 | E12 | 0.3+ | 0.0 |
| 2000 04 12 | 699 | 0.7+ | 0.4+ | 2004 05 22 | 645 | 0.0 | 0.1− | 2006 11 20 | E12 | 0.1+ | 0.1+ |
| 2002 08 13 | 704 | 0.1− | 0.5+ | 2006 09 29 | E12 | 0.3− | 0.0 | 2006 11 28 | E12 | 0.2+ | 0.2+ |
| 2002 08 13 | 704 | 0.1+ | 0.0 | 2006 09 29 | E12 | 0.4− | 0.4+ | 2006 11 28 | E12 | 0.2+ | 0.3− |
| 2002 08 13 | 704 | 0.2− | 0.0 | 2006 09 29 | E12 | 0.2− | 0.0 | 2006 11 28 | E12 | 0.1+ | 0.1− |
| 2004 02 16 | 704 | 0.2− | 0.7+ | 2006 09 29 | E12 | 0.2+ | 0.0 | 2006 11 28 | E12 | 0.3+ | 0.3− |
| 2004 02 16 | 704 | 1.3+ | 0.0 | 2006 10 11 | E12 | 0.1− | 0.2+ | | | | |

**(144754)∗ 2004 HH$_2$ = 2000 GY$_{24}$**

Discovered 2004 Apr. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86478)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.75122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25136715 | $\omega$ | 292.10383 | | −0.84608854 | +0.53270983 | |
| $a$ | 2.4865491 | $\Omega$ | 280.08949 | | −0.48173951 | −0.77929722 | |
| $e$ | 0.1135057 | $i$ | 1.09566 | | −0.22816930 | −0.33002435 | |
| $P$ | 3.92 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.3− | 0.4+ | 2001 09 19 | 645 | 0.0 | 0.1+ | 2004 05 15 | 691 | 0.4− | 0.1− |
| 1996 03 20 | 691 | 0.4− | 0.2+ | 2001 09 19 | 645 | 0.0 | 0.2+ | 2004 05 23 | 691 | 0.0 | 0.1+ |
| 1996 03 20 | 691 | 0.2− | 0.1+ | 2004 04 16 | 691 | 0.0 | 0.0 | 2004 05 23 | 691 | 0.1− | 0.1+ |
| 2000 04 05 | 699 | 0.5− | 0.3− | 2004 04 16 | 691 | 0.2+ | 0.0 | 2004 05 23 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.6+ | 0.0 | 2004 04 16 | 691 | 0.0 | 0.1+ | 2005 08 31 | 691 | 0.2+ | 0.5+ |
| 2000 04 05 | 699 | 0.8+ | 0.7+ | 2004 04 17 | 704 | 0.7+ | 0.5+ | 2005 08 31 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.2+ | 0.1− | 2004 04 17 | 704 | 0.3+ | 0.1+ | 2005 08 31 | 691 | 0.1− | 0.2+ |
| 2000 04 05 | 699 | 0.2+ | 0.3− | 2004 04 17 | 704 | 0.1+ | 0.7+ | 2005 09 13 | 691 | 0.5− | 0.3+ |
| 2000 04 05 | 704 | 1.7+ | 0.6+ | 2004 04 20 | 704 | (1.6+ | 0.9+) | 2005 09 13 | 691 | 0.3− | 0.4+ |
| 2000 04 05 | 699 | 0.6+ | 0.9+ | 2004 04 20 | 704 | 0.3+ | 0.6− | 2005 09 13 | 691 | 0.4− | 0.7+ |
| 2000 04 05 | 704 | 0.5+ | 0.2+ | 2004 04 20 | 704 | (0.8+ | 2.0+) | 2005 09 30 | G96 | 0.1− | 0.3− |
| 2000 04 05 | 704 | 1.1+ | 1.3− | 2004 04 20 | 704 | 0.2+ | 0.2+ | 2005 09 30 | G96 | 0.1− | 0.1+ |
| 2000 04 06 | 704 | 1.1+ | 0.8+ | 2004 04 20 | 704 | (1.7+ | 0.4+) | 2005 09 30 | G96 | 0.1− | 0.4+ |
| 2000 04 06 | 704 | 0.2+ | 0.8+ | 2004 04 22 | 691 | 0.0 | 0.1+ | 2005 09 30 | G96 | 0.6− | 0.1+ |
| 2000 04 06 | 704 | 0.2+ | 1.0+ | 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.7+ |
| 2000 04 06 | 704 | 0.1+ | 0.8+ | 2004 04 22 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.2− | 0.5+ |
| 2000 04 29 | 704 | 1.0+ | 0.8+ | 2004 04 30 | 691 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.6+ |
| 2000 04 29 | 704 | 1.2+ | 0.1+ | 2004 04 30 | 691 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2000 04 29 | 704 | 0.9+ | 1.0+ | 2004 04 30 | 691 | 0.2+ | 0.6+ | 2006 11 24 | 691 | 0.4+ | 0.5+ |
| 2000 04 29 | 704 | 0.9+ | 0.2+ | 2004 05 15 | 691 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.4− | 0.7+ |
| 2000 04 29 | 704 | 0.3+ | 1.0+ | 2004 05 15 | 691 | 0.4− | 0.2− | | | | |

**(144755)∗ 2004 HO$_3$ = 1998 GV$_{10}$**

Discovered 2004 Apr. 16 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 62164)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.83346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17953071 | $\omega$ | 209.97196 | | −0.74298170 | +0.66624128 | |
| $a$ | 3.1120284 | $\Omega$ | 12.45626 | | −0.53981655 | −0.53992051 | |
| $e$ | 0.0687467 | $i$ | 17.27082 | | −0.39569722 | −0.51440100 | |
| $P$ | 5.49 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | (1.3− | 2.5−) | 2004 04 17 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 1998 03 24 | 704 | (2.1+ | 1.4−) | 2004 04 17 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1998 03 24 | 704 | 0.3+ | 1.0− | 2004 04 25 | 704 | 0.3+ | 0.7+ | 2006 09 26 | 691 | 0.7− | 0.2+ |
| 1998 03 24 | 704 | (4.5− | 1.5−) | 2004 04 25 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 1998 03 25 | 704 | 0.9− | 1.7+ | 2004 04 25 | 704 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 1998 03 25 | 704 | 1.8− | 0.2− | 2004 04 25 | 704 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 1998 03 25 | 704 | 0.0 | 1.4− | 2004 04 28 | 608 | 1.1+ | 1.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1998 03 25 | 704 | (3.3− | 2.3−) | 2004 04 28 | 608 | 1.0+ | 0.5+ | 2006 09 30 | 691 | (1.8+ | 1.6−) |
| 1998 04 02 | 809 | (0.6− | 4.4+) | 2004 04 28 | 608 | 1.1+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.2− |
| 1998 04 02 | 809 | (0.4− | 4.4+) | 2004 05 14 | 699 | 0.6+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 1998 04 02 | 809 | (1.7+ | 4.0+) | 2004 05 14 | 699 | 1.1+ | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 1998 04 03 | 809 | (2.8− | 0.1−) | 2004 05 14 | 699 | 0.7+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.0 |
| 1998 04 03 | 809 | (2.5− | 1.0+) | 2004 05 14 | 699 | 0.2+ | 0.9+ | 2006 10 17 | 703 | 0.6+ | 0.5− |
| 1998 04 03 | 809 | (2.7− | 1.0+) | 2004 05 15 | 185 | 0.2+ | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.8+ |
| 2001 10 15 | 704 | 0.8+ | 0.9+ | 2004 05 15 | 185 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2001 10 15 | 704 | 0.8− | 0.8+ | 2004 05 22 | 704 | 0.3− | 0.6+ | 2006 10 19 | 683 | 0.3+ | 0.5− |
| 2001 10 15 | 704 | 0.4+ | 0.9+ | 2004 05 22 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 683 | (0.2− | 1.9+) |
| 2001 10 15 | 704 | 0.2− | 0.6+ | 2004 05 22 | 704 | 0.3− | 0.5+ | 2006 10 19 | 683 | 0.7− | 0.6+ |
| 2001 11 11 | 704 | 0.8− | 0.5+ | 2005 07 05 | E12 | 0.0 | 0.5+ | 2006 10 20 | 683 | 0.7− | 0.3− |
| 2001 11 11 | 704 | 0.6+ | 0.2− | 2005 07 05 | E12 | 0.0 | 0.1+ | 2006 10 20 | 683 | (0.8+ | 1.8+) |
| 2001 11 11 | 704 | 0.7+ | 0.9− | 2005 07 05 | E12 | 0.9− | 0.6+ | 2006 10 20 | 683 | 1.2− | 0.4+ |
| 2001 11 11 | 704 | 0.3+ | 0.5+ | 2005 07 05 | E12 | 0.1+ | 0.3+ | 2006 10 22 | 683 | 0.6+ | 1.4− |
| 2003 01 13 | 704 | 0.5+ | 0.4+ | 2005 08 13 | E12 | 0.4− | 0.2− | 2006 10 22 | 683 | 0.7+ | 0.3+ |
| 2003 01 13 | 704 | (1.0+ | 1.5+) | 2005 08 13 | E12 | 1.1+ | 0.1− | 2006 10 22 | 683 | 0.0 | 0.8+ |
| 2003 01 13 | 704 | 0.5+ | 1.2+ | 2005 08 13 | E12 | 0.6+ | 0.5− | 2006 10 31 | 683 | (0.6+ | 2.0+) |
| 2003 01 13 | 704 | 0.3+ | 0.7+ | 2005 08 13 | E12 | 0.4+ | 0.8− | 2006 10 31 | 683 | (0.0 | 1.6−) |
| 2003 01 25 | 704 | (0.9+ | 1.6−) | 2006 09 14 | 703 | 1.4− | 0.5− | 2006 11 14 | 703 | 0.7+ | 0.5+ |
| 2003 01 25 | 704 | 0.9+ | 0.5+ | 2006 09 14 | 703 | 0.4+ | 0.5+ | 2006 11 14 | 703 | 0.7− | 0.5− |
| 2003 01 25 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.1+ | 0.8+ | 2006 11 14 | 703 | 0.7− | 0.8− |
| 2004 04 16 | E12 | 0.5+ | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.4− | 2006 11 14 | 703 | 0.1− | 0.8− |
| 2004 04 16 | E12 | 0.4+ | 0.6+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2004 04 16 | E12 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 04 16 | E12 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2004 04 17 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2− |

**(144756)∗ 2004 HX$_4$ = 2002 XC$_{106}$**

Discovered 2004 Apr. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65729)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.27938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23342362 | $\omega$ | 67.69549 | | −0.50448436 | −0.86140126 | |
| $a$ | 2.6123991 | $\Omega$ | 52.73627 | | +0.76237622 | −0.47649183 | |
| $e$ | 0.0719128 | $i$ | 4.25293 | | +0.40531226 | −0.17590740 | |
| $P$ | 4.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 0.6− | 0.9− | 2004 04 19 | 704 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2000 04 28 | 691 | 0.0 | 0.5− | 2004 04 19 | 704 | 0.1− | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2000 04 28 | 691 | 0.2− | 0.3− | 2004 04 19 | 704 | 0.1+ | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2000 06 01 | 691 | 0.2+ | 0.1+ | 2004 04 19 | 704 | (2.0+ | 0.3+) | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2000 06 01 | 691 | 0.1+ | 0.4+ | 2004 05 24 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2000 06 01 | 691 | 0.0 | 0.1− | 2004 05 24 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2004 05 24 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.4− | 0.4− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 13 | G96 | 1.1− | 0.4− |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2002 12 11 | 704 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2004 03 25 | 699 | 0.1+ | 0.6− | 2006 10 28 | G96 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.4− |
| 2004 03 25 | 699 | 0.9+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2004 03 25 | 699 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2004 03 25 | 699 | (1.7+ | 0.1+) | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2004 04 16 | 644 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.9− |
| 2004 04 16 | 644 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.2− |
| 2004 04 16 | 644 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 1.5+ | 2.0− |
| 2004 04 19 | 704 | 0.5+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 1.4− | 1.2− |

**(144757)∗ 2004 HJ$_5$**

Discovered 2004 Apr. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 285.03033 | | | (2000.0) | | |
| $n$ | 0.26362507 | $\omega$ | 247.86600 | | −0.68181111 | −0.72572363 |
| $a$ | 2.4088601 | $\Omega$ | 245.45846 | | +0.70289464 | −0.61509385 |
| $e$ | 0.1543140 | $i$ | 5.80285 | | +0.20266409 | −0.30819600 |
| $P$ | 3.74 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.5− | 0.5− | 2004 04 21 | 704 | 0.6− | 1.4+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2000 02 06 | 704 | 0.8− | 0.1− | 2004 04 21 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 2000 02 06 | 704 | 0.8+ | 0.3+ | 2004 04 21 | 704 | 1.3+ | 0.9+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2000 02 06 | 704 | 0.2+ | 1.2+ | 2004 04 29 | 608 | 0.1+ | 0.5+ | 2006 11 13 | 691 | 0.4− | 0.4+ |
| 2002 10 12 | 704 | 0.5+ | 0.8+ | 2004 04 29 | 608 | 0.3+ | 0.8+ | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2002 10 12 | 704 | 0.9− | 0.6+ | 2004 04 29 | 608 | 0.7+ | 1.3+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.5− | 0.3+ | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2002 10 12 | 704 | 1.4+ | 0.3+ | 2005 07 04 | 691 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.6− | 0.9− |
| 2002 11 09 | 695 | 0.0 | 0.1+ | 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.4+ | 0.1+ |
| 2002 11 09 | 695 | 0.1− | 0.2+ | 2005 07 08 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2004 03 17 | 704 | 0.9− | 0.5− | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 11 20 | 691 | (2.2− | 3.3−) |
| 2004 03 17 | 704 | 0.1+ | 0.4+ | 2005 07 08 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 1.1+ |
| 2004 03 17 | 704 | 0.6− | 0.5+ | 2006 08 27 | 291 | 0.4− | 0.4+ | 2006 11 21 | 704 | 1.0+ | 0.8+ |
| 2004 03 17 | 704 | (1.7− | 0.2+) | 2006 08 27 | 291 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.9+ |
| 2004 03 27 | 699 | (0.3− | 2.0+) | 2006 08 27 | 291 | 0.4− | 0.4+ | 2006 11 21 | 704 | (0.1+ | 1.8+) |
| 2004 03 27 | 699 | 0.6+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2004 03 27 | 699 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2004 03 27 | 699 | 0.5+ | 0.6+ | 2006 10 19 | 691 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 04 17 | 704 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2004 04 17 | 704 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2004 04 17 | 704 | 0.8+ | 0.7− | 2006 10 23 | 691 | 0.4+ | 0.6− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2004 04 17 | 704 | (0.4− | 2.2+) | 2006 10 27 | 691 | 0.3− | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.3− |
| 2004 04 19 | 704 | 1.2+ | 0.2+ | 2006 10 27 | 691 | 0.7+ | 0.6+ | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2004 04 19 | 704 | 0.3+ | 1.0+ | 2006 10 27 | 691 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.4+ | 1.4− |
| 2004 04 19 | 704 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.7+ | 0.6+ | | | | |
| 2004 04 19 | 704 | 1.0− | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.4+ | | | | |

**(144758)∗ 2004 HR$_7$ = 2001 UK$_{19}$ = 2004 FQ$_{147}$**

Discovered 2004 Apr. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65733)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.24510 | | | (2000.0) | | |
| $n$ | 0.21112361 | $\omega$ | 350.91663 | | +0.84555713 | −0.52796949 |
| $a$ | 2.7932609 | $\Omega$ | 41.27064 | | +0.49706594 | +0.72434770 |
| $e$ | 0.0323994 | $i$ | 6.90094 | | +0.19482966 | +0.44336059 |
| $P$ | 4.67 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 0.6+ | 2004 04 19 | 704 | 0.1− | 0.6+ | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2004 04 19 | 704 | 0.2− | 1.1+ | 2006 11 09 | 691 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.3+ | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2004 04 20 | 691 | 0.1− | 0.6+ | 2006 11 09 | 691 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.5− | 0.7+ | 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.2+ |
| 2001 09 25 | 704 | 0.3− | 0.6+ | 2004 05 09 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2001 09 25 | 704 | 0.2+ | 0.6+ | 2004 05 09 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.8− |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2004 05 09 | 691 | 1.1+ | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.6− |
| 2001 10 16 | 644 | 0.3− | 0.5− | 2006 10 12 | 691 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2001 10 16 | 644 | 0.3− | 0.9− | 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2001 10 16 | 644 | 0.1− | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 10 17 | 644 | 0.6− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2001 10 17 | 644 | 0.0 | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2001 10 17 | 644 | 0.0 | 1.0+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 2.1+ | 2.9+ |
| 2003 01 10 | 704 | 0.6− | 0.8− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2003 01 10 | 704 | 0.9+ | 1.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.9+ |
| 2003 01 10 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 1.7+ | 0.9− |
| 2003 01 10 | 704 | 0.6− | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2003 01 10 | 704 | 0.1+ | 0.2− | 2006 10 29 | G96 | 0.0 | 0.3− | 2006 11 22 | G96 | 0.6− | 0.6− |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 10 29 | G96 | 0.5− | 0.2− | 2006 11 22 | G96 | 0.2+ | 1.1− |
| 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.1− | | | | |
| 2004 04 19 | 704 | 0.6− | 0.0 | 2006 10 29 | 691 | 1.2− | 0.3− | | | | |

**(144759)∗ 2004 HH$_9$**

Discovered 2004 Apr. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 263.73487 | | | (2000.0) | | |
| $n$ | 0.25181333 | $\omega$ | 295.42147 | | −0.92797793 | −0.36261887 |
| $a$ | 2.4836110 | $\Omega$ | 223.45919 | | +0.37070261 | −0.87492680 |
| $e$ | 0.1072979 | $i$ | 7.16708 | | +0.03790170 | −0.32095273 |
| $P$ | 3.91 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.6− | 0.3+ | 2004 04 20 | 704 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | 0.7− | 1.1− | 2004 04 20 | 704 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.8− | 0.7− | 2004 04 20 | 704 | 0.7− | 1.2+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2002 11 12 | 704 | 0.6− | 0.6+ | 2004 04 30 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 0.5− | 2004 04 30 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2004 04 30 | 691 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2002 12 05 | 704 | 1.4+ | 0.1+ | 2004 05 16 | 704 | 1.0+ | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2002 12 10 | 644 | 0.2+ | 0.5+ | 2004 05 16 | 704 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2002 12 10 | 644 | 0.2+ | 0.7+ | 2004 05 16 | 704 | 0.5+ | 0.4+ | 2006 11 29 | 704 | 0.3− | 1.0+ |
| 2002 12 10 | 644 | 0.2+ | 0.7+ | 2004 05 28 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.2− | 1.4+ |
| 2004 03 15 | 644 | 0.0 | 0.3+ | 2004 05 28 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.6− | 1.2+ |
| 2004 03 15 | 644 | 0.4− | 0.5+ | 2004 05 28 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.2− | 0.1− |
| 2004 03 15 | 644 | 0.4+ | 0.4+ | 2005 07 31 | 644 | 0.3− | 0.6+ | 2006 11 29 | 704 | 0.5− | 1.5+ |
| 2004 04 17 | 704 | 0.2− | 0.1+ | 2005 07 31 | 644 | 0.2− | 0.9+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2004 04 17 | 704 | 0.5− | 0.2+ | 2005 07 31 | 644 | 0.4− | 1.0+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2004 04 17 | 704 | 0.6− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2004 04 17 | 704 | 0.2− | 0.7− | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2004 04 20 | 704 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.0 | | | | |
| 2004 04 20 | 704 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | | | | |

**(144760)∗ 2004 HQ$_9$**

Discovered 2004 Apr. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 252.91560 | | | (2000.0) | | |
| $n$ | 0.21330751 | $\omega$ | 101.51922 | | −0.64997440 | −0.75171063 |
| $a$ | 2.7741628 | $\Omega$ | 29.96081 | | +0.58052041 | −0.58592729 |
| $e$ | 0.1806306 | $i$ | 12.91781 | | +0.49043790 | −0.30268851 |
| $P$ | 4.62 | $H$ | 15.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 0.5+ | 0.4+ | 2004 04 20 | 704 | 0.8+ | 0.8− | 2004 05 16 | 704 | 0.4+ | 0.8− |
| 1999 02 23 | 699 | 0.5− | 0.7+ | 2004 04 20 | 704 | 0.2− | 0.7+ | 2006 09 26 | 703 | 0.9− | 0.4+ |
| 1999 02 23 | 699 | 0.6+ | 0.3− | 2004 04 20 | 704 | 0.7+ | 0.1− | 2006 09 26 | 703 | 0.5− | 0.4− |
| 2002 12 06 | 704 | 0.4− | 0.5+ | 2004 04 24 | 691 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.2+ |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2004 04 24 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.5− | 1.0+ |
| 2002 12 06 | 704 | 0.5− | 0.2+ | 2004 04 24 | 691 | 0.4− | 0.2+ | 2006 09 30 | 703 | 1.3− | 1.1+ |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2004 04 25 | 704 | (0.2− | 3.9−) | 2006 09 30 | 703 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.6+ | 2004 04 25 | 704 | 0.6+ | 1.2+ | 2006 09 30 | 703 | 0.2+ | 0.9+ |
| 2002 12 15 | 704 | 0.1+ | 0.8+ | 2004 04 25 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 1.5+ | 0.1− |
| 2002 12 15 | 704 | 0.6− | 0.8+ | 2004 04 25 | 703 | 1.3+ | 1.2− | 2006 10 02 | G96 | 0.4− | 0.1+ |
| 2002 12 15 | 704 | (2.8− | 0.5+) | 2004 04 25 | 703 | 0.4+ | 0.6− | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2003 01 29 | 644 | 0.1− | 0.1− | 2004 04 25 | 704 | 0.2− | 0.9+ | 2006 10 02 | G96 | 0.7− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 644 | 0.0 | 0.2+ | 2004 04 25 | 703 | 1.1+ | 0.3+ | 2006 10 02 | G96 | 0.8− | 0.0 |
| 2003 01 29 | 644 | 0.3− | 0.0 | 2004 04 25 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2004 03 27 | 704 | 0.5+ | 0.2− | 2004 04 25 | 703 | 0.8− | 1.0+ | 2006 10 16 | 703 | 1.2+ | 0.4+ |
| 2004 03 27 | 704 | 0.4− | 0.5+ | 2004 05 15 | 704 | 1.1+ | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.4+ |
| 2004 03 27 | 704 | 0.6− | 0.2+ | 2004 05 15 | 704 | 0.8− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2004 04 17 | 704 | 0.3+ | 0.8+ | 2004 05 15 | 704 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.9− | 0.1+ |
| 2004 04 17 | 704 | 0.0 | 0.9+ | 2004 05 15 | 704 | 0.4+ | 0.7− | 2006 11 17 | G96 | 0.7− | 0.0 |
| 2004 04 17 | 704 | 0.0 | 0.0 | 2004 05 16 | 704 | 0.6+ | 1.2+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2004 04 20 | 704 | 0.3+ | 0.7+ | 2004 05 16 | 704 | 0.5− | 0.2+ | 2006 11 17 | G96 | 0.6− | 0.1− |

**(144761)∗ 2004 HX$_9$**

Discovered 2004 Apr. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.57073 | | (2000.0) | | | |
| $n$ | 0.22499174 | $\omega$ | 50.98712 | | −0.88095014 | −0.46522153 |
| $a$ | 2.6772669 | $\Omega$ | 101.13227 | | +0.40230743 | −0.83264418 |
| $e$ | 0.1945517 | $i$ | 5.06228 | | +0.24914971 | −0.30045399 |
| $P$ | 4.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 23 | 691 | 0.3− | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.3− | 2004 05 18 | 704 | 0.1− | 0.0 |
| 1998 10 23 | 691 | 0.3− | 0.6− | 2004 04 20 | 704 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.0 | 0.1+ |
| 1998 10 23 | 691 | 0.4− | 0.4− | 2004 04 20 | 704 | 0.4− | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.1+ |
| 1999 01 22 | 699 | 1.3+ | 0.7+ | 2004 04 23 | 599 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.2+ |
| 1999 01 22 | 699 | 0.7+ | 0.4+ | 2004 04 23 | 599 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1999 01 22 | 699 | 0.5+ | 0.3+ | 2004 04 23 | 599 | 0.2− | 0.0 | 2006 10 22 | 703 | 1.1+ | 0.2− |
| 2002 12 05 | 608 | 0.1+ | 0.1− | 2004 04 23 | 599 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.4− | 1.5+ |
| 2002 12 05 | 608 | 0.2− | 0.4− | 2004 05 11 | 699 | 0.1− | 1.4+ | 2006 10 22 | 703 | (0.1+ | 1.7+) |
| 2002 12 05 | 608 | 0.3+ | 0.6+ | 2004 05 11 | 699 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.1+ | 1.0+ |
| 2002 12 10 | 644 | 0.2− | 0.9+ | 2004 05 11 | 699 | 0.9− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 12 10 | 644 | 0.6− | 0.7+ | 2004 05 11 | 699 | 0.7+ | 1.0− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2002 12 10 | 644 | 0.8− | 1.0+ | 2004 05 18 | 704 | 0.0 | 1.2+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2004 04 17 | 704 | 0.4+ | 0.1+ | 2004 05 18 | 704 | 1.0+ | 0.2− | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2004 04 17 | 704 | 0.3− | 0.7+ | 2004 05 18 | 704 | 0.2+ | 0.7+ | | | | |
| 2004 04 17 | 704 | 0.7+ | 0.1+ | 2004 05 18 | 704 | (0.5+ | 1.7+) | | | | |

**(144762)∗ 2004 HR$_{10}$ = 2001 SG$_{351}$**

Discovered 2004 Apr. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65737)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.50766 | | (2000.0) | | | |
| $n$ | 0.22261215 | $\omega$ | 267.99449 | | −0.34723487 | −0.93359376 |
| $a$ | 2.6963120 | $\Omega$ | 202.94636 | | +0.92507514 | −0.32552391 |
| $e$ | 0.1578536 | $i$ | 13.11908 | | +0.15383088 | −0.14978942 |
| $P$ | 4.43 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 699 | 0.4+ | 0.8− | 2004 05 13 | 699 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.4− |
| 1999 03 22 | 699 | 0.3− | 0.2− | 2004 05 13 | 699 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.0 |
| 1999 03 22 | 699 | 0.4+ | 0.4+ | 2004 05 13 | 699 | 0.8− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 1999 04 11 | 699 | 0.2+ | 1.2+ | 2004 05 15 | 704 | 0.8+ | 1.1+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 1999 04 11 | 699 | 0.0 | 0.6+ | 2004 05 15 | 704 | 0.3− | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 1999 04 11 | 699 | 0.5+ | 0.7+ | 2004 05 15 | 704 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 1.0+ | 0.4− | 2004 05 15 | 704 | 0.5− | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 2001 08 25 | 704 | 0.2+ | 0.1− | 2004 05 15 | 704 | 0.9+ | 1.3+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 08 25 | 704 | 0.1− | 0.6− | 2004 05 15 | 704 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.7+ | 0.0 |
| 2001 08 25 | 704 | 0.6− | 0.1+ | 2004 05 15 | 704 | 0.2+ | 1.4+ | 2006 10 27 | 704 | 1.0− | 0.3+ |
| 2001 08 25 | 704 | 0.2− | 0.4− | 2004 05 15 | 704 | 0.2− | 0.2− | 2006 10 27 | 704 | 0.9− | 0.2− |
| 2001 09 09 | 699 | 0.4− | 0.3+ | 2004 05 15 | 704 | 0.5+ | 0.9+ | 2006 10 27 | 704 | 1.3− | 0.2− |
| 2001 09 09 | 699 | 0.5+ | 0.3− | 2004 05 15 | 704 | 0.1− | 0.2+ | 2006 11 01 | 703 | 0.4− | 0.0 |
| 2001 09 09 | 699 | 0.2+ | 0.5− | 2004 05 23 | 704 | (0.6− | 1.5+) | 2006 11 01 | 703 | 0.1+ | 0.0 |
| 2001 09 09 | 699 | (0.3+ | 2.5+) | 2004 05 23 | 704 | 0.5+ | 0.5+ | 2006 11 01 | 703 | 0.3− | 0.2− |
| 2001 09 16 | 704 | 0.4− | 1.0+ | 2004 05 23 | 704 | 0.1− | 0.9+ | 2006 11 01 | 703 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 1.1+ | 2004 05 23 | 704 | 0.5+ | 0.8+ | 2006 11 11 | 644 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.3− | 0.8+ | 2004 05 23 | 704 | 0.7+ | 0.4+ | 2006 11 11 | 644 | 0.0 | 0.3+ |
| 2001 09 16 | 704 | 0.0 | 0.8+ | 2004 06 09 | 691 | 0.3− | 0.4+ | 2006 11 11 | 644 | 0.2+ | 0.5+ |
| 2001 09 16 | 704 | 0.8− | 0.9+ | 2004 06 09 | 691 | 0.2+ | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.6− | 0.6− | 2004 06 09 | 699 | 0.2+ | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2001 09 25 | 683 | 0.8− | 0.1+ | 2004 06 09 | 691 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2001 09 25 | 683 | 0.4+ | 0.2+ | 2004 06 09 | 699 | 0.6− | 0.7+ | 2006 11 14 | 704 | 0.1+ | 1.0+ |
| 2001 09 25 | 704 | 0.4− | 0.9+ | 2004 06 09 | 699 | 0.4+ | 1.2+ | 2006 11 14 | 704 | 0.3− | 0.6+ |
| 2001 09 25 | 704 | 0.0 | 0.4+ | 2004 06 09 | 699 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.0 | 1.1+ |
| 2003 01 02 | 704 | 0.4− | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.1− | 2006 11 14 | 704 | 0.1− | 1.0+ |
| 2003 01 02 | 704 | 0.1− | 0.3+ | 2006 08 28 | 703 | (1.7− | 0.2+) | 2006 11 14 | 704 | 0.0 | 1.1+ |
| 2003 01 02 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2003 01 28 | 704 | 0.2+ | 1.1+ | 2006 08 28 | 703 | 0.5− | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.9+ |
| 2003 01 28 | 704 | 0.2+ | 1.3+ | 2006 09 26 | 704 | 1.3+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2003 01 28 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.6+ | 0.0 | 2006 11 17 | 704 | 0.2− | 1.0+ |
| 2003 01 28 | 704 | 0.4− | 0.6+ | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.6+ |
| 2003 01 28 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.5+ | 0.3− |
| 2004 04 17 | 704 | 0.4− | 1.0+ | 2006 09 26 | 704 | 0.4− | 0.1− | 2006 11 19 | 703 | 0.0 | 0.3− |
| 2004 04 17 | 704 | 0.2− | 0.3− | 2006 09 30 | 703 | 1.4− | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.7− |
| 2004 04 17 | 704 | (1.5+ | 0.6+) | 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2004 04 17 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 703 | 0.9− | 0.9+ | 2006 11 20 | 704 | 0.0 | 1.1+ |
| 2004 04 20 | 704 | 0.6+ | 1.1+ | 2006 09 30 | 703 | 0.8− | 0.3− | 2006 11 20 | 704 | (0.3+ | 1.8+) |
| 2004 04 20 | 704 | (0.3+ | 1.5+) | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.3+ | 1.0+ |
| 2004 04 20 | 704 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2004 04 20 | 704 | 0.1− | 1.2+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.2+ | 1.4+ |
| 2004 04 20 | 704 | 0.1+ | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2004 05 12 | 699 | 1.0− | 0.5+ | 2006 10 03 | 704 | 0.1+ | 0.9+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 05 12 | 699 | 0.2+ | 0.3+ | 2006 10 03 | 704 | 0.6+ | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2004 05 12 | 699 | 0.3+ | 0.4− | 2006 10 03 | 704 | 0.7+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2004 05 12 | 699 | 0.6− | 0.6− | 2006 10 03 | 704 | 0.5+ | 0.6+ | | | | |
| 2004 05 13 | 699 | 0.6− | 0.5− | 2006 10 16 | 703 | 0.5+ | 0.1+ | | | | |

**(144763)∗ 2004 HU$_{11}$**

Discovered 2004 Apr. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 139.21407 | | (2000.0) | | | |
| $n$ | 0.17934380 | $\omega$ | 191.65734 | | −0.44657164 | +0.87664713 |
| $a$ | 3.1141902 | $\Omega$ | 52.08483 | | −0.80159339 | −0.30307179 |
| $e$ | 0.1776447 | $i$ | 13.11886 | | −0.39751956 | −0.37368073 |
| $P$ | 5.50 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 644 | 0.1+ | 0.4+ | 2004 05 12 | 699 | 0.3− | 0.3− | 2005 08 28 | E12 | 0.4+ | 0.3+ |
| 2003 03 08 | 644 | 0.2+ | 0.8+ | 2004 05 12 | 699 | 0.5− | 0.2+ | 2005 08 28 | E12 | 1.0− | 1.0− |
| 2003 03 08 | 644 | 0.1+ | 1.1+ | 2004 05 12 | 699 | 0.2− | 0.4− | 2005 08 28 | E12 | (0.5− | 1.6+) |
| 2004 03 22 | 699 | 0.7− | 0.1− | 2004 05 14 | 691 | 0.2+ | 0.1+ | 2005 09 10 | 699 | 0.6− | 0.0 |
| 2004 03 22 | 699 | 0.9+ | 0.1+ | 2004 05 14 | 691 | 0.3+ | 0.1+ | 2005 09 10 | 699 | 0.8− | 0.4+ |
| 2004 03 22 | 699 | 1.2− | 0.4− | 2004 05 14 | 691 | 0.3+ | 0.1+ | 2005 09 10 | 699 | 0.1− | 1.1− |
| 2004 03 22 | 699 | 0.7− | 0.9+ | 2004 05 15 | 704 | 0.5− | 0.7+ | 2005 09 10 | 699 | 0.6+ | 1.0+ |
| 2004 03 27 | 699 | 0.2− | 0.2− | 2004 05 15 | 704 | 1.1− | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.0 |
| 2004 03 27 | 699 | 0.3− | 0.0 | 2004 05 15 | 704 | 0.4− | 0.8+ | 2006 10 03 | G96 | 0.7− | 0.4− |
| 2004 03 27 | 699 | 0.3− | 0.1− | 2004 05 15 | 704 | 0.5− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2004 03 27 | 699 | (0.4+ | 2.2−) | 2004 05 15 | 704 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.0 |
| 2004 04 19 | 704 | 0.9+ | 1.4+ | 2004 05 21 | 704 | 0.1+ | 0.4− | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 2004 04 19 | 704 | 0.7+ | 0.8+ | 2004 05 21 | 704 | 0.4+ | 0.6− | 2006 10 18 | 691 | 0.2+ | 0.5+ |
| 2004 04 19 | 704 | 0.6+ | 1.0+ | 2004 05 21 | 704 | 0.3+ | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.5+ |
| 2004 04 19 | 704 | 0.6+ | 0.5+ | 2004 05 21 | 704 | 0.5+ | 0.0 | 2006 10 18 | 691 | 0.4− | 0.7+ |
| 2004 04 19 | 704 | 1.2+ | 0.6+ | 2004 05 23 | 691 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.6− | 0.5+ |
| 2004 04 20 | 704 | 0.6+ | 0.7+ | 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2004 04 20 | 704 | 0.1+ | 0.6+ | 2004 05 23 | 691 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.6+ |
| 2004 04 20 | 704 | 1.2+ | 0.2+ | 2004 06 14 | 704 | (2.0+ | 0.9+) | 2006 10 22 | 691 | 0.4− | 0.7+ |
| 2004 04 20 | 704 | 0.9+ | 1.4+ | 2004 06 14 | 704 | 1.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2004 04 20 | 704 | 0.9+ | 0.5+ | 2004 06 14 | 704 | 0.5+ | 1.3+ | 2006 10 31 | G96 | 0.5− | 0.1+ |
| 2004 04 22 | 704 | 0.1+ | 0.6+ | 2004 06 14 | 704 | 0.3+ | 1.3− | 2006 10 31 | G96 | 0.2− | 0.4+ |
| 2004 04 22 | 704 | 0.1+ | 0.7+ | 2005 08 05 | 644 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2004 04 22 | 704 | 0.1+ | 0.6+ | 2005 08 05 | 644 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 704 | 0.1+ | 0.4+ | 2005 08 05 | 644 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2004 04 22 | 704 | 0.7− | 0.4− | 2005 08 10 | E12 | 0.6+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 04 30 | 608 | 0.3+ | 0.0 | 2005 08 10 | E12 | 0.9− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2004 04 30 | 608 | 0.3+ | 0.1− | 2005 08 10 | E12 | 0.3+ | 0.8+ | 2006 11 15 | G96 | 0.3− | 0.4+ |
| 2004 04 30 | 608 | 0.5+ | 0.1− | 2005 08 10 | E12 | 0.8− | 0.1− | | | | |
| 2004 05 12 | 699 | 0.9+ | 0.1− | 2005 08 28 | E12 | 0.3+ | 0.2+ | | | | |

**(144764)∗ 2004 HB$_{16}$**

Discovered 2004 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.08218 | | (2000.0) | | | |
| $n$ | 0.19443131 | $\omega$ | 211.82105 | | +0.84637322 | +0.49354588 |
| $a$ | 2.9509278 | $\Omega$ | 117.31819 | | −0.42908231 | +0.85452929 |
| $e$ | 0.0519764 | $i$ | 13.01982 | | −0.31550077 | +0.16183991 |
| $P$ | 5.07 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 05 | 608 | 1.3− | 0.6− | 2004 04 25 | 704 | 0.2+ | 0.3+ | 2005 08 27 | E12 | 1.4+ | 0.4− |
| 2000 08 05 | 608 | 0.1− | 0.5− | 2004 05 12 | 703 | 0.2+ | 0.5+ | 2005 08 28 | 699 | 0.9− | 1.3+ |
| 2000 08 05 | 608 | 0.5− | 1.0− | 2004 05 12 | 703 | 1.0− | 0.6− | 2005 08 28 | 699 | 0.5− | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 0.7+ | 2004 05 12 | 703 | 0.9− | 0.6+ | 2005 08 28 | 699 | 0.6− | 0.3+ |
| 2001 12 19 | 704 | 1.0+ | 1.2+ | 2004 05 12 | 703 | 1.0− | 0.9− | 2005 08 28 | 699 | 0.6− | 0.8+ |
| 2001 12 19 | 704 | 0.4− | 0.2+ | 2004 05 14 | 704 | 0.5+ | 0.3+ | 2005 09 01 | 644 | 0.4+ | 0.7+ |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2004 05 14 | 704 | 0.6+ | 0.3+ | 2005 09 01 | 644 | 0.6+ | 0.5+ |
| 2001 12 19 | 704 | (1.9− | 0.2−) | 2004 05 14 | 704 | (0.9+ | 1.5+) | 2005 09 01 | 644 | 0.3+ | 0.5+ |
| 2003 01 27 | 704 | 0.0 | 0.5+ | 2004 05 14 | 699 | 1.3+ | 0.0 | 2005 09 01 | 644 | 0.4+ | 0.5+ |
| 2003 01 27 | 704 | (1.6+ | 1.4+) | 2004 05 14 | 699 | 0.4− | 0.9+ | 2005 09 01 | 644 | 1.3+ | 0.5+ |
| 2003 01 27 | 704 | 0.8+ | 0.8+ | 2004 05 14 | 699 | 0.2− | 0.1+ | 2005 09 01 | 644 | 0.3+ | 0.4+ |
| 2003 01 27 | 704 | 0.3+ | 0.6+ | 2004 05 14 | 699 | 0.3− | 0.4+ | 2006 08 27 | 291 | 0.2− | 0.5+ |
| 2003 03 07 | 644 | 0.5+ | 0.6+ | 2004 05 21 | 703 | 1.1− | 0.3− | 2006 08 27 | 291 | 0.2− | 0.4+ |
| 2003 03 07 | 644 | 0.9+ | 0.1+ | 2004 05 21 | 703 | 0.2+ | 0.2+ | 2006 08 27 | 291 | 0.4− | 0.7+ |
| 2003 03 07 | 644 | 1.3+ | 0.4+ | 2004 05 21 | 703 | 0.4+ | 0.6+ | 2006 10 30 | 703 | 0.3+ | 0.3+ |
| 2004 04 16 | 704 | 0.3+ | 0.0 | 2004 05 21 | 703 | (2.8− | 0.1−) | 2006 10 30 | 703 | 0.1+ | 0.8+ |
| 2004 04 16 | 704 | 0.2− | 0.2+ | 2004 05 24 | 704 | 0.2+ | 0.4+ | 2006 10 30 | 703 | 0.8− | 0.3− |
| 2004 04 16 | 704 | 0.1− | 0.5+ | 2004 05 24 | 704 | 0.3− | 0.9− | 2006 10 30 | 703 | 0.8− | 0.4+ |
| 2004 04 16 | 704 | 0.8+ | 0.2+ | 2004 05 24 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.8− | 0.3− |
| 2004 04 21 | 691 | 0.0 | 0.3+ | 2004 05 24 | 704 | 0.1− | 0.5− | 2006 11 13 | 703 | 0.8− | 0.2− |
| 2004 04 21 | 691 | 0.2− | 0.3+ | 2005 07 04 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.4+ |
| 2004 04 21 | 691 | 0.2+ | 0.5+ | 2005 07 04 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.2− | 0.1− |
| 2004 04 25 | 704 | 0.5+ | 0.7+ | 2005 07 04 | 644 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.5− |
| 2004 04 25 | 704 | 0.0 | 0.6+ | 2005 08 27 | E12 | 0.1− | 0.5+ | 2006 11 19 | 703 | 0.0 | 0.2− |
| 2004 04 25 | 704 | 1.3+ | 0.6+ | 2005 08 27 | E12 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.1− | 0.2− |
| 2004 04 25 | 704 | 1.4− | 0.5+ | 2005 08 27 | E12 | 1.1+ | 0.7+ | | | | |

**(144765)∗ 2004 HH$_{17}$**

Discovered 2004 Apr. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.35270 | | (2000.0) | | | |
| $n$ | 0.23684689 | $\omega$ | 340.31237 | | −0.81679583 | −0.57483019 |
| $a$ | 2.5871658 | $\Omega$ | 164.30266 | | +0.55067425 | −0.80219676 |
| $e$ | 0.1768536 | $i$ | 10.46469 | | +0.17205361 | −0.16140201 |
| $P$ | 4.16 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.6+ | 1.1− | 2004 03 31 | 704 | 0.6+ | 0.9+ | 2004 05 24 | 704 | 0.3+ | 0.2+ |
| 1998 12 15 | 704 | 1.3− | 1.0− | 2004 03 31 | 704 | 0.7+ | 0.3+ | 2004 05 24 | 704 | 0.4+ | 0.0 |
| 1998 12 15 | 704 | 0.8+ | 0.6− | 2004 03 31 | 704 | 0.4+ | 0.6+ | 2004 05 24 | 704 | 1.0− | 0.1− |
| 1998 12 15 | 704 | (2.8− | 0.8−) | 2004 03 31 | 704 | 0.4+ | 0.0 | 2005 07 29 | 644 | 0.2− | 0.0 |
| 1998 12 22 | 704 | 0.4− | 0.6− | 2004 04 16 | 704 | 0.0 | 0.9+ | 2005 07 29 | 644 | 0.3− | 0.0 |
| 1998 12 22 | 704 | (3.4+ | 0.3−) | 2004 04 16 | 704 | 0.3+ | 0.6− | 2005 07 29 | 644 | 0.5+ | 0.3− |
| 1998 12 22 | 704 | 0.5− | 0.1− | 2004 04 16 | 704 | 0.4+ | 0.4+ | 2005 07 30 | 599 | 0.1− | 0.1+ |
| 1998 12 22 | 704 | 1.5+ | 1.4− | 2004 04 16 | 704 | 0.1− | 0.0 | 2005 07 30 | 599 | 0.2− | 0.6− |
| 1998 12 22 | 704 | 0.9− | 0.5− | 2004 04 16 | 704 | 0.8+ | 0.9+ | 2005 08 06 | 644 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2004 04 21 | 608 | 0.1+ | 0.5+ | 2005 08 06 | 644 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.5− | 1.3− | 2004 04 21 | 608 | 0.1+ | 0.1+ | 2005 08 06 | 644 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.6+ | 0.1+ | 2004 04 21 | 608 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.3− | 1.0+ | 2004 04 24 | 704 | (0.8− | 1.8+) | 2006 09 30 | 703 | 0.6+ | 1.0− |
| 2002 10 31 | 704 | (0.3− | 1.6+) | 2004 04 24 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2002 10 31 | 704 | 0.4+ | 1.3+ | 2004 04 24 | 704 | 0.6− | 1.2+ | 2006 09 30 | 703 | (2.1− | 0.9+) |
| 2002 10 31 | 704 | 1.4+ | 1.3+ | 2004 04 24 | 704 | 0.8− | 0.6+ | 2006 10 12 | 644 | 0.4− | 0.5+ |
| 2002 10 31 | 704 | (0.9+ | 2.1+) | 2004 04 24 | 704 | 1.2− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.7+ |
| 2002 12 13 | 644 | 0.1− | 1.0+ | 2004 05 14 | 704 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.7− | 0.8+ |
| 2002 12 13 | 644 | 0.1+ | 1.1+ | 2004 05 14 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2002 12 13 | 644 | 0.1+ | 1.0+ | 2004 05 14 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 2003 01 02 | 704 | 0.8− | 1.1+ | 2004 05 14 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2003 01 02 | 704 | 1.0− | 0.5+ | 2004 05 14 | 704 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.4+ | 0.7+ |
| 2003 01 02 | 704 | 0.1+ | 1.3+ | 2004 05 24 | 704 | 0.3+ | 0.4− | | | | |

**(144766)∗ 2004 HS$_{17}$ = 2005 OQ$_7$**

Discovered 2004 Apr. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 86484)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.75660 | | (2000.0) | | | |
| $n$ | 0.19265406 | $\omega$ | 250.49992 | | −0.08359108 | +0.99549602 |
| $a$ | 2.9690484 | $\Omega$ | 14.91722 | | −0.83669533 | −0.04573811 |
| $e$ | 0.0858764 | $i$ | 10.00510 | | −0.54125175 | −0.08304033 |
| $P$ | 5.12 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.3− | 0.2+ | 2004 05 13 | 644 | 0.2+ | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.3− | 0.1+ | 2004 05 13 | 644 | 0.6+ | 0.6+ | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 2001 11 11 | 704 | 0.4− | 0.2+ | 2004 05 13 | 703 | 1.3− | 0.3+ | 2006 10 20 | A50 | 0.2− | 0.2+ |
| 2001 11 11 | 704 | 0.4+ | 0.6+ | 2004 05 13 | 703 | 1.3+ | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.7+ |
| 2001 11 11 | 704 | 0.6− | 0.3+ | 2004 05 13 | 703 | 1.0− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2003 01 05 | 699 | 0.6+ | 1.1− | 2004 05 13 | 703 | (0.4+ | 1.8+) | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2003 01 05 | 699 | 0.1+ | 0.6+ | 2004 05 15 | 704 | 0.1− | 1.4+ | 2006 10 27 | 703 | (2.5+ | 0.9+) |
| 2003 01 05 | 699 | 1.0− | 0.7+ | 2004 05 15 | 704 | (2.0+ | 0.4+) | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2003 01 05 | 699 | 0.2+ | 0.4+ | 2004 05 15 | 704 | 0.5+ | 1.1+ | 2006 10 27 | 703 | 0.6+ | 1.2− |
| 2003 01 10 | 704 | 0.2− | 0.0 | 2004 05 15 | 704 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2003 01 10 | 704 | 0.3+ | 1.1+ | 2005 07 29 | 644 | 0.0 | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2003 01 10 | 704 | 0.9+ | 0.6+ | 2005 07 29 | 644 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2003 04 26 | 645 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.5+ | 0.1− |
| 2003 04 26 | 645 | 0.1+ | 0.1− | 2005 07 30 | E12 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.4− |
| 2004 04 17 | 704 | 0.1+ | 0.4+ | 2005 07 30 | E12 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2004 04 17 | 704 | 0.5+ | 0.2+ | 2005 07 30 | E12 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 04 17 | 704 | 0.3+ | 0.1+ | 2005 07 30 | E12 | 1.0− | 0.3− | 2006 11 25 | G96 | 0.4− | 0.4− |
| 2004 04 21 | 704 | 0.2− | 1.2− | 2005 09 24 | 644 | 0.3+ | 0.9+ | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2004 04 21 | 704 | 0.2− | 0.1− | 2005 09 24 | 644 | 0.5+ | 0.4+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2004 04 21 | 704 | 0.2+ | 0.5− | 2005 09 24 | 644 | 0.2+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2004 05 13 | 644 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.1− | | | | |

**(144767)∗ 2004 HR$_{19}$ = 1993 FC$_{82}$**

Discovered 2004 Apr. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65742)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 119.78214 | | (2000.0) | | | |
| $n$ | 0.18357090 | $\omega$ | 230.16737 | | −0.02981942 | +0.99903276 |
| $a$ | 3.0661978 | $\Omega$ | 38.16108 | | −0.90035703 | −0.01280404 |
| $e$ | 0.1453359 | $i$ | 2.99809 | | −0.43412905 | −0.04206670 |
| $P$ | 5.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.5− | 0.5− | 2004 04 21 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 1993 03 23 | 809 | 0.2+ | 0.1+ | 2004 04 21 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.8+ |
| 1993 03 24 | 691 | 0.5− | 0.8− | 2004 04 21 | 704 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.5+ |
| 1993 03 24 | 691 | 0.1− | 0.7− | 2004 04 21 | 704 | (1.3− | 1.6+) | 2006 10 20 | 691 | 0.1− | 0.6+ |
| 1995 09 26 | 691 | 0.2+ | 0.5− | 2004 04 30 | 291 | 0.2+ | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | (3.7− | 5.2−) | 2004 04 30 | 291 | 0.3+ | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.7+ | | |
| 1995 09 26 | 691 | (1.9+ | 2.9−) | 2004 04 30 | 291 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.7− | 0.6+ | | |
| 2000 09 29 | 691 | 0.1− | 0.1− | 2004 05 29 | 691 | 0.0 | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.4+ | | |
| 2000 09 29 | 691 | 0.1− | 0.1− | 2004 05 29 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.5− | 0.0 | | |
| 2000 09 29 | 691 | 0.1− | 0.0 | 2004 05 29 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.3+ | | |
| 2004 04 12 | 699 | 0.3− | 0.8+ | 2005 08 04 | 644 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.3+ | | |
| 2004 04 12 | 699 | 0.1+ | 0.3− | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2004 04 12 | 699 | 0.5+ | 0.2+ | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.0 | | |
| 2004 04 12 | 699 | 0.5− | 0.1+ | 2005 08 30 | 644 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.5− | 0.0 | | |
| 2004 04 15 | 699 | 1.0− | 1.0+ | 2005 08 30 | 644 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.0 | | |
| 2004 04 15 | 699 | 0.6+ | 0.5+ | 2005 08 30 | 644 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.0 | | |
| 2004 04 15 | 699 | 1.3− | 1.3− | 2005 09 02 | 615 | 0.4+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.2+ | | |
| 2004 04 15 | 699 | (1.7+ | 1.2−) | 2005 09 02 | 615 | 0.5− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.0 | | |
| 2004 04 20 | 291 | 0.7+ | 0.9+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.0 | | |
| 2004 04 20 | 291 | 0.8+ | 1.0+ | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.0 | | |
| 2004 04 20 | 291 | 0.6+ | 1.0+ | 2006 10 12 | 691 | 0.1− | 0.6+ | | | | | | |

**(144768)∗ 2004 HB$_{20}$ = 2002 XT$_{52}$**

Discovered 2004 Apr. 20 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69720)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 0.11601 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22948865 | $\omega$ | 16.46885 | | +0.81607918 | | −0.57133194 | | |
| $a$ | 2.6421770 | $\Omega$ | 19.16660 | | +0.49580331 | | +0.61461026 | | |
| $e$ | 0.1233465 | $i$ | 15.39287 | | +0.29697450 | | +0.54390628 | | |
| $P$ | 4.29 | $H$ | 15.1 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.9− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.4+ | | |
| 1993 10 12 | 691 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.8− | 0.5− | 2006 10 19 | 703 | 0.3− | 0.2− | | |
| 1993 10 12 | 691 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.4− | 0.3− | | |
| 2002 12 10 | 704 | 0.8− | 0.3− | 2004 03 23 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.3− | 0.7+ | | |
| 2002 12 10 | 704 | 0.8+ | 0.4+ | 2004 03 23 | 704 | 0.7+ | 0.2− | 2006 10 27 | 703 | 0.8− | 0.3+ | | |
| 2002 12 10 | 704 | 0.4− | 0.4+ | 2004 04 20 | 291 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.1+ | | |
| 2002 12 10 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 291 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.3+ | | |
| 2002 12 11 | 704 | 0.9+ | 0.1− | 2004 04 20 | 291 | 0.7+ | 0.4+ | 2006 11 02 | 703 | 0.5− | 0.6+ | | |
| 2002 12 11 | 704 | 1.0+ | 0.1− | 2004 04 21 | 704 | 0.0 | 0.3+ | 2006 11 02 | 703 | 1.0− | 0.8+ | | |
| 2002 12 11 | 704 | 0.9+ | 0.6− | 2004 04 21 | 704 | 1.0+ | 0.3+ | 2006 11 02 | 703 | 0.1− | 0.3+ | | |
| 2002 12 11 | 704 | (2.0+ | 0.1+) | 2004 04 21 | 704 | 0.1− | 0.8+ | 2006 11 02 | 703 | (0.4− | 2.3+) | | |
| 2002 12 11 | 704 | 0.8+ | 0.2− | 2004 04 21 | 704 | 0.0 | 1.4+ | 2006 11 15 | 704 | 0.5+ | 0.3+ | | |
| 2002 12 28 | 704 | 0.7− | 0.1+ | 2004 04 21 | 704 | 0.3− | 0.3+ | 2006 11 15 | 704 | 0.1+ | 1.1+ | | |
| 2002 12 28 | 704 | 0.8− | 1.4− | 2006 07 22 | G96 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.0 | 0.3+ | | |
| 2002 12 28 | 704 | 1.3− | 1.5− | 2006 07 22 | G96 | 0.4− | 0.1− | 2006 11 15 | 704 | 0.3− | 0.3+ | | |
| 2002 12 28 | 704 | 1.2− | 1.0− | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.6− | 0.4+ | | |
| 2003 01 14 | 704 | 0.1+ | 0.8− | 2006 07 22 | G96 | 0.5− | 0.1− | 2006 11 17 | 644 | 0.3− | 0.4+ | | |
| 2003 01 14 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 11 17 | 644 | 0.3− | 0.2+ | | |
| 2003 01 14 | 704 | 0.9+ | 0.7− | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 17 | 644 | 0.5− | 0.4+ | | |
| 2003 01 14 | 704 | 0.2− | 1.3− | 2006 09 18 | 703 | 0.4− | 0.7+ | 2006 11 17 | 644 | 0.3− | 0.3+ | | |
| 2004 03 22 | 704 | 0.1+ | 0.4− | 2006 09 18 | 703 | 1.2− | 1.1+ | 2006 11 17 | 644 | 0.4− | 0.3+ | | |
| 2004 03 22 | 704 | 0.8+ | 0.8+ | 2006 09 25 | 704 | 1.3+ | 0.3− | 2006 11 21 | 703 | 0.4− | 0.1+ | | |
| 2004 03 22 | 704 | 0.2− | 0.1+ | 2006 09 25 | 704 | 1.1+ | 0.8+ | 2006 11 21 | 703 | 0.1+ | 0.2+ | | |
| 2004 03 22 | 704 | 0.1− | 1.2+ | 2006 09 25 | 704 | 0.0 | 0.8+ | 2006 11 21 | 703 | 0.0 | 0.2− | | |
| 2004 03 22 | 704 | 0.6− | 0.5+ | 2006 10 19 | 703 | (0.2+ | 2.3+) | 2006 11 21 | 703 | 0.1+ | 0.0 | | |

**(144769)∗ 2004 HO$_{20}$ = 2003 BV$_{41}$**

Discovered 2004 Apr. 19 at Jarnac Observatory, Vail.

Id. G. V. Williams (*MPO* 62166)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 99.49621 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17867733 | $\omega$ | 121.46590 | | −0.01100597 | | +0.99989007 | | |
| $a$ | 3.1219294 | $\Omega$ | 147.89895 | | −0.92365320 | | −0.00635935 | | |
| $e$ | 0.0471886 | $i$ | 1.07128 | | −0.38307133 | | −0.01339419 | | |
| $P$ | 5.52 | $H$ | 15.9 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1− | 0.2− | 2004 04 19 | G92 | 0.1+ | 0.1− | 2005 06 28 | G96 | 0.0 | 0.2+ | | |
| 1995 09 17 | 691 | 0.3− | 0.2− | 2004 04 19 | G92 | 0.8+ | 0.5+ | 2005 06 28 | G96 | 0.3− | 0.6+ | | |
| 1995 09 17 | 691 | 0.1− | 0.2− | 2004 04 19 | G92 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.1− | 0.1− | | |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2004 04 22 | 599 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.2− | 0.3− | | |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2004 04 22 | 599 | 0.3+ | 0.2− | 2006 07 21 | G96 | 0.1− | 0.0 | | |
| 2001 11 20 | 704 | (1.7− | 0.2+) | 2004 04 22 | 599 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.5+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.5− | 0.7− | 2004 04 25 | 691 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.4+ | | |
| 2001 11 20 | 704 | 0.3− | 0.5+ | 2004 04 25 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.4+ | | |
| 2001 11 21 | 704 | (1.1+ | 2.2−) | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.4+ | | |
| 2001 11 21 | 704 | 0.4+ | 0.6− | 2004 04 26 | 568 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1− | | |
| 2001 11 21 | 704 | 1.3+ | 1.2+ | 2004 04 26 | 568 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.2− | | |
| 2001 11 21 | 704 | (0.4+ | 1.7+) | 2004 04 26 | 568 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | | |
| 2001 12 10 | 691 | 0.4+ | 0.1+ | 2004 04 27 | 568 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2001 12 10 | 691 | 0.1+ | 0.2+ | 2004 05 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2001 12 10 | 691 | 0.1+ | 0.1+ | 2004 05 19 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.0 | | |
| 2003 01 29 | 291 | 0.0 | 0.5+ | 2004 05 19 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1+ | | |
| 2003 01 29 | 291 | 0.1− | 0.4+ | 2005 06 12 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.4− | 0.5− | | |
| 2003 01 29 | 291 | 0.1− | 0.4+ | 2005 06 12 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.5− | 0.4− | | |
| 2003 01 30 | 644 | 0.2+ | 0.3+ | 2005 06 12 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.3− | | |
| 2003 01 30 | 644 | 0.0 | 0.4+ | 2005 06 28 | G96 | 0.8− | 0.9+ | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2003 01 30 | 644 | 0.0 | 0.4+ | 2005 06 28 | G96 | 0.1− | 0.7+ | | | | | | |

**(144770)∗ 2004 HM$_{22}$ = 2001 UM$_{58}$ = 2001 XK$_{201}$**

Discovered 2004 Apr. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65743)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 204.25241 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19662345 | $\omega$ | 159.61913 | | −0.99878226 | | −0.04825477 | | |
| $a$ | 2.9289537 | $\Omega$ | 17.62436 | | +0.03924917 | | −0.90330159 | | |
| $e$ | 0.0337166 | $i$ | 1.94374 | | +0.02989129 | | −0.42628360 | | |
| $P$ | 5.01 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.4+ | 0.8+ | 2004 04 16 | 691 | 0.8+ | 0.8+ | 2006 07 21 | G96 | 0.4− | 0.1− | | |
| 2001 10 17 | 291 | 0.1+ | 0.4+ | 2004 04 16 | 691 | 0.2+ | 0.7+ | 2006 07 21 | G96 | 0.4− | 0.3− | | |
| 2001 10 17 | 704 | (2.0+ | 0.7+) | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 291 | 0.1+ | 0.0 | 2004 04 22 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.5+ | | |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 17 | 291 | 0.3− | 0.3+ | 2004 04 22 | 691 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.4− | 0.4+ | | |
| 2001 10 17 | 704 | 0.9− | 0.2+ | 2004 05 15 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2004 05 15 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.4+ | | |
| 2001 10 21 | 704 | 0.4+ | 0.3− | 2004 05 15 | 691 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.4− | 0.5+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.6+ | 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2001 10 21 | 704 | 0.4− | 0.6− | 2004 05 23 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 1.3− | 0.4− | | |
| 2001 10 21 | 704 | 0.2− | 0.5− | 2004 05 23 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2001 11 20 | 691 | 0.1− | 0.1+ | 2005 07 07 | 691 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4+ | | |
| 2001 11 20 | 691 | 0.1+ | 0.1− | 2005 07 07 | 691 | 0.5+ | 0.4− | 2006 10 31 | 691 | 0.0 | 0.5+ | | |
| 2001 11 20 | 691 | 0.1− | 0.1+ | 2005 07 07 | 691 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2001 12 13 | 621 | 0.1+ | 0.8+ | 2005 07 11 | 691 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.5+ | | |
| 2001 12 13 | 621 | 0.3− | 0.3− | 2005 07 11 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.5− | 0.8+ | | |
| 2001 12 13 | 621 | 0.1+ | 0.3+ | 2005 07 11 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.6+ | | |
| 2001 12 14 | 621 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1+ | | |

**(144771)∗ 2004 HQ$_{22}$ = 2001 SW$_{297}$**

Discovered 2004 Apr. 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69720)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 322.69335 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21217605 | $\omega$ | 215.20802 | | +0.36286930 | | −0.93139546 | | |
| $a$ | 2.7840165 | $\Omega$ | 213.54206 | | +0.86644817 | | +0.34861025 | | |
| $e$ | 0.0825091 | $i$ | 2.98578 | | +0.34291901 | | +0.10475391 | | |
| $P$ | 4.65 | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.1+ | 0.2+ | 2004 05 23 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2001 08 23 | 691 | 0.1+ | 0.3+ | 2004 05 23 | 691 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 08 23 | 691 | 0.2+ | 0.1+ | 2004 05 23 | 691 | 0.6+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.9− | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.6− | 0.8+ | 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.8− | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.6− | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.7− | 0.7+ |
| 2001 09 20 | 704 | 1.2− | 0.7+ | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | 1.2+ | 0.7+ |
| 2001 09 23 | 704 | 0.2+ | 0.6+ | 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.9+ | 0.2− |
| 2001 09 23 | 704 | 0.2− | 0.7+ | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 17 | 703 | (2.0− | 0.6+) |
| 2001 09 23 | 704 | 0.2− | 0.9+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2003 01 07 | 704 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2003 01 07 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2003 01 07 | 704 | 0.6+ | 0.3− | 2006 10 12 | 691 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.1− | 1.2+ |
| 2003 01 26 | 291 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.3− | 2006 11 25 | H55 | 0.0 | 0.3+ |
| 2003 01 26 | 291 | 0.0 | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 25 | H55 | 0.2− | 0.3+ |
| 2003 01 26 | 291 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 25 | H55 | 0.3− | 0.4+ |
| 2004 04 16 | 691 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 25 | H55 | 0.2− | 0.4+ |
| 2004 04 16 | 691 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.8+ | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2004 04 16 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2004 04 22 | 691 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.0 | | | | |
| 2004 04 22 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.1− | | | | |

**(144772)∗ 2004 HB$_{25}$ = 1999 KF$_2$**

Discovered 2004 Apr. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65744)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.91841 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18910113 | $\omega$ | 208.39727 | | +0.25839382 | +0.96443468 |
| $a$ | 3.0061222 | $\Omega$ | 76.62246 | | −0.87514861 | +0.25809342 |
| $e$ | 0.0945253 | $i$ | 3.28000 | | −0.40908134 | +0.05703966 |
| $P$ | 5.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 16 | 691 | 0.3− | 0.1− | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 1999 05 16 | 691 | 0.1− | 0.0 | 2004 04 22 | 704 | 0.7+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 1999 05 16 | 691 | 0.8+ | 0.1− | 2004 04 22 | 704 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.0 |
| 1999 05 19 | 691 | 0.0 | 0.1+ | 2004 04 22 | 704 | 0.5+ | 0.2− | 2006 09 30 | G96 | 0.6+ | 0.1− |
| 1999 05 19 | 691 | 0.2− | 0.1− | 2004 05 13 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.4+ |
| 1999 05 19 | 691 | 0.1+ | 0.2− | 2004 05 13 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2001 12 11 | 291 | 0.6− | 1.2+ | 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 291 | 0.6− | 1.3+ | 2004 05 23 | 691 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2001 12 11 | 291 | (0.3− | 1.6+) | 2004 05 23 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.5+ | 0.2+ |
| 2004 03 31 | 691 | 0.0 | 0.3+ | 2004 05 23 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.2+ |
| 2004 03 31 | 691 | 0.2− | 0.1+ | 2005 07 18 | 644 | 0.4− | 0.8+ | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2004 03 31 | 691 | 0.1− | 0.3+ | 2005 07 18 | 644 | 0.6− | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2004 04 16 | 704 | (2.4+ | 0.5−) | 2005 07 18 | 644 | 0.7− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.5+ |
| 2004 04 16 | 704 | (1.2+ | 1.6+) | 2005 07 26 | 644 | 0.3− | 0.8+ | 2006 10 22 | 691 | 0.0 | 0.6+ |
| 2004 04 16 | 704 | (0.6+ | 1.9+) | 2005 07 26 | 644 | 0.5− | 0.8+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2004 04 19 | 704 | 0.7+ | 0.3+ | 2005 07 26 | 644 | 0.7+ | 0.9+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2004 04 19 | 704 | 0.1− | 0.5+ | 2005 08 01 | E12 | 0.2+ | 0.8+ | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2004 04 19 | 704 | 0.2+ | 0.2+ | 2005 08 01 | E12 | 0.4− | 0.2+ | 2006 11 12 | G96 | 0.5− | 0.2− |
| 2004 04 22 | 691 | 0.0 | 0.4+ | 2005 08 01 | E12 | 0.8− | 0.6+ | | | | |
| 2004 04 22 | 691 | 0.4+ | 0.2+ | 2005 08 01 | E12 | (0.4− | 1.6+) | | | | |

**(144773)∗ 2004 HG$_{25}$ = 2002 XG$_{107}$**

Discovered 2004 Apr. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69721)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.86215 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22840496 | $\omega$ | 59.44136 | | −0.51855355 | −0.85182876 |
| $a$ | 2.6505278 | $\Omega$ | 61.97384 | | +0.75292960 | −0.49597352 |
| $e$ | 0.0567435 | $i$ | 4.81493 | | +0.40521504 | −0.16851715 |
| $P$ | 4.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 26 | 644 | 1.1− | 0.7+ | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 07 26 | 644 | 0.5− | 0.8+ | 2004 05 21 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2001 07 26 | 644 | 0.3− | 0.5+ | 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 703 | 0.2+ | 0.1+ |
| 2001 08 25 | 644 | 0.0 | 1.1+ | 2005 07 26 | 644 | 0.0 | 0.8+ | 2006 11 16 | 703 | 0.1− | 0.6− |
| 2001 08 25 | 644 | 0.2+ | 1.0+ | 2005 07 26 | 644 | 0.2+ | 0.8+ | 2006 11 16 | 703 | 0.2+ | 0.4− |
| 2001 08 25 | 644 | 0.9− | 0.1+ | 2005 07 26 | 644 | 0.2− | 0.8+ | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 1.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 1.0+ | 0.0 |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 1.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2002 12 11 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.7− | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.6− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.9− | 0.4+ |
| 2002 12 11 | 704 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2003 01 05 | 704 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 26 | 704 | 0.3+ | 0.2+ |
| 2003 01 05 | 704 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 26 | 704 | 0.8+ | 0.1+ |
| 2003 01 05 | 704 | 0.7+ | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 26 | 704 | 0.3− | 0.9+ |
| 2003 01 05 | 704 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2003 01 05 | 704 | 0.4+ | 1.2+ | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2004 04 19 | 704 | 0.5+ | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 27 | 703 | 1.9− | 0.4− |
| 2004 04 19 | 704 | 0.2+ | 0.9+ | 2006 10 28 | 691 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.2− |
| 2004 04 19 | 704 | 0.7+ | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2004 04 19 | 704 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.3− | 1.2− |
| 2004 04 19 | 704 | 0.4+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.4+ | 0.8− |
| 2004 04 22 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.9− | 1.1− |
| 2004 04 22 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1− | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.2− |
| 2004 04 22 | 704 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.1− | 2006 11 29 | 704 | 1.0+ | 0.7+ |
| 2004 04 22 | 599 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.4+ |
| 2004 04 22 | 599 | 0.5+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.6+ | 0.4− |
| 2004 04 22 | 599 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.8− |
| 2004 05 13 | 691 | 0.0 | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2004 05 13 | 691 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.3− | | | | |

**(144774)∗ 2004 HQ$_{25}$ = 2001 SW$_{319}$**

Discovered 2004 Apr. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65744)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.17081 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23214207 | $\omega$ | 152.08247 | | −0.48032349 | +0.87613250 |
| $a$ | 2.6220048 | $\Omega$ | 89.18527 | | −0.81215981 | −0.42662667 |
| $e$ | 0.0840320 | $i$ | 2.35015 | | −0.33118844 | −0.22445828 |
| $P$ | 4.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 15 | 691 | 0.3− | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.7+ | 2005 08 30 | 691 | 0.0 | 0.3+ |
| 1993 12 15 | 691 | 0.3− | 0.3+ | 2004 04 22 | 704 | 0.2+ | 0.9+ | 2005 08 30 | 691 | 0.0 | 0.2+ |
| 1993 12 15 | 691 | 0.2− | 0.4+ | 2004 04 22 | 704 | 0.5− | 0.2+ | 2005 08 30 | 691 | 0.4− | 0.2+ |
| 1995 02 07 | 691 | 0.3− | 0.1+ | 2004 04 22 | 704 | 0.5+ | 0.2− | 2005 09 01 | 691 | 0.1− | 0.3+ |
| 1995 02 07 | 691 | 0.1+ | 0.4− | 2004 04 22 | 704 | 0.2+ | 1.2+ | 2005 09 01 | 691 | 0.1− | 0.1+ |
| 1995 02 07 | 691 | 0.2+ | 0.6− | 2004 05 10 | 291 | 0.5+ | 0.6+ | 2005 09 01 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.7− | 2004 05 10 | 291 | 0.5+ | 0.5+ | 2005 09 07 | A50 | 0.3− | 0.1− |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2004 05 10 | 291 | 0.8+ | 0.4+ | 2005 09 07 | A50 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.7− | 2004 05 12 | 699 | (1.7+ | 0.5+) | 2005 09 11 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 1.4− | 2004 05 12 | 699 | 0.5− | 1.1− | 2005 09 11 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.7− | 0.9− | 2004 05 12 | 699 | 0.8− | 0.0 | 2005 09 11 | 691 | 0.2+ | 0.1+ |
| 2001 09 26 | 704 | 0.0 | 0.9+ | 2004 05 12 | 699 | 0.6− | 0.4+ | 2005 09 14 | 691 | 0.4− | 0.1+ |
| 2001 09 26 | 704 | 1.0− | 0.4+ | 2004 05 14 | 691 | 0.3− | 0.2+ | 2005 09 14 | 691 | 0.1+ | 0.2+ |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2004 05 14 | 691 | 0.3− | 0.2+ | 2005 09 14 | 691 | 0.2− | 0.1+ |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2004 05 14 | 691 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.3+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 05 21 | 704 | 0.4− | 0.5− | 2006 11 17 | 691 | 0.5− | 0.4+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 05 21 | 704 | 0.7− | 0.7− | 2006 11 17 | 691 | 0.1− | 0.5+ |
| 2001 12 10 | 645 | 0.1+ | 0.0 | 2004 05 21 | 704 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.5+ |
| 2001 12 10 | 645 | 0.0 | 0.1+ | 2004 05 21 | 704 | 0.2+ | 0.1− | 2006 11 25 | 691 | 0.0 | 0.5+ |
| 2004 04 19 | 704 | 0.0 | 0.4− | 2005 08 28 | 691 | 0.0 | 0.2+ | 2006 11 25 | 691 | 0.1+ | 0.5+ |
| 2004 04 19 | 704 | 0.1− | 0.6+ | 2005 08 28 | 691 | 0.1− | 0.2+ | | | | |
| 2004 04 19 | 704 | 0.0 | 0.5− | 2005 08 28 | 691 | 0.1− | 0.0 | | | | |

**(144775)∗ 2004 HT$_{25}$ = 1998 EO$_{11}$ = 2001 WU$_{82}$**

Discovered 2004 Apr. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65744)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 157.40980 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17877182 | $\omega$ | 156.48348 | | −0.77403228 | +0.62892833 | |
| *a* | 3.1208292 | $\Omega$ | 62.69067 | | −0.59315463 | −0.68000623 | |
| *e* | 0.1011578 | *i* | 4.70998 | | −0.22145339 | −0.37688285 | |
| *P* | 5.51 | *H* | 15.4 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 01 | 809 | (2.6+ | 1.5+) | 2004 04 19 | 704 | 0.2− | 0.1− | 2004 05 16 | 704 | 0.0 | 0.2− |
| 1998 03 01 | 809 | (3.2+ | 2.1+) | 2004 04 19 | 704 | 0.1− | 0.1+ | 2004 05 16 | 704 | 0.1− | 0.1− |
| 1998 03 01 | 809 | (3.5+ | 2.8+) | 2004 04 19 | 704 | 0.3+ | 0.2− | 2004 05 16 | 704 | 0.5+ | 0.3− |
| 1998 03 02 | 809 | (2.4+ | 0.4+) | 2004 04 19 | 704 | 0.2+ | 1.0+ | 2004 05 23 | 691 | 0.1+ | 0.2+ |
| 1998 03 02 | 809 | 1.8+ | 1.0− | 2004 04 22 | 691 | 0.3+ | 0.2+ | 2004 05 23 | 691 | 0.0 | 0.2+ |
| 1998 03 02 | 809 | (2.9+ | 0.2−) | 2004 04 22 | 691 | 0.2+ | 0.1+ | 2004 05 23 | 691 | 0.2+ | 0.3+ |
| 1998 03 26 | 704 | (0.8− | 2.7+) | 2004 04 22 | 704 | 0.1+ | 0.1+ | 2005 07 03 | 644 | 0.5+ | 0.3+ |
| 1998 03 26 | 704 | 0.8− | 0.8− | 2004 04 22 | 691 | 0.1+ | 0.0 | 2005 07 03 | 644 | 0.4+ | 0.1− |
| 1998 03 26 | 704 | (5.1− | 2.3+) | 2004 04 22 | 704 | 1.1− | 0.7+ | 2005 07 03 | 644 | 0.1+ | 0.1+ |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2004 04 22 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2000 09 26 | 645 | 0.1− | 0.0 | 2004 04 22 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | (0.8− | 1.9+) |
| 2001 11 20 | 704 | 0.5− | 0.4+ | 2004 04 22 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 1.1− | 1.4+ |
| 2001 11 20 | 704 | 0.3+ | 1.2+ | 2004 05 10 | 703 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.1− | 1.4+ | 2004 05 10 | 703 | 0.3− | 1.4+ | 2006 10 15 | 703 | 0.4+ | 0.7+ |
| 2001 11 21 | 704 | 0.4− | 0.8+ | 2004 05 10 | 703 | 0.3− | 0.2+ | 2006 10 15 | 703 | (1.9− | 0.7−) |
| 2001 11 21 | 704 | 0.5+ | 1.0+ | 2004 05 10 | 703 | (1.0+ | 2.1+) | 2006 10 15 | 703 | 1.3− | 0.1− |
| 2001 11 21 | 704 | 0.7− | 0.8+ | 2004 05 11 | 699 | 0.8− | 0.5+ | 2006 10 15 | 703 | 0.6− | 0.3− |
| 2001 11 21 | 704 | 1.0− | 1.2+ | 2004 05 11 | 699 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 1.0+ | 0.6− | 2004 05 11 | 699 | 1.4− | 0.8− | 2006 10 17 | G96 | 0.5+ | 0.3+ |
| 2001 12 17 | 704 | 0.5+ | 0.1− | 2004 05 11 | 699 | 0.6− | 0.3− | 2006 10 17 | G96 | 1.0+ | 0.2+ |
| 2001 12 17 | 704 | 0.2+ | 1.1+ | 2004 05 12 | 699 | 0.2+ | 1.2+ | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.8− | 0.1+ | 2004 05 12 | 699 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.4− | 0.2− |
| 2003 02 02 | 704 | 0.4− | 0.2+ | 2004 05 12 | 699 | 0.6+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2003 02 02 | 704 | 1.3− | 1.0+ | 2004 05 12 | 699 | 0.5+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2003 02 02 | 704 | 0.2+ | 0.5+ | 2004 05 15 | 704 | 0.1+ | 0.9+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2003 02 02 | 704 | 0.1− | 0.3+ | 2004 05 15 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2004 04 12 | 699 | 0.3+ | 0.5+ | 2004 05 15 | 704 | 0.0 | 1.0+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2004 04 12 | 699 | 0.2+ | 0.6+ | 2004 05 15 | 704 | 0.2+ | 1.5+ | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2004 04 12 | 699 | (1.9− | 0.2−) | 2004 05 15 | 704 | 0.3+ | 0.8+ | | | | |
| 2004 04 12 | 699 | 0.8+ | 0.6− | 2004 05 16 | 704 | 1.1+ | 0.8+ | | | | |

**(144776)∗ 2004 HN$_{26}$ = 2005 NS$_{109}$**

Discovered 2004 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 95210)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 287.64797 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.23345383 | $\omega$ | 351.70329 | | −0.36622330 | −0.91058019 | |
| *a* | 2.6121737 | $\Omega$ | 119.58977 | | +0.86589253 | −0.40889471 | |
| *e* | 0.1285486 | *i* | 12.73114 | | +0.34075009 | +0.06040553 | |
| *P* | 4.22 | *H* | 15.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 20 | 704 | (1.7− | 2.6−) | 2003 01 27 | 644 | 0.7− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.7+ |
| 1999 01 20 | 704 | 0.6+ | 0.4+ | 2004 03 30 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.1− | 0.7− |
| 1999 01 20 | 704 | 1.4− | 0.4− | 2004 03 30 | 691 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.4− | 0.0 |
| 1999 01 20 | 704 | (4.3− | 2.6−) | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2000 05 07 | 691 | 0.0 | 0.3− | 2004 04 20 | 704 | 1.2+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2000 05 07 | 691 | 0.3+ | 0.4− | 2004 04 20 | 704 | 1.0+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2000 05 07 | 691 | 0.2− | 0.2− | 2004 04 20 | 704 | 0.7+ | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.2− |
| 2002 10 31 | 704 | 0.4+ | 1.2− | 2004 04 20 | 704 | 1.1+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 10 31 | 704 | 0.2+ | 1.2− | 2004 04 22 | 703 | 0.6− | 0.1+ | 2006 10 20 | 703 | 0.5+ | 1.1+ |
| 2002 10 31 | 704 | 0.0 | 1.0− | 2004 04 22 | 703 | 0.6− | 0.1− | 2006 10 20 | 703 | 0.4− | 0.3+ |
| 2002 11 30 | 704 | 1.3− | 0.3− | 2004 04 22 | 703 | 0.4− | 1.1+ | 2006 10 20 | 703 | 0.4+ | 0.3− |
| 2002 11 30 | 704 | 0.0 | 0.1− | 2004 04 22 | 703 | 0.1+ | 0.5− | 2006 10 20 | 703 | 0.1+ | 0.2+ |
| 2002 11 30 | 704 | 0.1− | 0.1− | 2005 06 15 | G96 | 0.5+ | 0.0 | 2006 10 20 | 703 | 0.2+ | 1.0+ |
| 2002 11 30 | 704 | (2.1− | 1.6−) | 2005 06 15 | G96 | 0.2− | 0.3+ | 2006 10 20 | 703 | 0.3− | 1.4− |
| 2002 11 30 | 704 | 0.2+ | 1.0− | 2005 06 15 | G96 | 0.1+ | 0.4+ | 2006 10 20 | 703 | (0.2+ | 2.2+) |
| 2002 12 08 | 644 | 0.1+ | 1.0+ | 2005 06 15 | G96 | 0.0 | 0.4+ | 2006 10 20 | 703 | 0.2− | 1.0+ |
| 2002 12 08 | 644 | 0.0 | 1.1+ | 2005 07 03 | G96 | 0.4− | 0.0 | 2006 10 28 | 703 | (2.6+ | 1.2+) |
| 2002 12 08 | 644 | 0.0 | 0.8+ | 2005 07 03 | G96 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.5+ | 0.2+ |
| 2002 12 13 | 644 | 0.2− | 0.4+ | 2005 07 03 | G96 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.2+ | 0.9+ |
| 2002 12 13 | 644 | 0.1+ | 0.4+ | 2005 07 03 | G96 | 0.7+ | 0.7+ | 2006 10 28 | 703 | 1.3− | 0.2+ |
| 2002 12 13 | 644 | 0.1− | 0.2+ | 2005 07 07 | 568 | 0.4− | 0.6+ | 2006 11 23 | 703 | 0.5− | 0.4+ |
| 2003 01 05 | 704 | 0.8+ | 0.2+ | 2005 07 07 | 568 | 0.5− | 0.5+ | 2006 11 23 | 703 | 0.1+ | 0.8+ |
| 2003 01 05 | 704 | 0.6+ | 0.9+ | 2005 07 07 | 568 | 0.5− | 0.5+ | 2006 11 23 | 703 | 0.3+ | 0.9+ |
| 2003 01 05 | 704 | 0.8+ | 1.1+ | 2005 07 08 | 568 | 0.3− | 0.8+ | 2006 11 23 | 703 | 0.2− | 1.3− |
| 2003 01 27 | 644 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.8+ | 1.4− | | | | |
| 2003 01 27 | 644 | 0.7− | 0.5+ | 2006 09 19 | 703 | (2.1+ | 0.3+) | | | | |

**(144777)∗ 2004 HR$_{27}$**

Discovered 2004 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 169.54506 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.18146817 | $\omega$ | 17.86977 | | −0.89017146 | +0.45480812 | |
| *a* | 3.0898383 | $\Omega$ | 189.32456 | | −0.43588452 | −0.86750923 | |
| *e* | 0.0796269 | *i* | 9.69381 | | −0.13266292 | −0.20143810 | |
| *P* | 5.43 | *H* | 15.8 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 691 | 0.2+ | 0.2− | 2004 04 25 | 621 | 0.5− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2000 08 26 | 691 | 0.2+ | 0.2− | 2004 04 28 | 621 | 1.1− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.4+ |
| 2000 08 26 | 691 | 0.4− | 0.5− | 2004 04 28 | 621 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.4+ |
| 2000 09 24 | 691 | 0.3+ | 0.2+ | 2004 04 28 | 621 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.6− | 0.3+ |
| 2000 09 24 | 691 | 0.4− | 0.1+ | 2004 05 18 | 704 | 0.4− | 0.6− | 2006 10 17 | G96 | 0.7− | 0.4− |
| 2000 09 24 | 691 | 0.2− | 0.5+ | 2004 05 18 | 704 | 0.6− | 0.6+ | 2006 10 17 | G96 | 0.6− | 0.0 |
| 2003 01 28 | 645 | 0.1+ | 0.2+ | 2004 05 18 | 704 | 0.6− | 1.0+ | 2006 10 17 | G96 | 0.1+ | 0.2+ |
| 2003 01 28 | 645 | 0.1+ | 0.2+ | 2004 05 18 | 704 | 0.5+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.7− |
| 2004 04 20 | 704 | 0.4+ | 1.0+ | 2004 05 22 | 704 | 0.4− | 1.3+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2004 04 20 | 704 | 0.0 | 0.2+ | 2004 05 22 | 704 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2004 04 20 | 704 | 0.3− | 0.6+ | 2004 05 22 | 704 | 0.5+ | 0.4+ | 2006 10 21 | G96 | 0.5− | 0.1− |
| 2004 04 20 | 704 | 0.1+ | 0.0 | 2005 07 15 | 691 | 0.6+ | 1.2+ | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2004 04 20 | 704 | 0.2+ | 1.1+ | 2005 07 15 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2004 04 22 | 704 | 0.1+ | 0.4+ | 2005 07 15 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2004 04 22 | 704 | 0.3− | 0.1− | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2004 04 22 | 704 | 0.3+ | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.5+ | 0.9− |
| 2004 04 22 | 599 | 0.5+ | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2004 04 22 | 599 | 0.4+ | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.2+ |
| 2004 04 22 | 599 | 0.4+ | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2004 04 22 | 599 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 621 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1− | |
| 2004 04 25 | 621 | 0.0 | 0.6− | 2006 09 18 | 691 | 0.0 | 0.5+ | |

**(144778)∗ 2004 HA$_{28}$**

Discovered 2004 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.82598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17887777 | $\omega$ | 235.91305 | | +0.27924856 | +0.92739288 | |
| $a$ | 3.1195968 | $\Omega$ | 52.29829 | | −0.74428484 | +0.37284036 | |
| $e$ | 0.1399206 | $i$ | 18.33742 | | −0.60667975 | −0.03053720 | |
| $P$ | 5.51 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 1.2− | 0.1− | 2004 05 15 | 704 | 0.2− | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2000 10 01 | 704 | 0.0 | 0.6+ | 2004 05 15 | 704 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.2− |
| 2000 10 01 | 704 | 0.0 | 0.9+ | 2004 05 18 | 599 | 0.1+ | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2000 10 01 | 704 | 1.2− | 1.3+ | 2004 05 18 | 599 | 0.1+ | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2003 04 26 | 645 | 0.0 | 0.0 | 2004 05 18 | 599 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2003 04 26 | 645 | 0.1+ | 0.0 | 2004 05 18 | 599 | (0.2− | 2.1+) | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2004 03 31 | 704 | 0.8+ | 0.2+ | 2004 05 21 | 704 | 0.8+ | 0.7+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2004 03 31 | 704 | 0.5+ | 0.3+ | 2004 05 21 | 704 | 0.8+ | 0.7+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2004 03 31 | 704 | 0.4+ | 0.9+ | 2004 05 21 | 704 | 0.3+ | 0.0 | 2006 11 09 | 691 | 0.1− | 0.7+ |
| 2004 04 20 | 704 | 0.7+ | 0.3+ | 2004 05 21 | 704 | 0.0 | 0.7+ | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 2004 04 20 | 704 | 1.0+ | 0.2+ | 2004 06 14 | 704 | 1.2+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2004 04 20 | 704 | 0.6+ | 0.5+ | 2004 06 14 | 704 | 1.0+ | 0.3+ | 2006 11 11 | 703 | (0.1+ | 1.6−) |
| 2004 04 20 | 704 | 0.7+ | 0.5+ | 2004 06 14 | 704 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.9− | 1.1+ |
| 2004 04 20 | 704 | 0.5+ | 0.4+ | 2004 06 14 | 704 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2004 04 22 | 704 | 0.5+ | 0.4+ | 2004 06 14 | 704 | (1.5+ | 0.6+) | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2004 04 22 | 704 | 0.1+ | 0.3+ | 2005 07 29 | E12 | 0.4− | 0.7+ | 2006 11 18 | 691 | 0.3− | 0.3+ |
| 2004 04 22 | 704 | 0.9+ | 0.3+ | 2005 07 29 | E12 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.4+ |
| 2004 04 22 | 704 | 0.8+ | 0.3+ | 2005 07 29 | E12 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2004 04 22 | 704 | 0.6+ | 1.2+ | 2005 07 29 | E12 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2004 05 01 | 703 | 0.8− | 0.7− | 2005 08 13 | E12 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.8− | 0.5+ |
| 2004 05 01 | 703 | (0.1+ | 1.7+) | 2005 08 13 | E12 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.4− | 0.7+ |
| 2004 05 01 | 703 | 0.2− | 0.4+ | 2005 08 13 | E12 | 0.7− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2004 05 01 | 703 | 0.6− | 0.4+ | 2005 08 13 | E12 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.1− | 0.4+ |
| 2004 05 11 | 699 | 0.0 | 0.2− | 2005 09 09 | E12 | 0.1− | 0.5+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2004 05 11 | 699 | 0.1+ | 0.3+ | 2005 09 09 | E12 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.0 |
| 2004 05 11 | 699 | 0.4− | 0.4+ | 2005 09 09 | E12 | 0.1+ | 0.5+ | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2004 05 11 | 699 | (2.9+ | 0.4+) | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2004 05 15 | 704 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2004 05 15 | 704 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.1− | | | | |
| 2004 05 15 | 704 | 0.2+ | 0.8+ | 2006 09 28 | G96 | 0.2+ | 0.1− | | | | |

**(144779)∗ 2004 HV$_{28}$**

Discovered 2004 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.75696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22126212 | $\omega$ | 112.19623 | | +0.90708232 | +0.41703458 | |
| $a$ | 2.7072686 | $\Omega$ | 223.21346 | | −0.41044049 | +0.84596257 | |
| $e$ | 0.0137627 | $i$ | 4.80075 | | −0.09348940 | +0.33230934 | |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1+ | 1.0+ | 2004 05 23 | 691 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2004 05 23 | 691 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.3− | 0.8+ | 2005 06 29 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 09 16 | 704 | 0.0 | 0.3− | 2005 06 29 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 09 28 | 644 | 0.2+ | 0.8+ | 2005 06 29 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 09 28 | 644 | 0.5− | 0.6+ | 2005 07 04 | 691 | 1.3+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 09 28 | 644 | 0.2− | 0.6+ | 2005 07 04 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 10 14 | 704 | 0.6− | 1.4+ | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.7− | 0.3+ | 2005 07 06 | 291 | 0.6− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.5+ | 0.6+ | 2005 07 06 | 291 | 0.8− | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 2001 10 14 | 704 | 1.0− | 0.1− | 2005 07 06 | 291 | 0.6− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.9− | 0.8+ | 2005 07 08 | 691 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.1− | 0.7− | 2005 07 08 | 691 | 0.0 | 0.4+ | 2006 11 12 | 703 | 0.9− | 0.4+ |
| 2001 10 14 | 704 | 0.4+ | 1.4+ | 2005 07 08 | 691 | 0.1− | 0.4+ | 2006 11 12 | 703 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.5− | 1.1+ | 2005 08 06 | 644 | 0.1− | 0.0 | 2006 11 12 | 703 | 0.4− | 1.3+ |
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.4− | 0.4+ |
| 2004 03 27 | 704 | 1.2+ | 0.3+ | 2005 08 08 | 185 | 0.8+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2004 03 27 | 704 | 0.8+ | 0.9+ | 2005 08 08 | 185 | 0.1+ | 0.6− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 1.3+ | 0.3+ | 2005 08 08 | 185 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2004 03 27 | 704 | (0.1− | 1.6−) | 2005 08 08 | 185 | (1.6+ | 0.0 ) | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 04 20 | 704 | 0.3+ | 0.4+ | 2005 08 24 | 644 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2004 04 20 | 704 | 1.2+ | 0.2+ | 2005 08 24 | 644 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2004 04 20 | 704 | 0.8+ | 0.8+ | 2005 08 24 | 644 | 0.6+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2004 04 20 | 704 | 0.6+ | 0.7+ | 2005 10 30 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2004 04 22 | 691 | 0.0 | 0.7+ | 2005 10 30 | G96 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.4+ | 0.0 |
| 2004 04 22 | 691 | 0.4+ | 0.6+ | 2005 10 30 | G96 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2004 04 22 | 691 | 0.1+ | 0.5+ | 2005 10 30 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 04 30 | 291 | 0.3− | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.6+ |
| 2004 04 30 | 291 | 0.4− | 0.8+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.5+ |
| 2004 04 30 | 691 | 0.2+ | 0.6+ | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.5+ | 1.0+ |
| 2004 04 30 | 291 | 0.4− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.1+ | 1.0+ |
| 2004 04 30 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 12 01 | 691 | 0.5+ | 0.7+ |
| 2004 04 30 | 691 | 0.5+ | 0.8+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.8− | 0.4+ |
| 2004 05 15 | 691 | 0.2− | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.3+ |
| 2004 05 15 | 691 | 0.2+ | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.7− | 0.7+ |
| 2004 05 15 | 691 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.5− | 2006 12 01 | 691 | 0.3− | 0.5+ |
| 2004 05 23 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.7+ | 0.7+ |

**(144780)∗ 2004 HJ$_{29}$ = 2001 WR$_{33}$**

Discovered 2004 Apr. 21 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65749)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.47901 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19440382 | $\omega$ | 129.89718 | | +0.96311846 | +0.25751120 | |
| $a$ | 2.9512060 | $\Omega$ | 215.38124 | | −0.26904892 | +0.91737414 | |
| $e$ | 0.0992784 | $i$ | 7.74631 | | −0.00393827 | +0.30350067 | |
| $P$ | 5.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 28 | 691 | 0.0 | 0.1− | 2004 04 22 | 691 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1995 06 28 | 691 | 0.1− | 0.2+ | 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 1995 06 28 | 691 | 0.2+ | 0.2− | 2004 04 30 | 291 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.2− | 0.3+ |
| 2001 11 17 | 704 | 0.7+ | 0.3+ | 2004 04 30 | 291 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.6+ | 0.6+ | 2004 04 30 | 291 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.3− |
| 2001 11 17 | 704 | 0.1+ | 0.3+ | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.9− | 0.6+ | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.3+ | 2004 05 13 | 691 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2005 05 13 | G96 | 0.3+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 2001 11 20 | 704 | 0.5− | 0.9+ | 2005 05 13 | G96 | 0.5+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.9+ | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2001 12 14 | 704 | 0.1− | 0.9+ | 2005 05 13 | G96 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2005 06 13 | 291 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2005 06 13 | 291 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2001 12 14 | 704 | 0.7− | 0.6+ | 2005 06 13 | 291 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2004 04 21 | 291 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 1.2+ | 0.9+ |
| 2004 04 21 | 291 | 0.3− | 0.7+ | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.8+ | 0.2− |
| 2004 04 21 | 291 | 0.3− | 0.8+ | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.5+ |
| 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.0 |

**(144781)∗ 2004 HZ$_{29}$ = 2000 BV$_{34}$ = 2002 VX$_{12}$**

Discovered 2004 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65750)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.27272 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27785969 | $\omega$ | 250.48616 | | −0.86521678 | −0.49827116 | |
| $a$ | 2.3258713 | $\Omega$ | 259.59304 | | +0.47870204 | −0.78773276 | |
| $e$ | 0.0796234 | $i$ | 3.25866 | | +0.14914519 | −0.36221948 | |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 703 | 0.1+ | 0.7+ | 2002 12 05 | 704 | 0.6− | 1.3+ | 2005 08 30 | 691 | 0.8− | 0.7− |
| 2000 01 30 | 703 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 0.7− | 0.8+ | 2005 08 30 | 691 | 0.1+ | 0.2− |
| 2000 01 30 | 703 | 1.0− | 0.3+ | 2002 12 05 | 704 | (0.7− | 2.2+) | 2005 09 12 | 691 | 0.3+ | 0.3+ |
| 2000 01 30 | 703 | 1.4− | 1.2− | 2004 04 12 | 644 | 0.4+ | 0.5+ | 2005 09 12 | 691 | 0.2+ | 0.5+ |
| 2000 02 04 | 704 | 0.5+ | 1.5+ | 2004 04 12 | 644 | 0.3+ | 0.2+ | 2005 09 12 | 691 | 0.0 | 0.3+ |
| 2000 02 04 | 704 | 0.6+ | 0.7− | 2004 04 12 | 644 | 0.4+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2000 02 04 | 704 | 1.8+ | 0.1− | 2004 04 14 | 699 | 0.7+ | 0.4− | 2006 11 01 | G96 | 0.2− | 0.2+ |
| 2002 11 04 | 644 | 0.1+ | 0.4+ | 2004 04 14 | 699 | (0.6+ | 2.2−) | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2002 11 04 | 644 | 0.1+ | 0.7+ | 2004 04 14 | 699 | 0.7+ | 0.6+ | 2006 11 01 | G96 | 0.4− | 0.2+ |
| 2002 11 04 | 644 | 0.0 | 0.2− | 2004 04 14 | 699 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.4− | 0.2+ |
| 2002 11 05 | 704 | 1.2+ | 0.2− | 2004 04 21 | 704 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2002 11 05 | 704 | 0.6+ | 0.5+ | 2004 04 21 | 704 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 11 05 | 704 | 0.8− | 0.2− | 2004 04 21 | 704 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.4− | 2004 04 22 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2002 11 14 | 704 | 0.9+ | 0.8+ | 2004 04 22 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2002 11 14 | 704 | 0.0 | 0.2− | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 1.3− | 1.0− | 2005 07 31 | 644 | 0.4+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2002 11 15 | 704 | 1.2− | 1.5+ | 2005 07 31 | 644 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2002 11 15 | 704 | (0.5− | 2.1+) | 2005 07 31 | 644 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2002 11 15 | 704 | 1.0− | 1.2+ | 2005 08 30 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.1− |

**(144782)∗ 2004 HH$_{30}$ = 1993 FZ$_9$**

Discovered 2004 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65750)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.58291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18516980 | $\omega$ | 259.22584 | | +0.36914823 | +0.92621323 | |
| $a$ | 3.0485216 | $\Omega$ | 32.76708 | | −0.78783649 | +0.35555545 | |
| $e$ | 0.0452582 | $i$ | 8.13020 | | −0.49299417 | +0.12533701 | |
| $P$ | 5.32 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.8− | 0.1− | 2005 07 10 | E12 | 0.9− | 0.8− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 1993 03 18 | 809 | 1.0− | 1.4+ | 2005 07 10 | E12 | 0.3− | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.7+ |
| 1993 03 23 | 809 | 1.4+ | 0.2− | 2005 08 12 | E12 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2000 08 26 | 704 | 0.7+ | 0.0 | 2005 08 12 | E12 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.7− | 0.5+ |
| 2000 08 26 | 704 | 0.3+ | 0.9+ | 2005 08 12 | E12 | 0.7− | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2000 08 26 | 704 | 0.7+ | 0.5− | 2005 08 12 | E12 | 0.8− | 0.3+ | 2006 11 09 | 644 | 0.5− | 0.4+ |
| 2004 04 21 | 704 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2004 04 21 | 704 | 0.1+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.6− | 0.1+ |
| 2004 04 21 | 704 | 0.6+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.3− | 0.4+ |
| 2004 04 22 | 704 | 0.6+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.9− | 0.7+ |
| 2004 04 22 | 704 | 0.7+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.4− | 0.6− |
| 2004 04 22 | 704 | 1.2+ | 0.1+ | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2004 04 22 | 704 | 0.3− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2004 04 24 | 691 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.6+ |
| 2004 04 24 | 691 | 0.2+ | 0.7+ | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 17 | 703 | (1.6− | 0.3−) |
| 2004 04 25 | 704 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.1+ |
| 2004 04 25 | 704 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | (0.5+ | 1.9−) |
| 2004 04 25 | 704 | 0.4− | 1.0+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 1.4+ | 0.5+ |
| 2004 04 26 | 704 | 0.7+ | 0.6+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | (1.7+ | 0.5+) |
| 2004 04 26 | 704 | 0.6+ | 1.0+ | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.7+ |
| 2004 04 26 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.3+ |
| 2004 04 26 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.3+ |
| 2004 05 13 | 333 | 0.8+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 05 13 | 333 | 0.8− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2004 05 13 | 333 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2005 07 10 | E12 | (0.3+ | 1.9+) | 2006 10 21 | 644 | 0.1− | 0.1− | | | | |
| 2005 07 10 | E12 | 0.3+ | 0.8− | 2006 10 27 | G96 | 0.3− | 0.2− | | | | |

**(144783)∗ 2004 HO$_{30}$**

Discovered 2004 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.24718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18302394 | $\omega$ | 77.44476 | | +0.36306748 | +0.92592391 | |
| $a$ | 3.0723035 | $\Omega$ | 214.42588 | | −0.91033259 | +0.32865935 | |
| $e$ | 0.1604254 | $i$ | 10.61583 | | −0.19868714 | +0.18613958 | |
| $P$ | 5.39 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 14 | 704 | 0.8− | 0.5− | 2004 05 21 | 704 | 0.2− | 1.3+ | 2005 09 30 | 703 | 0.1+ | 0.1− |
| 1999 06 14 | 704 | 0.1+ | 1.0− | 2004 05 21 | 704 | 0.4+ | 0.7+ | 2005 10 02 | 699 | 0.7− | 0.2+ |
| 1999 06 14 | 704 | 1.0+ | 1.3− | 2004 05 21 | 704 | 0.5+ | 0.2+ | 2005 10 02 | 699 | (1.7− | 0.3+) |
| 1999 06 14 | 704 | 0.1− | 0.3+ | 2005 07 08 | 699 | 0.3− | 0.1− | 2005 10 02 | 699 | 1.0− | 1.0+ |
| 1999 06 14 | 704 | 0.1− | 0.1− | 2005 07 08 | 699 | (0.1− | 1.6+) | 2005 10 02 | 699 | 0.6+ | 0.2+ |
| 2003 03 29 | 699 | 0.4+ | 0.4+ | 2005 07 08 | 699 | 0.4+ | 0.7+ | 2005 10 08 | 704 | 0.2+ | 0.7+ |
| 2003 03 29 | 699 | 0.3+ | 0.2− | 2005 07 08 | 699 | 0.1+ | 1.2+ | 2005 10 08 | 704 | 0.2+ | 0.7+ |
| 2003 03 29 | 699 | 1.1+ | 0.6+ | 2005 08 04 | 704 | 0.3− | 0.5− | 2005 10 08 | 704 | 0.1− | 1.2+ |
| 2003 03 29 | 699 | 0.8− | 0.0 | 2005 08 04 | 704 | 0.4+ | 0.7+ | 2005 10 08 | 704 | 0.8+ | 1.0+ |
| 2004 04 12 | 291 | 0.1− | 0.6+ | 2005 08 04 | 704 | 1.4− | 0.7+ | 2005 10 08 | 704 | 0.1− | 0.0 |
| 2004 04 12 | 291 | 0.1− | 0.6+ | 2005 08 04 | 704 | 0.5− | 0.0 | 2005 10 20 | 644 | 0.1+ | 0.1+ |
| 2004 04 12 | 291 | 0.3− | 0.6+ | 2005 08 04 | 704 | 0.3− | 0.6− | 2005 10 20 | 644 | 0.1+ | 0.2− |
| 2004 04 21 | 704 | 0.3− | 0.3+ | 2005 08 31 | 699 | 0.4+ | 0.2+ | 2005 10 20 | 644 | 0.2+ | 0.4+ |
| 2004 04 21 | 704 | 0.2− | 0.8+ | 2005 08 31 | 699 | 0.5− | 0.1− | 2005 10 30 | 699 | 0.4− | 0.6− |
| 2004 04 21 | 704 | 0.6+ | 0.9+ | 2005 08 31 | 699 | 0.4− | 0.0 | 2005 10 30 | 699 | 1.0+ | 0.0 |
| 2004 04 22 | 691 | 0.1+ | 0.2+ | 2005 08 31 | 699 | 0.2− | 0.2+ | 2005 10 30 | 699 | 0.9− | 0.9+ |
| 2004 04 22 | 691 | 0.1+ | 0.3+ | 2005 09 09 | 704 | 1.1+ | 0.1− | 2005 10 30 | 699 | 0.5+ | 0.1− |
| 2004 04 22 | 691 | 0.0 | 0.3+ | 2005 09 09 | 704 | 0.5+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2004 04 26 | 699 | 0.6− | 0.4+ | 2005 09 09 | 704 | 1.1+ | 0.5− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2004 04 26 | 699 | 0.1− | 0.3+ | 2005 09 09 | 704 | 0.4+ | 0.5− | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2004 04 26 | 699 | 0.2+ | 0.1− | 2005 09 09 | 704 | 0.4+ | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2004 04 26 | 699 | (1.6+ | 0.5+) | 2005 09 12 | 608 | 0.6− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2004 05 11 | 699 | 0.1− | 0.1+ | 2005 09 12 | 608 | 0.7− | 0.9+ | 2006 11 16 | 691 | 0.3− | 0.3+ |
| 2004 05 11 | 699 | 0.1− | 0.7− | 2005 09 12 | 608 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.6+ |
| 2004 05 11 | 699 | 0.5+ | 0.5− | 2005 09 24 | 699 | 0.9+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2004 05 11 | 699 | 0.4+ | 0.3+ | 2005 09 24 | 699 | 0.4− | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2004 05 15 | 704 | 0.7+ | 0.1+ | 2005 09 24 | 699 | (0.5− | 1.8+) | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2004 05 15 | 704 | 0.3− | 0.5− | 2005 09 24 | 699 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2004 05 15 | 704 | 0.2+ | 0.3+ | 2005 09 30 | 703 | 1.1− | 0.5− | 2006 11 24 | 691 | 0.1+ | 0.3+ |
| 2004 05 15 | 704 | 0.8+ | 0.1+ | 2005 09 30 | 703 | 1.0− | 0.5+ | 2006 11 24 | 691 | 0.1− | 0.4+ |
| 2004 05 21 | 704 | 0.3+ | 0.5+ | 2005 09 30 | 703 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.0 | 0.6+ |

**(144784)∗ 2004 HR$_{30}$**

Discovered 2004 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.95041 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23067164 | $\omega$ | 272.89039 | | −0.77404943 | −0.62954611 | |
| $a$ | 2.6331357 | $\Omega$ | 228.10428 | | +0.61083438 | −0.71464896 | |
| $e$ | 0.1035898 | $i$ | 5.18155 | | +0.16651978 | −0.30487464 | |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | (0.9− | 1.7+) | 2004 05 16 | 704 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2001 09 08 | 704 | 0.6− | 0.9+ | 2005 07 08 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2001 09 08 | 704 | 0.3− | 1.0+ | 2005 07 08 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.2− | 0.3− | 2005 07 08 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.4− | 1.0+ |
| 2002 12 11 | 704 | 0.7− | 1.2− | 2005 09 03 | 644 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.3+ | 0.4+ |
| 2002 12 11 | 704 | 0.6− | 1.4− | 2005 09 03 | 644 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.4+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.8+ | 0.7+ | 2005 09 03 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2003 01 08 | 704 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2003 01 08 | 704 | 0.9+ | 0.7+ | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.5− | 0.2+ |
| 2003 01 08 | 704 | 0.2− | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 16 | 703 | (0.7− | 2.4−) |
| 2003 01 08 | 704 | 0.1+ | 0.7+ | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2004 04 21 | 704 | 0.7+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.9+ | 0.6+ |
| 2004 04 21 | 704 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2004 04 21 | 704 | 1.2+ | 0.3+ | 2006 10 17 | 691 | 0.9− | 1.0+ | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2004 04 21 | 704 | 1.0+ | 1.3+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2004 04 22 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2004 04 22 | 691 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | (0.4− | 2.0+) |
| 2004 04 22 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 21 | 704 | 1.1+ | 0.4− |
| 2004 05 12 | 699 | 1.0− | 0.8+ | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | (2.5− | 0.1−) |
| 2004 05 12 | 699 | 1.3− | 1.1− | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.4+ | 1.2+ |
| 2004 05 12 | 699 | 1.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | (1.6+ | 0.6+) |
| 2004 05 12 | 699 | 0.9+ | 0.3− | 2006 11 09 | 644 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.4+ |
| 2004 05 13 | 291 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2004 05 13 | 291 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.6− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2004 05 13 | 291 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.4+ |
| 2004 05 13 | 291 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 26 | 704 | 0.8+ | 0.1− |
| 2004 05 13 | 291 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.9− | 2006 11 26 | 704 | 0.5+ | 0.4− |
| 2004 05 13 | 291 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.4− | 2006 11 26 | 704 | 0.5+ | 0.7− |
| 2004 05 15 | 704 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.0 | 2006 11 27 | 703 | 1.1+ | 1.0− |
| 2004 05 15 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 1.2+ | 2006 11 27 | 703 | 0.2+ | 0.6− |
| 2004 05 15 | 704 | 1.4+ | 1.1+ | 2006 11 11 | G96 | 0.2+ | 0.0 | 2006 11 27 | 703 | (2.6− | 3.1−) |
| 2004 05 15 | 704 | 0.6− | 1.0+ | 2006 11 11 | 703 | 0.6− | 0.4+ | 2006 11 27 | 703 | 1.2+ | 1.1− |
| 2004 05 16 | 704 | 0.6+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2004 05 16 | 704 | 0.4+ | 0.6+ | 2006 11 12 | G96 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 2004 05 16 | 704 | 0.4+ | 0.6− | 2006 11 12 | G96 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2004 05 16 | 704 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.1− | 0.1− |

**(144785)∗ 2004 HC$_{31}$**

Discovered 2004 Apr. 22 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.22022 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24074756 | $\omega$ | 177.15662 | | −0.83405636 | | −0.54093270 |
| $a$ | 2.5591444 | $\Omega$ | 329.30121 | | +0.50187544 | | −0.66242449 |
| $e$ | 0.1940608 | $i$ | 12.25432 | | +0.22906554 | | −0.51825246 |
| $P$ | 4.09 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 14 | 691 | 0.2+ | 0.1− | 2004 03 26 | 699 | 0.0 | 1.3+ | 2004 05 13 | 703 | (1.5+ | 1.4−) |
| 1993 08 14 | 691 | 0.4− | 0.5+ | 2004 04 12 | E12 | 0.4+ | 0.1+ | 2005 10 28 | G96 | 0.7+ | 0.1− |
| 1993 08 14 | 691 | 0.2− | 0.1+ | 2004 04 12 | E12 | (0.9− | 1.7−) | 2005 10 28 | G96 | 0.7+ | 0.6− |
| 1998 11 16 | 566 | 0.4− | 0.0 | 2004 04 12 | E12 | 0.4+ | 0.1− | 2005 10 28 | G96 | 0.2+ | 0.2− |
| 1998 11 16 | 566 | 0.4+ | 0.0 | 2004 04 12 | E12 | 0.4+ | 0.1+ | 2005 10 28 | G96 | 0.9+ | 0.3− |
| 1998 11 16 | 566 | 0.2+ | 0.0 | 2004 04 22 | 428 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.7− | 0.2+ |
| 2002 10 06 | 704 | 0.2− | 0.3+ | 2004 04 22 | 428 | 0.6− | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.5+ |
| 2002 10 06 | 704 | 0.2− | 1.3− | 2004 04 23 | 428 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.6− | 0.3− |
| 2002 10 06 | 704 | 0.3+ | 0.9+ | 2004 04 23 | 428 | 0.6− | 0.3+ | 2006 09 17 | 703 | 0.6+ | 1.1+ |
| 2002 10 06 | 704 | 1.1− | 0.1+ | 2004 04 23 | 428 | 0.9− | 0.1+ | 2006 10 16 | 104 | (2.0+ | 0.4+) |
| 2002 11 14 | 644 | 0.4+ | 0.5+ | 2004 04 24 | E12 | 0.2+ | 0.3− | 2006 10 16 | 104 | 0.7+ | 1.5+ |
| 2002 11 14 | 644 | 0.0 | 0.6+ | 2004 04 24 | E12 | 0.2− | 0.4+ | 2006 10 16 | 104 | 0.0 | 1.1+ |
| 2002 11 14 | 644 | 0.4+ | 0.6+ | 2004 04 24 | E12 | 0.6+ | 0.1− | 2006 10 19 | 703 | 0.8− | 0.3− |
| 2002 12 02 | 704 | 0.2+ | 0.0 | 2004 04 24 | E12 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 1.0− | 1.1− |
| 2002 12 02 | 704 | 0.1− | 0.4+ | 2004 04 25 | 704 | 0.5+ | 0.3− | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2002 12 02 | 704 | 0.2− | 0.7− | 2004 04 25 | 704 | 0.6+ | 0.5− | 2006 10 19 | 703 | 0.3+ | 0.8− |
| 2002 12 02 | 704 | 0.7+ | 0.7− | 2004 04 25 | 704 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2004 03 16 | 644 | 0.3− | 0.0 | 2004 04 26 | E12 | 0.6− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2004 03 16 | 644 | 0.4+ | 0.1+ | 2004 04 26 | E12 | 0.5− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2004 03 16 | 644 | 0.2+ | 0.1+ | 2004 04 26 | E12 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.6+ | 0.1+ |
| 2004 03 26 | 704 | 0.3+ | 0.4− | 2004 04 26 | E12 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.2+ |
| 2004 03 26 | 704 | 0.1+ | 0.1− | 2004 04 30 | 428 | 0.4+ | 0.2+ | 2006 11 15 | 703 | 0.3− | 0.3+ |
| 2004 03 26 | 699 | 0.2+ | 0.8+ | 2004 04 30 | 428 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.4+ |
| 2004 03 26 | 704 | 0.4+ | 0.0 | 2004 05 11 | 428 | 0.4+ | 0.5− | 2006 11 22 | 703 | 0.2+ | 0.5− |
| 2004 03 26 | 704 | 0.2+ | 0.2− | 2004 05 11 | 428 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.4− | 0.3+ |
| 2004 03 26 | 699 | 0.4+ | 1.0+ | 2004 05 13 | 703 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.6− | 0.2− |
| 2004 03 26 | 704 | 0.5+ | 0.0 | 2004 05 13 | 703 | 0.1− | 0.1− | 2006 11 22 | 703 | 0.3− | 0.3− |
| 2004 03 26 | 699 | 0.4− | 0.7+ | 2004 05 13 | 703 | 0.4− | 0.5− | | | | |

**(144786)∗ 2004 HT$_{35}$ = 2001 UG$_{202}$**

Discovered 2004 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65756)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.67252 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20621483 | $\omega$ | 335.41756 | | −0.91454702 | | +0.38265817 |
| $a$ | 2.8374145 | $\Omega$ | 227.74207 | | −0.33559448 | | −0.89873122 |
| $e$ | 0.0776131 | $i$ | 10.19954 | | −0.22578771 | | −0.21413764 |
| $P$ | 4.78 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.4− | 0.6+ | 2004 05 01 | 291 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.5− | 0.1+ |
| 2001 10 19 | 644 | 0.4− | 0.1− | 2004 05 01 | 291 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 10 19 | 644 | 0.1− | 0.2+ | 2004 05 15 | 704 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 0.5− | 0.8+ | 2004 05 15 | 704 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.4+ |
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2004 05 15 | 704 | 0.5+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.3− | 0.6− | 2004 05 15 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.2+ |
| 2001 10 21 | 704 | 0.8− | 0.4− | 2004 05 15 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 703 | 0.7− | 0.5+ |
| 2001 10 21 | 704 | 0.2− | 0.6− | 2004 05 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 1.0− |
| 2001 11 17 | 691 | 0.1+ | 0.1+ | 2004 05 16 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2001 11 17 | 691 | 0.2+ | 0.1+ | 2004 05 16 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2001 11 17 | 691 | 0.3+ | 0.1+ | 2004 05 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 04 20 | 704 | 0.2− | 0.2+ | 2004 05 16 | 704 | 0.7− | 1.3+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 04 20 | 704 | 0.2− | 0.8+ | 2004 05 16 | 704 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2004 04 20 | 704 | 1.1− | 0.1+ | 2004 05 16 | 704 | 0.5+ | 0.9+ | 2006 11 12 | 703 | (1.6+ | 0.9−) |
| 2004 04 20 | 704 | 0.6+ | 0.4+ | 2004 05 19 | 691 | 0.4+ | 0.2+ | 2006 11 12 | 703 | 0.6+ | 0.3− |
| 2004 04 23 | 704 | (0.4− | 1.6+) | 2004 05 19 | 691 | 0.2+ | 0.1+ | 2006 11 12 | 703 | 0.2+ | 0.5+ |
| 2004 04 23 | 704 | 0.1− | 1.0+ | 2004 05 19 | 691 | 0.3+ | 0.1− | 2006 11 12 | 703 | 0.2− | 0.5− |
| 2004 04 23 | 704 | (1.1+ | 2.0+) | 2005 08 29 | 644 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2004 04 23 | 704 | 1.0+ | 1.0+ | 2005 08 29 | 644 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2004 04 23 | E12 | 1.0− | 0.2+ | 2005 08 29 | 644 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2004 04 23 | E12 | 1.1− | 0.0 | 2005 08 29 | 644 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2004 04 23 | E12 | 0.8− | 0.4+ | 2005 08 29 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4− | 1.2+ |
| 2004 04 23 | E12 | (2.1+ | 6.1+) | 2005 08 29 | 644 | 0.4+ | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.9+ |
| 2004 04 25 | 691 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.6+ |
| 2004 04 25 | 691 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | (1.5− | 0.7+) |
| 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2004 04 30 | 291 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.5− | 0.3− |
| 2004 04 30 | 291 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2004 04 30 | 291 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 05 01 | 291 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | |

**(144787)∗ 2004 HQ$_{38}$ = 1999 GY$_{40}$**

Discovered 2004 Apr. 23 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 65758)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.87060 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20975080 | $\omega$ | 0.63340 | | −0.99992459 | | +0.01227745 |
| $a$ | 2.8054355 | $\Omega$ | 180.07186 | | −0.01201661 | | −0.98285708 |
| $e$ | 0.1376413 | $i$ | 12.83780 | | −0.00253266 | | −0.18395984 |
| $P$ | 4.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 20 | 691 | 0.5− | 0.2− | 2003 01 02 | 704 | 0.2+ | 1.3+ | 2004 05 21 | 703 | 1.4+ | 0.9+ |
| 1996 09 20 | 691 | 0.3− | 0.4− | 2003 01 02 | 704 | 0.1+ | 0.9+ | 2004 05 21 | 703 | 0.6− | 0.9+ |
| 1996 09 20 | 691 | 0.8− | 0.4− | 2004 03 23 | 704 | 0.4+ | 0.7+ | 2004 05 24 | 704 | 1.1− | 0.5+ |
| 1999 03 23 | 703 | 0.1+ | 0.7− | 2004 03 23 | 704 | 0.3− | 0.4+ | 2004 05 24 | 704 | 0.7− | 0.1+ |
| 1999 03 23 | 703 | 0.5+ | 0.5− | 2004 03 23 | 704 | 0.2+ | 1.4+ | 2004 05 24 | 704 | 0.1− | 1.1+ |
| 1999 03 23 | 703 | 0.6− | 0.3+ | 2004 03 23 | 704 | 0.2+ | 1.0+ | 2004 05 24 | 704 | 0.9− | 0.1+ |
| 1999 03 23 | 703 | 0.4− | 0.1− | 2004 03 31 | 704 | 0.0 | 0.1− | 2004 05 24 | 704 | 1.2− | 1.5+ |
| 1999 03 24 | 699 | 0.3+ | 0.2+ | 2004 03 31 | 704 | 0.0 | 0.8+ | 2004 06 06 | 703 | 1.4+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 699 | 0.6+ | 0.6+ | 2004 03 31 | 704 | 0.4− | 1.2+ | 2004 06 06 | 703 | 0.6+ | 0.1+ | | |
| 1999 03 24 | 699 | 0.2+ | 0.1− | 2004 03 31 | 704 | 0.7+ | 0.3+ | 2004 06 06 | 703 | 1.2+ | 1.2+ | | |
| 1999 04 12 | 704 | 1.2+ | 1.2− | 2004 03 31 | 704 | 0.7+ | 0.0 | 2004 06 06 | 703 | 1.1+ | 0.8+ | | |
| 1999 04 12 | 704 | 1.0+ | 1.0+ | 2004 04 16 | 704 | 0.1+ | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.0 | | |
| 1999 04 12 | 704 | 0.3+ | 0.4− | 2004 04 16 | 704 | 0.4− | 0.2− | 2005 08 24 | 644 | 0.1+ | 0.0 | | |
| 1999 04 12 | 704 | 1.6− | 0.6− | 2004 04 16 | 704 | 0.3− | 0.5− | 2005 08 24 | 644 | 0.4+ | 0.2+ | | |
| 1999 04 12 | 704 | 0.8+ | 1.2+ | 2004 04 16 | 704 | 0.4+ | 0.6− | 2006 09 30 | 703 | (0.4− | 1.8+) | | |
| 1999 04 16 | 704 | 0.1+ | 1.0− | 2004 04 16 | 704 | 0.3− | 0.6+ | 2006 09 30 | 703 | 1.4− | 0.4+ | | |
| 1999 04 16 | 704 | (2.6− | 2.1−) | 2004 04 23 | 703 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.8− | | |
| 1999 04 16 | 704 | 0.3− | 1.4− | 2004 04 23 | 703 | 0.5− | 0.4− | 2006 09 30 | 703 | (0.6− | 3.3−) | | |
| 1999 04 16 | 704 | (2.3− | 0.2−) | 2004 04 23 | 703 | 0.8− | 0.6− | 2006 10 22 | 703 | 1.0− | 0.9+ | | |
| 1999 04 16 | 704 | (2.4− | 0.4−) | 2004 04 23 | 703 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2004 04 24 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2004 04 24 | 704 | 0.1+ | 1.2+ | 2006 10 22 | 703 | 0.5− | 1.3+ | | |
| 2001 09 21 | 704 | 0.6− | 0.7− | 2004 04 24 | 704 | 0.5− | 0.0 | 2006 11 08 | 644 | 0.4− | 0.7+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2004 04 24 | 704 | 0.5− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.5+ | | |
| 2001 10 12 | 699 | 0.1− | 0.5− | 2004 04 24 | 704 | 0.8− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.6+ | | |
| 2001 10 12 | 699 | 0.2+ | 0.6+ | 2004 05 12 | 703 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.5+ | | |
| 2001 10 12 | 699 | 1.3− | 0.1− | 2004 05 12 | 703 | 0.7− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.6+ | | |
| 2001 10 12 | 699 | 0.5− | 0.2+ | 2004 05 12 | 703 | 0.3+ | 1.1+ | 2006 11 08 | 644 | 0.3− | 0.2+ | | |
| 2001 10 14 | 645 | 0.1+ | 0.1+ | 2004 05 12 | 703 | 0.1+ | 0.6− | 2006 11 13 | 703 | 1.3− | 0.3+ | | |
| 2001 10 14 | 645 | 0.1+ | 0.1+ | 2004 05 14 | 704 | 0.5+ | 0.8+ | 2006 11 13 | 703 | (0.3− | 1.6+) | | |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 05 14 | 704 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.0 | 1.4+ | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 05 14 | 704 | 0.9+ | 0.1+ | 2006 11 13 | 703 | 1.3+ | 1.4+ | | |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2004 05 14 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.5+ | | |
| 2001 10 25 | 645 | 0.1+ | 0.1+ | 2004 05 14 | 699 | 0.4− | 0.1− | 2006 11 17 | 644 | 0.1+ | 0.4+ | | |
| 2002 12 14 | 704 | 0.5− | 0.5− | 2004 05 14 | 704 | 0.6+ | 0.4+ | 2006 11 17 | 644 | 0.0 | 0.2+ | | |
| 2002 12 14 | 704 | 0.0 | 0.2− | 2004 05 14 | 699 | 0.2+ | 0.2− | 2006 11 19 | 703 | 0.6+ | 0.9+ | | |
| 2002 12 14 | 704 | 0.7− | 0.4+ | 2004 05 14 | 699 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.4− | | |
| 2003 01 02 | 704 | 0.1− | 0.7+ | 2004 05 14 | 699 | 0.0 | 0.1+ | 2006 11 19 | 703 | (1.6− | 0.0 ) | | |
| 2003 01 02 | 704 | 0.3+ | 1.4+ | 2004 05 21 | 703 | 0.5− | 0.3+ | 2006 11 19 | 703 | 1.3− | 0.1+ | | |
| 2003 01 02 | 704 | 0.8− | 0.4+ | 2004 05 21 | 703 | 0.3− | 1.0+ | | | | | | |

**(144788)∗ 2004 HX$_{42}$**

Discovered 2004 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.33487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18801547 | $\omega$ | 245.32369 | | +0.14191615 | +0.98481302 | |
| $a$ | 3.0176833 | $\Omega$ | 33.31829 | | −0.82960571 | +0.17344945 | |
| $e$ | 0.0377696 | $i$ | 10.49104 | | −0.54001312 | −0.00765497 | |
| $P$ | 5.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.3+ | 0.4− | 2004 04 26 | 699 | 0.3− | 1.4− | 2006 10 12 | 691 | 0.1− | 0.0 | | |
| 2001 11 12 | 704 | 0.6− | 0.2− | 2004 04 26 | 699 | 0.9+ | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.3+ | | |
| 2001 11 12 | 704 | 0.6+ | 1.1− | 2004 04 26 | 699 | (0.2− | 2.3+) | 2006 10 16 | 691 | 0.1+ | 0.3+ | | |
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2004 05 15 | 704 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1− | 0.2+ | | |
| 2001 11 24 | 704 | (2.4− | 1.5+) | 2004 05 15 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2001 11 24 | 704 | (1.9− | 0.8+) | 2004 05 15 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.2+ | | |
| 2001 11 24 | 704 | (2.2− | 1.1+) | 2004 05 15 | 704 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.3+ | | |
| 2001 11 24 | 704 | 1.1− | 1.5+ | 2004 05 16 | 704 | 0.5+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.3+ | | |
| 2001 11 24 | 704 | 1.2− | 1.4+ | 2004 05 16 | 704 | 0.9+ | 1.0+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2003 03 09 | 695 | 0.0 | 0.1+ | 2004 05 16 | 704 | 1.0+ | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2003 03 09 | 695 | 0.1− | 0.2+ | 2004 05 18 | 704 | 0.7+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2003 03 09 | 695 | 0.1− | 0.0 | 2004 05 18 | 704 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.0 | | |
| 2003 03 09 | 695 | 0.0 | 0.1+ | 2004 05 18 | 704 | 1.0+ | 1.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2003 03 09 | 695 | 0.1+ | 0.2+ | 2004 05 18 | 704 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.3+ | | |
| 2003 03 09 | 695 | 0.0 | 0.1+ | 2004 05 18 | 704 | 0.2+ | 0.7− | 2006 11 08 | 644 | 0.5− | 0.4+ | | |
| 2003 03 09 | 695 | 0.1− | 0.1+ | 2004 05 23 | 691 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.3− | 0.4+ | | |
| 2003 03 09 | 695 | 0.1− | 0.0 | 2004 05 23 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.4+ | | |
| 2003 03 09 | 695 | 0.3+ | 0.2+ | 2004 05 23 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2004 04 20 | 704 | 0.7+ | 1.3+ | 2004 06 06 | 644 | 0.7+ | 0.7+ | 2006 11 08 | 644 | 0.3− | 0.2+ | | |
| 2004 04 20 | 704 | 0.6+ | 1.3+ | 2004 06 06 | 644 | 0.8+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.0 | | |
| 2004 04 20 | 704 | 0.6+ | 1.5+ | 2004 06 06 | 644 | 0.9+ | 0.5+ | 2006 11 14 | 703 | 0.7+ | 1.3− | | |
| 2004 04 20 | 704 | 0.1− | 1.1+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.9− | 0.8+ | | |
| 2004 04 25 | 704 | 1.0− | 0.8+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.1+ | | |
| 2004 04 25 | 704 | 0.9− | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.0 | | |
| 2004 04 25 | 704 | 0.8− | 0.9− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.1− | | |
| 2004 04 25 | 704 | 0.6− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.1+ | | |
| 2004 04 26 | 699 | 1.0− | 0.9− | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2+ | | |

**(144789)∗ 2004 HF$_{43}$ = 2005 OT$_{15}$**

Discovered 2004 Apr. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 95213)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.00578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22351459 | $\omega$ | 227.14626 | | +0.91424137 | −0.40260843 | |
| $a$ | 2.6890495 | $\Omega$ | 156.48439 | | +0.39698648 | +0.86766225 | |
| $e$ | 0.0286033 | $i$ | 6.54627 | | +0.08102128 | +0.29166535 | |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 08 | 691 | 0.3+ | 0.1− | 2004 04 11 | 644 | 0.2+ | 0.0 | 2005 08 27 | 644 | 0.1− | 0.3+ | | |
| 1995 04 08 | 691 | 0.3− | 0.2− | 2004 04 20 | 704 | (2.2+ | 2.2−) | 2005 08 27 | 644 | 0.5− | 0.2+ | | |
| 2001 10 08 | 644 | 0.1− | 1.4+ | 2004 04 20 | 704 | (1.9+ | 2.9−) | 2005 08 27 | 644 | 0.2− | 0.4+ | | |
| 2001 10 08 | 644 | (0.3− | 1.6+) | 2004 04 20 | 704 | (1.5+ | 2.0−) | 2005 10 25 | G96 | 0.6− | 0.3− | | |
| 2001 10 08 | 644 | (0.0 | 1.7+) | 2004 04 20 | 704 | (1.5+ | 1.6−) | 2005 10 25 | G96 | 0.2− | 0.2+ | | |
| 2001 10 24 | 644 | 0.3+ | 0.9− | 2004 04 26 | 691 | 0.0 | 0.2+ | 2005 10 25 | G96 | 0.4− | 0.3− | | |
| 2001 10 24 | 644 | 0.5+ | 0.7− | 2004 04 26 | 691 | 0.1+ | 0.1+ | 2005 10 25 | G96 | 0.1− | 0.4− | | |
| 2001 10 24 | 644 | 0.4+ | 0.7− | 2004 04 26 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.1+ | | |
| 2003 01 26 | 699 | 1.5− | 0.4+ | 2005 07 29 | 644 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.1+ | | |
| 2003 01 26 | 699 | 0.7− | 0.7+ | 2005 07 29 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.0 | | |
| 2003 01 26 | 699 | (0.5− | 2.4+) | 2005 07 29 | 644 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.0 | | |
| 2003 01 26 | 699 | (2.2+ | 1.8+) | 2005 07 31 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 1.1+ | 1.6+ | | |
| 2004 04 11 | 644 | 0.3+ | 0.2+ | 2005 07 31 | 644 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.2+ | | |
| 2004 04 11 | 644 | 0.0 | 0.4+ | 2005 07 31 | 644 | 0.1+ | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.6+ | | |

**(144790)∗ 2004 HT$_{43}$**

Discovered 2004 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.88766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18949651 | $\omega$ | 84.61293 | | +0.66455239 | +0.73440391 | |
| $a$ | 3.0019393 | $\Omega$ | 228.02783 | | −0.73777468 | +0.61557406 | |
| $e$ | 0.1159650 | $i$ | 10.69053 | | −0.11856916 | +0.28586619 | |
| $P$ | 5.20 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 1.8+ | 0.9+ | 2004 05 23 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.9+ | | |
| 2000 09 01 | 704 | 0.4+ | 0.2+ | 2004 05 23 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.2− | | |
| 2000 09 01 | 704 | 0.5− | 0.6+ | 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.2+ | | |
| 2000 09 01 | 704 | 1.5− | 0.5+ | 2005 07 11 | 703 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.0 | | |
| 2000 09 23 | 704 | 0.2− | 0.5− | 2005 07 11 | 703 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.0 | | |
| 2000 09 23 | 704 | 1.4+ | 0.5− | 2005 07 11 | 703 | 0.2− | 0.5− | 2006 11 17 | 703 | 2.6+ | 0.9− | | |
| 2000 09 23 | 704 | 1.2− | 0.6− | 2005 07 11 | 703 | (1.7+ | 0.7−) | 2006 11 17 | 703 | 0.6− | 0.0 | | |
| 2000 09 23 | 704 | 0.6− | 0.4+ | 2005 07 16 | 703 | 0.8− | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.1− | | |
| 2004 04 13 | 644 | 0.4+ | 0.7+ | 2005 07 16 | 703 | 0.6− | 0.4+ | 2006 11 17 | 703 | 0.3+ | 0.1− | | |
| 2004 04 13 | 644 | 0.5+ | 0.6+ | 2005 07 16 | 703 | 1.1− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.0 | | |
| 2004 04 13 | 644 | 0.7+ | 0.7+ | 2005 07 16 | 703 | 0.0 | 0.6+ | 2006 11 18 | 704 | 1.0+ | 0.2+ | | |
| 2004 04 21 | 704 | 0.4− | 1.5+ | 2005 07 31 | 644 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.2+ | | |
| 2004 04 21 | 704 | 0.2− | 0.5+ | 2005 07 31 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.6+ | | |
| 2004 04 21 | 704 | 0.6+ | 0.1+ | 2005 07 31 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.0 | | |
| 2004 04 21 | 704 | 0.2+ | 0.9+ | 2005 08 26 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 1.9− | 0.4− | | |
| 2004 04 25 | 704 | 0.7− | 0.8+ | 2005 08 26 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.8+ | 1.3+ | | |
| 2004 04 25 | 704 | 0.2+ | 0.4+ | 2005 08 26 | 644 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.3+ | | |
| 2004 04 25 | 704 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.2+ | | |
| 2004 04 25 | 704 | 0.1− | 0.6− | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.2− | 0.2+ | | |
| 2004 04 27 | 704 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.3− | 0.2+ | | |
| 2004 04 27 | 704 | 0.7+ | 1.4+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2004 04 27 | 704 | 0.4+ | 0.5− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.4+ | 0.8+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 27 | 704 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2004 04 27 | 704 | 0.9+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.1+ | 0.9+ |
| 2004 04 27 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 1.5− | 0.2+ | 2006 11 21 | 704 | 0.2− | 1.5+ |
| 2004 04 27 | 704 | 0.6− | 1.4+ | 2006 11 11 | 703 | 0.2− | 0.9+ | 2006 11 21 | 704 | 0.4+ | 1.4+ |

**(144791)∗ 2004 $HY_{43}$ = 2002 $XE_{113}$**

Discovered 2004 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 163.95979 | | (2000.0) | | | |
| $n$ | 0.31345220 | $\omega$ | 13.90144 | | +0.94273763 | +0.33034317 |
| $a$ | 2.1462905 | $\Omega$ | 326.69501 | | −0.31346609 | +0.83037911 |
| $e$ | 0.1527508 | $i$ | 4.80912 | | −0.11395073 | +0.44871364 |
| $P$ | 3.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.9− | 0.7+ | 2004 04 25 | 704 | 0.4− | 1.2+ | 2005 11 02 | 704 | 0.7+ | 0.5+ |
| 1995 11 14 | 691 | 0.3+ | 0.5+ | 2004 04 26 | 704 | 0.4− | 0.6+ | 2005 11 21 | 703 | 0.1+ | 0.5− |
| 1995 11 14 | 691 | 0.0 | 0.4+ | 2004 04 26 | 704 | 0.2− | 0.1− | 2005 11 21 | 703 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.4+ | 0.1+ | 2004 04 26 | 704 | 0.9− | 0.4− | 2005 11 21 | 703 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.3− | 0.6+ | 2004 04 26 | 704 | 0.2+ | 0.1+ | 2005 11 21 | 703 | 0.5− | 0.0 |
| 2002 12 06 | 704 | 0.2+ | 0.4+ | 2004 04 26 | 704 | 0.8+ | 1.1+ | 2005 12 28 | 703 | 0.2− | 0.7− |
| 2002 12 11 | 704 | 0.5− | 0.3− | 2004 04 26 | 704 | 0.4+ | 0.0 | 2005 12 28 | 703 | 0.3+ | 0.4+ |
| 2002 12 11 | 704 | 0.7+ | 0.7− | 2004 04 26 | 704 | 0.4− | 0.2− | 2005 12 28 | 703 | 0.9+ | 0.4− |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2004 04 26 | 704 | 0.2+ | 1.2− | 2005 12 28 | 703 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 0.5− | 1.3− | 2004 04 26 | 704 | 0.5+ | 0.3+ | 2005 12 29 | 704 | 0.7− | 0.2+ |
| 2003 01 05 | 704 | 1.1− | 0.4+ | 2004 05 13 | 644 | 0.7+ | 0.9+ | 2005 12 29 | 644 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.0 | 1.0+ | 2004 05 13 | 644 | 0.6+ | 0.4+ | 2005 12 29 | 704 | 0.8− | 1.2− |
| 2003 01 05 | 704 | 0.3+ | 0.9+ | 2004 05 13 | 644 | 0.9+ | 0.5+ | 2005 12 29 | 704 | 1.0+ | 1.3− |
| 2003 01 05 | 704 | 0.1+ | 1.3+ | 2005 10 30 | 704 | 1.0+ | 1.0+ | 2005 12 29 | 644 | 0.1− | 0.3+ |
| 2004 04 21 | 704 | 0.1− | 0.5+ | 2005 10 30 | 704 | 0.5+ | 0.2− | 2005 12 29 | 704 | 0.0 | 0.6− |
| 2004 04 21 | 704 | 1.7+ | 1.7+ | 2005 10 30 | 704 | 0.1− | 0.4+ | 2005 12 29 | 704 | 0.4+ | 0.0 |
| 2004 04 21 | 704 | 0.2+ | 0.3+ | 2005 10 30 | 704 | 0.5+ | 0.7+ | 2005 12 29 | 644 | 0.0 | 0.0 |
| 2004 04 21 | 704 | 0.1− | 0.2− | 2005 10 30 | 704 | 0.3− | 0.3+ | 2006 01 05 | 703 | 0.1− | 1.3+ |
| 2004 04 21 | 704 | 0.2+ | 0.1+ | 2005 11 02 | 704 | 0.3− | 1.0+ | 2006 01 05 | 703 | 0.6− | 0.2+ |
| 2004 04 25 | 704 | 0.7− | 1.3+ | 2005 11 02 | 704 | 0.6− | 0.9+ | 2006 01 05 | 703 | 0.4+ | 0.1+ |
| 2004 04 25 | 704 | 0.6+ | 0.4+ | 2005 11 02 | 704 | 0.1− | 0.7+ | 2006 01 05 | 703 | 0.3+ | 0.0 |
| 2004 04 25 | 704 | 0.8− | 0.4− | 2005 11 02 | 704 | 0.4− | 0.9+ | | | | |

**(144792)∗ 2004 $HD_{46}$ = 2000 $WJ_{133}$**

Discovered 2004 Apr. 21 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 65763)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.95491 | | (2000.0) | | | |
| $n$ | 0.17063967 | $\omega$ | 59.07533 | | +0.43287291 | +0.81504141 |
| $a$ | 3.2192105 | $\Omega$ | 241.52860 | | −0.90125677 | +0.40024986 |
| $e$ | 0.1909197 | $i$ | 25.98419 | | +0.01890157 | +0.41893621 |
| $P$ | 5.78 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.2+ | 0.1− | 2004 04 25 | 704 | 0.3− | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2000 10 25 | 704 | 0.3− | 0.2− | 2004 04 25 | 704 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2000 10 25 | 704 | 1.8− | 0.9+ | 2004 06 12 | 699 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 10 25 | 704 | 0.4+ | 0.8+ | 2004 06 12 | 699 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2000 11 19 | 704 | 0.6+ | 0.1− | 2004 06 12 | 699 | 0.6+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2000 11 19 | 704 | 0.7+ | 0.2+ | 2004 06 12 | 699 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2000 11 19 | 704 | 0.4+ | 0.2− | 2005 06 08 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.2+ | 1.0+ |
| 2000 11 19 | 704 | 1.1+ | 1.0+ | 2005 06 08 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2000 11 19 | 704 | 0.8+ | 0.1− | 2005 06 08 | 704 | 0.6+ | 0.4+ | 2006 11 13 | 691 | 0.3− | 0.1+ |
| 2000 11 24 | 699 | 0.1− | 0.6− | 2005 06 08 | 704 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2000 11 24 | 699 | 0.1+ | 1.1− | 2005 06 08 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 691 | 0.3− | 0.1− |
| 2000 11 24 | 699 | 0.2− | 0.5+ | 2005 07 31 | 704 | 0.4− | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2000 11 24 | 699 | 1.6− | 0.7− | 2005 07 31 | 704 | 0.2− | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2003 02 09 | 644 | 0.4− | 0.2− | 2005 07 31 | 704 | 0.8− | 0.0 | 2006 11 19 | 704 | (0.5− | 1.7+) |
| 2003 02 09 | 644 | 0.1+ | 0.6− | 2005 10 12 | 704 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.3− | 1.0+ |
| 2003 02 09 | 644 | 0.2− | 0.1− | 2005 10 12 | 704 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.8+ |
| 2004 04 13 | E12 | 0.7+ | 1.1+ | 2005 10 12 | 704 | 1.4+ | 1.1− | 2006 11 19 | 704 | 0.5+ | 0.9− |
| 2004 04 13 | E12 | 1.5+ | 0.2+ | 2005 10 12 | 704 | 0.2− | 0.3− | 2006 11 19 | 704 | (0.3+ | 1.6+) |
| 2004 04 13 | E12 | 0.0 | 1.2+ | 2005 10 12 | 704 | 0.4− | 1.1− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2004 04 13 | E12 | 0.3− | 1.0− | 2005 11 06 | 704 | 0.4− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2004 04 21 | E12 | 0.5− | 0.4+ | 2005 11 06 | 704 | 0.3− | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 04 21 | E12 | 0.6− | 0.1− | 2005 11 06 | 704 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.7− |
| 2004 04 21 | E12 | 0.7+ | 0.2+ | 2005 11 06 | 704 | 0.0 | 0.7− | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2004 04 21 | E12 | 0.1+ | 0.1− | 2005 11 06 | 704 | 0.5+ | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2004 04 25 | 704 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2004 04 25 | 704 | 1.3− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 | | | | |

**(144793)∗ 2004 $HD_{47}$**

Discovered 2004 Apr. 22 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.54599 | | (2000.0) | | | |
| $n$ | 0.21697793 | $\omega$ | 16.98943 | | −0.76257111 | −0.63656750 |
| $a$ | 2.7427886 | $\Omega$ | 122.90785 | | +0.57643626 | −0.74945788 |
| $e$ | 0.0896944 | $i$ | 7.88567 | | +0.29360949 | −0.18191948 |
| $P$ | 4.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 16 | 691 | 0.5+ | 0.3− | 2004 04 26 | 704 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.2− |
| 1999 01 16 | 691 | 0.5− | 0.2− | 2004 04 26 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | (0.2− | 2.3−) |
| 1999 01 16 | 691 | 0.2− | 0.5− | 2004 04 26 | 704 | 0.4− | 1.4− | 2006 09 26 | 703 | 0.6− | 0.2− |
| 2004 03 16 | 704 | 0.4+ | 0.9+ | 2004 04 26 | 704 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.9− | 0.2+ |
| 2004 03 16 | 704 | 1.0+ | 0.6+ | 2004 05 09 | 703 | (2.5+ | 1.2+) | 2006 09 26 | 703 | 0.4− | 0.9− |
| 2004 03 16 | 704 | 0.8+ | 1.2+ | 2004 05 09 | 703 | (1.7+ | 0.1−) | 2006 09 26 | 703 | 0.7− | 0.3− |
| 2004 03 23 | 704 | 0.5+ | 0.6+ | 2004 05 09 | 703 | 0.3+ | 1.0+ | 2006 09 29 | 699 | 1.0+ | 0.8+ |
| 2004 03 23 | 704 | 0.1+ | 0.4− | 2004 05 09 | 703 | 1.5+ | 1.4+ | 2006 09 29 | 699 | 1.4− | 0.5− |
| 2004 03 23 | 704 | 0.1+ | 0.4+ | 2005 06 14 | G96 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.8+ | 0.6+ |
| 2004 04 12 | 683 | 1.2− | 0.4+ | 2005 06 14 | G96 | 0.2− | 0.0 | 2006 09 29 | 699 | (1.8− | 0.7−) |
| 2004 04 12 | 683 | 0.8− | 1.2+ | 2005 06 14 | G96 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.4+ | 0.1− |
| 2004 04 12 | 683 | 0.7− | 0.6+ | 2005 06 14 | G96 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2004 04 22 | 703 | 1.5+ | 0.3− | 2005 07 03 | G96 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2004 04 22 | 703 | 0.2+ | 0.5− | 2005 07 03 | G96 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2004 04 22 | 703 | 0.6+ | 1.0− | 2005 07 03 | G96 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 2004 04 22 | 703 | 0.0 | 1.2− | 2005 07 03 | G96 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.4+ |
| 2004 04 25 | 704 | 0.4+ | 0.3+ | 2005 07 06 | 691 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.6− | 0.4− |
| 2004 04 25 | 704 | 0.2+ | 0.0 | 2005 07 06 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2004 04 25 | 704 | 0.0 | 0.2− | 2005 07 06 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2004 04 25 | 704 | 0.3− | 0.1+ | 2005 07 07 | 568 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.7+ | 0.5+ |
| 2004 04 25 | 704 | 0.2− | 0.0 | 2005 07 07 | 568 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2004 04 25 | 699 | 1.1− | 0.8− | 2005 07 07 | 568 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2004 04 25 | 699 | 0.1− | 1.0+ | 2005 07 10 | 691 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2004 04 25 | 699 | 0.2+ | 0.2+ | 2005 07 10 | 691 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.7+ | 1.5+ |
| 2004 04 25 | 699 | 0.8+ | 0.6+ | 2005 07 10 | 691 | 0.0 | 0.4− | 2006 11 16 | 703 | 1.4+ | 1.5+ |
| 2004 04 26 | 704 | 0.3− | 0.2− | 2005 07 15 | G96 | 0.6+ | 0.2− | 2006 11 16 | 703 | 0.5− | 0.9+ |
| 2004 04 26 | 704 | 0.7+ | 1.4+ | 2005 07 15 | G96 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.1− | 0.5+ |
| 2004 04 26 | 704 | 0.2− | 0.0 | 2005 07 15 | G96 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.3− | 0.1− |
| 2004 04 26 | 704 | 0.3+ | 0.1+ | 2005 07 15 | G96 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.6+ |
| 2004 04 26 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.7+ | 2006 11 16 | 703 | 0.9− | 0.8− |
| 2004 04 26 | 704 | 0.7− | 0.2− | 2006 09 18 | 703 | 0.9− | 0.0 | 2006 11 16 | 703 | 0.4− | 0.4+ |

**(144794)∗ 2004 $HF_{47}$ = 2001 $YN_{98}$**

Discovered 2004 Apr. 22 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 69722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.37865 | | (2000.0) | | | |
| $n$ | 0.18086948 | $\omega$ | 237.24522 | | +0.69348413 | +0.69000356 |
| $a$ | 3.0966528 | $\Omega$ | 78.16565 | | −0.56964370 | +0.70128686 |
| $e$ | 0.0879684 | $i$ | 12.22820 | | −0.44111883 | +0.17914192 |
| $P$ | 5.45 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 05 | 608 | 0.3+ | 0.7− | 2004 04 15 | 704 | (1.2− | 2.3+) | 2006 09 26 | 703 | 1.4− | 0.5+ | |
| 2000 08 05 | 608 | 0.5+ | 0.0 | 2004 04 15 | 704 | (0.2− | 1.9+) | 2006 09 26 | 703 | 0.5+ | 0.4− | |
| 2000 08 05 | 608 | 0.2− | 0.6− | 2004 04 15 | 704 | 1.1+ | 0.5+ | 2006 09 29 | 699 | 0.4− | 0.2+ | |
| 2000 09 20 | 704 | 0.4+ | 1.1− | 2004 04 22 | 703 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.3− | 0.8+ | |
| 2000 09 20 | 704 | 0.4− | 0.2+ | 2004 04 22 | 703 | (1.8+ | 0.3+) | 2006 09 29 | 699 | 0.4− | 0.5+ | |
| 2000 09 20 | 704 | 0.0 | 0.3− | 2004 04 22 | 703 | (4.4− | 1.6−) | 2006 09 29 | 699 | (0.4− | 1.6+) | |
| 2001 10 23 | 704 | 0.3− | 0.7− | 2004 04 22 | 703 | 0.8+ | 1.2− | 2006 10 02 | G96 | 0.2+ | 0.3− | |
| 2001 10 23 | 704 | 0.6+ | 0.1+ | 2004 04 25 | 704 | 0.5+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.3− | |
| 2001 10 23 | 704 | 0.9− | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2− | |
| 2001 11 20 | 704 | 0.7+ | 0.5+ | 2004 04 25 | 704 | 0.8+ | 0.5− | 2006 10 02 | G96 | 0.1+ | 0.1− | |
| 2001 11 20 | 704 | 0.6+ | 0.4+ | 2004 04 25 | 704 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.7+ | 0.5+ | |
| 2001 11 20 | 704 | 0.2+ | 0.4− | 2004 04 25 | 704 | 0.9+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2+ | |
| 2001 11 20 | 704 | 0.4+ | 0.2+ | 2004 04 25 | 704 | 0.0 | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 2001 12 17 | 704 | (0.6+ | 1.5+) | 2004 04 25 | 704 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.0 | 0.8+ | |
| 2001 12 17 | 704 | (1.8+ | 0.3−) | 2004 04 25 | 704 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.1− | |
| 2001 12 17 | 704 | 1.3+ | 0.1+ | 2004 04 25 | 704 | 0.3+ | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.9+ | |
| 2001 12 20 | 704 | (1.9+ | 0.5+) | 2004 04 25 | 704 | 0.3+ | 0.9+ | 2006 10 17 | 703 | 0.8− | 0.1+ | |
| 2001 12 20 | 704 | (3.5+ | 1.0−) | 2005 07 06 | E12 | 1.1− | 0.3− | 2006 10 23 | 644 | 0.8+ | 0.1+ | |
| 2001 12 20 | 704 | (2.4+ | 0.9−) | 2005 07 06 | E12 | 1.0− | 0.6+ | 2006 10 23 | 644 | 0.3+ | 0.0 | |
| 2001 12 20 | 704 | (2.1+ | 0.1−) | 2005 07 06 | E12 | 0.0 | 0.8+ | 2006 10 23 | 644 | 0.2+ | 0.4+ | |
| 2003 02 01 | 644 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.7+ | 2006 10 28 | 703 | 0.1− | 0.0 | |
| 2003 02 01 | 644 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.3+ | 0.8+ | 2006 10 28 | 703 | 0.5− | 0.1− | |
| 2003 02 01 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.6+ | 2006 10 28 | 703 | 0.2+ | 0.1+ | |
| 2003 03 07 | 645 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 10 28 | 703 | 0.1− | 0.3+ | |
| 2003 03 07 | 645 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.5− | | | | | |
| 2004 04 15 | 704 | (0.1− | 1.7+) | 2006 09 26 | 703 | 0.4+ | 0.1+ | | | | | |

**(144795)∗ 2004 HV$_{47}$**

Discovered 2004 Apr. 22 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.91094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23318972 | $\omega$ | 106.01261 | | +0.04014568 | −0.99735453 | |
| $a$ | 2.6141457 | $\Omega$ | 341.36691 | | +0.82883715 | +0.06711165 | |
| $e$ | 0.1793383 | $i$ | 10.93324 | | +0.55804776 | −0.02792799 | |
| $P$ | 4.23 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 21 | 704 | 1.7+ | 0.5− | 2002 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.4− | |
| 1998 12 21 | 704 | (2.1− | 1.9−) | 2002 12 29 | 704 | 0.5+ | 0.0 | 2006 09 28 | 703 | 0.2− | 0.0 | |
| 1998 12 21 | 704 | 1.8− | 1.0+ | 2002 12 29 | 704 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.4+ | |
| 1998 12 21 | 704 | 1.1− | 0.0 | 2002 12 29 | 704 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.1− | 0.1+ | |
| 1999 01 19 | 704 | 0.5− | 1.3+ | 2002 12 29 | 704 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.2+ | |
| 1999 01 19 | 704 | 0.5− | 0.2+ | 2003 02 02 | 704 | 0.6− | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.2+ | |
| 1999 01 19 | 704 | 0.3+ | 0.7− | 2003 02 02 | 704 | (2.0− | 0.9+) | 2006 10 19 | 703 | 0.3+ | 0.2+ | |
| 1999 01 19 | 704 | 0.2+ | 0.4+ | 2003 02 02 | 704 | 0.9− | 0.0 | 2006 10 20 | 704 | 1.2− | 0.8+ | |
| 1999 01 19 | 704 | (4.5− | 0.4−) | 2003 02 02 | 704 | 0.1+ | 1.2+ | 2006 10 20 | 704 | 0.8− | 0.2+ | |
| 2001 08 12 | 644 | 0.4+ | 0.1+ | 2004 03 16 | 644 | 0.0 | 0.1− | 2006 10 20 | 704 | 1.2− | 0.1− | |
| 2001 08 12 | 644 | 0.5+ | 0.3− | 2004 03 16 | 644 | 0.0 | 0.1+ | 2006 10 20 | 704 | 0.5− | 0.8+ | |
| 2001 08 12 | 644 | 0.5− | 0.4− | 2004 03 16 | 644 | 0.2− | 0.1− | 2006 10 20 | 704 | 1.2− | 1.3+ | |
| 2001 09 11 | 704 | 0.5− | 1.1− | 2004 04 22 | E12 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.3+ | |
| 2001 09 11 | 704 | 0.8− | 0.6− | 2004 04 22 | E12 | 0.4− | 1.3+ | 2006 10 22 | 644 | 0.4− | 0.2+ | |
| 2001 09 11 | 704 | 0.4− | 1.2+ | 2004 04 22 | E12 | 0.3− | 1.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ | |
| 2002 10 05 | 704 | 0.4− | 0.1− | 2004 04 22 | E12 | 0.3− | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.6+ | |
| 2002 10 05 | 704 | 0.7− | 0.1− | 2004 04 25 | 704 | 1.5+ | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.3+ | |
| 2002 10 05 | 704 | 0.9− | 0.1+ | 2004 04 25 | 704 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.4+ | |
| 2002 10 05 | 704 | 0.3+ | 1.1− | 2004 04 25 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 0.7− | 0.4+ | |
| 2002 10 30 | 704 | 1.1+ | 1.2− | 2004 04 25 | 704 | 1.1+ | 1.0− | 2006 11 15 | 703 | 0.2− | 0.1− | |
| 2002 10 30 | 704 | 0.3+ | 0.8− | 2004 04 25 | 704 | 0.4− | 0.8+ | 2006 11 15 | 703 | 0.3+ | 0.4− | |
| 2002 10 30 | 704 | (0.3− | 1.9−) | 2004 05 13 | 644 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.4− | |
| 2002 10 30 | 704 | 0.5+ | 1.5− | 2004 05 13 | 644 | 0.2+ | 0.2− | 2006 11 15 | 703 | 0.1+ | 0.1− | |
| 2002 10 30 | 704 | 0.3+ | 0.7− | 2004 05 13 | 644 | 0.5− | 0.1− | 2006 11 16 | 704 | 1.0+ | 0.7+ | |
| 2002 11 07 | 704 | 0.7+ | 0.5− | 2005 07 05 | E12 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 1.0+ | 1.0+ | |
| 2002 11 07 | 704 | 0.7+ | 0.2− | 2005 07 05 | E12 | 0.4+ | 0.4− | 2006 11 16 | 704 | 0.8+ | 0.7− | |
| 2002 11 07 | 704 | 0.8+ | 0.6− | 2005 07 05 | E12 | 0.9+ | 0.4− | 2006 11 16 | 704 | (0.5− | 1.7+) | |
| 2002 11 07 | 704 | 1.0+ | 0.1− | 2005 07 05 | E12 | 1.3+ | 1.4+ | 2006 11 16 | 704 | (0.9+ | 2.4+) | |
| 2002 11 07 | 704 | 1.3+ | 0.1− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.8− | 0.1+ | |
| 2002 12 07 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.6− | 0.6− | |
| 2002 12 07 | 704 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.3+ | 0.0 | 2006 11 22 | 703 | 0.8− | 0.2+ | |
| 2002 12 07 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.3− | |
| 2002 12 07 | 704 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.3− | | | | | |

**(144796)∗ 2004 HV$_{48}$ = 2005 OM$_4$**

Discovered 2004 Apr. 22 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 86493)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.89359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18474980 | $\omega$ | 217.00137 | | −0.61549108 | +0.78677625 | |
| $a$ | 3.0531401 | $\Omega$ | 15.19203 | | −0.67406838 | −0.49497791 | |
| $e$ | 0.0968928 | $i$ | 10.20082 | | −0.40841467 | −0.36875465 | |
| $P$ | 5.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.5+ | 1.1+ | 2004 05 12 | E12 | 0.0 | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.1+ | |
| 2003 02 01 | 644 | 0.3+ | 0.7+ | 2005 07 27 | 644 | 0.0 | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.2+ | |
| 2003 02 01 | 644 | 0.5+ | 0.7+ | 2005 07 27 | 644 | 0.4− | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.0 | |
| 2003 04 26 | 645 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2+ | |
| 2003 04 26 | 645 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.5− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ | |
| 2004 04 22 | E12 | 0.5+ | 1.2+ | 2005 07 29 | 644 | 0.7− | 0.8+ | 2006 10 31 | 691 | 0.1− | 0.3+ | |
| 2004 04 22 | E12 | 0.7− | 1.0+ | 2005 07 29 | 644 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.2+ | |
| 2004 04 22 | E12 | 0.5+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3− | |
| 2004 04 22 | E12 | (0.5+ | 1.5+) | 2006 10 02 | G96 | 0.2− | 0.5− | 2006 11 09 | 644 | 0.4− | 0.2− | |
| 2004 04 25 | 704 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | |
| 2004 04 25 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.2− | 0.2− | |
| 2004 04 25 | 704 | 1.2+ | 0.1− | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2004 04 25 | 704 | 0.3+ | 0.8− | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− | |
| 2004 05 12 | E12 | 0.5+ | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.3− | |
| 2004 05 12 | E12 | 0.1− | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | | | | | |
| 2004 05 12 | E12 | 0.1− | 0.7+ | 2006 10 17 | 691 | 0.6+ | 0.1+ | | | | | |

**(144797)∗ 2004 HM$_{49}$ = 2005 NO$_{80}$**

Discovered 2004 Apr. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86493)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.41476 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16093497 | $\omega$ | 235.30746 | | +0.66806700 | +0.72678952 | |
| $a$ | 3.3473601 | $\Omega$ | 77.44750 | | −0.61800033 | +0.66138523 | |
| $e$ | 0.1592027 | $i$ | 9.40897 | | −0.41444188 | +0.18532828 | |
| $P$ | 6.12 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 1.3− | 1.3− | 2005 06 07 | E12 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.0 | |
| 1998 04 23 | 704 | (2.9+ | 0.4+) | 2005 06 07 | E12 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.8− | 1.0+ | |
| 1998 04 23 | 704 | 0.6− | 1.0+ | 2005 06 07 | E12 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.9− | 0.3− | |
| 1998 04 23 | 704 | (2.6+ | 0.3−) | 2005 07 10 | E12 | 0.1+ | 0.1− | 2006 09 30 | G92 | 0.6− | 0.1+ | |
| 1999 07 14 | 704 | 0.6+ | 0.3+ | 2005 07 10 | E12 | 0.0 | 0.2− | 2006 09 30 | G92 | 0.4− | 0.0 | |
| 1999 07 14 | 704 | 0.6+ | 0.3− | 2005 07 10 | E12 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.2− | |
| 1999 07 14 | 704 | 0.1+ | 0.6+ | 2005 07 10 | E12 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.2− | |
| 2000 10 30 | 704 | (0.8− | 2.1+) | 2005 07 13 | 428 | 0.7− | 0.3+ | 2006 09 30 | G92 | 0.5+ | 0.2+ | |
| 2000 10 30 | 704 | 0.9− | 1.5+ | 2005 07 13 | 428 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.1+ | |
| 2000 10 30 | 704 | (1.1− | 2.6+) | 2005 07 15 | 428 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.9+ | |
| 2000 10 30 | 704 | 0.7− | 1.2+ | 2005 07 15 | 428 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.3+ | 0.7+ | |
| 2000 11 19 | 699 | 0.5− | 0.5+ | 2005 07 26 | 644 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.6− | 0.1+ | |
| 2000 11 19 | 699 | 0.3+ | 0.1+ | 2005 07 26 | 644 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.3− | |
| 2000 11 19 | 699 | 0.2− | 1.1− | 2005 07 26 | 644 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.1− | |
| 2000 11 19 | 699 | 0.9+ | 0.2− | 2005 08 04 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.4+ | |
| 2002 01 06 | 644 | 0.1+ | 0.1+ | 2005 08 04 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ | |
| 2002 01 06 | 644 | 0.3− | 0.4+ | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 2002 01 06 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.5+ | |
| 2004 04 17 | 699 | 0.4+ | 0.4+ | 2006 09 18 | 703 | (0.2− | 1.9−) | 2006 10 16 | 703 | 1.2− | 1.0+ | |
| 2004 04 17 | 699 | 1.0− | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.5− | 2006 10 16 | 703 | 0.1− | 0.1+ | |
| 2004 04 17 | 699 | 0.8− | 0.1− | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.6+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 699 | 0.6+ | 0.9− | 2006 09 27 | G92 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2004 04 23 | 691 | 0.3+ | 0.4+ | 2006 09 27 | G92 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2004 04 23 | 691 | 0.4+ | 0.3+ | 2006 09 27 | G92 | 0.2− | 0.4+ | 2006 10 22 | 703 | 1.2− | 0.1− |
| 2004 04 23 | 691 | 0.1+ | 0.5+ | 2006 09 28 | G92 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.9− |
| 2004 04 25 | 704 | 1.2+ | 1.2+ | 2006 09 28 | G92 | 1.2+ | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2004 04 25 | 704 | 0.5+ | 1.3+ | 2006 09 28 | G92 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.6− | 0.4+ |
| 2004 04 25 | 704 | 0.3+ | 1.4+ | 2006 09 28 | G92 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2004 04 25 | 704 | 0.5+ | 0.9+ | 2006 09 28 | G92 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2004 04 26 | 704 | 0.3− | 0.1+ | 2006 09 28 | G92 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.7+ | 0.5+ |
| 2004 04 26 | 704 | 1.1+ | 1.4+ | 2006 09 29 | G92 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2004 04 26 | 704 | 0.6+ | 0.1+ | 2006 09 29 | G92 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.8+ | 1.1+ |
| 2004 04 26 | 704 | 0.2+ | 0.8+ | 2006 09 29 | G92 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 04 26 | 704 | 0.0 | 1.0+ | 2006 09 29 | G92 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2004 04 26 | 704 | 1.2+ | 0.0 | 2006 09 29 | G92 | 0.6+ | 0.6+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2004 04 26 | 704 | 0.9+ | 1.0− | 2006 09 29 | G92 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.4− | 0.1+ |
| 2005 06 07 | E12 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.3+ | | | | |

**(144798)∗ 2004 HX$_{50}$ = 2002 VV$_7$**

Discovered 2004 Apr. 23 by the Siding Spring Survey at Siding Spring.
Id. G. V. Williams (*MPO* 65767)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.44472 | | (2000.0) | | −0.75022255 | −0.56052143 |
| $n$ | 0.24242086 | $\omega$ | 275.08521 | | +0.62462582 | −0.77476122 |
| $a$ | 2.5473545 | $\Omega$ | 231.33155 | | −0.21681492 | −0.29250774 |
| $e$ | 0.1862473 | $i$ | 26.68939 | | | |
| $P$ | 4.07 | $H$ | 15.7 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 699 | 0.4− | 0.6+ | 2004 04 01 | E12 | 0.0 | 0.6− | 2006 09 19 | 703 | 0.2+ | 1.3+ |
| 2000 05 05 | 699 | 0.3+ | 0.4+ | 2004 04 16 | 699 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.3+ | 1.3+ |
| 2000 05 05 | 699 | 0.2+ | 1.7+ | 2004 04 16 | 699 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.5+ |
| 2000 05 05 | 699 | 0.2+ | 1.5+ | 2004 04 16 | 699 | 0.3− | 0.2+ | 2006 09 25 | 703 | 0.9+ | 0.2− |
| 2002 10 06 | 704 | 0.1+ | 0.5− | 2004 04 16 | 699 | 0.4+ | 0.6+ | 2006 09 25 | 703 | 0.3− | 0.8− |
| 2002 10 06 | 704 | 0.3− | 0.2− | 2004 04 23 | E12 | 0.6+ | 0.4+ | 2006 09 25 | 703 | 0.5− | 0.9− |
| 2002 10 06 | 704 | 0.5− | 0.3− | 2004 04 23 | E12 | 0.7− | 0.2+ | 2006 09 25 | 703 | (2.1− | 1.0−) |
| 2002 11 01 | 644 | 0.2+ | 0.9+ | 2004 04 23 | E12 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2002 11 01 | 644 | 0.3+ | 1.1+ | 2004 04 23 | E12 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.7+ | 0.5− |
| 2002 11 01 | 644 | 0.5− | 0.4+ | 2004 04 24 | E12 | 0.4− | 1.2+ | 2006 10 27 | 703 | 1.0− | 0.6− |
| 2002 11 05 | 704 | 0.3+ | 0.2+ | 2004 04 24 | E12 | 0.8− | 0.9+ | 2006 10 27 | 703 | 0.6+ | 0.1− |
| 2002 11 05 | 704 | 0.5− | 0.5− | 2004 04 24 | E12 | 0.2− | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.9+ |
| 2002 11 05 | 704 | 0.6+ | 1.4+ | 2004 04 24 | E12 | 0.5− | 0.4+ | 2006 11 23 | 703 | 0.5+ | 1.2+ |
| 2002 11 05 | 704 | 0.0 | 0.4+ | 2004 05 15 | 704 | 0.6+ | 0.7− | 2006 11 23 | 703 | 0.4− | 0.7+ |
| 2004 04 01 | E12 | 0.3− | 0.7− | 2004 05 15 | 704 | 0.2− | 0.3− | 2006 11 23 | 703 | (1.8− | 0.5+) |
| 2004 04 01 | E12 | 0.3+ | 0.9− | 2004 05 15 | 704 | 0.4+ | 0.3− | | | | |
| 2004 04 01 | E12 | 0.2+ | 0.5− | 2006 09 19 | 703 | 0.2+ | 0.7+ | | | | |

**(144799)∗ 2004 HX$_{54}$**

Discovered 2004 Apr. 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 214.66894 | | (2000.0) | | −0.85080323 | +0.50953395 |
| $n$ | 0.23494345 | $\omega$ | 354.12113 | | −0.47309918 | −0.84916003 |
| $a$ | 2.6011206 | $\Omega$ | 217.42597 | | −0.22871603 | −0.13893309 |
| $e$ | 0.1138315 | $i$ | 12.20557 | | | |
| $P$ | 4.20 | $H$ | 15.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 0.1+ | 0.4− | 2004 04 21 | 704 | 0.1+ | 0.2− | 2004 05 21 | 704 | 0.7+ | 0.3− |
| 1997 10 05 | 691 | 0.1+ | 0.5− | 2004 04 21 | 704 | 0.3− | 0.6+ | 2004 05 21 | 704 | 1.0+ | 0.2− |
| 1997 10 05 | 691 | 0.2− | 0.5− | 2004 04 26 | 699 | 0.2− | 0.1− | 2004 05 29 | 703 | 0.2− | 0.3+ |
| 2001 08 25 | 704 | 0.0 | 0.9+ | 2004 04 26 | 699 | 0.5+ | 0.0 | 2004 05 29 | 703 | 0.4− | 0.1+ |
| 2001 08 25 | 704 | 1.0+ | 0.8+ | 2004 04 26 | 699 | 0.1− | 0.6+ | 2004 05 29 | 703 | 0.2− | 0.4− |
| 2001 08 25 | 704 | (0.5+ | 1.6−) | 2004 04 26 | 699 | 0.3+ | 0.1+ | 2004 05 29 | 703 | 0.5− | 0.1+ |
| 2001 09 17 | 704 | 0.4− | 0.1+ | 2004 05 09 | 691 | 0.1− | 0.2+ | 2004 06 05 | 699 | 0.2+ | 0.4+ |
| 2001 09 17 | 704 | 0.3− | 0.9+ | 2004 05 09 | 691 | 0.0 | 0.1+ | 2004 06 05 | 699 | (1.6− | 1.2+) |
| 2001 09 17 | 704 | 0.2+ | 0.9+ | 2004 05 09 | 691 | 0.0 | 0.0 | 2004 06 05 | 699 | 0.6− | 0.6+ |
| 2001 09 25 | 699 | 0.3− | 0.4+ | 2004 05 10 | 608 | 0.1− | 0.5− | 2004 06 05 | 699 | 0.6− | 0.1+ |
| 2001 09 25 | 699 | (3.2− | 1.3+) | 2004 05 10 | 608 | 0.2+ | 0.4− | 2005 08 29 | 644 | 0.3+ | 0.0 |
| 2001 09 25 | 699 | 1.2+ | 0.1+ | 2004 05 10 | 608 | 0.2+ | 0.2− | 2005 08 29 | 644 | 0.4+ | 0.0 |
| 2001 09 25 | 699 | 0.8+ | 1.3+ | 2004 05 11 | 699 | (1.2+ | 2.7+) | 2005 08 29 | 644 | 0.2+ | 0.1− |
| 2001 09 29 | 644 | 0.2− | 0.3+ | 2004 05 11 | 699 | 0.5− | 0.4+ | 2005 09 11 | 704 | 0.4+ | 0.5+ |
| 2001 09 29 | 644 | 0.0 | 0.2+ | 2004 05 11 | 699 | 0.5− | 0.8− | 2005 09 11 | 704 | 0.6+ | 0.2+ |
| 2001 09 29 | 644 | 0.0 | 0.0 | 2004 05 11 | 699 | 0.1− | 0.1− | 2005 09 11 | 704 | 0.7− | 0.6+ |
| 2001 10 17 | 704 | 0.6+ | 1.0− | 2004 05 12 | 699 | 0.3− | 0.1− | 2005 09 26 | 703 | 0.7− | 0.5+ |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2004 05 12 | 699 | 0.2+ | 0.1− | 2005 09 26 | 703 | 0.8− | 1.4− |
| 2001 10 17 | 704 | 0.1− | 0.5− | 2004 05 12 | 699 | 0.2− | 0.3− | 2005 09 26 | 703 | 0.4− | 0.6− |
| 2001 10 17 | 704 | 0.7− | 0.4+ | 2004 05 12 | 699 | 0.0 | 0.7− | 2005 09 26 | 703 | 1.0− | 0.9+ |
| 2001 10 26 | 644 | (0.6+ | 1.6+) | 2004 05 15 | 704 | 0.6+ | 0.4+ | 2006 11 25 | 683 | 0.6− | 1.5− |
| 2001 10 26 | 644 | (0.1+ | 1.9+) | 2004 05 15 | 704 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.3+ |
| 2001 10 26 | 644 | (0.2+ | 1.8+) | 2004 05 15 | 704 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.5+ | 0.3+ |
| 2004 03 27 | 704 | 0.4− | 0.6− | 2004 05 15 | 704 | 0.5+ | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2004 03 27 | 704 | 0.6− | 0.1− | 2004 05 15 | 704 | 0.4− | 1.1+ | 2006 11 25 | 683 | 0.1− | 0.2+ |
| 2004 03 27 | 704 | 0.9− | 0.8− | 2004 05 17 | 704 | 0.7+ | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2004 03 27 | 704 | 0.3− | 0.4+ | 2004 05 17 | 704 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2004 04 13 | 644 | 0.5+ | 0.4+ | 2004 05 17 | 704 | 0.6+ | 0.5+ | 2006 11 28 | 704 | 0.1− | 0.9+ |
| 2004 04 13 | 644 | 0.2+ | 0.3+ | 2004 05 17 | 704 | 0.0 | 0.9− | 2006 11 28 | 704 | 0.6+ | 0.5+ |
| 2004 04 13 | 644 | 0.2+ | 0.2+ | 2004 05 17 | 704 | 0.6− | 0.4− | 2006 11 28 | 704 | 0.5− | 0.7+ |
| 2004 04 21 | 704 | 0.5− | 0.1+ | 2004 05 21 | 704 | 0.6+ | 0.5− | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2004 04 21 | 704 | 0.1− | 0.1+ | 2004 05 21 | 704 | 0.6+ | 0.3− | | | | |
| 2004 04 21 | 704 | 0.4− | 0.3+ | 2004 05 21 | 704 | 0.3+ | 0.4− | | | | |

**(144800)∗ 2004 HC$_{55}$ = 2001 TJ$_{236}$**

Discovered 2004 Apr. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 65770)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.26414 | | (2000.0) | | −0.44076543 | +0.89565121 |
| $n$ | 0.18577502 | $\omega$ | 80.39730 | | −0.88263542 | −0.42040177 |
| $a$ | 3.0418970 | $\Omega$ | 163.06343 | | −0.16334183 | −0.14515940 |
| $e$ | 0.0413091 | $i$ | 11.77616 | | | |
| $P$ | 5.31 | $H$ | 15.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 691 | 0.1− | 0.0 | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 461 | 0.1+ | 0.5+ |
| 2000 09 03 | 691 | 0.1− | 0.0 | 2004 04 16 | 683 | (2.0+ | 0.2−) | 2006 10 01 | 461 | 0.2+ | 0.3+ |
| 2000 09 03 | 691 | 0.1− | 0.0 | 2004 04 16 | 683 | 0.8+ | 0.9− | 2006 10 12 | 644 | 0.1+ | 0.6+ |
| 2001 10 15 | 644 | 0.5− | 0.2+ | 2004 04 16 | 683 | 0.0 | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2001 10 15 | 644 | 0.3− | 0.5+ | 2004 04 23 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 10 15 | 644 | 0.1− | 0.0 | 2004 04 23 | 704 | 0.9+ | 0.0 | 2006 10 14 | 461 | 0.0 | 0.1− |
| 2001 10 16 | 704 | (0.4+ | 1.8+) | 2004 04 23 | 704 | 0.1− | 0.6+ | 2006 10 14 | 461 | 0.0 | 0.3− |
| 2001 10 16 | 704 | 0.8+ | 0.2− | 2004 04 23 | 704 | 0.4+ | 0.8+ | 2006 10 14 | 461 | 0.2− | 0.1− |
| 2001 10 16 | 704 | 0.4+ | 0.1+ | 2004 04 23 | 704 | 0.1+ | 0.5+ | 2006 10 14 | 461 | 0.2+ | 0.3+ |
| 2001 10 16 | 704 | 0.7− | 0.6+ | 2004 04 25 | 699 | 0.4− | 0.5+ | 2006 10 14 | 461 | 0.0 | 0.2+ |
| 2001 11 04 | 209 | 0.2− | 0.4+ | 2004 04 25 | 699 | 0.1+ | 0.0 | 2006 10 14 | 461 | 0.1+ | 0.1+ |
| 2001 11 04 | 209 | 0.3− | 1.4+ | 2004 04 25 | 699 | 0.3− | 0.3− | 2006 10 14 | 461 | 0.0 | 0.2+ |
| 2001 11 04 | 209 | 0.2− | 0.5+ | 2004 04 25 | 699 | 0.7− | 0.3+ | 2006 10 15 | 461 | 0.2+ | 0.2+ |
| 2001 11 12 | 645 | 0.1+ | 0.0 | 2004 05 09 | 703 | (1.4+ | 2.7+) | 2006 10 15 | 461 | 0.4+ | 0.2+ |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2004 05 09 | 703 | 1.4+ | 1.2+ | 2006 10 16 | 703 | 0.6+ | 1.1− |
| 2001 11 20 | 699 | 0.6− | 0.6+ | 2004 05 09 | 703 | (1.6− | 1.1+) | 2006 10 16 | 703 | 0.7− | 1.1− |
| 2001 11 20 | 699 | 1.2− | 0.6+ | 2004 05 09 | 703 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.8− |
| 2001 11 20 | 699 | 0.1− | 0.0 | 2006 09 23 | 461 | 0.0 | 0.3+ | 2006 10 16 | 703 | (2.3− | 0.8−) |
| 2001 11 20 | 699 | 0.3− | 0.9+ | 2006 09 23 | 461 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2006 09 23 | 461 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 09 24 | 461 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 09 24 | 461 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 14 | 645 | 0.1− | 0.0 | 2006 09 24 | 461 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 02 01 | 704 | 0.6+ | 0.1− | 2006 09 24 | 461 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2003 02 01 | 704 | 0.4+ | 0.3− | 2006 09 24 | 461 | 0.3− | 0.6− | 2006 10 23 | 644 | 0.3− | 0.6+ |
| 2003 02 01 | 704 | 1.3− | 0.9− | 2006 09 26 | 703 | 1.2− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.6+ |
| 2003 02 01 | 704 | 0.5+ | 0.9− | 2006 09 26 | 703 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2004 03 29 | 703 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.6+ | 2006 10 28 | 703 | 0.3− | 1.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 29 | 703 | (1.7− | 0.5−) | 2006 09 26 | 703 | 1.1− | 0.3− | 2006 10 28 | 703 | 0.4+ | 0.2− | | |
| 2004 03 29 | 703 | 0.2− | 0.4− | 2006 09 29 | 461 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.9+ | | |
| 2004 03 29 | 703 | 0.2− | 0.3+ | 2006 09 29 | 461 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.0 | 0.4− | | |
| 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 09 29 | 461 | 0.2+ | 0.1+ | | | | | | |
| 2004 04 14 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 461 | 0.1+ | 0.4+ | | | | | | |

**(144801)∗ 2004 HF$_{55}$ = 2002 TF$_{217}$**

Discovered 2004 Apr. 23 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 69722)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.13230 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24517113 | $\omega$ | 6.63778 | | −0.06922196 | −0.98640222 | |
| $a$ | 2.5282683 | $\Omega$ | 87.40577 | | +0.90828366 | −0.12411349 | |
| $e$ | 0.1947531 | $i$ | 8.58134 | | +0.41258830 | +0.10773345 | |
| $P$ | 4.02 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 699 | 0.1− | 0.4+ | 2004 03 29 | 703 | (1.5− | 1.2+) | 2006 09 29 | 699 | 0.8− | 0.2+ | | |
| 1998 09 24 | 699 | 0.9+ | 0.6− | 2004 03 29 | 703 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.4− | 0.1− | | |
| 1998 09 24 | 699 | 0.9+ | 0.1+ | 2004 03 29 | 703 | 1.3+ | 0.9+ | 2006 09 30 | 704 | 0.3− | 0.5− | | |
| 1998 09 25 | 645 | 0.1+ | 0.2− | 2004 04 23 | 703 | 0.2− | 1.1− | 2006 09 30 | 704 | 0.3− | 0.5− | | |
| 1998 09 25 | 645 | 0.1+ | 0.2− | 2004 04 23 | 703 | 0.0 | 1.2+ | 2006 09 30 | 704 | (0.7− | 1.5+) | | |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2004 04 23 | 703 | (0.4+ | 1.6+) | 2006 10 16 | 703 | 0.6+ | 0.2+ | | |
| 2002 09 05 | 645 | 0.1− | 0.1− | 2004 04 23 | 703 | 0.6+ | 0.5+ | 2006 10 16 | 703 | (2.2− | 0.1−) | | |
| 2002 09 17 | 608 | 0.7− | 1.0− | 2004 04 25 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 1.0+ | | |
| 2002 09 17 | 608 | 0.9− | 0.8− | 2004 04 25 | 699 | 0.2− | 0.8+ | 2006 10 16 | 703 | (2.5+ | 1.9+) | | |
| 2002 09 17 | 608 | 0.9− | 0.5− | 2004 04 25 | 699 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.1+ | 0.3− | | |
| 2002 10 07 | 608 | 0.1− | 0.4− | 2004 04 25 | 699 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.5+ | 0.2− | | |
| 2002 10 07 | 608 | 0.2+ | 0.7− | 2004 05 12 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 1.3+ | 0.2− | | |
| 2002 10 07 | 608 | 0.2− | 0.5− | 2004 05 12 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 1.3+ | 0.6− | | |
| 2002 10 08 | 699 | 0.6+ | 0.2+ | 2004 05 12 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.5− | 0.0 | | |
| 2002 10 08 | 699 | 0.5− | 0.2− | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2002 10 08 | 699 | 0.9+ | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 23 | 644 | 0.3− | 0.2− | | |
| 2002 10 08 | 699 | 0.3− | 0.9+ | 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 10 23 | 644 | 0.4− | 0.1− | | |
| 2002 10 15 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.8− | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2002 10 15 | 644 | 0.3+ | 0.6+ | 2006 09 21 | 699 | 0.9+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2002 10 15 | 644 | 0.1+ | 0.4+ | 2006 09 21 | 699 | (0.6− | 1.9−) | 2006 10 28 | 703 | 0.1− | 0.7+ | | |
| 2002 10 30 | 704 | 0.5+ | 1.0+ | 2006 09 21 | 699 | 0.3− | 0.3− | 2006 10 28 | 703 | 0.0 | 0.7+ | | |
| 2002 10 30 | 704 | 0.5− | 1.2+ | 2006 09 21 | 699 | 0.3− | 1.1+ | 2006 10 28 | 703 | 0.0 | 0.5+ | | |
| 2002 10 30 | 704 | 0.8− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.9− | 0.2− | | |
| 2002 10 30 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.0 | | |
| 2002 10 30 | 704 | 0.5− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.4+ | 0.4+ | | |
| 2002 11 04 | 608 | 0.6+ | 0.7+ | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.4+ | | |
| 2002 11 04 | 608 | 0.7+ | 0.0 | 2006 09 26 | 703 | 1.2− | 1.0+ | 2006 11 16 | 703 | 0.1+ | 1.1− | | |
| 2002 11 04 | 608 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.9+ | 0.8+ | 2006 11 16 | 703 | 1.2− | 0.5+ | | |
| 2002 11 21 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.1− | 1.4+ | 2006 11 16 | 703 | 0.8+ | 0.8− | | |
| 2002 11 21 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 1.0+ | 1.1+ | 2006 11 16 | 703 | 0.1− | 1.2− | | |
| 2002 11 21 | 644 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.3+ | 0.8+ | | | | | | |
| 2004 03 29 | 703 | 0.7− | 0.4− | 2006 09 29 | 699 | 0.1+ | 1.5+ | | | | | | |

**(144802)∗ 2004 HH$_{55}$**

Discovered 2004 Apr. 23 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.13696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17543523 | $\omega$ | 198.70494 | | +0.83672080 | +0.49736054 | |
| $a$ | 3.1602747 | $\Omega$ | 129.27377 | | −0.45706296 | +0.86477389 | |
| $e$ | 0.2148782 | $i$ | 17.22165 | | −0.30164839 | +0.06927203 | |
| $P$ | 5.62 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 04 | 608 | 0.5+ | 0.1+ | 2005 05 14 | 703 | 0.3− | 0.0 | 2005 08 07 | 608 | 0.2− | 1.3− | | |
| 2000 08 04 | 608 | 0.8+ | 0.1− | 2005 05 14 | 703 | 0.0 | 0.5+ | 2005 08 07 | 608 | 0.6− | 1.4− | | |
| 2000 08 04 | 608 | 0.6+ | 0.5− | 2005 05 14 | 703 | 0.2− | 0.6+ | 2005 08 07 | 608 | (0.2− | 1.7−) | | |
| 2000 10 05 | 704 | 0.5− | 0.4+ | 2005 05 14 | 703 | 0.3− | 0.1+ | 2005 08 28 | E12 | 0.1− | 0.1− | | |
| 2000 10 05 | 704 | 0.4− | 0.6+ | 2005 06 06 | 691 | 0.4+ | 0.8+ | 2005 08 28 | E12 | 0.7+ | 0.4− | | |
| 2000 10 05 | 704 | 0.4− | 0.8+ | 2005 06 06 | 691 | 0.0 | 0.2+ | 2005 08 28 | E12 | 0.2− | 0.2− | | |
| 2000 10 05 | 704 | 0.4− | 0.5− | 2005 06 06 | 691 | 0.1+ | 0.1− | 2005 08 28 | E12 | 0.5+ | 0.2− | | |
| 2000 10 05 | 704 | 0.3− | 0.1+ | 2005 06 15 | 691 | 0.4− | 0.3+ | 2005 08 29 | 704 | 0.3− | 0.4+ | | |
| 2000 10 27 | 704 | 0.7− | 0.1+ | 2005 06 15 | 691 | (1.7− | 2.0+) | 2005 08 29 | 704 | 0.7− | 0.4+ | | |
| 2000 10 27 | 704 | 0.4− | 0.9+ | 2005 06 15 | 691 | 0.0 | 0.3+ | 2005 08 29 | 704 | 0.1− | 0.5+ | | |
| 2000 10 27 | 704 | 0.9+ | 0.2− | 2005 06 30 | 703 | 0.0 | 0.3+ | 2005 09 08 | E12 | 1.0+ | 0.7+ | | |
| 2000 10 27 | 704 | 0.0 | 0.4+ | 2005 06 30 | 703 | 0.1+ | 0.4− | 2005 09 08 | E12 | 0.2+ | 0.1+ | | |
| 2004 03 28 | 704 | 1.0+ | 0.9− | 2005 06 30 | 703 | 0.2− | 0.1− | 2005 09 08 | E12 | 0.7− | 0.2− | | |
| 2004 03 28 | 704 | 0.6+ | 1.1+ | 2005 06 30 | 703 | 0.5− | 0.1+ | 2006 10 20 | 703 | 0.5− | 0.0 | | |
| 2004 03 28 | 704 | 0.0 | 1.0+ | 2005 07 04 | 704 | 0.2− | 0.6+ | 2006 10 20 | 703 | 0.2− | 1.2+ | | |
| 2004 03 28 | 704 | (0.9+ | 1.8+) | 2005 07 04 | 704 | (0.0 | 1.5+) | 2006 10 20 | 703 | 0.9− | 0.6+ | | |
| 2004 04 09 | 644 | 0.7+ | 1.0+ | 2005 07 04 | 704 | 0.1+ | 0.5− | 2006 10 20 | 703 | 1.1− | 0.5+ | | |
| 2004 04 09 | 644 | 0.9+ | 0.8+ | 2005 07 04 | 704 | 0.0 | 0.0 | 2006 11 10 | 704 | 0.0 | 0.5+ | | |
| 2004 04 09 | 644 | 0.8+ | 0.6+ | 2005 07 07 | 704 | 0.5+ | 0.1− | 2006 11 10 | 704 | 0.7− | 0.2+ | | |
| 2004 04 23 | 703 | 0.9− | 0.6+ | 2005 07 07 | 704 | 0.2+ | 0.8− | 2006 11 10 | 704 | (0.7+ | 1.6+) | | |
| 2004 04 23 | 703 | 0.5+ | 1.0+ | 2005 07 07 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 0.5− | 0.8+ | | |
| 2004 04 23 | 703 | 0.5− | 0.1+ | 2005 07 08 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.2+ | 1.5+ | | |
| 2004 04 23 | 703 | 0.4+ | 0.2− | 2005 07 08 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 703 | (1.9+ | 1.1+) | | |
| 2004 04 25 | 699 | 0.3− | 0.3− | 2005 07 08 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.8+ | 0.4+ | | |
| 2004 04 25 | 699 | 0.2− | 0.2+ | 2005 07 11 | G96 | 0.0 | 0.3− | 2006 11 16 | 703 | 1.3+ | 0.9+ | | |
| 2004 04 25 | 699 | (0.4− | 1.9+) | 2005 07 11 | G96 | 0.0 | 0.2− | 2006 11 22 | 703 | 0.2+ | 0.1+ | | |
| 2004 04 25 | 699 | 0.9− | 0.7+ | 2005 07 11 | G96 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.9− | 1.1+ | | |
| 2004 05 24 | 703 | 0.1− | 0.0 | 2005 07 11 | G96 | 0.1− | 0.2− | 2006 11 22 | 703 | (0.3+ | 2.1+) | | |
| 2004 05 24 | 703 | 0.7+ | 0.8+ | 2005 07 28 | 608 | 0.6− | 0.2− | 2006 11 22 | 703 | 0.1− | 0.6+ | | |
| 2004 05 24 | 703 | 0.6+ | 0.5+ | 2005 07 28 | 608 | 0.5− | 0.1+ | | | | | | |
| 2004 05 24 | 703 | 0.4+ | 1.2+ | 2005 07 28 | 608 | 0.4− | 0.3− | | | | | | |

**(144803)∗ 2004 HL$_{56}$**

Discovered 2004 Apr. 25 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.79818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17416888 | $\omega$ | 256.02170 | | +0.82533963 | −0.44060203 | |
| $a$ | 3.1755748 | $\Omega$ | 128.82317 | | +0.49981902 | +0.86102680 | |
| $e$ | 0.1662002 | $i$ | 26.95129 | | −0.26266982 | +0.25397383 | |
| $P$ | 5.66 | $H$ | 13.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.2+ | 0.3+ | 2003 02 04 | 699 | 0.1+ | 0.6+ | 2005 06 26 | 644 | 0.1− | 0.6+ | | |
| 2000 08 01 | 704 | 0.1+ | 0.7+ | 2003 03 08 | 699 | 1.4+ | 0.2+ | 2005 06 26 | 644 | 0.1− | 0.7+ | | |
| 2000 08 01 | 704 | 0.1+ | 0.3+ | 2003 03 08 | 699 | 0.0 | 1.2+ | 2005 06 26 | 644 | 0.1− | 0.6+ | | |
| 2000 08 01 | 704 | 0.3+ | 0.4+ | 2003 03 08 | 699 | 0.5− | 0.4− | 2006 08 05 | E12 | 0.1− | 0.2− | | |
| 2000 08 01 | 704 | 0.5+ | 0.7+ | 2003 03 08 | 699 | 0.4+ | 0.1+ | 2006 08 05 | E12 | (1.9− | 1.5+) | | |
| 2000 08 26 | 704 | 0.4− | 0.7+ | 2003 03 09 | 644 | 0.7+ | 0.5+ | 2006 08 05 | E12 | 0.4− | 0.0 | | |
| 2000 08 26 | 704 | 0.1− | 0.0 | 2003 03 09 | 644 | 0.4+ | 0.4+ | 2006 08 05 | E12 | 0.4+ | 0.7+ | | |
| 2000 08 26 | 704 | 1.6− | 0.5− | 2003 03 09 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.5+ | | |
| 2000 08 26 | 704 | 0.5+ | 0.5+ | 2003 03 22 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.5− | 0.5+ | | |
| 2000 08 26 | 704 | 0.1+ | 0.4+ | 2003 03 22 | 644 | 0.1+ | 1.3+ | 2006 09 27 | 703 | 0.8− | 0.5+ | | |
| 2001 12 07 | 704 | 0.0 | 0.3− | 2003 03 22 | 644 | 0.0 | 1.3+ | 2006 09 27 | 703 | 0.3− | 0.3+ | | |
| 2001 12 07 | 704 | 0.0 | 0.4− | 2003 04 01 | 699 | 1.2− | 0.6− | 2006 10 03 | E12 | 0.3+ | 0.4+ | | |
| 2001 12 07 | 704 | 0.2+ | 0.3− | 2003 04 01 | 699 | 1.3− | 0.1− | 2006 10 03 | E12 | 0.1− | 0.0 | | |
| 2001 12 19 | 704 | 0.3+ | 0.5+ | 2003 04 01 | 699 | 0.2+ | 0.7+ | 2006 10 03 | E12 | 0.7− | 0.6+ | | |
| 2001 12 19 | 704 | 0.0 | 0.5+ | 2003 04 01 | 699 | 1.0− | 0.8− | 2006 10 03 | E12 | 0.1+ | 0.0 | | |
| 2001 12 19 | 704 | 0.3− | 0.1− | 2003 04 07 | 644 | 0.2+ | 1.5+ | 2006 10 11 | E12 | 0.0 | 0.4+ | | |
| 2001 12 19 | 704 | 0.5− | 0.6+ | 2003 04 07 | 644 | (0.2+ | 1.6+) | 2006 10 11 | E12 | 0.4+ | 0.9− | | |
| 2002 02 16 | 704 | 0.1+ | 0.5− | 2003 04 07 | 644 | 0.7+ | 1.5+ | 2006 10 11 | E12 | 0.4+ | 0.0 | | |
| 2002 02 16 | 704 | 0.3− | 0.8− | 2004 04 25 | 699 | 0.2− | 0.3+ | 2006 10 11 | E12 | 0.0 | 0.4+ | | |
| 2002 02 16 | 704 | 0.5+ | 0.3− | 2004 04 25 | 699 | 0.9− | 0.4+ | 2006 10 30 | E12 | 0.1+ | 0.4+ | | |
| 2003 01 26 | 704 | 0.3− | 1.3+ | 2004 04 25 | 699 | 0.1+ | 0.3+ | 2006 10 30 | E12 | 0.1+ | 0.4+ | | |
| 2003 01 26 | 704 | 0.5+ | 0.2+ | 2004 04 25 | 699 | 0.0 | 0.9− | 2006 10 30 | E12 | 0.6+ | 0.5+ | | |
| 2003 01 26 | 704 | 1.3+ | 0.5+ | 2004 04 27 | 704 | 0.7+ | 0.3− | 2006 10 30 | E12 | 0.6− | 0.8+ | | |
| 2003 01 26 | 704 | 0.8− | 0.5− | 2004 04 27 | 704 | 0.2+ | 0.0 | 2006 11 18 | E12 | 0.3− | 0.2− | | |
| 2003 01 26 | 704 | 0.4+ | 0.2+ | 2004 04 27 | 704 | 0.1− | 0.8+ | 2006 11 18 | E12 | 0.2+ | 0.2+ | | |
| 2003 02 04 | 699 | 0.5+ | 0.4+ | 2004 06 08 | 644 | 0.2− | 0.5+ | 2006 11 18 | E12 | 0.1− | 0.5+ | | |
| 2003 02 04 | 699 | (1.7+ | 0.1−) | 2004 06 08 | 644 | 0.3+ | 0.1+ | 2006 11 18 | E12 | 0.0 | 0.5+ | | |
| 2003 02 04 | 699 | 0.2− | 0.1− | 2004 06 08 | 644 | 0.2+ | 0.3+ | | | | | | |

**(144804)∗ 2004 HU$_{58}$ = 2001 SB$_{295}$**

Discovered 2004 Apr. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 73006)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 295.01366 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23117585 | | $\omega$ | 271.64820 | | −0.57395484 | | −0.81834609 | | | |
| $a$ | 2.6293056 | | $\Omega$ | 213.43453 | | +0.77115404 | | −0.52791655 | | | |
| $e$ | 0.0782593 | | $i$ | 3.09596 | | +0.27549462 | | −0.22718670 | | | |
| $P$ | 4.26 | | $H$ | 15.9 | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 23 | 691 | 0.2− | 0.1+ | 2004 04 28 | 691 | 0.2− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 1997 10 23 | 691 | 0.3− | 0.0 | 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 1997 10 23 | 691 | 0.0 | 0.1+ | 2004 05 16 | 704 | 0.6+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 08 21 | 807 | 0.2− | 0.4+ | 2004 05 16 | 704 | 0.2+ | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 08 21 | 807 | 0.2+ | 0.3+ | 2004 05 16 | 704 | 0.8+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 1.0+ | 0.1− | 2004 06 08 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2004 06 08 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2004 06 08 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | (3.8+ | 1.8−) |
| 2001 09 20 | 704 | 0.1− | 0.2− | 2005 07 29 | 644 | 0.4+ | 0.3+ | 2006 11 18 | 704 | (3.2+ | 1.3−) |
| 2001 09 20 | 704 | 0.5+ | 0.5− | 2005 07 29 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | (2.3+ | 1.8−) |
| 2001 09 23 | 704 | 0.4+ | 0.5+ | 2005 07 29 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | (2.8+ | 2.1−) |
| 2001 09 23 | 704 | 0.5− | 0.2+ | 2005 08 06 | 644 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.4− | 0.5+ | 2005 08 06 | 644 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 0.3+ | 0.4+ | 2005 08 06 | 644 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2003 01 07 | 704 | 0.7+ | 0.6− | 2005 10 27 | G96 | 0.3− | 0.4+ | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2003 01 07 | 704 | 0.5+ | 0.0 | 2005 10 27 | G96 | 0.4+ | 0.5+ | 2006 11 24 | 691 | 0.2− | 0.5− |
| 2003 01 07 | 704 | 0.4+ | 0.4+ | 2005 10 27 | G96 | 0.2+ | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2003 01 07 | 704 | 0.1− | 1.0+ | 2005 10 27 | G96 | 0.7− | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.9+ |
| 2003 01 07 | 704 | 0.0 | 0.8+ | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.5+ |
| 2004 04 24 | 291 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2004 04 24 | 291 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.3− | 0.8+ |
| 2004 04 24 | 291 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.4− | 0.1+ |
| 2004 04 28 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.1− | | | | |

**(144805)∗ 2004 HD$_{59}$**

Discovered 2004 Apr. 24 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 109.82283 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.16895139 | | $\omega$ | 49.13623 | | −0.00166297 | | +0.99492737 | | | |
| $a$ | 3.2406207 | | $\Omega$ | 221.10386 | | −0.95734322 | | −0.03064709 | | | |
| $e$ | 0.0452431 | | $i$ | 8.80046 | | −0.28894844 | | +0.09581382 | | | |
| $P$ | 5.83 | | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.8+ | 0.8+ | 2005 07 10 | 691 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2000 10 03 | 704 | 0.0 | 0.7+ | 2005 07 10 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2000 10 03 | 704 | 1.0− | 0.9− | 2005 07 10 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.7+ |
| 2004 04 12 | 691 | 0.4+ | 0.3+ | 2005 09 02 | 644 | 0.1− | 0.2− | 2006 10 28 | 691 | (1.5+ | 2.2+) |
| 2004 04 12 | 691 | 0.3− | 0.3− | 2005 09 02 | 644 | 0.3+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2004 04 12 | 691 | 0.6− | 0.3− | 2005 09 02 | 644 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2004 04 24 | 291 | 0.3+ | 0.2+ | 2005 09 12 | 691 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2004 04 24 | 291 | 0.4+ | 0.1− | 2005 09 12 | 691 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.4+ |
| 2004 04 24 | 291 | 0.4+ | 0.3+ | 2005 09 12 | 691 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.4+ | 0.3+ |
| 2004 04 28 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 291 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.4+ | 0.5+ |
| 2004 04 28 | 691 | 0.1− | 0.3+ | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2004 04 28 | 691 | 0.1− | 0.2+ | 2006 09 30 | 291 | 1.0− | 0.1− | 2006 11 15 | 691 | 0.5+ | 0.4+ |
| 2004 05 13 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2004 05 13 | 691 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2004 05 13 | 691 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2004 05 15 | 704 | 0.6− | 1.0+ | 2006 10 21 | 703 | 0.4− | 0.7+ | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 2004 05 15 | 704 | 0.2+ | 1.5+ | 2006 10 21 | 703 | 0.7− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2004 05 15 | 704 | 0.6− | 1.1+ | 2006 10 21 | 703 | 0.6+ | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2005 06 27 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2005 06 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.5+ | | | | |
| 2005 06 27 | 691 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.3+ | | | | |

**(144806)∗ 2004 HC$_{61}$ = 2000 TY$_{22}$**

Discovered 2004 Apr. 25 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65776)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 115.11419 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.18465900 | | $\omega$ | 80.41801 | | +0.11911811 | | +0.99251148 | | | |
| $a$ | 3.0541409 | | $\Omega$ | 196.49670 | | −0.94423008 | | +0.10481518 | | | |
| $e$ | 0.1913864 | | $i$ | 5.46675 | | −0.30698603 | | +0.06272744 | | | |
| $P$ | 5.34 | | $H$ | 15.3 | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.1− | 0.5− | 2004 04 21 | 704 | (2.1− | 0.9+) | 2005 09 13 | 691 | 0.1+ | 0.1+ |
| 1993 03 25 | 691 | 0.1− | 0.6− | 2004 04 21 | 704 | 0.8+ | 0.9+ | 2005 09 13 | 691 | 0.0 | 0.1− |
| 1993 03 25 | 691 | 0.2− | 0.1+ | 2004 04 25 | 704 | 0.6+ | 0.1+ | 2005 09 13 | 691 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 1.8+ | 0.2+ | 2004 04 25 | 704 | 0.5+ | 0.1− | 2005 09 22 | 644 | 0.2+ | 0.1− |
| 2000 10 01 | 704 | 0.6+ | 0.0 | 2004 04 25 | 704 | 0.5+ | 0.2− | 2005 09 22 | 644 | 0.2+ | 0.0 |
| 2000 10 01 | 704 | 0.6+ | 0.1− | 2004 04 25 | 704 | 0.5+ | 0.2+ | 2005 09 22 | 644 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 0.4− | 0.9− | 2004 04 25 | 704 | 0.5+ | 0.5+ | 2005 09 25 | 691 | 0.2− | 0.2+ |
| 2000 10 01 | 704 | 0.0 | 0.3− | 2004 04 30 | 691 | 0.1− | 0.2+ | 2005 09 25 | 691 | 0.0 | 0.2+ |
| 2000 10 03 | 704 | 1.1− | 1.0− | 2004 04 30 | 691 | 0.2+ | 0.2+ | 2005 09 25 | 691 | 0.0 | 0.1+ |
| 2000 10 03 | 704 | 0.7+ | 0.6+ | 2004 04 30 | 691 | 0.1+ | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.6+ |
| 2000 10 03 | 704 | 0.8− | 0.9+ | 2004 05 15 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2004 03 27 | 704 | 0.4+ | 0.0 | 2004 05 15 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2004 03 27 | 704 | 1.3− | 1.0+ | 2004 05 15 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.4+ |
| 2004 03 27 | 704 | 0.5+ | 1.2+ | 2005 07 31 | 644 | 0.6− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 03 27 | 704 | 0.4+ | 0.8+ | 2005 07 31 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2004 03 27 | 704 | 0.1+ | 0.2+ | 2005 07 31 | 644 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 04 15 | 699 | 0.9− | 1.0+ | 2005 08 27 | 699 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2004 04 15 | 699 | 0.6− | 0.6− | 2005 08 27 | 699 | 1.2+ | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.5+ |
| 2004 04 15 | 699 | 0.1+ | 1.3− | 2005 08 27 | 699 | 1.1− | 0.4− | 2006 11 27 | 691 | 0.6− | 0.7+ |
| 2004 04 15 | 699 | 0.2+ | 0.5− | 2005 08 30 | 704 | 0.6− | 0.7+ | 2006 11 27 | 691 | 0.4− | 0.6+ |
| 2004 04 21 | 704 | (1.7− | 0.3+) | 2005 08 30 | 704 | 0.7− | 0.2+ | | | | |
| 2004 04 21 | 704 | 0.5− | 1.1+ | 2005 08 30 | 704 | 0.3+ | 0.2+ | | | | |

**(144807)∗ 2004 HV$_{63}$ = 2001 WU$_{21}$**

Discovered 2004 Apr. 16 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 65779)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 146.34656 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23893826 | | $\omega$ | 198.67529 | | +0.64519124 | | +0.74408405 | | | |
| $a$ | 2.5720471 | | $\Omega$ | 111.89840 | | −0.67501896 | | +0.66146642 | | | |
| $e$ | 0.1334526 | | $i$ | 10.77094 | | −0.35787940 | | +0.09381412 | | | |
| $P$ | 4.12 | | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 699 | 0.5+ | 0.8+ | 2004 05 14 | 704 | 0.2+ | 0.0 | 2004 06 12 | 703 | (1.8− | 2.0+) |
| 2001 10 14 | 699 | 0.3+ | 0.6+ | 2004 05 14 | 704 | 1.3+ | 0.1− | 2004 06 12 | 703 | (1.6+ | 3.1+) |
| 2001 10 14 | 699 | 0.1− | 0.2+ | 2004 05 14 | 704 | 0.0 | 0.3+ | 2005 10 27 | 704 | (0.1− | 2.5+) |
| 2001 10 14 | 699 | 0.5− | 0.6+ | 2004 05 14 | 704 | 0.3+ | 0.1+ | 2005 10 27 | 704 | 0.1− | 1.2+ |
| 2001 11 18 | 704 | 0.4− | 0.5+ | 2004 05 22 | 703 | (0.1− | 1.9−) | 2005 10 27 | 704 | 0.3+ | 1.1+ |
| 2001 11 18 | 704 | 0.2− | 0.6− | 2004 05 22 | 703 | (0.8− | 1.8−) | 2005 10 27 | 703 | 0.3− | 0.6− |
| 2001 11 18 | 704 | 0.2+ | 0.1− | 2004 05 22 | 703 | (0.0 | 2.4−) | 2005 10 27 | 703 | 0.2+ | 0.7+ |
| 2001 11 18 | 704 | 0.4− | 0.6+ | 2004 05 22 | 703 | 1.2− | 0.4+ | 2005 10 27 | 703 | 1.4− | 0.4+ |
| 2001 11 19 | 704 | 0.5− | 0.7+ | 2004 05 23 | 704 | 1.3− | 0.3+ | 2005 10 27 | 703 | 0.5− | 0.8+ |
| 2001 11 19 | 704 | 0.3− | 0.1+ | 2004 05 23 | 704 | 0.3− | 0.1+ | 2005 12 25 | 703 | 0.7+ | 1.2+ |
| 2001 11 19 | 704 | 0.5− | 0.1+ | 2004 05 23 | 704 | 0.2− | 0.2− | 2005 12 25 | 703 | (0.8− | 2.2+) |
| 2001 11 19 | 704 | 0.5− | 0.6+ | 2004 05 23 | 704 | 0.7+ | 0.8+ | 2005 12 25 | 703 | (2.0+ | 0.3+) |
| 2001 11 19 | 704 | (1.0− | 1.9+) | 2004 06 02 | 809 | 0.2− | 0.0 | 2005 12 25 | 703 | 0.5+ | 0.4− |
| 2002 11 11 | 291 | 0.3− | 0.5+ | 2004 06 02 | 809 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2002 11 11 | 291 | 0.1+ | 0.5+ | 2004 06 02 | 809 | 0.6− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 11 11 | 291 | 0.1+ | 0.5+ | 2004 06 06 | 703 | 0.4− | 0.6+ | 2006 10 23 | G96 | 0.1− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 07 | 644 | 0.9+ | 0.5+ | 2004 06 06 | 703 | 0.5− | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2003 02 07 | 644 | 0.9+ | 0.4+ | 2004 06 06 | 703 | 0.1− | 0.7+ | 2006 11 01 | G96 | 0.4− | 0.3− |
| 2003 02 07 | 644 | 1.0+ | 0.6+ | 2004 06 06 | 703 | 0.4− | 0.4+ | 2006 11 01 | G96 | 0.6− | 0.4− |
| 2004 04 16 | 644 | 0.4− | 0.4+ | 2004 06 09 | 699 | 0.3+ | 0.6+ | 2006 11 01 | G96 | 0.6− | 0.7− |
| 2004 04 16 | 644 | 0.2− | 0.3+ | 2004 06 09 | 699 | (0.1− | 1.9+) | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2004 04 16 | 644 | 0.1− | 0.4+ | 2004 06 09 | 699 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 04 19 | 691 | 0.1+ | 0.0 | 2004 06 09 | 699 | 0.7+ | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 04 19 | 691 | 0.1+ | 0.1− | 2004 06 12 | 704 | 0.7+ | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2004 04 19 | 691 | 0.2+ | 0.2− | 2004 06 12 | 704 | 0.6+ | 0.9+ | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2004 05 12 | 703 | (2.0+ | 1.0+) | 2004 06 12 | 704 | 0.1− | 0.4+ | 2006 11 28 | G96 | 0.0 | 0.2+ |
| 2004 05 12 | 703 | 0.8+ | 0.1+ | 2004 06 12 | 704 | 0.2+ | 0.1+ | 2006 11 28 | G96 | 0.2− | 0.1− |
| 2004 05 12 | 703 | 0.2+ | 0.8+ | 2004 06 12 | 703 | 1.1+ | 0.5− | 2006 11 28 | G96 | 0.7+ | 0.0 |
| 2004 05 12 | 703 | 0.5− | 1.0+ | 2004 06 12 | 703 | (1.6+ | 0.1+) | 2006 11 28 | G96 | 0.1− | 0.2+ |

**(144808)∗ 2004 HD$_{64}$ = 1998 XX$_{91}$**

Discovered 2004 Apr. 25 by NEAT at Haleakala.

Id. G. V. Williams (*MPO* 65780)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.80347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23400351 | $\omega$ | 30.21123 | | −0.76648789 | | −0.60139100 |
| $a$ | 2.6080814 | $\Omega$ | 111.08589 | | +0.53024362 | | −0.79060804 |
| $e$ | 0.2238196 | $i$ | 13.98235 | | +0.36240587 | | −0.11518591 |
| $P$ | 4.21 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.0 | 0.8+ | 2002 12 13 | 644 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 1998 12 15 | 704 | 1.3+ | 0.7+ | 2002 12 13 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.7− | 0.4+ |
| 1998 12 15 | 704 | 0.2− | 0.5+ | 2004 04 25 | 608 | 0.1+ | 1.0+ | 2006 10 20 | 703 | 0.1− | 0.2+ |
| 1998 12 15 | 704 | 0.5− | 0.9− | 2004 04 25 | 608 | 0.8+ | 0.4+ | 2006 10 20 | 703 | (2.1+ | 0.8−) |
| 1998 12 22 | 704 | 0.6− | 0.8+ | 2004 04 25 | 608 | 0.5− | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.0 |
| 1998 12 22 | 704 | 0.8+ | 0.2− | 2004 05 22 | 703 | 0.7+ | 0.9+ | 2006 10 21 | 703 | 1.0− | 1.2+ |
| 1998 12 22 | 704 | 0.0 | 0.2+ | 2004 05 22 | 703 | 1.2+ | 0.6− | 2006 10 21 | 703 | 1.3+ | 0.5+ |
| 1998 12 22 | 704 | 1.3+ | 0.2+ | 2004 05 22 | 703 | 0.2− | 1.4− | 2006 10 21 | 703 | 0.1− | 0.0 |
| 1999 01 20 | 704 | 0.5− | 0.6− | 2004 05 22 | 703 | 1.3− | 0.4+ | 2006 10 21 | 703 | 0.9− | 1.2− |
| 1999 01 20 | 704 | (2.2+ | 0.2−) | 2004 05 24 | 704 | 0.5+ | 0.7+ | 2006 10 28 | 703 | 0.1+ | 0.8+ |
| 1999 01 20 | 704 | 1.6− | 1.4− | 2004 05 24 | 704 | 0.1− | 0.4+ | 2006 10 28 | 703 | 1.4− | 0.4− |
| 1999 01 20 | 704 | (5.5− | 0.5−) | 2004 05 24 | 704 | 1.0+ | 0.0 | 2006 10 28 | 703 | 0.8+ | 0.4− |
| 2002 10 31 | 704 | 0.3− | 0.2− | 2004 05 24 | 704 | 0.7+ | 0.5+ | 2006 10 28 | 703 | 1.0+ | 0.1+ |
| 2002 10 31 | 704 | 1.0+ | 0.3− | 2004 06 22 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.6− | 0.0 |
| 2002 10 31 | 704 | 0.1− | 0.6− | 2004 06 22 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.4+ | 0.3− |
| 2002 10 31 | 704 | 1.0− | 1.0− | 2004 06 22 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2002 11 30 | 704 | 0.7− | 0.3+ | 2005 07 03 | 644 | 0.1+ | 0.6− | 2006 11 17 | 703 | 1.4− | 0.9− |
| 2002 11 30 | 704 | 0.7− | 0.4+ | 2005 07 03 | 644 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.5+ | 0.4+ |
| 2002 11 30 | 704 | 0.2+ | 0.6+ | 2005 07 03 | 644 | 0.7− | 0.4− | 2006 11 23 | 703 | 0.1− | 0.1+ |
| 2002 11 30 | 704 | 0.5− | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 11 23 | 703 | 1.0+ | 0.5+ |
| 2002 12 13 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 23 | 703 | 0.3+ | 0.6+ |

**(144809)∗ 2004 HV$_{72}$ = 2004 HF$_{59}$ = 2005 UK$_{391}$**

Discovered 2004 Apr. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 100720), A. Doppler (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.83545 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17044007 | $\omega$ | 46.42177 | | −0.00405696 | | +0.99946199 |
| $a$ | 3.2217233 | $\Omega$ | 223.37781 | | −0.93058925 | | −0.01568700 |
| $e$ | 0.1603611 | $i$ | 2.71616 | | −0.36604259 | | +0.02880370 |
| $P$ | 5.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 645 | 0.1+ | 0.3+ | 2005 08 27 | 699 | 0.9− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2003 03 30 | 645 | 0.1+ | 0.3+ | 2005 09 25 | 691 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2004 04 25 | 704 | (2.0+ | 1.2+) | 2005 09 25 | 691 | 0.1− | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2004 04 25 | 704 | (2.1+ | 0.8+) | 2005 09 25 | 691 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2004 04 25 | 704 | 0.5+ | 0.7− | 2005 10 06 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2004 04 25 | 704 | 0.3+ | 1.0− | 2005 10 06 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2004 04 28 | 691 | 0.0 | 0.1+ | 2005 10 06 | 691 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2004 04 28 | 691 | 0.1− | 0.4+ | 2005 10 30 | G96 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 04 28 | 691 | 0.2− | 0.1+ | 2005 10 30 | G96 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2004 05 11 | 699 | 0.6− | 0.3+ | 2005 10 30 | G96 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2004 05 11 | 699 | 0.8− | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.6+ | 0.1− |
| 2004 05 11 | 699 | 0.4+ | 0.5− | 2005 10 31 | G96 | 0.5− | 0.4− | 2006 11 11 | G96 | 0.1− | 0.1+ |
| 2004 05 11 | 699 | 0.3− | 0.2− | 2005 10 31 | G96 | 0.7+ | 1.0− | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2004 05 15 | 704 | 0.8+ | 0.5− | 2005 10 31 | G96 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2004 05 15 | 704 | 1.6+ | 1.3+ | 2005 10 31 | G96 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 05 15 | 704 | (1.1+ | 2.0+) | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2005 08 27 | 699 | 0.3− | 1.1+ | 2006 09 25 | G96 | 0.2+ | 0.8− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2005 08 27 | 699 | (2.3+ | 0.3+) | 2006 09 25 | G96 | 0.3+ | 0.5− | | | | |
| 2005 08 27 | 699 | 0.6+ | 0.1− | 2006 09 25 | G96 | 0.6− | 0.4− | | | | |

**(144810)∗ 2004 HE$_{74}$ = 2000 SP$_{32}$**

Discovered 2004 Apr. 28 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69724)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.52013 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17439878 | $\omega$ | 2.76577 | | +0.84764384 | | −0.52655489 |
| $a$ | 3.1727833 | $\Omega$ | 29.30058 | | +0.48419505 | | +0.71753685 |
| $e$ | 0.0424309 | $i$ | 7.64596 | | +0.21692180 | | +0.45593949 |
| $P$ | 5.65 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.1− | 0.4+ | 2004 05 15 | E12 | 0.6− | 0.1− | 2006 10 23 | 704 | 0.7− | 0.8− |
| 2000 09 24 | 704 | 0.2− | 0.4− | 2004 05 15 | E12 | 0.5− | 1.1+ | 2006 10 23 | 704 | 0.7− | 0.4− |
| 2000 09 24 | 699 | 0.6− | 0.4+ | 2005 07 10 | E12 | 0.9+ | 0.9+ | 2006 10 23 | 683 | 0.5− | 0.7+ |
| 2000 09 24 | 704 | 0.5− | 0.5+ | 2005 07 10 | E12 | 0.2− | 1.1+ | 2006 10 23 | 704 | 1.0− | 0.3− |
| 2000 09 24 | 699 | 0.3− | 0.2− | 2005 07 10 | E12 | 0.2− | 0.4+ | 2006 10 27 | 683 | 0.2+ | 0.6− |
| 2000 09 24 | 704 | 0.5− | 0.0 | 2005 07 10 | E12 | 0.1+ | 0.1+ | 2006 10 27 | 683 | 0.5− | 1.4+ |
| 2000 09 24 | 699 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 10 27 | 683 | 0.2+ | 1.0+ |
| 2000 09 24 | 699 | 0.1− | 1.0+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2000 09 25 | 704 | 0.8− | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2000 09 25 | 704 | 0.0 | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2000 09 25 | 704 | 0.5+ | 1.1+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2000 09 25 | 704 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 12 13 | 704 | 0.5− | 1.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2001 12 13 | 704 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2001 12 13 | 704 | 1.4+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2001 12 13 | 704 | 0.1− | 1.0+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 2003 02 28 | 704 | 0.4+ | 0.8+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2003 02 28 | 704 | 0.1+ | 0.6+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2003 02 28 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 683 | 0.8+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2003 02 28 | 704 | 0.7+ | 0.2+ | 2006 10 16 | 683 | 1.1− | 1.2− | 2006 11 11 | 703 | 0.6− | 0.3+ |
| 2003 02 28 | 704 | 0.8+ | 0.1+ | 2006 10 16 | 683 | (2.6+ | 1.0−) | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2003 03 10 | 644 | 0.8− | 0.2+ | 2006 10 19 | 683 | 0.8+ | 0.7− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2003 03 10 | 644 | 0.8+ | 0.4+ | 2006 10 19 | 683 | 0.9− | 0.5+ | 2006 11 15 | 691 | 0.4− | 0.1− |
| 2003 03 10 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 683 | 1.0+ | 0.7+ | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2003 03 25 | 644 | (0.0 | 1.8+) | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2003 03 25 | 644 | 0.4+ | 1.4+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2003 03 25 | 644 | (0.3+ | 1.9+) | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2004 04 12 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.3− |
| 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.4+ | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2004 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.3+ | 0.2− |
| 2004 04 28 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | (1.5− | 0.2−) | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2004 04 28 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.7+ | 0.6− | 2006 11 21 | 691 | 0.3+ | 0.2− |
| 2004 04 28 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.4− | 2006 11 21 | 691 | 0.2+ | 0.2− |
| 2004 05 15 | 704 | 0.5− | 0.9+ | 2006 10 21 | 703 | 0.5+ | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2004 05 15 | 704 | 1.0− | 0.9+ | 2006 10 23 | 704 | 0.0 | 0.7− | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2004 05 15 | 704 | 1.0− | 0.4− | 2006 10 23 | 683 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2004 05 15 | E12 | 0.4+ | 0.1+ | 2006 10 23 | 704 | 0.1+ | 0.8− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2004 05 15 | E12 | 0.3− | 0.1− | 2006 10 23 | 683 | 0.7+ | 0.5+ | 2006 11 21 | 704 | 0.1− | 2.2+ |

**(144811)∗ 2004 HK$_{74}$**

Discovered 2004 Apr. 29 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.39297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21797637 | $\omega$ | 5.26892 | | +0.02658850 | +0.99174682 | |
| $a$ | 2.7344067 | $\Omega$ | 266.29632 | | −0.92168767 | −0.02425495 | |
| $e$ | 0.0818933 | $i$ | 7.22043 | | −0.38702054 | +0.12589654 | |
| $P$ | 4.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.6− | 1.1+ | 2004 04 29 | 608 | 0.1− | 0.6− | 2005 09 09 | 704 | 0.0 | 0.4+ | |
| 2001 10 14 | 704 | 0.4− | 0.6+ | 2004 04 29 | 608 | 0.6− | 0.3− | 2005 09 09 | 704 | 0.2+ | 0.3+ | |
| 2001 10 14 | 704 | 0.4− | 1.2+ | 2004 05 13 | 699 | 0.1+ | 0.3− | 2005 09 23 | 644 | 0.4+ | 0.6+ | |
| 2001 10 14 | 704 | 0.6− | 0.1− | 2004 05 13 | 699 | 0.2− | 1.1+ | 2005 09 23 | 644 | 0.5+ | 0.6+ | |
| 2001 10 25 | 704 | (0.4− | 1.5−) | 2004 05 13 | 699 | 0.2− | 0.3+ | 2005 09 23 | 644 | 0.2+ | 0.6+ | |
| 2001 10 25 | 704 | 0.9+ | 0.8− | 2004 05 13 | 644 | 0.1+ | 0.2+ | 2005 09 24 | 703 | 1.2− | 0.4+ | |
| 2001 10 25 | 704 | 0.4+ | 0.6− | 2004 05 13 | 699 | 0.6+ | 0.4− | 2005 09 24 | 703 | 0.4− | 1.4− | |
| 2003 02 01 | 608 | 0.4+ | 0.2− | 2004 05 13 | 644 | 0.4+ | 0.3− | 2005 09 24 | 703 | 0.6− | 0.5− | |
| 2003 02 01 | 608 | 0.2+ | 0.2+ | 2004 05 13 | 644 | 0.2− | 0.2+ | 2005 09 24 | 703 | 0.8+ | 1.5− | |
| 2003 02 01 | 608 | 0.2+ | 0.5+ | 2004 05 19 | 704 | (0.0 | 1.8+) | 2006 11 10 | 691 | 0.6− | 1.5+ | |
| 2004 04 16 | E12 | (0.4+ | 2.5−) | 2004 05 19 | 704 | 1.1+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 | |
| 2004 04 16 | E12 | 0.1+ | 0.7− | 2004 05 19 | 704 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.1+ | |
| 2004 04 16 | E12 | 0.0 | 0.1− | 2004 05 19 | 704 | 0.8+ | 0.8− | 2006 11 16 | 691 | 0.1+ | 0.4− | |
| 2004 04 16 | E12 | 0.6+ | 0.6− | 2005 08 31 | 704 | (1.4− | 2.0+) | 2006 11 16 | 691 | 0.3+ | 0.1+ | |
| 2004 04 25 | 704 | 1.4− | 1.4+ | 2005 08 31 | 704 | (0.7− | 1.7+) | 2006 11 16 | 691 | 0.5+ | 0.2− | |
| 2004 04 25 | 704 | 0.3− | 1.2+ | 2005 08 31 | 704 | 0.4+ | 0.8+ | 2006 11 24 | 691 | 0.2− | 0.3− | |
| 2004 04 25 | 704 | 0.3− | 1.0+ | 2005 09 09 | 704 | 0.5+ | 0.2+ | 2006 11 24 | 691 | 0.2+ | 0.3− | |
| 2004 04 25 | 704 | 0.9+ | 1.0+ | 2005 09 09 | 704 | (1.5+ | 0.5+) | 2006 11 24 | 691 | 0.0 | 0.3− | |
| 2004 04 29 | 608 | 0.9− | 0.7− | 2005 09 09 | 704 | 0.4− | 0.2+ | | | | | |

**(144812)∗ 2004 JX**

Discovered 2004 May 10 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.66049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18088786 | $\omega$ | 65.94119 | | +0.39438179 | +0.91248489 | |
| $a$ | 3.0964431 | $\Omega$ | 227.74466 | | −0.88746214 | +0.34746957 | |
| $e$ | 0.0214321 | $i$ | 8.45177 | | −0.23848263 | +0.21595422 | |
| $P$ | 5.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 644 | 0.2− | 0.4− | 2004 05 16 | 704 | 0.6+ | 0.8+ | 2006 10 03 | 291 | 0.2− | 0.2+ | |
| 2001 12 20 | 644 | 0.0 | 0.1− | 2004 05 16 | 704 | (1.7+ | 0.3+) | 2006 10 03 | 291 | 0.1− | 0.1+ | |
| 2001 12 20 | 644 | 0.3+ | 0.0 | 2004 05 16 | 704 | 0.1+ | 0.0 | 2006 10 03 | 291 | 0.0 | 0.1+ | |
| 2004 04 21 | 691 | 0.1− | 0.1− | 2004 05 16 | E12 | 1.4+ | 0.7+ | 2006 10 15 | 691 | 0.3− | 0.4+ | |
| 2004 04 21 | 691 | 0.1− | 0.0 | 2004 05 16 | E12 | 0.2− | 0.9+ | 2006 10 15 | 691 | 0.2− | 0.6+ | |
| 2004 04 21 | 691 | 0.0 | 0.0 | 2004 05 16 | E12 | 1.2− | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.7+ | |
| 2004 04 21 | 691 | 0.1+ | 0.0 | 2004 05 16 | E12 | 0.8− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.3+ | |
| 2004 04 21 | 691 | 0.3− | 0.1+ | 2004 05 20 | 291 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.2− | 0.3+ | |
| 2004 04 21 | 691 | 0.1− | 0.2+ | 2004 05 20 | 291 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.2− | 0.4+ | |
| 2004 04 30 | 691 | 0.5+ | 0.1− | 2004 05 20 | 291 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.4+ | |
| 2004 04 30 | 691 | 0.1+ | 0.2+ | 2005 07 08 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.2+ | |
| 2004 04 30 | 691 | 0.0 | 0.1+ | 2005 07 08 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.2+ | |
| 2004 05 10 | 333 | 0.5+ | 0.2− | 2005 07 08 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3+ | 1.1+ | |
| 2004 05 10 | 333 | 0.0 | 0.9+ | 2005 07 30 | 644 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.7− | 0.1− | |
| 2004 05 10 | 333 | 0.0 | 0.6− | 2005 07 30 | 644 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.8− | 0.1− | |
| 2004 05 11 | 333 | 0.1− | 0.1+ | 2005 07 30 | 644 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.8+ | |
| 2004 05 11 | 333 | 1.0+ | 0.4− | 2005 08 24 | 644 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.2+ | |
| 2004 05 11 | 333 | 0.8− | 0.6− | 2005 08 24 | 644 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.4+ | 0.3+ | |
| 2004 05 12 | 699 | 0.8− | 0.6− | 2005 08 24 | 644 | 0.3+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.8+ | |
| 2004 05 12 | 699 | (0.5+ | 1.5+) | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.8+ | 0.6− | |
| 2004 05 12 | 699 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.2− | |
| 2004 05 12 | 699 | (1.7− | 1.0−) | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.2− | |
| 2004 05 15 | 704 | 0.7+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− | |
| 2004 05 15 | 704 | 0.1+ | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | (1.5− | 0.1−) | |
| 2004 05 15 | 704 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.2+ | |
| 2004 05 15 | 704 | 0.0 | 1.1+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 1.2+ | 0.7− | |
| 2004 05 16 | 704 | 1.1+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.8− | 0.6+ | |

**(144813)∗ 2004 JU$_1$ = 2000 QC$_{81}$ = 2003 BL$_{44}$**

Discovered 2004 May 10 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 65783)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.34152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18796358 | $\omega$ | 242.02345 | | −0.85885872 | +0.50731770 | |
| $a$ | 3.0182386 | $\Omega$ | 328.31316 | | −0.40989279 | −0.76343129 | |
| $e$ | 0.0667828 | $i$ | 7.72899 | | −0.30716380 | −0.39975170 | |
| $P$ | 5.24 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.8+ | 0.0 | 2004 04 14 | 644 | 0.2+ | 0.1+ | 2005 08 15 | E12 | (1.6+ | 0.2−) | |
| 2000 08 24 | 704 | 0.3+ | 0.2− | 2004 04 14 | 644 | 0.0 | 0.1+ | 2005 08 15 | E12 | (1.9− | 0.6−) | |
| 2000 08 24 | 704 | 0.7− | 0.2− | 2004 04 14 | 644 | 0.4+ | 0.7+ | 2006 09 17 | 703 | 0.1+ | 0.5− | |
| 2000 08 31 | 704 | 0.7− | 0.4+ | 2004 04 25 | 704 | 0.4+ | 0.5− | 2006 09 17 | 703 | 0.3+ | 0.3− | |
| 2000 08 31 | 704 | 0.0 | 0.6+ | 2004 04 25 | 704 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.2+ | |
| 2000 08 31 | 704 | 0.0 | 0.1+ | 2004 04 25 | 704 | 0.0 | 0.5− | 2006 09 17 | 703 | 0.8− | 0.2+ | |
| 2000 08 31 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.4− | 0.4− | 2006 09 28 | 703 | 1.0+ | 0.1− | |
| 2000 08 31 | 704 | 0.1+ | 0.9+ | 2004 05 10 | 428 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.9− | |
| 2001 11 11 | 704 | 0.6− | 0.3+ | 2004 05 10 | 428 | 0.8− | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.8+ | |
| 2001 11 11 | 704 | 0.8+ | 0.2+ | 2004 05 11 | 428 | 1.3+ | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.9− | |
| 2001 11 11 | 704 | 0.4− | 0.5+ | 2004 05 11 | 428 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | |
| 2001 11 11 | 704 | 0.2− | 0.1+ | 2004 05 22 | 704 | 0.4+ | 1.2+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | |
| 2001 11 11 | 704 | 0.9− | 0.4+ | 2004 05 22 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | |
| 2003 01 27 | 704 | 0.9+ | 1.3+ | 2004 05 22 | 704 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.2− | |
| 2003 01 27 | 704 | (0.4+ | 2.3+) | 2004 06 05 | 644 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | |
| 2003 01 27 | 704 | 0.2+ | 1.3+ | 2004 06 05 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2003 01 27 | 704 | 1.1− | 1.2+ | 2004 06 05 | 644 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.1− | |
| 2003 01 27 | 704 | 0.8+ | 0.7+ | 2005 07 27 | 644 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.4+ | |
| 2003 01 28 | 608 | 0.2+ | 0.3− | 2005 07 27 | 644 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.6− | 0.9+ | |
| 2003 01 28 | 608 | 0.5+ | 0.4− | 2005 07 27 | 644 | 0.3− | 0.1+ | 2006 11 23 | 703 | 0.7− | 1.1+ | |
| 2003 01 28 | 608 | 0.3+ | 0.2− | 2005 08 08 | 807 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.0 | 1.0+ | |
| 2004 04 14 | 644 | 0.1− | 0.6+ | 2005 08 08 | 807 | 0.4− | 0.0 | 2006 11 23 | 703 | 0.8− | 0.1− | |
| 2004 04 14 | 644 | 0.2+ | 0.2+ | 2005 08 15 | E12 | 0.9+ | 1.1+ | 2006 11 23 | 703 | 0.2− | 0.3+ | |
| 2004 04 14 | 644 | 0.0 | 0.4+ | 2005 08 15 | E12 | 0.6− | 0.1− | | | | | |

**(144814)∗ 2004 JL$_2$**

Discovered 2004 May 12 by W. K. Y. Yeung at Desert Eagle Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.33639 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17442403 | $\omega$ | 306.03674 | | −0.99831535 | −0.02804630 | |
| $a$ | 3.1724771 | $\Omega$ | 232.41107 | | +0.04453969 | −0.93146834 | |
| $e$ | 0.0791891 | $i$ | 3.67511 | | −0.03718440 | −0.36273976 | |
| $P$ | 5.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 691 | 0.1− | 0.1− | 2004 05 12 | 333 | 0.1+ | 0.6+ | 2004 05 24 | 701 | 0.2+ | 0.6− | |
| 2000 09 29 | 691 | 0.2− | 0.1+ | 2004 05 13 | 333 | 0.1+ | 0.2+ | 2004 06 13 | 691 | 0.2+ | 0.1+ | |
| 2000 09 29 | 691 | 0.2− | 0.2+ | 2004 05 13 | 333 | 0.2+ | 0.5+ | 2004 06 13 | 691 | 0.3+ | 0.0 | |
| 2001 11 18 | 291 | 0.0 | 0.5+ | 2004 05 13 | 333 | 0.3+ | 0.3+ | 2004 06 13 | 691 | 0.3+ | 0.1− | |
| 2001 11 18 | 291 | 0.1+ | 0.7+ | 2004 05 13 | 333 | 0.3+ | 0.4+ | 2005 07 01 | 691 | 0.1+ | 0.2+ | |
| 2001 11 18 | 291 | 0.2− | 0.4+ | 2004 05 13 | 333 | 0.2− | 0.2+ | 2005 07 01 | 691 | 0.1+ | 0.3+ | |
| 2001 12 18 | 691 | 0.1+ | 0.2+ | 2004 05 13 | 333 | 0.0 | 0.4+ | 2005 07 01 | 691 | 0.0 | 0.4+ | |
| 2001 12 18 | 691 | 0.2+ | 0.3+ | 2004 05 13 | 333 | 0.0 | 0.3+ | 2005 07 10 | 691 | 0.2− | 0.3+ | |
| 2001 12 18 | 691 | 0.1− | 0.2+ | 2004 05 13 | 333 | 0.3− | 0.4− | 2005 07 10 | 691 | 0.1− | 0.3+ | |
| 2003 01 27 | 644 | 0.1− | 0.5+ | 2004 05 13 | 333 | 0.4+ | 0.5+ | 2005 07 10 | 691 | 0.0 | 0.5+ | |
| 2003 01 27 | 644 | 0.0 | 0.5+ | 2004 05 15 | 704 | 0.9− | 0.8+ | 2006 09 15 | 691 | 0.1− | 0.1+ | |
| 2003 01 27 | 644 | 0.1− | 0.4+ | 2004 05 15 | 704 | 0.8− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | |
| 2003 02 03 | 699 | 0.2− | 0.8+ | 2004 05 15 | 704 | 1.0− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.3− | |
| 2003 02 03 | 699 | (0.0 | 1.6−) | 2004 05 15 | 704 | 0.1− | 0.7+ | 2006 09 30 | 691 | 0.2− | 0.0 | |
| 2003 02 03 | 699 | 0.4+ | 0.9+ | 2004 05 15 | 704 | 0.5+ | 0.9− | 2006 09 30 | 691 | 0.1+ | 0.0 | |
| 2003 02 03 | 699 | (3.3+ | 0.9+) | 2004 05 16 | 704 | 0.9+ | 0.4− | 2006 09 30 | 691 | 0.3− | 0.1− | |
| 2003 02 07 | 644 | 0.3+ | 0.4+ | 2004 05 16 | 704 | (0.9+ | 1.6+) | 2006 10 19 | G96 | 0.2+ | 0.0 | |
| 2003 02 07 | 644 | 0.2+ | 0.4+ | 2004 05 16 | 704 | 0.9+ | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.2+ | |
| 2003 02 07 | 644 | 0.2+ | 0.3+ | 2004 05 16 | 704 | 0.8− | 0.6+ | 2006 10 19 | G96 | 0.4− | 0.2− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 22 | 644 | 0.0 | 0.3+ | 2004 05 21 | 691 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2003 02 22 | 644 | 0.2+ | 0.3+ | 2004 05 21 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 02 22 | 644 | 0.1+ | 0.1+ | 2004 05 21 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1− | 1.9− |
| 2004 05 12 | 333 | 0.4− | 0.9+ | 2004 05 24 | 701 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 1.0+ | 1.0− |
| 2004 05 12 | 333 | 0.4− | 0.8+ | 2004 05 24 | 701 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.5− |

**(144815)∗ 2004 JP$_2$ = 2003 CB**

Discovered 2004 May 8 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65784)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.23710 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20484092 | $\omega$ | 215.34754 | | −0.72465297 | | +0.68879364 |
| $a$ | 2.8500878 | $\Omega$ | 8.28648 | | −0.59394981 | | −0.60883107 |
| $e$ | 0.1005316 | $i$ | 8.38223 | | −0.34943054 | | −0.39355820 |
| $P$ | 4.81 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 691 | (5.3− | 0.8+) | 2003 02 01 | 941 | 1.3+ | 0.1+ | 2005 08 04 | 644 | 0.4+ | 0.7+ |
| 1991 10 06 | 691 | 0.0 | 0.3+ | 2003 02 01 | 941 | (1.5+ | 0.2+) | 2005 08 04 | 644 | 0.0 | 0.3+ |
| 1999 03 09 | 691 | 0.1+ | 0.1− | 2003 02 01 | 941 | 1.4+ | 0.2+ | 2005 08 04 | 644 | 0.2+ | 0.4+ |
| 1999 03 09 | 691 | 0.1+ | 0.0 | 2003 02 01 | 941 | 1.1+ | 0.1+ | 2005 08 05 | 644 | 0.3+ | 0.4+ |
| 1999 03 09 | 691 | 0.2− | 0.2+ | 2003 02 02 | 941 | 1.2+ | 0.1+ | 2005 08 05 | 644 | 0.1+ | 0.3+ |
| 1999 03 14 | 691 | 0.3− | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.5+ | 2005 08 05 | 644 | 0.5+ | 0.8+ |
| 1999 03 14 | 691 | 0.3+ | 0.2+ | 2004 04 25 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3− |
| 1999 03 14 | 691 | (9.6+ | 1.5+) | 2004 04 25 | 704 | 0.7+ | 0.6− | 2006 10 19 | 691 | 0.3− | 0.0 |
| 1999 03 21 | 691 | 0.4+ | 0.6+ | 2004 04 25 | 704 | 1.0+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.7+ |
| 1999 03 21 | 691 | 0.0 | 0.0 | 2004 04 25 | 704 | 0.0 | 1.0+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 1999 03 21 | 691 | 0.3− | 1.0+ | 2004 05 08 | 644 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.8− | 0.0 |
| 2002 12 13 | 645 | 0.0 | 0.1− | 2004 05 08 | 644 | 0.5+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.6+ |
| 2002 12 13 | 645 | 0.0 | 0.1− | 2004 05 08 | 644 | 0.7+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2003 02 01 | 941 | (2.7− | 0.5−) | 2004 05 13 | 703 | 0.1+ | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.5+ |
| 2003 02 01 | 941 | (1.6− | 0.4−) | 2004 05 13 | 703 | 0.5− | 0.6+ | 2006 10 27 | 691 | 0.2− | 0.5+ |
| 2003 02 01 | 941 | 0.5− | 0.4− | 2004 05 13 | 703 | 1.2− | 0.1− | | | | |
| 2003 02 01 | 941 | 1.0+ | 0.3− | 2004 05 13 | 703 | 0.6+ | 0.0 | | | | |

**(144816)∗ 2004 JL$_4$ = 2001 QJ$_{332}$ = 2001 RZ$_{40}$**

Discovered 2004 May 10 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 65785)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.50314 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21138645 | $\omega$ | 274.50161 | | −0.70499303 | | −0.68827245 |
| $a$ | 2.7909450 | $\Omega$ | 222.14218 | | +0.70857232 | | −0.67329622 |
| $e$ | 0.1957053 | $i$ | 14.77135 | | +0.03016756 | | −0.27009856 |
| $P$ | 4.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.6− | 0.3+ | 2003 02 04 | 644 | 0.0 | 0.5+ | 2004 05 15 | 704 | 0.3+ | 0.1+ |
| 2001 08 16 | 644 | 0.1− | 0.6+ | 2003 02 04 | 644 | 0.1+ | 0.4+ | 2004 05 15 | 704 | 1.5− | 0.3− |
| 2001 08 16 | 644 | 0.2− | 0.5+ | 2004 04 12 | 691 | 0.0 | 0.3− | 2004 05 15 | 704 | 0.0 | 0.1− |
| 2001 09 11 | 704 | 0.1+ | 0.2− | 2004 04 12 | 691 | 0.3+ | 0.2+ | 2004 05 15 | 704 | 0.1+ | 0.3+ |
| 2001 09 11 | 704 | 0.2− | 0.3+ | 2004 04 12 | 691 | 0.1+ | 0.2− | 2004 05 21 | 691 | 0.3+ | 0.1+ |
| 2001 09 11 | 704 | 0.8− | 0.1− | 2004 04 21 | 704 | 0.2− | 1.2+ | 2004 05 21 | 691 | 0.3− | 0.2+ |
| 2001 09 11 | 704 | (1.6− | 0.5+) | 2004 04 21 | 704 | 1.1− | 0.2+ | 2004 05 21 | 704 | 0.3+ | 0.8+ |
| 2001 09 12 | 704 | (0.5− | 2.0−) | 2004 04 21 | 704 | 0.6+ | 1.1− | 2004 05 21 | 704 | 0.2+ | 1.0+ |
| 2001 09 12 | 704 | 0.4− | 0.2+ | 2004 04 28 | 691 | 0.1− | 0.3+ | 2004 05 21 | 691 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.2+ | 0.7− | 2004 04 28 | 691 | 0.3− | 0.1+ | 2004 05 21 | 704 | 0.2− | 1.0+ |
| 2001 09 12 | 704 | 1.3− | 0.8− | 2004 04 28 | 691 | 0.1+ | 0.2+ | 2004 05 21 | 704 | 0.1− | 1.3+ |
| 2001 10 14 | 691 | 0.0 | 0.3+ | 2004 05 10 | 703 | 0.5+ | 0.0 | 2004 05 21 | 704 | 0.4+ | 0.8+ |
| 2001 10 14 | 691 | 0.4+ | 0.2+ | 2004 05 10 | 703 | 0.7+ | 0.7− | 2006 09 27 | 703 | 0.6+ | 0.8− |
| 2001 10 14 | 691 | 0.2+ | 0.4+ | 2004 05 10 | 703 | 0.2− | 1.3+ | 2006 09 27 | 703 | 0.2+ | 0.3+ |
| 2002 12 14 | 704 | 0.1+ | 1.4+ | 2004 05 10 | 703 | (0.8− | 1.5+) | 2006 09 27 | 703 | 1.0− | 0.6+ |
| 2002 12 14 | 704 | 0.3+ | 0.2+ | 2004 05 11 | 699 | 0.1− | 0.2− | 2006 09 27 | 703 | 1.6− | 0.1− |
| 2002 12 14 | 704 | 0.7+ | 1.3+ | 2004 05 11 | 699 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 12 14 | 704 | 0.0 | 0.6+ | 2004 05 11 | 699 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 12 14 | 704 | 0.2+ | 1.1+ | 2004 05 11 | 699 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.4+ |
| 2003 01 26 | 644 | 0.0 | 0.3+ | 2004 05 12 | 699 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2003 01 26 | 644 | 0.0 | 0.2+ | 2004 05 12 | 699 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2003 01 26 | 644 | 0.1− | 0.1+ | 2004 05 12 | 699 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.4+ |
| 2003 02 04 | 644 | 0.2− | 0.6+ | 2004 05 12 | 699 | 0.8− | 0.3+ | | | | |

**(144817)∗ 2004 JB$_5$**

Discovered 2004 May 12 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.69372 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18212663 | $\omega$ | 210.67598 | | −0.95569835 | | +0.29040103 |
| $a$ | 3.0823864 | $\Omega$ | 345.95877 | | −0.21347269 | | −0.79618634 |
| $e$ | 0.0604863 | $i$ | 11.42049 | | −0.20265753 | | −0.53080557 |
| $P$ | 5.41 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 691 | 0.2− | 0.3+ | 2003 03 07 | 644 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 0.5− | 1.3− |
| 2000 09 21 | 691 | 0.3− | 0.3+ | 2003 03 07 | 644 | 0.4+ | 0.7+ | 2006 10 19 | 703 | 0.8− | 0.8− |
| 2000 09 21 | 691 | 0.3− | 0.1+ | 2004 05 12 | 428 | 0.3+ | 0.7+ | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2001 11 11 | 704 | 0.0 | 0.2− | 2004 05 12 | 428 | 0.3− | 0.1+ | 2006 10 19 | 703 | 1.2− | 0.0 |
| 2001 11 11 | 704 | 0.5− | 0.5− | 2004 05 13 | 428 | 0.3− | 0.9+ | 2006 10 22 | 644 | 0.6− | 0.4+ |
| 2001 11 11 | 704 | 0.2− | 0.4− | 2004 05 13 | 428 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2001 11 11 | 704 | 0.5− | 0.0 | 2004 05 21 | 428 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.6+ |
| 2001 11 11 | 704 | 0.3+ | 0.5− | 2004 05 24 | 428 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 0.2− | 2004 05 24 | 428 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2001 12 09 | 704 | (2.8+ | 0.5+) | 2004 06 14 | 428 | (2.0+ | 2.1−) | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2001 12 09 | 704 | 0.4+ | 0.6− | 2005 07 26 | 644 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.3+ | 1.0− |
| 2001 12 09 | 704 | 0.6+ | 1.2+ | 2005 07 26 | 644 | 0.1+ | 0.8+ | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 1.2+ | 0.5+ | 2005 07 26 | 644 | 0.2− | 1.1+ | 2006 10 27 | 703 | 0.8− | 1.3− |
| 2003 02 02 | 644 | 0.6+ | 1.2+ | 2005 08 04 | 644 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.8+ | 0.8+ |
| 2003 02 02 | 644 | 0.5+ | 1.5+ | 2005 08 04 | 644 | 0.1− | 0.8+ | 2006 11 09 | 104 | 0.7+ | 0.3+ |
| 2003 02 02 | 644 | 0.6+ | 1.1+ | 2005 08 04 | 644 | 0.0 | 0.8+ | 2006 11 09 | 104 | 0.0 | 1.0+ |
| 2003 02 19 | 644 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 1.0+ | 1.2− | 2006 11 09 | 104 | 0.0 | 0.4+ |
| 2003 02 19 | 644 | 0.3+ | 0.5+ | 2006 09 28 | 703 | (0.5+ | 1.9+) | 2006 11 13 | 104 | 0.6− | 2.0+ |
| 2003 02 19 | 644 | 0.4+ | 0.6+ | 2006 09 28 | 703 | 0.5+ | 0.1+ | 2006 11 13 | 104 | 0.0 | 0.2− |
| 2003 03 07 | 644 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.5− | 0.8+ | 2006 11 13 | 104 | 0.1+ | 0.0 |

**(144818)∗ 2004 JD$_5$**

Discovered 2004 May 12 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.71557 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17410646 | $\omega$ | 238.39174 | | +0.12559685 | | +0.98617902 |
| $a$ | 3.1763338 | $\Omega$ | 39.28063 | | −0.84257523 | | +0.16353463 |
| $e$ | 0.0472566 | $i$ | 9.82703 | | −0.52372934 | | −0.02659628 |
| $P$ | 5.66 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | (0.4+ | 2.1+) | 2004 05 22 | 704 | (1.6+ | 1.7+) | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 1998 04 22 | 704 | 1.3+ | 0.3+ | 2004 06 12 | 428 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1998 04 22 | 704 | (0.1− | 3.3+) | 2004 06 12 | 428 | 0.5− | 1.0+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 1998 04 22 | 704 | 0.8+ | 1.6+ | 2005 08 08 | E12 | 0.2+ | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 1998 04 22 | 704 | 0.6− | 0.0 | 2005 08 08 | E12 | 0.0 | 0.1− | 2006 11 11 | 703 | (2.1+ | 0.5+) |
| 2000 10 02 | 704 | 0.7− | 0.2+ | 2005 08 08 | E12 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.4+ |
| 2000 10 02 | 704 | 0.1− | 0.4+ | 2005 08 08 | E12 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2000 10 02 | 704 | 0.7− | 0.9+ | 2005 09 01 | 644 | 0.0 | 0.6+ | 2006 11 11 | 703 | 1.0− | 1.1+ |
| 2001 12 09 | 704 | 0.5+ | 0.4+ | 2005 09 01 | 644 | 0.3− | 0.7+ | 2006 11 11 | 703 | 0.2− | 0.8− |
| 2001 12 09 | 704 | 0.1+ | 0.8+ | 2005 09 01 | 644 | 0.3− | 0.6+ | 2006 11 11 | 703 | 1.1− | 0.8− |
| 2001 12 09 | 704 | 0.0 | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2003 02 28 | 608 | 0.3+ | 0.7+ | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2003 02 28 | 608 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2003 02 28 | 608 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2003 03 23 | 644 | 0.3+ | 0.6+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.3− |
| 2003 03 23 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2003 03 23 | 644 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 05 12 | 428 | 0.4+ | 1.4+ | 2006 10 18 | 291 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2004 05 12 | 428 | 0.3+ | 0.4+ | 2006 10 18 | 291 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2004 05 13 | 428 | 0.4− | 0.3+ | 2006 10 18 | 291 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 428 | 0.5+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.5+ | 0.4− |
| 2004 05 20 | 428 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.8− |
| 2004 05 22 | 704 | 1.0+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.5+ | 2006 11 27 | 703 | 0.1− | 0.5+ |
| 2004 05 22 | 704 | 0.9+ | 1.4+ | 2006 11 01 | 691 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.1+ | 1.4− |
| 2004 05 22 | 704 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.8− | 0.4+ | | | | |

**(144819)∗ 2004 JS$_5$ = 1999 JJ$_{85}$ = 2003 CJ$_4$**

Discovered 2004 May 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.46213 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19270049 | $\omega$ | 11.14451 | | −0.34971789 | −0.91336471 | |
| $a$ | 2.9685714 | $\Omega$ | 99.58928 | | +0.84247394 | −0.40393909 | |
| $e$ | 0.0735668 | $i$ | 12.20619 | | +0.40979879 | +0.05097178 | |
| $P$ | 5.11 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.2− | 0.0 | 2004 03 30 | 691 | 0.2− | 0.2+ |
| 1999 03 21 | 645 | 0.0 | 0.2− | 2002 12 05 | 704 | 0.3+ | 0.1+ | 2004 04 15 | 704 | 0.7− | 0.7+ |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2002 12 05 | 704 | 0.0 | 0.4+ | 2004 04 15 | 704 | 0.6+ | 1.2+ |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2002 12 06 | 645 | 0.1− | 0.1− | 2004 04 15 | 704 | 0.3+ | 1.6+ |
| 1999 05 14 | 704 | 0.8− | 0.5− | 2002 12 06 | 645 | 0.1− | 0.1− | 2004 04 15 | 704 | 0.4+ | 1.0+ |
| 1999 05 14 | 704 | (2.3− | 0.2−) | 2002 12 31 | 704 | 0.3+ | 0.4+ | 2004 04 15 | 704 | 0.3− | 0.8+ |
| 1999 05 14 | 704 | 1.0− | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.4+ | 2004 04 24 | 704 | 0.5+ | 0.2+ |
| 1999 05 14 | 704 | (5.9− | 0.1+) | 2002 12 31 | 704 | 0.5+ | 0.1+ | 2004 04 24 | 704 | 0.0 | 1.1+ |
| 1999 05 15 | 704 | 0.8− | 1.4+ | 2002 12 31 | 704 | 0.5+ | 0.6+ | 2004 04 24 | 704 | 0.1− | 0.1− |
| 1999 05 15 | 704 | 0.5− | 1.7+ | 2002 12 31 | 704 | 0.3+ | 0.7+ | 2004 04 24 | 704 | 0.2+ | 0.7+ |
| 1999 05 15 | 704 | (1.5− | 2.1+) | 2003 01 08 | 704 | 0.6− | 0.6+ | 2004 04 24 | 704 | 0.2+ | 0.3+ |
| 1999 05 18 | 703 | 0.7+ | 0.2+ | 2003 01 08 | 704 | 0.5− | 0.6+ | 2004 05 12 | 644 | 0.3+ | 0.3+ |
| 1999 05 18 | 703 | 0.5− | 0.5+ | 2003 01 08 | 704 | 0.2− | 0.8+ | 2004 05 12 | 644 | 0.1− | 0.4+ |
| 1999 05 18 | 703 | 0.3− | 0.8+ | 2003 01 08 | 704 | 0.2− | 0.4+ | 2004 05 12 | 644 | 0.5+ | 0.2+ |
| 1999 05 18 | 703 | 1.6+ | 0.4+ | 2003 01 08 | 704 | 0.4− | 0.8+ | 2004 05 13 | 704 | 0.2+ | 0.6− |
| 2001 09 25 | 699 | 0.1− | 1.8+ | 2003 02 01 | 704 | 0.5+ | 0.2+ | 2004 05 13 | 704 | 0.2+ | 0.3+ |
| 2001 09 25 | 699 | 0.8+ | 0.1+ | 2003 02 01 | 704 | 0.5+ | 0.1+ | 2004 05 13 | 704 | 0.1+ | 0.8− |
| 2001 09 25 | 699 | 0.5+ | 0.8+ | 2003 02 01 | 704 | 0.0 | 0.4+ | 2004 05 13 | 704 | 0.9+ | 0.6+ |
| 2001 09 25 | 699 | 1.2+ | 1.0+ | 2003 02 01 | 704 | 0.4+ | 0.5+ | 2004 05 24 | 704 | 0.5+ | 1.5+ |
| 2001 10 15 | 644 | 0.1+ | 0.8+ | 2003 02 04 | 704 | 0.9+ | 0.0 | 2004 05 24 | 704 | 0.9+ | 1.4+ |
| 2001 10 15 | 644 | 0.3− | 0.7+ | 2003 02 04 | 704 | 0.8+ | 0.6+ | 2004 05 24 | 704 | 0.6+ | 0.1+ |
| 2001 10 15 | 644 | 0.1− | 0.7+ | 2003 02 04 | 704 | 0.8+ | 1.0+ | 2004 05 24 | 704 | 0.8+ | 0.8+ |
| 2001 11 19 | 608 | 0.3− | 0.1+ | 2003 02 04 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 703 | 0.9− | 0.9+ |
| 2001 11 19 | 608 | 0.9− | 0.3− | 2004 03 16 | 704 | 1.3+ | 0.3− | 2006 09 20 | 703 | 0.9− | 0.3+ |
| 2001 11 19 | 608 | 0.6− | 0.5− | 2004 03 16 | 704 | 1.4+ | 0.7− | 2006 09 20 | 703 | 0.4− | 0.4− |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.1+ | 0.1+ |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.7+ |
| 2002 12 05 | 704 | 0.8− | 1.3+ | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.2− |
| 2002 12 05 | 704 | 0.3− | 0.2− | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.5+ |

**(144820)∗ 2004 JW$_5$ = 1999 AF$_{30}$**

Discovered 2004 May 10 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 65787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.11886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23397876 | $\omega$ | 17.15561 | | −0.71245832 | −0.58192315 | |
| $a$ | 2.6082653 | $\Omega$ | 120.60459 | | +0.57843772 | −0.80339780 | |
| $e$ | 0.0694246 | $i$ | 27.10339 | | +0.39725677 | +0.12616424 | |
| $P$ | 4.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 691 | 0.3+ | 0.0 | 2004 05 13 | 704 | 0.0 | 1.1+ | 2004 06 15 | 704 | 0.6+ | 0.6− |
| 1999 01 14 | 691 | 0.4+ | 0.1+ | 2004 05 13 | 645 | 0.0 | 0.0 | 2004 06 15 | 704 | 0.2+ | 0.0 |
| 1999 01 14 | 691 | 0.5+ | 0.0 | 2004 05 13 | 704 | 0.4+ | 0.2+ | 2004 06 15 | 704 | 0.3+ | 0.6− |
| 1999 01 19 | 691 | 0.5− | 0.2− | 2004 05 13 | 645 | 0.0 | 0.0 | 2004 06 15 | 704 | 0.3+ | 0.2− |
| 1999 01 19 | 691 | 0.5− | 0.2− | 2004 05 13 | 704 | 0.4+ | 0.2+ | 2004 06 16 | 704 | 0.6+ | 0.4+ |
| 1999 02 12 | 699 | 1.2+ | 0.6− | 2004 05 13 | 704 | 0.5+ | 0.9+ | 2004 06 16 | 704 | 0.2+ | 0.2+ |
| 1999 02 12 | 699 | 0.7− | 0.7+ | 2004 05 14 | 704 | 0.9− | 0.1+ | 2004 06 16 | 704 | 0.1− | 0.3+ |
| 1999 02 12 | 699 | 0.8− | 0.3+ | 2004 05 14 | 704 | 0.2+ | 0.7+ | 2004 06 16 | 704 | 0.1+ | 0.1− |
| 2000 05 28 | 699 | 0.4+ | 1.4+ | 2004 05 14 | 704 | 0.8− | 0.6− | 2005 09 01 | 644 | 0.2− | 0.1+ |
| 2000 05 28 | 699 | 0.2+ | 0.8+ | 2004 05 22 | 645 | 0.1− | 0.0 | 2005 09 01 | 644 | 0.0 | 0.1+ |
| 2000 05 28 | 699 | 0.8+ | 0.3+ | 2004 05 22 | 645 | 0.0 | 0.0 | 2005 09 01 | 644 | 0.1− | 0.2+ |
| 2000 05 28 | 699 | 0.8− | 0.0 | 2004 05 23 | 645 | 0.0 | 0.0 | 2005 09 06 | E12 | 0.4− | 0.6− |
| 2004 04 16 | 645 | 0.1− | 0.0 | 2004 05 23 | 645 | 0.0 | 0.0 | 2005 09 06 | E12 | 0.0 | 0.6− |
| 2004 04 16 | 645 | 0.1− | 0.0 | 2004 06 01 | 703 | 0.9+ | 0.6+ | 2005 09 06 | E12 | 0.0 | 0.0 |
| 2004 04 22 | 645 | 0.1− | 0.0 | 2004 06 01 | 703 | (0.1+ | 2.0+) | 2005 09 06 | E12 | 0.5− | 0.0 |
| 2004 04 22 | 645 | 0.1− | 0.0 | 2004 06 01 | 703 | 0.2− | 0.7+ | 2006 11 01 | 703 | 0.2− | 0.2+ |
| 2004 04 25 | 703 | 0.2− | 0.9− | 2004 06 01 | 703 | (1.7− | 1.1+) | 2006 11 01 | 703 | 0.4+ | 0.1− |
| 2004 04 25 | 703 | 0.6+ | 0.5− | 2004 06 11 | 704 | 1.1+ | 0.2− | 2006 11 01 | 703 | 0.1− | 0.0 |
| 2004 04 25 | 703 | 0.2+ | 1.2− | 2004 06 11 | 704 | 0.7+ | 0.1+ | 2006 11 01 | 703 | 0.1− | 0.6− |
| 2004 04 25 | 703 | 0.9− | 0.1− | 2004 06 11 | 704 | 1.0+ | 0.1+ | 2006 11 19 | 703 | 0.6− | 1.2+ |
| 2004 05 10 | 644 | 0.4+ | 0.4+ | 2004 06 11 | 704 | 0.7+ | 0.0 | 2006 11 19 | 703 | 0.2− | 0.4+ |
| 2004 05 10 | 644 | 0.4+ | 0.4+ | 2004 06 11 | 704 | 1.0+ | 0.1+ | 2006 11 19 | 703 | 0.4− | 1.3+ |
| 2004 05 10 | 644 | 0.9+ | 0.7+ | 2004 06 14 | 704 | 0.5+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.9+ |
| 2004 05 12 | 704 | 1.1+ | 0.0 | 2004 06 14 | 704 | 0.5+ | 0.1+ | 2006 11 24 | 703 | 0.6+ | 1.2+ |
| 2004 05 12 | 704 | 0.5+ | 0.1+ | 2004 06 14 | 704 | 0.1− | 0.5+ | 2006 11 24 | 703 | 0.4+ | 0.5+ |
| 2004 05 12 | 704 | (0.3+ | 2.7+) | 2004 06 14 | 704 | 0.6+ | 0.3− | 2006 11 24 | 703 | 0.9− | 0.6+ |
| 2004 05 12 | 704 | 1.1+ | 0.8+ | 2004 06 14 | 704 | 0.4+ | 0.1− | 2006 11 24 | 703 | 1.2− | 0.7+ |

**(144821)∗ 2004 JB$_6$ = 2000 AU$_{92}$**

Discovered 2004 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 65787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.22429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27472715 | $\omega$ | 120.96414 | | −0.64414403 | +0.62724494 | |
| $a$ | 2.3435182 | $\Omega$ | 101.91398 | | −0.75973615 | −0.59106601 | |
| $e$ | 0.1939178 | $i$ | 26.57747 | | +0.08876628 | −0.50715358 | |
| $P$ | 3.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 02 | 704 | 0.2− | 0.7− | 2004 05 12 | 704 | 0.5+ | 0.9+ | 2004 06 10 | 704 | 0.2− | 0.1+ |
| 2000 01 02 | 704 | 1.4− | 0.2+ | 2004 05 12 | 704 | 0.3+ | 0.0 | 2004 06 10 | 704 | 0.0 | 0.3+ |
| 2000 01 02 | 704 | 0.7− | 0.2+ | 2004 05 12 | 704 | 0.2+ | 1.2+ | 2004 06 10 | 704 | 0.2+ | 0.1+ |
| 2000 01 02 | 704 | 0.7+ | 0.5+ | 2004 05 12 | 704 | 0.3+ | 1.0+ | 2004 06 10 | 704 | 0.2+ | 0.1+ |
| 2000 01 08 | 704 | 0.5− | 1.3− | 2004 05 12 | 704 | 0.1+ | 1.0+ | 2004 06 10 | 704 | 0.1− | 0.2+ |
| 2000 01 08 | 704 | 0.4− | 1.1− | 2004 05 13 | 704 | 0.4− | 0.8+ | 2004 06 21 | 704 | 0.4+ | 0.1+ |
| 2000 01 08 | 704 | 0.6+ | 0.2− | 2004 05 13 | 704 | 0.2− | 1.1+ | 2004 06 21 | 704 | 0.2+ | 0.1+ |
| 2000 04 10 | 699 | 0.3− | 0.6+ | 2004 05 13 | 704 | 0.1+ | 0.8+ | 2004 06 21 | 704 | 0.1+ | 0.3+ |
| 2000 04 10 | 699 | 1.1+ | 0.0 | 2004 05 14 | 645 | 0.1− | 0.2− | 2004 06 21 | 704 | 0.3+ | 0.2+ |
| 2000 04 10 | 699 | 0.9+ | 0.9+ | 2004 05 14 | 645 | 0.1− | 0.1− | 2004 06 21 | 704 | 1.2+ | 0.6− |
| 2000 04 10 | 699 | 0.2− | 0.1− | 2004 05 21 | A35 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2002 12 14 | 704 | 0.9− | 0.8− | 2004 05 21 | A35 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2002 12 14 | 704 | 0.4+ | 0.2− | 2004 05 21 | A35 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2002 12 14 | 704 | 0.2+ | 0.3+ | 2004 05 22 | 645 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2003 01 02 | 704 | 1.3+ | 0.6− | 2004 05 22 | 645 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2003 01 02 | 704 | 0.1− | 0.7+ | 2004 05 23 | 645 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 01 02 | 704 | 0.5+ | 0.9− | 2004 05 23 | 645 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2003 01 02 | 704 | 0.2− | 0.3− | 2004 05 26 | 699 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2004 04 11 | 703 | (3.4+ | 0.8+) | 2004 05 26 | 699 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2004 04 11 | 703 | (2.2+ | 0.2−) | 2004 05 26 | 699 | 0.4+ | 0.4+ | 2006 11 27 | 703 | 0.9− | 0.6+ |
| 2004 04 11 | 703 | (1.9+ | 1.1−) | 2004 05 26 | 699 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.7− | 0.7+ |
| 2004 04 11 | 703 | 1.1− | 0.7+ | 2004 05 28 | 704 | 0.7+ | 0.9+ | 2006 11 27 | 703 | (0.6+ | 4.7+) |
| 2004 05 03 | 703 | 0.2+ | 0.3− | 2004 05 28 | 704 | 0.9+ | 0.8+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2004 05 03 | 703 | 0.5+ | 0.4+ | 2004 05 28 | 704 | 0.7+ | 1.2+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 05 03 | 703 | 0.5+ | 0.1+ | 2004 05 28 | 704 | 0.7+ | 0.6+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2004 05 03 | 703 | 0.4− | 0.4+ | 2004 05 28 | 704 | 0.8+ | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.0 |

**(144822)∗ 2004 JF$_{12}$**

Discovered 2004 May 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 184.85487 | | (2000.0) | | | |
| $n$ | 0.17881710 | $\omega$ | 276.69245 | | −0.98432807 | −0.08247068 |
| $a$ | 3.1203024 | $\Omega$ | 258.66050 | | +0.13486027 | −0.92156835 |
| $e$ | 0.0863272 | $i$ | 9.14757 | | −0.11362636 | −0.37935519 |
| $P$ | 5.51 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.5− | 0.1+ | 2004 04 17 | 704 | 0.5+ | 0.4+ | 2005 06 05 | 691 | 0.1+ | 0.1− |
| 2001 11 10 | 704 | 0.2− | 0.6+ | 2004 04 17 | 704 | 0.3+ | 0.2+ | 2005 06 10 | 691 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.3− | 1.1+ | 2004 04 17 | 704 | 0.2− | 0.4− | 2005 06 10 | 691 | 0.0 | 0.2+ |
| 2003 01 07 | 704 | (2.6+ | 1.0+) | 2004 04 25 | 704 | (0.1− | 1.8−) | 2005 06 10 | 691 | 0.3+ | 0.2+ |
| 2003 01 07 | 704 | 0.8+ | 1.0+ | 2004 04 25 | 704 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.9+ | 0.5+ |
| 2003 01 07 | 704 | 0.7+ | 0.3+ | 2004 04 25 | 704 | 0.3+ | 0.4− | 2006 09 16 | 703 | (1.8− | 0.2−) |
| 2003 01 07 | 704 | 0.1+ | 1.0− | 2004 05 13 | 644 | (0.2+ | 1.6+) | 2006 09 16 | 703 | 1.0− | 0.2+ |
| 2003 01 27 | 704 | 0.1+ | 1.0+ | 2004 05 13 | 644 | 0.7+ | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.5+ |
| 2003 01 27 | 704 | 0.1+ | 0.7+ | 2004 05 13 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.1+ |
| 2003 01 27 | 704 | 0.0 | 0.4+ | 2004 05 14 | 699 | 0.2− | 0.5+ | 2006 09 27 | 703 | 0.4− | 0.2+ |
| 2003 01 27 | 704 | 0.2− | 0.4+ | 2004 05 14 | 699 | 1.2+ | 1.2+ | 2006 09 27 | 703 | (1.8+ | 0.3+) |
| 2003 01 27 | 704 | 0.2+ | 0.8+ | 2004 05 14 | 699 | 0.3− | 0.2+ | 2006 09 27 | 703 | 1.3− | 1.1− |
| 2004 03 15 | 644 | 0.3− | 0.1+ | 2004 05 14 | 699 | 0.5− | 0.7+ | 2006 09 29 | 699 | (0.0 | 1.8+) |
| 2004 03 15 | 644 | 0.3− | 0.1+ | 2004 05 15 | 704 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.1+ | 0.4+ |
| 2004 03 15 | 644 | 0.1− | 0.3+ | 2004 05 15 | 704 | 0.6+ | 0.7+ | 2006 09 29 | 699 | 1.0− | 0.5+ |
| 2004 03 26 | 704 | 0.3− | 0.8+ | 2004 05 15 | 704 | 0.7+ | 0.8+ | 2006 09 29 | 699 | 0.2− | 0.8+ |
| 2004 03 26 | 704 | 0.2− | 0.2− | 2004 05 15 | 704 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2004 03 26 | 704 | (2.7− | 3.2+) | 2004 05 15 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2004 03 26 | 704 | 1.2− | 0.5− | 2005 06 05 | 691 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.4+ |
| 2004 04 17 | 704 | 0.1+ | 1.1+ | 2005 06 05 | 691 | 0.0 | 0.2− | | | | |

**(144823)∗ 2004 JU$_{13}$ = 2001 YB$_{29}$**

Discovered 2004 May 9 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69725)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.88130 | | (2000.0) | | | |
| $n$ | 0.17830167 | $\omega$ | 197.39757 | | −0.42200016 | +0.90621324 |
| $a$ | 3.1263129 | $\Omega$ | 47.65036 | | −0.82749014 | −0.37314959 |
| $e$ | 0.0902045 | $i$ | 2.04193 | | −0.37037269 | −0.19883898 |
| $P$ | 5.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 691 | 0.1− | 0.2+ | 2005 07 27 | 644 | 0.3+ | 0.2+ | 2006 10 29 | 691 | 0.4− | 0.4+ |
| 2001 11 12 | 691 | 0.2− | 0.1+ | 2005 07 27 | 644 | 0.3+ | 0.2+ | 2006 10 29 | 691 | 0.3− | 0.4+ |
| 2001 11 12 | 691 | 0.1+ | 0.2+ | 2005 07 27 | 644 | 0.1− | 0.1+ | 2006 11 03 | G96 | 0.0 | 0.1− |
| 2001 11 21 | 704 | (0.2− | 1.5+) | 2005 10 28 | G96 | 0.3− | 0.2− | 2006 11 03 | G96 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.6+ | 1.4+ | 2005 10 28 | G96 | 0.2− | 0.8− | 2006 11 03 | G96 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.5+ | 0.9+ | 2005 10 28 | G96 | 0.7− | 0.0 | 2006 11 03 | G96 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 1.2+ | 0.3− | 2005 10 28 | G96 | 0.4+ | 0.4+ | 2006 11 03 | G96 | 0.6+ | 0.4− |
| 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 03 | G96 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 11 03 | G96 | 0.3+ | 0.4+ |
| 2001 12 19 | 704 | 0.8− | 0.7− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 03 | G96 | 0.3− | 0.3+ |
| 2001 12 19 | 704 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.1+ |
| 2001 12 19 | 704 | 1.3− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2004 04 22 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2004 04 22 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2004 05 09 | 691 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2004 05 15 | 704 | 0.3+ | 0.9+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2004 05 15 | 704 | 0.3+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2004 05 15 | 704 | 1.1+ | 0.9+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2004 05 15 | 704 | 0.5+ | 0.5+ | 2006 10 29 | 691 | 0.1− | 0.3+ | | | | |

**(144824)∗ 2004 JZ$_{13}$**

Discovered 2004 May 9 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.22214 | | (2000.0) | | | |
| $n$ | 0.18259440 | $\omega$ | 317.94856 | | +0.98964409 | +0.08306762 |
| $a$ | 3.0771199 | $\Omega$ | 37.76844 | | −0.00863973 | +0.84853573 |
| $e$ | 0.0744380 | $i$ | 11.01910 | | −0.14328269 | +0.52257716 |
| $P$ | 5.40 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 704 | 0.4+ | 0.7+ | 2006 09 03 | 152 | (0.8+ | 1.8+) | 2006 11 16 | 704 | 0.7− | 0.1− |
| 2000 08 28 | 704 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.1− |
| 2000 08 28 | 704 | 1.9− | 1.1+ | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2000 09 05 | 645 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 16 | 704 | 0.4− | 0.0 |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.5− | 2006 11 16 | 704 | (1.9− | 1.3−) |
| 2001 12 14 | 704 | 0.7− | 0.9− | 2006 10 17 | 691 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 2001 12 14 | 704 | 0.1+ | 1.2− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.1− |
| 2001 12 14 | 704 | 1.0+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.8+ |
| 2002 01 13 | 704 | 0.4+ | 0.2− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.7+ |
| 2002 01 13 | 704 | 0.9+ | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.4+ |
| 2002 01 13 | 704 | 0.6+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.0 |
| 2003 02 25 | 599 | 0.2− | 0.9+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2003 02 25 | 599 | 0.6− | 0.7+ | 2006 11 09 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2003 02 25 | 599 | 0.1+ | 1.3+ | 2006 11 09 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.4− |
| 2004 04 28 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2004 04 28 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.6− |
| 2004 04 28 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.7− |
| 2004 05 09 | 644 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | (0.7+ | 1.9−) |
| 2004 05 09 | 644 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.3+ |
| 2004 05 09 | 644 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.6− |
| 2004 05 15 | 704 | 0.4− | 1.3+ | 2006 11 11 | 703 | 0.6+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2004 05 15 | 704 | (0.0 | 1.6+) | 2006 11 11 | 703 | 0.5+ | 1.2− | 2006 11 19 | 704 | 0.2− | 0.4− |
| 2004 05 15 | 704 | 0.3+ | 1.5+ | 2006 11 11 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2004 05 15 | 704 | (0.8− | 2.1+) | 2006 11 11 | 703 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.6− |
| 2004 05 15 | 704 | (0.1− | 1.8+) | 2006 11 14 | 703 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.5− |
| 2004 05 19 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.8− | 2006 11 20 | 704 | 0.5+ | 1.1+ |
| 2004 05 19 | 704 | 0.2+ | 0.4+ | 2006 11 14 | 703 | (1.1− | 3.0+) | 2006 11 20 | 704 | 1.4− | 0.3+ |
| 2004 05 19 | 704 | 0.8− | 0.8− | 2006 11 14 | 703 | 0.1+ | 1.3− | 2006 11 20 | 704 | 0.6+ | 0.5+ |
| 2004 06 12 | E12 | 0.4+ | 0.7− | 2006 11 16 | 704 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.3+ | 1.1+ |
| 2004 06 12 | E12 | 0.5+ | 0.8− | 2006 11 16 | 704 | 0.6− | 0.0 | 2006 11 22 | 704 | (2.8− | 0.3+) |
| 2004 06 12 | E12 | 1.2+ | 0.3− | 2006 11 16 | 704 | 0.4− | 0.8+ | 2006 11 22 | 704 | (0.7+ | 3.2+) |
| 2004 06 12 | E12 | 0.9+ | 0.8− | 2006 11 16 | 704 | 0.2+ | 1.0+ | 2006 11 22 | 704 | (1.0+ | 1.7+) |
| 2004 06 13 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.3+ | 2006 11 22 | 704 | (0.1− | 2.8+) |
| 2004 06 13 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.6− | 0.5+ |
| 2004 06 13 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.3− | 2006 12 01 | 704 | 0.1− | 0.0 |
| 2006 09 02 | 152 | 1.2− | 0.7+ | 2006 11 16 | 704 | 0.0 | 0.2− | 2006 12 01 | 704 | 1.3− | 1.1+ |
| 2006 09 02 | 152 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.4− | 0.0 | | | | |

**(144825)∗ 2004 JB$_{15}$**

Discovered 2004 May 9 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 132.04084 | | (2000.0) | | | |
| $n$ | 0.17117963 | $\omega$ | 77.72333 | | −0.12839808 | +0.99169065 |
| $a$ | 3.2124373 | $\Omega$ | 184.92061 | | −0.94219800 | −0.12449150 |
| $e$ | 0.1434305 | $i$ | 5.33449 | | −0.30947838 | −0.03242726 |
| $P$ | 5.76 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.7+ | 0.5+ | 2004 06 15 | 691 | 0.2+ | 0.1+ | 2005 09 06 | 699 | 0.2− | 1.4− |
| 1998 04 21 | 704 | 0.8− | 0.1− | 2004 06 16 | 704 | (2.5+ | 0.9−) | 2005 09 06 | 699 | (1.6− | 1.3−) |
| 1998 04 21 | 704 | 0.2+ | 1.2− | 2004 06 16 | 704 | 0.7− | 0.4− | 2005 09 13 | 691 | 0.1− | 0.1+ |
| 1998 04 21 | 704 | 1.9− | 1.6+ | 2004 06 16 | 704 | 0.9+ | 1.0− | 2005 09 13 | 691 | 0.1− | 0.2+ |
| 1998 05 01 | 704 | 0.2− | 1.5− | 2004 06 16 | 704 | (2.3− | 0.3+) | 2005 09 13 | 691 | 0.2+ | 0.2+ |
| 1998 05 01 | 704 | 1.0+ | 0.4+ | 2005 07 31 | 644 | 0.2+ | 0.1+ | 2005 09 22 | 644 | 0.4− | 0.0 |
| 1998 05 01 | 704 | 0.5+ | 0.9− | 2005 07 31 | 644 | 0.3+ | 0.0 | 2005 09 22 | 644 | 0.1− | 0.3+ |
| 1998 05 01 | 704 | 0.2− | 1.4+ | 2005 07 31 | 644 | 0.1− | 0.3+ | 2005 09 22 | 644 | 0.2− | 0.2+ |
| 2003 03 26 | 699 | 0.7+ | 0.2− | 2005 07 31 | 644 | 0.2+ | 0.2+ | 2005 10 08 | A13 | 1.3+ | 0.1− |
| 2003 03 26 | 699 | 0.3+ | 0.6− | 2005 07 31 | 644 | 0.1− | 0.1+ | 2005 10 08 | A13 | 0.4− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 699 | 0.7− | 1.4+ | 2005 07 31 | 644 | 0.1+ | 0.0 | 2005 11 25 | G96 | 0.0 | 0.2− |
| 2003 03 26 | 699 | 1.3− | 0.0 | 2005 08 24 | 644 | 0.1− | 0.0 | 2005 11 25 | G96 | 0.6+ | 0.6− |
| 2004 05 09 | 608 | 0.6+ | 0.1− | 2005 08 24 | 644 | 0.2− | 0.2− | 2005 11 25 | G96 | 0.6− | 0.3− |
| 2004 05 09 | 608 | 0.1− | 0.7− | 2005 08 24 | 644 | 0.2− | 0.0 | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2004 05 09 | 608 | 0.4+ | 0.3− | 2005 08 25 | 644 | 0.0 | 0.2− | 2005 12 02 | G96 | 0.2− | 0.2− |
| 2004 05 15 | 704 | 0.1+ | 0.4+ | 2005 08 25 | 644 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.1+ | 0.5− |
| 2004 05 15 | 704 | 1.1+ | 0.2− | 2005 08 25 | 644 | 0.1+ | 0.1+ | 2005 12 02 | G96 | 0.3+ | 0.2− |
| 2004 05 15 | 704 | 0.7− | 1.1+ | 2005 08 28 | 185 | 0.9− | 0.4+ | 2005 12 02 | G96 | 0.3− | 0.2− |
| 2004 05 22 | 704 | 0.5− | 0.8+ | 2005 08 29 | 185 | 0.5+ | 0.4+ | 2006 09 30 | G96 | (0.3− | 1.7−) |
| 2004 05 22 | 704 | 0.3− | 0.3+ | 2005 08 29 | 185 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.6+ | 1.2− |
| 2004 05 22 | 704 | 1.0− | 0.3+ | 2005 08 29 | 461 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2004 06 10 | 599 | (1.7− | 0.6+) | 2005 08 29 | 461 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.5+ |
| 2004 06 10 | 599 | 0.6− | 0.3+ | 2005 08 29 | 461 | 0.6− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2004 06 10 | 599 | 1.0− | 0.3+ | 2005 08 29 | 461 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2004 06 10 | 599 | 0.8− | 0.4+ | 2005 08 29 | 461 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.1+ |
| 2004 06 11 | 644 | 0.5+ | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2004 06 11 | 644 | 0.4+ | 0.1− | 2005 08 31 | 691 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 06 11 | 644 | 0.0 | 0.2− | 2005 08 31 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 06 15 | 691 | 0.2+ | 0.1+ | 2005 09 06 | 699 | (2.1+ | 1.1−) | | | | |
| 2004 06 15 | 691 | 0.3+ | 0.1+ | 2005 09 06 | 699 | (2.2+ | 1.2−) | | | | |

**(144826)∗ 2004 JP$_{15}$ = 2000 EO$_{185}$**

Discovered 2004 May 10 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 65798)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.48580 | | (2000.0) | | | |
| $n$ | 0.27048508 | $\omega$ | 88.26672 | | −0.99366578 | +0.09084398 |
| $a$ | 2.3679572 | $\Omega$ | 96.94160 | | −0.10953487 | −0.91448828 |
| $e$ | 0.1166680 | $i$ | 3.82088 | | +0.02510841 | −0.39428234 |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 608 | 0.4− | 1.4− | 2002 12 05 | 704 | 0.1− | 0.7+ | 2004 05 21 | 704 | 0.0 | 0.7+ |
| 2000 03 05 | 608 | 0.7+ | 0.1− | 2002 12 10 | 704 | (2.0− | 0.3−) | 2004 05 21 | 704 | 0.3− | 0.7+ |
| 2000 03 05 | 608 | 0.5+ | 0.2− | 2002 12 10 | 704 | 0.2− | 0.1+ | 2004 05 21 | 704 | 0.2− | 1.1+ |
| 2000 03 12 | 703 | 0.0 | 0.8− | 2002 12 10 | 704 | 0.3− | 1.0+ | 2004 06 18 | 704 | 0.1− | 0.2+ |
| 2000 03 12 | 703 | 0.9− | 1.2+ | 2002 12 10 | 704 | 0.1+ | 0.2+ | 2004 06 18 | 704 | 0.2+ | 0.3− |
| 2000 03 12 | 703 | 0.7− | 1.5+ | 2002 12 10 | 704 | 0.1+ | 0.6+ | 2004 06 18 | 704 | 0.7− | 0.7− |
| 2000 03 12 | 703 | 0.8+ | 0.8+ | 2004 05 10 | 644 | 0.1+ | 0.2+ | 2004 06 18 | 704 | 0.0 | 0.5+ |
| 2000 03 12 | 704 | 0.4+ | 0.5+ | 2004 05 10 | 644 | 0.4+ | 0.5+ | 2005 09 11 | 691 | 0.2− | 0.9+ |
| 2000 03 12 | 704 | 0.5+ | 0.7+ | 2004 05 10 | 644 | 0.3+ | 0.0 | 2005 09 11 | 691 | 0.3− | 0.6+ |
| 2000 03 12 | 704 | 0.1− | 0.5+ | 2004 05 15 | 704 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.5− | 0.6+ |
| 2000 03 12 | 704 | 1.0+ | 0.9+ | 2004 05 15 | 704 | 0.2+ | 1.0+ | 2005 10 01 | G96 | 0.3+ | 0.2+ |
| 2000 03 12 | 704 | 0.4+ | 1.1+ | 2004 05 15 | 704 | 0.3+ | 0.3− | 2005 10 01 | G96 | 0.1+ | 0.2+ |
| 2000 04 08 | 704 | 1.3+ | 0.5+ | 2004 05 15 | 704 | 1.0+ | 0.5+ | 2005 10 01 | G96 | 0.1+ | 0.3+ |
| 2000 04 08 | 704 | 0.3+ | 0.0 | 2004 05 15 | 704 | 0.1− | 0.1− | 2005 10 01 | G96 | 0.5+ | 0.3+ |
| 2000 04 08 | 704 | 0.4− | 0.6+ | 2004 05 17 | 704 | 0.4− | 1.0+ | 2006 11 16 | G96 | 0.4+ | 0.6− |
| 2002 10 29 | 291 | 0.2+ | 0.5+ | 2004 05 17 | 704 | 0.0 | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 10 29 | 291 | 0.6− | 0.5+ | 2004 05 17 | 704 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 10 29 | 291 | 0.5− | 0.3+ | 2004 05 17 | 704 | 0.2+ | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2002 11 28 | 599 | (1.9+ | 0.1−) | 2004 05 20 | 599 | 0.0 | 0.5+ | 2006 11 28 | G96 | 0.2+ | 0.2− |
| 2002 11 28 | 599 | (2.0+ | 0.5+) | 2004 05 20 | 599 | 0.1+ | 0.4+ | 2006 11 28 | G96 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.8+ | 2004 05 20 | 599 | 0.3+ | 0.4+ | 2006 11 28 | G96 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.7+ | 2004 05 21 | 599 | 0.1+ | 0.5+ | 2006 11 28 | G96 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.9+ | 2004 05 21 | 704 | 0.3+ | 0.3+ | | | | |

**(144827)∗ 2004 JF$_{16}$**

Discovered 2004 May 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 178.70873 | | (2000.0) | | | |
| $n$ | 0.18956067 | $\omega$ | 2.57365 | | −0.87070632 | +0.48848686 |
| $a$ | 3.0012619 | $\Omega$ | 206.90439 | | −0.45344155 | −0.84226610 |
| $e$ | 0.0750998 | $i$ | 7.23890 | | −0.19042392 | −0.22796581 |
| $P$ | 5.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 02 | 691 | 0.1+ | 0.3− | 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 1996 12 02 | 691 | 0.7− | 0.6− | 2004 05 19 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 1996 12 02 | 691 | 0.4+ | 0.1− | 2005 07 08 | 691 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2001 10 25 | 644 | 0.2+ | 0.9+ | 2005 07 08 | 691 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2001 10 25 | 644 | 0.4+ | 1.1+ | 2005 07 08 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2001 10 25 | 644 | 0.1+ | 1.3+ | 2005 07 30 | 644 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2005 07 30 | 644 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.2+ | 0.4+ | 2005 07 30 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 0.2− | 2005 08 24 | 644 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2005 08 24 | 644 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2005 08 24 | 644 | 0.8− | 0.4− | 2006 11 10 | 691 | 0.5− | 0.2+ |
| 2004 04 25 | 691 | 0.6− | 0.6+ | 2005 09 03 | 644 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2004 04 25 | 691 | 0.2+ | 0.3+ | 2005 09 03 | 644 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2004 05 11 | 699 | 0.0 | 1.2+ | 2005 09 03 | 644 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.1+ |
| 2004 05 11 | 699 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.7+ | 0.6+ |
| 2004 05 11 | 699 | 0.4+ | 0.6− | 2006 09 25 | G96 | 0.5− | 0.2− | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2004 05 11 | 699 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.4− | 0.1− |
| 2004 05 15 | 704 | 0.4+ | 0.6− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 2004 05 15 | 704 | 0.2− | 1.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.4+ |
| 2004 05 15 | 704 | 0.4+ | 0.8+ | 2006 10 12 | 691 | 0.3+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2004 05 19 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | | | | |

**(144828)∗ 2004 JL$_{16}$**

Discovered 2004 May 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 182.52489 | | (2000.0) | | | |
| $n$ | 0.21569420 | $\omega$ | 35.39132 | | −0.56310265 | +0.82503273 |
| $a$ | 2.7536606 | $\Omega$ | 200.46694 | | −0.78593884 | −0.55234768 |
| $e$ | 0.1602273 | $i$ | 7.77277 | | −0.25537337 | −0.11930227 |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 05 10 | 703 | 0.8+ | 1.4− | 2004 06 06 | 703 | 0.8− | 0.7+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 05 10 | 703 | (2.2+ | 0.0 ) | 2004 06 06 | 703 | 0.9− | 0.6+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 05 11 | 699 | 0.7− | 0.2+ | 2004 06 06 | 703 | (0.3+ | 1.6+) |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 05 11 | 699 | 0.2− | 0.2+ | 2004 06 06 | 703 | (0.1+ | 1.6+) |
| 2001 10 25 | 644 | 0.1− | 0.8+ | 2004 05 11 | 699 | 0.3− | 0.0 | 2005 08 03 | 644 | 0.1− | 0.3+ |
| 2001 10 25 | 644 | 0.1− | 1.1+ | 2004 05 11 | 699 | 0.2− | 0.7+ | 2005 08 03 | 644 | 0.3− | 0.1+ |
| 2001 10 25 | 644 | 0.3− | 0.6+ | 2004 05 12 | 699 | 0.1− | 0.5+ | 2005 08 03 | 644 | 0.4− | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2004 05 12 | 699 | 0.4+ | 0.4+ | 2005 09 22 | 644 | 0.5− | 0.2+ |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2004 05 12 | 699 | 0.6+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.2− | 0.0 | 2004 05 12 | 699 | 0.3+ | 0.3+ | 2005 09 22 | 644 | 0.1+ | 0.3+ |
| 2004 04 19 | 704 | 0.1− | 0.1+ | 2004 05 15 | 704 | 0.1+ | 0.7+ | 2005 10 30 | G96 | 0.2− | 0.0 |
| 2004 04 19 | 704 | 0.1− | 0.3− | 2004 05 15 | 704 | 0.5+ | 0.2+ | 2005 10 30 | G96 | 0.1+ | 0.2+ |
| 2004 04 19 | 704 | 0.3+ | 0.0 | 2004 05 15 | 704 | 0.6+ | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.1− |
| 2004 04 19 | 704 | 0.3+ | 0.5− | 2004 05 15 | 704 | 0.5+ | 0.6+ | 2005 10 30 | G96 | 0.3+ | 0.1− |
| 2004 04 19 | 704 | 0.3− | 0.4+ | 2004 05 15 | 704 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2004 04 22 | 704 | (0.1+ | 3.0+) | 2004 05 18 | 704 | 0.3+ | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 04 22 | 704 | (0.1+ | 2.2+) | 2004 05 18 | 704 | 0.6+ | 1.2+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2004 04 22 | 704 | (1.8+ | 1.8+) | 2004 05 18 | 704 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2004 04 22 | 704 | 1.1+ | 0.1+ | 2004 05 18 | 704 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 04 28 | 608 | 0.5− | 0.3− | 2004 05 18 | 704 | 0.3+ | 1.2+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2004 04 28 | 608 | 0.7− | 0.7− | 2004 05 22 | 704 | 0.0 | 0.7+ | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2004 04 28 | 608 | 0.6− | 0.6− | 2004 05 22 | 704 | 0.1− | 0.6+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2004 05 10 | 703 | 0.6− | 1.4− | 2004 05 22 | 704 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2004 05 10 | 703 | 0.7+ | 1.3− | 2004 05 22 | 704 | 0.2− | 0.6+ | | | | |

**(144829)∗ 2004 JV$_{16}$ = 2000 JQ$_{93}$ = 2002 XH$_{104}$**

Discovered 2004 May 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 65800), A. Doppler (*MPO* 76468)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.04664 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24248200 | $\omega$ | 108.14665 | | −0.93490876 | | −0.35151379 |
| $a$ | 2.5469263 | $\Omega$ | 51.30255 | | +0.29735723 | | −0.85099480 |
| $e$ | 0.1216388 | $i$ | 3.58658 | | +0.19371188 | | −0.39018702 |
| $P$ | 4.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 06 | 704 | 0.1+ | 0.4+ | 2004 05 11 | 699 | 0.4+ | 0.6− | 2005 08 30 | 644 | 0.1− | 0.3+ |
| 2000 05 06 | 704 | 0.1− | 1.7+ | 2004 05 15 | 704 | 0.2+ | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2000 05 06 | 704 | 0.1+ | 0.9+ | 2004 05 15 | 704 | 0.7+ | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2000 05 07 | 704 | 0.1− | 0.3+ | 2004 05 15 | 704 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2000 05 07 | 704 | 0.4− | 0.3− | 2004 05 15 | 704 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2000 05 07 | 704 | 0.8− | 0.2+ | 2004 05 15 | 704 | 0.1− | 0.5− | 2006 10 29 | G96 | 0.2+ | 0.4− |
| 2000 05 28 | 704 | 0.4+ | 0.3+ | 2004 05 16 | 691 | 0.1− | 0.0 | 2006 10 29 | G96 | 0.1− | 0.2− |
| 2000 05 28 | 704 | 0.1+ | 0.5+ | 2004 05 16 | 691 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.2− | 0.1− |
| 2000 05 28 | 704 | 0.7+ | 0.9+ | 2004 05 16 | 704 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.7− | 0.8+ |
| 2000 05 28 | 704 | 0.1− | 0.2+ | 2004 05 16 | 704 | 0.7− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2000 05 28 | 704 | 0.7+ | 1.9+ | 2004 05 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.5+ | 0.6+ | 2004 05 16 | 704 | 0.6− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.5+ | 2004 05 16 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 703 | (1.7+ | 0.0 ) |
| 2002 12 05 | 704 | 0.5− | 0.1+ | 2004 05 19 | 691 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.3− | 0.9− |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2004 05 19 | 691 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.3− | 0.6− |
| 2002 12 10 | 704 | 0.7− | 0.0 | 2004 05 19 | 691 | 0.4+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 12 10 | 704 | 0.2+ | 0.9+ | 2004 06 07 | 699 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.7+ | 1.3− |
| 2002 12 10 | 704 | 1.2+ | 1.0+ | 2004 06 07 | 699 | 0.9− | 0.0 | 2006 11 15 | 691 | 0.6− | 0.8+ |
| 2002 12 10 | 704 | 0.1− | 0.5+ | 2004 06 07 | 699 | (1.6+ | 1.3+) | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2004 04 25 | 704 | 0.0 | 0.7+ | 2004 06 07 | 699 | 0.5− | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.8− |
| 2004 04 25 | 704 | 0.9− | 0.4− | 2005 07 28 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2004 04 25 | 704 | 0.8− | 0.4− | 2005 07 28 | 644 | 0.2− | 0.8+ | 2006 11 21 | 704 | 1.4− | 0.7+ |
| 2004 05 11 | 699 | 0.2+ | 0.4− | 2005 07 28 | 644 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2004 05 11 | 699 | 0.6+ | 0.3− | 2005 08 30 | 644 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2004 05 11 | 699 | 0.8− | 0.3− | 2005 08 30 | 644 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |

**(144830)∗ 2004 JQ$_{17}$**

Discovered 2004 May 12 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.40991 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18063135 | $\omega$ | 304.49181 | | −0.99575500 | | −0.07429175 |
| $a$ | 3.0993739 | $\Omega$ | 231.30927 | | +0.08885477 | | −0.92991329 |
| $e$ | 0.2230623 | $i$ | 3.99204 | | −0.02401699 | | −0.36019719 |
| $P$ | 5.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.1+ | 0.1− | 2004 04 25 | 704 | 0.5+ | 0.0 | 2004 06 11 | 691 | 0.2+ | 0.1+ |
| 1996 11 08 | 691 | 0.4+ | 0.2− | 2004 04 25 | 704 | 0.6+ | 0.1+ | 2004 06 11 | 691 | 0.2+ | 0.1+ |
| 1998 03 03 | 704 | (1.8+ | 2.4+) | 2004 04 27 | 704 | (2.2− | 0.1−) | 2004 06 11 | 691 | 0.0 | 0.2− |
| 1998 03 03 | 704 | 1.6+ | 0.4− | 2004 04 27 | 704 | 1.5− | 0.8+ | 2004 06 14 | 704 | 0.6− | 0.0 |
| 1998 03 03 | 704 | 1.7+ | 1.7+ | 2004 04 27 | 704 | 0.5+ | 0.3+ | 2004 06 14 | 704 | 1.4− | 1.1+ |
| 1998 03 03 | 704 | 0.7+ | 0.5+ | 2004 05 12 | E12 | 0.0 | 0.4− | 2004 06 14 | 704 | 0.3+ | 0.2+ |
| 1998 03 03 | 704 | (0.4+ | 2.5+) | 2004 05 12 | E12 | 0.4+ | 0.3+ | 2004 06 14 | 704 | 1.3+ | 1.0− |
| 1998 03 04 | 704 | 1.2− | 0.2− | 2004 05 12 | E12 | 0.1− | 1.0+ | 2004 06 14 | 704 | 0.5− | 1.1+ |
| 1998 03 04 | 704 | 0.7− | 0.2− | 2004 05 12 | E12 | 0.2− | 0.6+ | 2004 06 17 | 691 | 0.5+ | 0.0 |
| 1998 03 04 | 704 | 1.7− | 0.6+ | 2004 05 15 | 704 | 0.1+ | 0.3− | 2004 06 17 | 691 | 0.2+ | 0.1− |
| 1998 03 04 | 704 | 1.5− | 0.5+ | 2004 05 15 | 704 | 0.2− | 0.2+ | 2004 06 17 | 691 | 0.0 | 0.1+ |
| 2000 08 27 | 807 | 0.3− | 0.4− | 2004 05 15 | 704 | 0.1− | 0.2+ | 2005 07 09 | 691 | 0.1+ | 0.1− |
| 2000 08 27 | 807 | 0.1+ | 0.1− | 2004 05 15 | 704 | 0.1− | 0.2− | 2005 07 09 | 691 | 0.2− | 0.0 |
| 2001 10 15 | 691 | 0.3+ | 0.4+ | 2004 05 15 | 704 | 0.3+ | 0.1− | 2005 07 09 | 691 | 0.1− | 0.2− |
| 2001 10 15 | 691 | 0.3+ | 0.5+ | 2004 05 16 | 704 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.5+ |
| 2001 10 15 | 691 | 0.4+ | 0.1+ | 2004 05 16 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.1− |
| 2001 10 26 | 691 | 0.2− | 0.3+ | 2004 05 16 | 704 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2001 10 26 | 691 | 0.3− | 0.3+ | 2004 05 16 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.5− | 0.2+ |
| 2001 10 26 | 691 | 0.3− | 0.2+ | 2004 05 19 | 704 | 0.4− | 0.4− | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 2004 04 17 | 704 | (2.2+ | 3.6−) | 2004 05 19 | 704 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.3− |
| 2004 04 17 | 704 | 0.7− | 1.3− | 2004 05 19 | 704 | 0.8− | 0.9+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2004 04 17 | 704 | 0.3− | 0.6+ | 2004 05 19 | 704 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.8− |
| 2004 04 25 | 704 | 0.2− | 0.6− | 2004 06 06 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.6− |
| 2004 04 25 | 704 | 1.1+ | 0.6− | 2004 06 06 | 644 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2004 04 25 | 704 | 0.6+ | 0.2+ | 2004 06 06 | 644 | 0.1− | 0.1+ | | | | |

**(144831)∗ 2004 JN$_{21}$ = 2001 WQ$_{53}$**

Discovered 2004 May 9 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65804)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.44305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18679548 | $\omega$ | 135.74241 | | −0.99287548 | | −0.00228333 |
| $a$ | 3.0308083 | $\Omega$ | 44.54495 | | −0.05837804 | | −0.86228200 |
| $e$ | 0.0583981 | $i$ | 9.77829 | | +0.10387632 | | −0.50642329 |
| $P$ | 5.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 691 | 1.0− | 0.4+ | 2004 04 12 | 291 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2001 10 21 | 691 | 0.4− | 0.3+ | 2004 04 12 | 291 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.4− | 0.0 |
| 2001 10 21 | 691 | 0.6− | 0.4+ | 2004 04 28 | 291 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2001 11 19 | 704 | 0.4+ | 1.1+ | 2004 04 28 | 291 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 11 19 | 704 | 0.6+ | 0.6+ | 2004 04 28 | 291 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 11 19 | 704 | 0.0 | 1.2+ | 2004 05 09 | 691 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 0.3+ | 0.9+ | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.7− | 0.1− |
| 2001 11 21 | 704 | 0.4− | 0.4+ | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2001 11 21 | 704 | 0.2+ | 0.4+ | 2004 05 16 | 704 | 1.0+ | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.6− |
| 2001 11 21 | 704 | 1.2+ | 0.4+ | 2004 05 16 | 704 | 0.9+ | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.8+ | 0.5+ | 2004 05 16 | 704 | 0.4+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2004 05 16 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.5+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2004 05 23 | 926 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.5− | 0.7+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2004 05 23 | 926 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.7+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2004 05 23 | 926 | 0.2− | 0.2+ | | | | |
| 2004 04 12 | 291 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.9− | 0.1− | | | | |

**(144832)∗ 2004 JE$_{23}$**

Discovered 2004 May 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.09231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18432427 | $\omega$ | 173.26871 | | −0.18931566 | | +0.98106473 |
| $a$ | 3.0578372 | $\Omega$ | 85.81271 | | −0.90279114 | | −0.15753373 |
| $e$ | 0.1051797 | $i$ | 2.34946 | | −0.38617062 | | −0.11267262 |
| $P$ | 5.35 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 691 | 0.1+ | 0.2+ | 2004 05 15 | 704 | (0.6− | 2.8+) | 2005 11 06 | G96 | 1.5+ | 0.1− |
| 2000 09 30 | 691 | 0.0 | 0.2+ | 2004 05 16 | 704 | 0.2− | 0.7+ | 2005 11 06 | G96 | 0.0 | 0.9− |
| 2000 09 30 | 691 | 0.1− | 0.0 | 2004 05 16 | 704 | 0.3+ | 0.2+ | 2005 11 06 | G96 | 0.7+ | 0.1+ |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2004 05 16 | 704 | 0.3− | 0.1− | 2005 11 06 | G96 | 0.3− | 0.4− |
| 2001 11 20 | 704 | 0.1+ | 0.7− | 2004 05 16 | 704 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.3− | 0.1+ |
| 2001 11 20 | 704 | 0.7− | 0.6− | 2004 05 21 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.4− | 2004 05 21 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 2003 02 24 | 608 | 0.0 | 0.7+ | 2004 05 21 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.5+ |
| 2003 02 24 | 608 | 0.6+ | 0.2+ | 2004 06 13 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.4+ |
| 2003 02 24 | 608 | 0.3+ | 0.7+ | 2004 06 13 | 691 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.4− | 0.6+ |
| 2004 04 12 | 691 | 0.5+ | 0.1+ | 2004 06 13 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.1− | 2005 08 05 | 644 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 2004 04 12 | 691 | 0.1− | 0.3+ | 2005 08 05 | 644 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2004 04 17 | 704 | 0.1− | 1.0− | 2005 08 05 | 644 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2004 04 17 | 704 | 0.1− | 0.3− | 2005 08 05 | 644 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2004 04 17 | 704 | 0.0 | 0.5− | 2005 08 05 | 644 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2004 04 17 | 704 | 0.4+ | 0.2+ | 2005 08 05 | 644 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.7+ | 0.1+ |
| 2004 05 13 | 691 | 0.1+ | 0.3+ | 2005 08 27 | 644 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.5+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 691 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2004 05 13 | 691 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2004 05 15 | 704 | 0.9+ | 1.5+ | 2005 08 29 | 704 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.0 |
| 2004 05 15 | 704 | (0.3− | 1.9+) | 2005 08 29 | 704 | 0.5+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2004 05 15 | 704 | 0.1− | 1.0+ | 2005 08 29 | 704 | 1.2− | 0.6+ | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 2004 05 15 | 704 | (0.4− | 3.5+) | 2005 08 29 | 704 | 0.1+ | 0.6+ | 2006 11 13 | G96 | 0.5+ | 0.1+ |

**(144833)∗ 2004 JM$_{24}$ = 2005 PD$_{11}$**

Discovered 2004 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 86510)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.61350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19750034 | $\omega$ | 195.01442 | | −0.19988555 | +0.97950736 | |
| $a$ | 2.9202777 | $\Omega$ | 63.46049 | | −0.89609513 | −0.17254283 | |
| $e$ | 0.0984100 | $i$ | 1.58341 | | −0.39630705 | −0.10389564 | |
| $P$ | 4.99 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.0 | 0.3− | 2004 05 27 | 691 | 0.2+ | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 1996 11 17 | 691 | 0.4+ | 0.2− | 2005 07 12 | G96 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.3+ |
| 1996 11 17 | 691 | 0.1− | 0.0 | 2005 07 12 | G96 | 0.7− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2001 10 21 | 291 | 0.2− | 0.5+ | 2005 07 12 | G96 | 0.7− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2001 10 21 | 291 | 0.0 | 0.8+ | 2005 07 12 | G96 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2001 10 21 | 291 | 0.2− | 0.6+ | 2005 08 04 | 644 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2001 11 21 | 704 | 1.0+ | 1.3+ | 2005 08 04 | 644 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 0.2+ | 0.4+ | 2005 08 04 | 644 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.1− | 2005 08 05 | 644 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2001 11 21 | 704 | 0.9− | 0.8+ | 2005 08 05 | 644 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 12 10 | 291 | 0.2− | 0.2− | 2005 08 05 | 644 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2001 12 10 | 291 | 0.1− | 0.8+ | 2005 11 06 | G96 | 0.5− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 12 10 | 291 | 0.5− | 0.2+ | 2005 11 06 | G96 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2004 05 12 | 699 | 0.1+ | 0.4+ | 2005 11 06 | G96 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2004 05 12 | 699 | (1.0− | 2.0+) | 2005 11 06 | G96 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2004 05 12 | 699 | 1.2+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2004 05 12 | 699 | 0.4+ | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2004 05 15 | 704 | 0.4+ | 1.1+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.3+ | 0.2+ |
| 2004 05 15 | 704 | 0.7+ | 1.0+ | 2006 10 02 | G96 | 1.0− | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2004 05 15 | 704 | 0.9+ | 1.4+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.5− | 0.7+ |
| 2004 05 15 | 704 | 0.0 | 1.4+ | 2006 10 12 | 691 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.8+ | 0.5− |
| 2004 05 16 | 704 | 0.1+ | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.6+ | 0.0 |
| 2004 05 16 | 704 | 0.9+ | 0.8+ | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.9− |
| 2004 05 16 | 704 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.9− |
| 2004 05 27 | 691 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.5− | 0.3+ | | | | |
| 2004 05 27 | 691 | 0.2+ | 0.7+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | | | | |

**(144834)∗ 2004 JR$_{24}$**

Discovered 2004 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.97715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22779858 | $\omega$ | 287.70819 | | −0.91605974 | −0.37537041 | |
| $a$ | 2.6552294 | $\Omega$ | 230.48933 | | +0.40071167 | −0.87099683 | |
| $e$ | 0.1313766 | $i$ | 10.54408 | | −0.01626995 | −0.31695675 | |
| $P$ | 4.33 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.7− | 0.4+ | 2004 06 07 | 699 | 1.1− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2003 01 02 | 704 | 0.4+ | 0.3+ | 2004 06 07 | 699 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2003 01 02 | 704 | 0.3− | 0.7− | 2004 06 07 | 699 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2003 01 11 | 644 | 0.4+ | 0.8+ | 2004 06 07 | 699 | 1.3+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2003 01 11 | 644 | 0.4+ | 0.7+ | 2004 06 15 | 691 | 0.5− | 0.2+ | 2006 11 17 | 703 | (0.3− | 1.9−) |
| 2003 01 11 | 644 | 0.1+ | 0.5+ | 2004 06 15 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2004 04 17 | 704 | 1.1− | 0.2− | 2004 06 15 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.7− |
| 2004 04 17 | 704 | 1.3+ | 0.3+ | 2005 08 29 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2004 04 17 | 704 | 0.1+ | 0.1+ | 2005 08 29 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.2+ |
| 2004 04 17 | 704 | 0.4− | 0.3+ | 2005 08 29 | 644 | 0.6− | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2004 04 26 | 699 | 0.1− | 1.4− | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2004 04 26 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.3+ | 1.2+ |
| 2004 04 26 | 699 | 0.5+ | 0.4− | 2006 10 17 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 1.0+ | 0.7+ |
| 2004 04 26 | 699 | 0.8+ | 0.9+ | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2004 05 15 | 704 | 0.1− | 1.0+ | 2006 11 08 | 644 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2004 05 15 | 704 | 1.2+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2004 05 15 | 704 | 0.2+ | 1.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2004 05 15 | 704 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 2004 05 15 | 704 | 0.8+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2004 05 16 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.9+ |
| 2004 05 16 | 704 | 1.3− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.9− | 1.3+ |
| 2004 05 16 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2004 05 19 | 704 | 0.4− | 1.1+ | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.6− | 1.5+ |
| 2004 05 19 | 704 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.9− | 2006 11 27 | 703 | 1.7− | 1.0+ |
| 2004 05 19 | 704 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.4+ | 1.1+ |
| 2004 05 19 | 704 | 0.1+ | 1.4+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 27 | 703 | (5.3− | 0.0 ) |

**(144835)∗ 2004 JC$_{26}$**

Discovered 2004 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.63710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18031017 | $\omega$ | 22.17513 | | −0.14230172 | +0.96108359 | |
| $a$ | 3.1030533 | $\Omega$ | 240.36146 | | −0.94413363 | −0.20363385 | |
| $e$ | 0.1884176 | $i$ | 15.80906 | | −0.29725731 | +0.18668579 | |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 28 | 691 | 0.3+ | 0.0 | 2004 05 18 | 704 | 0.5− | 0.4− | 2005 10 28 | 703 | (2.2− | 0.1+) |
| 1995 11 28 | 691 | 0.5− | 0.5− | 2004 06 07 | 699 | 0.7+ | 0.0 | 2005 10 28 | 703 | 0.2− | 0.2− |
| 1995 11 28 | 691 | 0.1+ | 0.0 | 2004 06 07 | 699 | 1.0− | 0.7+ | 2005 10 28 | 703 | 0.3+ | 0.6+ |
| 2004 04 25 | 704 | 0.4− | 0.5+ | 2004 06 07 | 699 | 0.5+ | 0.1+ | 2005 10 28 | 703 | 1.3− | 0.5− |
| 2004 04 25 | 704 | 1.1+ | 0.4+ | 2004 06 07 | 699 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.2− |
| 2004 04 25 | 704 | 0.0 | 1.2+ | 2004 06 09 | E12 | 0.2− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2004 04 25 | 704 | 0.0 | 0.5− | 2004 06 09 | E12 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 2004 04 25 | 704 | 0.2− | 0.9+ | 2004 06 09 | E12 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.8− |
| 2004 05 15 | 704 | 1.0− | 1.1− | 2004 06 09 | E12 | 0.5− | 0.5− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2004 05 15 | 704 | 1.3− | 0.4+ | 2004 06 14 | 704 | (2.5+ | 1.0+) | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2004 05 15 | 704 | 0.8+ | 0.2+ | 2004 06 14 | 704 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.4+ | 0.2− |
| 2004 05 15 | 704 | 0.6+ | 0.6− | 2004 06 14 | 704 | 1.1+ | 0.7− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2004 05 16 | 704 | 0.1+ | 0.9− | 2004 06 14 | 704 | 0.6+ | 0.8− | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2004 05 16 | 704 | 0.2− | 0.6− | 2004 06 25 | 703 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2004 05 16 | 704 | 0.4+ | 0.1+ | 2004 06 25 | 703 | 0.9− | 0.9+ | 2006 11 18 | 691 | 0.1− | 0.3− |
| 2004 05 16 | 704 | 0.4− | 0.4− | 2004 06 25 | 703 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.4− |
| 2004 05 16 | E12 | 0.5+ | 0.7− | 2004 06 25 | 703 | 0.6− | 0.7+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2004 05 16 | E12 | 0.2+ | 0.5− | 2005 09 30 | 644 | 0.1− | 0.8+ | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2004 05 16 | E12 | 0.4− | 0.6− | 2005 09 30 | 644 | 0.3+ | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2004 05 16 | E12 | 0.2+ | 0.2− | 2005 09 30 | 644 | 0.4+ | 0.4+ | 2006 11 22 | 691 | 1.0− | 0.3− |
| 2004 05 18 | 704 | 0.4− | 0.0 | 2005 10 07 | 703 | 0.7+ | 0.9− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2004 05 18 | 704 | 0.8+ | 0.2+ | 2005 10 07 | 703 | 0.1− | 0.6− | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2004 05 18 | 704 | 0.1+ | 0.4− | 2005 10 07 | 703 | (2.8+ | 0.7−) | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 05 18 | 704 | 0.2− | 0.3− | 2005 10 07 | 703 | (1.0− | 2.0+) | 2006 11 24 | G96 | 0.1+ | 0.3− |

**(144836)∗ 2004 JR$_{28}$**

Discovered 2004 May 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.49334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22480628 | $\omega$ | 213.53933 | | +0.48744693 | −0.86812459 | |
| $a$ | 2.6787391 | $\Omega$ | 207.63293 | | +0.83888552 | +0.49534693 | |
| $e$ | 0.1910172 | $i$ | 11.63886 | | +0.24221183 | +0.03148194 | |
| $P$ | 4.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 1.7+ | 1.8− | 2006 09 20 | 704 | 0.8+ | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 1997 10 30 | 704 | 1.0− | 0.7+ | 2006 09 20 | 704 | 0.5+ | 0.3− | 2006 10 28 | 683 | (1.8+ | 0.8−) |
| 1997 10 30 | 704 | 0.2− | 0.8− | 2006 09 20 | 704 | 0.5+ | 0.2− | 2006 10 28 | 683 | (2.4+ | 0.2−) |
| 1997 10 30 | 704 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 28 | 683 | 0.5+ | 0.8− |
| 1997 10 30 | 704 | 0.3− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.3− | 0.3− | 2006 09 27 | 704 | (1.5+ | 1.0+) | 2006 11 10 | 644 | 0.3+ | 0.0 |
| 2002 12 14 | 704 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.8+ | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2003 01 02 | 704 | 0.4− | 0.1− | 2006 09 27 | 704 | (2.1+ | 0.3−) | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2003 01 02 | 704 | 0.9− | 0.0 | 2006 09 27 | 704 | 0.3− | 1.0+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2003 01 02 | 704 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.9+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2003 01 02 | 704 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2003 01 28 | 704 | 0.7+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2003 01 28 | 704 | 0.5+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2003 01 28 | 704 | 0.7+ | 0.6− | 2006 10 15 | 691 | 0.1+ | 0.6− | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2003 01 28 | 704 | 0.6+ | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2004 04 21 | 704 | 0.3+ | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 2004 04 21 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 14 | 704 | 0.0 | 0.3− |
| 2004 04 21 | 704 | 0.7+ | 1.3+ | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.4− | 0.7+ |
| 2004 04 21 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.5+ | 2006 11 14 | 704 | 0.5+ | 0.4+ |
| 2004 05 13 | 691 | 0.4− | 0.7+ | 2006 10 16 | 703 | 1.1− | 0.6+ | 2006 11 14 | 704 | 0.8− | 0.7− |
| 2004 05 13 | 691 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.4− | 0.6+ |
| 2004 05 13 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.6+ | 1.1+ |
| 2004 05 17 | 704 | 1.2+ | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.4+ |
| 2004 05 17 | 704 | 0.9+ | 1.3+ | 2006 10 22 | 704 | (1.5+ | 0.5+) | 2006 11 17 | 704 | 0.6− | 0.4+ |
| 2004 05 17 | 704 | 0.8+ | 1.4+ | 2006 10 22 | 704 | 0.0 | 0.0 | 2006 11 17 | 704 | 1.0− | 0.3+ |
| 2004 05 21 | 621 | 0.0 | 0.3+ | 2006 10 22 | 704 | 0.2− | 0.6+ | 2006 11 19 | 703 | 0.8− | 0.0 |
| 2004 05 21 | 621 | 0.2+ | 0.3− | 2006 10 22 | 704 | 0.5− | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.2+ |
| 2004 05 21 | 621 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.3− | 0.6− |
| 2004 05 29 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.6− | 0.3+ |
| 2004 05 29 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2004 05 29 | 691 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.8− | 0.0 |
| 2006 08 25 | 704 | 0.7− | 1.3+ | 2006 10 23 | 644 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2006 08 25 | 704 | 0.2+ | 1.4+ | 2006 10 23 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.2+ |
| 2006 08 25 | 704 | 0.1+ | 1.1+ | 2006 10 26 | 704 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2006 08 25 | 704 | 0.0 | 1.4+ | 2006 10 26 | 704 | 1.0− | 0.3− | 2006 11 20 | 704 | 0.5− | 0.0 |
| 2006 08 29 | 703 | 0.6− | 0.3+ | 2006 10 26 | 704 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2006 08 29 | 703 | 0.5− | 0.0 | 2006 10 27 | 704 | 0.2+ | 1.0+ | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 10 27 | 704 | (0.5+ | 2.9+) | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2006 08 29 | 703 | 0.6− | 0.3− | 2006 10 27 | 704 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.2− | 0.5− |
| 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 683 | 0.4+ | 0.5− | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2006 09 17 | 704 | 0.4− | 0.3− | 2006 10 27 | 704 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2006 09 17 | 704 | 0.9+ | 0.4− | 2006 10 27 | 704 | 0.2− | 1.4+ | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2006 09 17 | 704 | 0.1− | 0.5− | 2006 10 27 | 683 | 0.1+ | 0.1+ | 2006 11 25 | 704 | 2.9+ | 0.9− |
| 2006 09 17 | 704 | 1.2+ | 0.3− | 2006 10 27 | 683 | 0.1+ | 0.9+ | 2006 11 25 | 704 | 1.1+ | 1.6+ |
| 2006 09 20 | 704 | 0.7+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 25 | 704 | 1.7+ | 2.1+ |
| 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | | | | |

**(144837)∗ 2004 JG$_{29}$ = 2001 YQ$_{27}$**

Discovered 2004 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65812)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 116.27450 | | (2000.0) | **P** | **Q** |
| $n$ | 0.18315228 | $\omega$ | 201.68069 | +0.19368787 | +0.97377203 |
| $a$ | 3.0708681 | $\Omega$ | 79.64432 | −0.88133286 | +0.22616294 |
| $e$ | 0.0737052 | $i$ | 6.97077 | −0.43097262 | −0.02486700 |
| $P$ | 5.38 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 25 | 691 | 0.3+ | 0.2− | 2004 05 15 | 704 | 0.4+ | 0.1+ | 2005 08 30 | 699 | 0.5− | 0.1+ |
| 1995 11 25 | 691 | 0.2+ | 0.4− | 2004 05 15 | 704 | 0.1− | 1.0+ | 2005 08 30 | 699 | 1.0− | 0.2+ |
| 1995 11 25 | 691 | 0.1− | 0.2− | 2004 05 15 | 704 | 0.7− | 0.5+ | 2005 08 30 | 699 | 0.4− | 0.7+ |
| 2000 10 01 | 699 | 0.8− | 1.3+ | 2004 05 15 | 599 | 0.2+ | 0.0 | 2005 08 30 | 699 | 0.2− | 0.3− |
| 2000 10 01 | 699 | 0.1+ | 0.5+ | 2004 05 15 | 599 | 0.0 | 0.1+ | 2005 09 01 | 644 | 0.1− | 0.1+ |
| 2000 10 01 | 699 | 0.2+ | 0.8+ | 2004 05 17 | 704 | 0.0 | 0.5+ | 2005 09 01 | 644 | 0.0 | 0.5+ |
| 2000 10 01 | 699 | 0.2+ | 0.1+ | 2004 05 17 | 704 | 0.3− | 0.1− | 2005 09 01 | 644 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.9+ | 0.2+ | 2004 05 17 | 704 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.2− | 0.3+ | 2004 05 21 | 704 | 0.6+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2001 12 18 | 704 | 0.0 | 0.6+ | 2004 05 21 | 704 | 0.8− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | 0.1− | 1.1+ | 2004 05 21 | 704 | (0.6+ | 1.6+) | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 1.0− | 0.5+ | 2004 05 21 | 704 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.4+ |
| 2001 12 18 | 704 | 0.7− | 0.6+ | 2004 06 17 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2001 12 18 | 704 | 0.5− | 0.4+ | 2004 06 17 | 691 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2001 12 19 | 704 | 0.4− | 0.4+ | 2004 06 17 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2001 12 19 | 704 | 0.2− | 0.5+ | 2005 07 27 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1+ | 1.3− |
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2005 07 27 | 644 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2001 12 19 | 704 | 0.1+ | 1.0+ | 2005 07 27 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.1− |
| 2001 12 19 | 704 | 0.6+ | 0.7+ | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2003 02 21 | 644 | 0.2+ | 1.3+ | 2005 08 04 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2003 02 21 | 644 | 0.6+ | 1.5+ | 2005 08 04 | 644 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2003 02 21 | 644 | (1.2+ | 1.8+) | 2005 08 28 | 615 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2004 05 15 | 704 | 0.7+ | 0.4− | 2005 08 28 | 615 | 0.2+ | 0.5+ | | | | |
| 2004 05 15 | 704 | 0.9+ | 1.2+ | 2005 08 28 | 615 | 0.7− | 0.4− | | | | |

**(144838)∗ 2004 JM$_{30}$ = 2001 SO$_{320}$**

Discovered 2004 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65812)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 198.46263 | | (2000.0) | **P** | **Q** |
| $n$ | 0.25982301 | $\omega$ | 159.74186 | +0.10434476 | +0.99305952 |
| $a$ | 2.4323028 | $\Omega$ | 116.21479 | −0.92060254 | +0.11708917 |
| $e$ | 0.1999279 | $i$ | 3.46789 | −0.37630192 | −0.01108691 |
| $P$ | 3.79 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 704 | 0.2+ | 0.1+ | 2004 05 15 | 704 | 0.2+ | 0.5+ | 2004 06 18 | 704 | (1.6+ | 0.4−) |
| 2000 04 04 | 704 | 0.2+ | 0.6− | 2004 05 15 | 704 | 0.4+ | 1.0+ | 2004 06 18 | 704 | 1.0− | 0.6− |
| 2000 04 04 | 704 | 0.5− | 0.8− | 2004 05 17 | 704 | 0.2+ | 0.1− | 2004 07 14 | E12 | 1.0− | 0.9+ |
| 2000 04 27 | 699 | 0.3+ | 0.5+ | 2004 05 17 | 704 | 0.2+ | 0.2− | 2004 07 14 | E12 | 0.6− | 0.2− |
| 2000 04 27 | 699 | 0.7+ | 1.2+ | 2004 05 17 | 704 | 0.3+ | 0.3− | 2004 07 14 | E12 | 0.1+ | 0.5+ |
| 2000 04 27 | 699 | 0.4+ | 0.6+ | 2004 05 17 | 704 | 0.4+ | 0.1+ | 2004 07 14 | E12 | 0.3− | 0.1− |
| 2000 04 27 | 699 | 0.0 | 0.9+ | 2004 05 17 | 704 | 0.8+ | 0.3+ | 2005 10 25 | 691 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2004 05 20 | 691 | 0.0 | 0.4+ | 2005 10 25 | 691 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.1− | 0.8+ | 2004 05 20 | 691 | 0.0 | 0.4+ | 2005 10 25 | 691 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.5− | 1.4+ | 2004 05 20 | 691 | 0.1− | 0.4+ | 2005 10 29 | 691 | 0.2− | 0.3+ |
| 2001 09 26 | 704 | 0.1− | 0.3+ | 2004 05 21 | 704 | 0.2− | 0.8+ | 2005 10 29 | 691 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.6− | 0.9+ | 2004 05 21 | 704 | 0.2− | 0.6+ | 2005 10 29 | 691 | 0.2− | 0.2+ |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2004 05 21 | 704 | 0.1+ | 0.2− | 2005 10 30 | G96 | 0.1+ | 0.0 |
| 2001 09 26 | 704 | 0.2− | 0.1+ | 2004 05 21 | 704 | (1.2− | 1.9−) | 2005 10 30 | G96 | 0.4+ | 0.1+ |
| 2003 01 04 | 291 | 0.2− | 0.7+ | 2004 05 21 | 704 | 0.5− | 1.0+ | 2005 10 30 | G96 | 0.2+ | 0.1− |
| 2003 01 04 | 291 | 0.2+ | 0.5+ | 2004 06 11 | 704 | 0.2− | 0.5+ | 2005 10 30 | G96 | 0.0 | 0.2− |
| 2003 01 04 | 291 | 0.1+ | 0.5+ | 2004 06 11 | 704 | 0.3− | 0.5+ | 2005 11 04 | 691 | 0.6+ | 0.7+ |
| 2004 03 19 | 704 | 0.2− | 0.2− | 2004 06 11 | 704 | (0.3− | 2.9+) | 2005 11 04 | 691 | 0.4− | 0.4+ |
| 2004 03 19 | 704 | 0.1+ | 0.9+ | 2004 06 11 | 704 | 0.1− | 0.1− | 2005 11 04 | 691 | 0.4− | 0.3+ |
| 2004 03 19 | 704 | 0.3+ | 0.0 | 2004 06 11 | 599 | (1.7− | 0.1+) | 2005 11 06 | 691 | 0.0 | 0.3+ |
| 2004 03 28 | 704 | 0.1+ | 0.6+ | 2004 06 11 | 599 | (1.6− | 0.1+) | 2005 11 06 | 691 | 0.1− | 0.2+ |
| 2004 03 28 | 704 | 0.1+ | 0.1+ | 2004 06 11 | 599 | (1.6− | 0.1+) | 2005 11 06 | 691 | 0.1+ | 0.1+ |
| 2004 03 28 | 704 | 0.6+ | 0.1+ | 2004 06 12 | 644 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 04 30 | 691 | 0.2+ | 0.4+ | 2004 06 12 | 644 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.7− |
| 2004 04 30 | 691 | 0.3+ | 0.3+ | 2004 06 12 | 644 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2004 04 30 | 608 | 0.0 | 0.2+ | 2004 06 15 | 704 | 0.3+ | 1.1− | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2004 04 30 | 608 | 0.1+ | 0.4+ | 2004 06 15 | 704 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2004 04 30 | 691 | 0.1+ | 0.4+ | 2004 06 15 | 704 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2004 04 30 | 608 | 0.0 | 0.2− | 2004 06 15 | 704 | 0.6− | 1.0− | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2004 05 15 | 704 | 0.2− | 0.4+ | 2004 06 15 | 704 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.7− |
| 2004 05 15 | 704 | 0.3− | 0.5+ | 2004 06 18 | 704 | 1.0+ | 0.1− | | | | |
| 2004 05 15 | 704 | 0.1+ | 0.6+ | 2004 06 18 | 704 | 0.2+ | 0.2− | | | | |

**(144839)∗ 2004 JJ$_{31}$ = 1991 GM**

Discovered 2004 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65813)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 249.85050 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.23351060 | $\omega$ | 329.29671 | | −0.99334715 | | +0.01636756 | | |
| $a$ | 2.6117502 | $\Omega$ | 212.24810 | | +0.00950798 | | −0.97481135 | | |
| $e$ | 0.2281747 | $i$ | 12.33507 | | −0.11476510 | | −0.22242960 | | |
| $P$ | 4.22 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 04 09 | 675 | 0.1− | 0.1+ | 2004 05 15 | 704 | (0.2− | 1.6+) | 2006 10 23 | G96 | 0.1− | 0.1− |
| 1991 04 09 | 675 | 0.9+ | 0.3+ | 2004 05 15 | 704 | 0.9− | 0.6+ | 2006 11 14 | 683 | 0.9+ | 0.2− |
| 1991 04 11 | 675 | 1.3− | 0.7+ | 2004 05 15 | 704 | (2.0− | 0.6−) | 2006 11 14 | 683 | 0.2+ | 0.9− |
| 1991 04 11 | 675 | 0.3+ | 0.1− | 2004 05 17 | 704 | 0.9+ | 0.0 | 2006 11 14 | 683 | 1.3+ | 0.5+ |
| 1997 09 23 | 691 | 0.2− | 0.1− | 2004 05 17 | 704 | 0.9+ | 0.5+ | 2006 11 19 | 704 | (2.0− | 0.6−) |
| 1997 09 23 | 691 | 0.0 | 0.1− | 2004 05 17 | 704 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.5− | 1.1+ |
| 1997 09 23 | 691 | 0.1+ | 0.1− | 2004 05 17 | 704 | 0.7+ | 0.6− | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 1999 01 23 | 704 | 0.4− | 1.6− | 2004 05 19 | 704 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 1999 01 23 | 704 | 0.1+ | 0.2− | 2004 05 19 | 704 | 1.2+ | 0.4− | 2006 11 19 | 704 | 0.1− | 1.2+ |
| 1999 01 23 | 704 | 0.3+ | 1.3− | 2004 05 19 | 704 | 0.2− | 1.0+ | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 1999 01 23 | 704 | 0.2− | 0.7− | 2004 05 19 | 704 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.6+ |
| 2002 12 01 | 704 | 0.5+ | 0.7+ | 2004 05 19 | 704 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2002 12 01 | 704 | 0.2+ | 0.8+ | 2004 05 23 | 704 | 1.1− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2002 12 01 | 704 | 0.3+ | 0.3+ | 2004 05 23 | 704 | 0.1+ | 0.1− | 2006 11 20 | 704 | (0.3− | 1.7+) |
| 2002 12 14 | 704 | 0.1− | 0.1+ | 2004 05 23 | 704 | 0.7− | 1.1+ | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 0.4+ | 0.3+ | 2004 06 12 | 704 | 1.2+ | 0.7− | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2002 12 14 | 704 | 0.3− | 0.8+ | 2004 06 12 | 704 | 0.6− | 0.6+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.3+ | 0.1+ | 2004 06 12 | 704 | 0.0 | 1.0+ | 2006 11 22 | G96 | (2.1− | 0.5+) |
| 2002 12 14 | 704 | 0.7+ | 0.8+ | 2004 06 12 | 704 | 0.1− | 0.1− | 2006 11 25 | 704 | 0.8− | 2.0+ |
| 2003 01 26 | 644 | 0.1− | 1.2+ | 2004 06 12 | 704 | 1.1− | 1.2+ | 2006 11 25 | 704 | 0.1− | 1.3− |
| 2003 01 26 | 644 | 0.3− | 1.0+ | 2006 10 19 | 703 | 0.2− | 0.6− | 2006 11 25 | 704 | 1.4− | 0.6− |
| 2003 01 26 | 644 | 0.1+ | 0.9+ | 2006 10 19 | 703 | 0.5− | 0.5+ | 2006 11 25 | 704 | 0.5− | 0.8+ |
| 2003 02 04 | 644 | 0.4+ | 0.9+ | 2006 10 19 | 703 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.5+ | 1.0+ |
| 2003 02 04 | 644 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.8+ | 0.4− | 2006 11 28 | 704 | 0.2− | 0.4− |
| 2003 02 04 | 644 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2004 05 15 | 704 | 0.3− | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.2− |
| 2004 05 15 | 704 | 0.3− | 1.1+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.7− | 0.2+ |

**(144840)∗ 2004 JX$_{35}$**

Discovered 2004 May 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 353.27465 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.08040333 | $\omega$ | 70.01638 | | +0.78122753 | | +0.62009232 | | |
| $a$ | 5.3164290 | $\Omega$ | 251.59263 | | −0.59732216 | | +0.70909827 | | |
| $e$ | 0.0516336 | $i$ | 4.34564 | | −0.18135541 | | +0.33565631 | | |
| $P$ | 12.26 | $H$ | 12.3 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 327 | 0.3− | 0.1+ | 2004 05 13 | 644 | 0.4+ | 0.2− | 2006 06 19 | G96 | 0.2− | 0.3− |
| 1995 08 27 | 327 | 0.2− | 0.1+ | 2004 05 16 | 704 | (2.4+ | 0.3+) | 2006 06 19 | G96 | 0.0 | 0.2− |
| 1995 08 27 | 327 | 0.3+ | 0.1− | 2004 05 16 | 704 | 0.3+ | 0.2+ | 2006 06 22 | 644 | 0.1+ | 0.2+ |
| 1995 08 27 | 327 | 0.2+ | 0.3− | 2004 05 16 | 704 | 0.2+ | 0.4− | 2006 06 22 | 691 | 0.6− | 0.3+ |
| 1996 10 05 | 691 | 0.1− | 0.5+ | 2004 05 16 | 704 | 0.4− | 0.4+ | 2006 06 22 | 644 | 0.1+ | 0.2+ |
| 1996 10 05 | 691 | 0.1− | 0.6+ | 2004 05 19 | 704 | 0.5− | 1.1+ | 2006 06 22 | 691 | 0.1− | 0.3+ |
| 1996 10 05 | 691 | 0.0 | 0.1+ | 2004 05 19 | 704 | 0.3− | 0.7+ | 2006 06 22 | 644 | 0.2− | 0.2+ |
| 2001 01 26 | 704 | 0.2− | 1.3+ | 2004 05 19 | 704 | 0.2− | 0.2− | 2006 06 22 | 691 | 0.8+ | 0.3+ |
| 2001 01 26 | 704 | 0.4+ | 0.1− | 2004 05 19 | 704 | 0.1− | 0.2− | 2006 08 13 | 644 | 0.0 | 0.1+ |
| 2001 01 26 | 704 | 0.4− | 0.2+ | 2004 05 21 | 704 | 0.4+ | 0.8− | 2006 08 13 | 644 | 0.0 | 0.2+ |
| 2001 01 26 | 704 | 0.3− | 1.1+ | 2004 05 21 | 704 | 0.0 | 0.9− | 2006 08 13 | 644 | 0.7− | 0.1− |
| 2002 04 04 | 644 | 0.6+ | 0.5+ | 2004 05 21 | 704 | 0.8− | 1.0− | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2002 04 04 | 644 | 0.8+ | 0.3+ | 2004 05 21 | 704 | 0.4− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.3+ |
| 2002 04 04 | 644 | 0.8+ | 0.5+ | 2004 06 12 | E12 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2003 04 25 | 691 | 0.1− | 0.4+ | 2004 06 12 | E12 | 0.7+ | 0.1− | 2006 09 13 | 644 | 0.3+ | 0.1+ |
| 2003 04 25 | 691 | 0.1+ | 0.4+ | 2004 06 12 | E12 | 0.6+ | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.1− |
| 2003 04 25 | 691 | 0.2+ | 0.4+ | 2004 06 12 | E12 | 0.8+ | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2003 04 25 | 599 | 0.1+ | 0.7− | 2004 06 14 | 704 | 0.4− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2003 04 25 | 599 | 0.6+ | 0.1+ | 2004 06 14 | 704 | 0.8− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 04 25 | 599 | 0.1− | 0.6+ | 2004 06 14 | 704 | 0.9− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 05 13 | 644 | 0.1− | 0.3− | 2006 06 19 | G96 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2004 05 13 | 644 | 0.2+ | 0.2− | 2006 06 19 | G96 | 0.3− | 0.1+ | | | | |

**(144841)∗ 2004 JB$_{37}$ = 1995 VU$_{16}$**

Discovered 2004 May 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65821)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 68.72115 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.17955695 | $\omega$ | 90.05074 | | +0.83905939 | | +0.52681056 | | |
| $a$ | 3.1117252 | $\Omega$ | 238.15970 | | −0.54070415 | | +0.77990022 | | |
| $e$ | 0.0827873 | $i$ | 9.20055 | | −0.06015278 | | +0.33797378 | | |
| $P$ | 5.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.0 | 0.4− | 2004 05 21 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.7− | 1.2+ |
| 1995 11 15 | 691 | 0.1− | 0.5− | 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 1995 11 15 | 691 | 0.0 | 0.4− | 2004 06 13 | 691 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 1995 11 20 | 691 | 0.0 | 0.1− | 2004 06 13 | 691 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 1995 11 20 | 691 | 0.0 | 0.4− | 2004 06 13 | 691 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 1.2− | 0.6+ |
| 1995 11 20 | 691 | 0.1+ | 0.4− | 2005 07 29 | 699 | 1.2+ | 0.6+ | 2006 11 19 | 704 | 0.8+ | 0.6+ |
| 2000 09 28 | 704 | 0.6+ | 0.0 | 2005 07 29 | 699 | 1.2− | 0.1+ | 2006 11 19 | 704 | 1.2− | 1.0+ |
| 2000 09 28 | 704 | 0.6+ | 0.2+ | 2005 07 29 | 699 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.7− |
| 2000 09 28 | 704 | 0.3+ | 0.2+ | 2005 07 29 | 699 | 0.6− | 0.9− | 2006 11 19 | 704 | 0.8+ | 0.6+ |
| 2000 10 25 | 704 | 0.1+ | 0.9− | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 1.0− | 0.7+ |
| 2000 10 25 | 704 | 0.0 | 0.6+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.5− |
| 2000 10 25 | 704 | 0.9− | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2004 04 12 | 691 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 1.4+ |
| 2004 04 12 | 691 | 0.6− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2004 04 12 | 691 | 0.2− | 0.6− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2004 04 28 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2004 04 28 | 691 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | (1.9+ | 0.9−) |
| 2004 04 28 | 691 | 0.3− | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 1.4+ | 0.7− |
| 2004 05 13 | 699 | (0.8− | 2.7+) | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | (2.0+ | 0.5−) |
| 2004 05 13 | 699 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.8− | 2006 11 21 | 704 | 1.2+ | 0.1− |
| 2004 05 13 | 699 | 1.0− | 0.6+ | 2006 11 11 | 703 | 0.8− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2004 05 13 | 699 | 0.6+ | 0.7− | 2006 11 11 | 703 | 0.4+ | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2004 05 13 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2004 05 13 | 691 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.3+ | 0.4+ |
| 2004 05 13 | 691 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2004 05 19 | 704 | 0.8+ | 0.6− | 2006 11 13 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.7+ | 0.8+ |
| 2004 05 19 | 704 | 0.2− | 1.4− | 2006 11 18 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2004 05 19 | 704 | 0.5+ | 1.0− | 2006 11 18 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.6− | 0.4+ |
| 2004 05 21 | 691 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.4+ | | | | |

**(144842)∗ 2004 JF$_{37}$ = 2005 PN$_{1}$**

Discovered 2004 May 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86515)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 75.65676 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.16815839 | $\omega$ | 323.03461 | | +0.71955903 | | +0.69436282 | | |
| $a$ | 3.2508007 | $\Omega$ | 352.96420 | | −0.61657257 | | +0.63236033 | | |
| $e$ | 0.1277927 | $i$ | 4.56564 | | −0.31948875 | | +0.34348317 | | |
| $P$ | 5.86 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.0 | 0.0 | 2005 08 02 | 704 | 0.2+ | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2000 11 01 | 704 | 1.7− | 0.8+ | 2005 08 02 | 704 | (0.3− | 1.6+) | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2000 11 01 | 704 | 1.9− | 0.3+ | 2005 08 02 | 704 | 0.8− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2000 11 18 | 699 | 0.6+ | 0.1+ | 2005 08 02 | 704 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2000 11 18 | 699 | 0.1+ | 0.3− | 2005 08 04 | 644 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 18 | 699 | 0.2+ | 0.5− | 2005 08 04 | 644 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2000 11 18 | 699 | 1.4+ | 0.4+ | 2005 08 04 | 644 | 0.1+ | 0.1+ | 2006 11 02 | 691 | 0.2+ | 0.2− |
| 2002 01 14 | 704 | 1.0+ | 1.1+ | 2005 08 05 | 644 | 0.1+ | 0.2+ | 2006 11 02 | 691 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.7+ | 0.7+ | 2005 08 05 | 644 | 0.0 | 0.2+ | 2006 11 02 | 691 | 0.2− | 0.1+ |
| 2002 01 14 | 704 | 0.4+ | 0.4+ | 2005 08 05 | 644 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.2+ | 1.0+ | 2005 08 26 | 699 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2003 03 26 | 644 | 0.5+ | 1.2+ | 2005 08 26 | 699 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.3− |
| 2003 03 26 | 644 | 0.5+ | 0.7+ | 2005 08 26 | 699 | 0.3− | 1.0+ | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2003 03 26 | 644 | 0.2+ | 1.1+ | 2005 08 26 | 699 | 1.0− | 1.4+ | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2004 05 13 | 644 | 0.1+ | 0.7+ | 2005 08 28 | E12 | 0.4+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2004 05 13 | 644 | 0.2+ | 0.4+ | 2005 08 28 | E12 | 1.0+ | 0.4− | 2006 11 16 | 704 | 1.0+ | 0.4+ |
| 2004 05 13 | 644 | 0.1− | 0.2+ | 2005 08 28 | E12 | 0.5+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.2− |
| 2004 05 19 | 704 | 0.6− | 0.3+ | 2005 08 28 | E12 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.2+ |
| 2004 05 19 | 704 | 0.6− | 0.3+ | 2005 08 30 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2004 05 19 | 704 | 0.5− | 0.0 | 2005 08 30 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.3− | 1.4+ |
| 2004 05 19 | 704 | 0.2− | 0.4− | 2005 08 30 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.4+ |
| 2004 05 19 | E12 | 0.1+ | 0.3+ | 2005 10 26 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2004 05 19 | E12 | 1.1− | 0.2+ | 2005 10 26 | G96 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.4− |
| 2004 05 19 | E12 | 1.0− | 0.3+ | 2005 10 26 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 1.2− | 1.0+ |
| 2004 05 19 | E12 | 0.9+ | 0.3− | 2005 10 26 | G96 | 0.3− | 0.2+ | 2006 11 22 | 704 | (1.0− | 2.2+) |
| 2004 05 20 | E12 | 0.4− | 0.8− | 2005 11 06 | G96 | 0.5− | 0.0 | 2006 11 22 | 704 | 1.1− | 1.3+ |
| 2004 05 20 | E12 | 0.3+ | 0.7− | 2005 11 06 | G96 | 0.3+ | 0.0 | 2006 11 27 | 291 | 0.3− | 0.2− |
| 2004 05 20 | E12 | 1.0+ | 0.0 | 2005 11 06 | G96 | 0.3− | 0.1− | 2006 11 27 | 291 | 0.3− | 0.1− |
| 2004 05 20 | E12 | 0.9+ | 0.9− | 2005 11 06 | G96 | 0.1− | 0.1− | 2006 11 27 | 291 | 0.2− | 0.1− |
| 2005 08 01 | E12 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.9− |
| 2005 08 01 | E12 | 0.2− | 0.7+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.6+ | 0.2− |
| 2005 08 01 | E12 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2005 08 01 | E12 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.5+ | 0.6− |

**(144843)∗ 2004 JH$_{38}$ = 2001 RJ$_{146}$**

Discovered 2004 May 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 65822)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.08885 | | (2000.0) | | | |
| $n$ | 0.24025765 | $\omega$ | 296.24919 | | −0.43258280 | −0.90159019 |
| $a$ | 2.5626221 | $\Omega$ | 179.36353 | | +0.88925022 | −0.42715057 |
| $e$ | 0.1232152 | $i$ | 14.02214 | | +0.14868145 | −0.06839232 |
| $P$ | 4.10 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.3− | 0.3− | 2003 01 28 | 704 | 0.0 | 1.0+ | 2005 09 02 | 644 | 0.1+ | 0.2+ |
| 1993 09 15 | 691 | 0.1− | 0.3− | 2003 01 28 | 704 | 0.7+ | 0.7+ | 2005 09 02 | 644 | 0.0 | 0.2+ |
| 1993 09 15 | 691 | 0.1+ | 0.3− | 2003 01 28 | 704 | 0.3+ | 0.9+ | 2006 11 15 | 703 | 0.5+ | 0.0 |
| 2001 08 25 | 704 | 0.4+ | 1.0+ | 2004 05 14 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.3− | 0.4− |
| 2001 08 25 | 704 | 0.5+ | 0.8+ | 2004 05 14 | 691 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.7− |
| 2001 08 25 | 704 | 1.0− | 0.1− | 2004 05 14 | 691 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.6+ |
| 2001 08 25 | 704 | 0.1− | 0.2+ | 2004 05 19 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 703 | (0.0 | 2.2+) |
| 2001 08 25 | 704 | 0.4+ | 1.2+ | 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 11 21 | 703 | 0.8− | 0.1+ |
| 2001 09 09 | 699 | 0.0 | 1.1+ | 2004 05 19 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 703 | 0.0 | 0.0 |
| 2001 09 09 | 699 | 0.1− | 0.6+ | 2004 05 24 | 704 | 0.1− | 0.8− | 2006 11 21 | 703 | 0.8− | 0.2− |
| 2001 09 09 | 699 | 0.2+ | 0.8− | 2004 05 24 | 704 | 0.3+ | 0.4+ | 2006 11 23 | G92 | 0.5− | 0.3+ |
| 2001 09 09 | 699 | 0.7+ | 0.2− | 2004 05 24 | 704 | 0.3+ | 0.4− | 2006 11 23 | G92 | 0.2+ | 0.2+ |
| 2001 09 12 | 704 | 0.4+ | 0.3+ | 2004 05 24 | 704 | 0.2+ | 0.0 | 2006 11 23 | G92 | 0.4− | 0.5+ |
| 2001 09 12 | 704 | (1.7+ | 0.9+) | 2005 08 24 | 644 | 0.2+ | 0.1+ | 2006 11 25 | G92 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.4+ | 0.1− | 2005 08 24 | 644 | 0.1+ | 0.3+ | 2006 11 25 | G92 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 1.2+ | 2005 08 24 | 644 | 0.1+ | 0.4+ | 2006 11 25 | G92 | 0.3+ | 0.1+ |
| 2003 01 02 | 704 | 0.3+ | 0.9+ | 2005 08 26 | 699 | 0.1+ | 0.8+ | 2006 12 01 | 703 | 1.1+ | 1.2+ |
| 2003 01 02 | 704 | 0.4+ | 0.2+ | 2005 08 26 | 699 | 0.1− | 0.2+ | 2006 12 01 | 703 | 1.0+ | 0.8+ |
| 2003 01 02 | 704 | 0.2− | 0.2− | 2005 08 26 | 699 | 0.3− | 0.3+ | 2006 12 01 | 703 | 1.4− | 0.5+ |
| 2003 01 02 | 704 | 0.6+ | 0.7− | 2005 08 26 | 699 | 1.1− | 0.8− | 2006 12 01 | 703 | 0.4− | 1.0+ |
| 2003 01 02 | 704 | 0.0 | 0.2− | 2005 09 02 | 644 | 0.3− | 0.2+ | | | | |

**(144844)∗ 2004 JD$_{41}$**

Discovered 2004 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.48146 | | (2000.0) | | | |
| $n$ | 0.27657018 | $\omega$ | 298.61887 | | −0.55530123 | +0.82815642 |
| $a$ | 2.3330953 | $\Omega$ | 297.45152 | | −0.72992716 | −0.52920950 |
| $e$ | 0.0898330 | $i$ | 4.92218 | | −0.39855600 | −0.18464630 |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 09 | 621 | 0.2− | 1.3+ | 2004 05 15 | 704 | 0.2+ | 0.9+ | 2005 10 08 | 704 | 1.0− | 1.5+ |
| 2002 12 09 | 621 | 0.5+ | 1.0+ | 2004 05 15 | 704 | 0.1− | 0.9+ | 2005 10 08 | 704 | (0.1+ | 2.2+) |
| 2002 12 09 | 621 | 0.3− | 0.6+ | 2004 05 15 | 704 | 0.3+ | 0.5+ | 2005 10 08 | 704 | 0.2+ | 1.3+ |
| 2002 12 09 | 621 | 0.6− | 0.3− | 2004 05 15 | 704 | 0.0 | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2002 12 09 | 621 | 0.5+ | 0.1− | 2004 05 19 | 704 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.6− | 0.2− |
| 2003 01 05 | 704 | 0.5+ | 0.9+ | 2004 05 19 | 704 | 0.5+ | 1.0+ | 2006 10 23 | G96 | 0.2− | 0.3+ |
| 2003 01 05 | 704 | 0.5− | 0.2+ | 2004 05 19 | 704 | 0.9+ | 1.0+ | 2006 10 23 | G96 | 0.5+ | 0.7− |
| 2003 01 05 | 704 | 0.7− | 1.1+ | 2004 05 19 | 704 | 0.4+ | 1.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2004 04 16 | 699 | (2.2+ | 1.2−) | 2004 05 19 | 704 | 1.1+ | 0.6+ | 2006 11 16 | G96 | 0.7− | 0.2+ |
| 2004 04 16 | 699 | 0.2+ | 0.2+ | 2005 09 23 | 703 | (2.1+ | 1.5−) | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2004 04 16 | 699 | 0.4− | 0.2− | 2005 09 23 | 703 | (2.4− | 1.0−) | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2004 04 16 | 699 | 1.1+ | 0.7+ | 2005 09 23 | 703 | (2.8− | 1.7−) | 2006 11 28 | G96 | 0.3+ | 0.0 |
| 2004 04 25 | 704 | 0.2− | 0.6+ | 2005 09 23 | 703 | 0.6− | 1.2+ | 2006 11 28 | G96 | 0.4+ | 0.1+ |
| 2004 04 25 | 704 | 0.2+ | 0.3+ | 2005 10 03 | 704 | 0.3− | 0.1+ | 2006 11 28 | G96 | 0.1− | 0.6+ |
| 2004 04 25 | 704 | 1.0− | 0.1− | 2005 10 03 | 704 | 1.0− | 0.8+ | 2006 11 28 | G96 | 0.6+ | 0.3+ |
| 2004 04 25 | 704 | 0.3+ | 0.0 | 2005 10 03 | 704 | 0.0 | 1.1+ | | | | |
| 2004 05 15 | 704 | 0.2+ | 0.2− | 2005 10 03 | 704 | 0.0 | 0.5+ | | | | |

**(144845)∗ 2004 JM$_{42}$**

Discovered 2004 May 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.43705 | | (2000.0) | | | |
| $n$ | 0.17621208 | $\omega$ | 125.82801 | | +0.18081881 | +0.98349062 |
| $a$ | 3.1509797 | $\Omega$ | 154.58665 | | −0.90762813 | +0.16965255 |
| $e$ | 0.1239979 | $i$ | 0.95121 | | −0.37883472 | +0.06296197 |
| $P$ | 5.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 04 | 691 | 0.2− | 0.4+ | 2004 06 13 | 691 | 0.2+ | 0.2+ | 2005 09 29 | G96 | 0.5+ | 0.1+ |
| 1999 07 04 | 691 | 0.1− | 0.3+ | 2005 08 06 | 644 | 0.2+ | 0.3+ | 2005 09 29 | G96 | 0.1− | 0.4+ |
| 1999 07 04 | 691 | 0.1+ | 0.5+ | 2005 08 06 | 644 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2003 02 23 | 291 | 0.3+ | 0.6+ | 2005 08 06 | 644 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.6− | 0.2+ |
| 2003 02 23 | 291 | 0.8+ | 0.4+ | 2005 08 25 | 644 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.8− | 0.0 |
| 2003 02 23 | 291 | 0.0 | 0.9+ | 2005 08 25 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.5− | 0.0 |
| 2003 03 30 | 645 | 0.1+ | 0.1+ | 2005 08 25 | 644 | 0.4+ | 0.6+ | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2003 03 30 | 645 | 0.0 | 0.2+ | 2005 08 26 | 599 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2004 04 21 | 691 | 0.2− | 0.4− | 2005 08 26 | 599 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2004 04 21 | 691 | 0.2− | 0.0 | 2005 08 26 | 599 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.5+ | 0.4− |
| 2004 04 21 | 691 | 0.5− | 1.1− | 2005 08 26 | 599 | 0.3− | 0.6+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2004 05 15 | 704 | (1.1− | 1.8+) | 2005 09 01 | 691 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2004 05 15 | 704 | 0.2+ | 0.6+ | 2005 09 01 | 691 | 0.3− | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.5+ |
| 2004 05 15 | 704 | 0.9− | 0.7+ | 2005 09 01 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2004 05 21 | 691 | 0.3+ | 0.4+ | 2005 09 11 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2004 05 21 | 691 | 0.2+ | 0.0 | 2005 09 11 | 691 | 0.2− | 0.6+ | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2004 05 21 | 691 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2004 06 13 | 691 | 0.0 | 0.0 | 2005 09 29 | G96 | 0.5− | 0.2− | | | | |
| 2004 06 13 | 691 | 0.4+ | 0.3+ | 2005 09 29 | G96 | 0.6− | 0.1+ | | | | |

**(144846)∗ 2004 JW$_{46}$ = 2005 NL$_{101}$**

Discovered 2004 May 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86517)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.59517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20641394 | $\omega$ | 350.16844 | | +0.87335853 | +0.48701402 | |
| $a$ | 2.8355895 | $\Omega$ | 340.68097 | | −0.44525011 | +0.79168825 | |
| $e$ | 0.0591574 | $i$ | 1.36628 | | −0.19747712 | +0.36884557 | |
| $P$ | 4.77 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 09 | 691 | 0.1− | 0.5+ | 2004 04 16 | 691 | 0.1− | 0.5+ | 2006 11 14 | 691 | 0.1− | 0.0 | |
| 1991 09 09 | 691 | 0.1+ | 0.2+ | 2004 04 16 | 691 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.3+ | |
| 1991 09 09 | 691 | 0.3− | 0.3− | 2004 05 13 | 691 | 1.0+ | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.3+ | |
| 2001 10 21 | 704 | (0.3+ | 1.6+) | 2004 05 13 | 691 | 0.5+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2+ | |
| 2001 10 21 | 704 | 0.2+ | 1.5+ | 2004 05 13 | 691 | 0.3+ | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.3+ | |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2004 05 23 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.3+ | |
| 2001 10 26 | 644 | 0.7− | 0.5+ | 2004 05 23 | 691 | 0.1− | 0.4+ | 2006 11 20 | 703 | 0.4− | 1.3− | |
| 2001 10 26 | 644 | 0.5− | 0.8+ | 2004 05 23 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 703 | 0.3− | 1.5+ | |
| 2001 10 26 | 644 | 0.7− | 0.8+ | 2005 07 12 | G96 | 0.0 | 0.3+ | 2006 11 20 | 703 | 0.0 | 0.5+ | |
| 2001 11 19 | 704 | 0.4− | 1.0+ | 2005 07 12 | G96 | 0.3− | 0.2+ | 2006 11 20 | 703 | 0.3− | 0.3− | |
| 2001 11 19 | 704 | (0.4− | 1.6+) | 2005 07 12 | G96 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.1+ | |
| 2001 11 19 | 704 | 1.1+ | 0.9+ | 2005 07 12 | G96 | 0.3− | 0.5+ | 2006 11 22 | 691 | 0.2− | 0.2+ | |
| 2003 01 01 | 291 | 0.1− | 0.0 | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.2+ | |
| 2003 01 01 | 291 | 0.1− | 0.2+ | 2005 07 18 | 644 | 0.3− | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.8− | |
| 2003 01 01 | 291 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.0 | 0.6+ | 2006 12 01 | G96 | 0.8+ | 1.9− | |
| 2003 01 27 | 291 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.3+ | 0.6− | |
| 2003 01 27 | 291 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.5− | 0.4− | 2006 12 01 | G96 | 0.2− | 0.7− | |
| 2003 01 27 | 291 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1+ | | | | | |
| 2004 04 16 | 691 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2− | | | | | |

**(144847)∗ 2004 JP$_{49}$ = 1995 UH$_{23}$**

Discovered 2004 May 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69728)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.81815 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17677844 | $\omega$ | 322.45339 | | −0.79011436 | +0.60901585 | |
| $a$ | 3.1442460 | $\Omega$ | 255.20804 | | −0.54354017 | −0.74847546 | |
| $e$ | 0.1022569 | $i$ | 4.11729 | | −0.28334322 | −0.26245796 | |
| $P$ | 5.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 1.3+ | 0.8− | 2004 04 12 | 691 | 0.2+ | 0.6− | 2006 10 20 | 691 | 0.1− | 0.0 | |
| 1995 10 19 | 691 | 0.3− | 0.3− | 2004 04 12 | 691 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.3− | 0.2− | |
| 1995 10 19 | 691 | 0.1+ | 0.0 | 2004 05 13 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 1995 10 24 | 691 | 0.4+ | 0.2− | 2004 05 13 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | |
| 1995 10 24 | 691 | 0.3+ | 0.3+ | 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− | |
| 1995 10 24 | 691 | 0.1+ | 0.4− | 2004 05 21 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.4− | 0.0 | |
| 1995 11 17 | 691 | 0.5− | 0.3+ | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.4+ | |
| 1995 11 17 | 691 | 0.8− | 0.4+ | 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | |
| 1995 11 17 | 691 | 0.5− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.1− | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.6+ | 0.1− | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.0 | |
| 2004 04 12 | 691 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.5− | 0.0 | | | | | |

**(144848)∗ 2004 KB$_3$ = 1995 UB$_{48}$**

Discovered 2004 May 16 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69728)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.04864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18362354 | $\omega$ | 296.46072 | | +0.92611581 | +0.35938986 | |
| $a$ | 3.0656117 | $\Omega$ | 42.74322 | | −0.25691105 | +0.82344770 | |
| $e$ | 0.0806649 | $i$ | 9.72660 | | −0.27623580 | +0.43905901 | |
| $P$ | 5.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 25 | 327 | 1.0+ | 0.9− | 2005 07 03 | 644 | 0.5+ | 0.9+ | 2006 11 11 | 703 | 0.0 | 0.2+ | |
| 1995 10 25 | 327 | 0.8+ | 0.3− | 2005 08 04 | 644 | 0.6+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.4+ | |
| 1995 10 25 | 327 | 1.8+ | 1.0+ | 2005 08 04 | 644 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 1.2+ | 0.4− | |
| 1995 10 26 | 327 | 0.2− | 0.9+ | 2005 08 04 | 644 | 0.8+ | 1.1+ | 2006 11 11 | 703 | 0.3− | 0.8+ | |
| 1995 10 26 | 327 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.6+ | 0.5+ | |
| 1995 10 26 | 327 | 1.1− | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.2− | 0.2+ | |
| 1995 11 25 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 13 | 691 | 0.2− | 0.8+ | |
| 1995 11 25 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.2− | 0.2+ | |
| 1995 11 25 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.3+ | |
| 2000 09 05 | 645 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.6− | 2006 11 16 | 691 | 0.0 | 0.2+ | |
| 2000 09 05 | 645 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.5− | 0.5− | 2006 11 16 | 704 | 1.2+ | 0.3+ | |
| 2004 04 25 | 691 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.5− | 0.9− | |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.6− | 0.6− | |
| 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | (1.6+ | 0.3−) | |
| 2004 05 16 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.4+ | |
| 2004 05 16 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.3+ | |
| 2004 05 16 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.7+ | |
| 2004 05 19 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 1.2+ | |
| 2004 05 19 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.6− | 2006 11 19 | 704 | 1.0− | 1.3+ | |
| 2004 05 19 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.7− | 1.2+ | |
| 2004 05 28 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.4+ | |
| 2004 05 28 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.5− | 0.4− | 2006 11 22 | 704 | 0.5+ | 1.1− | |
| 2004 05 28 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.1− | 1.0+ | |
| 2005 07 03 | 644 | 0.4+ | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.6+ | |
| 2005 07 03 | 644 | 0.1+ | 0.7+ | 2006 11 09 | 691 | 0.2− | 0.2+ | | | | | |

**(144849)∗ 2004 KG$_3$ = 2001 YX$_{46}$**

Discovered 2004 May 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65830)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.51807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18012711 | $\omega$ | 232.34599 | | +0.43484385 | +0.88612247 | |
| $a$ | 3.1051553 | $\Omega$ | 64.15659 | | −0.75991005 | +0.45660514 | |
| $e$ | 0.0490890 | $i$ | 10.26023 | | −0.48316409 | +0.07936449 | |
| $P$ | 5.47 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.5− | 1.1− | 2004 05 16 | 704 | 1.1+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1+ | |
| 1998 04 24 | 704 | 1.0− | 0.1− | 2004 05 16 | 704 | 1.2+ | 0.9+ | 2006 10 22 | 691 | 0.1− | 0.0 | |
| 1998 04 24 | 704 | 0.3− | 0.8− | 2004 05 16 | 704 | 0.8− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1+ | |
| 1998 04 24 | 704 | (8.0− | 1.3−) | 2004 05 19 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.3− | 1.2− | |
| 2000 10 01 | 704 | 0.2− | 0.1+ | 2004 05 19 | 704 | (0.9− | 2.2+) | 2006 11 11 | 703 | (1.6− | 1.0−) | |
| 2000 10 01 | 704 | 0.3− | 0.5− | 2004 05 19 | 704 | 0.8− | 1.4+ | 2006 11 11 | 703 | 0.1+ | 0.5− | |
| 2000 10 01 | 704 | 0.1− | 0.0 | 2004 06 17 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.8− | |
| 2001 12 18 | 704 | 0.4+ | 0.3+ | 2004 06 17 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.4− | |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2004 06 17 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.3− | |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2005 08 08 | E12 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− | |
| 2001 12 18 | 704 | 0.5+ | 0.4− | 2005 08 08 | E12 | 0.6+ | 0.8+ | 2006 11 12 | G96 | 0.0 | 0.1− | |
| 2001 12 19 | 704 | 0.2− | 0.4− | 2005 08 08 | E12 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.0 | |
| 2001 12 19 | 704 | 0.2+ | 0.4− | 2005 08 08 | E12 | 0.1− | 0.6+ | 2006 11 17 | 703 | 0.0 | 0.8− | |
| 2001 12 19 | 704 | 0.2+ | 0.0 | 2005 08 28 | E12 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.6− | |
| 2003 03 08 | 644 | 0.5+ | 0.4+ | 2005 08 28 | E12 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.1+ | |
| 2003 03 08 | 644 | 0.6+ | 0.8+ | 2005 08 28 | E12 | 0.4+ | 0.3+ | 2006 11 20 | 704 | (0.1+ | 1.9+) | |
| 2003 03 08 | 644 | 0.3+ | 0.4+ | 2005 08 28 | E12 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.2+ | |
| 2003 03 23 | 644 | 0.2+ | 0.6+ | 2006 09 30 | G96 | 0.3+ | 0.6− | 2006 11 20 | 704 | 0.1+ | 1.3+ | |
| 2003 03 23 | 644 | 0.5+ | 0.5+ | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 11 20 | 704 | (0.1− | 1.6+) | |
| 2003 03 23 | 644 | 0.2+ | 0.9+ | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.4+ | 1.3+ | |
| 2004 05 12 | 699 | 0.8− | 1.0− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.8+ | 2.8+ | |
| 2004 05 12 | 699 | 0.5− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.4− | |
| 2004 05 12 | 699 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.5+ | 1.7+ | |
| 2004 05 12 | 699 | 1.4+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2+ | | | | | |

**(144850)∗ 2004 KY$_5$**

Discovered 2004 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 189.44084 | | | (2000.0) | | |
| $n$ | 0.22294936 | $\omega$ | 123.16249 | | −0.56327004 | +0.82523221 |
| $a$ | 2.6935925 | $\Omega$ | 112.50122 | | −0.77224881 | −0.50793451 |
| $e$ | 0.0768592 | $i$ | 2.57188 | | −0.29386838 | −0.24697029 |
| $P$ | 4.42 | $H$ | 16.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.8+ | 0.8+ | 2004 05 12 | 699 | 0.2+ | 0.6− | 2004 05 21 | 704 | 0.0 | 0.9+ |
| 2001 09 21 | 704 | (0.8+ | 1.7+) | 2004 05 12 | 699 | 0.1− | 0.0 | 2005 08 29 | 691 | 0.1− | 0.5+ |
| 2001 09 21 | 704 | (0.8+ | 1.9+) | 2004 05 12 | 699 | 0.9+ | 0.6− | 2005 08 29 | 691 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2004 05 12 | 699 | 0.7− | 0.2+ | 2005 08 29 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.1− | 0.6+ | 2004 05 17 | 704 | 0.1− | 0.2+ | 2005 09 12 | 691 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.2− | 0.1− | 2004 05 17 | 704 | 0.8− | 0.5+ | 2005 09 12 | 691 | 0.4− | 0.5+ |
| 2001 10 23 | 704 | 0.8− | 0.2+ | 2004 05 17 | 704 | 0.9+ | 0.3+ | 2005 09 12 | 691 | 0.2− | 0.3+ |
| 2003 01 04 | 291 | 0.2− | 0.6+ | 2004 05 17 | 704 | 0.6+ | 0.7− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2003 01 04 | 291 | 0.4+ | 0.6+ | 2004 05 21 | 691 | 0.0 | 0.4+ | 2006 11 21 | 691 | 0.6+ | 0.2+ |
| 2003 01 04 | 291 | 0.1− | 0.5+ | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.6+ | 0.4− |
| 2003 01 25 | 645 | 0.0 | 0.1+ | 2004 05 21 | 704 | 1.4+ | 0.9+ | 2006 11 25 | 691 | 0.3− | 0.3+ |
| 2003 01 25 | 645 | 0.0 | 0.1+ | 2004 05 21 | 704 | (0.6+ | 1.7+) | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2004 04 30 | 691 | 0.1− | 0.2+ | 2004 05 21 | 704 | (0.2− | 1.7+) | 2006 11 25 | 691 | 0.5− | 0.0 |
| 2004 04 30 | 691 | 0.2+ | 0.1+ | 2004 05 21 | 691 | 0.1+ | 0.6+ | | | | |
| 2004 04 30 | 691 | 0.1− | 0.5+ | 2004 05 21 | 704 | (1.2+ | 1.7+) | | | | |

**(144851)∗ 2004 KK$_7$**

Discovered 2004 May 20 at George Observatory, Needville.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.90996 | | | (2000.0) | | |
| $n$ | 0.12290005 | $\omega$ | 212.78733 | | +0.85886099 | +0.50834013 |
| $a$ | 4.0065265 | $\Omega$ | 116.53569 | | −0.45351661 | +0.81172244 |
| $e$ | 0.2325891 | $i$ | 4.02734 | | −0.23807662 | +0.28757086 |
| $P$ | 8.02 | $H$ | 14.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.2+ | 1.3− | 2005 06 17 | G96 | 0.0 | 0.1− | 2005 08 08 | 807 | 0.0 | 0.0 |
| 1995 03 26 | 691 | 0.7− | 0.5− | 2005 06 17 | G96 | 0.4− | 0.1+ | 2005 08 09 | 807 | 0.2− | 0.1− |
| 1995 03 26 | 691 | 0.4− | 0.5− | 2005 06 27 | 691 | 0.0 | 0.3− | 2006 09 15 | 644 | 0.2− | 0.2− |
| 2004 05 19 | 735 | (1.4+ | 1.7+) | 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 09 15 | 644 | 0.1+ | 0.4− |
| 2004 05 19 | 735 | 0.6+ | 1.0+ | 2005 06 27 | 691 | 0.2− | 0.2− | 2006 09 15 | 644 | 0.4+ | 0.4− |
| 2004 05 19 | 735 | 1.5+ | 0.4− | 2005 06 28 | G96 | 0.5− | 0.8+ | 2006 09 19 | 691 | 0.3+ | 0.0 |
| 2004 05 20 | 735 | 0.1+ | 0.3− | 2005 06 28 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2004 05 20 | 735 | 0.8− | 0.4+ | 2005 06 28 | G96 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.4+ | 0.1+ |
| 2004 05 20 | 735 | (0.5− | 2.7+) | 2005 06 28 | G96 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.5+ |
| 2004 05 21 | 704 | 0.1− | 0.4+ | 2005 07 04 | 691 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 2004 05 21 | 704 | 0.4+ | 0.1− | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2004 05 21 | 704 | 0.2− | 1.4+ | 2005 07 04 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2004 05 22 | 735 | 0.5+ | 0.7+ | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2004 05 22 | 735 | 0.2+ | 0.9+ | 2005 07 09 | 691 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2004 05 22 | 735 | 0.2− | 0.3+ | 2005 07 09 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2004 05 24 | 735 | 0.5− | 0.8+ | 2005 07 30 | E12 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2004 05 24 | 735 | 0.4+ | 0.4+ | 2005 07 30 | E12 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2004 06 15 | 735 | 0.4+ | 0.3− | 2005 07 30 | E12 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2004 06 15 | 735 | 0.0 | 0.1+ | 2005 07 30 | E12 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2004 06 15 | 735 | 0.4− | 0.6+ | 2005 08 01 | E12 | 0.5− | 1.0− | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2004 07 05 | 735 | 0.2− | 0.1+ | 2005 08 01 | E12 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2004 07 05 | 735 | (2.4+ | 0.5−) | 2005 08 01 | E12 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2004 07 05 | 735 | 0.3+ | 0.1− | 2005 08 01 | E12 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2004 08 13 | 735 | 0.3− | 0.6− | 2005 08 06 | 704 | 0.7+ | 1.4− | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2004 08 13 | 735 | 0.2+ | 0.8+ | 2005 08 06 | 704 | 0.2+ | 0.7− | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2004 08 13 | 735 | (1.9+ | 2.1+) | 2005 08 06 | 704 | 0.3+ | 0.4− | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2005 06 17 | G96 | 0.3− | 0.0 | 2005 08 06 | 704 | 0.3+ | 0.3− | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2005 06 17 | G96 | 0.7− | 0.0 | 2005 08 08 | 807 | 0.0 | 0.0 | | | | |

**(144852)∗ 2004 KU$_7$ = 2000 SU$_{359}$**

Discovered 2004 May 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69729)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 86.85717 | | | (2000.0) | | |
| $n$ | 0.18250617 | $\omega$ | 92.91428 | | +0.73277608 | +0.67179275 |
| $a$ | 3.0781115 | $\Omega$ | 224.91300 | | −0.66923480 | +0.68268001 |
| $e$ | 0.0658012 | $i$ | 8.82540 | | −0.12314219 | +0.28747609 |
| $P$ | 5.40 | $H$ | 15.0 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 0.9− | 0.5− | 2004 05 20 | 599 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2000 09 26 | 699 | 0.4− | 0.3+ | 2004 05 20 | 599 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2000 09 26 | 699 | 1.0− | 0.1− | 2004 05 20 | 599 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.1+ |
| 2000 09 26 | 699 | 0.1− | 1.1+ | 2004 05 21 | 599 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2000 10 03 | 704 | 0.2+ | 0.4+ | 2004 06 12 | 644 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2000 10 03 | 704 | 0.6− | 0.7+ | 2004 06 12 | 644 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2000 10 03 | 704 | 0.6− | 0.5− | 2004 06 12 | 644 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.4− | 0.2+ |
| 2000 10 03 | 704 | 0.2− | 0.1+ | 2005 08 26 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2000 10 03 | 704 | 0.2+ | 0.5+ | 2005 08 26 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2000 11 23 | 691 | 0.2+ | 0.2− | 2005 08 26 | 644 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.1+ |
| 2000 11 23 | 691 | 0.1+ | 0.4+ | 2005 08 27 | 699 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2000 11 23 | 691 | 0.4+ | 0.1− | 2005 08 27 | 699 | 0.4+ | 0.5− | 2006 11 12 | 703 | 0.3− | 0.4− |
| 2003 03 10 | 699 | 0.2+ | 1.4+ | 2005 08 27 | 699 | 0.4+ | 0.9− | 2006 11 12 | 703 | 0.7− | 0.2− |
| 2003 03 10 | 699 | (0.8+ | 1.6+) | 2005 08 27 | 699 | 0.1+ | 0.4− | 2006 11 12 | 703 | 0.4− | 0.2+ |
| 2003 03 10 | 699 | (1.9+ | 1.5−) | 2005 09 09 | 704 | 0.9+ | 1.1+ | 2006 11 12 | 703 | 0.1− | 0.6+ |
| 2003 03 10 | 699 | 1.2+ | 0.4+ | 2005 09 09 | 704 | 0.5− | 0.1− | 2006 11 29 | 704 | 0.6+ | 1.4+ |
| 2004 05 17 | 704 | 0.7− | 1.0+ | 2005 09 09 | 704 | 0.5− | 0.3− | 2006 11 29 | 704 | 0.1− | 0.4− |
| 2004 05 17 | 704 | 0.1− | 0.9+ | 2005 09 09 | 704 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.8+ |
| 2004 05 17 | 704 | 0.1+ | 1.1+ | 2005 09 09 | 704 | 0.3+ | 0.7+ | 2006 11 29 | 704 | 0.8+ | 0.3+ |
| 2004 05 17 | 704 | 0.6+ | 0.5− | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.8+ | 0.2− |

**(144853)∗ 2004 KW$_8$ = 2000 QD$_{232}$**

Discovered 2004 May 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65834)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 140.68555 | | | (2000.0) | | |
| $n$ | 0.18909504 | $\omega$ | 66.06631 | | −0.16017233 | +0.98654354 |
| $a$ | 3.0061867 | $\Omega$ | 194.82884 | | −0.94584527 | −0.16290359 |
| $e$ | 0.0631674 | $i$ | 7.36608 | | −0.28235005 | −0.01393796 |
| $P$ | 5.21 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.4+ | 0.1+ | 2004 05 15 | 704 | 0.3− | 0.8+ | 2005 08 26 | 599 | 0.4+ | 0.5+ |
| 1995 10 21 | 691 | 0.2+ | 0.3+ | 2004 05 18 | 704 | (0.6+ | 1.9+) | 2005 10 30 | G96 | 0.3+ | 0.6− |
| 1995 10 21 | 691 | 0.1− | 0.6+ | 2004 05 18 | 704 | 0.5+ | 1.5+ | 2005 10 30 | G96 | 0.3+ | 0.2− |
| 2000 08 30 | 691 | 0.2+ | 0.6− | 2004 05 18 | 704 | 0.7− | 0.3+ | 2005 10 30 | G96 | 0.4+ | 0.4− |
| 2000 08 30 | 691 | 0.0 | 0.2− | 2004 05 18 | 704 | 0.6+ | 1.3+ | 2005 10 30 | G96 | 0.3− | 0.2− |
| 2000 08 30 | 691 | 0.2+ | 1.2− | 2004 05 18 | 704 | 0.0 | 1.3+ | 2005 10 31 | G96 | 0.3+ | 0.2− |
| 2000 09 05 | 699 | 1.8− | 0.8+ | 2004 05 22 | 704 | 1.0− | 1.3+ | 2005 10 31 | G96 | 0.5+ | 0.1+ |
| 2000 09 05 | 699 | 1.2− | 0.5+ | 2004 05 22 | 704 | 0.1+ | 0.8− | 2005 10 31 | G96 | 0.1− | 0.4− |
| 2000 09 05 | 699 | 0.7− | 0.4+ | 2004 05 22 | 704 | 0.7− | 0.4+ | 2005 10 31 | G96 | 0.0 | 0.2− |
| 2000 09 05 | 699 | 0.6− | 0.2+ | 2004 05 22 | 704 | 0.5+ | 0.7− | 2006 10 02 | G96 | 0.5+ | 0.1− |
| 2000 09 24 | 704 | 0.6− | 1.3+ | 2004 05 22 | 704 | 0.2+ | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.8− | 0.8− | 2005 07 31 | 644 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 1.1− | 1.5+ | 2005 07 31 | 644 | 0.6+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2000 09 24 | 704 | 0.3+ | 0.2− | 2005 07 31 | 644 | 0.3− | 0.2+ | 2006 10 18 | 291 | 0.3− | 0.1+ |
| 2004 04 20 | 704 | 0.5− | 0.4+ | 2005 08 25 | 599 | 0.2+ | 0.2+ | 2006 10 18 | 291 | 0.3− | 0.2+ |
| 2004 04 20 | 704 | 0.1− | 1.5+ | 2005 08 25 | 599 | 0.4+ | 0.1+ | 2006 10 18 | 291 | 0.2− | 0.4+ |
| 2004 04 20 | 704 | 0.2+ | 0.0 | 2005 08 25 | 599 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2+ | 0.5+ |
| 2004 04 20 | 704 | 0.4− | 0.3+ | 2005 08 25 | 599 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 704 | 1.3+ | 1.3− | 2005 08 26 | 599 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.1+ | | |
| 2004 05 15 | 704 | 0.6+ | 0.9− | 2005 08 26 | 599 | 0.2+ | 0.3+ | | | | | | |

**(144854)∗ 2004 KA$_{10}$ = 2003 AC$_{86}$**

Discovered 2004 May 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65836)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.39156 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21627694 | $\omega$ | 318.57472 | | −0.73609278 | +0.61645590 | |
| $a$ | 2.7487120 | $\Omega$ | 261.71698 | | −0.52252887 | −0.78004207 | |
| $e$ | 0.1131405 | $i$ | 16.40943 | | −0.43026852 | −0.10731491 | |
| $P$ | 4.56 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.3− | 1.4+ | 2004 05 19 | 704 | 0.2+ | 0.4+ | 2004 08 12 | E12 | 0.5+ | 0.2− |
| 2001 10 15 | 704 | 0.2− | 0.2− | 2004 05 19 | 704 | 0.8− | 0.3+ | 2005 09 25 | 644 | 0.4+ | 0.3− |
| 2001 10 15 | 704 | 0.1− | 0.0 | 2004 05 22 | 704 | 0.6− | 1.3+ | 2005 09 25 | 644 | 0.2− | 0.1+ |
| 2001 10 15 | 704 | 0.7− | 0.9+ | 2004 05 22 | 704 | 0.1− | 0.6+ | 2005 09 25 | 644 | 0.0 | 0.4− |
| 2001 10 15 | 704 | 0.6− | 0.8− | 2004 05 22 | 704 | 0.1− | 0.1+ | 2005 09 30 | 703 | 0.0 | 0.5− |
| 2001 11 11 | 704 | 1.3+ | 0.5+ | 2004 06 05 | 644 | 0.0 | 0.1+ | 2005 09 30 | 703 | 0.5− | 0.6− |
| 2001 11 11 | 704 | 0.9+ | 0.9+ | 2004 06 05 | 644 | 0.2− | 0.3− | 2005 09 30 | 703 | 0.1+ | 1.2− |
| 2001 11 11 | 704 | 0.5+ | 0.3+ | 2004 06 05 | 644 | 0.2+ | 0.1+ | 2005 09 30 | 703 | 0.5− | 0.6− |
| 2001 11 11 | 704 | 0.7+ | 0.2+ | 2004 06 05 | 644 | 0.0 | 0.0 | 2005 10 07 | 703 | 1.3− | 0.3− |
| 2001 11 11 | 704 | 0.9+ | 0.5+ | 2004 06 05 | 644 | 0.1− | 0.4− | 2005 10 07 | 703 | 0.5+ | 0.3+ |
| 2001 11 12 | 699 | 0.0 | 0.6+ | 2004 06 05 | 644 | 0.2+ | 0.0 | 2005 10 07 | 703 | 0.5− | 0.4+ |
| 2001 11 12 | 699 | 0.3− | 1.4+ | 2004 06 11 | 704 | 0.3− | 0.4+ | 2005 10 07 | 703 | 0.5+ | 0.3− |
| 2001 11 12 | 699 | 0.2− | 0.0 | 2004 06 11 | 704 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 2001 11 12 | 699 | 0.9− | 0.0 | 2004 06 11 | 704 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.9+ | 0.5+ |
| 2002 12 14 | 704 | 0.3− | 0.1− | 2004 06 11 | 704 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.3− | 0.8+ | 2004 06 15 | 704 | 0.2− | 0.8+ | 2006 11 16 | 704 | 0.2− | 0.9+ |
| 2002 12 14 | 704 | 0.4+ | 0.7+ | 2004 06 15 | 704 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2003 01 01 | 704 | 0.2− | 0.2− | 2004 06 15 | 704 | 0.2+ | 0.5− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2003 01 01 | 704 | 0.5+ | 0.1− | 2004 06 15 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2003 01 01 | 704 | 0.3− | 0.8− | 2004 06 17 | 704 | 0.1− | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2003 01 01 | 704 | 0.3+ | 0.4+ | 2004 06 17 | 704 | 0.1+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | (2.1− | 1.1+) | 2004 06 17 | 704 | 1.4+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 1.1− | 0.8+ | 2004 06 17 | 704 | 0.2− | 0.4+ | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2004 06 17 | 704 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 1.1− | 0.9− | 2004 08 12 | E12 | 1.4+ | 0.7− | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2004 05 19 | 704 | 0.1+ | 0.1+ | 2004 08 12 | E12 | 0.4− | 0.4+ | | | | |
| 2004 05 19 | 704 | 0.6− | 0.5− | 2004 08 12 | E12 | 0.4+ | 0.0 | | | | |

**(144855)∗ 2004 KF$_{10}$ = 1998 HQ$_{130}$**

Discovered 2004 May 19 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 65836)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.30917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17374798 | $\omega$ | 166.03430 | | −0.99786713 | +0.04725174 | |
| $a$ | 3.1807012 | $\Omega$ | 16.86978 | | −0.06394999 | −0.84606990 | |
| $e$ | 0.1704906 | $i$ | 8.92835 | | +0.01309897 | −0.53097363 | |
| $P$ | 5.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.8+ | 1.4+ | 2002 12 13 | 645 | 0.0 | 0.0 | 2004 05 22 | 704 | 1.1+ | 0.1+ |
| 1998 03 29 | 704 | 0.7− | 0.1− | 2003 01 10 | 704 | (0.1+ | 1.6+) | 2004 05 22 | 704 | (0.9− | 1.7−) |
| 1998 03 29 | 704 | (2.2+ | 1.3−) | 2003 01 10 | 704 | 0.4+ | 0.8+ | 2004 05 22 | 704 | 0.8− | 0.1− |
| 1998 03 29 | 704 | 0.8+ | 1.4+ | 2003 01 10 | 704 | 1.2+ | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.2− |
| 1998 04 19 | 704 | 0.3− | 1.5− | 2003 01 10 | 704 | (1.3− | 2.6+) | 2006 09 23 | 691 | 0.5− | 0.4+ |
| 1998 04 19 | 704 | 0.5+ | 0.9− | 2004 04 17 | 460 | 0.1+ | 1.4− | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 1998 04 19 | 704 | 0.2− | 0.5+ | 2004 04 17 | 460 | 1.1− | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 1998 04 19 | 704 | 0.2− | 1.5+ | 2004 04 17 | 460 | 0.8+ | 0.9+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 1998 04 20 | 704 | 0.3+ | 0.1− | 2004 04 22 | E12 | 0.2+ | 1.4+ | 2006 09 26 | G96 | 0.1− | 0.5− |
| 1998 04 20 | 704 | 0.2− | 0.4− | 2004 04 22 | E12 | 0.9− | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 1998 04 20 | 704 | 0.6− | 0.1+ | 2004 04 22 | E12 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 1998 04 20 | 704 | 0.6− | 1.1− | 2004 04 22 | E12 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.4− |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2004 05 19 | E12 | 0.4+ | 1.1− | 2006 09 27 | 691 | 0.3+ | 0.3+ |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2004 05 19 | E12 | 1.1+ | 0.0 | 2006 10 21 | G96 | 0.5− | 0.4+ |
| 2001 10 19 | 691 | 0.3+ | 0.3+ | 2004 05 19 | E12 | (1.8+ | 1.3−) | 2006 10 21 | G96 | 0.3− | 0.4− |
| 2001 10 19 | 691 | 0.2− | 0.4+ | 2004 05 19 | E12 | 0.7+ | 1.3− | 2006 10 21 | G96 | 0.5− | 0.3− |
| 2001 10 19 | 691 | 0.1− | 0.3+ | 2004 05 22 | 704 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 12 13 | 645 | 0.1− | 0.1− | 2004 05 22 | 704 | 0.2− | 1.3+ | | | | |

**(144856)∗ 2004 KH$_{10}$**

Discovered 2004 May 20 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.96792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23553945 | $\omega$ | 171.91567 | | −0.11272986 | +0.97695943 | |
| $a$ | 2.5967309 | $\Omega$ | 91.47729 | | −0.92147460 | −0.03455858 | |
| $e$ | 0.0592389 | $i$ | 10.44459 | | −0.37172106 | −0.21060859 | |
| $P$ | 4.18 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.2− | 0.1− | 2004 05 18 | 704 | 0.6+ | 0.8− | 2005 10 08 | 699 | (0.0 | 2.2+) |
| 1994 01 08 | 691 | 0.5+ | 0.7+ | 2004 05 18 | 704 | 1.0+ | 0.1− | 2005 10 08 | 699 | 1.3− | 1.0+ |
| 1994 01 08 | 691 | 0.7− | 0.1− | 2004 05 18 | 704 | (1.0+ | 1.8−) | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2001 10 15 | 644 | 0.4+ | 0.1− | 2004 05 18 | 704 | (0.6+ | 2.6−) | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2001 10 15 | 644 | 0.4+ | 0.1+ | 2004 05 18 | 704 | (1.6+ | 3.1−) | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2001 10 15 | 644 | 0.4+ | 0.1− | 2004 05 20 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.5− | 0.2+ |
| 2001 10 23 | 644 | 0.3− | 0.2+ | 2004 05 20 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2001 10 23 | 644 | 0.3− | 0.4+ | 2004 05 20 | 691 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2001 10 23 | 644 | 0.3− | 0.3+ | 2004 05 22 | 704 | (0.4− | 1.8+) | 2006 11 14 | G96 | 0.0 | 0.1+ |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2004 05 22 | 704 | 0.5+ | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.2+ |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2004 05 22 | 704 | 0.7+ | 0.5+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2003 01 05 | 704 | 0.4+ | 0.9+ | 2004 06 10 | 599 | 1.4− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.2− | 0.9+ | 2004 06 10 | 599 | 1.4− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | (1.9+ | 0.3+) | 2004 06 10 | 599 | 0.1+ | 0.7− | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2003 01 09 | 704 | 0.7+ | 0.6+ | 2004 06 10 | 599 | 1.4− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 01 09 | 704 | 0.5+ | 1.2+ | 2004 06 16 | 704 | (1.9+ | 0.8+) | 2006 12 01 | G96 | 0.3− | 0.2− |
| 2003 01 09 | 704 | (0.2+ | 3.7+) | 2004 06 16 | 704 | (2.4+ | 1.8+) | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2004 04 30 | 691 | 0.2+ | 0.4+ | 2004 06 16 | 704 | (1.9+ | 1.8+) | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2004 04 30 | 691 | 0.1+ | 0.4+ | 2005 10 08 | 699 | 0.2− | 0.8+ | | | | |
| 2004 04 30 | 691 | 0.3+ | 0.2+ | 2005 10 08 | 699 | 0.2− | 0.5+ | | | | |

**(144857)∗ 2004 LT$_7$ = 2003 GR$_{39}$ = 2005 YC$_{36}$**

Discovered 2004 June 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 95230)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.65890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23985544 | $\omega$ | 245.28591 | | +0.77067427 | +0.63377219 | |
| $a$ | 2.5654861 | $\Omega$ | 75.31466 | | −0.55708894 | +0.72059982 | |
| $e$ | 0.2026255 | $i$ | 3.92931 | | −0.30937530 | +0.28119159 | |
| $P$ | 4.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 01 | 691 | 0.0 | 1.3− | 2003 03 26 | 691 | 0.5+ | 0.6+ | 2005 12 25 | 291 | 0.3+ | 0.1+ |
| 1995 03 01 | 691 | 0.2− | 1.1− | 2003 03 26 | 691 | 0.7+ | 0.4+ | 2005 12 25 | 291 | 0.2+ | 0.1+ |
| 1995 03 01 | 691 | 0.2− | 0.8− | 2003 04 08 | 691 | 0.0 | 1.3+ | 2005 12 25 | 291 | 0.1+ | 0.0 |
| 1995 04 05 | 691 | 2.1− | 1.2+ | 2003 04 08 | 691 | 0.7− | 1.8+ | 2005 12 26 | G96 | 0.2− | 0.3− |
| 1995 04 05 | 691 | 0.2+ | 0.3− | 2003 04 08 | 691 | 0.6− | 1.8+ | 2005 12 26 | G96 | 0.1− | 0.0 |
| 1995 04 05 | 691 | 0.4− | 0.4− | 2003 04 10 | 691 | 0.1+ | 0.2+ | 2005 12 26 | G96 | 0.0 | 0.0 |
| 1995 04 08 | 691 | 1.1+ | 0.7− | 2003 04 10 | 691 | 0.1+ | 0.5+ | 2006 01 06 | G96 | 0.3− | 0.1+ |
| 1995 04 08 | 691 | 0.6+ | 1.2− | 2003 04 10 | 691 | 0.2− | 0.1+ | 2006 01 06 | G96 | 0.4− | 0.6+ |
| 1995 04 08 | 691 | 0.4− | 0.7− | 2004 06 11 | 704 | 1.4+ | 1.6+ | 2006 01 06 | G96 | 0.6− | 0.3+ |
| 2000 08 02 | 704 | 0.8− | 0.8+ | 2004 06 11 | 704 | 0.8+ | 1.0+ | 2006 01 06 | G96 | 0.2− | 0.0 |
| 2000 08 02 | 704 | 0.1− | 0.4+ | 2004 06 11 | 704 | 0.4+ | 1.0+ | 2006 01 26 | G96 | 0.3− | 0.2− |
| 2000 08 02 | 704 | 0.3− | 0.5+ | 2004 06 14 | 704 | 0.1+ | 0.0 | 2006 01 26 | G96 | 0.1+ | 0.1+ |
| 2000 08 02 | 704 | 0.6− | 0.5+ | 2004 06 14 | 704 | 0.3− | 0.4− | 2006 01 26 | G96 | 0.1− | 0.1− |
| 2000 08 02 | 704 | 1.6− | 0.3+ | 2004 06 14 | 704 | 0.2− | 0.5+ | 2006 01 26 | G96 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 1.0− | 0.9+ | 2004 06 16 | 704 | 0.1− | 0.8+ | 2006 02 23 | G96 | 0.2− | 0.1− | | |
| 2000 09 24 | 704 | 0.4− | 0.3− | 2004 06 16 | 704 | 0.7+ | 0.2+ | 2006 02 23 | G96 | 0.1− | 0.1− | | |
| 2000 09 24 | 704 | 0.2+ | 0.4+ | 2004 06 16 | 704 | 0.4+ | 0.2+ | 2006 02 23 | G96 | 0.6− | 0.2− | | |
| 2000 09 24 | 704 | 0.7− | 0.9+ | 2004 06 16 | 704 | 0.6+ | 0.5+ | 2006 02 23 | G96 | 0.1+ | 0.1+ | | |
| 2001 12 25 | 691 | 0.3+ | 0.3+ | 2005 12 04 | 704 | 0.4− | 0.0 | 2006 03 05 | G96 | 0.1+ | 0.1− | | |
| 2001 12 25 | 691 | 0.5+ | 0.1− | 2005 12 04 | 704 | 0.5− | 0.2+ | 2006 03 05 | G96 | 0.1+ | 0.3+ | | |
| 2001 12 25 | 691 | 0.4+ | 0.2+ | 2005 12 04 | 704 | 0.1+ | 1.2+ | 2006 03 05 | G96 | 0.0 | 0.8+ | | |
| 2003 03 26 | 691 | 0.8+ | 0.7+ | 2005 12 04 | 704 | 0.4− | 0.1− | 2006 03 05 | G96 | 1.0− | 0.6+ | | |

**(144858)∗ 2004 LT$_9$**

Discovered 2004 June 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.46678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22168572 | $\omega$ | 285.28873 | | −0.84474103 | +0.50294237 | |
| $a$ | 2.7038187 | $\Omega$ | 285.21244 | | −0.38872577 | −0.81155402 | |
| $e$ | 0.1347542 | $i$ | 10.92755 | | −0.36783809 | −0.29737022 | |
| $P$ | 4.45 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.1− | 0.7+ | 2004 06 13 | 704 | 0.0 | 0.0 | 2004 07 16 | 704 | 0.4− | 0.2− | | |
| 2000 09 01 | 704 | 0.4+ | 0.2+ | 2004 06 13 | 704 | (1.7− | 0.7−) | 2004 07 18 | 704 | 0.0 | 0.4+ | | |
| 2000 09 01 | 704 | 0.3− | 0.4− | 2004 06 13 | 704 | 0.3− | 0.9+ | 2004 07 18 | 704 | 0.3+ | 0.3− | | |
| 2000 09 01 | 704 | 0.1+ | 0.2+ | 2004 06 13 | 704 | 0.2+ | 0.9− | 2004 07 18 | 704 | 0.3− | 0.3+ | | |
| 2000 09 01 | 704 | 0.2− | 0.8+ | 2004 06 13 | 704 | 0.1+ | 0.1− | 2004 07 18 | 704 | 0.2− | 0.8+ | | |
| 2001 12 09 | 704 | 0.0 | 1.4+ | 2004 06 13 | 704 | 0.3− | 0.4+ | 2004 08 08 | 704 | 0.0 | 1.3+ | | |
| 2001 12 09 | 704 | 1.1− | 0.2+ | 2004 06 13 | 704 | 0.5+ | 0.5− | 2004 08 08 | 704 | 0.3− | 0.2+ | | |
| 2001 12 09 | 704 | 0.2− | 0.6+ | 2004 06 13 | 704 | 0.3+ | 0.3+ | 2004 08 08 | 704 | 0.3− | 0.7+ | | |
| 2001 12 09 | 704 | (1.0+ | 1.8+) | 2004 06 13 | 704 | 0.3− | 0.0 | 2005 09 29 | 703 | 0.6+ | 0.6− | | |
| 2003 01 26 | 608 | 0.2− | 0.7+ | 2004 06 13 | 704 | 1.2+ | 0.6+ | 2005 09 29 | 703 | 1.0+ | 0.1+ | | |
| 2003 01 26 | 608 | 0.1− | 0.6+ | 2004 06 13 | 704 | 0.2− | 1.0− | 2005 09 29 | 703 | 0.1+ | 0.3+ | | |
| 2003 01 26 | 608 | 0.1+ | 0.6+ | 2004 06 14 | 704 | 0.5+ | 0.1− | 2005 09 29 | 703 | 0.5− | 0.6− | | |
| 2003 02 01 | 608 | 0.3− | 0.1− | 2004 06 14 | 704 | 0.4− | 0.7− | 2005 10 29 | 703 | 0.7+ | 0.5− | | |
| 2003 02 01 | 608 | 0.4+ | 0.3+ | 2004 06 14 | 704 | 0.6− | 1.1− | 2005 10 29 | 703 | 0.6− | 1.1+ | | |
| 2003 02 01 | 608 | 1.0− | 0.7+ | 2004 06 14 | 704 | 0.4+ | 0.7+ | 2005 10 29 | 703 | 0.4− | 0.9+ | | |
| 2003 02 12 | 608 | 0.4+ | 0.3− | 2004 06 14 | 704 | 0.2− | 0.2+ | 2005 10 29 | 703 | 0.5− | 1.2− | | |
| 2003 02 12 | 608 | 0.5+ | 0.1− | 2004 07 11 | 704 | 0.2− | 0.6− | 2006 10 23 | G96 | 0.2− | 0.0 | | |
| 2003 02 12 | 608 | 0.9+ | 0.1− | 2004 07 11 | 704 | 0.2− | 0.3− | 2006 10 23 | G96 | 0.4− | 0.0 | | |
| 2003 03 10 | 704 | 0.6+ | 0.5+ | 2004 07 11 | 704 | 0.1− | 0.8− | 2006 10 23 | G96 | 0.4− | 0.2− | | |
| 2003 03 10 | 704 | 0.4+ | 0.6+ | 2004 07 11 | 704 | 0.1− | 0.7− | 2006 10 23 | G96 | 0.3+ | 0.0 | | |
| 2003 03 10 | 704 | 0.1+ | 0.4− | 2004 07 11 | 704 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2004 06 12 | E12 | 0.2− | 0.4+ | 2004 07 16 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2004 06 12 | E12 | 0.3− | 0.3+ | 2004 07 16 | 704 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.1− | | |
| 2004 06 12 | E12 | 0.3− | 0.7+ | 2004 07 16 | 704 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.1+ | | |
| 2004 06 12 | E12 | 0.1− | 0.6+ | 2004 07 16 | 704 | 0.3+ | 0.2+ | | | | | | |

**(144859)∗ 2004 LG$_{10}$ = 2002 XP$_{95}$**

Discovered 2004 June 8 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69732)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.97747 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26431450 | $\omega$ | 29.12653 | | −0.69626763 | −0.71639058 | |
| $a$ | 2.4046695 | $\Omega$ | 105.04197 | | +0.64927148 | −0.65512670 | |
| $e$ | 0.1152156 | $i$ | 2.65150 | | +0.30603584 | −0.23998655 | |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 08 | 691 | 0.5− | 0.3+ | 2002 12 05 | 704 | 0.1− | 0.2− | 2004 06 15 | 691 | 0.3+ | 0.3+ | | |
| 1994 09 08 | 691 | 0.4− | 0.5+ | 2002 12 05 | 704 | 0.1+ | 0.1− | 2004 06 15 | 691 | 0.1− | 0.4+ | | |
| 1994 09 08 | 691 | 0.1− | 0.5+ | 2002 12 10 | 704 | 0.3+ | 0.9+ | 2005 08 08 | 807 | 0.1+ | 0.1+ | | |
| 2000 03 29 | 704 | 0.6+ | 1.9+ | 2002 12 10 | 704 | 0.2− | 0.1− | 2005 08 08 | 807 | 0.1+ | 0.2+ | | |
| 2000 03 29 | 704 | 0.7+ | 1.5+ | 2002 12 10 | 644 | 0.1+ | 0.2− | 2005 08 09 | 807 | 0.7+ | 0.1+ | | |
| 2000 03 29 | 704 | 0.9+ | 0.1− | 2002 12 10 | 704 | 0.6− | 0.7+ | 2005 08 27 | 644 | 0.2+ | 0.1+ | | |
| 2000 03 29 | 704 | 1.2+ | 0.5+ | 2002 12 10 | 704 | 0.7− | 0.5− | 2005 08 27 | 644 | 0.3+ | 0.0 | | |
| 2002 11 16 | 644 | 0.2− | 0.5+ | 2002 12 10 | 644 | 0.1− | 0.1− | 2005 08 27 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 16 | 644 | 0.0 | 0.5+ | 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.4+ | | |
| 2002 11 16 | 644 | 0.1+ | 0.6+ | 2004 05 28 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.5+ | | |
| 2002 11 23 | 644 | 0.2+ | 1.0+ | 2004 05 28 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.1+ | | |
| 2002 11 23 | 644 | 0.2+ | 0.4+ | 2004 05 28 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.5+ | | |
| 2002 11 23 | 644 | 0.1+ | 0.7+ | 2004 06 08 | 691 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.3− | 0.0 | | |
| 2002 12 05 | 704 | 0.5+ | 1.1+ | 2004 06 08 | 691 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.2− | 0.1+ | | |
| 2002 12 05 | 704 | 0.6− | 0.5+ | 2004 06 08 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.7− | 0.1+ | | |
| 2002 12 05 | 704 | 0.8+ | 0.3+ | 2004 06 15 | 691 | 0.3− | 0.1− | 2006 12 01 | G96 | 1.0− | 0.4+ | | |

**(144860)∗ 2004 LJ$_{11}$ = 2001 SW$_{195}$**

Discovered 2004 June 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 69732)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.20488 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23328772 | $\omega$ | 151.32132 | | −0.97779583 | −0.20921151 | |
| $a$ | 2.6134135 | $\Omega$ | 16.61565 | | +0.18330381 | −0.88179539 | |
| $e$ | 0.1126644 | $i$ | 2.42056 | | +0.10156288 | −0.42269071 | |
| $P$ | 4.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.1− | 0.7− | 2004 05 16 | E12 | 0.7+ | 1.0+ | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 1997 10 21 | 691 | 0.1− | 0.3− | 2004 05 16 | E12 | 0.9+ | 1.4+ | 2006 10 20 | G96 | 0.3+ | 0.3− | | |
| 1997 10 21 | 691 | (4.1− | 3.2+) | 2004 05 16 | E12 | 1.0+ | 1.0+ | 2006 10 20 | G96 | 0.6+ | 0.2− | | |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2004 05 16 | E12 | 0.6+ | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.4− | | |
| 2001 09 19 | 704 | 1.2+ | 0.5+ | 2004 06 11 | 691 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.4+ | 1.1+ | 2004 06 11 | 691 | 0.3− | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.9+ | 0.9+ | 2004 06 11 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2004 06 12 | E12 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.4+ | | |
| 2001 09 21 | 704 | 0.7+ | 1.1+ | 2004 06 12 | E12 | 0.2− | 0.5+ | 2006 11 14 | 691 | 0.3− | 0.2+ | | |
| 2001 09 21 | 704 | 0.6+ | 1.3+ | 2004 06 12 | E12 | 0.4− | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.4+ | | |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2004 06 12 | E12 | 0.0 | 0.3− | 2006 11 14 | 691 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | 0.4− | 0.9+ | 2005 08 27 | 644 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1+ | | |
| 2001 09 21 | 704 | 0.6+ | 1.3− | 2005 08 27 | 644 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1+ | | |
| 2002 12 14 | 704 | (1.4+ | 1.6+) | 2005 08 27 | 644 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2+ | | |
| 2002 12 14 | 704 | (0.1− | 1.8+) | 2005 08 31 | 691 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.1− | 0.8+ | | |
| 2002 12 14 | 704 | (2.1− | 0.8+) | 2005 08 31 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.1+ | | |
| 2003 01 05 | 704 | 0.3− | 0.5− | 2005 08 31 | 691 | 0.2− | 0.0 | 2006 11 15 | 703 | (3.0+ | 0.1+) | | |
| 2003 01 05 | 704 | 0.1− | 0.5− | 2005 10 06 | G96 | 0.6− | 0.3− | 2006 11 15 | 703 | 0.3− | 0.7+ | | |
| 2003 01 05 | 704 | 0.2− | 0.0 | 2005 10 06 | G96 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.4+ | 0.1− | | |
| 2003 01 05 | 704 | (0.2− | 2.1+) | 2005 10 06 | G96 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 2004 05 16 | 704 | 0.0 | 0.1+ | 2005 10 06 | G96 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.4+ | | |
| 2004 05 16 | 704 | 0.8− | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 22 | 691 | 0.1− | 0.2+ | | |
| 2004 05 16 | 704 | 0.8− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.6− | | | | | | |
| 2004 05 16 | 704 | 0.2− | 1.2− | 2006 09 28 | G96 | 0.4+ | 0.5− | | | | | | |

**(144861)∗ 2004 LA$_{12}$**

Discovered 2004 June 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.24027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24768866 | $\omega$ | 199.42555 | | +0.97295300 | −0.05270865 | |
| $a$ | 2.5111075 | $\Omega$ | 159.24383 | | −0.00217171 | +0.97149052 | |
| $e$ | 0.7476037 | $i$ | 39.39292 | | −0.23099296 | −0.23114490 | |
| $P$ | 3.98 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 291 | 0.2+ | 0.3+ | 2004 06 16 | 926 | 0.4+ | 0.0 | 2005 11 21 | 291 | 0.9+ | 0.2− | | |
| 2002 03 12 | 291 | 0.0 | 0.2+ | 2004 06 21 | 540 | 0.7+ | 0.2− | 2006 01 08 | G96 | 0.3+ | 0.2+ | | |
| 2002 03 12 | 645 | 0.1+ | 0.3− | 2004 06 21 | 540 | 0.6+ | 0.2+ | 2006 01 08 | G96 | 0.3− | 0.0 | | |
| 2002 03 12 | 645 | 0.0 | 0.3− | 2004 06 21 | J95 | 0.9− | 0.2+ | 2006 01 08 | G96 | 0.2+ | 0.1+ | | |
| 2002 03 12 | 291 | 0.0 | 0.4+ | 2004 06 21 | J95 | 0.8− | 0.6+ | 2006 01 08 | G96 | 0.0 | 0.4+ | | |
| 2004 06 14 | 644 | 0.6+ | 0.1+ | 2004 07 15 | 413 | 0.4+ | 0.2− | 2006 01 23 | 291 | 0.2− | 0.1+ | | |
| 2004 06 14 | 644 | 0.7+ | 0.2+ | 2004 07 15 | 413 | 0.4+ | 0.2− | 2006 01 23 | 291 | 0.0 | 0.2+ | | |
| 2004 06 14 | 644 | 0.6+ | 0.2+ | 2004 07 16 | 413 | 0.3+ | 0.0 | 2006 01 23 | 291 | 0.1− | 0.7+ | | |
| 2004 06 15 | 673 | 0.9− | 0.4+ | 2004 07 16 | 413 | 0.5+ | 0.2− | 2006 01 28 | G96 | 0.4− | 0.1+ | | |
| 2004 06 15 | 673 | 0.7− | 0.2+ | 2004 07 16 | 540 | 0.0 | 0.7− | 2006 01 28 | G96 | 0.3+ | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 15 | 926 | 0.7+ | 0.0 | 2004 07 19 | 540 | 0.4+ | 0.3− | 2006 01 28 | G96 | 0.1+ | 0.4− |
| 2004 06 15 | 926 | 0.7+ | 0.2− | 2004 07 19 | 540 | 0.3+ | 0.1− | 2006 01 28 | G96 | 0.2− | 0.3− |
| 2004 06 15 | 926 | 0.3+ | 0.1− | 2005 03 11 | G96 | 0.1− | 0.0 | 2006 02 02 | 691 | 0.1− | 0.6− |
| 2004 06 15 | 673 | 0.0 | 0.1− | 2005 03 11 | G96 | 0.0 | 0.3+ | 2006 02 02 | 691 | 1.3− | 0.0 |
| 2004 06 15 | 673 | 0.1+ | 0.4− | 2005 03 11 | G96 | 0.2+ | 0.2+ | 2006 02 02 | 691 | 0.5− | 0.1− |
| 2004 06 15 | J95 | 0.1+ | 0.5+ | 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 02 21 | G96 | 0.3+ | 0.0 |
| 2004 06 15 | J95 | 0.2− | 0.5− | 2005 03 14 | E12 | 0.5− | 0.5+ | 2006 02 21 | G96 | 0.2+ | 0.1− |
| 2004 06 16 | G90 | 0.3+ | 0.2+ | 2005 03 14 | E12 | 0.2− | 0.6+ | 2006 02 21 | G96 | 0.4− | 0.3− |
| 2004 06 16 | G90 | 0.5+ | 0.2− | 2005 03 14 | E12 | 0.0 | 0.4+ | 2006 02 21 | G96 | 0.4− | 0.1− |
| 2004 06 16 | G90 | 0.5+ | 0.1+ | 2005 03 14 | E12 | 0.1+ | 0.9+ | 2006 03 05 | 691 | 0.4+ | 0.4+ |
| 2004 06 16 | 926 | 0.5+ | 0.6+ | 2005 11 21 | 291 | 0.1− | 0.2+ | 2006 03 05 | 691 | 0.6+ | 0.2+ |
| 2004 06 16 | 926 | 0.2+ | 0.0 | 2005 11 21 | 291 | 0.3+ | 1.0+ | 2006 03 05 | 691 | 0.1+ | 0.1− |

**(144862)∗ 2004 LK$_{13}$ = 2005 UR$_{349}$**

Discovered 2004 June 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 95232)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 153.04511 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.18298578 | $\omega$ | 5.39938 | | −0.25666369 | | +0.95482222 |
| *a* | 3.0727307 | $\Omega$ | 249.79554 | | −0.89261444 | | −0.29361089 |
| *e* | 0.2437447 | *i* | 9.18460 | | −0.37062542 | | +0.04590384 |
| *P* | 5.39 | *H* | 15.0 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.5− | 0.8− | 2004 06 15 | 704 | 1.3− | 0.4− | 2005 10 27 | 699 | 1.1− | 1.2+ |
| 1999 07 13 | 704 | 0.2+ | 1.0− | 2004 06 15 | 704 | 1.2− | 0.2+ | 2005 10 30 | 704 | 0.3− | 0.5− |
| 1999 07 13 | 704 | 0.9+ | 1.0+ | 2004 06 15 | 704 | 1.1− | 0.4+ | 2005 10 30 | 704 | 0.1− | 0.5− |
| 1999 07 13 | 704 | 0.2− | 0.4+ | 2004 06 15 | 704 | 1.2− | 0.4+ | 2005 10 30 | 704 | 0.8+ | 0.5+ |
| 1999 07 13 | 704 | 0.0 | 0.1− | 2004 06 17 | 704 | 0.7+ | 0.4+ | 2005 10 30 | 704 | 1.2+ | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2004 06 17 | 704 | 0.4+ | 0.6+ | 2005 10 30 | 704 | 0.2− | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.9+ | 2004 06 17 | 704 | 0.7+ | 0.4− | 2005 11 01 | 644 | 0.1+ | 0.5+ |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2004 06 17 | 704 | 0.2+ | 0.1+ | 2005 11 01 | 644 | 0.4+ | 0.4+ |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2004 06 17 | 704 | 0.0 | 0.2+ | 2005 11 01 | 644 | 0.2+ | 0.3+ |
| 2001 12 17 | 704 | 0.3− | 0.7− | 2004 08 08 | 704 | (1.9+ | 0.2−) | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2002 11 13 | 645 | 0.0 | 0.0 | 2004 08 08 | 704 | (2.1+ | 0.3+) | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2002 11 13 | 645 | 0.0 | 0.0 | 2004 08 08 | 704 | 0.5+ | 1.3+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2003 01 28 | 704 | 1.1+ | 0.5+ | 2005 09 01 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2003 01 28 | 704 | 0.6+ | 0.4+ | 2005 09 01 | 644 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.7− |
| 2003 01 28 | 704 | (1.8+ | 1.3+) | 2005 09 01 | 644 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.7− | 0.4− |
| 2003 01 28 | 704 | (3.1+ | 0.3+) | 2005 09 10 | 699 | 1.4− | 0.8− | 2006 10 29 | G96 | 0.1− | 0.9− |
| 2003 01 28 | 608 | 0.1+ | 0.4− | 2005 09 10 | 699 | 0.2+ | 0.9− | 2006 10 29 | G96 | 0.5− | 0.6− |
| 2003 01 28 | 608 | 0.4+ | 0.5− | 2005 09 10 | 699 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.6+ | 0.2− |
| 2003 01 28 | 608 | 0.5+ | 0.9− | 2005 09 10 | 699 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2003 02 04 | 704 | 0.2+ | 0.3+ | 2005 09 30 | 699 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2003 02 04 | 704 | 0.6− | 0.8+ | 2005 09 30 | 699 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.7+ | 0.1− |
| 2003 02 04 | 704 | 0.9− | 0.9+ | 2005 09 30 | 699 | (1.0+ | 1.6+) | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2003 02 04 | 704 | 0.0 | 0.5− | 2005 09 30 | 699 | 0.6+ | 1.1+ | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2003 02 22 | 644 | 0.3+ | 0.3+ | 2005 10 05 | 703 | (1.8− | 1.2−) | 2006 11 15 | 691 | 0.3− | 0.2− |
| 2003 02 22 | 644 | 0.3+ | 0.2+ | 2005 10 05 | 703 | 0.3+ | 0.8+ | 2006 11 19 | 691 | 0.3− | 0.1− |
| 2003 02 22 | 644 | 0.1+ | 0.1+ | 2005 10 05 | 703 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2004 05 16 | 704 | 0.0 | 0.8+ | 2005 10 05 | 703 | 1.1+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2004 05 16 | 704 | 0.1+ | 0.9+ | 2005 10 08 | 704 | 0.7− | 0.3+ | 2006 11 23 | 691 | 0.4+ | 0.1+ |
| 2004 05 16 | 704 | 0.1+ | 0.2+ | 2005 10 08 | 704 | (1.7− | 0.3+) | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2004 05 16 | 704 | 0.6+ | 0.2+ | 2005 10 08 | 704 | 1.1− | 0.4+ | 2006 11 23 | 691 | 0.5+ | 0.1− |
| 2004 06 11 | 704 | 0.2+ | 0.1− | 2005 10 08 | 704 | 0.6− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.5+ |
| 2004 06 11 | 704 | 0.4+ | 0.6− | 2005 10 27 | 699 | (2.4+ | 0.1+) | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2004 06 11 | 704 | 0.1+ | 0.0 | 2005 10 27 | 699 | (0.9+ | 2.0−) | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2004 06 11 | 704 | 0.3+ | 0.1+ | 2005 10 27 | 699 | 0.0 | 0.4+ | | | | |

**(144863)∗ 2004 LW$_{13}$ = 2000 ST$_{282}$**

Discovered 2004 June 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 89577)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 176.78848 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.19215061 | $\omega$ | 13.41407 | | −0.47495244 | | +0.87013098 |
| *a* | 2.9742322 | $\Omega$ | 228.40552 | | −0.82275272 | | −0.49208451 |
| *e* | 0.0653455 | *i* | 10.12723 | | −0.31224692 | | −0.02692408 |
| *P* | 5.13 | *H* | 14.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.6− | 0.7+ | 2004 06 11 | 704 | 0.1− | 0.9+ | 2005 10 01 | 703 | 0.1− | 0.6+ |
| 2000 09 23 | 704 | 0.2+ | 0.2− | 2004 06 11 | 704 | (0.6− | 1.9+) | 2005 10 01 | 703 | (0.8+ | 1.6−) |
| 2000 09 23 | 704 | 0.1− | 0.4+ | 2004 06 16 | 704 | 0.3+ | 0.2− | 2005 10 01 | 703 | 1.1− | 0.3+ |
| 2000 09 23 | 704 | 0.5+ | 0.7− | 2004 06 16 | 704 | 0.4+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2000 10 03 | 704 | 0.4− | 0.1+ | 2004 06 16 | 704 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2000 10 03 | 704 | 1.6+ | 0.5+ | 2004 06 17 | 644 | 0.5− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2000 10 03 | 704 | 0.4+ | 0.4− | 2004 06 17 | 644 | 0.2− | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2000 10 03 | 704 | 0.2− | 0.6+ | 2004 06 17 | 644 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2000 10 03 | 704 | 0.1+ | 0.1− | 2004 06 18 | 704 | 0.1− | 1.2+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2000 10 03 | 704 | 0.4− | 0.3+ | 2004 06 18 | 704 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2000 10 03 | 704 | 0.5− | 1.3+ | 2004 06 18 | 704 | 1.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 12 11 | 704 | 0.1− | 0.3+ | 2004 06 18 | 704 | 0.8− | 1.1+ | 2006 11 18 | 691 | 0.3+ | 0.1− |
| 2001 12 11 | 704 | 0.5− | 0.6+ | 2005 08 29 | 644 | 0.3− | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.6+ |
| 2001 12 11 | 704 | 0.3− | 1.1+ | 2005 08 29 | 644 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2001 12 20 | 704 | 0.3− | 1.0+ | 2005 08 29 | 644 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2001 12 20 | 704 | 0.2− | 0.9+ | 2005 09 11 | 704 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2001 12 20 | 704 | (0.4− | 1.6+) | 2005 09 11 | 704 | 0.7+ | 0.5+ | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2001 12 20 | 704 | 0.0 | 0.1+ | 2005 09 11 | 704 | 0.4− | 0.1− | 2006 11 25 | 703 | 0.1+ | 0.7+ |
| 2003 03 08 | 699 | 0.8+ | 1.0+ | 2005 09 11 | 704 | 0.4+ | 0.2− | 2006 11 25 | 703 | 0.1+ | 0.1− |
| 2003 03 08 | 699 | (2.0+ | 0.1−) | 2005 09 23 | 644 | 0.2− | 0.4− | 2006 11 25 | 703 | 0.9− | 0.2+ |
| 2003 03 08 | 699 | 0.9+ | 1.2+ | 2005 09 23 | 644 | 0.3− | 0.3− | 2006 11 25 | 703 | 0.4− | 0.7+ |
| 2003 03 08 | 699 | 0.2− | 1.0+ | 2005 09 23 | 644 | 0.3− | 0.2− | | | | |
| 2004 06 11 | 704 | 0.2− | 1.0+ | 2005 10 01 | 703 | (1.3+ | 1.9+) | | | | |

**(144864)∗ 2004 LC$_{15}$ = 1998 AH$_{1}$ = 2001 XH$_{186}$**

Discovered 2004 June 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65858)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 169.53174 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.23869579 | $\omega$ | 214.42817 | | +0.81034296 | | +0.54403842 |
| *a* | 2.5737886 | $\Omega$ | 111.15027 | | −0.47131878 | | +0.82585793 |
| *e* | 0.1952751 | *i* | 13.49485 | | −0.34814207 | | +0.14825947 |
| *P* | 4.13 | *H* | 15.5 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 01 | 691 | 0.4− | 0.1− | 2002 12 11 | 645 | 0.1+ | 0.0 | 2004 07 16 | 704 | 0.3− | 0.1− |
| 1998 01 01 | 691 | 0.3− | 0.3+ | 2004 06 11 | 704 | 0.2+ | 0.7+ | 2004 07 16 | 704 | 0.5− | 0.1+ |
| 1998 01 01 | 691 | 0.0 | 0.2+ | 2004 06 11 | 704 | 0.0 | 1.2+ | 2004 07 16 | 704 | 0.2− | 0.1+ |
| 1998 01 06 | 691 | (3.6+ | 1.4+) | 2004 06 11 | 704 | 0.8+ | 0.4+ | 2004 07 16 | 704 | 0.4− | 0.0 |
| 1998 01 06 | 691 | (1.8+ | 2.1+) | 2004 06 11 | 704 | 0.4+ | 0.6+ | 2004 07 21 | E12 | 0.2− | 0.2− |
| 2000 06 09 | 699 | 0.0 | 0.1+ | 2004 06 11 | 704 | 0.0 | 0.2− | 2004 07 21 | E12 | (1.6+ | 0.3+) |
| 2000 06 09 | 699 | 0.4+ | 0.9− | 2004 06 15 | 704 | 0.3+ | 0.1+ | 2004 07 21 | E12 | 0.3− | 0.1− |
| 2000 06 09 | 699 | 0.2+ | 0.2+ | 2004 06 15 | 704 | 0.3+ | 0.0 | 2004 07 21 | E12 | 0.3− | 0.2− |
| 2000 06 09 | 699 | 0.2− | 0.3+ | 2004 06 15 | 704 | 0.3+ | 0.2+ | 2004 08 11 | 704 | 0.3+ | 0.7+ |
| 2000 08 02 | 704 | 0.9+ | 1.4− | 2004 06 15 | 704 | 0.3− | 0.1− | 2004 08 11 | 704 | 0.7− | 0.3− |
| 2000 08 02 | 704 | 0.1− | 0.4− | 2004 06 15 | 704 | 0.0 | 0.2− | 2004 08 11 | 704 | 1.2− | 0.8− |
| 2000 08 02 | 704 | 0.1− | 0.2− | 2004 06 18 | 704 | 0.4+ | 0.3− | 2004 08 11 | 704 | 0.2− | 0.2+ |
| 2001 12 14 | 704 | 0.2− | 0.4+ | 2004 06 18 | 704 | 0.4+ | 0.6− | 2006 01 28 | G96 | 0.2− | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2004 06 18 | 704 | 0.2− | 0.3− | 2006 01 28 | G96 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 1.2+ | 0.5+ | 2004 06 18 | 704 | 0.7+ | 0.1− | 2006 01 28 | G96 | 0.2− | 0.3+ |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2004 06 20 | 691 | 0.2− | 0.2− | 2006 01 28 | G96 | 0.4− | 0.1− |
| 2001 12 17 | 704 | 0.6+ | 0.3− | 2004 06 20 | 691 | 0.5+ | 1.4+ | 2006 11 20 | G96 | 0.0 | 0.6− |
| 2001 12 17 | 704 | 0.4+ | 0.1+ | 2004 06 20 | 691 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.6− | 0.4− |
| 2001 12 17 | 704 | 0.9+ | 0.1− | 2004 07 09 | 704 | 0.9− | 0.3− | 2006 11 20 | G96 | 0.3− | 0.2− |
| 2002 01 09 | 704 | 0.1+ | 0.3+ | 2004 07 09 | 704 | 0.8+ | 0.1− | 2006 11 20 | G96 | 0.3− | 0.3+ |
| 2002 01 09 | 704 | 0.7− | 0.9+ | 2004 07 09 | 704 | (1.9+ | 1.3−) | 2006 11 28 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.3− | 0.7+ | 2004 07 09 | 704 | 0.3+ | 0.9+ | 2006 11 28 | 691 | 0.4− | 0.1− |
| 2002 12 11 | 645 | 0.1+ | 0.1− | 2004 07 16 | 704 | 0.3− | 0.4+ | 2006 11 28 | 691 | 0.2+ | 0.2+ |

**(144865)∗ 2004 LD$_{15}$ = 2000 YV$_{124}$ = 2005 WG$_{153}$**

Discovered 2004 June 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 95232)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 109.49936 | | (2000.0) | | | |
| $n$ | 0.17457729 | $\omega$ | 240.92298 | | +0.81098859 | +0.49167120 |
| $a$ | 3.1706202 | $\Omega$ | 87.96120 | | −0.36234252 | +0.84763853 |
| $e$ | 0.1342197 | $i$ | 18.50020 | | −0.45935324 | +0.19942006 |
| $P$ | 5.65 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.5− | 0.8+ | 2004 06 15 | 704 | 1.2+ | 0.7− | 2005 11 29 | 644 | 0.3− | 0.2+ |
| 1999 09 11 | 704 | 0.6− | 0.3+ | 2004 06 15 | 704 | 1.1+ | 0.7− | 2005 11 30 | 703 | 0.7− | 0.3− |
| 1999 09 11 | 704 | 1.3− | 0.7+ | 2004 06 17 | 704 | 0.6+ | 0.3+ | 2005 11 30 | 703 | 0.6− | 0.6+ |
| 1999 09 11 | 704 | 1.1− | 0.1− | 2004 06 17 | 704 | 0.2− | 0.1− | 2005 11 30 | 703 | 0.1+ | 0.0 |
| 2000 12 29 | 691 | 0.3+ | 0.2− | 2004 06 17 | 704 | 0.5+ | 0.0 | 2005 11 30 | 703 | 0.3− | 0.7+ |
| 2000 12 29 | 691 | 0.1+ | 0.1− | 2004 06 17 | 704 | 1.2− | 0.6+ | 2005 12 06 | 699 | 0.2− | 0.2+ |
| 2000 12 29 | 691 | 0.2+ | 0.0 | 2005 10 07 | 699 | 0.1+ | 0.0 | 2005 12 06 | 699 | 0.2+ | 0.1+ |
| 2000 12 30 | 704 | 0.5+ | 0.1+ | 2005 10 07 | 699 | 0.0 | 0.2+ | 2005 12 06 | 699 | 0.4− | 1.3+ |
| 2000 12 30 | 704 | 1.3+ | 0.8− | 2005 10 07 | 699 | 0.1+ | 0.1− | 2005 12 06 | 699 | 0.9− | 0.8− |
| 2000 12 30 | 704 | 0.8+ | 1.1+ | 2005 10 07 | 699 | 1.3− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.2+ |
| 2003 03 31 | 645 | 0.0 | 0.1+ | 2005 10 08 | 703 | 0.2− | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2003 03 31 | 645 | 0.0 | 0.1+ | 2005 10 08 | 703 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.5+ |
| 2003 04 25 | 645 | 0.0 | 0.2+ | 2005 10 08 | 703 | 0.3+ | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2003 04 25 | 645 | 0.0 | 0.1+ | 2005 10 08 | 703 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2004 06 11 | 704 | 0.8+ | 0.2+ | 2005 11 03 | 703 | 0.2+ | 0.5− | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2004 06 11 | 704 | 0.1+ | 0.8− | 2005 11 03 | 703 | 0.4− | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2004 06 11 | 704 | 0.2+ | 0.5− | 2005 11 03 | 703 | 0.6− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2004 06 15 | 704 | 0.3+ | 0.2− | 2005 11 03 | 703 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2004 06 15 | 704 | 0.4+ | 0.1+ | 2005 11 29 | 644 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.4− | 0.1− |
| 2004 06 15 | 704 | 0.2− | 0.1− | 2005 11 29 | 644 | 0.1− | 0.0 | | | | |

**(144866)∗ 2004 LX$_{16}$ = 2002 AN$_{92}$**

Discovered 2004 June 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69733)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.05206 | | (2000.0) | | | |
| $n$ | 0.12532588 | $\omega$ | 69.33030 | | +0.76343858 | +0.62526859 |
| $a$ | 3.9546574 | $\Omega$ | 251.60646 | | −0.63769238 | +0.68992669 |
| $e$ | 0.3143764 | $i$ | 9.82161 | | −0.10251811 | +0.36474697 |
| $P$ | 7.86 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 12 | 807 | 0.4+ | 0.2+ | 2005 06 10 | 703 | 1.1+ | 0.3+ | 2005 09 29 | 683 | 0.6+ | 0.7+ |
| 2002 01 12 | 807 | 0.1+ | 0.2+ | 2005 06 10 | 703 | 0.0 | 0.3+ | 2005 10 02 | 699 | 0.4+ | 0.5− |
| 2002 01 12 | 807 | 0.0 | 0.1+ | 2005 06 10 | 703 | 0.5+ | 0.4− | 2005 10 02 | 699 | 0.2+ | 0.6− |
| 2002 01 12 | 807 | 0.0 | 0.5+ | 2005 06 10 | 703 | 0.2− | 0.5− | 2005 10 02 | 699 | 0.1+ | 0.5+ |
| 2002 01 12 | 807 | 0.1+ | 0.5+ | 2005 07 03 | 703 | 0.7− | 0.0 | 2005 10 02 | 699 | 0.1− | 0.1+ |
| 2002 01 12 | 807 | 0.2+ | 0.5+ | 2005 07 03 | 703 | 0.1+ | 0.6+ | 2005 10 07 | 703 | 1.1+ | 1.5+ |
| 2002 01 12 | 807 | 0.3+ | 0.6+ | 2005 07 03 | 703 | 0.5− | 0.1+ | 2005 10 07 | 703 | 0.2+ | 0.6+ |
| 2002 01 13 | 807 | 0.1− | 0.1+ | 2005 07 03 | 703 | 0.0 | 0.8+ | 2005 10 07 | 703 | 0.1− | 0.8+ |
| 2002 01 13 | 807 | 0.2+ | 0.3+ | 2005 07 05 | 704 | 0.5+ | 0.8− | 2005 10 07 | 703 | 1.3+ | 0.2− |
| 2002 01 13 | 807 | 0.2+ | 0.4+ | 2005 07 05 | 704 | 0.4+ | 0.0 | 2005 10 28 | 703 | 0.5− | 0.2− |
| 2002 01 13 | 807 | 0.1− | 0.1+ | 2005 07 05 | 704 | 0.5− | 0.1+ | 2005 10 28 | 703 | 0.1+ | 0.0 |
| 2004 05 16 | 704 | 0.0 | 0.2− | 2005 07 09 | 703 | 1.0− | 0.3− | 2005 10 28 | 703 | 0.3− | 0.4+ |
| 2004 05 16 | 704 | 0.8− | 0.4− | 2005 07 09 | 703 | 0.6− | 1.3− | 2005 10 28 | 703 | 0.8− | 0.1− |
| 2004 05 16 | 704 | 0.6− | 0.2+ | 2005 07 09 | 703 | 0.2− | 0.9− | 2005 10 30 | 699 | 0.0 | 0.5+ |
| 2004 05 16 | 704 | 0.0 | 0.2− | 2005 07 09 | 703 | 0.4− | 0.2− | 2005 10 30 | 699 | 0.0 | 0.8+ |
| 2004 05 16 | 704 | 0.2− | 0.3− | 2005 09 01 | 704 | 1.2+ | 1.1+ | 2005 10 30 | 699 | 0.5− | 0.2− |
| 2004 06 14 | 704 | 0.7− | 0.4+ | 2005 09 01 | 704 | (1.5+ | 3.2−) | 2005 10 30 | 699 | 0.8− | 0.1+ |
| 2004 06 14 | 704 | 0.2− | 0.3+ | 2005 09 01 | 704 | (2.5+ | 0.4−) | 2005 12 02 | 703 | (2.0− | 0.1−) |
| 2004 06 14 | 704 | 0.4+ | 0.2− | 2005 09 01 | 704 | 0.3+ | 0.6+ | 2005 12 02 | 703 | (1.8− | 0.3−) |
| 2004 06 14 | 704 | 0.3+ | 0.2+ | 2005 09 01 | 704 | (1.2− | 1.8+) | 2005 12 02 | 703 | 0.3− | 1.1− |
| 2004 06 14 | 704 | 0.1+ | 0.6+ | 2005 09 08 | A50 | 0.0 | 0.0 | 2005 12 02 | 703 | 0.0 | 0.9+ |
| 2004 06 15 | 704 | 0.1+ | 0.1+ | 2005 09 08 | A50 | 0.1+ | 0.3+ | 2005 12 07 | 704 | 0.5− | 0.0 |
| 2004 06 15 | 704 | 0.4+ | 1.0− | 2005 09 12 | 704 | 0.4+ | 1.1+ | 2005 12 07 | 704 | 1.4− | 0.0 |
| 2004 06 15 | 704 | 0.3+ | 0.4+ | 2005 09 12 | 704 | 0.2+ | 0.8+ | 2005 12 07 | 704 | 1.3− | 1.2− |
| 2004 06 15 | 704 | 0.5+ | 0.1+ | 2005 09 12 | 704 | 1.1+ | 1.2+ | 2005 12 07 | 704 | 0.3− | 0.9+ |
| 2004 06 16 | 704 | 0.3+ | 0.5− | 2005 09 12 | 704 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.9+ | 0.7− |
| 2004 06 16 | 704 | 0.1+ | 0.7− | 2005 09 12 | 704 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2004 06 16 | 704 | 0.4+ | 0.5− | 2005 09 23 | 683 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2004 06 16 | 704 | 0.7+ | 0.5− | 2005 09 23 | 683 | 0.7+ | 1.3− | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2004 06 17 | 704 | 0.1+ | 0.3+ | 2005 09 23 | 683 | 0.4+ | 0.5+ | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 2004 06 17 | 704 | 0.4+ | 0.9+ | 2005 09 24 | 683 | 0.8− | 0.3− | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2004 06 17 | 704 | 0.8+ | 0.0 | 2005 09 24 | 683 | 0.8+ | 1.3− | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2004 06 17 | 704 | 0.5− | 0.8+ | 2005 09 24 | 683 | 0.9− | 0.8− | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2004 06 17 | 704 | 0.5− | 0.5+ | 2005 09 24 | A50 | 0.9− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2004 06 17 | 704 | 0.1− | 0.1+ | 2005 09 24 | A50 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.4− | 0.7− |
| 2004 06 17 | 704 | 0.1− | 0.4+ | 2005 09 24 | A50 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2004 06 17 | 704 | 0.1+ | 1.4+ | 2005 09 24 | A50 | (1.1− | 1.7+) | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 06 18 | 704 | 0.9− | 0.0 | 2005 09 25 | 683 | 0.5− | 1.2− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 06 18 | 704 | 0.9− | 0.5− | 2005 09 25 | 683 | 0.6− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2004 06 18 | 704 | 0.9+ | 0.1+ | 2005 09 25 | 683 | 0.7− | 0.4− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2004 06 18 | 704 | (2.2+ | 0.9+) | 2005 09 27 | 683 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2005 05 16 | 703 | 0.8+ | 1.3− | 2005 09 27 | 683 | (0.2− | 1.7+) | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2005 05 16 | 703 | 0.3+ | 0.1+ | 2005 09 27 | 683 | 1.1− | 0.9+ | 2006 12 01 | 691 | 0.4− | 0.0 |
| 2005 05 16 | 703 | 1.4− | 0.7− | 2005 09 29 | 683 | 1.1+ | 0.5+ | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2005 05 16 | 703 | (1.7+ | 0.2−) | 2005 09 29 | 683 | 0.7+ | 1.3+ | 2006 12 01 | 691 | 0.3− | 0.0 |

**(144867)∗ 2004 LA$_{17}$ = 2001 UZ$_{215}$**

Discovered 2004 June 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 69733)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 194.33260 | | (2000.0) | | | |
| $n$ | 0.24103763 | $\omega$ | 321.64446 | | −0.13644910 | +0.98935412 |
| $a$ | 2.5570908 | $\Omega$ | 300.45978 | | −0.89379747 | −0.14497421 |
| $e$ | 0.1432785 | $i$ | 3.36510 | | −0.42720923 | −0.01268440 |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 07 | 691 | 0.7+ | 0.3− | 2004 06 14 | 704 | 0.1+ | 0.2+ | 2005 10 28 | 151 | 0.5+ | 0.2− |
| 1995 02 07 | 691 | 0.7+ | 0.3− | 2004 06 14 | 704 | 0.4− | 0.1+ | 2005 10 28 | 151 | 0.3+ | 0.2− |
| 1995 02 07 | 691 | 0.4+ | 0.1− | 2004 06 14 | 704 | 0.2− | 0.3+ | 2005 10 29 | 703 | 0.3+ | 0.2+ |
| 1995 02 21 | 691 | 0.5− | 0.5− | 2004 06 14 | 704 | 0.1− | 0.1− | 2005 10 29 | 703 | 1.1− | 0.2− |
| 1995 02 21 | 691 | 0.5− | 0.5− | 2004 06 16 | 704 | 0.3− | 0.4+ | 2005 10 29 | 703 | 0.1+ | 0.0 |
| 1995 02 21 | 691 | 0.5− | 0.8+ | 2004 06 16 | 704 | 0.0 | 0.8+ | 2005 10 29 | 703 | 0.2− | 1.3− |
| 2001 10 23 | 691 | 0.1− | 0.1− | 2004 06 16 | 704 | 0.5+ | 0.4+ | 2005 10 30 | 691 | 0.3+ | 0.1− |
| 2001 10 23 | 691 | 0.6− | 0.3+ | 2004 06 16 | 704 | 0.7− | 0.7+ | 2005 10 30 | 691 | 0.3+ | 0.1− |
| 2001 10 23 | 691 | 0.8− | 0.0 | 2004 06 16 | 704 | 0.2+ | 0.6+ | 2005 10 30 | 691 | 0.3+ | 0.1+ |
| 2001 10 26 | 644 | 0.1− | 0.2+ | 2005 09 26 | 691 | 0.1+ | 0.1+ | 2005 11 05 | 703 | 0.5− | 0.1− |
| 2001 10 26 | 644 | 0.1+ | 0.3+ | 2005 09 26 | 691 | 0.3+ | 0.0 | 2005 11 05 | 703 | 1.4− | 0.2− |
| 2001 10 26 | 644 | 0.2+ | 0.4+ | 2005 09 26 | 691 | 0.3+ | 0.2+ | 2005 11 05 | 703 | 1.2− | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 1.0+ | 2005 09 30 | 703 | 0.2+ | 0.2− | 2005 11 05 | 703 | 0.5− | 0.2− |
| 2001 11 19 | 704 | 0.2+ | 0.2+ | 2005 09 30 | 703 | 0.7− | 0.7− | 2005 11 10 | G96 | 0.4+ | 0.0 |
| 2001 11 19 | 704 | 0.3+ | 1.5+ | 2005 09 30 | 703 | 0.7− | 0.0 | 2005 11 10 | G96 | 0.4+ | 0.0 |
| 2001 11 19 | 704 | 0.6− | 1.6+ | 2005 09 30 | 703 | 1.4+ | 1.0− | 2005 11 10 | G96 | 0.2+ | 0.0 |
| 2003 01 27 | 291 | 1.0− | 1.3+ | 2005 10 08 | 704 | 0.4− | 0.3+ | 2005 11 10 | G96 | 0.1+ | 0.1− |
| 2003 01 27 | 291 | 0.5+ | 0.1+ | 2005 10 08 | 704 | 0.3− | 0.8+ | 2005 11 10 | G96 | 0.5+ | 0.1+ |
| 2003 01 27 | 291 | 0.6+ | 0.1+ | 2005 10 08 | 704 | 0.4+ | 1.1+ | 2005 11 10 | G96 | 0.3+ | 0.0 |
| 2004 05 18 | 704 | 0.8+ | 0.4+ | 2005 10 08 | 704 | 0.2− | 0.9− | 2005 11 10 | G96 | 0.3+ | 0.2+ |
| 2004 05 18 | 704 | 0.6+ | 0.1− | 2005 10 23 | 644 | 0.0 | 0.0 | 2005 11 10 | G96 | 0.4+ | 0.2+ |
| 2004 05 18 | 704 | 0.0 | 1.3+ | 2005 10 23 | 644 | 0.2+ | 0.2− | | | | |
| 2004 06 14 | 704 | 0.1− | 0.7+ | 2005 10 23 | 644 | 0.3+ | 0.0 | | | | |

**(144868)∗ 2004 LW$_{29}$ = 2000 WA$_{135}$ = 2005 TH$_{6}$**

Discovered 2004 June 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 95235)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.45984 | | (2000.0) | | | |
| $n$ | 0.18240449 | $\omega$ | 256.56569 | | −0.97703428 | −0.13062168 |
| $a$ | 3.0792553 | $\Omega$ | 275.73614 | | +0.18964840 | −0.89326949 |
| $e$ | 0.0075866 | $i$ | 9.74119 | | −0.09714678 | −0.43012509 |
| $P$ | 5.40 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 704 | 0.6− | 0.0 | 2004 07 18 | 704 | 0.2+ | 0.8− | 2005 10 29 | 703 | (0.8− | 1.9−) |
| 2000 11 19 | 704 | 1.1+ | 0.1− | 2004 07 18 | 704 | 0.2− | 0.6− | 2006 09 25 | 691 | 0.3+ | 0.2+ |
| 2000 11 19 | 704 | 1.0− | 0.2+ | 2005 09 03 | 644 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2000 11 19 | 704 | 1.5+ | 0.3− | 2005 09 03 | 644 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.4− |
| 2000 11 24 | 699 | 1.1− | 0.3− | 2005 09 03 | 644 | 0.3+ | 0.5− | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2000 11 24 | 699 | 0.8+ | 1.2− | 2005 10 01 | 703 | 0.7+ | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2000 11 24 | 699 | 0.7− | 0.4+ | 2005 10 01 | 703 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2000 11 24 | 699 | 0.1+ | 0.6+ | 2005 10 01 | 703 | 0.9− | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2004 06 14 | 691 | 0.2− | 0.0 | 2005 10 01 | 703 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2004 06 14 | 691 | 0.2− | 0.1+ | 2005 10 02 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2004 06 14 | 691 | 0.2− | 0.0 | 2005 10 02 | 644 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.7− |
| 2004 06 19 | 691 | 0.2+ | 0.1− | 2005 10 02 | 644 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2004 06 19 | 691 | 0.0 | 0.1+ | 2005 10 26 | 699 | (2.4+ | 1.2−) | 2006 10 22 | G96 | 0.4− | 0.4− |
| 2004 06 19 | 691 | 0.0 | 0.0 | 2005 10 26 | 699 | 0.6− | 0.4+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2004 07 18 | 704 | 0.8+ | 0.7+ | 2005 10 26 | 699 | 0.7+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2004 07 18 | 704 | 0.5+ | 0.3− | 2005 10 26 | 699 | 0.5− | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2004 07 18 | 704 | (1.9+ | 0.2+) | 2005 10 29 | 703 | 0.2+ | 0.9+ | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2004 07 18 | 704 | 0.7+ | 0.7− | 2005 10 29 | 703 | 1.0− | 0.6− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2004 07 18 | 704 | (0.8+ | 1.7+) | 2005 10 29 | 703 | 0.2− | 0.8− | 2006 11 27 | G96 | 0.2+ | 0.2− |

**(144869)∗ 2004 MQ = 1999 FA$_{43}$**

Discovered 2004 June 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 65871)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 236.48368 | | (2000.0) | | | |
| $n$ | 0.21876366 | $\omega$ | 17.59855 | | −0.99771776 | −0.05988736 |
| $a$ | 2.7278423 | $\Omega$ | 158.89406 | | +0.04668480 | −0.94553824 |
| $e$ | 0.2160985 | $i$ | 4.96888 | | +0.04878321 | −0.31995458 |
| $P$ | 4.51 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.2− | 0.1+ | 2004 05 15 | 704 | 0.1+ | 0.6+ | 2005 08 28 | 691 | 0.2+ | 0.1− |
| 1999 02 09 | 691 | 0.3− | 0.2+ | 2004 05 15 | 704 | 0.9+ | 0.5+ | 2005 08 28 | 691 | 0.3− | 0.1− |
| 1999 02 09 | 691 | 0.3+ | 0.3+ | 2004 05 15 | 704 | 0.0 | 1.0+ | 2005 09 01 | 691 | 0.2− | 0.1− |
| 1999 03 20 | 704 | 1.4− | 0.1− | 2004 06 12 | 704 | 0.5+ | 0.5+ | 2005 09 01 | 691 | 0.2− | 0.1+ |
| 1999 03 20 | 704 | 0.7+ | 0.6− | 2004 06 12 | 704 | 0.9− | 0.5+ | 2005 09 01 | 691 | 0.1− | 0.2− |
| 1999 03 20 | 704 | (2.8+ | 2.2−) | 2004 06 12 | 704 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.0 |
| 1999 03 20 | 704 | 0.6+ | 0.9− | 2004 06 12 | 704 | (2.2+ | 0.1+) | 2006 10 03 | G96 | 0.4+ | 0.1+ |
| 1999 03 20 | 704 | 1.7+ | 0.2+ | 2004 06 16 | 704 | 1.1− | 1.3− | 2006 10 03 | G96 | 0.5+ | 0.0 |
| 1999 03 23 | 704 | 0.7− | 0.0 | 2004 06 16 | 704 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 1999 03 23 | 704 | 0.3− | 1.0+ | 2004 06 16 | 704 | 0.1+ | 0.6− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 1999 03 23 | 704 | 0.7+ | 0.1− | 2004 06 16 | 704 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.5+ |
| 1999 03 23 | 704 | 1.2− | 1.3− | 2004 06 18 | 704 | 0.6+ | 1.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2004 06 18 | 704 | 0.2− | 0.8+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2001 10 14 | 645 | 0.1− | 0.0 | 2004 06 18 | 704 | 1.1+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 06 22 | 599 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2004 06 22 | 599 | 0.7+ | 0.0 | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2004 06 22 | 599 | 0.2− | 0.2− | | | | |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2005 08 28 | 691 | 0.3− | 0.0 | | | | |

**(144870)∗ 2004 MA$_{8}$**

Discovered 2004 June 29 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.01261 | | (2000.0) | | | |
| $n$ | 0.16961866 | $\omega$ | 184.70204 | | −0.79276322 | +0.59664172 |
| $a$ | 3.2321161 | $\Omega$ | 32.96488 | | −0.55149536 | −0.61500599 |
| $e$ | 0.5569524 | $i$ | 13.24638 | | −0.25957531 | −0.51554466 |
| $P$ | 5.81 | $H$ | 14.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 25 | 261 | 0.7− | 0.4− | 2004 07 01 | 422 | 0.2− | 0.2− | 2004 09 10 | E12 | 0.2− | 0.0 |
| 1992 01 25 | 261 | 1.6+ | 1.1− | 2004 07 01 | 422 | 0.0 | 0.3− | 2005 09 23 | 691 | 0.3− | 0.2+ |
| 1998 07 02 | 260 | 0.8+ | 0.4− | 2004 07 12 | 413 | 0.1+ | 0.0 | 2005 09 23 | 691 | 0.2+ | 0.3+ |
| 1998 07 02 | 260 | 0.5− | 0.2− | 2004 07 12 | 413 | 0.2+ | 0.0 | 2005 09 23 | 691 | 0.0 | 0.1+ |
| 1998 07 02 | 260 | 1.2− | 0.7+ | 2004 07 12 | 413 | 0.2+ | 0.1− | 2005 11 04 | 461 | 0.2− | 0.2− |
| 1998 07 02 | 260 | 0.1+ | 0.7+ | 2004 07 16 | E12 | 0.1+ | 0.0 | 2005 11 04 | 461 | 0.7+ | 0.8− |
| 2004 04 21 | E12 | 0.7− | 1.2+ | 2004 07 16 | E12 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2004 04 21 | E12 | (0.6− | 1.7+) | 2004 07 16 | E12 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2− | 0.5− |
| 2004 04 21 | E12 | (0.7− | 1.6+) | 2004 07 16 | E12 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.4− | 0.3− |
| 2004 04 21 | E12 | 0.3− | 0.2+ | 2004 07 16 | 413 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2004 06 29 | E12 | 0.6+ | 0.1+ | 2004 07 16 | 413 | 0.1+ | 0.1+ | 2006 10 04 | G96 | (2.0− | 0.7−) |
| 2004 06 29 | E12 | 0.7− | 0.8+ | 2004 07 16 | 413 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.9− |
| 2004 06 29 | E12 | 0.2− | 0.5+ | 2004 07 20 | 413 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2004 06 29 | E12 | 0.3− | 0.9+ | 2004 07 20 | 413 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.3+ | 1.2− |
| 2004 06 29 | E12 | 0.3− | 0.4+ | 2004 07 20 | 413 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.5− |
| 2004 06 29 | E12 | 0.6+ | 0.0 | 2004 07 28 | 859 | 0.2+ | 1.1− | 2006 10 16 | 691 | 0.4+ | 0.6− |
| 2004 06 29 | E12 | 0.4− | 0.6+ | 2004 07 28 | 859 | 0.4− | 1.0− | 2006 10 16 | 691 | 0.5− | 0.3+ |
| 2004 06 29 | E12 | 0.5+ | 0.3+ | 2004 07 28 | 859 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2004 06 30 | 428 | 0.1+ | 0.0 | 2004 07 30 | 859 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.6+ | 0.1+ |
| 2004 06 30 | E12 | 0.1− | 0.4+ | 2004 07 30 | 859 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2004 06 30 | E12 | 1.0− | 0.7+ | 2004 08 09 | E12 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 06 30 | 428 | 0.2+ | 0.5+ | 2004 08 09 | E12 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.4− | 0.2+ |
| 2004 06 30 | E12 | 0.2− | 0.5+ | 2004 08 09 | E12 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.3− | 0.4+ |
| 2004 06 30 | E12 | 0.1− | 0.5+ | 2004 08 09 | E12 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.3− | 0.4+ |
| 2004 07 01 | 673 | 0.2− | 0.2− | 2004 08 23 | E12 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.8+ |
| 2004 07 01 | 673 | 0.3− | 0.2− | 2004 08 23 | E12 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2004 07 01 | 673 | 0.0 | 0.1− | 2004 08 23 | E12 | 0.3− | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2004 07 01 | 673 | 0.0 | 0.1− | 2004 08 23 | E12 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.7− |
| 2004 07 01 | E12 | 0.2+ | 0.8− | 2004 09 03 | 859 | 0.3− | 0.7− | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2004 07 01 | E12 | 0.6+ | 0.5− | 2004 09 03 | 859 | 0.2+ | 0.8+ | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2004 07 01 | E12 | 0.2+ | 0.4− | 2004 09 10 | E12 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.8− |
| 2004 07 01 | E12 | 0.3+ | 0.4− | 2004 09 10 | E12 | 0.5+ | 0.4+ | | | | |
| 2004 07 01 | 422 | 0.4+ | 0.5− | 2004 09 10 | E12 | 0.0 | 0.1− | | | | |

**(144871)∗ 2004 NN$_{1}$**

Discovered 2004 July 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.27750 | | (2000.0) | | | |
| $n$ | 0.17775921 | $\omega$ | 148.79458 | | +0.81033506 | +0.58596163 |
| $a$ | 3.1326700 | $\Omega$ | 175.33222 | | −0.54365551 | +0.75338332 |
| $e$ | 0.2050632 | $i$ | 1.73333 | | −0.21862245 | +0.29843348 |
| $P$ | 5.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.2+ | 0.5+ | 2004 07 11 | 704 | 0.4− | 0.7+ | 2005 11 03 | 691 | 0.1− | 0.0 |
| 1996 01 13 | 691 | 0.8+ | 0.4+ | 2004 07 11 | 704 | 0.4+ | 0.2+ | 2005 11 22 | 691 | 0.1− | 0.0 |
| 1996 01 13 | 691 | 0.3− | 0.0 | 2004 07 11 | 704 | 0.1− | 0.6+ | 2005 11 22 | 691 | 0.1− | 0.0 |
| 1996 01 19 | 691 | 0.7− | 0.0 | 2004 07 11 | 704 | 0.4+ | 0.3+ | 2005 11 22 | 691 | 0.1+ | 0.1+ |
| 1996 01 19 | 691 | 0.8− | 0.6− | 2004 07 16 | 704 | 0.7− | 0.4+ | 2005 11 22 | 691 | 0.2+ | 0.3− |
| 1996 01 19 | 691 | 0.5+ | 0.1− | 2004 07 16 | 704 | 0.3− | 0.3+ | 2005 11 22 | 691 | 0.0 | 0.1+ |
| 1999 09 07 | 691 | 0.0 | 0.5+ | 2004 07 16 | 704 | 0.6− | 0.1+ | 2005 11 22 | 691 | 0.3− | 0.0 |
| 1999 09 07 | 691 | 0.1− | 0.4+ | 2004 07 18 | 704 | (2.3+ | 2.8−) | 2005 11 25 | G96 | 0.1+ | 0.0 |
| 1999 09 07 | 691 | 0.2− | 0.4+ | 2004 07 18 | 704 | 1.2+ | 1.8− | 2005 11 25 | G96 | 0.0 | 0.0 |
| 1999 10 01 | 703 | 1.2+ | 0.3+ | 2004 07 18 | 704 | 0.2− | 0.5+ | 2005 11 25 | G96 | 0.1+ | 0.0 |
| 1999 10 01 | 703 | 0.3− | 0.5+ | 2004 07 18 | 704 | 0.3+ | 0.7+ | 2005 11 25 | G96 | 0.2+ | 0.1− |
| 1999 10 01 | 703 | 1.6− | 0.6+ | 2005 10 24 | 691 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.3− | 0.1− |
| 1999 10 01 | 703 | 0.8+ | 0.2− | 2005 10 24 | 691 | 0.3+ | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.7+ | 0.4+ | 2005 10 24 | 691 | 0.3+ | 0.1+ | 2005 12 01 | G96 | 0.2+ | 0.1− |
| 1999 10 09 | 704 | 0.5− | 1.3− | 2005 10 25 | G96 | 0.1− | 0.1− | 2005 12 01 | G96 | 0.0 | 0.3+ |
| 1999 10 09 | 704 | 0.1− | 0.3+ | 2005 10 25 | G96 | 0.1− | 0.1− | 2005 12 04 | G96 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.3+ | 0.3− | 2005 10 25 | G96 | 0.3− | 0.4− | 2005 12 04 | G96 | 0.3+ | 0.0 |
| 1999 10 09 | 704 | 0.3− | 0.7− | 2005 10 25 | G96 | 0.1+ | 0.4− | 2005 12 04 | G96 | 0.2+ | 0.2− |
| 2002 02 08 | 291 | 0.3+ | 0.3+ | 2005 10 26 | 691 | 0.2− | 0.4+ | 2005 12 04 | G96 | 0.0 | 0.2− |
| 2002 02 08 | 291 | 0.1+ | 0.1− | 2005 10 26 | 691 | 0.1− | 0.3+ | 2005 12 29 | G96 | 0.2+ | 0.4− |
| 2002 02 08 | 291 | 0.2+ | 0.1+ | 2005 10 26 | 691 | 0.2− | 0.3+ | 2005 12 29 | G96 | 0.2+ | 0.3− |
| 2003 04 29 | 691 | 0.6+ | 0.8+ | 2005 10 28 | 691 | 0.0 | 0.3+ | 2005 12 29 | G96 | 0.0 | 0.3− |
| 2003 04 29 | 691 | 0.4+ | 1.3+ | 2005 10 28 | 691 | 0.0 | 0.3+ | 2005 12 29 | G96 | 0.1+ | 0.1− |
| 2003 04 29 | 691 | 0.1+ | 1.1+ | 2005 10 28 | 691 | 0.0 | 0.2+ | 2006 01 22 | G96 | 0.5− | 0.0 |
| 2004 07 09 | 704 | 0.2− | 0.0 | 2005 11 01 | 691 | 0.2− | 0.3+ | 2006 01 22 | G96 | 0.0 | 0.4− |
| 2004 07 09 | 704 | 0.3− | 0.3+ | 2005 11 01 | 691 | 0.0 | 0.3+ | 2006 01 22 | G96 | 0.2+ | 0.3+ |
| 2004 07 09 | 704 | 0.3− | 0.5+ | 2005 11 01 | 691 | 0.1− | 0.2+ | 2006 01 22 | G96 | 0.3+ | 0.2+ |
| 2004 07 09 | 704 | 0.4− | 0.7+ | 2005 11 03 | 691 | 0.3− | 0.1+ | | | | |
| 2004 07 11 | 704 | 0.1− | 0.8+ | 2005 11 03 | 691 | 0.2− | 0.2+ | | | | |

**(144872)∗ 2004 NN$_{12}$**

Discovered 2004 July 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 145.83777 | | (2000.0) | | | |
| $n$ | 0.18847160 | $\omega$ | 211.70735 | | +0.68944331 | +0.69858977 |
| $a$ | 3.0128125 | $\Omega$ | 102.67227 | | −0.61678256 | +0.70476140 |
| $e$ | 0.1278441 | $i$ | 11.31458 | | −0.37979888 | +0.12362729 |
| $P$ | 5.23 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.4− | 0.2− | 2004 07 11 | 704 | 0.2− | 0.3− | 2005 11 20 | 644 | 0.3− | 0.4+ |
| 2000 11 27 | 704 | 0.3− | 0.3+ | 2004 07 11 | 704 | 0.1− | 0.4− | 2005 11 20 | 644 | 0.2+ | 0.3+ |
| 2000 11 27 | 704 | 0.3− | 0.2+ | 2004 07 16 | 704 | 0.8− | 0.3+ | 2005 11 20 | 644 | 0.1+ | 0.0 |
| 2002 02 12 | 704 | (1.8+ | 2.7+) | 2004 07 16 | 704 | 0.3− | 0.0 | 2005 11 26 | 703 | 0.2+ | 1.3+ |
| 2002 02 12 | 704 | 0.9+ | 1.4+ | 2004 07 16 | 704 | 0.9+ | 0.2− | 2005 11 26 | 703 | 0.4− | 0.7+ |
| 2002 02 12 | 704 | (0.1+ | 1.6+) | 2004 07 16 | 704 | 0.5+ | 0.6− | 2005 11 26 | 703 | (1.1− | 1.6+) |
| 2002 02 12 | 704 | 0.3+ | 0.9+ | 2004 07 16 | 704 | 0.2+ | 0.1− | 2005 11 26 | 703 | 1.0+ | 0.7+ |
| 2003 04 09 | 704 | 0.2− | 0.8+ | 2004 07 25 | 699 | 0.5+ | 0.4− | 2005 11 26 | 703 | (0.8− | 1.7+) |
| 2003 04 09 | 704 | 1.0+ | 0.1+ | 2004 07 25 | 699 | 0.1− | 0.4+ | 2005 11 26 | 703 | (1.9− | 1.3+) |
| 2003 04 09 | 704 | 0.7+ | 1.0+ | 2004 07 25 | 699 | 1.1− | 0.2− | 2005 11 26 | 703 | 0.6+ | 1.2+ |
| 2003 04 09 | 704 | 0.3+ | 0.5+ | 2004 07 25 | 699 | 0.2+ | 0.3+ | 2005 11 26 | 703 | 0.1− | 0.2− |
| 2003 04 09 | 704 | 0.3+ | 1.3+ | 2004 07 27 | E12 | 0.3− | 0.5+ | 2005 12 05 | 703 | 0.4− | 0.1− |
| 2003 04 27 | 699 | 0.0 | 0.2− | 2004 07 27 | E12 | 0.1+ | 0.2+ | 2005 12 05 | 703 | 0.2− | 0.7+ |
| 2003 04 27 | 699 | 0.2+ | 0.2+ | 2004 07 27 | E12 | 0.1− | 0.4+ | 2005 12 05 | 703 | 1.1− | 0.2+ |
| 2003 04 27 | 699 | 0.6− | 0.6+ | 2004 07 27 | E12 | 0.2− | 0.5− | 2005 12 05 | 703 | 0.1+ | 0.1+ |
| 2003 04 27 | 699 | 0.5+ | 0.7+ | 2004 08 16 | E12 | 0.0 | 0.3+ | 2005 12 30 | 699 | 0.1+ | 0.7+ |
| 2003 05 02 | 704 | 0.5+ | 1.0+ | 2004 08 16 | E12 | 0.3− | 0.4+ | 2005 12 30 | 699 | (0.1+ | 1.9+) |
| 2003 05 02 | 704 | 0.1− | 0.5− | 2004 08 16 | E12 | 0.3+ | 0.3+ | 2005 12 30 | 699 | (1.2− | 1.9+) |
| 2003 05 02 | 704 | 0.4+ | 0.9+ | 2004 08 16 | E12 | 0.1− | 0.3+ | 2005 12 30 | 699 | (0.1+ | 1.6+) |
| 2003 05 02 | 704 | 0.6+ | 0.2+ | 2004 09 05 | E12 | 0.0 | 0.9+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2004 06 27 | E12 | 0.9− | 0.6+ | 2004 09 05 | E12 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2004 06 27 | E12 | 0.3− | 0.6+ | 2004 09 05 | E12 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.2− | 0.2+ |
| 2004 06 27 | E12 | 0.5− | 0.2+ | 2004 09 05 | E12 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2004 06 27 | E12 | 0.1+ | 0.2− | 2005 10 26 | 699 | (1.0+ | 2.1+) | 2006 11 24 | G96 | 0.6− | 0.2+ |
| 2004 07 11 | 704 | 0.1− | 0.8+ | 2005 10 26 | 699 | 0.2− | 1.2+ | 2006 11 24 | G96 | 0.7− | 0.2+ |
| 2004 07 11 | 704 | 0.2+ | 0.2− | 2005 10 26 | 699 | 0.4− | 0.6+ | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2004 07 11 | 704 | 0.4+ | 0.5+ | 2005 10 26 | 699 | (0.5+ | 2.1+) | 2006 11 24 | G96 | 0.8− | 0.4− |

**(144873)∗ 2004 NT$_{19}$ = 2000 XG$_{30}$**

Discovered 2004 July 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 65902)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 115.67834 | | (2000.0) | | | |
| $n$ | 0.18183687 | $\omega$ | 55.86775 | | +0.86972663 | +0.40527666 |
| $a$ | 3.0856601 | $\Omega$ | 278.77429 | | −0.49156946 | +0.76221893 |
| $e$ | 0.0933291 | $i$ | 16.55793 | | +0.04398934 | +0.50475057 |
| $P$ | 5.42 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.4+ | 0.0 | 2004 07 18 | 704 | 1.1− | 1.0+ | 2005 10 31 | 703 | 0.3+ | 0.3+ |
| 1999 10 10 | 704 | 1.1+ | 1.5− | 2004 07 18 | 704 | (1.9− | 0.9+) | 2005 10 31 | 703 | 0.1+ | 0.1− |
| 1999 10 10 | 704 | 1.0+ | 0.7− | 2004 07 18 | 704 | 1.2− | 0.5+ | 2005 10 31 | 703 | 0.6+ | 0.3+ |
| 1999 10 10 | 704 | 0.8+ | 1.0− | 2004 07 18 | 704 | 1.1− | 0.6+ | 2005 10 31 | 703 | 0.9+ | 0.5+ |
| 2000 12 04 | 704 | 0.5− | 0.6− | 2004 07 18 | 704 | 0.4− | 1.4+ | 2005 11 10 | 703 | 0.4+ | 0.0 |
| 2000 12 04 | 704 | 0.3+ | 0.5− | 2004 08 10 | 704 | 0.7+ | 0.4+ | 2005 11 10 | 703 | 0.5− | 0.3+ |
| 2000 12 04 | 704 | 0.1− | 1.0+ | 2004 08 10 | 704 | 0.2− | 0.2+ | 2005 11 10 | 703 | 0.5+ | 0.0 |
| 2000 12 04 | 704 | 0.4+ | 0.2− | 2004 08 10 | 704 | 0.4− | 0.2− | 2005 11 10 | 703 | 0.0 | 0.1+ |
| 2000 12 06 | 704 | 0.0 | 0.4− | 2004 08 10 | 704 | 0.1+ | 0.2− | 2005 11 12 | 703 | 1.1− | 0.3− |
| 2000 12 06 | 704 | 0.3− | 1.1+ | 2004 08 10 | 704 | 0.6+ | 0.4+ | 2005 11 12 | 703 | 0.2− | 0.2− |
| 2000 12 06 | 704 | 0.2− | 0.3− | 2004 08 10 | 704 | 0.6+ | 0.4+ | 2005 11 12 | 703 | 1.1− | 0.4− |
| 2000 12 06 | 704 | 0.8− | 1.8+ | 2004 08 10 | 704 | 1.1− | 0.2+ | 2005 11 12 | 703 | 0.3− | 1.3− |
| 2002 02 08 | 644 | 0.6+ | 0.6+ | 2004 08 10 | 704 | 0.1− | 0.1+ | 2005 11 21 | 703 | (1.5+ | 2.3+) |
| 2002 02 08 | 644 | 0.5+ | 0.7+ | 2004 08 10 | 704 | 0.6− | 0.7+ | 2005 11 21 | 703 | 0.6− | 0.1+ |
| 2002 02 08 | 644 | 0.5+ | 0.6+ | 2004 08 11 | 704 | 0.5+ | 0.0 | 2005 11 21 | 703 | 0.4+ | 0.2+ |
| 2002 02 15 | 704 | 0.8+ | 0.4− | 2004 08 11 | 704 | 0.2+ | 0.0 | 2005 11 21 | 703 | (2.1− | 0.6−) |
| 2002 02 15 | 704 | 0.3− | 0.2+ | 2004 08 11 | 704 | 0.1− | 0.4− | 2005 12 01 | 699 | 1.0− | 1.1+ |
| 2002 02 15 | 704 | 0.4+ | 1.4+ | 2004 08 11 | 704 | 0.1− | 0.1− | 2005 12 01 | 644 | 0.2+ | 0.3− |
| 2002 02 15 | 704 | 0.5+ | 0.6+ | 2004 08 11 | 704 | 0.3− | 0.7− | 2005 12 01 | 699 | 0.6+ | 0.1+ |
| 2002 02 15 | 704 | 0.1− | 0.6+ | 2004 08 11 | 704 | 0.2+ | 0.4− | 2005 12 01 | 644 | 0.3+ | 0.1+ |
| 2004 07 09 | 699 | 0.6− | 0.2− | 2004 08 11 | 704 | 0.0 | 0.1− | 2005 12 01 | 699 | 0.2− | 0.6+ |
| 2004 07 09 | 699 | 0.7− | 0.5+ | 2004 08 11 | 704 | 0.2+ | 0.4+ | 2005 12 01 | 644 | 0.2+ | 0.0 |
| 2004 07 09 | 699 | 0.2+ | 0.1− | 2004 08 11 | 704 | 0.0 | 0.3− | 2005 12 01 | 699 | 0.5+ | 0.8+ |
| 2004 07 09 | 699 | 0.3+ | 1.2− | 2004 08 12 | 704 | 0.4− | 0.0 | 2005 12 04 | 703 | 0.7+ | 1.4+ |
| 2004 07 14 | 704 | 0.5− | 0.6+ | 2004 08 12 | 704 | 0.0 | 0.5− | 2005 12 04 | 703 | 0.3− | 1.1+ |
| 2004 07 14 | 704 | 0.0 | 0.6+ | 2004 08 12 | 704 | 0.0 | 0.7− | 2005 12 04 | 703 | 0.3− | 0.7+ |
| 2004 07 14 | 704 | 0.1− | 0.6+ | 2005 10 14 | 703 | 0.6+ | 0.6+ | 2005 12 04 | 703 | 0.5+ | 0.9+ |
| 2004 07 14 | 704 | 0.2+ | 0.7+ | 2005 10 14 | 703 | 0.3+ | 0.5− | 2006 09 25 | G96 | (2.4− | 1.1+) |
| 2004 07 14 | 704 | 0.3+ | 0.3+ | 2005 10 14 | 703 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.8− | 0.1− |
| 2004 07 16 | 704 | 0.1− | 0.1+ | 2005 10 14 | 703 | 0.1− | 0.7− | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2004 07 16 | 704 | 0.0 | 0.8+ | 2005 10 25 | 703 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2004 07 16 | 704 | 0.2+ | 0.5+ | 2005 10 25 | 703 | 0.7− | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2004 07 16 | 704 | 0.1− | 0.9+ | 2005 10 25 | 703 | 0.6− | 0.4+ | 2006 11 20 | G96 | 0.5+ | 0.3− |
| 2004 07 16 | 704 | 0.1+ | 0.6+ | 2005 10 25 | 703 | 0.9− | 0.8− | 2006 11 20 | G96 | 0.3+ | 0.2− |

**(144874)∗ 2004 NV$_{30}$ = 1997 UK$_{27}$**

Discovered 2004 July 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 95248)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 163.17051 | | (2000.0) | | | |
| $n$ | 0.26576203 | $\omega$ | 261.06270 | | +0.97307624 | −0.22733842 |
| $a$ | 2.3959298 | $\Omega$ | 112.07062 | | +0.22427220 | +0.89596979 |
| $e$ | 0.1935235 | $i$ | 2.34669 | | +0.05314701 | +0.38151721 |
| $P$ | 3.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.6+ | 0.4− | 2003 04 26 | 691 | 0.5− | 1.0+ | 2004 08 12 | 704 | 0.3+ | 0.5− |
| 1995 01 29 | 691 | 0.4+ | 0.9− | 2003 04 26 | 691 | 0.4− | 0.9+ | 2004 08 12 | 704 | 0.2+ | 0.5− |
| 1995 01 29 | 691 | 0.5− | 2.2− | 2003 04 26 | 691 | 0.4− | 0.7+ | 2004 08 12 | 704 | 0.1− | 0.7− |
| 1997 10 29 | 704 | 0.8− | 0.3− | 2004 07 08 | E12 | 1.5+ | 1.8− | 2004 08 12 | 704 | 0.1− | 0.4− |
| 1997 10 29 | 704 | 0.5− | 0.3− | 2004 07 08 | E12 | 0.7+ | 0.5− | 2004 08 12 | 704 | 0.3+ | 0.0 |
| 1997 10 29 | 704 | 0.5+ | 0.1− | 2004 07 08 | E12 | 0.7+ | 0.2− | 2004 08 21 | E12 | 0.1− | 0.1+ |
| 1997 10 29 | 704 | 0.7− | 0.8− | 2004 07 08 | E12 | 0.7+ | 1.0− | 2004 08 21 | E12 | 0.3− | 0.2+ |
| 1997 10 30 | 704 | (2.6+ | 0.8+) | 2004 07 09 | 699 | 0.6+ | 1.0+ | 2004 08 21 | E12 | 0.2− | 0.0 |
| 1997 10 30 | 704 | 1.6+ | 1.0− | 2004 07 09 | 699 | 0.0 | 0.5+ | 2004 08 21 | E12 | 0.4− | 0.4− |
| 1997 10 30 | 704 | (2.3+ | 0.1+) | 2004 07 09 | 699 | 0.8+ | 0.4+ | 2005 10 28 | G96 | 0.9− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | (2.5+ | 1.4−) | 2004 07 09 | 699 | 0.1− | 0.9+ | 2005 10 28 | G96 | 0.5− | 0.1+ |
| 1997 11 06 | 704 | (2.6− | 0.8+) | 2004 07 10 | 703 | (1.7− | 2.2−) | 2005 10 28 | G96 | 0.6− | 0.1− |
| 1997 11 06 | 704 | 0.9− | 0.2+ | 2004 07 10 | 703 | 0.3− | 1.3+ | 2006 01 20 | 691 | 1.2+ | 0.8− |
| 1997 11 06 | 704 | 0.8− | 0.9+ | 2004 07 10 | 703 | 0.8+ | 0.2+ | 2006 01 20 | 691 | 0.1− | 0.7+ |
| 1997 11 06 | 704 | 1.4− | 1.1+ | 2004 07 10 | 703 | 0.1+ | 0.8+ | 2006 01 20 | 691 | 0.3− | 0.6+ |
| 1997 11 06 | 704 | 1.0− | 1.2+ | 2004 07 16 | 704 | 0.7− | 0.7+ | 2006 01 24 | 704 | 0.4+ | 0.8+ |
| 2001 12 14 | 704 | 0.3− | 0.7+ | 2004 07 16 | 704 | 0.3− | 1.5+ | 2006 01 24 | 704 | 0.4+ | 1.9+ |
| 2001 12 14 | 704 | 0.2+ | 0.8+ | 2004 07 16 | 704 | 0.2− | 0.2+ | 2006 01 24 | 704 | 0.6+ | 0.2+ |
| 2001 12 14 | 704 | 0.0 | 0.7+ | 2004 08 03 | E12 | 0.1− | 0.2+ | 2006 01 27 | 699 | 0.3+ | 0.2− |
| 2001 12 14 | 704 | 0.2+ | 0.8+ | 2004 08 03 | E12 | 0.0 | 0.2− | 2006 01 27 | 699 | 0.9+ | 1.4+ |
| 2001 12 14 | 704 | 0.9+ | 1.5+ | 2004 08 03 | E12 | 0.4− | 0.3+ | 2006 01 27 | 699 | 0.8− | 1.6+ |
| 2002 01 08 | 704 | 0.4− | 0.1+ | 2004 08 03 | E12 | 0.0 | 0.4− | 2006 01 27 | 699 | 0.7+ | 0.7+ |
| 2002 01 08 | 704 | 0.2+ | 0.2− | 2004 08 08 | 704 | 0.0 | 0.7+ | 2006 02 07 | G96 | 0.1− | 0.1− |
| 2002 01 08 | 704 | 0.4+ | 0.7− | 2004 08 08 | 704 | 0.5− | 0.7− | 2006 02 07 | G96 | 0.3− | 0.3− |
| 2002 01 08 | 704 | 0.2− | 0.2− | 2004 08 08 | 704 | 0.1+ | 1.6+ | 2006 02 07 | G96 | 0.1− | 0.0 |
| 2002 01 08 | 704 | (3.3+ | 2.3−) | 2004 08 08 | 704 | 0.2+ | 0.0 | 2006 02 07 | G96 | 0.5− | 0.0 |

**(144875)∗ 2004 OX = 2001 YS$_{55}$**

Discovered 2004 July 16 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 65918)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.14704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24093528 | $\omega$ | 260.78071 | | +0.41803176 | +0.90756026 | |
| $a$ | 2.5578149 | $\Omega$ | 34.01795 | | −0.80304612 | +0.38966232 | |
| $e$ | 0.1846057 | $i$ | 4.07925 | | −0.42469563 | +0.15651728 | |
| $P$ | 4.09 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 05 | 691 | 0.3+ | 0.5+ | 2001 12 19 | 704 | 0.1− | 0.8+ | 2004 07 16 | 428 | 0.2+ | 0.5+ |
| 1995 04 05 | 691 | 0.2+ | 0.2+ | 2003 02 21 | 644 | 0.8+ | 0.0 | 2004 07 16 | 428 | 0.0 | 0.4+ |
| 1995 04 05 | 691 | 0.3− | 0.2+ | 2003 02 21 | 644 | 0.2+ | 0.6+ | 2004 07 17 | 428 | 0.1− | 0.1− |
| 2000 08 02 | 704 | 0.0 | 1.2+ | 2003 02 21 | 644 | 0.1+ | 0.7+ | 2004 07 17 | 428 | 0.1+ | 0.2− |
| 2000 08 02 | 704 | 0.4+ | 0.5+ | 2004 06 17 | 704 | 0.2+ | 0.1+ | 2004 08 11 | 704 | 0.0 | 0.1− |
| 2000 08 02 | 704 | 0.0 | 1.4+ | 2004 06 17 | 704 | 0.3+ | 0.6+ | 2004 08 11 | 704 | 0.4+ | 0.3− |
| 2000 08 02 | 704 | 0.4+ | 0.5+ | 2004 06 17 | 704 | 0.3+ | 0.2+ | 2004 08 11 | 704 | 1.8− | 0.5+ |
| 2000 08 20 | 699 | 0.1− | 0.1+ | 2004 06 17 | 704 | 0.5− | 0.7+ | 2005 11 21 | 691 | 0.0 | 0.1+ |
| 2000 08 20 | 699 | 0.0 | 0.5− | 2004 06 28 | E12 | 0.8− | 0.3+ | 2005 11 21 | 691 | 0.0 | 0.0 |
| 2000 08 20 | 699 | 1.5− | 0.1+ | 2004 06 28 | E12 | (0.5− | 2.3−) | 2005 11 21 | 691 | 0.0 | 0.3− |
| 2000 08 20 | 699 | 0.4− | 0.2− | 2004 06 28 | E12 | (2.4+ | 0.8−) | 2005 11 25 | 691 | 0.1− | 0.0 |
| 2000 09 02 | 704 | 1.3+ | 0.2− | 2004 06 28 | E12 | 0.1− | 0.5+ | 2005 11 25 | 691 | 0.0 | 0.2+ |
| 2000 09 02 | 704 | 0.5− | 0.0 | 2004 07 11 | 704 | 0.3+ | 0.1+ | 2005 11 25 | 691 | 0.2− | 0.0 |
| 2000 09 02 | 704 | 0.3− | 0.2− | 2004 07 11 | 704 | 0.3+ | 0.1− | 2005 12 02 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 1.2+ | 1.8+ | 2004 07 11 | 704 | 0.1+ | 0.3+ | 2005 12 02 | 691 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.6− | 1.2+ | 2004 07 11 | 704 | 0.3− | 0.5+ | 2005 12 02 | 691 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.6− | 1.7+ | 2004 07 16 | E12 | 0.1+ | 0.3+ | 2005 12 10 | 691 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.6− | 1.3+ | 2004 07 16 | E12 | 0.2− | 0.5+ | 2005 12 10 | 691 | 0.4− | 0.3+ |
| 2001 12 19 | 704 | 0.7+ | 1.7+ | 2004 07 16 | E12 | 0.0 | 0.2− | 2005 12 10 | 691 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.3− | 0.7+ | 2004 07 16 | E12 | 0.1+ | 0.5+ | | | | |

**(144876)∗ 2004 OB$_1$ = 2005 UK$_{357}$**

Discovered 2004 July 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 95249)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.74064 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19299491 | $\omega$ | 165.54261 | | +0.27101728 | +0.94378191 | |
| $a$ | 2.9655515 | $\Omega$ | 119.87171 | | −0.90340511 | +0.31726988 | |
| $e$ | 0.1044225 | $i$ | 12.60775 | | −0.33227825 | −0.09281989 | |
| $P$ | 5.11 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.7+ | 0.9+ | 2003 03 08 | 644 | 0.1+ | 0.3+ | 2005 09 14 | 703 | 0.6+ | 0.5+ |
| 1998 03 25 | 704 | 0.8+ | 0.8+ | 2003 03 08 | 644 | 0.1+ | 0.4+ | 2005 09 14 | 703 | 0.6− | 0.1− |
| 1998 03 25 | 704 | 1.1+ | 0.3− | 2003 03 08 | 644 | 0.2+ | 0.1+ | 2005 09 27 | 704 | 0.6+ | 0.0 |
| 1998 03 25 | 704 | (3.3− | 1.6+) | 2003 03 20 | 644 | 0.1+ | 1.4+ | 2005 09 27 | 704 | 0.3− | 1.2+ |
| 1998 03 25 | 704 | 1.3+ | 1.2− | 2003 03 20 | 644 | 0.4+ | 1.3+ | 2005 09 27 | 704 | 0.2− | 0.6+ |
| 2000 09 10 | 699 | 1.0+ | 2.2+ | 2003 03 20 | 644 | 0.1+ | 1.5+ | 2005 10 08 | 699 | 0.8− | 0.9+ |
| 2000 09 10 | 699 | 0.0 | 0.2+ | 2003 03 26 | 704 | 0.8+ | 0.1+ | 2005 10 08 | 699 | 0.3− | 0.9+ |
| 2000 09 10 | 699 | 0.6− | 0.6− | 2003 03 26 | 704 | 1.0+ | 0.8+ | 2005 10 08 | 699 | 1.0− | 0.1− |
| 2000 09 10 | 699 | 1.2− | 0.2− | 2003 03 26 | 704 | 0.5− | 0.8+ | 2005 10 25 | 704 | 0.0 | 1.0+ |
| 2000 10 05 | 704 | 0.8− | 0.5+ | 2003 03 26 | 704 | 0.4+ | 0.2+ | 2005 10 25 | 704 | 0.7− | 0.7+ |
| 2000 10 05 | 704 | 0.2− | 0.9+ | 2003 04 10 | 644 | 0.0 | 0.5+ | 2005 10 25 | 704 | 0.5+ | 1.4+ |
| 2000 10 05 | 704 | 0.8+ | 0.2+ | 2003 04 10 | 644 | 0.3+ | 0.5+ | 2005 10 30 | 703 | 0.3+ | 0.4+ |
| 2000 10 05 | 704 | 1.3− | 1.4+ | 2003 04 10 | 644 | 0.4+ | 0.5+ | 2005 10 30 | 703 | 0.4− | 0.3− |
| 2000 10 05 | 704 | 0.8− | 0.3− | 2004 05 15 | 704 | 1.0− | 0.4+ | 2005 10 30 | 703 | 0.7− | 0.6− |
| 2000 11 20 | 699 | 0.6+ | 0.1− | 2004 05 15 | 704 | 1.4− | 0.1+ | 2005 10 30 | 703 | 0.5− | 0.0 |
| 2000 11 20 | 699 | 1.0− | 1.7+ | 2004 05 15 | 704 | 1.9− | 0.4+ | 2005 11 06 | 703 | 0.4+ | 0.6− |
| 2000 11 20 | 699 | 0.4+ | 1.2+ | 2004 05 15 | 704 | 0.8− | 0.1− | 2005 11 06 | 699 | 0.4+ | 0.6+ |
| 2000 11 20 | 699 | 0.2+ | 0.6+ | 2004 07 16 | 704 | 0.8+ | 1.1+ | 2005 11 06 | 703 | 0.5+ | 0.2− |
| 2003 01 13 | 291 | 0.2+ | 0.2+ | 2004 07 16 | 704 | 0.7+ | 1.3+ | 2005 11 06 | 703 | 0.7− | 0.4+ |
| 2003 01 13 | 291 | 0.2+ | 0.1− | 2004 07 16 | 704 | 1.3+ | 1.3+ | 2005 11 06 | 703 | 0.1− | 0.5− |
| 2003 01 13 | 291 | 0.1− | 0.5+ | 2004 07 18 | 704 | 1.0+ | 1.3+ | 2005 11 06 | 699 | 0.2+ | 0.1+ |
| 2003 02 28 | 704 | 0.6− | 0.4+ | 2004 07 18 | 704 | 0.8+ | 0.1+ | 2005 11 06 | 699 | 1.6+ | 0.3− |
| 2003 02 28 | 704 | 0.3+ | 0.4− | 2004 07 18 | 704 | 1.2+ | 0.6+ | 2005 11 06 | 699 | (2.2− | 0.1−) |
| 2003 02 28 | 704 | 0.2+ | 1.0+ | 2005 09 14 | 703 | 1.0+ | 0.6+ | | | | |
| 2003 02 28 | 704 | 0.8− | 0.3+ | 2005 09 14 | 703 | 1.2− | 0.5− | | | | |

**(144877)∗ 2004 OS$_5$ = 2005 UJ$_{114}$**

Discovered 2004 July 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 95252)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.90202 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18203539 | $\omega$ | 261.79076 | | +0.92793081 | −0.33845127 | |
| $a$ | 3.0834164 | $\Omega$ | 117.87092 | | +0.37158324 | +0.87306084 | |
| $e$ | 0.1079986 | $i$ | 10.17669 | | −0.02950088 | +0.35102066 | |
| $P$ | 5.41 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 22 | 644 | 0.1+ | 1.3+ | 2004 07 21 | E12 | 0.3+ | 0.6+ | 2005 10 28 | 703 | 0.1+ | 0.5− |
| 2002 02 22 | 644 | 0.6+ | 1.1+ | 2004 07 21 | E12 | 0.1+ | 0.3+ | 2005 10 28 | 703 | 0.1+ | 0.8− |
| 2002 02 22 | 644 | 0.1+ | 0.6+ | 2005 09 25 | 644 | 0.1+ | 0.1+ | 2005 10 30 | 699 | 0.8− | 0.1− |
| 2002 03 11 | 644 | 0.1+ | 0.3+ | 2005 09 25 | 644 | 0.1+ | 0.3+ | 2005 10 30 | 699 | 0.5+ | 0.3− |
| 2002 03 11 | 644 | 0.1− | 0.3+ | 2005 09 25 | 644 | 0.1+ | 0.6+ | 2005 10 30 | 699 | 0.3− | 0.2+ |
| 2002 03 11 | 644 | 0.3+ | 0.1+ | 2005 10 10 | 704 | 0.2− | 0.3− | 2005 10 30 | 699 | 0.5+ | 0.8− |
| 2004 07 09 | 704 | 0.5− | 0.1− | 2005 10 10 | 704 | 0.7+ | 0.3+ | 2005 11 28 | 644 | 0.0 | 0.3+ |
| 2004 07 09 | 704 | 1.1− | 0.8+ | 2005 10 10 | 704 | 0.4− | 0.6+ | 2005 11 28 | 644 | 0.0 | 0.4+ |
| 2004 07 09 | 704 | 0.3+ | 0.7− | 2005 10 22 | 703 | 0.4− | 0.4− | 2005 11 28 | 644 | 0.1+ | 0.2+ |
| 2004 07 09 | 704 | 0.2− | 0.1− | 2005 10 22 | 703 | 1.3+ | 0.5+ | 2005 11 28 | 644 | 0.0 | 0.0 |
| 2004 07 17 | 704 | 1.0+ | 0.3+ | 2005 10 22 | 703 | 0.3− | 0.1+ | 2005 11 28 | 644 | 0.4− | 0.5+ |
| 2004 07 17 | 704 | (1.9+ | 0.0 ) | 2005 10 22 | 703 | 0.7+ | 0.3− | 2005 11 28 | 644 | 0.2− | 0.2+ |
| 2004 07 17 | 704 | 0.1+ | 1.2+ | 2005 10 22 | 644 | 0.1− | 0.3+ | 2005 11 29 | 703 | 0.2− | 1.5+ |
| 2004 07 17 | 704 | 0.6− | 0.4− | 2005 10 22 | 644 | 0.1− | 0.2+ | 2005 11 29 | 703 | 0.4+ | 0.7+ |
| 2004 07 18 | 704 | 0.4− | 0.6+ | 2005 10 22 | 644 | 0.4− | 0.0 | 2005 11 29 | 703 | 0.7− | 0.1+ |
| 2004 07 18 | 704 | 0.5− | 0.6− | 2005 10 22 | 644 | 0.1+ | 0.0 | 2005 11 29 | 703 | 0.0 | 0.4+ |
| 2004 07 18 | 704 | 0.0 | 0.5+ | 2005 10 22 | 644 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.4− |
| 2004 07 18 | 704 | 0.7− | 0.5− | 2005 10 22 | 644 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2004 07 18 | 704 | 0.5+ | 0.2− | 2005 10 27 | 704 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2004 07 18 | 704 | 0.2− | 0.7+ | 2005 10 27 | 704 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2004 07 18 | 704 | 0.3+ | 0.1− | 2005 10 27 | 704 | 0.7+ | 0.3+ | 2006 11 15 | G96 | 0.7+ | 0.2+ |
| 2004 07 18 | 704 | 0.7+ | 0.8+ | 2005 10 27 | 704 | 0.3− | 0.6− | 2006 11 15 | G96 | 0.8− | 0.2− |
| 2004 07 19 | 699 | 0.9+ | 0.5− | 2005 10 27 | 704 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2004 07 19 | 699 | 0.5+ | 0.7− | 2005 10 27 | 644 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.5− | 1.0− |
| 2004 07 19 | 699 | 0.1− | 0.5− | 2005 10 27 | 644 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.1+ |
| 2004 07 19 | 699 | 0.3− | 0.1− | 2005 10 27 | 644 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2004 07 21 | E12 | 0.1+ | 0.6+ | 2005 10 28 | 703 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.1+ |
| 2004 07 21 | E12 | 0.3− | 0.5+ | 2005 10 28 | 703 | 0.1+ | 0.8− | 2006 11 27 | G96 | 0.4− | 0.2+ |

**(144878)∗ 2004 RO$_{13}$ = 2005 UK$_{348}$**

Discovered 2004 Sept. 6 at the Goodricke-Pigott Observatory, Tucson.

Id. A. Doppler (*MPO* 95324)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 193.85475 | | (2000.0) | | −0.56735015 | +0.79813424 |
| $n$ | 0.17064253 | $\omega$ | 1.68395 | | −0.75843108 | −0.60234937 |
| $a$ | 3.2191745 | $\Omega$ | 233.80329 | | −0.32077423 | +0.01252877 |
| $e$ | 0.1713863 | $i$ | 14.54878 | | | |
| $P$ | 5.78 | $H$ | 14.5 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 691 | 0.4+ | 0.4− | 2003 04 30 | 704 | 0.4− | 0.1− | 2005 10 23 | 644 | 0.3− | 0.2− |
| 2000 11 03 | 691 | 0.8+ | 0.3− | 2003 04 30 | 704 | 0.4− | 0.1− | 2005 10 23 | 703 | 1.0+ | 0.8− |
| 2000 11 03 | 691 | 0.4+ | 0.5− | 2003 04 30 | 704 | 0.8− | 0.1+ | 2005 10 23 | 703 | 0.6− | 0.7+ |
| 2000 12 06 | 691 | 0.4− | 0.1− | 2003 04 30 | 704 | 0.6− | 0.5− | 2005 10 23 | 703 | (0.8+ | 1.9−) |
| 2000 12 06 | 691 | 0.4− | 0.1− | 2003 04 30 | 704 | 0.5− | 0.4− | 2005 10 23 | 703 | 1.3+ | 0.2+ |
| 2000 12 06 | 691 | 0.1− | 0.3+ | 2003 05 16 | 608 | 0.0 | 1.2− | 2005 10 29 | 703 | (2.2− | 1.0−) |
| 2000 12 16 | 691 | 0.3− | 0.2− | 2003 05 16 | 608 | 0.1+ | 0.8− | 2005 10 29 | 703 | 1.1− | 0.5− |
| 2000 12 16 | 691 | 0.9− | 0.3+ | 2003 05 16 | 608 | 0.3+ | 1.1− | 2005 10 29 | 703 | 1.1− | 0.1+ |
| 2000 12 16 | 691 | 0.6− | 0.3+ | 2003 05 26 | 608 | (1.8+ | 0.7−) | 2005 10 29 | 703 | 0.4− | 1.0− |
| 2000 12 29 | 691 | 0.4+ | 0.4+ | 2003 05 26 | 608 | 1.1+ | 0.5− | 2005 10 30 | 704 | 0.3+ | 0.4+ |
| 2000 12 29 | 691 | 0.4+ | 0.3+ | 2003 05 26 | 608 | 1.1+ | 1.1− | 2005 10 30 | 704 | 0.4− | 1.2+ |
| 2000 12 29 | 691 | 0.3+ | 0.3+ | 2003 06 02 | 703 | (1.0+ | 1.5+) | 2005 10 30 | 704 | 0.3+ | 0.1− |
| 2001 12 27 | 644 | 0.3+ | 0.7+ | 2003 06 02 | 703 | 0.6+ | 1.1+ | 2005 10 30 | 704 | 0.4− | 0.4+ |
| 2001 12 27 | 644 | 0.0 | 0.5+ | 2003 06 02 | 703 | 1.4+ | 0.2+ | 2005 10 30 | 704 | 0.4+ | 0.4− |
| 2001 12 27 | 644 | 0.2+ | 0.7+ | 2003 06 02 | 703 | 0.9+ | 0.2− | 2005 11 02 | 704 | 0.8+ | 1.3+ |
| 2003 03 23 | 644 | 0.2+ | 0.7+ | 2004 05 23 | 291 | 0.1− | 0.4+ | 2005 11 02 | 704 | 0.4+ | 0.9+ |
| 2003 03 23 | 644 | 0.0 | 0.4+ | 2004 05 23 | 291 | 0.2− | 0.3+ | 2005 11 02 | 704 | 1.1+ | 1.4+ |
| 2003 03 23 | 644 | 0.5+ | 0.7+ | 2004 05 23 | 291 | 0.1− | 0.3+ | 2005 11 02 | 704 | 0.5+ | 0.4+ |
| 2003 03 28 | 699 | 0.5+ | 1.3+ | 2004 08 20 | 704 | 0.4+ | 0.2+ | 2005 11 02 | 704 | 0.4+ | 0.3+ |
| 2003 03 28 | 699 | 0.1+ | 1.1+ | 2004 08 20 | 704 | 0.5+ | 0.3+ | 2006 10 21 | D35 | 0.0 | 0.4+ |
| 2003 03 28 | 699 | 0.5+ | 0.7+ | 2004 08 20 | 704 | 0.3+ | 0.3+ | 2006 10 21 | D35 | 0.1+ | 0.3+ |
| 2003 03 28 | 699 | 0.2+ | 0.7+ | 2004 08 20 | 704 | 0.5+ | 0.2− | 2006 10 21 | D35 | 0.0 | 0.3+ |
| 2003 04 02 | 704 | 0.1+ | 0.3+ | 2004 09 06 | 683 | 0.4− | 1.1− | 2006 11 16 | 735 | 0.6+ | 1.0− |
| 2003 04 02 | 704 | 0.0 | 0.9+ | 2004 09 06 | 683 | 1.0+ | 0.0 | 2006 11 16 | 735 | 1.5− | 0.1+ |
| 2003 04 02 | 704 | 0.5+ | 0.1− | 2004 09 06 | 683 | 0.8− | 0.9+ | 2006 11 16 | 735 | 0.8− | 0.9+ |
| 2003 04 02 | 704 | 0.1− | 0.1+ | 2004 09 08 | 704 | 0.6− | 0.3− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2003 04 02 | 704 | (1.5− | 0.1+) | 2004 09 08 | 704 | 0.9− | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2003 04 02 | 704 | 0.0 | 1.0+ | 2004 09 08 | 704 | 0.6− | 0.9− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2003 04 02 | 704 | 0.6− | 0.4− | 2004 09 08 | 704 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2003 04 02 | 704 | 0.1− | 0.3− | 2005 10 01 | 703 | (4.1− | 0.5−) | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 2003 04 02 | 704 | 0.9− | 0.8+ | 2005 10 01 | 703 | (2.9− | 1.6+) | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2003 04 02 | 704 | 0.4− | 0.6+ | 2005 10 01 | 703 | (0.5− | 2.8+) | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2003 04 12 | 704 | 0.4− | 0.1− | 2005 10 01 | 703 | 1.2− | 1.3+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2003 04 12 | 704 | 0.9− | 0.9+ | 2005 10 23 | 644 | 0.4+ | 0.0 | | | | |
| 2003 04 12 | 704 | 0.7− | 0.0 | 2005 10 23 | 644 | 0.5− | 0.3− | | | | |

**(144879)∗ 2004 RS$_{39}$**

Discovered 2004 Sept. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.29302 | | (2000.0) | | −0.98167349 | +0.18842407 |
| $n$ | 0.23048742 | $\omega$ | 198.35094 | | −0.13676426 | −0.80079750 |
| $a$ | 2.6345386 | $\Omega$ | 352.33900 | | −0.13271280 | −0.56852418 |
| $e$ | 0.1929767 | $i$ | 12.35406 | | | |
| $P$ | 4.28 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 10 | 691 | 0.1− | 0.2− | 2004 09 07 | 691 | 0.2+ | 0.2+ | 2005 10 04 | 703 | 0.8+ | 0.9+ |
| 1993 12 10 | 691 | 0.5− | 0.1− | 2004 09 07 | 691 | 0.3+ | 0.2+ | 2005 11 03 | 704 | 0.4+ | 0.3+ |
| 1993 12 10 | 691 | 0.2+ | 0.4− | 2004 09 07 | 691 | 0.3+ | 0.2+ | 2005 11 03 | 704 | 0.7− | 1.4+ |
| 2000 10 30 | 691 | 0.0 | 0.2− | 2004 09 09 | 704 | 0.2+ | 0.0 | 2005 11 03 | 704 | 0.1− | 1.0+ |
| 2000 10 30 | 691 | 0.0 | 0.4− | 2004 09 09 | 704 | 1.0− | 0.4− | 2005 11 03 | 704 | 0.0 | 0.2+ |
| 2000 10 30 | 691 | 0.0 | 0.4− | 2004 09 09 | 704 | 0.5+ | 0.8− | 2005 12 01 | 644 | 0.5+ | 0.3+ |
| 2001 12 23 | 704 | 0.3+ | 0.5− | 2004 09 09 | 699 | (1.8+ | 1.3+) | 2005 12 01 | 644 | 0.4+ | 0.2− |
| 2001 12 23 | 704 | 0.4− | 0.2− | 2004 09 09 | 699 | 1.0− | 0.6+ | 2005 12 01 | 644 | 0.2+ | 0.1+ |
| 2001 12 23 | 704 | 1.1+ | 1.3− | 2004 09 09 | 699 | 0.3+ | 1.2+ | 2005 12 03 | 703 | 1.1− | 0.5+ |
| 2001 12 23 | 704 | 0.4+ | 0.6− | 2004 09 09 | 699 | 1.0− | 1.0− | 2005 12 03 | 703 | (0.4− | 2.6+) |
| 2001 12 23 | 704 | 0.7+ | 0.4− | 2004 09 21 | 704 | 0.2− | 0.9+ | 2005 12 03 | 703 | 0.2− | 0.5− |
| 2002 01 07 | 704 | 0.7− | 0.1+ | 2004 09 21 | 704 | 0.3+ | 0.2+ | 2005 12 03 | 703 | (0.6− | 1.7+) |
| 2002 01 07 | 704 | 0.6+ | 0.2+ | 2004 09 21 | 704 | 0.6− | 0.9+ | 2006 11 18 | 691 | 0.4+ | 0.3+ |
| 2002 01 07 | 704 | 1.2− | 0.3− | 2004 10 04 | 644 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2002 01 07 | 704 | 1.2+ | 0.6− | 2004 10 04 | 644 | 0.4− | 0.3+ | 2006 11 18 | 691 | 0.3+ | 0.2+ |
| 2004 08 11 | 704 | 0.6+ | 0.4+ | 2004 10 04 | 644 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.3+ |
| 2004 08 11 | 704 | 0.2+ | 0.2+ | 2004 10 15 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.6+ | 0.3+ |
| 2004 08 11 | 704 | 0.5+ | 0.9+ | 2004 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 08 11 | 704 | 0.5− | 0.5− | 2004 10 15 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.2+ | 0.2+ |
| 2004 09 07 | 704 | 0.6− | 0.4− | 2005 10 04 | 703 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.3− | 1.7+ |
| 2004 09 07 | 704 | 0.2− | 0.4− | 2005 10 04 | 703 | 0.9− | 0.2− | 2006 11 27 | 703 | 0.5− | 0.1+ |
| 2004 09 07 | 704 | 0.8− | 0.6− | 2005 10 04 | 703 | 0.7− | 0.1+ | 2006 11 27 | 703 | 1.4− | 0.2+ |

**(144880)∗ 2004 RU$_{56}$ = 1997 JD$_{11}$**

Discovered 2004 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 69944)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 215.50624 | | (2000.0) | | −0.17403430 | +0.98040927 |
| $n$ | 0.17874876 | $\omega$ | 141.55911 | | −0.92740040 | −0.13168066 |
| $a$ | 3.1210976 | $\Omega$ | 118.24318 | | −0.33112017 | −0.14648502 |
| $e$ | 0.1105015 | $i$ | 6.01073 | | | |
| $P$ | 5.51 | $H$ | 15.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 10 | 691 | 0.1− | 0.0 | 2002 04 02 | 644 | 0.8+ | 0.7+ | 2005 11 03 | G96 | 0.0 | 0.4− |
| 1997 05 10 | 691 | 0.6− | 0.3+ | 2004 09 08 | 704 | 0.6+ | 0.6+ | 2005 11 03 | G96 | 0.3− | 0.2− |
| 1997 05 10 | 691 | 0.2− | 0.1+ | 2004 09 08 | 704 | 0.0 | 1.1+ | 2005 11 03 | G96 | 0.3− | 0.2− |
| 1997 05 14 | 691 | 0.0 | 0.4+ | 2004 09 08 | 704 | 1.0− | 1.0+ | 2005 11 03 | G96 | 0.0 | 0.2− |
| 1997 05 14 | 691 | 0.5+ | 0.2+ | 2004 09 08 | 704 | 0.6+ | 0.2+ | 2005 11 25 | 703 | 0.1− | 0.6− |
| 1997 05 14 | 691 | 0.2+ | 0.1+ | 2004 09 09 | 704 | (1.2− | 1.7+) | 2005 11 25 | 703 | 0.8+ | 0.4+ |
| 1998 08 17 | 704 | 1.1+ | 0.8+ | 2004 09 09 | 704 | 1.3− | 0.7+ | 2005 11 25 | 703 | 0.9− | 0.2− |
| 1998 08 17 | 704 | 1.1+ | 0.9+ | 2004 09 09 | 704 | 0.6− | 0.8+ | 2005 11 25 | 703 | (1.7+ | 0.0 ) |
| 1998 08 17 | 704 | (2.5+ | 0.1−) | 2004 09 09 | 704 | 0.1+ | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 1998 08 17 | 704 | 1.1− | 1.5− | 2004 09 15 | 699 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.8+ | 0.1− |
| 2000 12 30 | 691 | 0.0 | 0.3+ | 2004 09 15 | 699 | 0.7+ | 0.4+ | 2006 11 01 | G96 | 0.6− | 0.6+ |
| 2000 12 30 | 691 | 0.2+ | 0.3+ | 2004 09 15 | 699 | 0.6− | 0.3− | 2006 11 01 | G96 | 0.5− | 0.0 |
| 2000 12 30 | 691 | 0.0 | 0.1+ | 2004 09 15 | 699 | 0.3− | 0.0 | 2006 11 15 | G96 | 1.4− | 0.1+ |
| 2002 03 11 | 644 | 0.9+ | 1.0+ | 2004 09 17 | 704 | 0.8− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2002 03 11 | 644 | 0.7+ | 0.8+ | 2004 09 17 | 704 | 0.4− | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.7+ |
| 2002 03 11 | 644 | 0.6+ | 1.0+ | 2004 09 17 | 704 | 0.3+ | 1.0+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2002 03 20 | 699 | 0.3+ | 1.3+ | 2004 09 17 | 704 | 0.6− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.3+ |
| 2002 03 20 | 699 | (1.6− | 1.4+) | 2004 09 17 | 704 | 1.0− | 0.2+ | 2006 11 16 | G96 | 0.8− | 0.2− |
| 2002 03 20 | 699 | 0.3+ | 1.4− | 2004 09 22 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 03 20 | 699 | 0.9+ | 0.8− | 2004 09 22 | 704 | 0.7− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2002 04 02 | 644 | 0.5+ | 0.8+ | 2004 09 22 | 704 | 0.5+ | 1.0+ | | | | |
| 2002 04 02 | 644 | 0.5+ | 1.0+ | 2004 09 22 | 704 | 0.5+ | 0.8+ | | | | |

**(144881)∗ 2004 RM$_{99}$**

Discovered 2004 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.99890 | | (2000.0) | | +0.95608415 | −0.28507546 |
| $n$ | 0.17928702 | $\omega$ | 54.89916 | | +0.22042952 | +0.85247883 |
| $a$ | 3.1148477 | $\Omega$ | 321.53580 | | +0.19316811 | +0.43819153 |
| $e$ | 0.0602857 | $i$ | 6.28367 | | | |
| $P$ | 5.50 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.1+ | 0.5− | 2004 09 10 | 704 | 0.7− | 0.8+ | 2004 10 10 | 704 | 0.1− | 1.2− |
| 1993 09 15 | 691 | 0.1+ | 0.5− | 2004 09 10 | 704 | 0.5− | 0.5− | 2004 10 10 | 704 | 0.1+ | 0.1− |
| 1993 09 15 | 691 | 0.2+ | 0.6− | 2004 09 10 | 704 | 0.4+ | 0.5+ | 2004 10 10 | 704 | 0.2− | 0.4+ |
| 1999 10 12 | 704 | 0.7+ | 0.3− | 2004 09 10 | 704 | 0.4− | 1.0+ | 2005 12 05 | 704 | 0.5− | 0.5+ |
| 1999 10 12 | 704 | 1.1+ | 0.3− | 2004 09 10 | 704 | 0.3− | 0.3+ | 2005 12 05 | 704 | 0.3+ | 0.2− |
| 1999 10 12 | 704 | 0.9+ | 0.8− | 2004 09 10 | 704 | 1.1+ | 0.4+ | 2005 12 05 | 704 | 0.3− | 0.1− |
| 1999 10 12 | 704 | 0.6+ | 0.2+ | 2004 09 10 | 704 | 0.5− | 0.8+ | 2005 12 24 | 704 | 0.6− | 1.0+ |
| 1999 10 12 | 704 | 0.7+ | 0.1− | 2004 09 13 | 704 | 0.2− | 0.2+ | 2005 12 24 | 704 | 1.0− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.3+ | 0.0 | 2004 09 13 | 704 | 0.2− | 0.1+ | 2005 12 24 | 704 | 1.2− | 0.1− |
| 1999 11 03 | 704 | 0.1+ | 0.7+ | 2004 09 13 | 704 | 0.2− | 0.2+ | 2005 12 28 | 703 | 0.3+ | 1.1+ |
| 1999 11 03 | 704 | 0.2+ | 1.0+ | 2004 09 13 | 704 | 0.2+ | 0.3− | 2005 12 28 | 703 | 0.1+ | 0.8+ |
| 2001 01 31 | 691 | 0.0 | 1.0− | 2004 09 13 | 704 | 0.8− | 0.5− | 2005 12 28 | 703 | 0.0 | 0.1+ |
| 2001 01 31 | 691 | 0.7− | 0.8− | 2004 09 13 | 699 | 1.3− | 1.2+ | 2005 12 28 | 703 | 0.2− | 0.3+ |
| 2001 01 31 | 691 | 0.8− | 0.8− | 2004 09 13 | 699 | 0.7− | 0.3+ | 2006 10 30 | G96 | 0.3− | 0.0 |
| 2001 02 17 | 691 | (0.8+ | 1.6+) | 2004 09 13 | 699 | 0.3+ | 0.9− | 2006 10 30 | G96 | 0.3− | 1.4− |
| 2001 02 17 | 691 | 0.4+ | 0.3+ | 2004 09 13 | 699 | 0.1− | 0.1− | 2006 10 30 | G96 | 0.4− | 0.1− |
| 2001 02 17 | 691 | 0.4+ | 1.1+ | 2004 09 18 | 704 | 0.2+ | 0.2− | 2006 10 30 | G96 | 0.3− | 0.2+ |
| 2004 09 08 | 704 | 0.5+ | 0.8+ | 2004 09 18 | 704 | 0.2− | 0.1+ | 2006 11 20 | G96 | 1.0− | 0.1+ |
| 2004 09 08 | 704 | 0.7+ | 0.6+ | 2004 09 18 | 704 | 0.3+ | 0.5− | 2006 11 20 | G96 | 0.9− | 0.5+ |
| 2004 09 08 | 704 | 0.1+ | 0.5+ | 2004 09 18 | 704 | 0.3− | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.2− |
| 2004 09 08 | 704 | 0.6+ | 0.8+ | 2004 09 18 | 704 | 0.3+ | 0.3− | 2006 11 20 | G96 | 0.2− | 0.8− |
| 2004 09 08 | 704 | 0.3+ | 0.9+ | 2004 10 08 | 704 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.7+ | 0.5− |
| 2004 09 10 | 704 | 0.3− | 0.4+ | 2004 10 08 | 704 | 0.6− | 1.2− | 2006 11 24 | G96 | 0.2+ | 0.2+ |
| 2004 09 10 | 704 | 0.4− | 0.8+ | 2004 10 08 | 704 | 0.7− | 0.2+ | 2006 11 24 | G96 | 0.6− | 0.1− |
| 2004 09 10 | 704 | 0.6− | 0.1− | 2004 10 08 | 704 | 0.5+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.2+ |
| 2004 09 10 | 704 | 0.4− | 0.5+ | 2004 10 09 | 691 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.9+ | 0.3+ |
| 2004 09 10 | 704 | 0.7− | 0.3− | 2004 10 09 | 691 | 0.0 | 0.2− | 2006 11 25 | 691 | 0.7+ | 0.3+ |
| 2004 09 10 | 704 | 0.2− | 0.1+ | 2004 10 09 | 691 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.4+ |
| 2004 09 10 | 704 | 0.2− | 0.6+ | 2004 10 10 | 704 | 0.0 | 0.5+ | | | | |
| 2004 09 10 | 704 | 0.2− | 0.4+ | 2004 10 10 | 704 | 0.8+ | 0.3+ | | | | |

**(144882)∗ 2004 RP$_{106}$**

Discovered 2004 Sept. 8 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.98402 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.19141347 | $\omega$ | 34.95550 | | +0.82222400 | −0.56916271 |
| $a$ | 2.9818632 | $\Omega$ | 359.72715 | | +0.44545140 | +0.64484923 |
| $e$ | 0.1038484 | $i$ | 14.95608 | | +0.35428908 | +0.51012085 |
| $P$ | 5.15 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.3+ | 0.8− | 2004 09 10 | 704 | 0.5+ | 0.9+ | 2004 11 10 | 699 | 0.4− | 1.2+ |
| 1999 10 14 | 704 | 0.3+ | 0.6− | 2004 09 13 | 704 | 0.4− | 0.0 | 2005 12 26 | 291 | 0.3− | 0.2− |
| 1999 10 14 | 704 | 0.7+ | 0.9− | 2004 09 13 | 704 | 0.3− | 0.2+ | 2005 12 26 | 291 | 0.6− | 0.1− |
| 1999 10 14 | 704 | 0.1+ | 1.1− | 2004 09 13 | 704 | 0.7− | 0.1+ | 2005 12 26 | 291 | 0.6− | 0.1− |
| 1999 10 14 | 704 | 0.0 | 0.7− | 2004 09 13 | 704 | 1.2− | 0.8+ | 2006 01 02 | 703 | 0.1− | 0.0 |
| 1999 10 14 | 704 | 0.9+ | 0.4− | 2004 09 18 | 704 | 0.3− | 0.4− | 2006 01 02 | 703 | 0.5+ | 0.9+ |
| 1999 10 14 | 704 | 0.5+ | 0.4− | 2004 09 18 | 704 | 0.7− | 0.1− | 2006 01 02 | 703 | 1.3+ | 0.7− |
| 1999 10 14 | 704 | 1.0+ | 0.3− | 2004 09 18 | 704 | 0.4− | 0.0 | 2006 01 02 | 703 | 0.5+ | 0.1+ |
| 1999 10 14 | 704 | 0.2− | 1.4− | 2004 09 18 | 704 | 0.4− | 0.3− | 2006 01 05 | 703 | 0.3+ | 0.6− |
| 1999 10 14 | 704 | 0.4− | 0.0 | 2004 09 18 | 704 | 0.3− | 0.6− | 2006 01 05 | 703 | 0.4− | 0.7+ |
| 1999 10 14 | 704 | 1.1+ | 0.6− | 2004 10 04 | 699 | 1.3+ | 0.8+ | 2006 01 05 | 703 | 0.1− | 0.8− |
| 1999 10 14 | 704 | 0.7+ | 0.4− | 2004 10 04 | 699 | 0.4+ | 0.0 | 2006 01 05 | 703 | 0.1+ | 0.3+ |
| 1999 10 14 | 704 | 0.2− | 0.3− | 2004 10 04 | 699 | 0.4+ | 0.3+ | 2006 01 07 | 704 | 0.0 | 0.1− |
| 1999 10 14 | 704 | 0.3+ | 0.4− | 2004 10 04 | 699 | 0.2− | 0.1− | 2006 01 07 | 704 | 0.8+ | 0.4+ |
| 1999 11 10 | 703 | 0.3− | 1.4+ | 2004 10 10 | 704 | 0.3− | 0.0 | 2006 01 07 | 704 | 0.2+ | 1.1+ |
| 1999 11 10 | 703 | 0.1− | 1.2+ | 2004 10 10 | 704 | 1.2+ | 0.2+ | 2006 01 24 | 699 | 0.6+ | 0.8+ |
| 1999 11 10 | 703 | 0.1− | 0.6+ | 2004 10 10 | 704 | 0.2+ | 0.8+ | 2006 01 24 | 699 | 0.3− | 0.3+ |
| 1999 11 10 | 703 | 1.1− | 0.2− | 2004 10 15 | 704 | 0.2− | 0.1+ | 2006 01 24 | 699 | 0.6− | 0.5− |
| 2001 02 02 | 699 | 0.4− | 1.6+ | 2004 10 15 | 704 | 0.3+ | 0.3+ | 2006 01 24 | 699 | 0.2− | 0.2+ |
| 2001 02 02 | 699 | 0.8+ | 0.7+ | 2004 10 15 | 704 | 1.0− | 0.5− | 2006 01 27 | 703 | 1.0+ | 0.3+ |
| 2001 02 02 | 699 | 0.1− | 0.4+ | 2004 10 15 | 704 | 0.9− | 0.2+ | 2006 01 27 | 703 | 0.6+ | 0.8− |
| 2001 02 02 | 699 | 0.3+ | 0.1− | 2004 10 15 | 704 | 0.7− | 0.2+ | 2006 01 27 | 703 | 0.5+ | 0.5− |
| 2004 08 11 | 704 | 0.8− | 0.5+ | 2004 10 16 | 704 | 0.7− | 0.3− | 2006 01 27 | 703 | 0.5− | 0.3+ |
| 2004 08 11 | 704 | 0.6+ | 1.2+ | 2004 10 16 | 704 | 1.0− | 0.7− | 2006 02 18 | 699 | 0.4+ | 0.2− |
| 2004 08 11 | 704 | 0.7+ | 1.1+ | 2004 10 16 | 704 | 0.7− | 0.7− | 2006 02 18 | 699 | 0.5+ | 0.6− |
| 2004 08 11 | 704 | 0.4+ | 0.8+ | 2004 10 16 | 704 | 0.4− | 0.5− | 2006 02 18 | 699 | 0.6+ | 1.2+ |
| 2004 09 08 | 644 | 0.0 | 0.6+ | 2004 10 16 | 704 | 0.8− | 0.4− | 2006 02 18 | 699 | 0.4− | 1.7+ |
| 2004 09 08 | 644 | 0.1+ | 0.4+ | 2004 11 08 | 185 | 0.2+ | 0.2+ | 2006 02 22 | 703 | 0.8+ | 0.0 |
| 2004 09 08 | 644 | 0.4+ | 0.6+ | 2004 11 08 | 185 | 0.0 | 0.3+ | 2006 02 22 | 703 | 0.5− | 0.5− |
| 2004 09 10 | 704 | 0.7− | 0.6− | 2004 11 08 | 185 | 0.7+ | 0.1− | 2006 02 22 | 703 | 0.3+ | 1.2− |
| 2004 09 10 | 704 | 0.4− | 0.0 | 2004 11 10 | 699 | 0.3+ | 0.9+ | 2006 02 22 | 703 | 0.5+ | 0.4− |
| 2004 09 10 | 704 | 0.3− | 0.0 | 2004 11 10 | 699 | 1.4+ | 0.2+ | | | | |
| 2004 09 10 | 704 | 0.0 | 0.3− | 2004 11 10 | 699 | 0.4+ | 0.2− | | | | |

**(144883)∗ 2004 RM$_{110}$**

Discovered 2004 Sept. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.51858 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.35874813 | $\omega$ | 280.79154 | | −0.43256144 | −0.89598477 |
| $a$ | 1.9615962 | $\Omega$ | 196.02727 | | +0.90160375 | −0.42972475 |
| $e$ | 0.1034621 | $i$ | 21.34821 | | +0.00113386 | −0.11201756 |
| $P$ | 2.75 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 691 | 0.4− | 0.6− | 2004 09 12 | 704 | 0.2− | 0.3+ | 2006 04 24 | 699 | 0.3+ | 0.4+ |
| 1996 09 13 | 691 | 0.2+ | 0.2− | 2004 09 12 | 704 | 0.1+ | 0.3+ | 2006 04 24 | 699 | 0.0 | 0.3− |
| 1996 09 13 | 691 | 0.2+ | 0.3− | 2004 09 12 | 704 | 0.1− | 0.0 | 2006 04 24 | 699 | 0.3− | 0.4+ |
| 2003 01 12 | 644 | 0.1+ | 0.3− | 2004 09 12 | 704 | 0.8+ | 0.0 | 2006 04 24 | 699 | 0.1− | 0.1+ |
| 2003 01 12 | 644 | 0.4+ | 0.1− | 2004 09 22 | 704 | 0.5+ | 0.7− | 2006 05 01 | 703 | 0.5− | 0.8+ |
| 2003 01 12 | 644 | 0.2+ | 0.7− | 2004 09 22 | 704 | 0.5+ | 0.2− | 2006 05 01 | 703 | 0.6− | 0.4+ |
| 2003 03 11 | 704 | 0.8+ | 0.3− | 2004 09 22 | 704 | 0.6− | 0.7+ | 2006 05 01 | 703 | 1.4− | 0.5+ |
| 2003 03 11 | 704 | 0.3+ | 0.0 | 2004 09 23 | 704 | 0.0 | 0.4+ | 2006 05 22 | 691 | 0.4+ | 0.2− |
| 2003 03 11 | 704 | 0.2− | 0.2− | 2004 09 23 | 704 | 0.3+ | 0.2− | 2006 05 22 | 691 | 0.0 | 0.5− |
| 2003 03 11 | 704 | 0.4+ | 0.1+ | 2004 09 23 | 704 | 0.2− | 0.3− | 2006 05 22 | 691 | 0.4+ | 0.3− |
| 2003 03 28 | 699 | 0.4− | 0.3+ | 2004 09 23 | 704 | 0.5+ | 0.1+ | 2006 05 24 | 691 | 0.1− | 0.0 |
| 2003 03 28 | 699 | 0.7− | 0.6+ | 2004 09 23 | 704 | 0.1+ | 0.1− | 2006 05 24 | 691 | 0.3+ | 0.2− |
| 2003 03 28 | 699 | 0.5− | 0.5+ | 2004 09 24 | 704 | 0.3+ | 0.9+ | 2006 05 24 | 691 | 0.0 | 0.1− |
| 2003 03 28 | 699 | 0.6− | 0.3− | 2004 09 24 | 704 | 0.6+ | 0.3+ | 2006 05 26 | 691 | 0.2− | 0.2+ |
| 2004 08 20 | 703 | 1.0− | 0.8+ | 2004 09 24 | 704 | 1.0+ | 0.6− | 2006 05 26 | 691 | 0.4− | 0.3− |
| 2004 08 20 | 703 | 0.3− | 1.2+ | 2004 09 24 | 704 | 0.6+ | 0.3− | 2006 05 26 | 691 | 0.0 | 0.1− |
| 2004 08 20 | 703 | 0.7− | 0.4+ | 2004 09 24 | 704 | 0.5− | 0.2+ | 2006 05 28 | 691 | 0.0 | 0.2− |
| 2004 08 20 | 703 | 1.3− | 0.1+ | 2004 10 10 | 704 | 0.2− | 0.5+ | 2006 05 28 | 691 | 0.2+ | 0.1+ |
| 2004 09 11 | 704 | 0.2− | 1.2− | 2004 10 10 | 704 | 0.7− | 0.2+ | 2006 05 28 | 691 | 0.3+ | 0.2+ |
| 2004 09 11 | 704 | 0.1+ | 0.2− | 2004 10 10 | 704 | 0.4− | 0.3− | 2006 05 31 | 691 | 0.0 | 0.1− |
| 2004 09 11 | 704 | 0.2+ | 0.0 | 2006 03 05 | G96 | 0.3− | 0.3− | 2006 05 31 | 691 | 0.0 | 0.1− |
| 2004 09 11 | 704 | 0.4− | 0.1− | 2006 03 05 | G96 | 0.1− | 0.0 | 2006 05 31 | 691 | 0.1+ | 0.1+ |
| 2004 09 11 | 704 | 0.3+ | 0.1+ | 2006 03 05 | G96 | 0.2+ | 0.1+ | | | | |
| 2004 09 12 | 704 | 0.2+ | 0.1+ | 2006 03 05 | G96 | 0.1− | 0.2+ | | | | |

**(144884)∗ 2004 RQ$_{113}$ = 2003 JD$_2$**

Discovered 2004 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 73096)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.37640 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22538713 | $\omega$ | 227.10734 | | +0.90373366 | −0.42763124 |
| $a$ | 2.6741348 | $\Omega$ | 158.18693 | | +0.40673888 | +0.84320199 |
| $e$ | 0.1042604 | $i$ | 3.07375 | | +0.13352510 | +0.32579428 |
| $P$ | 4.37 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 691 | 0.0 | 0.4+ | 2002 01 13 | 704 | 0.0 | 0.2+ | 2004 08 10 | 704 | 0.1+ | 0.4− |
| 2000 09 03 | 691 | 0.3− | 0.3+ | 2002 01 13 | 704 | 1.0+ | 0.2+ | 2004 08 20 | 691 | 0.0 | 0.1+ |
| 2000 09 03 | 691 | 0.2− | 0.3+ | 2002 02 11 | 704 | 0.1+ | 0.7+ | 2004 08 20 | 691 | 0.0 | 0.1+ |
| 2000 09 23 | 699 | 0.6− | 1.3+ | 2002 02 11 | 704 | 0.6+ | 0.6+ | 2004 08 20 | 691 | 0.1+ | 0.1+ |
| 2000 09 23 | 699 | 0.1− | 0.5+ | 2002 02 11 | 704 | 0.2+ | 1.3+ | 2004 09 07 | 704 | (2.8− | 1.0+) |
| 2000 09 23 | 699 | 0.1− | 1.2+ | 2002 02 11 | 704 | 0.3+ | 1.1+ | 2004 09 07 | 704 | 1.6− | 0.2+ |
| 2000 09 23 | 699 | 1.5− | 1.3+ | 2002 02 11 | 704 | 0.1+ | 1.6+ | 2004 09 07 | 704 | (2.1− | 0.3+) |
| 2000 10 02 | 704 | 0.5− | 0.6+ | 2003 05 01 | 291 | 0.0 | 0.4+ | 2004 09 07 | 704 | (2.2− | 0.6+) |
| 2000 10 02 | 704 | 0.1+ | 0.4+ | 2003 05 01 | 291 | 0.4+ | 0.2+ | 2004 09 11 | 691 | 0.4+ | 0.0 |
| 2000 10 02 | 704 | 0.1+ | 0.2− | 2003 05 01 | 291 | 0.1+ | 0.3+ | 2004 09 11 | 691 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.2+ | 0.9+ | 2003 05 02 | 691 | 0.0 | 0.5+ | 2004 09 11 | 691 | 0.1− | 0.0 |
| 2000 10 02 | 704 | 0.2+ | 0.5+ | 2003 05 02 | 691 | 0.4− | 0.5+ | 2005 12 07 | 691 | 0.0 | 0.4− |
| 2000 10 02 | 704 | 0.3+ | 0.1− | 2003 05 02 | 691 | 0.5+ | 0.7+ | 2005 12 07 | 691 | 0.0 | 0.3+ |
| 2000 10 02 | 704 | 0.4− | 1.2+ | 2004 08 10 | 704 | 0.8+ | 0.2+ | 2005 12 07 | 691 | 0.1+ | 0.1+ |
| 2000 10 02 | 704 | 0.3− | 0.4− | 2004 08 10 | 704 | 0.5− | 0.4− | 2005 12 29 | A13 | 1.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.1− | 0.3+ | 2004 08 10 | 704 | 0.1+ | 0.3− | 2005 12 29 | A13 | 0.4+ | 0.2+ |
| 2002 01 13 | 704 | 0.6+ | 1.4+ | 2004 08 10 | 704 | 0.3+ | 0.6+ | | | | |

**(144885)∗ 2004 RH$_{116}$ = 2000 AP$_{109}$**

Discovered 2004 Sept. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 70000)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.08261 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15924869 | $\omega$ | 237.87903 | | +0.94863593 | −0.29723032 | |
| $a$ | 3.3709486 | $\Omega$ | 139.12424 | | +0.31597145 | +0.90730836 | |
| $e$ | 0.1237700 | $i$ | 9.53188 | | −0.01587157 | +0.29739819 | |
| $P$ | 6.19 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 17 | 910 | 0.3− | 0.6− | 2004 09 07 | 704 | 0.6− | 0.2− | 2004 10 06 | 704 | 0.4− | 0.3− |
| 1998 09 18 | 910 | 0.7− | 0.6− | 2004 09 12 | 704 | 1.1+ | 0.8+ | 2004 10 06 | 704 | 0.1+ | 0.2+ |
| 1998 09 18 | 910 | 0.6− | 0.7− | 2004 09 12 | 704 | 0.5+ | 1.3+ | 2004 10 10 | 644 | 0.3− | 0.1− |
| 1998 10 18 | 699 | 0.3− | 0.5+ | 2004 09 12 | 704 | 0.9+ | 0.9+ | 2004 10 10 | 644 | 0.1+ | 0.0 |
| 1998 10 18 | 699 | 0.4− | 0.6+ | 2004 09 13 | 691 | 0.0 | 0.3− | 2004 10 10 | 644 | 0.5− | 0.1− |
| 1998 10 18 | 699 | 0.2− | 0.4+ | 2004 09 13 | 691 | 0.1− | 0.2− | 2005 12 08 | 704 | 0.6+ | 0.8+ |
| 2000 01 05 | 704 | 1.2+ | 0.5− | 2004 09 13 | 691 | 0.2− | 0.2− | 2005 12 08 | 704 | 1.1− | 0.7+ |
| 2000 01 05 | 704 | 0.2− | 0.6− | 2004 09 15 | 699 | 0.8+ | 0.5− | 2005 12 08 | 704 | 0.0 | 0.2+ |
| 2000 01 05 | 704 | 0.7+ | 1.0− | 2004 09 15 | 699 | 0.4+ | 0.7− | 2005 12 09 | 704 | 0.9− | 0.2− |
| 2000 01 07 | 704 | 0.1+ | 1.2− | 2004 09 15 | 699 | 0.2+ | 0.8− | 2005 12 09 | 704 | 0.9− | 0.5+ |
| 2000 01 07 | 704 | 0.6+ | 0.5− | 2004 09 15 | 699 | 0.1+ | 0.8− | 2005 12 09 | 704 | 0.0 | 0.3− |
| 2000 01 07 | 704 | 0.4+ | 0.3− | 2004 09 17 | 704 | 0.2− | 0.7+ | 2005 12 09 | 704 | 0.8− | 0.9+ |
| 2000 01 07 | 704 | 1.1+ | 0.6− | 2004 09 17 | 704 | 0.3+ | 0.6+ | 2006 01 03 | 704 | 0.3+ | 0.5+ |
| 2002 04 16 | 704 | 0.4+ | 0.0 | 2004 09 17 | 704 | 0.7− | 0.2− | 2006 01 03 | 704 | 0.6− | 0.9+ |
| 2002 04 16 | 704 | 0.2+ | 0.8+ | 2004 09 17 | 704 | 0.1− | 0.6+ | 2006 01 03 | 704 | 0.6− | 0.3+ |
| 2002 04 16 | 704 | 1.3− | 1.2+ | 2004 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.5+ |
| 2004 08 27 | 699 | 1.0+ | 0.8− | 2004 09 21 | 704 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2+ |
| 2004 08 27 | 699 | 0.6+ | 0.4+ | 2004 09 21 | 704 | 0.5+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2004 08 27 | 699 | 0.3+ | 0.2+ | 2004 09 21 | 704 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2004 08 27 | 699 | 0.4− | 0.8− | 2004 09 21 | 704 | 0.3+ | 0.5+ | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2004 09 07 | 704 | 0.4− | 0.2+ | 2004 09 21 | 704 | 0.2+ | 0.7+ | 2006 12 01 | G96 | 0.4+ | 0.2+ |
| 2004 09 07 | 704 | 0.1− | 0.5+ | 2004 10 06 | 704 | 0.6+ | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 2004 09 07 | 704 | 0.3− | 0.2+ | 2004 10 06 | 704 | 0.6− | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.1+ |

**(144886)∗ 2004 RJ$_{141}$ = 2002 EC$_{138}$**

Discovered 2004 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 70008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.99792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20401303 | $\omega$ | 359.69166 | | +0.98883466 | −0.14892618 | |
| $a$ | 2.8577931 | $\Omega$ | 8.87811 | | +0.13679223 | +0.89333123 | |
| $e$ | 0.0846846 | $i$ | 1.92956 | | +0.05910919 | +0.42400507 | |
| $P$ | 4.83 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 691 | 0.4− | 0.3+ | 2004 09 09 | 704 | 0.7− | 1.4+ | 2004 10 18 | 704 | 0.1+ | 0.2+ |
| 2000 12 30 | 691 | 0.1+ | 0.4− | 2004 09 09 | 704 | 0.7+ | 1.1+ | 2005 12 05 | G96 | 0.1− | 0.5− |
| 2000 12 30 | 691 | 0.1+ | 0.3− | 2004 09 11 | 691 | 0.1− | 0.4+ | 2005 12 05 | G96 | 0.0 | 0.5− |
| 2000 12 30 | 704 | 0.1− | 0.6+ | 2004 09 11 | 691 | 0.1− | 0.5+ | 2005 12 05 | G96 | 0.0 | 0.4− |
| 2000 12 30 | 704 | 0.8+ | 0.0 | 2004 09 11 | 691 | 0.1+ | 0.3+ | 2005 12 05 | G96 | 0.5− | 0.4− |
| 2000 12 30 | 704 | 0.4+ | 0.2− | 2004 09 13 | 699 | 0.2− | 0.2− | 2005 12 24 | 691 | 0.1+ | 0.3− |
| 2000 12 30 | 704 | 0.3− | 0.5+ | 2004 09 13 | 699 | 0.0 | 0.1+ | 2005 12 24 | 691 | 0.1+ | 0.3− |
| 2002 03 12 | 644 | 0.2+ | 0.6+ | 2004 09 13 | 699 | 0.2+ | 0.2+ | 2005 12 24 | 691 | 0.1+ | 0.2− |
| 2002 03 12 | 644 | 0.3+ | 0.7+ | 2004 09 13 | 699 | 0.4+ | 0.5+ | 2005 12 29 | G96 | 0.4− | 0.5− |
| 2002 03 12 | 644 | 0.0 | 0.6+ | 2004 09 14 | 699 | 1.2+ | 0.2+ | 2005 12 29 | G96 | 0.3− | 0.4− |
| 2002 03 12 | 644 | 0.8+ | 0.4+ | 2004 09 14 | 699 | 0.4− | 0.8− | 2005 12 29 | G96 | 0.2− | 0.5− |
| 2002 03 12 | 644 | 1.6+ | 0.9+ | 2004 09 14 | 699 | 0.8− | 1.2+ | 2005 12 29 | G96 | 0.3− | 0.5− |
| 2002 03 12 | 644 | 1.0+ | 0.7+ | 2004 09 14 | 699 | 0.7+ | 0.2+ | 2006 01 05 | 691 | 0.1+ | 0.1− |
| 2002 03 16 | 704 | 0.4− | 1.1+ | 2004 09 17 | 704 | 1.0− | 1.1+ | 2006 01 05 | 691 | 0.4+ | 1.4+ |
| 2002 03 16 | 704 | 0.1− | 0.7+ | 2004 09 17 | 704 | 0.6− | 1.2+ | 2006 01 05 | 691 | 0.2+ | 0.0 |
| 2002 03 16 | 704 | 0.1− | 0.3− | 2004 09 17 | 704 | 0.7− | 1.4+ | 2006 01 05 | 704 | 0.4− | 1.1+ |
| 2002 04 03 | 691 | 0.2− | 0.7+ | 2004 09 22 | H86 | (0.3+ | 2.1−) | 2006 01 05 | 704 | 0.3+ | 0.4− |
| 2002 04 03 | 691 | 0.3− | 0.3+ | 2004 09 22 | H86 | 0.3+ | 1.8− | 2006 01 05 | 704 | 1.1− | 1.0+ |
| 2002 04 03 | 691 | 0.1+ | 0.5+ | 2004 09 22 | H86 | (0.5+ | 2.7−) | 2006 01 05 | 704 | 0.8− | 0.5+ |
| 2002 04 18 | 691 | 0.0 | 0.5+ | 2004 10 07 | 704 | 0.7− | 0.2+ | 2006 01 06 | 704 | 0.2− | 0.6− |
| 2002 04 18 | 691 | 0.6+ | 0.2+ | 2004 10 07 | 704 | 0.5− | 0.0 | 2006 01 06 | 704 | 0.3+ | 0.2+ |
| 2002 04 18 | 691 | 0.7+ | 0.1+ | 2004 10 07 | 704 | 0.2− | 0.4+ | 2006 01 06 | 704 | 0.1+ | 0.9+ |
| 2004 09 08 | 704 | 0.0 | 0.7+ | 2004 10 07 | 704 | 0.2− | 0.9+ | 2006 01 06 | 704 | 0.4− | 0.3+ |
| 2004 09 08 | 704 | 0.4+ | 0.1+ | 2004 10 10 | 704 | 0.6− | 0.3− | 2006 01 06 | 704 | 0.3+ | 0.0 |
| 2004 09 08 | 704 | 0.2− | 0.3+ | 2004 10 10 | 704 | 0.4− | 0.1+ | 2006 01 07 | 704 | 0.1− | 1.1− |
| 2004 09 08 | 704 | 0.4− | 0.0 | 2004 10 10 | 704 | 0.9− | 0.6+ | 2006 01 07 | 704 | 0.1+ | 0.4+ |
| 2004 09 08 | 704 | 0.3− | 0.4+ | 2004 10 10 | 704 | 0.0 | 0.5− | 2006 01 07 | 704 | 0.4+ | 0.7− |
| 2004 09 09 | 704 | 0.3− | 0.4− | 2004 10 18 | 704 | 0.5+ | 0.1− | 2006 01 07 | 704 | 0.7− | 0.3+ |
| 2004 09 09 | 704 | 0.2+ | 1.0− | 2004 10 18 | 704 | 0.5− | 0.3+ | | | | |
| 2004 09 09 | 704 | 0.4− | 0.9+ | 2004 10 18 | 704 | 0.4− | 0.1− | | | | |

**(144887)∗ 2004 RD$_{165}$**

Discovered 2004 Sept. 9 by P. De Cat and E. W. Elst at Uccle.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.66874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17387718 | $\omega$ | 196.92034 | | −0.58505827 | −0.78592339 | |
| $a$ | 3.1791254 | $\Omega$ | 289.32916 | | +0.76645939 | −0.45521421 | |
| $e$ | 0.0564612 | $i$ | 12.24132 | | +0.26504119 | −0.41845483 | |
| $P$ | 5.67 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 03 | 734 | 0.3− | 0.0 | 2004 09 13 | 012 | 0.0 | 0.1+ | 2005 10 29 | 644 | 0.1− | 0.2+ |
| 2000 12 03 | 734 | 0.7− | 0.2+ | 2005 10 10 | 703 | 0.1+ | 0.5+ | 2005 11 21 | 703 | 0.1+ | 0.5− |
| 2000 12 03 | 734 | 0.6+ | 0.2− | 2005 10 10 | 703 | 0.7+ | 0.3+ | 2005 11 21 | 703 | 0.9+ | 0.5+ |
| 2000 12 03 | 734 | 0.2+ | 0.1− | 2005 10 10 | 703 | 0.3+ | 0.2− | 2005 11 21 | 703 | 0.5− | 0.2− |
| 2001 01 04 | 704 | 0.1− | 0.2+ | 2005 10 10 | 703 | 0.9+ | 0.3− | 2005 11 21 | 703 | 0.2− | 0.4+ |
| 2001 01 04 | 704 | 0.5+ | 0.6− | 2005 10 12 | 012 | 0.6+ | 0.9+ | 2005 12 04 | 703 | 0.4− | 0.6+ |
| 2001 01 04 | 704 | 0.3+ | 0.1+ | 2005 10 12 | 012 | 0.2+ | 0.8− | 2005 12 04 | 703 | 0.1+ | 0.3− |
| 2001 01 04 | 704 | 0.5− | 0.5+ | 2005 10 12 | 012 | 0.1− | 0.8+ | 2005 12 04 | 703 | 1.5− | 0.3− |
| 2004 08 20 | 691 | 0.2+ | 0.1+ | 2005 10 12 | 012 | 1.1− | 0.5− | 2005 12 04 | 703 | 0.6− | 0.6+ |
| 2004 08 20 | 691 | 0.1− | 0.3+ | 2005 10 24 | 644 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.3− | 0.4− |
| 2004 08 20 | 691 | 0.1+ | 0.4+ | 2005 10 24 | 644 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2004 08 21 | 703 | 0.4+ | 0.6− | 2005 10 24 | 644 | 0.3+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2004 08 21 | 703 | 0.0 | 1.7− | 2005 10 25 | 703 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2004 08 21 | 703 | 1.7− | 0.9− | 2005 10 25 | 703 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2004 08 21 | 703 | 1.6+ | 1.7+ | 2005 10 25 | 703 | 0.4− | 1.6− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2004 09 09 | 012 | 0.9− | 0.5− | 2005 10 25 | 703 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.3+ |
| 2004 09 09 | 012 | 0.5+ | 0.7− | 2005 10 25 | 703 | 0.7− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2004 09 09 | 012 | 0.1+ | 0.1− | 2005 10 25 | 703 | 1.6+ | 0.6− | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2004 09 09 | 012 | 0.6+ | 0.4− | 2005 10 25 | 703 | 0.4− | 1.1− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2004 09 13 | 012 | 0.9− | 0.2+ | 2005 10 25 | 703 | 0.9− | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.4+ |
| 2004 09 13 | 012 | 0.3− | 1.1− | 2005 10 29 | 644 | 0.1− | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2004 09 13 | 012 | (2.1+ | 0.2−) | 2005 10 29 | 644 | 0.3+ | 0.3+ | | | | |

**(144888)∗ 2004 RZ$_{192}$**

Discovered 2004 Sept. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.69003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17664654 | $\omega$ | 354.95456 | | +0.86394667 | +0.49983453 | |
| $a$ | 3.1458110 | $\Omega$ | 334.76374 | | −0.45685046 | +0.72669982 | |
| $e$ | 0.0737962 | $i$ | 8.27084 | | −0.21185799 | +0.47124602 | |
| $P$ | 5.58 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.3+ | 0.3+ | 2004 09 13 | 704 | 0.2+ | 1.1+ | 2004 10 10 | 704 | 0.3− | 1.0+ |
| 1998 08 17 | 704 | 0.5− | 0.7+ | 2004 09 13 | 704 | 0.0 | 0.7+ | 2004 10 10 | 704 | 0.1− | 0.2+ |
| 1998 08 17 | 704 | 1.3+ | 0.9+ | 2004 09 13 | 704 | 0.6+ | 0.4+ | 2004 10 21 | 704 | (1.6− | 0.3−) |
| 1998 08 17 | 704 | 0.4− | 0.9+ | 2004 09 13 | 704 | 0.3+ | 0.7+ | 2004 10 21 | 704 | 0.9− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 1.1− | 0.9− | 2004 09 13 | 699 | 0.3− | 0.5+ | 2004 10 21 | 704 | 1.2− | 0.2− |
| 1999 12 07 | 703 | 1.3− | 0.5− | 2004 09 13 | 699 | 1.4+ | 0.2− | 2004 10 21 | 704 | 1.1− | 0.4+ |
| 1999 12 07 | 703 | 1.1+ | 1.8+ | 2004 09 13 | 699 | 0.4+ | 0.6− | 2004 10 21 | 704 | 1.4− | 0.2+ |
| 1999 12 07 | 703 | 0.6+ | 0.3− | 2004 09 13 | 699 | 0.4− | 0.7+ | 2005 12 24 | 704 | 0.1+ | 0.8− |
| 1999 12 12 | 704 | 0.3− | 0.0 | 2004 09 18 | 704 | 0.2− | 1.1− | 2005 12 24 | 704 | 0.2+ | 0.2− |
| 1999 12 12 | 704 | 0.3+ | 1.2− | 2004 09 18 | 704 | 0.2− | 1.5− | 2005 12 24 | 704 | 0.3+ | 0.0 |
| 1999 12 12 | 704 | 0.5− | 1.0− | 2004 09 18 | 704 | (0.9+ | 1.8−) | 2005 12 24 | 704 | 0.6+ | 0.6− |
| 1999 12 12 | 704 | 0.8+ | 0.0 | 2004 09 18 | 704 | 0.2+ | 0.9− | 2005 12 24 | 704 | 0.2− | 0.2− |
| 2001 01 19 | 704 | 0.4+ | 1.2+ | 2004 09 18 | 704 | 1.1− | 0.9+ | 2006 01 07 | 704 | 0.7+ | 0.2+ |
| 2001 01 19 | 704 | 0.4− | 0.6+ | 2004 09 22 | 704 | 0.4+ | 0.2+ | 2006 01 07 | 704 | 1.3+ | 0.6− |
| 2001 01 19 | 704 | 0.6− | 0.4+ | 2004 09 22 | 704 | 1.1− | 1.2+ | 2006 01 07 | 704 | 0.4+ | 0.1+ |
| 2001 01 19 | 704 | 0.1+ | 0.6+ | 2004 09 22 | 704 | 0.5+ | 0.5− | 2006 01 07 | 704 | 0.4+ | 0.1+ |
| 2001 01 19 | 704 | 0.6+ | 0.6+ | 2004 09 22 | 704 | 0.9− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 02 17 | 704 | 0.4+ | 1.0+ | 2004 09 22 | 704 | 0.0 | 0.5− | 2006 11 01 | G96 | 0.6− | 0.5− |
| 2001 02 17 | 704 | 0.6− | 0.9+ | 2004 10 05 | 644 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2001 02 17 | 704 | (0.9+ | 1.9+) | 2004 10 05 | 644 | 0.1− | 0.5− | 2006 11 01 | G96 | 0.7− | 0.2+ |
| 2002 04 30 | 644 | 0.0 | 1.0+ | 2004 10 05 | 644 | 0.3+ | 0.1− | 2006 11 17 | 691 | 0.3+ | 0.1− |
| 2002 04 30 | 644 | (0.0 | 1.6+) | 2004 10 09 | 699 | 0.2− | 0.5− | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 2002 04 30 | 644 | 0.1+ | 1.1+ | 2004 10 09 | 699 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.4+ |
| 2004 09 10 | 704 | 0.2+ | 0.0 | 2004 10 09 | 699 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2004 09 10 | 704 | 0.6+ | 0.3− | 2004 10 09 | 699 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.9+ | 0.4− |
| 2004 09 10 | 704 | 0.2+ | 1.1− | 2004 10 10 | 704 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.4− | 0.0 |
| 2004 09 10 | 704 | 0.2+ | 0.3− | 2004 10 10 | 704 | 0.2− | 0.9+ | 2006 11 24 | G96 | 0.5− | 0.4− |
| 2004 09 13 | 704 | 0.1+ | 0.6+ | 2004 10 10 | 704 | 0.7− | 1.1+ | | | | |

**(144889)∗ 2004 RZ$_{213}$**

Discovered 2004 Sept. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.43095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18255388 | $\omega$ | 327.67826 | | +0.54942490 | +0.82075331 | |
| $a$ | 3.0775752 | $\Omega$ | 334.57274 | | −0.66792174 | +0.31888416 | |
| $e$ | 0.0670016 | $i$ | 21.37816 | | −0.50200879 | +0.47400096 | |
| $P$ | 5.40 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 31 | 699 | 1.0+ | 0.0 | 2004 09 14 | 704 | 0.0 | 0.2− | 2004 11 03 | 703 | (2.6+ | 1.8+) |
| 1998 07 31 | 699 | 0.1+ | 1.8+ | 2004 09 14 | 704 | 0.1− | 0.3− | 2004 11 03 | 703 | 1.0+ | 1.1− |
| 1998 07 31 | 699 | 0.3+ | 0.5+ | 2004 09 14 | 704 | 0.8+ | 0.7− | 2004 11 09 | 703 | 0.3+ | 1.3− |
| 1998 08 17 | 704 | 0.1+ | 0.9+ | 2004 09 14 | 704 | 0.1+ | 0.5+ | 2004 11 09 | 703 | 0.2+ | 0.1+ |
| 1998 08 17 | 704 | 0.4+ | 0.4− | 2004 10 04 | 704 | 0.6− | 0.3− | 2004 11 09 | 703 | 0.1− | 0.2− |
| 1998 08 17 | 704 | 0.7− | 0.5− | 2004 10 04 | 704 | 0.1− | 0.0 | 2004 11 09 | 703 | 0.2+ | 0.2− |
| 1998 08 17 | 704 | 0.2− | 0.3+ | 2004 10 04 | 704 | 1.1− | 0.5− | 2004 12 01 | 644 | 0.3+ | 0.1− |
| 1998 08 17 | 704 | 1.1− | 1.4− | 2004 10 04 | 704 | 0.7− | 0.3− | 2004 12 01 | 644 | 0.4− | 0.0 |
| 1998 08 23 | 704 | 0.9− | 1.3+ | 2004 10 04 | 704 | 0.3+ | 0.1− | 2004 12 01 | 644 | 0.4+ | 0.4+ |
| 1998 08 23 | 704 | 0.0 | 1.2+ | 2004 10 05 | 644 | 0.2− | 0.1+ | 2005 12 22 | 704 | (1.2− | 1.6+) |
| 1998 08 23 | 704 | 1.8− | 0.3− | 2004 10 05 | 644 | 0.3− | 0.1+ | 2005 12 22 | 704 | (1.6− | 1.8+) |
| 1998 08 23 | 704 | (0.8+ | 2.9+) | 2004 10 05 | 644 | 0.3− | 0.2+ | 2005 12 22 | 704 | (2.4− | 1.5+) |
| 1998 08 23 | 704 | (6.1− | 0.4−) | 2004 10 08 | 704 | 0.0 | 0.1+ | 2006 01 21 | 704 | (0.5− | 1.6−) |
| 2001 01 18 | 704 | 1.2+ | 0.1− | 2004 10 08 | 704 | 0.2− | 0.5+ | 2006 01 21 | 704 | 0.7+ | 0.8− |
| 2001 01 18 | 704 | 1.0+ | 0.8+ | 2004 10 08 | 704 | 0.1− | 0.6+ | 2006 01 21 | 704 | 0.1+ | 0.8− |
| 2001 01 18 | 704 | 0.4+ | 0.4+ | 2004 10 08 | 704 | 0.6+ | 0.5+ | 2006 02 13 | A24 | (1.8+ | 2.2+) |
| 2001 01 18 | 704 | 0.1− | 0.5+ | 2004 10 14 | 644 | 0.3+ | 0.1− | 2006 02 13 | A24 | (1.3− | 2.0−) |
| 2001 01 18 | 704 | 0.3− | 0.7+ | 2004 10 14 | 644 | 0.4+ | 0.1− | 2006 02 13 | A24 | 0.6− | 0.7− |
| 2001 02 16 | 704 | 0.4+ | 0.1+ | 2004 10 14 | 644 | 0.5+ | 0.1− | 2006 11 09 | 691 | 0.9+ | 0.2− |
| 2001 02 16 | 704 | 0.7+ | 0.7+ | 2004 10 16 | 704 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2001 02 16 | 704 | 0.3+ | 0.3+ | 2004 10 16 | 704 | 0.1− | 0.1− | 2006 11 09 | 691 | 0.6+ | 0.3+ |
| 2001 02 16 | 704 | 1.2− | 0.3+ | 2004 10 16 | 704 | 0.0 | 0.5− | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2004 09 06 | 704 | 1.4+ | 1.2+ | 2004 10 16 | 704 | 0.3+ | 0.4− | 2006 11 23 | G96 | 0.1− | 0.3+ |
| 2004 09 06 | 704 | 1.5+ | 0.7+ | 2004 10 16 | 704 | 0.0 | 0.7− | 2006 11 23 | G96 | 0.6− | 0.2+ |
| 2004 09 06 | 704 | 0.2− | 0.7+ | 2004 10 23 | 704 | 1.2− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.5+ |
| 2004 09 11 | 704 | 0.9− | 0.3+ | 2004 10 23 | 704 | (1.7− | 0.2+) | 2006 12 01 | G96 | 0.5− | 0.3+ |
| 2004 09 11 | 704 | 1.0− | 0.8+ | 2004 10 23 | 704 | 0.9− | 0.3+ | 2006 12 01 | G96 | 0.7− | 0.1+ |
| 2004 09 11 | 704 | 1.2− | 0.1− | 2004 10 23 | 704 | (1.3− | 2.6+) | 2006 12 01 | G96 | 0.4− | 0.3+ |
| 2004 09 11 | 704 | 0.3− | 0.2+ | 2004 10 23 | 704 | 1.1+ | 0.6+ | 2006 12 01 | G96 | 0.6− | 0.1+ |
| 2004 09 11 | 704 | 0.2− | 0.2+ | 2004 11 03 | 703 | 0.4− | 0.7− | | | | |
| 2004 09 14 | 704 | 0.2+ | 0.1− | 2004 11 03 | 703 | 0.7+ | 0.2− | | | | |

**(144890)∗ 2004 RG$_{288}$**

Discovered 2004 Sept. 15 by W. K. Y. Yeung at 7300 Observatory, Cloudcroft.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.73105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23362046 | $\omega$ | 243.22303 | | +0.54400677 | −0.83903476 | |
| $a$ | 2.6109314 | $\Omega$ | 173.79830 | | +0.79585388 | +0.51263276 | |
| $e$ | 0.2581133 | $i$ | 4.66864 | | +0.26584439 | +0.18228639 | |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 09 24 | 261 | 0.6− | 1.1+ | 2004 09 16 | 699 | 0.4+ | 0.3+ | 2004 11 06 | 704 | 1.3− | 1.5+ |
| 1987 09 24 | 261 | 0.0 | 0.9+ | 2004 09 16 | H07 | 0.1− | 0.1− | 2004 11 18 | 704 | 0.3− | 0.1+ |
| 2000 11 27 | 704 | 0.5+ | 0.4− | 2004 09 16 | 699 | 0.2+ | 0.5− | 2004 11 18 | 704 | 0.4− | 0.3+ |
| 2000 11 27 | 704 | 1.2− | 1.5− | 2004 09 16 | H07 | 0.1− | 0.4− | 2004 11 18 | 704 | 0.4− | 0.0 |
| 2000 11 27 | 704 | 0.1− | 0.5− | 2004 09 17 | 704 | 0.1+ | 1.2+ | 2004 11 18 | 704 | 0.0 | 0.0 |
| 2000 11 27 | 704 | 0.1− | 0.7− | 2004 09 17 | 704 | 0.2+ | 1.1+ | 2004 11 18 | 704 | 0.4+ | 0.4+ |
| 2000 11 27 | 704 | 0.3− | 0.6− | 2004 09 17 | 704 | 0.1− | 0.7+ | 2004 11 30 | 644 | 0.0 | 0.3− |
| 2000 11 27 | 704 | 0.6+ | 0.7− | 2004 09 17 | 704 | 0.1− | 0.5+ | 2004 11 30 | 644 | 0.1+ | 0.5+ |
| 2000 11 27 | 704 | 0.6+ | 1.0− | 2004 09 17 | 704 | 0.2+ | 0.4+ | 2004 11 30 | 644 | 0.1+ | 0.1+ |
| 2001 01 04 | 704 | 0.1− | 0.1− | 2004 10 05 | 644 | 0.1− | 0.0 | 2005 01 13 | 704 | 0.7+ | 1.2+ |
| 2001 01 04 | 704 | 0.1− | 0.2+ | 2004 10 05 | 644 | 0.2− | 0.3+ | 2005 01 13 | 704 | 1.2+ | 0.6+ |
| 2001 01 04 | 704 | 0.1− | 0.4− | 2004 10 05 | 644 | 0.1− | 0.3+ | 2005 01 13 | 704 | 1.3+ | 0.0 |
| 2001 01 04 | 704 | 0.1+ | 0.7− | 2004 10 07 | 699 | 0.1+ | 0.2+ | 2005 01 13 | 704 | 0.2− | 0.8+ |
| 2001 01 19 | 704 | (0.4+ | 1.6+) | 2004 10 07 | 699 | 0.0 | 0.1− | 2006 01 27 | G96 | 0.3+ | 0.1− |
| 2001 01 19 | 704 | 0.2+ | 0.2− | 2004 10 07 | 699 | 0.3+ | 0.2+ | 2006 01 27 | G96 | 0.0 | 0.2+ |
| 2001 01 19 | 704 | 0.8− | 0.5+ | 2004 10 07 | 699 | 0.4+ | 0.3− | 2006 01 27 | G96 | 0.4+ | 0.0 |
| 2001 01 19 | 704 | 0.3+ | 0.2+ | 2004 10 09 | 704 | 0.2+ | 1.1+ | 2006 01 27 | G96 | 0.1+ | 0.1− |
| 2004 09 09 | 704 | 1.0+ | 1.1− | 2004 10 09 | 704 | 0.5− | 1.2+ | 2006 02 24 | 691 | 0.0 | 0.3+ |
| 2004 09 09 | 704 | 0.5− | 0.7− | 2004 10 09 | 704 | 0.2+ | 0.9+ | 2006 02 24 | 691 | 0.0 | 0.3+ |
| 2004 09 09 | 704 | 0.8+ | 0.1− | 2004 10 09 | 704 | (0.3− | 1.8+) | 2006 02 24 | 691 | 0.4− | 0.2+ |
| 2004 09 09 | 704 | 0.0 | 0.2− | 2004 10 09 | 704 | (0.3− | 1.6+) | 2006 03 02 | 691 | 0.3+ | 0.3+ |
| 2004 09 09 | 704 | 0.3+ | 0.1+ | 2004 11 02 | 699 | 0.1+ | 0.2− | 2006 03 02 | 691 | 0.2+ | 0.6+ |
| 2004 09 15 | H07 | 1.2− | 1.0− | 2004 11 02 | 699 | 0.5− | 0.3+ | 2006 03 02 | 691 | 0.5+ | 0.6+ |
| 2004 09 15 | H07 | 0.3− | 0.2+ | 2004 11 02 | 699 | 0.4− | 0.6+ | 2006 03 24 | G96 | 0.0 | 0.6+ |
| 2004 09 15 | H07 | 0.2− | 0.1− | 2004 11 02 | 699 | (0.8+ | 1.7−) | 2006 03 24 | G96 | 0.3+ | 0.5+ |
| 2004 09 16 | H07 | 0.1+ | 0.2− | 2004 11 06 | 704 | 1.3− | 0.6+ | 2006 03 24 | G96 | 0.0 | 0.8+ |
| 2004 09 16 | 699 | 0.7+ | 0.1+ | 2004 11 06 | 704 | (1.9− | 0.1+) | 2006 03 24 | G96 | 0.2+ | 0.4+ |
| 2004 09 16 | 699 | 0.5− | 0.3+ | 2004 11 06 | 704 | 1.1− | 0.1− | | | | |

**(144891)∗ 2004 RC$_{289}$ = 2006 HS$_5$**

Discovered 2004 Sept. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 100779)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.15786 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35853087 | $\omega$ | 288.97194 | | −0.84244745 | −0.48947064 | |
| $a$ | 1.9623886 | $\Omega$ | 222.54339 | | +0.52635161 | −0.83693777 | |
| $e$ | 0.0871979 | $i$ | 19.45195 | | −0.11504900 | −0.24485436 | |
| $P$ | 2.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.4+ | 1.5− | 2004 09 14 | 704 | 0.3− | 0.5+ | 2006 05 02 | G96 | 0.2− | 0.1− |
| 1995 07 27 | 691 | 0.3+ | 1.0− | 2004 09 14 | 704 | 0.9− | 0.4− | 2006 05 02 | 691 | 0.0 | 0.2+ |
| 1995 07 27 | 691 | 0.2+ | 0.4− | 2004 09 14 | 704 | 0.6− | 0.7+ | 2006 05 02 | G96 | 0.4− | 0.3− |
| 1999 12 16 | 704 | 0.1+ | 0.7− | 2004 09 17 | 704 | 0.2+ | 0.2+ | 2006 05 02 | G96 | 0.2− | 0.2− |
| 1999 12 16 | 704 | 0.7− | 0.4+ | 2004 09 17 | 704 | 0.6+ | 0.8− | 2006 05 02 | G96 | 0.5− | 0.3− |
| 1999 12 16 | 704 | 1.2− | 0.0 | 2004 09 17 | 704 | 0.9− | 0.4− | 2006 05 06 | 691 | 0.1− | 0.1+ |
| 2000 01 10 | 704 | 1.6− | 0.1− | 2004 09 17 | 704 | 0.4+ | 1.2+ | 2006 05 06 | 691 | 0.0 | 0.1+ |
| 2000 01 10 | 704 | 1.8− | 1.1− | 2004 09 17 | 704 | 0.2− | 0.0 | 2006 05 06 | 691 | 0.1+ | 0.3+ |
| 2000 01 10 | 704 | (2.4− | 0.0 ) | 2004 09 18 | 704 | 0.6+ | 0.3+ | 2006 05 09 | 691 | 0.0 | 0.1+ |
| 2000 01 10 | 704 | 0.9− | 0.6+ | 2004 09 18 | 704 | 0.3− | 0.2− | 2006 05 09 | 691 | 0.1− | 0.3+ |
| 2003 03 11 | 644 | 0.6+ | 0.6+ | 2004 09 18 | 704 | 0.1− | 0.5+ | 2006 05 09 | 691 | 0.2+ | 0.4+ |
| 2003 03 11 | 644 | 0.6+ | 0.5+ | 2004 09 18 | 704 | 1.2+ | 0.3+ | 2006 05 19 | 699 | 0.6+ | 0.4+ |
| 2003 03 11 | 644 | 0.5+ | 0.8+ | 2004 09 18 | 704 | 0.3+ | 0.4+ | 2006 05 19 | 699 | 0.9− | 0.2+ |
| 2003 03 29 | 699 | 0.4− | 0.9+ | 2004 09 23 | 704 | 0.2− | 1.4+ | 2006 05 19 | 699 | 0.5− | 1.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 29 | 699 | 1.1+ | 0.4− | 2004 09 23 | 704 | 0.3+ | 0.4− | 2006 05 19 | 699 | 0.5+ | 0.6+ |
| 2003 03 29 | 699 | 0.2+ | 0.1− | 2004 09 23 | 704 | 1.3+ | 1.3+ | 2006 05 24 | 699 | 0.2− | 0.3+ |
| 2003 03 29 | 699 | 0.2− | 0.2− | 2004 09 23 | 704 | 1.4+ | 0.9+ | 2006 05 24 | 699 | 0.2+ | 0.1− |
| 2003 04 03 | 608 | 0.4+ | 1.2− | 2006 04 19 | 703 | 0.0 | 1.0+ | 2006 05 24 | 699 | 1.1− | 0.7+ |
| 2003 04 03 | 608 | 0.4+ | 1.2− | 2006 04 19 | 703 | 0.4− | 0.2+ | 2006 05 24 | 699 | 0.1+ | 0.4+ |
| 2003 04 03 | 608 | 0.5+ | 1.8− | 2006 04 19 | 703 | 0.9− | 0.1− | 2006 05 30 | 699 | 0.6+ | 0.3+ |
| 2003 04 06 | 704 | 0.3+ | 0.0 | 2006 04 19 | 703 | 0.9− | 0.2+ | 2006 05 30 | 699 | 0.9+ | 0.5+ |
| 2003 04 06 | 704 | 0.7+ | 0.3− | 2006 04 20 | G96 | 0.3− | 0.0 | 2006 05 30 | 699 | 0.7+ | 0.4− |
| 2003 04 06 | 704 | 0.4+ | 0.1− | 2006 04 20 | G96 | 0.5− | 0.1− | 2006 05 30 | 699 | 0.8+ | 0.5− |
| 2003 04 06 | 704 | 0.3+ | 0.2− | 2006 04 20 | G96 | 0.1− | 0.1− | 2006 06 03 | 699 | (2.5+ | 0.1−) |
| 2003 04 06 | 704 | 0.5− | 0.6+ | 2006 04 23 | 704 | 1.5− | 0.0 | 2006 06 03 | 699 | 1.5+ | 0.9+ |
| 2003 04 06 | 704 | 0.6+ | 0.4− | 2006 04 23 | 704 | 1.5− | 0.2+ | 2006 06 03 | 699 | 0.4+ | 0.9− |
| 2003 04 06 | 704 | 0.4+ | 1.3+ | 2006 04 23 | 704 | 0.1− | 0.3+ | 2006 06 03 | 699 | 0.3− | 0.8+ |
| 2003 04 06 | 704 | 1.7+ | 1.6+ | 2006 04 26 | 691 | 0.3− | 0.6− | 2006 06 04 | 703 | 0.5− | 0.9− |
| 2003 04 06 | 704 | 0.5− | 0.9+ | 2006 04 26 | 691 | 0.4+ | 0.1− | 2006 06 04 | 703 | 1.3− | 0.6− |
| 2004 09 14 | 704 | 0.0 | 0.4− | 2006 04 26 | 691 | 0.0 | 0.1+ | 2006 06 04 | 703 | 0.9− | 1.0+ |
| 2004 09 14 | 704 | 0.4+ | 1.6+ | 2006 05 02 | 691 | 0.2+ | 0.1+ | 2006 06 04 | 703 | 1.2− | 1.1− |
| 2004 09 14 | 704 | 0.3− | 0.1− | 2006 05 02 | 691 | 0.2+ | 0.2− | | | | |

**(144892)∗ 2004 SJ$_3$ = 1995 QB$_{17}$ = 2003 EG$_{10}$**

Discovered 2004 Sept. 17 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 73201, *MPO* 95457)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 210.91454 | | (2000.0) | | | |
| $n$ | 0.21055344 | $\omega$ | 34.37530 | | −0.25180628 | +0.96684479 |
| $a$ | 2.7983014 | $\Omega$ | 221.08622 | | −0.90180490 | −0.25034449 |
| $e$ | 0.2380392 | $i$ | 3.70630 | | −0.35120011 | −0.05038640 |
| $P$ | 4.68 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.2− | 0.4+ | 2003 03 26 | 644 | 0.4+ | 0.5+ | 2005 10 25 | G96 | 0.1+ | 0.5+ |
| 1995 08 22 | 691 | 0.1− | 0.4+ | 2003 03 26 | 699 | 1.1+ | 1.0+ | 2005 10 25 | G96 | 0.4+ | 0.1+ |
| 1995 08 22 | 691 | 0.0 | 0.0 | 2003 03 26 | 699 | 0.0 | 0.7+ | 2005 10 25 | G96 | 0.4− | 0.2+ |
| 1995 08 27 | 691 | 0.0 | 0.2− | 2003 03 26 | 699 | 1.8− | 0.4+ | 2005 10 26 | 691 | 0.2− | 0.5+ |
| 1995 08 27 | 691 | 0.0 | 0.4− | 2003 03 26 | 699 | 0.4− | 1.4+ | 2005 10 26 | 691 | 0.1− | 0.3+ |
| 1995 08 27 | 691 | (4.8+ | 3.8−) | 2003 03 31 | 704 | 1.0+ | 0.9+ | 2005 10 26 | 691 | 0.1− | 0.3+ |
| 2000 10 01 | 704 | 1.0+ | 0.2− | 2003 03 31 | 704 | 0.9+ | 1.3+ | 2005 11 25 | 691 | 0.1− | 0.4+ |
| 2000 10 01 | 704 | 0.7+ | 0.0 | 2003 03 31 | 704 | 0.1+ | 0.2+ | 2005 11 25 | 691 | 0.2− | 0.0 |
| 2000 10 01 | 704 | 0.5+ | 0.4+ | 2003 03 31 | 704 | 0.4+ | 0.2+ | 2005 11 25 | 691 | 0.0 | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.6− | 2003 04 09 | 691 | 0.2+ | 0.3+ | 2005 11 29 | G96 | 0.0 | 0.1+ |
| 2003 03 06 | 699 | (2.3+ | 0.3−) | 2003 04 09 | 691 | 0.2− | 0.4+ | 2005 11 29 | G96 | 0.2+ | 0.3+ |
| 2003 03 06 | 699 | 1.6+ | 1.0+ | 2003 04 09 | 691 | 0.2+ | 0.3+ | 2005 11 29 | G96 | 0.7+ | 0.1− |
| 2003 03 06 | 699 | 1.0+ | 0.9− | 2004 08 11 | 704 | 1.5− | 0.4+ | 2005 11 29 | G96 | 0.2+ | 0.1− |
| 2003 03 06 | 699 | 1.4+ | 1.2+ | 2004 08 11 | 704 | 0.4− | 0.4+ | 2005 12 04 | G96 | 0.2+ | 0.0 |
| 2003 03 07 | 699 | 0.3+ | 0.3− | 2004 08 11 | 704 | 0.2− | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.2− |
| 2003 03 07 | 704 | 0.1− | 0.8+ | 2004 08 11 | 704 | 0.4− | 0.5+ | 2005 12 04 | G96 | 0.1+ | 0.0 |
| 2003 03 07 | 699 | 0.2+ | 0.3+ | 2004 09 08 | 704 | 0.3+ | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.1− |
| 2003 03 07 | 704 | 0.6− | 1.2+ | 2004 09 08 | 704 | 1.1− | 0.8+ | 2005 12 29 | G96 | 0.1+ | 0.1− |
| 2003 03 07 | 699 | 1.0− | 0.1+ | 2004 09 08 | 704 | 0.8− | 0.4+ | 2005 12 29 | G96 | 0.3− | 0.2+ |
| 2003 03 07 | 699 | 0.0 | 0.4− | 2004 09 17 | 691 | 0.1− | 0.8+ | 2005 12 29 | G96 | 0.1− | 0.5− |
| 2003 03 07 | 704 | 0.4+ | 1.4+ | 2004 09 17 | 691 | 0.2− | 0.9+ | 2005 12 29 | G96 | 0.7− | 0.0 |
| 2003 03 07 | 704 | 0.3− | 1.2+ | 2004 09 17 | 691 | 0.2− | 0.8+ | 2006 01 22 | G96 | 0.0 | 0.5− |
| 2003 03 26 | 644 | 0.5+ | 0.3+ | 2004 09 18 | 704 | 1.0+ | 0.6+ | 2006 01 22 | G96 | 0.2− | 0.1+ |
| 2003 03 26 | 644 | 0.3+ | 0.5+ | 2004 09 18 | 704 | 0.3+ | 1.3+ | 2006 01 22 | G96 | 0.4− | 0.4− |
| 2003 03 26 | 644 | 0.0 | 0.6+ | 2004 09 18 | 704 | 0.5+ | 0.8+ | 2006 01 22 | G96 | 0.6− | 0.5− |
| 2003 03 26 | 644 | 0.5+ | 0.4+ | 2004 09 18 | 704 | 0.5− | 0.9+ | | | | |
| 2003 03 26 | 644 | 0.2+ | 0.5+ | 2005 10 25 | G96 | 0.3− | 0.1+ | | | | |

**(144893)∗ 2004 ST$_4$**

Discovered 2004 Sept. 17 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.66581 | | (2000.0) | | | |
| $n$ | 0.30348709 | $\omega$ | 343.72840 | | +0.99908062 | −0.02180787 |
| $a$ | 2.1930199 | $\Omega$ | 17.64528 | | +0.03738890 | +0.86447785 |
| $e$ | 0.2142705 | $i$ | 6.99399 | | −0.02097593 | +0.50219764 |
| $P$ | 3.25 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 691 | 0.3− | 1.2− | 2004 09 23 | 704 | 0.6− | 0.1+ | 2004 12 11 | 703 | 0.1− | 0.3− |
| 1993 03 24 | 691 | 1.0− | 0.5− | 2004 09 23 | 704 | 0.3+ | 1.0+ | 2004 12 11 | 703 | 0.5− | 0.3+ |
| 1993 03 24 | 691 | 0.2− | 0.9− | 2004 09 23 | 704 | 0.5+ | 0.7+ | 2004 12 11 | 703 | 1.1− | 0.1− |
| 2003 03 25 | 291 | 0.7+ | 0.3+ | 2004 10 21 | 704 | 0.5− | 0.2− | 2005 01 07 | 704 | 0.3− | 1.3+ |
| 2003 03 25 | 291 | 0.3+ | 0.5+ | 2004 10 21 | 704 | 0.0 | 0.6+ | 2005 01 07 | 704 | 0.4− | 0.4+ |
| 2003 03 25 | 291 | 0.0 | 0.5+ | 2004 10 21 | 704 | 0.0 | 0.1+ | 2005 01 07 | 704 | 0.2− | 0.6+ |
| 2003 04 25 | 691 | 0.1− | 0.1− | 2004 10 21 | 704 | 0.4− | 0.4+ | 2005 01 07 | 704 | 0.6− | 0.9+ |
| 2003 04 25 | 691 | 0.4+ | 0.0 | 2004 10 21 | 704 | 0.1− | 0.5+ | 2006 03 02 | G96 | 0.4− | 0.1− |
| 2003 04 25 | 691 | 0.2− | 0.1− | 2004 11 03 | 703 | 0.5− | 0.2− | 2006 03 02 | G96 | 0.3+ | 0.1− |
| 2003 05 10 | 691 | 0.0 | 0.3+ | 2004 11 03 | 703 | 0.0 | 0.8+ | 2006 03 02 | G96 | 0.2− | 0.0 |
| 2003 05 10 | 691 | 0.2− | 0.7+ | 2004 11 03 | 703 | 0.1+ | 0.3− | 2006 03 02 | G96 | 0.3+ | 0.3+ |
| 2003 05 10 | 691 | 0.4+ | 0.2+ | 2004 11 03 | 703 | 1.0− | 0.3− | 2006 03 24 | G96 | 0.1− | 0.1+ |
| 2004 09 17 | 704 | 0.3+ | 0.6+ | 2004 11 19 | 704 | 0.2+ | 0.5+ | 2006 03 24 | G96 | 0.0 | 0.1− |
| 2004 09 17 | 704 | 0.6+ | 0.1+ | 2004 11 19 | 704 | 0.2+ | 0.3+ | 2006 03 24 | G96 | 0.1− | 0.0 |
| 2004 09 17 | 704 | 1.3+ | 0.5+ | 2004 11 19 | 704 | 0.2+ | 0.4+ | 2006 03 24 | G96 | 0.2+ | 0.0 |
| 2004 09 17 | 704 | 0.8+ | 0.8+ | 2004 11 19 | 704 | 0.0 | 0.7+ | 2006 04 19 | G96 | 0.0 | 0.5+ |
| 2004 09 17 | 704 | 0.5+ | 0.2+ | 2004 11 19 | 704 | 0.7+ | 0.7+ | 2006 04 19 | G96 | 0.0 | 0.8+ |
| 2004 09 18 | 704 | 0.1+ | 1.5− | 2004 12 02 | 703 | 0.0 | 0.6− | 2006 04 19 | G96 | 0.1+ | 0.3+ |
| 2004 09 18 | 704 | 1.0− | 1.5− | 2004 12 02 | 703 | 0.3+ | 0.7− | 2006 04 19 | G96 | 0.3+ | 0.4+ |
| 2004 09 18 | 704 | (0.2+ | 2.9−) | 2004 12 02 | 703 | 0.5− | 0.4− | 2006 04 21 | 691 | 0.1+ | 0.3+ |
| 2004 09 18 | 704 | (0.2− | 2.5−) | 2004 12 02 | 703 | 0.2+ | 0.3+ | 2006 04 21 | 691 | 0.2+ | 0.1+ |
| 2004 09 18 | 704 | 0.7+ | 1.9− | 2004 12 11 | 703 | 0.1+ | 0.8− | 2006 04 21 | 691 | 0.2+ | 0.2+ |

**(144894)∗ 2004 SY$_5$ = 1998 YY$_{21}$**

Discovered 2004 Sept. 17 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 70114)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.10243 | | (2000.0) | | | |
| $n$ | 0.12617373 | $\omega$ | 140.02141 | | +0.06947102 | −0.99715593 |
| $a$ | 3.9369215 | $\Omega$ | 305.97551 | | +0.90578994 | +0.07532458 |
| $e$ | 0.1338661 | $i$ | 2.06923 | | +0.41799326 | +0.00250051 |
| $P$ | 7.81 | $H$ | 13.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 691 | 0.2− | 0.4− | 2005 10 30 | 644 | 0.1− | 0.0 | 2005 12 05 | 704 | 0.2+ | 1.1+ |
| 1998 12 26 | 691 | 0.3− | 0.2− | 2005 10 30 | 644 | 0.2+ | 0.1− | 2005 12 05 | 699 | 0.0 | 1.4− |
| 1998 12 26 | 691 | 0.3− | 0.0 | 2005 11 01 | 704 | 0.3+ | 0.0 | 2005 12 05 | 699 | 0.9+ | 0.2+ |
| 1998 12 28 | 691 | 0.3− | 0.3− | 2005 11 01 | 704 | 0.1+ | 1.4+ | 2005 12 05 | 699 | (1.7+ | 0.5−) |
| 1998 12 28 | 691 | 0.5− | 0.3− | 2005 11 01 | 704 | 0.1− | 1.4+ | 2005 12 10 | 699 | 0.6+ | 0.7+ |
| 1998 12 28 | 691 | 0.7− | 0.5− | 2005 11 01 | 704 | 0.6− | 0.2− | 2005 12 10 | 699 | 0.1+ | 0.2− |
| 1999 02 09 | 691 | 1.4− | 0.8+ | 2005 11 01 | 704 | 0.0 | 0.5+ | 2005 12 10 | 699 | 0.9− | 0.4+ |
| 1999 02 09 | 691 | (2.5+ | 1.3−) | 2005 11 03 | 691 | 0.1+ | 0.1− | 2005 12 10 | 699 | 1.3+ | 0.6+ |
| 1999 02 09 | 691 | 1.9+ | 0.9+ | 2005 11 03 | 691 | 0.0 | 0.1− | 2005 12 23 | 691 | 0.5+ | 0.2− |
| 1999 02 12 | 691 | 0.4+ | 0.0 | 2005 11 03 | 691 | 0.0 | 0.0 | 2005 12 23 | 691 | 0.4+ | 0.3− |
| 1999 02 12 | 691 | 0.5+ | 0.6− | 2005 11 04 | 704 | 1.1− | 0.0 | 2005 12 23 | 691 | 0.4+ | 0.1− |
| 1999 02 12 | 691 | 0.5+ | 0.2− | 2005 11 04 | 704 | 1.4− | 0.8+ | 2005 12 28 | 644 | 0.0 | 0.0 |
| 1999 04 09 | 691 | 0.3− | 0.5− | 2005 11 04 | 704 | 1.3− | 0.6+ | 2005 12 28 | 644 | 0.1+ | 0.1− |
| 1999 04 09 | 691 | 0.0 | 0.2− | 2005 11 08 | 704 | 1.0− | 1.2+ | 2005 12 28 | 644 | 0.1+ | 0.0 |
| 1999 04 09 | 691 | 0.1− | 0.2− | 2005 11 08 | 704 | 0.3+ | 0.9− | 2005 12 31 | G96 | 0.0 | 0.4− |
| 2004 08 26 | 703 | (2.0+ | 0.9−) | 2005 11 08 | 704 | 1.3− | 0.3− | 2005 12 31 | G96 | 0.1− | 0.5− |
| 2004 08 26 | 703 | (0.4− | 3.1−) | 2005 11 08 | 704 | 0.7− | 0.1+ | 2005 12 31 | G96 | 0.0 | 0.6− |
| 2004 08 26 | 703 | 0.4+ | 0.7− | 2005 11 12 | 691 | 0.0 | 0.0 | 2005 12 31 | G96 | 0.1+ | 0.4− |
| 2004 08 26 | 703 | 1.4− | 0.2+ | 2005 11 12 | 691 | 0.1+ | 0.1+ | 2006 01 05 | 704 | 0.1− | 0.3+ |
| 2004 09 09 | 704 | 0.1− | 0.6+ | 2005 11 12 | 691 | 0.2+ | 0.1− | 2006 01 05 | 704 | 0.0 | 0.3− |
| 2004 09 09 | 704 | 0.2+ | 0.4− | 2005 11 21 | 691 | 0.1+ | 0.1− | 2006 01 05 | 704 | 0.7+ | 0.5− |
| 2004 09 09 | 704 | 1.1− | 1.2+ | 2005 11 21 | 691 | 0.0 | 0.0 | 2006 01 05 | 704 | 0.0 | 0.1− |
| 2004 09 09 | 704 | 0.0 | 0.5− | 2005 11 21 | 691 | 0.0 | 0.0 | 2006 01 05 | 704 | 0.6− | 0.5+ |
| 2004 09 16 | 699 | 1.2+ | 0.7− | 2005 11 25 | 691 | 0.1− | 0.2− | 2006 01 07 | G96 | 0.5+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 16 | 699 | 0.6− | 0.1+ | 2005 11 25 | 691 | 0.0 | 0.2− | 2006 01 07 | G96 | 0.2+ | 0.0 |
| 2004 09 16 | 699 | 0.1− | 0.9+ | 2005 11 25 | 691 | 0.0 | 0.2− | 2006 01 07 | G96 | 0.5+ | 0.3+ |
| 2004 09 16 | 699 | 0.1+ | 0.2+ | 2005 11 28 | 703 | 0.5− | 0.1+ | 2006 01 07 | G96 | 0.3+ | 0.1+ |
| 2004 09 17 | 691 | 0.0 | 0.0 | 2005 11 28 | 703 | 0.5+ | 0.3− | 2006 02 20 | 703 | 0.7− | 0.1− |
| 2004 09 17 | 691 | 0.0 | 0.1+ | 2005 11 28 | 703 | 0.2− | 0.1− | 2006 02 20 | 703 | 1.2+ | 0.6+ |
| 2004 09 17 | 691 | 0.2− | 0.1+ | 2005 11 28 | 703 | 0.3− | 0.9− | 2006 02 20 | 703 | (0.2+ | 1.9+) |
| 2004 09 17 | 704 | 0.3+ | 0.3− | 2005 11 29 | 704 | 0.6+ | 0.1− | 2006 02 20 | 703 | (1.0− | 3.3+) |
| 2004 09 17 | 704 | 0.3− | 0.9− | 2005 11 29 | 704 | 0.5+ | 0.0 | 2006 10 19 | 695 | 0.3− | 0.3+ |
| 2004 09 17 | 704 | 0.1+ | 0.5+ | 2005 11 29 | 704 | 1.0+ | 0.3− | 2006 10 19 | 695 | 0.0 | 0.2+ |
| 2004 09 17 | 704 | 0.6− | 0.9+ | 2005 11 29 | 704 | 0.6+ | 0.0 | 2006 10 20 | 691 | 0.5+ | 0.3+ |
| 2004 09 17 | 704 | 0.2+ | 0.1− | 2005 11 29 | 704 | 0.5+ | 0.8− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2004 09 21 | 691 | 0.1− | 0.1− | 2005 12 01 | 704 | 0.6− | 0.4− | 2006 10 20 | 691 | 0.3+ | 0.2− |
| 2004 09 21 | 691 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.6+ |
| 2004 09 21 | 691 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 10 06 | 699 | 0.0 | 0.8+ | 2005 12 01 | 704 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2004 10 06 | 699 | 1.2− | 0.2+ | 2005 12 01 | 704 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2004 10 06 | 699 | 1.0+ | 0.8+ | 2005 12 04 | 704 | 0.7− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2004 10 06 | 699 | 0.8+ | 0.1− | 2005 12 04 | 704 | 0.1− | 0.5− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2004 10 08 | 683 | (1.6+ | 1.3−) | 2005 12 04 | 704 | 1.2− | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.7+ |
| 2004 10 08 | 683 | 0.6+ | 0.7− | 2005 12 04 | 704 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2004 10 08 | 683 | 0.3− | 0.4− | 2005 12 04 | 704 | 0.7− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2004 10 09 | 704 | 0.2+ | 0.3+ | 2005 12 04 | 704 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.4− | 0.2+ |
| 2004 10 09 | 704 | 0.3− | 0.3+ | 2005 12 04 | 704 | 1.3− | 0.3− | 2006 11 15 | G96 | 0.6+ | 0.4− |
| 2004 10 09 | 704 | 0.1+ | 0.2+ | 2005 12 04 | 704 | 0.4− | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.5+ |
| 2004 10 09 | 704 | 0.3− | 0.2− | 2005 12 04 | 704 | 1.0− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2004 10 09 | 704 | 0.8+ | 0.2− | 2005 12 04 | 704 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2005 10 28 | G96 | 0.1+ | 0.5− | 2005 12 05 | 704 | 0.1+ | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 10 28 | G96 | 0.0 | 0.5− | 2005 12 05 | 704 | 0.1+ | 0.8+ | 2006 11 26 | 291 | 0.0 | 0.5+ |
| 2005 10 28 | G96 | 0.0 | 0.5− | 2005 12 05 | 704 | 0.2+ | 1.3+ | 2006 11 26 | 291 | 0.1+ | 0.5+ |
| 2005 10 28 | G96 | 0.0 | 0.6− | 2005 12 05 | 704 | 0.1+ | 0.7+ | 2006 11 26 | 291 | 0.2+ | 0.4+ |
| 2005 10 30 | 644 | 0.1− | 0.2− | 2005 12 05 | 699 | (2.1+ | 0.1+) | | | | |

**(144895)∗ 2004 TO$_{65}$**

Discovered 2004 Oct. 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.04219 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21470049 | $\omega$ | 233.03554 | | +0.98960500 | | +0.02552271 |
| $a$ | 2.7621507 | $\Omega$ | 125.07694 | | +0.01839737 | | +0.95357245 |
| $e$ | 0.1728027 | $i$ | 9.95869 | | −0.14263058 | | +0.30008027 |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 699 | 0.4+ | 1.2+ | 2004 10 18 | 704 | 0.2− | 0.0 | 2006 01 25 | 691 | 0.1+ | 0.2+ |
| 1999 08 07 | 699 | 0.5− | 1.4+ | 2004 10 18 | 704 | 0.2+ | 0.4+ | 2006 01 28 | G96 | 0.3− | 0.1− |
| 1999 08 07 | 699 | 0.4+ | 1.3+ | 2004 10 18 | 704 | 0.3− | 0.3+ | 2006 01 28 | G96 | 0.3− | 0.2− |
| 1999 09 11 | 704 | 0.1− | 0.4+ | 2004 11 01 | 644 | 0.1+ | 0.2+ | 2006 01 28 | G96 | 0.0 | 0.2− |
| 1999 09 11 | 704 | 0.0 | 1.2+ | 2004 11 01 | 644 | 0.1+ | 0.1− | 2006 01 28 | G96 | 0.0 | 0.1+ |
| 1999 09 11 | 704 | 0.6+ | 1.0− | 2004 11 01 | 644 | 0.1+ | 0.2+ | 2006 01 30 | 691 | 0.1+ | 0.8+ |
| 1999 09 11 | 704 | 0.4− | 1.9+ | 2004 11 20 | 703 | 0.5− | 1.4− | 2006 01 30 | 691 | 0.3+ | 0.1− |
| 1999 09 11 | 704 | 0.1+ | 0.5+ | 2004 11 20 | 703 | 0.0 | 0.6− | 2006 01 30 | 691 | 0.1+ | 0.2+ |
| 2002 03 12 | 645 | 0.1− | 0.2+ | 2004 11 20 | 703 | 0.5+ | 0.5− | 2006 02 02 | 703 | 0.2− | 0.7− |
| 2002 03 12 | 645 | 0.1− | 0.1+ | 2004 11 20 | 703 | 0.2− | 0.5− | 2006 02 02 | 703 | 1.9+ | 0.2− |
| 2004 08 15 | 644 | 0.1+ | 0.1− | 2004 12 04 | 699 | 0.2+ | 0.2+ | 2006 02 02 | 703 | 0.7− | 1.7+ |
| 2004 08 15 | 644 | 0.8− | 0.5+ | 2004 12 04 | 699 | 0.2− | 0.4− | 2006 02 02 | 703 | 0.1− | 0.8− |
| 2004 08 15 | 644 | 0.3+ | 0.1+ | 2004 12 04 | 699 | (2.5− | 2.3−) | 2006 02 03 | 691 | 0.2+ | 0.3+ |
| 2004 10 05 | 644 | 0.1− | 0.1+ | 2004 12 04 | 699 | (2.1− | 0.8−) | 2006 02 03 | 691 | 0.0 | 0.3+ |
| 2004 10 05 | 644 | 0.1+ | 0.1+ | 2005 11 25 | G96 | 0.1− | 0.1− | 2006 02 03 | 691 | 0.3+ | 0.2+ |
| 2004 10 05 | 644 | 0.1+ | 0.1+ | 2005 11 25 | G96 | 0.4− | 0.2− | 2006 02 07 | 691 | 0.3+ | 0.1+ |
| 2004 10 07 | 704 | 0.8− | 0.8+ | 2005 11 25 | G96 | 0.1− | 0.4− | 2006 02 07 | 691 | 0.1+ | 0.1+ |
| 2004 10 07 | 704 | 0.4− | 0.3+ | 2005 11 25 | G96 | 0.4− | 0.1+ | 2006 02 07 | 691 | 0.0 | 0.0 |
| 2004 10 07 | 704 | 0.1+ | 1.6+ | 2005 12 26 | G96 | 0.4+ | 0.3− | 2006 02 07 | G96 | 0.1+ | 0.2− |
| 2004 10 07 | 704 | 0.1− | 0.4− | 2005 12 26 | G96 | 0.0 | 0.3− | 2006 02 07 | G96 | 0.3+ | 0.1− |
| 2004 10 07 | 704 | 0.9− | 0.4+ | 2005 12 26 | G96 | 0.2+ | 0.5− | 2006 02 07 | G96 | 0.1− | 0.3− |
| 2004 10 13 | 699 | 0.3+ | 0.4− | 2005 12 26 | G96 | 0.3+ | 0.3− | 2006 02 07 | G96 | 0.1− | 0.3− |
| 2004 10 13 | 699 | 0.3+ | 0.0 | 2006 01 20 | 691 | 0.2− | 0.3− | 2006 02 22 | 703 | 1.5− | 0.1− |
| 2004 10 13 | 699 | 0.5− | 0.6− | 2006 01 20 | 691 | 0.1+ | 0.4+ | 2006 02 22 | 703 | 1.4+ | 0.5− |
| 2004 10 13 | 699 | 0.1− | 0.3− | 2006 01 20 | 691 | 0.1− | 0.3− | 2006 02 22 | 703 | 0.8− | 0.7− |
| 2004 10 18 | 704 | 0.4− | 1.0+ | 2006 01 25 | 691 | 0.0 | 0.2+ | 2006 02 22 | 703 | 0.2+ | 0.6− |
| 2004 10 18 | 704 | 0.0 | 0.3+ | 2006 01 25 | 691 | 0.1+ | 0.2+ | | | | |

**(144896)∗ 2004 TT$_{308}$ = 2003 FZ$_{43}$**

Discovered 2004 Oct. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 73445)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.11420 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29706666 | $\omega$ | 10.15635 | | +0.55003870 | | +0.83485337 |
| $a$ | 2.2245053 | $\Omega$ | 293.21646 | | −0.76788296 | | +0.49528434 |
| $e$ | 0.1231886 | $i$ | 1.36215 | | −0.32834920 | | +0.24023586 |
| $P$ | 3.32 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 16 | 691 | 0.4− | 0.1+ | 2003 03 27 | 644 | 1.0+ | 1.5+ | 2004 10 20 | 704 | 0.1+ | 0.2+ |
| 1996 02 16 | 691 | 0.3− | 0.3− | 2003 03 27 | 644 | 0.6+ | 1.4+ | 2004 10 20 | 704 | 0.0 | 0.5− |
| 1996 02 16 | 691 | 0.0 | 0.4− | 2003 03 27 | 644 | 0.9+ | 1.3+ | 2004 10 20 | 704 | 0.0 | 1.1+ |
| 1997 08 01 | 691 | 0.2− | 0.4+ | 2004 09 09 | 691 | 0.2+ | 0.1+ | 2004 11 11 | 691 | 0.2− | 0.0 |
| 1997 08 01 | 691 | 0.0 | 0.2+ | 2004 09 09 | 691 | 0.4+ | 0.3+ | 2004 11 11 | 691 | 0.2− | 0.2+ |
| 1997 08 01 | 691 | 0.1− | 0.4+ | 2004 09 09 | 691 | 0.2+ | 0.1+ | 2004 11 11 | 691 | 0.2− | 0.4+ |
| 2001 11 21 | 291 | 0.2+ | 0.1+ | 2004 09 23 | 691 | 0.1− | 0.2+ | 2005 10 07 | 568 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.8− | 1.8+ | 2004 09 23 | 691 | 0.1− | 0.2+ | 2005 10 07 | 568 | 0.0 | 0.4+ |
| 2001 11 21 | 291 | 0.3+ | 0.2+ | 2004 09 23 | 691 | 0.0 | 0.2+ | 2005 10 07 | 568 | 0.1− | 0.3+ |
| 2001 11 21 | 291 | 0.1+ | 0.1+ | 2004 10 10 | 691 | 0.2− | 0.1+ | 2006 01 23 | G96 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.2+ | 0.5+ | 2004 10 10 | 704 | 1.3+ | 1.1− | 2006 01 23 | G96 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | 0.0 | 0.9+ | 2004 10 10 | 704 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.4− | 0.2+ |
| 2001 12 18 | 704 | 0.6− | 0.5− | 2004 10 10 | 691 | 0.3− | 0.0 | 2006 01 23 | G96 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.7+ | 0.1− | 2004 10 10 | 704 | 0.9− | 0.2+ | 2006 03 25 | G96 | 0.5− | 0.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.3− | 2004 10 10 | 704 | 0.4− | 0.8− | 2006 03 25 | G96 | 0.6− | 0.6+ |
| 2001 12 18 | 704 | 0.8+ | 0.2+ | 2004 10 10 | 691 | 0.1− | 0.0 | 2006 03 25 | G96 | 0.3+ | 0.2+ |
| 2003 03 23 | 691 | 0.3+ | 0.6+ | 2004 10 15 | 691 | 0.2− | 0.1+ | 2006 03 25 | G96 | 1.3− | 0.2+ |
| 2003 03 23 | 691 | 0.6+ | 0.8+ | 2004 10 15 | 691 | 0.1− | 0.1+ | | | | |
| 2003 03 23 | 691 | 0.6+ | 0.4+ | 2004 10 15 | 691 | 0.0 | 0.1+ | | | | |

**(144897)∗ 2004 UX$_{10}$**

Discovered 2004 Oct. 20 by A. C. Becker, A. W. Puckett and J. Kubica at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.42521 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.00406636 | $\omega$ | 148.39459 | | +0.44817907 | | +0.88961882 |
| $a$ | 38.8745481 | $\Omega$ | 147.98651 | | −0.85083699 | | +0.45464480 |
| $e$ | 0.0422485 | $i$ | 9.53659 | | −0.27424794 | | +0.04331815 |
| $P$ | 242 | $H$ | 4.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 07 17 | 260 | 0.3− | 0.7+ | 2002 10 04 | 705 | 0.1+ | 0.0 | 2004 10 24 | 705 | 0.2+ | 0.2− |
| 1983 10 26 | 260 | 0.5+ | 0.0 | 2002 10 04 | 705 | 0.2+ | 0.1− | 2004 10 24 | 705 | 0.2+ | 0.2− |
| 1989 11 22 | 260 | 0.5− | 0.4− | 2002 10 05 | 705 | 0.2+ | 0.1− | 2004 11 03 | 705 | 0.3+ | 0.3− |
| 1993 11 07 | 260 | 0.1+ | 0.2+ | 2002 10 05 | 705 | 0.1+ | 0.1− | 2004 11 03 | 705 | 0.2+ | 0.3− |
| 1995 11 23 | 260 | 0.5− | 0.1− | 2002 10 31 | 705 | 0.0 | 0.2− | 2004 11 05 | 705 | 0.1+ | 0.2− |
| 1998 09 25 | 705 | 0.3+ | 0.0 | 2002 10 31 | 705 | 0.1+ | 0.1− | 2004 11 05 | 705 | 0.2+ | 0.2− |
| 1998 09 25 | 705 | 0.2+ | 0.1− | 2002 11 20 | 644 | 0.4− | 0.1+ | 2004 11 10 | 705 | 0.1+ | 0.0 |
| 2000 10 02 | 705 | 0.1+ | 0.1− | 2003 09 28 | 705 | 0.2+ | 0.1− | 2004 11 10 | 705 | 0.2+ | 0.0 |
| 2000 10 02 | 705 | 0.2+ | 0.1− | 2003 09 28 | 705 | 0.1+ | 0.0 | 2004 12 12 | 705 | 0.0 | 0.1− |
| 2001 09 27 | 644 | 0.4− | 0.5+ | 2003 10 22 | 705 | 0.0 | 0.1− | 2004 12 12 | 705 | 0.1+ | 0.1− |
| 2001 10 10 | 644 | 0.3+ | 0.0 | 2003 10 22 | 705 | 0.1+ | 0.1− | 2006 09 14 | 291 | 0.1− | 0.4+ |
| 2001 10 16 | 644 | 0.2− | 0.1− | 2003 10 24 | 705 | 0.0 | 0.2− | 2006 09 14 | 291 | 0.1− | 0.3+ |
| 2001 10 16 | 644 | 0.1− | 0.1− | 2003 10 24 | 705 | 0.1+ | 0.2− | 2006 09 14 | 291 | 0.3− | 0.2+ |
| 2001 10 21 | 644 | 0.2− | 0.2+ | 2003 11 20 | 705 | 0.0 | 0.1− | 2006 10 16 | 705 | 0.2+ | 0.1− |
| 2001 10 21 | 644 | 0.3+ | 0.0 | 2003 11 20 | 705 | 0.0 | 0.1− | 2006 10 16 | 705 | 0.1+ | 0.0 |
| 2001 10 25 | 705 | 0.1+ | 0.1− | 2003 11 28 | 705 | 0.2− | 0.2− | 2006 10 16 | 705 | 0.1− | 0.0 |
| 2001 10 25 | 705 | 0.0 | 0.1− | 2003 11 28 | 705 | 0.0 | 0.2− | 2006 10 16 | 705 | 0.2− | 0.1+ |
| 2001 11 12 | 705 | 0.1− | 0.1− | 2004 10 20 | 705 | 0.2+ | 0.2− | 2006 10 16 | 705 | 0.1− | 0.0 |
| 2001 11 12 | 705 | 0.0 | 0.1− | 2004 10 20 | 705 | 0.3+ | 0.3− | | | | |

**(144898)* 2004 VD$_{17}$**

Discovered 2004 Nov. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.42723 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.53215145 | $\omega$ | 90.68662 | | +0.70431875 | | +0.70802233 |
| $a$ | 1.5081547 | $\Omega$ | 224.24099 | | −0.67708209 | | +0.64826721 |
| $e$ | 0.5886539 | $i$ | 4.22299 | | −0.21329544 | | +0.28009642 |
| $P$ | 1.85 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 16 | 644 | 0.6− | 0.0 | | 2004 11 23 | I77 | 0.6+ | 0.1− | | 2004 12 19 | J95 | 0.2+ | 0.2− | | 2004 11 10 | 932 | 0.1− | 0.0 | | 2004 12 02 | 932 | 0.1+ | 0.2− | | 2005 01 12 | J95 | 0.0 | 0.6+ |
| 2002 03 06 | 644 | 0.0 | 0.4− | | 2004 11 23 | 932 | 0.1+ | 0.2− | | 2004 12 21 | 587 | 0.4+ | 0.4+ | | 2004 11 10 | 932 | 0.1+ | 0.0 | | 2004 12 02 | 932 | 0.2+ | 0.1− | | 2005 01 12 | J95 | 0.3+ | 0.8+ |
| 2002 03 14 | 644 | 0.6− | 0.2− | | 2004 11 23 | 932 | 0.2− | 0.4− | | 2004 12 21 | 587 | 0.2+ | 0.9− | | 2004 11 10 | 932 | 0.0 | 0.0 | | 2004 12 02 | 699 | 0.3− | 0.4+ | | 2005 01 13 | 291 | 0.2− | 0.2− |
| 2002 03 15 | 644 | 0.1− | 0.7+ | | 2004 11 23 | 932 | 0.1+ | 0.2+ | | 2004 12 27 | 952 | 0.4+ | 0.7+ | | 2004 11 10 | 932 | 0.1− | 0.1− | | 2004 12 02 | 699 | 0.5− | 0.0 | | 2005 01 13 | 291 | 0.3− | 0.0 |
| 2004 11 07 | 704 | 0.8+ | 0.5+ | | 2004 11 23 | 932 | 0.1− | 0.1− | | 2004 12 27 | 952 | 0.5+ | 1.0+ | | 2004 11 10 | 932 | 0.1− | 0.0 | | 2004 12 02 | H41 | 0.6+ | 0.3− | | 2005 01 13 | 291 | 0.1+ | 0.2− |
| 2004 11 07 | 704 | 0.4+ | 0.2+ | | 2004 11 23 | 932 | 0.1− | 0.2− | | 2004 12 27 | 952 | 0.6+ | 1.2+ | | 2004 11 10 | H06 | (1.5+ | 0.3+) | | 2004 12 02 | H41 | 0.2− | 0.4− | | 2005 01 14 | 198 | 0.7− | 0.1− |
| 2004 11 07 | 704 | 0.4+ | 0.3+ | | 2004 11 23 | 932 | 0.0 | 0.1− | | 2004 12 27 | 952 | 0.7+ | 0.9+ | | 2004 11 10 | H06 | 1.5+ | 0.4+ | | 2004 12 02 | H41 | 0.1− | 0.4− | | 2005 01 14 | 198 | 0.9− | 0.1+ |
| 2004 11 07 | 704 | 0.2+ | 0.4+ | | 2004 11 23 | 932 | 0.0 | 0.0 | | 2004 12 27 | 952 | 0.7+ | 0.9+ | | 2004 11 10 | H06 | 1.5+ | 0.3+ | | 2004 12 02 | H41 | 0.1− | 0.6− | | 2005 01 14 | 198 | 0.6− | 0.1− |
| 2004 11 08 | 118 | (1.7− | 0.1+) | | 2004 11 23 | 932 | 0.0 | 0.1− | | 2004 12 29 | 734 | 0.8+ | 0.7− | | 2004 11 10 | H06 | (1.5+ | 0.2+) | | 2004 12 02 | H41 | 0.0 | 0.1− | | 2005 01 14 | 587 | 0.0 | 1.2− |
| 2004 11 08 | 118 | 1.3− | 0.1+ | | 2004 11 23 | 932 | 0.0 | 0.1− | | 2004 12 29 | 734 | 0.6− | 0.4− | | 2004 11 10 | H06 | 1.5+ | 0.3− | | 2004 12 02 | 699 | 0.3− | 0.0 | | 2005 01 14 | 587 | 0.5− | 0.3− |
| 2004 11 08 | 118 | 0.0 | 0.1− | | 2004 11 23 | 932 | 0.0 | 0.1− | | 2004 12 30 | 176 | 0.1+ | 0.2− | | 2004 11 10 | H06 | (1.6+ | 0.3+) | | 2004 12 02 | 699 | 0.2+ | 0.1+ | | 2005 01 15 | 291 | 0.2− | 0.2+ |
| 2004 11 08 | 118 | 0.1+ | 0.1− | | 2004 11 23 | 932 | 0.0 | 0.2− | | 2004 12 30 | 176 | 0.1− | 0.5− | | 2004 11 10 | H06 | (1.7+ | 0.3+) | | 2004 12 02 | A16 | 1.2− | 0.4− | | 2005 01 15 | 291 | 0.1+ | 0.1+ |
| 2004 11 08 | 118 | 0.0 | 0.1− | | 2004 11 23 | 203 | 0.1− | 0.1− | | 2004 12 30 | 176 | 0.3− | 0.7− | | 2004 11 11 | 938 | 0.2+ | 0.1− | | 2004 12 02 | A16 | 1.0− | 0.6+ | | 2005 01 15 | 291 | 0.0 | 0.3+ |
| 2004 11 08 | 649 | 0.1+ | 0.2+ | | 2004 11 23 | 203 | 0.3− | 0.1− | | 2004 12 31 | 715 | 0.9− | 0.4− | | 2004 11 11 | 938 | 0.1− | 0.1+ | | 2004 12 02 | 170 | 0.4+ | 0.3− | | 2005 01 15 | 246 | (0.5+ | 1.7+) |
| 2004 11 08 | 649 | 0.0 | 0.2+ | | 2004 11 23 | 203 | 0.1+ | 0.3− | | 2004 12 31 | 715 | 0.2+ | 0.1+ | | 2004 11 11 | 938 | 0.2− | 0.4− | | 2004 12 02 | 170 | 0.1+ | 0.4− | | 2005 01 15 | 246 | 0.3+ | 1.4+ |
| 2004 11 08 | 649 | 0.2+ | 0.0 | | 2004 11 24 | A41 | 0.2+ | 0.4+ | | 2004 12 31 | 734 | 0.4− | 1.0+ | | 2004 11 11 | J95 | 0.2+ | 0.0 | | 2004 12 02 | 170 | 0.1− | 0.6− | | 2005 01 16 | 715 | 0.0 | 0.3+ |
| 2004 11 08 | 734 | 0.0 | 0.2− | | 2004 11 24 | A41 | 0.9+ | 0.1+ | | 2004 12 31 | 715 | 0.0 | 0.7− | | 2004 11 11 | J95 | 0.0 | 0.1+ | | 2004 12 03 | J95 | 0.0 | 0.2− | | 2005 01 16 | 715 | 0.1+ | 0.1+ |
| 2004 11 08 | 734 | 0.2+ | 0.1− | | 2004 11 24 | A41 | 0.0 | 0.5− | | 2004 12 31 | 734 | (1.7+ | 0.0 ) | | 2004 11 11 | J95 | 0.1+ | 0.1+ | | 2004 12 03 | J95 | 0.1+ | 0.1− | | 2005 01 16 | 715 | 0.0 | 0.5− |
| 2004 11 08 | 734 | 0.3+ | 0.1− | | 2004 11 25 | H41 | 0.6+ | 0.4− | | 2005 01 01 | A30 | 0.0 | 0.4+ | | 2004 11 12 | H06 | 0.2− | 0.1+ | | 2004 12 03 | 932 | 0.2+ | 0.2− | | 2005 01 16 | 291 | 0.2− | 0.1+ |
| 2004 11 08 | 734 | 0.1+ | 0.0 | | 2004 11 25 | H41 | 1.3+ | 0.5− | | 2005 01 01 | A30 | 0.2− | 0.6+ | | 2004 11 12 | H06 | 0.0 | 0.2− | | 2004 12 03 | J95 | 0.1− | 0.0 | | 2005 01 16 | 291 | 0.3− | 0.1+ |
| 2004 11 08 | 734 | 0.3+ | 0.1− | | 2004 11 25 | H41 | 0.8+ | 0.4− | | 2005 01 01 | A30 | 1.0+ | 0.3− | | 2004 11 12 | H06 | 0.1− | 0.0 | | 2004 12 03 | 932 | 0.1+ | 0.3− | | 2005 01 16 | 291 | 0.3− | 0.3+ |
| 2004 11 08 | H06 | 0.2+ | 0.1+ | | 2004 11 25 | H41 | 1.1+ | 1.0− | | 2005 01 01 | J95 | 0.6+ | 0.1+ | | 2004 11 12 | 587 | 0.1+ | 0.7+ | | 2004 12 03 | J95 | 0.1− | 0.1− | | 2005 01 18 | 696 | 0.0 | 0.1+ |
| 2004 11 08 | H06 | 0.3+ | 0.4+ | | 2004 11 25 | H41 | (1.6+ | 0.7−) | | 2005 01 01 | J95 | 0.5− | 0.4− | | 2004 11 12 | 587 | 0.0 | 0.2+ | | 2004 12 03 | 932 | 0.1− | 0.1− | | 2005 01 18 | 696 | 0.1+ | 0.0 |
| 2004 11 08 | H06 | 0.3− | 0.5− | | 2004 11 25 | 084 | 0.2− | 0.1+ | | 2005 01 01 | J95 | 0.5− | 0.5− | | 2004 11 12 | 587 | 0.2− | 0.2+ | | 2004 12 03 | 704 | 0.5− | 0.3+ | | 2005 01 26 | 715 | 0.9− | 0.4− |
| 2004 11 08 | H06 | 0.4+ | 0.0 | | 2004 11 26 | 118 | 0.2+ | 0.0 | | 2005 01 01 | 941 | 0.0 | 0.5+ | | 2004 11 12 | 587 | 0.0 | 0.3+ | | 2004 12 03 | 704 | 0.6− | 0.3+ | | 2005 01 26 | 715 | 0.1− | 0.1− |
| 2004 11 08 | H06 | 0.3+ | 0.0 | | 2004 11 26 | 118 | 0.5+ | 0.1− | | 2005 01 01 | 941 | 0.1− | 0.5+ | | 2004 11 12 | J81 | (1.8+ | 0.2−) | | 2004 12 03 | 734 | 0.2− | 0.2− | | 2005 01 28 | 715 | 0.7− | 0.3− |
| 2004 11 08 | H06 | 0.2+ | 0.0 | | 2004 11 26 | 118 | 0.0 | 0.1− | | 2005 01 01 | 941 | 0.0 | 0.5+ | | 2004 11 12 | J81 | 0.1+ | 0.7+ | | 2004 12 03 | 734 | 0.0 | 0.1− | | 2005 01 28 | 715 | 0.3− | 0.1− |
| 2004 11 08 | 587 | 0.0 | 0.4+ | | 2004 11 26 | 118 | 0.1+ | 0.2− | | 2005 01 01 | 941 | 0.1− | 0.5+ | | 2004 11 12 | J81 | (1.6− | 0.4+) | | 2004 12 03 | 734 | 0.1+ | 0.2− | | 2005 01 28 | 715 | 0.2− | 0.3− |
| 2004 11 08 | 587 | 0.3− | 0.1+ | | 2004 11 27 | 448 | 0.0 | 0.2− | | 2005 01 01 | 941 | 0.2− | 0.5+ | | 2004 11 12 | J81 | 0.6− | 0.3+ | | 2004 12 03 | 734 | 0.2+ | 0.0 | | 2005 03 04 | 568 | 0.3− | 0.1+ |
| 2004 11 08 | 587 | 0.1− | 0.3+ | | 2004 11 27 | 448 | 0.2+ | 0.3− | | 2005 01 02 | 952 | 1.1− | 0.7+ | | 2004 11 12 | J81 | 0.1− | 0.0 | | 2004 12 03 | 734 | 0.0 | 0.1− | | 2005 03 04 | 568 | 0.2− | 0.1+ |
| 2004 11 09 | J95 | 0.0 | 0.1+ | | 2004 11 27 | 448 | 0.2+ | 0.5− | | 2005 01 02 | 952 | 0.9− | 0.5+ | | 2004 11 13 | 203 | 0.3− | 0.0 | | 2004 12 03 | 734 | 0.2+ | 0.0 | | 2005 03 04 | 568 | 0.3− | 0.1− |
| 2004 11 09 | J95 | 0.1+ | 0.1+ | | 2004 11 28 | H41 | 0.3− | 0.1− | | 2005 01 02 | 952 | 1.0− | 0.4+ | | 2004 11 13 | 203 | 0.3− | 0.2− | | 2004 12 03 | 734 | 0.3+ | 0.0 | | 2005 11 04 | 568 | 0.0 | 0.0 |
| 2004 11 09 | J95 | 0.1− | 0.3+ | | 2004 11 28 | H41 | 0.5+ | 0.2+ | | 2005 01 02 | 952 | 0.8− | 0.3+ | | 2004 11 13 | 203 | 0.1+ | 0.1− | | 2004 12 03 | 734 | 0.3+ | 0.2− | | 2005 11 04 | 568 | 0.1− | 0.1+ |
| 2004 11 09 | 938 | 0.8− | 0.1+ | | 2004 11 28 | H41 | 0.2+ | 0.0 | | 2005 01 02 | 952 | 0.4− | 0.2− | | 2004 11 13 | J95 | 0.1+ | 0.2+ | | 2004 12 03 | 734 | 0.0 | 0.2− | | 2005 11 11 | 568 | 0.0 | 0.1+ |
| 2004 11 09 | 938 | 0.6− | 0.1+ | | 2004 11 28 | H41 | 0.1+ | 0.4− | | 2005 01 03 | 587 | 0.2− | 0.1− | | 2004 11 13 | J95 | 0.0 | 0.1− | | 2004 12 03 | 734 | 0.5+ | 0.2− | | 2005 11 13 | 568 | 0.1− | 0.1− |
| 2004 11 09 | 938 | (0.3− | 1.7+) | | 2004 11 28 | H41 | 0.2− | 0.2− | | 2005 01 03 | 587 | (2.0+ | 0.1+) | | 2004 11 13 | J95 | 0.0 | 0.3− | | 2004 12 03 | 704 | (0.3+ | 1.9−) | | 2006 01 27 | 291 | 0.2+ | 0.8+ |
| 2004 11 09 | 938 | 0.1+ | 0.1− | | 2004 11 29 | 932 | 0.2+ | 0.4− | | 2005 01 04 | J95 | 0.5− | 0.2+ | | 2004 11 13 | A16 | 0.1+ | 0.3− | | 2004 12 03 | 704 | 1.2− | 0.1+ | | 2006 01 27 | 291 | 0.7+ | 0.8+ |
| 2004 11 09 | 938 | 0.3− | 0.1+ | | 2004 11 29 | 932 | 0.1+ | 0.3− | | 2005 01 04 | J95 | 0.2+ | 0.1+ | | 2004 11 13 | A16 | 0.1+ | 0.2− | | 2004 12 03 | H41 | 0.2+ | 0.1− | | 2006 02 06 | 291 | 0.4+ | 0.0 |
| 2004 11 09 | 938 | 0.3− | 0.2− | | 2004 11 29 | 932 | 0.0 | 0.5− | | 2005 01 04 | J95 | 0.3− | 0.1− | | 2004 11 13 | A16 | 0.0 | 0.2− | | 2004 12 03 | H41 | 0.0 | 0.4− | | 2006 02 06 | 291 | 0.5+ | 0.1− |
| 2004 11 09 | 379 | 0.6+ | 0.3+ | | 2004 11 30 | 118 | 0.3+ | 0.1− | | 2005 01 05 | 941 | 0.0 | 0.7− | | 2004 11 13 | A16 | 0.1+ | 0.1− | | 2004 12 03 | H41 | 0.5− | 1.0− | | 2006 02 06 | 291 | 0.5+ | 0.5− |
| 2004 11 09 | 379 | 0.4− | 0.0 | | 2004 11 30 | 118 | 0.5+ | 0.0 | | 2005 01 05 | 941 | 0.1− | 0.7− | | 2004 11 13 | A16 | 0.1+ | 0.3− | | 2004 12 03 | H41 | 0.2− | 0.3− | | 2006 02 22 | 291 | 0.0 | 0.3+ |
| 2004 11 09 | 379 | 0.6+ | 0.2+ | | 2004 11 30 | 118 | 0.1+ | 0.0 | | 2005 01 05 | 941 | 0.0 | 0.4− | | 2004 11 13 | A16 | 0.1− | 0.2− | | 2004 12 04 | 932 | 0.1+ | 0.1− | | 2006 02 22 | 291 | 0.5+ | 0.4+ |
| 2004 11 09 | 379 | 0.4− | 0.6− | | 2004 11 30 | H06 | 0.3− | 0.0 | | 2005 01 05 | 941 | 0.1− | 0.4− | | 2004 11 13 | 203 | 0.1+ | 0.0 | | 2004 12 04 | 932 | 0.2+ | 0.0 | | 2006 02 22 | 291 | 0.2+ | 0.2+ |
| 2004 11 09 | 379 | 0.2+ | 0.2+ | | 2004 11 30 | H06 | 0.1+ | 0.0 | | 2005 01 07 | 587 | 0.0 | 0.7+ | | 2004 11 14 | 203 | 0.1− | 0.0 | | 2004 12 04 | 932 | 0.2+ | 0.1− | | 2006 02 25 | 291 | 1.1+ | 0.1+ |
| 2004 11 09 | J92 | 0.2+ | 0.3+ | | 2004 11 30 | H06 | 0.2− | 0.2− | | 2005 01 07 | 587 | 0.1− | 0.4+ | | 2004 11 14 | 952 | 0.0 | 0.1+ | | 2004 12 04 | 932 | 0.2+ | 0.2− | | 2006 02 25 | 291 | 0.2+ | 0.4+ |
| 2004 11 09 | J92 | 0.1+ | 0.3+ | | 2004 12 01 | J95 | 0.2+ | 0.1− | | 2005 01 11 | 715 | 0.8+ | 0.2− | | 2004 11 14 | 952 | 0.0 | 0.0 | | 2004 12 04 | 932 | 0.2+ | 0.1− | | 2006 02 25 | 291 | 0.3− | 0.2+ |
| 2004 11 10 | J92 | 0.1+ | 0.3+ | | 2004 12 01 | J95 | 0.2+ | 0.1− | | 2005 01 11 | 715 | 0.4+ | 0.3− | | 2004 11 14 | 952 | 0.1− | 0.2+ | | 2004 12 04 | H41 | 0.2− | 0.2− | | 2006 03 01 | 809 | 0.0 | 0.2− |
| 2004 11 10 | J92 | 0.1+ | 0.7+ | | 2004 12 01 | J95 | 0.3+ | 0.0 | | 2005 01 11 | 701 | 0.5− | 0.1− | | 2004 11 14 | 952 | 0.3+ | 0.3+ | | 2004 12 04 | H41 | 0.1− | 0.3− | | 2006 03 01 | 809 | 0.0 | 0.2− |
| 2004 11 10 | J92 | 0.0 | 0.5+ | | 2004 12 01 | J95 | 0.2+ | 0.0 | | 2005 01 11 | 715 | 0.6+ | 0.0 | | 2004 11 14 | 952 | 0.1− | 0.4+ | | 2004 12 04 | H41 | 0.5+ | 0.4− | | 2006 03 02 | 291 | 0.4+ | 0.4+ |
| 2004 11 10 | J92 | 0.1+ | 0.6+ | | 2004 12 01 | J95 | 0.3+ | 0.1− | | 2005 01 11 | 701 | 0.2+ | 0.2− | | 2004 11 14 | 952 | 0.5+ | 0.4+ | | 2004 12 04 | H41 | 0.6+ | 0.1− | | 2006 03 02 | 291 | 0.4+ | 0.5+ |
| 2004 11 10 | J92 | 0.1− | 0.3+ | | 2004 12 01 | J95 | 0.1+ | 0.0 | | 2005 01 11 | 701 | 1.0− | 0.6− | | 2004 11 14 | 952 | 0.5+ | 0.3+ | | 2004 12 04 | H41 | 0.3− | 0.1+ | | 2006 03 02 | 291 | 0.2+ | 0.4+ |
| 2004 11 10 | J92 | 0.1+ | 0.4+ | | 2004 12 02 | H06 | 0.4− | 0.0 | | 2005 01 12 | F65 | 0.1− | 0.2− | | 2004 11 14 | 952 | 0.2+ | 0.0 | | 2004 12 04 | 938 | 0.1− | 0.1− | | 2006 03 04 | 701 | 0.7+ | 0.2− |
| 2004 11 10 | J92 | 0.0 | 0.2+ | | 2004 12 02 | H06 | 0.4− | 0.0 | | 2005 01 12 | F65 | 0.3− | 0.1+ | | 2004 11 14 | 952 | 0.1+ | 0.1+ | | 2004 12 04 | 938 | 0.2− | 0.1+ | | 2006 03 04 | 701 | 0.2− | 0.5+ |
| 2004 11 10 | J92 | 0.1− | 0.6+ | | 2004 12 02 | H06 | 0.2− | 0.1+ | | 2005 01 12 | F65 | 0.4− | 0.0 | | 2004 11 14 | 203 | 0.1+ | 0.1− | | 2004 12 04 | 938 | 0.4− | 0.1− | | 2006 03 04 | 701 | 0.5+ | 0.0 |
| 2004 11 10 | 932 | 0.1− | 0.1+ | | 2004 12 02 | 932 | 0.1+ | 0.3− | | 2005 01 12 | F65 | 0.2− | 0.1+ | | 2004 11 14 | A06 | 1.1+ | 0.0 | | 2004 12 04 | 246 | 0.2− | 0.2− | | 2006 03 05 | 932 | 0.1+ | 0.1− |
| | | | | | | | | | | | | | | | 2004 11 14 | A06 | (1.8+ | 0.2−) | | 2004 12 04 | 246 | 0.4− | 0.3− | | 2006 03 05 | 932 | 0.2+ | 0.5− |
| | | | | | | | | | | | | | | | 2004 11 14 | J95 | 0.2+ | 0.0 | | 2004 12 04 | 246 | 0.4− | 0.1− | | 2006 03 06 | 932 | 0.1− | 0.0 |
| | | | | | | | | | | | | | | | 2004 11 14 | J95 | 0.0 | 0.0 | | 2004 12 04 | 246 | 0.0 | 0.0 | | 2006 03 06 | 932 | 0.1− | 0.0 |
| | | | | | | | | | | | | | | | 2004 11 14 | J95 | 0.1+ | 0.1+ | | 2004 12 04 | 246 | 0.2− | 0.1+ | | 2006 03 08 | 932 | 0.3− | 0.6− |
| | | | | | | | | | | | | | | | 2004 11 14 | 932 | 0.1+ | 0.0 | | 2004 12 04 | 246 | 0.1− | 0.0 | | 2006 03 08 | 932 | 0.1− | 0.6− |
| | | | | | | | | | | | | | | | 2004 11 14 | 932 | 0.1− | 0.2− | | 2004 12 04 | 246 | 0.2− | 0.1+ | | 2006 03 08 | 568 | 0.0 | 0.1− |
| | | | | | | | | | | | | | | | 2004 11 14 | 932 | 0.4− | 0.1+ | | 2004 12 06 | 932 | 0.0 | 0.2− | | 2006 03 08 | 568 | 0.0 | 0.1− |
| | | | | | | | | | | | | | | | 2004 11 14 | 932 | 0.1− | 0.3− | | 2004 12 06 | 932 | 0.1− | 0.2− | | 2006 03 09 | 291 | 0.2− | 0.5+ |
| | | | | | | | | | | | | | | | 2004 11 14 | 932 | 0.1− | 0.1+ | | 2004 12 06 | 932 | 0.0 | 0.2− | | 2006 03 09 | 291 | 0.3+ | 0.5+ |
| | | | | | | | | | | | | | | | 2004 11 14 | 932 | 0.0 | 0.0 | | 2004 12 06 | 932 | 0.0 | 0.3− | | 2006 03 09 | 291 | 0.1− | 0.2+ |
| | | | | | | | | | | | | | | | 2004 11 14 | 932 | 0.0 | 0.1− | | 2004 12 06 | 932 | 0.1+ | 0.2− | | 2006 03 09 | 691 | 0.2+ | 0.0 |
| | | | | | | | | | | | | | | | 2004 11 14 | A06 | (1.6+ | 0.3−) | | 2004 12 06 | 198 | 0.4− | 0.3+ | | 2006 03 09 | 691 | 0.1+ | 0.3+ |
| | | | | | | | | | | | | | | | 2004 11 14 | A06 | 0.6+ | 0.7+ | | 2004 12 06 | 198 | 0.4− | 0.3+ | | 2006 03 09 | 691 | 0.4+ | 0.3+ |

| | | | |
|---|---|---|---|
| 2004 11 15 | 932 | 0.1− | 0.2− |
| 2004 11 15 | 932 | 0.1− | 0.1− |
| 2004 11 15 | 932 | 0.1− | 0.1− |
| 2004 11 15 | 932 | 0.0 | 0.2− |
| 2004 11 15 | 932 | 0.1+ | 0.1− |
| 2004 11 15 | 932 | 0.2+ | 0.1− |
| 2004 11 15 | 932 | 0.1+ | 0.2− |
| 2004 11 15 | 670 | 0.1+ | 0.0 |
| 2004 11 15 | 670 | 0.2+ | 0.2− |
| 2004 11 15 | 670 | 0.2+ | 0.0 |
| 2004 11 15 | 670 | 0.3− | 0.2− |
| 2004 11 15 | 379 | 0.3+ | 0.1− |
| 2004 11 15 | 379 | 0.3+ | 0.2+ |
| 2004 11 15 | 379 | 0.4+ | 0.4− |
| 2004 11 15 | 379 | 0.9+ | 0.2+ |
| 2004 11 15 | 246 | 0.1+ | 0.2+ |
| 2004 11 15 | 246 | 0.0 | 0.2+ |
| 2004 11 15 | 246 | 0.0 | 0.3+ |
| 2004 11 15 | 246 | 0.1− | 0.2+ |
| 2004 11 15 | 246 | 0.4+ | 0.4+ |
| 2004 11 15 | 246 | 0.2+ | 0.3+ |
| 2004 11 15 | 213 | 0.2+ | 0.2+ |
| 2004 11 15 | 213 | 0.3+ | 0.2+ |
| 2004 11 15 | 213 | 0.2+ | 0.3+ |
| 2004 11 15 | 469 | 0.4+ | 0.0 |
| 2004 11 15 | 213 | 0.3+ | 0.2+ |
| 2004 11 15 | 469 | 0.3− | 0.1− |
| 2004 11 15 | A16 | 0.7− | 0.2− |
| 2004 11 15 | 469 | 0.2− | 0.0 |
| 2004 11 15 | A16 | 0.8− | 0.3− |
| 2004 11 15 | 469 | 0.6− | 0.1− |
| 2004 11 15 | A16 | 0.8− | 0.2− |
| 2004 11 15 | 469 | 0.1− | 0.0 |
| 2004 11 15 | A16 | 0.8− | 0.0 |
| 2004 11 15 | A16 | 0.8− | 0.4− |
| 2004 11 15 | A16 | 0.8− | 0.3− |
| 2004 11 16 | 379 | 0.1+ | 0.3− |
| 2004 11 16 | 379 | 0.3+ | 0.0 |
| 2004 11 16 | 379 | 0.0 | 0.5− |
| 2004 11 16 | 108 | 0.9− | 0.2− |
| 2004 11 16 | 108 | 0.5+ | 0.1+ |
| 2004 11 16 | 108 | 0.1− | 0.1+ |
| 2004 11 16 | 108 | 0.3− | 0.2+ |
| 2004 11 16 | A30 | 0.3− | 0.4+ |
| 2004 11 16 | A30 | 0.2− | 0.2+ |
| 2004 11 16 | A30 | 0.2− | 0.1− |
| 2004 11 16 | A30 | 0.0 | 0.2− |
| 2004 11 16 | A16 | 0.3− | 0.2− |
| 2004 11 16 | A16 | 0.1− | 0.0 |
| 2004 11 16 | A16 | 0.1+ | 0.2− |
| 2004 11 16 | A16 | 0.2− | 0.3− |
| 2004 11 16 | 176 | 0.1+ | 0.2− |
| 2004 11 16 | 176 | 0.1+ | 0.1− |
| 2004 11 16 | 176 | 0.1− | 0.1− |
| 2004 11 16 | A16 | 0.2− | 0.2− |
| 2004 11 16 | 176 | 0.2− | 0.2− |
| 2004 11 16 | 176 | 0.1+ | 0.1− |
| 2004 11 16 | 176 | 0.1− | 0.0 |
| 2004 11 16 | A16 | 0.0 | 0.2− |
| 2004 11 16 | 203 | 0.1+ | 0.2− |
| 2004 11 16 | 938 | 0.1− | 0.0 |
| 2004 11 16 | A16 | 0.2− | 0.0 |
| 2004 11 16 | 938 | 0.0 | 0.2− |
| 2004 11 16 | A16 | 0.4− | 0.2+ |
| 2004 11 16 | 938 | 0.1− | 0.2+ |
| 2004 11 16 | 938 | 0.4− | 0.0 |
| 2004 11 16 | A48 | 0.1+ | 0.1+ |
| 2004 11 16 | A48 | 0.1− | 0.2+ |
| 2004 12 06 | 198 | 0.3− | 0.3+ |
| 2004 12 06 | 198 | 0.3− | 0.3+ |
| 2004 12 06 | 198 | 0.4− | 0.3+ |
| 2004 12 06 | 246 | 0.1+ | 0.1− |
| 2004 12 06 | 246 | 0.0 | 0.2+ |
| 2004 12 06 | 938 | 0.2+ | 0.3− |
| 2004 12 06 | 938 | 0.1− | 0.1− |
| 2004 12 07 | 938 | 0.1− | 0.5− |
| 2004 12 07 | 246 | 0.0 | 0.4+ |
| 2004 12 07 | 246 | 0.2+ | 0.3+ |
| 2004 12 07 | 246 | 0.1− | 0.2+ |
| 2004 12 07 | 246 | 0.0 | 0.2+ |
| 2004 12 07 | 246 | 0.1+ | 0.2+ |
| 2004 12 07 | 938 | 0.1+ | 0.3+ |
| 2004 12 07 | 587 | 0.1− | 0.2− |
| 2004 12 07 | 587 | 0.1− | 0.3+ |
| 2004 12 07 | 587 | 0.6− | 0.4+ |
| 2004 12 08 | 130 | 0.2+ | 0.3− |
| 2004 12 08 | 130 | 0.1− | 0.2− |
| 2004 12 08 | 130 | 0.2+ | 0.2− |
| 2004 12 08 | 130 | 0.2+ | 0.2− |
| 2004 12 08 | 734 | 0.6− | 0.2− |
| 2004 12 08 | 734 | 0.2+ | 0.1− |
| 2004 12 08 | 734 | 0.3+ | 0.3− |
| 2004 12 08 | 734 | 1.2+ | 0.1− |
| 2004 12 08 | 734 | 0.4+ | 0.3− |
| 2004 12 08 | 734 | 0.5+ | 0.1+ |
| 2004 12 08 | 734 | 0.3− | 0.4− |
| 2004 12 08 | 246 | 0.1+ | 0.4+ |
| 2004 12 08 | 246 | 0.0 | 0.1+ |
| 2004 12 08 | 246 | 0.2+ | 0.2+ |
| 2004 12 08 | 246 | 0.3+ | 0.3+ |
| 2004 12 08 | 246 | 0.2+ | 0.1− |
| 2004 12 08 | 246 | 0.2+ | 0.3− |
| 2004 12 09 | 198 | 0.1+ | 0.5+ |
| 2004 12 09 | 198 | 0.1+ | 0.5+ |
| 2004 12 09 | 198 | 0.1+ | 0.4+ |
| 2004 12 09 | 198 | 0.1+ | 0.4+ |
| 2004 12 09 | 198 | 0.1+ | 0.3+ |
| 2004 12 09 | 734 | 0.5− | 0.1+ |
| 2004 12 09 | 734 | 0.3− | 0.1− |
| 2004 12 09 | 734 | 0.2− | 0.2+ |
| 2004 12 09 | 932 | 0.2− | 0.3− |
| 2004 12 09 | 932 | 0.2+ | 0.0 |
| 2004 12 09 | 932 | 0.2+ | 0.3− |
| 2004 12 09 | 703 | 0.4− | 0.2− |
| 2004 12 09 | 703 | 0.5− | 0.1+ |
| 2004 12 09 | 703 | 0.9− | 0.1− |
| 2004 12 09 | 703 | 0.0 | 0.2− |
| 2004 12 09 | A62 | 0.0 | 0.2− |
| 2004 12 09 | A62 | 0.3− | 0.0 |
| 2004 12 09 | A62 | 0.1− | 0.0 |
| 2004 12 09 | A62 | 0.4+ | 0.1+ |
| 2004 12 09 | A62 | 0.2− | 0.4+ |
| 2004 12 09 | A62 | 0.1− | 0.4+ |
| 2004 12 09 | A62 | 0.1− | 0.2+ |
| 2004 12 09 | A53 | 0.6− | 1.0+ |
| 2004 12 09 | 246 | 0.8+ | 0.7− |
| 2004 12 09 | 246 | 0.1+ | 0.3+ |
| 2004 12 09 | 246 | 0.5+ | 0.8− |
| 2004 12 09 | 246 | 0.2+ | 1.1− |
| 2004 12 09 | A53 | 0.4− | 0.2− |
| 2004 12 09 | 246 | 0.1+ | 1.1− |
| 2004 12 10 | H41 | 0.2+ | 0.6− |
| 2004 12 10 | H41 | 0.8− | 0.3+ |
| 2004 12 10 | H41 | 0.6− | 0.4− |
| 2004 12 10 | J95 | 0.1+ | 0.5− |
| 2006 03 19 | 198 | 0.2− | 0.3− |
| 2006 03 19 | 198 | 0.2− | 0.3− |
| 2006 03 19 | 198 | 0.3− | 0.3− |
| 2006 03 19 | 198 | 0.3− | 0.3− |
| 2006 03 19 | 198 | 0.4− | 0.4− |
| 2006 03 19 | 198 | 0.4− | 0.4− |
| 2006 03 20 | 932 | 0.3− | 0.5− |
| 2006 03 20 | 932 | 0.4− | 0.3− |
| 2006 03 20 | 246 | 0.2− | 0.7− |
| 2006 03 20 | 246 | 0.2− | 1.1− |
| 2006 03 20 | 246 | 1.2+ | 0.8− |
| 2006 03 21 | 932 | 0.1+ | 0.2− |
| 2006 03 21 | 932 | 0.2+ | 0.0 |
| 2006 03 21 | 932 | 0.3− | 0.1− |
| 2006 03 21 | 932 | 0.1− | 0.1− |
| 2006 03 21 | 932 | 0.2− | 0.4− |
| 2006 03 21 | 932 | 0.2− | 0.2− |
| 2006 03 23 | 715 | 0.1+ | 0.4− |
| 2006 03 23 | 715 | 0.3+ | 0.4− |
| 2006 03 23 | 715 | 0.1+ | 0.6− |
| 2006 03 23 | 715 | 0.2+ | 0.3− |
| 2006 03 24 | 932 | 0.2− | 0.3− |
| 2006 03 24 | 291 | 0.1+ | 0.2+ |
| 2006 03 24 | 291 | 0.3+ | 0.1+ |
| 2006 03 24 | 291 | 0.1+ | 0.2+ |
| 2006 03 24 | 932 | 0.1− | 0.2− |
| 2006 03 24 | 932 | 0.2− | 0.3− |
| 2006 03 24 | 176 | 0.2− | 0.6− |
| 2006 03 24 | 176 | 0.3− | 0.2− |
| 2006 03 24 | 176 | 0.2− | 0.1+ |
| 2006 03 24 | 176 | 0.2− | 0.3− |
| 2006 03 24 | 176 | 0.2+ | 0.3+ |
| 2006 03 25 | 291 | 0.1− | 0.0 |
| 2006 03 25 | 291 | 0.1− | 0.2+ |
| 2006 03 25 | 291 | 0.1− | 0.4+ |
| 2006 03 25 | 644 | 0.1− | 0.1− |
| 2006 03 25 | 644 | 0.1− | 0.1− |
| 2006 03 25 | 644 | 0.7− | 0.1+ |
| 2006 03 25 | 734 | 0.2− | 0.4− |
| 2006 03 25 | 734 | 0.6− | 0.2+ |
| 2006 03 25 | 734 | 0.1+ | 0.9− |
| 2006 03 25 | 941 | 0.5− | 0.1− |
| 2006 03 25 | 941 | 0.6− | 0.2− |
| 2006 03 25 | 941 | 0.5− | 0.3− |
| 2006 03 25 | 941 | 0.5− | 0.2− |
| 2006 03 27 | 932 | 0.0 | 0.2− |
| 2006 03 27 | 932 | 0.4− | 0.1− |
| 2006 03 27 | 932 | 0.3− | 0.1− |
| 2006 03 27 | 932 | 0.1− | 0.3− |
| 2006 03 29 | H45 | 0.7+ | 0.1− |
| 2006 03 29 | H45 | 0.7− | 0.3− |
| 2006 03 29 | H45 | 0.1+ | 0.3+ |
| 2006 03 29 | H45 | 0.4+ | 0.5+ |
| 2006 03 29 | H45 | 0.6+ | 0.1− |
| 2006 03 31 | 147 | 0.5− | 0.1− |
| 2006 03 31 | 147 | 0.0 | 0.2− |
| 2006 03 31 | 147 | 0.3+ | 0.1− |
| 2006 04 01 | 204 | 0.2− | 0.0 |
| 2006 04 02 | 204 | 0.0 | 0.2− |
| 2006 04 02 | 204 | 0.0 | 0.1− |
| 2006 04 03 | 809 | 0.1− | 0.3− |
| 2006 04 03 | 809 | 0.2− | 0.2− |
| 2006 04 03 | 932 | 0.0 | 0.2− |
| 2006 04 03 | 809 | 0.1− | 0.3− |
| 2006 04 03 | 809 | 0.2− | 0.3− |
| 2006 04 03 | 932 | 0.1− | 0.2− |
| 2006 04 03 | 932 | 0.1− | 0.0 |
| 2004 11 16 | A48 | 0.6+ | 0.5+ |
| 2004 11 16 | 203 | 0.2+ | 0.1− |
| 2004 11 16 | 938 | 0.7− | 0.2+ |
| 2004 11 16 | 938 | 0.0 | 0.0 |
| 2004 11 17 | 932 | 0.1− | 0.3− |
| 2004 11 17 | 932 | 0.1+ | 0.0 |
| 2004 11 17 | 932 | 0.0 | 0.2− |
| 2004 11 17 | 932 | 0.2+ | 0.2− |
| 2004 11 17 | 932 | 0.1+ | 0.4− |
| 2004 11 17 | 932 | 0.3− | 0.3− |
| 2004 11 17 | H41 | 0.5+ | 0.3− |
| 2004 11 17 | H41 | 0.0 | 0.4− |
| 2004 11 17 | H41 | 0.3+ | 0.4− |
| 2004 11 17 | H41 | 0.3+ | 0.1+ |
| 2004 11 17 | H41 | 0.1+ | 0.2− |
| 2004 11 17 | A70 | 0.4− | 0.0 |
| 2004 11 17 | A70 | 0.0 | 0.4+ |
| 2004 11 17 | A70 | 0.1− | 0.1− |
| 2004 11 17 | A70 | (2.4− | 0.4−) |
| 2004 11 18 | 932 | 0.2+ | 0.2− |
| 2004 11 18 | 932 | 0.0 | 0.2− |
| 2004 11 18 | 932 | 0.3+ | 0.1− |
| 2004 11 18 | 932 | 0.1− | 0.3− |
| 2004 11 18 | 704 | 0.1+ | 0.3− |
| 2004 11 18 | 704 | 0.1+ | 0.1− |
| 2004 11 18 | 704 | 0.3+ | 0.4− |
| 2004 11 18 | 704 | 0.1− | 0.4− |
| 2004 11 18 | 704 | 0.0 | 0.3− |
| 2004 11 18 | 671 | 0.0 | 0.2− |
| 2004 11 18 | 671 | 0.1− | 0.3− |
| 2004 11 18 | 671 | 0.0 | 0.2− |
| 2004 11 18 | 671 | 0.0 | 0.3− |
| 2004 11 18 | 671 | 0.1− | 0.3− |
| 2004 11 18 | 671 | 0.1− | 0.2− |
| 2004 11 18 | 671 | 0.1− | 0.2− |
| 2004 11 18 | 671 | 0.2+ | 0.2− |
| 2004 11 18 | 671 | 0.1+ | 0.2− |
| 2004 11 18 | 671 | 0.2+ | 0.4− |
| 2004 11 18 | 671 | 0.0 | 0.2− |
| 2004 11 18 | A06 | 1.4+ | 0.3+ |
| 2004 11 18 | A06 | 0.6+ | 0.3+ |
| 2004 11 19 | 670 | 0.0 | 0.1− |
| 2004 11 19 | 670 | 0.3+ | 0.2− |
| 2004 11 19 | 670 | 0.2+ | 0.2− |
| 2004 11 19 | 670 | 0.4+ | 0.2+ |
| 2004 11 19 | J95 | 0.2+ | 0.2+ |
| 2004 11 19 | J95 | 0.1+ | 0.6− |
| 2004 11 19 | 130 | 0.2− | 0.1+ |
| 2004 11 19 | 130 | 0.1− | 0.1− |
| 2004 11 19 | 130 | 0.0 | 0.2− |
| 2004 11 19 | 176 | 0.2− | 0.0 |
| 2004 11 19 | 130 | 0.1+ | 0.1− |
| 2004 11 19 | 176 | 0.2− | 0.0 |
| 2004 11 19 | 176 | 0.0 | 0.1+ |
| 2004 11 19 | 130 | 0.1+ | 0.1− |
| 2004 11 19 | 176 | 0.1+ | 0.1+ |
| 2004 11 19 | 176 | 0.1+ | 0.1+ |
| 2004 11 19 | A06 | 1.1+ | 0.2+ |
| 2004 11 19 | A06 | 0.9+ | 0.5+ |
| 2004 11 19 | A06 | 0.5+ | 0.7+ |
| 2004 11 20 | 932 | 0.4− | 0.2− |
| 2004 11 20 | 932 | 0.1− | 0.2− |
| 2004 11 20 | 932 | 0.2− | 0.2− |
| 2004 11 20 | 932 | 0.1− | 0.0 |
| 2004 11 20 | 932 | 0.0 | 0.1+ |
| 2004 11 20 | 704 | 0.1− | 0.3+ |
| 2004 11 20 | 932 | 0.3+ | 0.2− |
| 2004 11 20 | 704 | 0.6− | 0.3+ |
| 2004 12 10 | J95 | 0.2− | 0.2+ |
| 2004 12 10 | A57 | 0.2− | 0.0 |
| 2004 12 10 | A57 | 0.0 | 0.1− |
| 2004 12 10 | 246 | 0.3− | 0.2+ |
| 2004 12 10 | 246 | 0.2+ | 0.2+ |
| 2004 12 10 | A57 | 0.4+ | 0.1+ |
| 2004 12 10 | 246 | 0.0 | 0.2+ |
| 2004 12 10 | 246 | 0.2− | 0.3+ |
| 2004 12 10 | 246 | 0.1+ | 0.1+ |
| 2004 12 10 | A53 | 0.6+ | 1.4+ |
| 2004 12 10 | A53 | 0.1+ | 0.2− |
| 2004 12 10 | A53 | 0.2− | 0.5+ |
| 2004 12 10 | A53 | 0.3− | 0.2− |
| 2004 12 11 | 734 | 0.0 | 0.2− |
| 2004 12 11 | 734 | 0.2+ | 0.3− |
| 2004 12 11 | 734 | 0.0 | 0.2− |
| 2004 12 11 | 715 | 0.2− | 0.1− |
| 2004 12 11 | 715 | 0.3− | 0.1− |
| 2004 12 11 | 715 | 0.4− | 0.2− |
| 2004 12 11 | 608 | 1.2− | 0.4+ |
| 2004 12 11 | 608 | 1.2− | 0.6+ |
| 2004 12 11 | 608 | 0.6− | 0.6+ |
| 2004 12 11 | 941 | 0.2+ | 0.5− |
| 2004 12 11 | 941 | 0.1+ | 0.4− |
| 2004 12 11 | 941 | 0.1− | 0.3− |
| 2004 12 11 | 941 | 0.1− | 0.2− |
| 2004 12 12 | H41 | 0.6+ | 0.4− |
| 2004 12 12 | H41 | 0.1+ | 0.0 |
| 2004 12 12 | H41 | 0.4+ | 0.0 |
| 2004 12 12 | H41 | 0.0 | 0.9− |
| 2004 12 12 | 246 | 0.2− | 0.2+ |
| 2004 12 12 | 246 | 0.2− | 0.1+ |
| 2004 12 12 | 246 | 0.1+ | 0.1+ |
| 2004 12 12 | 246 | 0.0 | 0.0 |
| 2004 12 12 | 246 | 0.1− | 0.2+ |
| 2004 12 12 | 246 | 0.2− | 0.2+ |
| 2004 12 12 | 560 | 0.0 | 0.5+ |
| 2004 12 12 | 560 | 0.1− | 0.4+ |
| 2004 12 12 | 560 | 0.1− | 0.1− |
| 2004 12 13 | 704 | 1.0− | 0.7+ |
| 2004 12 13 | 704 | 0.4+ | 0.1− |
| 2004 12 13 | 704 | 0.1− | 0.4+ |
| 2004 12 13 | A62 | 0.4− | 0.3+ |
| 2004 12 13 | A62 | 0.2− | 0.1+ |
| 2004 12 13 | A62 | 0.1+ | 0.2+ |
| 2004 12 13 | 246 | 0.2− | 0.3− |
| 2004 12 13 | 246 | 0.2+ | 0.4− |
| 2004 12 13 | 246 | 0.1+ | 0.1+ |
| 2004 12 13 | 246 | 0.1− | 0.0 |
| 2004 12 13 | A62 | 0.4+ | 0.1+ |
| 2004 12 13 | 246 | 0.5+ | 0.4− |
| 2004 12 13 | 246 | 0.2+ | 0.2− |
| 2004 12 13 | 246 | 0.3+ | 0.1− |
| 2004 12 13 | A62 | 0.1+ | 0.1+ |
| 2004 12 14 | 734 | 0.1+ | 0.0 |
| 2004 12 14 | 699 | 1.0− | 0.2+ |
| 2004 12 14 | 734 | 0.3− | 0.4+ |
| 2004 12 14 | 734 | 0.5+ | 0.2− |
| 2004 12 14 | 699 | 0.1+ | 0.4+ |
| 2004 12 14 | 699 | 0.3+ | 0.1+ |
| 2004 12 14 | 699 | 0.2− | 0.1+ |
| 2004 12 14 | 291 | 0.2− | 0.1+ |
| 2004 12 14 | 291 | 0.9+ | 0.5+ |
| 2004 12 14 | 291 | 0.6− | 0.1+ |
| 2004 12 14 | 246 | 0.2− | 0.2+ |
| 2004 12 14 | 246 | 0.6− | 0.0 |
| 2004 12 14 | 246 | 0.5− | 0.3+ |
| 2006 04 03 | 932 | 0.1− | 0.3− |
| 2006 04 04 | 809 | 0.2− | 0.4− |
| 2006 04 04 | 809 | 0.3− | 0.3− |
| 2006 04 05 | F65 | 0.5+ | 0.0 |
| 2006 04 05 | F65 | 0.6+ | 0.0 |
| 2006 04 05 | F65 | 0.5+ | 0.1+ |
| 2006 04 05 | F65 | 0.5+ | 0.0 |
| 2006 04 06 | 198 | 0.2+ | 0.2− |
| 2006 04 06 | 198 | 0.0 | 0.3− |
| 2006 04 06 | 198 | 0.3− | 0.4− |
| 2006 04 06 | 198 | 0.2− | 0.4− |
| 2006 04 07 | 246 | 0.5+ | 0.5+ |
| 2006 04 07 | 246 | 0.4+ | 0.1+ |
| 2006 04 07 | 246 | 0.1+ | 0.0 |
| 2006 04 07 | 246 | 0.6+ | 0.6− |
| 2006 04 07 | 246 | 0.2− | 0.3− |
| 2006 04 07 | 246 | 0.2+ | 0.5+ |
| 2006 04 08 | 147 | 0.2− | 0.4+ |
| 2006 04 08 | 147 | 0.2+ | 1.0− |
| 2006 04 08 | 147 | 0.3+ | 0.4+ |
| 2006 04 16 | 932 | 0.1− | 0.2− |
| 2006 04 16 | 932 | 0.2− | 0.3− |
| 2006 04 16 | 699 | 0.2+ | 0.3− |
| 2006 04 16 | 699 | 0.1− | 0.1− |
| 2006 04 16 | 699 | 0.0 | 0.1+ |
| 2006 04 16 | 699 | 0.8+ | 0.6+ |
| 2006 04 17 | 932 | 0.1− | 0.4− |
| 2006 04 17 | 932 | 0.0 | 0.3− |
| 2006 04 17 | 932 | 0.1− | 0.2− |
| 2006 04 17 | 734 | 0.6− | 0.4− |
| 2006 04 17 | 734 | 0.0 | 0.8− |
| 2006 04 17 | 734 | 0.6− | 0.4− |
| 2006 04 20 | 715 | 0.3− | 0.2− |
| 2006 04 20 | 715 | 0.2− | 0.1− |
| 2006 04 20 | 715 | 0.3− | 0.3− |
| 2006 04 20 | 715 | 0.0 | 0.2− |
| 2006 04 20 | 703 | 0.8− | 0.8− |
| 2006 04 20 | 703 | 1.1− | 0.1− |
| 2006 04 20 | 703 | 1.0− | 0.5− |
| 2006 04 20 | 703 | 0.1+ | 1.2− |
| 2006 04 20 | A13 | 0.9− | 0.5+ |
| 2006 04 20 | A13 | 0.8− | 0.4+ |
| 2006 04 20 | A13 | 1.2− | 0.6+ |
| 2006 04 21 | 699 | 0.3+ | 1.0− |
| 2006 04 21 | 699 | 0.0 | 0.4− |
| 2006 04 21 | 699 | 0.2+ | 0.3− |
| 2006 04 21 | 699 | 0.2+ | 0.3+ |
| 2006 04 21 | 151 | 0.3− | 0.1− |
| 2006 04 21 | 151 | 0.2− | 0.2− |
| 2006 04 21 | 151 | 0.2− | 0.1− |
| 2006 04 21 | 151 | 0.2− | 0.1− |
| 2006 04 21 | 151 | 0.1− | 0.0 |
| 2006 04 21 | 151 | 0.0 | 0.3+ |
| 2006 04 21 | 176 | 0.0 | 0.4− |
| 2006 04 21 | 176 | 0.2+ | 0.3− |
| 2006 04 21 | 176 | 0.2+ | 0.4− |
| 2006 04 21 | 176 | 0.5+ | 0.5− |
| 2006 04 21 | 176 | 0.0 | 0.1+ |
| 2006 04 22 | A83 | 0.9+ | 1.1− |
| 2006 04 22 | A83 | 0.5+ | 0.6− |
| 2006 04 22 | A83 | 0.2+ | 0.9+ |
| 2006 04 22 | A83 | 0.5− | 0.7+ |
| 2006 04 23 | D35 | (2.2− | 1.3+) |
| 2006 04 23 | D35 | (4.7− | 2.9+) |
| 2006 04 23 | D35 | (1.5− | 1.5+) |
| 2006 04 23 | D35 | (4.0− | 2.1+) |
| 2006 04 27 | 715 | 0.1− | 0.1− |
| 2006 04 27 | 715 | 0.3− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 20 | H06 | 0.1− | 0.1+ | 2004 12 14 | 246 | 0.6− | 0.2+ | 2006 04 27 | 715 | 0.3− | 0.0 | | |
| 2004 11 20 | 704 | 0.4− | 0.4+ | 2004 12 14 | 246 | 0.4− | 0.0 | 2006 04 27 | 715 | 0.1− | 0.2− | | |
| 2004 11 20 | H06 | 0.1− | 0.1+ | 2004 12 14 | 246 | 0.5− | 0.1− | 2006 04 29 | 932 | 0.1− | 0.2− | | |
| 2004 11 20 | 704 | 0.2+ | 0.4+ | 2004 12 14 | A53 | 1.1− | 0.1+ | 2006 04 29 | 932 | 0.1− | 0.3− | | |
| 2004 11 20 | H06 | (2.7− | 3.0+) | 2004 12 14 | A53 | 0.2− | 0.3− | 2006 04 29 | 932 | 0.2− | 0.3− | | |
| 2004 11 20 | 379 | 0.2+ | 0.4− | 2004 12 14 | A53 | 0.6+ | 0.4− | 2006 04 30 | 290 | 0.2− | 0.0 | | |
| 2004 11 20 | 379 | 0.2+ | 0.2− | 2004 12 14 | 147 | 0.0 | 0.3− | 2006 04 30 | 290 | 0.0 | 0.0 | | |
| 2004 11 20 | 379 | 0.4+ | 0.3− | 2004 12 14 | 147 | 0.0 | 0.0 | 2006 04 30 | 290 | 0.0 | 0.0 | | |
| 2004 11 20 | 379 | 0.9+ | 0.0 | 2004 12 14 | 147 | 0.3− | 0.2+ | 2006 04 30 | 290 | 0.0 | 0.0 | | |
| 2004 11 20 | 198 | 0.3− | 0.1+ | 2004 12 14 | 147 | 0.1− | 0.1+ | 2006 05 01 | 932 | 0.3− | 0.0 | | |
| 2004 11 20 | 108 | 0.4− | 0.2− | 2004 12 15 | 147 | 0.1+ | 0.1− | 2006 05 01 | 932 | 0.1− | 0.2− | | |
| 2004 11 20 | 108 | 0.6− | 0.1+ | 2004 12 15 | A62 | 0.3− | 0.2+ | 2006 05 18 | 586 | 0.2− | 0.4+ | | |
| 2004 11 20 | 198 | 0.2− | 0.1+ | 2004 12 15 | 246 | 0.0 | 0.5− | 2006 05 18 | 586 | 0.1+ | 0.4+ | | |
| 2004 11 20 | 198 | 0.1− | 0.1+ | 2004 12 15 | A62 | 0.1− | 0.1+ | 2006 05 18 | 586 | 0.0 | 0.3+ | | |
| 2004 11 20 | 108 | 0.3+ | 0.6− | 2004 12 15 | 246 | 0.2− | 0.1− | 2006 05 18 | 586 | 0.1+ | 0.3+ | | |
| 2004 11 20 | 108 | 0.3− | 0.0 | 2004 12 15 | 246 | 0.3− | 0.0 | 2006 05 18 | 586 | (2.4+ | 1.6−) | | |
| 2004 11 20 | 198 | 0.2− | 0.1+ | 2004 12 15 | 246 | 0.3− | 0.1+ | 2006 05 18 | 586 | 0.2− | 0.3+ | | |
| 2004 11 20 | 198 | 0.1− | 0.1+ | 2004 12 15 | 246 | 0.2− | 0.1− | 2006 05 18 | 586 | 0.1+ | 0.4+ | | |
| 2004 11 20 | A56 | 0.3− | 0.0 | 2004 12 15 | 198 | 0.1− | 0.1− | 2006 05 18 | 586 | 0.1− | 0.2+ | | |
| 2004 11 20 | A56 | 0.5+ | 0.4+ | 2004 12 15 | 198 | 0.4− | 0.0 | 2006 05 18 | 586 | 0.1− | 0.4+ | | |
| 2004 11 20 | A56 | 0.3− | 0.4+ | 2004 12 15 | 198 | 0.5− | 0.1+ | 2006 05 18 | 586 | 0.1− | 0.4+ | | |
| 2004 11 20 | A56 | 0.4− | 0.1+ | 2004 12 15 | 198 | 0.6− | 0.1+ | 2006 05 18 | 586 | 0.0 | 0.4+ | | |
| 2004 11 21 | 715 | 0.2− | 0.1− | 2004 12 16 | 932 | 0.3+ | 0.2− | 2006 05 19 | 703 | (1.7− | 1.1+) | | |
| 2004 11 21 | 715 | 0.2− | 0.2− | 2004 12 16 | 932 | 0.1+ | 0.0 | 2006 05 19 | 703 | 0.8− | 0.5+ | | |
| 2004 11 21 | 715 | 0.1− | 0.7+ | 2004 12 16 | 932 | 0.1− | 0.0 | 2006 05 19 | 703 | 0.4− | 0.1− | | |
| 2004 11 21 | 715 | 0.2− | 0.4+ | 2004 12 16 | 932 | 0.3+ | 0.1+ | 2006 05 19 | 703 | 0.5+ | 0.4+ | | |
| 2004 11 21 | 608 | 0.4+ | 0.2− | 2004 12 16 | 932 | 0.1− | 0.1+ | 2006 05 19 | 941 | 0.2+ | 0.1+ | | |
| 2004 11 21 | 608 | 0.2+ | 0.2− | 2004 12 16 | 291 | 0.1− | 0.1+ | 2006 05 19 | 941 | 0.3+ | 0.0 | | |
| 2004 11 21 | 608 | 0.2+ | 0.3− | 2004 12 16 | 291 | 0.0 | 0.1+ | 2006 05 19 | 941 | 0.3+ | 0.1+ | | |
| 2004 11 21 | 379 | 0.4+ | 0.4− | 2004 12 16 | 291 | 0.0 | 0.0 | 2006 05 19 | 941 | 0.3+ | 0.0 | | |
| 2004 11 21 | 379 | 0.2− | 0.2− | 2004 12 16 | 932 | 0.1+ | 0.1+ | 2006 05 20 | 291 | 0.7+ | 0.1+ | | |
| 2004 11 21 | 379 | 0.5− | 0.5− | 2004 12 16 | 608 | (1.5− | 0.6−) | 2006 05 20 | 291 | 0.3+ | 0.2+ | | |
| 2004 11 21 | 379 | 0.3− | 0.0 | 2004 12 16 | 608 | (1.9− | 0.4+) | 2006 05 20 | 291 | 0.2− | 0.2+ | | |
| 2004 11 21 | 160 | 0.0 | 0.1− | 2004 12 16 | 608 | (1.8− | 0.0 ) | 2006 05 24 | 932 | 0.3+ | 0.0 | | |
| 2004 11 21 | 160 | 0.2− | 0.2− | 2004 12 17 | 734 | 0.0 | 0.3− | 2006 05 24 | 932 | 0.0 | 0.1+ | | |
| 2004 11 21 | 160 | 0.2− | 0.5− | 2004 12 17 | 734 | 0.4+ | 0.2− | 2006 05 24 | 932 | 0.2+ | 0.0 | | |
| 2004 11 21 | 160 | 0.2+ | 0.2− | 2004 12 17 | 734 | 0.1+ | 0.5− | 2006 06 01 | 291 | 0.4+ | 0.5+ | | |
| 2004 11 21 | 160 | 0.1− | 0.2− | 2004 12 17 | J95 | 0.6+ | 0.2− | 2006 06 01 | 291 | 0.5+ | 0.2+ | | |
| 2004 11 21 | 160 | 0.2− | 0.2− | 2004 12 17 | J95 | 0.0 | 0.3− | 2006 06 01 | 291 | 0.6+ | 0.3+ | | |
| 2004 11 21 | 160 | 0.0 | 0.3− | 2004 12 17 | J95 | 0.1+ | 0.2+ | 2006 09 27 | 693 | 0.1− | 0.2+ | | |
| 2004 11 21 | 160 | 0.2+ | 0.2− | 2004 12 18 | 932 | 0.1+ | 0.2− | 2006 09 27 | 693 | 0.3− | 0.2+ | | |
| 2004 11 21 | 160 | 0.3− | 0.1− | 2004 12 18 | 932 | 0.1+ | 0.2− | 2006 09 27 | 693 | 0.1+ | 0.1+ | | |
| 2004 11 21 | 160 | 0.0 | 0.0 | 2004 12 18 | 932 | 0.2+ | 0.0 | 2006 09 27 | 693 | 0.1+ | 0.2+ | | |
| 2004 11 21 | 160 | 0.2− | 0.2− | 2004 12 18 | 932 | 0.2+ | 0.1− | 2006 10 18 | 291 | 0.2− | 0.8+ | | |
| 2004 11 21 | 160 | 0.1− | 0.1− | 2004 12 18 | 932 | 0.2− | 0.1− | 2006 10 18 | 291 | 0.3− | 0.8+ | | |
| 2004 11 21 | 160 | 0.1− | 0.2− | 2004 12 18 | 704 | 0.1− | 0.0 | 2006 10 18 | 291 | 0.6− | 0.7+ | | |
| 2004 11 21 | 160 | 0.1− | 0.2− | 2004 12 18 | 704 | 0.1+ | 0.1− | 2006 10 27 | 291 | 0.2− | 0.4+ | | |
| 2004 11 21 | 160 | 0.2− | 0.2− | 2004 12 18 | 704 | 0.4+ | 0.6− | 2006 10 27 | 291 | 0.4− | 0.3+ | | |
| 2004 11 21 | 160 | 0.1− | 0.2− | 2004 12 18 | 704 | 0.4− | 0.3− | 2006 10 27 | 291 | 0.4− | 0.5+ | | |
| 2004 11 21 | 160 | 0.2− | 0.2+ | 2004 12 18 | 704 | 0.2− | 0.5− | 2006 10 28 | 291 | 0.2− | 0.0 | | |
| 2004 11 21 | 160 | 0.1− | 0.3− | 2004 12 18 | 941 | 0.2+ | 0.5+ | 2006 10 28 | 291 | 0.5− | 0.0 | | |
| 2004 11 21 | 160 | 0.4− | 0.4− | 2004 12 18 | 941 | 0.2+ | 0.5+ | 2006 10 28 | 291 | 0.8− | 0.2+ | | |
| 2004 11 21 | 160 | 0.1− | 0.2− | 2004 12 18 | 941 | 0.3+ | 0.5+ | 2006 11 24 | 291 | 0.3− | 0.2+ | | |
| 2004 11 21 | 160 | 0.3− | 0.3− | 2004 12 18 | 941 | 0.4+ | 0.4+ | 2006 11 24 | 291 | 0.1− | 0.2+ | | |
| 2004 11 21 | 084 | 0.2+ | 0.2+ | 2004 12 18 | 941 | 0.3+ | 0.3+ | 2006 11 24 | 291 | 0.4− | 0.0 | | |
| 2004 11 22 | 084 | 0.2+ | 0.3+ | 2004 12 19 | 715 | 0.7− | 0.1− | 2006 11 25 | 291 | 1.0+ | 1.2+ | | |
| 2004 11 23 | I77 | 0.4+ | 0.4+ | 2004 12 19 | 715 | 0.4− | 0.1+ | 2006 11 25 | 291 | 0.7− | 1.5+ | | |
| 2004 11 23 | I77 | 1.2− | 0.2− | 2004 12 19 | 715 | 0.2− | 0.3− | 2006 11 25 | 291 | 0.3+ | 1.0+ | | |
| 2004 11 23 | I77 | 0.2− | 0.1− | 2004 12 19 | J95 | 0.7+ | 0.4− | | | | | | |
| 2004 11 23 | I77 | 0.4− | 0.7− | 2004 12 19 | J95 | 0.4+ | 0.1+ | | | | | | |

**(144899)∗ 2004 VX$_{34}$ = 2006 DL$_{122}$**

Discovered 2004 Nov. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 100847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.67879 | | (2000.0) | | | |
| $n$ | 0.24220075 | $\omega$ | 106.85681 | | −0.95731797 | −0.23030933 |
| $a$ | 2.5488976 | $\Omega$ | 60.13108 | | +0.12094973 | −0.86797821 |
| $e$ | 0.0670653 | $i$ | 11.61849 | | +0.26251376 | −0.43996755 |
| $P$ | 4.07 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 1.5+ | 1.7− | 2002 04 16 | 704 | 1.4− | 0.3− | 2006 03 09 | 703 | 0.2+ | 0.1+ | | |
| 1998 03 24 | 704 | (0.1+ | 3.3+) | 2002 04 16 | 704 | 0.3− | 0.2+ | 2006 03 21 | 704 | 1.0+ | 0.0 | | |
| 1998 03 24 | 704 | 0.2− | 0.3− | 2002 04 16 | 704 | 0.1+ | 0.3+ | 2006 03 21 | 704 | 0.9+ | 0.3+ | | |
| 1998 03 24 | 704 | (4.5− | 1.1+) | 2002 04 16 | 704 | 0.3− | 0.0 | 2006 03 21 | 704 | 1.0− | 1.2+ | | |
| 1998 04 24 | 704 | 0.1+ | 0.5+ | 2004 11 03 | 691 | 0.0 | 0.1+ | 2006 03 24 | 699 | 0.8+ | 0.1+ | | |
| 1998 04 24 | 704 | 0.6+ | 1.1+ | 2004 11 03 | 691 | 0.2− | 0.4+ | 2006 03 24 | 699 | 0.1+ | 0.3− | | |
| 1998 04 24 | 704 | 0.5− | 0.2+ | 2004 11 03 | 691 | 0.0 | 0.3+ | 2006 03 24 | 699 | 0.8+ | 0.4+ | | |
| 1998 04 24 | 704 | 1.1+ | 0.1− | 2004 11 10 | 691 | 0.1− | 0.4+ | 2006 03 24 | 699 | 0.1+ | 0.1− | | |
| 1998 04 24 | 704 | (5.6− | 1.3−) | 2004 11 10 | 691 | 0.3− | 0.1+ | 2006 04 02 | 703 | 0.3+ | 0.1+ | | |
| 2000 11 24 | 691 | 0.2+ | 0.1− | 2004 11 10 | 691 | 0.2− | 0.1+ | 2006 04 02 | 703 | 0.5+ | 0.1− | | |
| 2000 11 24 | 691 | 0.2+ | 0.1− | 2004 11 19 | 703 | 0.8+ | 0.4− | 2006 04 02 | 703 | 0.7− | 0.8− | | |
| 2000 11 24 | 691 | 0.2+ | 0.1− | 2004 11 19 | 703 | 1.4− | 0.8− | 2006 04 02 | 703 | 1.0− | 0.2− | | |
| 2002 01 23 | 704 | 0.4− | 0.7+ | 2004 11 19 | 703 | 0.6+ | 1.2− | 2006 04 08 | 703 | 0.8− | 0.8− | | |
| 2002 01 23 | 704 | 1.7− | 0.9− | 2004 11 19 | 703 | 0.0 | 0.5− | 2006 04 08 | 703 | 1.3− | 0.8− | | |
| 2002 01 23 | 704 | 0.4+ | 0.0 | 2006 02 23 | 699 | 0.1+ | 0.9+ | 2006 04 08 | 703 | (0.2+ | 2.1−) | | |
| 2002 01 23 | 704 | 0.9− | 0.4+ | 2006 02 23 | 699 | 0.5− | 0.1+ | 2006 04 08 | 703 | 0.7− | 0.6− | | |
| 2002 03 20 | 704 | 0.6− | 0.9− | 2006 02 23 | 699 | 1.4+ | 0.4− | 2006 04 23 | 699 | 0.2+ | 1.0+ | | |
| 2002 03 20 | 704 | 0.2+ | 0.3− | 2006 02 23 | 699 | (2.3+ | 0.4+) | 2006 04 23 | 699 | 0.5+ | 0.9+ | | |
| 2002 03 20 | 704 | 0.1+ | 0.1+ | 2006 02 28 | 703 | 0.4− | 0.1− | 2006 04 23 | 699 | (0.2− | 2.2+) | | |
| 2002 03 20 | 704 | 0.5− | 0.1+ | 2006 02 28 | 703 | 1.6− | 0.0 | 2006 04 23 | 699 | 1.4+ | 0.4− | | |
| 2002 03 20 | 704 | 0.1+ | 0.6+ | 2006 02 28 | 703 | 0.3+ | 0.2+ | 2006 05 03 | 703 | 0.9+ | 0.8+ | | |
| 2002 04 01 | 644 | 0.2+ | 1.0+ | 2006 02 28 | 703 | 0.5− | 1.0− | 2006 05 03 | 703 | 0.3+ | 0.8− | | |
| 2002 04 01 | 644 | 0.5+ | 1.5+ | 2006 03 09 | 703 | 0.6− | 0.4− | 2006 05 03 | 703 | 0.4− | 0.4− | | |
| 2002 04 01 | 644 | 0.1+ | 1.2+ | 2006 03 09 | 703 | 1.1+ | 0.6− | 2006 05 03 | 703 | 0.1+ | 0.3− | | |
| 2002 04 16 | 704 | 0.9− | 0.7+ | 2006 03 09 | 703 | 1.4+ | 0.7− | | | | | | |

**(144900)∗ 2004 VG$_{64}$**

Discovered 2004 Nov. 13 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.36115 | | (2000.0) | | | |
| $n$ | 1.03438128 | $\omega$ | 43.87663 | | −0.36068290 | +0.88770327 |
| $a$ | 0.9683127 | $\Omega$ | 208.92346 | | −0.93169440 | −0.32875854 |
| $e$ | 0.6554085 | $i$ | 36.27705 | | +0.04305100 | +0.32233636 |
| $P$ | 0.95 | $H$ | 18.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc (radar residuals in s.d.)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 13 | 703 | 0.8− | 0.2− | 2005 10 20 | 379 | 0.8− | 0.4+ | | 2005 10 30 | A32 | 0.2− | 0.0+ | |
| 2004 11 13 | 703 | 0.3− | 0.6− | 2005 10 20 | 379 | 1.1− | 0.6+ | | 2005 10 30 | A32 | 0.2+ | 0.1− | |
| 2004 11 13 | 703 | 0.2− | 0.3− | 2005 10 20 | 379 | 1.0− | 0.0− | | 2005 10 30 | A32 | 0.1− | 0.9− | |
| 2004 11 13 | 703 | 0.4− | 0.4+ | 2005 10 20 | 379 | 0.5− | 0.2+ | | 2005 10 30 | A32 | 0.5− | 0.5− | |
| 2004 11 13 | 703 | 0.4− | 0.4− | 2005 10 20 | 379 | 1.0− | 0.0+ | | 2005 10 31 | 379 | 0.2+ | 0.6+ | |
| 2004 11 13 | 703 | 0.7− | 0.0− | 2005 10 20 | 379 | 0.7− | 0.3+ | | 2005 10 31 | 379 | 0.3+ | 0.6+ | |
| 2004 11 13 | 703 | 0.4− | 0.1+ | 2005 10 20 | 379 | 1.0− | 0.2+ | | 2005 10 31 | 379 | 0.1+ | 0.4+ | |
| 2004 11 13 | 703 | 0.6+ | 0.8− | 2005 10 20 | 379 | 0.5− | 0.3+ | | 2005 11 01 | 844 | 0.1+ | 0.3− | |
| 2004 11 13 | 703 | 0.1− | 1.0− | 2005 10 20 | 379 | 0.6− | 0.1+ | | 2005 11 01 | 844 | 0.1− | 0.1+ | |
| 2004 11 13 | 703 | 0.6− | 0.3+ | 2005 10 20 | 379 | 1.0− | 0.2+ | | 2005 11 01 | 844 | 0.3+ | 0.0+ | |
| 2004 11 13 | 703 | 1.0− | 0.3− | 2005 10 20 | 379 | 1.1− | 0.5+ | | 2005 11 01 | 844 | 0.3+ | 0.1+ | |
| 2004 11 13 | 703 | 0.8− | 0.2+ | 2005 10 20 | 379 | 1.1− | 0.2− | | 2005 11 01 | 844 | 0.1− | 0.2+ | |
| 2004 11 13 | 413 | 0.1+ | 0.2− | 2005 10 20 | 251/ | 251 | 0.083+ | D | 2005 11 01 | 844 | 0.2− | 0.1− | |
| 2004 11 13 | 413 | 0.2+ | 0.3− | 2005 10 20 | 251/ | 251 | 0.338− | r | 2005 11 01 | 844 | 0.2+ | 0.2− | |
| 2004 11 13 | 413 | 0.2+ | 0.1+ | 2005 10 20 | 251/ | 251 | 0.094+ | R | 2005 11 01 | 379 | 0.0+ | 0.4+ | |
| 2004 11 13 | 413 | 0.1+ | 0.0+ | 2005 10 21 | 379 | 1.6− | 1.1+ | | 2005 11 01 | 379 | 0.5+ | 0.3− | |
| 2004 11 13 | J95 | 0.5+ | 0.5+ | 2005 10 21 | 379 | 0.8− | 1.2+ | | 2005 11 01 | 379 | 0.3− | 0.0− | |
| 2004 11 13 | J95 | 0.4+ | 0.0− | 2005 10 21 | 379 | 1.0− | 0.5+ | | 2005 11 03 | 844 | 0.3+ | 0.1− | |
| 2004 11 13 | J95 | 0.9− | 1.0+ | 2005 10 21 | 379 | 1.6− | 0.8+ | | 2005 11 03 | 844 | 0.0− | 0.0+ | |
| 2004 11 16 | 413 | 0.3+ | 0.2− | 2005 10 21 | 379 | 0.9− | 0.7+ | | 2005 11 03 | 844 | 0.2+ | 0.6− | |
| 2004 11 16 | 413 | 0.2+ | 0.3− | 2005 10 21 | 379 | 1.0− | 0.9+ | | 2005 11 03 | 844 | 0.1+ | 0.1− | |
| 2004 11 17 | 413 | 0.2+ | 0.0− | 2005 10 21 | 251/ | 251 | 0.040− | D | 2005 11 03 | 844 | 0.1− | 0.2− | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 17 | 413 | 0.1+ | 0.1− | 2005 10 21 | 251/ | 251 | 0.142− | R | 2005 11 03 | 844 | 0.0− | 0.1− | 2005 10 20 | 379 | 1.2− | 0.0− | 2005 10 30 | 143 | 0.2− | 0.2− | 2006 11 06 | 644 | 0.1− | 0.5− |
| 2004 11 18 | 413 | 0.2+ | 0.2− | 2005 10 21 | 251/ | 251 | 0.299+ | R | 2005 11 03 | 844 | 0.3+ | 0.3− | 2005 10 20 | 379 | 0.7− | 0.5+ | 2005 10 30 | A32 | 0.0+ | 0.4− | 2006 11 06 | 644 | 0.1+ | 0.5− |
| 2004 11 18 | 413 | 0.3+ | 0.1− | 2005 10 23 | 379 | 0.7− | 0.7+ | | 2005 11 03 | 844 | 0.0− | 0.2− | | | | | | | | | | | | |
| 2004 11 19 | 448 | 0.6+ | 0.3+ | 2005 10 23 | 379 | 0.5− | 0.2+ | | 2005 11 03 | 844 | 0.1+ | 0.3− | | | | | | | | | | | | |
| 2004 11 19 | 448 | 1.3− | 0.2− | 2005 10 23 | 379 | 0.8− | 0.5+ | | 2005 11 03 | 844 | 0.1− | 0.1− | | | | | | | | | | | | |
| 2004 11 19 | 448 | 1.1− | 0.6− | 2005 10 23 | 379 | 1.0− | 0.6+ | | 2005 11 03 | 071 | 0.8+ | 0.7− | | | | | | | | | | | | |
| 2004 11 22 | 413 | 0.0+ | 0.2− | 2005 10 23 | 379 | 0.8− | 0.6+ | | 2005 11 03 | 071 | 0.4+ | 0.6− | | | | | | | | | | | | |
| 2004 11 22 | 413 | 0.8+ | 0.0+ | 2005 10 23 | 379 | 0.7− | 0.7+ | | 2005 11 03 | 071 | 1.9+ | 1.1− | | | | | | | | | | | | |
| 2004 11 23 | 413 | 0.2+ | 0.1− | 2005 10 23 | 379 | 0.2− | 0.6+ | | 2005 11 04 | 844 | 0.2+ | 0.0+ | | | | | | | | | | | | |
| 2004 11 23 | 413 | 0.2+ | 0.1− | 2005 10 23 | 379 | 0.8− | 0.6+ | | 2005 11 04 | 844 | 0.3− | 0.4− | | | | | | | | | | | | |
| 2004 11 24 | 413 | 0.0+ | 0.1+ | 2005 10 23 | 379 | 0.7− | 0.9+ | | 2005 11 04 | 844 | 0.3+ | 0.1− | | | | | | | | | | | | |
| 2004 11 24 | 413 | 0.0+ | 0.0− | 2005 10 23 | 379 | 0.4− | 0.5+ | | 2005 11 04 | 844 | 0.9− | 0.4+ | | | | | | | | | | | | |
| 2004 12 01 | 734 | 0.1− | 1.3− | 2005 10 23 | 379 | 0.5− | 0.1+ | | 2005 11 05 | 699 | 1.8− | 1.2+ | | | | | | | | | | | | |
| 2004 12 01 | 734 | 0.8+ | 0.8− | 2005 10 23 | 379 | 0.7− | 0.4+ | | 2005 11 05 | 699 | 0.2+ | 0.6− | | | | | | | | | | | | |
| 2004 12 02 | 448 | 0.1+ | 0.1− | 2005 10 23 | 379 | 0.4− | 0.2+ | | 2005 11 05 | 699 | 0.1− | 0.2− | | | | | | | | | | | | |
| 2004 12 02 | 448 | 0.2+ | 0.4− | 2005 10 23 | 379 | 0.8− | 0.8+ | | 2005 11 06 | 699 | 0.1− | 0.1− | | | | | | | | | | | | |
| 2004 12 02 | 448 | 0.1+ | 0.1− | 2005 10 23 | 379 | 0.1− | 0.4+ | | 2005 11 06 | 699 | 0.1− | 0.1− | | | | | | | | | | | | |
| 2004 12 09 | 448 | 1.0+ | 0.4− | 2005 10 23 | 379 | 0.5− | 0.7+ | | 2005 11 06 | 699 | 0.5− | 0.4− | | | | | | | | | | | | |
| 2004 12 09 | 448 | 1.3+ | 0.0+ | 2005 10 23 | 379 | 0.0− | 0.7+ | | 2005 11 06 | 699 | 0.0− | 0.4− | | | | | | | | | | | | |
| 2004 12 09 | 448 | 0.4+ | 1.1+ | 2005 10 23 | 379 | 0.9− | 0.2+ | | 2005 11 08 | 844 | 0.3− | 0.2− | | | | | | | | | | | | |
| 2004 12 14 | 413 | 0.3+ | 0.3− | 2005 10 23 | 379 | 0.2− | 0.3+ | | 2005 11 08 | 844 | 0.2+ | 0.9− | | | | | | | | | | | | |
| 2004 12 14 | 413 | 0.0+ | 0.1+ | 2005 10 23 | 379 | 0.8− | 0.3+ | | 2005 11 08 | 844 | 0.5+ | 0.1− | | | | | | | | | | | | |
| 2004 12 14 | 246 | 0.1− | 0.6− | 2005 10 23 | 355 | 0.4+ | 0.0− | | 2005 11 08 | 844 | 0.3− | 0.6− | | | | | | | | | | | | |
| 2004 12 14 | 246 | 1.1+ | 0.7+ | 2005 10 23 | 355 | 0.1+ | 0.0− | | 2005 11 08 | 844 | 1.0+ | 0.1+ | | | | | | | | | | | | |
| 2004 12 14 | 246 | 1.2+ | 0.5− | 2005 10 23 | 355 | 0.4+ | 0.1− | | 2005 11 22 | 644 | 0.2− | 0.0− | | | | | | | | | | | | |
| 2004 12 14 | 246 | 0.9+ | 0.4+ | 2005 10 23 | 355 | 0.1+ | 0.2− | | 2005 11 22 | 644 | 0.2+ | 0.0− | | | | | | | | | | | | |
| 2004 12 14 | 246 | 0.0− | 0.0− | 2005 10 24 | 379 | 0.4− | 0.1+ | | 2005 11 22 | 644 | 0.5− | 0.1− | | | | | | | | | | | | |
| 2005 01 18 | 291 | 0.4− | 0.5+ | 2005 10 24 | 379 | 0.6− | 0.1+ | | 2006 09 24 | 703 | 0.8− | 0.5+ | | | | | | | | | | | | |
| 2005 01 18 | 291 | 0.3− | 0.9+ | 2005 10 24 | 379 | 0.4− | 0.3+ | | 2006 09 24 | 703 | 0.9− | 0.3+ | | | | | | | | | | | | |
| 2005 01 18 | 291 | 0.1− | 0.9+ | 2005 10 24 | 379 | 0.7− | 0.7+ | | 2006 09 24 | 703 | 0.7− | 0.6+ | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.7+ | 0.0+ | 2005 10 24 | 379 | 0.9− | 0.3+ | | 2006 09 24 | 703 | 0.4− | 0.7+ | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.8+ | 0.2− | 2005 10 24 | 355 | 0.2+ | 0.4+ | | 2006 10 02 | 704 | 0.3− | 0.0− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.4+ | 0.1+ | 2005 10 24 | 355 | 0.3+ | 0.1− | | 2006 10 02 | 704 | 0.5− | 0.7+ | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.3+ | 0.0+ | 2005 10 24 | 355 | 0.1− | 0.1− | | 2006 10 02 | 704 | 0.5+ | 0.8+ | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.4+ | 0.0+ | 2005 10 24 | 355 | 0.2+ | 0.4+ | | 2006 10 02 | 704 | 0.0+ | 1.3+ | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.5+ | 0.5− | 2005 10 24 | 379 | 0.8− | 0.5+ | | 2006 10 02 | 704 | 0.5− | 1.1+ | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.5+ | 0.1− | 2005 10 24 | 379 | 0.8− | 0.5+ | | 2006 10 08 | 198 | 0.4+ | 0.0− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.6+ | 0.2− | 2005 10 24 | 379 | 0.5− | 0.6+ | | 2006 10 08 | 198 | 0.7+ | 0.2− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.6+ | 0.0− | 2005 10 24 | 379 | 0.1− | 0.2+ | | 2006 10 08 | 198 | 0.4+ | 0.5− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.9+ | 0.5− | 2005 10 24 | 379 | 0.8− | 0.6+ | | 2006 10 11 | 204 | 0.1+ | 0.1+ | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.3+ | 0.1+ | 2005 10 24 | 379 | 0.5− | 0.7+ | | 2006 10 11 | 204 | 0.1+ | 0.0− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.0− | 0.6− | 2005 10 24 | 379 | 0.7− | 0.6+ | | 2006 10 11 | 204 | 0.2+ | 0.0− | | | | | | | | | | | | |
| 2005 10 20 | 715 | 0.6+ | 0.1+ | 2005 10 24 | 379 | 0.8− | 0.6+ | | 2006 10 18 | 379 | 0.9+ | 0.1+ | | | | | | | | | | | | |
| 2005 10 20 | 715 | 0.8+ | 0.3+ | 2005 10 26 | 704 | 0.3− | 0.4+ | | 2006 10 18 | 379 | 0.0− | 0.7− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.8+ | 0.4− | 2005 10 26 | 704 | 0.5− | 0.4+ | | 2006 10 24 | H45 | 0.3− | 0.4− | | | | | | | | | | | | |
| 2005 10 20 | 715 | 1.4+ | 0.0− | 2005 10 26 | 704 | 0.6− | 0.6+ | | 2006 10 24 | H45 | 0.1− | 0.4− | | | | | | | | | | | | |
| 2005 10 20 | 715 | 0.9+ | 0.1+ | 2005 10 26 | 704 | 0.2− | 0.3+ | | 2006 10 24 | H45 | 0.3− | 0.4− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.4+ | 0.2− | 2005 10 27 | 379 | 0.0+ | 0.8+ | | 2006 10 24 | H45 | 0.1− | 0.4− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.9+ | 0.3− | 2005 10 27 | 379 | 0.1− | 0.5+ | | 2006 10 24 | H45 | 0.2− | 0.1+ | | | | | | | | | | | | |
| 2005 10 20 | 715 | 0.1+ | 0.0− | 2005 10 27 | 379 | 0.6− | 0.0− | | 2006 10 27 | 151 | 0.4− | 0.2− | | | | | | | | | | | | |
| 2005 10 20 | 715 | 0.2+ | 0.1+ | 2005 10 27 | 379 | 0.6− | 0.4+ | | 2006 10 27 | 151 | 0.1− | 0.2− | | | | | | | | | | | | |
| 2005 10 20 | 715 | 0.0+ | 0.4+ | 2005 10 27 | 379 | 0.5− | 0.5+ | | 2006 10 27 | 151 | 0.2+ | 0.3− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.6+ | 0.3− | 2005 10 27 | 379 | 0.5− | 0.4+ | | 2006 10 27 | 151 | 0.0− | 0.3− | | | | | | | | | | | | |
| 2005 10 20 | 715 | 0.5+ | 0.5+ | 2005 10 27 | 379 | 0.4− | 0.3+ | | 2006 10 27 | 151 | 0.2− | 0.2− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.9+ | 0.4− | 2005 10 29 | A32 | 0.2− | 0.6− | | 2006 10 27 | 151 | 0.0+ | 0.3− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.7+ | 0.1+ | 2005 10 29 | A32 | 0.4+ | 0.4− | | 2006 10 27 | 151 | 0.0+ | 0.3− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.8+ | 0.8− | 2005 10 29 | A32 | 0.1+ | 0.4− | | 2006 10 29 | H45 | 0.0+ | 0.1− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 1.0+ | 0.4− | 2005 10 29 | A32 | 0.1+ | 0.3− | | 2006 10 29 | H45 | 0.0− | 0.2− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 1.1+ | 0.3− | 2005 10 29 | A32 | 0.4− | 0.4− | | 2006 10 29 | H45 | 0.2− | 0.4− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 1.1+ | 0.4+ | 2005 10 30 | 151 | 0.6− | 0.0+ | | 2006 10 29 | H45 | 0.2− | 0.2− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 1.1+ | 0.3− | 2005 10 30 | 151 | 0.5− | 0.1− | | 2006 10 29 | H45 | 0.1+ | 0.3− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.3+ | 0.4− | 2005 10 30 | 151 | 0.6− | 0.1− | | 2006 10 29 | H45 | 0.1+ | 0.1− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 1.3+ | 0.6− | 2005 10 30 | 151 | 0.4− | 0.1− | | 2006 11 01 | 703 | 0.3− | 0.1− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.0− | 0.1− | 2005 10 30 | 151 | 0.5− | 0.2− | | 2006 11 01 | 703 | 0.5− | 0.4− | | | | | | | | | | | | |
| 2005 10 20 | 703 | 0.5+ | 0.2− | 2005 10 30 | 151 | 0.7− | 0.2+ | | 2006 11 01 | 703 | 0.9− | 0.4− | | | | | | | | | | | | |
| 2005 10 20 | 379 | 0.8− | 0.5+ | 2005 10 30 | 143 | 0.4− | 0.1− | | 2006 11 01 | 703 | 0.0− | 0.5− | | | | | | | | | | | | |
| 2005 10 20 | 379 | 0.6− | 0.5+ | 2005 10 30 | 143 | 0.2− | 0.1− | | 2006 11 06 | 644 | 0.1− | 0.5− | | | | | | | | | | | | |

## (144901)∗ 2004 $WG_1$ = 2004 $SM_{60}$

Discovered 2004 Nov. 19 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (d, *MPO* 95613)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.05234 | | (2000.0) | | | |
| $n$ | 0.46920842 | $\omega$ | 232.22687 | | +0.06298443 | +0.98641860 |
| $a$ | 1.6401826 | $\Omega$ | 42.17251 | | −0.82983592 | +0.13620310 |
| $e$ | 0.5215562 | $i$ | 13.05874 | | −0.55444144 | −0.09179907 |
| $P$ | 2.10 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 22 | 691 | 0.2− | 0.5+ | 2006 03 19 | 704 | 0.7+ | 0.7+ | 2006 04 07 | 379 | 0.6− | 0.2+ | | | | | | | | |
| 2004 09 22 | 691 | 0.1− | 0.1− | 2006 03 19 | 704 | 0.5+ | 0.3+ | 2006 04 07 | 379 | 0.1− | 0.1+ | | | | | | | | |
| 2004 09 22 | 691 | 0.3+ | 0.1− | 2006 03 19 | 704 | 0.6+ | 0.1+ | 2006 04 07 | 379 | 0.5− | 0.1+ | | | | | | | | |
| 2004 09 24 | 291 | 0.0 | 1.0+ | 2006 03 19 | 704 | 0.5+ | 0.5+ | 2006 04 07 | 379 | 0.7− | 0.0 | | | | | | | | |
| 2004 09 24 | 291 | 0.3+ | 0.6+ | 2006 03 19 | A53 | 0.1+ | 0.4+ | 2006 04 07 | 379 | 0.1− | 0.3+ | | | | | | | | |
| 2004 09 24 | 291 | 0.2+ | 0.1− | 2006 03 19 | A53 | (1.7+ | 0.1−) | 2006 04 07 | 379 | 0.4+ | 0.0 | | | | | | | | |
| 2004 11 19 | 704 | 0.0 | 1.1− | 2006 03 19 | A53 | 0.1− | 0.4+ | 2006 04 07 | 379 | 0.7− | 0.0 | | | | | | | | |
| 2004 11 19 | 704 | 0.1− | 0.8− | 2006 03 19 | A70 | 0.2− | 0.0 | 2006 04 08 | 157 | 0.1+ | 0.0 | | | | | | | | |
| 2004 11 19 | 704 | (0.6− | 1.6−) | 2006 03 20 | A53 | 1.2+ | 0.0 | 2006 04 08 | 157 | 0.0 | 0.1+ | | | | | | | | |
| 2004 11 19 | 704 | 1.2+ | 0.9− | 2006 03 20 | A13 | 0.9+ | 0.1+ | 2006 04 08 | 157 | 0.1+ | 0.0 | | | | | | | | |
| 2004 11 20 | 854 | 0.3− | 0.3+ | 2006 03 20 | A70 | 0.6+ | 0.1− | 2006 04 08 | 157 | 0.1+ | 0.0 | | | | | | | | |
| 2004 11 20 | 854 | 0.7− | 0.7− | 2006 03 20 | A70 | 0.3+ | 0.4− | 2006 04 09 | J65 | 0.2+ | 0.1− | | | | | | | | |
| 2004 11 20 | 854 | 0.1− | 0.1+ | 2006 03 20 | A70 | 0.6+ | 0.3+ | 2006 04 09 | J65 | 1.0− | 0.8+ | | | | | | | | |
| 2004 11 20 | 854 | 1.0+ | 0.0 | 2006 03 20 | A13 | 0.8+ | 0.0 | 2006 04 09 | J65 | 0.3+ | 0.3− | | | | | | | | |
| 2004 11 20 | 854 | 0.1− | 0.6+ | 2006 03 20 | A13 | 0.7+ | 0.0 | 2006 04 09 | J65 | 0.9− | 0.1+ | | | | | | | | |
| 2004 11 20 | 854 | 0.4+ | 0.6+ | 2006 03 20 | 379 | 0.4+ | 0.1+ | 2006 04 09 | H45 | 0.4+ | 0.4+ | | | | | | | | |
| 2004 11 20 | 599 | 0.7− | 0.4+ | 2006 03 20 | 379 | 0.6+ | 0.5− | 2006 04 09 | H45 | 0.2+ | 0.2+ | | | | | | | | |
| 2004 11 20 | 599 | 1.0− | 0.1+ | 2006 03 20 | 379 | 0.7+ | 0.1− | 2006 04 09 | H45 | 0.1+ | 0.2+ | | | | | | | | |
| 2004 11 20 | 599 | 0.9− | 0.0 | 2006 03 21 | 704 | 1.0+ | 0.2+ | 2006 04 09 | H45 | 0.2+ | 0.4+ | | | | | | | | |
| 2004 11 20 | 599 | 1.0− | 0.1+ | 2006 03 21 | 704 | (1.6+ | 0.0 ) | 2006 04 09 | H45 | 0.2+ | 0.4+ | | | | | | | | |
| 2004 11 20 | 240 | 0.4+ | 0.0 | 2006 03 21 | 704 | (1.6+ | 0.2−) | 2006 04 13 | 850 | 0.3+ | 0.2+ | | | | | | | | |
| 2004 11 20 | 240 | 0.5+ | 0.3− | 2006 03 21 | 704 | (3.8+ | 1.6+) | 2006 04 13 | 850 | 0.6+ | 0.3+ | | | | | | | | |
| 2004 11 20 | 240 | 0.4+ | 0.5− | 2006 03 21 | 704 | (1.7+ | 0.2+) | 2006 04 13 | 850 | 0.4+ | 0.6+ | | | | | | | | |
| 2004 11 20 | 240 | 0.6− | 1.1− | 2006 03 21 | 704 | (1.7+ | 0.6+) | 2006 04 13 | 850 | 0.3+ | 0.1+ | | | | | | | | |
| 2004 11 20 | 240 | (0.1− | 1.5−) | 2006 03 21 | 704 | (1.8+ | 0.2+) | 2006 04 13 | 850 | 0.3+ | 0.0 | | | | | | | | |
| 2004 11 21 | 587 | 0.5− | 0.1+ | 2006 03 21 | 704 | 0.8+ | 0.2+ | 2006 04 13 | 850 | 0.4+ | 0.0 | | | | | | | | |
| 2004 11 21 | 587 | 0.7+ | 1.4+ | 2006 03 23 | 379 | 1.2+ | 0.6− | 2006 04 13 | 850 | 0.1+ | 0.0 | | | | | | | | |
| 2004 11 21 | 587 | 0.4− | 1.1+ | 2006 03 23 | 379 | 1.4+ | 0.4− | 2006 04 13 | 850 | 0.1+ | 0.2− | | | | | | | | |
| 2004 11 30 | 540 | 0.3− | 1.0+ | 2006 03 23 | 379 | 0.7+ | 0.0 | 2006 04 13 | 850 | 0.4+ | 0.2+ | | | | | | | | |
| 2004 11 30 | 540 | (0.6+ | 2.1+) | 2006 03 23 | 379 | 0.3+ | 0.4− | 2006 04 13 | 850 | 0.4+ | 1.1+ | | | | | | | | |
| 2004 12 01 | 649 | 0.1+ | 0.5− | 2006 03 24 | H45 | 0.3− | 0.0 | 2006 04 14 | 941 | 0.5− | 0.7+ | | | | | | | | |
| 2004 12 01 | 649 | 0.3+ | 0.3− | 2006 03 24 | H45 | 0.1+ | 0.1+ | 2006 04 14 | 941 | 0.3− | 0.6+ | | | | | | | | |
| 2004 12 01 | 649 | 0.4+ | 0.2− | 2006 03 24 | H45 | 0.1+ | 0.1− | 2006 04 14 | 941 | 0.4− | 0.4+ | | | | | | | | |
| 2004 12 01 | 649 | 0.4+ | 0.5− | 2006 03 24 | H45 | 0.1+ | 0.4− | 2006 04 14 | 941 | 0.1− | 0.6+ | | | | | | | | |
| 2004 12 01 | 649 | 0.2− | 0.2+ | 2006 03 24 | H45 | 0.4+ | 0.2− | 2006 09 16 | 703 | 0.5+ | 0.5+ | | | | | | | | |
| 2004 12 07 | 448 | (1.9+ | 0.7+) | 2006 03 24 | 379 | 0.7+ | 0.3− | 2006 09 16 | 703 | 0.8− | 0.0 | | | | | | | | |
| 2004 12 07 | 448 | 1.3+ | 0.5+ | 2006 03 24 | 379 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.7− | 1.1+ | | | | | | | | |
| 2004 12 07 | 448 | 0.2− | 0.3− | 2006 03 25 | 703 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.3− | 1.0+ | | | | | | | | |
| 2004 12 08 | 246 | 0.1− | 0.5− | 2006 03 25 | 703 | 0.0 | 0.2− | 2006 09 27 | 693 | 0.2− | 0.0 | | | | | | | | |
| 2004 12 08 | 246 | 0.2− | 0.0 | 2006 03 25 | 703 | 0.2− | 0.3− | 2006 09 27 | 693 | 0.2− | 0.1+ | | | | | | | | |
| 2004 12 08 | 246 | 0.1+ | 0.4− | 2006 03 25 | 703 | 0.7− | 0.4+ | 2006 09 27 | 693 | 0.4− | 0.1+ | | | | | | | | |
| 2004 12 08 | 246 | 0.2+ | 0.5+ | 2006 03 25 | H45 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.4− | | | | | | | | |
| 2004 12 08 | 246 | 0.3− | 0.4− | 2006 03 25 | H45 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.3− | | | | | | | | |
| 2004 12 08 | 246 | 0.9− | 0.4− | 2006 03 25 | H45 | 0.3− | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.4− | | | | | | | | |
| 2004 12 08 | 246 | 0.4+ | 0.1+ | 2006 03 25 | H45 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.3− | 0.3− | | | | | | | | |
| 2004 12 10 | 246 | 0.1+ | 0.3+ | 2006 03 25 | H45 | 0.1− | 0.2− | 2006 10 15 | H55 | 0.1− | 0.4+ | | | | | | | | |
| 2004 12 10 | 246 | 0.9+ | 0.2+ | 2006 03 25 | 379 | 0.0 | 0.1− | 2006 10 15 | H55 | 0.1+ | 0.2− | | | | | | | | |
| 2004 12 10 | 246 | 0.2− | 1.0+ | 2006 03 25 | 379 | 0.1− | 0.0 | 2006 10 15 | H55 | 0.1+ | 0.0 | | | | | | | | |
| 2004 12 10 | 246 | 0.4+ | 0.3+ | 2006 03 25 | 379 | 0.1+ | 0.1− | 2006 10 15 | H55 | 0.4+ | 0.0 | | | | | | | | |
| 2004 12 10 | 246 | 0.4+ | 0.6+ | 2006 03 25 | 379 | 0.0 | 0.0 | 2006 10 16 | 693 | 0.0 | 0.2− | | | | | | | | |
| 2004 12 15 | 246 | 1.0− | 0.4− | 2006 03 25 | 379 | 0.1− | 0.0 | 2006 10 16 | 693 | 0.1+ | 0.2− | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 15 | 246 | 0.9− | 0.0 | 2006 03 25 | 157 | 0.1+ | 0.4− | 2006 10 16 | 693 | 0.1− | 0.2− |
| 2004 12 15 | 246 | 0.3− | 0.5− | 2006 03 25 | 157 | 0.0 | 0.4− | 2006 10 16 | 693 | 0.0 | 0.1− |
| 2004 12 15 | 246 | 0.7+ | 1.0− | 2006 03 25 | 157 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2004 12 15 | 246 | 0.5+ | 0.1− | 2006 03 25 | 157 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.3− | 0.0 |
| 2004 12 15 | 246 | 0.9− | 0.0 | 2006 03 28 | H45 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.4− | 0.4− |
| 2004 12 15 | 246 | 0.1− | 0.6− | 2006 03 28 | H45 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2005 01 16 | 715 | 1.0− | 0.1+ | 2006 03 28 | H45 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.5− |
| 2005 01 16 | 715 | 1.4− | 0.2− | 2006 03 29 | H45 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.5− |
| 2005 12 08 | 291 | 0.9− | 0.6+ | 2006 03 29 | H45 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2005 12 08 | 291 | 0.6− | 0.5+ | 2006 03 29 | H45 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2005 12 08 | 291 | 0.8− | 0.9+ | 2006 03 29 | H45 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2005 12 31 | 711 | 0.1+ | 0.1− | 2006 03 29 | H45 | 0.1− | 0.1+ | 2006 10 21 | H45 | 0.1− | 0.3− |
| 2005 12 31 | 711 | 0.6+ | 0.2− | 2006 03 29 | A31 | 0.4− | 0.2− | 2006 10 21 | H45 | 0.2+ | 0.5− |
| 2005 12 31 | 711 | 0.6+ | 0.1− | 2006 03 29 | A31 | 0.2− | 0.2− | 2006 10 21 | H45 | 0.4+ | 0.4− |
| 2006 01 04 | 703 | 0.4− | 0.7− | 2006 03 29 | A31 | 0.0 | 0.1− | 2006 10 21 | H45 | 0.2+ | 0.5− |
| 2006 01 04 | 703 | 0.7+ | 0.1− | 2006 03 30 | H45 | 0.2− | 0.2+ | 2006 10 21 | H45 | 0.2+ | 0.0 |
| 2006 01 04 | 703 | (1.8− | 3.2+) | 2006 03 30 | H45 | 0.3− | 0.4+ | 2006 10 21 | 691 | 0.6− | 0.5+ |
| 2006 01 04 | 703 | 0.2− | 0.1− | 2006 03 30 | H45 | 0.1− | 0.1+ | 2006 10 27 | A41 | 0.7− | 0.1+ |
| 2006 01 28 | 448 | 0.1− | 0.2− | 2006 03 30 | H45 | 0.1− | 0.1+ | 2006 10 27 | A41 | 0.5− | 0.4+ |
| 2006 01 28 | 448 | 0.5− | 0.2− | 2006 03 30 | H45 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2006 01 28 | 448 | 0.5− | 0.1− | 2006 03 31 | 379 | 0.5− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2006 01 30 | 711 | 0.2− | 0.2+ | 2006 03 31 | 379 | 0.2+ | 0.5− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 01 30 | 711 | 0.6− | 0.1− | 2006 03 31 | 379 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2006 01 30 | 711 | 0.0 | 0.3− | 2006 04 02 | H89 | 0.1− | 0.3− | 2006 11 07 | A13 | 0.9− | 0.2− |
| 2006 02 01 | 703 | 0.6+ | 0.1− | 2006 04 02 | H89 | 0.1− | 0.2− | 2006 11 07 | A13 | 0.0 | 0.2− |
| 2006 02 01 | 703 | 0.7− | 0.3+ | 2006 04 03 | H45 | 0.3+ | 0.1− | 2006 11 07 | A13 | 1.2− | 0.6+ |
| 2006 02 01 | 703 | 0.1− | 0.4− | 2006 04 03 | H45 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2006 02 01 | 703 | 0.9− | 0.3− | 2006 04 03 | H45 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2006 02 09 | 699 | 0.2− | 1.2− | 2006 04 03 | H45 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2006 02 09 | 699 | 0.2− | 0.3− | 2006 04 03 | H45 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2006 02 09 | 699 | 0.4+ | 0.1+ | 2006 04 03 | 379 | 0.0 | 0.3− | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2006 02 09 | 699 | 0.7− | 0.3− | 2006 04 03 | 379 | 0.4− | 0.2− | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2006 02 22 | 704 | 0.5+ | 0.3+ | 2006 04 04 | J65 | 0.6− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2006 02 22 | 704 | 0.3+ | 0.4+ | 2006 04 04 | J65 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2006 02 22 | 704 | 0.6+ | 0.6+ | 2006 04 04 | J65 | 0.2+ | 0.1− | 2006 11 09 | H45 | 0.2+ | 0.0 |
| 2006 02 22 | 704 | 0.4+ | 0.1+ | 2006 04 04 | J65 | 0.3− | 0.0 | 2006 11 09 | H45 | 0.4− | 0.1+ |
| 2006 02 24 | 703 | 0.1+ | 1.2− | 2006 04 04 | J65 | 0.0 | 0.4− | 2006 11 09 | H45 | 0.3− | 0.3− |
| 2006 02 24 | 703 | 0.3− | 0.1+ | 2006 04 04 | J65 | 0.1+ | 0.1− | 2006 11 09 | H45 | 0.3+ | 0.3− |
| 2006 02 24 | 703 | 0.7− | 0.5− | 2006 04 04 | J65 | 0.3− | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2006 02 24 | 703 | 0.3− | 0.3− | 2006 04 04 | J65 | 0.5+ | 0.0 | 2006 11 09 | H45 | 0.2− | 0.1− |
| 2006 02 24 | 703 | 0.4− | 0.2− | 2006 04 04 | J65 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.4+ | 0.4+ |
| 2006 02 24 | 703 | 0.5− | 0.3− | 2006 04 04 | J65 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2006 02 24 | 703 | 0.4− | 0.0 | 2006 04 04 | J65 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.9− |
| 2006 02 24 | 703 | 0.9− | 0.1− | 2006 04 04 | J65 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2006 02 25 | 699 | 0.3+ | 0.1+ | 2006 04 04 | J65 | 0.9+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2006 02 25 | 699 | 0.9+ | 0.3− | 2006 04 04 | J65 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2006 02 25 | 699 | 1.2+ | 0.1+ | 2006 04 04 | J65 | 0.6+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2006 03 09 | 703 | 0.3− | 0.8− | 2006 04 04 | J65 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2006 03 09 | 703 | 0.4− | 0.2− | 2006 04 04 | J65 | 0.3− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2006 03 09 | 703 | 0.0 | 0.4− | 2006 04 04 | J65 | 0.0 | 0.5− | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2006 03 09 | 703 | 0.7− | 0.7− | 2006 04 04 | J65 | 0.3− | 0.1+ | 2006 11 16 | 704 | (1.8− | 1.0+) |
| 2006 03 12 | 204 | 0.0 | 0.2− | 2006 04 04 | J65 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 1.2+ |
| 2006 03 12 | 204 | 0.1− | 0.2+ | 2006 04 04 | J65 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.3− | 0.8+ |
| 2006 03 13 | A13 | 0.0 | 0.2− | 2006 04 04 | J65 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.6+ |
| 2006 03 13 | 198 | 0.5− | 0.8− | 2006 04 04 | J65 | 0.2+ | 0.2− | 2006 11 16 | 704 | (1.2− | 2.0+) |
| 2006 03 13 | A13 | 0.4+ | 0.1− | 2006 04 04 | J65 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.6+ |
| 2006 03 13 | 198 | 0.5− | 0.7− | 2006 04 04 | J65 | 1.2− | 1.0− | 2006 11 17 | 704 | 0.5− | 0.6− |
| 2006 03 13 | 198 | 0.5− | 0.7− | 2006 04 04 | J65 | 0.3− | 0.5+ | 2006 11 17 | 704 | 0.5− | 0.2− |
| 2006 03 13 | A13 | 0.2+ | 0.2+ | 2006 04 04 | J65 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.0 |
| 2006 03 13 | A13 | 0.8+ | 0.1+ | 2006 04 04 | J65 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.1+ | 0.2+ |
| 2006 03 14 | 084 | 0.2+ | 0.4− | 2006 04 04 | J65 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.9+ | 0.4+ |
| 2006 03 17 | H45 | 0.2+ | 0.2− | 2006 04 04 | J65 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 1.0+ | 0.1− |
| 2006 03 17 | H45 | 0.1+ | 0.3− | 2006 04 06 | A13 | (4.4+ | 0.3+) | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 2006 03 17 | H45 | 0.4− | 0.3− | 2006 04 06 | A13 | (2.1+ | 0.0 ) | 2006 11 22 | 704 | (0.3− | 1.8+) |
| 2006 03 17 | H45 | 0.4+ | 0.4+ | 2006 04 06 | A13 | (2.2+ | 0.2+) | 2006 11 22 | 704 | 0.7+ | 0.7+ |
| 2006 03 18 | 084 | 0.4+ | 0.3− | 2006 04 07 | 379 | 0.4− | 0.0 | 2006 11 22 | 704 | 1.2− | 0.3+ |
| 2006 03 18 | 084 | 0.0 | 0.6− | 2006 04 07 | 379 | 0.1− | 0.3− | 2006 11 22 | 704 | 1.1+ | 1.2+ |
| 2006 03 19 | 704 | (2.1+ | 0.6+) | 2006 04 07 | 379 | 0.6+ | 0.3− | 2006 11 22 | 704 | 0.2− | 1.5+ |

**(144902)∗ 2004 $XO_{12}$ = 2006 $HB_{72}$**

Discovered 2004 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 100865)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.03895 | | (2000.0) | | | |
| $n$ | 0.26965482 | $\omega$ | 104.68805 | | −0.93493216 | +0.33315288 |
| $a$ | 2.3728152 | $\Omega$ | 94.88798 | | −0.35399603 | −0.85223806 |
| $e$ | 0.0599897 | $i$ | 7.03966 | | −0.02426232 | −0.40336020 |
| $P$ | 3.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 704 | 0.8+ | 0.6+ | 2004 12 10 | 691 | 0.2− | 0.1− | 2006 04 29 | 691 | 0.2+ | 0.2− |
| 2002 02 08 | 704 | 0.5+ | 0.0 | 2004 12 10 | 691 | 0.1− | 0.1− | 2006 04 29 | 691 | 0.3+ | 0.1− |
| 2002 02 08 | 704 | 0.1+ | 0.1+ | 2004 12 14 | 691 | 0.1− | 0.1− | 2006 04 29 | 691 | 0.2+ | 0.3− |
| 2002 02 08 | 704 | 0.0 | 0.5+ | 2004 12 14 | 691 | 0.1+ | 0.1− | 2006 05 03 | 691 | 0.1− | 0.0 |
| 2002 04 01 | 644 | 0.1− | 0.3− | 2004 12 14 | 691 | 0.1+ | 0.1− | 2006 05 03 | 691 | 0.1+ | 0.1− |
| 2002 04 01 | 644 | 0.1− | 0.4− | 2004 12 16 | 704 | 0.4− | 0.1− | 2006 05 03 | 691 | 0.1+ | 0.1− |
| 2002 04 01 | 644 | 0.0 | 0.2− | 2004 12 16 | 704 | 0.5− | 0.0 | 2006 05 20 | 703 | 0.4+ | 0.5− |
| 2002 04 16 | 704 | 0.3+ | 0.8+ | 2004 12 16 | 704 | 0.8− | 0.9+ | 2006 05 20 | 703 | 0.5− | 0.4+ |
| 2002 04 16 | 704 | 0.2− | 0.9+ | 2004 12 16 | 704 | 0.4− | 0.2− | 2006 05 20 | 703 | 1.3− | 1.1+ |
| 2002 04 16 | 704 | 0.0 | 0.6+ | 2004 12 16 | 704 | 0.4− | 0.8− | 2006 05 20 | 703 | 1.1− | 1.1+ |
| 2002 04 16 | 704 | 0.7+ | 0.3− | 2005 01 06 | 704 | 1.0+ | 0.4+ | 2006 05 24 | 699 | 0.0 | 1.2+ |
| 2002 04 16 | 704 | 0.7− | 0.9+ | 2005 01 06 | 704 | 0.4− | 0.1− | 2006 05 24 | 699 | 0.9− | 0.9+ |
| 2003 07 08 | 644 | 0.2− | 0.9+ | 2005 01 06 | 704 | 0.0 | 0.4− | 2006 05 24 | 699 | 0.5− | 0.0 |
| 2003 07 08 | 644 | 0.2− | 0.9+ | 2005 01 06 | 704 | 0.0 | 0.3+ | 2006 05 24 | 699 | 0.1+ | 0.9+ |
| 2003 07 08 | 644 | 0.5− | 0.7+ | 2005 01 06 | 704 | 0.0 | 0.2+ | 2006 05 28 | 704 | 0.3+ | 1.5− |
| 2004 09 16 | 291 | 0.1+ | 0.2+ | 2006 04 19 | 703 | 0.3− | 1.6− | 2006 05 28 | 704 | 0.9+ | 0.1+ |
| 2004 09 16 | 291 | 0.0 | 0.0 | 2006 04 19 | 703 | 0.6− | 0.7− | 2006 05 28 | 704 | 1.1+ | 0.3+ |
| 2004 09 16 | 291 | 0.2+ | 0.3+ | 2006 04 19 | 703 | 1.9− | 0.1+ | 2006 05 30 | 699 | 1.0− | 0.7− |
| 2004 12 08 | 704 | (2.6+ | 0.8+) | 2006 04 19 | 703 | 1.6− | 1.3+ | 2006 05 30 | 699 | 0.0 | 0.3+ |
| 2004 12 08 | 704 | 1.9+ | 1.1+ | 2006 04 25 | 691 | 0.2− | 0.2− | 2006 05 30 | 699 | 0.1+ | 0.1− |
| 2004 12 08 | 704 | (2.5+ | 0.1−) | 2006 04 25 | 691 | 0.0 | 0.1− | 2006 05 30 | 699 | 0.5+ | 0.3− |
| 2004 12 10 | 691 | 0.0 | 0.0 | 2006 04 25 | 691 | 0.7+ | 0.2+ | | | | |

**(144903)∗ 2004 $XD_{22}$ = 2003 $SY_{282}$**

Discovered 2004 Dec. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 73615)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 104.83856 | | (2000.0) | | | |
| $n$ | 0.21268830 | $\omega$ | 235.42887 | | −0.63338343 | −0.73713012 |
| $a$ | 2.7795447 | $\Omega$ | 255.66627 | | +0.76543922 | −0.55207226 |
| $e$ | 0.1609648 | $i$ | 14.06817 | | +0.11370234 | −0.38968630 |
| $P$ | 4.63 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.3− | 0.5− | 2001 04 24 | 608 | 0.2+ | 0.2− | 2004 12 13 | 704 | 0.1+ | 0.1+ |
| 1999 10 14 | 704 | 0.4− | 0.5− | 2003 09 20 | 644 | 0.3− | 0.2+ | 2004 12 13 | 704 | 0.5+ | 0.1− |
| 1999 10 14 | 704 | 0.4+ | 0.3− | 2003 09 20 | 644 | 0.6− | 0.0 | 2004 12 13 | 704 | 0.2+ | 0.5− |
| 1999 10 14 | 704 | 0.4− | 0.3+ | 2003 09 20 | 644 | 0.7+ | 0.4+ | 2005 01 13 | 704 | 0.0 | 0.9+ |
| 2000 01 06 | 704 | 0.0 | 2.0− | 2003 09 21 | 644 | 0.1+ | 0.1+ | 2005 01 13 | 704 | 0.2− | 0.3+ |
| 2000 01 06 | 704 | 0.1+ | 0.6− | 2003 09 21 | 644 | 0.3− | 0.1− | 2005 01 13 | 704 | (0.3+ | 2.3+) |
| 2000 01 06 | 704 | 0.6+ | 0.2+ | 2003 09 21 | 644 | 0.2− | 0.2+ | 2005 01 13 | 704 | 1.0− | 0.7+ |
| 2000 01 06 | 704 | 0.6+ | 0.5+ | 2004 12 08 | 704 | 0.6− | 0.6+ | 2005 01 13 | 704 | 0.5− | 1.0+ |
| 2001 02 01 | 608 | 0.0 | 1.4− | 2004 12 08 | 704 | 1.0+ | 0.4− | 2006 04 26 | E12 | 0.2+ | 0.1− |
| 2001 02 01 | 608 | 0.5− | 1.0− | 2004 12 08 | 704 | 0.1+ | 0.3+ | 2006 04 26 | E12 | 0.0 | 0.3+ |
| 2001 02 01 | 608 | 0.2+ | 1.1− | 2004 12 08 | 704 | 0.1− | 1.2+ | 2006 04 26 | E12 | 0.1− | 0.7+ |
| 2001 04 01 | 699 | 0.1+ | 0.3− | 2004 12 10 | 704 | 1.2+ | 0.5+ | 2006 04 26 | E12 | 0.2+ | 0.4+ |
| 2001 04 01 | 699 | 0.4− | 0.1+ | 2004 12 10 | 704 | 0.6− | 0.1+ | 2006 05 22 | E12 | 0.4+ | 0.5+ |
| 2001 04 01 | 699 | 0.5− | 0.8+ | 2004 12 10 | 704 | 0.9+ | 0.4+ | 2006 05 22 | E12 | 0.1+ | 0.4+ |
| 2001 04 01 | 699 | 0.2+ | 0.7− | 2004 12 10 | 704 | 0.4− | 0.4− | 2006 05 22 | E12 | 0.3+ | 1.1+ |
| 2001 04 24 | 608 | 0.6− | 0.3+ | 2004 12 10 | 704 | (3.0+ | 1.0+) | 2006 05 22 | E12 | 0.5− | 0.5+ |
| 2001 04 24 | 608 | 0.1+ | 0.1− | 2004 12 13 | 704 | 0.2+ | 0.3+ | | | | |

**(144904)∗ 2004 XD$_{26}$ = 1999 VV$_{217}$**

Discovered 2004 Dec. 9 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 73622)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 146.92569 | | (2000.0) | | | |
| $n$ | 0.21852778 | $\omega$ | 31.02303 | | +0.01175375 | −0.99618859 |
| $a$ | 2.7298049 | $\Omega$ | 58.43330 | | +0.89536795 | −0.02799625 |
| $e$ | 0.0845634 | $i$ | 5.82209 | | +0.44517196 | +0.08261055 |
| $P$ | 4.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.2+ | 0.4+ | 2004 12 09 | 691 | 0.1+ | 0.1− | 2006 04 09 | G96 | 0.3− | 0.1+ |
| 1992 03 09 | 809 | 0.2− | 0.5+ | 2004 12 10 | 704 | 0.5− | 0.0 | 2006 04 09 | G96 | 0.2− | 0.1− |
| 1999 11 05 | 704 | 1.0+ | 1.5− | 2004 12 10 | 704 | 1.1− | 1.1− | 2006 04 09 | G96 | 0.1+ | 0.3+ |
| 1999 11 05 | 704 | 0.1− | 0.3+ | 2004 12 10 | 704 | 0.5− | 1.7− | 2006 04 19 | 699 | 0.5+ | 0.7+ |
| 1999 11 05 | 704 | 1.2− | 0.7+ | 2004 12 15 | 704 | 0.2+ | 0.1+ | 2006 04 19 | 699 | 0.7− | 0.9− |
| 1999 11 12 | 704 | 0.9− | 0.5+ | 2004 12 15 | 704 | 0.2− | 0.3+ | 2006 04 19 | 699 | 0.7+ | 0.6+ |
| 1999 11 12 | 704 | 1.1+ | 0.2+ | 2004 12 15 | 704 | 0.4+ | 0.5+ | 2006 04 19 | 699 | 0.8− | 1.6+ |
| 1999 11 12 | 704 | 0.6− | 1.2+ | 2004 12 15 | 704 | 0.0 | 0.3− | 2006 05 06 | G96 | 0.1+ | 0.2− |
| 1999 11 12 | 704 | 0.7+ | 0.0 | 2004 12 15 | 704 | 0.3− | 0.1− | 2006 05 06 | G96 | 0.5− | 0.5− |
| 1999 11 12 | 704 | 0.1+ | 0.4− | 2004 12 18 | 691 | 0.3− | 0.0 | 2006 05 06 | G96 | 0.5+ | 0.3− |
| 2001 02 16 | 704 | 0.3+ | 0.9+ | 2004 12 18 | 691 | 0.4− | 0.1− | 2006 05 06 | G96 | 0.8− | 0.2− |
| 2001 02 16 | 704 | 0.0 | 0.4− | 2004 12 18 | 691 | 0.1− | 0.1+ | 2006 05 06 | G96 | 0.3+ | 0.4− |
| 2001 02 16 | 704 | 0.5+ | 0.6+ | 2005 01 07 | 704 | 0.2+ | 0.5+ | 2006 05 06 | G96 | 0.5− | 0.6− |
| 2001 02 16 | 704 | 0.2+ | 0.2+ | 2005 01 07 | 704 | 0.1+ | 1.0+ | 2006 05 06 | G96 | 0.9+ | 0.5− |
| 2001 02 16 | 704 | 0.5+ | 0.6+ | 2005 01 07 | 704 | 0.3− | 0.6+ | 2006 05 06 | G96 | 0.3− | 0.5− |
| 2003 08 23 | 644 | 0.4− | 0.9+ | 2005 01 07 | 704 | 0.1− | 0.1+ | 2006 05 26 | G96 | 0.1− | 0.2+ |
| 2003 08 23 | 644 | 0.6− | 0.6+ | 2005 01 16 | 704 | 0.1+ | 0.0 | 2006 05 26 | G96 | 0.1+ | 0.1− |
| 2003 08 23 | 644 | 0.2− | 0.4+ | 2005 01 16 | 704 | 0.5+ | 0.1+ | 2006 05 26 | G96 | 0.3+ | 0.1+ |
| 2004 12 09 | 691 | 0.7+ | 0.2− | 2005 01 16 | 704 | 0.5+ | 0.2− | 2006 05 26 | G96 | 0.1+ | 0.1− |
| 2004 12 09 | 691 | 0.0 | 0.0 | 2006 04 09 | G96 | 0.1+ | 0.2+ | | | | |

**(144905)∗ 2004 XY$_{27}$ = 1995 YV$_{4}$**

Discovered 2004 Dec. 10 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76546)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.07736 | | (2000.0) | | | |
| $n$ | 0.22523560 | $\omega$ | 90.74700 | | −0.99842053 | −0.00315070 |
| $a$ | 2.6753341 | $\Omega$ | 89.07366 | | −0.01946536 | −0.91718633 |
| $e$ | 0.0885033 | $i$ | 3.21605 | | +0.05270246 | −0.39844612 |
| $P$ | 4.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 24 | 691 | 0.1+ | 0.1− | 2004 12 10 | 704 | 0.2− | 0.0 | 2006 04 07 | 691 | 0.1+ | 0.2− |
| 1993 05 24 | 691 | 0.2+ | 0.2+ | 2004 12 10 | 704 | 0.1− | 0.5+ | 2006 04 08 | G96 | 0.1− | 0.1− |
| 1993 05 24 | 691 | 0.0 | 0.5+ | 2004 12 10 | 704 | 0.1− | 0.4− | 2006 04 08 | G96 | 0.3− | 0.3− |
| 1995 10 24 | 691 | 0.4− | 0.2− | 2004 12 11 | 599 | 0.1− | 0.7− | 2006 04 08 | G96 | 0.5− | 0.1+ |
| 1995 10 24 | 691 | 0.2− | 0.5− | 2004 12 11 | 599 | 0.0 | 0.3+ | 2006 04 08 | G96 | 0.0 | 0.2− |
| 1995 10 24 | 691 | 0.1+ | 0.2− | 2004 12 11 | 599 | 0.1− | 0.5+ | 2006 04 18 | 699 | 1.5+ | 0.3+ |
| 1995 12 16 | 691 | 0.6+ | 0.1− | 2004 12 13 | 599 | 0.2+ | 0.0 | 2006 04 18 | 699 | 0.4+ | 0.3− |
| 1995 12 16 | 691 | 0.2+ | 0.1− | 2004 12 13 | 599 | 0.2+ | 0.1+ | 2006 04 18 | 699 | 0.1+ | 0.3+ |
| 1995 12 16 | 691 | 0.1+ | 0.4− | 2004 12 13 | 599 | 0.3+ | 0.1+ | 2006 04 18 | 699 | 0.5+ | 0.2+ |
| 1995 12 28 | 691 | 0.4− | 0.6− | 2004 12 14 | 599 | 0.0 | 0.1+ | 2006 04 20 | 703 | 0.5− | 0.3+ |
| 1995 12 28 | 691 | 0.9+ | 0.7− | 2004 12 14 | 704 | 0.1+ | 0.1− | 2006 04 20 | 703 | 1.3− | 0.9− |
| 1995 12 28 | 691 | 0.0 | 0.5− | 2004 12 14 | 704 | 0.1− | 0.1+ | 2006 04 20 | 703 | 0.1− | 1.1− |
| 2000 12 29 | 691 | 0.0 | 0.5+ | 2004 12 14 | 704 | 0.0 | 1.2+ | 2006 04 20 | 703 | 1.0− | 0.7− |
| 2000 12 29 | 691 | 0.0 | 0.4+ | 2004 12 14 | 704 | 0.6+ | 0.3+ | 2006 04 24 | 704 | 0.5+ | 1.2− |
| 2000 12 29 | 691 | 0.0 | 0.1+ | 2006 03 23 | 691 | 0.0 | 0.3− | 2006 04 24 | 704 | 0.3+ | 0.7+ |
| 2001 01 19 | 704 | 0.0 | 0.1+ | 2006 03 23 | 691 | 0.0 | 0.0 | 2006 04 24 | 704 | 1.0+ | 1.2+ |
| 2001 01 19 | 704 | 1.3− | 0.1+ | 2006 03 23 | 691 | 0.0 | 0.2− | 2006 04 24 | 704 | 0.8+ | 0.5+ |
| 2001 01 19 | 704 | 0.7+ | 0.1+ | 2006 04 02 | 691 | 0.2− | 0.0 | 2006 04 27 | 704 | 1.3− | 0.4+ |
| 2001 01 19 | 704 | 1.0+ | 0.7+ | 2006 04 02 | 691 | 0.0 | 0.2− | 2006 04 27 | 704 | 0.8− | 0.7− |
| 2001 01 19 | 704 | 0.0 | 0.8− | 2006 04 02 | 691 | 0.2− | 0.1− | 2006 04 27 | 704 | 0.8+ | 1.5− |
| 2001 02 17 | 704 | 0.3+ | 1.4+ | 2006 04 06 | 703 | 1.0+ | 0.5+ | 2006 04 27 | 704 | 1.0+ | 0.6− |
| 2001 02 17 | 704 | 0.3− | 0.4+ | 2006 04 06 | 703 | (2.2− | 1.1+) | 2006 05 09 | G96 | 0.7− | 1.0− |
| 2001 02 17 | 704 | 0.2+ | 0.6+ | 2006 04 06 | 703 | 0.6+ | 1.2− | 2006 05 09 | G96 | 0.5− | 0.1− |
| 2001 02 17 | 704 | 0.4− | 0.3+ | 2006 04 06 | 703 | 1.5− | 0.5− | 2006 05 09 | G96 | 0.3− | 0.4− |
| 2001 02 17 | 704 | 0.6+ | 0.5+ | 2006 04 07 | 691 | 0.0 | 0.0 | 2006 05 09 | G96 | 0.0 | 0.3− |
| 2004 12 10 | 704 | 0.3+ | 0.6− | 2006 04 07 | 691 | 0.8− | 0.2− | | | | |

**(144906)∗ 2004 XE$_{128}$ = 2006 HP$_{78}$**

Discovered 2004 Dec. 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 100888)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 202.34600 | | (2000.0) | | | |
| $n$ | 0.23770309 | $\omega$ | 32.15346 | | +0.84500415 | −0.53475975 |
| $a$ | 2.5809495 | $\Omega$ | 0.17422 | | +0.48487186 | +0.76611012 |
| $e$ | 0.0905052 | $i$ | 1.51344 | | +0.22553774 | +0.35652111 |
| $P$ | 4.15 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.9+ | 0.8+ | 2003 08 04 | 704 | 0.4− | 0.1− | 2006 03 25 | 691 | 0.1− | 0.0 |
| 1995 08 20 | 809 | 0.4+ | 0.2+ | 2003 08 04 | 704 | 0.3− | 0.3− | 2006 03 25 | G96 | 0.3− | 0.2− |
| 1995 09 20 | 809 | 0.4− | 0.5+ | 2003 08 04 | 704 | 0.5− | 0.2− | 2006 03 25 | G96 | 0.6− | 0.0 |
| 1997 02 01 | 691 | 0.0 | 0.6+ | 2004 12 14 | 704 | 0.4+ | 1.4+ | 2006 03 25 | G96 | 0.4− | 0.2− |
| 1997 02 01 | 691 | 0.1− | 0.3− | 2004 12 14 | 704 | 0.8+ | 0.0 | 2006 03 25 | G96 | 0.3− | 0.0 |
| 1997 02 01 | 691 | 0.3− | 0.3− | 2004 12 14 | 704 | 0.5− | 0.1+ | 2006 04 18 | 691 | 0.3+ | 0.2− |
| 1999 09 03 | 691 | 0.0 | 0.9+ | 2004 12 14 | 704 | 0.8− | 0.3− | 2006 04 18 | 691 | 0.3+ | 0.0 |
| 1999 09 03 | 691 | 0.2+ | 0.7+ | 2004 12 16 | 704 | 0.4+ | 1.0+ | 2006 04 18 | 691 | 0.3+ | 0.0 |
| 1999 09 03 | 691 | 0.2− | 0.8+ | 2004 12 16 | 704 | 0.0 | 0.9+ | 2006 04 26 | G96 | 0.5− | 0.4− |
| 2002 04 14 | 704 | 0.2− | 0.1− | 2004 12 16 | 704 | 0.1− | 0.2+ | 2006 04 26 | G96 | 0.4− | 0.6− |
| 2002 04 14 | 704 | 0.3+ | 0.4+ | 2004 12 16 | 704 | 1.1+ | 0.6+ | 2006 04 26 | G96 | 0.4− | 0.3− |
| 2002 04 14 | 704 | 0.7+ | 1.1+ | 2004 12 20 | 691 | 0.1− | 0.4+ | 2006 04 26 | G96 | 0.5− | 0.1− |
| 2002 05 05 | 291 | 0.2− | 0.6+ | 2004 12 20 | 691 | 0.2− | 0.3+ | 2006 04 30 | 691 | 0.3+ | 0.2+ |
| 2002 05 05 | 291 | 0.2− | 0.3+ | 2004 12 20 | 691 | 0.1− | 0.4+ | 2006 04 30 | 691 | 0.1+ | 0.3+ |
| 2002 05 05 | 291 | 0.1− | 0.4+ | 2006 02 24 | G96 | 0.2− | 0.0 | 2006 04 30 | 691 | 0.3+ | 0.0 |
| 2003 07 05 | 691 | 0.2− | 0.0 | 2006 02 24 | G96 | 0.3+ | 0.2+ | 2006 05 01 | 691 | 0.5+ | 0.3+ |
| 2003 07 05 | 691 | 0.4− | 0.1− | 2006 02 24 | G96 | 0.8− | 0.0 | 2006 05 01 | 691 | 0.3+ | 0.0 |
| 2003 07 05 | 691 | 0.2− | 0.2− | 2006 02 24 | G96 | 0.3− | 0.3+ | 2006 05 01 | 691 | 0.3+ | 0.3+ |
| 2003 08 04 | 704 | 0.3− | 0.5− | 2006 03 25 | 691 | 0.1+ | 0.1− | | | | |
| 2003 08 04 | 704 | 0.0 | 0.1− | 2006 03 25 | 691 | 0.3+ | 0.1− | | | | |

**(144907)∗ 2004 YS$_{3}$ = 2003 UZ$_{171}$**

Discovered 2004 Dec. 16 at Jarnac Observatory, Vail.

Id. A. Doppler (*MPO* 73717)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.04474 | | (2000.0) | | | |
| $n$ | 0.19233609 | $\omega$ | 44.61854 | | +0.23761000 | −0.97134948 |
| $a$ | 2.9723197 | $\Omega$ | 31.63680 | | +0.88870732 | +0.21545416 |
| $e$ | 0.1032333 | $i$ | 0.50864 | | +0.39209792 | +0.10029806 |
| $P$ | 5.12 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.2− | 0.1− | 2004 12 16 | G92 | 0.4+ | 0.3− | 2005 01 18 | 691 | 0.2+ | 0.2+ |
| 2000 01 05 | 691 | 0.1+ | 0.3− | 2004 12 18 | G96 | 0.2− | 0.3− | 2005 01 18 | 691 | 0.2+ | 0.3+ |
| 2000 01 05 | 691 | 0.1+ | 0.1+ | 2004 12 18 | G96 | 0.0 | 0.3− | 2005 01 18 | 691 | 0.0 | 0.3+ |
| 2001 04 26 | 691 | 0.1+ | 0.5+ | 2004 12 18 | G96 | 0.0 | 0.1− | 2005 02 02 | 704 | 0.4− | 1.5− |
| 2001 04 26 | 691 | 0.1+ | 0.7+ | 2004 12 18 | G96 | 0.2− | 0.1+ | 2005 02 02 | 704 | 0.0 | 0.2− |
| 2001 04 26 | 691 | 0.1+ | 0.5+ | 2004 12 19 | G96 | 0.1− | 0.4− | 2005 02 02 | 704 | 0.5− | 0.4+ |
| 2003 09 16 | 291 | 0.2− | 0.2+ | 2004 12 19 | G96 | 0.1− | 0.3− | 2006 03 25 | 691 | 0.4+ | 0.3+ |
| 2003 09 16 | 291 | 0.2+ | 0.3+ | 2004 12 19 | G96 | 0.3+ | 0.3− | 2006 03 25 | 691 | 0.3+ | 0.5+ |
| 2003 09 16 | 291 | 0.0 | 0.2+ | 2004 12 19 | G96 | 0.2− | 0.1− | 2006 03 25 | 691 | 0.5+ | 0.5+ |
| 2003 09 27 | 691 | 0.2− | 0.2+ | 2005 01 15 | 704 | 0.2− | 1.0+ | 2006 04 09 | 691 | 0.1+ | 0.3+ |
| 2003 09 27 | 691 | 0.1− | 0.4+ | 2005 01 15 | 704 | 0.4− | 0.5+ | 2006 04 09 | 691 | 0.3+ | 0.6+ |
| 2003 09 27 | 691 | 0.1− | 0.2+ | 2005 01 15 | 704 | 0.4+ | 0.1− | 2006 04 09 | 691 | 0.3+ | 0.3+ |
| 2003 10 20 | 691 | 0.0 | 0.5+ | 2005 01 17 | 704 | 0.2− | 0.5+ | 2006 04 19 | G96 | 0.1+ | 0.3+ |
| 2003 10 20 | 691 | 0.1− | 0.6+ | 2005 01 17 | 704 | 0.0 | 1.0+ | 2006 04 19 | G96 | 0.2+ | 0.4+ |
| 2003 10 20 | 691 | 0.2− | 0.6+ | 2005 01 17 | 704 | 0.8+ | 0.9+ | 2006 04 19 | G96 | 1.0− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 691 | 0.2+ | 0.4+ | 2005 01 17 | 704 | 0.7+ | 0.6+ | 2006 04 19 | G96 | 0.4− | 0.2+ |
| 2003 10 24 | 691 | 1.4− | 0.9+ | 2005 01 17 | 704 | 0.7+ | 0.2+ | 2006 05 05 | G96 | 0.8− | 0.2+ |
| 2003 10 24 | 691 | 0.1− | 0.3+ | 2005 01 17 | 704 | 0.3+ | 1.1+ | 2006 05 05 | G96 | 0.2+ | 0.5+ |
| 2004 12 16 | G92 | 0.0 | 0.3+ | 2005 01 17 | 704 | 0.5− | 0.5+ | 2006 05 05 | G96 | 0.0 | 0.4+ |
| 2004 12 16 | G92 | 0.2− | 0.4+ | 2005 01 17 | 704 | 1.3− | 0.1+ | 2006 05 05 | G96 | 0.2− | 0.4+ |

**(144908)∗ 2004 YH$_{32}$**

Discovered 2004 Dec. 18 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.02059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.04230972 | $\omega$ | 348.85417 | | +0.68649611 | −0.00721386 | |
| $a$ | 8.1566021 | $\Omega$ | 47.76653 | | +0.71950653 | −0.13771157 | |
| $e$ | 0.5675610 | $i$ | 79.11784 | | +0.10504020 | +0.99044610 | |
| $P$ | 23.30 | $H$ | 12.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 18 | E12 | 0.3− | 0.8+ | 2005 10 05 | 704 | 0.2− | 0.6+ | 2005 11 04 | 704 | 0.4− | 0.1+ |
| 2004 12 18 | E12 | 0.1− | 0.3+ | 2005 10 05 | 704 | 0.2− | 0.1+ | 2005 11 05 | A70 | 0.0 | 0.5− |
| 2004 12 18 | E12 | 0.1+ | 0.6+ | 2005 10 05 | 704 | 0.3− | 0.5+ | 2005 11 05 | A70 | 0.1+ | 1.0− |
| 2004 12 18 | E12 | 0.7+ | 0.4− | 2005 10 06 | 699 | 0.1− | 0.1− | 2005 11 05 | A70 | 0.1+ | 0.6− |
| 2004 12 18 | E12 | 0.5+ | 0.4− | 2005 10 06 | 699 | 1.0− | 1.1+ | 2005 11 05 | A70 | 0.4− | 0.8− |
| 2004 12 18 | E12 | 0.9− | 0.5+ | 2005 10 06 | 699 | 0.4− | 0.2+ | 2005 11 07 | 071 | 1.3− | 0.7+ |
| 2004 12 18 | E12 | 0.4− | 0.2+ | 2005 10 07 | 703 | 0.2+ | 0.8− | 2005 11 07 | 071 | (1.9− | 0.6+) |
| 2004 12 18 | E12 | 0.0 | 0.5+ | 2005 10 07 | 703 | 0.4− | 0.5− | 2005 11 07 | 071 | 1.3− | 0.6+ |
| 2004 12 19 | 474 | 0.1+ | 0.2+ | 2005 10 07 | 703 | 0.2− | 0.6− | 2005 11 08 | 704 | 0.0 | 0.1+ |
| 2004 12 19 | 474 | 0.1− | 0.3+ | 2005 10 07 | 703 | 0.0 | 0.1− | 2005 11 08 | 704 | 0.2+ | 1.0− |
| 2004 12 19 | 474 | 0.4− | 0.4− | 2005 10 09 | 084 | 0.3+ | 1.2− | 2005 11 08 | 704 | 0.4+ | 0.2− |
| 2004 12 20 | E12 | 0.6+ | 0.0 | 2005 10 12 | 704 | 0.6− | 0.3− | 2005 11 08 | 704 | 0.4+ | 0.5− |
| 2004 12 20 | E12 | 0.1+ | 0.5− | 2005 10 12 | 704 | 0.5− | 0.0 | 2005 11 20 | A13 | 0.3− | 0.0 |
| 2004 12 20 | E12 | 0.1+ | 0.3− | 2005 10 12 | 704 | 0.3− | 1.0− | 2005 11 20 | A13 | 0.1− | 0.1− |
| 2004 12 20 | E12 | 0.4− | 0.5− | 2005 10 12 | 704 | 0.5− | 0.4+ | 2005 11 20 | A13 | 0.1− | 0.2− |
| 2004 12 21 | E12 | 0.6+ | 0.2+ | 2005 10 12 | 704 | 0.0 | 0.3+ | 2005 11 21 | 699 | 0.1+ | 0.5− |
| 2004 12 21 | E12 | 0.7− | 0.4+ | 2005 10 14 | 084 | 0.0 | 0.7− | 2005 11 21 | 699 | 0.2− | 0.5+ |
| 2004 12 21 | E12 | 0.5+ | 0.2+ | 2005 10 23 | 703 | 0.3+ | 0.5− | 2005 11 21 | 699 | 1.1− | 0.4+ |
| 2004 12 21 | E12 | 0.1+ | 0.0 | 2005 10 23 | 703 | 0.7− | 0.6− | 2005 11 21 | 699 | 0.9− | 0.4+ |
| 2004 12 22 | E12 | 0.2+ | 0.0 | 2005 10 23 | 703 | 0.3+ | 0.6− | 2005 11 23 | A13 | (1.9+ | 1.0−) |
| 2004 12 22 | E12 | 0.1+ | 0.3− | 2005 10 23 | 703 | 0.6− | 0.1+ | 2005 11 23 | A13 | 1.3− | 0.1− |
| 2004 12 22 | E12 | 0.4+ | 0.1+ | 2005 10 24 | 691 | 1.0+ | 0.3− | 2005 11 23 | A13 | 1.1+ | 1.0+ |
| 2004 12 22 | E12 | 0.1− | 0.0 | 2005 10 24 | 691 | 0.2+ | 0.1− | 2005 11 28 | 704 | 0.9+ | 0.7+ |
| 2004 12 25 | 474 | 0.6− | 0.2− | 2005 10 24 | 691 | 0.0 | 0.1− | 2005 11 28 | 704 | 0.0 | 0.4+ |
| 2004 12 25 | 474 | 1.0− | 0.3+ | 2005 10 27 | 084 | 0.3+ | 0.6− | 2005 11 28 | 704 | 0.1+ | 0.8+ |
| 2004 12 25 | 474 | 0.1+ | 0.0 | 2005 10 29 | 704 | 1.0+ | 0.7+ | 2005 11 28 | 704 | 0.0 | 0.6+ |
| 2004 12 25 | 474 | 0.4− | 0.2+ | 2005 10 29 | 704 | 0.6+ | 0.9+ | 2005 11 28 | 704 | 0.3+ | 1.2+ |
| 2004 12 25 | 474 | 1.1− | 0.2− | 2005 10 29 | 704 | 0.9+ | 0.1− | 2005 11 28 | 703 | 0.2+ | 0.6− |
| 2005 01 11 | E17 | (0.8− | 2.5−) | 2005 10 29 | 704 | 0.8+ | 0.5+ | 2005 11 28 | 703 | 0.2− | 0.1− |
| 2005 01 11 | E17 | 0.0 | 0.3− | 2005 10 29 | 703 | 0.0 | 0.4+ | 2005 11 28 | 703 | 0.5− | 0.1− |
| 2005 01 11 | E17 | 1.5+ | 0.6− | 2005 10 29 | 703 | 0.4− | 0.3+ | 2005 11 28 | 703 | (2.9− | 3.2+) |
| 2005 01 31 | 413 | 0.1− | 0.1− | 2005 10 29 | 703 | 0.4− | 0.4+ | 2005 12 03 | 703 | 0.2− | 0.5− |
| 2005 01 31 | 413 | 0.2+ | 0.3− | 2005 10 30 | 691 | 0.0 | 0.0 | 2005 12 03 | 703 | 0.2+ | 0.1+ |
| 2005 02 01 | 413 | 0.0 | 0.4− | 2005 10 30 | 691 | 0.2− | 0.0 | 2005 12 03 | 703 | 0.2− | 0.3− |
| 2005 02 01 | 413 | 0.2+ | 0.2− | 2005 10 30 | 691 | 0.0 | 0.0 | 2005 12 03 | 703 | 0.3− | 0.5− |
| 2005 03 31 | 413 | 0.2+ | 0.3− | 2005 10 30 | 469 | 0.3+ | 0.2− | 2005 12 09 | 703 | 0.4+ | 0.4+ |
| 2005 03 31 | 413 | 0.2+ | 0.2− | 2005 10 30 | 469 | 0.1− | 0.5− | 2005 12 09 | 703 | 0.2− | 0.1− |
| 2005 08 13 | 147 | 1.1+ | 0.8+ | 2005 10 30 | 469 | 0.6+ | 0.2− | 2005 12 09 | 703 | 0.8− | 0.7+ |
| 2005 08 13 | 147 | 0.4+ | 0.5+ | 2005 10 30 | 469 | 0.6+ | 0.4− | 2005 12 09 | 703 | 0.0 | 0.6+ |
| 2005 09 12 | 704 | 0.3− | 0.5+ | 2005 10 31 | 084 | 0.3+ | 0.3− | 2005 12 17 | 699 | 0.2+ | 0.3− |
| 2005 09 12 | 704 | 0.2+ | 0.5+ | 2005 11 01 | 704 | 0.3− | 0.1− | 2005 12 17 | 699 | 0.2− | 0.3− |
| 2005 09 12 | 704 | 0.3− | 1.3+ | 2005 11 01 | 704 | 0.8+ | 0.1+ | 2005 12 17 | 699 | 0.2− | 0.1− |
| 2005 09 12 | 704 | 1.0+ | 1.0+ | 2005 11 01 | 704 | 0.1+ | 0.1− | 2005 12 17 | 699 | (1.7− | 0.3−) |
| 2005 09 12 | 704 | 0.4− | 0.5+ | 2005 11 01 | 704 | 0.3− | 0.1− | 2006 01 06 | G96 | 0.1+ | 0.1+ |
| 2005 09 13 | 699 | 0.1+ | 0.7+ | 2005 11 01 | 704 | 0.2+ | 0.1+ | 2006 01 06 | G96 | 0.1− | 0.2− |
| 2005 09 13 | 699 | 0.5+ | 0.2+ | 2005 11 01 | 084 | 0.8+ | 0.6− | 2006 01 06 | G96 | 0.1+ | 0.0 |
| 2005 09 13 | 699 | 0.1+ | 0.4+ | 2005 11 01 | 084 | 0.2+ | 0.4− | 2006 01 06 | G96 | 0.1− | 0.2− |
| 2005 09 13 | 699 | 0.0 | 0.1+ | 2005 11 02 | 084 | 0.1− | 0.4− | 2006 01 06 | 704 | 0.3− | 0.3+ |
| 2005 09 28 | 644 | 0.1− | 0.1+ | 2005 11 03 | 691 | 0.1− | 0.0 | 2006 01 06 | 704 | 0.1− | 0.8+ |
| 2005 09 28 | 644 | 0.3− | 0.1+ | 2005 11 03 | 691 | 0.1+ | 0.2− | 2006 01 06 | 704 | 0.4+ | 0.1− |
| 2005 09 28 | 644 | 0.0 | 0.1+ | 2005 11 03 | 691 | 0.2+ | 0.1+ | 2006 09 27 | A74 | 0.2− | 0.5+ |
| 2005 10 01 | 704 | 0.4− | 0.4+ | 2005 11 04 | 691 | 0.1+ | 0.2− | 2006 09 27 | A74 | 0.1+ | 0.1+ |
| 2005 10 01 | 704 | 0.2− | 0.2− | 2005 11 04 | 691 | 0.1− | 0.0 | 2006 09 27 | A74 | 0.4− | 0.0 |
| 2005 10 01 | 704 | 0.0 | 0.8+ | 2005 11 04 | 691 | 0.1+ | 0.1− | 2006 10 24 | 511 | 0.4+ | 0.0 |
| 2005 10 01 | 704 | 0.3− | 0.2− | 2005 11 04 | 704 | 0.5− | 0.3+ | 2006 10 24 | 511 | 0.1+ | 0.0 |
| 2005 10 01 | 704 | 0.4− | 0.2− | 2005 11 04 | 704 | 0.6− | 0.0 | 2006 10 24 | 511 | 0.3+ | 0.3− |
| 2005 10 05 | 704 | 0.0 | 0.0 | 2005 11 04 | 704 | 0.6− | 0.4+ | | | | |
| 2005 10 05 | 704 | 0.4+ | 0.2− | 2005 11 04 | 704 | 0.4− | 0.5+ | | | | |

**(144909)∗ 2004 YO$_{33}$ = 2003 UE$_{87}$**

Discovered 2004 Dec. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76578)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.49952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18019260 | $\omega$ | 219.49427 | | −0.83371503 | −0.54384979 | |
| $a$ | 3.1044029 | $\Omega$ | 287.30625 | | +0.52858807 | −0.73591226 | |
| $e$ | 0.2536275 | $i$ | 5.74914 | | +0.15973069 | −0.40331198 | |
| $P$ | 5.47 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.2+ | 0.2+ | 2003 10 19 | 291 | 0.8− | 1.5+ | 2004 12 20 | 691 | 0.1+ | 0.0 |
| 2000 02 08 | 704 | 0.9+ | 0.5+ | 2003 10 19 | 291 | 0.0 | 0.1+ | 2005 01 17 | 704 | 0.1+ | 0.1− |
| 2000 02 08 | 704 | 1.7+ | 0.5+ | 2003 10 19 | 291 | 0.1− | 0.4+ | 2005 01 17 | 704 | 0.5+ | 0.1+ |
| 2000 02 08 | 704 | 0.4+ | 1.3+ | 2003 10 21 | 291 | 0.1− | 0.1+ | 2005 01 17 | 704 | 0.7− | 1.3+ |
| 2000 02 08 | 704 | 1.0+ | 0.6+ | 2003 10 21 | 291 | 0.1+ | 0.1− | 2006 05 18 | 644 | 0.1+ | 1.3+ |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2003 10 21 | 291 | 0.2− | 0.1− | 2006 05 18 | 644 | 0.0 | 0.6+ |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2003 10 24 | 291 | 0.0 | 0.3+ | 2006 05 18 | 644 | 1.0− | 0.4+ |
| 2000 03 08 | 704 | 0.4− | 0.5− | 2003 10 24 | 291 | 0.1− | 0.5+ | 2006 05 22 | E12 | 0.2− | 0.5+ |
| 2000 03 08 | 704 | 1.5+ | 0.2+ | 2003 10 24 | 291 | 0.1− | 0.4+ | 2006 05 22 | E12 | 0.0 | 1.2+ |
| 2000 03 08 | 704 | 1.2− | 1.6+ | 2004 12 16 | 704 | (2.2+ | 1.2+) | 2006 05 22 | E12 | 0.7+ | 0.6+ |
| 2000 03 08 | 704 | 0.1− | 0.8+ | 2004 12 16 | 704 | 1.1+ | 0.5+ | 2006 05 22 | E12 | 0.5+ | 0.7+ |
| 2000 04 04 | 699 | 1.1+ | 0.5+ | 2004 12 16 | 704 | 0.8+ | 0.1+ | 2006 06 17 | 691 | 0.2+ | 0.1+ |
| 2000 04 04 | 699 | 0.6+ | 0.4− | 2004 12 16 | 704 | 0.4− | 0.0 | 2006 06 17 | 691 | 0.1+ | 0.8+ |
| 2000 04 04 | 699 | 0.1+ | 1.5+ | 2004 12 20 | 691 | 0.3− | 0.1+ | 2006 06 17 | 691 | 0.3+ | 0.1+ |
| 2000 04 04 | 699 | 0.7− | 0.7+ | 2004 12 20 | 691 | 0.1− | 0.2+ | | | | |

**(144910)∗ 2005 AX$_{15}$ = 2006 FW$_{28}$**

Discovered 2005 Jan. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 100899)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.81210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20182344 | $\omega$ | 300.62164 | | −0.49393158 | −0.86950058 | |
| $a$ | 2.8784254 | $\Omega$ | 178.97716 | | +0.80836278 | −0.45944460 | |
| $e$ | 0.0154502 | $i$ | 1.84422 | | +0.32028301 | −0.18132677 | |
| $P$ | 4.88 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.8+ | 0.7+ | 2003 11 19 | 644 | 0.2+ | 0.6+ | 2006 01 09 | 691 | 0.7+ | 0.2+ |
| 1998 09 14 | 691 | 0.9+ | 0.5+ | 2003 11 19 | 644 | 0.1+ | 0.6+ | 2006 01 09 | 691 | 0.1+ | 0.3+ |
| 1998 09 14 | 691 | 0.5+ | 0.1− | 2003 11 19 | 644 | 0.4+ | 0.4+ | 2006 03 24 | G96 | 0.5− | 0.3+ |
| 1998 09 27 | 691 | 0.8− | 0.1+ | 2005 01 06 | 704 | 0.7− | 2.0+ | 2006 03 24 | G96 | 0.6− | 0.2+ |
| 1998 09 27 | 691 | 1.5− | 0.2+ | 2005 01 06 | 704 | 0.3− | 1.5+ | 2006 03 24 | G96 | 0.1− | 0.1+ |
| 1998 09 27 | 691 | 1.2− | 0.3+ | 2005 01 06 | 704 | 1.3+ | 0.1− | 2006 03 24 | G96 | 0.2− | 0.0 |
| 2000 01 05 | 704 | 0.2+ | 0.7− | 2005 01 06 | 704 | 0.3− | 1.2+ | 2006 03 25 | 691 | 0.0 | 0.5+ |
| 2000 01 05 | 704 | 0.4− | 0.5− | 2005 01 11 | 704 | 0.5+ | 0.0 | 2006 03 25 | 691 | 0.1+ | 0.2+ |
| 2000 01 05 | 704 | 0.2− | 0.6− | 2005 01 11 | 704 | 0.8+ | 0.5− | 2006 03 25 | 691 | 0.2+ | 0.4+ |
| 2001 03 20 | 691 | 0.0 | 0.1− | 2005 01 11 | 704 | 0.2+ | 0.1+ | 2006 04 02 | 691 | 0.0 | 0.3+ |
| 2001 03 20 | 691 | 0.4+ | 0.1+ | 2005 01 11 | 704 | 0.9+ | 0.1+ | 2006 04 02 | 691 | 0.1− | 0.6+ |
| 2001 03 20 | 691 | 0.3+ | 0.0 | 2005 01 15 | 704 | 0.5− | 0.3+ | 2006 04 02 | 691 | 0.1+ | 0.2+ |
| 2002 06 11 | 644 | 0.0 | 0.7+ | 2005 01 15 | 704 | 0.3− | 0.0 | 2006 04 07 | 691 | 0.2+ | 0.3+ |
| 2002 06 11 | 644 | 0.6+ | 0.1+ | 2005 01 15 | 704 | 0.4+ | 0.3− | 2006 04 07 | 691 | 0.0 | 0.4+ |
| 2002 06 11 | 644 | 0.3+ | 0.1+ | 2005 01 17 | 704 | 0.1− | 0.8+ | 2006 04 07 | 691 | 0.0 | 0.2+ |
| 2003 10 28 | 704 | 0.5− | 1.9+ | 2005 01 17 | 704 | 0.1− | 0.1+ | 2006 05 24 | G96 | 0.7− | 0.2+ |
| 2003 10 28 | 704 | 0.1+ | 1.1+ | 2005 01 17 | 704 | 0.5− | 0.5− | 2006 05 24 | G96 | 0.5− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 28 | 704 | 1.0− | 1.8+ | 2005 01 17 | 704 | 0.5− | 0.8− | 2006 05 24 | G96 | 0.4− | 0.1+ |
| 2003 10 28 | 704 | 0.7+ | 0.7+ | 2005 01 17 | 704 | 0.4− | 0.2+ | 2006 05 24 | G96 | 0.6− | 0.2+ |
| 2003 10 28 | 704 | 0.2− | 1.4+ | 2006 01 09 | 691 | 0.6+ | 0.3+ | | | | |

**(144911)∗ 2005 AS$_{27}$ = 1995 SO$_{28}$**

Discovered 2005 Jan. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 73778)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.04117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35904479 | $\omega$ | 286.84454 | | +0.07299841 | | +0.99462958 |
| $a$ | 1.9605156 | $\Omega$ | 346.68228 | | −0.74997692 | | +0.00625088 |
| $e$ | 0.0569344 | $i$ | 18.57325 | | −0.65742365 | | +0.10330989 |
| $P$ | 2.75 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.0 | 2005 01 16 | 704 | 0.5+ | 0.9+ | 2006 09 20 | 704 | 0.1+ | 0.2− |
| 1995 09 20 | 691 | 0.3+ | 0.1− | 2005 01 31 | 704 | (0.0 | 1.8+) | 2006 09 20 | 699 | 0.3− | 0.4+ |
| 1995 09 20 | 691 | 0.0 | 0.1+ | 2005 01 31 | 704 | (0.8+ | 1.8+) | 2006 09 20 | 704 | 0.2− | 0.6+ |
| 1995 09 26 | 691 | 0.1+ | 1.0− | 2005 01 31 | 704 | 0.1+ | 1.1+ | 2006 09 20 | 699 | 0.1− | 0.1+ |
| 1995 09 26 | 691 | 0.3+ | 0.3− | 2005 01 31 | 704 | 0.9+ | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.6+ |
| 1995 09 26 | 691 | 0.1+ | 0.7− | 2005 01 31 | 704 | 0.4+ | 1.4+ | 2006 09 20 | 699 | 0.2+ | 0.1+ |
| 1998 10 16 | 699 | 1.2+ | 0.8− | 2005 02 28 | 703 | 0.4− | 0.1+ | 2006 09 27 | 704 | (1.2− | 1.5+) |
| 1998 10 16 | 699 | 0.6+ | 0.2− | 2005 02 28 | 703 | 0.4− | 0.8− | 2006 09 27 | 704 | 0.3− | 0.9+ |
| 1998 10 16 | 699 | 0.5+ | 0.2+ | 2005 02 28 | 703 | 1.0− | 0.2− | 2006 09 27 | 704 | 0.4− | 0.1− |
| 1998 10 18 | 704 | (2.3+ | 0.7−) | 2005 02 28 | 703 | 1.4+ | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.0 |
| 1998 10 18 | 704 | 0.7+ | 0.5− | 2006 08 07 | E12 | 0.5− | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.5− |
| 1998 10 18 | 704 | (2.3+ | 0.3−) | 2006 08 07 | E12 | 0.1+ | 0.6− | 2006 09 28 | G96 | 0.2− | 0.2− |
| 1998 10 18 | 704 | 1.5+ | 0.7− | 2006 08 07 | E12 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 1998 10 18 | 704 | 2.0+ | 0.4− | 2006 08 07 | E12 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.0 |
| 2004 12 16 | 704 | 0.5− | 0.8+ | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2004 12 16 | 704 | 0.6− | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.4+ |
| 2004 12 16 | 704 | 0.4− | 0.8− | 2006 08 17 | 644 | 0.6− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 2004 12 16 | 704 | 0.1− | 0.5+ | 2006 08 23 | 704 | 0.3− | 0.7+ | 2006 09 29 | 704 | 0.5− | 0.7+ |
| 2005 01 01 | 703 | 0.6− | 0.4− | 2006 08 23 | 704 | 1.0− | 0.8+ | 2006 09 29 | 704 | 0.1− | 0.7+ |
| 2005 01 01 | 703 | 0.5− | 0.0 | 2006 08 23 | 704 | 0.4− | 0.8+ | 2006 09 29 | 704 | 0.3− | 0.1+ |
| 2005 01 01 | 703 | 0.4− | 0.6+ | 2006 08 23 | 704 | 0.3− | 0.6+ | 2006 09 30 | 704 | 0.5− | 0.6+ |
| 2005 01 01 | 703 | 0.0 | 0.3+ | 2006 08 23 | 704 | 0.7− | 1.2+ | 2006 09 30 | 699 | 0.1− | 0.4+ |
| 2005 01 15 | 699 | 0.0 | 1.1+ | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 2005 01 15 | 699 | 0.3− | 0.0 | 2006 08 23 | 644 | 0.3− | 0.2+ | 2006 09 30 | 699 | 0.9+ | 0.1+ |
| 2005 01 15 | 699 | 0.5+ | 0.3+ | 2006 08 23 | 644 | 0.3− | 0.2+ | 2006 09 30 | 704 | 1.0− | 0.4+ |
| 2005 01 15 | 699 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.3+ | 0.1− | 2006 09 30 | 699 | 0.1− | 0.4− |
| 2005 01 15 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.4+ |
| 2005 01 15 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 704 | 0.6− | 0.4− | 2006 09 30 | 699 | 0.3− | 0.1− |
| 2005 01 15 | 704 | 0.7+ | 0.6+ | 2006 08 28 | 704 | 0.1+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2005 01 15 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 704 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2005 01 15 | 704 | 0.8+ | 0.6+ | 2006 08 30 | 699 | 0.3− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2005 01 16 | 118 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.9− | 0.7+ | 2006 10 16 | 703 | 0.9− | 0.3+ |
| 2005 01 16 | 118 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2005 01 16 | G90 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2005 01 16 | 118 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2005 01 16 | G90 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2005 01 16 | G90 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2005 01 16 | 012 | 0.5+ | 0.3− | 2006 08 30 | 699 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 01 16 | 012 | 0.1− | 0.4− | 2006 08 31 | 704 | 1.0+ | 0.2− | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2005 01 16 | 012 | 0.2+ | 0.4− | 2006 08 31 | 704 | 1.4+ | 0.8− | 2006 10 22 | 703 | 0.6− | 0.8− |
| 2005 01 16 | 012 | 0.1+ | 0.1− | 2006 08 31 | 704 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.3− | 1.4− |
| 2005 01 16 | 012 | 0.2+ | 0.3− | 2006 08 31 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.5− | 0.7− |
| 2005 01 16 | 012 | 0.1+ | 0.5− | 2006 08 31 | 704 | 0.5− | 0.3+ | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2005 01 16 | 673 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.2+ | 2006 11 13 | 703 | 0.5+ | 1.0− |
| 2005 01 16 | 673 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.5+ | 1.1+ | 2006 11 13 | 703 | 0.0 | 0.2− |
| 2005 01 16 | 673 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.7+ | 2006 11 13 | 703 | 0.8+ | 0.2− |
| 2005 01 16 | 673 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.4− | 1.0+ | 2006 11 19 | 703 | 0.1+ | 0.5− |
| 2005 01 16 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 703 | 0.7− | 0.4− |
| 2005 01 16 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 1.4+ | 0.2− | 2006 11 19 | 703 | 0.4− | 0.2+ |
| 2005 01 16 | 704 | 0.7− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.8+ | 2006 11 19 | 703 | 0.0 | 0.6− |
| 2005 01 16 | 704 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.0 | | | | |

**(144912)∗ 2005 AY$_{32}$ = 2000 EF$_{191}$**

Discovered 2005 Jan. 11 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 73783)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.40946 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18225899 | $\omega$ | 112.84393 | | −0.84513851 | | −0.53450412 |
| $a$ | 3.0808939 | $\Omega$ | 34.84685 | | +0.48597175 | | −0.77357511 |
| $e$ | 0.0977914 | $i$ | 0.68189 | | +0.22264850 | | −0.34042163 |
| $P$ | 5.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2003 11 21 | 704 | 0.3+ | 1.8+ | 2005 02 09 | 143 | 0.1− | 0.4+ |
| 2000 03 03 | 704 | 0.5+ | 0.5+ | 2003 11 21 | 704 | 0.5+ | 0.8+ | 2005 02 09 | 143 | 0.1− | 0.4+ |
| 2000 03 03 | 704 | 0.1− | 0.2+ | 2005 01 11 | 704 | 1.2+ | 0.1− | 2005 03 02 | 703 | 1.0− | 1.1+ |
| 2000 03 03 | 704 | 0.3− | 0.1+ | 2005 01 11 | 704 | 1.7+ | 0.7+ | 2005 03 02 | 703 | 0.5− | 0.3− |
| 2000 03 03 | 704 | 0.0 | 0.1− | 2005 01 11 | 704 | 1.4+ | 0.8+ | 2005 03 02 | 703 | 0.2− | 0.6− |
| 2000 03 03 | 691 | 0.1− | 0.0 | 2005 01 11 | 704 | 0.1− | 0.0 | 2005 03 02 | 703 | 1.6− | 0.7+ |
| 2000 03 03 | 691 | 0.0 | 0.1− | 2005 01 15 | 691 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.1− | 0.1− |
| 2000 03 03 | 691 | 0.0 | 0.1− | 2005 01 15 | 691 | 0.1+ | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.1− |
| 2000 03 11 | 699 | 1.2+ | 1.0+ | 2005 01 15 | 691 | 0.2+ | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.0 |
| 2000 03 11 | 699 | 0.3− | 1.0+ | 2005 01 19 | 691 | 0.1− | 0.3− | 2006 04 21 | 703 | 0.4+ | 0.7+ |
| 2000 03 11 | 699 | 0.3− | 0.0 | 2005 01 19 | 691 | 0.1− | 0.1− | 2006 04 21 | 703 | 0.6+ | 0.5+ |
| 2000 03 11 | 699 | 0.1+ | 0.2− | 2005 01 19 | 691 | 0.1+ | 0.0 | 2006 04 21 | 703 | 1.8− | 0.2+ |
| 2003 10 02 | 691 | 0.1− | 0.1+ | 2005 01 19 | 691 | 0.3− | 0.3− | 2006 04 21 | 703 | (2.7− | 0.7−) |
| 2003 10 02 | 691 | 0.0 | 0.2+ | 2005 01 19 | 691 | 0.0 | 0.0 | 2006 04 30 | 691 | 0.0 | 0.2+ |
| 2003 10 02 | 691 | 0.2− | 0.1+ | 2005 01 19 | 691 | 0.0 | 0.1− | 2006 04 30 | 691 | 0.2+ | 0.3+ |
| 2003 10 21 | 691 | 0.1− | 0.2+ | 2005 02 01 | 703 | 0.8+ | 0.5− | 2006 04 30 | 691 | 0.2+ | 0.1+ |
| 2003 10 21 | 691 | 0.1+ | 0.0 | 2005 02 01 | 703 | 1.2− | 0.5− | 2006 05 04 | 691 | 0.1+ | 0.3− |
| 2003 10 21 | 691 | 0.3− | 0.0 | 2005 02 01 | 703 | 0.1+ | 0.5− | 2006 05 04 | 691 | 0.1− | 0.4+ |
| 2003 11 21 | 704 | 0.8− | 1.4+ | 2005 02 01 | 703 | 0.8− | 0.0 | 2006 05 04 | 691 | 0.2+ | 0.4+ |
| 2003 11 21 | 704 | 0.1− | 1.6+ | 2005 02 09 | 143 | 0.2+ | 0.8+ | | | | |

**(144913)∗ 2005 AB$_{39}$ = 2006 HT$_{121}$**

Discovered 2005 Jan. 13 by Spacewatch at Kitt Peak.

Id. ?. Foglia (*MPO* 100903), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.92332 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19276608 | $\omega$ | 108.91284 | | −0.80306570 | | +0.56461988 |
| $a$ | 2.9678980 | $\Omega$ | 105.89292 | | −0.59352052 | | −0.72941299 |
| $e$ | 0.0847820 | $i$ | 11.42413 | | −0.05309309 | | −0.38621377 |
| $P$ | 5.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.1+ | 0.9+ | 2005 01 16 | 704 | 0.6+ | 0.0 | 2006 04 30 | 703 | 0.2− | 0.2+ |
| 2000 02 06 | 704 | 0.1+ | 0.5− | 2005 01 16 | 704 | 0.3− | 0.1− | 2006 04 30 | 703 | 0.3+ | 0.6+ |
| 2000 02 06 | 704 | 0.3− | 1.0+ | 2005 01 18 | 691 | 0.0 | 0.1+ | 2006 05 20 | 703 | 0.2+ | 0.1+ |
| 2000 02 06 | 704 | 0.3+ | 0.1+ | 2005 01 18 | 691 | 0.3+ | 0.1+ | 2006 05 20 | 703 | 0.0 | 0.6− |
| 2002 08 20 | 644 | 0.5− | 0.1+ | 2005 01 18 | 691 | 0.1− | 0.1− | 2006 05 20 | 703 | 0.3− | 0.8+ |
| 2002 09 09 | 644 | 0.0 | 0.9+ | 2005 02 03 | 704 | 0.3− | 0.2+ | 2006 05 20 | 703 | 1.1− | 0.7+ |
| 2002 09 09 | 644 | 0.0 | 0.9+ | 2005 02 03 | 704 | 0.0 | 0.1+ | 2006 05 26 | 703 | 0.3+ | 0.5− |
| 2002 09 09 | 644 | 0.2− | 0.4+ | 2005 02 03 | 704 | 0.0 | 0.8− | 2006 05 26 | 703 | 0.0 | 0.7− |
| 2002 09 17 | 644 | 0.2− | 0.3+ | 2005 02 03 | 704 | 1.4+ | 0.0 | 2006 05 26 | 703 | 0.0 | 0.4− |
| 2002 09 17 | 644 | 0.2− | 1.3+ | 2005 02 03 | 704 | 0.1+ | 0.4+ | 2006 05 26 | 703 | 0.3− | 0.5− |
| 2002 10 09 | 644 | 0.2− | 0.9+ | 2005 02 14 | 704 | 0.3− | 0.8+ | 2006 05 30 | 699 | 1.4+ | 0.3+ |
| 2002 10 09 | 644 | 0.2− | 1.8+ | 2005 02 14 | 704 | 0.4+ | 0.1− | 2006 05 30 | 699 | 0.3− | 1.5+ |
| 2005 01 13 | 691 | 0.2+ | 0.1+ | 2005 02 14 | 704 | 1.6− | 1.3+ | 2006 05 30 | 699 | 1.3+ | 0.3+ |
| 2005 01 13 | 691 | 0.2+ | 0.1+ | 2005 02 14 | 704 | 0.4− | 0.0 | 2006 05 30 | 699 | 0.0 | 0.1+ |
| 2005 01 13 | 691 | 0.0 | 0.1+ | 2006 04 30 | 703 | 0.3− | 0.4+ | | | | |
| 2005 01 16 | 704 | 0.6− | 1.0+ | 2006 04 30 | 703 | 0.2− | 0.8+ | | | | |

**(144914)∗ 2005 AK$_{40}$ = 2003 UY$_{253}$**

Discovered 2005 Jan. 15 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76596)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.49321 | | (2000.0) | | | |
| $n$ | 0.20399754 | $\omega$ | 222.26790 | | −0.00483969 | +0.99942663 |
| $a$ | 2.8579377 | $\Omega$ | 47.48418 | | −0.90487860 | +0.00988717 |
| $e$ | 0.0303765 | $i$ | 2.60580 | | −0.42564221 | −0.03238308 |
| $P$ | 4.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.0 | 1.1+ | 2003 10 28 | 704 | 1.0+ | 0.4+ | 2005 01 19 | 704 | 0.2− | 0.9− |
| 2002 07 14 | 644 | 0.3+ | 0.8+ | 2003 10 28 | 704 | 0.1− | 0.7+ | 2005 01 19 | 704 | 1.0+ | 0.8+ |
| 2002 07 14 | 644 | 0.1+ | 0.2+ | 2003 11 28 | 691 | 0.1+ | 0.6− | 2006 04 09 | 691 | 0.0 | 0.3+ |
| 2002 08 05 | 644 | 0.5− | 0.4− | 2003 11 28 | 691 | 0.1− | 0.3+ | 2006 04 09 | 691 | 0.4+ | 0.6+ |
| 2002 08 05 | 644 | 0.3− | 0.4− | 2003 11 28 | 691 | 0.3+ | 0.5− | 2006 04 09 | 691 | 0.3+ | 0.5+ |
| 2002 08 05 | 644 | 0.1+ | 0.2− | 2005 01 15 | 704 | 0.1− | 0.1+ | 2006 05 01 | 568 | 0.1− | 0.3− |
| 2003 09 28 | 691 | 0.2− | 0.3+ | 2005 01 15 | 704 | 0.4+ | 0.5− | 2006 05 01 | 568 | 0.1− | 0.2− |
| 2003 09 28 | 691 | 0.1− | 0.2+ | 2005 01 15 | 704 | 0.4+ | 0.7+ | 2006 05 01 | 568 | 0.2− | 0.2− |
| 2003 09 28 | 691 | 0.5− | 0.3+ | 2005 01 15 | 704 | 0.1− | 0.1+ | 2006 05 02 | 568 | 0.2− | 0.3+ |
| 2003 10 19 | 691 | 0.0 | 0.3+ | 2005 01 16 | 704 | 0.5+ | 1.0+ | 2006 05 03 | G96 | 0.3+ | 0.0 |
| 2003 10 19 | 691 | 0.0 | 0.2+ | 2005 01 16 | 704 | 0.3− | 1.2+ | 2006 05 03 | G96 | 0.1+ | 0.2+ |
| 2003 10 19 | 691 | 0.0 | 0.1+ | 2005 01 16 | 704 | 1.7− | 0.5+ | 2006 05 03 | G96 | 0.1− | 0.0 |
| 2003 10 24 | 291 | 0.2− | 0.4+ | 2005 01 16 | 704 | 0.2+ | 0.0 | 2006 05 23 | G96 | 0.1+ | 0.2+ |
| 2003 10 24 | 291 | 0.1− | 0.3+ | 2005 01 17 | 691 | 0.0 | 0.1− | 2006 05 23 | G96 | 0.2− | 0.4+ |
| 2003 10 24 | 291 | 0.1− | 0.1+ | 2005 01 17 | 691 | 0.1+ | 0.1− | 2006 05 23 | G96 | 0.3+ | 0.3+ |
| 2003 10 28 | 704 | 0.7− | 0.4− | 2005 01 17 | 691 | 0.0 | 0.2− | 2006 05 23 | G96 | 0.2− | 0.1+ |
| 2003 10 28 | 704 | 0.4+ | 0.4+ | 2005 01 19 | 704 | 0.1− | 0.4+ | | | | |

**(144915)∗ 2005 AQ$_{45}$ = 1999 RM$_{227}$**

Discovered 2005 Jan. 7 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 73792)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 87.20553 | | (2000.0) | | | |
| $n$ | 0.27903024 | $\omega$ | 265.51350 | | −0.69216866 | +0.67325986 |
| $a$ | 2.3193620 | $\Omega$ | 316.49724 | | −0.41508052 | −0.66609545 |
| $e$ | 0.2304865 | $i$ | 22.19496 | | −0.59043264 | −0.32099535 |
| $P$ | 3.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 703 | 1.1− | 0.3+ | 2005 01 17 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 699 | 0.3+ | 0.1− |
| 1999 09 07 | 703 | (1.3− | 2.4+) | 2005 01 17 | 704 | 0.4+ | 0.3+ | 2006 08 21 | 644 | 0.1− | 0.2− |
| 1999 09 07 | 703 | 1.4+ | 1.7− | 2005 01 19 | 704 | 0.0 | 0.1+ | 2006 08 21 | 644 | 0.4− | 0.3− |
| 1999 09 07 | 703 | (2.7− | 0.7−) | 2005 01 19 | 704 | 0.4+ | 0.4+ | 2006 08 21 | 644 | 0.4− | 0.1+ |
| 1999 09 09 | 704 | 0.4+ | 0.5+ | 2005 01 19 | 704 | 0.0 | 0.8+ | 2006 08 29 | 703 | 0.6− | 0.2+ |
| 1999 09 09 | 704 | 0.5− | 0.2− | 2005 01 19 | 704 | 0.7+ | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.4+ |
| 1999 09 09 | 704 | 0.1+ | 0.6+ | 2005 01 19 | 704 | 0.3− | 0.6+ | 2006 08 29 | 703 | 1.3− | 0.5− |
| 1999 09 09 | 704 | 0.2+ | 0.3− | 2005 01 31 | 704 | 0.0 | 0.9+ | 2006 08 29 | 703 | 0.3+ | 0.1+ |
| 2003 09 19 | 644 | 0.1+ | 0.1+ | 2005 01 31 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 699 | 0.2+ | 0.4+ |
| 2003 09 19 | 644 | 0.3+ | 0.2− | 2005 01 31 | 704 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.2− | 0.1+ |
| 2003 09 19 | 644 | 0.1+ | 0.4− | 2005 01 31 | 704 | 0.0 | 0.4− | 2006 08 30 | 699 | 1.5− | 1.3+ |
| 2004 12 22 | 703 | 0.1− | 0.3− | 2005 01 31 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.7+ | 0.3− |
| 2004 12 22 | 703 | 0.3− | 0.4− | 2005 03 04 | 704 | 1.2+ | 0.1+ | 2006 08 30 | 704 | 0.6− | 0.5+ |
| 2004 12 22 | 703 | 0.0 | 0.9− | 2005 03 04 | 704 | 1.5+ | 0.5+ | 2006 08 30 | 699 | 0.4− | 0.4− |
| 2004 12 22 | 703 | 0.5+ | 1.7− | 2005 03 04 | 704 | 0.1− | 1.2+ | 2006 08 30 | 704 | 0.1+ | 0.4+ |
| 2005 01 07 | 703 | 0.3− | 0.0 | 2006 05 25 | E12 | 1.2− | 1.6+ | 2006 08 30 | 704 | 0.3+ | 0.3+ |
| 2005 01 07 | 703 | 0.7− | 0.1+ | 2006 05 25 | E12 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.0 |
| 2005 01 07 | 703 | 0.4− | 0.2+ | 2006 05 25 | E12 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.4− | 0.4+ |
| 2005 01 07 | 703 | 0.9− | 0.3+ | 2006 05 25 | E12 | 0.7+ | 0.6+ | 2006 08 30 | 704 | 0.4+ | 0.4− |
| 2005 01 07 | 703 | (3.4+ | 3.4−) | 2006 07 18 | G96 | 0.2− | 0.3− | 2006 08 30 | 704 | 0.6+ | 0.6+ |
| 2005 01 07 | 703 | (0.4− | 2.2−) | 2006 07 18 | G96 | 0.6− | 0.2− | 2006 08 30 | 704 | 0.5− | 0.2+ |
| 2005 01 07 | 703 | (2.4+ | 1.2−) | 2006 07 18 | G96 | 0.5− | 0.3− | 2006 08 30 | 704 | 0.5+ | 0.0 |
| 2005 01 07 | 703 | 0.8− | 0.0 | 2006 07 18 | G96 | 0.1+ | 0.4− | 2006 09 16 | 691 | 0.1− | 0.1− |
| 2005 01 15 | 703 | 0.4− | 0.3− | 2006 07 25 | 644 | 0.1+ | 0.2− | 2006 09 16 | 691 | 0.1+ | 0.0 |
| 2005 01 15 | 703 | 0.4− | 0.3− | 2006 07 25 | 644 | 0.3− | 0.1− | 2006 09 16 | 691 | 0.0 | 0.1− |
| 2005 01 15 | 703 | 0.4− | 0.4− | 2006 07 25 | 644 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.1+ |
| 2005 01 15 | 703 | 0.3− | 0.2− | 2006 07 28 | A50 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 2005 01 17 | 704 | 0.4+ | 0.3+ | 2006 07 28 | A50 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2005 01 17 | 704 | 0.3+ | 0.6+ | 2006 08 19 | 699 | 0.4+ | 0.1+ | | | | |
| 2005 01 17 | 704 | 0.9+ | 0.7+ | 2006 08 19 | 699 | 0.2+ | 0.1− | | | | |

**(144916)∗ 2005 AY$_{69}$ = 2006 FD$_{33}$**

Discovered 2005 Jan. 15 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 100908)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.70115 | | (2000.0) | | | |
| $n$ | 0.19207681 | $\omega$ | 252.84164 | | −0.12323236 | +0.99235922 |
| $a$ | 2.9749940 | $\Omega$ | 10.08550 | | −0.89678555 | −0.10873642 |
| $e$ | 0.1605129 | $i$ | 1.98947 | | −0.42495819 | −0.05830578 |
| $P$ | 5.13 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.6− | 0.2− | 2005 01 15 | 691 | 0.4+ | 0.2+ | 2006 04 19 | 644 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.6− | 0.6+ | 2005 01 15 | 691 | 0.0 | 0.2+ | 2006 04 19 | 644 | 0.5+ | 0.4+ |
| 2002 09 05 | 704 | 1.1− | 0.8+ | 2005 01 15 | 691 | 0.0 | 0.3+ | 2006 04 21 | 703 | 0.0 | 0.3+ |
| 2002 09 14 | 644 | 0.6− | 1.1+ | 2005 01 19 | 691 | 0.0 | 0.0 | 2006 04 21 | 703 | 0.5− | 0.2− |
| 2002 09 14 | 644 | 0.5− | 1.3+ | 2005 01 19 | 691 | 0.3+ | 0.2− | 2006 04 21 | 703 | 0.7− | 0.5+ |
| 2002 09 14 | 644 | 0.4− | 1.3+ | 2005 01 19 | 691 | 0.1+ | 0.2− | 2006 04 21 | 703 | 0.4+ | 0.5+ |
| 2002 10 03 | 704 | 1.0− | 1.4+ | 2006 02 25 | G96 | 0.1− | 0.6+ | 2006 04 25 | 644 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.4+ | 1.7+ | 2006 02 25 | G96 | 0.4− | 0.2+ | 2006 04 25 | 644 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.1− | 1.3+ | 2006 02 25 | G96 | 0.1+ | 0.3+ | 2006 04 25 | 644 | 0.0 | 0.0 |
| 2003 10 27 | 691 | 0.3− | 0.0 | 2006 02 25 | G96 | 1.0− | 0.2+ | 2006 05 03 | G96 | 0.2− | 0.3− |
| 2003 10 27 | 691 | 0.3+ | 0.3+ | 2006 03 25 | G96 | 0.3− | 0.0 | 2006 05 03 | G96 | 0.2− | 0.2− |
| 2003 10 27 | 691 | 0.1− | 0.1− | 2006 03 25 | G96 | 0.4− | 0.1− | 2006 05 03 | G96 | 0.6− | 0.4− |
| 2003 12 14 | 691 | 0.1+ | 0.0 | 2006 03 25 | G96 | 0.2+ | 0.1+ | 2006 05 03 | G96 | 0.4− | 0.1− |
| 2003 12 14 | 691 | 0.1− | 0.3− | 2006 03 25 | G96 | 0.4− | 0.2+ | 2006 05 05 | 699 | 0.1− | 0.2+ |
| 2003 12 14 | 691 | 0.1+ | 0.1+ | 2006 03 26 | 691 | 0.2+ | 0.2+ | 2006 05 05 | 699 | 1.8+ | 0.3+ |
| 2005 01 07 | 691 | 0.3− | 0.5+ | 2006 03 26 | 691 | 0.2+ | 0.4+ | 2006 05 05 | 699 | 0.8+ | 0.4+ |
| 2005 01 07 | 691 | 0.2− | 0.3+ | 2006 03 26 | 691 | 0.1+ | 0.3+ | 2006 05 05 | 699 | 0.6+ | 0.6+ |
| 2005 01 07 | 691 | 0.2+ | 0.5+ | 2006 04 19 | 644 | 0.2+ | 0.1− | | | | |

**(144917)∗ 2005 BJ$_{6}$ = 2003 TB$_{24}$**

Discovered 2005 Jan. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 76616)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 107.52209 | | (2000.0) | | | |
| $n$ | 0.28627423 | $\omega$ | 251.46598 | | −0.87364055 | +0.48116563 |
| $a$ | 2.2800684 | $\Omega$ | 317.21537 | | −0.39654282 | −0.79022784 |
| $e$ | 0.1986887 | $i$ | 6.11290 | | −0.28196804 | −0.37949913 |
| $P$ | 3.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 21 | 704 | 0.4− | 1.1− | 2003 10 16 | 691 | 0.2+ | 0.3− | 2005 03 08 | G96 | 0.1+ | 0.2− |
| 2002 04 21 | 704 | 0.2− | 1.4− | 2003 10 16 | 691 | 0.1− | 0.2+ | 2005 03 08 | G96 | 0.2− | 0.3− |
| 2002 04 21 | 704 | 0.4+ | 0.7+ | 2003 10 16 | 691 | 0.2− | 0.0 | 2005 03 08 | G96 | 0.0 | 0.1− |
| 2002 04 21 | 704 | 0.5− | 0.5− | 2005 01 07 | 704 | 0.9− | 0.4− | 2005 03 08 | G96 | 0.1− | 0.1− |
| 2002 05 04 | 699 | 0.8+ | 1.0+ | 2005 01 07 | 704 | (0.6+ | 2.8+) | 2006 07 18 | G96 | 0.3− | 0.3− |
| 2002 05 04 | 699 | 0.2+ | 0.4− | 2005 01 07 | 704 | 0.6− | 0.8+ | 2006 07 18 | G96 | 0.2− | 0.3+ |
| 2002 05 04 | 699 | 0.5+ | 0.7+ | 2005 01 07 | 704 | 0.5− | 1.4+ | 2006 07 18 | G96 | 0.5+ | 0.0 |
| 2002 05 04 | 699 | 0.9− | 0.3+ | 2005 01 16 | 704 | 0.1+ | 0.2+ | 2006 07 18 | G96 | 0.5− | 0.0 |
| 2002 05 17 | 704 | 0.2+ | 0.1+ | 2005 01 16 | 704 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.6+ |
| 2002 05 17 | 704 | 0.5+ | 0.8+ | 2005 01 16 | 704 | 0.8+ | 0.6+ | 2006 08 18 | 644 | 0.2+ | 0.3+ |
| 2002 05 17 | 704 | 0.6+ | 1.6+ | 2005 01 16 | 704 | 0.5+ | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.1+ |
| 2002 05 17 | 704 | 0.2+ | 0.6+ | 2005 01 16 | 704 | 0.2+ | 0.0 | 2006 08 22 | 644 | 0.3− | 0.4+ |
| 2002 06 06 | 704 | 0.5− | 0.3+ | 2005 01 17 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 2002 06 06 | 704 | 0.0 | 0.3+ | 2005 01 17 | 691 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.5+ |
| 2002 06 06 | 704 | 0.2+ | 0.0 | 2005 01 17 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2002 06 06 | 704 | 0.0 | 0.1− | 2005 02 01 | 703 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.5− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 691 | 0.0 | 0.4+ | 2005 02 01 | 703 | 0.5− | 0.5− | 2006 09 27 | G96 | 0.1− | 0.1+ |
| 2003 10 01 | 691 | 0.2− | 0.0 | 2005 02 01 | 703 | 0.3+ | 0.6− | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2003 10 01 | 691 | 0.1+ | 0.1+ | 2005 02 01 | 703 | 0.0 | 0.4+ | | | | |

**(144918)∗ 2005 BV$_{26}$**

Discovered 2005 Jan. 19 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.57953 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29180417 | $\omega$ | 49.38306 | | −0.95752660 | +0.28248843 | |
| $a$ | 2.2511705 | $\Omega$ | 146.90638 | | −0.28603814 | −0.90525980 | |
| $e$ | 0.1876141 | $i$ | 6.07873 | | −0.03640050 | −0.31734047 | |
| $P$ | 3.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 704 | 1.5+ | 0.3− | 2005 02 02 | 703 | 0.5− | 0.6+ | 2005 03 10 | 699 | 0.3− | 0.3− |
| 2002 05 08 | 704 | 0.8+ | 1.5+ | 2005 02 02 | 703 | 0.7− | 0.4− | 2005 03 10 | 699 | 0.0 | 0.1+ |
| 2002 05 08 | 704 | 1.3+ | 0.6− | 2005 02 02 | 704 | 1.0− | 1.1+ | 2005 03 10 | 699 | 0.6+ | 0.2+ |
| 2002 05 08 | 704 | 0.3− | 0.4+ | 2005 02 02 | 703 | 0.9− | 0.3+ | 2005 03 10 | 699 | 0.8+ | 0.4+ |
| 2002 05 08 | 704 | 0.7+ | 0.2+ | 2005 02 02 | 704 | 1.1+ | 0.8+ | 2005 03 12 | 704 | 1.1+ | 0.4+ |
| 2002 05 13 | 704 | 0.4+ | 0.3+ | 2005 02 02 | 691 | 0.0 | 0.1− | 2005 03 12 | 704 | 0.5+ | 0.6+ |
| 2002 05 13 | 704 | 0.9− | 0.3+ | 2005 02 02 | 704 | 0.4+ | 1.9+ | 2005 03 12 | 704 | 0.1− | 0.2+ |
| 2002 05 13 | 704 | 0.6− | 0.5+ | 2005 02 04 | 699 | 1.0− | 0.4+ | 2005 03 12 | 704 | 0.8+ | 0.4+ |
| 2002 05 13 | 704 | 0.3− | 0.1− | 2005 02 04 | 699 | 0.1+ | 0.1+ | 2005 03 12 | 704 | 0.4+ | 0.9+ |
| 2002 06 01 | 644 | 0.0 | 0.2+ | 2005 02 04 | 699 | 0.0 | 0.2− | 2005 03 14 | G96 | 0.5− | 0.3− |
| 2002 06 01 | 644 | 0.0 | 0.7+ | 2005 02 04 | 699 | 0.1+ | 0.6− | 2005 03 14 | G96 | 0.4− | 0.2− |
| 2002 06 01 | 644 | 0.2− | 0.6+ | 2005 02 09 | 699 | 0.1− | 0.2+ | 2005 03 14 | G96 | 0.5− | 0.3− |
| 2002 06 10 | 704 | 0.4− | 0.5+ | 2005 02 09 | 699 | 0.3+ | 0.4+ | 2005 03 14 | G96 | 0.5− | 0.3− |
| 2002 06 10 | 704 | 0.2− | 0.1+ | 2005 02 09 | 699 | 0.9+ | 0.0 | 2005 03 16 | 704 | 0.7+ | 0.1+ |
| 2002 06 10 | 704 | 0.0 | 0.7+ | 2005 02 09 | 704 | 0.3− | 0.2− | 2005 03 16 | 704 | 0.2+ | 0.2− |
| 2002 06 10 | 644 | 0.2+ | 1.3+ | 2005 02 09 | 704 | 0.1+ | 0.1− | 2005 03 16 | 704 | 0.4− | 0.1+ |
| 2002 06 10 | 704 | 0.2+ | 0.7+ | 2005 02 09 | 699 | 0.1+ | 0.5− | 2005 03 16 | 704 | 0.1− | 0.2− |
| 2002 06 10 | 644 | 0.1− | 0.6+ | 2005 02 09 | 704 | 0.0 | 0.2− | 2005 03 16 | 704 | 0.1+ | 0.1− |
| 2002 06 10 | 704 | 0.5− | 0.4+ | 2005 02 09 | 704 | 0.1+ | 0.0 | 2005 05 02 | 703 | 1.0− | 0.6+ |
| 2002 06 10 | 644 | 0.3+ | 1.1+ | 2005 02 09 | 704 | 0.1+ | 0.2− | 2005 05 02 | 703 | 1.7− | 0.8− |
| 2003 10 23 | 645 | 0.1− | 0.3+ | 2005 02 12 | 143 | 0.0 | 0.5− | 2005 05 02 | 703 | 0.6+ | 1.0+ |
| 2003 10 23 | 645 | 0.1− | 0.4+ | 2005 02 12 | 143 | 0.1− | 0.4− | 2005 05 02 | 703 | 0.9+ | 0.7+ |
| 2005 01 15 | 291 | 0.2+ | 0.0 | 2005 02 12 | 143 | 0.1− | 0.3− | 2006 08 23 | 807 | 0.3− | 0.6+ |
| 2005 01 15 | 291 | 0.2+ | 0.1+ | 2005 02 14 | 691 | 0.0 | 0.1+ | 2006 08 23 | 807 | 0.4− | 0.4+ |
| 2005 01 15 | 291 | 0.2+ | 0.0 | 2005 02 14 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2005 01 19 | 691 | 0.0 | 0.1− | 2005 02 14 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2005 01 19 | 691 | 0.0 | 0.0 | 2005 03 03 | 704 | 1.2+ | 1.3+ | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2005 01 19 | 691 | 0.1+ | 0.1+ | 2005 03 03 | 704 | 0.2− | 0.4+ | 2006 09 01 | A79 | 0.3− | 1.4+ |
| 2005 01 20 | 699 | 0.1+ | 0.4+ | 2005 03 03 | 704 | 0.1+ | 0.7+ | 2006 09 01 | A79 | 0.0 | 1.2+ |
| 2005 01 20 | 699 | (2.5+ | 0.8+) | 2005 03 03 | 704 | 1.0+ | 0.8+ | 2006 09 01 | A79 | 0.3− | 0.4+ |
| 2005 01 20 | 699 | 0.7+ | 1.2+ | 2005 03 03 | 704 | 0.0 | 0.6+ | 2006 09 01 | A79 | 0.1+ | 0.6− |
| 2005 01 20 | 699 | (2.1+ | 0.3−) | 2005 03 08 | 704 | 0.6− | 0.0 | 2006 09 01 | A79 | (0.5+ | 2.1−) |
| 2005 02 02 | 691 | 0.2− | 0.0 | 2005 03 08 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.5− |
| 2005 02 02 | 703 | 0.3− | 0.6+ | 2005 03 08 | 704 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.0 |
| 2005 02 02 | 691 | 0.1− | 0.1− | 2005 03 08 | 704 | 0.5− | 0.6+ | 2006 09 14 | 703 | 1.3− | 1.9+ |
| 2005 02 02 | 704 | 0.7+ | 0.0 | 2005 03 08 | 704 | 0.3− | 0.1+ | 2006 09 14 | 703 | (1.2+ | 2.6−) |

**(144919)∗ 2005 BA$_{27}$ = 1995 SF$_{52}$ = 1997 GQ = 2002 CY$_{11}$**

Discovered 2005 Jan. 16 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 73826)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.04761 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35854516 | $\omega$ | 266.64352 | | +0.13593431 | +0.98752241 | |
| $a$ | 1.9623364 | $\Omega$ | 12.07635 | | −0.68877673 | +0.15188484 | |
| $e$ | 0.1094942 | $i$ | 22.33526 | | −0.71211550 | +0.04159919 | |
| $P$ | 2.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.2+ | 0.1+ | 2005 02 27 | 703 | 0.1− | 1.1− | 2006 09 27 | 704 | 0.3− | 0.1− |
| 1995 09 27 | 691 | 0.4+ | 0.0 | 2005 02 27 | 703 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.1+ |
| 1995 09 27 | 691 | 0.4+ | 0.0 | 2005 03 01 | 704 | 0.3− | 0.8− | 2006 09 29 | 704 | 0.2− | 0.3+ |
| 1995 09 30 | 691 | 0.0 | 0.1+ | 2005 03 01 | 704 | (3.3+ | 0.1−) | 2006 09 29 | 704 | 0.1− | 0.1+ |
| 1995 09 30 | 691 | 0.2− | 0.1− | 2005 03 01 | 704 | 0.9+ | 0.4− | 2006 09 29 | 704 | 0.1− | 0.7− |
| 1995 09 30 | 691 | 0.3− | 0.1− | 2005 03 01 | 704 | 0.6+ | 0.5− | 2006 09 29 | 704 | 0.0 | 0.5− |
| 1997 04 05 | 566 | 0.6− | 0.2+ | 2006 08 28 | 704 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.2+ |
| 1997 04 05 | 566 | 0.1− | 0.1− | 2006 08 28 | 704 | (0.3+ | 1.6−) | 2006 09 29 | 691 | 0.2+ | 0.3− |
| 1997 04 05 | 566 | 0.0 | 0.2+ | 2006 08 28 | 704 | 1.1+ | 0.6+ | 2006 09 29 | 691 | 0.1+ | 0.4− |
| 1997 04 07 | 566 | 0.5− | 0.2+ | 2006 08 28 | 704 | 0.0 | 0.4+ | 2006 09 29 | 691 | 0.1+ | 0.2− |
| 1997 04 07 | 566 | 0.2+ | 0.1+ | 2006 08 28 | 704 | (0.0 | 1.7+) | 2006 09 29 | 608 | 1.1− | 0.6+ |
| 1997 04 07 | 566 | 0.6+ | 0.1+ | 2006 08 28 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 608 | 0.6− | 0.6− |
| 2002 02 06 | 704 | 0.5− | 0.0 | 2006 08 28 | 704 | 0.5− | 1.2+ | 2006 09 29 | 608 | 0.9− | 0.0 |
| 2002 02 06 | 704 | 0.3− | 0.2− | 2006 08 31 | 704 | 0.6− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2002 02 06 | 704 | 0.9− | 0.0 | 2006 08 31 | 704 | 1.1− | 0.9+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2002 02 06 | 704 | 0.1− | 1.1+ | 2006 08 31 | 704 | 1.0− | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2002 02 06 | 704 | 1.0− | 0.8+ | 2006 08 31 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2002 02 08 | 704 | 0.2+ | 1.2− | 2006 08 31 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 02 08 | 704 | 0.3+ | 1.5− | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 02 08 | 704 | 0.6+ | 1.2− | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2003 10 16 | 699 | 0.8− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2003 10 16 | 699 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2003 10 16 | 699 | 1.1− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 10 15 | 185 | 0.1+ | 0.2− |
| 2003 10 16 | 699 | 1.4+ | 1.2− | 2006 09 14 | 703 | 0.1+ | 0.6+ | 2006 10 15 | 185 | 0.3+ | 0.1− |
| 2004 12 15 | 703 | 0.6+ | 0.7− | 2006 09 17 | 704 | 0.4+ | 0.7+ | 2006 10 15 | 185 | 0.3+ | 0.1− |
| 2004 12 15 | 703 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.3+ | 0.4+ | 2006 10 15 | 185 | 0.3+ | 0.3− |
| 2004 12 15 | 703 | 1.2− | 1.0+ | 2006 09 17 | 704 | 0.9+ | 0.5+ | 2006 10 17 | 683 | 0.4− | 0.5+ |
| 2004 12 15 | 703 | 1.0− | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.2− | 2006 10 17 | 683 | (3.1− | 0.6+) |
| 2005 01 16 | 704 | 0.4+ | 1.2+ | 2006 09 17 | 704 | 0.2+ | 0.1− | 2006 10 17 | 683 | 0.5− | 0.8+ |
| 2005 01 16 | 704 | (0.2+ | 2.5+) | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2005 01 16 | 704 | 0.7− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.0 | 2006 10 17 | 703 | 1.1− | 0.5+ |
| 2005 01 16 | 704 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 1.0+ | 0.1+ |
| 2005 01 19 | 704 | 0.1− | 0.7− | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.5− |
| 2005 01 19 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 683 | 0.7− | 0.5+ |
| 2005 01 19 | 704 | 0.4− | 0.6+ | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 10 19 | 683 | 0.2− | 1.3+ |
| 2005 01 31 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.7+ | 0.3− | 2006 10 19 | 704 | (1.5+ | 0.4−) |
| 2005 01 31 | 704 | 0.5− | 0.0 | 2006 09 20 | 704 | 0.5− | 0.8− | 2006 10 19 | 704 | 0.3+ | 0.6+ |
| 2005 01 31 | 704 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.3− | 2006 10 19 | 683 | 0.3− | 1.1+ |
| 2005 02 02 | 704 | 0.8+ | 0.8+ | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 19 | 704 | 0.8− | 0.3− |
| 2005 02 02 | 704 | 0.6− | 0.7− | 2006 09 20 | 704 | 0.3− | 0.6− | 2006 10 19 | 704 | 0.1− | 0.5+ |
| 2005 02 02 | 704 | 0.6+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 10 20 | 683 | 0.8+ | 0.4− |
| 2005 02 02 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 683 | 1.2+ | 0.3+ |
| 2005 02 02 | 704 | 0.8+ | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 683 | 0.4+ | 0.1− |
| 2005 02 02 | 704 | (0.3+ | 1.7+) | 2006 09 25 | 691 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2005 02 02 | 704 | 0.1− | 1.1− | 2006 09 25 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2005 02 02 | 704 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 02 02 | 704 | 0.3− | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2005 02 04 | 704 | 0.7+ | 0.4− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2005 02 04 | 704 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.7− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2005 02 04 | 704 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.8− | 2006 11 14 | 703 | 1.0− | 0.3− |
| 2005 02 04 | 704 | 1.5+ | 1.2+ | 2006 09 27 | 704 | 0.4+ | 0.0 | 2006 11 14 | 703 | 0.5+ | 0.3− |
| 2005 02 27 | 703 | 0.7− | 0.0 | 2006 09 27 | 704 | 0.7− | 0.2− | 2006 11 14 | 703 | 0.8− | 0.1− |
| 2005 02 27 | 703 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.3− | 0.2− |

**(144920)∗ 2005 BN$_{29}$**

Discovered 2005 Jan. 17 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.64281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36011510 | $\omega$ | 63.44978 | | +0.66483612 | −0.74242633 | |
| $a$ | 1.9566290 | $\Omega$ | 344.00839 | | +0.53335856 | +0.54906803 | |
| $e$ | 0.1175528 | $i$ | 17.41167 | | +0.52299290 | +0.38383258 | |
| $P$ | 2.74 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 704 | 0.4− | 0.9− | 2005 03 11 | 704 | 0.6+ | 0.7+ | 2006 09 12 | 699 | 0.3− | 0.6+ |
| 1998 10 19 | 704 | 0.3− | 1.1− | 2005 03 11 | 704 | (0.5+ | 2.2+) | 2006 09 12 | 699 | 0.0 | 0.3+ |
| 1998 10 19 | 704 | 1.2+ | 1.3+ | 2005 03 11 | 704 | 0.8+ | 1.4+ | 2006 09 12 | 704 | (1.7+ | 1.9−) |
| 1998 10 19 | 704 | 0.4+ | 0.4− | 2005 03 11 | 704 | 0.1+ | 1.3+ | 2006 09 12 | 704 | 1.2− | 1.1− |
| 2001 12 23 | 704 | 0.3− | 0.5+ | 2005 03 11 | 704 | 0.8+ | 1.3+ | 2006 09 12 | 704 | (0.6− | 1.7−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.2+ | 0.4+ | 2005 03 17 | 704 | 1.4+ | 0.8− | 2006 09 12 | 704 | 0.0 | 0.5+ | | |
| 2001 12 23 | 704 | 0.3+ | 0.4+ | 2005 03 17 | 704 | 1.0− | 0.3− | 2006 09 12 | 704 | 0.4− | 0.1− | | |
| 2001 12 23 | 704 | 0.4+ | 0.1+ | 2005 03 17 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.5− | 0.1+ | | |
| 2002 02 07 | 699 | 0.1− | 1.0+ | 2005 03 17 | 704 | (1.9+ | 0.0 ) | 2006 09 14 | 703 | 0.9− | 0.1− | | |
| 2002 02 07 | 699 | 0.5+ | 1.1+ | 2005 03 17 | 704 | 0.2− | 1.5+ | 2006 09 14 | 703 | 0.8− | 1.1+ | | |
| 2002 02 07 | 699 | 0.2− | 0.0 | 2005 03 17 | 704 | 1.1+ | 0.6− | 2006 09 14 | 703 | 0.7+ | 0.5+ | | |
| 2002 02 07 | 699 | 0.3+ | 0.4+ | 2005 03 17 | 704 | 0.1− | 0.5− | 2006 09 17 | 704 | 0.0 | 0.8+ | | |
| 2005 01 17 | 703 | 0.8− | 0.5− | 2005 03 17 | 704 | 1.2+ | 0.8− | 2006 09 17 | 704 | 0.2+ | 0.2− | | |
| 2005 01 17 | 703 | 1.1− | 0.7− | 2005 03 17 | 704 | (0.6+ | 2.3+) | 2006 09 17 | 704 | 0.2+ | 0.2+ | | |
| 2005 01 17 | 703 | (1.7− | 0.6−) | 2005 03 17 | 703 | (1.6− | 0.5−) | 2006 09 17 | 704 | 0.1− | 1.0+ | | |
| 2005 01 17 | 703 | (3.0− | 0.8−) | 2005 03 17 | 703 | 1.3− | 0.5− | 2006 09 17 | 704 | 0.2+ | 0.4+ | | |
| 2005 02 03 | 704 | (0.5+ | 2.2+) | 2005 03 17 | 703 | 0.1− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.7+ | | |
| 2005 02 03 | 704 | 0.5+ | 0.4+ | 2005 03 17 | 703 | 0.3− | 0.6− | 2006 09 20 | 644 | 0.1− | 0.3+ | | |
| 2005 02 03 | 704 | 0.3− | 0.7+ | 2005 03 30 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.5+ | | |
| 2005 02 03 | 704 | 0.1− | 0.7+ | 2005 03 30 | 644 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.3+ | | |
| 2005 02 14 | 704 | 0.9+ | 0.8+ | 2005 03 30 | 644 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.1+ | 1.0+ | | |
| 2005 02 14 | 704 | 0.3+ | 0.9+ | 2005 03 30 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.3+ | 1.3+ | | |
| 2005 02 14 | 704 | 0.0 | 0.0 | 2005 03 30 | 644 | 0.9+ | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.5+ | | |
| 2005 02 14 | 704 | 1.0+ | 0.7+ | 2005 03 30 | 644 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.6+ | 0.6+ | | |
| 2005 02 14 | 704 | 0.3+ | 0.7+ | 2005 04 06 | 699 | (0.1+ | 2.0+) | 2006 09 24 | 699 | 0.1+ | 0.0 | | |
| 2005 03 03 | 703 | 0.2− | 0.3− | 2005 04 06 | 699 | 0.0 | 0.2+ | 2006 09 24 | 699 | 0.7− | 0.2+ | | |
| 2005 03 03 | 704 | 0.4+ | 1.2+ | 2005 04 06 | 699 | 0.5+ | 1.0+ | 2006 09 24 | 699 | 1.1− | 1.0+ | | |
| 2005 03 03 | 703 | 0.2− | 0.3+ | 2005 04 06 | 699 | 1.2+ | 1.2− | 2006 09 25 | G96 | 0.3+ | 0.1+ | | |
| 2005 03 03 | 703 | 0.2− | 0.4+ | 2006 08 23 | 704 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | | |
| 2005 03 03 | 703 | 0.0 | 0.2+ | 2006 08 23 | 704 | 0.8− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1+ | | |
| 2005 03 03 | 704 | 1.0+ | 1.0+ | 2006 08 23 | 704 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | | |
| 2005 03 03 | 704 | 0.9+ | 0.1+ | 2006 08 23 | 704 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | | |
| 2005 03 04 | G96 | 0.3− | 0.0 | 2006 08 23 | 704 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.4− | 0.6+ | | |
| 2005 03 04 | G96 | 0.2− | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.3+ | 2006 09 27 | 704 | (1.7+ | 1.1+) | | |
| 2005 03 04 | G96 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.2− | 1.1+ | | |
| 2005 03 04 | G96 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.2− | 1.2+ | | |
| 2005 03 08 | 699 | 1.5+ | 0.6+ | 2006 08 28 | 704 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.6+ | | |
| 2005 03 08 | 699 | (1.9+ | 1.5+) | 2006 08 28 | 704 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.7− | 0.1− | | |
| 2005 03 08 | 699 | (0.3+ | 1.6+) | 2006 08 28 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 704 | 0.6− | 0.6+ | | |
| 2005 03 08 | 699 | 0.1+ | 1.0+ | 2006 08 28 | 704 | 0.7− | 1.1+ | 2006 10 20 | 703 | 1.6− | 1.6− | | |
| 2005 03 08 | 704 | 1.2+ | 0.6+ | 2006 08 28 | 704 | 0.6− | 0.7+ | 2006 10 20 | 703 | 0.4− | 0.7− | | |
| 2005 03 08 | 704 | 0.3+ | 0.1− | 2006 08 31 | 704 | (0.7− | 1.5+) | 2006 10 20 | 703 | 0.2− | 1.3− | | |
| 2005 03 08 | 704 | 0.6+ | 0.9+ | 2006 08 31 | 704 | 0.3− | 0.2− | 2006 10 20 | 703 | 0.6− | 0.2+ | | |
| 2005 03 08 | 704 | (1.6+ | 0.8+) | 2006 08 31 | 704 | 0.0 | 0.6+ | 2006 10 21 | 703 | 1.2− | 1.4+ | | |
| 2005 03 09 | 699 | (0.5− | 1.6+) | 2006 08 31 | 704 | 0.1− | 0.7+ | 2006 10 21 | 703 | 1.1− | 0.1+ | | |
| 2005 03 09 | 699 | 0.0 | 0.6+ | 2006 08 31 | 704 | (2.0− | 1.0+) | 2006 10 21 | 703 | 0.2+ | 0.3+ | | |
| 2005 03 09 | 699 | 1.3+ | 1.1+ | 2006 09 12 | 699 | 0.4− | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.2− | | |
| 2005 03 09 | 699 | 1.3+ | 1.5+ | 2006 09 12 | 699 | 0.7− | 0.8+ | | | | | | |

**(144921)∗ 2005 CE$_{25}$ = 1998 FP$_{134}$**

Discovered 2005 Feb. 4 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 76660)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.14527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28581646 | $\omega$ | 86.53362 | | −0.80324117 | +0.59333524 | |
| $a$ | 2.2825023 | $\Omega$ | 129.85269 | | −0.57005658 | −0.74016739 | |
| $e$ | 0.1312519 | $i$ | 3.92179 | | −0.17274003 | −0.31639457 | |
| $P$ | 3.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 1.6+ | 0.4+ | 2005 03 04 | 683 | 0.4− | 0.5+ | 2005 04 05 | 704 | 0.8+ | 1.4+ | | |
| 1998 03 20 | 704 | (2.7+ | 0.8+) | 2005 03 04 | 704 | 0.9+ | 0.2+ | 2005 04 05 | 704 | 1.1+ | 0.7+ | | |
| 1998 03 20 | 704 | 0.2+ | 1.7− | 2005 03 04 | 704 | 0.5+ | 0.8+ | 2005 04 05 | 704 | 0.9+ | 0.4+ | | |
| 1998 03 20 | 704 | 0.0 | 0.2+ | 2005 03 04 | 704 | 1.0+ | 0.5+ | 2005 04 05 | 704 | 1.0+ | 1.2+ | | |
| 1998 03 20 | 704 | 0.9+ | 0.5− | 2005 03 04 | 704 | 0.3+ | 0.2+ | 2005 04 16 | 703 | 0.9− | 0.5+ | | |
| 1998 03 21 | 691 | 0.3− | 0.2− | 2005 03 04 | 704 | 0.1+ | 0.0 | 2005 04 16 | 703 | 0.4− | 0.4+ | | |
| 1998 03 21 | 691 | 0.4− | 0.3− | 2005 03 08 | 699 | 0.4+ | 0.2+ | 2005 04 16 | 703 | 0.5− | 0.5+ | | |
| 1998 03 21 | 691 | 0.3− | 0.3− | 2005 03 08 | 699 | (1.6+ | 0.0 ) | 2005 04 16 | 703 | 0.9− | 1.0+ | | |
| 2000 12 30 | 704 | 0.8− | 0.2− | 2005 03 08 | 699 | 0.8+ | 0.2+ | 2005 05 22 | 644 | 0.2+ | 0.2+ | | |
| 2000 12 30 | 704 | 0.7+ | 0.2− | 2005 03 08 | 699 | 0.7+ | 0.3+ | 2005 05 22 | 644 | 0.0 | 0.2+ | | |
| 2000 12 30 | 704 | 0.2− | 0.8+ | 2005 03 11 | 691 | 0.2+ | 0.3+ | 2005 05 22 | 644 | 0.1− | 0.4+ | | |
| 2003 10 29 | 691 | 0.0 | 0.3+ | 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.5+ | | |
| 2003 10 29 | 691 | 0.1+ | 0.3+ | 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.3+ | | |
| 2003 10 29 | 691 | 0.0 | 0.5+ | 2005 03 18 | 704 | 0.3+ | 0.0 | 2006 08 16 | 644 | 0.1− | 0.6+ | | |
| 2003 11 18 | 644 | 0.2− | 0.2+ | 2005 03 18 | 704 | 0.4+ | 0.3+ | 2006 08 18 | 691 | 0.1− | 0.9+ | | |
| 2003 11 18 | 644 | 0.2− | 0.2− | 2005 03 18 | 704 | 0.2+ | 0.3+ | 2006 08 18 | 691 | 0.6− | 0.5+ | | |
| 2003 11 18 | 644 | 0.2− | 0.1− | 2005 03 18 | 704 | 0.0 | 0.5+ | 2006 08 18 | 691 | 0.4− | 0.5+ | | |
| 2005 02 04 | 644 | 0.8+ | 0.7+ | 2005 03 18 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.3+ | | |
| 2005 02 04 | 644 | 0.5+ | 0.3+ | 2005 03 18 | 703 | 0.6− | 0.9− | 2006 09 14 | 644 | 0.3− | 0.7+ | | |
| 2005 02 04 | 644 | 0.4+ | 0.2+ | 2005 03 18 | 703 | 0.1− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.5+ | | |
| 2005 02 05 | 644 | 0.6+ | 0.1− | 2005 03 18 | 703 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.5+ | 0.6+ | | |
| 2005 02 05 | 644 | 0.7+ | 0.5+ | 2005 03 18 | 703 | 0.2− | 0.4− | 2006 09 26 | 704 | 0.9− | 0.3− | | |
| 2005 02 05 | 644 | 0.2+ | 0.6+ | 2005 03 23 | 608 | 0.8+ | 1.0− | 2006 09 26 | 704 | 0.0 | 0.1+ | | |
| 2005 03 01 | 683 | 0.7− | 1.4+ | 2005 03 23 | 608 | 0.7+ | 0.8− | 2006 09 30 | 703 | 0.8− | 0.9− | | |
| 2005 03 01 | 683 | (0.1+ | 1.9+) | 2005 03 23 | 608 | 0.7+ | 0.7− | 2006 09 30 | 703 | 1.1+ | 0.9+ | | |
| 2005 03 01 | 683 | 1.3− | 1.4+ | 2005 03 30 | 703 | (3.9− | 1.7−) | 2006 09 30 | 703 | 0.0 | 0.7− | | |
| 2005 03 03 | 703 | 0.6− | 0.4+ | 2005 03 30 | 703 | (1.0− | 2.6−) | 2006 09 30 | 703 | 0.2− | 0.9− | | |
| 2005 03 03 | 703 | 0.6− | 0.3+ | 2005 03 30 | 703 | 0.9− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2005 03 03 | 703 | 0.8− | 0.2+ | 2005 03 30 | 703 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.5+ | | |
| 2005 03 03 | 703 | 0.6− | 0.7+ | 2005 03 31 | 699 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2005 03 04 | 683 | 0.6− | 1.3− | 2005 03 31 | 699 | 0.3+ | 0.4− | | | | | | |
| 2005 03 04 | 683 | 1.0− | 0.9− | 2005 03 31 | 699 | 0.2− | 0.9+ | | | | | | |

**(144922)∗ 2005 CK$_{38}$ = 1977 ES$_4$**

Discovered 2005 Feb. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 76669)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.30114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31643473 | $\omega$ | 213.57887 | | −0.73806903 | +0.67435826 | |
| $a$ | 2.1327828 | $\Omega$ | 8.92917 | | −0.58322253 | −0.62104788 | |
| $e$ | 0.4126021 | $i$ | 8.24162 | | −0.33927214 | −0.39942518 | |
| $P$ | 3.11 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 03 15 | 381 | 0.9− | 1.4− | 2005 03 20 | 118 | 0.2− | 0.1− | 2005 04 04 | 704 | 0.8+ | 0.9+ | | |
| 1977 03 15 | 381 | 0.5− | 1.1− | 2005 03 20 | 118 | 0.2− | 0.2− | 2005 04 04 | 704 | 1.0+ | 0.9+ | | |
| 2002 01 14 | 608 | 0.7+ | 0.2+ | 2005 03 20 | 639 | 0.5+ | 0.1− | 2005 04 04 | 355 | 0.3− | 0.1+ | | |
| 2002 01 14 | 608 | 0.0 | 0.2− | 2005 03 20 | 639 | 0.4+ | 0.0 | 2005 04 04 | 355 | 0.1+ | 0.1− | | |
| 2002 01 14 | 608 | 0.5+ | 0.2+ | 2005 03 20 | 639 | 0.5+ | 0.3+ | 2005 04 04 | 355 | 0.4− | 0.5− | | |
| 2002 08 13 | 644 | 0.5− | 0.0 | 2005 03 20 | 113 | 0.1+ | 0.4+ | 2005 04 04 | 355 | 0.2+ | 0.2+ | | |
| 2002 08 13 | 644 | 0.2− | 0.3+ | 2005 03 20 | 639 | 0.5+ | 0.2+ | 2005 04 04 | 379 | 0.2+ | 0.1+ | | |
| 2002 08 13 | 644 | 0.5− | 0.0 | 2005 03 20 | 113 | 0.4+ | 0.3+ | 2005 04 04 | 379 | 0.3− | 0.3− | | |
| 2002 08 13 | 644 | 0.4− | 0.0 | 2005 03 20 | 113 | 0.4+ | 0.5+ | 2005 04 04 | 379 | 0.2+ | 0.1− | | |
| 2002 08 13 | 644 | 0.7− | 0.1− | 2005 03 20 | 113 | 0.7+ | 0.2+ | 2005 04 04 | 379 | 0.0 | 0.3+ | | |
| 2002 08 13 | 644 | 0.1− | 0.1+ | 2005 03 20 | 113 | 0.4+ | 0.3+ | 2005 04 04 | 379 | 0.4+ | 0.3+ | | |
| 2005 01 16 | 703 | 0.2+ | 0.8− | 2005 03 21 | 726 | 0.1− | 0.4− | 2005 04 04 | 379 | 0.3− | 0.1+ | | |
| 2005 01 16 | 703 | 1.4− | 0.0 | 2005 03 21 | 726 | 0.2− | 0.1− | 2005 04 04 | 560 | 0.4+ | 0.2+ | | |
| 2005 01 16 | 703 | 0.8− | 0.3+ | 2005 03 21 | 726 | 0.3− | 0.1− | 2005 04 04 | 560 | 0.3+ | 0.1+ | | |
| 2005 01 16 | 703 | 0.4+ | 0.0 | 2005 03 21 | A30 | 0.3− | 0.0 | 2005 04 04 | 560 | 0.3+ | 0.1+ | | |
| 2005 02 03 | 704 | (0.3+ | 2.6+) | 2005 03 21 | A30 | 0.0 | 0.2− | 2005 04 05 | 834 | 0.1+ | 0.0 | | |
| 2005 02 03 | 704 | (1.1+ | 2.9+) | 2005 03 21 | A30 | 0.3+ | 0.1+ | 2005 04 05 | 834 | 0.2+ | 0.0 | | |
| 2005 02 03 | 704 | (0.6+ | 2.1+) | 2005 03 23 | 379 | 1.1+ | 0.1+ | 2005 04 05 | 834 | 0.1− | 0.3− | | |
| 2005 02 03 | 704 | (1.1+ | 3.6+) | 2005 03 23 | 379 | 0.4+ | 0.2− | 2005 04 05 | G96 | 0.2− | 0.1− | | |
| 2005 02 09 | 704 | 0.8+ | 0.2+ | 2005 03 28 | I77 | 0.1− | 0.1− | 2005 04 05 | G96 | 0.3− | 0.1− | | |
| 2005 02 09 | 704 | 0.7+ | 0.1+ | 2005 03 28 | I77 | 0.3− | 0.1+ | 2005 04 05 | G96 | 0.2− | 0.2− | | |
| 2005 02 09 | 704 | 1.0+ | 0.4+ | 2005 03 28 | I77 | 0.0 | 0.3− | 2005 04 05 | G96 | 0.2− | 0.1− | | |
| 2005 02 09 | 704 | 1.1+ | 0.0 | 2005 03 28 | I77 | 0.1− | 0.0 | 2005 04 05 | 379 | 0.2− | 0.1+ | | |
| 2005 02 18 | H36 | 0.2− | 0.1+ | 2005 03 28 | H45 | 0.2+ | 0.1+ | 2005 04 05 | 379 | 0.1+ | 0.3+ | | |
| 2005 02 18 | H36 | 0.1− | 0.2+ | 2005 03 28 | H45 | 0.2− | 0.8− | 2005 04 05 | 379 | 0.4− | 0.1− | | |
| 2005 02 21 | 084 | 0.1+ | 0.3+ | 2005 03 28 | H45 | 0.1− | 0.3+ | 2005 04 05 | 379 | 0.3+ | 0.1+ | | |
| 2005 02 28 | A53 | 1.2− | 0.2+ | 2005 03 28 | H45 | 0.4+ | 0.2− | 2005 04 06 | 084 | 0.0 | 0.2+ | | |
| 2005 02 28 | A53 | 0.2− | 0.3+ | 2005 03 28 | H45 | 0.3+ | 0.0 | 2005 04 06 | 084 | 0.1− | 0.1− | | |
| 2005 02 28 | A53 | 0.9− | 0.4+ | 2005 03 29 | 333 | (3.1+ | 0.3−) | 2005 04 07 | H97 | 0.2− | 0.1− | | |
| 2005 03 01 | H45 | 0.6− | 0.1− | 2005 03 29 | H45 | 0.4− | 0.1− | 2005 04 07 | H97 | 0.0 | 0.1− | | |
| 2005 03 01 | H45 | 0.4− | 0.3− | 2005 03 29 | H45 | 0.5+ | 0.1+ | 2005 04 07 | H97 | 0.0 | 0.2− | | |
| 2005 03 01 | H45 | 0.1− | 0.0 | 2005 03 29 | H45 | 0.2+ | 0.1+ | 2005 04 07 | H97 | 0.8+ | 0.2+ | | |
| 2005 03 01 | H45 | 0.1+ | 0.1+ | 2005 03 29 | 333 | (4.1+ | 0.1+) | 2005 04 07 | 704 | 1.1+ | 0.4+ | | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | H45 | 0.4+ | 0.4− | 2005 03 29 | H45 | 0.1+ | 0.3+ | 2005 04 07 | 704 | 0.9+ | 0.3+ | 2005 03 13 | A30 | 0.1− | 0.2− | 2005 04 01 | 127 | 0.3+ | 0.4+ | 2005 04 26 | A06 | 0.1− | 0.5+ |
| 2005 03 03 | 703 | 0.4− | 0.0 | 2005 03 29 | H45 | 0.5+ | 0.0 | 2005 04 07 | 704 | 1.0+ | 0.3+ | 2005 03 13 | A76 | 0.3− | 0.4+ | 2005 04 01 | 127 | 0.3+ | 0.3+ | 2005 04 26 | A06 | 0.1− | 0.1+ |
| 2005 03 03 | 703 | 0.3− | 0.1+ | 2005 03 29 | 333 | (5.3+ | 0.6−) | 2005 04 07 | 704 | 0.9+ | 0.2+ | 2005 03 13 | A30 | 0.1− | 0.1− | 2005 04 01 | A13 | 0.7− | 0.7− | 2005 04 27 | 379 | 0.8+ | 0.1− |
| 2005 03 03 | 703 | 0.2− | 0.3+ | 2005 03 29 | 379 | 0.5− | 0.0 | 2005 04 07 | 704 | 1.0+ | 0.3+ | 2005 03 13 | A30 | 0.0 | 0.2− | 2005 04 01 | A13 | 0.6− | 0.6− | 2005 04 27 | 379 | 0.1− | 0.3+ |
| 2005 03 03 | 703 | 0.3− | 0.2+ | 2005 03 29 | 379 | 0.5+ | 1.1+ | 2005 04 09 | 704 | 0.2+ | 0.4+ | 2005 03 13 | A70 | 0.8+ | 0.1+ | 2005 04 02 | A13 | 0.6− | 0.7− | 2005 04 27 | 300 | 1.0+ | 0.0 |
| 2005 03 05 | 084 | 0.0 | 0.2+ | 2005 03 29 | 379 | 0.2+ | 1.0+ | 2005 04 09 | 704 | 0.0 | 0.7+ | 2005 03 13 | A70 | 0.2− | 0.2+ | 2005 04 02 | A13 | 0.6− | 0.5− | 2005 04 27 | 300 | 0.6+ | 0.3− |
| 2005 03 05 | 084 | 0.3− | 0.1− | 2005 03 30 | 355 | 0.1+ | 0.2+ | 2005 04 09 | 704 | 0.1− | 0.0 | 2005 03 13 | A30 | 0.0 | 0.2− | 2005 04 02 | A13 | 0.6− | 0.6− | 2005 04 27 | 300 | 0.3+ | 0.0 |
| 2005 03 06 | 379 | 0.5+ | 0.1− | 2005 03 30 | 355 | 0.1+ | 0.5+ | 2005 04 09 | 704 | 0.0 | 0.4+ | 2005 03 13 | A30 | 0.0 | 0.1− | 2005 04 02 | 726 | 0.4+ | 0.1− | 2005 04 28 | 428 | 0.1− | 0.3− |
| 2005 03 06 | 379 | 0.2− | 0.3− | 2005 03 30 | 355 | 0.5+ | 0.3+ | 2005 04 09 | 704 | 0.2+ | 0.1+ | 2005 03 14 | H45 | 0.3+ | 0.2+ | 2005 04 02 | 726 | 0.6+ | 0.1− | 2005 04 28 | 428 | 0.4− | 0.3− |
| 2005 03 06 | 379 | 0.2− | 0.3− | 2005 03 30 | 379 | 1.1− | 0.5− | 2005 04 09 | E12 | 0.4− | 0.2− | 2005 03 14 | H45 | 0.5− | 0.0 | 2005 04 02 | 726 | 0.3+ | 0.1− | 2005 04 28 | 428 | 0.3− | 0.3− |
| 2005 03 06 | 379 | 0.6− | 0.3− | 2005 03 30 | 355 | 0.4+ | 0.1− | 2005 04 09 | E12 | 0.2− | 0.2− | 2005 03 14 | H45 | 0.0 | 0.6− | 2005 04 02 | 113 | 0.4+ | 0.3+ | 2005 04 30 | A53 | 0.6+ | 0.1− |
| 2005 03 07 | A41 | 0.4+ | 0.3− | 2005 03 30 | 355 | 0.0 | 0.2− | 2005 04 09 | E12 | 0.3− | 0.2− | 2005 03 14 | 084 | 0.0 | 0.6+ | 2005 04 02 | 113 | 0.1+ | 0.7+ | 2005 04 30 | A53 | 0.2+ | 0.0 |
| 2005 03 07 | A41 | 0.4+ | 0.1+ | 2005 03 30 | 379 | 0.3− | 0.2+ | 2005 04 09 | E12 | 0.3− | 0.0 | 2005 03 14 | 084 | 0.3+ | 0.4+ | 2005 04 02 | 113 | 0.1+ | 0.4+ | 2005 04 30 | A53 | 0.4+ | 0.1+ |
| 2005 03 07 | A41 | 0.4+ | 0.2− | 2005 03 30 | 379 | 0.1− | 0.3+ | 2005 04 09 | 379 | 0.3− | 0.2+ | 2005 03 16 | 084 | 0.2− | 0.3+ | 2005 04 02 | 113 | 0.5+ | 0.4+ | 2005 04 30 | A53 | 0.8+ | 0.0 |
| 2005 03 07 | 379 | 0.1+ | 0.1− | 2005 03 30 | 379 | 0.8− | 0.8− | 2005 04 09 | 379 | 0.2− | 0.5+ | 2005 03 16 | 084 | 0.3− | 0.0 | 2005 04 02 | 113 | 0.2+ | 0.3+ | 2005 05 01 | H45 | 0.0 | 0.1+ |
| 2005 03 07 | 379 | 0.4− | 0.1+ | 2005 03 30 | 379 | 0.3+ | 1.0− | 2005 04 09 | 379 | 0.1− | 0.2+ | 2005 03 17 | 130 | 0.0 | 0.2− | 2005 04 02 | 127 | 0.2+ | 0.2+ | 2005 05 01 | H45 | 0.0 | 0.0 |
| 2005 03 07 | 170 | 0.2− | 0.2+ | 2005 03 30 | 185 | 0.3− | 0.1+ | 2005 04 09 | 379 | 0.6+ | 0.4+ | 2005 03 17 | 130 | 0.2+ | 0.2+ | 2005 04 02 | 127 | 0.3+ | 0.4+ | 2005 05 01 | H45 | 0.2+ | 0.5− |
| 2005 03 07 | 170 | 0.3− | 0.0 | 2005 03 30 | 185 | 0.2− | 0.4+ | 2005 04 09 | 379 | 0.6+ | 0.2+ | 2005 03 17 | 130 | 0.4− | 0.1+ | 2005 04 02 | 127 | 0.3+ | 0.2+ | 2005 05 01 | H45 | 0.5+ | 0.2+ |
| 2005 03 07 | 170 | 0.0 | 0.0 | 2005 03 30 | 185 | 0.2− | 0.3+ | 2005 04 13 | 699 | 0.4+ | 0.1+ | 2005 03 17 | 130 | 0.2− | 0.4− | 2005 04 02 | 127 | 0.3+ | 0.1+ | 2005 05 01 | H45 | 0.5− | 0.2+ |
| 2005 03 08 | 434 | 0.3− | 0.6− | 2005 03 30 | 185 | 0.0 | 0.4+ | 2005 04 13 | 699 | 0.3+ | 0.1+ | 2005 03 18 | 726 | 0.7− | 0.0 | 2005 04 02 | 127 | 0.3+ | 0.4+ | 2005 05 01 | 108 | 0.7− | 0.1+ |
| 2005 03 08 | 434 | (1.5+ | 0.7+) | 2005 03 31 | 699 | 0.9+ | 0.2+ | 2005 04 13 | H45 | 0.4− | 0.0 | 2005 03 18 | 726 | 0.1− | 1.0− | 2005 04 02 | A62 | 0.1− | 0.1− | 2005 05 01 | 108 | 0.3− | 0.1− |
| 2005 03 08 | 434 | 0.6+ | 0.1− | 2005 03 31 | 699 | 0.7+ | 0.4+ | 2005 04 13 | H45 | 0.4− | 0.3− | 2005 03 18 | 726 | 0.0 | 0.3− | 2005 04 02 | 127 | 0.3+ | 0.3+ | 2005 05 01 | 108 | 1.2− | 0.3+ |
| 2005 03 08 | 434 | 0.4− | 0.2− | 2005 03 31 | 699 | 0.5+ | 0.2+ | 2005 04 13 | H45 | 0.1+ | 0.1+ | 2005 03 18 | 726 | 0.0 | 0.0 | 2005 04 02 | A62 | 0.3− | 0.0 | 2005 05 01 | 108 | 0.2− | 0.0 |
| 2005 03 09 | 203 | 0.3+ | 0.8− | 2005 03 31 | H45 | 0.5− | 0.4− | 2005 04 13 | H45 | 0.3− | 0.4− | 2005 03 18 | 726 | 0.6+ | 0.9− | 2005 04 02 | A62 | 0.1− | 0.0 | 2005 05 01 | 108 | 0.0 | 0.4− |
| 2005 03 09 | 203 | 0.1+ | 0.1− | 2005 03 31 | H45 | 0.0 | 0.1− | 2005 04 13 | H45 | 0.4− | 0.1− | 2005 03 18 | 726 | 0.0 | 1.5+ | 2005 04 02 | A62 | 0.2− | 0.2− | 2005 05 04 | E12 | 0.4− | 0.0 |
| 2005 03 09 | 203 | 0.3− | 0.2+ | 2005 03 31 | H45 | 0.6− | 0.2+ | 2005 04 13 | 699 | 0.3+ | 0.0 | 2005 03 18 | 704 | 0.3+ | 0.0 | 2005 04 02 | A62 | 0.1− | 0.0 | 2005 05 04 | E12 | 0.4− | 0.3− |
| 2005 03 09 | 203 | 0.0 | 0.2− | 2005 03 31 | H45 | 0.3− | 0.3− | 2005 04 13 | 699 | 0.3+ | 0.0 | 2005 03 18 | 704 | 0.4+ | 0.3+ | 2005 04 02 | A62 | 0.1− | 0.0 | 2005 05 04 | E12 | 0.4− | 0.3− |
| 2005 03 10 | 084 | 0.7− | 0.5− | 2005 03 31 | 699 | 0.7+ | 0.0 | 2005 04 13 | 379 | 0.6+ | 0.1+ | 2005 03 18 | 704 | 0.6+ | 0.6+ | 2005 04 02 | A62 | 0.1− | 0.3− | 2005 05 04 | E12 | 0.7− | 0.2− |
| 2005 03 10 | 084 | 0.3− | 0.6+ | 2005 03 31 | H45 | 0.1− | 0.1− | 2005 04 13 | 379 | 0.5− | 0.2− | 2005 03 18 | 704 | 0.3+ | 0.4+ | 2005 04 02 | A62 | 0.3− | 0.1− | 2005 05 05 | 170 | 0.3− | 0.6− |
| 2005 03 10 | 703 | 0.2− | 0.1− | 2005 03 31 | 379 | 0.6− | 0.1+ | 2005 04 13 | 379 | 0.1− | 0.6+ | 2005 03 18 | 703 | 0.5− | 0.3− | 2005 04 02 | A62 | 0.2− | 0.1− | 2005 05 05 | 170 | 0.2− | 0.3− |
| 2005 03 10 | 703 | 0.1− | 0.0 | 2005 03 31 | 379 | 0.5− | 0.6+ | 2005 04 13 | 434 | 0.5+ | 0.4− | 2005 03 18 | 703 | 0.3− | 0.1− | 2005 04 02 | A62 | 0.1− | 0.0 | 2005 05 05 | 170 | 0.4− | 0.5− |
| 2005 03 10 | 703 | 0.2− | 0.1− | 2005 03 31 | 379 | 0.3+ | 0.4− | 2005 04 13 | 434 | 0.2+ | 0.2− | 2005 03 18 | 703 | 0.5− | 0.0 | 2005 04 02 | A62 | 0.3− | 0.0 | 2005 05 06 | H45 | 0.2+ | 0.3− |
| 2005 03 10 | 699 | 0.0 | 0.0 | 2005 03 31 | 379 | 0.2− | 0.1− | 2005 04 13 | 434 | 1.1+ | 0.7+ | 2005 03 18 | 703 | 0.9− | 0.2− | 2005 04 02 | A62 | 0.1− | 0.1− | 2005 05 06 | H45 | 0.4− | 0.2− |
| 2005 03 10 | 703 | 0.4− | 0.1− | 2005 03 31 | 379 | 0.4+ | 0.6− | 2005 04 13 | 434 | 0.3+ | 0.1+ | 2005 03 18 | 151 | 0.4− | 0.0 | 2005 04 02 | A62 | 0.1− | 0.2− | 2005 05 06 | H45 | 0.5− | 0.0 |
| 2005 03 10 | 699 | 0.1+ | 0.1+ | 2005 03 31 | A70 | 0.5+ | 0.9+ | 2005 04 13 | A13 | 0.4− | 0.8− | 2005 03 18 | 151 | 0.4− | 0.1− | 2005 04 02 | A62 | 0.1− | 0.2+ | 2005 05 06 | H45 | 0.6− | 0.1− |
| 2005 03 10 | H45 | 0.2− | 0.3− | 2005 03 31 | A70 | 0.4+ | 0.4+ | 2005 04 13 | A13 | 0.6− | 0.7− | 2005 03 18 | 151 | 0.3− | 0.2− | 2005 04 02 | A62 | 0.1− | 0.1− | 2005 05 06 | H45 | 0.5+ | 0.2+ |
| 2005 03 10 | H45 | 0.4− | 0.6− | 2005 03 31 | A70 | 1.3+ | 0.6+ | 2005 04 13 | A13 | 0.5− | 0.9− | 2005 03 18 | 151 | 0.4− | 0.1+ | 2005 04 03 | 726 | 0.5− | 0.1− | 2005 05 16 | 644 | 0.1+ | 0.3− |
| 2005 03 10 | H45 | 0.2− | 0.4− | 2005 03 31 | A70 | 0.3+ | 0.6+ | 2005 04 13 | A13 | 0.4− | 0.8− | 2005 03 18 | J87 | 0.3− | 0.1− | 2005 04 03 | 726 | 0.4+ | 0.1− | 2005 05 16 | 644 | 0.0 | 0.2− |
| 2005 03 10 | H45 | 0.2+ | 0.3− | 2005 03 31 | 084 | 0.1+ | 0.1− | 2005 04 13 | A13 | 0.3− | 0.8− | 2005 03 18 | 151 | 0.0 | 0.1− | 2005 04 03 | 726 | 0.1− | 0.5− | 2005 05 16 | 644 | 0.1+ | 0.3− |
| 2005 03 10 | H45 | 0.5− | 0.5− | 2005 03 31 | 084 | 0.1− | 0.2+ | 2005 04 14 | 379 | 0.5− | 0.1− | 2005 03 18 | 151 | 0.3− | 0.1+ | 2005 04 03 | 726 | 0.8− | 0.1− | 2005 05 27 | E12 | 0.0 | 0.0 |
| 2005 03 10 | 699 | 0.1+ | 0.1+ | 2005 04 01 | A62 | 0.2− | 0.0 | 2005 04 14 | 379 | 0.1− | 0.3+ | 2005 03 18 | J87 | 0.1− | 0.2− | 2005 04 03 | 726 | 0.1− | 0.4− | 2005 05 27 | E12 | 0.0 | 0.2− |
| 2005 03 10 | 699 | 0.2+ | 0.1+ | 2005 04 01 | A62 | 0.1− | 0.3+ | 2005 04 14 | 379 | 0.1− | 0.3+ | 2005 03 18 | J87 | 0.3− | 0.0 | 2005 04 03 | 469 | 0.2− | 0.1− | 2005 05 27 | E12 | 0.2+ | 0.0 |
| 2005 03 12 | 071 | 0.2+ | 0.0 | 2005 04 01 | A62 | 0.1− | 0.1+ | 2005 04 14 | 379 | 0.3− | 0.4+ | 2005 03 19 | 726 | 0.4− | 0.5− | 2005 04 03 | 469 | 0.3− | 0.2+ | 2005 05 27 | E12 | 0.3− | 0.0 |
| 2005 03 12 | 071 | 0.4+ | 0.0 | 2005 04 01 | A62 | 0.0 | 0.1+ | 2005 04 14 | 379 | 0.0 | 0.1− | 2005 03 19 | 726 | 0.1− | 0.2+ | 2005 04 03 | 469 | 0.4− | 0.0 | 2005 07 04 | E12 | 0.0 | 0.1− |
| 2005 03 12 | 071 | 0.2+ | 0.3− | 2005 04 01 | A62 | 0.1− | 0.1− | 2005 04 14 | 379 | 0.2− | 0.0 | 2005 03 19 | 726 | 0.1+ | 0.2− | 2005 04 03 | 469 | 0.2− | 0.2− | 2005 07 04 | E12 | 0.1+ | 0.2− |
| 2005 03 13 | 084 | 0.1+ | 0.3− | 2005 04 01 | A62 | 0.0 | 0.2+ | 2005 04 14 | 084 | 0.1+ | 0.2+ | 2005 03 19 | 726 | 0.4− | 0.2− | 2005 04 03 | 084 | 0.1− | 0.3+ | 2005 07 04 | E12 | 0.2+ | 0.1+ |
| 2005 03 13 | 084 | 0.1+ | 0.4− | 2005 04 01 | A62 | 0.3− | 0.1− | 2005 04 14 | 084 | 0.2+ | 0.0 | 2005 03 19 | 726 | 0.5− | 0.0 | 2005 04 03 | 084 | 0.2− | 0.4+ | 2005 07 04 | E12 | 0.4− | 0.3− |
| 2005 03 13 | 927 | 1.4+ | 0.1+ | 2005 04 01 | A62 | 0.0 | 0.1+ | 2005 04 15 | 084 | 0.1+ | 0.1+ | 2005 03 19 | 726 | 0.3− | 0.4− | 2005 04 03 | A32 | 0.0 | 0.2− | 2006 10 13 | 691 | 1.1+ | 0.9+ |
| 2005 03 13 | 927 | 0.5+ | 0.0 | 2005 04 01 | A62 | 0.2− | 0.1− | 2005 04 16 | 379 | 0.1− | 0.0 | 2005 03 19 | 379 | 0.3− | 0.3− | 2005 04 03 | A32 | 0.3− | 0.2− | 2006 10 13 | 691 | 0.0 | 0.4− |
| 2005 03 13 | 927 | 0.3− | 0.0 | 2005 04 01 | A62 | 0.1− | 0.3− | 2005 04 16 | 379 | 0.3+ | 0.5− | 2005 03 19 | 379 | 0.1+ | 0.1− | 2005 04 03 | A32 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.9+ | 0.4− |
| 2005 03 13 | 379 | 0.1+ | 0.0 | 2005 04 01 | A62 | 0.1− | 0.2+ | 2005 04 16 | 379 | 0.4+ | 0.4− | 2005 03 19 | 379 | 0.3+ | 0.1+ | 2005 04 03 | A32 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.5− | 0.3− |
| 2005 03 13 | 379 | 0.0 | 0.3− | 2005 04 01 | A62 | 0.4− | 0.1− | 2005 04 16 | 379 | 0.3+ | 0.3− | 2005 03 19 | 379 | 0.1− | 0.1+ | 2005 04 04 | 834 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 1.0− |
| 2005 03 13 | 379 | 0.0 | 0.4− | 2005 04 01 | A62 | 0.1− | 0.1− | 2005 04 16 | 084 | 0.1− | 0.2− | 2005 03 20 | H45 | 0.4− | 0.4− | 2005 04 04 | 834 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.6+ | 0.1− |
| 2005 03 13 | 379 | 0.0 | 0.0 | 2005 04 01 | A62 | 0.1− | 0.2+ | 2005 04 16 | 084 | 0.4− | 0.3− | 2005 03 20 | H45 | 0.2− | 0.0 | 2005 04 04 | 834 | 0.5+ | 0.3+ | 2006 10 31 | 691 | 0.5+ | 1.1− |
| 2005 03 13 | A62 | 0.0 | 0.4+ | 2005 04 01 | A62 | 0.0 | 0.2+ | 2005 04 17 | 084 | 0.4− | 0.3− | 2005 03 20 | H45 | 0.2− | 0.4− | 2005 04 04 | 703 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.5− |
| 2005 03 13 | A62 | 0.0 | 0.2+ | 2005 04 01 | A62 | 0.3− | 0.1− | 2005 04 17 | 084 | 0.7− | 0.5− | 2005 03 20 | H45 | 0.3− | 0.3− | 2005 04 04 | 703 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.8− | 0.4+ |
| 2005 03 13 | A62 | 0.1+ | 0.1+ | 2005 04 01 | A62 | 0.2− | 0.1+ | 2005 04 18 | 703 | 0.3− | 0.2− | 2005 03 20 | H45 | 0.5+ | 0.3− | 2005 04 04 | 703 | 0.5− | 0.1− | 2006 11 18 | G96 | 0.9− | 0.0 |
| 2005 03 13 | A62 | 0.2+ | 0.3+ | 2005 04 01 | A62 | 0.1− | 0.1+ | 2005 04 18 | 703 | 0.1− | 0.3− | 2005 03 20 | 118 | 0.2− | 0.2− | 2005 04 04 | 704 | 0.7+ | 1.1+ | 2006 11 18 | G96 | 0.5− | 0.2− |
| 2005 03 13 | A62 | 0.1+ | 0.3+ | 2005 04 01 | A62 | 0.1+ | 0.2+ | 2005 04 18 | 703 | 0.3− | 0.2− | 2005 03 20 | 118 | 0.3− | 0.2− | 2005 04 04 | 704 | 0.9+ | 0.9+ | 2006 11 18 | G96 | 0.7− | 0.4+ |
| 2005 03 13 | A62 | 0.1− | 0.6+ | 2005 04 01 | A62 | 0.1− | 0.2+ | 2005 04 18 | 703 | 0.3− | 0.2− | 2005 03 20 | 639 | 0.5+ | 0.2+ | 2005 04 04 | 704 | 1.2+ | 0.8+ | | | | |
| 2005 03 13 | A76 | 0.4+ | 0.1+ | 2005 04 01 | A62 | 0.1− | 0.0 | 2005 04 18 | 084 | 0.2− | 0.0 | | | | | | | | | | | | |
| 2005 03 13 | A62 | 0.2+ | 0.4+ | 2005 04 01 | 127 | 0.0 | 0.1+ | 2005 04 18 | 084 | 0.6− | 0.6− | | | | | | | | | | | | |
| 2005 03 13 | A62 | 0.1+ | 0.3+ | 2005 04 01 | A62 | 0.0 | 0.1+ | 2005 04 19 | 084 | 0.2− | 0.0 | | | | | | | | | | | | |
| 2005 03 13 | A62 | 0.1+ | 0.2+ | 2005 04 01 | A62 | 0.1− | 0.1+ | 2005 04 19 | 084 | 0.3− | 0.3− | | | | | | | | | | | | |
| 2005 03 13 | A62 | 0.1+ | 0.2+ | 2005 04 01 | A62 | 0.1− | 0.0 | 2005 04 25 | 084 | 0.2− | 0.3− | | | | | | | | | | | | |
| 2005 03 13 | A76 | 0.4+ | 0.0 | 2005 04 01 | A62 | 0.1− | 0.2+ | 2005 04 25 | A06 | 1.2− | 0.7+ | | | | | | | | | | | | |
| 2005 03 13 | A70 | 0.5+ | 0.5− | 2005 04 01 | 127 | 0.3+ | 0.2+ | 2005 04 25 | A06 | 0.0 | 0.4− | | | | | | | | | | | | |
| 2005 03 13 | A70 | 0.6+ | 0.3− | 2005 04 01 | 127 | 0.0 | 0.2+ | 2005 04 25 | 084 | 0.4− | 0.2− | | | | | | | | | | | | |

**(144923)∗ 2005 CQ$_{43}$ = 1998 EJ$_{16}$**

Discovered 2005 Feb. 2 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 73841)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.59491 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28066389 | $\omega$ | 237.40476 | | −0.91602427 | +0.39957150 | |
| $a$ | 2.3103531 | $\Omega$ | 326.10910 | | −0.34358400 | −0.82693354 | |
| $e$ | 0.1690974 | $i$ | 3.62381 | | −0.20700137 | −0.39563056 | |
| $P$ | 3.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | 0.3− | 1.6+ | 2005 02 02 | 704 | 0.4+ | 0.7+ | 2005 04 05 | G96 | 0.2− | 0.1− |
| 1998 03 03 | 704 | 1.7+ | 0.1− | 2005 02 02 | 704 | 0.3+ | 0.3+ | 2005 04 06 | G96 | 0.2− | 0.1− |
| 1998 03 03 | 704 | (2.3− | 0.9−) | 2005 02 02 | 703 | 0.4− | 0.2− | 2005 04 06 | G96 | 0.2− | 0.1− |
| 1998 03 03 | 704 | 0.3+ | 1.7+ | 2005 02 02 | 703 | 0.0 | 0.6− | 2005 04 06 | G96 | 0.2− | 0.1− |
| 1998 03 03 | 704 | 0.8− | 0.8+ | 2005 02 02 | 704 | 0.8+ | 0.1− | 2005 04 06 | G96 | 0.1− | 0.0 |
| 1998 03 04 | 704 | 0.4− | 1.2+ | 2005 02 02 | 703 | 0.2− | 0.5− | 2006 08 13 | 644 | 0.1− | 0.4+ |
| 1998 03 04 | 704 | 0.2+ | 1.1− | 2005 02 02 | 703 | 0.2− | 0.0 | 2006 08 13 | 644 | 0.3− | 0.2+ |
| 1998 03 04 | 704 | 0.9− | 1.6− | 2005 02 09 | 699 | 0.0 | 0.1− | 2006 08 13 | 644 | 0.0 | 0.4+ |
| 1998 03 04 | 704 | 1.2+ | 1.2− | 2005 02 09 | 699 | 0.7− | 0.0 | 2006 08 15 | 644 | 0.4− | 0.2+ |
| 2000 11 20 | 704 | 1.2− | 0.4− | 2005 02 09 | 699 | 0.2+ | 0.3− | 2006 08 15 | 644 | 0.2− | 0.3+ |
| 2000 11 20 | 704 | 0.4+ | 0.6− | 2005 02 09 | 699 | 0.1+ | 0.3+ | 2006 08 15 | 644 | 0.4− | 0.3+ |
| 2000 11 20 | 704 | 0.1− | 0.6− | 2005 02 09 | 704 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.8− | 0.1+ |
| 2000 11 20 | 704 | 0.4+ | 0.6− | 2005 02 09 | 704 | 0.0 | 0.8+ | 2006 08 28 | 699 | (1.3+ | 1.6+) |
| 2000 11 20 | 704 | 1.4− | 0.7− | 2005 02 09 | 704 | (0.8+ | 1.5+) | 2006 08 28 | 703 | 0.7+ | 0.5− |
| 2003 10 03 | 691 | 0.3+ | 0.1− | 2005 02 09 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 703 | (1.4+ | 1.9−) |
| 2003 10 03 | 691 | 0.2+ | 0.1+ | 2005 02 09 | 704 | 0.5+ | 1.0+ | 2006 08 28 | 699 | 0.5+ | 1.2+ |
| 2003 10 03 | 691 | 0.1− | 0.1+ | 2005 03 02 | E12 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.5+ |
| 2003 10 25 | 704 | (0.2+ | 1.8+) | 2005 03 02 | E12 | 0.0 | 0.6+ | 2006 08 28 | 699 | (1.7− | 0.8+) |
| 2003 10 25 | 704 | 0.2− | 1.3+ | 2005 03 02 | E12 | 0.1+ | 0.9+ | 2006 08 28 | 703 | 0.7− | 0.2+ |
| 2003 10 25 | 704 | 0.1− | 0.5+ | 2005 03 02 | E12 | 1.2− | 0.0 | 2006 08 28 | 703 | (2.6+ | 2.2+) |
| 2003 10 25 | 704 | (1.5− | 1.8+) | 2005 03 10 | 699 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.1+ |
| 2003 10 25 | 704 | 0.7− | 1.2+ | 2005 03 10 | 699 | 0.7+ | 0.4− | 2006 09 14 | 644 | 0.5− | 0.2+ |
| 2005 01 06 | 704 | 0.7+ | 0.1− | 2005 03 10 | 699 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2005 01 06 | 704 | 0.4+ | 0.1+ | 2005 03 10 | 699 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2005 01 06 | 704 | 0.9+ | 1.1+ | 2005 04 04 | 704 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2005 01 18 | 703 | 0.2+ | 0.5− | 2005 04 04 | 704 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.8+ | 0.1+ |
| 2005 01 18 | 703 | 0.4− | 0.2− | 2005 04 04 | 704 | 1.1+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2005 01 18 | 703 | 0.8− | 0.7− | 2005 04 05 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 01 18 | 703 | 0.4− | 0.3+ | 2005 04 05 | G96 | 0.1− | 0.0 | | | | |
| 2005 02 02 | 704 | 0.3+ | 0.2+ | 2005 04 05 | G96 | 0.1− | 0.1+ | | | | |

**(144924)∗ 2005 CX$_{48}$ = 2002 TJ$_{234}$**

Discovered 2005 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 73842)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.96355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21452512 | $\omega$ | 274.42337 | | −0.26490929 | +0.95809002 | |
| $a$ | 2.7636558 | $\Omega$ | 339.19665 | | −0.71721326 | −0.27134709 | |
| $e$ | 0.2280555 | $i$ | 17.87700 | | −0.64453721 | −0.09183832 | |
| $P$ | 4.59 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.6− | 0.9+ | 2005 03 09 | 704 | 0.8+ | 0.1+ | 2006 08 24 | 644 | 0.4− | 0.0 |
| 2000 01 29 | 704 | 0.6− | 0.5+ | 2005 03 09 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 704 | 0.3+ | 0.4+ |
| 2000 01 29 | 704 | 0.0 | 0.5+ | 2005 03 09 | 699 | 1.1+ | 0.3+ | 2006 08 28 | 704 | 0.1+ | 0.1− |
| 2000 01 29 | 704 | 0.2− | 0.2+ | 2005 03 09 | 704 | 0.3+ | 0.0 | 2006 08 28 | 704 | 0.4− | 0.8+ |
| 2000 01 29 | 704 | 1.8+ | 1.0− | 2005 03 09 | 704 | 0.5+ | 0.0 | 2006 08 28 | 699 | 0.8− | 0.2+ |
| 2002 10 06 | 704 | 0.2− | 0.5+ | 2005 03 09 | 699 | 0.2− | 0.9+ | 2006 08 28 | 704 | 0.4+ | 0.2+ |
| 2002 10 06 | 704 | 0.8− | 0.7− | 2005 03 09 | 704 | 0.8+ | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.2+ |
| 2002 10 06 | 704 | (1.9− | 0.7−) | 2005 03 12 | 704 | 1.0+ | 0.3+ | 2006 08 28 | 704 | 0.2− | 0.3+ |
| 2002 10 10 | 704 | 0.4+ | 0.6+ | 2005 03 12 | 704 | 0.8+ | 0.7+ | 2006 08 28 | 699 | 0.7+ | 0.5+ |
| 2002 10 10 | 704 | 0.1− | 0.1+ | 2005 03 12 | 704 | 0.3+ | 0.6+ | 2006 08 28 | 699 | 0.5+ | 0.2+ |
| 2002 10 10 | 704 | 0.1− | 0.8+ | 2005 03 12 | 704 | 0.8+ | 0.7+ | 2006 08 31 | 704 | 0.7− | 0.4+ |
| 2002 10 10 | 704 | 0.5+ | 1.0+ | 2005 03 12 | 704 | 0.9+ | 0.6+ | 2006 08 31 | 704 | 1.2+ | 1.1− |
| 2002 10 10 | 704 | 0.3− | 0.2− | 2005 03 17 | G96 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.1+ | 0.5+ |
| 2005 01 18 | 703 | 0.2+ | 0.6+ | 2005 03 17 | G96 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.0 |
| 2005 01 18 | 703 | 0.3+ | 0.8+ | 2005 03 17 | G96 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.8+ | 0.5− |
| 2005 01 18 | 703 | 0.3− | 0.0 | 2005 03 17 | G96 | 0.2− | 0.1− | 2006 09 12 | 699 | 0.2− | 0.3− |
| 2005 01 18 | 703 | 0.4− | 0.5+ | 2005 03 17 | 703 | 0.4− | 0.6− | 2006 09 12 | 699 | 0.3− | 0.8+ |
| 2005 02 02 | 704 | 0.2− | 0.3− | 2005 03 17 | 703 | 1.2− | 0.7+ | 2006 09 12 | 699 | 0.5− | 0.1− |
| 2005 02 02 | 704 | 0.5− | 0.3+ | 2005 03 17 | 703 | 1.0+ | 0.9+ | 2006 09 12 | 699 | 0.2− | 0.4+ |
| 2005 02 02 | 704 | 0.5− | 0.8− | 2005 03 17 | 703 | 0.3− | 0.2− | 2006 09 12 | 704 | 0.7− | 0.9− |
| 2005 02 02 | 704 | 0.2− | 0.1+ | 2005 03 31 | 644 | 0.3+ | 0.0 | 2006 09 12 | 704 | 1.0− | 0.3+ |
| 2005 02 02 | 704 | 0.1− | 0.3− | 2005 03 31 | 644 | 0.2+ | 0.0 | 2006 09 12 | 704 | (2.2− | 0.0 ) |
| 2005 02 02 | 644 | 0.7+ | 0.6+ | 2005 03 31 | 644 | 0.2+ | 0.1− | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2005 02 02 | 644 | 1.2+ | 1.2+ | 2005 04 04 | 703 | 0.6− | 0.8− | 2006 09 13 | 644 | 0.4− | 0.1+ |
| 2005 02 02 | 644 | 0.2+ | 0.9+ | 2005 04 04 | 703 | 1.0− | 0.6− | 2006 09 13 | 644 | 0.4− | 0.3+ |
| 2005 02 02 | 644 | 0.4+ | 0.5+ | 2005 04 04 | 703 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.2− |
| 2005 02 02 | 644 | 0.4+ | 0.7+ | 2005 04 04 | 703 | 0.8− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.0 |
| 2005 02 02 | 644 | 0.6+ | 1.0+ | 2005 04 06 | 699 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.0 |
| 2005 02 09 | 704 | 0.8+ | 0.8+ | 2005 04 06 | 699 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.4− |
| 2005 02 09 | 704 | 0.3+ | 0.3+ | 2005 04 06 | 699 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.2− | 0.1+ |
| 2005 02 09 | 704 | 0.9+ | 0.3+ | 2005 04 13 | 703 | 0.2+ | 0.8− | 2006 09 17 | 704 | 0.1− | 0.9+ |
| 2005 02 09 | 704 | 0.4+ | 0.4+ | 2005 04 13 | 703 | 1.4− | 0.6− | 2006 09 17 | 704 | 0.9− | 0.5− |
| 2005 02 09 | 704 | 0.8+ | 1.1+ | 2005 04 13 | 703 | 1.4− | 0.0 | 2006 09 17 | 704 | 0.4− | 0.2+ |
| 2005 03 03 | 703 | 0.5− | 0.1+ | 2005 04 13 | 703 | 0.6− | 1.0− | 2006 09 18 | 699 | 1.2− | 0.7+ |
| 2005 03 03 | 703 | 0.1− | 0.1+ | 2006 05 29 | E12 | 0.6− | 0.8+ | 2006 09 18 | 699 | 0.1+ | 0.2+ |
| 2005 03 03 | 703 | 0.0 | 0.1− | 2006 05 29 | E12 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.3− | 0.3+ |
| 2005 03 03 | 703 | 0.3− | 0.2− | 2006 05 29 | E12 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.1+ |
| 2005 03 03 | 704 | 0.7+ | 0.1− | 2006 05 29 | E12 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.1− | 0.9+ |
| 2005 03 03 | 704 | 0.7+ | 0.0 | 2006 08 15 | 644 | 0.6− | 0.1− | 2006 09 20 | 704 | 0.3− | 1.3+ |
| 2005 03 03 | 703 | 0.4− | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.3− | 0.2+ |
| 2005 03 03 | 703 | 0.5− | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.8− | 0.6+ |
| 2005 03 03 | 704 | 0.5+ | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.4− | 0.5+ |
| 2005 03 03 | 703 | 0.8− | 0.4− | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 24 | 699 | (0.6− | 1.8+) |
| 2005 03 03 | 703 | 0.2− | 0.1− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 24 | 699 | 0.4− | 0.0 |
| 2005 03 08 | 699 | 0.4+ | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.6+ | 2006 09 24 | 699 | (1.7− | 1.3+) |
| 2005 03 08 | 699 | 0.9+ | 0.5+ | 2006 08 17 | 644 | 0.8− | 0.4+ | 2006 09 24 | 699 | 0.9− | 0.3+ |
| 2005 03 08 | 704 | 0.9+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.9+ | 2006 09 27 | 704 | 0.3− | 0.0 |
| 2005 03 08 | 704 | 0.9+ | 0.3+ | 2006 08 23 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 1.3− | 0.4+ |
| 2005 03 08 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 704 | 0.8+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 1.2+ |
| 2005 03 08 | 699 | 0.8+ | 0.3+ | 2006 08 23 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.2− |
| 2005 03 08 | 704 | 0.6+ | 0.1− | 2006 08 23 | 704 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.5− | 0.4− |
| 2005 03 08 | 704 | 0.5+ | 0.5+ | 2006 08 23 | 704 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2005 03 09 | 699 | 0.4− | 0.7+ | 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2005 03 09 | 699 | 0.7+ | 0.3+ | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.5− | 0.0 |

**(144925)∗ 2005 CO$_{50}$ = 2002 LJ$_{51}$**

Discovered 2005 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76683)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.94873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28305835 | $\omega$ | 33.01453 | | −0.98485618 | +0.16891148 | |
| $a$ | 2.2973054 | $\Omega$ | 156.61601 | | −0.17259990 | −0.93396316 | |
| $e$ | 0.0958506 | $i$ | 5.65074 | | −0.01635774 | −0.31493129 | |
| $P$ | 3.48 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.8+ | 0.6+ | 2005 02 02 | 704 | 0.4+ | 0.6− | 2005 03 08 | 704 | 0.6+ | 0.6+ |
| 2000 11 27 | 704 | 0.3+ | 0.2+ | 2005 02 02 | 704 | 1.7+ | 1.2− | 2005 03 09 | 695 | 0.3− | 0.6+ |
| 2000 11 27 | 704 | 0.4− | 0.7− | 2005 02 02 | 704 | 0.6+ | 0.0 | 2005 03 09 | 704 | 0.1+ | 0.7+ |
| 2000 11 27 | 704 | 0.7− | 0.7+ | 2005 02 04 | 699 | 0.3+ | 0.6+ | 2005 03 09 | 695 | 0.1+ | 0.2+ |
| 2000 11 27 | 704 | 0.9− | 0.3+ | 2005 02 04 | 699 | 0.5+ | 0.0 | 2005 03 09 | 704 | 0.3+ | 0.1+ |
| 2002 05 23 | 644 | 0.1− | 0.7+ | 2005 02 04 | 699 | 1.0− | 0.5+ | 2005 03 09 | 704 | 0.1− | 0.1+ |
| 2002 05 23 | 644 | 0.3− | 0.4+ | 2005 02 04 | 699 | 1.5+ | 0.1+ | 2005 03 09 | 704 | 0.4+ | 0.0 |
| 2002 05 23 | 644 | 0.3− | 0.3+ | 2005 02 09 | 704 | 0.9− | 0.9+ | 2005 03 09 | 704 | 0.1− | 0.9+ |
| 2002 06 03 | 644 | 0.5− | 0.7− | 2005 02 09 | 704 | 0.5+ | 0.3− | 2005 03 10 | 699 | (2.2+ | 0.8+) |
| 2002 06 03 | 644 | 0.6− | 0.7− | 2005 02 09 | 704 | 1.0− | 0.9+ | 2005 03 10 | 699 | 1.0− | 0.4− |
| 2002 06 03 | 644 | 0.6− | 0.6− | 2005 02 09 | 704 | 0.0 | 0.8+ | 2005 03 10 | 699 | 0.0 | 0.7+ |
| 2002 06 09 | 704 | 0.5− | 0.1+ | 2005 02 09 | 704 | 0.4− | 0.6− | 2005 03 10 | 699 | 0.7+ | 0.6− |
| 2002 06 09 | 704 | 0.3− | 0.9+ | 2005 03 02 | 703 | 0.9− | 1.1+ | 2006 07 21 | A50 | 0.2− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.0 | 0.0 | 2005 03 02 | 703 | 0.6− | 0.7+ | 2006 07 21 | A50 | 0.5− | 0.1− |
| 2002 06 09 | 704 | 1.2− | 0.6+ | 2005 03 02 | 703 | 0.7− | 0.7− | 2006 08 15 | 644 | 0.4+ | 0.3+ |
| 2002 06 09 | 704 | 0.3+ | 0.6+ | 2005 03 02 | 703 | 0.6+ | 1.3− | 2006 08 15 | 644 | 0.1+ | 0.4+ |
| 2002 06 10 | 644 | 0.4− | 0.2+ | 2005 03 04 | G96 | 0.1− | 0.2− | 2006 08 15 | 644 | 0.2+ | 0.2+ |
| 2002 06 10 | 644 | 0.2− | 0.8+ | 2005 03 04 | G96 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.8+ | 0.7+ |
| 2002 06 10 | 644 | 0.4− | 0.7+ | 2005 03 04 | G96 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.5+ | 0.4+ |
| 2003 10 19 | 645 | 0.1− | 0.1+ | 2005 03 04 | G96 | 0.2+ | 0.1− | 2006 08 18 | 644 | 0.6+ | 0.4+ |
| 2003 10 19 | 645 | 0.1− | 0.1+ | 2005 03 08 | 704 | 1.1+ | 0.3+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2003 10 23 | 645 | 0.0 | 0.1+ | 2005 03 08 | 704 | 0.7+ | 0.3− | 2006 08 24 | 644 | 0.5+ | 0.2+ |
| 2003 10 23 | 645 | 0.0 | 0.2+ | 2005 03 08 | 704 | 0.1− | 0.3+ | 2006 08 24 | 644 | 0.5+ | 0.2+ |
| 2005 02 02 | 704 | 0.6+ | 1.0+ | 2005 03 08 | 704 | 0.7+ | 0.7+ | | | | |

**(144926)∗ 2005 CL$_{51}$**

Discovered 2005 Feb. 2 by Spacewatch at Kitt Peak.

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | **P** | | **Q** |
| $M$ | 76.06296 | (2000.0) | | | |
| $n$ | 0.28861279 | $\omega$ | 292.73858 | −0.14981797 | +0.98661125 |
| $a$ | 2.2677352 | $\Omega$ | 328.43219 | −0.85596726 | −0.16204875 |
| $e$ | 0.1169088 | $i$ | 7.07090 | −0.49484809 | −0.01839688 |
| $P$ | 3.41 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.1+ | 0.5+ | 2005 03 08 | 704 | 0.3− | 0.6+ | 2006 08 27 | 699 | 1.3− | 0.4+ |
| 1999 07 14 | 704 | 0.2+ | 0.5+ | 2005 03 08 | 704 | 0.6− | 0.1+ | 2006 08 27 | 699 | 0.2− | 0.3+ |
| 1999 07 14 | 704 | 0.6− | 0.5+ | 2005 03 09 | 704 | 1.4+ | 0.3+ | 2006 08 27 | 699 | 0.0 | 0.0 |
| 1999 07 14 | 704 | 1.0+ | 0.5+ | 2005 03 09 | 704 | 0.0 | 1.1+ | 2006 08 28 | 703 | 0.9− | 0.2− |
| 1999 08 13 | 699 | 0.3− | 0.1+ | 2005 03 09 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.0 |
| 1999 08 13 | 699 | 0.2+ | 0.2+ | 2005 03 09 | 704 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.7+ |
| 1999 08 13 | 699 | 0.6+ | 0.1+ | 2005 03 09 | 704 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.5+ |
| 1999 09 18 | 691 | 0.2+ | 0.5− | 2005 03 09 | 704 | 0.8+ | 0.6− | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 1999 09 18 | 691 | 0.0 | 0.6− | 2005 03 09 | 704 | 0.1− | 0.7+ | 2006 08 28 | 691 | 0.9− | 1.3+ |
| 1999 09 18 | 691 | 0.0 | 0.2− | 2005 03 11 | 704 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 1999 10 03 | 691 | 0.1+ | 0.7− | 2005 03 11 | 704 | 0.4− | 1.0+ | 2006 08 30 | 704 | 0.7− | 0.6+ |
| 1999 10 03 | 691 | 0.3+ | 0.7− | 2005 03 11 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.6+ | 0.9− |
| 1999 10 03 | 691 | 0.1− | 0.3− | 2005 03 11 | 704 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.2+ | 0.0 |
| 2002 06 06 | 704 | (0.2− | 2.8+) | 2005 03 11 | 704 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.6+ |
| 2002 06 06 | 704 | (0.5− | 4.0+) | 2005 03 17 | G96 | 0.3− | 0.0 | 2006 08 30 | 704 | 1.1− | 0.1− |
| 2002 06 06 | 704 | (0.6− | 3.7+) | 2005 03 17 | G96 | 0.3− | 0.2− | 2006 09 11 | 703 | 0.6− | 0.3+ |
| 2003 11 19 | 704 | 0.7− | 1.7+ | 2005 03 17 | G96 | 0.2+ | 0.4− | 2006 09 11 | 703 | 0.3+ | 0.6− |
| 2003 11 19 | 704 | 0.3+ | 0.4+ | 2005 03 17 | 703 | 0.4+ | 0.6− | 2006 09 11 | 703 | 0.2− | 0.4+ |
| 2003 11 19 | 704 | 1.0+ | 0.3− | 2005 03 17 | G96 | 0.4− | 0.0 | 2006 09 11 | 703 | 0.7+ | 0.2− |
| 2003 11 24 | 699 | 0.9− | 0.7− | 2005 03 17 | 703 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.1− |
| 2003 11 24 | 699 | 0.5+ | 0.3− | 2005 03 17 | 703 | 0.5− | 0.3− | 2006 09 17 | 703 | 0.1− | 0.1− |
| 2003 11 24 | 691 | 0.2+ | 0.3− | 2005 03 17 | 703 | 1.5− | 1.0+ | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 2003 11 24 | 699 | 0.3− | 0.0 | 2005 03 30 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.6+ | 0.7+ |
| 2003 11 24 | 691 | 0.1+ | 0.3− | 2005 03 30 | 703 | 1.0− | 0.6+ | 2006 09 20 | 699 | 0.1+ | 0.2+ |
| 2003 11 24 | 699 | 0.3− | 0.7− | 2005 03 30 | 703 | 0.2− | 1.7+ | 2006 09 20 | 699 | 0.8+ | 0.6+ |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2005 03 30 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 699 | 0.4+ | 0.1− |
| 2005 02 02 | 691 | 0.3+ | 0.2+ | 2005 03 30 | 703 | 0.7− | 0.3− | 2006 09 21 | 012 | 0.1+ | 0.3− |
| 2005 02 02 | 691 | 0.2+ | 0.2+ | 2005 03 30 | 703 | 1.0+ | 1.4+ | 2006 09 21 | 012 | 0.6− | 0.1− |
| 2005 02 02 | 691 | 0.3+ | 0.0 | 2005 03 30 | 644 | 1.1+ | 0.3− | 2006 09 21 | 012 | 0.3− | 0.1+ |
| 2005 02 09 | 704 | 1.3+ | 0.0 | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 21 | 012 | 0.7+ | 0.5− |
| 2005 02 09 | 704 | 1.7+ | 1.1+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 21 | 012 | 1.1− | 0.8+ |
| 2005 02 09 | 704 | 1.6+ | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 21 | 012 | 0.5+ | 0.5− |
| 2005 03 03 | 703 | 0.3− | 0.4+ | 2006 08 21 | 704 | 0.0 | 1.3+ | 2006 09 22 | 012 | 1.1− | 0.5+ |
| 2005 03 03 | 703 | 0.2− | 1.8− | 2006 08 21 | 704 | 0.6− | 0.9+ | 2006 09 30 | 699 | 1.1+ | 0.1− |
| 2005 03 03 | 703 | 0.6− | 0.4− | 2006 08 21 | 704 | 0.8− | 0.2+ | 2006 09 30 | 699 | 1.0+ | 0.4+ |
| 2005 03 03 | 703 | 0.7− | 0.5− | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 30 | 699 | 0.4− | 0.5− |
| 2005 03 08 | 704 | 0.4+ | 0.8+ | 2006 08 22 | 644 | 0.1− | 0.4+ | 2006 09 30 | 699 | 0.1− | 0.3+ |
| 2005 03 08 | 704 | 0.0 | 0.9+ | 2006 08 22 | 644 | 0.1+ | 0.5+ | | | | |
| 2005 03 08 | 704 | 0.1+ | 0.9+ | 2006 08 27 | 699 | 0.0 | 0.1+ | | | | |

**(144927)∗ 2005 CF$_{52}$ = 1998 FH$_{141}$ = 2003 WA$_{174}$**

Discovered 2005 Feb. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76689)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | **P** | | **Q** |
| $M$ | 112.56398 | (2000.0) | | | |
| $n$ | 0.27665880 | $\omega$ | 289.67901 | −0.78419831 | +0.61987888 |
| $a$ | 2.3325971 | $\Omega$ | 288.63844 | −0.55767316 | −0.72384420 |
| $e$ | 0.1460743 | $i$ | 1.69243 | −0.27209125 | −0.30298472 |
| $P$ | 3.56 | $H$ | 17.1 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.3− | 0.5+ | 2003 11 22 | 695 | 0.1+ | 0.1− | 2005 03 12 | 704 | 0.1− | 0.5+ |
| 1998 03 20 | 704 | 1.4+ | 0.3+ | 2003 11 22 | 695 | 0.3− | 0.1− | 2005 03 12 | 704 | 0.4+ | 1.7+ |
| 1998 03 20 | 704 | 0.5+ | 0.0 | 2005 02 02 | 691 | 0.0 | 0.2+ | 2005 03 12 | 704 | 0.7+ | 1.4+ |
| 1998 03 20 | 704 | 0.1− | 0.5− | 2005 02 02 | 691 | 0.2− | 0.4+ | 2005 03 12 | 704 | 0.7+ | 0.8+ |
| 1998 03 20 | 704 | 1.1− | 1.7− | 2005 02 02 | 691 | 0.1+ | 0.3+ | 2005 03 17 | G96 | 0.3− | 0.1− |
| 1998 03 22 | 704 | 1.2+ | 0.2− | 2005 02 09 | 704 | 0.4+ | 1.0+ | 2005 03 17 | G96 | 0.1− | 0.3− |
| 1998 03 22 | 704 | (1.6− | 2.2+) | 2005 02 09 | 704 | 0.3+ | 2.0+ | 2005 03 17 | G96 | 0.4− | 0.1− |
| 1998 03 22 | 704 | (2.1+ | 1.0+) | 2005 02 09 | 704 | 0.4+ | 0.5− | 2005 03 17 | G96 | 0.4− | 0.0 |
| 1998 03 22 | 704 | (5.7− | 1.3+) | 2005 02 09 | 704 | 0.9+ | 0.0 | 2006 08 15 | D35 | 0.4− | 1.1+ |
| 1998 03 29 | 704 | 0.3+ | 0.7− | 2005 03 03 | 703 | 0.3− | 0.5− | 2006 08 15 | D35 | 0.1− | 0.6+ |
| 1998 03 29 | 704 | 0.5− | 0.0 | 2005 03 03 | 703 | 1.5− | 0.3− | 2006 08 15 | D35 | 0.4+ | 0.5+ |
| 1998 03 29 | 704 | 1.2+ | 0.2+ | 2005 03 03 | 703 | 0.2− | 0.4− | 2006 08 19 | 691 | 0.7− | 0.7+ |
| 1998 03 29 | 704 | 1.4− | 0.4+ | 2005 03 03 | 703 | 1.2− | 0.0 | 2006 08 19 | 691 | 0.1− | 0.5+ |
| 1998 03 29 | 704 | (2.9− | 0.1−) | 2005 03 08 | 699 | 0.0 | 1.9+ | 2006 08 19 | 691 | 0.0 | 0.6+ |
| 1998 04 01 | 704 | 1.1− | 1.6− | 2005 03 08 | 699 | 1.1+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 1998 04 01 | 704 | (4.5− | 1.2−) | 2005 03 08 | 699 | 1.9+ | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 1998 04 01 | 704 | (3.3− | 1.1−) | 2005 03 08 | 699 | 0.9+ | 1.2+ | 2006 08 27 | 691 | 0.3− | 0.3+ |
| 1999 10 03 | 691 | 0.2− | 0.6− | 2005 03 08 | 704 | 0.1+ | 0.0 | 2006 08 29 | 691 | 0.1− | 0.3+ |
| 1999 10 03 | 691 | 0.3− | 0.4− | 2005 03 08 | 704 | 0.5+ | 0.0 | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 1999 10 03 | 691 | 0.1− | 0.4− | 2005 03 08 | 704 | 0.6+ | 0.5+ | 2006 08 29 | 691 | 0.2− | 0.4+ |
| 1999 10 16 | 691 | 0.3+ | 0.4− | 2005 03 08 | 704 | 1.0+ | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.1+ |
| 1999 10 16 | 691 | 0.4+ | 0.3− | 2005 03 11 | G96 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.2+ |
| 1999 10 16 | 691 | 0.0 | 0.2− | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2003 11 19 | 691 | 0.4+ | 0.1− | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.2+ |
| 2003 11 19 | 691 | 0.0 | 0.5+ | 2005 03 11 | G96 | 0.3− | 0.0 | | | | |
| 2003 11 19 | 691 | 0.0 | 0.3+ | 2005 03 12 | 704 | 0.0 | 0.6+ | | | | |

**(144928)∗ 2005 CH$_{52}$ = 1996 VV$_{23}$**

Discovered 2005 Feb. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76689)

| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 | | | | | MPC |
|---|---|---|---|---|---|
| | | | **P** | | **Q** |
| $M$ | 114.67537 | (2000.0) | | | |
| $n$ | 0.27588765 | $\omega$ | 343.52556 | −0.85164096 | +0.52368751 |
| $a$ | 2.3369417 | $\Omega$ | 228.07427 | −0.47756895 | −0.79218664 |
| $e$ | 0.1180344 | $i$ | 1.65022 | −0.21595271 | −0.31335559 |
| $P$ | 3.57 | $H$ | 16.9 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 10 | 691 | 0.1− | 0.0 | 2003 10 25 | 291 | 0.5+ | 0.3+ | 2005 03 09 | 699 | 0.8+ | 0.2+ |
| 1996 11 10 | 691 | 0.1− | 0.1+ | 2003 10 25 | 291 | 0.1+ | 0.2+ | 2005 03 09 | 704 | 0.3− | 0.2+ |
| 1996 11 10 | 691 | 0.0 | 0.0 | 2005 02 02 | 691 | 0.0 | 0.1+ | 2005 03 09 | 704 | 0.0 | 0.8+ |
| 1996 11 17 | 691 | 0.4− | 0.1− | 2005 02 02 | 691 | 0.0 | 0.1− | 2005 03 09 | 704 | 0.0 | 0.1+ |
| 1996 11 17 | 691 | 0.8− | 0.1− | 2005 02 02 | 691 | 0.1− | 0.1+ | 2005 03 09 | 704 | 0.3− | 0.8+ |
| 1996 11 17 | 691 | 0.5− | 0.2− | 2005 02 09 | 704 | 1.2+ | 0.6+ | 2005 03 09 | 704 | 1.1+ | 0.1+ |
| 1998 03 29 | 704 | 0.6+ | 0.7− | 2005 02 09 | 704 | 0.6+ | 0.8+ | 2005 03 17 | 703 | 0.7− | 1.0+ |
| 1998 03 29 | 704 | 0.3− | 0.5+ | 2005 02 09 | 704 | 1.4+ | 0.2+ | 2005 03 17 | 703 | 0.4− | 0.6+ |
| 1998 03 29 | 704 | 0.1+ | 0.2+ | 2005 02 09 | 704 | 0.4− | 1.0+ | 2005 03 17 | 703 | 0.9+ | 0.2+ |
| 1998 03 29 | 704 | 0.9+ | 1.6− | 2005 03 03 | 703 | 1.0+ | 0.5− | 2005 03 17 | 703 | 0.9− | 0.2+ |
| 1998 03 29 | 704 | 1.0+ | 0.6− | 2005 03 03 | 703 | 0.0 | 0.5− | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 1999 09 18 | 691 | 0.0 | 0.0 | 2005 03 03 | 703 | 0.8− | 0.3− | 2006 08 19 | 691 | 0.6− | 0.9+ |
| 1999 09 18 | 691 | 0.3+ | 0.1+ | 2005 03 03 | 703 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.6− | 0.5+ |
| 1999 09 18 | 691 | 0.0 | 0.1+ | 2005 03 08 | 704 | 0.1− | 0.4+ | 2006 08 22 | 644 | 0.4− | 0.3+ |
| 2003 09 28 | 691 | 0.0 | 0.1− | 2005 03 08 | 704 | 0.9+ | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.2+ |
| 2003 09 28 | 691 | 0.2+ | 0.0 | 2005 03 08 | 704 | 0.7− | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2003 09 28 | 691 | 0.1+ | 0.2+ | 2005 03 08 | 704 | 0.4+ | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2003 10 19 | 691 | 0.2+ | 0.0 | 2005 03 09 | 699 | 1.5− | 1.7+ | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2003 10 19 | 691 | 0.6+ | 0.0 | 2005 03 09 | 699 | 0.1+ | 1.1+ | 2006 09 27 | G96 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 691 | 0.2+ | 0.1+ | 2005 03 09 | 699 | 1.0− | 0.5− | 2006 09 27 | G96 | 0.3+ | 0.3+ |
| 2003 10 25 | 291 | 0.5+ | 0.1+ | 2005 03 09 | 704 | (2.4− | 0.4−) | | | | |

**(144929)∗ 2005 $CP_{61}$**

Discovered 2005 Feb. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.18609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37374215 | $\omega$ | 264.30139 | | −0.48975434 | +0.86304451 | |
| $a$ | 1.9087747 | $\Omega$ | 335.14982 | | −0.63696680 | −0.45104612 | |
| $e$ | 0.0704991 | $i$ | 17.11468 | | −0.59532678 | −0.22740181 | |
| $P$ | 2.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.1+ | 0.7− | 2005 02 14 | 704 | 0.4+ | 0.6+ | 2005 03 14 | 704 | 0.1+ | 0.2+ |
| 2001 12 23 | 704 | 0.1− | 0.5+ | 2005 02 14 | 704 | 0.7+ | 0.3+ | 2005 03 17 | 704 | 0.0 | 0.3− |
| 2001 12 23 | 704 | 0.1+ | 1.2− | 2005 02 14 | 704 | 0.4+ | 0.3− | 2005 03 17 | 704 | 0.5+ | 0.5+ |
| 2001 12 23 | 704 | 0.3+ | 0.0 | 2005 02 14 | 704 | 0.4− | 1.3+ | 2005 03 17 | 704 | 0.1+ | 0.1− |
| 2001 12 23 | 704 | 0.4− | 0.2− | 2005 02 14 | 704 | 0.5+ | 0.5+ | 2005 03 17 | 704 | 1.1+ | 1.0+ |
| 2003 07 07 | 644 | 0.4− | 0.0 | 2005 03 01 | 691 | 0.1− | 0.0 | 2005 04 05 | 699 | 0.3+ | 0.2− |
| 2003 07 07 | 644 | 0.7− | 0.3+ | 2005 03 01 | 691 | 0.1− | 0.0 | 2005 04 05 | 699 | 0.8− | 0.2+ |
| 2003 07 07 | 644 | 0.3− | 0.2− | 2005 03 01 | 691 | 0.0 | 0.1+ | 2005 04 05 | 699 | 0.2+ | 0.7− |
| 2003 09 15 | 699 | 0.1− | 0.8+ | 2005 03 04 | G96 | 0.3− | 0.2− | 2005 04 05 | 699 | 1.8− | 0.4− |
| 2003 09 15 | 699 | (0.1− | 2.1+) | 2005 03 04 | G96 | 0.3+ | 0.3− | 2005 04 13 | 703 | 0.7− | 0.1− |
| 2003 09 15 | 699 | 0.0 | 1.2− | 2005 03 04 | G96 | 0.3− | 0.1− | 2005 04 13 | 703 | 0.4− | 0.5− |
| 2003 09 15 | 699 | 0.9+ | 0.2− | 2005 03 04 | G96 | 0.1− | 0.3− | 2005 04 13 | 703 | 0.5− | 0.4− |
| 2003 10 24 | 704 | 0.2+ | 0.2− | 2005 03 08 | 704 | 0.1+ | 0.7+ | 2005 04 13 | 703 | 1.6− | 0.3− |
| 2003 10 24 | 704 | 0.1− | 0.6+ | 2005 03 08 | G96 | 0.3− | 0.1+ | 2006 09 25 | 703 | (3.7− | 1.7−) |
| 2003 10 24 | 704 | 0.5+ | 1.2+ | 2005 03 08 | G96 | 0.3− | 0.1+ | 2006 09 25 | 703 | 1.3+ | 1.7+ |
| 2003 11 20 | 691 | 0.1+ | 0.3+ | 2005 03 08 | 704 | 0.3− | 0.2+ | 2006 09 25 | 703 | 0.8+ | 1.2+ |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 09 25 | 703 | 0.2− | 0.6− |
| 2003 11 20 | 691 | 0.3− | 0.2− | 2005 03 08 | G96 | 0.3− | 0.1+ | 2006 10 03 | 703 | 0.4+ | 1.4− |
| 2005 02 01 | 703 | 0.4− | 0.6− | 2005 03 08 | 704 | 0.2− | 0.9+ | 2006 10 03 | 703 | 0.3− | 0.2− |
| 2005 02 01 | 703 | 0.3+ | 1.3− | 2005 03 08 | 704 | 0.2+ | 0.6+ | 2006 10 03 | 703 | 1.0− | 0.0 |
| 2005 02 01 | 703 | 0.7+ | 0.4+ | 2005 03 08 | 704 | 0.1− | 0.3+ | 2006 10 03 | 703 | 0.0 | 0.1− |
| 2005 02 01 | 703 | 0.7− | 1.1− | 2005 03 10 | 699 | 0.2+ | 0.0 | 2006 10 23 | 703 | 0.7− | 0.6− |
| 2005 02 04 | 699 | 0.2+ | 0.3+ | 2005 03 10 | 699 | 0.5+ | 0.1− | 2006 10 23 | 703 | 0.2+ | 0.3− |
| 2005 02 04 | 699 | 0.3+ | 0.5− | 2005 03 10 | 699 | 0.1+ | 0.1− | 2006 10 23 | 703 | 0.5+ | 0.3+ |
| 2005 02 04 | 699 | 0.3+ | 0.1− | 2005 03 10 | 699 | 0.7+ | 0.2− | 2006 10 23 | 703 | 0.2+ | 0.7+ |
| 2005 02 04 | 699 | 0.5− | 0.2− | 2005 03 11 | 704 | 0.6− | 1.5− | 2006 10 29 | 703 | 0.2− | 0.5+ |
| 2005 02 09 | 699 | 1.1− | 0.7+ | 2005 03 11 | 704 | 0.7+ | 1.2+ | 2006 10 29 | 703 | 0.3− | 0.4+ |
| 2005 02 09 | 699 | 0.0 | 0.1+ | 2005 03 11 | 704 | 0.5+ | 0.1+ | 2006 10 29 | 703 | 0.6− | 0.4− |
| 2005 02 09 | 699 | 1.4+ | 0.2− | 2005 03 14 | 704 | 1.1+ | 0.1+ | 2006 10 29 | 703 | 0.7− | 0.3− |
| 2005 02 09 | 699 | 0.1+ | 0.1− | 2005 03 14 | 704 | 0.7+ | 0.2+ | | | | |

**(144930)∗ 2005 $CZ_{67}$ = 2002 $GV_{73}$**

Discovered 2005 Feb. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 73847)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.71540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25918981 | $\omega$ | 272.39997 | | +0.93362442 | −0.35661343 | |
| $a$ | 2.4362626 | $\Omega$ | 108.49397 | | +0.34136916 | +0.85655698 | |
| $e$ | 0.1923572 | $i$ | 2.06903 | | +0.10868553 | +0.37301072 | |
| $P$ | 3.80 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.2+ | 0.9− | 2005 01 06 | 704 | 1.5+ | 0.4− | 2005 03 10 | G96 | 0.2− | 0.6− |
| 1998 04 17 | 691 | 0.0 | 0.8− | 2005 01 06 | 704 | 1.3+ | 0.0 | 2005 03 11 | 701 | 0.3− | 0.1− |
| 1998 04 17 | 691 | 0.1− | 0.4− | 2005 01 16 | 691 | 0.1+ | 0.2− | 2005 03 11 | G96 | 0.5− | 0.3− |
| 2001 01 21 | 704 | 0.6− | 0.1+ | 2005 01 16 | 691 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.2− | 0.3− |
| 2001 01 21 | 704 | 0.2− | 1.6+ | 2005 01 16 | 691 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.3− | 0.3− |
| 2001 01 21 | 704 | 1.7− | 0.5+ | 2005 02 02 | 704 | 1.3+ | 0.5+ | 2005 03 11 | G96 | 0.3− | 0.5− |
| 2001 01 21 | 704 | 0.5− | 0.8− | 2005 02 02 | 704 | 0.5− | 1.7+ | 2005 03 11 | 701 | 0.0 | 0.9+ |
| 2002 04 09 | 644 | 0.6− | 1.6+ | 2005 02 02 | 704 | 0.0 | 0.9+ | 2005 03 11 | 701 | 0.2− | 0.3− |
| 2002 04 09 | 644 | 0.3− | 1.1+ | 2005 02 02 | 704 | 0.2+ | 1.4+ | 2005 04 09 | G96 | 0.2− | 0.3− |
| 2002 04 09 | 644 | 0.3− | 1.5+ | 2005 02 04 | 699 | 0.5+ | 1.2+ | 2005 04 09 | G96 | 0.3− | 0.4− |
| 2002 04 10 | 644 | 0.0 | 1.4+ | 2005 02 04 | 699 | 0.3− | 0.8− | 2005 04 09 | G96 | 0.5− | 0.0 |
| 2002 04 10 | 644 | 0.8+ | 1.1+ | 2005 02 04 | 699 | 1.7+ | 0.1+ | 2005 04 09 | G96 | 0.1− | 0.3− |
| 2002 04 10 | 644 | 0.3+ | 0.7+ | 2005 02 04 | 699 | 0.7+ | 0.5+ | 2006 04 02 | 691 | 0.2− | 0.0 |
| 2003 07 08 | 644 | 0.4− | 0.6+ | 2005 02 09 | 704 | (0.1+ | 2.3+) | 2006 04 02 | 691 | 0.0 | 0.0 |
| 2003 07 08 | 644 | 0.2− | 0.6+ | 2005 02 09 | 704 | 0.5+ | 0.0 | 2006 04 02 | 691 | 0.0 | 0.1− |
| 2003 07 08 | 644 | 0.3+ | 0.8+ | 2005 02 09 | 704 | 0.7+ | 0.6+ | 2006 04 20 | 691 | 0.2− | 0.0 |
| 2003 08 04 | 704 | 0.3− | 1.1+ | 2005 02 09 | 704 | 0.4− | 0.7+ | 2006 04 20 | 691 | 0.2+ | 0.1− |
| 2003 08 04 | 704 | 0.8− | 0.1+ | 2005 02 10 | 568 | 0.3− | 0.6+ | 2006 04 20 | 691 | 0.2− | 0.1+ |
| 2003 08 04 | 704 | 0.6− | 0.2− | 2005 02 10 | 568 | 0.0 | 0.6+ | 2006 04 24 | 691 | 0.1+ | 0.2+ |
| 2003 08 04 | 704 | 0.3+ | 0.2− | 2005 02 10 | 568 | 0.0 | 0.4+ | 2006 04 24 | 691 | 0.1+ | 0.2+ |
| 2003 08 04 | 704 | 0.0 | 0.7+ | 2005 03 04 | 691 | 0.1− | 0.1− | 2006 04 24 | 691 | 0.1− | 0.1+ |
| 2003 08 25 | 704 | 0.4+ | 0.1+ | 2005 03 04 | 691 | 0.1+ | 0.2− | 2006 05 01 | 691 | 0.1− | 0.2+ |
| 2003 08 25 | 704 | 0.3+ | 0.4− | 2005 03 04 | 691 | 0.1− | 0.6− | 2006 05 01 | 691 | 0.1− | 0.1− |
| 2003 08 25 | 704 | 0.4+ | 0.5− | 2005 03 10 | G96 | 0.3− | 0.2− | 2006 05 01 | 691 | 0.1+ | 0.3− |
| 2003 08 25 | 704 | 0.7+ | 0.2− | 2005 03 10 | G96 | 0.5− | 0.1+ | | | | |
| 2005 01 06 | 704 | 1.1+ | 0.2− | 2005 03 10 | G96 | 0.8− | 0.2− | | | | |

**(144931)∗ 2005 $ED_2$**

Discovered 2005 Mar. 2 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.19942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37242972 | $\omega$ | 185.66195 | | −0.98817834 | −0.12841301 | |
| $a$ | 1.9132564 | $\Omega$ | 346.09327 | | +0.15075073 | −0.71452570 | |
| $e$ | 0.0402391 | $i$ | 20.39264 | | +0.02788867 | −0.68772314 | |
| $P$ | 2.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 699 | 0.4+ | 0.2+ | 2005 03 09 | 699 | 0.3+ | 0.4+ | 2005 04 09 | 699 | 0.3− | 0.2+ |
| 1998 08 27 | 699 | 0.5+ | 0.9− | 2005 03 09 | 699 | 0.5+ | 0.2+ | 2005 04 09 | 699 | 0.2− | 0.4+ |
| 1998 08 27 | 699 | 1.8− | 0.1+ | 2005 03 09 | 699 | 0.1− | 0.4+ | 2005 04 09 | 699 | 0.2+ | 0.9− |
| 1998 09 18 | 699 | 0.1− | 0.1− | 2005 03 09 | 699 | 0.1+ | 0.1+ | 2005 04 09 | 699 | 0.9− | 0.3+ |
| 1998 09 18 | 699 | 0.9+ | 1.2+ | 2005 03 09 | 704 | 0.0 | 0.2+ | 2006 07 22 | G96 | 0.3− | 0.1− |
| 1998 09 18 | 699 | 1.0+ | 0.8− | 2005 03 09 | 704 | 0.3+ | 0.2− | 2006 07 22 | G96 | 0.2− | 0.2+ |
| 2001 11 27 | 704 | 0.3− | 1.2− | 2005 03 09 | 704 | 0.0 | 0.1− | 2006 07 22 | G96 | 0.6− | 0.0 |
| 2001 11 27 | 704 | 1.0− | 0.5− | 2005 03 09 | 704 | 0.3− | 0.1+ | 2006 07 22 | G96 | 0.3− | 0.1+ |
| 2001 11 27 | 704 | 0.4+ | 0.1+ | 2005 03 09 | 704 | 0.2+ | 0.0 | 2006 08 29 | 699 | 0.5+ | 0.4+ |
| 2004 12 21 | 703 | 0.2− | 0.4− | 2005 03 09 | 704 | 0.2− | 0.0 | 2006 08 29 | 699 | 0.5+ | 0.6+ |
| 2004 12 21 | 703 | (2.1− | 1.4−) | 2005 03 09 | 704 | 0.1+ | 0.1+ | 2006 08 29 | 699 | (0.8− | 2.3+) |
| 2004 12 21 | 703 | 0.6− | 0.6− | 2005 03 09 | 704 | 0.5+ | 0.2− | 2006 08 29 | 699 | 0.4− | 0.3− |
| 2004 12 21 | 703 | 0.5− | 0.4− | 2005 03 09 | 704 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.0 | 0.6− |
| 2005 02 01 | 703 | 0.4+ | 0.0 | 2005 03 09 | 704 | 0.1− | 0.6+ | 2006 09 16 | 703 | 1.2− | 0.0 |
| 2005 02 01 | 703 | 0.9− | 0.2+ | 2005 03 12 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.0 |
| 2005 02 01 | 703 | 0.7− | 0.2− | 2005 03 12 | 704 | 0.7− | 0.0 | 2006 09 16 | 703 | 0.8− | 0.1− |
| 2005 02 01 | 703 | 1.2− | 0.2− | 2005 03 12 | 704 | 0.1+ | 0.9+ | 2006 09 28 | 703 | 0.6− | 0.5+ |
| 2005 03 02 | 703 | (1.6− | 0.8−) | 2005 03 12 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.7− | 0.2+ |
| 2005 03 02 | 703 | 0.6− | 0.2− | 2005 03 12 | 704 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.9− | 0.0 |
| 2005 03 02 | 703 | 1.5− | 0.1+ | 2005 03 16 | 704 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.6− | 0.3− |
| 2005 03 02 | 703 | 0.3− | 0.5− | 2005 03 16 | 704 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.7− | 0.3+ |
| 2005 03 04 | 704 | 0.2− | 0.1+ | 2005 03 16 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.4− | 0.5+ |
| 2005 03 04 | 704 | 0.1+ | 0.2+ | 2005 03 16 | 704 | (1.7+ | 2.4+) | 2006 09 30 | 704 | 1.0− | 0.6+ |
| 2005 03 04 | 704 | 0.1− | 0.4+ | 2005 03 16 | 704 | 0.3− | 0.2− | 2006 09 30 | 704 | 1.0− | 0.7+ |
| 2005 03 04 | 704 | 0.4+ | 0.8+ | 2005 03 17 | 704 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2005 03 04 | 704 | 0.1− | 0.5+ | 2005 03 17 | 704 | 0.6+ | 1.2+ | 2006 10 09 | 644 | 0.3+ | 0.4+ |
| 2005 03 07 | 704 | 0.6+ | 0.2− | 2005 03 17 | 704 | 0.5+ | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2005 03 07 | 704 | 0.5+ | 0.3− | 2005 03 17 | 704 | 0.1+ | 0.1− | 2006 10 20 | 703 | 0.3− | 0.1− |
| 2005 03 07 | 704 | 0.8+ | 0.5− | 2005 03 30 | 644 | 0.7+ | 0.4+ | 2006 10 20 | 703 | 0.1+ | 0.0 |
| 2005 03 07 | 704 | 0.9+ | 0.2+ | 2005 03 30 | 703 | 1.2− | 1.0− | 2006 10 20 | 703 | 0.6+ | 0.3− |
| 2005 03 07 | 704 | 0.1− | 0.2+ | 2005 03 30 | 703 | 0.2+ | 0.6+ | 2006 10 20 | 703 | 0.0 | 0.6+ |
| 2005 03 08 | 699 | 0.3+ | 0.5− | 2005 03 30 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 704 | 0.4+ | 0.3+ |
| 2005 03 08 | 699 | 0.7+ | 0.1− | 2005 03 30 | 703 | 0.2− | 0.6− | 2006 10 21 | 704 | 0.8+ | 0.2− |
| 2005 03 08 | 699 | 0.2− | 0.1+ | 2005 03 30 | 703 | 0.1− | 0.2+ | 2006 10 21 | 704 | 0.4+ | 0.0 |
| 2005 03 08 | 699 | 0.8− | 0.1− | 2005 03 30 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 704 | (1.8+ | 0.4+) |
| 2005 03 08 | 704 | 0.5+ | 0.2− | 2005 04 04 | 704 | 0.1− | 0.2− | 2006 10 21 | 704 | 0.5+ | 0.1− |
| 2005 03 08 | 704 | 0.5+ | 0.2+ | 2005 04 04 | 704 | 0.3+ | 0.3− | 2006 10 31 | 703 | 0.4+ | 1.0+ |
| 2005 03 08 | 704 | 0.6+ | 0.3− | 2005 04 04 | 704 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.3+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 704 | 0.7+ | 0.3− | 2005 04 04 | 704 | 0.8+ | 0.1− | 2006 10 31 | 703 | 0.2+ | 0.8+ |
| 2005 03 08 | 704 | 0.6+ | 0.4− | 2005 04 04 | 704 | 0.0 | 0.2+ | 2006 10 31 | 703 | 0.3− | 0.2− |

**(144932)∗ 2005 EQ$_7$**

Discovered 2005 Mar. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.22964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25669217 | $\omega$ | 78.05121 | | −0.51690304 | +0.85589617 | |
| $a$ | 2.4520405 | $\Omega$ | 160.79884 | | −0.80302536 | −0.47836775 | |
| $e$ | 0.1342228 | $i$ | 2.77210 | | −0.29658308 | −0.19648421 | |
| $P$ | 3.84 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 24 | 691 | 0.3− | 0.9+ | 2005 03 04 | G96 | 0.7− | 0.1+ | 2005 04 04 | 703 | 0.6+ | 0.4− |
| 1992 12 24 | 691 | 0.6− | 1.4+ | 2005 03 04 | G96 | 0.1− | 0.2+ | 2005 04 04 | 703 | 0.9+ | 0.9+ |
| 1992 12 24 | 691 | 0.8− | 0.4+ | 2005 03 08 | 699 | (1.6− | 0.8+) | 2005 04 04 | 703 | 0.7− | 0.4+ |
| 1997 01 31 | 691 | 0.5+ | 0.1− | 2005 03 08 | 699 | 1.0− | 0.4+ | 2005 04 05 | 704 | 0.4− | 0.1− |
| 1997 01 31 | 691 | 0.8+ | 0.1− | 2005 03 08 | 699 | 0.6+ | 0.4+ | 2005 04 05 | 704 | 0.9− | 1.4+ |
| 1997 01 31 | 691 | 0.4+ | 0.1− | 2005 03 08 | 699 | (1.8− | 0.5+) | 2005 04 05 | 704 | 0.3− | 1.1+ |
| 1997 02 11 | 691 | 0.4+ | 0.5− | 2005 03 09 | 699 | 0.2− | 0.4− | 2006 08 18 | 691 | 0.4+ | 0.4+ |
| 1997 02 11 | 691 | (3.1+ | 0.5−) | 2005 03 09 | 699 | 0.3− | 0.9+ | 2006 08 18 | 691 | 0.1− | 0.1+ |
| 1997 02 11 | 691 | 0.2+ | 0.5− | 2005 03 09 | 699 | 0.6+ | 0.0 | 2006 08 18 | 691 | 0.1− | 0.5+ |
| 2002 08 12 | 807 | 0.3− | 0.0 | 2005 03 09 | 699 | (0.3− | 1.8+) | 2006 08 27 | 691 | 0.2− | 0.6+ |
| 2002 08 12 | 807 | 0.3− | 0.4+ | 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.3− | 0.4+ |
| 2002 10 10 | 291 | 0.0 | 0.3+ | 2005 03 12 | 691 | 0.1+ | 0.4+ | 2006 08 27 | 691 | 0.5− | 0.7+ |
| 2002 10 10 | 291 | 0.1+ | 0.3+ | 2005 03 12 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | (2.1+ | 0.6+) |
| 2002 10 10 | 291 | 0.1− | 0.4+ | 2005 03 16 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 1.3− | 0.6+ |
| 2003 11 23 | 691 | 0.2+ | 0.3− | 2005 03 16 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.2+ |
| 2003 11 23 | 691 | 0.4+ | 0.3− | 2005 03 16 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.1+ | 1.5+ |
| 2003 11 23 | 691 | 0.5+ | 0.1− | 2005 03 17 | 703 | (1.6− | 0.7−) | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2003 12 14 | 691 | 0.3− | 0.0 | 2005 03 17 | 703 | 0.3+ | 0.5− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2003 12 14 | 691 | 0.4− | 0.3+ | 2005 03 17 | 703 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2003 12 14 | 691 | 0.4− | 0.3+ | 2005 03 17 | 703 | 1.5− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2005 03 01 | 691 | 0.2+ | 0.1− | 2005 03 31 | 699 | 1.0+ | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2005 03 01 | 691 | 0.1+ | 0.0 | 2005 03 31 | 699 | 0.7+ | 0.5+ | 2006 11 17 | G96 | 0.1+ | 1.1− |
| 2005 03 01 | 691 | 0.2− | 0.3− | 2005 03 31 | 699 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.9− | 0.2− |
| 2005 03 04 | G96 | 0.1− | 0.2+ | 2005 03 31 | 699 | 0.7− | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.4+ |
| 2005 03 04 | G96 | 0.6− | 0.1− | 2005 04 04 | 703 | 0.9+ | 1.0+ | | | | |

**(144933)∗ 2005 EA$_8$ = 1996 VE$_{32}$**

Discovered 2005 Mar. 1 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 95648)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.68499 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29038171 | $\omega$ | 321.67862 | | +0.82660446 | +0.56268866 | |
| $a$ | 2.2585162 | $\Omega$ | 4.11996 | | −0.47439806 | +0.70653591 | |
| $e$ | 0.1531954 | $i$ | 8.26013 | | −0.30277311 | +0.42917185 | |
| $P$ | 3.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 04 | 691 | 0.5+ | 0.3− | 2006 08 25 | 704 | 0.5− | 0.0 | 2006 09 24 | 691 | 0.7− | 0.2− |
| 1996 11 04 | 691 | 0.1+ | 0.3− | 2006 08 25 | 704 | 0.2− | 0.3+ | 2006 09 24 | 691 | 0.3− | 0.1− |
| 1996 11 04 | 691 | 0.5+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.6+ | 0.2+ |
| 1996 11 10 | 691 | 0.2− | 1.2− | 2006 08 28 | 703 | 0.6+ | 0.1− | 2006 09 27 | 704 | 0.4− | 0.4+ |
| 1996 11 10 | 691 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.8+ | 2006 09 27 | 704 | 0.4− | 0.2+ |
| 1996 11 10 | 691 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.6+ | 0.6− | 2006 09 27 | 704 | 0.2− | 0.0 |
| 1999 09 11 | 704 | 0.4+ | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.2+ |
| 1999 09 11 | 704 | 0.3− | 0.1− | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 1999 09 11 | 704 | 0.2− | 0.4+ | 2006 09 06 | 644 | 0.5− | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 1999 09 11 | 704 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.6+ | 1.2+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 1999 09 11 | 704 | 0.1+ | 1.3+ | 2006 09 12 | 703 | 0.2− | 1.5− | 2006 09 29 | 704 | 0.5+ | 0.3− |
| 2003 12 17 | 704 | 0.3+ | 1.4+ | 2006 09 12 | 703 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.5+ | 0.0 |
| 2003 12 17 | 704 | (0.5+ | 2.6+) | 2006 09 12 | 703 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.5+ | 0.3− |
| 2003 12 17 | 704 | (0.3+ | 1.7+) | 2006 09 12 | 703 | (0.0 | 2.1+) | 2006 09 29 | 704 | 0.6+ | 0.8+ |
| 2003 12 29 | 704 | 0.3− | 0.6− | 2006 09 12 | 703 | 0.2− | 0.6+ | 2006 09 29 | 704 | 0.8+ | 0.2+ |
| 2003 12 29 | 704 | 0.6+ | 0.6+ | 2006 09 12 | 703 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 1.1+ | 0.1+ |
| 2003 12 29 | 704 | 0.4+ | 1.4+ | 2006 09 12 | 703 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.1− |
| 2003 12 29 | 704 | 0.6− | 0.3− | 2006 09 15 | 691 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2003 12 29 | 704 | 0.6+ | 0.9+ | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.0 | 0.1+ |
| 2005 03 01 | 691 | 0.5+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 01 | 704 | (2.2+ | 1.1−) |
| 2005 03 01 | 691 | 0.4+ | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.1− | 0.8+ |
| 2005 03 01 | 691 | 0.5+ | 0.2− | 2006 09 17 | 704 | 0.7+ | 0.1− | 2006 10 17 | 703 | 1.1+ | 1.5+ |
| 2005 03 04 | G96 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.9+ | 2006 10 17 | 703 | 0.5+ | 1.0+ |
| 2005 03 04 | G96 | 0.7− | 0.8+ | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.4+ |
| 2005 03 04 | G96 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.9+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2005 03 04 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2005 04 05 | G96 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 04 05 | G96 | 0.4− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 04 05 | G96 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2005 05 14 | G96 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2005 05 14 | G96 | 0.6− | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2005 05 14 | G96 | 0.8− | 0.4+ | 2006 09 20 | 704 | 0.7− | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.7− | 0.3+ | 2006 10 31 | G96 | 1.0+ | 1.2+ |
| 2006 08 24 | 644 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2006 08 25 | 704 | 0.9− | 0.5− | 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.3− | 0.2− |

**(144934)∗ 2005 EZ$_9$ = 2003 WE$_{15}$**

Discovered 2005 Mar. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76727)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.63938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27040677 | $\omega$ | 24.50715 | | −0.80993885 | +0.58650368 | |
| $a$ | 2.3684143 | $\Omega$ | 191.40417 | | −0.54102249 | −0.74943071 | |
| $e$ | 0.1322319 | $i$ | 1.02412 | | −0.22648118 | −0.30719218 | |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 691 | 0.2+ | 0.7+ | 2005 03 08 | G96 | 0.0 | 0.6− | 2005 04 04 | 703 | 0.1− | 0.1− |
| 2000 12 22 | 691 | 0.0 | 0.3+ | 2005 03 08 | G96 | 0.4− | 0.2− | 2005 04 04 | 703 | 0.9− | 0.6+ |
| 2000 12 22 | 691 | 0.1+ | 0.4+ | 2005 03 08 | 704 | (0.3+ | 1.7+) | 2005 04 04 | 703 | 1.3− | 0.5+ |
| 2003 10 19 | 291 | 0.6− | 0.0 | 2005 03 08 | G96 | 0.5− | 0.1− | 2005 04 04 | 703 | 0.9− | 0.3+ |
| 2003 10 19 | 291 | 0.2− | 0.1+ | 2005 03 08 | G96 | 0.4− | 0.1− | 2005 05 04 | G96 | 0.2− | 0.4− |
| 2003 10 19 | 291 | 0.1+ | 0.2+ | 2005 03 08 | 704 | 0.6+ | 0.1+ | 2005 05 04 | G96 | 0.2− | 0.3− |
| 2003 11 16 | 691 | 0.3+ | 0.5− | 2005 03 08 | 704 | 0.4− | 0.3+ | 2005 05 04 | G96 | 0.3− | 0.0 |
| 2003 11 16 | 691 | 0.1+ | 0.5− | 2005 03 08 | 704 | 0.9+ | 0.2− | 2005 05 04 | G96 | 0.4− | 0.0 |
| 2003 11 16 | 691 | 0.9+ | 0.3− | 2005 03 08 | 704 | 0.4+ | 0.5+ | 2005 05 13 | G96 | 0.0 | 0.5− |
| 2003 11 20 | 691 | 0.4− | 0.0 | 2005 03 09 | 699 | 0.3− | 0.5+ | 2005 05 13 | G96 | 0.0 | 0.2− |
| 2003 11 20 | 691 | 0.3− | 0.0 | 2005 03 09 | 699 | 0.1+ | 0.1+ | 2005 05 13 | G96 | 0.1+ | 0.0 |
| 2003 11 20 | 691 | 0.2+ | 0.2− | 2005 03 09 | 683 | (0.8+ | 1.8+) | 2005 05 13 | G96 | 0.3− | 0.2− |
| 2005 03 02 | 691 | 0.1− | 0.1− | 2005 03 09 | 699 | 0.1− | 0.4+ | 2006 07 25 | G96 | 0.1− | 0.2+ |
| 2005 03 02 | 691 | 0.2+ | 0.2− | 2005 03 09 | 683 | 0.4+ | 1.0+ | 2006 07 25 | G96 | 0.2− | 0.1+ |
| 2005 03 02 | 691 | 0.4+ | 0.1+ | 2005 03 09 | 683 | 0.2+ | 1.3+ | 2006 07 25 | G96 | 0.2− | 0.1+ |
| 2005 03 03 | 703 | 0.5− | 0.3+ | 2005 03 09 | 699 | 0.6− | 0.9+ | 2006 07 25 | G96 | 0.7− | 0.5+ |
| 2005 03 03 | 703 | 0.8− | 0.6− | 2005 03 14 | 704 | 0.9+ | 0.5+ | 2006 08 20 | A50 | 0.1− | 0.1− |
| 2005 03 03 | 703 | 0.1− | 0.5− | 2005 03 14 | 704 | 0.3+ | 0.2− | 2006 08 27 | 691 | 0.2+ | 0.6+ |
| 2005 03 03 | 703 | 1.0− | 0.3− | 2005 03 14 | 704 | 1.0− | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 2005 03 07 | 683 | 0.6+ | 0.3+ | 2005 03 14 | 704 | 0.1− | 0.7+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2005 03 07 | 683 | 0.1+ | 0.5− | 2005 03 14 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.6− |
| 2005 03 07 | 683 | 0.1− | 0.5+ | 2005 03 17 | 704 | 0.9+ | 1.0− | 2006 08 28 | 703 | (2.1+ | 0.5+) |
| 2005 03 08 | 699 | 1.3+ | 0.8− | 2005 03 17 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 1.4− | 1.0+ |
| 2005 03 08 | 699 | 0.0 | 0.6− | 2005 03 17 | 704 | 1.2+ | 0.5+ | 2006 08 28 | 703 | (1.7− | 1.2+) |
| 2005 03 08 | 683 | (2.6− | 2.2−) | 2005 03 17 | 704 | 0.9+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2005 03 08 | 699 | 0.1− | 0.1− | 2005 04 02 | G96 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2005 03 08 | 683 | 0.4+ | 0.3− | 2005 04 02 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.6− | 0.0 |
| 2005 03 08 | 699 | 0.3+ | 0.2− | 2005 04 02 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 2005 03 08 | 683 | 0.1− | 0.0 | 2005 04 02 | G96 | 0.3− | 0.0 | | | | |

**(144935)∗ 2005 ES$_{10}$ = 1999 TC$_{316}$**

Discovered 2005 Mar. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.88883 | | | (2000.0) | | |
| $n$ | 0.27195335 | $\omega$ | 302.10034 | | +0.00370336 | +0.99834359 |
| $a$ | 2.3594264 | $\Omega$ | 327.96061 | | −0.87714359 | −0.02432830 |
| $e$ | 0.0895373 | $i$ | 6.21304 | | −0.48021392 | +0.05213644 |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5+ | 0.0 | 2005 03 13 | 691 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.2− | 0.6+ | 2005 03 17 | 703 | 1.2− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.6− | 1.0+ | 2005 03 17 | 703 | 0.6− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 1999 10 19 | 557 | 0.1− | 0.5+ | 2005 03 17 | 703 | 0.5− | 0.0 | 2006 08 29 | 704 | 0.1+ | 0.0 |
| 1999 10 19 | 557 | 0.7− | 0.4− | 2005 03 17 | 703 | 1.4− | 0.2+ | 2006 08 29 | 704 | 0.3+ | 0.1+ |
| 1999 10 20 | 557 | 0.1+ | 0.4+ | 2005 04 04 | 703 | 0.1− | 0.5+ | 2006 08 29 | 704 | 0.0 | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2005 04 04 | 703 | 0.5− | 0.8+ | 2006 08 29 | 704 | 0.0 | 0.6− |
| 2003 12 19 | 691 | 0.0 | 0.3+ | 2005 04 04 | 703 | 0.7+ | 0.7+ | 2006 09 01 | 704 | 0.7− | 0.0 |
| 2003 12 19 | 691 | 0.2− | 0.2+ | 2005 04 04 | 703 | 1.3+ | 0.3− | 2006 09 01 | 704 | 1.2− | 0.6− |
| 2005 03 02 | 691 | 0.4+ | 0.1+ | 2006 07 21 | 704 | 0.5− | 0.1− | 2006 09 01 | 704 | 1.2− | 0.9+ |
| 2005 03 02 | 691 | 0.4+ | 0.3+ | 2006 07 21 | 704 | 0.6− | 0.7+ | 2006 09 14 | 703 | 0.9− | 0.2+ |
| 2005 03 02 | 691 | 0.2+ | 0.4+ | 2006 07 21 | 704 | 0.6+ | 0.4− | 2006 09 14 | 703 | 0.5− | 0.3− |
| 2005 03 03 | 703 | 0.6− | 0.4+ | 2006 08 01 | A50 | 0.8− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2005 03 03 | 703 | 0.2+ | 0.6− | 2006 08 01 | A50 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.4+ | 1.2+ |
| 2005 03 03 | 703 | 0.8− | 0.0 | 2006 08 14 | 644 | 0.4− | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.6+ |
| 2005 03 03 | 703 | 0.2+ | 0.4− | 2006 08 14 | 644 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.7+ | 0.3+ |
| 2005 03 08 | 699 | 1.3+ | 0.6+ | 2006 08 14 | 644 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.7− | 0.8+ |
| 2005 03 08 | 699 | 0.4+ | 0.1− | 2006 08 18 | 699 | 0.4− | 0.0 | 2006 09 18 | 699 | 1.2+ | 0.6+ |
| 2005 03 08 | 699 | 0.6+ | 0.0 | 2006 08 18 | 699 | 1.4− | 0.5+ | 2006 09 20 | 704 | 0.7− | 1.3+ |
| 2005 03 08 | 699 | 0.6+ | 0.5+ | 2006 08 18 | 699 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.4+ |
| 2005 03 09 | 691 | 0.4+ | 0.2+ | 2006 08 18 | 699 | 0.3− | 0.9+ | 2006 09 20 | 704 | 0.2+ | 0.6− |
| 2005 03 09 | 691 | 0.1− | 0.6+ | 2006 08 21 | 704 | 0.1− | 0.9+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2005 03 09 | 691 | 0.3+ | 0.3+ | 2006 08 21 | 704 | 0.3+ | 0.9+ | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 08 21 | 704 | 1.0+ | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 08 21 | 704 | 1.1+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.3− |

**(144936)∗ 2005 EQ$_{13}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 85.46545 | | | (2000.0) | | |
| $n$ | 0.27562748 | $\omega$ | 218.10829 | | −0.19181652 | +0.98088850 |
| $a$ | 2.3384120 | $\Omega$ | 40.86221 | | −0.88776201 | −0.15924218 |
| $e$ | 0.1993686 | $i$ | 2.85804 | | −0.41843163 | −0.11180193 |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.7− | 1.9− | 2003 12 14 | 691 | 0.2+ | 0.2+ | 2005 03 09 | 704 | 0.1− | 1.0+ |
| 1998 03 29 | 704 | 1.0− | 1.6+ | 2003 12 14 | 691 | 0.2+ | 0.0 | 2005 03 09 | 704 | 0.4+ | 0.0 |
| 1998 03 29 | 704 | 0.1− | 0.4− | 2003 12 14 | 691 | 0.4+ | 0.1+ | 2005 03 09 | 704 | 1.0− | 0.2+ |
| 1998 03 29 | 704 | 0.3+ | 0.3− | 2005 03 03 | 691 | 0.3+ | 0.2− | 2005 03 09 | 704 | 0.3− | 1.0+ |
| 1998 03 29 | 704 | 0.3+ | 0.2− | 2005 03 03 | 691 | 0.2+ | 0.2+ | 2005 04 09 | 691 | 0.1− | 0.2+ |
| 2001 01 14 | 691 | 0.1− | 0.3− | 2005 03 03 | 691 | 0.1+ | 0.1− | 2005 04 09 | 691 | 1.0+ | 0.6+ |
| 2001 01 14 | 691 | 0.3+ | 0.3− | 2005 03 03 | 703 | 0.9− | 0.1− | 2005 04 09 | 691 | 0.0 | 0.3+ |
| 2001 01 14 | 691 | 0.2+ | 0.3− | 2005 03 03 | 703 | 1.0− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 2002 06 17 | 644 | 0.1− | 0.3+ | 2005 03 03 | 703 | 0.1− | 0.5− | 2006 09 18 | 691 | 0.3− | 0.1+ |
| 2002 06 17 | 644 | 0.4+ | 0.1+ | 2005 03 03 | 703 | 0.7− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 2002 06 17 | 644 | 0.3+ | 0.5− | 2005 03 04 | 704 | (2.6+ | 0.2−) | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2002 07 05 | 704 | 0.3+ | 0.8+ | 2005 03 04 | 704 | 0.8+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | 0.1+ | 0.7+ | 2005 03 04 | 704 | (1.2+ | 1.5+) | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | 0.0 | 0.6+ | 2005 03 07 | 704 | 1.4+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2002 07 05 | 704 | (0.3+ | 1.9+) | 2005 03 07 | 704 | 0.7+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2002 07 05 | 704 | 0.7− | 0.5− | 2005 03 07 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2002 08 05 | 644 | 0.1+ | 0.3+ | 2005 03 07 | 704 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2002 08 05 | 644 | 0.4+ | 0.4+ | 2005 03 08 | 704 | 1.2− | 1.4+ | 2006 11 14 | G96 | 1.3+ | 0.3− |
| 2002 08 05 | 644 | 0.2+ | 0.2+ | 2005 03 08 | 704 | 0.3− | 0.5+ | 2006 11 14 | G96 | 0.9− | 0.5− |
| 2003 11 19 | 691 | 1.0− | 0.0 | 2005 03 08 | 704 | 0.7+ | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.1+ |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2005 03 08 | 704 | 0.3+ | 0.7− | | | | |
| 2003 11 19 | 691 | 0.2+ | 0.5+ | 2005 03 09 | 704 | 0.6− | 0.5+ | | | | |

**(144937)∗ 2005 EP$_{15}$ = 1995 TR$_{12}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76741)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.65029 | | | (2000.0) | | |
| $n$ | 0.26156607 | $\omega$ | 242.01014 | | −0.60334319 | +0.79741259 |
| $a$ | 2.4214850 | $\Omega$ | 350.85813 | | −0.70651191 | −0.54057701 |
| $e$ | 0.1209300 | $i$ | 3.78767 | | −0.36988906 | −0.26815976 |
| $P$ | 3.77 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.4+ | 0.4+ | 2005 03 04 | G96 | 0.5− | 0.6− | 2005 04 04 | 691 | 0.1− | 0.2− |
| 1995 10 15 | 691 | 0.5+ | 0.3+ | 2005 03 04 | G96 | 0.2− | 0.5− | 2005 04 04 | 691 | 0.3− | 0.2− |
| 1995 10 15 | 691 | 0.3− | 0.5− | 2005 03 04 | G96 | 0.3− | 0.5− | 2005 04 15 | 691 | 0.0 | 0.2+ |
| 1999 11 03 | 691 | 0.7− | 0.0 | 2005 03 08 | 704 | 1.3+ | 0.6+ | 2005 04 15 | 691 | 0.5+ | 0.2− |
| 1999 11 03 | 691 | 0.3− | 0.1− | 2005 03 08 | 704 | 1.3+ | 0.0 | 2005 04 15 | 691 | 0.6+ | 0.3− |
| 1999 11 03 | 691 | 0.7− | 0.0 | 2005 03 08 | 704 | 1.4+ | 0.0 | 2005 05 04 | G96 | 0.4− | 0.3− |
| 2001 05 17 | 691 | 0.2− | 0.0 | 2005 03 08 | 704 | 1.6+ | 0.8+ | 2005 05 04 | G96 | 0.1− | 0.3− |
| 2001 05 17 | 691 | 0.5+ | 0.4+ | 2005 03 08 | 704 | (2.1+ | 1.1+) | 2005 05 04 | G96 | 0.2− | 0.3− |
| 2001 05 17 | 691 | 0.3+ | 1.0+ | 2005 03 09 | 699 | 0.0 | 0.8+ | 2005 05 04 | G96 | 0.4− | 0.2− |
| 2003 10 24 | 695 | 0.4+ | 0.1+ | 2005 03 09 | 699 | 1.7− | 0.3+ | 2005 05 08 | G96 | 0.1− | 0.3− |
| 2003 10 24 | 695 | 0.5+ | 0.2+ | 2005 03 09 | 699 | 1.2− | 2.0+ | 2005 05 08 | G96 | 0.7− | 0.4− |
| 2003 11 16 | 691 | 0.5+ | 0.1− | 2005 03 09 | 699 | (4.6− | 3.5+) | 2005 05 08 | G96 | 0.5− | 0.3− |
| 2003 11 16 | 691 | 0.5+ | 0.3− | 2005 03 17 | 704 | 1.0+ | 0.6+ | 2005 05 08 | G96 | 0.0 | 0.5− |
| 2003 11 16 | 691 | 0.1− | 0.3− | 2005 03 17 | 704 | 0.4+ | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.9+ |
| 2005 02 09 | 704 | 0.4+ | 0.2− | 2005 03 17 | 704 | 0.5+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.9+ |
| 2005 02 09 | 704 | 0.9+ | 0.8+ | 2005 03 17 | 704 | 0.3− | 0.6− | 2006 08 24 | 644 | 0.2− | 0.8+ |
| 2005 02 09 | 704 | 0.4− | 0.6+ | 2005 03 17 | 704 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.5+ |
| 2005 02 09 | 704 | (2.4− | 2.1+) | 2005 03 17 | 703 | 0.9− | 0.2− | 2006 08 28 | 703 | (2.6− | 1.9−) |
| 2005 03 03 | 691 | 0.2+ | 0.0 | 2005 03 17 | 703 | 1.7− | 0.4+ | 2006 08 28 | 703 | 0.5+ | 2.0− |
| 2005 03 03 | 691 | 0.4− | 0.7+ | 2005 03 17 | 703 | 0.2− | 0.5+ | 2006 08 28 | 703 | 1.2− | 0.0 |
| 2005 03 03 | 691 | 0.2+ | 0.0 | 2005 03 17 | 703 | 0.8− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.4+ |
| 2005 03 03 | 703 | 0.1+ | 0.4− | 2005 04 02 | G96 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2005 03 03 | 703 | 0.3− | 0.3− | 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.4+ |
| 2005 03 03 | 703 | 0.1− | 0.4− | 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.4+ |
| 2005 03 03 | 703 | 0.8− | 0.2− | 2005 04 02 | G96 | 0.1− | 0.2− | | | | |
| 2005 03 04 | G96 | 0.1− | 0.6− | 2005 04 04 | 691 | 0.1− | 0.3− | | | | |

**(144938)∗ 2005 EC$_{16}$ = 2001 BV$_{36}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76742)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.03082 | | | (2000.0) | | |
| $n$ | 0.26515186 | $\omega$ | 62.10200 | | −0.95666736 | +0.29069536 |
| $a$ | 2.3996041 | $\Omega$ | 134.79199 | | −0.27480565 | −0.88221997 |
| $e$ | 0.1088359 | $i$ | 1.36015 | | −0.09627780 | −0.37038378 |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 691 | 0.1+ | 0.0 | 2005 03 08 | 704 | 0.0 | 0.3− | 2005 03 17 | 703 | 0.6+ | 0.4+ |
| 2000 12 22 | 691 | 0.1+ | 0.0 | 2005 03 08 | 704 | 0.9+ | 0.1+ | 2005 03 17 | 703 | 0.2− | 0.1+ |
| 2000 12 22 | 691 | 0.2+ | 0.1− | 2005 03 08 | 704 | 0.2+ | 0.6+ | 2005 03 17 | 703 | 0.3− | 0.7+ |
| 2001 01 21 | 704 | 0.8− | 0.4+ | 2005 03 09 | 699 | 0.6+ | 0.4− | 2005 03 30 | 703 | 1.1+ | 0.8− |
| 2001 01 21 | 704 | 1.0− | 0.9− | 2005 03 09 | 699 | 0.1− | 0.3+ | 2005 03 30 | 703 | 0.7− | 0.7+ |
| 2001 01 21 | 704 | 0.5+ | 1.4− | 2005 03 09 | 699 | 0.8− | 0.5+ | 2005 03 30 | 703 | 1.5− | 1.3+ |
| 2001 01 21 | 704 | 0.0 | 0.2+ | 2005 03 09 | 699 | 0.2− | 0.2+ | 2005 03 30 | 703 | (1.4− | 2.2+) |
| 2001 01 21 | 704 | 0.9− | 0.4− | 2005 03 09 | 704 | 0.5+ | 0.2− | 2005 04 04 | G96 | 0.1+ | 0.0 |
| 2001 01 21 | 704 | 0.8− | 0.3− | 2005 03 09 | 704 | 0.5+ | 0.1+ | 2005 04 04 | G96 | 0.1− | 0.0 |
| 2001 01 21 | 704 | 1.0+ | 0.7+ | 2005 03 09 | 704 | 0.5+ | 0.5+ | 2005 04 04 | G96 | 0.0 | 0.1− |
| 2001 01 21 | 704 | 0.2− | 0.4− | 2005 03 09 | 704 | 0.1+ | 0.3+ | 2005 04 04 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 24 | 704 | 0.3− | 0.1+ | 2005 03 09 | 704 | 1.0+ | 0.0 | 2005 04 11 | G96 | 0.2− | 0.3− |
| 2001 01 24 | 704 | 0.6+ | 0.2− | 2005 03 10 | G96 | 0.6− | 0.1− | 2005 04 11 | G96 | 0.5− | 0.3− |
| 2001 01 24 | 704 | 0.1+ | 0.2− | 2005 03 10 | G96 | 0.5− | 0.2− | 2005 04 11 | G96 | 0.4− | 0.3− |
| 2003 10 18 | 291 | 0.2− | 0.4+ | 2005 03 10 | G96 | 0.7− | 0.0 | 2005 04 11 | G96 | 0.3− | 0.2− |
| 2003 10 18 | 291 | 0.1− | 0.4+ | 2005 03 10 | G96 | 0.6− | 0.1− | 2005 05 11 | G96 | 0.4− | 0.2− |
| 2003 10 18 | 291 | 0.1− | 0.3+ | 2005 03 11 | 704 | 0.8− | 1.2+ | 2005 05 11 | G96 | 0.5− | 0.1− |
| 2005 02 09 | 704 | 0.6+ | 0.1+ | 2005 03 11 | 704 | 0.4− | 0.2+ | 2005 05 11 | G96 | 0.5− | 0.0 |
| 2005 02 09 | 704 | 0.9+ | 0.2− | 2005 03 11 | 704 | 0.5+ | 0.7+ | 2005 05 11 | G96 | 0.3− | 0.1− |
| 2005 02 09 | 704 | 0.9+ | 0.6+ | 2005 03 11 | 704 | 0.2− | 0.7+ | 2006 07 20 | D35 | 0.5− | 1.1+ |
| 2005 02 09 | 704 | 1.3+ | 1.1− | 2005 03 14 | 704 | 0.1− | 0.5+ | 2006 07 20 | D35 | 0.2+ | 0.8+ |
| 2005 03 03 | 691 | 0.1− | 0.0 | 2005 03 14 | 704 | 0.0 | 1.4+ | 2006 07 20 | D35 | 0.1− | 0.7+ |
| 2005 03 03 | 691 | 0.1− | 0.0 | 2005 03 14 | 704 | 0.1+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.3+ |
| 2005 03 03 | 691 | 0.2− | 0.4− | 2005 03 14 | 704 | 0.4+ | 0.4+ | 2006 07 21 | G96 | 0.3− | 0.1− |
| 2005 03 04 | G96 | 0.4− | 0.2− | 2005 03 17 | 704 | 1.0+ | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.3+ |
| 2005 03 04 | G96 | 0.2− | 0.5− | 2005 03 17 | 704 | 0.7+ | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.1+ |
| 2005 03 04 | G96 | 0.5− | 0.4− | 2005 03 17 | 704 | 0.7+ | 0.4− | 2006 10 20 | G96 | 0.4− | 0.3− |
| 2005 03 04 | G96 | 0.6− | 0.4− | 2005 03 17 | 704 | 1.0+ | 0.9+ | 2006 10 20 | G96 | 0.8+ | 0.2+ |
| 2005 03 08 | 704 | 0.1+ | 0.7+ | 2005 03 17 | 704 | 1.1+ | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2005 03 08 | 704 | 0.5+ | 0.5+ | 2005 03 17 | 703 | 0.4+ | 0.6+ | 2006 10 20 | G96 | 0.4− | 1.0+ |

**(144939)∗ 2005 EJ$_{16}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.15928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29708010 | $\omega$ | 221.29714 | | −0.85411910 | +0.51973797 | |
| $a$ | 2.2244382 | $\Omega$ | 349.96636 | | −0.44436290 | −0.74806812 | |
| $e$ | 0.0954282 | $i$ | 6.19079 | | −0.27022617 | −0.41263365 | |
| $P$ | 3.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 704 | 0.1+ | 0.0 | 2005 03 08 | 704 | 0.2− | 0.5+ | 2005 04 04 | 704 | 0.1− | 0.2− |
| 2002 05 17 | 704 | 0.4− | 1.0− | 2005 03 08 | 704 | 0.4+ | 0.1− | 2005 04 04 | 704 | 1.3− | 0.1+ |
| 2002 05 17 | 704 | 0.0 | 0.4+ | 2005 03 08 | 704 | 0.2− | 1.0+ | 2005 04 06 | 699 | (0.9− | 2.3+) |
| 2003 09 27 | 704 | 0.6+ | 0.2+ | 2005 03 08 | 704 | 0.0 | 0.5+ | 2005 04 06 | 699 | 0.4− | 0.7+ |
| 2003 09 27 | 704 | 0.2− | 0.5+ | 2005 03 08 | 704 | 1.0+ | 0.2+ | 2005 04 06 | 699 | 0.7+ | 1.1+ |
| 2003 09 27 | 704 | 0.1− | 0.3+ | 2005 03 09 | 704 | 0.3− | 0.1+ | 2005 04 06 | 699 | 1.0− | 0.1− |
| 2003 10 01 | 691 | 0.0 | 0.1+ | 2005 03 09 | 704 | 0.4− | 0.0 | 2005 04 09 | G96 | 0.4− | 0.0 |
| 2003 10 01 | 691 | 0.5+ | 0.0 | 2005 03 09 | 704 | 1.4− | 0.4+ | 2005 04 09 | G96 | 0.2− | 0.2− |
| 2003 10 01 | 691 | 0.1− | 0.2+ | 2005 03 09 | 704 | 1.0− | 0.3+ | 2005 04 09 | G96 | 0.3− | 0.0 |
| 2003 10 21 | 699 | (1.2+ | 2.0+) | 2005 03 09 | 704 | 0.6− | 0.4+ | 2005 04 09 | G96 | 0.2− | 0.3− |
| 2003 10 21 | 699 | 0.5− | 1.2− | 2005 03 11 | 704 | 0.0 | 0.9+ | 2005 04 15 | 691 | 0.1+ | 0.3+ |
| 2003 10 21 | 699 | 1.0− | 0.8+ | 2005 03 11 | 704 | 0.4+ | 0.2+ | 2005 04 15 | 691 | 0.1+ | 0.0 |
| 2003 10 21 | 699 | (1.5− | 1.5−) | 2005 03 11 | 704 | 0.7+ | 1.3+ | 2005 04 15 | 691 | 0.1− | 0.4+ |
| 2003 10 27 | 691 | 0.2− | 0.1+ | 2005 03 11 | 704 | 0.0 | 1.1+ | 2005 05 14 | G96 | (1.7− | 1.2+) |
| 2003 10 27 | 691 | 0.1− | 0.0 | 2005 03 11 | 704 | 1.0+ | 0.5− | 2005 05 14 | G96 | 0.3− | 0.1− |
| 2003 10 27 | 691 | 0.1− | 0.1+ | 2005 03 11 | 704 | 0.2+ | 0.1− | 2005 05 14 | G96 | 0.3− | 0.0 |
| 2005 02 14 | 704 | 1.0+ | 0.2+ | 2005 03 11 | 704 | 0.8+ | 0.2+ | 2005 05 14 | G96 | 0.1+ | 0.2+ |
| 2005 02 14 | 704 | 0.2− | 0.5+ | 2005 03 11 | 704 | 1.1+ | 0.4− | 2006 08 18 | 691 | 0.4− | 0.4+ |
| 2005 02 14 | 704 | 0.5+ | 0.6− | 2005 03 11 | 704 | 0.4+ | 0.5+ | 2006 08 18 | 691 | 0.2− | 0.5+ |
| 2005 02 14 | 704 | 0.2+ | 1.1+ | 2005 03 11 | 704 | 0.9+ | 0.8+ | 2006 08 18 | 691 | 0.0 | 0.3+ |
| 2005 02 14 | 704 | 1.2+ | 1.5+ | 2005 03 12 | 704 | 0.4+ | 0.0 | 2006 08 21 | 691 | 0.4− | 0.7+ |
| 2005 03 03 | 691 | 0.0 | 0.1+ | 2005 03 12 | 704 | 1.1+ | 0.4+ | 2006 08 21 | 691 | 0.3− | 0.9+ |
| 2005 03 03 | 691 | 0.0 | 0.2+ | 2005 03 12 | 704 | 0.7+ | 0.7+ | 2006 08 21 | 691 | 0.3− | 0.4+ |
| 2005 03 03 | 691 | 0.0 | 0.2+ | 2005 03 12 | 704 | 0.6+ | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 2005 03 03 | 703 | 0.6− | 0.1− | 2005 03 12 | 704 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2005 03 03 | 703 | 0.5− | 0.7− | 2005 03 13 | 704 | 0.5+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 2005 03 03 | 703 | 0.4+ | 0.2− | 2005 03 13 | 704 | 1.0+ | 1.1+ | 2006 08 28 | 703 | 1.1+ | 0.2+ |
| 2005 03 03 | 704 | 0.5+ | 0.0 | 2005 03 13 | 704 | (1.7+ | 0.6+) | 2006 08 28 | 703 | 0.6− | 0.7+ |
| 2005 03 03 | 703 | 0.4− | 0.4− | 2005 03 13 | 704 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.0 |
| 2005 03 03 | 704 | 0.8+ | 0.0 | 2005 03 13 | 704 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.8+ |
| 2005 03 03 | 704 | 0.6+ | 0.0 | 2005 03 17 | 704 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.3− |
| 2005 03 04 | G96 | 0.2− | 0.1− | 2005 03 17 | 704 | 0.2− | 1.0+ | 2006 09 14 | 703 | 0.7− | 0.4− |
| 2005 03 04 | G96 | 0.3− | 0.2− | 2005 03 17 | 704 | 1.2+ | 0.1− | 2006 09 14 | 703 | 1.0− | 1.4− |
| 2005 03 04 | G96 | 0.4− | 0.1− | 2005 03 17 | 703 | 0.5− | 0.8− | 2006 09 14 | 703 | 0.2− | 0.8− |
| 2005 03 04 | G96 | 0.4− | 0.3− | 2005 03 17 | 703 | 0.7+ | 0.9+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2005 03 08 | 699 | (1.8+ | 1.4+) | 2005 03 17 | 703 | 0.6+ | 0.6− | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2005 03 08 | 699 | (0.3− | 2.1+) | 2005 03 17 | 703 | (0.8− | 1.8+) | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2005 03 08 | 699 | (0.0 | 1.7+) | 2005 04 04 | 704 | 0.9+ | 0.2− | 2006 10 16 | G96 | 0.3− | 0.2+ |
| 2005 03 08 | 699 | 0.3− | 0.3+ | 2005 04 04 | 704 | 0.3+ | 1.1− | | | | |

**(144940)∗ 2005 EO$_{19}$ = 1992 FW$_3$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76746)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.78337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22713990 | $\omega$ | 278.17495 | | +0.06500212 | +0.99783299 | |
| $a$ | 2.6603601 | $\Omega$ | 355.51406 | | −0.85650241 | +0.05054470 | |
| $e$ | 0.2621390 | $i$ | 7.49327 | | −0.51203354 | +0.04212538 | |
| $P$ | 4.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 26 | 691 | 1.0− | 0.1− | 2005 03 16 | 691 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 1992 03 26 | 691 | 0.5− | 0.7− | 2005 04 01 | 683 | (1.5+ | 1.1−) | 2006 09 18 | 699 | 0.5+ | 0.5− |
| 1992 03 26 | 691 | 0.8− | 1.0− | 2005 04 01 | 683 | 0.4− | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.1− |
| 1992 04 07 | 691 | 0.3+ | 0.6− | 2005 04 01 | 683 | 0.3+ | 0.8− | 2006 09 18 | 699 | 0.5− | 0.1− |
| 1992 04 07 | 691 | 0.2− | 0.3− | 2005 04 02 | 683 | (1.7+ | 3.7−) | 2006 09 18 | 699 | 1.0+ | 0.8− |
| 1993 09 18 | 809 | 0.1+ | 1.6+ | 2005 04 02 | 683 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.0 |
| 1993 09 18 | 809 | 0.7− | 1.3+ | 2005 04 04 | 703 | 1.3− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 1993 09 18 | 809 | 1.3− | 1.1+ | 2005 04 04 | 703 | 0.7− | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.1− |
| 1996 01 15 | 691 | 0.3+ | 0.4− | 2005 04 04 | 703 | 0.0 | 0.2− | 2006 09 20 | 704 | (1.6− | 0.3−) |
| 1996 01 15 | 691 | 0.0 | 0.4− | 2005 04 04 | 703 | 0.0 | 0.5− | 2006 09 20 | 704 | (2.0− | 0.5+) |
| 1996 01 15 | 691 | 0.0 | 0.2− | 2005 04 06 | G96 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 1.3− | 0.5+ |
| 2001 04 26 | 699 | 0.5+ | 0.0 | 2005 04 06 | G96 | 0.0 | 0.3+ | 2006 09 20 | 704 | 1.2− | 0.1+ |
| 2001 04 26 | 699 | 0.5+ | 0.3+ | 2005 04 06 | G96 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.3+ | 0.5+ |
| 2001 04 26 | 699 | 0.3+ | 0.1− | 2005 04 06 | G96 | 0.0 | 0.1− | 2006 09 23 | 291 | 0.3− | 0.1− |
| 2001 04 26 | 699 | 0.4+ | 0.9+ | 2005 04 11 | 683 | 0.8+ | 0.6+ | 2006 09 23 | 291 | 0.1+ | 0.1+ |
| 2005 03 03 | 691 | 0.4+ | 0.3+ | 2005 04 11 | 683 | 1.4+ | 0.2+ | 2006 09 23 | 291 | 0.3− | 0.3+ |
| 2005 03 03 | 691 | 0.5+ | 0.4+ | 2005 04 11 | 683 | 0.6− | 0.6− | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2005 03 03 | 691 | 0.2+ | 0.6+ | 2005 04 15 | 703 | 1.0+ | 0.3+ | 2006 09 23 | 691 | 0.3+ | 0.6+ |
| 2005 03 04 | G96 | 0.3− | 0.1+ | 2005 04 15 | 703 | 0.2+ | 1.2+ | 2006 09 24 | 106 | 0.7− | 0.6− |
| 2005 03 04 | G96 | 0.2− | 0.1+ | 2005 04 15 | 703 | 1.4− | 0.3+ | 2006 09 24 | 106 | 1.0− | 0.9− |
| 2005 03 04 | G96 | 0.2− | 0.1+ | 2005 04 15 | 703 | 0.5+ | 1.4+ | 2006 09 24 | 106 | 0.1− | 0.6− |
| 2005 03 04 | G96 | 0.1− | 0.1+ | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 09 24 | 106 | 0.5+ | 1.2− |
| 2005 03 08 | 699 | 0.1− | 1.1+ | 2005 05 12 | G96 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2005 03 08 | 699 | 1.2+ | 0.0 | 2005 05 12 | G96 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2005 03 08 | 699 | 0.0 | 0.7+ | 2005 05 12 | G96 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2005 03 08 | 699 | 0.8+ | 1.0+ | 2005 05 14 | G96 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.7− | 0.6+ |
| 2005 03 08 | 704 | 0.8+ | 0.4+ | 2005 05 14 | G96 | 0.6+ | 0.6+ | 2006 09 27 | 704 | 0.0 | 0.7+ |
| 2005 03 08 | 704 | 1.3+ | 0.3+ | 2005 05 14 | G96 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.3− |
| 2005 03 08 | 704 | 0.1+ | 0.6+ | 2005 05 14 | G96 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.7+ |
| 2005 03 08 | 704 | 1.0+ | 0.2+ | 2006 08 21 | 807 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 2005 03 09 | G96 | 0.1− | 0.3+ | 2006 08 21 | 807 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2005 03 09 | G96 | 0.0 | 0.2+ | 2006 08 22 | 807 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 2005 03 09 | G96 | 0.3− | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.3− | 2006 09 29 | 704 | (1.0− | 2.7+) |
| 2005 03 09 | G96 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.3+ | 1.3− | 2006 09 29 | 704 | 0.4− | 1.3+ |
| 2005 03 11 | 704 | 1.2− | 1.4+ | 2006 08 28 | 703 | 0.6− | 0.6− | 2006 09 29 | 704 | 0.5− | 0.6+ |
| 2005 03 11 | 704 | 0.8+ | 1.0+ | 2006 08 28 | 703 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.1+ | 0.1+ |
| 2005 03 11 | 704 | (1.5+ | 0.7+) | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.8+ |
| 2005 03 11 | 704 | 0.0 | 0.2+ | 2006 09 06 | 644 | 0.5− | 0.5+ | 2006 10 01 | 704 | (0.9− | 2.7+) |
| 2005 03 14 | 704 | 0.7+ | 1.0+ | 2006 09 06 | 644 | 0.5− | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.9+ |
| 2005 03 14 | 704 | 0.7+ | 0.5+ | 2006 09 12 | 703 | 1.0+ | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.7− |
| 2005 03 14 | 704 | (0.6+ | 1.5+) | 2006 09 12 | 703 | 1.1− | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 03 14 | 704 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.7+ | 0.8− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2005 03 14 | 704 | 0.2+ | 0.2− | 2006 09 12 | 703 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2005 03 16 | 691 | 0.8+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.3+ | | | | |
| 2005 03 16 | 691 | 0.4+ | 0.6+ | 2006 09 15 | 691 | 0.2− | 0.3+ | | | | |

**(144941)∗ 2005 EW$_{23}$ = 1995 SZ$_{67}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76754)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.50570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26111401 | $\omega$ | 68.95532 | | −0.52968972 | +0.84795142 | |
| $a$ | 2.4242790 | $\Omega$ | 168.99275 | | −0.81215608 | −0.50018148 | |
| $e$ | 0.0526694 | $i$ | 6.06670 | | −0.24460439 | −0.17549039 | |
| $P$ | 3.77 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.3+ | 0.5+ | 2005 03 04 | 704 | 0.6− | 0.9+ | 2005 04 04 | G96 | 0.3− | 0.1− |
| 1995 09 18 | 691 | 0.3+ | 0.6+ | 2005 03 04 | 704 | 0.3+ | 0.4+ | 2005 04 04 | G96 | 0.2− | 0.1− |
| 1995 09 18 | 691 | 0.2+ | 0.5+ | 2005 03 04 | 704 | 1.5+ | 0.2+ | 2005 04 10 | 691 | 0.4+ | 0.4+ |
| 1995 09 20 | 809 | 1.0+ | 0.1− | 2005 03 04 | 704 | 1.1+ | 0.3− | 2005 04 10 | 691 | 0.4+ | 0.3+ |
| 1995 09 22 | 809 | (3.3− | 4.1−) | 2005 03 04 | G96 | 0.5− | 0.2− | 2005 04 10 | 691 | 0.3+ | 0.1+ |
| 1995 09 22 | 691 | 0.4− | 0.1+ | 2005 03 04 | 704 | 0.5+ | 0.6+ | 2005 05 11 | G96 | 0.7− | 0.0 |
| 1995 09 22 | 691 | 1.0− | 0.6+ | 2005 03 04 | G96 | 0.4− | 0.1+ | 2005 05 11 | G96 | 0.6− | 0.0 |
| 1995 09 22 | 691 | 0.5− | 0.2+ | 2005 03 04 | G96 | 0.2− | 0.0 | 2005 05 11 | G96 | 0.3− | 0.0 |
| 2001 02 16 | 699 | 0.6+ | 0.1+ | 2005 03 04 | G96 | 0.3− | 0.1+ | 2005 05 11 | G96 | 0.1− | 0.0 |
| 2001 02 16 | 699 | 0.1− | 0.5+ | 2005 03 11 | 704 | 0.6+ | 0.7− | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 2001 02 16 | 699 | 0.3+ | 0.4+ | 2005 03 11 | 704 | 0.0 | 0.4− | 2006 09 13 | 644 | 0.5− | 0.5+ |
| 2001 02 16 | 699 | 0.1− | 0.1+ | 2005 03 11 | 704 | 0.2− | 0.7− | 2006 09 13 | 644 | 0.0 | 0.5+ |
| 2003 10 29 | 691 | 0.3+ | 0.2− | 2005 03 11 | 704 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2+ |
| 2003 10 29 | 691 | 0.0 | 0.3− | 2005 03 11 | 704 | 0.5+ | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2003 10 29 | 691 | 0.2+ | 0.1− | 2005 03 14 | 704 | 1.2+ | 1.1− | 2006 09 25 | G96 | 0.3+ | 0.3+ |
| 2003 11 19 | 644 | 0.8− | 0.2+ | 2005 03 14 | 704 | 0.5+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2003 11 19 | 644 | 0.3− | 0.6+ | 2005 03 14 | 704 | 0.4+ | 1.1+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2003 11 19 | 644 | 0.5− | 0.1+ | 2005 03 14 | 704 | 0.6+ | 0.7+ | 2006 10 19 | G96 | 0.8+ | 0.1− |
| 2005 03 03 | 703 | 0.1− | 0.0 | 2005 03 14 | 704 | 1.2+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2005 03 03 | 703 | 0.2− | 0.6+ | 2005 03 30 | 703 | 1.3− | 0.1− | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2005 03 03 | 703 | 1.2− | 0.4+ | 2005 03 30 | 703 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2005 03 03 | 703 | 0.4− | 0.1+ | 2005 03 30 | 703 | 1.0− | 0.7+ | 2006 10 28 | G96 | 0.7− | 0.0 |
| 2005 03 04 | 691 | 0.3− | 0.3+ | 2005 03 30 | 703 | 0.3− | 0.5− | 2006 10 28 | G96 | 0.2+ | 0.4+ |
| 2005 03 04 | 691 | 0.2− | 0.2+ | 2005 04 04 | G96 | 0.6− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3+ |
| 2005 03 04 | 691 | 0.0 | 0.3+ | 2005 04 04 | G96 | 0.0 | 0.0 | | | | |

**(144942)∗ 2005 EB$_{24}$ = 1998 DX$_{36}$**

Discovered 2005 Mar. 3 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Id. A. Doppler (*MPO* 95650)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.96701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28146471 | $\omega$ | 176.61402 | | −0.74005944 | +0.67169868 | |
| $a$ | 2.3059687 | $\Omega$ | 45.64551 | | −0.61814538 | −0.65963243 | |
| $e$ | 0.1646232 | $i$ | 2.69810 | | −0.26496852 | −0.33720311 | |
| $P$ | 3.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 809 | (5.5− | 3.2+) | 2005 03 04 | 704 | 0.7+ | 0.3+ | 2005 05 09 | G96 | 0.2− | 0.1+ |
| 1998 02 28 | 809 | 1.0+ | 0.3+ | 2005 03 04 | 704 | 0.7+ | 0.0 | 2005 05 09 | G96 | 0.4− | 0.4+ |
| 1998 03 02 | 809 | (5.0− | 2.5+) | 2005 03 18 | 704 | 1.1+ | 0.8+ | 2005 05 09 | G96 | 0.1− | 0.0 |
| 1998 03 02 | 809 | 0.2+ | 0.5− | 2005 03 18 | 704 | 0.4− | 0.5+ | 2005 05 09 | G96 | 0.2− | 0.0 |
| 1998 03 20 | 704 | 0.0 | 0.6+ | 2005 03 18 | 704 | 0.5+ | 0.6+ | 2005 05 22 | 644 | 0.7+ | 0.4+ |
| 1998 03 20 | 704 | 0.1− | 0.6− | 2005 03 18 | 704 | 0.4+ | 0.6+ | 2005 05 22 | 644 | 0.0 | 0.7+ |
| 1998 03 20 | 704 | (0.3− | 2.9+) | 2005 03 18 | 703 | 0.2− | 0.5− | 2005 05 22 | 644 | 0.3+ | 0.6+ |
| 1998 03 20 | 704 | 0.8− | 0.0 | 2005 03 18 | 703 | 0.5− | 0.4− | 2006 09 15 | 691 | 0.3− | 0.7+ |
| 1998 03 20 | 704 | 0.4− | 0.3− | 2005 03 18 | 703 | 0.7− | 0.1+ | 2006 09 15 | 691 | 0.4− | 0.6+ |
| 2003 10 28 | 704 | 0.2− | 0.0 | 2005 03 18 | 703 | 0.8− | 0.6+ | 2006 09 15 | 691 | 0.4− | 0.7+ |
| 2003 10 28 | 704 | 0.4+ | 0.4+ | 2005 03 30 | 333 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.4− |
| 2003 10 28 | 704 | 0.3+ | 0.9+ | 2005 03 30 | 333 | 0.0 | 0.1+ | 2006 09 18 | 699 | 1.1− | 1.1+ |
| 2003 11 16 | 691 | 0.0 | 0.7− | 2005 03 30 | 333 | 0.1+ | 0.5+ | 2006 09 18 | 699 | (2.4− | 0.5+) |
| 2003 11 16 | 691 | 0.1+ | 0.1− | 2005 03 31 | 699 | 0.4− | 0.5− | 2006 09 18 | 699 | (2.0− | 0.4+) |
| 2003 11 16 | 691 | 0.1− | 0.6+ | 2005 03 31 | 699 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2005 01 06 | 703 | 0.9+ | 0.3− | 2005 03 31 | 699 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2005 01 06 | 703 | 0.4− | 0.3+ | 2005 03 31 | 699 | 0.6+ | 0.5+ | 2006 09 30 | 691 | 0.5− | 0.4+ |
| 2005 01 06 | 703 | (0.9+ | 1.9+) | 2005 04 04 | 703 | 0.8− | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.3− |
| 2005 01 06 | 703 | 0.6− | 0.9+ | 2005 04 04 | 703 | 0.9− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 2005 03 03 | 683 | 0.8− | 1.3+ | 2005 04 04 | 703 | 0.2− | 0.3+ | 2006 09 30 | 703 | 1.2+ | 0.0 |
| 2005 03 03 | 683 | 0.2+ | 0.2− | 2005 04 04 | 703 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2005 03 03 | 683 | 0.4− | 0.3+ | 2005 04 04 | 704 | 1.1+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 2005 03 03 | 703 | 0.1− | 0.5+ | 2005 04 04 | 704 | 0.7+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2005 03 03 | 703 | 0.8− | 0.4+ | 2005 04 04 | 704 | 1.4+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2005 03 03 | 703 | 0.3− | 0.5+ | 2005 04 04 | 704 | 0.0 | 0.8− | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2005 03 03 | 703 | 0.7− | 0.5+ | 2005 04 04 | 704 | 0.9+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2005 03 04 | 704 | 0.9+ | 0.6+ | 2005 04 09 | 608 | 0.6+ | 0.5− | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2005 03 04 | 704 | 1.3+ | 0.1+ | 2005 04 09 | 608 | 1.0+ | 0.8− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2005 03 04 | 704 | 0.0 | 0.5+ | 2005 04 09 | 608 | 0.8+ | 0.5− | 2006 10 20 | G96 | 0.3+ | 0.3− |

**(144943)∗ 2005 EG$_{24}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.92744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27956508 | $\omega$ | 129.17048 | | +0.15501550 | +0.98357020 | |
| $a$ | 2.3164029 | $\Omega$ | 149.36657 | | −0.95313728 | +0.17353062 | |
| $e$ | 0.2327841 | $i$ | 10.46141 | | −0.25980668 | −0.04976728 | |
| $P$ | 3.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 23 | 691 | 0.8− | 0.1− | 2005 03 10 | 699 | 0.1− | 0.8+ | 2006 09 25 | 699 | 0.6− | 0.1+ |
| 1998 01 23 | 691 | 0.5− | 0.1− | 2005 03 12 | 704 | 0.0 | 0.8+ | 2006 09 25 | 699 | 0.2− | 0.6+ |
| 1998 01 23 | 691 | 0.5− | 0.1+ | 2005 03 12 | 704 | 0.9+ | 0.3− | 2006 09 25 | 699 | 0.3+ | 1.2+ |
| 1998 03 25 | 704 | 1.0− | 1.2− | 2005 03 12 | 704 | 0.3+ | 0.2− | 2006 09 25 | 699 | 1.1− | 0.5+ |
| 1998 03 25 | 704 | 1.5+ | 1.1− | 2005 03 12 | 704 | 1.4+ | 0.3+ | 2006 09 26 | 703 | 0.4+ | 0.2+ |
| 1998 03 25 | 704 | 1.9+ | 1.0− | 2005 03 12 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 703 | 0.9+ | 0.9+ |
| 1998 03 25 | 704 | 1.3+ | 0.1− | 2005 03 16 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 1998 03 25 | 704 | 0.4+ | 1.3− | 2005 03 16 | 703 | 1.0− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 2002 06 13 | 704 | 0.6+ | 0.5+ | 2005 03 16 | 703 | (1.7− | 1.9+) | 2006 09 29 | 699 | 0.4+ | 0.2+ |
| 2002 06 13 | 704 | 0.2+ | 0.4+ | 2005 03 16 | 704 | 0.1+ | 1.0+ | 2006 09 29 | 699 | 0.6+ | 0.3+ |
| 2002 06 13 | 704 | 0.0 | 0.8+ | 2005 03 16 | 703 | 1.0− | 0.2+ | 2006 09 29 | 699 | (1.6− | 0.6+) |
| 2002 06 13 | 704 | 0.0 | 0.4+ | 2005 03 16 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 699 | (1.5+ | 1.5+) |
| 2002 06 13 | 704 | 1.0− | 1.0+ | 2005 03 16 | 703 | (3.2− | 1.6−) | 2006 09 30 | 704 | 0.0 | 0.1− |
| 2003 11 24 | 644 | 0.0 | 0.2+ | 2005 03 16 | 704 | 0.1− | 0.3+ | 2006 09 30 | 704 | 1.2− | 0.0 |
| 2003 11 24 | 644 | 0.2+ | 0.2+ | 2005 03 16 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.1− |
| 2003 11 24 | 644 | 0.1− | 0.2+ | 2005 03 30 | 703 | (0.0 | 2.4+) | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2005 02 14 | 704 | 0.3+ | 0.7+ | 2005 03 30 | 703 | 0.2+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2005 02 14 | 704 | (1.5+ | 0.7+) | 2005 03 30 | 703 | 0.8+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2005 02 14 | 704 | 0.3+ | 1.1+ | 2005 03 30 | 703 | 0.7− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2005 03 03 | 691 | 0.0 | 0.1− | 2005 04 02 | 703 | 1.5− | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2005 03 03 | 691 | 0.3+ | 0.0 | 2005 04 02 | 703 | 1.0− | 0.4− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2005 03 03 | 691 | 0.1− | 0.1− | 2005 04 02 | 703 | (1.7− | 1.0−) | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2005 03 03 | 703 | 0.6− | 0.5+ | 2005 04 02 | 703 | 0.5+ | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2005 03 03 | 703 | 0.7− | 0.4− | 2005 04 06 | 699 | 0.9+ | 1.1+ | 2006 10 16 | 703 | 0.6− | 1.4+ |
| 2005 03 03 | 703 | 0.5− | 0.9+ | 2005 04 06 | 699 | (0.5+ | 2.2+) | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2005 03 03 | 703 | 0.2− | 0.6− | 2005 04 06 | 699 | 0.7+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2005 03 04 | 704 | 0.6+ | 0.7+ | 2005 04 06 | 699 | 0.9+ | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.9− |
| 2005 03 04 | 704 | 0.2+ | 0.2+ | 2005 04 09 | 703 | 1.1− | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2005 03 04 | 704 | 0.6+ | 0.5+ | 2005 04 09 | 703 | 0.5− | 0.4− | 2006 10 22 | 703 | 0.5+ | 0.2− |
| 2005 03 04 | 704 | 0.2+ | 1.0+ | 2005 04 09 | 703 | 0.8− | 0.2− | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2005 03 04 | 704 | 0.5− | 0.6+ | 2005 04 09 | 703 | 0.2− | 0.8+ | 2006 10 28 | 703 | 0.7− | 0.2− |
| 2005 03 09 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2005 03 09 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.4− | 0.3− |
| 2005 03 09 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 703 | (1.7− | 0.2+) | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2005 03 09 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2005 03 09 | 704 | 1.1+ | 0.4− | 2006 09 21 | 699 | 1.5+ | 0.5− | 2006 11 17 | 703 | 0.3− | 0.9− |
| 2005 03 10 | 699 | 0.2− | 0.4− | 2006 09 21 | 699 | 1.1+ | 1.1− | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 2005 03 10 | 699 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.5+ | 0.3+ | | | | |
| 2005 03 10 | 699 | 0.9− | 0.1+ | 2006 09 21 | 699 | 0.2+ | 1.3+ | | | | |

**(144944)∗ 2005 EY$_{26}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.49078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26471690 | $\omega$ | 244.04982 | | −0.24213322 | +0.97023728 | |
| $a$ | 2.4022320 | $\Omega$ | 11.93913 | | −0.88431624 | −0.21927411 | |
| $e$ | 0.1424511 | $i$ | 0.92354 | | −0.39919456 | −0.10275446 | |
| $P$ | 3.72 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 691 | 0.3− | 0.2+ | 2005 03 08 | 704 | 0.1+ | 0.6− | 2005 05 10 | G96 | 0.3− | 0.2− |
| 1999 10 13 | 691 | 0.2+ | 0.4+ | 2005 03 08 | 704 | 1.0+ | 0.2+ | 2005 05 10 | G96 | 0.5− | 0.3− |
| 1999 10 13 | 691 | 0.2− | 0.5+ | 2005 03 09 | 699 | 1.1+ | 1.3+ | 2005 05 10 | G96 | 0.6− | 0.2− |
| 2002 07 05 | 644 | 0.1− | 0.8+ | 2005 03 09 | 699 | (1.8− | 0.4−) | 2006 08 18 | 691 | 0.3− | 0.4+ |
| 2002 07 05 | 644 | 0.1− | 0.4+ | 2005 03 09 | 699 | 0.6− | 1.3+ | 2006 08 18 | 691 | 0.3− | 0.6+ |
| 2002 07 05 | 644 | 0.1+ | 0.4+ | 2005 03 09 | 699 | 0.1− | 0.7− | 2006 08 18 | 691 | 0.1− | 0.5+ |
| 2002 07 18 | 644 | 0.2− | 0.0 | 2005 03 14 | 704 | 0.1+ | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 2002 07 18 | 644 | 0.3− | 0.1+ | 2005 03 14 | 704 | 1.0+ | 1.3+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2002 07 18 | 644 | 0.1− | 0.3+ | 2005 03 14 | 704 | (1.7− | 0.9+) | 2006 08 27 | 691 | 0.2+ | 0.4+ |
| 2005 03 03 | 703 | 1.0+ | 0.7− | 2005 03 14 | 704 | 0.3− | 0.8+ | 2006 08 28 | 703 | 0.6− | 1.4− |
| 2005 03 03 | 703 | 0.5− | 0.3+ | 2005 04 02 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.1− |
| 2005 03 03 | 703 | 0.2− | 0.5− | 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.2− | 1.0− |
| 2005 03 03 | 703 | 0.5− | 0.3+ | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.2+ |
| 2005 03 04 | 691 | 0.1+ | 1.1+ | 2005 04 02 | G96 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2005 03 04 | 691 | 0.1+ | 0.3+ | 2005 04 11 | 691 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.5+ | 0.1− |
| 2005 03 04 | 691 | 0.1+ | 0.2+ | 2005 04 11 | 691 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2005 03 04 | G96 | 0.5− | 0.0 | 2005 04 11 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2005 03 04 | G96 | 0.1− | 0.1+ | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2005 03 04 | G96 | 0.6− | 0.1− | 2005 05 04 | G96 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2005 03 04 | G96 | 0.1− | 0.2− | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.7− | 0.6− |
| 2005 03 08 | 704 | 0.7+ | 0.6− | 2005 05 04 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.9− | 0.3− |
| 2005 03 08 | 704 | 0.7+ | 0.8+ | 2005 05 10 | G96 | 0.6− | 0.1− | | | | |

**(144945)∗ 2005 EC$_{29}$ = 1998 ST$_{33}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76766)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.94529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37044421 | $\omega$ | 108.03866 | | −0.29392005 | −0.95581181 | |
| $a$ | 1.9200867 | $\Omega$ | 358.99587 | | +0.69905018 | −0.21074720 | |
| $e$ | 0.0872444 | $i$ | 19.66738 | | +0.65187411 | −0.20496195 | |
| $P$ | 2.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.3− | 0.4+ | 2005 03 13 | 703 | 0.6− | 0.8+ | 2006 09 18 | 704 | 0.0 | 0.1− |
| 1998 09 26 | 704 | 0.0 | 0.1− | 2005 03 13 | 703 | 0.6− | 0.1+ | 2006 09 18 | 704 | 0.3− | 0.1+ |
| 1998 09 26 | 704 | (1.4+ | 2.9+) | 2005 03 13 | 703 | (0.2− | 1.8−) | 2006 09 18 | 704 | 0.3+ | 0.5− |
| 1998 09 26 | 704 | 0.3− | 1.4+ | 2005 03 13 | 703 | 0.3− | 0.4+ | 2006 09 19 | 699 | (2.6+ | 0.2+) |
| 1998 09 26 | 704 | 1.2− | 1.4+ | 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 1998 09 27 | 704 | 0.4− | 0.4+ | 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.3+ |
| 1998 09 27 | 704 | 1.0+ | 0.0 | 2005 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.9+ |
| 1998 09 27 | 704 | 0.3− | 0.2− | 2005 03 31 | 699 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 0.0 | 0.4+ |
| 1998 09 27 | 704 | 0.4− | 0.8+ | 2005 03 31 | 699 | 0.3+ | 0.5− | 2006 09 25 | 704 | 0.4+ | 0.0 |
| 1998 09 27 | 704 | 1.0− | 1.7− | 2005 03 31 | 699 | 0.3+ | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 1998 10 15 | 704 | 1.9+ | 0.5− | 2005 04 01 | 699 | 0.2− | 1.0+ | 2006 09 25 | 704 | 0.0 | 0.4+ |
| 1998 10 15 | 704 | 0.9− | 0.9− | 2005 04 01 | 699 | 1.1+ | 0.2+ | 2006 09 25 | 704 | 0.1− | 0.5+ |
| 1998 10 15 | 704 | 0.6+ | 0.1− | 2005 04 01 | 699 | 0.8+ | 0.4+ | 2006 09 27 | 699 | 0.1− | 0.6+ |
| 1998 10 15 | 704 | (3.1− | 1.4−) | 2005 04 01 | 699 | 0.6+ | 0.4+ | 2006 09 27 | 699 | 0.2− | 0.1+ |
| 2001 11 27 | 704 | 0.0 | 0.1− | 2005 04 05 | 703 | 0.0 | 0.3+ | 2006 09 27 | 699 | 0.3+ | 0.6+ |
| 2001 11 27 | 704 | 0.8− | 0.2− | 2005 04 05 | 703 | 1.1+ | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 2001 11 27 | 704 | 1.1+ | 0.8− | 2005 04 05 | 703 | 0.7+ | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2005 02 05 | 644 | 0.2+ | 0.0 | 2005 04 05 | 703 | 0.3− | 1.0+ | 2006 09 29 | 704 | 0.5− | 0.0 |
| 2005 02 05 | 644 | 0.1+ | 0.2− | 2005 04 09 | 699 | 0.8+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.6− |
| 2005 02 05 | 644 | 0.2+ | 0.0 | 2005 04 09 | 704 | 1.0+ | 0.3+ | 2006 09 29 | 704 | 1.1− | 0.2+ |
| 2005 03 03 | 703 | 0.7− | 0.2− | 2005 04 09 | 704 | 1.0+ | 0.6− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2005 03 03 | 703 | 0.1− | 0.5− | 2005 04 09 | 699 | 0.5+ | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2005 03 03 | 703 | 0.2+ | 0.1− | 2005 04 09 | 704 | 0.9+ | 0.1− | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2005 03 03 | 703 | 0.4− | 0.2− | 2005 04 09 | 704 | 0.9+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2005 03 04 | 704 | 0.6+ | 0.4+ | 2005 04 09 | 704 | 0.3+ | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2005 03 04 | 704 | 0.7+ | 0.3+ | 2005 04 09 | 699 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2005 03 04 | 704 | 0.4+ | 0.3+ | 2005 04 09 | 699 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2005 03 04 | 704 | 0.5+ | 0.3+ | 2006 08 17 | 644 | 0.6− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2005 03 04 | 704 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.3+ |
| 2005 03 08 | 699 | 0.4− | 0.1− | 2006 08 17 | 644 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2005 03 08 | 699 | 0.0 | 0.5+ | 2006 08 18 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.7+ |
| 2005 03 08 | 699 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.8− |
| 2005 03 08 | 699 | 0.7+ | 0.3+ | 2006 08 18 | 644 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2005 03 09 | 699 | 0.6+ | 0.3− | 2006 08 24 | 644 | 0.6− | 0.3+ | 2006 10 23 | 703 | 0.2+ | 0.1+ |
| 2005 03 09 | 699 | 0.4− | 0.2+ | 2006 08 24 | 644 | 0.5− | 0.5+ | 2006 10 23 | 703 | 0.3− | 0.4+ |
| 2005 03 09 | 699 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.5− | 0.2+ | 2006 10 23 | 703 | 0.4+ | 0.6+ |
| 2005 03 09 | 699 | 0.4+ | 0.9+ | 2006 08 25 | 704 | 0.8− | 0.9+ | 2006 10 23 | 703 | 0.5− | 0.6+ |
| 2005 03 10 | G96 | 0.2− | 0.2− | 2006 08 25 | 704 | 0.6− | 0.1+ | 2006 10 26 | 704 | 0.4+ | 0.0 |
| 2005 03 10 | G96 | 0.1− | 0.1− | 2006 08 25 | 704 | 0.5− | 1.0+ | 2006 10 26 | 704 | 0.5− | 0.3+ |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 1.1− | 0.9+ | 2006 10 26 | 704 | 0.1+ | 0.1− |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.8− | 0.8+ | 2006 10 26 | 704 | (1.8− | 1.9−) |
| 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.7+ | 0.7+ | 2006 10 26 | 704 | 0.2− | 0.2− |
| 2005 03 11 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2005 03 11 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2005 03 11 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2005 03 11 | 704 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.7+ | 2006 11 10 | 683 | 0.2− | 0.2− |
| 2005 03 11 | 704 | 1.1+ | 0.8+ | 2006 09 17 | 703 | 1.1− | 0.5− | 2006 11 10 | 683 | 1.3− | 0.7+ |
| 2005 03 11 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 691 | 0.8− | 0.4+ | 2006 11 10 | 683 | (0.0 | 2.9+) |
| 2005 03 11 | 704 | 0.5− | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.5− | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.2− |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.3− | 2006 11 20 | 704 | 1.1+ | 0.2+ |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.8− | 2006 11 20 | 704 | 0.6+ | 0.6+ |

**(144946)∗ 2005 EJ$_{31}$**

Discovered 2005 Mar. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.96224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25074483 | $\omega$ | 266.48228 | | +0.17348288 | +0.98467344 | |
| $a$ | 2.4906616 | $\Omega$ | 13.54806 | | −0.87043646 | +0.16182753 | |
| $e$ | 0.0592933 | $i$ | 4.39248 | | −0.46069953 | +0.06503893 | |
| $P$ | 3.93 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1− | 2005 03 04 | G96 | 0.3− | 0.1+ | 2005 05 08 | G96 | 0.2− | 0.4− |
| 2001 04 16 | 645 | 0.0 | 0.1− | 2005 03 10 | 695 | 0.1− | 0.2+ | 2005 05 08 | G96 | 0.2− | 0.1− |
| 2002 07 15 | 644 | 0.2+ | 0.1− | 2005 03 10 | 695 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.0 |
| 2002 07 15 | 644 | 0.1− | 0.0 | 2005 03 31 | 699 | 0.5+ | 0.4− | 2006 08 16 | 644 | 0.3+ | 0.1− |
| 2002 07 15 | 644 | 0.3− | 0.1+ | 2005 03 31 | 699 | 0.3+ | 0.5+ | 2006 08 16 | 644 | 0.0 | 0.1− |
| 2002 08 13 | 644 | 0.5− | 0.1− | 2005 03 31 | 699 | 0.7− | 0.9− | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 2002 08 13 | 704 | 0.4− | 0.5− | 2005 03 31 | 699 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 08 13 | 704 | 0.3− | 0.4− | 2005 04 01 | 947 | 0.7− | 0.2− | 2006 08 17 | 644 | 0.3− | 0.2− |
| 2002 08 13 | 704 | 0.5− | 0.5− | 2005 04 01 | 947 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.0 |
| 2002 08 13 | 644 | 0.5− | 0.1− | 2005 04 01 | 947 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.3+ |
| 2002 08 13 | 704 | 1.6+ | 0.2− | 2005 04 04 | 703 | 0.2+ | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.0 |
| 2002 08 13 | 704 | 0.2+ | 1.4− | 2005 04 04 | 703 | (2.0− | 0.3+) | 2006 08 23 | 644 | 0.5+ | 0.2− |
| 2002 08 13 | 644 | 0.5− | 0.0 | 2005 04 04 | 703 | 0.0 | 1.4− | 2006 08 23 | 644 | 0.0 | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2005 04 04 | 703 | (2.7+ | 0.9−) | 2006 08 23 | 644 | 0.1+ | 0.1+ |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 08 28 | E12 | 0.4+ | 0.7+ |
| 2002 08 18 | 644 | 0.6+ | 0.3+ | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 08 28 | E12 | 0.5− | 0.4− |
| 2002 08 29 | 644 | 0.4+ | 0.3+ | 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 08 28 | E12 | 0.2+ | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.5+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 08 28 | E12 | 0.3+ | 0.9+ |
| 2002 08 29 | 644 | 0.4+ | 0.0 | 2005 04 13 | 699 | 0.4− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.2− |
| 2002 08 29 | 644 | 0.0 | 0.5+ | 2005 04 13 | 699 | 1.1− | 0.3− | 2006 09 13 | 644 | 0.4− | 0.2− |
| 2002 08 29 | 644 | 0.3+ | 0.0 | 2005 04 13 | 699 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.2− | 0.4+ | 2005 04 13 | 699 | 0.9+ | 1.4+ | 2006 09 14 | 644 | 0.3+ | 0.1+ |
| 2005 03 01 | 691 | 0.2+ | 0.1− | 2005 05 04 | G96 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.1+ |
| 2005 03 01 | 691 | 0.0 | 0.5+ | 2005 05 04 | G96 | 1.0+ | 0.6+ | 2006 09 14 | 644 | 0.4− | 0.0 |
| 2005 03 01 | 691 | 0.6+ | 0.3+ | 2005 05 04 | G96 | 0.1− | 0.4− | 2006 09 15 | 644 | 0.2− | 0.0 |
| 2005 03 04 | G96 | 0.3+ | 0.2− | 2005 05 04 | G96 | 0.9+ | 0.2− | 2006 09 15 | 644 | 0.0 | 0.1− |
| 2005 03 04 | G96 | 1.1− | 0.2+ | 2005 05 08 | G96 | 0.4− | 0.5− | 2006 09 15 | 644 | 0.0 | 0.6+ |
| 2005 03 04 | G96 | 0.6− | 0.3+ | 2005 05 08 | G96 | 0.3− | 0.2− | | | | |

**(144947)∗ 2005 ES$_{31}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.11234 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17597015 | $\omega$ | 294.66041 | | −0.03744357 | | −0.99255672 |
| $a$ | 3.1538670 | $\Omega$ | 156.58566 | | +0.98942800 | | −0.05308266 |
| $e$ | 0.2285714 | $i$ | 16.95511 | | +0.14010783 | | +0.10960563 |
| $P$ | 5.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.3− | 1.1− | 2005 02 14 | 704 | 0.6+ | 0.5+ | 2005 03 09 | 699 | 0.2+ | 0.1− |
| 1995 07 03 | 691 | 0.1− | 0.6− | 2005 02 14 | 704 | 0.1− | 1.1− | 2005 03 09 | 704 | 0.2− | 0.3+ |
| 1995 07 03 | 691 | 0.3− | 0.9− | 2005 02 14 | 704 | 0.4+ | 0.8+ | 2005 03 09 | 704 | 0.5+ | 0.4+ |
| 1999 01 15 | 699 | 0.9+ | 0.0 | 2005 03 03 | 691 | 0.0 | 0.1+ | 2005 03 09 | 704 | 0.0 | 0.7+ |
| 1999 01 15 | 699 | 0.5− | 0.4+ | 2005 03 03 | 691 | 0.2− | 0.1− | 2005 03 12 | 704 | 1.5+ | 0.1− |
| 1999 01 15 | 699 | 0.1+ | 0.6+ | 2005 03 03 | 691 | 0.6− | 0.6+ | 2005 03 12 | 704 | 2.0+ | 0.1− |
| 2002 08 14 | 291 | 0.1+ | 0.8+ | 2005 03 03 | 703 | 1.3− | 0.1− | 2005 03 12 | 704 | 1.0+ | 0.2− |
| 2002 08 14 | 291 | 0.3+ | 0.5+ | 2005 03 03 | 703 | 0.6− | 0.3+ | 2005 03 12 | 704 | 0.1− | 0.2+ |
| 2002 08 14 | 291 | 0.1+ | 0.1+ | 2005 03 03 | 703 | 0.7− | 0.1+ | 2005 03 12 | 704 | 1.6+ | 0.1+ |
| 2003 10 24 | 699 | 0.2+ | 0.2+ | 2005 03 03 | 703 | 0.5− | 0.4− | 2005 03 18 | 049 | 0.4− | 1.2− |
| 2003 10 24 | 699 | 0.0 | 0.2− | 2005 03 04 | 704 | (2.1+ | 1.6+) | 2005 03 18 | 049 | 1.3− | 1.2− |
| 2003 10 24 | 699 | 0.0 | 0.2+ | 2005 03 04 | 704 | 0.5+ | 0.3+ | 2005 03 18 | 049 | 0.4− | 1.1− |
| 2003 10 24 | 699 | 0.3− | 0.9+ | 2005 03 04 | 704 | (1.1+ | 3.0+) | 2005 03 30 | A35 | 0.2− | 0.2− |
| 2003 11 26 | 704 | 0.5− | 0.7+ | 2005 03 04 | 704 | (2.3+ | 0.5+) | 2005 03 30 | A35 | 0.4− | 0.4+ |
| 2003 11 26 | 704 | 1.3− | 0.6+ | 2005 03 04 | 704 | 0.6− | 0.1+ | 2005 03 30 | A35 | 1.0− | 0.1− |
| 2003 11 26 | 704 | 0.2− | 0.8+ | 2005 03 08 | 699 | 1.5+ | 0.6+ | 2005 04 13 | 691 | 0.0 | 0.0 |
| 2003 12 22 | 644 | 0.1+ | 1.0− | 2005 03 08 | 699 | 1.1+ | 0.4+ | 2005 04 13 | 691 | 0.3− | 0.0 |
| 2003 12 22 | 644 | 0.1− | 0.8+ | 2005 03 08 | 699 | 0.2− | 0.8− | 2005 04 13 | 691 | 0.1− | 0.0 |
| 2003 12 22 | 644 | 0.2+ | 0.2+ | 2005 03 08 | 699 | 0.3+ | 0.3− | 2006 04 20 | 291 | 0.1− | 0.5+ |
| 2005 02 09 | 704 | 1.3+ | 1.2− | 2005 03 09 | 699 | 0.6− | 0.9+ | 2006 04 20 | 291 | 0.0 | 0.7+ |
| 2005 02 09 | 704 | 1.2+ | 0.5− | 2005 03 09 | 699 | 1.5− | 0.3+ | 2006 04 20 | 291 | 0.2− | 0.5+ |
| 2005 02 09 | 704 | 1.0+ | 0.0 | 2005 03 09 | 699 | 0.4+ | 0.5− | 2006 05 06 | 691 | 0.4+ | 0.4+ |
| 2005 02 09 | 704 | 0.1− | 1.5+ | 2005 03 09 | 704 | 0.2+ | 0.1+ | 2006 05 06 | 691 | 0.0 | 0.9+ |
| 2005 02 14 | 704 | 1.0+ | 0.3+ | 2005 03 09 | 704 | 0.2+ | 0.7+ | 2006 05 06 | 691 | 0.1+ | 0.1+ |

**(144948)∗ 2005 EB$_{32}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.60691 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21192464 | $\omega$ | 93.30022 | | −0.25046421 | | +0.96538488 |
| $a$ | 2.7862179 | $\Omega$ | 161.68901 | | −0.95452634 | | −0.23368714 |
| $e$ | 0.1793546 | $i$ | 13.39809 | | −0.16170082 | | −0.11585486 |
| $P$ | 4.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.1+ | 0.1+ | 2005 03 04 | G96 | 0.1− | 0.2− | 2005 04 11 | G96 | 0.7+ | 0.1− |
| 1997 08 11 | 691 | 0.2+ | 0.5+ | 2005 03 04 | G96 | 0.3− | 0.2− | 2005 04 11 | G96 | 0.2− | 0.2− |
| 1997 08 11 | 691 | 0.4+ | 0.2+ | 2005 03 04 | G96 | 0.2− | 0.4− | 2005 04 12 | 691 | 0.2+ | 0.3+ |
| 2001 05 23 | 704 | 0.7− | 0.3− | 2005 03 04 | G96 | 0.1− | 0.2− | 2005 04 12 | 691 | 0.1+ | 0.3+ |
| 2001 05 23 | 704 | 0.1− | 0.8− | 2005 03 04 | G96 | 0.0 | 0.4− | 2005 04 12 | 691 | 0.0 | 0.2+ |
| 2001 05 23 | 704 | 0.9− | 0.5− | 2005 03 08 | 704 | (0.8+ | 1.6+) | 2006 05 25 | A55 | (1.8− | 1.1−) |
| 2001 05 23 | 704 | 0.3− | 0.2− | 2005 03 08 | 704 | 0.9+ | 0.7+ | 2006 05 25 | A55 | (1.7− | 1.1−) |
| 2001 05 23 | 704 | 0.0 | 0.2+ | 2005 03 08 | 704 | (1.8+ | 1.6+) | 2006 05 25 | A55 | (1.5− | 0.9−) |
| 2001 07 10 | 644 | 0.4− | 0.0 | 2005 03 08 | 704 | 0.9+ | 1.3+ | 2006 05 27 | 691 | 0.2+ | 0.2+ |
| 2001 07 10 | 644 | 0.0 | 0.1+ | 2005 03 08 | 704 | (0.3+ | 2.2+) | 2006 05 27 | 691 | 0.3+ | 0.3+ |
| 2001 07 10 | 644 | 0.2− | 0.2+ | 2005 03 09 | 699 | 0.1+ | 0.7+ | 2006 05 27 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2005 03 09 | 699 | 0.1+ | 0.4+ | 2006 06 01 | 703 | 0.8− | 1.0− |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2005 03 09 | 699 | 0.0 | 1.1+ | 2006 06 01 | 703 | 1.4− | 0.6+ |
| 2005 02 02 | 691 | 0.2+ | 0.2+ | 2005 03 09 | 699 | 0.3− | 0.6+ | 2006 06 01 | 703 | 0.4+ | 0.0 |
| 2005 02 02 | 691 | 0.0 | 0.2+ | 2005 03 11 | 704 | 0.3+ | 0.1+ | 2006 06 01 | 703 | 0.1− | 0.3+ |
| 2005 02 02 | 691 | 0.1+ | 0.1+ | 2005 03 11 | 704 | 0.5+ | 0.5+ | 2006 06 01 | 691 | 0.1+ | 0.3+ |
| 2005 02 17 | 809 | 0.1− | 0.1+ | 2005 03 11 | 704 | 0.1+ | 0.1− | 2006 06 01 | 691 | 0.2+ | 0.4+ |
| 2005 02 17 | 809 | 0.0 | 0.1+ | 2005 03 12 | 695 | 0.0 | 0.1− | 2006 06 01 | 691 | 0.0 | 0.2+ |
| 2005 02 17 | 809 | 0.0 | 0.1+ | 2005 03 12 | 695 | 0.0 | 0.0 | 2006 08 12 | 644 | 1.0+ | 0.1− |
| 2005 02 18 | 809 | 0.1− | 0.1+ | 2005 03 17 | 704 | 0.1− | 0.2+ | 2006 08 12 | 644 | 0.2− | 0.2+ |
| 2005 02 18 | 809 | 0.1− | 0.1+ | 2005 03 17 | 704 | 0.6+ | 0.6+ | 2006 08 12 | 644 | 0.1+ | 0.1+ |
| 2005 02 18 | 809 | 0.0 | 0.1+ | 2005 03 17 | 704 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2005 02 18 | 809 | 0.0 | 0.0 | 2005 03 17 | 703 | 0.8− | 0.4− | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2005 02 18 | 809 | 0.1− | 0.0 | 2005 03 17 | 703 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2005 03 03 | 703 | (0.7− | 2.4+) | 2005 03 17 | 703 | 0.4− | 1.0− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2005 03 03 | 703 | 0.9+ | 0.9+ | 2005 03 17 | 703 | 0.4+ | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2005 03 03 | 703 | 0.2+ | 0.1− | 2005 04 04 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2005 03 03 | 703 | 0.7− | 0.0 | 2005 04 04 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.4+ |
| 2005 03 04 | G96 | 0.4− | 0.1− | 2005 04 04 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2005 03 04 | G96 | 0.4− | 0.0 | 2005 04 11 | G96 | 0.3− | 0.1− | | | | |
| 2005 03 04 | G96 | 0.3− | 0.2− | 2005 04 11 | G96 | 0.4+ | 0.1+ | | | | |

**(144949)∗ 2005 EG$_{35}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.29424 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27025631 | $\omega$ | 320.01028 | | −0.36820994 | | +0.92947817 |
| $a$ | 2.3692933 | $\Omega$ | 288.37420 | | −0.84693750 | | −0.34516078 |
| $e$ | 0.1793633 | $i$ | 1.33898 | | −0.38356005 | | −0.13013214 |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1− | 0.0 | 2005 03 11 | G96 | 0.6− | 0.2+ | 2005 04 14 | 703 | 1.1− | 0.1+ |
| 1995 10 17 | 691 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.2− | 0.1+ | 2005 04 30 | 691 | 0.2+ | 0.3+ |
| 1995 10 17 | 691 | 0.2− | 0.1+ | 2005 03 11 | G96 | 0.4+ | 0.2+ | 2005 04 30 | 691 | 0.3+ | 0.3+ |
| 1995 10 27 | 691 | 0.4− | 0.0 | 2005 03 11 | G96 | 0.2− | 0.1− | 2005 04 30 | 691 | 0.2+ | 0.3+ |
| 1995 10 27 | 691 | 0.4+ | 0.2+ | 2005 03 13 | 703 | (0.1− | 1.7+) | 2006 09 15 | 691 | 0.3− | 0.1+ |
| 1995 10 27 | 691 | 0.4− | 0.1− | 2005 03 13 | 703 | 0.7− | 1.3+ | 2006 09 15 | 691 | 0.1− | 0.8+ |
| 1999 11 10 | 691 | 0.3+ | 0.0 | 2005 03 13 | 703 | 0.5− | 0.1− | 2006 09 15 | 691 | 0.5− | 0.2+ |
| 1999 11 10 | 691 | 0.2+ | 0.4+ | 2005 03 13 | 703 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.4+ |
| 1999 11 10 | 691 | 0.3+ | 0.3+ | 2005 04 02 | 735 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.5+ |
| 2001 01 26 | 691 | 0.1− | 0.2+ | 2005 04 02 | 735 | 0.6− | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2001 01 26 | 691 | 0.1− | 0.2+ | 2005 04 02 | 735 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2001 01 26 | 691 | 0.1− | 0.2+ | 2005 04 04 | 704 | 1.0+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 08 13 | 699 | 0.9+ | 0.6+ | 2005 04 04 | 704 | 1.2+ | 1.1+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2002 08 13 | 699 | (1.3− | 1.8+) | 2005 04 04 | 704 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.8+ | 0.6+ |
| 2002 08 13 | 699 | 0.1+ | 0.9+ | 2005 04 04 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.7+ |
| 2002 08 13 | 699 | (1.6+ | 0.8+) | 2005 04 04 | 704 | 1.0+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2002 08 19 | 644 | 0.0 | 0.4+ | 2005 04 07 | 704 | 1.3+ | 0.1− | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2002 08 19 | 644 | 0.2− | 0.1+ | 2005 04 07 | 704 | 1.2+ | 0.2− | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2002 08 19 | 644 | 0.0 | 0.3+ | 2005 04 07 | 704 | (1.7+ | 0.1−) | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2002 08 27 | 644 | 0.3− | 0.4− | 2005 04 07 | 704 | 0.5− | 0.5+ | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2002 08 27 | 644 | 0.0 | 0.1− | 2005 04 07 | 704 | (1.4+ | 2.1+) | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 08 27 | 644 | 0.4− | 0.1+ | 2005 04 12 | 704 | 1.3+ | 1.2+ | 2006 10 31 | G96 | 0.4− | 0.1+ |
| 2005 03 03 | 691 | 0.2− | 0.1+ | 2005 04 12 | 704 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.6+ | 0.2− |
| 2005 03 03 | 691 | 0.1+ | 0.2− | 2005 04 12 | 704 | (2.9+ | 0.4+) | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2005 03 03 | 691 | 0.1− | 0.2+ | 2005 04 12 | 704 | 0.9+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2005 03 07 | 704 | 0.1+ | 0.5+ | 2005 04 14 | 703 | 1.2− | 0.3+ | 2006 11 15 | G96 | 0.6− | 0.3+ |
| 2005 03 07 | 704 | 0.1+ | 0.3− | 2005 04 14 | 703 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.6− | 0.1+ |
| 2005 03 07 | 704 | 0.2+ | 0.3+ | 2005 04 14 | 703 | 0.6− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.1+ |

**(144950)∗ 2005 EQ$_{35}$**

Discovered 2005 Mar. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.32638 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28665792 | $\omega$ | 207.31822 | | −0.99715706 | | +0.05863635 |
| $a$ | 2.2780334 | $\Omega$ | 335.90300 | | −0.02780399 | | −0.87005253 |
| $e$ | 0.0431866 | $i$ | 6.65614 | | −0.07003385 | | −0.48945927 |
| $P$ | 3.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 704 | 1.6− | 0.6− | 2005 03 04 | 703 | 0.3+ | 0.8+ | 2006 08 17 | 644 | 0.5− | 0.5+ |
| 1998 03 03 | 704 | 0.4− | 1.7+ | 2005 03 07 | 704 | 0.4+ | 0.1− | 2006 08 17 | 644 | 0.4− | 0.6+ |
| 1998 03 03 | 704 | (0.2+ | 3.6+) | 2005 03 07 | 704 | 0.7+ | 0.6+ | 2006 08 17 | 644 | 0.6− | 0.4+ |
| 1998 03 03 | 704 | 0.3− | 0.5+ | 2005 03 07 | 704 | (0.5+ | 1.8+) | 2006 08 21 | 704 | 1.1− | 0.4+ |
| 1999 09 07 | 691 | 0.1+ | 0.2+ | 2005 03 08 | 691 | 0.4+ | 0.3+ | 2006 08 21 | 704 | 1.0− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 691 | 0.4+ | 0.4+ | 2005 03 08 | 691 | 0.3+ | 0.4+ | 2006 08 21 | 704 | 0.1− | 0.7+ |
| 1999 09 14 | 691 | 0.3+ | 0.6− | 2005 03 08 | 699 | 0.1+ | 0.5+ | 2006 08 21 | 704 | 0.4− | 0.9+ |
| 1999 09 14 | 691 | 0.1+ | 0.1+ | 2005 03 08 | 691 | 0.4+ | 0.4+ | 2006 08 21 | 704 | 0.8− | 0.1− |
| 1999 09 14 | 691 | (5.1− | 0.9+) | 2005 03 08 | 699 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.3+ |
| 2000 12 19 | 704 | 0.6+ | 0.3+ | 2005 03 08 | 699 | 0.2+ | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2000 12 19 | 704 | 0.2− | 0.8+ | 2005 03 08 | 699 | 0.4+ | 0.8+ | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2000 12 19 | 704 | (0.1− | 2.0+) | 2005 03 09 | 699 | 0.6+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.3+ |
| 2003 09 20 | 644 | 0.0 | 0.4+ | 2005 03 09 | 699 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.5− |
| 2003 09 20 | 644 | 0.3− | 0.4+ | 2005 03 09 | 699 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 1.0− | 1.4− |
| 2003 09 20 | 644 | 0.4− | 0.4+ | 2005 03 09 | 699 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.7− | 0.9− |
| 2003 09 20 | 644 | 0.4− | 0.5+ | 2005 03 17 | 703 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2003 09 20 | 644 | 0.4− | 0.0 | 2005 03 17 | 703 | 0.4+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2003 09 20 | 644 | 0.7− | 0.6+ | 2005 03 17 | 703 | 0.6+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2003 10 17 | 691 | 0.2− | 0.0 | 2005 03 17 | 703 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2003 10 17 | 691 | 0.2− | 0.3+ | 2005 03 31 | 699 | 0.5− | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2003 10 17 | 691 | 0.2− | 0.0 | 2005 03 31 | 699 | 1.3+ | 1.2+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2003 10 29 | 699 | 1.1− | 0.3+ | 2005 03 31 | 699 | 1.1+ | 1.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2003 10 29 | 699 | (0.9− | 2.4−) | 2005 03 31 | 699 | 0.8+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2003 10 29 | 699 | 1.4+ | 0.7− | 2005 04 09 | 704 | 0.5− | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2003 10 29 | 699 | 1.3+ | 0.5+ | 2005 04 09 | 704 | 0.9+ | 0.2+ | 2006 10 19 | G96 | 0.9− | 0.6+ |
| 2003 11 22 | 691 | 0.1− | 0.2+ | 2005 04 09 | 704 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.6− | 0.2+ |
| 2003 11 22 | 691 | 0.2+ | 0.0 | 2005 04 09 | 704 | 0.8+ | 0.5− | 2006 10 19 | G96 | 0.2− | 0.2+ |
| 2003 11 22 | 691 | 0.2+ | 0.4+ | 2005 04 15 | 703 | 0.7− | 0.8+ | 2006 11 17 | 291 | 0.0 | 0.6+ |
| 2005 03 04 | 703 | 0.8− | 0.4− | 2005 04 15 | 703 | 0.8− | 0.3+ | 2006 11 17 | 291 | 0.4+ | 0.9+ |
| 2005 03 04 | 703 | 0.8+ | 0.2− | 2005 04 15 | 703 | 0.4− | 0.0 | 2006 11 17 | 291 | 0.3+ | 0.8+ |
| 2005 03 04 | 703 | 1.3− | 0.6+ | 2005 04 15 | 703 | 0.7+ | 0.3+ | | | | |

**(144951)∗ 2005 EE$_{37}$ = 2001 FL$_{128}$**

Discovered 2005 Mar. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76783)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.12675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27021788 | $\omega$ | 206.20199 | | −0.44568331 | +0.85593736 | |
| $a$ | 2.3695179 | $\Omega$ | 38.93911 | | −0.73048217 | −0.17844006 | |
| $e$ | 0.1347436 | $i$ | 24.65501 | | −0.51745743 | −0.48531473 | |
| $P$ | 3.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3− | 0.3− | 2005 04 02 | 699 | 0.2+ | 0.4+ | 2005 05 09 | 699 | 0.1+ | 0.2+ |
| 1999 10 06 | 704 | (2.4+ | 0.9−) | 2005 04 05 | 703 | 0.3− | 0.6+ | 2005 05 09 | 704 | 0.8+ | 0.3+ |
| 1999 10 06 | 704 | 0.1+ | 0.0 | 2005 04 05 | 703 | 0.1− | 0.3− | 2005 05 09 | 699 | 0.1+ | 0.1− |
| 1999 10 06 | 704 | 0.4+ | 0.5− | 2005 04 05 | 704 | 0.0 | 0.6+ | 2005 05 09 | 699 | 0.3+ | 0.0 |
| 1999 10 06 | 704 | 0.5+ | 1.3− | 2005 04 05 | 703 | 0.0 | 0.0 | 2005 05 09 | 699 | 0.4+ | 0.1+ |
| 1999 10 15 | 704 | 1.2− | 1.3+ | 2005 04 05 | 703 | 0.9− | 0.1− | 2005 06 02 | 699 | 0.1+ | 0.7+ |
| 1999 10 15 | 704 | 1.2− | 0.2− | 2005 04 05 | 704 | 0.5+ | 0.2− | 2005 06 02 | 699 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 1.2− | 0.2+ | 2005 04 05 | 704 | 0.4+ | 0.1− | 2005 06 02 | 699 | 0.8− | 0.3− |
| 2001 01 06 | 704 | 1.3+ | 0.2+ | 2005 04 05 | 704 | 0.1+ | 0.3− | 2005 06 02 | 699 | 0.4− | 0.3− |
| 2001 01 06 | 704 | 0.1+ | 0.3− | 2005 04 05 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.6+ | 1.3+ |
| 2001 01 06 | 704 | 0.4− | 0.8− | 2005 04 07 | 704 | 0.9+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 2001 01 06 | 704 | 1.1+ | 0.0 | 2005 04 07 | 704 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.6+ |
| 2001 01 06 | 704 | 1.3+ | 0.1− | 2005 04 07 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.8− | 0.5+ |
| 2001 03 26 | 699 | 0.3− | 0.2− | 2005 04 07 | 704 | 0.6+ | 0.4+ | 2006 09 21 | 699 | 0.6+ | 0.9+ |
| 2001 03 26 | 699 | (0.3+ | 1.7−) | 2005 04 13 | 699 | 0.2− | 0.2+ | 2006 09 21 | 699 | 0.7− | 0.4+ |
| 2001 03 26 | 699 | 0.6+ | 0.3+ | 2005 04 13 | 699 | 0.4+ | 0.1− | 2006 09 21 | 699 | 0.9− | 0.8+ |
| 2001 03 26 | 699 | 0.0 | 0.3− | 2005 04 13 | 699 | 0.4+ | 0.5− | 2006 09 21 | 699 | 1.0− | 0.0 |
| 2001 03 31 | 699 | 0.3− | 0.2+ | 2005 04 13 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 1.2+ |
| 2001 03 31 | 699 | 0.5+ | 0.7+ | 2005 04 13 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 1.1+ |
| 2001 03 31 | 699 | 0.8− | 0.4− | 2005 04 13 | 699 | 0.9− | 0.5+ | 2006 09 26 | 703 | 0.4+ | 0.8+ |
| 2001 03 31 | 699 | 1.1+ | 0.4− | 2005 04 13 | 704 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.1+ |
| 2005 01 15 | 291 | 0.2+ | 0.5+ | 2005 04 13 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.6+ |
| 2005 01 15 | 291 | 0.2+ | 0.3+ | 2005 04 13 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.3+ | 0.7+ |
| 2005 01 15 | 291 | 0.5+ | 0.2+ | 2005 04 18 | 703 | 1.3− | 0.5− | 2006 09 29 | 699 | 0.6− | 0.6− |
| 2005 01 17 | 703 | 0.1− | 0.2− | 2005 04 18 | 703 | (3.1− | 1.0+) | 2006 09 29 | 699 | 0.6− | 0.9− |
| 2005 01 17 | 703 | 1.2+ | 0.6− | 2005 04 18 | 704 | 0.2− | 0.2+ | 2006 09 30 | 704 | 0.8+ | 0.1+ |
| 2005 01 17 | 703 | 0.8− | 0.1+ | 2005 04 18 | 703 | (2.4+ | 3.8+) | 2006 09 30 | 704 | 0.1+ | 0.5+ |
| 2005 01 17 | 703 | (0.6+ | 3.3−) | 2005 04 18 | 704 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.5− | 0.6+ |
| 2005 03 04 | 703 | 0.1− | 0.1+ | 2005 04 18 | 703 | 0.9− | 0.7− | 2006 10 16 | 703 | 0.6+ | 0.8+ |
| 2005 03 04 | 703 | 0.1− | 0.8− | 2005 04 18 | 704 | 0.3− | 0.8+ | 2006 10 16 | 703 | 0.1+ | 1.2+ |
| 2005 03 04 | 703 | 0.2+ | 0.1+ | 2005 04 18 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | (0.6+ | 1.6+) |
| 2005 03 04 | 703 | 0.1− | 0.1− | 2005 04 18 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.9− | 1.3+ |
| 2005 03 07 | 704 | 0.3+ | 0.4+ | 2005 05 04 | 699 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2005 03 07 | 704 | 0.2− | 0.2− | 2005 05 04 | 699 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.6− | 0.8− |
| 2005 03 07 | 704 | 0.5+ | 0.3+ | 2005 05 04 | 699 | 0.4− | 0.2+ | 2006 10 22 | 703 | 1.1− | 1.3− |
| 2005 03 07 | 704 | 0.5− | 0.5− | 2005 05 05 | 704 | 0.2+ | 1.0− | 2006 10 22 | 703 | 1.0− | 0.2− |
| 2005 03 13 | 703 | 0.0 | 0.7+ | 2005 05 05 | 704 | 0.2+ | 0.4− | 2006 10 28 | 703 | 0.5+ | 0.3+ |
| 2005 03 13 | 703 | 0.1− | 0.9+ | 2005 05 05 | 704 | 0.3− | 0.4+ | 2006 10 28 | 703 | 0.9− | 0.4+ |
| 2005 03 13 | 703 | 0.1− | 0.7+ | 2005 05 05 | 704 | 0.2− | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.7+ |
| 2005 03 13 | 703 | 0.4− | 0.3+ | 2005 05 05 | 608 | 0.1+ | 0.0 | 2006 10 28 | 703 | 1.3− | 0.2− |
| 2005 04 02 | 699 | 0.3− | 0.1− | 2005 05 05 | 608 | 0.4+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.3+ |
| 2005 04 02 | 691 | 0.1+ | 0.2+ | 2005 05 05 | 608 | 0.8+ | 0.1− | 2006 11 24 | G96 | 0.4− | 0.0 |
| 2005 04 02 | 699 | 0.3+ | 0.5+ | 2005 05 09 | 704 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.1+ |
| 2005 04 02 | 691 | 0.2+ | 0.0 | 2005 05 09 | 704 | 0.7+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.3+ |
| 2005 04 02 | 699 | 0.3− | 0.4+ | 2005 05 09 | 704 | 1.1+ | 0.7+ | | | | |
| 2005 04 02 | 691 | 0.0 | 0.0 | 2005 05 09 | 704 | 0.5+ | 0.7+ | | | | |

**(144952)∗ 2005 EC$_{38}$ = 2003 WD$_{91}$**

Discovered 2005 Mar. 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76786)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.41963 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28644064 | $\omega$ | 45.64564 | | −0.39179383 | +0.91935498 | |
| $a$ | 2.2791852 | $\Omega$ | 201.36683 | | −0.86963608 | −0.38275897 | |
| $e$ | 0.1458410 | $i$ | 5.64425 | | −0.30038422 | −0.09100544 | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 1.0− | 0.3− | 2005 03 04 | 703 | 0.2+ | 0.6+ | 2005 05 08 | G96 | 0.2+ | 0.2+ |
| 1998 03 04 | 704 | 1.5− | 0.9− | 2005 03 04 | 691 | 0.4+ | 0.3+ | 2005 05 08 | G96 | 0.2+ | 0.2− |
| 1998 03 04 | 704 | 1.5− | 1.6− | 2005 03 08 | G92 | 0.4+ | 0.5+ | 2006 08 31 | A13 | 1.1− | 0.5− |
| 1998 03 04 | 704 | (2.3− | 1.5+) | 2005 03 08 | G92 | 0.5+ | 0.3+ | 2006 08 31 | A13 | (1.7− | 0.6−) |
| 1999 10 15 | 691 | 0.9+ | 0.6− | 2005 03 08 | G92 | 0.3+ | 0.2+ | 2006 09 04 | A13 | 0.4− | 0.4+ |
| 1999 10 15 | 691 | 0.2+ | 0.5− | 2005 03 10 | 699 | 0.9+ | 0.0 | 2006 09 04 | A13 | 0.8− | 0.0 |
| 1999 10 15 | 691 | 0.2+ | 0.4− | 2005 03 10 | 699 | 0.3− | 0.7+ | 2006 09 04 | A13 | 0.3− | 0.8+ |
| 2002 06 09 | 704 | 0.0 | 0.2− | 2005 03 10 | 699 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.0 |
| 2002 06 09 | 704 | 0.2− | 0.3+ | 2005 03 10 | 699 | 0.7+ | 0.0 | 2006 09 06 | 644 | 0.1− | 0.3+ |
| 2002 06 09 | 704 | 0.7− | 0.7+ | 2005 03 11 | G92 | 0.3− | 0.2− | 2006 09 06 | 644 | 0.4− | 0.2+ |
| 2002 06 09 | 704 | 0.4− | 0.7+ | 2005 03 11 | G92 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.2+ | 0.3+ |
| 2002 07 09 | 704 | 0.6+ | 0.7+ | 2005 03 11 | G92 | 0.2+ | 0.2− | 2006 09 19 | 699 | (1.3− | 2.2+) |
| 2002 07 09 | 704 | 0.1− | 0.7+ | 2005 03 17 | 703 | 0.4− | 0.5− | 2006 09 19 | 699 | 0.8− | 0.9+ |
| 2002 07 09 | 704 | 0.2+ | 0.5+ | 2005 03 17 | 703 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2− | 1.0+ |
| 2002 07 09 | 704 | 0.4+ | 0.2+ | 2005 03 17 | 703 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2003 11 18 | 691 | 0.1+ | 0.3+ | 2005 03 17 | 703 | 0.8− | 0.2− | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2003 11 18 | 691 | 0.3+ | 0.4+ | 2005 04 04 | 703 | 0.7− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2003 11 18 | 691 | 0.1+ | 0.5+ | 2005 04 04 | 703 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.9+ | 0.7+ |
| 2003 11 19 | 699 | 0.5− | 0.2− | 2005 04 04 | 703 | 0.7− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.5+ |
| 2003 11 19 | 699 | 0.3− | 0.4+ | 2005 04 04 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.7+ |
| 2003 11 19 | 699 | 0.1− | 0.1+ | 2005 04 04 | 703 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2003 11 19 | 699 | 0.4+ | 0.1− | 2005 04 04 | 704 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2005 03 04 | 691 | 0.2+ | 0.5+ | 2005 04 04 | 704 | 1.0+ | 0.4+ | 2006 10 22 | 644 | 0.6− | 0.4+ |
| 2005 03 04 | 703 | (2.7+ | 0.9+) | 2005 04 04 | 704 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2005 03 04 | 703 | 0.1− | 0.2+ | 2005 04 04 | 704 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.0 |
| 2005 03 04 | 703 | 0.2− | 0.1− | 2005 05 08 | G96 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2005 03 04 | 691 | 0.4+ | 0.4+ | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3− |

**(144953)∗ 2005 ER$_{41}$ = 2003 WZ$_{166}$**

Discovered 2005 Mar. 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76791)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.59527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26554226 | $\omega$ | 42.36418 | | −0.88754073 | +0.45977575 | |
| $a$ | 2.3972516 | $\Omega$ | 164.92777 | | −0.44733904 | −0.84457258 | |
| $e$ | 0.0541323 | $i$ | 6.54198 | | −0.11026894 | −0.27441468 | |
| $P$ | 3.71 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.5− | 0.3− | 2005 03 09 | 699 | 1.2− | 0.5+ | 2005 04 13 | 704 | 1.3+ | 1.4+ |
| 2001 02 19 | 704 | 0.1− | 1.1+ | 2005 03 13 | 703 | 0.4− | 0.2+ | 2005 04 13 | 704 | (0.8+ | 1.9+) |
| 2001 02 19 | 704 | 0.7+ | 0.9+ | 2005 03 13 | 703 | 0.3− | 0.7+ | 2005 04 13 | 704 | 1.3+ | 0.6+ |
| 2003 11 18 | 691 | 0.1+ | 0.5+ | 2005 03 13 | 703 | 0.1− | 0.8+ | 2005 05 22 | 644 | 0.0 | 0.0 |
| 2003 11 18 | 691 | 0.2+ | 0.3+ | 2005 03 13 | 703 | 0.1− | 0.1+ | 2005 05 22 | 644 | 0.4+ | 0.0 |
| 2003 11 18 | 691 | 0.0 | 0.4+ | 2005 03 14 | G96 | 0.2− | 0.3+ | 2005 05 22 | 644 | 0.7+ | 0.2+ |
| 2003 11 21 | 699 | 0.8− | 0.6+ | 2005 03 14 | G96 | 0.3− | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.8+ |
| 2003 11 21 | 699 | 0.6− | 0.8+ | 2005 03 14 | G96 | 0.1+ | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.3+ |
| 2003 11 21 | 699 | 0.6− | 0.8+ | 2005 03 14 | G96 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.3− | 0.4+ |
| 2003 11 21 | 699 | 0.2− | 0.8− | 2005 03 18 | 703 | 0.8− | 0.8− | 2006 08 28 | 699 | 0.5− | 0.6− |
| 2003 11 30 | 704 | 0.9+ | 0.2+ | 2005 03 18 | 703 | 0.3− | 0.1− | 2006 08 28 | 699 | 0.1− | 0.0 |
| 2003 11 30 | 704 | (1.8− | 1.2+) | 2005 03 18 | 703 | 0.5− | 0.2− | 2006 08 28 | 699 | 0.1+ | 1.3+ |
| 2003 11 30 | 704 | 0.0 | 0.4+ | 2005 03 18 | 703 | 0.3− | 0.1− | 2006 08 28 | 699 | (1.1+ | 1.7+) |
| 2003 11 30 | 704 | 0.8− | 0.1− | 2005 03 31 | 699 | 0.5− | 0.2+ | 2006 09 17 | 291 | 0.0 | 0.3+ |
| 2005 03 01 | 691 | 0.3+ | 0.3+ | 2005 03 31 | 699 | 0.8+ | 0.9− | 2006 09 17 | 291 | 0.0 | 0.5+ |
| 2005 03 01 | 691 | 0.2+ | 0.1+ | 2005 03 31 | 699 | 0.2− | 0.9− | 2006 09 17 | 291 | 0.2+ | 0.4+ |
| 2005 03 01 | 691 | 0.1+ | 0.2+ | 2005 03 31 | 699 | 0.5+ | 0.4− | 2006 09 25 | G96 | 0.9− | 0.8− |
| 2005 03 08 | 699 | 0.4− | 0.9+ | 2005 04 04 | 703 | (0.5+ | 1.6+) | 2006 09 25 | G96 | 0.3− | 0.3− |
| 2005 03 08 | 699 | 0.6+ | 0.2+ | 2005 04 04 | 703 | 0.4− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2005 03 08 | 699 | 0.2+ | 0.0 | 2005 04 04 | 703 | 0.5+ | 1.1+ | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2005 03 08 | 699 | 0.7+ | 0.7+ | 2005 04 04 | 703 | 0.7+ | 0.7+ | 2006 10 28 | G96 | 0.3− | 0.4+ |
| 2005 03 09 | 699 | 0.3− | 0.6− | 2005 04 05 | 704 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.4− | 0.4+ |
| 2005 03 09 | 699 | 0.1+ | 0.8+ | 2005 04 05 | 704 | 0.3− | 1.0+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2005 03 09 | 699 | 0.9− | 0.5+ | 2005 04 05 | 704 | 1.4+ | 1.1+ | 2006 10 28 | G96 | 0.4− | 0.4+ |

**(144954)∗ 2005 EH$_{44}$ = 1995 UU$_{78}$ = 2006 QM$_3$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 103667)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.57299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26730071 | $\omega$ | 301.03635 | | +0.39778526 | +0.91746297 | |
| $a$ | 2.3867264 | $\Omega$ | 352.39767 | | −0.82739868 | +0.35620611 | |
| $e$ | 0.1861643 | $i$ | 2.31576 | | −0.39645721 | +0.17714091 | |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.5− | 0.2− | 2005 05 13 | G96 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 1.1− | 0.4− |
| 1995 10 23 | 691 | 0.0 | 0.3− | 2005 05 13 | G96 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.7− | 0.9+ |
| 1995 10 23 | 691 | 0.3− | 0.3− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.9+ |
| 1995 10 28 | 691 | 0.1+ | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 26 | J75 | 1.9+ | 1.7+ |
| 1995 10 28 | 691 | 0.2+ | 0.2+ | 2006 08 17 | 644 | 0.4− | 0.1+ | 2006 09 26 | J75 | (0.2+ | 2.5−) |
| 1995 10 28 | 691 | 0.2+ | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.5+ | 2006 09 26 | J75 | 1.1+ | 0.7+ |
| 1996 12 09 | 691 | 0.6+ | 0.4− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 27 | 291 | 0.0 | 0.1+ |
| 1996 12 09 | 691 | 0.0 | 1.0− | 2006 08 19 | 691 | 0.1− | 0.5+ | 2006 09 27 | 291 | 0.2+ | 0.2+ |
| 1996 12 09 | 691 | 0.3− | 1.0− | 2006 08 22 | 644 | 0.4− | 0.0 | 2006 09 27 | 291 | 0.1+ | 0.2+ |
| 2001 02 02 | 691 | 0.3− | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.2+ |
| 2001 02 02 | 691 | 0.2− | 0.7+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.2− | 0.4+ |
| 2001 02 02 | 691 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.5− | 0.5+ |
| 2001 02 21 | 691 | 0.2+ | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.2− |
| 2001 02 21 | 691 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.9− | 0.2+ |
| 2001 02 21 | 691 | 0.0 | 0.6+ | 2006 08 25 | 704 | 0.3− | 0.7+ | 2006 09 27 | J75 | 0.8+ | 0.1+ |
| 2001 03 02 | 691 | 0.7+ | 0.3+ | 2006 08 25 | 704 | 0.4+ | 0.5− | 2006 09 27 | J75 | 0.5+ | 0.2+ |
| 2001 03 02 | 691 | 0.2+ | 0.2+ | 2006 08 25 | 704 | 0.9− | 0.2+ | 2006 09 27 | J75 | 0.4+ | 0.1+ |
| 2001 03 02 | 691 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.8+ | 0.4− | 2006 09 28 | 691 | 0.4+ | 0.0 |
| 2002 06 17 | 644 | 0.4+ | 0.3+ | 2006 08 25 | 704 | 0.6− | 0.6+ | 2006 09 28 | 691 | 0.3− | 0.2− |
| 2002 06 17 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.7− | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2002 06 17 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.6− | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2002 07 05 | 704 | 0.7− | 0.5+ | 2006 08 28 | 703 | 0.6− | 1.0− | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2002 07 05 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.7− | 2006 09 28 | G96 | 0.3− | 0.5− |
| 2002 07 05 | 704 | 0.2− | 0.1− | 2006 09 12 | 703 | 1.6− | 1.1+ | 2006 09 28 | G96 | 0.4+ | 0.6− |
| 2002 08 05 | 644 | 0.1− | 0.2+ | 2006 09 12 | 703 | 1.1− | 1.2+ | 2006 09 29 | 704 | 1.6+ | 0.5− |
| 2002 08 05 | 644 | 0.1− | 0.4− | 2006 09 12 | 703 | 0.6− | 1.4+ | 2006 09 29 | 704 | 0.6− | 0.3+ |
| 2002 08 05 | 644 | 0.0 | 0.3+ | 2006 09 12 | 703 | (1.1− | 3.1+) | 2006 09 29 | 704 | 0.2+ | 0.7+ |
| 2002 08 31 | 704 | 0.1+ | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.1− | 1.8+ |
| 2002 08 31 | 704 | 0.3+ | 0.2− | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.5+ |
| 2002 08 31 | 704 | 0.4+ | 1.0− | 2006 09 16 | 691 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.6+ | 1.9− |
| 2002 08 31 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 0.4− | 0.6+ | 2006 10 01 | 704 | 0.2+ | 1.0− |
| 2005 03 03 | 691 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.6+ | 0.4− |
| 2005 03 03 | 691 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 1.2− | 0.3− | 2006 10 01 | 704 | 0.3+ | 1.3+ |
| 2005 03 03 | 691 | 0.0 | 0.7+ | 2006 09 17 | 704 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2005 03 08 | G96 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.5− | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2005 03 08 | G96 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2005 03 08 | G96 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.3− | 1.0+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2005 03 08 | G96 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.8+ | 0.3− | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2005 04 02 | G96 | 0.0 | 0.2+ | 2006 09 20 | 704 | 1.2− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2005 04 02 | G96 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2005 05 13 | G96 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2005 05 13 | G96 | 0.5+ | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.2− | | | | |

**(144955)∗ 2005 ER$_{45}$ = 2002 TY$_{301}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76796)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.79044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22079595 | $\omega$ | 258.19551 | | −0.17407241 | +0.98472883 | |
| $a$ | 2.7110778 | $\Omega$ | 1.78707 | | −0.86467440 | −0.15148071 | |
| $e$ | 0.1886047 | $i$ | 5.18010 | | −0.47120800 | −0.08580631 | |
| $P$ | 4.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2005 03 09 | 699 | (1.8− | 1.7+) | 2006 08 24 | 644 | 0.2− | 0.3+ |
| 2002 09 07 | 704 | 0.1+ | 0.1+ | 2005 03 09 | 699 | 0.8+ | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.2+ |
| 2002 09 07 | 704 | 0.4− | 0.6+ | 2005 03 11 | 704 | 0.9+ | 0.4+ | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 2002 09 07 | 704 | (0.3− | 2.2+) | 2005 03 11 | 704 | 0.6+ | 1.2+ | 2006 08 28 | 704 | 0.7+ | 0.4+ |
| 2002 10 04 | 704 | 0.1+ | 0.1− | 2005 03 11 | 704 | 0.7+ | 0.8+ | 2006 08 28 | 704 | 1.0+ | 0.4+ |
| 2002 10 04 | 704 | 0.5− | 1.0+ | 2005 03 11 | 704 | 0.5+ | 0.8+ | 2006 08 28 | 704 | 0.3− | 1.1+ |
| 2002 10 04 | 704 | 1.0− | 1.2+ | 2005 03 11 | 704 | (0.3+ | 1.9+) | 2006 08 28 | 704 | 1.0− | 1.2+ |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2005 03 14 | 704 | 1.2+ | 0.6− | 2006 08 28 | 704 | 0.4− | 0.0 |
| 2002 10 09 | 704 | 0.8− | 1.1+ | 2005 03 14 | 704 | 0.2− | 0.3+ | 2006 08 28 | 699 | 0.2+ | 0.7+ |
| 2002 10 09 | 704 | 0.8− | 0.5+ | 2005 03 14 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.2− | 0.9+ |
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2005 03 14 | 704 | 0.5+ | 1.0− | 2006 08 28 | 699 | 0.5+ | 0.6+ |
| 2002 10 11 | 704 | 0.3+ | 0.5+ | 2005 03 14 | 704 | 0.5+ | 0.2− | 2006 08 28 | 699 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | (0.1+ | 2.0−) | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 09 12 | 699 | 0.8− | 0.6+ |
| 2002 10 11 | 704 | 0.8− | 0.1− | 2005 04 02 | G96 | 0.3− | 0.1− | 2006 09 12 | 699 | 0.7+ | 0.4− |
| 2002 10 11 | 704 | 1.4+ | 0.9− | 2005 04 02 | G96 | 0.2− | 0.2− | 2006 09 12 | 699 | 0.3− | 1.1− |
| 2002 10 11 | 704 | (0.7− | 2.3−) | 2005 04 02 | G96 | 0.3− | 0.2− | 2006 09 12 | 699 | 0.5+ | 0.5− |
| 2003 12 17 | 704 | (1.1+ | 2.2+) | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.9+ |
| 2003 12 17 | 704 | 0.8+ | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.1+ |
| 2003 12 17 | 704 | 0.4− | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 2005 03 03 | 691 | 0.4− | 0.4+ | 2006 08 21 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.4− |
| 2005 03 03 | 691 | 0.1− | 0.7+ | 2006 08 21 | 644 | 0.4− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2005 03 03 | 691 | 0.2+ | 0.5+ | 2006 08 21 | 644 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2005 03 08 | 704 | 0.5+ | 0.3+ | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2005 03 08 | 704 | 0.1− | 0.2+ | 2006 08 21 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2005 03 08 | 704 | 1.4+ | 1.1+ | 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.2+ |
| 2005 03 08 | 704 | 1.1+ | 1.3+ | 2006 08 23 | 704 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2005 03 08 | 704 | 0.5+ | 0.4+ | 2006 08 23 | 704 | (2.0− | 1.1−) | 2006 10 28 | G96 | 0.6− | 0.2+ |
| 2005 03 09 | 699 | 0.4+ | 0.4+ | 2006 08 23 | 704 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2+ |
| 2005 03 09 | 699 | 0.4− | 0.6+ | 2006 08 23 | 704 | 0.4+ | 0.4+ | | | | |

**(144956)∗ 2005 EM$_{47}$ = 2006 QG$_{14}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 103667)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.16172 | | | (2000.0) | | |
| $n$ | 0.26581581 | $\omega$ | 344.65217 | | +0.84146931 | +0.53982804 |
| $a$ | 2.3956066 | $\Omega$ | 342.61921 | | −0.48737758 | +0.74023885 |
| $e$ | 0.1963425 | $i$ | 4.35733 | | −0.23322200 | +0.40078939 |
| $P$ | 3.71 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.3+ | 0.2+ | 2005 04 06 | G96 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.0 | |
| 1995 08 22 | 809 | 0.3− | 0.2− | 2005 04 06 | G96 | 0.9− | 0.3− | 2006 08 28 | 703 | 0.2− | 0.4+ | |
| 1995 09 17 | 809 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.2− | |
| 1995 09 20 | 809 | 0.1+ | 1.4− | 2006 08 17 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 0.7+ | 1.5− | |
| 1995 09 22 | 809 | 1.6+ | 1.8− | 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 09 13 | 644 | 0.3+ | 0.4+ | |
| 2003 12 23 | 704 | 0.4− | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.2+ | |
| 2003 12 23 | 704 | 0.7− | 0.5+ | 2006 08 20 | 644 | 0.7− | 0.3+ | 2006 09 13 | 644 | 0.4+ | 0.4+ | |
| 2003 12 23 | 704 | 0.1+ | 0.1− | 2006 08 20 | 644 | 0.6− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1− | |
| 2003 12 23 | 704 | 1.0+ | 0.4+ | 2006 08 20 | 644 | 0.6− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1− | |
| 2005 03 03 | 691 | 0.1− | 0.3− | 2006 08 23 | 704 | 0.5− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.1− | |
| 2005 03 03 | 691 | 0.6+ | 0.5+ | 2006 08 23 | 704 | 0.3− | 0.5− | 2006 09 30 | G96 | 0.2− | 0.0 | |
| 2005 03 03 | 691 | 0.1− | 0.6− | 2006 08 23 | 704 | 0.7+ | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.7− | |
| 2005 03 08 | G96 | 0.5− | 0.2+ | 2006 08 23 | 704 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.5− | |
| 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 08 28 | 699 | 1.3− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.4− | |
| 2005 03 08 | G96 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.1− | |
| 2005 03 08 | G96 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.5− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2+ | |
| 2005 03 13 | 691 | 0.2− | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.7− | 2006 11 16 | G96 | 0.0 | 0.0 | |
| 2005 03 13 | 691 | 0.1+ | 0.8− | 2006 08 28 | 699 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.1− | |
| 2005 03 13 | 691 | 0.1+ | 0.1− | 2006 08 28 | 704 | 0.7− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.2+ | |
| 2005 04 06 | G96 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.5+ | 0.2− | | | | | |

**(144957)∗ 2005 EW$_{47}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 111.59966 | | | (2000.0) | | |
| $n$ | 0.27541317 | $\omega$ | 83.08770 | | −0.71801682 | +0.69541699 |
| $a$ | 2.3396250 | $\Omega$ | 140.96630 | | −0.65545143 | −0.66150112 |
| $e$ | 0.1778222 | $i$ | 2.64877 | | −0.23416932 | −0.28073383 |
| $P$ | 3.58 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 08 | 691 | 0.2− | 0.4− | 2005 03 08 | 704 | 0.2+ | 0.6+ | 2005 03 17 | 704 | 0.5+ | 0.3+ | |
| 1996 12 08 | 691 | 0.1+ | 0.0 | 2005 03 08 | 704 | 0.4+ | 0.0 | 2005 03 30 | 703 | 0.2− | 1.1− | |
| 1996 12 08 | 691 | 0.2+ | 0.3+ | 2005 03 08 | 704 | 0.1+ | 0.2+ | 2005 03 30 | 703 | 0.1− | 0.9− | |
| 1999 09 03 | 691 | 0.1+ | 0.3+ | 2005 03 08 | 704 | 0.3+ | 0.4+ | 2005 03 30 | 703 | 0.5− | 0.1+ | |
| 1999 09 03 | 691 | 0.1+ | 0.1− | 2005 03 09 | 704 | (0.2+ | 1.9−) | 2005 03 30 | 703 | 0.7− | 0.1− | |
| 1999 09 03 | 691 | 0.4− | 0.1+ | 2005 03 09 | 704 | 0.2+ | 0.5− | 2005 04 11 | G96 | 0.2− | 0.3− | |
| 2002 06 11 | 644 | 0.3− | 0.2− | 2005 03 09 | 704 | 1.2− | 0.2− | 2005 04 11 | G96 | 0.2− | 0.4− | |
| 2002 06 11 | 644 | 0.2− | 0.2− | 2005 03 09 | 704 | 0.6+ | 1.2+ | 2005 04 11 | G96 | 0.4− | 0.2− | |
| 2002 06 11 | 644 | 0.1+ | 0.3− | 2005 03 10 | G96 | 0.5− | 0.1− | 2005 04 11 | G96 | 0.3− | 0.2− | |
| 2002 06 16 | 644 | 0.4+ | 0.7+ | 2005 03 10 | G96 | 0.3− | 0.1− | 2006 08 27 | 699 | 1.3+ | 1.0− | |
| 2002 06 16 | 644 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.4− | 0.0 | 2006 08 27 | 699 | 0.1+ | 1.0+ | |
| 2002 06 16 | 644 | 0.1− | 0.4+ | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 08 27 | 699 | 0.8− | 0.4+ | |
| 2002 06 29 | 644 | 0.1− | 0.5+ | 2005 03 11 | 704 | 0.1+ | 0.6+ | 2006 08 27 | 699 | 0.1+ | 1.2− | |
| 2002 06 29 | 644 | 0.2+ | 0.6+ | 2005 03 11 | 704 | 0.8− | 0.2+ | 2006 09 30 | G96 | 0.5− | 0.2− | |
| 2002 06 29 | 644 | 0.2+ | 1.0+ | 2005 03 11 | 704 | 0.4− | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.1+ | |
| 2002 07 14 | 704 | 0.0 | 0.7− | 2005 03 11 | 704 | 0.9+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.4+ | |
| 2002 07 14 | 704 | 0.2− | 0.5− | 2005 03 11 | 704 | 0.2+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.1+ | |
| 2002 07 14 | 704 | (1.4− | 1.6−) | 2005 03 12 | 704 | (1.4+ | 2.0+) | 2006 10 19 | 695 | 0.2− | 0.5+ | |
| 2005 02 02 | 704 | 0.6+ | 0.2− | 2005 03 12 | 704 | 0.4+ | 1.1+ | 2006 10 20 | 695 | 0.1− | 0.4+ | |
| 2005 02 02 | 704 | 0.0 | 0.3+ | 2005 03 12 | 704 | 0.7+ | 0.0 | 2006 10 20 | 695 | 0.1+ | 0.6+ | |
| 2005 02 02 | 704 | 1.0− | 0.3+ | 2005 03 12 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 695 | 0.1− | 0.5+ | |
| 2005 03 03 | 703 | 0.4− | 0.1− | 2005 03 12 | 704 | (1.5+ | 2.5+) | 2006 10 20 | 695 | 0.0 | 0.5+ | |
| 2005 03 03 | 703 | 0.6+ | 0.3+ | 2005 03 17 | 704 | 0.7+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3+ | |
| 2005 03 03 | 703 | 0.3+ | 0.1− | 2005 03 17 | 704 | 0.9+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1+ | |
| 2005 03 03 | 703 | 0.3+ | 0.5+ | 2005 03 17 | 704 | (1.7+ | 1.3+) | 2006 10 21 | G96 | 0.5− | 0.6+ | |
| 2005 03 08 | 704 | 0.2+ | 0.3+ | 2005 03 17 | 704 | 0.8+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.5+ | |

**(144958)∗ 2005 EV$_{50}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.59060 | | | (2000.0) | | |
| $n$ | 0.27312968 | $\omega$ | 76.47932 | | −0.22436810 | +0.97450374 |
| $a$ | 2.3526471 | $\Omega$ | 180.55914 | | −0.93470349 | −0.21555061 |
| $e$ | 0.0871691 | $i$ | 7.02369 | | −0.27565984 | −0.06229286 |
| $P$ | 3.61 | $H$ | 16.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.2− | 0.4+ | 2005 03 11 | G96 | 0.0 | 0.1− | 2006 08 19 | 644 | 0.2− | 0.3+ | |
| 1998 04 21 | 704 | 0.5+ | 1.4− | 2005 03 11 | 704 | 0.4+ | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.3+ | |
| 1998 04 21 | 704 | 0.6+ | 0.3− | 2005 03 11 | G96 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.2− | 0.3+ | |
| 1998 04 21 | 704 | 0.5+ | 0.8+ | 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.4+ | |
| 1999 09 18 | 691 | 0.1− | 0.1− | 2005 03 11 | 704 | 0.2+ | 1.3+ | 2006 08 24 | 704 | 0.2− | 0.5− | |
| 1999 09 18 | 691 | 0.1+ | 0.0 | 2005 03 11 | 704 | 0.2+ | 0.2− | 2006 08 24 | 704 | 0.0 | 0.2+ | |
| 1999 09 18 | 691 | 0.0 | 0.1− | 2005 03 13 | 691 | 0.0 | 0.4+ | 2006 08 24 | 704 | 0.1− | 0.2+ | |
| 1999 10 09 | 704 | 0.5− | 0.5− | 2005 03 13 | 691 | 0.3+ | 0.1+ | 2006 08 24 | 704 | 0.2− | 0.1+ | |
| 1999 10 09 | 704 | 0.1− | 0.1+ | 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 0.5− | 0.2− | |
| 1999 10 09 | 704 | 0.1+ | 0.3− | 2005 03 14 | 704 | (1.7+ | 0.2+) | 2006 08 28 | 703 | 0.1− | 0.2+ | |
| 1999 10 09 | 704 | 0.1+ | 0.7+ | 2005 03 14 | 704 | 0.8+ | 0.0 | 2006 08 28 | 703 | 0.7+ | 0.4+ | |
| 2003 11 21 | 699 | 0.1− | 1.2+ | 2005 03 14 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.0 | |
| 2003 11 21 | 691 | 0.0 | 0.2+ | 2005 03 14 | 704 | 0.6− | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.1+ | |
| 2003 11 21 | 699 | 1.2− | 0.7− | 2005 03 14 | 704 | 0.4+ | 0.7+ | 2006 08 29 | 691 | 0.1− | 0.5+ | |
| 2003 11 21 | 699 | 0.7− | 0.2− | 2005 03 17 | 704 | 0.6+ | 1.3+ | 2006 08 29 | 691 | 0.1− | 1.0+ | |
| 2003 11 21 | 691 | 0.0 | 0.3+ | 2005 03 17 | 704 | (0.4− | 1.6+) | 2006 08 29 | 691 | 0.0 | 0.3+ | |
| 2003 11 21 | 699 | 1.3+ | 0.4− | 2005 03 17 | 704 | 1.0+ | 0.4+ | 2006 08 30 | 704 | 0.8+ | 0.6− | |
| 2003 11 21 | 691 | 0.1+ | 0.4+ | 2005 03 17 | 703 | 0.6− | 0.1− | 2006 08 30 | 704 | 0.0 | 0.6+ | |
| 2005 03 03 | 703 | 0.8− | 0.4− | 2005 03 17 | 703 | 0.8− | 0.9+ | 2006 08 30 | 704 | 0.0 | 0.4− | |
| 2005 03 03 | 703 | 0.5+ | 0.5− | 2005 03 17 | 703 | 1.1− | 0.4+ | 2006 09 18 | 704 | 0.6+ | 0.4+ | |
| 2005 03 03 | 703 | 0.8− | 0.1+ | 2005 03 17 | 703 | 1.0− | 0.5− | 2006 09 18 | 704 | 0.4+ | 0.6+ | |
| 2005 03 03 | 703 | (0.4− | 1.7−) | 2005 04 02 | G96 | 0.3+ | 0.2− | 2006 09 18 | 704 | 0.0 | 0.8+ | |
| 2005 03 08 | 699 | 0.6− | 0.6+ | 2005 04 02 | G96 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.1+ | |
| 2005 03 08 | 699 | 0.9− | 0.8+ | 2005 04 02 | G96 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.6− | 0.1+ | |
| 2005 03 08 | 699 | 0.9− | 0.4+ | 2005 04 02 | G96 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.3− | 0.2+ | |
| 2005 03 08 | 704 | 1.2+ | 0.7− | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.2+ | |
| 2005 03 08 | 699 | 0.7+ | 0.6+ | 2005 04 04 | G96 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.0 | 0.1+ | |
| 2005 03 08 | 704 | 0.4+ | 1.3+ | 2005 04 04 | G96 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.4− | 0.1+ | |
| 2005 03 08 | 704 | (1.8+ | 0.7−) | 2005 04 04 | G96 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.4− | 0.0 | |
| 2005 03 08 | 704 | 1.4+ | 0.4+ | 2005 05 06 | G96 | 0.6− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.0 | |
| 2005 03 09 | 691 | 0.3+ | 0.2+ | 2005 05 06 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.1− | |
| 2005 03 09 | 691 | 0.1+ | 0.1+ | 2005 05 06 | G96 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− | |
| 2005 03 09 | 691 | 0.3+ | 0.2+ | 2005 05 06 | G96 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− | |
| 2005 03 11 | 704 | 0.4+ | 1.3+ | 2006 08 19 | 644 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.5+ | |
| 2005 03 11 | G96 | 0.0 | 0.1− | 2006 08 19 | 644 | 0.0 | 0.4+ | | | | | |

**(144959)∗ 2005 EX$_{58}$ = 1995 SU$_{66}$**

Discovered 2005 Mar. 4 by Spacewatch at Kitt Peak.
Id. G. V. Williams (*MPO* 76815)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 93.91937 | | | (2000.0) | | |
| $n$ | 0.27237854 | $\omega$ | 84.02539 | | −0.26579719 | +0.96400320 |
| $a$ | 2.3569704 | $\Omega$ | 170.55133 | | −0.90059875 | −0.24569331 |
| $e$ | 0.1755309 | $i$ | 2.46104 | | −0.34390951 | −0.10164957 |
| $P$ | 3.62 | $H$ | 17.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.0 | 0.3+ | 2005 03 09 | G96 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 | |
| 1995 09 17 | 691 | 0.0 | 0.4+ | 2005 03 09 | G96 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.4+ | |
| 1995 09 17 | 691 | 0.0 | 0.2+ | 2005 03 12 | 691 | 0.5+ | 0.5+ | 2006 09 24 | 691 | 0.2− | 0.4+ | |
| 1995 09 22 | 691 | 0.7− | 1.2− | 2005 03 12 | 691 | 0.4+ | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.1− | |
| 1995 09 22 | 691 | 0.1+ | 0.2+ | 2005 03 12 | 691 | 0.5+ | 0.5+ | 2006 09 24 | 691 | 0.1− | 0.3+ | |
| 1995 09 22 | 691 | 0.4+ | 0.2+ | 2005 03 13 | 703 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.3− | |
| 1998 05 01 | 704 | 0.7− | 1.9+ | 2005 03 13 | 703 | 1.1− | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.3− | |
| 1998 05 01 | 704 | 0.1+ | 0.0 | 2005 03 13 | 703 | 0.5− | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.2− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 1.2+ | 0.2− | 2005 03 13 | 703 | 0.8− | 0.7+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 1998 05 01 | 704 | 0.2+ | 1.4− | 2005 03 16 | 691 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.3− | 0.2+ |
| 2002 07 19 | 644 | 0.3− | 0.0 | 2005 03 16 | 691 | 0.8− | 0.6− | 2006 09 28 | 691 | 0.4− | 0.0 |
| 2002 07 19 | 644 | 0.4− | 0.3+ | 2005 03 16 | 691 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.4− | 0.5+ |
| 2002 07 19 | 644 | 0.4− | 0.4+ | 2005 03 17 | 703 | 0.6− | 1.4− | 2006 10 02 | 691 | 0.5+ | 0.0 |
| 2002 08 07 | 644 | 0.2+ | 0.5+ | 2005 03 17 | 703 | 0.5+ | 1.4− | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2002 08 07 | 644 | 0.4− | 1.0+ | 2005 03 17 | 703 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.4− | 0.2− |
| 2002 08 07 | 644 | 0.1− | 0.6+ | 2005 03 17 | 703 | 0.6− | 0.2+ | 2006 10 11 | 291 | 0.1+ | 0.0 |
| 2005 03 04 | 691 | 0.0 | 0.5+ | 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 10 11 | 291 | 0.1+ | 0.2+ |
| 2005 03 04 | 691 | 0.2+ | 0.4+ | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 10 11 | 291 | 0.1+ | 0.2+ |
| 2005 03 04 | 691 | 0.9+ | 0.3+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 10 16 | 291 | 0.3+ | 0.4+ |
| 2005 03 08 | 699 | (0.2+ | 1.6+) | 2005 04 04 | G96 | 0.4− | 0.0 | 2006 10 16 | 291 | 0.2+ | 0.6+ |
| 2005 03 08 | 699 | (0.5+ | 1.6+) | 2005 05 09 | G96 | 0.1− | 0.1− | 2006 10 16 | 291 | 0.2+ | 0.4+ |
| 2005 03 08 | 699 | 1.3+ | 0.2− | 2005 05 09 | G96 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2005 03 08 | 699 | (0.8+ | 1.6+) | 2005 05 09 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2005 03 09 | G96 | 0.2− | 0.1+ | 2005 05 09 | G96 | (2.2+ | 1.9−) | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2005 03 09 | G96 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− |

**(144960)∗ 2005 EN$_{77}$ = 2000 YH$_{131}$ = 2001 AA$_{54}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 95652)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 65.51585 | | (2000.0) | | | |
| *n* | 0.27864616 | $\omega$ | 132.57678 | | +0.00799933 | +0.99938822 |
| *a* | 2.3214928 | $\Omega$ | 137.84509 | | −0.93167175 | +0.01981574 |
| *e* | 0.1385431 | *i* | 2.90787 | | −0.36321310 | −0.02881871 |
| *P* | 3.54 | *H* | 16.7 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.3− | 0.4+ | 2005 03 08 | 704 | 0.6− | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.6+ |
| 1992 09 27 | 691 | 0.8− | 0.5+ | 2005 03 08 | 704 | 0.2+ | 1.0+ | 2006 08 27 | 691 | 0.4− | 0.4+ |
| 1992 09 27 | 691 | 0.0 | 0.3+ | 2005 03 08 | 704 | 0.8+ | 0.3− | 2006 08 27 | 699 | 0.4+ | 1.2+ |
| 2000 12 30 | 691 | 0.6+ | 0.4+ | 2005 03 09 | 704 | 0.1+ | 0.6+ | 2006 08 27 | 699 | 0.3− | 0.7+ |
| 2000 12 30 | 691 | 0.2+ | 0.2− | 2005 03 09 | 704 | 0.9+ | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.7− |
| 2000 12 30 | 691 | 0.3+ | 0.0 | 2005 03 09 | 704 | 0.5+ | 0.9+ | 2006 08 28 | 703 | 0.7− | 0.3− |
| 2001 01 01 | 691 | 0.3+ | 0.1+ | 2005 03 09 | 704 | 0.8− | 0.3+ | 2006 08 28 | 703 | 0.3+ | 0.4+ |
| 2001 01 01 | 691 | 0.3+ | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.9− | 1.0+ |
| 2001 01 01 | 691 | 0.4+ | 0.1+ | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.3− |
| 2002 06 10 | 704 | 0.4+ | 0.2− | 2005 03 10 | G96 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.7− |
| 2002 06 10 | 704 | 0.6+ | 0.1− | 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.4+ |
| 2002 06 10 | 704 | 0.1− | 0.1− | 2005 03 17 | 703 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.2− | 1.0− |
| 2002 06 10 | 704 | 0.3− | 0.2+ | 2005 03 17 | 703 | 0.5− | 1.1− | 2006 09 14 | 703 | 0.6− | 0.4+ |
| 2002 06 18 | 704 | 0.7+ | 0.9+ | 2005 03 17 | 703 | 0.6− | 0.4+ | 2006 09 14 | 703 | 0.9+ | 0.3− |
| 2002 06 18 | 704 | 0.8+ | 0.7+ | 2005 03 17 | 703 | (1.0− | 2.1+) | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2002 06 18 | 704 | 1.4+ | 1.6+ | 2005 04 02 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.1+ |
| 2002 06 18 | 704 | 0.5− | 0.6+ | 2005 04 02 | 691 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 2003 12 22 | 691 | 0.0 | 0.0 | 2005 04 02 | 691 | 0.0 | 0.5+ | 2006 09 19 | 699 | 1.3+ | 0.2+ |
| 2003 12 22 | 691 | 0.1− | 0.1+ | 2005 04 03 | 185 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.8+ | 1.1+ |
| 2003 12 22 | 691 | 0.3− | 0.0 | 2005 04 03 | 185 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.7− | 0.2+ |
| 2005 03 03 | 703 | 0.2+ | 0.3− | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.4+ |
| 2005 03 03 | 703 | 0.4− | 0.4− | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.7− |
| 2005 03 03 | 703 | 0.6− | 0.8+ | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 2005 03 03 | 703 | 0.0 | 0.3− | 2005 04 11 | G96 | 0.5− | 0.1+ | 2006 09 30 | 703 | 1.4+ | 1.8+ |
| 2005 03 08 | 704 | 1.3+ | 0.3+ | 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2005 03 08 | 704 | 0.8− | 0.5+ | 2005 04 12 | 691 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.1− |
| 2005 03 08 | 704 | 0.4+ | 0.5+ | 2005 04 12 | 691 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.9− | 0.1− |
| 2005 03 08 | 704 | 1.1− | 1.6+ | 2006 08 27 | 691 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2005 03 08 | 704 | 1.0+ | 0.6+ | 2006 08 27 | 699 | 0.4+ | 1.1+ | | | | |
| 2005 03 08 | 704 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.3− | 0.2+ | | | | |

**(144961)∗ 2005 EP$_{77}$ = 1998 DS$_{17}$ = 2005 ET$_{248}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76836)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 65.81282 | | (2000.0) | | | |
| *n* | 0.28371719 | $\omega$ | 127.77327 | | −0.00159011 | +0.99691325 |
| *a* | 2.2937476 | $\Omega$ | 141.90853 | | −0.95283473 | +0.02231169 |
| *e* | 0.1011951 | *i* | 7.30996 | | −0.30348551 | −0.07527397 |
| *P* | 3.47 | *H* | 16.5 | *G* | 0.15 | *U* 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.2− | 0.0 | 2005 03 04 | 704 | 1.0+ | 0.6− | 2005 03 16 | 703 | 0.2− | 0.4− |
| 1998 02 23 | 691 | 0.8− | 0.0 | 2005 03 04 | 704 | (1.4+ | 4.1+) | 2005 04 04 | 691 | 0.1+ | 0.3+ |
| 1998 02 28 | 691 | 0.5+ | 0.2− | 2005 03 04 | 704 | (0.1− | 2.8+) | 2005 04 04 | 691 | 0.1+ | 0.6+ |
| 1998 02 28 | 691 | 0.1+ | 0.1− | 2005 03 04 | 704 | (0.9+ | 3.3+) | 2005 04 04 | 691 | 0.1+ | 0.5+ |
| 1998 02 28 | 691 | 0.4+ | 0.1− | 2005 03 04 | 704 | (1.8+ | 2.8+) | 2006 08 16 | 644 | 0.3− | 0.5+ |
| 2002 05 18 | 704 | 0.6− | 0.7− | 2005 03 08 | 699 | 0.8− | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.3+ |
| 2002 05 18 | 704 | 0.4− | 0.5+ | 2005 03 08 | 699 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.4+ |
| 2002 05 18 | 704 | 0.7− | 0.4− | 2005 03 08 | 699 | (2.1+ | 0.6−) | 2006 08 21 | 691 | 0.0 | 0.3+ |
| 2002 05 18 | 704 | 0.9− | 0.1− | 2005 03 08 | 699 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.2− | 0.2+ |
| 2002 05 18 | 704 | 0.6− | 0.0 | 2005 03 09 | 704 | 0.1+ | 0.7− | 2006 08 21 | 691 | 0.1+ | 0.3+ |
| 2002 06 01 | 644 | 0.0 | 0.2+ | 2005 03 09 | 704 | 0.7+ | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.4+ |
| 2002 06 01 | 644 | 0.1− | 0.1+ | 2005 03 09 | 704 | 0.3− | 1.0+ | 2006 08 24 | 644 | 0.0 | 0.7+ |
| 2002 06 01 | 644 | 0.0 | 0.0 | 2005 03 09 | 704 | 1.2+ | 0.2− | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 2002 06 14 | 704 | 1.3+ | 0.5+ | 2005 03 09 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.5+ |
| 2002 06 14 | 704 | 0.1− | 1.1− | 2005 03 12 | 704 | 0.1+ | 0.9+ | 2006 09 14 | 703 | 0.4− | 0.6+ |
| 2002 06 14 | 704 | 0.2+ | 0.3+ | 2005 03 12 | 704 | 0.8+ | 0.3+ | 2006 09 14 | 703 | 0.7+ | 1.3− |
| 2002 06 14 | 704 | 0.2− | 0.3− | 2005 03 12 | 704 | 1.1+ | 1.0+ | 2006 09 14 | 703 | 1.4− | 0.8− |
| 2002 06 14 | 704 | 1.6+ | 0.2− | 2005 03 12 | 704 | 0.9+ | 1.3+ | 2006 09 25 | 699 | 0.6− | 0.8− |
| 2005 02 14 | 704 | 0.1+ | 1.5+ | 2005 03 16 | 704 | 0.1+ | 1.2+ | 2006 09 25 | 699 | 0.8+ | 0.7+ |
| 2005 02 14 | 704 | 0.3− | 0.6+ | 2005 03 16 | 704 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.5− | 0.7+ |
| 2005 02 14 | 704 | 0.5− | 1.5+ | 2005 03 16 | 704 | 0.6− | 0.0 | 2006 09 25 | 699 | 0.5+ | 1.0+ |
| 2005 03 03 | 703 | 0.3+ | 0.5+ | 2005 03 16 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 1.6+ | 1.3+ |
| 2005 03 03 | 703 | 0.6− | 0.3+ | 2005 03 16 | 703 | 0.8− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.5+ |
| 2005 03 03 | 703 | 0.4− | 0.1− | 2005 03 16 | 703 | 0.1+ | 0.6− | 2006 09 30 | 703 | 1.5− | 0.2+ |
| 2005 03 03 | 703 | 0.3− | 0.3− | 2005 03 16 | 703 | 0.7− | 0.5− | 2006 09 30 | 703 | 0.6+ | 1.3+ |

**(144962)∗ 2005 EZ$_{77}$ = 1999 TA$_{247}$ = 2003 YA$_{38}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76837)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| *M* | 69.80929 | | (2000.0) | | | |
| *n* | 0.26312335 | $\omega$ | 10.16135 | | −0.18857854 | +0.98150603 |
| *a* | 2.4119212 | $\Omega$ | 248.97479 | | −0.90347796 | −0.18653266 |
| *e* | 0.1505485 | *i* | 2.02144 | | −0.38492299 | −0.04302894 |
| *P* | 3.75 | *H* | 16.4 | *G* | 0.15 | *U* 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.3− | 0.1− | 2003 12 21 | 691 | 0.3− | 0.0 | 2005 04 12 | G96 | 0.0 | 0.1+ |
| 1995 08 28 | 691 | 0.2− | 0.0 | 2003 12 21 | 691 | 0.0 | 0.5+ | 2006 08 19 | 644 | 0.1+ | 0.4+ |
| 1995 08 28 | 691 | 0.4− | 0.1− | 2003 12 21 | 691 | 0.2− | 0.5− | 2006 08 19 | 644 | 0.2− | 0.3+ |
| 1999 10 06 | 704 | 0.6+ | 0.6− | 2005 03 03 | 703 | 0.5+ | 0.8− | 2006 08 19 | 644 | 0.2+ | 0.2+ |
| 1999 10 06 | 704 | 1.6+ | 0.7− | 2005 03 03 | 703 | 0.5− | 0.3+ | 2006 08 24 | 704 | 0.5+ | 1.2+ |
| 1999 10 06 | 704 | 0.8+ | 0.4+ | 2005 03 03 | 703 | 0.2+ | 0.1− | 2006 08 24 | 704 | 0.6+ | 0.2+ |
| 1999 10 10 | 691 | 0.5+ | 0.0 | 2005 03 03 | 703 | 1.4− | 0.9− | 2006 08 24 | 704 | 0.1+ | 0.3− |
| 1999 10 10 | 691 | 0.6+ | 0.1− | 2005 03 09 | 699 | (0.9− | 2.6+) | 2006 08 24 | 704 | 0.1− | 0.0 |
| 1999 10 10 | 691 | 0.5+ | 0.2− | 2005 03 09 | 699 | 1.0+ | 0.5− | 2006 08 24 | 644 | 0.4− | 0.1+ |
| 2002 07 05 | 704 | 0.2− | 0.4+ | 2005 03 09 | 699 | 0.9+ | 0.5+ | 2006 08 24 | 644 | 0.4− | 0.4+ |
| 2002 07 05 | 704 | 0.1− | 1.4+ | 2005 03 09 | 699 | 0.6+ | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 2002 07 05 | 704 | 0.5− | 0.5+ | 2005 03 09 | 704 | 1.0+ | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2002 07 05 | 704 | 0.2− | 1.3+ | 2005 03 09 | 704 | 0.1+ | 0.6+ | 2006 08 27 | 691 | 0.1+ | 0.1− |
| 2002 07 05 | 704 | 0.1+ | 0.6+ | 2005 03 09 | 704 | 0.4+ | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2002 07 20 | 644 | 0.2+ | 0.1− | 2005 03 09 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 691 | 0.2+ | 0.1− |
| 2002 07 20 | 644 | 0.1− | 0.1− | 2005 03 17 | G96 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.2− | 0.1− |
| 2002 07 20 | 644 | 0.1+ | 0.1+ | 2005 03 17 | G96 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.2+ | 0.1− |
| 2002 08 07 | 644 | 0.3− | 0.2+ | 2005 03 17 | G96 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.0 | 0.2− |
| 2002 08 07 | 644 | 0.1− | 0.4+ | 2005 03 17 | G96 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.1− |
| 2002 08 07 | 644 | 0.1− | 0.2+ | 2005 03 30 | 703 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.3− | 0.1− |
| 2003 11 19 | 691 | 0.2− | 0.0 | 2005 03 30 | 703 | (3.2+ | 2.6+) | 2006 09 28 | G96 | 0.2− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.0 | 0.0 | 2005 03 30 | 703 | (2.9+ | 1.7−) | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2003 11 19 | 691 | 0.3− | 0.2+ | 2005 03 30 | 703 | 1.1− | 1.3+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2003 12 19 | 291 | 0.1− | 0.5+ | 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2003 12 19 | 291 | 0.5− | 0.6+ | 2005 04 12 | G96 | 0.1− | 0.6+ | | | | |
| 2003 12 19 | 291 | 0.3− | 0.7+ | 2005 04 12 | G96 | 0.3− | 0.1+ | | | | |

**(144963)∗ 2005 EZ$_{79}$**

Discovered 2005 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.94392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25638618 | $\omega$ | 204.17757 | | −0.58330676 | +0.81196936 | |
| $a$ | 2.4539911 | $\Omega$ | 30.15217 | | −0.73810559 | −0.51886551 | |
| $e$ | 0.1772826 | $i$ | 2.44450 | | −0.33904772 | −0.26736555 | |
| $P$ | 3.84 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.2+ | 0.3+ | 2005 03 09 | 699 | 0.9+ | 0.5+ | 2005 04 07 | 704 | 0.6+ | 1.2− |
| 2001 02 17 | 704 | 0.8+ | 0.3+ | 2005 03 09 | 699 | 0.6+ | 0.3+ | 2005 04 07 | 704 | 0.8+ | 0.4− |
| 2001 02 17 | 704 | (1.6+ | 1.0−) | 2005 03 09 | 699 | 0.1+ | 0.5+ | 2005 04 07 | 704 | 0.4+ | 1.1+ |
| 2001 02 17 | 704 | (1.5+ | 1.8−) | 2005 03 09 | 699 | 1.2+ | 0.4+ | 2005 04 07 | 704 | 0.9+ | 0.1+ |
| 2001 03 03 | 704 | (0.3+ | 1.8−) | 2005 03 10 | 695 | 0.2− | 0.1+ | 2005 04 07 | 704 | 0.1− | 0.6− |
| 2001 03 03 | 704 | 1.2− | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.0 | 2005 04 12 | 704 | 0.9+ | 0.1+ |
| 2001 03 03 | 704 | 0.1− | 0.7+ | 2005 03 10 | G96 | 0.3− | 0.1− | 2005 04 12 | 704 | 0.8+ | 0.8+ |
| 2001 03 03 | 704 | 0.5− | 0.2+ | 2005 03 10 | G96 | 0.3− | 0.0 | 2005 04 12 | 704 | 0.2+ | 0.2+ |
| 2001 03 19 | 704 | 0.1+ | 0.8+ | 2005 03 10 | G96 | 0.4− | 0.1− | 2005 04 12 | 704 | 1.1+ | 0.1+ |
| 2001 03 19 | 704 | 0.8− | 0.7+ | 2005 03 10 | 695 | 0.1− | 0.0 | 2005 04 12 | 704 | (1.9+ | 0.3+) |
| 2001 03 19 | 704 | (0.5+ | 2.0+) | 2005 03 11 | 704 | 0.6+ | 0.7+ | 2005 05 16 | G96 | 0.5− | 0.0 |
| 2001 03 19 | 704 | 0.2+ | 1.1+ | 2005 03 11 | 704 | 0.4+ | 0.1+ | 2005 05 16 | G96 | 0.4− | 0.0 |
| 2001 03 19 | 704 | 1.0+ | 0.3− | 2005 03 11 | 704 | (0.5+ | 1.5+) | 2005 05 16 | G96 | 0.1− | 0.2+ |
| 2001 03 19 | 704 | 0.4+ | 0.5− | 2005 03 11 | 704 | 0.2− | 1.1+ | 2005 05 16 | G96 | 0.3− | 0.1+ |
| 2001 03 19 | 704 | 0.8+ | 0.9− | 2005 03 11 | 704 | 0.1+ | 0.4+ | 2006 08 21 | 807 | 0.3− | 0.5+ |
| 2002 08 29 | 644 | 0.4− | 0.7+ | 2005 03 13 | 703 | 1.3− | 0.6+ | 2006 08 21 | 807 | 0.3− | 0.4+ |
| 2002 08 29 | 644 | 0.1− | 0.9+ | 2005 03 13 | 703 | 1.0− | 0.1− | 2006 08 22 | 807 | 0.4− | 0.8+ |
| 2002 08 29 | 644 | 0.3− | 0.8+ | 2005 03 13 | 703 | 0.2− | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2003 11 24 | 691 | 0.2− | 0.2+ | 2005 03 13 | 703 | 1.1− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1− |
| 2003 11 24 | 691 | 0.1− | 0.0 | 2005 03 31 | 699 | 1.4− | 0.4− | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2003 11 24 | 691 | 0.1− | 0.2+ | 2005 03 31 | 699 | 0.3− | 0.5+ | 2006 09 19 | 703 | (0.2+ | 1.6+) |
| 2003 11 30 | 691 | 0.1+ | 0.1− | 2005 03 31 | 699 | 0.3− | 0.6+ | 2006 09 19 | 703 | 1.2− | 0.8+ |
| 2003 11 30 | 691 | 0.2+ | 0.0 | 2005 03 31 | 699 | 0.7− | 0.4+ | 2006 09 19 | 703 | (2.6+ | 0.2+) |
| 2003 11 30 | 691 | 0.2+ | 0.0 | 2005 04 04 | G96 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.0 | 1.3+ |
| 2005 03 03 | 704 | 0.5+ | 0.7+ | 2005 04 04 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.6+ |
| 2005 03 03 | 704 | 0.2+ | 0.2− | 2005 04 04 | G96 | 0.3− | 0.5− | 2006 09 26 | 691 | 0.3− | 0.6+ |
| 2005 03 03 | 704 | 0.6+ | 0.4+ | 2005 04 04 | G96 | 0.4− | 0.7− | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2005 03 03 | 704 | 0.9+ | 0.2+ | 2005 04 04 | 704 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2005 03 08 | 699 | 1.1+ | 0.0 | 2005 04 04 | G96 | 0.4− | 0.4− | 2006 11 15 | G96 | 0.6+ | 0.4+ |
| 2005 03 08 | 699 | 1.1+ | 1.4+ | 2005 04 04 | 704 | 0.5+ | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2005 03 08 | 699 | 0.9+ | 0.5− | 2005 04 04 | 704 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.7+ | 0.0 |
| 2005 03 08 | 699 | 0.8− | 0.8+ | 2005 04 04 | 704 | 0.1+ | 0.4+ | | | | |

**(144964)∗ 2005 EC$_{80}$ = 2003 XT$_{24}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76841)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.14937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27102794 | $\omega$ | 268.74469 | | +0.20829870 | +0.97768781 | |
| $a$ | 2.3647941 | $\Omega$ | 13.37179 | | −0.84414339 | +0.19373851 | |
| $e$ | 0.1243265 | $i$ | 6.74675 | | −0.49399755 | +0.08119072 | |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2+ | 0.3− | 2005 03 09 | 699 | 0.3− | 0.3+ | 2005 04 06 | 703 | 0.8+ | 0.4+ |
| 1999 10 09 | 704 | 0.4− | 0.3+ | 2005 03 09 | 704 | 0.2+ | 0.2− | 2005 05 11 | G96 | 0.4− | 0.1− |
| 1999 10 09 | 704 | 0.0 | 0.4+ | 2005 03 09 | 704 | 0.3− | 0.8+ | 2005 05 11 | G96 | 0.0 | 0.3− |
| 1999 10 09 | 704 | 0.2− | 0.0 | 2005 03 09 | 704 | 0.6− | 0.6− | 2005 05 11 | G96 | 0.0 | 0.1− |
| 2003 11 20 | 691 | 0.0 | 0.1+ | 2005 03 09 | 704 | 1.1+ | 0.2+ | 2005 05 11 | G96 | 0.2+ | 0.2+ |
| 2003 11 20 | 691 | 0.1+ | 0.0 | 2005 03 09 | 704 | 0.2+ | 1.2+ | 2006 08 23 | 644 | 0.3− | 0.6+ |
| 2003 11 20 | 691 | 0.1+ | 0.1+ | 2005 03 12 | 704 | 0.6+ | 0.5+ | 2006 08 23 | 644 | 0.4− | 0.6+ |
| 2003 12 01 | 691 | 0.1− | 0.0 | 2005 03 12 | 704 | 0.0 | 1.1+ | 2006 08 23 | 644 | 0.2− | 0.1− |
| 2003 12 01 | 691 | 0.0 | 0.2− | 2005 03 12 | 704 | 1.2+ | 0.1+ | 2006 08 24 | 644 | 0.4− | 0.4+ |
| 2003 12 01 | 691 | 0.1+ | 0.0 | 2005 03 16 | 703 | 1.0− | 0.3+ | 2006 08 24 | 644 | 0.4− | 0.6+ |
| 2003 12 17 | 691 | 0.1+ | 0.4− | 2005 03 16 | 703 | 0.7− | 0.6+ | 2006 08 24 | 644 | 0.5− | 0.5+ |
| 2003 12 17 | 691 | 0.5− | 0.0 | 2005 03 16 | 703 | (2.2− | 6.2−) | 2006 09 18 | 568 | 0.1− | 0.4+ |
| 2003 12 17 | 691 | 0.2− | 0.1− | 2005 03 16 | 703 | (1.1+ | 2.3−) | 2006 09 18 | 568 | 0.0 | 0.3+ |
| 2003 12 29 | 691 | 0.2+ | 0.0 | 2005 03 30 | 703 | (1.0− | 2.6−) | 2006 09 18 | 568 | 0.0 | 0.3+ |
| 2003 12 29 | 691 | 0.0 | 0.4+ | 2005 03 30 | 703 | 0.9− | 0.8+ | 2006 09 25 | 699 | 0.8+ | 0.8− |
| 2003 12 29 | 691 | 0.3+ | 0.3+ | 2005 03 30 | 703 | (1.2+ | 2.6−) | 2006 09 25 | 699 | 0.5+ | 0.1− |
| 2005 03 03 | 703 | 0.8− | 0.3− | 2005 03 30 | 703 | 1.5− | 0.6− | 2006 09 25 | 699 | 0.3− | 0.4+ |
| 2005 03 03 | 703 | 0.7− | 0.5− | 2005 04 04 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.7+ |
| 2005 03 03 | 703 | 0.0 | 0.1+ | 2005 04 04 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2005 03 03 | 703 | 0.4+ | 0.4+ | 2005 04 04 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2005 03 09 | 699 | 0.3+ | 0.6+ | 2005 04 06 | 703 | 1.3+ | 0.2− | 2006 11 23 | G96 | 0.6− | 0.1− |
| 2005 03 09 | 699 | 1.0+ | 0.3+ | 2005 04 06 | 703 | (0.8+ | 3.1+) | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2005 03 09 | 699 | (0.4+ | 1.6−) | 2005 04 06 | 703 | 0.3+ | 0.4− | | | | |

**(144965)∗ 2005 EA$_{86}$**

Discovered 2005 Mar. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.20772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27358276 | $\omega$ | 188.24339 | | +0.29722492 | +0.95313540 | |
| $a$ | 2.3500489 | $\Omega$ | 99.06152 | | −0.87272438 | +0.29519334 | |
| $e$ | 0.2105743 | $i$ | 3.27889 | | −0.38731060 | +0.06628573 | |
| $P$ | 3.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.7− | 0.0 | 2002 08 31 | 704 | 0.7+ | 0.5+ | 2006 09 21 | 699 | 0.5− | 0.6− |
| 1998 03 29 | 704 | 0.9+ | 1.2− | 2002 08 31 | 704 | 0.5+ | 0.9+ | 2006 09 21 | 699 | 0.5− | 0.8− |
| 1998 03 29 | 704 | 0.2+ | 0.1+ | 2002 08 31 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.4+ |
| 1998 03 29 | 704 | 0.3+ | 0.7− | 2002 09 05 | 704 | 0.6− | 0.6+ | 2006 09 25 | 699 | 0.6− | 0.3− |
| 1998 04 22 | 704 | (2.1− | 2.2−) | 2002 09 05 | 704 | 0.2− | 1.5+ | 2006 09 25 | 699 | 0.3+ | 0.0 |
| 1998 04 22 | 704 | 0.6+ | 0.7+ | 2002 09 05 | 704 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.4+ | 0.7+ |
| 1998 04 22 | 704 | 0.4− | 0.4+ | 2005 03 04 | 704 | 0.7+ | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.8+ |
| 1998 04 22 | 704 | 1.7− | 0.3− | 2005 03 04 | 704 | 1.3+ | 1.3+ | 2006 09 29 | 699 | 0.0 | 0.7+ |
| 1998 04 22 | 704 | (3.8− | 0.9−) | 2005 03 04 | 704 | 0.4− | 0.2− | 2006 09 29 | 699 | 0.5− | 0.0 |
| 1999 10 10 | 704 | 0.0 | 0.4+ | 2005 03 04 | 704 | 1.4+ | 0.4− | 2006 09 29 | 699 | 0.8+ | 0.0 |
| 1999 10 10 | 704 | 0.5+ | 0.5+ | 2005 03 09 | 699 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.6+ | 0.4+ |
| 1999 10 10 | 704 | 0.2− | 0.2− | 2005 03 09 | 699 | (0.2+ | 1.6+) | 2006 10 01 | 704 | 1.1+ | 0.5+ |
| 2002 05 21 | 704 | 0.3− | 0.8+ | 2005 03 09 | 699 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.2− |
| 2002 05 21 | 704 | 0.3+ | 0.1− | 2005 03 09 | 699 | (1.7− | 0.7+) | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 05 21 | 704 | 0.2+ | 0.5+ | 2005 03 09 | 704 | 0.1− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.8+ |
| 2002 05 21 | 704 | 0.4+ | 1.0+ | 2005 03 09 | 704 | (1.6+ | 0.7+) | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 06 03 | 644 | 0.2− | 0.1+ | 2005 03 09 | 704 | 0.7− | 1.2+ | 2006 10 16 | 703 | 0.2− | 0.9− |
| 2002 06 03 | 644 | 0.1− | 0.1+ | 2005 03 09 | 704 | (0.9+ | 1.9+) | 2006 10 16 | 703 | 1.0− | 0.2+ |
| 2002 06 03 | 644 | 0.0 | 0.0 | 2005 03 12 | 704 | 0.5+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2002 06 18 | 704 | 0.3− | 0.5− | 2005 03 12 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2002 06 18 | 704 | 0.1+ | 0.2− | 2005 03 12 | 704 | (1.8+ | 0.4+) | 2006 10 19 | 644 | 0.4− | 0.6+ |
| 2002 06 18 | 704 | 0.0 | 0.1− | 2005 03 12 | 704 | 0.9+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 06 18 | 704 | 0.8− | 0.5− | 2005 03 12 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2002 06 18 | 704 | 0.1− | 0.2− | 2005 04 16 | 691 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 07 05 | 704 | 0.2− | 0.4− | 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | 0.3+ | 0.0 | 2005 04 16 | 691 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2002 07 05 | 704 | 0.6+ | 0.1− | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2002 07 05 | 704 | 0.5− | 0.1− | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.4+ | 1.1+ |
| 2002 07 05 | 704 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.1− |
| 2002 08 31 | 704 | 0.1+ | 0.3− | 2006 09 21 | 699 | 1.3− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.2− |

**(144966)∗ 2005 EA$_{90}$ = 1998 HJ$_{144}$**

Discovered 2005 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 76855)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.68162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26913892 | $\omega$ | 205.00735 | | +0.58372299 | +0.80541598 | |
| $a$ | 2.3758465 | $\Omega$ | 100.86666 | | −0.72623877 | +0.57453045 | |
| $e$ | 0.1865079 | $i$ | 6.00991 | | −0.36310428 | +0.14567038 | |
| $P$ | 3.66 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.7+ | 1.4+ | 2005 03 09 | 704 | (1.7+ | 0.2+) | 2006 09 17 | 699 | 0.6− | 0.0 | |
| 1998 04 21 | 704 | 1.2− | 0.5+ | 2005 03 09 | 704 | 0.6+ | 1.1+ | 2006 09 17 | 699 | 0.8+ | 0.4+ | |
| 1998 04 21 | 704 | (2.1+ | 0.4−) | 2005 03 16 | 703 | 1.1− | 1.3+ | 2006 09 17 | 699 | 0.5+ | 0.1+ | |
| 1998 04 21 | 704 | 0.1+ | 1.3− | 2005 03 16 | 703 | 0.8− | 0.0 | 2006 09 25 | 703 | 0.8− | 0.5+ | |
| 1998 04 23 | 704 | 0.6− | 0.3+ | 2005 03 16 | 703 | 0.3− | 0.3+ | 2006 09 25 | 703 | 0.7− | 0.1+ | |
| 1998 04 23 | 704 | 0.6− | 0.1− | 2005 03 16 | 703 | 0.5− | 0.8+ | 2006 09 25 | 703 | 0.2− | 0.3+ | |
| 1998 04 23 | 704 | 0.1− | 0.6− | 2005 03 17 | 703 | 0.4− | 0.0 | 2006 09 25 | 703 | 0.6− | 0.8+ | |
| 1998 04 23 | 704 | 0.8+ | 0.9− | 2005 03 17 | 703 | 0.0 | 0.7+ | 2006 10 02 | 703 | 0.4+ | 0.7+ | |
| 1998 04 23 | 704 | 0.5+ | 1.4− | 2005 03 17 | 703 | 1.4− | 0.6+ | 2006 10 02 | 703 | 0.3− | 0.2+ | |
| 1998 05 22 | 704 | 1.3+ | 0.1− | 2005 03 17 | 703 | 1.4− | 1.0+ | 2006 10 02 | 703 | 0.1− | 0.1+ | |
| 1998 05 22 | 704 | 0.3+ | 0.2+ | 2005 04 18 | 691 | 0.8+ | 0.4+ | 2006 10 02 | 703 | 0.1+ | 0.7+ | |
| 1998 05 22 | 704 | 0.6− | 0.3− | 2005 04 18 | 691 | 0.6+ | 0.4− | 2006 10 09 | 644 | 0.2− | 0.2+ | |
| 1998 05 22 | 704 | 1.3− | 0.8+ | 2005 04 18 | 691 | 0.3+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.2+ | |
| 2003 12 23 | 704 | 0.4+ | 0.2+ | 2006 07 20 | 704 | 0.3+ | 0.6+ | 2006 10 09 | 644 | 0.1− | 0.2+ | |
| 2003 12 23 | 704 | 0.2− | 0.4+ | 2006 07 20 | 704 | 0.4− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.1+ | |
| 2003 12 23 | 704 | 0.1+ | 0.0 | 2006 07 20 | 704 | 1.2− | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1+ | |
| 2003 12 23 | 704 | 0.0 | 0.8− | 2006 07 20 | 704 | 0.3+ | 1.1+ | 2006 10 09 | 644 | 0.3− | 0.1+ | |
| 2003 12 30 | 704 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.2− | |
| 2003 12 30 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 1.4− | 0.4+ | |
| 2003 12 30 | 704 | 0.7+ | 0.5− | 2006 08 30 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.6+ | |
| 2003 12 30 | 704 | 0.3− | 0.6− | 2006 09 01 | 106 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.0 | 0.9− | |
| 2005 03 08 | 699 | 0.4− | 0.1+ | 2006 09 01 | 106 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2− | |
| 2005 03 08 | 699 | (1.6+ | 0.4+) | 2006 09 01 | 106 | 0.5+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.2+ | |
| 2005 03 08 | 699 | 0.7− | 1.2+ | 2006 09 01 | 106 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.0 | |
| 2005 03 08 | 699 | 1.0+ | 0.4− | 2006 09 12 | 704 | 0.8+ | 0.8+ | 2006 10 24 | 644 | 0.2− | 0.0 | |
| 2005 03 09 | 704 | 0.3+ | 0.4+ | 2006 09 12 | 704 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.1+ | |
| 2005 03 09 | 704 | 1.4+ | 0.3+ | 2006 09 12 | 704 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.2− | 0.2+ | |
| 2005 03 09 | 704 | 0.8+ | 1.3+ | 2006 09 12 | 704 | 0.6+ | 0.1− | | | | | |

**(144967)∗ 2005 EX$_{92}$ = 2001 CK$_9$**

Discovered 2005 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76859)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.54346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25923415 | $\omega$ | 307.57420 | | +0.66191320 | +0.74954294 | |
| $a$ | 2.4359848 | $\Omega$ | 3.89692 | | −0.64822126 | +0.57740595 | |
| $e$ | 0.1443255 | $i$ | 6.33818 | | −0.37640420 | +0.32370935 | |
| $P$ | 3.80 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 703 | 0.1+ | 1.5+ | 2005 03 10 | G96 | 0.1− | 0.1− | 2006 06 18 | E12 | 0.2− | 0.2− | |
| 1999 11 09 | 703 | 0.3− | 1.4+ | 2005 03 10 | G96 | 0.1− | 0.2− | 2006 06 18 | E12 | 0.1− | 0.4+ | |
| 1999 11 09 | 703 | 1.9− | 0.4+ | 2005 03 11 | 704 | 0.2+ | 0.4+ | 2006 08 16 | E12 | 0.1+ | 0.5+ | |
| 1999 11 09 | 703 | 0.8+ | 1.1+ | 2005 03 11 | 704 | 1.0+ | 0.3+ | 2006 08 16 | E12 | 0.4+ | 0.6+ | |
| 2001 02 01 | 704 | 0.8+ | 0.8+ | 2005 03 11 | 704 | 0.3+ | 0.6+ | 2006 08 16 | E12 | 0.6− | 0.6+ | |
| 2001 02 01 | 704 | 0.6+ | 1.3+ | 2005 03 11 | 704 | 0.5+ | 0.1+ | 2006 08 16 | E12 | 0.1− | 0.0 | |
| 2001 02 01 | 704 | 0.7− | 1.2+ | 2005 03 14 | 704 | 0.5+ | 0.4+ | 2006 08 23 | 704 | 0.4− | 0.3+ | |
| 2001 02 02 | 704 | 0.2+ | 0.5− | 2005 03 14 | 704 | 0.3+ | 0.2+ | 2006 08 23 | 704 | 0.1+ | 0.2+ | |
| 2001 02 02 | 704 | 0.7− | 0.5− | 2005 03 14 | 704 | 1.2+ | 0.3− | 2006 08 23 | 704 | 0.2+ | 0.2+ | |
| 2001 02 02 | 704 | 0.6+ | 0.4+ | 2005 03 14 | 704 | 0.2+ | 1.0+ | 2006 08 23 | 704 | 0.5− | 0.1+ | |
| 2003 12 17 | 704 | 0.7+ | 1.0+ | 2005 03 14 | 704 | 0.8+ | 0.7+ | 2006 08 23 | 704 | 0.2+ | 0.5− | |
| 2003 12 17 | 704 | (0.3+ | 1.6+) | 2005 03 16 | G96 | 0.4− | 0.4− | 2006 08 23 | 644 | 0.1+ | 0.7+ | |
| 2003 12 17 | 704 | 0.2− | 0.3− | 2005 03 16 | G96 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.4+ | |
| 2003 12 17 | 704 | 0.1− | 0.5− | 2005 03 16 | G96 | 0.2− | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.4+ | |
| 2003 12 17 | 704 | 0.3+ | 0.3− | 2005 03 16 | G96 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.5+ | |
| 2003 12 23 | 704 | 0.3− | 0.2+ | 2005 03 17 | 704 | 0.4+ | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.6+ | |
| 2003 12 23 | 704 | 0.8− | 0.3− | 2005 03 17 | 704 | 0.3+ | 1.1+ | 2006 08 24 | 644 | 0.1− | 0.6+ | |
| 2003 12 23 | 704 | 0.7+ | 1.1+ | 2005 03 17 | 704 | 0.7+ | 1.1+ | 2006 08 28 | 704 | 0.3− | 0.2− | |
| 2003 12 23 | 704 | 0.3− | 0.6+ | 2005 03 17 | 704 | 1.0+ | 0.6+ | 2006 08 28 | 704 | 0.8− | 0.1− | |
| 2003 12 23 | 704 | 0.3+ | 0.4+ | 2005 03 30 | 703 | 1.2− | 0.6− | 2006 08 28 | 704 | 1.1− | 1.1+ | |
| 2003 12 29 | 704 | 0.1+ | 0.3+ | 2005 03 30 | 703 | 0.5− | 0.2− | 2006 08 28 | 704 | 0.9− | 1.2+ | |
| 2003 12 29 | 704 | 0.1− | 0.3− | 2005 03 30 | 703 | 0.9− | 0.0 | 2006 08 28 | 704 | 0.6− | 0.1+ | |
| 2003 12 29 | 704 | 0.1+ | 0.2+ | 2005 03 30 | 703 | (2.1+ | 0.0 ) | 2006 08 28 | E12 | 0.1− | 0.3+ | |
| 2003 12 29 | 704 | 0.2+ | 0.1+ | 2005 04 09 | G96 | (0.1+ | 2.2+) | 2006 08 28 | E12 | 0.2− | 0.6+ | |
| 2003 12 29 | 704 | 0.2+ | 0.2− | 2005 04 09 | G96 | (0.5+ | 1.8+) | 2006 08 28 | E12 | 0.3− | 0.3+ | |
| 2005 03 08 | 699 | 0.6+ | 0.4− | 2005 04 09 | G96 | 0.2+ | 0.9+ | 2006 08 28 | E12 | 0.0 | 0.5+ | |
| 2005 03 08 | 699 | 0.2+ | 0.1− | 2005 04 09 | G96 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.4− | 0.7− | |
| 2005 03 08 | 699 | 0.2− | 0.4− | 2005 04 13 | 691 | 0.4− | 0.1+ | 2006 08 31 | 704 | 0.4− | 0.5+ | |
| 2005 03 08 | 699 | 0.4− | 0.4+ | 2005 04 13 | 691 | 0.1− | 0.2− | 2006 08 31 | 704 | 1.0− | 0.4+ | |
| 2005 03 08 | 704 | 0.7+ | 0.8+ | 2005 04 13 | 691 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.2+ | |
| 2005 03 08 | 704 | 1.2+ | 0.8+ | 2006 05 25 | E12 | 1.0+ | 0.4+ | 2006 08 31 | 704 | 0.3+ | 0.1− | |
| 2005 03 08 | 704 | 1.3+ | 0.9+ | 2006 05 25 | E12 | 0.0 | 0.3+ | 2006 10 21 | 703 | (4.8− | 4.2+) | |
| 2005 03 08 | 704 | 0.7+ | 0.2+ | 2006 05 25 | E12 | 0.5+ | 0.3− | 2006 10 21 | 703 | 0.9− | 1.0+ | |
| 2005 03 08 | 704 | 1.0+ | 0.2+ | 2006 05 25 | E12 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.2− | |
| 2005 03 09 | 699 | 1.3− | 1.1+ | 2006 05 29 | E12 | (1.7− | 0.6−) | 2006 10 21 | 703 | 1.1+ | 0.5− | |
| 2005 03 09 | 699 | 0.4+ | 0.0 | 2006 05 29 | E12 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.2− | |
| 2005 03 09 | 699 | 0.3− | 0.6+ | 2006 05 29 | E12 | 0.1− | 1.0+ | 2006 11 23 | G96 | 0.4− | 0.0 | |
| 2005 03 09 | 699 | 0.0 | 1.4+ | 2006 05 29 | E12 | 0.7+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.1− | |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2006 06 18 | E12 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.4− | |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2006 06 18 | E12 | 0.3− | 0.2+ | | | | | |

**(144968)∗ 2005 EY$_{93}$ = 1999 CY$_{156}$**

Discovered 2005 Mar. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76861)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.51598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17764201 | $\omega$ | 111.36850 | | +0.08942406 | +0.98666305 | |
| $a$ | 3.1340477 | $\Omega$ | 162.06736 | | −0.99585497 | +0.08629528 | |
| $e$ | 0.2211410 | $i$ | 26.21519 | | +0.01661973 | −0.13801863 | |
| $P$ | 5.55 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 809 | 0.2− | 0.1+ | 2005 04 12 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 699 | 0.3− | 0.1+ | |
| 1995 08 29 | 809 | 0.4− | 0.3+ | 2005 04 13 | 704 | 0.2+ | 0.9− | 2006 08 29 | 691 | 0.2+ | 0.5+ | |
| 1995 08 30 | 809 | 0.3+ | 1.0− | 2005 04 13 | 704 | 0.7+ | 0.2− | 2006 08 29 | 691 | 0.0 | 0.2− | |
| 1999 02 08 | 691 | 0.1− | 0.2+ | 2005 04 13 | 704 | 0.4+ | 0.0 | 2006 08 29 | 691 | 0.0 | 0.2− | |
| 1999 02 08 | 691 | 0.0 | 0.1+ | 2005 04 13 | 704 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.7− | 0.3− | |
| 1999 02 08 | 691 | 0.6− | 1.2− | 2005 04 13 | 704 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.8+ | 0.3+ | |
| 1999 02 09 | 691 | 0.0 | 0.2+ | 2005 04 14 | 704 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.1− | 0.0 | |
| 1999 02 09 | 691 | 0.4+ | 0.2+ | 2005 04 14 | 704 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.3+ | |
| 1999 02 09 | 691 | 0.6+ | 0.0 | 2005 04 14 | 704 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.4+ | 0.2− | |
| 2001 09 27 | 699 | 1.1− | 1.2+ | 2005 04 14 | 704 | 0.7+ | 0.2+ | 2006 09 01 | 704 | 0.1+ | 0.7− | |
| 2001 09 27 | 699 | 0.8− | 0.9+ | 2005 04 20 | 703 | 0.7− | 0.1+ | 2006 09 01 | 704 | 0.7+ | 0.3− | |
| 2001 09 27 | 699 | 1.5+ | 1.3+ | 2005 04 20 | 703 | 1.2− | 0.1− | 2006 09 01 | 704 | 0.2− | 0.2− | |
| 2001 09 27 | 699 | 0.0 | 1.9+ | 2005 04 20 | 703 | 0.6− | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.5+ | |
| 2005 03 08 | 704 | 1.3+ | 0.4+ | 2005 04 20 | 703 | 1.1− | 1.5− | 2006 09 14 | 703 | 0.5− | 0.1+ | |
| 2005 03 08 | 704 | 0.3+ | 1.2− | 2005 05 02 | 703 | 1.0− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.5+ | |
| 2005 03 08 | 704 | 0.4+ | 0.6+ | 2005 05 02 | 703 | 0.1+ | 0.7− | 2006 09 14 | 703 | 0.6− | 0.3+ | |
| 2005 03 08 | 704 | 0.1+ | 0.6+ | 2005 05 02 | 703 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.5− | 0.6− | |
| 2005 03 08 | 704 | 0.6− | 0.2+ | 2005 05 02 | 703 | 0.5− | 0.4− | 2006 09 17 | 704 | 1.5− | 0.8+ | |
| 2005 03 09 | 704 | 0.3+ | 1.4+ | 2005 05 10 | 704 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.6− | |
| 2005 03 09 | 704 | 0.9+ | 0.4+ | 2005 05 10 | 704 | 0.1+ | 0.7+ | 2006 09 17 | 704 | 0.8+ | 0.6− | |
| 2005 03 09 | 704 | 0.5+ | 1.3+ | 2005 05 10 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 704 | 0.7− | 0.2− | |
| 2005 03 13 | 703 | 0.9− | 0.1− | 2005 05 10 | 704 | 0.6+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.0 | |
| 2005 03 13 | 703 | 0.1− | 0.6+ | 2005 05 10 | 704 | 0.5− | 0.5+ | 2006 09 20 | 644 | 0.3+ | 0.2− | |
| 2005 03 13 | 703 | 1.0− | 0.2− | 2005 05 16 | 703 | 0.2− | 0.4− | 2006 09 20 | 704 | 0.6+ | 0.0 | |
| 2005 03 13 | 703 | 0.4− | 0.4− | 2005 05 16 | 703 | 1.0+ | 1.1− | 2006 09 20 | 704 | 0.3− | 0.4+ | |
| 2005 04 02 | 703 | 0.4+ | 0.7− | 2005 05 16 | 703 | 0.5+ | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | |
| 2005 04 02 | 703 | 0.7− | 0.3− | 2005 05 16 | 703 | 0.5− | 0.4− | 2006 09 20 | 704 | 1.0− | 0.6+ | |
| 2005 04 02 | 703 | 1.7− | 0.9− | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.4− | |
| 2005 04 02 | 703 | 0.5+ | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.9+ | 0.9− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 09 | 703 | 0.6− | 0.6− | 2006 08 22 | 644 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.4− | 1.2+ |
| 2005 04 09 | 703 | 1.2− | 0.2+ | 2006 08 24 | 704 | 0.5+ | 0.7− | 2006 09 25 | 699 | 1.4+ | 0.1+ |
| 2005 04 09 | 703 | 0.9− | 0.2− | 2006 08 24 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 1.1+ | 0.5+ |
| 2005 04 09 | 703 | 0.5− | 0.1− | 2006 08 24 | 704 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2005 04 12 | 699 | 0.1+ | 0.7+ | 2006 08 24 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.0 | 0.7− |
| 2005 04 12 | 699 | 0.1+ | 1.0+ | 2006 08 24 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2005 04 12 | 699 | 1.4+ | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.4− |
| 2005 04 12 | 699 | 0.7+ | 1.1+ | 2006 08 28 | 703 | 0.4− | 0.8− | 2006 09 30 | 703 | 0.6− | 0.2− |
| 2005 04 12 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 699 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2005 04 12 | 704 | 0.7+ | 1.1+ | 2006 08 28 | 703 | 0.5+ | 0.9− | 2006 09 30 | 703 | 0.3− | 0.6+ |
| 2005 04 12 | 704 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2005 04 12 | 704 | 0.4+ | 0.2− | 2006 08 28 | 699 | 0.0 | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.3− |

**(144969)∗ 2005 EH$_{95}$ = 1998 SP$_{47}$**

Discovered 2005 Mar. 1 by the Catalina Sky Survey.

Id. T. B. Spahr (*MPO* 76863)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.15305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37165507 | $\omega$ | 217.15257 | | −0.59501164 | | +0.79659824 |
| $a$ | 1.9159140 | $\Omega$ | 17.18817 | | −0.62294760 | | −0.37318652 |
| $e$ | 0.0490848 | $i$ | 21.17321 | | −0.50783604 | | −0.47556605 |
| $P$ | 2.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.3+ | 0.1− | 2005 03 12 | 704 | 0.1+ | 0.3− | 2006 10 04 | G96 | 0.1− | 0.2− |
| 1998 09 26 | 704 | 0.4+ | 1.6− | 2005 03 12 | 704 | 0.4− | 0.6− | 2006 10 04 | G96 | 0.1− | 0.1− |
| 1998 09 26 | 704 | 0.4+ | 0.7− | 2005 03 12 | 704 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 1998 09 26 | 704 | 0.6+ | 0.5− | 2005 04 02 | 699 | 0.9+ | 1.0+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 1998 09 26 | 704 | 0.8+ | 1.1+ | 2005 04 02 | 699 | (1.8+ | 0.7+) | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1998 09 26 | 691 | 0.1+ | 0.2− | 2005 04 02 | 699 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1998 09 26 | 691 | 0.2+ | 0.3− | 2005 04 02 | 699 | 0.8− | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 1998 09 26 | 691 | 0.4+ | 0.3− | 2005 04 09 | 703 | 0.5− | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.5− |
| 1998 09 30 | 691 | 0.5− | 0.3+ | 2005 04 09 | 703 | 0.6− | 0.2− | 2006 10 19 | 703 | 0.4− | 0.1+ |
| 1998 09 30 | 691 | 0.2+ | 0.1− | 2005 04 09 | 703 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.3+ | 0.3+ |
| 1998 09 30 | 691 | 0.4− | 0.4+ | 2005 04 09 | 703 | 0.3− | 0.6− | 2006 10 19 | 703 | (4.5− | 1.9−) |
| 1998 10 01 | 691 | 0.4− | 0.0 | 2005 04 11 | A35 | 0.4+ | 0.0 | 2006 10 19 | A50 | 0.3+ | 0.3+ |
| 1998 10 01 | 691 | 0.6− | 0.0 | 2005 04 11 | A35 | 0.0 | 0.2+ | 2006 10 19 | A50 | 0.3− | 0.0 |
| 1998 10 01 | 691 | 0.3− | 0.1− | 2005 04 12 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 704 | 0.3− | 0.3+ |
| 1998 10 11 | 699 | 0.3+ | 0.9+ | 2005 04 12 | 704 | 0.8+ | 0.4− | 2006 10 21 | 704 | 0.8− | 0.3+ |
| 1998 10 11 | 699 | 0.7+ | 0.4+ | 2005 04 12 | 704 | 0.3+ | 0.9− | 2006 10 21 | 704 | 0.1+ | 0.5+ |
| 1998 10 11 | 699 | 1.8+ | 1.1+ | 2005 04 12 | 704 | 0.5+ | 0.3− | 2006 10 21 | 704 | 0.0 | 0.2+ |
| 2002 02 01 | 704 | 1.0+ | 1.1+ | 2005 04 12 | 704 | 0.9+ | 0.2− | 2006 10 21 | 704 | (1.9+ | 1.1−) |
| 2002 02 01 | 704 | 0.5+ | 0.6+ | 2005 04 17 | 703 | 0.7− | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 02 01 | 704 | 0.6− | 0.3+ | 2005 04 17 | 703 | 1.0− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 02 01 | 704 | 0.6− | 0.4− | 2005 04 17 | 703 | 0.9− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 12 21 | 703 | 1.0− | 0.0 | 2005 04 17 | 703 | (2.5− | 1.6−) | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 12 21 | 703 | 0.6− | 0.2− | 2006 08 28 | 703 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2004 12 21 | 703 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2004 12 21 | 703 | 0.9− | 0.9− | 2006 08 28 | 703 | 0.7− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2005 01 17 | 703 | (1.9− | 0.0 ) | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2005 01 17 | 703 | 0.5− | 0.4+ | 2006 09 16 | 699 | 0.7− | 0.5− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2005 01 17 | 703 | (1.6− | 0.2−) | 2006 09 16 | 699 | 0.6+ | 0.0 | 2006 10 27 | 703 | 0.7− | 0.3+ |
| 2005 01 17 | 703 | 0.5− | 0.1+ | 2006 09 16 | 699 | 1.0+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.1− |
| 2005 03 01 | 703 | 1.0− | 0.5− | 2006 09 16 | 699 | 0.7− | 0.7+ | 2006 10 27 | 703 | 0.6− | 0.4+ |
| 2005 03 01 | 703 | 0.7− | 0.2+ | 2006 09 22 | 699 | 0.4− | 0.9+ | 2006 10 27 | 703 | 0.5− | 0.1− |
| 2005 03 01 | 703 | 0.2+ | 1.2+ | 2006 09 22 | 699 | 1.3+ | 0.4− | 2006 10 30 | 104 | 0.2+ | 0.1− |
| 2005 03 01 | 703 | 0.9− | 0.3− | 2006 09 22 | 699 | 0.2− | 0.1+ | 2006 10 30 | 104 | 0.5+ | 0.5− |
| 2005 03 08 | 704 | 1.0+ | 0.5+ | 2006 09 22 | 699 | 0.1+ | 0.2+ | 2006 10 30 | 104 | 1.4− | 0.9− |
| 2005 03 08 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 704 | 0.0 | 1.0+ | 2006 11 15 | 703 | 0.4+ | 0.1+ |
| 2005 03 08 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 704 | 0.6− | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.1+ |
| 2005 03 08 | 704 | 0.7+ | 0.7+ | 2006 09 25 | 704 | 0.5+ | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2005 03 08 | 704 | 0.8+ | 0.6+ | 2006 09 25 | 704 | 0.6+ | 0.8+ | 2006 11 15 | 703 | 0.2+ | 0.5− |
| 2005 03 11 | 704 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.2− | 0.7+ | 2006 11 22 | 703 | 0.8− | 1.2− |
| 2005 03 11 | 704 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 703 | (1.6+ | 1.0−) |
| 2005 03 11 | 704 | 0.5+ | 0.0 | 2006 09 29 | 704 | 0.9+ | 0.6− | 2006 11 22 | 703 | 0.7+ | 0.5− |
| 2005 03 11 | 704 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 22 | 703 | 0.7+ | 0.6− |
| 2005 03 12 | 704 | 0.2− | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.3− | | | | |
| 2005 03 12 | 704 | 0.2− | 0.8− | 2006 10 04 | G96 | 0.1− | 0.1− | | | | |

**(144970)∗ 2005 EE$_{101}$ = 2002 TS$_{125}$**

Discovered 2005 Mar. 3 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76871)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.07096 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26010372 | $\omega$ | 155.52029 | | +0.20510374 | | +0.97427303 |
| $a$ | 2.4305525 | $\Omega$ | 126.18377 | | −0.91597287 | | +0.22470011 |
| $e$ | 0.2336526 | $i$ | 6.64546 | | −0.34485673 | | −0.01737579 |
| $P$ | 3.79 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 15 | 691 | 0.2− | 0.2+ | 2005 03 18 | 704 | (2.2+ | 0.2+) | 2006 10 03 | 704 | 0.1+ | 1.2+ |
| 1998 07 15 | 691 | 0.0 | 0.0 | 2005 03 18 | 704 | 1.0+ | 0.8+ | 2006 10 03 | 704 | 0.8+ | 0.3− |
| 1998 07 15 | 691 | 0.1− | 0.1− | 2005 03 30 | 703 | 0.8− | 0.6− | 2006 10 03 | 704 | 0.2− | 0.9+ |
| 2002 08 12 | 704 | 0.3− | 0.0 | 2005 03 30 | 703 | 0.5+ | 0.4− | 2006 10 03 | 704 | 0.0 | 0.6+ |
| 2002 08 12 | 704 | 0.0 | 0.4+ | 2005 03 30 | 703 | 0.2− | 0.5− | 2006 10 03 | 704 | 0.4+ | 0.1+ |
| 2002 08 12 | 704 | 0.0 | 0.1+ | 2005 03 30 | 703 | (2.4+ | 1.7+) | 2006 10 04 | G96 | 0.1− | 0.4− |
| 2002 08 12 | 704 | 0.0 | 0.0 | 2005 04 06 | 703 | 0.7− | 0.3− | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.2− | 0.1+ | 2005 04 06 | 703 | 0.1+ | 0.9− | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2002 09 28 | 608 | (2.5− | 1.5−) | 2005 04 06 | 703 | 0.2− | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2002 09 28 | 608 | (2.3− | 1.6−) | 2005 04 06 | 703 | 0.4− | 0.4− | 2006 10 11 | 644 | 0.6− | 0.1+ |
| 2002 09 28 | 608 | (2.6− | 1.6−) | 2005 04 11 | 699 | 0.6+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2002 10 04 | 704 | 0.7+ | 0.0 | 2005 04 11 | 699 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | 0.9+ | 0.5− | 2005 04 11 | 699 | 1.3+ | 0.6− | 2006 10 16 | 703 | 0.7− | 0.1+ |
| 2002 10 04 | 704 | 1.5+ | 0.0 | 2005 04 11 | 699 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2002 10 04 | 704 | 1.1+ | 0.5− | 2005 04 16 | 703 | 1.2− | 0.7+ | 2006 10 16 | 703 | 1.1+ | 0.3− |
| 2002 10 05 | 704 | 1.3+ | 0.1+ | 2005 04 16 | 703 | 1.1− | 0.6− | 2006 10 16 | 703 | 0.6− | 0.6− |
| 2002 10 05 | 704 | 0.2− | 0.2− | 2005 04 16 | 703 | (1.8+ | 0.9−) | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.4+ | 0.6− | 2005 04 16 | 703 | 0.0 | 1.2+ | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2005 03 03 | 703 | 0.2− | 0.0 | 2006 09 16 | 699 | (0.9+ | 1.7+) | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2005 03 03 | 703 | 0.3+ | 0.6+ | 2006 09 16 | 699 | 0.7− | 0.9− | 2006 10 28 | 703 | 1.1+ | 0.6+ |
| 2005 03 03 | 703 | 0.7− | 0.3+ | 2006 09 16 | 699 | 0.1+ | 1.2− | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2005 03 03 | 703 | 0.4+ | 0.5+ | 2006 09 16 | 699 | 1.1− | 0.4− | 2006 10 28 | 703 | 0.2− | 1.0− |
| 2005 03 10 | 703 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.3+ | 1.4+ | 2006 10 28 | 703 | 0.1− | 0.4+ |
| 2005 03 10 | 703 | 0.6+ | 0.1− | 2006 09 26 | 703 | 0.5+ | 0.6+ | 2006 11 16 | 703 | 0.0 | 0.1− |
| 2005 03 10 | 703 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.3− | 0.5+ | 2006 11 16 | 703 | 1.9− | 1.2− |
| 2005 03 10 | 703 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.0 | 0.2+ |
| 2005 03 18 | 704 | (2.0+ | 0.0 ) | 2006 10 03 | 704 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.9− | 0.2− |
| 2005 03 18 | 704 | 1.4+ | 0.5+ | 2006 10 03 | 704 | 0.1− | 0.3+ | | | | |

**(144971)∗ 2005 EY$_{108}$ = 1996 VS$_{26}$**

Discovered 2005 Mar. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76875)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.06209 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28488212 | $\omega$ | 29.77154 | | −0.29599609 | | +0.95335945 |
| $a$ | 2.2874903 | $\Omega$ | 223.08744 | | −0.89256855 | | −0.29809276 |
| $e$ | 0.1521322 | $i$ | 4.96266 | | −0.34015836 | | −0.04739687 |
| $P$ | 3.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | 0.3+ | 0.1− | 2005 03 04 | 703 | 1.0+ | 0.7+ | 2005 04 13 | 683 | 0.1− | 1.2+ |
| 1996 11 11 | 691 | 0.3+ | 0.0 | 2005 03 04 | 703 | 0.4+ | 0.8+ | 2005 04 13 | 683 | 1.0− | 0.9+ |
| 1996 11 11 | 691 | 0.2− | 1.2− | 2005 03 04 | 703 | 0.1+ | 0.7+ | 2006 08 29 | 703 | 0.6− | 0.0 |
| 1996 11 18 | 691 | 0.3− | 0.1− | 2005 03 04 | 703 | 0.3+ | 0.9+ | 2006 08 29 | 703 | 0.1− | 0.9− |
| 1996 11 18 | 691 | 0.5− | 0.2− | 2005 03 10 | 699 | 0.2+ | 0.6+ | 2006 08 29 | 703 | 0.1− | 0.4− |
| 1996 11 18 | 691 | 0.2+ | 0.1− | 2005 03 10 | 699 | 0.1+ | 0.7+ | 2006 08 29 | 703 | 1.3− | 0.4+ |
| 1999 10 09 | 704 | 0.6− | 0.8+ | 2005 03 10 | 703 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.7− | 0.7+ |
| 1999 10 09 | 704 | 0.7+ | 1.7+ | 2005 03 10 | 699 | 1.3+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.5− | 0.9+ | 2005 03 10 | 703 | 1.3− | 0.3− | 2006 09 19 | 699 | 1.1+ | 0.6+ |
| 1999 10 13 | 645 | 0.1+ | 0.1− | 2005 03 10 | 703 | 0.3− | 1.3− | 2006 09 19 | 699 | 0.3− | 1.1+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2005 03 10 | 699 | 1.4+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 28 | 704 | 0.8− | 1.1+ | 2005 03 10 | 703 | 0.2− | 0.9− | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2003 10 28 | 704 | (1.3− | 2.3+) | 2005 03 17 | 703 | 1.0− | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2003 10 28 | 704 | 0.5− | 0.2+ | 2005 03 17 | 703 | 0.4− | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2003 11 18 | 691 | 0.2+ | 0.1+ | 2005 03 17 | 703 | 0.6− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2003 11 18 | 691 | 0.1+ | 0.4+ | 2005 03 17 | 703 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.1− |
| 2003 11 18 | 691 | 0.0 | 0.2− | 2005 04 01 | 699 | 0.8+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2003 11 21 | 704 | (2.9− | 0.4−) | 2005 04 01 | 699 | (1.8+ | 0.4+) | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 11 21 | 704 | 1.3− | 0.4− | 2005 04 01 | 699 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2003 11 21 | 704 | 0.4− | 0.1− | 2005 04 01 | 699 | 0.8+ | 0.5− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2003 11 21 | 704 | 0.8− | 0.3− | 2005 04 12 | 683 | 0.4− | 0.4− | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2003 12 22 | 691 | 0.5+ | 0.4+ | 2005 04 12 | 683 | (0.2− | 2.4+) | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2003 12 22 | 691 | 0.2+ | 0.5+ | 2005 04 12 | 683 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2003 12 22 | 691 | 0.3+ | 0.1+ | 2005 04 13 | 683 | 0.9+ | 0.4+ | | | | |

**(144972)∗ 2005 EM$_{119}$ = 1999 RW$_{83}$**

Discovered 2005 Mar. 7 by R. A. Tucker at the Goodricke-Pigott Observatory, Tucson.

Id. A. Doppler (*MPO* 76884)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.66250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28628064 | $\omega$ | 267.37820 | | +0.35974481 | | +0.93209101 |
| $a$ | 2.2800344 | $\Omega$ | 23.84258 | | −0.80907523 | | +0.33420961 |
| $e$ | 0.1406770 | $i$ | 6.00794 | | −0.46473750 | | +0.13967924 |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.2+ | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.1− | 0.9+ |
| 1999 09 07 | 704 | 0.1+ | 0.3− | 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.6+ | 0.4− |
| 1999 09 07 | 704 | 0.5− | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.1+ |
| 1999 09 07 | 704 | 0.7+ | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.6+ |
| 1999 09 07 | 704 | 0.1+ | 1.6+ | 2005 03 18 | 703 | 0.4− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 1999 09 14 | 704 | 0.3− | 0.2+ | 2005 03 18 | 703 | 1.0− | 0.8− | 2006 09 25 | 691 | 0.2+ | 0.2+ |
| 1999 09 14 | 704 | 0.7− | 0.6+ | 2005 03 18 | 703 | 1.2− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.2+ |
| 1999 09 14 | 704 | 0.1+ | 0.1+ | 2005 03 18 | 703 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.8− | 0.4− |
| 1999 09 14 | 704 | 1.2− | 0.3+ | 2005 04 04 | 703 | 0.3+ | 0.5− | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 1999 09 14 | 704 | 1.0− | 0.2− | 2005 04 04 | 703 | (0.9+ | 1.6−) | 2006 10 01 | 704 | 0.4− | 0.5− |
| 1999 10 08 | 704 | 0.2+ | 0.1+ | 2005 04 04 | 703 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.1− | 0.6+ |
| 1999 10 08 | 704 | 0.5+ | 0.6+ | 2005 04 04 | 703 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.0 |
| 1999 10 08 | 704 | 0.4+ | 0.1− | 2005 05 06 | G96 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.3+ |
| 2003 11 23 | 695 | (1.6− | 0.1+) | 2005 05 06 | G96 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2003 11 23 | 695 | 0.4+ | 0.1+ | 2005 05 06 | G96 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 12 25 | 691 | 0.1− | 0.0 | 2005 05 06 | G96 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2003 12 25 | 691 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 03 07 | 683 | 0.6− | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 03 07 | 683 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.9+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2005 03 07 | 683 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.7+ | 0.2− | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2005 03 10 | 683 | (0.3− | 4.5+) | 2006 09 17 | 704 | 0.0 | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2005 03 10 | 683 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2005 03 10 | 683 | 1.0+ | 1.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2005 03 11 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1− | | | | |
| 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.9− | 0.5− | | | | |

**(144973)∗ 2005 EP$_{124}$**

Discovered 2005 Mar. 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.41052 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29842261 | $\omega$ | 267.93577 | | −0.35957110 | | +0.93273792 |
| $a$ | 2.2177618 | $\Omega$ | 340.92373 | | −0.82047826 | | −0.32962490 |
| $e$ | 0.1416123 | $i$ | 4.67181 | | −0.44443677 | | −0.14610749 |
| $P$ | 3.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.9+ | 0.8+ | 2005 03 13 | 703 | 0.9− | 0.2+ | 2005 04 04 | 704 | 0.4+ | 0.2− |
| 2002 05 11 | 704 | 0.1+ | 1.5+ | 2005 03 13 | 703 | 0.5− | 0.1+ | 2005 04 04 | 704 | (2.0+ | 0.3−) |
| 2002 05 11 | 704 | 0.4− | 0.6+ | 2005 03 13 | 703 | 0.7− | 0.3+ | 2005 04 15 | 703 | 0.7− | 0.5− |
| 2002 06 17 | 704 | (1.8+ | 0.1+) | 2005 03 14 | 704 | 0.8+ | 0.0 | 2005 04 15 | 703 | 0.8− | 0.3+ |
| 2002 06 17 | 704 | 0.4+ | 1.0+ | 2005 03 14 | 704 | 0.8+ | 0.4− | 2005 04 15 | 703 | 0.8− | 0.5− |
| 2002 06 17 | 704 | 0.3+ | 1.5+ | 2005 03 14 | 704 | 0.1+ | 0.4− | 2005 04 15 | 703 | 0.7− | 1.3− |
| 2003 11 19 | 691 | 0.1− | 0.3+ | 2005 03 14 | 704 | 0.6+ | 0.1− | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2003 11 19 | 691 | 0.1+ | 0.2+ | 2005 03 16 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2003 11 19 | 691 | 0.2− | 0.0 | 2005 03 16 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2003 11 24 | 699 | 0.7− | 0.3+ | 2005 03 16 | 691 | 0.4+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.6+ |
| 2003 11 24 | 699 | 0.3+ | 0.1+ | 2005 03 17 | 703 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2003 11 24 | 699 | (2.2+ | 0.4−) | 2005 03 17 | 703 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.4+ |
| 2003 11 24 | 699 | 0.3− | 0.9+ | 2005 03 17 | 703 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2005 03 08 | 699 | 0.8+ | 0.0 | 2005 03 17 | 703 | 1.2− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2005 03 08 | 699 | 0.7+ | 0.3− | 2005 04 01 | 699 | 1.1+ | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.6+ |
| 2005 03 08 | 699 | 0.2− | 0.3+ | 2005 04 01 | 699 | (1.9+ | 0.6+) | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2005 03 08 | 699 | 0.4− | 0.4+ | 2005 04 01 | 699 | 0.1+ | 1.3+ | 2006 10 17 | 703 | 0.6+ | 0.1− |
| 2005 03 11 | 704 | 0.1− | 0.7+ | 2005 04 01 | 699 | 0.6+ | 1.0+ | 2006 10 17 | 703 | 0.6− | 0.3+ |
| 2005 03 11 | 704 | 0.1− | 0.4+ | 2005 04 04 | 703 | 0.8− | 0.8+ | 2006 10 17 | 703 | (1.6− | 1.4−) |
| 2005 03 11 | 704 | 0.8+ | 0.9+ | 2005 04 04 | 703 | 0.9− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2005 03 11 | 704 | 0.7+ | 0.2− | 2005 04 04 | 703 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2005 03 11 | 704 | 0.9+ | 0.5+ | 2005 04 04 | 703 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 03 13 | 703 | 0.1+ | 0.5+ | 2005 04 04 | 704 | 1.0+ | 0.2+ | | | | |

**(144974)∗ 2005 EH$_{125}$**

Discovered 2005 Mar. 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.15890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28756384 | $\omega$ | 218.31376 | | +0.83048800 | | −0.55696464 |
| $a$ | 2.2732465 | $\Omega$ | 175.50465 | | +0.53508202 | | +0.79318783 |
| $e$ | 0.0952861 | $i$ | 6.55523 | | +0.15484478 | | +0.24625892 |
| $P$ | 3.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 644 | 0.4+ | 1.3+ | 2003 11 23 | 703 | 0.5− | 0.7− | 2005 04 04 | 703 | 0.2+ | 0.7+ |
| 2002 05 10 | 644 | 0.0 | 1.4+ | 2003 11 23 | 703 | 0.1− | 0.5− | 2005 04 10 | G96 | 0.1− | 0.4− |
| 2002 05 10 | 644 | (0.3+ | 1.6+) | 2003 11 23 | 703 | 0.7− | 1.4− | 2005 04 10 | G96 | 0.4− | 0.0 |
| 2003 10 16 | 699 | (1.9− | 0.3−) | 2003 11 23 | 699 | 0.8− | 0.2− | 2005 04 10 | G96 | 0.3− | 0.6− |
| 2003 10 16 | 699 | 0.3− | 0.4+ | 2003 11 23 | 699 | 0.7− | 0.1+ | 2005 04 10 | G96 | 0.1− | 0.2− |
| 2003 10 16 | 699 | 1.2+ | 0.2+ | 2003 11 23 | 699 | 1.4+ | 1.3+ | 2005 04 30 | 691 | 0.1+ | 0.4+ |
| 2003 10 16 | 699 | 1.0− | 0.2+ | 2003 11 23 | 703 | (3.1− | 0.6−) | 2005 04 30 | 691 | 0.3+ | 0.2+ |
| 2003 10 21 | 704 | 0.0 | 0.1+ | 2003 11 23 | 699 | 0.4+ | 0.5+ | 2005 04 30 | 691 | 0.3− | 0.2+ |
| 2003 10 21 | 704 | 0.5− | 0.5+ | 2003 11 23 | 703 | 0.8− | 1.0− | 2006 09 27 | G96 | 0.6− | 0.2+ |
| 2003 10 21 | 704 | 1.1− | 0.2− | 2003 11 23 | 703 | 0.4− | 0.5− | 2006 09 27 | G96 | 1.3− | 0.4+ |
| 2003 10 21 | 704 | 0.8− | 1.2+ | 2003 11 23 | 703 | (0.0 | 1.9−) | 2006 09 27 | G96 | 0.3+ | 0.1− |
| 2003 10 21 | 704 | 0.4+ | 1.0+ | 2005 03 08 | G96 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.3+ |
| 2003 10 27 | 704 | 0.1− | 1.1+ | 2005 03 08 | G96 | 0.7− | 0.3− | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2003 10 27 | 704 | 0.0 | 0.6+ | 2005 03 08 | G96 | 0.6− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2003 10 27 | 704 | 0.4+ | 0.4+ | 2005 03 08 | G96 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2003 10 27 | 704 | 0.3− | 0.7+ | 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2003 10 27 | 704 | 0.7+ | 0.5+ | 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2003 11 01 | 704 | 0.7+ | 0.7+ | 2005 03 11 | 691 | 0.6+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2003 11 01 | 704 | 0.0 | 0.4+ | 2005 04 04 | 703 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2003 11 01 | 704 | 1.2+ | 0.1− | 2005 04 04 | 703 | 0.3− | 0.2− | 2006 11 17 | G96 | 1.0+ | 0.5+ |
| 2003 11 23 | 703 | (2.1− | 2.6−) | 2005 04 04 | 703 | 0.5− | 0.0 | | | | |

**(144975)∗ 2005 EB$_{126}$**

Discovered 2005 Mar. 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.82011 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26402783 | $\omega$ | 347.51345 | | +0.73364463 | | +0.67935503 |
| $a$ | 2.4064097 | $\Omega$ | 329.67499 | | −0.62077822 | | +0.66071750 |
| $e$ | 0.2207405 | $i$ | 1.76667 | | −0.27640543 | | +0.31926342 |
| $P$ | 3.73 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 691 | 0.5− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.3+ | 1.0+ |
| 1999 12 15 | 691 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.6+ | 0.4− |
| 1999 12 15 | 691 | 0.0 | 0.0 | 2006 08 18 | 704 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.4+ |
| 2001 02 02 | 691 | 1.0+ | 0.1+ | 2006 08 18 | 704 | 0.5− | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.6+ |
| 2001 02 02 | 691 | 0.1+ | 0.7+ | 2006 08 18 | 704 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.2+ |
| 2001 02 02 | 691 | 0.7+ | 0.7+ | 2006 08 18 | 704 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.4+ |
| 2001 02 27 | 691 | 0.4+ | 0.8+ | 2006 08 18 | 704 | 0.7− | 1.4+ | 2006 09 20 | 704 | 0.0 | 0.2− |
| 2001 02 27 | 691 | 0.3+ | 0.4+ | 2006 08 21 | 704 | 0.4+ | 1.1+ | 2006 09 20 | 704 | 0.2+ | 0.0 |
| 2001 02 27 | 691 | 0.2+ | 0.6+ | 2006 08 21 | 704 | 0.2− | 1.1+ | 2006 09 20 | 704 | 0.0 | 0.3+ |
| 2005 03 08 | 699 | 0.7+ | 0.1− | 2006 08 21 | 704 | 0.2− | 0.8+ | 2006 09 20 | 704 | 0.5+ | 0.1− |
| 2005 03 08 | 699 | (2.2+ | 1.2+) | 2006 08 21 | 704 | 0.1− | 1.0+ | 2006 09 20 | 704 | 0.3+ | 0.3− |
| 2005 03 08 | 699 | 0.3+ | 0.7− | 2006 08 21 | 704 | 0.4− | 0.8+ | 2006 09 25 | 699 | 0.8+ | 0.2− |
| 2005 03 08 | 699 | (0.5+ | 1.8+) | 2006 08 21 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.2− |
| 2005 03 08 | G96 | 0.3− | 0.2+ | 2006 08 21 | 644 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2005 03 08 | G96 | 0.4− | 0.1+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.0 |
| 2005 03 08 | G96 | 1.1− | 1.1+ | 2006 08 25 | 704 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2005 03 08 | G96 | 0.6− | 0.8+ | 2006 08 25 | 704 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 08 25 | 704 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2005 03 11 | G96 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 2005 03 11 | G96 | 0.0 | 0.1− | 2006 08 25 | 704 | 0.1− | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.6+ |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.1− | 0.3+ |
| 2005 04 12 | G96 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 09 27 | 704 | 0.8+ | 0.3+ |
| 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.5− | 2006 09 27 | 704 | 0.9+ | 0.6− |
| 2005 04 12 | G96 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.5+ |
| 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2005 04 13 | 691 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2005 04 13 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.4− | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2005 04 13 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2006 06 20 | 703 | 1.0− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.7+ | 0.8− |
| 2006 06 20 | 703 | 0.2+ | 0.2− | 2006 08 31 | 704 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.7− |
| 2006 06 20 | 703 | 0.4− | 0.1− | 2006 08 31 | 704 | 0.3− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2006 06 20 | 703 | 0.2+ | 0.7+ | 2006 08 31 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2006 06 24 | 699 | 0.6− | 0.3+ | 2006 08 31 | 704 | 0.9− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2006 06 24 | 699 | 0.7− | 0.4− | 2006 08 31 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 06 24 | 699 | 0.5+ | 0.7− | 2006 09 12 | 704 | (0.2+ | 1.8+) | 2006 11 13 | G96 | 0.6− | 0.3− |
| 2006 06 24 | 699 | 0.3− | 0.6− | 2006 09 12 | 704 | 0.3+ | 1.5+ | 2006 11 13 | G96 | 0.3− | 1.0− |
| 2006 08 01 | A50 | 0.8− | 0.5− | 2006 09 12 | 704 | 0.1+ | 1.4+ | 2006 11 13 | G96 | 0.5− | 0.6− |
| 2006 08 01 | A50 | 0.7− | 0.6− | 2006 09 12 | 704 | (0.0 | 1.7+) | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 12 | 704 | 0.2+ | 0.8+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.6− | 0.7+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |

**(144976)∗ 2005 EV$_{126}$ = 1995 DU$_{11}$**

Discovered 2005 Mar. 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 76892)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.81520 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29985413 | $\omega$ | 252.03262 | | −0.06560644 | | +0.99755594 |
| $a$ | 2.2106977 | $\Omega$ | 14.26988 | | −0.87463641 | | −0.04589205 |
| $e$ | 0.1431390 | $i$ | 5.59699 | | −0.48031963 | | −0.05268833 |
| $P$ | 3.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 26 | 691 | 0.4− | 0.1+ | 2005 04 05 | 699 | 0.6− | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.0 |
| 1995 02 26 | 691 | 0.4− | 0.1+ | 2005 04 05 | 699 | 0.5− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.2+ |
| 1995 02 26 | 691 | 0.8− | 0.6− | 2005 04 05 | 699 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 1995 02 27 | 691 | 0.1+ | 0.6− | 2005 04 07 | 704 | 0.6− | 0.5− | 2006 09 28 | G96 | 0.1− | 0.0 |
| 1995 02 27 | 691 | 0.1− | 0.5− | 2005 04 07 | 704 | 0.5+ | 1.4+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 1995 02 27 | 691 | 0.3+ | 0.7− | 2005 04 07 | 704 | 0.8− | 1.0− | 2006 09 28 | G96 | 0.6+ | 0.1− |
| 1999 09 07 | 704 | 0.3− | 0.5+ | 2005 04 07 | 704 | 0.5− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.3− |
| 1999 09 07 | 704 | 1.2+ | 0.2+ | 2005 04 07 | 704 | 0.9+ | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 1999 09 07 | 704 | 0.3− | 0.0 | 2005 04 09 | 691 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 1999 09 07 | 704 | 0.0 | 0.3− | 2005 04 09 | 691 | 0.0 | 0.5+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.2− | 0.3− | 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 291 | 0.3− | 0.1− |
| 2005 03 08 | G96 | 0.4− | 0.2− | 2005 04 11 | 699 | 0.6− | 0.1+ | 2006 10 03 | 291 | 0.3− | 0.0 |
| 2005 03 08 | G96 | 0.2− | 0.2− | 2005 04 11 | 699 | 0.6− | 0.0 | 2006 10 03 | 291 | 0.3− | 0.0 |
| 2005 03 08 | G96 | 0.2− | 0.4− | 2005 04 11 | 699 | 0.8− | 0.0 | 2006 10 11 | 691 | 0.3− | 0.2+ |
| 2005 03 10 | 699 | 0.6+ | 0.4+ | 2005 04 12 | 704 | 0.5+ | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2005 03 10 | 699 | 1.1+ | 0.3− | 2005 04 12 | 704 | 0.5− | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.3+ |
| 2005 03 10 | 699 | 0.2+ | 0.7+ | 2005 04 12 | 704 | 0.4+ | 0.4− | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2005 03 10 | 699 | 0.9+ | 0.1+ | 2005 04 12 | 704 | 0.7+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.4+ |
| 2005 03 13 | 691 | 0.5+ | 0.0 | 2005 04 12 | 704 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.9+ |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2005 04 18 | 703 | (0.0 | 3.5−) | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2005 03 13 | 691 | 1.2+ | 0.2− | 2005 04 18 | 703 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.8− | 0.6+ |
| 2005 03 17 | 704 | 0.3+ | 0.0 | 2005 04 18 | 703 | 1.0− | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 2005 03 17 | 704 | 0.2− | 0.9+ | 2005 04 18 | 703 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2005 03 17 | 704 | 0.5− | 1.0+ | 2005 04 18 | 704 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2005 04 02 | 246 | 0.5+ | 0.4+ | 2005 04 18 | 704 | 0.5+ | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2005 04 02 | 246 | 0.3+ | 0.6+ | 2005 04 18 | 704 | 1.1+ | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2005 04 02 | 246 | 0.1+ | 0.7+ | 2005 04 18 | 704 | 0.3− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2005 04 02 | 246 | 0.0 | 0.6+ | 2005 04 18 | 704 | (1.9+ | 0.7−) | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2005 04 02 | 246 | 0.2+ | 0.5+ | 2005 05 14 | 703 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.9− | 0.2+ |
| 2005 04 02 | 246 | 0.4+ | 0.7+ | 2005 05 14 | 703 | 0.9− | 1.2+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2005 04 02 | 246 | 0.6+ | 0.7+ | 2005 05 14 | 703 | 0.5− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2005 04 02 | 246 | 0.6+ | 0.4+ | 2005 05 14 | 703 | 0.4+ | 1.4+ | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2005 04 03 | 644 | 0.3+ | 0.6+ | 2005 05 23 | 644 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.6+ |
| 2005 04 03 | 644 | 0.2+ | 0.2+ | 2005 05 23 | 644 | 0.0 | 0.4+ | 2006 11 19 | 704 | 1.1− | 0.0 |
| 2005 04 03 | 644 | 0.3+ | 0.4+ | 2005 05 23 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.5+ |
| 2005 04 04 | 704 | 0.2+ | 0.7+ | 2005 06 08 | 699 | 0.5+ | 0.6+ | 2006 11 19 | 704 | 2.0+ | 0.3− |
| 2005 04 04 | 704 | 0.4+ | 0.3+ | 2005 06 08 | 699 | (1.3− | 2.8+) | 2006 11 22 | 104 | 0.8+ | 0.5+ |
| 2005 04 04 | 704 | 0.0 | 0.2− | 2005 06 08 | 699 | 0.5− | 0.6+ | 2006 11 22 | 104 | 0.4+ | 0.6+ |
| 2005 04 04 | 704 | 0.7+ | 0.7+ | 2005 06 08 | 699 | (2.1+ | 1.8+) | 2006 11 22 | 104 | 0.2− | 0.4+ |
| 2005 04 04 | 704 | 0.4+ | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.3+ | | | | |
| 2005 04 05 | 699 | 1.1+ | 0.4+ | 2006 07 21 | G96 | 0.3− | 0.3+ | | | | |

**(144977)∗ 2005 EC$_{127}$ = 2003 UX$_{77}$**

Discovered 2005 Mar. 9 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76892)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.20062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29926610 | $\omega$ | 312.43028 | | +0.33299259 | | +0.94237294 |
| $a$ | 2.2135926 | $\Omega$ | 336.96002 | | −0.83900449 | | +0.28043960 |
| $e$ | 0.1735193 | $i$ | 4.74738 | | −0.43033405 | | +0.18244690 |
| $P$ | 3.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 704 | (0.6− | 3.0+) | 2005 03 09 | 691 | 0.3+ | 0.1− | 2006 08 29 | 704 | (2.2+ | 0.7−) |
| 2002 03 21 | 704 | 0.3+ | 1.0+ | 2005 03 09 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.3+ | 0.1− |
| 2002 03 21 | 704 | (0.4+ | 1.7+) | 2005 03 10 | G96 | 0.4− | 0.4+ | 2006 08 29 | 704 | 0.3− | 0.2+ |
| 2002 03 21 | 704 | (0.4− | 2.0−) | 2005 03 10 | G96 | 0.5− | 0.3− | 2006 08 29 | 704 | 0.6+ | 0.2+ |
| 2003 09 27 | 704 | 0.3+ | 0.6− | 2005 03 10 | G96 | 1.3+ | 0.4+ | 2006 09 14 | 703 | 0.7+ | 0.4− |
| 2003 09 27 | 704 | 0.3+ | 1.1+ | 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.5− |
| 2003 09 27 | 704 | (0.1+ | 2.8+) | 2005 03 11 | G96 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.6− | 0.7− |
| 2003 10 17 | 691 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.6− | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.3− |
| 2003 10 17 | 691 | 0.2− | 0.0 | 2005 03 11 | G96 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2003 10 17 | 691 | 0.2+ | 0.1− | 2005 03 11 | G96 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.4− | 0.4− |
| 2003 10 20 | 644 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2003 10 20 | 644 | 0.3− | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 2003 10 20 | 644 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2003 11 02 | 691 | 0.3− | 0.3+ | 2006 08 21 | 704 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2003 11 02 | 691 | 0.0 | 0.2+ | 2006 08 21 | 704 | 0.3− | 0.9+ | 2006 10 19 | G96 | 0.5+ | 0.4− |
| 2003 11 02 | 691 | 0.0 | 0.1+ | 2006 08 21 | 704 | 0.3+ | 0.7+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2005 02 04 | G96 | 0.5− | 0.1− | 2006 08 21 | 704 | 0.1− | 0.9+ | 2006 10 21 | G96 | 0.5− | 0.5− |
| 2005 02 04 | G96 | 0.5− | 0.2− | 2006 08 21 | 704 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.7− |
| 2005 02 04 | G96 | 0.3− | 0.2− | 2006 08 21 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2005 02 04 | G96 | 0.5− | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2005 03 09 | 691 | 0.3+ | 0.3− | 2006 08 21 | 644 | 0.2− | 0.2+ | | | | |

**(144978)∗ 2005 EY$_{131}$**

Discovered 2005 Mar. 9 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.87089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35482599 | $\omega$ | 97.96559 | | −0.05481101 | −0.99811213 | |
| $a$ | 1.9760250 | $\Omega$ | 354.92350 | | +0.74741399 | −0.02260938 | |
| $e$ | 0.0901385 | $i$ | 18.25077 | | +0.66209371 | −0.05710516 | |
| $P$ | 2.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 30 | 809 | 0.3− | 0.7+ | 2004 12 21 | 703 | 0.3− | 0.6− | 2005 04 16 | 703 | 0.8− | 0.7+ | |
| 1995 08 30 | 809 | 0.4+ | 0.3− | 2004 12 21 | 703 | 0.5− | 0.1+ | 2006 07 30 | E12 | 1.4− | 0.4+ | |
| 1995 09 20 | 809 | 0.7+ | 0.0 | 2005 01 15 | 704 | (0.6+ | 2.2+) | 2006 07 30 | E12 | 0.1− | 0.6+ | |
| 1995 09 22 | 809 | (2.3+ | 0.3+) | 2005 01 15 | 704 | (0.1− | 1.8+) | 2006 07 30 | E12 | 0.1− | 0.3+ | |
| 1998 10 18 | 704 | 0.6+ | 0.6− | 2005 01 15 | 704 | 0.6+ | 0.6− | 2006 07 30 | E12 | 0.5− | 0.6− | |
| 1998 10 18 | 704 | 0.5+ | 0.3− | 2005 01 15 | 704 | 0.4− | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.5+ | |
| 1998 10 18 | 704 | 0.4− | 0.0 | 2005 03 09 | 703 | 0.3− | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.4+ | |
| 1998 10 18 | 704 | 1.4− | 1.6− | 2005 03 09 | 703 | 0.8− | 0.5− | 2006 09 13 | 644 | 0.0 | 0.4+ | |
| 2001 11 27 | 704 | (1.8+ | 0.5+) | 2005 03 09 | 703 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.4+ | |
| 2001 11 27 | 704 | 0.5+ | 0.4+ | 2005 03 09 | 703 | 0.5− | 0.1− | 2006 09 13 | 644 | 0.5+ | 0.7+ | |
| 2001 11 27 | 704 | 0.7+ | 1.3+ | 2005 03 11 | 699 | 0.5+ | 0.5+ | 2006 09 13 | 644 | 0.3+ | 0.3+ | |
| 2001 11 27 | 704 | 0.9+ | 0.6+ | 2005 03 11 | 699 | 0.5+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.3+ | |
| 2002 03 04 | 704 | 0.5+ | 0.7+ | 2005 03 11 | 699 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.5+ | 0.4+ | |
| 2002 03 04 | 704 | 0.0 | 0.7+ | 2005 03 11 | 699 | 0.3+ | 0.3+ | 2006 09 14 | 644 | 0.3+ | 0.8+ | |
| 2002 03 04 | 704 | 0.7+ | 0.9+ | 2005 03 16 | 703 | (1.7+ | 2.5−) | 2006 09 30 | 703 | 0.8− | 0.3+ | |
| 2002 03 04 | 704 | 0.2+ | 0.4+ | 2005 03 16 | 703 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.6− | 0.2− | |
| 2002 03 04 | 704 | 0.1− | 1.2+ | 2005 03 16 | 703 | 0.1+ | 0.2− | 2006 09 30 | 703 | 1.3− | 0.8− | |
| 2004 12 02 | 703 | 0.4+ | 0.3− | 2005 03 16 | 703 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.6− | |
| 2004 12 02 | 703 | (0.5− | 1.9−) | 2005 04 02 | 703 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− | |
| 2004 12 02 | 703 | 0.6+ | 1.0− | 2005 04 02 | 703 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.8− | |
| 2004 12 02 | 703 | 0.9− | 1.4− | 2005 04 02 | 703 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.1− | |
| 2004 12 11 | 703 | 0.8− | 0.1− | 2005 04 02 | 703 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.8+ | 0.5+ | |
| 2004 12 11 | 703 | 0.7− | 0.3+ | 2005 04 04 | A35 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.3− | |
| 2004 12 11 | 703 | 0.1+ | 0.0 | 2005 04 04 | A35 | 0.7+ | 0.5+ | 2006 11 16 | G96 | 0.7+ | 0.3− | |
| 2004 12 11 | 703 | 0.0 | 0.1+ | 2005 04 16 | 703 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.5+ | 0.1+ | |
| 2004 12 21 | 703 | 0.6+ | 0.6− | 2005 04 16 | 703 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.1− | |
| 2004 12 21 | 703 | 0.5− | 0.4+ | 2005 04 16 | 703 | 0.1− | 1.3− | | | | | |

**(144979)∗ 2005 EE$_{137}$**

Discovered 2005 Mar. 9 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.98769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26984317 | $\omega$ | 310.26448 | | +0.89002577 | +0.45401821 | |
| $a$ | 2.3717110 | $\Omega$ | 22.82619 | | −0.37906819 | +0.78750829 | |
| $e$ | 0.2546058 | $i$ | 6.13985 | | −0.25330107 | +0.41677111 | |
| $P$ | 3.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 11 | 691 | 0.3+ | 0.3− | 2005 05 08 | G96 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 1997 01 11 | 691 | 0.2+ | 0.0 | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 10 29 | 704 | (2.8− | 0.3−) | |
| 1997 01 11 | 691 | 0.5+ | 0.2− | 2006 08 25 | 704 | 0.1+ | 0.3− | 2006 10 29 | 704 | (2.4− | 0.4−) | |
| 2002 07 16 | 644 | 0.1− | 0.2+ | 2006 08 25 | 704 | 0.3+ | 0.0 | 2006 10 29 | 704 | 0.5− | 0.1+ | |
| 2002 07 16 | 644 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.9+ | 0.2+ | 2006 10 29 | 704 | 0.1+ | 0.9+ | |
| 2002 07 16 | 644 | 0.1− | 0.2+ | 2006 08 25 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 1.3− | 0.0 | |
| 2002 08 30 | 644 | 0.1− | 0.1− | 2006 08 25 | 704 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.4− | |
| 2002 08 30 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.5− | 0.7+ | 2006 11 01 | G96 | 0.2− | 0.3− | |
| 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.5+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.3− | |
| 2002 10 04 | 704 | 0.8− | 0.2− | 2006 08 28 | 703 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.4− | |
| 2002 10 04 | 704 | 1.2− | 1.0+ | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.6− | 0.0 | |
| 2002 10 04 | 704 | 0.9− | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.1+ | |
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.4− | 0.0 | |
| 2002 12 05 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 704 | (0.8− | 2.0+) | 2006 11 11 | 703 | 0.6− | 0.2− | |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.2− | 1.1− | |
| 2003 12 21 | 645 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.8+ | 1.1+ | 2006 11 11 | 703 | 0.7− | 0.6− | |
| 2003 12 21 | 645 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 1.3− | 0.6− | |
| 2005 03 09 | G96 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.8+ | 2006 11 14 | 703 | 0.1+ | 1.2− | |
| 2005 03 09 | G96 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.4+ | |
| 2005 03 09 | G96 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.9+ | 0.2− | |
| 2005 03 09 | G96 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.6+ | 2006 11 14 | 703 | 0.3+ | 0.7− | |
| 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.9+ | 2006 11 16 | 704 | (0.2+ | 1.9+) | |
| 2005 03 11 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.4+ | 2006 11 16 | 704 | 1.2+ | 0.5+ | |
| 2005 03 11 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.7+ | 2006 11 16 | 704 | (0.3+ | 1.6+) | |
| 2005 03 17 | 691 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.3− | |
| 2005 03 17 | 691 | 0.4+ | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.2− | 1.0+ | |
| 2005 03 17 | 691 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.7− | 0.2+ | |
| 2005 04 03 | 185 | 0.7+ | 0.5− | 2006 09 27 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.1− | 1.5+ | |
| 2005 04 03 | 185 | 0.7− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 17 | 704 | (0.3− | 2.8−) | |
| 2005 04 04 | 185 | 0.2+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 18 | G96 | 0.1− | 0.3− | |
| 2005 04 04 | 185 | 0.5+ | 1.3+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.2− | |
| 2005 04 10 | G96 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.3− | |
| 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2005 04 10 | G96 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.1− | |
| 2005 04 10 | G96 | 0.1− | 0.2+ | 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.2+ | |
| 2005 04 11 | 699 | 0.5− | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.5− | |
| 2005 04 11 | 699 | (1.6+ | 0.2+) | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.0 | |
| 2005 04 11 | 699 | 0.5− | 0.7+ | 2006 10 19 | 704 | 0.1− | 1.0+ | 2006 11 19 | 704 | 0.4+ | 0.0 | |
| 2005 04 11 | 699 | 0.0 | 1.2+ | 2006 10 19 | 704 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.8+ | |
| 2005 05 04 | G96 | 0.2− | 0.3+ | 2006 10 19 | 704 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.6+ | |
| 2005 05 04 | G96 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.9+ | |
| 2005 05 04 | G96 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.3− | 1.4+ | |
| 2005 05 04 | G96 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 1.1+ | |
| 2005 05 08 | G96 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | | | | | |
| 2005 05 08 | G96 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | | | | | |

**(144980)∗ 2005 EK$_{139}$**

Discovered 2005 Mar. 9 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.07750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22622670 | $\omega$ | 90.15273 | | −0.55341302 | +0.83247629 | |
| $a$ | 2.6675146 | $\Omega$ | 146.20140 | | −0.78205030 | −0.50828967 | |
| $e$ | 0.1452622 | $i$ | 2.75955 | | −0.28658568 | −0.22051042 | |
| $P$ | 4.36 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.1+ | 0.1− | 2005 04 05 | 704 | 0.9− | 0.7− | 2005 05 08 | 703 | 0.8− | 0.1+ | |
| 1996 02 10 | 691 | 0.0 | 0.1− | 2005 04 09 | 704 | 0.2− | 0.3+ | 2005 05 08 | 703 | 0.3− | 0.4+ | |
| 1996 02 10 | 691 | 0.0 | 0.1+ | 2005 04 09 | 704 | 0.3− | 0.5+ | 2005 05 08 | 703 | 0.4− | 0.9+ | |
| 2000 02 03 | 691 | 0.3+ | 0.2+ | 2005 04 09 | 704 | 1.1+ | 1.1− | 2005 05 13 | 703 | 0.6− | 0.1− | |
| 2000 02 03 | 691 | 0.0 | 0.4+ | 2005 04 09 | 704 | 0.1− | 0.0 | 2005 05 13 | 703 | 0.7− | 0.3+ | |
| 2000 02 03 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 699 | (2.0+ | 0.6+) | 2005 05 13 | 703 | 0.9− | 0.4− | |
| 2002 10 11 | 704 | 0.9− | 0.0 | 2005 04 11 | 699 | 0.4+ | 0.2− | 2005 05 13 | 703 | 0.6− | 0.7+ | |
| 2002 10 11 | 704 | 0.4− | 0.4− | 2005 04 11 | 699 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.1− | 0.0 | |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2005 04 11 | 699 | 0.6+ | 0.3− | 2006 08 19 | 691 | 0.2− | 0.4+ | |
| 2002 10 11 | 704 | 1.4− | 1.4+ | 2005 04 12 | 691 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.0 | 0.3+ | |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2005 04 12 | 691 | 0.0 | 0.2− | 2006 08 21 | 691 | 0.1+ | 0.2+ | |
| 2002 11 08 | 645 | 0.1− | 0.2+ | 2005 04 12 | 691 | 0.0 | 0.1− | 2006 08 21 | 691 | 0.0 | 0.5+ | |
| 2005 03 09 | G96 | 0.5− | 0.1− | 2005 04 12 | 704 | 0.6+ | 0.0 | 2006 08 21 | 691 | 0.1+ | 0.2+ | |
| 2005 03 09 | G96 | 0.1+ | 0.1+ | 2005 04 12 | 704 | 1.0+ | 0.8− | 2006 08 23 | 807 | 0.0 | 0.3− | |
| 2005 03 09 | G96 | 0.0 | 0.0 | 2005 04 12 | 704 | 0.3+ | 0.2− | 2006 08 23 | 807 | 0.0 | 0.3− | |
| 2005 03 09 | G96 | 0.2− | 0.3− | 2005 04 12 | 704 | 0.8+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.2+ | |
| 2005 03 10 | 699 | 0.8− | 0.3− | 2005 04 12 | 704 | 1.0+ | 0.2− | 2006 08 28 | 703 | 0.5− | 0.2+ | |
| 2005 03 10 | 699 | 0.2+ | 0.3+ | 2005 04 15 | 699 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.8− | 0.6+ | |
| 2005 03 10 | 699 | 0.6− | 1.3+ | 2005 04 15 | 699 | 0.0 | 0.5− | 2006 08 28 | 691 | 0.1+ | 0.2+ | |
| 2005 03 10 | 699 | 1.0+ | 1.8+ | 2005 04 15 | 699 | 0.8+ | 1.2+ | 2006 08 28 | 703 | 0.9− | 0.7− | |
| 2005 03 11 | 691 | 0.2+ | 0.1+ | 2005 04 15 | 699 | 0.3− | 0.4+ | 2006 08 28 | 703 | 1.1− | 1.0+ | |
| 2005 03 11 | 691 | 0.3+ | 0.4+ | 2005 04 18 | 705 | 0.3+ | 1.0− | 2006 08 28 | 691 | 0.1− | 0.1− | |
| 2005 03 11 | 691 | 0.1+ | 0.3+ | 2005 04 18 | 703 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 1.6+ | |
| 2005 04 01 | 699 | 1.1− | 0.8+ | 2005 04 18 | 703 | 0.5− | 0.6− | 2006 09 14 | 703 | 0.2− | 1.0− | |
| 2005 04 01 | 699 | 0.4+ | 0.0 | 2005 04 18 | 703 | 0.8− | 0.1− | 2006 09 14 | 703 | 1.4+ | 0.5− | |
| 2005 04 01 | 699 | 1.1+ | 0.8− | 2005 04 18 | 703 | 0.7− | 0.2− | 2006 09 14 | 703 | 0.7+ | 0.8− | |
| 2005 04 01 | 699 | 0.1+ | 0.7+ | 2005 04 18 | 705 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | |
| 2005 04 05 | 704 | 0.7+ | 1.0− | 2005 04 18 | 705 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− | |
| 2005 04 05 | 703 | 0.5− | 1.8+ | 2005 04 19 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− | |
| 2005 04 05 | 704 | 0.9+ | 1.3+ | 2005 04 19 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− | |
| 2005 04 05 | 703 | 0.7− | 1.8+ | 2005 04 19 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | 703 | 0.6+ | 1.5+ | 2005 05 07 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.1− |
| 2005 04 05 | 704 | 1.1+ | 0.6+ | 2005 05 07 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2005 04 05 | 703 | 1.3+ | 1.5+ | 2005 05 07 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2005 04 05 | 704 | 0.1+ | 0.4− | 2005 05 08 | 703 | 0.2− | 0.4− | | | | |

**(144981)∗ 2005 EM$_{142}$**

Discovered 2005 Mar. 10 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.32155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28257478 | $\omega$ | 190.95237 | | +0.28148156 | +0.95717513 | |
| $a$ | 2.2999256 | $\Omega$ | 95.42243 | | −0.87516559 | +0.28501862 | |
| $e$ | 0.1583601 | $i$ | 3.89963 | | −0.39351406 | +0.05079529 | |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.4− | 0.2+ | 2002 08 05 | 644 | 0.2− | 0.9+ | 2005 05 04 | 644 | 0.1− | 0.1+ |
| 1992 10 01 | 691 | 0.1− | 0.4+ | 2002 08 05 | 644 | 0.0 | 0.7+ | 2005 05 04 | 644 | 0.3− | 0.1+ |
| 1992 10 01 | 691 | 0.1− | 0.2+ | 2002 08 05 | 644 | 0.2− | 0.8+ | 2006 09 30 | 703 | (1.0+ | 1.6+) |
| 1998 03 25 | 704 | 0.0 | 1.5− | 2005 03 10 | 703 | 0.8− | 0.6− | 2006 09 30 | 703 | (0.8− | 1.8−) |
| 1998 03 25 | 704 | 1.3− | 1.3− | 2005 03 10 | 703 | 0.3− | 0.7+ | 2006 09 30 | 703 | (3.2+ | 0.5+) |
| 1998 03 25 | 704 | (0.4+ | 2.5−) | 2005 03 10 | 703 | 0.1+ | 0.8+ | 2006 09 30 | 703 | 1.5+ | 0.2+ |
| 1998 03 25 | 704 | (5.1− | 1.1−) | 2005 03 10 | 703 | 0.8− | 0.0 | 2006 10 03 | G96 | 0.0 | 0.0 |
| 1999 10 11 | 704 | 0.5+ | 0.4− | 2005 03 10 | 691 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 1999 10 11 | 704 | 0.2+ | 0.3+ | 2005 03 10 | 691 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 1999 10 11 | 704 | 1.3+ | 0.2− | 2005 03 10 | 691 | 0.5− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 1999 10 11 | 704 | 1.0+ | 0.8− | 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.6+ |
| 2002 06 12 | 644 | 0.4− | 0.9− | 2005 03 11 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.6+ |
| 2002 06 12 | 644 | 0.1− | 0.8− | 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | (1.8− | 0.8−) |
| 2002 06 12 | 644 | 0.1− | 0.9− | 2005 04 04 | 703 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.4+ |
| 2002 06 18 | 704 | 0.9+ | 1.0− | 2005 04 04 | 703 | 0.4− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 06 18 | 704 | 0.9+ | 0.9− | 2005 04 04 | 703 | 0.6+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2002 06 18 | 704 | 0.0 | 0.1− | 2005 04 04 | 703 | 0.4+ | 0.8− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 06 18 | 704 | 0.6+ | 0.1+ | 2005 04 05 | 699 | 0.7+ | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 07 05 | 704 | 0.3+ | 0.7+ | 2005 04 05 | 699 | (1.1+ | 1.8+) | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2002 07 05 | 704 | 0.1− | 0.9+ | 2005 04 05 | 699 | 1.2+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2002 07 05 | 704 | 0.9− | 0.5+ | 2005 04 05 | 699 | (0.2+ | 2.0+) | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2002 07 05 | 704 | (0.7+ | 2.0+) | 2005 04 09 | 699 | 0.7+ | 0.7+ | 2006 11 20 | G96 | 0.5− | 0.1− |
| 2002 07 05 | 704 | (0.6− | 1.6+) | 2005 04 09 | 699 | 1.1+ | 1.1+ | 2006 11 20 | G96 | 0.1+ | 0.8− |
| 2002 07 14 | 644 | 0.2− | 0.3+ | 2005 04 09 | 699 | 0.1− | 1.1+ | 2006 11 20 | G96 | 1.2+ | 0.1− |
| 2002 07 14 | 644 | 0.3− | 0.2+ | 2005 04 09 | 699 | 0.4+ | 0.2+ | 2006 11 20 | G96 | 0.1− | 0.5− |
| 2002 07 14 | 644 | 0.5− | 0.1+ | 2005 05 04 | 644 | 0.0 | 0.3+ | | | | |

**(144982)∗ 2005 EZ$_{142}$ = 1997 GK$_{45}$ = 2002 UY$_{53}$**

Discovered 2005 Mar. 10 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76911), A. Doppler (*MPO* 95655)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.52390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24173297 | $\omega$ | 133.31185 | | +0.24234792 | +0.96854478 | |
| $a$ | 2.5521848 | $\Omega$ | 150.57345 | | −0.92008360 | +0.24790447 | |
| $e$ | 0.2142615 | $i$ | 6.59968 | | −0.30775585 | +0.02154947 | |
| $P$ | 4.08 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 08 | 809 | (2.6+ | 0.1+) | 2005 03 18 | 703 | (2.7− | 3.2−) | 2006 09 21 | 699 | 0.5− | 0.2− |
| 1997 04 08 | 809 | 0.3− | 1.4+ | 2005 03 18 | 703 | 0.8− | 0.4− | 2006 09 21 | 699 | 1.3− | 1.4+ |
| 1997 04 08 | 809 | 0.9+ | 0.3− | 2005 03 18 | 703 | 0.1− | 0.0 | 2006 09 22 | 704 | 1.1+ | 1.3+ |
| 2001 03 26 | 704 | 0.6− | 0.4+ | 2005 04 04 | 683 | (0.9− | 2.3−) | 2006 09 22 | 704 | 0.6− | 1.5+ |
| 2001 03 26 | 704 | 0.7− | 1.2+ | 2005 04 04 | 683 | (1.7+ | 1.9−) | 2006 09 22 | 704 | 0.2+ | 0.4+ |
| 2001 03 26 | 704 | 0.0 | 0.7+ | 2005 04 04 | 683 | (1.7− | 0.6+) | 2006 09 22 | 704 | 0.8− | 0.4+ |
| 2001 03 26 | 704 | 0.6− | 0.4− | 2005 04 04 | 703 | 0.5+ | 0.2− | 2006 09 25 | 699 | 0.0 | 0.3+ |
| 2001 04 17 | 699 | 0.8+ | 0.6+ | 2005 04 04 | 703 | 1.1− | 0.5+ | 2006 09 25 | 699 | 1.1− | 0.1+ |
| 2001 04 17 | 699 | 0.2− | 1.1+ | 2005 04 04 | 703 | 0.6− | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.2− |
| 2001 04 17 | 699 | 0.3+ | 0.4+ | 2005 04 04 | 703 | 0.0 | 0.5+ | 2006 09 25 | 699 | (2.2+ | 0.3+) |
| 2001 04 17 | 699 | 0.9− | 0.2+ | 2005 04 05 | 699 | 1.1+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.9− |
| 2001 05 23 | 699 | 0.2+ | 1.0+ | 2005 04 05 | 699 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 05 23 | 699 | 0.4+ | 0.7+ | 2005 04 05 | 699 | 1.3+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.8− |
| 2001 05 23 | 699 | 0.2− | 0.4− | 2005 04 05 | 699 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 2001 05 23 | 699 | 0.1+ | 0.5+ | 2005 04 09 | 699 | (0.2+ | 1.8+) | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 10 29 | 645 | 0.0 | 0.1+ | 2005 04 09 | 699 | 0.2+ | 1.2+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 10 29 | 645 | 0.0 | 0.1+ | 2005 04 09 | 699 | 0.9− | 1.3+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2002 10 30 | 645 | 0.0 | 0.1+ | 2005 04 09 | 699 | 0.0 | 1.4+ | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 04 13 | 704 | 0.7+ | 0.5+ | 2006 10 22 | 703 | 0.7+ | 0.0 |
| 2005 03 10 | 703 | 0.2+ | 0.2− | 2005 04 13 | 704 | 1.0+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.4− |
| 2005 03 10 | 703 | 0.2+ | 0.1− | 2005 04 13 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.7− |
| 2005 03 10 | 703 | 0.3+ | 0.3− | 2005 05 04 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 1.1− | 1.1+ |
| 2005 03 10 | 703 | 0.1+ | 0.5− | 2005 05 04 | 644 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2005 03 10 | 691 | 0.2+ | 0.1+ | 2005 05 04 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.4− | 0.8+ |
| 2005 03 10 | 691 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2005 03 10 | 691 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2005 03 11 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.7+ | 2006 10 22 | 644 | 0.4− | 0.6+ |
| 2005 03 11 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 1.1− | 0.5+ | 2006 10 23 | 644 | 0.5+ | 0.4+ |
| 2005 03 11 | 691 | 0.0 | 0.4+ | 2006 09 21 | 699 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2005 03 18 | 703 | (1.7− | 0.4−) | 2006 09 21 | 699 | 1.1+ | 0.9+ | 2006 10 23 | 644 | 0.4− | 0.1+ |

**(144983)∗ 2005 EM$_{148}$**

Discovered 2005 Mar. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.05892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31781941 | $\omega$ | 203.16728 | | +0.27814832 | +0.95911280 | |
| $a$ | 2.1265835 | $\Omega$ | 83.01482 | | −0.87282416 | +0.27510866 | |
| $e$ | 0.1652453 | $i$ | 3.02085 | | −0.40101309 | +0.06646699 | |
| $P$ | 3.10 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 1.9+ | 1.3+ | 2003 12 14 | 691 | 0.1+ | 0.2+ | 2005 05 15 | 644 | 0.2− | 0.3+ |
| 1999 05 13 | 704 | 0.5+ | 0.2− | 2003 12 14 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 1999 05 13 | 704 | 1.1− | 1.2− | 2005 03 10 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 |
| 1999 05 13 | 704 | 0.3+ | 1.5+ | 2005 03 10 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 1999 05 13 | 704 | (3.3− | 0.9−) | 2005 03 10 | 691 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 1999 05 20 | 691 | 0.3− | 0.4+ | 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 1999 05 20 | 691 | 0.3− | 0.1− | 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.7+ | 0.2− |
| 1999 05 20 | 691 | 0.1+ | 0.2− | 2005 03 11 | 691 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.6+ | 0.0 |
| 2000 12 14 | 344 | 0.4+ | 0.5− | 2005 04 04 | 703 | 0.5− | 0.5− | 2006 10 20 | 691 | 0.6− | 0.3+ |
| 2000 12 14 | 344 | 0.0 | 0.4− | 2005 04 04 | 703 | 1.1− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2000 12 14 | 344 | 0.1+ | 0.4− | 2005 04 04 | 703 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.5− | 0.3+ |
| 2002 04 14 | 644 | 0.8+ | 0.6− | 2005 04 04 | 703 | 0.4+ | 0.7− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 04 14 | 644 | 0.2+ | 0.5− | 2005 04 30 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.4+ | 0.3+ |
| 2002 04 14 | 644 | 0.6+ | 0.6− | 2005 04 30 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2003 11 24 | 695 | 0.6+ | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2003 11 24 | 695 | 0.2+ | 0.0 | 2005 05 04 | 644 | 0.2− | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2003 11 30 | 291 | 0.0 | 0.1− | 2005 05 04 | 644 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2003 11 30 | 291 | 0.3− | 0.4− | 2005 05 04 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2003 11 30 | 291 | 0.3+ | 0.1− | 2005 05 15 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2003 11 30 | 691 | 0.1+ | 0.1+ | 2005 05 15 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.5+ | 0.0 |
| 2003 11 30 | 691 | 0.3− | 0.1+ | 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2003 11 30 | 691 | 0.0 | 0.3− | 2005 05 15 | 644 | 0.1+ | 0.3+ | | | | |
| 2003 12 14 | 691 | 0.1− | 0.1− | 2005 05 15 | 644 | 0.1+ | 0.3+ | | | | |

**(144984)∗ 2005 EK$_{150}$ = 2003 WT$_{110}$**

Discovered 2005 Mar. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.21945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30167746 | $\omega$ | 266.12760 | | +0.58689688 | +0.80567177 | |
| $a$ | 2.2017811 | $\Omega$ | 40.16444 | | −0.68466186 | +0.54677072 | |
| $e$ | 0.0663147 | $i$ | 7.15015 | | −0.43219231 | +0.22789204 | |
| $P$ | 3.27 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | (2.5+ | 0.6+) | 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 1.3+ | 0.6− |
| 2002 05 11 | 704 | (2.0+ | 0.4+) | 2005 03 10 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.7+ |
| 2002 05 11 | 704 | (0.0 | 2.1+) | 2005 03 10 | 691 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 1.1+ |
| 2002 05 11 | 704 | 0.6+ | 0.2+ | 2005 03 10 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.4+ | 1.1+ |
| 2002 05 11 | 704 | 0.1+ | 0.6+ | 2005 03 11 | 691 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 2002 05 30 | 644 | 0.1+ | 0.6+ | 2005 03 11 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.5+ |
| 2002 05 30 | 644 | 0.5− | 0.2+ | 2005 03 11 | 691 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2002 05 30 | 644 | 0.5+ | 0.8+ | 2005 04 01 | 699 | 0.7− | 1.1− | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2003 11 20 | 704 | 0.8+ | 0.0 | 2005 04 01 | 699 | 0.3− | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2003 11 20 | 704 | 0.4− | 0.3+ | 2005 04 01 | 699 | 0.6+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2003 11 20 | 704 | 0.2− | 1.2+ | 2005 04 01 | 699 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2003 11 20 | 704 | 0.6+ | 0.5+ | 2005 04 04 | 703 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.7+ |
| 2003 11 20 | 704 | 0.8− | 0.4+ | 2005 04 04 | 703 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2003 11 24 | 704 | 0.1+ | 0.6+ | 2005 04 04 | 703 | 0.2− | 1.5+ | 2006 10 22 | 703 | 0.6+ | 0.3+ |
| 2003 11 24 | 704 | 0.3+ | 0.6+ | 2005 04 04 | 703 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.7+ | 0.1− |
| 2003 11 24 | 704 | 0.3− | 0.7− | 2005 05 03 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.1− |
| 2003 12 01 | 691 | 0.3− | 0.1+ | 2005 05 03 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 1.0− |
| 2003 12 01 | 691 | 0.0 | 0.0 | 2005 05 03 | 691 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.5− | 0.0 |
| 2003 12 01 | 691 | 0.1− | 0.2+ | 2005 05 13 | 691 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.5− | 0.3− |
| 2003 12 18 | 691 | 0.1+ | 0.0 | 2005 05 13 | 691 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 1.0− | 0.2− |
| 2003 12 18 | 691 | 0.2− | 0.0 | 2005 05 13 | 691 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.5− | 0.2− |

**(144985)∗ 2005 EE$_{152}$ = 2002 SP$_3$**

Discovered 2005 Mar. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76918)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.23367 | | (2000.0) | | | |
| $n$ | 0.23955924 | $\omega$ | 94.15263 | | −0.25913780 | +0.96539070 |
| $a$ | 2.5676004 | $\Omega$ | 160.75037 | | −0.91781984 | −0.23663826 |
| $e$ | 0.1524409 | $i$ | 5.12817 | | −0.30075630 | −0.10965000 |
| $P$ | 4.11 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 691 | 0.0 | 0.1− | 2005 03 10 | 691 | 0.5+ | 0.0 | 2005 05 12 | 691 | 0.1+ | 0.1+ |
| 1998 09 19 | 691 | 0.2+ | 0.0 | 2005 03 10 | 691 | 0.0 | 0.1+ | 2005 05 12 | 691 | 0.1+ | 0.2+ |
| 2001 02 22 | 691 | 0.2+ | 0.1− | 2005 03 11 | 691 | 0.0 | 0.2− | 2005 05 15 | 644 | 0.1− | 0.0 |
| 2001 02 22 | 691 | 0.2+ | 0.0 | 2005 03 11 | 691 | 0.1+ | 0.1+ | 2005 05 15 | 644 | 0.3− | 0.3+ |
| 2001 02 22 | 691 | 0.5+ | 0.0 | 2005 03 11 | 691 | 0.2− | 0.3− | 2005 05 15 | 644 | 0.3− | 0.4+ |
| 2001 03 26 | 704 | 0.3− | 0.2+ | 2005 03 18 | 703 | 0.8+ | 0.5+ | 2006 08 28 | 703 | 1.2+ | 0.1− |
| 2001 03 26 | 704 | 0.8+ | 0.5− | 2005 03 18 | 703 | 1.2− | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.6+ |
| 2001 03 26 | 704 | 0.3− | 0.3+ | 2005 03 18 | 703 | (0.0 | 1.9−) | 2006 08 28 | 703 | 0.9+ | 0.1+ |
| 2001 03 26 | 704 | 0.3+ | 1.1+ | 2005 03 18 | 703 | 0.7− | 0.7− | 2006 08 28 | 703 | 0.3− | 0.4− |
| 2001 05 24 | 645 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.0 |
| 2001 05 24 | 645 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.7− | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2002 09 26 | 644 | 0.4− | 0.5+ | 2005 04 04 | 703 | 0.4− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2002 09 26 | 644 | 0.2− | 0.6+ | 2005 04 04 | 703 | 1.2− | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2002 09 26 | 644 | 0.6− | 0.5+ | 2005 04 05 | 699 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2002 09 28 | 644 | (1.9− | 1.0+) | 2005 04 05 | 699 | 0.6+ | 0.9+ | 2006 10 21 | G96 | 0.6+ | 0.3+ |
| 2002 09 28 | 644 | 0.8− | 0.4+ | 2005 04 05 | 699 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2002 09 28 | 644 | 0.9− | 0.6+ | 2005 04 05 | 699 | 0.7+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2005 03 10 | 691 | 0.1− | 0.0 | 2005 05 12 | 691 | 0.3+ | 0.2− | | | | |

**(144986)∗ 2005 ET$_{154}$**

Discovered 2005 Mar. 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 109.01241 | | (2000.0) | | | |
| $n$ | 0.25587463 | $\omega$ | 200.50286 | | −0.61527528 | +0.78791422 |
| $a$ | 2.4572607 | $\Omega$ | 31.54049 | | −0.71642682 | −0.54562888 |
| $e$ | 0.1468115 | $i$ | 2.74482 | | −0.32889048 | −0.28544756 |
| $P$ | 3.85 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 03 12 | 691 | 0.2+ | 0.0 | 2006 08 18 | 691 | 0.3− | 0.3+ |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2005 03 12 | 691 | 0.8− | 0.3+ | 2006 08 27 | 691 | 0.4− | 0.1− |
| 2001 03 20 | 691 | 0.1+ | 0.5+ | 2005 03 12 | 691 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.1− |
| 2001 03 20 | 691 | 0.1+ | 0.5+ | 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.6+ |
| 2001 03 20 | 691 | 0.1+ | 0.5+ | 2005 05 03 | 691 | 0.6+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.4+ |
| 2003 12 19 | 691 | 0.2+ | 0.4+ | 2005 05 03 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.5+ |
| 2003 12 19 | 691 | 0.1− | 0.2− | 2005 05 13 | G96 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2005 05 13 | G96 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2005 05 13 | G96 | 0.2− | 0.1− | 2006 10 20 | G96 | 1.0− | 0.0 |
| 2005 03 08 | G96 | 0.5− | 0.1− | 2006 08 18 | 691 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.7− | 0.0 |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.1+ | | | | |

**(144987)∗ 2005 EQ$_{155}$**

Discovered 2005 Mar. 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.53587 | | (2000.0) | | | |
| $n$ | 0.29240965 | $\omega$ | 289.55451 | | +0.54912495 | +0.83557845 |
| $a$ | 2.2480618 | $\Omega$ | 13.78919 | | −0.73859100 | +0.49440677 |
| $e$ | 0.1694055 | $i$ | 3.95629 | | −0.39108200 | +0.23952159 |
| $P$ | 3.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 691 | 0.5− | 0.2− | 2005 03 08 | G96 | 0.4− | 0.2+ | 2006 07 21 | G96 | 0.6− | 0.0 |
| 1998 03 24 | 691 | 0.4− | 0.0 | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.1− |
| 1998 03 24 | 691 | 0.1− | 0.2− | 2005 03 12 | 691 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.3+ |
| 1998 04 03 | 691 | 0.1− | 0.4− | 2005 03 12 | 691 | 0.2+ | 0.1+ | 2006 07 21 | G96 | 0.9− | 0.2+ |
| 1998 04 03 | 691 | 0.3+ | 0.1− | 2005 05 02 | 691 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 1998 04 03 | 691 | 0.3+ | 0.1− | 2005 05 02 | 691 | 0.6+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.2+ |
| 1999 09 07 | 704 | 1.1− | 1.3− | 2005 05 02 | 691 | 0.6+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 0.1+ | 0.5+ | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.2+ |
| 1999 09 07 | 704 | 0.3− | 0.1− | 2005 05 08 | G96 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.4+ |
| 1999 11 11 | 691 | 0.1+ | 0.1+ | 2005 05 08 | G96 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 1999 11 11 | 691 | 0.2+ | 0.1+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 1999 11 11 | 691 | 0.3+ | 0.2+ | 2005 05 10 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 2004 01 18 | 691 | 0.1+ | 0.0 | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2004 01 18 | 691 | 0.1+ | 0.0 | 2005 05 10 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2004 01 18 | 691 | 0.3− | 0.1+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.8− | 0.3+ | 2005 05 12 | G96 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2005 03 08 | G96 | 0.6− | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 03 08 | G96 | 0.3− | 0.1+ | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.2− |

**(144988)∗ 2005 EC$_{164}$ = 2005 JA$_2$**

Discovered 2005 Mar. 10 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (d, *MPO* 87832)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.55216 | | (2000.0) | | | |
| $n$ | 0.26589128 | $\omega$ | 75.78993 | | +0.01481326 | +0.99985416 |
| $a$ | 2.3951533 | $\Omega$ | 195.06656 | | −0.92952789 | +0.01063823 |
| $e$ | 0.1962817 | $i$ | 1.87364 | | −0.36845417 | +0.01336005 |
| $P$ | 3.71 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 05 | 691 | 1.6+ | 0.5− | 2005 05 02 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.2− |
| 1991 10 05 | 691 | 0.6− | 0.7− | 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 703 | 0.7− | 0.9+ |
| 1991 10 05 | 691 | 0.3− | 0.5− | 2005 05 04 | G96 | 0.5− | 0.3− | 2006 10 20 | 703 | 0.3+ | 0.0 |
| 2002 08 28 | 644 | 0.3− | 0.2+ | 2005 05 04 | G96 | 0.3− | 0.0 | 2006 10 20 | 703 | 1.4− | 0.0 |
| 2002 08 28 | 644 | 0.4+ | 0.6+ | 2005 05 04 | G96 | 0.6− | 0.0 | 2006 10 20 | 703 | (1.6+ | 0.8−) |
| 2002 08 28 | 644 | 0.0 | 0.4+ | 2005 05 04 | G96 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2002 09 05 | 704 | (0.6− | 2.5−) | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2002 09 05 | 704 | 0.1+ | 0.7+ | 2005 05 13 | G96 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.8+ | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2002 09 14 | 644 | 0.6− | 0.5+ | 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.5− | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.6− | 0.6+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 03 10 | G96 | 0.5− | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.7− | 0.3− | 2006 09 24 | 691 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.0 | | |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 2005 03 12 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.0 | | |
| 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.3− | | |
| 2005 03 13 | 703 | 0.9+ | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2005 03 13 | 703 | 0.5− | 1.1+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2+ | | |
| 2005 03 13 | 703 | 0.7− | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2005 03 13 | 703 | (3.1− | 1.1+) | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2005 04 02 | 644 | 0.8+ | 1.1+ | 2006 10 15 | 691 | 0.3− | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.3− | | |
| 2005 04 02 | 644 | 1.0+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.5+ | 0.5− | | |
| 2005 04 02 | 644 | 0.7+ | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | | | |
| 2005 05 02 | 691 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.0 | | | | | | |

**(144989)∗ 2005 EV$_{171}$ = 1998 FH$_{108}$**

Discovered 2005 Mar. 7 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 76933)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.08740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27613241 | $\omega$ | 9.24581 | | −0.15972550 | +0.98022333 | |
| $a$ | 2.3355605 | $\Omega$ | 251.63054 | | −0.91338895 | −0.19164300 | |
| $e$ | 0.0776388 | $i$ | 7.07140 | | −0.37444410 | +0.04934765 | |
| $P$ | 3.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 31 | 704 | 0.0 | 0.4+ | 2003 10 30 | 704 | 0.0 | 0.5+ | 2005 04 02 | 644 | 1.1+ | 0.5+ |
| 1998 03 31 | 704 | 0.5+ | 0.8+ | 2003 10 30 | 704 | 0.2+ | 0.1− | 2005 04 02 | 644 | 0.9+ | 0.4+ |
| 1998 03 31 | 704 | 0.6+ | 1.3− | 2003 10 30 | 704 | 1.5− | 0.2− | 2005 04 02 | 644 | 0.8+ | 0.5+ |
| 1998 03 31 | 704 | (4.0− | 0.3+) | 2003 11 30 | 691 | 0.2− | 0.0 | 2005 04 02 | 644 | 0.9+ | 0.0 |
| 1998 04 01 | 704 | 1.4+ | 1.9+ | 2003 11 30 | 691 | 0.2− | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.1− |
| 1998 04 01 | 704 | (0.3+ | 2.1+) | 2003 11 30 | 691 | 0.1− | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 1998 04 01 | 704 | (0.8− | 2.3+) | 2005 03 07 | 704 | 0.7+ | 0.1− | 2006 08 17 | 644 | 0.3+ | 0.1+ |
| 1998 04 01 | 704 | 1.8− | 0.2+ | 2005 03 07 | 704 | 0.3+ | 0.3− | 2006 08 29 | 703 | (2.7− | 0.5−) |
| 1998 04 01 | 704 | (3.1− | 1.7−) | 2005 03 07 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 703 | 1.3− | 0.4+ |
| 1998 04 20 | 704 | (1.8+ | 2.1+) | 2005 03 07 | 704 | 0.1− | 0.4− | 2006 08 29 | 703 | 0.0 | 0.5+ |
| 1998 04 20 | 704 | 0.9− | 0.2− | 2005 03 08 | 703 | 0.1− | 1.0+ | 2006 08 29 | 703 | 0.1− | 1.0+ |
| 1998 04 20 | 704 | (1.3− | 2.4+) | 2005 03 08 | 703 | 0.1+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 1998 04 20 | 704 | (5.2− | 1.7+) | 2005 03 08 | 703 | 1.7− | 1.8+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 1999 09 07 | 703 | 0.6− | 1.5+ | 2005 03 08 | 703 | 0.5+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 1999 09 07 | 703 | 0.4− | 1.2+ | 2005 03 13 | 703 | 0.1+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 1999 09 07 | 703 | (2.8− | 0.9+) | 2005 03 13 | 703 | 1.4− | 0.5− | 2006 09 17 | 691 | 0.1− | 0.1− |
| 1999 09 07 | 703 | 1.4+ | 0.3+ | 2005 03 13 | 703 | 0.1+ | 1.2+ | 2006 09 17 | 691 | 0.0 | 0.2− |
| 2003 10 18 | 699 | 0.7+ | 0.4− | 2005 03 13 | 703 | 0.9+ | 1.6− | 2006 09 19 | 691 | 0.1− | 0.2− |
| 2003 10 18 | 699 | (2.4− | 0.7−) | 2005 03 13 | 703 | 0.9− | 0.6− | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2003 10 18 | 699 | 0.5− | 1.0+ | 2005 03 13 | 703 | 0.5+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.3− |
| 2003 10 18 | 699 | (3.5− | 1.0+) | 2005 03 13 | 703 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2003 10 25 | 704 | 1.4+ | 0.1− | 2005 03 13 | 703 | 0.3− | 0.2− | 2006 09 26 | 703 | 0.4+ | 1.2+ |
| 2003 10 25 | 704 | 0.8+ | 0.5− | 2005 03 13 | 703 | 0.4+ | 0.8+ | 2006 09 26 | 703 | 0.8+ | 0.9+ |
| 2003 10 25 | 704 | 0.4+ | 0.2− | 2005 03 13 | 703 | 0.4− | 1.0+ | 2006 09 26 | 703 | 0.6− | 2.0+ |
| 2003 10 25 | 704 | 0.6+ | 0.4− | 2005 03 13 | 703 | 0.9− | 0.9+ | 2006 09 29 | 699 | 0.8+ | 1.2− |
| 2003 10 27 | 691 | 0.1+ | 0.1− | 2005 03 13 | 703 | 0.2+ | 1.0+ | 2006 09 29 | 699 | 0.1− | 0.8+ |
| 2003 10 27 | 691 | 0.3− | 0.2+ | 2005 04 02 | 644 | 0.7+ | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.5+ |
| 2003 10 27 | 691 | 0.4− | 0.1+ | 2005 04 02 | 644 | 1.5+ | 0.6− | 2006 09 29 | 699 | 2.0− | 2.3+ |

**(144990)∗ 2005 ES$_{179}$**

Discovered 2005 Mar. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.81855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27384521 | $\omega$ | 50.58363 | | −0.12546866 | +0.99198020 | |
| $a$ | 2.3485472 | $\Omega$ | 212.21830 | | −0.91880180 | −0.12198796 | |
| $e$ | 0.1443632 | $i$ | 1.64025 | | −0.37424707 | −0.03307889 | |
| $P$ | 3.60 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.1+ | 0.2− | 2003 12 22 | 291 | 0.0 | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.3+ |
| 1999 10 04 | 691 | 0.1− | 0.3− | 2003 12 22 | 291 | 1.2+ | 0.6+ | 2006 08 21 | 691 | 0.3− | 0.3+ |
| 1999 10 04 | 691 | 0.0 | 0.1− | 2005 03 09 | 691 | 0.2+ | 0.3+ | 2006 08 21 | 691 | 0.1+ | 0.2+ |
| 2002 06 11 | 644 | 0.6− | 0.2+ | 2005 03 09 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 691 | 0.3− | 0.4+ |
| 2002 06 11 | 644 | 0.3− | 0.0 | 2005 03 09 | 691 | 0.0 | 0.5+ | 2006 09 16 | 691 | 0.2− | 0.3+ |
| 2002 06 11 | 644 | 0.1− | 0.0 | 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 691 | 0.2− | 0.4+ |
| 2002 06 29 | 644 | 0.1+ | 1.5+ | 2005 03 13 | 691 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.7− |
| 2002 06 29 | 644 | 0.2+ | 1.1+ | 2005 03 13 | 691 | 0.3+ | 0.4+ | 2006 09 17 | 703 | (1.3− | 2.1+) |
| 2002 06 29 | 644 | 0.4+ | 1.1+ | 2005 04 04 | 703 | 0.9+ | 0.3+ | 2006 09 17 | 703 | 0.6− | 0.8+ |
| 2003 11 30 | 291 | 0.4− | 0.1+ | 2005 04 04 | 703 | (0.5− | 2.3+) | 2006 09 17 | 703 | 0.2+ | 0.5− |
| 2003 11 30 | 291 | 0.3− | 0.1+ | 2005 04 04 | 703 | 0.2− | 1.2+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2003 11 30 | 291 | 0.2− | 0.2+ | 2005 04 04 | 703 | (0.4− | 3.8+) | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2003 12 14 | 691 | 0.4+ | 0.4+ | 2005 04 06 | G96 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.6+ | 0.2+ |
| 2003 12 14 | 691 | 0.2+ | 0.3+ | 2005 04 06 | G96 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2003 12 14 | 691 | 0.0 | 0.2+ | 2005 04 06 | G96 | 0.4− | 0.1− | | | | |
| 2003 12 22 | 291 | 1.0− | 0.3− | 2005 04 06 | G96 | 0.2− | 0.2− | | | | |

**(144991)∗ 2005 EH$_{182}$ = 1997 SS$_{7}$**

Discovered 2005 Mar. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 76940)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.97295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21686556 | $\omega$ | 107.45548 | | +0.07972218 | +0.99632922 | |
| $a$ | 2.7437361 | $\Omega$ | 166.99805 | | −0.95907594 | +0.08519302 | |
| $e$ | 0.1881211 | $i$ | 7.96723 | | −0.27169416 | −0.00838087 | |
| $P$ | 4.54 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 15 | 691 | 0.2+ | 1.1− | 2005 03 31 | 699 | 0.1+ | 0.4− | 2006 08 29 | 691 | 0.3− | 0.1+ |
| 1996 04 15 | 691 | 0.6+ | 1.0− | 2005 03 31 | 683 | 0.8− | 1.2+ | 2006 08 30 | 704 | 1.3+ | 0.5+ |
| 1996 04 15 | 691 | 0.6+ | 0.8− | 2005 04 01 | 683 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.7+ | 0.2− |
| 1997 09 23 | 691 | 0.4− | 0.3+ | 2005 04 01 | 683 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.2− |
| 1997 09 23 | 691 | 0.1− | 0.7+ | 2005 04 01 | 683 | 0.0 | 0.4− | 2006 08 30 | 704 | (2.6− | 2.0+) |
| 1997 09 23 | 691 | 0.2− | 0.1+ | 2005 04 04 | 703 | 0.3+ | 1.1+ | 2006 09 01 | 704 | 0.6+ | 0.6− |
| 1997 09 29 | 691 | 0.5− | 0.4+ | 2005 04 04 | 703 | 0.1+ | 0.6+ | 2006 09 01 | 704 | 0.2+ | 0.8+ |
| 1997 09 29 | 691 | 0.3− | 0.1+ | 2005 04 04 | 703 | 0.4− | 0.6+ | 2006 09 01 | 704 | 1.0+ | 0.7− |
| 1997 09 29 | 691 | 0.7− | 0.2+ | 2005 04 04 | 703 | 0.5− | 0.8+ | 2006 09 01 | 704 | 0.5+ | 0.7− |
| 2000 02 02 | 704 | 0.8+ | 0.8+ | 2005 04 05 | 704 | 0.4− | 1.2+ | 2006 09 01 | 704 | 0.3− | 0.2+ |
| 2000 02 02 | 704 | 0.3+ | 0.2− | 2005 04 05 | 704 | 0.3+ | 1.3+ | 2006 09 14 | 703 | 1.2− | 0.3+ |
| 2000 02 02 | 704 | 0.2− | 0.9+ | 2005 04 05 | 704 | 0.1− | 0.9+ | 2006 09 14 | 703 | (1.6− | 0.5−) |
| 2001 05 26 | 704 | 0.0 | 0.9− | 2005 04 08 | 704 | 0.7+ | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.2− |
| 2001 05 26 | 704 | 0.8− | 0.3+ | 2005 04 08 | 704 | 0.3+ | 0.7− | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2001 05 26 | 704 | 0.1− | 0.1− | 2005 04 08 | 704 | 0.4+ | 1.0+ | 2006 09 17 | 704 | 1.4+ | 1.1− |
| 2001 05 26 | 704 | 0.2− | 0.4− | 2005 04 08 | 704 | 0.9+ | 0.6+ | 2006 09 17 | 704 | 0.5+ | 0.6− |
| 2001 05 26 | 704 | 0.0 | 0.1+ | 2005 04 13 | 704 | (0.8+ | 1.7+) | 2006 09 17 | 704 | 0.5− | 0.0 |
| 2001 06 21 | 704 | 0.6− | 0.3− | 2005 04 13 | 704 | 0.7+ | 0.9+ | 2006 09 17 | 704 | 0.6+ | 0.7− |
| 2001 06 21 | 704 | (1.7− | 0.6−) | 2005 04 13 | 704 | 0.6+ | 1.0+ | 2006 09 18 | 699 | 0.8+ | 0.5+ |
| 2001 06 21 | 704 | 0.7− | 0.0 | 2005 04 13 | 704 | 0.4+ | 1.4+ | 2006 09 18 | 699 | 0.2− | 0.0 |
| 2001 06 21 | 704 | 0.4− | 0.3− | 2006 08 18 | 704 | 0.4+ | 1.1− | 2006 09 18 | 699 | 0.0 | 0.0 |
| 2002 11 01 | 704 | 0.1− | 0.9+ | 2006 08 18 | 704 | (1.6+ | 0.1+) | 2006 09 18 | 699 | 0.7− | 0.2− |
| 2002 11 01 | 704 | 0.2+ | 1.1+ | 2006 08 18 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.4+ |
| 2002 11 01 | 704 | 0.5− | 1.4+ | 2006 08 21 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.6+ |
| 2005 03 01 | 691 | 0.1− | 0.7+ | 2006 08 21 | 704 | 0.2− | 0.5+ | 2006 09 20 | 704 | 0.1+ | 1.0+ |
| 2005 03 01 | 691 | 0.2+ | 0.7+ | 2006 08 21 | 704 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.1− | 0.7+ |
| 2005 03 01 | 691 | 0.1+ | 0.6+ | 2006 08 21 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 699 | 0.6− | 1.1+ |
| 2005 03 09 | 699 | 1.0+ | 0.5+ | 2006 08 21 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 1.1− | 0.0 |
| 2005 03 09 | 699 | 0.4+ | 1.2+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2005 03 09 | 699 | 0.5− | 1.4+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 1.2− | 1.2+ |
| 2005 03 09 | 699 | 0.7+ | 1.4+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2005 03 12 | 695 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.4− | 0.4− |
| 2005 03 12 | 695 | 0.3− | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.5− | 0.9− |
| 2005 03 13 | 703 | 0.0 | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.1+ | 1.1+ |
| 2005 03 13 | 703 | 1.1− | 0.6+ | 2006 08 25 | 704 | 0.1− | 0.7+ | 2006 09 27 | 704 | 0.3+ | 0.3+ |
| 2005 03 13 | 703 | 1.2− | 0.5+ | 2006 08 25 | 704 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 703 | 0.8− | 0.6+ | 2006 08 25 | 704 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.8+ |
| 2005 03 14 | G96 | 0.1− | 0.5+ | 2006 08 25 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.5− | 1.2+ |
| 2005 03 14 | G96 | 0.6− | 0.1+ | 2006 08 25 | 704 | 0.4+ | 0.7− | 2006 10 10 | G92 | 0.0 | 0.7− |
| 2005 03 14 | G96 | 0.3− | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.1+ | 2006 10 10 | G92 | 1.0+ | 0.0 |
| 2005 03 14 | G96 | 0.2− | 0.4+ | 2006 08 27 | 691 | 0.3− | 1.0+ | 2006 10 10 | G92 | 0.5+ | 0.6+ |
| 2005 03 18 | 703 | (2.0− | 0.8−) | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.2− |
| 2005 03 18 | 703 | (1.8− | 0.8−) | 2006 08 29 | 704 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2005 03 18 | 703 | 1.3− | 0.1+ | 2006 08 29 | 704 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2005 03 18 | 703 | 1.3− | 0.2− | 2006 08 29 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.8+ | 1.1− |
| 2005 03 31 | 699 | 1.1+ | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2005 03 31 | 699 | 0.1+ | 0.4+ | 2006 08 29 | 704 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2005 03 31 | 699 | 0.5+ | 0.8+ | 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2005 03 31 | 683 | 1.3+ | 1.3+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2005 03 31 | 683 | 0.2+ | 1.1+ | 2006 08 29 | 691 | 0.0 | 0.1+ | | | | |

**(144992)∗ 2005 EM$_{182}$**

Discovered 2005 Mar. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.73973 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28826659 | $\omega$ | 34.04257 | | −0.46081056 | +0.88651254 | |
| $a$ | 2.2695504 | $\Omega$ | 208.58418 | | −0.83249039 | −0.44810136 | |
| $e$ | 0.2091038 | $i$ | 5.01481 | | −0.30759288 | −0.11532860 | |
| $P$ | 3.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | (1.3− | 3.6−) | 2005 04 04 | 704 | 0.4− | 0.3+ | 2006 09 24 | 691 | 0.8− | 0.4+ |
| 1998 03 04 | 704 | 0.8− | 1.9− | 2005 04 04 | 704 | 0.4− | 0.7+ | 2006 09 24 | 691 | 0.2− | 0.2+ |
| 1998 03 04 | 704 | (0.2− | 2.3−) | 2005 04 04 | 704 | 0.2− | 0.1+ | 2006 09 24 | 691 | 0.7− | 0.4+ |
| 1998 03 04 | 704 | (3.4− | 3.0−) | 2005 04 04 | 704 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2002 07 09 | 704 | 0.2+ | 1.0+ | 2005 04 07 | 704 | 0.9+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2002 07 09 | 704 | (3.7− | 0.6+) | 2005 04 07 | 704 | 0.5+ | 0.8+ | 2006 09 28 | 691 | 0.2+ | 0.3+ |
| 2002 07 09 | 704 | 0.7− | 0.1+ | 2005 04 07 | 704 | 0.6+ | 0.7+ | 2006 10 11 | 691 | 0.3+ | 0.1+ |
| 2002 07 09 | 704 | 0.2− | 0.2+ | 2005 04 07 | 704 | 1.1+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.3+ |
| 2002 07 18 | 704 | 0.5− | 0.8+ | 2005 04 07 | 704 | 0.3+ | 0.7+ | 2006 10 11 | 691 | 0.2+ | 0.2+ |
| 2002 07 18 | 704 | (1.3− | 1.9+) | 2005 04 09 | 704 | (1.1+ | 3.1+) | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2002 07 18 | 704 | 0.1+ | 0.2− | 2005 04 09 | 704 | (0.9+ | 3.6+) | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 07 18 | 704 | 0.8− | 0.2− | 2005 04 09 | 704 | (0.7+ | 3.4+) | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 07 18 | 704 | 1.1+ | 0.4+ | 2005 04 09 | 704 | (1.3+ | 3.2+) | 2006 10 20 | 703 | 0.2+ | 0.6+ |
| 2002 08 09 | 608 | 0.1− | 0.0 | 2005 04 09 | 704 | (0.4+ | 3.5+) | 2006 10 20 | 703 | (1.9− | 0.6+) |
| 2002 08 09 | 608 | 0.4+ | 0.6+ | 2005 04 12 | 704 | (0.5+ | 1.6−) | 2006 10 20 | 703 | 0.8+ | 0.6+ |
| 2002 08 09 | 608 | 0.2+ | 0.5− | 2005 04 12 | 704 | 0.3+ | 0.7+ | 2006 10 20 | 703 | 0.8+ | 0.7+ |
| 2005 03 09 | 699 | 0.3+ | 0.3+ | 2005 04 12 | 704 | 1.0+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3− |
| 2005 03 09 | 699 | 0.9+ | 0.2− | 2005 04 12 | 704 | 1.1+ | 1.4+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2005 03 09 | 699 | 0.9− | 0.7+ | 2005 04 13 | 699 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2005 03 09 | 699 | 0.0 | 1.2+ | 2005 04 13 | 699 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2005 03 13 | 703 | 0.4+ | 1.1+ | 2005 04 13 | 699 | 1.1+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2005 03 13 | 703 | 0.5− | 1.2+ | 2005 04 13 | 699 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.4− |
| 2005 03 13 | 703 | 0.5+ | 0.9+ | 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2005 03 13 | 703 | 0.0 | 1.3+ | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2005 03 31 | 699 | 1.0− | 0.1− | 2005 05 08 | G96 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2+ |
| 2005 03 31 | 699 | 0.3− | 0.5+ | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2005 03 31 | 699 | 0.7+ | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.3− |
| 2005 03 31 | 699 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.3− | 0.8+ | 2006 11 19 | 691 | 0.4+ | 0.3+ |
| 2005 04 04 | 704 | 0.6− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.9+ |

**(144993)∗ 2005 EH$_{185}$**

Discovered 2005 Mar. 9 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.96727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.34756626 | $\omega$ | 280.21427 | | −0.48878149 | −0.86304079 | |
| $a$ | 2.0034460 | $\Omega$ | 200.60344 | | +0.87234418 | −0.48524300 | |
| $e$ | 0.0623114 | $i$ | 21.24075 | | −0.01040600 | −0.14035608 | |
| $P$ | 2.84 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 704 | 0.6+ | 0.1− | 2005 04 05 | 703 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.3− | 1.2+ |
| 2002 03 13 | 704 | 0.6+ | 0.4+ | 2005 04 05 | 703 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.1+ | 1.0+ |
| 2002 03 13 | 704 | 0.5− | 0.3+ | 2005 04 05 | 703 | 0.3− | 0.2− | 2006 09 19 | 699 | 1.1+ | 0.5+ |
| 2002 03 13 | 704 | 0.3− | 0.3+ | 2005 04 06 | 704 | (1.6+ | 0.3+) | 2006 09 27 | 699 | 0.3− | 0.2− |
| 2002 03 13 | 704 | 0.7− | 0.5+ | 2005 04 06 | 704 | 0.7+ | 0.0 | 2006 09 27 | 699 | 0.3+ | 0.4+ |
| 2002 03 23 | 704 | 0.6+ | 0.4− | 2005 04 06 | 704 | 0.8− | 1.2+ | 2006 09 27 | 699 | 0.2− | 1.3+ |
| 2002 03 23 | 704 | 0.1− | 0.2+ | 2005 04 18 | 703 | 1.2− | 0.4− | 2006 09 27 | 699 | 1.3− | 1.2+ |
| 2002 03 23 | 704 | 0.0 | 0.1− | 2005 04 18 | 703 | 0.6− | 0.5− | 2006 09 27 | 703 | 0.6− | 0.1+ |
| 2002 03 23 | 704 | 0.8+ | 1.4+ | 2005 04 18 | 703 | (1.9− | 0.3−) | 2006 09 27 | 703 | (1.6− | 1.7−) |
| 2002 04 05 | 699 | 0.2− | 0.0 | 2005 04 18 | 703 | 0.1+ | 0.5− | 2006 09 27 | 703 | 0.9− | 0.5− |
| 2002 04 05 | 699 | 0.8− | 0.9− | 2005 05 06 | G96 | 0.0 | 0.1− | 2006 09 27 | 703 | 1.2+ | 1.3+ |
| 2002 04 05 | 699 | 0.3− | 0.4− | 2005 05 06 | G96 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.1− | 0.5+ |
| 2002 04 05 | 699 | 0.6− | 0.9+ | 2005 05 06 | G96 | 0.0 | 0.2− | 2006 09 27 | 703 | 0.2+ | 0.3+ |
| 2003 09 20 | 704 | (1.7+ | 1.0+) | 2005 05 06 | 704 | 1.0+ | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.1− |
| 2003 09 20 | 704 | 0.3+ | 0.3+ | 2005 05 06 | G96 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.2+ |
| 2003 09 20 | 704 | 0.6+ | 0.0 | 2005 05 06 | 704 | 1.4+ | 0.7+ | 2006 10 09 | 644 | 0.4− | 0.4+ |
| 2003 09 20 | 704 | 0.5+ | 0.4+ | 2005 05 06 | 704 | (1.6+ | 1.8−) | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2003 09 20 | 704 | 0.5− | 0.7+ | 2005 05 11 | 703 | 0.9− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2003 09 21 | 644 | 0.3− | 0.2+ | 2005 05 11 | 703 | 1.0− | 0.5− | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2003 09 21 | 644 | 0.1+ | 0.4+ | 2005 05 11 | 703 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2003 09 21 | 644 | 0.2+ | 0.0 | 2005 05 11 | 703 | 0.9+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2005 03 02 | 704 | (1.2+ | 2.2−) | 2005 05 13 | 699 | 0.7+ | 1.3+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2005 03 02 | 704 | 0.6− | 0.3− | 2005 05 13 | 699 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2005 03 02 | 704 | 0.4+ | 0.4− | 2005 05 13 | 699 | 0.4− | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2005 03 02 | 704 | 0.1+ | 0.1+ | 2005 05 13 | 699 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2005 03 09 | E12 | 0.2+ | 0.8+ | 2006 07 25 | G96 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2005 03 09 | E12 | 0.1− | 0.7+ | 2006 07 25 | G96 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2005 03 09 | E12 | 0.4+ | 0.7+ | 2006 07 25 | G96 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2005 03 09 | E12 | 0.4− | 1.2+ | 2006 07 25 | G96 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2005 03 13 | 699 | 0.5+ | 1.2+ | 2006 08 29 | 699 | 0.0 | 0.0 | 2006 11 10 | 704 | 0.4− | 1.0+ |
| 2005 03 13 | 699 | 0.1+ | 1.0+ | 2006 08 29 | 699 | 0.2− | 0.2+ | 2006 11 10 | 704 | 0.4− | 1.0+ |
| 2005 03 13 | 699 | 0.5− | 1.4+ | 2006 08 29 | 699 | 0.5− | 0.0 | 2006 11 10 | 704 | (0.3+ | 2.1+) |
| 2005 03 13 | 699 | 0.5+ | 0.8+ | 2006 08 29 | 699 | 0.7+ | 0.6− | 2006 11 10 | 704 | 0.2− | 0.6+ |
| 2005 04 03 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2005 04 03 | 644 | 0.4+ | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2005 04 03 | 644 | 0.6+ | 0.5+ | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2005 04 05 | 703 | 0.1+ | 0.7+ | 2006 09 19 | 699 | 1.0+ | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.0 |

**(144994)∗ 2005 EO$_{186}$**

Discovered 2005 Mar. 10 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.13924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29388109 | $\omega$ | 190.08264 | | −0.24667589 | +0.96354785 | |
| $a$ | 2.2405516 | $\Omega$ | 65.69757 | | −0.88102907 | −0.17845927 | |
| $e$ | 0.1680377 | $i$ | 6.52513 | | −0.40365676 | −0.19931840 | |
| $P$ | 3.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 22 | 691 | 0.4− | 0.3+ | 2005 04 04 | 703 | 1.0− | 0.3− | 2005 05 08 | 703 | 0.7− | 0.2− |
| 1995 04 22 | 691 | 0.0 | 0.2+ | 2005 04 05 | 699 | 0.1+ | 0.5+ | 2005 05 08 | 703 | 0.4− | 0.6− |
| 1995 04 22 | 691 | 0.3+ | 0.0 | 2005 04 05 | 699 | 0.1+ | 0.4+ | 2005 05 08 | 703 | 0.1− | 0.0 |
| 2001 01 03 | 704 | 0.3− | 0.2+ | 2005 04 05 | 699 | 0.0 | 0.8+ | 2005 05 08 | 703 | 0.4− | 0.3− |
| 2001 01 03 | 704 | 1.1+ | 0.2− | 2005 04 05 | 699 | 0.7+ | 0.1+ | 2005 05 15 | 644 | 0.1+ | 0.1+ |
| 2001 01 03 | 704 | 0.5− | 0.6+ | 2005 04 05 | 704 | 0.1+ | 0.4− | 2005 05 15 | 644 | 0.0 | 0.1+ |
| 2001 01 03 | 704 | 0.1+ | 0.3− | 2005 04 05 | 704 | 0.6+ | 0.0 | 2005 05 15 | 644 | 0.0 | 0.3+ |
| 2002 06 06 | 704 | 0.1+ | 0.2− | 2005 04 05 | 704 | 0.3+ | 0.6+ | 2005 05 31 | 703 | 0.5+ | 0.5− |
| 2002 06 06 | 704 | 0.1+ | 0.3− | 2005 04 05 | 704 | 0.1+ | 0.7+ | 2005 05 31 | 703 | 0.1− | 0.1− |
| 2002 06 06 | 704 | 0.3+ | 0.5− | 2005 04 05 | 704 | 0.3+ | 0.0 | 2005 05 31 | 703 | 0.5− | 0.7+ |
| 2002 07 10 | 599 | 0.3+ | 0.5+ | 2005 04 08 | 704 | 0.9+ | 0.5+ | 2005 05 31 | 703 | 0.7+ | 0.1+ |
| 2002 07 10 | 599 | 0.4+ | 0.7+ | 2005 04 08 | 704 | 0.3+ | 0.0 | 2006 09 29 | 699 | 0.7− | 0.5+ |
| 2003 11 30 | 691 | 0.1+ | 0.1− | 2005 04 08 | 704 | 0.6+ | 1.1+ | 2006 09 29 | 699 | (0.5+ | 2.3+) |
| 2003 11 30 | 691 | 0.1+ | 0.1− | 2005 04 09 | 699 | 0.6− | 0.7− | 2006 09 29 | 699 | 0.7+ | 0.9− |
| 2003 11 30 | 691 | 0.1+ | 0.1− | 2005 04 09 | 699 | 1.4− | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.5− |
| 2003 12 14 | 691 | 0.1+ | 0.0 | 2005 04 09 | 699 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 2003 12 14 | 691 | 0.0 | 0.1− | 2005 04 09 | 699 | 0.0 | 0.1− | 2006 09 30 | 703 | (0.5+ | 2.2+) |
| 2003 12 14 | 691 | 0.5+ | 0.1+ | 2005 04 13 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 703 | 0.7− | 0.1− | 2005 04 13 | 704 | 0.1+ | 1.0+ | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2005 03 10 | 703 | 0.6− | 0.1− | 2005 04 13 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2005 03 10 | 703 | 1.5− | 0.7+ | 2005 04 13 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.5+ |
| 2005 03 10 | 703 | 0.3+ | 0.2+ | 2005 04 13 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.3+ |
| 2005 03 12 | 704 | 0.0 | 0.6+ | 2005 04 18 | 703 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2005 03 12 | 704 | (2.6− | 1.0+) | 2005 04 18 | 703 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2005 03 12 | 704 | 0.7− | 0.3− | 2005 04 18 | 703 | 0.6− | 0.4− | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2005 03 12 | 704 | 0.5− | 0.2− | 2005 04 18 | 704 | 0.2+ | 0.7− | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2005 03 12 | 704 | 0.1+ | 0.7+ | 2005 04 18 | 703 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.1− |
| 2005 03 16 | 683 | 0.3− | 0.7− | 2005 04 18 | 704 | 0.7+ | 0.5− | 2006 10 20 | 644 | 0.4− | 0.9+ |
| 2005 03 16 | 683 | 1.3+ | 0.7− | 2005 04 18 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2005 03 16 | 683 | (1.8+ | 1.0−) | 2005 04 18 | 704 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2005 03 17 | 683 | (0.1+ | 1.7+) | 2005 04 18 | 704 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2005 03 17 | 683 | (1.1− | 1.7+) | 2005 04 19 | 704 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2005 03 17 | 683 | 0.0 | 0.3− | 2005 04 19 | 704 | 0.5− | 0.9+ | 2006 10 21 | 644 | 0.5+ | 0.5+ |
| 2005 03 21 | 683 | 0.9− | 0.9+ | 2005 04 19 | 704 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.5− | 0.3+ |
| 2005 03 21 | 683 | 0.5+ | 0.5+ | 2005 04 19 | 704 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2005 03 21 | 683 | 1.1+ | 0.8+ | 2005 05 03 | 704 | 1.3+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2005 04 01 | 699 | 0.4+ | 0.1+ | 2005 05 03 | 704 | 0.9+ | 0.1− | 2006 11 15 | 621 | 0.0 | 0.0 |
| 2005 04 01 | 699 | 0.3+ | 0.1+ | 2005 05 03 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 621 | 0.1+ | 0.2+ |
| 2005 04 01 | 699 | 0.5+ | 0.0 | 2005 05 06 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 621 | 0.1+ | 0.1− |
| 2005 04 01 | 699 | 0.4+ | 0.5+ | 2005 05 06 | 704 | 0.8+ | 0.2+ | 2006 11 18 | 621 | 0.9+ | 0.6+ |
| 2005 04 04 | 703 | 0.5− | 0.3− | 2005 05 06 | 704 | 0.0 | 0.4− | 2006 11 18 | 621 | 0.4+ | 0.0 |
| 2005 04 04 | 703 | 0.2− | 0.3− | 2005 05 06 | 704 | 0.2+ | 0.2− | 2006 11 18 | 621 | 1.3+ | 0.3− |
| 2005 04 04 | 703 | 1.2− | 0.2− | 2005 05 06 | 704 | 0.2− | 0.1− | 2006 11 18 | 621 | 0.9+ | 0.1+ |

**(144995)∗ 2005 EA$_{187}$**

Discovered 2005 Mar. 10 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.02103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27029264 | $\omega$ | 308.00467 | | +0.68766095 | +0.72594734 | |
| $a$ | 2.3690810 | $\Omega$ | 5.48072 | | −0.62443930 | +0.59915777 | |
| $e$ | 0.0995462 | $i$ | 6.66471 | | −0.37040244 | +0.33765431 | |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 809 | 0.2− | 0.9− | 2006 08 18 | 691 | 0.2− | 0.0 | 2006 09 27 | 704 | 1.0+ | 1.2+ |
| 1995 08 30 | 809 | 0.5+ | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.6− | 0.7+ |
| 1995 08 31 | 809 | (2.4+ | 0.2−) | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.0 | 0.2− |
| 1995 09 20 | 809 | 1.2+ | 0.9− | 2006 08 22 | 644 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.9− | 0.9+ |
| 2002 07 06 | 644 | 0.3− | 0.2− | 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.7− | 0.3+ |
| 2002 07 06 | 644 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 2002 07 06 | 644 | 0.2− | 0.5− | 2006 08 27 | 691 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 07 16 | 644 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2002 07 16 | 644 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.4− |
| 2002 07 16 | 644 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2004 01 19 | 691 | 0.4− | 0.8+ | 2006 09 17 | 704 | 0.7+ | 0.4− | 2006 09 30 | 703 | 0.4− | 0.3− |
| 2004 01 19 | 691 | 0.1− | 0.5+ | 2006 09 17 | 704 | 0.3+ | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2004 01 19 | 691 | 0.2+ | 0.0 | 2006 09 17 | 704 | 1.0+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.3− |
| 2005 03 10 | G96 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.5− |
| 2005 03 10 | G96 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.8− | 0.2− | 2006 09 30 | 703 | 0.2− | 1.1− |
| 2005 03 10 | G96 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.6+ | 1.0− |
| 2005 03 10 | G96 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2005 03 13 | 691 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.2+ | 1.3+ |
| 2005 03 17 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 22 | D35 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2005 03 17 | 691 | 0.3+ | 0.2+ | 2006 09 22 | D35 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2005 04 04 | 691 | 0.3+ | 0.7+ | 2006 09 22 | D35 | 1.1− | 0.6+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2005 04 04 | 691 | 0.2+ | 0.7+ | 2006 09 25 | 699 | 0.3+ | 1.4+ | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2005 04 04 | 691 | 0.4+ | 0.5+ | 2006 09 25 | 699 | 0.3+ | 0.7+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2006 08 17 | 644 | 0.0 | 0.2− | 2006 09 25 | 699 | (0.7+ | 2.1+) | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.2+ | 1.2+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | (0.9+ | 1.5+) | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2006 08 18 | 699 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2006 08 18 | 699 | 0.4− | 1.1+ | 2006 09 25 | 699 | 0.1+ | 1.5+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 08 18 | 699 | 0.7+ | 0.2− | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2006 08 18 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.5− | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2006 08 18 | 699 | 0.6− | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.1− |

**(144996)∗ 2005 EA$_{188}$**

Discovered 2005 Mar. 10 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.12591 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28604667 | $\omega$ | 206.27781 | | −0.90979766 | +0.41504259 | |
| $a$ | 2.2812775 | $\Omega$ | 358.23697 | | −0.36295634 | −0.79886094 | |
| $e$ | 0.1753432 | $i$ | 5.22718 | | −0.20132288 | −0.43538586 | |
| $P$ | 3.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 24 | 691 | 0.0 | 0.2+ | 2005 03 17 | 704 | 0.5− | 1.0+ | 2005 05 09 | 699 | 1.1+ | 0.6− |
| 1998 01 24 | 691 | 0.1+ | 0.2+ | 2005 04 05 | 699 | 0.7+ | 0.4− | 2005 05 14 | 644 | 0.0 | 0.2− |
| 1998 01 24 | 691 | (1.0+ | 2.7−) | 2005 04 05 | 699 | 0.6− | 0.9− | 2005 05 14 | 644 | 0.0 | 0.2− |
| 1998 03 22 | 704 | 0.0 | 0.4− | 2005 04 05 | 699 | 0.6+ | 0.3− | 2005 05 14 | 644 | 0.0 | 0.3− |
| 1998 03 22 | 704 | 0.3+ | 1.5− | 2005 04 05 | 699 | 0.0 | 0.3− | 2005 05 23 | 644 | 0.2+ | 0.5− |
| 1998 03 22 | 704 | (2.4+ | 1.9+) | 2005 04 06 | 691 | 0.1+ | 0.0 | 2005 05 23 | 644 | 0.0 | 0.2− |
| 1998 03 22 | 704 | (0.3− | 2.6+) | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2005 05 23 | 644 | 0.1+ | 0.4− |
| 1998 03 22 | 704 | 0.2+ | 0.7+ | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.2+ |
| 1999 09 04 | 691 | 1.1− | 0.5+ | 2005 04 08 | 735 | 0.9− | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.4− |
| 1999 09 04 | 691 | 1.0− | 0.0 | 2005 04 08 | 735 | 0.6− | 0.3− | 2006 07 21 | G96 | 0.0 | 0.3+ |
| 1999 09 04 | 691 | 0.6− | 0.1+ | 2005 04 08 | 735 | 0.4− | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.0 |
| 1999 09 18 | 691 | 1.1+ | 0.7− | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 1999 09 18 | 691 | 0.7+ | 0.0 | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.0 |
| 1999 09 18 | 691 | 0.7+ | 0.2− | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2005 03 10 | G96 | 0.3− | 0.5+ | 2005 04 11 | 699 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2005 03 10 | 699 | (2.8+ | 0.7+) | 2005 04 11 | 699 | 0.5− | 0.1− | 2006 09 19 | 691 | 0.4− | 0.1− |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2005 04 11 | 699 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2− |
| 2005 03 10 | G96 | 0.6− | 0.1+ | 2005 04 11 | 699 | 0.0 | 0.3− | 2006 09 23 | 691 | 1.0+ | 1.0+ |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.3+ |
| 2005 03 10 | 699 | 0.4− | 0.2+ | 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.3− | 0.3+ |
| 2005 03 10 | 699 | 0.4+ | 0.2+ | 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.4− | 0.4− |
| 2005 03 10 | 699 | 1.4+ | 0.1− | 2005 04 18 | 703 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.4− |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2005 04 18 | 703 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2005 03 13 | 691 | 0.0 | 0.3+ | 2005 04 18 | 703 | 0.1+ | 0.6+ | 2006 09 25 | G96 | 0.7− | 0.3− |
| 2005 03 13 | 691 | 0.2+ | 0.4+ | 2005 04 18 | 703 | 0.6− | 1.0+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2005 03 14 | G96 | 0.8− | 0.2− | 2005 05 01 | 644 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2005 03 14 | G96 | 0.7− | 0.1+ | 2005 05 01 | 644 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2005 03 14 | G96 | 0.8− | 0.0 | 2005 05 01 | 644 | 0.0 | 0.2− | 2006 10 20 | G96 | 2.4+ | 0.2+ |
| 2005 03 14 | G96 | 0.6− | 0.4− | 2005 05 09 | 699 | 0.6+ | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2005 03 17 | 704 | 0.4+ | 0.4− | 2005 05 09 | 699 | 0.1+ | 0.5− | 2006 10 20 | G96 | 0.7− | 0.3+ |
| 2005 03 17 | 704 | 0.0 | 0.3+ | 2005 05 09 | 699 | 0.6+ | 0.7− | 2006 10 20 | G96 | 0.0 | 0.5− |

**(144997)∗ 2005 EH$_{196}$ = 2002 LF$_{42}$**

Discovered 2005 Mar. 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (*MPO* 76951)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.79409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28054382 | $\omega$ | 134.60616 | | +0.81009785 | +0.58587932 | |
| $a$ | 2.3110122 | $\Omega$ | 189.60146 | | −0.56839358 | +0.77557793 | |
| $e$ | 0.1377470 | $i$ | 7.60214 | | −0.14377139 | +0.23499849 | |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.4− | 0.0 | 2006 08 29 | 703 | 0.2− | 0.4+ | 2006 09 25 | 699 | (1.7+ | 0.2−) |
| 1999 10 06 | 704 | 0.2+ | 0.2− | 2006 08 29 | 703 | 1.1− | 0.2+ | 2006 09 25 | 699 | 0.9− | 0.5+ |
| 1999 10 06 | 704 | 0.5+ | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.2+ |
| 1999 10 06 | 704 | 0.0 | 0.4− | 2006 08 29 | 703 | 0.9− | 0.7− | 2006 09 26 | 704 | 0.0 | 0.0 |
| 1999 10 06 | 704 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.6+ |
| 2002 06 10 | 704 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.3− | 0.6+ |
| 2002 06 10 | 704 | 0.6− | 0.1− | 2006 09 06 | 644 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 10 | 704 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.3− | 0.0 | |
| 2002 06 10 | 704 | 0.4+ | 0.6+ | 2006 09 12 | 703 | 0.2+ | 0.8− | 2006 09 29 | 704 | 0.4+ | 0.6+ | |
| 2002 06 14 | 644 | 0.5− | 0.4− | 2006 09 12 | 703 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.5+ | 0.1+ | |
| 2002 06 14 | 704 | 0.3+ | 0.8− | 2006 09 12 | 703 | 1.1+ | 0.9− | 2006 09 30 | 704 | 1.3+ | 0.3− | |
| 2002 06 14 | 704 | 0.3+ | 0.6− | 2006 09 13 | 644 | 0.3+ | 0.2− | 2006 09 30 | 704 | 0.0 | 0.1+ | |
| 2002 06 14 | 704 | 0.8+ | 0.6− | 2006 09 13 | 644 | 0.1+ | 0.5− | 2006 09 30 | 704 | 1.0− | 0.3+ | |
| 2002 06 14 | 644 | 0.5− | 0.4− | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.1− | 0.3− | |
| 2002 06 14 | 704 | 0.3+ | 0.8+ | 2006 09 16 | 699 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.8− | |
| 2002 06 14 | 644 | 0.9− | 0.6− | 2006 09 16 | 699 | (1.7+ | 0.9+) | 2006 10 16 | 703 | 0.6+ | 0.0 | |
| 2002 07 16 | 644 | 0.0 | 0.2− | 2006 09 16 | 699 | (2.0− | 0.1−) | 2006 10 16 | 703 | 0.7+ | 0.7+ | |
| 2002 07 16 | 644 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.3− | |
| 2002 07 16 | 644 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.2+ | 1.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− | |
| 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.0 | 1.2+ | 2006 10 19 | G96 | 0.4− | 0.4− | |
| 2005 03 11 | G96 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.2− | |
| 2005 03 11 | G96 | 0.1+ | 0.1− | 2006 09 18 | 704 | 0.1− | 0.8+ | 2006 10 19 | G96 | 0.1− | 0.2− | |
| 2005 03 11 | G96 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.3− | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.7+ | |
| 2005 03 13 | 691 | 0.3+ | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.3− | |
| 2005 03 13 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | |
| 2005 03 13 | 691 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.0 | |
| 2005 04 04 | 703 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.2− | |
| 2005 04 04 | 703 | 1.1− | 0.3− | 2006 09 19 | 699 | 0.1− | 1.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ | |
| 2005 04 04 | 703 | (1.6− | 0.7+) | 2006 09 19 | 703 | 0.5− | 0.3+ | 2006 10 24 | 644 | 0.2− | 0.1+ | |
| 2005 04 04 | 703 | 0.6− | 0.8+ | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 24 | 644 | 0.4− | 0.0 | |
| 2005 04 05 | G96 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.4+ | 2006 10 24 | 644 | 0.2− | 0.2− | |
| 2005 04 05 | G96 | 0.1+ | 0.3+ | 2006 09 20 | 691 | 0.6− | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.4− | |
| 2005 04 05 | G96 | 0.1− | 0.5− | 2006 09 20 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− | |
| 2005 04 05 | G96 | 0.3+ | 0.5+ | 2006 09 20 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− | |
| 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.6+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.3− | |
| 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 25 | 704 | (2.0− | 0.7+) | 2006 11 15 | G96 | 0.1+ | 0.2− | |
| 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.1− | |
| 2006 08 27 | 699 | 0.7+ | 0.2− | 2006 09 25 | 704 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.2+ | |
| 2006 08 27 | 699 | 0.6− | 0.5− | 2006 09 25 | 704 | 0.6+ | 0.9+ | 2006 11 15 | G96 | 0.5+ | 0.2− | |
| 2006 08 27 | 699 | 0.2− | 0.4− | 2006 09 25 | 699 | 0.4− | 0.0 | | | | | |
| 2006 08 27 | 699 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.6+ | 0.6+ | | | | | |

**(144998)∗ 2005 EY$_{198}$**

Discovered 2005 Mar. 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.96879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29227500 | $\omega$ | 78.58793 | | +0.17427001 | | +0.98371021 |
| $a$ | 2.2487522 | $\Omega$ | 201.59945 | | −0.94370116 | | +0.15406093 |
| $e$ | 0.1460785 | $i$ | 6.87940 | | −0.28117269 | | +0.09262530 |
| $P$ | 3.37 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.1+ | 0.1+ | 2005 04 01 | 699 | 0.2+ | 0.4− | 2006 10 12 | 691 | 0.1− | 0.4+ | |
| 1999 10 13 | 645 | 0.0 | 0.1+ | 2005 04 01 | 699 | 1.1+ | 0.8+ | 2006 10 17 | G96 | 0.0 | 0.5− | |
| 1999 10 16 | 645 | 0.0 | 0.0 | 2005 04 04 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.5− | |
| 1999 10 16 | 645 | 0.0 | 0.1+ | 2005 04 04 | 691 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.3− | |
| 1999 10 30 | 691 | 0.3− | 0.2− | 2005 04 04 | 691 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.8− | |
| 1999 10 30 | 691 | 0.3− | 0.3− | 2005 05 06 | G96 | 0.4− | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.1− | |
| 1999 10 30 | 691 | 0.3− | 0.3− | 2005 05 06 | G96 | 0.2− | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.2+ | |
| 2003 12 16 | 413 | 0.1+ | 0.4− | 2005 05 06 | G96 | 0.0 | 0.5+ | 2006 10 18 | 691 | 0.3+ | 0.3− | |
| 2003 12 16 | 413 | 0.3+ | 1.5+ | 2005 05 06 | G96 | 0.6− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | |
| 2003 12 16 | 413 | 0.5− | 0.5+ | 2006 09 25 | G96 | (1.8+ | 1.0−) | 2006 10 22 | 691 | 0.2− | 0.2− | |
| 2005 03 11 | G96 | 0.5− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 10 22 | 691 | 0.2− | 0.1− | |
| 2005 03 11 | G96 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.4− | |
| 2005 03 11 | G96 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.7− | 2006 10 31 | G96 | 0.0 | 0.3− | |
| 2005 03 11 | G96 | 0.7− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− | |
| 2005 03 13 | 691 | 1.0+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.1− | |
| 2005 03 13 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1+ | |
| 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1− | |
| 2005 04 01 | 699 | 0.7+ | 0.4− | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− | |
| 2005 04 01 | 699 | 1.0+ | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.2+ | |

**(144999)∗ 2005 EJ$_{199}$ = 2000 EV$_{80}$ = 2001 QA$_{331}$**

Discovered 2005 Mar. 11 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76955)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.06494 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20889525 | $\omega$ | 245.36843 | | −0.11580353 | | +0.99241138 |
| $a$ | 2.8130903 | $\Omega$ | 18.12625 | | −0.85649614 | | −0.07869287 |
| $e$ | 0.1756286 | $i$ | 7.63639 | | −0.50299494 | | −0.09448325 |
| $P$ | 4.72 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.3− | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.1− | 2005 05 04 | G96 | 0.9− | 0.2− | |
| 2000 03 05 | 704 | 0.3+ | 0.7+ | 2005 03 13 | 703 | 0.7+ | 1.0+ | 2005 05 04 | G96 | 0.7− | 0.1− | |
| 2000 03 05 | 704 | 1.6+ | 0.8+ | 2005 03 13 | 703 | 0.4− | 1.2+ | 2005 05 04 | G96 | 0.5− | 0.0 | |
| 2000 03 05 | 704 | 0.8− | 0.4+ | 2005 03 13 | 703 | 0.8− | 0.1+ | 2005 05 13 | G96 | 0.8− | 0.3− | |
| 2000 03 12 | 704 | 0.8+ | 0.1+ | 2005 03 13 | 703 | 0.4− | 1.0+ | 2005 05 13 | G96 | 0.4− | 0.5− | |
| 2000 03 12 | 704 | 0.4+ | 0.2+ | 2005 04 04 | 704 | 1.0+ | 0.1− | 2005 05 13 | G96 | 0.1− | 0.7− | |
| 2000 03 12 | 704 | 0.6+ | 1.3+ | 2005 04 04 | 704 | 1.4+ | 0.2− | 2005 05 13 | G96 | 0.6− | 0.4− | |
| 2001 06 26 | 644 | 0.3− | 0.6+ | 2005 04 04 | 704 | 0.0 | 0.2+ | 2006 08 19 | 644 | 0.1− | 0.5+ | |
| 2001 06 26 | 644 | 0.4− | 0.6+ | 2005 04 04 | G96 | 0.6− | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.3+ | |
| 2001 06 26 | 644 | 0.5− | 0.4+ | 2005 04 04 | 704 | 0.7+ | 0.8− | 2006 08 19 | 644 | 0.1+ | 0.4+ | |
| 2001 07 19 | 644 | 0.2+ | 0.3+ | 2005 04 04 | G96 | 0.1− | 1.1+ | 2006 08 23 | 644 | 0.3− | 0.5+ | |
| 2001 07 19 | 644 | 0.1+ | 0.6+ | 2005 04 04 | G96 | 0.3− | 0.2+ | 2006 08 23 | 644 | 0.2− | 0.5+ | |
| 2001 07 19 | 644 | 0.1+ | 0.3+ | 2005 04 04 | 704 | 1.1+ | 0.2+ | 2006 08 23 | 644 | 0.6− | 0.3+ | |
| 2001 08 17 | 644 | 0.3− | 0.6+ | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.2− | 0.6+ | |
| 2001 08 17 | 644 | 0.4− | 0.2+ | 2005 04 12 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.5+ | |
| 2001 08 17 | 644 | 0.2+ | 0.1− | 2005 04 12 | 704 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.5− | 1.0− | |
| 2003 12 27 | 691 | 0.0 | 1.0+ | 2005 04 12 | 704 | 0.7+ | 1.0− | 2006 08 28 | 699 | 0.1− | 0.3− | |
| 2003 12 27 | 691 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.5− | |
| 2003 12 27 | 691 | 0.2+ | 0.0 | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.1+ | |
| 2005 03 11 | 691 | 0.1− | 0.1− | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.2+ | |
| 2005 03 11 | 691 | 0.2− | 0.2− | 2005 05 04 | G96 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.1+ | 1.8+ | |

**(145000)∗ 2005 EH$_{200}$ = 1998 KD$_{40}$ = 2001 CJ$_{23}$**

Discovered 2005 Mar. 12 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 76956)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.33766 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27960363 | $\omega$ | 99.32555 | | −0.43330272 | | +0.90075970 |
| $a$ | 2.3161900 | $\Omega$ | 144.94896 | | −0.84583787 | | −0.39507396 |
| $e$ | 0.2307742 | $i$ | 2.96203 | | −0.31113832 | | −0.18041210 |
| $P$ | 3.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 17 | 691 | 0.6− | 0.1− | 2005 04 13 | 699 | 0.5+ | 0.6+ | 2005 05 16 | 704 | 0.3+ | 0.5− | |
| 1992 11 17 | 691 | 0.5+ | 0.9+ | 2005 04 13 | 699 | 0.3− | 0.3+ | 2005 05 31 | 699 | 0.2− | 0.1− | |
| 1992 11 17 | 691 | 0.2+ | 0.2− | 2005 04 13 | 699 | 0.3+ | 0.2+ | 2005 05 31 | 699 | 0.3+ | 0.5+ | |
| 1998 05 22 | 704 | 1.2+ | 0.3+ | 2005 04 13 | 699 | 0.4+ | 0.9+ | 2005 05 31 | 699 | 0.4+ | 0.8− | |
| 1998 05 22 | 704 | 0.6− | 0.0 | 2005 04 16 | 691 | 0.0 | 0.2+ | 2005 05 31 | 699 | 0.1− | 0.0 | |
| 1998 05 22 | 704 | 0.4− | 0.2− | 2005 04 16 | 691 | 0.0 | 0.2+ | 2005 06 04 | 703 | 0.4− | 0.5− | |
| 1998 05 22 | 704 | 0.4+ | 1.9− | 2005 04 16 | 691 | 0.0 | 0.2+ | 2005 06 04 | 703 | 0.8− | 0.4− | |
| 1998 05 24 | 704 | 1.0− | 0.1− | 2005 05 03 | 704 | 0.4+ | 0.1− | 2005 06 04 | 703 | 1.0− | 0.0 | |
| 1998 05 24 | 704 | 0.3− | 0.3− | 2005 05 03 | 704 | 0.2− | 0.0 | 2005 06 04 | 703 | 0.4− | 0.3+ | |
| 1998 05 24 | 704 | 0.5+ | 0.4+ | 2005 05 03 | 704 | 0.0 | 0.3+ | 2005 06 23 | 644 | 0.2− | 0.1+ | |
| 1998 05 24 | 704 | 0.2− | 0.8− | 2005 05 03 | 704 | 0.4+ | 0.6+ | 2005 06 23 | 644 | 0.2− | 0.2+ | |
| 1998 05 24 | 704 | 0.3− | 0.5+ | 2005 05 03 | 704 | 0.0 | 1.0+ | 2005 06 23 | 644 | 0.0 | 0.1+ | |
| 2001 02 01 | 699 | 0.1+ | 0.1+ | 2005 05 08 | 699 | 0.0 | 0.4+ | 2005 06 28 | 699 | 0.0 | 0.2+ | |
| 2001 02 01 | 699 | 0.4+ | 0.5+ | 2005 05 08 | 699 | 0.1− | 0.4+ | 2005 06 28 | 644 | 0.2− | 0.1+ | |
| 2001 02 01 | 699 | 1.3+ | 0.2− | 2005 05 08 | 699 | 0.3− | 0.4+ | 2005 06 28 | 699 | 0.6− | 0.1− | |
| 2001 02 01 | 699 | 0.4+ | 0.4+ | 2005 05 08 | 699 | 0.0 | 0.4+ | 2005 06 28 | 644 | 0.1− | 0.2+ | |
| 2001 02 02 | 704 | 1.0− | 0.1+ | 2005 05 08 | 704 | 0.8+ | 0.5+ | 2005 06 28 | 699 | 0.0 | 0.1− | |
| 2001 02 02 | 704 | 0.8− | 1.1+ | 2005 05 08 | 704 | 1.0+ | 0.5+ | 2005 06 28 | 644 | 0.0 | 0.1+ | |
| 2001 02 02 | 704 | 0.8+ | 0.8+ | 2005 05 08 | 704 | 0.4+ | 0.3+ | 2005 06 28 | 699 | 0.4− | 0.1− | |
| 2001 02 02 | 704 | (1.2− | 1.9+) | 2005 05 08 | 704 | 0.6+ | 1.1+ | 2005 07 04 | 704 | 0.9+ | 0.0 | |
| 2001 02 02 | 704 | 0.4− | 0.3+ | 2005 05 08 | 704 | 0.7+ | 0.2− | 2005 07 04 | 704 | 0.2− | 0.0 | |
| 2002 09 07 | 704 | (1.7− | 0.2+) | 2005 05 09 | 699 | 0.1+ | 0.1+ | 2005 07 04 | 704 | 0.7+ | 0.3− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.3− | 0.4+ | 2005 05 09 | 699 | 0.1− | 0.1+ | 2005 07 04 | 704 | 0.6+ | 0.2+ |
| 2002 09 07 | 704 | 0.6− | 1.1+ | 2005 05 09 | 699 | 0.6− | 1.0− | 2005 07 04 | 703 | 0.1− | 1.1+ |
| 2002 09 07 | 704 | 1.0− | 0.6+ | 2005 05 12 | 704 | 0.3+ | 0.2− | 2005 07 04 | 704 | 1.0+ | 0.0 |
| 2002 09 12 | 644 | 0.5− | 0.5+ | 2005 05 12 | 704 | 0.6+ | 0.4− | 2005 07 04 | 703 | 0.5− | 0.3+ |
| 2002 09 12 | 644 | 0.1+ | 0.8+ | 2005 05 12 | 704 | 0.0 | 1.0− | 2005 07 04 | 703 | 0.2+ | 0.5− |
| 2002 09 12 | 644 | 0.0 | 0.6+ | 2005 05 12 | 704 | 0.0 | 1.0− | 2005 07 04 | 703 | 0.4+ | 0.6+ |
| 2005 03 12 | 699 | 1.3− | 0.0 | 2005 05 12 | 704 | 0.3+ | 0.8− | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2005 03 12 | 699 | 0.5+ | 0.1+ | 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.2+ |
| 2005 03 12 | 699 | 0.9− | 0.8− | 2005 05 13 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2005 03 12 | 699 | 0.3− | 0.6+ | 2005 05 13 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 2005 03 13 | G96 | 0.2− | 0.2− | 2005 05 16 | 704 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.3− | 0.3+ |
| 2005 03 13 | G96 | 0.3− | 0.1− | 2005 05 16 | 704 | 0.5+ | 0.8− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 03 13 | G96 | 0.3− | 0.1− | 2005 05 16 | 704 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2005 03 13 | G96 | 0.4− | 0.2− | 2005 05 16 | 704 | 0.2− | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.1− |

**(145001)**∗ **2005 EW$_{203}$ = 2006 PP$_{35}$**

Discovered 2005 Mar. 11 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 103677)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.42988 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30297359 | $\omega$ | 150.92581 | | −0.06081295 | | +0.99670008 |
| $a$ | 2.1954971 | $\Omega$ | 115.54299 | | −0.92691702 | | −0.03640744 |
| $e$ | 0.0804185 | $i$ | 3.41627 | | −0.37030613 | | −0.07254968 |
| $P$ | 3.25 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.2+ | 1.2+ | 2004 12 18 | G96 | 0.1− | 0.0 | 2005 03 14 | G96 | 0.5− | 0.2+ |
| 2002 02 10 | 704 | 0.4+ | 1.3+ | 2005 02 01 | 703 | (2.7− | 0.6+) | 2005 03 14 | G96 | 0.3− | 0.1− |
| 2002 02 10 | 704 | 1.7+ | 0.6+ | 2005 02 01 | 703 | 0.1− | 1.1− | 2006 05 24 | G96 | 0.0 | 0.1− |
| 2002 03 05 | 645 | 0.1− | 0.0 | 2005 02 01 | 703 | (2.4− | 0.2−) | 2006 05 24 | G96 | 0.3+ | 0.2+ |
| 2002 03 05 | 645 | 0.0 | 0.0 | 2005 02 01 | 703 | 1.5+ | 1.8− | 2006 05 24 | G96 | 0.3− | 0.2+ |
| 2002 04 02 | 644 | 0.7+ | 0.6+ | 2005 02 03 | 704 | 0.3− | 0.8+ | 2006 05 24 | G96 | 0.4− | 0.2+ |
| 2002 04 02 | 644 | 0.2+ | 0.5+ | 2005 02 03 | 704 | 0.2+ | 0.3− | 2006 07 25 | 644 | 0.2− | 0.4+ |
| 2002 04 02 | 644 | 0.5+ | 0.5+ | 2005 02 03 | 704 | 0.9+ | 0.5+ | 2006 07 25 | 644 | 0.0 | 0.0 |
| 2003 09 17 | 644 | 0.1− | 0.9+ | 2005 02 03 | 704 | 0.7+ | 1.2+ | 2006 07 25 | 644 | 0.2− | 0.1+ |
| 2003 09 17 | 644 | 0.1− | 0.9+ | 2005 02 03 | 704 | 0.3− | 1.1+ | 2006 08 12 | 644 | 0.3− | 0.3+ |
| 2003 09 17 | 644 | 0.2+ | 0.9+ | 2005 03 02 | 691 | 0.2+ | 0.2− | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2003 09 22 | 699 | 0.5+ | 0.4− | 2005 03 02 | 691 | 0.1− | 0.2+ | 2006 08 12 | 644 | 0.5− | 0.2+ |
| 2003 09 22 | 699 | 0.1− | 0.3+ | 2005 03 02 | 691 | 0.0 | 0.2+ | 2006 08 12 | 644 | 0.2+ | 0.6+ |
| 2003 09 22 | 699 | 0.3− | 1.1+ | 2005 03 11 | 691 | 0.1− | 0.1+ | 2006 08 12 | 644 | 0.1− | 0.3+ |
| 2003 09 22 | 699 | 1.9− | 1.1+ | 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 08 12 | 644 | 0.4+ | 0.4+ |
| 2004 12 18 | G96 | 0.5− | 0.2− | 2005 03 11 | 691 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2004 12 18 | G96 | 0.2− | 0.0 | 2005 03 14 | G96 | 0.1− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2004 12 18 | G96 | 0.4− | 0.0 | 2005 03 14 | G96 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.3+ |

**(145002)**∗ **2005 EY$_{204}$ = 2001 FK$_{139}$ = 2002 TB$_{93}$**

Discovered 2005 Mar. 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (*MPO* 95659)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.53687 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25367151 | $\omega$ | 282.65409 | | +0.18016122 | | +0.98362884 |
| $a$ | 2.4714676 | $\Omega$ | 357.71346 | | −0.85872532 | | +0.15528319 |
| $e$ | 0.1824609 | $i$ | 5.79722 | | −0.47972154 | | +0.09144089 |
| $P$ | 3.89 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 608 | 0.1− | 1.2− | 2005 03 14 | G96 | 0.8− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3+ |
| 2001 03 21 | 608 | 0.0 | 1.2− | 2005 03 14 | G96 | 1.0− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3+ |
| 2001 03 21 | 608 | 0.2+ | 0.8− | 2005 03 14 | G96 | 0.8− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 2001 03 28 | 691 | 0.2− | 0.4+ | 2005 03 14 | G96 | 1.2− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2001 03 28 | 691 | 0.3+ | 0.4+ | 2005 04 04 | 691 | 0.3+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2001 03 28 | 691 | 0.3+ | 0.3+ | 2005 04 04 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.6− |
| 2002 10 02 | 704 | 0.6− | 0.9+ | 2005 04 04 | 691 | 0.9+ | 1.3− | 2006 09 26 | 691 | (1.6− | 0.5+) |
| 2002 10 02 | 704 | (0.6− | 1.6+) | 2005 04 10 | 691 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2002 10 02 | 704 | 1.0− | 1.1+ | 2005 04 10 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2002 10 02 | 704 | (2.1− | 0.3+) | 2005 04 10 | 691 | 0.6+ | 0.8+ | 2006 10 17 | 703 | 1.5+ | 0.5+ |
| 2002 10 04 | 644 | 0.6− | 0.3+ | 2005 04 15 | 691 | 0.4+ | 0.2+ | 2006 10 17 | 703 | (0.3− | 2.2−) |
| 2002 10 04 | 644 | 0.4− | 0.8+ | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.9− | 0.6+ |
| 2002 10 04 | 644 | 0.1− | 0.6+ | 2005 04 15 | 691 | 0.1− | 0.4+ | 2006 10 17 | 703 | 1.0− | 0.6− |
| 2003 12 18 | 691 | 0.5− | 0.4+ | 2005 05 01 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.8+ |
| 2003 12 18 | 691 | 0.3+ | 0.4− | 2005 05 01 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.8+ |
| 2003 12 18 | 691 | 0.1+ | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.1− | 2005 05 09 | 699 | 0.9− | 0.1− | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2005 05 09 | 699 | 0.6+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2005 03 11 | G96 | 0.1+ | 0.1+ | 2005 05 09 | 699 | 1.0+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2005 05 09 | 699 | (2.0+ | 0.7−) | 2006 11 17 | G96 | 0.4− | 0.0 |

**(145003)**∗ **2005 EZ$_{205}$ = 1998 DZ$_{30}$ = 2003 XB$_{36}$**

Discovered 2005 Mar. 13 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76960)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.88937 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28481635 | $\omega$ | 321.05408 | | +0.94794229 | | +0.31476214 |
| $a$ | 2.2878424 | $\Omega$ | 20.75447 | | −0.24734378 | | +0.82326248 |
| $e$ | 0.1439689 | $i$ | 7.82930 | | −0.20056537 | | +0.47240204 |
| $P$ | 3.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 691 | 0.5+ | 0.3+ | 2005 04 02 | 461 | 0.2+ | 0.6+ | 2006 09 26 | 704 | (1.0+ | 1.6+) |
| 1998 02 26 | 691 | 0.8+ | 0.2+ | 2005 04 02 | 461 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 1998 02 26 | 691 | 0.4+ | 0.1− | 2005 04 02 | 461 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 1.4+ |
| 1998 03 04 | 691 | 0.4− | 0.3+ | 2005 04 02 | 461 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.6− | 0.5− |
| 1998 03 04 | 691 | 0.1+ | 0.3+ | 2005 04 04 | 703 | 0.3− | 0.2− | 2006 09 26 | 704 | (0.8+ | 1.9+) |
| 1998 03 04 | 691 | 0.1− | 0.0 | 2005 04 04 | 703 | 1.2− | 0.6− | 2006 09 26 | 704 | 0.7− | 0.0 |
| 1999 09 08 | 703 | 0.4+ | 0.4+ | 2005 04 04 | 703 | 0.2+ | 1.2− | 2006 09 26 | 704 | 0.2− | 1.2+ |
| 1999 09 08 | 703 | 0.6− | 1.4+ | 2005 04 04 | 703 | 0.8− | 0.9− | 2006 09 26 | 704 | 0.6− | 0.1− |
| 1999 09 08 | 703 | 0.7− | 0.8+ | 2005 04 05 | 461 | 0.9+ | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 1999 09 08 | 703 | 1.5− | 0.6+ | 2005 04 05 | 461 | 0.2+ | 0.9+ | 2006 09 26 | 703 | 0.3− | 0.4− |
| 2001 01 21 | 704 | (0.0 | 1.6+) | 2005 04 05 | 461 | 0.2− | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.5+ |
| 2001 01 21 | 704 | 0.1+ | 0.9+ | 2006 08 25 | F84 | 0.6+ | 0.3− | 2006 09 26 | 703 | 0.7− | 0.0 |
| 2001 01 21 | 704 | 1.1− | 0.2− | 2006 08 27 | D35 | 0.2+ | 0.6+ | 2006 09 28 | 704 | 0.6− | 0.3− |
| 2003 12 03 | 704 | 0.2+ | 0.3+ | 2006 08 27 | D35 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.8− |
| 2003 12 03 | 704 | 0.7− | 0.9− | 2006 08 27 | D35 | 0.3+ | 0.4+ | 2006 09 28 | 704 | (0.9− | 1.6−) |
| 2003 12 03 | 704 | 0.1+ | 1.0+ | 2006 08 30 | 699 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.2− | 0.3+ |
| 2003 12 03 | 704 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 2003 12 03 | 704 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2003 12 17 | 704 | 0.0 | 0.6+ | 2006 08 30 | 699 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1− | 0.7+ |
| 2003 12 17 | 704 | 0.5+ | 1.5+ | 2006 09 12 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.0 | 0.4− |
| 2003 12 17 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 704 | 0.4− | 0.8+ | 2006 10 09 | 644 | 0.2− | 0.5+ |
| 2003 12 17 | 704 | 0.3− | 1.2+ | 2006 09 12 | 704 | 0.5− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | (0.8+ | 2.1+) | 2006 09 12 | 704 | 0.1− | 0.9+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2003 12 22 | 704 | (1.4+ | 1.9+) | 2006 09 12 | 704 | (0.8+ | 2.3+) | 2006 10 09 | 644 | 0.4− | 0.2+ |
| 2003 12 22 | 704 | (1.8− | 0.6+) | 2006 09 14 | 703 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2003 12 22 | 704 | 0.1+ | 1.0+ | 2006 09 14 | 703 | 0.7− | 1.0+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2005 03 13 | 703 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.8− |
| 2005 03 13 | 703 | 0.8+ | 0.8+ | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 10 19 | 703 | (2.4− | 0.4−) |
| 2005 03 13 | 703 | 0.1− | 0.8+ | 2006 09 16 | 704 | 0.7+ | 0.8+ | 2006 10 19 | 703 | (1.1+ | 1.9−) |
| 2005 03 13 | 703 | 1.3− | 1.4+ | 2006 09 16 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.7− | 0.7− |
| 2005 03 14 | G96 | 0.2+ | 0.2+ | 2006 09 16 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2005 03 14 | G96 | 0.4+ | 0.4+ | 2006 09 16 | 704 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2005 03 14 | G96 | 0.8+ | 0.1+ | 2006 09 19 | 704 | (1.7− | 0.2−) | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2005 03 14 | G96 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 0.3− | 1.2+ | 2006 11 11 | 703 | 0.9− | 1.0− |
| 2005 03 31 | 461 | 0.4+ | 1.1+ | 2006 09 19 | 704 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2005 03 31 | 461 | 0.5+ | 0.7+ | 2006 09 19 | 704 | 0.8+ | 0.3− | 2006 11 11 | 703 | 1.1− | 0.3− |
| 2005 03 31 | 461 | 0.2+ | 0.8+ | 2006 09 19 | 704 | 0.6+ | 1.4− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2005 04 01 | 461 | 0.2+ | 0.4+ | 2006 09 21 | 699 | 0.2+ | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2005 04 01 | 461 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.4− | 0.4+ | 2006 11 11 | 703 | (1.5+ | 1.7+) |
| 2005 04 01 | 461 | 0.5+ | 0.1+ | 2006 09 21 | 699 | 0.6+ | 0.3− | 2006 11 11 | 703 | (1.2+ | 2.1−) |
| 2005 04 01 | 461 | 0.6+ | 0.4+ | 2006 09 22 | 704 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.7− |
| 2005 04 01 | 461 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.4+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2005 04 01 | 461 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.5+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2005 04 01 | 461 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.5+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 461 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.1− |
| 2005 04 01 | 461 | 0.2+ | 0.5+ | 2006 09 26 | 704 | (0.1+ | 2.0+) | | | | |
| 2005 04 01 | 461 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.4− | 0.9+ | | | | |

**(145004)∗ 2005 ER$_{206}$ = 2003 UF$_{297}$**

Discovered 2005 Mar. 13 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76961)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.83485 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28958316 | $\omega$ | 198.31359 | | −0.93738732 | −0.34725431 | |
| $a$ | 2.2626663 | $\Omega$ | 321.33352 | | +0.32467471 | −0.84336315 | |
| $e$ | 0.0612450 | $i$ | 2.46051 | | +0.12606085 | −0.41006468 | |
| $P$ | 3.40 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 540 | 0.5+ | 0.9+ | 2003 10 25 | 704 | 0.4− | 0.4+ | 2005 04 02 | 644 | 0.3+ | 0.7+ |
| 1998 02 26 | 540 | 1.8+ | 1.7+ | 2003 10 25 | 704 | 0.3− | 0.9+ | 2005 04 02 | 644 | 0.2+ | 0.6+ |
| 1998 02 26 | 540 | 0.7+ | 0.3+ | 2003 10 25 | 704 | 0.2− | 0.8+ | 2005 04 02 | 644 | 0.3+ | 1.1+ |
| 1998 02 26 | 540 | 0.6+ | 0.8+ | 2003 11 20 | 704 | 0.6− | 1.1+ | 2006 08 16 | 644 | 0.2− | 0.2− |
| 1998 03 03 | 704 | 1.3− | 0.8− | 2003 11 20 | 704 | 0.1+ | 1.0+ | 2006 08 16 | 644 | 0.3+ | 0.0 |
| 1998 03 03 | 704 | 1.1− | 1.5− | 2003 11 20 | 704 | 0.4− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 1998 03 03 | 704 | 0.9+ | 0.1+ | 2005 03 03 | 691 | 0.3+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.4+ |
| 1998 03 03 | 704 | 0.1+ | 1.7+ | 2005 03 03 | 691 | 0.2+ | 0.3+ | 2006 08 17 | 644 | 0.3− | 0.4+ |
| 2000 12 17 | 691 | 0.0 | 0.6− | 2005 03 03 | 691 | 0.4+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2000 12 17 | 691 | 0.3− | 0.2+ | 2005 03 13 | 703 | 0.5− | 0.7+ | 2006 08 19 | 691 | 0.0 | 0.4+ |
| 2000 12 17 | 691 | 0.3− | 0.3− | 2005 03 13 | 703 | 0.3− | 1.2+ | 2006 08 19 | 691 | 0.0 | 0.5+ |
| 2003 09 22 | 691 | 0.1+ | 0.2+ | 2005 03 13 | 703 | 1.0+ | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.1+ |
| 2003 09 22 | 691 | 0.1+ | 0.0 | 2005 03 13 | 703 | (0.9− | 2.6+) | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2003 09 22 | 691 | 0.0 | 0.2+ | 2005 03 14 | G96 | 0.4− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 2003 09 27 | 691 | 0.2− | 0.5+ | 2005 03 14 | G96 | 0.3− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2003 09 27 | 691 | 0.2− | 0.1+ | 2005 03 14 | G96 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.7− | 0.3+ |
| 2003 09 27 | 691 | 0.1− | 0.1+ | 2005 03 14 | G96 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.4− |
| 2003 10 16 | 691 | 0.1− | 0.2+ | 2005 03 31 | 699 | 1.2+ | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2003 10 16 | 691 | 0.2+ | 0.1+ | 2005 03 31 | 699 | 0.1− | 0.8+ | 2006 09 27 | G96 | 0.6− | 0.3− |
| 2003 10 16 | 691 | 0.3+ | 0.3+ | 2005 03 31 | 699 | 0.6+ | 0.6+ | | | | |
| 2003 10 25 | 704 | 0.5− | 1.4+ | 2005 03 31 | 699 | 0.3+ | 0.4+ | | | | |

**(145005)∗ 2005 ES$_{212}$ = 2000 CK$_{11}$**

Discovered 2005 Mar. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76967)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.06357 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22690900 | $\omega$ | 76.34005 | | −0.74766168 | +0.64695479 | |
| $a$ | 2.6621646 | $\Omega$ | 143.63173 | | −0.66377391 | −0.72119777 | |
| $e$ | 0.1404674 | $i$ | 14.63674 | | −0.02015482 | −0.24763536 | |
| $P$ | 4.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 01 | 691 | 0.3+ | 0.3+ | 2005 04 06 | 703 | 0.0 | 0.3− | 2005 05 12 | 704 | 0.3+ | 0.3+ |
| 1997 06 01 | 691 | 0.5+ | 0.2+ | 2005 04 06 | 703 | 0.5− | 0.2+ | 2005 05 12 | 704 | 0.5+ | 0.2+ |
| 1997 06 01 | 691 | 0.0 | 0.5− | 2005 04 06 | 703 | 0.9− | 0.3+ | 2005 05 12 | 704 | 0.4+ | 0.8+ |
| 1997 06 28 | 691 | 0.5− | 0.1− | 2005 04 06 | 703 | 0.9− | 0.7+ | 2005 05 12 | 704 | 0.5− | 1.1+ |
| 1997 06 28 | 691 | 0.2− | 0.4− | 2005 04 06 | G96 | 0.1− | 0.0 | 2005 06 08 | 699 | 0.3− | 0.5+ |
| 1997 06 28 | 691 | 0.2− | 0.2− | 2005 04 06 | G96 | 0.2− | 0.2− | 2005 06 08 | 699 | 0.5+ | 0.3− |
| 1997 10 04 | 691 | 0.1+ | 0.1− | 2005 04 06 | G96 | 0.3− | 0.3− | 2005 06 08 | 699 | 1.2− | 0.8+ |
| 1997 10 04 | 691 | 0.0 | 0.1+ | 2005 04 06 | G96 | 0.4− | 0.2− | 2005 06 08 | 699 | 1.0+ | 0.4− |
| 1997 10 04 | 691 | 0.2+ | 0.5− | 2005 04 08 | 704 | 1.2+ | 0.7+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2000 02 02 | 704 | 0.6+ | 0.1+ | 2005 04 08 | 704 | 0.2+ | 0.2+ | 2006 08 14 | 644 | 0.4+ | 0.3+ |
| 2000 02 02 | 704 | 0.4− | 0.7+ | 2005 04 08 | 704 | 1.5+ | 0.2− | 2006 08 14 | 644 | 0.1+ | 0.1− |
| 2000 02 02 | 704 | 0.4− | 0.1+ | 2005 04 08 | 704 | 0.5+ | 0.1− | 2006 08 14 | 644 | 0.1+ | 0.6+ |
| 2000 02 02 | 704 | 0.2+ | 0.8− | 2005 04 12 | 699 | 0.4+ | 0.7− | 2006 08 14 | 644 | 0.4+ | 0.3+ |
| 2000 02 04 | 704 | 0.3+ | 0.9+ | 2005 04 12 | 699 | 0.2+ | 0.1+ | 2006 08 14 | 644 | 0.5− | 0.3+ |
| 2000 02 04 | 704 | 0.0 | 0.6+ | 2005 04 12 | 699 | 0.2+ | 0.7+ | 2006 08 16 | 644 | 0.2+ | 0.3+ |
| 2000 02 04 | 704 | 0.0 | 1.2+ | 2005 04 16 | 703 | 0.0 | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2005 03 04 | 703 | 0.4− | 0.1+ | 2005 04 16 | 703 | 0.5+ | 0.7− | 2006 08 16 | 644 | 0.2+ | 0.2+ |
| 2005 03 04 | 703 | 0.5+ | 0.7+ | 2005 04 16 | 703 | 0.1− | 1.2+ | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2005 03 04 | 703 | (2.5+ | 3.3+) | 2005 04 16 | 703 | 0.6− | 0.7− | 2006 08 17 | 644 | 0.3+ | 0.3+ |
| 2005 03 04 | 703 | 1.4+ | 0.7+ | 2005 05 03 | 703 | 0.2− | 0.4− | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2005 03 10 | 703 | 0.1+ | 0.2− | 2005 05 03 | 703 | 0.5+ | 0.7− | 2006 08 30 | 699 | 0.9− | 1.1+ |
| 2005 03 10 | 703 | 0.3+ | 0.5− | 2005 05 03 | 703 | 0.4− | 0.7− | 2006 08 30 | 699 | 0.9+ | 1.7+ |
| 2005 03 10 | 703 | 0.2− | 0.2− | 2005 05 03 | 703 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.3− | 0.7+ |
| 2005 03 10 | 703 | 0.2− | 0.3− | 2005 05 09 | 703 | 0.8− | 0.8− | 2006 08 30 | 699 | 0.7− | 1.3+ |
| 2005 04 01 | 699 | 0.2− | 0.3+ | 2005 05 09 | 703 | 0.9− | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.5+ |
| 2005 04 01 | 699 | (2.3+ | 0.8+) | 2005 05 09 | 703 | 0.9− | 0.6− | 2006 09 14 | 703 | 0.6− | 0.1+ |
| 2005 04 01 | 699 | 1.1+ | 1.3+ | 2005 05 09 | 703 | 0.8− | 0.5− | 2006 09 14 | 703 | 0.2+ | 1.4+ |
| 2005 04 01 | 699 | 0.1+ | 1.6+ | 2005 05 12 | 704 | 1.3+ | 0.8+ | 2006 09 14 | 703 | 0.8− | 0.2+ |

**(145006)∗ 2005 EH$_{214}$ = 1998 HF$_{17}$**

Discovered 2005 Mar. 7 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 76968)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.87387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28556660 | $\omega$ | 297.40858 | | +0.02740563 | +0.99848781 | |
| $a$ | 2.2838335 | $\Omega$ | 334.02952 | | −0.87441547 | +0.00084395 | |
| $e$ | 0.1160672 | $i$ | 6.24757 | | −0.48440325 | +0.05496707 | |
| $P$ | 3.45 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 01 | 704 | 0.6+ | 1.5− | 2005 03 07 | E12 | 0.7− | 0.1− | 2006 08 29 | 699 | (1.7+ | 0.9+) |
| 1998 04 01 | 704 | 1.9− | 1.0− | 2005 03 09 | 691 | 0.7+ | 0.5+ | 2006 08 29 | 699 | 0.9+ | 0.4− |
| 1998 04 01 | 704 | 0.1− | 0.5− | 2005 03 09 | 691 | 0.3+ | 0.5+ | 2006 08 29 | 699 | 0.1− | 0.7+ |
| 1998 04 01 | 704 | 0.8− | 1.4− | 2005 03 09 | 691 | 0.3+ | 0.7+ | 2006 08 29 | 699 | 0.8+ | 0.8+ |
| 1998 04 18 | 704 | 1.8− | 0.1− | 2005 03 17 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.6− |
| 1998 04 18 | 704 | 0.5+ | 0.6+ | 2005 03 17 | 704 | 0.9+ | 0.1− | 2006 09 16 | 703 | 0.5− | 0.5− |
| 1998 04 18 | 704 | 0.1− | 0.2− | 2005 03 17 | 704 | 0.5+ | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.4− |
| 1998 04 18 | 704 | (4.0− | 0.3−) | 2005 03 17 | 704 | 0.1+ | 0.8+ | 2006 09 16 | 703 | 0.4− | 0.7− |
| 1998 04 19 | 704 | 0.4+ | 0.6− | 2005 04 05 | 703 | (0.5− | 2.2−) | 2006 09 17 | 691 | 0.6− | 0.0 |
| 1998 04 19 | 704 | 0.5+ | 0.4− | 2005 04 05 | 703 | 1.2− | 0.4− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 1998 04 19 | 704 | 0.4+ | 1.7− | 2005 04 05 | 703 | 0.8− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.0 |
| 1998 04 19 | 704 | (6.2− | 0.1+) | 2005 04 05 | 703 | 0.3− | 0.3− | 2006 09 29 | 704 | 0.2+ | 0.8+ |
| 1999 10 04 | 704 | 0.9− | 0.1+ | 2005 04 06 | 699 | 1.2+ | 0.9+ | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 1999 10 04 | 704 | 0.5− | 1.2+ | 2005 04 06 | 699 | (1.6+ | 0.4+) | 2006 09 29 | 704 | 0.1+ | 0.5− |
| 1999 10 04 | 704 | 0.3− | 0.2+ | 2005 04 06 | 699 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.4− | 0.7+ |
| 2001 01 19 | 704 | 0.1+ | 0.4+ | 2005 04 06 | 699 | 0.8+ | 0.7+ | 2006 10 03 | 704 | 1.1− | 0.8− |
| 2001 01 19 | 704 | 0.4− | 0.9+ | 2005 04 06 | 704 | 0.8+ | 0.0 | 2006 10 03 | 704 | 0.0 | 0.8+ |
| 2001 01 19 | 704 | 0.7− | 0.5+ | 2005 04 06 | 704 | 0.7+ | 0.0 | 2006 10 03 | 704 | 0.5+ | 0.9+ |
| 2003 12 17 | 704 | 0.2+ | 0.4− | 2005 04 06 | 704 | (0.4+ | 1.6−) | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 12 17 | 704 | 0.0 | 0.2+ | 2005 04 14 | 703 | 0.7+ | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 12 17 | 704 | 0.1+ | 0.5+ | 2005 04 14 | 703 | 0.8− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 12 25 | 691 | 0.2+ | 0.1− | 2005 04 14 | 703 | 0.4− | 0.4+ | 2006 10 20 | 683 | 0.4+ | 1.1+ |
| 2003 12 25 | 691 | 0.1+ | 0.2− | 2005 04 14 | 703 | 0.5− | 0.2− | 2006 10 20 | 683 | 1.2+ | 0.2− |
| 2003 12 25 | 691 | 0.1− | 0.1− | 2005 04 18 | 703 | (1.8− | 0.5+) | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2005 03 07 | E12 | (2.7+ | 1.4+) | 2005 04 18 | 703 | 0.0 | 1.1+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2005 03 07 | E12 | 0.0 | 0.1− | 2005 04 18 | 703 | (2.2− | 0.1−) | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2005 03 07 | E12 | 0.3+ | 0.8− | 2005 04 18 | 703 | 1.3− | 0.9+ | | | | |

**(145007)∗ 2005 ER$_{219}$**

Discovered 2005 Mar. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.37530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21624077 | $\omega$ | 98.29369 | | +0.28892831 | +0.95692365 | |
| $a$ | 2.7490185 | $\Omega$ | 188.66239 | | −0.93600164 | +0.27608690 | |
| $e$ | 0.1929832 | $i$ | 10.94375 | | −0.20105064 | +0.08985071 | |
| $P$ | 4.56 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2005 04 15 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.0 |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2005 04 15 | 699 | 0.5− | 0.5+ | 2006 09 18 | 704 | (2.0+ | 1.6−) |
| 2001 05 29 | 704 | 0.2− | 0.1+ | 2005 04 15 | 699 | 0.2+ | 0.3− | 2006 09 18 | 699 | 1.2− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 704 | 0.2− | 0.4− | 2005 04 15 | 699 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.0 |
| 2001 05 29 | 704 | 0.4− | 0.1+ | 2005 05 03 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.2+ |
| 2001 05 29 | 704 | 0.2− | 0.2+ | 2005 05 03 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 1.2− | 0.6+ |
| 2001 05 29 | 704 | 0.3− | 0.2+ | 2005 05 03 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.8− | 0.4+ |
| 2001 06 21 | 704 | 1.1+ | 0.6− | 2005 05 08 | 703 | 0.5− | 0.2− | 2006 09 20 | 704 | (0.6− | 1.8+) |
| 2001 06 21 | 704 | 0.1+ | 0.0 | 2005 05 08 | 703 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.3+ | 1.2+ |
| 2001 06 21 | 704 | 0.0 | 0.5+ | 2005 05 08 | 703 | 0.5− | 0.2+ | 2006 09 20 | 704 | 0.6+ | 0.5+ |
| 2004 01 28 | 645 | 0.0 | 0.2+ | 2005 05 08 | 703 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.3+ | 1.0+ |
| 2004 01 28 | 645 | 0.0 | 0.3+ | 2005 05 13 | 703 | 0.0 | 0.9+ | 2006 09 25 | 704 | 0.5− | 1.1+ |
| 2005 03 10 | 699 | 0.5− | 0.5+ | 2005 05 13 | 703 | 0.6− | 0.8− | 2006 09 25 | 704 | 0.3− | 1.1+ |
| 2005 03 10 | 699 | (1.6+ | 0.9+) | 2005 05 13 | 703 | (0.3− | 1.8+) | 2006 09 25 | 704 | 1.2− | 0.5+ |
| 2005 03 10 | 699 | 0.1− | 0.6+ | 2005 05 13 | 703 | 1.3− | 0.0 | 2006 09 25 | 704 | 0.6− | 0.9+ |
| 2005 03 10 | 699 | 0.4− | 0.3− | 2005 05 14 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.3+ |
| 2005 03 14 | G96 | 0.5− | 0.0 | 2005 05 14 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.9− | 0.3+ |
| 2005 03 14 | G96 | 0.4− | 0.1− | 2005 05 14 | 691 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.7− | 0.7+ |
| 2005 03 14 | G96 | 0.6− | 0.1− | 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.3− | 0.4+ |
| 2005 03 14 | G96 | 0.6− | 0.0 | 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.7− | 1.0+ |
| 2005 03 17 | 691 | 0.0 | 0.4+ | 2005 05 15 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.6+ |
| 2005 03 17 | 691 | 0.0 | 0.4+ | 2006 08 18 | 699 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.9+ |
| 2005 03 17 | 691 | 0.1+ | 0.4+ | 2006 08 18 | 699 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.9− | 0.4− |
| 2005 03 31 | 460 | 0.8− | 0.4− | 2006 08 18 | 699 | 0.6+ | 0.5+ | 2006 09 29 | 704 | 0.6+ | 0.1+ |
| 2005 03 31 | 460 | 0.1+ | 0.2+ | 2006 08 18 | 699 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.2− |
| 2005 03 31 | 460 | 1.1− | 0.2− | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 2005 04 01 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.5− | 1.2+ |
| 2005 04 01 | 691 | 0.1+ | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.8+ | 0.6+ |
| 2005 04 01 | 691 | 0.1+ | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.6+ |
| 2005 04 02 | 644 | 0.3+ | 0.4+ | 2006 08 21 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 2005 04 02 | 644 | 0.3+ | 0.5+ | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2005 04 02 | 644 | 0.5+ | 0.3+ | 2006 08 24 | 704 | 0.6+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2005 04 05 | 703 | (1.5− | 1.2+) | 2006 08 24 | 704 | 0.4− | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2005 04 05 | 703 | 0.5+ | 0.5+ | 2006 08 24 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2005 04 05 | 703 | (1.6+ | 0.9−) | 2006 08 24 | 704 | 0.0 | 1.4+ | 2006 10 16 | 703 | 0.2− | 1.2+ |
| 2005 04 05 | 703 | 0.7− | 0.9− | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.7+ |
| 2005 04 09 | 704 | 0.9+ | 0.6+ | 2006 08 29 | 703 | 1.0+ | 0.2− | 2006 10 16 | 703 | 1.2+ | 0.7+ |
| 2005 04 09 | 704 | 0.8+ | 0.7+ | 2006 08 29 | 703 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2005 04 09 | 704 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2005 04 09 | 704 | 0.9+ | 1.1+ | 2006 08 30 | 704 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2005 04 11 | 699 | 1.2+ | 0.5+ | 2006 08 30 | 704 | 0.6+ | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 04 11 | 699 | (1.0− | 1.9+) | 2006 08 30 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 04 11 | 699 | 0.4− | 0.4+ | 2006 08 30 | 704 | 0.7− | 1.3+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2005 04 11 | 699 | (0.4+ | 1.6+) | 2006 08 30 | 704 | 0.1+ | 0.8− | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2005 04 13 | 704 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.7+ | 0.8− | 2006 10 22 | 703 | 0.6− | 0.6+ |
| 2005 04 13 | 704 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.1+ |
| 2005 04 13 | 704 | 0.9+ | 0.2+ | 2006 09 01 | 704 | 0.3− | 0.2− | 2006 10 22 | 703 | 1.1− | 0.3− |
| 2005 04 13 | 704 | 0.7+ | 0.0 | 2006 09 01 | 704 | 0.4+ | 0.9− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 04 13 | 704 | 0.4− | 0.1+ | 2006 09 16 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2005 04 14 | 691 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.1+ | | | | |

**(145008)∗ 2005 EO$_{221}$**

Discovered 2005 Mar. 11 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.91729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29072520 | $\omega$ | 193.63133 | | −0.56946101 | +0.76101135 | |
| $a$ | 2.2567369 | $\Omega$ | 42.88082 | | −0.70488172 | −0.25757126 | |
| $e$ | 0.1373835 | $i$ | 27.17375 | | −0.42291361 | −0.59541479 | |
| $P$ | 3.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.6+ | 0.5− | 2005 04 17 | E12 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 1998 04 24 | 704 | 0.4− | 0.7+ | 2005 04 17 | E12 | 0.3+ | 0.5− | 2006 11 01 | G96 | 0.4− | 0.1− |
| 1998 04 24 | 704 | 0.9+ | 0.1− | 2005 04 17 | E12 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.1− | 0.0 |
| 1998 04 24 | 704 | 0.9− | 0.2+ | 2005 04 17 | E12 | 0.4− | 0.5+ | 2006 11 01 | G96 | 0.3− | 0.0 |
| 1998 04 24 | 704 | 0.6− | 0.3+ | 2005 04 30 | E12 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.7− | 0.1+ |
| 1998 05 16 | 704 | 0.9+ | 0.1+ | 2005 04 30 | E12 | 0.3+ | 0.1+ | 2006 11 11 | 703 | (0.1+ | 1.5+) |
| 1998 05 16 | 704 | 1.2+ | 0.2− | 2005 04 30 | E12 | 1.0− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.9+ |
| 1998 05 16 | 704 | 0.1− | 0.2+ | 2005 04 30 | E12 | 0.0 | 0.5− | 2006 11 11 | 703 | 1.0+ | 0.3− |
| 1998 05 16 | 704 | 1.4+ | 1.3− | 2005 05 13 | E12 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.5+ |
| 1998 05 16 | 704 | 1.5− | 1.8+ | 2005 05 13 | E12 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.3+ |
| 2003 12 05 | 704 | 0.2− | 0.5+ | 2005 05 13 | E12 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.6+ |
| 2003 12 05 | 704 | 0.1− | 0.3− | 2005 05 13 | E12 | 0.2+ | 0.0 | 2006 11 17 | 703 | 1.2− | 1.0− |
| 2003 12 05 | 704 | 0.3+ | 0.0 | 2005 05 29 | E12 | 0.4+ | 0.0 | 2006 11 17 | 703 | 1.2+ | 1.0+ |
| 2003 12 05 | 704 | 0.2+ | 1.4− | 2005 05 29 | E12 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.7− | 1.2− |
| 2005 03 11 | 703 | (0.2+ | 1.7−) | 2005 05 29 | E12 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2005 03 11 | 703 | 0.9− | 1.1− | 2005 06 09 | E12 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2005 03 11 | 703 | (1.6− | 0.3+) | 2005 06 09 | E12 | 0.0 | 1.3− | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 2005 03 11 | 703 | 1.0+ | 0.5+ | 2005 06 09 | E12 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.6+ |
| 2005 03 12 | 699 | 0.4+ | 0.2+ | 2005 06 09 | E12 | 0.0 | 0.4+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2005 03 12 | 699 | 0.5+ | 0.1− | 2006 09 30 | 703 | (2.4− | 0.5+) | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2005 03 12 | 699 | 0.8+ | 1.2+ | 2006 09 30 | 703 | 1.0− | 1.0− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2005 03 12 | 699 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2005 04 04 | 704 | (2.4− | 0.8+) | 2006 09 30 | 703 | 0.0 | 1.2− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2005 04 04 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.3− | 2006 11 24 | 703 | 1.0+ | 0.5+ |
| 2005 04 04 | 704 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.2− | 0.4− | 2006 11 24 | 703 | 0.9− | 0.1− |
| 2005 04 04 | 704 | (0.2− | 1.7+) | 2006 10 16 | 703 | 0.6− | 0.0 | 2006 11 24 | 703 | 0.4+ | 1.0− |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 24 | 703 | 0.6+ | 0.6− |
| 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2005 04 11 | G96 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1+ |

**(145009)∗ 2005 EW$_{221}$ = 2003 YX$_{156}$**

Discovered 2005 Mar. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76976)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.51443 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26886542 | $\omega$ | 75.60792 | | −0.05180349 | +0.99845298 | |
| $a$ | 2.3774574 | $\Omega$ | 191.47974 | | −0.95090549 | −0.05549624 | |
| $e$ | 0.0788385 | $i$ | 5.82533 | | −0.30511496 | +0.00343586 | |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1+ | 0.7− | 2005 03 13 | 703 | 0.1− | 0.7− | 2006 08 28 | 703 | 0.2+ | 0.0 |
| 1995 09 17 | 691 | 0.3− | 0.6− | 2005 03 13 | 703 | (1.7− | 0.6−) | 2006 08 30 | 704 | (2.1− | 0.6+) |
| 1995 09 17 | 691 | 0.2+ | 0.8− | 2005 03 13 | 703 | 0.7+ | 0.9+ | 2006 08 30 | 704 | (2.8− | 0.3−) |
| 1998 05 23 | 910 | 0.9+ | 0.1− | 2005 04 12 | 704 | (1.5+ | 0.4−) | 2006 08 30 | 704 | (2.3− | 0.3+) |
| 1998 05 23 | 910 | 0.8+ | 0.4− | 2005 04 12 | 704 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 1.2− | 0.4− |
| 1998 05 23 | 910 | 1.2+ | 0.6− | 2005 04 12 | 704 | (1.6+ | 0.6+) | 2006 09 12 | 703 | 0.7− | 0.3+ |
| 2002 07 29 | 644 | 0.3− | 0.3+ | 2005 04 12 | 704 | 0.1− | 0.6+ | 2006 09 12 | 703 | 0.9+ | 0.2+ |
| 2002 07 29 | 644 | 0.5− | 0.2+ | 2005 05 04 | 644 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.2− |
| 2002 07 29 | 644 | 0.5− | 0.2+ | 2005 05 04 | 644 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.3+ |
| 2002 08 05 | 644 | 0.2− | 0.6+ | 2005 05 04 | 644 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.5+ |
| 2002 08 05 | 644 | 0.2+ | 0.6+ | 2005 05 06 | G96 | 0.5− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2002 08 05 | 644 | 0.1− | 0.7+ | 2005 05 06 | G96 | 0.5− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.2+ |
| 2002 08 05 | 644 | 0.1+ | 0.4+ | 2005 05 06 | G96 | 0.5− | 0.0 | 2006 09 23 | 691 | 0.0 | 0.5+ |
| 2002 08 05 | 644 | 0.1+ | 0.9+ | 2005 05 06 | G96 | 0.5− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.2+ |
| 2002 08 05 | 644 | 0.1+ | 0.5+ | 2005 05 10 | 691 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.1+ | 1.3+ |
| 2002 08 05 | 644 | 0.2− | 0.9+ | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.5+ |
| 2002 08 05 | 644 | 0.1− | 0.6+ | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.4+ | 1.0+ |
| 2002 08 05 | 644 | 0.5− | 0.7+ | 2005 06 04 | 809 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.7+ |
| 2003 12 16 | 691 | 0.1− | 0.0 | 2005 06 04 | 809 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2003 12 16 | 691 | 0.1+ | 0.2+ | 2005 06 04 | 809 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2003 12 16 | 691 | 0.2+ | 0.5+ | 2005 06 04 | 809 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2003 12 28 | 691 | 0.1− | 0.3+ | 2005 06 04 | 809 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.4− | 0.1+ |
| 2003 12 28 | 691 | 0.2+ | 0.3+ | 2006 08 23 | 644 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2003 12 28 | 691 | 0.1+ | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2005 03 03 | 691 | 0.3− | 0.4+ | 2006 08 23 | 644 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2005 03 03 | 691 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.7− | 0.6− |
| 2005 03 03 | 691 | 0.1− | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2005 03 12 | 691 | 0.2+ | 0.5+ | 2006 08 24 | 644 | 0.4− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2005 03 12 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2005 03 12 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2005 03 13 | 703 | 1.3− | 1.1− | 2006 08 28 | 703 | 0.7− | 1.1− | | | | |

**(145010)∗ 2005 EE$_{222}$**

Discovered 2005 Mar. 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.91397 | | (2000.0) | | | |
| $n$ | 0.27128829 | $\omega$ | 34.76935 | | +0.05197255 | +0.99853982 |
| $a$ | 2.3632810 | $\Omega$ | 238.21398 | | −0.92012906 | +0.04214670 |
| $e$ | 0.0530265 | $i$ | 0.99315 | | −0.38815122 | +0.03379164 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.8− | 0.8+ | 2005 04 05 | G96 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 1992 11 27 | 691 | 0.4+ | 0.4+ | 2005 04 05 | G96 | 0.3+ | 0.2+ | 2006 08 28 | 699 | (0.0 | 1.6+) |
| 2003 11 21 | 704 | (0.2− | 1.7−) | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.9+ |
| 2003 11 21 | 704 | 0.0 | 1.2− | 2005 04 05 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 1.4+ | 0.9+ |
| 2003 11 21 | 704 | 0.7+ | 0.5+ | 2005 04 06 | G96 | 0.2+ | 0.0 | 2006 08 28 | 699 | 0.5− | 0.6+ |
| 2003 11 21 | 704 | (2.2+ | 0.2−) | 2005 04 06 | G96 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.0 | 1.1− |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2005 04 06 | G96 | 0.0 | 0.1+ | 2006 08 28 | 703 | 1.4− | 0.2− |
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2005 04 06 | G96 | 0.0 | 0.0 | 2006 08 28 | 699 | 1.1+ | 0.9+ |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 08 28 | 699 | 1.5+ | 0.2+ |
| 2005 03 04 | G96 | 0.1− | 0.0 | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2005 03 04 | G96 | 0.4− | 0.1+ | 2005 05 08 | G96 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2005 03 04 | G96 | 1.0− | 0.3− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 08 29 | 691 | 0.4− | 0.6+ |
| 2005 03 04 | G96 | 0.6− | 0.3+ | 2006 08 15 | D35 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2005 03 12 | 695 | 0.2+ | 0.6+ | 2006 08 15 | D35 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2005 03 12 | 695 | 0.4+ | 0.4+ | 2006 08 15 | D35 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2005 03 13 | 703 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.4− |
| 2005 03 13 | 703 | (1.6− | 0.8+) | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2005 03 13 | 703 | 1.1+ | 0.1− | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2005 03 13 | 703 | 0.6+ | 0.0 | 2006 08 22 | 644 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.6− |
| 2005 03 14 | G96 | 0.1+ | 0.3− | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2005 03 14 | G96 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2005 03 14 | G96 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.5+ | 0.2− | 2006 11 21 | G96 | 1.2− | 0.2− |
| 2005 03 14 | G96 | 0.1+ | 0.2− | 2006 08 25 | 704 | 0.4+ | 0.4+ | 2006 11 21 | G96 | 0.4− | 0.7− |
| 2005 03 17 | 691 | 0.4− | 1.0+ | 2006 08 25 | 704 | 0.5+ | 0.6− | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2005 03 17 | 691 | 0.6+ | 0.6+ | 2006 08 27 | 691 | 0.1− | 0.2+ | | | | |
| 2005 03 17 | 691 | 0.6+ | 0.6+ | 2006 08 27 | 691 | 0.2− | 0.2+ | | | | |

**(145011)∗ 2005 ET$_{236}$**

Discovered 2005 Mar. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.93386 | | (2000.0) | | | |
| $n$ | 0.23292286 | $\omega$ | 232.84112 | | −0.16749400 | +0.97865868 |
| $a$ | 2.6161420 | $\Omega$ | 28.22147 | | −0.80578115 | −0.06631922 |
| $e$ | 0.1603120 | $i$ | 14.58139 | | −0.56803389 | −0.19449664 |
| $P$ | 4.23 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2005 04 12 | 704 | 0.4+ | 0.9+ | 2005 05 23 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | (1.6− | 0.5+) | 2005 04 12 | 704 | 0.2+ | 0.5+ | 2005 06 01 | 699 | 1.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.8− | 1.2+ | 2005 04 12 | 704 | 1.4+ | 0.1+ | 2005 06 01 | 699 | 0.3− | 0.4+ |
| 2002 10 03 | 704 | 0.6− | 0.3+ | 2005 04 12 | 704 | 0.5− | 0.2− | 2005 06 01 | 699 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2005 04 12 | 704 | 0.6+ | 0.2− | 2005 06 01 | 699 | 0.4− | 0.2− |
| 2002 10 10 | 644 | 0.6− | 1.0+ | 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 08 28 | D35 | 0.5+ | 0.7+ |
| 2002 10 10 | 644 | 0.5− | 0.9+ | 2005 04 17 | 691 | 0.6+ | 0.3+ | 2006 08 28 | D35 | 0.2+ | 0.7+ |
| 2002 10 10 | 644 | 0.5− | 0.7+ | 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 08 28 | D35 | 0.3+ | 0.6+ |
| 2003 12 30 | 704 | 1.0− | 0.5+ | 2005 04 18 | 703 | 0.3− | 0.1− | 2006 08 30 | D35 | 0.4+ | 0.2− |
| 2003 12 30 | 704 | 0.6+ | 0.9+ | 2005 04 18 | 703 | 0.2− | 0.7+ | 2006 08 30 | D35 | 0.4− | 0.5− |
| 2003 12 30 | 704 | 1.0+ | 0.7+ | 2005 04 18 | 703 | 0.7− | 0.1+ | 2006 08 30 | D35 | 1.0− | 0.2− |
| 2005 03 10 | 699 | 0.5− | 0.6+ | 2005 04 18 | 703 | 0.9− | 0.1− | 2006 09 17 | 699 | 1.0− | 0.5+ |
| 2005 03 10 | 699 | 0.3+ | 0.1− | 2005 04 18 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 699 | 0.3− | 0.5+ |
| 2005 03 10 | 699 | 0.0 | 0.2− | 2005 04 18 | 704 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.1+ | 1.0+ |
| 2005 03 10 | 699 | 0.1− | 0.1+ | 2005 04 18 | 704 | 0.4+ | 0.0 | 2006 09 17 | 699 | (0.4+ | 2.0+) |
| 2005 03 16 | G96 | 0.2+ | 0.3− | 2005 04 18 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.9− | 0.8+ |
| 2005 03 16 | G96 | 0.3− | 0.0 | 2005 04 18 | 704 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.9− | 1.0− |
| 2005 03 16 | G96 | 0.1− | 0.2− | 2005 04 19 | 699 | 0.6+ | 0.5+ | 2006 09 19 | 703 | 0.8+ | 0.1+ |
| 2005 03 16 | G96 | 0.1− | 0.1+ | 2005 04 19 | 699 | 0.9+ | 0.7+ | 2006 09 19 | 703 | 0.2+ | 0.2− |
| 2005 04 01 | 699 | 0.2− | 0.4+ | 2005 04 19 | 699 | 1.0+ | 1.3+ | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 2005 04 01 | 699 | 0.1− | 0.1+ | 2005 04 19 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2005 04 01 | 699 | 0.4+ | 0.2+ | 2005 05 08 | 703 | (2.8+ | 4.6+) | 2006 09 26 | 703 | 1.2− | 0.2− |
| 2005 04 01 | 699 | 0.1+ | 0.4+ | 2005 05 08 | 703 | 0.9− | 0.1− | 2006 09 26 | 703 | 0.0 | 0.6− |
| 2005 04 04 | 704 | 0.3+ | 0.3− | 2005 05 08 | 703 | 0.8− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2005 04 04 | G96 | 1.0− | 0.2+ | 2005 05 08 | 703 | 0.8− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2005 04 04 | 704 | (2.0+ | 0.2+) | 2005 05 08 | 703 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2005 04 04 | G96 | 0.3− | 0.3− | 2005 05 08 | 703 | 0.7− | 0.2− | 2006 10 16 | 703 | 1.0+ | 0.5− |
| 2005 04 04 | G96 | 0.4− | 0.2− | 2005 05 08 | 703 | 1.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2005 04 04 | 704 | 1.0+ | 0.3− | 2005 05 08 | 703 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.6− |
| 2005 04 04 | G96 | 0.4− | 0.0 | 2005 05 08 | 703 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2005 04 04 | 704 | 0.4+ | 0.4− | 2005 05 08 | 703 | 0.6− | 0.1− | 2006 10 16 | 703 | (0.0 | 1.7−) |
| 2005 04 04 | 704 | 0.4+ | 1.0+ | 2005 05 08 | 703 | 1.0− | 0.6− | 2006 10 16 | 703 | 1.3− | 0.5− |
| 2005 04 05 | 703 | (0.1− | 1.7−) | 2005 05 08 | 703 | 0.3− | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.7+ |
| 2005 04 05 | 703 | (1.9− | 0.3+) | 2005 05 09 | 699 | 0.2+ | 0.0 | 2006 10 16 | 703 | 1.2+ | 0.5− |
| 2005 04 05 | 703 | 0.8− | 0.2− | 2005 05 09 | 699 | 1.2+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2005 04 05 | 703 | (0.0 | 1.8+) | 2005 05 09 | 699 | 1.0+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2005 04 06 | 691 | 0.2+ | 0.1+ | 2005 05 09 | 699 | 0.9+ | 0.3− | 2006 10 23 | 644 | 0.7+ | 0.0 |
| 2005 04 06 | 691 | 0.2+ | 0.1+ | 2005 05 12 | 699 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.3+ |
| 2005 04 06 | 691 | 0.8− | 0.1− | 2005 05 12 | 699 | 0.5+ | 0.9− | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2005 04 11 | 699 | 0.3+ | 0.1− | 2005 05 12 | 699 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 2005 04 11 | 699 | 0.4+ | 0.2+ | 2005 05 12 | 699 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2005 04 11 | 699 | 0.0 | 0.0 | 2005 05 23 | 644 | 0.1− | 0.1− | | | | |
| 2005 04 11 | 699 | 0.7+ | 0.3+ | 2005 05 23 | 644 | 0.0 | 0.1− | | | | |

**(145012)∗ 2005 EU$_{236}$**

Discovered 2005 Mar. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.85056 | | (2000.0) | | | |
| $n$ | 0.18279895 | $\omega$ | 274.60802 | | +0.55494643 | +0.81622305 |
| $a$ | 3.0748239 | $\Omega$ | 30.88847 | | −0.58345315 | +0.51955953 |
| $e$ | 0.3930701 | $i$ | 18.23827 | | −0.59297292 | +0.25266149 |
| $P$ | 5.39 | $H$ | 14.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 0.1+ | 0.2+ | 2005 04 18 | 703 | 0.7− | 0.4− | 2006 09 27 | J75 | 0.2− | 0.0 |
| 2001 09 28 | 704 | 0.1+ | 0.5+ | 2005 04 18 | 691 | 0.4+ | 0.4+ | 2006 09 27 | J75 | 0.2− | 0.0 |
| 2001 09 28 | 704 | 0.4+ | 0.5+ | 2005 04 18 | 704 | 0.3+ | 0.6+ | 2006 09 27 | J75 | 0.0 | 0.0 |
| 2001 10 25 | 704 | 0.5− | 0.2− | 2005 04 18 | 704 | 0.4+ | 0.2+ | 2006 09 27 | J75 | 0.0 | 0.1− |
| 2001 10 25 | 704 | 0.8− | 0.0 | 2005 04 18 | 704 | 0.6+ | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.1− |
| 2001 10 25 | 704 | 0.0 | 0.5+ | 2005 04 18 | 704 | 0.4+ | 1.4+ | 2006 09 27 | 704 | 0.0 | 0.2− |
| 2001 10 25 | 704 | 0.4− | 0.6+ | 2005 04 18 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 704 | 0.3− | 0.5+ |
| 2004 01 19 | 691 | 0.3+ | 0.0 | 2005 05 08 | 703 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.6− | 0.6+ |
| 2004 01 19 | 691 | 0.1+ | 0.2− | 2005 05 08 | 703 | 0.3− | 0.8+ | 2006 09 27 | 704 | 0.1− | 0.2+ |
| 2004 01 19 | 691 | 0.1+ | 0.1− | 2005 05 08 | 703 | 0.1− | 1.3+ | 2006 09 29 | 704 | 0.7+ | 0.2− |
| 2004 04 15 | 645 | 0.1− | 0.1− | 2005 05 08 | 703 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.5− | 0.1+ |
| 2004 04 15 | 645 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.6+ |
| 2004 04 16 | 645 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.2+ |
| 2004 04 16 | 645 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 04 | 703 | 0.2− | 0.1− |
| 2004 05 14 | 645 | 0.0 | 0.2− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 04 | 703 | 0.0 | 0.0 |
| 2004 05 14 | 645 | 0.0 | 0.2− | 2005 05 09 | 699 | 0.2− | 0.2− | 2006 10 04 | 703 | 0.1+ | 0.2− |
| 2005 03 10 | 699 | 0.1+ | 1.4+ | 2005 05 09 | 699 | 0.6+ | 0.0 | 2006 10 04 | 703 | 0.1+ | 0.0 |
| 2005 03 10 | 699 | 1.1+ | 0.7+ | 2005 05 09 | 699 | 0.4+ | 0.3+ | 2006 10 11 | 691 | 0.5− | 0.2+ |
| 2005 03 10 | 699 | 0.7+ | 0.5+ | 2005 05 09 | 699 | 1.0+ | 0.3− | 2006 10 11 | 691 | 0.3− | 0.2+ |
| 2005 03 10 | 699 | (1.7+ | 0.6+) | 2005 05 12 | 699 | 0.6+ | 0.1− | 2006 10 11 | 691 | 0.4− | 0.2+ |
| 2005 03 16 | G96 | 0.2− | 0.3− | 2005 05 12 | 699 | 0.9+ | 0.7− | 2006 10 14 | 958 | 0.2+ | 0.2− |
| 2005 03 16 | G96 | 0.1− | 0.0 | 2005 05 12 | 699 | 1.1+ | 0.3+ | 2006 10 14 | 958 | 0.2+ | 0.9− |
| 2005 03 16 | G96 | 0.5− | 0.0 | 2005 05 12 | 699 | 0.5+ | 0.5+ | 2006 10 14 | 958 | 0.4− | 0.4− |
| 2005 03 16 | G96 | (1.9− | 0.6−) | 2005 05 23 | 644 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.3+ |
| 2005 04 04 | 704 | 0.9+ | 0.6+ | 2005 05 23 | 644 | 0.5+ | 0.2+ | 2006 10 19 | 704 | 0.8− | 1.2+ |
| 2005 04 04 | 704 | 0.7+ | 0.3+ | 2005 05 23 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 704 | 1.3− | 0.8− |
| 2005 04 04 | 704 | 1.1+ | 0.4+ | 2005 05 30 | E12 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.4− | 0.4+ |
| 2005 04 04 | 704 | 0.4+ | 0.6+ | 2005 05 30 | E12 | 1.1− | 0.5− | 2006 10 19 | 704 | 0.3+ | 0.3+ |
| 2005 04 05 | 703 | 0.3+ | 0.3− | 2005 05 30 | E12 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | 703 | 0.2− | 0.1+ | 2005 05 30 | E12 | 0.2− | 0.4+ | 2006 10 19 | 704 | 0.7− | 0.0 |
| 2005 04 05 | 703 | 0.2− | 0.1− | 2005 06 04 | 703 | 0.0 | 0.9+ | 2006 10 19 | 704 | 0.2− | 0.5+ |
| 2005 04 05 | 703 | 0.0 | 0.9− | 2005 06 04 | 703 | 0.7− | 0.1+ | 2006 10 19 | 644 | 0.5− | 0.1+ |
| 2005 04 06 | G96 | 0.1− | 0.1+ | 2005 06 04 | 704 | 0.8+ | 0.8+ | 2006 10 19 | 644 | 0.3− | 0.1− |
| 2005 04 06 | G96 | 0.1+ | 0.1+ | 2005 06 04 | 703 | 0.1− | 0.7+ | 2006 10 19 | 644 | 0.6− | 0.1− |
| 2005 04 06 | G96 | 0.0 | 0.0 | 2005 06 04 | 704 | 1.2+ | 0.2− | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2005 04 06 | G96 | 0.2− | 0.1+ | 2005 06 04 | 703 | 0.8+ | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2005 04 07 | 704 | 0.4+ | 0.4+ | 2005 06 04 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2005 04 07 | 704 | 0.1+ | 1.1+ | 2005 07 04 | 703 | 0.9+ | 1.3− | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2005 04 07 | 704 | 1.3+ | 0.0 | 2005 07 04 | 703 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2005 04 07 | 704 | 0.9+ | 1.2+ | 2005 07 04 | 703 | (1.7− | 1.2+) | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2005 04 07 | G96 | 0.1− | 0.1+ | 2005 07 04 | 703 | 1.0− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2005 04 07 | 704 | 0.9+ | 0.1+ | 2006 08 25 | 704 | (0.5+ | 1.6+) | 2006 10 28 | 691 | 0.4− | 0.4+ |
| 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 08 25 | 704 | 0.6+ | 1.4+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2005 04 07 | G96 | 0.0 | 0.1+ | 2006 08 25 | 704 | 1.0+ | 1.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2005 04 07 | G96 | 0.0 | 0.1+ | 2006 08 25 | 704 | (2.1+ | 1.2−) | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2005 04 09 | 691 | 0.6+ | 0.7+ | 2006 08 25 | 704 | 0.5+ | 1.2+ | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 10 29 | 704 | 0.5− | 0.2+ |
| 2005 04 09 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.8+ | 2006 10 29 | 704 | 0.0 | 0.2+ |
| 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.2+ | 1.2+ | 2006 10 29 | 704 | 0.4− | 0.6+ |
| 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.8+ | 2006 10 29 | 704 | 0.2− | 0.3+ |
| 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 08 31 | 704 | 1.3+ | 0.2+ | 2006 10 29 | 704 | 0.7− | 1.0+ |
| 2005 04 11 | 699 | 0.1− | 0.6+ | 2006 08 31 | 704 | 1.2+ | 0.6+ | 2006 11 14 | 703 | 0.3− | 0.2− |
| 2005 04 11 | 699 | 0.6+ | 1.1+ | 2006 08 31 | 704 | 0.5+ | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2005 04 11 | 699 | 0.1− | 0.4+ | 2006 08 31 | 704 | 1.3+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.2− |
| 2005 04 12 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.7− |
| 2005 04 12 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 704 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.8+ |
| 2005 04 12 | 704 | 0.3+ | 0.8+ | 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2005 04 12 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2005 04 12 | 704 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.4− | 0.1+ |
| 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.2− | 0.5− |
| 2005 04 14 | 691 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.6+ | 0.1− | 2006 11 18 | G96 | 0.3− | 0.3− |
| 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2005 04 15 | 699 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.6− | 0.6− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2005 04 15 | 699 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2005 04 15 | 699 | 0.4+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.9+ |
| 2005 04 15 | 699 | 1.0+ | 0.0 | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.8+ | 0.8+ |
| 2005 04 15 | A50 | (0.0 | 2.6+) | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.9+ |
| 2005 04 15 | A50 | (1.3− | 1.6+) | 2006 09 22 | 699 | 1.0− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.4+ |
| 2005 04 15 | A50 | (3.1− | 0.7−) | 2006 09 22 | 699 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2005 04 15 | A50 | (3.2− | 2.1−) | 2006 09 22 | 699 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 09 22 | 699 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 09 24 | J75 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2005 04 18 | 691 | 0.4+ | 0.4+ | 2006 09 24 | J75 | 0.7+ | 0.4− | 2006 11 29 | 704 | 0.2+ | 2.2+ |
| 2005 04 18 | 691 | 0.4+ | 0.3+ | 2006 09 24 | J75 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.9− | 1.3+ |
| 2005 04 18 | 703 | 0.9− | 0.3− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.0 | 1.2+ |
| 2005 04 18 | 703 | 0.1+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.4− | 0.2+ |
| 2005 04 18 | 703 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.0 | 1.7+ |
| 2005 04 18 | 691 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.1− | | | | |

**(145013)∗ 2005 EO$_{237}$ = 2002 GK$_{178}$ = 2003 WK$_{10}$**

Discovered 2005 Mar. 11 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.02814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29851406 | $\omega$ | 323.25051 | | +0.88663674 | +0.46210931 | |
| $a$ | 2.2173088 | $\Omega$ | 9.27937 | | −0.39294611 | +0.77349261 | |
| $e$ | 0.1447346 | $i$ | 6.47133 | | −0.24386194 | +0.43377894 | |
| $P$ | 3.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 691 | 0.0 | 0.3− | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.5+ | 0.7+ |
| 1993 10 11 | 691 | 0.1− | 0.2+ | 2006 07 28 | A44 | 0.9+ | 0.6− | 2006 09 22 | 704 | 0.7+ | 0.3+ |
| 1993 10 11 | 691 | 0.1− | 0.2+ | 2006 07 28 | A44 | 0.1+ | 0.5− | 2006 09 22 | 704 | 0.7− | 1.0+ |
| 2002 04 14 | 704 | 0.5+ | 0.5+ | 2006 07 28 | A44 | 1.4+ | 0.5+ | 2006 09 22 | 704 | 0.2+ | 0.2+ |
| 2002 04 14 | 704 | 1.2+ | 0.2− | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.2+ | 0.0 |
| 2002 04 14 | 704 | 0.6+ | 0.8+ | 2006 08 21 | 644 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.7− | 0.3− |
| 2003 11 18 | 691 | 0.2+ | 0.4+ | 2006 08 21 | 644 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2003 11 18 | 691 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.2− |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.6+ |
| 2003 11 19 | 704 | 0.3− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.0 | 1.2+ |
| 2003 11 19 | 704 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.6+ | 0.8+ | 2006 09 28 | 704 | 1.0+ | 0.1+ |
| 2003 11 19 | 704 | 0.5− | 0.3− | 2006 08 30 | 704 | 0.5+ | 0.0 | 2006 09 28 | 704 | 0.4− | 1.1+ |
| 2003 11 19 | 704 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.4+ | 1.0+ | 2006 09 28 | 704 | 0.1− | 0.7+ |
| 2003 11 19 | 704 | 0.8+ | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.5− |
| 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.7+ |
| 2003 12 19 | 691 | 0.1+ | 0.3+ | 2006 08 31 | 704 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 08 31 | 704 | 1.1− | 0.8+ | 2006 09 30 | 703 | 0.3− | 0.7− |
| 2005 03 03 | 691 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.9− |
| 2005 03 03 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.8− | 1.0− |
| 2005 03 03 | 691 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 0.9+ | 0.6− | 2006 10 16 | 703 | 0.8− | 0.6− |
| 2005 03 11 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 704 | 0.4− | 0.3− | 2006 10 16 | 703 | 1.3− | 0.9− |
| 2005 03 11 | 691 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2005 03 11 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 704 | 0.9+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2005 03 16 | G96 | 0.7− | 0.0 | 2006 09 16 | 699 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2005 03 16 | G96 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.6+ | 0.2− |
| 2005 03 16 | G96 | 0.5− | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2005 03 16 | G96 | 0.9− | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2005 04 04 | 703 | (1.2− | 1.9+) | 2006 09 19 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2005 04 04 | 703 | 0.3+ | 0.6− | 2006 09 19 | 699 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2005 04 04 | 703 | 0.3− | 0.4− | 2006 09 19 | 704 | (0.6− | 1.7+) | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2005 04 04 | 703 | (0.6+ | 1.6+) | 2006 09 19 | 704 | 1.5− | 0.9+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2005 05 04 | G96 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.8− | 0.1+ |
| 2005 05 04 | G96 | 0.3+ | 0.1+ | 2006 09 19 | 704 | (1.9− | 0.2−) | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2005 05 04 | G96 | 0.4+ | 0.4+ | 2006 09 19 | 704 | (1.7− | 1.2+) | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2005 05 04 | G96 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.6+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2005 05 13 | G96 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 2005 05 13 | G96 | 0.4− | 0.2− | 2006 09 20 | 644 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.7− |

**(145014)∗ 2005 EC$_{240}$ = 1994 RZ$_{17}$**

Discovered 2005 Mar. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 76984)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.58831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24402475 | $\omega$ | 164.36350 | | +0.61264344 | +0.78992325 | |
| $a$ | 2.5361803 | $\Omega$ | 143.40609 | | −0.72978052 | +0.57812787 | |
| $e$ | 0.1347576 | $i$ | 2.52412 | | −0.30346072 | +0.20442461 | |
| $P$ | 4.04 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 03 | 809 | (2.2− | 4.1+) | 2005 04 04 | 703 | (2.2− | 0.2−) | 2006 08 28 | 699 | (2.5+ | 0.1−) |
| 1994 09 03 | 809 | (1.5− | 3.8+) | 2005 04 04 | 703 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.1− | 0.5+ |
| 1994 09 03 | 809 | (1.0− | 3.8+) | 2005 04 04 | 703 | 0.1− | 0.4− | 2006 08 28 | 703 | 0.1− | 0.7− |
| 1994 09 04 | 809 | (1.2− | 3.3+) | 2005 04 04 | 703 | 0.7− | 1.4− | 2006 08 28 | 703 | 0.1− | 0.5− |
| 1994 09 04 | 809 | (2.9− | 3.4+) | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.5+ |
| 1994 09 04 | 809 | (3.4− | 2.6+) | 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.2+ |
| 1998 08 23 | 699 | 0.4− | 0.9− | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.0 | 0.7+ |
| 1998 08 23 | 699 | 0.5+ | 1.1− | 2005 04 11 | G96 | 0.4+ | 0.0 | 2006 08 31 | 704 | 0.6− | 0.4+ |
| 1998 08 23 | 699 | 0.0 | 0.1+ | 2006 05 24 | G96 | 0.5+ | 0.3− | 2006 08 31 | 704 | 0.3+ | 0.1+ |
| 2002 08 14 | 704 | 0.7− | 0.8+ | 2006 05 24 | G96 | 0.2− | 0.6− | 2006 08 31 | 704 | 0.6+ | 0.8+ |
| 2002 08 14 | 704 | 0.6+ | 0.3− | 2006 05 24 | G96 | 0.1− | 0.4− | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 2002 08 14 | 704 | 0.7− | 0.6+ | 2006 05 24 | G96 | 0.2+ | 0.4− | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2002 08 14 | 704 | 0.6+ | 0.8+ | 2006 06 19 | G96 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.0 |
| 2002 08 29 | 644 | (0.1− | 1.5+) | 2006 06 19 | G96 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2002 08 29 | 644 | 0.1+ | 0.9+ | 2006 06 19 | G96 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.9+ | 2006 06 19 | G96 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2005 03 10 | G96 | (3.3+ | 0.8+) | 2006 07 20 | 644 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2005 03 10 | G96 | 0.2+ | 0.1− | 2006 07 20 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2006 07 20 | 644 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2005 03 10 | G96 | 0.5− | 0.5− | 2006 08 12 | 644 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.2− |
| 2005 03 11 | 691 | 0.3− | 0.6+ | 2006 08 12 | 644 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.7− | 0.3− |
| 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2005 03 11 | 691 | 0.3+ | 0.4+ | 2006 08 14 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.5+ |
| 2005 03 16 | G96 | 0.2− | 0.1− | 2006 08 14 | 644 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2005 03 16 | G96 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.3+ | 1.1− | | | | |
| 2005 03 16 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 699 | (2.1+ | 0.9+) | | | | |

**(145015)∗ 2005 ES$_{240}$**

Discovered 2005 Mar. 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.36847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26771227 | $\omega$ | 11.19303 | | −0.27393016 | | +0.96143641 |
| $a$ | 2.3842797 | $\Omega$ | 242.91262 | | −0.88450278 | | −0.26186631 |
| $e$ | 0.2036471 | $i$ | 1.57958 | | −0.37764679 | | −0.08405988 |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.1− | 1.0− | 2005 03 11 | G96 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1− |
| 1998 03 20 | 704 | 1.1− | 1.2− | 2005 03 11 | G96 | 0.4− | 0.4− | 2006 08 28 | 703 | 0.0 | 0.3+ |
| 1998 03 20 | 704 | 1.2+ | 1.4+ | 2005 03 11 | G96 | 0.7− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.5− |
| 1998 03 29 | 704 | 0.7+ | 0.3− | 2005 03 11 | G96 | 0.6− | 0.1− | 2006 08 28 | 703 | 0.5− | 0.3− |
| 1998 03 29 | 704 | 0.9+ | 0.4+ | 2005 03 16 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.2− |
| 1998 03 29 | 704 | 0.7− | 0.6− | 2005 03 16 | 691 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.6+ | 1.0+ |
| 1998 03 29 | 704 | 0.4− | 1.3+ | 2005 03 16 | 691 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.5+ | 0.7+ |
| 1998 04 01 | 704 | (3.2+ | 1.9+) | 2005 04 05 | G96 | 0.1− | 0.5− | 2006 08 29 | 704 | (1.9+ | 1.1+) |
| 1998 04 01 | 704 | 1.3− | 1.4+ | 2005 04 05 | G96 | 0.2+ | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 1998 04 01 | 704 | 1.5+ | 0.3+ | 2005 04 05 | G96 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.4− |
| 1998 04 01 | 704 | (5.7− | 1.7+) | 2005 04 05 | G96 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.1− |
| 1999 10 06 | 704 | 0.1+ | 0.9− | 2006 07 25 | 644 | 0.5− | 0.3+ | 2006 09 27 | G96 | (0.3+ | 2.1−) |
| 1999 10 06 | 704 | 1.3− | 0.2+ | 2006 07 25 | 644 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 1999 10 06 | 704 | 0.5+ | 0.8+ | 2006 07 25 | 644 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1999 10 06 | 704 | 0.2+ | 0.9+ | 2006 08 01 | A50 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.4− | 0.1+ |
| 2005 01 17 | 691 | 0.5+ | 0.4+ | 2006 08 01 | A50 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2005 01 17 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.3+ | 0.1+ | | | | |
| 2005 01 17 | 691 | 0.2− | 0.3+ | 2006 08 18 | 644 | 0.3+ | 0.2+ | | | | |

**(145016)∗ 2005 EE$_{242}$ = 2002 TE$_{294}$**

Discovered 2005 Mar. 11 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 76985)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.70236 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22098555 | $\omega$ | 206.82405 | | −0.54135641 | | +0.83495422 |
| $a$ | 2.7095269 | $\Omega$ | 30.69695 | | −0.73244923 | | −0.41055350 |
| $e$ | 0.2433336 | $i$ | 11.17271 | | −0.41285755 | | −0.36646593 |
| $P$ | 4.46 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.4− | 1.1+ | 2005 04 09 | 703 | 0.1− | 0.0 | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2002 10 11 | 704 | 1.1+ | 0.1− | 2005 04 12 | 704 | 0.4+ | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.9− | 0.0 | 2005 04 12 | 704 | 0.8+ | 0.3+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.4− | 0.5+ | 2005 04 12 | 704 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 0.3− | 0.3+ | 2005 04 12 | 704 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2002 10 12 | 704 | 0.2− | 1.7+ | 2005 04 12 | 704 | 0.4+ | 0.2− | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2002 10 12 | 704 | 1.2− | 0.6+ | 2005 04 16 | 703 | 0.6− | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.8− | 0.2+ | 2005 04 16 | 703 | 0.9+ | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.0 |
| 2003 12 17 | 704 | 0.1− | 0.4+ | 2005 04 16 | 703 | 1.5− | 0.8+ | 2006 08 16 | 644 | 0.0 | 0.1− |
| 2003 12 17 | 704 | 0.2+ | 0.3− | 2005 04 16 | 703 | 0.6− | 1.6+ | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2003 12 17 | 704 | 0.4+ | 0.3− | 2005 04 30 | 699 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.1+ |
| 2005 03 11 | 703 | 0.0 | 0.1− | 2005 04 30 | 699 | 0.7+ | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.2+ |
| 2005 03 11 | 703 | 0.4− | 0.1+ | 2005 04 30 | 699 | 0.4+ | 0.3+ | 2006 08 28 | E12 | 0.2+ | 0.1+ |
| 2005 03 11 | 703 | 0.2+ | 0.1+ | 2005 04 30 | 699 | 0.1+ | 0.3+ | 2006 08 28 | E12 | 0.1+ | 0.4+ |
| 2005 03 11 | 703 | 0.1+ | 0.3+ | 2005 05 02 | 703 | 0.7− | 0.6− | 2006 08 28 | E12 | 0.4+ | 0.0 |
| 2005 03 16 | 703 | 0.4− | 0.5− | 2005 05 02 | 703 | 0.3− | 0.1+ | 2006 08 28 | E12 | 0.3+ | 0.6+ |
| 2005 03 16 | 703 | 0.5− | 0.1− | 2005 05 02 | 703 | 0.7− | 0.4+ | 2006 09 17 | 699 | 0.3− | 0.5− |
| 2005 03 16 | 703 | 0.3− | 0.0 | 2005 05 02 | 703 | 0.7− | 0.9− | 2006 09 17 | 699 | 0.3− | 0.2− |
| 2005 03 16 | 703 | 0.1+ | 0.3+ | 2005 05 11 | 704 | 0.8+ | 0.7+ | 2006 09 17 | 699 | 1.1− | 0.3− |
| 2005 04 02 | 699 | 0.7+ | 0.3+ | 2005 05 11 | 704 | (0.7+ | 2.4+) | 2006 09 17 | 699 | 1.7+ | 0.8− |
| 2005 04 02 | 699 | 1.6+ | 0.3+ | 2005 05 11 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 703 | 0.6− | 0.6− |
| 2005 04 02 | 699 | 0.7+ | 1.1+ | 2005 05 11 | 704 | 0.5+ | 0.4− | 2006 09 20 | 703 | 0.3− | 0.2+ |
| 2005 04 02 | 703 | 0.6− | 0.3+ | 2005 05 11 | 704 | 1.3+ | 0.1− | 2006 09 20 | 703 | 0.0 | 0.8+ |
| 2005 04 02 | 703 | 0.2− | 1.3− | 2005 05 21 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 703 | 0.6− | 0.5− |
| 2005 04 02 | 703 | 0.3− | 0.3− | 2005 05 21 | 644 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.1− | 0.4+ |
| 2005 04 02 | 699 | 1.2+ | 0.4+ | 2005 05 21 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.6− |
| 2005 04 02 | 703 | 0.6+ | 0.1− | 2006 07 30 | E12 | 0.5+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.0 |
| 2005 04 09 | 703 | 0.1− | 0.1+ | 2006 07 30 | E12 | 1.0− | 0.7+ | 2006 09 26 | 703 | 0.9− | 1.1+ |
| 2005 04 09 | 703 | 0.8− | 0.6− | 2006 07 30 | E12 | 0.3+ | 0.2+ | | | | |
| 2005 04 09 | 703 | 0.0 | 0.2+ | 2006 07 30 | E12 | 0.3− | 0.3+ | | | | |

**(145017)∗ 2005 ED$_{246}$ = 1998 HY$_{38}$ = 2002 PQ$_{159}$**

Discovered 2005 Mar. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76988), A. Doppler (*MPO* 86665)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.07038 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27675461 | $\omega$ | 240.71368 | | −0.18865836 | | +0.98195866 |
| $a$ | 2.3320587 | $\Omega$ | 18.42513 | | −0.88631007 | | −0.16461619 |
| $e$ | 0.2068328 | $i$ | 2.33067 | | −0.42292137 | | −0.09305209 |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.0− | 0.8+ | 2002 08 18 | 644 | 0.4− | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.3− |
| 1998 03 29 | 704 | 0.2+ | 0.3− | 2002 08 18 | 644 | 0.4− | 0.2+ | 2005 04 04 | 703 | 0.9− | 0.4+ |
| 1998 03 29 | 704 | 1.1+ | 1.3+ | 2002 08 18 | 644 | 0.1− | 0.5+ | 2005 04 04 | G96 | 0.5− | 0.2− |
| 1998 03 29 | 704 | (3.7− | 1.6−) | 2002 08 29 | 644 | 0.1+ | 0.3+ | 2005 04 04 | 703 | 0.4− | 0.1− |
| 1998 04 20 | 704 | 0.2+ | 0.2− | 2002 08 29 | 644 | 0.1+ | 0.4+ | 2005 04 04 | G96 | 0.0 | 0.6− |
| 1998 04 20 | 704 | 1.6− | 0.1+ | 2002 08 29 | 644 | 0.1+ | 0.8+ | 2005 04 04 | 703 | 0.0 | 0.5− |
| 1998 04 20 | 704 | (3.6− | 0.2+) | 2005 03 03 | 691 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.2− | 0.3+ |
| 1998 04 20 | 704 | (3.6− | 1.9−) | 2005 03 03 | 691 | 0.2+ | 0.1+ | 2005 04 04 | 703 | 0.2− | 0.1+ |
| 1998 04 21 | 704 | 1.1+ | 0.6− | 2005 03 03 | 691 | 0.3+ | 0.3+ | 2005 05 13 | G96 | 0.0 | 0.1+ |
| 1998 04 21 | 704 | 0.8+ | 0.3− | 2005 03 03 | 703 | 0.4+ | 0.7+ | 2005 05 13 | G96 | 0.0 | 0.4− |
| 1998 04 21 | 704 | 1.0+ | 0.1− | 2005 03 03 | 703 | (1.6− | 0.3−) | 2005 05 13 | G96 | 0.0 | 0.2− |
| 1998 04 21 | 704 | 0.8+ | 0.0 | 2005 03 03 | 703 | 1.2− | 0.3− | 2005 05 13 | G96 | 0.1− | 0.2− |
| 1998 04 21 | 704 | 0.4+ | 0.3+ | 2005 03 03 | 703 | 0.3+ | 1.2− | 2006 09 25 | G96 | 0.4+ | 0.1+ |
| 1998 04 22 | 704 | 1.7− | 0.2− | 2005 03 08 | 699 | (2.2− | 1.3−) | 2006 09 25 | G96 | 0.2− | 0.5+ |
| 1998 04 22 | 704 | 0.1− | 0.9+ | 2005 03 08 | 699 | 1.0+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.1+ |
| 1998 04 22 | 704 | 1.2− | 1.6− | 2005 03 08 | 699 | 0.7− | 0.9+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 1998 04 22 | 704 | (5.0− | 0.3−) | 2005 03 08 | 699 | 0.7+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 1999 11 15 | 691 | 0.4+ | 0.3− | 2005 03 12 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.6− | 0.4+ |
| 1999 11 15 | 691 | 0.1− | 1.1− | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.5+ |
| 1999 11 15 | 691 | 0.4+ | 0.1− | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2002 08 08 | 699 | 0.5+ | 0.4+ | 2005 03 16 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2002 08 08 | 699 | 1.0+ | 0.8− | 2005 03 16 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.4+ |
| 2002 08 08 | 699 | 0.3− | 0.6+ | 2005 03 16 | 691 | 0.4+ | 0.7+ | 2006 10 28 | G96 | 0.1− | 0.3+ |
| 2002 08 08 | 699 | 0.1+ | 0.6+ | 2005 03 17 | 703 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2002 08 08 | 644 | 1.5− | 0.3− | 2005 03 17 | 703 | 0.3− | 0.6− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2002 08 08 | 644 | 0.2− | 0.5− | 2005 03 17 | 703 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.5+ |
| 2002 08 08 | 644 | 0.3+ | 0.0 | 2005 03 17 | 703 | 0.5− | 0.3− | | | | |

**(145018)∗ 2005 EP$_{247}$ = 3062 T-3**

Discovered 2005 Mar. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76989)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.64758 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27166557 | $\omega$ | 280.63314 | | +0.54871590 | | +0.83594346 |
| $a$ | 2.3610924 | $\Omega$ | 22.65539 | | −0.75601667 | | +0.50151445 |
| $e$ | 0.1962952 | $i$ | 1.55597 | | −0.35686084 | | +0.22289412 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 1.3+ | 1.7− | 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 1977 10 16 | 675 | 0.7+ | 1.5− | 2005 04 02 | G96 | 0.4+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 1977 10 17 | 675 | 1.0− | 0.4+ | 2005 04 02 | G96 | 0.6+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 1977 10 17 | 675 | 1.3+ | 0.9− | 2005 04 04 | G96 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 21 | 675 | 0.2+ | 2.2− | 2005 04 04 | G96 | 0.1− | 0.5− | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2002 07 05 | 704 | 0.7+ | 1.5− | 2005 04 04 | G96 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2002 07 05 | 704 | 0.6+ | 0.1− | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.7− | 0.4− |
| 2002 07 05 | 704 | 0.8+ | 0.2+ | 2005 04 05 | G96 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.5+ | 0.0 |
| 2002 07 05 | 704 | 0.0 | 0.2− | 2005 04 05 | G96 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 07 15 | 644 | 0.5− | 0.0 | 2005 04 05 | G96 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2002 07 15 | 644 | 0.7− | 0.2+ | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.3+ |
| 2002 07 15 | 644 | 0.7− | 0.3+ | 2005 05 04 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2005 03 04 | G96 | 0.0 | 0.5+ | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 03 04 | G96 | 0.1− | 0.1− | 2005 05 04 | G96 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2005 03 04 | G96 | 0.9− | 0.1+ | 2005 05 04 | G96 | 1.0− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2005 03 04 | G96 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2005 03 12 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2005 03 12 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2005 03 12 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2005 03 16 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2005 03 16 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2005 03 16 | 691 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.4− | 0.7− | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2005 04 02 | G96 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2005 04 02 | G96 | (3.2− | 0.1+) | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2005 04 02 | G96 | 1.0+ | 0.9− | 2006 09 26 | 691 | 0.1+ | 0.3+ | | | | |

**(145019)∗ 2005 EB$_{250}$ = 2003 XR$_{7}$**

Discovered 2005 Mar. 14 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. A. Doppler (*MPO* 76990)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.29987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23049971 | $\omega$ | 203.29065 | | +0.92277734 | +0.37875670 | |
| $a$ | 2.6344449 | $\Omega$ | 134.25255 | | −0.33614286 | +0.88118027 | |
| $e$ | 0.1865944 | $i$ | 5.67988 | | −0.18838778 | +0.28295704 | |
| $P$ | 4.28 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.2+ | 0.0 | 2004 01 17 | 644 | 0.2− | 0.4+ | 2006 05 19 | 703 | 0.1− | 0.6− |
| 1998 08 17 | 704 | 0.1− | 0.8+ | 2005 02 01 | 691 | 0.0 | 0.2− | 2006 05 22 | 691 | 0.2+ | 0.0 |
| 1998 08 17 | 704 | 0.1+ | 0.8+ | 2005 02 01 | 691 | 0.1− | 0.2− | 2006 05 22 | 691 | 1.6+ | 0.6+ |
| 1998 08 17 | 704 | 0.0 | 0.5+ | 2005 02 01 | 691 | 0.3+ | 0.1+ | 2006 05 22 | 691 | 0.5− | 1.2+ |
| 1998 08 17 | 704 | 0.9− | 0.9+ | 2005 03 04 | 704 | 0.0 | 0.1+ | 2006 05 24 | G96 | 0.2+ | 0.2− |
| 1998 08 27 | 699 | 0.6+ | 0.7+ | 2005 03 04 | 704 | 0.3− | 0.1+ | 2006 05 24 | G96 | 0.4− | 0.2− |
| 1998 08 27 | 699 | 0.0 | 0.0 | 2005 03 04 | 704 | 1.9+ | 0.1− | 2006 05 24 | G96 | 0.4− | 0.1− |
| 1998 08 27 | 699 | 0.5− | 0.7+ | 2005 03 08 | 699 | 0.9+ | 1.8+ | 2006 05 24 | G96 | 0.3− | 0.2− |
| 2000 01 07 | 704 | 0.9− | 1.0− | 2005 03 08 | 699 | 1.0+ | 1.2+ | 2006 05 25 | 644 | 0.1− | 0.0 |
| 2000 01 07 | 704 | 0.3− | 0.7− | 2005 03 08 | 699 | 1.3+ | 0.8+ | 2006 05 25 | 644 | 0.1− | 0.1− |
| 2000 01 07 | 704 | 0.4− | 0.2− | 2005 03 08 | 699 | 0.4− | 0.2− | 2006 05 25 | 644 | 0.1− | 0.0 |
| 2000 01 07 | 704 | 0.2− | 0.0 | 2005 03 14 | G96 | 0.2− | 0.3− | 2006 05 28 | 704 | 0.3+ | 0.3+ |
| 2003 12 01 | 704 | 0.3+ | 1.8+ | 2005 03 14 | G96 | 0.4− | 0.2+ | 2006 05 28 | 704 | 0.1− | 0.1− |
| 2003 12 01 | 704 | 0.0 | 1.0+ | 2005 03 14 | G96 | 0.2− | 0.5+ | 2006 05 28 | 704 | 0.5− | 0.5+ |
| 2003 12 01 | 704 | 0.1+ | 1.2+ | 2005 03 14 | G96 | 1.0− | 0.4− | 2006 05 28 | 704 | 0.0 | 0.5− |
| 2003 12 01 | 704 | 0.2+ | 1.6+ | 2005 03 16 | G96 | 0.2− | 0.3+ | 2006 05 28 | 703 | 0.6− | 0.4− |
| 2003 12 05 | 704 | 1.0+ | 0.3+ | 2005 03 16 | G96 | 0.2− | 0.1+ | 2006 05 28 | 703 | 0.9− | 0.6+ |
| 2003 12 05 | 704 | 0.2− | 0.7+ | 2005 03 16 | G96 | 0.2+ | 0.0 | 2006 05 28 | 704 | 0.1+ | 0.0 |
| 2003 12 05 | 704 | 0.2+ | 0.7+ | 2005 03 16 | G96 | 0.1− | 0.2+ | 2006 05 28 | 703 | 0.2− | 0.1+ |
| 2003 12 22 | 704 | 0.8− | 0.2+ | 2006 05 09 | G96 | 0.2− | 0.3− | 2006 05 28 | 703 | 1.1− | 0.1+ |
| 2003 12 22 | 704 | 0.7− | 0.5+ | 2006 05 09 | G96 | 0.2− | 0.3− | 2006 05 30 | 691 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.4− | 0.3+ | 2006 05 09 | G96 | 0.2− | 0.1− | 2006 05 30 | 691 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.4+ | 0.5+ | 2006 05 09 | G96 | 0.2− | 0.2− | 2006 05 30 | 691 | 0.3+ | 0.1+ |
| 2003 12 22 | 704 | 0.8− | 0.3+ | 2006 05 19 | 703 | 0.3+ | 0.3+ | 2006 06 13 | 644 | 0.2− | 0.2+ |
| 2004 01 17 | 644 | 0.3− | 0.5+ | 2006 05 19 | 703 | 0.3− | 0.1− | 2006 06 13 | 644 | 0.2+ | 0.4− |
| 2004 01 17 | 644 | 0.1− | 0.5+ | 2006 05 19 | 703 | 1.0− | 0.5+ | 2006 06 13 | 644 | 0.3− | 0.1− |

**(145020)∗ 2005 EA$_{253}$ = 2001 FA$_{110}$**

Discovered 2005 Mar. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.
Id. G. V. Williams (*MPO* 76993)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.35313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25323639 | $\omega$ | 305.91988 | | −0.62664996 | +0.77762774 | |
| $a$ | 2.4742978 | $\Omega$ | 285.19626 | | −0.69687686 | −0.58848282 | |
| $e$ | 0.1216051 | $i$ | 3.03166 | | −0.34881580 | −0.22132119 | |
| $P$ | 3.89 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.3− | 0.1− | 2005 03 10 | 699 | 0.5+ | 0.3− | 2005 05 12 | 699 | 0.3+ | 0.6+ |
| 2001 03 18 | 704 | 0.6− | 0.9+ | 2005 03 17 | 704 | 0.2+ | 0.1+ | 2005 05 12 | 699 | 0.9− | 1.0− |
| 2001 03 18 | 704 | 0.6+ | 0.1+ | 2005 03 17 | 704 | 0.2+ | 0.9+ | 2005 05 12 | 699 | 0.4− | 0.1− |
| 2001 03 18 | 704 | 0.5+ | 0.3− | 2005 03 17 | 704 | 1.0+ | 0.6+ | 2005 05 12 | 699 | 1.7− | 0.4− |
| 2001 03 18 | 704 | 0.7+ | 0.1− | 2005 03 17 | 704 | 0.1+ | 0.9− | 2005 05 23 | 644 | 0.2+ | 0.1+ |
| 2001 03 19 | 699 | 0.1+ | 0.5+ | 2005 03 17 | 704 | 0.6− | 0.2+ | 2005 05 23 | 644 | 0.0 | 0.0 |
| 2001 03 19 | 699 | 0.3+ | 0.5+ | 2005 04 05 | 699 | 0.0 | 0.4− | 2005 05 23 | 644 | 0.1+ | 0.0 |
| 2001 03 19 | 699 | 0.0 | 0.6+ | 2005 04 05 | 699 | 0.7+ | 0.6− | 2006 08 28 | 703 | 1.4− | 0.9+ |
| 2001 03 19 | 699 | 0.7− | 0.2+ | 2005 04 05 | 699 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.8− | 0.3− |
| 2001 03 20 | 608 | 0.3+ | 0.5+ | 2005 04 05 | 699 | 0.6+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.2+ |
| 2001 03 20 | 608 | 0.4+ | 0.4+ | 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | (1.3+ | 2.1+) |
| 2001 03 20 | 608 | 0.2+ | 0.5+ | 2005 04 06 | 691 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.2− |
| 2002 08 18 | 608 | 0.3+ | 0.3− | 2005 04 06 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2002 08 18 | 608 | 0.4+ | 0.3− | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.0 |
| 2002 08 18 | 608 | 0.3− | 0.0 | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 1.0+ | 1.0+ |
| 2002 09 01 | 608 | 0.2− | 0.1− | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.8− | 1.5+ |
| 2002 09 01 | 608 | 0.1+ | 0.2− | 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.3+ | 1.5+ |
| 2002 09 01 | 608 | 0.1+ | 0.7− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 1.2+ | 0.1+ |
| 2002 09 14 | 644 | 0.1− | 0.6+ | 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 1.9+ | 1.2− |
| 2002 09 14 | 644 | 0.3− | 0.7+ | 2005 04 18 | 703 | (2.2− | 0.8−) | 2006 09 19 | 703 | 1.0− | 0.3+ |
| 2002 09 14 | 644 | 0.0 | 1.0+ | 2005 04 18 | 703 | 1.5− | 0.3− | 2006 09 19 | 699 | 0.5− | 0.4+ |
| 2003 12 22 | 704 | (1.4− | 2.4+) | 2005 04 18 | 703 | 0.2− | 0.7− | 2006 09 19 | 703 | 0.9− | 0.1− |
| 2003 12 22 | 704 | (0.9− | 2.9+) | 2005 04 18 | 703 | 0.6− | 0.1− | 2006 09 19 | 703 | 0.3− | 0.4+ |
| 2003 12 22 | 704 | 0.2− | 0.9+ | 2005 05 06 | 703 | 0.8− | 0.4− | 2006 09 19 | 699 | 0.0 | 0.7+ |
| 2005 03 10 | 699 | 0.2+ | 0.1− | 2005 05 06 | 703 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.7− |
| 2005 03 10 | 699 | 0.5+ | 0.0 | 2005 05 06 | 703 | 0.4+ | 0.3− | 2006 09 19 | 699 | 0.3− | 0.5+ |
| 2005 03 10 | 699 | 0.2− | 1.2+ | 2005 05 06 | 703 | 0.1+ | 0.8− | | | | |

**(145021)∗ 2005 EB$_{257}$ = 2001 CK$_{18}$**

Discovered 2005 Mar. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.
Id. A. Doppler (*MPO* 76994)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.73792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26891904 | $\omega$ | 271.89875 | | −0.32685761 | +0.94133791 | |
| $a$ | 2.3771414 | $\Omega$ | 338.43344 | | −0.75062694 | −0.31255059 | |
| $e$ | 0.1143447 | $i$ | 13.20145 | | −0.57421538 | −0.12725985 | |
| $P$ | 3.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.3+ | 0.3+ | 2005 03 17 | 704 | 0.9+ | 0.9+ | 2006 09 16 | 699 | 0.9+ | 0.8+ |
| 2001 01 18 | 704 | 0.3− | 1.2+ | 2005 03 17 | 704 | 1.1+ | 0.4+ | 2006 09 16 | 699 | 0.2+ | 0.5− |
| 2001 01 18 | 704 | (2.0+ | 0.8+) | 2005 03 17 | 704 | 1.2+ | 0.6+ | 2006 09 19 | 699 | (1.7− | 0.7+) |
| 2001 01 18 | 704 | 1.1+ | 0.5+ | 2005 03 17 | 704 | 1.2+ | 0.8+ | 2006 09 19 | 703 | 0.2− | 0.3+ |
| 2001 02 02 | 704 | 0.1+ | 0.8+ | 2005 03 17 | 704 | 0.4+ | 0.4− | 2006 09 19 | 699 | 0.8− | 0.4+ |
| 2001 02 02 | 704 | 0.2+ | 0.6+ | 2005 04 05 | 703 | 0.8− | 0.0 | 2006 09 19 | 703 | 1.1− | 1.2+ |
| 2001 02 02 | 704 | 0.6+ | 0.2+ | 2005 04 05 | 703 | 0.3− | 1.1+ | 2006 09 19 | 703 | 0.8− | 1.2− |
| 2001 02 02 | 704 | 0.2+ | 0.2+ | 2005 04 05 | 703 | (3.1− | 2.1−) | 2006 09 19 | 699 | 0.7+ | 0.7+ |
| 2001 02 03 | 704 | 0.0 | 0.1− | 2005 04 05 | 703 | (1.4− | 3.1−) | 2006 09 19 | 703 | 0.6− | 0.1− |
| 2001 02 03 | 704 | 0.7+ | 0.6+ | 2005 04 07 | 704 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.6+ |
| 2001 02 03 | 704 | 0.3+ | 0.8+ | 2005 04 07 | 704 | 0.9+ | 1.4+ | 2006 09 25 | 704 | 0.1− | 0.8+ |
| 2002 07 16 | 644 | 0.1− | 0.3+ | 2005 04 07 | 704 | (2.7+ | 0.8+) | 2006 09 25 | 704 | 1.4+ | 1.1+ |
| 2002 07 16 | 644 | 0.3+ | 0.5+ | 2005 04 15 | 703 | 1.0− | 0.2+ | 2006 09 25 | 699 | 1.4− | 1.0+ |
| 2002 07 16 | 644 | 0.1− | 0.5+ | 2005 04 15 | 703 | 0.4− | 0.6+ | 2006 09 25 | 704 | 0.8+ | 0.4+ |
| 2002 08 13 | 644 | 0.3− | 0.6+ | 2005 04 15 | 703 | 0.9+ | 0.7− | 2006 09 25 | 704 | 0.6− | 1.4+ |
| 2002 08 13 | 644 | 0.0 | 0.5+ | 2005 04 15 | 703 | 0.1− | 0.7− | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2002 08 13 | 644 | 0.5− | 0.7+ | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.3− | 0.1+ | 2006 08 17 | 644 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.8+ | 1.0+ |
| 2002 08 30 | 644 | 0.4− | 0.1+ | 2006 08 17 | 644 | 0.9− | 0.0 | 2006 09 25 | 699 | 0.1− | 0.8+ |
| 2002 08 30 | 644 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2005 03 10 | E12 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.3+ | 0.9− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2005 03 10 | E12 | 0.9− | 0.6− | 2006 08 27 | 699 | (2.0+ | 1.1+) | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2005 03 10 | E12 | 0.7+ | 0.5− | 2006 08 27 | 699 | (1.5− | 1.9+) | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2005 03 10 | E12 | 1.3− | 0.7− | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2005 03 11 | 699 | 0.5+ | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2005 03 11 | 699 | 0.5+ | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.3− |
| 2005 03 11 | 699 | 0.9+ | 0.2+ | 2006 09 12 | 703 | 0.2− | 1.1− | 2006 10 18 | 691 | 0.4− | 0.1− |
| 2005 03 11 | 699 | 0.4− | 1.2+ | 2006 09 12 | 703 | 0.6− | 0.4− | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2005 03 13 | 703 | 0.1− | 1.3+ | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.3− |
| 2005 03 13 | 703 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.7+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2005 03 13 | 703 | 0.7− | 0.5− | 2006 09 16 | 699 | 0.9− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.4− |
| 2005 03 13 | 703 | 0.1− | 0.5− | 2006 09 16 | 699 | 0.8+ | 0.5+ | | | | |

**(145022)∗ 2005 EC$_{259}$ = 2006 PA$_{31}$**

Discovered 2005 Mar. 11 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 103680)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.35818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26659234 | $\omega$ | 164.11930 | | +0.97041338 | +0.24144809 | |
| $a$ | 2.3909524 | $\Omega$ | 181.90927 | | −0.22414389 | +0.89957934 | |
| $e$ | 0.1323547 | $i$ | 1.42470 | | −0.08976293 | +0.36395031 | |
| $P$ | 3.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.5− | 0.2+ | 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 1999 10 07 | 691 | 0.2− | 0.5+ | 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 08 22 | 644 | 0.3− | 0.1+ |
| 1999 10 07 | 691 | 0.1+ | 0.1+ | 2005 04 04 | G96 | 0.4+ | 0.4+ | 2006 08 22 | 644 | 0.1− | 0.0 |
| 1999 11 11 | 695 | 0.4+ | 0.4+ | 2005 05 13 | G96 | 0.8− | 0.4− | 2006 08 22 | 644 | 0.2− | 0.0 |
| 1999 11 11 | 695 | 0.9+ | 0.5+ | 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 2004 01 28 | 691 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.3− | 0.5+ | 2006 08 28 | 691 | 0.0 | 0.3+ |
| 2004 01 28 | 691 | 0.2− | 0.0 | 2005 05 13 | G96 | 0.0 | 0.6+ | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2004 01 28 | 691 | 0.1+ | 0.6+ | 2006 05 26 | G96 | 0.6− | 0.4+ | 2006 08 29 | 704 | 0.1+ | 0.2+ |
| 2005 03 11 | G96 | 0.3− | 0.4− | 2006 05 26 | G96 | 0.7− | 0.0 | 2006 08 29 | 704 | 0.1− | 0.7− |
| 2005 03 11 | G96 | 0.6− | 0.3+ | 2006 05 26 | G96 | 0.2− | 0.4+ | 2006 08 29 | 704 | 0.4+ | 0.4+ |
| 2005 03 11 | G96 | 0.2+ | 0.2+ | 2006 05 26 | G96 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.1− |
| 2005 03 11 | G96 | 0.0 | 0.4− | 2006 08 13 | 644 | 0.3− | 0.1+ | 2006 10 17 | G96 | 1.0+ | 0.5− |
| 2005 03 17 | 691 | 0.1+ | 0.6+ | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.8+ |
| 2005 03 17 | 691 | 0.4+ | 0.3+ | 2006 08 13 | 644 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.5+ | 1.0− |
| 2005 03 17 | 691 | 0.5+ | 0.4+ | 2006 08 18 | 644 | 0.3− | 0.1+ | | | | |
| 2005 04 04 | G96 | 0.2− | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.1− | | | | |

**(145023)∗ 2005 EB$_{260}$**

Discovered 2005 Mar. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.47771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24080490 | $\omega$ | 167.80649 | | +0.47295195 | +0.88085985 | |
| $a$ | 2.5587381 | $\Omega$ | 130.41597 | | −0.81058008 | +0.44391565 | |
| $e$ | 0.1108929 | $i$ | 1.50974 | | −0.34536413 | +0.16439228 | |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.5+ | 0.0 | 2005 03 17 | 691 | 0.3+ | 0.1+ | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 1994 10 08 | 691 | 0.2− | 0.2− | 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 691 | 0.1− | 0.5+ |
| 1994 10 08 | 691 | 0.5− | 0.4+ | 2005 03 17 | 691 | 0.3− | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.5+ |
| 2001 04 16 | 615 | 1.0+ | 0.4− | 2005 04 01 | 691 | 0.1+ | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.5+ |
| 2001 04 16 | 615 | (2.3− | 0.8−) | 2005 04 01 | 691 | 0.3− | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.7+ |
| 2001 04 16 | 615 | (2.2− | 1.1−) | 2005 04 01 | 691 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.8− |
| 2002 10 04 | 644 | 0.3+ | 0.7+ | 2005 04 10 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 1.1− | 1.2− |
| 2002 10 04 | 644 | 0.2− | 0.5+ | 2005 04 10 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.1− | 1.1+ |
| 2002 10 04 | 644 | 0.1− | 0.6+ | 2005 04 10 | G96 | 0.3+ | 0.3− | 2006 08 28 | 703 | 1.8− | 1.2+ |
| 2003 12 17 | 291 | 0.0 | 0.7+ | 2005 04 10 | G96 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2003 12 17 | 291 | 0.4− | 0.6+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.1+ |
| 2003 12 17 | 291 | 0.6− | 0.7+ | 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2003 12 29 | 691 | 0.6+ | 0.2+ | 2005 05 08 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2003 12 29 | 691 | 0.6+ | 0.0 | 2005 05 10 | G96 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2003 12 29 | 691 | 0.2+ | 0.0 | 2005 05 10 | G96 | 0.4− | 0.3− | 2006 09 30 | G96 | 0.4− | 0.1+ |
| 2005 03 11 | 691 | 0.4+ | 0.6+ | 2005 05 10 | G96 | 0.7− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2005 03 11 | 691 | 0.5+ | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 691 | 0.1− | 0.3+ | | | | |

**(145024)∗ 2005 EU$_{260}$**

Discovered 2005 Mar. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.66470 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30288816 | $\omega$ | 271.41644 | | −0.09138908 | +0.99579765 | |
| $a$ | 2.1959099 | $\Omega$ | 353.33134 | | −0.89216367 | −0.08451724 | |
| $e$ | 0.1393126 | $i$ | 2.92339 | | −0.44237090 | −0.03526864 | |
| $P$ | 3.25 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 644 | 0.2− | 0.8+ | 2005 03 12 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.5− | 0.2+ |
| 2002 05 10 | 644 | 0.2+ | 0.8+ | 2005 03 12 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2002 05 10 | 644 | 0.0 | 0.8+ | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2002 05 17 | 704 | 0.4− | 1.2− | 2005 03 17 | 691 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 05 17 | 704 | 0.7+ | 0.6+ | 2005 03 17 | 691 | 0.4+ | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2002 05 17 | 704 | 0.1+ | 0.1− | 2005 03 17 | 691 | 0.5+ | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2002 05 17 | 704 | 0.2− | 1.2− | 2005 04 05 | G96 | 0.6− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2002 05 29 | 644 | 0.1− | 0.9+ | 2005 04 05 | G96 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 05 29 | 644 | 0.5+ | 1.1+ | 2005 04 05 | G96 | 0.5− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2002 05 29 | 644 | 0.2+ | 0.7+ | 2005 04 05 | G96 | 0.5− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2002 06 05 | 644 | 0.4+ | 0.6+ | 2005 05 14 | G96 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2002 06 05 | 644 | 0.6+ | 1.0+ | 2005 05 14 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.4− | 0.3− |
| 2002 06 05 | 644 | 0.5+ | 1.1+ | 2005 05 14 | G96 | 0.4− | 0.2− | 2006 11 27 | G96 | 0.7− | 0.0 |
| 2003 12 18 | 691 | 0.0 | 0.8+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.5− | 0.5+ | | | | |
| 2003 12 18 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.4− | 0.4+ | | | | |

**(145025)∗ 2005 EH$_{264}$ = 1995 UX$_9$**

Discovered 2005 Mar. 13 by Spacewatch at Kitt Peak.
Id. G. V. Williams (*MPO* 76998)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.96952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26896724 | $\omega$ | 28.23580 | | −0.15578886 | +0.98758470 | |
| $a$ | 2.3768574 | $\Omega$ | 232.80865 | | −0.91097514 | −0.15153364 | |
| $e$ | 0.1607129 | $i$ | 1.44991 | | −0.38190854 | −0.04140081 | |
| $P$ | 3.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.1− | 0.3+ | 2005 03 13 | 703 | 0.1− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1− |
| 1995 10 16 | 691 | 0.3− | 0.3+ | 2005 03 13 | 703 | 0.4+ | 0.2− | 2006 09 15 | 691 | 0.4− | 0.3+ |
| 1995 10 16 | 691 | 0.2− | 0.2+ | 2005 03 13 | 691 | 0.5+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 1995 10 21 | 691 | 0.7− | 0.8+ | 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 1995 10 21 | 691 | 0.3+ | 0.4+ | 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1995 10 21 | 691 | 0.0 | 0.5+ | 2005 03 17 | 691 | 0.9− | 0.7+ | 2006 09 24 | 691 | 0.0 | 0.2+ |
| 2002 07 22 | 644 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.6+ |
| 2002 07 22 | 644 | 0.3− | 0.0 | 2005 04 04 | 703 | 0.2− | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.0 |
| 2002 07 22 | 644 | 0.3+ | 0.0 | 2005 04 04 | 703 | (0.8+ | 1.7+) | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.4− | 0.1+ | 2005 04 04 | 703 | 0.6− | 1.0+ | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.2− | 0.4− | 2005 04 05 | G96 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.1− | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 09 04 | 644 | 0.0 | 1.1+ | 2005 04 05 | G96 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 2002 09 04 | 644 | 0.2+ | 1.1+ | 2005 04 05 | G96 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 09 04 | 644 | 0.4− | 1.1+ | 2005 04 09 | 704 | 0.7+ | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2005 03 13 | 691 | 0.3+ | 0.5+ | 2005 04 09 | 704 | 0.6+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2005 03 13 | 703 | (0.1+ | 2.1+) | 2005 04 09 | 704 | 0.4+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2005 03 13 | 703 | 1.0+ | 0.1− | 2005 04 09 | 704 | (2.0+ | 0.1+) | 2006 10 28 | G96 | 0.1+ | 0.9− |
| 2005 03 13 | 691 | 0.6+ | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.2+ |

**(145026)∗ 2005 EK$_{266}$ = 1998 HL$_{62}$**

Discovered 2005 Mar. 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 76999)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.12076 | | (2000.0) | | | |
| $n$ | 0.27871613 | $\omega$ | 116.91825 | | +0.69144989 | +0.72128028 |
| $a$ | 2.3211043 | $\Omega$ | 197.02750 | | −0.70224047 | +0.65786135 |
| $e$ | 0.2180598 | $i$ | 7.97793 | | −0.16957412 | +0.21673302 |
| $P$ | 3.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | (0.5+ | 2.1+) | 2005 04 04 | 704 | 0.0 | 0.3− | 2006 09 16 | 703 | (0.7+ | 2.2+) |
| 1998 04 21 | 704 | 1.4+ | 0.7+ | 2005 04 04 | 704 | 0.8+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1998 04 21 | 704 | 0.8+ | 0.0 | 2005 04 04 | 704 | 0.1− | 1.3− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1998 04 21 | 704 | 0.2− | 0.6+ | 2005 04 05 | 699 | 0.2− | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1998 04 21 | 704 | 0.1+ | 1.0− | 2005 04 05 | 699 | 1.3− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 1998 04 22 | 704 | 0.0 | 0.5− | 2005 04 05 | 699 | 0.5+ | 1.3+ | 2006 10 16 | 703 | 0.3− | 1.1+ |
| 1998 04 22 | 704 | 0.9− | 0.2− | 2005 04 05 | 699 | 0.4+ | 1.0+ | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 1998 04 22 | 704 | 0.7− | 0.3+ | 2005 04 07 | 704 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 1998 04 22 | 704 | 0.6− | 0.3− | 2005 04 07 | 704 | 0.5+ | 1.4+ | 2006 10 16 | 703 | 0.1+ | 1.2+ |
| 2002 06 23 | 644 | 0.1− | 0.6− | 2005 04 07 | 704 | 0.5+ | 1.4+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2002 06 23 | 644 | 0.1− | 0.6+ | 2005 04 07 | 704 | 0.1+ | 0.9+ | 2006 10 18 | 691 | 0.3+ | 0.2+ |
| 2002 06 23 | 644 | 0.2− | 0.4+ | 2005 04 10 | G96 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2002 07 09 | 704 | 0.5+ | 1.2+ | 2005 04 10 | G96 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 07 09 | 704 | 0.1− | 0.4+ | 2005 04 10 | G96 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2002 07 09 | 704 | 0.2− | 0.2+ | 2005 04 10 | G96 | 0.6− | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2002 07 09 | 704 | 0.2+ | 0.2+ | 2005 04 11 | 699 | 0.2− | 1.1+ | 2006 11 02 | 703 | 0.9+ | 0.3+ |
| 2002 07 09 | 704 | 0.4+ | 0.5+ | 2005 04 11 | 699 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.0 |
| 2002 07 20 | 644 | 0.2+ | 0.7+ | 2005 04 11 | 699 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.1+ | 0.1+ |
| 2002 07 20 | 644 | 0.0 | 0.7+ | 2005 04 11 | 699 | 0.2− | 0.9+ | 2006 11 02 | 703 | 0.2− | 0.6+ |
| 2002 07 20 | 644 | 0.0 | 0.7+ | 2005 04 12 | 704 | 0.6+ | 0.9− | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 08 13 | 704 | 0.8− | 0.1− | 2005 04 12 | 704 | 0.2+ | 1.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 08 13 | 704 | 1.1− | 0.0 | 2005 04 12 | 704 | 0.8+ | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 08 13 | 704 | 1.1− | 0.2− | 2005 04 12 | 704 | 0.8+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 08 13 | 704 | 0.6− | 0.1− | 2005 04 12 | 704 | 0.7+ | 0.4+ | 2006 11 11 | 703 | 1.2+ | 0.4+ |
| 2002 08 23 | 644 | 0.1− | 0.6+ | 2005 04 14 | 704 | 1.3+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.5+ |
| 2002 08 23 | 644 | 0.1− | 0.8+ | 2005 04 14 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 644 | 0.2− | 0.3+ |
| 2002 08 23 | 644 | 0.2− | 0.6+ | 2005 04 14 | 704 | (1.5+ | 0.0 ) | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2002 09 03 | 644 | 0.0 | 0.6+ | 2005 04 18 | 703 | 0.9− | 0.5+ | 2006 11 11 | 644 | 0.3+ | 0.0 |
| 2002 09 03 | 644 | 0.0 | 0.7+ | 2005 04 18 | 703 | (2.2− | 0.0 ) | 2006 11 11 | 644 | 0.4− | 0.3+ |
| 2002 09 03 | 644 | 0.0 | 0.6+ | 2005 04 18 | 703 | (0.3− | 1.5−) | 2006 11 17 | 704 | 1.1− | 0.4+ |
| 2002 10 04 | 704 | 1.0+ | 1.1+ | 2005 04 18 | 703 | (0.3− | 1.8−) | 2006 11 17 | 704 | 1.2+ | 0.5+ |
| 2002 10 04 | 704 | 0.6+ | 0.7− | 2005 05 08 | 703 | 0.7− | 0.4− | 2006 11 17 | 704 | 0.1+ | 1.3+ |
| 2002 10 04 | 704 | 0.1+ | 0.7− | 2005 05 08 | 703 | (0.1− | 1.6−) | 2006 11 17 | 704 | 0.1+ | 1.1+ |
| 2002 10 04 | 704 | 0.7+ | 0.0 | 2005 05 08 | 703 | 1.2− | 0.6− | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2005 03 13 | 691 | 0.4+ | 0.2+ | 2005 05 08 | 703 | (2.9− | 3.3+) | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2005 03 13 | 691 | 0.1− | 0.3+ | 2005 05 10 | G96 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.4− | 0.7+ |
| 2005 03 17 | 691 | 0.1+ | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.0 | 1.0+ | 2006 11 20 | 704 | 0.8+ | 0.8+ |
| 2005 04 04 | 704 | 0.0 | 1.4+ | 2006 09 16 | 703 | 0.6− | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.7+ |
| 2005 04 04 | 704 | 0.4+ | 0.1− | 2006 09 16 | 703 | 1.3+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.6+ |

**(145027)∗ 2005 ET$_{266}$**

Discovered 2005 Mar. 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.34806 | | (2000.0) | | | |
| $n$ | 0.27469542 | $\omega$ | 24.49948 | | +0.95508718 | −0.29623668 |
| $a$ | 2.3436986 | $\Omega$ | 352.72096 | | +0.26158856 | +0.85434281 |
| $e$ | 0.0897073 | $i$ | 3.27223 | | +0.13921171 | +0.42701545 |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2− | 0.3− | 2003 12 22 | 704 | 0.2− | 1.4+ | 2006 08 15 | 644 | 0.5− | 0.6+ |
| 1999 10 06 | 704 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.5− | 1.0+ | 2006 08 15 | 644 | 0.1+ | 0.5+ |
| 1999 10 06 | 704 | 0.0 | 0.2− | 2003 12 22 | 704 | 0.6− | 0.3− | 2006 08 24 | 644 | 0.3− | 0.7+ |
| 1999 10 06 | 704 | 0.0 | 0.1− | 2003 12 27 | 704 | 0.7− | 0.8+ | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 1999 10 06 | 704 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 0.4+ | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.4+ |
| 2001 02 23 | 691 | 0.7− | 0.3− | 2003 12 27 | 704 | (3.8+ | 0.9+) | 2006 08 29 | 704 | (0.0 | 2.4+) |
| 2001 02 23 | 691 | 0.1− | 0.1− | 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 704 | 1.2+ | 0.8+ |
| 2001 02 23 | 691 | 0.2− | 0.2− | 2005 03 13 | 691 | 0.0 | 0.0 | 2006 08 29 | 704 | (0.0 | 1.7+) |
| 2001 03 31 | 691 | 0.4+ | 0.2+ | 2005 03 13 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 704 | (0.0 | 1.9+) |
| 2001 03 31 | 691 | 0.4+ | 0.1− | 2005 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.6− | 0.4+ |
| 2001 03 31 | 691 | 0.5+ | 0.0 | 2005 03 17 | 691 | 0.2− | 0.8+ | 2006 09 30 | G96 | 0.4− | 0.2+ |
| 2003 11 24 | 704 | 0.1− | 0.4+ | 2005 03 17 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.5+ |
| 2003 11 24 | 704 | 1.0+ | 0.7+ | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2003 11 24 | 704 | 0.0 | 0.2− | 2005 04 09 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2003 11 24 | 704 | 1.1− | 0.5+ | 2005 04 09 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.3+ |
| 2003 12 17 | 644 | 0.3− | 0.2+ | 2006 08 13 | 644 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2003 12 17 | 644 | 0.1− | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.4− | 0.3+ |
| 2003 12 17 | 644 | 0.1− | 0.7+ | 2006 08 13 | 644 | 0.2− | 0.6+ | | | | |
| 2003 12 22 | 704 | 0.7+ | 0.2+ | 2006 08 15 | 644 | 0.1− | 0.2+ | | | | |

**(145028)∗ 2005 EY$_{267}$ = 1995 UX$_{73}$**

Discovered 2005 Mar. 14 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77001)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.32866 | | (2000.0) | | | |
| $n$ | 0.27003394 | $\omega$ | 346.73309 | | −0.31785721 | +0.94775757 |
| $a$ | 2.3705938 | $\Omega$ | 264.72849 | | −0.86741770 | −0.30212473 |
| $e$ | 0.1697731 | $i$ | 1.54667 | | −0.38282285 | −0.10235345 |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 1.1− | 0.4+ | 2002 08 17 | 644 | 0.4− | 0.1+ | 2005 04 04 | 704 | 0.0 | 0.4− |
| 1995 10 21 | 691 | 0.6− | 0.2+ | 2002 08 17 | 644 | 0.6− | 0.1− | 2005 04 18 | 703 | (0.8+ | 1.8+) |
| 1995 10 21 | 691 | 0.9− | 0.2+ | 2002 08 27 | 644 | 0.1− | 0.4+ | 2005 04 18 | 703 | (0.4− | 2.1+) |
| 1995 10 27 | 691 | 0.7+ | 0.1+ | 2002 08 27 | 644 | 0.2− | 0.3+ | 2005 04 18 | 703 | (0.7+ | 2.1−) |
| 1995 10 27 | 691 | 0.7+ | 0.4+ | 2002 08 27 | 644 | 0.2+ | 0.5+ | 2005 04 18 | 703 | (1.7− | 1.3−) |
| 1995 10 27 | 691 | 0.9+ | 0.5− | 2005 03 03 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.4− | 0.2+ |
| 2002 08 08 | 699 | 0.1+ | 0.0 | 2005 03 03 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2002 08 08 | 699 | 0.7+ | 0.2− | 2005 03 03 | 691 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.3+ |
| 2002 08 08 | 699 | 0.4− | 0.2− | 2005 03 14 | G96 | 0.5− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2002 08 08 | 699 | 0.4− | 0.5− | 2005 03 14 | G96 | 1.2− | 0.7− | 2006 10 31 | G96 | 0.2− | 0.3+ |
| 2002 08 08 | 644 | 0.7+ | 0.0 | 2005 03 14 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2005 03 14 | G96 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 08 08 | 644 | 0.4+ | 0.3+ | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.5+ |
| 2002 08 17 | 644 | 0.2− | 0.1+ | 2005 03 17 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.7+ | 0.1+ |
| 2002 08 17 | 644 | 0.2− | 0.2+ | 2005 04 04 | 704 | 0.7+ | 1.2− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.2− | 0.0 | 2005 04 04 | 704 | 0.9+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.7+ |

**(145029)∗ 2005 ER$_{269}$**

Discovered 2005 Mar. 15 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.77159 | | (2000.0) | | | |
| $n$ | 0.25865412 | $\omega$ | 38.84197 | | −0.21628082 | +0.97434912 |
| $a$ | 2.4396252 | $\Omega$ | 218.78121 | | −0.91870959 | −0.22465873 |
| $e$ | 0.0896917 | $i$ | 5.69739 | | −0.33044711 | −0.01312435 |
| $P$ | 3.81 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.6− | 0.2− | 2005 03 17 | G96 | 0.1− | 0.2− | 2005 05 01 | 735 | 0.1+ | 0.1+ |
| 1999 12 09 | 691 | 0.6− | 0.1− | 2005 03 17 | G96 | 0.4− | 0.2− | 2005 05 01 | 735 | 0.8+ | 0.3+ |
| 1999 12 09 | 691 | 0.8− | 0.5+ | 2005 03 17 | G96 | 0.2− | 0.3− | 2005 05 01 | 735 | 0.3− | 0.7− |
| 1999 12 16 | 691 | 0.5+ | 0.4+ | 2005 03 17 | G96 | 0.1+ | 0.3− | 2005 05 01 | 735 | 0.7− | 0.8− |
| 1999 12 16 | 691 | 0.7+ | 0.5+ | 2005 04 03 | 644 | 0.0 | 0.6+ | 2005 05 08 | 703 | (1.6− | 1.1−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 691 | 0.5+ | 0.5+ | 2005 04 03 | 644 | 0.1+ | 0.2+ | 2005 05 08 | 703 | 1.5− | 0.5+ |
| 2002 08 12 | 704 | 0.1+ | 0.1+ | 2005 04 03 | 644 | 0.3+ | 0.5+ | 2005 05 08 | 703 | 0.8− | 1.3+ |
| 2002 08 12 | 704 | 0.0 | 0.2+ | 2005 04 04 | 691 | 0.1− | 0.1+ | 2005 05 08 | 703 | 0.4+ | 1.0+ |
| 2002 08 12 | 704 | 0.0 | 0.5+ | 2005 04 04 | 691 | 0.2+ | 0.5− | 2005 05 12 | G96 | 0.4− | 0.3− |
| 2002 08 12 | 704 | 0.7− | 0.6− | 2005 04 04 | 691 | 0.3+ | 0.1− | 2005 05 12 | G96 | 0.3− | 0.2− |
| 2002 08 16 | 644 | (0.1− | 1.7+) | 2005 04 05 | 699 | 0.3+ | 0.8+ | 2005 05 12 | G96 | 0.3− | 0.2− |
| 2002 08 16 | 644 | 0.2− | 1.4+ | 2005 04 05 | 699 | 0.2+ | 0.6+ | 2005 05 12 | G96 | 0.2− | 0.5− |
| 2002 08 16 | 644 | 0.1+ | 1.3+ | 2005 04 05 | 699 | 0.1− | 0.6− | 2006 08 29 | 703 | 0.3− | 0.6+ |
| 2002 08 18 | 644 | 0.2− | 0.8+ | 2005 04 05 | 644 | 0.4+ | 0.5+ | 2006 08 29 | 703 | 0.9− | 0.8− |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2005 04 05 | 699 | 1.1+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.2+ |
| 2002 08 18 | 644 | 0.0 | 0.6+ | 2005 04 05 | 644 | 0.7+ | 0.5+ | 2006 08 29 | 703 | 0.6− | 0.6+ |
| 2002 08 26 | 644 | 0.2− | 0.2− | 2005 04 05 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2002 08 26 | 644 | 0.4− | 0.1+ | 2005 04 06 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | (0.3− | 1.9+) |
| 2002 08 26 | 644 | 0.1+ | 0.0 | 2005 04 06 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3+ | 0.1− |
| 2005 03 15 | G96 | 0.3− | 0.5− | 2005 04 06 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.8+ |
| 2005 03 15 | G96 | 0.4− | 0.2− | 2005 04 09 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2005 03 15 | G96 | (1.8− | 0.0 ) | 2005 04 09 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.7− |
| 2005 03 15 | G96 | 1.1− | 0.7+ | 2005 04 09 | 691 | 0.5+ | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.3− |

**(145030)∗ 2005 ET$_{269}$**

Discovered 2005 Mar. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.67250 | | (2000.0) | | | |
| $n$ | 0.21870241 | $\omega$ | 328.53227 | | −0.02465798 | +0.98637348 |
| $a$ | 2.7283516 | $\Omega$ | 299.59548 | | −0.87397220 | −0.10026631 |
| $e$ | 0.2360966 | $i$ | 10.78181 | | −0.48534996 | +0.13043782 |
| $P$ | 4.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.2− | 0.2+ | 2005 04 06 | 699 | 0.8− | 1.0+ | 2006 09 21 | 699 | 0.3+ | 0.5+ |
| 2002 10 13 | 644 | 0.3+ | 0.2− | 2005 04 14 | 703 | 1.3− | 0.9+ | 2006 09 21 | 699 | 0.3− | 1.2+ |
| 2002 10 13 | 644 | 0.2+ | 0.2+ | 2005 04 14 | 703 | 0.0 | 0.0 | 2006 09 22 | A50 | 0.2− | 0.1+ |
| 2003 12 18 | 691 | 0.1+ | 0.1− | 2005 04 14 | 703 | 0.9− | 0.6+ | 2006 09 27 | 703 | (1.0+ | 3.0+) |
| 2003 12 18 | 691 | 0.6− | 1.1+ | 2005 04 14 | 703 | 0.5− | 0.4+ | 2006 09 27 | 703 | 0.1− | 1.0+ |
| 2003 12 18 | 691 | 0.3− | 0.2− | 2005 04 18 | E12 | 0.0 | 0.4− | 2006 09 27 | 703 | 0.1− | 0.8+ |
| 2003 12 29 | 691 | 0.1+ | 0.2− | 2005 04 18 | E12 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.8+ | 0.8+ |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2005 04 18 | E12 | (2.1− | 1.1−) | 2006 10 03 | 703 | 0.9− | 0.2+ |
| 2003 12 29 | 691 | 0.4− | 0.0 | 2005 04 18 | E12 | 0.4+ | 0.3− | 2006 10 03 | 703 | (0.2− | 2.0+) |
| 2004 01 21 | 691 | 0.5+ | 0.2− | 2005 05 04 | E12 | 0.3− | 0.3+ | 2006 10 03 | 703 | 0.5− | 0.0 |
| 2004 01 21 | 691 | 0.5+ | 0.0 | 2005 05 04 | E12 | 0.2− | 0.3− | 2006 10 03 | 703 | 0.1+ | 1.3+ |
| 2004 01 21 | 691 | 0.1+ | 0.1+ | 2005 05 04 | E12 | 0.3− | 0.9+ | 2006 10 17 | 683 | 0.8+ | 1.2− |
| 2005 03 13 | 699 | 1.4+ | 0.3+ | 2005 05 04 | E12 | 0.1+ | 0.1− | 2006 10 17 | 683 | 1.1+ | 0.8+ |
| 2005 03 13 | 699 | 0.3+ | 0.6− | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 10 17 | 683 | (1.9− | 2.0+) |
| 2005 03 13 | 699 | 0.8+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2005 03 13 | 699 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 10 17 | 703 | 1.0− | 0.2− |
| 2005 03 17 | 599 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.7− | 1.5+ | 2006 10 17 | 703 | 0.5+ | 0.6− |
| 2005 03 18 | 599 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2005 03 18 | 599 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.4− | 0.1+ | 2006 10 23 | 703 | 0.4− | 0.7− |
| 2005 03 18 | 599 | 0.0 | 0.0 | 2006 09 16 | 703 | 1.0− | 0.2+ | 2006 10 23 | 703 | 1.0+ | 0.3− |
| 2005 04 06 | 699 | 0.6+ | 0.1− | 2006 09 16 | 703 | 0.6− | 0.7− | 2006 10 23 | 703 | 1.4+ | 1.4− |
| 2005 04 06 | 699 | 0.6+ | 0.0 | 2006 09 21 | 699 | 0.5− | 0.4+ | 2006 10 23 | 703 | 0.3− | 0.6+ |
| 2005 04 06 | 699 | 1.2+ | 0.0 | 2006 09 21 | 699 | 0.4+ | 0.4+ | | | | |

**(145031)∗ 2005 EB$_{272}$**

Discovered 2005 Mar. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.46852 | | (2000.0) | | | |
| $n$ | 0.21552076 | $\omega$ | 98.80322 | | −0.23578960 | +0.96990783 |
| $a$ | 2.7551377 | $\Omega$ | 157.27900 | | −0.94191707 | −0.21272584 |
| $e$ | 0.0700387 | $i$ | 9.03876 | | −0.23915580 | −0.11843357 |
| $P$ | 4.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 704 | 0.6− | 0.9− | 2005 03 31 | 699 | 1.0− | 0.8+ | 2005 04 16 | 703 | 1.4− | 1.1− |
| 2001 05 29 | 704 | 0.7− | 0.3− | 2005 04 04 | 703 | 0.3− | 0.5− | 2006 05 09 | G96 | 0.1+ | 0.1+ |
| 2001 05 29 | 704 | 0.9− | 0.5+ | 2005 04 04 | 703 | 1.0+ | 0.1+ | 2006 05 09 | G96 | 0.3− | 0.3− |
| 2001 06 19 | 608 | 1.0+ | 0.5− | 2005 04 04 | 703 | 0.2+ | 0.3+ | 2006 05 09 | G96 | 0.2− | 0.2− |
| 2001 06 19 | 608 | 0.8+ | 0.0 | 2005 04 04 | 703 | 0.5− | 0.1− | 2006 05 09 | G96 | 0.0 | 0.1+ |
| 2001 06 19 | 608 | 0.3+ | 0.1+ | 2005 04 05 | 699 | 0.5+ | 1.1+ | 2006 05 10 | G96 | 0.0 | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2005 04 05 | 699 | 0.2− | 0.0 | 2006 05 10 | G96 | 0.0 | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2005 04 05 | 699 | 0.6+ | 1.0+ | 2006 05 10 | G96 | 0.4− | 0.0 |
| 2005 03 11 | 691 | 0.2+ | 0.1+ | 2005 04 05 | 699 | 0.5− | 0.7+ | 2006 05 10 | G96 | 0.4− | 0.0 |
| 2005 03 11 | 691 | 0.3+ | 0.0 | 2005 04 13 | 699 | 1.2+ | 0.7+ | 2006 08 12 | 644 | 0.2+ | 0.1+ |
| 2005 03 11 | 691 | 0.2+ | 0.0 | 2005 04 13 | 699 | (2.0+ | 0.4−) | 2006 08 12 | 644 | 0.2+ | 0.2+ |
| 2005 03 16 | 683 | 0.6+ | 0.5+ | 2005 04 13 | 704 | 0.5+ | 0.5+ | 2006 08 12 | 644 | 0.1+ | 0.1− |
| 2005 03 16 | 683 | 0.7+ | 0.1− | 2005 04 13 | 704 | 1.1+ | 1.5+ | 2006 08 13 | 644 | 0.0 | 0.4+ |
| 2005 03 16 | 683 | (0.8+ | 2.3+) | 2005 04 13 | 699 | (2.4+ | 0.4−) | 2006 08 13 | 644 | 0.2− | 0.2+ |
| 2005 03 18 | 703 | (1.2− | 1.9+) | 2005 04 13 | 704 | 1.0+ | 0.6+ | 2006 08 13 | 644 | 0.1− | 0.3+ |
| 2005 03 18 | 703 | 0.8− | 0.1+ | 2005 04 13 | 704 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.6+ | 0.2− |
| 2005 03 18 | 703 | 0.1− | 0.6+ | 2005 04 13 | 699 | 1.3− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2005 03 18 | 703 | 0.6− | 0.6+ | 2005 04 13 | 704 | (0.1− | 3.1+) | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2005 03 31 | 699 | 0.5+ | 0.7− | 2005 04 16 | 703 | 1.0− | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2005 03 31 | 699 | 0.0 | 0.5+ | 2005 04 16 | 703 | 0.3− | 1.1− | | | | |
| 2005 03 31 | 699 | 0.2− | 0.6+ | 2005 04 16 | 703 | 0.9− | 1.0− | | | | |

**(145032)∗ 2005 EX$_{272}$**

Discovered 2005 Mar. 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.87942 | | (2000.0) | | | |
| $n$ | 0.26188917 | $\omega$ | 179.16162 | | +0.51177395 | +0.85497131 |
| $a$ | 2.4194929 | $\Omega$ | 121.61636 | | −0.78880257 | +0.50651006 |
| $e$ | 0.1902800 | $i$ | 5.68318 | | −0.34040848 | +0.11167643 |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 0.4+ | 0.6+ | 2006 08 21 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 1998 05 24 | 704 | 1.5+ | 0.9− | 2006 08 21 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 1998 05 24 | 704 | (1.3+ | 2.1+) | 2006 08 21 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.4+ |
| 1998 05 24 | 704 | 0.7+ | 1.2+ | 2006 08 23 | 704 | 0.8+ | 0.7− | 2006 09 14 | 703 | 0.2+ | 0.0 |
| 1998 05 24 | 704 | (3.5− | 0.8−) | 2006 08 23 | 704 | (1.9+ | 0.6+) | 2006 09 14 | 703 | 0.3− | 0.7+ |
| 1998 06 30 | 691 | 0.1− | 0.3+ | 2006 08 23 | 704 | (3.7+ | 0.4−) | 2006 09 16 | 704 | 0.8− | 1.2− |
| 1998 06 30 | 691 | 0.3− | 0.3+ | 2006 08 28 | 704 | 0.2− | 0.5− | 2006 09 16 | 704 | 0.2+ | 0.1+ |
| 1998 06 30 | 691 | 0.1+ | 0.4− | 2006 08 28 | 704 | 0.7− | 0.4+ | 2006 09 16 | 704 | 0.1− | 0.3+ |
| 2002 06 11 | 644 | 0.3− | 0.0 | 2006 08 28 | 704 | 0.2− | 0.9+ | 2006 09 20 | 703 | (2.2− | 0.6−) |
| 2002 06 11 | 644 | 0.1− | 0.0 | 2006 08 28 | 704 | 0.4− | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.3− |
| 2002 06 11 | 644 | 0.2− | 0.1− | 2006 08 28 | 704 | 0.3− | 0.6+ | 2006 09 20 | 703 | 0.7− | 0.5− |
| 2002 07 05 | 704 | 1.0− | 0.2− | 2006 08 29 | 703 | 0.5− | 0.6+ | 2006 09 20 | 703 | 0.4− | 0.1+ |
| 2002 07 05 | 704 | 0.8− | 0.1− | 2006 08 29 | 703 | 0.1− | 0.6+ | 2006 09 21 | 699 | 0.7+ | 0.1− |
| 2002 07 05 | 704 | 0.1+ | 0.2− | 2006 08 29 | 703 | 0.2+ | 1.0+ | 2006 09 21 | 699 | 0.1− | 0.5+ |
| 2002 07 05 | 704 | 0.4− | 0.5− | 2006 08 29 | 703 | 0.5− | 0.5+ | 2006 09 21 | 699 | 0.7− | 0.1+ |
| 2002 07 14 | 704 | 1.0+ | 0.1− | 2006 08 30 | 699 | 0.7+ | 0.1− | 2006 09 21 | 699 | 0.8− | 0.9+ |
| 2002 07 14 | 704 | 0.5− | 1.0− | 2006 08 30 | 699 | 0.4+ | 0.5− | 2006 09 25 | 699 | 0.5+ | 0.2− |
| 2002 07 14 | 704 | 0.2+ | 0.4− | 2006 08 30 | 699 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 1.0+ | 0.4+ |
| 2002 07 14 | 704 | 0.4+ | 0.3− | 2006 08 31 | 704 | 0.4+ | 0.4− | 2006 09 25 | 699 | 0.5+ | 0.6+ |
| 2005 03 03 | 691 | 0.2+ | 0.6+ | 2006 08 31 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.3− | 0.5+ |
| 2005 03 03 | 691 | 0.2− | 0.5+ | 2006 08 31 | 704 | 0.6− | 0.5− | 2006 09 26 | 703 | (0.1+ | 1.9+) |
| 2005 03 03 | 691 | 0.3− | 0.3+ | 2006 08 31 | 704 | 0.4+ | 0.2− | 2006 09 26 | 703 | 0.0 | 0.7+ |
| 2005 03 12 | 704 | 0.4+ | 0.3− | 2006 09 12 | 704 | 0.6− | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2005 03 12 | 704 | 1.4+ | 0.8+ | 2006 09 12 | 704 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2005 03 12 | 704 | 1.1+ | 0.7+ | 2006 09 12 | 704 | 0.7+ | 1.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2005 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 704 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2005 04 13 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2005 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.1+ | | | | |

**(145033)∗ 2005 ET$_{275}$ = 1995 UK$_{32}$**

Discovered 2005 Mar. 8 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 95663)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.14021 | | (2000.0) | | | |
| $n$ | 0.26428437 | $\omega$ | 85.96659 | | +0.14243190 | +0.98863639 |
| $a$ | 2.4048522 | $\Omega$ | 192.53348 | | −0.97310864 | +0.13098069 |
| $e$ | 0.1760817 | $i$ | 12.79921 | | −0.18103237 | +0.07377090 |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.3+ | 0.4− | 2005 04 04 | 703 | 0.4− | 1.1+ | 2006 09 27 | 699 | 0.2− | 0.2− |
| 1995 10 21 | 691 | 0.1+ | 0.2− | 2005 04 04 | 703 | 1.0− | 0.1+ | 2006 09 27 | 699 | 0.3− | 1.2+ |
| 1995 10 21 | 691 | 0.1− | 0.5− | 2005 04 04 | 703 | 1.0− | 0.3− | 2006 09 27 | 699 | 0.1− | 0.0 |
| 1995 10 25 | 691 | 0.2− | 0.4+ | 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.7+ |
| 1995 10 25 | 691 | 0.0 | 0.1− | 2005 04 12 | G96 | 0.4− | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.9+ |
| 1995 10 25 | 691 | 0.0 | 0.0 | 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 09 29 | 704 | 1.2+ | 0.7+ |
| 2002 07 09 | 644 | 0.0 | 0.1− | 2005 04 12 | G96 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.1− | 1.1+ |
| 2002 07 09 | 644 | 0.1− | 0.3+ | 2005 05 13 | G96 | 0.8− | 0.2− | 2006 09 29 | 704 | 0.9+ | 0.2+ |
| 2002 07 09 | 644 | 0.0 | 0.3+ | 2005 05 13 | G96 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.6− | 0.4− |
| 2002 07 18 | 704 | 0.1+ | 0.5+ | 2005 05 13 | G96 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.9+ | 1.4+ |
| 2002 07 18 | 704 | (1.4+ | 1.8+) | 2005 05 13 | G96 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.8+ |
| 2002 07 18 | 704 | 0.1+ | 0.8+ | 2006 08 29 | 703 | (1.1+ | 2.1+) | 2006 10 01 | 704 | 0.4+ | 0.0 |
| 2002 07 18 | 704 | 0.1− | 1.1+ | 2006 08 29 | 703 | 0.6+ | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2002 07 18 | 704 | 0.2+ | 1.2+ | 2006 08 29 | 703 | (2.0− | 0.4+) | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 2002 08 11 | 704 | (1.9− | 0.1+) | 2006 08 29 | 703 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.3+ | 0.2+ |
| 2002 08 11 | 704 | (2.0− | 0.6+) | 2006 09 16 | 644 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2002 08 11 | 704 | (1.9− | 0.4+) | 2006 09 16 | 644 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 09 04 | 644 | 0.3+ | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2002 09 04 | 644 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 17 | 106 | 0.3− | 0.1+ |
| 2002 09 04 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 17 | 106 | 0.1− | 1.2− |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.4− | 0.4+ | 2006 10 17 | 106 | 0.8− | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.3+ | 2006 10 17 | 106 | 0.1− | 0.1− |
| 2005 03 08 | 691 | 0.0 | 0.5+ | 2006 09 17 | 703 | 1.3− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2005 03 08 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 03 08 | 691 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2005 03 17 | 691 | 0.6+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | (0.7− | 1.5+) | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2005 03 17 | 691 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.6− | 0.4+ |
| 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.7− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2005 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2005 03 17 | 691 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2005 04 04 | 703 | 0.6+ | 1.3− | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1− |

**(145034)∗ 2005 EC$_{278}$ = 1998 FW$_{130}$**

Discovered 2005 Mar. 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 77008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 127.42955 | | (2000.0) | | | |
| $n$ | 0.28043513 | $\omega$ | 48.53786 | | −0.80775422 | +0.58897221 |
| $a$ | 2.3116093 | $\Omega$ | 167.47623 | | −0.56975536 | −0.76888881 |
| $e$ | 0.0732707 | $i$ | 6.72517 | | −0.15136696 | −0.24884078 |
| $P$ | 3.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | (1.3+ | 2.6−) | 2005 03 01 | 691 | 0.1+ | 0.2+ | 2005 04 04 | 703 | 0.8− | 0.3+ |
| 1998 03 22 | 704 | 0.4+ | 0.5− | 2005 03 09 | 699 | (1.4− | 2.6+) | 2005 05 04 | 644 | 0.2+ | 0.3+ |
| 1998 03 22 | 704 | 1.2− | 0.7− | 2005 03 09 | 699 | (1.8− | 0.6+) | 2005 05 04 | 644 | 0.1+ | 0.4+ |
| 1998 03 22 | 704 | (2.7− | 0.5−) | 2005 03 09 | 699 | 0.6+ | 1.1+ | 2005 05 04 | 644 | 0.0 | 0.5+ |
| 1998 03 25 | 704 | 0.7− | 0.1− | 2005 03 09 | 699 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.4− | 0.2+ |
| 1998 03 25 | 704 | 0.5+ | 1.0+ | 2005 03 12 | 695 | 0.4− | 0.5+ | 2006 08 28 | 703 | (1.0+ | 1.6+) |
| 1998 03 25 | 704 | (2.3− | 0.5−) | 2005 03 12 | 695 | 0.3− | 0.5+ | 2006 08 28 | 703 | (0.3+ | 1.5+) |
| 1998 03 25 | 704 | 0.4− | 1.1− | 2005 03 13 | 703 | 0.8− | 0.8+ | 2006 08 28 | 703 | (1.6− | 1.8−) |
| 1998 03 29 | 704 | (2.4+ | 0.6−) | 2005 03 13 | 703 | 0.6− | 0.5− | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 1998 03 29 | 704 | 0.3+ | 0.4+ | 2005 03 13 | 703 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.2+ | 0.3+ |
| 1998 03 29 | 704 | (2.8+ | 1.2−) | 2005 03 13 | 703 | 0.2− | 0.9+ | 2006 08 28 | 691 | 0.0 | 0.1− |
| 1998 03 29 | 704 | 0.8+ | 0.7+ | 2005 03 31 | 699 | (1.8− | 1.3+) | 2006 09 14 | 703 | 0.0 | 0.0 |
| 1998 04 20 | 704 | (2.1+ | 0.6+) | 2005 03 31 | 699 | 0.3− | 0.7− | 2006 09 14 | 703 | 0.8− | 0.2− |
| 1998 04 20 | 704 | 0.3− | 1.0+ | 2005 03 31 | 699 | 0.9+ | 0.2+ | 2006 09 14 | 703 | 0.6+ | 0.3+ |
| 1998 04 20 | 704 | 1.7+ | 1.7+ | 2005 03 31 | 699 | 1.2+ | 0.4− | 2006 09 14 | 703 | 0.7− | 0.4− |
| 1998 04 20 | 704 | 1.7+ | 0.2− | 2005 04 01 | 683 | 0.7+ | 1.0− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 1999 09 04 | 691 | 0.5− | 0.0 | 2005 04 01 | 683 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.1− |
| 1999 09 04 | 691 | 0.4− | 0.0 | 2005 04 01 | 683 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.7+ | 0.1+ |
| 1999 09 04 | 691 | 0.5− | 0.0 | 2005 04 02 | 683 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 1999 09 17 | 691 | 0.1+ | 0.6+ | 2005 04 02 | 683 | 0.7− | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 1999 09 17 | 691 | 0.0 | 0.5+ | 2005 04 02 | 683 | (2.1− | 2.0+) | 2006 10 20 | G96 | 0.5+ | 0.2+ |
| 1999 09 17 | 691 | 0.0 | 0.6+ | 2005 04 04 | 683 | 0.1− | 0.9− | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2003 11 29 | 691 | 0.0 | 0.4+ | 2005 04 04 | 683 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2003 11 29 | 691 | 0.1+ | 0.4+ | 2005 04 04 | 683 | (0.2+ | 2.4−) | 2006 11 17 | G96 | 0.2− | 0.6− |
| 2003 11 29 | 691 | 0.3− | 0.4+ | 2005 04 04 | 703 | 0.9− | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.5+ |
| 2005 03 01 | 691 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.7+ | 0.1− |
| 2005 03 01 | 691 | 0.3+ | 0.4+ | 2005 04 04 | 703 | 0.2− | 0.6+ | | | | |

**(145035)∗ 2005 EC$_{282}$**

Discovered 2005 Mar. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 139.83015 | | (2000.0) | | | |
| $n$ | 0.30037962 | $\omega$ | 139.70470 | | −0.69215948 | +0.71865934 |
| $a$ | 2.2081187 | $\Omega$ | 86.37946 | | −0.67818419 | −0.61600211 |
| $e$ | 0.1401900 | $i$ | 3.83002 | | −0.24694424 | −0.32259907 |
| $P$ | 3.28 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 31 | 691 | 0.2− | 0.3− | 2005 04 08 | 704 | 0.4− | 0.6− | 2005 05 11 | 699 | 0.2+ | 0.6+ |
| 1997 12 31 | 691 | 0.1− | 0.0 | 2005 04 09 | 704 | 0.1− | 1.1− | 2005 05 11 | 699 | 0.1− | 0.2+ |
| 1997 12 31 | 691 | 0.0 | 0.2− | 2005 04 09 | 704 | 0.8+ | 0.1− | 2005 05 15 | 644 | 0.5− | 0.2+ |
| 2003 10 20 | 691 | 0.0 | 0.3+ | 2005 04 09 | 704 | 1.1+ | 0.4+ | 2005 05 15 | 644 | 0.7− | 0.5+ |
| 2003 10 20 | 691 | 0.0 | 0.5+ | 2005 04 09 | 704 | 0.7+ | 0.4+ | 2005 05 15 | 644 | 0.3− | 0.5+ |
| 2003 10 20 | 691 | 0.2+ | 0.2+ | 2005 04 09 | 704 | 0.1+ | 0.3+ | 2005 05 15 | 644 | 0.4− | 0.2+ |
| 2003 11 30 | 691 | 0.2− | 0.5+ | 2005 04 13 | 704 | 0.8+ | 1.0+ | 2005 05 15 | 644 | 0.3− | 0.3+ |
| 2003 11 30 | 691 | 0.1+ | 0.5+ | 2005 04 13 | 704 | 0.8+ | 0.1+ | 2005 05 15 | 644 | 0.8− | 0.5+ |
| 2003 11 30 | 691 | 0.1+ | 0.4+ | 2005 04 13 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.5+ |
| 2005 03 10 | 699 | 0.2+ | 0.8+ | 2005 04 13 | 704 | 1.2+ | 0.5− | 2006 09 17 | 691 | 0.5− | 0.2+ |
| 2005 03 10 | 699 | 0.2+ | 0.7+ | 2005 04 13 | 704 | 0.8+ | 0.2− | 2006 09 17 | 691 | 0.2+ | 0.3+ |
| 2005 03 10 | 699 | 0.4+ | 0.5+ | 2005 04 15 | 699 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2005 03 10 | 699 | 1.0+ | 0.5+ | 2005 04 15 | 699 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2005 03 18 | 703 | 0.3− | 0.9+ | 2005 04 15 | 699 | 0.4− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 03 18 | 703 | (2.2− | 3.0+) | 2005 04 15 | 699 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 2005 03 18 | 703 | (0.0 | 1.6+) | 2005 04 18 | 703 | 0.3+ | 0.6+ | 2006 10 01 | 691 | 0.3+ | 0.3+ |
| 2005 03 18 | 703 | (1.1− | 1.6+) | 2005 04 18 | 703 | 0.6− | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2005 04 04 | 703 | (2.1+ | 0.8−) | 2005 04 18 | 703 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.3+ |
| 2005 04 04 | 703 | 0.9− | 0.0 | 2005 04 18 | 703 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2005 04 04 | 703 | 0.2+ | 0.3+ | 2005 05 06 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.4− |
| 2005 04 04 | 703 | 0.1− | 0.0 | 2005 05 06 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 2005 04 05 | 704 | 0.4+ | 0.4+ | 2005 05 06 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 04 05 | 704 | 0.2− | 0.2+ | 2005 05 06 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.9− | 0.1+ |
| 2005 04 05 | 704 | 0.2+ | 0.3+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2005 04 05 | 704 | 0.4− | 0.1− | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2005 04 05 | 704 | 0.5− | 0.3− | 2005 05 08 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.7− |
| 2005 04 08 | 704 | 0.8+ | 0.1− | 2005 05 11 | 699 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.8− | 0.9+ |
| 2005 04 08 | 704 | 0.6− | 1.2− | 2005 05 11 | 699 | 1.2+ | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.3− |

**(145036)∗ 2005 EW$_{282}$**

Discovered 2005 Mar. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.26060 | | (2000.0) | | | |
| $n$ | 0.21854174 | $\omega$ | 118.60353 | | +0.15652524 | +0.98603625 |
| $a$ | 2.7296887 | $\Omega$ | 160.15759 | | −0.95456743 | +0.16580658 |
| $e$ | 0.0523390 | $i$ | 9.64225 | | −0.25357617 | −0.01551406 |
| $P$ | 4.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 24 | 691 | 0.2− | 0.0 | 2005 03 10 | 691 | 0.1+ | 0.1+ | 2005 04 15 | 699 | 0.6− | 0.2+ |
| 2001 06 24 | 691 | 0.1− | 0.1− | 2005 03 10 | 691 | 0.0 | 0.1+ | 2005 04 15 | 699 | 0.5+ | 0.8+ |
| 2001 06 24 | 691 | 0.3+ | 0.3+ | 2005 03 18 | 703 | 0.2+ | 0.1+ | 2005 04 15 | 699 | 0.0 | 1.2+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2005 03 18 | 703 | 0.1− | 0.1+ | 2006 06 11 | 644 | 0.0 | 0.1+ |
| 2002 09 05 | 645 | 0.2+ | 0.1+ | 2005 03 18 | 703 | 1.0− | 0.2+ | 2006 06 11 | 644 | 0.0 | 0.3− |
| 2002 09 14 | 608 | 0.7− | 0.4− | 2005 03 18 | 703 | 1.1− | 1.2+ | 2006 06 11 | 644 | 0.1+ | 0.3+ |
| 2002 09 14 | 608 | (1.7− | 0.3+) | 2005 04 01 | 699 | (0.6+ | 1.7+) | 2006 09 25 | G96 | 0.3− | 0.3− |
| 2002 09 14 | 608 | 0.3− | 1.1+ | 2005 04 01 | 699 | 1.1+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.6+ |
| 2002 10 01 | 699 | 0.7+ | 0.4+ | 2005 04 01 | 699 | 0.6− | 1.1+ | 2006 09 25 | G96 | 0.5− | 1.2− |
| 2002 10 01 | 699 | 0.6− | 0.3+ | 2005 04 01 | 699 | 0.1+ | 1.0+ | 2006 09 25 | G96 | 0.3+ | 1.0− |
| 2002 10 01 | 699 | 1.4− | 0.8+ | 2005 04 01 | 699 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.8− |
| 2002 10 01 | 699 | 0.2− | 0.0 | 2005 04 01 | 699 | 1.2+ | 0.9+ | 2006 10 19 | G96 | 0.7+ | 0.6+ |
| 2002 10 07 | 608 | 0.6− | 0.3+ | 2005 04 01 | 699 | 0.2− | 0.7− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2002 10 07 | 608 | 0.3− | 0.7+ | 2005 04 01 | 699 | (1.8+ | 0.1+) | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2002 10 07 | 608 | 0.5− | 0.4+ | 2005 04 09 | 683 | (1.5− | 1.1+) | 2006 10 19 | G96 | 0.5− | 0.1− |
| 2002 10 29 | 704 | 0.5+ | 0.4− | 2005 04 09 | 683 | 1.4+ | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2002 10 29 | 704 | 1.3− | 0.2+ | 2005 04 09 | 683 | 0.6− | 0.6+ | 2006 10 19 | G96 | 0.4− | 0.5− |
| 2002 10 29 | 704 | (1.3− | 1.7+) | 2005 04 09 | 699 | 0.8+ | 0.4− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2002 11 06 | 644 | 1.0− | 1.1+ | 2005 04 09 | 699 | (1.7+ | 0.4+) | 2006 10 28 | G96 | 0.4− | 0.1+ |
| 2002 11 06 | 644 | 0.9− | 0.9+ | 2005 04 09 | 699 | 0.8− | 0.2− | 2006 10 28 | G96 | 0.4− | 0.3+ |
| 2002 11 06 | 644 | 0.9− | 1.0+ | 2005 04 09 | 699 | 0.1− | 0.6− | 2006 10 28 | G96 | 0.2+ | 0.7+ |
| 2005 03 10 | 691 | 0.0 | 0.2+ | 2005 04 15 | 699 | 1.2+ | 0.3− | 2006 10 28 | G96 | 0.8+ | 0.4+ |

**(145037)∗ 2005 EC$_{291}$**

Discovered 2005 Mar. 10 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 55.26048 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26683450 | $\omega$ | 176.79761 | +0.38977472 | +0.91310158 | |
| $a$ | 2.3895057 | $\Omega$ | 116.11503 | −0.84785257 | +0.40653532 | |
| $e$ | 0.1119003 | $i$ | 7.65900 | −0.35947417 | +0.03121753 | |
| $P$ | 3.69 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.1− | 0.1+ | 2005 03 30 | 703 | (3.0+ | 1.9+) | 2006 09 17 | 699 | 0.6+ | 1.0− |
| 2002 06 16 | 644 | 0.2− | 0.5+ | 2005 03 30 | 703 | 0.9− | 0.1− | 2006 09 17 | 699 | 0.3− | 0.7+ |
| 2002 06 16 | 644 | 0.5+ | 0.8+ | 2005 03 30 | 703 | 0.9− | 0.6− | 2006 09 17 | 699 | 0.8+ | 0.7− |
| 2002 08 13 | 704 | (1.4− | 1.9−) | 2005 04 06 | 703 | 0.9− | 0.2+ | 2006 09 17 | 699 | 1.2− | 0.4− |
| 2002 08 13 | 704 | 0.1− | 0.9− | 2005 04 06 | 703 | 0.1+ | 0.9+ | 2006 09 19 | 703 | 0.5+ | 0.7− |
| 2002 08 13 | 704 | 0.8− | 1.3− | 2005 04 06 | 703 | 0.1+ | 1.2+ | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2002 08 13 | 704 | 0.2− | 0.9− | 2005 04 06 | 703 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.5− | 0.7+ |
| 2002 08 29 | 644 | 0.0 | 0.3− | 2005 04 08 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 703 | (1.6− | 0.4−) |
| 2002 08 29 | 644 | 0.3+ | 0.4+ | 2005 04 08 | 704 | 0.6+ | 0.7+ | 2006 09 25 | 703 | 1.1− | 0.4+ |
| 2002 08 29 | 644 | 0.0 | 0.3+ | 2005 04 08 | 704 | 0.2+ | 1.1+ | 2006 09 25 | 703 | 1.1− | 0.7+ |
| 2002 08 29 | 644 | 0.4+ | 0.4+ | 2005 04 08 | 704 | 0.4+ | 1.0− | 2006 09 25 | 703 | (1.5+ | 1.9+) |
| 2002 08 29 | 644 | 0.0 | 0.1+ | 2005 04 09 | H06 | 0.6− | 0.3+ | 2006 09 25 | 703 | 0.5− | 0.9+ |
| 2002 08 29 | 644 | 0.3+ | 0.9+ | 2005 04 09 | H06 | 1.2+ | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.7− | 0.3+ | 2005 04 09 | H06 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2003 12 22 | 704 | 0.1+ | 0.9+ | 2005 04 12 | H06 | 0.5+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.7+ | 0.8− | 2005 04 12 | H06 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2005 03 10 | 703 | 0.2+ | 0.7− | 2005 04 12 | H06 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.4+ |
| 2005 03 10 | 703 | 1.1+ | 0.6− | 2005 04 16 | 703 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.5− | 1.3− |
| 2005 03 10 | 703 | 0.2− | 0.1− | 2005 04 16 | 703 | (1.2+ | 1.8−) | 2006 10 19 | 703 | 0.9+ | 0.1− |
| 2005 03 10 | 703 | 0.1+ | 0.5+ | 2005 04 16 | 703 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2005 03 18 | 704 | 0.3+ | 0.5+ | 2005 04 16 | 703 | 1.3− | 0.8− | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2005 03 18 | 704 | 0.9+ | 0.7+ | 2005 05 03 | 703 | 0.4+ | 0.9− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2005 03 18 | 703 | 0.1− | 0.0 | 2005 05 03 | 703 | 0.4− | 1.1− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2005 03 18 | 704 | 0.5+ | 1.0+ | 2005 05 03 | 703 | 0.9+ | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2005 03 18 | 703 | 0.6− | 0.2+ | 2005 05 03 | 703 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 03 18 | 703 | 0.0 | 0.7+ | 2006 08 29 | D35 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2005 03 18 | 703 | (0.0 | 1.5+) | 2006 08 29 | D35 | 0.3+ | 0.8+ | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2005 03 30 | 703 | (2.5− | 4.0+) | 2006 08 29 | D35 | 0.1− | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.0 |

**(145038)∗ 2005 EF$_{295}$ = 1999 XZ$_{62}$ = 2003 YF$_{76}$**

Discovered 2005 Mar. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 95664)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 33.67171 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26310768 | $\omega$ | 235.22725 | +0.70361566 | +0.69827017 | |
| $a$ | 2.4120170 | $\Omega$ | 80.07928 | −0.60042825 | +0.68335887 | |
| $e$ | 0.1232546 | $i$ | 7.68316 | −0.38001437 | +0.21316524 | |
| $P$ | 3.75 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.2+ | 0.9+ | 2002 08 13 | 704 | 0.0 | 0.5+ | 2005 04 04 | 703 | 1.1− | 1.1+ |
| 1999 12 07 | 704 | 0.0 | 0.2− | 2002 08 13 | 704 | 0.1+ | 0.0 | 2005 04 04 | 703 | 1.0− | 0.1+ |
| 1999 12 07 | 704 | 0.0 | 0.0 | 2002 08 13 | 704 | 0.5− | 0.2+ | 2005 04 04 | 703 | (1.8+ | 2.4−) |
| 1999 12 07 | 704 | 0.4− | 0.4− | 2002 08 13 | 704 | 0.1− | 0.4− | 2005 04 08 | 704 | 0.1+ | 0.3+ |
| 1999 12 08 | 704 | 0.5− | 1.4− | 2002 08 13 | 704 | 0.9+ | 1.2− | 2005 04 08 | 704 | 0.3+ | 0.2+ |
| 1999 12 08 | 704 | 0.0 | 0.1− | 2002 08 30 | 644 | 0.3− | 0.1− | 2005 04 08 | 704 | 0.4+ | 0.7+ |
| 1999 12 08 | 704 | 0.5− | 0.6− | 2002 08 30 | 644 | 0.2− | 0.1− | 2005 04 08 | 704 | 0.8+ | 0.4+ |
| 1999 12 08 | 704 | 0.3− | 1.0− | 2002 08 30 | 644 | 0.2− | 0.1+ | 2005 04 08 | 704 | 0.8+ | 0.7+ |
| 1999 12 08 | 704 | 1.4+ | 0.2+ | 2003 12 18 | 704 | 0.3+ | 0.2− | 2006 07 31 | E12 | 0.9− | 0.1+ |
| 2001 03 18 | 608 | 0.1+ | 0.4− | 2003 12 18 | 704 | 0.1+ | 0.5+ | 2006 07 31 | E12 | 0.7+ | 0.5+ |
| 2001 03 18 | 608 | 0.4+ | 0.7− | 2003 12 18 | 704 | 0.5+ | 1.0+ | 2006 07 31 | E12 | 0.5+ | 0.2− |
| 2001 03 18 | 608 | 0.0 | 0.5− | 2003 12 22 | 704 | 0.5+ | 0.0 | 2006 07 31 | E12 | 0.1+ | 0.4− |
| 2002 05 18 | 644 | 0.2+ | 0.4+ | 2003 12 22 | 704 | 0.7− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2002 05 18 | 644 | 0.2+ | 0.7+ | 2003 12 22 | 704 | 0.1− | 1.1+ | 2006 09 14 | 644 | 0.4− | 0.0 |
| 2002 05 18 | 644 | 0.0 | 0.7+ | 2003 12 22 | 704 | 0.0 | 1.3+ | 2006 09 14 | 644 | 0.3− | 0.4+ |
| 2002 06 14 | 608 | 0.0 | 1.0− | 2003 12 22 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 699 | 0.2− | 0.2− |
| 2002 06 14 | 608 | 0.1− | 1.2− | 2005 03 12 | 704 | 1.6+ | 0.7+ | 2006 09 17 | 699 | 1.4− | 1.8+ |
| 2002 06 14 | 608 | 0.2+ | 1.2− | 2005 03 12 | 704 | 1.7+ | 0.8+ | 2006 09 17 | 699 | 0.3+ | 0.1− |
| 2002 06 20 | 644 | 0.1− | 1.0+ | 2005 03 12 | 704 | 1.9+ | 1.0+ | 2006 09 17 | 699 | 0.9− | 0.3+ |
| 2002 06 20 | 644 | 0.2+ | 0.3+ | 2005 03 18 | 703 | 0.7+ | 1.1+ | 2006 09 19 | 703 | 0.2− | 0.5− |
| 2002 06 20 | 644 | 0.1+ | 0.8+ | 2005 03 18 | 703 | 1.6− | 1.3+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2002 06 20 | 644 | 0.2+ | 0.2+ | 2005 03 18 | 703 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.3− | 0.0 |
| 2002 06 20 | 644 | 0.1+ | 1.1+ | 2005 03 18 | 703 | 1.1− | 0.9− | 2006 09 26 | 703 | 0.4− | 2.2+ |
| 2002 06 20 | 644 | 0.4+ | 0.2+ | 2005 04 01 | 699 | 1.0+ | 1.0− | 2006 09 26 | 703 | 0.6+ | 0.9+ |
| 2002 07 16 | 644 | 0.3− | 0.3− | 2005 04 01 | 699 | 0.1+ | 1.0+ | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 2002 07 16 | 644 | 0.2− | 0.3− | 2005 04 01 | 699 | 1.6− | 0.5− | 2006 09 26 | 703 | 0.1+ | 0.6+ |
| 2002 07 16 | 644 | 0.4− | 0.0 | 2005 04 01 | 699 | 0.1− | 1.1+ | | | | |

**(145039)∗ 2005 EB$_{312}$ = 2002 GM$_{24}$**

Discovered 2005 Mar. 10 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77021)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 83.06311 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.31117295 | $\omega$ | 258.21571 | −0.04124727 | +0.99913646 | |
| $a$ | 2.1567584 | $\Omega$ | 9.42461 | −0.90439949 | −0.03520800 | |
| $e$ | 0.1482006 | $i$ | 1.74998 | −0.42468838 | −0.02206220 | |
| $P$ | 3.17 | $H$ | 18.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 18 | 691 | 0.3+ | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.1− | 2006 09 20 | J75 | 0.2− | 0.6− |
| 2002 03 18 | 691 | 0.1+ | 0.4+ | 2005 03 11 | 695 | 0.2− | 0.2+ | 2006 09 20 | J75 | 0.5+ | 0.2+ |
| 2002 03 18 | 691 | 0.0 | 0.5+ | 2005 03 11 | 695 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.2+ |
| 2002 04 13 | 691 | 0.3+ | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 09 24 | 691 | 0.2− | 0.2− |
| 2002 04 13 | 691 | 0.3+ | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 09 24 | 691 | 0.5− | 0.2+ |
| 2002 04 13 | 691 | 0.2+ | 0.2+ | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2002 04 19 | 691 | 0.1− | 0.6+ | 2005 04 04 | G96 | 0.3− | 0.4− | 2006 09 25 | 691 | 0.3− | 0.1+ |
| 2002 04 19 | 691 | 0.2− | 0.1− | 2005 04 11 | 695 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2002 04 19 | 691 | 0.1+ | 0.2− | 2005 04 11 | 695 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2003 10 21 | 691 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2003 10 21 | 691 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2003 10 21 | 691 | 0.1+ | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 02 09 | 691 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2005 02 09 | 691 | 0.4+ | 0.3+ | 2006 09 14 | 691 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2005 02 09 | 691 | 0.4+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.6+ |
| 2005 03 10 | G96 | 0.2− | 0.4− | 2006 09 14 | 691 | 0.1+ | 0.4+ | | | | |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2006 09 20 | J75 | 0.7+ | 0.4+ | | | | |

**(145040)∗ 2005 FB$_2$ = 1999 VF$_{83}$**

Discovered 2005 Mar. 18 by A. Lowe at RAS Observatory, Mayhill.

Id. A. Doppler (*MPO* 89649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 66.11989 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.26602591 | $\omega$ | 236.51249 | | −0.09143440 | +0.99259091 | |
| *a* | 2.3943452 | $\Omega$ | 28.56487 | | −0.84910234 | −0.03573043 | |
| *e* | 0.1318256 | *i* | 9.63377 | | −0.52025472 | −0.11613189 | |
| *P* | 3.70 | *H* | 16.9 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 05 11 | 260 | 0.2+ | 0.6+ | 2003 11 20 | 691 | 0.1+ | 0.0 | 2005 03 18 | H06 | 0.2− | 0.2− |
| 1983 05 11 | 260 | 0.8+ | 0.5+ | 2003 12 28 | 691 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.5+ |
| 1999 10 14 | 645 | 0.1− | 0.1+ | 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.2+ |
| 1999 10 14 | 645 | 0.2− | 0.1+ | 2003 12 28 | 691 | 0.3+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.6+ |
| 1999 11 01 | 691 | 0.0 | 0.1− | 2005 03 10 | 699 | (2.3+ | 2.0+) | 2006 08 23 | 644 | 0.2+ | 0.3+ |
| 1999 11 01 | 691 | 0.3+ | 0.0 | 2005 03 10 | 699 | 1.2+ | 1.5+ | 2006 08 23 | 644 | 0.1+ | 0.4+ |
| 1999 11 01 | 691 | 0.2+ | 0.2+ | 2005 03 10 | 699 | 0.0 | 1.5+ | 2006 08 23 | 644 | 0.1− | 0.6+ |
| 1999 11 06 | 691 | 0.2+ | 1.1− | 2005 03 10 | 699 | (2.9+ | 2.0+) | 2006 08 28 | E12 | 0.3− | 1.1+ |
| 1999 11 06 | 691 | 0.0 | 0.0 | 2005 03 12 | H06 | 0.1+ | 0.1− | 2006 08 28 | E12 | 1.2+ | 0.0 |
| 1999 11 06 | 691 | 0.0 | 0.0 | 2005 03 12 | H06 | 0.2+ | 0.2− | 2006 08 28 | E12 | 0.4+ | 0.8+ |
| 2002 05 16 | 644 | 0.1+ | 1.0+ | 2005 03 12 | H06 | 1.0+ | 0.5− | 2006 08 28 | E12 | 0.1− | 0.4− |
| 2002 05 16 | 644 | 0.2− | 0.7+ | 2005 03 16 | H06 | 0.9− | 0.3− | 2006 09 20 | 703 | 0.2− | 1.4− |
| 2002 05 16 | 644 | 0.2− | 0.6+ | 2005 03 16 | H06 | 1.0− | 0.5+ | 2006 09 20 | 703 | 0.5− | 1.2+ |
| 2003 11 20 | 691 | 0.2+ | 0.1+ | 2005 03 18 | H06 | 0.5+ | 0.7+ | 2006 09 20 | 703 | 0.3− | 1.2− |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2005 03 18 | H06 | 0.0 | 0.6+ | 2006 09 20 | 703 | 1.0− | 0.9− |

**(145041)∗ 2005 FJ$_6$**

Discovered 2005 Mar. 31 at Junk Bond Observatory, Sierra Vista.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 65.65162 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.28765998 | $\omega$ | 279.47785 | | +0.09069393 | +0.99583647 | |
| *a* | 2.2727400 | $\Omega$ | 355.69370 | | −0.85899126 | +0.07355874 | |
| *e* | 0.1060896 | *i* | 7.02460 | | −0.50389347 | +0.05384077 | |
| *P* | 3.43 | *H* | 17.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | (0.4+ | 5.4−) | 2005 03 31 | 701 | 0.2− | 0.0 | 2006 09 17 | 704 | 1.2+ | 0.3+ |
| 1996 11 11 | 691 | 0.7− | 0.3+ | 2005 04 04 | G96 | 0.2+ | 0.2− | 2006 09 17 | 704 | 1.1+ | 0.8− |
| 1996 11 11 | 691 | 0.7− | 0.3+ | 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.5− | 0.0 |
| 1996 11 13 | 691 | 0.1+ | 0.3+ | 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.3− | 0.8− |
| 1996 11 13 | 691 | 0.3+ | 0.1− | 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.6− | 0.2− |
| 1996 11 13 | 691 | 0.7+ | 0.2− | 2005 05 08 | G96 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2003 10 25 | 691 | 0.1+ | 0.1− | 2005 05 08 | G96 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.9+ |
| 2003 10 25 | 691 | 0.5− | 0.4− | 2005 05 08 | G96 | 0.2− | 0.3+ | 2006 09 19 | D35 | 0.1+ | 0.5+ |
| 2003 10 25 | 691 | 0.3− | 0.2− | 2005 05 08 | G96 | 0.0 | 0.1− | 2006 09 19 | D35 | 0.2− | 0.4+ |
| 2003 11 21 | 691 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.2+ | 0.3+ | 2006 09 19 | D35 | 0.1− | 0.5+ |
| 2003 11 21 | 691 | 0.2+ | 0.1− | 2006 08 24 | 644 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2003 11 21 | 691 | 0.6+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2005 03 03 | 691 | 0.2+ | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2005 03 03 | 691 | 0.2+ | 0.5+ | 2006 09 13 | 644 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2005 03 03 | 691 | 0.4+ | 0.3+ | 2006 09 13 | 644 | 0.4− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 09 16 | 699 | (2.0− | 2.0+) | 2006 09 30 | 703 | 0.1− | 0.8+ |
| 2005 03 10 | G96 | 0.5− | 0.1+ | 2006 09 16 | 699 | 0.8− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.9− |
| 2005 03 10 | G96 | 0.1+ | 0.2− | 2006 09 16 | 699 | 0.7− | 0.8+ | 2006 09 30 | 703 | 0.5+ | 2.3+ |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2006 09 16 | 699 | 1.5+ | 0.6− | | | | |
| 2005 03 31 | 701 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.4+ | 0.6+ | | | | |

**(145042)∗ 2005 FO$_6$ = 2003 XZ$_{40}$**

Discovered 2005 Mar. 30 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77028)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 93.05708 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.28821756 | $\omega$ | 205.93986 | | −0.03152901 | +0.99135324 | |
| *a* | 2.2698078 | $\Omega$ | 62.48391 | | −0.89022249 | +0.03008876 | |
| *e* | 0.1522839 | *i* | 8.25752 | | −0.45443354 | −0.12772400 | |
| *P* | 3.42 | *H* | 16.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | (2.2− | 0.8−) | 2005 03 30 | 703 | 0.4− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 1998 03 25 | 704 | 1.1+ | 1.7+ | 2005 04 05 | 699 | 1.0+ | 0.3+ | 2006 10 04 | G96 | 0.2− | 0.0 |
| 1998 03 25 | 704 | 0.4+ | 0.3+ | 2005 04 05 | 699 | 0.3+ | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.0 |
| 1998 03 25 | 704 | (1.0+ | 2.8−) | 2005 04 05 | 699 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 1999 09 08 | 703 | 0.6− | 1.2− | 2005 04 05 | 699 | (1.7+ | 0.9+) | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 1999 09 08 | 703 | 1.6+ | 0.6+ | 2005 04 06 | 703 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1999 09 08 | 703 | 1.3− | 1.4+ | 2005 04 06 | 703 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 1999 09 08 | 703 | 0.0 | 0.4− | 2005 04 06 | 703 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.1+ | 1.2+ |
| 2001 01 26 | 645 | 0.1− | 0.1− | 2005 04 06 | 703 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2001 01 26 | 645 | 0.1− | 0.2− | 2005 04 08 | 704 | 0.3+ | 1.3+ | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2003 11 21 | 704 | 0.9+ | 1.3+ | 2005 04 08 | 704 | 1.4+ | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2003 11 21 | 704 | 0.2+ | 0.4+ | 2005 04 08 | 704 | 0.0 | 0.2+ | 2006 10 22 | 703 | 1.3− | 0.4− |
| 2003 11 21 | 704 | 0.2+ | 1.5+ | 2005 04 08 | 704 | 1.1+ | 0.2− | 2006 10 22 | 703 | 0.8− | 0.0 |
| 2003 12 14 | 691 | 0.1+ | 0.1− | 2005 04 09 | 699 | 0.5+ | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2003 12 14 | 691 | 0.0 | 0.1− | 2005 04 09 | 699 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2003 12 14 | 691 | 0.1+ | 0.0 | 2005 04 09 | 699 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 12 27 | 691 | 0.4+ | 0.0 | 2005 04 09 | 699 | 0.6− | 0.8− | 2006 10 22 | 644 | 0.4+ | 0.4+ |
| 2003 12 27 | 691 | 0.2− | 0.7+ | 2005 04 16 | 703 | 0.5+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2003 12 27 | 691 | 0.0 | 0.2+ | 2005 04 16 | 703 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2005 03 18 | 704 | 1.2+ | 0.6+ | 2005 04 16 | 703 | 0.3− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2005 03 18 | 704 | (3.0+ | 1.9+) | 2005 04 16 | 703 | 0.1+ | 1.1− | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2005 03 18 | 703 | 0.6− | 0.5+ | 2005 05 03 | 703 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2005 03 18 | 704 | 0.2− | 1.0+ | 2005 05 03 | 703 | 0.3− | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2005 03 18 | 703 | 0.1− | 0.2+ | 2005 05 03 | 703 | 0.6− | 1.1− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2005 03 18 | 703 | 0.3+ | 0.1+ | 2005 05 03 | 703 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2005 03 18 | 703 | 1.0− | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.8+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2005 03 30 | 703 | 0.7+ | 0.4− | 2006 09 30 | 703 | 0.5− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2005 03 30 | 703 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 1.0− | 0.5− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2005 03 30 | 703 | 0.3+ | 0.5− | 2006 09 30 | 703 | 1.1− | 0.3− | | | | |

**(145043)∗ 2005 FE$_7$**

Discovered 2005 Mar. 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 69.66947 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.25816907 | $\omega$ | 260.37121 | | +0.17792701 | +0.98098636 | |
| *a* | 2.4426800 | $\Omega$ | 20.37969 | | −0.79281971 | +0.18956390 | |
| *e* | 0.1990449 | *i* | 12.86035 | | −0.58290556 | +0.04160875 | |
| *P* | 3.82 | *H* | 16.2 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 24 | 691 | 0.3+ | 0.3+ | 2005 03 31 | 699 | 1.1− | 0.2− | 2006 09 14 | 703 | 0.2+ | 1.0− |
| 1993 01 24 | 691 | 0.2+ | 0.1+ | 2005 03 31 | 699 | 1.2+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.3+ |
| 1993 01 24 | 691 | 0.5− | 0.1− | 2005 03 31 | 699 | 0.8+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.4− |
| 2001 03 26 | 608 | 0.2+ | 0.0 | 2005 03 31 | 699 | 0.2+ | 1.0+ | 2006 09 18 | 699 | 0.9− | 1.3+ |
| 2001 03 26 | 608 | 0.4+ | 0.2− | 2005 03 31 | 699 | 0.4+ | 0.6− | 2006 09 18 | 699 | 0.5− | 0.1+ |
| 2001 03 26 | 608 | 1.0+ | 0.2− | 2005 03 31 | 699 | 0.1− | 0.9+ | 2006 09 18 | 699 | 0.4+ | 0.2− |
| 2002 08 18 | 608 | 0.3− | 0.6+ | 2005 03 31 | 699 | 0.6− | 0.7+ | 2006 09 18 | 699 | 0.6− | 0.3+ |
| 2002 08 18 | 608 | 0.3− | 0.2+ | 2005 03 31 | 699 | 0.6+ | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2002 08 18 | 608 | 0.3− | 0.5+ | 2005 04 05 | 704 | 0.1+ | 1.0− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2002 09 01 | 644 | 0.3− | 0.7+ | 2005 04 05 | 704 | 1.3+ | 1.1− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2002 09 01 | 644 | 0.4− | 0.7+ | 2005 04 05 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.1− |
| 2002 09 01 | 644 | 0.1− | 0.7+ | 2005 04 05 | 704 | 1.4+ | 0.6+ | 2006 10 15 | 703 | 0.8− | 0.1− |
| 2002 09 13 | 704 | 0.3− | 0.2− | 2005 04 05 | G96 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.0 | 0.2− |
| 2002 09 13 | 704 | 1.0− | 0.5− | 2005 04 05 | G96 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.1+ |
| 2002 09 13 | 704 | 1.1+ | 0.2− | 2005 04 05 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2002 10 05 | 704 | 0.3+ | 0.8− | 2005 04 05 | G96 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2002 10 05 | 704 | 0.6− | 0.5+ | 2005 04 10 | H55 | 0.2− | 0.7+ | 2006 10 17 | G96 | 0.4− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.0 | 0.7− | 2005 04 10 | H55 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.5+ | 0.1− |
| 2002 10 05 | 704 | 0.2− | 0.7+ | 2005 04 10 | H55 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2005 03 09 | 699 | (0.1+ | 1.7+) | 2005 04 13 | 699 | 1.5− | 0.8+ | 2006 10 19 | 644 | 0.5+ | 0.2+ |
| 2005 03 09 | 699 | (2.6+ | 1.0+) | 2005 04 13 | 699 | 1.2− | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.6− |
| 2005 03 09 | 699 | 1.3+ | 0.6+ | 2005 04 13 | 699 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 03 09 | 699 | 0.3− | 1.1+ | 2005 04 13 | 699 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 03 18 | 703 | 0.7− | 1.1− | 2005 05 06 | G96 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 2005 03 18 | 703 | (2.1− | 1.6−) | 2005 05 06 | G96 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2005 03 18 | 703 | (1.9− | 0.6+) | 2005 05 06 | G96 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 03 18 | 703 | 0.3+ | 0.7− | 2005 05 06 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 2005 03 18 | 703 | 0.6− | 0.5+ | 2006 08 24 | D35 | 0.9+ | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2005 03 18 | 703 | 0.2+ | 0.0 | 2006 08 24 | D35 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2005 03 18 | 703 | 1.0− | 0.7+ | 2006 08 24 | D35 | 0.5+ | 0.8+ | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2005 03 18 | 703 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.6− | 0.5− | 2006 11 15 | G96 | 0.5− | 0.2− |

**(145044)∗ 2005 FH$_7$**

Discovered 2005 Mar. 31 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.72861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27514798 | $\omega$ | 227.69109 | | +0.31296868 | +0.92887025 | |
| $a$ | 2.3411280 | $\Omega$ | 61.55882 | | −0.79159709 | +0.37037510 | |
| $e$ | 0.1436377 | $i$ | 13.02119 | | −0.52480916 | −0.00472657 | |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.5+ | 0.4− | 2005 05 03 | 704 | 0.5+ | 0.0 | 2005 06 04 | 703 | 0.2− | 0.2− |
| 1999 11 10 | 691 | 0.7+ | 0.4− | 2005 05 03 | 704 | 0.3− | 0.7− | 2005 06 04 | 703 | 1.2− | 0.7− |
| 1999 11 10 | 691 | 0.3+ | 0.8− | 2005 05 03 | 704 | 0.0 | 0.3− | 2005 06 13 | G96 | 0.3− | 0.1+ |
| 1999 12 14 | 691 | 0.1− | 0.1− | 2005 05 07 | 703 | (0.4− | 1.6+) | 2005 06 13 | G96 | 0.3− | 0.1+ |
| 1999 12 14 | 691 | 0.4− | 0.1− | 2005 05 07 | 703 | (1.9+ | 1.8+) | 2005 06 13 | G96 | 0.2+ | 0.1− |
| 1999 12 14 | 691 | 0.1− | 0.4− | 2005 05 07 | 703 | 0.5− | 1.1− | 2005 06 13 | G96 | 0.4− | 0.3− |
| 2003 12 14 | 691 | 0.2+ | 0.3+ | 2005 05 07 | 703 | 0.1− | 0.1+ | 2006 10 16 | 703 | 1.1− | 0.2+ |
| 2003 12 14 | 691 | 0.1− | 0.0 | 2005 05 08 | 699 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 2003 12 14 | 691 | 0.1+ | 0.4+ | 2005 05 08 | 699 | 0.3− | 0.6− | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2005 03 31 | 691 | 0.5− | 0.1+ | 2005 05 08 | 699 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2005 03 31 | 691 | 1.3+ | 0.2+ | 2005 05 08 | 699 | 0.3− | 1.1+ | 2006 10 22 | 703 | 1.4− | 0.6+ |
| 2005 03 31 | 691 | 0.1+ | 0.2+ | 2005 05 11 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.2− | 0.6+ |
| 2005 04 05 | 703 | 0.0 | 0.7+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.2+ | 1.5+ |
| 2005 04 05 | 703 | 0.5+ | 0.7− | 2005 05 11 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 1.0+ | 0.6+ |
| 2005 04 05 | 703 | 0.9− | 0.1− | 2005 05 11 | 699 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.5− | 0.7+ |
| 2005 04 05 | 703 | 0.8− | 0.8− | 2005 05 11 | 699 | 1.3+ | 0.8+ | 2006 11 08 | 644 | 0.5− | 0.4+ |
| 2005 04 14 | 691 | 0.2− | 0.1− | 2005 05 11 | 699 | 0.5+ | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.6+ |
| 2005 04 14 | 691 | 0.2− | 0.1− | 2005 05 11 | 699 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.5− | 0.3+ |
| 2005 04 14 | 691 | 0.1− | 0.1− | 2005 05 12 | 704 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2005 04 18 | 691 | 0.0 | 0.0 | 2005 05 12 | 704 | 1.1− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2005 04 18 | 691 | 0.0 | 0.0 | 2005 05 12 | 704 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.5+ |
| 2005 04 18 | 691 | 0.2+ | 0.1+ | 2005 05 12 | 704 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2005 05 03 | 704 | 0.6+ | 0.5− | 2005 06 04 | 703 | 0.6− | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 05 03 | 704 | 0.3+ | 0.9− | 2005 06 04 | 703 | 0.8− | 0.0 | | | | |

**(145045)∗ 2005 FP$_7$**

Discovered 2005 Mar. 30 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.34071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25745639 | $\omega$ | 213.61300 | | +0.39352485 | +0.90927656 | |
| $a$ | 2.4471858 | $\Omega$ | 79.88456 | | −0.81024946 | +0.41267419 | |
| $e$ | 0.1649318 | $i$ | 7.90999 | | −0.43432017 | +0.05400137 | |
| $P$ | 3.83 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 13 | 691 | 0.0 | 0.4+ | 2005 04 05 | 699 | (2.3+ | 0.8+) | 2006 09 19 | 703 | 0.0 | 0.1− |
| 1991 11 13 | 691 | 0.1+ | 0.8+ | 2005 04 06 | 703 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 1991 11 13 | 691 | 0.8− | 0.3+ | 2005 04 06 | 703 | 0.3+ | 0.6− | 2006 09 25 | 703 | 0.5− | 0.2− |
| 2002 08 11 | 608 | 0.4− | 0.4− | 2005 04 06 | 703 | 0.6+ | 0.4+ | 2006 09 25 | 703 | 0.1− | 0.2− |
| 2002 08 11 | 608 | 0.1+ | 0.2− | 2005 04 06 | 703 | 0.8+ | 0.6− | 2006 09 25 | 703 | 0.3+ | 0.1− |
| 2002 08 11 | 608 | 0.2+ | 0.2− | 2005 04 08 | 704 | 0.8+ | 0.9+ | 2006 09 25 | 703 | 0.1+ | 0.9− |
| 2002 08 13 | 704 | (0.7− | 1.8+) | 2005 04 08 | 704 | 0.7+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 08 13 | 704 | 0.8+ | 0.5+ | 2005 04 08 | 704 | 1.2+ | 0.5− | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 08 13 | 704 | 0.5+ | 0.0 | 2005 04 08 | 704 | 0.2− | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 08 20 | 644 | 0.3− | 0.2+ | 2005 04 08 | 704 | 0.6+ | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 08 20 | 644 | 0.0 | 0.4+ | 2005 04 16 | 703 | 1.3− | 0.0 | 2006 10 12 | 644 | 0.2+ | 1.3− |
| 2002 08 20 | 644 | 0.3− | 0.5+ | 2005 04 16 | 703 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 09 09 | 644 | 0.3− | 0.2+ | 2005 04 16 | 703 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2002 09 09 | 644 | 0.4− | 0.2+ | 2005 04 16 | 703 | 0.6− | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 09 09 | 644 | 0.0 | 0.2+ | 2005 05 22 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2003 12 22 | 704 | 0.9+ | 0.6− | 2005 05 22 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.1+ |
| 2003 12 22 | 704 | 1.0+ | 0.7− | 2005 05 22 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.4+ | 1.3+ |
| 2003 12 22 | 704 | 0.5− | 0.6− | 2006 08 28 | D35 | 0.5− | 0.8+ | 2006 10 21 | 703 | 0.6+ | 0.7− |
| 2005 03 18 | 703 | 0.8− | 0.4+ | 2006 08 28 | D35 | 0.3− | 1.2+ | 2006 10 21 | 703 | 0.3− | 0.1+ |
| 2005 03 18 | 703 | 0.3− | 0.5− | 2006 08 28 | D35 | 0.5− | 1.4+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2005 03 18 | 703 | 0.2+ | 0.7+ | 2006 08 29 | D35 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.4− | 0.1+ |
| 2005 03 18 | 703 | (0.1− | 1.6+) | 2006 08 29 | D35 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2005 03 30 | 703 | 0.1+ | 1.1+ | 2006 08 29 | D35 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2005 03 30 | 703 | 0.1+ | 0.8+ | 2006 09 17 | 699 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2005 03 30 | 703 | 0.5− | 0.3− | 2006 09 17 | 699 | 0.8+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2005 03 30 | 703 | 1.1+ | 0.1+ | 2006 09 17 | 699 | 0.6+ | 0.0 | 2006 10 28 | 703 | 0.2− | 2.1− |
| 2005 04 05 | 699 | 0.5+ | 1.0+ | 2006 09 17 | 699 | 0.0 | 0.3− | 2006 10 28 | 703 | 1.0+ | 1.2− |
| 2005 04 05 | 699 | (1.6+ | 1.5+) | 2006 09 19 | 703 | 0.5− | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.9− |
| 2005 04 05 | 699 | (1.6+ | 0.3+) | 2006 09 19 | 703 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.2+ | 0.1+ |

**(145046)∗ 2005 GD$_2$ = 1998 TU$_{35}$**

Discovered 2005 Apr. 1 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.49526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36543416 | $\omega$ | 30.46678 | | +0.58953588 | −0.79441614 | |
| $a$ | 1.9375963 | $\Omega$ | 24.36520 | | +0.65110674 | +0.36031918 | |
| $e$ | 0.1005283 | $i$ | 20.74327 | | +0.47802453 | +0.48895100 | |
| $P$ | 2.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 699 | 0.1− | 0.6+ | 2005 03 08 | 704 | 0.1+ | 0.8+ | 2006 07 30 | E12 | 0.3+ | 0.6+ |
| 1998 09 21 | 699 | 0.5+ | 0.5+ | 2005 03 08 | 704 | 0.5+ | 0.3− | 2006 07 30 | E12 | 0.6+ | 0.2− |
| 1998 09 21 | 699 | 0.7+ | 0.4+ | 2005 03 08 | 704 | 0.0 | 0.1+ | 2006 07 30 | E12 | 0.9− | 0.2+ |
| 1998 10 15 | 704 | 0.3− | 0.4− | 2005 03 08 | 704 | 0.2− | 0.6− | 2006 08 16 | E12 | 0.1− | 0.0 |
| 1998 10 15 | 704 | 1.0− | 1.6+ | 2005 03 08 | 704 | 0.5+ | 0.7− | 2006 08 16 | E12 | 1.0− | 0.4− |
| 1998 10 15 | 704 | 1.6− | 0.7− | 2005 04 01 | 703 | 1.3− | 0.6+ | 2006 08 16 | E12 | 0.0 | 0.9+ |
| 1998 10 15 | 704 | 1.0+ | 1.0− | 2005 04 01 | 703 | 0.5+ | 0.0 | 2006 08 16 | E12 | 1.0− | 0.4− |
| 1998 10 15 | 704 | 1.2+ | 1.2− | 2005 04 01 | 703 | 0.6− | 0.0 | 2006 09 28 | E12 | 0.7− | 0.5+ |
| 1998 10 17 | 699 | 0.1− | 0.8− | 2005 04 01 | 703 | 0.3− | 0.7− | 2006 09 28 | E12 | 0.0 | 0.6+ |
| 1998 10 17 | 699 | 0.6+ | 1.3− | 2005 04 02 | 699 | 0.5− | 0.2+ | 2006 09 28 | E12 | 0.3− | 0.2+ |
| 1998 10 17 | 699 | 0.0 | 0.3− | 2005 04 02 | 699 | 1.3+ | 0.2+ | 2006 09 28 | E12 | 0.4+ | 0.8+ |
| 1998 10 28 | 704 | 1.5+ | 1.2+ | 2005 04 02 | 699 | 0.4+ | 0.8− | 2006 10 12 | E12 | 0.0 | 0.4+ |
| 1998 10 28 | 704 | 1.1+ | 1.5− | 2005 04 02 | 699 | 1.0+ | 0.1+ | 2006 10 12 | E12 | 0.2− | 0.3+ |
| 1998 10 28 | 704 | 0.6− | 0.9− | 2005 04 09 | 703 | 0.3+ | 1.1+ | 2006 10 12 | E12 | 0.2− | 0.5+ |
| 1998 10 28 | 704 | (5.6− | 0.3+) | 2005 04 09 | 703 | 0.4+ | 0.0 | 2006 10 12 | E12 | 0.1− | 0.8+ |
| 1998 11 11 | 699 | 0.1− | 0.0 | 2005 04 09 | 703 | 0.7− | 0.5+ | 2006 10 28 | 703 | (0.0 | 1.8+) |
| 1998 11 11 | 699 | 0.8+ | 0.2+ | 2005 04 09 | 703 | 0.6− | 1.2+ | 2006 10 28 | 703 | 1.3− | 0.7+ |
| 1998 11 11 | 699 | 0.4+ | 0.5− | 2005 04 12 | 704 | 0.2− | 0.4+ | 2006 10 28 | 703 | 1.1− | 0.3+ |
| 2001 11 27 | 704 | 0.4− | 1.1+ | 2005 04 12 | 704 | 0.6+ | 0.4+ | 2006 10 28 | 703 | 0.8− | 0.7+ |
| 2001 11 27 | 704 | 0.2+ | 0.2− | 2005 04 12 | 704 | 0.0 | 0.9+ | 2006 11 25 | G96 | 0.1+ | 0.3+ |
| 2001 11 27 | 704 | 0.1− | 0.4+ | 2005 04 12 | 704 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2001 11 27 | 704 | 0.7+ | 0.9+ | 2005 04 12 | 704 | 0.5+ | 0.8+ | 2006 11 25 | G96 | 0.5− | 0.3+ |
| 2001 11 27 | 704 | 0.8+ | 0.4+ | 2006 07 30 | E12 | 0.5− | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.5+ |

**(145047)∗ 2005 GW$_3$**

Discovered 2005 Apr. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.90617 | | (2000.0) | | | |
| $n$ | 0.21635193 | $\omega$ | 58.83749 | | −0.59687398 | +0.80219495 |
| $a$ | 2.7480768 | $\Omega$ | 174.44478 | | −0.77872833 | −0.57471251 |
| $e$ | 0.0974359 | $i$ | 8.90832 | | −0.19319328 | −0.16182952 |
| $P$ | 4.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.2− | 0.5+ | 2005 04 09 | 704 | 0.7− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 0.2+ | 0.0 | 2005 04 13 | 704 | 0.3− | 0.7− | 2006 08 16 | 644 | 0.2+ | 0.1− |
| 2000 03 11 | 704 | 0.6− | 0.5+ | 2005 04 13 | 704 | 0.4+ | 0.9− | 2006 08 19 | 699 | 0.4+ | 0.1+ |
| 2000 03 11 | 704 | 0.1− | 0.5+ | 2005 04 13 | 704 | 0.5− | 0.3− | 2006 08 19 | 699 | 0.1− | 0.2+ |
| 2002 10 07 | 644 | 0.8− | 0.1− | 2005 04 13 | 704 | 0.3+ | 0.9− | 2006 08 19 | 699 | 0.4+ | 0.6+ |
| 2002 10 07 | 644 | 0.2− | 0.0 | 2005 04 15 | 699 | 0.3+ | 0.4+ | 2006 08 19 | 699 | 0.9− | 0.0 |
| 2002 10 07 | 644 | 0.3− | 0.1− | 2005 04 15 | 699 | 0.1+ | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 04 15 | 699 | 1.0+ | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 2002 10 31 | 645 | 0.0 | 0.2+ | 2005 04 15 | 699 | 0.2+ | 1.2+ | 2006 09 15 | 691 | 0.3− | 0.2+ |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2005 05 06 | 704 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2005 05 06 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2005 04 01 | 691 | 0.1+ | 0.3+ | 2005 05 06 | 704 | 0.1− | 0.8− | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2005 04 01 | 691 | 0.1− | 0.2+ | 2005 05 11 | 699 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2005 04 01 | 691 | 0.1+ | 0.1+ | 2005 05 11 | 699 | 0.7+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2005 04 02 | 691 | 0.0 | 0.3+ | 2005 05 11 | 699 | (2.0− | 0.2−) | 2006 09 19 | 691 | 0.4+ | 0.1− |
| 2005 04 02 | 691 | 0.1+ | 0.3+ | 2005 05 11 | 699 | 1.3− | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2005 04 02 | 691 | 0.2+ | 0.3+ | 2005 05 15 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2005 04 02 | 644 | 0.4+ | 0.2+ | 2005 05 15 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.2− |
| 2005 04 02 | 644 | 0.4+ | 0.3+ | 2005 05 15 | 644 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2005 04 02 | 644 | 0.3+ | 0.4+ | 2005 05 18 | 644 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2005 04 09 | 704 | 0.4− | 0.7+ | 2005 05 18 | 644 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.5− |
| 2005 04 09 | 704 | 0.2− | 0.5+ | 2005 05 18 | 644 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.4− |
| 2005 04 09 | 704 | 0.9− | 0.7+ | 2006 08 16 | 644 | 0.2− | 0.1− | | | | |

**(145048)∗ 2005 GR$_4$ = 1995 FO$_9$**

Discovered 2005 Apr. 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 185.92662 | | (2000.0) | | | |
| $n$ | 0.29801237 | $\omega$ | 46.64801 | | −0.99152224 | −0.11623678 |
| $a$ | 2.2197966 | $\Omega$ | 126.59373 | | +0.08808979 | −0.92987496 |
| $e$ | 0.0664108 | $i$ | 4.14797 | | +0.09551875 | −0.34902947 |
| $P$ | 3.31 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.3− | 0.6− | 2005 04 05 | 703 | 1.3− | 0.5+ | 2005 05 13 | 691 | 0.0 | 0.1+ |
| 1995 03 26 | 691 | 0.2− | 0.5− | 2005 04 05 | 703 | 0.1+ | 0.4+ | 2005 05 18 | 644 | 0.2− | 0.4+ |
| 1995 03 26 | 691 | 0.2− | 0.5− | 2005 04 05 | 704 | 0.4+ | 1.3+ | 2005 05 18 | 644 | 0.0 | 0.2+ |
| 1995 03 31 | 691 | 0.5− | 0.8− | 2005 04 05 | 703 | (3.7− | 0.0 ) | 2005 05 18 | 644 | 0.3− | 0.5+ |
| 1995 03 31 | 691 | 0.1− | 0.6− | 2005 04 05 | 704 | 1.2+ | 0.6+ | 2006 08 27 | 691 | 0.1− | 0.0 |
| 1995 03 31 | 691 | 0.2− | 0.8− | 2005 04 05 | 703 | (1.7− | 0.2+) | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2000 12 30 | 704 | 1.0+ | 0.1− | 2005 04 05 | 704 | 1.0+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2000 12 30 | 704 | 0.2− | 0.9+ | 2005 04 05 | 704 | 0.8− | 0.3− | 2006 08 28 | 699 | 0.9+ | 0.0 |
| 2000 12 30 | 704 | 0.1+ | 1.2+ | 2005 04 09 | 704 | 0.0 | 0.4− | 2006 08 28 | 699 | 0.9+ | 0.0 |
| 2003 10 23 | 699 | 1.0− | 1.1+ | 2005 04 09 | 704 | 0.8+ | 0.9− | 2006 08 28 | 699 | (1.6+ | 0.1+) |
| 2003 10 23 | 699 | 1.1+ | 0.1+ | 2005 04 09 | 704 | 1.1+ | 0.4− | 2006 08 28 | 699 | 1.4+ | 0.4+ |
| 2003 10 23 | 699 | 0.4+ | 0.5+ | 2005 04 09 | 704 | 0.9+ | 0.1+ | 2006 09 12 | 703 | 0.7+ | 0.8− |
| 2003 10 23 | 699 | 0.4− | 0.3− | 2005 04 13 | 704 | 0.6+ | 0.7+ | 2006 09 12 | 703 | (2.2+ | 0.5−) |
| 2003 11 01 | 704 | 0.4− | 0.6+ | 2005 04 13 | 704 | 0.2− | 1.1+ | 2006 09 12 | 703 | 0.5+ | 0.6− |
| 2003 11 01 | 704 | 1.1− | 0.9+ | 2005 04 13 | 704 | 0.7− | 0.2+ | 2006 09 12 | 703 | 0.3+ | 1.1− |
| 2003 11 01 | 704 | 1.2− | 0.0 | 2005 04 13 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.4+ |
| 2003 11 01 | 704 | 0.2− | 0.7+ | 2005 04 13 | 704 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.1+ |
| 2003 11 01 | 704 | 0.6− | 1.2+ | 2005 04 15 | 699 | 0.1− | 0.3− | 2006 09 14 | 644 | 0.1− | 0.3+ |
| 2003 11 21 | 699 | 0.1+ | 0.6+ | 2005 04 15 | 699 | 0.0 | 0.7+ | 2006 09 30 | 703 | 1.1− | 0.8+ |
| 2003 11 21 | 699 | (0.3+ | 1.6−) | 2005 04 15 | 699 | 0.4+ | 0.7+ | 2006 09 30 | 703 | (1.9− | 0.4+) |
| 2003 11 21 | 699 | 1.1− | 0.1− | 2005 04 15 | 699 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.4− |
| 2003 11 21 | 699 | 0.4+ | 0.4+ | 2005 05 03 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.0 |
| 2005 04 01 | 691 | 0.3+ | 0.4+ | 2005 05 03 | 704 | 0.5+ | 0.8− | 2006 10 03 | G96 | 0.3− | 0.1− |
| 2005 04 01 | 691 | 0.4+ | 0.4+ | 2005 05 03 | 704 | 0.1+ | 0.5− | 2006 10 03 | G96 | 0.4− | 0.4− |
| 2005 04 01 | 691 | 0.4+ | 0.4+ | 2005 05 03 | 704 | 0.4− | 0.4− | 2006 10 03 | G96 | 0.2− | 0.0 |
| 2005 04 02 | 691 | 0.3+ | 0.4+ | 2005 05 08 | 703 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.0 |
| 2005 04 02 | 691 | 0.4+ | 0.6+ | 2005 05 08 | 703 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2005 04 02 | 691 | 0.2+ | 0.4+ | 2005 05 08 | 703 | 0.5− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2005 04 02 | 644 | 0.2+ | 0.4+ | 2005 05 08 | 703 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2005 04 02 | 644 | 0.2− | 0.4+ | 2005 05 13 | 691 | 0.3− | 0.5+ | | | | |
| 2005 04 02 | 644 | 0.0 | 0.4+ | 2005 05 13 | 691 | 0.1− | 0.6+ | | | | |

**(145049)∗ 2005 GR$_6$**

Discovered 2005 Apr. 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.56979 | | (2000.0) | | | |
| $n$ | 0.30137257 | $\omega$ | 157.74730 | | −0.71976531 | +0.69194709 |
| $a$ | 2.2032659 | $\Omega$ | 66.16375 | | −0.64581404 | −0.63774513 |
| $e$ | 0.1281652 | $i$ | 3.51618 | | −0.25468042 | −0.33836427 |
| $P$ | 3.27 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 25 | 691 | 0.3+ | 0.3+ | 2005 04 07 | 704 | 0.1+ | 0.5− | 2005 05 08 | 703 | 0.6− | 0.3− |
| 1992 04 25 | 691 | 0.2− | 0.0 | 2005 04 07 | 704 | 0.4− | 0.5+ | 2005 05 08 | 703 | 0.4+ | 0.7− |
| 1992 04 25 | 691 | 0.0 | 0.1+ | 2005 04 07 | 704 | 1.0+ | 0.1+ | 2005 05 08 | 703 | 0.1− | 0.3− |
| 2003 10 20 | 691 | 0.0 | 0.2+ | 2005 04 07 | 704 | 0.5− | 0.1− | 2005 05 08 | 703 | 0.2− | 0.5− |
| 2003 10 20 | 691 | 0.0 | 0.3+ | 2005 04 10 | 691 | 0.2+ | 0.0 | 2005 05 09 | 699 | 0.3+ | 0.1− |
| 2003 10 20 | 691 | 0.1+ | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.1+ | 2005 05 09 | 699 | 0.0 | 0.1+ |
| 2003 10 28 | 704 | 0.0 | 0.6+ | 2005 04 10 | 691 | 0.1− | 0.1+ | 2005 05 09 | 699 | 0.3− | 0.0 |
| 2003 10 28 | 704 | 0.4− | 0.5+ | 2005 04 11 | 699 | 0.9− | 0.7+ | 2005 05 09 | 699 | 0.6− | 0.9− |
| 2003 10 28 | 704 | (0.1+ | 1.6+) | 2005 04 11 | 699 | 1.2− | 0.3+ | 2005 05 14 | 691 | 0.0 | 0.1− |
| 2003 11 15 | 691 | 0.0 | 0.2− | 2005 04 11 | 699 | 0.5+ | 0.4+ | 2005 05 14 | 691 | 0.0 | 0.0 |
| 2003 11 15 | 691 | 0.1− | 0.0 | 2005 04 11 | 699 | 0.4− | 0.0 | 2005 05 14 | 691 | 0.0 | 0.0 |
| 2003 11 15 | 691 | 0.1+ | 0.0 | 2005 04 13 | 704 | 0.7+ | 0.0 | 2005 05 18 | 644 | 0.0 | 0.4+ |
| 2005 04 01 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 704 | 0.8+ | 0.9+ | 2005 05 18 | 644 | 0.0 | 0.1+ |
| 2005 04 01 | 691 | 0.1− | 0.1+ | 2005 04 13 | 704 | 0.8+ | 0.2+ | 2005 05 18 | 644 | 0.2+ | 0.1− |
| 2005 04 01 | 691 | 0.1+ | 0.1− | 2005 04 13 | 704 | 0.3− | 0.5− | 2005 06 28 | 644 | 0.1+ | 0.2+ |
| 2005 04 02 | 691 | 0.1+ | 0.0 | 2005 04 13 | 704 | 0.2+ | 0.2+ | 2005 06 28 | 644 | 0.3+ | 0.3+ |
| 2005 04 02 | 691 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.0 | 0.0 | 2005 06 28 | 644 | 0.4+ | 0.1+ |
| 2005 04 02 | 644 | 0.1+ | 0.0 | 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.5+ |
| 2005 04 02 | 691 | 0.4− | 0.6+ | 2005 04 14 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.5− | 0.6+ |
| 2005 04 02 | 644 | 0.2+ | 0.0 | 2005 04 15 | 699 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.6+ |
| 2005 04 02 | 644 | 0.3+ | 0.0 | 2005 04 15 | 699 | 0.9+ | 0.3− | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 2005 04 05 | 704 | 1.0+ | 0.8+ | 2005 04 15 | 699 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.5− | 0.0 |
| 2005 04 05 | 703 | 0.1+ | 1.1− | 2005 04 15 | 699 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.6− | 0.2+ |
| 2005 04 05 | 704 | 1.1− | 0.1+ | 2005 04 18 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2005 04 05 | 703 | 0.7− | 0.1− | 2005 04 18 | 703 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 04 05 | 703 | 0.1− | 0.3+ | 2005 04 18 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.2+ |
| 2005 04 05 | 704 | 0.7+ | 0.9+ | 2005 04 18 | 703 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 04 05 | 703 | 0.2− | 0.2− | 2005 04 18 | 703 | 0.2+ | 1.1+ | 2006 11 16 | G96 | 0.5− | 0.1− |
| 2005 04 05 | 704 | 0.3− | 0.1+ | 2005 04 18 | 703 | 0.2+ | 0.2+ | | | | |
| 2005 04 05 | 704 | 0.4+ | 0.1− | 2005 04 18 | 691 | 0.1+ | 0.0 | | | | |

**(145050)∗ 2005 GN$_7$**

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.15842 | | (2000.0) | | | |
| $n$ | 0.28485232 | $\omega$ | 176.02791 | | +0.09007493 | +0.98954984 |
| $a$ | 2.2876498 | $\Omega$ | 99.11434 | | −0.91686589 | +0.12653846 |
| $e$ | 0.1919094 | $i$ | 6.54795 | | −0.38890031 | −0.06913125 |
| $P$ | 3.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.1+ | 0.3+ | 2005 04 04 | 703 | 0.6− | 0.1− | 2005 05 12 | 683 | 0.8+ | 1.4+ |
| 1998 04 24 | 704 | 1.1− | 1.7− | 2005 04 04 | 703 | 0.7− | 1.2+ | 2005 05 12 | 683 | (0.8+ | 2.1+) |
| 1998 04 24 | 704 | 0.8+ | 0.9− | 2005 04 04 | 703 | (0.4− | 2.1+) | 2005 05 12 | 683 | (1.1− | 3.5+) |
| 1998 04 24 | 704 | 0.7− | 1.2− | 2005 04 04 | 703 | 0.0 | 0.3+ | 2005 05 13 | 683 | (0.2+ | 2.1+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 16 | 608 | 0.5− | 1.3+ | 2005 04 07 | 699 | 0.4− | 0.3+ | 2005 05 13 | 691 | 0.1− | 0.0 | | |
| 2002 05 16 | 608 | 0.0 | 1.4+ | 2005 04 07 | 699 | 0.8+ | 0.2+ | 2005 05 13 | 683 | 0.6+ | 1.1+ | | |
| 2002 05 16 | 608 | 0.1+ | 1.2+ | 2005 04 07 | 699 | 0.3− | 0.8+ | 2005 05 13 | 691 | 0.1+ | 0.1− | | |
| 2002 07 05 | 704 | 0.2− | 0.3+ | 2005 04 07 | 699 | 0.0 | 0.2+ | 2005 05 13 | 683 | (0.4− | 2.8+) | | |
| 2002 07 05 | 704 | 1.1+ | 0.7+ | 2005 04 13 | 703 | 0.7− | 0.3− | 2005 05 13 | 691 | 0.2− | 0.0 | | |
| 2002 07 05 | 704 | 0.5+ | 0.1− | 2005 04 13 | 703 | 0.6− | 0.4− | 2005 05 14 | 683 | 0.1+ | 0.6− | | |
| 2002 07 05 | 704 | 0.6+ | 0.3− | 2005 04 13 | 703 | 0.3− | 0.2− | 2005 05 14 | 683 | 0.4− | 1.1+ | | |
| 2002 07 07 | 333 | (0.5− | 2.1−) | 2005 04 13 | 703 | 0.1+ | 0.5− | 2005 05 14 | 683 | 1.1+ | 0.3+ | | |
| 2002 07 07 | 333 | 0.2− | 0.7− | 2005 04 15 | 699 | 1.0+ | 0.0 | 2005 05 15 | 644 | 0.0 | 0.0 | | |
| 2002 07 07 | 333 | 0.5− | 0.4− | 2005 04 15 | 699 | (3.2+ | 0.4+) | 2005 05 15 | 644 | 0.2− | 0.1− | | |
| 2002 07 30 | 608 | 0.1+ | 1.3− | 2005 04 15 | 699 | 0.8+ | 0.7+ | 2005 05 15 | 644 | 0.0 | 0.0 | | |
| 2002 07 30 | 608 | (0.4+ | 1.7−) | 2005 04 15 | 699 | 0.6+ | 0.1+ | 2005 05 16 | 644 | 0.1− | 0.1− | | |
| 2002 07 30 | 608 | (0.1+ | 1.7−) | 2005 04 18 | 704 | 0.1− | 0.3+ | 2005 05 16 | 644 | 0.0 | 0.2− | | |
| 2002 08 11 | 644 | 0.2− | 0.4− | 2005 04 18 | 704 | 0.3− | 0.5+ | 2005 05 16 | 644 | 0.2− | 0.0 | | |
| 2002 08 11 | 644 | 0.1+ | 0.4− | 2005 04 18 | 704 | 0.0 | 0.2− | 2005 05 18 | 644 | 0.0 | 0.1+ | | |
| 2002 08 11 | 644 | 0.1− | 0.4− | 2005 04 18 | 704 | 0.9+ | 0.5− | 2005 05 18 | 644 | 0.1− | 0.1− | | |
| 2002 08 13 | 704 | 0.1− | 0.4− | 2005 04 18 | 704 | 0.1+ | 0.0 | 2005 05 18 | 644 | 0.2− | 0.1− | | |
| 2002 08 13 | 704 | 0.1+ | 0.5− | 2005 05 03 | 683 | 0.5+ | 0.0 | 2005 06 03 | 699 | 0.1− | 0.0 | | |
| 2002 08 13 | 704 | 0.5− | 0.1− | 2005 05 03 | 683 | 0.9+ | 1.2+ | 2005 06 03 | 699 | 0.2+ | 0.2− | | |
| 2002 08 13 | 704 | 0.4− | 0.5− | 2005 05 03 | 683 | 0.2− | 1.2+ | 2005 06 03 | 699 | 0.1+ | 0.6− | | |
| 2002 08 13 | 704 | 0.1+ | 0.9+ | 2005 05 04 | 703 | 0.4− | 1.0− | 2005 06 03 | 699 | 0.4+ | 0.2+ | | |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2005 05 04 | 703 | 0.2+ | 0.5− | 2005 06 13 | 699 | 0.2+ | 1.0− | | |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2005 05 04 | 703 | 1.0− | 0.1+ | 2005 06 13 | 699 | 0.3− | 0.1+ | | |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2005 05 04 | 703 | 1.0− | 0.1− | 2005 06 13 | 699 | (0.8− | 1.6−) | | |
| 2002 08 19 | 644 | 0.2− | 0.1− | 2005 05 06 | 683 | 0.6+ | 1.2− | 2005 06 13 | 699 | 0.6− | 0.8− | | |
| 2002 08 19 | 644 | 0.2+ | 0.2− | 2005 05 06 | 683 | (0.9− | 1.8+) | 2005 06 28 | 644 | 0.5− | 0.3− | | |
| 2002 08 19 | 704 | 0.4− | 0.6+ | 2005 05 06 | 683 | (1.3− | 1.8+) | 2005 06 28 | 644 | 0.3− | 0.1− | | |
| 2002 08 19 | 704 | 0.3+ | 1.0+ | 2005 05 06 | 704 | 0.8+ | 0.7+ | 2005 06 28 | 644 | 0.2− | 0.3− | | |
| 2002 08 19 | 644 | (1.6+ | 2.7−) | 2005 05 06 | 704 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.3+ | | |
| 2002 08 19 | 704 | 0.0 | 0.6+ | 2005 05 06 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 1.3− | 0.2+ | | |
| 2002 08 19 | 704 | 0.2− | 1.2+ | 2005 05 06 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.7+ | | |
| 2002 08 31 | 704 | 0.1+ | 0.2− | 2005 05 06 | 704 | 0.9+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.0 | | |
| 2002 08 31 | 704 | 0.1− | 0.1+ | 2005 05 07 | 683 | (0.0 | 2.0−) | 2006 10 22 | 703 | 0.2− | 0.9+ | | |
| 2002 08 31 | 704 | 0.2+ | 0.2− | 2005 05 07 | 683 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 0.7− | 0.8+ | | |
| 2002 08 31 | 704 | 0.0 | 0.2− | 2005 05 07 | 683 | 1.4+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.8+ | | |
| 2002 09 10 | 644 | 0.0 | 0.2+ | 2005 05 08 | 683 | (0.1− | 2.0+) | 2006 10 22 | 703 | 0.8− | 0.1− | | |
| 2002 09 10 | 644 | 0.2− | 0.2+ | 2005 05 08 | 683 | (0.7+ | 2.1+) | 2006 11 20 | 704 | 1.1+ | 0.4+ | | |
| 2002 09 10 | 644 | 0.3− | 0.1− | 2005 05 08 | 683 | (0.1− | 1.7+) | 2006 11 20 | 704 | 1.0+ | 1.7+ | | |
| 2005 04 01 | 699 | 0.5+ | 0.2+ | 2005 05 10 | 683 | (1.6− | 1.4−) | 2006 11 20 | 704 | 0.6− | 1.2+ | | |
| 2005 04 01 | 699 | 0.5+ | 0.5+ | 2005 05 10 | 683 | 1.0− | 0.9+ | 2006 11 20 | 704 | 0.1− | 1.3+ | | |
| 2005 04 01 | 699 | 0.1− | 0.2+ | 2005 05 10 | 683 | 0.9− | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.1+ | | |
| 2005 04 01 | 699 | 0.2− | 0.9+ | 2005 05 11 | 703 | 0.6− | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.1+ | | |
| 2005 04 02 | 644 | 0.5+ | 0.3+ | 2005 05 11 | 703 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.3− | 0.0 | | |
| 2005 04 02 | 644 | 0.3+ | 0.2+ | 2005 05 11 | 703 | (0.4− | 1.5−) | 2006 11 23 | G96 | 0.3− | 0.1+ | | |
| 2005 04 02 | 644 | 0.3+ | 0.2+ | 2005 05 11 | 703 | 0.7− | 0.2+ | | | | | | |

### (145051)∗ 2005 GT$_{10}$ = 2002 OP$_{26}$

Discovered 2005 Apr. 1 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86679)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.23277 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24464963 | $\omega$ | 152.57996 | | +0.78714351 | | +0.61630917 |
| $a$ | 2.5318599 | $\Omega$ | 169.27389 | | −0.58674162 | | +0.76017228 |
| $e$ | 0.0604933 | $i$ | 7.35786 | | −0.19010358 | | +0.20567232 |
| $P$ | 4.03 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.0 | 0.3− | 2002 09 05 | 704 | 1.2− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.1− | | |
| 1993 04 17 | 691 | 0.1− | 0.6− | 2002 09 05 | 704 | 0.6+ | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.2− | | |
| 1993 04 17 | 691 | 0.6− | 0.3− | 2005 03 18 | 703 | 0.7− | 0.8+ | 2006 08 17 | 644 | 0.1− | 0.1− | | |
| 1998 08 17 | 704 | 1.1− | 1.2− | 2005 03 18 | 703 | 0.0 | 0.1− | 2006 08 19 | 699 | 0.3− | 1.1− | | |
| 1998 08 17 | 704 | (2.1+ | 2.4−) | 2005 03 18 | 703 | 0.6− | 0.8+ | 2006 08 19 | 699 | (2.7− | 1.2−) | | |
| 1998 08 17 | 704 | (0.8+ | 2.1−) | 2005 03 18 | 703 | 0.6− | 0.9+ | 2006 08 19 | 699 | 0.5+ | 0.9− | | |
| 1998 08 17 | 704 | 0.3+ | 1.7− | 2005 04 01 | 691 | 0.3− | 0.1+ | 2006 08 24 | A50 | 0.3− | 0.5+ | | |
| 2001 03 16 | 691 | 0.4+ | 0.2− | 2005 04 01 | 691 | 0.2− | 0.1+ | 2006 08 24 | A50 | 0.1− | 0.3+ | | |
| 2001 03 16 | 691 | 0.4+ | 0.2+ | 2005 04 01 | 691 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.2+ | | |
| 2001 03 16 | 691 | 0.7+ | 0.2+ | 2005 04 04 | 703 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.6− | 0.4− | | |
| 2002 07 22 | 644 | 0.5+ | 0.3+ | 2005 04 04 | 703 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 1.1− | 0.4− | | |
| 2002 07 22 | 644 | 0.0 | 0.4+ | 2005 04 04 | 703 | 0.7− | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.2− | | |
| 2002 07 22 | 644 | 0.4+ | 0.4+ | 2005 04 04 | 703 | 0.4− | 0.4+ | 2006 08 30 | 704 | 0.4− | 0.3+ | | |
| 2002 08 06 | 644 | 0.3− | 1.4+ | 2005 04 05 | 699 | (1.1+ | 2.4−) | 2006 08 30 | 704 | 0.6+ | 0.8− | | |
| 2002 08 06 | 644 | 0.2+ | 1.0+ | 2005 04 05 | 699 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.6+ | | |
| 2002 08 06 | 644 | 0.4+ | 0.9+ | 2005 04 05 | 699 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.3+ | | |
| 2002 08 08 | 699 | 0.2− | 0.9+ | 2005 04 05 | 699 | (1.8+ | 0.9+) | 2006 08 30 | 704 | 0.6+ | 0.2+ | | |
| 2002 08 08 | 699 | 0.1+ | 1.3+ | 2005 04 09 | 704 | 1.5+ | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.6+ | | |
| 2002 08 08 | 699 | 0.6+ | 0.7+ | 2005 04 09 | 704 | 0.1+ | 0.5− | 2006 09 14 | 703 | 0.9+ | 0.3+ | | |
| 2002 08 08 | 699 | 0.2− | 0.9+ | 2005 04 09 | 704 | 1.3+ | 0.2− | 2006 09 14 | 703 | 0.6+ | 0.8+ | | |
| 2002 08 12 | 704 | 0.6− | 0.6− | 2006 07 21 | 703 | 1.0+ | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.8− | | |
| 2002 08 12 | 704 | 0.5+ | 0.0 | 2006 07 21 | 703 | 1.3+ | 0.6+ | 2006 09 27 | G96 | 0.6− | 0.3− | | |
| 2002 08 12 | 704 | 0.3+ | 0.2+ | 2006 07 21 | 703 | 0.6+ | 0.0 | 2006 09 27 | G96 | 0.4− | 0.5− | | |
| 2002 08 17 | 644 | 0.5− | 0.2+ | 2006 07 21 | 703 | 0.6− | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.2− | | |
| 2002 08 17 | 644 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.1− | | |
| 2002 08 17 | 644 | 0.4− | 0.1− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1− | | |
| 2002 08 27 | 644 | 0.4+ | 0.9− | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2+ | | |
| 2002 08 27 | 644 | 0.2+ | 0.0 | 2006 08 16 | A50 | 0.4+ | 0.6− | 2006 09 27 | G96 | 0.3− | 0.1− | | |
| 2002 08 27 | 644 | 0.3− | 0.2+ | 2006 08 16 | A50 | 0.2− | 0.6− | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2002 09 05 | 704 | 0.2− | 0.8− | 2006 08 17 | 644 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2002 09 05 | 704 | 0.3− | 0.6+ | 2006 08 17 | 644 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2002 09 05 | 704 | 0.2+ | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1− | | |

### (145052)∗ 2005 GY$_{10}$

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.54208 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27440212 | $\omega$ | 121.86011 | | −0.77079474 | | +0.62140231 |
| $a$ | 2.3453684 | $\Omega$ | 96.94518 | | −0.62182714 | | −0.68585088 |
| $e$ | 0.0589216 | $i$ | 8.13572 | | −0.13858741 | | −0.37877134 |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.3− | 1.0+ | 2005 04 30 | 699 | 0.6+ | 1.5+ | | |
| 2002 07 14 | 644 | 0.3− | 0.1− | 2005 04 04 | 703 | 0.0 | 1.0+ | 2005 04 30 | 699 | 0.4− | 1.3+ | | |
| 2002 07 14 | 644 | 0.0 | 0.0 | 2005 04 08 | 704 | 1.3+ | 0.0 | 2005 05 08 | 703 | 1.2− | 1.5− | | |
| 2003 11 26 | 691 | 0.1+ | 0.2+ | 2005 04 08 | 704 | 0.5+ | 0.6+ | 2005 05 08 | 703 | 0.5− | 0.2− | | |
| 2003 11 26 | 691 | 0.1− | 0.2+ | 2005 04 08 | 704 | 0.7+ | 0.4+ | 2005 05 08 | 703 | 1.9− | 0.9− | | |
| 2003 11 26 | 691 | 0.5− | 0.4+ | 2005 04 08 | 704 | 1.1+ | 0.5+ | 2005 05 08 | 703 | 0.0 | 0.9+ | | |
| 2003 12 21 | 691 | 0.2+ | 0.1+ | 2005 04 08 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.9+ | | |
| 2003 12 21 | 691 | 0.1− | 0.3+ | 2005 04 11 | 049 | 0.7− | 0.6+ | 2006 08 30 | 699 | 0.6+ | 0.4− | | |
| 2003 12 21 | 691 | 0.2+ | 0.2+ | 2005 04 11 | 049 | 0.4+ | 0.5+ | 2006 08 30 | 699 | 0.5− | 0.7+ | | |
| 2005 03 18 | 703 | 0.6− | 0.2+ | 2005 04 11 | 049 | 0.1+ | 0.1− | 2006 08 30 | 699 | (2.3+ | 0.0 ) | | |
| 2005 03 18 | 703 | 0.9+ | 0.7− | 2005 04 13 | 049 | 0.9+ | 0.6+ | 2006 09 14 | 703 | 1.0− | 1.0+ | | |
| 2005 03 18 | 703 | 0.8− | 0.3+ | 2005 04 13 | 049 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.8+ | 1.1− | | |
| 2005 03 18 | 703 | 0.1− | 0.0 | 2005 04 14 | 049 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.5− | 0.4− | | |
| 2005 04 01 | 699 | 1.3+ | 0.3− | 2005 04 17 | 703 | 1.5− | 0.4+ | 2006 09 14 | 703 | 1.7− | 0.5+ | | |
| 2005 04 01 | 699 | 0.1− | 0.1+ | 2005 04 17 | 703 | 0.0 | 0.1+ | 2006 09 26 | 703 | 1.1+ | 2.6+ | | |
| 2005 04 01 | 699 | 0.6+ | 0.8+ | 2005 04 17 | 703 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.3+ | 0.7+ | | |
| 2005 04 01 | 699 | 0.7+ | 0.3+ | 2005 04 17 | 703 | 0.2− | 1.1+ | 2006 09 26 | 703 | 1.1− | 2.2+ | | |
| 2005 04 04 | 703 | 1.3+ | 0.4+ | 2005 04 30 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 1.3− | 1.5+ | | |
| 2005 04 04 | 703 | 0.6+ | 0.3− | 2005 04 30 | 699 | 0.7+ | 0.6+ | | | | | | |

### (145053)∗ 2005 GX$_{11}$ = 2002 TW$_{202}$

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 77048)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.58273 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21693413 | $\omega$ | 69.66645 | | −0.67495426 | | +0.73436475 |
| $a$ | 2.7431578 | $\Omega$ | 157.38947 | | −0.72725860 | | −0.64568654 |
| $e$ | 0.0993070 | $i$ | 10.75272 | | −0.12462614 | | −0.20927809 |
| $P$ | 4.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 1.6− | 1.0+ | 2005 04 06 | 683 | 1.0+ | 0.5+ | 2006 07 21 | 703 | 0.9− | 0.8− |
| 2000 02 04 | 704 | 0.2− | 0.0 | 2005 04 13 | 703 | 0.5+ | 0.5− | 2006 07 21 | 703 | 1.3− | 0.4− |
| 2000 02 04 | 704 | 1.0+ | 0.0 | 2005 04 13 | 703 | 0.0 | 0.3− | 2006 07 21 | 703 | 1.1− | 0.3+ |
| 2000 02 04 | 704 | 0.4+ | 1.5+ | 2005 04 13 | 703 | 0.1− | 0.4− | 2006 08 19 | 699 | 0.4− | 0.9+ |
| 2000 03 11 | 704 | 0.9+ | 0.7+ | 2005 04 13 | 703 | 0.4− | 0.6− | 2006 08 19 | 699 | 0.1+ | 0.6+ |
| 2000 03 11 | 704 | 0.3+ | 0.5+ | 2005 04 15 | 699 | 0.2− | 0.5+ | 2006 08 19 | 699 | 0.1− | 0.9+ |
| 2000 03 11 | 704 | 0.2+ | 1.1+ | 2005 04 15 | 699 | 0.3− | 0.4+ | 2006 08 19 | 699 | 0.2+ | 0.6+ |
| 2000 03 11 | 704 | 0.1− | 0.9+ | 2005 04 15 | 699 | 0.2− | 0.9+ | 2006 08 19 | A50 | 0.1− | 0.2+ |
| 2000 03 11 | 704 | 0.7− | 0.7+ | 2005 04 15 | 699 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.6− | 0.4+ |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2005 04 18 | 704 | 0.7+ | 0.6− | 2006 08 28 | 699 | 0.2+ | 1.2+ |
| 2002 10 04 | 704 | 0.4+ | 0.3− | 2005 04 18 | 704 | 0.8+ | 0.4+ | 2006 08 28 | 699 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2005 04 18 | 704 | 1.0+ | 0.1− | 2006 08 28 | 699 | 0.5+ | 1.0+ |
| 2002 10 04 | 704 | 0.0 | 0.0 | 2005 04 18 | 704 | 1.2+ | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.2+ |
| 2002 10 08 | 699 | 0.3− | 1.0+ | 2005 04 18 | 704 | 0.7+ | 0.7− | 2006 08 28 | 703 | 0.3+ | 0.5− |
| 2002 10 08 | 699 | 0.2− | 1.1+ | 2005 04 30 | 699 | 0.0 | 0.2− | 2006 08 28 | 699 | 0.4− | 0.0 |
| 2002 10 08 | 699 | 0.0 | 0.6+ | 2005 04 30 | 699 | 0.4− | 1.2+ | 2006 08 28 | 699 | 0.3+ | 0.3+ |
| 2002 10 08 | 699 | 0.1+ | 1.0+ | 2005 04 30 | 699 | 0.7+ | 0.9+ | 2006 08 28 | 703 | 0.5− | 0.5− |
| 2005 03 18 | 703 | 0.7− | 0.4+ | 2005 04 30 | 699 | 0.1− | 0.6− | 2006 08 28 | 703 | 0.6+ | 0.2+ |
| 2005 03 18 | 703 | 0.6− | 0.3+ | 2005 05 04 | 703 | 0.9− | 0.1− | 2006 08 28 | 699 | 0.7− | 0.2+ |
| 2005 03 18 | 703 | 0.5− | 0.0 | 2005 05 04 | 703 | 0.3− | 1.0+ | 2006 08 28 | 699 | 0.5+ | 0.0 |
| 2005 03 18 | 703 | 1.1− | 0.3+ | 2005 05 04 | 703 | 0.6+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2005 04 01 | 699 | 0.6+ | 0.0 | 2005 05 04 | 703 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.4+ | 0.4+ |
| 2005 04 01 | 699 | 0.9+ | 0.4− | 2005 05 08 | 703 | 0.4+ | 1.2− | 2006 09 26 | G96 | 1.2+ | 0.9+ |
| 2005 04 01 | 699 | 0.0 | 0.4− | 2005 05 08 | 703 | 0.5− | 0.8− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2005 04 01 | 699 | 1.0+ | 0.4− | 2005 05 08 | 703 | 0.3− | 0.4− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2005 04 04 | 683 | (1.4− | 1.9−) | 2005 05 08 | 703 | 0.0 | 0.5− | 2006 10 22 | G96 | 0.4− | 1.1− |
| 2005 04 04 | 683 | 1.1− | 0.2− | 2005 05 13 | 704 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2005 04 04 | 683 | 0.6+ | 0.8− | 2005 05 13 | 704 | 0.9+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2005 04 04 | 703 | 0.2− | 0.5+ | 2005 05 13 | 704 | 1.1+ | 1.5+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2005 04 04 | 703 | 0.1+ | 0.5− | 2005 05 13 | 704 | 0.2− | 1.3+ | 2006 11 23 | G96 | 0.3− | 0.3+ |
| 2005 04 04 | 703 | 1.2− | 0.2+ | 2005 05 18 | 644 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.3+ |
| 2005 04 04 | 703 | 0.3− | 0.3− | 2005 05 18 | 644 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2005 04 06 | 683 | 0.4− | 0.6+ | 2005 05 18 | 644 | 0.3− | 0.0 | | | | |
| 2005 04 06 | 683 | 0.7− | 0.8+ | 2006 07 21 | 703 | (1.6− | 0.6−) | | | | |

**(145054)∗ 2005 GD$_{12}$**

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.04709 | | (2000.0) | | | |
| $n$ | 0.29115214 | $\omega$ | 86.87215 | | −0.93722242 | +0.33899899 |
| $a$ | 2.2545302 | $\Omega$ | 112.93165 | | −0.34471639 | −0.86507164 |
| $e$ | 0.0689399 | $i$ | 5.09667 | | −0.05277071 | −0.36977121 |
| $P$ | 3.39 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 0.2+ | 0.6− | 2005 04 04 | 703 | 0.6− | 0.3− | 2005 04 18 | 704 | 1.0+ | 0.1+ |
| 1998 03 04 | 704 | 0.6+ | 0.8− | 2005 04 04 | 703 | 0.8− | 0.1− | 2005 04 18 | 703 | 0.4− | 0.3+ |
| 1998 03 04 | 704 | 0.8− | 1.1− | 2005 04 04 | 703 | 0.4− | 0.1− | 2005 04 18 | 704 | (1.8+ | 0.0 ) |
| 1998 03 04 | 704 | (5.4− | 2.2−) | 2005 04 04 | 703 | 0.6− | 0.3+ | 2005 04 18 | 704 | (2.0+ | 1.2+) |
| 1998 03 25 | 704 | (2.8+ | 0.6−) | 2005 04 05 | H06 | 0.0 | 0.1+ | 2005 04 18 | 704 | (1.9+ | 0.7−) |
| 1998 03 25 | 704 | 0.3− | 0.4+ | 2005 04 05 | H06 | 0.7+ | 0.4− | 2005 04 18 | 704 | 0.7+ | 0.1+ |
| 1998 03 25 | 704 | (5.3+ | 1.2+) | 2005 04 05 | 704 | 1.0+ | 1.4+ | 2005 05 03 | 704 | 0.5− | 0.8+ |
| 1998 03 25 | 704 | (3.0+ | 2.3−) | 2005 04 05 | 704 | 0.6+ | 0.3+ | 2005 05 03 | 704 | 0.6+ | 0.4+ |
| 1998 03 25 | 704 | 1.0− | 1.0− | 2005 04 05 | 704 | 0.9+ | 1.0+ | 2005 05 03 | 704 | 0.0 | 0.4+ |
| 2000 12 30 | 704 | 0.1− | 0.3+ | 2005 04 05 | 704 | 0.6+ | 1.4+ | 2005 05 08 | 691 | 0.1− | 0.0 |
| 2000 12 30 | 704 | 0.2+ | 0.7+ | 2005 04 09 | 699 | 0.8+ | 0.0 | 2005 05 08 | 691 | 0.1− | 0.2+ |
| 2000 12 30 | 704 | 0.4− | 0.6+ | 2005 04 09 | 699 | 0.5− | 1.0+ | 2005 05 08 | 691 | 0.1− | 0.0 |
| 2003 10 18 | 644 | 0.3− | 0.3+ | 2005 04 09 | 699 | 0.4+ | 0.3− | 2005 05 08 | 703 | 0.1+ | 0.1+ |
| 2003 10 18 | 644 | 0.1− | 0.4+ | 2005 04 09 | 699 | 0.1+ | 0.1+ | 2005 05 08 | 703 | 0.9− | 1.4− |
| 2003 10 18 | 644 | 0.3− | 0.6+ | 2005 04 11 | 683 | (0.0 | 2.9+) | 2005 05 08 | 703 | 0.8− | 0.2+ |
| 2003 10 18 | 644 | 0.0 | 0.6+ | 2005 04 11 | 683 | (0.1− | 2.3+) | 2005 05 08 | 703 | 0.1− | 0.5− |
| 2003 10 18 | 644 | 0.5− | 0.5+ | 2005 04 11 | 683 | (1.3− | 1.5+) | 2005 05 15 | 644 | 0.0 | 0.1+ |
| 2003 10 18 | 644 | 0.1+ | 0.4+ | 2005 04 13 | 704 | 1.4+ | 0.2− | 2005 05 15 | 644 | 0.1+ | 0.1− |
| 2003 10 27 | 704 | 0.7+ | 0.7+ | 2005 04 13 | 704 | 1.2+ | 0.3− | 2005 05 15 | 644 | 0.0 | 0.1+ |
| 2003 10 27 | 704 | 1.5+ | 0.5+ | 2005 04 13 | 704 | 1.5+ | 0.3− | 2006 09 14 | 703 | 0.2+ | 1.0+ |
| 2003 10 27 | 704 | (0.5+ | 1.6+) | 2005 04 13 | 704 | (1.8+ | 0.8+) | 2006 09 14 | 703 | 0.8− | 0.2+ |
| 2003 10 27 | 704 | (0.1+ | 1.5+) | 2005 04 13 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.3− |
| 2003 11 30 | 704 | 0.9− | 1.2+ | 2005 04 15 | 683 | 0.4− | 1.1+ | 2006 09 14 | 703 | 0.3+ | 1.2− |
| 2003 11 30 | 704 | 0.7− | 0.8+ | 2005 04 15 | 683 | 1.0+ | 0.3+ | 2006 09 18 | 703 | (1.6− | 0.4+) |
| 2003 11 30 | 704 | 0.2+ | 0.3+ | 2005 04 15 | 683 | 0.9− | 0.9+ | 2006 09 18 | 703 | 0.4− | 0.7+ |
| 2005 03 18 | 703 | 0.5− | 0.3+ | 2005 04 15 | 699 | 0.5+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.5− |
| 2005 03 18 | 703 | 1.0− | 0.6− | 2005 04 15 | 699 | 1.1+ | 1.3+ | 2006 09 18 | 703 | 0.1+ | 0.9+ |
| 2005 03 18 | 703 | 0.7− | 0.1+ | 2005 04 15 | 699 | 0.4+ | 0.1+ | 2006 09 25 | 699 | (1.9+ | 2.2+) |
| 2005 03 18 | 703 | 0.8− | 0.4+ | 2005 04 15 | 699 | 0.7+ | 0.1− | 2006 09 25 | 699 | 1.0− | 1.4+ |
| 2005 04 01 | 699 | 0.3− | 0.7+ | 2005 04 16 | 683 | 1.2+ | 1.0− | 2006 09 25 | 699 | 0.4− | 0.0 |
| 2005 04 01 | 699 | 0.6+ | 0.0 | 2005 04 16 | 683 | (1.6− | 1.3+) | 2006 09 25 | 699 | 0.7− | 0.7+ |
| 2005 04 01 | 699 | 1.3+ | 0.5− | 2005 04 16 | 683 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.4+ |
| 2005 04 01 | 699 | 0.6− | 0.2+ | 2005 04 18 | 703 | 0.8− | 0.9+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2005 04 03 | H06 | 0.9− | 0.2− | 2005 04 18 | 703 | 0.2− | 1.0+ | 2006 10 12 | 644 | 0.3+ | 0.7+ |
| 2005 04 03 | H06 | 0.4+ | 0.1+ | 2005 04 18 | 703 | 0.9− | 0.2+ | | | | |

**(145055)∗ 2005 GQ$_{12}$ = 1999 TP$_{238}$ = 2003 YO$_{174}$**

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 89650)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.98168 | | (2000.0) | | | |
| $n$ | 0.27943105 | $\omega$ | 214.06193 | | +0.95003532 | +0.30542364 |
| $a$ | 2.3171436 | $\Omega$ | 128.02287 | | −0.26506834 | +0.89837370 |
| $e$ | 0.1537152 | $i$ | 4.69027 | | −0.16483830 | +0.31565977 |
| $P$ | 3.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 19 | 691 | 0.3− | 0.8+ | 2006 07 21 | 704 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.0 | 0.4+ |
| 1998 04 19 | 691 | 0.1− | 0.2+ | 2006 08 19 | 699 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.2− | 0.5− |
| 1998 04 19 | 691 | 0.2+ | 0.3+ | 2006 08 19 | 699 | 0.7− | 0.5− | 2006 09 26 | 704 | 0.1− | 1.0− |
| 1999 10 04 | 703 | 0.5+ | 0.1+ | 2006 08 19 | 699 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.7− | 0.8− |
| 1999 10 04 | 703 | 0.0 | 0.9+ | 2006 08 19 | 699 | 0.1− | 0.4+ | 2006 09 26 | 704 | 1.2+ | 0.1+ |
| 1999 10 04 | 703 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.1− | 1.1− | 2006 09 26 | 704 | (1.6+ | 0.7−) |
| 1999 10 04 | 703 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 1.4+ | 0.8− | 2006 09 26 | 704 | 1.4+ | 0.4+ |
| 1999 10 09 | 704 | 0.6− | 0.4− | 2006 09 16 | 704 | 0.8+ | 0.1− | 2006 09 29 | 699 | 0.4− | 0.2− |
| 1999 10 09 | 704 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.6+ | 0.9+ | 2006 09 29 | 699 | 0.1− | 0.3− |
| 1999 10 09 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.9+ | 2006 09 29 | 699 | 0.3− | 1.0+ |
| 1999 10 09 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.5+ | 1.3+ | 2006 09 30 | 703 | 0.9− | 0.2− |
| 1999 10 09 | 704 | 0.7+ | 0.7− | 2006 09 18 | 703 | 0.9+ | 0.9+ | 2006 09 30 | 704 | (1.7+ | 1.0+) |
| 2001 02 17 | 704 | 0.6+ | 0.9+ | 2006 09 19 | 704 | 0.9+ | 0.5− | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 2001 02 17 | 704 | 1.3+ | 0.4+ | 2006 09 19 | 704 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 2001 02 17 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 704 | 1.1− | 1.1+ | 2006 09 30 | 703 | 0.6− | 0.5− |
| 2003 12 19 | 704 | 0.2− | 0.4+ | 2006 09 19 | 704 | 0.6− | 0.8+ | 2006 09 30 | 704 | 1.0+ | 0.2+ |
| 2003 12 19 | 704 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2003 12 19 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.2− | 0.1+ |
| 2003 12 19 | 704 | 0.4− | 0.2− | 2006 09 20 | 644 | 0.6− | 0.0 | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2003 12 19 | 704 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.1+ |
| 2003 12 28 | 704 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.4− |
| 2003 12 28 | 704 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2003 12 28 | 704 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 2005 04 01 | 699 | (0.7+ | 1.7+) | 2006 09 21 | 699 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2005 04 01 | 699 | (1.7+ | 1.1+) | 2006 09 21 | 699 | 0.8− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2005 04 01 | 699 | 0.3+ | 0.3+ | 2006 09 21 | 699 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2005 04 01 | 699 | 0.3+ | 0.7+ | 2006 09 22 | 704 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2005 04 04 | 703 | 0.6− | 0.2+ | 2006 09 22 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2005 04 04 | 703 | 0.3− | 0.5− | 2006 09 22 | 704 | (0.6− | 1.6−) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2005 04 04 | 703 | 1.1− | 0.1− | 2006 09 22 | 704 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2005 04 04 | 703 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2005 05 08 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2005 05 08 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.2− |
| 2005 05 08 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.2− |
| 2006 07 21 | 704 | 0.3− | 0.0 | 2006 09 25 | 699 | (1.6− | 3.1+) | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2006 07 21 | 704 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.2+ |

**(145056)∗ 2005 GT$_{12}$**

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.87906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28805653 | $\omega$ | 52.59757 | | −0.62145697 | +0.78344780 | |
| $a$ | 2.2706537 | $\Omega$ | 178.97855 | | −0.73353077 | −0.58146488 | |
| $e$ | 0.1048607 | $i$ | 2.83637 | | −0.27517967 | −0.21933565 | |
| $P$ | 3.42 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.3+ | 0.1− | 2005 05 08 | 703 | (0.2+ | 3.2+) | 2006 09 30 | G96 | 0.4+ | 0.4+ |
| 1999 09 30 | 691 | 0.2+ | 0.2− | 2005 05 08 | 703 | 1.3+ | 1.2+ | 2006 09 30 | 291 | 0.1+ | 0.0 |
| 1999 09 30 | 691 | 0.4− | 0.2+ | 2005 05 08 | 703 | (1.9+ | 1.1+) | 2006 09 30 | 291 | 0.2+ | 0.1− |
| 2003 11 19 | 691 | 0.5− | 0.5+ | 2005 05 08 | 703 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.6− | 0.3+ |
| 2003 11 19 | 691 | 0.2− | 0.4+ | 2005 05 11 | G96 | 0.1− | 0.1− | 2006 09 30 | 701 | (2.3+ | 1.0+) |
| 2003 11 19 | 691 | 0.0 | 0.3+ | 2005 05 11 | G96 | 0.0 | 0.0 | 2006 09 30 | 291 | 0.3+ | 0.2+ |
| 2003 12 21 | 691 | 0.4+ | 0.1− | 2005 05 11 | G96 | 0.1+ | 0.1− | 2006 09 30 | 291 | 0.3+ | 0.1+ |
| 2003 12 21 | 691 | 0.0 | 0.2− | 2005 05 11 | G96 | 0.3− | 0.1− | 2006 09 30 | 291 | 0.0 | 0.0 |
| 2003 12 21 | 691 | 0.3+ | 0.0 | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 09 30 | 291 | 0.2+ | 0.1+ |
| 2005 04 01 | 699 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.7+ | 0.3− | 2006 09 30 | 701 | 1.4+ | 0.7+ |
| 2005 04 01 | 699 | (0.2+ | 2.0+) | 2006 07 21 | G96 | 1.0− | 0.2+ | 2006 09 30 | 291 | 0.1+ | 0.0 |
| 2005 04 01 | 699 | 0.2+ | 0.3− | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 30 | 291 | 0.2+ | 0.0 |
| 2005 04 01 | 699 | (1.9− | 1.2+) | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | 701 | 0.0 | 0.3+ |
| 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 14 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 291 | 0.2− | 0.4+ |
| 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 01 | 291 | 0.6− | 0.2+ |
| 2005 04 04 | G96 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.5+ | 0.1+ | 2006 10 01 | 291 | 0.2− | 0.1+ |
| 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.4+ | 0.1+ | 2006 10 01 | 291 | 0.2+ | 0.1+ |
| 2005 04 05 | 703 | 0.8− | 0.4− | 2006 09 18 | 691 | (2.4+ | 0.4−) | 2006 10 01 | 291 | 0.0 | 0.1− |
| 2005 04 05 | 703 | 0.1+ | 0.9− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 01 | 291 | 0.2− | 0.0 |
| 2005 04 05 | 703 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 01 | 291 | 0.0 | 0.1+ |
| 2005 04 05 | 703 | 1.0− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 01 | 291 | 0.4− | 0.5− |
| 2005 04 05 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 01 | 291 | 0.3+ | 0.2+ |
| 2005 04 05 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 02 | 291 | 0.2− | 0.0 |
| 2005 04 05 | G96 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 10 02 | 291 | 0.4− | 0.3− |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 02 | 291 | 0.2− | 0.1− |
| 2005 04 11 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 291 | 0.3− | 0.1+ | 2006 10 02 | 291 | 0.3+ | 0.1− |
| 2005 04 11 | 691 | (1.7+ | 1.2−) | 2006 09 29 | 291 | 0.1− | 0.2+ | 2006 10 02 | 291 | 0.0 | 0.0 |
| 2005 04 11 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 291 | 0.4− | 0.1+ | 2006 10 02 | 291 | 0.2+ | 0.2− |
| 2005 04 12 | 704 | 0.9+ | 1.2+ | 2006 09 30 | 291 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.5− |
| 2005 04 12 | 704 | 0.2− | 0.7+ | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2005 04 12 | 704 | 0.3− | 0.3+ | 2006 09 30 | 291 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2005 04 15 | 699 | 0.2+ | 0.5+ | 2006 09 30 | 291 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.6+ | 0.3− |
| 2005 04 15 | 699 | 0.2− | 0.2− | 2006 09 30 | 291 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2005 04 15 | 699 | 0.4− | 0.1+ | 2006 09 30 | 291 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.6+ | 0.3+ |
| 2005 04 15 | 699 | (3.2+ | 0.9+) | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.4− |
| 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 09 30 | 701 | (0.2+ | 3.7−) | | | | |
| 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 09 30 | 291 | 0.0 | 0.2+ | | | | |

**(145057)∗ 2005 GM$_{13}$**

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.77548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21408411 | $\omega$ | 133.60761 | | +0.26322804 | +0.95917446 | |
| $a$ | 2.7674498 | $\Omega$ | 151.17208 | | −0.93535719 | +0.27999445 | |
| $e$ | 0.1639034 | $i$ | 12.38505 | | −0.23625818 | −0.03984290 | |
| $P$ | 4.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 608 | 0.9− | 0.2+ | 2005 05 08 | 703 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 0.7+ | 0.4− |
| 2001 07 27 | 608 | 1.0− | 0.1+ | 2005 05 08 | 703 | 0.6− | 0.0 | 2006 09 21 | 699 | (0.1+ | 1.6+) |
| 2001 07 27 | 608 | 1.1− | 0.0 | 2005 05 08 | 703 | 0.2+ | 0.6+ | 2006 09 21 | 699 | 0.5− | 0.5+ |
| 2001 08 23 | 608 | 1.2+ | 0.8+ | 2005 05 13 | 704 | 0.6+ | 1.2− | 2006 09 21 | 699 | 0.3+ | 0.9+ |
| 2001 08 23 | 608 | 1.3+ | 0.6+ | 2005 05 13 | 704 | 0.6+ | 0.9− | 2006 09 22 | 704 | 1.0+ | 0.4+ |
| 2001 08 23 | 608 | 1.0+ | 1.0+ | 2005 05 13 | 704 | (1.9+ | 0.3−) | 2006 09 22 | 704 | 0.2− | 0.1+ |
| 2004 03 18 | 645 | 0.0 | 0.2+ | 2005 05 13 | 704 | 1.3+ | 1.0+ | 2006 09 22 | 704 | 0.3+ | 0.0 |
| 2004 03 18 | 645 | 0.0 | 0.2+ | 2006 08 10 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.3+ | 0.0 |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 08 10 | 644 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.4+ | 0.2+ |
| 2004 04 15 | 645 | 0.0 | 0.0 | 2006 08 10 | 644 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.5− | 0.1− |
| 2005 04 01 | 699 | 0.4+ | 0.1+ | 2006 08 24 | 644 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 2005 04 01 | 699 | 1.5+ | 0.2− | 2006 08 24 | 644 | 0.2− | 0.4+ | 2006 09 26 | 704 | (3.0+ | 2.2−) |
| 2005 04 01 | 699 | 0.9+ | 0.5+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | (1.7+ | 0.7−) |
| 2005 04 01 | 699 | 0.3+ | 0.6+ | 2006 08 28 | 699 | 0.4+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.4+ |
| 2005 04 04 | 703 | 0.5− | 0.4− | 2006 08 28 | 699 | 0.0 | 0.7+ | 2006 09 26 | 703 | 1.2+ | 0.4+ |
| 2005 04 04 | 703 | 1.2− | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.9− | 0.1− |
| 2005 04 04 | 703 | 1.0− | 0.2+ | 2006 08 30 | 704 | (1.3+ | 1.7+) | 2006 09 26 | 703 | 0.2− | 0.3− |
| 2005 04 04 | 703 | 0.6+ | 0.6− | 2006 08 30 | 704 | 1.2+ | 0.0 | 2006 09 27 | 703 | 0.3− | 0.3+ |
| 2005 04 04 | 703 | 0.3− | 0.7+ | 2006 08 30 | 704 | 1.2+ | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.5+ |
| 2005 04 04 | 703 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.5− | 2006 09 27 | 703 | 0.5+ | 0.3− |
| 2005 04 04 | 703 | 0.4+ | 0.4+ | 2006 08 31 | 704 | 1.1− | 0.1+ | 2006 09 27 | 703 | 1.0− | 0.1− |
| 2005 04 04 | 703 | 1.0+ | 0.6+ | 2006 08 31 | 704 | 0.0 | 0.6+ | 2006 10 02 | 703 | 0.3− | 0.6+ |
| 2005 04 13 | 703 | 0.2− | 0.3+ | 2006 08 31 | 704 | 0.0 | 0.7+ | 2006 10 02 | 703 | 1.2− | 0.3− |
| 2005 04 13 | 703 | 0.7− | 0.2− | 2006 09 14 | 703 | 0.5− | 0.0 | 2006 10 02 | 703 | 0.6− | 0.1− |
| 2005 04 13 | 703 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.8+ |
| 2005 04 13 | 703 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2005 04 18 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2005 04 18 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 704 | (1.7+ | 1.1−) | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2005 04 18 | 704 | 0.1+ | 1.1+ | 2006 09 16 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 1.1− |
| 2005 04 18 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 704 | 0.5+ | 0.3− | 2006 10 19 | 703 | 0.1− | 1.4− |
| 2005 05 03 | 703 | 0.7− | 0.7− | 2006 09 16 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.4− |
| 2005 05 03 | 703 | 0.4− | 0.3+ | 2006 09 19 | 704 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.8− |
| 2005 05 03 | 703 | 0.6− | 0.2− | 2006 09 19 | 704 | 0.2− | 0.8+ | | | | |
| 2005 05 03 | 703 | 0.8− | 0.2− | 2006 09 19 | 704 | 0.6+ | 0.4+ | | | | |

**(145058)∗ 2005 GM$_{19}$ = 2006 KK$_{105}$**

Discovered 2005 Apr. 2 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 103686)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.02768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21280693 | $\omega$ | 303.24404 | | +0.82115316 | +0.56557309 | |
| $a$ | 2.7785115 | $\Omega$ | 22.60533 | | −0.43480978 | +0.70668149 | |
| $e$ | 0.2263614 | $i$ | 11.46213 | | −0.36965922 | +0.42512157 | |
| $P$ | 4.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.4− | 0.3− | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 08 28 | E12 | 0.4+ | 0.1+ |
| 1997 10 30 | 704 | 1.5− | 0.0 | 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 08 28 | E12 | 0.2+ | 0.2+ |
| 1997 10 30 | 704 | 0.7+ | 0.5+ | 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 08 28 | E12 | 0.4− | 0.4− |
| 1997 10 30 | 704 | 0.4+ | 0.3+ | 2005 04 09 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.1− | 0.1− |
| 1997 10 30 | 704 | 0.3+ | 0.6+ | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 703 | 0.1+ | 0.4+ |
| 2002 11 06 | 704 | 0.7+ | 0.2− | 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 703 | 0.2− | 0.3+ |
| 2002 11 06 | 704 | 0.8+ | 0.3− | 2005 04 09 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.3+ |
| 2002 11 06 | 704 | 0.2+ | 0.1− | 2005 04 09 | G96 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.3+ | 0.3− |
| 2002 11 15 | 704 | 0.4+ | 0.4+ | 2005 04 09 | G96 | 0.4+ | 0.2+ | 2006 09 21 | 699 | 0.5+ | 0.2− |
| 2002 11 15 | 704 | 1.2− | 0.5+ | 2005 04 09 | G96 | 0.4+ | 0.4+ | 2006 09 21 | 699 | 0.2+ | 0.4− |
| 2002 11 15 | 704 | 0.5− | 0.0 | 2005 04 09 | G96 | 0.4+ | 0.4+ | 2006 09 21 | 699 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.7− | 0.3+ | 2005 04 11 | 699 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.3+ |
| 2002 12 05 | 704 | 0.7− | 0.6+ | 2005 04 11 | 699 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.7+ |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2005 04 11 | 699 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2005 04 11 | 699 | 0.1− | 1.3+ | 2006 09 26 | 703 | 0.4− | 0.5+ |
| 2004 01 17 | 644 | 0.3+ | 0.3+ | 2005 04 11 | 947 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2004 01 17 | 644 | 0.5+ | 0.3+ | 2005 04 11 | 947 | 0.3− | 0.3− | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2004 01 17 | 644 | 0.4+ | 0.7+ | 2005 04 11 | 947 | 0.7− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2004 03 17 | 645 | 0.0 | 0.1+ | 2005 04 12 | 695 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 2004 03 17 | 645 | 0.0 | 0.1+ | 2005 04 12 | 695 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 05 29 | E12 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 05 29 | E12 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.3+ |
| 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 05 29 | E12 | 0.3− | 0.5+ | 2006 11 14 | 704 | 0.2+ | 0.8+ |
| 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 05 29 | E12 | 0.5+ | 0.4− | 2006 11 14 | 704 | 0.5+ | 1.7+ |
| 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 06 01 | E12 | 0.9− | 0.6− | 2006 11 14 | 704 | (1.8+ | 5.1+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 06 01 | E12 | 0.4− | 0.1− | 2006 11 14 | 704 | 0.1+ | 1.9+ |
| 2005 04 02 | G96 | 0.0 | 0.2+ | 2006 06 01 | E12 | 1.0− | 0.1+ | 2006 11 20 | 704 | 0.3− | 1.4+ |
| 2005 04 02 | G96 | 0.1+ | 0.2+ | 2006 06 01 | E12 | 0.7− | 0.5− | 2006 11 20 | 704 | 0.5− | 0.9+ |
| 2005 04 04 | 704 | 0.4+ | 0.6− | 2006 06 22 | E12 | 1.2− | 0.4+ | 2006 11 20 | 704 | 1.5− | 0.5+ |
| 2005 04 04 | 704 | 0.4− | 0.3− | 2006 06 22 | E12 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 1.9− | 0.3+ |
| 2005 04 04 | 704 | 0.4− | 0.7− | 2006 06 22 | E12 | 1.8− | 0.9+ | 2006 11 27 | 703 | 0.2+ | 1.6+ |
| 2005 04 04 | 704 | 1.8+ | 0.2− | 2006 06 22 | E12 | 0.5− | 0.8+ | 2006 11 27 | 703 | 0.2− | 0.7+ |
| 2005 04 05 | G96 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 1.8+ |
| 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 08 23 | 644 | 0.2+ | 0.3+ | | | | |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.1− | 0.3+ | | | | |

**(145059)∗ 2005 GL$_{20}$**

Discovered 2005 Apr. 2 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.08387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22492785 | $\omega$ | 234.40497 | | +0.07446246 | +0.99622784 | |
| $a$ | 2.6777738 | $\Omega$ | 39.93771 | | −0.89101747 | +0.08653090 | |
| $e$ | 0.2312785 | $i$ | 3.98011 | | −0.44782052 | −0.00651817 | |
| $P$ | 4.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 704 | 0.2+ | 0.2− | 2005 04 18 | 703 | 0.5+ | 0.4+ | 2005 06 01 | G96 | 0.4− | 0.0 |
| 2001 06 16 | 704 | 0.5− | 0.2− | 2005 04 18 | 704 | 0.6+ | 0.8+ | 2005 06 14 | G96 | 0.0 | 0.0 |
| 2001 06 16 | 704 | 0.7− | 0.5− | 2005 04 18 | 704 | 0.4+ | 1.1+ | 2005 06 14 | G96 | 0.1− | 0.1− |
| 2001 06 16 | 704 | 0.6− | 0.2− | 2005 04 18 | 704 | 0.8+ | 1.3+ | 2005 06 14 | G96 | 0.2+ | 0.0 |
| 2001 07 10 | 644 | 0.3− | 0.3+ | 2005 04 18 | 704 | 0.5+ | 0.7+ | 2005 06 14 | G96 | 0.1− | 0.1− |
| 2001 07 10 | 644 | 0.5− | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.2+ | 2005 06 27 | 644 | 0.0 | 0.0 |
| 2001 07 10 | 644 | 0.4− | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.2+ | 2005 06 27 | 644 | 0.1+ | 0.2− |
| 2001 07 23 | 644 | 0.8+ | 0.0 | 2005 05 01 | 644 | 0.0 | 0.2+ | 2005 06 27 | 644 | 0.1+ | 0.0 |
| 2001 07 23 | 644 | 1.0+ | 0.1− | 2005 05 09 | H06 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 2001 07 23 | 644 | 0.9+ | 0.1− | 2005 05 09 | H06 | 0.1− | 0.8− | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2002 12 28 | 291 | 0.2+ | 0.4+ | 2005 05 09 | H06 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.4− | 0.1+ |
| 2002 12 28 | 291 | 0.1− | 0.4+ | 2005 05 09 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2002 12 28 | 291 | 0.6− | 0.6+ | 2005 05 09 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.7+ |
| 2005 04 02 | G96 | 0.4− | 0.0 | 2005 05 09 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2005 04 02 | G96 | 0.3− | 0.0 | 2005 05 09 | 699 | 0.1− | 1.0− | 2006 10 21 | 703 | 0.2+ | 1.2− |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2005 05 09 | 704 | 0.6+ | 0.0 | 2006 10 21 | 703 | 0.2− | 1.2+ |
| 2005 04 02 | G96 | 0.5− | 0.1+ | 2005 05 09 | 699 | 0.1+ | 0.7+ | 2006 10 21 | 703 | (2.6− | 1.7+) |
| 2005 04 04 | 704 | (2.2+ | 0.6−) | 2005 05 09 | 704 | 1.0+ | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.8+ |
| 2005 04 04 | 704 | 1.4+ | 0.1− | 2005 05 09 | 699 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2005 04 04 | 704 | (1.8+ | 0.1+) | 2005 05 09 | 699 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 04 04 | 704 | 1.2+ | 0.2− | 2005 05 10 | H06 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 04 07 | 704 | 0.8+ | 0.2+ | 2005 05 10 | H06 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.6− | 0.2+ |
| 2005 04 07 | 704 | 0.9+ | 0.4+ | 2005 05 10 | H06 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2005 04 07 | 704 | 0.3+ | 0.4− | 2005 05 11 | G96 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2005 04 12 | 704 | 0.3− | 0.2− | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2005 04 12 | 704 | 0.5− | 1.0+ | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2005 04 12 | 704 | 0.2+ | 0.5+ | 2005 05 11 | G96 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2005 04 12 | 704 | 0.8− | 0.5+ | 2005 05 12 | 699 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2005 04 12 | 704 | 0.8− | 0.3+ | 2005 05 12 | 699 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2005 04 13 | 699 | 0.5− | 1.3+ | 2005 05 12 | 699 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2005 04 13 | 699 | (1.5+ | 0.5+) | 2005 05 12 | 699 | 1.0+ | 0.7+ | 2006 11 16 | 691 | 0.3− | 0.2+ |
| 2005 04 13 | 699 | 0.1+ | 1.3+ | 2005 05 13 | 704 | 0.4+ | 0.5− | 2006 11 16 | 691 | 0.2− | 0.4+ |
| 2005 04 13 | 699 | 0.9+ | 1.0+ | 2005 05 13 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2005 04 17 | I10 | 0.7− | 1.3− | 2005 05 13 | 704 | 0.5+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2005 04 17 | I10 | 0.7− | 0.2− | 2005 05 13 | 704 | 0.2− | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2005 04 17 | I10 | 1.1− | 1.1− | 2005 05 13 | 704 | 0.5+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 04 17 | 691 | 0.2+ | 0.2+ | 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2005 04 17 | 691 | 0.2+ | 0.3+ | 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.3− |
| 2005 04 17 | 691 | 0.1+ | 0.3+ | 2005 05 14 | 644 | 0.1+ | 0.0 | 2006 11 22 | G96 | 1.3+ | 1.0+ |
| 2005 04 18 | 703 | 1.1+ | 0.3+ | 2005 06 01 | G96 | 0.5− | 0.3+ | 2006 11 22 | G96 | 0.5− | 0.1− |
| 2005 04 18 | 703 | 1.0− | 0.4+ | 2005 06 01 | G96 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2005 04 18 | 703 | 1.0− | 0.2− | 2005 06 01 | G96 | 0.3− | 0.2+ | | | | |

**(145060)∗ 2005 GV$_{20}$**

Discovered 2005 Apr. 2 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.16495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26620436 | $\omega$ | 316.46248 | | −0.94754432 | −0.31936949 | |
| $a$ | 2.3932750 | $\Omega$ | 204.92119 | | +0.30092335 | −0.87793434 | |
| $e$ | 0.1342021 | $i$ | 1.73568 | | +0.10772604 | −0.35669935 | |
| $P$ | 3.70 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.1+ | 0.3+ | 2003 11 21 | 704 | 1.6+ | 0.6+ | 2005 05 03 | 701 | 1.0+ | 0.6− |
| 1995 09 27 | 691 | 0.1+ | 0.2+ | 2003 11 21 | 704 | 0.3+ | 0.2− | 2005 05 03 | 691 | 0.5− | 0.8+ |
| 1995 09 27 | 691 | 0.0 | 0.1+ | 2005 01 21 | 809 | 0.7− | 0.8+ | 2005 05 03 | 701 | 0.7+ | 0.3+ |
| 2001 03 02 | 699 | 0.6− | 0.2− | 2005 01 21 | 809 | 0.5− | 0.2+ | 2005 05 03 | 701 | 0.7+ | 0.1+ |
| 2001 03 02 | 699 | 0.4− | 0.1− | 2005 01 21 | 809 | 0.0 | 0.1− | 2005 05 04 | 701 | 0.2+ | 0.1− |
| 2001 03 02 | 699 | 0.4+ | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.2− | 2005 05 04 | G96 | 0.2− | 0.7− |
| 2001 03 02 | 699 | 0.4− | 0.8− | 2005 03 10 | G96 | 0.2− | 0.3− | 2005 05 04 | G96 | 0.3− | 0.7− |
| 2001 03 18 | 704 | 0.1+ | 0.0 | 2005 03 10 | G96 | 0.0 | 0.4− | 2005 05 04 | G96 | 0.1− | 0.5− |
| 2001 03 18 | 704 | 0.2+ | 0.4+ | 2005 03 10 | G96 | 0.1− | 0.3− | 2005 05 04 | 701 | 0.7+ | 0.2+ |
| 2001 03 18 | 704 | 0.8+ | 0.1− | 2005 04 02 | G96 | 0.1− | 0.3− | 2005 05 04 | G96 | 0.1− | 0.6− |
| 2001 03 18 | 704 | 1.1− | 0.1− | 2005 04 02 | G96 | 0.4− | 0.6− | 2006 08 19 | 691 | 0.4− | 0.2+ |
| 2001 03 18 | 704 | 0.6− | 0.0 | 2005 04 02 | G96 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.0 | 0.1− |
| 2001 03 29 | 691 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.2− | 0.4− | 2006 08 19 | 691 | 0.1− | 0.0 |
| 2001 03 29 | 691 | 0.5+ | 0.3+ | 2005 04 04 | G96 | 0.4− | 0.4− | 2006 08 27 | 691 | 0.3− | 0.2+ |
| 2001 03 29 | 691 | 0.4+ | 0.1+ | 2005 04 04 | G96 | 0.2− | 0.5− | 2006 08 27 | 691 | 0.3− | 0.1+ |
| 2001 04 13 | 691 | 0.3− | 0.1+ | 2005 04 04 | G96 | 0.1+ | 0.2− | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2001 04 13 | 691 | 0.4− | 0.4+ | 2005 04 04 | G96 | 0.2− | 0.6− | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 2001 04 13 | 691 | 0.3− | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.7− | 0.3− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.5− | 0.2− |
| 2003 11 21 | 704 | 0.1+ | 0.3+ | 2005 05 03 | 691 | 0.1+ | 0.1+ | | | | |
| 2003 11 21 | 704 | 0.5+ | 0.5+ | 2005 05 03 | 691 | 0.0 | 0.0 | | | | |

**(145061)∗ 2005 GK$_{21}$**

Discovered 2005 Apr. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.99903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30044401 | $\omega$ | 232.99451 | | −0.38255796 | +0.92377126 | |
| $a$ | 2.2078032 | $\Omega$ | 14.54250 | | −0.82443474 | −0.33289472 | |
| $e$ | 0.0793749 | $i$ | 3.92932 | | −0.41708124 | −0.18928224 | |
| $P$ | 3.28 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 22 | 691 | 0.0 | 0.1− | 2005 04 04 | 704 | 0.8+ | 1.1+ | 2006 10 11 | 691 | 0.2− | 0.6+ |
| 1996 09 22 | 691 | 0.1− | 0.4+ | 2005 04 04 | 704 | 0.8+ | 0.2− | 2006 10 15 | 691 | 0.5− | 1.0− |
| 1996 09 22 | 691 | 0.1− | 0.1+ | 2005 04 04 | 704 | 1.2+ | 0.6− | 2006 10 15 | 691 | 0.3− | 0.2+ |
| 2003 10 23 | 691 | 0.2+ | 0.0 | 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.0 |
| 2003 10 23 | 691 | 0.1+ | 0.2− | 2005 04 05 | G96 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 2003 10 23 | 691 | 0.1+ | 0.3− | 2005 04 05 | G96 | 0.4− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2003 11 20 | 704 | 0.1+ | 0.2− | 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2003 11 20 | 704 | 0.3+ | 0.1− | 2005 04 12 | 704 | 0.6+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2003 11 20 | 704 | 0.5+ | 0.7+ | 2005 04 12 | 704 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2003 11 20 | 704 | 0.4+ | 0.0 | 2005 04 12 | 704 | 0.2+ | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2003 12 01 | 691 | 0.3− | 0.2+ | 2005 04 12 | 704 | 0.8+ | 0.9− | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2003 12 01 | 691 | 0.6− | 0.1+ | 2005 04 17 | 691 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 2003 12 01 | 691 | 0.1− | 0.0 | 2005 04 17 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2003 12 18 | 691 | 0.1− | 0.1+ | 2005 04 17 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.2− | 0.0 |
| 2003 12 18 | 691 | 0.3+ | 0.1+ | 2005 04 18 | 704 | 1.0+ | 0.9+ | 2006 10 21 | 703 | 0.9− | 0.7+ |
| 2003 12 18 | 691 | 0.1− | 0.2+ | 2005 04 18 | 704 | 0.8+ | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 2005 03 08 | G96 | 0.3− | 0.2− | 2005 04 18 | 704 | 0.5+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2005 03 08 | G96 | 0.5− | 0.1− | 2005 05 06 | 703 | 0.4− | 1.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2005 03 08 | G96 | 0.8− | 0.4− | 2005 05 06 | 703 | 1.1− | 0.4− | 2006 10 27 | 691 | 0.5+ | 0.2+ |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2005 05 06 | 703 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2005 04 03 | 644 | 0.3+ | 0.6+ | 2005 05 06 | 703 | 0.3− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2005 04 03 | 644 | 0.6+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2005 04 03 | 644 | 0.5+ | 1.0+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2005 04 04 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 691 | 0.4+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2005 04 04 | 691 | 0.2+ | 0.5+ | 2006 10 11 | 691 | 0.5− | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.0 |

**(145062)∗ 2005 GS$_{22}$ = 2000 DF$_{32}$**

Discovered 2005 Apr. 4 by K. Endate at Kitami.

Id. G. V. Williams (*MPO* 77061)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.88791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21916920 | $\omega$ | 113.43766 | | −0.22038706 | +0.97288600 | |
| $a$ | 2.7244763 | $\Omega$ | 143.60613 | | −0.93252572 | −0.18905759 | |
| $e$ | 0.0991657 | $i$ | 6.79092 | | −0.28605127 | −0.13322933 | |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 10 | 691 | 0.1+ | 0.1+ | 2005 04 04 | 703 | 1.0− | 0.6+ | 2006 08 18 | 644 | 0.2− | 0.1+ |
| 1997 08 10 | 691 | 0.0 | 0.1− | 2005 04 04 | 703 | 1.3− | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.3+ |
| 1997 08 10 | 691 | 0.1− | 0.4− | 2005 04 04 | 400 | 0.3− | 0.5− | 2006 08 18 | 644 | 0.0 | 0.1+ |
| 2000 01 10 | 691 | 0.0 | 0.1+ | 2005 04 04 | 400 | 0.6− | 0.0 | 2006 08 18 | 644 | 0.0 | 0.1+ |
| 2000 01 10 | 691 | 0.1− | 0.1− | 2005 04 05 | 704 | 0.3+ | 0.7+ | 2006 08 18 | 644 | 0.2− | 0.1+ |
| 2000 01 10 | 691 | 0.1− | 0.1+ | 2005 04 05 | 704 | 0.2+ | 1.1+ | 2006 08 21 | 704 | 1.3+ | 0.9+ |
| 2000 02 29 | 704 | 0.9+ | 1.0+ | 2005 04 05 | 704 | 0.2+ | 0.7+ | 2006 08 21 | 704 | 1.8+ | 0.3+ |
| 2000 02 29 | 704 | 0.3+ | 0.1− | 2005 04 05 | 400 | 0.1− | 1.6+ | 2006 08 21 | 704 | 0.3+ | 0.1− |
| 2000 02 29 | 704 | 0.4+ | 0.7+ | 2005 04 05 | 400 | 0.3+ | 0.1+ | 2006 08 21 | 704 | 0.4− | 1.1+ |
| 2000 02 29 | 704 | (1.0+ | 2.2+) | 2005 04 13 | 704 | (2.5+ | 0.1−) | 2006 08 21 | 704 | 1.2+ | 0.0 |
| 2000 02 29 | 704 | 1.3+ | 0.5+ | 2005 04 13 | 704 | (1.5+ | 2.1−) | 2006 08 28 | 704 | 0.3− | 0.8+ |
| 2000 03 03 | 704 | 0.2− | 1.0+ | 2005 04 13 | 704 | 1.3+ | 1.0− | 2006 08 28 | 704 | 0.3+ | 0.1− |
| 2000 03 03 | 704 | 0.2+ | 0.7+ | 2005 04 13 | 704 | 1.7+ | 0.1− | 2006 08 28 | 704 | 1.1+ | 0.4+ |
| 2000 03 03 | 704 | 0.3+ | 0.6+ | 2005 04 14 | 400 | 0.9+ | 0.4− | 2006 08 28 | 704 | 0.8+ | 0.1+ |
| 2000 03 03 | 704 | 0.5+ | 0.7+ | 2005 04 14 | 400 | 0.6− | 0.8+ | 2006 08 28 | 704 | 0.9+ | 0.7+ |
| 2000 03 03 | 704 | 0.2+ | 1.1+ | 2005 05 06 | 704 | 0.4+ | 1.6+ | 2006 08 28 | 691 | 0.2− | 0.2+ |
| 2000 03 04 | 704 | 0.6+ | 0.7+ | 2005 05 06 | 704 | 0.6+ | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2000 03 04 | 704 | 0.9+ | 1.3− | 2005 05 06 | 704 | 0.6+ | 0.5+ | 2006 08 28 | 703 | 0.7− | 0.0 |
| 2000 03 04 | 704 | 0.7+ | 0.9+ | 2005 05 06 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 2000 03 04 | 704 | 0.4+ | 1.0+ | 2005 05 06 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.8− | 1.8+ |
| 2000 03 11 | 704 | 0.3− | 0.6+ | 2005 05 11 | 703 | 0.6− | 1.0+ | 2006 08 28 | 703 | 1.0− | 0.3+ |
| 2000 03 11 | 704 | 0.7+ | 1.4+ | 2005 05 11 | 703 | 1.8− | 0.7− | 2006 08 28 | 699 | 1.2+ | 0.2− |
| 2000 03 11 | 704 | 0.7+ | 1.0− | 2005 05 11 | 703 | 1.5− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.9+ |
| 2000 03 11 | 704 | 0.5+ | 0.1− | 2005 05 11 | 703 | 1.0− | 0.3+ | 2006 08 28 | 699 | 0.8+ | 0.1− |
| 2002 10 30 | 645 | 0.0 | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.3− | 1.3+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 05 13 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.1− |
| 2002 11 07 | 645 | 0.2− | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 1.4− | 0.4+ |
| 2002 11 07 | 645 | 0.2− | 0.0 | 2005 05 15 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 1.1+ |
| 2003 12 22 | 704 | 0.1+ | 0.5− | 2005 05 15 | 644 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.4+ | 1.1+ |
| 2003 12 22 | 704 | 0.9+ | 1.5+ | 2005 05 15 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.3− |
| 2003 12 22 | 704 | 0.2− | 0.0 | 2005 05 16 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.2+ | 1.1− |
| 2003 12 22 | 704 | 0.2+ | 0.0 | 2005 05 16 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.2− |
| 2005 04 04 | 703 | 0.1− | 0.7− | 2005 05 16 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.5− |
| 2005 04 04 | 703 | 0.8− | 0.7− | 2006 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 2.5− | 0.3− |

**(145063)∗ 2005 GZ$_{22}$**

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.70967 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17088894 | $\omega$ | 109.10004 | | −0.00942401 | +0.99576951 | |
| $a$ | 3.2160793 | $\Omega$ | 159.69644 | | −0.98757427 | +0.00507111 | |
| $e$ | 0.1568357 | $i$ | 15.27250 | | −0.15687016 | −0.09174619 | |
| $P$ | 5.77 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 31 | 809 | 0.3− | 1.6− | 2004 01 28 | 645 | 0.0 | 0.2+ | 2005 04 08 | 704 | 0.3+ | 0.5− |
| 2000 07 06 | 704 | 1.0+ | 0.8+ | 2005 03 08 | 683 | (0.4+ | 2.5−) | 2005 04 08 | 704 | 0.8+ | 0.8+ |
| 2000 07 06 | 704 | 0.1+ | 0.7+ | 2005 03 08 | 683 | 0.1− | 0.3− | 2005 04 08 | 704 | 0.6+ | 0.7+ |
| 2000 07 06 | 704 | 0.8+ | 0.4+ | 2005 03 08 | 683 | 0.9− | 0.9− | 2005 04 08 | 704 | 0.6+ | 1.0+ |
| 2000 07 06 | 704 | 0.3− | 1.0+ | 2005 03 10 | 703 | 0.1− | 0.0 | 2005 04 08 | 704 | 0.1− | 0.9+ |
| 2000 07 06 | 704 | 0.3− | 0.7+ | 2005 03 10 | 703 | 0.4+ | 0.4+ | 2005 04 16 | 703 | 0.5− | 0.1+ |
| 2001 09 12 | 704 | 0.3+ | 0.9+ | 2005 03 10 | 703 | 1.5− | 0.3+ | 2005 04 16 | 703 | 0.9+ | 0.6+ |
| 2001 09 12 | 704 | (0.0 | 2.5+) | 2005 03 10 | 703 | 0.8− | 1.2− | 2005 04 16 | 703 | 1.0− | 0.5+ |
| 2001 09 12 | 704 | 0.6− | 1.3+ | 2005 04 01 | 699 | 0.7+ | 0.5+ | 2005 04 16 | 703 | 0.4− | 0.9+ |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2005 04 01 | 699 | 1.5+ | 1.0+ | 2005 05 06 | 703 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.8+ | 2005 04 01 | 699 | 1.3+ | 1.1+ | 2005 05 06 | 703 | 0.4− | 0.5− |
| 2001 09 21 | 704 | 0.4+ | 0.8+ | 2005 04 01 | 699 | 0.5+ | 0.3− | 2005 05 06 | 703 | 0.6− | 1.3− |
| 2001 09 21 | 704 | 0.4+ | 0.7+ | 2005 04 05 | 699 | 0.2+ | 0.6+ | 2005 05 06 | 703 | 0.9− | 0.2+ |
| 2001 10 15 | 644 | 0.5− | 0.1+ | 2005 04 05 | 699 | 0.4+ | 0.9+ | 2006 05 27 | 691 | 0.0 | 0.1+ |
| 2001 10 15 | 644 | 0.6− | 0.3+ | 2005 04 05 | 699 | 0.4− | 0.2+ | 2006 05 27 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 644 | 0.7− | 0.1+ | 2005 04 05 | 699 | 0.0 | 0.1− | 2006 05 27 | 691 | 0.1+ | 0.2+ |
| 2001 10 23 | 644 | 0.4− | 0.9+ | 2005 04 06 | 703 | 0.4− | 0.2− | 2006 08 12 | 644 | 0.0 | 0.4+ |
| 2001 10 23 | 644 | 0.5− | 1.1+ | 2005 04 06 | 703 | 0.8− | 0.1− | 2006 08 12 | 644 | 0.3+ | 0.1+ |
| 2001 10 23 | 644 | 0.5− | 0.7+ | 2005 04 06 | 703 | 0.5+ | 1.3− | 2006 08 12 | 644 | 0.2− | 0.1+ |
| 2004 01 28 | 645 | 0.1+ | 0.1+ | 2005 04 06 | 703 | 0.5− | 0.0 | | | | |

**(145064)∗ 2005 GD$_{23}$**

Discovered 2005 Apr. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.24432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22291339 | $\omega$ | 228.00677 | | −0.05840047 | +0.98919873 | |
| $a$ | 2.6938822 | $\Omega$ | 39.26124 | | −0.84158261 | +0.02365418 | |
| $e$ | 0.1833490 | $i$ | 12.26539 | | −0.53696191 | −0.14465947 | |
| $P$ | 4.42 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.2+ | 1.1+ | 2005 04 05 | 704 | 0.5− | 0.4− | 2005 04 18 | 703 | (1.7− | 0.4−) |
| 2002 10 30 | 644 | 0.1− | 0.8+ | 2005 04 05 | 704 | 0.1+ | 0.1− | 2005 05 04 | 691 | 0.4− | 0.2+ |
| 2002 10 30 | 644 | 0.2+ | 0.6+ | 2005 04 05 | 704 | 1.1− | 0.5− | 2005 05 04 | 691 | 0.2+ | 0.5+ |
| 2002 11 06 | 704 | 0.1− | 0.7+ | 2005 04 05 | 704 | 0.5+ | 0.2− | 2005 05 04 | 691 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 1.3− | 0.3− | 2005 04 05 | 704 | (1.5+ | 0.4+) | 2005 05 06 | 704 | 1.4+ | 0.6+ |
| 2002 11 06 | 704 | 1.0− | 1.1+ | 2005 04 05 | 704 | 0.2+ | 0.0 | 2005 05 06 | 704 | 0.2− | 0.7+ |
| 2002 11 06 | 704 | 0.3− | 0.3− | 2005 04 05 | 704 | 1.1+ | 0.3+ | 2005 05 06 | 704 | 0.1− | 1.0+ |
| 2003 12 17 | 704 | 0.4− | 0.6− | 2005 04 05 | 704 | 0.5+ | 1.2+ | 2005 05 06 | 704 | 0.3+ | 0.2− |
| 2003 12 17 | 704 | 0.1− | 0.2+ | 2005 04 05 | 704 | (1.3+ | 1.6−) | 2005 05 06 | 704 | 1.1+ | 0.1+ |
| 2003 12 17 | 704 | 1.2+ | 0.2− | 2005 04 08 | 704 | 0.6+ | 0.4+ | 2005 05 08 | 703 | 1.2− | 0.6+ |
| 2004 01 17 | 644 | 1.0− | 1.3+ | 2005 04 08 | 704 | 0.0 | 0.9+ | 2005 05 08 | 703 | 0.4+ | 0.5+ |
| 2004 01 17 | 644 | 0.3+ | 1.0+ | 2005 04 08 | 704 | 0.0 | 0.3+ | 2005 05 08 | 703 | 0.9− | 0.2+ |
| 2004 01 17 | 644 | 0.4+ | 0.8+ | 2005 04 09 | 699 | 0.2+ | 0.3− | 2005 05 08 | 703 | 0.5− | 0.2+ |
| 2005 03 18 | 703 | 0.2− | 0.7− | 2005 04 09 | 699 | 0.5− | 0.4+ | 2006 09 20 | 703 | 0.7− | 0.6+ |
| 2005 03 18 | 703 | (1.7− | 5.3−) | 2005 04 09 | 699 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.7− | 0.5+ |
| 2005 03 18 | 703 | 0.8+ | 0.8− | 2005 04 13 | 704 | 1.3+ | 0.0 | 2006 09 20 | 703 | 0.4+ | 0.8+ |
| 2005 03 18 | 703 | 0.4− | 0.4− | 2005 04 13 | 704 | 0.4+ | 1.1+ | 2006 09 20 | 703 | 0.3+ | 0.2− |
| 2005 04 01 | 699 | 0.2+ | 0.4− | 2005 04 13 | 704 | 0.1+ | 0.0 | 2006 09 21 | 699 | (1.9+ | 1.5+) |
| 2005 04 01 | 699 | 0.4− | 1.4+ | 2005 04 13 | 704 | 1.2+ | 0.4+ | 2006 09 21 | 699 | 0.7− | 1.2+ |
| 2005 04 01 | 699 | 0.2+ | 0.9− | 2005 04 13 | 704 | 0.6− | 0.5− | 2006 09 21 | 699 | 1.3− | 1.4+ |
| 2005 04 04 | 703 | 0.5− | 0.5+ | 2005 04 13 | 704 | 0.8+ | 0.2+ | 2006 09 21 | 699 | (1.3− | 2.3+) |
| 2005 04 04 | 703 | 0.4− | 0.1− | 2005 04 13 | 704 | 0.3+ | 0.3− | 2006 09 26 | 703 | (2.9+ | 0.7−) |
| 2005 04 04 | 703 | 0.5− | 0.3+ | 2005 04 13 | 704 | 1.3+ | 0.4− | 2006 09 26 | 703 | 0.4+ | 0.4+ |
| 2005 04 04 | 703 | 0.5− | 0.6− | 2005 04 13 | 704 | 0.4+ | 0.5− | 2006 09 26 | 703 | 0.1+ | 0.1+ |
| 2005 04 05 | 699 | 1.1+ | 0.5− | 2005 04 13 | 704 | (1.6+ | 0.8+) | 2006 10 02 | 703 | 0.3− | 0.5− |
| 2005 04 05 | 699 | 0.7− | 0.3− | 2005 04 14 | 704 | 0.7+ | 0.1+ | 2006 10 02 | 703 | 0.6− | 1.3+ |
| 2005 04 05 | 699 | 0.3− | 0.9+ | 2005 04 14 | 704 | 0.6+ | 0.8− | 2006 10 02 | 703 | (1.6− | 0.1−) |
| 2005 04 05 | 699 | 0.3− | 0.5+ | 2005 04 14 | 704 | 0.5+ | 0.5+ | 2006 10 02 | 703 | (1.2+ | 2.2+) |
| 2005 04 05 | 704 | 0.5− | 0.6+ | 2005 04 14 | 704 | 0.9+ | 0.8+ | 2006 10 24 | 644 | 0.4− | 0.5+ |
| 2005 04 05 | 704 | 0.2− | 0.2− | 2005 04 18 | 703 | 0.1− | 1.0− | 2006 10 24 | 644 | 0.3− | 0.4+ |
| 2005 04 05 | 704 | 0.7− | 0.5+ | 2005 04 18 | 703 | 0.1− | 0.5+ | 2006 10 24 | 644 | 0.5− | 0.5+ |
| 2005 04 05 | 704 | 0.8+ | 0.4+ | 2005 04 18 | 703 | (1.8− | 0.1+) | | | | |

**(145065)∗ 2005 GX$_{23}$**

Discovered 2005 Apr. 2 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.16698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28964057 | $\omega$ | 302.20388 | | +0.11995882 | +0.99179481 | |
| $a$ | 2.2623673 | $\Omega$ | 334.57449 | | −0.87270019 | +0.08412395 | |
| $e$ | 0.1719733 | $i$ | 5.90797 | | −0.47329089 | +0.09626120 | |
| $P$ | 3.40 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.8+ | 1.3− | 2004 12 20 | G96 | 0.0 | 0.4− | 2006 09 12 | 703 | 0.7− | 1.4+ | |
| 1999 07 14 | 704 | 1.5+ | 1.0− | 2005 02 14 | 691 | 0.5+ | 0.2+ | 2006 09 12 | 703 | 0.8+ | 0.3− | |
| 1999 07 14 | 704 | 0.4− | 0.2+ | 2005 02 14 | 691 | 0.3+ | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.5+ | |
| 2002 04 14 | 704 | 0.5+ | 0.5− | 2005 02 14 | 691 | 0.4+ | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.4+ | |
| 2002 04 14 | 704 | 0.5+ | 0.2+ | 2005 03 04 | G96 | 0.2− | 0.1− | 2006 09 13 | 644 | 0.1− | 0.4+ | |
| 2002 04 14 | 704 | 0.8− | 0.0 | 2005 03 04 | G96 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.5− | 0.2− | |
| 2002 04 18 | 644 | 0.5− | 0.1+ | 2005 03 04 | G96 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.6− | 1.2− | |
| 2002 04 18 | 644 | 0.1− | 0.2+ | 2005 03 04 | G96 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.0 | 0.1− | |
| 2002 04 18 | 644 | 0.2+ | 0.2+ | 2005 04 02 | G96 | 0.2+ | 0.3− | 2006 09 16 | 699 | 0.1− | 0.7+ | |
| 2002 05 15 | 644 | 0.4+ | 1.4+ | 2005 04 02 | G96 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.5+ | 0.6+ | |
| 2002 05 15 | 644 | 0.2+ | 1.3+ | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.8− | 0.1+ | |
| 2002 05 15 | 644 | 0.2+ | 1.5+ | 2005 04 02 | G96 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.8− | 0.1+ | |
| 2003 10 25 | 691 | 0.3− | 0.2+ | 2005 04 05 | G96 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.1+ | |
| 2003 10 25 | 691 | 0.3− | 0.2− | 2005 04 05 | G96 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.8+ | |
| 2003 10 25 | 691 | 0.2− | 0.1+ | 2005 04 05 | G96 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.7− | 0.9+ | |
| 2003 11 20 | 704 | 0.8+ | 1.9− | 2005 04 05 | G96 | 0.9− | 0.5+ | 2006 09 25 | 699 | 0.4− | 0.5+ | |
| 2003 11 20 | 704 | 0.6+ | 0.0 | 2006 08 27 | 699 | 0.5− | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.8− | |
| 2003 11 20 | 704 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 0.9+ | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.4− | |
| 2003 11 20 | 704 | 0.5− | 1.2+ | 2006 08 27 | 699 | 0.4− | 1.4+ | 2006 10 02 | G96 | 0.5+ | 0.2+ | |
| 2004 12 20 | G96 | 0.0 | 0.4− | 2006 08 27 | 699 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.0 | |
| 2004 12 20 | G96 | 0.1− | 0.5− | 2006 09 12 | 703 | 0.7− | 0.4+ | | | | | |
| 2004 12 20 | G96 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.1− | 0.2+ | | | | | |

**(145066)∗ 2005 GJ$_{26}$**

Discovered 2005 Apr. 2 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.95958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22288921 | $\omega$ | 285.31806 | | +0.58882896 | +0.80814300 | |
| $a$ | 2.6940771 | $\Omega$ | 20.77377 | | −0.72605746 | +0.53627068 | |
| $e$ | 0.1910361 | $i$ | 2.19983 | | −0.35513523 | +0.24355419 | |
| $P$ | 4.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.1− | 0.4− | 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.3− | |
| 2002 11 07 | 695 | 0.2+ | 0.3− | 2005 04 05 | G96 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.6− | 0.6+ | |
| 2002 11 14 | 704 | 0.3+ | 0.9− | 2005 04 05 | G96 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.9+ | |
| 2002 11 14 | 704 | 0.0 | 0.2+ | 2005 04 05 | G96 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.9+ | 0.4+ | |
| 2002 11 14 | 704 | 0.1+ | 0.9− | 2005 04 05 | G96 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.6+ | |
| 2002 11 14 | 704 | 0.1+ | 0.2− | 2005 05 12 | G96 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.2− | |
| 2002 11 14 | 704 | 0.1− | 1.5+ | 2005 05 12 | G96 | 0.1− | 0.3+ | 2006 09 28 | 704 | (1.6+ | 2.2+) | |
| 2002 12 28 | 291 | 0.1− | 0.5+ | 2005 05 12 | G96 | 0.0 | 0.6+ | 2006 09 28 | 704 | 0.1− | 1.1+ | |
| 2002 12 28 | 291 | 0.0 | 0.1− | 2005 05 12 | G96 | 0.4+ | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.9+ | |
| 2002 12 28 | 291 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.8+ | |
| 2004 01 19 | 691 | 0.5+ | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.5− | 2006 09 30 | 704 | (1.1− | 2.5+) | |
| 2004 01 19 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 09 30 | 704 | 0.2+ | 0.2+ | |
| 2004 01 19 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 09 30 | 704 | 0.6− | 0.3+ | |
| 2004 02 14 | 691 | 0.5+ | 0.2− | 2006 09 13 | 644 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.2+ | |
| 2004 02 14 | 691 | 1.4− | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.3− | 0.3− | |
| 2004 02 14 | 691 | 0.2+ | 0.0 | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.5− | 0.3− | |
| 2005 03 10 | G96 | 0.3+ | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.7− | |
| 2005 03 10 | G96 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.6− | |
| 2005 03 10 | G96 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.4− | |
| 2005 03 10 | G96 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.7+ | 2006 11 21 | G96 | 0.6− | 0.6− | |
| 2005 04 02 | G96 | 0.6+ | 0.2+ | 2006 09 20 | 704 | (0.2+ | 1.6+) | 2006 11 21 | G96 | 0.4− | 0.5− | |
| 2005 04 02 | G96 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.4− | 1.1+ | 2006 11 21 | G96 | 0.2− | 0.3− | |
| 2005 04 02 | G96 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.6− | 0.6− | |

**(145067)∗ 2005 GO$_{27}$**

Discovered 2005 Apr. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.83618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28559616 | $\omega$ | 114.56437 | | +0.61933714 | +0.78476871 | |
| $a$ | 2.2836759 | $\Omega$ | 193.78157 | | −0.75148111 | +0.58380284 | |
| $e$ | 0.1385043 | $i$ | 5.69888 | | −0.22737115 | +0.20811611 | |
| $P$ | 3.45 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 29 | 691 | 0.1− | 0.2+ | 2005 04 09 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.1+ | |
| 1992 09 29 | 691 | 0.0 | 0.3+ | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 1.3− | 0.7+ | |
| 1992 09 29 | 691 | 0.3− | 0.3− | 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.0 | |
| 1999 10 15 | 704 | 0.4− | 1.1+ | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.6+ | |
| 1999 10 15 | 704 | 0.3+ | 0.3+ | 2005 04 12 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | (0.3+ | 1.6+) | |
| 1999 10 15 | 704 | 0.0 | 0.3+ | 2005 04 12 | 704 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.9− | |
| 1999 10 15 | 704 | 0.4+ | 0.6+ | 2005 04 12 | 704 | 0.9+ | 0.2− | 2006 10 14 | D35 | 0.0 | 0.2− | |
| 1999 11 13 | 691 | 0.1+ | 0.2+ | 2005 04 18 | 691 | (2.4+ | 0.6−) | 2006 10 14 | D35 | 0.2− | 0.0 | |
| 1999 11 13 | 691 | 0.4+ | 0.1+ | 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 10 14 | D35 | 0.2− | 0.1− | |
| 1999 11 13 | 691 | 0.1+ | 0.0 | 2005 04 18 | 691 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.5+ | |
| 2005 03 08 | G96 | 0.4− | 0.1− | 2005 05 07 | 691 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.5+ | |
| 2005 03 08 | G96 | 0.3− | 0.1+ | 2005 05 07 | 691 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.0 | 0.4+ | |
| 2005 03 08 | G96 | 0.2− | 0.2− | 2005 05 07 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5+ | |
| 2005 03 08 | G96 | 0.4− | 0.2+ | 2005 05 08 | 703 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.9+ | |
| 2005 04 03 | 644 | 0.6+ | 0.2+ | 2005 05 08 | 703 | 0.4− | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.4+ | |
| 2005 04 03 | 644 | 0.2+ | 0.0 | 2005 05 08 | 703 | 1.3− | 0.5− | 2006 10 31 | G96 | 0.0 | 0.4+ | |
| 2005 04 03 | 644 | 0.2+ | 0.1+ | 2005 05 08 | 703 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.4− | 0.2+ | |
| 2005 04 05 | G96 | 0.3− | 0.0 | 2005 05 10 | G96 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1+ | |
| 2005 04 05 | G96 | 0.5− | 0.2− | 2005 05 10 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1+ | |
| 2005 04 05 | G96 | 0.4− | 0.1+ | 2005 05 10 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.7− | |
| 2005 04 05 | G96 | 0.2− | 0.2− | 2005 05 10 | G96 | 0.1+ | 0.7− | 2006 11 11 | 703 | 0.6+ | 0.7− | |
| 2005 04 06 | G96 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.3− | 0.7− | |
| 2005 04 06 | G96 | 0.6− | 0.0 | 2006 09 26 | G96 | 0.5+ | 1.5− | 2006 11 11 | 703 | 0.6− | 0.2− | |
| 2005 04 06 | G96 | 0.7− | 0.1+ | 2006 09 26 | G96 | 0.9+ | 0.8− | 2006 11 17 | 704 | 0.3+ | 1.1− | |
| 2005 04 06 | G96 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.3+ | 0.4− | |
| 2005 04 09 | 691 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 17 | 704 | (1.6− | 1.3+) | |
| 2005 04 09 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.0 | | | | | |

**(145068)∗ 2005 GF$_{30}$ = 1999 XN$_{64}$ = 2003 YG$_{76}$ = 2005 FG$_{9}$**

Discovered 2005 Apr. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 86684)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.56673 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26133963 | $\omega$ | 232.23738 | | +0.63842140 | +0.76041829 | |
| $a$ | 2.4228835 | $\Omega$ | 77.86660 | | −0.66232041 | +0.62157240 | |
| $e$ | 0.1181949 | $i$ | 6.99657 | | −0.39210941 | +0.18818018 | |
| $P$ | 3.77 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 1.8− | 0.2+ | 2002 08 30 | 644 | 0.2+ | 0.2+ | 2005 05 08 | 703 | 0.4− | 0.1+ | |
| 1999 12 07 | 704 | 0.6− | 0.7− | 2002 08 30 | 644 | 0.2− | 0.3+ | 2005 05 08 | 703 | 0.2− | 0.5− | |
| 1999 12 07 | 704 | 0.7+ | 0.6− | 2002 08 30 | 644 | 0.5+ | 0.0 | 2005 05 08 | 703 | 0.5− | 1.0− | |
| 1999 12 07 | 704 | 0.4+ | 0.5− | 2003 12 18 | 704 | 0.8− | 1.3+ | 2006 07 31 | E12 | 0.3− | 0.5+ | |
| 1999 12 08 | 704 | 0.8+ | 0.5− | 2003 12 18 | 704 | 0.5+ | 0.8+ | 2006 07 31 | E12 | 0.6+ | 0.3− | |
| 1999 12 08 | 704 | 1.1+ | 1.1− | 2003 12 18 | 704 | 0.0 | 1.4+ | 2006 07 31 | E12 | 0.6− | 0.1+ | |
| 1999 12 08 | 704 | 0.1− | 0.3− | 2003 12 22 | 704 | (0.2+ | 2.1+) | 2006 07 31 | E12 | 0.2+ | 0.2− | |
| 2001 03 18 | 699 | 0.3+ | 0.4+ | 2003 12 22 | 704 | 0.2+ | 0.3+ | 2006 09 12 | 704 | 0.3− | 0.4− | |
| 2001 03 18 | 699 | 0.9− | 0.3− | 2003 12 22 | 704 | 0.8+ | 0.4+ | 2006 09 12 | 704 | 0.7− | 0.9+ | |
| 2001 03 18 | 699 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.8+ | 1.3+ | 2006 09 12 | 704 | (1.6+ | 1.1+) | |
| 2001 03 18 | 699 | 0.5− | 0.7+ | 2005 03 18 | 703 | 0.1− | 0.6− | 2006 09 14 | 644 | 0.1− | 0.1+ | |
| 2002 07 29 | 644 | 0.2− | 0.8+ | 2005 03 18 | 703 | 0.7− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.1+ | |
| 2002 07 29 | 644 | 0.3− | 1.1+ | 2005 03 18 | 703 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.1− | |
| 2002 07 29 | 644 | 0.1+ | 0.7+ | 2005 03 18 | 703 | 0.1− | 0.8− | 2006 09 17 | 699 | 0.9− | 0.1+ | |
| 2002 08 13 | 704 | 0.1+ | 0.6− | 2005 04 04 | 703 | 1.0+ | 0.8+ | 2006 09 17 | 699 | 0.6+ | 1.1+ | |
| 2002 08 13 | 704 | 0.3+ | 0.9− | 2005 04 04 | 703 | 0.6− | 0.9+ | 2006 09 17 | 699 | 0.0 | 0.8+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.2+ | 0.0 | 2005 04 04 | 703 | 0.5+ | 1.4+ | 2006 09 17 | 699 | 0.2− | 0.0 |
| 2002 08 13 | 704 | 0.2− | 0.4− | 2005 04 04 | 703 | (1.7+ | 0.6+) | 2006 09 19 | 703 | 0.1+ | 0.5+ |
| 2002 08 13 | 704 | 0.3+ | 1.5− | 2005 04 05 | 699 | 0.2+ | 0.5− | 2006 09 19 | 703 | 0.2− | 0.5− |
| 2002 08 13 | 644 | 0.1− | 0.1− | 2005 04 05 | 699 | 0.5+ | 1.3+ | 2006 09 19 | 703 | 0.7− | 0.2− |
| 2002 08 13 | 644 | 0.2− | 0.1− | 2005 04 05 | 699 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 2002 08 13 | 644 | 0.1− | 0.1− | 2005 04 05 | 699 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.6− | 0.5+ |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2005 04 15 | 699 | 0.9− | 0.4− | 2006 09 25 | 703 | 0.4− | 0.0 |
| 2002 08 19 | 644 | 0.0 | 0.3+ | 2005 04 15 | 699 | 0.6− | 0.3+ | 2006 09 25 | 703 | 0.1− | 0.2+ |
| 2002 08 19 | 644 | 0.2+ | 0.1+ | 2005 04 15 | 699 | 1.4+ | 0.1+ | 2006 09 25 | 703 | 0.2− | 0.6+ |
| 2002 08 19 | 644 | 0.3+ | 0.2+ | 2005 04 15 | 699 | 0.6+ | 0.6+ | 2006 10 19 | 703 | 0.5+ | 0.3− |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2005 04 18 | 703 | (2.1− | 0.5+) | 2006 10 19 | 703 | 0.8+ | 0.0 |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2005 04 18 | 703 | 0.3+ | 0.8+ | 2006 10 19 | 703 | 1.6− | 0.1+ |
| 2002 08 30 | 644 | 0.2− | 0.3+ | 2005 04 18 | 703 | 0.4+ | 1.0+ | 2006 10 19 | 703 | 1.4+ | 0.2+ |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2005 04 18 | 703 | 0.8+ | 1.4− | | | | |
| 2002 08 30 | 644 | 0.4− | 0.2+ | 2005 05 08 | 703 | 0.8+ | 0.6+ | | | | |

**(145069)∗ 2005 GG$_{31}$ = 1998 HB$_{140}$**

Discovered 2005 Apr. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77070)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.88247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27819600 | $\omega$ | 208.37044 | | +0.16488343 | +0.98086544 | |
| $a$ | 2.3239965 | $\Omega$ | 71.27670 | | −0.88300911 | +0.19356101 | |
| $e$ | 0.2158398 | $i$ | 6.27524 | | −0.43944096 | −0.02090765 | |
| $P$ | 3.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.3− | 0.3− | 2002 08 31 | 704 | 0.0 | 0.3+ | 2005 05 03 | 703 | 1.4+ | 0.4− |
| 1992 11 26 | 691 | 0.1+ | 0.1+ | 2005 03 18 | 704 | 0.2+ | 0.6+ | 2005 05 03 | 703 | 0.2− | 1.3− |
| 1992 11 26 | 691 | 0.1+ | 0.5+ | 2005 03 18 | 704 | 0.8+ | 0.8+ | 2005 05 04 | 644 | 0.1+ | 0.4+ |
| 1998 04 21 | 704 | 0.1+ | 0.5+ | 2005 03 18 | 704 | (2.3+ | 1.3+) | 2005 05 04 | 644 | 0.1+ | 0.2+ |
| 1998 04 21 | 704 | 0.3+ | 0.0 | 2005 04 04 | 703 | 0.2− | 0.7+ | 2005 05 04 | 644 | 0.3+ | 0.5+ |
| 1998 04 21 | 704 | 1.4− | 1.1− | 2005 04 04 | 703 | 0.6+ | 0.3+ | 2005 05 13 | 699 | 0.4+ | 0.1− |
| 1998 04 21 | 704 | 0.0 | 0.9− | 2005 04 04 | 703 | 0.3+ | 0.3+ | 2005 05 13 | 699 | (0.8− | 1.8+) |
| 1998 04 21 | 704 | 0.5− | 0.6− | 2005 04 04 | 703 | 0.5+ | 0.4+ | 2005 05 13 | 699 | 0.7+ | 1.2+ |
| 1998 04 23 | 704 | 0.4+ | 1.0+ | 2005 04 05 | 699 | 0.2+ | 0.4− | 2005 05 13 | 699 | 1.2+ | 1.2+ |
| 1998 04 23 | 704 | 1.2− | 1.6− | 2005 04 05 | 699 | 0.6+ | 1.1+ | 2006 10 03 | G96 | 0.2− | 0.0 |
| 1998 04 23 | 704 | (2.2− | 0.2+) | 2005 04 05 | 699 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.2− | 0.0 |
| 1998 04 23 | 704 | (2.4+ | 0.3+) | 2005 04 05 | 699 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.0 | 0.0 |
| 1998 04 23 | 704 | 1.1+ | 0.5− | 2005 04 05 | 704 | (0.1+ | 2.0+) | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2002 06 08 | 608 | 0.5+ | 1.3− | 2005 04 05 | 704 | (1.8− | 0.7+) | 2006 10 14 | D35 | 0.5+ | 0.4+ |
| 2002 06 08 | 608 | 0.3− | 0.8− | 2005 04 05 | 704 | 0.7+ | 1.2+ | 2006 10 14 | D35 | 0.0 | 0.3+ |
| 2002 06 08 | 608 | 0.1+ | 1.4− | 2005 04 05 | 704 | 1.1+ | 0.2− | 2006 10 14 | D35 | 0.1− | 0.4+ |
| 2002 08 13 | 704 | 0.3+ | 0.4+ | 2005 04 09 | 704 | 0.7− | 0.1− | 2006 10 18 | 691 | 0.2− | 0.1− |
| 2002 08 13 | 704 | 0.5+ | 0.6+ | 2005 04 09 | 704 | 0.2+ | 1.1− | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.1− | 0.7+ | 2005 04 09 | 704 | (1.7+ | 0.2+) | 2006 10 18 | 691 | 0.5+ | 0.7+ |
| 2002 08 13 | 704 | 0.6− | 0.6+ | 2005 04 09 | 704 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 08 13 | 644 | 0.3− | 0.4− | 2005 04 09 | 704 | 0.1+ | 1.4− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2002 08 13 | 644 | 0.6− | 0.1− | 2005 04 09 | 699 | 0.5− | 1.4+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 08 13 | 644 | 0.2− | 0.0 | 2005 04 09 | 699 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 08 20 | 644 | 0.1− | 0.2+ | 2005 04 09 | 699 | 0.6− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 08 20 | 644 | 0.6+ | 0.4+ | 2005 04 09 | 699 | 0.6− | 0.8+ | 2006 11 08 | 644 | 0.2− | 0.7+ |
| 2002 08 20 | 644 | 0.3+ | 0.5+ | 2005 04 13 | 704 | (2.0+ | 1.0−) | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2002 08 31 | 644 | 0.5− | 0.6+ | 2005 04 13 | 704 | 0.5+ | 1.0+ | 2006 11 13 | 703 | 0.9− | 0.8− |
| 2002 08 31 | 704 | 0.6− | 0.2+ | 2005 04 13 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 703 | (0.3+ | 2.1−) |
| 2002 08 31 | 699 | 0.4+ | 0.8+ | 2005 04 13 | 704 | 0.0 | 0.7+ | 2006 11 13 | 703 | 0.6− | 0.3− |
| 2002 08 31 | 704 | 0.3+ | 0.0 | 2005 04 13 | 704 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.0 | 0.1− |
| 2002 08 31 | 699 | 0.5− | 0.4− | 2005 04 16 | 703 | 0.8− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 08 31 | 644 | 0.6− | 0.6+ | 2005 04 16 | 703 | 0.5− | 1.3− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2002 08 31 | 699 | 0.3+ | 0.3+ | 2005 04 16 | 703 | 0.6− | 1.2+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 08 31 | 704 | 0.1+ | 0.0 | 2005 04 16 | 703 | 1.2− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 08 31 | 699 | 0.0 | 0.3− | 2005 05 03 | 703 | 0.0 | 0.7+ | | | | |
| 2002 08 31 | 644 | 0.6− | 0.8+ | 2005 05 03 | 703 | 0.2+ | 1.0+ | | | | |

**(145070)∗ 2005 GR$_{32}$ = 2002 PH$_{79}$**

Discovered 2005 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 77071)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.62817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27346516 | $\omega$ | 253.55949 | | +0.16719096 | +0.98475005 | |
| $a$ | 2.3507226 | $\Omega$ | 26.21155 | | −0.85792046 | +0.16935556 | |
| $e$ | 0.1392395 | $i$ | 6.25318 | | −0.48581855 | +0.03982498 | |
| $P$ | 3.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.2− | 0.1+ | 2005 04 15 | 699 | 0.4− | 0.9+ | 2006 10 19 | 644 | 0.5− | 0.1+ |
| 1999 10 13 | 704 | 0.1+ | 0.1+ | 2005 04 15 | 699 | 0.8+ | 1.0+ | 2006 10 19 | 644 | 0.4+ | 0.3− |
| 1999 10 13 | 704 | 0.2+ | 0.0 | 2005 04 15 | 699 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 08 11 | 644 | 0.2− | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 703 | 0.6+ | 0.1− |
| 2002 08 11 | 644 | 0.2+ | 0.3+ | 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 703 | 0.1− | 0.6+ |
| 2002 08 11 | 644 | 0.0 | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2002 08 13 | 704 | 0.1+ | 0.5+ | 2005 04 18 | 704 | 0.4+ | 0.1− | 2006 10 20 | 703 | 0.3+ | 0.3+ |
| 2002 08 13 | 704 | 0.2+ | 0.4− | 2005 04 18 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 703 | 0.1+ | 0.5+ |
| 2002 08 13 | 704 | 0.2− | 0.7+ | 2005 04 18 | 704 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 08 13 | 644 | 0.2− | 0.5− | 2005 04 18 | 704 | 1.0+ | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2002 08 13 | 644 | 0.1+ | 0.6− | 2005 05 09 | 699 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 08 13 | 644 | 0.0 | 0.4− | 2005 05 09 | 699 | 0.5+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 03 09 | G96 | 0.6− | 0.1− | 2005 05 09 | 699 | 0.4+ | 0.6− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2005 03 09 | G96 | 0.4− | 0.0 | 2005 05 09 | 699 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2005 03 09 | G96 | 0.2− | 0.1− | 2005 05 12 | G96 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2005 03 09 | G96 | 0.3− | 0.2− | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2005 04 04 | 704 | (1.7+ | 1.5+) | 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2005 04 04 | 704 | 0.7+ | 0.2− | 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.2− |
| 2005 04 04 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2005 04 04 | 704 | 1.0+ | 1.4+ | 2006 09 18 | 691 | 0.4− | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2005 04 05 | G96 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.4− | 0.0 |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2005 04 05 | G96 | 0.4− | 0.5+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2005 04 05 | G96 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2005 04 06 | G96 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2005 04 06 | G96 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2005 04 09 | 691 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2005 04 09 | 691 | 0.4+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.0 | 0.5+ |
| 2005 04 09 | 691 | 0.2− | 0.7+ | 2006 10 12 | A13 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.5+ |
| 2005 04 11 | 699 | 0.0 | 0.3+ | 2006 10 12 | A13 | 0.3− | 0.6− | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2005 04 11 | 699 | 0.3+ | 0.9+ | 2006 10 13 | G98 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2005 04 11 | 699 | 0.1− | 0.2+ | 2006 10 13 | G98 | 0.2− | 0.4+ | 2006 11 17 | 703 | (1.8− | 0.0 ) |
| 2005 04 11 | 699 | 0.2− | 0.8+ | 2006 10 13 | G98 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2005 04 12 | 704 | 0.1+ | 0.8+ | 2006 10 13 | G98 | 0.4− | 0.5+ | 2006 11 17 | 703 | (1.7− | 0.4−) |
| 2005 04 12 | 704 | 0.7+ | 0.2+ | 2006 10 13 | G98 | 0.1+ | 0.4+ | 2006 11 20 | G96 | 0.3+ | 0.7− |
| 2005 04 12 | 704 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.5− |
| 2005 04 12 | 704 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 20 | G96 | 0.3− | 0.2− |
| 2005 04 12 | 704 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.2− | 0.6− |
| 2005 04 15 | 699 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.2+ | | | | |

**(145071)∗ 2005 GW$_{32}$ = 2002 TQ$_{13}$**

Discovered 2005 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 77073)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.57315 | | (2000.0) | | | |
| $n$ | 0.23856442 | $\omega$ | 256.08005 | | +0.48596894 | +0.86454133 |
| $a$ | 2.5747334 | $\Omega$ | 43.75989 | | −0.71322372 | +0.47699591 |
| $e$ | 0.1065952 | $i$ | 10.67118 | | −0.50511990 | +0.15825041 |
| $P$ | 4.13 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 704 | 1.2− | 0.8− | 2005 04 12 | 704 | 0.0 | 0.5− | 2005 06 22 | 644 | 0.1− | 0.3− |
| 2001 05 24 | 704 | 0.7− | 0.3− | 2005 04 12 | 704 | 0.3− | 0.1− | 2005 06 22 | 644 | 0.0 | 0.0 |
| 2001 05 24 | 704 | (2.1− | 0.2−) | 2005 04 12 | 704 | 0.4− | 0.3+ | 2005 06 22 | 644 | 0.4− | 0.2− |
| 2002 10 01 | 699 | 0.2− | 1.2+ | 2005 04 16 | 691 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.1− | 0.1+ |
| 2002 10 01 | 699 | 0.1+ | 0.0 | 2005 04 16 | 691 | 0.2− | 0.0 | 2005 06 27 | 644 | 0.2− | 0.2− |
| 2002 10 01 | 699 | 0.7+ | 0.9+ | 2005 04 16 | 691 | 0.0 | 0.1+ | 2005 06 27 | 644 | 0.2+ | 0.1+ |
| 2002 10 01 | 699 | 0.0 | 1.0+ | 2005 04 30 | 691 | 0.1− | 0.1+ | 2006 08 28 | D35 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.4+ | 0.1− | 2005 04 30 | 691 | 0.1− | 0.1+ | 2006 08 28 | D35 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.3+ | 1.1+ | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 08 28 | D35 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2005 05 09 | 704 | 1.0+ | 0.1+ | 2006 09 17 | 699 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 0.6− | 0.0 | 2005 05 09 | 704 | 0.1− | 0.7+ | 2006 09 17 | 699 | 0.1+ | 0.6+ |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2005 05 09 | 704 | 0.3− | 0.6+ | 2006 09 17 | 699 | 0.7− | 0.7+ |
| 2002 10 31 | 704 | 0.7+ | 1.3− | 2005 05 09 | 699 | 0.1− | 0.3+ | 2006 09 17 | 699 | 0.4+ | 0.1− |
| 2002 10 31 | 704 | 0.6− | 0.5− | 2005 05 09 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 703 | (2.4+ | 2.3−) |
| 2002 10 31 | 704 | 0.2+ | 0.5− | 2005 05 09 | 699 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.3− |
| 2003 12 30 | 704 | 0.9+ | 1.1+ | 2005 05 09 | 699 | 0.6+ | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.1− |
| 2003 12 30 | 704 | (0.7+ | 1.9+) | 2005 05 09 | 699 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.4− | 0.1− |
| 2003 12 30 | 704 | 0.8− | 1.4+ | 2005 05 13 | 704 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.3− |
| 2005 04 04 | 704 | 0.4− | 0.3− | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2005 04 04 | 704 | 1.4+ | 0.9+ | 2005 05 13 | 704 | 0.6− | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2005 04 04 | 704 | (1.6+ | 0.3+) | 2005 05 13 | 704 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.5− | 0.5+ |
| 2005 04 05 | 691 | 0.3+ | 0.2+ | 2005 05 13 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2005 04 05 | 691 | 0.1− | 0.2− | 2005 06 14 | 291 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2005 04 05 | 691 | 0.2+ | 0.4− | 2005 06 14 | 291 | 0.1+ | 0.1+ | | | | |
| 2005 04 12 | 704 | 1.4+ | 0.7− | 2005 06 14 | 291 | 0.1+ | 0.1+ | | | | |

**(145072)∗ 2005 GX$_{32}$**

Discovered 2005 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 113.76279 | | (2000.0) | | | |
| $n$ | 0.29648086 | $\omega$ | 216.12645 | | −0.04351133 | +0.99605272 |
| $a$ | 2.2274345 | $\Omega$ | 51.50934 | | −0.89187132 | −0.00383034 |
| $e$ | 0.1189776 | $i$ | 5.67272 | | −0.45019141 | −0.08868098 |
| $P$ | 3.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 644 | 0.3+ | 0.2+ | 2005 05 04 | 704 | 0.2+ | 1.4+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2002 06 18 | 644 | 0.4+ | 0.1+ | 2005 05 04 | 704 | 0.6+ | 0.7+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2002 06 18 | 644 | 0.2+ | 0.3+ | 2005 05 08 | 699 | 0.5+ | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 07 06 | 644 | 0.1+ | 0.1− | 2005 05 08 | 699 | 1.0+ | 1.2+ | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 2002 07 06 | 644 | 0.1− | 0.1− | 2005 05 08 | 699 | 0.1+ | 0.9+ | 2006 10 28 | 691 | 0.3− | 0.9+ |
| 2002 07 06 | 644 | 0.0 | 0.0 | 2005 05 08 | 699 | 0.7+ | 0.6+ | 2006 10 28 | 691 | 0.3− | 0.4+ |
| 2002 08 11 | 644 | 1.4− | 0.3+ | 2005 05 09 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.4− | 0.4+ |
| 2002 08 11 | 644 | 0.1+ | 0.2+ | 2005 05 09 | 704 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2002 08 11 | 644 | 0.2+ | 0.1+ | 2005 05 09 | 704 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2003 12 22 | 704 | 0.3− | 0.2+ | 2005 05 09 | 699 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.6+ |
| 2003 12 22 | 704 | 0.2+ | 0.2+ | 2005 05 09 | 704 | 0.5+ | 1.1+ | 2006 11 10 | 644 | 0.0 | 0.6+ |
| 2003 12 22 | 704 | 0.5+ | 0.5+ | 2005 05 09 | 699 | 0.6− | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.1+ | 2005 05 09 | 699 | 0.3+ | 1.2+ | 2006 11 10 | 644 | 0.4+ | 0.8+ |
| 2003 12 22 | 704 | 0.2− | 0.7+ | 2005 05 09 | 699 | 0.6+ | 0.8+ | 2006 11 10 | 644 | 0.1+ | 0.7+ |
| 2005 03 13 | G96 | 0.6− | 0.3+ | 2005 05 13 | 704 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.6+ | 0.2+ |
| 2005 03 13 | G96 | 0.4− | 0.1+ | 2005 05 13 | 704 | 0.8+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2005 03 13 | G96 | 0.4− | 0.1+ | 2005 05 13 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.8− |
| 2005 03 13 | G96 | 0.6− | 0.0 | 2005 05 13 | 704 | 0.9+ | 0.7− | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2005 04 04 | 704 | 0.5+ | 0.5− | 2005 05 13 | 704 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2005 04 04 | 704 | 0.4− | 0.2− | 2005 05 30 | 699 | 0.6+ | 0.7+ | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2005 04 04 | 704 | 0.0 | 0.1− | 2005 05 30 | 699 | 0.5− | 0.8+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2005 04 04 | 704 | 0.0 | 1.1− | 2005 05 30 | 699 | 0.3+ | 0.9+ | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2005 04 05 | 691 | 0.2+ | 0.2+ | 2005 05 30 | 699 | 1.0− | 1.0+ | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 2005 04 05 | 691 | 0.4+ | 0.2+ | 2005 06 01 | G96 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.5+ | 1.1− |
| 2005 04 05 | 691 | 0.2− | 0.1+ | 2005 06 01 | G96 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2005 04 12 | 704 | 1.1+ | 0.1+ | 2005 06 01 | G96 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2005 04 12 | 704 | 0.4− | 0.0 | 2005 06 01 | G96 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 704 | 0.5− | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2005 04 13 | 699 | (1.6+ | 0.5−) | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2005 04 13 | 699 | 1.1+ | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.5− |
| 2005 04 13 | 699 | (2.1+ | 0.9+) | 2006 09 30 | G96 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.5− | 1.0+ |
| 2005 04 13 | 699 | 1.0+ | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.8− |
| 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2005 04 18 | 703 | 0.8− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.4− | 0.2+ |
| 2005 04 18 | 703 | (1.6− | 0.4−) | 2006 10 18 | 691 | 0.2− | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2005 04 18 | 703 | 1.4− | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.2− | 1.2+ |
| 2005 04 18 | 703 | (1.7− | 1.1−) | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 21 | 704 | 1.2− | 0.7+ |
| 2005 05 04 | 699 | 0.7+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.8+ |
| 2005 05 04 | 699 | 0.8− | 0.5− | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.4− | 1.0+ |
| 2005 05 04 | 704 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.3+ | 2006 11 27 | 703 | 0.3− | 0.1− |
| 2005 05 04 | 699 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 1.3− | 0.8− |
| 2005 05 04 | 704 | 0.6+ | 1.3+ | 2006 10 28 | G96 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.4+ | 1.1− |
| 2005 05 04 | 699 | 0.9+ | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.2− | 2006 11 27 | 703 | 0.9+ | 1.6− |

**(145073)∗ 2005 GY$_{32}$ = 2003 YQ$_{37}$**

Discovered 2005 Apr. 4 by the Mt. Lemmon Survey at Mt. Lemmon. Id. G. V. Williams (*MPO* 77073)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.99198 | | (2000.0) | | | |
| $n$ | 0.29740080 | $\omega$ | 140.96493 | | −0.56746267 | +0.82315552 |
| $a$ | 2.2228388 | $\Omega$ | 94.45277 | | −0.76039719 | −0.51455746 |
| $e$ | 0.0652795 | $i$ | 1.15104 | | −0.31588326 | −0.24009499 |
| $P$ | 3.31 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 691 | 0.1− | 0.2− | 2005 04 04 | 704 | 0.2+ | 0.6− | 2005 05 08 | 703 | 0.5− | 0.1+ |
| 1998 03 22 | 691 | 0.4− | 0.6− | 2005 04 04 | 704 | 0.2+ | 0.9+ | 2005 05 08 | 703 | 0.5− | 0.8+ |
| 1998 03 22 | 691 | 0.0 | 0.3− | 2005 04 05 | 703 | 0.4+ | 0.9− | 2005 05 09 | 699 | 0.7+ | 0.4− |
| 1999 10 11 | 691 | 0.1− | 0.2+ | 2005 04 05 | 703 | 0.9− | 0.6+ | 2005 05 09 | 699 | 1.1+ | 0.4− |
| 1999 10 11 | 691 | 0.1+ | 0.2+ | 2005 04 05 | 703 | 0.2+ | 0.3− | 2005 05 09 | 699 | 0.7− | 0.3+ |
| 1999 10 11 | 691 | 0.1− | 0.2+ | 2005 04 05 | 703 | 0.2− | 0.1− | 2005 05 09 | 699 | (1.5+ | 0.5+) |
| 2000 12 30 | 704 | 0.6+ | 0.2+ | 2005 04 06 | 691 | 0.0 | 0.4− | 2005 05 12 | 699 | (1.5+ | 0.8−) |
| 2000 12 30 | 704 | 0.7+ | 0.2+ | 2005 04 06 | 691 | 0.3+ | 0.1+ | 2005 05 12 | 699 | (1.4+ | 2.0+) |
| 2000 12 30 | 704 | 0.0 | 0.2+ | 2005 04 06 | 691 | 0.3+ | 0.1− | 2005 05 12 | 699 | 0.8− | 0.7+ |
| 2003 10 28 | 704 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.3− | 0.1− | 2005 05 12 | 699 | 1.1− | 0.1− |
| 2003 10 28 | 704 | 0.6− | 0.2− | 2005 04 06 | G96 | 0.4− | 0.6− | 2005 05 14 | 691 | 0.2+ | 0.4+ |
| 2003 10 28 | 704 | 0.5+ | 0.1− | 2005 04 06 | G96 | 0.4− | 0.3+ | 2005 05 14 | 691 | 0.2+ | 0.6+ |
| 2003 10 28 | 704 | 0.2− | 0.2− | 2005 04 06 | G96 | 0.2− | 0.2+ | 2005 05 14 | 691 | 0.1+ | 0.3+ |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.0 | 0.9+ | 2006 09 18 | 691 | 0.2+ | 0.4+ |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2005 04 11 | 699 | 0.5− | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.4+ |
| 2003 11 18 | 691 | 0.2+ | 0.1+ | 2005 04 11 | 699 | 0.9− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2003 11 24 | 703 | 0.5− | 1.3+ | 2005 04 11 | 699 | 1.3− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2003 11 24 | 703 | 1.0− | 0.9+ | 2005 04 12 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2003 11 24 | 703 | 0.9− | 1.3+ | 2005 04 12 | 704 | 1.2+ | 1.3+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2003 11 24 | 703 | 0.3− | 0.3+ | 2005 04 12 | 704 | (1.6+ | 0.3+) | 2006 10 15 | 703 | 0.3− | 0.0 |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2005 04 12 | 704 | 0.9+ | 0.9+ | 2006 10 15 | 703 | (1.5− | 0.6+) |
| 2003 12 18 | 691 | 0.5+ | 0.1+ | 2005 04 12 | 704 | 1.1+ | 0.5+ | 2006 10 15 | 703 | 1.1− | 0.7+ |
| 2003 12 18 | 691 | 0.3+ | 0.0 | 2005 04 18 | 703 | 0.4+ | 1.4+ | 2006 10 15 | 703 | 0.8− | 0.1− |
| 2003 12 21 | 291 | 0.5− | 0.4+ | 2005 04 18 | 703 | 0.5+ | 0.9+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2003 12 21 | 291 | 1.1− | 0.6+ | 2005 04 18 | 703 | 0.7− | 1.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2003 12 21 | 291 | 0.3+ | 0.4+ | 2005 04 18 | 703 | (1.3+ | 1.5+) | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2005 03 17 | 704 | 0.6+ | 1.0+ | 2005 04 18 | 704 | 0.6− | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2005 03 17 | 704 | (0.7+ | 1.9+) | 2005 04 18 | 704 | 0.9+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2005 03 17 | 704 | (0.5+ | 2.5+) | 2005 04 18 | 704 | 1.5+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2005 03 17 | 704 | 0.1+ | 1.5+ | 2005 04 18 | 704 | 0.7+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 04 04 | G96 | 0.1+ | 0.1+ | 2005 05 06 | G96 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 704 | 1.2+ | 0.4+ | 2005 05 06 | G96 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2005 04 04 | G96 | 0.1+ | 0.1+ | 2005 05 06 | G96 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2005 04 04 | G96 | 0.2− | 0.1+ | 2005 05 06 | G96 | 0.7− | 0.9− | 2006 11 14 | G96 | 0.0 | 0.1+ |
| 2005 04 04 | 704 | 0.7+ | 0.4− | 2005 05 08 | 703 | 0.5+ | 0.3+ | | | | |
| 2005 04 04 | G96 | 0.1+ | 0.1+ | 2005 05 08 | 703 | 0.5− | 0.3+ | | | | |

**(145074)∗ 2005 GO$_{33}$**

Discovered 2005 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.05279 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28528264 | $\omega$ | 315.65263 | | +0.58227244 | | +0.81256670 |
| $a$ | 2.2853488 | $\Omega$ | 349.86029 | | −0.69809436 | | +0.48310836 |
| $e$ | 0.2456296 | $i$ | 8.60706 | | −0.41668101 | | +0.32610071 |
| $P$ | 3.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 1.4− | 0.6− | 2005 03 09 | 691 | 0.5− | 0.7− | 2005 04 14 | 703 | 0.4− | 0.5− |
| 1998 03 20 | 704 | 1.1+ | 0.4+ | 2005 03 09 | 691 | 0.3− | 0.2+ | 2005 04 14 | 703 | 0.3− | 0.6− |
| 1998 03 20 | 704 | 0.7− | 0.1+ | 2005 03 17 | 691 | 0.1+ | 0.3+ | 2005 04 14 | 703 | 0.5− | 1.1− |
| 1998 03 20 | 704 | (1.2+ | 2.1−) | 2005 03 17 | 704 | (1.1+ | 2.2+) | 2005 04 19 | 703 | 0.2+ | 1.1+ |
| 1998 03 29 | 704 | 0.7+ | 0.5− | 2005 03 17 | 691 | 0.0 | 0.2+ | 2005 04 19 | 703 | 0.2+ | 1.0− |
| 1998 03 29 | 704 | 1.1− | 0.3+ | 2005 03 17 | 704 | 0.3+ | 1.2+ | 2005 04 19 | 703 | 0.6+ | 0.7+ |
| 1998 03 29 | 704 | 0.0 | 1.1+ | 2005 03 17 | 704 | (0.4− | 1.8+) | 2005 04 19 | 703 | 0.4− | 1.4+ |
| 1998 03 29 | 704 | (0.8− | 2.4−) | 2005 03 17 | 704 | (0.1− | 2.3+) | 2006 10 23 | 703 | 0.2− | 0.2+ |
| 1999 10 14 | 704 | 0.0 | 0.3+ | 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.1+ | 0.2+ |
| 1999 10 14 | 704 | 0.6+ | 0.6+ | 2005 04 05 | 699 | (1.3− | 1.5+) | 2006 10 23 | 703 | 0.2+ | 0.0 |
| 1999 10 14 | 704 | 0.3− | 0.4+ | 2005 04 05 | 699 | 0.1− | 0.0 | 2006 10 23 | 703 | (1.9− | 0.4−) |
| 1999 10 14 | 704 | 0.2+ | 0.5+ | 2005 04 05 | 699 | 0.3+ | 0.4+ | 2006 10 29 | 703 | 0.4+ | 0.3+ |
| 1999 10 14 | 704 | 0.5+ | 0.0 | 2005 04 06 | 704 | 0.2+ | 0.2+ | 2006 10 29 | 703 | 0.6− | 1.1+ |
| 2002 05 16 | 644 | 0.2+ | 0.5+ | 2005 04 06 | 704 | 0.5+ | 0.4− | 2006 10 29 | 703 | 0.1− | 1.3+ |
| 2002 05 16 | 644 | 0.4− | 0.2+ | 2005 04 06 | 704 | 0.1− | 0.2− | 2006 10 29 | 703 | 0.2− | 0.0 |
| 2002 05 16 | 644 | 0.4− | 0.5+ | 2005 04 07 | 704 | 0.6+ | 0.3− | 2006 11 21 | 703 | 0.6− | 0.1− |
| 2002 09 26 | 704 | 0.1+ | 0.6+ | 2005 04 07 | 704 | 1.1+ | 0.2+ | 2006 11 21 | 703 | 1.0− | 0.6+ |
| 2002 09 26 | 704 | 0.1− | 1.2+ | 2005 04 07 | 704 | 0.7+ | 0.2+ | 2006 11 21 | 703 | 1.1− | 0.2+ |
| 2002 09 26 | 704 | 0.0 | 0.1+ | 2005 04 09 | 704 | 1.1+ | 0.0 | 2006 11 21 | 703 | 0.6+ | 0.3+ |
| 2002 09 26 | 704 | 0.4− | 0.0 | 2005 04 09 | 704 | (1.7+ | 0.8+) | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2003 12 14 | 691 | 0.0 | 0.1− | 2005 04 09 | 704 | 0.8+ | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.2+ |
| 2003 12 14 | 691 | 0.3+ | 0.1+ | 2005 04 09 | 704 | 0.9+ | 0.5+ | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2003 12 14 | 691 | 0.3− | 0.0 | 2005 04 09 | 704 | 0.9+ | 0.7+ | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2005 03 09 | 691 | 0.0 | 0.1+ | 2005 04 14 | 703 | 0.5− | 0.3− | | | | |

**(145075)∗ 2005 GV$_{33}$**

Discovered 2005 Apr. 6 at University of Szeged, Piszkéstető Stn. (Konkoly).

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.66191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23681816 | $\omega$ | 19.63450 | | −0.78132073 | | +0.62080325 |
| $a$ | 2.5873750 | $\Omega$ | 199.17974 | | −0.59561604 | | −0.77246064 |
| $e$ | 0.1146732 | $i$ | 11.29606 | | −0.18649249 | | −0.13382036 |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 691 | 0.1− | 0.5− | 2005 04 07 | 461 | 0.2+ | 0.3− | 2005 05 12 | 704 | 0.3+ | 0.6− |
| 1998 10 14 | 691 | 0.6+ | 0.9− | 2005 04 07 | 461 | 0.4− | 0.1+ | 2005 05 12 | 704 | 0.7+ | 0.3+ |
| 1998 10 14 | 691 | 0.0 | 0.3− | 2005 04 10 | G96 | 0.2− | 0.0 | 2005 05 12 | 704 | 0.3− | 0.9− |
| 2001 05 03 | 608 | 0.8+ | 0.2− | 2005 04 10 | G96 | 0.4− | 0.0 | 2005 05 12 | 704 | 1.1− | 0.2+ |
| 2001 05 03 | 608 | 0.3+ | 0.2− | 2005 04 10 | G96 | 0.3− | 0.2+ | 2006 08 18 | 461 | 0.2+ | 0.3− |
| 2001 06 12 | 699 | 0.8+ | 0.8− | 2005 04 10 | G96 | 0.3− | 0.0 | 2006 08 18 | 461 | 0.1+ | 0.3− |
| 2001 06 12 | 699 | 0.0 | 0.9+ | 2005 04 12 | 704 | 0.2+ | 0.4− | 2006 08 18 | 461 | 0.3+ | 0.1− |
| 2001 06 12 | 699 | 0.9− | 0.0 | 2005 04 12 | 704 | 0.7+ | 0.0 | 2006 09 13 | A13 | 0.1+ | 0.0 |
| 2001 06 12 | 699 | 1.2− | 0.1+ | 2005 04 12 | 704 | 0.6+ | 0.2− | 2006 09 13 | A13 | 0.5− | 1.0− |
| 2002 09 06 | 704 | 0.3− | 0.0 | 2005 04 12 | 704 | 1.1+ | 0.6+ | 2006 09 20 | A13 | 0.6− | 0.2− |
| 2002 09 06 | 704 | 0.9− | 0.3+ | 2005 04 13 | 699 | 0.2+ | 0.5− | 2006 09 20 | A13 | 0.5− | 0.6− |
| 2002 09 06 | 704 | 0.3− | 0.1− | 2005 04 13 | 699 | 0.1− | 0.5+ | 2006 09 20 | A13 | 0.4− | 0.1− |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2005 04 13 | 699 | 0.0 | 0.4+ | 2006 09 22 | 461 | 0.6+ | 0.2+ |
| 2002 09 13 | 644 | 0.3− | 0.0 | 2005 04 13 | 699 | 0.0 | 0.4+ | 2006 09 22 | 461 | 0.3+ | 0.1+ |
| 2002 09 13 | 644 | 0.5+ | 0.0 | 2005 04 16 | 691 | 0.1+ | 0.2− | 2006 09 22 | 461 | 0.5− | 1.0− |
| 2005 03 10 | G96 | 0.6− | 0.1+ | 2005 04 16 | 691 | 0.0 | 0.4− | 2006 10 14 | 461 | 0.1− | 0.2+ |
| 2005 03 10 | G96 | 0.5− | 0.0 | 2005 04 16 | 691 | 0.1− | 0.3− | 2006 10 14 | 461 | 0.1− | 0.1+ |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2005 05 03 | 704 | 1.3+ | 0.6+ | 2006 10 14 | 461 | 0.3− | 0.0 |
| 2005 03 10 | G96 | 0.5− | 0.2+ | 2005 05 03 | 704 | 1.2+ | 0.2+ | 2006 11 10 | 291 | 0.3+ | 0.1− |
| 2005 04 05 | 461 | 0.4− | 0.1+ | 2005 05 03 | 704 | 0.2+ | 0.9+ | 2006 11 10 | 291 | 0.2+ | 0.3+ |
| 2005 04 05 | 461 | 0.2− | 0.0 | 2005 05 03 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 291 | 0.1− | 0.1+ |
| 2005 04 05 | 461 | 0.4− | 0.1− | 2005 05 03 | 704 | (2.0+ | 2.3+) | 2006 11 11 | 291 | 0.1− | 0.3+ |
| 2005 04 06 | 461 | 0.2− | 0.1+ | 2005 05 11 | 699 | 0.5− | 0.5− | 2006 11 11 | 291 | 0.1− | 0.9+ |
| 2005 04 06 | 461 | 0.4− | 0.0 | 2005 05 11 | 699 | 0.5− | 0.0 | 2006 11 11 | 291 | 0.1+ | 0.6+ |
| 2005 04 07 | 461 | 0.6− | 0.1+ | 2005 05 11 | 699 | 0.6+ | 0.1+ | | | | |
| 2005 04 07 | 461 | 0.1− | 0.2− | 2005 05 11 | 699 | 0.1− | 0.0 | | | | |

**(145076)∗ 2005 GY$_{36}$ = 2002 RA$_{198}$**

Discovered 2005 Apr. 2 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 77075)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.68068 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26066479 | $\omega$ | 156.80245 | | −0.30121813 | | +0.95273531 |
| $a$ | 2.4270635 | $\Omega$ | 95.64818 | | −0.88097692 | | −0.26218620 |
| $e$ | 0.1550745 | $i$ | 2.27688 | | −0.36489355 | | −0.15347257 |
| $P$ | 3.78 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.0 | 0.1+ | 2005 04 06 | 691 | 0.4− | 0.0 | 2005 05 12 | 699 | 0.8− | 0.2+ |
| 2000 12 23 | 645 | 0.0 | 0.2+ | 2005 04 06 | 691 | 0.1− | 0.3+ | 2005 05 12 | 699 | (2.4+ | 1.5+) |
| 2001 03 19 | 704 | 0.1− | 0.8− | 2005 04 11 | G96 | 0.0 | 0.3− | 2005 05 14 | 644 | 0.0 | 0.2− |
| 2001 03 19 | 704 | 0.4+ | 1.3+ | 2005 04 11 | G96 | 0.4− | 0.1− | 2005 05 14 | 644 | 0.1− | 0.2− |
| 2001 03 19 | 704 | 0.1− | 0.3− | 2005 04 11 | G96 | 0.3− | 0.3− | 2005 05 14 | 644 | 0.2− | 0.0 |
| 2001 03 19 | 704 | 0.0 | 0.5+ | 2005 04 11 | G96 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2001 03 19 | 608 | 1.3+ | 0.8+ | 2005 04 12 | 704 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2001 03 19 | 608 | 1.4+ | 0.8+ | 2005 04 12 | 704 | 0.9+ | 1.2+ | 2006 09 17 | 691 | 0.4− | 0.5+ |
| 2001 03 19 | 608 | 1.0+ | 1.3+ | 2005 04 12 | 704 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2005 04 12 | 704 | 0.4− | 0.7+ | 2006 09 27 | 691 | 0.4− | 0.4+ |
| 2002 09 13 | 644 | 0.2− | 0.7+ | 2005 04 13 | 699 | 0.6− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2005 04 13 | 699 | 0.8+ | 0.5− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2002 09 15 | 644 | 0.7− | 0.6+ | 2005 04 13 | 699 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2002 09 15 | 644 | 0.1+ | 0.4+ | 2005 04 13 | 699 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2002 09 15 | 644 | 0.8− | 0.3+ | 2005 05 09 | 704 | (0.2− | 1.7+) | 2006 10 22 | G96 | 0.3+ | 0.8− |
| 2005 04 02 | 699 | 0.5+ | 0.2− | 2005 05 09 | 704 | 0.6+ | 0.6+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2005 04 02 | 699 | 0.3− | 0.4− | 2005 05 09 | 704 | (1.7+ | 0.0 ) | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2005 04 02 | 699 | 0.4+ | 0.8+ | 2005 05 09 | 704 | 0.6+ | 1.2+ | 2006 10 22 | G96 | 0.1+ | 0.3+ |
| 2005 04 02 | 699 | 1.2+ | 0.1− | 2005 05 09 | 704 | 1.0+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 04 05 | 703 | 0.2+ | 0.2+ | 2005 05 09 | 704 | 0.8+ | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2005 04 05 | 703 | 0.3+ | 1.3+ | 2005 05 09 | 704 | (0.5+ | 1.8+) | 2006 11 16 | G96 | 0.1− | 0.5+ |
| 2005 04 05 | 703 | 0.7− | 0.4+ | 2005 05 09 | 704 | (0.5+ | 1.7+) | 2006 11 16 | G96 | 0.3+ | 0.5+ |
| 2005 04 05 | 703 | (2.4− | 0.9−) | 2005 05 12 | 699 | (1.6− | 0.0 ) | | | | |
| 2005 04 06 | 691 | 0.0 | 0.0 | 2005 05 12 | 699 | 1.3+ | 0.5+ | | | | |

**(145077)∗ 2005 GL$_{38}$**

Discovered 2005 Apr. 3 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.70769 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29600845 | $\omega$ | 247.11709 | | −0.50171581 | | +0.86487457 |
| $a$ | 2.2298038 | $\Omega$ | 352.70339 | | −0.73829525 | | −0.43808809 |
| $e$ | 0.1440663 | $i$ | 7.47807 | | −0.45077862 | | −0.24509346 |
| $P$ | 3.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 17 | 910 | 0.3+ | 0.1+ | 2005 04 06 | 699 | 0.5+ | 0.2− | 2005 05 10 | 699 | 0.4+ | 0.1− |
| 1996 10 18 | 910 | 0.5+ | 0.0 | 2005 04 06 | 699 | 0.6+ | 0.3+ | 2005 05 10 | 699 | 0.2+ | 0.2+ |
| 1996 10 18 | 910 | 0.1+ | 0.0 | 2005 04 06 | 704 | 0.4− | 0.5− | 2005 05 11 | 644 | 0.4+ | 0.0 |
| 1996 11 05 | 691 | 0.5− | 0.3+ | 2005 04 06 | 704 | 0.2+ | 0.2− | 2005 05 11 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 05 | 691 | 0.2+ | 0.2+ | 2005 04 06 | 704 | 0.1− | 0.2+ | 2005 05 11 | 644 | 0.2+ | 0.1+ |
| 1996 11 05 | 691 | 0.4− | 0.3+ | 2005 04 15 | 703 | 0.5− | 0.8+ | 2005 05 12 | 644 | 0.1+ | 0.2+ |
| 1999 09 14 | 704 | 0.1+ | 0.4− | 2005 04 15 | 703 | 0.6− | 0.9+ | 2005 05 12 | 644 | 0.3+ | 0.1+ |
| 1999 09 14 | 704 | 1.6− | 1.4− | 2005 04 15 | 703 | 0.5− | 0.8+ | 2005 05 12 | 644 | 0.2+ | 0.2+ |
| 1999 09 14 | 704 | 0.7− | 0.4+ | 2005 04 15 | 703 | 0.6− | 0.3+ | 2005 05 16 | 644 | 0.4+ | 0.0 |
| 1999 09 14 | 704 | 0.0 | 0.2+ | 2005 04 18 | E12 | 0.1− | 0.4+ | 2005 05 16 | 644 | 0.1+ | 0.1− |
| 2002 07 06 | 644 | 0.8+ | 0.2+ | 2005 04 18 | E12 | 0.6− | 1.5+ | 2005 05 16 | 644 | 0.6+ | 0.0 |
| 2002 07 06 | 644 | 0.9+ | 0.4+ | 2005 04 18 | E12 | 0.6− | 1.0+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2002 07 06 | 644 | 1.0+ | 0.4+ | 2005 04 18 | E12 | 0.0 | 0.9+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2003 12 18 | 691 | 0.0 | 0.2+ | 2005 05 04 | E12 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2003 12 18 | 691 | 0.1+ | 0.2+ | 2005 05 04 | E12 | 0.2− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2003 12 18 | 691 | 0.3+ | 0.0 | 2005 05 09 | 703 | 0.6+ | 1.0− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2005 03 22 | G92 | 0.6+ | 0.5− | 2005 05 09 | 703 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 2005 03 22 | G92 | 1.3+ | 0.1− | 2005 05 09 | 703 | 1.4− | 0.5− | 2006 10 21 | 691 | 0.5− | 0.2− |
| 2005 03 22 | G92 | 0.6+ | 0.4− | 2005 05 09 | 703 | 0.5− | 0.6− | 2006 10 21 | 691 | 0.6− | 0.0 |
| 2005 04 03 | E12 | 0.1+ | 0.3+ | 2005 05 09 | E12 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2005 04 03 | E12 | 0.2+ | 0.2− | 2005 05 09 | E12 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2005 04 03 | E12 | 0.7+ | 0.1− | 2005 05 09 | E12 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 04 03 | E12 | 0.3+ | 1.0+ | 2005 05 09 | E12 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2005 04 06 | 699 | (2.0+ | 0.9+) | 2005 05 10 | 699 | 0.1+ | 0.3+ | | | | |
| 2005 04 06 | 699 | 0.6+ | 0.1+ | 2005 05 10 | 699 | 0.1− | 0.6+ | | | | |

**(145078)∗ 2005 GO$_{39}$**

Discovered 2005 Apr. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.92127 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27188878 | $\omega$ | 168.20892 | | −0.09802151 | | +0.98787038 |
| $a$ | 2.3597999 | $\Omega$ | 96.07970 | | −0.92262584 | | −0.04484598 |
| $e$ | 0.2172931 | $i$ | 6.95636 | | −0.37303263 | | −0.14866389 |
| $P$ | 3.63 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.4− | 0.8+ | 2005 04 06 | 704 | (1.4+ | 2.0+) | 2005 04 18 | 704 | 0.2+ | 0.3+ |
| 2002 08 09 | 608 | 0.5− | 1.2+ | 2005 04 06 | 704 | 0.8+ | 0.5+ | 2005 04 18 | 704 | 1.4+ | 0.4+ |
| 2002 08 09 | 608 | 0.5− | 0.6+ | 2005 04 06 | 704 | 0.4− | 0.1− | 2005 04 28 | 608 | 0.3+ | 0.3+ |
| 2002 09 13 | 704 | 0.0 | 1.4+ | 2005 04 08 | 704 | (2.9− | 1.3−) | 2005 04 28 | 608 | 0.3+ | 0.1− |
| 2002 09 13 | 704 | 0.9− | 0.9+ | 2005 04 08 | 704 | (3.1− | 0.9−) | 2005 04 28 | 608 | 0.2+ | 0.1+ |
| 2002 09 13 | 704 | 0.5− | 0.4+ | 2005 04 08 | 704 | (2.9− | 0.4−) | 2005 05 04 | 703 | 1.1− | 0.4+ |
| 2002 09 13 | 704 | 0.2− | 0.4+ | 2005 04 08 | 704 | (2.4− | 1.3−) | 2005 05 04 | 703 | 0.5− | 0.2+ |
| 2002 09 13 | 704 | 0.3+ | 0.2− | 2005 04 08 | 704 | 0.6+ | 0.2+ | 2005 05 04 | 703 | 0.2+ | 0.9+ |
| 2004 01 28 | 691 | 0.2− | 0.4+ | 2005 04 13 | 703 | (0.5+ | 1.7−) | 2005 05 04 | 703 | 0.2− | 0.7+ |
| 2004 01 28 | 691 | 0.2+ | 0.6+ | 2005 04 13 | 703 | 0.5− | 0.3− | 2005 05 13 | 704 | 0.2− | 0.3− |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2005 04 13 | 703 | (2.6− | 3.2−) | 2005 05 13 | 704 | 0.1− | 0.1− |
| 2005 03 18 | 703 | 1.1+ | 0.1+ | 2005 04 13 | 703 | 1.4− | 0.4− | 2005 05 13 | 704 | 0.0 | 0.7+ |
| 2005 03 18 | 703 | 0.9+ | 0.7− | 2005 04 14 | 704 | 0.5+ | 0.1+ | 2005 05 13 | 704 | 0.4+ | 1.3− |
| 2005 03 18 | 703 | 1.1+ | 0.5+ | 2005 04 14 | 704 | 0.9+ | 0.4+ | 2005 05 13 | 704 | 0.1+ | 0.1+ |
| 2005 03 18 | 703 | 0.6− | 0.6− | 2005 04 14 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 2005 03 22 | 683 | 0.8− | 0.0 | 2005 04 14 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | (2.3− | 1.1+) |
| 2005 03 22 | 683 | 0.9+ | 0.6− | 2005 04 14 | 704 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.6− | 1.4+ |
| 2005 03 22 | 683 | 1.3− | 0.6− | 2005 04 15 | 699 | 0.2+ | 0.3+ | 2006 10 16 | 703 | (1.7− | 0.8+) |
| 2005 04 04 | 703 | 0.3− | 0.1− | 2005 04 15 | 699 | 0.5− | 0.1− | 2006 10 22 | 703 | (0.1− | 3.3+) |
| 2005 04 04 | 703 | 0.1+ | 0.4− | 2005 04 15 | 699 | 0.6− | 0.2+ | 2006 10 22 | 703 | (0.5+ | 3.1+) |
| 2005 04 04 | 703 | 0.8+ | 0.3− | 2005 04 15 | 699 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.1+ | 1.3+ |
| 2005 04 04 | 703 | 0.9− | 0.6+ | 2005 04 18 | 703 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.6+ |
| 2005 04 04 | 703 | 0.3− | 0.3+ | 2005 04 18 | 703 | 0.5− | 0.7− | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2005 04 04 | 703 | 0.5− | 0.3+ | 2005 04 18 | 703 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 1.7− |
| 2005 04 04 | 703 | 0.2+ | 0.3+ | 2005 04 18 | 703 | 1.1− | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2005 04 04 | 703 | 0.5− | 0.4− | 2005 04 18 | 704 | 0.5+ | 0.7+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2005 04 06 | 704 | 0.7+ | 0.5+ | 2005 04 18 | 704 | 0.5+ | 1.1+ | | | | |
| 2005 04 06 | 704 | 0.3+ | 1.3+ | 2005 04 18 | 704 | 1.2+ | 1.3+ | | | | |

**(145079)∗ 2005 GZ$_{43}$**

Discovered 2005 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.94013 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37508568 | $\omega$ | 225.28725 | | +0.33173481 | | −0.93165650 |
| $a$ | 1.9042139 | $\Omega$ | 206.43138 | | +0.93198235 | | +0.34800032 |
| $e$ | 0.1196216 | $i$ | 19.44958 | | +0.14615375 | | −0.10446028 |
| $P$ | 2.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 699 | 0.9− | 0.6+ | 2005 05 11 | 699 | 1.0+ | 1.0+ | 2006 10 04 | 703 | 0.2+ | 1.2+ |
| 1998 09 19 | 699 | (0.4− | 2.6+) | 2005 05 11 | 699 | (1.7+ | 0.7+) | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 1998 09 19 | 699 | 0.4+ | 1.4+ | 2005 05 13 | 703 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.3− |
| 1998 09 23 | 704 | 0.9+ | 0.7+ | 2005 05 13 | 703 | 0.7− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.0 |
| 1998 09 23 | 704 | 0.0 | 0.7− | 2005 05 13 | 703 | 0.3+ | 1.1+ | 2006 10 16 | 683 | 0.9+ | 0.0 |
| 1998 09 23 | 704 | 1.1− | 0.3+ | 2005 05 13 | 703 | 0.3− | 0.3− | 2006 10 16 | 683 | 1.1+ | 0.4+ |
| 1998 10 15 | 699 | 0.2+ | 0.6+ | 2006 09 15 | 703 | 0.0 | 0.7+ | 2006 10 16 | 683 | 1.1+ | 1.2+ |
| 1998 10 15 | 699 | 0.0 | 0.1+ | 2006 09 15 | 703 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 1998 10 15 | 699 | 0.6− | 1.2+ | 2006 09 15 | 703 | 0.8− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2000 05 31 | 699 | 0.0 | 0.4− | 2006 09 15 | 703 | 0.8− | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 2000 05 31 | 699 | 0.2− | 0.0 | 2006 09 18 | 704 | 1.2+ | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2000 05 31 | 699 | 1.1+ | 0.1− | 2006 09 18 | 704 | 1.3− | 0.1− | 2006 10 22 | 704 | 0.0 | 0.7+ |
| 2000 05 31 | 699 | 1.0+ | 0.2+ | 2006 09 18 | 704 | 0.7− | 0.6+ | 2006 10 22 | 704 | 0.1− | 0.2− |
| 2005 04 05 | 699 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.7− | 1.4− | 2006 10 22 | 704 | 1.0+ | 0.1− |
| 2005 04 05 | 699 | 0.3+ | 0.7+ | 2006 09 18 | 704 | 0.8+ | 0.9− | 2006 10 22 | 704 | 1.1+ | 0.4+ |
| 2005 04 05 | 699 | 0.6− | 0.5+ | 2006 09 20 | 699 | 0.8− | 0.6+ | 2006 10 22 | 704 | 0.0 | 0.8+ |
| 2005 04 05 | 699 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.2− | 2006 10 27 | 704 | 0.3− | 0.1+ |
| 2005 04 06 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.7− | 0.4+ | 2006 10 27 | 704 | 0.7+ | 0.2+ |
| 2005 04 06 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.0 | 1.3+ | 2006 10 27 | 704 | 0.0 | 0.1+ |
| 2005 04 06 | 691 | 0.1+ | 0.4+ | 2006 09 21 | 704 | 1.3+ | 0.6− | 2006 10 27 | 704 | 0.6+ | 0.2+ |
| 2005 04 10 | 691 | 0.2+ | 0.7+ | 2006 09 21 | 704 | 0.1− | 0.5− | 2006 10 27 | 704 | 0.1+ | 0.1− |
| 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 09 21 | 704 | 0.2+ | 0.6− | 2006 10 31 | 704 | 0.6+ | 0.3+ |
| 2005 04 10 | 691 | 0.1+ | 0.6+ | 2006 09 21 | 704 | 0.3− | 0.9− | 2006 10 31 | 704 | 0.6− | 0.2− |
| 2005 04 11 | 699 | 0.0 | 0.1+ | 2006 09 21 | 704 | 0.4− | 0.3+ | 2006 10 31 | 704 | 0.3+ | 0.9+ |
| 2005 04 11 | 699 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.3+ | 2006 10 31 | 704 | 0.6− | 0.2− |
| 2005 04 11 | 699 | 0.7+ | 0.4− | 2006 09 25 | 704 | 0.2+ | 0.7+ | 2006 10 31 | 704 | 0.2+ | 0.3+ |
| 2005 04 11 | 699 | (1.6+ | 0.5+) | 2006 09 25 | 704 | 0.9+ | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2005 04 18 | 703 | 0.6+ | 0.0 | 2006 09 25 | 704 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.1+ | 0.4+ |
| 2005 04 18 | 703 | 0.5− | 0.5− | 2006 09 25 | 704 | 0.9+ | 0.7+ | 2006 11 13 | 703 | 0.3+ | 0.2+ |
| 2005 04 18 | 703 | 0.9− | 1.2+ | 2006 09 29 | 704 | 0.0 | 0.8+ | 2006 11 16 | 703 | 0.4+ | 0.2− |
| 2005 04 18 | 703 | 1.2− | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 703 | 0.7+ | 0.2+ |
| 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.3+ | 2006 11 16 | 703 | 0.2− | 1.1− |
| 2005 05 10 | G96 | 0.6− | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.3+ | 2006 11 16 | 703 | 0.5+ | 0.1+ |
| 2005 05 10 | G96 | 0.4− | 0.3+ | 2006 09 29 | 704 | 1.0− | 1.3+ | 2006 11 22 | 704 | 2.3− | 0.5− |
| 2005 05 10 | G96 | 0.4− | 0.3+ | 2006 10 04 | 703 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.4− | 1.2+ |
| 2005 05 11 | 699 | (2.9+ | 0.5+) | 2006 10 04 | 703 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 1.0− | 0.7+ |
| 2005 05 11 | 699 | 0.2− | 1.4+ | 2006 10 04 | 703 | 0.1− | 1.4+ | 2006 11 22 | 704 | 2.3− | 0.7+ |

**(145080)∗ 2005 GG$_{45}$ = 1999 RC$_{225}$**

Discovered 2005 Apr. 5 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 77082)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.17662 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29309070 | $\omega$ | 28.07484 | | +0.62887032 | | +0.77531400 |
| $a$ | 2.2445779 | $\Omega$ | 280.95230 | | −0.72402430 | | +0.55657919 |
| $e$ | 0.1584372 | $i$ | 3.41005 | | −0.28339184 | | +0.29850929 |
| $P$ | 3.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.6+ | 0.2− | 2005 04 18 | 703 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.6+ |
| 1998 03 29 | 704 | 0.0 | 1.5− | 2005 04 18 | 703 | 0.1+ | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1998 03 29 | 704 | (0.6+ | 2.1+) | 2005 05 01 | 644 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 1998 03 29 | 704 | 2.0− | 0.0 | 2005 05 01 | 644 | 0.3− | 0.4+ | 2006 11 11 | 703 | 1.2+ | 0.6+ |
| 1999 09 07 | 704 | 0.3− | 0.3− | 2005 05 01 | 644 | 0.3− | 0.3+ | 2006 11 11 | 703 | (2.3+ | 0.1+) |
| 1999 09 07 | 704 | 0.1+ | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.0 | 0.7+ |
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.0+ | 1.3+ |
| 1999 09 07 | 704 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 1999 09 07 | 704 | 0.9− | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 699 | 0.2+ | 0.5+ | 2006 10 18 | A50 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 1999 09 08 | 699 | 0.5+ | 1.3+ | 2006 10 18 | A50 | 0.7+ | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 1999 09 08 | 699 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.2+ |
| 1999 10 07 | 704 | 1.3− | 0.3− | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.3+ | 0.6+ |
| 1999 10 07 | 704 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.1− | 0.7+ |
| 1999 10 07 | 704 | 0.5− | 0.6− | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.4− | 0.6+ |
| 1999 10 07 | 704 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.5+ |
| 1999 10 07 | 704 | 0.6+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.6− | 0.4+ |
| 2005 04 05 | 644 | 0.5+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2005 04 05 | 644 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.1− | 0.1− |
| 2005 04 05 | 644 | 0.5+ | 0.6+ | 2006 10 23 | 691 | 0.7− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2005 04 06 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2005 04 06 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2005 04 06 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.1+ | 0.2− |
| 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.7+ |
| 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2005 04 15 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2005 04 18 | 703 | 0.7+ | 0.7− | 2006 11 09 | 691 | 0.0 | 0.1− | | | | |
| 2005 04 18 | 703 | 0.0 | 0.3− | 2006 11 09 | 691 | 0.0 | 0.1− | | | | |

**(145081)∗ 2005 GV$_{49}$ = 2004 CM$_{19}$**

Discovered 2005 Apr. 5 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 77085)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.33970 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27516988 | $\omega$ | 181.42487 | | +0.98401114 | | +0.17791828 |
| $a$ | 2.3410038 | $\Omega$ | 168.31694 | | −0.16300699 | | +0.91817339 |
| $e$ | 0.2359048 | $i$ | 2.31936 | | −0.07176901 | | +0.35398124 |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1997 01 31 | 691 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 1997 01 31 | 691 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 1997 02 11 | 691 | 0.1+ | 0.6− | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 10 23 | 704 | 1.3− | 0.6− |
| 1997 02 11 | 691 | (2.5+ | 0.6−) | 2006 08 28 | 703 | (0.5− | 1.5+) | 2006 10 23 | 704 | 0.1+ | 0.6− |
| 1997 02 11 | 691 | 0.2− | 0.6− | 2006 08 28 | 703 | 0.7+ | 0.6+ | 2006 10 23 | 704 | 0.6− | 0.2+ |
| 2004 01 17 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.7+ | 2006 10 23 | 704 | 0.3− | 0.3− |
| 2004 01 17 | 644 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 10 23 | 704 | 0.5− | 0.2− |
| 2004 01 17 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2004 01 17 | 644 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2004 01 17 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2004 01 17 | 644 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.9+ | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2004 02 11 | 691 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2004 02 13 | 691 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2004 02 13 | 691 | 0.3+ | 0.2+ | 2006 10 03 | 704 | 0.6+ | 0.6+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2004 02 13 | 691 | 0.4− | 0.2+ | 2006 10 03 | 704 | 0.9+ | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2005 04 05 | G96 | 0.7− | 0.0 | 2006 10 03 | 704 | 0.4− | 0.5− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2005 04 05 | G96 | 0.5− | 0.1+ | 2006 10 03 | 704 | 0.5+ | 0.7− | 2006 11 14 | 704 | 0.2+ | 0.1+ |
| 2005 04 05 | G96 | 0.4− | 0.8− | 2006 10 11 | 644 | 0.5+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.2+ |
| 2005 04 05 | G96 | 0.0 | 1.0− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.7− | 0.2+ |
| 2005 04 06 | G96 | 0.1− | 0.8− | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 0.3+ | 0.1− |
| 2005 04 06 | G96 | 0.7− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.4− | 0.4+ |
| 2005 04 06 | G96 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2005 04 06 | G96 | 0.6− | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 04 07 | G96 | 0.1− | 0.1− | 2006 10 16 | 683 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 10 16 | 683 | 0.4− | 1.3+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2005 04 07 | G96 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.4− | 1.0+ | 2006 11 17 | 704 | 1.2− | 1.1− |
| 2005 04 07 | G96 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.8+ | 2006 11 17 | 704 | 0.2+ | 0.4− |
| 2005 04 10 | 691 | 0.5− | 0.1+ | 2006 10 16 | 683 | 0.3− | 1.0+ | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.2+ |
| 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2005 04 14 | 691 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.5− | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 17 | 703 | (3.5− | 0.9−) |
| 2005 04 14 | 691 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 1.8− | 0.9− |
| 2005 04 18 | 691 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 20 | 704 | 1.1+ | 0.5+ |
| 2005 04 18 | 691 | 0.5+ | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.5− |
| 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.6− |
| 2005 05 10 | G96 | 0.1+ | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 1.2+ | 0.1+ |
| 2005 05 10 | G96 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | | | |
| 2005 05 10 | G96 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | | | |

**(145082)∗ 2005 GE$_{50}$ = 2002 TR$_{222}$ = 2004 BF$_{134}$**

Discovered 2005 Apr. 5 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. A. Doppler (*MPO* 86690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.35627 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23488070 | $\omega$ | 134.65697 | | +0.77288544 | | +0.63452249 |
| $a$ | 2.6015839 | $\Omega$ | 185.96580 | | −0.59592756 | | +0.72289119 |
| $e$ | 0.1714140 | $i$ | 2.98540 | | −0.21798722 | | +0.27351332 |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.7+ | 0.1− | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.7+ |
| 2002 10 07 | 704 | 0.7− | 0.4− | 2005 04 10 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 0.5+ | 0.2− |
| 2002 10 07 | 704 | 0.8+ | 0.2+ | 2005 04 10 | 691 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.4− |
| 2002 10 07 | 704 | 0.1+ | 0.4+ | 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 1.1− | 0.1− |
| 2002 10 09 | 704 | 0.5− | 0.7+ | 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.7+ | 1.3− |
| 2002 10 09 | 704 | 0.3+ | 0.4− | 2005 04 11 | 691 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.4+ |
| 2002 10 09 | 704 | 0.1+ | 0.5+ | 2005 04 11 | 691 | 0.1− | 0.7+ | 2006 09 26 | 704 | 0.5+ | 0.4− |
| 2002 10 09 | 704 | 0.0 | 0.1+ | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.1− |
| 2002 10 10 | 291 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.0 |
| 2002 10 10 | 291 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 2002 10 10 | 291 | 0.3− | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.5+ |
| 2004 01 18 | 691 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.9+ |
| 2004 01 18 | 691 | 0.4+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.6+ | 2006 09 28 | 704 | (2.0− | 4.4−) |
| 2004 01 18 | 691 | 0.1− | 0.2− | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 1.0− | 0.8+ |
| 2004 01 28 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.8+ | 0.6+ |
| 2004 01 28 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.4+ | 0.0 |
| 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.8− | 0.2+ |
| 2004 01 28 | 291 | 0.1− | 0.4+ | 2006 09 16 | 699 | 0.2+ | 0.4− | 2006 10 01 | 703 | 0.9− | 0.6− |
| 2004 01 28 | 291 | 0.3− | 0.5+ | 2006 09 16 | 699 | 1.1− | 0.7− | 2006 10 01 | 703 | 0.2+ | 0.7− |
| 2004 01 28 | 291 | 0.2− | 0.4+ | 2006 09 16 | 699 | 1.0+ | 0.8+ | 2006 10 01 | 703 | (1.6− | 1.0+) |
| 2005 03 08 | G96 | 0.5− | 0.3− | 2006 09 16 | 699 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.5+ | 0.6+ |
| 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.2− | 2006 10 16 | 703 | 1.2+ | 0.2+ |
| 2005 03 08 | G96 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | (0.7− | 2.0+) |
| 2005 03 08 | G96 | 0.6− | 0.1− | 2006 09 17 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 1.0− | 0.0 |
| 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2005 04 05 | G96 | 0.6− | 0.1− | 2006 09 19 | 699 | 0.4− | 0.8+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2005 04 05 | G96 | 0.6− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.7+ | 1.1+ | 2006 10 16 | G96 | 0.3+ | 0.2+ |
| 2005 04 06 | G96 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2005 04 06 | G96 | 0.7− | 0.3− | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2005 04 06 | G96 | 0.6− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2005 04 06 | G96 | 0.7+ | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2005 04 07 | G96 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2005 04 07 | G96 | 0.4− | 0.2− | 2006 09 24 | 106 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.5− | 0.4− |
| 2005 04 07 | G96 | 0.4− | 0.1− | 2006 09 24 | 106 | 0.7− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2005 04 07 | G96 | 0.0 | 0.2− | 2006 09 24 | 106 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 09 24 | 106 | 0.2− | 0.5− | | | | |

**(145083)∗ 2005 GB$_{53}$**

Discovered 2005 Apr. 2 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.49956 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21958944 | $\omega$ | 89.38456 | | +0.54540905 | | +0.83402648 |
| $a$ | 2.7209992 | $\Omega$ | 214.09391 | | −0.81590717 | | +0.50556067 |
| $e$ | 0.0753059 | $i$ | 8.53976 | | −0.19189701 | | +0.22092587 |
| $P$ | 4.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.0 | 1.1+ | 2005 04 07 | 691 | 0.0 | 0.3+ | 2006 08 27 | 699 | 0.2+ | 0.6− |
| 2002 10 11 | 704 | 0.3− | 1.4+ | 2005 04 07 | 691 | 0.0 | 0.2+ | 2006 08 27 | 699 | 0.7− | 0.3+ |
| 2002 10 11 | 704 | 0.9− | 1.6+ | 2005 04 07 | 691 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.3+ | 0.4− |
| 2002 10 11 | 704 | 0.1− | 0.9+ | 2005 05 03 | 691 | 0.0 | 0.1− | 2006 08 27 | 699 | (2.6+ | 0.7+) |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2005 05 03 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.1− | 0.3− |
| 2002 10 15 | 644 | 0.2+ | 0.4− | 2005 05 03 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.9− | 0.9+ |
| 2002 10 15 | 644 | 0.3+ | 0.2− | 2005 05 13 | 704 | 1.3+ | 0.0 | 2006 08 29 | 703 | 1.0+ | 0.5+ |
| 2002 10 15 | 644 | 0.2+ | 0.1− | 2005 05 13 | 704 | 0.3− | 0.6+ | 2006 08 29 | 703 | 1.5− | 0.2− |
| 2002 10 31 | 699 | 0.4− | 1.4+ | 2005 05 13 | 704 | 1.0+ | 0.7+ | 2006 08 30 | 699 | 0.2+ | 0.9− |
| 2002 10 31 | 699 | 0.5+ | 0.0 | 2005 05 13 | 704 | 0.5+ | 0.0 | 2006 08 30 | 699 | 0.1− | 0.7+ |
| 2002 10 31 | 699 | 0.4− | 0.0 | 2005 05 16 | 691 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.2+ | 0.4− |
| 2002 10 31 | 644 | 0.0 | 0.7+ | 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 1.3+ | 0.4+ |
| 2002 10 31 | 699 | 0.5− | 1.3+ | 2005 05 16 | 691 | 0.1− | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.2− |
| 2002 10 31 | 644 | 0.3+ | 0.9+ | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.9+ | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.2− | 0.2− |
| 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 13 | A13 | 0.2+ | 0.2− |
| 2004 02 11 | 644 | 0.1− | 0.9+ | 2006 08 19 | 644 | 0.2− | 0.4+ | 2006 09 13 | A13 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.5+ | 0.5+ | 2006 08 19 | 644 | 0.1− | 0.3− | 2006 09 13 | A13 | 0.1+ | 0.7+ |
| 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 08 19 | 644 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.1+ |
| 2005 04 02 | G96 | 0.9− | 0.3+ | 2006 08 19 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.6− |
| 2005 04 02 | G96 | 0.6− | 0.2+ | 2006 08 19 | 644 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.1− | 0.2+ |
| 2005 04 02 | G96 | 0.2− | 0.3− | 2006 08 19 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.2− |

**(145084)∗ 2005 GE$_{53}$ = 2003 XX$_{41}$**

Discovered 2005 Apr. 2 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 77088)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.56974 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27153513 | $\omega$ | 258.34465 | | +0.44443871 | | +0.89226137 |
| $a$ | 2.3618485 | $\Omega$ | 38.36469 | | −0.76376644 | | +0.42388987 |
| $e$ | 0.1061090 | $i$ | 7.37296 | | −0.46811864 | | +0.15552177 |
| $P$ | 3.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 14 | 691 | 0.3− | 0.1− | 2005 05 08 | 699 | 0.7+ | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 1994 03 14 | 691 | 0.2+ | 0.0 | 2005 05 08 | 699 | 1.3+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 1994 03 14 | 691 | 0.1+ | 0.2+ | 2005 05 08 | 699 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 08 14 | 704 | 1.2+ | 0.7+ | 2005 05 08 | 699 | 0.3− | 0.9− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2002 08 14 | 704 | 0.5− | 1.2+ | 2005 05 13 | 704 | 0.5− | 0.9+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2002 08 14 | 704 | 0.6− | 0.2+ | 2005 05 13 | 704 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2002 08 15 | 699 | (0.5− | 2.3+) | 2005 05 13 | 704 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2002 08 15 | 699 | (1.8− | 0.4−) | 2005 05 13 | 704 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 2002 08 15 | 699 | 0.0 | 0.2+ | 2005 05 13 | 704 | 1.1+ | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2002 08 15 | 699 | 0.1− | 0.1− | 2005 05 14 | 291 | 0.2+ | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 09 09 | 644 | 0.6− | 0.5+ | 2005 05 14 | 291 | 0.2+ | 0.5+ | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2002 09 09 | 644 | 0.2− | 0.3+ | 2005 05 14 | 291 | 0.2+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2002 09 09 | 644 | 0.7− | 0.6+ | 2005 05 14 | 291 | 0.1− | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2003 12 14 | 691 | 0.1− | 0.1+ | 2005 05 14 | 291 | 0.1− | 0.8+ | 2006 11 03 | G96 | 0.2+ | 0.0 |
| 2003 12 14 | 691 | 0.2− | 0.5+ | 2005 05 14 | 291 | 0.1− | 0.3+ | 2006 11 03 | G96 | 0.2− | 0.1+ |
| 2003 12 14 | 691 | 0.1− | 0.6+ | 2005 05 16 | G96 | 0.1− | 0.1− | 2006 11 03 | G96 | 0.1− | 0.0 |
| 2003 12 28 | 691 | 0.0 | 0.3+ | 2005 05 16 | G96 | 0.1− | 0.1− | 2006 11 03 | G96 | 0.1− | 0.1− |
| 2003 12 28 | 691 | 0.6+ | 0.1+ | 2005 05 16 | G96 | 0.2− | 0.3− | 2006 11 03 | G96 | 0.0 | 0.1+ |
| 2003 12 28 | 691 | 0.2+ | 0.5+ | 2005 05 16 | G96 | 0.6− | 0.2− | 2006 11 03 | G96 | 0.2+ | 0.2+ |
| 2005 03 12 | G96 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.8− | 0.1− | 2006 11 03 | G96 | 0.1− | 0.3+ |
| 2005 03 12 | G96 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 03 | G96 | 0.1− | 0.2+ |
| 2005 03 12 | G96 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | (1.6+ | 0.8−) |
| 2005 03 12 | G96 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 11 | 703 | 1.4+ | 0.7− |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.2+ | 0.6+ |
| 2005 04 02 | G96 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.3− | 1.3− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2005 04 02 | G96 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 1.1+ | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.9+ | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2005 04 07 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2005 04 07 | 691 | 0.3+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2005 04 07 | 691 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 14 | 701 | 0.3+ | 0.2+ |
| 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 683 | (0.7− | 1.8−) | 2006 11 14 | 701 | 0.1+ | 0.5+ |
| 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 683 | 1.0+ | 1.2− | 2006 11 14 | 701 | 0.1+ | 0.1+ |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 683 | (2.7+ | 0.1+) | 2006 11 14 | 701 | 0.1+ | 0.0 |
| 2005 05 04 | E12 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.8− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2005 05 04 | E12 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.7− | 0.2+ | 2006 11 17 | 703 | (1.5− | 0.7−) |
| 2005 05 04 | E12 | 0.5− | 0.2− | 2006 10 22 | 691 | 0.5− | 0.4+ | 2006 11 17 | 703 | 1.1− | 0.5− |
| 2005 05 04 | E12 | 0.4− | 0.2+ | 2006 10 27 | 683 | 0.9+ | 0.5+ | 2006 11 17 | 703 | (2.5− | 3.9−) |
| 2005 05 07 | G96 | 0.1− | 0.0 | 2006 10 27 | 683 | (1.7+ | 2.6+) | 2006 11 25 | 703 | 0.6− | 0.7+ |
| 2005 05 07 | G96 | 0.1+ | 0.1− | 2006 10 27 | 683 | 0.3+ | 0.1+ | 2006 11 25 | 703 | 1.4− | 0.5− |
| 2005 05 07 | G96 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.4+ | 1.3+ |
| 2005 05 07 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 1.5− | 1.1+ | 2006 11 25 | 703 | 0.7+ | 0.3+ |

**(145085)∗ 2005 GY$_{53}$ = 1998 UR$_{10}$ = 2002 TY$_{216}$**

Discovered 2005 Apr. 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 77089)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.06934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23357559 | $\omega$ | 221.63539 | | −0.47286550 | | +0.87992309 |
| $a$ | 2.6112658 | $\Omega$ | 20.27764 | | −0.76910979 | | −0.38659930 |
| $e$ | 0.1562502 | $i$ | 7.65914 | | −0.42996319 | | −0.27618170 |
| $P$ | 4.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 691 | 0.7+ | 0.3− | 2005 04 12 | 704 | 0.8+ | 0.5+ | 2005 05 19 | 644 | 0.2− | 0.0 |
| 1998 10 16 | 691 | 0.8+ | 0.2− | 2005 04 12 | 704 | 0.5+ | 0.4+ | 2006 08 18 | 691 | 0.1− | 0.0 |
| 1998 10 16 | 691 | 0.2− | 0.2− | 2005 04 12 | 704 | 0.2− | 1.1+ | 2006 08 18 | 691 | 0.0 | 0.0 |
| 1998 10 24 | 691 | 0.4− | 0.1+ | 2005 04 18 | 703 | 1.0− | 0.1− | 2006 08 18 | 691 | 0.1− | 0.2− |
| 1998 10 24 | 691 | 0.3− | 0.1− | 2005 04 18 | 703 | 0.7− | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 1998 10 24 | 691 | 0.5− | 0.2− | 2005 04 18 | 703 | 0.7− | 0.2− | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 2002 10 07 | 644 | 0.2+ | 1.4+ | 2005 04 18 | 703 | 0.6− | 1.0− | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2002 10 07 | 644 | 0.1+ | 1.4+ | 2005 05 06 | 703 | 0.3− | 0.9− | 2006 09 18 | 703 | 1.3− | 0.4+ |
| 2002 10 07 | 644 | (0.2+ | 1.7+) | 2005 05 06 | 703 | (2.1+ | 1.0−) | 2006 09 18 | 703 | 0.0 | 0.8+ |
| 2002 10 08 | 291 | 0.1− | 0.4+ | 2005 05 06 | 703 | 0.5+ | 1.2− | 2006 09 18 | 703 | 0.3− | 0.4− |
| 2002 10 08 | 291 | 0.1− | 0.2+ | 2005 05 06 | 703 | 1.3− | 0.9+ | 2006 09 18 | 703 | 0.6− | 0.8+ |
| 2002 10 08 | 291 | 0.0 | 0.1+ | 2005 05 08 | E12 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.6+ | 0.4+ |
| 2004 01 16 | 691 | 0.1+ | 0.5+ | 2005 05 08 | E12 | 0.4− | 0.2+ | 2006 09 18 | 699 | (0.4− | 1.7+) |
| 2004 01 16 | 691 | 0.0 | 0.4+ | 2005 05 08 | E12 | 0.3+ | 0.3+ | 2006 09 18 | 699 | (0.7+ | 2.1+) |
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2005 05 08 | E12 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.4+ |
| 2005 04 04 | 704 | 0.5+ | 1.1+ | 2005 05 10 | 699 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2005 04 04 | 704 | 1.0+ | 0.2− | 2005 05 10 | 699 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2005 04 04 | 704 | 0.8+ | 0.1+ | 2005 05 10 | 699 | 0.4+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2005 04 07 | 704 | 1.4+ | 0.6+ | 2005 05 10 | 699 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2005 04 07 | 704 | 0.7+ | 0.3+ | 2005 05 11 | 807 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2005 04 07 | 704 | 0.3+ | 0.2+ | 2005 05 11 | 807 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2005 04 07 | 704 | 0.2+ | 1.2+ | 2005 05 19 | 644 | 0.6+ | 0.4− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2005 04 12 | 704 | 0.9+ | 0.4+ | 2005 05 19 | 644 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.3− |

**(145086)∗ 2005 GC$_{54}$**

Discovered 2005 Apr. 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.20472 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22225439 | $\omega$ | 254.06074 | | +0.34894707 | | +0.93586383 |
| $a$ | 2.6992047 | $\Omega$ | 36.48083 | | −0.82525778 | | +0.33161103 |
| $e$ | 0.2171495 | $i$ | 4.72130 | | −0.44405579 | | +0.11913448 |
| $P$ | 4.43 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1− | 0.1− | 2005 05 05 | 568 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 11 13 | 644 | 0.3− | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2002 11 13 | 644 | 0.2− | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2002 11 24 | 644 | 0.3− | 1.3+ | 2005 05 08 | G96 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.4+ |
| 2002 11 24 | 644 | 0.6− | 1.2+ | 2005 05 08 | G96 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 11 24 | 644 | 0.9− | 0.9+ | 2005 06 01 | 699 | 0.7+ | 0.6− | 2006 10 15 | 703 | 0.8− | 0.3+ |
| 2002 12 27 | 644 | 0.1+ | 0.7+ | 2005 06 01 | 699 | (1.6+ | 0.2−) | 2006 10 15 | 703 | 0.8− | 0.2+ |
| 2002 12 27 | 644 | 0.2+ | 1.1+ | 2005 06 01 | 699 | 0.8+ | 0.8+ | 2006 10 15 | 703 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 27 | 644 | 0.1+ | 1.0+ | 2005 06 01 | 699 | (1.8+ | 0.9−) | 2006 10 15 | 703 | 0.2− | 0.2+ |
| 2004 01 26 | 699 | 0.0 | 0.7− | 2005 07 05 | 644 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2004 01 26 | 699 | (2.0+ | 0.9−) | 2005 07 05 | 644 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2004 01 26 | 699 | 0.3+ | 0.3+ | 2005 07 05 | 644 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2004 01 26 | 699 | 0.2− | 0.4+ | 2006 09 14 | 703 | 1.0+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2005 04 04 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.9+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2005 04 04 | 704 | 0.3− | 0.8+ | 2006 09 14 | 703 | 0.3− | 0.8− | 2006 10 21 | 703 | (0.4+ | 1.5+) |
| 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.3+ |
| 2005 04 04 | G96 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.5+ |
| 2005 04 04 | 704 | 0.7+ | 0.7+ | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.8+ |
| 2005 04 04 | G96 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2005 04 04 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2005 04 07 | 704 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2005 04 07 | 704 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2005 04 07 | 704 | 0.2− | 0.7+ | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 04 12 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2005 04 12 | 691 | 0.2+ | 0.6+ | 2006 09 20 | 644 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 04 12 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 704 | 0.1− | 1.0+ | 2006 09 20 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2005 04 12 | 691 | 0.0 | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2005 04 12 | 704 | 0.1+ | 0.8+ | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2005 04 12 | 704 | 0.7+ | 0.9+ | 2006 09 27 | 704 | 0.4− | 0.5+ | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2005 04 12 | 704 | 0.8+ | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.3− | 2006 11 06 | 644 | 0.0 | 0.4+ |
| 2005 04 18 | 704 | (0.1− | 2.4+) | 2006 09 27 | 704 | 0.2− | 0.2+ | 2006 11 06 | 644 | 0.4− | 0.5+ |
| 2005 04 18 | 704 | 0.7+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2005 04 18 | 704 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.5+ |
| 2005 04 18 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.9+ |
| 2005 04 18 | 608 | 0.9+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2005 04 18 | 608 | 1.3+ | 0.9+ | 2006 10 01 | 704 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2005 04 18 | 608 | 1.2+ | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2005 05 04 | 568 | 0.1+ | 0.7+ | 2006 10 01 | 704 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2005 05 04 | 568 | 0.1+ | 0.7+ | 2006 10 01 | 704 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2005 05 04 | 568 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 | | | | |

**(145087)∗ 2005 GK$_{54}$ = 1996 SE$_6$**

Discovered 2005 Apr. 5 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 77090)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.21874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29830164 | $\omega$ | 136.80162 | | +0.84224469 | +0.53889676 | |
| $a$ | 2.2183614 | $\Omega$ | 190.61867 | | −0.51371343 | +0.79406243 | |
| $e$ | 0.1934042 | $i$ | 4.55504 | | −0.16346985 | +0.28116746 | |
| $P$ | 3.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 18 | 327 | 0.6+ | 0.8+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1996 09 18 | 327 | 0.1− | 1.0− | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 1996 09 18 | 327 | 0.6− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 1996 09 21 | 327 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.4− |
| 1996 09 21 | 327 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 1996 09 21 | 327 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2003 12 22 | 704 | (0.7− | 1.7−) | 2006 09 27 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.4− |
| 2003 12 22 | 704 | 0.5− | 0.3− | 2006 09 27 | 704 | 0.2+ | 1.0+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.8+ | 0.0 | 2006 09 27 | 704 | 0.6− | 0.6− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 0.4− | 0.9− | 2006 09 27 | 704 | 0.7+ | 0.8− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | (1.8+ | 0.1+) | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 28 | 704 | 0.1− | 0.7+ |
| 2005 03 12 | 695 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 28 | 704 | 0.9− | 0.5+ |
| 2005 03 12 | 695 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 28 | 704 | 0.2− | 0.7+ |
| 2005 03 13 | 703 | (0.3+ | 1.6−) | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 10 28 | 704 | (0.7− | 2.4+) |
| 2005 03 13 | 703 | 0.7− | 0.9− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2005 03 13 | 703 | 1.3+ | 1.0+ | 2006 09 30 | 703 | 0.6+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2005 03 13 | 703 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.4− |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2006 10 01 | 683 | (2.2+ | 0.5−) | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2005 04 02 | G96 | 0.3− | 0.1− | 2006 10 01 | 683 | 1.5+ | 1.1− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2005 04 02 | G96 | 0.3− | 0.2− | 2006 10 01 | 683 | 1.3+ | 1.0+ | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 10 04 | 683 | 1.2+ | 1.0+ | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 10 04 | 683 | (0.4− | 2.1+) | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 1.2− | 1.3− |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.4− | 1.0+ |
| 2005 04 05 | G96 | 0.1− | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.2+ | 1.0+ |
| 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2005 04 07 | G96 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2005 04 07 | G96 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2005 04 07 | G96 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.5+ |
| 2005 04 07 | G96 | 0.9+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.4+ | 0.1+ |
| 2005 05 06 | G96 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.7− |
| 2005 05 06 | G96 | 0.2− | 0.3− | 2006 10 15 | 691 | 1.0− | 0.9+ | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2005 05 06 | G96 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.8+ | 0.5− |
| 2005 05 06 | G96 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.1+ |
| 2006 08 30 | 699 | 1.3− | 0.1− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.8+ |
| 2006 08 30 | 699 | 1.0− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.0 |
| 2006 08 30 | 699 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.8− | 0.1− |
| 2006 08 30 | 699 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2006 09 20 | 699 | 0.9+ | 0.9− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1− | 0.3+ |
| 2006 09 20 | 699 | 1.2+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 1.7+ |
| 2006 09 20 | 699 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2006 09 20 | 699 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.4− | 0.6+ |
| 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | | | | |

**(145088)∗ 2005 GW$_{54}$ = 2006 OC$_3$**

Discovered 2005 Apr. 5 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 103688)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.76757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25865708 | $\omega$ | 14.73786 | | +0.99354058 | +0.11308656 | |
| $a$ | 2.4396066 | $\Omega$ | 338.76205 | | −0.10656548 | +0.90131198 | |
| $e$ | 0.2230040 | $i$ | 1.48854 | | −0.03899894 | +0.41814847 | |
| $P$ | 3.81 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 695 | 0.4+ | 0.5+ | 2005 05 08 | G96 | 0.5− | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.0 |
| 2001 03 26 | 695 | 0.3+ | 0.6+ | 2005 05 08 | G96 | 0.0 | 0.2− | 2006 08 15 | 644 | 0.3+ | 0.0 |
| 2003 12 22 | 704 | 0.0 | 0.7+ | 2005 05 08 | G96 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 1.1+ | 0.1− | 2006 06 03 | G96 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.2− |
| 2003 12 22 | 704 | 0.9+ | 0.3+ | 2006 06 03 | G96 | 0.8+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2003 12 29 | 691 | 0.3− | 0.3+ | 2006 06 03 | G96 | 0.5− | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.0 |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 06 03 | G96 | 0.8− | 0.2− | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2003 12 29 | 691 | 0.2− | 0.1+ | 2006 07 19 | 644 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 07 19 | 644 | 0.3− | 0.2+ | 2006 08 20 | 644 | 0.2+ | 0.0 |
| 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 07 19 | 644 | 0.3− | 0.8+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2004 01 27 | 691 | 0.2− | 0.1− | 2006 07 19 | D35 | 0.2− | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 2005 04 05 | G96 | 0.2+ | 0.1+ | 2006 07 19 | D35 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2005 04 05 | G96 | 0.1+ | 0.2+ | 2006 07 19 | D35 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2005 04 05 | G96 | 0.1+ | 0.1+ | 2006 07 20 | D35 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.1+ |
| 2005 04 05 | G96 | 0.8+ | 0.0 | 2006 07 20 | D35 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.5− | 0.3− |
| 2005 04 07 | G96 | 0.1+ | 0.0 | 2006 07 20 | D35 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2005 04 07 | G96 | 0.2+ | 0.9− | 2006 07 28 | D35 | 0.6− | 0.2− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2005 04 07 | G96 | 0.0 | 0.1+ | 2006 07 28 | D35 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.3+ |
| 2005 04 07 | G96 | 0.1+ | 0.4+ | 2006 07 28 | D35 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 2005 05 08 | G96 | 1.0− | 0.2− | 2006 08 15 | 644 | 0.1+ | 0.1+ | | | | |

**(145089)∗ 2005 GY$_{59}$**

Discovered 2005 Apr. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.05343 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36921917 | $\omega$ | 233.02548 | | +0.44196019 | −0.89360493 | |
| $a$ | 1.9243315 | $\Omega$ | 191.55725 | | +0.89576246 | +0.44429713 | |
| $e$ | 0.0699096 | $i$ | 23.02654 | | +0.04775781 | −0.06379876 | |
| $P$ | 2.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.0 | 0.3+ | 2005 04 09 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 1.1+ | 0.5− |
| 1995 10 15 | 691 | 0.3− | 0.4− | 2005 04 13 | 704 | 0.7+ | 0.4− | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 1995 10 15 | 691 | 0.3+ | 0.2− | 2005 04 13 | 704 | 0.5+ | 0.2− | 2006 09 18 | 703 | (1.7+ | 0.4+) |
| 2003 07 20 | 644 | 0.1+ | 0.8+ | 2005 04 13 | 704 | 0.9− | 0.2− | 2006 09 30 | 703 | 0.8− | 0.4+ |
| 2003 07 20 | 644 | 0.2+ | 0.8+ | 2005 04 13 | 704 | 0.3+ | 0.8− | 2006 09 30 | 703 | 0.8+ | 0.5− |
| 2003 07 20 | 644 | 0.0 | 0.7+ | 2005 04 13 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.2+ |
| 2003 08 29 | 608 | 0.3− | 0.7+ | 2005 04 13 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.5+ |
| 2003 08 29 | 608 | 0.9− | 1.1+ | 2005 04 13 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.8− |
| 2003 08 29 | 608 | 0.1+ | 0.4+ | 2005 04 13 | 704 | (1.6− | 0.2−) | 2006 10 17 | 703 | 0.4− | 0.7− |
| 2003 09 20 | 691 | 0.2+ | 0.2+ | 2005 04 14 | 704 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2003 09 20 | 691 | 0.2+ | 0.5+ | 2005 04 14 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.4− |
| 2003 09 20 | 691 | 0.3+ | 0.5+ | 2005 04 14 | 704 | 0.1− | 0.5− | 2006 10 28 | 703 | 0.5+ | 0.3+ |
| 2003 10 17 | 645 | 0.0 | 0.1− | 2005 04 14 | 704 | 0.5+ | 0.7+ | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2003 10 17 | 645 | 0.1− | 0.1− | 2005 04 15 | 699 | 0.5+ | 0.3+ | 2006 10 28 | 703 | 0.7+ | 0.1+ |
| 2003 10 18 | 645 | 0.1− | 0.1− | 2005 04 15 | 699 | 1.0− | 1.0+ | 2006 10 28 | 703 | (1.2− | 1.6−) |
| 2003 10 18 | 645 | 0.1− | 0.1− | 2005 04 15 | 699 | 0.3+ | 0.4+ | 2006 11 01 | 703 | 0.9− | 0.2+ |
| 2005 03 13 | 703 | 0.2− | 0.3+ | 2005 04 15 | 699 | 0.2+ | 0.2+ | 2006 11 01 | 703 | 0.1+ | 1.2+ |
| 2005 03 13 | 703 | 1.1+ | 0.2− | 2005 04 30 | 699 | 0.1− | 0.2− | 2006 11 01 | 703 | 0.5+ | 0.4+ |
| 2005 03 13 | 703 | 0.5− | 0.7+ | 2005 04 30 | 699 | 0.4+ | 0.5+ | 2006 11 01 | 703 | 0.3+ | 0.5+ |
| 2005 03 13 | 703 | 0.4− | 0.7+ | 2005 04 30 | 699 | 1.0+ | 1.3+ | 2006 11 06 | 644 | 0.3− | 0.3− |
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2005 04 30 | 699 | 0.8+ | 0.3+ | 2006 11 06 | 644 | 0.5− | 0.2+ |
| 2005 03 17 | 691 | 0.1+ | 0.2− | 2005 05 08 | 703 | 0.7− | 0.1− | 2006 11 06 | 644 | 0.3− | 0.4+ |
| 2005 03 17 | 691 | 0.1− | 0.1+ | 2005 05 08 | 703 | 1.4− | 0.1− | 2006 11 19 | 703 | 0.8+ | 1.0+ |
| 2005 04 05 | 703 | (0.3+ | 2.3+) | 2005 05 08 | 703 | (2.1− | 0.1+) | 2006 11 19 | 703 | 0.7+ | 0.8+ |
| 2005 04 05 | 703 | (1.2− | 1.9+) | 2005 05 08 | 703 | 0.5− | 0.7+ | 2006 11 19 | 703 | 0.4− | 1.1+ |
| 2005 04 05 | 703 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.2− | 2006 11 19 | 703 | 0.4− | 1.4+ |
| 2005 04 05 | 703 | 0.9− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.8+ | 2006 11 24 | 703 | 0.5+ | 1.0+ |
| 2005 04 09 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 11 24 | 703 | 0.1− | 0.1− |
| 2005 04 09 | 704 | 0.1− | 0.9− | 2006 08 28 | 703 | 1.3− | 0.5+ | 2006 11 24 | 703 | 0.2− | 0.1− |
| 2005 04 09 | 704 | 0.2− | 1.0+ | 2006 09 18 | 703 | 0.5− | 0.6− | 2006 11 24 | 703 | 0.3− | 0.1− |

**(145090)∗ 2005 GF$_{60}$ = 1998 QE$_{27}$**

Discovered 2005 Apr. 9 by the Siding Spring Survey at Siding Spring.

Id. T. B. Spahr (*MPO* 77097)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.78967 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37624532 | $\omega$ | 128.47577 | | +0.08412016 | −0.97148026 | |
| $a$ | 1.9002992 | $\Omega$ | 315.08913 | | +0.78818341 | +0.20099471 | |
| $e$ | 0.1192012 | $i$ | 18.30147 | | +0.60966442 | −0.12580630 | |
| $P$ | 2.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 704 | 0.7+ | 0.8− | 2002 02 08 | 704 | (2.1− | 0.4+) | 2006 09 19 | 704 | 0.3+ | 0.3+ |
| 1998 08 24 | 704 | 0.7+ | 0.1− | 2002 02 08 | 704 | 1.4− | 0.1+ | 2006 09 19 | 704 | 0.3− | 0.2+ |
| 1998 08 24 | 704 | (2.3− | 1.9−) | 2002 02 08 | 704 | 1.4− | 0.9+ | 2006 09 25 | 703 | 0.9+ | 1.0+ |
| 1998 08 24 | 704 | 1.5− | 0.5+ | 2005 03 05 | E12 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.3+ |
| 1998 08 27 | 704 | 1.8+ | 0.8− | 2005 03 05 | E12 | 0.3+ | 0.1+ | 2006 09 25 | 703 | 0.2− | 0.9+ |
| 1998 08 27 | 704 | 0.1+ | 0.9+ | 2005 03 05 | E12 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.6+ | 0.4− |
| 1998 08 27 | 704 | 1.2+ | 0.2+ | 2005 03 05 | E12 | 0.1+ | 0.7+ | 2006 10 02 | 704 | (0.5+ | 3.7+) |
| 1998 08 27 | 704 | 0.3− | 1.2+ | 2005 03 18 | E12 | 0.1+ | 0.3− | 2006 10 02 | 703 | 0.4− | 0.4− |
| 1998 09 19 | 704 | 1.5− | 1.2− | 2005 03 18 | E12 | 0.1+ | 0.1+ | 2006 10 02 | 704 | 0.3− | 0.9+ |
| 1998 09 19 | 704 | 1.3− | 0.3+ | 2005 03 18 | E12 | 0.9+ | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.6− |
| 1998 09 19 | 704 | 1.2− | 0.3+ | 2005 03 18 | E12 | 0.3+ | 0.3+ | 2006 10 02 | 703 | 0.7− | 0.8− |
| 1998 09 19 | 704 | 0.0 | 1.5+ | 2005 04 09 | E12 | 0.1− | 0.4+ | 2006 10 02 | 703 | 0.1+ | 0.4− |
| 1998 09 19 | 704 | (3.0− | 1.8+) | 2005 04 09 | E12 | 0.2− | 0.5+ | 2006 10 02 | 704 | 0.4+ | 0.3− |
| 2001 09 28 | 704 | 0.5− | 0.3+ | 2005 04 09 | E12 | 0.2− | 0.7− | 2006 10 02 | 704 | (1.6− | 0.2+) |
| 2001 09 28 | 704 | 0.1− | 1.0− | 2005 04 09 | E12 | 0.8+ | 0.1− | 2006 10 02 | 703 | 0.6− | 0.1+ |
| 2001 09 28 | 704 | (0.5+ | 1.8−) | 2005 04 10 | E12 | 0.1+ | 0.1− | 2006 10 02 | 703 | 0.3− | 0.2+ |
| 2001 11 27 | 704 | 0.7+ | 0.9− | 2005 04 10 | E12 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.0 |
| 2001 11 27 | 704 | 0.1+ | 0.8+ | 2005 04 10 | E12 | 0.3+ | 0.6+ | 2006 10 02 | 703 | 0.3− | 0.1+ |
| 2001 11 27 | 704 | 0.8+ | 0.5+ | 2005 04 10 | E12 | 0.0 | 0.4+ | 2006 10 17 | 704 | 0.5+ | 1.3+ |
| 2001 11 27 | 704 | 1.2+ | 0.5+ | 2006 08 10 | 941 | 0.0 | 0.3− | 2006 10 17 | 704 | 0.3+ | 0.1+ |
| 2001 12 23 | 704 | 0.4+ | 0.1+ | 2006 08 10 | 941 | 0.1− | 0.5− | 2006 10 17 | 704 | 0.5+ | 0.2− |
| 2001 12 23 | 704 | 0.1+ | 0.4+ | 2006 08 10 | 941 | 0.3− | 0.6− | 2006 10 23 | 703 | (1.8+ | 1.4+) |
| 2001 12 23 | 704 | 0.0 | 0.1+ | 2006 08 10 | 941 | 0.4− | 0.5− | 2006 10 23 | 703 | 0.8+ | 0.4+ |
| 2001 12 23 | 704 | 0.0 | 0.4+ | 2006 08 10 | 941 | 0.3− | 0.4− | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2001 12 23 | 704 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.5− | 0.9− | 2006 10 23 | 703 | 0.3− | 0.4+ |
| 2002 01 07 | 704 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.1− | 0.7+ | 2006 11 21 | 703 | 0.5+ | 0.3− |
| 2002 01 07 | 704 | 0.3− | 0.7− | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 11 21 | 703 | 0.2+ | 0.3− |
| 2002 01 07 | 704 | 0.6− | 1.2− | 2006 09 19 | 704 | 0.3− | 0.3+ | 2006 11 21 | 703 | 0.2− | 0.2− |
| 2002 02 08 | 704 | (2.4− | 0.1−) | 2006 09 19 | 704 | 0.0 | 0.4− | 2006 11 21 | 703 | 0.6− | 0.5+ |
| 2002 02 08 | 704 | (1.7− | 0.2+) | 2006 09 19 | 704 | 0.2− | 0.3+ | | | | |

**(145091)∗ 2005 GM$_{64}$ = 1998 KA$_{52}$**

Discovered 2005 Apr. 2 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.86483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27135487 | $\omega$ | 166.16692 | | +0.20786467 | +0.94820076 | |
| $a$ | 2.3628943 | $\Omega$ | 115.37526 | | −0.92083127 | +0.27252896 | |
| $e$ | 0.2357666 | $i$ | 15.41899 | | −0.32994251 | −0.16322770 | |
| $P$ | 3.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 23 | 704 | 0.1+ | 0.0 | 2002 08 21 | 644 | 0.1+ | 0.2+ | 2005 04 17 | 703 | 0.4− | 0.5+ |
| 1998 05 23 | 704 | 0.9+ | 0.1+ | 2002 09 26 | 704 | (1.8− | 0.7+) | 2005 04 17 | 703 | 0.5+ | 0.5− |
| 1998 05 23 | 704 | 0.5+ | 1.3− | 2002 09 26 | 704 | 0.0 | 0.6− | 2005 04 30 | 703 | (3.1+ | 1.7+) |
| 1998 05 23 | 704 | (1.1− | 4.1−) | 2002 09 26 | 704 | 0.8+ | 0.7− | 2005 04 30 | 703 | 0.7− | 1.3− |
| 1998 05 23 | 704 | 1.8− | 0.9− | 2005 03 04 | 703 | 0.1+ | 0.2+ | 2005 04 30 | 703 | 0.2− | 0.0 |
| 1998 05 26 | 704 | 0.9+ | 1.0− | 2005 03 04 | 703 | 0.2− | 0.1− | 2005 04 30 | 703 | (1.1− | 2.0−) |
| 1998 05 26 | 704 | 0.2+ | 0.8+ | 2005 03 04 | 703 | 0.1− | 0.2+ | 2005 05 10 | 704 | (1.8+ | 0.7−) |
| 1998 05 26 | 704 | (2.3+ | 0.1−) | 2005 03 04 | 703 | 0.6− | 0.6− | 2005 05 10 | 704 | 0.8+ | 0.8+ |
| 1998 05 26 | 704 | 0.1− | 1.1− | 2005 03 08 | 704 | 0.1+ | 0.5+ | 2005 05 10 | 704 | 0.6+ | 0.3− |
| 1998 05 26 | 704 | 0.7− | 0.8+ | 2005 03 08 | 704 | (0.8+ | 1.5+) | 2005 05 10 | 704 | 0.1− | 0.3− |
| 1998 06 03 | 704 | 1.8+ | 0.8+ | 2005 03 08 | 704 | (2.2+ | 1.0−) | 2005 05 16 | 703 | 1.2− | 0.7+ |
| 1998 06 03 | 704 | 0.4− | 0.8+ | 2005 03 08 | 704 | (2.1+ | 0.3+) | 2005 05 16 | 703 | 0.2+ | 1.2+ |
| 1998 06 03 | 704 | 0.8− | 0.5− | 2005 03 15 | 703 | 0.2+ | 0.3− | 2005 05 16 | 703 | 0.5+ | 0.3+ |
| 1998 06 03 | 704 | 0.8− | 1.0+ | 2005 03 15 | 703 | 0.6− | 0.8− | 2005 05 16 | 703 | 0.1− | 0.4− |
| 1998 06 03 | 704 | (4.9− | 2.6+) | 2005 03 15 | 703 | (1.6− | 0.8+) | 2006 09 28 | 703 | 0.3+ | 0.2− |
| 1998 06 19 | 704 | 0.1− | 0.5+ | 2005 03 15 | 703 | 0.7− | 0.3− | 2006 09 28 | 703 | 0.8+ | 1.5− |
| 1998 06 19 | 704 | (2.2− | 1.1−) | 2005 04 02 | 703 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.7− | 0.0 |
| 1998 06 19 | 704 | 0.0 | 0.3− | 2005 04 02 | 703 | 0.6+ | 0.3− | 2006 09 28 | 703 | 0.3+ | 0.9− |
| 1998 06 19 | 704 | (1.6+ | 2.6−) | 2005 04 02 | 703 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.7+ |
| 2002 08 13 | 704 | 0.0 | 0.7+ | 2005 04 02 | 703 | 0.3+ | 0.7− | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2002 08 13 | 704 | 0.5+ | 0.8− | 2005 04 09 | 703 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1+ | 1.0− |
| 2002 08 13 | 704 | 0.1− | 0.1− | 2005 04 09 | 703 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2002 08 13 | 704 | 0.1− | 0.2+ | 2005 04 09 | 703 | 1.0− | 1.2+ | 2006 11 17 | 703 | (1.7− | 0.4+) |
| 2002 08 13 | 704 | 0.2− | 0.5+ | 2005 04 09 | 703 | 0.2− | 0.7+ | 2006 11 17 | 703 | 0.3+ | 0.7+ |
| 2002 08 21 | 644 | 0.1− | 0.1+ | 2005 04 17 | 703 | 1.5+ | 0.8− | 2006 11 17 | 703 | 0.5− | 1.2+ |
| 2002 08 21 | 644 | 0.4− | 0.1+ | 2005 04 17 | 703 | 0.7+ | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.8+ |

**(145092)∗ 2005 GR$_{66}$**

Discovered 2005 Apr. 2 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.26644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28069093 | $\omega$ | 129.91556 | | +0.82259960 | +0.56779732 | |
| $a$ | 2.3102047 | $\Omega$ | 195.56579 | | −0.55027866 | +0.78135491 | |
| $e$ | 0.1423907 | $i$ | 6.54695 | | −0.14325955 | +0.25901874 | |
| $P$ | 3.51 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.1− | 0.9+ | 2006 09 17 | 704 | (1.6+ | 0.1−) | 2006 10 17 | G96 | 0.2− | 0.4− |
| 1998 04 21 | 704 | 1.0− | 0.0 | 2006 09 17 | 704 | 0.8+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | (0.4− | 2.2−) | 2006 09 17 | 704 | (1.8+ | 0.3−) | 2006 10 17 | G96 | 0.1− | 0.3− |
| 1998 04 21 | 704 | (2.3− | 1.3+) | 2006 09 17 | 704 | 0.2+ | 1.3+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 1999 10 10 | 704 | 0.5− | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.0 |
| 1999 10 10 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.7+ |
| 1999 10 10 | 704 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 1999 10 10 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− |
| 1999 10 10 | 704 | 0.2+ | 1.0+ | 2006 09 20 | 704 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2006 09 20 | 704 | 1.0+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2006 09 20 | 704 | 1.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.5+ | 1.1− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2005 03 10 | G96 | 0.5− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2005 03 10 | G96 | 0.4− | 0.1+ | 2006 09 21 | 683 | 0.5− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 09 21 | 683 | 1.2+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.1− | 0.3+ | 2006 09 21 | 683 | (0.1− | 1.6+) | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 22 | 683 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2006 09 22 | 683 | 0.7+ | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2005 04 02 | G96 | 0.2− | 0.3+ | 2006 09 22 | 683 | (1.7+ | 0.7+) | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2005 04 09 | 691 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.3− | 2006 10 23 | 704 | (0.6− | 1.6+) |
| 2005 04 09 | 691 | 0.3+ | 0.5+ | 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 704 | 0.5+ | 1.5+ |
| 2005 04 09 | 691 | 0.2+ | 0.7+ | 2006 09 24 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 704 | 0.6+ | 1.1− |
| 2005 04 11 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 683 | 0.9+ | 1.0+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2005 04 11 | 691 | 0.2+ | 0.4+ | 2006 09 25 | 683 | (1.1+ | 1.7+) | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 683 | 0.8+ | 1.2+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2005 04 11 | 699 | 0.3− | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2005 04 11 | 699 | 0.1− | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.6+ | 0.4+ |
| 2005 04 11 | 699 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.9+ |
| 2005 04 11 | 699 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 13 | 703 | 1.0+ | 1.0+ |
| 2005 04 18 | 691 | 0.5+ | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.7+ | 2006 11 13 | 703 | 0.7+ | 0.0 |
| 2005 04 18 | 691 | 0.3+ | 0.7+ | 2006 09 27 | 704 | 0.3− | 0.9+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2005 05 08 | 691 | 0.0 | 0.6+ | 2006 09 27 | 704 | 0.4+ | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2005 05 08 | 691 | 0.4+ | 0.8+ | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2005 05 08 | 691 | 0.1− | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2006 08 12 | 644 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.8− | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2006 08 12 | 644 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2006 08 12 | 644 | 0.3− | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.8+ | 2006 11 18 | G96 | 0.4+ | 0.1+ |
| 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 10 03 | 704 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.6− | 0.4+ |
| 2006 08 12 | 644 | 0.3− | 0.3− | 2006 10 03 | 704 | 0.4+ | 1.4+ | 2006 11 20 | 704 | 0.1− | 0.4− |
| 2006 08 12 | 644 | 0.3− | 0.1− | 2006 10 03 | 704 | 0.3+ | 1.0+ | 2006 11 20 | 704 | 0.5− | 0.7+ |
| 2006 08 30 | 699 | 0.5− | 0.2− | 2006 10 03 | 704 | 0.6+ | 1.2+ | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2006 08 30 | 699 | 1.2+ | 0.2− | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.4− | 0.5+ |
| 2006 08 30 | 699 | 0.2− | 1.2+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.4− | 0.4+ |
| 2006 08 30 | 699 | 0.5+ | 1.0− | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 21 | 691 | 0.3− | 0.4+ |

**(145093)∗ 2005 GS$_{73}$ = 1996 FS$_6$ = 2002 TZ$_{303}$**

Discovered 2005 Apr. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77105)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.83990 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22849976 | $\omega$ | 82.94806 | | −0.23610443 | +0.97125374 |
| $a$ | 2.6497946 | $\Omega$ | 173.16490 | | −0.96144008 | −0.22895874 |
| $e$ | 0.0828811 | $i$ | 14.77246 | | −0.14102367 | −0.06514651 |
| $P$ | 4.31 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 18 | 691 | 0.9+ | 0.6+ | 2005 05 06 | 704 | (1.8− | 0.0 ) | 2006 09 17 | 704 | 0.4+ | 0.3− |
| 1996 03 18 | 691 | 0.8+ | 0.4+ | 2005 05 06 | 704 | 0.7+ | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.1+ |
| 1996 03 18 | 691 | 0.7+ | 0.2+ | 2005 05 11 | 703 | 1.0− | 0.8+ | 2006 09 17 | 704 | 0.5+ | 0.0 |
| 1996 03 26 | 691 | 0.6− | 0.4− | 2005 05 11 | 703 | 1.3− | 0.4+ | 2006 09 17 | 704 | 0.6+ | 0.1− |
| 1996 03 26 | 691 | 1.0− | 0.5− | 2005 05 11 | 703 | 1.3− | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.3− |
| 1996 03 26 | 691 | 0.8− | 0.4− | 2005 05 11 | 703 | 0.1− | 0.8− | 2006 09 17 | 704 | 0.1− | 0.2+ |
| 2002 10 04 | 645 | 0.1+ | 0.1+ | 2005 05 13 | 704 | 1.0+ | 0.2− | 2006 09 17 | 703 | 0.7− | 1.3− |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2005 05 13 | 704 | 0.9+ | 0.7+ | 2006 09 17 | 703 | 0.4− | 0.5− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 05 13 | 704 | 1.1+ | 0.9+ | 2006 09 20 | 699 | 0.6− | 1.0+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 05 13 | 704 | 1.1+ | 0.5+ | 2006 09 20 | 699 | 0.4+ | 0.4− |
| 2002 10 15 | 644 | 0.4− | 0.7+ | 2005 05 30 | 703 | (2.0+ | 1.0−) | 2006 09 20 | 699 | 0.0 | 1.3− |
| 2002 10 15 | 644 | 0.3− | 0.7+ | 2005 05 30 | 703 | 0.2+ | 0.1− | 2006 09 20 | 699 | 0.3− | 0.2− |
| 2002 10 15 | 644 | 0.3− | 0.5+ | 2005 05 30 | 703 | 0.2+ | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2005 02 09 | 691 | 0.0 | 0.1+ | 2005 05 30 | 703 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2005 02 09 | 691 | 0.5+ | 0.1− | 2006 07 26 | A50 | 0.5+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2005 02 09 | 691 | 0.3− | 0.0 | 2006 07 27 | A50 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2005 04 04 | 703 | 0.5− | 0.1− | 2006 07 27 | A50 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2005 04 04 | 703 | 0.1− | 1.2+ | 2006 08 27 | 699 | (1.6+ | 0.2+) | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2005 04 04 | 703 | 0.4+ | 0.3+ | 2006 08 27 | 699 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2005 04 04 | 703 | 0.8− | 0.8− | 2006 08 27 | 699 | 0.5+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2005 04 07 | 699 | (2.7+ | 0.4−) | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2005 04 07 | 699 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 10 16 | G96 | 0.3− | 0.1+ |
| 2005 04 07 | 699 | 0.0 | 0.9− | 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.5+ | 0.1+ |
| 2005 04 07 | 699 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2005 04 09 | 704 | 0.5+ | 0.3− | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 04 09 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2005 04 09 | 704 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2005 04 09 | 704 | 0.2+ | 0.1− | 2006 08 30 | 704 | (0.7− | 1.7+) | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2005 04 13 | 703 | 0.8− | 0.2− | 2006 08 30 | 704 | (1.5+ | 3.0−) | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2005 04 13 | 703 | (0.7− | 1.6+) | 2006 09 11 | 703 | 0.7− | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2005 04 13 | 703 | 1.0− | 0.5+ | 2006 09 11 | 703 | (0.6+ | 1.8+) | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2005 04 13 | 703 | 0.3− | 0.2− | 2006 09 11 | 703 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2005 05 04 | 703 | 0.2+ | 0.4− | 2006 09 11 | 703 | 1.4− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2005 05 04 | 703 | 0.6− | 0.6− | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2005 05 04 | 703 | 0.3+ | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2005 05 04 | 703 | 0.6− | 0.9− | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.2− | 0.5− |
| 2005 05 06 | 704 | 0.1+ | 0.9− | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2005 05 06 | 704 | 0.4− | 1.0+ | 2006 09 16 | 644 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.4+ | 0.0 |
| 2005 05 06 | 704 | 0.6+ | 0.8+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.9− |

**(145094)∗ 2005 GW$_{73}$ = 2004 BB$_{60}$**

Discovered 2005 Apr. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77105)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.84601 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22948161 | $\omega$ | 147.89421 | | +0.11509619 | +0.98345662 |
| $a$ | 2.6422310 | $\Omega$ | 128.32971 | | −0.94492511 | +0.15182540 |
| $e$ | 0.0971864 | $i$ | 10.27150 | | −0.30638113 | −0.09880350 |
| $P$ | 4.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.2+ | 1.2+ | 2005 04 04 | 703 | 0.5+ | 1.1+ | 2005 06 23 | 644 | 0.2+ | 0.4+ |
| 2001 06 15 | 704 | (0.9+ | 2.1+) | 2005 04 09 | 704 | (1.6+ | 0.8+) | 2005 06 23 | 644 | 0.0 | 0.4+ |
| 2001 06 15 | 704 | 0.0 | 0.4+ | 2005 04 09 | 704 | 1.2+ | 0.7+ | 2005 06 23 | 644 | 0.2+ | 0.3+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2005 04 09 | 704 | (0.4+ | 1.5+) | 2006 09 18 | 703 | 0.5+ | 0.5+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2005 04 09 | 704 | (1.6+ | 1.7+) | 2006 09 18 | 703 | 0.3+ | 0.4+ |
| 2002 10 30 | 704 | (5.8− | 1.5+) | 2005 04 18 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 0.1− | 0.1− |
| 2002 10 30 | 704 | 1.3− | 0.7+ | 2005 04 18 | 704 | 0.4+ | 1.3+ | 2006 09 18 | 703 | 0.4− | 0.5− |
| 2002 10 30 | 704 | 0.6− | 0.1− | 2005 04 18 | 704 | 1.2+ | 0.9+ | 2006 09 26 | 703 | 0.3− | 1.3+ |
| 2003 12 22 | 691 | 0.2− | 0.1+ | 2005 04 18 | 704 | 0.8+ | 0.9+ | 2006 09 26 | 703 | 1.3− | 0.2− |
| 2003 12 22 | 691 | 0.2− | 0.1+ | 2005 05 04 | 703 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 1.0+ |
| 2003 12 22 | 691 | 0.1− | 0.2+ | 2005 05 04 | 703 | 1.3− | 0.6+ | 2006 09 26 | 703 | 0.4− | 1.2+ |
| 2004 01 15 | 691 | 0.5− | 0.3+ | 2005 05 04 | 703 | 0.2− | 0.1+ | 2006 10 02 | 703 | 1.0+ | 0.3+ |
| 2004 01 15 | 691 | 0.2− | 0.4+ | 2005 05 04 | 703 | 1.1− | 0.0 | 2006 10 02 | 703 | 0.3+ | 0.7+ |
| 2004 01 15 | 691 | 0.2− | 0.3+ | 2005 05 06 | 704 | 1.0+ | 0.9+ | 2006 10 02 | 703 | 1.0− | 1.0+ |
| 2004 01 21 | 704 | 0.5+ | 0.5+ | 2005 05 06 | 704 | 0.7+ | 0.1+ | 2006 10 02 | 703 | 0.1+ | 0.5+ |
| 2004 01 21 | 704 | 0.8+ | 0.9+ | 2005 05 06 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2004 01 21 | 704 | 1.4+ | 0.7+ | 2005 05 06 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2004 01 24 | 704 | 0.5+ | 1.1− | 2005 05 11 | 703 | 0.7− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2004 01 24 | 704 | 0.1+ | 0.7− | 2005 05 11 | 703 | 0.7− | 0.2+ | 2006 10 12 | 644 | 0.6− | 0.1+ |
| 2004 01 24 | 704 | (1.1− | 2.2+) | 2005 05 11 | 703 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.8+ | 0.1− |
| 2004 01 24 | 704 | (2.1− | 1.0+) | 2005 05 11 | 703 | 0.8− | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2004 01 24 | 704 | (1.8− | 0.5+) | 2005 05 13 | 683 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.7+ |
| 2004 01 27 | 691 | 0.3+ | 0.4+ | 2005 05 13 | 683 | 0.8+ | 0.0 | 2006 10 12 | 644 | 0.7− | 0.3+ |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2005 05 13 | 683 | 1.5+ | 1.0− | 2006 10 12 | 644 | 0.0 | 0.6+ |
| 2004 01 27 | 691 | 0.3+ | 0.2+ | 2005 06 03 | 699 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2005 04 04 | 703 | 0.7+ | 0.4+ | 2005 06 03 | 699 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.7+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 703 | 0.4− | 0.4+ | 2005 06 03 | 699 | 1.0− | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.0 | |
| 2005 04 04 | 703 | 0.1+ | 0.2+ | 2005 06 03 | 699 | 0.3+ | 0.6− | | | | | |

**(145095)∗ 2005 $GB_{74}$**

Discovered 2005 Apr. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.73337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18438183 | $\omega$ | 101.83365 | | −0.20906643 | +0.97112290 | |
| $a$ | 3.0572008 | $\Omega$ | 155.17717 | | −0.96945682 | −0.19041093 | |
| $e$ | 0.1263225 | $i$ | 15.89001 | | −0.12823689 | −0.14374975 | |
| $P$ | 5.35 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 18 | 557 | 0.2+ | 0.1+ | 2005 05 19 | 703 | 0.7+ | 0.1− | 2006 08 20 | 644 | 0.1− | 0.0 | |
| 1999 03 18 | 557 | 0.1− | 0.9+ | 2005 05 19 | 703 | 1.1− | 0.5− | 2006 08 21 | 644 | 0.0 | 0.0 | |
| 2004 01 24 | 704 | 0.2+ | 0.6+ | 2005 05 19 | 703 | 0.4+ | 0.5− | 2006 08 21 | 644 | 0.2− | 0.1− | |
| 2004 01 24 | 704 | 0.2− | 0.4− | 2005 05 19 | 703 | 0.7− | 0.1− | 2006 08 21 | 644 | 0.1− | 0.0 | |
| 2004 01 24 | 704 | 0.5− | 0.5+ | 2005 06 08 | 699 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.1+ | |
| 2004 01 24 | 704 | 0.0 | 1.2+ | 2005 06 08 | 699 | 1.2+ | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.1− | |
| 2004 02 17 | 291 | 0.0 | 0.3+ | 2005 06 08 | 699 | 0.0 | 0.8+ | 2006 08 22 | 644 | 0.3− | 0.2+ | |
| 2004 02 17 | 291 | 0.1− | 0.5+ | 2005 06 08 | 699 | (1.6+ | 1.6+) | 2006 08 28 | 691 | 0.1− | 0.4+ | |
| 2004 02 17 | 291 | 0.1− | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.7+ | |
| 2004 02 26 | 704 | 0.9+ | 0.6− | 2006 08 13 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.3+ | |
| 2004 02 26 | 704 | 0.3+ | 0.4− | 2006 08 13 | 644 | 0.9+ | 0.2+ | 2006 08 28 | 703 | (4.9− | 0.5+) | |
| 2004 02 26 | 704 | 0.4+ | 0.5− | 2006 08 16 | A50 | 0.0 | 0.0 | 2006 08 28 | 703 | (1.6− | 3.2+) | |
| 2005 04 04 | 703 | 0.4− | 0.0 | 2006 08 16 | A50 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.5− | |
| 2005 04 04 | 703 | 0.1− | 0.4− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.1+ | |
| 2005 04 04 | 703 | 0.3+ | 0.6− | 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 08 29 | 704 | 0.9+ | 0.3− | |
| 2005 04 04 | 703 | 0.2+ | 0.4− | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 08 29 | 704 | 0.2+ | 0.1− | |
| 2005 04 08 | 704 | 0.9+ | 0.1− | 2006 08 19 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 704 | 0.4− | 0.9+ | |
| 2005 04 08 | 704 | 0.9+ | 0.4− | 2006 08 19 | 691 | 0.6− | 0.5− | 2006 09 14 | 703 | 0.1+ | 0.5− | |
| 2005 04 08 | 704 | 0.6+ | 0.2+ | 2006 08 19 | 699 | (1.3+ | 2.1+) | 2006 09 14 | 703 | 0.3+ | 0.5− | |
| 2005 04 08 | 704 | 0.7+ | 0.5− | 2006 08 19 | 691 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.2+ | |
| 2005 04 13 | 703 | 0.4− | 0.3− | 2006 08 19 | 699 | 0.8+ | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.4+ | |
| 2005 04 13 | 703 | 0.3− | 0.0 | 2006 08 19 | 644 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.0 | |
| 2005 04 13 | 703 | 0.4− | 0.3+ | 2006 08 19 | 644 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2− | |
| 2005 04 13 | 703 | 1.1− | 0.5+ | 2006 08 19 | 699 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1− | |
| 2005 05 03 | 703 | 0.5− | 0.8+ | 2006 08 19 | 644 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1− | |
| 2005 05 03 | 703 | 0.3+ | 0.3+ | 2006 08 19 | 644 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1− | |
| 2005 05 03 | 703 | 0.1− | 0.2− | 2006 08 19 | 644 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.2− | |
| 2005 05 03 | 703 | (1.1− | 1.9−) | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− | |
| 2005 05 13 | 704 | 1.0− | 0.9+ | 2006 08 19 | 699 | 0.0 | 0.4− | 2006 09 30 | G96 | 0.3− | 0.3− | |
| 2005 05 13 | 704 | 0.3+ | 0.8+ | 2006 08 20 | 644 | 0.1− | 0.0 | | | | | |
| 2005 05 13 | 704 | (2.2+ | 0.8−) | 2006 08 20 | 644 | 0.0 | 0.1+ | | | | | |

**(145096)∗ 2005 $GP_{74}$ = 1998 $FX_{141}$**

Discovered 2005 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 77106)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.95727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28623762 | $\omega$ | 328.74829 | | −0.99880281 | −0.04382567 | |
| $a$ | 2.2802628 | $\Omega$ | 208.76395 | | +0.04871812 | −0.93127310 | |
| $e$ | 0.0401964 | $i$ | 2.58840 | | −0.00441463 | −0.36167626 | |
| $P$ | 3.44 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.7+ | 0.0 | 2005 04 12 | 704 | 0.8+ | 0.5− | 2006 09 19 | 699 | 0.8+ | 1.2+ | |
| 1998 03 29 | 704 | 0.2+ | 0.4+ | 2005 04 12 | 704 | 0.7+ | 0.5− | 2006 09 19 | 703 | 0.5− | 0.5− | |
| 1998 03 29 | 704 | 0.3− | 0.6+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.2− | 1.1+ | |
| 1998 03 29 | 704 | 0.5− | 0.7+ | 2005 04 17 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 699 | (0.5− | 2.1+) | |
| 1998 04 01 | 704 | 0.9− | 1.6+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.8− | 0.4+ | |
| 1998 04 01 | 704 | 0.4+ | 0.4− | 2005 05 08 | 703 | 0.4− | 0.6− | 2006 09 19 | 699 | 0.1− | 0.1+ | |
| 1998 04 01 | 704 | (3.3+ | 2.0+) | 2005 05 08 | 703 | 1.0− | 0.8− | 2006 09 28 | G96 | 0.3− | 0.2− | |
| 1998 04 01 | 704 | 1.0+ | 1.0− | 2005 05 08 | 703 | 1.1− | 0.6− | 2006 09 28 | G96 | 0.3− | 0.0 | |
| 2003 10 20 | 691 | 0.1− | 0.4+ | 2005 05 08 | 703 | 1.2− | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.2− | |
| 2003 10 20 | 691 | 0.2− | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.2− | |
| 2003 10 20 | 691 | 0.2− | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.4− | |
| 2003 11 16 | 691 | 0.0 | 0.4+ | 2005 05 08 | G96 | 0.6− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2− | |
| 2003 11 16 | 691 | 0.1+ | 0.2+ | 2005 05 08 | G96 | 0.8− | 0.3− | 2006 10 19 | G96 | 0.1− | 0.4− | |
| 2003 11 16 | 691 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.0 | |
| 2005 04 05 | 699 | 0.8+ | 0.0 | 2005 06 13 | G96 | 0.7− | 0.1+ | 2006 10 20 | 291 | 0.3+ | 0.6+ | |
| 2005 04 05 | 699 | (1.9+ | 0.3+) | 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 10 20 | 291 | 0.4+ | 0.6+ | |
| 2005 04 05 | 699 | (1.6+ | 0.9+) | 2005 06 13 | G96 | 0.3+ | 0.2+ | 2006 10 20 | 291 | 0.3+ | 0.6+ | |
| 2005 04 05 | 699 | (2.7+ | 1.0+) | 2006 08 28 | 703 | 0.5− | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.0 | |
| 2005 04 09 | 691 | 0.4+ | 0.5+ | 2006 08 28 | 703 | 0.3+ | 1.0− | 2006 10 20 | G96 | 0.4− | 0.2+ | |
| 2005 04 09 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.9− | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.3− | |
| 2005 04 09 | 691 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.5− | 0.8− | 2006 10 20 | G96 | 0.2− | 0.2− | |
| 2005 04 11 | 699 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.1+ | |
| 2005 04 11 | 699 | 0.0 | 1.4+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.2− | |
| 2005 04 11 | 699 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− | |
| 2005 04 11 | 699 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.3+ | 2006 11 21 | G96 | 1.0+ | 1.2− | |
| 2005 04 12 | 704 | (0.2− | 1.5−) | 2006 09 19 | 703 | 0.5− | 0.3+ | | | | | |

**(145097)∗ 2005 $GU_{74}$ = 2002 $LJ_{54}$ = 2005 $GL_{180}$**

Discovered 2005 Apr. 5 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 77106)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.18328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29226200 | $\omega$ | 212.90548 | | −0.01933470 | +0.99757745 | |
| $a$ | 2.2488189 | $\Omega$ | 56.07056 | | −0.89902821 | +0.01189707 | |
| $e$ | 0.1481110 | $i$ | 4.61944 | | −0.43746366 | −0.06853977 | |
| $P$ | 3.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.0 | 0.2− | 2005 04 05 | 704 | 0.4− | 0.9− | 2006 09 30 | G96 | 0.1− | 0.1− | |
| 1996 11 17 | 691 | 0.2+ | 0.1− | 2005 04 05 | 704 | (0.6+ | 2.1+) | 2006 09 30 | 703 | 0.7− | 0.0 | |
| 1996 11 17 | 691 | 0.2+ | 0.3− | 2005 04 09 | 704 | 0.7− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.0 | |
| 2002 06 13 | 644 | 0.1− | 0.2+ | 2005 04 09 | 704 | (0.6− | 1.6+) | 2006 09 30 | 703 | 0.5+ | 1.3+ | |
| 2002 06 13 | 644 | 0.1− | 0.0 | 2005 04 09 | 704 | 0.4+ | 0.7+ | 2006 09 30 | 703 | (1.6− | 1.1+) | |
| 2002 06 13 | 644 | 0.1− | 0.3+ | 2005 04 09 | 704 | (0.4− | 1.8+) | 2006 09 30 | 703 | 0.5− | 1.0+ | |
| 2002 06 17 | 644 | 0.6+ | 0.5+ | 2005 04 09 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.9− | |
| 2002 06 17 | 644 | 0.0 | 0.1+ | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | (0.7+ | 3.1+) | |
| 2002 06 17 | 644 | 0.2+ | 0.9+ | 2005 04 12 | 691 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.1+ | |
| 2002 07 06 | 644 | 0.1+ | 0.1+ | 2005 04 12 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.4+ | |
| 2002 07 06 | 644 | 0.1− | 0.3− | 2005 04 13 | 704 | 0.9+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− | |
| 2002 07 19 | 644 | 0.6− | 0.2+ | 2005 04 13 | 704 | 0.5+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.0 | |
| 2002 07 19 | 644 | 0.5− | 0.0 | 2005 04 13 | 704 | 0.7+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.0 | |
| 2002 07 19 | 644 | 0.2− | 0.3+ | 2005 04 13 | 704 | 1.0+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.1− | |
| 2003 11 29 | 691 | 0.0 | 0.1+ | 2005 04 13 | 704 | 0.8+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | |
| 2003 11 29 | 691 | 0.4− | 0.1+ | 2005 04 18 | 703 | 0.7− | 0.7+ | 2006 10 18 | 691 | 0.7+ | 0.6+ | |
| 2003 11 29 | 691 | 0.0 | 0.1+ | 2005 04 18 | 703 | 0.6+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.5+ | |
| 2003 12 22 | 704 | 0.2+ | 0.7+ | 2005 04 18 | 703 | 0.7+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.4+ | |
| 2003 12 22 | 704 | 0.1+ | 0.8+ | 2005 04 18 | 703 | 0.0 | 1.2− | 2006 10 20 | 691 | 0.4− | 0.4+ | |
| 2003 12 22 | 704 | 0.2− | 0.4− | 2005 04 19 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.4+ | |
| 2003 12 22 | 704 | 0.7+ | 0.2− | 2005 04 19 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3− | |
| 2005 04 01 | 691 | 0.2+ | 0.5+ | 2005 04 19 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.6+ | |
| 2005 04 01 | 691 | 0.4+ | 0.4+ | 2005 05 07 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2005 04 01 | 691 | 0.8+ | 0.2− | 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.1+ | |
| 2005 04 05 | 704 | 1.5− | 0.1+ | 2005 05 07 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.2+ | |
| 2005 04 05 | 703 | 1.4− | 1.2− | 2005 05 08 | 703 | 1.0− | 0.6− | 2006 10 22 | 691 | 0.4− | 0.4+ | |
| 2005 04 05 | 704 | 1.2+ | 1.0+ | 2005 05 08 | 703 | 0.6+ | 0.6− | 2006 10 31 | G96 | 0.2+ | 0.0 | |
| 2005 04 05 | 703 | 0.2+ | 0.2− | 2005 05 08 | 703 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.0 | |
| 2005 04 05 | 703 | 1.0− | 0.4− | 2005 05 08 | 703 | 0.4− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.1+ | |
| 2005 04 05 | 704 | (1.7+ | 0.2+) | 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1+ | |
| 2005 04 05 | 703 | 1.3− | 1.1− | 2006 09 30 | G96 | 0.2+ | 0.2− | | | | | |

**(145098)∗ 2005 $GJ_{86}$**

Discovered 2005 Apr. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.69465 | | (2000.0) | | −0.03232606 | +0.99265706 |
| $n$ | 0.21012072 | $\omega$ | 218.21369 | | −0.87565056 | +0.02809830 |
| $a$ | 2.8021420 | $\Omega$ | 50.24897 | | −0.48186214 | −0.11765395 |
| $e$ | 0.1837545 | $i$ | 8.72031 | | | |
| $P$ | 4.69 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 22 | 644 | 0.0 | 0.1+ | 2005 04 04 | 703 | 0.1− | 0.2− | 2005 05 12 | 691 | 0.3− | 0.0 | |
| 2001 06 22 | 644 | 0.2− | 0.2− | 2005 04 04 | 703 | 0.6− | 0.1− | 2006 08 14 | 644 | 0.2− | 0.1+ | |
| 2001 06 22 | 644 | 0.3+ | 0.4− | 2005 04 04 | 703 | 0.2− | 0.7− | 2006 08 14 | 644 | 0.3− | 0.4+ | |
| 2001 07 18 | 644 | 0.2− | 0.2+ | 2005 04 04 | 703 | 0.0 | 0.8+ | 2006 08 14 | 644 | 0.1− | 0.0 | |
| 2001 07 18 | 644 | 0.4− | 0.4+ | 2005 04 11 | 704 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.1− | |
| 2001 07 18 | 644 | 0.2− | 0.1− | 2005 04 11 | 704 | 0.6− | 0.9+ | 2006 08 16 | 644 | 0.1− | 0.2+ | |
| 2002 11 07 | 699 | 1.7− | 1.2+ | 2005 04 11 | 704 | 1.1+ | 0.0 | 2006 08 16 | 644 | 0.6− | 0.0 | |
| 2002 11 07 | 699 | 0.2+ | 0.6+ | 2005 04 12 | 704 | 0.4− | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.2+ | |
| 2002 11 07 | 699 | (3.3− | 1.4+) | 2005 04 12 | 704 | 0.1+ | 0.9+ | 2006 08 18 | 644 | 0.2− | 0.2+ | |
| 2002 11 07 | 699 | (20.8− | 16.5+) | 2005 04 12 | 704 | 0.1− | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.0 | |
| 2002 11 11 | 291 | 0.4− | 0.7+ | 2005 04 12 | 704 | 0.8+ | 1.2+ | 2006 08 24 | 644 | 0.4− | 0.1+ | |
| 2002 11 11 | 291 | 0.0 | 0.6+ | 2005 04 12 | 704 | 0.5+ | 0.4+ | 2006 08 24 | 644 | 0.4− | 0.0 | |
| 2002 11 11 | 291 | 0.4+ | 0.6+ | 2005 04 13 | 704 | 1.7+ | 0.7+ | 2006 08 24 | 644 | 0.3− | 0.2+ | |
| 2003 12 18 | 691 | 0.4− | 0.0 | 2005 04 13 | 704 | 0.3+ | 0.4+ | 2006 08 28 | E12 | 0.3+ | 0.4− | |
| 2003 12 18 | 691 | 0.3− | 0.0 | 2005 04 13 | 704 | 1.1+ | 0.3− | 2006 08 28 | E12 | 0.2− | 0.6+ | |
| 2003 12 18 | 691 | 0.0 | 0.2+ | 2005 04 13 | 704 | 0.4+ | 0.3− | 2006 08 28 | E12 | 0.9+ | 0.6+ | |
| 2005 03 10 | 703 | 0.1− | 1.2+ | 2005 04 13 | 704 | 0.3+ | 0.4+ | 2006 08 28 | E12 | 0.2− | 0.2+ | |
| 2005 03 10 | 703 | 0.8− | 0.6+ | 2005 04 13 | 704 | 0.1+ | 0.7− | 2006 09 14 | 644 | 0.2+ | 0.2+ | |
| 2005 03 10 | 703 | 0.3+ | 0.8+ | 2005 04 13 | 704 | 0.4+ | 1.0+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | |
| 2005 03 10 | 703 | 1.4− | 0.7− | 2005 04 13 | 704 | 0.5+ | 1.4+ | 2006 09 14 | 644 | 0.2− | 0.0 | |
| 2005 03 10 | 683 | 0.4− | 0.1− | 2005 04 14 | 704 | 0.7+ | 0.2+ | 2006 09 20 | 703 | 0.4− | 1.3+ | |
| 2005 03 10 | 683 | 0.1− | 0.2− | 2005 04 14 | 704 | 0.3+ | 0.5− | 2006 09 20 | 703 | 0.5− | 0.2− | |
| 2005 03 10 | 683 | 1.0− | 1.0− | 2005 04 14 | 704 | 0.6+ | 0.3− | 2006 09 20 | 703 | 0.6− | 0.2+ | |
| 2005 03 18 | 704 | 2.0+ | 0.4− | 2005 04 14 | 704 | 0.4− | 0.2− | 2006 09 20 | 703 | 0.1− | 0.3+ | |
| 2005 03 18 | 704 | 0.2+ | 0.6+ | 2005 04 14 | 704 | 0.0 | 1.6+ | 2006 09 26 | 703 | 0.2− | 0.1+ | |
| 2005 03 18 | 703 | 0.9+ | 1.2− | 2005 05 02 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.6− | |
| 2005 03 18 | 704 | 0.9− | 0.6+ | 2005 05 02 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.5+ | |
| 2005 03 18 | 703 | 0.8− | 0.2+ | 2005 05 02 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 1.3+ | 1.6+ | |
| 2005 03 18 | 703 | 0.1+ | 1.7− | 2005 05 12 | 691 | 0.0 | 0.2+ | | | | | |
| 2005 03 18 | 703 | 0.9+ | 0.2− | 2005 05 12 | 691 | 0.1− | 0.2+ | | | | | |

**(145099)∗ 2005 GX$_{87}$ = 1996 AA$_{17}$**

Discovered 2005 Apr. 5 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 77117)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 87.01377 | | (2000.0) | | −0.31040939 | +0.94969657 |
| $n$ | 0.23796147 | $\omega$ | 349.75550 | | −0.86917057 | −0.30122782 |
| $a$ | 2.5790808 | $\Omega$ | 262.15128 | | −0.38495264 | −0.08566345 |
| $e$ | 0.0854962 | $i$ | 2.40110 | | | |
| $P$ | 4.14 | $H$ | 16.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.1+ | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.0 | 0.1+ | |
| 1996 01 13 | 691 | 0.1+ | 0.1− | 2005 03 17 | G96 | 0.1+ | 0.1− | 2005 05 01 | 644 | 0.3+ | 0.1+ | |
| 1996 01 13 | 691 | 0.1− | 0.1− | 2005 03 17 | G96 | 0.1+ | 0.2+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | |
| 1996 01 26 | 691 | 0.1+ | 1.7+ | 2005 03 17 | G96 | 0.0 | 0.1− | 2005 05 06 | 703 | 0.4− | 0.7− | |
| 1996 01 26 | 691 | 0.2+ | 0.3− | 2005 03 17 | G96 | 0.4− | 0.1− | 2005 05 06 | 703 | 0.4− | 0.1+ | |
| 1996 01 26 | 691 | 0.7+ | 0.2− | 2005 04 05 | 699 | 0.8+ | 0.6+ | 2005 05 06 | 703 | 0.3− | 0.5+ | |
| 1999 12 15 | 691 | 0.2− | 0.2− | 2005 04 05 | 699 | 0.2+ | 0.2− | 2005 05 06 | 703 | 0.8− | 0.2+ | |
| 1999 12 15 | 691 | 0.2− | 0.3− | 2005 04 05 | 699 | (0.6− | 1.8+) | 2005 05 09 | 699 | 0.4+ | 0.0 | |
| 1999 12 15 | 691 | 0.8− | 0.1− | 2005 04 05 | 699 | 0.3+ | 0.0 | 2005 05 09 | 699 | 0.5− | 1.0− | |
| 2001 04 26 | 699 | (0.6− | 1.9−) | 2005 04 11 | 691 | 0.3+ | 0.1+ | 2005 05 09 | 699 | 0.5+ | 0.1− | |
| 2001 04 26 | 699 | 0.5− | 0.6+ | 2005 04 11 | 691 | 0.3+ | 0.3+ | 2005 05 09 | 699 | 1.0+ | 0.2+ | |
| 2001 04 26 | 699 | 0.0 | 0.2− | 2005 04 11 | 691 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.2+ | |
| 2001 04 26 | 699 | 0.0 | 0.1− | 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.0 | |
| 2001 04 29 | 919 | 0.4− | 0.6+ | 2005 04 11 | 699 | 0.6+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.1+ | |
| 2001 05 24 | 699 | 0.3− | 0.4+ | 2005 04 11 | 699 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.6− | 0.0 | |
| 2001 05 24 | 699 | 0.3− | 0.1+ | 2005 04 11 | 699 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2+ | |
| 2001 05 24 | 699 | 0.2− | 0.2− | 2005 04 15 | 691 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.4+ | |
| 2001 05 24 | 699 | 0.4− | 0.0 | 2005 04 15 | 691 | 1.2− | 0.5− | 2006 11 16 | G96 | 0.4+ | 0.4+ | |
| 2002 10 31 | 645 | 0.0 | 0.2+ | 2005 04 15 | 691 | 0.5+ | 0.1+ | | | | | |

**(145100)∗ 2005 GJ$_{88}$**

Discovered 2005 Apr. 5 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 140.78053 | | (2000.0) | | −0.86601196 | +0.49847184 |
| $n$ | 0.27448678 | $\omega$ | 190.39963 | | −0.44994835 | −0.74253301 |
| $a$ | 2.3448861 | $\Omega$ | 19.64969 | | −0.21810494 | −0.44740425 |
| $e$ | 0.0642715 | $i$ | 6.72162 | | | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.2+ | 0.4+ | 2005 04 05 | G96 | 0.9− | 0.3− | 2005 04 18 | 704 | 1.1+ | 0.6+ | |
| 2002 07 06 | 644 | 0.2− | 0.1+ | 2005 04 05 | G96 | 0.8− | 0.0 | 2005 04 18 | 704 | 0.6+ | 1.1+ | |
| 2002 07 06 | 644 | 0.4+ | 0.0 | 2005 04 11 | 699 | 0.1− | 0.1+ | 2005 05 01 | 644 | 0.2− | 0.2+ | |
| 2002 08 13 | 644 | 0.0 | 0.2− | 2005 04 11 | 699 | 0.5+ | 0.5+ | 2005 05 01 | 644 | 0.2− | 0.2+ | |
| 2002 08 13 | 644 | 0.3− | 0.3− | 2005 04 11 | 699 | 1.0+ | 0.4+ | 2005 05 01 | 644 | 0.2− | 0.1+ | |
| 2002 08 13 | 644 | 0.0 | 0.4− | 2005 04 11 | 699 | 0.3− | 0.5+ | 2006 08 29 | 691 | 0.3− | 0.4+ | |
| 2003 11 20 | 691 | 0.0 | 0.3+ | 2005 04 12 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.4+ | |
| 2003 11 20 | 691 | 0.1+ | 0.3+ | 2005 04 12 | 704 | 1.4+ | 0.2− | 2006 08 29 | 691 | 0.4− | 0.6+ | |
| 2003 11 20 | 691 | 0.1− | 0.2+ | 2005 04 12 | 704 | 0.7+ | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.0 | |
| 2003 12 28 | 691 | 0.3− | 0.5+ | 2005 04 12 | 704 | 1.1+ | 0.0 | 2006 09 14 | 703 | 1.7− | 1.2+ | |
| 2003 12 28 | 691 | 0.1− | 0.4+ | 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | (2.2− | 1.0+) | |
| 2003 12 28 | 691 | 0.4− | 0.6+ | 2005 04 15 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.3+ | |
| 2005 03 13 | G96 | 0.1− | 0.3+ | 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 699 | (1.0− | 3.1+) | |
| 2005 03 13 | G96 | 0.2− | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 699 | (0.2− | 2.8+) | |
| 2005 03 13 | G96 | 0.3− | 0.0 | 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.1− | |
| 2005 03 13 | G96 | 0.0 | 0.2− | 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 1.9+ | 1.2+ | |
| 2005 04 05 | 699 | 0.3+ | 0.6− | 2005 04 18 | 704 | 1.3+ | 1.5+ | 2006 10 02 | G96 | 0.7− | 0.4+ | |
| 2005 04 05 | 699 | 0.4− | 0.1+ | 2005 04 18 | 703 | 0.9− | 0.3− | 2006 10 02 | G96 | 0.4− | 0.3+ | |
| 2005 04 05 | 699 | 0.4− | 0.1+ | 2005 04 18 | 704 | 1.7+ | 0.3+ | 2006 10 02 | G96 | 0.6− | 0.3+ | |
| 2005 04 05 | 699 | 0.1+ | 0.5+ | 2005 04 18 | 703 | 1.1− | 0.1− | 2006 10 02 | G96 | 0.7− | 0.1+ | |
| 2005 04 05 | G96 | 0.3− | 0.3− | 2005 04 18 | 703 | 1.0− | 0.4+ | | | | | |
| 2005 04 05 | G96 | 0.7− | 0.1− | 2005 04 18 | 703 | 1.0− | 0.7+ | | | | | |

**(145101)∗ 2005 GM$_{88}$ = 2002 SB$_{10}$**

Discovered 2005 Apr. 5 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77117)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.14506 | | (2000.0) | | +0.04072131 | +0.99845392 |
| $n$ | 0.22331626 | $\omega$ | 254.61026 | | −0.86286698 | +0.05423384 |
| $a$ | 2.6906414 | $\Omega$ | 17.85313 | | −0.50378800 | −0.01218418 |
| $e$ | 0.0635888 | $i$ | 7.08911 | | | |
| $P$ | 4.41 | $H$ | 16.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.4− | 0.6+ | 2005 03 10 | G96 | 0.7− | 0.2− | 2005 05 01 | 644 | 0.1− | 0.1+ | |
| 2002 09 27 | 644 | 0.3− | 0.7+ | 2005 04 05 | G96 | 0.4− | 0.2− | 2005 05 01 | 644 | 0.0 | 0.1+ | |
| 2002 09 27 | 644 | 0.5− | 0.8+ | 2005 04 05 | G96 | 0.5− | 0.1− | 2005 05 01 | 644 | 0.0 | 0.2+ | |
| 2002 09 28 | 644 | 0.4− | 0.7+ | 2005 04 05 | G96 | 0.5− | 0.1− | 2005 05 01 | 644 | 0.1+ | 0.0 | |
| 2002 09 28 | 644 | 0.4− | 0.8+ | 2005 04 05 | G96 | 0.5− | 0.2− | 2005 05 01 | 644 | 0.0 | 0.0 | |
| 2002 09 28 | 644 | 0.5− | 0.7+ | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 08 16 | E12 | 0.2+ | 0.5− | |
| 2003 12 18 | 691 | 0.2+ | 0.1− | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 08 16 | E12 | 0.7− | 0.9+ | |
| 2003 12 18 | 691 | 0.3+ | 0.0 | 2005 04 11 | 691 | 0.3+ | 0.1+ | 2006 08 16 | E12 | 0.4− | 0.7+ | |
| 2003 12 18 | 691 | 0.4+ | 0.2− | 2005 04 15 | 691 | 0.5+ | 0.4+ | 2006 08 16 | E12 | 0.4+ | 0.2+ | |
| 2003 12 27 | 691 | 0.5− | 0.4+ | 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 08 20 | 644 | 0.4− | 0.6+ | |
| 2003 12 27 | 691 | 0.0 | 0.6+ | 2005 04 15 | 691 | 0.4+ | 0.1+ | 2006 08 20 | 644 | 0.5− | 0.4+ | |
| 2003 12 27 | 691 | 0.1− | 0.8+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 08 20 | 644 | 0.4− | 0.3+ | |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 291 | 0.1+ | 0.2+ | |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 09 26 | 291 | 0.1− | 0.2+ | |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2005 05 01 | 644 | 0.3− | 0.1− | 2006 09 26 | 291 | 0.1− | 0.2+ | |

**(145102)∗ 2005 GW$_{90}$**

Discovered 2005 Apr. 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.56191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27606650 | $\omega$ | 9.28475 | | −0.47309772 | +0.87875468 | |
| $a$ | 2.3359323 | $\Omega$ | 232.50597 | | −0.81332115 | −0.46311789 | |
| $e$ | 0.1872172 | $i$ | 4.55413 | | −0.33865505 | −0.11537776 | |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 691 | 0.7+ | 0.3+ | 2003 11 26 | 691 | (2.6− | 1.2+) | 2005 05 09 | 699 | 0.0 | 0.1− |
| 1999 11 15 | 691 | 0.0 | 0.7+ | 2003 12 19 | 691 | 0.5+ | 0.3− | 2005 05 09 | 699 | 0.2− | 0.5+ |
| 1999 11 15 | 691 | 0.5+ | 0.5+ | 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2002 07 30 | 608 | (0.5+ | 1.7−) | 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.0 |
| 2002 07 30 | 608 | 0.1− | 1.1− | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.6+ |
| 2002 07 30 | 608 | 1.2− | 1.0− | 2005 04 06 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.3+ |
| 2002 08 16 | 644 | 0.3− | 0.4+ | 2005 04 06 | 691 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.4+ | 0.5+ |
| 2002 08 16 | 644 | 0.5− | 0.4+ | 2005 04 10 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 2002 08 16 | 644 | 0.0 | 0.4+ | 2005 04 10 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.3− |
| 2002 08 18 | 644 | 0.3− | 0.5+ | 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.9− | 0.5− |
| 2002 08 18 | 644 | (0.3− | 1.5+) | 2005 04 11 | 699 | 0.6+ | 1.3+ | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.6− | 0.5+ | 2005 04 11 | 699 | 1.3+ | 1.2+ | 2006 10 17 | 703 | 0.7− | 1.2− |
| 2002 08 18 | 644 | (0.4− | 1.7+) | 2005 04 11 | 699 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2002 08 18 | 644 | 0.3− | 0.9+ | 2005 04 11 | 699 | 1.0+ | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.4+ |
| 2002 08 18 | 644 | 0.0 | 1.4+ | 2005 04 15 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2002 08 26 | 644 | 0.4− | 0.1+ | 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2002 08 26 | 644 | 0.7− | 0.5+ | 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.5+ |
| 2002 08 26 | 644 | 0.8− | 0.2+ | 2005 04 18 | 703 | 0.8− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.2+ | 1.1+ | 2005 04 18 | 703 | 0.9− | 1.0+ | 2006 11 18 | 291 | 0.3− | 0.6+ |
| 2002 09 06 | 704 | 0.8− | 0.3+ | 2005 04 18 | 703 | 0.3− | 0.4+ | 2006 11 18 | 291 | 0.3− | 0.4+ |
| 2002 09 06 | 704 | 0.1+ | 0.2+ | 2005 04 18 | 703 | 0.5− | 0.3+ | 2006 11 18 | 291 | 0.1− | 0.6+ |
| 2003 11 26 | 691 | 1.3− | 0.4+ | 2005 05 09 | 699 | 0.5+ | 0.1− | | | | |
| 2003 11 26 | 691 | 1.3− | 0.9+ | 2005 05 09 | 699 | 0.3− | 0.9+ | | | | |

**(145103)∗ 2005 GC$_{96}$ = 1996 TW$_7$ = 2003 YZ$_{57}$**

Discovered 2005 Apr. 6 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86701)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.53906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29518061 | $\omega$ | 257.74095 | | +0.99355134 | −0.10936080 | |
| $a$ | 2.2339708 | $\Omega$ | 108.53173 | | +0.11237365 | +0.91462474 | |
| $e$ | 0.1407608 | $i$ | 1.80908 | | +0.01509601 | +0.38923232 | |
| $P$ | 3.34 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 566 | 0.8+ | 0.1+ | 2005 04 06 | 691 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1996 10 11 | 566 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.1− | 0.6− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 1996 10 11 | 566 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 1996 10 12 | 566 | 0.4− | 0.7− | 2005 04 11 | G96 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 1996 10 12 | 566 | 0.7+ | 0.3− | 2005 04 11 | G96 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 1996 10 12 | 566 | 0.5− | 0.6− | 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 02 16 | 699 | 0.2+ | 0.3− | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 02 16 | 699 | (2.7− | 0.5−) | 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.3+ |
| 2001 02 16 | 699 | (1.0+ | 2.0+) | 2006 09 16 | 704 | 1.1+ | 0.2− | 2006 10 15 | 703 | 0.6− | 0.5+ |
| 2001 02 16 | 699 | (0.8− | 2.1+) | 2006 09 16 | 704 | 0.6+ | 0.2− | 2006 10 15 | 703 | 0.1+ | 0.6+ |
| 2001 02 19 | 704 | (1.9− | 1.0+) | 2006 09 16 | 704 | 0.4+ | 0.6+ | 2006 10 15 | 703 | 0.8− | 0.2+ |
| 2001 02 19 | 704 | 0.5+ | 1.4+ | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 02 19 | 704 | 0.5+ | 0.2− | 2006 09 16 | 644 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 02 19 | 704 | 0.7− | 0.4+ | 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 02 19 | 704 | 0.3+ | 0.9+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.4− |
| 2002 06 08 | 704 | 0.9− | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2002 06 08 | 704 | (2.3+ | 0.8+) | 2006 09 17 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2002 06 08 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 06 08 | 704 | 0.7− | 0.5− | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2002 06 08 | 704 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.5+ |
| 2003 11 21 | 704 | 0.8− | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2003 11 21 | 704 | 0.0 | 0.2− | 2006 09 19 | 704 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 2003 11 21 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.6+ | 1.2+ | 2006 10 22 | 704 | 0.1− | 0.8− |
| 2003 11 21 | 704 | 1.1+ | 0.5− | 2006 09 19 | 704 | 1.0+ | 0.5+ | 2006 10 22 | 704 | 0.3+ | 1.5+ |
| 2003 12 19 | 704 | 0.4− | 0.2+ | 2006 09 19 | 704 | 1.1− | 1.0+ | 2006 10 22 | 704 | (0.5− | 2.0+) |
| 2003 12 19 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2003 12 19 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2003 12 19 | 704 | 1.1− | 0.4+ | 2006 09 20 | 644 | 0.8− | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2003 12 21 | 704 | 0.2− | 0.5+ | 2006 09 22 | 704 | 0.9− | 0.5− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2003 12 21 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.4− |
| 2003 12 21 | 704 | 0.5+ | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 1.2− |
| 2003 12 21 | 704 | 0.3− | 0.6+ | 2006 09 22 | 704 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2005 03 14 | G96 | 0.5− | 0.0 | 2006 09 27 | 704 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.5− | 1.1− |
| 2005 03 14 | G96 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2005 03 14 | G96 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2005 03 14 | G96 | 0.6− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2005 04 06 | 691 | 0.2+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2005 04 06 | 691 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | | | | |

**(145104)∗ 2005 GU$_{101}$**

Discovered 2005 Apr. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.25496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26351988 | $\omega$ | 111.73069 | | +0.69775253 | +0.71289556 | |
| $a$ | 2.4095011 | $\Omega$ | 202.99013 | | −0.70552051 | +0.66695592 | |
| $e$ | 0.2416533 | $i$ | 10.34725 | | −0.12402506 | +0.21667883 | |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 11 | 691 | 0.2− | 0.3− | 2005 03 11 | G96 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.0 |
| 1994 06 11 | 691 | 0.1+ | 0.9+ | 2005 03 11 | G96 | 1.0− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.4− |
| 1994 06 11 | 691 | 0.2+ | 0.9− | 2005 03 11 | G96 | 0.9− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.7+ |
| 2002 07 18 | 704 | 0.1− | 0.6− | 2005 04 09 | 691 | 0.9+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2002 07 18 | 704 | 0.7+ | 0.9− | 2005 04 09 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.1− | 1.1+ |
| 2002 07 18 | 704 | 0.3+ | 0.6+ | 2005 04 09 | 691 | 0.7+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2002 09 14 | 608 | 0.5+ | 0.4− | 2005 04 11 | 699 | 0.2− | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2002 09 14 | 608 | 0.2+ | 0.3− | 2005 04 11 | 699 | (1.0+ | 1.6+) | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2002 09 14 | 608 | 0.1+ | 0.2− | 2005 04 11 | 699 | (0.8+ | 1.5−) | 2006 10 22 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.7− | 1.5+ | 2005 04 11 | 699 | 0.5+ | 1.4+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 1.1− | 1.4+ | 2005 04 18 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.2− | 1.0+ | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.7− |
| 2002 10 04 | 704 | (0.5− | 1.7+) | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2002 10 04 | 704 | (1.0− | 1.6+) | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2002 10 12 | 704 | (0.8+ | 1.7+) | 2005 05 04 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.8+ | 0.9+ | 2005 05 04 | 691 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 10 12 | 704 | 0.1+ | 0.8+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 10 12 | 704 | 0.7− | 1.5+ | 2005 05 10 | G96 | 0.6− | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.2+ |
| 2002 10 12 | 704 | 1.2− | 1.5+ | 2005 05 10 | G96 | 0.7− | 0.3+ | 2006 11 19 | 703 | 0.3+ | 1.0− |
| 2002 10 28 | 608 | 0.3− | 0.7− | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.5− |
| 2002 10 28 | 608 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.3+ |
| 2002 10 28 | 608 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.2− | | | | |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.3− | | | | |

**(145105)∗ 2005 GW$_{101}$ = 1995 VX$_{18}$**

Discovered 2005 Apr. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 86702)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.56401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25603075 | $\omega$ | 272.37749 | | +0.60821720 | +0.79184783 | |
| $a$ | 2.4562617 | $\Omega$ | 35.27428 | | −0.68497632 | +0.55873366 | |
| $e$ | 0.1148365 | $i$ | 5.48667 | | −0.40109758 | +0.24656379 | |
| $P$ | 3.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 327 | 0.9+ | 0.3+ | 2005 04 01 | 699 | (0.4− | 1.7+) | 2006 09 19 | 699 | 0.3+ | 0.4+ |
| 1995 11 14 | 327 | 0.6+ | 0.7+ | 2005 04 09 | 704 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.1+ | 1.2− |
| 1995 11 14 | 327 | 0.6+ | 0.8+ | 2005 04 09 | 704 | 0.9+ | 0.1− | 2006 09 22 | 704 | 0.2− | 0.3− |
| 1995 11 15 | 327 | 1.2− | 0.0 | 2005 04 09 | 704 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.5+ | 0.2− |
| 1995 11 15 | 327 | 0.5− | 0.3+ | 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.3+ |
| 1995 11 15 | 327 | 0.7+ | 0.5+ | 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.2− |
| 2002 08 11 | 644 | 0.1+ | 0.3+ | 2005 04 11 | G96 | 0.4− | 0.2+ | 2006 09 25 | 699 | (1.7+ | 0.3−) |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.3+ |
| 2002 08 11 | 644 | 0.1+ | 0.0 | 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.9− | 1.3+ |
| 2002 08 13 | 704 | 0.6− | 0.4− | 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.4− |
| 2002 08 13 | 704 | 0.6− | 0.2− | 2005 05 04 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.4+ |
| 2002 08 13 | 704 | 0.5− | 0.0 | 2006 08 18 | 941 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.3− |
| 2002 08 13 | 704 | 0.5− | 0.3− | 2006 08 18 | 941 | 0.2+ | 0.2+ | 2006 09 26 | 704 | (0.9− | 1.7−) |
| 2002 08 13 | 704 | 0.9− | 0.3+ | 2006 08 18 | 941 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 1.1− | 0.3− |
| 2002 08 19 | 644 | 0.2+ | 0.1− | 2006 08 18 | 941 | 0.4+ | 0.1+ | 2006 09 28 | 704 | 1.0− | 1.0+ |
| 2002 08 19 | 644 | 0.4+ | 0.0 | 2006 08 23 | 704 | 0.4+ | 0.6− | 2006 09 28 | 704 | 0.1+ | 0.1+ |
| 2002 08 19 | 644 | 0.0 | 0.2− | 2006 08 23 | 704 | 0.1+ | 1.0+ | 2006 09 28 | 704 | 0.4− | 0.8+ |
| 2004 01 16 | 691 | 0.2− | 0.4+ | 2006 08 23 | 704 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.7− |
| 2004 01 16 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.7+ | 2006 09 30 | 703 | 1.2− | 0.2− |
| 2004 01 16 | 691 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2005 03 12 | 691 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 1.2− | 0.4+ | 2006 10 20 | 644 | 0.7− | 0.2− |
| 2005 03 12 | 691 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.5− | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2005 04 01 | 691 | 0.0 | 0.5+ | 2006 09 16 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 04 01 | 691 | 0.0 | 0.6+ | 2006 09 16 | 704 | 0.4+ | 0.9+ | 2006 10 20 | 291 | 0.2+ | 0.5+ |
| 2005 04 01 | 691 | 0.1+ | 0.6+ | 2006 09 16 | 704 | 0.7+ | 0.1− | 2006 10 20 | 291 | 0.3+ | 0.3+ |
| 2005 04 01 | 699 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 10 20 | 291 | 0.1+ | 0.4+ |
| 2005 04 01 | 699 | 0.7+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.1− | | | | |
| 2005 04 01 | 699 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.8− | 0.6+ | | | | |

**(145106)∗ 2005 GF$_{105}$**

Discovered 2005 Apr. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.57648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22441058 | $\omega$ | 253.22635 | | +0.71219715 | +0.69805375 | |
| $a$ | 2.6818871 | $\Omega$ | 62.43083 | | −0.60799811 | +0.66618606 | |
| $e$ | 0.1207379 | $i$ | 4.79739 | | −0.35087536 | +0.26252064 | |
| $P$ | 4.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 0.6− | 1.5+ | 2005 04 02 | 691 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 2002 10 09 | 699 | 0.1+ | 1.6+ | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 08 14 | 644 | 0.4+ | 0.0 |
| 2002 10 09 | 699 | 0.1+ | 0.1+ | 2005 04 10 | 691 | 0.3+ | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.0 |
| 2002 10 09 | 699 | 0.3+ | 0.2+ | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.1+ |
| 2002 10 30 | 644 | 1.0− | 0.1+ | 2005 04 10 | 695 | 0.3− | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.0 |
| 2002 10 30 | 644 | 1.1− | 0.3+ | 2005 04 10 | 695 | 0.2− | 0.1− | 2006 08 22 | 644 | 0.3− | 0.2+ |
| 2002 10 30 | 644 | 0.6− | 0.4− | 2005 04 11 | 699 | 0.3+ | 0.4+ | 2006 08 23 | 704 | 0.2− | 0.3+ |
| 2002 10 31 | 608 | 0.6+ | 0.7+ | 2005 04 11 | 699 | 0.4− | 1.2+ | 2006 08 23 | 704 | 0.7+ | 0.3− |
| 2002 10 31 | 608 | 0.7+ | 0.3+ | 2005 04 11 | 699 | 0.3− | 0.3− | 2006 08 23 | 704 | 0.4+ | 0.3+ |
| 2002 10 31 | 608 | 0.5+ | 0.7+ | 2005 04 11 | 699 | 0.8+ | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 1.0− | 1.2+ | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.3+ |
| 2002 11 06 | 704 | 1.5− | 0.3+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 1.4+ | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 1.7− | 0.6− |
| 2002 11 06 | 704 | 0.2− | 0.8+ | 2005 04 18 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.7− |
| 2004 01 26 | 699 | 0.4− | 1.7+ | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.1+ |
| 2004 01 26 | 699 | 0.4+ | 1.2+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.4− |
| 2004 01 26 | 699 | 0.1+ | 1.1+ | 2005 05 08 | 703 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.0 | 1.2+ |
| 2004 01 26 | 699 | 1.5+ | 0.5+ | 2005 05 08 | 703 | 0.3− | 1.3+ | 2006 09 20 | 703 | 0.1− | 0.3+ |
| 2005 03 16 | G96 | 0.3− | 0.3+ | 2005 05 08 | 703 | 1.2+ | 0.1+ | 2006 09 20 | 703 | 0.7+ | 0.0 |
| 2005 03 16 | G96 | 0.0 | 0.2− | 2005 05 08 | 703 | (2.1− | 0.0 ) | 2006 09 20 | 703 | 0.8− | 1.1+ |
| 2005 03 16 | G96 | 0.1− | 0.2− | 2005 05 09 | 699 | 0.7− | 1.1− | 2006 09 26 | 703 | 0.6− | 0.7+ |
| 2005 03 16 | G96 | 0.8− | 0.0 | 2005 05 09 | 699 | 0.7− | 1.4+ | 2006 09 26 | 703 | 0.5+ | 1.1+ |
| 2005 04 02 | 691 | 0.3+ | 0.1+ | 2005 05 09 | 699 | (2.2+ | 0.1+) | 2006 09 26 | 703 | 0.1+ | 1.4+ |
| 2005 04 02 | 691 | 0.2+ | 0.4+ | 2005 05 09 | 699 | 0.2+ | 0.6− | 2006 09 26 | 703 | 0.3− | 1.1+ |

**(145107)∗ 2005 GG$_{105}$ = 1998 HW$_{49}$**

Discovered 2005 Apr. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77127)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.04027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28547977 | $\omega$ | 22.26123 | | −0.89852440 | +0.43883930 | |
| $a$ | 2.2842966 | $\Omega$ | 183.80168 | | −0.41971923 | −0.86477857 | |
| $e$ | 0.0395773 | $i$ | 7.45297 | | −0.12841209 | −0.24408623 | |
| $P$ | 3.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.1− | 0.1− | 2005 04 10 | 691 | 0.0 | 0.4+ | 2005 05 13 | 691 | 0.2+ | 0.3+ |
| 1998 03 29 | 704 | 0.2− | 1.4+ | 2005 04 11 | 699 | 0.2− | 0.3+ | 2005 05 13 | 691 | 0.1− | 0.5+ |
| 1998 03 29 | 704 | 1.1+ | 1.1+ | 2005 04 11 | 699 | 0.1− | 0.4− | 2005 05 13 | 691 | 0.2− | 0.5+ |
| 1998 03 29 | 704 | (3.6− | 4.0+) | 2005 04 11 | 699 | 0.3− | 1.0− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 1998 04 27 | 691 | 0.4+ | 0.2− | 2005 04 11 | 699 | 0.6+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 1998 04 27 | 691 | 0.1− | 0.5− | 2005 04 13 | 704 | 1.2− | 0.4− | 2006 09 28 | 691 | 0.4− | 0.2+ |
| 1998 04 27 | 691 | 0.2+ | 0.3− | 2005 04 13 | 704 | 0.2+ | 1.4+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 1998 05 03 | 691 | 0.2− | 0.3− | 2005 04 13 | 704 | 0.1+ | 1.4+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 1998 05 03 | 691 | 0.7− | 0.6− | 2005 04 14 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 1998 05 03 | 691 | 0.1+ | 0.0 | 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | (1.3− | 1.6−) |
| 2003 11 26 | 691 | 0.1− | 0.4+ | 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | (2.4− | 0.3+) |
| 2003 11 26 | 691 | 0.6− | 0.4+ | 2005 04 15 | 699 | (1.6+ | 0.7+) | 2006 09 30 | 703 | 0.4+ | 0.6+ |
| 2003 11 26 | 691 | 0.2− | 0.4+ | 2005 04 15 | 699 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.1− | 0.8+ |
| 2003 12 22 | 691 | 0.4+ | 0.1+ | 2005 04 15 | 699 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2003 12 22 | 691 | 0.0 | 0.3+ | 2005 04 15 | 699 | 0.9+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2003 12 22 | 691 | 0.3+ | 0.4+ | 2005 04 18 | 691 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.6+ |
| 2005 04 10 | 691 | 0.2+ | 0.4+ | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2005 04 10 | 691 | 0.1+ | 0.2+ | 2005 04 18 | 691 | 0.1+ | 0.2+ | | | | |

**(145108)∗ 2005 GB$_{113}$ = 1996 CO$_{6}$**

Discovered 2005 Apr. 6 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 86705)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.67492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23303994 | $\omega$ | 110.39395 | | −0.23081654 | +0.96164661 | |
| $a$ | 2.6152657 | $\Omega$ | 145.17861 | | −0.96111901 | −0.20161399 | |
| $e$ | 0.1785199 | $i$ | 15.04120 | | −0.15157165 | −0.18597742 | |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.3− | 1.0+ | 2001 06 16 | 645 | 0.1− | 0.1− | 2006 09 17 | 699 | 0.0 | 1.3+ |
| 1996 02 10 | 691 | 0.1− | 0.1+ | 2005 04 06 | 703 | 0.3− | 0.2+ | 2006 09 17 | 699 | 0.4+ | 0.3+ |
| 1996 02 10 | 691 | 0.0 | 0.0 | 2005 04 06 | 703 | (1.7− | 0.4+) | 2006 09 17 | 699 | 0.2− | 0.1− |
| 1996 02 10 | 691 | 0.3+ | 0.1+ | 2005 04 06 | 703 | 0.3− | 0.6+ | 2006 09 17 | 699 | 0.2− | 1.2+ |
| 1996 02 16 | 691 | 0.1− | 0.1− | 2005 04 06 | 703 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.6− |
| 1996 02 16 | 691 | 0.3− | 0.8− | 2005 04 11 | 704 | 1.0+ | 0.8− | 2006 09 19 | 703 | 0.4− | 0.2+ |
| 1996 02 16 | 691 | 0.3− | 0.1− | 2005 04 11 | 704 | 1.3+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.3+ |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2005 04 11 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.7+ |
| 1998 09 25 | 645 | 0.2+ | 0.0 | 2005 04 11 | 704 | 0.2+ | 1.3+ | 2006 09 25 | 703 | 0.3+ | 0.4− |
| 2001 04 27 | 704 | 1.1+ | 0.7− | 2005 04 12 | 699 | 0.3+ | 0.1+ | 2006 09 25 | 703 | 0.4+ | 0.1− |
| 2001 04 27 | 704 | 1.2+ | 0.3− | 2005 04 12 | 699 | 0.1+ | 0.6+ | 2006 09 25 | 703 | 0.8− | 1.4− |
| 2001 04 27 | 704 | 1.1+ | 0.9+ | 2005 04 12 | 699 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.3+ | 0.3− |
| 2001 04 27 | 704 | (1.7+ | 0.3−) | 2005 04 12 | 699 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.8− | 0.3+ |
| 2001 05 23 | 704 | 0.4+ | 0.6− | 2005 05 02 | 703 | 0.0 | 0.5− | 2006 10 12 | 644 | 0.6− | 0.3− |
| 2001 05 23 | 704 | (1.9+ | 0.4−) | 2005 05 02 | 703 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.5− | 0.4+ |
| 2001 05 23 | 704 | (2.4+ | 1.5−) | 2005 05 02 | 703 | 0.7− | 0.0 | | | | |
| 2001 06 16 | 645 | 0.1− | 0.1− | 2005 05 02 | 703 | 0.4− | 0.3− | | | | |

**(145109)∗ 2005 GL$_{113}$ = 2005 JV$_{179}$**

Discovered 2005 Apr. 9 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (d, *MPO* 86705), G. V. Williams (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.68318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27197134 | $\omega$ | 65.75446 | | −0.15164969 | +0.98839091 | |
| $a$ | 2.3593224 | $\Omega$ | 195.53147 | | −0.91895454 | −0.14443478 | |
| $e$ | 0.1815060 | $i$ | 1.98227 | | −0.36403974 | −0.04713819 | |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.2+ | 0.2− | 2002 07 14 | 704 | 0.0 | 0.2+ | 2005 05 11 | G96 | 0.3+ | 0.4+ |
| 1995 10 02 | 691 | 0.3− | 0.2− | 2002 07 14 | 704 | 0.5+ | 0.7− | 2005 05 11 | G96 | 0.0 | 0.0 |
| 1995 10 02 | 691 | 0.4+ | 0.3− | 2003 12 01 | 691 | 0.3− | 0.2+ | 2005 05 11 | G96 | 0.3+ | 0.4+ |
| 1998 03 29 | 704 | 0.3− | 0.0 | 2003 12 01 | 691 | 0.0 | 0.4+ | 2005 05 11 | G96 | 0.2+ | 0.1+ |
| 1998 03 29 | 704 | 0.1+ | 1.3+ | 2003 12 01 | 691 | 0.1+ | 0.2+ | 2005 05 13 | G96 | 0.2− | 0.0 |
| 1998 03 29 | 704 | 1.5+ | 0.9+ | 2005 02 16 | 809 | 0.0 | 0.1+ | 2005 05 13 | G96 | 0.7− | 0.1+ |
| 1998 03 29 | 704 | (3.3− | 1.4+) | 2005 02 16 | 809 | 0.1− | 0.1− | 2005 05 13 | G96 | 0.4− | 0.4+ |
| 1998 04 21 | 704 | (2.3− | 0.4+) | 2005 02 16 | 809 | 0.1+ | 0.0 | 2005 05 13 | G96 | 0.5− | 0.1− |
| 1998 04 21 | 704 | 0.1− | 0.1+ | 2005 03 17 | 703 | (1.6− | 1.1−) | 2006 08 28 | 691 | 0.2− | 0.0 |
| 1998 04 21 | 704 | 1.5+ | 0.6− | 2005 03 17 | 703 | 0.2− | 1.4+ | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 1998 04 21 | 704 | 0.2+ | 0.4− | 2005 03 17 | 703 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.3− | 0.3+ |
| 1998 04 21 | 704 | 1.5− | 0.8+ | 2005 03 17 | 703 | 1.2− | 0.3+ | 2006 09 16 | 691 | 0.2− | 0.3+ |
| 2002 06 11 | 644 | 0.1− | 0.2+ | 2005 04 09 | G96 | 0.3− | 0.2− | 2006 09 16 | 691 | 0.2− | 0.4+ |
| 2002 06 11 | 644 | 0.0 | 0.1+ | 2005 04 09 | G96 | 0.2− | 0.2− | 2006 09 16 | 691 | 0.3+ | 1.2+ |
| 2002 06 11 | 644 | 0.0 | 0.1+ | 2005 04 09 | G96 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.5+ | 0.2− |
| 2002 06 16 | 644 | 0.4− | 0.6+ | 2005 04 09 | G96 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.4− | 0.6− |
| 2002 06 16 | 644 | 0.1− | 0.5+ | 2005 04 12 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.1+ |
| 2002 06 16 | 644 | 0.3− | 0.4+ | 2005 04 12 | 691 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | (1.6− | 1.2+) | 2005 04 12 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 07 05 | 704 | 0.7− | 0.3+ | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 07 05 | 704 | 0.3+ | 0.0 | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2002 07 05 | 704 | 0.5− | 0.4+ | 2005 05 04 | G96 | 0.2− | 0.0 | | | | |
| 2002 07 14 | 704 | 0.6+ | 0.2− | 2005 05 04 | G96 | 0.2− | 0.4− | | | | |

**(145110)∗ 2005 GF$_{117}$ = 2003 YJ$_{171}$**

Discovered 2005 Apr. 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86706)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.27025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26483180 | $\omega$ | 325.72362 | | +0.94474196 | +0.32639768 | |
| $a$ | 2.4015371 | $\Omega$ | 15.31430 | | −0.26897807 | +0.82492256 | |
| $e$ | 0.1263003 | $i$ | 6.62036 | | −0.18738577 | +0.46148382 | |
| $P$ | 3.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.6− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2002 07 16 | 644 | 0.3− | 0.1− | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.4+ |
| 2002 07 16 | 644 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2002 07 16 | 644 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.1− |
| 2002 07 16 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 27 | 291 | 0.5− | 0.5+ |
| 2002 07 16 | 644 | 0.1+ | 0.3− | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2002 07 29 | 644 | 0.2− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 27 | 291 | 0.2− | 0.5+ |
| 2002 07 29 | 644 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.5− | 0.0 | 2006 09 27 | 291 | 0.2− | 0.2+ |
| 2002 07 29 | 644 | 0.1+ | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.1− | 0.2− |
| 2002 08 13 | 704 | 0.8+ | 0.4+ | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 08 13 | 704 | 0.8− | 0.6+ | 2006 09 17 | 704 | 0.2+ | 0.6− | 2006 09 27 | 704 | 0.7− | 0.6+ |
| 2002 08 13 | 704 | 0.7+ | 1.3− | 2006 09 17 | 704 | 0.5− | 0.1− | 2006 09 27 | 704 | 0.4− | 0.0 |
| 2002 08 13 | 704 | 0.9+ | 1.2− | 2006 09 17 | 704 | 0.3− | 0.3− | 2006 09 28 | 704 | 0.7+ | 0.2+ |
| 2002 08 13 | 704 | (0.6+ | 2.3−) | 2006 09 17 | 704 | 0.4− | 0.5− | 2006 09 28 | 704 | 0.4− | 0.0 |
| 2002 08 19 | 644 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 09 28 | 704 | 0.1− | 0.6+ |
| 2002 08 19 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.9+ | 0.2+ | 2006 09 28 | 704 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.0 | 0.7− | 2006 09 28 | 704 | 0.7− | 0.0 |
| 2002 08 30 | 644 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.9+ | 0.6− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 08 30 | 644 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.3+ | 0.2− |
| 2002 08 30 | 644 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2003 12 18 | 691 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.8− | 0.0 |
| 2003 12 18 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.6− | 2006 10 01 | 704 | 0.1− | 1.1+ |
| 2003 12 18 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.3+ |
| 2003 12 27 | 704 | (0.1− | 1.8+) | 2006 09 19 | 703 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.1− | 0.0 |
| 2003 12 27 | 704 | (0.8+ | 1.7+) | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 10 01 | 704 | (4.5− | 2.1+) |
| 2003 12 27 | 704 | 0.4+ | 1.2+ | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2005 03 15 | G96 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2005 03 15 | G96 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2005 03 15 | G96 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 1.0+ |
| 2005 03 15 | G96 | 0.8− | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.2− | 1.4+ |
| 2005 04 11 | 691 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 1.0+ |
| 2005 04 11 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2005 04 12 | 691 | 0.2+ | 0.6+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 2005 04 12 | 691 | 0.3+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2005 04 12 | 691 | 0.3+ | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 09 24 | 291 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2005 04 15 | 691 | 0.3+ | 0.6+ | 2006 09 24 | 291 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.1− |
| 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 09 24 | 291 | 0.0 | 0.2+ | 2006 10 16 | 703 | (0.8− | 2.4+) |
| 2005 05 01 | 644 | 0.1− | 0.2+ | 2006 09 25 | 291 | 0.2+ | 0.3+ | 2006 10 16 | 703 | (1.0+ | 2.6+) |
| 2005 05 01 | 644 | 0.1− | 0.3+ | 2006 09 25 | 291 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2005 05 01 | 644 | 0.2− | 0.3+ | 2006 09 25 | 291 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.8+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.6− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.6− | 0.9+ | 2006 11 21 | 704 | 0.0 | 0.5− |
| 2006 08 23 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.3− |

**(145111)∗ 2005 GN$_{119}$**

Discovered 2005 Apr. 9 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.74857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24380612 | $\omega$ | 247.14712 | | −0.97299877 | +0.14276346 | |
| $a$ | 2.5376963 | $\Omega$ | 300.62635 | | −0.03716560 | −0.87241448 | |
| $e$ | 0.1032275 | $i$ | 12.16695 | | −0.22779839 | −0.46745221 | |
| $P$ | 4.04 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 1.0− | 1.1− | 2003 12 29 | 704 | 0.2+ | 0.9+ | 2005 06 05 | E12 | 0.1− | 0.5+ |
| 1999 12 12 | 704 | 0.1+ | 0.2+ | 2003 12 29 | 704 | 1.0+ | 0.2− | 2005 06 05 | E12 | 0.5− | 0.1+ |
| 1999 12 12 | 704 | 0.0 | 0.2− | 2003 12 29 | 704 | 1.2+ | 1.1+ | 2006 08 16 | 644 | 0.6− | 0.0 |
| 1999 12 12 | 704 | 0.4− | 0.4+ | 2005 04 09 | E12 | 0.3+ | 0.2− | 2006 08 16 | 644 | 0.3− | 0.0 |
| 2002 08 15 | 644 | 0.0 | 0.5+ | 2005 04 09 | E12 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.8− | 0.0 |
| 2002 08 15 | 644 | 0.4− | 0.4+ | 2005 04 09 | E12 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.2+ |
| 2002 08 15 | 644 | 0.1− | 1.0+ | 2005 04 09 | E12 | 0.2+ | 0.3− | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2002 09 04 | 644 | 0.0 | 0.5+ | 2005 04 12 | E12 | 0.2+ | 1.0+ | 2006 09 14 | 691 | 0.1− | 0.1+ |
| 2002 09 04 | 644 | 0.2+ | 0.7+ | 2005 04 12 | E12 | 0.3+ | 0.5+ | 2006 09 16 | 691 | 0.2− | 0.2+ |
| 2002 09 04 | 644 | 0.1+ | 0.2+ | 2005 04 12 | E12 | 0.4− | 0.1− | 2006 09 16 | 691 | 0.2− | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 04 12 | E12 | 0.2− | 0.2+ | 2006 09 16 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 11 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.3+ | 0.0 |
| 2003 12 17 | 704 | 0.6− | 1.2+ | 2005 05 11 | 644 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.2+ |
| 2003 12 17 | 704 | 0.2− | 0.8+ | 2005 05 11 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.1+ |
| 2003 12 17 | 704 | 0.3− | 0.8+ | 2005 05 12 | 644 | 0.5+ | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.2− |
| 2003 12 17 | 704 | 1.1− | 0.8+ | 2005 05 12 | 644 | 0.5+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.4− |
| 2003 12 17 | 704 | (2.1− | 0.3+) | 2005 05 12 | 644 | 0.5+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.4− |
| 2003 12 29 | 704 | 0.2− | 0.1− | 2005 06 05 | E12 | 0.4+ | 0.6+ | | | | |
| 2003 12 29 | 704 | 0.8+ | 0.1+ | 2005 06 05 | E12 | 0.1− | 0.1+ | | | | |

**(145112)∗ 2005 GK$_{121}$**

Discovered 2005 Apr. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.13334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31200956 | $\omega$ | 161.54171 | | −0.24457037 | +0.96882539 | |
| $a$ | 2.1529013 | $\Omega$ | 94.28718 | | −0.89453758 | −0.20971037 | |
| $e$ | 0.1090126 | $i$ | 2.27191 | | −0.37414949 | −0.13190496 | |
| $P$ | 3.16 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 704 | 0.2− | 0.1− | 2005 04 12 | 704 | 0.6+ | 1.0− | 2005 06 15 | G96 | 0.8− | 0.9+ |
| 2002 06 06 | 704 | 0.1+ | 0.3− | 2005 04 16 | 691 | 0.3+ | 0.0 | 2005 06 15 | G96 | 0.0 | 0.4+ |
| 2002 06 06 | 704 | 0.2− | 0.8+ | 2005 04 16 | 691 | 0.0 | 0.1+ | 2005 06 15 | G96 | 0.7− | 0.5+ |
| 2002 06 06 | 704 | 0.5+ | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2003 11 24 | 699 | 0.3+ | 0.2+ | 2005 04 16 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.3+ |
| 2003 11 24 | 699 | 0.6+ | 0.7− | 2005 04 16 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2003 11 24 | 699 | 0.1+ | 0.6− | 2005 04 16 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.4+ |
| 2003 11 24 | 699 | 0.0 | 0.4+ | 2005 05 09 | 807 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2005 05 10 | 807 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2003 12 19 | 691 | 0.1− | 0.3+ | 2005 05 10 | 807 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.3+ |
| 2003 12 19 | 691 | 0.3− | 0.0 | 2005 05 10 | 807 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3+ |
| 2005 04 05 | 703 | 0.4+ | 1.0+ | 2005 05 12 | 699 | (0.1− | 2.7+) | 2006 11 11 | 703 | 0.5+ | 0.8+ |
| 2005 04 05 | 703 | 0.4+ | 0.5+ | 2005 05 12 | 699 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2005 04 05 | 703 | (2.7− | 0.2−) | 2005 05 12 | 699 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2005 04 05 | 703 | 1.0− | 0.8− | 2005 05 12 | 699 | (2.0+ | 0.4−) | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2005 04 12 | 704 | 0.5− | 0.2+ | 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2005 04 12 | 704 | 1.3+ | 0.4− | 2005 05 14 | 644 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2005 04 12 | 704 | 0.3− | 0.2− | 2005 05 14 | 644 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.0 |
| 2005 04 12 | 704 | 0.5+ | 0.1+ | 2005 06 15 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.0 |

**(145113)∗ 2005 GH$_{123}$ = 2003 YZ$_{108}$**

Discovered 2005 Apr. 6 by Spacewatch at Kitt Peak.
Id. G. V. Williams (*MPO* 77135)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.33362 | | (2000.0) | | | |
| $n$ | 0.27466160 | $\omega$ | 212.81654 | | −0.16245680 | +0.98571188 |
| $a$ | 2.3438910 | $\Omega$ | 47.87597 | | −0.89186951 | −0.12740035 |
| $e$ | 0.0968587 | $i$ | 3.43935 | | −0.42210966 | −0.11018727 |
| $P$ | 3.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 0.3− | 0.6+ | 2005 04 06 | 691 | 0.8+ | 0.3+ | 2005 06 14 | G96 | 0.9− | 0.6+ |
| 1998 05 24 | 704 | 0.5− | 0.1− | 2005 04 06 | 691 | 0.2+ | 0.6+ | 2005 06 14 | G96 | 0.6− | 0.4+ |
| 1998 05 24 | 704 | 0.4− | 0.7− | 2005 04 06 | 691 | 1.5+ | 0.8+ | 2005 06 14 | G96 | 0.4− | 0.7+ |
| 1998 05 24 | 704 | 0.2+ | 1.5− | 2005 04 12 | 704 | 0.5+ | 0.4− | 2005 06 14 | G96 | 1.0− | 0.5+ |
| 2002 07 15 | 644 | 0.2− | 0.8+ | 2005 04 12 | 704 | 1.3+ | 0.3− | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2002 07 15 | 644 | 0.2− | 0.8+ | 2005 04 12 | 704 | 0.0 | 0.9− | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2002 07 15 | 644 | 0.4− | 0.6+ | 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 08 13 | 704 | 0.7+ | 0.8− | 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2002 08 13 | 704 | 0.3− | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.5− | 0.0 |
| 2002 08 13 | 704 | 0.9− | 1.4+ | 2005 04 18 | 703 | 0.4− | 0.4− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2002 08 13 | 704 | 1.0+ | 0.4+ | 2005 04 18 | 703 | 0.9− | 1.0+ | 2006 10 01 | 691 | 0.1+ | 0.5+ |
| 2003 12 22 | 704 | 0.2− | 0.1− | 2005 04 18 | 703 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.5+ |
| 2003 12 22 | 704 | 0.2+ | 1.0+ | 2005 04 18 | 703 | 0.6− | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 2003 12 22 | 704 | 0.3+ | 0.2+ | 2005 04 18 | 704 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2003 12 22 | 704 | (0.2+ | 1.6+) | 2005 04 18 | 704 | (2.7+ | 0.5+) | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.3− | 1.3+ | 2005 04 18 | 704 | (2.7+ | 1.4+) | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2003 12 25 | 691 | 0.3− | 0.3+ | 2005 05 04 | 568 | 0.2− | 0.6+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2003 12 25 | 691 | 0.2+ | 0.5+ | 2005 05 04 | 568 | 0.0 | 0.7+ | 2006 11 14 | G96 | 0.7− | 1.0− |
| 2003 12 25 | 691 | 0.0 | 0.2+ | 2005 05 04 | 568 | 0.1+ | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.6− |
| 2005 03 14 | G96 | 0.9− | 0.0 | 2005 05 05 | 568 | 0.6− | 0.8+ | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2005 03 14 | G96 | 0.9− | 0.2+ | 2005 05 14 | 644 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.2+ |
| 2005 03 14 | G96 | 0.6− | 0.0 | 2005 05 14 | 644 | 0.2+ | 0.1+ | | | | |
| 2005 03 14 | G96 | 0.8− | 0.2+ | 2005 05 14 | 644 | 0.0 | 0.4+ | | | | |

**(145114)∗ 2005 GJ$_{123}$ = 2001 BN$_{35}$**

Discovered 2005 Apr. 6 by Spacewatch at Kitt Peak.
Id. G. V. Williams (*MPO* 77135)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 145.03912 | | (2000.0) | | | |
| $n$ | 0.27947164 | $\omega$ | 27.48993 | | −0.86616958 | +0.49974667 |
| $a$ | 2.3169192 | $\Omega$ | 182.49568 | | −0.46605973 | −0.80912649 |
| $e$ | 0.1739888 | $i$ | 2.46943 | | −0.18038453 | −0.30914009 |
| $P$ | 3.53 | $H$ | 17.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.1− | 0.4+ | 2005 04 06 | 691 | 0.0 | 0.2+ | 2005 05 13 | 691 | 0.2+ | 0.0 |
| 1998 05 01 | 704 | 0.2− | 0.2− | 2005 04 06 | 691 | 0.1− | 0.2+ | 2005 05 13 | 691 | 0.1+ | 0.1+ |
| 1998 05 01 | 704 | 0.4+ | 0.5− | 2005 04 12 | 704 | 0.9+ | 0.7+ | 2005 05 13 | 691 | 0.2+ | 0.4+ |
| 1998 05 01 | 704 | 0.1+ | 0.7+ | 2005 04 12 | 704 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.5+ |
| 2001 01 19 | 691 | 0.2− | 0.3+ | 2005 04 12 | 704 | 0.1+ | 0.4− | 2006 09 19 | 691 | 0.1− | 0.6+ |
| 2001 01 19 | 691 | 0.1+ | 0.2+ | 2005 04 15 | 699 | 0.4− | 0.5− | 2006 09 19 | 691 | 0.1− | 0.7+ |
| 2001 01 19 | 691 | 0.1− | 0.1+ | 2005 04 15 | 699 | 0.4+ | 1.2+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2001 01 24 | 691 | 0.0 | 0.0 | 2005 04 15 | 699 | (1.8+ | 0.3+) | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2001 01 24 | 691 | 0.1− | 0.2+ | 2005 04 15 | 699 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2001 01 24 | 691 | 0.2+ | 0.0 | 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.7− | 0.0 |
| 2002 08 06 | 644 | 0.1− | 0.2+ | 2005 04 17 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.6− | 0.0 |
| 2002 08 06 | 644 | 0.0 | 0.5+ | 2005 04 17 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2002 08 06 | 644 | 0.3− | 0.3+ | 2005 04 18 | 704 | 1.3+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.5+ |
| 2003 11 24 | 695 | 0.9− | 0.2+ | 2005 04 18 | 704 | 0.7+ | 0.6+ | 2006 10 16 | G96 | 0.4− | 0.0 |
| 2003 11 24 | 695 | 0.2+ | 0.3+ | 2005 04 18 | 704 | 0.9+ | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2003 12 14 | 291 | 0.1+ | 0.6+ | 2005 05 12 | 699 | 0.5− | 0.6− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2003 12 14 | 291 | 0.1+ | 0.3+ | 2005 05 12 | 699 | 0.4+ | 0.6− | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2003 12 14 | 291 | 0.1+ | 0.2+ | 2005 05 12 | 699 | 1.0− | 0.4+ | | | | |
| 2005 04 06 | 691 | 0.1− | 0.4+ | 2005 05 12 | 699 | 1.3+ | 0.8+ | | | | |

**(145115)∗ 2005 GP$_{124}$ = 2002 TU$_{230}$**

Discovered 2005 Apr. 9 by the Catalina Sky Survey.
Id. G. V. Williams (*MPO* 77137)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.11677 | | (2000.0) | | | |
| $n$ | 0.24306295 | $\omega$ | 233.43698 | | +0.43343120 | +0.87201076 |
| $a$ | 2.5428664 | $\Omega$ | 63.75547 | | −0.72440415 | +0.48726347 |
| $e$ | 0.1829525 | $i$ | 14.69030 | | −0.53607464 | +0.04659983 |
| $P$ | 4.05 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 03 | 699 | 1.3+ | 0.5− | 2005 04 02 | 703 | 1.1− | 1.4+ | 2006 08 17 | 644 | 0.1+ | 0.2+ |
| 1998 10 03 | 699 | 0.2+ | 0.4− | 2005 04 02 | 703 | 0.1+ | 0.6− | 2006 08 28 | E12 | 0.3− | 0.2+ |
| 1998 10 03 | 699 | 0.2− | 1.5− | 2005 04 02 | 703 | 0.7− | 0.2+ | 2006 08 28 | E12 | 0.2+ | 0.4+ |
| 2002 10 07 | 644 | 0.3− | 0.4− | 2005 04 09 | 703 | 0.5+ | 0.5− | 2006 08 28 | E12 | 0.1+ | 0.1+ |
| 2002 10 07 | 644 | 0.5− | 0.2− | 2005 04 09 | 703 | 0.6+ | 0.5+ | 2006 08 28 | E12 | 0.3+ | 0.3− |
| 2002 10 07 | 644 | 0.8− | 0.1+ | 2005 04 09 | 703 | 0.7+ | 0.2+ | 2006 09 12 | E12 | 0.1− | 0.8+ |
| 2002 10 10 | 699 | 0.1− | 0.1+ | 2005 04 09 | 703 | 0.3+ | 0.6+ | 2006 09 12 | E12 | 0.3− | 1.0+ |
| 2002 10 10 | 699 | 0.6+ | 0.5+ | 2005 04 09 | 703 | 0.0 | 0.2+ | 2006 09 12 | E12 | 0.0 | 0.2− |
| 2002 10 10 | 699 | 1.1+ | 0.8+ | 2005 04 09 | 703 | 0.9− | 1.2+ | 2006 09 12 | E12 | 0.1− | 0.1− |
| 2002 10 10 | 699 | 0.1− | 0.1− | 2005 04 09 | 703 | 0.7+ | 1.5+ | 2006 09 28 | E12 | 0.5− | 0.5+ |
| 2003 12 17 | 704 | 0.8+ | 0.1+ | 2005 04 09 | 703 | 0.2− | 0.2− | 2006 09 28 | E12 | 0.2− | 0.4+ |
| 2003 12 17 | 704 | 0.4+ | 0.1− | 2005 04 12 | 704 | 0.8+ | 0.1+ | 2006 09 28 | E12 | 0.4− | 0.5+ |
| 2003 12 17 | 704 | 0.0 | 0.1− | 2005 04 12 | 704 | 0.9+ | 0.3− | 2006 09 28 | E12 | 0.0 | 1.2+ |
| 2003 12 17 | 704 | 0.1− | 0.1+ | 2005 04 12 | 704 | 0.5+ | 0.4− | 2006 11 17 | 644 | 0.3− | 0.3+ |
| 2004 01 16 | 644 | 0.2− | 0.5+ | 2005 04 12 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2004 01 16 | 644 | 0.3− | 0.8+ | 2005 04 12 | 704 | 0.6+ | 0.4+ | 2006 11 17 | 644 | 0.4− | 0.2+ |
| 2004 01 16 | 644 | 0.1− | 0.7+ | 2006 07 28 | E12 | 0.2+ | 0.3− | 2006 11 17 | 703 | 1.0− | 0.0 |
| 2005 03 15 | 703 | 0.3− | 1.0− | 2006 07 28 | E12 | 0.6− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2005 03 15 | 703 | 0.5− | 0.3− | 2006 07 28 | E12 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 1.0+ |
| 2005 03 15 | 703 | 0.9− | 0.4− | 2006 07 28 | E12 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2005 03 15 | 703 | 0.8+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.1+ | | | | |
| 2005 04 02 | 703 | 0.8− | 0.6+ | 2006 08 17 | 644 | 0.0 | 0.0 | | | | |

**(145116)∗ 2005 GT$_{126}$ = 1999 RE$_{254}$**

Discovered 2005 Apr. 11 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 77138)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.07740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28963961 | $\omega$ | 152.78708 | | +0.98494110 | −0.14996807 | |
| $a$ | 2.2623723 | $\Omega$ | 216.16305 | | +0.11983693 | +0.95084495 | |
| $e$ | 0.1098224 | $i$ | 8.38286 | | +0.12461995 | +0.27093073 | |
| $P$ | 3.40 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 703 | 1.3+ | 0.6− | 2005 06 01 | 699 | (1.7− | 0.1+) | 2006 10 19 | 704 | 1.0− | 1.0− |
| 1999 09 05 | 703 | 0.4+ | 0.9− | 2005 06 01 | 699 | (0.9− | 1.5+) | 2006 10 19 | 704 | 0.7+ | 0.2+ |
| 1999 09 05 | 703 | 0.4− | 0.4+ | 2005 06 01 | 699 | (2.6− | 0.1−) | 2006 10 19 | 704 | 0.0 | 0.2− |
| 1999 09 05 | 703 | 0.4+ | 1.1+ | 2005 06 01 | 699 | (1.8− | 0.4−) | 2006 10 19 | 704 | 1.3− | 0.5+ |
| 1999 09 09 | 704 | 0.2− | 0.2+ | 2006 08 12 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 1999 09 09 | 704 | 0.3+ | 0.4− | 2006 08 12 | 644 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 1999 09 09 | 704 | 1.6+ | 0.3+ | 2006 08 12 | 644 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 1999 09 09 | 704 | 0.6+ | 0.0 | 2006 08 20 | 644 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 09 09 | 704 | 0.9+ | 1.8+ | 2006 08 20 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 1999 09 09 | 704 | 0.1+ | 0.3− | 2006 08 20 | 644 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1999 09 09 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1999 09 09 | 704 | 0.6− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 09 09 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 1999 09 09 | 704 | 0.3− | 0.0 | 2006 09 18 | 704 | 1.0+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 09 09 | 704 | 0.6+ | 0.0 | 2006 09 18 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 10 13 | 645 | 0.1− | 0.1− | 2006 09 18 | 704 | 1.1− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 10 13 | 645 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.4+ | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2000 11 30 | 645 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.3+ | 1.1+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2000 11 30 | 645 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.7− | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2002 06 14 | 704 | (0.4− | 1.9+) | 2006 09 25 | 704 | 0.1− | 0.2− | 2006 10 29 | 704 | 0.2+ | 1.2+ |
| 2002 06 14 | 704 | 0.2− | 0.9+ | 2006 09 25 | 704 | 0.6− | 0.3+ | 2006 10 29 | 704 | (2.7− | 0.1−) |
| 2002 06 14 | 704 | 0.5− | 1.0+ | 2006 09 25 | 704 | 0.9− | 0.1+ | 2006 10 29 | 704 | 1.4− | 0.4+ |
| 2003 11 30 | 704 | 0.3− | 1.2+ | 2006 09 29 | 704 | 0.1− | 0.5− | 2006 10 29 | 704 | 0.2− | 0.6+ |
| 2003 11 30 | 704 | 0.0 | 1.2+ | 2006 09 29 | 704 | 0.5− | 0.1+ | 2006 10 29 | 704 | 0.2− | 0.4+ |
| 2003 11 30 | 704 | 0.6+ | 1.1+ | 2006 09 29 | 704 | (0.6+ | 1.6+) | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2003 11 30 | 704 | 0.5− | 1.2+ | 2006 09 29 | 704 | (0.6− | 1.6+) | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.7− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2005 04 11 | G96 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2005 04 11 | G96 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2005 04 12 | G96 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.7− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 10 03 | 704 | (0.2− | 1.7+) | 2006 11 13 | 691 | 0.2− | 0.3+ |
| 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.5+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2005 04 14 | 691 | 0.1− | 0.6+ | 2006 10 03 | 704 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.5+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2005 05 01 | 644 | 0.1+ | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2005 05 01 | 644 | 0.4+ | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2005 05 01 | 644 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2005 05 01 | 644 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3+ | 1.0+ |
| 2005 05 11 | G96 | 0.3− | 0.0 | 2006 10 16 | 683 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 1.9+ | 0.5+ |
| 2005 05 11 | G96 | 0.3− | 0.3+ | 2006 10 16 | 683 | 0.6− | 1.0+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2005 05 11 | G96 | 0.1− | 0.3+ | 2006 10 16 | 683 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2005 05 11 | G96 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.7− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2005 05 13 | 704 | 1.3+ | 1.0+ | 2006 10 17 | 703 | 0.3− | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2005 05 13 | 704 | (2.4+ | 0.7+) | 2006 10 17 | 703 | 0.2− | 0.9− | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2005 05 13 | 704 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.4− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2005 05 13 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 704 | 0.8+ | 1.0− | | | | |

**(145117)∗ 2005 GV$_{129}$ = 2001 KF$_{52}$**

Discovered 2005 Apr. 7 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77140)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.35657 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23866028 | $\omega$ | 240.96318 | | +0.71720058 | +0.69033606 | |
| $a$ | 2.5740439 | $\Omega$ | 75.19930 | | −0.60022890 | +0.68134596 | |
| $e$ | 0.2485726 | $i$ | 5.64978 | | −0.35404604 | +0.24331830 | |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 691 | 0.2+ | 0.5+ | 2005 04 27 | 599 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2001 05 17 | 691 | 0.0 | 0.4+ | 2005 04 27 | 599 | 0.5+ | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.0 |
| 2001 05 17 | 691 | 0.0 | 0.5+ | 2005 04 27 | 599 | 0.6+ | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2001 05 18 | 704 | 0.4+ | 0.1+ | 2005 04 27 | 599 | 0.7+ | 0.6+ | 2006 10 18 | 691 | 0.2− | 0.2+ |
| 2001 05 18 | 704 | 0.0 | 1.4+ | 2005 04 30 | 599 | 0.5+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2001 05 18 | 704 | 0.4+ | 0.4− | 2005 04 30 | 599 | 0.7− | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 05 18 | 704 | 0.1+ | 0.2+ | 2005 04 30 | 599 | (1.6− | 0.4−) | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2002 11 13 | 644 | 0.1− | 0.2+ | 2006 09 30 | 699 | 0.2− | 0.6− | 2006 11 01 | 703 | 1.2− | 0.5+ |
| 2002 11 13 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 699 | 1.1− | 1.2− | 2006 11 01 | 703 | 0.2− | 0.8+ |
| 2002 11 13 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 699 | 0.0 | 0.6+ | 2006 11 01 | 703 | 0.4+ | 0.6+ |
| 2002 11 13 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 11 01 | 703 | 0.5+ | 0.6+ |
| 2002 11 13 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.1− | 2006 11 11 | 703 | 1.1− | 0.2− |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2006 09 30 | 699 | (1.6+ | 3.2+) | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 2002 11 23 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 11 23 | 644 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.6+ | 0.2+ |
| 2005 04 07 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2005 04 07 | 691 | 1.0− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.3+ | 0.1+ |
| 2005 04 07 | 691 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.3+ | 0.9+ |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2005 04 14 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.0 |
| 2005 04 14 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.2− | 2006 11 14 | 704 | 0.6+ | 0.7+ |

**(145118)∗ 2005 GJ$_{130}$**

Discovered 2005 Apr. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.72591 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25661347 | $\omega$ | 232.11870 | | +0.06073270 | +0.99796554 | |
| $a$ | 2.4525418 | $\Omega$ | 41.37607 | | −0.90632772 | +0.06327759 | |
| $e$ | 0.1594812 | $i$ | 1.68176 | | −0.41818849 | +0.00779291 | |
| $P$ | 3.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 691 | 0.1− | 0.7+ | 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.5+ |
| 2001 03 29 | 691 | 0.1− | 0.6+ | 2005 05 07 | G96 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.2+ |
| 2001 03 29 | 691 | 0.1− | 0.5+ | 2005 05 07 | G96 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2002 10 03 | 704 | 0.8+ | 1.3+ | 2005 05 07 | G96 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.8+ | 0.4+ | 2005 05 07 | G96 | 0.4− | 0.2+ | 2006 10 21 | 703 | (1.4+ | 1.5+) |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.4− | 0.0 | 2006 10 21 | 703 | (0.5− | 1.8+) |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.9+ |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 21 | 703 | 1.2+ | 0.9− |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2005 05 13 | 704 | 1.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2005 05 13 | 704 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2003 12 29 | 691 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.8+ | 0.6− | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 2003 12 29 | 691 | 0.6+ | 0.1− | 2005 05 13 | 704 | 0.5+ | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.3− |
| 2003 12 29 | 691 | 0.4+ | 0.3+ | 2005 05 13 | 704 | 0.9+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2005 05 14 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2005 03 10 | G96 | 0.8− | 0.1− | 2005 05 14 | 644 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2005 03 10 | G96 | 0.5− | 0.0 | 2005 05 14 | 644 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2005 03 10 | G96 | 0.4− | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2005 04 07 | 691 | 0.2− | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2005 04 07 | 691 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2005 04 07 | 691 | 0.1− | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2005 04 13 | 699 | 0.9− | 1.1− | 2006 09 25 | G96 | 0.5+ | 0.3− | 2006 11 11 | G96 | 0.4− | 0.2+ |
| 2005 04 13 | 699 | 1.1+ | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2005 04 13 | 699 | 0.8+ | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.3− | 0.2− |
| 2005 04 13 | 699 | 0.4− | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.4− | 0.0 | 2006 11 21 | 691 | 0.3− | 0.2− |
| 2005 04 14 | 691 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.4− | 0.1+ |
| 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.8+ | | | | |
| 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.5+ | | | | |

**(145119)∗ 2005 GS$_{132}$**

Discovered 2005 Apr. 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.21140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24301806 | $\omega$ | 71.46494 | | −0.35119171 | +0.93629839 | |
| $a$ | 2.5431795 | $\Omega$ | 177.96688 | | −0.88877012 | −0.33231365 | |
| $e$ | 0.1068493 | $i$ | 5.04035 | | −0.29453702 | −0.11363524 | |
| $P$ | 4.06 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 26 | 691 | (4.4+ | 0.5+) | 2002 11 07 | 695 | 0.1+ | 0.5+ | 2005 04 18 | 691 | 0.2+ | 0.3+ |
| 1993 05 26 | 691 | 0.2+ | 0.1+ | 2002 11 07 | 695 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.6+ |
| 1993 05 26 | 691 | 0.2− | 0.1+ | 2005 03 14 | G96 | 0.7− | 0.0 | 2006 09 15 | 691 | 0.3− | 0.4+ |
| 1993 06 13 | 691 | 0.2− | 0.4− | 2005 03 14 | G96 | 0.6− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.6+ |
| 1993 06 13 | 691 | 0.4− | 0.9− | 2005 03 14 | G96 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.0 |
| 1993 06 13 | 691 | 0.0 | 1.1− | 2005 03 14 | G96 | 0.8− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 1994 10 04 | 691 | 0.2− | 0.1− | 2005 04 10 | 691 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.4− | 0.3− |
| 1994 10 04 | 691 | 0.1− | 0.1− | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2002 09 13 | 644 | 0.4− | 1.2+ | 2005 04 10 | 691 | 0.3− | 0.9+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2002 09 13 | 644 | 0.3− | 1.2+ | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.6− |
| 2002 09 13 | 644 | 0.1− | 1.2+ | 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2002 10 08 | 291 | 0.1− | 0.2+ | 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 1.0− | 0.4− |
| 2002 10 08 | 291 | 0.3+ | 0.4+ | 2005 04 18 | 691 | 0.3+ | 0.3+ | | | | |
| 2002 10 08 | 291 | 0.3+ | 0.2− | 2005 04 18 | 691 | 0.6+ | 0.2+ | | | | |

**(145120)∗ 2005 GF$_{135}$**

Discovered 2005 Apr. 10 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.53399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23540897 | $\omega$ | 286.49323 | | +0.77754530 | +0.62813519 | |
| $a$ | 2.5976903 | $\Omega$ | 34.61010 | | −0.55532598 | +0.70790583 | |
| $e$ | 0.1765014 | $i$ | 2.97585 | | −0.29501927 | +0.32297913 | |
| $P$ | 4.19 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.8− | 0.1+ | 2005 06 01 | G96 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.5− |
| 2001 05 23 | 807 | 0.8− | 0.1+ | 2005 06 01 | G96 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 2001 06 17 | 691 | 0.1+ | 0.5− | 2005 06 02 | G96 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.4− |
| 2001 06 17 | 691 | 0.1+ | 0.4− | 2005 06 02 | G96 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 06 17 | 691 | 0.1− | 0.2− | 2005 06 02 | G96 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 11 05 | 291 | 0.2− | 0.1+ | 2005 06 02 | G96 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 11 05 | 291 | 0.0 | 0.1− | 2005 06 02 | G96 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 291 | 0.2+ | 0.0 | 2005 06 02 | G96 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 04 02 | G96 | 0.1− | 0.0 | 2005 06 02 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2005 04 02 | G96 | 0.3+ | 0.0 | 2005 06 02 | G96 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.7+ | 1.2+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 04 02 | G96 | 0.5+ | 0.5− | 2006 09 14 | 703 | 1.0− | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2005 04 10 | G96 | 0.3− | 0.1− | 2006 09 14 | 703 | (0.8− | 3.1+) | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2005 04 10 | G96 | 0.3+ | 0.4− | 2006 09 14 | 703 | (1.0− | 1.8+) | 2006 10 29 | 291 | 0.1− | 0.1− |
| 2005 04 10 | G96 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 29 | 291 | 0.0 | 0.0 |
| 2005 04 10 | G96 | 0.4− | 0.3+ | 2006 09 14 | 691 | 0.4+ | 0.1− | 2006 10 29 | 291 | 0.1+ | 0.0 |
| 2005 04 14 | 691 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 1.2+ |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2005 05 01 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.9− |
| 2005 05 01 | 644 | 0.5+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | (0.2− | 1.5+) |
| 2005 05 14 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2005 05 14 | 644 | 0.3+ | 0.3+ | 2006 09 29 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2005 05 14 | 644 | 0.3+ | 0.6+ | 2006 09 29 | 691 | 0.1− | 0.0 | 2006 11 20 | A44 | 0.3− | 0.2+ |
| 2005 05 14 | G96 | 1.4− | 0.2+ | 2006 09 29 | 691 | 0.4+ | 0.2+ | 2006 11 20 | A44 | 0.3+ | 0.4− |
| 2005 05 14 | G96 | 0.7+ | 0.1− | 2006 10 15 | 703 | 0.6− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2005 05 14 | G96 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.1− | 1.1− | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2005 05 14 | G96 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2005 06 01 | G96 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2005 06 01 | G96 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.1− | | | | |

**(145121)∗ 2005 GC$_{136}$ = 2001 KN$_{62}$**

Discovered 2005 Apr. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77144)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.55788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24384995 | $\omega$ | 147.34392 | | +0.90038178 | +0.43387535 | |
| $a$ | 2.5373922 | $\Omega$ | 187.17439 | | −0.43374021 | +0.88911225 | |
| $e$ | 0.2470587 | $i$ | 15.14628 | | −0.03438130 | +0.14571061 | |
| $P$ | 4.04 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 08 | 691 | 0.0 | 0.1− | 2002 12 13 | 644 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 0.9− | 0.1+ |
| 1997 04 08 | 691 | 0.4− | 0.1+ | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.6− | 0.6+ |
| 1997 04 08 | 691 | 0.0 | 0.5+ | 2005 04 10 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.7+ | 0.8+ |
| 2001 05 18 | 699 | 1.1+ | 0.3+ | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.9+ |
| 2001 05 18 | 699 | 1.2+ | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 2001 05 18 | 699 | (0.1− | 1.5+) | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.3+ |
| 2001 05 18 | 699 | (2.4+ | 0.7−) | 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2001 05 23 | 608 | 0.6+ | 0.7+ | 2005 05 04 | 703 | 0.7− | 0.4− | 2006 10 17 | 703 | 0.5− | 0.5− |
| 2001 05 23 | 608 | 0.0 | 0.1− | 2005 05 04 | 703 | (2.2− | 0.5+) | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2001 05 23 | 608 | 0.3+ | 0.3− | 2005 05 04 | 703 | 0.9− | 1.3− | 2006 10 17 | 703 | 0.0 | 0.5+ |
| 2002 11 07 | 699 | 0.9− | 0.6+ | 2005 05 04 | 703 | 0.7− | 0.2+ | 2006 10 28 | 703 | 0.0 | 1.0+ |
| 2002 11 07 | 699 | 0.6− | 0.8+ | 2005 05 11 | 703 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.5+ | 0.6− |
| 2002 11 07 | 699 | 0.2+ | 0.4+ | 2005 05 11 | 703 | (0.4− | 1.9+) | 2006 10 28 | 703 | 1.0+ | 0.0 |
| 2002 11 07 | 699 | 0.2+ | 0.3− | 2005 05 11 | 703 | 0.2− | 1.0− | 2006 10 28 | 703 | 0.3+ | 0.1+ |
| 2002 11 30 | 704 | 0.4− | 0.8− | 2005 05 11 | 703 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2002 11 30 | 704 | (0.5− | 1.8+) | 2006 09 18 | 703 | 0.7+ | 0.6+ | 2006 12 01 | G96 | 1.0− | 0.7− |
| 2002 11 30 | 704 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 12 01 | G96 | 0.9+ | 0.5− |
| 2002 11 30 | 704 | (1.6+ | 0.3+) | 2006 09 18 | 703 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.5+ | 0.4− |
| 2002 12 13 | 644 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.9+ | | | | |
| 2002 12 13 | 644 | 0.7+ | 0.7+ | 2006 09 19 | 699 | 0.8− | 1.0+ | | | | |

**(145122)∗ 2005 GD$_{136}$ = 2001 FG$_{178}$**

Discovered 2005 Apr. 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77144)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.36327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28458963 | $\omega$ | 178.80828 | | +0.94589136 | +0.32231259 | |
| $a$ | 2.2890573 | $\Omega$ | 162.24894 | | −0.29871532 | +0.91004927 | |
| $e$ | 0.1837284 | $i$ | 7.05981 | | −0.12672287 | +0.26062411 | |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 08 05 | 644 | 0.3− | 0.2+ | 2005 04 18 | 691 | 0.1− | 0.2− |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2002 08 05 | 644 | 0.3− | 0.3+ | 2005 04 18 | 691 | 0.1− | 0.3+ |
| 2001 03 20 | 691 | 0.1+ | 0.1− | 2002 08 05 | 644 | 0.4− | 0.3+ | 2005 04 18 | 691 | 0.1− | 0.2+ |
| 2001 03 20 | 691 | 0.4+ | 0.2+ | 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 10 29 | 703 | 0.3+ | 0.8+ |
| 2001 03 20 | 691 | 0.1+ | 0.2+ | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 703 | 1.3+ | 0.6+ |
| 2001 03 26 | 695 | 0.2− | 0.2+ | 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 10 29 | 703 | 0.3− | 0.8+ |
| 2001 03 26 | 695 | 0.2+ | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.2− | 2006 10 29 | 703 | 0.8− | 0.5+ |
| 2002 07 09 | 704 | 0.6+ | 1.4+ | 2005 04 14 | 691 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.7+ |
| 2002 07 09 | 704 | 0.3+ | 0.1+ | 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 1.0− | 0.5+ |
| 2002 07 09 | 704 | 0.0 | 0.3+ | 2005 04 15 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 1.5− | 1.3+ |
| 2002 07 09 | 704 | 0.0 | 0.4+ | 2005 04 15 | 691 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 2002 07 09 | 704 | 0.6+ | 0.0 | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.4+ |
| 2002 07 18 | 704 | 0.1− | 0.1− | 2005 04 15 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.2+ |
| 2002 07 18 | 704 | 0.1− | 0.2+ | 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.4+ |
| 2002 07 18 | 704 | 0.8− | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.4+ | 0.2+ |

**(145123)∗ 2005 GD$_{139}$**

Discovered 2005 Apr. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 127.94084 | | | (2000.0) | | |
| $n$ | 0.26162632 | $\omega$ | 0.64435 | | −0.66265644 | +0.74715603 |
| $a$ | 2.4211132 | $\Omega$ | 227.85440 | | −0.68743378 | −0.63406076 |
| $e$ | 0.1565088 | $i$ | 3.97695 | | −0.29718892 | −0.19931085 |
| $P$ | 3.77 | $H$ | 16.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.7+ | 1.3+ | 2005 05 07 | G96 | 0.1− | 0.6− | 2005 06 01 | G96 | 0.3− | 0.2− |
| 2001 03 18 | 704 | 0.9+ | 0.9+ | 2005 05 07 | G96 | 0.2− | 0.4− | 2006 09 17 | 703 | 0.8− | 0.4− |
| 2001 03 18 | 704 | 1.1− | 1.2+ | 2005 05 07 | G96 | 0.2− | 0.5− | 2006 09 17 | 703 | (1.0+ | 2.1−) |
| 2001 03 18 | 704 | 0.8+ | 1.1+ | 2005 05 09 | 704 | 0.2+ | 0.9+ | 2006 09 17 | 691 | 0.2− | 0.2− |
| 2001 03 27 | 608 | 0.3+ | 0.5+ | 2005 05 09 | 704 | 0.6− | 0.2+ | 2006 09 17 | 691 | 0.3+ | 0.0 |
| 2001 03 27 | 608 | 0.3+ | 0.3+ | 2005 05 09 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 1.4+ | 0.0 |
| 2001 03 27 | 608 | 0.1+ | 0.1+ | 2005 05 09 | 699 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2005 05 09 | 699 | 0.6− | 0.2+ | 2006 09 17 | 703 | 0.0 | 1.0+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2005 05 09 | 699 | 0.7+ | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2005 04 12 | 704 | 0.2+ | 0.7+ | 2005 05 09 | 699 | 0.7+ | 0.8− | 2006 10 22 | G96 | 0.0 | 0.3+ |
| 2005 04 12 | 704 | 0.3− | 0.6+ | 2005 05 13 | 704 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2005 04 12 | 704 | 0.0 | 0.1+ | 2005 05 13 | 704 | 0.0 | 0.8− | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2005 04 12 | 704 | 0.1+ | 1.0− | 2005 05 13 | 704 | 0.2− | 0.7− | 2006 10 31 | G96 | 0.0 | 0.9+ |
| 2005 04 14 | 703 | 0.7− | 0.1− | 2005 05 13 | 704 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2005 04 14 | 703 | 0.9+ | 0.5− | 2005 05 13 | 704 | (1.3− | 1.7−) | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2005 04 14 | 703 | 0.6− | 0.4+ | 2005 05 30 | 699 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2005 04 14 | 703 | 0.2+ | 0.2− | 2005 05 30 | 699 | 0.6− | 0.2− | 2006 11 15 | G96 | 0.5− | 0.7+ |
| 2005 05 04 | 699 | 0.4+ | 0.4+ | 2005 05 30 | 699 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.2+ | 0.5+ |
| 2005 05 04 | 699 | 0.3− | 1.0+ | 2005 05 30 | 699 | 1.2+ | 1.1+ | 2006 11 15 | G96 | 0.2− | 0.4+ |
| 2005 05 04 | 699 | 0.6+ | 1.3+ | 2005 06 01 | G96 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.3− | 0.8+ |
| 2005 05 04 | 699 | 0.8+ | 0.7+ | 2005 06 01 | G96 | 0.4− | 0.6− | | | | |
| 2005 05 07 | G96 | 0.1− | 0.5− | 2005 06 01 | G96 | 0.3− | 0.5− | | | | |

**(145124)∗ 2005 GT$_{139}$ = 1996 JY$_{15}$**

Discovered 2005 Apr. 12 by the Mt. Lemmon Survey at Mt. Lemmon. Id. A. Doppler (*MPO* 86710)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.45583 | | | (2000.0) | | |
| $n$ | 0.21708912 | $\omega$ | 164.76260 | | +0.91928501 | +0.39342161 |
| $a$ | 2.7418520 | $\Omega$ | 172.04057 | | −0.36930515 | +0.87237518 |
| $e$ | 0.1241317 | $i$ | 4.80458 | | −0.13612046 | +0.29013959 |
| $P$ | 4.54 | $H$ | 16.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 15 | 691 | 0.2+ | 0.1+ | 2005 04 12 | G96 | 0.5− | 0.1+ | 2006 08 21 | 704 | 0.8+ | 0.5+ |
| 1996 05 15 | 691 | 0.2− | 0.1+ | 2005 04 12 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.1− | 1.2+ |
| 1996 05 15 | 691 | 0.1+ | 0.0 | 2005 04 12 | G96 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.1− |
| 1996 05 21 | 691 | 0.2+ | 0.2+ | 2005 04 14 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.3+ |
| 1996 05 21 | 691 | 0.6+ | 0.1− | 2005 04 14 | 691 | 0.5+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.4+ |
| 1997 09 04 | 327 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.2− | 0.3+ | 2006 08 29 | 704 | (0.5+ | 1.8+) |
| 1997 09 04 | 327 | 0.7− | 0.4− | 2006 08 13 | 644 | 0.0 | 0.3+ | 2006 08 29 | 704 | 0.7+ | 0.9+ |
| 1997 09 04 | 327 | 1.6− | 0.3− | 2006 08 13 | 644 | 0.3− | 0.0 | 2006 08 29 | 704 | 0.7+ | 0.4− |
| 2002 10 30 | 644 | (0.3+ | 1.7+) | 2006 08 13 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2002 10 30 | 644 | (1.3+ | 1.8+) | 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2002 10 30 | 644 | 0.5+ | 0.8+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2002 11 13 | 644 | 0.0 | 1.1+ | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2002 11 13 | 644 | 0.1+ | 1.1+ | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.1+ |
| 2002 11 13 | 644 | 0.2− | 0.9+ | 2006 08 15 | 644 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 691 | 0.1+ | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2004 01 30 | 691 | 0.2− | 0.1+ | 2006 08 19 | 699 | 0.1− | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 1.2− |
| 2005 03 14 | G96 | 1.0− | 0.3− | 2006 08 19 | 699 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.4− | 0.5− |
| 2005 03 14 | G96 | 0.8− | 0.2− | 2006 08 19 | 699 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 03 14 | G96 | 0.9− | 0.4+ | 2006 08 21 | 704 | 0.8+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.5− |
| 2005 03 14 | G96 | 0.7− | 0.1+ | 2006 08 21 | 704 | 1.1+ | 0.1+ | | | | |
| 2005 04 12 | G96 | 0.2− | 0.1− | 2006 08 21 | 704 | 0.6+ | 0.2+ | | | | |

**(145125)∗ 2005 GU$_{141}$**

Discovered 2005 Apr. 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.78504 | | | (2000.0) | | |
| $n$ | 0.25389536 | $\omega$ | 251.62161 | | −0.03884374 | +0.99880112 |
| $a$ | 2.4700147 | $\Omega$ | 16.23884 | | −0.87187094 | −0.01931167 |
| $e$ | 0.1168034 | $i$ | 6.11541 | | −0.48819282 | −0.04498199 |
| $P$ | 3.88 | $H$ | 16.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.2+ | 0.0 | 2005 03 10 | G96 | 0.2− | 0.4− | 2005 05 04 | G96 | 0.6− | 0.2− |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2005 03 10 | G96 | 0.1− | 0.2− | 2006 08 23 | 644 | 0.3+ | 0.1+ |
| 2001 03 04 | 691 | 0.3+ | 0.6+ | 2005 04 04 | 704 | 0.6+ | 1.0+ | 2006 08 23 | 644 | 0.2+ | 0.1+ |
| 2001 03 04 | 691 | 0.7− | 0.2+ | 2005 04 04 | 704 | 0.7+ | 0.2− | 2006 08 23 | 644 | 0.3+ | 0.1− |
| 2001 03 04 | 691 | 0.1− | 0.5+ | 2005 04 04 | 704 | (1.9+ | 0.1−) | 2006 09 30 | 703 | 0.8− | 1.1+ |
| 2001 03 27 | 608 | 0.1+ | 0.7+ | 2005 04 09 | 704 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2001 03 27 | 608 | 0.1+ | 1.2+ | 2005 04 09 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.4+ |
| 2001 03 27 | 608 | 0.2+ | 0.7+ | 2005 04 09 | 704 | (0.2+ | 3.3+) | 2006 09 30 | 703 | 0.8+ | 0.6+ |
| 2002 08 19 | 644 | 0.3− | 0.2+ | 2005 04 09 | 704 | 0.7− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2002 08 19 | 644 | 0.2− | 0.2+ | 2005 04 13 | 699 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.6− | 0.2+ |
| 2002 08 19 | 644 | 0.3− | 0.0 | 2005 04 13 | 699 | 0.6+ | 0.9+ | 2006 10 02 | G96 | 0.5− | 0.0 |
| 2002 08 30 | 644 | 0.0 | 0.5+ | 2005 04 13 | 699 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.1− |
| 2002 08 30 | 644 | 0.1− | 0.6+ | 2005 04 13 | 699 | 0.6− | 0.0 | 2006 10 20 | 695 | 0.3− | 0.4+ |
| 2002 08 30 | 644 | 0.6− | 0.8+ | 2005 05 04 | G96 | 0.6− | 0.5− | 2006 10 20 | 695 | 0.2− | 0.4+ |
| 2005 03 10 | G96 | 0.0 | 0.8− | 2005 05 04 | G96 | 0.5− | 0.2− | | | | |
| 2005 03 10 | G96 | 0.4− | 0.7− | 2005 05 04 | G96 | 0.5− | 0.5− | | | | |

**(145126)∗ 2005 GV$_{144}$**

Discovered 2005 Apr. 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.49527 | | | (2000.0) | | |
| $n$ | 0.28305691 | $\omega$ | 295.68751 | | +0.51350451 | +0.85803189 |
| $a$ | 2.2973132 | $\Omega$ | 5.24122 | | −0.74422812 | +0.45097535 |
| $e$ | 0.1301129 | $i$ | 6.10527 | | −0.42712717 | +0.24576920 |
| $P$ | 3.48 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 09 | 691 | 0.2− | 0.1+ | 2005 03 16 | G96 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.3− |
| 1996 12 09 | 691 | 0.3+ | 0.1− | 2005 03 16 | G96 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.1+ |
| 1996 12 09 | 691 | 0.1− | 0.1− | 2005 03 16 | G96 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.5− | 1.0− |
| 1998 03 20 | 691 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.1− |
| 1998 03 20 | 691 | 0.3− | 0.1+ | 2005 04 11 | G96 | 0.3+ | 0.0 | 2006 09 14 | 703 | 1.1− | 0.1− |
| 1998 03 20 | 691 | 0.0 | 0.4− | 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2002 05 10 | 644 | 0.4+ | 0.8+ | 2005 04 11 | G96 | 0.0 | 0.2− | 2006 09 14 | 644 | 0.2− | 0.1+ |
| 2002 05 10 | 644 | 0.3+ | 0.1+ | 2005 04 15 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.6+ | 1.5+ |
| 2002 05 10 | 644 | (1.6+ | 1.0+) | 2005 04 15 | 691 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 1.1+ | 0.7+ |
| 2003 10 18 | 644 | 0.2+ | 0.2+ | 2005 04 15 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 1.0− | 0.8+ |
| 2003 10 18 | 644 | 0.3+ | 0.1− | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.8+ | 1.1+ |
| 2003 10 18 | 644 | 0.2+ | 0.0 | 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 09 22 | 704 | 1.4+ | 1.1+ |
| 2003 11 18 | 691 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.8+ | 0.5− |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.7+ | 0.7− |
| 2003 11 18 | 691 | 0.2+ | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.2− | 0.5+ |
| 2003 11 20 | 704 | 0.4− | 0.8+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 25 | 699 | (0.5+ | 2.6+) |
| 2003 11 20 | 704 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.5− | 0.6+ |
| 2003 11 20 | 704 | 0.7− | 0.4− | 2006 08 20 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | (0.8− | 2.7+) |
| 2003 11 20 | 704 | 1.3− | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.6+ |
| 2003 11 20 | 704 | 0.9− | 0.2− | 2006 08 20 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2003 12 01 | 691 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | (1.9− | 0.4+) |
| 2003 12 01 | 691 | 0.2+ | 0.1+ | 2006 08 22 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 1.4− | 0.0 |
| 2003 12 01 | 691 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.9− | 0.4− |
| 2003 12 19 | 691 | 0.2− | 0.1− | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.5− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2005 03 04 | 704 | (2.0+ | 0.1+) | 2006 08 31 | 704 | 0.2+ | 0.6− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2005 03 04 | 704 | 0.2− | 0.8+ | 2006 08 31 | 704 | 0.3− | 1.2− | 2006 10 28 | G96 | 0.6+ | 0.2− |
| 2005 03 04 | 704 | (1.8+ | 1.4+) | 2006 08 31 | 704 | 0.7+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2005 03 04 | 704 | 0.4+ | 0.4+ | 2006 08 31 | 704 | 0.3− | 0.9+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2005 03 16 | G96 | 0.1− | 0.3+ | 2006 08 31 | 704 | 0.3+ | 1.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− |

**(145127)∗ 2005 GL$_{147}$ = 2002 NL$_{54}$**

Discovered 2005 Apr. 11 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77151)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.75581 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28682986 | $\omega$ | 259.57682 | | −0.38816402 | +0.92155352 | |
| $a$ | 2.2771229 | $\Omega$ | 347.57323 | | −0.82986828 | −0.35340341 | |
| $e$ | 0.1168996 | $i$ | 2.19286 | | −0.40080836 | −0.16076421 | |
| $P$ | 3.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.7+ | 1.6− | 2005 04 15 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 1998 03 29 | 704 | 1.5+ | 1.0+ | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 1998 03 29 | 704 | (0.2+ | 2.4−) | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1998 03 29 | 704 | (1.3+ | 3.1+) | 2005 04 18 | 703 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 1998 03 29 | 704 | 0.1+ | 1.0− | 2005 04 18 | 703 | 0.3− | 0.5− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 1998 04 01 | 704 | 1.6+ | 0.4− | 2005 04 18 | 703 | 0.4− | 0.2+ | 2006 10 21 | 703 | (1.6+ | 0.7+) |
| 1998 04 01 | 704 | (0.8− | 2.5+) | 2005 04 18 | 703 | 0.6− | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.0 |
| 1998 04 01 | 704 | 0.7− | 0.5+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 1998 04 01 | 704 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | 1.1+ | 0.1− |
| 1998 04 01 | 704 | 0.2+ | 0.9− | 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 01 31 | 691 | 1.3− | 0.2− | 2005 05 06 | 703 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 01 31 | 691 | 0.2− | 0.1− | 2005 05 06 | 703 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.6− | 0.5+ |
| 2001 01 31 | 691 | 0.0 | 0.2− | 2005 05 06 | 703 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2002 07 05 | 704 | 0.6− | 0.8− | 2005 05 06 | 703 | 0.7− | 0.0 | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2002 07 05 | 704 | (0.8− | 2.4−) | 2005 05 09 | 699 | 0.5− | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2002 07 05 | 704 | (0.1− | 1.7−) | 2005 05 09 | 699 | 0.6+ | 0.7− | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2002 07 05 | 704 | 1.1− | 0.9− | 2005 05 09 | 699 | 0.1+ | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 07 08 | 644 | 0.1− | 0.6− | 2005 05 09 | 699 | 0.8+ | 1.0− | 2006 10 31 | 691 | 0.7+ | 0.1+ |
| 2002 07 08 | 644 | 0.1− | 0.8− | 2005 05 12 | 699 | (1.8+ | 0.5+) | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2002 07 08 | 644 | 0.3− | 0.7− | 2005 05 12 | 699 | 0.5− | 0.9− | 2006 11 15 | G96 | 0.3− | 1.1− |
| 2005 03 15 | G96 | 0.4− | 0.3+ | 2005 05 12 | 699 | 1.0+ | 0.7− | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2005 03 15 | G96 | 0.6− | 0.0 | 2005 05 12 | 699 | 1.0+ | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2005 03 15 | G96 | 0.2− | 0.1+ | 2005 05 12 | 699 | 0.2− | 0.7− | 2006 11 18 | 291 | 0.1− | 0.6+ |
| 2005 03 15 | G96 | 0.6− | 0.0 | 2005 05 12 | 699 | 0.5− | 0.1+ | 2006 11 18 | 291 | 0.1− | 0.4+ |
| 2005 04 11 | 691 | 0.1+ | 0.4+ | 2005 05 12 | 699 | 0.1+ | 0.7+ | 2006 11 18 | 291 | 0.2− | 0.5+ |
| 2005 04 11 | 691 | 0.3+ | 0.3+ | 2005 05 12 | 699 | (2.6− | 1.0+) | | | | |
| 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ | | | | |

**(145128)∗ 2005 GG$_{149}$**

Discovered 2005 Apr. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.67997 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21362439 | $\omega$ | 242.46027 | | +0.90775361 | −0.41555459 | |
| $a$ | 2.7714188 | $\Omega$ | 142.01580 | | +0.41023787 | +0.85073438 | |
| $e$ | 0.0826794 | $i$ | 5.35398 | | +0.08768283 | +0.32181578 | |
| $P$ | 4.61 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.0 | 0.5− | 2004 01 24 | 704 | 0.1+ | 1.7+ | 2005 04 30 | 691 | 0.4+ | 0.0 |
| 1995 03 26 | 691 | 0.1+ | 0.8− | 2004 01 24 | 704 | (1.0+ | 4.6+) | 2005 04 30 | 691 | 0.3+ | 0.1+ |
| 1995 03 26 | 691 | 0.0 | 1.1− | 2004 01 24 | 704 | 1.0− | 1.8+ | 2006 05 26 | G96 | 0.2+ | 0.2+ |
| 2000 02 12 | 645 | 0.2− | 0.2− | 2004 02 17 | 704 | 0.6+ | 1.2− | 2006 05 26 | G96 | 0.1− | 0.1+ |
| 2000 02 12 | 645 | 0.2− | 0.1− | 2004 02 17 | 704 | 0.3− | 1.3+ | 2006 05 26 | G96 | 0.0 | 0.3+ |
| 2000 05 04 | 645 | 0.2− | 0.1− | 2004 02 17 | 704 | 0.6+ | 1.9+ | 2006 05 26 | G96 | 0.1+ | 0.3+ |
| 2000 05 04 | 645 | 0.2− | 0.1− | 2004 02 17 | 704 | 0.5− | 1.8+ | 2006 07 25 | G96 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.8+ | 0.1+ | 2005 04 02 | 691 | 0.0 | 0.3+ | 2006 07 25 | G96 | 0.5− | 0.0 |
| 2002 10 31 | 704 | 0.6+ | 0.1+ | 2005 04 02 | 691 | 0.2+ | 0.2+ | 2006 07 25 | G96 | 0.0 | 0.1+ |
| 2002 10 31 | 704 | 0.4+ | 0.7+ | 2005 04 02 | 691 | 0.9+ | 0.1− | 2006 07 25 | G96 | 0.2− | 0.3+ |
| 2002 10 31 | 704 | 1.0+ | 0.6+ | 2005 04 11 | 691 | 0.3+ | 0.4+ | 2006 08 14 | 644 | 0.3− | 0.2+ |
| 2002 10 31 | 704 | 1.0+ | 0.5+ | 2005 04 11 | 691 | 0.4+ | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.3+ |
| 2002 10 31 | 608 | 0.6− | 0.5− | 2005 04 11 | 691 | 0.1+ | 0.6+ | 2006 08 14 | 644 | 0.2− | 0.5+ |
| 2002 10 31 | 608 | 0.2− | 0.4− | 2005 04 15 | 691 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.1+ |
| 2002 10 31 | 608 | 0.5− | 0.8− | 2005 04 15 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 1.2− | 1.0− |
| 2004 01 24 | 704 | 1.3+ | 2.9+ | 2005 04 15 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.2− |
| 2004 01 24 | 704 | 0.3+ | 1.6+ | 2005 04 30 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.6+ |

**(145129)∗ 2005 GH$_{150}$**

Discovered 2005 Apr. 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.97918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26759575 | $\omega$ | 194.87602 | | +0.31181679 | +0.94567090 | |
| $a$ | 2.3849717 | $\Omega$ | 93.35861 | | −0.86204934 | +0.32232375 | |
| $e$ | 0.2312277 | $i$ | 5.29181 | | −0.39955127 | +0.04259049 | |
| $P$ | 3.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 15 | 691 | 0.1+ | 0.4+ | 2005 04 30 | 691 | 0.4+ | 0.4+ | 2005 06 01 | G92 | 0.4+ | 0.2− |
| 1994 05 15 | 691 | 0.2+ | 0.3+ | 2005 04 30 | 691 | 0.1+ | 0.1+ | 2005 06 05 | G92 | 0.4+ | 0.4+ |
| 1994 05 15 | 691 | 0.1+ | 0.1+ | 2005 05 03 | 704 | (0.6+ | 5.5+) | 2005 06 05 | G92 | 0.1+ | 0.4+ |
| 2002 09 17 | 608 | 1.2− | 0.8− | 2005 05 03 | 704 | (0.6+ | 4.7+) | 2005 06 05 | G92 | 0.7+ | 0.5+ |
| 2002 09 17 | 608 | 0.6− | 0.6− | 2005 05 03 | 704 | (0.7+ | 5.5+) | 2005 06 22 | 644 | 0.0 | 0.2+ |
| 2002 09 17 | 608 | 0.2− | 0.5− | 2005 05 07 | 703 | 0.9− | 0.5+ | 2005 06 22 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 05 07 | 703 | 0.0 | 0.1+ | 2005 06 22 | 644 | 0.1+ | 0.3+ |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 05 07 | 703 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.8+ | 0.2− |
| 2002 10 31 | 704 | 1.0− | 0.4+ | 2005 05 07 | 703 | 0.9− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.7+ | 2005 05 12 | 704 | 0.1+ | 1.2− | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2002 10 31 | 704 | 0.2+ | 0.4+ | 2005 05 12 | 704 | 0.1+ | 0.6− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 10 31 | 704 | 0.1− | 0.5− | 2005 05 12 | 704 | 0.4− | 0.4− | 2006 11 12 | G96 | 0.3− | 0.2+ |
| 2005 04 11 | 691 | 0.0 | 0.3+ | 2005 05 12 | 704 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.3− | 0.4+ |
| 2005 04 11 | 691 | 0.2− | 0.2+ | 2005 06 01 | 699 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.4+ |
| 2005 04 11 | 691 | 0.1− | 0.2− | 2005 06 01 | 699 | 0.5− | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.3+ |
| 2005 04 15 | 691 | 0.2− | 0.2+ | 2005 06 01 | 699 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2005 04 15 | 691 | 0.1− | 0.2+ | 2005 06 01 | G92 | 1.1+ | 0.3− | 2006 11 24 | 691 | 0.3− | 0.5+ |
| 2005 04 15 | 691 | 0.0 | 0.2+ | 2005 06 01 | 699 | 0.3+ | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.6+ |
| 2005 04 30 | 691 | 0.2+ | 0.3+ | 2005 06 01 | G92 | 0.6+ | 0.7− | | | | |

**(145130)∗ 2005 GF$_{153}$**

Discovered 2005 Apr. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.46648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28649002 | $\omega$ | 226.64981 | | +0.33440770 | +0.92793716 | |
| $a$ | 2.2789233 | $\Omega$ | 63.56299 | | −0.80273389 | +0.37198179 | |
| $e$ | 0.1447265 | $i$ | 10.59471 | | −0.49375075 | +0.02371022 | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.8+ | 0.6+ | 2005 05 03 | 704 | 1.0− | 0.6+ | 2006 10 16 | 703 | 0.3− | 1.4+ |
| 1998 03 24 | 704 | 0.9+ | 0.9+ | 2005 05 03 | 704 | 0.3+ | 0.7+ | 2006 10 18 | 691 | 0.4− | 0.3+ |
| 1998 03 24 | 704 | 0.6− | 0.5+ | 2005 05 07 | 703 | 0.5− | 0.3− | 2006 10 18 | 691 | 0.5− | 0.5+ |
| 1998 03 24 | 704 | (2.8− | 0.6+) | 2005 05 07 | 703 | (2.4− | 2.9−) | 2006 10 18 | 691 | 0.2− | 0.5+ |
| 1998 04 24 | 704 | 0.5− | 1.1− | 2005 05 07 | 703 | (0.8+ | 1.6−) | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 1998 04 24 | 704 | (0.5+ | 2.5−) | 2005 05 07 | 703 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 1998 04 24 | 704 | (2.4− | 1.5−) | 2005 05 11 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1998 04 24 | 704 | 0.8− | 0.7− | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 1998 04 24 | 704 | (5.5− | 0.3+) | 2005 05 11 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | (2.1− | 0.2−) |
| 2004 01 16 | 691 | 0.2− | 0.1− | 2005 05 11 | 699 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1+ | 1.1− |
| 2004 01 16 | 691 | 0.5+ | 0.3− | 2005 05 11 | 699 | 0.5− | 0.8+ | 2006 11 11 | 703 | 1.0− | 0.4+ |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2005 05 11 | 699 | 1.2− | 0.9+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2005 04 02 | 644 | 0.1+ | 0.2− | 2005 05 11 | 699 | 0.5+ | 0.5− | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2005 04 02 | 644 | 0.2− | 0.3+ | 2005 05 11 | 699 | 0.3+ | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 644 | 0.2− | 0.3+ | 2005 05 11 | 699 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.2− | 0.2+ |
| 2005 04 13 | 699 | 1.2+ | 0.3+ | 2005 05 11 | 699 | 0.3− | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2005 04 13 | 699 | (1.6+ | 0.5−) | 2005 05 11 | 699 | 1.0+ | 0.4+ | 2006 11 17 | 703 | 0.8− | 0.5+ |
| 2005 04 13 | 699 | 0.6+ | 0.6+ | 2005 05 12 | 704 | (1.3+ | 1.6+) | 2006 11 17 | 703 | 0.7− | 0.4− |
| 2005 04 13 | 699 | 0.1+ | 0.9+ | 2005 05 12 | 704 | 1.4+ | 0.2+ | 2006 11 17 | 703 | 0.0 | 1.4+ |
| 2005 04 14 | 691 | 0.1− | 0.1+ | 2005 05 12 | 704 | 1.1+ | 0.5− | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2005 04 14 | 691 | 0.1− | 0.0 | 2005 06 04 | 703 | (2.4− | 1.5+) | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2005 04 14 | 691 | 0.0 | 0.3− | 2005 06 04 | 703 | (0.2− | 2.0+) | 2006 11 21 | 704 | (1.3+ | 2.0+) |
| 2005 04 18 | 691 | 0.1+ | 0.2+ | 2005 06 04 | 703 | 0.4+ | 1.0+ | 2006 11 21 | 704 | (0.3+ | 2.5+) |
| 2005 04 18 | 691 | 0.1+ | 0.0 | 2005 06 04 | 703 | 0.5− | 0.8+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2005 04 30 | 644 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2005 04 30 | 644 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 11 26 | 104 | 0.6+ | 0.0 |
| 2005 04 30 | 644 | 0.3+ | 0.3− | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 26 | 104 | 0.2− | 0.7+ |
| 2005 05 03 | 704 | 0.3+ | 1.4+ | 2006 10 16 | 703 | 0.7− | 0.2+ | 2006 11 26 | 104 | 0.0 | 1.5+ |
| 2005 05 03 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.7+ | | | | |
| 2005 05 03 | 704 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3− | | | | |

**(145131)∗ 2005 GM$_{153}$ = 2004 CD$_{69}$**

Discovered 2005 Apr. 13 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77154)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.75876 | | (2000.0) | | | |
| $n$ | 0.22702608 | $\omega$ | 176.01634 | | +0.54604033 | +0.80693570 |
| $a$ | 2.6612492 | $\Omega$ | 126.92581 | | −0.77620230 | +0.58842226 |
| $e$ | 0.1153525 | $i$ | 16.35870 | | −0.31519828 | −0.05112742 |
| $P$ | 4.34 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.5+ | 1.8+ | 2005 05 06 | 699 | 0.5+ | 0.4− | 2005 06 25 | 644 | 0.1+ | 0.3+ |
| 2000 03 04 | 704 | 0.0 | 0.6+ | 2005 05 06 | 699 | 0.3+ | 0.2+ | 2005 06 25 | 644 | 0.2+ | 0.2+ |
| 2000 03 04 | 704 | 0.0 | 0.5+ | 2005 05 09 | 703 | 0.3+ | 0.2− | 2005 07 01 | 644 | 0.1+ | 0.3+ |
| 2002 11 16 | 644 | 0.1− | 0.1− | 2005 05 09 | 703 | 0.4− | 0.4− | 2005 07 01 | 644 | 0.2+ | 0.3+ |
| 2002 11 16 | 644 | 0.5− | 0.1+ | 2005 05 09 | 703 | 1.0− | 0.3− | 2005 07 01 | 644 | 0.3− | 0.0 |
| 2002 11 16 | 644 | 0.2+ | 0.0 | 2005 05 09 | 703 | 0.5− | 0.7− | 2006 09 22 | 703 | 0.1− | 1.0+ |
| 2004 01 22 | 704 | 0.1− | 0.2+ | 2005 05 13 | 704 | (1.6− | 0.8+) | 2006 09 22 | 703 | 0.3− | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 0.6+ | 2005 05 13 | 704 | 0.8+ | 0.2+ | 2006 09 22 | 703 | 0.5− | 0.4− |
| 2004 01 22 | 704 | 1.0− | 0.4+ | 2005 05 13 | 704 | 0.2+ | 0.0 | 2006 09 22 | 703 | 0.7− | 0.5− |
| 2004 01 22 | 704 | 0.7+ | 0.5+ | 2005 05 13 | 704 | 0.3− | 0.4− | 2006 09 23 | 246 | 0.3− | 1.4+ |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 704 | 0.1+ | 1.1+ | 2006 09 23 | 246 | 0.4− | 0.8+ |
| 2004 02 11 | 691 | 0.3+ | 0.3+ | 2005 05 14 | 703 | 0.3− | 0.9+ | 2006 09 23 | 246 | 0.6− | 0.2− |
| 2004 02 11 | 691 | 0.2+ | 0.1+ | 2005 05 14 | 703 | (0.2+ | 1.5+) | 2006 09 23 | 246 | 0.7− | 0.5+ |
| 2004 02 16 | 704 | (1.7+ | 0.2+) | 2005 05 14 | 703 | 0.2− | 1.2+ | 2006 09 23 | 246 | 0.3− | 1.3+ |
| 2004 02 16 | 704 | 0.3+ | 0.4+ | 2005 05 14 | 703 | 0.3+ | 1.2+ | 2006 09 23 | 246 | (0.3+ | 1.7+) |
| 2004 02 16 | 704 | 0.7+ | 0.6+ | 2005 05 19 | 703 | 0.9− | 0.3− | 2006 09 23 | 246 | 0.2+ | 0.2+ |
| 2004 02 16 | 704 | 0.2+ | 0.8+ | 2005 05 19 | 703 | 0.1+ | 0.3− | 2006 09 23 | 246 | 0.5+ | 0.4− |
| 2004 04 15 | 645 | 0.0 | 0.1− | 2005 05 19 | 703 | 0.9− | 0.0 | 2006 09 23 | 246 | 0.4− | 1.4+ |
| 2004 04 15 | 645 | 0.1− | 0.1− | 2005 05 19 | 703 | 1.3− | 0.1− | 2006 09 24 | 699 | 0.5− | 0.6+ |
| 2005 04 04 | 703 | 0.2+ | 0.4− | 2005 05 21 | 644 | 0.1− | 0.5+ | 2006 09 24 | 699 | 0.9+ | 1.0+ |
| 2005 04 04 | 703 | 0.4+ | 0.7+ | 2005 05 21 | 644 | 0.0 | 0.6+ | 2006 09 24 | 699 | (0.9− | 1.9+) |
| 2005 04 04 | 703 | 0.3− | 0.0 | 2005 05 21 | 644 | 0.2− | 0.3+ | 2006 09 24 | 699 | 0.1+ | 1.0+ |
| 2005 04 04 | 703 | 0.7− | 0.4− | 2005 05 30 | 703 | 0.3+ | 0.7+ | 2006 10 25 | E12 | 0.8+ | 1.0+ |
| 2005 04 13 | 703 | 0.3+ | 0.6− | 2005 05 30 | 703 | (0.5− | 1.6+) | 2006 10 25 | E12 | 0.7+ | 0.1− |
| 2005 04 13 | 703 | 0.4+ | 0.3− | 2005 05 30 | 703 | 0.5− | 0.2− | 2006 10 25 | E12 | 0.1− | 0.4+ |
| 2005 04 13 | 703 | 0.5+ | 0.5− | 2005 05 30 | 703 | 0.2+ | 0.1− | 2006 10 25 | E12 | 0.8+ | 0.3+ |
| 2005 04 13 | 703 | 0.0 | 0.2+ | 2005 06 01 | 704 | (1.8+ | 1.4+) | 2006 10 31 | 703 | 0.3+ | 1.7− |
| 2005 04 14 | 704 | 0.9+ | 0.6+ | 2005 06 01 | 704 | (1.5+ | 2.8+) | 2006 10 31 | 703 | 1.2− | 0.5− |
| 2005 04 14 | 704 | 1.1+ | 0.0 | 2005 06 01 | 704 | (1.4+ | 1.6+) | 2006 10 31 | 703 | 0.3+ | 0.1− |
| 2005 04 14 | 704 | 0.8+ | 0.3− | 2005 06 01 | 704 | (2.4+ | 1.2+) | 2006 10 31 | 703 | 0.7− | 0.6− |
| 2005 05 06 | 699 | 0.2+ | 0.5− | 2005 06 01 | 704 | 0.7+ | 1.3+ | | | | |
| 2005 05 06 | 699 | 0.3+ | 0.2+ | 2005 06 25 | 644 | 0.1− | 0.2+ | | | | |

**(145132)∗ 2005 GZ$_{157}$ = 1992 HB$_3$**

Discovered 2005 Apr. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77156)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.53013 | | (2000.0) | | | |
| $n$ | 0.22476302 | $\omega$ | 131.30483 | | +0.15583466 | +0.98694316 |
| $a$ | 2.6790829 | $\Omega$ | 147.59285 | | −0.92746670 | +0.16038186 |
| $e$ | 0.1806819 | $i$ | 4.35836 | | −0.33988392 | +0.01486130 |
| $P$ | 4.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 28 | 691 | 0.1+ | 0.9− | 2005 04 15 | 699 | 0.7+ | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.5+ |
| 1992 04 28 | 691 | 0.0 | 1.1− | 2005 04 15 | 699 | 0.8+ | 1.0+ | 2006 09 18 | 703 | 1.1− | 0.6− |
| 1992 04 28 | 691 | 0.1− | 0.7− | 2005 05 08 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.5− |
| 1992 05 03 | 691 | 0.0 | 0.1+ | 2005 05 08 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.6− | 0.4− |
| 1992 05 03 | 691 | 0.5− | 0.2− | 2005 05 08 | 691 | 0.2+ | 0.8+ | 2006 09 26 | 704 | 0.8+ | 0.0 |
| 1992 05 03 | 691 | 0.4− | 0.4− | 2005 05 15 | 644 | 0.1+ | 0.8+ | 2006 09 26 | 704 | 1.2− | 0.5+ |
| 2000 02 03 | 691 | 0.2+ | 0.1− | 2005 05 15 | 644 | 0.8+ | 0.8+ | 2006 09 26 | 704 | 0.8+ | 0.2− |
| 2000 02 03 | 691 | 0.1− | 0.0 | 2005 05 15 | 644 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.8+ | 0.5− |
| 2000 02 03 | 691 | 0.1− | 0.1− | 2006 08 18 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.3− |
| 2005 03 09 | G96 | 0.5− | 0.2+ | 2006 08 18 | 691 | 0.1− | 0.3+ | 2006 09 26 | 704 | (1.9+ | 0.2−) |
| 2005 03 09 | G96 | 0.4− | 0.0 | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 26 | 704 | 1.2− | 0.8+ |
| 2005 03 09 | G96 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.1− | 0.4+ |
| 2005 03 09 | G96 | 0.5− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.6+ |
| 2005 04 02 | 644 | 0.5− | 0.8+ | 2006 08 27 | 691 | 0.7+ | 0.7− | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2005 04 02 | 644 | 0.1+ | 0.9+ | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.3+ |
| 2005 04 02 | 644 | 0.0 | 0.9+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2005 04 12 | 691 | 0.2+ | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.9− | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2005 04 12 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 1.1+ | 0.6+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2005 04 15 | 699 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 1.4+ | | | | |
| 2005 04 15 | 699 | 0.2− | 1.2− | 2006 09 18 | 703 | 0.8− | 1.2+ | | | | |

**(145133)∗ 2005 GO$_{158}$ = 2001 LF$_2$**

Discovered 2005 Apr. 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77156)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.17838 | | (2000.0) | | | |
| $n$ | 0.23280466 | $\omega$ | 47.16699 | | +0.24043698 | +0.96859435 |
| $a$ | 2.6170274 | $\Omega$ | 236.84931 | | −0.91118760 | +0.20272327 |
| $e$ | 0.2168864 | $i$ | 4.34046 | | −0.33455524 | +0.14397313 |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 704 | 1.1+ | 0.7− | 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.6− | 0.4+ |
| 2001 05 24 | 704 | 1.0− | 1.3+ | 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.0 |
| 2001 05 24 | 704 | 0.6+ | 0.8− | 2005 04 16 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.2− |
| 2001 05 24 | 704 | 0.4− | 0.8− | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 1.2+ | 0.6+ |
| 2001 06 13 | 704 | 0.0 | 0.1− | 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.5− |
| 2001 06 13 | 704 | (1.7− | 0.6−) | 2005 04 17 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.7+ | 1.2+ |
| 2001 06 13 | 704 | 0.3+ | 0.0 | 2005 04 17 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 06 13 | 704 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.6− | 0.3+ |
| 2001 06 16 | 704 | 0.7− | 0.1− | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 06 16 | 704 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.4− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2001 06 16 | 704 | 0.0 | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2001 06 16 | 704 | 0.4+ | 0.5− | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2002 11 04 | 644 | 0.1− | 0.6+ | 2006 09 28 | 691 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2002 11 04 | 644 | 0.2− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2002 11 04 | 644 | 0.7− | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.5− | 0.6+ |
| 2005 04 12 | 691 | 0.6+ | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2005 04 12 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.2+ | | | | |
| 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ | | | | |

**(145134)∗ 2005 GU$_{160}$**

Discovered 2005 Apr. 12 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.30100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22374638 | $\omega$ | 69.76490 | | −0.15484417 | +0.98720990 | |
| $a$ | 2.6871921 | $\Omega$ | 191.52517 | | −0.96243285 | −0.15940652 | |
| $e$ | 0.2229273 | $i$ | 10.94820 | | −0.22303877 | +0.00248552 | |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 691 | 0.2+ | 0.4+ | 2005 04 15 | 699 | 0.3− | 0.6+ | 2005 06 25 | 644 | 0.2+ | 0.0 | |
| 1996 03 17 | 691 | 0.0 | 0.1+ | 2005 04 15 | 699 | 0.5− | 0.8+ | 2005 06 25 | 644 | 0.1+ | 0.1+ | |
| 1996 03 17 | 691 | 0.2− | 0.0 | 2005 04 15 | 699 | 0.6− | 0.2+ | 2005 06 25 | 644 | 0.1− | 0.0 | |
| 1997 10 09 | 691 | 0.3+ | 0.6− | 2005 04 20 | 703 | 0.5− | 0.3+ | 2006 07 22 | G96 | 0.5+ | 0.6+ | |
| 1997 10 09 | 691 | 0.1− | 0.1+ | 2005 04 20 | 703 | 0.2− | 0.3+ | 2006 07 22 | G96 | 0.0 | 0.4+ | |
| 1997 10 09 | 691 | 0.0 | 0.1+ | 2005 04 20 | 703 | 0.9− | 0.5+ | 2006 07 22 | G96 | 0.6− | 0.3+ | |
| 2001 06 15 | 645 | 0.1− | 0.2− | 2005 04 20 | 703 | 0.4+ | 0.7+ | 2006 07 22 | G96 | (1.7− | 0.5+) | |
| 2001 06 15 | 645 | 0.2− | 0.2− | 2005 05 04 | 691 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.2+ | |
| 2001 06 28 | 699 | 1.5+ | 1.3+ | 2005 05 04 | 691 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.3+ | |
| 2001 06 28 | 699 | 0.3+ | 0.6+ | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.2+ | |
| 2001 06 28 | 699 | 1.0+ | 0.9+ | 2005 05 07 | 703 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.6+ | |
| 2001 06 28 | 699 | 0.1+ | 0.4+ | 2005 05 07 | 703 | 0.2+ | 1.1+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | |
| 2001 07 11 | 644 | 1.0+ | 0.1+ | 2005 05 07 | 703 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.5+ | |
| 2001 07 11 | 644 | (1.6+ | 0.3+) | 2005 05 07 | 703 | 1.0− | 0.1− | 2006 09 29 | 691 | 0.3− | 0.1+ | |
| 2001 07 11 | 644 | 1.3+ | 0.0 | 2005 05 11 | 699 | 0.2− | 0.0 | 2006 09 29 | 691 | 0.2+ | 0.2+ | |
| 2001 08 07 | 608 | 0.6+ | 0.0 | 2005 05 11 | 699 | 0.6− | 0.5+ | 2006 09 29 | 691 | 0.2− | 0.3− | |
| 2001 08 07 | 608 | 0.8+ | 0.3+ | 2005 05 11 | 699 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.2− | |
| 2001 08 07 | 608 | 0.9+ | 0.2+ | 2005 05 11 | 703 | 0.5+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.2− | |
| 2001 08 16 | 644 | 0.1+ | 0.2− | 2005 05 11 | 703 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.1− | 0.1+ | |
| 2001 08 16 | 644 | 0.2− | 0.3+ | 2005 05 11 | 703 | 0.7− | 0.6− | 2006 10 17 | G96 | 0.0 | 0.3− | |
| 2001 08 16 | 644 | 0.0 | 0.3+ | 2005 05 11 | 699 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.6+ | |
| 2001 08 26 | 644 | 0.5− | 0.2+ | 2005 05 11 | 703 | 0.8− | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.1+ | |
| 2001 08 26 | 644 | 0.9− | 0.2+ | 2005 05 15 | 644 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.7− | 0.7+ | |
| 2001 08 26 | 644 | 0.7− | 0.4+ | 2005 05 15 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2+ | |
| 2005 04 05 | 703 | 0.0 | 0.9+ | 2005 05 15 | 644 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− | |
| 2005 04 05 | 704 | 0.6− | 0.2+ | 2005 06 07 | 699 | 0.5+ | 0.2− | 2006 10 21 | 703 | 0.4− | 0.7− | |
| 2005 04 05 | 703 | 1.1+ | 0.4+ | 2005 06 07 | 699 | 0.7+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | |
| 2005 04 05 | 704 | 1.1+ | 0.4− | 2005 06 07 | 699 | 0.7+ | 0.1+ | 2006 10 21 | 703 | 1.0− | 1.0+ | |
| 2005 04 05 | 703 | 0.7+ | 0.7− | 2005 06 07 | 703 | 0.1− | 0.9− | 2006 11 18 | G96 | 0.2+ | 0.2+ | |
| 2005 04 05 | 703 | 0.9+ | 0.9+ | 2005 06 07 | 699 | 0.6+ | 0.8+ | 2006 11 18 | G96 | 0.1+ | 0.2+ | |
| 2005 04 05 | 704 | (2.5+ | 0.3−) | 2005 06 07 | 703 | 1.1− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.0 | |
| 2005 04 05 | 704 | (0.7+ | 1.8−) | 2005 06 07 | 703 | 0.6− | 0.5− | 2006 11 18 | G96 | 0.1− | 0.0 | |
| 2005 04 12 | E12 | 0.2+ | 0.8− | 2005 06 07 | 703 | 0.7− | 0.5− | 2006 11 23 | G96 | 0.5+ | 0.3− | |
| 2005 04 12 | E12 | 0.3− | 0.2− | 2005 06 09 | 704 | (2.0+ | 0.4−) | 2006 11 23 | G96 | 0.1− | 0.3− | |
| 2005 04 12 | E12 | 0.1− | 0.2− | 2005 06 09 | 704 | 1.1+ | 0.8+ | 2006 11 23 | G96 | 0.3− | 0.4− | |
| 2005 04 12 | E12 | 0.8+ | 0.4− | 2005 06 09 | 704 | 0.9+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.1− | |
| 2005 04 15 | 699 | 1.0+ | 0.8− | 2005 06 09 | 704 | (0.1+ | 1.9+) | | | | | |

**(145135)∗ 2005 GU$_{161}$**

Discovered 2005 Apr. 13 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.50369 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28009242 | $\omega$ | 211.77008 | | +0.46092496 | +0.87488059 | |
| $a$ | 2.3134945 | $\Omega$ | 86.05657 | | −0.77978537 | +0.47930822 | |
| $e$ | 0.1578666 | $i$ | 8.57604 | | −0.42365429 | +0.06962461 | |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.3− | 1.0+ | 2002 08 30 | 644 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.7+ | |
| 1998 04 23 | 704 | 0.0 | 1.7− | 2005 04 05 | 599 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.5+ | |
| 1998 04 23 | 704 | 0.0 | 0.7− | 2005 04 05 | 599 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.7+ | |
| 1998 04 23 | 704 | 0.1+ | 0.5+ | 2005 04 06 | 599 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ | |
| 2002 06 08 | 704 | (0.9+ | 1.6−) | 2005 04 06 | 599 | 0.6+ | 0.4− | 2006 10 12 | 644 | 0.5+ | 0.4+ | |
| 2002 06 08 | 704 | 0.4+ | 0.6− | 2005 04 13 | 703 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.1− | |
| 2002 06 08 | 704 | 0.4− | 0.7− | 2005 04 13 | 703 | 0.4− | 0.0 | 2006 10 16 | 703 | 1.2− | 1.2+ | |
| 2002 06 08 | 704 | 0.3+ | 0.9− | 2005 04 13 | 703 | 0.5− | 0.5− | 2006 10 16 | 703 | (0.6− | 2.2+) | |
| 2002 07 05 | 704 | 0.6− | 0.6− | 2005 04 13 | 703 | 1.1− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.3+ | |
| 2002 07 05 | 704 | 0.1+ | 0.3+ | 2005 04 15 | 699 | 0.8+ | 1.2+ | 2006 10 16 | 703 | 0.4− | 0.2+ | |
| 2002 07 05 | 704 | 0.5+ | 0.1+ | 2005 04 15 | 699 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 1.4− | |
| 2002 07 15 | 644 | 0.0 | 0.6+ | 2005 04 15 | 699 | (0.7+ | 1.6+) | 2006 10 22 | 703 | 0.1− | 0.5− | |
| 2002 07 15 | 644 | 0.1− | 0.7+ | 2005 04 15 | 699 | 0.9+ | 0.7+ | 2006 10 22 | 703 | 0.2+ | 0.4− | |
| 2002 07 15 | 644 | 0.3+ | 0.5+ | 2005 04 30 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.1− | |
| 2002 08 13 | 644 | 0.2− | 0.2− | 2005 04 30 | 699 | (1.9+ | 0.2+) | 2006 11 19 | 703 | 0.4− | 0.2− | |
| 2002 08 13 | 644 | 0.0 | 0.1− | 2005 04 30 | 699 | (2.2+ | 2.2+) | 2006 11 19 | 703 | 0.5− | 0.9+ | |
| 2002 08 13 | 644 | 0.2− | 0.3− | 2005 04 30 | 699 | 0.7+ | 0.9+ | 2006 11 19 | 703 | 0.6− | 0.2− | |
| 2002 08 30 | 644 | 0.2− | 0.1+ | 2005 05 11 | 703 | 0.3− | 0.1− | 2006 11 19 | 703 | (0.1− | 1.8−) | |
| 2002 08 30 | 644 | 0.1− | 0.4+ | 2005 05 11 | 703 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.6+ | 0.3− | |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2005 05 11 | 703 | (0.8− | 1.5+) | 2006 11 24 | G96 | 0.5+ | 0.4− | |
| 2002 08 30 | 644 | 0.0 | 0.0 | 2005 05 11 | 703 | 0.4− | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.5− | |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.8+ | 2006 11 24 | G96 | 0.4+ | 0.3− | |

**(145136)∗ 2005 GY$_{161}$ = 2004 BB$_{155}$**

Discovered 2005 Apr. 14 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77158)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.72416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21813746 | $\omega$ | 9.16440 | | +0.35364452 | +0.93350402 | |
| $a$ | 2.7330603 | $\Omega$ | 281.56347 | | −0.86197767 | +0.30065892 | |
| $e$ | 0.1843002 | $i$ | 3.46487 | | −0.36322176 | +0.19538286 | |
| $P$ | 4.52 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.5+ | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.2+ | |
| 1995 02 03 | 691 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.6+ | 0.4− | 2006 09 25 | 704 | 0.5− | 0.3+ | |
| 1995 02 03 | 691 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1+ | |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.7− | 0.8− | 2006 09 27 | 691 | 0.2− | 0.4+ | |
| 2004 01 28 | 691 | 0.5+ | 0.1+ | 2006 08 30 | 704 | (1.9+ | 0.9−) | 2006 09 27 | 691 | 0.1+ | 0.5+ | |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 1.0− | 0.2− | 2006 09 29 | 704 | 0.2− | 0.3− | |
| 2004 02 12 | 691 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.1+ | 1.4− | 2006 09 29 | 704 | 0.2− | 0.6− | |
| 2004 02 12 | 691 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.7− | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.6+ | |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.7− | 0.5− | 2006 10 01 | 691 | 0.0 | 0.3+ | |
| 2005 04 14 | 703 | 0.3+ | 0.3− | 2006 09 17 | 703 | 1.4+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.2+ | |
| 2005 04 14 | 703 | (1.8− | 0.9+) | 2006 09 17 | 703 | 0.5− | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.4+ | |
| 2005 04 14 | 703 | 1.2− | 1.0+ | 2006 09 17 | 703 | (2.4+ | 0.7+) | 2006 10 21 | 644 | 0.6− | 0.4+ | |
| 2005 04 14 | 703 | 0.6− | 0.1+ | 2006 09 17 | 703 | 1.0+ | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.2+ | |
| 2005 04 16 | 691 | 0.4+ | 0.5+ | 2006 09 18 | 704 | 0.8− | 1.3− | 2006 10 21 | 644 | 0.2+ | 1.0− | |
| 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.0 | |
| 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.3− | |
| 2005 05 06 | 703 | 0.6+ | 0.8+ | 2006 09 18 | 704 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | |
| 2005 05 06 | 703 | (1.9− | 0.6+) | 2006 09 19 | 699 | 0.3− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1+ | |
| 2005 05 06 | 703 | 1.3− | 1.2+ | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.4+ | |
| 2005 05 06 | 703 | 1.1− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.4− | |
| 2005 05 09 | 699 | 0.8+ | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.3− | |
| 2005 05 09 | 699 | 1.1+ | 1.1− | 2006 09 25 | 704 | (2.0+ | 0.0 ) | 2006 10 23 | G96 | 0.1− | 0.4− | |
| 2005 05 09 | 699 | 0.4− | 0.7− | 2006 09 25 | 704 | 0.6+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.2+ | |
| 2005 05 09 | 699 | 0.7− | 0.7− | 2006 09 25 | 704 | 0.6+ | 0.1− | 2006 10 23 | G96 | 0.4− | 0.2− | |

**(145137)∗ 2005 GW$_{162}$**

Discovered 2005 Apr. 13 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.89229 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18601244 | $\omega$ | 66.27337 | | −0.76887505 | +0.62880496 | |
| $a$ | 3.0393081 | $\Omega$ | 152.25527 | | −0.63876375 | −0.74730526 | |
| $e$ | 0.1993725 | $i$ | 14.41755 | | −0.02849596 | −0.21480031 | |
| $P$ | 5.30 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | (0.2− | 1.5−) | 2005 05 06 | 704 | 0.1+ | 0.2+ | 2005 07 10 | 699 | (2.0+ | 0.1−) | |
| 2001 09 12 | 704 | 0.7− | 1.4− | 2005 05 06 | 704 | 0.4+ | 0.4− | 2005 07 10 | 699 | 0.5+ | 0.4+ | |
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2005 05 06 | 704 | 0.5+ | 0.3+ | 2006 07 18 | G96 | 0.3− | 0.2− | |
| 2002 11 07 | 645 | 0.0 | 0.2+ | 2005 05 12 | 699 | 0.1+ | 0.2− | 2006 07 18 | G96 | 0.5− | 0.3− | |
| 2002 11 07 | 645 | 0.0 | 0.2+ | 2005 05 12 | 699 | 0.2+ | 0.1− | 2006 07 18 | G96 | 0.3+ | 0.1− | |
| 2002 12 31 | 809 | 0.1− | 0.2+ | 2005 05 12 | 699 | 0.1+ | 0.0 | 2006 07 18 | G96 | 0.1+ | 0.3− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 809 | 0.0 | 0.3+ | 2005 05 12 | 699 | 0.3− | 0.6+ | 2006 08 06 | A50 | 0.4− | 0.2− |
| 2002 12 31 | 809 | 0.2− | 0.3+ | 2005 05 13 | 703 | 0.4− | 0.4+ | 2006 08 06 | A50 | 0.1+ | 0.1− |
| 2002 12 31 | 809 | 0.2− | 0.3+ | 2005 05 13 | 703 | 0.0 | 0.1+ | 2006 08 07 | A50 | 0.3+ | 0.7+ |
| 2004 02 17 | 704 | (0.5− | 1.6+) | 2005 05 13 | 703 | 0.4− | 0.1+ | 2006 08 07 | A50 | 0.3− | 0.2− |
| 2004 02 17 | 704 | 1.3− | 1.1+ | 2005 05 13 | 704 | 0.5+ | 0.1+ | 2006 08 07 | A50 | 0.0 | 0.1+ |
| 2004 02 17 | 704 | 0.6− | 1.2+ | 2005 05 13 | 703 | 0.4− | 0.3+ | 2006 08 07 | A50 | 0.6+ | 1.3− |
| 2004 02 17 | 704 | 1.0+ | 1.0+ | 2005 05 13 | 704 | 0.5+ | 0.4+ | 2006 08 16 | 644 | 0.2+ | 0.3− |
| 2005 03 11 | 703 | 0.3− | 0.1+ | 2005 05 13 | 704 | 0.6+ | 0.2− | 2006 08 16 | 644 | 0.2− | 0.1+ |
| 2005 03 11 | 703 | 0.9− | 0.7+ | 2005 05 13 | 704 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.5− | 0.1− |
| 2005 03 11 | 703 | 0.5− | 0.1− | 2005 05 13 | 704 | 1.0+ | 0.2+ | 2006 08 16 | A50 | 0.4+ | 0.8+ |
| 2005 03 11 | 703 | 0.8− | 0.3− | 2005 05 19 | 703 | 0.5− | 0.4+ | 2006 08 16 | A50 | 0.2+ | 0.2+ |
| 2005 04 04 | 703 | 0.5− | 0.4+ | 2005 05 19 | 703 | 1.1− | 0.3+ | 2006 08 17 | A50 | 0.1+ | 0.1+ |
| 2005 04 04 | 703 | 1.1− | 0.0 | 2005 05 19 | 703 | 0.5− | 0.3− | 2006 08 18 | 644 | 0.1+ | 0.5+ |
| 2005 04 04 | 703 | 0.6− | 0.0 | 2005 05 19 | 703 | 0.5− | 0.8+ | 2006 08 18 | 644 | 0.5+ | 0.1+ |
| 2005 04 04 | 703 | 0.4+ | 0.4− | 2005 05 21 | 644 | 0.1− | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.0 |
| 2005 04 13 | 703 | 0.0 | 0.2+ | 2005 05 21 | 644 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.3− | 0.1− |
| 2005 04 13 | 703 | 0.3+ | 0.7+ | 2005 05 21 | 644 | 0.1+ | 0.1− | 2006 08 19 | 691 | 0.3− | 0.4− |
| 2005 04 13 | 703 | 0.2+ | 0.1− | 2005 06 01 | 704 | 0.5+ | 0.6+ | 2006 08 19 | 691 | 0.4− | 0.2− |
| 2005 04 13 | 703 | 0.6− | 0.1+ | 2005 06 01 | 704 | 0.3− | 0.2− | 2006 08 21 | 704 | 0.5− | 0.6− |
| 2005 04 14 | 683 | (0.0 | 2.3−) | 2005 06 01 | 704 | 0.4+ | 0.1− | 2006 08 21 | 704 | 0.1+ | 0.7+ |
| 2005 04 14 | 683 | 0.4+ | 0.1− | 2005 06 01 | 704 | 0.1− | 0.4− | 2006 08 21 | 704 | 0.1− | 0.3− |
| 2005 04 14 | 683 | 0.3− | 0.1+ | 2005 06 01 | 704 | 0.5− | 0.7− | 2006 08 21 | 704 | 0.0 | 0.1− |
| 2005 04 16 | 683 | (0.3− | 2.5+) | 2005 06 07 | 699 | 0.3+ | 0.5+ | 2006 08 21 | 704 | 0.7− | 0.1+ |
| 2005 04 16 | 683 | 0.5+ | 0.6+ | 2005 06 07 | 699 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 2005 04 16 | 683 | 0.5− | 1.2+ | 2005 06 07 | 699 | 0.6+ | 0.4+ | 2006 08 27 | 691 | (1.0− | 1.8−) |
| 2005 04 17 | 683 | 0.4− | 1.4+ | 2005 06 07 | 699 | 0.8+ | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 2005 04 17 | 683 | 1.3+ | 0.8− | 2005 06 25 | 644 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2005 04 17 | 683 | (0.2+ | 1.8+) | 2005 06 25 | 644 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.2+ | 0.3+ |
| 2005 04 18 | 704 | 0.8+ | 0.4− | 2005 06 25 | 644 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2005 04 18 | 704 | 0.0 | 0.5+ | 2005 06 27 | 699 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.0 |
| 2005 04 18 | 704 | 0.6+ | 0.3+ | 2005 06 27 | 699 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.4− |
| 2005 04 18 | 704 | 0.7+ | 0.3+ | 2005 06 27 | 699 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.4+ |
| 2005 05 02 | 608 | 0.9+ | 0.2+ | 2005 07 01 | 644 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.3− |
| 2005 05 02 | 608 | 0.6+ | 0.2+ | 2005 07 01 | 644 | 0.1+ | 0.1− | 2006 08 29 | 704 | 0.2− | 0.4+ |
| 2005 05 02 | 608 | 0.6+ | 0.2+ | 2005 07 01 | 644 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.6+ | 0.4+ |
| 2005 05 04 | 703 | 0.6− | 0.1+ | 2005 07 05 | 703 | 0.3+ | 0.5− | 2006 08 29 | 704 | 0.2+ | 0.9+ |
| 2005 05 04 | 703 | 0.5− | 0.1− | 2005 07 05 | 703 | 0.6− | 0.4− | 2006 09 14 | 703 | 0.8+ | 0.6+ |
| 2005 05 04 | 703 | 0.2− | 0.0 | 2005 07 05 | 703 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.7− |
| 2005 05 04 | 703 | 0.7− | 0.0 | 2005 07 05 | 703 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.0 |
| 2005 05 06 | 704 | 0.1− | 0.1− | 2005 07 10 | 699 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.6+ |
| 2005 05 06 | 704 | 0.5+ | 0.3− | 2005 07 10 | 699 | (1.7− | 0.6−) | | | | |

**(145138)∗ 2005 GB$_{163}$**

Discovered 2005 Apr. 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.72049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22953049 | $\omega$ | 51.84805 | | −0.16853639 | −0.93954479 | |
| $a$ | 2.6418559 | $\Omega$ | 50.60067 | | +0.73980869 | −0.32040656 | |
| $e$ | 0.0418081 | $i$ | 22.68984 | | +0.65136671 | +0.12081071 | |
| $P$ | 4.29 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1− | 0.1+ | 2005 05 04 | 699 | 0.6+ | 0.4− | 2005 05 30 | 699 | 0.1+ | 0.1+ |
| 1998 09 19 | 645 | 0.1− | 0.1+ | 2005 05 08 | 691 | 0.3+ | 0.6− | 2005 06 11 | 703 | 0.3+ | 0.4− |
| 2002 10 07 | 644 | 0.1− | 0.3+ | 2005 05 08 | 691 | 0.7+ | 0.0 | 2005 06 11 | 703 | 0.3− | 0.4+ |
| 2002 10 07 | 644 | 0.4− | 0.1− | 2005 05 08 | 691 | 0.1+ | 0.1+ | 2005 06 11 | 703 | 1.2− | 0.0 |
| 2002 10 07 | 644 | 0.1− | 0.2− | 2005 05 09 | 704 | 0.4+ | 0.2+ | 2005 06 11 | 703 | (2.4− | 0.6−) |
| 2003 12 04 | 704 | 1.0+ | 0.5+ | 2005 05 09 | 704 | 0.1+ | 0.2+ | 2006 07 29 | E12 | 0.2− | 0.2+ |
| 2003 12 04 | 704 | 0.7− | 0.6− | 2005 05 09 | 704 | 0.2− | 0.2− | 2006 07 29 | E12 | 0.6+ | 0.1− |
| 2003 12 04 | 704 | 0.5− | 0.4+ | 2005 05 09 | 704 | 0.1+ | 0.3+ | 2006 07 29 | E12 | 0.1+ | 0.3+ |
| 2003 12 04 | 704 | 0.1− | 0.1+ | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 07 29 | E12 | 0.3+ | 0.1− |
| 2004 02 10 | 704 | 0.3+ | 1.5+ | 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 08 14 | E12 | 0.0 | 0.7− |
| 2004 02 10 | 704 | 0.9− | 1.6+ | 2005 05 10 | 691 | 0.8− | 0.0 | 2006 08 14 | E12 | 0.2− | 0.6+ |
| 2004 02 10 | 704 | 1.0− | 1.7+ | 2005 05 11 | G96 | 0.5− | 0.3− | 2006 08 14 | E12 | 0.3+ | 0.4− |
| 2004 02 10 | 704 | 0.7+ | 0.4+ | 2005 05 11 | G96 | 0.4− | 0.2− | 2006 08 14 | E12 | 0.1− | 0.7− |
| 2004 02 10 | 704 | 1.3+ | 0.1+ | 2005 05 11 | G96 | 0.6− | 0.2− | 2006 08 22 | E12 | 0.5− | 0.3+ |
| 2005 04 04 | G96 | 0.4− | 0.4− | 2005 05 11 | G96 | 0.5− | 0.2− | 2006 08 22 | E12 | 0.3+ | 0.1+ |
| 2005 04 04 | G96 | 0.3− | 0.1− | 2005 05 12 | 691 | 0.2+ | 0.1+ | 2006 08 22 | E12 | 0.0 | 0.5+ |
| 2005 04 04 | G96 | 0.1− | 0.1+ | 2005 05 12 | 691 | 0.2+ | 0.1+ | 2006 08 22 | E12 | 0.5− | 1.0+ |
| 2005 04 04 | G96 | 0.3− | 0.3− | 2005 05 12 | 691 | 0.0 | 0.2+ | 2006 08 31 | E12 | 0.2+ | 0.1− |
| 2005 04 16 | 691 | 0.2+ | 0.2− | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2006 08 31 | E12 | 0.1+ | 0.5+ |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 704 | 0.8+ | 0.2+ | 2006 08 31 | E12 | 0.1+ | 1.0− |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 704 | 0.7+ | 0.2+ | 2006 08 31 | E12 | 0.3− | 0.2+ |
| 2005 04 18 | 691 | 0.1+ | 0.2+ | 2005 05 13 | 704 | 0.2+ | 0.7+ | 2006 09 15 | E12 | 1.1− | 0.8+ |
| 2005 04 18 | 691 | 0.2+ | 0.3+ | 2005 05 13 | 704 | 0.6+ | 0.4+ | 2006 09 15 | E12 | 0.2− | 1.5+ |
| 2005 04 18 | 691 | 0.2+ | 0.3+ | 2005 05 26 | 699 | 0.6− | 0.8+ | 2006 09 15 | E12 | 0.4+ | 0.0 |
| 2005 05 01 | 644 | 0.2− | 0.0 | 2005 05 26 | 699 | 0.3− | 0.4− | 2006 09 15 | E12 | 0.3− | 0.3− |
| 2005 05 01 | 644 | 0.6− | 0.4− | 2005 05 26 | 699 | 0.4+ | 0.9+ | 2006 09 28 | E12 | 0.7+ | 0.6− |
| 2005 05 01 | 644 | 0.2− | 0.1− | 2005 05 26 | 699 | 1.2+ | 1.1+ | 2006 09 28 | E12 | 0.3− | 0.1+ |
| 2005 05 04 | 699 | 0.3− | 0.2− | 2005 05 30 | 699 | 0.7+ | 0.3+ | 2006 09 28 | E12 | 0.1− | 0.2− |
| 2005 05 04 | 699 | 0.5− | 0.2+ | 2005 05 30 | 699 | 0.8+ | 1.2− | 2006 09 28 | E12 | 0.1+ | 0.4+ |
| 2005 05 04 | 699 | 1.2− | 0.0 | 2005 05 30 | 699 | 1.9− | 1.3+ | | | | |

**(145139)∗ 2005 GV$_{165}$ = 1995 SR$_{68}$ = 2003 VD$_3$**

Discovered 2005 Apr. 11 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 86715)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.08705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26976186 | $\omega$ | 169.76062 | | −0.98705706 | +0.16014347 | |
| $a$ | 2.3721875 | $\Omega$ | 19.46081 | | −0.14888330 | −0.89534804 | |
| $e$ | 0.1200989 | $i$ | 1.46373 | | −0.05959966 | −0.41557906 | |
| $P$ | 3.65 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 16 | 691 | 0.1+ | 0.3− | 2003 11 15 | 691 | 0.1+ | 0.1− | 2005 04 18 | 703 | 0.2− | 0.7− |
| 1994 04 16 | 691 | 0.1+ | 1.0− | 2003 11 15 | 691 | 0.5+ | 0.1+ | 2005 05 12 | G96 | 0.1+ | 0.2− |
| 1994 04 16 | 691 | 0.0 | 0.1− | 2003 11 16 | 291 | 0.2− | 0.3− | 2005 05 12 | G96 | 0.1+ | 0.1+ |
| 1994 04 16 | 691 | 0.2+ | 0.3+ | 2003 11 16 | 291 | 0.1− | 0.0 | 2005 05 12 | G96 | 0.1+ | 0.3+ |
| 1994 04 16 | 691 | 0.3− | 0.0 | 2003 11 16 | 291 | 0.0 | 0.2+ | 2005 05 12 | G96 | 0.5+ | 0.5+ |
| 1994 04 16 | 691 | 0.2+ | 0.5+ | 2005 03 10 | G96 | 0.2+ | 0.2+ | 2005 06 14 | G96 | 0.6+ | 1.3+ |
| 1995 09 20 | 691 | 0.8− | 0.1+ | 2005 03 10 | G96 | 0.2− | 0.1− | 2005 06 14 | G96 | 0.3− | 0.3+ |
| 1995 09 20 | 691 | 0.2− | 0.1+ | 2005 03 10 | G96 | 0.2+ | 0.1− | 2005 06 14 | G96 | 0.4− | 0.1+ |
| 1995 09 20 | 691 | 0.1+ | 0.2+ | 2005 03 10 | G96 | 0.1− | 0.1− | 2005 06 14 | G96 | 0.7+ | 0.6+ |
| 1995 09 22 | 691 | 0.2+ | 0.4− | 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 08 18 | 691 | 0.1− | 0.6+ |
| 1995 09 22 | 691 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.3+ | 0.3+ | 2006 08 18 | 691 | 0.1− | 0.0 |
| 1995 09 22 | 691 | 0.1− | 0.2− | 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 08 18 | 691 | 0.1+ | 0.2+ |
| 2001 02 02 | 691 | 0.3+ | 0.2+ | 2005 04 02 | G96 | 0.3− | 0.6− | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2001 02 02 | 691 | 0.0 | 0.1+ | 2005 04 11 | 699 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.4− | 0.3− |
| 2001 02 02 | 691 | 0.1− | 0.0 | 2005 04 11 | 699 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2001 02 16 | 699 | 0.1+ | 1.1+ | 2005 04 11 | 699 | 0.2+ | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.3+ |
| 2001 02 16 | 699 | 0.1− | 0.3− | 2005 04 11 | 699 | 0.9+ | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.1+ |
| 2001 02 16 | 699 | 0.0 | 0.7+ | 2005 04 18 | 703 | 0.9− | 0.5− | 2006 10 20 | G96 | 0.5+ | 0.7+ |
| 2001 02 16 | 699 | 0.7− | 0.9+ | 2005 04 18 | 703 | 1.1− | 0.4− | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2003 11 15 | 691 | 0.1− | 0.1+ | 2005 04 18 | 703 | 1.0− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− |

**(145140)∗ 2005 GV$_{167}$**

Discovered 2005 Apr. 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.15773 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23422932 | $\omega$ | 199.47499 | | −0.52628806 | +0.84962570 | |
| $a$ | 2.6064049 | $\Omega$ | 38.79077 | | −0.77276340 | −0.46122049 | |
| $e$ | 0.1406085 | $i$ | 3.11248 | | −0.35476416 | −0.25575737 | |
| $P$ | 4.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 691 | 0.2− | 0.3+ | 2005 05 04 | 704 | (1.6− | 0.9−) | 2005 05 12 | 291 | 0.1+ | 0.0 |
| 1998 10 12 | 691 | 0.4− | 0.1+ | 2005 05 04 | 704 | (1.7− | 0.1−) | 2005 05 12 | G96 | 0.0 | 0.1− |
| 1998 10 12 | 691 | 0.1+ | 0.0 | 2005 05 04 | 704 | 1.1− | 0.3− | 2005 05 12 | G96 | 0.1− | 0.0 |
| 1998 11 16 | 691 | 0.4+ | 0.8− | 2005 05 08 | E12 | 0.0 | 0.2+ | 2005 05 12 | G96 | 0.3− | 0.2+ |
| 1998 11 16 | 691 | 0.3+ | 0.6− | 2005 05 08 | E12 | 0.1+ | 0.3+ | 2005 05 12 | G96 | 0.1− | 0.1− |
| 1998 11 16 | 691 | 0.5+ | 0.6− | 2005 05 08 | E12 | 0.1+ | 0.3+ | 2005 05 14 | 704 | 0.9+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 1.0+ | 0.2+ | 2005 05 08 | E12 | 0.4− | 0.0 | 2005 05 14 | 704 | 1.4+ | 0.5− |
| 2003 12 22 | 704 | 0.4− | 0.0 | 2005 05 09 | 704 | 0.2− | 0.9− | 2005 05 14 | 704 | 1.3+ | 0.9− |
| 2003 12 22 | 704 | 0.5+ | 1.0+ | 2005 05 09 | 704 | 0.5+ | 0.3− | 2005 05 14 | 704 | 0.4+ | 0.8+ |
| 2003 12 22 | 704 | 0.3− | 0.6+ | 2005 05 09 | 704 | 1.4+ | 0.7− | 2005 06 04 | 703 | 0.0 | 1.1− |
| 2004 01 22 | 704 | 0.3+ | 0.3− | 2005 05 09 | 704 | 1.3+ | 0.6− | 2005 06 04 | 703 | 1.2− | 0.8+ |
| 2004 01 22 | 704 | 0.1+ | 0.5+ | 2005 05 09 | 704 | 0.9+ | 0.0 | 2005 06 04 | 703 | 1.0− | 0.1+ |
| 2004 01 22 | 704 | 0.6− | 1.1+ | 2005 05 10 | 699 | 0.0 | 1.1+ | 2005 06 04 | 703 | 0.3− | 0.3+ |
| 2004 01 22 | 704 | 0.2− | 0.6+ | 2005 05 10 | 699 | 0.7− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.1− |
| 2005 03 10 | G96 | 0.5− | 0.2+ | 2005 05 10 | 699 | 0.2+ | 0.3− | 2006 09 27 | 704 | 1.1− | 0.9+ |
| 2005 03 10 | G96 | 0.4− | 0.1+ | 2005 05 10 | 699 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 1.0− |
| 2005 03 10 | G96 | 0.2− | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2005 04 11 | G96 | 0.3+ | 0.0 | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.3+ | 0.0 | 2005 05 12 | G96 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2005 04 11 | G96 | 0.2+ | 0.1+ | 2005 05 12 | G96 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2005 04 17 | 703 | 1.3− | 0.2− | 2005 05 12 | 291 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2005 04 17 | 703 | 0.7− | 0.8− | 2005 05 12 | G96 | 0.1+ | 0.0 | 2006 10 13 | 291 | 0.0 | 0.1+ |
| 2005 04 17 | 703 | 1.2− | 0.5− | 2005 05 12 | 291 | 0.0 | 0.1+ | 2006 10 13 | 291 | 0.0 | 0.3+ |
| 2005 04 17 | 703 | 0.9− | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 10 13 | 291 | 0.2− | 0.3+ |

**(145141)∗ 2005 GF$_{168}$ = 1997 LX$_8$ = 2002 UV$_{24}$ = 2005 JB$_{45}$**

Discovered 2005 Apr. 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77161)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.42881 | | (2000.0) | | | |
| $n$ | 0.24528828 | $\omega$ | 67.96830 | | +0.34159121 | +0.93823388 |
| $a$ | 2.5274632 | $\Omega$ | 222.13355 | | −0.88973161 | +0.30394210 |
| $e$ | 0.1498400 | $i$ | 4.70858 | | −0.30280870 | +0.16533721 |
| $P$ | 4.02 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 07 | 809 | (0.8+ | 2.5−) | 2005 05 04 | G96 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 1997 06 07 | 809 | (1.3+ | 3.8−) | 2005 05 04 | G96 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.4− | 0.3+ |
| 1997 06 07 | 809 | 1.4+ | 1.6− | 2005 05 04 | 699 | 0.2− | 0.9+ | 2006 10 03 | 691 | 0.2− | 0.3+ |
| 1997 06 08 | 809 | 1.0+ | 1.0− | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 10 03 | 691 | 0.1− | 0.1+ |
| 1997 06 08 | 809 | 1.4+ | 0.8+ | 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 1997 06 08 | 809 | 0.6+ | 0.4+ | 2005 05 08 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 |
| 1998 10 19 | 691 | 0.5+ | 0.6− | 2005 05 08 | 691 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 1998 10 19 | 691 | 0.6+ | 0.3− | 2005 05 08 | 699 | 1.4+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 1998 10 19 | 691 | 0.9+ | 0.3− | 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 |
| 1998 10 27 | 691 | 1.0− | 1.8− | 2005 05 08 | 699 | 0.7+ | 0.2− | 2006 10 20 | 691 | 0.4− | 0.1+ |
| 1998 10 27 | 691 | 0.5− | 0.2− | 2005 05 08 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 1998 10 27 | 691 | 0.4− | 0.4− | 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2001 05 22 | 691 | 0.6− | 0.2+ | 2005 05 08 | 699 | 1.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 05 22 | 691 | 0.6− | 0.1+ | 2005 05 08 | 699 | 1.5− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2001 05 22 | 691 | 0.7− | 0.2+ | 2005 05 08 | 699 | (1.5+ | 1.5+) | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2002 10 30 | 291 | 0.1+ | 0.2+ | 2005 05 08 | 699 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.5+ | 0.0 |
| 2002 10 30 | 291 | 0.3+ | 0.1+ | 2005 05 08 | 699 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2002 10 30 | 291 | 0.3+ | 0.4+ | 2005 05 08 | 699 | (1.8− | 0.5−) | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2002 10 31 | 644 | 0.3− | 0.3+ | 2005 05 12 | 691 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.6+ | 0.6+ | 2005 05 12 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 644 | 0.5+ | 0.5+ | 2005 05 12 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.7+ |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2005 05 31 | 185 | 0.3− | 1.4− | 2006 11 11 | 703 | 0.0 | 1.0− |
| 2005 04 11 | G96 | 0.4− | 0.0 | 2005 05 31 | 185 | 0.2+ | 0.9− | 2006 11 11 | 703 | 0.6+ | 1.1− |
| 2005 04 11 | G96 | 0.0 | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.4− |
| 2005 04 11 | G96 | 0.7− | 0.3+ | 2005 06 13 | G96 | 0.8− | 0.5− | 2006 11 15 | 691 | (2.6+ | 2.0−) |
| 2005 04 17 | 691 | 0.2+ | 0.2+ | 2005 06 13 | G96 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.4+ | 0.2+ |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2005 06 13 | G96 | 0.3− | 0.3− | 2006 11 20 | 691 | 0.3− | 0.3+ |
| 2005 05 04 | 699 | 0.5− | 1.0+ | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2005 05 04 | 699 | 0.5− | 1.1− | 2005 06 13 | G96 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2005 05 04 | G96 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.2− | 0.4+ | | | | |
| 2005 05 04 | 699 | 0.6− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |

**(145142)∗ 2005 GX$_{168}$ = 1998 UA$_{50}$**

Discovered 2005 Apr. 12 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86715)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 106.24980 | | (2000.0) | | | |
| $n$ | 0.24120978 | $\omega$ | 48.59168 | | −0.57769695 | +0.81624780 |
| $a$ | 2.5558740 | $\Omega$ | 186.12103 | | −0.75545480 | −0.53578045 |
| $e$ | 0.1160630 | $i$ | 1.29053 | | −0.30911856 | −0.21605286 |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 691 | 0.2− | 0.3− | 2005 04 12 | 704 | 0.3− | 0.3− | 2005 06 15 | G96 | 0.6− | 0.2+ |
| 1998 10 01 | 691 | 0.2− | 0.0 | 2005 04 12 | 704 | 1.1+ | 0.2− | 2006 09 19 | 699 | (1.6− | 1.2+) |
| 1998 10 01 | 691 | 0.3+ | 0.3+ | 2005 04 12 | 704 | 1.4+ | 0.0 | 2006 09 19 | 703 | (2.6+ | 1.4+) |
| 1998 10 29 | 691 | 0.2+ | 0.1− | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 1.0− | 1.2+ |
| 1998 10 29 | 691 | 0.2− | 0.4+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 1998 10 29 | 691 | 0.0 | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.8+ | 1.4+ |
| 2001 04 26 | 699 | 0.4− | 0.4+ | 2005 04 18 | 703 | 0.2− | 0.6− | 2006 09 19 | 699 | 0.2− | 0.4+ |
| 2001 04 26 | 699 | (1.6− | 0.3+) | 2005 04 18 | 703 | 1.0− | 1.2− | 2006 09 19 | 703 | 0.5− | 0.7− |
| 2001 04 26 | 699 | 0.7+ | 0.4− | 2005 04 18 | 703 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.2− |
| 2001 04 26 | 699 | 0.1− | 0.5+ | 2005 04 18 | 703 | 0.2− | 0.9− | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2001 04 26 | 699 | 0.6+ | 0.1+ | 2005 05 04 | 568 | 0.2− | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2001 04 26 | 699 | 0.6− | 0.6− | 2005 05 04 | 568 | 0.1− | 0.8+ | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2001 04 26 | 699 | 0.4+ | 0.1+ | 2005 05 04 | 568 | 0.0 | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2001 04 26 | 699 | 0.9− | 0.4+ | 2005 05 05 | 568 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2001 05 14 | 691 | 0.1− | 0.2− | 2005 05 09 | 699 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2001 05 14 | 691 | 0.0 | 0.4− | 2005 05 09 | 699 | 0.7− | 0.6+ | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2001 05 14 | 691 | 0.1− | 0.3− | 2005 05 09 | 699 | 0.6− | 0.7+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2005 04 02 | G96 | 0.3− | 0.2− | 2005 05 09 | 699 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.5− | 0.3− |
| 2005 04 02 | G96 | 0.3− | 0.1− | 2005 05 12 | 699 | 0.8− | 1.0− | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2005 04 02 | G96 | 0.4− | 0.2− | 2005 05 12 | 699 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 04 02 | G96 | 0.6− | 0.0 | 2005 05 12 | 699 | 0.9+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2005 04 12 | 691 | 0.4− | 0.1+ | 2005 05 12 | 699 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2005 04 12 | 691 | 0.2+ | 0.1+ | 2005 06 15 | G96 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2005 04 12 | 704 | 0.7+ | 0.1− | 2005 06 15 | G96 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2005 04 12 | 691 | 0.0 | 0.2+ | 2005 06 15 | G96 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2+ |

**(145143)∗ 2005 GL$_{170}$ = 2002 LM$_{11}$**

Discovered 2005 Apr. 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 77163)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 103.95988 | | (2000.0) | | | |
| $n$ | 0.30721699 | $\omega$ | 69.50257 | | +0.15936205 | +0.98578901 |
| $a$ | 2.1752336 | $\Omega$ | 209.82211 | | −0.94090265 | +0.13537108 |
| $e$ | 0.1098907 | $i$ | 6.13396 | | −0.29884101 | +0.09947212 |
| $P$ | 3.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.1− | 0.2+ | 2005 04 12 | 691 | 0.1+ | 0.4+ | 2005 05 12 | 699 | 0.7− | 0.6+ |
| 1999 07 13 | 704 | 0.3− | 0.5+ | 2005 04 12 | 704 | 0.8+ | 0.5− | 2005 05 12 | 699 | 0.5− | 0.3+ |
| 1999 07 13 | 704 | 0.7+ | 0.2+ | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2005 05 12 | 699 | 0.4− | 0.3+ |
| 1999 07 13 | 704 | 0.4− | 0.2− | 2005 04 12 | 704 | 0.4− | 0.0 | 2005 05 13 | 704 | 0.1− | 0.3+ |
| 1999 07 13 | 704 | 0.0 | 0.4+ | 2005 04 12 | 691 | 0.2+ | 0.3+ | 2005 05 13 | 704 | 0.2− | 0.3+ |
| 2002 06 05 | 704 | 0.1+ | 0.2+ | 2005 04 12 | 704 | 0.9+ | 0.3− | 2005 05 13 | 704 | 0.0 | 0.3+ |
| 2002 06 05 | 704 | 0.0 | 0.3− | 2005 04 12 | 704 | 0.9+ | 0.2− | 2005 05 13 | 704 | 0.5+ | 0.1− |
| 2002 06 05 | 704 | 0.5+ | 0.1+ | 2005 04 12 | 704 | 0.7+ | 0.0 | 2005 05 13 | 704 | 0.5− | 0.0 |
| 2002 06 05 | 704 | 0.2− | 0.3+ | 2005 04 13 | 699 | 0.4− | 0.9+ | 2005 05 14 | G96 | 0.1− | 0.2− |
| 2002 06 05 | 704 | 0.2− | 0.2− | 2005 04 13 | 699 | 0.6+ | 0.0 | 2005 05 14 | G96 | 0.2− | 0.3− |
| 2002 06 09 | 704 | 0.6− | 0.8+ | 2005 04 13 | 699 | 0.7− | 0.1+ | 2005 05 14 | G96 | 0.1− | 0.2− |
| 2002 06 09 | 704 | 0.4+ | 0.5+ | 2005 04 13 | 699 | 0.5+ | 0.0 | 2005 05 14 | G96 | 0.1− | 0.2− |
| 2002 06 09 | 704 | 0.3+ | 0.5+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.3+ |
| 2002 06 09 | 704 | 0.2+ | 1.5+ | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.4+ |
| 2002 06 09 | 704 | 0.0 | 0.8+ | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.6+ |
| 2002 07 09 | 704 | (0.5− | 1.8+) | 2005 04 18 | 703 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | (0.7− | 1.9+) | 2005 04 18 | 703 | 1.1− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.4+ |
| 2002 07 09 | 704 | 0.2− | 1.2+ | 2005 04 18 | 703 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.4+ |
| 2002 07 09 | 704 | 0.5− | 1.4+ | 2005 04 18 | 703 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 2002 07 09 | 704 | (1.2− | 1.8+) | 2005 04 18 | 704 | 0.4− | 1.1+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2003 12 01 | 704 | 0.3+ | 0.5+ | 2005 04 18 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 2003 12 01 | 704 | 0.1− | 0.7+ | 2005 04 18 | 704 | 1.3− | 0.9− | 2006 11 02 | 703 | 0.4− | 0.7+ |
| 2003 12 01 | 704 | 0.4− | 0.2+ | 2005 04 18 | 704 | 0.1− | 0.7+ | 2006 11 02 | 703 | 1.2− | 0.6+ |
| 2003 12 01 | 704 | 1.1+ | 0.9+ | 2005 04 18 | 704 | 0.7+ | 0.7+ | 2006 11 02 | 703 | 1.3+ | 0.8+ |
| 2003 12 28 | 691 | 0.0 | 0.5+ | 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 1.5− | 0.1− |
| 2003 12 28 | 691 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2003 12 28 | 691 | 0.1− | 0.2+ | 2005 05 01 | 644 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.5+ |
| 2005 03 15 | G96 | 0.1− | 0.0 | 2005 05 10 | 704 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2005 03 15 | G96 | 0.4− | 0.2− | 2005 05 10 | 704 | (0.8+ | 1.9+) | 2006 11 10 | 644 | 0.3+ | 0.4+ |
| 2005 03 15 | G96 | 0.4− | 0.1+ | 2005 05 10 | 704 | 1.5+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 2005 03 15 | G96 | 0.6− | 0.1+ | 2005 05 10 | 704 | 0.2+ | 1.1+ | 2006 11 10 | 644 | 0.1+ | 0.6+ |
| 2005 04 04 | 704 | 0.6− | 1.0+ | 2005 05 10 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2005 04 04 | 704 | 0.3+ | 0.6+ | 2005 05 10 | 704 | (2.0+ | 1.3+) | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2005 04 04 | 704 | 0.0 | 0.8+ | 2005 05 10 | 704 | 0.6+ | 1.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2005 04 04 | 704 | 0.5− | 0.1− | 2005 05 12 | 699 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.2+ |

**(145144)∗ 2005 GU$_{171}$**

Discovered 2005 Apr. 12 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.41323 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17897011 | $\omega$ | 215.11301 | | +0.25208063 | | +0.92178514 |
| $a$ | 3.1185237 | $\Omega$ | 71.09525 | | −0.80127811 | | +0.36949622 |
| $e$ | 0.1812896 | $i$ | 18.14111 | | −0.54259446 | | −0.11740823 |
| $P$ | 5.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.0 | 0.7+ | 2005 04 17 | 691 | 0.1+ | 0.1− | 2005 05 16 | 704 | 0.0 | 0.1− |
| 2001 10 23 | 644 | 0.1− | 0.9+ | 2005 04 20 | 703 | 1.1− | 0.5+ | 2005 05 16 | 704 | 0.4+ | 0.5− |
| 2001 10 23 | 644 | 0.1− | 0.7+ | 2005 04 20 | 703 | 0.1+ | 0.4+ | 2005 05 31 | 699 | 1.2+ | 1.4+ |
| 2001 11 04 | 209 | 0.1+ | 0.5+ | 2005 04 20 | 703 | 0.7− | 0.3+ | 2005 05 31 | 699 | 0.4+ | 0.8+ |
| 2001 11 04 | 209 | 0.1+ | 0.5+ | 2005 04 20 | 703 | 0.0 | 0.5+ | 2005 05 31 | 699 | 0.0 | 0.5+ |
| 2001 11 04 | 209 | 0.2− | 0.6+ | 2005 05 04 | 691 | 0.0 | 0.4+ | 2005 05 31 | 699 | 1.0+ | 1.0− |
| 2001 11 12 | 645 | 0.1− | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2005 06 05 | 704 | 0.7+ | 0.4+ |
| 2001 11 12 | 645 | 0.2− | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.4+ | 2005 06 05 | 704 | 1.1+ | 0.2+ |
| 2001 11 18 | 704 | 0.3+ | 0.6+ | 2005 05 08 | 691 | 0.2+ | 0.1+ | 2005 06 05 | 704 | 0.9+ | 0.7+ |
| 2001 11 18 | 704 | 1.2− | 1.2+ | 2005 05 08 | 691 | 0.2+ | 0.0 | 2005 06 05 | 704 | 0.3+ | 0.5+ |
| 2001 11 18 | 704 | 0.2− | 0.1− | 2005 05 08 | 704 | 0.1+ | 0.6− | 2005 06 08 | 691 | 0.1− | 0.2+ |
| 2001 11 18 | 704 | 0.2+ | 0.7+ | 2005 05 08 | 704 | 0.9+ | 0.1+ | 2005 06 08 | 691 | 0.2− | 0.2+ |
| 2001 11 18 | 704 | 0.4+ | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.1+ | 2005 06 08 | 691 | 0.2− | 0.1+ |
| 2001 11 18 | 608 | 0.7− | 0.6− | 2005 05 08 | 704 | 0.3− | 1.5+ | 2006 07 30 | E12 | 0.1− | 0.2− |
| 2001 11 18 | 608 | 0.2− | 0.4− | 2005 05 08 | 704 | 0.7− | 0.6− | 2006 07 30 | E12 | 0.6+ | 0.0 |
| 2001 11 18 | 608 | 0.4− | 0.4− | 2005 05 12 | 704 | 0.3+ | 0.3− | 2006 07 30 | E12 | 0.3+ | 0.9− |
| 2004 03 16 | 645 | 0.1+ | 0.0 | 2005 05 12 | 704 | 0.9+ | 1.3− | 2006 07 30 | E12 | 0.5+ | 0.2+ |
| 2004 03 16 | 645 | 0.1+ | 0.1+ | 2005 05 12 | 704 | 0.4+ | 0.4+ | 2006 09 16 | E12 | 0.3− | 0.5+ |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2005 05 12 | 704 | 0.1+ | 0.2− | 2006 09 16 | E12 | 0.1+ | 0.0 |
| 2004 03 18 | 645 | 0.1− | 0.1+ | 2005 05 12 | 704 | 0.4+ | 0.0 | 2006 09 16 | E12 | 0.2− | 0.4+ |
| 2005 04 12 | E12 | 1.0− | 0.5+ | 2005 05 14 | 644 | 0.3− | 0.0 | 2006 09 16 | E12 | 0.4− | 0.1+ |
| 2005 04 12 | E12 | 0.6− | 0.7− | 2005 05 14 | 644 | 0.4− | 0.0 | 2006 10 12 | E12 | 0.2+ | 0.1− |
| 2005 04 12 | E12 | 1.3− | 0.6− | 2005 05 14 | 644 | 0.4− | 0.1+ | 2006 10 12 | E12 | 0.0 | 0.1+ |
| 2005 04 12 | E12 | 0.6− | 0.1− | 2005 05 16 | 704 | 0.3+ | 0.1− | 2006 10 12 | E12 | 1.4− | 0.3+ |
| 2005 04 17 | 691 | 0.1+ | 0.1− | 2005 05 16 | 704 | 0.2+ | 0.2− | 2006 10 12 | E12 | 0.5+ | 0.6+ |
| 2005 04 17 | 691 | 0.0 | 0.0 | 2005 05 16 | 704 | 0.5+ | 0.1− | | | | |

**(145145)∗ 2005 GV$_{171}$ = 2000 CK$_4$**

Discovered 2005 Apr. 13 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 86716)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.24290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23624551 | $\omega$ | 294.95057 | | −0.10125864 | | −0.99440261 |
| $a$ | 2.5915545 | $\Omega$ | 160.78872 | | +0.94264024 | | −0.10559495 |
| $e$ | 0.0669832 | $i$ | 5.26043 | | +0.31808187 | | −0.00362740 |
| $P$ | 4.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.2− | 0.0 | 2002 08 17 | 644 | 0.2+ | 0.8+ | 2005 04 13 | 699 | 0.7+ | 0.7+ |
| 2000 02 02 | 704 | 0.3− | 0.4+ | 2002 08 17 | 644 | 0.0 | 1.0+ | 2005 04 13 | 699 | 0.0 | 0.4− |
| 2000 02 02 | 704 | 0.6+ | 1.4− | 2002 08 17 | 644 | 0.1− | 0.8+ | 2005 04 13 | 699 | 0.8− | 0.4− |
| 2000 02 03 | 704 | 0.7− | 0.5+ | 2003 12 01 | 704 | 0.4− | 0.9+ | 2005 04 18 | 691 | 0.2+ | 0.1− |
| 2000 02 03 | 704 | 0.1+ | 0.3+ | 2003 12 01 | 704 | 0.4− | 1.0+ | 2005 04 18 | 691 | 0.2+ | 0.2+ |
| 2000 02 03 | 704 | 0.8+ | 0.2+ | 2003 12 01 | 704 | 0.6+ | 0.2+ | 2005 04 18 | 691 | 0.0 | 0.1− |
| 2001 04 17 | 691 | 0.1+ | 0.3+ | 2003 12 22 | 704 | 0.2+ | 0.4+ | 2006 08 12 | 644 | 0.1+ | 0.4− |
| 2001 04 17 | 691 | 0.1− | 0.3+ | 2003 12 22 | 704 | 0.2− | 0.7+ | 2006 08 12 | 644 | 0.2− | 0.3+ |
| 2001 04 17 | 691 | 0.0 | 0.3+ | 2003 12 22 | 704 | 0.4− | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.1+ |
| 2001 05 15 | 699 | 0.9− | 0.4− | 2005 04 02 | 691 | 0.3− | 0.0 | 2006 08 13 | 644 | 0.0 | 0.4+ |
| 2001 05 15 | 699 | 0.7+ | 0.0 | 2005 04 02 | 691 | 0.5+ | 0.3− | 2006 08 13 | 644 | 0.0 | 0.2+ |
| 2001 05 15 | 699 | 1.3+ | 0.0 | 2005 04 02 | 691 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.3− | 0.2+ |
| 2001 05 15 | 699 | 0.3+ | 0.3− | 2005 04 02 | 699 | 0.5− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2001 05 24 | 699 | 0.7− | 0.5− | 2005 04 02 | 699 | 0.5− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 05 24 | 699 | 1.1− | 0.2+ | 2005 04 02 | 699 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2001 05 24 | 699 | 0.4− | 0.6− | 2005 04 02 | 699 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.6− |
| 2001 05 24 | 699 | 0.2+ | 0.6+ | 2005 04 13 | 699 | 0.4+ | 0.1+ | | | | |

**(145146)∗ 2005 GC$_{172}$**

Discovered 2005 Apr. 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.00531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26197221 | $\omega$ | 288.54532 | | +0.94246752 | | +0.32985912 |
| $a$ | 2.4189816 | $\Omega$ | 52.23049 | | −0.27493399 | | +0.85720904 |
| $e$ | 0.1885966 | $i$ | 3.93850 | | −0.19017431 | | +0.39545623 |
| $P$ | 3.76 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 327 | 0.3+ | 0.1− | 2005 04 18 | 691 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.1− | 1.2+ |
| 1995 10 21 | 327 | 0.9− | 0.6− | 2005 04 18 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.8− | 1.3+ |
| 1995 10 21 | 327 | 0.1− | 0.3− | 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.2+ |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 05 07 | 691 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.1+ | 0.7+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2005 05 07 | 691 | 0.3− | 0.2+ | 2006 10 15 | 106 | 0.6+ | 0.5− |
| 2002 07 15 | 644 | 0.2+ | 0.3− | 2006 09 16 | 704 | 1.1− | 0.2+ | 2006 10 15 | 106 | 0.4− | 0.3− |
| 2002 07 15 | 644 | 0.3+ | 0.0 | 2006 09 16 | 704 | 0.6− | 1.3+ | 2006 10 15 | 106 | 0.2+ | 0.5+ |
| 2002 07 15 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 0.5− | 0.3+ | 2006 10 15 | 106 | 0.3+ | 0.6+ |
| 2002 08 13 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 0.5− | 1.0+ | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2002 08 13 | 704 | 0.5− | 0.2+ | 2006 09 16 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2002 08 13 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 10 16 | 703 | 1.3− | 0.6− |
| 2002 08 13 | 704 | 0.4+ | 0.7− | 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2002 08 13 | 704 | 0.3+ | 0.5− | 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 08 13 | 644 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.4− | 0.4+ |
| 2002 08 13 | 704 | 0.4+ | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2002 08 13 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 08 31 | 704 | 0.4+ | 1.3+ | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 08 31 | 704 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 08 31 | 704 | 1.2+ | 0.6+ | 2006 09 19 | 704 | (0.1− | 1.6+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 31 | 704 | 0.3+ | 0.3− | 2006 09 19 | 704 | 0.6− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 09 26 | 704 | 0.4− | 0.9− | 2006 09 19 | 704 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 26 | 704 | 1.0− | 0.5− | 2006 09 19 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 09 26 | 704 | 1.0− | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 703 | (0.1− | 1.9+) |
| 2003 12 21 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.9+ | 2006 10 21 | 703 | (0.0 | 2.0+) |
| 2003 12 21 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 1.0− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 03 17 | 691 | 0.4+ | 0.7+ | 2006 09 28 | 704 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.3+ | 1.1+ |
| 2005 03 17 | 691 | 0.2− | 0.4+ | 2006 09 28 | 704 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.3− | 1.1+ |
| 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 704 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 04 14 | 691 | 0.4+ | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.7− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1− | |
| 2005 04 18 | 691 | 0.9+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.8+ | | | | | |

**(145147)∗ 2005 GD$_{175}$ = 1997 NF$_1$ = 2005 AT$_{39}$**

Discovered 2005 Apr. 14 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77166)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 109.77681 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.23477770 | $\omega$ | 334.42145 | | −0.56239391 | +0.82491949 | |
| *a* | 2.6023447 | $\Omega$ | 261.30824 | | −0.74843693 | −0.53702513 | |
| *e* | 0.2919728 | *i* | 3.29131 | | −0.35150428 | −0.17638551 | |
| *P* | 4.20 | *H* | 15.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 02 | 691 | 0.1+ | 0.2− | 2005 04 14 | 703 | 0.2− | 0.2+ | 2005 07 04 | 608 | 0.6+ | 0.1+ | |
| 1997 07 02 | 691 | 0.0 | 0.5− | 2005 04 14 | 608 | (1.5− | 2.3+) | 2005 07 12 | 703 | (2.2− | 0.3−) | |
| 1997 07 02 | 691 | 0.1− | 0.4− | 2005 04 14 | 608 | (1.6− | 2.3+) | 2005 07 12 | 703 | 1.3− | 1.3− | |
| 1997 07 07 | 691 | 0.2− | 0.8+ | 2005 04 14 | 608 | (1.7− | 2.2+) | 2005 07 12 | 703 | 1.0− | 0.0 | |
| 1997 07 07 | 691 | 0.0 | 0.9+ | 2005 04 18 | 608 | 0.3− | 0.7− | 2005 07 12 | 703 | 0.2− | 1.0+ | |
| 2002 10 10 | 644 | 0.0 | 0.3+ | 2005 04 18 | 608 | 0.4− | 0.6− | 2005 07 28 | E12 | 0.2+ | 0.2− | |
| 2002 10 10 | 644 | 0.4− | 0.2+ | 2005 04 18 | 608 | 0.6− | 1.0− | 2005 07 28 | E12 | 0.0 | 0.3+ | |
| 2002 10 10 | 644 | 1.4+ | 0.5+ | 2005 04 18 | E12 | 0.2+ | 0.2+ | 2005 07 28 | E12 | 0.9+ | 0.3+ | |
| 2002 10 12 | 704 | 0.4− | 0.7+ | 2005 04 18 | E12 | 0.3+ | 0.2+ | 2005 07 28 | E12 | 0.7+ | 0.9− | |
| 2002 10 12 | 704 | 0.4− | 1.4+ | 2005 04 18 | E12 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.1− | |
| 2002 10 12 | 704 | 0.1+ | 1.3+ | 2005 04 18 | E12 | 0.1+ | 0.5+ | 2006 09 14 | 703 | (1.6− | 0.4−) | |
| 2003 11 30 | 291 | 0.3− | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.1− | 0.1− | |
| 2003 11 30 | 291 | 0.0 | 0.5+ | 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | (1.7− | 0.3−) | |
| 2003 11 30 | 291 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2+ | |
| 2005 01 13 | 704 | 1.4+ | 1.1+ | 2005 05 06 | 703 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2+ | |
| 2005 01 13 | 704 | (0.5− | 1.7−) | 2005 05 06 | 703 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1+ | |
| 2005 01 13 | 704 | 0.8+ | 0.2− | 2005 05 06 | 703 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.4+ | |
| 2005 01 13 | 704 | 0.5+ | 0.1− | 2005 05 06 | 703 | (1.7− | 1.6+) | 2006 09 18 | 699 | 0.8− | 0.6+ | |
| 2005 01 16 | 699 | 1.1+ | 0.2− | 2005 05 08 | E12 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.9+ | |
| 2005 01 16 | 699 | 0.9+ | 0.7+ | 2005 05 08 | E12 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.9+ | 0.6+ | |
| 2005 01 16 | 699 | (0.0 | 1.7−) | 2005 05 08 | E12 | 0.1+ | 0.0 | 2006 09 27 | 958 | 0.4+ | 0.1− | |
| 2005 01 16 | 699 | 0.2+ | 0.2+ | 2005 05 08 | E12 | 0.3− | 0.2+ | 2006 09 27 | 958 | 0.5− | 0.7− | |
| 2005 01 19 | 703 | 0.1+ | 0.3− | 2005 05 10 | 699 | 0.5+ | 0.4+ | 2006 09 27 | 958 | 0.5+ | 0.6+ | |
| 2005 01 19 | 703 | 0.5− | 0.5+ | 2005 05 10 | 699 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.0 | |
| 2005 01 19 | 703 | 0.3+ | 0.3− | 2005 05 10 | 699 | 0.4+ | 1.0+ | 2006 09 27 | 691 | 0.1+ | 0.0 | |
| 2005 01 19 | 703 | 0.2− | 0.1+ | 2005 05 10 | 699 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.2− | |
| 2005 04 03 | E12 | 0.1+ | 0.4+ | 2005 05 26 | E12 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.4+ | |
| 2005 04 03 | E12 | 0.0 | 0.4+ | 2005 05 26 | E12 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.1− | |
| 2005 04 03 | E12 | 0.2+ | 0.5+ | 2005 05 26 | E12 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.3− | |
| 2005 04 03 | E12 | 0.1− | 0.2+ | 2005 05 26 | E12 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.5− | 0.0 | |
| 2005 04 05 | 699 | 0.1− | 0.1− | 2005 06 22 | 644 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.2+ | |
| 2005 04 05 | 699 | 0.4+ | 0.3+ | 2005 06 22 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3− | |
| 2005 04 05 | 699 | 0.1+ | 0.2− | 2005 06 22 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.4− | |
| 2005 04 05 | 699 | 0.1− | 0.0 | 2005 06 28 | 699 | 0.2+ | 0.2− | 2006 11 11 | 703 | (0.0 | 1.7−) | |
| 2005 04 06 | 704 | (1.2+ | 2.3+) | 2005 06 28 | 699 | 1.1+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.5− | |
| 2005 04 06 | 704 | 0.2− | 1.0− | 2005 06 28 | 699 | 0.6− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.7− | |
| 2005 04 06 | 704 | 0.6+ | 0.6+ | 2005 06 28 | 608 | 0.4+ | 0.4+ | 2006 11 11 | 703 | (2.2− | 1.3−) | |
| 2005 04 06 | 704 | 1.0− | 0.3− | 2005 06 28 | 608 | 0.1+ | 0.3− | 2006 11 20 | G96 | 0.3− | 0.4− | |
| 2005 04 14 | 703 | 0.1− | 0.1+ | 2005 06 28 | 608 | 0.8+ | 0.4+ | 2006 11 20 | G96 | 0.3+ | 0.6− | |
| 2005 04 14 | 703 | 0.1− | 0.3+ | 2005 07 04 | 608 | 0.5+ | 0.3− | 2006 11 20 | G96 | 0.2− | 0.2− | |
| 2005 04 14 | 703 | 0.2− | 0.2+ | 2005 07 04 | 608 | 0.4+ | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.5− | |

**(145148)∗ 2005 GR$_{176}$ = 2001 FM$_{32}$**

Discovered 2005 Apr. 14 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77166)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 79.94877 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24726891 | $\omega$ | 158.34414 | | +0.04708464 | +0.99501938 | |
| *a* | 2.5139485 | $\Omega$ | 114.26478 | | −0.93003043 | +0.07576109 | |
| *e* | 0.0645949 | *i* | 5.53044 | | −0.36445361 | −0.06478189 | |
| *P* | 3.99 | *H* | 16.3 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 09 | 691 | 0.2+ | 0.2− | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.4+ | 0.0 | |
| 1997 05 09 | 691 | 0.1+ | 0.2− | 2005 04 14 | 691 | 0.3+ | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.3+ | |
| 1997 05 09 | 691 | 0.1+ | 0.4− | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.6− | 0.5+ | |
| 2001 03 22 | 691 | 0.5− | 0.3− | 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 691 | 1.0− | 0.7+ | |
| 2001 03 22 | 691 | 0.8− | 0.1+ | 2005 04 18 | 691 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.8+ | |
| 2001 03 22 | 691 | 0.6− | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.4+ | |
| 2001 03 24 | 691 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.6+ | 0.3+ | |
| 2001 03 24 | 691 | 0.1+ | 0.1+ | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.6− | |
| 2001 03 24 | 691 | 0.1+ | 0.2+ | 2005 04 30 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | (0.6− | 1.5−) | |
| 2001 05 02 | 644 | 0.6+ | 1.2+ | 2005 04 30 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.8+ | |
| 2001 05 02 | 644 | 0.8+ | 1.1+ | 2005 04 30 | 644 | 0.3+ | 0.2− | 2006 09 18 | 699 | (1.9− | 1.1+) | |
| 2001 05 02 | 644 | 0.7+ | 1.3+ | 2005 05 03 | 704 | 0.2− | 0.2− | 2006 09 18 | 699 | (2.0− | 0.5+) | |
| 2002 10 01 | 699 | 0.5+ | 0.1+ | 2005 05 03 | 704 | 0.1+ | 1.1− | 2006 09 26 | 704 | 0.4+ | 0.3+ | |
| 2002 10 01 | 699 | 0.8− | 0.7+ | 2005 05 03 | 704 | 1.4− | 0.8− | 2006 09 26 | 704 | (2.4− | 1.6+) | |
| 2002 10 01 | 699 | (0.7− | 1.6+) | 2005 05 07 | 703 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.9+ | 0.0 | |
| 2002 10 01 | 699 | 0.2− | 1.0+ | 2005 05 07 | 703 | 0.3− | 1.2+ | 2006 09 26 | 704 | (1.0+ | 1.8+) | |
| 2002 10 02 | 608 | 0.2− | 0.9+ | 2005 05 07 | 703 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.5+ | |
| 2002 10 02 | 608 | 0.6− | 1.1+ | 2005 05 07 | 703 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.1− | |
| 2002 10 02 | 608 | (0.4− | 1.6+) | 2005 05 15 | 644 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.5+ | 1.2− | |
| 2003 12 29 | 691 | (0.4+ | 1.7+) | 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.4− | 1.1− | |
| 2003 12 29 | 691 | 0.2+ | 1.1+ | 2005 05 15 | 644 | 0.1− | 0.2− | 2006 10 24 | 644 | 0.3+ | 0.3− | |
| 2003 12 29 | 691 | 0.1+ | 0.9+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.3− | |
| 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 10 24 | 644 | 0.3+ | 0.1+ | |

**(145149)∗ 2005 GX$_{177}$**

Discovered 2005 Apr. 15 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 46.79635 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.27568721 | $\omega$ | 305.28217 | | +0.83142865 | +0.55533656 | |
| *a* | 2.3380743 | $\Omega$ | 21.00213 | | −0.49197541 | +0.75092710 | |
| *e* | 0.1825620 | *i* | 2.89521 | | −0.25823748 | +0.35736508 | |
| *P* | 3.58 | *H* | 17.5 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 809 | 0.7+ | 0.1+ | 2002 08 29 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.5− | 0.5+ | |
| 1995 08 29 | 809 | 1.0− | 1.3− | 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.4+ | |
| 1995 08 30 | 809 | 1.0+ | 0.1− | 2002 08 29 | 644 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.4+ | 0.5+ | |
| 2002 07 15 | 644 | 0.2− | 0.3− | 2005 04 15 | 691 | 0.4+ | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | |
| 2002 07 15 | 644 | 0.3− | 0.6− | 2005 04 15 | 691 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.3+ | 0.6+ | |
| 2002 07 15 | 644 | 0.3− | 0.0 | 2005 04 15 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.7+ | |
| 2002 08 11 | 644 | 0.3+ | 0.7+ | 2005 04 17 | 691 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | |
| 2002 08 11 | 644 | 0.0 | 0.8+ | 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2− | |
| 2002 08 11 | 644 | 0.3+ | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.2+ | |
| 2002 08 13 | 644 | 0.3− | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 11 10 | 644 | 0.2− | 0.4+ | |
| 2002 08 13 | 704 | 0.4− | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.5+ | |
| 2002 08 13 | 644 | 0.3− | 0.1− | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.2+ | |
| 2002 08 13 | 704 | 0.3+ | 1.4+ | 2006 07 21 | G96 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.6+ | 0.1+ | |
| 2002 08 13 | 704 | 0.4+ | 1.1+ | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.2+ | |
| 2002 08 13 | 644 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.8+ | 0.2− | |
| 2002 08 18 | 644 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 13 | 104 | 0.8− | 0.5+ | |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 11 13 | 104 | 0.9− | 0.7+ | |
| 2002 08 18 | 644 | 0.3− | 0.5− | 2006 10 21 | 691 | 0.3− | 0.3+ | 2006 11 13 | 104 | 0.0 | 0.0 | |

**(145150)∗ 2005 GX$_{178}$**

Discovered 2005 Apr. 15 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.04348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23446056 | $\omega$ | 297.59615 | | −0.32202761 | +0.92927915 | |
| $a$ | 2.6046908 | $\Omega$ | 312.40637 | | −0.75906169 | −0.36765166 | |
| $e$ | 0.1559335 | $i$ | 14.18460 | | −0.56579464 | −0.03567240 | |
| $P$ | 4.20 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 15 | 691 | 0.5− | 1.0+ | 2005 04 15 | E12 | 0.0 | 0.3+ | 2005 07 27 | E12 | 0.6− | 1.2+ |
| 1993 08 15 | 691 | 0.1− | 0.2− | 2005 04 17 | E12 | 0.9+ | 0.3+ | 2005 07 27 | E12 | 1.0+ | 1.1+ |
| 2002 10 06 | 704 | 0.4+ | 0.0 | 2005 04 17 | E12 | 0.9− | 0.7+ | 2005 07 27 | E12 | 0.2− | 0.9+ |
| 2002 10 06 | 704 | 0.3− | 1.1+ | 2005 04 17 | E12 | 1.1+ | 0.3− | 2005 07 27 | E12 | 0.5− | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 1.4+ | 2005 04 17 | E12 | 0.5− | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.3− |
| 2002 11 14 | 644 | 0.0 | 0.6+ | 2005 04 17 | E12 | 0.2+ | 0.3+ | 2006 09 06 | 644 | 0.4− | 0.3+ |
| 2002 11 14 | 644 | 0.0 | 0.3+ | 2005 04 17 | E12 | 0.9− | 0.4+ | 2006 09 06 | 644 | 0.2− | 0.0 |
| 2002 11 14 | 644 | 0.0 | 0.3+ | 2005 04 17 | E12 | (1.7+ | 0.2+) | 2006 09 16 | 703 | 0.4+ | 0.3+ |
| 2003 12 28 | 691 | 0.2− | 0.6+ | 2005 04 17 | E12 | 0.9+ | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.5− |
| 2003 12 28 | 691 | 0.0 | 0.3+ | 2005 05 05 | E12 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.4+ |
| 2003 12 28 | 691 | 0.2+ | 0.6+ | 2005 05 05 | E12 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.8+ | 0.5+ |
| 2004 01 17 | 644 | 0.3+ | 0.5+ | 2005 05 05 | E12 | 0.2− | 0.2+ | 2006 09 28 | 703 | (0.5+ | 1.6−) |
| 2004 01 17 | 644 | 0.0 | 0.5+ | 2005 05 05 | E12 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 1.5+ | 0.9+ |
| 2004 01 17 | 644 | 0.6+ | 0.2+ | 2005 05 16 | E12 | 0.7+ | 0.3+ | 2006 09 28 | 703 | 0.6− | 0.9− |
| 2005 04 06 | E12 | (1.7+ | 2.3+) | 2005 05 16 | E12 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.2− |
| 2005 04 06 | E12 | 0.2+ | 0.1+ | 2005 05 16 | E12 | 0.3− | 0.2+ | 2006 10 20 | 703 | 0.6− | 0.6− |
| 2005 04 06 | E12 | 0.2+ | 0.1− | 2005 05 16 | E12 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.4+ |
| 2005 04 06 | E12 | 0.5+ | 0.4+ | 2005 06 05 | E12 | 0.0 | 0.0 | 2006 10 20 | 703 | 1.1− | 0.2− |
| 2005 04 15 | E12 | 0.4− | 0.3+ | 2005 06 05 | E12 | 0.6+ | 0.1− | 2006 10 20 | 703 | 0.8− | 0.1+ |
| 2005 04 15 | E12 | 0.1− | 0.2+ | 2005 06 05 | E12 | 0.4+ | 0.0 | | | | |
| 2005 04 15 | E12 | 0.5− | 0.2+ | 2005 06 05 | E12 | 0.8+ | 0.3− | | | | |

**(145151)∗ 2005 GH$_{179}$ = 1999 CA$_{111}$**

Discovered 2005 Apr. 13 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77169)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.28838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18599409 | $\omega$ | 87.72172 | | −0.34103579 | +0.93644677 | |
| $a$ | 3.0395080 | $\Omega$ | 161.67052 | | −0.93242641 | −0.32585508 | |
| $e$ | 0.2519467 | $i$ | 15.15810 | | −0.11948045 | −0.12994579 | |
| $P$ | 5.30 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 04 09 | 261 | 0.7− | 0.0 | 2005 05 04 | 703 | 0.2− | 0.0 | 2005 06 07 | 699 | 0.6− | 0.7+ |
| 1989 04 09 | 261 | 0.6+ | 1.4− | 2005 05 04 | 703 | 0.0 | 0.1− | 2005 06 21 | 644 | 0.1+ | 0.0 |
| 1999 02 12 | 704 | 0.8+ | 0.1+ | 2005 05 09 | 703 | 0.0 | 0.1− | 2005 06 21 | 644 | 0.0 | 0.0 |
| 1999 02 12 | 704 | 0.1− | 0.9+ | 2005 05 09 | 703 | 0.3− | 0.1+ | 2005 06 21 | 644 | 0.1− | 0.1− |
| 1999 02 12 | 704 | 1.9− | 1.0+ | 2005 05 09 | 703 | 0.6− | 0.1− | 2005 06 27 | 699 | 0.4+ | 0.1+ |
| 1999 02 12 | 704 | 0.0 | 1.9− | 2005 05 09 | 703 | 0.2− | 0.3− | 2005 06 27 | 699 | 0.2+ | 0.3+ |
| 1999 02 16 | 704 | (1.6− | 2.2+) | 2005 05 12 | 699 | 0.3+ | 0.5− | 2005 06 27 | 699 | 0.3− | 0.7+ |
| 1999 02 16 | 704 | 1.2+ | 0.3− | 2005 05 12 | 699 | 0.1+ | 0.2+ | 2005 06 27 | 699 | 0.3− | 0.0 |
| 1999 02 16 | 704 | 1.2− | 1.4− | 2005 05 12 | 699 | 0.3+ | 0.1+ | 2005 07 01 | 644 | 0.0 | 0.1+ |
| 2000 07 11 | 704 | 0.3− | 0.4− | 2005 05 12 | 699 | 0.1− | 0.1+ | 2005 07 01 | 644 | 0.1− | 0.0 |
| 2000 07 11 | 704 | 0.2− | 0.5+ | 2005 05 13 | 704 | 0.6+ | 0.0 | 2005 07 01 | 644 | 0.1− | 0.1+ |
| 2000 07 11 | 704 | 1.1+ | 1.0+ | 2005 05 13 | 704 | 0.4+ | 0.0 | 2005 07 03 | 703 | 1.3− | 0.3− |
| 2001 10 15 | 644 | 0.3− | 0.7− | 2005 05 13 | 704 | 0.6+ | 0.1− | 2005 07 03 | 703 | 0.1− | 0.5+ |
| 2001 10 15 | 644 | 1.3+ | 0.7− | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2005 07 03 | 703 | 0.2+ | 0.3− |
| 2001 10 15 | 644 | 0.0 | 0.8− | 2005 05 13 | 704 | 0.9+ | 0.2+ | 2005 07 03 | 703 | 0.3− | 0.3+ |
| 2001 10 23 | 644 | 0.7− | 0.7+ | 2005 05 19 | 703 | 1.0− | 0.0 | 2006 08 18 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 644 | 0.4− | 0.4+ | 2005 05 19 | 703 | 0.4− | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 644 | 0.4− | 0.3+ | 2005 05 19 | 703 | 0.2− | 0.5− | 2006 08 18 | 691 | 0.3− | 0.0 |
| 2004 01 28 | 645 | 0.0 | 0.2+ | 2005 05 19 | 703 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2004 01 28 | 645 | 0.0 | 0.2+ | 2005 05 21 | 644 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2005 03 07 | 704 | 0.4+ | 0.1− | 2005 05 21 | 644 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.3+ |
| 2005 03 07 | 704 | 0.1− | 0.7− | 2005 05 21 | 644 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.2+ |
| 2005 03 07 | 704 | 1.2+ | 0.0 | 2005 05 30 | 703 | 0.6− | 0.3− | 2006 08 28 | 699 | 0.7+ | 0.0 |
| 2005 03 07 | 704 | 0.2+ | 0.7− | 2005 05 30 | 703 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.5− | 0.7+ |
| 2005 03 07 | 704 | 0.0 | 0.2+ | 2005 05 30 | 703 | 0.2+ | 0.2− | 2006 08 28 | 699 | 1.1− | 0.7+ |
| 2005 04 13 | 703 | 0.2− | 0.7+ | 2005 05 30 | 703 | 0.1+ | 0.5− | 2006 09 12 | 703 | 1.0+ | 0.8− |
| 2005 04 13 | 703 | 0.2− | 0.3+ | 2005 06 01 | 704 | 0.9+ | 0.0 | 2006 09 12 | 703 | 0.4− | 1.5− |
| 2005 04 13 | 703 | 0.7− | 1.1+ | 2005 06 01 | 699 | 0.5− | 0.1− | 2006 09 12 | 703 | 1.5+ | 0.1+ |
| 2005 04 13 | 703 | 0.8− | 0.5+ | 2005 06 01 | 704 | 0.3+ | 0.3+ | 2006 09 12 | 703 | (1.6+ | 0.4−) |
| 2005 04 14 | 683 | (0.1− | 2.2−) | 2005 06 01 | 704 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2005 04 14 | 683 | 1.3+ | 0.4− | 2005 06 01 | 699 | 0.0 | 0.9− | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2005 04 14 | 683 | 0.4+ | 0.9+ | 2005 06 01 | 704 | 1.0+ | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.5+ |
| 2005 04 18 | 704 | 0.1− | 0.2+ | 2005 06 01 | 704 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.9+ |
| 2005 04 18 | 704 | 0.5+ | 0.3− | 2005 06 01 | 699 | 0.1+ | 0.8− | 2006 09 26 | 704 | 0.9+ | 0.8+ |
| 2005 04 18 | 704 | 0.5+ | 0.2+ | 2005 06 01 | 699 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 2005 04 18 | 704 | 0.1+ | 0.1− | 2005 06 07 | 703 | (1.7− | 0.5+) | 2006 09 30 | 703 | 0.5+ | 0.4− |
| 2005 04 18 | 704 | 0.1+ | 0.1− | 2005 06 07 | 703 | (1.8− | 0.8+) | 2006 09 30 | 703 | 0.4+ | 0.4− |
| 2005 04 24 | 608 | 0.2+ | 0.8+ | 2005 06 07 | 703 | 0.9− | 0.5+ | 2006 09 30 | 703 | 1.0− | 0.8− |
| 2005 04 24 | 608 | 0.2+ | 0.5+ | 2005 06 07 | 703 | (0.0 | 1.8+) | 2006 09 30 | 703 | 1.1− | 0.4+ |
| 2005 04 24 | 608 | 0.3− | 0.7+ | 2005 06 07 | 699 | 0.6+ | 1.1+ | 2006 10 09 | 644 | 0.2+ | 0.8+ |
| 2005 05 04 | 703 | 0.5+ | 0.8+ | 2005 06 07 | 699 | 0.2− | 0.5+ | 2006 10 09 | 644 | 0.4+ | 0.7+ |
| 2005 05 04 | 703 | 0.2+ | 0.2− | 2005 06 07 | 699 | 0.5− | 0.2− | 2006 10 09 | 644 | 0.5+ | 0.1+ |

**(145152)∗ 2005 GS$_{181}$**

Discovered 2005 Apr. 12 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.36055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28187802 | $\omega$ | 309.87155 | | +0.99533259 | +0.06718387 | |
| $a$ | 2.3037141 | $\Omega$ | 46.39846 | | −0.02825328 | +0.88928286 | |
| $e$ | 0.1542545 | $i$ | 5.48970 | | −0.09227561 | +0.45239620 | |
| $P$ | 3.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.4− | 0.2+ | 2005 04 19 | 691 | 0.5+ | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 1999 09 05 | 699 | 0.5− | 1.4+ | 2005 05 10 | G96 | 0.4+ | 1.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 1999 09 05 | 699 | 0.5+ | 0.6+ | 2005 05 10 | G96 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.8+ |
| 1999 09 14 | 704 | 0.2− | 1.3− | 2005 05 10 | G96 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 1999 09 14 | 704 | 0.4+ | 0.6− | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.6− | 1.0+ |
| 1999 09 14 | 704 | 0.7+ | 0.1− | 2006 08 28 | 699 | (0.7+ | 1.6+) | 2006 10 16 | 703 | 0.4+ | 1.2+ |
| 1999 09 14 | 704 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.4+ | 2006 10 16 | 703 | (3.0− | 0.6+) |
| 1999 10 08 | 704 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 1999 10 08 | 704 | 0.5+ | 0.7− | 2006 08 28 | 699 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 1999 10 08 | 704 | 0.4+ | 1.4− | 2006 09 12 | 703 | 0.8− | 0.5− | 2006 10 16 | 703 | 0.3− | 0.7+ |
| 2003 11 24 | 695 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 1.0− | 1.4− | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2003 11 24 | 695 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 1.0− | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.3+ |
| 2003 12 23 | 704 | 0.7− | 0.4+ | 2006 09 12 | 703 | 0.9− | 0.3− | 2006 10 22 | 703 | 0.7− | 0.4+ |
| 2003 12 23 | 704 | 0.1+ | 0.4− | 2006 09 20 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2003 12 23 | 704 | 0.2− | 0.6+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2003 12 23 | 704 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2003 12 23 | 704 | 0.7+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2005 03 09 | G96 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.9− | 1.0+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2005 03 09 | G96 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2005 03 09 | G96 | 0.5− | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.9− | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2005 03 09 | G96 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 0.6− | 0.5− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2005 04 12 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.3+ |
| 2005 04 12 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 04 19 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2005 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.0 | | | | |

**(145153)∗ 2005 GJ$_{182}$**

Discovered 2005 Apr. 15 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.30779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24181990 | $\omega$ | 114.48713 | | +0.12656912 | +0.99041567 | |
| $a$ | 2.5515732 | $\Omega$ | 162.51462 | | −0.96365446 | +0.13598642 | |
| $e$ | 0.1574839 | $i$ | 10.60392 | | −0.23526651 | −0.02417633 | |
| $P$ | 4.08 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 14 | 691 | 0.1+ | 0.2− | 2005 04 20 | 703 | 0.8− | 0.2+ | 2005 06 07 | 699 | 0.4+ | 0.6+ |
| 1996 01 14 | 691 | 0.2− | 0.3+ | 2005 05 08 | 699 | (1.1− | 1.5+) | 2005 06 25 | 644 | 0.4+ | 0.0 |
| 1996 01 14 | 691 | 0.1+ | 0.5− | 2005 05 08 | 699 | (0.8− | 1.7+) | 2005 06 25 | 644 | 0.1+ | 0.1+ |
| 1996 01 14 | 691 | 0.2− | 0.3+ | 2005 05 08 | 699 | 1.4+ | 0.3− | 2005 06 25 | 644 | 0.3+ | 0.1+ |
| 1996 01 14 | 691 | 0.1+ | 0.1+ | 2005 05 08 | 699 | 1.2− | 1.1+ | 2005 07 10 | 699 | 0.6+ | 0.1+ |
| 1996 01 14 | 691 | 0.0 | 0.2− | 2005 05 13 | 703 | (1.8+ | 0.1−) | 2005 07 10 | 699 | 0.8+ | 0.9− |
| 2001 05 18 | 699 | 1.0− | 0.2+ | 2005 05 13 | 703 | 0.5− | 0.7+ | 2005 07 10 | 699 | 0.4+ | 0.7+ |
| 2001 05 18 | 699 | 0.0 | 0.7+ | 2005 05 13 | 703 | 0.4− | 0.2− | 2005 07 10 | 699 | (1.7+ | 1.1−) |
| 2001 05 18 | 699 | 0.2− | 0.8+ | 2005 05 13 | 703 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.9− | 0.2− |
| 2001 05 18 | 699 | 0.5− | 0.1+ | 2005 05 31 | 699 | 0.2− | 0.3+ | 2006 09 18 | 703 | 1.1− | 0.1+ |
| 2001 06 21 | 704 | 0.1+ | 0.7− | 2005 05 31 | 699 | 0.5− | 0.6+ | 2006 09 18 | 703 | 0.8− | 0.5+ |
| 2001 06 21 | 704 | 0.4+ | 0.3− | 2005 05 31 | 699 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 0.4− | 0.8+ |
| 2001 06 21 | 704 | (0.4− | 1.5+) | 2005 05 31 | 703 | 0.3− | 0.0 | 2006 09 27 | G92 | 0.3+ | 0.2+ |
| 2002 10 31 | 704 | 0.6− | 0.2+ | 2005 05 31 | 703 | 1.3− | 0.9− | 2006 09 27 | G92 | 0.4− | 0.3+ |
| 2002 10 31 | 704 | 0.2− | 0.5+ | 2005 05 31 | 699 | 0.0 | 0.2− | 2006 09 27 | G92 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.1+ | 1.1+ | 2005 05 31 | 703 | 0.6− | 0.1− | 2006 09 29 | 699 | 0.2− | 0.9− |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2005 05 31 | 703 | 0.6− | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.9+ |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2005 06 02 | H06 | 0.7− | 0.1− | 2006 09 29 | 699 | (1.8− | 1.1−) |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2005 06 02 | H06 | 0.1− | 0.5+ | 2006 09 29 | 699 | 1.0+ | 0.3+ |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2005 06 02 | H06 | 0.8− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2005 04 15 | 703 | 0.8+ | 1.1+ | 2005 06 04 | H06 | 0.8+ | 0.8− | 2006 10 16 | 703 | 0.2− | 1.2− |
| 2005 04 15 | 703 | 0.7+ | 0.1+ | 2005 06 04 | H06 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2005 04 15 | 703 | 0.1− | 0.3+ | 2005 06 04 | H06 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2005 04 15 | 699 | 0.8+ | 0.3− | 2005 06 06 | 704 | 0.9+ | 0.8− | 2006 10 22 | 703 | (2.5+ | 0.7+) |
| 2005 04 15 | 703 | 0.9− | 0.0 | 2005 06 06 | 704 | 1.2+ | 0.9− | 2006 10 22 | 703 | (1.7+ | 2.1+) |
| 2005 04 15 | 699 | 1.4+ | 0.1+ | 2005 06 06 | 704 | 0.5− | 1.0− | 2006 10 22 | 703 | 0.4+ | 0.9+ |
| 2005 04 15 | 699 | 0.6+ | 0.7+ | 2005 06 06 | 704 | 0.5− | 0.5− | 2006 10 22 | 703 | 1.3+ | 1.2+ |
| 2005 04 15 | 699 | 0.4+ | 0.4+ | 2005 06 06 | 704 | 0.3+ | 0.6− | 2006 10 28 | 703 | 0.6− | 0.3− |
| 2005 04 20 | 703 | 0.5− | 1.2+ | 2005 06 07 | 699 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.9− | 0.4− |
| 2005 04 20 | 703 | 0.6− | 0.2+ | 2005 06 07 | 699 | 0.4+ | 0.0 | 2006 10 28 | 703 | 1.7− | 0.1+ |
| 2005 04 20 | 703 | 0.2− | 0.2− | 2005 06 07 | 699 | 0.8+ | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.3− |

**(145154)∗ 2005 GD$_{201}$**

Discovered 2005 Apr. 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.09484 | | (2000.0) | | +0.60527953 | +0.79476007 |
| $n$ | 0.23845557 | $\omega$ | 295.65073 | | −0.63056272 | +0.51294832 |
| $a$ | 2.5755169 | $\Omega$ | 11.91582 | | −0.48582646 | +0.32440785 |
| $e$ | 0.2658717 | $i$ | 12.48725 | | | |
| $P$ | 4.13 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 695 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.5+ | 0.2− | 2006 09 29 | 291 | 0.1− | 0.2+ |
| 2001 03 26 | 695 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.4+ | 0.2+ |
| 2002 10 16 | 735 | 0.1+ | 0.3− | 2006 09 18 | 699 | 1.2− | 1.0+ | 2006 10 01 | 704 | 0.2+ | 0.3+ |
| 2002 10 16 | 735 | 0.2+ | 0.9− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.6+ | 0.4− |
| 2002 10 16 | 735 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.7+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.3− | 1.3+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 699 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2005 03 11 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.9− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2005 03 11 | 691 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.7− | 0.3− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2005 04 04 | G96 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.7+ | 0.9− |
| 2005 04 04 | G96 | 0.6− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4− | 0.6+ |
| 2005 04 04 | G96 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.7+ | 1.1− |
| 2005 04 11 | 695 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2005 04 11 | 695 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.6− |
| 2005 05 08 | G96 | 0.9− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2005 05 08 | G96 | 0.4− | 1.2− | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2005 05 08 | G96 | 0.5+ | 0.4− | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 08 28 | 703 | 0.6+ | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2006 08 28 | 703 | (2.8− | 2.7+) | 2006 09 29 | 291 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.7− |
| 2006 08 28 | 703 | (2.0− | 1.7+) | 2006 09 29 | 291 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.9− |
| 2006 09 12 | 703 | 0.2− | 0.5− | 2006 09 29 | 291 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.7+ | 0.3− |
| 2006 09 12 | 703 | (1.7− | 0.7−) | 2006 09 29 | 291 | 0.1+ | 0.2+ | | | | |
| 2006 09 12 | 703 | 0.2+ | 0.6+ | 2006 09 29 | 291 | 0.1+ | 0.0 | | | | |

**(145155)∗ 2005 HD = 2001 KT$_{68}$ = 2001 KT$_{78}$ = 2003 YU$_{75}$**

Discovered 2005 Apr. 16 at Cordell-Lorenz Observatory, Sewanee.

Id. G. V. Williams (*MPO* 77173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 163.10697 | | (2000.0) | | −0.99671004 | −0.00765067 |
| $n$ | 0.24278214 | $\omega$ | 122.80397 | | −0.02908865 | −0.89544260 |
| $a$ | 2.5448268 | $\Omega$ | 56.87861 | | +0.07565010 | −0.44511125 |
| $e$ | 0.0638497 | $i$ | 5.52858 | | | |
| $P$ | 4.06 | $H$ | 15.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.6+ | 1.4+ | 2004 01 22 | 704 | 1.0− | 0.9− | 2005 05 04 | 699 | 0.3+ | 0.7+ |
| 1999 12 15 | 704 | 0.9− | 0.1+ | 2005 04 16 | 850 | 0.7− | 0.2− | 2005 05 04 | 704 | 1.4+ | 0.4+ |
| 1999 12 15 | 704 | 0.6+ | 0.4− | 2005 04 16 | 850 | 0.8− | 1.6− | 2005 05 04 | 850 | 1.8− | 0.1− |
| 2001 05 21 | 704 | 1.0− | 0.3+ | 2005 04 16 | 850 | 0.6+ | 1.4− | 2005 05 04 | 704 | 0.6+ | 1.0+ |
| 2001 05 21 | 704 | 0.7− | 0.2− | 2005 04 16 | 691 | 0.4+ | 0.2− | 2005 05 06 | 850 | 0.0 | 0.1− |
| 2001 05 21 | 704 | 0.4+ | 0.3+ | 2005 04 16 | 691 | 0.5+ | 0.2− | 2005 05 06 | 850 | 1.8− | 0.2− |
| 2001 05 21 | 704 | 1.0− | 0.6+ | 2005 04 16 | 691 | 0.5+ | 0.3− | 2005 05 06 | 850 | 1.5− | 0.5+ |
| 2001 05 24 | 699 | (3.7− | 0.7−) | 2005 04 17 | 850 | 0.8− | 0.4+ | 2005 05 09 | 699 | 0.2+ | 0.1+ |
| 2001 05 24 | 699 | 1.6+ | 0.2+ | 2005 04 17 | 850 | 0.8− | 0.3+ | 2005 05 09 | 699 | (2.3+ | 0.3−) |
| 2001 05 24 | 699 | 0.7+ | 0.4− | 2005 04 17 | 850 | 1.5− | 0.7+ | 2005 05 09 | 699 | 0.2+ | 0.2+ |
| 2001 05 24 | 699 | 0.0 | 0.2− | 2005 04 17 | 850 | 1.0− | 0.2+ | 2005 05 09 | 699 | 0.2+ | 0.1− |
| 2001 05 28 | 608 | 0.6+ | 0.7+ | 2005 04 20 | 850 | 1.3− | 1.6+ | 2005 05 10 | G96 | 0.1+ | 0.1− |
| 2001 05 28 | 608 | 0.3+ | 1.0+ | 2005 04 20 | 850 | 0.9− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.2− |
| 2001 05 28 | 608 | 0.2+ | 0.6+ | 2005 04 20 | 850 | 1.0− | 0.1+ | 2005 05 10 | G96 | 0.2+ | 0.1− |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2005 04 20 | 850 | 0.7− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.2− |
| 2002 08 30 | 644 | 0.1− | 0.8+ | 2005 05 03 | 691 | 0.7+ | 0.0 | 2005 05 13 | 704 | 1.0+ | 0.3+ |
| 2002 08 30 | 644 | 0.2− | 0.2+ | 2005 05 03 | 691 | 0.6+ | 0.1− | 2005 05 13 | 704 | 0.9+ | 0.7+ |
| 2003 12 18 | 704 | 0.1− | 0.4+ | 2005 05 03 | 691 | 0.7+ | 0.1− | 2005 05 13 | 704 | 1.1+ | 0.2− |
| 2003 12 18 | 704 | 0.1+ | 0.6+ | 2005 05 03 | 850 | 0.9− | 0.1+ | 2005 05 13 | 704 | 0.3− | 0.5+ |
| 2003 12 18 | 704 | 0.2+ | 0.1+ | 2005 05 03 | 850 | 1.3− | 0.2− | 2005 05 13 | 704 | 1.3+ | 0.3− |
| 2003 12 18 | 704 | 0.7+ | 0.3+ | 2005 05 03 | 850 | 1.5− | 1.1+ | 2006 08 16 | 644 | 0.2− | 0.5+ |
| 2003 12 22 | 704 | 0.0 | 0.0 | 2005 05 03 | 850 | 1.0− | 1.5+ | 2006 08 16 | 644 | 0.1− | 0.3+ |
| 2003 12 22 | 704 | 0.6+ | 1.1+ | 2005 05 04 | 699 | 1.0+ | 0.4− | 2006 08 16 | 644 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.9+ | 0.6+ | 2005 05 04 | 699 | 1.3+ | 0.2+ | 2006 09 17 | 850 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.9+ | 2005 05 04 | 850 | 1.5− | 0.0 | 2006 09 17 | 850 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.6+ | 2005 05 04 | 699 | (2.2+ | 0.4−) | 2006 09 17 | 850 | 0.2− | 0.3+ |
| 2004 01 22 | 704 | 1.0− | 0.0 | 2005 05 04 | 704 | 0.9− | 0.3− | 2006 09 17 | 850 | 0.4− | 0.8+ |
| 2004 01 22 | 704 | 1.6− | 0.5+ | 2005 05 04 | 850 | 1.5− | 0.2+ | | | | |

**(145156)∗ 2005 HO**

Discovered 2005 Apr. 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.09437 | | (2000.0) | | +0.82587775 | +0.56382802 |
| $n$ | 0.23211970 | $\omega$ | 328.95524 | | −0.49826428 | +0.72572845 |
| $a$ | 2.6221733 | $\Omega$ | 356.71141 | | −0.26392924 | +0.39422859 |
| $e$ | 0.1898623 | $i$ | 4.88908 | | | |
| $P$ | 4.25 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 18 | 644 | 0.1+ | 0.6+ | 2006 08 25 | 704 | 0.7− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2002 10 18 | 644 | 0.2+ | 0.8+ | 2006 08 25 | 704 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2002 10 18 | 644 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2002 10 29 | 049 | 0.9− | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.8+ |
| 2002 10 29 | 049 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.3− | 1.0+ | 2006 09 27 | 704 | 0.3+ | 0.1+ |
| 2002 10 29 | 049 | 0.4− | 1.2+ | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.2− | 1.3+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.0 | 0.4+ |
| 2002 11 05 | 704 | 0.4− | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.0 | 0.6− |
| 2002 11 05 | 704 | 0.9− | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.3− | 1.0+ |
| 2002 11 24 | 644 | 0.1− | 0.5+ | 2006 09 12 | 703 | 1.4− | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 0.5− | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.4+ | 0.6+ | 2006 09 12 | 703 | 0.2− | 0.4− | 2006 09 29 | 704 | 0.6− | 0.1+ |
| 2004 02 26 | 695 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 0.8+ | 0.5+ | 2006 09 29 | 704 | 0.5− | 0.4+ |
| 2004 02 26 | 695 | 0.1− | 0.7+ | 2006 09 20 | 704 | 0.7− | 0.4− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2005 03 17 | G96 | 0.6− | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2005 03 17 | G96 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2005 03 17 | G96 | 0.6− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2005 03 17 | G96 | 0.6− | 0.3+ | 2006 09 20 | H07 | 0.5+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2005 04 16 | 691 | 0.6+ | 0.6+ | 2006 09 20 | 704 | 0.5− | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 20 | H07 | 1.0+ | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 20 | H07 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2005 04 17 | 691 | 0.0 | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | | | | |
| 2006 08 25 | 704 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.5− | | | | |

**(145157)∗ 2005 HY$_1$ = 1998 HD$_{143}$ = 1999 WK$_{14}$**

Discovered 2005 Apr. 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.73219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28381112 | $\omega$ | 199.15814 | | −0.03133430 | +0.99689413 | |
| $a$ | 2.2932414 | $\Omega$ | 69.09888 | | −0.90663969 | +0.00208044 | |
| $e$ | 0.2092734 | $i$ | 4.43572 | | −0.42074058 | −0.07872593 | |
| $P$ | 3.47 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | (0.3− | 2.3−) | 2005 04 18 | 703 | 0.8+ | 1.0− | 2005 05 16 | 691 | 0.1+ | 0.0 |
| 1998 04 21 | 704 | 0.5+ | 1.0− | 2005 04 18 | 703 | 0.7− | 0.8+ | 2005 05 16 | 691 | 0.1+ | 0.1+ |
| 1998 04 21 | 704 | 1.9− | 0.1+ | 2005 04 18 | 703 | 1.4− | 0.1+ | 2005 05 16 | 691 | 0.0 | 0.1− |
| 1998 04 21 | 704 | 1.3− | 1.2+ | 2005 05 01 | 644 | 0.2− | 0.0 | 2005 05 16 | 704 | 0.2+ | 0.8− |
| 1998 04 22 | 704 | 1.2+ | 1.5+ | 2005 05 01 | 644 | 0.4+ | 0.4− | 2005 05 16 | 704 | 0.8+ | 0.1+ |
| 1998 04 22 | 704 | 0.4− | 1.5− | 2005 05 01 | 644 | 0.3− | 0.0 | 2005 05 16 | 704 | 0.5+ | 0.1+ |
| 1998 04 22 | 704 | 0.8− | 0.0 | 2005 05 04 | 704 | 1.4+ | 0.1− | 2005 05 16 | 704 | 0.4+ | 0.5− |
| 1998 04 22 | 704 | 0.9+ | 0.8+ | 2005 05 04 | 704 | 0.3− | 0.2+ | 2005 05 26 | 699 | 0.4+ | 0.4− |
| 1998 04 22 | 704 | 0.1+ | 1.2− | 2005 05 04 | 704 | 0.8+ | 0.3− | 2005 05 26 | 699 | 0.3− | 1.1+ |
| 1998 05 01 | 704 | (2.6+ | 0.7−) | 2005 05 08 | 699 | 0.2− | 0.9− | 2005 05 26 | 699 | 0.5+ | 1.4+ |
| 1998 05 01 | 704 | (2.5+ | 1.7+) | 2005 05 08 | 699 | 0.4− | 1.0− | 2005 05 26 | 699 | (2.2− | 1.2+) |
| 1998 05 01 | 704 | 1.5− | 0.1− | 2005 05 08 | 699 | 0.1− | 0.3− | 2005 06 04 | 703 | 0.7− | 0.2− |
| 1998 05 01 | 704 | (2.2− | 0.2+) | 2005 05 08 | 699 | 0.2+ | 0.1− | 2005 06 04 | 703 | 1.2− | 0.2− |
| 1998 05 01 | 704 | 1.7+ | 0.5+ | 2005 05 09 | 704 | 0.5+ | 0.1+ | 2005 06 04 | 703 | (0.3+ | 1.8+) |
| 1999 10 06 | 691 | 0.0 | 0.1+ | 2005 05 09 | 704 | 1.4+ | 0.0 | 2005 06 04 | 703 | 0.7− | 0.4− |
| 1999 10 06 | 691 | 0.1+ | 0.4+ | 2005 05 09 | 699 | 0.1− | 0.0 | 2005 06 12 | G96 | 0.2− | 0.2+ |
| 1999 10 06 | 691 | 0.3+ | 0.2− | 2005 05 09 | 704 | 0.8+ | 0.1− | 2005 06 12 | G96 | 0.5− | 0.2+ |
| 1999 11 28 | 691 | 0.2+ | 0.3− | 2005 05 09 | 704 | 0.9+ | 0.7+ | 2005 06 12 | G96 | 0.9− | 0.1+ |
| 1999 11 28 | 691 | 0.2− | 0.1− | 2005 05 09 | 699 | 0.8− | 0.0 | 2005 06 12 | G96 | 0.6− | 0.1− |
| 1999 11 28 | 691 | 0.6+ | 0.1− | 2005 05 09 | 699 | 0.9− | 0.2− | 2006 10 28 | G96 | 0.7+ | 0.4− |
| 1999 12 05 | 691 | 0.3+ | 0.3+ | 2005 05 09 | 699 | 0.2+ | 0.8− | 2006 10 28 | G96 | 0.6− | 0.2− |
| 1999 12 05 | 691 | 0.1− | 0.2+ | 2005 05 13 | 704 | 1.0+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 1999 12 05 | 691 | 0.0 | 0.0 | 2005 05 13 | 704 | 0.8+ | 0.8+ | 2006 10 28 | G96 | 0.5− | 0.4− |
| 2002 08 30 | 644 | 0.6− | 0.2+ | 2005 05 13 | 704 | (0.9+ | 1.6+) | 2006 11 14 | 691 | 0.6− | 0.2+ |
| 2002 08 30 | 644 | 0.4− | 0.5+ | 2005 05 13 | 704 | 1.1+ | 0.0 | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2002 08 30 | 644 | 0.2− | 0.2+ | 2005 05 13 | 704 | 0.9+ | 1.2+ | 2006 11 14 | 691 | 0.5− | 0.4+ |
| 2005 04 16 | 691 | 0.0 | 0.1+ | 2005 05 14 | G96 | 0.6− | 0.2− | 2006 11 27 | G96 | 0.5+ | 0.6+ |
| 2005 04 16 | 691 | 0.1+ | 1.1+ | 2005 05 14 | G96 | 0.5− | 0.4− | 2006 11 27 | G96 | 0.2− | 0.2+ |
| 2005 04 16 | 691 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.7− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2005 04 18 | 703 | 0.2+ | 0.9− | 2005 05 14 | G96 | 0.5− | 0.3− | 2006 11 27 | G96 | 0.2− | 0.2+ |

**(145158)∗ 2005 HU$_3$ = 2001 FW$_{11}$**

Discovered 2005 Apr. 28 by A. Lowe at RAS Observatory, Mayhill.

Id. G. V. Williams (*MPO* 77176)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.95070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25302324 | $\omega$ | 55.95073 | | −0.84370973 | +0.53493640 | |
| $a$ | 2.4756872 | $\Omega$ | 156.29432 | | −0.52183512 | −0.79782314 | |
| $e$ | 0.0614422 | $i$ | 6.38169 | | −0.12586500 | −0.27806706 | |
| $P$ | 3.90 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 15 | 261 | 0.2− | 0.6+ | 2002 08 17 | 644 | 0.6+ | 0.1+ | 2005 05 13 | 703 | 0.3− | 0.2+ |
| 1993 04 15 | 261 | 0.5+ | 0.7+ | 2002 08 17 | 644 | 0.1− | 0.3− | 2005 05 15 | 644 | 0.1+ | 0.0 |
| 2001 03 18 | 608 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.4+ | 0.0 | 2005 05 15 | 644 | 0.0 | 0.1+ |
| 2001 03 18 | 608 | 0.5− | 0.2− | 2002 09 14 | 644 | 0.6− | 0.1+ | 2005 05 15 | 644 | 0.0 | 0.1+ |
| 2001 03 18 | 608 | 0.2− | 0.1− | 2003 11 18 | 691 | 0.1− | 0.6+ | 2005 05 18 | 644 | 0.1+ | 0.1+ |
| 2001 03 19 | 699 | 0.1− | 0.6+ | 2003 11 18 | 691 | 0.0 | 0.3+ | 2005 05 18 | 644 | 0.5+ | 0.5+ |
| 2001 03 19 | 699 | 1.4+ | 0.2+ | 2003 11 18 | 691 | 0.1− | 0.4+ | 2005 05 18 | 644 | 0.2+ | 0.2+ |
| 2001 03 19 | 699 | 0.6+ | 0.7+ | 2005 04 15 | 699 | 0.1− | 1.4+ | 2006 08 21 | 691 | 0.1+ | 0.2+ |
| 2001 03 19 | 699 | 0.6+ | 0.6+ | 2005 04 15 | 699 | (1.2− | 2.7+) | 2006 08 21 | 691 | 0.0 | 0.4+ |
| 2001 03 23 | 699 | 0.2− | 0.4+ | 2005 04 15 | 699 | 1.0− | 0.6+ | 2006 08 21 | 691 | 0.1− | 0.4+ |
| 2001 03 23 | 699 | 0.1+ | 1.6+ | 2005 04 15 | 699 | 0.5+ | 0.6+ | 2006 08 28 | 691 | 0.2+ | 0.5+ |
| 2001 03 23 | 699 | 0.4− | 0.2− | 2005 04 28 | H06 | 1.2− | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.5− |
| 2001 03 23 | 699 | 0.7+ | 0.1+ | 2005 04 28 | H06 | 0.1− | 0.0 | 2006 08 28 | 703 | (0.7− | 2.3−) |
| 2001 03 26 | 608 | 0.6+ | 0.0 | 2005 04 28 | H06 | 0.4− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2001 03 26 | 608 | 0.6+ | 0.1+ | 2005 04 30 | H06 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.6− |
| 2001 03 26 | 608 | 0.5+ | 0.1− | 2005 04 30 | H06 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.2− | 0.6− |
| 2002 08 08 | 644 | 0.2+ | 0.0 | 2005 04 30 | H06 | 0.0 | 0.9+ | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2002 08 08 | 644 | 0.2+ | 0.0 | 2005 05 01 | H06 | 1.1+ | 1.0+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2002 08 13 | 291 | 0.2− | 0.1+ | 2005 05 01 | H06 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2002 08 13 | 291 | 0.3− | 0.0 | 2005 05 13 | 703 | 0.6− | 1.4− | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2002 08 13 | 291 | 0.4− | 0.5+ | 2005 05 13 | 703 | 0.6+ | 1.5− | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2002 08 17 | 644 | 0.1+ | 0.2− | 2005 05 13 | 703 | 0.9− | 0.8− | | | | |

**(145159)∗ 2005 HM$_4$**

Discovered 2005 Apr. 27 by CINEOS at Campo Imperatore.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.98956 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29875823 | $\omega$ | 270.64251 | | +0.98298295 | +0.15111069 | |
| $a$ | 2.2161005 | $\Omega$ | 80.66980 | | −0.09564594 | +0.90647367 | |
| $e$ | 0.1892837 | $i$ | 6.07624 | | −0.15683233 | +0.39429817 | |
| $P$ | 3.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.3− | 1.0+ | 2005 04 30 | 599 | 1.5+ | 0.4− | 2006 11 17 | 704 | (0.3+ | 2.4+) |
| 1999 07 14 | 704 | 0.0 | 0.0 | 2005 04 30 | 599 | 0.1+ | 0.8+ | 2006 11 17 | 704 | (0.1− | 1.6+) |
| 1999 07 14 | 704 | 0.1+ | 0.0 | 2005 04 30 | 599 | 0.3+ | 0.4+ | 2006 11 17 | 704 | (0.1+ | 1.9+) |
| 2002 06 16 | 644 | 0.2− | 0.5+ | 2005 04 30 | 599 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.7+ | 1.0+ |
| 2002 06 16 | 644 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 0.4− | 1.1− | 2006 11 17 | 704 | (0.3− | 1.7+) |
| 2002 06 16 | 644 | 0.1+ | 0.5+ | 2006 09 16 | 703 | (1.1− | 2.6−) | 2006 11 18 | 704 | 1.0− | 0.1+ |
| 2003 12 18 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | (2.3− | 2.0−) | 2006 11 18 | 704 | (1.7− | 0.7−) |
| 2003 12 18 | 704 | 0.4− | 0.1− | 2006 09 16 | 703 | (2.5− | 1.7−) | 2006 11 18 | 704 | 0.2− | 0.6− |
| 2003 12 18 | 704 | 0.4− | 0.4+ | 2006 10 19 | 703 | 1.2− | 0.4+ | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2003 12 18 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 703 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2003 12 22 | 704 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.6− | 1.4− | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2003 12 22 | 704 | 0.3− | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.4+ |
| 2003 12 22 | 704 | 0.3− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2003 12 22 | 704 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2003 12 28 | 691 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2003 12 28 | 691 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.7+ |
| 2003 12 28 | 691 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2004 01 22 | 704 | 0.3− | 0.6− | 2006 10 23 | G96 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.2− | 0.2+ |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.1− | 0.4− | 2006 11 12 | G96 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2005 04 07 | 691 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2005 04 07 | 691 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2005 04 07 | 691 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.6− | 0.3− | 2006 11 29 | 704 | 1.5− | 1.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 18 | 691 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.3+ |
| 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.7+ | 2006 11 29 | 704 | 0.6− | 1.4+ |
| 2005 04 18 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.6− | 0.1− | 2006 11 29 | 704 | 1.3− | 0.5+ |
| 2005 04 27 | 599 | 0.2+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.8+ |
| 2005 04 27 | 599 | 0.2+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.3+ | | | | |
| 2005 04 27 | 599 | 0.3+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.3+ | | | | |

**(145160)∗ 2005 HY$_4$**

Discovered 2005 Apr. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.83113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17808705 | $\omega$ | 201.46739 | | +0.30908003 | +0.94151601 | |
| $a$ | 3.1288241 | $\Omega$ | 86.73638 | | −0.85181795 | +0.33682971 | |
| $e$ | 0.1431591 | $i$ | 7.72658 | | −0.42293701 | +0.00966150 | |
| $P$ | 5.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 644 | 0.4− | 0.5+ | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.2− |
| 2001 10 24 | 644 | 0.7− | 0.7+ | 2005 05 03 | 704 | 1.1+ | 0.1− | 2006 08 20 | 644 | 0.1− | 0.4− |
| 2001 10 24 | 644 | 0.5− | 0.5+ | 2005 05 03 | 704 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.3− |
| 2001 10 25 | 645 | 0.0 | 0.1+ | 2005 05 03 | 704 | 0.9+ | 0.9+ | 2006 08 20 | 644 | 0.1− | 0.1− |
| 2001 10 25 | 645 | 0.0 | 0.1+ | 2005 05 03 | 704 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.3− |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.2− |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2005 05 11 | 691 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.3− | 0.3− |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2005 05 11 | 691 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2001 11 18 | 645 | 0.1− | 0.1+ | 2005 05 11 | 691 | 0.0 | 0.8+ | 2006 08 24 | 644 | 0.0 | 0.3− |
| 2001 11 21 | 645 | 0.1− | 0.1+ | 2005 05 11 | 699 | 0.0 | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.4− |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2005 05 11 | 699 | 0.0 | 0.5− | 2006 08 28 | E12 | 0.3− | 0.3+ |
| 2004 03 16 | 691 | 0.1− | 0.1− | 2005 06 03 | G92 | 0.1+ | 0.3+ | 2006 08 28 | E12 | 0.1− | 0.2+ |
| 2004 03 16 | 691 | 0.2+ | 0.3+ | 2005 06 03 | G92 | 0.1− | 0.1+ | 2006 08 28 | E12 | 0.8+ | 0.1− |
| 2004 03 16 | 691 | 0.2+ | 0.2+ | 2005 06 03 | G92 | 0.4+ | 0.2+ | 2006 08 28 | E12 | 0.1− | 0.4+ |
| 2005 04 15 | 691 | 0.0 | 0.3+ | 2005 06 05 | G92 | 0.9+ | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.9+ |
| 2005 04 15 | 691 | 0.2− | 0.2+ | 2005 06 05 | G92 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.7− |
| 2005 04 15 | 691 | 0.2− | 0.2+ | 2005 06 05 | G92 | 0.8+ | 0.4− | 2006 09 20 | 703 | 0.9+ | 0.3+ |
| 2005 04 30 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.3− | 2006 09 20 | 703 | 0.0 | 0.1+ |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.3− | | | | |

**(145161)∗ 2005 HZ$_4$ = 2001 MD$_{27}$**

Discovered 2005 Apr. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77178)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.22267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23732991 | $\omega$ | 21.74961 | | −0.71307619 | +0.69621928 | |
| $a$ | 2.5836543 | $\Omega$ | 203.03022 | | −0.67030074 | −0.71150547 | |
| $e$ | 0.0983863 | $i$ | 12.16925 | | −0.20547328 | −0.09507197 | |
| $P$ | 4.15 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 691 | 0.3+ | 0.0 | 2005 04 13 | 704 | 0.3+ | 0.5+ | 2005 06 03 | 703 | 1.3− | 0.5− |
| 2001 05 14 | 691 | 0.4− | 0.3− | 2005 04 13 | 704 | 1.1− | 0.0 | 2005 06 03 | 703 | 0.5− | 0.0 |
| 2001 05 14 | 691 | 0.5− | 0.2− | 2005 04 13 | 704 | (0.2− | 2.0+) | 2006 08 26 | D35 | 0.0 | 0.0 |
| 2001 05 26 | 704 | 0.1+ | 0.6+ | 2005 04 30 | 691 | 0.2+ | 0.0 | 2006 08 26 | D35 | 0.0 | 0.1− |
| 2001 05 26 | 704 | 0.3− | 0.4− | 2005 04 30 | 691 | 0.2+ | 0.1− | 2006 08 26 | D35 | 0.9+ | 0.0 |
| 2001 05 26 | 704 | 0.3+ | 0.3+ | 2005 04 30 | 691 | 0.1+ | 0.1− | 2006 08 29 | 703 | 1.3− | 1.0− |
| 2001 05 26 | 704 | 1.5+ | 0.7− | 2005 04 30 | 644 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 1.4− | 0.2− |
| 2001 05 26 | 704 | 0.2− | 0.4− | 2005 04 30 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 1.3− | 0.8− |
| 2001 06 20 | 699 | 0.8− | 0.4+ | 2005 04 30 | 644 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.2− | 0.9+ |
| 2001 06 20 | 699 | 1.1+ | 1.1+ | 2005 05 03 | 704 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.0 | 1.3+ |
| 2001 06 20 | 699 | 0.2+ | 0.7+ | 2005 05 03 | 704 | 1.1+ | 0.9− | 2006 09 14 | 703 | 0.2+ | 1.2− |
| 2001 06 20 | 699 | 1.1+ | 0.7+ | 2005 05 03 | 704 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.5− | 0.5− |
| 2001 06 21 | 704 | 0.0 | 0.2− | 2005 05 03 | 704 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.1+ |
| 2001 06 21 | 704 | 0.0 | 0.5+ | 2005 05 03 | 704 | 0.1+ | 0.4− | 2006 09 16 | 644 | 0.0 | 0.0 |
| 2001 06 21 | 704 | 0.2− | 0.4+ | 2005 05 07 | 703 | 0.8− | 0.3− | 2006 09 16 | 644 | 0.1− | 0.1+ |
| 2001 06 21 | 704 | 0.6− | 0.1+ | 2005 05 07 | 703 | 0.0 | 0.6− | 2006 09 16 | 644 | 0.3+ | 0.0 |
| 2002 10 04 | 704 | 0.8− | 0.7− | 2005 05 07 | 703 | (1.6− | 0.7−) | 2006 09 19 | 703 | 0.8+ | 1.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.4− | 2005 05 07 | 703 | 0.3+ | 0.9− | 2006 09 19 | 703 | 0.7+ | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 1.1+ | 2005 05 08 | 699 | 0.7+ | 0.3+ | 2006 09 19 | 703 | 1.0+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.4+ | 2005 05 08 | 699 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.5+ | 1.0+ |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2005 05 08 | 699 | 0.5− | 0.8+ | 2006 09 20 | 699 | 1.2− | 0.8+ |
| 2005 03 12 | G96 | 0.3− | 1.2− | 2005 05 08 | 699 | 1.0− | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.2− |
| 2005 03 12 | G96 | 0.4− | 0.1− | 2005 05 11 | 699 | 0.3+ | 0.7+ | 2006 09 20 | 699 | 1.1+ | 0.3− |
| 2005 03 12 | G96 | 0.2− | 0.2− | 2005 05 11 | 699 | 1.2+ | 0.4+ | 2006 09 20 | 699 | 0.4+ | 0.7− |
| 2005 03 12 | G96 | 0.5− | 0.1− | 2005 05 11 | 699 | 0.3+ | 1.0+ | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2005 04 04 | 704 | 0.2− | 0.8+ | 2005 05 11 | 699 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.9− | 0.2− |
| 2005 04 04 | 704 | 0.2+ | 0.9+ | 2005 06 03 | 703 | 0.7− | 0.4− | 2006 10 16 | 703 | 1.0+ | 1.4− |
| 2005 04 04 | 704 | (0.5+ | 2.7+) | 2005 06 03 | 703 | 0.1+ | 0.9− | 2006 10 16 | 703 | 0.7+ | 0.4− |

**(145162)∗ 2005 HG$_5$**

Discovered 2005 Apr. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.05744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17927319 | $\omega$ | 111.08041 | | +0.59676186 | +0.80138552 | |
| $a$ | 3.1150079 | $\Omega$ | 195.76249 | | −0.78055423 | +0.56799437 | |
| $e$ | 0.1727111 | $i$ | 8.61687 | | −0.18603864 | +0.18751970 | |
| $P$ | 5.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 14 | 691 | 0.5− | 0.3+ | 2005 06 04 | 691 | 0.5+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.2+ |
| 1999 04 14 | 691 | 1.3+ | 1.3− | 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 703 | (0.7+ | 1.6−) |
| 1999 04 14 | 691 | 1.1− | 0.5− | 2005 06 11 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.4− | 0.5− |
| 2004 03 16 | 691 | 0.1− | 0.1+ | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.0 | 0.2− |
| 2004 03 16 | 691 | 0.1− | 0.5+ | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.4+ |
| 2004 03 16 | 691 | 0.2+ | 0.3+ | 2005 06 28 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.4− | 0.5+ |
| 2004 03 27 | 691 | 0.8+ | 0.5+ | 2005 06 28 | 644 | 0.1+ | 0.2− | 2006 09 18 | 704 | 0.2+ | 0.3+ |
| 2004 03 27 | 691 | 0.1+ | 0.9+ | 2005 06 28 | 644 | 0.3− | 0.5− | 2006 09 25 | 704 | 1.0+ | 1.0+ |
| 2004 03 27 | 691 | 0.0 | 0.9+ | 2005 07 05 | 644 | 0.5− | 0.1+ | 2006 09 25 | 704 | 0.9+ | 0.3+ |
| 2005 04 30 | 691 | 0.2− | 0.0 | 2005 07 05 | 644 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.1− | 0.6+ |
| 2005 04 30 | 691 | 0.1− | 0.2− | 2005 07 05 | 644 | 0.5− | 0.7+ | 2006 09 25 | 704 | 0.8+ | 0.7+ |
| 2005 04 30 | 691 | 0.4+ | 0.3+ | 2006 08 21 | 691 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.2− |
| 2005 05 03 | 703 | 0.9− | 0.5− | 2006 08 21 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 1.4− |
| 2005 05 03 | 703 | 1.3− | 0.6− | 2006 08 21 | 691 | 0.2− | 0.6+ | 2006 09 25 | 699 | 0.1− | 1.4+ |
| 2005 05 03 | 703 | 0.1− | 0.5− | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.3− |
| 2005 05 03 | 703 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 0.2− | 1.0+ | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2005 05 04 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.3− | 2006 09 28 | 691 | 0.7− | 0.0 |
| 2005 05 04 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 10 01 | 703 | 0.2+ | 1.1− |
| 2005 05 04 | 691 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.6+ | 2006 10 01 | 703 | 0.3− | 0.1+ |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.6+ | 1.0+ | 2006 10 01 | 703 | 0.1− | 0.5+ |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.4+ | 1.1− | 2006 10 01 | 703 | (0.5− | 1.5−) |
| 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.9− | 2006 10 16 | 703 | 0.8+ | 0.1− |
| 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.8+ |
| 2005 05 14 | 691 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.8+ | 0.8− |
| 2005 05 14 | 691 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.5+ |
| 2005 05 17 | G96 | 0.7− | 0.3− | 2006 09 12 | 703 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2005 05 17 | G96 | 0.6− | 0.1− | 2006 09 12 | 703 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2005 05 17 | G96 | 0.5− | 0.2− | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2005 05 17 | G96 | 0.4− | 0.2− | 2006 09 12 | 703 | (1.3+ | 2.0+) | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2005 06 02 | 703 | 0.3+ | 0.8− | 2006 09 13 | 644 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2005 06 02 | 703 | 0.6− | 0.3− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2005 06 02 | 703 | 0.9− | 0.5− | 2006 09 13 | 644 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2005 06 02 | 703 | 1.4− | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.2+ | | | | |
| 2005 06 04 | 691 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.0 | | | | |

**(145163)∗ 2005 HT$_6$ = 2000 AQ$_{112}$ = 2003 YB$_{56}$**

Discovered 2005 Apr. 28 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 77180)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 137.10305 | | (2000.0) | | | |
| $n$ | 0.23045737 | $\omega$ | 314.36657 | | −0.94679966 | +0.31546251 |
| $a$ | 2.6347676 | $\Omega$ | 244.11743 | | −0.27147230 | −0.88913284 |
| $e$ | 0.1866690 | $i$ | 4.05811 | | −0.17283864 | −0.33155121 |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.2+ | 0.5− | 2005 04 28 | E12 | 0.6− | 0.6+ | 2005 05 30 | 699 | 0.5+ | 0.2+ |
| 2000 01 05 | 704 | 0.1+ | 1.2− | 2005 04 28 | E12 | 0.6− | 0.1+ | 2005 05 30 | 699 | 0.1− | 0.3+ |
| 2000 01 05 | 704 | 0.4− | 0.4− | 2005 05 04 | 704 | 0.4+ | 0.4+ | 2005 05 30 | 699 | 0.4+ | 0.4+ |
| 2000 01 05 | 704 | 0.1+ | 0.5− | 2005 05 04 | 704 | 0.4− | 0.7+ | 2005 06 04 | 703 | 1.0− | 0.2+ |
| 2000 01 05 | 704 | 0.0 | 0.0 | 2005 05 04 | 704 | 0.2+ | 0.0 | 2005 06 04 | 703 | 0.0 | 0.0 |
| 2000 01 07 | 704 | 0.0 | 0.1+ | 2005 05 04 | 704 | 0.3+ | 0.6+ | 2005 06 04 | 703 | 1.0− | 0.7+ |
| 2000 01 07 | 704 | 0.2− | 0.3− | 2005 05 04 | 644 | 0.0 | 0.5− | 2005 06 04 | 703 | 1.6− | 0.3+ |
| 2000 01 07 | 704 | 1.0− | 0.9+ | 2005 05 04 | 644 | 0.1+ | 0.3− | 2005 06 14 | 699 | 1.4+ | 0.3+ |
| 2000 01 07 | 704 | 0.3− | 0.1− | 2005 05 04 | 644 | 0.1+ | 0.3− | 2005 06 14 | 699 | 1.7+ | 0.7+ |
| 2000 01 07 | 704 | 1.9+ | 0.2− | 2005 05 08 | E12 | 0.1− | 0.5− | 2005 06 14 | 699 | 1.1+ | 0.1+ |
| 2000 01 07 | 704 | 0.1+ | 0.4+ | 2005 05 08 | E12 | 0.7− | 0.2− | 2005 06 14 | G96 | 0.3− | 0.3+ |
| 2000 01 07 | 704 | 1.1− | 0.1+ | 2005 05 08 | E12 | 0.6− | 0.4− | 2005 06 14 | G96 | 0.4− | 0.1− |
| 2000 01 07 | 704 | 0.0 | 0.3− | 2005 05 08 | E12 | 0.3− | 0.0 | 2005 06 14 | G96 | 0.3− | 0.2+ |
| 2000 01 07 | 704 | 0.2− | 0.1+ | 2005 05 09 | 704 | 0.6+ | 0.5+ | 2005 06 14 | 699 | 0.8+ | 0.7− |
| 2000 02 03 | 704 | 1.5− | 0.3− | 2005 05 09 | 704 | 0.9+ | 0.1+ | 2005 06 14 | G96 | 0.3− | 0.1+ |
| 2000 02 03 | 704 | 0.1+ | 1.5+ | 2005 05 09 | 704 | 0.3+ | 0.1− | 2005 06 22 | 644 | 0.1+ | 0.1+ |
| 2000 02 03 | 704 | 0.5+ | 1.0+ | 2005 05 09 | 704 | 0.7+ | 0.5− | 2005 06 22 | 644 | 0.2+ | 0.3+ |
| 2000 02 03 | 704 | 0.8+ | 0.6+ | 2005 05 09 | 704 | 0.4+ | 0.2+ | 2005 06 22 | 644 | 0.1+ | 0.9+ |
| 2002 10 04 | 704 | 0.6+ | 1.1+ | 2005 05 11 | 691 | 0.0 | 0.1+ | 2005 06 27 | 644 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.4− | 0.5+ | 2005 05 11 | 691 | 0.2+ | 0.0 | 2005 06 27 | 644 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 1.0+ | 0.3− | 2005 05 11 | 691 | 0.2− | 0.1+ | 2005 06 27 | 644 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 0.1− | 1.7+ | 2005 05 11 | 644 | 0.2+ | 0.3− | 2006 07 26 | A50 | 0.5+ | 0.1− |
| 2003 12 19 | 704 | 0.1− | 0.5+ | 2005 05 11 | 644 | 0.3+ | 0.3− | 2006 07 26 | A50 | 0.7+ | 0.0 |
| 2003 12 19 | 704 | 0.2+ | 0.8+ | 2005 05 11 | 644 | 0.3+ | 0.3− | 2006 08 24 | 704 | 0.4+ | 0.5− |
| 2003 12 19 | 704 | 1.4+ | 0.3+ | 2005 05 12 | G96 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.6+ | 0.1+ |
| 2003 12 21 | 704 | 0.5+ | 1.5+ | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 08 24 | 704 | (2.3+ | 1.2+) |
| 2003 12 21 | 704 | 0.5− | 1.5+ | 2005 05 12 | G96 | 0.2+ | 0.3+ | 2006 08 24 | 704 | 1.2+ | 1.1+ |
| 2003 12 21 | 704 | 0.4− | 1.3+ | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 08 29 | 703 | 1.6− | 0.3− |
| 2003 12 21 | 704 | 0.0 | 0.4+ | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 08 29 | 703 | 1.0− | 0.5− |
| 2003 12 21 | 704 | 0.2− | 1.3+ | 2005 05 12 | G96 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.9− | 0.5− |
| 2005 01 18 | 809 | 0.2+ | 0.2+ | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.8− | 0.8+ |
| 2005 01 18 | 809 | 0.1+ | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 08 29 | 691 | (3.6+ | 0.3+) |
| 2005 01 18 | 809 | 0.0 | 0.2+ | 2005 05 16 | 691 | 0.2+ | 0.0 | 2006 08 29 | 691 | 0.4− | 0.8+ |
| 2005 04 18 | 703 | 0.2− | 0.9+ | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 08 29 | 691 | 0.3− | 0.1+ |
| 2005 04 18 | 703 | 0.6− | 0.2+ | 2005 05 16 | 691 | 0.2+ | 0.0 | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 2005 04 18 | 703 | 0.7− | 0.8+ | 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2005 04 18 | 703 | 1.0− | 0.6+ | 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2005 04 28 | E12 | 0.2− | 0.0 | 2005 05 19 | 644 | 0.0 | 0.1− | | | | |
| 2005 04 28 | E12 | 0.2− | 0.2− | 2005 05 30 | 699 | 0.2+ | 0.3− | | | | |

**(145164)∗ 2005 HA$_7$**

Discovered 2005 Apr. 30 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 127.17252 | | (2000.0) | | | |
| $n$ | 0.23240472 | $\omega$ | 348.87332 | | −0.70930017 | +0.69797994 |
| $a$ | 2.6200289 | $\Omega$ | 235.85619 | | −0.63725230 | −0.69470373 |
| $e$ | 0.1083800 | $i$ | 6.84053 | | −0.30133498 | −0.17381234 |
| $P$ | 4.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 28 | 691 | 0.2− | 0.3+ | 2005 05 04 | 704 | 0.7+ | 0.4− | 2005 06 27 | 644 | 0.4− | 0.2+ |
| 1997 06 28 | 691 | 0.1+ | 0.0 | 2005 05 04 | G96 | 0.4− | 0.2− | 2005 07 05 | 644 | 0.5− | 0.4+ |
| 1997 06 28 | 691 | 0.3+ | 0.2− | 2005 05 04 | G96 | 0.3− | 0.3− | 2005 07 05 | 644 | 0.2− | 0.2+ |
| 1998 11 17 | 691 | 0.4+ | 0.2− | 2005 05 04 | 704 | 0.2+ | 0.3+ | 2005 07 05 | 644 | 0.3− | 0.2+ |
| 1998 11 17 | 691 | 0.4+ | 0.2+ | 2005 05 04 | G96 | 0.6− | 0.3− | 2006 08 29 | 699 | 1.4− | 0.4+ |
| 1998 12 17 | 691 | 0.5− | 0.1− | 2005 05 04 | G96 | 0.5− | 0.2− | 2006 08 29 | 699 | 1.3+ | 1.0+ |
| 1998 12 17 | 691 | (3.7+ | 4.7−) | 2005 05 09 | 704 | (1.0+ | 2.9−) | 2006 08 29 | 699 | 0.1+ | 1.3− |
| 1998 12 17 | 691 | 0.9− | 0.3− | 2005 05 09 | 704 | (1.0+ | 2.1−) | 2006 08 29 | 699 | 0.0 | 0.9+ |
| 2000 02 06 | 704 | 0.4+ | 0.3− | 2005 05 09 | 704 | (0.2− | 1.6−) | 2006 09 17 | 703 | 0.0 | 0.8− |
| 2000 02 06 | 704 | 0.5+ | 0.6+ | 2005 05 09 | 704 | (1.6+ | 1.3−) | 2006 09 17 | 703 | 0.5− | 0.6− |
| 2000 02 06 | 704 | 0.1+ | 0.5+ | 2005 05 09 | 704 | 1.0+ | 1.2− | 2006 09 17 | 703 | 0.5− | 0.9+ |
| 2000 02 06 | 704 | 0.3+ | 1.8+ | 2005 05 26 | E12 | 0.7+ | 0.2+ | 2006 09 17 | 703 | 0.9− | 0.0 |
| 2002 10 31 | 644 | 0.1− | 0.5+ | 2005 05 26 | E12 | 0.1− | 0.2+ | 2006 09 19 | 699 | (1.8+ | 0.1+) |
| 2002 10 31 | 644 | 0.4− | 0.3+ | 2005 05 26 | E12 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.6− | 0.4+ |
| 2002 10 31 | 644 | 0.3− | 0.7+ | 2005 05 26 | E12 | (1.9− | 0.3+) | 2006 09 19 | 699 | 1.3+ | 0.1− |
| 2003 12 22 | 704 | 1.0+ | 0.3+ | 2005 06 04 | 704 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.6+ |
| 2003 12 22 | 704 | 0.7+ | 0.5+ | 2005 06 04 | 704 | 0.2− | 0.1+ | 2006 10 01 | 703 | 0.3+ | 0.2+ |
| 2003 12 22 | 704 | 0.3+ | 0.7+ | 2005 06 04 | 704 | 0.2− | 0.0 | 2006 10 01 | 703 | 1.2+ | 0.5+ |
| 2003 12 22 | 704 | 0.7+ | 0.5+ | 2005 06 04 | 704 | 0.6− | 0.2+ | 2006 10 01 | 703 | 1.2− | 0.7+ |
| 2003 12 22 | 704 | 0.4+ | 0.4+ | 2005 06 04 | 704 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.8+ | 0.7+ |
| 2004 01 14 | 644 | 0.2− | 0.8+ | 2005 06 14 | 291 | (0.2− | 2.6+) | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2004 01 14 | 644 | 0.2− | 0.7+ | 2005 06 14 | 291 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2004 01 14 | 644 | 0.8− | 0.4+ | 2005 06 14 | 291 | 1.2+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2005 04 30 | E12 | 0.4− | 0.3+ | 2005 06 17 | 691 | 0.1− | 0.3+ | 2006 10 24 | 644 | 0.2− | 0.2+ |
| 2005 04 30 | E12 | 0.3− | 0.6+ | 2005 06 17 | 691 | 0.0 | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.5+ |
| 2005 04 30 | E12 | 0.5− | 0.0 | 2005 06 17 | 691 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.2− |
| 2005 04 30 | E12 | 0.1− | 0.0 | 2005 06 27 | 644 | 0.4− | 0.1+ | | | | |
| 2005 05 04 | 704 | 0.5− | 0.7− | 2005 06 27 | 644 | 0.8− | 0.1+ | | | | |

**(145165)∗ 2005 HS$_7$**

Discovered 2005 Apr. 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.06488 | | (2000.0) | | | |
| $n$ | 0.25699836 | $\omega$ | 314.53346 | | +0.98613991 | −0.13666210 |
| $a$ | 2.4500925 | $\Omega$ | 53.54531 | | +0.16477268 | +0.87312077 |
| $e$ | 0.2035241 | $i$ | 6.71730 | | −0.01944304 | +0.46795682 |
| $P$ | 3.84 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 30 | 608 | 0.1+ | 1.0− | 2006 08 10 | 644 | 0.2− | 0.1+ | 2006 10 27 | 704 | 0.1+ | 0.7− |
| 2002 07 30 | 608 | 0.1+ | 0.5− | 2006 08 10 | 644 | 0.8− | 0.1+ | 2006 10 27 | 704 | 1.0+ | 0.9+ |
| 2002 07 30 | 608 | 0.3+ | 0.9− | 2006 09 17 | 699 | 0.2− | 1.2+ | 2006 10 27 | 704 | (0.5− | 1.6+) |
| 2002 08 13 | 704 | 0.0 | 0.1− | 2006 09 17 | 699 | 0.9− | 0.7+ | 2006 11 05 | 644 | 0.1+ | 0.1+ |
| 2002 08 13 | 704 | 1.0− | 0.4+ | 2006 09 17 | 699 | 0.9− | 0.4+ | 2006 11 05 | 644 | 0.0 | 0.0 |
| 2002 08 13 | 704 | 0.7+ | 1.0+ | 2006 09 17 | 699 | 0.3− | 1.4+ | 2006 11 05 | 644 | 0.2− | 0.2+ |
| 2002 08 13 | 644 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.3− | 2006 11 05 | 644 | 0.1+ | 0.3+ |
| 2002 08 13 | 644 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 11 05 | 644 | 0.2+ | 0.0 |
| 2002 08 13 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 11 05 | 644 | 0.1− | 0.2+ |
| 2002 08 31 | 704 | 0.2− | 1.3+ | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.5− |
| 2002 08 31 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2002 08 31 | 704 | (2.2+ | 2.5−) | 2006 09 26 | 703 | 0.1− | 0.1− | 2006 11 07 | 644 | 0.3− | 0.1− |
| 2002 10 06 | 608 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2002 10 06 | 608 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2002 10 06 | 608 | 0.3+ | 0.1− | 2006 10 02 | 703 | 0.6+ | 0.5− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2004 03 18 | 645 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.5+ | 0.5− | 2006 11 10 | 704 | 0.1− | 0.2+ |
| 2004 03 18 | 645 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.3+ | 0.0 | 2006 11 10 | 704 | 0.1+ | 0.5+ |
| 2005 04 16 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 703 | 0.4− | 0.7− | 2006 11 10 | 704 | 0.4− | 0.7+ |
| 2005 04 16 | 691 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 704 | 0.6+ | 0.9+ |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2005 04 30 | 691 | 0.4+ | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.0 | 1.1+ |
| 2005 04 30 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 14 | 704 | 0.7+ | 0.2+ |
| 2005 04 30 | 691 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.2+ | 1.4+ |
| 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.4− | 1.4+ |
| 2005 05 01 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.6+ | 1.4+ |
| 2005 05 01 | 644 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 17 | 704 | 0.5− | 1.3+ |
| 2005 05 14 | G96 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.6− | 2.0+ |
| 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.9− | 0.0 |
| 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 17 | 704 | 1.0+ | 1.5+ |
| 2005 05 14 | G96 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.5+ | 0.2− |
| 2005 06 12 | G96 | 0.7− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.8− | 0.1− |
| 2005 06 12 | G96 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.5− | 0.5− | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2005 06 12 | G96 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2005 06 12 | G96 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2006 08 10 | 644 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2006 08 10 | 644 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 10 | 644 | 0.4− | 0.5− | 2006 10 27 | 704 | 0.1− | 1.3− | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2006 08 10 | 644 | 0.6− | 0.1− | 2006 10 27 | 704 | 0.2− | 0.7+ | | | | | | |

**(145166)∗ 2005 JL**

Discovered 2005 May 3 by J. W. Young at Table Mountain Observatory, Wrightwood.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.98366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28861408 | $\omega$ | 230.14646 | | +0.47338432 | +0.87143320 | |
| $a$ | 2.2677284 | $\Omega$ | 68.55372 | | −0.76014071 | +0.47784885 | |
| $e$ | 0.1228402 | $i$ | 7.93536 | | −0.44507684 | +0.11074593 | |
| $P$ | 3.41 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 13 | 644 | 0.3− | 1.1− | 2005 04 18 | 703 | (0.8+ | 2.2+) | 2006 09 30 | 703 | 0.7− | 0.8− | |
| 2002 06 13 | 644 | 0.1+ | 0.9− | 2005 04 18 | 703 | 1.0− | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.6+ | |
| 2002 06 13 | 644 | 0.3− | 0.6− | 2005 04 18 | 703 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4− | |
| 2002 06 17 | 644 | 0.4− | 0.0 | 2005 04 18 | 703 | 0.8− | 0.1− | 2006 09 30 | 703 | (0.7+ | 3.9−) | |
| 2002 06 17 | 644 | 0.2+ | 0.9+ | 2005 05 03 | 673 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 1.3− | 0.1− | |
| 2002 06 17 | 644 | 0.1− | 0.3+ | 2005 05 03 | 673 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 1.1+ | |
| 2002 06 18 | 644 | 0.1− | 0.3+ | 2005 05 03 | 673 | 0.6− | 0.4+ | 2006 10 16 | 703 | 1.4− | 0.6+ | |
| 2002 06 18 | 644 | 0.1+ | 0.4+ | 2005 05 04 | 673 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.9+ | 0.2− | |
| 2002 06 18 | 644 | 0.2+ | 0.3+ | 2005 05 04 | 673 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.4+ | |
| 2002 07 06 | 644 | 0.2+ | 0.2+ | 2005 05 04 | 673 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.4+ | |
| 2002 07 15 | 644 | 0.0 | 0.2+ | 2005 05 08 | 673 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.4+ | |
| 2002 07 15 | 644 | 0.1+ | 0.2+ | 2005 05 08 | 673 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.5+ | |
| 2002 07 19 | 644 | 0.0 | 0.0 | 2005 05 08 | 673 | 0.5+ | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.3+ | |
| 2002 07 19 | 644 | 0.2+ | 0.3+ | 2005 05 08 | 673 | 1.4+ | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.4+ | |
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2005 05 12 | 691 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.5+ | 0.2+ | |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2005 05 12 | 691 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.1− | 0.2+ | |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2005 05 12 | 691 | 0.2+ | 0.0 | | | | | |

**(145167)∗ 2005 JF$_1$**

Discovered 2005 May 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.00423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27849947 | $\omega$ | 190.60899 | | +0.26121651 | +0.95604556 | |
| $a$ | 2.3223079 | $\Omega$ | 94.63099 | | −0.87555283 | +0.29276823 | |
| $e$ | 0.1148484 | $i$ | 7.67990 | | −0.40641504 | −0.01623752 | |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 1.1− | 0.9+ | 2005 05 14 | 644 | 0.1+ | 0.0 | 2005 06 28 | 644 | 0.2+ | 0.2+ | |
| 1998 05 24 | 704 | 0.7− | 1.4− | 2005 05 16 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.0 | 1.1− | |
| 1998 05 24 | 704 | 1.1+ | 0.4− | 2005 05 16 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.8+ | |
| 1998 05 24 | 704 | 0.4+ | 0.8− | 2005 05 16 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | (0.8+ | 1.6+) | |
| 2002 08 20 | 644 | 0.5+ | 0.4+ | 2005 06 01 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.3+ | |
| 2002 08 20 | 644 | 0.1− | 0.1− | 2005 06 01 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | (1.7− | 0.2+) | |
| 2002 08 20 | 644 | 0.3− | 0.4+ | 2005 06 01 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | (1.3+ | 1.7+) | |
| 2002 09 09 | 644 | (2.0+ | 1.2+) | 2005 06 05 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.5+ | |
| 2002 09 09 | 644 | 0.3− | 0.1+ | 2005 06 05 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | (3.0− | 1.0+) | |
| 2002 09 09 | 644 | 0.4− | 0.2− | 2005 06 05 | 691 | 0.2− | 0.2+ | 2006 11 01 | 703 | 0.3− | 0.1− | |
| 2002 09 12 | 608 | 0.1− | 0.1+ | 2005 06 05 | 691 | 0.3− | 0.0 | 2006 11 01 | 703 | (2.8+ | 1.0+) | |
| 2002 09 12 | 608 | 0.2+ | 0.5+ | 2005 06 05 | 691 | 0.1− | 0.2+ | 2006 11 01 | 703 | 0.3− | 1.4+ | |
| 2002 09 12 | 608 | 0.1+ | 1.0− | 2005 06 05 | 691 | 0.3− | 0.1+ | 2006 11 01 | 703 | 1.3+ | 0.3+ | |
| 2005 04 17 | 691 | 0.3+ | 0.3+ | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.5+ | |
| 2005 04 17 | 691 | 0.6+ | 0.5+ | 2005 06 09 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.5+ | |
| 2005 04 17 | 691 | 0.1+ | 0.3+ | 2005 06 09 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.8+ | |
| 2005 05 03 | 704 | 0.7+ | 0.2+ | 2005 06 12 | 691 | 0.2+ | 0.2− | 2006 11 19 | 703 | 0.8− | 0.6+ | |
| 2005 05 03 | 704 | 0.0 | 0.1− | 2005 06 12 | 691 | 0.1+ | 0.0 | 2006 11 19 | 703 | (1.6− | 1.1−) | |
| 2005 05 03 | 704 | 1.0+ | 0.1+ | 2005 06 12 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 1.0− | 0.1+ | |
| 2005 05 04 | 691 | 0.2+ | 0.0 | 2005 06 28 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.8− | 0.3− | |
| 2005 05 04 | 691 | 0.2+ | 0.1− | 2005 06 28 | 644 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.4+ | |
| 2005 05 04 | 691 | 0.3+ | 0.1− | 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2+ | |
| 2005 05 14 | 644 | 0.1− | 0.1− | 2005 06 28 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.2+ | |
| 2005 05 14 | 644 | 0.2+ | 0.1− | 2005 06 28 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1+ | |

**(145168)∗ 2005 JD$_3$**

Discovered 2005 May 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.84662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22956635 | $\omega$ | 232.97561 | | +0.32813346 | +0.93577154 | |
| $a$ | 2.6415808 | $\Omega$ | 56.66636 | | −0.81020026 | +0.34905256 | |
| $e$ | 0.1780821 | $i$ | 8.88720 | | −0.48569946 | +0.04993928 | |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 29 | 691 | 0.5− | 0.0 | 2005 05 04 | G96 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.5− | 1.0+ | |
| 1992 04 29 | 691 | 1.1+ | 1.0+ | 2005 05 04 | G96 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.1+ | |
| 2001 06 12 | 644 | 0.5− | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.5+ | |
| 2001 06 12 | 644 | 1.0+ | 0.5− | 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 09 30 | 703 | (0.0 | 2.8+) | |
| 2002 11 01 | 644 | 0.2− | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.4+ | 0.8+ | |
| 2002 11 07 | 291 | 0.3− | 0.1+ | 2005 05 13 | G96 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.3+ | 1.0+ | |
| 2002 11 07 | 291 | 0.5− | 0.4+ | 2005 05 16 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 703 | (1.6+ | 1.5+) | |
| 2002 11 07 | 291 | 0.1− | 0.4+ | 2005 05 16 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 1.2+ | |
| 2002 11 13 | 644 | 0.2+ | 0.4− | 2005 05 16 | 644 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1+ | |
| 2002 11 13 | 644 | 0.3− | 0.2− | 2005 05 18 | E12 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1− | |
| 2002 11 13 | 644 | 0.5+ | 0.7+ | 2005 05 18 | E12 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− | |
| 2002 11 24 | 644 | 0.4− | 0.2+ | 2005 05 18 | E12 | 1.2+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1+ | |
| 2002 11 24 | 644 | 0.3− | 0.1− | 2005 05 18 | E12 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.5+ | 0.1− | |
| 2002 11 24 | 644 | 0.2+ | 0.6− | 2005 05 21 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2005 05 21 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 1.1+ | 0.0 | |
| 2002 12 11 | 644 | 0.1+ | 0.3− | 2005 05 21 | 644 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.2+ | |
| 2004 02 17 | 645 | 0.1+ | 0.0 | 2005 05 29 | E12 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2+ | |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2005 05 29 | E12 | 0.6+ | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.2+ | |
| 2005 05 03 | 703 | 1.0+ | 0.3+ | 2005 05 29 | E12 | 1.0+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.3− | |
| 2005 05 03 | 703 | 0.8− | 0.8+ | 2005 05 29 | E12 | 0.2− | 0.9− | 2006 11 01 | G96 | 0.3+ | 0.7− | |
| 2005 05 03 | 703 | 0.3− | 0.4− | 2005 06 11 | 703 | 0.5− | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.2− | |
| 2005 05 03 | 703 | 0.6− | 0.5− | 2005 06 11 | 703 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.5+ | 0.3− | |
| 2005 05 04 | G96 | 0.2− | 0.1+ | 2005 06 11 | 703 | 0.1− | 0.8+ | | | | | |
| 2005 05 04 | G96 | 0.1− | 0.2+ | 2005 06 11 | 703 | 1.0− | 0.4− | | | | | |

**(145169)∗ 2005 JF$_3$**

Discovered 2005 May 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.68175 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30942786 | $\omega$ | 170.11341 | | −0.50982994 | +0.85770632 | |
| $a$ | 2.1648598 | $\Omega$ | 69.20706 | | −0.79406098 | −0.43947437 | |
| $e$ | 0.1163329 | $i$ | 4.07492 | | −0.33096917 | −0.26683729 | |
| $P$ | 3.19 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 644 | 0.4+ | 0.5+ | 2005 05 09 | 704 | 0.3+ | 0.5− | 2005 07 04 | 644 | 0.4− | 0.1+ | |
| 2002 05 11 | 644 | 0.4− | 0.2+ | 2005 05 09 | 704 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.3− | |
| 2002 05 11 | 644 | 0.1− | 0.9+ | 2005 05 09 | 704 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.1− | |
| 2002 06 01 | 644 | 0.4+ | 0.5− | 2005 05 09 | 704 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.4− | |
| 2002 06 02 | 644 | 0.3+ | 0.1− | 2005 05 14 | 704 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1− | |
| 2002 06 02 | 644 | 0.3+ | 0.8+ | 2005 05 14 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.3+ | |
| 2002 06 02 | 644 | 0.3− | 0.1+ | 2005 05 14 | 704 | 0.3− | 0.7− | 2006 10 12 | 691 | 0.2− | 0.2+ | |
| 2002 06 02 | 644 | 0.6+ | 0.4+ | 2005 05 14 | 704 | 0.8− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.6+ | |
| 2002 06 02 | 644 | 0.4− | 0.0 | 2005 06 01 | 701 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | |
| 2002 06 04 | 644 | 0.2− | 0.3+ | 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.2+ | |
| 2002 06 04 | 644 | 0.3+ | 0.1− | 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ | |
| 2002 06 04 | 644 | 0.1− | 0.4− | 2005 06 01 | 701 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.5+ | 0.1− | |
| 2002 06 08 | 704 | 0.2+ | 0.8− | 2005 06 01 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | |
| 2002 06 08 | 704 | 0.3− | 0.4− | 2005 06 01 | 701 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | |
| 2002 06 08 | 704 | 0.2− | 0.7− | 2005 06 04 | 704 | 0.2+ | 1.0− | 2006 10 31 | 621 | 0.3− | 0.6− | |
| 2002 06 28 | 644 | 0.3− | 0.1+ | 2005 06 04 | 704 | 1.0+ | 0.5− | 2006 10 31 | 621 | 0.3− | 0.2+ | |
| 2002 06 28 | 644 | 0.1− | 0.1− | 2005 06 04 | 704 | 0.1+ | 0.3− | 2006 10 31 | 621 | 0.6− | 0.2− | |
| 2003 11 24 | 691 | 0.0 | 0.3+ | 2005 06 04 | 704 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 691 | 0.2+ | 0.3+ | 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2003 11 24 | 691 | 0.3− | 0.2+ | 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2005 05 03 | 703 | 0.0 | 0.1− | 2005 06 06 | 691 | 0.1+ | 0.1+ | 2006 11 02 | 621 | 0.3+ | 0.1− |
| 2005 05 03 | 703 | (2.3− | 0.5−) | 2005 06 11 | 703 | (2.3− | 0.4−) | 2006 11 02 | 621 | 0.3+ | 0.2+ |
| 2005 05 03 | 703 | 0.8− | 0.6− | 2005 06 11 | 703 | 1.3− | 0.4− | 2006 11 02 | 621 | 0.2+ | 0.2− |
| 2005 05 03 | 703 | 0.4+ | 0.3− | 2005 06 11 | 703 | 0.7− | 1.0+ | 2006 11 11 | 644 | 0.1− | 0.3+ |
| 2005 05 04 | 704 | 0.5+ | 1.1+ | 2005 06 11 | 703 | 0.3− | 0.6− | 2006 11 11 | 644 | 0.0 | 0.2+ |
| 2005 05 04 | 704 | 0.7− | 0.7− | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 644 | 0.2− | 0.2+ |
| 2005 05 04 | 704 | 0.4+ | 0.1+ | 2005 06 13 | G96 | 0.5+ | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2005 05 04 | 704 | 0.2+ | 0.3− | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 11 13 | G96 | 1.2+ | 0.2− |
| 2005 05 04 | 644 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.5− | 0.4− |
| 2005 05 04 | 644 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.4+ | 1.5− |
| 2005 05 04 | 644 | 0.4+ | 0.4+ | 2005 06 13 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.9− | 1.3− |
| 2005 05 04 | 644 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.5+ | 0.8− |
| 2005 05 04 | 644 | 0.2+ | 0.0 | 2005 07 04 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2005 05 04 | 644 | 0.3− | 0.3+ | 2005 07 04 | 644 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.9− | 0.8− |

**(145170)∗ 2005 JL$_3$ = 2003 OS$_{14}$**

Discovered 2005 May 5 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 77185)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.26857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37758892 | $\omega$ | 262.54576 | | +0.38965322 | −0.91353443 | |
| $a$ | 1.8957885 | $\Omega$ | 163.01188 | | +0.92037983 | +0.39077120 | |
| $e$ | 0.0722974 | $i$ | 23.54774 | | −0.03273147 | +0.11292790 | |
| $P$ | 2.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.0 | 0.1− | 2003 07 30 | 704 | 1.4− | 0.1− | 2005 05 05 | 644 | 0.7+ | 0.3− |
| 2002 01 13 | 704 | 1.1+ | 0.8− | 2005 03 17 | 703 | 0.7− | 0.4+ | 2005 05 05 | 644 | 0.5+ | 0.0 |
| 2002 01 13 | 704 | 1.0+ | 0.2− | 2005 03 17 | 703 | 0.2− | 0.3+ | 2005 05 05 | 644 | 0.8+ | 0.1− |
| 2002 01 13 | 704 | 0.4+ | 0.0 | 2005 03 17 | 703 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.5− |
| 2002 02 15 | 704 | 0.4− | 0.6+ | 2005 03 17 | 703 | 0.4− | 0.1− | 2006 09 28 | 703 | 0.7− | 0.2− |
| 2002 02 15 | 704 | 0.9− | 0.7+ | 2005 04 09 | 703 | 0.3+ | 0.7+ | 2006 09 28 | 703 | 0.8− | 0.3+ |
| 2002 02 15 | 704 | 0.6− | 0.1+ | 2005 04 09 | 703 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.8+ | 0.3− |
| 2002 02 15 | 704 | 0.5− | 0.9+ | 2005 04 09 | 703 | 1.2− | 0.0 | 2006 11 20 | E12 | 0.2+ | 0.2− |
| 2002 02 15 | 704 | 0.2− | 0.4+ | 2005 04 09 | 703 | 0.1+ | 0.3− | 2006 11 20 | E12 | 0.3+ | 0.0 |
| 2003 07 22 | 644 | 0.0 | 0.1+ | 2005 04 17 | 703 | 0.0 | 0.6− | 2006 11 20 | E12 | 0.2+ | 0.4+ |
| 2003 07 22 | 644 | 0.1− | 0.0 | 2005 04 17 | 703 | 0.1+ | 1.0+ | 2006 11 20 | E12 | 0.2+ | 0.4+ |
| 2003 07 22 | 644 | 0.1+ | 0.0 | 2005 04 17 | 703 | 0.3+ | 0.2− | 2006 11 25 | 703 | 0.1− | 0.2− |
| 2003 07 30 | 704 | 1.0+ | 0.5+ | 2005 04 17 | 703 | 0.3− | 0.8− | 2006 11 25 | 703 | 0.5− | 0.9− |
| 2003 07 30 | 704 | 0.1+ | 0.8+ | 2005 05 03 | 695 | 0.2+ | 0.2− | 2006 11 25 | 703 | 0.0 | 0.3+ |
| 2003 07 30 | 704 | 0.4+ | 0.8+ | 2005 05 03 | 695 | 0.4+ | 0.1− | 2006 11 25 | 703 | 0.1+ | 1.1+ |

**(145171)∗ 2005 JV$_3$**

Discovered 2005 May 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.60985 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26940442 | $\omega$ | 305.31973 | | +0.89456444 | +0.43326356 | |
| $a$ | 2.3742853 | $\Omega$ | 29.46007 | | −0.30210929 | +0.76708492 | |
| $e$ | 0.2280709 | $i$ | 12.88994 | | −0.32936976 | +0.47314207 | |
| $P$ | 3.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.7+ | 0.5− | 2006 09 21 | 608 | 1.1+ | 0.8+ | 2006 10 22 | 704 | 0.8− | 1.0+ |
| 1999 12 12 | 704 | 0.2+ | 0.7− | 2006 09 21 | 608 | 1.1+ | 0.8+ | 2006 10 22 | 704 | 0.3+ | 0.5+ |
| 1999 12 12 | 704 | 0.4− | 0.9− | 2006 09 25 | 699 | 0.8+ | 0.4− | 2006 10 22 | 704 | 0.1− | 0.8+ |
| 1999 12 12 | 704 | 0.4+ | 1.4− | 2006 09 25 | 699 | 0.4− | 0.3+ | 2006 10 22 | 704 | 0.4− | 1.2+ |
| 2003 12 17 | 704 | 1.2+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.3+ | 2006 10 22 | 704 | 0.3− | 0.6+ |
| 2003 12 17 | 704 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.6− |
| 2003 12 17 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.3− |
| 2003 12 17 | 704 | 0.6− | 0.6+ | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2003 12 30 | 704 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.3− |
| 2003 12 30 | 704 | 0.8+ | 1.1+ | 2006 09 26 | 704 | 0.3− | 0.1− | 2006 10 27 | 704 | 0.3− | 1.1+ |
| 2003 12 30 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.6− | 0.4− | 2006 10 27 | 704 | 0.5+ | 0.7+ |
| 2003 12 30 | 704 | 1.1+ | 0.1− | 2006 09 26 | 704 | 0.4− | 0.2+ | 2006 10 27 | 704 | 0.2+ | 0.7+ |
| 2005 03 10 | 703 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.1+ | 2006 10 27 | 704 | 0.4− | 0.3+ |
| 2005 03 10 | 703 | 1.1+ | 0.8+ | 2006 09 26 | 704 | 1.0− | 0.2− | 2006 10 27 | 704 | 0.4− | 0.2+ |
| 2005 03 10 | 703 | (0.1+ | 2.0+) | 2006 09 26 | 703 | 0.6− | 0.1+ | 2006 10 28 | 704 | 0.1− | 0.4+ |
| 2005 03 10 | 703 | (2.8+ | 0.2+) | 2006 09 26 | 703 | 0.5− | 0.2− | 2006 10 28 | 704 | 0.0 | 0.4+ |
| 2005 04 04 | 703 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.5− | 1.5− | 2006 10 28 | 704 | 0.5+ | 0.5+ |
| 2005 04 04 | 703 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.2− | 2006 10 28 | 704 | 0.1+ | 0.7+ |
| 2005 04 04 | 703 | 1.0− | 0.6+ | 2006 09 29 | 699 | 0.2+ | 0.1− | 2006 10 28 | 704 | 0.1− | 0.0 |
| 2005 04 04 | 703 | (1.8− | 1.2−) | 2006 09 29 | 699 | 0.2− | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2005 05 02 | 691 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.1+ | 0.2− | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2005 05 02 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2005 05 02 | 691 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1− | 0.1− |
| 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2005 05 04 | 644 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 11 | 703 | 1.4− | 0.9− |
| 2005 05 04 | 644 | 0.3+ | 0.8+ | 2006 09 30 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 703 | 0.6− | 1.4− |
| 2005 05 10 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.3+ | 1.0− |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.8− | 0.6− | 2006 11 13 | G96 | 0.6+ | 1.1− |
| 2005 05 10 | 691 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.8+ | 0.3− |
| 2006 06 26 | E12 | 0.4+ | 1.0+ | 2006 09 30 | 704 | 0.5+ | 1.2+ | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2006 06 26 | E12 | 0.1− | 0.5+ | 2006 09 30 | 704 | (0.4+ | 1.7+) | 2006 11 17 | 703 | 0.1− | 0.7− |
| 2006 06 26 | E12 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.5+ |
| 2006 06 26 | E12 | 1.0+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2006 08 10 | 644 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2006 08 10 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.9+ | 2006 11 18 | 704 | 0.7− | 0.7+ |
| 2006 08 10 | 644 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.7− | 0.4+ |
| 2006 09 18 | 703 | 0.9+ | 1.5− | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.7+ | 1.1+ |
| 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.9+ |
| 2006 09 18 | 703 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2006 09 18 | 703 | 0.5− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2006 09 21 | 699 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2006 09 21 | 699 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | (2.0+ | 1.3+) |
| 2006 09 21 | 699 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2006 09 21 | 608 | 1.1+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.5+ |

**(145172)∗ 2005 JX$_3$ = 2002 TO$_{262}$ = 2006 QW$_{22}$**

Discovered 2005 May 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 103697)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.69805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22497197 | $\omega$ | 109.56235 | | +0.26628494 | +0.96388997 | |
| $a$ | 2.6774238 | $\Omega$ | 175.87767 | | −0.89882869 | +0.24939863 | |
| $e$ | 0.1526915 | $i$ | 2.31879 | | −0.34813693 | +0.09336194 | |
| $P$ | 4.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.1+ | 0.1+ | 2005 05 09 | G96 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.8+ | 0.4+ |
| 1996 03 11 | 691 | 0.1+ | 0.2+ | 2005 05 09 | G96 | 0.7− | 0.4− | 2006 08 28 | 699 | 0.4− | 0.3+ |
| 1996 03 11 | 691 | 0.1− | 0.2+ | 2006 08 18 | 699 | 1.3+ | 0.5− | 2006 08 28 | 699 | 0.3− | 0.5− |
| 1998 12 13 | 691 | 0.1− | 0.1+ | 2006 08 18 | 699 | 0.8+ | 1.1+ | 2006 09 01 | 704 | 0.8+ | 0.2+ |
| 1998 12 13 | 691 | 0.4+ | 0.4− | 2006 08 18 | 699 | 1.0− | 0.5− | 2006 09 01 | 704 | 0.2− | 0.1− |
| 1998 12 13 | 691 | 0.1+ | 0.4+ | 2006 08 18 | 699 | 0.5− | 0.9+ | 2006 09 01 | 704 | 0.4− | 0.4+ |
| 2001 05 21 | 704 | (2.1+ | 1.2+) | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.2− | 0.6+ |
| 2001 05 21 | 704 | 0.0 | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 1.2+ |
| 2001 05 21 | 704 | 0.9+ | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2001 05 21 | 704 | 1.5+ | 0.5+ | 2006 08 21 | 644 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.8− |
| 2001 05 21 | 704 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.7− | 0.3− |
| 2001 06 27 | 691 | 0.2− | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.1− | 0.4− |
| 2001 06 27 | 691 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.5+ | 0.2− |
| 2001 06 27 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.7+ | 0.4− |
| 2002 10 10 | 644 | 1.7− | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.0 | 1.1+ |
| 2002 10 10 | 644 | 1.0− | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 1.0+ | 0.5− |
| 2002 10 10 | 644 | 1.5− | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 1.0− | 0.7− |
| 2002 10 11 | 704 | 0.4− | 1.5+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.9+ |
| 2002 10 11 | 704 | 0.7− | 0.7+ | 2006 08 22 | 644 | 0.2+ | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.3+ | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.5− | 0.5− |
| 2003 12 28 | 691 | 0.1− | 0.8+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 691 | 0.8+ | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4− | | |
| 2003 12 28 | 691 | 0.1+ | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 08 25 | 704 | 0.8− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.0 | | |
| 2005 04 06 | G96 | 0.0 | 0.3+ | 2006 08 25 | 704 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.5− | | |
| 2005 04 06 | G96 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.0 | 1.1+ | 2006 10 27 | G96 | 0.2− | 0.4− | | |
| 2005 04 06 | G96 | 0.4− | 0.1+ | 2006 08 25 | 704 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2005 05 02 | 691 | 0.3+ | 0.3+ | 2006 08 25 | 704 | 0.3+ | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.5− | | |
| 2005 05 02 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.1− | | |
| 2005 05 02 | 691 | 0.0 | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.1− | | |
| 2005 05 04 | 644 | 0.2+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2+ | | |
| 2005 05 04 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.8+ | 1.1+ | 2006 11 17 | G96 | 0.4− | 0.4− | | |
| 2005 05 04 | 644 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2005 05 09 | G96 | 0.3− | 0.1− | 2006 08 28 | 699 | 1.0+ | 0.5+ | 2006 11 17 | G96 | 0.5+ | 0.0 | | |
| 2005 05 09 | G96 | 0.5− | 0.3− | 2006 08 28 | 703 | 0.3+ | 0.2+ | | | | | | |

**(145173)∗ 2005 JX$_4$ = 2002 TX$_{251}$**

Discovered 2005 May 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77188)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.00846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25811732 | $\omega$ | 166.82678 | | +0.77359198 | | +0.63137499 |
| $a$ | 2.4430064 | $\Omega$ | 153.78244 | | −0.59192094 | | +0.75042581 |
| $e$ | 0.1304051 | $i$ | 7.02709 | | −0.22624113 | | +0.19551654 |
| $P$ | 3.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 699 | 0.5− | 1.2+ | 2005 05 04 | 691 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.3− | | |
| 1998 08 30 | 699 | 0.1− | 1.0+ | 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.4+ | | |
| 1998 08 30 | 699 | 0.0 | 0.6+ | 2005 05 04 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.4+ | | |
| 2001 03 04 | 691 | 0.0 | 0.3+ | 2005 05 06 | 703 | (1.6− | 0.1−) | 2006 10 12 | 644 | 0.5+ | 0.1+ | | |
| 2001 03 04 | 691 | 0.0 | 0.4+ | 2005 05 06 | 703 | (1.7− | 0.8−) | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2001 03 04 | 691 | 0.1− | 0.1+ | 2005 05 06 | 703 | 0.8− | 0.9− | 2006 10 16 | 703 | 0.1− | 0.5+ | | |
| 2002 10 08 | 699 | (1.8+ | 0.7+) | 2005 05 06 | 703 | 0.9− | 0.9+ | 2006 10 16 | 703 | 0.5− | 0.1− | | |
| 2002 10 08 | 699 | (2.4+ | 2.0+) | 2005 05 11 | 699 | 1.1+ | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.6− | | |
| 2002 10 08 | 699 | (1.0+ | 1.6+) | 2005 05 11 | 699 | 0.9+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.0 | | |
| 2002 10 08 | 699 | 0.1+ | 0.3+ | 2005 05 11 | 699 | 0.8+ | 0.4+ | 2006 11 08 | 644 | 0.6+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.9− | 1.4+ | 2005 05 11 | 699 | (1.2− | 2.0+) | 2006 11 08 | 644 | 0.4+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.0 | 1.1+ | 2005 05 12 | 461 | 0.5− | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 11 | 704 | 1.3+ | 0.7+ | 2005 05 12 | 461 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.4+ | | |
| 2002 10 11 | 704 | 0.9− | 1.2+ | 2005 06 23 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 1.2− | | |
| 2002 10 11 | 704 | 0.5− | 1.0− | 2005 06 23 | 644 | 0.5+ | 0.1− | 2006 11 13 | 703 | 1.2+ | 0.9− | | |
| 2002 11 06 | 644 | 0.2− | 1.0+ | 2005 06 23 | 644 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.2− | | |
| 2002 11 06 | 644 | 0.3− | 0.8+ | 2005 06 29 | 644 | 0.2+ | 0.1− | 2006 11 19 | 703 | 1.3− | 0.0 | | |
| 2002 11 06 | 644 | 0.3− | 0.2+ | 2005 06 29 | 644 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.8− | 0.7− | | |
| 2004 02 14 | 691 | 0.4+ | 0.6+ | 2005 06 29 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 703 | 0.7− | 0.7− | | |
| 2004 02 14 | 691 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 11 19 | 703 | (1.7− | 0.8+) | | |
| 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.2+ | | | | | | |

**(145174)∗ 2005 JC$_5$**

Discovered 2005 May 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.46720 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24386262 | $\omega$ | 106.80634 | | −0.27032528 | | +0.95159275 |
| $a$ | 2.5373043 | $\Omega$ | 146.38606 | | −0.95290700 | | −0.24276020 |
| $e$ | 0.0642220 | $i$ | 15.32075 | | −0.13744998 | | −0.18851717 |
| $P$ | 4.04 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 704 | 0.3− | 0.3+ | 2005 05 06 | 699 | 0.3+ | 0.1+ | 2005 07 01 | 644 | 0.2+ | 0.1+ |
| 2001 05 23 | 704 | 0.4+ | 0.4− | 2005 05 06 | 699 | 0.6+ | 0.6− | 2005 07 01 | 644 | 0.3+ | 0.1+ |
| 2001 05 23 | 704 | 0.0 | 0.7+ | 2005 05 06 | 699 | 0.1+ | 0.5− | 2006 08 28 | 699 | 0.4− | 0.0 |
| 2001 05 23 | 704 | 0.2+ | 0.6+ | 2005 05 06 | 699 | 0.8− | 1.1+ | 2006 08 28 | 699 | 0.6+ | 0.5− |
| 2001 05 23 | 704 | 1.3+ | 0.1+ | 2005 05 19 | 703 | 0.8+ | 1.5+ | 2006 08 28 | 699 | 0.1− | 0.6+ |
| 2001 06 16 | 645 | 0.1− | 0.1− | 2005 05 19 | 703 | (1.7− | 0.6−) | 2006 08 28 | 699 | 0.4− | 0.7+ |
| 2001 06 16 | 645 | 0.1− | 0.1− | 2005 05 19 | 703 | 0.7− | 0.3− | 2006 09 20 | 703 | 1.2− | 0.2− |
| 2001 06 23 | 644 | 0.1− | 0.8+ | 2005 05 19 | 703 | 0.9− | 0.2− | 2006 09 20 | 703 | 0.4− | 0.1− |
| 2001 06 23 | 644 | 0.1+ | 0.7+ | 2005 05 31 | 703 | 0.4+ | 0.7+ | 2006 09 20 | 703 | 0.8− | 0.4+ |
| 2001 06 23 | 644 | 0.6− | 0.9+ | 2005 05 31 | 703 | 0.5− | 0.5+ | 2006 09 20 | 703 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 1.3+ | 0.4+ | 2005 05 31 | 703 | 0.3+ | 0.4+ | 2006 09 25 | 703 | 1.4− | 0.7+ |
| 2002 10 05 | 704 | (1.8+ | 0.3+) | 2005 05 31 | 703 | 0.5+ | 0.9+ | 2006 09 25 | 703 | 0.8+ | 0.4+ |
| 2002 10 05 | 704 | (0.4+ | 2.0+) | 2005 06 01 | 704 | (1.7+ | 0.3+) | 2006 09 25 | 703 | 1.2+ | 1.0− |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2005 06 01 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.3+ | 0.1+ |
| 2004 01 18 | 691 | 0.1− | 0.4+ | 2005 06 01 | 704 | 0.9+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2004 01 18 | 691 | 0.1+ | 0.3+ | 2005 06 01 | 704 | 0.5+ | 0.0 | 2006 10 09 | 644 | 0.5− | 0.0 |
| 2005 04 13 | 703 | 1.3− | 0.4+ | 2005 06 07 | 699 | 0.2+ | 1.1+ | 2006 10 09 | 644 | 0.4+ | 0.1+ |
| 2005 04 13 | 703 | 0.8− | 0.3− | 2005 06 07 | 699 | 0.4+ | 1.3− | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2005 04 13 | 703 | 0.6− | 0.5+ | 2005 06 07 | 699 | 0.6− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2005 04 13 | 703 | 0.1+ | 0.6+ | 2005 06 07 | 699 | 1.3+ | 0.5+ | 2006 10 09 | 644 | 0.5− | 0.3+ |
| 2005 05 04 | 703 | 0.3− | 0.1+ | 2005 06 25 | 644 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2005 05 04 | 703 | 0.3+ | 0.9− | 2005 06 25 | 644 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2005 05 04 | 703 | 0.2− | 0.4− | 2005 06 25 | 644 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2005 05 04 | 703 | 0.2− | 1.0− | 2005 07 01 | 644 | 0.3+ | 0.1+ | | | | |

**(145175)∗ 2005 JF$_5$ = 2002 XD$_{27}$ = 2004 CN$_{105}$**

Discovered 2005 May 4 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 89659)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.78857 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23134906 | $\omega$ | 241.62055 | | +0.52282377 | | −0.85231579 |
| $a$ | 2.6279932 | $\Omega$ | 176.74466 | | +0.84403532 | | +0.51519361 |
| $e$ | 0.1060841 | $i$ | 14.89646 | | +0.11941389 | | +0.09018505 |
| $P$ | 4.26 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.2+ | 0.3+ | 2002 12 07 | 291 | 0.1− | 0.9+ | 2006 08 29 | 703 | 0.4− | 0.4+ |
| 2000 03 11 | 704 | 0.6+ | 0.6+ | 2004 02 14 | 644 | 0.7+ | 0.8+ | 2006 08 29 | 703 | 0.3− | 0.1+ |
| 2000 03 11 | 704 | 0.4+ | 0.7+ | 2004 02 14 | 644 | 0.4+ | 0.9+ | 2006 08 29 | 703 | 0.2− | 0.1+ |
| 2000 03 11 | 704 | 0.4− | 0.6− | 2004 02 14 | 644 | 0.6+ | 0.9+ | 2006 08 29 | 703 | 0.7− | 0.3+ |
| 2000 03 25 | 691 | 0.5− | 0.2+ | 2004 02 19 | 704 | 0.1+ | 1.1+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2000 03 25 | 691 | 0.7− | 0.1− | 2004 02 19 | 704 | 0.5+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.2+ |
| 2000 03 25 | 691 | 0.5+ | 0.0 | 2004 02 19 | 704 | 0.2− | 1.1+ | 2006 09 13 | 644 | 0.6+ | 0.6+ |
| 2002 09 30 | 704 | 0.9− | 0.0 | 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.4+ |
| 2002 09 30 | 704 | 1.1− | 0.8+ | 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.2+ | 0.2+ |
| 2002 09 30 | 704 | 0.0 | 0.3+ | 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.6+ |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2005 05 06 | 691 | 0.0 | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.4+ |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2005 05 06 | 691 | 0.5+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.5− |
| 2002 10 03 | 704 | 0.1− | 0.2+ | 2005 05 06 | 691 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2005 05 10 | 691 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2002 12 05 | 291 | 0.3+ | 0.3+ | 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.3− |
| 2002 12 05 | 291 | 0.2− | 0.6+ | 2006 08 18 | 644 | 0.5+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2002 12 05 | 291 | 0.0 | 0.5+ | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.5+ | 0.3− |
| 2002 12 07 | 291 | 0.3+ | 0.5+ | 2006 08 18 | 644 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2002 12 07 | 291 | 0.7− | 0.4+ | 2006 08 29 | 703 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2002 12 07 | 291 | 0.5+ | 0.6+ | 2006 08 29 | 703 | 1.4− | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2002 12 07 | 291 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 1.2− | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2002 12 07 | 291 | 0.0 | 0.6+ | 2006 08 29 | 703 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.5− | 0.4− |

**(145176)∗ 2005 JJ$_5$**

Discovered 2005 May 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.69662 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23126652 | $\omega$ | 57.65335 | | −0.48275712 | | +0.87564403 |
| $a$ | 2.6286184 | $\Omega$ | 183.56783 | | −0.85966484 | | −0.47685572 |
| $e$ | 0.1397250 | $i$ | 12.90261 | | −0.16709855 | | −0.07652545 |
| $P$ | 4.26 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 608 | 0.3+ | 0.4+ | 2005 05 08 | 699 | 0.1− | 0.1− | 2005 07 10 | 699 | 0.0 | 0.1− |
| 2000 03 08 | 608 | 0.3+ | 1.2+ | 2005 05 08 | 699 | 0.0 | 0.0 | 2005 07 10 | 699 | 0.6+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 608 | 0.2− | 0.3+ | 2005 05 08 | 699 | 0.8− | 0.1+ | 2005 07 10 | 699 | 1.3+ | 0.3− |
| 2000 04 07 | 608 | 0.5+ | 0.9+ | 2005 05 08 | 699 | 0.6+ | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2000 04 07 | 608 | 0.1+ | 0.2+ | 2005 05 08 | 699 | 0.5− | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 |
| 2002 10 29 | 644 | 0.7− | 0.5+ | 2005 05 08 | 699 | 0.7− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.3+ |
| 2002 10 29 | 644 | 0.3− | 0.3+ | 2005 05 13 | 703 | 0.0 | 0.6− | 2006 08 24 | 644 | 0.1− | 0.6+ |
| 2002 10 31 | 704 | 0.0 | 0.4+ | 2005 05 13 | 703 | 0.2− | 0.4− | 2006 08 24 | 644 | 0.3+ | 0.5+ |
| 2002 10 31 | 704 | 0.2− | 0.6+ | 2005 05 13 | 703 | 0.4− | 0.0 | 2006 08 24 | 644 | 0.4− | 0.9+ |
| 2002 10 31 | 704 | 0.4+ | 0.7+ | 2005 05 13 | 703 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.7− |
| 2002 10 31 | 704 | (1.0+ | 1.6+) | 2005 05 14 | 704 | 0.8+ | 0.2+ | 2006 08 28 | 703 | 0.6+ | 1.1− |
| 2002 10 31 | 608 | 0.3− | 0.2+ | 2005 05 14 | 704 | 0.6+ | 0.5− | 2006 08 28 | 703 | 1.1− | 1.5+ |
| 2002 10 31 | 608 | 0.4− | 0.9+ | 2005 05 14 | 704 | 0.9+ | 0.0 | 2006 08 28 | 703 | 0.7− | 0.5+ |
| 2002 10 31 | 608 | 0.0 | 0.2− | 2005 05 14 | 704 | 0.8+ | 0.1− | 2006 09 16 | 644 | 0.0 | 0.0 |
| 2005 03 13 | 703 | (2.8− | 1.2+) | 2005 05 14 | 704 | 0.1+ | 0.6− | 2006 09 16 | 644 | 0.1+ | 0.0 |
| 2005 03 13 | 703 | (0.5− | 2.0−) | 2005 05 31 | 703 | (1.3− | 2.1−) | 2006 09 16 | 644 | 0.5+ | 0.2− |
| 2005 03 13 | 703 | 0.3− | 1.0− | 2005 05 31 | 703 | 1.5− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2005 03 13 | 703 | 0.9− | 0.2+ | 2005 05 31 | 703 | 0.5− | 0.4− | 2006 09 19 | 691 | 0.3− | 0.1− |
| 2005 04 15 | 699 | 0.0 | 0.5+ | 2005 05 31 | 703 | 0.7− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2005 04 15 | 699 | 0.3+ | 0.0 | 2005 06 06 | 704 | 0.7+ | 0.5+ | 2006 09 21 | A50 | 0.1− | 0.4+ |
| 2005 04 15 | 699 | 0.3− | 0.9+ | 2005 06 06 | 704 | 0.2+ | 0.8+ | 2006 09 21 | A50 | 0.7+ | 0.1+ |
| 2005 04 15 | 699 | 0.2− | 0.6+ | 2005 06 06 | 704 | 1.1+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2005 05 02 | 691 | 0.0 | 0.1+ | 2005 06 06 | 704 | 0.9+ | 0.8+ | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2005 05 02 | 691 | 0.0 | 0.0 | 2005 06 06 | 704 | 0.4+ | 1.0+ | 2006 09 26 | G96 | 0.4+ | 0.1+ |
| 2005 05 02 | 691 | 0.1+ | 0.1+ | 2005 06 16 | 703 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2005 05 06 | 608 | 0.6− | 0.1+ | 2005 06 16 | 703 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.4− |
| 2005 05 06 | 608 | 0.1− | 0.1+ | 2005 06 16 | 703 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2005 05 06 | 608 | 0.2+ | 0.1+ | 2005 06 16 | 703 | 0.1− | 0.8− | 2006 10 16 | 703 | 0.9− | 0.5− |
| 2005 05 08 | 699 | 0.3− | 0.4− | 2005 07 10 | 699 | 1.0− | 0.0 | 2006 10 16 | 703 | 0.9+ | 0.7− |

**(145177)∗ 2005 JX$_{13}$**

Discovered 2005 May 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.68128 | | (2000.0) | | | |
| $n$ | 0.29951020 | $\omega$ | 349.54149 | | +0.05079969 | +0.99664984 |
| $a$ | 2.2123898 | $\Omega$ | 283.34836 | | −0.91147505 | +0.02003419 |
| $e$ | 0.1137368 | $i$ | 3.77722 | | −0.40820659 | +0.07929524 |
| $P$ | 3.29 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.0 | 0.6+ | 2005 05 01 | 644 | 0.1− | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 1999 09 07 | 704 | 0.2− | 1.1+ | 2005 05 04 | E12 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 1999 09 07 | 704 | 0.5− | 0.7+ | 2005 05 04 | E12 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 1999 09 07 | 704 | 0.1− | 1.1+ | 2005 05 04 | E12 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 09 07 | 704 | 0.1− | 0.5+ | 2005 05 04 | E12 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 09 09 | 704 | 0.3− | 0.5− | 2005 05 09 | 703 | 0.9− | 0.9+ | 2006 10 25 | 198 | 0.1+ | 0.3+ |
| 1999 09 09 | 704 | (1.1+ | 4.1+) | 2005 05 09 | 703 | 1.0− | 0.3+ | 2006 10 25 | 198 | 0.1+ | 0.4+ |
| 1999 09 09 | 704 | (2.1+ | 3.7+) | 2005 05 09 | 703 | 0.4+ | 1.0− | 2006 10 25 | 198 | 0.1− | 0.2+ |
| 2000 12 20 | 691 | 0.4− | 0.1+ | 2005 05 09 | 703 | 0.3− | 0.0 | 2006 10 25 | 198 | 0.3− | 0.0 |
| 2000 12 20 | 691 | 0.6− | 0.0 | 2005 05 14 | 644 | 0.5+ | 0.4+ | 2006 10 26 | 198 | 0.5+ | 0.2− |
| 2000 12 20 | 691 | 0.2+ | 0.2− | 2005 05 14 | 644 | 0.5+ | 0.4+ | 2006 10 26 | 198 | 0.4+ | 0.2− |
| 2003 11 21 | 704 | 0.2− | 0.2+ | 2005 05 14 | 644 | 0.4+ | 0.3+ | 2006 10 26 | 198 | 0.3+ | 0.2− |
| 2003 11 21 | 704 | 0.6− | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.0 | 2006 10 26 | 198 | 0.2− | 0.3+ |
| 2003 11 21 | 704 | 0.5− | 1.4+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 30 | 198 | 0.5− | 0.4− |
| 2003 11 21 | 704 | 1.2+ | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 10 30 | 198 | 0.3− | 0.3− |
| 2003 12 19 | 704 | 0.7+ | 1.1+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 30 | 198 | 0.4− | 0.3− |
| 2003 12 19 | 704 | 0.8+ | 0.9+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 10 30 | 198 | 0.7− | 0.3− |
| 2003 12 19 | 704 | 0.3+ | 0.5+ | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.5− | 0.2+ |
| 2003 12 19 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2005 04 06 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.1+ | 1.0− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2005 04 06 | 691 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2005 04 18 | 703 | 1.1+ | 0.6+ | 2006 10 19 | 703 | 0.6− | 0.7− | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2005 04 18 | 703 | 0.8− | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.6− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2005 04 18 | 703 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2005 04 18 | 703 | 1.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2005 05 01 | 644 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | | | | |
| 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.4− | 0.1+ | | | | |

**(145178)∗ 2005 JN$_{14}$**

Discovered 2005 May 1 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 145.50954 | | (2000.0) | | | |
| $n$ | 0.28200278 | $\omega$ | 344.90167 | | −0.79077154 | +0.60656042 |
| $a$ | 2.3030345 | $\Omega$ | 232.73664 | | −0.55035012 | −0.76335468 |
| $e$ | 0.1547445 | $i$ | 5.93185 | | −0.26794610 | −0.22220283 |
| $P$ | 3.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 0.4− | 0.6− | 2005 05 01 | 644 | 0.1− | 0.3+ | 2005 06 01 | G96 | 0.0 | 0.1+ |
| 1998 04 22 | 704 | 0.2+ | 1.0− | 2005 05 04 | 699 | 0.3− | 0.3− | 2005 06 01 | G96 | 0.2+ | 0.2+ |
| 1998 04 22 | 704 | 0.9+ | 0.5− | 2005 05 04 | 699 | 0.6+ | 0.3+ | 2005 06 01 | G96 | 0.2− | 0.1+ |
| 1998 04 22 | 704 | (3.2− | 1.9−) | 2005 05 04 | 699 | 1.0+ | 0.3+ | 2005 06 12 | G96 | 0.7− | 0.1+ |
| 1998 05 01 | 704 | 1.1+ | 1.8− | 2005 05 04 | 699 | 0.1+ | 0.6+ | 2005 06 12 | G96 | 0.4− | 0.1+ |
| 1998 05 01 | 704 | 0.5− | 0.9+ | 2005 05 09 | 704 | 0.5+ | 0.3+ | 2005 06 12 | G96 | 0.5− | 0.1− |
| 1998 05 01 | 704 | 1.0− | 0.3− | 2005 05 09 | 704 | 0.2− | 0.4+ | 2005 06 12 | G96 | 0.2− | 0.2+ |
| 1998 05 01 | 704 | 0.5− | 1.8− | 2005 05 09 | 704 | 0.5+ | 0.7+ | 2006 08 23 | H55 | 1.0+ | 0.6− |
| 1998 05 01 | 704 | 0.1+ | 1.3+ | 2005 05 09 | 704 | 0.6− | 0.5− | 2006 08 23 | H55 | 0.6+ | 0.3− |
| 2002 07 12 | 644 | 0.2+ | 0.8− | 2005 05 13 | 704 | 0.5+ | 0.2− | 2006 08 23 | H55 | 0.9+ | 0.7− |
| 2002 07 12 | 644 | 0.3− | 0.2− | 2005 05 13 | 704 | 0.9+ | 1.1+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2002 07 12 | 644 | 0.2− | 0.0 | 2005 05 13 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.2+ |
| 2002 08 05 | 644 | 0.3− | 0.2− | 2005 05 13 | 704 | 1.2+ | 0.0 | 2006 09 17 | 691 | 0.4− | 0.1− |
| 2002 08 05 | 644 | 0.2− | 0.0 | 2005 05 13 | 704 | 1.0− | 0.3− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2002 08 05 | 644 | 0.4− | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2003 11 24 | 695 | 0.6− | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2003 11 24 | 695 | 1.0− | 0.1− | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 27 | G98 | 0.2− | 0.7− |
| 2005 05 01 | 644 | 0.0 | 0.3+ | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 27 | G98 | (4.5+ | 1.7+) |
| 2005 05 01 | 644 | 0.1− | 0.5+ | 2005 06 01 | G96 | 0.3− | 0.2+ | | | | |

**(145179)∗ 2005 JB$_{16}$**

Discovered 2005 May 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.04420 | | (2000.0) | | | |
| $n$ | 0.29300262 | $\omega$ | 232.67882 | | +0.56927014 | +0.80933034 |
| $a$ | 2.2450278 | $\Omega$ | 72.63361 | | −0.69822772 | +0.56879763 |
| $e$ | 0.1502676 | $i$ | 8.71565 | | −0.43406170 | +0.14647070 |
| $P$ | 3.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.3− | 0.5− | 2005 04 09 | 704 | 0.1− | 1.1− | 2006 10 19 | 703 | 0.4+ | 0.6− |
| 1999 10 08 | 704 | 0.2+ | 0.7− | 2005 04 09 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.8+ |
| 1999 10 08 | 704 | 1.1+ | 0.0 | 2005 04 09 | 704 | 0.0 | 0.5− | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2002 06 06 | 704 | 0.9− | 0.4+ | 2005 04 09 | 704 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2002 06 06 | 704 | 0.1+ | 0.9+ | 2005 04 18 | 703 | 0.8− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2002 06 06 | 704 | 0.5− | 0.0 | 2005 04 18 | 703 | 0.3− | 0.8+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2002 06 06 | 704 | 0.5+ | 0.5+ | 2005 04 18 | 703 | (1.5− | 0.1−) | 2006 11 09 | 644 | 0.5+ | 0.0 |
| 2002 06 13 | 644 | 0.4− | 0.2+ | 2005 04 18 | 703 | 0.2− | 1.3− | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2002 06 13 | 644 | 0.3− | 0.3+ | 2005 05 03 | 704 | 0.8+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2002 06 13 | 644 | 0.3− | 0.2+ | 2005 05 03 | 704 | 1.0+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2002 06 18 | 644 | 0.4+ | 0.9+ | 2005 05 03 | 704 | 0.7+ | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.4− |
| 2002 06 18 | 644 | 0.4+ | 0.9+ | 2005 05 07 | 703 | 1.0− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2002 06 18 | 644 | 0.4+ | 0.8+ | 2005 05 07 | 703 | 0.3− | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.4− |
| 2002 07 06 | 644 | 0.1− | 0.2+ | 2005 05 07 | 703 | 1.1− | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 07 06 | 644 | 0.1− | 0.2+ | 2005 05 07 | 703 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2002 07 06 | 644 | 0.1− | 0.3+ | 2005 05 11 | 699 | 0.0 | 0.4− | 2006 11 16 | 691 | 0.2− | 0.3+ |
| 2003 12 28 | 704 | 0.9+ | 0.8+ | 2005 05 11 | 699 | 0.9+ | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2003 12 28 | 704 | 0.7+ | 0.5+ | 2005 05 11 | 699 | 0.7+ | 0.9+ | 2006 11 20 | 704 | 0.7+ | 0.2− |
| 2003 12 28 | 704 | 0.8+ | 1.0+ | 2005 05 11 | 699 | 1.3− | 0.3− | 2006 11 20 | 704 | 0.4− | 0.1+ |
| 2004 01 16 | 691 | 0.3− | 0.3+ | 2005 06 03 | 703 | (0.0 | 1.8−) | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2004 01 16 | 691 | 0.4− | 0.2+ | 2005 06 03 | 703 | (2.0− | 1.3−) | 2006 11 23 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.2− | 0.1+ | 2005 06 03 | 703 | (0.3− | 1.8−) | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2005 04 05 | 704 | 0.7+ | 1.2− | 2005 06 03 | 703 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2005 04 05 | 704 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.6− | 0.3− | | | | |
| 2005 04 05 | 704 | 1.4+ | 1.0+ | 2006 10 19 | 703 | 0.4− | 1.0+ | | | | |

**(145180)∗ 2005 JA$_{20}$**

Discovered 2005 May 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 59.35780 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22748034 | | $\omega$ | 184.53263 | | +0.42658876 | | +0.88114633 | |
| $a$ | 2.6577052 | | $\Omega$ | 110.83147 | | −0.82280162 | | +0.47171830 | |
| $e$ | 0.1736900 | | $i$ | 12.60535 | | −0.37552566 | | −0.03260353 | |
| $P$ | 4.33 | | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.5− | 0.5− | 2005 04 18 | 704 | 0.3+ | 0.2+ | 2005 05 31 | 703 | 0.5− | 0.1− |
| 2002 11 30 | 704 | 0.2− | 0.9+ | 2005 04 18 | 704 | 1.3+ | 0.1− | 2005 06 03 | 699 | 0.9+ | 0.2+ |
| 2002 11 30 | 704 | (2.0− | 1.3+) | 2005 04 18 | 704 | 0.1− | 1.2+ | 2005 06 03 | 699 | 1.1+ | 0.8− |
| 2003 12 29 | 291 | 0.2− | 0.5+ | 2005 04 18 | 704 | 0.5+ | 0.3− | 2005 06 03 | 699 | 0.5+ | 0.2+ |
| 2003 12 29 | 291 | 0.4− | 0.3+ | 2005 05 04 | 703 | 0.9− | 0.6+ | 2005 06 03 | 699 | 0.7+ | 0.0 |
| 2003 12 29 | 291 | 0.3− | 0.7+ | 2005 05 04 | 703 | 0.5− | 0.4− | 2005 06 08 | 699 | 0.5+ | 0.6− |
| 2004 02 17 | 645 | 0.1+ | 0.1− | 2005 05 06 | 704 | 0.3+ | 0.7− | 2005 06 08 | 699 | 0.2− | 1.0+ |
| 2004 02 17 | 645 | 0.1+ | 0.1− | 2005 05 06 | 704 | 1.0+ | 0.5+ | 2005 06 08 | 699 | 0.2− | 1.5− |
| 2005 03 12 | G96 | 0.5− | 0.0 | 2005 05 06 | 704 | 0.8+ | 0.1+ | 2005 06 08 | 699 | 0.1+ | 1.3+ |
| 2005 03 12 | G96 | 0.2− | 0.0 | 2005 05 06 | 704 | 0.2+ | 0.5+ | 2005 06 13 | 699 | (0.8− | 1.6+) |
| 2005 03 12 | G96 | 0.4− | 0.1− | 2005 05 06 | 704 | 0.5+ | 0.1+ | 2005 06 13 | 699 | (1.6+ | 1.1+) |
| 2005 03 12 | G96 | 0.5− | 0.2− | 2005 05 11 | 703 | 0.4+ | 0.4− | 2005 06 13 | 699 | 0.2+ | 0.1+ |
| 2005 04 04 | 703 | 0.7− | 0.3− | 2005 05 11 | 703 | 0.5− | 0.1− | 2005 06 13 | 699 | 0.2− | 0.5+ |
| 2005 04 04 | 703 | 0.4− | 0.2− | 2005 05 11 | 703 | 1.2− | 0.1− | 2006 09 24 | 699 | 0.5+ | 0.4+ |
| 2005 04 04 | 703 | 0.6− | 0.0 | 2005 05 11 | 703 | 0.3− | 0.4− | 2006 09 24 | 699 | 0.1+ | 0.7+ |
| 2005 04 04 | 703 | 0.3+ | 0.8+ | 2005 05 13 | 699 | 0.7− | 0.2+ | 2006 09 24 | 699 | 1.2− | 0.1− |
| 2005 04 11 | 683 | (0.5+ | 3.8−) | 2005 05 13 | 704 | 1.1+ | 0.2+ | 2006 09 24 | 699 | 0.8− | 0.9+ |
| 2005 04 11 | 683 | (0.9− | 1.9−) | 2005 05 13 | 699 | (0.4− | 2.1+) | 2006 09 25 | 703 | 0.2+ | 0.2+ |
| 2005 04 11 | 683 | 0.7− | 0.9− | 2005 05 13 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 703 | 0.5+ | 0.4− |
| 2005 04 12 | 683 | (0.1+ | 4.5+) | 2005 05 13 | 699 | 1.4+ | 0.6+ | 2006 09 25 | 703 | 0.8− | 0.0 |
| 2005 04 12 | 683 | 0.1+ | 0.0 | 2005 05 13 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 0.1+ | 0.1+ |
| 2005 04 12 | 683 | 0.2+ | 0.9− | 2005 05 13 | 704 | 1.5+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2005 04 13 | 703 | 0.8− | 0.9+ | 2005 05 13 | 699 | 1.1− | 0.7+ | 2006 10 21 | 703 | 0.6+ | 0.4+ |
| 2005 04 13 | 703 | 0.2− | 0.5+ | 2005 05 31 | 703 | 0.5− | 1.0− | 2006 10 21 | 703 | 0.6− | 0.1− |
| 2005 04 13 | 703 | 1.1− | 1.4+ | 2005 05 31 | 703 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 1.3+ |
| 2005 04 13 | 703 | (2.7− | 2.8+) | 2005 05 31 | 703 | 0.4− | 0.1− | | | | |

**(145181)∗ 2005 JK$_{20}$**

Discovered 2005 May 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 38.04508 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17516395 | | $\omega$ | 204.20070 | | +0.45949170 | | +0.82996633 | |
| $a$ | 3.1635368 | | $\Omega$ | 94.52407 | | −0.75437587 | | +0.55263954 | |
| $e$ | 0.1824186 | | $i$ | 18.49688 | | −0.46881171 | | −0.07579865 | |
| $P$ | 5.63 | | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 699 | 1.3− | 1.0+ | 2005 05 04 | 703 | 0.1+ | 0.7+ | 2005 05 20 | 644 | 0.0 | 0.1− |
| 2001 11 17 | 699 | 0.9− | 0.3+ | 2005 05 04 | 703 | 0.2− | 0.3− | 2005 05 31 | 703 | 0.6− | 0.2+ |
| 2001 11 17 | 699 | (0.7+ | 2.3+) | 2005 05 04 | 703 | 0.4− | 0.3+ | 2005 05 31 | 703 | 0.5− | 0.4+ |
| 2001 11 17 | 699 | 0.6− | 1.3+ | 2005 05 06 | 704 | 1.2+ | 0.2+ | 2005 05 31 | 703 | 0.8− | 0.2− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2005 05 06 | 704 | 0.5+ | 0.1+ | 2006 07 28 | E12 | 0.2+ | 0.7+ |
| 2001 12 18 | 645 | 0.1+ | 0.0 | 2005 05 06 | 704 | 0.7+ | 0.1+ | 2006 07 28 | E12 | 0.5+ | 0.7− |
| 2004 04 16 | 645 | 0.0 | 0.1+ | 2005 05 06 | 704 | 0.5+ | 0.5+ | 2006 07 28 | E12 | 0.2− | 0.4+ |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2005 05 08 | 699 | 0.1+ | 0.3+ | 2006 07 28 | E12 | 0.1+ | 0.5+ |
| 2004 05 12 | 645 | 0.0 | 0.1− | 2005 05 08 | 699 | 0.2− | 0.5+ | 2006 09 16 | E12 | 0.2− | 0.4+ |
| 2004 05 12 | 645 | 0.0 | 0.0 | 2005 05 08 | 699 | 0.3+ | 0.5+ | 2006 09 16 | E12 | 0.4− | 0.5+ |
| 2004 05 14 | 645 | 0.1+ | 0.0 | 2005 05 08 | 699 | 0.4+ | 1.4− | 2006 09 16 | E12 | 0.1− | 0.4+ |
| 2004 05 14 | 645 | 0.0 | 0.0 | 2005 05 13 | 703 | 0.2+ | 0.8+ | 2006 09 16 | E12 | 0.3+ | 0.8− |
| 2005 05 04 | 703 | 0.8− | 0.7− | 2005 05 13 | 703 | (0.1+ | 2.1+) | 2006 09 28 | E12 | 0.3− | 0.2− |
| 2005 05 04 | 703 | 0.2+ | 0.1− | 2005 05 13 | 703 | (1.1+ | 2.0+) | 2006 09 28 | E12 | 0.1− | 0.1− |
| 2005 05 04 | 703 | 0.2− | 0.4− | 2005 05 13 | 703 | 0.4+ | 1.3+ | 2006 09 28 | E12 | 0.4− | 0.5+ |
| 2005 05 04 | 703 | 0.2+ | 0.5− | 2005 05 20 | 644 | 0.2+ | 0.4+ | 2006 09 28 | E12 | 0.2+ | 0.1− |
| 2005 05 04 | 703 | 0.7− | 0.4− | 2005 05 20 | 644 | 0.4+ | 0.3+ | | | | |

**(145182)∗ 2005 JT$_{20}$**

Discovered 2005 May 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 28.49955 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21838598 | | $\omega$ | 191.37550 | | +0.82027985 | | +0.55859978 | |
| $a$ | 2.7309865 | | $\Omega$ | 133.94669 | | −0.51046144 | | +0.81191368 | |
| $e$ | 0.1714352 | | $i$ | 9.82933 | | −0.25801180 | | +0.16959501 | |
| $P$ | 4.51 | | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 19 | 608 | 0.1+ | 0.7− | 2005 05 04 | 703 | 0.1− | 0.4− | 2005 06 07 | 699 | (0.4− | 1.6+) |
| 2001 06 19 | 608 | 0.3+ | 0.7− | 2005 05 06 | 704 | 0.2− | 0.2− | 2006 08 10 | 644 | 0.1− | 0.2+ |
| 2001 06 19 | 608 | 0.4− | 0.2− | 2005 05 06 | 704 | 0.3+ | 0.0 | 2006 08 10 | 644 | 0.1− | 0.3+ |
| 2002 12 03 | 644 | 0.1− | 0.6+ | 2005 05 06 | 704 | 0.2+ | 0.8+ | 2006 08 10 | 644 | 0.6− | 0.3+ |
| 2002 12 03 | 644 | 0.3− | 0.6+ | 2005 05 06 | 704 | 0.4+ | 1.0− | 2006 08 28 | 699 | 0.3− | 0.5− |
| 2002 12 03 | 644 | (1.9− | 0.5−) | 2005 05 09 | H06 | 0.3− | 0.1− | 2006 08 28 | 699 | 0.0 | 0.9+ |
| 2002 12 05 | 608 | 0.1+ | 0.2− | 2005 05 09 | H06 | 0.1− | 0.4− | 2006 08 28 | 699 | 0.7+ | 0.4+ |
| 2002 12 05 | 608 | 0.0 | 0.3− | 2005 05 09 | H06 | 0.1− | 0.1+ | 2006 08 28 | 699 | 1.3− | 0.5− |
| 2002 12 05 | 608 | 0.1− | 0.7+ | 2005 05 11 | 699 | 0.2− | 0.1− | 2006 09 17 | 699 | 0.2+ | 0.3+ |
| 2004 01 22 | 704 | 0.2− | 0.5+ | 2005 05 11 | 699 | (0.3+ | 2.4+) | 2006 09 17 | 699 | 0.6+ | 0.8+ |
| 2004 01 22 | 704 | 0.1− | 0.8+ | 2005 05 11 | 703 | 0.9− | 1.0+ | 2006 09 17 | 699 | 0.5+ | 0.7+ |
| 2004 01 22 | 704 | 0.6− | 1.4− | 2005 05 11 | 703 | 1.3− | 0.4+ | 2006 09 17 | 699 | 1.0+ | 0.3− |
| 2004 02 23 | 704 | 1.3+ | 0.9+ | 2005 05 11 | 703 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.6− |
| 2004 02 23 | 704 | (2.1+ | 0.5+) | 2005 05 11 | 699 | 0.1+ | 1.0− | 2006 09 19 | 703 | 0.3+ | 0.5− |
| 2004 02 23 | 704 | 0.6+ | 0.9+ | 2005 05 11 | 703 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.2− |
| 2004 02 23 | 704 | (1.9+ | 1.6+) | 2005 05 11 | 699 | 1.3+ | 0.8+ | 2006 09 19 | 703 | 0.6− | 0.2− |
| 2005 03 31 | 691 | 0.3+ | 0.2+ | 2005 05 15 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.4+ | 1.0+ |
| 2005 03 31 | 691 | 0.2+ | 0.3+ | 2005 05 15 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 0.1+ | 0.1+ |
| 2005 03 31 | 691 | 0.1+ | 0.6+ | 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.2+ | 0.6+ |
| 2005 04 12 | 699 | 0.2+ | 0.5− | 2005 05 19 | G96 | 0.4− | 0.4+ | 2006 09 25 | 703 | 0.1− | 1.0+ |
| 2005 04 12 | 699 | 0.3+ | 0.3− | 2005 05 19 | G96 | 0.1− | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2005 04 12 | 699 | 1.0+ | 0.3+ | 2005 05 19 | G96 | 0.1− | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2005 04 12 | 699 | 0.3+ | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2005 04 30 | H06 | 0.7− | 0.0 | 2005 05 20 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.4+ | 1.8+ |
| 2005 04 30 | H06 | 0.1+ | 0.4− | 2005 05 20 | 644 | 0.2+ | 0.0 | 2006 10 21 | 703 | 1.2− | 0.1− |
| 2005 04 30 | H06 | 1.0− | 0.6− | 2005 05 20 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.4+ |
| 2005 05 04 | 703 | 0.5+ | 0.1− | 2005 06 07 | 699 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2005 05 04 | 703 | 0.5− | 0.0 | 2005 06 07 | 699 | 0.5+ | 0.6+ | | | | |
| 2005 05 04 | 703 | 0.6− | 0.1− | 2005 06 07 | 699 | 0.2− | 0.1+ | | | | |

**(145183)∗ 2005 JD$_{21}$ = 2003 YY$_{124}$**

Discovered 2005 May 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77194)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 164.76062 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23899503 | | $\omega$ | 6.76305 | | −0.99130987 | | −0.11780194 | |
| $a$ | 2.5716398 | | $\Omega$ | 166.05778 | | +0.10642051 | | −0.97976854 | |
| $e$ | 0.1893438 | | $i$ | 14.06249 | | +0.07732669 | | −0.16179097 | |
| $P$ | 4.12 | | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.4− | 0.3+ | 2005 05 06 | 704 | 0.0 | 0.1+ | 2005 05 19 | 703 | 0.5− | 0.0 |
| 2002 09 12 | 644 | 0.0 | 0.3+ | 2005 05 06 | 704 | 0.8+ | 0.6+ | 2005 05 31 | 703 | 0.4− | 0.3− |
| 2002 09 12 | 644 | 0.5− | 0.3+ | 2005 05 06 | 704 | 1.2+ | 0.3+ | 2005 05 31 | 703 | (0.8− | 1.6+) |
| 2003 11 29 | 704 | 0.4− | 0.1+ | 2005 05 06 | 704 | 0.2− | 1.0+ | 2005 05 31 | 703 | 0.7+ | 1.3+ |
| 2003 11 29 | 704 | 0.4− | 0.9+ | 2005 05 08 | 683 | (0.8+ | 2.3−) | 2005 05 31 | 703 | 0.1− | 0.2− |
| 2003 11 29 | 704 | 0.1+ | 0.6+ | 2005 05 08 | 699 | 0.6− | 0.5+ | 2005 06 06 | 704 | 1.2+ | 0.8− |
| 2003 12 25 | 704 | 0.0 | 1.1+ | 2005 05 08 | 683 | 0.4− | 0.2+ | 2005 06 06 | 704 | 0.9+ | 0.3+ |
| 2003 12 25 | 704 | 0.9− | 1.2+ | 2005 05 08 | 699 | 0.9+ | 0.7+ | 2005 06 06 | 704 | (0.8+ | 1.9+) |
| 2003 12 25 | 704 | 0.3+ | 0.4− | 2005 05 08 | 699 | 0.7+ | 0.2+ | 2005 06 25 | 644 | 0.1+ | 0.1− |
| 2003 12 25 | 704 | 0.2+ | 1.1+ | 2005 05 08 | 699 | 0.4+ | 0.4+ | 2005 06 25 | 644 | 0.1− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 704 | 0.4+ | 0.3+ | 2005 05 10 | 683 | 0.3+ | 0.1+ | 2005 06 25 | 644 | 0.0 | 0.0 |
| 2003 12 25 | 704 | 0.3+ | 0.2+ | 2005 05 10 | 683 | 0.5+ | 0.0 | 2005 06 27 | 699 | 0.6+ | 1.5+ |
| 2003 12 25 | 704 | 0.3+ | 0.2+ | 2005 05 10 | 683 | (0.1− | 3.3+) | 2005 06 27 | 699 | 1.2+ | 0.2+ |
| 2003 12 29 | 704 | 0.9+ | 0.7+ | 2005 05 11 | 683 | 1.4+ | 1.3− | 2005 06 27 | 699 | 0.0 | 0.8+ |
| 2003 12 29 | 704 | 0.4− | 0.8+ | 2005 05 11 | 683 | 0.7− | 0.8− | 2005 06 27 | 699 | 0.5+ | 1.1+ |
| 2003 12 29 | 704 | 0.0 | 0.3+ | 2005 05 12 | 699 | 0.9− | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2003 12 29 | 704 | 0.5− | 0.9+ | 2005 05 12 | 699 | 0.3− | 0.6+ | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2005 04 21 | 703 | 0.2− | 0.6− | 2005 05 12 | 699 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.0 |
| 2005 04 21 | 703 | 1.2− | 0.0 | 2005 05 12 | 699 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2005 04 21 | 703 | 1.1− | 1.2+ | 2005 05 13 | 703 | 1.2− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2005 04 21 | 703 | 0.4− | 0.0 | 2005 05 13 | 703 | 0.9− | 0.5+ | 2006 09 25 | G96 | 0.4− | 0.5− |
| 2005 05 04 | 703 | 0.5+ | 1.0− | 2005 05 13 | 703 | 0.7− | 1.0+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2005 05 04 | 703 | 0.7− | 0.3− | 2005 05 13 | 703 | 0.1+ | 0.8+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2005 05 04 | 703 | 0.3+ | 0.4− | 2005 05 19 | 703 | 0.5− | 0.1+ | 2006 10 16 | G96 | 0.6+ | 0.3+ |
| 2005 05 04 | 703 | 0.8+ | 1.0− | 2005 05 19 | 703 | 0.3− | 0.5− | 2006 10 16 | G96 | 0.8+ | 0.0 |
| 2005 05 06 | 704 | 0.0 | 1.0+ | 2005 05 19 | 703 | 0.4− | 0.5− | 2006 10 16 | G96 | 1.1+ | 0.1+ |

**(145184)∗ 2005 JK$_{21}$ = 1999 UE$_{57}$**

Discovered 2005 May 4 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 77195)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.54941 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26896999 | $\omega$ | 272.65089 | | −0.73135568 | | +0.68194618 |
| $a$ | 2.3768412 | $\Omega$ | 310.34518 | | −0.62133278 | | −0.67124782 |
| $e$ | 0.1328816 | $i$ | 0.62115 | | −0.28118401 | | −0.29047506 |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 18 | 696 | 0.2− | 0.3− | 2005 05 04 | 704 | 0.8− | 1.1+ | 2005 05 16 | G96 | 0.1− | 0.1− |
| 1998 06 18 | 696 | 0.7− | 0.4− | 2005 05 04 | E12 | 0.3− | 0.4− | 2005 05 16 | G96 | 0.1− | 0.6+ |
| 1999 10 29 | 691 | 0.5+ | 0.1− | 2005 05 04 | E12 | 0.4− | 0.2− | 2005 05 16 | G96 | 0.4− | 0.1− |
| 1999 10 29 | 691 | 0.3+ | 0.5+ | 2005 05 04 | E12 | 0.5− | 0.2+ | 2005 05 16 | G96 | 0.2− | 0.2− |
| 1999 10 29 | 691 | 0.2+ | 0.1+ | 2005 05 04 | E12 | (1.6− | 0.8+) | 2005 05 19 | 644 | 0.3− | 0.1+ |
| 1999 11 06 | 691 | 0.3− | 0.1+ | 2005 05 07 | G96 | 0.3− | 0.1+ | 2005 05 19 | 644 | 0.1− | 0.1+ |
| 1999 11 06 | 691 | 0.1− | 0.5+ | 2005 05 07 | G96 | 0.2− | 0.1+ | 2005 05 19 | 644 | 0.1− | 0.2− |
| 1999 11 06 | 691 | 0.1+ | 0.1− | 2005 05 07 | G96 | 0.4− | 0.0 | 2005 05 26 | 699 | 1.3− | 1.0− |
| 2001 02 19 | 704 | (0.5− | 2.1+) | 2005 05 07 | G96 | 0.2− | 0.0 | 2005 05 26 | 699 | 0.3+ | 0.2− |
| 2001 02 19 | 704 | 0.4+ | 1.2+ | 2005 05 08 | 699 | 0.6+ | 0.7+ | 2005 05 26 | 699 | 0.2− | 0.3− |
| 2001 02 19 | 704 | 0.5− | 1.0+ | 2005 05 08 | 699 | 0.1+ | 0.2+ | 2005 05 26 | 699 | 0.5− | 0.4− |
| 2001 03 18 | 704 | 1.2+ | 0.0 | 2005 05 08 | 699 | 0.7+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2001 03 18 | 704 | 0.0 | 0.3− | 2005 05 08 | 699 | 1.4+ | 0.9+ | 2006 09 15 | 691 | 0.6− | 0.0 |
| 2001 03 18 | 704 | 0.8− | 1.3+ | 2005 05 08 | E12 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.2+ |
| 2001 03 18 | 704 | 0.2− | 0.3+ | 2005 05 08 | E12 | 0.4+ | 0.2− | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 2001 03 18 | 704 | 0.6− | 1.2+ | 2005 05 08 | E12 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.5− | 0.5+ |
| 2002 08 27 | 644 | 0.2+ | 0.3+ | 2005 05 08 | E12 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 2002 08 27 | 644 | 0.0 | 0.1+ | 2005 05 09 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2002 08 27 | 644 | 0.1+ | 0.1+ | 2005 05 09 | 704 | 1.0+ | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2005 05 09 | 704 | 0.2+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2005 04 17 | 691 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.7+ | 0.4+ | 2006 10 28 | G96 | 0.5+ | 0.6− |
| 2005 04 17 | 691 | 0.1+ | 0.1− | 2005 05 13 | 704 | 0.9+ | 0.8+ | 2006 10 28 | G96 | 0.6+ | 0.3− |
| 2005 05 04 | 704 | 1.1+ | 0.2+ | 2005 05 13 | 704 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2005 05 04 | 704 | (1.6+ | 0.2−) | 2005 05 13 | 704 | 1.0+ | 0.9+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2005 05 04 | 704 | 0.1+ | 0.7− | 2005 05 13 | 704 | 1.0+ | 0.4+ | | | | |

**(145185)∗ 2005 JP$_{21}$**

Discovered 2005 May 4 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.81942 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29127765 | $\omega$ | 3.38871 | | −0.47108408 | | +0.87880548 |
| $a$ | 2.2538825 | $\Omega$ | 238.51964 | | −0.81138196 | | −0.46552337 |
| $e$ | 0.1639892 | $i$ | 5.11486 | | −0.34603339 | | −0.10482807 |
| $P$ | 3.38 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 691 | 0.1− | 0.4− | 2005 05 09 | 704 | 0.8+ | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 1996 11 09 | 691 | 0.2+ | 0.4− | 2005 05 09 | 704 | 0.6+ | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 1996 11 09 | 691 | 0.2+ | 0.9− | 2005 05 10 | 704 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 1999 10 11 | 704 | 0.8+ | 0.7− | 2005 05 10 | 704 | 0.1− | 0.9− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 1999 10 11 | 704 | 0.1+ | 0.7− | 2005 05 10 | 704 | 0.3+ | 0.5+ | 2006 10 15 | 691 | 0.6+ | 0.3+ |
| 1999 10 11 | 704 | 1.8− | 1.2+ | 2005 05 10 | 704 | 0.0 | 0.9+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2002 07 21 | 644 | 0.3− | 0.3− | 2005 05 10 | 704 | 0.6− | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.2− |
| 2002 07 21 | 644 | 0.4+ | 0.2− | 2005 05 13 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 691 | 0.5− | 0.2+ |
| 2002 07 21 | 644 | 0.3+ | 0.5− | 2005 05 13 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2002 08 05 | 644 | 0.0 | 0.4− | 2005 05 13 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.2+ | 0.4+ |
| 2002 08 05 | 644 | 0.2+ | 0.5− | 2005 05 13 | 704 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2002 08 05 | 644 | 0.2+ | 0.2− | 2005 05 13 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 2002 08 26 | 644 | 0.3+ | 0.3+ | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 10 23 | 691 | 1.0− | 0.7+ |
| 2002 08 26 | 644 | 0.1+ | 0.2+ | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 10 26 | A13 | 0.6+ | 0.2− |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2005 05 19 | 644 | 0.1− | 0.1+ | 2006 10 26 | A13 | 0.6+ | 0.7− |
| 2003 12 29 | 691 | 0.1+ | 0.1+ | 2005 06 04 | 703 | 0.0 | 0.8− | 2006 10 28 | 691 | 0.3− | 0.8+ |
| 2003 12 29 | 691 | 0.1− | 0.1− | 2005 06 04 | 703 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2003 12 29 | 691 | 0.1+ | 0.2+ | 2005 06 04 | 703 | 1.3− | 0.5− | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2005 04 18 | 703 | 1.2− | 0.0 | 2005 06 04 | 703 | (0.9− | 1.8+) | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2005 04 18 | 703 | 0.2+ | 0.3+ | 2005 06 12 | G96 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2005 04 18 | 703 | 0.5− | 0.1+ | 2005 06 12 | G96 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2005 04 18 | 703 | 0.9− | 0.6+ | 2005 06 12 | G96 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.1− |
| 2005 05 04 | 644 | 0.3+ | 0.1+ | 2005 06 12 | G96 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.4− | 0.1− |
| 2005 05 04 | 644 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.3+ | 0.3+ |
| 2005 05 04 | 644 | 0.3+ | 0.1+ | 2005 06 27 | 644 | 0.4+ | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2005 05 04 | E12 | 0.2− | 0.0 | 2005 06 27 | 644 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2005 05 04 | E12 | 0.6− | 0.5+ | 2005 06 28 | 699 | (0.2+ | 2.3+) | 2006 11 11 | 691 | 0.4+ | 0.1+ |
| 2005 05 04 | E12 | 0.2− | 0.0 | 2005 06 28 | 699 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.4+ | 0.4+ |
| 2005 05 04 | E12 | 0.0 | 0.3+ | 2005 06 28 | 699 | (1.5+ | 1.6+) | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 2005 05 07 | 691 | 0.0 | 0.3+ | 2005 06 28 | 699 | 0.2+ | 0.7− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.3− |
| 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 22 | 691 | 0.4+ | 0.3− |
| 2005 05 09 | 704 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2005 05 09 | 704 | (1.7+ | 0.5+) | 2006 10 02 | G96 | 0.3+ | 0.4− | | | | |

**(145186)∗ 2005 JQ$_{21}$ = 2002 PO$_{150}$**

Discovered 2005 May 4 by the Siding Spring Survey at Siding Spring.

Id. A. Doppler (*MPO* 86725)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.45753 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29371971 | $\omega$ | 334.18947 | | −0.48064684 | | +0.87680129 |
| $a$ | 2.2413722 | $\Omega$ | 267.08006 | | −0.80209256 | | −0.44606705 |
| $e$ | 0.1404474 | $i$ | 0.80752 | | −0.35443777 | | −0.17956525 |
| $P$ | 3.36 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 15 | 691 | 0.0 | 0.2+ | 2005 05 04 | E12 | 0.3+ | 1.0+ | 2005 05 30 | 699 | 0.4+ | 1.0− |
| 2001 01 15 | 691 | 0.1+ | 0.3+ | 2005 05 04 | E12 | 0.3+ | 0.8+ | 2005 05 30 | 699 | 0.0 | 1.0+ |
| 2001 01 15 | 691 | 0.0 | 0.2+ | 2005 05 04 | E12 | 0.1− | 0.7+ | 2005 05 30 | 699 | (0.4− | 1.7+) |
| 2002 07 17 | 644 | 0.6− | 0.0 | 2005 05 07 | 691 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.5− |
| 2002 07 17 | 644 | 0.1− | 0.0 | 2005 05 07 | 691 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2002 07 17 | 644 | 0.3− | 0.1− | 2005 05 07 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.6+ | 0.5− |
| 2002 08 07 | 644 | 0.2− | 0.2+ | 2005 05 09 | 704 | 1.2+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2002 08 07 | 644 | 0.3+ | 0.4+ | 2005 05 09 | 704 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2002 08 07 | 644 | 0.4+ | 0.3+ | 2005 05 09 | 704 | 0.5− | 0.7− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2002 08 09 | 807 | 0.2+ | 0.1+ | 2005 05 09 | 704 | 0.2+ | 1.0+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2002 08 09 | 807 | 0.2+ | 0.0 | 2005 05 09 | 704 | 0.1+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.6+ |
| 2005 04 11 | G96 | 0.3− | 0.3+ | 2005 05 09 | G96 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.5+ |
| 2005 04 11 | G96 | 0.6− | 0.1+ | 2005 05 09 | G96 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.3+ |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2005 05 09 | G96 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2005 05 09 | G96 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2005 05 04 | E12 | 0.1+ | 0.4+ | 2005 05 30 | 699 | 0.7+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.8+ |

**(145187)∗ 2005 JW$_{22}$**

Discovered 2005 May 1 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 63.51619 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22068960 | | $\omega$ | 31.82487 | | +0.21134435 | | +0.97220495 | | | |
| $a$ | 2.7119487 | | $\Omega$ | 250.54321 | | −0.91767989 | | +0.16188867 | | | |
| $e$ | 0.1126426 | | $i$ | 6.13404 | | −0.33644790 | | +0.16914371 | | | |
| $P$ | 4.47 | | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.2+ | 0.1+ | 2005 05 04 | 699 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.2− | 0.5− |
| 1993 11 20 | 691 | 0.4+ | 0.3− | 2005 05 04 | 699 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.6+ | 0.6+ |
| 1993 11 20 | 691 | 0.4+ | 0.3+ | 2005 05 08 | 699 | 0.6− | 0.4+ | 2006 09 17 | 703 | 0.5− | 1.1+ |
| 1993 12 13 | 691 | 0.5− | 0.4− | 2005 05 08 | 699 | 0.4− | 0.2− | 2006 09 20 | 699 | 0.7+ | 1.0+ |
| 1993 12 13 | 691 | 0.5− | 0.2− | 2005 05 08 | 699 | 0.7− | 0.1+ | 2006 09 20 | 699 | 0.6+ | 0.1+ |
| 1993 12 13 | 691 | 0.1+ | 0.0 | 2005 05 08 | 699 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.6− | 0.4− |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2005 05 08 | E12 | 0.5− | 1.3− | 2006 09 20 | 699 | 0.8− | 0.7+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2005 05 08 | E12 | 0.3+ | 0.2+ | 2006 09 24 | 106 | 0.7+ | 0.1+ |
| 2002 11 05 | 704 | 0.1− | 1.0+ | 2005 05 08 | E12 | 0.6+ | 0.1− | 2006 09 24 | 106 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.1− | 0.1+ | 2005 05 08 | E12 | 0.0 | 0.3− | 2006 09 24 | 106 | 0.5− | 0.0 |
| 2002 11 05 | 704 | 0.0 | 1.3+ | 2005 05 19 | 644 | 0.3+ | 0.3+ | 2006 09 24 | 106 | 0.1+ | 0.3+ |
| 2004 01 16 | 644 | 0.2− | 0.6+ | 2005 05 19 | 644 | 0.4+ | 0.2+ | 2006 10 01 | 703 | 0.3+ | 0.2+ |
| 2004 01 16 | 644 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.4+ | 0.4+ | 2006 10 01 | 703 | 0.3− | 1.3− |
| 2004 01 16 | 644 | 0.2− | 0.3+ | 2006 08 25 | D35 | 0.3+ | 0.3+ | 2006 10 01 | 703 | 0.2+ | 1.3− |
| 2004 01 23 | 704 | 0.3+ | 0.1− | 2006 08 25 | D35 | 0.4+ | 0.5+ | 2006 10 01 | 703 | 0.9− | 0.2− |
| 2004 01 23 | 704 | 0.1+ | 0.5− | 2006 08 25 | D35 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2004 01 23 | 704 | 0.4+ | 0.5− | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2005 05 01 | E12 | 0.3+ | 0.4− | 2006 09 06 | 644 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.7+ | 0.4+ |
| 2005 05 01 | E12 | 0.2− | 0.6+ | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.3− | 0.8+ |
| 2005 05 01 | E12 | 0.5− | 0.6+ | 2006 09 15 | 704 | 0.3+ | 0.9− | 2006 10 23 | 703 | 0.4− | 0.3− |
| 2005 05 01 | E12 | 0.2+ | 0.2+ | 2006 09 15 | 704 | 0.2+ | 0.5− | 2006 10 23 | 703 | 0.7− | 0.8− |
| 2005 05 04 | 699 | (1.8− | 0.1−) | 2006 09 15 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 703 | 1.8− | 0.1+ |
| 2005 05 04 | 699 | 0.7+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.6+ | | | | |

**(145188)∗ 2005 JJ$_{24}$ = 1996 JT$_{13}$**

Discovered 2005 May 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77198)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 53.49016 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22089869 | | $\omega$ | 219.55540 | | +0.40433726 | | +0.91182397 | | | |
| $a$ | 2.7102372 | | $\Omega$ | 74.39977 | | −0.81926092 | | +0.39575407 | | | |
| $e$ | 0.0869566 | | $i$ | 4.24731 | | −0.40659923 | | +0.10934246 | | | |
| $P$ | 4.46 | | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.4+ | 0.3+ | 2005 05 03 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.9+ | 0.3− |
| 1996 05 11 | 691 | 0.3+ | 0.2+ | 2005 05 03 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 699 | 0.1+ | 0.4+ |
| 1996 05 11 | 691 | 0.1+ | 0.2+ | 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 08 28 | 699 | 1.2− | 0.5+ |
| 1996 05 17 | 691 | 0.0 | 0.3− | 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.8+ |
| 1996 05 17 | 691 | 0.4− | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 1.1− | 0.0 |
| 1996 05 17 | 691 | 0.5− | 0.3− | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.7+ |
| 2002 11 02 | 950 | 0.2− | 0.4+ | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.7+ |
| 2002 11 03 | 950 | 0.1− | 0.3+ | 2005 05 08 | G96 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.8− |
| 2002 11 03 | 950 | 0.0 | 0.3+ | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 2003 12 29 | 291 | 0.7− | 1.4+ | 2005 05 09 | 699 | 1.1+ | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.2− |
| 2003 12 29 | 291 | 0.0 | 0.2+ | 2005 05 09 | 699 | 0.5+ | 1.0+ | 2006 09 14 | 703 | 0.2+ | 0.1+ |
| 2003 12 29 | 291 | 0.3+ | 0.2+ | 2005 05 09 | 699 | 0.1+ | 1.1+ | 2006 09 19 | 699 | 0.2+ | 0.6+ |
| 2004 01 22 | 704 | 0.9+ | 0.0 | 2005 05 09 | 699 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 0.8+ | 0.1− | 2005 05 12 | 691 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.3+ |
| 2004 01 22 | 704 | 0.5+ | 0.3− | 2005 05 12 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2005 05 12 | 691 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 2004 02 23 | 704 | 0.2− | 1.1+ | 2005 06 13 | G96 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2004 02 23 | 704 | 1.5+ | 0.4+ | 2005 06 13 | G96 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2004 02 23 | 704 | (2.4+ | 1.0+) | 2005 06 13 | G96 | 0.2+ | 0.1− | | | | |
| 2005 05 03 | 691 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.0 | 0.1+ | | | | |

**(145189)∗ 2005 JM$_{24}$ = 1995 SR$_{85}$**

Discovered 2005 May 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77198)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 133.25375 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26807272 | | $\omega$ | 36.90914 | | −0.65496819 | | +0.75561393 | | | |
| $a$ | 2.3821419 | | $\Omega$ | 192.18055 | | −0.70206088 | | −0.61240367 | | | |
| $e$ | 0.1586941 | | $i$ | 2.17732 | | −0.27951240 | | −0.23239910 | | | |
| $P$ | 3.68 | | $H$ | 17.6 | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.1+ | 0.2− | 2005 04 11 | G96 | 0.3− | 0.1− | 2005 05 13 | 704 | 0.1+ | 0.2+ |
| 1995 09 25 | 691 | 0.0 | 0.6− | 2005 04 11 | G96 | 0.2+ | 0.9+ | 2005 05 13 | 704 | 0.2− | 0.0 |
| 1995 09 25 | 691 | 0.3+ | 0.3− | 2005 05 03 | 691 | 0.0 | 0.2− | 2005 05 13 | 704 | 0.1− | 0.6− |
| 1995 09 30 | 691 | 0.1− | 0.6− | 2005 05 03 | 691 | 0.2+ | 0.1− | 2005 06 27 | 644 | 0.3− | 0.1− |
| 1995 09 30 | 691 | 0.0 | 0.6− | 2005 05 03 | 691 | 0.3+ | 0.1+ | 2005 06 27 | 644 | 0.1+ | 0.3− |
| 1995 09 30 | 691 | 0.1− | 0.3− | 2005 05 08 | 699 | 0.3+ | 0.3+ | 2005 06 27 | 644 | 0.3− | 0.1− |
| 1999 12 05 | 691 | 0.6+ | 0.1+ | 2005 05 08 | 699 | 0.6− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 1999 12 05 | 691 | 0.9+ | 0.2+ | 2005 05 08 | 699 | 1.1− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.4+ |
| 1999 12 05 | 691 | 0.4+ | 0.0 | 2005 05 08 | 699 | 0.5+ | 0.3− | 2006 09 25 | G96 | 0.3− | 0.1+ |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2000 12 23 | 645 | 0.1− | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2005 05 08 | G96 | 0.3− | 0.3− | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2001 05 23 | 807 | 0.5+ | 0.0 | 2005 05 09 | G96 | 0.2− | 0.2− | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2001 05 24 | 807 | 0.2+ | 0.1+ | 2005 05 09 | G96 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2005 03 12 | G96 | 0.3− | 0.1+ | 2005 05 09 | G96 | 0.3− | 0.4− | 2006 10 16 | G96 | 0.1− | 0.4+ |
| 2005 03 12 | G96 | (1.6− | 0.8−) | 2005 05 09 | G96 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.4− | 0.1+ |
| 2005 03 12 | G96 | 0.3− | 0.0 | 2005 05 12 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2005 03 12 | G96 | 0.1− | 0.1− | 2005 05 12 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2005 04 11 | G96 | 0.7− | 0.4− | 2005 05 12 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2005 04 11 | G96 | 0.1− | 0.2− | 2005 05 13 | 704 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.8− | 0.6+ |

**(145190)∗ 2005 JR$_{26}$**

Discovered 2005 May 3 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 199.29500 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27194180 | | $\omega$ | 329.49592 | | −0.94416752 | | −0.32880980 | | | |
| $a$ | 2.3594932 | | $\Omega$ | 191.36495 | | +0.31955483 | | −0.89858810 | | | |
| $e$ | 0.0695786 | | $i$ | 6.05321 | | +0.08020232 | | −0.29055729 | | | |
| $P$ | 3.62 | | $H$ | 17.1 | $G$ | 0.15 | | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.3+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2005 05 08 | 691 | 0.1− | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.3+ |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.1+ | 0.4+ |
| 2003 11 18 | 691 | 0.4+ | 0.3+ | 2005 05 17 | G96 | 1.4− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2003 11 18 | 691 | 0.4+ | 0.7+ | 2005 05 17 | G96 | 0.4− | 0.6− | 2006 09 19 | 703 | 0.1− | 1.1− |
| 2003 12 17 | 691 | 0.2+ | 0.4+ | 2005 05 17 | G96 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.6+ |
| 2003 12 17 | 691 | 0.0 | 0.3− | 2005 05 17 | G96 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.6− | 0.2+ |
| 2003 12 17 | 691 | 0.4− | 0.1+ | 2005 06 13 | 691 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2003 12 28 | 691 | 0.2− | 0.2+ | 2005 06 13 | 691 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.4+ |
| 2003 12 28 | 691 | 0.3− | 0.2− | 2005 06 13 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.5+ | 0.0 |
| 2003 12 28 | 691 | 0.1− | 0.2− | 2005 06 17 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2005 05 03 | 691 | 0.3+ | 0.1+ | 2005 06 17 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.3− |
| 2005 05 03 | 691 | 0.1+ | 0.0 | 2005 06 17 | 691 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.2− | 0.2+ |
| 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.4− |

**(145191)∗ 2005 JG$_{27}$**

Discovered 2005 May 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.02331 | | (2000.0) | | | |
| $n$ | 0.22716467 | $\omega$ | 77.67195 | | +0.13628581 | +0.98938578 |
| $a$ | 2.6601668 | $\Omega$ | 200.36850 | | −0.95589173 | +0.11796471 |
| $e$ | 0.1002249 | $i$ | 8.32890 | | −0.26018681 | +0.08485348 |
| $P$ | 4.34 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 13 | 691 | 1.0− | 0.3+ | 2006 08 24 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 1.4+ |
| 1997 07 13 | 691 | 0.5+ | 0.4+ | 2006 08 24 | 704 | (2.0+ | 2.0−) | 2006 09 25 | 704 | 1.1+ | 0.5+ |
| 1997 07 13 | 691 | 0.2+ | 0.2+ | 2006 08 24 | 704 | 1.0+ | 0.2+ | 2006 09 25 | 704 | (1.9− | 1.9+) |
| 2002 10 02 | 704 | 0.2− | 1.1− | 2006 08 24 | 704 | (1.0+ | 2.0+) | 2006 09 25 | 699 | 0.0 | 0.6+ |
| 2002 10 02 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.4− | 2006 09 25 | 704 | 0.6− | 1.4+ |
| 2002 10 02 | 704 | 0.4+ | 0.7+ | 2006 08 29 | 703 | 0.4− | 0.2− | 2006 09 25 | 699 | 0.2− | 0.1− |
| 2002 10 02 | 704 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.5− | 0.5− | 2006 09 25 | 699 | 0.5+ | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 1.0+ | 2006 08 29 | 703 | 0.4− | 0.2− | 2006 09 29 | 704 | 1.2− | 0.9+ |
| 2002 10 11 | 704 | 0.5− | 0.8+ | 2006 08 30 | 704 | 0.5− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 1.0− |
| 2002 10 11 | 704 | 0.7− | 0.8+ | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.9+ | 0.2− |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 08 30 | 704 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.7− |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.8+ | 0.5− | 2006 10 01 | 703 | 0.1− | 0.5+ |
| 2005 01 17 | 809 | 0.4− | 0.3+ | 2006 09 06 | 644 | 0.4+ | 0.2− | 2006 10 01 | 703 | 0.2− | 0.5− |
| 2005 01 17 | 809 | 0.7+ | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 01 | 703 | 0.7+ | 0.8− |
| 2005 01 17 | 809 | 0.2− | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 01 | 703 | 0.5− | 0.6− |
| 2005 01 21 | 809 | 0.5− | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.6+ | 2006 10 01 | 704 | 0.5− | 0.3− |
| 2005 01 21 | 809 | 0.6− | 0.1+ | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.8+ | 0.4+ |
| 2005 01 21 | 809 | 0.4− | 0.2+ | 2006 09 12 | 703 | 1.1− | 0.7− | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2005 04 04 | 704 | 1.2+ | 0.3− | 2006 09 12 | 703 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2005 04 04 | 704 | 0.1− | 0.3+ | 2006 09 15 | 704 | (0.2− | 1.8−) | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2005 04 04 | 704 | (0.2+ | 2.9+) | 2006 09 15 | 704 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2005 05 03 | 704 | 0.5+ | 0.3− | 2006 09 15 | 704 | 0.9− | 0.6− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2005 05 03 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 704 | 0.8− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2005 05 03 | 704 | 0.9+ | 0.6+ | 2006 09 18 | 704 | 1.0+ | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2005 05 03 | 704 | 0.6− | 0.1+ | 2006 09 18 | 704 | 0.1+ | 1.0− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2005 05 08 | 699 | 1.1+ | 0.6− | 2006 09 18 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.4− | 1.3− |
| 2005 05 08 | 699 | (2.8+ | 0.2+) | 2006 09 18 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2005 05 08 | 699 | 0.5− | 0.1+ | 2006 09 19 | 703 | (1.5− | 4.7−) | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2005 05 08 | 699 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2005 05 11 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.3− | 0.3− |
| 2005 05 11 | 691 | 0.0 | 0.0 | 2006 09 20 | 691 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 05 11 | 691 | 0.1− | 0.0 | 2006 09 20 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2005 05 12 | 704 | 0.5− | 0.2− | 2006 09 20 | 691 | 0.4+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2005 05 12 | 704 | 0.1− | 0.7− | 2006 09 20 | 703 | 0.6+ | 0.8− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2005 05 12 | 704 | 0.3+ | 0.2− | 2006 09 20 | 703 | 0.0 | 0.7− | 2006 10 23 | G96 | 0.4− | 0.5− |
| 2005 05 12 | 704 | 0.1+ | 0.6− | 2006 09 20 | 703 | 0.1+ | 0.5− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 09 20 | 703 | 0.2+ | 0.6− | 2006 10 24 | 644 | 0.4+ | 0.7+ |
| 2006 08 18 | 644 | 0.1+ | 0.3− | 2006 09 22 | 703 | 0.3+ | 0.4− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 22 | 703 | 0.6+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2006 08 21 | 691 | 0.0 | 0.2− | 2006 09 22 | 703 | 0.8− | 0.9− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2006 08 21 | 691 | 0.1+ | 0.2− | 2006 09 22 | 703 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2006 08 21 | 691 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.4− | 1.4+ | 2006 10 27 | 691 | 0.1− | 0.2+ |

**(145192)∗ 2005 JO$_{27}$**

Discovered 2005 May 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.24847 | | (2000.0) | | | |
| $n$ | 0.21839255 | $\omega$ | 264.67875 | | +0.79079060 | +0.57191954 |
| $a$ | 2.7309317 | $\Omega$ | 60.25657 | | −0.41308701 | +0.76158154 |
| $e$ | 0.1958823 | $i$ | 14.54668 | | −0.45167395 | +0.30479764 |
| $P$ | 4.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.6− | 0.4+ | 2005 05 14 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.8− | 0.1+ |
| 2002 12 11 | 704 | 0.4+ | 0.4+ | 2005 05 14 | 704 | 0.3+ | 0.2− | 2006 09 30 | 704 | 0.3− | 0.9+ |
| 2002 12 11 | 704 | 0.4− | 0.2+ | 2005 05 14 | 704 | 1.2+ | 0.1+ | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2002 12 11 | 704 | 0.2− | 0.5+ | 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 704 | (1.6− | 0.4−) |
| 2002 12 11 | 704 | (0.3− | 1.6+) | 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | 704 | 1.1− | 0.3+ |
| 2004 01 19 | 691 | 0.1+ | 0.4+ | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2005 05 20 | G96 | 0.6− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2004 01 19 | 691 | 0.1− | 0.3+ | 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2004 04 16 | 645 | 0.1+ | 0.1+ | 2005 05 20 | G96 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2004 04 16 | 645 | 0.1+ | 0.0 | 2005 05 20 | G96 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2005 04 18 | 703 | 0.3− | 0.1+ | 2005 05 20 | G96 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2005 04 18 | 703 | 0.0 | 0.1− | 2005 05 20 | G96 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2005 04 18 | 703 | 0.4− | 0.0 | 2005 05 20 | G96 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2005 04 18 | 703 | 1.1− | 0.5− | 2005 05 20 | G96 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2005 04 18 | 691 | 0.1+ | 0.2+ | 2005 05 30 | 699 | 1.4+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2005 04 18 | 691 | 0.1+ | 0.0 | 2005 05 30 | 699 | (0.3− | 1.7+) | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2005 04 18 | 691 | 0.1− | 0.3− | 2005 05 30 | 699 | 0.6− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2005 05 03 | 704 | 0.2+ | 1.1+ | 2005 05 30 | 699 | 1.0+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.9+ |
| 2005 05 03 | 704 | 0.4+ | 0.9+ | 2005 06 04 | 703 | (1.8− | 0.1−) | 2006 10 16 | 703 | 0.3− | 1.3+ |
| 2005 05 03 | 704 | 1.3− | 0.6− | 2005 06 04 | 703 | 0.1+ | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 2005 05 03 | 704 | 0.6+ | 0.6+ | 2005 06 04 | 703 | (1.8+ | 0.3+) | 2006 10 16 | 703 | 0.2+ | 1.1+ |
| 2005 05 03 | 704 | 0.5+ | 0.2+ | 2005 06 04 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2005 05 09 | 699 | 0.5+ | 1.2+ | 2005 06 12 | G96 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.7− |
| 2005 05 09 | 699 | 0.9+ | 0.6+ | 2005 06 12 | G96 | 0.0 | 0.2− | 2006 10 22 | 703 | 1.0− | 0.4+ |
| 2005 05 09 | 699 | 0.5+ | 0.6+ | 2005 06 12 | G96 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 2005 05 09 | 704 | 0.1− | 0.2+ | 2005 06 27 | 644 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2005 05 09 | 704 | 0.6− | 0.6+ | 2005 06 27 | 644 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.2− |
| 2005 05 09 | 699 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.5+ | 0.2− |
| 2005 05 09 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.3− |
| 2005 05 09 | 704 | (1.7+ | 0.1+) | 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 11 10 | 704 | 1.0− | 0.8− |
| 2005 05 11 | G96 | 0.2− | 0.1− | 2006 09 18 | 703 | 1.0+ | 0.7− | 2006 11 10 | 704 | 0.1− | 0.6+ |
| 2005 05 11 | G96 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 11 10 | 704 | 0.2− | 0.8+ |
| 2005 05 11 | G96 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.3− | 2006 11 10 | 704 | 0.5+ | 1.5+ |
| 2005 05 11 | G96 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.1− | 0.4− | 2006 11 10 | 704 | 0.0 | 0.6+ |
| 2005 05 12 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.8− | 1.4− | 2006 11 16 | 703 | 0.2+ | 0.3+ |
| 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | (1.2+ | 2.4−) | 2006 11 16 | 703 | 0.5+ | 0.3+ |
| 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.9− | 1.1+ | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2005 05 14 | 704 | 0.2− | 1.0− | 2006 09 29 | 699 | 0.9− | 0.6+ | 2006 11 16 | 703 | 0.0 | 0.1− |
| 2005 05 14 | 704 | 0.7− | 0.8− | 2006 09 29 | 699 | 0.0 | 0.0 | | | | |

**(145193)∗ 2005 JL$_{29}$**

Discovered 2005 May 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 101.04412 | | (2000.0) | | | |
| $n$ | 0.24026128 | $\omega$ | 113.79279 | | −0.00357897 | +0.99951622 |
| $a$ | 2.5625963 | $\Omega$ | 155.94068 | | −0.94285038 | +0.00692150 |
| $e$ | 0.2319343 | $i$ | 4.34619 | | −0.33319716 | −0.03032190 |
| $P$ | 4.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.9− | 1.4+ | 2005 05 12 | 704 | 0.2+ | 0.9+ | 2005 06 15 | 691 | 0.4− | 0.8+ |
| 2002 11 14 | 644 | (0.9− | 1.8+) | 2005 05 16 | 704 | 0.2+ | 0.2− | 2005 06 23 | 644 | 0.0 | 0.1+ |
| 2002 11 14 | 644 | 0.4− | 1.2+ | 2005 05 16 | 704 | 0.1− | 0.5− | 2005 06 23 | 644 | 0.1− | 0.0 |
| 2004 01 27 | 691 | 0.3− | 0.3+ | 2005 05 16 | 704 | 0.0 | 0.3+ | 2005 06 23 | 644 | 0.0 | 0.0 |
| 2004 01 27 | 691 | 0.1− | 0.3+ | 2005 05 16 | 704 | 0.2− | 0.2+ | 2005 06 27 | 691 | 1.0− | 0.2+ |
| 2004 01 27 | 691 | 0.1− | 0.3+ | 2005 05 16 | 704 | 0.8− | 0.0 | 2005 06 27 | 691 | 0.2+ | 0.8+ |
| 2004 02 16 | 691 | 0.4+ | 0.7+ | 2005 05 16 | G96 | 0.1− | 0.0 | 2005 06 27 | 691 | 0.2+ | 0.1+ |
| 2004 02 16 | 691 | 0.1+ | 0.5+ | 2005 05 16 | G96 | 0.1− | 0.2− | 2005 06 28 | 644 | 0.2− | 0.0 |
| 2004 02 16 | 691 | 0.7+ | 0.5+ | 2005 05 16 | G96 | 0.0 | 0.1− | 2005 06 28 | 644 | 0.0 | 0.1− |
| 2005 04 05 | 704 | 1.4− | 0.0 | 2005 05 16 | G96 | 0.1+ | 0.1− | 2005 06 28 | 644 | 0.1+ | 0.2+ |
| 2005 04 05 | 704 | 0.4− | 0.6+ | 2005 06 02 | 703 | 1.1− | 0.0 | 2005 07 05 | 644 | 0.0 | 0.1− |
| 2005 04 05 | 704 | (0.0 | 1.8+) | 2005 06 02 | 703 | 0.4− | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.0 |
| 2005 04 05 | 704 | 1.0+ | 0.3− | 2005 06 02 | 703 | 0.7− | 0.3− | 2005 07 05 | 644 | 0.4− | 0.3− |
| 2005 04 05 | 704 | 0.3+ | 1.5+ | 2005 06 02 | 703 | 0.4− | 0.2− | 2006 09 30 | 703 | (1.6− | 0.7+) |
| 2005 05 03 | 703 | 0.3− | 0.4− | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.8− | 0.3+ |
| 2005 05 03 | 704 | 0.3+ | 0.2+ | 2005 06 04 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.6− | 0.1− |
| 2005 05 03 | 703 | 0.7− | 0.3− | 2005 06 04 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.8− | 0.0 |
| 2005 05 03 | 703 | 0.3− | 0.0 | 2005 06 05 | 704 | 0.8+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.3+ |
| 2005 05 03 | 704 | 0.8+ | 0.2+ | 2005 06 05 | 704 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2005 05 03 | 703 | 0.5− | 0.3− | 2005 06 05 | 704 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2005 05 03 | 704 | 0.3+ | 0.0 | 2005 06 05 | 704 | 1.5+ | 1.0+ | 2006 10 02 | G96 | 0.2− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 704 | 0.3+ | 0.2+ | 2005 06 05 | 704 | 0.7+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.7+ |
| 2005 05 03 | 704 | 0.1+ | 0.5+ | 2005 06 10 | 704 | 0.6+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.5+ |
| 2005 05 08 | 704 | 0.7+ | 0.5+ | 2005 06 10 | 704 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2005 05 08 | 704 | 0.6− | 0.5+ | 2005 06 10 | 704 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2005 05 08 | 704 | 1.2− | 0.4+ | 2005 06 10 | 704 | 0.3+ | 0.5− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2005 05 08 | 704 | (1.8+ | 0.2−) | 2005 06 11 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.5+ |
| 2005 05 12 | 704 | 0.2+ | 0.2− | 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 703 | 0.9+ | 2.9+ |
| 2005 05 12 | 704 | 0.0 | 0.4+ | 2005 06 11 | 691 | 0.2+ | 0.0 | 2006 11 01 | 703 | 0.4− | 0.5− |
| 2005 05 12 | 704 | 0.2+ | 1.1+ | 2005 06 15 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 703 | 1.6− | 1.1+ |
| 2005 05 12 | 704 | 0.4+ | 1.3+ | 2005 06 15 | 691 | 0.6+ | 0.1+ | 2006 11 01 | 703 | 1.0+ | 1.0+ |

**(145194)∗ 2005 JM$_{29}$ = 2001 MT$_{27}$ = 2004 CE$_{115}$**

Discovered 2005 May 3 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77202)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.24390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22775814 | $\omega$ | 65.19920 | | +0.14776529 | +0.98209014 | |
| $a$ | 2.6555436 | $\Omega$ | 213.94939 | | −0.96608869 | +0.11802217 | |
| $e$ | 0.1622566 | $i$ | 12.08228 | | −0.21175000 | +0.14686635 | |
| $P$ | 4.33 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.2− | 0.1+ | 2005 05 16 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2000 03 09 | 704 | 0.2− | 0.9− | 2005 06 01 | 608 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2000 03 09 | 704 | 1.1+ | 0.1+ | 2005 06 01 | 608 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2000 03 09 | 704 | 0.6− | 0.6+ | 2005 06 01 | 608 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 06 21 | 704 | 0.1+ | 0.3+ | 2005 06 02 | 703 | 0.7− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2001 06 21 | 704 | 0.1+ | 1.2− | 2005 06 02 | 703 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 2001 06 21 | 704 | 0.5+ | 0.2+ | 2005 06 02 | 703 | 0.8− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.4+ |
| 2001 06 21 | 704 | 0.3− | 0.2− | 2005 06 02 | 703 | 0.7− | 0.4+ | 2006 10 21 | 703 | 0.7− | 0.6+ |
| 2001 06 25 | 608 | 0.1+ | 1.1− | 2005 06 03 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.7− |
| 2001 06 25 | 608 | 0.3+ | 0.7− | 2005 06 03 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 06 25 | 608 | 0.7+ | 1.0− | 2005 06 03 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.3+ | 0.9− | 2005 06 03 | E12 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.7− | 2005 06 03 | E12 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.6− | 0.0 | 2005 06 03 | E12 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2005 06 03 | E12 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 02 12 | 644 | 0.3+ | 0.7+ | 2005 06 08 | 691 | 0.2+ | 0.0 | 2006 10 27 | 683 | 0.4− | 0.9− |
| 2004 02 12 | 644 | 0.4+ | 0.8+ | 2005 06 08 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 683 | 0.1+ | 0.9+ |
| 2004 02 12 | 644 | 0.7+ | 0.7+ | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 10 28 | 683 | 0.9− | 1.4+ |
| 2004 02 14 | 699 | 0.5+ | 1.2+ | 2005 06 10 | 704 | (0.9+ | 2.6+) | 2006 10 28 | 683 | 0.4+ | 1.4+ |
| 2004 02 14 | 699 | 0.2+ | 0.8+ | 2005 06 10 | 704 | 1.2+ | 0.5− | 2006 10 28 | G96 | 0.6+ | 0.5− |
| 2004 02 14 | 699 | (0.2− | 1.9+) | 2005 06 10 | 704 | 0.3− | 0.6− | 2006 10 28 | 683 | (0.5+ | 1.7+) |
| 2004 02 14 | 699 | 1.0− | 0.6+ | 2005 06 10 | 704 | 0.4+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.6− |
| 2005 02 10 | 809 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.5− |
| 2005 02 10 | 809 | 0.2− | 0.1+ | 2005 06 13 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2005 02 10 | 809 | 0.0 | 0.1+ | 2005 06 13 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 2005 05 03 | 703 | 0.5− | 0.6+ | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.2+ |
| 2005 05 03 | 703 | 0.1+ | 0.4− | 2005 06 17 | 691 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2005 05 03 | 704 | 0.1+ | 1.0+ | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2005 05 03 | 703 | 0.7− | 0.1+ | 2005 07 27 | 644 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2005 05 03 | 704 | 0.3+ | 0.9+ | 2005 07 27 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2005 05 03 | 703 | 0.6− | 0.4− | 2005 07 27 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2005 05 03 | 704 | 0.4− | 0.8+ | 2006 09 20 | 699 | 0.3− | 1.1+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2005 05 03 | 704 | 0.3− | 0.9+ | 2006 09 20 | 699 | 1.1− | 0.8+ | 2006 11 13 | G96 | (1.8− | 0.1+) |
| 2005 05 03 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 1.2− | 0.8+ | 2006 11 13 | G96 | 0.3− | 1.1+ |
| 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.8− | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2005 05 08 | 691 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.3+ |
| 2005 05 08 | 704 | 0.2− | 1.4+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2005 05 08 | 691 | 0.7+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2005 05 08 | 704 | 0.4+ | 1.0+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2005 05 08 | 704 | 0.0 | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.6− |
| 2005 05 08 | 704 | 0.0 | 1.3+ | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 2005 05 16 | 704 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2005 05 16 | 704 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2005 05 16 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.5+ | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2005 05 16 | 704 | 0.5+ | 0.3− | 2006 10 19 | 644 | 0.8− | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |

**(145195)∗ 2005 JM$_{30}$**

Discovered 2005 May 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.35192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21654075 | $\omega$ | 148.19116 | | +0.94069797 | +0.33866424 | |
| $a$ | 2.7464791 | $\Omega$ | 192.06219 | | −0.32775584 | +0.89218673 | |
| $e$ | 0.0292113 | $i$ | 5.44948 | | −0.08754104 | +0.29884673 | |
| $P$ | 4.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 06 | 910 | 0.3+ | 0.3− | 2005 05 09 | 699 | 0.9+ | 1.0− | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 1997 09 06 | 910 | 0.4+ | 0.2− | 2005 05 09 | 699 | 0.5− | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.4+ |
| 1997 09 06 | 910 | 0.3+ | 0.3− | 2005 05 09 | 699 | 0.5+ | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.3+ |
| 2002 10 31 | 608 | (1.6− | 2.4+) | 2005 05 09 | 699 | 0.9+ | 0.8+ | 2006 08 30 | 704 | 1.1+ | 0.4− |
| 2002 10 31 | 608 | 1.4− | 1.1+ | 2005 05 19 | G96 | 0.4− | 0.0 | 2006 09 12 | 699 | 0.0 | 1.5− |
| 2002 10 31 | 608 | 0.6− | 1.6+ | 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 09 12 | 699 | 1.1+ | 0.3+ |
| 2002 11 06 | 704 | 1.0− | 0.6+ | 2005 05 19 | G96 | 0.7− | 0.1+ | 2006 09 12 | 699 | 0.8+ | 1.0+ |
| 2002 11 06 | 704 | (0.4− | 2.2+) | 2006 08 24 | 704 | 0.1− | 1.3+ | 2006 09 12 | 699 | 0.7− | 0.3+ |
| 2002 11 06 | 704 | 0.4− | 1.6+ | 2006 08 24 | 704 | 0.5+ | 0.5− | 2006 09 14 | 703 | 0.2+ | 0.2− |
| 2002 11 22 | 644 | 0.3− | 1.1+ | 2006 08 24 | 704 | 0.2+ | 1.0+ | 2006 09 14 | 703 | 0.2+ | 0.1− |
| 2002 11 22 | 644 | 0.2− | 0.9+ | 2006 08 24 | 704 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.4− | 0.4+ |
| 2002 11 22 | 644 | 0.3− | 0.9+ | 2006 08 28 | 699 | 0.2− | 1.3+ | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2004 01 23 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 699 | (2.2+ | 0.9+) | 2006 09 18 | 703 | 0.0 | 0.4− |
| 2004 01 23 | 704 | 0.5+ | 1.2+ | 2006 08 28 | 699 | 0.1− | 0.7+ | 2006 09 18 | 703 | 1.7− | 0.7+ |
| 2004 01 23 | 704 | 1.1+ | 0.7+ | 2006 08 28 | 699 | 0.9+ | 1.3+ | 2006 09 18 | 703 | 0.0 | 0.6− |
| 2004 03 10 | 644 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 0.5− | 0.5− | 2006 09 18 | 703 | (3.7− | 3.4−) |
| 2004 03 10 | 644 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.8− | 0.6− | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2004 03 10 | 644 | 0.0 | 0.9+ | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2005 05 04 | 691 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 1.6− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2005 05 04 | 691 | 0.0 | 0.8+ | 2006 08 29 | 691 | 0.2+ | 0.1+ | | | | |
| 2005 05 04 | 691 | 0.0 | 0.6+ | 2006 08 29 | 691 | 0.2+ | 0.1+ | | | | |

**(145196)∗ 2005 JX$_{31}$ = 2002 TL$_{274}$**

Discovered 2005 May 4 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 77206)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.18939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22558587 | $\omega$ | 37.81189 | | −0.10494698 | +0.97806070 | |
| $a$ | 2.6725641 | $\Omega$ | 226.95821 | | −0.96188852 | −0.14577663 | |
| $e$ | 0.0697632 | $i$ | 14.25414 | | −0.25250069 | +0.14881679 | |
| $P$ | 4.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.2+ | 1.1− | 2005 05 04 | G96 | 0.5− | 0.2− | 2005 06 04 | 704 | 0.8+ | 0.7+ |
| 2002 10 04 | 704 | (2.0+ | 0.7−) | 2005 05 04 | 608 | 0.1− | 0.7− | 2005 06 04 | 704 | 0.9+ | 0.2+ |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2005 05 04 | 608 | 0.1+ | 0.8− | 2005 06 04 | 704 | 0.2− | 0.4+ |
| 2002 10 04 | 704 | 0.0 | 0.7− | 2005 05 04 | 608 | 0.0 | 1.0− | 2005 06 04 | 703 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.2− | 0.8+ | 2005 05 08 | 699 | 0.2+ | 0.2+ | 2005 06 04 | 703 | (1.9− | 0.2+) |
| 2002 10 09 | 704 | 0.2+ | 0.9+ | 2005 05 08 | 699 | 0.4+ | 0.4− | 2005 06 04 | 703 | 0.6− | 0.5− |
| 2002 10 09 | 704 | 0.3+ | 0.4+ | 2005 05 08 | 699 | 0.2+ | 0.2− | 2005 06 04 | 703 | 0.9− | 0.1+ |
| 2002 10 09 | 704 | 0.3+ | 0.4+ | 2005 05 08 | E12 | 0.4− | 0.1− | 2005 06 11 | 291 | 0.1+ | 0.2− |
| 2002 10 09 | 704 | 0.5+ | 0.3− | 2005 05 08 | E12 | 0.3− | 0.1+ | 2005 06 11 | 291 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.4− | 1.0+ | 2005 05 08 | E12 | 0.1+ | 0.1− | 2005 06 11 | 291 | 0.4− | 0.2+ |
| 2002 10 12 | 704 | 0.5+ | 1.4+ | 2005 05 08 | E12 | 0.5− | 0.1+ | 2005 06 14 | 699 | 1.3+ | 0.6+ |
| 2002 10 12 | 704 | 0.8− | 1.3− | 2005 05 09 | 699 | 0.2+ | 0.6+ | 2005 06 14 | 699 | 0.1− | 0.5− |
| 2002 10 12 | 704 | 0.2− | 1.0− | 2005 05 09 | 699 | 0.2+ | 0.0 | 2005 06 14 | 699 | 0.6+ | 0.5+ |
| 2002 10 18 | 644 | 0.1− | 0.2+ | 2005 05 09 | 704 | 0.4− | 0.0 | 2005 06 14 | 699 | 0.5− | 0.2− |
| 2002 10 18 | 644 | 0.1− | 0.4+ | 2005 05 09 | 699 | 0.5− | 0.4+ | 2006 08 10 | 644 | 0.1− | 0.1+ |
| 2002 10 18 | 644 | 0.0 | 0.4+ | 2005 05 09 | 704 | 0.2− | 0.7+ | 2006 08 10 | 644 | 0.0 | 0.0 |
| 2002 10 30 | 608 | 1.1− | 0.4− | 2005 05 09 | 704 | 0.3+ | 0.8+ | 2006 08 10 | 644 | 0.1− | 0.0 |
| 2002 10 30 | 608 | 0.3− | 0.0 | 2005 05 09 | 699 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.4+ | 0.5+ |
| 2002 10 30 | 608 | 1.4− | 0.3− | 2005 05 09 | 704 | 0.6− | 0.9+ | 2006 09 21 | 699 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 1.1+ | 0.1+ | 2005 05 09 | 704 | 0.4− | 0.0 | 2006 09 21 | 699 | 0.3+ | 0.6+ |
| 2002 11 12 | 704 | 0.3+ | 0.4− | 2005 05 10 | 704 | 0.7+ | 0.4+ | 2006 09 21 | 699 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.1+ | 0.9− | 2005 05 10 | 704 | 0.3+ | 0.4− | 2006 09 22 | 703 | 0.2− | 0.2+ | | |
| 2002 11 22 | 644 | 0.1− | 1.2+ | 2005 05 10 | 704 | 0.5− | 0.9+ | 2006 09 22 | 703 | 0.3− | 0.2+ | | |
| 2002 11 22 | 644 | 0.1+ | 1.2+ | 2005 05 10 | 704 | 0.7+ | 0.6+ | 2006 09 22 | 703 | 0.3+ | 0.3− | | |
| 2002 11 22 | 644 | 0.2− | 1.1+ | 2005 05 10 | 704 | 0.9+ | 0.3+ | 2006 09 22 | 703 | 0.3− | 0.9− | | |
| 2004 01 12 | 644 | 0.3+ | 1.0+ | 2005 05 11 | 704 | 1.5− | 0.9+ | 2006 09 27 | 703 | 0.0 | 0.1+ | | |
| 2004 01 12 | 644 | 0.4+ | 1.1+ | 2005 05 11 | 704 | 0.6+ | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.2+ | | |
| 2004 01 12 | 644 | 0.1+ | 0.8+ | 2005 05 11 | 704 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.1− | 1.1− | | |
| 2005 04 03 | E12 | 0.4− | 0.1+ | 2005 05 11 | 704 | 0.0 | 0.5+ | 2006 09 27 | 703 | 0.1+ | 0.1+ | | |
| 2005 04 03 | E12 | 0.2− | 0.5− | 2005 05 12 | 691 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.8+ | 0.4+ | | |
| 2005 04 03 | E12 | 0.2+ | 1.0+ | 2005 05 12 | 691 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.8− | 0.8+ | | |
| 2005 04 03 | E12 | 0.0 | 0.1− | 2005 05 12 | 704 | (1.6+ | 0.7+) | 2006 09 29 | 699 | 1.0− | 1.2+ | | |
| 2005 05 04 | 699 | 0.4+ | 0.4− | 2005 05 12 | 691 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.8− | | |
| 2005 05 04 | 704 | 0.1+ | 0.3+ | 2005 05 12 | 704 | (2.4+ | 1.0−) | 2006 10 11 | 644 | 0.2+ | 0.1− | | |
| 2005 05 04 | 699 | 0.5− | 0.5− | 2005 05 12 | 704 | (2.5+ | 0.7−) | 2006 10 11 | 644 | 0.4+ | 0.2− | | |
| 2005 05 04 | 704 | 0.4+ | 1.3− | 2005 05 19 | 644 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.4+ | 0.1+ | | |
| 2005 05 04 | 699 | 0.3+ | 0.0 | 2005 05 19 | 644 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.0 | | |
| 2005 05 04 | 704 | 0.0 | 0.7+ | 2005 05 19 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 0.2− | | |
| 2005 05 04 | G96 | 0.4− | 0.8− | 2005 05 30 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.6+ | | |
| 2005 05 04 | 704 | 0.5+ | 0.4− | 2005 05 30 | 699 | 1.2+ | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.8+ | | |
| 2005 05 04 | G96 | 0.5− | 0.2− | 2005 05 30 | 699 | 0.5+ | 0.5+ | | | | | | |
| 2005 05 04 | G96 | 0.5− | 0.4− | 2005 05 30 | 699 | 1.4+ | 0.1− | | | | | | |

**(145197)∗ 2005 JY$_{31}$ = 2003 YM$_{24}$**

Discovered 2005 May 4 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. A. Doppler (*MPO* 77206)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 111.46537 | | (2000.0) | | | |
| $n$ | 0.23228366 | $\omega$ | 13.63956 | | −0.65196070 | +0.75781114 |
| $a$ | 2.6209391 | $\Omega$ | 215.68107 | | −0.69977831 | −0.61447362 |
| $e$ | 0.0457059 | $i$ | 2.54260 | | −0.29198897 | −0.21941845 |
| $P$ | 4.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 691 | 0.9+ | 0.0 | 2004 01 16 | 644 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.2− | 0.0 | | |
| 1998 10 01 | 691 | 0.8+ | 0.2− | 2005 01 17 | 809 | 0.6+ | 0.1− | 2005 05 13 | 704 | (1.6+ | 0.1+) | | |
| 1998 10 01 | 691 | 0.9+ | 0.3− | 2005 01 17 | 809 | 0.7+ | 0.2+ | 2005 05 13 | G96 | 0.3− | 0.1+ | | |
| 1998 10 12 | 691 | 0.6− | 0.2+ | 2005 01 17 | 809 | 0.2+ | 0.2+ | 2005 05 13 | G96 | 0.4− | 0.0 | | |
| 1998 10 12 | 691 | 0.9− | 0.0 | 2005 03 11 | G96 | 0.1− | 0.2− | 2005 05 13 | G96 | 0.1− | 0.0 | | |
| 1998 10 12 | 691 | 1.0− | 0.1− | 2005 03 11 | G96 | 1.1+ | 0.2+ | 2006 08 19 | A50 | 0.1+ | 0.0 | | |
| 2000 02 06 | 704 | 0.3− | 0.1− | 2005 04 02 | G96 | 0.1+ | 0.3− | 2006 08 23 | 807 | 0.4− | 0.3+ | | |
| 2000 02 06 | 704 | 0.2+ | 0.8+ | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 08 23 | 807 | 0.2− | 0.4+ | | |
| 2000 02 06 | 704 | 1.4+ | 1.2+ | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.7+ | | |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2005 04 02 | G96 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.6+ | | |
| 2002 10 04 | 644 | 0.0 | 0.6+ | 2005 05 04 | G96 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.4+ | | |
| 2002 10 04 | 644 | 0.0 | 0.6+ | 2005 05 04 | G96 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.6+ | | |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2005 05 04 | G96 | 0.3− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.4+ | | |
| 2003 12 17 | 691 | 0.0 | 0.0 | 2005 05 04 | G96 | 0.1+ | 0.0 | 2006 08 29 | 691 | 0.2− | 0.5+ | | |
| 2003 12 17 | 691 | 0.1+ | 0.3+ | 2005 05 04 | E12 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.4+ | | |
| 2003 12 19 | 704 | (1.3+ | 1.6−) | 2005 05 04 | E12 | 0.2− | 1.0+ | 2006 08 29 | D35 | 0.2+ | 0.2+ | | |
| 2003 12 19 | 704 | 0.5+ | 0.6+ | 2005 05 04 | E12 | 0.0 | 0.9+ | 2006 08 29 | D35 | 0.3+ | 0.4+ | | |
| 2003 12 19 | 704 | 0.2− | 0.1+ | 2005 05 04 | E12 | 0.2+ | 0.5+ | 2006 08 29 | D35 | 0.3+ | 0.1+ | | |
| 2003 12 23 | 704 | 0.5− | 0.2+ | 2005 05 08 | 699 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.0 | | |
| 2003 12 23 | 704 | 0.6− | 0.2− | 2005 05 08 | 699 | (1.6− | 1.2+) | 2006 09 28 | G96 | 0.1− | 0.2+ | | |
| 2003 12 23 | 704 | 0.6+ | 0.4+ | 2005 05 08 | 699 | 0.8+ | 1.0+ | 2006 09 28 | G96 | 0.0 | 0.3+ | | |
| 2003 12 23 | 704 | 0.1+ | 0.4+ | 2005 05 08 | 699 | 1.0− | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.2+ | | |
| 2003 12 23 | 704 | 0.1− | 0.1+ | 2005 05 09 | 704 | 0.2− | 1.5+ | 2006 11 16 | G96 | 0.2+ | 0.1+ | | |
| 2003 12 29 | 691 | 0.1+ | 0.3+ | 2005 05 09 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.3− | | |
| 2003 12 29 | 691 | 0.0 | 0.5+ | 2005 05 09 | 704 | 0.1− | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2003 12 29 | 691 | 0.0 | 0.3+ | 2005 05 13 | 704 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.7− | 0.2− | | |
| 2004 01 16 | 644 | 0.1− | 0.4+ | 2005 05 13 | 704 | 1.4+ | 0.1+ | | | | | | |
| 2004 01 16 | 644 | 0.3− | 0.1+ | 2005 05 13 | 704 | (1.9+ | 0.4+) | | | | | | |

**(145198)∗ 2005 JP$_{32}$**

Discovered 2005 May 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.84731 | | (2000.0) | | | |
| $n$ | 0.27210573 | $\omega$ | 19.60119 | | −0.47231379 | +0.87900179 |
| $a$ | 2.3585455 | $\Omega$ | 222.28365 | | −0.82111214 | −0.46575066 |
| $e$ | 0.1196768 | $i$ | 5.57721 | | −0.32045988 | −0.10213805 |
| $P$ | 3.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 691 | 0.2− | 0.2− | 2005 05 04 | 704 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 1999 12 12 | 691 | 0.1− | 0.1+ | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 1999 12 12 | 691 | 0.4+ | 0.3− | 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.4+ | | |
| 2001 02 19 | 608 | 0.1− | 1.2+ | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ | | |
| 2001 02 19 | 608 | 0.3− | 1.4+ | 2005 05 08 | G96 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | | |
| 2001 02 19 | 608 | 0.6− | 1.5+ | 2005 05 09 | 704 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.4+ | | |
| 2001 03 21 | 608 | 0.6+ | 0.6− | 2005 05 09 | 704 | 0.1+ | 0.5− | 2006 10 17 | 691 | 0.2− | 0.0 | | |
| 2001 03 21 | 608 | 0.5+ | 0.7− | 2005 05 09 | 704 | 0.9+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.4+ | | |
| 2001 03 21 | 608 | 0.6+ | 0.2− | 2005 05 15 | A50 | (1.7+ | 1.5+) | 2006 10 17 | 703 | 0.9+ | 0.8− | | |
| 2002 08 12 | 704 | 0.5+ | 0.0 | 2005 06 04 | 703 | 0.6− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.8+ | | |
| 2002 08 12 | 704 | 1.2+ | 0.7− | 2005 06 04 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.9− | | |
| 2002 08 12 | 704 | 1.1+ | 0.4− | 2005 06 04 | 703 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.3+ | 1.4− | | |
| 2002 08 12 | 704 | 0.5+ | 0.2− | 2005 06 04 | 703 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2002 08 12 | 704 | (2.1+ | 0.8−) | 2005 06 04 | 704 | 0.9− | 0.8− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2002 08 12 | 608 | 0.5− | 1.3− | 2005 06 04 | 703 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.2− | | |
| 2002 08 12 | 608 | 0.3− | 0.5− | 2005 06 04 | 704 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.9+ | | |
| 2002 08 12 | 608 | 0.2+ | 1.0− | 2005 06 04 | 704 | (0.4+ | 1.6+) | 2006 10 21 | 703 | 0.8− | 0.7+ | | |
| 2002 09 06 | 704 | 0.2− | 0.7+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 1.0− | | |
| 2002 09 06 | 704 | 0.7− | 0.7+ | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.1+ | | |
| 2002 09 06 | 704 | 0.6− | 0.0 | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2002 09 06 | 704 | 0.4− | 0.1+ | 2005 06 14 | 691 | 0.8+ | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.0 | | |
| 2002 09 06 | 704 | 0.1− | 0.2− | 2005 06 14 | 691 | 0.6− | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.1− | | |
| 2003 12 22 | 704 | (0.4+ | 2.6+) | 2005 06 14 | 691 | 0.8+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.1− | | |
| 2003 12 22 | 704 | (0.7+ | 1.7+) | 2005 06 23 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.6+ | | |
| 2003 12 22 | 704 | 0.1+ | 0.8+ | 2005 06 23 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.1− | | |
| 2003 12 22 | 704 | 0.2+ | 0.6+ | 2005 06 23 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2005 04 11 | G96 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.8+ | 0.7+ | | |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 2.3− | 1.0− | | |
| 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 2.6+ | 1.9+ | | |
| 2005 04 11 | G96 | 0.6− | 0.0 | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.4− | 0.2+ | | |
| 2005 05 04 | 704 | 0.4− | 0.3− | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.5+ | | |
| 2005 05 04 | 704 | 0.0 | 0.4+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.3− | 0.2+ | | |
| 2005 05 04 | 704 | 0.3− | 0.8− | 2006 10 11 | 644 | 0.2− | 0.2+ | | | | | | |

**(145199)∗ 2005 JQ$_{32}$ = 2001 WM$_{52}$**

Discovered 2005 May 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 77207)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.51003 | | (2000.0) | | | |
| $n$ | 0.17566316 | $\omega$ | 41.54948 | | −0.05470927 | +0.98448596 |
| $a$ | 3.1575404 | $\Omega$ | 226.05877 | | −0.96629433 | −0.09426630 |
| $e$ | 0.2258448 | $i$ | 13.38738 | | −0.25155947 | +0.14799077 |
| $P$ | 5.61 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.2+ | 0.2− | 2005 05 09 | 704 | 0.1+ | 0.5− | 2006 09 16 | 703 | 0.1+ | 0.4− | | |
| 2000 08 31 | 704 | 0.2+ | 0.1+ | 2005 05 09 | 704 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.2− | | |
| 2000 08 31 | 704 | 0.0 | 0.8− | 2005 05 09 | 704 | 0.2+ | 0.3− | 2006 09 16 | 703 | 0.4+ | 0.7− | | |
| 2000 08 31 | 704 | 0.6+ | 0.1− | 2005 05 09 | 704 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.3− | 0.5− | | |
| 2000 08 31 | 704 | 0.3− | 0.9− | 2005 05 09 | 704 | 0.3− | 0.5− | 2006 09 16 | 703 | 0.6+ | 0.1− | | |
| 2000 09 23 | 704 | 1.0− | 1.5+ | 2005 05 18 | 644 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.7− | | |
| 2000 09 23 | 704 | 0.6− | 0.4+ | 2005 05 18 | 644 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.5− | | |
| 2000 09 23 | 704 | 0.3+ | 0.8+ | 2005 05 18 | 644 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.3+ | 0.6+ | | |
| 2001 10 15 | 291 | 0.3+ | 0.2+ | 2005 06 02 | E12 | 0.2+ | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.3− | | |
| 2001 10 15 | 291 | 0.8− | 0.5+ | 2005 06 02 | E12 | 0.2− | 0.3− | 2006 09 27 | 703 | 0.4− | 0.0 | | |
| 2001 10 15 | 291 | 0.9+ | 0.2+ | 2005 06 02 | E12 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.6+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.0 | 0.1− | 2005 06 02 | E12 | 0.2− | 0.0 | 2006 09 30 | 683 | 0.7− | 1.3− |
| 2001 10 25 | 704 | 0.4− | 0.5+ | 2005 06 04 | 703 | 0.4− | 0.3− | 2006 09 30 | 683 | (0.3− | 2.4−) |
| 2001 10 25 | 704 | 0.3+ | 1.5+ | 2005 06 04 | 703 | 0.3− | 0.4− | 2006 09 30 | 683 | 0.4− | 0.3+ |
| 2001 11 19 | 704 | 1.0− | 0.2+ | 2005 06 04 | 703 | 0.3− | 0.7− | 2006 10 03 | 703 | 0.3+ | 0.2− |
| 2001 11 19 | 704 | 0.1+ | 0.2− | 2005 06 04 | 703 | 0.3− | 0.6− | 2006 10 03 | 703 | 0.6+ | 0.1− |
| 2001 11 19 | 704 | 0.3− | 0.6+ | 2005 06 05 | 704 | 0.7+ | 0.6+ | 2006 10 03 | 703 | 1.2− | 0.2− |
| 2001 11 19 | 704 | 0.4+ | 0.3+ | 2005 06 05 | 704 | 0.4+ | 0.1+ | 2006 10 03 | 703 | 0.3− | 0.1− |
| 2001 11 19 | 704 | 0.8− | 0.7+ | 2005 06 05 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | (1.8+ | 0.6+) | 2005 06 05 | 704 | 0.6+ | 0.6− | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | (2.2+ | 0.2+) | 2005 06 05 | 704 | 0.9+ | 0.6+ | 2006 10 19 | 691 | 0.3+ | 0.2+ |
| 2001 11 21 | 704 | (2.4+ | 1.6+) | 2005 06 08 | 691 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | (2.1+ | 0.2+) | 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2005 04 11 | G96 | 0.5− | 0.2− | 2005 06 08 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2005 04 11 | G96 | 0.5− | 0.2− | 2005 06 12 | 691 | 0.5+ | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.4− |
| 2005 04 11 | G96 | 0.2− | 0.0 | 2005 06 12 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2005 06 12 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2005 04 17 | E12 | 0.2+ | 0.6− | 2005 06 16 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2005 04 17 | E12 | 0.2+ | 0.1− | 2005 06 16 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2005 04 17 | E12 | 0.6+ | 0.5+ | 2005 06 16 | 691 | 1.2− | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2005 04 17 | E12 | 0.5− | 0.2+ | 2005 06 28 | 644 | 0.1− | 0.3− | 2006 10 23 | 703 | 1.4− | 0.8− |
| 2005 05 04 | 704 | 0.7+ | 0.2+ | 2005 06 28 | 644 | 0.0 | 0.1− | 2006 10 23 | 703 | 0.4− | 0.7+ |
| 2005 05 04 | 704 | 0.0 | 0.1− | 2005 06 28 | 644 | 0.2− | 0.2− | 2006 10 23 | 703 | 0.6− | 0.2− |
| 2005 05 04 | 704 | 0.1− | 0.6+ | 2006 08 29 | 699 | 0.5+ | 0.7+ | 2006 10 23 | 703 | 1.0+ | 1.2− |
| 2005 05 08 | G96 | 0.2− | 0.3− | 2006 08 29 | 699 | 1.3+ | 1.5+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2005 05 08 | G96 | 0.3− | 0.3− | 2006 08 29 | 699 | 0.9+ | 0.6− | 2006 10 28 | 691 | 0.4+ | 0.4+ |
| 2005 05 08 | G96 | 0.3− | 0.3− | 2006 08 29 | 699 | (1.7+ | 0.2+) | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2005 05 08 | G96 | 0.5− | 0.3− | 2006 09 16 | 703 | (1.7+ | 1.0−) | | | | |

**(145200)∗ 2005 JR$_{32}$ = 2001 FD$_{196}$ = 2002 TV$_{374}$**

Discovered 2005 May 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. A. Doppler (*MPO* 95677), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 118.68680 | | (2000.0) | | | |
| $n$ | 0.26864110 | $\omega$ | 198.87170 | | −0.23849626 | +0.97001545 |
| $a$ | 2.3787807 | $\Omega$ | 57.35533 | | −0.88370418 | −0.19678952 |
| $e$ | 0.2092175 | $i$ | 3.18564 | | −0.40272379 | −0.14263210 |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.4− | 0.2− | 2005 05 09 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 2001 03 03 | 704 | 0.7+ | 0.4+ | 2005 05 09 | G96 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.2− |
| 2001 03 03 | 704 | 0.1+ | 0.1+ | 2005 05 09 | G96 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2001 03 03 | 704 | 0.1+ | 0.8+ | 2005 05 09 | 704 | 0.5+ | 0.8− | 2006 10 15 | 691 | 0.3+ | 0.5+ |
| 2001 03 27 | 699 | 0.4+ | 0.2− | 2005 05 09 | G96 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2001 03 27 | 699 | 0.3+ | 1.1+ | 2005 05 09 | 704 | 0.1− | 1.3+ | 2006 10 15 | 691 | 0.5+ | 0.7+ |
| 2001 03 27 | 699 | (0.9− | 1.8+) | 2005 05 09 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2001 03 27 | 699 | 0.2− | 0.3− | 2005 05 09 | 704 | 0.1+ | 0.7− | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 05 10 | 703 | (1.5+ | 1.9+) | 2006 10 23 | 691 | 0.7− | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 05 10 | 703 | 0.1− | 0.7+ | 2006 10 31 | 691 | 0.6− | 0.4+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 10 | 703 | 0.5− | 0.6+ | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2005 05 10 | 703 | 0.4− | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2005 04 17 | 703 | 0.3− | 0.8+ | 2005 05 26 | 699 | 1.3+ | 0.7− | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2005 04 17 | 703 | 0.8− | 0.8+ | 2005 05 26 | 699 | (0.0 | 1.9+) | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2005 04 17 | 703 | 1.0− | 1.2+ | 2005 05 26 | 699 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.3− | 0.6− |
| 2005 04 17 | 703 | 1.4− | 0.2+ | 2005 05 26 | 699 | 1.0+ | 0.3− | 2006 11 13 | G96 | 0.6+ | 0.2− |
| 2005 05 04 | 704 | 0.7+ | 0.7+ | 2005 06 11 | 703 | 0.2+ | 0.7− | 2006 11 21 | G96 | 0.6+ | 0.2− |
| 2005 05 04 | 704 | 0.8+ | 0.3+ | 2005 06 11 | 703 | (1.7+ | 0.9−) | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2005 05 04 | G96 | 0.2+ | 0.3+ | 2005 06 11 | 703 | 0.1+ | 0.5− | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2005 05 04 | 704 | 0.6+ | 0.7+ | 2005 06 11 | 703 | 1.0− | 0.6− | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2005 05 04 | G96 | 0.6− | 0.8− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2005 05 04 | G96 | 0.9+ | 1.1− | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.5+ |
| 2005 05 04 | G96 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 1.2+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2005 05 09 | G96 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.2+ |

**(145201)∗ 2005 JQ$_{33}$ = 2004 BV$_{117}$**

Discovered 2005 May 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (*MPO* 77207)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 153.64878 | | (2000.0) | | | |
| $n$ | 0.22394502 | $\omega$ | 317.78596 | | −0.97735432 | +0.12870814 |
| $a$ | 2.6856028 | $\Omega$ | 230.40264 | | −0.08186767 | −0.96193273 |
| $e$ | 0.0318890 | $i$ | 12.59069 | | −0.19513126 | −0.24108013 |
| $P$ | 4.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 26 | 691 | 0.1+ | 0.2− | 2004 02 19 | 704 | 1.1− | 0.3+ | 2005 06 27 | 644 | 0.4+ | 0.5+ |
| 1998 11 26 | 691 | 0.0 | 0.0 | 2005 05 04 | G96 | 0.3+ | 0.4+ | 2005 06 27 | 644 | 0.5+ | 0.4+ |
| 1998 11 26 | 691 | 0.1− | 0.2+ | 2005 05 04 | G96 | 0.0 | 0.2+ | 2005 06 27 | 644 | 0.1+ | 0.3+ |
| 2003 12 26 | 608 | 0.1+ | 0.5− | 2005 05 04 | G96 | 0.3+ | 0.3+ | 2006 08 27 | 699 | 1.5− | 1.1+ |
| 2003 12 26 | 608 | 0.4− | 0.3− | 2005 05 04 | G96 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.9+ | 0.3+ |
| 2003 12 26 | 608 | 0.3− | 0.5− | 2005 05 09 | G96 | 0.1− | 0.4− | 2006 08 27 | 699 | 0.8+ | 0.7+ |
| 2004 01 29 | 704 | 0.2+ | 0.0 | 2005 05 09 | G96 | 0.0 | 0.5− | 2006 08 27 | 699 | 0.0 | 0.9+ |
| 2004 01 29 | 704 | 1.4+ | 0.9+ | 2005 05 09 | G96 | 0.0 | 0.3− | 2006 09 11 | 703 | 0.7− | 0.0 |
| 2004 01 29 | 704 | 0.0 | 0.2+ | 2005 05 09 | G96 | 0.0 | 0.5− | 2006 09 11 | 703 | 0.3− | 0.6− |
| 2004 01 29 | 704 | 0.0 | 0.7+ | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 09 11 | 703 | 0.4− | 0.1− |
| 2004 01 31 | 704 | 0.1− | 0.3+ | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 09 11 | 703 | 1.1− | 2.0− |
| 2004 01 31 | 704 | 0.6− | 0.9+ | 2005 05 13 | G96 | 0.1+ | 0.0 | 2006 09 18 | G92 | 0.8+ | 0.1+ |
| 2004 01 31 | 704 | 0.5− | 0.9+ | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 09 18 | G92 | 0.7+ | 0.8+ |
| 2004 01 31 | 704 | 0.3− | 0.9+ | 2005 06 16 | G96 | 0.7− | 0.5+ | 2006 09 18 | G92 | 0.1+ | 1.0+ |
| 2004 02 19 | 704 | 0.8+ | 0.2− | 2005 06 16 | G96 | 0.6+ | 0.4+ | 2006 09 19 | G92 | 0.0 | 0.7+ |
| 2004 02 19 | 704 | 1.3+ | 0.4+ | 2005 06 16 | G96 | 0.3− | 0.2+ | 2006 09 19 | G92 | 0.1+ | 0.3+ |
| 2004 02 19 | 704 | 0.7+ | 0.4+ | 2005 06 16 | G96 | 0.2− | 0.9+ | 2006 09 19 | G92 | 0.9− | 0.6+ |

**(145202)∗ 2005 JS$_{33}$ = 2003 AB$_{13}$**

Discovered 2005 May 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (*MPO* 77207)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.85287 | | (2000.0) | | | |
| $n$ | 0.21386298 | $\omega$ | 150.79444 | | +0.93984264 | −0.32391265 |
| $a$ | 2.7693571 | $\Omega$ | 228.52344 | | +0.27852524 | +0.91052285 |
| $e$ | 0.3006158 | $i$ | 8.32810 | | +0.19778650 | +0.25696056 |
| $P$ | 4.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 22 | 704 | 0.4− | 0.2− | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.4+ | 0.1− |
| 1997 10 22 | 704 | 0.2− | 0.4+ | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 09 30 | 699 | 0.3− | 0.0 |
| 1997 10 22 | 704 | 0.4− | 0.6− | 2005 06 13 | G96 | 0.4− | 0.2− | 2006 09 30 | 699 | 0.5+ | 0.1− |
| 1997 10 22 | 704 | 1.0+ | 0.4− | 2005 06 13 | G96 | 0.1+ | 0.0 | 2006 09 30 | 699 | 0.1+ | 0.1− |
| 1997 10 22 | 704 | 0.4− | 0.9− | 2005 06 13 | G96 | 0.7− | 0.1− | 2006 09 30 | 699 | 0.2− | 0.1− |
| 1997 10 29 | 704 | 1.1− | 1.3− | 2006 06 03 | 703 | 1.2− | 0.6− | 2006 10 01 | 703 | 0.4− | 0.9+ |
| 1997 10 29 | 704 | 0.7+ | 0.4− | 2006 06 03 | 703 | 0.2− | 0.1+ | 2006 10 01 | 703 | 0.2+ | 0.7− |
| 1997 10 29 | 704 | 1.4− | 0.1− | 2006 06 03 | 703 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.1+ | 0.3− |
| 1997 10 29 | 704 | 1.2− | 0.1+ | 2006 06 03 | 703 | 1.1− | 0.1− | 2006 10 01 | 703 | 0.3− | 0.3− |
| 1997 10 29 | 704 | 0.8+ | 0.6− | 2006 07 21 | 704 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.6+ | 0.8+ |
| 1997 10 29 | 566 | 0.8+ | 0.5− | 2006 07 21 | 704 | 0.2+ | 0.1− | 2006 10 01 | 704 | (1.6+ | 0.3−) |
| 1997 10 29 | 566 | 0.6+ | 0.1− | 2006 07 21 | 704 | 0.1+ | 1.2+ | 2006 10 01 | 704 | 0.8+ | 0.2+ |
| 1997 10 29 | 566 | 0.5+ | 0.1− | 2006 08 21 | H51 | 0.2+ | 0.3− | 2006 10 01 | 704 | 0.7+ | 0.2+ |
| 1997 10 29 | 566 | 0.8+ | 0.2− | 2006 08 21 | H51 | 0.1+ | 0.3− | 2006 10 01 | 704 | 0.6+ | 0.2+ |
| 1997 10 29 | 566 | 1.1+ | 0.5− | 2006 08 21 | H51 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 1997 10 29 | 566 | 0.1+ | 0.2− | 2006 08 27 | 699 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 1997 10 30 | 704 | (2.5+ | 3.2−) | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 1997 10 30 | 704 | (2.4+ | 2.4−) | 2006 08 27 | 699 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 1997 10 30 | 704 | (2.3+ | 1.7−) | 2006 08 27 | 699 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 1997 10 30 | 704 | (2.1+ | 1.9−) | 2006 08 28 | 704 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 1997 10 31 | 704 | 0.0 | 1.7+ | 2006 08 28 | 704 | 1.0− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 1997 10 31 | 704 | (0.5− | 2.8+) | 2006 08 28 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.5− |
| 1997 10 31 | 704 | (0.3+ | 3.3+) | 2006 08 28 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.9− | 0.1− |
| 1997 10 31 | 704 | (1.3+ | 3.5+) | 2006 08 28 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 1997 10 31 | 704 | 1.0+ | 0.2+ | 2006 08 30 | 699 | 0.4+ | 0.2+ | 2006 10 29 | 703 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | (2.7− | 0.7+) | 2006 08 30 | 699 | 0.3+ | 0.3+ | 2006 10 29 | 703 | 0.0 | 0.1− |
| 1997 11 06 | 704 | (2.4− | 0.8+) | 2006 08 30 | 699 | 0.0 | 0.1+ | 2006 10 29 | 703 | 0.1+ | 0.6− |
| 1997 11 06 | 704 | 1.7− | 0.4− | 2006 08 30 | 699 | 0.1+ | 0.1− | 2006 10 29 | 703 | 0.2− | 0.1− |
| 1997 11 06 | 704 | (3.1− | 1.3+) | 2006 09 11 | 703 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.6+ | 0.8+ |
| 1999 03 21 | 645 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.4− | 0.3− | 2006 11 10 | 704 | 0.5+ | 0.9+ |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2006 09 11 | 703 | 0.2− | 0.4− | 2006 11 10 | 704 | 0.7− | 0.5+ |
| 2003 01 01 | 704 | 0.5− | 0.7+ | 2006 09 11 | 703 | 0.0 | 0.4− | 2006 11 10 | 704 | 0.5+ | 0.6+ |
| 2003 01 01 | 704 | 0.5+ | 0.5− | 2006 09 13 | 127 | 0.0 | 0.4− | 2006 11 10 | 704 | 0.4+ | 1.2+ |
| 2003 01 01 | 704 | 0.6+ | 0.2− | 2006 09 13 | 127 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.1+ |
| 2003 01 01 | 704 | 1.3+ | 0.3+ | 2006 09 13 | 127 | 0.4+ | 0.2− | 2006 11 15 | 704 | 0.2− | 0.1+ |
| 2003 01 05 | 704 | 1.1− | 0.9+ | 2006 09 13 | 127 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.5− | 0.3+ |
| 2003 01 05 | 704 | 0.9− | 1.0+ | 2006 09 15 | 704 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.1− | 0.7+ |
| 2003 01 05 | 704 | (1.6− | 1.3+) | 2006 09 15 | 704 | 0.5− | 0.2+ | 2006 11 15 | 704 | 0.4+ | 0.9+ |
| 2003 01 05 | 704 | (2.8− | 0.9+) | 2006 09 15 | 704 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2003 01 27 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2003 01 27 | 704 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.5− | 0.7+ |
| 2003 01 27 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.8− | 0.4− |
| 2005 05 04 | G96 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 2005 05 04 | G96 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2005 05 04 | G96 | 0.0 | 0.2− | 2006 09 20 | 127 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.9− | 0.4− |
| 2005 05 04 | G96 | 0.4+ | 0.4+ | 2006 09 20 | 127 | 0.4+ | 0.6+ | 2006 11 19 | 704 | 0.6+ | 0.3− |
| 2005 05 09 | G96 | 0.4− | 0.2− | 2006 09 20 | 127 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.6− |
| 2005 05 09 | G96 | 0.2+ | 0.0 | 2006 09 21 | 127 | 0.8− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2005 05 09 | G96 | 0.3− | 0.1− | 2006 09 21 | 127 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2005 05 09 | G96 | 0.5− | 0.2− | 2006 09 21 | 127 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2005 05 13 | G96 | 0.3− | 0.1− | 2006 09 23 | 106 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2005 05 13 | G96 | 0.2− | 0.0 | 2006 09 23 | 106 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.4− | 0.8+ |
| 2005 05 13 | G96 | 0.0 | 0.6+ | 2006 09 23 | 106 | 0.2+ | 0.4− | 2006 11 22 | 704 | 1.1− | 0.9+ |
| 2005 05 13 | G96 | 0.8+ | 0.8+ | 2006 09 23 | 106 | 0.4+ | 0.1+ | 2006 11 22 | 704 | 0.9− | 0.2+ |
| 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.5+ | 2006 11 22 | 704 | 1.5− | 1.9+ |
| 2005 06 10 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.8+ | 0.5+ | | | | |

**(145203)∗ 2005 JZ$_{33}$ = 2004 CF$_{24}$**

Discovered 2005 May 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77208)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.16655 | | (2000.0) | | | |
| $n$ | 0.21249599 | $\omega$ | 184.21002 | | +0.63366070 | +0.77355784 |
| $a$ | 2.7812214 | $\Omega$ | 125.11098 | | −0.70944987 | +0.58574530 |
| $e$ | 0.0553583 | $i$ | 0.63579 | | −0.30847205 | +0.24188989 |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.0 | 0.1− | 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 09 12 | 703 | (1.5+ | 3.2−) |
| 1995 03 02 | 691 | 0.1− | 0.0 | 2005 05 08 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 1995 03 02 | 691 | 0.5+ | 0.1− | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.8+ | 0.1+ |
| 2000 04 06 | 704 | 0.6+ | 0.9+ | 2005 06 13 | G96 | 0.3− | 0.2+ | 2006 09 19 | 703 | 1.1− | 0.5+ |
| 2000 04 06 | 704 | 0.0 | 0.0 | 2005 06 13 | G96 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.8+ | 0.6− |
| 2000 04 06 | 704 | 0.5+ | 0.4+ | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.1+ |
| 2000 04 06 | 704 | 0.0 | 0.8− | 2005 06 13 | G96 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2000 04 29 | 691 | 0.7− | 0.5− | 2005 06 15 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.6+ | 0.2+ |
| 2000 04 29 | 691 | 0.8− | 0.1− | 2005 06 15 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2000 04 29 | 691 | 0.2− | 0.6− | 2005 06 15 | 691 | 0.3+ | 0.8+ | 2006 09 30 | 703 | 1.2+ | 0.6− |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 08 27 | 699 | (0.6− | 2.7+) | 2006 09 30 | 703 | 0.8− | 0.0 |
| 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 08 27 | 699 | 1.1− | 0.9+ | 2006 09 30 | 703 | 0.6+ | 0.0 |
| 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 1.0− | 0.1+ | 2006 09 30 | 703 | (0.2+ | 1.5−) |
| 2004 02 13 | 691 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.7− | 0.1− | 2006 10 19 | 695 | 0.2+ | 0.3+ |
| 2004 02 13 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 1.0− | 0.2− | 2006 10 19 | 695 | 0.3+ | 0.3+ |
| 2004 02 13 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 1.3− | 0.7− | 2006 10 20 | G96 | 0.4+ | 0.2+ |
| 2005 05 04 | G96 | 0.3+ | 0.1− | 2006 08 28 | 703 | (0.1+ | 1.7+) | 2006 10 20 | G96 | 0.2+ | 0.2+ |
| 2005 05 04 | G96 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.8+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2005 05 04 | G96 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.9− | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.2+ |
| 2005 05 04 | G96 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.2+ | 0.6− | | | | |
| 2005 05 08 | G96 | 1.4+ | 0.6+ | 2006 09 12 | 703 | 0.9+ | 0.1+ | | | | |

**(145204)∗ 2005 JT$_{34}$ = 1999 RO$_{191}$**

Discovered 2005 May 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77208)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 125.43383 | | (2000.0) | | | |
| $n$ | 0.28669906 | $\omega$ | 108.35320 | | −0.17912836 | +0.98249625 |
| $a$ | 2.2778155 | $\Omega$ | 151.17748 | | −0.93794575 | −0.15485880 |
| $e$ | 0.0861185 | $i$ | 6.08794 | | −0.29693570 | −0.10353684 |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 15 | 691 | 0.5− | 1.4+ | 2005 05 09 | 703 | 0.2− | 0.1− | 2005 06 23 | 644 | 0.3− | 0.1− |
| 1999 09 15 | 691 | 0.1+ | 0.3+ | 2005 05 09 | 703 | 0.0 | 0.3− | 2005 06 23 | 644 | 0.2− | 0.2− |
| 1999 09 15 | 691 | 0.7+ | 0.5+ | 2005 05 09 | 703 | 1.0− | 0.1+ | 2005 06 23 | 644 | 0.3− | 0.0 |
| 1999 09 16 | 691 | 0.4− | 0.1+ | 2005 05 09 | 703 | 0.8− | 0.2− | 2005 06 28 | 644 | 0.0 | 0.2− |
| 1999 09 16 | 691 | 0.4− | 0.2+ | 2005 05 28 | 599 | 0.2− | 0.1+ | 2005 06 28 | 644 | 0.3− | 0.0 |
| 1999 09 16 | 691 | 0.2− | 0.3+ | 2005 05 28 | 599 | 0.1+ | 0.1+ | 2005 06 28 | 644 | 0.1− | 0.1− |
| 2001 02 03 | 691 | 0.3+ | 0.4+ | 2005 05 28 | 599 | 0.0 | 0.1+ | 2005 06 28 | 644 | 0.3− | 0.0 |
| 2001 02 03 | 691 | 0.5+ | 0.4+ | 2005 05 29 | 599 | 0.3− | 0.1− | 2005 06 28 | 644 | 0.1− | 0.1− |
| 2001 02 03 | 691 | 0.4− | 0.3+ | 2005 06 02 | 703 | (1.8− | 0.4+) | 2005 06 28 | 644 | 0.3− | 0.0 |
| 2001 02 19 | 699 | 0.4− | 0.7+ | 2005 06 02 | 703 | 0.5− | 0.8− | 2005 07 12 | 291 | 0.7+ | 0.0 |
| 2001 02 19 | 699 | 1.1+ | 1.0+ | 2005 06 02 | 703 | 0.6− | 0.2− | 2005 07 12 | 291 | 0.7+ | 0.0 |
| 2001 02 19 | 699 | (2.2+ | 1.3+) | 2005 06 02 | 703 | 0.3− | 0.2− | 2005 07 12 | 291 | 0.7+ | 0.1+ |
| 2001 02 19 | 699 | (0.0 | 1.6+) | 2005 06 03 | 691 | (2.0− | 0.3−) | 2006 10 22 | 703 | 0.8+ | 1.2+ |
| 2001 03 26 | 608 | 0.2− | 0.5+ | 2005 06 03 | 691 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.0 | 1.2+ |
| 2001 03 26 | 608 | 0.2+ | 0.5+ | 2005 06 03 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.1+ |
| 2001 03 26 | 608 | 0.1− | 0.3+ | 2005 06 03 | E12 | 0.3− | 0.7+ | 2006 10 22 | 703 | 0.6+ | 0.4+ |
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2005 06 03 | E12 | 0.1− | 0.3− | 2006 11 19 | 703 | 0.6− | 0.5+ |
| 2002 08 27 | 644 | 0.6− | 0.0 | 2005 06 03 | E12 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.2+ | 0.4+ |
| 2002 08 27 | 644 | 0.3− | 0.0 | 2005 06 03 | E12 | 0.7− | 0.5+ | 2006 11 19 | 703 | (1.6− | 1.3+) |
| 2005 05 04 | 691 | 0.1− | 0.3+ | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.7− | 0.1− |
| 2005 05 04 | 691 | 0.2− | 0.0 | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.2+ |
| 2005 05 04 | 691 | 0.4+ | 0.5+ | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2005 05 08 | 691 | 0.7+ | 0.8+ | 2005 06 15 | 691 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2005 05 08 | 691 | 0.0 | 0.3+ | 2005 06 15 | 691 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.6− | 0.2− |
| 2005 05 08 | 691 | 0.1− | 0.2+ | 2005 06 15 | 691 | 0.1+ | 0.2− | | | | |

**(145205)∗ 2005 JP$_{36}$ = 1999 TP$_{168}$ = 2002 PE$_{12}$**

Discovered 2005 May 4 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 77209)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 290.64015 | | (2000.0) | | | |
| $n$ | 0.28116867 | $\omega$ | 205.70255 | | +0.15152862 | −0.98660710 |
| $a$ | 2.3075871 | $\Omega$ | 235.63751 | | +0.91903889 | +0.16311094 |
| $e$ | 0.0151042 | $i$ | 4.19451 | | +0.36387718 | −0.00111600 |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1− | 1.1− | 2005 05 04 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.4− | 0.5− | 2005 05 04 | 644 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.4− | 0.1+ | 2005 05 09 | G96 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.4+ | 0.1− | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 09 22 | 683 | 0.1+ | 0.2+ |
| 1999 10 10 | 704 | 1.2− | 0.1+ | 2005 05 09 | G96 | 0.1− | 0.1− | 2006 09 22 | 683 | 0.7− | 0.3+ |
| 1999 10 13 | 704 | 0.6+ | 0.3− | 2005 05 09 | G96 | 0.4− | 0.0 | 2006 09 22 | 683 | (1.7− | 0.6−) |
| 1999 10 13 | 704 | 0.2− | 0.3+ | 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 09 30 | 703 | 1.1+ | 0.3+ |
| 1999 10 13 | 704 | 0.1+ | 0.3+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.1− | 0.1+ |
| 1999 10 13 | 704 | 0.1− | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.7− |
| 1999 10 13 | 704 | 0.2− | 1.0+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.1− |
| 2002 08 05 | 644 | 0.2+ | 0.1+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2002 08 05 | 644 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 08 05 | 644 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 2002 08 07 | 644 | 0.2+ | 0.1+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2002 08 07 | 644 | 0.3− | 0.2+ | 2005 05 10 | 703 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2002 08 07 | 644 | 1.0+ | 0.3+ | 2005 05 10 | 703 | 0.6+ | 1.2+ | 2006 10 17 | 703 | 1.3− | 0.0 |
| 2003 12 23 | 704 | 0.2+ | 0.4+ | 2005 05 10 | 703 | 0.8− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.8+ | 0.6+ | 2005 05 10 | 703 | 1.0− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2003 12 23 | 704 | (1.9+ | 0.2−) | 2005 05 19 | 644 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2003 12 23 | 704 | 0.6+ | 0.0 | 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2004 01 28 | 691 | 0.2− | 0.3+ | 2005 05 19 | 644 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 01 28 | 691 | 0.0 | 0.4+ | 2005 06 06 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2004 01 28 | 691 | 0.1+ | 0.3+ | 2005 06 06 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2005 05 04 | 644 | 0.3− | 0.6+ | 2005 06 06 | 691 | 0.4+ | 0.1+ | | | | |

**(145206)∗ 2005 JQ$_{36}$ = 2001 FV$_{149}$ = 2005 HZ$_6$**

Discovered 2005 May 4 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 77210)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.47110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25763247 | $\omega$ | 17.32536 | | −0.20699682 | +0.97626574 | |
| $a$ | 2.4460706 | $\Omega$ | 240.76882 | | −0.90603594 | −0.21585682 | |
| $e$ | 0.1918822 | $i$ | 4.18597 | | −0.36912220 | −0.01763608 | |
| $P$ | 3.83 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 327 | 1.3− | 0.7− | 2005 05 09 | 704 | 0.0 | 0.5− | 2005 06 15 | 691 | 0.3+ | 0.3+ |
| 1998 09 14 | 327 | 0.2− | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2005 06 15 | 691 | 0.3+ | 0.0 |
| 1998 09 14 | 327 | 0.6+ | 0.3+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2005 06 15 | 691 | 0.3+ | 0.1+ |
| 2001 03 24 | 704 | 0.1− | 1.2+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.1+ |
| 2001 03 24 | 704 | 0.4+ | 0.2+ | 2005 05 10 | G96 | 0.1− | 0.0 | 2005 06 23 | 644 | 0.2− | 0.1+ |
| 2001 03 24 | 704 | 1.2+ | 0.5+ | 2005 05 11 | 644 | 0.3− | 0.1− | 2005 06 23 | 644 | 0.6− | 0.1+ |
| 2001 03 24 | 699 | 0.8− | 0.9+ | 2005 05 11 | 644 | 0.1− | 0.0 | 2005 06 27 | 644 | 0.0 | 0.1− |
| 2001 03 24 | 699 | (0.6+ | 2.5+) | 2005 05 11 | 644 | 0.1− | 0.1− | 2005 06 27 | 644 | 0.1+ | 0.1+ |
| 2001 03 24 | 699 | 0.3− | 0.6+ | 2005 05 14 | 704 | 0.7− | 1.2− | 2005 06 27 | 644 | 0.1+ | 0.1+ |
| 2001 03 24 | 699 | (1.9− | 1.8+) | 2005 05 14 | 704 | 0.2− | 1.3− | 2006 10 11 | 691 | 0.4+ | 0.1− |
| 2001 03 27 | 608 | 0.2− | 0.3− | 2005 05 14 | 704 | (0.3− | 1.6−) | 2006 10 11 | 691 | 0.1+ | 0.3− |
| 2001 03 27 | 608 | 0.2+ | 0.1+ | 2005 05 14 | 704 | 1.0− | 1.0− | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2001 03 27 | 608 | 0.2+ | 0.5+ | 2005 05 14 | 704 | (0.9+ | 1.6−) | 2006 10 15 | 691 | 0.2+ | 0.3− |
| 2001 04 23 | 704 | 0.6+ | 1.2+ | 2005 05 19 | 644 | 0.2+ | 0.3− | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 2001 04 23 | 704 | 0.2+ | 1.2+ | 2005 05 19 | 644 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.2+ |
| 2001 04 23 | 704 | 0.6+ | 0.5− | 2005 05 19 | 644 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.5+ | 0.1− |
| 2002 10 09 | 704 | (1.7− | 1.9+) | 2005 05 19 | 644 | 0.2+ | 0.5− | 2006 10 17 | 691 | 0.2+ | 0.6+ |
| 2002 10 09 | 704 | 0.6+ | 0.8+ | 2005 05 19 | 644 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2002 10 09 | 704 | 0.7+ | 0.8+ | 2005 05 19 | 644 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2005 04 30 | E12 | 0.6− | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2005 04 30 | E12 | 0.4+ | 0.6+ | 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.0 |
| 2005 04 30 | E12 | 0.5+ | 0.1+ | 2005 05 19 | 644 | 0.0 | 0.0 | 2006 10 21 | 691 | 1.0− | 0.0 |
| 2005 04 30 | E12 | 0.8− | 0.4− | 2005 05 30 | 699 | 1.2+ | 0.2+ | 2006 10 21 | 691 | 0.7− | 0.0 |
| 2005 05 04 | 704 | 0.8+ | 0.5+ | 2005 05 30 | 699 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.7− | 0.1+ |
| 2005 05 04 | 704 | 1.1− | 0.4− | 2005 05 30 | 699 | 0.6− | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 2005 05 04 | 704 | 1.2− | 0.2+ | 2005 05 30 | 699 | 0.4− | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2005 05 04 | 704 | 1.4− | 0.5+ | 2005 06 04 | 704 | 0.6+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2005 05 04 | 644 | 0.0 | 0.1− | 2005 06 04 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2005 05 04 | 644 | 0.1− | 0.2+ | 2005 06 04 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2005 05 04 | 644 | 0.2+ | 0.1− | 2005 06 04 | 704 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 1.1+ | 1.0+ |
| 2005 05 08 | E12 | 0.2+ | 0.4− | 2005 06 04 | 704 | 0.7+ | 0.4− | 2006 11 15 | 691 | 0.6− | 0.1− |
| 2005 05 08 | E12 | 0.1− | 0.3+ | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2005 05 08 | E12 | 0.1+ | 0.1+ | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2005 05 08 | E12 | 0.1+ | 0.4− | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.4− |
| 2005 05 09 | 704 | 0.3− | 1.0− | 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2005 05 09 | 704 | (0.3+ | 1.8−) | 2005 06 14 | G96 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2005 05 09 | 704 | 0.0 | 0.8− | 2005 06 14 | G96 | 0.1− | 0.4+ | | | | |
| 2005 05 09 | 704 | 0.3+ | 0.1− | 2005 06 14 | G96 | 0.0 | 0.6+ | | | | |

**(145207)∗ 2005 JS$_{36}$**

Discovered 2005 May 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.22259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26286992 | $\omega$ | 146.51174 | | +0.12696740 | +0.99114837 | |
| $a$ | 2.4134712 | $\Omega$ | 130.75098 | | −0.92092419 | +0.13231648 | |
| $e$ | 0.1785222 | $i$ | 2.93461 | | −0.36848055 | +0.01082847 | |
| $P$ | 3.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 1.9+ | 1.0− | 2005 05 08 | 704 | 0.1− | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.0 |
| 1998 10 12 | 699 | 0.6− | 0.3+ | 2005 05 08 | 704 | 0.2+ | 0.4+ | 2005 06 23 | 644 | 0.1− | 0.1+ |
| 1998 10 12 | 699 | 0.5− | 1.0+ | 2005 05 08 | 704 | 0.3− | 0.4+ | 2005 06 23 | 644 | 0.3− | 0.0 |
| 2001 03 20 | 699 | 0.4− | 0.4+ | 2005 05 12 | 704 | 0.2+ | 0.2− | 2005 06 23 | 644 | 0.2− | 0.0 |
| 2001 03 20 | 699 | 0.6− | 0.8+ | 2005 05 12 | 704 | 1.1− | 1.0+ | 2005 07 05 | 644 | 0.1+ | 0.1+ |
| 2001 03 20 | 699 | (0.5− | 1.7+) | 2005 05 12 | 704 | (1.6+ | 1.4+) | 2005 07 05 | 644 | 0.1+ | 0.1+ |
| 2001 03 20 | 699 | 0.3− | 0.7+ | 2005 05 12 | 704 | 0.5+ | 0.7+ | 2005 07 05 | 644 | 0.1− | 0.0 |
| 2001 03 29 | 704 | 1.1+ | 0.5+ | 2005 05 12 | 704 | 1.1− | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.1+ |
| 2001 03 29 | 704 | 0.4+ | 0.2+ | 2005 05 15 | G96 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.4+ |
| 2001 03 29 | 704 | 0.5− | 1.1+ | 2005 05 15 | G96 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.7− | 0.3+ | 2005 05 15 | G96 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.3+ |
| 2002 10 04 | 704 | (0.5− | 1.7+) | 2005 05 15 | G96 | 0.6− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | (1.1+ | 2.0+) | 2005 06 03 | 691 | 0.1+ | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 1.1− | 1.1+ | 2005 06 03 | 691 | 0.1+ | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.0 |
| 2004 01 31 | 691 | 0.8+ | 0.1− | 2005 06 03 | 691 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2004 01 31 | 691 | 0.5− | 0.2− | 2005 06 05 | 704 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 01 31 | 691 | 0.1+ | 0.1− | 2005 06 05 | 704 | 1.0+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2005 05 04 | 644 | 0.1− | 0.2+ | 2005 06 05 | 704 | 0.8+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2005 05 04 | 644 | 0.0 | 0.1+ | 2005 06 05 | 704 | 0.3− | 1.0− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2005 05 04 | 644 | 0.0 | 0.1+ | 2005 06 05 | 704 | 0.4+ | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2005 05 08 | 704 | 0.1− | 0.7− | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2005 05 08 | 704 | 0.2− | 0.3+ | 2005 06 08 | 691 | 0.0 | 0.0 | | | | |

**(145208)∗ 2005 JJ$_{38}$**

Discovered 2005 May 6 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.28324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22988499 | $\omega$ | 279.39915 | | +0.53086689 | +0.84387172 | |
| $a$ | 2.6391392 | $\Omega$ | 23.18493 | | −0.67904053 | +0.47853223 | |
| $e$ | 0.2762153 | $i$ | 11.40503 | | −0.50703482 | +0.24266731 | |
| $P$ | 4.29 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 01 | 691 | 1.0+ | 1.5+ | 2005 05 08 | E12 | 0.0 | 0.2− | 2006 10 29 | 704 | 0.3+ | 0.7+ |
| 1992 05 01 | 691 | 1.3+ | 0.4+ | 2005 05 08 | E12 | 0.5− | 0.0 | 2006 10 29 | 704 | 0.7+ | 0.9+ |
| 1992 05 01 | 691 | 1.2+ | 0.3+ | 2005 05 10 | 699 | 0.6+ | 0.0 | 2006 10 29 | 704 | 0.3− | 0.6+ |
| 1993 11 21 | 691 | 0.5− | 0.1− | 2005 05 10 | 699 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.1+ | 1.4+ |
| 1993 11 21 | 691 | 0.4− | 0.1− | 2005 05 10 | 699 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.8+ | 0.3+ |
| 1993 11 21 | 691 | 0.4− | 0.2− | 2005 05 10 | 699 | 0.2− | 0.3+ | 2006 11 02 | 703 | 1.1− | 1.0+ |
| 2000 03 04 | 704 | 0.2− | 0.8+ | 2005 05 12 | 703 | 0.5− | 0.4+ | 2006 11 02 | 703 | 1.0+ | 1.1+ |
| 2000 03 04 | 704 | 0.2− | 0.4− | 2005 05 12 | 703 | 0.5− | 0.8+ | 2006 11 02 | 703 | (2.1− | 2.8+) |
| 2000 03 04 | 704 | 0.3+ | 0.7+ | 2005 05 12 | 703 | 1.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2000 03 04 | 704 | 0.3− | 0.3+ | 2005 05 28 | E12 | (1.4+ | 1.9−) | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2004 02 14 | 704 | 0.0 | 1.1+ | 2005 05 28 | E12 | 1.3− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 2004 02 14 | 704 | 1.1− | 0.4+ | 2005 05 28 | E12 | 0.2+ | 0.7− | 2006 11 14 | 703 | 0.9+ | 0.1− |
| 2004 02 14 | 704 | 0.0 | 1.2+ | 2005 05 28 | E12 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.3+ |
| 2004 02 14 | 704 | 0.3+ | 1.2+ | 2005 06 02 | 699 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 1.1+ | 0.6+ |
| 2004 02 14 | 704 | 0.0 | 1.2+ | 2005 06 02 | 699 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.4− | 0.5+ |
| 2004 03 18 | 645 | 0.2− | 0.3− | 2005 06 02 | 699 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 645 | 0.1− | 0.2− | 2005 06 02 | 699 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2006 10 17 | A50 | 1.1− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 03 11 | G96 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.5+ | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2005 03 11 | G96 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.4− | 0.8+ | 2006 11 22 | 703 | 0.1− | 0.6+ |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2006 10 19 | 703 | 1.1− | 1.2+ | 2006 11 22 | 703 | 0.5+ | 0.4− |
| 2005 04 11 | 699 | 0.8− | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.4+ | 2006 11 22 | 703 | 0.3− | 0.0 |
| 2005 04 11 | 699 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.7+ | 2006 11 22 | 703 | 0.1− | 0.0 |
| 2005 04 11 | 699 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.3+ |
| 2005 04 11 | 699 | 0.7− | 0.1− | 2006 10 22 | 644 | 0.6+ | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 06 | 608 | 0.6+ | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.8+ | 2006 11 23 | 703 | 1.4− | 0.2+ |
| 2005 05 06 | 608 | 0.7+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.3+ | 0.4+ |
| 2005 05 06 | 608 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.7+ | | | | |
| 2005 05 08 | E12 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.2+ | | | | |

**(145209)∗ 2005 JY$_{38}$ = 1996 XR$_{36}$ = 2000 KE$_{23}$**

Discovered 2005 May 7 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86730)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.74933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19091960 | $\omega$ | 242.69728 | | +0.69715367 | +0.71657114 | |
| $a$ | 2.9870033 | $\Omega$ | 71.52062 | | −0.64912590 | +0.64419191 | |
| $e$ | 0.2703667 | $i$ | 1.35439 | | −0.30432274 | +0.26747444 | |
| $P$ | 5.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 14 | 691 | 0.0 | 0.1− | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.7− | 0.2+ |
| 1996 12 14 | 691 | 0.0 | 0.0 | 2005 06 08 | 701 | 0.7+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3− |
| 1996 12 14 | 691 | 0.1+ | 0.4− | 2005 06 08 | 701 | 0.2− | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 1996 12 17 | 691 | 0.2+ | 0.3− | 2005 06 08 | 701 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 1996 12 17 | 691 | 0.6− | 0.3− | 2005 06 12 | G96 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1996 12 17 | 691 | 0.1− | 0.3+ | 2005 06 12 | G96 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2000 05 28 | 704 | 0.9− | 0.7− | 2005 06 12 | G96 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2000 05 28 | 704 | 0.9− | 0.6− | 2005 06 12 | G96 | 0.6− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.9− |
| 2000 05 28 | 704 | 1.0− | 0.4− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.9− | 0.2− |
| 2000 05 28 | 704 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.3+ |
| 2000 05 28 | 704 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2000 05 29 | 704 | 1.2+ | 0.5− | 2006 09 23 | 691 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2000 05 29 | 704 | 0.8+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 05 29 | 704 | 0.8+ | 0.2− | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2000 05 29 | 704 | 1.0+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 2001 11 11 | 704 | (3.1+ | 1.1−) | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.3− | 0.2− |
| 2001 11 11 | 704 | (2.9+ | 0.8+) | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2001 11 11 | 704 | 1.3+ | 0.4+ | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.5+ | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.8+ | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2001 11 20 | 704 | 0.3− | 1.0+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.7− |
| 2005 05 04 | G96 | (0.7− | 3.2+) | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2005 05 04 | G96 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.7− |
| 2005 05 04 | G96 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 13 | 291 | 0.2+ | 0.2+ |
| 2005 05 04 | G96 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.8− | 0.2+ | 2006 11 13 | 291 | 0.3+ | 0.3+ |
| 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.5− | 0.4+ | 2006 11 13 | 291 | 0.5+ | 0.4+ |
| 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.3+ | 2006 11 13 | 291 | 0.3+ | 0.3+ |
| 2005 05 07 | 691 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 13 | 291 | 0.1+ | 0.3+ |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.7− | 2006 11 13 | 291 | 0.3+ | 0.0 |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.8− | | | | |

**(145210)∗ 2005 JZ$_{38}$ = 2002 VK$_{119}$**

Discovered 2005 May 7 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 77211)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.26916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22212057 | $\omega$ | 315.31489 | | +0.98051565 | −0.04373801 | |
| $a$ | 2.7002887 | $\Omega$ | 48.21232 | | +0.14271447 | +0.82852190 | |
| $e$ | 0.2191903 | $i$ | 14.88304 | | −0.13498757 | +0.55824587 | |
| $P$ | 4.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | (1.7+ | 1.7−) | 2004 03 14 | 704 | 0.0 | 1.1+ | 2006 08 20 | 644 | 0.8+ | 0.0 |
| 2002 10 12 | 704 | (2.2+ | 0.9−) | 2005 05 07 | 691 | 0.3+ | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2002 10 12 | 704 | (1.2+ | 2.0−) | 2005 05 07 | 691 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.2− | 0.1− |
| 2002 10 12 | 704 | (2.1+ | 1.9−) | 2005 05 07 | 691 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.4− | 0.0 |
| 2002 10 12 | 704 | (1.6+ | 1.6−) | 2005 05 09 | G96 | 0.2− | 0.3− | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2005 05 09 | G96 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.8− | 0.8+ |
| 2002 11 12 | 704 | 0.1− | 0.3+ | 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2005 05 09 | G96 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.8+ |
| 2002 11 12 | 704 | 0.4+ | 1.1+ | 2005 05 11 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.0 |
| 2002 11 15 | 704 | 0.2− | 0.8− | 2005 05 11 | 691 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 11 15 | 704 | 0.5− | 0.1− | 2005 05 11 | 691 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 11 15 | 704 | 0.1− | 0.6− | 2005 05 19 | 644 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.5− | 0.4+ | 2005 05 19 | 644 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.6− | 0.4+ | 2005 05 19 | 644 | 0.6− | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.4− |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2005 05 19 | 644 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2002 12 15 | 704 | 0.8+ | 1.4− | 2006 07 30 | E12 | 0.9+ | 0.3− | 2006 10 28 | 703 | 0.4− | 0.5− |
| 2002 12 15 | 704 | 0.1+ | 1.2+ | 2006 07 30 | E12 | 0.5+ | 0.2− | 2006 10 28 | 703 | 0.3− | 0.2+ |
| 2002 12 15 | 704 | 0.3+ | 1.0+ | 2006 07 30 | E12 | 0.3− | 0.3+ | 2006 11 11 | 644 | 0.2− | 0.0 |
| 2004 03 14 | 704 | 0.8+ | 0.5− | 2006 07 30 | E12 | 0.6− | 0.0 | 2006 11 11 | 644 | 0.2− | 0.2+ |
| 2004 03 14 | 704 | 0.3− | 0.2− | 2006 08 20 | 644 | 0.6+ | 0.5− | 2006 11 11 | 644 | 0.1− | 0.5+ |

**(145211)∗ 2005 JO$_{39}$ = 2002 SZ$_{9}$**

Discovered 2005 May 7 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77211)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.54047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26219298 | $\omega$ | 244.43856 | | +0.12092149 | +0.99254873 | |
| $a$ | 2.4176235 | $\Omega$ | 32.51763 | | −0.90044321 | +0.11603595 | |
| $e$ | 0.2034878 | $i$ | 1.59904 | | −0.41782774 | +0.03718443 | |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.6− | 0.0 | 2005 05 07 | G96 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.6+ |
| 1997 01 31 | 691 | 1.6+ | 0.1+ | 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.1− |
| 1997 01 31 | 691 | 0.1− | 0.6+ | 2005 05 07 | G96 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.3− |
| 2001 03 20 | 608 | 0.2− | 1.0− | 2005 05 07 | G96 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.4+ | 0.7− |
| 2001 03 20 | 608 | 0.0 | 1.0− | 2005 05 09 | 699 | 0.4− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.5+ |
| 2001 03 20 | 608 | 0.1− | 1.0− | 2005 05 09 | 699 | 0.6+ | 0.8+ | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 2001 03 30 | 691 | 0.2+ | 0.0 | 2005 05 09 | 699 | 0.6+ | 0.6+ | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2001 03 30 | 691 | 0.4+ | 0.6+ | 2005 05 09 | 699 | 0.8− | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2001 03 30 | 691 | 0.2+ | 0.2+ | 2005 05 14 | 644 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.4+ | 0.2− |
| 2001 04 16 | 645 | 0.1− | 0.1− | 2005 05 14 | 644 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 04 16 | 645 | 0.2− | 0.1− | 2005 05 14 | 644 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.2+ |
| 2002 09 27 | 644 | 0.6− | 0.4+ | 2005 05 14 | G96 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.6+ |
| 2002 09 27 | 644 | 0.4− | 0.1+ | 2005 05 14 | G96 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.1− |
| 2002 09 27 | 644 | 0.7− | 0.3+ | 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2002 09 28 | 644 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.6− | 0.4+ |
| 2002 09 28 | 644 | 0.2− | 0.4+ | 2005 06 01 | G96 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2002 09 28 | 644 | 0.2− | 0.5+ | 2005 06 01 | G96 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2003 12 29 | 691 | 0.1− | 0.2+ | 2005 06 01 | G96 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.8+ |
| 2003 12 29 | 691 | 0.2− | 0.1− | 2005 06 01 | G96 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2005 06 02 | G96 | 0.2− | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.4− | 0.0 | 2005 06 02 | G96 | 0.4− | 0.5+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | G96 | 0.4− | 0.1+ | 2005 06 02 | G96 | 0.0 | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2005 04 02 | G96 | 0.7− | 0.2+ | 2005 06 02 | G96 | 0.3− | 0.6+ | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | G96 | 0.8− | 0.2+ | 2006 09 25 | G96 | 0.6+ | 0.4− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2005 04 14 | 691 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.6− |
| 2005 04 14 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2005 04 14 | 691 | 0.7+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.6− | | | | |

**(145212)∗ 2005 JY$_{43}$ = 1992 HT$_{2}$**

Discovered 2005 May 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 77213)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.77118 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22878317 | $\omega$ | 226.44987 | | +0.20842365 | | +0.96206406 |
| $a$ | 2.6476059 | $\Omega$ | 56.38048 | | −0.82530428 | | +0.26959064 |
| $e$ | 0.1745670 | $i$ | 12.20488 | | −0.52481656 | | −0.04187636 |
| $P$ | 4.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 28 | 691 | 1.2− | 0.5+ | 2005 05 19 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.6+ | 0.2− |
| 1992 04 28 | 691 | 0.1− | 0.0 | 2005 05 19 | 644 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.5+ | 0.6+ |
| 1992 04 28 | 691 | 0.1− | 0.6− | 2005 05 26 | 699 | 1.1+ | 0.5− | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 1992 05 03 | 691 | 0.5+ | 0.6− | 2005 05 26 | 699 | 0.1+ | 1.1+ | 2006 10 01 | 704 | 0.6+ | 0.9− |
| 1992 05 03 | 691 | 0.3+ | 0.1− | 2005 05 26 | 699 | (2.4+ | 0.6+) | 2006 10 01 | 704 | 0.1+ | 0.8+ |
| 1992 05 03 | 691 | 0.2+ | 0.2+ | 2005 05 27 | 699 | 0.7+ | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.2+ |
| 2000 03 04 | 704 | (4.0+ | 0.4−) | 2005 05 27 | 699 | 0.8+ | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.2− |
| 2000 03 04 | 704 | (2.8+ | 0.4−) | 2005 05 27 | 699 | 0.5+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.2+ |
| 2000 03 04 | 704 | (3.5+ | 0.6−) | 2005 05 27 | 699 | (0.5+ | 1.7+) | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 1.2+ | 2005 05 30 | 699 | 0.2+ | 0.2+ | 2006 10 03 | 704 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2005 05 30 | 699 | 0.9+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.9+ | 1.3+ | 2005 05 30 | 699 | 0.3+ | 0.3− | 2006 10 03 | 704 | 0.1+ | 0.6− |
| 2004 01 18 | 644 | 0.1− | 0.7+ | 2005 06 04 | 704 | 1.0− | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2004 01 18 | 644 | 0.3+ | 0.9+ | 2005 06 04 | 704 | 0.6+ | 1.0− | 2006 10 03 | 704 | 0.4+ | 0.8+ |
| 2004 01 18 | 703 | 0.5− | 1.5+ | 2005 06 04 | 704 | 0.2+ | 0.2− | 2006 10 03 | 704 | 0.5+ | 0.3+ |
| 2004 01 18 | 703 | 0.2+ | 0.7+ | 2005 06 04 | 703 | 1.0+ | 0.3+ | 2006 10 03 | 704 | 0.3− | 0.2+ |
| 2004 01 18 | 703 | 0.3+ | 0.2+ | 2005 06 04 | 703 | 0.9− | 0.9+ | 2006 10 03 | 704 | 0.9+ | 0.1− |
| 2004 01 18 | 644 | 0.1− | 0.7+ | 2005 06 04 | 703 | 0.7− | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2004 01 18 | 703 | 0.6+ | 0.3+ | 2005 06 04 | 703 | 0.0 | 0.5− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2005 03 18 | 599 | 0.1− | 0.0 | 2005 06 11 | 703 | 1.3− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2005 03 18 | 599 | 0.1− | 0.4+ | 2005 06 11 | 703 | 0.2− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2005 03 18 | 599 | 0.2+ | 0.4+ | 2005 06 11 | 703 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2005 04 17 | 703 | 0.6− | 0.3− | 2005 06 11 | 703 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2005 04 17 | 703 | 0.7− | 0.3+ | 2005 06 14 | 699 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.7+ |
| 2005 04 17 | 703 | 0.3− | 0.0 | 2005 06 14 | 699 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2005 04 17 | 703 | (2.7− | 0.0 ) | 2005 06 14 | 699 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2005 05 04 | 704 | 0.4+ | 1.1+ | 2005 06 14 | 699 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.7+ |
| 2005 05 04 | 704 | 0.3− | 0.6+ | 2006 09 16 | 699 | 0.7+ | 0.6− | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2005 05 04 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 699 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.5− | 0.8− |
| 2005 05 04 | 704 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 1.1− | 0.1− |
| 2005 05 09 | 704 | 0.6+ | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.3+ |
| 2005 05 09 | 704 | 0.6+ | 0.7− | 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.5− |
| 2005 05 09 | 704 | 0.6+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.1− | 0.7+ |
| 2005 05 09 | 704 | 0.6+ | 0.5− | 2006 09 18 | 703 | 0.6+ | 0.9+ | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2005 05 09 | 704 | (0.0 | 1.5−) | 2006 09 18 | 703 | 0.9− | 0.0 | 2006 11 13 | 703 | 0.5− | 1.0− |
| 2005 05 12 | 691 | 0.1+ | 0.3+ | 2006 09 21 | 699 | (0.1− | 1.7+) | 2006 11 13 | 703 | 0.6− | 0.3+ |
| 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.6+ | 0.7+ | 2006 11 13 | 703 | 1.3− | 0.3− |
| 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.4+ | 0.7+ | 2006 11 13 | 703 | 0.4− | 0.7− |
| 2005 05 14 | 704 | 0.1− | 0.1+ | 2006 09 21 | 699 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.9− | 0.8− |
| 2005 05 14 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 1.0− | 0.6+ | 2006 11 16 | 703 | 0.6− | 0.6− |
| 2005 05 14 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 1.3− | 0.2− | 2006 11 16 | 703 | 0.2+ | 0.1− |
| 2005 05 14 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 0.6− | 0.5+ | 2006 11 16 | 703 | 0.1− | 0.4− |
| 2005 05 14 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.3+ | | | | |
| 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 1.2+ | 0.7+ | | | | |

**(145213)∗ 2005 JE$_{44}$ = 2001 HS$_{42}$**

Discovered 2005 May 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. T. B. Spahr (*MPO* 77213)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.07072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26053949 | $\omega$ | 211.38332 | | −0.03940644 | | +0.99419221 |
| $a$ | 2.4278416 | $\Omega$ | 56.53840 | | −0.89010747 | | +0.01061438 |
| $e$ | 0.1018173 | $i$ | 6.89447 | | −0.45404386 | | −0.10709432 |
| $P$ | 3.78 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 699 | 0.6+ | 0.9+ | 2004 02 14 | 704 | 0.7− | 0.4− | 2005 06 04 | 704 | 0.3+ | 0.1+ |
| 2001 04 16 | 699 | 0.1+ | 1.1+ | 2004 02 14 | 704 | 0.6− | 0.0 | 2005 06 04 | 704 | 0.0 | 0.1+ |
| 2001 04 16 | 699 | 0.2+ | 1.0+ | 2005 04 07 | G96 | (0.5− | 2.5+) | 2005 06 04 | 704 | 0.7− | 0.9− |
| 2001 04 16 | 699 | (0.5− | 1.7+) | 2005 04 07 | G96 | (0.6− | 1.7+) | 2005 06 26 | 644 | 0.3+ | 0.5+ |
| 2001 04 18 | 608 | 1.0+ | 0.9+ | 2005 04 07 | G96 | 0.4+ | 0.0 | 2005 06 26 | 644 | 0.6+ | 0.5+ |
| 2001 04 18 | 608 | 0.3+ | 0.4+ | 2005 04 07 | G96 | 0.2− | 0.3− | 2005 06 26 | 644 | 0.4+ | 0.5+ |
| 2001 04 18 | 608 | 0.2+ | 0.5+ | 2005 05 04 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.4+ |
| 2002 09 28 | 608 | (3.3− | 1.3−) | 2005 05 04 | 704 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.8− |
| 2002 09 28 | 608 | (3.9− | 0.9−) | 2005 05 04 | 704 | 0.7− | 0.2+ | 2006 09 30 | 703 | (0.4+ | 3.5+) |
| 2002 09 28 | 608 | (3.5− | 0.8−) | 2005 05 04 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | (2.7− | 2.6+) |
| 2003 12 23 | 704 | 0.3+ | 0.3+ | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2003 12 23 | 704 | 0.8+ | 0.3+ | 2005 05 04 | 644 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2003 12 23 | 704 | 0.1+ | 0.3+ | 2005 05 04 | 644 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.4− | 0.1− |
| 2003 12 23 | 704 | 0.9− | 0.5− | 2005 05 09 | 704 | 0.3+ | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2003 12 23 | 704 | 0.6+ | 0.5+ | 2005 05 09 | 704 | (1.7+ | 0.9−) | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2003 12 28 | 704 | 0.0 | 0.1+ | 2005 05 09 | 704 | 0.8+ | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2003 12 28 | 704 | 0.6− | 0.6− | 2005 05 09 | 704 | 0.6+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2003 12 28 | 704 | 0.1− | 0.1+ | 2005 05 10 | 703 | 0.6− | 0.5− | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2004 01 16 | 699 | 0.7− | 0.6− | 2005 05 10 | 703 | 0.4− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2004 01 16 | 699 | 0.1− | 0.6+ | 2005 05 10 | 703 | 0.6− | 0.5+ | 2006 11 11 | 691 | 0.3− | 0.4+ |
| 2004 01 16 | 699 | 0.5+ | 0.3− | 2005 05 10 | 703 | 0.1− | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.8+ |
| 2004 01 16 | 699 | 0.4− | 1.3+ | 2005 05 29 | E12 | 0.3+ | 0.4+ | 2006 11 13 | 703 | (1.2− | 1.5+) |
| 2004 01 16 | 703 | (1.6+ | 0.2−) | 2005 05 29 | E12 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.6− | 0.5+ |
| 2004 01 16 | 703 | 0.5+ | 0.2− | 2005 05 29 | E12 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.7+ | 0.9+ |
| 2004 01 16 | 703 | 0.0 | 0.7+ | 2005 05 29 | E12 | 0.2+ | 0.7+ | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2004 01 16 | 703 | 0.2+ | 0.4− | 2005 06 04 | 704 | 0.6− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2004 02 14 | 704 | 1.5+ | 0.3+ | 2005 06 04 | 704 | 0.3+ | 0.2− | 2006 11 27 | 691 | 0.3− | 0.3+ |

**(145214)∗ 2005 JF$_{44}$**

Discovered 2005 May 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.08887 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22693687 | $\omega$ | 99.44945 | | +0.93987741 | | +0.30481345 |
| $a$ | 2.6619466 | $\Omega$ | 242.93609 | | −0.33929589 | | +0.88472715 |
| $e$ | 0.2585827 | $i$ | 9.95929 | | +0.03884265 | | +0.35262818 |
| $P$ | 4.34 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 0.8− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 11 15 | 704 | 1.1− | 0.3− |
| 1993 12 16 | 691 | 0.6+ | 0.2+ | 2006 08 30 | 704 | 0.7− | 0.9+ | 2006 11 15 | 704 | 0.3− | 0.1− |
| 1993 12 16 | 691 | 0.2+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.5− | 2006 11 15 | 704 | 0.3− | 0.3+ |
| 2003 01 07 | 704 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.5+ | 2006 11 15 | 704 | 0.5− | 0.5− |
| 2003 01 07 | 704 | 0.4− | 0.3− | 2006 08 30 | 704 | 0.5+ | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.7− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.4+ |
| 2003 01 28 | 704 | 0.4− | 0.4− | 2006 09 18 | 704 | 0.2− | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2003 01 28 | 704 | 0.0 | 0.4+ | 2006 09 18 | 704 | 1.4+ | 0.9+ | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2003 01 28 | 704 | 0.7+ | 0.6+ | 2006 09 18 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 2005 05 04 | 644 | 0.1− | 0.2+ | 2006 10 18 | A50 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2005 05 04 | 644 | 0.2− | 0.2+ | 2006 10 18 | A50 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2005 05 08 | E12 | 0.1+ | 0.1+ | 2006 10 19 | A50 | 0.3− | 0.3− | 2006 11 17 | 704 | 1.0+ | 0.1− |
| 2005 05 08 | E12 | 0.4+ | 0.7+ | 2006 10 19 | A50 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2005 05 08 | E12 | 0.1− | 0.0 | 2006 10 19 | 704 | 0.5− | 0.5+ | 2006 11 17 | 704 | 0.7+ | 0.5+ |
| 2005 05 08 | E12 | 0.3− | 0.2+ | 2006 10 19 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.9+ | 0.5+ |
| 2005 05 09 | 704 | 0.4− | 0.4+ | 2006 10 19 | 704 | 1.0+ | 0.9− | 2006 11 17 | 704 | 0.7+ | 0.0 |
| 2005 05 09 | 704 | 0.4+ | 0.1− | 2006 10 19 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.5− |
| 2005 05 09 | 704 | 0.9− | 0.8− | 2006 10 19 | 704 | 0.9− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2005 05 09 | 704 | 0.6+ | 0.0 | 2006 10 21 | 704 | 0.3− | 0.7− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2005 05 11 | 644 | 0.1+ | 0.1− | 2006 10 21 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.4− |
| 2005 05 11 | 644 | 0.0 | 0.1− | 2006 10 21 | 704 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.5− |
| 2005 05 11 | 644 | 0.1+ | 0.1− | 2006 10 21 | 704 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2005 05 12 | G96 | 0.4+ | 0.3+ | 2006 10 21 | 704 | 1.2− | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2005 05 12 | G96 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.8+ |
| 2005 05 12 | G96 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2005 05 15 | 428 | 0.6− | 0.8− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 15 | 428 | 1.0+ | 1.1+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2005 05 16 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2005 05 16 | 644 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2005 05 16 | 644 | 0.2+ | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.2+ | 2006 11 26 | 704 | 0.3− | 0.1− |
| 2005 05 19 | E12 | 0.3− | 0.2+ | 2006 10 29 | 704 | 0.1− | 0.1+ | 2006 11 26 | 704 | 0.5+ | 0.2+ |
| 2005 05 19 | E12 | 0.4− | 0.4+ | 2006 10 29 | 704 | 0.6− | 0.4+ | 2006 11 26 | 704 | 0.1+ | 0.0 |
| 2005 05 19 | E12 | 0.5− | 0.1+ | 2006 10 29 | 704 | 0.2+ | 0.1+ | 2006 11 26 | 704 | 0.0 | 0.2+ |
| 2005 05 19 | E12 | 0.4− | 0.8+ | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2005 05 30 | 699 | (1.8+ | 0.5+) | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.3− |
| 2005 05 30 | 699 | 0.3− | 1.2− | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 1.1− | 0.0 |
| 2005 05 30 | 699 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.1− | 0.5− |
| 2005 05 30 | 699 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2005 06 11 | 703 | 1.0+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2005 06 11 | 703 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.2− | 2006 11 29 | 704 | 0.5− | 0.0 |
| 2005 06 11 | 703 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2005 06 11 | 703 | 0.5− | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2006 08 29 | 703 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2006 08 29 | 703 | 0.4+ | 0.6− | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2006 08 29 | 703 | 0.2− | 0.8− | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.3− |

**(145215)∗ 2005 JM$_{46}$ = 1999 VL$_{153}$ = 2005 GC$_{53}$**

Discovered 2005 May 3 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 89662)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.02688 | | (2000.0) | | | |
| $n$ | 0.28224138 | $\omega$ | 107.30688 | | +0.70872042 | +0.70489580 |
| $a$ | 2.3017364 | $\Omega$ | 207.89351 | | −0.66849159 | +0.65788013 |
| $e$ | 0.1598146 | $i$ | 3.54607 | | −0.22546476 | +0.26517099 |
| $P$ | 3.49 | $H$ | 17.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 11 | 691 | 0.1+ | 0.2+ | 2005 04 02 | G96 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.4− |
| 1999 11 11 | 691 | 0.2− | 0.2− | 2005 04 02 | G96 | 1.0− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.6− |
| 1999 11 11 | 691 | 0.3− | 0.1+ | 2005 05 03 | 691 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.0 |
| 1999 11 16 | 691 | 0.4+ | 0.1− | 2005 05 03 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.6− |
| 1999 11 16 | 691 | 0.1+ | 0.0 | 2005 05 03 | 691 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.6− | 0.2− |
| 1999 11 16 | 691 | 0.1− | 0.1− | 2005 05 10 | 691 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.8− | 0.7− |
| 2002 08 05 | 644 | 0.2+ | 0.0 | 2005 05 10 | 691 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2002 08 05 | 644 | 0.3+ | 0.0 | 2005 05 10 | 691 | 0.5− | 0.5+ | 2006 11 11 | 691 | 0.3+ | 0.5+ |
| 2002 08 05 | 644 | 0.2+ | 0.1− | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2002 08 16 | 644 | 0.3− | 0.1+ | 2005 05 10 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.8− | 0.7− |
| 2002 08 16 | 644 | 0.2− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2002 08 16 | 644 | 0.3− | 0.0 | 2005 05 10 | G96 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.6− | 1.2− |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2005 05 11 | G96 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.6− | 0.2− |
| 2002 08 17 | 644 | 0.1+ | 0.2+ | 2005 05 11 | G96 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.7+ |
| 2002 08 17 | 644 | 0.1− | 0.4+ | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2002 08 26 | 644 | 0.4− | 0.2+ | 2005 05 11 | G96 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.4+ |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2005 05 11 | A13 | (2.8− | 2.4+) | 2006 11 23 | 691 | 0.2− | 0.4+ |
| 2002 08 26 | 644 | 0.0 | 0.2+ | 2005 05 11 | A13 | 0.9− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2005 04 02 | G96 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.5+ | 0.2− | | | | |

**(145216)∗ 2005 JO$_{48}$ = 2000 JU$_{90}$ = 2004 CT$_{121}$**

Discovered 2005 May 3 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77215)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.51457 | | (2000.0) | | | |
| $n$ | 0.21454498 | $\omega$ | 195.68384 | | +0.79131816 | +0.60672895 |
| $a$ | 2.7634852 | $\Omega$ | 126.71532 | | −0.55034297 | +0.76061252 |
| $e$ | 0.0969547 | $i$ | 5.40216 | | −0.26634222 | +0.23097308 |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.0 | 0.2+ | 2005 06 04 | 691 | 0.6− | 0.2+ |
| 2000 05 04 | 645 | 0.0 | 0.2− | 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 2000 05 05 | 645 | 0.1− | 0.0 | 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.6+ |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2005 05 14 | 691 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.5+ |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2005 05 14 | 691 | 0.3+ | 0.1− | 2006 08 29 | 691 | 0.2− | 0.6+ |
| 2004 02 12 | 691 | 0.1− | 0.6+ | 2005 05 14 | 691 | 0.4+ | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.5+ |
| 2004 02 12 | 691 | 0.1− | 0.6+ | 2005 05 17 | G96 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.3− | 0.6+ |
| 2004 02 29 | 691 | 0.0 | 0.7+ | 2005 05 17 | G96 | 0.1+ | 0.3− | 2006 09 18 | 699 | 1.4− | 1.5− |
| 2004 02 29 | 691 | 0.1− | 0.8+ | 2005 05 17 | G96 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.1+ | 0.2+ |
| 2004 02 29 | 691 | 0.5+ | 0.7+ | 2005 05 17 | G96 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.0 |
| 2004 03 18 | 691 | 0.3+ | 0.3+ | 2005 05 19 | G96 | 0.3− | 0.2− | 2006 09 18 | 699 | 1.0+ | 1.2+ |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2004 03 18 | 691 | 0.3+ | 0.1+ | 2005 05 19 | G96 | 0.4− | 0.2− | 2006 10 09 | 644 | 0.6− | 0.4+ |
| 2005 05 03 | 691 | 0.1− | 0.5+ | 2005 05 19 | G96 | 0.5− | 0.1+ | 2006 10 09 | 644 | 0.5− | 0.3+ |
| 2005 05 03 | 691 | 0.3+ | 0.9+ | 2005 06 04 | 691 | 0.2+ | 0.2+ | | | | |
| 2005 05 03 | 691 | 0.3+ | 0.0 | 2005 06 04 | 691 | 0.2+ | 0.3+ | | | | |

**(145217)∗ 2005 JZ$_{48}$**

Discovered 2005 May 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.80244 | | (2000.0) | | | |
| $n$ | 0.22990980 | $\omega$ | 51.32109 | | +0.04802113 | +0.98471177 |
| $a$ | 2.6389494 | $\Omega$ | 222.37797 | | −0.97612680 | +0.01071422 |
| $e$ | 0.1372182 | $i$ | 14.38421 | | −0.21182645 | +0.17386182 |
| $P$ | 4.29 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.2− | 0.4− | 2005 05 10 | G96 | 0.2− | 0.2− | 2005 06 17 | 691 | 0.1− | 0.1− |
| 2000 03 09 | 704 | 0.1− | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.2− | 2005 06 23 | 644 | 0.2− | 0.0 |
| 2000 03 09 | 704 | 0.3− | 0.6− | 2005 05 10 | G96 | 0.2− | 0.2− | 2005 06 23 | 644 | 0.2− | 0.2+ |
| 2000 03 09 | 704 | 1.3+ | 1.6+ | 2005 05 10 | G96 | 0.4− | 0.1− | 2005 06 23 | 644 | 0.1− | 0.1+ |
| 2000 03 09 | 704 | 0.5+ | 0.7+ | 2005 05 12 | 704 | 0.5+ | 0.1+ | 2006 08 12 | 644 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.4− | 1.1+ | 2005 05 12 | 704 | 1.0+ | 0.4+ | 2006 08 12 | 644 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2005 05 12 | 704 | 0.5+ | 0.5+ | 2006 08 12 | 644 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | (1.7− | 2.6+) | 2005 05 12 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.1+ | 0.8− | 2005 05 12 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.3− |
| 2002 10 11 | 704 | (1.7− | 1.1−) | 2005 05 14 | 644 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2002 11 12 | 644 | 1.0+ | 0.3+ | 2005 05 14 | 644 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.1− | 0.1− |
| 2002 11 12 | 644 | 0.3+ | 0.6+ | 2005 05 14 | 644 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.0 |
| 2002 11 12 | 644 | 0.1+ | 0.5+ | 2005 06 03 | 691 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.5+ | 0.1− |
| 2002 11 22 | 644 | 0.7− | 0.1+ | 2005 06 03 | 691 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.2+ |
| 2002 11 22 | 644 | 0.6− | 0.2+ | 2005 06 03 | 691 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.0 |
| 2002 11 22 | 644 | 0.8− | 0.4+ | 2005 06 04 | 703 | 0.3− | 1.2− | 2006 09 28 | 703 | 0.1− | 0.9− |
| 2004 01 28 | 704 | 0.2− | 0.3+ | 2005 06 04 | 703 | 0.5− | 0.2+ | 2006 09 28 | 703 | 0.5+ | 0.3+ |
| 2004 01 28 | 704 | 0.5− | 1.3− | 2005 06 04 | 703 | (1.6− | 0.4−) | 2006 09 28 | 703 | 0.1+ | 0.0 |
| 2004 01 28 | 704 | 0.2− | 0.1+ | 2005 06 04 | 703 | 0.4+ | 1.2− | 2006 09 28 | 703 | 0.5+ | 0.1− |
| 2004 01 28 | 704 | 0.3− | 0.6+ | 2005 06 05 | 704 | 0.8+ | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.2+ |
| 2004 01 28 | 704 | 0.8+ | 0.6+ | 2005 06 05 | 704 | 1.4+ | 0.7+ | 2006 09 28 | 703 | 0.9− | 0.0 |
| 2005 04 17 | 703 | 0.3− | 0.4− | 2005 06 05 | 704 | 0.6+ | 0.0 | 2006 09 28 | 703 | 0.4− | 0.3+ |
| 2005 04 17 | 703 | 1.3− | 1.4+ | 2005 06 05 | 704 | 0.6− | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2005 04 17 | 703 | 0.5− | 0.5+ | 2005 06 07 | 699 | 0.5+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2005 04 17 | 703 | 0.1− | 0.3− | 2005 06 07 | 699 | 0.3− | 0.6− | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2005 05 03 | 704 | 0.1− | 0.3− | 2005 06 07 | 699 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2005 05 03 | 704 | 0.5+ | 0.9+ | 2005 06 07 | 699 | 0.4− | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 2005 05 03 | 704 | 0.4+ | 0.3+ | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.7+ |
| 2005 05 03 | 704 | 0.7− | 0.8+ | 2005 06 08 | 691 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.6− | 0.6− |
| 2005 05 03 | 704 | 0.3+ | 0.1− | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2005 05 09 | 704 | (1.6+ | 0.2+) | 2005 06 13 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2005 05 09 | 704 | (0.9+ | 2.4−) | 2005 06 13 | 691 | 0.1+ | 1.0− | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2005 05 09 | 704 | 0.2− | 0.6+ | 2005 06 13 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 05 09 | 704 | 0.2+ | 0.1+ | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2005 05 09 | 704 | 0.0 | 0.1− | 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 |

**(145218)∗ 2005 JH$_{49}$ = 1989 TW$_{11}$ = 2001 KE$_{54}$ = 2004 EZ$_{44}$**

Discovered 2005 May 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77216)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.10585 | | (2000.0) | | | |
| $n$ | 0.23546175 | $\omega$ | 187.87814 | | +0.99981197 | +0.01087543 |
| $a$ | 2.5973021 | $\Omega$ | 171.44940 | | −0.00560797 | +0.95471012 |
| $e$ | 0.3511793 | $i$ | 6.19877 | | −0.01856265 | +0.29733872 |
| $P$ | 4.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 01 | 807 | 0.3+ | 0.2− | 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 10 22 | D35 | 0.1− | 0.6+ |
| 1989 10 03 | 807 | 0.1− | 0.4− | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 10 22 | D35 | 0.2− | 0.2+ |
| 2001 05 23 | 291 | 0.5− | 0.7+ | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 10 22 | D35 | 0.1− | 0.2+ |
| 2001 05 23 | 291 | 0.1− | 0.4+ | 2005 04 04 | G96 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.7− | 0.6− |
| 2001 05 23 | 291 | 0.2+ | 0.3+ | 2005 04 04 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2001 05 28 | 691 | 0.2+ | 0.2+ | 2005 04 04 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.6− | 0.8+ |
| 2001 05 28 | 691 | 0.8+ | 0.2− | 2005 04 04 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2001 05 28 | 691 | 0.0 | 0.1− | 2005 05 04 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.1− | 0.3− |
| 2003 01 07 | 704 | 0.3− | 0.1+ | 2005 05 04 | 691 | 0.1− | 0.4+ | 2006 11 25 | 704 | 0.1+ | 1.4+ |
| 2003 01 07 | 704 | 0.2− | 0.5+ | 2005 05 04 | 691 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.6− | 0.9+ |
| 2003 01 07 | 704 | 0.1− | 0.9+ | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 11 25 | 704 | 0.7+ | 0.4+ |
| 2003 01 07 | 704 | 0.8− | 0.5− | 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 11 25 | 704 | 0.4+ | 0.9+ |
| 2003 01 07 | 704 | 0.5− | 0.2+ | 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 11 25 | 704 | 0.6+ | 0.3+ |
| 2004 03 15 | 691 | 0.0 | 0.5− | 2005 05 14 | 691 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2004 03 15 | 691 | 0.2+ | 0.4− | 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2004 03 15 | 691 | 0.0 | 0.5− | 2005 05 14 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.5+ |
| 2004 03 17 | 291 | 0.2+ | 0.0 | 2006 10 03 | 704 | 1.2− | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.3+ |
| 2004 03 17 | 291 | 0.3− | 0.2+ | 2006 10 03 | 704 | 0.0 | 0.1+ | 2006 11 28 | 704 | 2.3+ | 1.7− |
| 2004 03 17 | 291 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.5+ | 0.3+ | | | | |

**(145219)∗ 2005 JQ$_{55}$**

Discovered 2005 May 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.60616 | | (2000.0) | | | |
| $n$ | 0.18931890 | $\omega$ | 233.01069 | | +0.97730141 | +0.03894819 |
| $a$ | 3.0038165 | $\Omega$ | 123.84163 | | +0.01624548 | +0.96628332 |
| $e$ | 0.0790950 | $i$ | 14.52009 | | −0.21122982 | +0.25451834 |
| $P$ | 5.21 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.3− | 0.3+ | 2001 10 23 | 644 | 0.0 | 0.3+ | 2005 06 25 | 644 | 0.2− | 0.4− |
| 2001 08 11 | 608 | 1.0+ | 0.6+ | 2001 10 23 | 644 | 0.1− | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.0 |
| 2001 08 11 | 608 | 0.8− | 0.3− | 2004 03 23 | 704 | (1.1+ | 2.2+) | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2001 08 11 | 608 | 1.0+ | 0.8+ | 2004 03 23 | 704 | 0.8+ | 0.8+ | 2006 08 17 | 644 | 0.1− | 0.0 |
| 2001 08 11 | 608 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 0.6+ | 1.0+ | 2006 08 23 | 644 | 0.1+ | 0.2+ |
| 2001 08 11 | 608 | 1.1+ | 0.6− | 2004 03 23 | 704 | 0.5− | 1.2+ | 2006 08 23 | 644 | 0.2+ | 0.0 |
| 2001 08 20 | 608 | 0.6+ | 0.3− | 2005 05 04 | 703 | (2.1− | 0.5−) | 2006 08 23 | 644 | 0.1+ | 0.1− |
| 2001 08 20 | 608 | 0.6+ | 0.2− | 2005 05 04 | 703 | 1.3− | 1.2− | 2006 08 24 | 644 | 0.0 | 0.0 |
| 2001 08 20 | 608 | 1.0+ | 0.0 | 2005 05 04 | 703 | 0.7+ | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.1− |
| 2001 09 11 | 704 | 1.4− | 0.3− | 2005 05 04 | 703 | 0.0 | 1.2− | 2006 08 24 | 644 | 0.2+ | 0.1+ |
| 2001 09 11 | 704 | (2.7− | 1.6−) | 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 08 28 | E12 | 1.0+ | 0.3+ |
| 2001 09 11 | 704 | (2.1− | 0.4+) | 2005 05 10 | 691 | 0.0 | 0.1− | 2006 08 28 | E12 | 0.3+ | 0.1+ |
| 2001 09 11 | 704 | 1.9− | 1.4− | 2005 05 10 | 691 | 0.2− | 0.2− | 2006 08 28 | E12 | 0.2+ | 0.5+ |
| 2001 09 11 | 704 | 1.5− | 0.5− | 2005 05 14 | 691 | 0.1− | 0.0 | 2006 09 17 | 699 | 0.1+ | 0.3+ |
| 2001 10 14 | 644 | 0.0 | 0.0 | 2005 05 14 | 691 | 0.1− | 1.2+ | 2006 09 17 | 699 | 1.4− | 0.1+ |
| 2001 10 14 | 644 | 0.5+ | 0.0 | 2005 05 14 | 691 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.6− | 0.1+ |
| 2001 10 14 | 644 | 0.2+ | 0.2+ | 2005 06 25 | 644 | 0.9+ | 0.2− | 2006 09 17 | 699 | 0.4− | 1.1+ |
| 2001 10 23 | 644 | 0.3+ | 1.0+ | 2005 06 25 | 644 | 0.2− | 0.4− | | | | |

**(145220)∗ 2005 JC$_{56}$**

Discovered 2005 May 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.44257 | | (2000.0) | | | |
| $n$ | 0.17529604 | $\omega$ | 186.18439 | | +0.57374170 | +0.76200440 |
| $a$ | 3.1619474 | $\Omega$ | 119.22977 | | −0.73593585 | +0.64054286 |
| $e$ | 0.1239474 | $i$ | 20.12670 | | −0.35947029 | −0.09515322 |
| $P$ | 5.62 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 699 | 0.1− | 0.7− | 2004 03 14 | 704 | 0.2+ | 0.2+ | 2005 06 06 | 704 | 0.1− | 0.4− |
| 2000 05 28 | 699 | (2.2+ | 0.4+) | 2004 03 14 | 704 | 0.6+ | 0.0 | 2005 06 06 | 704 | 1.2+ | 0.7+ |
| 2000 05 28 | 699 | 0.6− | 0.5+ | 2005 05 06 | 704 | 0.1+ | 1.0− | 2005 06 06 | 704 | 0.2+ | 1.1+ |
| 2000 05 28 | 699 | 0.9+ | 0.7− | 2005 05 06 | 704 | 0.0 | 0.3− | 2005 06 06 | 704 | 0.4+ | 0.4+ |
| 2000 07 07 | 704 | 0.4+ | 0.7− | 2005 05 06 | 704 | 0.3− | 1.5− | 2005 06 06 | 704 | 0.5+ | 0.4+ |
| 2000 07 07 | 704 | 0.1+ | 0.1+ | 2005 05 06 | 704 | 0.1+ | 1.2− | 2005 06 11 | 703 | 0.8+ | 0.2− |
| 2000 07 07 | 704 | 1.1+ | 0.0 | 2005 05 10 | 691 | 0.1+ | 0.1− | 2005 06 11 | 703 | 0.1− | 0.8+ |
| 2000 07 07 | 704 | 0.7+ | 0.2− | 2005 05 10 | 691 | 0.1− | 0.1+ | 2005 06 11 | 703 | 0.4− | 0.5+ |
| 2000 08 02 | 704 | 0.4− | 0.9+ | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2005 06 11 | 703 | 0.6− | 0.6+ |
| 2000 08 02 | 704 | 0.2− | 0.6+ | 2005 05 11 | 691 | 0.1− | 0.1− | 2005 06 16 | 703 | 0.2+ | 0.4+ |
| 2000 08 02 | 704 | 0.7+ | 0.7+ | 2005 05 11 | 691 | 0.2+ | 0.0 | 2005 06 16 | 703 | (2.1− | 0.6+) |
| 2000 08 02 | 704 | 0.2+ | 0.3+ | 2005 05 11 | 691 | 0.2− | 0.0 | 2005 06 16 | 703 | 0.4+ | 0.0 |
| 2000 08 02 | 704 | 0.5+ | 0.1+ | 2005 05 13 | 703 | 0.5− | 0.9− | 2005 06 16 | 703 | 0.9− | 0.3− |
| 2000 08 20 | 699 | 0.7− | 0.3− | 2005 05 13 | 703 | 0.4+ | 0.6− | 2005 06 25 | 644 | 0.0 | 0.0 |
| 2000 08 20 | 699 | 0.4− | 0.6− | 2005 05 13 | 703 | 0.5+ | 0.8− | 2005 06 25 | 644 | 0.1+ | 0.1− |
| 2000 08 20 | 699 | 0.6− | 0.6− | 2005 05 13 | 703 | 1.0− | 0.4− | 2005 06 25 | 644 | 0.0 | 0.1+ |
| 2000 08 20 | 699 | 1.6− | 0.4+ | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2006 08 20 | 644 | 0.4− | 0.5+ |
| 2003 01 27 | 704 | 0.5+ | 0.6+ | 2005 05 13 | 704 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.4− | 0.4+ |
| 2003 01 27 | 704 | 0.0 | 0.1+ | 2005 05 13 | 704 | 1.0+ | 0.1− | 2006 08 20 | 644 | 0.5− | 0.6+ |
| 2003 01 27 | 704 | 0.3− | 0.3+ | 2005 05 13 | 704 | 1.0− | 0.2+ | 2006 09 28 | E12 | 0.0 | 0.1+ |
| 2004 01 29 | 097 | 0.9− | 1.8+ | 2005 05 16 | 691 | 0.4− | 0.9+ | 2006 09 28 | E12 | 0.5− | 0.5+ |
| 2004 03 14 | 704 | 0.4− | 1.6+ | 2005 05 16 | 691 | 0.1+ | 0.1+ | 2006 09 28 | E12 | 0.1+ | 0.5+ |
| 2004 03 14 | 704 | 0.8+ | 0.0 | 2005 05 16 | 691 | 0.1+ | 0.1− | 2006 09 28 | E12 | 1.0+ | 0.8+ |

**(145221)∗ 2005 JT$_{57}$**

Discovered 2005 May 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 161.56246 | | (2000.0) | | | |
| $n$ | 0.21986621 | $\omega$ | 296.83912 | | −0.99596150 | −0.06129406 |
| $a$ | 2.7187153 | $\Omega$ | 239.71146 | | +0.08097421 | −0.92886023 |
| $e$ | 0.0153757 | $i$ | 4.35716 | | −0.03877981 | −0.36532413 |
| $P$ | 4.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 0.4− | 0.8+ | 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 07 21 | 703 | 0.6+ | 1.2+ |
| 2002 10 01 | 699 | 1.4− | 1.3+ | 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 07 21 | 703 | 0.4− | 0.1+ |
| 2002 10 01 | 699 | 0.2+ | 0.6+ | 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 07 21 | 703 | 0.8− | 0.7− |
| 2002 10 01 | 699 | 0.2+ | 1.8− | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 08 28 | 703 | 1.9− | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3− | 0.4+ |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 08 28 | 703 | 1.3− | 1.4+ |
| 2002 10 04 | 704 | 0.9+ | 0.9+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.9+ | 0.4− |
| 2002 10 04 | 704 | 1.7− | 0.2− | 2005 05 11 | 691 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.3− | 0.3+ |
| 2002 10 12 | 704 | 0.3− | 1.2+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2002 10 12 | 704 | 0.1− | 1.0+ | 2005 05 11 | 691 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 1.5+ | 0.7+ | 2005 05 16 | 691 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2004 01 18 | 644 | 0.3+ | 0.4+ | 2005 05 16 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2004 01 18 | 644 | 0.2+ | 0.5+ | 2005 05 16 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2004 01 18 | 644 | 0.5+ | 0.5+ | 2005 06 14 | G96 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.3+ | 0.0 |
| 2004 04 14 | 645 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.4+ | 0.1+ |
| 2004 04 14 | 645 | 0.0 | 0.1− | 2005 06 14 | G96 | 0.7− | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.5− |
| 2004 04 16 | 645 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.8− | 0.7− | | | | |
| 2004 04 16 | 645 | 0.0 | 0.2+ | 2006 07 21 | 703 | 0.1+ | 0.1+ | | | | |

**(145222)∗ 2005 JY$_{60}$**

Discovered 2005 May 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.51043 | | (2000.0) | | | |
| $n$ | 0.20991021 | $\omega$ | 139.79837 | | +0.98689902 | +0.14718750 |
| $a$ | 2.8040150 | $\Omega$ | 211.92100 | | −0.16028329 | +0.94122130 |
| $e$ | 0.2343005 | $i$ | 7.17894 | | +0.01842820 | +0.30403668 |
| $P$ | 4.70 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.2− | 0.3+ |
| 1992 10 25 | 691 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.1− |
| 1992 10 25 | 691 | 0.2+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 07 29 | 644 | 0.3+ | 0.9+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.5− | 0.5+ |
| 2001 07 29 | 644 | 0.3+ | 1.0+ | 2006 09 18 | 704 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2001 07 29 | 644 | 0.4+ | 0.7+ | 2006 09 18 | 704 | (0.1+ | 2.0+) | 2006 10 03 | 704 | 0.4− | 0.3+ |
| 2001 08 25 | 704 | 0.7− | 0.6− | 2006 09 18 | 704 | 0.8− | 0.1− | 2006 10 03 | 704 | 0.6+ | 0.3+ |
| 2001 08 25 | 704 | 0.7− | 0.1− | 2006 09 18 | 704 | 0.7+ | 0.6− | 2006 10 03 | 704 | 0.8+ | 0.0 |
| 2001 08 25 | 704 | 0.3− | 0.2+ | 2006 09 18 | 704 | (1.8+ | 0.4−) | 2006 10 03 | 704 | 0.0 | 0.8− |
| 2001 08 25 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.8+ | 0.4− |
| 2001 08 25 | 704 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2005 04 07 | G96 | 0.3− | 1.5− | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2005 04 07 | G96 | 0.5− | 0.5− | 2006 09 18 | 699 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2005 04 07 | G96 | 0.7− | 0.3− | 2006 09 21 | 704 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 09 21 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2005 04 11 | G96 | 0.7− | 0.1− | 2006 09 21 | 704 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2005 04 11 | G96 | 0.0 | 0.4+ | 2006 09 21 | 683 | 0.2+ | 0.8− | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2005 04 11 | G96 | 0.2− | 0.1+ | 2006 09 21 | 704 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2005 04 11 | G96 | 0.0 | 0.7+ | 2006 09 21 | 683 | 0.0 | 1.4− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2005 05 08 | G96 | 0.0 | 0.2− | 2006 09 21 | 683 | 0.3− | 1.3− | 2006 10 17 | 703 | 0.6+ | 0.4+ |
| 2005 05 08 | G96 | 0.0 | 0.2− | 2006 09 22 | 683 | 0.0 | 0.6− | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2005 05 08 | G96 | 0.1− | 0.0 | 2006 09 22 | 683 | 0.1− | 0.9− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 09 22 | 683 | 0.7− | 0.7− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2005 05 10 | G96 | 0.3− | 0.1− | 2006 09 25 | 704 | 1.3+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2005 05 10 | G96 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2005 05 14 | 644 | 0.4− | 0.4− | 2006 09 26 | 683 | 0.5+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2005 05 14 | 644 | 0.3+ | 0.4− | 2006 09 26 | 683 | 0.9+ | 1.1+ | 2006 11 11 | 703 | 0.4+ | 0.3+ |
| 2005 05 14 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 683 | 0.8− | 1.0+ | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2005 06 12 | 691 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.8− | 0.9+ |
| 2005 06 12 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.0 | 0.7+ |
| 2005 06 12 | 691 | 0.2+ | 0.4− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2006 09 14 | 703 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.0 | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2006 09 14 | 703 | 0.1− | 0.8− | 2006 09 29 | 704 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.2− |

### (145223)∗ 2005 JS$_{61}$ = 2002 RP$_{214}$

Discovered 2005 May 8 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 77223)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.84468 | | (2000.0) | | | |
| $n$ | 0.27263787 | $\omega$ | 254.32568 | | +0.48346116 | +0.87056670 |
| $a$ | 2.3554755 | $\Omega$ | 44.96191 | | −0.74532756 | +0.46422518 |
| $e$ | 0.1247507 | $i$ | 7.44291 | | −0.45907748 | +0.16312142 |
| $P$ | 3.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.3− | 0.4+ | 2005 05 14 | 704 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2002 08 20 | 644 | 0.1− | 0.6+ | 2005 05 14 | 704 | 0.5+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 08 20 | 644 | 0.0 | 0.6+ | 2005 05 14 | 704 | 0.9+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 09 13 | 704 | 0.3+ | 0.1− | 2005 05 14 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 09 13 | 704 | 0.2− | 0.1+ | 2005 05 14 | 704 | 0.2− | 1.1+ | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2002 09 13 | 704 | 0.0 | 0.6+ | 2005 05 19 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.2+ |
| 2002 09 13 | 704 | 0.1+ | 0.2− | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2002 09 16 | 644 | 0.4− | 0.4+ | 2005 05 19 | 644 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.4+ |
| 2002 09 16 | 644 | 0.4− | 0.3+ | 2005 06 04 | 703 | (2.0− | 1.6+) | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2002 09 16 | 644 | 0.4− | 0.1+ | 2005 06 04 | 703 | 0.9+ | 1.4+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2004 01 16 | 691 | 0.3+ | 0.2+ | 2005 06 04 | 703 | 0.2+ | 0.5+ | 2006 11 12 | G96 | 0.4− | 0.1− |
| 2004 01 16 | 691 | 0.1− | 0.4+ | 2005 06 04 | 703 | 0.5+ | 0.2− | 2006 11 12 | G96 | 0.4− | 0.1− |
| 2004 01 16 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2005 03 13 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2005 03 13 | G96 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2005 03 13 | G96 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2005 03 13 | G96 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2005 04 11 | G96 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2005 04 11 | G96 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2005 04 11 | G96 | 0.3− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.6+ |
| 2005 05 08 | E12 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.5+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2005 05 08 | E12 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2005 05 08 | E12 | 0.7+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2005 05 08 | E12 | 0.9+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2005 05 09 | 704 | 1.1− | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2005 05 09 | 704 | 0.2+ | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2005 05 09 | 704 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.1+ | 1.5+ |
| 2005 05 09 | 704 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2005 05 10 | G96 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.5+ | 2006 11 18 | 704 | 1.0+ | 1.2+ |
| 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.7− | 0.6− | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.0 | | | | |
| 2005 05 10 | G96 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | | | | |

### (145224)∗ 2005 JR$_{63}$

Discovered 2005 May 10 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 137.23568 | | (2000.0) | | | |
| $n$ | 0.22848260 | $\omega$ | 34.22102 | | −0.84406149 | +0.53601779 |
| $a$ | 2.6499273 | $\Omega$ | 177.98568 | | −0.53465888 | −0.84344887 |
| $e$ | 0.0456198 | $i$ | 26.45094 | | +0.04123204 | +0.03576212 |
| $P$ | 4.31 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 703 | (3.4− | 0.3+) | 2005 05 14 | 704 | 0.1+ | 0.4− | 2006 09 12 | 703 | 0.6+ | 0.6+ |
| 2000 03 03 | 703 | 1.7+ | 0.1+ | 2005 05 14 | 704 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.2+ | 1.1− |
| 2000 03 03 | 703 | 0.3− | 0.2− | 2005 06 02 | 699 | 0.3− | 0.2− | 2006 09 12 | 703 | 0.7+ | 1.0+ |
| 2000 03 03 | 703 | (2.7+ | 1.8−) | 2005 06 02 | 699 | 0.6+ | 0.8− | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2000 03 27 | 699 | 0.6− | 0.6+ | 2005 06 02 | 699 | 0.0 | 0.4− | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2000 03 27 | 699 | 0.8− | 0.9+ | 2005 06 02 | 699 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2000 03 27 | 699 | 0.0 | 0.6+ | 2005 06 04 | 703 | 0.0 | 0.2− | 2006 09 16 | 699 | 0.2+ | 0.5+ |
| 2000 03 27 | 699 | 0.2− | 0.2+ | 2005 06 04 | 703 | 0.4− | 0.6+ | 2006 09 16 | 699 | (1.8+ | 1.2+) |
| 2002 10 08 | 699 | 1.0− | 0.0 | 2005 06 04 | 703 | 0.3+ | 0.6− | 2006 09 16 | 699 | (1.7+ | 0.4−) |
| 2002 10 08 | 699 | 0.2− | 0.1+ | 2005 06 04 | 703 | 1.2− | 0.1+ | 2006 09 16 | 699 | 0.0 | 0.8+ |
| 2002 10 08 | 699 | 0.3− | 0.0 | 2005 06 08 | 704 | (0.6+ | 1.9+) | 2006 09 18 | 704 | 0.9− | 0.8− |
| 2002 10 08 | 699 | 0.0 | 0.3+ | 2005 06 08 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 704 | 0.0 | 0.9+ |
| 2002 10 16 | 644 | 0.4+ | 0.3+ | 2005 06 08 | 704 | (0.3− | 1.9+) | 2006 09 18 | 704 | (0.7+ | 1.6+) |
| 2002 10 16 | 644 | 0.4+ | 0.3+ | 2005 06 08 | 704 | 0.6+ | 0.0 | 2006 09 18 | 704 | 0.1− | 0.2+ |
| 2002 10 16 | 644 | 0.6+ | 0.4+ | 2005 06 30 | 699 | 0.3− | 0.3+ | 2006 09 18 | 704 | 0.7+ | 0.0 |
| 2005 05 10 | 703 | 0.4− | 0.7+ | 2005 06 30 | 699 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.1+ | 0.0 |
| 2005 05 10 | 703 | 1.0− | 0.5+ | 2005 06 30 | 699 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2005 05 10 | 703 | 0.1+ | 0.2− | 2005 06 30 | 699 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.3− |
| 2005 05 10 | 703 | 0.2− | 0.0 | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.0 |
| 2005 05 11 | 704 | 0.4+ | 0.3− | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.2− | 0.9− |
| 2005 05 11 | 704 | 0.6− | 0.8+ | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.7+ | 0.1− |
| 2005 05 11 | 704 | 0.8− | 0.0 | 2006 08 27 | 699 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2005 05 11 | 704 | 0.2− | 0.5− | 2006 08 27 | 699 | 0.5+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2005 05 12 | 704 | 0.7+ | 0.8− | 2006 08 27 | 699 | 0.0 | 0.9+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2005 05 12 | 704 | 0.1− | 0.5− | 2006 08 27 | 699 | (0.4− | 2.1+) | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2005 05 12 | 704 | 0.6+ | 0.7− | 2006 08 29 | 703 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2005 05 12 | 704 | 0.0 | 0.6− | 2006 08 29 | 703 | 0.5− | 0.9− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 05 13 | 704 | 0.7+ | 0.7+ | 2006 08 29 | 703 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2005 05 13 | 704 | 0.1− | 0.8+ | 2006 08 29 | 703 | 0.1+ | 0.8+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2005 05 13 | 704 | 0.5+ | 0.3+ | 2006 08 30 | 704 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2005 05 13 | 704 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2005 05 14 | 704 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.6− | 0.4− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2005 05 14 | 704 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 0.1+ | 0.1− | | | | |

**(145225)∗ 2005 JO$_{66}$**

Discovered 2005 May 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.48961 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26824907 | $\omega$ | 236.75659 | | −0.28991413 | | +0.95636604 |
| $a$ | 2.3810978 | $\Omega$ | 16.50679 | | −0.83016504 | | −0.23245160 |
| $e$ | 0.0973907 | $i$ | 7.32921 | | −0.47620984 | | −0.17700354 |
| $P$ | 3.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.8+ | 0.2+ | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 691 | 0.5− | 0.1+ |
| 2001 03 03 | 704 | 0.6+ | 1.1+ | 2005 05 11 | 644 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.6− | 0.1+ |
| 2001 03 03 | 704 | 0.1− | 0.8+ | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2001 03 03 | 704 | 0.5− | 1.0+ | 2005 05 12 | 703 | 1.1− | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2001 03 19 | 608 | 1.0+ | 1.0+ | 2005 05 12 | 703 | 1.0+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2001 03 19 | 608 | 0.5+ | 0.1+ | 2005 05 12 | 703 | 0.3+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.1− |
| 2001 03 19 | 608 | 0.6+ | 0.6+ | 2005 05 12 | 703 | 0.6− | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2− |
| 2002 08 19 | 644 | 0.1+ | 0.3− | 2005 05 12 | 644 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.0 | 0.3− | 2005 05 12 | 644 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2002 08 19 | 644 | 0.1− | 0.3− | 2005 05 12 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2002 08 30 | 644 | 0.2− | 0.2+ | 2005 05 18 | 644 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2005 05 18 | 644 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2005 05 18 | 644 | 0.7+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 08 30 | 644 | 0.2− | 0.5+ | 2005 06 26 | 644 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.4+ | 2005 06 26 | 644 | 0.5+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 08 30 | 644 | 0.1− | 0.5+ | 2005 06 26 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 03 14 | G96 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2005 03 14 | G96 | 0.3+ | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.3+ |
| 2005 03 14 | G96 | 0.6− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2005 03 14 | G96 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2005 05 04 | 644 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2005 05 04 | 644 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2005 05 04 | 644 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2005 05 10 | 699 | 1.4− | 0.8+ | 2006 09 30 | 691 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2005 05 10 | 699 | 0.6− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2005 05 10 | 699 | 0.8− | 0.7+ | 2006 09 30 | 691 | 0.3+ | 0.1+ | | | | |
| 2005 05 10 | 699 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.4− | 0.3+ | | | | |

**(145226)∗ 2005 JE$_{67}$ = 2002 WT$_{14}$**

Discovered 2005 May 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77226)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.88846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22946493 | $\omega$ | 247.48435 | | +0.88810091 | | +0.38269983 |
| $a$ | 2.6423591 | $\Omega$ | 89.22975 | | −0.26876260 | | +0.88168695 |
| $e$ | 0.2007027 | $i$ | 14.75084 | | −0.37288529 | | +0.27598725 |
| $P$ | 4.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.1− | 0.2− | 2005 05 11 | 703 | 1.2− | 0.3+ | 2006 09 25 | 703 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | 1.1+ | 0.4− | 2005 05 11 | 703 | 0.1− | 0.8− | 2006 10 04 | 703 | 1.0− | 0.1+ |
| 2002 11 12 | 704 | 0.7+ | 0.4− | 2005 05 12 | 599 | 0.8+ | 0.4+ | 2006 10 04 | 703 | 0.2+ | 0.5+ |
| 2002 11 12 | 704 | 0.3− | 0.4− | 2005 05 12 | 599 | 0.8+ | 0.7+ | 2006 10 04 | 703 | 0.2− | 0.5+ |
| 2002 11 28 | 699 | 0.3− | 0.5+ | 2005 05 12 | 599 | 0.6+ | 0.3+ | 2006 10 04 | 703 | 0.1+ | 0.8+ |
| 2002 11 28 | 699 | 0.0 | 0.7+ | 2005 05 15 | 644 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 11 28 | 699 | 0.9− | 0.1− | 2005 05 15 | 644 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.2+ |
| 2002 11 28 | 699 | 0.2+ | 0.8− | 2005 05 15 | 644 | 0.5+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 12 01 | 704 | 0.2− | 0.2+ | 2005 05 15 | 644 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.2− |
| 2002 12 01 | 704 | 0.3− | 0.1+ | 2005 05 15 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 2002 12 01 | 704 | 0.7− | 0.2+ | 2005 05 15 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 703 | (2.2− | 3.5+) |
| 2002 12 01 | 704 | 0.1− | 1.1+ | 2005 05 20 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | (1.3+ | 2.6+) |
| 2002 12 31 | 699 | (1.7+ | 1.1−) | 2005 05 20 | 644 | 0.7+ | 0.3+ | 2006 10 31 | 703 | 1.4+ | 0.7+ |
| 2002 12 31 | 699 | 0.5− | 0.7+ | 2005 05 20 | 644 | 0.3+ | 0.2+ | 2006 10 31 | 703 | 0.6+ | 0.0 |
| 2002 12 31 | 699 | 0.3+ | 0.5+ | 2005 06 07 | 703 | 0.4− | 0.9+ | 2006 10 31 | 703 | 0.9+ | 0.2+ |
| 2002 12 31 | 699 | 0.2+ | 0.1− | 2005 06 07 | 703 | 1.0− | 0.2+ | 2006 10 31 | 703 | 0.0 | 0.0 |
| 2004 04 16 | 645 | 0.1+ | 0.0 | 2005 06 07 | 703 | 1.0− | 0.4+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2004 04 16 | 645 | 0.0 | 0.1+ | 2005 06 07 | 703 | 0.7+ | 0.7− | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2005 05 04 | 703 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.6− | 0.5− | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2005 05 04 | 703 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.7+ | 2006 11 23 | 703 | 0.9− | 0.0 |
| 2005 05 04 | 703 | (0.2− | 1.6+) | 2006 08 30 | 704 | 0.7− | 0.1+ | 2006 11 23 | 703 | 0.4− | 0.3− |
| 2005 05 04 | 703 | 0.2+ | 0.7+ | 2006 08 30 | 704 | 0.7− | 0.6− | 2006 11 23 | 703 | 0.1− | 0.3+ |
| 2005 05 11 | 703 | 0.9− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.6+ | 2006 11 23 | 703 | 0.3− | 0.5− |
| 2005 05 11 | 703 | 0.4− | 0.4+ | 2006 09 25 | 703 | 0.1+ | 0.7+ | | | | |

**(145227)∗ 2005 JG$_{67}$ = 2002 UZ$_{16}$**

Discovered 2005 May 4 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 86733)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.37813 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21880153 | $\omega$ | 149.89739 | | +0.76003390 | | +0.64877675 |
| $a$ | 2.7275275 | $\Omega$ | 169.39556 | | −0.62977157 | | +0.74965897 |
| $e$ | 0.1203586 | $i$ | 11.88830 | | −0.16042518 | | +0.13076760 |
| $P$ | 4.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 04 | 910 | 0.5+ | 0.7+ | 2005 05 31 | 703 | 0.9− | 0.7− | 2006 09 25 | 699 | 0.0 | 0.5+ |
| 1997 09 05 | 910 | 0.4+ | 0.6+ | 2005 05 31 | 703 | 0.5− | 1.5+ | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 1997 09 05 | 910 | 0.7+ | 0.6+ | 2005 05 31 | 703 | 0.1− | 1.0− | 2006 09 25 | 699 | 0.3− | 0.0 |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2005 06 23 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.4+ |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2005 06 23 | 644 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.4− | 1.0+ |
| 2002 10 30 | 608 | 0.0 | 0.1− | 2005 06 23 | 644 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.1− |
| 2002 10 30 | 608 | 0.8− | 0.5+ | 2006 08 18 | 699 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.5+ | 0.5+ |
| 2002 10 30 | 608 | 0.4− | 0.1+ | 2006 08 18 | 699 | 0.5− | 0.8+ | 2006 09 26 | 704 | 0.7+ | 1.3+ |
| 2002 10 31 | 704 | 0.0 | 0.3− | 2006 08 18 | 699 | 0.6+ | 0.8+ | 2006 09 28 | 704 | 0.1− | 0.9+ |
| 2002 10 31 | 704 | 0.2+ | 0.6+ | 2006 08 18 | 699 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.2+ |
| 2002 10 31 | 704 | 0.6− | 0.6+ | 2006 08 21 | 704 | 0.1− | 1.0+ | 2006 09 28 | 704 | 0.1+ | 0.5+ |
| 2004 02 11 | 644 | 0.5+ | 0.9+ | 2006 08 21 | 704 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.6− | 0.6+ |
| 2004 02 11 | 644 | 0.5+ | 0.7+ | 2006 08 21 | 704 | (0.1− | 2.3+) | 2006 09 30 | 704 | 0.6+ | 1.1+ |
| 2004 02 11 | 644 | 0.6+ | 0.4+ | 2006 08 21 | 704 | 0.3+ | 0.9+ | 2006 09 30 | 704 | 0.0 | 1.0+ |
| 2004 02 17 | 691 | 0.3+ | 0.5+ | 2006 08 25 | 704 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 2004 02 17 | 691 | 0.4+ | 0.4+ | 2006 08 25 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2004 02 17 | 691 | 0.3+ | 0.5+ | 2006 08 25 | 704 | 0.0 | 1.1+ | 2006 09 30 | 704 | 0.0 | 0.3+ |
| 2005 03 31 | 691 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 0.3− | 0.8− | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2005 03 31 | 691 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 1.5+ | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 2005 03 31 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | (0.8− | 1.6+) | 2006 09 30 | 703 | 1.2− | 0.2+ |
| 2005 03 31 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 703 | (1.3− | 1.7+) | 2006 09 30 | 704 | 0.3+ | 0.1+ |
| 2005 03 31 | 691 | 0.4+ | 0.3+ | 2006 08 28 | 703 | (0.7− | 2.0+) | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2005 03 31 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 691 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2005 04 18 | 703 | 1.0− | 0.4+ | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2005 04 18 | 703 | 0.2+ | 0.6+ | 2006 08 28 | 691 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2005 04 18 | 703 | 0.8− | 0.8+ | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2005 04 18 | 703 | 0.6− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2005 05 04 | 703 | 0.1+ | 0.7− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.3− |
| 2005 05 04 | 703 | 0.9− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2005 05 04 | 703 | 0.2+ | 0.9− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2005 05 04 | 703 | 0.8− | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.6− | 0.6− |
| 2005 05 11 | 699 | 0.3+ | 0.4+ | 2006 09 16 | 704 | 0.2− | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2005 05 11 | 699 | 0.5+ | 0.8− | 2006 09 16 | 704 | 1.1+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2005 05 11 | 699 | 0.7+ | 1.3− | 2006 09 16 | 704 | 0.9− | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2005 05 11 | 703 | 0.9− | 1.0+ | 2006 09 16 | 704 | 0.4− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2005 05 11 | 703 | 0.0 | 0.2− | 2006 09 16 | 704 | 1.2− | 0.9− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2005 05 11 | 699 | 0.6+ | 0.8+ | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2005 05 11 | 703 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2005 05 11 | 703 | 0.3− | 0.8+ | 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2005 05 15 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2005 05 15 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 704 | 0.9− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 05 15 | 644 | 0.3+ | 0.3+ | 2006 09 19 | 704 | 1.4− | 0.6− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 05 31 | 699 | 0.7+ | 0.7− | 2006 09 19 | 704 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 05 31 | 699 | 1.4− | 0.7+ | 2006 09 20 | 704 | 0.6− | 0.3− | 2006 10 24 | 644 | 0.4+ | 0.1+ |
| 2005 05 31 | 699 | 1.1+ | 1.1+ | 2006 09 20 | 704 | (1.7− | 0.7−) | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2005 05 31 | 703 | 0.2− | 0.6− | 2006 09 20 | 704 | 0.1− | 0.5− | 2006 10 24 | 644 | 0.1+ | 0.3− |
| 2005 05 31 | 699 | 0.6− | 0.0 | 2006 09 20 | 704 | 0.5− | 0.5− | | | | |

**(145228)∗ 2005 JF$_{68}$**

Discovered 2005 May 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.86346 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22094486 | $\omega$ | 155.65855 | | +0.86402237 | | +0.50270101 |
| $a$ | 2.7098595 | $\Omega$ | 173.94194 | | −0.49400945 | | +0.85708344 |
| $e$ | 0.1420910 | $i$ | 15.11221 | | −0.09705670 | | +0.11269286 |
| $P$ | 4.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.4− | 1.3+ | 2006 08 24 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.5− |
| 2000 03 11 | 704 | 1.3+ | 0.3− | 2006 08 24 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | 0.3+ | 0.1− | 2006 08 26 | 704 | 0.6− | 1.5+ | 2006 09 19 | 699 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 1.0− | 0.6+ | 2006 08 26 | 704 | (0.4+ | 2.2+) | 2006 09 19 | 699 | 0.7+ | 0.2+ |
| 2000 03 11 | 704 | 0.0 | 0.6+ | 2006 08 26 | 704 | (0.5− | 1.7+) | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2002 11 06 | 699 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.6+ | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.1+ |
| 2002 11 06 | 699 | (1.5− | 0.5+) | 2006 08 27 | 699 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.3− | 0.2+ |
| 2002 11 06 | 699 | (1.8− | 0.3+) | 2006 08 27 | 699 | 0.7− | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.1− |
| 2002 11 06 | 699 | (1.5− | 2.0+) | 2006 08 28 | 703 | 0.8− | 0.7− | 2006 09 20 | 704 | 0.4+ | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.1− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.1+ |
| 2002 12 13 | 644 | 0.1− | 0.9+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2002 12 13 | 644 | 0.1− | 0.4+ | 2006 08 29 | 691 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2002 12 13 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.7− | 0.9+ |
| 2004 01 29 | 704 | 1.3− | 0.4− | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.5+ | 0.2− |
| 2004 01 29 | 704 | 0.5+ | 0.1− | 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2004 01 29 | 704 | 1.0+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2004 01 29 | 704 | 0.4+ | 0.7+ | 2006 08 30 | 704 | (1.7− | 0.8+) | 2006 09 25 | 699 | 0.6+ | 0.0 |
| 2005 04 09 | 704 | 0.1− | 0.3− | 2006 08 30 | 704 | 1.1− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2005 04 09 | 704 | 0.8+ | 0.7+ | 2006 08 30 | 704 | 0.8− | 0.5− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2005 04 09 | 704 | 0.6− | 0.6+ | 2006 09 01 | 704 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.2+ | 1.0+ |
| 2005 04 09 | 704 | 0.1+ | 0.5+ | 2006 09 01 | 704 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.2− |
| 2005 04 30 | 683 | (1.0+ | 1.6+) | 2006 09 01 | 704 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.0 |
| 2005 04 30 | 683 | (1.1− | 1.6+) | 2006 09 01 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.2+ |
| 2005 04 30 | 683 | (2.3− | 2.4+) | 2006 09 01 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.5− |
| 2005 05 06 | 704 | 0.3− | 1.3+ | 2006 09 12 | 703 | 0.3− | 0.6− | 2006 09 27 | 704 | 0.3− | 0.4+ |
| 2005 05 06 | 704 | 0.8− | 0.2+ | 2006 09 12 | 703 | 0.6− | 0.4− | 2006 09 28 | 704 | 0.2+ | 0.3− |
| 2005 05 06 | 704 | 0.7+ | 0.7+ | 2006 09 12 | 703 | 0.2− | 0.3− | 2006 09 28 | 704 | 0.2− | 0.9+ |
| 2005 05 06 | 704 | 0.9+ | 1.3+ | 2006 09 12 | 703 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.4− | 0.3− |
| 2005 05 11 | 703 | 0.0 | 1.0− | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.8− | 0.3− |
| 2005 05 11 | 703 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 09 30 | 704 | 0.8− | 0.4− |
| 2005 05 11 | 703 | 0.2− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2005 05 11 | 703 | (1.9+ | 0.3−) | 2006 09 16 | 699 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2006 08 20 | 691 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.0 | 1.2− |
| 2006 08 20 | 691 | 0.2+ | 0.2− | 2006 09 16 | 699 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2006 08 20 | 691 | 0.0 | 0.2− | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.7− | 0.4+ |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 695 | 0.2+ | 0.2+ |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.2+ | 1.3+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2006 08 23 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.0 | 1.0+ | 2006 10 20 | 695 | 0.0 | 0.2+ |
| 2006 08 23 | 644 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 10 20 | 695 | 0.0 | 0.2+ |
| 2006 08 24 | 704 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 10 20 | 695 | 0.1− | 0.1+ |
| 2006 08 24 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2006 08 24 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.5+ | | | | |

**(145229)∗ 2005 JT$_{70}$**

Discovered 2005 May 7 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.99987 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24614663 | $\omega$ | 142.80400 | | +0.36953223 | | +0.92564299 |
| $a$ | 2.5215841 | $\Omega$ | 148.64399 | | −0.88574266 | | +0.37737941 |
| $e$ | 0.1132302 | $i$ | 9.00329 | | −0.28090189 | | +0.02774591 |
| $P$ | 4.00 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.0 | 0.1+ | 2005 05 11 | 703 | 0.8− | 0.5− | 2006 09 18 | 703 | (1.0− | 1.7−) |
| 1993 04 17 | 691 | 0.3+ | 0.1− | 2005 05 11 | 703 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.2− |
| 1993 04 17 | 691 | 0.1+ | 0.1− | 2005 05 11 | 703 | 0.6− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.3− |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2005 05 11 | 012 | 0.4− | 0.4− | 2006 09 21 | 699 | (0.8− | 2.3+) |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2005 05 11 | 012 | 1.2+ | 0.1− | 2006 09 21 | 699 | 0.9− | 1.2+ |
| 2001 05 18 | 699 | 1.0− | 0.6− | 2005 05 12 | 012 | 0.4+ | 0.7+ | 2006 09 21 | 699 | 0.4+ | 1.2+ |
| 2001 05 18 | 699 | 1.1− | 0.3+ | 2005 05 12 | 012 | (2.1+ | 1.0−) | 2006 09 21 | 699 | 0.3− | 1.3+ |
| 2001 05 18 | 699 | 0.3− | 0.9+ | 2005 05 12 | 012 | 0.4+ | 0.0 | 2006 09 29 | 699 | 0.3− | 1.4+ |
| 2001 05 18 | 699 | 0.6− | 0.2− | 2005 05 12 | 012 | 1.0+ | 0.6− | 2006 09 29 | 699 | 0.1+ | 1.3− |
| 2002 10 15 | 644 | 0.4− | 0.6+ | 2005 05 12 | 012 | 0.1− | 0.4+ | 2006 09 29 | 699 | (1.3− | 2.0+) |
| 2002 10 15 | 644 | 0.4+ | 0.2+ | 2005 05 12 | 599 | 0.7+ | 0.6+ | 2006 09 29 | 699 | 1.0− | 0.8+ |
| 2002 10 15 | 644 | 0.3− | 0.5+ | 2005 05 12 | 599 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 11 06 | 644 | 0.8− | 0.2+ | 2005 05 12 | 599 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 644 | 0.5− | 0.2+ | 2005 05 12 | 599 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 06 | 644 | 0.1− | 0.3+ | 2005 05 15 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2004 01 17 | 691 | 0.0 | 0.0 | 2005 05 15 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 01 17 | 691 | 0.0 | 0.4+ | 2005 05 15 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 01 17 | 691 | 0.1− | 0.2+ | 2005 05 20 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2005 05 20 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2004 02 17 | 645 | 0.1+ | 0.0 | 2005 05 20 | 644 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.2+ |
| 2005 05 04 | 703 | 1.4− | 0.4− | 2005 05 31 | 699 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2005 05 04 | 703 | 0.2− | 0.1+ | 2005 05 31 | 699 | 1.1+ | 0.2− | 2006 10 22 | 703 | 0.7− | 0.3− |
| 2005 05 04 | 703 | 0.1− | 1.4− | 2005 05 31 | 699 | 0.4+ | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2005 05 04 | 703 | 1.1+ | 0.9− | 2005 05 31 | 699 | (1.9− | 0.7+) | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2005 05 07 | 703 | 0.0 | 0.8+ | 2005 06 07 | 703 | 0.4+ | 0.8+ | 2006 10 28 | 703 | 1.5+ | 1.3+ |
| 2005 05 07 | 703 | 1.0− | 0.0 | 2005 06 07 | 703 | 0.8+ | 0.3+ | 2006 10 28 | 703 | 0.6+ | 1.1− |
| 2005 05 07 | 703 | 0.9− | 1.3+ | 2005 06 07 | 703 | 1.2+ | 0.5+ | 2006 10 28 | 703 | 1.4+ | 1.2+ |
| 2005 05 07 | 703 | 1.4− | 0.4+ | 2005 06 07 | 703 | 0.6+ | 0.4− | 2006 10 28 | 703 | 0.5+ | 0.1− |
| 2005 05 11 | 703 | 0.9− | 0.4− | 2006 09 18 | 703 | 0.7+ | 0.9− | | | | |

**(145230)∗ 2005 JM$_{75}$**

Discovered 2005 May 9 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.14693 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26824310 | $\omega$ | 181.11346 | | +0.61689507 | | +0.75699713 |
| $a$ | 2.3811332 | $\Omega$ | 127.01818 | | −0.71999877 | | +0.65333017 |
| $e$ | 0.1897625 | $i$ | 15.65062 | | −0.31787143 | | −0.01072484 |
| $P$ | 3.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 0.0 | 0.4+ | 2005 04 11 | 704 | 0.1− | 1.0+ | 2006 09 19 | 703 | (1.6+ | 0.3−) |
| 2001 03 20 | 699 | 0.3− | 1.3+ | 2005 04 11 | 704 | 0.9+ | 1.0+ | 2006 09 19 | 703 | 0.2− | 0.2− |
| 2001 03 20 | 699 | 1.1+ | 1.5+ | 2005 04 11 | 704 | 1.1+ | 1.4+ | 2006 09 19 | 703 | 1.1+ | 0.7+ |
| 2001 03 20 | 699 | 0.8+ | 0.3− | 2005 04 11 | 704 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.5+ | 0.9+ |
| 2002 08 14 | 704 | (0.5+ | 1.8+) | 2005 04 16 | 703 | (3.8− | 0.4+) | 2006 10 11 | 644 | 0.1+ | 0.8+ |
| 2002 08 14 | 704 | (0.0 | 2.8+) | 2005 04 16 | 703 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.5+ |
| 2002 08 14 | 704 | 1.0− | 0.5+ | 2005 04 16 | 703 | 0.0 | 0.6− | 2006 10 20 | 703 | 0.2− | 0.2− |
| 2002 08 14 | 704 | (0.3− | 2.4+) | 2005 04 16 | 703 | 0.9+ | 0.2− | 2006 10 20 | 703 | 1.1− | 0.5+ |
| 2002 09 13 | 699 | 0.2− | 0.9+ | 2005 05 02 | 703 | 0.4− | 0.3+ | 2006 10 20 | 703 | 0.7− | 0.2+ |
| 2002 09 13 | 699 | 0.4+ | 0.4+ | 2005 05 02 | 703 | 0.1− | 0.5− | 2006 10 20 | 703 | 0.0 | 0.8+ |
| 2002 09 13 | 699 | 0.4− | 0.8+ | 2005 05 02 | 703 | 0.8− | 0.4− | 2006 10 28 | 703 | 0.2− | 0.7+ |
| 2002 09 13 | 699 | 0.2− | 0.4+ | 2005 05 09 | 703 | 0.3+ | 0.9− | 2006 10 28 | 703 | 0.2− | 1.3+ |
| 2002 10 07 | 644 | 0.4− | 0.9+ | 2005 05 09 | 703 | 0.3− | 0.2− | 2006 10 28 | 703 | 1.5+ | 0.8− |
| 2002 10 07 | 644 | 0.1+ | 0.2+ | 2005 05 09 | 703 | 0.3− | 0.4− | 2006 10 28 | 703 | 1.2− | 0.9− |
| 2002 10 07 | 644 | 0.1− | 0.5+ | 2005 05 09 | 703 | 0.1+ | 0.8− | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2003 12 22 | 691 | 0.1+ | 0.1+ | 2005 05 11 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 703 | 1.7+ | 0.6− |
| 2003 12 22 | 691 | 0.1− | 0.3− | 2005 05 11 | 704 | 0.2+ | 1.1+ | 2006 11 17 | 703 | 0.3− | 1.0+ |
| 2003 12 22 | 691 | 0.0 | 0.3+ | 2005 05 11 | 704 | 0.2− | 0.8+ | 2006 11 17 | 703 | 0.6− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 703 | 0.4+ | 0.6+ | 2005 06 08 | 703 | 1.3− | 0.5− | 2006 11 23 | 703 | 0.1− | 0.7− |
| 2005 04 06 | 703 | 0.4+ | 0.7+ | 2005 06 08 | 703 | 0.4− | 0.4+ | 2006 11 23 | 703 | 0.5+ | 0.3− |
| 2005 04 06 | 703 | 1.3− | 1.5+ | 2005 06 08 | 703 | 1.0+ | 0.5+ | 2006 11 23 | 703 | 0.6− | 0.3+ |
| 2005 04 06 | 703 | 0.2+ | 0.6− | 2005 06 08 | 703 | (1.4+ | 1.7−) | 2006 11 23 | 703 | 1.1− | 0.1− |
| 2005 04 11 | 704 | 0.4+ | 0.9+ | 2006 09 19 | 703 | (1.9− | 1.5+) | | | | |

**(145231)∗ 2005 JX$_{77}$**

Discovered 2005 May 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.55303 | | | | | |
| $n$ | 0.17531396 | $\omega$ | 260.99274 | | −0.27438401 | +0.96142133 |
| $a$ | 3.1617320 | $\Omega$ | 352.98913 | | −0.80729493 | −0.24135161 |
| $e$ | 0.1938807 | $i$ | 9.21972 | | −0.52248284 | −0.13197890 |
| $P$ | 5.62 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 699 | 0.8+ | 1.2+ | 2005 05 14 | E12 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.0 | 0.1− |
| 1999 03 24 | 699 | 0.3+ | 1.8+ | 2005 05 14 | E12 | 0.1− | 0.4− | 2006 09 14 | 703 | (1.8+ | 2.7+) |
| 1999 03 24 | 699 | 0.8+ | 0.1− | 2005 05 14 | E12 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.5− | 1.1+ |
| 2004 01 18 | 644 | 0.4+ | 0.8+ | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.5+ |
| 2004 01 18 | 644 | 0.4+ | 0.6+ | 2005 06 27 | 644 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 1.2− | 0.9+ |
| 2004 01 18 | 644 | 0.3+ | 0.7+ | 2005 06 27 | 644 | 0.5+ | 0.5+ | 2006 09 17 | 704 | (0.2+ | 1.6+) |
| 2004 02 11 | 691 | 0.3+ | 0.6+ | 2006 08 14 | 644 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.9+ | 0.6+ |
| 2004 02 11 | 691 | 0.2+ | 0.5+ | 2006 08 14 | 644 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.7+ |
| 2004 02 11 | 691 | 0.3+ | 0.5+ | 2006 08 14 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.6− | 0.5+ |
| 2005 01 25 | 809 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.7+ |
| 2005 01 25 | 809 | 0.2− | 0.1− | 2006 08 16 | 644 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.5− |
| 2005 01 25 | 809 | 0.4− | 0.0 | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.1− |
| 2005 04 10 | E12 | 0.4− | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2005 04 10 | E12 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2005 04 10 | E12 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2005 04 10 | E12 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2005 05 10 | 699 | 1.3+ | 0.4− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.7− | 1.1+ |
| 2005 05 10 | 699 | 0.5+ | 0.5+ | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.9+ |
| 2005 05 10 | 699 | (1.8+ | 1.2+) | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.7+ |
| 2005 05 10 | 699 | 0.0 | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 1.4− | 0.6− |
| 2005 05 11 | 644 | 0.0 | 0.4+ | 2006 08 21 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.4− | 0.3+ |
| 2005 05 11 | 644 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2005 05 13 | E12 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2005 05 13 | E12 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2005 05 13 | E12 | 0.4− | 0.6+ | 2006 08 30 | 699 | 0.5+ | 0.3− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2005 05 13 | E12 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2005 05 14 | E12 | 0.4− | 0.6+ | 2006 08 30 | 699 | 0.6− | 0.7+ | 2006 10 27 | G96 | 0.6− | 0.6− |

**(145232)∗ 2005 JU$_{79}$ = 2002 MN$_4$**

Discovered 2005 May 10 by the Mt. Lemmon Survey at Mt. Lemmon. Id. G. V. Williams (*MPO* 77231)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 177.40769 | | | | | |
| $n$ | 0.28733936 | $\omega$ | 317.15490 | | −0.95742950 | +0.26924291 |
| $a$ | 2.2744303 | $\Omega$ | 238.74203 | | −0.22077436 | −0.91531239 |
| $e$ | 0.0289121 | $i$ | 6.99475 | | −0.18597699 | −0.29951877 |
| $P$ | 3.43 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | (1.3+ | 1.5+) | 2005 05 12 | 644 | 0.2+ | 0.1− | 2006 09 30 | 703 | 1.1+ | 1.0+ |
| 2001 01 26 | 704 | 0.2+ | 0.3+ | 2005 05 16 | 691 | 0.8− | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.3− |
| 2001 01 26 | 704 | 0.5+ | 0.4+ | 2005 05 16 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2001 01 26 | 704 | (1.8+ | 1.5+) | 2005 05 16 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 05 16 | 644 | 0.1+ | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 05 16 | 644 | 0.2+ | 0.2− | 2006 10 17 | 703 | 1.4− | 0.6+ |
| 2002 06 22 | 950 | 0.3− | 0.5+ | 2005 05 16 | 644 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.3− | 1.1+ |
| 2002 06 22 | 950 | 0.1− | 0.4+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 06 22 | 950 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 06 23 | 950 | 0.3− | 0.6+ | 2005 05 19 | 644 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 06 23 | 950 | 0.1− | 0.7+ | 2005 06 06 | 691 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 06 23 | 950 | 0.1− | 0.6+ | 2005 06 06 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2003 11 29 | 691 | 0.2− | 0.2+ | 2005 06 06 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2003 11 29 | 691 | 0.0 | 0.4+ | 2005 06 12 | G96 | 0.3− | 1.4− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2003 11 29 | 691 | 0.1+ | 0.4+ | 2005 06 12 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2005 05 10 | G96 | 0.3− | 0.2− | 2005 06 12 | G96 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2005 05 10 | G96 | 0.2− | 0.2− | 2005 06 12 | G96 | 0.4− | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.4− | 0.5− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.0 | 0.9+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2005 05 11 | 644 | 0.3+ | 0.2− | 2006 09 28 | 703 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2005 05 11 | 644 | 0.2+ | 0.1− | 2006 09 28 | 703 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2005 05 11 | 644 | 0.2+ | 0.2− | 2006 09 30 | 703 | 1.1− | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2005 05 12 | 644 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2005 05 12 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.8+ | 0.4− | 2006 11 18 | G96 | 0.0 | 0.1− |

**(145233)∗ 2005 JB$_{80}$**

Discovered 2005 May 10 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.88178 | | | | | |
| $n$ | 0.19123716 | $\omega$ | 341.26634 | | −0.36322188 | +0.93155055 |
| $a$ | 2.9836957 | $\Omega$ | 267.43266 | | −0.85265312 | −0.33963416 |
| $e$ | 0.1995415 | $i$ | 0.96561 | | −0.37556960 | −0.12985456 |
| $P$ | 5.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.0 | 0.2− | 2005 03 11 | G96 | 0.3− | 0.3− | 2005 06 06 | 691 | 0.1+ | 0.2− |
| 1996 10 07 | 691 | 0.2− | 0.1+ | 2005 03 11 | G96 | 0.2+ | 0.4+ | 2005 06 06 | 691 | 0.2+ | 0.4+ |
| 1996 10 07 | 691 | 0.1− | 0.2− | 2005 03 11 | G96 | 0.5− | 0.3+ | 2005 06 06 | 691 | 0.1− | 0.3+ |
| 2001 09 23 | 704 | 1.0+ | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.2+ | 2005 06 14 | G96 | 0.5− | 0.1+ |
| 2001 09 23 | 704 | 0.7+ | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.3+ | 2005 06 14 | G96 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.7+ | 1.2+ | 2005 05 10 | G96 | 0.1− | 0.2+ | 2005 06 14 | G96 | 0.2− | 0.1+ |
| 2001 09 23 | 691 | 0.3− | 0.1+ | 2005 05 10 | G96 | 0.2− | 0.1+ | 2005 06 14 | G96 | 0.4− | 0.1+ |
| 2001 09 23 | 691 | 0.0 | 0.5+ | 2005 05 11 | 644 | 0.3+ | 0.2+ | 2005 06 15 | 691 | 0.1+ | 0.1− |
| 2001 09 23 | 691 | 0.5− | 0.3+ | 2005 05 11 | 644 | 0.2− | 0.2− | 2005 06 15 | 691 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 1.0+ | 0.9+ | 2005 05 11 | 644 | 0.2− | 0.1+ | 2005 06 15 | 691 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.7− | 2005 05 18 | E12 | 0.6− | 1.1+ | 2006 09 15 | 691 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2005 05 18 | E12 | 0.8+ | 0.7+ | 2006 09 15 | 691 | 0.3− | 0.2+ |
| 2001 10 21 | 704 | 0.9+ | 0.6+ | 2005 05 18 | E12 | 0.6+ | 0.4− | 2006 09 15 | 691 | 0.3− | 0.3+ |
| 2004 02 12 | 691 | 0.2+ | 0.3+ | 2005 05 18 | E12 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.8− | 0.1− |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2005 05 29 | E12 | 0.8− | 0.4+ | 2006 09 19 | 703 | 0.4+ | 0.6− |
| 2004 02 12 | 691 | 0.3− | 0.5+ | 2005 05 29 | E12 | 1.3+ | 0.9− | 2006 09 19 | 703 | 1.7− | 0.7+ |
| 2004 04 13 | 645 | 0.1+ | 0.0 | 2005 05 29 | E12 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.7− |
| 2004 04 13 | 645 | 0.1+ | 0.0 | 2005 05 29 | E12 | 0.0 | 0.5+ | 2006 10 01 | 703 | 1.1+ | 1.3− |
| 2004 04 16 | 645 | 0.1− | 0.1+ | 2005 06 04 | 704 | 0.5− | 0.3+ | 2006 10 01 | 703 | 0.9+ | 0.5+ |
| 2004 04 16 | 645 | 0.1− | 0.0 | 2005 06 04 | 704 | 0.8− | 0.3− | 2006 10 01 | 703 | 1.3− | 1.2− |
| 2005 03 11 | G96 | 0.4− | 0.5− | 2005 06 04 | 704 | 0.5+ | 0.1+ | 2006 10 01 | 703 | 0.6+ | 0.1− |

**(145234)∗ 2005 JQ$_{80}$**

Discovered 2005 May 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.70285 | | | | | |
| $n$ | 0.18090271 | $\omega$ | 196.40846 | | +0.99312247 | −0.10058045 |
| $a$ | 3.0962736 | $\Omega$ | 168.83899 | | +0.10620561 | +0.98934782 |
| $e$ | 0.2148385 | $i$ | 18.03498 | | −0.04927611 | +0.10523533 |
| $P$ | 5.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1− | 0.0 | 2006 08 21 | 704 | 0.2− | 0.6− | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.6+ |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.0 | 0.7+ |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.5+ | 1.2+ |
| 2001 08 23 | 644 | 0.4+ | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.7+ |
| 2001 08 23 | 644 | 0.3− | 0.2− | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.6+ |
| 2001 08 23 | 644 | 0.3+ | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.0 | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 14 | 644 | 0.2+ | 0.5+ | 2006 08 25 | 704 | 0.0 | 0.7+ | 2006 09 28 | 704 | 0.8+ | 0.4+ | | |
| 2001 09 14 | 644 | 0.1− | 0.3+ | 2006 08 25 | 704 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.3+ | 0.6+ | | |
| 2001 09 14 | 644 | 0.2− | 0.2+ | 2006 08 25 | 704 | (0.9− | 1.5+) | 2006 09 30 | 703 | 0.4+ | 0.4− | | |
| 2001 11 12 | 608 | 0.3+ | 0.0 | 2006 08 25 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.3+ | | |
| 2001 11 12 | 608 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.5− | | |
| 2001 11 12 | 608 | 0.2+ | 0.1− | 2006 08 27 | 699 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.7− | | |
| 2001 11 17 | 699 | 0.1+ | 0.6+ | 2006 08 27 | 699 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 2001 11 17 | 699 | 0.2+ | 1.1+ | 2006 08 27 | 699 | 0.7− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 2001 11 17 | 699 | 0.8− | 0.1+ | 2006 09 16 | 699 | 0.2+ | 0.3− | 2006 10 10 | 644 | 0.4− | 0.1− | | |
| 2001 11 17 | 699 | 0.4− | 0.6+ | 2006 09 16 | 699 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2001 12 14 | 644 | 0.2− | 0.8+ | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2001 12 14 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2001 12 14 | 644 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2004 03 14 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2004 03 14 | 691 | 0.0 | 0.6+ | 2006 09 19 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2004 03 14 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 09 19 | 704 | 0.8+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.9− | 0.4− | | |
| 2005 05 11 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 704 | 0.3− | 1.0− | 2006 10 19 | 703 | 0.2− | 0.7− | | |
| 2005 05 11 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 19 | 703 | (2.3− | 1.5−) | | |
| 2005 05 11 | 691 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.3− | | |
| 2005 05 20 | 644 | 0.2+ | 0.1− | 2006 09 19 | 704 | 1.3+ | 1.0− | 2006 10 23 | 644 | 0.1− | 0.1+ | | |
| 2005 05 20 | 644 | 0.4− | 0.2− | 2006 09 19 | 704 | 1.0+ | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2005 05 20 | 644 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.5− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.3+ | | |
| 2005 06 24 | 644 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.4+ | 0.6− | 2006 10 24 | 644 | 0.1− | 0.1+ | | |
| 2005 06 24 | 644 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.3+ | 1.0+ | 2006 10 24 | 644 | 0.3− | 0.1+ | | |
| 2005 06 24 | 644 | 0.3− | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.2+ | | |
| 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.3− | 0.4− | 2006 11 19 | 703 | 0.0 | 0.5+ | | |
| 2005 07 09 | 691 | 0.2+ | 0.2− | 2006 09 22 | 704 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.5− | 0.1+ | | |
| 2005 07 09 | 691 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.4− | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.0 | | |
| 2006 08 21 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.6+ | 0.5+ | | |
| 2006 08 21 | 704 | 0.2+ | 1.4− | 2006 09 25 | 699 | 0.1+ | 0.3+ | | | | | | |

**(145235)∗ 2005 JB$_{83}$**

Discovered 2005 May 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.57518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22900671 | $\omega$ | 282.84675 | | −0.06026367 | −0.99816915 | |
| $a$ | 2.6458827 | $\Omega$ | 170.60363 | | +0.92763656 | −0.05791290 | |
| $e$ | 0.0457546 | $i$ | 1.81136 | | +0.36859014 | −0.01744814 | |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.3+ | 0.4− | 2005 04 11 | G96 | 0.3− | 0.2− | 2006 06 20 | G96 | 0.3+ | 1.0− | | |
| 2000 02 03 | 691 | 0.3− | 0.4− | 2005 04 11 | G96 | 0.9− | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.0 | | |
| 2000 02 03 | 691 | 0.1− | 0.3− | 2005 05 08 | 691 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.4− | 0.1− | | |
| 2000 03 03 | 704 | 0.4+ | 0.8+ | 2005 05 08 | 691 | 0.4+ | 0.0 | 2006 08 18 | 644 | 0.4+ | 0.3− | | |
| 2000 03 03 | 704 | 0.4− | 0.7+ | 2005 05 08 | 691 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.5+ | 0.1− | | |
| 2000 03 03 | 704 | 0.8+ | 0.4+ | 2005 05 12 | 691 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.1+ | | |
| 2000 03 03 | 704 | 1.3+ | 0.7+ | 2005 05 12 | 691 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.1+ | 0.3+ | | |
| 2000 04 03 | 691 | 0.1− | 0.5− | 2005 05 12 | 691 | 0.3− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.2+ | | |
| 2000 04 03 | 691 | 0.4− | 0.5− | 2005 06 13 | G96 | 0.7+ | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.1+ | | |
| 2000 04 03 | 691 | 0.5− | 0.3− | 2005 06 13 | G96 | 0.8+ | 1.1+ | 2006 08 28 | 691 | 0.0 | 0.2+ | | |
| 2003 12 22 | 691 | 0.3+ | 0.5+ | 2005 06 13 | G96 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.8− | 0.3− | | |
| 2003 12 22 | 691 | 0.0 | 0.7+ | 2005 06 13 | G96 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2003 12 22 | 691 | 0.1+ | 0.5+ | 2006 06 20 | G96 | 0.3− | 0.6− | 2006 09 26 | G96 | 0.1− | 0.4− | | |
| 2005 04 11 | G96 | 0.6− | 0.2− | 2006 06 20 | G96 | 0.5+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.4− | | |
| 2005 04 11 | G96 | 0.0 | 0.3− | 2006 06 20 | G96 | 0.1+ | 0.3− | | | | | | |

**(145236)∗ 2005 JY$_{84}$ = 1998 TV$_{19}$**

Discovered 2005 May 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (*MPO* 86738)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.68210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24166483 | $\omega$ | 256.54840 | | +0.21179002 | +0.97706873 | |
| $a$ | 2.5526646 | $\Omega$ | 25.71055 | | −0.87596034 | +0.19973677 | |
| $e$ | 0.1099809 | $i$ | 2.89987 | | −0.43340335 | +0.07376943 | |
| $P$ | 4.08 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.1+ | 0.3+ | 2005 04 02 | G96 | 0.1+ | 0.3− | 2006 08 27 | 691 | 0.2− | 0.0 | | |
| 1998 10 13 | 691 | 0.2+ | 0.1− | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.4+ | | |
| 1998 10 13 | 691 | 0.0 | 0.1+ | 2005 04 10 | 691 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.7+ | | |
| 1998 10 22 | 691 | 0.5− | 0.6+ | 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.4− | | |
| 1998 10 22 | 691 | 0.6− | 0.1− | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.7+ | 1.3+ | | |
| 1998 10 22 | 691 | 0.4− | 0.0 | 2005 05 08 | G96 | 0.5− | 0.7− | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 2001 05 22 | 807 | 0.4+ | 0.0 | 2005 05 08 | G96 | 0.6− | 0.5− | 2006 09 26 | 691 | 0.4− | 0.0 | | |
| 2001 05 23 | 807 | 0.4+ | 0.2− | 2005 05 08 | G96 | 0.3− | 0.3− | 2006 09 26 | 691 | 0.4− | 0.1+ | | |
| 2001 05 26 | 291 | 0.3− | 0.1− | 2005 05 08 | G96 | 0.6− | 0.6− | 2006 09 30 | 691 | 0.5+ | 0.2− | | |
| 2002 10 11 | 645 | 0.3+ | 0.1− | 2005 05 12 | G96 | 0.9− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1− | | |
| 2002 10 11 | 645 | 0.2+ | 0.1− | 2005 05 12 | G96 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.6− | 0.6− | 2006 10 20 | G96 | 0.3− | 0.1− | | |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 05 12 | G96 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 2005 04 02 | G96 | 0.4+ | 0.4− | 2006 08 27 | 691 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.5− | | |
| 2005 04 02 | G96 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.5− | | |

**(145237)∗ 2005 JE$_{85}$**

Discovered 2005 May 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.36727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30232508 | $\omega$ | 155.32385 | | −0.32753276 | +0.94100598 | |
| $a$ | 2.1986356 | $\Omega$ | 95.46492 | | −0.88044106 | −0.27131462 | |
| $e$ | 0.1643622 | $i$ | 4.90006 | | −0.34284957 | −0.20222790 | |
| $P$ | 3.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 24 | 691 | 0.2− | 0.3+ | 2005 05 08 | 704 | 0.0 | 0.2+ | 2005 06 06 | 608 | 0.2− | 1.0− | | |
| 1995 03 24 | 691 | 0.3+ | 0.2+ | 2005 05 08 | 704 | 0.6+ | 0.3− | 2005 06 06 | 608 | 0.1+ | 1.3− | | |
| 1995 03 24 | 691 | 0.1+ | 0.0 | 2005 05 08 | 704 | 0.2+ | 0.1− | 2005 06 08 | 691 | 0.1− | 0.1+ | | |
| 2001 01 03 | 704 | (0.4− | 1.7+) | 2005 05 08 | 704 | (0.5− | 1.8−) | 2005 06 08 | 691 | 0.0 | 0.0 | | |
| 2001 01 03 | 704 | 0.1− | 0.9+ | 2005 05 08 | 704 | 0.8+ | 0.1− | 2005 06 08 | 691 | (0.4+ | 2.0+) | | |
| 2001 01 03 | 704 | 0.7+ | 0.0 | 2005 05 12 | 704 | 1.0+ | 0.6− | 2005 06 10 | 704 | 1.2− | 0.0 | | |
| 2002 05 23 | 644 | 0.2− | 0.5+ | 2005 05 12 | 704 | 0.9+ | 0.1− | 2005 06 10 | 704 | 0.4+ | 0.3− | | |
| 2002 05 23 | 644 | 0.3− | 1.1+ | 2005 05 12 | 704 | 0.1+ | 0.6+ | 2005 06 10 | 704 | 0.1+ | 0.1− | | |
| 2002 05 23 | 644 | 0.1+ | 0.6+ | 2005 05 12 | 704 | 1.5+ | 0.3+ | 2005 06 23 | 644 | 0.3− | 0.1− | | |
| 2002 07 05 | 704 | 0.0 | 0.5− | 2005 05 17 | 704 | 0.1+ | 0.2+ | 2005 06 23 | 644 | 0.4− | 0.1+ | | |
| 2002 07 05 | 704 | 0.2+ | 0.1− | 2005 05 17 | 704 | 0.5+ | 0.3+ | 2005 06 23 | 644 | 0.3− | 0.1− | | |
| 2002 07 05 | 704 | 0.7− | 0.0 | 2005 05 17 | 704 | 0.1+ | 0.4+ | 2005 06 27 | 644 | 0.3− | 0.0 | | |
| 2002 07 05 | 704 | 0.1+ | 0.2+ | 2005 05 17 | 704 | 0.1+ | 0.1+ | 2005 06 27 | 644 | 0.8− | 0.2+ | | |
| 2002 07 05 | 704 | 0.5− | 0.5− | 2005 05 19 | G96 | 0.4− | 0.0 | 2005 06 27 | 644 | 0.3− | 0.0 | | |
| 2002 07 15 | 644 | 0.1− | 0.1+ | 2005 05 19 | G96 | 0.2− | 0.0 | 2005 07 03 | 704 | 0.6+ | 1.1+ | | |
| 2002 07 15 | 644 | 0.6− | 0.0 | 2005 05 19 | G96 | 0.3− | 0.1+ | 2005 07 03 | 704 | 0.7+ | 0.2+ | | |
| 2002 07 15 | 644 | 0.3− | 0.1− | 2005 05 19 | G96 | 0.1− | 0.0 | 2005 07 03 | 704 | 0.2− | 0.1− | | |
| 2002 08 13 | 704 | 0.5+ | 0.1+ | 2005 06 02 | E12 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.5− | 0.3+ | | |
| 2002 08 13 | 704 | 0.3+ | 0.0 | 2005 06 02 | E12 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.4+ | | |
| 2002 08 13 | 704 | 0.2+ | 0.0 | 2005 06 02 | E12 | 0.6− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ | | |
| 2002 08 13 | 704 | 0.2− | 0.4+ | 2005 06 02 | E12 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1+ | | |
| 2002 08 13 | 704 | 0.4+ | 0.2+ | 2005 06 03 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1+ | | |
| 2002 08 30 | 644 | 0.2+ | 0.0 | 2005 06 03 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3+ | | |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2005 06 03 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2+ | | |
| 2002 08 30 | 644 | 0.5+ | 0.3+ | 2005 06 05 | 704 | (0.0 | 1.6+) | 2006 11 28 | 704 | 0.8+ | 0.7+ | | |
| 2005 05 03 | 704 | 0.0 | 0.8+ | 2005 06 05 | 704 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.0 | 1.3+ | | |
| 2005 05 03 | 704 | 0.9+ | 0.1+ | 2005 06 05 | 704 | 0.1− | 0.6+ | 2006 11 28 | 704 | 0.5+ | 1.2+ | | |
| 2005 05 03 | 704 | 0.3+ | 0.0 | 2005 06 05 | 704 | 0.4− | 0.8+ | 2006 11 28 | 704 | 0.3− | 1.2+ | | |
| 2005 05 03 | 704 | 0.1+ | 0.6+ | 2005 06 05 | 704 | 0.2− | 1.3+ | | | | | | |
| 2005 05 03 | 704 | 1.1+ | 0.1+ | 2005 06 06 | 608 | 0.2− | 0.7− | | | | | | |

**(145238)∗ 2005 JO$_{87}$ = 1999 FN$_{84}$**

Discovered 2005 May 9 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 86738)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.58384 | | | (2000.0) | | |
| $n$ | 0.18816791 | $\omega$ | 54.90033 | | −0.13840379 | +0.98748199 |
| $a$ | 3.0160533 | $\Omega$ | 207.44003 | | −0.95368588 | −0.15348698 |
| $e$ | 0.0662437 | $i$ | 9.44932 | | −0.26707235 | +0.03634640 |
| $P$ | 5.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2005 03 12 | G96 | 0.1− | 0.4− | 2005 05 19 | G96 | 0.2− | 0.3− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2005 03 12 | G96 | 0.2− | 0.4− | 2006 08 27 | 699 | 1.5+ | 0.8− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 04 17 | 703 | 0.8− | 1.4+ | 2006 08 27 | 699 | 1.6− | 1.0+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 04 17 | 703 | 1.1+ | 0.4− | 2006 08 27 | 699 | 0.7+ | 0.2+ |
| 2001 09 16 | 704 | 1.0+ | 0.7+ | 2005 04 17 | 703 | 0.3+ | 1.5+ | 2006 08 27 | 699 | 0.8+ | 1.6+ |
| 2001 09 16 | 704 | 0.1− | 1.2+ | 2005 04 17 | 703 | (5.2− | 1.9+) | 2006 09 01 | A13 | 0.0 | 0.2+ |
| 2001 09 16 | 704 | 1.0+ | 0.2+ | 2005 05 09 | 699 | 1.2− | 0.3− | 2006 09 01 | A13 | 0.4− | 0.6− |
| 2001 09 16 | 704 | 1.4+ | 0.6+ | 2005 05 09 | 699 | 0.2− | 0.3+ | 2006 09 01 | A13 | 0.8− | 0.2+ |
| 2001 10 15 | 645 | 0.1− | 0.1+ | 2005 05 09 | 699 | 0.5− | 0.0 | 2006 09 14 | 691 | 0.2− | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 05 09 | 699 | 1.0− | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2002 12 10 | 644 | 0.1+ | 1.6+ | 2005 05 12 | 704 | 0.0 | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 644 | 0.6− | 0.5+ | 2005 05 12 | 704 | 1.1+ | 1.3+ | 2006 09 17 | 703 | 0.1+ | 1.0+ |
| 2002 12 10 | 644 | 0.1− | 0.5+ | 2005 05 12 | 704 | 0.2+ | 1.2+ | 2006 09 17 | 703 | 0.4− | 0.8− |
| 2004 02 13 | 699 | 1.1+ | 0.3+ | 2005 05 13 | 691 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.9− | 0.2+ |
| 2004 02 13 | 699 | 1.0− | 0.8+ | 2005 05 13 | 691 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 1.5− | 0.3− |
| 2004 02 13 | 699 | 1.4+ | 0.1− | 2005 05 13 | 691 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.6+ | 0.0 |
| 2004 02 13 | 699 | 0.3+ | 0.5− | 2005 05 19 | G96 | 0.5− | 0.4− | 2006 09 18 | 691 | 0.2− | 0.1− |
| 2005 03 12 | G96 | 0.3− | 0.3− | 2005 05 19 | G96 | 0.9− | 0.4− | 2006 09 18 | 691 | 0.1− | 0.1− |
| 2005 03 12 | G96 | 0.4+ | 0.7− | 2005 05 19 | G96 | 0.5− | 0.3− | | | | |

**(145239)∗ 2005 JW$_{88}$ = 2000 AH$_{131}$**

Discovered 2005 May 11 by NEAT at Palomar.

Id. T. B. Spahr (*MPO* 77234)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 101.67504 | | | (2000.0) | | |
| $n$ | 0.22669802 | $\omega$ | 293.67476 | | −0.69743659 | +0.68361475 |
| $a$ | 2.6638161 | $\Omega$ | 290.24467 | | −0.54515883 | −0.70088457 |
| $e$ | 0.1077990 | $i$ | 13.25151 | | −0.46517100 | −0.20354777 |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 684 | 0.7+ | 0.8+ | 2005 03 18 | E12 | 0.9+ | 0.1− | 2005 06 03 | E12 | 0.2− | 0.2+ |
| 2000 01 08 | 684 | 0.5+ | 0.7+ | 2005 03 18 | E12 | 0.5− | 0.4+ | 2005 06 09 | E12 | 0.5+ | 0.6+ |
| 2000 01 09 | 684 | 0.1− | 0.0 | 2005 04 10 | E12 | 0.2− | 0.2+ | 2005 06 09 | E12 | 0.3− | 0.5+ |
| 2000 01 09 | 684 | 0.2+ | 0.7+ | 2005 04 10 | E12 | 0.1+ | 0.4+ | 2005 06 09 | E12 | 0.4+ | 0.5+ |
| 2002 09 03 | 644 | 0.0 | 0.3+ | 2005 04 10 | E12 | 0.4− | 0.1− | 2005 06 09 | E12 | 0.1− | 0.4− |
| 2002 09 03 | 644 | 0.3− | 0.0 | 2005 04 10 | E12 | 0.0 | 0.1+ | 2006 09 11 | 703 | 0.6− | 0.8− |
| 2002 09 03 | 644 | 0.0 | 0.1+ | 2005 04 19 | E12 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.2− | 0.1− |
| 2002 09 14 | 699 | 0.5− | 0.2+ | 2005 04 19 | E12 | 0.4+ | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.1+ |
| 2002 09 14 | 699 | 0.9+ | 1.2+ | 2005 04 19 | E12 | 0.8− | 0.3+ | 2006 09 11 | 703 | 0.3− | 0.8− |
| 2002 09 14 | 699 | 0.6+ | 0.3− | 2005 05 11 | 644 | 0.5+ | 0.6+ | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2002 09 14 | 699 | 1.1− | 0.1+ | 2005 05 11 | 644 | 0.2+ | 0.5+ | 2006 09 14 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 644 | 0.2− | 0.2+ | 2005 05 11 | 644 | 0.5+ | 0.5+ | 2006 09 14 | 691 | 0.1+ | 0.4+ |
| 2002 10 03 | 644 | 0.3− | 0.1− | 2005 05 12 | 703 | 0.7+ | 0.5− | 2006 09 16 | 691 | 0.3+ | 0.1+ |
| 2002 10 03 | 644 | 0.2− | 0.5+ | 2005 05 12 | 703 | 0.2− | 0.3− | 2006 09 16 | 691 | 0.3+ | 0.0 |
| 2003 12 03 | 704 | 0.5+ | 0.1− | 2005 05 12 | 703 | 0.5+ | 0.5− | 2006 09 16 | 691 | 0.1+ | 0.2+ |
| 2003 12 03 | 704 | 0.3− | 0.8+ | 2005 05 12 | 703 | 0.3− | 1.1− | 2006 09 19 | 703 | 0.0 | 0.6+ |
| 2003 12 03 | 704 | 0.4− | 0.8+ | 2005 06 03 | E12 | 1.3+ | 0.4+ | 2006 09 19 | 703 | 1.1− | 0.5− |
| 2005 03 18 | E12 | 0.0 | 0.1− | 2005 06 03 | E12 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2005 03 18 | E12 | 0.5− | 0.5+ | 2005 06 03 | E12 | 0.3+ | 0.9+ | 2006 09 19 | 703 | 2.6− | 0.4+ |

**(145240)∗ 2005 JN$_{91}$ = 2002 TQ$_{301}$ = 2003 YV$_{139}$**

Discovered 2005 May 8 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 77235)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.24410 | | | (2000.0) | | |
| $n$ | 0.23006074 | $\omega$ | 212.09968 | | −0.80321845 | +0.59566546 |
| $a$ | 2.6377950 | $\Omega$ | 4.46925 | | −0.53276627 | −0.71477245 |
| $e$ | 0.1441449 | $i$ | 3.51167 | | −0.26645868 | −0.36644646 |
| $P$ | 4.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.0 | 0.4− | 2004 01 28 | 291 | 0.1− | 0.1+ | 2005 05 30 | 699 | 0.9+ | 0.3− |
| 1996 03 26 | 691 | 0.6− | 0.3− | 2005 01 17 | 809 | 0.2+ | 0.3+ | 2005 05 30 | 699 | 0.8− | 0.5− |
| 1996 03 26 | 691 | 0.0 | 0.1− | 2005 01 17 | 809 | 0.1− | 0.1+ | 2005 05 30 | 699 | 1.1+ | 0.4+ |
| 1998 10 29 | 691 | 0.5+ | 0.1− | 2005 01 17 | 809 | 0.1+ | 0.2+ | 2005 06 03 | 703 | 1.2+ | 0.2+ |
| 1998 10 29 | 691 | 0.3+ | 0.1+ | 2005 03 14 | G96 | 0.4− | 0.0 | 2005 06 03 | 703 | 0.5+ | 1.2+ |
| 1998 10 29 | 691 | 0.2+ | 0.2− | 2005 03 14 | G96 | 0.4− | 0.4+ | 2005 06 03 | 703 | 0.0 | 0.9+ |
| 2000 02 02 | 704 | 0.0 | 0.8+ | 2005 03 14 | G96 | 0.5− | 0.1+ | 2005 06 03 | 703 | (0.2− | 2.1+) |
| 2000 02 02 | 704 | 0.3+ | 1.4+ | 2005 03 14 | G96 | 0.6− | 0.1+ | 2006 09 26 | 691 | 0.7− | 0.5+ |
| 2000 02 02 | 704 | 0.6+ | 0.6+ | 2005 03 14 | G96 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2000 02 02 | 704 | 0.4− | 0.1+ | 2005 03 14 | G96 | 0.4− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2002 10 05 | 644 | 0.4− | 0.7+ | 2005 03 14 | G96 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2002 10 05 | 644 | 0.3− | 0.6+ | 2005 03 14 | G96 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2002 10 05 | 644 | 0.4− | 0.6+ | 2005 05 04 | E12 | 1.1+ | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2002 10 10 | 291 | 0.1− | 0.2+ | 2005 05 04 | E12 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2002 10 10 | 291 | 0.2− | 0.2+ | 2005 05 04 | E12 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.4− |
| 2002 10 10 | 291 | 0.7− | 0.1+ | 2005 05 04 | E12 | 0.4− | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2003 12 28 | 704 | 0.2+ | 0.2+ | 2005 05 08 | E12 | 0.0 | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | 0.1− | 0.4+ | 2005 05 08 | E12 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2003 12 28 | 704 | 0.2+ | 0.7+ | 2005 05 08 | E12 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2003 12 28 | 704 | 0.1− | 0.5+ | 2005 05 08 | E12 | 0.5+ | 1.2+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2003 12 28 | 704 | 0.4− | 0.9+ | 2005 05 11 | 644 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2003 12 30 | 704 | 0.2+ | 1.4+ | 2005 05 11 | 644 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2003 12 30 | 704 | 0.3− | 0.6+ | 2005 05 11 | 644 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 12 30 | 704 | 0.1− | 0.4− | 2005 05 12 | 644 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2003 12 30 | 704 | 0.6+ | 0.8+ | 2005 05 12 | 644 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.6+ | 0.7− |
| 2004 01 28 | 291 | 0.1− | 0.1+ | 2005 05 12 | 644 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2004 01 28 | 291 | 0.2+ | 0.2+ | 2005 05 30 | 699 | 0.2− | 0.9+ | | | | |

**(145241)∗ 2005 JT$_{91}$ = 2002 RK$_{180}$**

Discovered 2005 May 10 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77236)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 105.67966 | | | (2000.0) | | |
| $n$ | 0.26465004 | $\omega$ | 355.32841 | | −0.04472682 | +0.99892576 |
| $a$ | 2.4026365 | $\Omega$ | 272.10773 | | −0.91617061 | −0.04585143 |
| $e$ | 0.1405747 | $i$ | 0.69478 | | −0.39828499 | −0.00670635 |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.2+ | 0.7− | 2005 05 10 | 703 | (4.0− | 2.6−) | 2006 09 27 | G96 | 0.5+ | 0.1− |
| 1995 11 15 | 691 | 0.2+ | 0.3− | 2005 05 10 | 703 | (0.3− | 2.5−) | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 1995 11 15 | 691 | 0.1− | 0.0 | 2005 05 12 | 644 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.5+ | 0.3− |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2005 05 12 | 644 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2005 05 12 | 644 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.4+ | 2005 05 14 | 704 | 0.7− | 0.1− | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2002 09 15 | 291 | 0.1+ | 0.1+ | 2005 05 14 | 704 | 0.2− | 0.7− | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2002 09 15 | 291 | 0.0 | 0.1− | 2005 05 14 | 704 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.6+ | 0.3− |
| 2002 09 15 | 291 | 0.4+ | 0.3− | 2005 05 14 | 704 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 644 | 0.2− | 0.7+ | 2005 05 14 | 704 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 644 | 0.1− | 1.0+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2− |
| 2002 10 04 | 644 | 0.1− | 0.7+ | 2005 05 19 | 644 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2002 10 11 | 291 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 291 | 0.1− | 0.1+ | 2005 06 04 | 703 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 2002 10 11 | 291 | 0.1+ | 0.2+ | 2005 06 04 | 703 | 0.8− | 0.9+ | 2006 10 29 | 691 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 06 04 | 703 | 1.0− | 0.3+ | 2006 10 29 | 691 | 0.4+ | 0.0 |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 06 04 | 703 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2005 05 10 | G96 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.3− | 0.2+ |
| 2005 05 10 | G96 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.3− | 0.4+ |
| 2005 05 10 | G96 | 0.0 | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2005 05 10 | G96 | 0.2− | 0.2− | 2005 06 15 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2005 05 10 | 703 | 0.1− | 0.0 | 2005 06 15 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.7+ |
| 2005 05 10 | 703 | 0.5− | 0.1− | 2005 06 15 | 691 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.5+ |

**(145242)∗ 2005 JS$_{92}$**

Discovered 2005 May 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.23518 | | (2000.0) | | | |
| $n$ | 0.22881725 | $\omega$ | 336.02187 | | −0.36796266 | +0.90063620 |
| $a$ | 2.6473430 | $\Omega$ | 271.70766 | | −0.81134925 | −0.43245445 |
| $e$ | 0.0307898 | $i$ | 13.37435 | | −0.45422007 | +0.04286711 |
| $P$ | 4.31 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.3− | 0.3− | 2002 09 11 | 644 | 0.2+ | 0.1+ | 2005 04 19 | E12 | 0.2− | 0.6− |
| 2000 01 08 | 704 | 0.5+ | 0.3+ | 2002 09 11 | 644 | 0.1+ | 0.2+ | 2005 04 19 | E12 | 0.6+ | 1.0+ |
| 2000 01 08 | 704 | 0.1+ | 1.1+ | 2002 10 06 | 704 | 1.4− | 0.8+ | 2005 05 11 | 644 | 0.3+ | 0.7+ |
| 2000 02 06 | 704 | 0.8− | 0.0 | 2002 10 06 | 704 | 0.5− | 0.8+ | 2005 05 11 | 644 | 0.5+ | 0.5+ |
| 2000 02 06 | 704 | 0.3− | 1.1+ | 2002 10 06 | 704 | 0.1− | 0.4− | 2005 05 11 | 644 | 0.3+ | 0.6+ |
| 2000 02 06 | 704 | 0.3− | 0.6+ | 2002 10 06 | 704 | 0.4− | 0.4− | 2005 05 12 | 644 | 0.6+ | 0.7+ |
| 2002 08 30 | 704 | 1.6+ | 0.2− | 2002 10 06 | 704 | 0.1− | 0.2+ | 2005 05 12 | 644 | 0.7+ | 0.6+ |
| 2002 08 30 | 704 | 0.1+ | 0.2+ | 2003 12 19 | 704 | 0.5+ | 0.8+ | 2005 05 12 | 644 | 0.7+ | 0.6+ |
| 2002 08 30 | 704 | 1.0+ | 0.5+ | 2003 12 19 | 704 | 1.3+ | 0.3+ | 2006 07 26 | A50 | 0.4+ | 0.1+ |
| 2002 08 30 | 704 | (0.0 | 3.0+) | 2003 12 19 | 704 | 1.0− | 0.0 | 2006 08 22 | 644 | 0.4− | 0.0 |
| 2002 08 31 | 644 | 0.2− | 0.3+ | 2003 12 19 | 704 | 0.1+ | 0.6+ | 2006 08 22 | 644 | 0.2− | 0.1− |
| 2002 08 31 | 644 | 0.2+ | 0.1+ | 2005 04 09 | E12 | 0.4+ | 0.8+ | 2006 08 22 | 644 | 0.2− | 0.0 |
| 2002 08 31 | 644 | 0.1− | 0.4+ | 2005 04 09 | E12 | 0.2− | 0.1+ | 2006 09 11 | 703 | 0.8− | 0.3+ |
| 2002 09 03 | 644 | 0.0 | 1.4+ | 2005 04 09 | E12 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.0 | 0.4+ |
| 2002 09 03 | 644 | 0.2− | 1.3+ | 2005 04 09 | E12 | 0.5+ | 0.3+ | 2006 09 11 | 703 | 0.3− | 0.5− |
| 2002 09 03 | 644 | 0.1− | 1.2+ | 2005 04 19 | E12 | 0.8− | 0.6− | 2006 09 11 | 703 | 1.2− | 1.0− |
| 2002 09 11 | 644 | 0.0 | 0.2− | 2005 04 19 | E12 | 0.1+ | 0.2− | | | | |

**(145243)∗ 2005 JX$_{95}$**

Discovered 2005 May 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.09516 | | (2000.0) | | | |
| $n$ | 0.28093107 | $\omega$ | 265.19619 | | +0.76414709 | +0.63845947 |
| $a$ | 2.3088880 | $\Omega$ | 55.09455 | | −0.53844927 | +0.70982613 |
| $e$ | 0.0828395 | $i$ | 6.43527 | | −0.35517828 | +0.29751702 |
| $P$ | 3.51 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.1− | 0.1− | 2005 06 27 | 644 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.4− | 0.5− |
| 2002 07 29 | 644 | 0.1+ | 0.1− | 2005 06 27 | 644 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2002 07 29 | 644 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.5+ | 0.2+ |
| 2002 08 13 | 644 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.6− | 0.5+ |
| 2002 08 13 | 644 | 0.3+ | 0.7+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.5+ |
| 2002 08 13 | 644 | 0.1+ | 0.5+ | 2006 10 02 | G96 | (1.5+ | 0.5−) | 2006 11 08 | 644 | 0.4+ | 0.4+ |
| 2002 08 30 | 644 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.8+ | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2002 08 30 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.3− | 1.2+ | 2006 11 08 | 644 | 0.4+ | 0.3+ |
| 2002 08 30 | 644 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 11 | 703 | (1.6− | 0.3−) |
| 2003 12 28 | 704 | (0.2− | 1.6+) | 2006 10 16 | 703 | 0.8− | 0.8− | 2006 11 11 | 703 | 1.1+ | 0.9+ |
| 2003 12 28 | 704 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2003 12 28 | 704 | 0.1+ | 1.1+ | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.6− |
| 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 13 | G96 | 1.1+ | 0.7− |
| 2005 04 11 | G96 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2005 04 11 | G96 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.5− | 0.3+ |
| 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.5− |
| 2005 05 08 | 691 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 1.0− | 0.0 | 2006 11 17 | 703 | (0.7− | 1.6−) |
| 2005 05 08 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | (0.5+ | 1.7−) |
| 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.4− |
| 2005 05 13 | G96 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.7− |
| 2005 05 13 | G96 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2+ | | | | |
| 2005 06 27 | 644 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.3+ | | | | |

**(145244)∗ 2005 JO$_{98}$ = 2004 EQ$_{51}$**

Discovered 2005 May 8 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 77237)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.23234 | | (2000.0) | | | |
| $n$ | 0.17783266 | $\omega$ | 167.36484 | | +0.90593851 | +0.41850119 |
| $a$ | 3.1318073 | $\Omega$ | 167.30219 | | −0.40945699 | +0.90458297 |
| $e$ | 0.0414284 | $i$ | 17.00438 | | −0.10779789 | +0.08115668 |
| $P$ | 5.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.2− | 2004 03 21 | 291 | 0.1+ | 0.2+ | 2005 06 01 | 699 | (1.6+ | 0.3+) |
| 1999 03 20 | 645 | 0.1− | 0.2− | 2004 03 21 | 291 | 0.3+ | 0.2+ | 2005 07 01 | 644 | 0.1− | 0.1+ |
| 2001 09 25 | 644 | 0.3+ | 0.1+ | 2005 05 04 | 703 | (2.3+ | 1.7−) | 2005 07 01 | 644 | 0.1− | 0.1− |
| 2001 09 25 | 644 | 0.0 | 0.6+ | 2005 05 04 | 703 | 1.4− | 0.7− | 2005 07 01 | 644 | 0.1− | 0.3− |
| 2001 09 25 | 644 | 0.1+ | 0.4+ | 2005 05 04 | 703 | (2.0− | 0.1−) | 2005 07 09 | 291 | 0.7+ | 0.2+ |
| 2001 10 23 | 644 | 0.3− | 0.6+ | 2005 05 04 | 703 | 0.9− | 0.2+ | 2005 07 09 | 291 | 0.8+ | 0.1+ |
| 2001 10 23 | 644 | 0.2− | 0.5+ | 2005 05 08 | 699 | 1.4− | 0.2+ | 2005 07 09 | 291 | 0.8+ | 0.0 |
| 2001 10 23 | 644 | 0.0 | 0.5+ | 2005 05 08 | 699 | 0.3+ | 0.2− | 2006 07 21 | 703 | 0.4− | 1.0+ |
| 2004 02 26 | 704 | 0.4− | 0.1− | 2005 05 08 | 699 | 0.0 | 0.1+ | 2006 07 21 | 703 | 1.1− | 0.6+ |
| 2004 02 26 | 704 | 0.9− | 0.5− | 2005 05 08 | 699 | 0.8− | 0.1− | 2006 07 21 | 703 | 0.1− | 0.3+ |
| 2004 02 26 | 704 | 1.4− | 0.1− | 2005 05 13 | 703 | 0.2− | 1.1+ | 2006 07 21 | 703 | 0.6− | 0.9+ |
| 2004 02 26 | 704 | 0.3− | 1.2+ | 2005 05 13 | 703 | (1.7− | 0.7+) | 2006 09 18 | 691 | 0.1+ | 0.2− |
| 2004 02 26 | 704 | (1.7− | 1.3+) | 2005 05 13 | 703 | 0.5− | 1.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 704 | 1.4+ | 0.6+ | 2005 05 13 | 703 | 0.2− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2004 03 15 | 704 | 0.2+ | 0.6− | 2005 05 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2004 03 15 | 704 | 0.3− | 0.6+ | 2005 05 21 | 644 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2004 03 18 | 691 | 0.0 | 0.4+ | 2005 05 21 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.7− |
| 2004 03 18 | 691 | 0.4+ | 0.3+ | 2005 06 01 | 699 | 1.4− | 0.8− | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2005 06 01 | 699 | 0.5+ | 0.9+ | | | | |
| 2004 03 21 | 291 | 0.1− | 0.2+ | 2005 06 01 | 699 | 0.5− | 0.1+ | | | | |

**(145245)∗ 2005 JX$_{102}$**

Discovered 2005 May 9 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.93908 | | (2000.0) | | | |
| $n$ | 0.18333078 | $\omega$ | 166.10973 | | +0.66193356 | +0.74401304 |
| $a$ | 3.0688745 | $\Omega$ | 145.20379 | | −0.70204638 | +0.65793918 |
| $e$ | 0.2448691 | $i$ | 9.18006 | | −0.26263064 | +0.11645016 |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 31 | 809 | 0.3− | 0.2− | 2005 06 05 | 691 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.7+ |
| 1995 09 01 | 809 | 1.5− | 1.8− | 2005 06 05 | 691 | 0.2− | 0.3+ | 2006 09 29 | 699 | 0.2+ | 1.0+ |
| 2000 05 26 | 691 | 0.6+ | 0.2− | 2005 06 29 | 699 | 0.4− | 1.4+ | 2006 09 29 | 699 | 1.4+ | 0.3+ |
| 2000 05 26 | 691 | 0.4+ | 0.4− | 2005 06 29 | 644 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.0 |
| 2000 05 26 | 691 | 0.9+ | 0.0 | 2005 06 29 | 699 | 1.1+ | 0.8− | 2006 09 29 | 699 | 0.3+ | 1.2+ |
| 2000 08 01 | 704 | 0.6− | 0.0 | 2005 06 29 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 1.0+ | 0.0 |
| 2000 08 01 | 704 | 1.6− | 0.3+ | 2005 06 29 | 699 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.7− | 0.2− |
| 2000 08 01 | 704 | 0.2− | 0.8− | 2005 06 29 | 644 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.7− | 0.3+ |
| 2000 08 01 | 704 | 0.2− | 0.7− | 2005 06 29 | 699 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 2000 08 01 | 704 | 1.4+ | 0.5− | 2005 07 10 | 699 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2000 08 26 | 704 | 1.0− | 0.2+ | 2005 07 10 | 699 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2000 08 26 | 704 | 0.2− | 0.1− | 2005 07 10 | 699 | (1.7+ | 0.8−) | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2000 08 26 | 704 | 0.0 | 0.2+ | 2005 07 10 | 699 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.5− | 0.5− |
| 2004 03 18 | 691 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.4− | 1.3+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 703 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.4+ | 0.8+ | 2006 10 22 | 703 | 0.3+ | 0.0 | |
| 2005 05 09 | 703 | 0.8− | 0.6+ | 2006 09 18 | 703 | 0.6+ | 0.4− | 2006 10 22 | 703 | 0.0 | 0.2− | |
| 2005 05 09 | 703 | 0.6− | 0.3− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.1+ | |
| 2005 05 13 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | (0.5− | 2.4+) | 2006 10 22 | 703 | 0.3− | 0.1− | |
| 2005 05 13 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.8+ | 0.2+ | 2006 10 28 | 703 | 0.6+ | 0.4+ | |
| 2005 05 13 | 691 | 0.0 | 0.4+ | 2006 09 21 | 699 | 0.5− | 0.5+ | 2006 10 28 | 703 | 0.3− | 0.2− | |
| 2005 05 14 | 704 | 0.6− | 0.9+ | 2006 09 21 | 699 | 1.0+ | 0.7− | 2006 10 28 | 703 | 0.5+ | 0.4− | |
| 2005 05 14 | 704 | (1.2− | 2.5+) | 2006 09 21 | 699 | 0.7− | 0.2+ | 2006 10 28 | 703 | 1.0− | 0.1− | |
| 2005 05 14 | 704 | (0.7+ | 2.2+) | 2006 09 21 | 699 | 0.1− | 0.8+ | 2006 11 16 | 703 | 0.8+ | 0.3+ | |
| 2005 05 14 | 704 | 0.9+ | 0.8− | 2006 09 25 | 699 | 0.8+ | 0.6+ | 2006 11 16 | 703 | 0.4− | 0.8+ | |
| 2005 05 14 | 704 | (0.5+ | 1.9+) | 2006 09 25 | 699 | 0.1− | 0.6+ | 2006 11 16 | 703 | 0.0 | 0.2+ | |
| 2005 05 14 | G96 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.5+ | 2006 11 16 | 703 | 0.7− | 0.6+ | |
| 2005 05 14 | G96 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.6− | 0.3− | 2006 11 16 | 703 | 1.2− | 0.7− | |
| 2005 05 14 | G96 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.5+ | 0.9+ | |
| 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.5− | 2006 11 16 | 703 | 1.6− | 0.0 | |
| 2005 06 05 | 691 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.2− | 2006 11 16 | 703 | 0.5− | 0.3+ | |

**(145246)∗ 2005 JN$_{103}$**

Discovered 2005 May 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.67213 | | (2000.0) | | | |
| $n$ | 0.26808155 | $\omega$ | 290.88169 | | +0.67512200 | +0.73764574 |
| $a$ | 2.3820896 | $\Omega$ | 21.59072 | | −0.66694432 | +0.61578012 |
| $e$ | 0.1950793 | $i$ | 1.46947 | | −0.31527062 | +0.27693609 |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.0 | 0.1− | 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 1.0+ | |
| 1995 09 26 | 691 | 0.4+ | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 701 | 0.7− | 0.4+ | |
| 1995 09 26 | 691 | 0.2+ | 0.1+ | 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.2+ | |
| 1995 11 23 | 691 | 0.1− | 0.3− | 2005 05 10 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 1995 11 23 | 691 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 10 20 | H07 | (2.4− | 1.0−) | |
| 1995 11 23 | 691 | 0.3− | 0.3− | 2005 05 13 | G96 | 0.3− | 0.4− | 2006 10 20 | H07 | 1.4− | 0.5− | |
| 2002 07 14 | 644 | 0.2+ | 0.5+ | 2005 05 13 | G96 | 0.6− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.4+ | |
| 2002 07 14 | 644 | 0.3+ | 0.4+ | 2005 05 13 | G96 | 0.3− | 0.3− | 2006 10 20 | H07 | 0.6− | 0.0 | |
| 2002 07 14 | 644 | 0.4+ | 0.4+ | 2005 05 13 | G96 | 0.6− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.1− | |
| 2002 07 23 | 644 | 0.3− | 0.4+ | 2006 09 18 | 699 | 1.4+ | 0.3+ | 2006 10 21 | 703 | 1.2− | 0.6− | |
| 2002 07 23 | 644 | 0.2− | 0.5+ | 2006 09 18 | 699 | (1.7− | 0.8+) | 2006 10 21 | 703 | 0.9− | 0.8− | |
| 2002 07 23 | 644 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.2− | 1.1+ | 2006 10 21 | 703 | 0.1− | 0.2− | |
| 2002 07 28 | 608 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.4− | 0.2+ | |
| 2002 07 28 | 608 | 0.3− | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2002 07 28 | 608 | 0.1+ | 0.3− | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ | |
| 2002 08 14 | 704 | 0.3− | 1.2− | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.4+ | |
| 2002 08 14 | 704 | 0.3+ | 0.7− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2+ | |
| 2002 08 14 | 704 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 | |
| 2002 08 14 | 704 | (0.6+ | 1.6−) | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1− | 0.3+ | |
| 2002 08 14 | 704 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1− | |
| 2002 08 18 | 644 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− | |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− | |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.0 | |
| 2005 03 12 | 691 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | |
| 2005 03 12 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.4+ | |
| 2005 03 12 | 691 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.5+ | 0.5− | |
| 2005 04 04 | G96 | 0.3− | 0.1− | 2006 10 18 | H07 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− | |
| 2005 04 04 | G96 | 0.1− | 0.3+ | 2006 10 18 | H07 | 0.5− | 0.9+ | 2006 11 13 | G96 | 0.1− | 0.1+ | |
| 2005 04 04 | G96 | 0.3− | 0.1+ | 2006 10 18 | H07 | 0.6− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.2− | |
| 2005 04 04 | G96 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.0 | |
| 2005 04 30 | 691 | 0.1− | 0.2+ | 2006 10 19 | 701 | 1.2− | 0.0 | | | | | |

**(145247)∗ 2005 JK$_{105}$ = 1999 YH$_{29}$ = 2000 AW$_{210}$**

Discovered 2005 May 11 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 86741)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.79381 | | (2000.0) | | | |
| $n$ | 0.24127248 | $\omega$ | 177.35785 | | +0.11013640 | +0.98888841 |
| $a$ | 2.5554312 | $\Omega$ | 98.95188 | | −0.91374398 | +0.14026818 |
| $e$ | 0.1895531 | $i$ | 5.80134 | | −0.39107788 | −0.04923979 |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 08 | 809 | (4.0+ | 2.9+) | 2005 04 09 | 704 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.2+ | |
| 1997 06 08 | 809 | (2.8+ | 2.9+) | 2005 04 09 | 704 | 1.0− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | |
| 1997 06 08 | 809 | (2.7+ | 2.7+) | 2005 04 09 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | |
| 1999 12 17 | 691 | 0.1+ | 0.2+ | 2005 04 09 | 704 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.5+ | |
| 1999 12 17 | 691 | 0.3− | 0.4+ | 2005 04 13 | 704 | 0.9− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.4+ | |
| 1999 12 17 | 691 | 0.2+ | 0.3+ | 2005 04 13 | 704 | (2.7+ | 0.5+) | 2006 10 11 | 644 | 0.3− | 0.2+ | |
| 2000 01 05 | 691 | 0.0 | 0.4+ | 2005 04 13 | 704 | (2.5+ | 0.2−) | 2006 10 11 | 644 | 0.3− | 0.3+ | |
| 2000 01 05 | 691 | 0.4− | 0.2+ | 2005 04 13 | 704 | (2.9+ | 0.3+) | 2006 10 12 | 644 | 0.2− | 0.6+ | |
| 2000 01 05 | 691 | 0.1− | 0.0 | 2005 05 03 | 704 | (1.3+ | 1.8+) | 2006 10 12 | 644 | 0.1+ | 0.6+ | |
| 2000 01 08 | 691 | 0.0 | 0.1− | 2005 05 03 | 704 | 0.4+ | 0.6+ | 2006 10 12 | 644 | 0.4+ | 0.4+ | |
| 2000 01 08 | 691 | 0.0 | 0.4+ | 2005 05 03 | 704 | 0.4− | 0.4+ | 2006 10 16 | 703 | (0.3+ | 1.8+) | |
| 2000 01 08 | 691 | 0.3+ | 0.1+ | 2005 05 03 | 704 | 0.6+ | 0.9+ | 2006 10 16 | 703 | 1.0− | 0.2+ | |
| 2001 03 22 | 691 | 0.0 | 0.0 | 2005 05 11 | 703 | 1.2− | 0.6− | 2006 10 16 | 703 | 1.2− | 0.3+ | |
| 2001 03 22 | 691 | 0.0 | 0.1− | 2005 05 11 | 703 | (1.6− | 1.5−) | 2006 10 16 | 703 | 0.3− | 0.0 | |
| 2001 03 22 | 691 | 0.1− | 0.0 | 2005 05 11 | 703 | 0.9− | 0.9− | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2001 05 27 | 608 | 0.3+ | 0.6+ | 2005 05 11 | 703 | 0.7− | 1.4− | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 2001 05 27 | 608 | 0.5+ | 0.6+ | 2005 05 13 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2001 05 27 | 608 | 0.5+ | 0.1+ | 2005 05 13 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ | |
| 2003 12 28 | 691 | 0.8− | 0.0 | 2005 05 13 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.1− | |
| 2003 12 28 | 691 | 1.3+ | 0.9− | 2006 09 29 | 699 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 2003 12 28 | 691 | 0.1+ | 0.5− | 2006 09 29 | 699 | 0.2− | 1.3+ | 2006 10 22 | 703 | 0.3− | 0.7+ | |
| 2005 04 01 | 699 | 1.2+ | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.4− | 1.1− | |
| 2005 04 01 | 699 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.7+ | 0.1− | |
| 2005 04 01 | 699 | 0.3+ | 0.3− | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.1− | 0.5+ | |
| 2005 04 01 | 699 | 0.4+ | 0.8− | 2006 10 04 | G96 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.1+ | |
| 2005 04 04 | 703 | 0.5+ | 1.1+ | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 10 22 | 703 | (1.9− | 0.3−) | |
| 2005 04 04 | 703 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.3+ | |
| 2005 04 04 | 703 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.5+ | |
| 2005 04 04 | 703 | (2.6− | 0.5+) | 2006 10 10 | 644 | 0.3+ | 0.0 | | | | | |

**(145248)∗ 2005 JB$_{106}$ = 2003 XE$_{26}$**

Discovered 2005 May 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (*MPO* 86742)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.98712 | | (2000.0) | | | |
| $n$ | 0.29383317 | $\omega$ | 218.82138 | | +0.37956536 | −0.92341429 |
| $a$ | 2.2407952 | $\Omega$ | 209.00181 | | +0.87539392 | +0.37836253 |
| $e$ | 0.0776398 | $i$ | 6.73821 | | +0.29935868 | +0.06440374 |
| $P$ | 3.35 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 16 | 691 | 0.4− | 0.5− | 2005 04 11 | G96 | 0.5− | 0.1+ | 2005 05 19 | G96 | 0.6− | 0.5− | |
| 1996 10 16 | 691 | 0.5+ | 0.1− | 2005 05 11 | G96 | 0.2+ | 0.2− | 2005 05 19 | G96 | 0.2− | 0.1− | |
| 1996 10 16 | 691 | 0.0 | 0.2+ | 2005 05 11 | G96 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.4+ | |
| 2003 11 23 | 691 | 0.2− | 0.1− | 2005 05 11 | G96 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.1+ | |
| 2003 11 23 | 691 | 0.1+ | 0.5+ | 2005 05 11 | G96 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.9− | |
| 2003 11 23 | 691 | 0.1− | 0.0 | 2005 05 13 | 691 | 0.7+ | 0.3+ | 2006 09 17 | 703 | (0.8− | 1.5−) | |
| 2003 12 01 | 704 | 0.4− | 0.1+ | 2005 05 13 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.5+ | |
| 2003 12 01 | 704 | 0.1+ | 0.8+ | 2005 05 13 | 691 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.4+ | |
| 2003 12 01 | 704 | 0.4+ | 0.4+ | 2005 05 14 | G96 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.3+ | 0.4+ | |
| 2003 12 14 | 644 | 0.1+ | 0.2+ | 2005 05 14 | G96 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.5− | |
| 2003 12 14 | 644 | 0.1− | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1− | |
| 2003 12 14 | 644 | 0.3+ | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.3− | |
| 2003 12 28 | 691 | 0.1+ | 0.1+ | 2005 05 19 | G96 | (1.4− | 1.9+) | 2006 10 22 | G96 | 0.3− | 0.3− | |
| 2003 12 28 | 691 | 0.2− | 0.2− | 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.3− | |
| 2003 12 28 | 691 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.5− | 0.6− | |
| 2005 04 11 | G96 | 0.4− | 0.0 | 2005 05 19 | G96 | 0.6− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 0.2− | 0.3+ | 2005 05 19 | G96 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2005 05 19 | G96 | 0.6− | 0.3+ | | | | |

**(145249)∗ 2005 JJ$_{109}$ = 6651 P-L = 1998 TM$_7$ = 2004 CZ$_{25}$**

Discovered 2005 May 3 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 77240), A. Doppler (*MPO* 89666)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.63454 | | (2000.0) | | | |
| $n$ | 0.26000030 | $\omega$ | 270.38301 | | +0.45119572 | +0.89223777 |
| $a$ | 2.4311970 | $\Omega$ | 26.46151 | | −0.80159963 | +0.41419446 |
| $e$ | 0.2121195 | $i$ | 2.35126 | | −0.39225049 | +0.17987418 |
| $P$ | 3.79 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.4− | 0.6+ | 2001 04 30 | 691 | 0.2+ | 0.6+ | 2005 05 29 | E12 | 0.5+ | 0.4+ |
| 1960 09 24 | 675 | 1.2− | 0.4− | 2001 04 30 | 691 | 0.1+ | 0.4+ | 2005 05 29 | E12 | 0.4+ | 0.1+ |
| 1960 09 26 | 675 | 0.3− | 0.0 | 2001 04 30 | 691 | 0.1+ | 0.4+ | 2005 05 29 | E12 | 0.5+ | 0.3+ |
| 1960 09 26 | 675 | 0.2− | 0.5− | 2002 11 06 | 704 | 0.8− | 0.8+ | 2005 06 04 | 704 | 0.4+ | 1.4− |
| 1960 09 27 | 675 | 1.1+ | 0.5+ | 2002 11 06 | 704 | 0.9− | 0.6+ | 2005 06 04 | 704 | 0.5+ | 0.1+ |
| 1960 09 27 | 675 | 2.1+ | 2.1+ | 2002 11 06 | 704 | 1.3− | 0.3− | 2005 06 04 | 704 | 0.3− | 0.8+ |
| 1960 09 28 | 675 | 1.0− | 0.0 | 2004 02 11 | 691 | 0.0 | 0.5− | 2005 06 04 | 704 | 0.4+ | 0.0 |
| 1960 09 28 | 675 | 0.2− | 0.2− | 2004 02 11 | 691 | 0.5+ | 0.2− | 2005 06 04 | 704 | 0.2− | 1.1+ |
| 1997 03 02 | 691 | 0.3+ | 0.6− | 2004 02 11 | 691 | 0.2− | 0.1+ | 2005 06 26 | 644 | 0.5+ | 0.2+ |
| 1997 03 02 | 691 | 0.1+ | 0.8− | 2004 02 14 | 691 | 0.2− | 0.1+ | 2005 06 26 | 644 | 0.6+ | 0.4+ |
| 1997 03 02 | 691 | 0.5+ | 1.0− | 2004 02 14 | 691 | 0.0 | 0.3+ | 2005 06 26 | 644 | 0.5+ | 0.3+ |
| 1998 10 12 | 691 | 0.3+ | 0.3+ | 2004 02 14 | 691 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 1998 10 12 | 691 | 0.5+ | 0.0 | 2005 05 03 | 428 | 0.1− | 1.4− | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 1998 10 12 | 691 | 0.4+ | 0.2+ | 2005 05 03 | 428 | 0.9− | 0.7− | 2006 09 28 | G96 | 0.5− | 0.2+ |
| 1998 10 17 | 691 | 0.2− | 0.3+ | 2005 05 03 | 428 | 0.0 | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1+ |
| 1998 10 17 | 691 | 0.5− | 0.1− | 2005 05 13 | 428 | 0.1− | 0.6− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 1998 10 17 | 691 | 0.1− | 0.7− | 2005 05 13 | 428 | 1.1− | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.5+ |
| 2001 03 27 | 691 | 0.3− | 0.9+ | 2005 05 14 | 428 | 0.4+ | 0.4− | 2006 11 10 | 691 | 0.3+ | 0.7+ |
| 2001 03 27 | 691 | 0.3− | 0.8+ | 2005 05 14 | 428 | (1.7+ | 0.4+) | 2006 11 18 | 691 | 0.4− | 0.2+ |
| 2001 03 27 | 691 | 0.6− | 1.0+ | 2005 05 28 | 599 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.4+ |
| 2001 04 16 | 699 | (0.6+ | 1.8+) | 2005 05 28 | 599 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 04 16 | 699 | 0.8+ | 0.6+ | 2005 05 28 | 599 | 0.2+ | 0.3+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2001 04 16 | 699 | 0.0 | 0.9+ | 2005 05 28 | 599 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2001 04 16 | 699 | 0.0 | 0.2− | 2005 05 29 | E12 | 0.6+ | 0.5+ | 2006 11 22 | 691 | 0.2+ | 0.2+ |

**(145250)∗ 2005 JN$_{112}$**

Discovered 2005 May 9 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.76374 | | (2000.0) | | | |
| $n$ | 0.21257971 | $\omega$ | 206.57069 | | +0.63017466 | +0.76035004 |
| $a$ | 2.7804911 | $\Omega$ | 102.91538 | | −0.68057932 | +0.63843319 |
| $e$ | 0.2093939 | $i$ | 9.28801 | | −0.37375352 | +0.11946082 |
| $P$ | 4.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 704 | 0.3− | 0.8+ | 2005 05 09 | 703 | 0.6+ | 0.3− | 2006 09 19 | 703 | 0.3+ | 0.3+ |
| 2001 09 11 | 704 | 0.4− | 0.9+ | 2005 05 09 | 703 | (1.9− | 0.8−) | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2001 09 11 | 704 | 0.1+ | 0.9+ | 2005 05 09 | 703 | 0.8− | 0.5− | 2006 11 13 | 703 | 1.3− | 0.1+ |
| 2001 09 11 | 704 | 1.1− | 0.9+ | 2005 05 16 | 704 | (1.7+ | 0.3+) | 2006 11 13 | 703 | 0.8+ | 0.1− |
| 2001 10 15 | 644 | 0.0 | 0.6+ | 2005 05 16 | 704 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2001 10 15 | 644 | 0.2− | 0.5+ | 2005 05 16 | 704 | 0.9+ | 0.8− | 2006 11 13 | 703 | 0.3+ | 0.7+ |
| 2001 10 15 | 644 | 0.9− | 0.4+ | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.8+ |
| 2001 10 23 | 644 | 0.2+ | 0.1+ | 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 644 | 0.4+ | 0.6+ |
| 2001 10 23 | 644 | 0.2+ | 0.2+ | 2005 06 04 | 691 | 0.6+ | 0.0 | 2006 11 17 | 644 | 0.1− | 1.1+ |
| 2001 10 23 | 644 | 0.3+ | 0.5+ | 2005 06 09 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.6+ |
| 2004 02 17 | 691 | 0.1+ | 0.8+ | 2005 06 09 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 644 | 0.3+ | 0.3+ |
| 2004 02 17 | 691 | 0.4+ | 0.6+ | 2005 06 09 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.7+ |
| 2004 02 17 | 691 | 0.3+ | 0.9+ | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.7− | 0.2− |
| 2005 05 08 | 691 | (0.1+ | 1.8+) | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 703 | (2.4− | 0.3+) |
| 2005 05 08 | 691 | 0.2− | 0.2+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.7− | 0.0 |
| 2005 05 08 | 691 | 1.1− | 0.7+ | 2006 09 19 | 703 | 0.8− | 1.0+ | 2006 11 19 | 703 | 1.2− | 1.3− |
| 2005 05 09 | 703 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.6+ | 0.4+ | | | | |

**(145251)∗ 2005 JP$_{112}$ = 1993 RG$_{16}$**

Discovered 2005 May 9 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 77241)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.38734 | | (2000.0) | | | |
| $n$ | 0.23585165 | $\omega$ | 115.62105 | | +0.75677651 | +0.65332426 |
| $a$ | 2.5944389 | $\Omega$ | 203.60492 | | −0.61724864 | +0.70346290 |
| $e$ | 0.2423340 | $i$ | 3.05936 | | −0.21515908 | +0.27983451 |
| $P$ | 4.18 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | (2.8+ | 0.4+) | 2005 06 03 | 703 | 0.6− | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 1993 09 15 | 809 | 1.9+ | 0.5+ | 2005 06 03 | 703 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1993 09 15 | 809 | (1.5+ | 2.2+) | 2005 06 04 | 704 | 0.2− | 1.5+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 1993 09 22 | 809 | 0.2− | 1.1+ | 2005 06 04 | 704 | 0.7− | 0.9+ | 2006 10 31 | G96 | 0.4− | 0.1− |
| 1993 09 22 | 809 | 0.4+ | 1.3+ | 2005 06 04 | 704 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 1993 09 22 | 809 | 0.1− | 1.6+ | 2005 06 04 | 428 | 0.9− | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 1993 10 14 | 691 | 0.0 | 1.2− | 2005 06 04 | 428 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.2+ |
| 1993 10 14 | 691 | 0.2− | 0.6− | 2005 06 05 | 704 | 1.1+ | 0.4+ | 2006 11 12 | G96 | 0.8− | 0.1− |
| 1993 10 14 | 691 | 0.2− | 0.2+ | 2005 06 05 | 704 | 0.7+ | 1.1+ | 2006 11 12 | G96 | 0.3− | 0.1− |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2005 06 05 | 704 | 0.3+ | 0.6− | 2006 11 12 | G96 | 0.4− | 0.1+ |
| 2004 03 17 | 691 | 0.2− | 0.1− | 2005 06 05 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.3+ | 0.7− |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2005 06 13 | 691 | 1.0− | 0.3− | 2006 11 14 | 704 | 0.9− | 0.0 |
| 2005 05 09 | 704 | 1.3+ | 0.6− | 2005 06 13 | 691 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.7+ | 0.6+ |
| 2005 05 09 | 704 | 0.6+ | 0.7− | 2005 06 13 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.7− | 0.9+ |
| 2005 05 09 | 704 | 0.4− | 0.2− | 2005 07 05 | 644 | 0.3− | 0.4+ | 2006 11 19 | H07 | 0.5+ | 1.1− |
| 2005 05 09 | 704 | 0.2− | 0.0 | 2005 07 05 | 644 | 0.3+ | 0.0 | 2006 11 19 | H07 | 1.3+ | 0.6− |
| 2005 05 09 | 704 | 0.6− | 1.0− | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 11 19 | H07 | (1.0+ | 1.9−) |
| 2005 05 15 | G96 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 19 | H07 | (2.0+ | 1.8−) |
| 2005 05 15 | G96 | 0.1+ | 0.6− | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2005 05 15 | G96 | 0.1+ | 0.3− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2005 05 15 | G96 | 0.4+ | 0.3− | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2005 05 19 | G96 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.6− | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.9+ |
| 2005 05 19 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2005 05 19 | G96 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.8− | 1.4+ |
| 2005 05 19 | G96 | 1.2+ | 0.8− | 2006 10 21 | G96 | 0.3+ | 0.0 | | | | |
| 2005 06 03 | 703 | 0.1+ | 0.8+ | 2006 10 31 | G96 | 0.2− | 0.1− | | | | |

**(145252)∗ 2005 JO$_{117}$ = 1995 SN$_{46}$ = 2002 PS$_{12}$**

Discovered 2005 May 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77242), A. Doppler (*MPO* 89666)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 232.14461 | | (2000.0) | | | |
| $n$ | 0.27240593 | $\omega$ | 321.75700 | | −0.67818346 | −0.73469153 |
| $a$ | 2.3568124 | $\Omega$ | 170.89964 | | +0.69818198 | −0.65143051 |
| $e$ | 0.0636782 | $i$ | 6.24000 | | +0.22936677 | −0.18938490 |
| $P$ | 3.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.4− | 0.4− | 2004 01 18 | 644 | 0.1+ | 0.8+ | 2006 09 25 | 699 | (0.2− | 1.6+) |
| 1995 07 26 | 691 | 0.4− | 0.5− | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.9+ |
| 1995 07 26 | 691 | 0.5− | 0.6− | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.7+ |
| 1995 09 26 | 691 | 0.3+ | 0.1− | 2005 05 10 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 1.2+ | 0.4+ |
| 1995 09 26 | 691 | 0.2+ | 0.2+ | 2005 05 14 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 1995 09 26 | 691 | 0.2+ | 0.0 | 2005 05 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1− |
| 1995 10 02 | 691 | 0.2+ | 0.1− | 2005 05 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1995 10 02 | 691 | 0.4+ | 0.1+ | 2005 05 17 | G96 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 1995 10 02 | 691 | 0.3+ | 0.0 | 2005 05 17 | G96 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2001 03 19 | 699 | 0.4+ | 0.3+ | 2005 05 17 | G96 | 0.0 | 0.2− | 2006 09 30 | 703 | 1.0− | 0.9− |
| 2001 03 19 | 699 | 0.0 | 0.8+ | 2005 05 17 | G96 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.0 |
| 2001 03 19 | 699 | 0.1+ | 0.4− | 2005 05 20 | G96 | 0.7− | 0.2− | 2006 09 30 | 703 | 1.0− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.2+ | 0.4+ | 2005 05 20 | G96 | 0.7− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.4+ |
| 2001 04 01 | 704 | (0.8+ | 1.7+) | 2005 05 20 | G96 | 0.6− | 0.2− | 2006 09 30 | 703 | (1.9+ | 0.8−) |
| 2001 04 01 | 704 | 0.5+ | 1.2+ | 2005 05 20 | G96 | 0.7− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.2− |
| 2001 04 01 | 704 | 0.6− | 1.2+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.6+ |
| 2002 08 05 | 644 | 0.1+ | 0.5+ | 2006 08 19 | 691 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 08 05 | 644 | 0.1− | 0.3+ | 2006 08 19 | 691 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2+ | 1.0+ |
| 2002 08 05 | 644 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 08 07 | 644 | 0.2− | 0.8+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 08 07 | 644 | 0.3+ | 0.8+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 08 07 | 644 | 0.0 | 0.9+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2004 01 18 | 644 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.3+ | | | | |
| 2004 01 18 | 644 | 0.1+ | 0.9+ | 2006 09 20 | 704 | 0.8− | 0.7+ | | | | |

**(145253)∗ 2005 JJ$_{118}$ = 2000 CK$_{43}$**

Discovered 2005 May 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77242)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.12156 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23723614 | $\omega$ | 287.76707 | | −0.24498979 | | −0.96949186 |
| $a$ | 2.5843351 | $\Omega$ | 176.38480 | | +0.93105261 | | −0.23758855 |
| $e$ | 0.1085564 | $i$ | 7.37594 | | +0.27040901 | | −0.06030927 |
| $P$ | 4.15 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.1+ | 0.1+ | 2002 09 14 | 644 | 0.0 | 0.1+ | 2005 05 17 | G96 | 0.6− | 0.1− |
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2003 12 28 | 699 | (0.1− | 1.6−) | 2005 05 17 | G96 | 0.1− | 0.6− |
| 1998 09 28 | 691 | 0.3− | 0.1+ | 2003 12 28 | 699 | 1.4+ | 0.5− | 2005 06 11 | 691 | 0.3+ | 0.0 |
| 1998 09 28 | 691 | 0.1− | 0.1− | 2003 12 28 | 699 | 0.3+ | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.1− |
| 1998 09 28 | 691 | 0.2− | 0.1− | 2003 12 28 | 699 | (1.7+ | 0.5−) | 2005 06 11 | 691 | 0.0 | 0.1+ |
| 2000 02 02 | 704 | 0.1− | 0.9− | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.2− |
| 2000 02 02 | 704 | 0.2− | 1.0+ | 2004 02 17 | 704 | 0.4+ | 0.2− | 2005 06 11 | 691 | 0.1+ | 0.1+ |
| 2000 02 02 | 704 | 1.5+ | 0.4+ | 2004 02 17 | 704 | 0.3− | 0.0 | 2005 06 11 | 691 | 0.0 | 0.1− |
| 2000 02 02 | 704 | 0.2+ | 1.1− | 2004 02 17 | 704 | 0.2+ | 0.1+ | 2005 06 15 | 691 | 0.1+ | 0.3− |
| 2000 02 02 | 704 | 0.1− | 0.1− | 2004 04 14 | 645 | 0.1− | 0.0 | 2005 06 15 | 691 | 0.1− | 0.1+ |
| 2000 02 06 | 704 | 0.1+ | 0.7+ | 2004 04 14 | 645 | 0.1− | 0.1+ | 2005 06 15 | 691 | 0.1− | 0.4− |
| 2000 02 06 | 704 | 0.2− | 0.9+ | 2005 04 30 | 691 | 0.2− | 0.2+ | 2006 08 19 | 699 | 0.6+ | 0.5+ |
| 2000 02 06 | 704 | 0.4+ | 0.4+ | 2005 04 30 | 691 | 0.3+ | 0.2+ | 2006 08 19 | 699 | (2.0+ | 0.1+) |
| 2000 02 06 | 704 | 0.4− | 1.3+ | 2005 04 30 | 691 | 0.5− | 0.3+ | 2006 08 19 | 699 | 0.5− | 0.7+ |
| 2002 09 12 | 644 | 0.4− | 0.3+ | 2005 05 10 | 691 | 0.0 | 0.5+ | 2006 08 19 | 699 | 0.1+ | 1.2+ |
| 2002 09 12 | 644 | 0.6− | 0.2+ | 2005 05 10 | 691 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 1.2+ | 1.0− |
| 2002 09 12 | 644 | 0.8− | 0.4+ | 2005 05 10 | 691 | (0.7+ | 2.3+) | 2006 11 16 | G96 | 0.0 | 0.8− |
| 2002 09 14 | 644 | 0.2− | 0.0 | 2005 05 17 | G96 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.0 | 2005 05 17 | G96 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.6+ | 0.9− |

**(145254)∗ 2005 JP$_{119}$**

Discovered 2005 May 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.30760 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21282418 | $\omega$ | 291.15714 | | −0.38490508 | | −0.92295171 |
| $a$ | 2.7783614 | $\Omega$ | 181.48989 | | +0.88243247 | | −0.36709304 |
| $e$ | 0.0163363 | $i$ | 6.33157 | | +0.27048294 | | −0.11577066 |
| $P$ | 4.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.6− | 0.0 | 2002 11 06 | 608 | 0.5− | 1.0+ | 2005 05 16 | G96 | 0.4− | 0.3− |
| 2000 04 05 | 704 | 0.1+ | 0.9+ | 2002 11 06 | 608 | 0.6− | 1.5+ | 2005 06 09 | 691 | 0.3+ | 0.0 |
| 2000 04 05 | 704 | 0.4+ | 0.7+ | 2002 11 06 | 608 | 0.3− | 1.6+ | 2005 06 09 | 691 | 0.2+ | 0.1− |
| 2000 04 05 | 704 | 0.3+ | 0.0 | 2004 01 29 | 704 | 0.6+ | 1.5+ | 2005 06 09 | 691 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.1− | 1.5+ | 2004 01 29 | 704 | 1.0+ | 1.2+ | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2000 04 27 | 699 | 0.3+ | 0.1− | 2004 01 29 | 704 | 0.2− | 1.5+ | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 2000 04 27 | 699 | 0.1+ | 0.0 | 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.4+ | 0.3+ |
| 2000 04 27 | 699 | 1.3+ | 1.1+ | 2005 05 10 | 691 | 0.2− | 0.2+ | 2006 09 18 | 703 | 1.1+ | 0.3+ |
| 2000 04 27 | 699 | 0.3+ | 0.4− | 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 1.9− | 0.4− |
| 2001 07 13 | 644 | 0.0 | 0.1− | 2005 05 14 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.5+ |
| 2001 07 13 | 644 | 0.2− | 0.2+ | 2005 05 14 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.0 |
| 2001 07 13 | 644 | 0.1− | 0.1+ | 2005 05 14 | 691 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2+ |
| 2002 10 15 | 644 | 0.5− | 0.7+ | 2005 05 16 | G96 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2002 10 15 | 644 | 0.2− | 0.8+ | 2005 05 16 | G96 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 2002 10 15 | 644 | 0.5− | 0.9+ | 2005 05 16 | G96 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.1+ |

**(145255)∗ 2005 JB$_{122}$ = 2004 DJ$_{46}$**

Discovered 2005 May 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86744)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.47360 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22526331 | $\omega$ | 146.65634 | | +0.74268991 | | +0.66815639 |
| $a$ | 2.6751147 | $\Omega$ | 171.00184 | | −0.65958628 | | +0.74139371 |
| $e$ | 0.1572840 | $i$ | 16.52374 | | −0.11557523 | | +0.06246917 |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 608 | (0.3− | 1.9+) | 2005 06 04 | 704 | 0.5− | 0.1+ | 2006 10 20 | 703 | 0.4+ | 0.9+ |
| 2001 07 13 | 608 | 0.0 | 1.1+ | 2005 06 04 | 704 | 1.3+ | 1.3+ | 2006 10 20 | 703 | (1.5− | 3.5−) |
| 2001 07 13 | 608 | 0.2− | 1.4+ | 2005 06 04 | 704 | 0.5− | 0.6− | 2006 10 20 | 703 | 0.8+ | 0.5− |
| 2004 02 19 | 704 | 0.9+ | 0.2− | 2005 06 04 | 704 | 1.0− | 0.5− | 2006 10 20 | 703 | 0.3+ | 1.3+ |
| 2004 02 19 | 704 | 0.7+ | 0.9+ | 2005 06 25 | 644 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.5− | 0.4− |
| 2004 02 19 | 704 | 0.9− | 0.5+ | 2005 06 25 | 644 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.3+ | 1.1+ |
| 2004 02 19 | 704 | 0.6+ | 0.3+ | 2005 06 25 | 644 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.0 | 0.1− |
| 2004 02 26 | 704 | 0.7− | 0.7+ | 2005 06 25 | 644 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.9− | 0.3− |
| 2004 02 26 | 704 | 0.2+ | 0.3+ | 2005 06 25 | 644 | 0.3+ | 0.1+ | 2006 10 28 | 703 | 0.3− | 1.2+ |
| 2004 02 26 | 704 | 0.2− | 0.4+ | 2005 06 25 | 644 | 0.5+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.1− |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2005 07 01 | 599 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.1+ | 1.2+ |
| 2005 05 10 | 691 | 0.1+ | 0.4− | 2005 07 01 | 599 | 0.4+ | 0.8− | 2006 10 28 | 703 | 0.3− | 0.8+ |
| 2005 05 10 | 691 | 0.2+ | 0.4− | 2005 07 01 | 599 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2005 05 16 | 691 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.6− | 0.5− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2005 05 16 | 691 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.8− |
| 2005 05 31 | 703 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2005 05 31 | 703 | 0.5+ | 0.1− | 2006 09 29 | 699 | 0.6+ | 1.0− | 2006 11 17 | 703 | (0.2− | 1.8−) |
| 2005 05 31 | 703 | 0.5− | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.9− | 2006 11 17 | 703 | 0.9− | 0.3+ |
| 2005 05 31 | 703 | 0.7+ | 1.1+ | 2006 09 29 | 699 | 0.7+ | 0.7− | 2006 11 23 | 703 | 0.7+ | 0.6− |
| 2005 06 02 | 704 | 1.1− | 0.5− | 2006 09 29 | 699 | 0.4− | 1.1− | 2006 11 23 | 703 | 1.5− | 1.4+ |
| 2005 06 02 | 704 | 0.0 | 1.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 1.0− | 1.0− |
| 2005 06 02 | 704 | 0.7− | 0.8+ | 2006 10 11 | 644 | 0.5+ | 0.4+ | 2006 11 23 | 703 | (2.1− | 1.1−) |
| 2005 06 02 | 704 | 1.0− | 0.7+ | 2006 10 11 | 644 | 0.5+ | 0.2+ | | | | |

**(145256)∗ 2005 JL$_{125}$**

Discovered 2005 May 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.12785 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17780365 | $\omega$ | 173.49004 | | +0.46171567 | | +0.87190234 |
| $a$ | 3.1321479 | $\Omega$ | 123.88938 | | −0.82243698 | | +0.48967956 |
| $e$ | 0.0722134 | $i$ | 11.33184 | | −0.33228911 | | −0.00048033 |
| $P$ | 5.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 561 | 0.4− | 0.9+ | 2005 05 11 | 691 | 0.2+ | 0.4+ | 2005 06 29 | 644 | 0.4+ | 0.1+ |
| 1998 01 07 | 561 | 0.3− | 0.3+ | 2005 05 11 | 691 | 0.1+ | 0.0 | 2005 06 29 | 644 | 0.3+ | 0.2+ |
| 1998 01 07 | 561 | 0.4+ | 1.0+ | 2005 05 14 | G96 | 0.5− | 0.1− | 2005 06 29 | 644 | 0.5+ | 0.3− |
| 1998 01 07 | 561 | 0.2− | 0.1− | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 1998 01 07 | 561 | 0.1− | 0.2− | 2005 05 14 | G96 | 0.6− | 0.1− | 2006 08 15 | 644 | 0.1+ | 0.0 |
| 1998 01 07 | 561 | 0.3− | 0.0 | 2005 05 14 | G96 | 0.5− | 0.1− | 2006 08 15 | 644 | 0.1+ | 0.0 |
| 2001 10 15 | 644 | 0.6− | 0.6+ | 2005 05 15 | 691 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.5− | 0.4− |
| 2001 10 15 | 644 | 0.5− | 0.5+ | 2005 05 15 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.1− | 0.9+ |
| 2001 10 15 | 644 | 0.5− | 0.5+ | 2005 05 15 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.7− | 0.3− |
| 2001 10 23 | 644 | 0.4+ | 0.7+ | 2005 06 03 | E12 | 0.4+ | 0.0 | 2006 08 28 | 699 | 1.4− | 0.9+ |
| 2001 10 23 | 644 | 0.2+ | 0.6+ | 2005 06 03 | E12 | 0.4+ | 0.7− | 2006 08 28 | E12 | 0.7+ | 1.0+ |
| 2001 10 23 | 644 | 0.8+ | 0.3+ | 2005 06 03 | E12 | 0.4− | 0.1+ | 2006 08 28 | E12 | 0.3− | 0.0 |
| 2004 02 17 | 704 | 0.8+ | 0.7+ | 2005 06 03 | E12 | 0.7− | 0.7− | 2006 08 28 | E12 | 0.1+ | 0.1− |
| 2004 02 17 | 704 | 0.3+ | 1.2+ | 2005 06 05 | 691 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.3+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.2+ | 0.7+ | 2005 06 05 | 691 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.6+ | | |
| 2004 03 19 | 644 | 0.1+ | 0.4+ | 2005 06 05 | 691 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | | |
| 2004 03 19 | 644 | 0.0 | 0.6+ | 2005 06 23 | 644 | 0.3+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.1+ | | |
| 2004 03 19 | 644 | 0.5+ | 0.3+ | 2005 06 23 | 644 | 0.0 | 0.2− | | | | | | |
| 2005 05 11 | 691 | 0.0 | 0.2+ | 2005 06 23 | 644 | 0.4+ | 0.2− | | | | | | |

**(145257)∗ 2005 JQ$_{127}$**

Discovered 2005 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.59695 | | (2000.0) | | | |
| $n$ | 0.18915414 | $\omega$ | 219.71930 | | +0.59390581 | +0.78110479 |
| $a$ | 3.0055606 | $\Omega$ | 87.57429 | | −0.68039047 | +0.61548929 |
| $e$ | 0.0872633 | $i$ | 11.12320 | | −0.42935382 | +0.10511057 |
| $P$ | 5.21 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.7− | 0.7− | 2005 05 17 | G96 | 0.2− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2005 05 17 | G96 | 0.4− | 0.3− | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2001 09 12 | 704 | 0.5− | 0.4+ | 2005 05 17 | G96 | 0.3− | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 1.1+ | 2005 05 17 | G96 | 0.3− | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.5+ |
| 2001 10 15 | 644 | 0.5− | 0.8+ | 2005 05 19 | 703 | 0.5+ | 1.2+ | 2006 08 18 | 644 | 0.5+ | 0.1+ |
| 2001 10 15 | 644 | 0.1− | 0.6+ | 2005 05 19 | 703 | 0.7+ | 0.6+ | 2006 08 18 | 644 | 0.2+ | 0.1+ |
| 2001 10 15 | 644 | 0.0 | 0.5+ | 2005 05 19 | 703 | (1.1+ | 2.5+) | 2006 08 18 | 644 | 0.1− | 0.1− |
| 2002 12 09 | 291 | 0.1− | 0.7+ | 2005 05 19 | 703 | 0.9+ | 1.1+ | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2002 12 09 | 291 | 0.3− | 0.5+ | 2005 06 04 | 691 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.1+ |
| 2002 12 09 | 291 | 0.0 | 0.7+ | 2005 06 04 | 691 | 0.6− | 0.3− | 2006 08 20 | 644 | 0.3− | 0.3+ |
| 2002 12 31 | 704 | 0.7− | 0.1+ | 2005 06 04 | 691 | 0.1+ | 0.3+ | 2006 08 28 | E12 | 0.2+ | 0.6− |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2005 06 09 | 691 | 0.1+ | 0.3+ | 2006 08 28 | E12 | 0.5+ | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2005 06 09 | 691 | 0.2+ | 0.2− | 2006 08 28 | E12 | 0.9+ | 0.1+ |
| 2004 02 16 | 704 | 0.7+ | 0.1− | 2005 06 09 | 691 | 0.1+ | 0.2+ | 2006 08 28 | E12 | 0.2− | 0.1+ |
| 2004 02 16 | 704 | 0.7+ | 0.3+ | 2006 08 16 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.5− | 1.1− |
| 2004 02 16 | 704 | (2.7+ | 0.8+) | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 1.2− | 0.2+ |
| 2005 05 12 | 704 | 0.1+ | 1.5+ | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 1.0− | 0.6+ |
| 2005 05 12 | 704 | 0.5+ | 1.1+ | 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.2− |
| 2005 05 12 | 704 | 0.7+ | 1.1+ | 2006 08 16 | 644 | 0.0 | 0.3+ | | | | |

**(145258)∗ 2005 JT$_{127}$**

Discovered 2005 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.99878 | | (2000.0) | | | |
| $n$ | 0.23333167 | $\omega$ | 82.90102 | | +0.24435656 | +0.96908738 |
| $a$ | 2.6130853 | $\Omega$ | 201.33644 | | −0.92252131 | +0.22150952 |
| $e$ | 0.1780793 | $i$ | 5.37010 | | −0.29873786 | +0.10864242 |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | 0.3+ | 0.9+ | 2005 06 02 | 703 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 1993 09 15 | 809 | 0.3− | 0.2+ | 2005 06 02 | 703 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1993 09 15 | 809 | 0.5− | 0.3+ | 2005 06 02 | 703 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2004 01 28 | 645 | 0.1+ | 0.2+ | 2005 06 05 | 704 | 0.4− | 1.3+ | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2004 01 28 | 645 | 0.0 | 0.2+ | 2005 06 05 | 704 | 0.7− | 1.4+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2004 02 11 | 644 | 0.1+ | 0.6+ | 2005 06 05 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2004 02 11 | 644 | 0.2+ | 0.4+ | 2005 06 05 | 704 | 0.4+ | 1.3+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2004 02 11 | 644 | 0.0 | 0.3+ | 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 03 17 | G96 | 0.4− | 0.2+ | 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.5+ |
| 2005 03 17 | G96 | 0.1− | 0.2+ | 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2005 03 17 | G96 | 0.2− | 0.2+ | 2005 06 28 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2005 03 17 | G96 | 0.2+ | 0.2− | 2005 06 28 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.6− | 0.1− |
| 2005 05 03 | 703 | 0.1− | 0.6+ | 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2005 05 03 | 703 | 0.6− | 0.2− | 2005 07 05 | 644 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2005 05 03 | 704 | (1.6+ | 0.6+) | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2005 05 03 | 703 | 0.5− | 0.4− | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.5− |
| 2005 05 03 | 704 | 0.1+ | 0.9− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2005 05 03 | 703 | (1.7− | 0.6+) | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 05 03 | 704 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2005 05 03 | 704 | 0.0 | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2005 05 03 | 704 | 1.0+ | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.8+ |
| 2005 05 12 | 704 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 2.1+ | 1.4− |
| 2005 05 12 | 704 | 1.1+ | 0.5+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.5− | 1.9+ |
| 2005 05 12 | 704 | 0.2+ | 0.7+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 17 | G92 | 0.7+ | 0.2− |
| 2005 05 12 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.5+ | 2006 11 17 | G92 | 0.1+ | 0.0 |
| 2005 05 15 | G96 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G92 | 0.4− | 0.3− |
| 2005 05 15 | G96 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G92 | 0.4+ | 0.5− |
| 2005 05 15 | G96 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.4+ | 2006 11 18 | G92 | 0.1− | 0.0 |
| 2005 05 15 | G96 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.5+ | 2006 11 18 | G92 | 0.1+ | 0.1− |
| 2005 06 02 | 703 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | | | | |

**(145259)∗ 2005 JA$_{128}$ = 2002 YT$_{17}$**

Discovered 2005 May 12 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77246)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.86136 | | (2000.0) | | | |
| $n$ | 0.18477630 | $\omega$ | 193.60703 | | +0.06796794 | +0.96374069 |
| $a$ | 3.0528481 | $\Omega$ | 80.75417 | | −0.88915373 | +0.17582614 |
| $e$ | 0.1205583 | $i$ | 15.15527 | | −0.45253288 | −0.20072131 |
| $P$ | 5.33 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 699 | 1.0− | 1.1+ | 2005 04 12 | E12 | 0.2− | 0.5− | 2005 06 04 | 703 | 0.5− | 0.0 |
| 2001 09 25 | 699 | 0.5− | 0.9+ | 2005 04 20 | 703 | 0.4− | 0.1+ | 2005 06 04 | 703 | 0.6+ | 0.3+ |
| 2001 09 25 | 699 | 0.1− | 0.8+ | 2005 04 20 | 703 | 0.8− | 0.3− | 2005 06 05 | 704 | 0.9+ | 0.1+ |
| 2001 09 25 | 699 | 1.0− | 0.5+ | 2005 04 20 | 703 | 0.2− | 0.6+ | 2005 06 05 | 704 | 0.8+ | 1.0+ |
| 2002 12 31 | 704 | 0.8+ | 0.2+ | 2005 04 20 | 703 | 0.7− | 1.1+ | 2005 06 05 | 704 | 0.5+ | 1.1− |
| 2002 12 31 | 704 | 0.1− | 0.7+ | 2005 04 30 | 691 | 0.0 | 0.3+ | 2005 06 05 | 704 | 0.4− | 0.0 |
| 2002 12 31 | 704 | 0.1− | 1.0+ | 2005 04 30 | 691 | 0.0 | 0.2+ | 2005 06 05 | 704 | 0.7+ | 0.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.5+ | 2005 04 30 | 691 | 0.0 | 0.2+ | 2005 06 08 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.2+ | 2005 05 12 | 691 | 0.2− | 0.3+ | 2005 06 08 | 691 | 0.1+ | 0.2− |
| 2003 01 04 | 704 | 0.1+ | 0.2− | 2005 05 12 | 691 | 0.5− | 0.4+ | 2005 06 08 | 691 | 0.1+ | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.1+ | 2005 05 12 | 691 | 0.9+ | 1.1+ | 2005 06 12 | 691 | 0.2+ | 0.0 |
| 2003 01 04 | 704 | 0.2− | 0.5+ | 2005 05 12 | 599 | 0.2+ | 0.1− | 2005 06 12 | 691 | 0.2+ | 0.1− |
| 2003 01 04 | 704 | 0.1− | 0.3− | 2005 05 16 | 704 | 0.5+ | 0.4+ | 2005 06 12 | 691 | 0.2+ | 0.1− |
| 2004 01 31 | 704 | 0.3+ | 1.2+ | 2005 05 16 | 704 | 0.6+ | 0.9+ | 2005 06 16 | 691 | 0.1− | 0.0 |
| 2004 01 31 | 704 | (0.6+ | 1.8+) | 2005 05 16 | 704 | 0.4+ | 0.1− | 2005 06 16 | 691 | 0.1− | 0.1+ |
| 2004 01 31 | 704 | 0.5− | 0.9+ | 2005 05 16 | 704 | 1.0+ | 0.4− | 2005 06 16 | 691 | 0.1− | 0.1− |
| 2004 02 14 | 704 | 0.6− | 0.0 | 2005 05 16 | 704 | 0.3+ | 0.1− | 2006 08 15 | E12 | 0.1+ | 0.5+ |
| 2004 02 14 | 704 | 0.8+ | 0.5+ | 2005 05 16 | 691 | 0.2+ | 0.1− | 2006 08 15 | E12 | 0.4+ | 0.7+ |
| 2004 02 14 | 704 | 0.2+ | 1.0+ | 2005 05 16 | 691 | 0.0 | 0.2− | 2006 08 15 | E12 | 0.8− | 0.3+ |
| 2004 02 14 | 704 | 0.3+ | 0.5+ | 2005 05 16 | 691 | 0.1+ | 0.2− | 2006 08 15 | E12 | 0.0 | 0.2+ |
| 2004 02 14 | 704 | 0.6+ | 0.6+ | 2005 05 20 | G96 | 0.2− | 0.2− | 2006 08 28 | E12 | 0.6− | 0.1+ |
| 2004 03 18 | 645 | 0.1− | 0.0 | 2005 05 20 | G96 | 0.5− | 0.2− | 2006 08 28 | E12 | 0.1− | 0.5+ |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2005 05 20 | G96 | 0.8− | 0.0 | 2006 08 28 | E12 | 0.6− | 0.6+ |
| 2004 03 25 | 704 | (1.5+ | 0.1−) | 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 08 28 | E12 | 0.4+ | 0.5+ |
| 2004 03 25 | 704 | 1.1+ | 0.0 | 2005 05 31 | 699 | 0.3− | 0.3− | 2006 09 28 | E12 | 0.6− | 0.6+ |
| 2004 03 25 | 704 | 0.2+ | 0.0 | 2005 05 31 | 699 | 0.1+ | 0.5− | 2006 09 28 | E12 | 0.5+ | 1.1− |
| 2004 03 25 | 704 | 0.5+ | 0.3+ | 2005 05 31 | 699 | 0.0 | 0.2− | 2006 09 28 | E12 | 0.3− | 0.1− |
| 2004 05 14 | 645 | 0.0 | 0.0 | 2005 06 03 | 691 | 0.3− | 0.2− | 2006 09 28 | E12 | 0.4+ | 0.3− |
| 2004 05 14 | 645 | 0.0 | 0.0 | 2005 06 03 | 691 | 0.1− | 0.1− | 2006 10 12 | E12 | 0.0 | 0.5+ |
| 2005 04 12 | E12 | 1.0+ | 0.0 | 2005 06 03 | 691 | 0.1− | 0.1+ | 2006 10 12 | E12 | 0.1+ | 0.4+ |
| 2005 04 12 | E12 | 0.2+ | 0.5− | 2005 06 04 | 703 | 0.6− | 0.5− | 2006 10 12 | E12 | 0.1+ | 0.1+ |
| 2005 04 12 | E12 | 0.2− | 0.2− | 2005 06 04 | 703 | 1.1− | 0.2− | 2006 10 12 | E12 | 0.5− | 0.6− |

**(145260)∗ 2005 JJ$_{128}$**

Discovered 2005 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.78576 | | | (2000.0) | | |
| $n$ | 0.22693414 | $\omega$ | 247.95806 | | +0.85557224 | +0.43747836 |
| $a$ | 2.6619680 | $\Omega$ | 85.15737 | | −0.30963864 | +0.86093006 |
| $e$ | 0.1633434 | $i$ | 16.12743 | | −0.41487355 | +0.25963845 |
| $P$ | 4.34 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 12 | 644 | 0.2+ | 1.2− | 2005 05 16 | 704 | (1.3+ | 1.9+) | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 2001 06 12 | 644 | 0.6+ | 0.7− | 2005 05 16 | 704 | 0.8+ | 0.7+ | 2006 10 17 | 703 | 0.9− | 1.4+ |
| 2001 06 12 | 644 | 0.3+ | 1.3− | 2005 06 10 | 691 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.6− | 0.9+ |
| 2001 07 10 | 644 | 0.4− | 0.5+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2001 07 10 | 644 | 0.3− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.7+ | 0.3− |
| 2001 07 10 | 644 | 0.5− | 0.1− | 2005 06 16 | 691 | 0.2− | 0.2− | 2006 10 28 | 703 | (0.8+ | 1.8+) |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.7− | 0.2+ |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.0 | 0.6− |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2005 06 27 | 644 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.7+ | 2005 06 27 | 644 | 0.3− | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.2+ |
| 2005 05 12 | 704 | 0.5− | 0.6+ | 2005 06 27 | 644 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.1+ | 0.1− |
| 2005 05 12 | 704 | 0.7− | 0.3+ | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.6− | 0.2− |
| 2005 05 12 | 704 | 0.3+ | 0.3+ | 2005 07 05 | 644 | 0.1+ | 0.3+ | | | | |
| 2005 05 16 | 704 | 0.5+ | 1.2+ | 2005 07 05 | 644 | 0.0 | 0.4+ | | | | |

**(145261)∗ 2005 JM$_{130}$**

Discovered 2005 May 13 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.75164 | | | (2000.0) | | |
| $n$ | 0.22396628 | $\omega$ | 85.00659 | | +0.77227805 | +0.62992711 |
| $a$ | 2.6854328 | $\Omega$ | 235.92232 | | −0.61512729 | +0.70908059 |
| $e$ | 0.1410151 | $i$ | 5.70465 | | −0.15876091 | +0.31685415 |
| $P$ | 4.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 691 | 0.2− | 0.3+ | 2005 05 18 | 644 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.1− |
| 1993 10 10 | 691 | 0.2− | 0.1+ | 2006 08 25 | D35 | 0.4+ | 0.5− | 2006 09 29 | 704 | 0.5+ | 0.4− |
| 1993 10 10 | 691 | 0.1− | 0.3+ | 2006 08 25 | D35 | 0.4+ | 0.7− | 2006 09 29 | 699 | 0.8− | 0.0 |
| 1993 11 10 | 691 | 0.1− | 0.1− | 2006 08 25 | D35 | 0.6+ | 0.7− | 2006 09 29 | 699 | (1.1+ | 1.6−) |
| 1993 11 10 | 691 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.5+ | 0.7+ | 2006 10 01 | 703 | 0.4+ | 0.0 |
| 1993 11 10 | 691 | 0.5+ | 0.5− | 2006 08 29 | 703 | 0.3+ | 0.5− | 2006 10 01 | 703 | 0.4+ | 0.5− |
| 2002 10 30 | 049 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.5− | 0.9− | 2006 10 01 | 703 | 0.6+ | 0.4+ |
| 2002 10 31 | 049 | 0.4− | 0.5+ | 2006 08 29 | 703 | 0.5+ | 1.1− | 2006 10 01 | 703 | (0.0 | 1.8−) |
| 2002 10 31 | 049 | 0.2− | 0.1+ | 2006 08 29 | 699 | 0.6− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2002 11 07 | 704 | 0.3− | 1.4− | 2006 08 29 | 699 | 0.5− | 1.0− | 2006 10 10 | 644 | 0.1− | 0.3− |
| 2002 11 07 | 704 | 0.7− | 0.9− | 2006 08 29 | 699 | 1.0+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 699 | 0.1− | 0.9− | 2006 10 11 | 691 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.4− | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.6+ | 0.1− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.2− | 2006 09 14 | A50 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.3+ | 0.7+ | 2006 09 14 | A50 | 0.0 | 0.6− | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.8− | 1.0+ | 2006 09 15 | 704 | (1.6+ | 0.5−) | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 09 15 | 704 | (2.3+ | 0.7−) | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.0 | 2006 09 15 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.5+ |
| 2002 12 05 | 704 | 0.8+ | 0.3+ | 2006 09 17 | 703 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.0 | 1.3+ | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2002 12 10 | 644 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.4+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2002 12 10 | 644 | 0.2− | 0.7+ | 2006 09 17 | 703 | 0.3+ | 0.6− | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 09 18 | 704 | 0.5− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2005 05 04 | 699 | 0.3− | 0.6+ | 2006 09 18 | 704 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2005 05 04 | 699 | 1.0+ | 0.8+ | 2006 09 18 | 704 | 0.6− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2005 05 04 | 699 | 0.1+ | 0.4− | 2006 09 18 | 704 | 0.3− | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2005 05 04 | 699 | 0.9+ | 1.4+ | 2006 09 18 | 704 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2005 05 13 | 704 | 0.5+ | 0.3− | 2006 09 19 | 699 | 0.5− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2005 05 13 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2005 05 13 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2005 05 13 | 704 | 0.6+ | 0.8+ | 2006 09 25 | 704 | 1.1− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2005 05 14 | G96 | 0.9− | 0.8+ | 2006 09 25 | 704 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.1− | 0.4+ |
| 2005 05 14 | G96 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 0.7− | 0.5+ | 2006 10 24 | 644 | 0.1+ | 0.3− |
| 2005 05 14 | G96 | 0.9− | 0.4+ | 2006 09 25 | 704 | 1.0− | 0.4+ | 2006 10 24 | 644 | 0.2− | 0.2− |
| 2005 05 14 | G96 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.6+ | 0.2− | 2006 10 24 | 644 | 0.2+ | 0.2− |
| 2005 05 18 | 644 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.0 | | | | |
| 2005 05 18 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.7− | 1.2+ | | | | |

**(145262)∗ 2005 JL$_{131}$ = 2005 JD$_{156}$**

Discovered 2005 May 13 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (d, *MPO* 87833)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.23591 | | | (2000.0) | | |
| $n$ | 0.26652911 | $\omega$ | 307.84013 | | +0.99548576 | −0.07194372 |
| $a$ | 2.3913306 | $\Omega$ | 56.36672 | | +0.09177129 | +0.89600399 |
| $e$ | 0.0788255 | $i$ | 4.26395 | | −0.02421038 | +0.43817913 |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.4− | 0.4+ | 2005 05 04 | G96 | 0.5− | 0.7+ | 2006 10 02 | 291 | 0.2− | 0.4+ |
| 1999 12 07 | 704 | 0.1+ | 0.2− | 2005 05 13 | G96 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 1999 12 07 | 704 | 0.4− | 0.0 | 2005 05 13 | G96 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 04 15 | 691 | 0.2+ | 0.7+ | 2005 05 13 | G96 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 04 15 | 691 | 0.1+ | 0.9+ | 2005 05 13 | G96 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.2− |
| 2001 04 15 | 691 | 0.4+ | 0.8+ | 2005 05 16 | 691 | 0.3− | 0.1+ | 2006 10 15 | 703 | 0.3+ | 0.1+ |
| 2001 04 30 | 691 | 0.7+ | 0.4+ | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 1.0− | 1.2− |
| 2001 04 30 | 691 | 0.5+ | 0.7+ | 2005 05 16 | 691 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 1.5+ | 1.0− |
| 2001 04 30 | 691 | 0.5+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 08 17 | 608 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2002 08 17 | 608 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 08 17 | 608 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.2+ | 1.0+ |
| 2002 08 28 | 644 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2002 08 28 | 644 | 0.3− | 0.4− | 2006 09 18 | 699 | 0.9− | 0.6+ | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2003 12 22 | 704 | 0.6+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2003 12 22 | 704 | 0.0 | 1.1+ | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 1.0+ | 1.0+ | 2006 09 20 | 644 | 0.9+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2003 12 22 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | 0.1− | 1.2+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2003 12 28 | 704 | 1.2− | 0.8+ | 2006 09 27 | 691 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2003 12 28 | 704 | 0.4− | 0.7+ | 2006 09 30 | 291 | 0.3− | 0.4+ | 2006 10 22 | G96 | 0.5+ | 0.3− |
| 2004 02 15 | 704 | 0.7− | 1.0+ | 2006 09 30 | 291 | 0.3− | 0.5+ | 2006 11 11 | 703 | 1.4+ | 0.4− |
| 2004 02 15 | 704 | 0.5+ | 0.3− | 2006 09 30 | 291 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 2004 02 15 | 704 | 0.2+ | 0.9− | 2006 10 01 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 1.4+ | 0.4− |
| 2005 04 07 | G96 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.5+ |
| 2005 04 07 | G96 | 0.2− | 0.0 | 2006 10 01 | 291 | 0.4− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2005 04 07 | G96 | 0.5− | 0.1+ | 2006 10 01 | 291 | 0.5− | 0.3+ | 2006 11 16 | G96 | 1.0− | 0.5− |
| 2005 04 07 | G96 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.8− |
| 2005 05 04 | G96 | 0.1+ | 0.4+ | 2006 10 01 | 291 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.9− |
| 2005 05 04 | G96 | 0.2+ | 0.5+ | 2006 10 02 | 291 | 0.2− | 0.4+ | | | | |
| 2005 05 04 | G96 | 0.2− | 0.2+ | 2006 10 02 | 291 | 0.2− | 0.5+ | | | | |

**(145263)∗ 2005 JB$_{133}$ = 2003 AK$_{35}$**

Discovered 2005 May 14 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86747)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.92775 | | | (2000.0) | | |
| $n$ | 0.23833794 | $\omega$ | 211.14431 | | +0.96574765 | −0.25815184 |
| $a$ | 2.5763642 | $\Omega$ | 163.75348 | | +0.25317401 | +0.91525956 |
| $e$ | 0.3066965 | $i$ | 5.38394 | | +0.05687172 | +0.30928556 |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 11 11 | 683 | (2.7− | 1.3+) |
| 2000 03 03 | 645 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.4− | 0.7+ | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2000 05 04 | 645 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.7− | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2000 05 04 | 645 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.7− | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.2+ |
| 2003 01 07 | 704 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.1+ | 0.7− | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2003 01 07 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 2003 01 07 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 704 | (2.4+ | 0.1−) | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2003 01 07 | 704 | 0.1+ | 0.0 | 2006 09 19 | 704 | 0.6+ | 0.3− | 2006 11 19 | 704 | 0.4+ | 1.2+ |
| 2003 01 07 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 704 | 0.4+ | 0.6+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2003 01 08 | 704 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.9− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2003 01 08 | 704 | 0.1+ | 0.7− | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.2+ |
| 2003 01 08 | 704 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2004 03 29 | 691 | 0.4+ | 0.8+ | 2006 09 19 | 699 | 0.7− | 0.6+ | 2006 11 21 | G96 | 0.4+ | 0.3+ |
| 2004 03 29 | 691 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2004 03 29 | 691 | 0.4+ | 0.0 | 2006 10 01 | 703 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2005 05 14 | 691 | 0.0 | 0.3+ | 2006 10 01 | 703 | (1.7+ | 1.5−) | 2006 11 25 | 704 | 0.0 | 0.6− |
| 2005 05 14 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.2− | 1.3− | 2006 11 25 | 704 | 0.9− | 0.7− |
| 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.3− | 0.9+ | 2006 11 25 | 704 | 0.5− | 1.3− |
| 2005 05 16 | G96 | 0.2− | 0.3+ | 2006 10 03 | 704 | 0.2+ | 0.5+ | 2006 11 25 | 704 | 0.5− | 1.1− |
| 2005 05 16 | G96 | 0.4− | 0.4+ | 2006 10 03 | 704 | 0.1+ | 0.6+ | 2006 11 25 | 703 | 0.2− | 0.1+ |
| 2005 05 16 | G96 | 0.7− | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 1.0− | 0.3+ |
| 2005 05 16 | G96 | 0.0 | 0.3+ | 2006 10 03 | 704 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.7− | 0.4+ |
| 2005 06 04 | 691 | 0.0 | 0.0 | 2006 10 22 | 704 | 0.0 | 0.3+ | 2006 11 25 | 703 | 0.5− | 0.3+ |
| 2005 06 04 | 691 | 0.0 | 0.7+ | 2006 10 22 | 704 | 0.6+ | 0.4+ | 2006 11 28 | 704 | 0.6+ | 0.5+ |
| 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 10 22 | 704 | 0.8+ | 0.8+ | 2006 11 28 | 704 | 0.3+ | 0.5+ |
| 2005 06 14 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 704 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.7+ | 0.1+ |
| 2005 06 14 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 704 | 0.5− | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 683 | (0.7− | 2.8+) | 2006 11 28 | 704 | 0.4+ | 0.4+ |

**(145264)∗ 2005 JF$_{133}$**

Discovered 2005 May 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.07759 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21962147 | $\omega$ | 179.49854 | | +0.92949662 | | +0.36732860 |
| $a$ | 2.7207346 | $\Omega$ | 158.85585 | | −0.33871561 | | +0.88580823 |
| $e$ | 0.1165405 | $i$ | 5.28932 | | −0.14597182 | | +0.28357269 |
| $P$ | 4.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.2+ | 0.0 | 2005 06 28 | 644 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.7+ | 0.3− |
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.6+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.8− | 0.2+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1− | 0.3+ |
| 2004 02 14 | 691 | 0.4+ | 0.4+ | 2006 08 17 | 644 | 0.6− | 0.2+ | 2006 09 26 | 704 | (2.1+ | 0.8+) |
| 2004 02 14 | 691 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.7− | 1.1+ | 2006 09 26 | 704 | 0.7− | 0.8+ |
| 2004 02 14 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.2− | 1.1+ | 2006 09 28 | 704 | 0.3+ | 1.0+ |
| 2004 03 17 | 691 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 09 28 | 704 | (0.5− | 1.6+) |
| 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 1.2+ | 0.6+ | 2006 09 28 | 704 | 1.1− | 0.0 |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.8− | 0.2+ | 2006 09 28 | 704 | 1.0− | 0.2+ |
| 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.5− | 2006 09 30 | 704 | 0.1− | 0.2+ |
| 2005 05 03 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.7− | 1.1+ | 2006 09 30 | 704 | 0.3− | 0.2+ |
| 2005 05 03 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.2+ | 0.8− | 2006 09 30 | 704 | 0.8+ | 0.7+ |
| 2005 05 14 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.4+ | 0.9+ |
| 2005 05 14 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.3+ |
| 2005 05 14 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.7+ |
| 2005 05 17 | G96 | 0.3− | 0.1− | 2006 09 18 | 699 | 1.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2005 05 17 | G96 | 0.7− | 0.1+ | 2006 09 18 | 699 | 1.0+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2005 05 17 | G96 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 05 17 | G96 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.5+ | 1.3+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2005 06 04 | 691 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.5+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 06 04 | 691 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.1− | | | | |
| 2005 06 28 | 644 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.8+ | 0.4− | | | | |

**(145265)∗ 2005 JZ$_{133}$**

Discovered 2005 May 14 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.63023 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20289322 | $\omega$ | 100.78189 | | +0.69773917 | | +0.70540918 |
| $a$ | 2.8682986 | $\Omega$ | 214.56503 | | −0.71256715 | | +0.66557569 |
| $e$ | 0.0980254 | $i$ | 12.70038 | | −0.07353980 | | +0.24373531 |
| $P$ | 4.86 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 17 | 691 | 0.6− | 0.0 | 2005 06 04 | 691 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.5+ |
| 1992 11 17 | 691 | 0.0 | 0.1+ | 2005 06 12 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.2+ |
| 1992 11 17 | 691 | 0.6+ | 0.3− | 2005 06 12 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.3+ |
| 2001 08 17 | 644 | 0.0 | 0.2− | 2005 06 12 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.4+ | 0.6+ |
| 2001 08 17 | 644 | 0.3+ | 0.1+ | 2005 06 13 | 691 | 0.1− | 0.0 | 2006 09 15 | 704 | 0.0 | 0.6− |
| 2001 08 17 | 644 | 0.2+ | 0.0 | 2005 06 13 | 691 | 0.4+ | 0.4− | 2006 09 15 | 704 | 0.7+ | 0.5+ |
| 2001 09 14 | 644 | 0.4+ | 0.4+ | 2005 06 13 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.3+ |
| 2001 09 14 | 644 | 0.2+ | 0.2+ | 2005 06 17 | 691 | 0.3− | 0.1− | 2006 09 16 | 644 | 0.4+ | 0.1+ |
| 2001 09 14 | 644 | 0.0 | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.4− | 2006 09 16 | 644 | 0.2− | 0.3+ |
| 2001 10 15 | 645 | 0.0 | 0.2− | 2005 06 17 | 691 | 0.0 | 0.0 | 2006 09 22 | 703 | 0.6+ | 1.2− |
| 2001 10 15 | 645 | 0.0 | 0.2− | 2005 06 28 | 644 | 0.5− | 0.1+ | 2006 09 22 | 703 | 0.6− | 0.7− |
| 2005 05 14 | 691 | 0.2− | 0.1+ | 2005 06 28 | 644 | 0.3+ | 0.0 | 2006 09 22 | 703 | 0.2− | 0.7+ |
| 2005 05 14 | 691 | 0.1+ | 0.1− | 2005 06 28 | 644 | 0.1− | 0.6+ | 2006 09 22 | 703 | 0.9− | 0.4− |
| 2005 05 14 | 691 | 0.4+ | 0.1− | 2006 08 28 | 683 | (1.7+ | 0.1−) | 2006 09 22 | 703 | 0.6+ | 1.1+ |
| 2005 05 16 | G96 | 0.5− | 0.2− | 2006 08 28 | 683 | 0.7− | 1.1+ | 2006 09 22 | 703 | (0.5+ | 2.2−) |
| 2005 05 16 | G96 | 0.2− | 0.3− | 2006 08 28 | 683 | 0.2− | 0.4+ | 2006 09 22 | 703 | 0.3+ | 0.2− |
| 2005 05 16 | G96 | 0.6− | 0.1− | 2006 09 14 | G92 | 0.2+ | 0.2+ | 2006 09 22 | 703 | 1.3− | 0.1− |
| 2005 05 16 | G96 | (2.5− | 1.5+) | 2006 09 14 | G92 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2005 06 04 | 691 | 0.1− | 0.1− | 2006 09 14 | G92 | 0.8+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2005 06 04 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |

**(145266)∗ 2005 JE$_{134}$**

Discovered 2005 May 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.47493 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23315735 | $\omega$ | 222.55726 | | +0.97089528 | | +0.14361481 |
| $a$ | 2.6143876 | $\Omega$ | 128.17261 | | −0.09377839 | | +0.96433189 |
| $e$ | 0.2010488 | $i$ | 14.11133 | | −0.22038142 | | +0.22234836 |
| $P$ | 4.23 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 13 | 910 | 0.0 | 0.3+ | 2005 06 09 | 703 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.0 |
| 1997 07 13 | 910 | 0.2− | 0.4+ | 2005 06 09 | 703 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 1997 07 13 | 910 | 0.1− | 0.3+ | 2005 06 09 | 703 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.0 | 0.8+ |
| 2002 12 14 | 704 | 0.5− | 0.9+ | 2005 06 09 | 703 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | 0.1− | 0.4+ | 2005 06 13 | 691 | 0.2+ | 0.2− | 2006 10 01 | 704 | 1.0+ | 1.4+ |
| 2002 12 14 | 704 | 0.9+ | 0.6+ | 2005 06 13 | 691 | 0.9− | 1.2+ | 2006 10 20 | 703 | 0.2− | 0.4− |
| 2002 12 14 | 704 | 0.3+ | 0.1− | 2005 06 13 | 691 | 0.3+ | 0.1− | 2006 10 20 | 703 | 0.1− | 0.8− |
| 2003 01 05 | 704 | 0.3− | 0.0 | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.1− | 0.4− |
| 2003 01 05 | 704 | 0.1+ | 0.2+ | 2005 06 17 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.4− |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2005 06 17 | 691 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.5+ | 0.4− |
| 2003 01 05 | 704 | 0.2− | 0.1+ | 2005 06 27 | 691 | 0.5+ | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2003 01 05 | 704 | 0.3− | 0.1+ | 2005 06 27 | 691 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2004 02 17 | 704 | 0.8+ | 1.2+ | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.1+ |
| 2004 02 17 | 704 | 0.9+ | 0.9+ | 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.4− | 0.3+ |
| 2004 02 17 | 704 | (1.8+ | 0.2−) | 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.1− | 0.8+ |
| 2005 05 14 | 704 | 0.6+ | 1.4+ | 2005 06 30 | 691 | 0.2+ | 0.0 | 2006 11 10 | 704 | 0.4− | 0.4+ |
| 2005 05 14 | 704 | 1.1+ | 0.1+ | 2005 07 02 | 703 | 0.2+ | 0.5− | 2006 11 10 | 704 | 0.0 | 0.9+ |
| 2005 05 14 | 704 | (0.2− | 2.1+) | 2005 07 02 | 703 | 0.6− | 0.6+ | 2006 11 10 | 704 | 0.8− | 0.2− |
| 2005 05 14 | 704 | 0.0 | 1.0+ | 2005 07 02 | 703 | (0.0 | 1.6−) | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2005 05 16 | G96 | (0.2− | 2.7+) | 2005 07 02 | 703 | 0.8− | 0.7− | 2006 11 16 | 703 | 0.1− | 0.6+ |
| 2005 05 16 | G96 | (0.3− | 2.8+) | 2005 07 04 | 691 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.3− | 0.4+ |
| 2005 05 16 | G96 | (0.2− | 2.9+) | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.1+ | 0.5+ |
| 2005 05 16 | G96 | (0.2− | 2.9+) | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2005 06 02 | 703 | 0.4− | 0.6+ | 2005 07 27 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2005 06 02 | 703 | 1.4− | 0.7+ | 2005 07 27 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2005 06 02 | 703 | (0.3− | 1.9+) | 2005 07 27 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.8− | 1.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 02 | 703 | 1.3− | 1.0+ | 2005 08 22 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.5− | 1.0+ |
| 2005 06 09 | 704 | 0.2+ | 0.5+ | 2005 08 22 | 644 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.1− | 0.2+ |
| 2005 06 09 | 704 | 0.4− | 0.3+ | 2005 08 22 | 644 | 0.8− | 0.1− | 2006 11 22 | 703 | 0.7− | 0.5+ |
| 2005 06 09 | 704 | 0.5− | 0.4− | 2006 09 19 | 703 | 0.4− | 0.4− | 2006 11 22 | 703 | 0.1− | 0.4+ |
| 2005 06 09 | 704 | 0.0 | 1.0+ | 2006 09 19 | 703 | 0.1− | 0.4− | 2006 11 22 | 703 | 0.6− | 0.2+ |

**(145267)∗ 2005 JW$_{134}$**

Discovered 2005 May 14 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.63681 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19878643 | $\omega$ | 231.16002 | | +0.99615224 | +0.06426948 | |
| $a$ | 2.9076686 | $\Omega$ | 125.07686 | | −0.03874827 | +0.93278890 | |
| $e$ | 0.1403341 | $i$ | 4.17517 | | −0.07860845 | +0.35464672 | |
| $P$ | 4.96 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.2− | 0.1+ | 2005 05 16 | G96 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.2+ |
| 2001 08 01 | 644 | 0.0 | 0.0 | 2005 05 16 | G96 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.9+ | 0.5− |
| 2001 08 01 | 644 | 0.1+ | 0.1− | 2005 05 16 | G96 | 0.3− | 0.5− | 2006 09 14 | 644 | 0.0 | 0.4+ |
| 2001 08 25 | 704 | 0.1+ | 1.1+ | 2005 05 16 | G96 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.3− | 1.1+ |
| 2001 08 25 | 704 | 0.1− | 0.7− | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.5+ | 1.2− |
| 2001 08 25 | 704 | 0.9+ | 0.1+ | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.9+ | 0.5+ |
| 2001 08 25 | 704 | 1.1− | 0.5− | 2005 05 19 | G96 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.4− | 1.3− |
| 2001 09 12 | 704 | 0.1+ | 0.0 | 2005 05 19 | G96 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.1+ | 0.2− | 2005 06 14 | 691 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2005 06 14 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 0.3+ | 2005 06 14 | 691 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.9− | 1.1+ |
| 2004 03 19 | 291 | 0.3− | 0.5+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 25 | 699 | 1.1+ | 0.6+ |
| 2004 03 19 | 291 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.0 | 0.1− |
| 2004 03 19 | 291 | 0.4+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.2+ | 1.5+ |
| 2005 05 14 | G96 | 0.5+ | 0.1− | 2006 08 17 | 644 | 0.1− | 0.4− | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2005 05 14 | G96 | 0.2− | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.3− | 0.6− |
| 2005 05 14 | G96 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.5+ |
| 2005 05 14 | G96 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.8− | 0.1− | 2006 11 27 | G96 | 0.7− | 0.4+ |

**(145268)∗ 2005 JZ$_{136}$ = 1999 FE$_{77}$**

Discovered 2005 May 12 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77250)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.30368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17625753 | $\omega$ | 258.77725 | | +0.26341592 | +0.96146424 | |
| $a$ | 3.1504379 | $\Omega$ | 26.89816 | | −0.80321183 | +0.26379458 | |
| $e$ | 0.1990606 | $i$ | 10.02206 | | −0.53428719 | +0.07745284 | |
| $P$ | 5.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 30 | 691 | 0.0 | 0.2+ | 2005 03 14 | G96 | 1.0− | 0.2+ | 2006 08 30 | 699 | 0.6+ | 0.8+ |
| 1995 09 30 | 691 | 0.1− | 0.1+ | 2005 03 14 | G96 | 1.2− | 0.0 | 2006 08 30 | 699 | 0.5− | 1.3+ |
| 1995 09 30 | 691 | 0.0 | 0.1+ | 2005 05 04 | 644 | 0.5+ | 0.4+ | 2006 08 30 | 699 | 1.1− | 0.0 |
| 1995 10 19 | 691 | 0.4− | 0.1+ | 2005 05 04 | 644 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.3+ | 1.1+ |
| 1995 10 19 | 691 | 0.5− | 0.1+ | 2005 05 04 | 644 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 1.1− |
| 1995 10 19 | 691 | 0.2− | 0.2+ | 2005 05 12 | 703 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.3+ |
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2005 05 12 | 703 | 0.8− | 0.2− | 2006 09 14 | 703 | 1.0+ | 0.3+ |
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2005 05 12 | 703 | 1.0− | 1.0+ | 2006 09 14 | 703 | 0.3− | 0.2− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 05 12 | 703 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.6+ | 1.0+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2005 05 18 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.6− |
| 2001 10 26 | 644 | 0.8− | 0.8+ | 2005 05 18 | 644 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.4+ | 0.5− |
| 2001 10 26 | 644 | 0.6− | 0.8+ | 2005 05 18 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | (2.2+ | 0.5+) |
| 2001 10 26 | 644 | 0.4− | 1.2+ | 2005 05 19 | 644 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2004 02 16 | 691 | 0.2+ | 0.3+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2004 02 16 | 691 | 0.5− | 0.1+ | 2005 05 19 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2005 03 14 | G96 | 1.1− | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2005 03 14 | G96 | 0.0 | 0.6− | 2006 08 17 | 644 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.4+ |

**(145269)∗ 2005 JC$_{138}$ = 1999 FY$_{95}$**

Discovered 2005 May 13 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 100956)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.21733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17576003 | $\omega$ | 239.06248 | | +0.96773628 | +0.17219423 | |
| $a$ | 3.1563802 | $\Omega$ | 110.47632 | | −0.10495385 | +0.93917318 | |
| $e$ | 0.2233061 | $i$ | 11.32364 | | −0.22906588 | +0.29715801 | |
| $P$ | 5.61 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.3− | 1.0+ | 2006 08 28 | E12 | 0.2− | 0.0 |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 12 11 | 704 | 0.1+ | 0.1+ | 2006 08 28 | E12 | 0.2+ | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 12 11 | 704 | 0.1− | 0.9+ | 2006 08 28 | E12 | 0.1− | 0.4+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2005 05 03 | 691 | 0.4+ | 0.3+ | 2006 08 28 | E12 | 0.0 | 0.6+ |
| 2001 10 17 | 704 | 1.4− | 0.4+ | 2005 05 03 | 691 | 0.2+ | 0.4+ | 2006 09 24 | 608 | 0.4− | 1.4− |
| 2001 10 17 | 704 | 0.0 | 0.6+ | 2005 05 03 | 691 | 0.5+ | 0.6+ | 2006 09 24 | 608 | (0.0 | 2.0−) |
| 2001 10 17 | 704 | 0.8− | 1.0+ | 2005 05 13 | 691 | 0.0 | 0.3+ | 2006 09 24 | 608 | 0.1− | 1.7− |
| 2001 10 17 | 704 | 1.3− | 1.5+ | 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |
| 2001 11 13 | 608 | 0.8− | 0.4+ | 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.4+ | 0.1+ |
| 2001 11 13 | 608 | 0.8− | 0.1+ | 2005 05 20 | G96 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.4− | 0.5+ |
| 2001 11 13 | 608 | 0.8− | 0.1+ | 2005 05 20 | G96 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2001 11 21 | 608 | 1.3+ | 1.9+ | 2005 05 20 | G96 | 0.2+ | 0.0 | 2006 10 12 | E12 | 0.0 | 0.1− |
| 2001 11 21 | 608 | 1.0+ | 1.0+ | 2005 05 20 | G96 | 0.3+ | 0.0 | 2006 10 12 | E12 | 0.4− | 0.3+ |
| 2001 11 21 | 608 | 1.4+ | 0.5+ | 2006 08 15 | 644 | 0.3− | 0.3+ | 2006 10 12 | E12 | 0.1+ | 0.5+ |
| 2001 12 11 | 704 | 0.1− | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.5+ | 2006 10 12 | E12 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | 0.2+ | 0.8+ | 2006 08 15 | 644 | 0.4− | 0.3+ | | | | |

**(145270)∗ 2005 JE$_{138}$**

Discovered 2005 May 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.52453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18481359 | $\omega$ | 256.46450 | | +0.98065167 | +0.02014492 | |
| $a$ | 3.0524375 | $\Omega$ | 102.11848 | | +0.05058093 | +0.93483994 | |
| $e$ | 0.1831227 | $i$ | 11.48783 | | −0.18911340 | +0.35449748 | |
| $P$ | 5.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.3− | 0.5+ | 2002 01 13 | 645 | 0.0 | 0.0 | 2005 06 05 | 691 | 0.2+ | 0.1+ |
| 2001 08 20 | 644 | 0.2+ | 0.6+ | 2002 01 13 | 645 | 0.0 | 0.0 | 2005 06 05 | 691 | 0.1+ | 0.1+ |
| 2001 08 20 | 644 | 0.0 | 0.5+ | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 08 16 | E12 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 08 16 | E12 | 1.2+ | 0.5− |
| 2001 09 12 | 704 | 0.6+ | 1.0− | 2003 01 05 | 704 | 0.9+ | 0.5+ | 2006 08 16 | E12 | 0.7− | 0.5+ |
| 2001 09 12 | 704 | 0.3+ | 1.0− | 2003 01 05 | 704 | 0.6+ | 1.1+ | 2006 08 16 | E12 | 0.3+ | 0.1+ |
| 2001 09 23 | 699 | 0.2+ | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.1− | 2006 08 28 | E12 | 0.8+ | 0.1+ |
| 2001 09 23 | 699 | 1.4− | 0.6+ | 2003 01 05 | 704 | 0.5− | 0.9+ | 2006 08 28 | E12 | 0.2− | 0.8− |
| 2001 09 23 | 699 | 1.3− | 0.0 | 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 08 28 | E12 | 0.1+ | 0.6− |
| 2001 09 23 | 699 | 0.6− | 0.1+ | 2005 05 13 | 691 | 0.3+ | 0.2+ | 2006 08 28 | E12 | 0.4− | 0.1− |
| 2001 10 11 | 704 | 0.8+ | 0.5+ | 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 10 11 | E12 | 0.2+ | 0.4− |
| 2001 10 11 | 704 | 0.3− | 0.2− | 2005 05 13 | 691 | 0.1− | 0.4+ | 2006 10 11 | E12 | 0.8− | 0.6− |
| 2001 10 11 | 704 | 0.0 | 0.7+ | 2005 05 20 | G96 | 0.2− | 0.3+ | 2006 10 11 | E12 | 0.1+ | 0.7− |
| 2001 10 19 | 699 | 0.4− | 0.8+ | 2005 05 20 | G96 | 0.5− | 0.0 | 2006 10 11 | E12 | 1.4− | 0.0 |
| 2001 10 19 | 699 | 0.2+ | 0.8+ | 2005 05 20 | G96 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.9+ |
| 2001 10 19 | 699 | 0.3+ | 1.1+ | 2005 05 20 | G96 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.8+ | 0.9+ |
| 2001 10 19 | 699 | 0.6− | 0.3+ | 2005 06 05 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3+ |

**(145271)∗ 2005 JP$_{138}$**

Discovered 2005 May 13 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.44935 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30038190 | $\omega$ | 14.39895 | | −0.91432431 | +0.40498247 | |
| $a$ | 2.2081075 | $\Omega$ | 189.49112 | | −0.37186524 | −0.84004608 | |
| $e$ | 0.0868973 | $i$ | 0.17461 | | −0.16039731 | −0.36098724 | |
| $P$ | 3.28 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 691 | 0.4− | 0.2− | 2005 05 18 | E12 | 0.6− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | |
| 1999 08 08 | 691 | 0.2+ | 0.1− | 2005 05 19 | 644 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.5+ | |
| 1999 08 08 | 691 | 0.4+ | 0.3− | 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 10 20 | 703 | 1.0− | 0.2− | |
| 2003 10 27 | 691 | 0.1+ | 0.3+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.9− | 0.4+ | |
| 2003 10 27 | 691 | 0.2− | 0.1− | 2005 06 04 | 703 | 1.0+ | 0.9+ | 2006 10 20 | 703 | 0.5− | 0.5− | |
| 2003 10 27 | 691 | 0.2− | 0.2+ | 2005 06 04 | 703 | 0.8− | 0.3+ | 2006 10 20 | 703 | 0.5− | 0.2− | |
| 2003 11 30 | 291 | 0.1+ | 0.2+ | 2005 06 04 | 703 | (1.8− | 2.2+) | 2006 10 21 | 703 | 0.6− | 0.3+ | |
| 2003 11 30 | 291 | 0.1− | 0.5+ | 2005 06 04 | 703 | (0.6− | 1.7+) | 2006 10 21 | 703 | 0.0 | 0.4+ | |
| 2003 11 30 | 291 | 0.1− | 0.3+ | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 1.0− | 0.4+ | |
| 2005 04 11 | G96 | 0.5+ | 0.9+ | 2005 06 06 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.3− | |
| 2005 04 11 | G96 | 0.2− | 0.1+ | 2005 06 06 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | |
| 2005 04 11 | G96 | 0.3− | 0.1+ | 2005 06 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.7+ | 0.2− | |
| 2005 04 11 | G96 | 0.8+ | 0.1+ | 2005 06 11 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.1− | |
| 2005 05 04 | G96 | 0.4− | 0.0 | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.4− | |
| 2005 05 04 | G96 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.3− | |
| 2005 05 04 | G96 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.3− | |
| 2005 05 04 | G96 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.3− | |
| 2005 05 04 | 644 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− | |
| 2005 05 04 | 644 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2005 05 04 | 644 | 1.0+ | 0.4+ | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.4− | |
| 2005 05 13 | G96 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4+ | |
| 2005 05 13 | G96 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.5+ | |
| 2005 05 13 | G96 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ | |
| 2005 05 13 | G96 | 0.3− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.3+ | 0.0 | |
| 2005 05 18 | E12 | 0.9− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2+ | |
| 2005 05 18 | E12 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.3+ | |
| 2005 05 18 | E12 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1+ | | | | | |

**(145272)∗ 2005 JE$_{139}$**

Discovered 2005 May 13 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.89280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18001200 | $\omega$ | 125.10967 | | +0.85140743 | +0.48186719 | |
| $a$ | 3.1064790 | $\Omega$ | 207.88672 | | −0.49208668 | +0.87054259 | |
| $e$ | 0.1610925 | $i$ | 26.28775 | | +0.18153810 | +0.09979784 | |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 22 | 691 | 0.5− | 0.1+ | 2001 12 17 | 704 | 1.2+ | 1.3+ | 2005 05 19 | 703 | 0.1+ | 0.7+ | |
| 1999 04 22 | 691 | 0.7− | 0.3+ | 2002 01 09 | 645 | 0.0 | 0.0 | 2005 05 20 | 644 | 0.1+ | 0.2+ | |
| 1999 04 22 | 691 | 0.0 | 0.5+ | 2002 01 09 | 645 | 0.2+ | 0.2+ | 2005 05 20 | 644 | 0.1− | 0.1+ | |
| 2001 10 17 | 704 | 0.9− | 1.2+ | 2002 01 14 | 645 | 0.2+ | 0.0 | 2005 05 20 | 644 | 0.0 | 0.0 | |
| 2001 10 17 | 704 | 0.4+ | 0.5+ | 2002 01 14 | 645 | 0.2+ | 0.0 | 2005 07 01 | 644 | 0.1− | 0.2+ | |
| 2001 10 17 | 704 | 0.8− | 0.7+ | 2005 05 04 | 703 | (1.2− | 1.6+) | 2005 07 01 | 644 | 0.3− | 0.1+ | |
| 2001 10 17 | 704 | 1.0− | 0.1+ | 2005 05 04 | 703 | 1.3+ | 0.5− | 2005 07 01 | 644 | 0.0 | 0.0 | |
| 2001 10 17 | 704 | 0.0 | 0.9+ | 2005 05 04 | 703 | 0.3− | 0.8+ | 2006 09 21 | 699 | 0.9− | 0.2− | |
| 2001 10 17 | 704 | 0.2+ | 0.2+ | 2005 05 04 | 703 | 0.1− | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.5+ | |
| 2001 10 17 | 704 | 0.3− | 1.1+ | 2005 05 04 | 691 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 1.0− | 0.3− | |
| 2001 11 19 | 608 | 0.5− | 0.6− | 2005 05 04 | 691 | 0.0 | 0.3+ | 2006 09 21 | 699 | 1.1+ | 0.3+ | |
| 2001 11 19 | 608 | 0.9− | 0.0 | 2005 05 04 | 703 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.2+ | |
| 2001 11 19 | 608 | 0.1− | 0.3− | 2005 05 04 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.3− | 0.6− | |
| 2001 11 20 | 699 | 0.3+ | 1.2+ | 2005 05 04 | 703 | 1.2+ | 0.7− | 2006 09 28 | 703 | 0.0 | 0.4+ | |
| 2001 11 20 | 699 | 0.7+ | 0.3− | 2005 05 04 | 703 | 1.4+ | 0.8− | 2006 09 28 | 703 | 0.2+ | 0.2+ | |
| 2001 11 20 | 699 | 0.8+ | 0.2+ | 2005 05 04 | 703 | 1.1− | 1.3+ | 2006 10 17 | 703 | 0.3− | 0.5− | |
| 2001 11 20 | 699 | 0.1− | 0.3+ | 2005 05 13 | 703 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.4+ | |
| 2001 12 07 | 704 | 0.4− | 0.4+ | 2005 05 13 | 703 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.9− | 0.5− | |
| 2001 12 07 | 704 | 1.3− | 0.3− | 2005 05 13 | 703 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.3− | |
| 2001 12 07 | 704 | 1.2− | 0.6− | 2005 05 13 | 703 | 0.1− | 0.1+ | 2006 10 19 | 683 | (1.7+ | 1.1−) | |
| 2001 12 07 | 704 | (0.9− | 1.9−) | 2005 05 15 | 644 | 0.4− | 0.4+ | 2006 10 19 | 683 | 0.6+ | 0.1+ | |
| 2001 12 17 | 704 | 1.2+ | 0.8− | 2005 05 15 | 644 | 0.0 | 0.7+ | 2006 10 19 | 683 | 0.4− | 0.3− | |
| 2001 12 17 | 704 | 0.6− | 0.3+ | 2005 05 15 | 644 | 0.2− | 0.8+ | 2006 11 13 | 703 | 0.4+ | 0.7− | |
| 2001 12 17 | 704 | 0.6− | 1.0+ | 2005 05 19 | 703 | 0.7+ | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.1+ | |
| 2001 12 17 | 704 | 0.5+ | 0.5+ | 2005 05 19 | 703 | 0.4− | 0.7+ | 2006 11 13 | 703 | 0.5− | 1.1+ | |
| 2001 12 17 | 704 | (1.8− | 0.3−) | 2005 05 19 | 703 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.9− | 0.7+ | |

**(145273)∗ 2005 JH$_{139}$**

Discovered 2005 May 13 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.43866 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21937373 | $\omega$ | 252.58616 | | +0.07367538 | +0.99470122 | |
| $a$ | 2.7227826 | $\Omega$ | 22.01844 | | −0.82694750 | +0.10112161 | |
| $e$ | 0.1383172 | $i$ | 11.02622 | | −0.55743141 | −0.01854448 | |
| $P$ | 4.49 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 1.5+ | 0.5− | 2005 05 18 | E12 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.6+ | |
| 2000 03 12 | 704 | 0.0 | 1.1− | 2005 05 18 | E12 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.4+ | |
| 2000 03 12 | 704 | 1.4− | 0.9− | 2005 05 18 | E12 | 0.5+ | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.6+ | |
| 2000 03 12 | 704 | 0.2+ | 0.1− | 2005 05 30 | E12 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.3− | |
| 2000 04 03 | 704 | 1.1+ | 1.5+ | 2005 05 30 | E12 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.8− | 0.3− | |
| 2000 04 03 | 704 | 0.1− | 1.2+ | 2005 05 30 | E12 | 1.3+ | 1.0+ | 2006 10 01 | 704 | 0.2+ | 0.1− | |
| 2000 04 03 | 704 | 0.6+ | 1.6+ | 2005 05 30 | E12 | 0.6+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.1+ | |
| 2001 07 30 | 644 | 0.3+ | 0.5− | 2005 06 05 | E12 | 0.0 | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.0 | |
| 2001 07 30 | 644 | 0.1− | 0.8− | 2005 06 05 | E12 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2001 07 30 | 644 | 0.2+ | 0.6− | 2005 06 05 | E12 | 0.1+ | 0.0 | 2006 10 15 | 106 | 0.3− | 0.1− | |
| 2001 08 20 | 644 | 0.1+ | 0.2+ | 2005 06 05 | E12 | 0.6− | 0.2− | 2006 10 15 | 106 | 0.0 | 0.5+ | |
| 2001 08 20 | 644 | 0.3+ | 0.1− | 2005 06 27 | 644 | 0.5+ | 0.0 | 2006 10 15 | 106 | 0.5− | 0.4+ | |
| 2001 08 20 | 644 | 0.3− | 1.0+ | 2005 06 27 | 644 | 0.3+ | 0.0 | 2006 10 15 | 106 | 0.7+ | 0.1+ | |
| 2002 11 13 | 644 | 0.8− | 0.7+ | 2005 06 27 | 644 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.5+ | |
| 2002 11 13 | 644 | 0.7− | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.3− | |
| 2002 11 13 | 644 | 0.8− | 0.9+ | 2006 09 18 | 703 | 0.8+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1+ | |
| 2005 02 12 | 809 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.9+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2005 02 12 | 809 | 0.1+ | 0.3− | 2006 09 18 | 703 | 1.2− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2005 02 12 | 809 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.4− | 0.9− | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 2005 04 20 | E12 | 0.3− | 0.6+ | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.4− | |
| 2005 04 20 | E12 | 0.3− | 0.7+ | 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.4− | |
| 2005 04 20 | E12 | 0.4+ | 0.4− | 2006 09 20 | 644 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.4− | |
| 2005 05 13 | E12 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.4− | |
| 2005 05 13 | E12 | 0.4− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.6+ | 2006 11 21 | G96 | 0.3+ | 0.2− | |
| 2005 05 13 | E12 | 0.7− | 0.9+ | 2006 09 26 | 704 | 0.6− | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.5− | |
| 2005 05 13 | E12 | 0.4+ | 1.3+ | 2006 09 26 | 704 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.3− | |
| 2005 05 18 | E12 | 0.6− | 0.1+ | 2006 09 26 | 704 | 1.2− | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.2− | |

**(145274)∗ 2005 JD$_{140}$ = 1999 VF$_{183}$ = 2001 FP$_{186}$**

Discovered 2005 May 14 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 77251)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.12157 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27808983 | $\omega$ | 246.51408 | | +0.58872189 | +0.80089660 | |
| $a$ | 2.3245879 | $\Omega$ | 60.00469 | | −0.68788551 | +0.56747214 | |
| $e$ | 0.1235800 | $i$ | 7.25775 | | −0.42452333 | +0.19115439 | |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 1.2− | 0.6− | 2005 05 03 | 703 | 0.9− | 0.7− | 2006 11 01 | G96 | 0.0 | 0.5− | |
| 1999 11 09 | 704 | 1.2+ | 1.5− | 2005 05 03 | 703 | 0.8− | 0.4− | 2006 11 09 | 644 | 0.5− | 0.2+ | |
| 1999 11 09 | 704 | 0.1+ | 0.7− | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 1999 11 09 | 704 | 0.1+ | 0.3− | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ | |
| 1999 11 12 | 704 | 1.0− | 0.3− | 2005 05 08 | G96 | (0.4+ | 2.0−) | 2006 11 09 | 644 | 0.1+ | 0.2+ | |
| 1999 11 12 | 704 | 0.0 | 0.7+ | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.3+ | |
| 1999 11 12 | 704 | 0.2− | 0.1− | 2005 05 10 | 807 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2− | |
| 1999 11 12 | 704 | 0.3− | 0.2− | 2005 05 10 | 807 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 699 | 0.3+ | 0.9− | 2005 05 14 | 704 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2001 03 18 | 699 | (0.4+ | 2.5+) | 2005 05 14 | 704 | 0.7− | 0.7+ | 2006 11 10 | 691 | 0.3− | 0.0 | | |
| 2001 03 18 | 699 | (0.4+ | 1.8+) | 2005 05 14 | 704 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1+ | | |
| 2001 03 18 | 699 | (2.3+ | 1.1+) | 2005 05 14 | 704 | 0.4+ | 0.4+ | 2006 11 14 | 691 | 0.4− | 0.1− | | |
| 2001 03 20 | 608 | 0.2+ | 0.0 | 2005 05 18 | E12 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | | |
| 2001 03 20 | 608 | 0.2− | 0.1+ | 2005 05 18 | E12 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.2+ | | |
| 2001 03 20 | 608 | 0.6+ | 0.2− | 2005 05 18 | E12 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.1− | | |
| 2002 08 14 | 704 | 0.3+ | 1.2+ | 2005 05 18 | E12 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.2+ | | |
| 2002 08 14 | 704 | 1.1+ | 0.9− | 2005 06 01 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.0 | | |
| 2002 08 14 | 704 | 0.8− | 0.2+ | 2005 06 01 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.3− | | |
| 2002 08 14 | 704 | 0.1− | 0.6+ | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.3+ | 0.3+ | 2005 06 06 | 691 | 0.2− | 0.3− | 2006 11 19 | 704 | 1.5+ | 0.5+ | | |
| 2002 08 20 | 644 | 0.0 | 0.3− | 2005 06 06 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | (0.2− | 1.5+) | | |
| 2002 08 20 | 644 | (0.6+ | 1.8+) | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.4+ | | |
| 2002 08 20 | 644 | 0.3+ | 0.3− | 2005 06 11 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.5+ | | |
| 2002 08 20 | 644 | (1.0+ | 1.7+) | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.5− | 0.6− | | |
| 2002 08 20 | 644 | 0.0 | 0.1− | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2002 08 20 | 644 | (0.9+ | 1.9+) | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2003 12 27 | 704 | (1.1+ | 2.5+) | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.6+ | | |
| 2003 12 27 | 704 | (0.6+ | 2.0+) | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 1.1+ | 1.3+ | | |
| 2003 12 27 | 704 | 0.8+ | 1.3+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1− | 0.9+ | | |
| 2005 04 17 | 703 | 0.8+ | 1.4− | 2006 10 19 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.4+ | | |
| 2005 04 17 | 703 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 29 | 704 | 0.4+ | 0.6+ | | |
| 2005 04 17 | 703 | 0.3+ | 0.8+ | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.6− | | |
| 2005 04 17 | 703 | 0.4+ | 1.1− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.5+ | | |
| 2005 05 03 | 703 | 0.5− | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.3− | | | | | | |
| 2005 05 03 | 703 | 1.0− | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.3− | | | | | | |

**(145275)∗ 2005 JN$_{140}$**

Discovered 2005 May 14 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.18704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23487853 | $\omega$ | 184.45011 | | +0.72112793 | +0.66565814 | |
| $a$ | 2.6015998 | $\Omega$ | 131.85939 | | −0.62741075 | +0.74502616 | |
| $e$ | 0.1759695 | $i$ | 14.94115 | | −0.29382011 | +0.04284002 | |
| $P$ | 4.20 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.4+ | 1.0+ | 2005 04 13 | 703 | 0.1+ | 0.4+ | 2005 07 01 | 644 | 0.1+ | 0.3+ | | |
| 2000 03 09 | 704 | 0.3− | 0.0 | 2005 04 13 | 703 | 0.9− | 0.4− | 2005 07 04 | 291 | 0.5+ | 0.1− | | |
| 2000 03 09 | 704 | 0.0 | 1.2+ | 2005 04 13 | 703 | 0.2+ | 0.1+ | 2005 07 04 | 291 | 0.4+ | 0.1+ | | |
| 2000 03 09 | 704 | 0.2− | 0.1− | 2005 05 06 | 704 | 0.2− | 0.2− | 2005 07 04 | 291 | 0.3+ | 0.1+ | | |
| 2000 03 09 | 704 | 0.5+ | 1.1+ | 2005 05 06 | 704 | 1.3+ | 1.0+ | 2006 09 26 | 703 | 0.5− | 0.5+ | | |
| 2001 05 22 | 704 | 0.0 | 0.5− | 2005 05 06 | 704 | 0.3+ | 0.5− | 2006 09 26 | 703 | (1.6− | 0.5−) | | |
| 2001 05 22 | 704 | 0.2+ | 0.3− | 2005 05 06 | 704 | 1.0+ | 0.3+ | 2006 09 26 | 703 | 0.4+ | 1.0− | | |
| 2001 05 22 | 704 | 0.3− | 0.1− | 2005 05 06 | 704 | 0.2+ | 0.6− | 2006 09 26 | 703 | 1.2− | 0.6− | | |
| 2001 05 22 | 704 | 0.4+ | 0.5− | 2005 05 14 | 703 | 0.7− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.0 | | |
| 2001 05 22 | 704 | 0.5+ | 0.0 | 2005 05 14 | 703 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.6− | 0.2− | | |
| 2001 06 21 | 704 | 0.5− | 0.3+ | 2005 05 14 | 703 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.3+ | | |
| 2001 06 21 | 704 | 0.8− | 0.3+ | 2005 05 14 | 703 | 1.2− | 0.2+ | 2006 09 26 | 703 | 0.7+ | 0.0 | | |
| 2001 06 21 | 704 | 0.8− | 0.5+ | 2005 05 19 | 703 | 0.4− | 0.5+ | 2006 10 02 | 703 | (0.6+ | 1.7+) | | |
| 2001 06 21 | 704 | 0.0 | 0.8+ | 2005 05 19 | 703 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.8+ | 0.8+ | | |
| 2001 06 21 | 704 | 0.1− | 0.2− | 2005 05 19 | 703 | 0.6− | 0.8+ | 2006 10 02 | 703 | (0.7− | 1.9+) | | |
| 2001 08 10 | 704 | 0.1+ | 0.8+ | 2005 05 19 | 703 | 0.4− | 0.9− | 2006 10 02 | 703 | 0.5+ | 0.8+ | | |
| 2001 08 10 | 704 | 0.8+ | 0.0 | 2005 05 21 | 644 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2− | 0.3+ | | |
| 2001 08 10 | 704 | 0.6+ | 0.3− | 2005 05 21 | 644 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.3− | 0.4+ | | |
| 2002 12 13 | 644 | 0.2− | 0.8+ | 2005 05 21 | 644 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.7+ | | |
| 2002 12 13 | 644 | 0.1− | 0.8+ | 2005 05 31 | 703 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.6+ | 0.4+ | | |
| 2002 12 13 | 644 | 0.1− | 0.5+ | 2005 05 31 | 703 | 1.0− | 0.2+ | 2006 10 21 | 703 | (1.9− | 1.8+) | | |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2005 05 31 | 703 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.7+ | | |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2005 05 31 | 703 | (1.5− | 1.7−) | 2006 10 21 | 703 | 0.7− | 0.5+ | | |
| 2004 01 22 | 704 | 0.1+ | 0.8+ | 2005 06 01 | 704 | 0.3− | 0.6− | 2006 10 31 | 703 | 0.2+ | 0.4+ | | |
| 2004 01 22 | 704 | 0.5+ | 0.7+ | 2005 06 01 | 704 | 0.3− | 0.5− | 2006 10 31 | 703 | 1.1− | 0.1+ | | |
| 2004 01 22 | 704 | 0.9+ | 0.6+ | 2005 06 01 | 704 | 0.9+ | 0.9+ | 2006 10 31 | 703 | 0.5− | 0.7+ | | |
| 2004 01 22 | 704 | 0.6+ | 0.6+ | 2005 06 07 | 699 | 0.0 | 0.4+ | 2006 10 31 | 703 | 0.3+ | 0.9+ | | |
| 2004 01 22 | 704 | 0.5+ | 0.3− | 2005 06 07 | 699 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.2− | | |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2005 06 07 | 699 | 0.5+ | 0.6+ | 2006 11 17 | 703 | 0.6− | 0.1− | | |
| 2004 01 30 | 691 | 0.1+ | 0.3+ | 2005 06 07 | 699 | 0.5+ | 0.9+ | 2006 11 17 | 703 | 0.3+ | 0.2+ | | |
| 2004 01 30 | 691 | 0.0 | 0.4+ | 2005 07 01 | 644 | 0.1− | 0.1+ | | | | | | |
| 2005 04 13 | 703 | 0.6− | 0.6+ | 2005 07 01 | 644 | 0.3+ | 0.4+ | | | | | | |

**(145276)∗ 2005 JA$_{144}$ = 2004 CU$_{80}$**

Discovered 2005 May 15 by the Mt. Lemmon Survey at Mt. Lemmon. Id. A. Doppler (*MPO* 86750)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.30678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23052420 | $\omega$ | 309.99352 | | +0.72786964 | −0.68146720 | |
| $a$ | 2.6342584 | $\Omega$ | 93.11161 | | +0.65009950 | +0.65043556 | |
| $e$ | 0.0948707 | $i$ | 4.37732 | | +0.21812020 | +0.33546392 | |
| $P$ | 4.28 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 20 | 910 | 0.8+ | 0.1− | 2004 02 11 | 644 | 0.3+ | 0.4+ | 2005 05 19 | G96 | 0.0 | 0.1− | | |
| 1998 11 20 | 910 | 0.7+ | 0.4− | 2004 02 17 | 704 | 0.2− | 0.6+ | 2005 06 06 | 691 | 0.1+ | 0.5+ | | |
| 1998 11 20 | 910 | 1.5+ | 0.3− | 2004 02 17 | 704 | 1.1+ | 1.1+ | 2005 06 06 | 691 | 0.4+ | 0.1+ | | |
| 2002 07 07 | 291 | 0.9− | 0.1+ | 2004 02 17 | 704 | 0.3− | 0.7+ | 2005 06 06 | 691 | 0.1+ | 0.3+ | | |
| 2002 07 07 | 291 | 1.1− | 0.8+ | 2004 02 17 | 704 | 0.1+ | 1.0+ | 2006 08 30 | 699 | 0.6− | 1.4+ | | |
| 2002 07 07 | 291 | 1.1− | 0.4+ | 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 1.8− | 1.0+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 08 30 | 699 | 1.0+ | 1.0− | | |
| 2002 10 03 | 704 | 0.1+ | 0.0 | 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 1.2+ | 0.5+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.0 | 2004 03 20 | 704 | 1.3− | 0.8+ | 2006 09 14 | 644 | 0.3− | 0.4+ | | |
| 2002 10 09 | 699 | 0.7− | 0.7+ | 2004 03 20 | 704 | 0.4+ | 0.8+ | 2006 09 14 | 644 | 0.2− | 0.2+ | | |
| 2002 10 09 | 699 | 0.3+ | 0.7+ | 2004 03 20 | 704 | 0.2+ | 0.9+ | 2006 09 14 | 703 | 0.8+ | 0.1+ | | |
| 2002 10 09 | 699 | 0.1+ | 1.0+ | 2004 03 20 | 704 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.5+ | 0.4+ | | |
| 2002 10 09 | 699 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 1.0+ | 2006 09 14 | 644 | 0.3− | 0.3+ | | |
| 2002 10 31 | 704 | 0.3− | 0.3− | 2005 05 15 | G96 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.1− | | |
| 2002 10 31 | 704 | 0.1− | 0.3− | 2005 05 15 | G96 | 0.6− | 0.4− | 2006 09 14 | 703 | 0.7− | 0.4− | | |
| 2002 10 31 | 704 | 0.5− | 0.3+ | 2005 05 15 | G96 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.5− | 0.2+ | | |
| 2002 10 31 | 704 | 0.1− | 0.1− | 2005 05 15 | G96 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.2+ | | |
| 2002 10 31 | 704 | 0.3+ | 0.4− | 2005 05 19 | G96 | 0.2+ | 0.1− | 2006 09 26 | 703 | 1.4+ | 0.2+ | | |
| 2004 02 11 | 644 | 0.4+ | 0.6+ | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 09 26 | 703 | 1.0+ | 1.4+ | | |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.2− | | | | | | |

**(145277)∗ 2005 JQ$_{146}$**

Discovered 2005 May 13 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.35219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22340308 | $\omega$ | 210.54036 | | +0.98630991 | +0.09595943 | |
| $a$ | 2.6899442 | $\Omega$ | 143.19884 | | −0.06427982 | +0.97264708 | |
| $e$ | 0.2046452 | $i$ | 12.93639 | | −0.15185806 | +0.21154064 | |
| $P$ | 4.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.5− | 0.0 | 2005 05 20 | 644 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.5+ | | |
| 2001 06 21 | 704 | 0.6+ | 0.0 | 2005 05 31 | 703 | 0.2+ | 0.6− | 2006 10 02 | 703 | 0.4+ | 0.8+ | | |
| 2001 06 21 | 704 | 0.2− | 0.1− | 2005 05 31 | 703 | 1.3− | 0.2+ | 2006 10 02 | 703 | 0.7+ | 0.7+ | | |
| 2003 01 11 | 644 | 0.1+ | 0.6+ | 2005 05 31 | 703 | 0.0 | 0.6+ | 2006 10 02 | 703 | (2.1+ | 1.9−) | | |
| 2003 01 11 | 644 | 0.2− | 0.7+ | 2005 05 31 | 703 | 0.3− | 1.2− | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2003 01 11 | 644 | 0.0 | 0.5+ | 2005 06 06 | 704 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2004 02 15 | 703 | (1.5+ | 2.1+) | 2005 06 06 | 704 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2004 02 15 | 703 | 0.3+ | 0.3+ | 2005 06 06 | 704 | 1.4+ | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.5+ | | |
| 2004 02 15 | 703 | (0.3− | 1.7+) | 2005 06 06 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.7+ | 0.3+ | | |
| 2004 02 15 | 703 | 0.6+ | 0.0 | 2005 06 25 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 1.0+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.3− | 0.6+ | 2005 06 25 | 644 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.1+ | | |
| 2004 03 20 | 704 | 0.7+ | 1.2+ | 2005 06 25 | 644 | 0.1+ | 0.1+ | 2006 11 01 | 703 | 1.3+ | 0.2+ | | |
| 2004 03 20 | 704 | (0.4− | 1.8+) | 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 11 01 | 703 | 1.5+ | 0.7+ | | |
| 2005 05 01 | 691 | 0.2+ | 0.4+ | 2005 06 30 | 644 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.3− | 0.0 | | |
| 2005 05 01 | 691 | 0.3+ | 0.3+ | 2005 06 30 | 644 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.2− | 0.3+ | | |
| 2005 05 01 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.3+ | 0.7+ | | |
| 2005 05 13 | 703 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 11 01 | 703 | 0.9− | 0.4+ | | |
| 2005 05 13 | 703 | (0.2− | 1.6+) | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 11 01 | 703 | 1.1− | 0.1− | | |
| 2005 05 13 | 703 | 1.3− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 11 01 | 703 | 0.8− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | 703 | 0.8− | 0.2− | 2006 09 26 | 703 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3+ | | |
| 2005 05 15 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.3+ | | |
| 2005 05 15 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.0 | 2006 11 17 | 703 | 1.3− | 0.2+ | | |
| 2005 05 15 | 644 | 0.5− | 0.5+ | 2006 09 30 | 704 | 0.1+ | 0.7− | 2006 11 17 | 703 | 0.3− | 0.0 | | |
| 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.4+ | | |
| 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.6− | 0.2− | | |
| 2005 05 20 | 644 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.1− | 0.3− | | | | | | |
| 2005 05 20 | 644 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.4− | | | | | | |

**(145278)∗ 2005 JZ$_{146}$**

Discovered 2005 May 14 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.29769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26732647 | $\omega$ | 75.83548 | | +0.33730155 | +0.93936470 | |
| $a$ | 2.3865731 | $\Omega$ | 214.07905 | | −0.90067105 | +0.30290724 | |
| $e$ | 0.1250335 | $i$ | 6.33407 | | −0.27389657 | +0.16075188 | |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 10 | 691 | 0.1+ | 0.1+ | 2005 05 21 | 644 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1+ | | |
| 1991 10 10 | 691 | 0.0 | 0.9− | 2005 05 21 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.0 | | |
| 1991 10 10 | 691 | (7.1+ | 1.2+) | 2005 06 03 | 691 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.2+ | | |
| 2002 09 07 | 704 | (1.5− | 2.7+) | 2005 06 03 | 691 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.4+ | | |
| 2002 09 07 | 704 | 0.5+ | 0.4+ | 2005 06 03 | 691 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.3+ | | |
| 2002 09 07 | 704 | (1.4+ | 1.7−) | 2005 06 16 | 691 | 0.0 | 0.8+ | 2006 11 01 | 691 | 0.2− | 0.1− | | |
| 2002 10 04 | 704 | 0.1+ | 0.4+ | 2005 06 16 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.5+ | | |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2005 06 16 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.4+ | | |
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.6+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.6− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.3− | 0.9− | | |
| 2002 10 04 | 704 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.5+ | 0.2+ | 2006 11 02 | 703 | 1.1− | 0.4+ | | |
| 2003 12 22 | 691 | 0.4+ | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 02 | 703 | 0.4− | 1.0+ | | |
| 2003 12 22 | 691 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.1− | | |
| 2003 12 22 | 691 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2− | | |
| 2004 01 28 | 291 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.2− | | |
| 2004 01 28 | 291 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2004 01 28 | 291 | 0.5− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− | | |
| 2005 05 14 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2005 05 14 | G96 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1− | | |
| 2005 05 14 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2005 05 14 | G96 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.0 | | | | | | |
| 2005 05 21 | 644 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.4+ | 0.2− | | | | | | |

**(145279)∗ 2005 JG$_{147}$ = 1992 BU$_5$ = 2003 YH$_{91}$**

Discovered 2005 May 15 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77254), A. Doppler (*MPO* 89668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.03312 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24281581 | $\omega$ | 283.35040 | | −0.50348185 | −0.86369743 | |
| $a$ | 2.5445916 | $\Omega$ | 196.93933 | | +0.82021010 | −0.46939257 | |
| $e$ | 0.1837052 | $i$ | 4.54386 | | +0.27159054 | −0.18356845 | |
| $P$ | 4.06 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 30 | 809 | (0.5− | 2.8−) | 2003 12 01 | 704 | 1.5− | 0.4− | 2005 05 15 | G96 | 0.7+ | 0.1− | | |
| 1992 01 30 | 809 | 1.5− | 1.5− | 2003 12 01 | 704 | 0.3− | 0.2+ | 2005 05 15 | G96 | 0.5− | 0.6− | | |
| 1992 01 30 | 809 | (3.9− | 0.9+) | 2003 12 20 | 704 | 0.0 | 0.4+ | 2005 05 21 | 644 | 0.1+ | 0.3+ | | |
| 1998 08 23 | 691 | 0.6+ | 0.0 | 2003 12 20 | 704 | 0.8+ | 0.5+ | 2005 05 21 | 644 | 0.3− | 0.2+ | | |
| 1998 08 23 | 691 | 0.0 | 0.1+ | 2003 12 20 | 704 | 0.8+ | 0.1+ | 2005 05 21 | 644 | 0.3− | 0.3+ | | |
| 1998 08 23 | 691 | 0.5+ | 0.2− | 2003 12 20 | 704 | 1.1+ | 0.0 | 2005 06 08 | 691 | 0.0 | 0.4+ | | |
| 2000 01 05 | 704 | 0.3+ | 0.2− | 2003 12 22 | 704 | 0.0 | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.1+ | | |
| 2000 01 05 | 704 | 0.1+ | 0.1− | 2003 12 22 | 704 | 0.2− | 0.6+ | 2005 06 08 | 691 | 0.1+ | 0.0 | | |
| 2000 01 05 | 704 | 0.0 | 0.5− | 2003 12 22 | 704 | 0.0 | 0.5+ | 2005 06 13 | 691 | 0.0 | 0.1− | | |
| 2000 01 05 | 704 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.2+ | 0.7+ | 2005 06 13 | 691 | 0.1+ | 0.2+ | | |
| 2000 01 05 | 704 | 0.2+ | 1.0− | 2003 12 22 | 704 | 0.1+ | 0.0 | 2005 06 13 | 691 | 0.2+ | 0.0 | | |
| 2002 08 16 | 644 | 0.6− | 0.0 | 2003 12 24 | 704 | 0.0 | 0.1+ | 2006 08 24 | A50 | 0.5− | 0.1− | | |
| 2002 08 16 | 644 | 0.8− | 0.0 | 2003 12 24 | 704 | 0.6− | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.3− | | |
| 2002 08 16 | 644 | 0.5− | 0.3+ | 2003 12 24 | 704 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.0 | | |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.9− | 1.1+ | 2006 09 28 | G96 | 0.4− | 0.3+ | | |
| 2002 08 27 | 644 | 0.6− | 0.4+ | 2004 02 16 | 704 | 0.5+ | 0.6+ | 2006 09 28 | G96 | 0.3− | 0.3− | | |
| 2002 08 27 | 644 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.5− | 0.5− | | |
| 2003 12 01 | 704 | 0.2− | 0.0 | 2004 02 16 | 704 | 0.6+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2003 12 01 | 704 | 0.6− | 0.1+ | 2005 05 15 | G96 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.4− | 0.3− | | |
| 2003 12 01 | 704 | 0.5− | 0.2− | 2005 05 15 | G96 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.0 | | |

**(145280)∗ 2005 JS$_{147}$ = 2004 FK$_{83}$**

Discovered 2005 May 13 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 77254)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.36123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22348539 | $\omega$ | 163.61091 | | +0.82414853 | +0.56255422 | |
| $a$ | 2.6892837 | $\Omega$ | 161.69373 | | −0.54027595 | +0.81565968 | |
| $e$ | 0.1869986 | $i$ | 12.06736 | | −0.16994438 | +0.13502607 | |
| $P$ | 4.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.3+ | 0.1− | 2005 05 31 | 703 | 0.1− | 0.6− | 2006 09 29 | 699 | 0.2− | 0.4− | | |
| 2001 06 21 | 704 | 0.9− | 0.6+ | 2005 05 31 | 703 | 0.7− | 0.4− | 2006 09 29 | 699 | 0.7+ | 0.9+ | | |
| 2001 06 21 | 704 | 0.3+ | 0.7+ | 2005 05 31 | 703 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.4+ | | |
| 2001 06 21 | 704 | 0.1+ | 0.7+ | 2005 05 31 | 703 | 0.9− | 0.1+ | 2006 10 01 | 704 | (0.8− | 1.8+) | | |
| 2004 02 14 | 691 | 0.1+ | 0.2+ | 2005 06 06 | 704 | (1.6+ | 1.1+) | 2006 10 01 | 704 | 0.6+ | 0.5+ | | |
| 2004 02 14 | 691 | 0.0 | 0.4+ | 2005 06 06 | 704 | 1.2+ | 0.8+ | 2006 10 01 | 704 | 1.4− | 0.8+ | | |
| 2004 02 14 | 691 | 0.2− | 0.3+ | 2005 06 06 | 704 | 0.1+ | 0.5+ | 2006 10 01 | 704 | (2.3− | 2.0+) | | |
| 2004 02 26 | 704 | 0.2− | 0.2+ | 2005 06 06 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.4− | | |
| 2004 02 26 | 704 | 0.7− | 1.5− | 2005 06 07 | 699 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.5− | | |
| 2004 02 26 | 704 | (0.3+ | 2.3−) | 2005 06 07 | 699 | 0.8+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.1+ | | |
| 2004 02 26 | 704 | 1.3− | 0.4+ | 2005 06 07 | 699 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.9− | 0.4+ | | |
| 2004 03 18 | 691 | 0.2+ | 0.3+ | 2005 06 07 | 699 | 0.3− | 1.1+ | 2006 10 28 | 703 | 0.4− | 1.1+ | | |
| 2004 03 18 | 691 | 0.4+ | 0.2+ | 2005 07 10 | 699 | 1.0− | 0.9+ | 2006 10 28 | 703 | 0.8+ | 0.4+ | | |
| 2004 03 18 | 691 | 0.3+ | 0.4+ | 2005 07 10 | 699 | (0.8− | 3.3+) | 2006 10 28 | 703 | 0.4+ | 0.5+ | | |
| 2004 03 23 | 704 | 1.0+ | 0.8+ | 2005 07 10 | 699 | 0.4+ | 0.4− | 2006 10 28 | 703 | 0.1− | 0.8+ | | |
| 2004 03 23 | 704 | (1.6+ | 1.3+) | 2005 07 10 | 699 | 0.2+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2004 03 23 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 0.6+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.2+ | | |
| 2005 05 04 | 703 | 0.8− | 0.5− | 2006 09 16 | 699 | (1.7+ | 0.8+) | 2006 11 10 | 704 | 0.6− | 1.4+ | | |
| 2005 05 04 | 703 | 0.5− | 0.7+ | 2006 09 16 | 699 | 0.4− | 0.0 | 2006 11 10 | 704 | 0.9− | 0.4+ | | |
| 2005 05 04 | 703 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.8+ | 0.4+ | 2006 11 10 | 704 | 0.2− | 0.3− | | |
| 2005 05 04 | 703 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.1+ | | |
| 2005 05 13 | 703 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.5+ | 1.1+ | 2006 11 16 | 703 | 1.0− | 0.0 | | |
| 2005 05 13 | 703 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 1.5+ | 2006 11 16 | 703 | 0.2+ | 0.2+ | | |
| 2005 05 13 | 703 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.3+ | 0.4− | | |
| 2005 05 13 | 703 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.2− | 2006 11 16 | 703 | 0.3− | 0.2− | | |
| 2005 05 20 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.1− | 2006 11 16 | 703 | 0.5− | 0.1+ | | |
| 2005 05 20 | 644 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.5+ | 0.5− | | |
| 2005 05 20 | 644 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.7+ | 1.2+ | 2006 11 16 | 703 | 0.3− | 0.1− | | |

**(145281)∗ 2005 JH$_{156}$ = 2001 FD$_{173}$ = 2004 BN$_{161}$**

Discovered 2005 May 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77256), A. Doppler (*MPO* 86752)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.47882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26938860 | $\omega$ | 98.90305 | | +0.31772175 | +0.94818125 | |
| $a$ | 2.3743782 | $\Omega$ | 189.62308 | | −0.87521575 | +0.29234501 | |
| $e$ | 0.1852475 | $i$ | 0.78176 | | −0.36476057 | +0.12444559 | |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 27 | 691 | 0.4− | 0.8+ | 2002 10 11 | 704 | (2.1+ | 0.3−) | 2005 06 06 | 691 | 0.3+ | 0.0 | | |
| 1998 07 27 | 691 | 0.3− | 0.8+ | 2002 10 11 | 704 | (0.8− | 1.6+) | 2005 06 06 | 691 | 0.2+ | 0.4+ | | |
| 1998 07 27 | 691 | 0.1− | 0.6+ | 2002 10 11 | 704 | (0.8− | 2.1+) | 2005 06 11 | 691 | 0.0 | 0.3+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.2+ | 0.3− | 2003 12 22 | 691 | 0.2− | 0.1+ | 2005 06 11 | 691 | 0.0 | 0.2+ |
| 2000 01 05 | 691 | 0.4+ | 0.5− | 2003 12 22 | 691 | 0.2+ | 0.4+ | 2005 06 11 | 691 | 0.0 | 0.1+ |
| 2000 01 05 | 691 | 0.1+ | 0.1− | 2003 12 22 | 691 | 0.0 | 0.5+ | 2005 06 13 | G96 | 0.6− | 0.1− |
| 2001 03 21 | 691 | 0.3− | 0.4− | 2004 01 27 | 691 | 0.1+ | 0.4+ | 2005 06 13 | G96 | 0.5− | 0.2− |
| 2001 03 21 | 691 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.4+ | 0.6+ | 2005 06 13 | G96 | 0.5− | 0.2+ |
| 2001 03 21 | 691 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.3+ | 0.8+ | 2005 06 13 | G96 | 0.4− | 0.2+ |
| 2001 03 22 | 291 | 0.6+ | 0.6+ | 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 06 15 | 691 | 0.5+ | 0.2+ |
| 2001 03 22 | 291 | 0.3+ | 0.3+ | 2005 03 10 | G96 | 0.1+ | 0.2− | 2005 06 15 | 691 | 0.2+ | 0.3+ |
| 2001 03 22 | 291 | 0.3+ | 0.3+ | 2005 03 10 | G96 | 0.1+ | 0.1+ | 2005 06 15 | 691 | 0.1− | 0.0 |
| 2001 03 31 | 691 | 0.1+ | 0.8+ | 2005 03 10 | G96 | 1.1− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2001 03 31 | 691 | 0.0 | 0.6+ | 2005 05 04 | G96 | 0.2− | 0.9− | 2006 10 27 | G96 | 0.1+ | 0.8− |
| 2001 03 31 | 691 | 0.2− | 0.7+ | 2005 05 04 | G96 | 0.8− | 0.2− | 2006 10 27 | G96 | 1.3− | 0.2− |
| 2002 09 07 | 704 | 1.1− | 0.1− | 2005 05 04 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2002 09 07 | 704 | 0.4+ | 0.5− | 2005 05 18 | 644 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.4− | 0.4+ |
| 2002 10 03 | 704 | 0.5+ | 0.8+ | 2005 05 18 | 644 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.4− | 1.2+ | 2005 05 18 | 644 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.5− | 0.5+ |
| 2002 10 03 | 704 | 1.3+ | 0.7+ | 2005 06 04 | 703 | 0.4+ | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2005 06 04 | 703 | 0.8+ | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.4+ |
| 2002 10 09 | 291 | 0.0 | 0.3+ | 2005 06 04 | 703 | (2.5− | 0.3+) | 2006 11 21 | 691 | 0.2− | 0.3+ |
| 2002 10 09 | 291 | 0.0 | 0.2+ | 2005 06 04 | 703 | 0.5+ | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.4+ |
| 2002 10 09 | 291 | 0.2− | 0.3+ | 2005 06 06 | 691 | 0.5+ | 0.6+ | 2006 11 21 | 691 | 0.0 | 0.4+ |

**(145282)∗ 2005 JM$_{160}$ = 2001 SU$_{337}$**

Discovered 2005 May 7 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86753)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.80640 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19083761 | $\omega$ | 86.87936 | | −0.27642434 | | +0.96004538 |
| $a$ | 2.9878588 | $\Omega$ | 166.82284 | | −0.94012981 | | −0.26071749 |
| $e$ | 0.0698793 | $i$ | 11.03065 | | −0.19936277 | | −0.10168213 |
| $P$ | 5.16 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 13 | 691 | 0.0 | 0.3+ | 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 08 27 | 699 | 0.4− | 0.9+ |
| 1994 03 13 | 691 | 0.2− | 0.1+ | 2005 05 15 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | (0.5− | 3.6+) |
| 1994 03 13 | 691 | 0.1+ | 0.2+ | 2005 05 15 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.2− |
| 2001 09 20 | 291 | 0.4− | 0.6+ | 2005 05 15 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | (2.1− | 0.6+) |
| 2001 09 20 | 291 | 0.3− | 0.4+ | 2005 06 05 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 1.2− | 0.8− |
| 2001 09 20 | 291 | 0.1+ | 0.3+ | 2005 06 05 | 691 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.6− | 0.7− |
| 2001 09 21 | 704 | (2.2+ | 1.6+) | 2005 06 05 | 691 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.6+ | 0.7+ | 2005 06 24 | 644 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.6− | 0.1− |
| 2001 09 21 | 704 | (1.9+ | 0.1+) | 2005 06 24 | 644 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.6+ | 0.0 |
| 2001 09 21 | 704 | 1.2+ | 1.3+ | 2005 06 24 | 644 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.7+ | 1.2+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2004 02 29 | 691 | 0.1+ | 0.7+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2004 02 29 | 691 | 0.2+ | 0.7+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2004 03 18 | 691 | 0.2+ | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2+ | 1.0− |
| 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 08 27 | 699 | 0.3− | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2005 05 07 | 691 | 0.0 | 0.0 | 2006 08 27 | 699 | 1.1− | 0.5+ | | | | |
| 2005 05 07 | 691 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.6+ | 1.4+ | | | | |

**(145283)∗ 2005 JF$_{163}$ = 2004 BZ$_{24}$**

Discovered 2005 May 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 77258)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.05183 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27075985 | $\omega$ | 208.06331 | | +0.97960259 | | −0.20073790 |
| $a$ | 2.3663549 | $\Omega$ | 163.50925 | | +0.18984998 | | +0.90970090 |
| $e$ | 0.0914864 | $i$ | 1.83996 | | +0.06584645 | | +0.36352246 |
| $P$ | 3.64 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.1− | 0.3+ | 2005 06 10 | 691 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.2+ |
| 1997 03 05 | 691 | 0.2− | 0.4+ | 2005 06 10 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 1997 03 05 | 691 | 0.1− | 0.2+ | 2005 06 14 | 691 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.3+ | 2005 06 14 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2002 08 17 | 644 | 0.3− | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 10 10 | 291 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2002 10 10 | 291 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 10 10 | 291 | 0.1+ | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2003 12 29 | 691 | 0.2− | 0.7+ | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2003 12 29 | 691 | 0.4+ | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2003 12 29 | 691 | 0.3+ | 0.3− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2004 01 19 | 691 | 0.5+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 01 19 | 691 | 0.5+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 2004 01 19 | 691 | 0.5+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2004 01 21 | 704 | 0.3− | 0.9+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.7+ |
| 2004 01 21 | 704 | 0.6− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (3.0− | 0.8+) |
| 2004 01 21 | 704 | 0.6− | 1.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 05 08 | G96 | 0.4− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2005 05 08 | G96 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2005 05 08 | G96 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2005 05 08 | G96 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 1.6+ | 0.0 |
| 2005 05 18 | 644 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.9+ | 1.4− |
| 2005 05 18 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.9+ | 0.4+ |
| 2005 05 18 | 644 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.2+ | 0.2+ |
| 2005 06 10 | 691 | 0.5+ | 1.4+ | 2006 10 21 | 703 | 0.5− | 0.3+ | | | | |

**(145284)∗ 2005 JY$_{165}$ = 2005 JJ$_{107}$ = 2003 YL$_{120}$**

Discovered 2005 May 11 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (d, *MPO* 87833), G. V. Williams (*MPO* 103705)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.69073 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29440061 | $\omega$ | 252.29953 | | +0.89773218 | | −0.44013269 |
| $a$ | 2.2379149 | $\Omega$ | 133.80798 | | +0.41350000 | | +0.82698485 |
| $e$ | 0.1646969 | $i$ | 1.50686 | | +0.15196933 | | +0.34982747 |
| $P$ | 3.35 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 07 | 691 | (3.2+ | 2.6+) | 2005 05 11 | G96 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.1+ |
| 1994 01 07 | 691 | (2.2− | 0.0 ) | 2005 05 11 | G96 | 0.4+ | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.7+ |
| 1994 01 07 | 691 | 0.5− | 0.2− | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.5+ | 0.8+ |
| 1994 01 12 | 691 | 0.1+ | 1.1− | 2005 05 11 | G96 | 0.3− | 0.5− | 2006 10 15 | 703 | 0.8− | 0.4− |
| 1994 01 12 | 691 | 0.1+ | 0.1− | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.2− | 0.5+ |
| 1994 01 12 | 691 | 0.2+ | 0.1− | 2005 05 11 | G96 | 0.3− | 0.5+ | 2006 10 15 | 703 | 0.2− | 0.0 |
| 2001 02 13 | 691 | 0.5+ | 0.8+ | 2005 05 12 | G96 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.2− | 0.3+ |
| 2001 02 13 | 691 | 0.3+ | 0.5+ | 2005 05 12 | G96 | 0.5+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 02 13 | 691 | 0.3+ | 0.4+ | 2005 05 12 | G96 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 02 22 | 691 | 0.3− | 0.1+ | 2005 05 12 | G96 | 0.5− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.6+ |
| 2001 02 22 | 691 | 0.2− | 0.0 | 2005 05 13 | G96 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 02 22 | 691 | 0.4− | 0.0 | 2005 05 13 | G96 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2003 12 27 | 704 | 0.4+ | 0.5− | 2005 05 13 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2003 12 27 | 704 | 0.9+ | 0.3+ | 2005 05 13 | G96 | 0.3+ | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.0 |
| 2003 12 27 | 704 | 0.4+ | 0.4− | 2006 09 18 | 699 | 0.9+ | 0.3− | 2006 10 21 | 703 | 0.4+ | 0.7− |
| 2003 12 27 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.6+ |
| 2003 12 28 | 704 | 0.3− | 0.9+ | 2006 09 18 | 699 | 0.9+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 12 28 | 704 | (2.1− | 0.9+) | 2006 09 19 | 691 | 0.7− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 12 28 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2004 01 21 | 704 | 0.4− | 1.3+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2004 01 21 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2004 01 21 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2005 04 16 | 691 | 0.4+ | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | G96 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.5− | | |
| 2005 05 11 | G96 | 0.8− | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.1− | | | | | | |

**(145285)∗ 2005 JN$_{167}$ = 2004 BK$_{15}$**

Discovered 2005 May 12 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 77259)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 114.47331 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.24345858 | $\omega$ | 131.70192 | | −0.31899862 | | +0.94564868 |
| *a* | 2.5401108 | $\Omega$ | 119.59202 | | −0.88969341 | | −0.27582560 |
| *e* | 0.0809189 | *i* | 4.16492 | | −0.32662749 | | −0.17224638 |
| *P* | 4.05 | *H* | 15.9 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.2− | 0.1+ | 2004 01 24 | 704 | 0.8− | 0.6− | 2005 07 04 | 691 | 0.0 | 0.1+ |
| 2000 01 28 | 691 | 0.0 | 0.1− | 2004 01 24 | 704 | 0.1+ | 0.2+ | 2005 07 04 | 691 | 0.0 | 0.3+ |
| 2000 01 28 | 691 | 0.1+ | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.8+ | 2005 07 04 | 691 | 0.4− | 0.4+ |
| 2001 06 15 | 704 | 0.0 | 0.5+ | 2004 01 27 | 691 | 0.2+ | 0.8+ | 2005 07 11 | 691 | 0.2+ | 0.5+ |
| 2001 06 15 | 704 | 0.3− | 0.6+ | 2004 01 27 | 691 | 0.2+ | 0.8+ | 2005 07 11 | 691 | 0.1+ | 0.4+ |
| 2001 06 15 | 704 | (2.3− | 0.2+) | 2005 05 12 | 704 | 0.5+ | 0.5− | 2005 07 11 | 691 | 0.0 | 0.5+ |
| 2001 06 15 | 704 | 0.6+ | 0.3+ | 2005 05 12 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 291 | 0.0 | 0.2+ |
| 2003 12 19 | 704 | 0.8+ | 0.2+ | 2005 05 12 | 704 | 1.0− | 0.3− | 2006 09 18 | 291 | 0.2+ | 0.3+ |
| 2003 12 19 | 704 | 0.0 | 0.2+ | 2005 05 12 | 704 | 0.0 | 0.8+ | 2006 09 18 | 291 | 0.3+ | 0.1+ |
| 2003 12 19 | 704 | 0.0 | 0.1− | 2005 05 12 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2005 05 20 | G96 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.4− | 0.2+ |
| 2003 12 22 | 691 | 0.1+ | 0.4+ | 2005 05 20 | G96 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2003 12 22 | 691 | 0.1+ | 0.3+ | 2005 05 20 | G96 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.2− | 0.5+ |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2005 06 05 | 704 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.5+ |
| 2004 01 16 | 691 | 0.1+ | 0.1+ | 2005 06 05 | 704 | 0.4− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.6+ |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2005 06 05 | 704 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2004 01 19 | 703 | 1.4+ | 0.5− | 2005 06 05 | 704 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.5+ |
| 2004 01 19 | 703 | 0.1+ | 0.1− | 2005 06 06 | 691 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.7+ |
| 2004 01 19 | 703 | 1.1− | 0.9− | 2005 06 06 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2004 01 19 | 703 | 1.4+ | 1.1+ | 2005 06 06 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2004 01 21 | 704 | 0.3− | 0.3+ | 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.9− | 0.1− |
| 2004 01 21 | 704 | 0.2− | 0.7+ | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.6+ | 0.9− |
| 2004 01 21 | 704 | 0.3− | 0.7+ | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 1.3− | 0.5+ |
| 2004 01 24 | 704 | 0.2+ | 1.0+ | 2005 06 23 | 644 | 0.4− | 0.1+ | 2006 10 22 | 703 | 1.7− | 0.3− |
| 2004 01 24 | 704 | 1.1− | 1.0+ | 2005 06 23 | 644 | 0.3− | 0.1− | 2006 10 22 | 703 | 1.0− | 0.5+ |
| 2004 01 24 | 704 | 0.9− | 0.1− | 2005 06 23 | 644 | 0.0 | 0.0 | | | | |

**(145286)∗ 2005 JP$_{167}$ = 1996 FF$_{11}$**

Discovered 2005 May 12 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 77260)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 89.81132 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.22795671 | $\omega$ | 233.71420 | | +0.06738822 | | +0.99672338 |
| *a* | 2.6540013 | $\Omega$ | 40.22161 | | −0.89174818 | | +0.08027985 |
| *e* | 0.1942489 | *i* | 3.97254 | | −0.44748633 | | −0.00988185 |
| *P* | 4.32 | *H* | 16.2 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 22 | 691 | 0.4+ | 0.0 | 2005 06 07 | G92 | 0.6+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1996 03 22 | 691 | 0.1− | 0.1+ | 2005 06 07 | G92 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1996 03 22 | 691 | 0.1+ | 0.0 | 2005 06 08 | G92 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1996 03 26 | 691 | 0.3− | 0.2− | 2005 06 08 | G92 | 0.4+ | 1.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1996 03 26 | 691 | 0.1− | 0.0 | 2005 06 08 | G92 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 1996 03 26 | 691 | 0.0 | 0.1− | 2005 06 26 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2001 07 31 | 644 | 0.1− | 0.1− | 2005 06 26 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 07 31 | 644 | 0.1− | 0.2− | 2005 06 26 | 644 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 07 31 | 644 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.4− | 0.5− | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2001 08 11 | 644 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2001 08 11 | 644 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 08 11 | 644 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2002 11 07 | 695 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 11 07 | 695 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2004 02 17 | 691 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 1.5+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2004 02 17 | 691 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2005 05 04 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | (2.0+ | 1.6+) | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2005 05 04 | 704 | 0.6− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2005 05 04 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2005 05 12 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2005 05 12 | 644 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2005 05 12 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2005 05 19 | E12 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2005 05 19 | E12 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.5− | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2005 05 19 | E12 | 0.3− | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2005 05 19 | E12 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2005 05 29 | E12 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2005 05 29 | E12 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.5+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2005 05 29 | E12 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2005 06 06 | G92 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2005 06 06 | G92 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2005 06 06 | G92 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2005 06 07 | G92 | (2.0− | 0.3−) | 2006 10 20 | 644 | 0.1− | 0.4+ | | | | |

**(145287)∗ 2005 JN$_{175}$ = 2000 KJ$_{71}$ = 2002 CP$_{9}$**

Discovered 2005 May 2 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 86755)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 353.58814 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.37484431 | $\omega$ | 335.67300 | | +0.75746673 | | −0.54851083 |
| *a* | 1.9050312 | $\Omega$ | 62.33798 | | +0.64513873 | | +0.54560579 |
| *e* | 0.0889807 | *i* | 23.56475 | | +0.10020073 | | +0.63360097 |
| *P* | 2.63 | *H* | 17.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 07 | 691 | 0.1− | 0.1+ | 2005 05 10 | 703 | 0.7+ | 0.4− | 2006 11 14 | 704 | 0.7− | 0.0 |
| 1999 01 07 | 691 | 0.3− | 0.3− | 2005 05 10 | 703 | 0.5− | 0.7− | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 1999 01 07 | 691 | 0.4− | 0.1− | 2005 05 10 | 703 | 0.5+ | 0.7− | 2006 11 14 | 704 | 0.4− | 0.1− |
| 2000 05 28 | 704 | 0.1+ | 0.4− | 2005 05 10 | 703 | (0.7− | 1.6+) | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2000 05 28 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.9− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2000 05 28 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 703 | 1.0+ | 0.4− | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2000 05 28 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | (1.9+ | 0.8−) | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2000 05 28 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.7− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2000 06 01 | 608 | 0.3− | 0.9− | 2006 10 01 | 704 | 0.5− | 0.5− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2000 06 01 | 608 | 0.3− | 1.6− | 2006 10 01 | 704 | 1.3− | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2000 06 01 | 608 | 0.2+ | 0.7− | 2006 10 01 | 704 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.5− | 0.0 |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.6− |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.4− | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2001 12 23 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | (1.7+ | 2.0+) | 2006 11 17 | 704 | 0.3− | 0.2− |
| 2001 12 23 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.3+ | 1.2+ | 2006 11 17 | 704 | 0.0 | 0.6+ |
| 2001 12 23 | 704 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.5+ | 1.1+ | 2006 11 18 | 704 | 0.3+ | 1.2+ |
| 2001 12 23 | 704 | 0.7+ | 0.3− | 2006 10 17 | 703 | 0.7+ | 0.7+ | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2001 12 23 | 704 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2002 02 06 | 704 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.7− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.0 |
| 2002 02 06 | 704 | 1.1+ | 0.0 | 2006 10 22 | 703 | 0.3− | 1.0− | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2002 02 06 | 704 | 0.4+ | 1.2+ | 2006 10 30 | 703 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.4− |
| 2002 02 06 | 704 | 0.3− | 1.0+ | 2006 10 30 | 703 | 0.6+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.2− |
| 2002 02 06 | 704 | 0.1+ | 0.9+ | 2006 10 30 | 703 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.3− |
| 2002 02 07 | 704 | 0.8+ | 1.0+ | 2006 10 30 | 703 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2002 02 07 | 704 | 0.9+ | 0.1+ | 2006 10 30 | 703 | 0.1− | 1.1+ | 2006 11 20 | 704 | 0.4− | 0.6− |
| 2002 02 07 | 704 | 0.6+ | 0.8+ | 2006 10 30 | 703 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2002 02 07 | 704 | 1.0− | 0.0 | 2006 10 30 | 703 | 0.2− | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2005 04 02 | 703 | 0.7− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2005 04 02 | 703 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | 703 | (1.6− | 0.2+) | 2006 11 09 | 644 | 0.3+ | 0.7− | 2006 11 29 | 704 | 0.7+ | 0.2− |
| 2005 04 02 | 703 | 0.8− | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2005 05 02 | 703 | 0.4− | 0.5+ | 2006 11 13 | 703 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2005 05 02 | 703 | 1.1− | 1.0+ | 2006 11 13 | 703 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 02 | 703 | 0.9− | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.2− | | |
| 2005 05 02 | 703 | 0.2− | 1.0+ | 2006 11 14 | 704 | 0.1− | 0.1− | | | | | | |

**(145288)∗ 2005 JL$_{177}$ = 1999 TG$_{303}$ = 1999 UB$_{64}$**

Discovered 2005 May 7 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 86756)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.02662 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27932428 | $\omega$ | 337.94222 | | +0.96861145 | | −0.24757829 |
| $a$ | 2.3177340 | $\Omega$ | 36.41498 | | +0.23330923 | | +0.87450254 |
| $e$ | 0.0401383 | $i$ | 2.15189 | | +0.08578261 | | +0.41707348 |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 688 | 0.3− | 0.1− | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.9+ |
| 1998 04 21 | 688 | 0.4− | 0.3− | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 1998 04 21 | 688 | 0.5− | 0.1− | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 1999 10 04 | 691 | 0.1+ | 0.3− | 2005 04 14 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1999 10 04 | 691 | 0.0 | 0.3− | 2005 05 07 | G96 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 1999 10 04 | 691 | 0.1+ | 0.4− | 2005 05 07 | G96 | 0.3− | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 1999 10 11 | 691 | 0.0 | 0.4− | 2005 05 07 | G96 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.5− | 0.7+ |
| 1999 10 11 | 691 | 0.1− | 0.4− | 2005 05 07 | G96 | 0.3− | 0.4+ | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 1999 10 11 | 691 | 0.0 | 0.3− | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 1999 10 17 | 691 | 0.4+ | 0.1+ | 2005 05 14 | 644 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.4+ |
| 1999 10 17 | 691 | 0.2− | 0.1+ | 2005 05 14 | 644 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 1999 10 17 | 691 | 0.2+ | 0.2+ | 2005 06 01 | G96 | 0.5− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.2+ |
| 2001 03 30 | 691 | 0.7+ | 0.3+ | 2005 06 01 | G96 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 03 30 | 691 | 1.0+ | 0.7+ | 2005 06 01 | G96 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2001 03 30 | 691 | 0.8+ | 0.6+ | 2005 06 01 | G96 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 2003 12 22 | 704 | 0.5+ | 0.3− | 2006 08 28 | 703 | 0.4− | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2003 12 22 | 704 | 1.3− | 1.1+ | 2006 08 28 | 703 | (1.7− | 0.5−) | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 1.4− | 0.4+ | 2006 08 28 | 703 | 1.2− | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2003 12 27 | 704 | 0.1− | 0.0 | 2006 08 28 | 703 | 1.2− | 0.5− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.8− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 12 27 | 704 | 1.0− | 0.4− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.6+ | 0.1+ |
| 2003 12 27 | 704 | 0.6− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.6− | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 04 02 | G96 | 1.0− | 0.5+ | 2006 09 18 | 699 | 0.8− | 1.2+ | | | | |
| 2005 04 02 | G96 | 0.6− | 0.2+ | 2006 09 18 | 699 | 1.0− | 1.4+ | | | | |

**(145289)∗ 2005 JU$_{177}$ = 2002 TX$_{92}$**

Discovered 2005 May 8 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. A. Doppler (*MPO* 86757)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.12183 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23477085 | $\omega$ | 104.78942 | | +0.64739931 | | +0.76198377 |
| $a$ | 2.6023953 | $\Omega$ | 205.57785 | | −0.71271159 | | +0.59784938 |
| $e$ | 0.0525158 | $i$ | 2.11914 | | −0.27003023 | | +0.24891132 |
| $P$ | 4.20 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | (1.7− | 0.3−) | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.0 | 1.4+ |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.2− |
| 2002 10 02 | 704 | (0.9− | 2.1+) | 2005 05 08 | G96 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.2− | 1.1+ | 2005 05 08 | G96 | 0.4+ | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.1+ | 1.4+ | 2005 05 14 | 644 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | (0.2+ | 1.6+) | 2005 05 14 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.6+ | 0.0 |
| 2002 10 04 | 644 | 0.1+ | 1.4+ | 2005 05 14 | 644 | 0.9+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.8+ |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2006 08 20 | 941 | 0.8− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.7+ |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2006 08 20 | 941 | 0.6− | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.2+ |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 08 20 | 941 | 0.6− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 08 21 | 291 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.1− |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2006 08 21 | 291 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.0 | 0.3+ | 2006 08 21 | 291 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2005 04 02 | G96 | 0.1− | 0.0 | 2006 08 21 | 941 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2005 04 02 | G96 | 0.3+ | 0.2− | 2006 08 21 | 941 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2005 04 11 | G96 | 0.1+ | 0.1− | 2006 08 21 | 941 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 08 21 | 941 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2005 04 11 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.8− | 0.5+ | | | | |
| 2005 04 11 | G96 | 0.5− | 0.1+ | 2006 08 28 | 703 | 1.0+ | 1.3+ | | | | |

**(145290)∗ 2005 JX$_{177}$**

Discovered 2005 May 8 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.84673 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25922143 | $\omega$ | 70.73321 | | +0.10870547 | | +0.99344034 |
| $a$ | 2.4360645 | $\Omega$ | 205.58696 | | −0.94011932 | | +0.09113841 |
| $e$ | 0.1204147 | $i$ | 4.71338 | | −0.32304611 | | +0.06906575 |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 699 | 0.1− | 1.1+ | 2005 05 14 | 644 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2001 04 16 | 699 | 0.4+ | 0.2+ | 2005 05 14 | 644 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 04 16 | 699 | 0.5+ | 0.9+ | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 04 16 | 699 | (1.2− | 2.0+) | 2005 06 08 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.0 | 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2005 06 16 | 691 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.7+ | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2005 06 16 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.1− | 0.6+ | 2005 06 16 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.5− | 0.4+ | 2005 06 23 | 644 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2002 10 11 | 704 | 0.7− | 0.2+ | 2005 06 23 | 644 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 1.4+ | 0.7+ | 2005 06 23 | 644 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.5+ | 0.3+ |
| 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.3+ |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2005 05 08 | G96 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2005 05 08 | G96 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2005 05 08 | G96 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.2+ |
| 2005 05 08 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 2.2− | 0.4+ |
| 2005 05 14 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 1.8− |

**(145291)∗ 2005 JO$_{178}$ = 1999 VK$_{120}$**

Discovered 2005 May 11 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 86757)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.31461 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29457004 | $\omega$ | 261.61050 | | +0.58454543 | | +0.80841819 |
| $a$ | 2.2370568 | $\Omega$ | 44.39931 | | −0.70016898 | | +0.54560318 |
| $e$ | 0.1669986 | $i$ | 5.66310 | | −0.40996346 | | +0.22085561 |
| $P$ | 3.35 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.5− | 0.6+ | 2002 08 11 | 644 | 0.2+ | 0.1+ | 2005 05 14 | 644 | 0.3+ | 0.2+ |
| 1999 11 04 | 691 | 0.2+ | 0.1− | 2005 04 06 | G96 | 0.3+ | 0.3− | 2005 06 01 | G96 | 0.1− | 0.3− |
| 1999 11 04 | 691 | 0.1+ | 0.0 | 2005 04 06 | G96 | 0.1− | 0.0 | 2005 06 01 | G96 | 0.4− | 0.5− |
| 1999 11 10 | 691 | 0.1− | 0.1+ | 2005 04 06 | G96 | 0.5− | 0.1+ | 2005 06 01 | G96 | 0.4− | 0.9− |
| 1999 11 10 | 691 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.7− | 0.3− | 2005 06 01 | G96 | 0.0 | 0.5− |
| 1999 11 10 | 691 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2002 06 13 | 644 | 0.4− | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.3+ |
| 2002 06 13 | 644 | 0.3− | 0.4+ | 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.5+ |
| 2002 06 13 | 644 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.1− | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2002 06 13 | 644 | 0.1− | 0.1− | 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 2002 06 13 | 644 | 0.2− | 0.1+ | 2005 05 01 | 644 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2+ |
| 2002 06 13 | 644 | 0.2− | 0.0 | 2005 05 11 | G96 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2002 07 06 | 644 | 0.2+ | 0.1− | 2005 05 11 | G96 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 07 06 | 644 | 0.2+ | 0.3− | 2005 05 11 | G96 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.1+ |
| 2002 07 06 | 644 | 0.1+ | 0.2− | 2005 05 11 | G96 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.1+ | 0.1− | 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2002 08 11 | 644 | 0.1+ | 0.1− | 2005 05 14 | 644 | 0.2+ | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.3− |

**(145292)∗ 2005 JA$_{179}$ = 1997 JE$_9$**

Discovered 2005 May 14 by NEAT at Palomar.

Id. A. Doppler (*MPO* 86758)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.31305 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24602663 | $\omega$ | 304.27103 | | +0.93769347 | −0.31054561 | |
| $a$ | 2.5224040 | $\Omega$ | 74.25281 | | +0.34743084 | +0.83182535 | |
| $e$ | 0.0824223 | $i$ | 9.31939 | | +0.00477102 | +0.46003044 | |
| $P$ | 4.01 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 03 | 691 | 0.2+ | 0.2− | 2004 01 31 | 704 | 0.1− | 0.9− | 2006 09 17 | F84 | 0.9+ | 0.7+ |
| 1997 05 03 | 691 | 0.2+ | 0.1− | 2004 02 14 | 704 | 0.1− | 0.7+ | 2006 09 17 | F84 | 0.7+ | 0.2− |
| 1997 05 03 | 691 | 0.0 | 0.1− | 2004 02 14 | 704 | 0.3+ | 0.5+ | 2006 09 17 | F84 | 0.1− | 0.2+ |
| 1997 05 10 | 691 | 0.3+ | 0.6− | 2004 02 14 | 704 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.7− | 0.1+ |
| 1997 05 10 | 691 | 0.1− | 1.1+ | 2005 04 30 | 599 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.1+ |
| 1997 05 10 | 691 | 0.2− | 0.2+ | 2005 04 30 | 599 | 0.7− | 1.1+ | 2006 09 18 | 703 | 0.2− | 0.1+ |
| 2002 09 12 | 608 | 0.5− | 0.3− | 2005 05 01 | 599 | 0.6+ | 1.1+ | 2006 09 18 | 703 | 0.1− | 0.2− |
| 2002 09 12 | 608 | 0.2− | 0.5− | 2005 05 14 | 644 | 0.6+ | 0.2+ | 2006 09 20 | 703 | 0.7+ | 0.5+ |
| 2002 09 12 | 608 | 0.3+ | 0.1− | 2005 05 14 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.4+ |
| 2002 10 08 | 644 | 0.3− | 0.3+ | 2005 05 14 | 644 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.3− | 0.4+ |
| 2002 10 08 | 644 | 0.2− | 0.7+ | 2005 05 19 | G96 | 0.4− | 0.1− | 2006 09 20 | 703 | 0.4+ | 0.7+ |
| 2002 10 08 | 644 | 0.4− | 0.2+ | 2005 05 19 | G96 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.9+ |
| 2003 12 27 | 704 | (1.6+ | 2.7+) | 2005 05 19 | G96 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.3− |
| 2003 12 27 | 704 | 0.6+ | 1.2+ | 2005 05 19 | G96 | 0.5− | 0.1− | 2006 09 26 | 703 | 0.4− | 1.0+ |
| 2003 12 27 | 704 | 0.3+ | 0.7+ | 2005 06 27 | 644 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.6− | 0.4− |
| 2004 01 31 | 704 | 0.1+ | 0.9+ | 2005 06 27 | 644 | 0.1+ | 0.1− | | | | |
| 2004 01 31 | 704 | 0.4+ | 0.4+ | 2005 06 27 | 644 | 0.3+ | 0.0 | | | | |

**(145293)∗ 2005 KE**

Discovered 2005 May 16 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.64107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22820826 | $\omega$ | 257.63415 | | +0.73916725 | +0.63030737 | |
| $a$ | 2.6520506 | $\Omega$ | 62.78123 | | −0.46604798 | +0.73308805 | |
| $e$ | 0.2247569 | $i$ | 15.48152 | | −0.48624176 | +0.25552795 | |
| $P$ | 4.32 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.0 | 0.2− | 2005 05 28 | 428 | 0.2+ | 0.6+ | 2006 11 15 | A79 | (2.6− | 0.5+) |
| 2000 03 29 | 704 | 0.1− | 0.7− | 2005 05 28 | 428 | 0.1+ | 0.7+ | 2006 11 17 | 704 | 0.9− | 1.4− |
| 2000 03 29 | 704 | 0.2+ | 0.1− | 2005 06 04 | 428 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.6− | 1.2− |
| 2000 03 29 | 704 | 0.5− | 0.6+ | 2005 06 04 | 428 | 1.1+ | 0.3+ | 2006 11 17 | 704 | 0.0 | 1.0+ |
| 2000 03 29 | 704 | 0.2− | 0.1− | 2005 07 03 | E12 | 0.4− | 0.4+ | 2006 11 17 | 704 | (0.2+ | 1.9−) |
| 2001 07 22 | 413 | 0.6− | 0.0 | 2005 07 03 | E12 | 0.2+ | 0.2+ | 2006 11 17 | 704 | (0.8+ | 2.4+) |
| 2001 07 22 | 413 | 0.6+ | 1.2+ | 2005 07 03 | E12 | 0.1− | 0.1+ | 2006 11 17 | 644 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | 0.3− | 0.5+ | 2005 07 03 | E12 | 0.7− | 0.2− | 2006 11 17 | 644 | 0.3+ | 0.2− |
| 2002 11 12 | 704 | 0.1+ | 0.3+ | 2005 07 03 | E12 | 0.0 | 0.4+ | 2006 11 17 | 644 | 0.2+ | 0.1− |
| 2002 11 12 | 704 | 0.5− | 0.3− | 2005 07 03 | E12 | 0.6− | 0.1+ | 2006 11 18 | 691 | 0.5− | 0.1+ |
| 2002 12 05 | 704 | (0.7+ | 2.7+) | 2005 07 03 | E12 | 0.4− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | (2.1+ | 2.2+) | 2005 07 27 | E12 | 0.1− | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | (2.3+ | 2.0+) | 2005 07 27 | E12 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2002 12 05 | 704 | (1.4+ | 2.2+) | 2005 07 27 | E12 | (1.1+ | 1.7+) | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2003 01 04 | 704 | 0.8− | 0.7+ | 2005 07 27 | E12 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2003 01 04 | 704 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2003 01 04 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2003 01 04 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.8− | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2004 03 17 | 644 | 0.5+ | 0.5+ | 2006 10 19 | 703 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2004 03 17 | 644 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2004 03 17 | 644 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.1− | 0.4− |
| 2005 05 04 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 27 | 704 | 1.1− | 0.8+ |
| 2005 05 04 | 704 | 0.0 | 0.2− | 2006 10 21 | G96 | (1.4+ | 1.6−) | 2006 11 27 | 704 | 1.3− | 0.4+ |
| 2005 05 04 | 704 | 0.6+ | 1.0+ | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2005 05 04 | 704 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2005 05 16 | 428 | 0.3− | 0.5− | 2006 11 02 | 703 | 0.1+ | 0.7+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2005 05 16 | 428 | 0.5+ | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2005 05 16 | 428 | 0.3− | 0.0 | 2006 11 02 | 703 | 0.5+ | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2005 05 17 | 428 | (0.5+ | 1.7+) | 2006 11 02 | 703 | 0.4+ | 0.0 | 2006 12 01 | 704 | 0.7+ | 0.4+ |
| 2005 05 17 | 428 | 0.6+ | 0.9+ | 2006 11 14 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.5− | 0.2− |
| 2005 05 27 | 428 | 0.6+ | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 0.4+ | 0.8+ |
| 2005 05 27 | 428 | 1.4+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.2− | 1.1+ |
| 2005 05 27 | 428 | 0.2− | 0.3+ | 2006 11 15 | A79 | 1.2− | 0.1+ | | | | |
| 2005 05 28 | 428 | 0.1− | 0.5+ | 2006 11 15 | A79 | 0.1− | 0.0 | | | | |

**(145294)∗ 2005 KX$_2$**

Discovered 2005 May 16 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.83405 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17657326 | $\omega$ | 68.85101 | | +0.60956580 | +0.71863026 | |
| $a$ | 3.1466813 | $\Omega$ | 243.23711 | | −0.79183824 | +0.57203785 | |
| $e$ | 0.2743775 | $i$ | 22.01289 | | +0.03770592 | +0.39540263 | |
| $P$ | 5.58 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 11 | 704 | 0.5− | 1.6+ | 2005 05 16 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.6+ | 0.2− |
| 2000 06 11 | 704 | 0.2− | 0.2+ | 2005 05 16 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.5− | 0.4− |
| 2000 06 11 | 704 | 1.7− | 0.5+ | 2005 05 18 | E12 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.1− | 0.2+ |
| 2000 06 11 | 704 | 0.1+ | 0.0 | 2005 05 18 | E12 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.3− | 0.5− |
| 2000 06 11 | 704 | 0.1− | 0.2+ | 2005 05 18 | E12 | (2.1− | 0.2−) | 2006 10 02 | 704 | 0.4+ | 0.2+ |
| 2000 07 09 | 704 | 0.4+ | 0.1+ | 2005 05 18 | E12 | 0.0 | 0.4+ | 2006 10 02 | 704 | 1.0+ | 0.2+ |
| 2000 07 09 | 704 | 0.2+ | 0.2− | 2005 05 19 | E12 | 0.0 | 0.1+ | 2006 10 02 | 704 | 1.1+ | 0.2+ |
| 2000 07 09 | 704 | 0.3+ | 0.9+ | 2005 05 19 | E12 | 0.3+ | 0.1+ | 2006 10 02 | 704 | 0.6+ | 0.4+ |
| 2000 07 09 | 704 | 0.3+ | 0.3− | 2005 05 19 | E12 | 0.8− | 0.2+ | 2006 10 02 | 704 | 0.4+ | 0.3+ |
| 2000 09 06 | 704 | 0.2+ | 0.1− | 2005 05 19 | E12 | (0.5− | 1.6−) | 2006 10 02 | 703 | 0.4− | 0.1+ |
| 2000 09 06 | 704 | 0.2+ | 0.1− | 2005 05 21 | 644 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.9− | 0.1− |
| 2000 09 06 | 704 | 0.1+ | 0.4− | 2005 05 21 | 644 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.5− | 0.2− |
| 2000 09 06 | 704 | 0.4+ | 1.1− | 2005 05 21 | 644 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.1+ |
| 2000 10 31 | 704 | 0.4− | 0.6− | 2005 05 28 | 428 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.4− | 0.3− |
| 2000 10 31 | 704 | 0.2− | 0.3+ | 2005 05 28 | 428 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.8− | 0.0 |
| 2000 10 31 | 704 | 0.4+ | 0.3+ | 2005 05 29 | 428 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 2000 10 31 | 704 | 0.3+ | 0.4+ | 2005 05 29 | 428 | 0.1+ | 0.2+ | 2006 10 20 | 704 | 0.4− | 0.7+ |
| 2000 10 31 | 704 | 0.5− | 0.1+ | 2005 05 29 | E12 | 0.6− | 0.0 | 2006 10 20 | 704 | (0.2− | 1.6+) |
| 2001 10 24 | 704 | 0.3+ | 0.5+ | 2005 05 29 | E12 | 0.8+ | 1.4− | 2006 10 20 | 704 | 0.1− | 0.5+ |
| 2001 10 24 | 704 | 0.0 | 0.0 | 2005 05 29 | E12 | 0.1− | 0.6+ | 2006 10 20 | 704 | (0.1+ | 2.1+) |
| 2001 10 24 | 704 | 0.1+ | 0.6+ | 2005 05 29 | E12 | 0.1+ | 0.1+ | 2006 10 20 | 704 | 0.3+ | 0.0 |
| 2001 10 24 | 704 | 0.1− | 1.2+ | 2005 06 04 | 704 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.4+ | 0.9+ | 2005 06 04 | 704 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | (0.4− | 1.6+) | 2005 06 04 | 704 | 0.7+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 11 09 | 704 | 0.0 | 0.7+ | 2005 06 04 | 704 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.2− | 0.0 | 2005 06 04 | 704 | 0.3− | 0.9− | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2001 11 09 | 704 | 0.3+ | 1.3+ | 2005 06 11 | 703 | 0.8− | 0.2+ | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2001 11 15 | 049 | 0.3− | 0.2+ | 2005 06 11 | 703 | 0.4− | 0.4− | 2006 10 27 | 703 | 1.4+ | 0.5+ |
| 2001 11 16 | 049 | 0.1− | 0.2+ | 2005 06 11 | 703 | 0.1+ | 1.1+ | 2006 10 27 | 703 | 0.1+ | 0.5− |
| 2001 11 16 | 049 | 0.1+ | 0.2+ | 2005 06 11 | 703 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.2+ | 2005 06 14 | G96 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | (1.1+ | 1.8+) | 2005 06 14 | G96 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 1.3− | 0.3− | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2001 11 20 | 704 | 0.1+ | 0.2+ | 2005 07 12 | 703 | 1.1− | 0.7+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.4+ | 0.4+ | 2005 07 12 | 703 | 0.1− | 0.5− | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2001 12 20 | 704 | 0.7+ | 0.2− | 2005 07 12 | 703 | 0.0 | 0.8+ | 2006 11 16 | 704 | 0.0 | 1.4+ |
| 2001 12 20 | 704 | 0.4+ | 0.3− | 2005 07 12 | 703 | 0.1− | 0.9+ | 2006 11 16 | 704 | 0.6+ | 0.6+ |
| 2001 12 20 | 704 | 0.3+ | 0.0 | 2005 09 05 | E12 | 0.1+ | 0.7+ | 2006 11 16 | 704 | 0.0 | 0.6+ |
| 2001 12 20 | 704 | 0.6+ | 0.1− | 2005 09 05 | E12 | 0.6+ | 0.2− | 2006 11 16 | 704 | 0.3− | 0.0 |
| 2001 12 20 | 704 | 0.3+ | 0.1− | 2005 09 06 | E12 | 0.4− | 0.5+ | 2006 11 16 | 704 | 1.2+ | 1.3+ |
| 2005 04 20 | E12 | 0.4− | 0.0 | 2005 09 06 | E12 | 0.1− | 0.1− | 2006 11 22 | 703 | 0.1− | 0.2− |
| 2005 04 20 | E12 | 0.4+ | 0.1+ | 2005 09 06 | E12 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.2− | 0.2− |
| 2005 04 20 | E12 | 0.5− | 0.7+ | 2006 08 21 | 291 | 0.2− | 0.3− | 2006 11 22 | 703 | 0.6− | 0.4− |
| 2005 04 30 | E12 | 0.5+ | 0.0 | 2006 08 21 | 291 | 0.3− | 0.4− | 2006 11 22 | 703 | 0.9+ | 1.4− |
| 2005 04 30 | E12 | 0.7+ | 0.4+ | 2006 08 21 | 291 | 0.3− | 0.3− | 2006 11 22 | 703 | 1.3+ | 1.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | E12 | 0.6+ | 0.1− | 2006 09 25 | 703 | 0.2− | 0.7+ | 2006 11 22 | 703 | 0.1− | 0.0 | | |
| 2005 04 30 | E12 | 0.6+ | 0.6− | 2006 09 25 | 703 | 0.3− | 0.4− | 2006 11 22 | 703 | 0.2+ | 0.1− | | |
| 2005 05 16 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.3− | 0.1− | | |

**(145295)∗ 2005 KK$_6$ = 2002 UQ$_{24}$**

Discovered 2005 May 18 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 77263)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.05206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25826867 | $\omega$ | 88.35610 | | +0.44400509 | | +0.89535141 |
| $a$ | 2.4420520 | $\Omega$ | 208.08556 | | −0.84862103 | | +0.40776402 |
| $e$ | 0.1917155 | $i$ | 4.22904 | | −0.28757924 | | +0.17909313 |
| $P$ | 3.82 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 28 | 691 | 0.2+ | 0.5+ | 2002 10 31 | 644 | 0.4− | 0.9+ | 2005 06 10 | 691 | 0.4+ | 0.3+ | | |
| 2001 03 28 | 691 | 0.0 | 0.4+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2005 06 10 | 691 | 0.3+ | 0.5+ | | |
| 2001 03 28 | 691 | 0.0 | 0.3+ | 2005 05 08 | G96 | 0.1− | 0.1− | 2005 06 10 | 691 | 0.3+ | 0.4+ | | |
| 2001 04 16 | 699 | 0.6+ | 1.1+ | 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.0 | | |
| 2001 04 16 | 699 | 0.7− | 0.1+ | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.0 | | |
| 2001 04 16 | 699 | 0.2+ | 0.3+ | 2005 05 18 | 644 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.2− | | |
| 2001 04 16 | 699 | 1.1+ | 0.4+ | 2005 05 18 | 644 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.2− | | |
| 2002 10 15 | 644 | 0.2+ | 0.2− | 2005 05 18 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.2− | | |
| 2002 10 15 | 644 | 0.3− | 0.2− | 2005 05 21 | 644 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2002 10 15 | 644 | 0.2− | 0.1− | 2005 05 21 | 644 | 0.3− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.0 | | |
| 2002 10 29 | 291 | 0.1+ | 0.5+ | 2005 05 21 | 644 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.1+ | | |
| 2002 10 29 | 291 | 0.2− | 0.5+ | 2005 06 03 | 703 | 0.9− | 0.7+ | 2006 11 23 | 691 | 0.1− | 0.7+ | | |
| 2002 10 29 | 291 | 0.3− | 0.5+ | 2005 06 03 | 703 | (1.6+ | 0.6+) | 2006 11 23 | 691 | 0.1− | 0.7+ | | |
| 2002 10 31 | 644 | 0.2− | 0.9+ | 2005 06 03 | 703 | 0.8− | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.6+ | | |
| 2002 10 31 | 644 | 0.2− | 0.8+ | 2005 06 03 | 703 | 0.1− | 1.3+ | | | | | | |

**(145296)∗ 2005 KC$_7$**

Discovered 2005 May 19 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.17690 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23767977 | $\omega$ | 346.82145 | | +0.42547775 | | +0.90386745 |
| $a$ | 2.5811183 | $\Omega$ | 308.34111 | | −0.82504646 | | +0.36716340 |
| $e$ | 0.1633555 | $i$ | 3.26239 | | −0.37184275 | | +0.21957838 |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.3− | 0.6− | 2005 05 21 | 644 | 0.1+ | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.2+ | | |
| 2002 11 12 | 704 | 0.4+ | 0.8+ | 2005 05 21 | 644 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2002 11 12 | 704 | 0.4+ | 0.8+ | 2005 05 21 | 644 | 0.0 | 0.8+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2002 11 12 | 704 | 0.3+ | 0.5+ | 2005 05 30 | E12 | 0.6+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ | | |
| 2002 11 24 | 644 | 0.4− | 0.0 | 2005 05 30 | E12 | 0.3− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2002 11 24 | 644 | 0.4− | 0.1− | 2005 05 30 | E12 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2002 11 24 | 644 | 0.1+ | 0.2+ | 2005 05 30 | E12 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 12 06 | 704 | 0.9− | 0.7− | 2005 06 26 | 644 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 12 06 | 704 | 0.3+ | 1.2+ | 2005 06 26 | 644 | 0.1− | 0.5+ | 2006 10 27 | 703 | 1.1+ | 0.7− | | |
| 2002 12 06 | 704 | 1.0+ | 0.2− | 2005 06 26 | 644 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.6+ | 1.0+ | | |
| 2002 12 06 | 704 | 0.7− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 27 | 703 | 1.0− | 0.3+ | | |
| 2004 02 11 | 691 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 27 | 703 | 1.1− | 0.8− | | |
| 2004 02 11 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.4+ | | |
| 2005 05 19 | 644 | 0.1+ | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.1− | | |
| 2005 05 19 | 644 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 1.1− | 1.3− | | |
| 2005 05 19 | 644 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.7+ | 2006 11 14 | 703 | 0.1+ | 0.9+ | | |
| 2005 05 19 | E12 | 0.4+ | 0.8+ | 2006 10 13 | 691 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 1.5+ | | |
| 2005 05 19 | E12 | 1.0+ | 1.4+ | 2006 10 13 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.8+ | | |
| 2005 05 19 | E12 | 0.3− | 0.2+ | 2006 10 13 | 691 | 0.4− | 0.0 | | | | | | |
| 2005 05 19 | E12 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.6+ | | | | | | |

**(145297)∗ 2005 KS$_7$ = 2003 BY$_{64}$**

Discovered 2005 May 19 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 86761)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.71722 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19005459 | $\omega$ | 160.23375 | | +0.21899283 | | +0.96134777 |
| $a$ | 2.9960598 | $\Omega$ | 122.08670 | | −0.91962091 | | +0.26052305 |
| $e$ | 0.0465357 | $i$ | 11.36046 | | −0.32609741 | | −0.08909662 |
| $P$ | 5.19 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 30 | 699 | 0.9+ | 0.4+ | 2005 05 22 | 644 | 0.0 | 0.2− | 2005 07 09 | 691 | 0.2− | 0.1− | | |
| 2003 01 30 | 699 | 0.0 | 1.0+ | 2005 06 27 | 691 | 0.1+ | 0.0 | 2005 07 12 | G96 | 0.0 | 0.0 | | |
| 2003 01 30 | 699 | 0.3+ | 0.8+ | 2005 06 27 | 691 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.0 | 0.2+ | | |
| 2003 01 30 | 699 | (2.4+ | 0.6+) | 2005 06 27 | 691 | 0.2+ | 0.0 | 2005 07 12 | G96 | 0.4+ | 0.0 | | |
| 2003 01 31 | 704 | 0.4− | 0.9+ | 2005 06 30 | 691 | 0.1− | 0.3+ | 2005 07 12 | G96 | 0.3+ | 0.1− | | |
| 2003 01 31 | 704 | (0.2+ | 2.9+) | 2005 06 30 | 691 | 0.0 | 0.3+ | 2005 07 16 | 691 | 0.4+ | 0.7+ | | |
| 2003 01 31 | 704 | 0.2− | 0.9+ | 2005 06 30 | 691 | 0.1+ | 0.0 | 2005 07 16 | 691 | 0.2+ | 0.0 | | |
| 2003 01 31 | 704 | 0.4− | 0.7+ | 2005 07 03 | G96 | 0.4+ | 0.0 | 2005 07 16 | 691 | 0.1− | 0.1− | | |
| 2004 04 16 | 704 | 0.2+ | 1.0+ | 2005 07 03 | G96 | 0.2+ | 0.3− | 2005 07 30 | E12 | 0.7+ | 0.0 | | |
| 2004 04 16 | 704 | 1.2+ | 0.1+ | 2005 07 03 | G96 | 0.4+ | 0.1+ | 2005 07 30 | E12 | 0.5+ | 0.1− | | |
| 2004 04 16 | 704 | 0.1− | 0.6+ | 2005 07 03 | G96 | 0.2+ | 0.5− | 2005 07 30 | E12 | 0.7+ | 0.1+ | | |
| 2004 04 16 | 704 | (2.0+ | 0.0 ) | 2005 07 04 | 644 | 0.0 | 0.2− | 2005 07 30 | E12 | 0.2− | 0.2− | | |
| 2004 04 16 | 704 | 0.3− | 1.0+ | 2005 07 04 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.4+ | | |
| 2004 04 23 | 704 | 1.6+ | 0.3+ | 2005 07 04 | 644 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.1− | 0.5+ | | |
| 2004 04 23 | 704 | 0.2+ | 1.6+ | 2005 07 05 | 691 | 0.2− | 0.0 | 2006 10 28 | 703 | 1.2− | 0.2+ | | |
| 2004 04 23 | 704 | 0.6− | 0.7+ | 2005 07 05 | 691 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.5− | 0.0 | | |
| 2005 05 19 | G96 | 0.4− | 0.1− | 2005 07 05 | 691 | 0.3− | 0.2− | 2006 10 28 | 703 | 1.1− | 0.2+ | | |
| 2005 05 19 | G96 | 0.4− | 0.3+ | 2005 07 09 | 691 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.5− | | |
| 2005 05 19 | G96 | 0.2− | 0.1− | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.7− | 1.4+ | | |
| 2005 05 19 | G96 | 0.3− | 0.1− | 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 11 16 | 703 | (3.7+ | 2.2+) | | |
| 2005 05 22 | 644 | 0.0 | 0.0 | 2005 07 09 | 691 | 0.4− | 0.1+ | 2006 11 16 | 703 | 0.6+ | 1.2+ | | |
| 2005 05 22 | 644 | 0.5− | 0.2+ | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 1.0− | 0.6+ | | |

**(145298)∗ 2005 KB$_8$**

Discovered 2005 May 20 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.61448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22703783 | $\omega$ | 175.84133 | | +0.91586803 | | +0.40095400 |
| $a$ | 2.6611574 | $\Omega$ | 160.48144 | | −0.37010037 | | +0.86300259 |
| $e$ | 0.1094438 | $i$ | 3.52355 | | −0.15560037 | | +0.30734741 |
| $P$ | 4.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.4+ | 0.2+ | 2005 06 02 | E12 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.0 | 0.8+ | | |
| 1995 02 03 | 691 | 0.2− | 0.3+ | 2005 06 10 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.4− | | |
| 1995 02 03 | 691 | 0.2− | 0.0 | 2005 06 10 | 691 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.8− | 1.1+ | | |
| 1996 04 17 | 691 | 1.0+ | 0.0 | 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.8− | 0.3− | | |
| 1996 04 17 | 691 | (2.6− | 0.5−) | 2005 06 16 | 691 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 1996 04 17 | 691 | 0.8− | 0.5− | 2005 06 16 | 691 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.4+ | | |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2005 06 27 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.6+ | 0.8+ | | |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2005 06 27 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.6+ | | |
| 2004 02 17 | 691 | 0.3+ | 0.3+ | 2005 06 30 | 691 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2005 06 30 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.7+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.3+ | 2005 06 30 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2005 05 20 | G96 | 0.1+ | 0.0 | 2005 07 04 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.2+ | | |
| 2005 05 20 | G96 | 0.0 | 0.6+ | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.2+ | | |
| 2005 05 20 | G96 | 0.1+ | 0.2− | 2005 07 04 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1+ | | |
| 2005 05 20 | G96 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2+ | | |
| 2005 05 22 | 644 | 0.4− | 0.3− | 2006 09 14 | 691 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.1+ | | |
| 2005 05 22 | 644 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2005 05 22 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2005 06 02 | E12 | 0.7− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.1+ | | |
| 2005 06 02 | E12 | 1.0− | 0.2− | 2006 09 30 | 703 | (0.3− | 2.7−) | | | | | | |
| 2005 06 02 | E12 | (0.4+ | 1.9−) | 2006 09 30 | 703 | (2.7+ | 2.2−) | | | | | | |

**(145299)∗ 2005 KE$_8$ = 2001 LU$_9$**

Discovered 2005 May 20 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 77264)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.18891 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24116244 | $\omega$ | 79.67594 | | +0.66596581 | | +0.72318435 |
| $a$ | 2.5562085 | $\Omega$ | 233.69208 | | −0.74188067 | | +0.61637238 |
| $e$ | 0.1767875 | $i$ | 13.12682 | | −0.07811917 | | +0.31159185 |
| $P$ | 4.09 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.1+ | 0.3− | 2005 06 24 | 644 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.2+ |
| 2001 06 15 | 704 | 0.2+ | 0.3− | 2005 06 24 | 644 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.2+ | 1.0+ |
| 2001 06 15 | 704 | 0.0 | 0.0 | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (0.5− | 2.2−) |
| 2001 06 15 | 704 | 0.4− | 0.3− | 2005 07 01 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.5+ | 1.0− |
| 2001 06 15 | 704 | 0.2+ | 0.6+ | 2005 07 01 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.0 |
| 2001 06 21 | 704 | 1.0− | 0.2+ | 2005 07 05 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.8+ | 0.9− |
| 2001 06 21 | 704 | 0.4+ | 0.4− | 2005 07 05 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2001 06 21 | 704 | 1.0+ | 0.3+ | 2005 07 05 | 644 | 0.6− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2001 06 21 | 704 | 0.8− | 0.5+ | 2005 08 05 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2001 06 21 | 704 | 0.1+ | 0.1+ | 2005 08 05 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2002 11 14 | 704 | 0.0 | 1.0+ | 2005 08 05 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.7− | 1.2+ |
| 2002 11 14 | 704 | (0.3− | 2.2−) | 2006 10 16 | 703 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.4− | 1.2+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.7− | 1.1− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 11 24 | 644 | 0.5+ | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2002 11 24 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2002 12 03 | 608 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 12 03 | 608 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 2002 12 03 | 608 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.4− | 0.4− |
| 2002 12 10 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.4− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2002 12 10 | 644 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2002 12 10 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 21 | 691 | 0.3− | 0.2− |
| 2005 01 19 | 809 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2005 01 19 | 809 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2005 01 19 | 809 | 0.7+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1+ | 1.2+ |
| 2005 05 20 | G96 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 1.1+ | 0.5+ |
| 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2005 05 20 | G96 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 05 22 | 644 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2005 05 22 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 1.0− | 0.9− |
| 2005 05 22 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.4− | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2005 06 03 | 703 | 0.5− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 27 | 703 | 1.0+ | 0.5− |
| 2005 06 03 | 703 | 0.3− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.7− | 1.7− |
| 2005 06 03 | 703 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2005 06 05 | 704 | 1.1− | 0.7− | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.2+ | 1.0+ |
| 2005 06 05 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.2+ |
| 2005 06 05 | 704 | 0.9− | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.7+ | 2006 11 29 | 704 | 0.4+ | 0.8+ |
| 2005 06 24 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.5+ |

**(145300)∗ 2005 KK$_8$ = 2003 YB$_{86}$**

Discovered 2005 May 21 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. A. Doppler (*MPO* 86762)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.88643 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28101725 | $\omega$ | 263.12273 | | −0.76545217 | | −0.63717167 |
| $a$ | 2.3084160 | $\Omega$ | 237.25305 | | +0.62454258 | | −0.70193052 |
| $e$ | 0.0621074 | $i$ | 6.14099 | | +0.15501463 | | −0.31828574 |
| $P$ | 3.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 25 | 691 | 0.8+ | 0.9+ | 2002 08 16 | 644 | 0.3− | 0.2+ | 2005 05 30 | E12 | 0.1− | 0.1− |
| 1992 09 25 | 691 | 0.7− | 0.3+ | 2002 08 16 | 644 | 1.2− | 0.9+ | 2005 05 30 | E12 | 0.0 | 0.6+ |
| 1992 09 25 | 691 | 0.6− | 0.8+ | 2003 12 19 | 704 | 0.0 | 0.6+ | 2005 07 05 | G96 | 0.1− | 0.2− |
| 2001 03 03 | 704 | 0.1+ | 0.4+ | 2003 12 19 | 704 | 0.3+ | 0.4+ | 2005 07 05 | G96 | 0.3− | 0.1+ |
| 2001 03 03 | 704 | 0.7+ | 0.1+ | 2003 12 19 | 704 | 0.7− | 0.2+ | 2005 07 05 | G96 | 0.1+ | 0.0 |
| 2001 03 03 | 704 | 0.6+ | 1.0+ | 2003 12 19 | 704 | 0.0 | 0.3+ | 2005 07 05 | G96 | 0.6+ | 0.0 |
| 2001 03 03 | 704 | 0.1+ | 1.5+ | 2003 12 22 | 704 | 0.3− | 0.3− | 2005 07 05 | 644 | 0.1− | 0.1+ |
| 2001 03 26 | 704 | 0.0 | 0.7+ | 2003 12 22 | 704 | 0.6+ | 1.3− | 2005 07 05 | 644 | 0.5+ | 0.2+ |
| 2001 03 26 | 704 | 0.8− | 0.2+ | 2003 12 22 | 704 | 0.1− | 0.1− | 2005 07 05 | 644 | 0.1+ | 0.1− |
| 2001 03 26 | 704 | (0.3− | 1.6+) | 2003 12 22 | 704 | 0.1− | 0.2+ | 2006 10 17 | 703 | 1.5+ | 0.6− |
| 2001 03 26 | 704 | 0.3− | 0.7+ | 2005 05 21 | G96 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.5+ |
| 2001 03 26 | 704 | 0.4− | 0.2+ | 2005 05 21 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2001 03 26 | 608 | 0.9+ | 0.5+ | 2005 05 21 | G96 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.0 |
| 2001 03 26 | 608 | 1.1+ | 0.4+ | 2005 05 21 | G96 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2001 03 26 | 608 | (0.8+ | 1.7+) | 2005 05 21 | G96 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.6− | 0.2− |
| 2002 08 05 | 644 | 0.4+ | 0.5+ | 2005 05 21 | G96 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2002 08 05 | 644 | 0.2+ | 0.3+ | 2005 05 21 | G96 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.0+ | 1.6− |
| 2002 08 05 | 644 | 0.5+ | 0.3+ | 2005 05 22 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.6− | 0.2+ |
| 2002 08 12 | 704 | (1.8− | 1.8+) | 2005 05 22 | 644 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2002 08 12 | 704 | 0.6− | 0.6− | 2005 05 22 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2002 08 12 | 704 | 0.3+ | 0.7− | 2005 05 30 | E12 | 0.8+ | 0.5− | | | | |
| 2002 08 16 | 644 | 0.2+ | 0.1− | 2005 05 30 | E12 | 1.2− | 0.4− | | | | |

**(145301)∗ 2005 KY$_8$**

Discovered 2005 May 20 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.41229 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22718116 | $\omega$ | 253.28516 | | +0.97222077 | | +0.04535788 |
| $a$ | 2.6600380 | $\Omega$ | 103.66105 | | +0.03527323 | | +0.94144938 |
| $e$ | 0.2849092 | $i$ | 13.66911 | | −0.23139267 | | +0.33408940 |
| $P$ | 4.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2005 05 20 | G96 | 0.3− | 0.3+ | 2006 10 31 | 704 | 1.2+ | 0.8− |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 10 31 | 704 | 1.4+ | 0.7− |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2005 05 20 | G96 | 0.3− | 0.1− | 2006 10 31 | 704 | (2.7+ | 1.7−) |
| 2002 12 05 | 704 | 0.6− | 0.9+ | 2005 05 27 | 461 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.6+ |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2005 05 27 | 461 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.0 | 1.3+ |
| 2002 12 31 | 704 | 1.1+ | 1.4+ | 2005 05 27 | 461 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.3+ |
| 2002 12 31 | 704 | 0.7+ | 0.5+ | 2005 05 28 | 461 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 1.1+ | 2005 05 28 | 461 | 0.3− | 0.0 | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2003 01 08 | 704 | 1.2− | 0.8+ | 2005 05 28 | 461 | 0.5+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.5+ |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2005 05 28 | 461 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.7− | 0.4− |
| 2003 01 08 | 704 | 1.1− | 0.1+ | 2005 06 29 | 644 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.8− | 0.3− |
| 2004 01 28 | 645 | 0.0 | 0.2− | 2005 06 29 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2004 01 28 | 645 | 0.0 | 0.2− | 2005 06 29 | 644 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2005 05 02 | 691 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.1− |
| 2005 05 02 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 699 | 0.9+ | 0.5− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2005 05 02 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.4− | 0.7+ | 2006 11 21 | 704 | 0.8− | 0.8+ |
| 2005 05 20 | G96 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.1+ | | | | |

**(145302)∗ 2005 KD$_9$**

Discovered 2005 May 16 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.27451 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23757240 | $\omega$ | 356.48691 | | −0.93461789 | | −0.35453716 |
| $a$ | 2.5818959 | $\Omega$ | 162.66643 | | +0.32856597 | | −0.89102950 |
| $e$ | 0.0876245 | $i$ | 5.42292 | | +0.13613891 | | −0.28349572 |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 05 | 691 | 0.2+ | 0.2− | 2003 12 22 | 704 | 0.6+ | 1.5+ | 2005 06 14 | 691 | 0.3+ | 0.0 |
| 1994 10 05 | 691 | 0.1+ | 0.2− | 2005 05 08 | 691 | 0.0 | 0.8+ | 2006 07 25 | G96 | 0.3+ | 0.2− |
| 1994 10 05 | 691 | 0.4− | 0.4+ | 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 07 25 | G96 | 0.2− | 0.0 |
| 2000 01 02 | 461 | 0.1− | 0.1+ | 2005 05 08 | 691 | 0.1− | 0.0 | 2006 07 25 | G96 | 0.1− | 0.4− |
| 2000 01 02 | 461 | 0.1+ | 0.5+ | 2005 05 16 | G96 | 0.3− | 0.2− | 2006 07 25 | G96 | 0.2− | 0.4− |
| 2000 01 02 | 461 | 0.5+ | 0.4+ | 2005 05 16 | G96 | 0.3− | 0.3− | 2006 08 27 | 691 | 0.1− | 0.5+ |
| 2000 02 04 | 704 | 0.3− | 0.2+ | 2005 05 16 | G96 | 0.2− | 0.2− | 2006 08 27 | 691 | 0.3− | 0.1+ |
| 2000 02 04 | 704 | 0.1+ | 0.2+ | 2005 05 16 | G96 | 0.8− | 0.3− | 2006 08 27 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 704 | 0.8− | 0.1− | 2005 05 28 | 599 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2005 05 28 | 599 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.7− | 0.5− |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2005 05 29 | 599 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2005 05 29 | 599 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.7− | 0.5− |
| 2002 09 13 | 644 | 0.1− | 0.5+ | 2005 06 09 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.4+ |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2005 06 09 | 691 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2003 12 22 | 704 | 0.3+ | 1.2+ | 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.0 | 1.0+ |
| 2003 12 22 | 704 | (1.6+ | 2.2+) | 2005 06 14 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2003 12 22 | 704 | (1.4+ | 1.7+) | 2005 06 14 | 691 | 0.1− | 0.0 | | | | |

**(145303)∗ 2005 KH$_9$ = 2002 PV$_{108}$**

Discovered 2005 May 28 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 86763)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 130.88268 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.29819091 | $\omega$ | 212.70855 | | −0.10550187 | | +0.99286161 |
| *a* | 2.2189105 | $\Omega$ | 51.29719 | | −0.89635350 | | −0.07072273 |
| *e* | 0.1268452 | *i* | 4.08806 | | −0.43060394 | | −0.09604229 |
| *P* | 3.31 | *H* | 17.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.3− | 0.2+ | 2002 08 15 | 644 | 0.1+ | 0.1− | 2005 06 26 | 644 | 0.5+ | 0.3+ |
| 1996 11 17 | 691 | 0.0 | 0.1+ | 2005 05 11 | 644 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 1996 11 17 | 691 | 0.2− | 0.5+ | 2005 05 11 | 644 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.3+ |
| 1998 03 02 | 809 | 1.6+ | 0.7+ | 2005 05 11 | 644 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.2− | 0.6+ |
| 1998 03 02 | 809 | 0.4− | 0.4+ | 2005 05 28 | 428 | (2.9− | 1.3+) | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 1998 03 02 | 809 | 0.3− | 0.6+ | 2005 05 28 | 428 | (1.9− | 2.4+) | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1998 03 25 | 704 | 0.3− | 0.7+ | 2005 05 29 | 428 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 1998 03 25 | 704 | 0.1+ | 0.6+ | 2005 05 29 | 428 | 0.8− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 1998 03 25 | 704 | 0.6+ | 1.1− | 2005 05 29 | 428 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 1998 03 25 | 704 | 0.4+ | 0.2+ | 2005 05 29 | E12 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.4− | 0.0 |
| 1998 03 25 | 704 | (5.0− | 0.2+) | 2005 05 29 | E12 | 0.3+ | 1.1+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2000 12 20 | 691 | 0.5− | 0.9− | 2005 05 29 | E12 | 0.4+ | 1.3+ | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2000 12 20 | 691 | 0.1+ | 0.2+ | 2005 05 29 | E12 | 0.4+ | 1.1+ | 2006 11 14 | 691 | 0.3+ | 0.3+ |
| 2000 12 20 | 691 | 0.2+ | 0.1+ | 2005 06 04 | 704 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.6− |
| 2002 08 13 | 704 | 0.6+ | 0.5+ | 2005 06 04 | 704 | 0.7− | 0.7− | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2002 08 13 | 704 | 0.6+ | 0.4+ | 2005 06 04 | 704 | 0.6− | 0.8− | 2006 11 21 | 704 | 0.5+ | 2.5+ |
| 2002 08 13 | 704 | (0.1+ | 1.7−) | 2005 06 04 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.1+ |
| 2002 08 13 | 704 | 0.0 | 1.1− | 2005 06 04 | 704 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 08 15 | 644 | 0.3− | 0.0 | 2005 06 26 | 644 | 0.1+ | 0.2+ | | | | |
| 2002 08 15 | 644 | 0.1− | 0.1− | 2005 06 26 | 644 | 0.0 | 0.3+ | | | | |

**(145304)∗ 2005 KZ$_9$**

Discovered 2005 May 30 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 92.97080 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.25852174 | $\omega$ | 18.72461 | | +0.25328781 | | +0.93485278 |
| *a* | 2.4404580 | $\Omega$ | 266.54731 | | −0.91634951 | | +0.14942163 |
| *e* | 0.1807881 | *i* | 14.43258 | | −0.31007880 | | +0.32206127 |
| *P* | 3.81 | *H* | 15.4 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.2− | 0.1+ | 2005 05 18 | E12 | 0.1+ | 0.2+ | 2005 07 01 | 703 | 0.9− | 0.1+ |
| 2002 10 06 | 704 | 0.4− | 0.6+ | 2005 05 18 | E12 | 0.4− | 0.2+ | 2005 07 03 | 644 | 0.3+ | 0.4+ |
| 2002 10 06 | 704 | 0.2− | 0.4+ | 2005 05 18 | E12 | 0.3− | 0.1+ | 2005 07 03 | 644 | 0.3+ | 0.2+ |
| 2002 10 06 | 704 | 0.1+ | 0.1− | 2005 05 18 | E12 | 0.0 | 0.0 | 2005 07 03 | 644 | 0.2+ | 0.2+ |
| 2002 10 06 | 704 | 0.2+ | 0.5+ | 2005 05 30 | 428 | 0.0 | 0.8− | 2006 10 23 | 703 | 0.5+ | 0.9+ |
| 2002 10 11 | 644 | 0.6+ | 0.4+ | 2005 05 30 | 428 | 0.3− | 0.7− | 2006 10 23 | 703 | 0.0 | 0.1+ |
| 2002 10 11 | 644 | 0.4+ | 0.2+ | 2005 05 31 | 428 | 0.3− | 0.4+ | 2006 10 23 | 703 | 1.4− | 1.5− |
| 2002 10 11 | 644 | 0.2+ | 0.3+ | 2005 05 31 | 428 | 0.7+ | 0.3+ | 2006 10 23 | 703 | 0.2− | 0.6− |
| 2002 11 11 | 699 | (1.8− | 1.2+) | 2005 05 31 | 428 | 0.6+ | 0.4− | 2006 10 29 | 703 | (2.0+ | 0.0 ) |
| 2002 11 11 | 699 | 0.9− | 1.0+ | 2005 06 03 | 428 | 0.6+ | 0.1+ | 2006 10 29 | 703 | 1.3+ | 0.4+ |
| 2002 11 11 | 699 | 0.8− | 0.2+ | 2005 06 16 | 428 | 0.1− | 0.4+ | 2006 10 29 | 703 | 0.2+ | 0.2− |
| 2002 11 11 | 699 | (0.3+ | 2.3−) | 2005 06 16 | 428 | 0.3− | 0.1+ | 2006 10 29 | 703 | 0.6− | 0.4+ |
| 2002 11 13 | 446 | 0.6+ | 1.2− | 2005 06 26 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 703 | 0.6− | 0.1+ |
| 2002 11 13 | 446 | 0.1+ | 0.4− | 2005 06 26 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 703 | (0.2− | 3.2−) |
| 2002 11 13 | 446 | (1.7+ | 0.3+) | 2005 06 26 | 644 | 0.3+ | 0.2+ | 2006 11 21 | 703 | (1.7+ | 1.8−) |
| 2004 01 17 | 608 | 0.4+ | 0.2+ | 2005 07 01 | 703 | 0.3+ | 0.1+ | 2006 11 21 | 703 | 0.7+ | 0.2− |
| 2004 01 17 | 608 | 0.1+ | 0.6+ | 2005 07 01 | 703 | 0.8− | 0.5+ | | | | |
| 2004 01 17 | 608 | 0.2+ | 1.1+ | 2005 07 01 | 703 | 0.3− | 0.3+ | | | | |

**(145305)∗ 2005 KT$_{10}$**

Discovered 2005 May 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 67.73345 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.25173762 | $\omega$ | 207.32917 | | +0.62948067 | | +0.76473633 |
| *a* | 2.4841089 | $\Omega$ | 102.01270 | | −0.68474127 | | +0.62965906 |
| *e* | 0.1787920 | *i* | 8.08695 | | −0.36726487 | | +0.13677648 |
| *P* | 3.92 | *H* | 16.3 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1− | 0.1+ | 2005 05 14 | 644 | 0.1− | 0.1− | 2005 06 23 | 644 | 0.1− | 0.2− |
| 1998 09 19 | 645 | 0.1− | 0.1+ | 2005 05 14 | 644 | 0.1+ | 0.4+ | 2005 06 23 | 644 | 0.0 | 0.0 |
| 2001 05 22 | 699 | 0.5+ | 0.3+ | 2005 05 14 | 644 | 0.1− | 0.2+ | 2005 06 28 | 644 | 0.1+ | 0.1− |
| 2001 05 22 | 699 | 1.1+ | 0.4+ | 2005 05 14 | 644 | 0.0 | 0.2+ | 2005 06 28 | 644 | 0.1+ | 0.2+ |
| 2001 05 22 | 699 | 0.4+ | 0.5+ | 2005 05 14 | 644 | 0.1− | 0.0 | 2005 06 28 | 644 | 0.1− | 0.4+ |
| 2001 05 22 | 699 | 0.0 | 0.1− | 2005 05 14 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.0− | 0.7− |
| 2002 10 31 | 704 | 0.8− | 0.4+ | 2005 05 16 | 704 | (0.4+ | 1.5+) | 2006 10 16 | 703 | 1.4− | 0.5+ |
| 2002 10 31 | 704 | (0.9− | 1.6+) | 2005 05 16 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.6+ | 2005 05 16 | 704 | (1.6+ | 0.0 ) | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2002 10 31 | 704 | 1.2− | 0.1+ | 2005 05 16 | 704 | (1.5+ | 0.4−) | 2006 10 31 | A50 | 0.4− | 0.3− |
| 2002 10 31 | 704 | 0.6− | 0.1− | 2005 05 31 | 699 | 0.2+ | 0.3− | 2006 10 31 | A50 | 0.2+ | 0.3+ |
| 2002 11 06 | 699 | (2.4− | 3.5+) | 2005 05 31 | 699 | 0.2+ | 0.8+ | 2006 11 01 | 703 | 1.0+ | 0.5+ |
| 2002 11 06 | 699 | 0.1+ | 1.4+ | 2005 05 31 | 699 | 0.8− | 0.6+ | 2006 11 01 | 703 | 0.6− | 0.7+ |
| 2002 11 06 | 699 | 0.3+ | 0.6+ | 2005 05 31 | 699 | 0.6+ | 1.4+ | 2006 11 01 | 703 | 0.4+ | 0.7+ |
| 2002 11 06 | 699 | (0.3− | 1.6+) | 2005 06 01 | 691 | 0.0 | 0.1+ | 2006 11 01 | 703 | 0.6− | 0.2+ |
| 2004 01 16 | 644 | 0.2+ | 0.7+ | 2005 06 01 | 691 | 0.1− | 0.8+ | 2006 11 19 | 703 | 0.6+ | 2.0+ |
| 2004 01 16 | 644 | 0.1+ | 0.8+ | 2005 06 01 | 691 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.2− | 1.5+ |
| 2004 01 16 | 644 | 0.1+ | 0.9+ | 2005 06 05 | 691 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.8+ |
| 2004 02 18 | 691 | 0.1+ | 0.3+ | 2005 06 05 | 691 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.0 | 0.3− |
| 2004 02 18 | 691 | 0.1+ | 0.3+ | 2005 06 05 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.4+ |
| 2004 02 18 | 691 | 0.1+ | 0.2+ | 2005 06 09 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.7+ | 0.3+ |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2005 06 09 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.3+ |
| 2005 04 17 | 691 | 0.2+ | 0.2+ | 2005 06 09 | 691 | 0.7+ | 0.9+ | 2006 11 23 | G96 | 0.2+ | 0.3+ |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.1+ | | | | |

**(145306)∗ 2005 KC$_{11}$ = 2004 BT$_{34}$**

Discovered 2005 May 28 by CINEOS at Campo Imperatore.

Id. G. V. Williams (*MPO* 77266)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 70.76486 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.26409002 | $\omega$ | 204.32337 | | +0.65923983 | | +0.74177986 |
| *a* | 2.4060319 | $\Omega$ | 107.16916 | | −0.66704567 | | +0.65251313 |
| *e* | 0.1064838 | *i* | 7.40557 | | −0.34706329 | | +0.15488463 |
| *P* | 3.73 | *H* | 16.8 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | (0.8+ | 1.7−) | 2005 05 28 | 599 | 0.4+ | 0.1+ | 2006 10 22 | 703 | (2.7− | 0.6+) |
| 2002 10 05 | 704 | 0.1− | 0.3− | 2005 05 28 | 599 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.1+ | 0.1− | 2005 05 29 | 599 | 1.3+ | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.7+ |
| 2004 01 19 | 691 | 0.2+ | 0.3+ | 2005 06 02 | 703 | 0.6− | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.8+ |
| 2004 01 19 | 691 | 0.2+ | 0.4+ | 2005 06 02 | 703 | 1.5− | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2004 01 19 | 691 | 0.0 | 0.4+ | 2005 06 02 | 703 | 0.8− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.5+ |
| 2004 01 22 | 704 | 0.4− | 0.7− | 2005 06 02 | 703 | 0.8− | 0.3+ | 2006 11 08 | 644 | 0.6+ | 1.0+ |
| 2004 01 22 | 704 | 0.9+ | 0.8+ | 2005 06 04 | 691 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.5− | 0.7+ |
| 2004 01 22 | 704 | 0.0 | 0.8+ | 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2004 01 22 | 704 | 0.9+ | 1.3+ | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.6+ |
| 2004 02 17 | 691 | 0.2+ | 0.2+ | 2005 06 09 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.8+ |
| 2004 02 17 | 691 | 0.2+ | 0.1+ | 2005 06 09 | 691 | 0.1− | 0.0 | 2006 11 19 | 703 | (2.2− | 0.2+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.5− | 0.8+ |
| 2004 02 17 | 645 | 0.1− | 0.2− | 2005 06 14 | 691 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 0.9− | 0.1− |
| 2004 02 17 | 645 | 0.1− | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.8− | 1.0− |
| 2005 04 30 | 691 | (2.6+ | 3.7+) | 2005 06 14 | 691 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.3+ |
| 2005 04 30 | 691 | 0.1− | 0.2+ | 2005 06 27 | 644 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2005 04 30 | 691 | 0.1+ | 0.1− | 2005 06 27 | 644 | 0.6+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.3+ |
| 2005 05 04 | 691 | 0.1+ | 0.2+ | 2005 06 27 | 644 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.3− | 0.4+ |
| 2005 05 04 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.2− | 1.4+ | | | | |
| 2005 05 04 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | (1.8+ | 2.1−) | | | | |

**(145307)∗ 2005 KA$_{12}$ = 1996 EQ$_{14}$ = 2000 CP$_{148}$ = 2001 KO$_{50}$ = 2004 DQ$_{76}$**

Discovered 2005 May 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 77266), A. Doppler (*MPO* 86766)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.11541 | | (2000.0) | | | |
| $n$ | 0.24523775 | $\omega$ | 184.47778 | | +0.92556011 | +0.37602829 |
| $a$ | 2.5278104 | $\Omega$ | 153.30079 | | −0.34424301 | +0.88428866 |
| $e$ | 0.2557576 | $i$ | 5.62748 | | −0.15759197 | +0.27683261 |
| $P$ | 4.02 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 1.2+ | 0.6− | 2002 12 05 | 608 | (0.4+ | 1.5+) | 2005 06 07 | 699 | 0.0 | 0.2+ |
| 1996 03 12 | 691 | 0.3+ | 0.1− | 2002 12 05 | 608 | (0.2+ | 1.7+) | 2005 06 07 | 699 | 1.1− | 0.1+ |
| 1996 03 12 | 691 | 1.0+ | 0.2− | 2002 12 05 | 608 | 0.4+ | 1.3+ | 2005 06 07 | 699 | 0.3− | 0.9− |
| 1996 03 17 | 691 | 1.2− | 0.3− | 2002 12 10 | 644 | 0.1− | 0.3+ | 2005 06 13 | 691 | 0.0 | 0.4+ |
| 1996 03 17 | 691 | 0.9− | 0.3− | 2002 12 10 | 644 | 0.3+ | 0.4+ | 2005 06 13 | 691 | 0.0 | 0.2+ |
| 1996 03 17 | 691 | 0.9− | 0.3− | 2002 12 10 | 644 | 0.0 | 0.5+ | 2005 06 13 | 691 | 0.1− | 0.3+ |
| 2000 02 05 | 695 | 0.2− | 0.4+ | 2004 02 18 | 291 | 0.2− | 0.3+ | 2006 11 02 | 703 | 1.0− | 0.0 |
| 2000 02 05 | 695 | 0.1− | 0.2+ | 2004 02 18 | 291 | 0.1+ | 0.3+ | 2006 11 02 | 703 | 1.5− | 0.6+ |
| 2000 02 11 | 691 | 0.0 | 0.2− | 2004 02 18 | 291 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.4− | 0.5+ |
| 2000 02 11 | 691 | 0.5+ | 0.2− | 2004 02 29 | 691 | 0.4− | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.2− |
| 2000 02 11 | 691 | 0.4+ | 0.5− | 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.9+ | 1.5+ |
| 2001 05 26 | 704 | 1.2+ | 0.6− | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.8+ | 0.5− |
| 2001 05 26 | 704 | 0.9− | 0.8+ | 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.9+ | 0.9+ |
| 2001 05 26 | 704 | (2.1− | 2.5+) | 2005 05 08 | 691 | 0.4+ | 0.3+ | 2006 11 15 | 703 | (3.3− | 0.0 ) |
| 2001 05 26 | 046 | 0.2+ | 0.6+ | 2005 05 08 | 704 | 1.4+ | 0.3− | 2006 11 17 | 704 | (0.5+ | 1.8+) |
| 2001 05 26 | 046 | 0.1+ | 0.6+ | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.6− | 0.3− |
| 2001 05 26 | 046 | 0.7+ | 0.5+ | 2005 05 08 | 704 | 0.8+ | 0.8+ | 2006 11 17 | 704 | 0.3+ | 0.1+ |
| 2001 05 26 | 046 | 0.1− | 0.1+ | 2005 05 08 | 704 | 0.0 | 0.9− | 2006 11 17 | 704 | 0.3− | 0.8+ |
| 2001 05 26 | 046 | 1.1− | 0.0 | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.1+ | 1.4+ |
| 2001 05 27 | 711 | 0.2+ | 0.1+ | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.4+ |
| 2001 05 27 | 711 | 0.0 | 0.3+ | 2005 05 16 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2001 05 27 | 711 | 0.0 | 0.4+ | 2005 05 31 | 699 | 0.1− | 0.1− | 2006 11 18 | 704 | (0.5+ | 1.5+) |
| 2001 05 27 | 649 | 0.2+ | 1.5+ | 2005 05 31 | 699 | 0.0 | 0.8+ | 2006 11 25 | 703 | 1.0− | 0.3− |
| 2001 05 27 | 649 | 1.0− | 0.6− | 2005 05 31 | 699 | 0.5+ | 0.0 | 2006 11 25 | 703 | 0.0 | 0.3+ |
| 2001 05 27 | 649 | 0.7− | 0.6+ | 2005 05 31 | 699 | 0.4+ | 0.2− | 2006 11 25 | 703 | 0.0 | 0.8+ |
| 2002 12 01 | 704 | 0.3− | 0.6+ | 2005 06 04 | 703 | (1.1+ | 1.7+) | 2006 11 25 | 703 | 0.5− | 0.2− |
| 2002 12 01 | 704 | 0.1+ | 0.3+ | 2005 06 04 | 703 | 0.7− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.5+ |
| 2002 12 01 | 704 | 1.4− | 0.6− | 2005 06 04 | 703 | 0.1+ | 0.7+ | 2006 11 28 | 704 | 0.1+ | 1.1+ |
| 2002 12 01 | 704 | 0.1− | 0.2+ | 2005 06 04 | 703 | (2.8− | 1.3+) | 2006 11 28 | 704 | 0.7+ | 0.9+ |
| 2002 12 05 | 704 | 0.9− | 1.3+ | 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.6+ | 0.6+ |
| 2002 12 05 | 704 | 0.1+ | 1.0+ | 2005 06 05 | 691 | 0.2− | 0.2+ | 2006 11 28 | 704 | 1.1− | 0.5− |
| 2002 12 05 | 704 | 0.3− | 0.8+ | 2005 06 05 | 691 | 0.1+ | 0.2+ | | | | |
| 2002 12 05 | 704 | 0.1+ | 0.7+ | 2005 06 07 | 699 | 0.5− | 0.2+ | | | | |

**(145308)∗ 2005 LD$_1$**

Discovered 2005 June 1 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.18221 | | (2000.0) | | | |
| $n$ | 0.25759687 | $\omega$ | 141.17108 | | +0.46568380 | +0.88472944 |
| $a$ | 2.4462960 | $\Omega$ | 156.56336 | | −0.82384303 | +0.44159244 |
| $e$ | 0.1964097 | $i$ | 2.85486 | | −0.32314279 | +0.14916414 |
| $P$ | 3.83 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 691 | 0.1− | 0.3+ | 2005 06 01 | 428 | 0.9− | 0.9+ | 2005 07 05 | 644 | 0.0 | 0.5+ |
| 2001 04 15 | 691 | 0.1− | 0.4+ | 2005 06 01 | 428 | 0.6− | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2001 04 15 | 691 | 0.1− | 0.4+ | 2005 06 03 | 703 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 05 14 | 691 | 0.3+ | 0.2− | 2005 06 03 | 703 | 1.0− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2001 05 14 | 691 | 0.0 | 0.3− | 2005 06 03 | 703 | 0.5− | 0.7− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 05 14 | 691 | 0.1+ | 0.2− | 2005 06 03 | 703 | 0.4− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2004 01 28 | 691 | 0.1+ | 0.7− | 2005 06 03 | 428 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2004 01 28 | 691 | 0.1+ | 0.2− | 2005 06 03 | 428 | 0.6+ | 0.3− | 2006 11 15 | 691 | 0.3− | 0.4+ |
| 2004 01 28 | 691 | 0.0 | 0.9+ | 2005 06 03 | 428 | 0.4+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2005 05 15 | G96 | 0.2− | 0.1− | 2005 06 16 | 428 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2005 05 15 | G96 | 0.1− | 0.1− | 2005 06 16 | 428 | 0.2+ | 1.0+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2005 05 15 | G96 | 0.1− | 0.2− | 2005 06 23 | 644 | 0.4+ | 0.2+ | 2006 11 24 | 691 | 0.3− | 0.5+ |
| 2005 05 15 | G96 | 0.1− | 0.0 | 2005 06 23 | 644 | 0.1+ | 0.5+ | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2005 06 01 | 691 | 0.4+ | 0.3+ | 2005 06 23 | 644 | 0.2+ | 0.5+ | 2006 11 24 | 691 | 0.2+ | 0.6+ |
| 2005 06 01 | 691 | 0.3+ | 0.4+ | 2005 07 05 | 644 | 0.1+ | 0.3+ | | | | |
| 2005 06 01 | 691 | 0.2+ | 0.4+ | 2005 07 05 | 644 | 0.1+ | 0.4+ | | | | |

**(145309)∗ 2005 LE$_1$ = 1998 SJ$_{96}$ = 2004 CH$_{28}$**

Discovered 2005 June 1 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 86767)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.72539 | | (2000.0) | | | |
| $n$ | 0.26053062 | $\omega$ | 171.24265 | | +0.38710856 | +0.92058706 |
| $a$ | 2.4278967 | $\Omega$ | 121.51725 | | −0.84957588 | +0.37788975 |
| $e$ | 0.1896452 | $i$ | 3.47271 | | −0.35828452 | +0.09858396 |
| $P$ | 3.78 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.9− | 0.8+ | 2004 02 14 | 691 | 0.3+ | 0.4+ | 2005 06 03 | 428 | 0.2− | 0.3− |
| 1998 09 26 | 704 | 0.9− | 1.0+ | 2004 02 14 | 691 | 0.1+ | 0.2+ | 2005 06 08 | 691 | 0.7+ | 0.3+ |
| 1998 09 26 | 704 | 0.5+ | 0.9− | 2005 05 03 | 703 | (2.6+ | 0.9−) | 2005 06 08 | 691 | 0.3− | 0.4+ |
| 1998 09 26 | 704 | 0.6− | 0.6+ | 2005 05 03 | 703 | 0.5+ | 0.5+ | 2005 06 08 | 691 | 0.3− | 0.4+ |
| 1998 09 27 | 704 | 0.1− | 0.6− | 2005 05 03 | 703 | 1.2− | 0.3− | 2005 06 23 | 644 | 0.2+ | 0.2+ |
| 1998 09 27 | 704 | 1.6+ | 1.6+ | 2005 05 03 | 703 | 0.0 | 0.2− | 2005 06 23 | 644 | 0.0 | 0.2+ |
| 1998 09 27 | 704 | 1.4− | 0.3+ | 2005 06 01 | 691 | 0.3+ | 0.5+ | 2005 06 23 | 644 | 0.3+ | 0.2+ |
| 1998 09 27 | 704 | 0.3− | 0.0 | 2005 06 01 | 691 | 0.4+ | 0.5+ | 2006 10 22 | G96 | 0.4+ | 0.1+ |
| 2001 05 24 | 645 | 0.1+ | 0.1− | 2005 06 01 | 691 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 05 24 | 645 | 0.0 | 0.1− | 2005 06 01 | 428 | 0.2+ | 0.6− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 10 15 | 644 | 0.0 | 0.3+ | 2005 06 01 | 428 | 0.7− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2002 10 15 | 644 | 0.2− | 0.2− | 2005 06 02 | E12 | 0.8− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2002 10 15 | 644 | 0.1− | 0.1+ | 2005 06 02 | E12 | 0.4− | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.2+ |
| 2004 01 19 | 691 | 0.3− | 0.3+ | 2005 06 02 | E12 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2004 01 19 | 691 | 0.5− | 0.4+ | 2005 06 02 | E12 | 0.7− | 0.8− | 2006 11 12 | G96 | 0.2− | 0.1− |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2005 06 03 | 703 | 0.5− | 0.5+ | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2005 06 03 | 703 | 0.6− | 0.4− | 2006 11 24 | 691 | 0.5+ | 0.3+ |
| 2004 02 12 | 691 | 0.3− | 0.0 | 2005 06 03 | 703 | 0.3− | 0.4− | 2006 11 24 | 691 | 0.0 | 0.7+ |
| 2004 02 12 | 691 | 0.1+ | 0.5+ | 2005 06 03 | 703 | 0.5− | 0.5+ | | | | |
| 2004 02 14 | 691 | 0.1− | 0.0 | 2005 06 03 | 428 | 0.4+ | 0.2+ | | | | |

**(145310)∗ 2005 LF$_1$**

Discovered 2005 June 1 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 75.98235 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26054847 | $\omega$ | 93.06350 | | | +0.63787839 | | +0.76766385 | |
| $a$ | 2.4277858 | $\Omega$ | 216.80714 | | | −0.74115234 | | +0.59013746 | |
| $e$ | 0.1337163 | $i$ | 5.90828 | | | −0.20929495 | | +0.24985994 | |
| $P$ | 3.78 | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 691 | 0.2+ | 0.7+ | 2005 06 03 | 703 | 1.0− | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2001 04 26 | 691 | 0.1+ | 0.5+ | 2005 06 03 | 703 | 0.6− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2001 04 26 | 691 | 0.3+ | 0.7+ | 2005 06 03 | 703 | 0.9− | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.4− |
| 2001 05 25 | 691 | 0.2+ | 0.2+ | 2005 06 03 | 428 | 1.1+ | 1.2+ | 2006 09 27 | G96 | 0.4+ | 0.0 |
| 2001 05 25 | 691 | 0.0 | 0.5+ | 2005 06 03 | 428 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2001 05 25 | 691 | 0.1− | 0.0 | 2005 06 05 | 704 | 1.2+ | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2005 06 05 | 704 | (1.6+ | 0.1−) | 2006 10 19 | G96 | 0.6+ | 0.0 |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2005 06 05 | 704 | 0.8+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | (1.8+ | 0.4+) | 2005 06 06 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.7+ | 0.2+ | 2005 06 06 | 691 | 0.1− | 0.6− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2002 10 18 | 644 | 0.5− | 0.9+ | 2005 06 06 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2002 10 18 | 644 | 0.4− | 0.6+ | 2005 06 10 | 691 | (0.1+ | 1.9+) | 2006 11 14 | 691 | 0.2− | 0.6+ |
| 2002 10 18 | 644 | 0.3− | 0.5+ | 2005 06 10 | 691 | 0.4− | 0.3+ | 2006 11 14 | 691 | 0.4+ | 0.5+ |
| 2002 10 30 | 644 | 0.2+ | 0.6+ | 2005 06 10 | 691 | 0.3− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.6+ |
| 2002 10 30 | 644 | 0.2− | 0.3− | 2005 06 16 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2002 10 30 | 644 | 0.2− | 0.7+ | 2005 06 16 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.9− | 0.8+ |
| 2005 05 20 | G96 | 0.1+ | 0.3+ | 2005 06 16 | 691 | 0.4+ | 0.1− | 2006 11 17 | 703 | (3.4− | 0.4−) |
| 2005 05 20 | G96 | 0.4− | 0.1+ | 2005 06 30 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2005 05 20 | G96 | 0.2− | 0.1+ | 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.8− |
| 2005 05 20 | G96 | 0.0 | 0.0 | 2005 06 30 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2005 06 01 | 428 | 0.8− | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.6− |
| 2005 06 01 | 428 | 0.4+ | 0.8+ | 2005 07 05 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | 1.0+ | 0.3− |
| 2005 06 03 | 703 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.3+ | | | | |

## (145311)∗ 2005 LH$_1$ = 2001 QO$_{275}$

Discovered 2005 June 3 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 77268)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 29.82030 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22125033 | $\omega$ | 111.50500 | | | +0.95420505 | | +0.24850677 | |
| $a$ | 2.7073647 | $\Omega$ | 234.47896 | | | −0.28744300 | | +0.91586996 | |
| $e$ | 0.1976679 | $i$ | 11.80754 | | | +0.08288091 | | +0.31531984 | |
| $P$ | 4.45 | $H$ | 14.6 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 691 | 0.0 | 0.2− | 2005 06 05 | 704 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 1997 12 04 | 691 | 0.2+ | 0.3+ | 2005 06 05 | 704 | 0.2− | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1997 12 04 | 691 | 0.4− | 0.2− | 2005 06 05 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2001 05 29 | 704 | 0.3+ | 0.1− | 2005 06 06 | 691 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2001 05 29 | 704 | 1.1+ | 0.5+ | 2005 06 06 | 691 | 0.0 | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2001 05 29 | 704 | 0.8− | 0.2+ | 2005 06 06 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2001 05 29 | 704 | 1.0+ | 0.2+ | 2005 06 13 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.8+ |
| 2001 07 13 | 608 | 0.4+ | 0.4+ | 2005 06 13 | 691 | 0.8+ | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2001 07 13 | 608 | 0.7+ | 0.2− | 2005 06 13 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 2001 07 13 | 608 | 0.3+ | 0.2+ | 2006 08 24 | 704 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.0 | 0.0 |
| 2001 08 19 | 608 | 0.8− | 1.0− | 2006 08 24 | 704 | 0.8+ | 1.2+ | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 2001 08 19 | 608 | 0.6− | 1.0− | 2006 08 24 | 704 | 0.7+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2001 08 19 | 608 | 0.7− | 1.1− | 2006 08 30 | 704 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 08 20 | 704 | 0.1+ | 0.4− | 2006 08 30 | 704 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2001 08 20 | 704 | 0.4+ | 0.1− | 2006 08 30 | 704 | 0.7+ | 0.7+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 08 20 | 704 | 0.3+ | 0.5− | 2006 08 30 | 704 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2001 08 20 | 704 | 0.4+ | 0.4− | 2006 08 30 | 704 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2001 08 20 | 704 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2001 10 11 | 704 | 1.4+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.7− | 0.4+ |
| 2001 10 11 | 704 | 0.0 | 0.5− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2001 10 11 | 704 | 0.5− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2001 10 11 | 704 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 11 11 | 704 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2002 11 11 | 704 | 0.1+ | 0.3− | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2003 01 05 | 704 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2003 01 05 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.8+ | 0.6+ | 2006 10 19 | 704 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.5+ | 0.2− |
| 2003 01 05 | 704 | 0.3− | 0.7+ | 2006 10 19 | 704 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2003 01 05 | 704 | 1.0+ | 1.2+ | 2006 10 19 | 704 | 1.0− | 0.6− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2005 05 09 | 704 | 0.7− | 0.4− | 2006 10 21 | 704 | 0.1+ | 0.8+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2005 05 09 | 704 | 0.4− | 0.4+ | 2006 10 21 | 704 | (0.3− | 1.7+) | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2005 05 09 | 704 | (1.5− | 1.4−) | 2006 10 21 | 704 | 0.5− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2005 05 09 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 704 | 0.7− | 0.6+ | 2006 11 26 | 704 | 0.7− | 0.2− |
| 2005 05 09 | 704 | 1.3− | 0.4− | 2006 10 21 | 704 | 0.7− | 1.0+ | 2006 11 26 | 704 | 0.0 | 1.0+ |
| 2005 05 09 | 704 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 26 | 704 | 0.1+ | 0.2+ |
| 2005 05 09 | 704 | 0.1− | 0.7− | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 26 | 704 | 1.4− | 1.0+ |
| 2005 05 09 | 704 | 0.4− | 1.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2005 05 09 | 704 | 0.7− | 0.9− | 2006 10 27 | 703 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2005 05 09 | 704 | 1.2− | 1.0+ | 2006 10 27 | 703 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2005 05 19 | G96 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2005 05 19 | G96 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.2+ | 0.2− |
| 2005 05 19 | G96 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.3+ | 0.1+ |
| 2005 05 19 | G96 | 0.1+ | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.2− | 0.5− |
| 2005 06 03 | 703 | 0.2− | 0.3− | 2006 10 29 | 704 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.1− |
| 2005 06 03 | 703 | 0.1− | 0.9+ | 2006 10 29 | 704 | 0.8− | 0.3+ | 2006 11 29 | 704 | 0.7+ | 0.2+ |
| 2005 06 03 | 703 | 0.3+ | 0.8+ | 2006 10 29 | 704 | 0.5− | 0.3− | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2005 06 03 | 703 | 0.7− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.4+ |
| 2005 06 03 | 428 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2005 06 03 | 428 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2005 06 04 | 428 | 1.4− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.3− | | | | |
| 2005 06 04 | 428 | 0.6− | 1.0+ | 2006 11 08 | 644 | 0.3− | 0.1− | | | | |

## (145312)∗ 2005 LB$_3$ = 2002 AF$_{206}$

Discovered 2005 June 3 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 77268)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 60.91379 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18389985 | $\omega$ | 190.69024 | | | +0.23682334 | | +0.93101914 | |
| $a$ | 3.0625402 | $\Omega$ | 93.44038 | | | −0.86959597 | | +0.33059411 | |
| $e$ | 0.1676991 | $i$ | 16.15297 | | | −0.43326384 | | −0.15463152 | |
| $P$ | 5.36 | $H$ | 14.9 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 699 | (2.3− | 1.2−) | 2005 05 03 | 703 | 0.2− | 0.5+ | 2005 06 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 699 | (1.5− | 0.4+) | 2005 05 03 | 703 | 0.6− | 0.9+ | 2005 06 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 699 | 0.8+ | 0.0 | 2005 05 09 | 703 | 1.3− | 0.7− | 2005 06 30 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 699 | 0.7− | 1.2+ | 2005 05 09 | 703 | 1.1− | 0.5− | 2005 06 30 | 691 | 0.1+ | 0.1+ |
| 2001 10 28 | 644 | 0.4− | 0.5+ | 2005 05 09 | 703 | 0.4− | 0.3− | 2005 06 30 | 691 | 0.1+ | 0.1+ |
| 2001 10 28 | 644 | 0.8− | 0.6+ | 2005 05 09 | 703 | 0.2− | 0.1− | 2005 07 05 | 644 | 0.1+ | 0.0 |
| 2001 10 28 | 644 | 0.8− | 0.9+ | 2005 06 03 | E12 | 0.0 | 0.5− | 2005 07 05 | 644 | 0.3− | 0.1+ |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2005 06 03 | E12 | 0.4+ | 0.3− | 2005 07 05 | 644 | 0.1− | 0.1− |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2005 06 03 | E12 | 0.0 | 0.0 | 2005 08 05 | 644 | 0.7− | 0.3+ |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2005 06 03 | E12 | 0.1− | 0.7− | 2005 08 05 | 644 | 0.0 | 0.0 |
| 2002 01 14 | 645 | 0.1− | 0.1+ | 2005 06 04 | 691 | (1.1+ | 2.1+) | 2005 08 05 | 644 | 0.3− | 0.0 |
| 2004 02 15 | 704 | 0.3− | 0.3+ | 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.6− | 0.5− |
| 2004 02 15 | 704 | 0.8+ | 0.4+ | 2005 06 04 | 691 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.9− | 0.3− |
| 2004 02 15 | 644 | 0.0 | 0.7+ | 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.4− | 0.0 |
| 2004 02 15 | 704 | 0.3− | 1.3+ | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.8+ | 0.1+ |
| 2004 02 15 | 704 | 1.0+ | 1.0+ | 2005 06 11 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.7+ | 1.1+ |
| 2004 02 15 | 644 | 0.1+ | 0.6+ | 2005 06 15 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.0 |
| 2004 02 15 | 644 | 0.4+ | 0.4+ | 2005 06 15 | 691 | 0.3+ | 0.8+ | 2006 09 27 | 703 | (0.4− | 1.6+) |
| 2004 03 17 | 644 | 0.1+ | 0.7+ | 2005 06 15 | 691 | 0.2+ | 0.3+ | 2006 10 12 | E12 | 0.2− | 0.2+ |
| 2004 03 17 | 644 | 0.1+ | 0.7+ | 2005 06 24 | 644 | 0.0 | 0.1− | 2006 10 12 | E12 | 0.1+ | 0.1+ |
| 2004 03 17 | 644 | 0.5+ | 0.6+ | 2005 06 24 | 644 | 0.1+ | 0.3− | 2006 10 12 | E12 | 0.4+ | 1.3+ |
| 2005 05 03 | 703 | 0.1+ | 0.4+ | 2005 06 24 | 644 | 0.1− | 0.1− | 2006 10 12 | E12 | 0.1− | 0.3+ |
| 2005 05 03 | 703 | 0.7− | 0.6+ | 2005 06 27 | 691 | 0.2+ | 0.6− | | | | |

**(145313)∗ 2005 LK$_3$ = 2001 MB$_7$**

Discovered 2005 June 3 by the Catalina Sky Survey.

Id. T. B. Spahr (*MPO* 86770)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.16134 | | (2000.0) | | | |
| $n$ | 0.22679714 | $\omega$ | 125.68433 | | +0.97713290 | −0.11189156 |
| $a$ | 2.6630399 | $\Omega$ | 241.37355 | | +0.05383658 | +0.95282668 |
| $e$ | 0.2727028 | $i$ | 11.88732 | | +0.20570106 | +0.28213754 |
| $P$ | 4.35 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.5− | 0.2− | 2006 10 29 | 704 | 0.6+ | 0.3+ |
| 2001 06 21 | 704 | 0.9+ | 0.4+ | 2006 08 30 | 704 | 0.7− | 0.7− | 2006 10 29 | 704 | 0.1+ | 0.3− |
| 2001 06 21 | 704 | 0.7+ | 0.1− | 2006 08 30 | 704 | 0.8− | 0.1− | 2006 10 29 | 704 | 0.1− | 0.4+ |
| 2001 06 24 | 704 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.4− | 0.8− | 2006 10 29 | 704 | 0.6+ | 0.3− |
| 2001 06 24 | 704 | 0.8− | 0.4+ | 2006 08 30 | 704 | 0.1+ | 1.0− | 2006 10 29 | 704 | 0.1+ | 0.1− |
| 2001 06 24 | 704 | 0.3− | 0.5+ | 2006 09 18 | 704 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.6− |
| 2001 11 10 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.6− | 1.1+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2001 11 10 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2001 11 10 | 704 | 0.7− | 1.2− | 2006 09 18 | 704 | 0.8+ | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2002 10 04 | 644 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.9+ | 0.8+ | 2006 11 03 | 704 | 1.1− | 0.4+ |
| 2002 10 04 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 11 03 | 704 | 1.1− | 0.5− |
| 2002 10 04 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.5+ | 2006 11 03 | 704 | 0.6− | 0.2− |
| 2002 11 07 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 03 | 704 | 0.8− | 0.6+ |
| 2002 11 07 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | (1.8+ | 0.5+) | 2006 09 20 | 704 | (2.8+ | 0.8+) | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.0 | 0.3+ | 2006 09 20 | 704 | (2.5+ | 0.3+) | 2006 11 10 | 644 | 1.0− | 0.7+ |
| 2002 12 14 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 704 | (3.2+ | 0.5+) | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 2002 12 14 | 704 | 0.7− | 0.1+ | 2006 09 20 | 704 | (2.8+ | 0.6+) | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2002 12 14 | 704 | 0.7+ | 1.1− | 2006 09 20 | 704 | (2.6+ | 0.4+) | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.0 | 0.6+ | 2006 09 21 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 09 21 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2003 01 05 | 704 | 0.1+ | 0.9+ | 2006 09 21 | 704 | 0.9− | 0.7+ | 2006 11 11 | 703 | 1.0+ | 1.0− |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2006 09 21 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2005 05 21 | G96 | 0.3− | 0.3+ | 2006 09 21 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2005 05 21 | G96 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.8+ | 0.4− | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2005 05 21 | G96 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2005 05 21 | G96 | 0.3− | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2005 06 03 | 703 | 0.8− | 0.4− | 2006 09 25 | 704 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.5− | 0.0 |
| 2005 06 03 | 703 | 0.5+ | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.2− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2005 06 03 | 703 | 0.4− | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2005 06 03 | 703 | 0.6− | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.7+ | 2006 11 17 | 704 | 0.5− | 0.4+ |
| 2005 06 04 | 704 | 1.1+ | 0.1+ | 2006 09 29 | 704 | (0.6+ | 2.4+) | 2006 11 18 | 704 | 0.5− | 0.2+ |
| 2005 06 04 | 704 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2005 06 04 | 704 | 0.6+ | 0.5+ | 2006 09 29 | 704 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.6− | 0.1+ |
| 2005 06 04 | 704 | 0.6− | 0.0 | 2006 10 01 | 704 | (2.6+ | 1.2+) | 2006 11 18 | 704 | 0.6− | 0.1+ |
| 2005 06 17 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 704 | (3.0+ | 1.7−) | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2005 06 17 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 704 | (4.0+ | 1.1+) | 2006 11 21 | 704 | 1.0− | 1.0+ |
| 2005 06 17 | 691 | 0.0 | 0.3+ | 2006 10 01 | 704 | (2.8+ | 0.5−) | 2006 11 21 | 704 | 1.1− | 1.0+ |
| 2005 07 05 | 644 | 0.0 | 0.3+ | 2006 10 19 | 704 | 0.9+ | 0.4+ | 2006 11 21 | 704 | 1.3− | 1.0+ |
| 2005 07 05 | 644 | 0.2− | 0.2+ | 2006 10 19 | 704 | 0.9+ | 0.2− | 2006 11 21 | 704 | 1.4− | 1.2+ |
| 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 10 19 | 704 | 0.5− | 0.3+ | 2006 11 21 | 704 | 1.3− | 1.3+ |
| 2006 08 23 | 704 | 0.5+ | 0.1− | 2006 10 19 | 704 | 1.1+ | 0.5+ | 2006 11 22 | 691 | 0.3+ | 0.1+ |
| 2006 08 23 | 704 | 0.2− | 0.1+ | 2006 10 19 | 704 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2006 08 23 | 704 | 0.8− | 0.8− | 2006 10 20 | 704 | 0.9+ | 0.7+ | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2006 08 23 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 704 | 0.4+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.3− |
| 2006 08 24 | 704 | 0.7− | 0.1− | 2006 10 20 | 704 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.2+ | 0.1− |
| 2006 08 24 | 704 | 0.5− | 0.3− | 2006 10 20 | 704 | 0.6+ | 0.4− | 2006 11 27 | 703 | 0.6− | 0.5− |
| 2006 08 24 | 704 | 0.0 | 0.1− | 2006 10 20 | 704 | 0.0 | 0.0 | 2006 11 27 | 704 | 0.5− | 0.8− |
| 2006 08 29 | 703 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.4− | 2006 11 27 | 704 | 0.1− | 0.6− |
| 2006 08 29 | 703 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.5− | 2006 11 27 | 704 | 0.2− | 0.3− |
| 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.4− | 2006 11 27 | 704 | 0.2− | 0.5− |
| 2006 08 29 | 703 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.4− | | | | |

**(145314)∗ 2005 LE$_5$ = 1994 PX$_{17}$ = 2004 BA$_{142}$**

Discovered 2005 June 1 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86771), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.44027 | | (2000.0) | | | |
| $n$ | 0.25783252 | $\omega$ | 147.11524 | | +0.39022533 | +0.92011014 |
| $a$ | 2.4448052 | $\Omega$ | 145.81953 | | −0.85709569 | +0.37630579 |
| $e$ | 0.1702868 | $i$ | 3.41744 | | −0.33632005 | +0.10858768 |
| $P$ | 3.82 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | (0.6+ | 2.1+) | 2005 05 15 | G96 | 0.3− | 0.2− | 2005 06 27 | 644 | 0.1− | 0.1+ |
| 1994 08 10 | 809 | 0.4− | 1.0+ | 2005 05 15 | G96 | 0.3− | 0.0 | 2005 06 27 | 644 | 0.1+ | 0.2+ |
| 1994 08 10 | 809 | (0.8− | 3.7+) | 2005 05 15 | G96 | 0.1− | 0.1− | 2005 06 27 | 644 | 0.2− | 0.1+ |
| 1994 08 11 | 809 | 0.0 | 1.0+ | 2005 06 01 | 691 | 0.1+ | 0.3+ | 2005 07 05 | 644 | 0.3− | 0.5+ |
| 1994 08 11 | 809 | 0.7− | 0.2+ | 2005 06 01 | 691 | 0.3+ | 0.1+ | 2005 07 05 | 644 | 0.1+ | 0.1− |
| 1994 08 11 | 809 | 0.5− | 1.4+ | 2005 06 01 | 691 | 0.0 | 0.2+ | 2005 07 05 | 644 | 0.1− | 0.3+ |
| 2002 10 15 | 644 | 0.1+ | 1.3+ | 2005 06 05 | 704 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 2002 10 15 | 644 | 0.1− | 1.1+ | 2005 06 05 | 704 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 2002 10 15 | 644 | 0.3+ | 1.5+ | 2005 06 05 | 704 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.1− |
| 2004 01 19 | 691 | 0.1+ | 0.3+ | 2005 06 05 | 704 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 2004 01 19 | 691 | 0.4+ | 0.0 | 2005 06 06 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2004 01 19 | 691 | 0.1− | 0.3+ | 2005 06 06 | 691 | 0.5+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2004 01 30 | 691 | 0.3+ | 0.2+ | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2005 06 10 | 691 | 0.1− | 0.8− | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2004 01 30 | 691 | 0.1− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.7− | 0.1− |
| 2004 02 12 | 691 | 0.4− | 0.6+ | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.5+ | 0.4+ |
| 2004 02 12 | 691 | 0.0 | 0.4+ | 2005 06 23 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 02 12 | 691 | 0.3+ | 0.4+ | 2005 06 23 | 644 | 0.1− | 0.3+ | | | | |
| 2005 05 15 | G96 | 0.3− | 0.1− | 2005 06 23 | 644 | 0.4− | 0.5+ | | | | |

**(145315)∗ 2005 LR$_5$ = 2001 BX$_{81}$**

Discovered 2005 June 2 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 86771)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 139.20351 | | (2000.0) | | | |
| $n$ | 0.30266283 | $\omega$ | 144.22306 | | −0.20798913 | +0.97312799 |
| $a$ | 2.1969997 | $\Omega$ | 113.58940 | | −0.92062505 | −0.16063446 |
| $e$ | 0.0872430 | $i$ | 6.18934 | | −0.33043915 | −0.16498024 |
| $P$ | 3.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 691 | 0.0 | 0.4+ | 2002 08 29 | 644 | 0.1+ | 0.3+ | 2005 06 28 | 599 | 0.1− | 0.4+ |
| 2000 12 22 | 691 | 0.1− | 0.5+ | 2005 06 02 | E12 | 0.1− | 0.0 | 2005 06 28 | 599 | 0.0 | 1.0+ |
| 2000 12 22 | 691 | 0.2+ | 0.4+ | 2005 06 02 | E12 | (0.0 | 2.4−) | 2006 10 30 | 703 | 0.2+ | 0.3− |
| 2001 01 21 | 704 | 0.8+ | 0.5+ | 2005 06 02 | E12 | 0.1− | 0.6− | 2006 10 30 | 703 | 0.9− | 0.3+ |
| 2001 01 21 | 704 | 0.3+ | 0.3+ | 2005 06 02 | E12 | 0.1− | 0.5+ | 2006 10 30 | 703 | 1.0− | 0.9− |
| 2001 01 21 | 704 | 0.4− | 0.2+ | 2005 06 03 | 703 | 0.8− | 0.6− | 2006 10 30 | 703 | 0.9− | 0.6+ |
| 2002 06 16 | 644 | 0.2+ | 0.5+ | 2005 06 03 | 703 | 0.3− | 1.0− | 2006 11 20 | 704 | (1.3− | 1.9−) |
| 2002 06 16 | 644 | 0.2− | 0.3+ | 2005 06 03 | 703 | 0.8− | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2002 06 16 | 644 | 0.1− | 0.9+ | 2005 06 03 | 703 | 0.8+ | 1.1− | 2006 11 20 | 704 | 0.6+ | 1.3− |
| 2002 07 14 | 644 | 0.0 | 0.2+ | 2005 06 03 | 703 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.9− | 0.6− |
| 2002 07 14 | 644 | 0.0 | 0.0 | 2005 06 03 | 703 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2002 07 14 | 644 | 0.2− | 0.1+ | 2005 06 03 | 703 | 1.2− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2002 07 22 | 644 | 0.4− | 0.0 | 2005 06 03 | 703 | 0.7− | 0.9− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2002 07 22 | 644 | 0.2− | 0.1− | 2005 06 05 | 704 | 1.3+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2002 07 22 | 644 | 0.1− | 0.3+ | 2005 06 05 | 704 | 1.1+ | 0.0 | 2006 11 28 | 704 | 0.9− | 0.3+ |
| 2002 08 13 | 704 | 0.5− | 0.5+ | 2005 06 05 | 704 | 0.6+ | 0.6+ | 2006 11 28 | 704 | 1.2+ | 1.3+ |
| 2002 08 13 | 704 | 0.4− | 0.5+ | 2005 06 11 | 703 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.4+ |
| 2002 08 13 | 704 | 0.4+ | 0.5+ | 2005 06 11 | 703 | 0.1+ | 1.2+ | 2006 11 28 | 704 | 1.0+ | 0.6+ |
| 2002 08 13 | 704 | 0.1+ | 0.1+ | 2005 06 11 | 703 | 0.7+ | 0.5+ | 2006 11 28 | 704 | 0.5+ | 0.7+ |
| 2002 08 29 | 644 | 0.3+ | 0.1− | 2005 06 11 | 703 | 0.1− | 1.1+ | | | | |
| 2002 08 29 | 644 | 0.4+ | 0.1− | 2005 06 28 | 599 | 0.2+ | 0.2+ | | | | |

**(145316)∗ 2005 LV$_5$**

Discovered 2005 June 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.82804 | | (2000.0) | | | |
| $n$ | 0.21892565 | $\omega$ | 132.27838 | | +0.89029229 | +0.45461965 |
| $a$ | 2.7264966 | $\Omega$ | 200.72405 | | −0.43672912 | +0.83589919 |
| $e$ | 0.1159634 | $i$ | 4.28972 | | −0.12902449 | +0.30756059 |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.1+ | 0.3+ | 2005 07 04 | 691 | 0.1+ | 0.5− | 2006 10 13 | A50 | 0.3− | 0.3+ |
| 2000 04 12 | 691 | 0.2+ | 0.3+ | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.9+ | 1.3+ |
| 2000 04 12 | 691 | 0.2+ | 0.5+ | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.1− | 1.1+ |
| 2000 04 29 | 691 | 0.2− | 0.3− | 2005 07 11 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.3+ | 0.5+ |
| 2000 04 29 | 691 | 0.8− | 1.8− | 2005 07 11 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.7+ | 1.1+ |
| 2000 04 29 | 691 | 0.3− | 0.8− | 2005 07 11 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 07 25 | 608 | 0.1− | 0.4+ | 2005 07 12 | G96 | 0.5− | 0.6− | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2001 07 25 | 608 | 0.5− | 1.1+ | 2005 07 12 | G96 | 0.9− | 0.4− | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2001 07 25 | 608 | 0.3− | 0.2+ | 2005 07 12 | G96 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2001 08 27 | 644 | 0.2+ | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2001 08 27 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2001 08 27 | 644 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2005 05 20 | G96 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2005 05 20 | G96 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2005 05 20 | G96 | 0.5− | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2005 05 20 | G96 | 0.4+ | 0.4− | 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 05 20 | G96 | 0.3− | 0.6+ | 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 05 20 | G96 | 0.2+ | 0.3− | 2006 09 17 | 704 | (1.7+ | 1.8−) | 2006 10 27 | G96 | 0.4+ | 0.5+ |
| 2005 05 20 | G96 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.7− | 1.3+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2005 05 20 | G96 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.6− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2005 06 03 | 703 | 0.8− | 0.1− | 2006 09 17 | 704 | (4.2− | 0.5+) | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2005 06 03 | 703 | 0.9− | 0.7− | 2006 09 18 | 691 | 0.2− | 0.4− | 2006 11 06 | 644 | 0.1− | 0.6+ |
| 2005 06 03 | 703 | 0.1+ | 0.6− | 2006 09 18 | 691 | 0.2− | 0.4− | 2006 11 06 | 644 | 0.3− | 0.5+ |
| 2005 06 03 | 703 | 0.5− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.2− | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2005 06 05 | 704 | 1.0+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2005 06 05 | 704 | 0.9+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2005 06 05 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.4− |
| 2005 06 05 | 704 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2005 06 06 | 691 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 1.2− | 0.1+ |
| 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2005 06 10 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2005 06 10 | 691 | 0.4+ | 0.1− | 2006 09 27 | 704 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.4+ | 0.2+ |
| 2005 06 10 | 691 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2005 06 28 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.6− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2005 06 28 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.9− | 2006 11 20 | G96 | 0.3+ | 0.5− |
| 2005 06 28 | 691 | 1.0− | 0.2+ | 2006 10 03 | 691 | 0.3− | 0.5− | 2006 11 20 | G96 | 0.4+ | 0.6− |
| 2005 07 01 | 691 | 0.3+ | 0.3− | 2006 10 03 | 691 | 0.3− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.6− |
| 2005 07 01 | 691 | 0.2− | 0.3+ | 2006 10 03 | 691 | 0.2− | 0.4− | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2005 07 01 | 691 | 0.1− | 0.1+ | 2006 10 13 | A50 | 0.7+ | 0.5+ | | | | |

**(145317)∗ 2005 LA$_6$**

Discovered 2005 June 3 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 67.63160 | | (2000.0) | | | |
| $n$ | 0.22426718 | $\omega$ | 177.30363 | | +0.40281050 | +0.89776920 |
| $a$ | 2.6830302 | $\Omega$ | 116.39765 | | −0.84343491 | +0.43970054 |
| $e$ | 0.1297435 | $i$ | 11.47501 | | −0.35547328 | −0.02595956 |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 26 | 644 | 0.0 | 0.3+ | 2005 06 03 | E12 | 0.4− | 0.1− | 2006 09 19 | 703 | 1.1+ | 0.8+ |
| 2001 06 26 | 644 | 0.1− | 0.1+ | 2005 06 03 | E12 | 0.3− | 0.7+ | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2001 06 26 | 644 | 0.3− | 0.1− | 2005 06 03 | E12 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.0 | 1.4+ |
| 2001 07 27 | 608 | 0.2− | 0.6− | 2005 06 03 | E12 | 0.2− | 0.0 | 2006 09 25 | 699 | (1.7− | 1.8+) |
| 2001 07 27 | 608 | 0.4+ | 1.2− | 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 1.3− | 0.4+ |
| 2001 07 27 | 608 | 0.1+ | 1.3− | 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.1+ |
| 2004 02 16 | 691 | 0.2− | 0.2+ | 2005 06 05 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.5+ |
| 2004 02 16 | 691 | 0.3+ | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.6− | 0.1+ |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2005 06 23 | 644 | 0.5+ | 0.2+ | 2006 10 02 | 703 | 1.2− | 0.4+ |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2005 06 23 | 644 | 0.3− | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.5+ |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2005 06 29 | 644 | 0.4+ | 0.2+ | 2006 10 02 | 703 | 0.3− | 0.2+ |
| 2005 05 02 | 691 | 0.3+ | 0.1− | 2005 06 29 | 644 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2005 05 02 | 691 | 0.0 | 0.2+ | 2005 06 29 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.5− | 0.6+ |
| 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.7+ |

**(145318)∗ 2005 LT$_{13}$**

Discovered 2005 June 4 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.32532 | | (2000.0) | | | |
| $n$ | 0.21883351 | $\omega$ | 237.01903 | | +0.66855577 | −0.74347633 |
| $a$ | 2.7272618 | $\Omega$ | 170.96824 | | +0.71273581 | +0.63421620 |
| $e$ | 0.0267591 | $i$ | 6.07627 | | +0.21222830 | +0.21216209 |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 696 | 1.4+ | 0.6+ | 2005 05 16 | G96 | 0.5− | 0.3− | 2006 09 26 | G96 | 0.4− | 0.2− |
| 1997 09 27 | 696 | 1.3+ | 0.5+ | 2005 06 04 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 1997 09 29 | 691 | 0.4− | 0.0 | 2005 06 04 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 1997 09 29 | 691 | 0.1− | 0.2+ | 2005 06 04 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 1997 09 29 | 691 | 0.4− | 0.3+ | 2005 06 09 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.2− | 0.2+ |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.3+ |
| 2004 02 12 | 691 | 0.1+ | 0.1+ | 2005 06 09 | 691 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2005 06 14 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2004 03 20 | 691 | 0.0 | 0.2+ | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.3+ |
| 2004 03 20 | 691 | 0.1+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 03 20 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 1.2+ | 0.4− | 2006 11 17 | G96 | 0.5− | 0.5+ |
| 2005 05 16 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | (0.1+ | 1.8+) | 2006 11 17 | G96 | 1.3− | 0.0 |
| 2005 05 16 | G96 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.8+ | 1.0+ | | | | |
| 2005 05 16 | G96 | 0.5− | 0.3− | 2006 08 28 | 703 | 1.3− | 0.7− | | | | |

**(145319)∗ 2005 LC$_{14}$ = 2004 CQ$_{116}$**

Discovered 2005 June 4 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 77271)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 140.71336 | | (2000.0) | | | |
| $n$ | 0.24075511 | $\omega$ | 28.19841 | | −0.47261506 | +0.87982247 |
| $a$ | 2.5590909 | $\Omega$ | 213.66812 | | −0.82469680 | −0.46173931 |
| $e$ | 0.1836157 | $i$ | 5.22356 | | −0.31066090 | −0.11273520 |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 07 | 691 | 0.0 | 0.3− | 2004 02 23 | 704 | 0.2+ | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 1995 01 07 | 691 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 1995 01 07 | 691 | 0.2− | 0.3− | 2005 05 15 | G96 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 1997 09 08 | 910 | 0.3+ | 0.0 | 2005 05 15 | G96 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 1997 09 08 | 910 | 0.2+ | 0.0 | 2005 05 15 | G96 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 1997 09 08 | 910 | 0.1+ | 0.0 | 2005 05 15 | G96 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | (0.9− | 1.6+) | 2005 06 04 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.1+ | 1.1+ | 2005 06 04 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 08 25 | 704 | 0.5− | 0.5+ | 2005 06 04 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2002 11 04 | 644 | 0.5− | 0.3+ | 2005 06 09 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2002 11 04 | 644 | 0.2+ | 0.7+ | 2005 06 09 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2002 11 04 | 644 | 0.3+ | 0.8+ | 2005 06 09 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2004 01 23 | 704 | 0.7+ | 0.1− | 2005 06 13 | 691 | 0.9+ | 0.4− | 2006 11 11 | 703 | 0.6− | 1.2+ |
| 2004 01 23 | 704 | 0.2− | 0.6+ | 2005 06 13 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.2+ |
| 2004 01 23 | 704 | 0.2+ | 1.2+ | 2005 06 13 | 691 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2004 02 11 | 644 | 0.6+ | 0.7+ | 2005 07 05 | 704 | (0.6− | 1.8+) | 2006 11 13 | G96 | 0.5+ | 0.0 |
| 2004 02 11 | 644 | 0.1− | 0.8+ | 2005 07 05 | 704 | 0.8+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2004 02 11 | 644 | 0.3+ | 0.6+ | 2005 07 05 | 704 | 0.9+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 2004 02 23 | 704 | 0.5+ | 0.7+ | 2005 07 05 | 704 | 0.2− | 0.7+ | | | | |
| 2004 02 23 | 704 | 0.1− | 1.1+ | 2005 07 05 | 704 | (1.7+ | 1.2+) | | | | |

**(145320)∗ 2005 LE$_{16}$**

Discovered 2005 June 5 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 108.67168 | | | (2000.0) | | |
| $n$ | 0.21254277 | $\omega$ | 63.03389 | | +0.09111975 | +0.99535380 |
| $a$ | 2.7808133 | $\Omega$ | 212.24070 | | −0.93309612 | +0.07442251 |
| $e$ | 0.0653823 | $i$ | 3.34342 | | −0.34789196 | +0.06109093 |
| $P$ | 4.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.8+ | 0.1+ | 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.6+ | 0.9+ | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | (0.1− | 2.0+) | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.2+ |
| 2001 11 20 | 291 | 0.4− | 0.1+ | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 2001 11 20 | 291 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.6+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.6+ |
| 2001 11 20 | 291 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 10 29 | 691 | 1.3− | 0.8+ |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2004 03 17 | 691 | 0.1+ | 0.8+ | 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2+ |
| 2004 04 25 | 691 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.7+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.2− | 0.1+ |
| 2005 05 15 | G96 | 0.6− | 0.1+ | 2006 10 12 | 691 | 0.5+ | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.1+ |
| 2005 05 15 | G96 | 0.6− | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2005 05 15 | G96 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2005 05 15 | G96 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2005 06 05 | 691 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.3− | 0.4+ |
| 2005 06 05 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | | | | |
| 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 | | | | |

**(145321)∗ 2005 LU$_{18}$**

Discovered 2005 June 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.39566 | | | (2000.0) | | |
| $n$ | 0.20343273 | $\omega$ | 167.12735 | | +0.74671638 | +0.66249199 |
| $a$ | 2.8632251 | $\Omega$ | 151.10928 | | −0.62062092 | +0.72603898 |
| $e$ | 0.0503312 | $i$ | 7.05271 | | −0.23925783 | +0.18431431 |
| $P$ | 4.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 16 | 691 | 0.7− | 1.0+ | 2002 12 12 | 644 | 0.3+ | 0.5+ | 2005 06 24 | 644 | 0.0 | 0.2+ |
| 1999 02 16 | 691 | 0.3+ | 0.0 | 2002 12 12 | 644 | 0.7+ | 0.4+ | 2005 06 24 | 644 | 0.0 | 0.2+ |
| 1999 02 16 | 691 | 1.5− | 0.9− | 2002 12 12 | 644 | 0.3+ | 0.6+ | 2005 06 29 | 691 | 0.0 | 0.1+ |
| 1999 03 09 | 691 | 0.6+ | 1.0− | 2004 02 16 | 691 | 0.4+ | 0.6+ | 2005 06 29 | 691 | 0.0 | 0.1+ |
| 1999 03 09 | 691 | 0.3+ | 0.5− | 2004 02 16 | 691 | 0.1+ | 0.8+ | 2005 06 29 | 691 | 0.0 | 0.2+ |
| 1999 03 09 | 691 | 0.3+ | 0.2− | 2004 02 16 | 691 | 0.2+ | 1.0+ | 2005 07 03 | 691 | 0.3+ | 0.0 |
| 2000 05 06 | 691 | 0.7− | 0.2− | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2005 07 03 | 691 | 0.1+ | 0.0 |
| 2000 05 06 | 691 | 0.4− | 0.3− | 2005 06 01 | 691 | 0.0 | 0.1+ | 2005 07 03 | 691 | 0.3− | 0.5− |
| 2000 05 06 | 691 | 0.1+ | 0.1− | 2005 06 01 | 691 | 0.6− | 0.9− | 2006 09 19 | 699 | 0.6− | 0.0 |
| 2000 05 29 | 691 | 0.2+ | 0.1+ | 2005 06 08 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.7+ |
| 2000 05 29 | 691 | 0.0 | 0.1− | 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 1.0+ | 0.4− |
| 2000 05 29 | 691 | 1.1+ | 0.8+ | 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.7− | 0.1+ |
| 2000 06 10 | 691 | 0.1− | 0.6− | 2005 06 10 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.3+ | 1.2+ |
| 2000 06 10 | 691 | 0.3− | 0.5− | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.5− | 1.1− |
| 2000 06 10 | 691 | 0.2− | 0.3− | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 1.3− | 0.7− |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.6+ |
| 2001 09 21 | 704 | 0.3− | 0.3+ | 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | (0.2+ | 1.7+) | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.7+ |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2005 06 24 | 644 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 |

**(145322)∗ 2005 LP$_{22}$ = 2004 FQ$_{100}$**

Discovered 2005 June 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86780)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.90519 | | | (2000.0) | | |
| $n$ | 0.17881634 | $\omega$ | 102.27485 | | +0.31785026 | +0.94813678 |
| $a$ | 3.1203112 | $\Omega$ | 186.26024 | | −0.87959292 | +0.29376505 |
| $e$ | 0.1743187 | $i$ | 1.47371 | | −0.35395976 | +0.12140325 |
| $P$ | 5.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.2+ | 0.1− | 2005 06 12 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2000 08 25 | 807 | 0.4+ | 0.8+ | 2005 06 12 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2000 08 25 | 807 | 0.8+ | 0.6+ | 2005 06 13 | G96 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2000 09 24 | 704 | 0.0 | 0.7− | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2000 09 24 | 704 | 1.1− | 0.5+ | 2005 06 13 | G96 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.9+ | 1.3− |
| 2000 09 24 | 704 | 0.4+ | 0.9+ | 2005 06 13 | G96 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2000 09 24 | 704 | 0.3+ | 0.1− | 2005 07 10 | E12 | 0.8− | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 11 17 | 691 | 0.3− | 0.2+ | 2005 07 10 | E12 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.7− |
| 2001 11 17 | 691 | 0.3− | 0.2− | 2005 07 10 | E12 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.5− | 0.1− |
| 2001 11 17 | 691 | 0.4− | 0.2− | 2005 07 10 | E12 | (0.3− | 2.7+) | 2006 10 29 | 691 | 0.2− | 0.7− |
| 2004 03 23 | 291 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 29 | 691 | 1.0− | 0.1+ |
| 2004 03 23 | 291 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.7− | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2004 03 23 | 291 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 1.2− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.9+ |
| 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.4+ |
| 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 10 12 | 691 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.4+ | 0.2+ |
| 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.5+ | 2006 11 22 | 691 | 0.8− | 0.4− |
| 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.6+ | 2006 11 22 | 691 | 0.3− | 0.2− |
| 2005 06 08 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.6+ | 0.4+ |
| 2005 06 08 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2005 06 12 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |

**(145323)∗ 2005 LR$_{22}$**

Discovered 2005 June 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 121.39308 | | | (2000.0) | | |
| $n$ | 0.18169236 | $\omega$ | 316.86149 | | −0.56160297 | +0.81723819 |
| $a$ | 3.0872960 | $\Omega$ | 278.56870 | | −0.71911397 | −0.55940548 |
| $e$ | 0.1615313 | $i$ | 7.51470 | | −0.40923978 | −0.13851805 |
| $P$ | 5.42 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 704 | 0.6+ | 1.3− | 2004 03 16 | 704 | 0.1+ | 0.4− | 2005 06 14 | G96 | 0.2− | 0.1+ |
| 2000 08 03 | 704 | 0.2− | 1.2+ | 2004 03 16 | 704 | 1.1− | 0.3− | 2005 06 14 | G96 | 0.1− | 0.2+ |
| 2000 08 03 | 704 | (0.7+ | 2.0+) | 2004 03 16 | 704 | 0.1+ | 1.0+ | 2005 06 14 | G96 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.8− | 0.5+ | 2004 03 16 | 704 | 0.4+ | 0.0 | 2005 06 14 | G96 | 0.2+ | 0.1+ |
| 2000 08 31 | 704 | 0.5− | 1.3+ | 2004 03 29 | 703 | 0.0 | 0.6+ | 2005 06 16 | 691 | 0.0 | 0.0 |
| 2000 08 31 | 704 | 0.5− | 0.2− | 2004 03 29 | 703 | 0.9+ | 0.3+ | 2005 06 16 | 691 | 0.1+ | 0.1− |
| 2000 08 31 | 704 | 0.6+ | 0.6+ | 2004 03 29 | 703 | 0.8+ | 0.5+ | 2005 06 16 | 691 | 0.0 | 0.0 |
| 2000 09 26 | 691 | 0.1+ | 0.0 | 2004 03 29 | 703 | 0.1− | 0.7+ | 2005 07 10 | E12 | 0.4− | 0.1+ |
| 2000 09 26 | 691 | 0.1− | 0.3+ | 2005 06 08 | 691 | 0.2− | 0.0 | 2005 07 10 | E12 | 1.2− | 0.6− |
| 2000 09 26 | 691 | 0.0 | 0.0 | 2005 06 08 | 691 | 0.1− | 0.2− | 2005 07 10 | E12 | 0.6+ | 0.7− |
| 2002 12 28 | 735 | 0.1− | 0.2+ | 2005 06 08 | 691 | 0.0 | 0.1− | 2005 07 10 | E12 | 0.5+ | 0.8+ |
| 2002 12 28 | 735 | 0.6− | 0.5+ | 2005 06 12 | 691 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.8+ |
| 2002 12 28 | 735 | 0.9− | 0.3+ | 2005 06 12 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.4+ |
| 2004 02 17 | 703 | (0.3+ | 1.8+) | 2005 06 12 | 691 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.0 | 0.7+ |
| 2004 02 17 | 703 | 0.4+ | 0.7+ | 2005 06 12 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 02 17 | 703 | 1.3+ | 1.2+ | 2005 06 12 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2004 02 17 | 703 | 0.5+ | 0.3+ | 2005 06 12 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.8+ |

**(145324)∗ 2005 LE$_{25}$ = 2004 CB$_{81}$**

Discovered 2005 June 8 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86782)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.46229 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26575988 | $\omega$ | 255.06365 | | +0.87332131 | | −0.48529521 |
| $a$ | 2.3959428 | $\Omega$ | 133.94705 | | +0.46652400 | | +0.80811875 |
| $e$ | 0.1316642 | $i$ | 3.37677 | | +0.14023284 | | +0.33381529 |
| $P$ | 3.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.0 | 0.1+ | 2005 05 19 | G96 | 0.6− | 1.0+ | 2006 10 16 | 703 | 0.9+ | 0.9+ |
| 1991 09 30 | 691 | 0.1− | 0.2+ | 2005 05 19 | G96 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 1991 09 30 | 691 | 0.2− | 0.1+ | 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 10 16 | 703 | (1.9− | 0.4+) |
| 1995 10 28 | 691 | 0.2+ | 0.0 | 2005 05 19 | G96 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.0 |
| 1995 10 28 | 691 | 0.0 | 0.1+ | 2005 06 08 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 1995 10 28 | 691 | 0.1+ | 0.6− | 2005 06 08 | 691 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1995 11 16 | 691 | 0.2− | 0.1− | 2005 06 08 | 691 | 0.2− | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 1995 11 16 | 691 | 0.1+ | 0.1− | 2005 06 13 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1995 11 16 | 691 | 0.1− | 0.1− | 2005 06 13 | 691 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2002 08 18 | 644 | 0.3+ | 1.4+ | 2005 06 13 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 08 18 | 644 | 0.4+ | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.2+ | 1.1+ | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 08 29 | 644 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2002 08 29 | 644 | 0.2+ | 0.7− | 2006 09 30 | 703 | 0.7− | 0.5− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 08 29 | 644 | 0.3+ | 0.5− | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2004 02 12 | 691 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.9+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 22 | 704 | 0.7+ | 0.4+ |
| 2004 02 17 | 704 | 0.6+ | 0.8+ | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 10 22 | 704 | 0.5+ | 0.0 |
| 2004 02 17 | 704 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 22 | 704 | 0.4+ | 0.4+ |
| 2004 02 17 | 704 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 22 | 704 | 1.0− | 0.3+ |

**(145325)∗ 2005 LG$_{28}$**

Discovered 2005 June 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.14891 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20472263 | $\omega$ | 166.24077 | | +0.69035697 | | +0.71952688 |
| $a$ | 2.8511856 | $\Omega$ | 147.31799 | | −0.67628396 | | +0.67884753 |
| $e$ | 0.1394984 | $i$ | 8.02901 | | −0.25699661 | | +0.14644825 |
| $P$ | 4.81 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5− | 0.8+ | 2005 06 09 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 703 | (2.0+ | 0.2−) |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | (0.8+ | 1.7−) |
| 2001 10 16 | 704 | 0.1− | 0.6+ | 2005 06 13 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.8− |
| 2001 10 16 | 704 | 0.1+ | 0.3− | 2005 06 13 | 691 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.9− | 1.4+ |
| 2001 10 16 | 704 | 0.5+ | 1.2− | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.6− | 0.3+ |
| 2001 10 16 | 704 | 0.6+ | 0.2− | 2005 06 17 | 691 | 0.1− | 0.1+ | 2006 10 30 | 703 | 0.2+ | 1.0− |
| 2001 11 18 | 704 | 0.0 | 1.2+ | 2005 06 17 | 691 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.6− | 0.1− |
| 2001 11 18 | 704 | 0.6+ | 1.0+ | 2005 06 17 | 691 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.6− |
| 2001 11 18 | 704 | 0.2− | 0.7+ | 2005 07 07 | 704 | (1.6− | 0.3+) | 2006 11 13 | 703 | 0.5+ | 0.4− |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2005 07 07 | 704 | 0.8− | 0.6+ | 2006 11 13 | 703 | 0.7− | 0.4+ |
| 2001 11 18 | 704 | 0.0 | 0.5+ | 2005 07 07 | 704 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.4− | 0.5− |
| 2001 11 20 | 699 | 0.3− | 0.2+ | 2005 07 07 | 704 | 0.6− | 0.2− | 2006 11 19 | 703 | 0.2− | 0.1+ |
| 2001 11 20 | 699 | 0.1+ | 0.1+ | 2005 10 28 | G96 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.4+ | 0.2+ |
| 2001 11 20 | 699 | 0.5− | 0.0 | 2005 10 28 | G96 | 0.2+ | 0.6− | 2006 11 19 | 703 | 0.6− | 0.4+ |
| 2001 11 20 | 699 | 0.5− | 0.0 | 2005 10 28 | G96 | 0.1− | 0.3− | 2006 11 19 | 703 | 0.4− | 0.8+ |
| 2004 03 20 | 704 | 0.5+ | 0.6+ | 2005 10 28 | G96 | 0.8− | 0.7− | 2006 11 20 | 703 | 0.9− | 0.1− |
| 2004 03 20 | 704 | 0.7− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.1+ | 2006 11 20 | 703 | 0.7+ | 0.0 |
| 2004 03 20 | 704 | 0.6+ | 0.9+ | 2006 10 16 | 703 | 0.6+ | 0.1− | 2006 11 20 | 703 | 0.6− | 0.7+ |
| 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.8− | 2006 11 20 | 703 | 1.0+ | 0.3+ |
| 2004 03 20 | 704 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 1.0+ | 0.5− | | | | |

**(145326)∗ 2005 LB$_{33}$**

Discovered 2005 June 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.50730 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22568493 | $\omega$ | 5.87409 | | +0.24645209 | | −0.93608383 |
| $a$ | 2.6717820 | $\Omega$ | 70.06466 | | +0.87795869 | | +0.10595749 |
| $e$ | 0.0727706 | $i$ | 15.48671 | | +0.41042649 | | +0.33544013 |
| $P$ | 4.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 644 | 0.3− | 0.9+ | 2004 02 02 | 704 | 0.3+ | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.0 |
| 2002 10 08 | 644 | 0.6− | 0.8+ | 2004 02 02 | 704 | 0.5+ | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.1+ |
| 2002 10 08 | 644 | 0.6− | 0.8+ | 2004 02 11 | 704 | 1.0− | 0.2− | 2005 06 14 | 691 | 0.0 | 0.2+ |
| 2003 12 21 | 645 | 0.2− | 0.0 | 2004 02 11 | 704 | 0.8+ | 1.0− | 2005 06 16 | G96 | 0.3− | 0.3− |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2004 02 11 | 704 | 1.5− | 0.0 | 2005 06 16 | G96 | 0.1− | 0.1+ |
| 2003 12 30 | 704 | 1.1+ | 1.2+ | 2004 02 11 | 704 | 0.2− | 0.7− | 2005 06 16 | G96 | 0.4− | 0.1− |
| 2003 12 30 | 704 | 1.0+ | 0.6+ | 2004 02 11 | 704 | 0.0 | 0.3− | 2005 06 16 | G96 | 0.8− | 0.4− |
| 2003 12 30 | 704 | 0.6+ | 0.2+ | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 07 29 | E12 | 0.2− | 0.6+ |
| 2003 12 30 | 704 | 0.9+ | 0.5+ | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 07 29 | E12 | 0.1+ | 0.1+ |
| 2003 12 30 | 704 | 1.4+ | 0.7+ | 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 08 25 | E12 | 0.6− | 0.7+ |
| 2004 01 19 | 704 | 0.3+ | 0.4+ | 2005 05 16 | G96 | 0.2− | 0.0 | 2006 08 25 | E12 | 0.4− | 0.5+ |
| 2004 01 19 | 704 | 0.7+ | 0.2− | 2005 05 16 | G96 | 0.3− | 0.2− | 2006 08 25 | E12 | 0.1− | 1.2− |
| 2004 01 19 | 704 | 0.2+ | 0.2+ | 2005 05 16 | G96 | 0.4− | 0.1+ | 2006 08 25 | E12 | 0.1+ | 0.5+ |
| 2004 01 19 | 704 | 0.4+ | 0.6+ | 2005 05 16 | G96 | 0.4− | 0.0 | 2006 09 28 | E12 | 0.1+ | 0.6− |
| 2004 01 19 | 704 | 0.3+ | 0.2+ | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 09 28 | E12 | 0.6+ | 0.7− |
| 2004 02 02 | 704 | 0.6+ | 0.7+ | 2005 06 10 | 691 | 0.3+ | 0.2+ | 2006 09 28 | E12 | 0.2− | 0.4+ |
| 2004 02 02 | 704 | 0.5+ | 0.6+ | 2005 06 10 | 691 | 0.3+ | 0.1+ | 2006 09 28 | E12 | 0.8+ | 0.1− |

**(145327)∗ 2005 LA$_{36}$ = 1997 HF$_2$**

Discovered 2005 June 12 by the Mt. Lemmon Survey at Mt. Lemmon. Id. A. Doppler (*MPO* 86787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.62552 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25094476 | $\omega$ | 359.09499 | | −0.61186008 | | −0.79084594 |
| $a$ | 2.4893385 | $\Omega$ | 128.62899 | | +0.72580793 | | −0.56829653 |
| $e$ | 0.0455369 | $i$ | 1.01087 | | +0.31437254 | | −0.22716019 |
| $P$ | 3.93 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 29 | 691 | 0.2− | 0.2+ | 2004 01 30 | 691 | 0.1+ | 0.5+ | 2006 08 18 | 691 | 0.2+ | 0.3+ |
| 1997 04 29 | 691 | 0.2+ | 0.0 | 2004 01 30 | 691 | 0.1− | 0.6+ | 2006 08 18 | 691 | 0.1+ | 0.2+ |
| 1997 04 29 | 691 | 0.4+ | 0.3+ | 2005 05 07 | G96 | 0.3− | 0.0 | 2006 08 27 | 691 | 0.3+ | 0.3+ |
| 1997 04 30 | 691 | 0.4− | 0.2+ | 2005 05 07 | G96 | 0.2− | 0.2− | 2006 08 27 | 691 | 0.6− | 0.3+ |
| 1997 04 30 | 691 | 0.2− | 0.4+ | 2005 05 07 | G96 | 0.3− | 0.0 | 2006 08 27 | 691 | 0.6− | 0.0 |
| 2001 05 14 | 691 | 0.3+ | 0.1− | 2005 05 07 | G96 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.5− | 0.4− |
| 2001 05 14 | 691 | 0.6+ | 0.3− | 2005 06 12 | G96 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2001 05 14 | 691 | 0.0 | 0.2+ | 2005 06 12 | G96 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2002 09 04 | 644 | 0.5− | 0.8+ | 2005 06 12 | G96 | 0.7− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 09 04 | 644 | 0.3− | 0.6+ | 2005 06 12 | G96 | 0.8− | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 09 04 | 644 | 0.1+ | 0.5+ | 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2003 11 24 | 695 | 0.0 | 0.3+ | 2005 06 14 | 691 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2003 11 24 | 695 | 0.1+ | 0.4+ | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2004 01 30 | 691 | 0.1+ | 0.4+ | 2006 08 18 | 691 | 0.3+ | 0.2+ | | | | |

**(145328)∗ 2005 LH$_{36}$ = 2004 BO$_{137}$**

Discovered 2005 June 13 by the Mt. Lemmon Survey at Mt. Lemmon. Id. A. Doppler (*MPO* 86787)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.55684 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22486289 | $\omega$ | 187.95674 | | +0.04155416 | | +0.99727630 |
| $a$ | 2.6782895 | $\Omega$ | 84.43965 | | −0.91328545 | | +0.06264668 |
| $e$ | 0.1644604 | $i$ | 3.51009 | | −0.40519494 | | −0.03892775 |
| $P$ | 4.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.0 | 0.2+ | 2005 05 08 | G96 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.4+ |
| 2001 07 19 | 644 | 0.0 | 0.3+ | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2001 07 19 | 644 | 0.1− | 0.1− | 2005 05 19 | 644 | 0.0 | 0.4+ | 2006 10 01 | 291 | 0.2− | 0.1+ |
| 2004 01 19 | 691 | 0.4+ | 0.6+ | 2005 05 19 | 644 | 0.2− | 0.2+ | 2006 10 01 | 291 | 0.2+ | 0.4+ |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.4+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2005 06 13 | G96 | 0.2+ | 0.7+ | 2006 10 01 | 291 | 0.2− | 0.1+ |
| 2004 01 30 | 691 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.5+ |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.0 | 1.3+ |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 1.1+ | 0.6− |
| 2005 03 13 | G96 | 0.6− | 0.3+ | 2005 06 14 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2005 03 13 | G96 | 0.3− | 0.3+ | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 03 13 | G96 | 0.6− | 0.3− | 2006 09 17 | 691 | 0.3+ | 0.3− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2005 03 13 | G96 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.4+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2005 05 08 | G96 | 0.9− | 0.6+ | 2006 09 30 | 291 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 05 08 | G96 | 0.5+ | 0.4+ | 2006 09 30 | 291 | 0.5− | 0.5+ | | | | |
| 2005 05 08 | G96 | 0.1− | 0.3+ | 2006 09 30 | 291 | 0.3− | 0.4+ | | | | |

**(145329)∗ 2005 LH$_{38}$ = 1998 VZ$_{51}$**

Discovered 2005 June 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 95687)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.36604 | | (2000.0) | | | |
| $n$ | 0.23928719 | $\omega$ | 307.11888 | | +0.65401106 | −0.72130815 |
| $a$ | 2.5695461 | $\Omega$ | 100.39795 | | +0.74654907 | +0.56672062 |
| $e$ | 0.2264563 | $i$ | 13.40348 | | +0.12220485 | +0.39817369 |
| $P$ | 4.12 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 13 | 704 | 0.5+ | 0.5− | 2002 10 28 | 704 | 0.1+ | 0.4+ | 2005 06 15 | 691 | 0.3− | 0.1− |
| 1998 11 13 | 704 | 0.3− | 0.7+ | 2002 10 28 | 704 | 0.0 | 0.3− | 2005 07 01 | 691 | 0.3+ | 0.3− |
| 1998 11 13 | 704 | 1.0− | 0.5− | 2002 10 28 | 704 | 0.2+ | 0.1− | 2005 07 01 | 691 | 0.3+ | 0.0 |
| 1998 11 13 | 704 | 1.4+ | 1.7− | 2002 10 28 | 704 | 0.0 | 0.3− | 2005 07 01 | 691 | 0.2− | 0.1− |
| 1998 11 13 | 704 | 0.0 | 0.6+ | 2002 10 28 | 704 | 0.1+ | 0.3− | 2006 09 14 | 644 | 0.2+ | 0.3− |
| 1998 11 19 | 699 | 0.3− | 1.0− | 2002 11 04 | 644 | 0.0 | 1.2+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 1998 11 19 | 699 | 0.6+ | 0.2− | 2002 11 04 | 644 | 0.3− | 1.2+ | 2006 09 14 | 644 | 0.0 | 0.3− |
| 1998 11 19 | 699 | 0.2+ | 0.3− | 2002 11 04 | 644 | 0.2− | 1.1+ | 2006 09 22 | E12 | 0.1− | 0.2− |
| 2002 09 30 | 608 | 0.8+ | 1.2+ | 2002 11 27 | 699 | 0.7− | 0.4+ | 2006 09 22 | E12 | 0.3+ | 0.3+ |
| 2002 09 30 | 608 | 0.6+ | 1.3+ | 2002 11 27 | 699 | 0.3− | 0.3+ | 2006 09 22 | E12 | 0.7− | 0.1− |
| 2002 09 30 | 608 | 0.8+ | 0.9+ | 2002 11 27 | 699 | 0.1+ | 0.3+ | 2006 09 22 | E12 | 0.2− | 0.0 |
| 2002 10 05 | 704 | 0.6− | 0.1+ | 2002 11 27 | 699 | (1.9− | 1.2−) | 2006 10 03 | E12 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.6− | 0.1+ | 2003 01 08 | 608 | 0.1+ | 0.7− | 2006 10 03 | E12 | 0.6+ | 0.4− |
| 2002 10 05 | 704 | 0.2− | 0.1− | 2003 01 08 | 608 | 0.1− | 0.4− | 2006 10 03 | E12 | 0.3− | 0.1− |
| 2002 10 05 | 704 | 0.0 | 0.2− | 2003 01 08 | 608 | 1.2− | 0.8+ | 2006 10 03 | E12 | 0.4− | 0.6− |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2004 03 19 | 644 | 0.4+ | 0.5+ | 2006 10 12 | E12 | 0.0 | 0.1− |
| 2002 10 10 | 699 | 0.3− | 0.1− | 2004 03 19 | 644 | 0.6+ | 0.7+ | 2006 10 12 | E12 | 0.2+ | 0.3− |
| 2002 10 10 | 699 | 0.2+ | 0.0 | 2004 03 19 | 644 | 0.5+ | 0.8+ | 2006 10 12 | E12 | 0.6+ | 0.1+ |
| 2002 10 10 | 699 | 0.4− | 0.2− | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 10 12 | E12 | 0.1− | 0.0 |
| 2002 10 10 | 699 | 0.4− | 0.2+ | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 10 28 | E12 | 0.8+ | 0.5+ |
| 2002 10 18 | 644 | 0.4− | 0.2+ | 2005 06 11 | 691 | 0.2− | 0.0 | 2006 10 28 | E12 | 1.1+ | 1.0− |
| 2002 10 18 | 644 | 0.4− | 0.2+ | 2005 06 15 | 691 | 0.1− | 0.3+ | 2006 10 28 | E12 | 0.2− | 0.6− |
| 2002 10 18 | 644 | 0.6− | 0.1+ | 2005 06 15 | 691 | 0.1− | 0.2+ | 2006 10 28 | E12 | 0.5− | 0.3+ |

**(145330)∗ 2005 LR$_{38}$**

Discovered 2005 June 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.12893 | | (2000.0) | | | |
| $n$ | 0.23724303 | $\omega$ | 267.83273 | | +0.97504097 | −0.12859590 |
| $a$ | 2.5842850 | $\Omega$ | 99.51914 | | +0.18777569 | +0.91260263 |
| $e$ | 0.0953434 | $i$ | 10.57481 | | −0.11847110 | +0.38809733 |
| $P$ | 4.15 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 03 20 | 291 | 0.4+ | 0.3+ | 2006 09 24 | 699 | 0.1+ | 0.4− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 03 20 | 291 | 0.4+ | 0.4+ | 2006 09 25 | 703 | 0.3− | 0.4+ |
| 2002 10 10 | 644 | 0.4− | 0.3+ | 2004 03 20 | 291 | 0.5+ | 0.4+ | 2006 09 25 | 703 | 0.2− | 0.0 |
| 2002 10 10 | 644 | 0.6− | 0.1+ | 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 09 25 | 703 | (1.7− | 0.6+) |
| 2002 10 10 | 644 | 0.3− | 0.3+ | 2005 06 04 | 691 | 0.3− | 0.0 | 2006 09 25 | 703 | (0.1− | 2.6+) |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 06 04 | 691 | 0.0 | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.5+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 06 11 | 691 | 0.4+ | 0.2− | 2006 10 09 | 644 | 0.4− | 0.3+ |
| 2002 10 28 | 644 | 0.1+ | 1.4+ | 2005 06 11 | 691 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.6+ | 0.1− |
| 2002 10 28 | 644 | 0.5+ | 1.1+ | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 10 28 | 644 | (0.2+ | 1.6+) | 2005 06 15 | 691 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 06 15 | 691 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.6+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2005 06 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 1.4− | 1.6+ |
| 2004 02 16 | 691 | 0.2− | 0.4+ | 2006 09 24 | 699 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.8+ |
| 2004 02 16 | 691 | 0.1− | 0.4+ | 2006 09 24 | 699 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.6− | 0.8+ |
| 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 09 24 | 699 | 0.1+ | 0.7− | 2006 10 21 | 703 | 0.1+ | 0.5− |

**(145331)∗ 2005 LC$_{39}$**

Discovered 2005 June 11 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.36581 | | (2000.0) | | | |
| $n$ | 0.25750183 | $\omega$ | 89.83591 | | −0.42013106 | +0.90565310 |
| $a$ | 2.4468978 | $\Omega$ | 155.07397 | | −0.87726045 | −0.38918492 |
| $e$ | 0.0905548 | $i$ | 7.81302 | | −0.23217234 | −0.16830796 |
| $P$ | 3.83 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 691 | 0.2+ | 0.3+ | 2002 10 08 | 608 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.7− |
| 2001 03 22 | 691 | 0.2+ | 0.2+ | 2002 10 08 | 608 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.3+ |
| 2001 03 22 | 691 | 0.7+ | 0.3+ | 2003 12 22 | 704 | 0.6− | 0.0 | 2006 10 22 | 644 | 0.3− | 0.7+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.6+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.6− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2001 06 15 | 645 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2001 06 15 | 645 | 0.0 | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2005 06 11 | 691 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2005 06 15 | 691 | 0.3− | 1.0− | 2006 10 28 | 703 | 0.9− | 0.8− |
| 2002 09 28 | 608 | (2.8− | 2.2−) | 2005 06 15 | 691 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.6− | 0.5− |
| 2002 09 28 | 608 | (2.4− | 1.4−) | 2005 06 15 | 691 | 0.0 | 0.1− | 2006 10 28 | 703 | (1.1− | 2.5+) |
| 2002 09 28 | 608 | (2.4− | 2.2−) | 2005 06 29 | 691 | 0.1− | 0.1+ | 2006 10 28 | 703 | (1.5+ | 0.9−) |
| 2002 10 03 | 704 | 0.7− | 0.3− | 2005 06 29 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.1+ | 0.7+ |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2005 06 29 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 1.5+ | 1.2− |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2006 10 22 | 703 | 1.1+ | 0.4+ | 2006 11 16 | 703 | 0.8+ | 1.0− |
| 2002 10 08 | 608 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.7+ | 1.5+ |

**(145332)∗ 2005 LT$_{45}$ = 1999 AG$_{9}$**

Discovered 2005 June 13 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86793)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.59362 | | (2000.0) | | | |
| $n$ | 0.22834572 | $\omega$ | 244.56040 | | +0.96132334 | −0.19409381 |
| $a$ | 2.6509862 | $\Omega$ | 126.03077 | | +0.24098855 | +0.93626975 |
| $e$ | 0.1748648 | $i$ | 13.98302 | | −0.13334902 | +0.29279096 |
| $P$ | 4.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 09 | 327 | 0.5+ | 1.2+ | 2004 03 23 | 704 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.1− | 0.0 |
| 1999 01 09 | 327 | 0.2− | 1.7+ | 2004 03 23 | 704 | 1.3+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.3− |
| 1999 01 09 | 327 | 0.4− | 1.6+ | 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 09 26 | 703 | 0.2− | 0.7− |
| 1999 01 11 | 327 | 0.1+ | 0.8+ | 2005 06 03 | E12 | 0.3− | 0.5+ | 2006 10 04 | 703 | 0.2+ | 0.2+ |
| 1999 01 11 | 327 | 0.0 | 1.0+ | 2005 06 03 | E12 | 1.4− | 0.0 | 2006 10 04 | 703 | 1.2− | 0.5+ |
| 1999 01 11 | 327 | 0.3+ | 0.3+ | 2005 06 03 | E12 | 0.2− | 0.6+ | 2006 10 04 | 703 | 0.3− | 0.5+ |
| 2002 11 30 | 704 | 0.4− | 0.3+ | 2005 06 13 | 691 | 0.1+ | 0.4+ | 2006 10 04 | 703 | 0.5− | 0.2− |
| 2002 11 30 | 704 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.0 | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 11 30 | 704 | 0.6− | 0.9+ | 2005 06 13 | 691 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.3+ | 0.4+ |
| 2002 11 30 | 704 | 0.1− | 0.0 | 2005 06 17 | 691 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.4+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.6− | 0.6+ | 2005 06 17 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.0 | | |
| 2002 12 08 | 608 | 0.2− | 0.2+ | 2005 06 17 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.6+ | | |
| 2002 12 08 | 608 | 0.1− | 0.4+ | 2005 06 24 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.2+ | | |
| 2002 12 08 | 608 | 0.5− | 0.3+ | 2005 06 24 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.4+ | | |
| 2002 12 14 | 704 | 0.2+ | 1.3+ | 2005 06 24 | 644 | 0.2− | 0.2+ | 2006 10 31 | 703 | 0.5− | 0.4+ | | |
| 2002 12 14 | 704 | 0.5− | 1.2+ | 2005 06 28 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 0.2− | 0.4+ | | |
| 2002 12 14 | 704 | 1.1+ | 0.0 | 2005 06 28 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 0.9− | 0.5+ | | |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2005 06 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 0.0 | 0.5− | | |
| 2002 12 14 | 704 | 0.0 | 0.2− | 2005 07 03 | 691 | 0.0 | 0.6+ | 2006 11 18 | 703 | 0.1− | 0.4− | | |
| 2003 01 05 | 704 | 0.7− | 0.3− | 2005 07 03 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 703 | 0.2− | 0.1+ | | |
| 2003 01 05 | 704 | 0.1+ | 0.1− | 2005 07 03 | 691 | 0.0 | 0.3+ | 2006 11 18 | 703 | 0.9− | 0.1+ | | |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2005 07 27 | 644 | 0.7+ | 0.1+ | 2006 11 18 | 703 | 0.3− | 0.7+ | | |
| 2003 01 05 | 704 | 0.3− | 0.1+ | 2005 07 27 | 644 | 0.1+ | 0.5+ | 2006 11 24 | 703 | 1.2+ | 0.4+ | | |
| 2003 01 05 | 704 | 0.0 | 0.2− | 2005 07 27 | 644 | 0.3+ | 0.4+ | 2006 11 24 | 703 | 0.3+ | 0.6+ | | |
| 2003 01 11 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 1.1+ | 0.5+ | 2006 11 24 | 703 | 0.3+ | 1.6+ | | |
| 2003 01 11 | 644 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.3+ | 2006 11 24 | 703 | 0.4+ | 1.6+ | | |
| 2003 01 11 | 644 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.5+ | 0.0 | | | | | | |
| 2004 03 23 | 704 | (1.4+ | 1.8+) | 2006 09 26 | 703 | 0.1− | 0.4− | | | | | | |

**(145333)∗ 2005 LG$_{49}$ = 2004 DZ$_{76}$**

Discovered 2005 June 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86798)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 319.15987 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.22483801 | ω | 182.34015 | | +0.77959250 | −0.62383026 | |
| *a* | 2.6784871 | Ω | 216.44624 | | +0.57611176 | +0.74902638 | |
| *e* | 0.0362873 | *i* | 5.35282 | | +0.24562326 | +0.22314858 | |
| *P* | 4.38 | *H* | 15.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.0 | 0.6+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.7+ | 0.5+ | | |
| 2002 10 31 | 644 | 0.5− | 0.6+ | 2006 08 18 | 644 | 0.5− | 0.1− | 2006 09 25 | 699 | 1.0− | 0.6+ | | |
| 2002 10 31 | 644 | 0.1− | 0.7+ | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.4− | 0.6+ | | |
| 2004 01 29 | 704 | 0.7+ | 1.0+ | 2006 08 29 | 703 | 0.7− | 0.8+ | 2006 09 27 | 704 | 0.5− | 0.4− | | |
| 2004 01 29 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 1.0− | 1.1+ | 2006 09 27 | 704 | 0.4− | 0.2+ | | |
| 2004 01 29 | 704 | (0.7+ | 1.6+) | 2006 08 29 | 703 | 0.9− | 0.7+ | 2006 09 27 | 704 | (1.6− | 0.6−) | | |
| 2004 02 18 | 691 | 0.2+ | 0.6+ | 2006 08 29 | 703 | 0.1− | 0.6− | 2006 09 27 | 704 | 0.7− | 1.0+ | | |
| 2004 02 18 | 691 | 0.2+ | 0.7+ | 2006 09 03 | 152 | 1.2+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.7+ | | |
| 2004 02 18 | 691 | 0.2+ | 0.7+ | 2006 09 03 | 152 | 1.1+ | 0.1− | 2006 09 29 | 704 | 0.0 | 0.1− | | |
| 2004 02 26 | 704 | 0.4+ | 1.0+ | 2006 09 03 | 152 | 0.1− | 0.8+ | 2006 09 29 | 704 | 1.3+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.5− | 1.1+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 30 | 291 | 0.0 | 0.3+ | | |
| 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 30 | 291 | 0.0 | 0.1+ | | |
| 2004 02 26 | 704 | (0.2+ | 1.7+) | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 09 30 | 291 | 0.2+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.1+ | 0.9+ | 2006 09 12 | 703 | (0.4− | 1.6−) | 2006 10 16 | 703 | 0.8− | 1.3+ | | |
| 2004 03 15 | 704 | (1.7+ | 0.2+) | 2006 09 12 | 703 | 0.3− | 0.0 | 2006 10 16 | 703 | (0.5+ | 1.5+) | | |
| 2004 03 15 | 704 | 0.3+ | 0.4− | 2006 09 12 | 703 | 0.3− | 1.1− | 2006 10 16 | 703 | 0.1+ | 0.7+ | | |
| 2004 03 15 | 704 | 1.0+ | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.7+ | | |
| 2004 03 15 | 704 | 0.5− | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.3+ | | |
| 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ | | |
| 2005 02 16 | 809 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2− | 0.2+ | | |
| 2005 02 16 | 809 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | | |
| 2005 02 16 | 809 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | | |
| 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.1− | | |
| 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 1.4+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1+ | | |
| 2005 06 10 | 691 | 0.0 | 0.4+ | 2006 09 18 | 704 | (1.6− | 1.4+) | 2006 10 22 | 691 | 0.0 | 0.1+ | | |
| 2005 06 16 | 691 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 1.1+ | 1.1+ | 2006 10 22 | 691 | 0.3− | 0.4+ | | |
| 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.5− | 0.1− | | |
| 2005 06 16 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.7− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2005 06 30 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7− | 1.3− | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2005 06 30 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.3− | 2006 11 14 | G96 | 0.1− | 0.2+ | | |
| 2005 06 30 | 691 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.8+ | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.8− | | |
| 2005 07 04 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.8− | 2006 11 14 | G96 | 0.1+ | 0.3− | | |
| 2005 07 04 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.6− | 0.4+ | 2006 11 14 | G96 | 0.5− | 0.6− | | |
| 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.8+ | | | | | | |

**(145334)∗ 2005 LP$_{49}$ = 2005 MZ$_{52}$**

Discovered 2005 June 11 by Spacewatch at Kitt Peak.

Id. A. Doppler (d, *MPO* 95688)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 49.42126 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.24084611 | ω | 160.53132 | | +0.92878801 | +0.37059358 | |
| *a* | 2.5584462 | Ω | 177.70681 | | −0.35094400 | +0.88261220 | |
| *e* | 0.2089423 | *i* | 5.21622 | | −0.11912658 | +0.28923365 | |
| *P* | 4.09 | *H* | 15.6 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 691 | 0.2+ | 0.2− | 2005 06 05 | 704 | 0.7+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.4+ | | |
| 2000 03 10 | 691 | 0.1+ | 0.3+ | 2005 06 05 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 704 | 1.1+ | 0.7− | | |
| 2000 03 10 | 691 | 0.3+ | 0.2+ | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.6− | 1.1+ | | |
| 2000 04 10 | 695 | 0.2+ | 0.6+ | 2005 06 11 | 691 | 0.3+ | 1.3+ | 2006 11 17 | 704 | 0.1− | 0.0 | | |
| 2000 04 10 | 695 | 0.0 | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.5− | 0.7+ | | |
| 2002 12 11 | 704 | 0.9− | 0.2+ | 2005 06 15 | 691 | 0.2+ | 0.6+ | 2006 11 17 | 704 | (0.6+ | 1.5+) | | |
| 2002 12 11 | 704 | 0.3− | 0.7− | 2005 06 15 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | (0.3− | 1.6+) | | |
| 2002 12 11 | 704 | 0.7− | 0.3− | 2005 06 15 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.7+ | 2005 06 24 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.8+ | | |
| 2005 05 04 | 644 | 0.3− | 0.3− | 2005 06 24 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.2− | 1.3+ | | |
| 2005 05 04 | 644 | 0.0 | 0.4+ | 2005 06 24 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.2+ | | |
| 2005 05 04 | 644 | 0.0 | 0.6+ | 2005 06 24 | 644 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2+ | | |
| 2005 05 21 | G96 | 0.1− | 0.1+ | 2005 06 24 | 644 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3+ | | |
| 2005 05 21 | G96 | 0.6− | 0.2− | 2005 06 24 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.6− | 0.3+ | | |
| 2005 05 21 | G96 | 0.4− | 0.2+ | 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.3+ | | |
| 2005 05 21 | G96 | 0.1− | 0.0 | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2+ | | |
| 2005 05 21 | G96 | 0.3− | 0.1+ | 2005 07 04 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.1+ | | |
| 2005 05 21 | G96 | 0.1− | 0.0 | 2005 07 11 | 691 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.4− | 0.4+ | | |
| 2005 05 21 | G96 | 0.6− | 0.1− | 2005 07 11 | 691 | 0.1+ | 0.7+ | 2006 11 28 | 704 | 0.7+ | 1.0+ | | |
| 2005 05 21 | G96 | 0.4− | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.3+ | 0.6+ | | |
| 2005 05 21 | G96 | 0.1− | 0.0 | 2006 11 02 | G96 | 0.1+ | 0.5− | 2006 11 28 | 704 | 0.5− | 0.6+ | | |
| 2005 05 21 | G96 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.0 | 1.0+ | | |
| 2005 05 21 | G96 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.3+ | 0.9+ | | |
| 2005 05 26 | 599 | 0.0 | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.2− | 0.4+ | | |
| 2005 05 26 | 599 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.6− | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.6+ | | |
| 2005 05 26 | 599 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.3+ | 1.4+ | 2006 11 29 | 704 | 0.2− | 0.9+ | | |
| 2005 05 26 | 599 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.3+ | 0.7+ | 2006 11 29 | 704 | 0.3+ | 0.8+ | | |
| 2005 06 05 | 704 | 0.1− | 0.7− | 2006 11 16 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.8+ | 0.1+ | | |
| 2005 06 05 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.4+ | | | | | | |

**(145335)∗ 2005 LM$_{50}$**

Discovered 2005 June 13 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 11.93470 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.23968572 | ω | 163.93445 | | +0.95217089 | −0.28199353 | |
| *a* | 2.5666971 | Ω | 213.18093 | | +0.25131212 | +0.94178462 | |
| *e* | 0.2449181 | *i* | 12.41777 | | +0.17381835 | +0.18308846 | |
| *P* | 4.11 | *H* | 15.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | (0.5− | 1.8+) | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.1− | 1.2+ | | |
| 2002 11 12 | 704 | 0.4+ | 0.2− | 2005 07 11 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.5+ | 0.7+ | | |
| 2002 11 12 | 704 | 0.4− | 1.0+ | 2005 07 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.2+ | 0.2+ | | |
| 2002 11 12 | 704 | 0.1− | 0.9+ | 2005 07 11 | 691 | 0.4− | 0.2+ | 2006 10 27 | 704 | 0.2− | 0.7+ | | |
| 2002 12 08 | 608 | 0.4+ | 0.5− | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 30 | 703 | 0.0 | 0.9+ | | |
| 2002 12 08 | 608 | 0.1+ | 0.6− | 2006 09 19 | 699 | 0.3+ | 0.9+ | 2006 10 30 | 703 | 0.3+ | 0.9+ | | |
| 2002 12 08 | 608 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.4− | 0.3− | 2006 10 30 | 703 | 0.1+ | 0.9+ | | |
| 2002 12 14 | 704 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.4− | 0.2+ | 2006 10 30 | 703 | 0.8+ | 1.1+ | | |
| 2002 12 14 | 704 | 0.6+ | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.5+ | 0.2+ | | |
| 2002 12 14 | 704 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.1+ | | |
| 2002 12 14 | 704 | 0.1− | 1.1+ | 2006 09 20 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.3+ | | |
| 2002 12 14 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.7− | 0.0 | 2006 11 15 | 703 | 0.1− | 0.1− | | |
| 2003 01 26 | 644 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.6+ | | |
| 2003 01 26 | 644 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 644 | 0.5− | 0.5− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.6− | 0.7+ |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 22 | 704 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2005 06 13 | 691 | 0.1− | 0.3+ | 2006 10 22 | 704 | 0.1− | 0.6− | 2006 11 19 | 703 | 0.2− | 0.1− |
| 2005 06 13 | 691 | 0.0 | 0.6+ | 2006 10 22 | 704 | 0.1+ | 0.3− | 2006 11 19 | 703 | 0.5+ | 0.3− |
| 2005 06 13 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 704 | 0.3+ | 0.7− | 2006 11 19 | 703 | 0.5− | 0.3+ |
| 2005 06 24 | 644 | 0.1+ | 0.7+ | 2006 10 23 | G96 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2005 06 24 | 644 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2005 06 24 | 644 | 0.4+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2005 07 01 | 691 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2005 07 01 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 1.0+ | 0.7+ | | | | |

**(145336)∗ 2005 LM$_{52}$**

Discovered 2005 June 2 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.08026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23556150 | $\omega$ | 212.20693 | | +0.79130024 | −0.60940653 | |
| $a$ | 2.5965688 | $\Omega$ | 186.09754 | | +0.61139219 | +0.78776185 | |
| $e$ | 0.0156603 | $i$ | 27.88224 | | −0.00659715 | −0.08974933 | |
| $P$ | 4.18 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 1.8+ | 0.1− | 2005 06 08 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.1+ | 0.3+ |
| 2000 03 09 | 704 | 0.4− | 0.2− | 2005 07 31 | 644 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.5+ |
| 2000 03 09 | 704 | 0.6− | 0.4+ | 2005 07 31 | 644 | 0.0 | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.3− |
| 2000 03 09 | 704 | 0.3+ | 0.1+ | 2005 07 31 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 704 | 0.8− | 0.1+ |
| 2000 03 09 | 704 | 0.7− | 0.2− | 2006 09 15 | 704 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 2002 10 15 | 644 | 0.3+ | 0.0 | 2006 09 15 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.3− |
| 2002 10 15 | 644 | 0.2+ | 0.4+ | 2006 09 15 | 704 | 1.1− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2002 10 15 | 644 | 0.3+ | 0.1+ | 2006 09 15 | 704 | 1.3− | 0.6− | 2006 09 30 | 703 | 0.1− | 0.6− |
| 2002 10 29 | 704 | 1.0− | 0.9− | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 1.2+ |
| 2002 10 29 | 704 | 0.4+ | 0.3− | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.9+ | 0.1− |
| 2002 10 29 | 704 | 0.3+ | 0.1− | 2006 09 16 | 644 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 0.6+ | 0.5+ |
| 2002 11 05 | 644 | 0.3− | 0.3+ | 2006 09 17 | 704 | (1.9+ | 0.9−) | 2006 10 01 | 704 | 0.3+ | 1.1+ |
| 2002 11 05 | 644 | 0.3− | 0.0 | 2006 09 17 | 704 | (1.0+ | 2.1+) | 2006 10 01 | 704 | (1.9− | 1.7+) |
| 2002 11 05 | 644 | 0.4− | 0.2+ | 2006 09 17 | 704 | (1.5+ | 0.7+) | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2004 01 16 | 644 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2004 01 16 | 644 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2004 01 16 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 15 | 106 | 0.3− | 0.5− |
| 2004 02 20 | 608 | 0.2+ | 0.7+ | 2006 09 18 | 699 | 0.4+ | 0.4− | 2006 10 15 | 106 | 0.3+ | 0.9− |
| 2004 02 20 | 608 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 15 | 106 | 0.5− | 0.5+ |
| 2004 02 20 | 608 | 0.5+ | 0.4+ | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 15 | 106 | 0.3+ | 0.2− |
| 2004 03 14 | 644 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.3+ |
| 2004 03 14 | 644 | 0.2− | 0.3+ | 2006 09 20 | 704 | 1.4+ | 0.1− | 2006 10 16 | 703 | 0.1− | 1.2+ |
| 2004 03 14 | 644 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.8+ | 1.1+ |
| 2005 06 02 | 703 | 1.1− | 0.0 | 2006 09 20 | 704 | (1.2− | 1.8+) | 2006 10 16 | 703 | 0.7+ | 1.2+ |
| 2005 06 02 | 703 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.4− | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2005 06 02 | 703 | 1.3+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2005 06 02 | 703 | (1.7− | 1.8+) | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2005 06 08 | 704 | 0.0 | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2005 06 08 | 704 | 0.3− | 0.3− | 2006 09 28 | 704 | 0.2− | 0.3− | | | | |

**(145337)∗ 2005 MG$_1$ = 2001 YL$_{14}$**

Discovered 2005 June 17 by the Mt. Lemmon Survey at Mt. Lemmon. Id. G. V. Williams (*MPO* 86803)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.00112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19605339 | $\omega$ | 207.91383 | | −0.44796667 | −0.89390660 | |
| $a$ | 2.9346286 | $\Omega$ | 268.70333 | | +0.82323137 | −0.40542415 | |
| $e$ | 0.0123887 | $i$ | 0.91854 | | +0.34873481 | −0.19121258 | |
| $P$ | 5.03 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 291 | 0.8− | 0.6− | 2005 08 29 | 291 | 0.3− | 0.3+ | 2006 10 29 | G96 | 0.4+ | 0.1− |
| 2001 10 24 | 291 | 0.6+ | 0.4− | 2005 08 29 | 291 | 0.5− | 0.2+ | 2006 10 29 | G96 | 0.2+ | 0.3− |
| 2001 10 24 | 291 | 0.8− | 0.3− | 2005 08 29 | 291 | 0.5− | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.3− |
| 2001 12 09 | 644 | 0.3− | 0.1− | 2005 09 04 | 185 | (1.3− | 2.2−) | 2006 10 29 | G96 | 0.3− | 0.2+ |
| 2001 12 09 | 644 | 0.4+ | 1.0+ | 2005 09 04 | 185 | (1.7+ | 0.2−) | 2006 11 11 | 691 | 0.3+ | 0.3− |
| 2001 12 09 | 644 | 0.2+ | 0.8+ | 2005 09 04 | 185 | 0.1+ | 1.3− | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | 0.6+ | 1.0+ | 2005 09 11 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | (0.9+ | 1.9+) | 2005 09 11 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2001 12 17 | 704 | (0.9+ | 2.2+) | 2005 09 11 | 691 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2001 12 19 | 704 | 0.7+ | 0.6− | 2005 09 25 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2005 09 25 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 12 19 | 704 | 0.4+ | 1.1+ | 2005 09 25 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | 0.8+ | 0.4+ | 2005 09 30 | G96 | 0.1− | 0.5− | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2005 09 30 | G96 | 0.3− | 0.4− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2003 03 07 | 291 | 0.3− | 0.3+ | 2005 09 30 | G96 | 0.5+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2003 03 07 | 291 | 0.1+ | 0.6+ | 2005 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2003 03 07 | 291 | 0.8+ | 0.6+ | 2005 11 25 | G96 | 0.4+ | 0.6− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2005 06 17 | G96 | 0.2+ | 0.2+ | 2005 11 25 | G96 | 0.9+ | 0.8− | 2006 11 23 | 691 | 0.5− | 0.2− |
| 2005 06 17 | G96 | 0.4− | 0.3− | 2005 11 25 | G96 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2005 06 17 | G96 | 0.5+ | 0.4− | 2005 11 25 | G96 | 0.8− | 0.3+ | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2005 06 17 | G96 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2005 06 18 | G96 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2005 06 18 | G96 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2005 06 18 | G96 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.6− | 2006 12 01 | 691 | 0.3− | 0.3+ |
| 2005 06 18 | G96 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.9− | 0.3− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2005 08 28 | 691 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.3− | 0.6+ |
| 2005 08 28 | 691 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.1− | | | | |
| 2005 08 28 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.4+ | 0.1− | | | | |

**(145338)∗ 2005 MR$_2$ = 2001 OB$_{80}$ = 2001 QO$_{332}$**

Discovered 2005 June 17 by the Mt. Lemmon Survey at Mt. Lemmon. Id. G. V. Williams (*MPO* 86805)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.84985 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24302167 | $\omega$ | 348.71599 | | +0.01722747 | +0.99877071 | |
| $a$ | 2.5431543 | $\Omega$ | 282.25872 | | −0.91360411 | −0.00316279 | |
| $e$ | 0.1715865 | $i$ | 2.72621 | | −0.40623976 | +0.04946790 | |
| $P$ | 4.06 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 644 | 0.6+ | 0.5+ | 2005 06 21 | 644 | 0.2− | 0.1+ | 2005 07 31 | E12 | 0.2− | 0.3− |
| 2001 07 29 | 644 | 0.5+ | 0.6+ | 2005 06 30 | 691 | 0.1+ | 0.5+ | 2005 07 31 | E12 | 0.1+ | 0.4− |
| 2001 07 29 | 644 | 0.4+ | 0.5+ | 2005 06 30 | 691 | 0.1− | 0.5+ | 2005 08 06 | 644 | 0.1+ | 0.0 |
| 2001 07 31 | 644 | 0.7− | 0.4+ | 2005 06 30 | 691 | 0.1− | 0.5+ | 2005 08 06 | 644 | 0.2− | 0.0 |
| 2001 07 31 | 644 | 0.3− | 0.5+ | 2005 07 05 | 644 | 0.1− | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.1− |
| 2001 07 31 | 644 | 0.8− | 0.3+ | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2005 10 27 | G96 | 0.2− | 0.4− |
| 2001 08 16 | 704 | 0.3− | 0.2+ | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2005 10 27 | G96 | 0.3− | 0.4− |
| 2001 08 16 | 704 | 0.4+ | 0.3+ | 2005 07 10 | 703 | 1.2− | 0.1+ | 2005 10 27 | G96 | 0.2− | 0.7− |
| 2001 08 16 | 704 | 0.1+ | 0.1+ | 2005 07 10 | 703 | 0.0 | 0.8− | 2005 10 27 | G96 | 0.4− | 0.3− |
| 2001 08 16 | 704 | 0.1+ | 0.5+ | 2005 07 10 | 703 | 0.5+ | 1.2− | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2001 08 16 | 704 | 0.4− | 0.0 | 2005 07 10 | 703 | 1.1− | 0.2− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2001 10 18 | 644 | 0.0 | 0.4− | 2005 07 15 | G96 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.4− |
| 2001 10 18 | 644 | 0.6− | 0.7− | 2005 07 15 | G96 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.5− | 0.1− |
| 2001 10 18 | 644 | 0.2− | 1.0− | 2005 07 15 | G96 | 0.5+ | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.6− |
| 2004 02 19 | 735 | 0.6− | 0.3+ | 2005 07 15 | G96 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2004 02 19 | 735 | 1.0+ | 0.6+ | 2005 07 18 | 644 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2004 02 19 | 735 | 0.1+ | 1.0+ | 2005 07 18 | 644 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.6+ | 0.1− |
| 2005 06 17 | G96 | 0.2− | 0.3− | 2005 07 18 | 644 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2005 06 17 | G96 | 0.2+ | 0.5− | 2005 07 28 | 644 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2005 06 17 | G96 | 0.0 | 0.5− | 2005 07 28 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 2005 06 17 | G96 | 0.2− | 0.4− | 2005 07 28 | 644 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2005 06 21 | 644 | 0.1+ | 0.1+ | 2005 07 28 | 415 | 0.3+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2005 06 21 | 644 | 0.3+ | 0.2+ | 2005 07 31 | E12 | 0.4− | 0.2− | 2006 11 22 | 691 | 0.3− | 0.4+ |

**(145339)∗ 2005 $MD_3$ = 2000 $TE_{20}$ = 2004 $HV_{64}$**

Discovered 2005 June 21 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86806), A. Doppler (*MPO* 89676)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.56849 | | | (2000.0) | | |
| $n$ | 0.17518692 | $\omega$ | 186.86355 | | +0.72420647 | +0.67249272 |
| $a$ | 3.1632603 | $\Omega$ | 129.69124 | | −0.62288125 | +0.73287610 |
| $e$ | 0.1159779 | $i$ | 11.43618 | | −0.29587824 | +0.10318026 |
| $P$ | 5.63 | $H$ | 14.8 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 24 | 691 | 0.3− | 0.1+ | 2004 04 16 | 704 | 0.2+ | 0.8+ | 2005 08 06 | 704 | 0.1+ | 0.1− |
| 1993 05 24 | 691 | 0.3− | 0.3− | 2004 04 16 | 704 | 0.1− | 0.8+ | 2005 08 06 | 704 | (1.9− | 1.2−) |
| 1993 05 24 | 691 | 0.3− | 0.4− | 2004 04 24 | 704 | 0.2+ | 0.8+ | 2005 08 27 | E12 | 0.3+ | 0.0 |
| 1997 02 14 | 691 | 0.3+ | 0.2− | 2004 04 24 | 704 | 0.6+ | 0.6+ | 2005 08 27 | E12 | 1.1− | 0.0 |
| 1997 02 14 | 691 | 1.6+ | 0.1+ | 2004 04 24 | 704 | 0.2+ | 0.6+ | 2005 08 27 | E12 | 0.0 | 0.3+ |
| 1997 02 14 | 691 | 0.1− | 0.5− | 2004 04 24 | 704 | 0.2+ | 0.2+ | 2005 08 27 | E12 | 0.3− | 0.2− |
| 2000 09 29 | 699 | 0.8− | 2.0+ | 2005 06 21 | 644 | 0.5+ | 0.1+ | 2005 09 08 | E12 | 0.5− | 0.6+ |
| 2000 09 29 | 699 | 0.2− | 0.8+ | 2005 06 21 | 644 | 0.1+ | 0.0 | 2005 09 08 | E12 | 0.2+ | 0.0 |
| 2000 09 29 | 699 | 0.3+ | 0.9+ | 2005 06 21 | 644 | 0.2+ | 0.0 | 2005 09 08 | E12 | 0.4− | 0.0 |
| 2000 09 29 | 699 | 0.0 | 1.1+ | 2005 06 21 | 644 | 0.0 | 0.1− | 2005 09 08 | E12 | 0.5+ | 0.4+ |
| 2000 10 01 | 704 | 0.1− | 0.7− | 2005 06 21 | 644 | 0.3+ | 0.0 | 2006 09 30 | 703 | (2.2+ | 0.3+) |
| 2000 10 01 | 704 | 1.1+ | 0.5− | 2005 06 21 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.6− | 1.2− |
| 2000 10 01 | 704 | 0.1+ | 0.2− | 2005 06 27 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 1.3− | 0.1+ |
| 2000 10 01 | 704 | 0.1+ | 0.4− | 2005 06 27 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 1.4− | 0.4− |
| 2000 10 01 | 704 | 0.6+ | 0.4− | 2005 06 27 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.8+ |
| 2000 10 05 | 704 | 0.2− | 0.6− | 2005 07 02 | 691 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2000 10 05 | 704 | 1.0− | 0.3+ | 2005 07 02 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 1.3+ |
| 2000 10 05 | 704 | 1.2− | 0.0 | 2005 07 02 | 691 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2000 10 05 | 704 | 0.3− | 1.0− | 2005 07 04 | 644 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2000 10 05 | 704 | 0.1− | 0.4− | 2005 07 04 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.5+ |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2005 07 04 | 644 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.2− |
| 2001 12 11 | 704 | 1.1+ | 0.6− | 2005 07 26 | 608 | 0.0 | 0.8− | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2001 12 11 | 704 | 0.4+ | 0.8+ | 2005 07 26 | 608 | 0.2− | 0.2− | 2006 11 13 | 703 | (2.4+ | 0.5−) |
| 2002 12 14 | 645 | 0.1+ | 0.2+ | 2005 07 26 | 608 | 0.5− | 0.2− | 2006 11 13 | 703 | 0.6+ | 0.7− |
| 2002 12 14 | 645 | 0.1+ | 0.1+ | 2005 07 31 | E12 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.2+ |
| 2002 12 28 | 291 | 0.2− | 0.7+ | 2005 07 31 | E12 | 0.9+ | 0.7− | 2006 11 13 | 703 | 0.4+ | 0.8− |
| 2002 12 28 | 291 | 0.8− | 0.3+ | 2005 07 31 | E12 | 0.7+ | 0.1− | 2006 11 19 | 703 | 0.6− | 0.8+ |
| 2002 12 28 | 291 | 0.7− | 0.5+ | 2005 07 31 | E12 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.3− | 0.3− |
| 2004 04 16 | 704 | 0.2+ | 0.1− | 2005 08 06 | 704 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2004 04 16 | 704 | 0.6− | 0.1− | 2005 08 06 | 704 | 0.4+ | 0.0 | 2006 11 19 | 703 | 0.7− | 0.5+ |
| 2004 04 16 | 704 | 0.1+ | 1.0− | 2005 08 06 | 704 | 0.9− | 0.5− | | | | |

**(145340)∗ 2005 $MZ_3$**

Discovered 2005 June 16 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.52131 | | | (2000.0) | | |
| $n$ | 0.21350248 | $\omega$ | 187.61735 | | +0.98654530 | +0.16283803 |
| $a$ | 2.7724737 | $\Omega$ | 162.99010 | | −0.14724984 | +0.92373373 |
| $e$ | 0.0483461 | $i$ | 2.85394 | | −0.07103421 | +0.34669839 |
| $P$ | 4.62 | $H$ | 16.1 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 691 | 0.2+ | 0.1+ | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 09 19 | 703 | 1.1− | 0.7+ |
| 1999 01 18 | 691 | 0.2+ | 0.1+ | 2005 06 16 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | (1.6− | 1.4+) |
| 1999 01 18 | 691 | 0.1+ | 0.0 | 2005 06 16 | 691 | 0.9+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.0 |
| 2000 04 29 | 691 | 0.1− | 0.4+ | 2005 06 16 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.9+ |
| 2000 04 29 | 691 | 0.2− | 0.2+ | 2005 06 27 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 1.1− | 0.6+ |
| 2000 04 29 | 691 | 0.1+ | 0.3+ | 2005 06 27 | 691 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.4− |
| 2002 11 24 | 644 | 0.5− | 1.1+ | 2005 06 27 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.3− |
| 2002 11 24 | 644 | 0.3− | 1.1+ | 2005 07 05 | G96 | 0.1+ | 0.1+ | 2006 09 20 | 704 | (2.2− | 0.7+) |
| 2002 11 24 | 644 | 0.4− | 1.3+ | 2005 07 05 | G96 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.2+ |
| 2004 02 26 | 704 | 0.7+ | 0.2− | 2005 07 05 | G96 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.0 |
| 2004 02 26 | 704 | 0.1− | 0.3− | 2005 07 05 | G96 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 02 26 | 704 | 0.6+ | 0.6+ | 2006 08 27 | 699 | 1.3+ | 1.2+ | 2006 09 26 | G96 | 0.3− | 0.2+ |
| 2004 02 26 | 704 | 0.1− | 0.4− | 2006 08 27 | 699 | 0.4+ | 0.3− | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2004 02 29 | 691 | 0.0 | 0.2− | 2006 08 27 | 699 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2004 02 29 | 691 | 0.2− | 0.0 | 2006 08 27 | 699 | (1.8+ | 1.1+) | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.1− | 0.7− | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2004 03 26 | 691 | 0.1+ | 0.6+ | 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2+ |
| 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.2+ |
| 2005 05 19 | G96 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.6+ | 1.0+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2005 05 19 | G96 | 0.2− | 0.2− | 2006 09 19 | 703 | (1.8− | 0.0 ) | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2005 05 19 | G96 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.2+ |

**(145341)∗ 2005 $MT_7$**

Discovered 2005 June 27 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.36363 | | | (2000.0) | | |
| $n$ | 0.22812599 | $\omega$ | 149.86640 | | +0.99292840 | −0.11685642 |
| $a$ | 2.6526882 | $\Omega$ | 216.86252 | | +0.10076278 | +0.92277436 |
| $e$ | 0.1139898 | $i$ | 1.99873 | | +0.06276979 | +0.36719485 |
| $P$ | 4.32 | $H$ | 15.8 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 18 | 809 | (2.5+ | 1.3+) | 2002 12 10 | 704 | 0.2− | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1993 09 18 | 809 | 0.2− | 0.9+ | 2002 12 10 | 704 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 1993 09 18 | 809 | 1.2+ | 0.9+ | 2002 12 10 | 644 | 0.3− | 0.2− | 2006 09 25 | 691 | 1.2− | 0.5+ |
| 1993 09 22 | 809 | 0.4− | 1.6+ | 2002 12 10 | 704 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.6+ |
| 1993 09 22 | 809 | 0.4− | 0.1− | 2002 12 10 | 644 | 0.4− | 0.0 | 2006 09 27 | 704 | 0.2+ | 1.0+ |
| 1993 09 22 | 809 | 1.4+ | 1.2− | 2002 12 10 | 704 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.8+ | 0.1− |
| 1995 01 08 | 691 | 0.1+ | 0.5− | 2002 12 10 | 644 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.6+ | 0.2+ |
| 1995 01 08 | 691 | 0.1− | 0.1− | 2004 03 12 | 644 | 0.8+ | 0.4+ | 2006 10 15 | 106 | 0.6− | 1.0− |
| 1995 02 03 | 691 | 0.3− | 0.2+ | 2004 03 12 | 644 | 0.7+ | 0.3+ | 2006 10 15 | 106 | 0.0 | 0.1+ |
| 1995 02 03 | 691 | 0.3− | 0.5+ | 2004 03 12 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 106 | 0.9+ | 0.4+ |
| 1995 02 03 | 691 | 0.0 | 0.5+ | 2005 06 15 | 291 | 0.1+ | 0.2+ | 2006 10 15 | 106 | 0.3+ | 0.5− |
| 1997 08 01 | 910 | 0.2+ | 0.2− | 2005 06 15 | 291 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 1997 08 02 | 910 | 0.2− | 0.4− | 2005 06 15 | 291 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 1997 08 02 | 910 | 0.1− | 0.1− | 2005 06 27 | G96 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 1997 10 05 | 910 | 0.6− | 0.5− | 2005 06 27 | G96 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.6− |
| 1997 10 05 | 910 | 0.6− | 0.3− | 2005 06 27 | G96 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 1997 10 05 | 910 | 0.4− | 0.2− | 2005 06 27 | G96 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.9− |
| 2000 04 05 | 704 | 0.4+ | 0.9+ | 2005 06 28 | G96 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 2000 04 05 | 704 | 0.5+ | 0.7+ | 2005 06 28 | G96 | 0.3− | 0.2+ | 2006 10 17 | 703 | 1.0− | 0.1− |
| 2000 04 05 | 704 | 1.6+ | 0.6− | 2005 06 28 | G96 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.3− |
| 2002 10 30 | 608 | 0.0 | 0.4− | 2005 06 28 | G96 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 10 30 | 608 | 0.7− | 0.3− | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 10 19 | 644 | (1.5+ | 0.7−) |
| 2002 10 30 | 608 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 1.2− | 0.4+ | 2006 09 17 | 704 | 0.7+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.4− | 0.5− | 2006 09 17 | 704 | 0.8+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.3− | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 11 13 | 644 | 0.1+ | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 11 13 | 644 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 11 13 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 12 02 | 704 | 1.2+ | 0.4+ | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2002 12 02 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.5+ | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.2+ | 1.1+ | 2006 11 01 | G96 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | (0.3+ | 1.7+) | 2006 09 20 | 704 | 0.5− | 1.1+ | 2006 11 01 | G96 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 1.4+ | 0.3− | 2006 09 20 | 704 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.1+ |
| 2002 12 05 | 704 | (1.2+ | 2.6−) | 2006 09 22 | A50 | 0.9− | 0.3+ | | | | |
| 2002 12 10 | 704 | 0.3− | 0.7− | 2006 09 22 | A50 | 0.4− | 0.5− | | | | |

**(145342)∗ 2005 $MS_9$ = 2004 $CH_{110}$**

Discovered 2005 June 28 by NEAT at Palomar.

Id. A. Doppler (*MPO* 86813)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.63669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26317133 | $\omega$ | 299.37404 | | −0.98170028 | +0.16726650 | |
| $a$ | 2.4116281 | $\Omega$ | 250.38059 | | −0.12320544 | −0.92236606 | |
| $e$ | 0.0499713 | $i$ | 5.54576 | | −0.14520671 | −0.34822805 | |
| $P$ | 3.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.0 | 0.9+ | 2004 04 12 | 703 | 0.5− | 0.0 | 2005 08 24 | 644 | 0.2− | 0.0 |
| 2000 02 02 | 704 | 0.1− | 0.2+ | 2004 04 12 | 703 | 0.8+ | 1.2− | 2005 08 24 | 644 | 0.2− | 0.0 |
| 2000 02 02 | 704 | 0.1− | 0.8+ | 2004 04 12 | 703 | 0.5+ | 1.4− | 2005 09 12 | 691 | 0.0 | 0.3+ |
| 2000 02 02 | 704 | 0.2− | 0.2+ | 2005 06 28 | 644 | 0.4− | 0.4+ | 2005 09 12 | 691 | 0.1+ | 0.3+ |
| 2000 02 02 | 704 | 0.5+ | 0.9+ | 2005 06 28 | 644 | 0.1− | 0.2− | 2005 09 12 | 691 | 0.1+ | 0.2+ |
| 2002 11 13 | 644 | 0.5+ | 0.2+ | 2005 06 28 | 644 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2002 11 13 | 644 | 0.0 | 0.5+ | 2005 06 29 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.4− | 0.4− |
| 2002 11 13 | 644 | 0.1+ | 0.6+ | 2005 06 29 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2004 02 14 | 644 | 0.0 | 0.7+ | 2005 06 29 | 691 | 0.1+ | 0.1− | 2006 11 01 | G96 | (1.9− | 0.7−) |
| 2004 02 14 | 644 | 0.2− | 0.8+ | 2005 07 05 | 644 | 0.7− | 0.5− | 2006 11 10 | 691 | 0.4+ | 0.1− |
| 2004 02 14 | 644 | 0.2+ | 0.6+ | 2005 07 05 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2004 02 17 | 703 | 0.0 | 0.5+ | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 02 17 | 703 | (1.9− | 0.3−) | 2005 07 08 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.4− |
| 2004 02 17 | 703 | 0.3+ | 0.1− | 2005 07 08 | 691 | 0.4+ | 0.9+ | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2004 02 17 | 703 | 0.3− | 0.7+ | 2005 07 08 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2004 02 20 | 608 | 0.6+ | 0.4+ | 2005 07 08 | 691 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2004 02 20 | 608 | 0.6+ | 0.8+ | 2005 07 08 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.4− |
| 2004 02 20 | 608 | 0.1+ | 0.2− | 2005 07 08 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.0 | 1.1+ |
| 2004 03 16 | 704 | 0.1− | 0.7+ | 2005 07 29 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.3+ | 1.3− |
| 2004 03 16 | 704 | 0.3− | 0.4+ | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2004 03 16 | 704 | 0.0 | 0.8+ | 2005 07 29 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.1+ |
| 2004 03 29 | 703 | 0.1+ | 0.6+ | 2005 08 01 | 599 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 1.2− | 0.4+ |
| 2004 03 29 | 703 | 1.5+ | 0.5+ | 2005 08 01 | 599 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.8− |
| 2004 03 29 | 703 | 0.1− | 0.2+ | 2005 08 01 | 599 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 1.5− | 0.1+ |
| 2004 03 29 | 703 | (0.3+ | 3.7+) | 2005 08 01 | 599 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2004 04 12 | 703 | (0.1+ | 1.6+) | 2005 08 24 | 644 | 0.3− | 0.3+ | 2006 12 01 | 691 | 0.1− | 0.3+ |

**(145343)∗ 2005 MY$_9$ = 2004 HX$_{43}$**

Discovered 2005 June 23 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86814)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.72892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17529284 | $\omega$ | 41.98885 | | +0.59194973 | +0.80085712 | |
| $a$ | 3.1619859 | $\Omega$ | 264.50374 | | −0.76159317 | +0.51898056 | |
| $e$ | 0.1732925 | $i$ | 5.22699 | | −0.26376383 | +0.29880939 | |
| $P$ | 5.62 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.5− | 0.5+ | 2005 07 29 | 699 | 0.1+ | 0.1− | 2005 09 27 | 644 | 0.0 | 0.1− |
| 2000 09 30 | 704 | 0.2− | 0.1+ | 2005 07 29 | 699 | 0.5− | 0.1+ | 2005 09 27 | 644 | 0.2+ | 0.1− |
| 2000 09 30 | 704 | 0.2+ | 0.5− | 2005 07 29 | 699 | 0.7+ | 0.1− | 2005 09 27 | 644 | 0.5+ | 0.0 |
| 2000 11 01 | 704 | 0.5+ | 0.8+ | 2005 07 29 | 699 | (0.4+ | 2.7−) | 2005 11 01 | G96 | 0.1+ | 0.2− |
| 2000 11 01 | 704 | 0.5+ | 0.2− | 2005 07 29 | 644 | 0.1− | 0.1+ | 2005 11 01 | G96 | 0.3− | 0.1− |
| 2000 11 01 | 704 | 0.0 | 0.6+ | 2005 07 29 | 644 | 0.1− | 0.1+ | 2005 11 01 | G96 | 0.1− | 0.0 |
| 2000 11 30 | 645 | 0.0 | 0.1− | 2005 07 29 | 644 | 0.2− | 0.1+ | 2005 11 01 | G96 | 0.0 | 0.1− |
| 2000 11 30 | 645 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.3− | 0.2+ | 2005 11 01 | G96 | 0.2+ | 0.2− |
| 2004 04 21 | 704 | 0.1− | 1.4+ | 2005 08 06 | 644 | 0.4− | 0.2+ | 2005 11 01 | G96 | 0.1− | 0.3− |
| 2004 04 21 | 704 | 1.0+ | 0.5+ | 2005 08 06 | 644 | 0.3− | 0.2+ | 2005 11 01 | G96 | 0.4− | 0.1− |
| 2004 04 21 | 704 | 0.3− | 0.5− | 2005 08 24 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.6+ | 0.2− |
| 2004 04 26 | 704 | 0.6− | 0.3− | 2005 08 24 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2004 04 26 | 704 | 0.8− | 0.9− | 2005 08 24 | 644 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.3+ |
| 2004 04 26 | 704 | 0.4+ | 0.9− | 2005 08 29 | 699 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.5− |
| 2005 06 23 | 644 | 0.1− | 0.4+ | 2005 08 29 | 699 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2005 06 23 | 644 | 0.0 | 0.0 | 2005 08 29 | 699 | 0.0 | 0.9− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2005 06 23 | 644 | 0.2+ | 0.1− | 2005 08 29 | 699 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.4+ |
| 2005 06 29 | 644 | 0.1− | 0.0 | 2005 09 03 | 644 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.5+ |
| 2005 06 29 | 644 | 0.1− | 0.1+ | 2005 09 03 | 644 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2005 06 29 | 644 | 0.1+ | 0.2− | 2005 09 03 | 644 | 0.1− | 0.1+ | 2006 11 24 | 703 | 1.2− | 0.7+ |
| 2005 07 29 | 699 | 0.5+ | 0.4+ | 2005 09 07 | 699 | 0.2+ | 0.3− | 2006 11 24 | 703 | 0.7− | 0.1− |
| 2005 07 29 | 699 | 1.2− | 0.6+ | 2005 09 07 | 699 | 0.8+ | 0.3− | 2006 11 24 | 703 | 0.2+ | 0.6− |
| 2005 07 29 | 699 | 1.3− | 0.9− | 2005 09 07 | 699 | 0.5+ | 0.6+ | 2006 11 24 | 703 | 0.6+ | 0.4+ |
| 2005 07 29 | 699 | 1.2+ | 0.7− | 2005 09 07 | 699 | 0.3+ | 0.5+ | | | | |

**(145344)∗ 2005 MN$_{11}$**

Discovered 2005 June 27 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.54739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22535399 | $\omega$ | 227.20087 | | +0.93254253 | +0.27506406 | |
| $a$ | 2.6743970 | $\Omega$ | 115.58007 | | −0.20585830 | +0.93723462 | |
| $e$ | 0.1187017 | $i$ | 15.02887 | | −0.29662568 | +0.21431524 | |
| $P$ | 4.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.2− | 0.3+ | 2005 06 29 | 644 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.7+ |
| 2002 12 12 | 644 | 0.3− | 0.3+ | 2005 06 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.4+ |
| 2002 12 12 | 644 | 0.1− | 0.2+ | 2005 06 30 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.1− | 0.1− |
| 2003 12 25 | 645 | 0.1+ | 0.1+ | 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 703 | (1.7− | 0.6−) |
| 2003 12 25 | 645 | 0.1+ | 0.2+ | 2005 07 05 | 644 | 0.5+ | 0.1+ | 2006 10 31 | 703 | 0.4+ | 0.4+ |
| 2004 03 14 | 704 | 0.3− | 1.2+ | 2005 07 05 | 644 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 0.2− | 0.1− |
| 2004 03 14 | 704 | 0.2+ | 0.5+ | 2005 07 05 | 644 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2004 03 14 | 704 | 0.4+ | 0.0 | 2006 09 25 | 703 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2005 06 09 | 703 | 0.7− | 0.0 | 2006 09 25 | 703 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 1.1+ |
| 2005 06 09 | 703 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 1.0+ | 0.4+ | 2006 11 18 | 703 | 0.2− | 0.1+ |
| 2005 06 09 | 703 | 0.7− | 0.8+ | 2006 09 25 | 703 | 0.2− | 0.5+ | 2006 11 18 | 703 | 0.2− | 0.8+ |
| 2005 06 09 | 703 | 0.0 | 0.9+ | 2006 10 04 | 703 | 0.2− | 0.2− | 2006 11 18 | 703 | 0.4+ | 0.7+ |
| 2005 06 27 | 691 | 0.4− | 1.0+ | 2006 10 04 | 703 | 0.4− | 0.6− | 2006 11 18 | 703 | 0.6− | 0.3+ |
| 2005 06 27 | 691 | 0.1+ | 0.2+ | 2006 10 04 | 703 | 0.0 | 0.1+ | 2006 11 24 | 703 | 0.8− | 0.3+ |
| 2005 06 27 | 691 | 0.3+ | 0.1+ | 2006 10 04 | 703 | 0.6− | 0.3− | 2006 11 24 | 703 | 0.6− | 0.8+ |
| 2005 06 29 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.1− | 2006 11 24 | 703 | 0.9− | 0.9+ |
| 2005 06 29 | 644 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.7+ | 2006 11 24 | 703 | 0.8− | 0.9+ |

**(145345)∗ 2005 MA$_{12}$ = 2004 DH$_{61}$**

Discovered 2005 June 28 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 86815)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.51864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21232002 | $\omega$ | 217.06196 | | +0.96644681 | −0.25318385 | |
| $a$ | 2.7827579 | $\Omega$ | 157.48775 | | +0.25434389 | +0.91964270 | |
| $e$ | 0.0552503 | $i$ | 6.49975 | | +0.03591312 | +0.30025863 | |
| $P$ | 4.64 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.2+ | 0.0 | 2004 02 26 | 704 | 1.5+ | 0.8+ | 2006 08 28 | 703 | 0.0 | 0.8+ |
| 2002 10 30 | 608 | 0.3− | 0.5− | 2004 02 26 | 704 | 1.2+ | 1.2+ | 2006 08 28 | 703 | 0.0 | 1.0+ |
| 2002 10 30 | 608 | 0.3− | 0.3+ | 2004 02 26 | 704 | 1.0+ | 0.2+ | 2006 09 16 | 699 | 0.1− | 1.1+ |
| 2002 11 07 | 704 | 0.2+ | 0.4+ | 2004 02 29 | 291 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.8+ |
| 2002 11 07 | 704 | 0.2+ | 0.0 | 2004 02 29 | 291 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.3− | 0.8+ |
| 2002 11 07 | 704 | (0.7+ | 1.9+) | 2004 02 29 | 291 | 0.4+ | 0.3+ | 2006 09 16 | 699 | 0.6+ | 0.4+ |
| 2002 11 07 | 704 | 0.8− | 0.3+ | 2004 03 14 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.8− | 0.8+ |
| 2002 11 07 | 704 | 0.0 | 0.8+ | 2004 03 14 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 1.1− | 0.8+ |
| 2002 11 16 | 644 | 0.1+ | 0.9+ | 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.6− |
| 2002 11 16 | 644 | 0.0 | 0.8+ | 2005 06 04 | 691 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.2+ |
| 2002 11 16 | 644 | 0.3+ | 0.9+ | 2005 06 04 | 691 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.5+ |
| 2002 11 23 | 644 | 0.2+ | 0.6+ | 2005 06 04 | 691 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2002 11 23 | 644 | 0.1− | 0.8+ | 2005 06 15 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2002 11 23 | 644 | 0.3+ | 0.4+ | 2005 06 15 | 691 | 0.0 | 0.4− | 2006 09 30 | G96 | 0.2− | 0.4+ |
| 2002 12 01 | 704 | 0.1− | 0.4+ | 2005 06 15 | 691 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.6+ |
| 2002 12 01 | 704 | 0.1+ | 0.7+ | 2005 06 28 | 644 | 0.5+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.7+ |
| 2002 12 01 | 704 | 0.6− | 0.9+ | 2005 06 28 | 644 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.5+ |
| 2003 01 02 | 704 | 0.1− | 0.2− | 2005 06 28 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.8+ |
| 2003 01 02 | 704 | 1.0− | 0.3− | 2005 06 30 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2003 01 02 | 704 | 0.3− | 1.1+ | 2005 06 30 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2003 01 02 | 704 | (2.5− | 0.1+) | 2005 06 30 | 691 | 0.0 | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 291 | 0.2+ | 0.3+ | 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2004 02 12 | 291 | 0.3− | 0.5+ | 2005 07 11 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.5− | 0.0 |
| 2004 02 12 | 291 | 0.6− | 0.4+ | 2005 07 11 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.3+ |
| 2004 02 26 | 704 | 0.8+ | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.3+ | | | | |
| 2004 02 26 | 704 | 0.9+ | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.2+ | | | | |

**(145346)∗ 2005 MU$_{12}$**

Discovered 2005 June 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.00962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21966359 | $\omega$ | 217.92803 | | +0.86224311 | −0.50598918 | |
| $a$ | 2.7203868 | $\Omega$ | 172.36738 | | +0.49630840 | +0.83514662 | |
| $e$ | 0.0897636 | $i$ | 9.80652 | | +0.10106826 | +0.21565033 | |
| $P$ | 4.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.5− | 0.8+ | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.4− | 0.9+ |
| 2002 11 25 | 644 | 0.2− | 0.8+ | 2006 08 19 | 691 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 2002 11 25 | 644 | 0.2− | 0.9+ | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.2− |
| 2002 11 30 | 704 | 0.3+ | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.6− |
| 2002 11 30 | 704 | 0.9− | 0.8+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.6− | 1.0− |
| 2002 11 30 | 704 | 0.7+ | 1.4+ | 2006 08 22 | 644 | 0.2+ | 0.6− | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 2004 02 26 | 704 | 0.4+ | 0.9+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2004 02 26 | 704 | 1.4+ | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 30 | 703 | 1.5− | 0.2+ |
| 2004 02 26 | 704 | 0.8+ | 0.6+ | 2006 08 22 | 644 | 0.3+ | 0.6− | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2004 02 26 | 704 | (0.3+ | 1.9+) | 2006 08 28 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.0 |
| 2004 03 14 | 691 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.5+ |
| 2004 03 14 | 691 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.3− |
| 2004 03 14 | 691 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.7− |
| 2005 06 11 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.9+ |
| 2005 06 11 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.6+ |
| 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | (0.8− | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 1.4− | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2005 06 29 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | 1.3+ | 0.6− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2005 06 29 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 06 30 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.5+ | 1.0+ | 2006 10 20 | 644 | 0.7+ | 0.1+ |
| 2005 06 30 | 691 | 0.1− | 0.3+ | 2006 09 26 | 704 | 1.3− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2005 06 30 | 691 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | (1.6− | 1.5+) | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 1.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2005 07 04 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2006 08 17 | 644 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 08 17 | 644 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.3+ |

**(145347)∗ 2005 MB$_{13}$ = 2001 RV$_{121}$**

Discovered 2005 June 29 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86817)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.83694 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22518702 | $\omega$ | 156.54691 | | −0.12826095 | +0.99043907 | |
| $a$ | 2.6757189 | $\Omega$ | 106.05310 | | −0.91806639 | −0.09920690 | |
| $e$ | 0.0286750 | $i$ | 3.02952 | | −0.37510429 | −0.09585638 | |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 06 | 691 | 0.5+ | 0.7+ | 2004 03 13 | 644 | 0.4+ | 0.3+ | 2005 07 27 | 644 | 0.2+ | 0.1+ |
| 1995 02 06 | 691 | 0.5− | 0.5− | 2004 03 16 | 691 | 0.3+ | 0.6+ | 2005 08 06 | 704 | 0.2− | 0.6− |
| 1995 02 06 | 691 | 0.5+ | 0.0 | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2005 08 06 | 704 | 0.0 | 0.6− |
| 1995 03 29 | 691 | 0.3− | 0.4− | 2004 03 16 | 691 | 0.3+ | 0.6+ | 2005 08 06 | 704 | (2.1− | 0.2+) |
| 1995 03 29 | 691 | 0.1− | 0.5+ | 2005 06 29 | 644 | 0.3− | 0.1+ | 2005 08 06 | 704 | 0.5+ | 1.0+ |
| 1995 03 29 | 691 | 0.0 | 0.4+ | 2005 06 29 | 644 | 0.3− | 0.3+ | 2005 08 29 | 699 | 1.0− | 1.0− |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2005 06 29 | 644 | 0.1+ | 0.3+ | 2005 08 29 | 699 | 0.9+ | 0.6− |
| 2001 09 12 | 704 | 0.2+ | 0.3− | 2005 06 30 | 691 | 0.0 | 0.5+ | 2005 08 29 | 699 | 0.2+ | 0.5− |
| 2001 09 12 | 704 | 0.7− | 0.1− | 2005 06 30 | 691 | 0.2− | 0.6+ | 2005 08 29 | 699 | 0.9− | 0.9+ |
| 2001 09 12 | 704 | 0.2− | 0.7+ | 2005 06 30 | 691 | 0.3− | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.5+ |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2005 07 12 | G96 | 0.4− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.9+ | 1.2+ | 2005 07 12 | G96 | (2.3− | 0.1−) | 2006 11 11 | 691 | 0.3− | 0.5+ |
| 2001 09 19 | 704 | 0.0 | 0.5− | 2005 07 12 | G96 | 0.6− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.5− | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.8+ | 0.9+ | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 03 13 | 644 | 0.4+ | 0.5+ | 2005 07 27 | 644 | 0.3+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.7+ |
| 2004 03 13 | 644 | 0.3+ | 0.3+ | 2005 07 27 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.3+ |

**(145348)∗ 2005 MJ$_{15}$ = 2003 FE$_{70}$**

Discovered 2005 June 29 by NEAT at Palomar.

Id. K. E. Smalley (*MPO* 86821)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.57614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15522568 | $\omega$ | 243.14059 | | +0.90008197 | −0.42134929 | |
| $a$ | 3.4289435 | $\Omega$ | 141.49490 | | +0.43544641 | +0.86081206 | |
| $e$ | 0.0579285 | $i$ | 10.26853 | | +0.01545549 | +0.28542488 | |
| $P$ | 6.35 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 704 | 0.1− | 0.0 | 2003 03 26 | 691 | 0.4+ | 0.3+ | 2005 07 18 | 644 | 0.3− | 0.4+ |
| 2000 11 26 | 704 | 0.2− | 1.0− | 2003 03 27 | 644 | 0.6+ | 0.7+ | 2005 07 18 | 644 | 0.1+ | 0.4+ |
| 2000 11 26 | 704 | 0.4+ | 0.3+ | 2003 03 27 | 644 | 1.1+ | 1.5+ | 2005 07 18 | 644 | 0.1− | 0.3+ |
| 2000 11 26 | 704 | 1.2− | 0.7+ | 2003 03 27 | 644 | 0.2+ | 1.4+ | 2005 07 28 | 644 | 0.2− | 0.3+ |
| 2000 11 26 | 704 | 0.3− | 0.2+ | 2003 04 01 | 645 | 0.0 | 0.0 | 2005 07 28 | 644 | 0.3− | 0.3+ |
| 2002 01 05 | 691 | 0.4+ | 0.6+ | 2003 04 01 | 645 | 0.0 | 0.0 | 2005 07 28 | 644 | 0.2− | 0.6+ |
| 2002 01 05 | 691 | 0.4+ | 0.5+ | 2003 04 09 | 691 | 0.5− | 0.1− | 2005 07 28 | 644 | 0.0 | 0.4+ |
| 2002 01 05 | 691 | 0.5+ | 0.8+ | 2003 04 09 | 691 | 0.3− | 0.1+ | 2005 07 28 | 644 | 0.2− | 0.2+ |
| 2002 02 11 | 704 | 0.4+ | 0.6− | 2003 04 09 | 691 | 0.6− | 0.1+ | 2005 07 28 | 644 | 0.5− | 0.1+ |
| 2002 02 11 | 704 | 0.3+ | 1.3− | 2005 06 29 | 644 | 0.3− | 0.1+ | 2005 12 01 | 695 | 0.2− | 0.4+ |
| 2002 02 11 | 704 | 0.0 | 0.5− | 2005 06 29 | 644 | 0.4− | 0.5+ | 2005 12 01 | 695 | 0.3− | 0.2+ |
| 2002 02 11 | 704 | 0.7+ | 1.1− | 2005 06 29 | 644 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.2+ |
| 2002 02 11 | 704 | (0.3+ | 1.8−) | 2005 07 01 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3+ |
| 2002 02 20 | 691 | 0.4− | 0.4+ | 2005 07 01 | 691 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.4+ |
| 2002 02 20 | 691 | 0.2− | 0.5+ | 2005 07 01 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 1.2+ | 1.1+ |
| 2002 02 20 | 691 | 0.1− | 0.3+ | 2005 07 09 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 2.3− | 0.5+ |
| 2003 03 26 | 691 | 0.4+ | 0.3− | 2005 07 09 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.8− | 0.1+ |
| 2003 03 26 | 691 | 0.1− | 0.2+ | 2005 07 09 | 691 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.0 |

**(145349)∗ 2005 MS$_{15}$ = 2004 FO$_{40}$**

Discovered 2005 June 27 by D. Healy at Junk Bond Observatory, Sierra Vista.

Id. G. V. Williams (*MPO* 86822)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.83028 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20932249 | $\omega$ | 26.65364 | | −0.38656783 | +0.92222582 | |
| $a$ | 2.8092612 | $\Omega$ | 220.60664 | | −0.84835030 | −0.35899933 | |
| $e$ | 0.1669860 | $i$ | 0.70890 | | −0.36175555 | −0.14359324 | |
| $P$ | 4.71 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.3− | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.0 |
| 1996 09 08 | 691 | 0.1− | 0.1+ | 2005 06 13 | G96 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.1+ |
| 1996 09 08 | 691 | 0.3− | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.5+ |
| 1999 01 11 | 691 | 0.4− | 0.1− | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 1999 01 11 | 691 | 0.5− | 0.1+ | 2005 06 27 | 701 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 1999 01 11 | 691 | 0.0 | 0.1− | 2005 06 27 | 701 | (2.0− | 1.2−) | 2006 10 16 | 691 | 0.4− | 0.1+ |
| 2001 09 22 | 691 | 0.1+ | 0.2+ | 2005 06 27 | 701 | (0.4− | 2.7−) | 2006 10 16 | 691 | 0.4− | 0.4+ |
| 2001 09 22 | 691 | 0.3+ | 0.2+ | 2005 07 01 | 701 | 0.0 | 0.7+ | 2006 10 16 | 691 | 0.3− | 0.3+ |
| 2001 09 22 | 691 | 0.1− | 0.2+ | 2005 07 01 | 701 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.1+ |
| 2001 10 13 | 691 | 0.4+ | 0.4+ | 2005 07 01 | 701 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2001 10 13 | 691 | 0.3+ | 0.3+ | 2005 07 03 | 701 | 0.1− | 0.9+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2001 10 13 | 691 | 0.5+ | 0.0 | 2005 07 03 | G96 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2004 02 16 | 691 | 0.9+ | 0.7+ | 2005 07 03 | G96 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.4+ | 2005 07 03 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.0 | 0.6+ | 2005 07 03 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2004 02 26 | 704 | (0.2− | 2.0+) | 2005 07 03 | 701 | 0.2+ | 0.5+ | 2006 10 29 | 691 | 0.3+ | 0.2− |
| 2004 02 26 | 704 | (0.1− | 2.3+) | 2005 07 07 | 568 | 0.1− | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 1.1+ | 0.2+ | 2005 07 07 | 568 | 0.2− | 0.4+ | 2006 10 29 | 691 | 0.3− | 0.2− |
| 2004 02 26 | 704 | (0.4+ | 2.2+) | 2005 07 07 | 568 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.4+ |
| 2004 02 26 | 704 | (0.9+ | 1.9+) | 2005 07 08 | 568 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | (0.6+ | 2.0+) | 2005 07 10 | 691 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2004 03 18 | 704 | 0.6+ | 1.2+ | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2004 03 18 | 704 | (0.7+ | 1.7+) | 2005 07 10 | 691 | 0.3− | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2004 03 19 | 704 | 0.2+ | 0.8+ | 2005 07 15 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2004 03 19 | 704 | 1.1+ | 1.2+ | 2005 07 15 | G96 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2004 03 19 | 704 | 1.2+ | 0.8+ | 2005 07 15 | G96 | 0.4+ | 0.2− | | | | |

**(145350)∗ 2005 MR$_{18}$**

Discovered 2005 June 28 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.69058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25557189 | $\omega$ | 103.75067 | | +0.95180051 | −0.29113391 | |
| $a$ | 2.4592008 | $\Omega$ | 273.24177 | | +0.23053972 | +0.88662660 | |
| $e$ | 0.1286657 | $i$ | 5.54793 | | +0.20230477 | +0.35935264 | |
| $P$ | 3.86 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.3− | 0.2− | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.4+ | 0.3+ |
| 1998 12 17 | 704 | (2.3− | 2.5−) | 2005 07 05 | 644 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.5+ | 0.1+ |
| 1998 12 17 | 704 | 0.1+ | 1.3− | 2005 07 05 | 644 | 0.0 | 0.5− | 2006 09 18 | 691 | 0.4− | 0.7+ |
| 1998 12 17 | 704 | (1.7+ | 3.0−) | 2005 07 05 | 644 | 0.2− | 0.3− | 2006 09 24 | 691 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2005 07 11 | 703 | 0.5− | 0.3+ | 2006 09 24 | 691 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2005 07 11 | 703 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2005 07 11 | 703 | (3.2− | 0.8−) | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.7+ | 2005 07 11 | 703 | (1.7− | 0.6−) | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2003 01 31 | 704 | 0.7+ | 1.1− | 2005 07 26 | 608 | 0.4− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2003 01 31 | 704 | 0.3+ | 0.9− | 2005 07 26 | 608 | 0.6− | 0.8+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2003 01 31 | 704 | 0.3+ | 0.3+ | 2005 07 26 | 608 | 0.3− | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2003 01 31 | 704 | 0.2− | 1.3− | 2005 08 05 | 644 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.5− | 0.1− |
| 2005 06 28 | 644 | 0.2− | 0.3− | 2005 08 05 | 644 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.4− | 0.5+ |
| 2005 06 28 | 644 | 0.0 | 0.2− | 2005 08 05 | 644 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.5− | 0.1− |
| 2005 06 28 | 644 | 0.3− | 0.1− | 2005 09 12 | 691 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 06 30 | 644 | 0.2− | 0.1− | 2005 09 12 | 691 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2005 06 30 | 644 | 0.3− | 0.3− | 2005 09 12 | 691 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2005 06 30 | 644 | 0.3− | 0.2− | 2005 09 19 | 644 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.5− | 0.3− |
| 2005 07 01 | 691 | 0.3+ | 0.8+ | 2005 09 19 | 644 | 0.5+ | 0.1− | | | | |
| 2005 07 01 | 691 | 0.1− | 0.1+ | 2005 09 19 | 644 | 0.3− | 0.4− | | | | |

**(145351)∗ 2005 ML$_{19}$**

Discovered 2005 June 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.61694 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23278271 | $\omega$ | 333.04322 | | −0.81639601 | −0.57647472 | |
| $a$ | 2.6171919 | $\Omega$ | 171.50163 | | +0.56280241 | −0.80752645 | |
| $e$ | 0.1158183 | $i$ | 13.40892 | | +0.12942568 | −0.12481160 | |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.1− | 0.2− | 2004 02 18 | 704 | 0.1− | 0.6− | 2005 07 03 | 691 | 0.1+ | 0.3+ |
| 1996 04 13 | 691 | 0.1− | 0.7− | 2004 02 18 | 704 | 0.2− | 0.4− | 2005 07 03 | 691 | 0.2+ | 0.5+ |
| 1996 04 13 | 691 | 0.0 | 0.5− | 2004 02 18 | 704 | 0.4+ | 0.7− | 2005 07 03 | 691 | 0.2+ | 0.3+ |
| 2000 02 06 | 704 | 0.1− | 0.6+ | 2004 02 18 | 704 | 1.2+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2000 02 06 | 704 | 0.7+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2000 02 06 | 704 | 0.3− | 0.8− | 2004 03 22 | 704 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2000 02 06 | 704 | 0.7+ | 0.0 | 2004 03 22 | 704 | 0.3+ | 1.4+ | 2006 09 27 | G96 | 0.1− | 0.2+ |
| 2000 03 11 | 699 | 0.6− | 0.7+ | 2005 06 07 | 703 | 1.2− | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2000 03 11 | 699 | 0.3+ | 0.8+ | 2005 06 07 | 703 | 0.6− | 1.4− | 2006 10 16 | G96 | 0.3− | 0.8− |
| 2000 03 11 | 699 | 0.3− | 0.7+ | 2005 06 07 | 703 | (3.2− | 0.7−) | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2000 03 11 | 699 | 0.4− | 1.6+ | 2005 06 07 | 703 | (1.2+ | 1.6−) | 2006 10 16 | G96 | 0.1− | 0.6− |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2005 06 29 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2005 06 29 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2004 01 29 | 704 | (0.1− | 1.7+) | 2005 06 29 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 01 29 | 704 | 0.5− | 0.4+ | 2005 06 30 | 644 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2004 01 29 | 704 | 0.2− | 0.9+ | 2005 06 30 | 644 | 0.2− | 0.5+ | | | | |
| 2004 01 29 | 704 | 0.7− | 0.4+ | 2005 06 30 | 644 | 0.4+ | 0.2+ | | | | |

**(145352)∗ 2005 MF$_{21}$**

Discovered 2005 June 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.71258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18311361 | $\omega$ | 259.61490 | | +0.76058793 | −0.64081468 | |
| $a$ | 3.0713005 | $\Omega$ | 140.12306 | | +0.64091678 | +0.71548993 | |
| $e$ | 0.1356420 | $i$ | 9.35549 | | +0.10359382 | +0.27826375 | |
| $P$ | 5.38 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 327 | 0.2− | 0.1− | 2005 06 30 | 644 | 0.1− | 0.1− | 2005 08 06 | 704 | 0.3+ | 0.1+ |
| 1995 10 23 | 327 | 0.1− | 0.0 | 2005 06 30 | 644 | 0.2+ | 0.2− | 2005 08 06 | 704 | 0.6+ | 0.2− |
| 1995 10 23 | 327 | 0.0 | 0.3− | 2005 07 01 | 691 | 0.0 | 0.1+ | 2005 08 06 | 704 | 0.3− | 0.7− |
| 2000 08 28 | 704 | 0.8+ | 1.6+ | 2005 07 01 | 691 | 0.1− | 0.0 | 2005 09 01 | 691 | 0.0 | 0.2− |
| 2000 08 28 | 704 | 0.4− | 1.1+ | 2005 07 01 | 691 | 0.2+ | 0.1− | 2005 09 01 | 691 | 0.1− | 0.1− |
| 2000 08 28 | 704 | 0.5+ | 1.4+ | 2005 07 05 | 644 | 0.3− | 0.1− | 2005 09 01 | 691 | 0.1− | 0.4− |
| 2000 08 28 | 704 | (0.2+ | 2.6+) | 2005 07 05 | 644 | 0.0 | 0.0 | 2005 09 14 | 691 | 0.3− | 0.9− |
| 2000 09 21 | 699 | 0.3− | 0.2− | 2005 07 05 | 644 | 0.1+ | 0.1+ | 2005 09 14 | 691 | 0.2− | 0.2+ |
| 2000 09 21 | 699 | 0.2− | 1.1+ | 2005 07 06 | 691 | 0.2+ | 0.1+ | 2005 09 14 | 691 | 0.0 | 0.2− |
| 2000 09 21 | 699 | 0.7− | 0.2+ | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.8+ |
| 2000 09 21 | 699 | 0.3− | 0.6+ | 2005 07 06 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 2004 04 24 | 691 | 0.1+ | 0.3+ | 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.4− | 0.5+ |
| 2004 04 24 | 691 | 0.2− | 0.1+ | 2005 07 09 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | 1.8− | 0.3+ |
| 2004 04 24 | 691 | 0.2− | 0.1+ | 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.6+ | 0.1+ |
| 2004 06 14 | 691 | 0.1− | 0.1− | 2005 07 28 | 644 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.1− | 0.6+ |
| 2004 06 14 | 691 | 0.1+ | 0.2− | 2005 07 28 | 644 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.3+ |
| 2004 06 14 | 691 | 0.2+ | 0.1− | 2005 07 28 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | (1.6+ | 4.5−) |
| 2005 06 30 | 644 | 0.2− | 0.2+ | 2005 08 06 | 704 | 0.3+ | 0.2− | | | | |

**(145353)∗ 2005 MK$_{21}$ = 2004 KA$_{12}$**

Discovered 2005 June 30 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86827)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.48220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21268385 | $\omega$ | 328.46665 | | −0.99854472 | +0.05328615 | |
| $a$ | 2.7795833 | $\Omega$ | 214.59084 | | −0.04593418 | −0.92106921 | |
| $e$ | 0.0308056 | $i$ | 0.83860 | | −0.02825779 | −0.38573579 | |
| $P$ | 4.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.1− | 0.2− | 2004 05 23 | 691 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.3+ | 0.0 |
| 1999 03 19 | 691 | 0.3− | 0.1− | 2004 05 23 | 691 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 1999 03 19 | 691 | 0.3− | 0.1− | 2005 06 30 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2− |
| 2001 09 23 | 691 | 0.1− | 0.1+ | 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2001 09 23 | 691 | 0.7− | 0.2− | 2005 06 30 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.7+ |
| 2001 09 23 | 691 | 0.1+ | 0.1− | 2005 07 03 | G96 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 691 | 0.2+ | 0.3+ | 2005 07 03 | G96 | 0.2+ | 0.5− | 2006 10 20 | 691 | 0.6− | 0.2+ |
| 2001 10 14 | 691 | 0.3+ | 0.1+ | 2005 07 03 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.1+ |
| 2001 10 14 | 691 | 0.0 | 0.4+ | 2005 07 03 | G96 | 0.1− | 0.7− | 2006 10 20 | 691 | 0.6− | 0.1+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2002 11 07 | 645 | 0.1+ | 0.1+ | 2005 07 05 | G96 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2002 12 06 | 645 | 0.1+ | 0.1+ | 2005 07 05 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2002 12 06 | 645 | 0.1+ | 0.1+ | 2005 07 05 | G96 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.2+ |
| 2004 03 23 | 291 | 0.8+ | 0.2+ | 2005 07 11 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 03 23 | 291 | 0.3+ | 0.5+ | 2005 07 11 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2004 03 23 | 291 | 0.3+ | 0.7+ | 2005 07 11 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 05 13 | 691 | 0.1+ | 0.4+ | 2005 07 11 | 691 | 0.2− | 0.1+ | 2006 11 09 | J95 | 0.3+ | 0.6− |
| 2004 05 13 | 691 | 0.4+ | 0.2+ | 2005 07 11 | 691 | 0.3− | 0.1− | 2006 11 09 | J95 | 0.1− | 0.8+ |
| 2004 05 13 | 691 | 0.6+ | 0.1+ | 2005 07 11 | 691 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.3− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 21 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2004 05 21 | 691 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 05 21 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 05 23 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.3− | | | | |

**(145354)∗ 2005 MY$_{21}$ = 2000 UN$_{32}$**

Discovered 2005 June 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86827)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.10600 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17064713 | $\omega$ | 196.93633 | | +0.79907210 | +0.60007018 | |
| $a$ | 3.2191167 | $\Omega$ | 126.12933 | | −0.54611642 | +0.75043585 | |
| $e$ | 0.1667767 | $i$ | 2.65479 | | −0.25147690 | +0.27705923 | |
| $P$ | 5.78 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 691 | 0.6− | 0.3− | 2005 07 04 | 644 | 0.0 | 0.1− | 2005 08 06 | 704 | 0.1+ | 0.2− |
| 2000 10 06 | 691 | 0.4− | 0.2− | 2005 07 04 | 644 | 0.1− | 0.2− | 2005 08 27 | 699 | (0.2+ | 1.6−) |
| 2000 10 06 | 691 | 0.4− | 0.1+ | 2005 07 04 | 644 | 0.0 | 0.0 | 2005 08 27 | 699 | 0.1− | 1.5− |
| 2000 10 29 | 691 | 0.4+ | 0.0 | 2005 07 10 | 703 | 0.9− | 0.3− | 2005 08 27 | 699 | 0.6+ | 0.7+ |
| 2000 10 29 | 691 | 0.6+ | 0.1− | 2005 07 10 | 703 | 0.4− | 0.3− | 2005 08 27 | 699 | 0.2+ | 0.5+ |
| 2000 10 29 | 691 | 0.5+ | 0.2+ | 2005 07 10 | 703 | 0.3+ | 1.0− | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2000 10 31 | 704 | (3.2− | 4.6−) | 2005 07 10 | 703 | 1.2− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 2000 10 31 | 704 | 1.0− | 1.5− | 2005 07 11 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 2000 10 31 | 704 | 0.0 | 0.7− | 2005 07 11 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 11 02 | 691 | 0.2+ | 0.0 | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 11 02 | 691 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2000 11 02 | 691 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2003 02 25 | 599 | 0.1− | 0.5+ | 2005 07 11 | 691 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2003 02 25 | 599 | 0.0 | 0.5+ | 2005 07 27 | 644 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2003 02 25 | 599 | 0.4+ | 0.4+ | 2005 07 27 | 644 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2003 02 25 | 599 | 0.4+ | 0.7+ | 2005 07 27 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.5+ |
| 2005 06 30 | 691 | 0.1+ | 0.1+ | 2005 07 31 | E12 | 0.6+ | 0.0 | 2006 11 17 | H07 | 0.1− | 0.4− |
| 2005 06 30 | 691 | 0.2+ | 0.1+ | 2005 07 31 | E12 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.5+ | 0.1− |
| 2005 06 30 | 691 | 0.2+ | 0.3+ | 2005 07 31 | E12 | 0.7− | 0.5− | 2006 11 17 | 703 | 0.7− | 0.5− |
| 2005 07 03 | G96 | 0.4− | 0.2− | 2005 07 31 | E12 | 1.1− | 0.9− | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2005 07 03 | G96 | 0.1− | 0.5− | 2005 08 06 | 704 | 0.6− | 0.5− | 2006 11 17 | H07 | 0.5+ | 0.3+ |
| 2005 07 03 | G96 | 0.4− | 0.4− | 2005 08 06 | 704 | 0.1− | 0.2+ | | | | |
| 2005 07 03 | G96 | 0.3− | 0.1− | 2005 08 06 | 704 | 0.3− | 0.8− | | | | |

**(145355)∗ 2005 MM$_{22}$**

Discovered 2005 June 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.57245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18889294 | $\omega$ | 28.43350 | | +0.86952917 | +0.47744145 | |
| $a$ | 3.0083307 | $\Omega$ | 302.50070 | | −0.47675311 | +0.74463207 | |
| $e$ | 0.0867037 | $i$ | 8.61727 | | −0.12893989 | +0.46644692 | |
| $P$ | 5.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 691 | 1.2− | 0.9− | 2005 06 30 | 691 | 0.1− | 0.0 | 2005 08 06 | 704 | 0.1− | 0.5− |
| 1998 03 22 | 691 | 0.3− | 0.2− | 2005 07 03 | G96 | 0.1+ | 0.2− | 2005 09 13 | 691 | 0.1+ | 0.3+ |
| 1998 03 22 | 691 | 0.4− | 0.5− | 2005 07 03 | G96 | 0.1− | 0.3− | 2005 09 13 | 691 | 0.1+ | 0.2− |
| 2000 08 01 | 807 | 0.3− | 0.1− | 2005 07 03 | G96 | 0.1− | 0.7− | 2005 09 13 | 691 | 0.1+ | 0.0 |
| 2000 08 01 | 807 | 0.2− | 0.1− | 2005 07 03 | G96 | 0.2− | 0.2− | 2006 11 02 | G96 | 0.2− | 0.2− |
| 2000 10 03 | 691 | 0.1+ | 0.1− | 2005 07 04 | 644 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.4− | 0.3− |
| 2000 10 03 | 691 | 0.0 | 0.1+ | 2005 07 04 | 644 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2000 10 03 | 691 | 0.3+ | 0.0 | 2005 07 04 | 644 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.2− | 0.2− |
| 2001 12 09 | 704 | 0.4+ | 0.2− | 2005 07 31 | E12 | 0.5+ | 0.2− | 2006 11 15 | 703 | 0.2− | 1.2+ |
| 2001 12 09 | 704 | 0.9+ | 0.2− | 2005 07 31 | E12 | 0.7− | 1.1− | 2006 11 15 | 703 | 0.7+ | 0.6+ |
| 2001 12 09 | 704 | 0.3+ | 0.2− | 2005 07 31 | E12 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.8+ | 0.6+ |
| 2003 02 22 | 644 | 1.1+ | 0.9+ | 2005 07 31 | E12 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.3+ | 1.2− |
| 2003 02 22 | 644 | 0.8+ | 0.5+ | 2005 08 02 | 704 | 0.1− | 0.5+ | 2006 11 21 | 703 | 1.2− | 0.3− |
| 2003 02 22 | 644 | 1.0+ | 0.3+ | 2005 08 02 | 704 | 0.2− | 1.0+ | 2006 11 21 | 703 | 1.2− | 0.5− |
| 2003 03 30 | 645 | 0.2+ | 0.1+ | 2005 08 02 | 704 | 0.3− | 0.8+ | 2006 11 21 | 703 | 0.7− | 0.7+ |
| 2003 03 30 | 645 | 0.1+ | 0.2+ | 2005 08 06 | 704 | 0.1+ | 1.1+ | 2006 11 21 | 703 | 0.2− | 0.9− |
| 2005 06 30 | 691 | 0.0 | 0.1+ | 2005 08 06 | 704 | 0.1+ | 0.4+ | | | | |
| 2005 06 30 | 691 | 0.1− | 0.1+ | 2005 08 06 | 704 | 0.6− | 0.7+ | | | | |

**(145356)∗ 2005 MV$_{23}$**

Discovered 2005 June 26 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.38141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27607704 | $\omega$ | 148.50965 | | −0.28864320 | +0.94998723 | |
| $a$ | 2.3358728 | $\Omega$ | 104.48321 | | −0.90202825 | −0.22808336 | |
| $e$ | 0.1492302 | $i$ | 7.07194 | | −0.32098309 | −0.21331253 | |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 27 | 209 | 0.6+ | 0.0 | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2001 02 27 | 209 | 0.3− | 0.2+ | 2004 01 22 | 704 | 0.3− | 0.7+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2001 02 27 | 209 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.5− | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2001 03 20 | 608 | 0.5− | 1.3− | 2004 01 22 | 704 | 0.5+ | 0.8+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2001 03 20 | 608 | 0.5− | 1.2− | 2005 06 12 | 691 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4+ |
| 2001 03 20 | 608 | 1.0− | 0.8− | 2005 06 12 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.7+ |
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2005 06 12 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2001 04 16 | 645 | 0.1− | 0.0 | 2005 06 26 | 644 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.7− | 0.4+ |
| 2001 04 17 | 699 | 0.2+ | 0.6+ | 2005 06 26 | G96 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2001 04 17 | 699 | (1.6+ | 0.7+) | 2005 06 26 | G96 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2001 04 17 | 699 | 0.2+ | 0.7+ | 2005 06 26 | 644 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2001 04 17 | 699 | 0.7+ | 0.6+ | 2005 06 26 | G96 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.4+ |
| 2001 04 27 | 704 | 0.1+ | 0.5+ | 2005 06 26 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2001 04 27 | 704 | 1.0+ | 0.2− | 2005 06 26 | G96 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.3− |
| 2001 04 27 | 704 | 0.7+ | 0.9+ | 2005 06 28 | G96 | 0.4+ | 0.1+ | 2006 11 24 | 691 | 0.4− | 0.3+ |
| 2001 05 23 | 699 | 0.2− | 0.3− | 2005 06 28 | G96 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2001 05 23 | 699 | 0.0 | 0.4+ | 2005 06 28 | G96 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.6+ | 0.1− |
| 2001 05 23 | 699 | 0.8+ | 0.8− | 2005 06 28 | G96 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2001 05 23 | 699 | 1.3+ | 0.9+ | 2005 07 17 | E12 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2003 12 21 | 691 | 0.0 | 0.3+ | 2005 07 17 | E12 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 12 21 | 691 | 0.2+ | 0.2− | 2005 07 17 | E12 | 0.0 | 0.1− | | | | |
| 2003 12 21 | 691 | 0.0 | 0.3− | 2005 07 17 | E12 | 0.7− | 0.1− | | | | |

**(145357)∗ 2005 ME$_{25}$ = 2000 TL$_{61}$**

Discovered 2005 June 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86830)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.37292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17504904 | $\omega$ | 196.04753 | | +0.73503681 | +0.65436240 | |
| $a$ | 3.1649212 | $\Omega$ | 121.70231 | | −0.59687187 | +0.74871614 | |
| $e$ | 0.1854623 | $i$ | 12.04681 | | −0.32165954 | +0.10599048 | |
| $P$ | 5.63 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 1.0− | 1.7+ | 2005 06 18 | G96 | 0.2− | 0.0 | 2005 07 30 | E12 | 0.5+ | 0.1− |
| 2000 10 02 | 699 | 0.3− | 0.7+ | 2005 06 27 | 691 | 0.4− | 0.9+ | 2005 07 30 | E12 | 0.3− | 0.1+ |
| 2000 10 02 | 699 | 0.2− | 0.5+ | 2005 06 27 | 691 | 0.3+ | 0.5+ | 2005 07 30 | E12 | (2.2− | 0.9+) |
| 2000 10 02 | 699 | 1.4− | 0.6+ | 2005 06 27 | 691 | 0.1+ | 0.5+ | 2005 08 02 | 704 | 0.4− | 1.3− |
| 2000 10 05 | 704 | 0.1− | 0.6− | 2005 07 04 | 691 | 0.0 | 0.1− | 2005 08 02 | 704 | 0.2− | 0.8+ |
| 2000 10 05 | 704 | 0.3− | 1.1+ | 2005 07 04 | 691 | 0.1− | 0.2− | 2005 08 02 | 704 | 0.2− | 0.1+ |
| 2000 10 05 | 704 | 0.3+ | 1.1+ | 2005 07 04 | 691 | 0.0 | 0.1− | 2005 08 02 | 704 | 0.2+ | 0.0 |
| 2000 10 05 | 704 | 0.7+ | 0.4− | 2005 07 04 | G96 | 0.1+ | 0.1− | 2005 08 06 | 704 | 0.4+ | 0.2− |
| 2000 10 05 | 704 | 0.1+ | 0.8+ | 2005 07 04 | G96 | 0.1+ | 0.2− | 2005 08 06 | 704 | 1.1+ | 1.0− |
| 2003 02 23 | 599 | 0.6+ | 0.2+ | 2005 07 04 | G96 | 0.2+ | 0.0 | 2005 08 06 | 704 | 0.5+ | 0.1+ |
| 2003 02 23 | 599 | 0.0 | 0.5+ | 2005 07 04 | G96 | 0.2+ | 0.1− | 2005 08 06 | 704 | 0.5+ | 0.1+ |
| 2003 02 23 | 599 | 0.6+ | 0.1+ | 2005 07 07 | 568 | 0.2+ | 0.3+ | 2005 08 06 | 704 | 0.4+ | 0.5− |
| 2003 02 23 | 599 | 0.3+ | 0.8+ | 2005 07 07 | 568 | 0.2+ | 0.3+ | 2005 08 08 | 807 | 0.2+ | 0.2− |
| 2004 04 24 | 704 | (1.3− | 2.0+) | 2005 07 07 | 568 | 0.2+ | 0.4+ | 2005 08 08 | 807 | 0.1+ | 0.3− |
| 2004 04 24 | 704 | 0.2− | 0.1+ | 2005 07 08 | 568 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.6− |
| 2004 04 24 | 704 | 0.8− | 0.5+ | 2005 07 09 | 691 | 1.1− | 0.9− | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2004 04 24 | 704 | 0.8− | 0.7− | 2005 07 09 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 699 | (1.6− | 0.4+) | 2005 07 09 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.9− | 1.0+ | | |
| 2004 04 25 | 699 | 0.4− | 0.9+ | 2005 07 12 | 703 | 0.7− | 0.2+ | 2006 11 13 | 703 | 0.0 | 1.1− | | |
| 2004 04 25 | 699 | 0.7− | 0.6+ | 2005 07 12 | 703 | 0.7+ | 1.4− | 2006 11 13 | 703 | 1.2− | 0.3− | | |
| 2004 04 25 | 699 | 0.8+ | 0.6+ | 2005 07 12 | 703 | 1.1+ | 0.6− | 2006 11 13 | 703 | 0.2+ | 0.4+ | | |
| 2004 05 12 | 644 | 1.3+ | 0.8+ | 2005 07 12 | 703 | 0.3+ | 1.3+ | 2006 11 13 | 703 | 0.4− | 0.8+ | | |
| 2004 05 12 | 644 | 0.9+ | 0.8+ | 2005 07 15 | G96 | 0.5− | 0.2+ | 2006 11 19 | 703 | 0.8+ | 0.1+ | | |
| 2004 05 12 | 644 | 0.4+ | 0.5+ | 2005 07 15 | G96 | 0.6− | 0.3+ | 2006 11 19 | 703 | 0.6− | 0.3− | | |
| 2005 06 18 | G96 | 0.1+ | 0.1+ | 2005 07 15 | G96 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.5+ | 0.1+ | | |
| 2005 06 18 | G96 | 0.0 | 0.1− | 2005 07 15 | G96 | 0.5− | 0.1+ | 2006 11 19 | 703 | 1.4+ | 0.3− | | |
| 2005 06 18 | G96 | 0.1− | 0.2− | 2005 07 30 | E12 | 0.3+ | 0.1− | | | | | | |

**(145358)∗ 2005 MX$_{25}$ = 1995 HG$_1$**

Discovered 2005 June 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86831)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 332.03131 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.22312127 | $\omega$ | 297.77515 | | +0.27457194 | −0.95991184 | |
| *a* | 2.6922087 | $\Omega$ | 136.16708 | | +0.90839587 | +0.23971307 | |
| *e* | 0.0662473 | *i* | 4.67012 | | +0.31532078 | +0.14528216 | |
| *P* | 4.42 | *H* | 16.6 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 24 | 691 | 0.2− | 0.3− | 2001 09 12 | 704 | 0.1− | 0.1− | 2005 07 07 | 691 | 0.1− | 0.3+ | | |
| 1995 04 24 | 691 | 0.2− | 1.0− | 2001 09 19 | 645 | 0.1+ | 0.3− | 2006 10 22 | J95 | 0.8+ | 0.1− | | |
| 1995 04 26 | 691 | 0.5− | 1.0− | 2001 09 19 | 645 | 0.1+ | 0.3− | 2006 10 22 | J95 | 0.4+ | 0.1+ | | |
| 1995 04 26 | 691 | 0.2− | 0.7− | 2005 06 27 | 691 | 0.2+ | 0.0 | 2006 10 26 | J95 | 0.3− | 1.0− | | |
| 1995 04 26 | 691 | 0.0 | 0.1+ | 2005 06 27 | 691 | 0.3+ | 0.2+ | 2006 10 27 | J95 | 0.4− | 0.2− | | |
| 2001 05 24 | 807 | 0.4+ | 0.3+ | 2005 06 27 | 691 | 0.2− | 0.1+ | 2006 11 15 | 683 | 0.0 | 0.4+ | | |
| 2001 05 24 | 807 | 0.4+ | 0.2+ | 2005 07 04 | G96 | 0.1− | 0.0 | 2006 11 15 | 683 | (1.4+ | 1.9+) | | |
| 2001 08 17 | 644 | 0.0 | 0.3+ | 2005 07 04 | G96 | 0.1− | 0.1+ | 2006 11 15 | 683 | (1.9− | 3.1+) | | |
| 2001 08 17 | 644 | 0.4− | 0.7+ | 2005 07 04 | G96 | 0.5+ | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.5+ | | |
| 2001 08 17 | 644 | 0.5− | 0.9+ | 2005 07 04 | G96 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.5− | | |
| 2001 09 12 | 704 | 0.6+ | 0.2+ | 2005 07 07 | 691 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.3− | 0.5+ | | |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2005 07 07 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.5− | | |

**(145359)∗ 2005 ME$_{26}$ = 1999 RE$_{79}$**

Discovered 2005 June 28 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 89680)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 313.96789 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.29273585 | $\omega$ | 287.72836 | | +0.26926083 | −0.96176200 | |
| *a* | 2.2463915 | $\Omega$ | 146.52199 | | +0.91445007 | +0.23899397 | |
| *e* | 0.0884382 | *i* | 5.21355 | | +0.30212527 | +0.13377492 | |
| *P* | 3.37 | *H* | 16.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.9− | 1.5− | 2005 06 28 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.5+ | | |
| 1999 09 07 | 704 | 0.9− | 0.0 | 2005 06 28 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.1+ | 0.8+ | | |
| 1999 09 07 | 704 | 0.9+ | 0.4+ | 2005 06 28 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.4− | 0.4+ | | |
| 1999 09 11 | 704 | 0.2− | 0.7− | 2005 06 28 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 1999 09 11 | 704 | 0.7+ | 0.6− | 2005 06 28 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.5− | 0.7+ | | |
| 1999 09 11 | 704 | 0.7+ | 0.1+ | 2005 07 04 | 691 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 1999 09 11 | 704 | 0.3+ | 0.2− | 2005 07 04 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.7− | 0.2+ | | |
| 2003 12 01 | 704 | 0.0 | 0.0 | 2005 07 04 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2003 12 01 | 704 | 0.1+ | 0.9+ | 2006 09 30 | 703 | (1.1− | 2.4+) | 2006 11 13 | 703 | 0.2+ | 0.1+ | | |
| 2003 12 01 | 704 | 0.4− | 1.2+ | 2006 09 30 | 703 | 0.9− | 0.6− | 2006 11 13 | 703 | 1.4+ | 0.1− | | |
| 2003 12 01 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.9+ | 0.4+ | 2006 11 13 | 703 | 0.4+ | 0.3− | | |
| 2003 12 01 | 704 | 0.3+ | 1.4+ | 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.7− | 0.6+ | | |
| 2003 12 22 | 704 | 0.5+ | 0.9+ | 2006 10 11 | 644 | 0.4− | 0.4+ | 2006 11 19 | 703 | 1.3− | 0.7+ | | |
| 2003 12 22 | 704 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.7+ | | |
| 2003 12 22 | 704 | 0.5− | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.6+ | 2006 11 19 | 703 | 0.3− | 0.5− | | |
| 2003 12 22 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 11 19 | 703 | 0.7+ | 0.3+ | | |
| 2005 06 11 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.6− | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.1− | | |
| 2005 06 11 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.0 | | |
| 2005 06 11 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.3− | 1.2− | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 1.4+ | 0.6− | 2006 11 24 | G96 | 0.4− | 0.2+ | | |

**(145360)∗ 2005 MC$_{27}$ = 2001 SE$_{91}$ = 2003 AH$_{39}$**

Discovered 2005 June 29 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86832), A. Doppler (*MPO* 89680)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 334.97991 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.22001855 | $\omega$ | 193.50894 | | +0.35615392 | −0.93365840 | |
| *a* | 2.7174602 | $\Omega$ | 235.63934 | | +0.86152985 | +0.34380444 | |
| *e* | 0.0717867 | *i* | 2.63143 | | +0.36182966 | +0.10040171 | |
| *P* | 4.48 | *H* | 16.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.1− | 0.3+ | 2005 07 04 | G96 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− | | |
| 2001 08 23 | 691 | 0.1− | 0.4+ | 2005 07 04 | G96 | 0.6− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.3− | | |
| 2001 08 23 | 691 | 0.0 | 0.1+ | 2005 07 04 | G96 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2001 09 20 | 704 | 1.0− | 0.0 | 2005 07 04 | G96 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1+ | | |
| 2001 09 20 | 704 | 0.6− | 0.7− | 2005 07 05 | 691 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.2− | 0.5− | 2005 07 05 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.1+ | | |
| 2001 09 20 | 704 | (2.1− | 0.5−) | 2005 07 05 | 691 | 0.3− | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.6+ | | |
| 2001 09 22 | 704 | 0.5+ | 0.4+ | 2005 07 11 | G96 | 0.2+ | 1.2− | 2006 11 16 | 703 | 0.3− | 0.3+ | | |
| 2001 09 22 | 704 | 0.0 | 0.5+ | 2005 07 11 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.3+ | 0.3+ | | |
| 2001 09 22 | 704 | 0.9− | 0.3+ | 2005 07 11 | G96 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.0 | 0.3+ | | |
| 2001 09 22 | 704 | 0.2+ | 1.1+ | 2005 07 11 | G96 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.1− | | |
| 2001 09 22 | 704 | 0.3− | 1.4+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 23 | 704 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 18 | 704 | 0.8+ | 0.7+ | | |
| 2001 09 23 | 704 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 21 | 704 | 0.2− | 0.9+ | | |
| 2001 09 23 | 704 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.7− | 0.1+ | | |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 1.0+ | 1.3+ | | |
| 2001 10 21 | 704 | (1.5+ | 1.8−) | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.1− | | |
| 2001 10 21 | 704 | 1.2+ | 1.5− | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2003 01 07 | 704 | (0.7+ | 1.5+) | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2003 01 07 | 704 | 0.4+ | 1.4+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2003 01 07 | 704 | (0.2+ | 1.8+) | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.5+ | 0.1− | | |
| 2003 01 07 | 704 | 0.1+ | 1.0+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.6+ | 0.4− | | |
| 2003 01 08 | 704 | 0.5+ | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 27 | G96 | 0.2− | 0.2− | | |
| 2003 01 08 | 704 | (0.2+ | 1.6+) | 2006 10 27 | G96 | 0.1− | 1.2− | 2006 11 27 | G96 | 0.4+ | 0.0 | | |
| 2003 01 08 | 704 | 0.1− | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.2− | 0.4− | | |
| 2003 01 08 | 704 | (1.0+ | 1.5+) | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.6− | 0.1− | | |
| 2005 06 18 | G96 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.1+ | | |
| 2005 06 18 | G96 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.0 | | |
| 2005 06 18 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.4+ | 2006 11 29 | 704 | 1.1+ | 0.3+ | | |
| 2005 06 18 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.0 | 0.2+ | | |
| 2005 06 29 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 11 29 | 704 | 1.2+ | 0.8− | | |
| 2005 06 29 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 1.4− | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.4+ | | |
| 2005 06 29 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.5− | | | | | | |

**(145361)∗ 2005 MF$_{29}$ = 1994 RH$_{21}$**

Discovered 2005 June 29 by Spacewatch at Kitt Peak.

Id. K. E. Smalley (*MPO* 86834)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 45.35695 | | (2000.0) | | **P** | **Q** | |
| *n* | 0.17411092 | $\omega$ | 177.82774 | | +0.95828438 | +0.28318767 | |
| *a* | 3.1762795 | $\Omega$ | 165.54172 | | −0.26451165 | +0.92996060 | |
| *e* | 0.0619210 | *i* | 8.91116 | | −0.10828032 | +0.23447394 | |
| *P* | 5.66 | *H* | 15.3 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 05 | 809 | 1.9+ | 0.8+ | 2004 06 09 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.2+ | | |
| 1994 09 05 | 809 | 1.5+ | 1.3+ | 2004 06 16 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | (1.8+ | 0.7+) | | |
| 1994 09 05 | 809 | 0.4+ | 0.6+ | 2004 06 16 | 691 | 0.4− | 0.1+ | 2006 10 16 | 703 | (2.0+ | 1.6+) | | |
| 1994 09 06 | 809 | 1.3+ | 1.9+ | 2004 06 16 | 691 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.0 | | |
| 1994 09 06 | 809 | 0.3− | 1.0+ | 2005 06 29 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.5− | | |
| 1994 09 06 | 809 | 1.3+ | 1.6+ | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.0+ | 0.6+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.1+ | 1.5− | 2005 06 29 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.8+ |
| 2000 10 02 | 704 | 0.1− | 0.5− | 2005 07 04 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 1.2+ | 0.2− |
| 2000 10 02 | 704 | 0.9− | 1.3− | 2005 07 04 | 691 | 0.0 | 0.2− | 2006 11 13 | 703 | 1.2+ | 1.0+ |
| 2000 10 02 | 645 | 0.3− | 0.2− | 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 11 13 | 703 | 1.2− | 0.4+ |
| 2000 10 02 | 704 | 0.1+ | 0.2+ | 2005 07 29 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.9+ | 0.6+ |
| 2000 10 02 | 645 | 0.3− | 0.1− | 2005 07 29 | 644 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.1− | 0.5+ |
| 2003 04 05 | 691 | 0.5+ | 0.4+ | 2005 07 29 | 644 | 0.3+ | 0.1− | 2006 11 19 | 703 | 0.5+ | 0.5+ |
| 2003 04 05 | 691 | 0.4+ | 0.5+ | 2005 08 01 | 599 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.2+ |
| 2003 04 05 | 691 | 0.3− | 0.1+ | 2005 08 01 | 599 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.4+ |
| 2004 04 23 | 599 | 0.2− | 0.1+ | 2005 08 01 | 599 | 0.5+ | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.1− |
| 2004 04 23 | 599 | 0.3+ | 0.4− | 2005 08 01 | 599 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.8+ | 0.7+ |
| 2004 04 23 | 599 | 0.1+ | 0.4− | 2005 08 25 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.4+ |
| 2004 04 23 | 599 | 0.4− | 0.1− | 2005 08 25 | 644 | 0.2+ | 0.2− | 2006 11 19 | 703 | 1.0+ | 0.7− |
| 2004 06 09 | 691 | 0.1− | 0.1+ | 2005 08 25 | 644 | 0.1− | 0.2+ | | | | |
| 2004 06 09 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 1.1− | 0.2+ | | | | |

**(145362)∗ 2005 MV$_{29}$ = 2004 FH$_{40}$**

Discovered 2005 June 29 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86835)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.29095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23978009 | $\omega$ | 296.66599 | | −0.98029054 | +0.16697490 | |
| $a$ | 2.5660236 | $\Omega$ | 253.09845 | | −0.11782954 | −0.92316079 | |
| $e$ | 0.0838471 | $i$ | 6.33605 | | −0.15857698 | −0.34625646 | |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.4+ | 0.3− | 2005 08 06 | 644 | 0.8+ | 0.1− |
| 2002 11 07 | 695 | 0.1− | 0.4− | 2004 04 22 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 0.1− | 0.2+ | 2004 04 22 | 704 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.3− | 0.9+ | 2005 06 29 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2004 03 18 | 704 | 0.5− | 1.0+ | 2005 06 29 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.5+ | 0.2+ | 2005 06 29 | 691 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.1+ | 0.3+ | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2004 03 18 | 704 | 0.2+ | 0.3− | 2005 07 04 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.6+ | 0.4+ |
| 2004 03 18 | 704 | 0.1+ | 0.6+ | 2005 07 04 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 704 | 0.1+ | 1.4+ | 2005 07 08 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.1+ | 0.8+ | 2005 07 08 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 0.2+ | 0.5+ | 2005 07 08 | 691 | 0.2− | 0.7− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 0.3− | 0.5+ | 2005 07 29 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.4+ |
| 2004 03 19 | 704 | 0.8+ | 0.3− | 2005 07 29 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.3+ | 1.2+ | 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 0.6− | 0.4− | 2005 08 06 | 644 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.3− |
| 2004 03 19 | 704 | 0.8+ | 0.1+ | 2005 08 06 | 644 | 0.2+ | 0.4+ | | | | |

**(145363)∗ 2005 MH$_{31}$**

Discovered 2005 June 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.71757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18368615 | $\omega$ | 145.61888 | | +0.16521746 | −0.97295354 | |
| $a$ | 3.0649151 | $\Omega$ | 294.39772 | | +0.86037965 | +0.22220843 | |
| $e$ | 0.1178580 | $i$ | 10.21114 | | +0.48213074 | −0.06312541 | |
| $P$ | 5.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.4+ | 0.9+ | 2005 06 30 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2001 11 11 | 704 | 0.1+ | 0.3+ | 2005 06 30 | 691 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.6+ |
| 2001 11 11 | 704 | 0.2+ | 0.8+ | 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.4+ |
| 2001 11 11 | 704 | 0.4+ | 1.3+ | 2005 07 04 | 691 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.1+ |
| 2001 11 11 | 704 | 0.2+ | 0.3+ | 2005 07 04 | 691 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.1+ |
| 2001 12 09 | 704 | 0.4− | 0.5− | 2005 07 04 | 691 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2001 12 09 | 704 | 0.6− | 0.1+ | 2005 07 09 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.2− | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.0 | 0.8− |
| 2001 12 09 | 704 | 0.0 | 0.6+ | 2005 07 09 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.8− |
| 2001 12 22 | 704 | (1.9− | 1.0−) | 2005 07 15 | G96 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.6− | 0.1− |
| 2001 12 22 | 704 | (2.9− | 0.8+) | 2005 07 15 | G96 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2001 12 22 | 704 | (2.0− | 1.3+) | 2005 07 15 | G96 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2001 12 22 | 704 | 0.8+ | 1.1+ | 2005 07 15 | G96 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2002 01 08 | 704 | 1.1− | 0.3− | 2006 09 17 | 703 | (0.4+ | 3.7+) | 2006 10 27 | 703 | 0.2+ | 0.6− |
| 2002 01 08 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2002 01 08 | 704 | 0.6− | 0.2+ | 2006 09 17 | 703 | (0.9− | 3.5+) | 2006 10 27 | 703 | 0.4− | 0.2− |
| 2003 03 08 | 699 | 0.6− | 0.9+ | 2006 09 17 | 703 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.9+ |
| 2003 03 08 | 699 | 0.2+ | 0.6+ | 2006 09 28 | 703 | 0.0 | 0.7− | 2006 11 15 | 703 | 0.7+ | 1.3+ |
| 2003 03 08 | 699 | 1.0+ | 0.8+ | 2006 09 28 | 703 | 0.9+ | 0.8− | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 2003 03 08 | 699 | 0.6+ | 0.1+ | 2006 09 28 | 703 | 0.6− | 0.2− | 2006 11 15 | 703 | 0.1+ | 1.2+ |
| 2005 06 15 | G96 | 0.4− | 0.3+ | 2006 09 28 | 703 | 0.2+ | 0.5+ | 2006 11 23 | 703 | 0.1+ | 1.2− |
| 2005 06 15 | G96 | 0.7− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.2+ | 0.8− |
| 2005 06 15 | G96 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 11 23 | 703 | 0.1− | 0.2− |
| 2005 06 15 | G96 | 0.8− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.0 | 0.5− |

**(145364)∗ 2005 MB$_{35}$ = 1993 RC$_{3}$ = 2004 EO$_{83}$**

Discovered 2005 June 30 by NEAT at Palomar.

Id. A. Doppler (*MPO* 103709)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.42015 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22997559 | $\omega$ | 219.98302 | | +0.88980190 | −0.45321174 | |
| $a$ | 2.6384460 | $\Omega$ | 166.65882 | | +0.45498879 | +0.87203695 | |
| $e$ | 0.2937603 | $i$ | 13.38103 | | +0.03518217 | +0.18479903 | |
| $P$ | 4.29 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 675 | (0.1+ | 4.0−) | 2005 06 30 | 644 | 0.0 | 0.2− | 2006 09 30 | 699 | 0.2− | 0.1+ |
| 1993 09 14 | 675 | (0.5+ | 2.2−) | 2005 07 05 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 0.0 | 0.3+ |
| 1993 09 16 | 675 | 0.4+ | 1.8− | 2005 07 05 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 0.1− | 0.2+ |
| 1993 09 16 | 675 | (0.3+ | 2.8−) | 2005 07 05 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 699 | 0.0 | 0.3+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2006 07 25 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 1.3− | 0.0 |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2006 07 25 | 704 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.5+ | 0.0 |
| 2001 06 21 | 704 | 0.5− | 0.2− | 2006 07 25 | 704 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.8+ | 0.3+ |
| 2001 06 21 | 704 | 0.3+ | 0.4+ | 2006 08 23 | 704 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.5+ |
| 2001 06 21 | 704 | 0.4+ | 0.3+ | 2006 08 23 | 704 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.6+ | 0.5+ |
| 2001 06 21 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 704 | 0.1+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 06 21 | 704 | 0.6+ | 0.8+ | 2006 08 23 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2006 08 23 | 704 | 0.8+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 0.5− | 2006 08 28 | 704 | 1.1− | 1.1+ | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2002 10 31 | 704 | 0.6+ | 0.4− | 2006 08 28 | 704 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2003 01 02 | 704 | 0.1− | 0.4+ | 2006 08 28 | 704 | 0.5− | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2003 01 02 | 704 | 0.2+ | 0.1+ | 2006 08 28 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2003 01 02 | 704 | 0.2− | 0.6+ | 2006 08 28 | 704 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.2+ | 0.3+ |
| 2003 01 02 | 704 | 0.4− | 0.0 | 2006 08 28 | 704 | 0.2− | 0.7+ | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2003 01 02 | 704 | 0.0 | 0.5+ | 2006 08 28 | 704 | 0.7− | 0.9+ | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2003 01 28 | 704 | 0.1− | 0.1+ | 2006 08 28 | 704 | 0.2− | 1.2+ | 2006 10 28 | 703 | 0.1− | 0.2+ |
| 2003 01 28 | 704 | 0.5+ | 0.4+ | 2006 08 28 | 704 | 1.3− | 1.8+ | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 2003 01 28 | 704 | 0.7+ | 0.7+ | 2006 08 31 | 704 | 0.0 | 0.5+ | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 2004 03 14 | 691 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.2+ | 0.6+ | 2006 11 07 | 644 | 0.3− | 0.3+ |
| 2004 03 14 | 691 | 0.5+ | 0.4+ | 2006 08 31 | 704 | 0.4− | 0.1− | 2006 11 11 | 704 | 0.8+ | 0.1+ |
| 2004 03 14 | 691 | 0.1+ | 0.5+ | 2006 08 31 | 704 | 0.2+ | 0.0 | 2006 11 11 | 704 | 0.5+ | 0.2+ |
| 2004 03 20 | 704 | 1.3+ | 0.4+ | 2006 08 31 | 704 | 0.9+ | 1.2+ | 2006 11 11 | 704 | 0.1− | 0.7− |
| 2004 03 20 | 704 | 0.7+ | 1.1+ | 2006 09 26 | 704 | 0.6− | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2004 03 20 | 704 | 0.5+ | 1.6+ | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2004 03 20 | 704 | 0.1− | 1.3+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2005 05 31 | 703 | 1.2− | 1.0+ | 2006 09 26 | 704 | 0.9− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2005 05 31 | 703 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.3− | 0.4+ | 2006 11 23 | 703 | 0.2+ | 0.0 |
| 2005 05 31 | 703 | 0.6− | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.4+ | 2006 11 23 | 703 | 0.1− | 0.1− |
| 2005 05 31 | 703 | 0.1+ | 0.8− | 2006 09 26 | 703 | 0.2+ | 0.4+ | 2006 11 23 | 703 | 0.1+ | 0.2+ |
| 2005 06 30 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.3− | 0.2+ | 2006 11 23 | 703 | 0.2+ | 0.0 |
| 2005 06 30 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 1.0+ | 0.3+ | | | | |

**(145365)∗ 2005 MT$_{35}$ = 2003 CK$_{15}$ = 2004 GE$_{79}$**

Discovered 2005 June 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86843)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.50262 | | (2000.0) | | | |
| $n$ | 0.20198243 | $\omega$ | 245.45787 | | +0.99368447 | +0.02517622 |
| $a$ | 2.8769147 | $\Omega$ | 112.94438 | | +0.01508285 | +0.93569336 |
| $e$ | 0.0771087 | $i$ | 6.81963 | | −0.11119207 | +0.35191489 |
| $P$ | 4.88 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | (0.6+ | 1.6−) | 2004 04 20 | 704 | (2.2+ | 1.3+) | 2006 11 10 | 683 | (0.4+ | 2.7+) |
| 2001 10 17 | 704 | 0.3+ | 0.7− | 2004 04 20 | 704 | 1.2+ | 0.8+ | 2006 11 10 | 683 | 0.8− | 0.6+ |
| 2001 10 17 | 704 | 0.3+ | 0.6− | 2004 04 20 | 704 | 0.0 | 0.8+ | 2006 11 14 | 704 | 0.2− | 0.2− |
| 2001 10 17 | 704 | (2.0+ | 0.6−) | 2004 04 20 | 704 | (0.4+ | 1.9+) | 2006 11 14 | 704 | 0.2− | 0.2+ |
| 2001 10 17 | 704 | (1.3+ | 1.8−) | 2005 06 30 | 691 | 0.2− | 0.4− | 2006 11 14 | 704 | 0.9− | 0.6+ |
| 2001 11 19 | 608 | 0.4− | 1.4+ | 2005 06 30 | 691 | 0.1− | 0.3+ | 2006 11 14 | 704 | 1.2+ | 0.3+ |
| 2001 11 19 | 608 | 0.8− | 1.0+ | 2005 06 30 | 691 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.6− | 0.3− |
| 2001 11 19 | 608 | 0.1− | 0.7+ | 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.5− |
| 2001 12 11 | 704 | 0.3− | 0.3+ | 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 12 11 | 704 | 0.1+ | 0.4− | 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2001 12 11 | 704 | 0.7− | 0.9+ | 2005 07 09 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2001 12 11 | 704 | (2.3− | 0.4−) | 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2003 02 04 | 608 | 0.3+ | 0.1+ | 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2003 02 04 | 608 | 0.4+ | 0.7− | 2005 08 06 | 704 | 0.3− | 0.9− | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2003 02 04 | 608 | 0.3− | 0.0 | 2005 08 06 | 704 | 0.0 | 0.4− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 02 07 | 644 | 0.2+ | 0.9+ | 2005 08 06 | 704 | 0.7− | 0.5+ | 2006 11 28 | 704 | 1.1+ | 0.3− |
| 2003 02 07 | 644 | 0.0 | 0.9+ | 2006 10 30 | 703 | 0.2+ | 0.5− | 2006 11 28 | 704 | 0.8+ | 0.4− |
| 2003 02 07 | 644 | 0.8+ | 0.8+ | 2006 10 30 | 703 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.5+ |
| 2004 04 11 | 644 | 0.2− | 0.8+ | 2006 10 30 | 703 | 0.7− | 0.3− | 2006 11 28 | 704 | 0.2+ | 1.1+ |
| 2004 04 11 | 644 | 0.2− | 0.4+ | 2006 10 30 | 703 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 1.0+ |
| 2004 04 11 | 644 | 0.5− | 0.6+ | 2006 11 10 | 683 | 0.0 | 0.4+ | | | | |

**(145366)∗ 2005 MP$_{39}$ = 2000 SD$_{223}$ = 2004 JD$_{55}$**

Discovered 2005 June 29 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86848)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 84.65935 | | (2000.0) | | | |
| $n$ | 0.17826063 | $\omega$ | 75.10592 | | +0.48241342 | +0.87570327 |
| $a$ | 3.1267927 | $\Omega$ | 223.75647 | | −0.81463785 | +0.43991701 |
| $e$ | 0.1658010 | $i$ | 1.70028 | | −0.32193551 | +0.19903974 |
| $P$ | 5.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.5− | 0.3− | 2005 07 06 | 691 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.2− | 0.4+ |
| 1995 12 18 | 691 | 0.2− | 0.5− | 2005 07 06 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 1995 12 18 | 691 | 0.2− | 0.4− | 2005 07 06 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.4+ |
| 2000 09 27 | 704 | 0.0 | 0.3+ | 2005 07 09 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.3− |
| 2000 09 27 | 704 | 0.3+ | 0.9+ | 2005 07 09 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2000 09 27 | 704 | 0.7+ | 1.0+ | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2000 09 27 | 704 | 0.3+ | 0.4− | 2005 07 10 | 703 | (0.6− | 2.5−) | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.9+ | 0.4+ | 2005 07 10 | 703 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2000 10 01 | 704 | 0.1+ | 0.2+ | 2005 07 10 | 703 | (1.5− | 1.0−) | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.2− | 1.0+ | 2005 07 10 | 703 | (4.6− | 1.1−) | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2005 07 31 | E12 | 1.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2000 10 01 | 704 | 0.1+ | 1.0+ | 2005 07 31 | E12 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.4− |
| 2000 10 02 | 704 | 0.5+ | 0.2+ | 2005 07 31 | E12 | 0.5− | 0.2− | 2006 11 11 | 703 | (2.3− | 1.3−) |
| 2000 10 02 | 704 | 0.6+ | 1.0+ | 2005 07 31 | E12 | 0.5− | 0.6− | 2006 11 11 | 703 | (2.3+ | 0.9−) |
| 2000 10 02 | 704 | 0.5+ | 0.4+ | 2005 08 06 | 704 | 0.5+ | 0.2− | 2006 11 11 | 703 | 1.1+ | 1.2− |
| 2001 12 19 | 691 | 0.0 | 0.1− | 2005 08 06 | 704 | 0.6+ | 0.2− | 2006 11 11 | G96 | 0.5− | 0.6− |
| 2001 12 19 | 691 | 0.0 | 0.2+ | 2005 08 06 | 704 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 691 | 0.0 | 0.0 | 2005 08 06 | 704 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 04 12 | 699 | (1.8+ | 0.8+) | 2005 08 06 | 644 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2004 04 12 | 699 | 0.4− | 0.8− | 2005 08 06 | 644 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 04 12 | 699 | 0.5− | 0.1− | 2005 08 06 | 644 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.1+ |
| 2004 04 12 | 699 | 1.0− | 0.9− | 2005 08 29 | 699 | 0.5− | 1.3+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2004 05 10 | 691 | 0.1+ | 0.1+ | 2005 08 29 | 699 | 0.2+ | 1.1− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 05 10 | 691 | 0.3+ | 0.1− | 2005 08 29 | 699 | 0.8− | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2004 05 10 | 691 | 0.0 | 0.1+ | 2005 08 29 | 699 | 0.1− | 1.3+ | 2006 11 21 | G96 | 0.5+ | 0.5− |
| 2004 05 28 | 691 | 0.1− | 0.2+ | 2005 10 01 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.8− | 0.2− |
| 2004 05 28 | 691 | 0.4+ | 0.3+ | 2005 10 01 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2004 05 28 | 691 | 0.3+ | 0.1− | 2005 10 01 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2005 05 19 | G96 | 0.1− | 0.0 | 2005 10 01 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.5+ | 0.3− |
| 2005 05 19 | G96 | 0.0 | 0.2− | 2005 10 26 | G96 | 0.7− | 0.4− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2005 05 19 | G96 | 0.3− | 0.2− | 2005 10 26 | G96 | 0.0 | 0.6− | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2005 05 19 | G96 | 0.1− | 0.4− | 2005 10 26 | G96 | 0.1+ | 0.8− | 2006 12 01 | G96 | 0.4+ | 0.1− |
| 2005 06 29 | 644 | 0.1+ | 0.3+ | 2005 10 26 | G96 | (0.9− | 2.8−) | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2005 06 29 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.1+ | | | | |
| 2005 06 29 | 644 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1− | | | | |

**(145367)∗ 2005 MS$_{41}$**

Discovered 2005 June 30 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.62351 | | (2000.0) | | | |
| $n$ | 0.17645188 | $\omega$ | 231.99206 | | +0.98485989 | −0.17087474 |
| $a$ | 3.1481242 | $\Omega$ | 137.82387 | | +0.16954069 | +0.91430804 |
| $e$ | 0.1066112 | $i$ | 2.49287 | | +0.03615176 | +0.36720925 |
| $P$ | 5.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.2− | 0.4− | 2005 07 27 | 644 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2+ |
| 2000 10 01 | 704 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.1+ | 0.4+ | 2005 07 27 | 644 | 0.3− | 0.4+ | 2006 10 18 | 691 | 0.3+ | 0.2+ |
| 2000 10 01 | 704 | 0.3− | 0.6+ | 2005 07 27 | 644 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2005 07 27 | 644 | 0.4− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2003 03 08 | 291 | 0.5+ | 0.5+ | 2005 07 27 | 644 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.5+ |
| 2003 03 08 | 291 | 0.2+ | 0.4+ | 2005 08 31 | 691 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.5+ |
| 2003 03 08 | 291 | 1.0+ | 0.8+ | 2005 08 31 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.7+ |
| 2003 03 30 | 695 | 0.1+ | 0.6+ | 2005 08 31 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2003 03 30 | 695 | 0.0 | 0.7+ | 2005 09 13 | 691 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2003 04 01 | 645 | 0.1− | 0.1+ | 2005 09 13 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.9+ |
| 2003 04 01 | 645 | 0.1− | 0.1+ | 2005 09 13 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2005 06 30 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 621 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.9− |
| 2005 06 30 | 691 | 0.0 | 0.4+ | 2006 10 16 | 621 | 0.6− | 0.0 | 2006 11 11 | 703 | (1.0+ | 1.7+) |
| 2005 06 30 | 691 | 0.1+ | 0.7+ | 2006 10 16 | 621 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.1+ |
| 2005 07 04 | 644 | 0.1− | 0.2+ | 2006 10 17 | 621 | 0.5+ | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2005 07 04 | 644 | 0.5− | 0.2+ | 2006 10 17 | 621 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2005 07 04 | 644 | 0.4− | 0.2+ | 2006 10 17 | 621 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2005 07 18 | 644 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.8− | 0.2+ |
| 2005 07 18 | 644 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.9− | 2006 11 28 | 704 | 0.8− | 0.2− |
| 2005 07 18 | 644 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.1− |

**(145368)∗ 2005 MB$_{43}$**

Discovered 2005 June 30 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.47699 | | (2000.0) | | | |
| $n$ | 0.12511943 | $\omega$ | 147.61864 | | +0.98705151 | +0.15906661 |
| $a$ | 3.9590065 | $\Omega$ | 203.25517 | | −0.15605345 | +0.92247585 |
| $e$ | 0.2001810 | $i$ | 3.00049 | | −0.03710298 | +0.35176146 |
| $P$ | 7.88 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 14 | 291 | 0.2+ | 0.1+ | 2005 07 31 | E12 | 0.2+ | 0.2− | 2006 10 29 | G96 | 0.2+ | 0.1− |
| 2002 02 14 | 291 | 0.2− | 0.2− | 2005 07 31 | E12 | 0.8+ | 0.8− | 2006 10 29 | G96 | 0.4− | 0.0 |
| 2002 02 14 | 291 | 0.1+ | 0.1− | 2005 08 06 | 644 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.0 | 0.0 |
| 2002 03 13 | 644 | (1.0+ | 1.8+) | 2005 08 06 | 644 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2002 03 13 | 644 | 0.1+ | 0.8+ | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.0 | 0.2− |
| 2002 03 13 | 644 | 0.1− | 0.6+ | 2005 09 14 | 691 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.7− | 1.0+ |
| 2003 04 29 | 691 | 0.4+ | 0.2+ | 2005 09 14 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2003 04 29 | 691 | 0.1+ | 1.0+ | 2005 09 14 | 691 | 0.2− | 0.0 | 2006 11 10 | 291 | 0.1− | 0.0 |
| 2003 04 29 | 691 | 0.1+ | 0.7+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 10 | 291 | 0.1− | 0.2− |
| 2005 06 21 | 644 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 10 | 291 | 0.3− | 0.2− |
| 2005 06 21 | 644 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 11 10 | 291 | 0.1+ | 0.2+ |
| 2005 06 21 | 644 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 10 | 291 | 0.3+ | 0.5+ |
| 2005 06 30 | 644 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 10 | 291 | 0.3+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 644 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2005 06 30 | 644 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2005 07 05 | 644 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2005 07 05 | 644 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2005 07 05 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2005 07 06 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2005 07 06 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2005 07 06 | 691 | 0.8− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2005 07 18 | 644 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.6− |
| 2005 07 18 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.8+ | 2.5− |
| 2005 07 18 | 644 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.5− | 1.5− |
| 2005 07 28 | 644 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.6− | 1.1+ |
| 2005 07 28 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.9+ | 0.0 |
| 2005 07 28 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2005 07 31 | E12 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2005 07 31 | E12 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.7− | 0.7+ |

**(145369)∗ 2005 MK$_{43}$ = 2000 GU$_{169}$**

Discovered 2005 June 24 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86855)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | | **Q** |
| $M$ | 85.48437 | | (2000.0) | | | | |
| $n$ | 0.21842341 | $\omega$ | 55.49834 | | +0.05889987 | | +0.99583225 |
| $a$ | 2.7306745 | $\Omega$ | 218.06494 | | −0.94892296 | | +0.03419316 |
| $e$ | 0.0723393 | $i$ | 6.48489 | | −0.30996133 | | +0.08455155 |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 699 | 0.2+ | 1.5+ | 2005 06 11 | 703 | 0.1− | 1.2+ | 2006 09 19 | 703 | 0.3+ | 0.8− |
| 2000 04 03 | 699 | 0.2+ | 0.5+ | 2005 06 11 | 703 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2000 04 03 | 699 | (2.6+ | 0.2+) | 2005 06 11 | 703 | (3.4+ | 0.6+) | 2006 09 21 | 185 | 0.4+ | 0.6− |
| 2000 04 03 | 699 | 0.9+ | 0.3+ | 2005 06 11 | 703 | 0.9− | 0.5− | 2006 09 22 | 185 | 0.1+ | 0.4− |
| 2000 04 05 | 699 | 1.1+ | 0.0 | 2005 06 24 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 185 | 0.1+ | 0.3+ |
| 2000 04 05 | 699 | 0.9+ | 1.6+ | 2005 06 24 | 644 | 0.2+ | 0.2+ | 2006 09 22 | 185 | 0.7+ | 0.4− |
| 2000 04 05 | 699 | 0.4+ | 0.5+ | 2005 06 24 | 644 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 699 | 0.1− | 0.2+ | 2005 06 27 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 07 25 | 608 | 0.1+ | 0.5− | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 07 25 | 608 | 0.3+ | 0.3− | 2005 06 27 | 644 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2001 07 25 | 608 | 0.2+ | 0.5− | 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2001 08 17 | 644 | 1.0− | 1.3+ | 2005 07 11 | G96 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 08 17 | 644 | 0.9− | 1.0+ | 2005 07 11 | G96 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 08 17 | 644 | 0.7− | 1.0+ | 2005 07 11 | G96 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2002 11 23 | 644 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 11 23 | 644 | 0.2− | 0.8+ | 2006 09 17 | 703 | 0.1+ | 0.6+ | 2006 10 13 | 291 | 0.4− | 0.2+ |
| 2002 11 23 | 644 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 13 | 291 | 0.2− | 0.3+ |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.6+ | 0.4+ | 2006 10 13 | 291 | 0.2− | 0.2− |
| 2002 12 10 | 644 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2002 12 10 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.7− |
| 2004 02 17 | 691 | 0.0 | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 02 17 | 691 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 02 17 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.7+ | | | | |

**(145370)∗ 2005 MZ$_{43}$**

Discovered 2005 June 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | | **Q** |
| $M$ | 120.26765 | | (2000.0) | | | | |
| $n$ | 0.21627099 | $\omega$ | 15.62682 | | +0.01642709 | | +0.98888979 |
| $a$ | 2.7487624 | $\Omega$ | 255.48947 | | −0.93293449 | | −0.03799299 |
| $e$ | 0.0950488 | $i$ | 8.77810 | | −0.35967123 | | +0.14371333 |
| $P$ | 4.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.3+ | 0.6− | 2001 10 26 | 644 | 0.4+ | 0.6− | 2005 07 12 | 703 | 0.3+ | 0.4− |
| 2000 05 28 | 704 | 0.0 | 1.4− | 2004 03 17 | 704 | 1.1+ | 0.5+ | 2005 07 19 | 644 | 0.1− | 0.0 |
| 2000 05 28 | 704 | 0.7− | 1.2− | 2004 03 17 | 704 | 0.2+ | 1.4+ | 2005 07 19 | 644 | 0.1+ | 0.2− |
| 2001 09 10 | 704 | 0.0 | 0.0 | 2004 03 17 | 704 | (1.1+ | 1.6+) | 2005 07 19 | 644 | 0.2− | 0.1− |
| 2001 09 10 | 704 | 0.8− | 0.0 | 2004 04 16 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.4− |
| 2001 09 10 | 704 | 0.4+ | 0.1+ | 2004 04 16 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 2001 09 10 | 704 | 0.2− | 0.6− | 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 09 23 | 644 | 0.1+ | 0.3+ | 2005 06 27 | 644 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2001 09 23 | 644 | 0.1+ | 0.1+ | 2005 06 27 | 644 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 09 23 | 644 | 0.1− | 0.4− | 2005 06 27 | 644 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 09 25 | 704 | 0.3− | 0.1+ | 2005 06 29 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.7+ | 2005 06 29 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.7+ | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 1.0+ | 0.3− | 2005 06 29 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 1.4+ | 1.7− |
| 2001 10 13 | 644 | 0.4+ | 0.3+ | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.6+ |
| 2001 10 13 | 644 | 0.1+ | 0.2− | 2005 06 29 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.2− | 2.1+ |
| 2001 10 13 | 644 | 0.0 | 0.2− | 2005 07 12 | 703 | 1.2− | 1.0− | 2006 11 14 | 703 | 1.0− | 0.7− |
| 2001 10 26 | 644 | 0.2− | 0.3+ | 2005 07 12 | 703 | 0.1− | 0.3− | | | | |
| 2001 10 26 | 644 | 0.2− | 0.2− | 2005 07 12 | 703 | (0.1− | 1.7−) | | | | |

**(145371)∗ 2005 MT$_{44}$ = 2001 UD$_{186}$**

Discovered 2005 June 27 by Spacewatch at Kitt Peak.

Id. K. E. Smalley (*MPO* 86856)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | | **Q** |
| $M$ | 104.51647 | | (2000.0) | | | | |
| $n$ | 0.21646357 | $\omega$ | 71.94024 | | +0.44839211 | | +0.88818923 |
| $a$ | 2.7471319 | $\Omega$ | 225.13604 | | −0.86426018 | | +0.40218205 |
| $e$ | 0.0453593 | $i$ | 8.13699 | | −0.22803258 | | +0.22219244 |
| $P$ | 4.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.3− | 0.1+ | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2001 09 28 | 644 | 0.5− | 0.4+ | 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 09 28 | 644 | 0.2− | 0.5+ | 2005 07 29 | 644 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.3− | 0.3+ | 2005 07 29 | 644 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.1− | 1.1+ | 2005 07 29 | 644 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.1+ | 0.8+ | 2005 09 03 | 644 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2001 10 20 | 644 | 0.4+ | 0.4+ | 2005 09 03 | 644 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 10 20 | 644 | 0.2− | 0.2+ | 2005 09 03 | 644 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2001 10 20 | 644 | 0.2− | 0.3+ | 2005 09 03 | 644 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2004 04 19 | 691 | 0.1+ | 0.6+ | 2005 09 03 | 644 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 04 19 | 691 | 0.0 | 0.7+ | 2005 09 03 | 644 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2004 04 19 | 691 | 0.4+ | 0.7+ | 2005 09 12 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2004 05 09 | 691 | 0.1− | 0.1+ | 2005 09 12 | 691 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2004 05 09 | 691 | 0.1+ | 0.2+ | 2005 09 12 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2− | 0.4+ |
| 2004 07 16 | 807 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2004 07 17 | 807 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2005 06 27 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2005 06 27 | 691 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.0 | 1.0− | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2005 06 27 | 691 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2005 07 10 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.9− | | | | |

**(145372)∗ 2005 MZ$_{44}$ = 1998 VV$_{39}$ = 2000 BU$_{30}$**

Discovered 2005 June 27 by NEAT at Palomar.

Id. A. Doppler (*MPO* 86857)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **P** | | **Q** |
| $M$ | 101.70208 | | (2000.0) | | | | |
| $n$ | 0.24221083 | $\omega$ | 66.43335 | | +0.03635355 | | +0.99896788 |
| $a$ | 2.5488269 | $\Omega$ | 205.69500 | | −0.93825270 | | +0.02473747 |
| $e$ | 0.1667674 | $i$ | 3.60099 | | −0.34403531 | | +0.03809503 |
| $P$ | 4.07 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.1+ | 0.1− | 2005 07 05 | G96 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.4− |
| 1998 11 14 | 691 | 0.0 | 0.1+ | 2005 07 05 | G96 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 1998 11 16 | 691 | 0.2− | 0.4+ | 2005 07 05 | G96 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.7− | 0.5− |
| 1998 11 16 | 691 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.7+ | 0.5− | 2006 10 23 | 691 | 0.6− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.7− | 0.7− |
| 2000 01 17 | 568 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2000 01 17 | 568 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2000 01 18 | 568 | 0.2+ | 0.8− | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2000 01 18 | 568 | 0.2+ | 0.7− | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2005 06 05 | 704 | 0.4− | 1.1+ | 2006 10 04 | G96 | 0.5− | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2005 06 05 | 704 | 0.6+ | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2005 06 05 | 704 | 0.4+ | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2005 06 17 | G96 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.4+ | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2005 06 17 | G96 | 0.3− | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2005 06 27 | 644 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.5+ | 0.5+ | 2006 11 13 | G96 | 0.5+ | 0.2− |
| 2005 06 27 | 644 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2005 06 27 | 644 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.3− | | | | |
| 2005 07 05 | G96 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.3+ | 0.2− | | | | |

**(145373)∗ 2005 MV$_{49}$ = 1998 SH$_{75}$**

Discovered 2005 June 30 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86860)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.37493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12388914 | $\omega$ | 251.56628 | | +0.97960604 | −0.19201637 | |
| $a$ | 3.9851735 | $\Omega$ | 119.46703 | | +0.20024611 | +0.90874234 | |
| $e$ | 0.2409145 | $i$ | 3.89727 | | +0.01653773 | +0.37056317 | |
| $P$ | 7.96 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 809 | 1.2+ | 1.1− | 2005 10 05 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.5+ | 0.1+ |
| 1998 09 21 | 809 | (0.1+ | 2.3−) | 2006 09 29 | 699 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 1998 09 21 | 809 | 1.1+ | 1.6− | 2006 09 29 | 699 | (0.6− | 1.6+) | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 1998 09 23 | 809 | (2.2+ | 0.9−) | 2006 09 29 | 699 | 0.4− | 1.0− | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 1998 09 23 | 809 | 0.8+ | 1.5− | 2006 09 29 | 699 | 0.5+ | 0.9+ | 2006 10 21 | G96 | 0.6+ | 0.2− |
| 1998 09 23 | 809 | 0.2+ | 1.7− | 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 1998 10 11 | 699 | (2.5− | 0.1+) | 2006 09 30 | 703 | 0.3+ | 1.0− | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 1998 10 11 | 699 | 1.3− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 1998 10 11 | 699 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 02 21 | 691 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2001 02 21 | 691 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 02 21 | 691 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2005 06 30 | 691 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.3− | 0.7+ |
| 2005 06 30 | 691 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.3+ |
| 2005 06 30 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | (0.9+ | 2.1+) | 2006 10 22 | 703 | 1.0− | 0.1+ |
| 2005 07 12 | G96 | 0.2− | 0.0 | 2006 10 16 | 703 | 1.4+ | 1.3+ | 2006 10 22 | 703 | 1.2− | 0.6+ |
| 2005 07 12 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.2− |
| 2005 07 12 | G96 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.0 | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.9− |
| 2005 07 12 | G96 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.5− |
| 2005 07 16 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.2+ | 1.2− |
| 2005 07 16 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 20 | 704 | 0.7− | 0.4+ |
| 2005 07 16 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 1.6− | 0.0 |
| 2005 10 05 | G96 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.5+ | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2005 10 05 | G96 | 0.5+ | 0.3− | 2006 10 19 | 644 | 0.5+ | 0.1+ | | | | |
| 2005 10 05 | G96 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.4+ | 0.3+ | | | | |

**(145374)∗ 2005 MJ$_{50}$ = 2004 GO$_{33}$**

Discovered 2005 June 30 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 86861)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.40696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18874085 | $\omega$ | 193.51891 | | +0.40271554 | +0.89730746 | |
| $a$ | 3.0099465 | $\Omega$ | 100.47446 | | −0.82177957 | +0.44139304 | |
| $e$ | 0.1499815 | $i$ | 10.59013 | | −0.40311107 | −0.00339391 | |
| $P$ | 5.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 08 | 691 | 0.9+ | 0.0 | 2004 04 12 | 703 | (1.1− | 1.6+) | 2005 08 12 | E12 | 0.2− | 1.4+ |
| 1994 06 08 | 691 | 0.6− | 0.4+ | 2004 04 16 | 644 | 0.0 | 0.1+ | 2005 08 12 | E12 | 0.0 | 0.2+ |
| 1994 06 08 | 691 | 0.1− | 0.2+ | 2004 04 16 | 644 | 0.8+ | 0.1+ | 2005 08 24 | E12 | 0.1− | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.2− | 2004 04 16 | 644 | 0.7+ | 0.5+ | 2005 08 24 | E12 | 0.3+ | 0.2+ |
| 1999 03 20 | 645 | 0.1− | 0.2− | 2005 06 30 | 699 | 0.4+ | 0.7+ | 2005 08 24 | E12 | 0.1+ | 0.3+ |
| 2000 08 01 | 704 | 0.4+ | 0.1+ | 2005 06 30 | 699 | 0.9+ | 0.8+ | 2005 08 24 | E12 | 1.1− | 0.2− |
| 2000 08 01 | 704 | 0.0 | 1.1− | 2005 06 30 | 699 | 0.7+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.6− |
| 2000 08 01 | 704 | 1.1+ | 1.8− | 2005 06 30 | 699 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.7− | 0.6+ |
| 2000 08 21 | 699 | 0.4− | 0.4− | 2005 07 10 | E12 | 0.2− | 0.1+ | 2006 10 22 | 703 | 1.1+ | 0.5+ |
| 2000 08 21 | 699 | 0.6− | 0.5+ | 2005 07 10 | E12 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.7− |
| 2000 08 21 | 699 | 0.3− | 0.6− | 2005 07 10 | E12 | 0.3− | 0.0 | 2006 11 13 | 703 | 1.1+ | 0.7− |
| 2000 08 21 | 699 | 0.3+ | 0.8+ | 2005 07 14 | 428 | 0.5− | 0.0 | 2006 11 13 | 703 | 0.5+ | 0.8+ |
| 2004 03 23 | 704 | 0.1− | 0.7+ | 2005 07 14 | 428 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.3+ |
| 2004 03 23 | 704 | (0.4− | 1.6+) | 2005 07 15 | 428 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.1+ |
| 2004 03 23 | 704 | 0.2+ | 0.9+ | 2005 07 15 | 428 | 0.0 | 0.6− | 2006 11 19 | 703 | 0.5− | 0.8+ |
| 2004 03 23 | 704 | (2.1+ | 1.4+) | 2005 07 29 | E12 | 0.3+ | 1.0− | 2006 11 19 | 703 | 0.4− | 0.4+ |
| 2004 03 23 | 704 | 0.2+ | 1.2+ | 2005 07 29 | E12 | 0.8− | 0.0 | 2006 11 19 | 703 | 0.3− | 0.6+ |
| 2004 04 12 | 703 | 0.5+ | 1.3+ | 2005 07 29 | E12 | 0.2− | 0.5+ | 2006 11 19 | 703 | 0.6− | 0.1− |
| 2004 04 12 | 703 | 0.1+ | 0.3+ | 2005 08 12 | E12 | 0.6+ | 0.4+ | | | | |
| 2004 04 12 | 703 | 0.8− | 0.5+ | 2005 08 12 | E12 | 0.2− | 0.5− | | | | |

**(145375)∗ 2005 NK$_{4}$ = 2002 TO$_{200}$**

Discovered 2005 July 2 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86869)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.29217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29565960 | $\omega$ | 146.66002 | | +0.42273159 | −0.90461775 | |
| $a$ | 2.2315574 | $\Omega$ | 278.28071 | | +0.81898044 | +0.40705664 | |
| $e$ | 0.1341374 | $i$ | 3.15417 | | +0.38803226 | +0.12637887 | |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1+ | 0.1− | 2002 10 31 | 704 | 0.3− | 0.0 | 2005 07 18 | 644 | 0.3− | 0.1− |
| 1999 12 07 | 704 | 0.6+ | 0.3− | 2002 10 31 | 704 | 0.7+ | 0.2+ | 2005 07 18 | 644 | 0.1+ | 0.1− |
| 1999 12 07 | 704 | 0.4+ | 0.2− | 2002 10 31 | 704 | 0.9− | 0.1− | 2005 08 28 | 691 | 0.2+ | 0.1− |
| 1999 12 07 | 704 | 0.6+ | 0.2+ | 2002 10 31 | 704 | 1.4− | 1.3− | 2005 08 28 | 691 | 0.0 | 0.0 |
| 1999 12 07 | 704 | 1.1+ | 0.4+ | 2004 03 20 | 704 | 0.1− | 0.3− | 2005 08 28 | 691 | 0.3+ | 0.2− |
| 2000 01 04 | 704 | 0.4− | 0.3− | 2004 03 20 | 704 | 1.0− | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.3− |
| 2000 01 04 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.7− | 1.0+ | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 2000 01 04 | 704 | 0.1+ | 0.8+ | 2004 03 20 | 704 | 0.4− | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2002 09 06 | 704 | 0.5+ | 0.3+ | 2005 07 02 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.5− | 0.2− |
| 2002 09 06 | 704 | 0.4− | 0.1− | 2005 07 02 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2002 09 06 | 704 | 0.3− | 0.7− | 2005 07 02 | 691 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.8− | 0.3+ | 2005 07 05 | G96 | 0.1− | 0.6− | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.7− | 0.0 | 2005 07 05 | G96 | 0.3− | 0.9− | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.8− | 0.4+ | 2005 07 05 | G96 | 0.7− | 0.6− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2002 10 04 | 704 | 0.6− | 0.1+ | 2005 07 05 | G96 | 0.4− | 0.6− | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2002 10 08 | 704 | 0.1+ | 0.0 | 2005 07 07 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 10 08 | 704 | 0.0 | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 2.7+ | 1.9− |
| 2002 10 08 | 704 | 0.3− | 1.2− | 2005 07 07 | 691 | 0.5+ | 0.9+ | | | | |
| 2002 10 31 | 704 | 0.4+ | 1.2+ | 2005 07 18 | 644 | 0.2− | 0.1− | | | | |

**(145376)∗ 2005 NA$_{6}$ = 2000 LZ$_{24}$**

Discovered 2005 July 4 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 86870)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.21146 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18486639 | $\omega$ | 32.00953 | | +0.12508249 | +0.92328379 | |
| $a$ | 3.0518562 | $\Omega$ | 247.45983 | | −0.97287170 | +0.04233529 | |
| $e$ | 0.2064081 | $i$ | 23.15501 | | −0.19461505 | +0.38177843 | |
| $P$ | 5.33 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 01 | 704 | 0.1− | 0.1+ | 2001 11 11 | 699 | 1.3− | 0.9+ | 2005 07 12 | 703 | 0.7− | 0.2+ |
| 2000 06 01 | 704 | 0.1− | 0.4+ | 2001 12 10 | 704 | 0.3+ | 0.5+ | 2005 07 12 | 703 | 0.6− | 0.3− |
| 2000 06 01 | 704 | 0.2− | 0.7+ | 2001 12 10 | 704 | 0.8+ | 0.8+ | 2005 07 12 | 703 | 0.7− | 0.2− |
| 2000 06 01 | 704 | 0.3− | 0.3+ | 2001 12 10 | 704 | 0.4− | 0.3+ | 2005 07 12 | 703 | 0.5− | 0.3− |
| 2000 06 01 | 704 | 0.2− | 0.3+ | 2001 12 10 | 704 | 0.7+ | 0.3+ | 2005 08 22 | 644 | 0.0 | 0.1− |
| 2000 06 11 | 704 | 0.2+ | 0.8− | 2001 12 10 | 704 | 0.1+ | 0.5+ | 2005 08 22 | 644 | 0.1+ | 0.1− |
| 2000 06 11 | 704 | 0.2− | 0.3+ | 2001 12 20 | 644 | 0.5− | 0.6+ | 2005 08 22 | 644 | 0.0 | 0.4− |
| 2000 06 11 | 704 | 0.3− | 0.3+ | 2001 12 20 | 644 | 0.3− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.3− |
| 2000 06 11 | 704 | 0.1− | 0.5− | 2001 12 20 | 644 | 0.3− | 0.4+ | 2006 09 25 | 703 | 0.3− | 0.5− |
| 2001 09 25 | 704 | (0.3− | 1.6+) | 2004 02 20 | 608 | 0.1− | 0.5+ | 2006 09 25 | 703 | 0.1− | 0.4− |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2004 02 20 | 608 | 0.2− | 1.1+ | 2006 10 02 | 703 | 0.5− | 0.2− |
| 2001 09 25 | 704 | 0.3− | 0.3+ | 2004 02 20 | 608 | 0.6+ | 0.3+ | 2006 10 02 | 703 | 1.1− | 0.8− |
| 2001 09 25 | 704 | 0.2− | 0.1− | 2005 06 05 | 704 | 0.4+ | 0.0 | 2006 10 02 | 703 | (2.2+ | 0.9+) |
| 2001 10 15 | 704 | 0.0 | 0.7− | 2005 06 05 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2001 10 15 | 704 | 0.0 | 0.3− | 2005 06 05 | 704 | 0.7+ | 0.0 | 2006 10 27 | 703 | (1.9− | 0.4+) |
| 2001 10 15 | 704 | 0.1+ | 0.4+ | 2005 06 05 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 703 | (0.8− | 1.6+) |
| 2001 10 15 | 704 | 0.4− | 0.3− | 2005 06 05 | 704 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2001 10 15 | 704 | 0.6+ | 0.4− | 2005 07 04 | 703 | 0.4+ | 0.7+ | 2006 11 15 | 703 | 0.1− | 0.7+ |
| 2001 11 11 | 704 | 0.0 | 0.7− | 2005 07 04 | 703 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.6+ | 0.8− |
| 2001 11 11 | 699 | (1.7− | 3.0+) | 2005 07 04 | 703 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2001 11 11 | 704 | 0.4+ | 0.3− | 2005 07 04 | 703 | 0.6− | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 2001 11 11 | 704 | 1.0+ | 0.2+ | 2005 07 05 | 704 | 0.4− | 0.4+ | 2006 11 22 | 703 | 1.1+ | 0.7− |
| 2001 11 11 | 699 | 0.2− | 0.2+ | 2005 07 05 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 0.1+ | 0.5+ |
| 2001 11 11 | 704 | 0.6+ | 0.9+ | 2005 07 05 | 704 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.2+ | 1.3+ |
| 2001 11 11 | 704 | 0.6+ | 0.2− | 2005 07 05 | 704 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.8− | 0.3+ |
| 2001 11 11 | 699 | 0.3− | 0.3+ | 2005 07 05 | 704 | 0.3+ | 0.2+ | | | | |

**(145377)∗ 2005 NJ$_6$ = 2001 TF$_{222}$**

Discovered 2005 July 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (*MPO* 95691)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.14449 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19873039 | $\omega$ | 44.55651 | | +0.73476555 | +0.67270509 | |
| $a$ | 2.9082151 | $\Omega$ | 272.95694 | | −0.64415205 | +0.65173349 | |
| $e$ | 0.0777206 | $i$ | 5.00382 | | −0.21257403 | +0.35030176 | |
| $P$ | 4.96 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.2+ | 0.4− | 2004 04 21 | 704 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 1991 11 08 | 691 | 0.0 | 0.1− | 2004 04 21 | 704 | (1.9+ | 0.5+) | 2006 10 04 | G96 | 0.4+ | 0.5− |
| 1991 11 08 | 691 | 0.2− | 0.3− | 2004 04 21 | 704 | 1.0+ | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.7+ |
| 2001 10 14 | 704 | 0.6+ | 0.8+ | 2004 04 21 | 704 | 0.8+ | 0.8+ | 2006 10 19 | 703 | 0.8− | 0.7− |
| 2001 10 14 | 704 | 0.6+ | 0.8+ | 2005 06 14 | G96 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 1.2− | 0.1− |
| 2001 10 14 | 704 | (0.1− | 1.9+) | 2005 06 14 | G96 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.8− | 0.2− |
| 2001 10 14 | 704 | 0.9+ | 0.2+ | 2005 06 14 | G96 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2001 10 18 | 691 | 0.3− | 0.2+ | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2001 10 18 | 691 | 0.6− | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2001 10 18 | 691 | 0.3− | 0.3+ | 2005 06 14 | G96 | 0.2− | 0.5+ | 2006 10 27 | 703 | 0.5+ | 0.1+ |
| 2001 11 10 | 704 | 0.6+ | 0.5+ | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2001 11 10 | 704 | 0.5− | 0.1− | 2005 06 14 | G96 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.2− |
| 2001 11 10 | 704 | 0.3+ | 0.2+ | 2005 07 04 | G96 | (0.1− | 1.6+) | 2006 10 27 | 703 | 0.0 | 0.3+ |
| 2001 11 10 | 704 | 0.4+ | 0.8+ | 2005 07 04 | G96 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2001 11 10 | 704 | 1.0+ | 0.8+ | 2005 07 04 | G96 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 2001 11 10 | 644 | 0.1+ | 0.6+ | 2005 07 04 | G96 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2001 11 10 | 644 | 0.1+ | 0.8+ | 2005 07 05 | G96 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.6− | 1.5+ |
| 2001 11 10 | 644 | 0.3+ | 0.5+ | 2005 07 05 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2003 01 28 | 704 | 0.4+ | 1.1+ | 2005 07 05 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2003 01 28 | 704 | 0.4+ | 0.1+ | 2005 07 05 | G96 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2003 01 28 | 704 | 0.6+ | 0.7+ | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2003 01 28 | 704 | 1.0+ | 0.3− | 2005 07 08 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2004 03 27 | 291 | 0.0 | 0.5+ | 2005 07 08 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2004 03 27 | 291 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2004 03 27 | 291 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.5+ | 0.6− | | | | |

**(145378)∗ 2005 NB$_8$**

Discovered 2005 July 1 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.33967 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23947638 | $\omega$ | 268.27702 | | −0.36661964 | −0.93001050 | |
| $a$ | 2.5681926 | $\Omega$ | 203.28254 | | +0.87752876 | −0.33641654 | |
| $e$ | 0.0905166 | $i$ | 3.75619 | | +0.30908465 | −0.14800130 | |
| $P$ | 4.12 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.4− | 0.1− | 2005 07 09 | 691 | 0.4+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 1.1+ |
| 2000 05 07 | 704 | 0.4− | 0.7− | 2005 07 09 | 691 | 0.2− | 0.0 | 2006 11 20 | H07 | 0.0 | 1.0+ |
| 2000 05 07 | 704 | 0.0 | 0.6− | 2005 07 09 | 691 | 0.1− | 0.2− | 2006 11 20 | H07 | 0.0 | 0.5+ |
| 2000 05 07 | 704 | 0.9+ | 1.6+ | 2005 08 06 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2000 05 28 | 704 | 0.6+ | 0.8+ | 2005 08 06 | 644 | 0.0 | 0.3+ | 2006 11 20 | H07 | 0.0 | 0.7+ |
| 2000 05 28 | 704 | 0.4+ | 0.0 | 2005 08 06 | 644 | 0.1+ | 0.3+ | 2006 11 20 | H07 | 0.1+ | 0.4+ |
| 2000 05 28 | 704 | 0.8− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 20 | H07 | 0.3− | 0.6+ |
| 2004 05 10 | 291 | 0.4− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 20 | H07 | 0.7− | 0.8− |
| 2004 05 10 | 291 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 20 | H07 | 0.1− | 0.4+ |
| 2004 05 10 | 291 | 0.6− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.4+ |
| 2004 05 27 | 691 | 0.8+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2004 05 27 | 691 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.0 | 2006 11 29 | 704 | 1.3− | 0.7+ |
| 2004 05 27 | 691 | 0.8+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.8+ | 0.2− |
| 2005 07 01 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.1− |
| 2005 07 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | H07 | (1.8− | 0.3+) | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2005 07 01 | 691 | 0.3+ | 0.0 | 2006 11 17 | H07 | 0.8− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2005 07 06 | 691 | 0.2− | 0.2+ | 2006 11 20 | 704 | 1.0+ | 1.5+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2005 07 06 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | (0.4− | 2.0+) | | | | |
| 2005 07 06 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 1.0+ | 0.6+ | | | | |

**(145379)∗ 2005 NU$_8$ = 2004 AW$_{18}$**

Discovered 2005 July 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86873)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.02289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28405270 | $\omega$ | 73.11940 | | −0.85051669 | +0.52393075 | |
| $a$ | 2.2919410 | $\Omega$ | 138.44567 | | −0.50509628 | −0.78927033 | |
| $e$ | 0.1604589 | $i$ | 3.97830 | | −0.14662573 | −0.32023259 | |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 16 | 691 | 0.1+ | 0.2+ | 2003 12 27 | 691 | 0.2+ | 0.5+ | 2005 07 09 | 691 | 0.1+ | 0.5+ |
| 1998 07 16 | 691 | 0.3+ | 0.0 | 2004 01 15 | 691 | 0.2− | 0.3+ | 2005 07 09 | 691 | 0.1− | 0.3+ |
| 1998 07 16 | 691 | 0.2− | 0.1+ | 2004 01 15 | 691 | 0.1− | 0.2+ | 2005 07 09 | 691 | 0.1− | 0.3+ |
| 2001 04 16 | 699 | 0.4+ | 0.4− | 2004 01 15 | 691 | 0.1+ | 0.1+ | 2005 07 15 | G96 | 0.2+ | 0.1− |
| 2001 04 16 | 699 | (0.9+ | 2.0+) | 2004 01 27 | 691 | 0.5+ | 0.3+ | 2005 07 15 | G96 | 0.0 | 0.4+ |
| 2001 04 16 | 699 | 0.1+ | 0.5+ | 2004 01 27 | 691 | 0.3+ | 0.9+ | 2005 07 15 | G96 | 0.2+ | 0.1+ |
| 2001 04 16 | 699 | 0.7+ | 0.1− | 2004 01 27 | 691 | 0.5+ | 0.3+ | 2005 07 15 | G96 | 0.1− | 0.0 |
| 2001 05 23 | 699 | 1.2+ | 1.2+ | 2005 05 19 | G96 | 0.5− | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2001 05 23 | 699 | 0.7+ | 0.2+ | 2005 05 19 | G96 | 0.9− | 0.9+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2001 05 23 | 699 | (1.6+ | 0.6+) | 2005 05 19 | G96 | 0.2− | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2001 05 23 | 699 | 0.1− | 0.8+ | 2005 05 19 | G96 | 0.4+ | 0.5− | 2006 11 18 | G96 | 0.7− | 0.4− |
| 2001 05 24 | 645 | 0.1− | 0.0 | 2005 07 01 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2001 05 24 | 645 | 0.2− | 0.0 | 2005 07 01 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 07 01 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2005 07 06 | 691 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.6− | 0.0 |
| 2003 12 27 | 691 | 0.6+ | 0.0 | 2005 07 06 | 691 | 1.0+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2003 12 27 | 691 | 0.1+ | 0.5+ | 2005 07 06 | 691 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.1− |

**(145380)∗ 2005 NK$_{11}$ = 2004 GP$_{61}$**

Discovered 2005 July 3 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 86876)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.41884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19228410 | $\omega$ | 162.72847 | | +0.54065975 | | +0.84078364 |
| $a$ | 2.9728555 | $\Omega$ | 139.98798 | | −0.77683108 | | +0.51164974 |
| $e$ | 0.0841333 | $i$ | 2.47343 | | −0.32283202 | | +0.17691075 |
| $P$ | 5.13 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.0 | 0.4− | 2005 05 20 | G96 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1+ | |
| 2001 10 14 | 691 | 0.2− | 0.1− | 2005 05 20 | G96 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.2− | |
| 2001 10 14 | 691 | 0.2− | 0.4− | 2005 06 14 | G96 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.3− | |
| 2001 12 10 | 691 | 0.3+ | 0.1+ | 2005 06 14 | G96 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.9− | 0.2− | |
| 2001 12 10 | 691 | 0.2− | 0.2+ | 2005 06 14 | G96 | 0.2− | 0.2+ | 2006 10 17 | G96 | 1.5+ | 0.2+ | |
| 2001 12 10 | 691 | 0.1− | 1.2+ | 2005 06 14 | G96 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.1− | |
| 2003 01 29 | 291 | 0.3+ | 0.0 | 2005 07 03 | G96 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.1− | |
| 2003 01 29 | 291 | 0.2+ | 0.1− | 2005 07 03 | G96 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.5+ | |
| 2003 01 29 | 291 | 0.1+ | 0.6+ | 2005 07 03 | G96 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.0 | |
| 2004 04 13 | 691 | 0.0 | 0.3+ | 2005 07 06 | 691 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.4+ | 0.2+ | |
| 2004 04 13 | 691 | 0.1+ | 0.2+ | 2005 07 06 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.0 | |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2005 07 06 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.3+ | |
| 2004 04 20 | 691 | 0.1+ | 0.7+ | 2005 07 07 | 568 | 0.7− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.4+ | |
| 2004 04 20 | 691 | 0.2− | 0.0 | 2005 07 07 | 568 | 0.7− | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.3− | |
| 2004 04 20 | 691 | 0.0 | 0.2+ | 2005 07 07 | 568 | 0.7− | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.3− | |
| 2005 05 20 | G96 | 0.3− | 0.2+ | 2005 07 08 | 568 | 0.4− | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.2− | |
| 2005 05 20 | G96 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.5− | 0.0 | |

**(145381)∗ 2005 NR$_{12}$ = 2001 RF$_{51}$**

Discovered 2005 July 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 86877)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.10274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22257881 | $\omega$ | 273.51934 | | +0.78942758 | | −0.57124258 |
| $a$ | 2.6965812 | $\Omega$ | 121.44675 | | +0.61350012 | | +0.74647500 |
| $e$ | 0.0594479 | $i$ | 15.27035 | | −0.02053534 | | +0.34125794 |
| $P$ | 4.43 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 644 | 0.4− | 0.7+ | 2004 04 16 | 704 | 0.7+ | 0.5+ | 2005 07 15 | G96 | 0.3− | 0.3+ | |
| 2001 07 22 | 644 | 0.3− | 0.8+ | 2004 04 16 | 704 | 0.0 | 0.1− | 2005 07 15 | G96 | 0.1+ | 0.4+ | |
| 2001 07 22 | 644 | 0.3− | 0.7+ | 2005 06 18 | G96 | 0.6+ | 0.5+ | 2006 10 20 | 703 | 0.1− | 0.6+ | |
| 2001 09 11 | 704 | 0.3− | 0.4− | 2005 06 18 | G96 | 0.2+ | 0.3+ | 2006 10 20 | 703 | 1.3− | 0.1− | |
| 2001 09 11 | 704 | 0.3− | 0.3− | 2005 07 04 | G96 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.2− | 0.1− | |
| 2001 09 11 | 704 | 0.1− | 0.3+ | 2005 07 04 | G96 | 0.2− | 0.3− | 2006 10 20 | 703 | 0.4+ | 0.7+ | |
| 2001 09 11 | 704 | 0.4− | 0.3+ | 2005 07 04 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.2− | 0.3+ | |
| 2001 09 11 | 704 | 0.3− | 0.4+ | 2005 07 04 | G96 | 0.1− | 0.2− | 2006 11 16 | 703 | 1.3+ | 0.3− | |
| 2001 09 16 | 704 | 0.4− | 0.0 | 2005 07 06 | 691 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.6+ | |
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2005 07 06 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.1+ | 0.0 | |
| 2001 09 16 | 704 | 0.7+ | 0.3+ | 2005 07 06 | 691 | 0.1− | 0.1− | 2006 11 22 | 703 | (1.7− | 0.2−) | |
| 2001 09 16 | 704 | 0.9+ | 0.2+ | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.9− | 0.3+ | |
| 2001 09 16 | 704 | 0.3+ | 0.0 | 2005 07 10 | 691 | 0.8− | 0.3+ | 2006 11 22 | 703 | 0.4+ | 0.2+ | |
| 2004 03 28 | 704 | 0.6+ | 0.3+ | 2005 07 10 | 691 | 0.1− | 0.3− | 2006 11 22 | 703 | 0.5− | 0.2+ | |
| 2004 03 28 | 704 | 0.5+ | 1.0+ | 2005 07 15 | 691 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.2+ | |
| 2004 03 28 | 704 | 0.2+ | 0.0 | 2005 07 15 | 691 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.6− | 0.2− | |
| 2004 03 28 | 704 | 0.2+ | 0.8+ | 2005 07 15 | 691 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.0 | 0.2+ | |
| 2004 04 16 | 704 | 0.7− | 1.4+ | 2005 07 15 | G96 | 0.5− | 0.4+ | 2006 12 01 | G96 | 0.7+ | 0.6+ | |
| 2004 04 16 | 704 | 0.6+ | 1.1+ | 2005 07 15 | G96 | 0.9+ | 0.6+ | | | | | |

**(145382)∗ 2005 NY$_{12}$**

Discovered 2005 July 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.09163 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18890526 | $\omega$ | 229.85356 | | +0.97148659 | | +0.17152058 |
| $a$ | 3.0081998 | $\Omega$ | 119.68620 | | −0.11550184 | | +0.94531024 |
| $e$ | 0.0806819 | $i$ | 10.86061 | | −0.20705828 | | +0.27743332 |
| $P$ | 5.22 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.2− | 0.9+ | 2005 05 19 | G96 | 0.1− | 0.7− | 2005 07 16 | 691 | 0.2− | 0.3+ | |
| 2000 08 21 | 699 | (2.1+ | 2.2+) | 2005 05 19 | G96 | 0.1+ | 0.3− | 2005 07 16 | 691 | 0.1− | 0.0 | |
| 2000 08 21 | 699 | (2.9+ | 0.9+) | 2005 05 19 | G96 | 0.0 | 0.5− | 2005 07 16 | 691 | 0.0 | 0.6+ | |
| 2000 08 21 | 699 | (5.3+ | 0.7−) | 2005 05 22 | 644 | 0.2− | 0.1+ | 2005 07 30 | E12 | 0.4+ | 0.1+ | |
| 2000 08 26 | 704 | 0.7− | 0.1+ | 2005 05 22 | 644 | 0.1+ | 0.3+ | 2005 07 30 | E12 | 0.0 | 0.1+ | |
| 2000 08 26 | 704 | 0.3+ | 0.2− | 2005 05 22 | 644 | 0.0 | 0.6+ | 2005 07 30 | E12 | 0.2+ | 0.3+ | |
| 2000 08 26 | 704 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.2+ | 0.1− | 2005 08 02 | 704 | 0.3+ | 0.8− | |
| 2000 08 26 | 704 | 0.3+ | 0.7− | 2005 06 13 | G96 | 0.3+ | 0.2− | 2005 08 02 | 704 | 0.3+ | 0.4− | |
| 2000 08 26 | 704 | 0.3− | 1.1− | 2005 06 13 | G96 | 0.2+ | 0.1− | 2005 08 02 | 704 | 1.1+ | 1.1+ | |
| 2001 12 11 | 704 | 0.2+ | 0.4+ | 2005 06 13 | G96 | 0.2+ | 0.1+ | 2005 08 02 | 704 | 1.2+ | 0.2+ | |
| 2001 12 11 | 704 | 1.2+ | 0.0 | 2005 07 04 | 644 | 0.0 | 0.1+ | 2005 08 02 | 704 | 0.6+ | 0.8− | |
| 2001 12 11 | 704 | 0.1− | 0.4− | 2005 07 04 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.2+ | |
| 2001 12 11 | 704 | 0.0 | 0.2+ | 2005 07 04 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 1.5+ | |
| 2002 01 08 | 644 | 0.2− | 0.9+ | 2005 07 05 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.4+ | |
| 2002 01 08 | 644 | 0.5− | 0.8+ | 2005 07 05 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 1.1+ | 0.9+ | |
| 2002 01 08 | 644 | 0.8− | 0.6+ | 2005 07 05 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.0 | |
| 2003 01 26 | 608 | 0.1− | 0.4− | 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.2+ | |
| 2003 01 26 | 608 | 0.2− | 0.1− | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4− | 0.4− | |
| 2003 01 26 | 608 | 0.2+ | 0.4− | 2005 07 09 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.6− | |
| 2003 03 07 | 644 | 0.0 | 0.5+ | 2005 07 12 | 703 | 0.7− | 0.5− | 2006 10 22 | 703 | 0.7+ | 0.4− | |
| 2003 03 07 | 644 | 0.2+ | 0.2+ | 2005 07 12 | 703 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.2− | |
| 2003 03 07 | 644 | 0.2+ | 0.5+ | 2005 07 12 | 703 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.2− | 0.2+ | |
| 2004 04 13 | 703 | 0.8+ | 0.4+ | 2005 07 12 | 703 | 1.4− | 1.2+ | 2006 10 22 | 703 | 0.7+ | 1.0− | |
| 2004 04 13 | 703 | 0.7− | 0.6+ | 2005 07 12 | G96 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.7− | 0.0 | |
| 2004 04 13 | 703 | 0.1− | 0.8+ | 2005 07 12 | G96 | 0.3+ | 0.4− | 2006 11 13 | 703 | 0.2− | 0.2+ | |
| 2004 04 13 | 703 | 0.2+ | 0.4+ | 2005 07 12 | G96 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.6− | 0.1+ | |
| 2005 05 19 | G96 | 0.3− | 0.4− | 2005 07 12 | G96 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.2− | 0.4− | |

**(145383)∗ 2005 NE$_{14}$ = 1997 CU$_{10}$ = 2001 YV$_{50}$**

Discovered 2005 July 5 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86878)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.82283 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17990967 | $\omega$ | 269.34001 | | −0.85751090 | | +0.51218090 |
| $a$ | 3.1076567 | $\Omega$ | 301.46814 | | −0.44654345 | | −0.78774438 |
| $e$ | 0.0636905 | $i$ | 3.25526 | | −0.25548777 | | −0.34224190 |
| $P$ | 5.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 02 | 809 | 0.0 | 1.0+ | 2003 03 07 | 704 | 0.1+ | 1.0+ | 2005 08 25 | 644 | 0.0 | 0.1− | |
| 1994 09 03 | 809 | 0.3− | 1.1− | 2003 03 07 | 704 | 0.2− | 0.8+ | 2005 09 06 | 699 | (4.0+ | 1.3+) | |
| 1994 09 03 | 809 | (1.4− | 2.3−) | 2003 03 07 | 704 | 1.5+ | 0.7+ | 2005 09 06 | 699 | 0.4− | 0.4+ | |
| 1994 09 03 | 809 | 1.8− | 0.2− | 2003 03 07 | 704 | 0.8− | 0.3− | 2005 09 06 | 699 | 1.0+ | 1.0+ | |
| 1997 02 03 | 691 | 0.0 | 0.2− | 2003 03 07 | 704 | 0.0 | 0.9+ | 2005 09 06 | 699 | 0.5− | 0.5− | |
| 1997 02 03 | 691 | 0.0 | 0.4− | 2003 03 26 | 644 | 0.3+ | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | |
| 1997 02 03 | 691 | 0.0 | 0.4− | 2003 03 26 | 644 | 0.1+ | 1.1+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | |
| 1997 02 07 | 691 | 0.0 | 0.1− | 2003 03 26 | 644 | 0.2+ | 0.9+ | 2006 10 19 | 691 | 0.7+ | 0.1− | |
| 1997 02 07 | 691 | 0.2+ | 0.0 | 2005 07 05 | 291 | 0.4− | 0.3− | 2006 11 09 | 691 | 0.3− | 0.1− | |
| 1997 02 07 | 691 | 0.0 | 0.4− | 2005 07 05 | 291 | 0.3− | 0.3− | 2006 11 09 | 691 | 0.4− | 0.0 | |
| 1999 07 19 | 691 | 0.3+ | 0.8+ | 2005 07 05 | 291 | 0.3− | 0.1− | 2006 11 09 | 691 | 0.1− | 0.0 | |
| 1999 07 19 | 691 | 0.0 | 0.4+ | 2005 07 06 | 291 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.4− | |
| 1999 07 19 | 691 | 0.2+ | 0.5+ | 2005 07 06 | 291 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1− | 0.4− | |
| 2001 12 18 | 704 | (1.8− | 0.2+) | 2005 07 06 | 291 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2− | 0.6− | |
| 2001 12 18 | 704 | 0.0 | 0.8+ | 2005 07 31 | 644 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.5− | |
| 2001 12 18 | 704 | 1.0− | 1.3+ | 2005 07 31 | 644 | 0.2+ | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.1+ | |
| 2001 12 18 | 704 | 1.2− | 1.0+ | 2005 07 31 | 644 | 0.7+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.1− | |
| 2001 12 18 | 704 | 1.2− | 1.0+ | 2005 08 24 | 644 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 1.2+ | |
| 2001 12 19 | 704 | 0.1+ | 0.2− | 2005 08 24 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.2+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.4+ | 0.1+ | 2005 08 24 | 644 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.8+ | 0.6+ | 2005 08 25 | 644 | 0.6+ | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2001 12 19 | 704 | 0.7+ | 0.4+ | 2005 08 25 | 644 | 0.4+ | 0.3+ | | | | |

**(145384)∗ 2005 NA$_{16}$ = 2004 HQ$_{7}$**

Discovered 2005 July 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86880)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.73344 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18022503 | $\omega$ | 179.44646 | | −0.10385197 | | +0.99373100 |
| $a$ | 3.1040305 | $\Omega$ | 84.59203 | | −0.91268073 | | −0.07867675 |
| $e$ | 0.1366543 | $i$ | 2.38299 | | −0.39525770 | | −0.07942708 |
| $P$ | 5.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 18 | 809 | 0.7− | 0.6+ | 2005 07 11 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2003 01 25 | 645 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2003 01 25 | 645 | 0.2+ | 0.0 | 2005 07 30 | E12 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.5− | 0.5− |
| 2004 03 28 | 704 | 0.4+ | 0.3+ | 2005 07 30 | E12 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2004 03 28 | 704 | (2.5+ | 0.6+) | 2005 07 30 | E12 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2004 03 28 | 704 | (0.8+ | 2.3+) | 2005 07 30 | E12 | 0.7− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2004 03 28 | 704 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2004 04 19 | 704 | 0.8− | 0.7− | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2004 04 19 | 704 | (1.6− | 0.3−) | 2006 09 19 | 691 | 0.8− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2004 04 19 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.4− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2004 04 20 | 691 | 0.1− | 0.7+ | 2006 09 27 | 691 | 0.4− | 0.5+ | 2006 11 01 | 691 | 0.5+ | 0.1− |
| 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 04 20 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.2− |
| 2005 07 02 | 691 | 0.6+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2005 07 02 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.9+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2005 07 02 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2005 07 07 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 07 07 | 691 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2005 07 07 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.6+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2005 07 11 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.0 |

**(145385)∗ 2005 NF$_{16}$ = 2004 GU$_{81}$**

Discovered 2005 July 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86880)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.93178 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22872004 | $\omega$ | 79.51204 | | +0.50640901 | | −0.86217187 |
| $a$ | 2.6480930 | $\Omega$ | 340.04296 | | +0.77362292 | | +0.46168587 |
| $e$ | 0.0370749 | $i$ | 2.43094 | | +0.38086415 | | +0.20858050 |
| $P$ | 4.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 695 | 0.1− | 0.3+ | 2005 07 02 | 691 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.3+ |
| 2002 12 07 | 695 | 0.2− | 0.0 | 2005 07 02 | 691 | 0.2− | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 0.3+ | 0.1+ | 2005 07 07 | 691 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.5+ |
| 2003 01 05 | 704 | 0.1+ | 0.5+ | 2005 07 07 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | (0.3+ | 1.7+) | 2005 07 07 | 691 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.3+ |
| 2003 01 05 | 704 | (0.3− | 1.7+) | 2005 07 16 | 691 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.4+ | 0.2− |
| 2004 04 13 | 691 | 0.0 | 0.5+ | 2005 07 16 | 691 | 0.0 | 0.1+ | 2006 11 23 | 703 | 1.0− | 0.3− |
| 2004 04 13 | 691 | 0.1− | 0.2+ | 2005 07 16 | 691 | 0.1+ | 0.2− | 2006 11 23 | 703 | 1.2− | 1.2− |
| 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.4+ | 0.1+ |
| 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 24 | 703 | 0.3+ | 1.0+ |
| 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 24 | 703 | 0.0 | 0.1+ |
| 2004 04 25 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.8+ | 2006 11 24 | 703 | 0.4− | 0.4− |
| 2004 05 24 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (1.7− | 0.3+) | 2006 11 24 | 703 | 0.2+ | 2.7+ |
| 2004 05 24 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 25 | 691 | 0.1− | 0.1+ |
| 2004 05 24 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4− | 1.2+ | 2006 11 25 | 691 | 0.3+ | 0.1− |
| 2005 07 02 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.4+ | 2006 11 25 | 691 | 0.0 | 0.1+ |

**(145386)∗ 2005 NY$_{16}$ = 2000 SN$_{322}$**

Discovered 2005 July 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86881)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.34862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18243425 | $\omega$ | 62.34406 | | +0.32914690 | | +0.94415166 |
| $a$ | 3.0789205 | $\Omega$ | 226.88178 | | −0.87366421 | | +0.29826730 |
| $e$ | 0.1741528 | $i$ | 1.21601 | | −0.35829202 | | +0.14005093 |
| $P$ | 5.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.3− | 0.4− | 2005 07 12 | 703 | 0.1+ | 1.5+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 1995 09 29 | 691 | 0.2+ | 0.1− | 2005 07 12 | 703 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 1995 09 29 | 691 | 0.2+ | 0.4− | 2005 07 12 | 703 | 0.6− | 1.2− | 2006 10 16 | 691 | 0.1+ | 0.5+ |
| 1995 11 24 | 691 | 0.8− | 0.7+ | 2005 07 30 | E12 | 0.7− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 1995 11 24 | 691 | 0.2− | 0.3− | 2005 07 30 | E12 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.4− | 0.3− |
| 1995 11 24 | 691 | 0.0 | 0.5+ | 2005 07 30 | E12 | 1.1− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2000 09 28 | 691 | 0.0 | 0.0 | 2005 07 30 | E12 | 0.9− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.5− |
| 2000 09 28 | 691 | 0.2− | 0.2− | 2005 08 28 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2000 09 28 | 691 | 0.0 | 0.0 | 2005 08 28 | 691 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.7+ | 0.6+ | 2005 08 28 | 691 | (1.9− | 1.1+) | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 1.4+ | 0.7+ | 2005 09 30 | G96 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2000 10 01 | 704 | 0.6+ | 0.2− | 2005 09 30 | G96 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2000 10 01 | 704 | 0.0 | 0.4− | 2005 09 30 | G96 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2000 10 02 | 645 | 0.1+ | 0.0 | 2005 09 30 | G96 | 0.5− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2000 10 02 | 645 | 0.1+ | 0.1+ | 2005 10 26 | G96 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2004 04 20 | 691 | 0.2+ | 0.5+ | 2005 10 26 | G96 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.0 | 0.5+ |
| 2004 04 20 | 691 | 0.3+ | 0.3+ | 2005 10 26 | G96 | 0.1+ | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.4+ |
| 2004 04 20 | 691 | 0.4+ | 0.9+ | 2005 10 26 | G96 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.3+ |
| 2005 07 02 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2005 07 02 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.4+ |
| 2005 07 02 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2005 07 07 | 691 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.6+ | 0.1− |
| 2005 07 07 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.0 | 0.6+ | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2005 07 07 | 691 | 0.2− | 0.8+ | 2006 10 12 | 691 | 0.1− | 0.5+ | | | | |
| 2005 07 12 | 703 | 1.1+ | 0.9+ | 2006 10 12 | 691 | 0.2− | 0.1− | | | | |

**(145387)∗ 2005 NV$_{18}$ = 2005 MS$_{25}$**

Discovered 2005 July 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (d, *MPO* 86882)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.39677 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28571352 | $\omega$ | 52.55378 | | −0.49637272 | | +0.86810242 |
| $a$ | 2.2830505 | $\Omega$ | 187.68832 | | −0.80452469 | | −0.46152974 |
| $e$ | 0.2001093 | $i$ | 1.50216 | | −0.32611982 | | −0.18272515 |
| $P$ | 3.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 11 | 691 | 0.3+ | 0.1− | 2001 04 16 | 699 | 1.2+ | 0.8+ | 2005 07 15 | G96 | 0.2− | 0.4+ |
| 1999 11 11 | 691 | 0.2+ | 0.2− | 2001 04 16 | 699 | (1.8+ | 0.8+) | 2005 08 02 | 704 | 0.7+ | 0.2− |
| 1999 11 11 | 691 | 0.2+ | 0.2− | 2002 10 05 | 704 | 0.9− | 0.8+ | 2005 08 02 | 704 | 0.4+ | 0.8+ |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2002 10 05 | 704 | 1.4− | 0.8+ | 2005 08 02 | 704 | 0.4− | 0.2+ |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2002 10 05 | 704 | 1.4− | 0.7+ | 2005 09 30 | G96 | 0.1+ | 0.3+ |
| 2001 02 02 | 691 | 0.4− | 0.2+ | 2002 10 05 | 704 | 0.0 | 1.0+ | 2005 09 30 | G96 | 0.1+ | 0.3+ |
| 2001 02 02 | 691 | 0.3− | 0.4+ | 2003 12 29 | 691 | 0.2+ | 0.1+ | 2005 09 30 | G96 | 0.2+ | 0.6+ |
| 2001 02 02 | 691 | 0.3− | 0.3+ | 2003 12 29 | 691 | 0.2+ | 0.3+ | 2005 09 30 | G96 | 0.3− | 0.4+ |
| 2001 02 20 | 691 | 0.2− | 0.2+ | 2003 12 29 | 691 | 0.1+ | 0.3+ | 2005 10 26 | G96 | 0.4− | 0.2+ |
| 2001 02 20 | 691 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2005 10 26 | G96 | 0.0 | 0.1− |
| 2001 02 20 | 691 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.2− | 0.0 | 2005 10 26 | G96 | 0.2− | 0.3− |
| 2001 03 02 | 699 | 0.1+ | 1.1+ | 2004 01 27 | 691 | 0.3+ | 0.4− | 2005 10 26 | G96 | 0.1− | 0.2− |
| 2001 03 02 | 699 | 0.8+ | 0.5+ | 2005 05 19 | G96 | 0.1− | 0.2+ | 2006 10 20 | 695 | 0.0 | 0.2+ |
| 2001 03 02 | 699 | 1.0+ | 1.3+ | 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.2+ |
| 2001 03 02 | 699 | 0.1+ | 0.1+ | 2005 05 19 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2001 03 18 | 691 | 0.1− | 0.0 | 2005 05 19 | G96 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2001 03 18 | 691 | 0.2− | 0.0 | 2005 06 27 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 691 | 0.8+ | 0.7+ | 2005 06 27 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2001 03 18 | 704 | 0.1+ | 0.4+ | 2005 06 27 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 03 18 | 704 | 0.4+ | 0.1+ | 2005 07 04 | G96 | 0.5− | 0.3+ | 2006 11 15 | 691 | 0.5− | 0.3+ |
| 2001 03 18 | 704 | 0.1− | 0.8+ | 2005 07 04 | G96 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.5− | 0.4+ |
| 2001 03 18 | 704 | 0.6+ | 0.8− | 2005 07 04 | G96 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 03 18 | 704 | 0.1+ | 0.0 | 2005 07 04 | G96 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2001 04 01 | 704 | 0.8+ | 0.7+ | 2005 07 07 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2001 04 01 | 704 | 0.4− | 0.0 | 2005 07 07 | 691 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.6+ |
| 2001 04 01 | 704 | 0.4+ | 0.1− | 2005 07 07 | 691 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 04 01 | 704 | 0.8+ | 0.4+ | 2005 07 15 | G96 | 0.4− | 0.4+ | 2006 11 23 | 691 | 0.3+ | 0.2+ |
| 2001 04 16 | 699 | (1.7+ | 0.5−) | 2005 07 15 | G96 | 0.3− | 0.1+ | | | | |
| 2001 04 16 | 699 | (1.3+ | 1.9+) | 2005 07 15 | G96 | 0.3− | 0.1+ | | | | |

**(145388)∗ 2005 NP$_{24}$**

Discovered 2005 July 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 175.19818 | | (2000.0) | | | |
| $n$ | 0.25161166 | $\omega$ | 343.75008 | | −0.72734501 | +0.68523245 |
| $a$ | 2.4849379 | $\Omega$ | 239.56631 | | −0.62466733 | −0.68383413 |
| $e$ | 0.0709752 | $i$ | 2.50994 | | −0.28418299 | −0.25065387 |
| $P$ | 3.92 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 291 | 0.5− | 0.2+ | 2005 06 18 | G96 | 0.5− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.6+ |
| 2002 10 31 | 291 | 0.3+ | 0.4− | 2005 06 18 | G96 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 2002 10 31 | 291 | 0.4+ | 0.5− | 2005 06 18 | G96 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2003 12 22 | 291 | 0.6− | 0.7+ | 2005 07 04 | G96 | 0.5− | 0.5− | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2003 12 22 | 291 | 1.0− | 0.7+ | 2005 07 04 | G96 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.5− | 0.0 |
| 2003 12 22 | 291 | 0.6− | 0.5+ | 2005 07 04 | G96 | 0.5− | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2004 03 17 | 691 | 0.6+ | 0.2+ | 2005 07 04 | G96 | 0.2− | 0.3− | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2004 03 17 | 691 | 0.8+ | 0.1+ | 2005 07 08 | 691 | 0.1+ | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2004 03 17 | 691 | 0.8+ | 0.2+ | 2005 07 08 | 691 | 0.1+ | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2005 05 20 | G96 | 0.3− | 0.3+ | 2005 07 08 | 691 | 0.2− | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2005 05 20 | G96 | 0.7− | 0.2+ | 2006 10 13 | 691 | 0.3+ | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.4+ |
| 2005 05 20 | G96 | 0.5− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2005 05 20 | G96 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.1+ | | | | |
| 2005 06 18 | G96 | 0.0 | 0.4+ | 2006 10 17 | 691 | 0.7− | 0.0 | | | | |

**(145389)∗ 2005 NH$_{31}$ = 2002 TF$_{364}$**

Discovered 2005 July 4 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. A. Doppler (*MPO* 86891)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 261.56601 | | (2000.0) | | | |
| $n$ | 0.26843871 | $\omega$ | 13.79255 | | −0.85887243 | −0.50978216 |
| $a$ | 2.3799762 | $\Omega$ | 135.44452 | | +0.46296578 | −0.81410631 |
| $e$ | 0.0769712 | $i$ | 4.05405 | | +0.21909093 | −0.27812418 |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 06 18 | G96 | 0.4− | 0.5+ | 2005 07 15 | G96 | 0.1+ | 0.2+ |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2005 06 18 | G96 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 06 18 | G96 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2005 06 18 | G96 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 07 04 | G96 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 07 04 | G96 | 0.9− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2005 07 04 | G96 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2002 11 08 | 645 | 0.1+ | 0.1− | 2005 07 04 | G96 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2004 02 27 | 012 | (2.3− | 0.3+) | 2005 07 09 | 691 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.2− | 0.4+ |
| 2004 02 27 | 012 | 0.2+ | 0.8− | 2005 07 09 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.4+ | 0.4+ |
| 2004 02 27 | 012 | 0.5− | 0.3− | 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 02 27 | 012 | 0.4+ | 0.2− | 2005 07 15 | G96 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 03 12 | 850 | 0.7− | 0.6− | 2005 07 15 | G96 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2004 03 12 | 850 | (3.1− | 1.1−) | 2005 07 15 | G96 | 0.0 | 0.7+ | 2006 11 27 | 691 | 0.1− | 0.2+ |

**(145390)∗ 2005 NW$_{31}$ = 2003 EE$_{22}$**

Discovered 2005 July 5 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86891)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.53826 | | (2000.0) | | | |
| $n$ | 0.18354541 | $\omega$ | 235.06976 | | +0.54140641 | −0.84073623 |
| $a$ | 3.0664817 | $\Omega$ | 182.18161 | | +0.81607234 | +0.52734001 |
| $e$ | 0.1134236 | $i$ | 9.76511 | | +0.20224993 | +0.12278070 |
| $P$ | 5.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.1+ | 0.4+ | 2003 03 31 | 691 | (0.3− | 2.0+) | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 1995 10 01 | 691 | 0.0 | 0.1− | 2004 06 16 | 691 | 0.0 | 0.4+ | 2006 10 22 | 703 | 1.1+ | 0.0 |
| 1995 10 01 | 691 | 0.1− | 0.4− | 2004 06 16 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2004 06 16 | 691 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.4+ | 0.4− |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.4− | 1.0+ |
| 2001 10 17 | 704 | 0.4+ | 0.3− | 2005 07 05 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 704 | (2.7− | 0.9+) |
| 2001 10 17 | 704 | (1.5+ | 0.3−) | 2005 07 05 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 704 | 0.7− | 0.4+ |
| 2001 10 17 | 704 | 0.5− | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 704 | (1.6− | 0.4+) |
| 2001 10 17 | 704 | (1.8+ | 1.2−) | 2005 07 09 | 691 | 0.0 | 0.3+ | 2006 10 27 | 704 | 0.4− | 0.2− |
| 2001 12 11 | 704 | 0.7+ | 0.5− | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2001 12 11 | 704 | 1.0+ | 0.3− | 2005 07 15 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.3− |
| 2001 12 11 | 704 | 0.6+ | 0.2− | 2005 07 15 | 691 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.9− |
| 2001 12 11 | 704 | 0.7+ | 0.1− | 2005 07 15 | 691 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.5+ |
| 2001 12 11 | 704 | 0.9+ | 0.5+ | 2006 09 26 | 704 | 1.4+ | 1.0+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2001 12 20 | 608 | 0.1+ | 0.5− | 2006 09 26 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2001 12 20 | 608 | 0.4− | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2001 12 20 | 608 | 0.1+ | 0.5− | 2006 09 26 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 644 | 0.2+ | 0.2+ |
| 2001 12 23 | 209 | 1.0− | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.5− | 2006 11 17 | 704 | 0.3− | 0.6− |
| 2001 12 23 | 209 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.4+ | 0.4+ | 2006 11 17 | 704 | 0.6− | 0.5+ |
| 2001 12 23 | 209 | 0.4− | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.4+ | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2002 01 04 | 209 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.2− | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2002 01 04 | 209 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.8+ |
| 2002 01 04 | 209 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.5− | 2006 11 17 | 644 | 0.4+ | 0.1+ |
| 2003 03 06 | 699 | 0.7− | 0.1− | 2006 09 30 | 703 | (1.6+ | 0.2+) | 2006 11 19 | 703 | 0.4− | 0.6− |
| 2003 03 06 | 699 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.5+ | 1.0+ | 2006 11 19 | 703 | 0.8− | 0.4− |
| 2003 03 06 | 699 | 1.2+ | 0.1+ | 2006 09 30 | 703 | 1.1− | 0.7+ | 2006 11 19 | 703 | 1.1− | 0.0 |
| 2003 03 06 | 699 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.2+ | 1.4+ | 2006 11 19 | 703 | 0.8− | 0.9+ |
| 2003 03 07 | 699 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.0 |
| 2003 03 07 | 699 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 11 20 | 704 | (1.7− | 0.6+) |
| 2003 03 07 | 699 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2003 03 07 | 699 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.5− | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2003 03 31 | 691 | (0.2− | 1.8+) | 2006 10 16 | 703 | 0.5− | 0.3− | | | | |
| 2003 03 31 | 691 | (0.0 | 1.6+) | 2006 10 16 | 703 | 0.4− | 0.1+ | | | | |

**(145391)∗ 2005 ND$_{39}$ = 2002 TY$_{373}$ = 2002 UK$_{18}$**

Discovered 2005 July 2 by J. Broughton at Reedy Creek.

Id. K. E. Smalley (*MPO* 86895), A. Doppler (*MPO* 89690)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.39317 | | (2000.0) | | | |
| $n$ | 0.25695640 | $\omega$ | 197.15815 | | −0.51013761 | +0.85779980 |
| $a$ | 2.4503592 | $\Omega$ | 42.22656 | | −0.77775591 | −0.42891612 |
| $e$ | 0.1601571 | $i$ | 5.35852 | | −0.36722658 | −0.28321452 |
| $P$ | 3.84 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 413 | 1.1− | 1.3− | 2005 07 06 | E12 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 2002 10 09 | 704 | 1.0+ | 0.0 | 2005 07 09 | 428 | 0.6+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.3− |
| 2002 10 09 | 704 | 0.7+ | 0.7+ | 2005 07 09 | 428 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2002 10 09 | 704 | 0.7+ | 1.4+ | 2005 07 26 | 428 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.3− |
| 2002 10 30 | 644 | 0.3+ | 0.8+ | 2005 07 26 | 428 | 0.6− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.7− |
| 2002 10 30 | 644 | 0.0 | 0.9+ | 2005 07 29 | E12 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2002 10 30 | 644 | 0.1+ | 0.2+ | 2005 07 29 | E12 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2002 10 31 | 608 | 0.3− | 1.4− | 2005 07 29 | E12 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.8+ |
| 2002 10 31 | 608 | 0.1− | 1.0− | 2005 07 29 | E12 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.0 | 1.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 608 | 0.7− | 1.0− | 2006 09 25 | G96 | 0.2+ | 0.7− | 2006 11 11 | 703 | 0.7− | 0.6− |
| 2004 01 17 | 644 | 0.4+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.8− | 2006 11 12 | 703 | 0.3− | 0.8+ |
| 2004 01 17 | 644 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.8− | 2006 11 12 | 703 | 0.2+ | 0.1− |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 12 | 703 | 0.3+ | 0.2+ |
| 2004 01 28 | 691 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 12 | 703 | 0.2− | 0.2− |
| 2004 01 28 | 691 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2004 01 28 | 691 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.2− | 0.1− |
| 2004 02 11 | 699 | 0.7+ | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.1+ |
| 2004 02 11 | 699 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.8− |
| 2004 02 11 | 699 | 0.4+ | 0.7− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | (0.2− | 1.7−) |
| 2004 02 11 | 699 | 0.4+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.3− |
| 2005 07 02 | 428 | 0.5− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2005 07 02 | 428 | 0.8+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2005 07 06 | E12 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2005 07 06 | E12 | 0.7− | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.5+ | 0.5− |
| 2005 07 06 | E12 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.0 | | | | |

**(145392)∗ 2005 NS$_{39}$**

Discovered 2005 July 7 by J. Broughton at Reedy Creek.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.50387 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19930816 | $\omega$ | 343.01926 | | +0.14716980 | | −0.93584250 |
| $a$ | 2.9025920 | $\Omega$ | 97.61751 | | +0.94088481 | | +0.03259816 |
| $e$ | 0.0397915 | $i$ | 18.84866 | | +0.30508493 | | +0.35090766 |
| $P$ | 4.95 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.0 | 0.6− | 2004 05 13 | 704 | 0.5+ | 1.3+ | 2005 08 24 | E12 | 0.4− | 0.4+ |
| 1997 11 23 | 691 | 0.1− | 0.2− | 2004 05 13 | 704 | (0.1− | 2.1+) | 2005 08 24 | E12 | 0.0 | 0.3+ |
| 1997 11 23 | 691 | 0.0 | 0.2− | 2004 05 13 | 704 | 0.0 | 0.9+ | 2005 08 24 | E12 | 0.0 | 0.4− |
| 2002 12 28 | 699 | 0.4− | 0.1− | 2005 06 08 | E12 | 0.5− | 0.1+ | 2006 09 25 | 703 | 0.1+ | 0.3− |
| 2002 12 28 | 699 | 0.7+ | 0.1+ | 2005 06 08 | E12 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.8+ |
| 2002 12 28 | 699 | 0.7+ | 0.9+ | 2005 06 08 | E12 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.2− | 0.3+ |
| 2002 12 28 | 699 | 0.8+ | 1.4+ | 2005 06 08 | E12 | 1.2+ | 0.2− | 2006 09 25 | 703 | 0.3+ | 0.4+ |
| 2003 01 10 | 704 | (1.7+ | 0.7+) | 2005 07 06 | E12 | 0.2+ | 0.2+ | 2006 10 04 | 703 | (0.2+ | 2.2+) |
| 2003 01 10 | 704 | 0.2− | 1.5+ | 2005 07 06 | E12 | 0.1+ | 0.4+ | 2006 10 04 | 703 | 0.7− | 0.2− |
| 2003 01 10 | 704 | 0.1− | 0.5+ | 2005 07 06 | E12 | 0.4− | 0.3+ | 2006 10 04 | 703 | 0.7− | 1.1+ |
| 2003 01 10 | 704 | 0.2− | 0.1+ | 2005 07 06 | E12 | 0.1− | 0.2+ | 2006 10 04 | 703 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.1− | 0.4+ | 2005 07 07 | 428 | 0.6− | 1.3+ | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 2003 01 31 | 699 | 0.5+ | 0.0 | 2005 07 07 | 428 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.6+ |
| 2003 01 31 | 699 | (1.8− | 0.1+) | 2005 07 09 | 428 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.6− |
| 2003 01 31 | 699 | 0.4+ | 0.3+ | 2005 07 09 | 428 | 0.6+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.8+ |
| 2003 01 31 | 699 | 0.4− | 0.9+ | 2005 07 29 | E12 | 0.1− | 0.4− | 2006 11 19 | 703 | 0.6− | 1.3+ |
| 2004 04 26 | 704 | 0.1+ | 1.0+ | 2005 07 29 | E12 | 0.1− | 0.0 | 2006 11 19 | 703 | 1.4− | 0.1+ |
| 2004 04 26 | 704 | 0.7+ | 0.2+ | 2005 07 29 | E12 | 0.3+ | 0.1− | 2006 11 19 | 703 | 1.5+ | 0.2+ |
| 2004 04 26 | 704 | 0.5− | 0.4+ | 2005 07 29 | E12 | 0.2− | 0.3− | 2006 11 19 | 703 | 0.3− | 0.4− |
| 2004 05 13 | 704 | 0.0 | 0.7+ | 2005 08 24 | E12 | 0.1+ | 0.0 | | | | |

**(145393)∗ 2005 NB$_{43}$ = 2000 TF$_3$**

Discovered 2005 July 5 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86898)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.89722 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18093688 | $\omega$ | 175.82738 | | +0.99607488 | | −0.08815707 |
| $a$ | 3.0958838 | $\Omega$ | 189.24150 | | +0.07971102 | | +0.93241987 |
| $e$ | 0.1355740 | $i$ | 2.83653 | | +0.03848353 | | +0.35045902 |
| $P$ | 5.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.1+ | 0.4+ | 2005 07 05 | 644 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.3− | 0.1− |
| 1997 03 02 | 691 | 0.0 | 0.1+ | 2005 07 05 | 644 | 0.1+ | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 1997 03 02 | 691 | 0.2− | 0.3+ | 2005 07 05 | 644 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.4+ | 0.1+ |
| 2000 09 28 | 691 | 0.3− | 0.5− | 2005 07 10 | 691 | 0.9− | 0.6+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2000 09 28 | 691 | 0.3− | 0.2− | 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.3+ | 0.3+ |
| 2000 09 28 | 691 | 0.3− | 0.4− | 2005 07 10 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.9+ |
| 2000 10 01 | 704 | 0.3+ | 0.4+ | 2005 07 11 | G96 | 0.1+ | 0.7− | 2006 11 13 | 703 | 0.7+ | 0.3+ |
| 2000 10 01 | 704 | 0.7+ | 0.4+ | 2005 07 11 | G96 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.9− | 0.3+ |
| 2000 10 01 | 704 | 0.6+ | 0.0 | 2005 07 11 | G96 | 0.3+ | 0.6− | 2006 11 13 | 703 | 0.7+ | 1.4+ |
| 2000 10 01 | 704 | 0.1+ | 0.6+ | 2005 07 11 | G96 | 0.0 | 0.6− | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 699 | 0.5+ | 0.0 | 2005 07 15 | G96 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2000 10 01 | 704 | 0.0 | 1.1+ | 2005 07 15 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.3− | 0.1− |
| 2000 10 01 | 699 | 0.1− | 0.8+ | 2005 07 15 | G96 | 0.1− | 0.1− | 2006 11 14 | 704 | (1.1+ | 2.1+) |
| 2000 10 01 | 699 | 0.7+ | 0.4+ | 2005 07 15 | G96 | 0.3− | 0.0 | 2006 11 14 | 704 | 1.4+ | 0.5+ |
| 2000 10 01 | 699 | 1.1+ | 1.3+ | 2005 07 18 | 644 | 0.2+ | 0.0 | 2006 11 14 | 704 | (1.5+ | 1.0+) |
| 2000 10 02 | 704 | 1.1+ | 0.3− | 2005 07 18 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2000 10 02 | 704 | 0.8− | 0.3− | 2005 07 18 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.4− |
| 2000 10 02 | 704 | 0.1− | 0.4− | 2005 07 30 | E12 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.0 | 1.2− | 2005 07 30 | E12 | 0.2− | 1.0− | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2001 12 17 | 704 | 0.1− | 1.1− | 2005 07 30 | E12 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.9− | 0.7+ |
| 2001 12 17 | 704 | 0.5+ | 0.1− | 2005 07 30 | E12 | 0.4− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2004 04 25 | 691 | 0.6+ | 0.3+ | 2005 10 26 | G96 | 0.3− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 04 25 | 691 | 0.0 | 0.6+ | 2005 10 26 | G96 | 0.5− | 0.6− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2004 04 25 | 691 | 0.2− | 0.1+ | 2005 10 26 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.6− | 1.3+ |
| 2004 06 08 | 691 | 0.3+ | 0.4+ | 2005 10 26 | G96 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.8+ |
| 2004 06 08 | 691 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2004 06 08 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2005 06 27 | 644 | 0.5+ | 0.5+ | 2006 10 19 | G96 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.1+ |
| 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.8− | 1.0− |
| 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.8+ | 2.1+ |
| 2005 06 27 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.0 | 0.3+ |
| 2005 06 27 | 644 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 1.1+ |

**(145394)∗ 2005 NT$_{43}$**

Discovered 2005 July 6 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.82474 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26923047 | $\omega$ | 187.11327 | | −0.21882180 | | −0.97536394 |
| $a$ | 2.3753079 | $\Omega$ | 275.52943 | | +0.89662511 | | −0.18968410 |
| $e$ | 0.1533364 | $i$ | 1.61015 | | +0.38494211 | | −0.11262829 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.5+ | 0.1+ | 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3− | 1.4+ |
| 1999 12 09 | 691 | 0.1+ | 0.4− | 2005 07 06 | 691 | 0.5− | 0.7+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 1999 12 09 | 691 | 0.3+ | 0.1+ | 2005 07 06 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 2000 02 02 | 704 | 0.2− | 0.9+ | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.8+ |
| 2000 02 02 | 704 | 0.7− | 0.4+ | 2005 07 10 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2000 02 02 | 704 | 0.1− | 0.8+ | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.3− | 0.4+ |
| 2000 02 02 | 704 | 0.1− | 0.1− | 2005 07 15 | G96 | 0.0 | 0.7+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2000 02 02 | 704 | 0.6− | 1.5+ | 2005 07 15 | G96 | 0.1− | 1.0+ | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2002 10 04 | 704 | 0.3− | 0.2− | 2005 07 15 | G96 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.3− |
| 2002 10 04 | 704 | 0.1+ | 0.7+ | 2005 07 15 | G96 | 0.6− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 24 | 691 | 0.4− | 0.1+ |
| 2004 03 27 | 704 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.9− | 0.4− | 2006 11 24 | 691 | 0.4− | 0.1− |
| 2004 03 27 | 704 | 0.5− | 0.5− | 2006 11 01 | G96 | 0.4− | 0.3− | 2006 11 24 | 691 | 0.3− | 0.1+ |
| 2004 03 27 | 704 | 1.4+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 28 | H07 | 0.4+ | 0.8− |
| 2004 03 27 | 704 | (1.7+ | 0.0 ) | 2006 11 15 | 703 | 0.3+ | 0.9− | 2006 11 28 | H07 | 0.2+ | 0.1+ |
| 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 15 | 703 | (3.9+ | 2.0−) | 2006 11 28 | H07 | (0.7− | 3.1−) |
| 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.1− | 2006 11 28 | H07 | 0.4− | 0.7+ |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 1.5+ | 0.6− | 2006 12 01 | H07 | 0.2− | 0.6+ |
| 2005 06 13 | G96 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 12 01 | H07 | 0.0 | 0.5+ |
| 2005 06 13 | G96 | 0.7+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 12 01 | H07 | 0.0 | 0.1+ |
| 2005 06 13 | G96 | (1.5+ | 0.1+) | 2006 11 16 | 691 | 1.1+ | 0.1− | 2006 12 01 | H07 | 0.2− | 0.4+ |
| 2005 06 13 | G96 | 0.1+ | 0.7+ | 2006 11 18 | 704 | 0.3− | 0.5+ | 2006 12 01 | H07 | 1.0− | 0.6+ |

**(145395)∗ 2005 ND$_{51}$ = 2004 HQ$_{65}$**

Discovered 2005 July 6 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86904)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.50516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24393186 | $\omega$ | 221.39145 | | −0.90538756 | | −0.37727798 |
| $a$ | 2.5368242 | $\Omega$ | 295.45324 | | +0.42364716 | | −0.77223790 |
| $e$ | 0.1034960 | $i$ | 12.45692 | | +0.02822150 | | −0.51118484 |
| $P$ | 4.04 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.1− | 0.4+ | 2004 04 26 | 608 | 0.9− | 0.3− | 2005 08 29 | 691 | 0.0 | 0.1+ |
| 2002 12 03 | 644 | 0.2− | 0.3+ | 2005 06 17 | G96 | 0.4− | 0.3+ | 2005 08 29 | 691 | 0.1+ | 0.0 |
| 2002 12 03 | 644 | 0.0 | 0.3+ | 2005 06 17 | G96 | 0.4− | 0.1− | 2005 08 29 | 691 | 0.0 | 0.1− |
| 2004 03 16 | 644 | 0.4+ | 0.6+ | 2005 06 17 | G96 | 0.4− | 0.1− | 2006 10 23 | 703 | 0.4− | 0.3− |
| 2004 03 16 | 644 | 0.4+ | 0.5+ | 2005 06 17 | G96 | 0.3− | 0.1+ | 2006 10 23 | 703 | 0.7− | 0.1+ |
| 2004 03 16 | 644 | 0.5+ | 0.4+ | 2005 07 06 | 691 | 0.1− | 0.4+ | 2006 10 23 | 703 | 1.0− | 0.0 |
| 2004 03 26 | 704 | 0.7+ | 0.9+ | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.9− | 0.5+ |
| 2004 03 26 | 704 | 0.3+ | 0.5+ | 2005 07 06 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 703 | 0.7+ | 0.0 |
| 2004 03 26 | 704 | 0.4− | 0.3+ | 2005 07 11 | G96 | 0.1− | 0.0 | 2006 10 29 | 703 | 0.6+ | 0.8− |
| 2004 04 16 | E12 | 0.4− | 0.2− | 2005 07 11 | G96 | 0.4− | 0.1− | 2006 10 29 | 703 | 0.4+ | 0.6+ |
| 2004 04 16 | E12 | 0.7+ | 0.1+ | 2005 07 11 | G96 | 0.1− | 0.2− | 2006 10 29 | 703 | 0.3− | 0.1+ |
| 2004 04 16 | E12 | 0.9+ | 0.3+ | 2005 07 11 | G96 | 0.3− | 0.3− | 2006 11 21 | 703 | 0.3+ | 2.2+ |
| 2004 04 16 | E12 | 0.6+ | 0.1+ | 2005 07 18 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 703 | 0.2+ | 0.2+ |
| 2004 04 26 | 608 | 0.6− | 0.4− | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 703 | 0.0 | 0.2− |
| 2004 04 26 | 608 | 1.0− | 0.1+ | 2005 07 18 | 644 | 0.3+ | 0.1− | 2006 11 21 | 703 | 0.3+ | 0.1− |

**(145396)∗ 2005 NE$_{53}$**

Discovered 2005 July 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.22003 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12294820 | $\omega$ | 104.92496 | | +0.82546530 | | +0.56280595 |
| $a$ | 4.0054802 | $\Omega$ | 220.85033 | | −0.53989121 | | +0.76496957 |
| $e$ | 0.2049771 | $i$ | 3.77703 | | −0.16469523 | | +0.31316294 |
| $P$ | 8.02 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 06 | 910 | 0.0 | 0.4− | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.4− |
| 1997 07 07 | 910 | 0.4+ | 0.1− | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 1.4− | 1.2− |
| 1997 07 07 | 910 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.7− |
| 1997 07 27 | 910 | 0.7+ | 0.1+ | 2006 09 28 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 1997 07 27 | 910 | 0.8+ | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1997 07 27 | 910 | 0.5+ | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1999 01 07 | 691 | 0.7− | 0.9− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 02 13 | 645 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 02 13 | 645 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2004 04 30 | 691 | 0.5− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.6+ |
| 2004 04 30 | 691 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2004 04 30 | 691 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2004 06 17 | 691 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2004 06 17 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2004 06 17 | 691 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2005 06 27 | 644 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2005 06 27 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2005 06 27 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2005 06 27 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.5+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2005 06 27 | 644 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2005 06 27 | 644 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2005 06 29 | 699 | 0.2− | 1.1+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2005 06 29 | 699 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.6+ | 2006 11 10 | 691 | 0.4− | 0.1− |
| 2005 06 29 | 699 | 1.4− | 0.5− | 2006 10 17 | 703 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.3− | 0.1− |
| 2005 06 29 | 699 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.0 | 0.6− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.5− | 1.2+ |
| 2005 07 10 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.0 | 1.1− |
| 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.5− | 0.7+ |
| 2005 07 11 | G96 | 0.6− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2005 07 11 | G96 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2005 07 11 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2005 07 30 | E12 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2005 07 30 | E12 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.5+ |
| 2005 07 30 | E12 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2005 07 30 | E12 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.8− | | | | |

**(145397)∗ 2005 NC$_{54}$ = 1998 TT$_{24}$ = 2003 HA$_{24}$**

Discovered 2005 July 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86905)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.31988 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12521285 | $\omega$ | 117.47169 | | +0.72812818 | | +0.68521880 |
| $a$ | 3.9570371 | $\Omega$ | 199.29223 | | −0.64604980 | | +0.67755482 |
| $e$ | 0.1828862 | $i$ | 3.02780 | | −0.22901748 | | +0.26719779 |
| $P$ | 7.87 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 691 | 0.4+ | 0.0 | 2005 10 01 | G96 | 0.2+ | 0.1+ | 2006 10 21 | 703 | (1.9− | 0.1+) |
| 1998 10 14 | 691 | 0.6+ | 0.1+ | 2005 10 01 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 703 | (1.5− | 0.3+) |
| 1998 10 14 | 691 | 0.6+ | 0.4+ | 2005 10 01 | G96 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 1998 10 20 | 691 | 0.5− | 0.4+ | 2005 10 01 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1998 10 20 | 691 | 0.7− | 0.3+ | 2005 10 27 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.6+ |
| 1998 10 20 | 691 | 1.0− | 0.7+ | 2005 10 27 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2003 03 26 | 691 | 0.2+ | 0.5+ | 2005 10 27 | G96 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2003 03 26 | 691 | 0.2− | 0.8+ | 2005 10 27 | G96 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2003 03 26 | 691 | 0.5+ | 0.5+ | 2006 07 22 | G96 | 0.8− | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.3− |
| 2003 04 26 | 691 | 0.3+ | 0.6+ | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 10 25 | 850 | 0.3+ | 0.1+ |
| 2003 04 26 | 691 | 0.1+ | 0.9+ | 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 10 25 | 850 | 0.1+ | 0.2+ |
| 2003 04 26 | 691 | 0.4− | 0.6+ | 2006 07 22 | G96 | 0.1+ | 1.0+ | 2006 10 25 | 850 | 0.3+ | 0.5− |
| 2003 04 29 | 291 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 25 | 850 | 0.1− | 0.7− |
| 2003 04 29 | 291 | 0.9+ | 0.5+ | 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.1+ |
| 2003 04 29 | 291 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2004 06 09 | E12 | 0.5− | 0.5+ | 2006 09 24 | 691 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2004 06 09 | E12 | 0.3+ | 1.1+ | 2006 09 24 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2004 06 09 | E12 | 0.9− | 1.3+ | 2006 09 24 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2004 06 09 | E12 | (1.7− | 2.2+) | 2006 09 25 | G96 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2005 07 10 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2005 07 10 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2005 07 10 | 691 | 0.3− | 0.7− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2005 07 11 | G96 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2005 07 11 | G96 | 0.6− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 07 11 | G96 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 07 11 | G96 | 0.6− | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2005 07 15 | 691 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 07 15 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.6+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2005 07 15 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2005 08 05 | 644 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2005 08 05 | 644 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2005 08 05 | 644 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 21 | 691 | 0.6− | 0.1− |
| 2005 09 13 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.7+ | 0.6+ |
| 2005 09 13 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.1− | | | | |
| 2005 09 13 | 691 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.1+ | | | | |

**(145398)∗ 2005 NH$_{54}$**

Discovered 2005 July 10 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.01856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22408770 | $\omega$ | 234.26025 | | −0.08820311 | | −0.99562980 |
| $a$ | 2.6844627 | $\Omega$ | 220.83363 | | +0.92838910 | | −0.07100465 |
| $e$ | 0.0471073 | $i$ | 2.68973 | | +0.36099015 | | −0.06066010 |
| $P$ | 4.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 691 | 0.5− | 0.4− | 2005 07 11 | G96 | 0.9− | 0.0 | 2006 11 17 | 703 | 0.6− | 0.1− |
| 1997 10 02 | 691 | 0.5− | 0.3− | 2005 08 05 | 644 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 691 | 0.7− | 0.6− | 2005 08 05 | 644 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 1997 10 11 | 691 | 0.7+ | 0.2− | 2005 08 05 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 1997 10 11 | 691 | 0.5+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 1997 10 11 | 691 | 0.7+ | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.1− |
| 1997 10 23 | 691 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 1997 10 23 | 691 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.3+ | 1.0+ |
| 1997 10 23 | 691 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | 1.0+ | 1.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.9− | 1.4+ |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 20 | 448 | 0.5+ | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 11 20 | 448 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 1.2+ | 2006 10 17 | 691 | 0.4− | 0.5+ | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 2001 09 23 | 704 | (2.3+ | 2.7+) | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 1.4+ | 0.9+ | 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 2001 09 23 | 704 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 1.1+ |
| 2003 01 07 | 704 | 0.8+ | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2003 01 07 | 704 | 1.0+ | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 1.1+ |
| 2003 01 07 | 704 | 0.8+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 1.1+ |
| 2004 05 21 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2004 05 21 | 691 | 0.2+ | 0.7+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2004 05 21 | 691 | 0.0 | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.6− |
| 2005 07 10 | 691 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 07 10 | 691 | 0.3− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 07 10 | 691 | 0.4+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.1− |
| 2005 07 11 | G96 | 0.9− | 0.1− | 2006 11 14 | 691 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.4− | 1.3− |
| 2005 07 11 | G96 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.5+ | 1.0+ | 2006 11 27 | 703 | 1.0− | 0.2− |
| 2005 07 11 | G96 | 0.6− | 0.4− | 2006 11 17 | 703 | 0.2+ | 0.6− | | | | |

**(145399)∗ 2005 NJ$_{56}$**

Discovered 2005 July 5 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.66698 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24446642 | $\omega$ | 112.89789 | | −0.08634408 | | +0.99586541 |
| $a$ | 2.5331248 | $\Omega$ | 152.10364 | | −0.93473955 | | −0.07117665 |
| $e$ | 0.0863642 | $i$ | 3.45883 | | −0.34468344 | | −0.05644442 |
| $P$ | 4.03 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | (0.6+ | 2.3+) | 2005 05 20 | G96 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.6− |
| 2000 02 03 | 704 | 1.1+ | 0.6+ | 2005 05 20 | G96 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.0 |
| 2000 02 03 | 704 | 0.3+ | 0.3− | 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2000 02 03 | 704 | 0.2+ | 0.4− | 2005 06 03 | 703 | (1.9− | 0.6−) | 2006 09 30 | 703 | 0.4− | 0.5+ |
| 2000 03 12 | 691 | 0.0 | 0.2− | 2005 06 03 | 703 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2000 03 12 | 691 | 0.3− | 0.4− | 2005 06 03 | 703 | 1.2+ | 0.9− | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2000 03 12 | 691 | 0.5− | 0.2− | 2005 06 03 | 703 | 0.6− | 0.7− | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2002 10 11 | 644 | 0.3+ | 0.2+ | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2002 10 11 | 644 | 0.3− | 0.3+ | 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2002 10 11 | 644 | 0.2+ | 0.4+ | 2005 07 05 | 644 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2003 12 29 | 691 | 0.2+ | 0.0 | 2005 07 12 | G96 | 0.1− | 0.8+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2003 12 29 | 691 | 0.1+ | 0.2+ | 2005 07 12 | G96 | 0.3+ | 0.4+ | 2006 10 21 | 703 | (0.4− | 2.0+) |
| 2003 12 29 | 691 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 1.0− | 0.0 |
| 2004 01 21 | 704 | 0.2+ | 0.7+ | 2005 07 12 | G96 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.9− | 0.4+ |
| 2004 01 21 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.6− |
| 2004 01 21 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2004 01 21 | 704 | 1.0+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2004 01 24 | 704 | (2.5+ | 1.5−) | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2004 01 24 | 704 | (2.3+ | 0.3+) | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2004 01 24 | 704 | (0.3+ | 2.9+) | 2006 09 23 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.4− | 0.4− |
| 2004 04 13 | 645 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2004 04 13 | 645 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2005 05 20 | G96 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.1− |

**(145400)∗ 2005 NN$_{65}$ = 2001 SS$_{309}$ = 2004 GQ$_{38}$**

Discovered 2005 July 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86915)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.02841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21465829 | $\omega$ | 34.00905 | | −0.66455646 | | +0.74713195 |
| $a$ | 2.7625126 | $\Omega$ | 194.35637 | | −0.69638100 | | −0.62534945 |
| $e$ | 0.0501870 | $i$ | 2.91103 | | −0.27095795 | | −0.22523747 |
| $P$ | 4.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1+ | 0.7+ | 2004 04 16 | 644 | 0.8+ | 0.6+ | 2005 07 18 | 644 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.4+ | 0.0 | 2004 04 17 | 704 | (0.1− | 1.9+) | 2005 07 18 | 644 | 0.4+ | 0.3− |
| 2001 09 20 | 704 | 0.5+ | 0.9+ | 2004 04 17 | 704 | 0.3− | 1.4+ | 2005 07 28 | 644 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.7− | 0.3+ | 2004 04 17 | 704 | 0.0 | 1.3+ | 2005 07 28 | 644 | 0.0 | 0.2+ |
| 2001 09 22 | 691 | 0.1+ | 0.2+ | 2004 04 17 | 704 | (0.8− | 1.8+) | 2005 07 28 | 644 | 0.0 | 0.2+ |
| 2001 09 22 | 691 | 0.0 | 0.2− | 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.3+ |
| 2001 09 22 | 691 | 0.1− | 0.2+ | 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.4− | 0.4+ |
| 2001 10 13 | 691 | 0.3− | 0.3+ | 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 10 12 | 691 | 0.5− | 0.1+ |
| 2001 10 13 | 691 | 0.3− | 0.1+ | 2004 04 26 | 568 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.7+ |
| 2001 10 13 | 691 | 0.0 | 0.4+ | 2004 04 26 | 568 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.2− | 0.2− | 2004 04 26 | 568 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.6+ | 0.6− | 2004 04 27 | 568 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2005 07 01 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2004 04 15 | 699 | (1.8+ | 1.1+) | 2005 07 01 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 04 15 | 699 | 0.0 | 1.0+ | 2005 07 01 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.2+ |
| 2004 04 15 | 699 | 0.6− | 1.1+ | 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2004 04 15 | 699 | 0.4+ | 0.3− | 2005 07 09 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2004 04 16 | 644 | 0.7+ | 0.5+ | 2005 07 09 | 691 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.6+ | 0.3− |
| 2004 04 16 | 644 | 0.8+ | 0.7+ | 2005 07 18 | 644 | 0.5+ | 0.4+ | | | | |

**(145401)∗ 2005 NL$_{70}$**

Discovered 2005 July 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.29833 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17444662 | $\omega$ | 207.03483 | | +0.68592126 | | +0.72024082 |
| $a$ | 3.1722033 | $\Omega$ | 106.47508 | | −0.64654057 | | +0.66864329 |
| $e$ | 0.1286258 | $i$ | 6.21143 | | −0.33391213 | | +0.18484946 |
| $P$ | 5.65 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.4+ | 0.0 | 2004 06 17 | 644 | 0.2+ | 0.6+ | 2005 08 28 | 699 | 0.4− | 0.2+ |
| 2000 10 02 | 704 | 0.4+ | 0.6− | 2004 06 17 | 644 | 0.1− | 0.5+ | 2005 08 28 | 699 | 1.0+ | 0.4+ |
| 2000 10 02 | 704 | 0.7− | 0.0 | 2005 07 04 | 644 | 0.2− | 0.0 | 2005 08 28 | 699 | 0.7− | 0.1− |
| 2000 10 02 | 704 | 0.1− | 0.2+ | 2005 07 04 | 644 | 0.2− | 0.2+ | 2005 09 03 | 644 | 0.1− | 0.1+ |
| 2003 03 25 | 413 | 0.2+ | 0.2+ | 2005 07 04 | 644 | 0.2− | 0.3+ | 2005 09 03 | 644 | 0.1− | 0.1+ |
| 2003 03 25 | 413 | 0.1+ | 0.2+ | 2005 07 11 | 699 | 0.5− | 0.4− | 2005 09 03 | 644 | 0.2− | 0.1+ |
| 2003 03 25 | 413 | 0.3+ | 0.2+ | 2005 07 11 | 699 | 0.2+ | 1.0+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2003 03 25 | 413 | 0.2+ | 0.2+ | 2005 07 11 | 699 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.2+ |
| 2003 03 25 | 413 | 0.2+ | 0.3+ | 2005 07 11 | 699 | 0.9− | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.1+ |
| 2004 04 20 | 704 | 0.1+ | 0.3+ | 2005 07 18 | 644 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2004 04 20 | 704 | 0.5+ | 0.1+ | 2005 07 18 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2004 04 20 | 704 | 0.3+ | 0.5+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 1.4+ | 0.1+ |
| 2004 04 20 | 704 | 0.4+ | 0.3+ | 2005 07 31 | 608 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2004 04 20 | 704 | 0.1− | 0.3+ | 2005 07 31 | 608 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2004 05 13 | 699 | 0.1− | 1.2+ | 2005 07 31 | 608 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2004 05 13 | 699 | 0.8− | 0.8− | 2005 08 02 | 704 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2004 05 13 | 699 | 0.4+ | 0.2− | 2005 08 02 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2004 05 13 | 699 | 0.1+ | 0.0 | 2005 08 02 | 704 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.5− | 0.3+ |
| 2004 05 22 | 704 | 1.3+ | 0.7+ | 2005 08 02 | 704 | 0.6+ | 0.4− | 2006 11 28 | 704 | 1.1− | 1.3+ |
| 2004 05 22 | 704 | (1.7+ | 1.1+) | 2005 08 27 | E12 | 0.3+ | 0.5+ | 2006 11 28 | 704 | 0.2− | 1.1+ |
| 2004 05 22 | 704 | 0.1+ | 0.5+ | 2005 08 27 | E12 | 1.0+ | 0.5− | 2006 11 28 | 704 | 0.8− | 0.7+ |
| 2004 05 22 | 704 | 1.0− | 0.7+ | 2005 08 27 | E12 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.3− | 0.9+ |
| 2004 06 17 | 644 | 0.3+ | 0.1+ | 2005 08 28 | 699 | (1.9+ | 0.3−) | | | | |

**(145402)∗ 2005 NT$_{72}$ = 2004 HG$_{75}$**

Discovered 2005 July 7 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86920)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.29005 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20899093 | $\omega$ | 292.45832 | | −0.36684774 | | +0.92769197 |
| $a$ | 2.8122316 | $\Omega$ | 315.82327 | | −0.81274776 | | −0.35588137 |
| $e$ | 0.0461732 | $i$ | 5.71184 | | −0.45261883 | | −0.11285415 |
| $P$ | 4.72 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.4+ | 0.8+ | 2004 04 21 | 704 | 0.1− | 0.3+ | 2006 09 28 | 703 | 1.0− | 0.5+ |
| 2001 09 10 | 704 | (0.1+ | 2.0+) | 2004 04 21 | 704 | 1.2− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 1.0+ |
| 2001 09 10 | 704 | 0.3− | 0.1+ | 2004 04 21 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 09 10 | 704 | 0.1+ | 0.2− | 2005 07 07 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 2001 09 19 | 704 | (0.2− | 2.0+) | 2005 07 07 | 691 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.5− | 1.0+ |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.4+ |
| 2001 09 19 | 704 | 0.9+ | 0.2+ | 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.6− |
| 2001 10 17 | 704 | 0.7− | 0.4− | 2005 07 11 | 691 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.4− |
| 2001 10 17 | 704 | 0.2+ | 0.7− | 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2001 10 17 | 704 | 0.7− | 1.3− | 2005 07 30 | E12 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.7+ |
| 2001 10 17 | 704 | 1.1+ | 0.1− | 2005 07 30 | E12 | 0.5+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.1− | 0.1− | 2005 07 30 | E12 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2003 01 05 | 704 | 0.2− | 0.6− | 2005 07 30 | E12 | 0.9+ | 0.1+ | 2006 10 27 | 703 | 0.7− | 0.6+ |
| 2003 01 05 | 704 | 0.0 | 0.2− | 2005 08 10 | 704 | 0.7− | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.7− |
| 2003 01 05 | 704 | 0.4+ | 0.6+ | 2005 08 10 | 704 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.0 | 0.6− |
| 2004 04 17 | 699 | 0.6− | 0.1+ | 2005 08 10 | 704 | 0.5− | 0.6− | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2004 04 17 | 699 | 0.3− | 0.9+ | 2006 09 28 | 703 | 0.1+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2004 04 17 | 699 | 1.3+ | 0.3− | 2006 09 28 | 703 | 0.4+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2004 04 17 | 699 | 1.2+ | 0.7− | 2006 09 28 | 703 | (1.8− | 0.3+) | 2006 11 01 | G96 | 0.1+ | 0.1+ |

**(145403)∗ 2005 NC$_{73}$**

Discovered 2005 July 8 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.22079 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22869341 | $\omega$ | 30.45845 | | −0.02199133 | | +0.99706799 |
| $a$ | 2.6482986 | $\Omega$ | 238.37325 | | −0.93374251 | | −0.04668181 |
| $e$ | 0.1371620 | $i$ | 4.93793 | | −0.35726922 | | +0.06063198 |
| $P$ | 4.31 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 25 | 910 | 0.1+ | 0.8+ | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.5− |
| 1997 10 25 | 910 | 0.1− | 1.2+ | 2005 07 08 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 1997 10 25 | 910 | 0.8+ | 0.9+ | 2005 07 08 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2000 05 06 | 704 | 1.7− | 1.3+ | 2005 07 11 | 703 | 0.4+ | 0.5+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2000 05 06 | 704 | 0.2− | 0.9+ | 2005 07 11 | 703 | 1.0− | 0.7+ | 2006 10 28 | G96 | 0.6+ | 0.5− |
| 2000 05 06 | 704 | 1.2+ | 1.7− | 2005 07 11 | 703 | (0.1+ | 1.7+) | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2000 05 09 | 704 | 0.5− | 1.2+ | 2005 07 11 | 703 | 0.2− | 1.3+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2000 05 09 | 704 | (1.1− | 2.2+) | 2005 07 29 | 699 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2000 05 09 | 704 | 1.0− | 1.3+ | 2005 07 29 | 644 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.1− |
| 2001 07 24 | 644 | 0.3− | 0.3+ | 2005 07 29 | 699 | 0.4− | 0.6+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2001 07 24 | 644 | 0.0 | 0.2− | 2005 07 29 | 699 | 0.6− | 1.3+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2001 07 24 | 644 | 0.7+ | 0.3+ | 2005 07 29 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | 0.2+ | 0.5− | 2005 07 29 | 699 | 0.1+ | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.0 | 2005 07 29 | 644 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.6+ | 0.4− | 2005 11 01 | G96 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.7− | 0.8− | 2005 11 01 | G96 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 0.4+ | 0.3+ | 2005 11 01 | G96 | 0.0 | 0.5− | 2006 11 23 | 291 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 1.1+ | 0.0 | 2005 11 01 | G96 | 0.4− | 0.5− | 2006 11 23 | 291 | 0.1− | 0.4+ |
| 2004 03 20 | 704 | 0.9+ | 0.2− | 2006 10 17 | G96 | (0.0 | 2.0−) | 2006 11 23 | 291 | 0.2− | 0.1+ |
| 2004 03 20 | 704 | 0.8+ | 0.1− | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2004 04 24 | 691 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2004 04 24 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2004 04 24 | 691 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.4− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3− |

**(145404)∗ 2005 NX$_{79}$ = 2000 QZ$_{59}$ = 2001 XK$_{34}$**

Discovered 2005 July 10 by J. Broughton at Reedy Creek.

Id. G. V. Williams (*MPO* 86922)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.79250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18117541 | $\omega$ | 34.82521 | | +0.95958468 | | −0.27529256 |
| $a$ | 3.0931659 | $\Omega$ | 340.89735 | | +0.20012935 | | +0.81345272 |
| $e$ | 0.0657833 | $i$ | 10.28057 | | +0.19785218 | | +0.51235602 |
| $P$ | 5.44 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 20 | 691 | 0.2− | 0.2+ | 2003 03 12 | 644 | 0.6+ | 1.4+ | 2006 09 28 | 703 | 0.2+ | 0.3− |
| 2000 08 20 | 691 | 0.1− | 0.1+ | 2004 04 22 | E12 | (0.2+ | 1.6+) | 2006 10 17 | A50 | 0.1− | 0.2+ |
| 2000 08 20 | 691 | 0.2− | 0.1+ | 2004 04 22 | E12 | 1.3+ | 0.2− | 2006 10 17 | A50 | 0.1+ | 0.4+ |
| 2000 08 26 | 704 | 0.4− | 0.8+ | 2004 04 22 | E12 | 1.3+ | 1.4+ | 2006 10 18 | A50 | 0.5+ | 0.2− |
| 2000 08 26 | 704 | 0.7− | 0.2− | 2004 04 22 | E12 | 0.4+ | 0.8+ | 2006 10 18 | A50 | 1.0− | 0.3+ |
| 2000 08 26 | 704 | 0.0 | 1.2+ | 2005 06 08 | E12 | 1.1− | 0.4+ | 2006 10 19 | 703 | 1.4− | 0.8+ |
| 2000 08 29 | 704 | 0.3+ | 0.4+ | 2005 06 08 | E12 | 0.4− | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.5+ |
| 2000 08 29 | 704 | 0.1− | 0.4+ | 2005 06 08 | E12 | 1.1− | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.6− |
| 2000 08 29 | 704 | 0.2+ | 0.8+ | 2005 06 08 | E12 | 0.7− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2000 08 29 | 704 | 0.8+ | 1.3+ | 2005 07 06 | E12 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.6+ | 0.2+ |
| 2001 12 09 | 704 | (1.6− | 0.9−) | 2005 07 06 | E12 | 0.7− | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2001 12 09 | 704 | 0.9− | 0.3− | 2005 07 06 | E12 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.1− |
| 2001 12 09 | 704 | 0.4− | 0.1− | 2005 07 06 | E12 | 0.8− | 0.7+ | 2006 10 19 | 703 | 0.7− | 0.1− |
| 2001 12 09 | 704 | 0.1− | 1.2− | 2005 07 10 | 428 | (2.1+ | 0.4+) | 2006 10 21 | 704 | (1.0+ | 2.6+) |
| 2001 12 09 | 704 | 0.7− | 0.3− | 2005 07 10 | 428 | (2.2+ | 0.1+) | 2006 10 21 | 704 | 0.8+ | 0.1− |
| 2001 12 14 | 704 | (2.8− | 1.6+) | 2005 07 15 | 428 | 0.4+ | 0.5− | 2006 10 21 | 704 | 0.4+ | 1.4+ |
| 2001 12 14 | 704 | (3.4− | 1.1+) | 2005 07 15 | 428 | 1.3+ | 1.2− | 2006 10 21 | 704 | 0.6− | 0.0 |
| 2001 12 14 | 704 | (3.6− | 1.6+) | 2005 07 16 | E12 | 0.5− | 0.6− | 2006 10 21 | 704 | (2.1− | 0.1+) |
| 2001 12 14 | 704 | (0.6− | 2.4+) | 2005 07 16 | E12 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 02 02 | 557 | 1.1+ | 0.3+ | 2005 07 16 | E12 | 0.7− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2003 02 02 | 557 | 0.6+ | 0.2+ | 2005 07 16 | E12 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2003 02 02 | 557 | (0.4− | 1.7−) | 2005 07 29 | E12 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2003 02 21 | 644 | 0.0 | 0.9+ | 2005 07 29 | E12 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 02 21 | 644 | 0.2− | 0.4+ | 2005 07 29 | E12 | 0.7+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 02 21 | 644 | 0.2+ | 0.7+ | 2005 07 29 | E12 | 0.2+ | 0.4− | 2006 10 27 | 703 | 0.6− | 0.0 |
| 2003 03 06 | 704 | (1.2+ | 1.6+) | 2006 09 16 | 703 | 1.4+ | 0.2+ | 2006 10 27 | 703 | 0.7+ | 0.4− |
| 2003 03 06 | 704 | 0.7+ | 1.1+ | 2006 09 16 | 703 | (1.9+ | 0.5+) | 2006 10 27 | 703 | 1.0+ | 0.6− |
| 2003 03 06 | 704 | 0.9+ | 1.4+ | 2006 09 16 | 703 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.6+ |
| 2003 03 06 | 704 | (2.0+ | 1.8+) | 2006 09 16 | 703 | 0.5+ | 0.6+ | 2006 11 15 | 703 | 0.3− | 0.2+ |
| 2003 03 06 | 704 | 0.5+ | 0.8+ | 2006 09 28 | 703 | 0.8− | 0.2+ | 2006 11 15 | 703 | 0.8− | 0.8+ |
| 2003 03 12 | 644 | (0.7+ | 1.8+) | 2006 09 28 | 703 | 0.3− | 0.4+ | 2006 11 15 | 703 | 0.8+ | 0.0 |
| 2003 03 12 | 644 | 0.5+ | 1.3+ | 2006 09 28 | 703 | 0.7+ | 0.7+ | 2006 11 15 | 703 | 0.7− | 0.4− |

**(145405)∗ 2005 NK$_{80}$ = 2002 YE$_{33}$**

Discovered 2005 July 13 by J. Broughton at Reedy Creek.

Id. A. Doppler (*MPO* 89695)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.77359 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28563043 | $\omega$ | 74.33103 | | +0.97829477 | | −0.15907915 |
| $a$ | 2.2834932 | $\Omega$ | 294.66956 | | +0.08361151 | | +0.88937607 |
| $e$ | 0.2673251 | $i$ | 8.40254 | | +0.18960076 | | +0.42860707 |
| $P$ | 3.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.1− | 0.7+ | 2002 11 06 | 704 | 0.8+ | 0.9+ | 2003 01 05 | 704 | 1.1+ | 0.9− |
| 2000 02 02 | 704 | 0.9+ | 0.1+ | 2002 11 06 | 704 | 0.2− | 0.7+ | 2005 06 28 | 608 | 0.3− | 0.8− |
| 2000 02 02 | 704 | 0.5+ | 0.6+ | 2002 11 15 | 704 | 0.9− | 0.1− | 2005 06 28 | 608 | 0.1− | 0.9− |
| 2000 02 02 | 704 | 0.4− | 0.4+ | 2002 11 15 | 704 | 1.1− | 0.7+ | 2005 06 28 | 608 | 0.2+ | 0.8− |
| 2002 09 07 | 704 | 0.6− | 0.2− | 2002 11 15 | 704 | 0.4− | 0.2+ | 2005 07 13 | 428 | 0.6+ | 0.7+ |
| 2002 09 07 | 704 | 0.7− | 0.3+ | 2002 11 15 | 704 | 0.8− | 0.3− | 2005 07 13 | 428 | 0.3+ | 0.5+ |
| 2002 09 07 | 704 | 0.4− | 0.5− | 2002 11 15 | 704 | 0.7− | 0.3− | 2005 07 14 | 428 | 0.3− | 0.1+ |
| 2002 10 01 | 704 | 0.3+ | 0.1+ | 2002 12 05 | 704 | 0.3+ | 0.8− | 2005 07 14 | 428 | 0.1− | 0.4+ |
| 2002 10 01 | 704 | 0.7+ | 0.1+ | 2002 12 05 | 704 | 0.5+ | 0.3− | 2005 07 15 | 428 | 0.1− | 0.6+ |
| 2002 10 01 | 704 | 0.4+ | 0.1+ | 2002 12 05 | 704 | 0.7+ | 0.3− | 2006 10 22 | G96 | 0.2− | 0.8− |
| 2002 10 05 | 704 | 0.6+ | 0.1+ | 2002 12 05 | 704 | 0.9+ | 0.4− | 2006 10 22 | G96 | 0.3− | 0.7− |
| 2002 10 05 | 704 | 0.3+ | 0.5+ | 2002 12 05 | 704 | 1.2+ | 0.6− | 2006 10 22 | G96 | 0.7− | 0.6− |
| 2002 10 05 | 704 | 0.9+ | 0.6− | 2002 12 15 | 704 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2002 10 05 | 704 | 0.4− | 0.4− | 2002 12 15 | 704 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.0 | 0.6− | 2002 12 15 | 704 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2002 10 31 | 704 | 0.3− | 0.5+ | 2002 12 30 | 704 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.6− | 0.7− |
| 2002 10 31 | 704 | 0.7− | 0.1+ | 2002 12 30 | 704 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2002 10 31 | 704 | 0.5− | 0.0 | 2002 12 30 | 704 | 0.4− | 0.6+ | 2006 11 24 | 291 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.1− | 0.2− | 2002 12 30 | 704 | 0.4− | 0.2− | 2006 11 24 | 291 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.1+ | 0.7− | 2003 01 05 | 704 | 0.3+ | 0.2+ | 2006 11 24 | 291 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.8+ | 2003 01 05 | 704 | 0.5+ | 0.9+ | | | | |

**(145406)∗ 2005 NL$_{83}$ = 2001 XS$_{210}$**

Discovered 2005 July 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86924)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.44420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17171803 | $\omega$ | 233.25936 | | +0.21780041 | −0.97538157 | |
| $a$ | 3.2057190 | $\Omega$ | 204.22930 | | +0.92015102 | +0.21701286 | |
| $e$ | 0.0602009 | $i$ | 4.82950 | | +0.32539989 | +0.03919456 | |
| $P$ | 5.74 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 11 | 704 | 0.7+ | 1.7+ | 2005 07 10 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1997 03 11 | 704 | 0.2+ | 0.0 | 2005 07 10 | 691 | 0.0 | 0.5+ | 2006 10 20 | 703 | 0.6− | 0.1− |
| 2000 10 03 | 704 | 1.0− | 0.2− | 2005 07 15 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 703 | 0.8− | 0.2+ |
| 2000 10 03 | 704 | 0.0 | 0.9+ | 2005 07 15 | 691 | 1.4− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2000 10 03 | 704 | 0.3− | 1.1+ | 2005 07 15 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 703 | 0.4− | 1.0− |
| 2000 10 03 | 704 | 0.0 | 0.1+ | 2005 07 18 | 644 | 0.2+ | 0.3+ | 2006 10 20 | 703 | 1.0+ | 1.0− |
| 2000 10 03 | 704 | 0.5+ | 0.1+ | 2005 07 18 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | (0.7+ | 1.8+) | 2005 07 18 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.1+ | 1.4+ | 2005 08 29 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2001 12 11 | 704 | (1.4+ | 1.8+) | 2005 08 29 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 1.2− | 0.8− |
| 2001 12 11 | 704 | 0.5− | 0.4+ | 2005 08 29 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.6+ |
| 2001 12 18 | 704 | 0.5− | 1.0+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2003 03 07 | 699 | 0.2− | 1.3+ | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2003 03 07 | 704 | 0.6+ | 0.2+ | 2006 09 24 | 691 | 0.5− | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2003 03 07 | 699 | 0.6+ | 0.5+ | 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.3+ |
| 2003 03 07 | 704 | 0.9+ | 0.4+ | 2006 09 28 | 691 | 0.8+ | 1.0− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2003 03 07 | 699 | (1.6+ | 0.9+) | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2003 03 07 | 699 | 0.6+ | 1.0+ | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2003 03 07 | 704 | 0.7+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2003 03 07 | 704 | 0.7+ | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2003 04 07 | 691 | 0.4+ | 1.4+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2003 04 07 | 691 | 0.2+ | 1.5+ | 2006 10 11 | 691 | 0.4+ | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2003 04 07 | 691 | 0.2+ | 1.2+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2005 07 01 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.0 |
| 2005 07 01 | 691 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2005 07 01 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2005 07 10 | 691 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | | | | |

**(145407)∗ 2005 NN$_{83}$ = 2001 VV$_{20}$**

Discovered 2005 July 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86925)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.38291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19929029 | $\omega$ | 135.48259 | | +0.99463901 | −0.08561953 | |
| $a$ | 2.9027655 | $\Omega$ | 229.51984 | | +0.05995623 | +0.93437422 | |
| $e$ | 0.0773787 | $i$ | 4.37224 | | +0.08425253 | +0.34585273 | |
| $P$ | 4.95 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.1+ | 0.1+ | 2001 12 14 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.0− | 0.4+ |
| 1999 05 18 | 691 | 0.4+ | 0.7+ | 2001 12 14 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.4+ | 1.4+ |
| 1999 05 18 | 691 | 0.1− | 0.5+ | 2001 12 14 | 704 | 0.8− | 1.0+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 10 21 | 704 | 0.4− | 0.1+ | 2001 12 14 | 704 | 0.7− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.5− | 0.1− | 2001 12 17 | 704 | 1.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 1.1− | 0.1+ | 2001 12 17 | 704 | 0.9+ | 1.1+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 10 21 | 704 | 0.8− | 0.2− | 2001 12 17 | 704 | 0.4+ | 0.5− | 2006 11 15 | 691 | 0.3− | 0.1− |
| 2001 10 21 | 704 | 0.8− | 0.6− | 2001 12 19 | 644 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2001 10 26 | 644 | 0.6− | 0.3+ | 2001 12 19 | 644 | 0.2− | 0.5+ | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2001 10 26 | 644 | 0.4− | 0.3+ | 2001 12 19 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.8+ | 0.1+ |
| 2001 10 26 | 644 | 0.9− | 0.4+ | 2005 07 01 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.6+ |
| 2001 11 09 | 704 | 0.7− | 0.0 | 2005 07 01 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | (1.5+ | 0.6+) |
| 2001 11 09 | 704 | 0.6− | 0.4+ | 2005 07 01 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | (2.1+ | 0.5−) |
| 2001 11 09 | 704 | 0.8− | 0.1+ | 2005 07 15 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2001 11 09 | 704 | 0.4− | 0.2− | 2005 07 15 | 691 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.5− | 0.0 | 2005 07 15 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2001 11 12 | 704 | 0.6− | 0.4+ | 2005 07 18 | 644 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | (0.3− | 1.6+) | 2005 07 18 | 644 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.9− | 0.6− |
| 2001 11 12 | 704 | 0.3+ | 0.8+ | 2005 07 18 | 644 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.3+ | 0.1− |
| 2001 11 14 | 291 | 0.2+ | 0.1− | 2005 07 27 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2001 11 14 | 291 | 0.0 | 0.1− | 2005 07 27 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 2001 11 14 | 291 | 0.0 | 0.2− | 2005 07 27 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.0+ | 0.3+ |
| 2001 11 16 | 644 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2001 11 16 | 644 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.3− |
| 2001 11 16 | 644 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.5− | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2001 11 20 | 704 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.7− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 23 | 691 | 0.8− | 0.4− |
| 2001 11 20 | 704 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 0.6+ | 0.8+ | 2006 10 17 | G96 | 0.5+ | 0.7− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.2+ | 0.4− |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.5− | 2006 11 27 | 703 | 0.3− | 0.1− |
| 2001 11 21 | 704 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.5− | 2006 11 27 | 703 | 0.2− | 0.7− |
| 2001 11 21 | 704 | 0.1− | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.5− | 2006 11 27 | 703 | 0.1− | 1.1− |
| 2001 12 10 | 291 | 0.7+ | 0.9+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.2− |
| 2001 12 10 | 291 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2001 12 10 | 291 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 1.0+ | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.9− | 0.0 | | | | |

**(145408)∗ 2005 NJ$_{84}$ = 1997 BJ$_{8}$**

Discovered 2005 July 2 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 86925)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.75073 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17458736 | $\omega$ | 124.83945 | | +0.25653634 | −0.96058131 | |
| $a$ | 3.1704982 | $\Omega$ | 309.92985 | | +0.83491581 | +0.27606729 | |
| $e$ | 0.0781099 | $i$ | 8.02930 | | +0.48693397 | +0.03271712 | |
| $P$ | 5.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 08 | 691 | 0.3− | 0.8+ | 2005 07 02 | 691 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1994 09 08 | 691 | 0.5− | 0.7+ | 2005 07 02 | 691 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1994 09 08 | 691 | 0.2− | 0.2+ | 2005 07 02 | 691 | 0.6+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 1997 01 02 | 691 | 0.4+ | 0.3+ | 2005 07 11 | 691 | 0.8− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1− |
| 1997 01 02 | 691 | 0.2− | 0.1− | 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1997 01 02 | 691 | 0.3− | 0.0 | 2005 07 11 | 691 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1997 01 31 | 691 | 0.2− | 0.4+ | 2005 07 30 | E12 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 1997 01 31 | 691 | 0.1+ | 0.1+ | 2005 07 30 | E12 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.9− |
| 1997 01 31 | 691 | 0.0 | 0.4− | 2005 07 30 | E12 | 0.8+ | 0.8+ | 2006 10 17 | 703 | 0.4− | 1.5− |
| 1997 02 11 | 691 | 0.1+ | 0.2− | 2005 07 30 | E12 | 0.7+ | 0.3− | 2006 10 17 | 703 | (1.3− | 8.4−) |
| 1997 02 11 | 691 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.6− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 03 07 | 699 | 0.1+ | 1.1+ | 2006 09 16 | 703 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2003 03 07 | 699 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.7+ | 1.1− | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2003 03 07 | 699 | 0.7− | 1.3+ | 2006 09 16 | 703 | 0.7+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2003 03 07 | 699 | (0.9+ | 1.8+) | 2006 09 28 | 703 | 0.2− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2003 03 26 | 644 | (1.5+ | 1.6+) | 2006 09 28 | 703 | 1.0+ | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2003 03 26 | 644 | 1.3+ | 0.9+ | 2006 09 28 | 703 | 0.7− | 0.7+ | | | | |
| 2003 03 26 | 644 | (1.6+ | 1.1+) | 2006 09 28 | 703 | 0.2+ | 0.1− | | | | |

**(145409)∗ 2005 NT$_{86}$ = 2004 HU$_{70}$**

Discovered 2005 July 3 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86927)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.37630 | | (2000.0) | | | |
| $n$ | 0.19786017 | $\omega$ | 311.97030 | | +0.92309201 | +0.37805353 |
| $a$ | 2.9167361 | $\Omega$ | 26.05236 | | −0.28789692 | +0.80092477 |
| $e$ | 0.0665495 | $i$ | 9.24321 | | −0.25498334 | +0.46432214 |
| $P$ | 4.98 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 14 | 691 | 0.4− | 0.1− | 2005 07 03 | 644 | 0.3+ | 1.1+ | 2006 10 04 | G96 | 0.2− | 0.5− |
| 2001 10 21 | 704 | 0.5+ | 0.0 | 2005 07 03 | 644 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.5− |
| 2001 10 21 | 704 | 0.2+ | 0.4− | 2005 07 03 | 644 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.0 | 0.1+ | 2005 07 06 | E12 | 0.6+ | 1.2− | 2006 10 19 | 691 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 1.1+ | 0.2+ | 2005 07 06 | E12 | 0.0 | 0.9+ | 2006 10 19 | 691 | 0.7+ | 0.4+ |
| 2001 11 12 | 704 | 0.5− | 0.9+ | 2005 07 06 | E12 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.5− | 0.9+ | 2005 07 06 | E12 | 0.6+ | 0.3+ | 2006 11 15 | 691 | 0.5− | 0.1+ |
| 2001 11 12 | 704 | 0.2+ | 0.7+ | 2005 07 26 | 644 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.6+ | 0.0 | 2005 07 26 | 644 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2001 11 24 | 704 | 0.5+ | 0.2+ | 2005 07 26 | 644 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.6− | 0.9+ | 2005 08 10 | E12 | 0.9− | 0.1+ | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2001 11 24 | 704 | 0.2− | 0.2− | 2005 08 10 | E12 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2001 11 24 | 704 | 0.7+ | 0.6+ | 2005 08 10 | E12 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.4− | 0.2+ |
| 2004 04 24 | 691 | 0.0 | 0.3+ | 2005 08 10 | E12 | 0.4− | 1.3+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2004 04 24 | 691 | 0.0 | 0.3+ | 2005 09 06 | E12 | 0.8+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2004 04 24 | 691 | 0.3− | 0.1+ | 2005 09 06 | E12 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2004 05 14 | 691 | 0.3+ | 0.5+ | 2005 09 06 | E12 | 0.6− | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.5+ |
| 2004 05 14 | 691 | 0.5+ | 0.4+ | 2005 09 06 | E12 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 05 14 | 691 | 0.7+ | 0.6+ | 2006 10 04 | G96 | 0.5− | 0.4− | | | | |

**(145410)∗ 2005 NN$_{87}$ = 2004 CL$_{92}$**

Discovered 2005 July 4 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 86928)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.27589 | | (2000.0) | | | |
| $n$ | 0.23790211 | $\omega$ | 99.24110 | | +0.63867530 | +0.76699874 |
| $a$ | 2.5795098 | $\Omega$ | 210.72734 | | −0.74487002 | +0.59614576 |
| $e$ | 0.2004390 | $i$ | 6.93558 | | −0.19303501 | +0.23732504 |
| $P$ | 4.14 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 30 | 691 | 0.2− | 0.4− | 2005 07 04 | 704 | 1.3+ | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 1997 05 30 | 691 | 0.3− | 0.2+ | 2005 07 04 | 704 | 0.9+ | 0.9+ | 2006 11 12 | G96 | 0.4− | 0.0 |
| 1997 05 30 | 691 | 0.3− | 0.2+ | 2005 07 04 | 704 | (0.6− | 2.1+) | 2006 11 12 | G96 | 0.2+ | 0.4+ |
| 2001 08 10 | 704 | 1.4+ | 1.4+ | 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.2− | 0.4− |
| 2001 08 10 | 704 | 1.1+ | 1.2+ | 2005 07 05 | 644 | 0.1− | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2001 08 10 | 704 | 1.2+ | 0.8+ | 2005 07 05 | 644 | 0.1− | 0.5+ | 2006 11 14 | 704 | (0.0 | 2.7+) |
| 2001 08 10 | 704 | 1.4+ | 0.3+ | 2005 07 27 | 644 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.2− | 1.1+ |
| 2001 08 10 | 704 | 0.4+ | 0.0 | 2005 07 27 | 644 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.4− | 0.3+ |
| 2002 11 07 | 704 | (2.8− | 1.2+) | 2005 07 27 | 644 | 0.9− | 0.7− | 2006 11 14 | 704 | 0.3− | 0.6+ |
| 2002 11 07 | 704 | (3.2− | 0.1−) | 2005 08 01 | E12 | 0.6− | 0.4+ | 2006 11 14 | 704 | 0.6− | 0.6+ |
| 2002 11 07 | 704 | (2.3− | 0.1−) | 2005 08 01 | E12 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 2002 12 01 | 704 | 0.2− | 0.0 | 2005 08 01 | E12 | 0.2− | 0.7+ | 2006 11 17 | 704 | 0.3+ | 1.2− |
| 2002 12 01 | 704 | 0.2+ | 0.2− | 2005 08 01 | E12 | 0.4+ | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2002 12 01 | 704 | 0.7− | 1.2− | 2006 09 16 | 703 | (1.1+ | 1.6+) | 2006 11 17 | 704 | 0.3+ | 0.0 |
| 2002 12 01 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.8+ | 0.7+ | 2006 11 17 | 704 | 0.1+ | 0.5− |
| 2004 02 14 | 608 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.4− | 1.3− |
| 2004 02 14 | 608 | 0.5+ | 0.7− | 2006 09 16 | 703 | (0.3+ | 1.8+) | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2004 02 14 | 608 | 1.2+ | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2004 02 18 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2004 02 18 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2004 02 18 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2004 02 19 | 704 | 0.5+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.7+ |
| 2004 02 19 | 704 | 0.5+ | 0.7+ | 2006 10 09 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.9+ | 0.7+ |
| 2004 02 19 | 704 | 0.6+ | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.8+ |
| 2004 02 19 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.4− | 1.0− | 2006 11 20 | 704 | 1.0+ | 0.2+ |
| 2005 06 02 | E12 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.8+ | 0.3+ |
| 2005 06 02 | E12 | 0.0 | 0.0 | 2006 10 19 | 703 | (2.7+ | 0.9+) | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2005 06 02 | E12 | 1.0− | 0.2− | 2006 10 19 | 703 | 1.3+ | 0.2− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2005 06 02 | E12 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 24 | 691 | 0.4− | 0.1+ |
| 2005 06 03 | 703 | (0.7− | 1.9+) | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.3− | 0.1− |
| 2005 06 03 | 703 | (1.2− | 2.3+) | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.5+ |
| 2005 06 03 | 703 | (0.9+ | 1.7+) | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.5− | 0.2− |
| 2005 06 03 | 703 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.5− | 0.2+ |
| 2005 06 11 | 703 | 1.0− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.1− | 0.4+ |
| 2005 06 11 | 703 | 1.1− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.5− | 0.6+ |
| 2005 06 11 | 703 | 0.8− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.4− | | | | |
| 2005 06 11 | 703 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− | | | | |

**(145411)∗ 2005 NL$_{99}$ = 1997 EB$_{45}$ = 2000 QP$_{212}$**

Discovered 2005 July 10 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86931)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.88271 | | (2000.0) | | | |
| $n$ | 0.18195171 | $\omega$ | 280.26938 | | +0.13188393 | −0.98744769 |
| $a$ | 3.0843616 | $\Omega$ | 161.46280 | | +0.98234189 | +0.11845545 |
| $e$ | 0.2133995 | $i$ | 15.86529 | | +0.13270659 | +0.10447665 |
| $P$ | 5.42 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 11 | 704 | 0.2− | 1.0+ | 2004 06 25 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.3− | 1.3+ |
| 1997 03 11 | 704 | 0.1+ | 0.4+ | 2004 06 25 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.3+ |
| 1997 03 12 | 704 | 0.3+ | 0.9+ | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.9− | 0.2+ |
| 1997 03 12 | 704 | 1.0+ | 1.3+ | 2005 07 10 | 691 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.4− | 0.7+ |
| 2000 08 31 | 704 | 0.1+ | 0.3− | 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2000 08 31 | 704 | 0.4− | 0.6+ | 2005 07 15 | 691 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.3+ | 0.5+ |
| 2000 08 31 | 704 | 0.1− | 0.1− | 2005 07 15 | 691 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2000 09 05 | 704 | 0.8− | 1.0+ | 2005 07 15 | 691 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.3+ | 0.2+ |
| 2000 09 05 | 704 | 0.3− | 0.3+ | 2005 07 29 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.6− |
| 2000 09 05 | 704 | 0.6− | 0.7+ | 2005 07 29 | 644 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2001 12 07 | 704 | 0.4+ | 0.3− | 2005 07 29 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.9− |
| 2001 12 07 | 704 | 0.3− | 0.2− | 2005 08 06 | 644 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2001 12 07 | 704 | 0.0 | 0.2+ | 2005 08 06 | 644 | 0.2− | 0.2− | 2006 11 18 | 703 | 0.4− | 0.1− |
| 2001 12 07 | 704 | 0.4+ | 0.7− | 2005 08 06 | 644 | 0.1− | 0.3− | 2006 11 18 | 703 | 0.5+ | 0.5+ |
| 2001 12 07 | 704 | 0.3− | 0.2− | 2005 09 12 | 691 | 0.0 | 0.3+ | 2006 11 18 | 703 | 0.5+ | 1.0+ |
| 2003 02 11 | 621 | 1.0− | 0.5+ | 2005 09 12 | 691 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.0 | 0.8− |
| 2003 02 11 | 621 | 0.0 | 0.1− | 2005 09 12 | 691 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.5− |
| 2003 02 11 | 621 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.5+ | 0.1− |
| 2003 02 24 | 621 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.1− | 0.2− |
| 2003 02 24 | 621 | 0.1− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 1.0− | 0.4− |
| 2003 02 24 | 621 | 0.2− | 0.6+ | 2006 10 17 | 703 | (2.6+ | 0.7+) | 2006 11 23 | 703 | 0.1+ | 0.3+ |
| 2003 02 24 | 621 | 0.5− | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.3+ | 2006 11 23 | 703 | 0.8− | 0.7+ |
| 2004 06 25 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.4− | 2006 11 23 | 703 | 0.5+ | 0.3+ |

**(145412)∗ 2005 OO = 1997 CA$_{19}$ = 2000 SU$_{368}$ = 2001 XN$_{257}$**

Discovered 2005 July 16 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 86936)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.39850 | | (2000.0) | | | |
| $n$ | 0.17734330 | $\omega$ | 121.57561 | | +0.19428830 | −0.97427080 |
| $a$ | 3.1375659 | $\Omega$ | 316.74373 | | +0.83402653 | +0.22536590 |
| $e$ | 0.0827015 | $i$ | 9.59572 | | +0.51638339 | +0.00257227 |
| $P$ | 5.56 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 09 | 540 | 0.3+ | 0.1+ | 2003 03 07 | 704 | 0.0 | 0.6+ | 2005 08 31 | 691 | 0.1+ | 0.1+ |
| 1997 02 09 | 540 | 0.3+ | 1.4+ | 2003 03 07 | 704 | 0.1+ | 0.9+ | 2005 08 31 | 691 | 0.1+ | 0.1+ |
| 1997 02 09 | 540 | 1.3+ | 1.0+ | 2003 03 07 | 704 | 0.1− | 1.4+ | 2006 09 28 | 703 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 09 | 540 | 0.8+ | 1.2+ | 2003 03 07 | 704 | 0.7+ | 0.4− | 2006 09 28 | 703 | 0.3− | 0.7+ | | |
| 1997 02 10 | 540 | 0.4+ | 0.5− | 2003 03 07 | 704 | 0.8+ | 1.3+ | 2006 09 28 | 703 | 0.2+ | 1.1+ | | |
| 1997 02 10 | 540 | 0.0 | 0.4+ | 2003 03 27 | 644 | 0.2− | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.1− | | |
| 1997 02 10 | 540 | 0.1− | 0.2+ | 2003 03 27 | 644 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2000 09 25 | 699 | 0.9− | 0.2+ | 2003 03 27 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.4+ | | |
| 2000 09 25 | 699 | 1.3− | 0.3+ | 2005 07 04 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2000 09 25 | 699 | 0.0 | 1.3+ | 2005 07 04 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.4− | | |
| 2000 09 25 | 699 | 0.9− | 0.1+ | 2005 07 04 | 644 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.1− | | |
| 2000 09 26 | 704 | 0.2+ | 0.3+ | 2005 07 16 | 291 | 0.6− | 0.0 | 2006 10 19 | 703 | 0.6− | 0.2+ | | |
| 2000 09 26 | 704 | 0.1+ | 0.6− | 2005 07 16 | 291 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.9− | | |
| 2000 09 26 | 704 | 0.1− | 1.5+ | 2005 07 16 | 291 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.5+ | 0.7− | | |
| 2000 09 26 | 704 | 0.7− | 0.6+ | 2005 07 18 | 644 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.0 | | |
| 2001 12 07 | 644 | 0.3+ | 0.7+ | 2005 07 18 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.6+ | 0.5− | | |
| 2001 12 07 | 644 | 0.3− | 0.6+ | 2005 07 18 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.5+ | 0.5− | | |
| 2001 12 07 | 644 | 0.4+ | 0.7+ | 2005 07 27 | 644 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.8− | 0.3− | | |
| 2001 12 09 | 704 | 1.0− | 0.5+ | 2005 07 27 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.1− | 0.6− | | |
| 2001 12 09 | 704 | 0.2+ | 0.4+ | 2005 07 27 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.7+ | 0.2+ | | |
| 2001 12 09 | 704 | 0.3+ | 0.6− | 2005 08 31 | 691 | 0.2− | 0.5+ | 2006 11 22 | 703 | 0.4+ | 0.4− | | |

**(145413)∗ 2005 OK$_8$**

Discovered 2005 July 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 268.38127 | | (2000.0) | | | |
| $n$ | 0.19035532 | $\omega$ | 318.85014 | | −0.51262319 | −0.85681327 |
| $a$ | 2.9929035 | $\Omega$ | 161.77033 | | +0.82692738 | −0.51009145 |
| $e$ | 0.0354051 | $i$ | 10.23298 | | +0.23110294 | −0.07535068 |
| $P$ | 5.18 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.8− | 0.6+ | 2003 02 22 | 699 | (1.0+ | 2.2+) | 2005 09 11 | 691 | 0.4− | 0.4+ | | |
| 2001 10 16 | 704 | 0.1− | 1.4+ | 2003 02 22 | 699 | 0.5+ | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2001 10 16 | 704 | 0.6+ | 0.3+ | 2003 02 22 | 699 | 0.2− | 0.8+ | 2006 10 11 | 644 | 0.6+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.2− | 1.2+ | 2003 02 22 | 644 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2001 10 23 | 644 | 0.0 | 1.6− | 2003 02 22 | 644 | 0.4+ | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 23 | 644 | 0.0 | 0.8− | 2005 07 04 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.5+ | 0.1+ | | |
| 2001 10 23 | 644 | 0.3+ | 1.0− | 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.5+ | 0.2− | | |
| 2002 11 13 | 645 | 0.0 | 0.0 | 2005 07 04 | 691 | 0.0 | 0.3+ | 2006 10 28 | 703 | 1.2− | 1.5− | | |
| 2002 11 13 | 645 | 0.1+ | 0.0 | 2005 07 26 | 644 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.8+ | | |
| 2003 01 28 | 645 | 0.1− | 0.1+ | 2005 07 26 | 644 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.8− | 0.6− | | |
| 2003 01 28 | 645 | 0.1− | 0.1+ | 2005 07 26 | 644 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.0 | 0.6+ | | |
| 2003 01 28 | 608 | 0.7+ | 0.7− | 2005 08 01 | 599 | 0.1+ | 0.8+ | 2006 11 16 | 703 | 0.3+ | 0.2+ | | |
| 2003 01 28 | 608 | 0.5+ | 0.1− | 2005 08 01 | 599 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.7+ | | |
| 2003 01 28 | 608 | 0.3+ | 0.5− | 2005 08 01 | 599 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.1− | | |
| 2003 02 22 | 644 | 0.5+ | 0.7+ | 2005 09 11 | 691 | 0.0 | 0.6+ | 2006 11 16 | 703 | 0.5− | 0.3+ | | |
| 2003 02 22 | 699 | 0.1− | 1.1+ | 2005 09 11 | 691 | 0.1+ | 0.2+ | | | | | | |

**(145414)∗ 2005 OM$_{13}$ = 2001 WE$_{103}$**

Discovered 2005 July 29 by NEAT at Palomar.

Id. A. Doppler (*MPO* 95695)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.00284 | | (2000.0) | | | |
| $n$ | 0.22098330 | $\omega$ | 279.30621 | | +0.92435558 | −0.36462160 |
| $a$ | 2.7095452 | $\Omega$ | 102.14253 | | +0.37933608 | +0.84675771 |
| $e$ | 0.0884318 | $i$ | 6.59785 | | +0.04087674 | +0.38736606 |
| $P$ | 4.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 13 | 691 | 0.4+ | 1.0− | 2003 01 28 | 645 | 0.0 | 0.2+ | 2005 09 25 | 703 | 0.0 | 0.3+ | | |
| 1994 02 13 | 691 | 0.1− | 0.3− | 2003 01 28 | 645 | 0.0 | 0.3+ | 2005 09 25 | 703 | 0.1− | 0.8− | | |
| 1994 02 13 | 691 | 0.4− | 0.3− | 2005 07 02 | 291 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.3+ | | |
| 1998 01 02 | 704 | 1.5− | 0.4+ | 2005 07 02 | 291 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1+ | | |
| 1998 01 02 | 704 | 0.1+ | 0.8− | 2005 07 02 | 291 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1+ | | |
| 1998 01 02 | 704 | 1.2− | 0.5− | 2005 07 29 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.3+ | | |
| 1998 01 02 | 704 | 1.5+ | 0.6− | 2005 07 29 | 644 | 0.1+ | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.2− | 0.1+ | 2005 07 29 | 644 | 0.3+ | 0.0 | 2006 10 29 | G96 | 0.0 | 0.5+ | | |
| 2001 10 17 | 704 | 0.2− | 0.0 | 2005 07 30 | 644 | 0.5+ | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.4− | | |
| 2001 10 17 | 704 | 0.3+ | 0.1− | 2005 07 30 | 644 | 0.2+ | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.1− | | |
| 2001 10 17 | 704 | 0.7+ | 1.4+ | 2005 07 30 | 644 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.1+ | | |
| 2001 10 17 | 704 | 1.1+ | 0.5− | 2005 08 28 | 699 | (1.7− | 0.2−) | 2006 11 14 | G96 | 0.3− | 0.2+ | | |
| 2001 11 19 | 608 | 0.4− | 0.5− | 2005 08 28 | 699 | 0.7− | 0.5+ | 2006 11 14 | G96 | 0.3+ | 0.0 | | |
| 2001 11 19 | 608 | 0.6− | 0.1+ | 2005 08 28 | 699 | 0.9− | 0.3− | 2006 12 01 | G96 | 0.4+ | 0.1+ | | |
| 2001 11 19 | 608 | 0.7− | 0.1+ | 2005 08 28 | 699 | 1.2− | 1.0+ | 2006 12 01 | G96 | 0.2+ | 0.0 | | |
| 2002 12 14 | 645 | 0.0 | 0.1+ | 2005 09 25 | 703 | 0.6+ | 0.2− | 2006 12 01 | G96 | 0.5+ | 0.1− | | |
| 2002 12 14 | 645 | 0.1+ | 0.1− | 2005 09 25 | 703 | 0.0 | 0.6− | 2006 12 01 | G96 | 0.3− | 0.2+ | | |

**(145415)∗ 2005 OW$_{14}$ = 2000 SZ$_{62}$**

Discovered 2005 July 27 by J. Broughton at Reedy Creek.

Id. K. E. Smalley (*MPO* 86956)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.51946 | | (2000.0) | | | |
| $n$ | 0.18038770 | $\omega$ | 321.73077 | | +0.74428656 | +0.66778702 |
| $a$ | 3.1021641 | $\Omega$ | 356.32622 | | −0.56836053 | +0.62554620 |
| $e$ | 0.1720597 | $i$ | 8.88844 | | −0.35071902 | +0.40342589 |
| $P$ | 5.46 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 704 | 0.4− | 0.2− | 2004 04 21 | 704 | 1.1+ | 1.3+ | 2005 08 24 | E12 | 0.1− | 0.4+ | | |
| 2000 09 02 | 704 | 0.7− | 0.5− | 2005 07 10 | E12 | 0.2− | 0.5+ | 2005 08 31 | 699 | (0.2+ | 1.9−) | | |
| 2000 09 02 | 704 | 0.7− | 0.2+ | 2005 07 10 | E12 | 0.2+ | 0.2− | 2005 08 31 | 699 | 0.7− | 0.3+ | | |
| 2000 09 24 | 704 | 1.6+ | 1.4+ | 2005 07 10 | E12 | 0.2+ | 0.4− | 2005 08 31 | 699 | 0.4− | 0.9− | | |
| 2000 09 24 | 704 | 1.4+ | 0.7− | 2005 07 10 | E12 | 0.9+ | 0.2− | 2005 08 31 | 699 | (1.7+ | 1.3−) | | |
| 2000 09 24 | 704 | 0.5− | 0.2+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2005 09 05 | E12 | 0.6+ | 0.1− | | |
| 2000 09 24 | 704 | 0.3− | 0.0 | 2005 07 18 | 644 | 0.0 | 0.3+ | 2005 09 05 | E12 | 0.4+ | 0.2− | | |
| 2000 09 24 | 704 | 0.1− | 0.0 | 2005 07 18 | 644 | 0.2+ | 0.2+ | 2005 09 05 | E12 | 0.1− | 0.3− | | |
| 2000 09 26 | 704 | 0.2− | 0.2+ | 2005 07 27 | 428 | 0.7− | 0.3− | 2005 09 05 | E12 | 0.9− | 0.1− | | |
| 2000 09 26 | 704 | 0.3+ | 0.7− | 2005 07 27 | 428 | 0.7+ | 0.3− | 2006 10 19 | 703 | (2.0+ | 2.3−) | | |
| 2000 09 26 | 704 | 0.1+ | 0.4− | 2005 07 29 | E12 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.2− | | |
| 2000 09 26 | 704 | 0.5− | 1.3− | 2005 07 29 | E12 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.2− | | |
| 2000 09 26 | 704 | 0.1− | 0.4+ | 2005 07 29 | E12 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.4− | | |
| 2000 10 01 | 699 | 0.5− | 0.2+ | 2005 07 29 | E12 | 1.2− | 1.0+ | 2006 11 02 | G96 | 0.0 | 0.3− | | |
| 2000 10 01 | 699 | 0.4− | 0.4+ | 2005 08 02 | 428 | 0.2− | 0.3− | 2006 11 02 | G96 | 0.1− | 0.1− | | |
| 2000 10 01 | 699 | 0.1− | 0.7+ | 2005 08 02 | 428 | 0.1− | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.0 | | |
| 2000 10 01 | 699 | 0.1+ | 0.2+ | 2005 08 10 | E12 | 0.9+ | 0.4+ | 2006 11 02 | G96 | 0.0 | 0.4− | | |
| 2000 10 02 | 704 | 0.1+ | 0.2− | 2005 08 10 | E12 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.1− | | |
| 2000 10 02 | 704 | 0.9+ | 0.1+ | 2005 08 10 | E12 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.9+ | | |
| 2000 10 02 | 704 | 0.1− | 0.6+ | 2005 08 10 | E12 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.2+ | 1.0− | | |
| 2000 10 02 | 704 | 0.4− | 0.1− | 2005 08 12 | E12 | 0.1− | 0.1+ | 2006 11 15 | 703 | (0.4− | 1.9+) | | |
| 2000 10 02 | 704 | 0.1− | 0.2+ | 2005 08 12 | E12 | 0.1+ | 0.0 | 2006 11 21 | 703 | 0.4+ | 0.2+ | | |
| 2001 12 19 | 644 | 0.3+ | 0.5+ | 2005 08 12 | E12 | 0.6+ | 0.1− | 2006 11 21 | 703 | 0.6− | 1.0+ | | |
| 2001 12 19 | 644 | 0.1− | 0.6+ | 2005 08 12 | E12 | 0.3+ | 0.2+ | 2006 11 21 | 703 | 0.2+ | 0.4+ | | |
| 2001 12 19 | 644 | 0.0 | 0.7+ | 2005 08 24 | E12 | 0.0 | 0.1− | 2006 11 21 | 703 | 0.3− | 0.3+ | | |
| 2004 04 21 | 704 | 0.1− | 0.0 | 2005 08 24 | E12 | 0.1+ | 0.2− | | | | | | |
| 2004 04 21 | 704 | 0.1− | 0.7+ | 2005 08 24 | E12 | 0.2− | 0.5+ | | | | | | |

**(145416)∗ 2005 OA$_{24}$ = 2003 HO$_{26}$**

Discovered 2005 July 30 by NEAT at Palomar.

Id. A. Doppler (*MPO* 95697)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.27171 | | (2000.0) | | | |
| $n$ | 0.17173518 | $\omega$ | 174.92336 | | +0.95750869 | −0.28440485 |
| $a$ | 3.2055055 | $\Omega$ | 201.78452 | | +0.25985894 | +0.92276263 |
| $e$ | 0.1024419 | $i$ | 7.41030 | | +0.12510175 | +0.26004426 |
| $P$ | 5.74 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.4− | 0.1− | 2005 07 30 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ | | |
| 1994 10 09 | 691 | 0.2− | 0.1− | 2005 07 30 | 644 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2+ | | |
| 1994 10 09 | 691 | 0.1− | 0.0 | 2005 07 30 | 644 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.2+ | | |
| 1998 05 16 | 691 | 0.2+ | 0.2+ | 2005 08 06 | 644 | 0.7+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1+ | | |
| 1998 05 16 | 691 | 0.1+ | 0.1− | 2005 08 06 | 644 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.5+ | 0.1− | 2005 08 06 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2000 10 02 | 691 | 0.0 | 0.3− | 2005 08 24 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.7− | 1.2− |
| 2000 10 02 | 691 | 0.5+ | 0.1− | 2005 08 24 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.9− |
| 2000 10 31 | 704 | 0.2+ | 0.2+ | 2005 08 24 | 644 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 1.0+ | 0.0 |
| 2000 10 31 | 704 | 0.7+ | 0.9+ | 2005 11 01 | G96 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.2− | 0.4+ |
| 2000 10 31 | 704 | 0.6+ | 0.9+ | 2005 11 01 | G96 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.2− | 0.2+ |
| 2000 10 31 | 704 | 0.2− | 0.6+ | 2005 11 01 | G96 | 0.2− | 0.4− | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2000 10 31 | 704 | 0.4+ | 1.4+ | 2005 11 01 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2003 03 24 | 691 | 0.6− | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2003 03 24 | 691 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.7− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2003 03 24 | 691 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2003 04 26 | 691 | 0.3+ | 0.7+ | 2006 10 23 | G96 | 0.9+ | 0.3− | 2006 11 28 | 704 | 0.6− | 1.0+ |
| 2003 04 26 | 691 | 0.3+ | 0.3+ | 2006 11 02 | 703 | 0.9− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.8+ |
| 2003 04 26 | 691 | 0.4+ | 0.5+ | 2006 11 02 | 703 | 0.4− | 0.4− | 2006 11 28 | 704 | 0.7− | 1.6+ |
| 2005 07 05 | 291 | 0.4− | 0.5+ | 2006 11 02 | 703 | 0.5− | 0.2− | 2006 11 28 | 704 | 0.9− | 0.3− |
| 2005 07 05 | 291 | 0.4− | 0.5+ | 2006 11 02 | 703 | (1.7− | 0.5−) | | | | |
| 2005 07 05 | 291 | 0.3− | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.2+ | | | | |

**(145417)∗ 2005 PC$_2$ = 1996 MQ$_1$ = 1998 UF$_{29}$**

Discovered 2005 Aug. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. K. E. Smalley (*MPO* 86972)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.98104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12481127 | $\omega$ | 199.48692 | | +0.91540181 | | +0.38884193 |
| $a$ | 3.9655204 | $\Omega$ | 137.15963 | | −0.34601888 | | +0.89226204 |
| $e$ | 0.2630400 | $i$ | 8.80840 | | −0.20569508 | | +0.22950033 |
| $P$ | 7.90 | $H$ | 13.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 16 | 691 | 0.2− | 0.0 | 2005 08 02 | 704 | 0.3+ | 0.3+ | 2005 09 06 | 699 | 0.2+ | 0.3+ |
| 1996 06 16 | 691 | 0.3− | 0.4− | 2005 08 02 | 704 | 0.0 | 0.1+ | 2005 09 06 | 699 | 0.3− | 0.8+ |
| 1996 06 16 | 691 | 0.3− | 0.2− | 2005 08 04 | 644 | 0.0 | 0.1− | 2005 09 13 | 703 | 0.8− | 0.5− |
| 1996 06 22 | 691 | 0.1+ | 0.2− | 2005 08 04 | 644 | 0.0 | 0.1− | 2005 09 13 | 703 | 0.2+ | 0.4+ |
| 1996 06 22 | 691 | 0.3+ | 0.1+ | 2005 08 04 | 644 | 0.0 | 0.0 | 2005 09 13 | 703 | 0.0 | 0.1+ |
| 1996 06 22 | 691 | 0.0 | 0.5− | 2005 08 05 | 644 | 0.0 | 0.1− | 2005 09 13 | 703 | 0.4+ | 0.6+ |
| 1998 10 18 | 809 | 0.2− | 2.0− | 2005 08 05 | 644 | 0.1− | 0.1+ | 2005 09 24 | 644 | 0.1+ | 0.1+ |
| 1998 10 18 | 809 | (1.1− | 2.8−) | 2005 08 05 | 644 | 0.2+ | 0.2− | 2005 09 24 | 644 | 0.1− | 0.3+ |
| 1998 10 18 | 809 | (0.9− | 3.9−) | 2005 08 06 | 704 | 0.3+ | 0.2+ | 2005 09 24 | 644 | 0.0 | 0.2+ |
| 1998 10 19 | 809 | 0.7+ | 1.4− | 2005 08 06 | 704 | 0.0 | 0.3+ | 2005 10 31 | 699 | 0.7+ | 0.5− |
| 1998 10 19 | 809 | 0.5+ | 2.0− | 2005 08 06 | 704 | 0.5− | 0.1− | 2005 10 31 | 699 | 0.0 | 0.2− |
| 1998 10 19 | 809 | 0.7+ | 1.7− | 2005 08 06 | 704 | 0.2− | 0.1+ | 2005 10 31 | 699 | 0.1− | 0.3− |
| 2002 03 13 | 691 | 0.3+ | 0.2+ | 2005 08 10 | 608 | 0.4+ | 1.1+ | 2005 10 31 | 704 | 0.4+ | 0.2− |
| 2002 03 13 | 691 | 0.5+ | 0.2+ | 2005 08 10 | 608 | 0.4+ | 1.2+ | 2005 10 31 | 699 | 0.1+ | 0.7+ |
| 2002 03 13 | 691 | 0.4+ | 0.0 | 2005 08 10 | 608 | 0.4+ | 1.0+ | 2005 10 31 | 704 | 0.2− | 0.5+ |
| 2003 04 07 | 691 | 0.2+ | 0.3+ | 2005 08 26 | 699 | 0.5− | 0.1+ | 2005 10 31 | 704 | 0.6+ | 0.3+ |
| 2003 04 07 | 691 | 0.0 | 0.4+ | 2005 08 26 | 699 | 0.4− | 0.2− | 2005 10 31 | 704 | 0.2− | 0.7+ |
| 2003 04 07 | 691 | 0.2+ | 0.3+ | 2005 08 26 | 699 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2003 05 02 | 691 | 0.1− | 0.6+ | 2005 08 26 | 699 | 0.9− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2003 05 02 | 691 | 0.2− | 0.4+ | 2005 08 29 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2003 05 02 | 691 | 0.1− | 0.7+ | 2005 08 29 | 704 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2004 05 23 | 704 | 0.2+ | 0.6+ | 2005 08 29 | 704 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2004 05 23 | 704 | 0.2+ | 1.1+ | 2005 08 29 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.8+ |
| 2004 05 23 | 704 | 0.3− | 0.6+ | 2005 08 29 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2004 05 23 | 704 | 0.1− | 1.1+ | 2005 08 29 | 704 | 0.6− | 0.2+ | 2006 10 30 | 703 | 0.6− | 0.8+ |
| 2004 05 23 | 704 | 0.4+ | 0.1+ | 2005 08 29 | 704 | 0.5+ | 0.6− | 2006 10 30 | 703 | 1.0− | 0.0 |
| 2005 07 04 | G96 | 0.6+ | 0.8+ | 2005 08 29 | 704 | 0.2− | 0.5+ | 2006 10 30 | 703 | 0.3+ | 1.0+ |
| 2005 07 04 | G96 | 0.9+ | 0.8+ | 2005 08 29 | 704 | 0.4+ | 0.2− | 2006 10 30 | 703 | 0.2+ | 0.3+ |
| 2005 07 04 | G96 | 0.8+ | 0.5+ | 2005 08 29 | 704 | 0.4− | 0.3+ | 2006 11 13 | 703 | 0.4+ | 0.7+ |
| 2005 07 04 | G96 | 0.7+ | 0.5+ | 2005 08 30 | 644 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.4+ |
| 2005 07 26 | 608 | 0.8− | 0.7− | 2005 08 30 | 699 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.3− | 0.7+ |
| 2005 07 26 | 608 | 0.7− | 0.5− | 2005 08 30 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.8− | 0.8+ |
| 2005 07 26 | 608 | 1.1− | 0.7− | 2005 08 30 | 699 | 0.0 | 0.7− | 2006 11 19 | 703 | 0.0 | 1.1+ |
| 2005 07 28 | 644 | 0.4− | 0.1− | 2005 08 30 | 699 | 0.0 | 0.4− | 2006 11 19 | 703 | 0.9− | 0.0 |
| 2005 07 28 | 644 | 0.2− | 0.1+ | 2005 08 30 | 644 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.0 | 1.2+ |
| 2005 07 28 | 644 | 0.3− | 0.0 | 2005 08 30 | 699 | 0.4− | 0.3+ | 2006 11 19 | 703 | 0.3− | 1.2+ |
| 2005 07 28 | 644 | 0.3− | 0.0 | 2005 09 05 | 703 | 0.0 | 0.1− | 2006 11 20 | 703 | 0.5− | 0.8+ |
| 2005 07 28 | 644 | 0.3− | 0.4+ | 2005 09 05 | 703 | 0.9+ | 0.8− | 2006 11 20 | 703 | 0.6+ | 1.7+ |
| 2005 07 28 | 644 | 0.1− | 0.0 | 2005 09 05 | 703 | 0.2− | 0.3− | 2006 11 20 | 703 | 0.3− | 0.5+ |
| 2005 08 02 | 704 | 0.1+ | 0.1− | 2005 09 05 | 703 | 0.2+ | 0.1− | 2006 11 20 | 703 | 0.2− | 0.3+ |
| 2005 08 02 | 704 | 0.2+ | 0.1+ | 2005 09 06 | 699 | 0.1+ | 0.6+ | | | | |
| 2005 08 02 | 704 | 0.0 | 0.2+ | 2005 09 06 | 699 | 0.4+ | 1.3+ | | | | |

**(145418)∗ 2005 PO$_{11}$**

Discovered 2005 Aug. 4 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.14304 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20282818 | $\omega$ | 350.54584 | | −0.02374947 | | −0.99821250 |
| $a$ | 2.8689118 | $\Omega$ | 100.80061 | | +0.92083266 | | −0.04320136 |
| $e$ | 0.0331986 | $i$ | 3.20061 | | +0.38923410 | | +0.04129699 |
| $P$ | 4.86 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 1.1+ | 1.0+ | 2001 12 14 | 704 | (2.2− | 0.7−) | 2005 08 30 | 644 | 0.3− | 0.1− |
| 2001 10 24 | 704 | 0.5+ | 0.5+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.5− | 0.3− |
| 2001 10 24 | 704 | 0.0 | 1.4+ | 2003 01 28 | 645 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 0.3+ | 0.6+ | 2003 02 21 | 049 | 0.4− | 1.0+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 10 24 | 704 | 0.6+ | 0.7+ | 2003 02 21 | 049 | 0.3− | 1.1+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 699 | 0.3− | 0.9+ | 2003 02 21 | 049 | 0.3+ | 0.6+ | 2006 10 22 | G96 | 0.1− | 1.1− |
| 2001 11 19 | 699 | 0.2− | 0.0 | 2003 03 06 | 704 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.3+ | 1.1− |
| 2001 11 19 | 699 | 0.9− | 0.1+ | 2003 03 06 | 704 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.7− | 0.3− |
| 2001 11 19 | 699 | 1.3− | 0.3− | 2003 03 06 | 704 | 0.2+ | 0.8+ | 2006 10 22 | G96 | 0.1+ | 0.6− |
| 2001 11 20 | 704 | 0.6− | 1.2+ | 2003 03 06 | 704 | 0.2− | 1.2+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2003 03 06 | 704 | 0.5− | 0.8− | 2006 10 22 | G96 | 0.1+ | 0.7− |
| 2001 11 20 | 704 | 0.7− | 1.3+ | 2005 07 28 | 644 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.9− | 0.5− |
| 2001 11 20 | 704 | 0.3− | 1.1+ | 2005 07 28 | 644 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.5− | 0.4− |
| 2001 11 20 | 704 | 0.4− | 1.1+ | 2005 07 28 | 644 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2001 11 21 | 704 | 0.2− | 0.6+ | 2005 08 04 | 644 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2001 11 21 | 704 | 0.0 | 0.8+ | 2005 08 04 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2001 11 21 | 704 | 0.2+ | 0.8+ | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.8− | 0.6− |
| 2001 11 21 | 704 | 0.5+ | 0.8+ | 2005 08 05 | 644 | 0.1+ | 0.2− | 2006 11 27 | 703 | 1.0− | 0.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2005 08 05 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.1+ |
| 2001 12 10 | 691 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.6− |
| 2001 12 10 | 691 | 0.0 | 0.2− | 2005 08 28 | E12 | 0.4− | 0.9+ | 2006 11 27 | 703 | 0.7− | 0.2− |
| 2001 12 10 | 691 | 0.2+ | 0.1+ | 2005 08 28 | E12 | 0.3+ | 0.0 | 2006 11 29 | 704 | 2.4+ | 1.6− |
| 2001 12 14 | 704 | 0.9− | 1.6+ | 2005 08 28 | E12 | (2.0− | 0.0 ) | 2006 11 29 | 704 | 1.0+ | 1.6− |
| 2001 12 14 | 704 | 1.4− | 0.6− | 2005 08 28 | E12 | 0.7− | 0.3+ | 2006 11 29 | 704 | 2.6+ | 1.8− |
| 2001 12 14 | 704 | 1.2− | 0.8+ | 2005 08 30 | 644 | 0.4− | 0.1+ | 2006 11 29 | 704 | 1.8+ | 0.5− |
| 2001 12 14 | 704 | 1.2− | 0.9− | 2005 08 30 | 644 | 0.3− | 0.4+ | 2006 11 29 | 704 | 1.8+ | 1.4− |

**(145419)∗ 2005 PW$_{15}$ = 2003 FT$_{118}$**

Discovered 2005 Aug. 4 by NEAT at Palomar.

Id. A. Doppler (*MPO* 89708)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.09610 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17883408 | $\omega$ | 176.17100 | | −0.99842424 | | +0.05401667 |
| $a$ | 3.1201049 | $\Omega$ | 6.98012 | | −0.05423541 | | −0.85929151 |
| $e$ | 0.0326861 | $i$ | 7.18814 | | −0.01440650 | | −0.50862589 |
| $P$ | 5.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.3− | 0.2+ | 2003 04 11 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 703 | (2.3+ | 0.5−) |
| 2000 09 20 | 691 | 0.1− | 0.3+ | 2003 04 11 | 691 | 0.2+ | 0.7+ | 2006 11 02 | 691 | 0.1− | 0.2+ |
| 2000 09 20 | 691 | 0.2− | 0.4+ | 2003 04 11 | 691 | 0.7+ | 0.5+ | 2006 11 02 | 691 | 0.3+ | 0.4+ |
| 2000 10 01 | 704 | 0.2− | 0.8+ | 2005 07 28 | 644 | 0.5− | 0.6+ | 2006 11 02 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.4− | 0.7+ | 2005 07 28 | 644 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.7+ | 0.5+ |
| 2000 10 01 | 704 | 0.3− | 0.3+ | 2005 07 28 | 644 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.8+ |
| 2000 10 01 | 704 | 0.5− | 0.7+ | 2005 08 04 | 644 | 0.3− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.8+ |
| 2003 03 09 | 704 | (0.4− | 1.6−) | 2005 08 04 | 644 | 0.3− | 0.5+ | 2006 11 14 | 703 | (1.6+ | 0.9−) |
| 2003 03 09 | 704 | 0.5+ | 0.6− | 2005 08 04 | 644 | 0.2− | 0.6+ | 2006 11 14 | 703 | 0.6− | 0.7− |
| 2003 03 09 | 704 | 0.5− | 0.3− | 2005 08 05 | 644 | 0.2− | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 704 | 0.6− | 0.2− | 2005 08 05 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.1+ | | |
| 2003 03 09 | 704 | 0.7− | 0.0 | 2005 08 05 | 644 | 0.2− | 0.7+ | 2006 11 14 | 703 | 0.7+ | 0.2− | | |
| 2003 03 26 | 699 | 0.1+ | 1.0− | 2005 11 06 | G96 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.1+ | | |
| 2003 03 26 | 699 | 1.1− | 1.0+ | 2005 11 06 | G96 | 0.2− | 0.4− | 2006 11 14 | 703 | (1.0+ | 2.3+) | | |
| 2003 03 26 | 699 | 0.3− | 0.5+ | 2005 11 06 | G96 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.6+ | 0.0 | | |
| 2003 03 26 | 699 | 0.6− | 0.4− | 2005 11 06 | G96 | 0.3− | 0.1+ | 2006 11 22 | 703 | (1.8− | 0.4+) | | |
| 2003 03 27 | 691 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.4− | 2006 11 22 | 703 | 1.3− | 1.3− | | |
| 2003 03 27 | 691 | 0.5+ | 0.6+ | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 22 | 703 | 0.9− | 1.0− | | |
| 2003 03 27 | 691 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.6+ | 0.2+ | 2006 11 22 | 703 | 1.0− | 0.5− | | |

**(145420)∗ 2005 PP$_{17}$**

Discovered 2005 Aug. 6 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.82767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17319870 | $\omega$ | 258.63940 | | +0.83492518 | +0.46820182 | |
| $a$ | 3.1874225 | $\Omega$ | 72.86872 | | −0.30718342 | +0.83257839 | |
| $e$ | 0.1430040 | $i$ | 17.62092 | | −0.45665994 | +0.29597345 | |
| $P$ | 5.69 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 0.7− | 0.7− | 2005 08 13 | E12 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.5+ | 0.2+ | | |
| 2001 12 22 | 704 | (0.4+ | 2.3−) | 2005 08 13 | E12 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.7− | 1.3+ | | |
| 2001 12 22 | 704 | (0.9+ | 2.3−) | 2005 08 13 | E12 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.6− | 1.1+ | | |
| 2001 12 22 | 704 | 1.0+ | 1.2− | 2005 08 13 | E12 | 0.1+ | 0.4− | 2006 11 14 | 704 | 0.5− | 1.2+ | | |
| 2004 03 30 | 291 | 0.5+ | 0.2+ | 2005 08 13 | E12 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.4+ | 1.5+ | | |
| 2004 03 30 | 291 | 0.6+ | 0.4+ | 2005 09 07 | E12 | (1.5+ | 0.3−) | 2006 11 14 | 704 | 0.6+ | 1.2+ | | |
| 2004 03 30 | 291 | 0.7+ | 0.3+ | 2005 09 07 | E12 | 0.4− | 1.2+ | 2006 11 14 | 704 | 1.1+ | 0.6+ | | |
| 2004 04 23 | 691 | 0.2− | 0.4+ | 2005 09 07 | E12 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.2+ | 1.0+ | | |
| 2004 04 23 | 691 | 0.1− | 0.5+ | 2005 09 07 | E12 | 0.8− | 0.3+ | 2006 11 17 | 704 | 0.7+ | 0.1− | | |
| 2004 04 23 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.6+ | | |
| 2004 05 23 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.4+ | 2006 11 17 | 704 | 0.6− | 0.1− | | |
| 2004 05 23 | 704 | (0.6+ | 1.9+) | 2006 10 16 | 703 | 0.4− | 0.4+ | 2006 11 19 | 703 | 0.7− | 0.4+ | | |
| 2004 05 23 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.7− | 0.1− | 2006 11 19 | 703 | 0.2− | 0.1− | | |
| 2004 05 23 | 704 | (0.3+ | 2.0+) | 2006 10 22 | 703 | 0.7+ | 0.6+ | 2006 11 19 | 703 | 0.9− | 0.3− | | |
| 2005 07 05 | E12 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.5+ | 2006 11 19 | 703 | 0.0 | 0.3− | | |
| 2005 07 05 | E12 | 0.7− | 0.4− | 2006 10 22 | 703 | 0.4− | 0.0 | 2006 11 20 | 704 | (0.3− | 1.6+) | | |
| 2005 07 05 | E12 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.5+ | 2006 11 20 | 704 | 1.5− | 0.1+ | | |
| 2005 07 05 | E12 | 0.3− | 0.2+ | 2006 11 01 | 703 | 0.6− | 0.9+ | 2006 11 20 | 704 | (1.1− | 2.3+) | | |
| 2005 08 06 | E12 | 0.1− | 0.2− | 2006 11 01 | 703 | 0.5+ | 0.7+ | 2006 11 28 | 704 | 0.5− | 0.2+ | | |
| 2005 08 06 | E12 | 0.6+ | 0.5− | 2006 11 01 | 703 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.0 | | |
| 2005 08 06 | E12 | 0.3+ | 0.0 | 2006 11 01 | 703 | 1.3− | 0.9− | 2006 11 28 | 704 | 0.3+ | 0.4+ | | |
| 2005 08 06 | E12 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.4− | 0.1+ | 2006 11 28 | 704 | 1.0+ | 2.0− | | |

**(145421)∗ 2005 PD$_{19}$**

Discovered 2005 Aug. 2 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.41450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12538704 | $\omega$ | 357.80562 | | +0.91715276 | +0.39834936 | |
| $a$ | 3.9533714 | $\Omega$ | 338.70658 | | −0.36513630 | +0.82763961 | |
| $e$ | 0.2555250 | $i$ | 1.92369 | | −0.15970690 | +0.39538647 | |
| $P$ | 7.86 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 24 | 691 | 0.2+ | 0.0 | 2005 08 06 | 704 | 1.3+ | 1.0− | 2005 11 25 | G96 | 0.4− | 0.4− | | |
| 1998 10 24 | 691 | 0.5+ | 0.0 | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.3+ | | |
| 1998 10 24 | 691 | 0.2+ | 0.0 | 2005 08 06 | 644 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.3− | 0.1+ | | |
| 1998 11 17 | 691 | 0.3− | 0.1− | 2005 08 06 | 644 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.3+ | | |
| 1998 11 17 | 691 | 0.4− | 0.5− | 2005 08 26 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.7− | 0.1− | | |
| 2003 04 08 | 691 | 0.1+ | 0.5+ | 2005 08 26 | 699 | 0.0 | 1.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2003 04 08 | 691 | 0.5+ | 0.8+ | 2005 08 26 | 699 | 0.8− | 1.0+ | 2006 10 21 | 691 | 0.1− | 0.3+ | | |
| 2003 04 08 | 691 | 0.4+ | 1.0+ | 2005 08 26 | 699 | 0.2− | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.6+ | | |
| 2005 07 05 | G96 | 0.1+ | 0.2+ | 2005 08 29 | 699 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.3+ | | |
| 2005 07 05 | G96 | 0.3− | 0.0 | 2005 08 29 | 704 | 0.1+ | 1.0+ | 2006 11 16 | 691 | 0.2+ | 0.4+ | | |
| 2005 07 05 | G96 | 0.2− | 0.0 | 2005 08 29 | 699 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.5+ | | |
| 2005 07 05 | G96 | 0.2− | 0.0 | 2005 08 29 | 704 | 0.5− | 0.8− | 2006 11 19 | 704 | 1.3− | 0.6+ | | |
| 2005 07 28 | 644 | 0.0 | 0.0 | 2005 08 29 | 699 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.5+ | | |
| 2005 07 28 | 644 | 0.1− | 0.0 | 2005 08 29 | 704 | 0.0 | 0.8− | 2006 11 19 | 704 | (0.3+ | 1.5+) | | |
| 2005 07 28 | 644 | 0.0 | 0.0 | 2005 08 29 | 699 | 0.5+ | 0.6− | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2005 07 28 | 644 | 0.2+ | 0.1+ | 2005 08 29 | 704 | 0.1+ | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2005 07 28 | 644 | 0.0 | 0.0 | 2005 08 29 | 704 | 0.5+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2005 07 28 | 644 | 0.2− | 0.1+ | 2005 09 05 | 703 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.0 | | |
| 2005 08 02 | 704 | 0.3+ | 0.5+ | 2005 09 05 | 703 | 0.6− | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.3− | | |
| 2005 08 02 | 704 | 0.3− | 0.8+ | 2005 09 05 | 703 | 0.5+ | 0.6− | 2006 12 01 | G96 | 0.1+ | 0.5+ | | |
| 2005 08 02 | 704 | 0.2+ | 0.7+ | 2005 09 05 | 703 | 0.6− | 0.1− | 2006 12 01 | G96 | 0.5+ | 0.8− | | |
| 2005 08 06 | 704 | 0.1− | 0.2+ | 2005 11 25 | G96 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.3− | 0.2+ | | |
| 2005 08 06 | 704 | 0.0 | 0.5+ | 2005 11 25 | G96 | 0.1− | 0.0 | | | | | | |
| 2005 08 06 | 704 | 1.1− | 0.0 | 2005 11 25 | G96 | 0.4− | 0.1+ | | | | | | |

**(145422)∗ 2005 PT$_{20}$ = 2000 AV$_{206}$ = 2003 GD$_{30}$**

Discovered 2005 Aug. 7 by NEAT at Haleakala.

Id. K. E. Smalley (*MPO* 86991)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.45907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12557313 | $\omega$ | 240.41029 | | +0.95576684 | +0.27442405 | |
| $a$ | 3.9494646 | $\Omega$ | 103.49199 | | −0.21785443 | +0.90225769 | |
| $e$ | 0.2909679 | $i$ | 6.24841 | | −0.19760867 | +0.33259963 | |
| $P$ | 7.85 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 691 | 0.1+ | 0.3− | 2005 08 22 | E12 | 0.2− | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | | |
| 2000 01 03 | 691 | 0.0 | 0.2− | 2005 08 22 | E12 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | | |
| 2000 01 03 | 691 | 0.3− | 0.4− | 2005 08 22 | E12 | 0.5− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.5+ | | |
| 2000 01 08 | 691 | 0.1+ | 0.6− | 2005 08 22 | E12 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.4+ | 0.4+ | | |
| 2000 01 08 | 691 | 0.2+ | 0.2− | 2005 08 27 | E12 | 0.0 | 0.4− | 2006 11 13 | 703 | 0.3+ | 0.9+ | | |
| 2000 01 08 | 691 | 0.0 | 0.5− | 2005 08 27 | E12 | 0.4− | 0.4− | 2006 11 13 | 703 | 0.5− | 1.5− | | |
| 2003 04 07 | 691 | 0.2− | 0.1+ | 2005 08 27 | E12 | 0.2− | 0.7− | 2006 11 13 | 703 | 0.7− | 0.9+ | | |
| 2003 04 07 | 691 | 0.7+ | 0.3+ | 2005 08 27 | E12 | 0.6− | 0.5− | 2006 11 14 | 704 | 1.2+ | 0.1+ | | |
| 2003 04 07 | 691 | 0.6+ | 0.5+ | 2005 08 28 | 699 | 0.1+ | 0.6− | 2006 11 14 | 704 | 0.8− | 0.7− | | |
| 2003 04 09 | 291 | 0.1− | 0.9+ | 2005 08 28 | 699 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.8− | 1.0+ | | |
| 2003 04 09 | 291 | 0.0 | 0.4+ | 2005 08 28 | 699 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.6+ | | |
| 2003 04 09 | 291 | 0.3− | 0.2+ | 2005 08 28 | 699 | 0.7+ | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.0 | | |
| 2003 05 02 | 691 | 0.2+ | 0.3+ | 2005 08 31 | 699 | 0.1+ | 1.0+ | 2006 11 15 | G96 | 0.3− | 0.1− | | |
| 2003 05 02 | 691 | 0.3+ | 0.2− | 2005 08 31 | 699 | 0.8+ | 0.2+ | 2006 11 15 | G96 | 0.5− | 0.1− | | |
| 2003 05 02 | 691 | 0.1+ | 0.4+ | 2005 08 31 | 699 | 0.5+ | 0.6− | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2005 06 20 | 644 | 0.1+ | 0.2+ | 2005 08 31 | 699 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.9+ | | |
| 2005 06 20 | 644 | 0.2− | 0.1− | 2005 09 01 | 644 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.9+ | | |
| 2005 06 20 | 644 | 0.6− | 0.6+ | 2005 09 01 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.3+ | | |
| 2005 06 20 | 644 | 0.4− | 0.3+ | 2005 09 01 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.9− | | |
| 2005 06 20 | 644 | 0.4− | 0.0 | 2005 09 03 | 644 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.4+ | | |
| 2005 06 20 | 644 | 0.5− | 0.0 | 2005 09 03 | 644 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2005 07 04 | 644 | 0.1− | 0.0 | 2005 09 03 | 644 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2005 07 04 | 644 | 0.1− | 0.2+ | 2005 09 17 | 644 | 0.4− | 0.4+ | 2006 11 20 | 704 | 0.9− | 0.5+ | | |
| 2005 07 04 | 644 | 0.1− | 0.2+ | 2005 09 17 | 644 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.1+ | | |
| 2005 07 11 | 699 | 0.4− | 0.4− | 2005 09 17 | 644 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.9+ | | |
| 2005 07 11 | 699 | 0.3− | 0.7− | 2005 10 02 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.3− | 0.0 | | |
| 2005 07 11 | 699 | 0.0 | 0.2+ | 2005 10 02 | 644 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.3− | 0.4+ | | |
| 2005 07 11 | 699 | 0.4+ | 0.3+ | 2005 10 02 | 644 | (1.8+ | 0.3−) | 2006 11 24 | 691 | 0.1− | 0.4+ | | |
| 2005 08 07 | 608 | 1.2+ | 1.0− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.4+ | | |
| 2005 08 07 | 608 | 0.8+ | 1.3− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.0 | | |
| 2005 08 07 | 608 | 0.6+ | 1.4− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.0 | | |
| 2005 08 15 | E12 | 0.4+ | 1.5+ | 2006 10 23 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.1+ | | |
| 2005 08 15 | E12 | 0.2− | 1.3+ | 2006 10 23 | G96 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.1+ | | |
| 2005 08 15 | E12 | 0.3− | 0.4− | 2006 10 23 | G96 | 0.6− | 0.2− | 2006 11 28 | 704 | 1.4− | 1.5+ | | |
| 2005 08 15 | E12 | 1.0+ | 1.4+ | 2006 11 02 | 703 | 0.8+ | 0.2− | 2006 11 28 | 704 | 0.2− | 0.2+ | | |
| 2005 08 22 | 644 | 0.2− | 0.3− | 2006 11 02 | 703 | 0.9+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.0 | | |
| 2005 08 22 | 644 | 0.3− | 0.3− | 2006 11 02 | 703 | 0.5+ | 0.0 | 2006 11 28 | 704 | 0.5− | 0.3+ | | |
| 2005 08 22 | 644 | 0.3− | 0.1− | 2006 11 02 | 703 | 0.6− | 0.7− | | | | | | |

**(145423)∗ 2005 QQ$_{4}$ = 2004 JW$_{42}$**

Discovered 2005 Aug. 24 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 86998)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.33936 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17912576 | $\omega$ | 188.23206 | | +0.62494812 | | +0.77951315 |
| $a$ | 3.1167169 | $\Omega$ | 120.45730 | | −0.71341563 | | +0.59232962 |
| $e$ | 0.1510145 | $i$ | 2.82043 | | −0.31698263 | | +0.20372746 |
| $P$ | 5.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 691 | 0.0 | 0.3− | 2004 06 17 | 691 | 0.1+ | 0.0 | 2005 10 01 | 704 | 0.0 | 1.4+ |
| 2000 10 06 | 691 | 0.0 | 0.3− | 2005 08 24 | 644 | 0.3− | 0.3+ | 2005 10 01 | 704 | 0.3− | 0.0 |
| 2000 10 06 | 691 | 0.3+ | 0.3− | 2005 08 24 | 644 | 0.1+ | 0.3+ | 2005 10 01 | 704 | 0.3+ | 1.1+ |
| 2001 12 17 | 704 | 0.1+ | 0.6− | 2005 08 24 | 644 | 0.4− | 0.4+ | 2005 10 05 | 704 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | 0.7+ | 1.3− | 2005 08 25 | 644 | 0.3− | 0.2+ | 2005 10 05 | 704 | 0.5+ | 0.3+ |
| 2001 12 17 | 704 | 0.2+ | 0.3− | 2005 08 25 | 644 | 0.4− | 0.2+ | 2005 10 05 | 704 | 0.3− | 0.7+ |
| 2001 12 17 | 704 | 0.8− | 0.3− | 2005 08 25 | 644 | 0.4− | 0.1+ | 2005 10 05 | 704 | 0.6+ | 0.2+ |
| 2003 02 23 | 291 | 0.3+ | 0.3+ | 2005 08 26 | 699 | 0.1− | 0.9+ | 2005 10 07 | 699 | 1.0+ | 0.3+ |
| 2003 02 23 | 291 | 0.0 | 0.5+ | 2005 08 26 | 699 | 0.8+ | 0.4+ | 2005 10 07 | 699 | 1.0− | 0.2− |
| 2003 02 23 | 291 | 0.3+ | 0.7+ | 2005 08 26 | 699 | (0.5− | 1.8+) | 2005 10 07 | 699 | 0.9− | 1.2− |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2005 08 26 | 699 | (0.1− | 1.6+) | 2005 10 07 | 699 | 0.5− | 0.1− |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2005 08 29 | 699 | 0.6+ | 0.5− | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2003 03 31 | 645 | 0.1− | 0.0 | 2005 08 29 | 699 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2003 03 31 | 645 | 0.0 | 0.1+ | 2005 08 29 | 699 | 0.5− | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2004 05 15 | 704 | 1.4+ | 0.8+ | 2005 08 29 | 699 | 0.2+ | 1.2− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2004 05 15 | 704 | 0.5+ | 0.1+ | 2005 09 01 | 691 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.5− | 0.4+ |
| 2004 05 15 | 704 | 0.1+ | 1.3+ | 2005 09 01 | 691 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2004 05 15 | 704 | 0.1+ | 0.1+ | 2005 09 01 | 691 | 0.4− | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2004 05 21 | 704 | 0.3+ | 1.5+ | 2005 09 07 | A50 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2004 05 21 | 704 | 0.6− | 0.4+ | 2005 09 07 | A50 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 05 21 | 704 | 0.1+ | 1.5+ | 2005 09 23 | 644 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.3+ |
| 2004 05 21 | 704 | 0.2− | 0.6+ | 2005 09 23 | 644 | 0.0 | 0.3+ | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2004 05 21 | 704 | (1.9+ | 0.8+) | 2005 09 23 | 644 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.6+ | 0.5+ |
| 2004 06 17 | 691 | 0.2+ | 0.3+ | 2005 10 01 | 704 | 0.4+ | 0.4+ | | | | |
| 2004 06 17 | 691 | 0.1+ | 0.1+ | 2005 10 01 | 704 | 0.3+ | 0.3+ | | | | |

**(145424)∗ 2005 QC$_{16}$**
Discovered 2005 Aug. 25 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.04744 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17294168 | $\omega$ | 183.79216 | | +0.93670704 | | +0.34998423 |
| $a$ | 3.1905797 | $\Omega$ | 155.71474 | | −0.32061032 | | +0.86839811 |
| $e$ | 0.0810294 | $i$ | 1.32875 | | −0.14067318 | | +0.35127733 |
| $P$ | 5.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 691 | 0.1+ | 0.3− | 2004 07 16 | 807 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2000 11 29 | 691 | 0.4+ | 0.1− | 2005 08 25 | 644 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2000 11 29 | 691 | 0.2+ | 0.1+ | 2005 08 25 | 644 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2001 12 24 | 691 | 0.1+ | 0.0 | 2005 08 25 | 644 | 0.6− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2001 12 24 | 691 | 1.1− | 0.1− | 2005 08 28 | 691 | 0.1− | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.3− |
| 2001 12 24 | 691 | 0.4− | 0.4+ | 2005 08 28 | 691 | 0.3− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 02 12 | 691 | 0.1+ | 0.8+ | 2005 08 28 | 691 | 0.5− | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2002 02 12 | 691 | 0.3+ | 0.7+ | 2005 09 01 | 691 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2002 02 12 | 691 | 0.3+ | 0.4+ | 2005 09 01 | 691 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2003 03 31 | 291 | 0.1+ | 0.9+ | 2005 09 01 | 691 | 0.3− | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2003 03 31 | 291 | 0.0 | 0.6+ | 2005 09 22 | 644 | 0.1− | 0.5+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2003 03 31 | 291 | 0.0 | 1.0+ | 2005 09 22 | 644 | 0.3− | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2003 04 07 | 691 | (1.0+ | 1.7+) | 2005 09 22 | 644 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 04 07 | 691 | (1.7+ | 1.9+) | 2005 09 27 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2003 04 07 | 691 | (1.2+ | 1.7+) | 2005 09 27 | 691 | 0.1+ | 0.4+ | 2006 12 01 | 691 | 0.3+ | 0.3+ |
| 2003 05 06 | 291 | 1.1+ | 0.6+ | 2005 09 27 | 691 | 0.1+ | 0.5+ | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2003 05 06 | 291 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.0 | 0.5+ |
| 2003 05 06 | 291 | 0.8+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.0 | | | | |
| 2004 07 16 | 807 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.8+ | 0.2− | | | | |

**(145425)∗ 2005 QP$_{39}$ = 2000 QM$_{156}$**
Discovered 2005 Aug. 26 by NEAT at Palomar.
Id. A. Doppler (*MPO* 87042)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.89023 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19606707 | $\omega$ | 175.70389 | | −0.16333442 | | −0.96952883 |
| $a$ | 2.9344921 | $\Omega$ | 283.62133 | | +0.89947091 | | −0.07031241 |
| $e$ | 0.0030179 | $i$ | 10.82820 | | +0.40530724 | | −0.23467002 |
| $P$ | 5.03 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.2− | 0.4+ | 2001 12 09 | 704 | 0.7+ | 0.5− | 2005 08 27 | 699 | 0.8+ | 0.3− |
| 2000 08 31 | 704 | 0.7+ | 0.6+ | 2001 12 09 | 704 | 1.1+ | 0.2+ | 2005 08 27 | 699 | 0.6− | 0.7+ |
| 2000 08 31 | 704 | 0.5+ | 0.8+ | 2001 12 09 | 704 | 0.9+ | 0.6+ | 2005 08 27 | 699 | 0.2− | 0.5+ |
| 2000 08 31 | 704 | 0.0 | 1.2+ | 2001 12 09 | 704 | 1.1+ | 0.2+ | 2005 08 27 | 699 | 0.5− | 0.0 |
| 2000 08 31 | 704 | 0.1+ | 0.7+ | 2002 01 08 | 704 | 1.1− | 0.5+ | 2005 08 29 | 644 | 0.0 | 0.1+ |
| 2000 09 03 | 704 | 0.9+ | 0.3− | 2002 01 08 | 704 | 0.7− | 0.7+ | 2005 08 29 | 644 | 0.0 | 0.2+ |
| 2000 09 03 | 704 | 0.2− | 0.5+ | 2002 01 08 | 704 | 0.2− | 0.2+ | 2005 08 29 | 644 | 0.2+ | 0.1+ |
| 2000 09 03 | 704 | 1.0+ | 0.1− | 2002 01 08 | 704 | 0.7− | 0.2+ | 2005 08 30 | 699 | 0.2+ | 0.2+ |
| 2000 09 03 | 704 | 0.5+ | 0.6+ | 2003 03 10 | 699 | 0.6+ | 1.2+ | 2005 08 30 | 699 | 0.4+ | 0.8− |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2003 03 10 | 699 | 0.8+ | 0.9+ | 2005 08 30 | 699 | 0.6− | 0.2+ |
| 2000 10 02 | 645 | 0.2− | 0.1− | 2003 03 10 | 699 | 0.6− | 0.2+ | 2005 08 30 | 699 | 0.0 | 0.8+ |
| 2001 11 11 | 704 | 0.5+ | 0.5+ | 2003 03 10 | 699 | 0.4+ | 0.9+ | 2005 09 07 | A44 | 0.1− | 0.2+ |
| 2001 11 11 | 704 | 0.1+ | 0.1− | 2004 06 11 | 704 | 0.2+ | 0.8+ | 2005 09 07 | A44 | 0.1− | 0.1− |
| 2001 11 11 | 704 | 0.2− | 0.3− | 2004 06 11 | 704 | 0.6+ | 0.3+ | 2005 09 07 | A44 | (1.8+ | 0.2−) |
| 2001 11 11 | 704 | 0.4+ | 0.1− | 2004 06 11 | 704 | 0.1− | 0.7+ | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2005 07 31 | 644 | 0.1− | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2001 11 24 | 704 | 0.4− | 0.6+ | 2005 07 31 | 644 | 0.1− | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | (1.8+ | 1.7+) | 2005 07 31 | 644 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.2+ | 0.4− |
| 2001 11 24 | 704 | 0.5− | 0.2− | 2005 08 26 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.6− |
| 2001 11 24 | 704 | 0.4− | 0.3+ | 2005 08 26 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.3− | 0.2− |
| 2001 12 09 | 704 | 0.5+ | 1.3+ | 2005 08 26 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.7− |

**(145426)∗ 2005 QS$_{48}$**
Discovered 2005 Aug. 26 by NEAT at Palomar.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.00847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12511328 | $\omega$ | 305.58764 | | +0.70559168 | | +0.70788137 |
| $a$ | 3.9591363 | $\Omega$ | 9.50017 | | −0.57018240 | | +0.59423452 |
| $e$ | 0.2788216 | $i$ | 11.29127 | | −0.42075219 | | +0.38182366 |
| $P$ | 7.88 | $H$ | 12.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 07 | 691 | 0.0 | 0.2− | 2005 08 26 | 644 | 0.2− | 0.1+ | 2005 10 31 | 644 | 0.4− | 0.3+ |
| 1995 04 07 | 691 | 0.1+ | 1.5+ | 2005 08 28 | 691 | 0.1− | 0.2+ | 2005 10 31 | 644 | 0.0 | 0.2− |
| 1995 04 07 | 691 | 0.1− | 0.4− | 2005 08 28 | 691 | 0.1− | 0.3+ | 2005 10 31 | 644 | 0.2+ | 0.1− |
| 1998 12 24 | 699 | 0.5− | 0.1− | 2005 08 28 | 691 | 0.1− | 0.2+ | 2005 11 18 | 699 | 0.4− | 0.6+ |
| 1998 12 24 | 699 | 0.3− | 1.3+ | 2005 09 01 | 691 | 0.1− | 0.1+ | 2005 11 18 | 699 | 0.7− | 0.2+ |
| 1998 12 24 | 699 | 1.1+ | 0.7+ | 2005 09 01 | 691 | 0.0 | 0.1+ | 2005 11 18 | 699 | 0.6+ | 1.1+ |
| 2002 04 02 | 644 | 0.9+ | 0.8+ | 2005 09 01 | 691 | 0.1− | 0.1+ | 2005 12 01 | G96 | 0.1− | 0.4− |
| 2002 04 02 | 644 | 1.1+ | 0.6+ | 2005 09 02 | 608 | 0.4+ | 0.6+ | 2005 12 01 | 704 | 0.4− | 0.9+ |
| 2002 04 02 | 644 | 1.2+ | 0.8+ | 2005 09 02 | 608 | 0.4+ | 0.3+ | 2005 12 01 | G96 | 0.2+ | 0.1+ |
| 2003 02 22 | 291 | 0.5+ | 0.2+ | 2005 09 02 | 608 | 0.5+ | 0.5+ | 2005 12 01 | G96 | 0.0 | 0.1+ |
| 2003 02 22 | 291 | 0.4+ | 0.4+ | 2005 09 11 | 691 | 0.1− | 0.2− | 2005 12 01 | 704 | 0.3− | 1.0+ |
| 2003 02 22 | 291 | 0.4+ | 0.4+ | 2005 09 11 | 691 | 0.0 | 0.2− | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2003 03 27 | 699 | 0.4− | 0.9+ | 2005 09 11 | 691 | 0.0 | 0.1− | 2005 12 01 | 704 | 0.2− | 0.7+ |
| 2003 03 27 | 699 | 1.1+ | 1.3− | 2005 09 11 | 608 | (1.3+ | 1.7+) | 2005 12 01 | 704 | 0.5− | 0.9+ |
| 2003 03 27 | 699 | 0.2+ | 1.4+ | 2005 09 11 | 608 | 1.0+ | 1.1+ | 2005 12 01 | 704 | 0.0 | 1.2+ |
| 2003 03 27 | 699 | 0.3− | 0.1+ | 2005 09 11 | 608 | 1.1+ | 1.1+ | 2005 12 04 | 704 | (0.3+ | 1.9+) |
| 2003 03 27 | 699 | 0.4− | 0.5− | 2005 09 23 | 703 | 0.3+ | 0.3− | 2005 12 04 | 704 | 0.8− | 0.8+ |
| 2003 03 27 | 699 | 0.1+ | 1.3+ | 2005 09 23 | 703 | 0.2− | 0.4− | 2005 12 04 | 704 | 0.4− | 0.4+ |
| 2003 03 27 | 699 | 0.4+ | 0.8+ | 2005 09 23 | 703 | 0.1− | 0.4− | 2005 12 21 | 699 | 0.2− | 0.1+ |
| 2003 03 27 | 699 | 0.7+ | 1.1+ | 2005 09 23 | 703 | 0.1+ | 0.1− | 2005 12 21 | 699 | 1.3− | 0.1+ |
| 2003 04 09 | 704 | 0.0 | 0.6+ | 2005 09 26 | A50 | 0.3+ | 0.2− | 2005 12 21 | 699 | 0.5− | 1.2+ |
| 2003 04 09 | 704 | 0.2− | 0.8+ | 2005 09 26 | A50 | 0.3+ | 0.1+ | 2005 12 21 | 699 | 1.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 704 | 0.2+ | 1.0+ | 2005 09 28 | 704 | 0.3+ | 0.4+ | 2005 12 21 | 703 | 0.6− | 0.1+ |
| 2003 04 09 | 704 | 0.0 | 0.7+ | 2005 09 28 | 704 | 0.3− | 0.2+ | 2005 12 21 | 703 | 0.3+ | 0.3+ |
| 2003 04 29 | 704 | 0.6+ | 0.3− | 2005 09 28 | 704 | 0.4+ | 0.0 | 2005 12 21 | 703 | (1.6− | 0.5−) |
| 2003 04 29 | 704 | 1.1+ | 0.6+ | 2005 09 28 | 704 | 0.0 | 0.6+ | 2005 12 21 | 703 | 1.3− | 0.3− |
| 2003 04 29 | 704 | 0.8− | 1.1− | 2005 09 28 | 704 | 0.9− | 0.2+ | 2005 12 28 | 704 | 0.1− | 0.2+ |
| 2003 04 29 | 704 | 0.4+ | 0.1− | 2005 10 01 | 704 | 0.1+ | 0.7+ | 2005 12 28 | 704 | 0.6− | 0.0 |
| 2003 04 29 | 704 | 1.2+ | 0.3− | 2005 10 01 | 704 | 0.3− | 0.6+ | 2005 12 28 | 704 | 0.0 | 0.3+ |
| 2003 05 05 | 691 | 0.4+ | 0.7+ | 2005 10 01 | 704 | 0.5− | 0.9+ | 2005 12 28 | 704 | 0.0 | 0.0 |
| 2003 05 05 | 691 | 0.2+ | 0.2+ | 2005 10 01 | 704 | 0.7− | 0.9+ | 2005 12 28 | 704 | 0.6− | 0.6+ |
| 2003 05 05 | 691 | 0.1+ | 0.6+ | 2005 10 01 | 704 | 1.2− | 0.6+ | 2006 01 31 | 703 | 0.2− | 0.3− |
| 2003 06 16 | 644 | 0.4+ | 0.2+ | 2005 10 05 | 704 | 0.1− | 0.5+ | 2006 01 31 | 703 | 0.7− | 0.1− |
| 2003 06 16 | 644 | 0.4+ | 0.8+ | 2005 10 05 | 704 | 0.4− | 0.5+ | 2006 01 31 | 703 | 0.7− | 1.2− |
| 2003 06 16 | 644 | 0.0 | 0.7+ | 2005 10 05 | 704 | 0.6− | 0.3+ | 2006 01 31 | 703 | 0.0 | 0.7− |
| 2005 05 20 | E12 | 0.1+ | 0.1+ | 2005 10 05 | 704 | 0.3− | 0.4+ | 2006 10 23 | 703 | 0.3− | 0.7+ |
| 2005 05 20 | E12 | 0.1+ | 0.3+ | 2005 10 05 | 704 | 0.1− | 0.4+ | 2006 10 23 | 703 | 0.0 | 1.4+ |
| 2005 05 20 | E12 | 0.5− | 0.4− | 2005 10 07 | 699 | 0.0 | 0.5+ | 2006 10 23 | 703 | 0.3+ | 0.3+ |
| 2005 05 20 | E12 | 0.1+ | 0.1+ | 2005 10 07 | 699 | 0.5− | 0.0 | 2006 10 23 | 703 | 0.5− | 0.5+ |
| 2005 08 16 | E12 | 0.3− | 0.2− | 2005 10 07 | 699 | 0.3− | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2005 08 16 | E12 | 0.3+ | 0.1− | 2005 10 07 | 699 | 0.6+ | 0.7+ | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2005 08 16 | E12 | 0.4− | 0.2+ | 2005 10 22 | 703 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.2− | 0.2+ |
| 2005 08 16 | E12 | 0.1− | 0.4− | 2005 10 22 | 703 | 0.2− | 0.5− | 2006 11 15 | 703 | 0.1+ | 0.3+ |
| 2005 08 26 | 644 | 0.1+ | 0.1− | 2005 10 22 | 703 | 0.3− | 0.5− | 2006 11 22 | 703 | 0.8− | 0.3− |
| 2005 08 26 | 644 | 0.1− | 0.1− | 2005 10 22 | 703 | 0.5− | 0.5− | 2006 11 22 | 703 | 0.1+ | 0.4+ |
| 2005 08 26 | 644 | 0.1− | 0.1− | 2005 10 29 | G96 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.1− | 0.4+ |
| 2005 08 26 | 644 | 0.0 | 0.2− | 2005 10 29 | G96 | 0.2− | 0.3− | 2006 11 22 | 703 | 1.1− | 0.2− |
| 2005 08 26 | 644 | 0.0 | 0.2− | 2005 10 29 | G96 | 0.2− | 0.3− | | | | |

**(145427)∗ 2005 QE$_{52}$**

Discovered 2005 Aug. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.95258 | | (2000.0) | | +0.03806639 | +0.99926948 |
| $n$ | 0.18477118 | $\omega$ | 97.22896 | | −0.93131744 | +0.03670499 |
| $a$ | 3.0529046 | $\Omega$ | 174.94891 | | −0.36221372 | +0.01064174 |
| $e$ | 0.1089453 | $i$ | 2.20286 | | | |
| $P$ | 5.33 | $H$ | 15.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.7− | 0.5− | 2005 08 29 | 691 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2000 09 20 | 691 | 0.6+ | 0.2− | 2005 08 29 | 691 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2000 09 20 | 691 | 0.3− | 0.0 | 2005 08 29 | 691 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2000 10 01 | 704 | 1.3+ | 0.1− | 2005 09 08 | 704 | 0.8+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2000 10 01 | 704 | 0.4+ | 0.1− | 2005 09 08 | 704 | 1.2− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2005 09 08 | 704 | 1.0− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2000 10 01 | 704 | 0.3+ | 0.2− | 2005 09 13 | 691 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2000 10 01 | 704 | 0.4+ | 0.1+ | 2005 09 13 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 12 07 | 645 | 0.0 | 0.1+ | 2005 09 13 | 691 | 0.1− | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2002 12 07 | 645 | 0.1+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2003 01 27 | 291 | 0.1− | 0.1+ | 2005 09 22 | 644 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2003 01 27 | 291 | 0.0 | 0.4+ | 2005 09 22 | 644 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2003 01 27 | 291 | 0.3+ | 0.1+ | 2005 09 26 | 691 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2003 01 27 | 291 | 0.2+ | 0.4+ | 2005 09 26 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.4+ |
| 2003 01 27 | 291 | 0.1+ | 0.3+ | 2005 09 26 | 691 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2003 01 27 | 291 | 0.0 | 0.4+ | 2005 09 29 | G96 | 0.0 | 0.4+ | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2005 08 27 | 699 | 0.9− | 0.4+ | 2005 09 29 | G96 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2005 08 27 | 699 | 0.9+ | 0.1− | 2005 09 29 | G96 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.4+ | 0.3− |
| 2005 08 27 | 699 | 0.0 | 0.3+ | 2005 09 29 | G96 | 0.4− | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2005 08 27 | 699 | 0.5− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1− |

**(145428)∗ 2005 QP$_{64}$ = 2002 CG$_{178}$**

Discovered 2005 Aug. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 87069)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 118.17254 | | (2000.0) | | +0.22404627 | +0.97280031 |
| $n$ | 0.15869898 | $\omega$ | 194.10019 | | −0.88835791 | +0.22868291 |
| $a$ | 3.3787285 | $\Omega$ | 88.87143 | | −0.40077860 | +0.03692815 |
| $e$ | 0.0571531 | $i$ | 3.37422 | | | |
| $P$ | 6.21 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 291 | 0.5− | 0.0 | 2003 04 09 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2002 01 09 | 291 | 0.6+ | 0.6+ | 2003 04 30 | 691 | (1.1− | 2.1+) | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2002 01 09 | 291 | 0.2+ | 0.4+ | 2003 04 30 | 691 | (0.8− | 1.9+) | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2002 02 10 | 704 | 0.4− | 0.5+ | 2003 04 30 | 691 | (0.8− | 2.1+) | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 02 10 | 704 | 0.3+ | 0.5− | 2005 08 26 | 644 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.5− | 0.4+ |
| 2002 02 10 | 704 | 0.4+ | 0.0 | 2005 08 26 | 644 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.8+ | 0.1− |
| 2002 02 10 | 704 | 0.2+ | 0.5− | 2005 08 26 | 644 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.5+ | 0.3+ |
| 2002 02 12 | 704 | 0.0 | 0.3+ | 2005 08 30 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.8− | 0.6+ |
| 2002 02 12 | 704 | 0.9− | 0.6+ | 2005 08 30 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2002 02 12 | 704 | 0.8− | 0.0 | 2005 08 30 | 691 | 0.1− | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2002 02 12 | 704 | 0.7+ | 0.9+ | 2005 09 11 | 691 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.5+ | 0.5− |
| 2002 02 12 | 704 | 1.2+ | 0.5+ | 2005 09 11 | 691 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2002 02 13 | 049 | 0.3+ | 0.5+ | 2005 09 11 | 691 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.2− | 1.1− |
| 2002 02 13 | 049 | 0.0 | 0.4+ | 2005 09 14 | 691 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.1+ | 0.9+ |
| 2002 02 13 | 049 | 0.6− | 0.8− | 2005 09 14 | 691 | 0.3− | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2003 03 27 | 691 | 0.3+ | 0.6+ | 2005 09 14 | 691 | 0.2− | 0.6+ | 2006 11 21 | 691 | 0.1− | 0.3− |
| 2003 03 27 | 691 | 0.1+ | 1.3+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2003 03 27 | 691 | 0.3+ | 1.1+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2003 04 09 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | | | | |
| 2003 04 09 | 691 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.6− | 0.1− | | | | |

**(145429)∗ 2005 QO$_{65}$**

Discovered 2005 Aug. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.95291 | | (2000.0) | | +0.97649432 | +0.19028423 |
| $n$ | 0.16967666 | $\omega$ | 137.34111 | | −0.20971883 | +0.94722500 |
| $a$ | 3.2313796 | $\Omega$ | 212.10694 | | +0.04976804 | +0.25798588 |
| $e$ | 0.0740985 | $i$ | 10.98142 | | | |
| $P$ | 5.81 | $H$ | 14.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 19 | 691 | (0.6+ | 3.7−) | 2004 06 22 | 599 | 0.5+ | 0.5+ | 2006 10 23 | G96 | 0.5− | 0.3− |
| 1998 06 19 | 691 | 0.6− | 0.2+ | 2004 06 22 | 599 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 1998 06 19 | 691 | 0.6− | 0.6+ | 2005 08 02 | A50 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2000 11 02 | 704 | 0.6+ | 0.1− | 2005 08 02 | A50 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2000 11 02 | 704 | 0.2+ | 0.2− | 2005 08 27 | 699 | 0.5− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.3+ |
| 2000 11 02 | 704 | 1.5− | 0.2+ | 2005 08 27 | 699 | 0.6− | 0.5+ | 2006 11 13 | 703 | 0.4− | 1.2+ |
| 2000 11 19 | 699 | 1.2+ | 1.4+ | 2005 08 27 | 699 | 1.2− | 0.8+ | 2006 11 13 | 703 | 0.7− | 1.6− |
| 2000 11 19 | 699 | 0.3+ | 0.7+ | 2005 08 27 | 699 | 0.5+ | 0.8+ | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2000 11 19 | 699 | 1.1− | 1.4+ | 2005 08 30 | 699 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.3− | 0.2− |
| 2000 11 19 | 699 | 0.5+ | 0.4+ | 2005 08 30 | 699 | 0.4+ | 0.3− | 2006 11 16 | 691 | 0.4− | 0.1+ |
| 2000 11 27 | 704 | 1.2+ | 0.9+ | 2005 08 30 | 699 | 0.3+ | 0.6+ | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2000 11 27 | 704 | 0.7+ | 0.8+ | 2005 08 30 | 699 | 0.6+ | 0.0 | 2006 11 17 | 704 | 0.3− | 0.2− |
| 2000 11 27 | 704 | 0.1− | 0.2+ | 2005 09 09 | 704 | 0.9+ | 0.5+ | 2006 11 17 | 704 | 0.7− | 0.9+ |
| 2000 11 27 | 704 | 0.7+ | 1.2+ | 2005 09 09 | 704 | 1.1− | 1.4+ | 2006 11 17 | 704 | 1.6− | 0.3+ |
| 2000 11 27 | 704 | 0.2− | 0.7+ | 2005 09 09 | 704 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.4+ | 0.3− |
| 2003 03 30 | 699 | 1.5− | 0.3+ | 2005 09 09 | 704 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.3+ |
| 2003 03 30 | 699 | 0.5+ | 0.2− | 2005 09 11 | 699 | 0.4− | 0.5+ | 2006 11 20 | 704 | 0.6− | 0.3+ |
| 2003 03 30 | 699 | 0.2+ | 0.2− | 2005 09 11 | 699 | 0.9+ | 1.4− | 2006 11 20 | 704 | 0.8− | 0.5− |
| 2003 03 30 | 699 | 1.6+ | 1.4− | 2005 09 11 | 699 | 0.5+ | 0.5+ | 2006 11 20 | 704 | 0.5+ | 0.7+ |
| 2003 03 31 | 691 | 0.3+ | 0.9+ | 2005 09 11 | 699 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.8+ | 0.1− |
| 2003 03 31 | 691 | 0.4+ | 0.9+ | 2005 09 29 | 644 | 0.2− | 0.6+ | 2006 11 28 | 704 | (4.4+ | 1.1+) |
| 2003 03 31 | 691 | 0.7+ | 1.0+ | 2005 09 29 | 644 | 0.4− | 0.4+ | 2006 11 28 | 704 | (5.0+ | 0.4+) |
| 2004 05 23 | 704 | 0.3+ | 0.1− | 2005 09 29 | 644 | 0.2− | 0.8+ | 2006 11 28 | 704 | (2.2+ | 0.5+) |
| 2004 05 23 | 704 | 0.3+ | 1.0+ | 2006 10 19 | 703 | 0.7+ | 1.8+ | 2006 11 28 | 704 | 1.0+ | 0.2+ |
| 2004 05 23 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.4+ | 2.0+ | 2006 11 28 | 704 | (2.3+ | 0.4−) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 05 23 | 704 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.6+ | 0.4+ | |
| 2004 05 23 | 704 | 0.1− | 1.1+ | 2006 10 19 | 703 | 0.7+ | 0.3− | |

**(145430)∗ 2005 QH$_{72}$ = 2000 EK**

Discovered 2005 Aug. 29 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 87077)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.53150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26407172 | $\omega$ | 86.79032 | | +0.88378353 | +0.46747312 | |
| $a$ | 2.4061431 | $\Omega$ | 245.33850 | | −0.43750943 | +0.81057264 | |
| $e$ | 0.2158684 | $i$ | 1.25400 | | −0.16586794 | +0.35276179 | |
| $P$ | 3.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 29 | 691 | 0.1+ | 0.2− | 2005 08 27 | 644 | 0.1− | 0.1+ | 2005 09 23 | 699 | 0.1+ | 0.1+ | |
| 1994 11 29 | 691 | 0.1− | 0.2− | 2005 08 27 | 644 | 0.0 | 0.1+ | 2005 09 23 | 699 | 0.1+ | 0.4+ | |
| 1994 11 29 | 691 | 0.1+ | 0.0 | 2005 08 29 | 699 | 0.5+ | 0.3+ | 2005 09 23 | 699 | 0.5− | 0.2− | |
| 2000 03 02 | 684 | 0.9+ | 0.3+ | 2005 08 29 | 699 | 0.1+ | 0.2+ | 2005 10 01 | 703 | 0.4− | 0.4+ | |
| 2000 03 02 | 684 | 1.2+ | 0.4+ | 2005 08 29 | 699 | 0.4+ | 0.7− | 2005 10 01 | 703 | 0.3− | 0.3− | |
| 2000 03 03 | 684 | 0.4+ | 0.4+ | 2005 08 30 | 704 | 0.4− | 0.7+ | 2005 10 01 | 703 | 0.8− | 1.1− | |
| 2000 03 03 | 684 | 0.9+ | 0.2− | 2005 08 30 | 704 | 0.0 | 0.0 | 2005 10 01 | 703 | 0.4+ | 0.7− | |
| 2000 03 10 | 691 | 0.1− | 0.3− | 2005 08 30 | 704 | 0.5− | 0.2− | 2005 10 02 | 704 | 0.1+ | 0.6+ | |
| 2000 03 10 | 691 | 0.2− | 0.0 | 2005 08 30 | 704 | 0.3− | 0.2+ | 2005 10 02 | 704 | 0.3+ | 0.1− | |
| 2000 03 10 | 691 | 0.3− | 0.1− | 2005 08 30 | 704 | 0.3− | 0.2+ | 2005 10 02 | 704 | 0.2− | 0.4+ | |
| 2001 06 16 | 704 | 0.1− | 0.5+ | 2005 08 31 | 691 | 0.3+ | 0.1+ | 2005 10 07 | 704 | 0.5− | 0.0 | |
| 2001 06 16 | 704 | 0.2− | 0.5+ | 2005 08 31 | 691 | 0.2+ | 0.1− | 2005 10 07 | 704 | 0.9− | 0.2+ | |
| 2001 06 16 | 704 | 0.5− | 0.2− | 2005 08 31 | 691 | 0.5+ | 0.0 | 2005 10 07 | 704 | 0.5− | 0.6+ | |
| 2001 06 16 | 704 | 0.2− | 0.1− | 2005 09 08 | 704 | 0.1− | 0.5+ | 2005 10 07 | 704 | 1.3− | 0.4− | |
| 2003 01 08 | 735 | 0.1+ | 0.2− | 2005 09 08 | 704 | 0.2− | 0.9+ | 2005 10 20 | 644 | 0.0 | 0.2+ | |
| 2003 01 08 | 735 | 0.0 | 0.3+ | 2005 09 08 | 704 | 0.7− | 0.6+ | 2005 10 20 | 644 | 0.1− | 0.2+ | |
| 2004 03 13 | 644 | 0.3+ | 0.6+ | 2005 09 08 | 704 | 0.2− | 0.5+ | 2005 10 20 | 644 | 0.1− | 0.4+ | |
| 2004 03 13 | 644 | 0.4+ | 0.5+ | 2005 09 08 | 704 | 0.3− | 0.3+ | 2005 11 29 | G96 | 0.2− | 0.5+ | |
| 2004 03 13 | 644 | 0.4+ | 0.9+ | 2005 09 09 | 704 | 0.1+ | 0.2+ | 2005 11 29 | G96 | 0.4+ | 1.3− | |
| 2004 03 18 | 704 | 1.0+ | 0.5+ | 2005 09 09 | 704 | 0.1+ | 0.4+ | 2005 11 29 | G96 | 0.3− | 0.1+ | |
| 2004 03 18 | 704 | (3.2+ | 1.0+) | 2005 09 09 | 704 | 0.2− | 0.3+ | 2005 11 29 | G96 | 0.0 | 0.2+ | |
| 2004 03 18 | 704 | 0.9+ | 0.7+ | 2005 09 09 | 704 | 0.0 | 0.3+ | 2005 12 01 | 704 | 1.4+ | 0.4− | |
| 2004 03 18 | 704 | 0.6− | 0.4− | 2005 09 09 | 704 | 0.0 | 0.1+ | 2005 12 01 | 704 | (0.3− | 2.0+) | |
| 2004 03 18 | 704 | 0.4+ | 0.1− | 2005 09 11 | 608 | 0.3− | 1.2+ | 2005 12 01 | 704 | 0.4+ | 0.9+ | |
| 2004 04 12 | 699 | 0.4− | 1.2− | 2005 09 11 | 608 | 0.6− | 1.3+ | 2005 12 04 | G96 | 0.2+ | 0.1− | |
| 2004 04 12 | 699 | 1.1+ | 0.4− | 2005 09 11 | 608 | 0.0 | 0.8+ | 2005 12 04 | G96 | 0.3− | 0.1+ | |
| 2004 04 12 | 691 | 0.1+ | 0.3+ | 2005 09 14 | 691 | 0.1+ | 0.2+ | 2005 12 04 | G96 | 0.1+ | 0.0 | |
| 2004 04 12 | 699 | 0.6− | 1.5+ | 2005 09 14 | 691 | 0.1+ | 0.2+ | 2005 12 04 | G96 | 0.3+ | 0.0 | |
| 2004 04 12 | 691 | 0.2+ | 0.6+ | 2005 09 14 | 691 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.2+ | |
| 2004 04 12 | 699 | 0.3− | 0.7+ | 2005 09 22 | 644 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.3− | |
| 2004 04 12 | 691 | 0.2+ | 0.7+ | 2005 09 22 | 644 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.7+ | 0.2+ | |
| 2005 07 09 | 699 | 0.4− | 0.1+ | 2005 09 22 | 644 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.1+ | |
| 2005 07 09 | 699 | 0.7+ | 0.2− | 2005 09 23 | 703 | 0.4− | 0.5− | 2006 11 24 | 291 | 0.1− | 0.6+ | |
| 2005 07 09 | 699 | 0.9+ | 0.4− | 2005 09 23 | 703 | 0.5− | 0.6− | 2006 11 24 | 291 | 0.2− | 0.8+ | |
| 2005 07 09 | 699 | (1.9+ | 0.1+) | 2005 09 23 | 703 | 0.5− | 0.2− | 2006 11 24 | 291 | 0.1+ | 0.6+ | |
| 2005 08 27 | 644 | 0.0 | 0.1+ | 2005 09 23 | 703 | 0.7− | 0.4− | | | | | |

**(145431)∗ 2005 QZ$_{77}$**

Discovered 2005 Aug. 25 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.46730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21870921 | $\omega$ | 250.15754 | | +0.25136859 | −0.96788764 | |
| $a$ | 2.7282950 | $\Omega$ | 185.28617 | | +0.89866760 | +0.23442973 | |
| $e$ | 0.0553779 | $i$ | 1.68585 | | +0.35945844 | +0.09075361 | |
| $P$ | 4.51 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.2− | 0.2+ | 2001 12 14 | 704 | 0.0 | 0.2+ | 2005 09 29 | G96 | 0.1− | 0.7+ | |
| 1992 11 26 | 691 | 0.0 | 0.3− | 2001 12 14 | 704 | 0.0 | 0.3− | 2005 09 29 | G96 | 0.2− | 1.0+ | |
| 1992 11 26 | 691 | 0.3− | 0.4+ | 2001 12 14 | 704 | 0.6− | 0.1+ | 2005 09 29 | G96 | 0.4+ | 0.7+ | |
| 1999 04 09 | 691 | 0.5− | 0.0 | 2003 01 31 | 291 | 0.2+ | 0.6+ | 2005 10 25 | 701 | 0.7− | 0.8+ | |
| 1999 04 09 | 691 | (4.3+ | 3.8−) | 2003 01 31 | 291 | 0.1+ | 0.2+ | 2005 10 25 | 701 | 1.3− | 1.1− | |
| 1999 04 09 | 691 | 0.2− | 0.4+ | 2003 01 31 | 291 | 0.0 | 0.3+ | 2005 10 25 | 701 | (1.6+ | 3.5+) | |
| 1999 04 18 | 691 | 0.5+ | 0.3− | 2003 03 31 | 691 | 0.3− | 0.5+ | 2005 11 25 | G96 | 0.2− | 0.1− | |
| 1999 04 18 | 691 | 0.4+ | 0.1+ | 2003 03 31 | 691 | 0.0 | 0.3+ | 2005 11 25 | G96 | 0.7− | 0.1+ | |
| 1999 04 18 | 691 | 0.6+ | 0.1+ | 2003 03 31 | 691 | 0.0 | 0.4+ | 2005 11 25 | G96 | 0.1− | 0.4− | |
| 2001 10 23 | 704 | (0.7+ | 1.6+) | 2005 08 25 | 644 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.0 | 0.2− | |
| 2001 10 23 | 704 | 1.5+ | 1.2+ | 2005 08 25 | 644 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.2− | 0.6− | |
| 2001 10 23 | 704 | 1.0+ | 0.7− | 2005 08 25 | 644 | 0.5− | 0.5+ | 2006 10 29 | G96 | 0.4− | 0.1− | |
| 2001 11 21 | 704 | 0.3+ | 0.2− | 2005 08 31 | 691 | 0.2+ | 0.5+ | 2006 10 29 | G96 | 0.4+ | 0.0 | |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2005 08 31 | 691 | 0.1− | 0.4+ | 2006 10 29 | G96 | 0.2+ | 0.2− | |
| 2001 11 21 | 704 | 0.8+ | 0.1− | 2005 08 31 | 691 | 0.3− | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.5− | |
| 2001 11 21 | 704 | 0.7+ | 0.0 | 2005 09 14 | 691 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.3− | |
| 2001 11 21 | 704 | 0.3+ | 0.7+ | 2005 09 14 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.4− | |
| 2001 12 14 | 704 | 0.2+ | 0.8+ | 2005 09 14 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.4− | 0.5− | |
| 2001 12 14 | 704 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.3+ | 0.7+ | | | | | |

**(145432)∗ 2005 QJ$_{78}$ = 2236 P-L**

Discovered 2005 Aug. 25 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 87083)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.15874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28428275 | $\omega$ | 196.40424 | | +0.60505538 | −0.79588777 | |
| $a$ | 2.2907043 | $\Omega$ | 216.37100 | | +0.73453216 | +0.56850990 | |
| $e$ | 0.1513241 | $i$ | 2.09655 | | +0.30719782 | +0.20822859 | |
| $P$ | 3.47 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.0+ | 0.3− | 2005 08 25 | 644 | 0.1+ | 0.0 | 2005 09 29 | 699 | 0.2− | 1.5+ | |
| 1960 09 24 | 675 | 1.0− | 0.7− | 2005 08 25 | 644 | 0.1− | 0.0 | 2005 10 22 | 703 | 0.7− | 0.3− | |
| 1960 09 26 | 675 | 0.9+ | 0.5+ | 2005 08 25 | 644 | 0.2− | 0.2+ | 2005 10 22 | 703 | 0.2+ | 0.9− | |
| 1960 09 26 | 675 | 0.9+ | 0.4− | 2005 08 30 | 704 | 0.8− | 0.8+ | 2005 10 22 | 703 | 0.4− | 0.5− | |
| 1960 09 28 | 675 | 0.5− | 0.6− | 2005 08 30 | 704 | 0.2+ | 0.3+ | 2005 10 22 | 703 | 1.1− | 1.2+ | |
| 1960 09 28 | 675 | 2.3− | 0.0 | 2005 08 30 | 704 | 1.2+ | 0.5+ | 2005 10 27 | G96 | 0.1− | 0.4− | |
| 1960 09 29 | 675 | 0.5− | 0.9+ | 2005 08 31 | 691 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.2− | 0.2− | |
| 1960 09 29 | 675 | 1.5+ | 0.8+ | 2005 08 31 | 691 | 0.3− | 0.1− | 2005 10 27 | G96 | 0.8− | 0.3− | |
| 2002 12 11 | 704 | 0.1− | 1.4+ | 2005 08 31 | 691 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.3− | 0.4− | |
| 2002 12 11 | 704 | 0.5+ | 0.3+ | 2005 09 14 | 691 | 0.1+ | 0.1− | 2005 11 29 | G96 | 1.3+ | 0.3− | |
| 2002 12 11 | 704 | 0.4− | 1.1+ | 2005 09 14 | 691 | 0.2+ | 0.1+ | 2005 11 29 | G96 | 0.0 | 0.1+ | |
| 2003 01 04 | 704 | 0.9+ | 0.0 | 2005 09 14 | 691 | 0.1+ | 0.1− | 2005 11 29 | G96 | 0.2− | 0.3+ | |
| 2003 01 04 | 704 | 0.3+ | 0.7− | 2005 09 22 | 644 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.7+ | 0.3+ | |
| 2003 01 04 | 704 | 1.0− | 0.2− | 2005 09 22 | 644 | 0.4+ | 0.0 | 2005 12 02 | G96 | 0.1+ | 0.1+ | |
| 2003 01 04 | 704 | 0.0 | 0.7− | 2005 09 22 | 644 | 0.2+ | 0.0 | 2005 12 02 | G96 | 0.3− | 0.1+ | |
| 2004 05 13 | 691 | 0.2+ | 0.3+ | 2005 09 29 | 699 | 0.2+ | 0.2− | 2005 12 02 | G96 | 0.5+ | 0.1− | |
| 2004 05 13 | 691 | 0.1− | 0.0 | 2005 09 29 | 699 | 0.5+ | 0.1+ | 2005 12 02 | G96 | 0.1+ | 0.1+ | |
| 2004 05 13 | 691 | 0.0 | 0.0 | 2005 09 29 | 699 | 0.1− | 0.6− | | | | | |

**(145433)∗ 2005 QU$_{79}$ = 2002 AT$_{200}$**

Discovered 2005 Aug. 27 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 100968)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.96205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16966309 | $\omega$ | 67.33426 | | +0.58986033 | +0.79707858 | |
| $a$ | 3.2315519 | $\Omega$ | 239.45507 | | −0.78500616 | +0.52847302 | |
| $e$ | 0.0350677 | $i$ | 8.63782 | | −0.18928846 | +0.29220200 | |
| $P$ | 5.81 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 27 | 691 | 0.3− | 0.6+ | 2005 05 16 | 291 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.5+ | |
| 1998 06 27 | 691 | 0.6− | 0.9+ | 2005 05 16 | 291 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 1.2− | 0.1+ | |
| 1998 06 27 | 691 | 0.6− | 0.3− | 2005 05 16 | 291 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 1.1− | |
| 2000 10 03 | 704 | 0.9+ | 0.4+ | 2005 08 27 | 699 | 0.1− | 0.5− | 2006 11 13 | 691 | 0.2+ | 0.1+ | |
| 2000 10 03 | 704 | 0.0 | 0.1+ | 2005 08 27 | 699 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.3+ | |
| 2000 10 03 | 704 | 0.1+ | 0.4+ | 2005 08 27 | 699 | 0.1− | 1.3+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.1+ | 0.2+ | 2005 08 27 | 699 | 0.4− | 0.7+ | 2006 11 13 | 644 | 0.3− | 0.0 | | |
| 2000 10 03 | 704 | 0.3− | 0.9+ | 2005 08 31 | 704 | 0.0 | 0.6+ | 2006 11 13 | 644 | 0.4+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.1+ | 0.3− | 2005 08 31 | 704 | 0.4− | 1.2+ | 2006 11 13 | 644 | 0.3− | 0.1+ | | |
| 2000 10 03 | 704 | 0.1+ | 0.5+ | 2005 08 31 | 704 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.3+ | | |
| 2000 10 03 | 704 | 1.9+ | 0.4+ | 2005 09 09 | 704 | 0.1− | 1.0+ | 2006 11 16 | 691 | 0.2+ | 0.0 | | |
| 2000 10 03 | 704 | 0.7+ | 0.2− | 2005 09 09 | 704 | 1.8− | 1.3+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | | |
| 2000 11 03 | 704 | 0.5+ | 0.4− | 2005 09 09 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.5− | | |
| 2000 11 03 | 704 | 0.3+ | 0.1+ | 2005 09 09 | 704 | 0.0 | 0.7− | 2006 11 21 | 704 | 0.5− | 0.2− | | |
| 2000 11 03 | 704 | 0.2+ | 0.5+ | 2005 09 09 | 704 | 1.1+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.1− | | |
| 2000 11 03 | 704 | 0.0 | 0.8+ | 2005 09 11 | 699 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.9− | 0.6+ | | |
| 2000 11 03 | 704 | 0.1− | 0.8+ | 2005 09 11 | 699 | 0.2− | 0.4+ | 2006 11 21 | 704 | 1.5− | 0.4+ | | |
| 2002 01 09 | 704 | (2.2+ | 0.3−) | 2005 09 11 | 699 | 0.8+ | 0.2− | 2006 11 22 | 704 | 0.7+ | 0.3+ | | |
| 2002 01 09 | 704 | (2.8+ | 0.1−) | 2005 09 11 | 699 | 0.9− | 0.4− | 2006 11 22 | 704 | 0.0 | 0.6+ | | |
| 2002 01 09 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.8− | 0.0 | | |
| 2003 03 28 | 691 | 0.8+ | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3+ | | |
| 2003 03 28 | 699 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.6+ | | |
| 2003 03 28 | 699 | 0.1+ | 1.1− | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 27 | G96 | 0.3− | 0.3− | | |
| 2003 03 28 | 691 | 0.6+ | 1.2+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2− | | |
| 2003 03 28 | 699 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.4− | | |
| 2003 03 28 | 691 | 0.6+ | 1.0+ | 2006 10 21 | 691 | 0.6− | 0.3+ | 2006 11 27 | 703 | 1.1− | 1.5+ | | |
| 2003 03 28 | 699 | 0.8+ | 0.5− | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.3− | | |
| 2003 04 04 | 699 | 0.4− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.3− | 0.2+ | | |
| 2003 04 04 | 699 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.2+ | 0.6+ | | |
| 2003 04 04 | 699 | 0.5+ | 1.1+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.6+ | 0.4+ | | |
| 2003 04 04 | 699 | (2.4+ | 0.2+) | 2006 11 09 | 691 | 0.3− | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.4− | | |
| 2004 06 18 | 704 | 1.8+ | 0.8+ | 2006 11 09 | 691 | 0.4− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.6− | | |
| 2004 06 18 | 704 | 0.1+ | 0.1− | 2006 11 09 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.2− | | |
| 2004 06 18 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.5− | | |

**(145434)∗ 2005 QV$_{84}$**

Discovered 2005 Aug. 30 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 261.48878 | | (2000.0) | | | |
| $n$ | 0.25591686 | $\omega$ | 228.96126 | | −0.99342159 | +0.09088567 |
| $a$ | 2.4569904 | $\Omega$ | 316.12073 | | −0.04859058 | −0.88542735 |
| $e$ | 0.0413729 | $i$ | 5.76840 | | −0.10369425 | −0.45580500 |
| $P$ | 3.85 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | 0.2+ | 0.6− | 2002 12 11 | 704 | 1.2+ | 1.0+ | 2005 08 31 | 691 | 0.0 | 0.2− | | |
| 2000 04 26 | 699 | 0.5+ | 0.3+ | 2002 12 11 | 704 | 0.4+ | 1.2+ | 2005 08 31 | 691 | 0.2− | 0.1− | | |
| 2000 04 26 | 699 | 0.1+ | 0.7+ | 2003 01 09 | 704 | 0.3+ | 0.0 | 2005 08 31 | 691 | 0.2− | 0.1− | | |
| 2000 04 26 | 699 | 0.1− | 0.1− | 2003 01 09 | 704 | 0.0 | 0.1− | 2005 09 14 | 691 | 0.1− | 0.2+ | | |
| 2001 08 23 | 699 | 0.1+ | 0.5+ | 2003 01 09 | 704 | 0.3− | 0.0 | 2005 09 14 | 691 | 1.0+ | 0.8+ | | |
| 2001 08 23 | 699 | 0.7− | 1.1+ | 2004 05 19 | E12 | (0.4− | 1.8+) | 2005 09 14 | 691 | 0.1− | 0.0 | | |
| 2001 08 23 | 699 | 0.8− | 0.0 | 2004 05 19 | E12 | (1.1+ | 3.0+) | 2005 10 01 | 703 | (0.5+ | 1.7−) | | |
| 2001 08 23 | 699 | 0.1− | 0.6+ | 2004 05 19 | E12 | 0.4+ | 1.3+ | 2005 10 01 | 703 | 1.4− | 0.0 | | |
| 2001 09 12 | 704 | 0.8− | 1.0− | 2004 05 19 | E12 | (0.6− | 2.2+) | 2005 10 01 | 703 | (1.6− | 0.4+) | | |
| 2001 09 12 | 704 | 0.5− | 0.9− | 2005 08 09 | A50 | 0.2− | 0.1− | 2005 10 01 | 703 | 0.4− | 0.7− | | |
| 2001 09 12 | 704 | (1.2+ | 2.0−) | 2005 08 09 | A50 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.0 | 0.3− | | |
| 2001 09 20 | 704 | 0.9− | 1.0+ | 2005 08 26 | 699 | 0.3+ | 0.7− | 2006 10 02 | 691 | 0.1− | 0.1− | | |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2005 08 26 | 699 | 0.6− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2005 08 26 | 699 | 1.4+ | 0.7+ | 2006 11 02 | G96 | 0.5− | 0.3− | | |
| 2001 09 20 | 704 | 0.4+ | 1.1− | 2005 08 26 | 699 | 0.0 | 1.5+ | 2006 11 02 | G96 | 0.9− | 0.2− | | |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2005 08 30 | 704 | 0.2+ | 0.2− | 2006 11 02 | G96 | 0.3− | 0.3− | | |
| 2002 12 11 | 704 | (0.6+ | 1.8+) | 2005 08 30 | 704 | 0.8+ | 0.4− | 2006 11 02 | G96 | 0.7− | 0.3− | | |
| 2002 12 11 | 704 | 0.0 | 1.5+ | 2005 08 30 | 704 | 0.1+ | 0.9− | | | | | | |

**(145435)∗ 2005 QU$_{87}$**

Discovered 2005 Aug. 27 by W. Bickel at Bergisch Gladbach.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.17809 | | (2000.0) | | | |
| $n$ | 0.18139298 | $\omega$ | 49.23845 | | +0.17108534 | +0.97824721 |
| $a$ | 3.0906921 | $\Omega$ | 231.00494 | | −0.94332568 | +0.12827293 |
| $e$ | 0.0754368 | $i$ | 8.68154 | | −0.28437030 | +0.16302899 |
| $P$ | 5.43 | $H$ | 14.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.2− | 0.1− | 2005 08 31 | 699 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.6− | 0.1− | | |
| 1995 11 14 | 691 | 0.3+ | 0.6− | 2005 08 31 | 699 | 0.7+ | 1.1+ | 2006 11 12 | G96 | 0.4+ | 0.5− | | |
| 1995 11 14 | 691 | 0.1− | 0.1+ | 2005 08 31 | 621 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.6− | | |
| 1995 12 16 | 691 | 0.0 | 0.3− | 2005 08 31 | 621 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 1995 12 16 | 691 | 0.1− | 0.0 | 2005 08 31 | 621 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.2− | | |
| 1995 12 16 | 691 | 0.0 | 0.0 | 2005 09 09 | 704 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 1995 12 28 | 691 | 0.1+ | 0.1+ | 2005 09 09 | 704 | 0.5− | 0.7+ | 2006 11 16 | 691 | 0.5− | 0.4− | | |
| 1995 12 28 | 691 | 0.0 | 0.2− | 2005 09 09 | 704 | 0.3+ | 0.9+ | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 1995 12 28 | 691 | 0.2+ | 0.3+ | 2005 09 23 | 644 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.3− | | |
| 1999 07 13 | 704 | 0.3+ | 0.4− | 2005 09 23 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 1999 07 13 | 704 | 0.1+ | 0.2− | 2005 09 23 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.3− | | |
| 1999 07 13 | 704 | 0.6+ | 0.4− | 2005 09 24 | 703 | 0.1+ | 0.8+ | 2006 11 19 | H07 | 0.4− | 0.3+ | | |
| 1999 07 13 | 704 | 0.1− | 0.7− | 2005 09 24 | 703 | 1.1− | 0.6− | 2006 11 19 | H07 | 0.7+ | 0.5+ | | |
| 2000 11 01 | 704 | 0.6− | 0.9+ | 2005 09 24 | 703 | (1.8− | 0.7−) | 2006 11 19 | H07 | 0.6+ | 1.0+ | | |
| 2000 11 01 | 704 | 0.1− | 0.3− | 2005 09 24 | 703 | 0.6+ | 1.1− | 2006 11 19 | H07 | 0.2− | 1.3− | | |
| 2000 11 01 | 704 | 0.4− | 0.7+ | 2005 10 01 | 703 | (1.1+ | 1.6+) | 2006 11 20 | 691 | 0.2+ | 0.1− | | |
| 2000 11 01 | 704 | 0.1− | 0.6+ | 2005 10 01 | 703 | 0.2+ | 0.8− | 2006 11 20 | 691 | 0.3+ | 0.1+ | | |
| 2000 11 01 | 704 | 0.1− | 0.6− | 2005 10 01 | 699 | (0.8− | 2.2−) | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2004 06 16 | 704 | 0.5− | 1.1− | 2005 10 01 | 703 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.1− | 0.0 | | |
| 2004 06 16 | 704 | 0.9− | 0.3+ | 2005 10 01 | 703 | 1.3− | 0.3− | 2006 11 24 | 691 | 0.1− | 0.2+ | | |
| 2004 06 16 | 704 | 0.8+ | 0.2− | 2005 10 01 | 699 | 0.6+ | 0.7+ | 2006 11 24 | 691 | 0.2− | 0.2+ | | |
| 2004 06 16 | 704 | 0.2+ | 1.2+ | 2005 10 01 | 699 | 0.0 | 0.3− | 2006 11 29 | 704 | 1.1+ | 1.0+ | | |
| 2005 08 27 | 621 | 0.1− | 0.4− | 2005 10 01 | 699 | 1.3− | 0.2+ | 2006 11 29 | 704 | 0.3− | 1.0+ | | |
| 2005 08 28 | 621 | 0.2− | 0.2− | 2005 10 08 | 704 | 0.3− | 0.8+ | 2006 11 29 | 704 | 0.2− | 0.5+ | | |
| 2005 08 28 | 621 | 0.1− | 0.1− | 2005 10 08 | 704 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.3+ | | |
| 2005 08 29 | 621 | 0.4+ | 0.2− | 2005 10 08 | 704 | 0.8+ | 0.3− | 2006 11 29 | 704 | 0.1− | 0.9+ | | |
| 2005 08 29 | 621 | 0.6+ | 0.1− | 2005 10 21 | 644 | 0.0 | 0.2+ | 2006 12 01 | 448 | 0.0 | 0.5− | | |
| 2005 08 29 | 621 | 0.7+ | 0.0 | 2005 10 21 | 644 | 0.0 | 0.0 | 2006 12 01 | 448 | 0.1+ | 0.0 | | |
| 2005 08 29 | 644 | 0.3− | 0.1+ | 2005 10 21 | 644 | 0.1+ | 0.4+ | 2006 12 01 | 448 | 0.5+ | 0.1+ | | |
| 2005 08 29 | 644 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 12 01 | G96 | 0.1− | 0.4− | | |
| 2005 08 29 | 644 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| 2005 08 29 | 621 | 0.5+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.5− | 0.2− | | |
| 2005 08 29 | 621 | 0.2+ | 0.5− | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.4− | | |
| 2005 08 29 | 621 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.4− | 0.1− | 2006 12 02 | 448 | 0.2− | 0.5+ | | |
| 2005 08 31 | 699 | (1.9+ | 3.5−) | 2006 10 31 | G96 | 0.0 | 0.2+ | 2006 12 02 | 448 | 0.1+ | 0.1− | | |
| 2005 08 31 | 699 | 0.5− | 0.6+ | 2006 10 31 | G96 | 0.4− | 0.2− | 2006 12 02 | 448 | 0.3− | 0.1+ | | |

**(145436)∗ 2005 QF$_{90}$**

Discovered 2005 Aug. 25 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.16001 | | (2000.0) | | | |
| $n$ | 0.19868402 | $\omega$ | 112.76253 | | +0.40455973 | −0.91250699 |
| $a$ | 2.9086676 | $\Omega$ | 313.22840 | | +0.80563522 | +0.38692924 |
| $e$ | 0.0885591 | $i$ | 4.76432 | | +0.43276243 | +0.13272815 |
| $P$ | 4.96 | $H$ | 15.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.4+ | 0.9− | 2003 04 05 | 691 | 0.1+ | 0.3− | 2006 11 17 | 644 | 0.1+ | 0.1− | | |
| 2001 11 12 | 704 | 0.6+ | 0.5+ | 2005 07 28 | 644 | 0.6− | 0.6+ | 2006 11 17 | 644 | 0.1+ | 0.3− | | |
| 2001 11 12 | 704 | 1.0+ | 0.1+ | 2005 07 28 | 644 | 0.5− | 0.8+ | 2006 11 19 | 704 | 0.6+ | 0.2− | | |
| 2001 11 24 | 704 | 0.0 | 1.0+ | 2005 07 28 | 644 | 0.3− | 1.1+ | 2006 11 19 | 704 | 0.4− | 1.5+ | | |
| 2001 11 24 | 704 | 0.4+ | 1.0+ | 2005 08 06 | 644 | 0.4− | 0.9+ | 2006 11 19 | 704 | (1.0+ | 2.3+) | | |
| 2001 11 24 | 704 | 1.3− | 0.9+ | 2005 08 06 | 644 | 0.4− | 0.9+ | 2006 11 21 | 691 | 0.1− | 0.2− | | |
| 2001 11 24 | 704 | 0.1− | 0.9+ | 2005 08 06 | 644 | 0.4− | 1.2+ | 2006 11 21 | 691 | 0.0 | 0.3− | | |
| 2001 11 24 | 704 | 0.1+ | 0.6+ | 2005 08 25 | 644 | 0.3− | 1.0+ | 2006 11 21 | 691 | 0.2+ | 0.1− | | |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2005 08 25 | 644 | 0.3− | 0.9+ | 2006 11 22 | 704 | (1.5+ | 0.1−) | | |
| 2001 12 17 | 704 | 0.0 | 0.0 | 2005 08 25 | 644 | 0.2− | 0.7+ | 2006 11 22 | 704 | 0.3+ | 0.2− | | |
| 2001 12 17 | 704 | 0.9− | 1.4+ | 2005 08 27 | 644 | 0.4− | 1.0+ | 2006 11 22 | 704 | 0.3− | 0.8− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.5− | 0.7+ | 2005 08 27 | 644 | 0.3− | 0.9+ | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2002 01 14 | 704 | 0.7− | 1.1+ | 2005 08 27 | 644 | 0.4− | 1.0+ | 2006 11 23 | 644 | 0.2+ | 0.5− |
| 2002 01 14 | 704 | 0.5− | 1.1+ | 2006 10 27 | 703 | 0.4− | 0.5− | 2006 11 23 | 644 | 0.1+ | 0.1− |
| 2002 01 14 | 704 | 0.8− | 1.2+ | 2006 10 27 | 703 | 0.8+ | 1.0+ | 2006 11 23 | 644 | 0.5+ | 0.2− |
| 2002 01 14 | 704 | 0.5− | 0.8+ | 2006 10 27 | 703 | 0.4+ | 1.0− | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2003 03 09 | 704 | 1.0+ | 0.4+ | 2006 10 27 | 703 | 1.2− | 0.7− | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2003 03 09 | 704 | 0.7+ | 1.5+ | 2006 11 15 | 704 | 0.6+ | 1.2+ | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2003 03 09 | 704 | 1.2+ | 0.3+ | 2006 11 15 | 704 | (0.0 | 1.9+) | 2006 11 27 | 704 | 0.3+ | 0.4− |
| 2003 03 27 | 691 | 0.3+ | 1.2+ | 2006 11 15 | 704 | (2.6− | 0.2+) | 2006 11 27 | 704 | 1.5− | 1.1+ |
| 2003 03 27 | 691 | 0.0 | 1.1+ | 2006 11 17 | 691 | 0.1− | 0.1− | 2006 11 27 | 704 | 1.7− | 0.2+ |
| 2003 03 27 | 691 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.3+ | 0.1− | 2006 11 27 | 704 | 1.1− | 1.8− |
| 2003 04 05 | 691 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.1− | | | | |
| 2003 04 05 | 691 | 0.2+ | 0.1− | 2006 11 17 | 644 | 0.4+ | 0.2+ | | | | |

**(145437)∗ 2005 QC$_{94}$**

Discovered 2005 Aug. 26 by NEAT at Haleakala.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.63062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12350990 | $\omega$ | 239.89372 | | +0.67230764 | | +0.73442709 |
| $a$ | 3.9933269 | $\Omega$ | 72.65546 | | −0.64131500 | | +0.64047931 |
| $e$ | 0.1834460 | $i$ | 5.58156 | | −0.36975331 | | +0.22450635 |
| $P$ | 7.98 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 06 | 691 | 0.4+ | 0.8− | 2005 09 24 | 644 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.5− |
| 1995 05 06 | 691 | 0.6− | 0.5− | 2005 09 25 | 703 | 0.7+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.4− |
| 1995 05 06 | 691 | 0.4− | 0.1− | 2005 09 25 | 703 | 1.3+ | 0.1− | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2003 04 04 | 691 | 0.2+ | 0.5+ | 2005 09 25 | 703 | 0.6− | 0.0 | 2006 10 31 | 621 | 0.2− | 0.1− |
| 2003 04 04 | 691 | 0.2+ | 0.7+ | 2005 09 27 | 704 | 0.5+ | 0.8+ | 2006 10 31 | 621 | 0.2+ | 0.2− |
| 2003 04 04 | 691 | 0.5+ | 0.5+ | 2005 09 27 | 704 | 0.4− | 0.5+ | 2006 10 31 | 621 | 0.0 | 0.3− |
| 2003 05 29 | 691 | 0.1+ | 0.1− | 2005 09 27 | 704 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2003 05 29 | 691 | 0.0 | 0.1+ | 2005 09 27 | 704 | 0.4+ | 0.8+ | 2006 11 01 | 691 | 0.4+ | 0.4+ |
| 2003 05 29 | 691 | 0.1− | 0.2+ | 2005 09 27 | 704 | 0.3+ | 1.0− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2005 07 30 | 644 | 0.2− | 0.2− | 2005 10 03 | 703 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.6− | 1.1+ |
| 2005 07 30 | 644 | 0.2− | 0.0 | 2005 10 03 | 703 | 0.2− | 0.8− | 2006 11 11 | 703 | 0.7− | 0.5+ |
| 2005 07 30 | 644 | 0.0 | 0.1+ | 2005 10 03 | 703 | 0.8− | 0.2+ | 2006 11 11 | 703 | 1.5− | 0.4− |
| 2005 08 26 | 608 | 0.3+ | 0.9+ | 2005 10 03 | 703 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.1+ |
| 2005 08 26 | 608 | 0.4+ | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.7+ | 0.5− |
| 2005 08 26 | 608 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 13 | G96 | 1.4+ | 0.8− |
| 2005 08 27 | 644 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2005 08 27 | 644 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2005 08 27 | 644 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2005 09 13 | 703 | 0.7− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2005 09 13 | 703 | 0.8− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.5− | 0.6− |
| 2005 09 13 | 703 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.8+ | 0.4+ |
| 2005 09 13 | 703 | 0.8− | 1.4− | 2006 10 18 | 691 | 0.4+ | 0.2− | 2006 11 18 | 704 | 2.0− | 2.9+ |
| 2005 09 24 | 644 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.1− | 1.7+ |
| 2005 09 24 | 644 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.8− | 1.4+ |

**(145438)∗ 2005 QM$_{94}$ = 1994 RG$_{16}$ = 2000 TN$_{16}$**

Discovered 2005 Aug. 27 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 87101)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.31348 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17906270 | $\omega$ | 168.10509 | | +0.86665118 | | +0.49889661 |
| $a$ | 3.1174485 | $\Omega$ | 161.96601 | | −0.45885845 | | +0.80037164 |
| $e$ | 0.1681909 | $i$ | 0.78312 | | −0.19586898 | | +0.33242655 |
| $P$ | 5.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 03 | 809 | 0.0 | 0.5+ | 2005 06 17 | G96 | 0.1+ | 0.3+ | 2005 10 01 | G96 | 0.0 | 0.4− |
| 1994 09 03 | 809 | 0.2− | 1.1+ | 2005 06 17 | G96 | 0.3− | 0.4+ | 2005 10 01 | G96 | 0.4− | 0.0 |
| 1994 09 03 | 809 | 0.2+ | 1.9+ | 2005 06 17 | G96 | 0.1− | 0.5+ | 2005 10 01 | G96 | 0.3− | 0.1− |
| 1994 09 04 | 809 | 0.4+ | 0.8+ | 2005 07 29 | 644 | 0.2− | 0.3+ | 2005 10 29 | G96 | 0.3− | 0.1− |
| 1994 09 04 | 809 | 0.8− | 0.8+ | 2005 07 29 | 644 | 0.4− | 0.0 | 2005 10 29 | G96 | 0.3+ | 0.1− |
| 1994 09 04 | 809 | 0.5− | 0.7+ | 2005 07 29 | 644 | 0.2− | 0.2+ | 2005 10 29 | G96 | 0.1+ | 0.2− |
| 1997 01 17 | 691 | 0.4+ | 0.1+ | 2005 08 06 | 644 | 0.4− | 0.0 | 2005 10 29 | G96 | 0.3− | 0.5− |
| 1997 01 17 | 691 | 0.2+ | 0.2+ | 2005 08 06 | 644 | 0.4− | 0.0 | 2005 11 25 | G96 | 0.3− | 0.0 |
| 1997 01 17 | 691 | 0.4+ | 0.5− | 2005 08 06 | 644 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.7+ | 0.6− |
| 2000 10 01 | 704 | 0.1− | 1.0− | 2005 08 27 | 644 | 0.2− | 0.1− | 2005 11 25 | G96 | 0.1− | 0.2− |
| 2000 10 01 | 704 | 0.5− | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.1− | 0.3− |
| 2000 10 01 | 704 | 0.3− | 0.0 | 2005 08 27 | 644 | 0.2− | 0.1− | 2005 12 02 | 291 | 0.5+ | 0.2+ |
| 2000 10 01 | 704 | 0.2− | 0.0 | 2005 08 29 | 704 | 0.7+ | 0.6+ | 2005 12 02 | 291 | 0.3+ | 0.4+ |
| 2000 10 01 | 704 | 0.2− | 0.1+ | 2005 08 29 | 704 | 0.0 | 0.4+ | 2005 12 02 | 291 | 0.0 | 0.5+ |
| 2000 10 02 | 704 | 0.9− | 0.5+ | 2005 08 29 | 704 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2000 10 02 | 704 | 0.1− | 0.0 | 2005 08 29 | 704 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 2000 10 02 | 704 | 0.3+ | 1.3+ | 2005 08 29 | 704 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2+ |
| 2000 10 02 | 704 | 1.6− | 0.9− | 2005 08 29 | 699 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2000 10 02 | 704 | 1.0− | 0.2+ | 2005 08 29 | 699 | 0.3− | 0.2− | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2001 12 21 | 691 | 0.2− | 1.2+ | 2005 08 29 | 699 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 12 21 | 691 | 0.4− | 1.4+ | 2005 08 29 | 699 | 0.5− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2001 12 21 | 691 | 0.1− | 1.4+ | 2005 09 07 | 699 | 0.3− | 0.5+ | 2006 11 23 | 691 | 0.4− | 1.3− |
| 2004 05 19 | 691 | 0.4+ | 0.5+ | 2005 09 07 | 699 | (0.3+ | 2.0+) | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 05 19 | 691 | 0.1+ | 0.4+ | 2005 09 07 | 699 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2004 05 19 | 691 | 0.1+ | 0.6+ | 2005 09 07 | 699 | 0.1− | 0.5− | 2006 12 01 | 691 | 0.3+ | 0.1+ |
| 2004 05 28 | 691 | 0.3+ | 0.3+ | 2005 09 30 | 699 | 0.4+ | 1.3+ | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2004 05 28 | 691 | 0.1− | 0.5+ | 2005 09 30 | 699 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2004 05 28 | 691 | 0.3− | 0.6+ | 2005 09 30 | 699 | 0.7− | 0.7− | | | | |
| 2005 06 17 | G96 | 0.2− | 0.6+ | 2005 09 30 | 699 | (1.6− | 0.1+) | | | | |

**(145439)∗ 2005 QQ$_{101}$**

Discovered 2005 Aug. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.58407 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22894666 | $\omega$ | 242.13596 | | −0.89181530 | | +0.43939096 |
| $a$ | 2.6463453 | $\Omega$ | 323.63536 | | −0.32415485 | | −0.78670901 |
| $e$ | 0.1530562 | $i$ | 10.46627 | | −0.31557742 | | −0.43361794 |
| $P$ | 4.30 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.9− | 0.8− | 2002 12 05 | 704 | 0.0 | 0.2− | 2005 08 29 | 691 | 0.1+ | 0.0 |
| 2001 08 27 | 644 | 1.4− | 1.1− | 2002 12 05 | 704 | 0.1− | 0.3+ | 2005 08 29 | 691 | 0.0 | 0.0 |
| 2001 08 27 | 644 | 0.9− | 1.0− | 2003 01 04 | 704 | 0.4+ | 0.1− | 2005 08 29 | 691 | 0.1− | 0.0 |
| 2001 09 10 | 704 | 0.3+ | 1.3+ | 2003 01 04 | 704 | 0.3− | 0.1− | 2005 09 12 | 691 | 0.3− | 0.2− |
| 2001 09 10 | 704 | 0.1+ | 0.6+ | 2003 01 04 | 704 | 0.3− | 0.0 | 2005 09 12 | 691 | 0.0 | 0.1− |
| 2001 09 10 | 704 | (0.4− | 2.1+) | 2003 01 04 | 704 | 0.8+ | 0.2+ | 2005 09 12 | 691 | 0.1+ | 0.2− |
| 2001 09 10 | 704 | 0.2− | 0.6+ | 2003 01 04 | 704 | 0.0 | 0.6+ | 2005 09 27 | 691 | 0.0 | 0.1+ |
| 2001 09 10 | 704 | (0.6− | 1.7+) | 2003 01 31 | 704 | 0.4− | 0.1− | 2005 09 27 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 644 | 0.1+ | 0.5+ | 2003 01 31 | 704 | 0.4− | 0.5+ | 2005 09 27 | 691 | 0.2+ | 0.0 |
| 2001 09 23 | 644 | 0.3+ | 0.2− | 2003 01 31 | 704 | 0.5− | 1.0+ | 2005 10 01 | 699 | (0.6− | 1.7+) |
| 2001 09 23 | 644 | 0.1+ | 0.1+ | 2004 05 15 | 704 | 1.6+ | 0.4− | 2005 10 01 | 699 | 0.3− | 0.5+ |
| 2001 09 25 | 704 | 0.7+ | 0.8+ | 2004 05 15 | 704 | 0.2− | 1.2+ | 2005 10 01 | 699 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.4+ | 0.5+ | 2004 05 15 | 704 | 0.1− | 0.7+ | 2005 10 01 | 699 | 0.3+ | 0.4+ |
| 2001 09 25 | 704 | 0.6+ | 0.4+ | 2004 05 15 | 704 | (1.3+ | 1.7+) | 2005 10 08 | 704 | 0.7+ | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2004 05 15 | 704 | 0.7+ | 1.1+ | 2005 10 08 | 704 | 0.5− | 0.7− |
| 2001 09 29 | 644 | 0.2− | 0.7+ | 2004 07 15 | E12 | 0.0 | 0.4+ | 2005 10 08 | 704 | 1.0+ | 0.7+ |
| 2001 09 29 | 644 | 0.0 | 0.6+ | 2004 07 15 | E12 | 0.1− | 0.4+ | 2005 10 08 | 704 | 0.1− | 0.1− |
| 2001 09 29 | 644 | 0.3− | 0.8+ | 2004 07 15 | E12 | 0.2− | 0.6+ | 2006 11 22 | 703 | 0.4− | 0.5+ |
| 2001 10 26 | 644 | 0.1− | 0.1− | 2004 07 15 | E12 | 0.3− | 0.6+ | 2006 11 22 | 703 | 0.2− | 0.0 |
| 2001 10 26 | 644 | 0.2− | 0.0 | 2005 08 27 | 644 | 0.2− | 0.0 | 2006 11 22 | 703 | 0.4+ | 0.0 |
| 2001 10 26 | 644 | 0.1+ | 0.1− | 2005 08 27 | 644 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.5+ | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 1.0+ | 2005 08 27 | 644 | 0.2− | 0.0 | | | | |

**(145440)∗ 2005 QU$_{143}$ = 1998 KS$_{67}$ = 2003 EA$_{48}$**

Discovered 2005 Aug. 26 by CINEOS at Campo Imperatore.

Id. G. V. Williams (*MPO* 89756)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.78117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17969866 | $\omega$ | 3.62854 | | −0.67642713 | +0.71075512 | |
| $a$ | 3.1100890 | $\Omega$ | 223.94113 | | −0.68254525 | −0.70343563 | |
| $e$ | 0.1294346 | $i$ | 16.15411 | | −0.27672790 | −0.00233947 | |
| $P$ | 5.48 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 0.9− | 0.0 | 2003 05 05 | 699 | 0.4− | 0.6+ | 2006 11 02 | 703 | 0.1+ | 0.7+ | |
| 1998 05 24 | 704 | 0.3+ | 0.8− | 2003 05 05 | 699 | 1.2+ | 0.4+ | 2006 11 02 | 703 | 0.2− | 0.3+ | |
| 1998 05 24 | 704 | 0.9− | 1.8+ | 2003 05 05 | 699 | 0.8− | 0.4+ | 2006 11 02 | 703 | 0.6+ | 0.9− | |
| 1998 05 24 | 704 | 1.6+ | 0.6+ | 2003 05 05 | 699 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.2− | 0.2− | |
| 1998 05 24 | 704 | 0.4− | 0.5+ | 2003 05 05 | 699 | 0.7− | 0.2− | 2006 11 16 | 691 | 0.0 | 0.1+ | |
| 1998 05 28 | 699 | 0.3− | 0.8− | 2003 05 05 | 699 | (2.2+ | 0.3−) | 2006 11 16 | 691 | 0.1+ | 0.0 | |
| 1998 05 28 | 699 | 0.6+ | 0.5+ | 2004 08 09 | 704 | 0.3− | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | |
| 1998 05 28 | 699 | 0.4− | 0.1− | 2004 08 09 | 704 | 0.3+ | 0.3− | 2006 11 20 | 691 | 0.2− | 0.1+ | |
| 2000 11 03 | 704 | 0.4+ | 0.4+ | 2004 08 09 | 704 | 0.5− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.2− | |
| 2000 11 03 | 704 | 0.1− | 0.4− | 2005 08 26 | 599 | 0.2− | 0.4− | 2006 11 20 | 691 | 0.0 | 0.2− | |
| 2000 11 03 | 704 | 0.1− | 1.6+ | 2005 08 26 | 599 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.1+ | |
| 2000 11 03 | 704 | 0.0 | 0.7+ | 2005 08 26 | 599 | 1.0− | 0.6− | 2006 11 20 | 704 | 0.2+ | 0.3− | |
| 2003 03 09 | 699 | 0.6+ | 0.5+ | 2005 08 26 | 599 | 0.8− | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.3− | |
| 2003 03 09 | 699 | 0.2− | 0.1+ | 2005 09 01 | 644 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.7− | 0.7− | |
| 2003 03 09 | 699 | 0.9+ | 0.1− | 2005 09 01 | 644 | 0.1− | 0.5+ | 2006 11 20 | 704 | 1.1− | 0.2+ | |
| 2003 03 09 | 699 | 0.6+ | 0.2+ | 2005 09 01 | 644 | 0.3− | 0.4+ | 2006 11 24 | 691 | 0.2− | 0.2+ | |
| 2003 03 11 | 704 | 0.3+ | 0.3+ | 2005 10 01 | 703 | 0.4+ | 0.1− | 2006 11 24 | 691 | 0.0 | 0.1− | |
| 2003 03 11 | 704 | 1.0+ | 0.9+ | 2005 10 01 | 703 | 0.5− | 0.5− | 2006 11 24 | 691 | 0.1− | 0.1+ | |
| 2003 03 11 | 704 | 0.3+ | 1.1− | 2005 10 01 | 703 | 0.4− | 0.9+ | 2006 11 24 | G96 | 0.2+ | 0.2− | |
| 2003 03 11 | 704 | 0.5− | 0.7− | 2005 10 01 | 703 | 0.3− | 0.5− | 2006 11 24 | G96 | 0.4+ | 0.4− | |
| 2003 04 28 | 704 | 0.0 | 1.4+ | 2005 10 22 | 683 | 0.9+ | 0.1+ | 2006 11 24 | G96 | 0.5+ | 0.2− | |
| 2003 04 28 | 704 | 0.1− | 0.2− | 2005 10 22 | 683 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.2− | |
| 2003 04 28 | 704 | 0.5− | 0.3+ | 2005 10 22 | 683 | 1.1+ | 0.2+ | 2006 11 28 | 704 | 0.4− | 1.3+ | |
| 2003 04 28 | 704 | 0.0 | 0.6− | 2005 10 23 | 683 | 0.7+ | 1.2+ | 2006 11 28 | 704 | 0.1− | 0.3+ | |
| 2003 05 05 | 699 | 0.1+ | 0.6+ | 2005 10 23 | 683 | (1.4− | 1.8+) | 2006 11 28 | 704 | 0.8− | 0.9+ | |
| 2003 05 05 | 699 | 0.4− | 0.4+ | 2005 10 23 | 683 | 0.4+ | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.5+ | |

**(145441)∗ 2005 QY$_{157}$**

Discovered 2005 Aug. 26 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.76773 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18442714 | $\omega$ | 289.21857 | | +0.65179152 | −0.73725687 | |
| $a$ | 3.0567001 | $\Omega$ | 118.79109 | | +0.74945844 | +0.59025839 | |
| $e$ | 0.1423243 | $i$ | 11.70677 | | +0.11610282 | +0.32870555 | |
| $P$ | 5.34 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 03 | 691 | 0.1− | 0.2+ | 2002 01 14 | 704 | 0.0 | 0.7+ | 2005 08 06 | E12 | 0.7− | 1.5+ | |
| 1998 05 03 | 691 | 0.1− | 0.0 | 2002 01 14 | 704 | 0.2− | 0.4+ | 2005 08 06 | E12 | 0.4+ | 0.2+ | |
| 1998 05 03 | 691 | 0.3+ | 0.3+ | 2002 01 25 | 704 | 0.2− | 0.1− | 2005 08 26 | 644 | 0.1+ | 0.6+ | |
| 2000 10 02 | 699 | (2.6+ | 0.1−) | 2002 01 25 | 704 | 0.9+ | 1.0− | 2005 08 26 | 644 | 0.2+ | 0.8+ | |
| 2000 10 02 | 699 | 1.4+ | 0.8+ | 2002 01 25 | 704 | 0.3+ | 0.3+ | 2005 08 26 | 644 | 0.1+ | 0.9+ | |
| 2000 10 02 | 699 | 0.5+ | 0.1− | 2002 02 07 | 704 | 1.0− | 0.5+ | 2005 08 31 | 644 | 0.0 | 0.3+ | |
| 2000 10 02 | 699 | 1.7− | 1.6+ | 2002 02 07 | 704 | 0.2− | 0.8− | 2005 08 31 | 644 | 0.1+ | 0.4+ | |
| 2000 10 05 | 608 | 0.3− | 0.9− | 2002 02 07 | 704 | 0.7− | 0.3+ | 2005 08 31 | 644 | 0.0 | 0.5+ | |
| 2000 10 05 | 608 | 0.4+ | 1.2− | 2002 02 07 | 704 | 0.2− | 0.4+ | 2005 09 25 | 703 | 0.4+ | 0.3− | |
| 2000 10 05 | 608 | 0.6+ | 0.6− | 2002 02 07 | 704 | 0.4− | 1.0+ | 2005 09 25 | 703 | 0.3− | 0.4+ | |
| 2000 11 20 | 699 | 0.9− | 0.1− | 2002 02 20 | 704 | 0.6+ | 0.0 | 2005 09 25 | 703 | 0.1− | 1.2− | |
| 2000 11 20 | 699 | 0.9+ | 0.5+ | 2002 02 20 | 704 | 0.7+ | 0.5+ | 2005 09 25 | 703 | 0.8− | 1.1− | |
| 2000 11 20 | 699 | 1.4− | 0.5+ | 2002 02 20 | 704 | 0.2+ | 0.8+ | 2005 10 02 | E12 | 1.6− | 0.7− | |
| 2000 11 20 | 699 | 0.6+ | 0.3− | 2002 02 20 | 704 | 1.0+ | 0.1+ | 2005 10 02 | E12 | 0.2+ | 0.6+ | |
| 2002 01 14 | 704 | 0.3+ | 1.0+ | 2002 02 20 | 704 | 0.7+ | 0.0 | 2005 10 02 | E12 | 1.0+ | 1.0+ | |
| 2002 01 14 | 704 | 0.4− | 0.5+ | 2005 08 06 | E12 | 0.2− | 0.7+ | 2005 10 02 | E12 | 0.7− | 0.2− | |
| 2002 01 14 | 704 | 0.7− | 0.3− | 2005 08 06 | E12 | 0.3+ | 0.3+ | | | | | |

**(145442)∗ 2005 QB$_{160}$ = 2002 AR$_{37}$ = 2004 ME$_{8}$**

Discovered 2005 Aug. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 87140)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.29924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18998307 | $\omega$ | 120.30648 | | −0.69194830 | +0.69737596 | |
| $a$ | 2.9968116 | $\Omega$ | 104.64900 | | −0.71077306 | −0.61271870 | |
| $e$ | 0.0437014 | $i$ | 11.12915 | | −0.12652749 | −0.37180984 | |
| $P$ | 5.19 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 1.3− | 0.6+ | 2003 03 08 | 644 | 0.0 | 0.7+ | 2005 08 28 | 699 | 1.0+ | 1.2+ | |
| 2000 09 24 | 699 | 0.5+ | 0.6− | 2003 03 08 | 644 | 0.1+ | 0.6+ | 2005 08 28 | 699 | 0.8+ | 0.8+ | |
| 2000 09 24 | 699 | 0.3+ | 0.3− | 2003 03 08 | 644 | 0.1+ | 0.7+ | 2005 08 31 | 644 | 0.3− | 0.3+ | |
| 2000 09 24 | 699 | 1.6− | 0.7− | 2003 03 23 | 644 | 0.2+ | 0.2+ | 2005 08 31 | 644 | 0.2− | 0.3+ | |
| 2001 11 17 | 704 | 0.7+ | 1.1+ | 2003 03 23 | 644 | 0.9+ | 1.2+ | 2005 08 31 | 644 | 0.4− | 0.4+ | |
| 2001 11 17 | 704 | 0.1− | 1.4+ | 2003 03 23 | 644 | 0.0 | 0.2+ | 2005 08 31 | 644 | 0.2+ | 0.5+ | |
| 2001 11 17 | 704 | 0.1+ | 0.1+ | 2003 03 23 | 644 | 0.9+ | 1.3+ | 2005 08 31 | 644 | 0.4− | 0.3+ | |
| 2001 11 17 | 704 | 0.6+ | 0.6+ | 2003 03 23 | 644 | 0.1− | 0.1+ | 2005 08 31 | 644 | 0.2+ | 0.5+ | |
| 2001 12 11 | 704 | 0.3+ | 0.2+ | 2003 03 23 | 644 | 0.9+ | 1.2+ | 2006 11 15 | 703 | 0.5+ | 0.4+ | |
| 2001 12 11 | 704 | 0.7− | 0.5− | 2004 06 18 | 704 | 0.2− | 0.9+ | 2006 11 15 | 703 | 0.1− | 0.2− | |
| 2001 12 11 | 704 | 0.2− | 0.4− | 2004 06 18 | 704 | (1.0− | 1.7+) | 2006 11 15 | 703 | 0.0 | 1.2+ | |
| 2001 12 11 | 704 | 0.4− | 0.1+ | 2004 06 18 | 704 | 0.1+ | 0.9+ | 2006 11 15 | 703 | (1.1+ | 1.8+) | |
| 2001 12 11 | 704 | 0.7+ | 0.5− | 2004 06 18 | 704 | 0.7− | 1.1+ | 2006 11 23 | G96 | 0.8+ | 0.5− | |
| 2002 01 09 | 704 | 0.5+ | 0.1− | 2005 08 06 | E12 | 0.4+ | 0.6+ | 2006 11 23 | G96 | 0.6+ | 0.4− | |
| 2002 01 09 | 704 | 0.7+ | 0.7+ | 2005 08 06 | E12 | 0.2− | 1.0+ | 2006 11 23 | G96 | 0.6+ | 0.7− | |
| 2002 01 09 | 704 | 0.1+ | 0.2+ | 2005 08 06 | E12 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.6− | |
| 2002 01 13 | 704 | 0.8− | 0.4+ | 2005 08 06 | E12 | 0.3+ | 0.7+ | 2006 11 28 | 704 | 1.4− | 0.2+ | |
| 2002 01 13 | 704 | 0.1− | 0.5+ | 2005 08 26 | 644 | 0.4− | 0.3+ | 2006 11 28 | 704 | 1.1− | 0.1+ | |
| 2002 01 13 | 704 | (2.2− | 0.3−) | 2005 08 26 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 1.4− | 0.4− | |
| 2003 03 08 | 704 | 0.3+ | 1.0+ | 2005 08 26 | 644 | 0.2− | 0.9+ | 2006 11 28 | 704 | 0.1− | 0.2− | |
| 2003 03 08 | 704 | 0.1− | 0.8+ | 2005 08 28 | 699 | 0.5− | 1.3+ | 2006 11 28 | 704 | 1.4− | 0.1+ | |
| 2003 03 08 | 704 | 0.1+ | 0.0 | 2005 08 28 | 699 | 0.1+ | 0.2+ | | | | | |

**(145443)∗ 2005 QR$_{165}$**

Discovered 2005 Aug. 31 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.51589 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12708305 | $\omega$ | 184.61682 | | +0.70695142 | +0.70397751 | |
| $a$ | 3.9181190 | $\Omega$ | 130.39048 | | −0.64600466 | +0.68191000 | |
| $e$ | 0.2438944 | $i$ | 5.12851 | | −0.28791956 | +0.19853065 | |
| $P$ | 7.76 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 24 | 691 | 0.2− | 0.3+ | 2005 09 24 | 703 | 0.4− | 0.3+ | 2005 10 06 | 703 | 0.4+ | 0.3− | |
| 2001 01 24 | 691 | 0.0 | 0.1+ | 2005 09 24 | 703 | 0.5+ | 0.2− | 2005 10 06 | 703 | 0.1− | 0.1− | |
| 2001 01 24 | 691 | 0.5+ | 0.2+ | 2005 09 24 | 644 | 0.0 | 0.2− | 2005 10 22 | 699 | 0.4+ | 0.9+ | |
| 2001 03 01 | 950 | 0.6− | 0.5+ | 2005 09 24 | 644 | 0.1− | 0.1− | 2005 10 22 | 699 | 1.1+ | 0.2− | |
| 2001 03 01 | 950 | 0.0 | 0.4+ | 2005 09 25 | 691 | 0.1+ | 0.0 | 2005 10 22 | 699 | 0.4+ | 0.2− | |
| 2001 03 01 | 950 | 0.1− | 0.5+ | 2005 09 25 | 691 | 0.1− | 0.0 | 2005 10 22 | 699 | 0.7+ | 0.6+ | |
| 2003 05 25 | 699 | 0.0 | 0.5− | 2005 09 25 | 691 | 0.1− | 0.1− | 2005 10 26 | 644 | 0.0 | 0.0 | |
| 2003 05 25 | 699 | 0.5+ | 0.9+ | 2005 09 27 | A50 | 0.0 | 0.0 | 2005 10 26 | 644 | 0.0 | 0.2− | |
| 2003 05 25 | 699 | (1.1+ | 2.0+) | 2005 09 27 | A50 | 0.0 | 0.0 | 2005 10 26 | 644 | 0.1+ | 0.0 | |
| 2003 05 25 | 699 | 0.4− | 0.1+ | 2005 09 29 | 699 | 0.2+ | 0.8− | 2005 10 27 | 699 | 0.4+ | 0.2+ | |
| 2005 07 31 | E12 | 0.2− | 0.4− | 2005 09 29 | 699 | 0.4+ | 0.4+ | 2005 10 27 | 704 | 0.6− | 0.2+ | |
| 2005 07 31 | E12 | 0.9− | 0.3− | 2005 09 29 | 644 | 0.2− | 0.3− | 2005 10 27 | 704 | 0.3− | 0.3+ | |
| 2005 07 31 | E12 | 0.5+ | 0.5− | 2005 09 29 | 699 | 0.2− | 0.4− | 2005 10 27 | 699 | 0.3+ | 0.6+ | |
| 2005 07 31 | E12 | 0.2+ | 0.3− | 2005 09 29 | 644 | 0.4+ | 0.5− | 2005 10 27 | 704 | 0.3− | 0.0 | |
| 2005 08 29 | 704 | (1.6+ | 1.4+) | 2005 09 29 | 699 | 0.3− | 0.5− | 2005 10 27 | 704 | 0.5− | 0.4− | |
| 2005 08 29 | 704 | 0.5+ | 0.1+ | 2005 09 29 | 644 | 0.0 | 0.3− | 2005 10 27 | 699 | 0.1− | 0.9+ | |
| 2005 08 29 | 704 | (1.6+ | 0.1−) | 2005 09 30 | 699 | 0.7+ | 0.3− | 2005 10 27 | 704 | 0.9− | 0.2− | |
| 2005 08 29 | 704 | (1.6− | 0.1+) | 2005 09 30 | 699 | 0.6+ | 0.2− | 2005 10 27 | 699 | 0.6− | 0.7+ | |
| 2005 08 31 | 699 | 0.1+ | 0.7+ | 2005 09 30 | 699 | 0.4+ | 0.0 | 2005 11 01 | 703 | (0.8+ | 2.0+) | |
| 2005 08 31 | 699 | 1.0− | 0.7+ | 2005 09 30 | 644 | 0.1− | 0.1− | 2005 11 01 | 703 | 0.6− | 0.3+ | |
| 2005 08 31 | 699 | 0.1− | 0.1+ | 2005 09 30 | 699 | 0.4− | 0.2+ | 2005 11 01 | 703 | 0.4− | 1.3+ | |
| 2005 08 31 | 644 | 0.2− | 0.3− | 2005 09 30 | 644 | 0.2− | 0.1− | 2005 11 01 | 703 | 1.4− | 0.2+ | |
| 2005 08 31 | 699 | 1.0− | 0.3+ | 2005 09 30 | 644 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.0 | 0.3− | |
| 2005 08 31 | 644 | 0.3− | 0.0 | 2005 10 01 | 704 | 0.4+ | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.3− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 31 | 644 | 0.1+ | 0.0 | 2005 10 01 | 704 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.1+ | 0.4− |
| 2005 09 06 | 704 | 0.1− | 0.5+ | 2005 10 01 | 704 | 0.1− | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.3− |
| 2005 09 06 | 704 | 0.1− | 0.6+ | 2005 10 01 | 704 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2005 09 06 | 704 | 0.0 | 0.1− | 2005 10 01 | 704 | 0.5− | 0.5− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2005 09 06 | 704 | 0.6− | 0.3+ | 2005 10 06 | 699 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2005 09 06 | 704 | 0.6− | 0.1+ | 2005 10 06 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2005 09 14 | 703 | (1.1+ | 1.6−) | 2005 10 06 | 699 | 1.0+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2005 09 14 | 703 | 0.1− | 0.1− | 2005 10 06 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2005 09 14 | 703 | 0.0 | 0.5− | 2005 10 06 | 699 | (2.7+ | 1.0+) | 2006 11 18 | 691 | 0.2− | 0.9− |
| 2005 09 14 | 703 | 0.0 | 0.1+ | 2005 10 06 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2005 09 24 | 703 | 0.9− | 0.3− | 2005 10 06 | 699 | 1.3+ | 0.9+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 09 24 | 703 | 0.4− | 0.5− | 2005 10 06 | 703 | 0.2− | 0.8+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2005 09 24 | 644 | 0.1− | 0.2− | 2005 10 06 | 703 | 0.4+ | 0.3− | | | | |

**(145444)∗ 2005 QD$_{175}$ = 2001 YO$_{20}$**

Discovered 2005 Aug. 31 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 87149)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.13114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21972262 | $\omega$ | 51.48729 | | +0.92599128 | +0.37498602 | |
| $a$ | 2.7198996 | $\Omega$ | 286.45060 | | −0.35907091 | +0.83879891 | |
| $e$ | 0.1067014 | $i$ | 2.62249 | | −0.11665431 | +0.39471746 | |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.1− | 0.4+ | 2004 05 13 | 691 | 0.3+ | 0.2− | 2005 10 01 | 703 | 1.2− | 0.7− |
| 1994 02 10 | 691 | 0.1− | 0.0 | 2004 06 15 | 691 | 0.2+ | 0.0 | 2005 10 01 | 703 | 0.9− | 0.4− |
| 1994 02 10 | 691 | 0.1− | 0.0 | 2004 06 15 | 691 | 0.2− | 0.1+ | 2005 10 01 | 703 | 0.1+ | 0.3+ |
| 2001 11 19 | 704 | 0.1+ | 0.4+ | 2004 06 15 | 691 | 0.4− | 0.3+ | 2005 11 30 | G96 | 0.0 | 0.2+ |
| 2001 11 19 | 704 | 0.5+ | 0.2+ | 2005 08 31 | 691 | 0.1− | 0.2− | 2005 11 30 | G96 | 0.3− | 0.5− |
| 2001 11 19 | 704 | 0.4+ | 0.4+ | 2005 08 31 | 691 | 0.2+ | 0.1+ | 2005 11 30 | G96 | 0.1− | 0.4− |
| 2001 12 18 | 704 | 1.1− | 0.3− | 2005 08 31 | 691 | 0.0 | 0.1+ | 2005 11 30 | G96 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2005 09 09 | 704 | 0.5+ | 1.2+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.6− | 0.5+ | 2005 09 09 | 704 | 0.4+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 704 | (0.4− | 1.6−) | 2005 09 09 | 704 | 0.5− | 0.4− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 1.3+ | 0.1+ | 2005 09 09 | 704 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2001 12 19 | 704 | 0.9+ | 0.7− | 2005 09 14 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.5− | 0.4− |
| 2001 12 19 | 704 | 1.4+ | 0.4+ | 2005 09 14 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.6+ | 0.1+ |
| 2004 05 13 | 691 | 0.3+ | 0.3− | 2005 09 14 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.2+ |
| 2004 05 13 | 691 | 0.2+ | 0.1+ | 2005 10 01 | 703 | 0.1+ | 0.7− | 2006 12 01 | G96 | 0.2− | 0.0 |

**(145445)∗ 2005 RS = 2001 XM$_{110}$**

Discovered 2005 Sept. 2 at St. Véran.

Id. A. Doppler (*MPO* 89770)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.99764 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19657491 | $\omega$ | 154.85117 | | +0.04636350 | +0.99762483 | |
| $a$ | 2.9294359 | $\Omega$ | 117.77044 | | −0.92595294 | +0.06205412 | |
| $e$ | 0.0668693 | $i$ | 3.30055 | | −0.37478205 | −0.02989956 | |
| $P$ | 5.01 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.4− | 0.5+ | 2003 03 07 | 699 | 1.4+ | 1.0+ | 2005 09 14 | 691 | 0.2− | 0.2+ |
| 1995 08 31 | 809 | 1.8+ | 0.1− | 2003 03 07 | 699 | (0.6− | 1.6+) | 2005 09 14 | 691 | 0.3− | 0.0 |
| 1998 01 22 | 691 | 0.0 | 0.0 | 2003 03 07 | 699 | (0.1+ | 1.6+) | 2005 09 14 | 691 | 0.8+ | 0.6+ |
| 1998 01 22 | 691 | 0.3− | 0.3+ | 2003 03 07 | 699 | 0.5+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.4+ |
| 1998 01 22 | 691 | 0.1+ | 0.1− | 2004 06 12 | 644 | 0.2+ | 0.5+ | 2005 09 22 | 644 | 0.2+ | 0.1+ |
| 2001 12 11 | 704 | 0.4− | 0.4+ | 2004 06 12 | 644 | 0.6+ | 0.4+ | 2005 09 22 | 644 | 0.2+ | 0.2+ |
| 2001 12 11 | 704 | 0.6− | 0.1− | 2004 06 12 | 644 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2001 12 11 | 704 | 1.3+ | 1.0− | 2005 07 30 | 644 | 0.6− | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2001 12 17 | 704 | 0.5− | 0.4− | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 1.2− | 0.9+ | 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2005 09 02 | 615 | 0.9− | 0.4+ | 2006 11 18 | 691 | 0.3+ | 0.3− |
| 2001 12 17 | 704 | 0.5− | 0.4+ | 2005 09 02 | 615 | 1.2− | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 09 02 | 615 | 1.2− | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 09 03 | 615 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2003 02 26 | 599 | 0.2− | 0.4+ | 2005 09 03 | 615 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2003 02 26 | 599 | 0.8+ | 0.6+ | 2005 09 03 | 615 | 0.5− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2003 02 26 | 599 | 0.2+ | 0.4+ | 2005 09 07 | A50 | 0.1− | 0.3− | | | | |
| 2003 02 26 | 599 | 0.0 | 0.1+ | 2005 09 07 | A50 | 0.3− | 0.2− | | | | |

**(145446)∗ 2005 RN$_{10}$**

Discovered 2005 Sept. 8 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.59848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17640232 | $\omega$ | 131.90594 | | +0.76964000 | +0.63550828 | |
| $a$ | 3.1487138 | $\Omega$ | 189.24080 | | −0.63755611 | +0.77012933 | |
| $e$ | 0.2041595 | $i$ | 22.52213 | | +0.03429991 | +0.05504580 | |
| $P$ | 5.59 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 0.1+ | 0.7− | 2005 09 11 | 704 | 0.6+ | 1.2+ | 2005 10 01 | 704 | 0.4+ | 0.2+ |
| 1992 03 25 | 691 | 0.1− | 0.6− | 2005 09 11 | 704 | 0.9− | 0.3− | 2005 10 01 | G96 | 0.1+ | 0.2− |
| 1999 09 09 | 704 | 0.1− | 0.4− | 2005 09 15 | 703 | 0.1+ | 0.1+ | 2005 10 01 | G96 | 0.2+ | 0.3− |
| 1999 09 09 | 704 | 0.7+ | 0.8+ | 2005 09 15 | 703 | 0.2+ | 0.6+ | 2005 10 05 | 704 | 0.0 | 0.2− |
| 1999 09 09 | 704 | 0.3+ | 0.1+ | 2005 09 15 | 703 | 0.2+ | 1.2− | 2005 10 05 | 704 | 0.2− | 0.1− |
| 1999 09 09 | 704 | 1.1− | 1.6+ | 2005 09 15 | 703 | 0.2+ | 0.6− | 2005 10 05 | 704 | 0.3− | 0.1− |
| 1999 10 09 | 704 | 0.1− | 0.0 | 2005 09 22 | 644 | 0.2− | 0.3+ | 2005 10 05 | 704 | 0.1− | 0.0 |
| 1999 10 09 | 704 | 0.2+ | 0.2+ | 2005 09 22 | 644 | 0.0 | 0.1+ | 2005 10 05 | 704 | 0.5− | 0.2− |
| 1999 10 09 | 704 | 0.4− | 0.1− | 2005 09 22 | 644 | 0.2− | 0.2+ | 2005 10 06 | 699 | 0.5+ | 0.5− |
| 1999 10 09 | 704 | 0.1+ | 0.3+ | 2005 09 23 | 703 | 0.1+ | 0.4− | 2005 10 06 | 699 | 0.1+ | 0.2− |
| 1999 10 14 | 645 | 0.0 | 0.3− | 2005 09 23 | 703 | 1.0+ | 1.0− | 2005 10 06 | 691 | 0.2+ | 0.1− |
| 1999 10 14 | 645 | 0.0 | 0.3− | 2005 09 23 | 703 | 0.3− | 0.4− | 2005 10 06 | 699 | 0.0 | 0.3− |
| 2004 05 15 | 704 | 0.4− | 0.7+ | 2005 09 23 | 703 | 0.6+ | 0.5− | 2005 10 06 | 699 | 0.6+ | 0.7− |
| 2004 05 15 | 704 | 0.1+ | 0.3+ | 2005 09 26 | 691 | 0.1− | 0.1− | 2005 10 06 | 691 | 0.2+ | 0.1− |
| 2004 05 15 | 704 | 0.6− | 0.6+ | 2005 09 26 | 691 | 0.1+ | 0.0 | 2005 10 06 | 699 | 0.1− | 0.1+ |
| 2004 05 15 | 704 | 0.5− | 0.1− | 2005 09 26 | 691 | 0.0 | 0.0 | 2005 10 06 | 691 | 0.3+ | 0.2− |
| 2004 05 15 | 704 | 0.5+ | 0.7+ | 2005 09 27 | 691 | 0.2− | 0.1− | 2005 10 06 | 699 | 0.2+ | 0.4− |
| 2004 05 26 | 699 | 1.0− | 0.4+ | 2005 09 27 | 691 | 0.4− | 0.1− | 2005 10 06 | 699 | 0.8+ | 0.2+ |
| 2004 05 26 | 699 | 0.7− | 0.5− | 2005 09 27 | 691 | 0.3− | 0.1+ | 2005 10 07 | 703 | 0.6− | 0.1+ |
| 2004 05 26 | 699 | 0.9− | 0.1+ | 2005 09 29 | 699 | 0.5+ | 0.5+ | 2005 10 07 | 703 | 1.2− | 0.1− |
| 2004 05 26 | 699 | 0.3− | 0.5+ | 2005 09 29 | 699 | 0.3− | 0.3+ | 2005 10 07 | 703 | 0.3− | 0.0 |
| 2004 05 26 | 699 | 0.7− | 1.2+ | 2005 09 29 | 644 | 0.0 | 0.0 | 2005 10 07 | 703 | 0.2+ | 0.4+ |
| 2004 05 26 | 699 | 0.7− | 0.3− | 2005 09 29 | 699 | 0.4− | 0.0 | 2005 10 12 | 691 | 0.0 | 0.4+ |
| 2004 05 26 | 699 | 1.0+ | 0.4+ | 2005 09 29 | G96 | 0.4+ | 0.1+ | 2005 10 12 | 691 | 0.1+ | 0.1+ |
| 2004 05 26 | 699 | 0.2+ | 0.4− | 2005 09 29 | G96 | 0.0 | 0.1+ | 2005 10 12 | 691 | 0.2+ | 0.3+ |
| 2004 06 09 | 699 | 1.0+ | 0.1+ | 2005 09 29 | 644 | 0.2+ | 0.0 | 2005 10 20 | 644 | 0.1+ | 0.0 |
| 2004 06 09 | 699 | 0.8+ | 0.3+ | 2005 09 29 | G96 | 0.1+ | 0.1+ | 2005 10 20 | 644 | 0.1− | 0.3+ |
| 2004 06 09 | 699 | 1.4+ | 0.2+ | 2005 09 29 | 699 | 0.2− | 0.2− | 2005 10 20 | 644 | 0.0 | 0.1+ |
| 2004 06 09 | 699 | 1.0+ | 0.6+ | 2005 09 29 | G96 | 0.3+ | 0.0 | 2005 10 22 | 699 | 0.1− | 0.3− |
| 2005 08 30 | 704 | 0.3− | 0.7+ | 2005 09 29 | 644 | 0.3+ | 0.1− | 2005 10 22 | 699 | 0.1+ | 0.2− |
| 2005 08 30 | 704 | 0.9+ | 0.1− | 2005 09 30 | 691 | 0.1− | 0.2− | 2005 10 22 | 699 | 0.5+ | 0.2− |
| 2005 08 30 | 704 | 1.2+ | 1.1− | 2005 09 30 | 691 | 0.2− | 0.2− | 2005 10 22 | 699 | 0.3− | 0.1− |
| 2005 08 30 | 704 | 0.3+ | 0.2+ | 2005 09 30 | 699 | 0.2+ | 0.2− | 2005 10 27 | 704 | 0.3− | 0.8+ |
| 2005 08 30 | 704 | 0.6+ | 1.1− | 2005 09 30 | 691 | 0.1− | 0.2− | 2005 10 27 | 704 | 0.6− | 0.2− |
| 2005 08 30 | 699 | 0.5+ | 0.6+ | 2005 09 30 | 699 | 0.3+ | 0.1+ | 2005 10 27 | 704 | 0.3− | 0.4+ |
| 2005 08 30 | 699 | 0.1+ | 0.9+ | 2005 09 30 | 699 | 0.2+ | 0.7+ | 2005 10 27 | 704 | 0.5− | 0.0 |
| 2005 08 30 | 699 | 0.0 | 0.1− | 2005 09 30 | 699 | 0.0 | 0.1+ | 2005 10 27 | 704 | 0.8− | 0.2− |
| 2005 08 30 | 699 | 0.5+ | 0.0 | 2005 10 01 | 691 | 0.3− | 0.0 | 2005 10 28 | 704 | 0.7− | 0.0 |
| 2005 09 08 | 704 | 0.3+ | 1.3+ | 2005 10 01 | 691 | 0.2− | 0.0 | 2005 10 28 | 704 | 0.3− | 0.0 |
| 2005 09 08 | 704 | 0.3+ | 1.7+ | 2005 10 01 | 691 | 0.4− | 0.2− | 2005 10 28 | 704 | 0.6− | 0.1− |
| 2005 09 08 | 704 | 0.2+ | 1.6+ | 2005 10 01 | 704 | 0.4+ | 0.5+ | 2005 10 28 | 704 | 0.8− | 0.4+ |
| 2005 09 08 | 704 | 0.5+ | 1.1+ | 2005 10 01 | 704 | 0.6+ | 0.2+ | 2005 10 28 | 704 | 0.5− | 0.3+ |
| 2005 09 08 | 704 | 0.2− | 1.1+ | 2005 10 01 | 704 | 0.0 | 0.1+ | 2005 11 02 | G96 | 0.7+ | 0.1− |
| 2005 09 11 | 704 | 0.0 | 0.8+ | 2005 10 01 | G96 | 0.0 | 0.2− | 2005 11 02 | G96 | 0.1+ | 0.3+ |
| 2005 09 11 | 704 | 0.1− | 0.9+ | 2005 10 01 | 704 | 0.0 | 0.0 | 2005 11 02 | G96 | 0.1+ | 0.2− |
| 2005 09 11 | 704 | 0.2− | 0.2− | 2005 10 01 | G96 | 0.2+ | 0.2− | 2005 11 02 | G96 | 0.5+ | 0.1− |

**(145447)∗ 2005 RE$_{12}$ = 2002 VP$_{138}$ = 2002 XQ$_{95}$**

Discovered 2005 Sept. 1 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 87164), A. Doppler (d, *MPO* 89782)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.00801 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27588123 | $\omega$ | 314.66109 | | −0.32943461 | | −0.94405888 |
| $a$ | 2.3369779 | $\Omega$ | 154.56203 | | +0.87586109 | | −0.31150127 |
| $e$ | 0.0494138 | $i$ | 2.00425 | | +0.35261904 | | −0.10825799 |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1− | 0.1− | 2004 04 21 | 704 | 0.2+ | 0.1− | 2005 10 01 | G96 | 0.1+ | 0.3+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 04 21 | 704 | 1.0− | 0.9+ | 2005 10 29 | G96 | 0.1+ | 0.9− |
| 2000 03 03 | 704 | 0.8+ | 2.0+ | 2004 04 21 | 704 | 0.4+ | 0.1− | 2005 10 29 | G96 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.6+ | 0.3+ | 2004 05 21 | 691 | 0.1− | 0.2− | 2005 10 29 | G96 | 0.4+ | 0.3− |
| 2000 03 03 | 704 | 0.2− | 0.5+ | 2004 05 21 | 691 | 0.1+ | 0.1+ | 2005 10 29 | G96 | 0.2+ | 0.4− |
| 2000 03 03 | 704 | 0.6+ | 0.5+ | 2004 05 21 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 1.5+ | 0.1− | 2005 08 28 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 0.6− | 0.4+ | 2005 08 28 | 691 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.8+ | 0.3− |
| 2002 11 07 | 704 | 0.5+ | 0.9+ | 2005 08 28 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 11 07 | 704 | 0.5+ | 0.7+ | 2005 09 01 | 691 | (1.0− | 1.9+) | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2002 12 05 | 704 | 0.3+ | 0.8+ | 2005 09 01 | 691 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.7− |
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2005 09 01 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2005 09 11 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.3− | 0.2+ |
| 2002 12 10 | 704 | 1.0− | 1.3− | 2005 09 11 | 691 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.8− | 0.5− |
| 2002 12 10 | 704 | 0.1+ | 0.1+ | 2005 09 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 12 10 | 704 | 1.0− | 1.1+ | 2005 10 01 | G96 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2004 01 18 | 807 | (2.3+ | 0.5−) | 2005 10 01 | G96 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2004 01 18 | 807 | 1.1− | 0.8+ | 2005 10 01 | G96 | 0.1+ | 0.0 | | | | |

**(145448)∗ 2005 RJ$_{26}$ = 1992 EH$_{33}$ = 1998 HH$_{75}$**

Discovered 2005 Sept. 6 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.
Id. G. V. Williams (*MPO* 87173)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.92288 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17882732 | $\omega$ | 73.44627 | | −0.32029239 | | +0.94731222 |
| $a$ | 3.1201835 | $\Omega$ | 177.86351 | | −0.90111665 | | −0.30352525 |
| $e$ | 0.0987239 | $i$ | 5.40690 | | −0.29223548 | | −0.10233270 |
| $P$ | 5.51 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.3+ | 0.4− | 2005 08 09 | A50 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 1992 03 03 | 809 | 0.8− | 0.3− | 2005 08 09 | A50 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 1992 03 06 | 809 | 1.3+ | 0.6− | 2005 09 06 | 704 | 1.0+ | 1.4+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 1998 04 21 | 704 | 0.2− | 1.5+ | 2005 09 06 | 704 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 1998 04 21 | 704 | 0.6− | 0.4+ | 2005 09 06 | 704 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1998 04 21 | 704 | 0.6− | 0.9− | 2005 09 06 | 704 | 0.8+ | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1998 04 21 | 704 | 0.2− | 0.3+ | 2005 09 13 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.3+ |
| 1998 04 21 | 704 | (1.2− | 2.3+) | 2005 09 13 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 1998 04 22 | 704 | 0.7− | 1.7− | 2005 09 13 | 691 | 0.3− | 0.1+ | 2006 11 20 | 704 | 1.0− | 1.4− |
| 1998 04 22 | 704 | (2.2+ | 0.9+) | 2005 09 23 | 703 | 0.6+ | 0.5− | 2006 11 20 | 704 | (0.2+ | 1.8−) |
| 1998 04 22 | 704 | 0.0 | 0.6+ | 2005 09 23 | 703 | 0.3+ | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.0 |
| 1998 04 22 | 704 | 0.3− | 0.2− | 2005 09 23 | 703 | 0.5− | 0.4− | 2006 11 24 | 691 | 0.4− | 0.1+ |
| 2003 03 09 | 704 | 0.6+ | 0.8+ | 2005 09 23 | 703 | 0.1− | 0.3− | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2003 03 09 | 704 | 0.5+ | 0.0 | 2005 10 01 | 703 | 0.5+ | 1.1− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2003 03 09 | 704 | 0.4+ | 0.6+ | 2005 10 01 | 703 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2003 03 09 | 704 | 0.8+ | 0.1+ | 2005 10 01 | 703 | (2.3− | 1.2+) | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2003 03 26 | 644 | (0.9+ | 1.6+) | 2005 10 01 | 703 | (2.8− | 1.0+) | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2003 03 26 | 644 | 1.0+ | 1.5+ | 2005 12 01 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 1.6+ | 1.5+ |
| 2003 03 26 | 644 | (0.8+ | 1.7+) | 2005 12 01 | G96 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.9+ | 0.1− |
| 2004 06 16 | 704 | 0.1− | 0.8+ | 2005 12 01 | G96 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 0.3− | 2.2+ |
| 2004 06 16 | 704 | 0.2+ | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 1.9− | 0.9− |
| 2004 06 16 | 704 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.3− | | | | |

**(145449)∗ 2005 RN$_{27}$**

Discovered 2005 Sept. 10 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.40157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22675712 | $\omega$ | 120.15213 | | +0.39630271 | | −0.91016652 |
| $a$ | 2.6633532 | $\Omega$ | 306.01198 | | +0.78273936 | | +0.40358485 |
| $e$ | 0.0644088 | $i$ | 8.57336 | | +0.47985754 | | +0.09336045 |
| $P$ | 4.35 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.2− | 0.5+ | 2003 03 30 | 699 | 0.7− | 0.5+ | 2005 10 26 | 699 | 0.7− | 0.5+ |
| 2000 08 01 | 704 | 0.2+ | 0.6+ | 2003 03 30 | 699 | (0.3+ | 1.8−) | 2005 10 26 | 699 | 0.0 | 0.8+ |
| 2000 08 01 | 704 | 0.7− | 0.5− | 2003 03 31 | 691 | 0.4+ | 0.3+ | 2005 10 26 | 699 | 0.1− | 0.3+ |
| 2000 08 01 | 704 | 0.1− | 0.3+ | 2003 03 31 | 691 | 0.4+ | 0.4+ | 2005 10 29 | 703 | 0.2− | 0.1− |
| 2000 08 01 | 704 | 0.0 | 0.3− | 2003 03 31 | 691 | 0.4+ | 0.3+ | 2005 10 29 | 703 | 0.3− | 0.7+ |
| 2000 08 26 | 704 | 1.1+ | 0.1− | 2003 04 07 | 644 | 0.3+ | 1.1+ | 2005 10 29 | 703 | 0.5+ | 0.6+ |
| 2000 08 26 | 704 | 0.5− | 1.1+ | 2003 04 07 | 644 | 0.6+ | 1.0+ | 2005 10 29 | 703 | 0.1− | 0.3+ |
| 2000 08 26 | 704 | 0.3− | 1.5+ | 2003 04 07 | 644 | 0.8+ | 0.9+ | 2005 10 30 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 0.3− | 0.5− | 2005 09 10 | 699 | 0.2− | 0.4+ | 2005 10 30 | 644 | 0.3− | 0.0 |
| 2001 11 11 | 704 | 0.4− | 0.3− | 2005 09 10 | 699 | 0.4− | 1.0+ | 2005 10 30 | 644 | 0.2− | 0.1+ |
| 2001 11 11 | 704 | 0.0 | 0.3+ | 2005 09 10 | 699 | 0.4− | 0.5− | 2005 11 03 | 704 | 0.7+ | 0.4+ |
| 2001 11 11 | 704 | 0.3− | 0.2− | 2005 09 10 | 699 | (1.0− | 1.7+) | 2005 11 03 | 704 | 0.2− | 0.1− |
| 2001 11 11 | 704 | 0.0 | 0.1− | 2005 09 13 | 704 | 0.7− | 0.2+ | 2005 11 03 | 704 | 0.2− | 0.8+ |
| 2001 12 09 | 704 | 0.3+ | 0.3− | 2005 09 13 | 704 | 0.6+ | 0.4− | 2005 11 03 | 704 | 0.3+ | 0.6+ |
| 2001 12 09 | 704 | 0.1+ | 0.6− | 2005 09 13 | 704 | 0.3+ | 0.4+ | 2005 11 07 | 704 | 0.2+ | 0.8+ |
| 2001 12 09 | 704 | 0.0 | 0.0 | 2005 10 02 | 644 | 0.0 | 0.2+ | 2005 11 07 | 704 | (1.9− | 0.1+) |
| 2001 12 09 | 704 | 0.4− | 0.2+ | 2005 10 02 | 644 | 0.1− | 0.2+ | 2005 11 07 | 704 | 0.5− | 0.6+ |
| 2001 12 09 | 704 | 0.4− | 0.5+ | 2005 10 02 | 644 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.5+ |
| 2001 12 22 | 704 | (0.0 | 3.1+) | 2005 10 08 | 703 | (2.3+ | 0.2−) | 2006 10 12 | 691 | 0.1+ | 0.1+ |
| 2001 12 22 | 704 | (1.5+ | 2.9+) | 2005 10 08 | 703 | 0.8− | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.2+ |
| 2001 12 22 | 704 | (1.3+ | 4.3+) | 2005 10 08 | 703 | 0.7− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4+ |
| 2002 01 08 | 704 | 0.7+ | 0.0 | 2005 10 08 | 703 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2002 01 08 | 704 | 0.3+ | 0.2+ | 2005 10 13 | 704 | 1.2+ | 1.0+ | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2002 01 08 | 704 | 0.2+ | 0.2+ | 2005 10 13 | 704 | 0.6+ | 0.4+ | 2006 11 15 | G96 | 1.0+ | 1.0− |
| 2002 01 08 | 704 | 0.8+ | 0.6+ | 2005 10 13 | 704 | 0.0 | 0.6+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2002 02 06 | 704 | 0.7− | 1.3− | 2005 10 23 | 703 | 0.8− | 0.8− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2002 02 06 | 704 | (0.6− | 1.7−) | 2005 10 23 | 703 | 1.2− | 0.8− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 02 06 | 704 | 0.1− | 1.3− | 2005 10 23 | 703 | 1.0− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2003 03 30 | 699 | 0.6− | 0.4+ | 2005 10 23 | 703 | 0.8+ | 1.0− | | | | |
| 2003 03 30 | 699 | 1.2− | 0.7+ | 2005 10 26 | 699 | (2.0− | 1.0+) | | | | |

**(145450)∗ 2005 RM$_{31}$ = 2001 DL$_{34}$**

Discovered 2005 Sept. 13 at Crni Vrh.
Id. G. V. Williams (*MPO* 89793)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.77530 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17796842 | $\omega$ | 286.47353 | | +0.67009156 | | −0.72407703 |
| $a$ | 3.1302144 | $\Omega$ | 120.28721 | | +0.73253894 | | +0.60954685 |
| $e$ | 0.2370380 | $i$ | 10.90571 | | +0.11984992 | | +0.32274616 |
| $P$ | 5.54 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.6− | 0.3− | 2005 09 13 | 106 | 0.1+ | 0.1− | 2005 12 01 | 703 | 0.6− | 0.5− |
| 2000 11 27 | 704 | 0.2+ | 0.4− | 2005 09 14 | 703 | 0.1+ | 1.0− | 2005 12 01 | 703 | 0.4− | 0.3− |
| 2000 11 27 | 704 | 0.4− | 0.0 | 2005 09 14 | 703 | 0.7− | 0.5− | 2005 12 01 | 703 | 0.2− | 0.4+ |
| 2000 11 27 | 704 | 0.3− | 0.2+ | 2005 09 14 | 703 | 0.3− | 0.4− | 2005 12 07 | 703 | (3.3− | 1.1−) |
| 2000 11 27 | 704 | 0.6− | 0.0 | 2005 09 14 | 703 | 0.3− | 0.1− | 2005 12 07 | 703 | (2.0− | 0.5−) |
| 2000 11 27 | 704 | 0.0 | 0.1− | 2005 09 24 | 699 | 0.3+ | 0.9+ | 2005 12 07 | 703 | 0.4+ | 0.1− |
| 2000 11 27 | 704 | 1.1+ | 0.0 | 2005 09 24 | 699 | 0.1+ | 0.5− | 2005 12 07 | 703 | 0.4− | 0.4+ |
| 2000 11 27 | 704 | (6.2+ | 5.8+) | 2005 09 24 | 699 | 0.4− | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2000 12 20 | 704 | 0.2+ | 0.1− | 2005 09 24 | 699 | 0.2+ | 0.8+ | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2000 12 20 | 704 | 0.0 | 0.2+ | 2005 09 27 | 704 | 0.0 | 0.8+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 12 20 | 704 | 0.3+ | 0.1+ | 2005 09 27 | 704 | 0.3− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2000 12 20 | 704 | 0.1− | 0.1− | 2005 09 27 | 704 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.5− | 0.5− | 2005 09 27 | 704 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2001 01 04 | 704 | 0.4− | 0.5− | 2005 09 27 | 704 | 0.5− | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 01 04 | 704 | 0.1+ | 0.3+ | 2005 10 05 | 703 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2001 01 04 | 704 | 0.0 | 0.7− | 2005 10 05 | 703 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 01 04 | 704 | 0.8+ | 0.1− | 2005 10 05 | 703 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.5− | 0.2+ |
| 2001 02 19 | 704 | 0.6+ | 0.3− | 2005 10 05 | 703 | 0.2+ | 0.5− | 2006 11 15 | 703 | 1.3− | 0.6− |
| 2001 02 19 | 704 | 0.0 | 0.4− | 2005 10 08 | 699 | 0.0 | 0.5+ | 2006 11 15 | 703 | 0.8− | 0.9− |
| 2001 02 19 | 704 | 0.1− | 0.0 | 2005 10 08 | 699 | 0.4− | 0.4+ | 2006 11 15 | 703 | 0.6− | 0.4− |
| 2001 02 19 | 704 | 0.1+ | 0.5+ | 2005 10 08 | 699 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.6− | 1.5− |
| 2001 02 20 | 704 | 0.6+ | 0.3− | 2005 10 08 | 699 | 1.1+ | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2001 02 20 | 704 | 0.6+ | 0.2− | 2005 10 25 | 704 | 0.3+ | 0.8+ | 2006 11 21 | 704 | 0.4+ | 1.4+ |
| 2001 02 20 | 704 | 0.1+ | 0.7+ | 2005 10 25 | 704 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.8+ | 1.3+ |
| 2001 02 20 | 704 | 0.1+ | 0.1+ | 2005 10 25 | 704 | 0.9− | 0.8+ | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 2001 02 20 | 704 | 0.9− | 0.6+ | 2005 10 25 | 704 | 0.6− | 0.3+ | 2006 11 27 | 703 | 1.2+ | 0.9− |
| 2002 03 11 | 644 | 0.2+ | 0.8+ | 2005 10 25 | 704 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.4− | 0.9− |
| 2002 03 11 | 644 | 0.2+ | 0.8+ | 2005 11 06 | 699 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.9+ | 0.4− |
| 2002 03 11 | 644 | 0.2+ | 0.7+ | 2005 11 06 | 699 | 0.3+ | 0.7− | 2006 11 27 | 703 | 0.4+ | 0.1− |
| 2002 04 01 | 644 | 0.0 | 0.8+ | 2005 11 06 | 699 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.6+ | 0.7+ |
| 2002 04 01 | 644 | 0.0 | 0.5+ | 2005 11 06 | 699 | 0.6+ | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.9+ |
| 2002 04 01 | 644 | 0.2+ | 0.8+ | 2005 11 15 | 644 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.3− |
| 2005 09 13 | 106 | 0.1+ | 0.3− | 2005 11 15 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2005 09 13 | 106 | 0.6+ | 0.3− | 2005 11 15 | 644 | 0.0 | 0.1+ | | | | |
| 2005 09 13 | 106 | 0.4− | 0.1− | 2005 12 01 | 703 | 0.4+ | 0.1+ | | | | |

**(145451)∗ 2005 RM$_{43}$**

Discovered 2005 Sept. 9 by A. C. Becker, A. W. Puckett and J. Kubica at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.79170 | | (2000.0) | | | |
| $n$ | 0.00115944 | $\omega$ | 318.35679 | | +0.65020518 | −0.58938428 |
| $a$ | 89.7369076 | $\Omega$ | 84.59147 | | +0.75950839 | +0.52042754 |
| $e$ | 0.6088275 | $i$ | 28.78868 | | −0.01949939 | +0.61788457 |
| $P$ | 850 | $H$ | 4.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 705 | 0.3+ | 0.4− | 2002 12 07 | 644 | 0.2− | 0.2− | 2005 10 27 | 705 | 0.1+ | 0.0 |
| 1999 10 13 | 705 | 0.4+ | 0.4− | 2002 12 07 | 644 | 0.1− | 0.0 | 2005 10 27 | 705 | 0.1+ | 0.0 |
| 2000 09 26 | 705 | 0.2+ | 0.3− | 2002 12 13 | 644 | 0.6− | 0.5+ | 2005 10 30 | 705 | 0.2+ | 0.1− |
| 2000 09 26 | 705 | 0.3+ | 0.3− | 2002 12 13 | 644 | 0.6− | 0.1+ | 2005 10 30 | 705 | 0.1+ | 0.1− |
| 2000 11 27 | 705 | 0.3+ | 0.4− | 2002 12 13 | 644 | 0.4− | 0.1+ | 2005 11 02 | 705 | 0.2+ | 0.2− |
| 2000 11 27 | 705 | 0.4+ | 0.3− | 2005 09 09 | 705 | 0.0 | 0.1− | 2005 11 02 | 705 | 0.0 | 0.3− |
| 2001 10 22 | 644 | 0.1− | 0.0 | 2005 09 09 | 705 | 0.1+ | 0.0 | 2005 11 07 | 705 | 0.1+ | 0.1− |
| 2001 10 22 | 644 | 0.3− | 0.1+ | 2005 09 14 | 705 | 0.2+ | 0.1− | 2005 11 07 | 705 | 0.1+ | 0.0 |
| 2001 10 28 | 644 | 0.3− | 0.3+ | 2005 09 14 | 705 | 0.1+ | 0.2− | 2005 11 10 | 705 | 0.2+ | 0.1+ |
| 2001 10 28 | 644 | 0.4− | 0.3+ | 2005 09 25 | 705 | 0.1+ | 0.0 | 2005 11 10 | 705 | 0.2+ | 0.0 |
| 2001 10 28 | 644 | 0.1− | 0.3+ | 2005 09 25 | 705 | 0.1− | 0.2− | 2005 11 13 | 705 | 0.0 | 0.0 |
| 2001 12 14 | 644 | 0.6+ | 0.0 | 2005 09 27 | 705 | 0.0 | 0.0 | 2005 11 13 | 705 | 0.0 | 0.1− |
| 2001 12 14 | 644 | 0.4+ | 0.2+ | 2005 09 27 | 705 | 0.1− | 0.2− | 2006 10 16 | 705 | 0.2− | 0.0 |
| 2002 10 05 | 644 | 0.1+ | 0.1+ | 2005 09 30 | 705 | 0.1+ | 0.0 | 2006 10 16 | 705 | 0.1− | 0.1+ |
| 2002 10 05 | 644 | 0.6− | 0.1− | 2005 09 30 | 705 | 0.0 | 0.1− | 2006 10 16 | 705 | 0.3− | 0.3− |
| 2002 10 05 | 644 | 0.1− | 0.3+ | 2005 10 01 | 705 | 0.3+ | 0.2− | 2006 10 16 | 705 | 0.5− | 0.2− |
| 2002 10 06 | 644 | 0.2− | 0.1− | 2005 10 01 | 705 | 0.1− | 0.3+ | 2006 10 16 | 705 | 0.3− | 0.1− |
| 2002 10 06 | 644 | 0.1+ | 0.4+ | 2005 10 14 | 705 | 0.2+ | 0.1− | 2006 10 21 | 705 | 0.1+ | 0.1+ |
| 2002 10 06 | 644 | 0.3− | 0.1+ | 2005 10 14 | 705 | 0.0 | 0.1+ | 2006 10 21 | 705 | 0.1− | 0.0 |
| 2002 10 10 | 644 | 0.0 | 0.2− | 2005 10 22 | 705 | 0.1+ | 0.0 | 2006 10 28 | 705 | 0.1+ | 0.0 |
| 2002 10 10 | 644 | 0.4− | 0.3+ | 2005 10 22 | 705 | 0.1+ | 0.0 | 2006 10 28 | 705 | 0.0 | 0.0 |
| 2002 10 10 | 644 | 0.4+ | 0.3+ | 2005 10 23 | 705 | 0.1+ | 0.0 | 2006 10 31 | 705 | 0.1+ | 0.1+ |
| 2002 10 28 | 644 | 0.2− | 0.5+ | 2005 10 23 | 705 | 0.1+ | 0.2− | 2006 10 31 | 705 | 0.0 | 0.2+ |
| 2002 11 06 | 644 | 0.1+ | 0.1+ | 2005 10 25 | 705 | 0.2+ | 0.0 | 2006 11 02 | 705 | 0.0 | 0.2+ |
| 2002 11 06 | 644 | 0.1− | 0.1+ | 2005 10 25 | 705 | 0.0 | 0.1− | 2006 11 02 | 705 | 0.0 | 0.1+ |
| 2002 11 06 | 644 | 0.2− | 0.1+ | 2005 10 26 | 705 | 0.1+ | 0.1− | | | | |
| 2002 12 07 | 644 | 0.1− | 0.2+ | 2005 10 26 | 705 | 0.1+ | 0.1− | | | | |

**(145452)∗ 2005 RN$_{43}$**

Discovered 2005 Sept. 10 by A. C. Becker, A. W. Puckett and J. Kubica at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.64860 | | (2000.0) | | | |
| $n$ | 0.00368246 | $\omega$ | 166.76929 | | +0.99239055 | +0.11651588 |
| $a$ | 41.5315033 | $\Omega$ | 186.91960 | | −0.11923025 | +0.99007168 |
| $e$ | 0.0218218 | $i$ | 19.29677 | | +0.03074335 | +0.07862648 |
| $P$ | 268 | $H$ | 3.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1954 06 02 | 261 | 0.2− | 0.1+ | 2003 10 19 | 705 | 0.0 | 0.1− | 2006 08 04 | 754 | 0.1− | 0.7+ |
| 1954 06 02 | 261 | 0.2+ | 0.0 | 2003 10 19 | 705 | 0.1+ | 0.0 | 2006 08 04 | 754 | 0.4− | 0.4+ |
| 1980 07 11 | 260 | 0.4+ | 0.5− | 2003 10 23 | 705 | 0.0 | 0.0 | 2006 08 04 | 754 | 0.1− | 0.2+ |
| 1982 07 24 | 260 | 0.1− | 0.3− | 2003 10 23 | 705 | 0.1− | 0.1+ | 2006 08 04 | 754 | 0.4− | 0.0 |
| 1984 05 30 | 260 | 0.1− | 0.4+ | 2004 08 26 | 705 | 0.0 | 0.1− | 2006 08 28 | 705 | 0.0 | 0.0 |
| 1985 09 08 | 260 | 0.0 | 0.4− | 2004 08 26 | 705 | 0.1+ | 0.1− | 2006 08 28 | 705 | 0.1+ | 0.1− |
| 1985 09 15 | 260 | 0.1− | 0.0 | 2005 09 10 | 705 | 0.1+ | 0.1− | 2006 09 01 | 147 | 0.2+ | 0.2− |
| 1990 07 20 | 261 | 0.2− | 0.0 | 2005 09 10 | 705 | 0.0 | 0.1− | 2006 09 11 | 705 | 0.1− | 0.0 |
| 1990 07 26 | 261 | 0.0 | 0.3+ | 2005 09 13 | 705 | 0.5+ | 0.2− | 2006 09 11 | 705 | 0.1− | 0.0 |
| 1994 07 11 | 261 | 0.0 | 0.4+ | 2005 09 13 | 705 | 0.2+ | 0.4− | 2006 09 17 | 705 | 0.1+ | 0.1− |
| 2001 06 15 | 705 | 0.1− | 0.0 | 2005 09 15 | 705 | 0.2+ | 0.2− | 2006 09 17 | 705 | 0.0 | 0.1− |
| 2001 06 15 | 705 | 0.1+ | 0.0 | 2005 09 15 | 705 | 0.1− | 0.2− | 2006 09 19 | 705 | 0.0 | 0.1− |
| 2001 09 20 | 705 | 0.1+ | 0.1− | 2005 09 21 | 705 | 0.3+ | 0.3− | 2006 09 19 | 705 | 0.1− | 0.0 |
| 2001 09 20 | 705 | 0.1+ | 0.0 | 2005 09 21 | 705 | 0.6+ | 0.3+ | 2006 09 27 | 705 | 0.1+ | 0.0 |
| 2001 09 23 | 644 | 0.1+ | 0.1+ | 2005 09 23 | 705 | 0.3+ | 0.2− | 2006 09 27 | 705 | 0.1− | 0.1− |
| 2002 06 26 | 644 | 0.0 | 0.5− | 2005 09 23 | 705 | 0.3+ | 0.1− | 2006 09 29 | 705 | 0.0 | 0.0 |
| 2002 06 26 | 644 | 0.2− | 0.1+ | 2005 10 20 | 705 | 0.0 | 0.0 | 2006 09 29 | 705 | 0.0 | 0.0 |
| 2002 06 26 | 644 | 0.1− | 0.4+ | 2005 10 20 | 705 | 0.1+ | 0.0 | 2006 09 29 | 147 | 0.2+ | 0.3− |
| 2002 07 10 | 644 | 0.0 | 0.2+ | 2005 10 22 | 705 | 0.0 | 0.1− | 2006 10 01 | 705 | 0.1− | 0.0 |
| 2002 07 10 | 644 | 0.0 | 0.3+ | 2005 10 22 | 705 | 0.1+ | 0.3− | 2006 10 01 | 705 | 0.1− | 0.1− |
| 2002 08 15 | 644 | 0.1− | 0.2+ | 2005 10 27 | 705 | 0.0 | 0.0 | 2006 10 03 | 705 | 0.1+ | 0.1− |
| 2002 08 15 | 644 | 0.0 | 0.2+ | 2005 10 27 | 705 | 0.0 | 0.1− | 2006 10 04 | 705 | 0.0 | 0.1+ |
| 2002 08 15 | 644 | 0.1− | 0.2+ | 2005 10 30 | 705 | 0.0 | 0.0 | 2006 10 04 | 705 | 0.0 | 0.0 |
| 2002 08 25 | 644 | 0.1− | 0.0 | 2005 10 30 | 705 | 0.1− | 0.0 | 2006 10 12 | 705 | 0.0 | 0.0 |
| 2002 08 25 | 644 | 0.2− | 0.0 | 2005 11 01 | 705 | 0.1+ | 0.0 | 2006 10 12 | 705 | 0.0 | 0.0 |
| 2002 08 25 | 644 | 0.1+ | 0.3+ | 2005 11 01 | 705 | 0.1+ | 0.1− | 2006 10 14 | 705 | 0.0 | 0.0 |
| 2002 09 04 | 644 | 0.3− | 0.1+ | 2005 11 03 | 705 | 0.1+ | 0.0 | 2006 10 20 | 705 | 0.0 | 0.0 |
| 2002 09 04 | 644 | 0.3− | 0.1+ | 2005 11 03 | 705 | 0.0 | 0.1− | 2006 10 20 | 705 | 0.1+ | 0.1− |
| 2002 09 04 | 644 | 0.2− | 0.2+ | 2005 11 06 | 705 | 0.1+ | 0.0 | 2006 10 22 | 705 | 0.0 | 0.0 |
| 2002 09 21 | 644 | 0.1+ | 0.2− | 2005 11 06 | 705 | 0.1− | 0.2− | 2006 10 22 | 705 | 0.0 | 0.1− |
| 2002 09 21 | 644 | 0.1+ | 0.1+ | 2005 11 12 | 705 | 0.1+ | 0.1− | 2006 10 24 | 705 | 0.0 | 0.0 |
| 2002 09 21 | 644 | 0.1+ | 0.4+ | 2005 11 12 | 705 | 0.1+ | 0.1− | 2006 10 24 | 705 | 0.1+ | 0.0 |
| 2002 10 05 | 705 | 0.0 | 0.1− | 2005 11 13 | 705 | 0.0 | 0.1− | 2006 10 26 | 705 | 0.1+ | 0.1+ |
| 2002 10 05 | 705 | 0.0 | 0.0 | 2005 11 13 | 705 | 0.0 | 0.2− | 2006 10 26 | 705 | 0.0 | 0.1+ |
| 2002 10 11 | 705 | 0.0 | 0.1− | 2006 07 24 | 754 | 0.2− | 0.1+ | 2006 10 29 | 705 | 0.1+ | 0.1− |
| 2002 10 11 | 705 | 0.0 | 0.1− | 2006 07 29 | 754 | 0.1− | 0.4+ | 2006 10 29 | 705 | 0.0 | 0.1− |
| 2003 05 15 | 608 | 0.2+ | 0.1+ | 2006 07 29 | 754 | 0.1+ | 0.4+ | 2006 10 31 | 705 | 0.1− | 0.0 |
| 2003 07 29 | 608 | 0.0 | 0.0 | 2006 07 29 | 754 | 0.3− | 0.2+ | 2006 10 31 | 705 | 0.1− | 0.1− |
| 2003 10 18 | 705 | 0.0 | 0.1+ | 2006 08 01 | H55 | 0.5− | 0.5+ | 2006 11 02 | 705 | 0.1− | 0.1− |
| 2003 10 18 | 705 | 0.1− | 0.1+ | 2006 08 02 | H55 | (2.4− | 1.7−) | 2006 11 02 | 705 | 0.3− | 0.2− |

**(145453)∗ 2005 RR$_{43}$**

Discovered 2005 Sept. 9 by A. C. Becker, A. W. Puckett and J. Kubica at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.71067 | | (2000.0) | | | |
| $n$ | 0.00348876 | $\omega$ | 278.52316 | | +0.87729082 | −0.05722091 |
| $a$ | 43.0548804 | $\Omega$ | 85.78877 | | +0.26504999 | +0.88550156 |
| $e$ | 0.1361032 | $i$ | 28.54352 | | −0.40013663 | +0.46109950 |
| $P$ | 283 | $H$ | 4.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 10 01 | 260 | (6.7− | 14.4−) | 2005 09 26 | 705 | 0.0 | 0.1− | 2005 11 23 | 705 | 0.0 | 0.0 |
| 2001 10 22 | 644 | 0.4− | 0.7+ | 2005 09 26 | 705 | 0.0 | 0.1− | 2005 11 23 | 705 | 0.0 | 0.1− |
| 2001 10 22 | 644 | 0.6+ | 0.3+ | 2005 09 28 | 705 | 0.1− | 0.1− | 2005 11 26 | 705 | 0.1− | 0.1− |
| 2001 10 22 | 644 | 0.4− | 0.2+ | 2005 09 28 | 705 | 0.0 | 0.1− | 2005 11 26 | 705 | 0.0 | 0.0 |
| 2001 10 28 | 644 | 0.3− | 0.1+ | 2005 10 01 | 705 | 0.2+ | 0.1− | 2005 12 01 | 705 | 0.1− | 0.1− |
| 2001 10 28 | 644 | 0.1− | 0.1− | 2005 10 01 | 705 | 0.1+ | 0.0 | 2005 12 01 | 705 | 0.0 | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.3− | 0.2+ | 2005 10 14 | 705 | 0.0 | 0.2− | 2006 09 16 | 705 | 0.1+ | 0.1+ |
| 2001 10 29 | 644 | 0.1− | 0.1− | 2005 10 14 | 705 | 0.1− | 0.1− | 2006 09 16 | 705 | 0.0 | 0.1+ |
| 2001 10 29 | 644 | 0.1− | 0.2− | 2005 10 20 | 705 | 0.1+ | 0.0 | 2006 09 18 | 705 | 0.1− | 0.1+ |
| 2001 10 29 | 644 | 0.2+ | 0.2− | 2005 10 20 | 705 | 0.0 | 0.1− | 2006 09 18 | 705 | 0.1− | 0.1+ |
| 2001 12 14 | 644 | 0.6− | 0.0 | 2005 10 22 | 705 | 0.1+ | 0.1− | 2006 09 27 | 705 | 0.1− | 0.1+ |
| 2001 12 14 | 644 | 0.1− | 0.2− | 2005 10 22 | 705 | 0.0 | 0.0 | 2006 09 27 | 705 | 0.1− | 0.1+ |
| 2001 12 14 | 644 | 0.0 | 0.3+ | 2005 10 25 | 705 | 0.1+ | 0.0 | 2006 09 30 | 705 | 0.0 | 0.2− |
| 2001 12 16 | 644 | 0.1+ | 0.1− | 2005 10 25 | 705 | 0.1+ | 0.0 | 2006 09 30 | 705 | 0.0 | 0.0 |
| 2001 12 16 | 644 | 0.1+ | 0.3− | 2005 10 26 | 705 | 0.0 | 0.1− | 2006 10 01 | 705 | 0.0 | 0.1+ |
| 2001 12 16 | 644 | 0.6+ | 1.0− | 2005 10 26 | 705 | 0.0 | 0.0 | 2006 10 01 | 705 | 0.1− | 0.1+ |
| 2002 10 06 | 608 | 0.4+ | 0.2+ | 2005 10 27 | 705 | 0.0 | 0.1− | 2006 10 02 | 705 | 0.0 | 0.1+ |
| 2002 10 06 | 608 | 0.6+ | 0.3+ | 2005 10 27 | 705 | 0.0 | 0.2− | 2006 10 02 | 705 | 0.0 | 0.1+ |
| 2002 10 06 | 608 | 0.2+ | 0.0 | 2005 10 28 | 705 | 0.0 | 0.1− | 2006 10 04 | 705 | 0.0 | 0.1+ |
| 2002 11 06 | 644 | 0.5+ | 0.1+ | 2005 10 28 | 705 | 0.1+ | 0.0 | 2006 10 04 | 705 | 0.0 | 0.1+ |
| 2002 11 06 | 644 | 0.2− | 0.2− | 2005 10 31 | 705 | 0.0 | 0.0 | 2006 10 13 | 705 | 0.0 | 0.1+ |
| 2002 11 06 | 644 | 0.2+ | 0.2+ | 2005 10 31 | 705 | 0.0 | 0.0 | 2006 10 13 | 705 | 0.1− | 0.1+ |
| 2002 11 16 | 644 | 0.3− | 0.3+ | 2005 11 02 | 705 | 0.0 | 0.1− | 2006 10 21 | 705 | 0.0 | 0.1+ |
| 2002 11 16 | 644 | 0.9− | 0.3+ | 2005 11 02 | 705 | 0.0 | 0.1− | 2006 10 21 | 705 | 0.1+ | 0.1+ |
| 2002 11 16 | 644 | 0.1+ | 0.5− | 2005 11 05 | 705 | 0.0 | 0.1− | 2006 10 23 | 705 | 0.0 | 0.2+ |
| 2003 01 25 | 644 | 0.4+ | 0.1+ | 2005 11 05 | 705 | 0.1− | 0.1− | 2006 10 23 | 705 | 0.1+ | 0.2+ |
| 2003 01 25 | 644 | 0.1+ | 0.5+ | 2005 11 07 | 705 | 0.1− | 0.1− | 2006 10 28 | 705 | 0.0 | 0.1+ |
| 2003 01 29 | 644 | 0.0 | 0.0 | 2005 11 07 | 705 | 0.1+ | 0.0 | 2006 10 28 | 705 | 0.0 | 0.1+ |
| 2003 01 29 | 644 | 0.2− | 0.1− | 2005 11 10 | 705 | 0.0 | 0.0 | 2006 10 31 | 705 | 0.0 | 0.1+ |
| 2003 01 29 | 644 | 0.2+ | 0.0 | 2005 11 10 | 705 | 0.1+ | 0.1− | 2006 10 31 | 705 | 0.0 | 0.2+ |
| 2005 09 09 | 705 | 0.0 | 0.2− | 2005 11 13 | 705 | 0.1− | 0.0 | 2006 11 02 | 705 | 0.0 | 0.1+ |
| 2005 09 09 | 705 | 0.0 | 0.2− | 2005 11 13 | 705 | 0.1+ | 0.1− | 2006 11 02 | 705 | 0.0 | 0.1+ |
| 2005 09 14 | 705 | 0.0 | 0.1− | 2005 11 22 | 705 | 0.0 | 0.1− | | | | |
| 2005 09 14 | 705 | 0.2− | 0.0 | 2005 11 22 | 705 | 0.0 | 0.1− | | | | |

**(145454)∗ 2005 SL$_3$ = 2002 CA$_{308}$**

Discovered 2005 Sept. 23 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 87182)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.96406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18597103 | $\omega$ | 224.72426 | | +0.99609076 | +0.08436630 | |
| $a$ | 3.0397592 | $\Omega$ | 130.41775 | | −0.06831947 | +0.92365553 | |
| $e$ | 0.1744823 | $i$ | 1.97080 | | −0.05599682 | +0.37382187 | |
| $P$ | 5.30 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.5+ | 0.6+ | 2005 10 01 | 691 | 0.0 | 0.2+ | 2005 10 28 | 703 | 0.3− | 0.1− |
| 2000 11 01 | 704 | 0.2− | 0.8− | 2005 10 05 | 704 | 0.4+ | 0.3+ | 2005 10 28 | 703 | 0.8− | 0.3+ |
| 2000 11 01 | 704 | 0.2+ | 0.1− | 2005 10 05 | 704 | 0.5+ | 0.8+ | 2005 10 29 | G96 | 0.3− | 0.5− |
| 2000 11 01 | 704 | 0.1− | 0.6− | 2005 10 05 | 704 | 0.1+ | 0.3+ | 2005 10 29 | G96 | 0.1− | 0.4− |
| 2002 01 19 | 291 | 0.3− | 0.2+ | 2005 10 05 | 704 | 0.3+ | 0.2+ | 2005 10 29 | G96 | 0.0 | 0.4− |
| 2002 01 19 | 291 | 0.1+ | 0.1+ | 2005 10 05 | 704 | 0.3+ | 0.1+ | 2005 10 29 | G96 | 0.2+ | 0.5− |
| 2002 01 19 | 291 | 0.6− | 0.0 | 2005 10 06 | 699 | 1.0− | 0.2+ | 2005 10 31 | 704 | 0.1+ | 0.5+ |
| 2002 02 10 | 704 | 0.9+ | 0.3+ | 2005 10 06 | 699 | 1.2+ | 1.3+ | 2005 10 31 | 704 | 0.1+ | 0.4+ |
| 2002 02 10 | 704 | 0.8+ | 0.6− | 2005 10 06 | 699 | 1.0+ | 0.5− | 2005 10 31 | 704 | 0.3− | 1.0+ |
| 2002 02 10 | 704 | 0.6+ | 0.4+ | 2005 10 06 | 699 | 0.1+ | 0.4+ | 2005 10 31 | 704 | 0.6− | 1.0− |
| 2002 02 10 | 704 | 1.3+ | 1.1+ | 2005 10 07 | 703 | 0.1+ | 1.1− | 2005 10 31 | 704 | 0.0 | 0.1+ |
| 2002 02 10 | 704 | 0.4+ | 0.1+ | 2005 10 07 | 703 | 0.0 | 0.7− | 2005 11 01 | G96 | 0.2+ | 0.5− |
| 2002 02 12 | 704 | (0.3− | 1.9−) | 2005 10 07 | 703 | 0.4− | 0.9− | 2005 11 01 | G96 | 0.1− | 0.4− |
| 2002 02 12 | 704 | 1.4+ | 0.6+ | 2005 10 07 | 703 | 0.0 | 0.4− | 2005 11 01 | G96 | 0.2+ | 0.4− |
| 2002 02 12 | 704 | 0.1+ | 1.5+ | 2005 10 11 | 704 | 0.6− | 0.1+ | 2005 11 01 | G96 | 0.4+ | 0.3− |
| 2002 02 12 | 704 | 1.0− | 1.0+ | 2005 10 11 | 704 | 0.1− | 0.8+ | 2005 11 04 | 704 | 0.9+ | 0.4+ |
| 2002 02 12 | 704 | 0.4+ | 0.9+ | 2005 10 11 | 704 | 0.3+ | 0.4+ | 2005 11 04 | 704 | 0.3+ | 0.7− |
| 2005 09 23 | 691 | 0.1+ | 0.0 | 2005 10 12 | 691 | 0.0 | 0.2− | 2005 11 04 | 704 | 0.4+ | 0.2+ |
| 2005 09 23 | 691 | 0.1− | 0.0 | 2005 10 12 | 691 | 0.2+ | 0.1− | 2005 11 04 | 704 | (1.9+ | 1.0+) |
| 2005 09 23 | 691 | 0.1− | 0.2+ | 2005 10 12 | 691 | 0.1+ | 0.2− | 2005 11 19 | 699 | 1.0+ | 1.4+ |
| 2005 09 25 | 691 | 0.1+ | 0.2− | 2005 10 21 | 644 | 0.4+ | 0.2+ | 2005 11 19 | 699 | (0.5+ | 1.6−) |
| 2005 09 25 | 691 | 0.1+ | 0.1− | 2005 10 21 | 644 | 0.0 | 0.1− | 2005 11 19 | 699 | 1.5− | 1.2+ |
| 2005 09 25 | 691 | 0.0 | 0.1− | 2005 10 21 | 644 | 0.2− | 0.1− | 2005 11 19 | 699 | 1.0− | 0.8+ |
| 2005 09 30 | 644 | 0.1+ | 0.1+ | 2005 10 22 | 703 | 0.8+ | 0.1+ | 2006 09 25 | G96 | 0.6− | 0.8− |
| 2005 09 30 | 644 | 0.0 | 0.2− | 2005 10 22 | 703 | 0.3− | 0.6− | 2006 09 25 | G96 | 0.9− | 0.5− |
| 2005 09 30 | 644 | 0.2+ | 0.2− | 2005 10 22 | 703 | 1.4+ | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2005 10 01 | 704 | 0.8+ | 0.0 | 2005 10 22 | 703 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.7− |
| 2005 10 01 | 704 | 0.3+ | 0.9+ | 2005 10 24 | 699 | 0.3− | 0.9− | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2005 10 01 | 704 | 0.3+ | 0.3+ | 2005 10 24 | 699 | 0.4+ | 0.9+ | 2006 10 21 | G96 | 0.7+ | 0.4− |
| 2005 10 01 | 704 | 0.8− | 0.7+ | 2005 10 24 | 699 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.6− | 0.0 |
| 2005 10 01 | 704 | 0.6− | 0.0 | 2005 10 24 | 699 | 0.5− | 0.5− | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2005 10 01 | 691 | 0.3− | 0.1+ | 2005 10 24 | A50 | 1.0− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.7− |
| 2005 10 01 | 691 | 0.4− | 0.1+ | 2005 10 24 | A50 | (2.0− | 0.7+) | 2006 11 01 | G96 | 0.5− | 0.3− |
| 2005 10 01 | 703 | 0.3− | 0.0 | 2005 10 28 | 704 | 0.5+ | 0.9+ | 2006 11 01 | G96 | 0.5− | 0.8− |
| 2005 10 01 | 691 | 0.2− | 0.2+ | 2005 10 28 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2005 10 01 | 703 | 0.1+ | 0.5+ | 2005 10 28 | 704 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2005 10 01 | 703 | 1.0− | 0.2− | 2005 10 28 | 704 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 1.2+ | 0.7− |
| 2005 10 01 | 691 | 0.0 | 0.1+ | 2005 10 28 | 704 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 10 01 | 703 | 0.7− | 0.2− | 2005 10 28 | 703 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 1.6− |
| 2005 10 01 | 691 | 0.1− | 0.0 | 2005 10 28 | 703 | 0.2+ | 0.3− | | | | |

**(145455)∗ 2005 SU$_3$ = 2001 VM$_{105}$**

Discovered 2005 Sept. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 89800)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.57400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22812873 | $\omega$ | 238.73988 | | +0.17706702 | +0.97591048 | |
| $a$ | 2.6526670 | $\Omega$ | 42.06856 | | −0.82588933 | +0.21777294 | |
| $e$ | 0.1391180 | $i$ | 10.96639 | | −0.53530747 | −0.01317896 | |
| $P$ | 4.32 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 23 | 691 | 1.1+ | 0.0 | 2005 10 01 | 703 | 0.3− | 0.4+ | 2005 10 28 | 703 | 0.4− | 0.1+ |
| 1995 04 23 | 691 | 0.0 | 0.7+ | 2005 10 01 | 703 | 0.5− | 1.3− | 2005 10 28 | 704 | 0.7− | 0.0 |
| 1995 04 23 | 691 | 0.4− | 0.4+ | 2005 10 01 | 703 | 0.4+ | 0.3+ | 2005 10 28 | 703 | 0.6− | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.3− | 2005 10 01 | 691 | 0.1− | 0.1− | 2005 10 31 | 704 | 0.6+ | 0.4+ |
| 2001 10 21 | 704 | (2.5− | 1.8−) | 2005 10 01 | 691 | 0.1− | 0.0 | 2005 10 31 | 704 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.5− | 0.4− | 2005 10 01 | 699 | 1.5− | 0.7− | 2005 10 31 | 704 | 0.4− | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 1.2− | 2005 10 01 | 699 | 0.7− | 0.2− | 2005 10 31 | 704 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.7+ | 0.1+ | 2005 10 01 | 691 | 0.0 | 0.2− | 2005 10 31 | 704 | 0.5+ | 0.3− |
| 2001 11 12 | 704 | 1.5− | 0.0 | 2005 10 01 | 699 | 1.2− | 0.3− | 2005 11 03 | 704 | 0.9− | 0.8+ |
| 2001 11 12 | 704 | 1.2+ | 0.6+ | 2005 10 01 | 699 | 0.7− | 0.0 | 2005 11 03 | 704 | 0.8+ | 0.1+ |
| 2001 11 12 | 704 | 0.7+ | 0.3− | 2005 10 05 | 704 | 0.4+ | 0.7+ | 2005 11 03 | 704 | 0.5− | 0.6+ |
| 2001 11 12 | 704 | 0.5+ | 0.5+ | 2005 10 05 | 704 | (3.2+ | 1.5+) | 2005 11 03 | 704 | 0.4− | 0.9+ |
| 2001 11 19 | 704 | 0.1+ | 0.3+ | 2005 10 05 | 704 | 0.5− | 0.2+ | 2005 11 03 | 704 | 1.1− | 0.7+ |
| 2001 11 19 | 704 | 0.5− | 0.2+ | 2005 10 05 | 704 | (2.4+ | 0.3+) | 2005 11 05 | 699 | 0.6− | 0.3+ |
| 2001 11 19 | 704 | 0.1+ | 0.4+ | 2005 10 07 | 703 | 0.2− | 0.3− | 2005 11 05 | 699 | 0.2+ | 1.0+ |
| 2001 11 19 | 704 | 0.1− | 0.1+ | 2005 10 07 | 703 | 1.4+ | 0.3+ | 2005 11 05 | 704 | 0.2+ | 1.4+ |
| 2001 11 19 | 704 | 0.1− | 0.6− | 2005 10 07 | 703 | 0.2+ | 0.0 | 2005 11 05 | 704 | 1.9+ | 0.6− |
| 2003 01 24 | 644 | 0.1+ | 0.1− | 2005 10 07 | 703 | 0.2+ | 0.0 | 2005 11 05 | 699 | 1.0+ | 0.7− |
| 2003 01 24 | 644 | 0.6− | 0.0 | 2005 10 11 | 691 | 0.1+ | 0.1− | 2005 11 05 | 704 | 0.2− | 1.4+ |
| 2003 01 24 | 644 | 0.2+ | 0.6− | 2005 10 11 | 691 | 0.1+ | 0.1− | 2005 11 05 | 704 | 0.6− | 1.3+ |
| 2003 01 29 | 644 | 0.2− | 0.1− | 2005 10 11 | 691 | 0.0 | 0.0 | 2005 11 05 | 699 | 0.2− | 0.7+ |
| 2003 01 29 | 644 | 0.0 | 0.3+ | 2005 10 22 | 703 | 0.6− | 0.4+ | 2005 11 25 | G96 | 0.0 | 0.3− |
| 2003 01 29 | 644 | 0.2− | 0.0 | 2005 10 22 | 703 | 0.4− | 0.4+ | 2005 11 25 | G96 | 0.0 | 0.5− |
| 2003 02 26 | 704 | 0.7+ | 0.6+ | 2005 10 22 | 703 | 0.2− | 0.0 | 2005 11 25 | G96 | 0.0 | 0.3− |
| 2003 02 26 | 704 | 0.2− | 0.4+ | 2005 10 22 | 703 | 0.7− | 0.5+ | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2003 02 26 | 704 | 0.3+ | 0.1− | 2005 10 22 | 644 | 0.4+ | 0.0 | 2005 12 02 | G96 | 0.0 | 0.4− |
| 2005 09 23 | 691 | 0.1+ | 0.1− | 2005 10 22 | 644 | 0.0 | 0.2− | 2005 12 02 | G96 | 0.1+ | 0.3− |
| 2005 09 23 | 691 | 0.3+ | 0.0 | 2005 10 22 | 644 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.1+ | 0.5− |
| 2005 09 23 | 691 | 0.3+ | 0.2− | 2005 10 24 | 699 | 0.5− | 0.0 | 2005 12 02 | G96 | 0.2+ | 0.3− |
| 2005 09 25 | 703 | 0.7+ | 0.7+ | 2005 10 24 | 699 | 0.0 | 0.5+ | 2005 12 28 | G96 | 0.2+ | 0.7− |
| 2005 09 25 | 703 | 0.4− | 0.2− | 2005 10 24 | 699 | 0.8− | 0.0 | 2005 12 28 | G96 | 0.1+ | 0.6− |
| 2005 09 25 | 703 | 0.0 | 0.2+ | 2005 10 24 | 699 | 0.6− | 0.9+ | 2005 12 28 | G96 | 0.3− | 0.7− |
| 2005 09 25 | 703 | 0.1− | 0.2+ | 2005 10 28 | 704 | 0.8− | 0.3− | 2005 12 28 | G96 | 0.9+ | 0.9− |
| 2005 10 01 | 704 | 0.0 | 1.1+ | 2005 10 28 | 704 | 0.2− | 0.9+ | 2006 01 04 | G96 | 0.5+ | 0.1− |
| 2005 10 01 | 704 | 0.3− | 0.2+ | 2005 10 28 | 704 | 0.5+ | 1.1+ | 2006 01 04 | G96 | 0.7+ | 0.1− |
| 2005 10 01 | 704 | 0.3− | 0.4+ | 2005 10 28 | 704 | 0.4− | 0.6+ | 2006 01 04 | G96 | 0.8+ | 0.1− |
| 2005 10 01 | 704 | 0.9+ | 0.2− | 2005 10 28 | 703 | 1.1− | 0.2− | 2006 01 04 | G96 | 0.5+ | 0.6− |
| 2005 10 01 | 703 | 0.5+ | 0.2+ | 2005 10 28 | 703 | 0.3− | 0.4− | | | | |

**(145456)∗ 2005 SA$_5$ = 2004 NX$_{11}$**

Discovered 2005 Sept. 24 by M. Ory at the Observatoire Astronomique Jurassien-Vicques.

Id. A. Doppler (*MPO* 87183)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 118.89409 | | (2000.0) | | | |
| $n$ | 0.16950293 | $\omega$ | 29.45221 | | +0.27075177 | +0.89627265 |
| $a$ | 3.2335872 | $\Omega$ | 258.17439 | | −0.93844035 | +0.16442484 |
| $e$ | 0.0539200 | $i$ | 21.03170 | | −0.21453016 | +0.41189781 |
| $P$ | 5.81 | $H$ | 13.9 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 11 | 704 | 0.2+ | 0.9+ | 2005 09 25 | J95 | 0.3− | 0.3− | 2005 10 23 | 703 | 0.2+ | 0.4− |
| 1999 08 11 | 704 | 0.0 | 0.9+ | 2005 09 25 | J95 | 0.1+ | 0.3− | 2005 10 23 | 644 | 0.2+ | 0.1− |
| 1999 08 11 | 704 | 0.6− | 0.2+ | 2005 09 27 | J95 | 0.2− | 0.0 | 2005 10 23 | 703 | 0.6+ | 0.5+ |
| 1999 10 10 | 704 | 0.1+ | 0.7− | 2005 09 27 | J95 | 0.2+ | 0.5− | 2005 10 23 | 703 | (2.3+ | 1.4−) |
| 1999 10 10 | 704 | 0.3+ | 0.3− | 2005 09 27 | J95 | 0.1− | 0.3− | 2005 10 23 | 703 | (1.7+ | 0.7−) |
| 1999 10 10 | 704 | 0.3− | 0.4− | 2005 10 01 | H06 | 0.2+ | 0.7+ | 2005 11 04 | 699 | 0.4− | 0.5+ |
| 1999 10 10 | 704 | 1.5− | 0.4+ | 2005 10 01 | H06 | 0.9+ | 0.4+ | 2005 11 04 | 699 | 0.6+ | 0.6+ |
| 2001 12 13 | 644 | 1.2+ | 0.4+ | 2005 10 01 | H06 | 0.5− | 0.1+ | 2005 11 04 | 699 | 0.1− | 0.3+ |
| 2001 12 13 | 644 | 1.1+ | 0.8+ | 2005 10 02 | 177 | 1.3+ | 0.7+ | 2005 11 04 | 699 | 0.8+ | 0.1+ |
| 2001 12 13 | 644 | 0.6+ | 0.6+ | 2005 10 02 | 177 | 0.4+ | 0.6+ | 2005 11 06 | 704 | 0.4− | 0.2+ |
| 2003 03 11 | 644 | 0.2+ | 0.6+ | 2005 10 02 | 177 | 0.2− | 0.5+ | 2005 11 06 | 704 | 0.4+ | 0.0 |
| 2003 03 11 | 644 | 0.2− | 0.6+ | 2005 10 02 | 177 | 0.5− | 0.1+ | 2005 11 06 | 704 | 1.0+ | 1.4+ |
| 2004 06 15 | 704 | 0.9− | 0.3− | 2005 10 03 | A58 | 1.4+ | 0.2+ | 2005 11 06 | 704 | 0.9+ | 1.2+ |
| 2004 06 15 | 704 | 0.6− | 0.5+ | 2005 10 03 | A58 | (1.1− | 2.3−) | 2006 10 29 | 703 | 0.8+ | 0.7− |
| 2004 06 15 | 704 | 0.2− | 0.1− | 2005 10 03 | A58 | (0.4− | 1.5−) | 2006 10 29 | 703 | 0.4+ | 0.9− |
| 2004 07 11 | 704 | 0.4− | 0.5+ | 2005 10 05 | A35 | 0.3+ | 0.1+ | 2006 10 29 | 703 | 0.5+ | 0.2+ |
| 2004 07 11 | 704 | 0.4+ | 0.5+ | 2005 10 05 | A35 | 0.3− | 0.1+ | 2006 10 29 | 703 | 0.1− | 0.6+ |
| 2004 07 11 | 704 | 0.7− | 0.2− | 2005 10 05 | A35 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.4− | 0.1+ |
| 2004 07 11 | 704 | 0.2+ | 0.5− | 2005 10 05 | A35 | 0.1− | 0.2− | 2006 11 17 | 644 | 0.4− | 0.2+ |
| 2004 07 16 | 704 | 0.2− | 0.6− | 2005 10 06 | 699 | 0.1− | 0.7− | 2006 11 17 | 644 | 0.3− | 0.4+ |
| 2004 07 16 | 704 | 0.9+ | 1.0+ | 2005 10 06 | 699 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.7− | 0.0 |
| 2004 07 16 | 704 | 1.1+ | 0.2+ | 2005 10 06 | 699 | 1.4− | 0.7+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2004 07 16 | 704 | 0.1− | 0.4+ | 2005 10 06 | 699 | 0.6− | 0.4+ | 2006 11 21 | G96 | 0.7− | 0.0 |
| 2004 07 16 | 704 | 0.1− | 0.8+ | 2005 10 06 | 850 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2005 09 24 | 185 | 0.3− | 0.2− | 2005 10 06 | 850 | 0.1+ | 0.1− | 2006 11 22 | 704 | (3.7− | 2.0+) |
| 2005 09 24 | 185 | 0.4− | 0.0 | 2005 10 06 | 850 | 0.0 | 0.1− | 2006 11 22 | 704 | (4.5− | 0.8+) |
| 2005 09 24 | 185 | 0.7− | 0.6− | 2005 10 06 | 850 | 0.3+ | 0.2+ | 2006 11 22 | 704 | (3.7− | 1.5+) |
| 2005 09 24 | 185 | 0.1− | 0.1− | 2005 10 06 | A13 | 0.0 | 0.4− | 2006 11 22 | 704 | (2.7− | 1.5+) |
| 2005 09 24 | 185 | 0.4− | 0.4+ | 2005 10 06 | A13 | 0.1− | 0.6− | 2006 11 22 | 704 | 0.6− | 0.4+ |
| 2005 09 24 | 198 | 0.3− | 0.1− | 2005 10 12 | 704 | 0.4+ | 0.2+ | 2006 11 27 | 704 | 0.1+ | 0.1+ |
| 2005 09 24 | 198 | 0.3− | 0.1+ | 2005 10 12 | 704 | 0.3+ | 1.3+ | 2006 11 27 | 704 | 0.2− | 0.6+ |
| 2005 09 24 | 198 | 0.4− | 0.0 | 2005 10 12 | 704 | 0.8+ | 0.5+ | 2006 11 27 | 704 | 0.1− | 0.5− |
| 2005 09 24 | 198 | 0.0 | 0.2+ | 2005 10 23 | 644 | 0.1+ | 0.2+ | | | | |
| 2005 09 25 | J95 | 0.0 | 0.2− | 2005 10 23 | 644 | 0.1− | 0.2+ | | | | |

**(145457)∗ 2005 SE$_5$ = 2004 JK$_{43}$**

Discovered 2005 Sept. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 87183)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 90.28483 | | (2000.0) | | | |
| $n$ | 0.18158854 | $\omega$ | 202.18364 | | +0.70300488 | +0.71006565 |
| $a$ | 3.0884726 | $\Omega$ | 112.51116 | | −0.64584340 | +0.66089261 |
| $e$ | 0.1366712 | $i$ | 2.47457 | | −0.29777582 | +0.24295621 |
| $P$ | 5.43 | $H$ | 16.1 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 24 | 691 | 0.2− | 0.3+ | 2004 05 21 | 704 | 0.6+ | 0.4+ | 2005 09 26 | 703 | 0.3− | 0.3+ |
| 1993 04 24 | 691 | 0.0 | 0.5+ | 2004 05 21 | 704 | 0.2+ | 0.7+ | 2005 09 26 | 703 | 1.1− | 0.4+ |
| 1993 04 24 | 691 | 0.5+ | 0.0 | 2004 05 21 | 704 | 0.5+ | 0.3− | 2005 10 01 | 699 | 0.3− | 0.7+ |
| 2000 10 06 | 699 | 0.4− | 0.4+ | 2004 05 21 | 704 | 0.4+ | 1.0+ | 2005 10 01 | 699 | 0.6+ | 0.1+ |
| 2000 10 06 | 699 | 0.4− | 0.1+ | 2005 08 30 | 691 | 0.1+ | 0.4+ | 2005 10 01 | 699 | 1.1− | 0.2+ |
| 2000 10 06 | 699 | 0.1− | 0.8+ | 2005 08 30 | 691 | 0.0 | 0.4+ | 2005 10 01 | 699 | 0.6− | 0.1+ |
| 2000 10 06 | 699 | 0.3+ | 1.3+ | 2005 08 30 | 691 | 0.1+ | 0.5+ | 2005 11 03 | G96 | 0.3− | 0.3− |
| 2003 03 23 | 645 | 0.1+ | 0.1+ | 2005 09 14 | 691 | 0.3− | 0.3+ | 2005 11 03 | G96 | 0.1+ | 0.1+ |
| 2003 03 23 | 645 | 0.1+ | 0.1− | 2005 09 14 | 691 | 0.1− | 0.2+ | 2005 11 03 | G96 | 0.1− | 0.0 |
| 2003 03 24 | 691 | 0.5+ | 0.7+ | 2005 09 14 | 691 | 0.0 | 0.3+ | 2005 11 03 | G96 | 0.2− | 0.2+ |
| 2003 03 24 | 691 | 0.1− | 1.2+ | 2005 09 23 | 699 | 0.1+ | 0.8+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2003 03 24 | 691 | 0.4+ | 0.9+ | 2005 09 23 | 699 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2003 04 05 | 691 | 0.6− | 0.3+ | 2005 09 23 | 699 | 0.9+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 2003 04 05 | 691 | 0.2− | 0.7+ | 2005 09 23 | 699 | 0.8− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2003 04 05 | 691 | 0.0 | 0.3+ | 2005 09 24 | 644 | 0.2− | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2004 04 30 | 691 | 0.0 | 0.1− | 2005 09 24 | 644 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2004 04 30 | 691 | 0.2+ | 0.1+ | 2005 09 24 | 644 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.2+ |
| 2004 04 30 | 691 | 0.2− | 0.4+ | 2005 09 24 | 644 | 0.3− | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.1+ |
| 2004 05 15 | 599 | 0.3+ | 0.5+ | 2005 09 24 | 644 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2004 05 15 | 599 | 0.2− | 0.5+ | 2005 09 24 | 644 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2004 05 15 | 599 | 0.1− | 0.7+ | 2005 09 26 | 703 | 1.0− | 0.0 | | | | |
| 2004 05 21 | 704 | 0.7+ | 0.2− | 2005 09 26 | 703 | 1.2− | 0.1− | | | | |

**(145458)∗ 2005 SF$_{22}$**

Discovered 2005 Sept. 23 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 145.93511 | | (2000.0) | | | |
| $n$ | 0.17505478 | $\omega$ | 230.81906 | | −0.10038686 | +0.98981007 |
| $a$ | 3.1648520 | $\Omega$ | 33.83160 | | −0.84775801 | −0.03196472 |
| $e$ | 0.1789019 | $i$ | 10.45053 | | −0.52079635 | −0.13875977 |
| $P$ | 5.63 | $H$ | 14.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.3− | 0.1+ | 2003 02 23 | 106 | (1.7+ | 0.1−) | 2005 09 24 | 644 | 0.2− | 0.2+ |
| 1994 10 08 | 691 | 0.1− | 0.2+ | 2003 02 23 | 106 | 0.3+ | 0.7+ | 2005 09 28 | 644 | 0.2− | 0.5+ |
| 1994 10 08 | 691 | 0.1+ | 0.3+ | 2003 02 23 | 106 | 0.5+ | 0.4− | 2005 09 28 | 644 | 0.0 | 0.5+ |
| 1998 04 22 | 704 | 0.1− | 0.4+ | 2003 02 28 | 106 | 0.8− | 0.6+ | 2005 09 28 | 644 | 0.1− | 0.3+ |
| 1998 04 22 | 704 | 0.0 | 1.7+ | 2003 02 28 | 106 | 0.7+ | 0.6− | 2005 09 30 | 699 | 0.0 | 1.3+ |
| 1998 04 22 | 704 | 1.4− | 0.6− | 2003 03 08 | 704 | 0.9+ | 0.3− | 2005 09 30 | 699 | 0.4+ | 0.3+ |
| 1998 04 22 | 704 | 1.1+ | 0.8− | 2003 03 08 | 704 | 1.0+ | 1.1+ | 2005 09 30 | 699 | 0.1+ | 0.6− |
| 1998 04 30 | 566 | 0.6− | 0.1− | 2003 03 08 | 704 | 1.0+ | 0.5+ | 2005 09 30 | 699 | 0.4− | 0.7+ |
| 1998 04 30 | 566 | 0.6− | 0.4+ | 2003 03 08 | 704 | 1.2+ | 0.0 | 2005 10 05 | 704 | 0.4− | 0.4+ |
| 1998 04 30 | 566 | 0.1− | 0.6+ | 2003 03 08 | 704 | 0.5+ | 0.7+ | 2005 10 05 | 704 | 0.4− | 0.9− |
| 1998 05 01 | 704 | 0.6+ | 0.2+ | 2003 03 26 | 691 | 0.6+ | 1.3+ | 2005 10 05 | 704 | 0.4+ | 0.4+ |
| 1998 05 01 | 704 | (3.1+ | 1.4−) | 2003 03 26 | 691 | (0.1+ | 1.6+) | 2005 10 05 | 704 | 0.0 | 1.0− |
| 1998 05 01 | 704 | 0.5+ | 0.3− | 2003 03 26 | 691 | 0.2+ | 1.1+ | 2005 10 05 | 704 | 0.5+ | 0.2− |
| 1998 05 01 | 704 | 0.9+ | 0.7− | 2003 04 01 | 704 | 0.0 | 1.5+ | 2005 10 07 | 703 | 0.1− | 0.6+ |
| 1998 05 01 | 704 | 1.2+ | 0.3+ | 2003 04 01 | 704 | 0.6+ | 1.2+ | 2005 10 07 | 703 | 0.3− | 0.2− |
| 1998 05 22 | 704 | (3.1+ | 0.4−) | 2003 04 01 | 704 | 0.3+ | 1.1+ | 2005 10 07 | 703 | 0.4− | 0.6+ |
| 1998 05 22 | 704 | 0.4+ | 0.2− | 2003 04 01 | 704 | (0.0 | 2.0+) | 2005 10 07 | 703 | (0.5− | 2.2+) |
| 1998 05 22 | 704 | 1.6− | 0.6+ | 2003 04 01 | 704 | (0.1+ | 2.1+) | 2005 10 09 | 691 | 0.2− | 0.0 |
| 1998 05 22 | 704 | 0.6+ | 1.0+ | 2003 04 06 | 699 | (0.1− | 2.5+) | 2005 10 09 | 691 | 0.3− | 0.3+ |
| 1998 05 22 | 704 | 0.5− | 1.5+ | 2003 04 06 | 699 | (1.8+ | 1.9+) | 2005 10 09 | 691 | 0.3− | 0.1+ |
| 1998 05 24 | 704 | 1.6+ | 0.3+ | 2003 04 06 | 699 | (1.6+ | 0.3−) | 2005 10 27 | 704 | 0.2+ | 0.8+ |
| 1998 05 24 | 704 | 0.5+ | 1.1+ | 2003 04 06 | 699 | 0.7− | 0.9+ | 2005 10 27 | 704 | 0.4− | 1.1+ |
| 1998 05 24 | 704 | (2.9+ | 2.8−) | 2004 11 14 | 413 | 0.0 | 0.1+ | 2005 10 27 | 704 | 0.3− | 0.6+ |
| 1998 05 24 | 704 | (4.1− | 1.3−) | 2004 11 14 | 413 | 0.0 | 0.3+ | 2005 10 27 | 704 | 1.3− | 0.6+ |
| 2001 12 09 | 704 | 0.4− | 0.2+ | 2005 09 06 | 704 | 0.3− | 0.8+ | 2005 12 01 | G96 | 0.2− | 0.0 |
| 2001 12 09 | 704 | 0.1− | 0.2+ | 2005 09 06 | 704 | 0.1− | 0.1+ | 2005 12 01 | G96 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | (1.5− | 0.3−) | 2005 09 06 | 704 | 0.8− | 0.1+ | 2005 12 01 | G96 | 0.0 | 0.2+ |
| 2001 12 09 | 704 | 0.2− | 0.3+ | 2005 09 06 | 704 | (3.2+ | 2.1+) | 2005 12 01 | G96 | 0.1+ | 0.2+ |
| 2001 12 19 | 644 | 0.3+ | 0.2− | 2005 09 14 | 703 | (0.8+ | 1.7+) | 2006 11 16 | 704 | 0.7− | 0.4− |
| 2001 12 19 | 644 | 0.1+ | 1.2− | 2005 09 14 | 703 | (1.7+ | 0.5+) | 2006 11 16 | 704 | 0.7+ | 0.4+ |
| 2001 12 19 | 644 | 0.2+ | 0.6− | 2005 09 14 | 703 | (1.7− | 1.4+) | 2006 11 16 | 704 | 0.9+ | 2.2+ |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2005 09 14 | 703 | (0.8− | 1.8+) | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2005 09 23 | 691 | 0.1− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.4− |
| 2003 02 02 | 699 | 1.3+ | 1.0− | 2005 09 23 | 691 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2003 02 02 | 699 | 0.9+ | 0.9+ | 2005 09 23 | 691 | 0.1− | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2003 02 02 | 699 | (1.7+ | 0.3+) | 2005 09 24 | 644 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2003 02 02 | 699 | (1.0− | 2.3+) | 2005 09 24 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.3− |

**(145459)∗ 2005 $SA_{25}$ = 2002 $AV_{198}$**

Discovered 2005 Sept. 25 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 95765)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.86069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20718436 | $\omega$ | 254.34291 | | +0.88203553 | +0.45617831 | |
| $a$ | 2.8285557 | $\Omega$ | 78.39238 | | −0.37288270 | +0.82883963 | |
| $e$ | 0.0575866 | $i$ | 6.91653 | | −0.28804829 | +0.32392316 | |
| $P$ | 4.76 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 23 | 691 | 0.1− | 0.1+ | 2002 01 14 | 704 | 1.4+ | 0.7− | 2005 09 30 | 699 | (0.4− | 1.6+) |
| 1999 05 23 | 691 | 0.0 | 0.3+ | 2002 01 14 | 704 | 0.3+ | 1.0+ | 2005 10 05 | 703 | 0.1− | 1.0− |
| 1999 05 23 | 691 | 0.4− | 0.2+ | 2003 03 25 | 644 | 0.6+ | 0.1+ | 2005 10 05 | 703 | 0.3− | 0.1+ |
| 1999 06 06 | 691 | 0.0 | 0.2− | 2003 03 25 | 644 | 0.4+ | 0.5+ | 2005 10 05 | 703 | 0.1+ | 1.4− |
| 1999 06 06 | 691 | 0.1+ | 0.0 | 2003 03 25 | 644 | 0.2+ | 0.3+ | 2005 10 05 | 703 | (0.1− | 1.5+) |
| 1999 06 06 | 691 | 0.0 | 0.1+ | 2004 07 16 | E12 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 1999 06 19 | 691 | 0.4+ | 0.9− | 2004 07 16 | E12 | 0.7+ | 0.6− | 2006 10 22 | G96 | 0.0 | 0.5− |
| 1999 06 19 | 691 | 0.4− | 0.0 | 2004 07 16 | E12 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.5− |
| 1999 06 19 | 691 | 0.0 | 0.1+ | 2004 07 16 | E12 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 1.2− | 0.3− | 2005 09 03 | 644 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2005 09 03 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.2− | 0.5+ | 2005 09 03 | 644 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.2+ |
| 2001 12 19 | 704 | 0.1− | 0.6− | 2005 09 25 | 703 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.5− | 2005 09 25 | 703 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2001 12 19 | 704 | 0.4− | 0.7− | 2005 09 25 | 703 | (1.6− | 1.6−) | 2006 10 23 | G96 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.1+ | 0.5− | 2005 09 25 | 703 | 0.9− | 0.7− | 2006 10 23 | G96 | 0.5+ | 0.3+ |
| 2002 01 08 | 704 | 0.2− | 0.8− | 2005 09 28 | 644 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2002 01 08 | 704 | 0.2+ | 0.2+ | 2005 09 28 | 644 | 0.2+ | 0.6+ | 2006 10 23 | G96 | 0.7− | 0.4+ |
| 2002 01 08 | 704 | 0.5+ | 0.2+ | 2005 09 28 | 644 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.4+ |
| 2002 01 14 | 704 | 0.5+ | 1.0+ | 2005 09 30 | 699 | (0.3− | 1.7+) | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | (1.7+ | 0.1+) | 2005 09 30 | 699 | (0.1− | 1.6+) | | | | |
| 2002 01 14 | 704 | 0.9+ | 0.3− | 2005 09 30 | 699 | 0.0 | 1.3+ | | | | |

**(145460)∗ 2005 $SZ_{31}$ = 2002 $AF_{144}$**

Discovered 2005 Sept. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 89806)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.68611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20402839 | $\omega$ | 263.76840 | | +0.72204653 | −0.69116677 | |
| $a$ | 2.8576497 | $\Omega$ | 139.94787 | | +0.65208339 | +0.66509734 | |
| $e$ | 0.0815393 | $i$ | 2.72703 | | +0.23116241 | +0.28272606 | |
| $P$ | 4.83 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.0 | 0.7− | 2002 01 15 | 704 | 0.5+ | 0.1+ | 2005 10 24 | 699 | 0.2+ | 0.3+ |
| 1998 04 17 | 691 | 0.1− | 0.5− | 2002 01 15 | 704 | 0.8+ | 0.5+ | 2005 10 24 | 699 | 0.8− | 0.8+ |
| 1998 04 17 | 691 | 0.7− | 0.7− | 2003 04 01 | 695 | 0.2+ | 0.9+ | 2005 10 24 | 699 | 0.7− | 0.7+ |
| 2000 09 29 | 691 | 0.4− | 0.1+ | 2003 04 01 | 695 | 0.3+ | 0.8+ | 2005 10 25 | 691 | 0.0 | 0.0 |
| 2000 09 29 | 691 | 0.5− | 0.0 | 2003 04 21 | 291 | 0.2+ | 0.5+ | 2005 10 25 | 691 | 0.1− | 0.1+ |
| 2000 09 29 | 691 | 0.4− | 0.1+ | 2003 04 21 | 291 | 0.2+ | 0.3+ | 2005 10 25 | 691 | 0.0 | 0.3+ |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2003 04 21 | 291 | 0.4+ | 0.3+ | 2005 10 31 | 704 | 0.2+ | 0.2+ |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2005 09 23 | 691 | 0.1− | 0.1− | 2005 10 31 | 704 | 1.0+ | 1.1+ |
| 2001 12 17 | 704 | 0.6+ | 0.2+ | 2005 09 23 | 691 | 0.3+ | 0.2+ | 2005 10 31 | 704 | 0.3+ | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.2− | 2005 09 23 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2001 12 17 | 704 | 0.1− | 1.4+ | 2005 09 29 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2001 12 17 | 704 | 0.1− | 0.9+ | 2005 09 29 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2002 01 13 | 704 | 0.2− | 0.3+ | 2005 09 29 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.1− | 1.2− |
| 2002 01 13 | 704 | 0.1+ | 0.2+ | 2005 10 07 | 703 | 0.4+ | 0.4− | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2002 01 13 | 704 | 0.4− | 1.2− | 2005 10 07 | 703 | 0.9− | 0.4− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2002 01 13 | 704 | 0.2+ | 0.5+ | 2005 10 07 | 703 | 0.8+ | 0.4− | 2006 11 23 | G96 | 0.4− | 1.2− |
| 2002 01 13 | 704 | 0.6+ | 0.3+ | 2005 10 07 | 703 | 0.4− | 0.4− | 2006 11 23 | G96 | 0.3− | 0.7− |
| 2002 01 15 | 704 | 0.1− | 0.1+ | 2005 10 22 | 703 | 1.4+ | 0.8− | 2006 11 24 | 291 | 0.3− | 0.4+ |
| 2002 01 15 | 704 | 0.4− | 0.3− | 2005 10 22 | 703 | 0.2+ | 0.6− | 2006 11 24 | 291 | 0.1− | 0.2+ |
| 2002 01 15 | 704 | 0.5− | 0.5− | 2005 10 22 | 703 | (1.7− | 0.6+) | 2006 11 24 | 291 | 0.2− | 0.4+ |
| 2002 01 15 | 704 | 0.1+ | 1.0− | 2005 10 22 | 703 | 1.3− | 0.6− | | | | |
| 2002 01 15 | 704 | 1.2+ | 0.2+ | 2005 10 24 | 699 | 1.1− | 0.7− | | | | |

**(145461)∗ 2005 $SD_{69}$ = 2001 $LR_{13}$**

Discovered 2005 Sept. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 89815)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.66744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29094551 | $\omega$ | 40.07564 | | −0.28562756 | +0.95733925 | |
| $a$ | 2.2555975 | $\Omega$ | 213.39517 | | −0.89838197 | −0.28338987 | |
| $e$ | 0.1787797 | $i$ | 4.56428 | | −0.33365660 | −0.05649557 | |
| $P$ | 3.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1+ | 0.4− | 2004 02 26 | 704 | 0.5− | 2.3+ | 2005 10 03 | G96 | 0.5+ | 0.3− |
| 1995 10 02 | 691 | 0.5+ | 0.7− | 2004 02 26 | 704 | 0.1− | 0.9+ | 2005 10 03 | G96 | 0.2+ | 0.2− |
| 1995 10 02 | 691 | 0.0 | 0.5− | 2004 03 15 | 683 | 2.9+ | 0.5− | 2005 10 07 | 691 | 0.1+ | 0.0 |
| 1995 11 25 | 691 | 0.4− | 0.4− | 2004 03 15 | 683 | 1.1+ | 1.0− | 2005 10 07 | 691 | 0.2− | 0.1+ |
| 1995 11 25 | 691 | 0.1+ | 0.2− | 2004 03 15 | 683 | 0.7+ | 0.9− | 2005 10 07 | 691 | 0.3+ | 0.1+ |
| 1995 11 25 | 691 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.3− | 0.3+ | 2005 10 07 | G96 | 0.0 | 0.2− |
| 2001 05 25 | 704 | 0.0 | 0.4− | 2004 03 20 | 704 | 0.6− | 1.2+ | 2005 10 07 | G96 | 0.4+ | 0.0 |
| 2001 05 25 | 704 | 1.1+ | 0.1− | 2004 03 20 | 704 | 0.2+ | 0.8+ | 2005 10 07 | G96 | 0.2+ | 0.3− |
| 2001 05 25 | 704 | 1.0+ | 0.2+ | 2005 09 27 | 691 | 0.2− | 0.0 | 2005 10 07 | G96 | 0.2+ | 0.3− |
| 2001 05 25 | 704 | 0.2+ | 0.2+ | 2005 09 27 | 691 | 0.1+ | 0.3+ | 2005 10 07 | 703 | 0.3− | 0.8+ |
| 2001 06 15 | 704 | 0.1− | 0.5− | 2005 09 27 | 691 | 0.4− | 0.2+ | 2005 10 07 | 703 | 0.1− | 0.7− |
| 2001 06 15 | 704 | 0.2+ | 0.5− | 2005 09 29 | 691 | 0.4− | 0.1− | 2005 10 07 | 703 | 0.9− | 1.8+ |
| 2001 06 15 | 704 | 1.3− | 0.6+ | 2005 09 29 | 691 | 0.1− | 0.0 | 2005 10 07 | 703 | 0.6− | 0.8+ |
| 2001 06 15 | 704 | 0.4− | 1.1+ | 2005 09 29 | 691 | 0.1− | 0.2+ | 2005 10 10 | 291 | 0.2− | 0.4+ |
| 2001 06 22 | 704 | 1.1− | 0.0 | 2005 10 01 | 703 | 0.7− | 1.5+ | 2005 10 10 | 291 | 0.1+ | 0.4+ |
| 2001 06 22 | 704 | 0.3− | 0.2− | 2005 10 01 | 703 | 0.3− | 0.9+ | 2005 10 10 | 291 | 0.4− | 0.5+ |
| 2001 06 22 | 704 | 0.4+ | 0.9+ | 2005 10 01 | 703 | 0.2+ | 0.1− | 2005 10 25 | 691 | 0.4+ | 0.1+ |
| 2001 06 22 | 704 | 0.0 | 0.6+ | 2005 10 01 | 703 | 0.2+ | 0.6+ | 2005 10 25 | 691 | 0.0 | 0.6+ |
| 2001 06 22 | 704 | 0.5+ | 0.4+ | 2005 10 03 | G96 | 0.2+ | 0.0 | 2005 10 25 | 691 | 0.2− | 0.3+ |
| 2004 02 16 | 649 | 0.3+ | 1.3+ | 2005 10 03 | G96 | 0.3+ | 0.2− | 2005 11 03 | G96 | 0.2− | 0.4− |
| 2004 02 16 | 649 | 0.2− | 1.4+ | 2005 10 03 | G96 | 0.3+ | 0.1− | 2005 11 03 | G96 | 0.2− | 0.1− |
| 2004 02 16 | 649 | 0.2− | 0.7+ | 2005 10 03 | G96 | 0.2− | 0.2− | 2005 11 03 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 704 | 0.6+ | 0.0 | 2005 10 03 | G96 | 0.1− | 0.1− | 2005 11 03 | G96 | 0.4+ | 0.1− |
| 2004 02 26 | 704 | 1.3− | 1.6+ | 2005 10 03 | G96 | 0.2+ | 0.2− | | | | |

**(145462)∗ 2005 $ST_{69}$ = 2004 $JQ_{11}$**

Discovered 2005 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 87205)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.37578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23784571 | $\omega$ | 224.69119 | | +0.91905957 | +0.30333046 | |
| $a$ | 2.5799176 | $\Omega$ | 116.10634 | | −0.23474971 | +0.93417857 | |
| $e$ | 0.1340365 | $i$ | 16.27355 | | −0.31657871 | +0.18788570 | |
| $P$ | 4.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 04 | 704 | 0.5− | 1.3+ | 2004 05 20 | 691 | 0.3+ | 0.1− | 2005 11 06 | 703 | 1.5− | 0.1− |
| 2000 06 04 | 704 | 0.4+ | 0.1− | 2004 05 20 | 691 | 0.2+ | 0.0 | 2005 11 17 | 644 | 0.2+ | 0.4+ |
| 2000 06 04 | 704 | 0.4+ | 1.2+ | 2005 09 13 | 703 | 0.4+ | 0.5+ | 2005 11 17 | 644 | 0.1+ | 0.0 |
| 2001 08 26 | 644 | 0.2− | 0.6− | 2005 09 13 | 703 | 0.4+ | 0.8− | 2005 11 17 | 644 | 0.1− | 0.2+ |
| 2001 08 26 | 644 | 0.2+ | 1.0+ | 2005 09 13 | 703 | 0.7+ | 0.2− | 2005 12 01 | 703 | 1.2+ | 0.4+ |
| 2001 08 26 | 644 | 0.1+ | 0.2+ | 2005 09 13 | 703 | 0.1+ | 0.0 | 2005 12 01 | 703 | 0.6− | 0.2− |
| 2001 08 26 | 644 | 0.1− | 1.2+ | 2005 09 27 | 704 | 0.9− | 1.4+ | 2005 12 01 | 703 | 0.5− | 0.1− |
| 2001 08 26 | 644 | 0.2+ | 0.1− | 2005 09 27 | 704 | 0.2− | 1.0− | 2005 12 01 | 703 | 0.7− | 1.1− |
| 2001 08 26 | 644 | 0.1+ | 1.4+ | 2005 09 27 | 704 | 0.7+ | 0.6+ | 2005 12 30 | G96 | 0.5− | 0.3− |
| 2001 10 11 | 704 | 0.2+ | 0.1+ | 2005 09 27 | 704 | 0.1+ | 0.9+ | 2005 12 30 | G96 | 0.0 | 0.1+ |
| 2001 10 11 | 704 | 0.9+ | 0.2− | 2005 09 29 | E12 | 0.7+ | 0.1+ | 2005 12 30 | G96 | 0.2+ | 0.0 |
| 2001 10 11 | 704 | 0.2− | 0.1− | 2005 09 29 | E12 | 0.4− | 0.6− | 2005 12 30 | G96 | 0.5− | 0.4+ |
| 2001 11 17 | 699 | 0.4+ | 0.7+ | 2005 09 29 | E12 | 0.1+ | 0.9− | 2006 10 27 | G96 | 0.3− | 0.8+ |
| 2001 11 17 | 699 | 0.6− | 0.8+ | 2005 09 29 | E12 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 699 | 0.7− | 0.0 | 2005 10 04 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.4+ |
| 2001 11 17 | 699 | 1.2− | 0.7+ | 2005 10 04 | 644 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 2004 05 13 | 704 | 0.0 | 0.6+ | 2005 10 04 | 644 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2004 05 13 | 704 | 0.1− | 0.2+ | 2005 10 30 | 703 | 1.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4+ |
| 2004 05 13 | 704 | 0.8+ | 0.8+ | 2005 10 30 | 703 | 0.2− | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2004 05 14 | 704 | 0.8− | 0.0 | 2005 10 30 | 703 | 1.4− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.5+ |
| 2004 05 14 | 704 | 1.0− | 0.7+ | 2005 10 30 | 703 | 0.3+ | 0.4− | 2006 11 27 | G96 | 0.3− | 0.1+ |
| 2004 05 14 | 704 | 0.4− | 0.1+ | 2005 11 06 | 703 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2004 05 14 | 704 | 0.1+ | 0.5+ | 2005 11 06 | 703 | 0.1+ | 0.5− | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2004 05 20 | 691 | 0.2+ | 0.0 | 2005 11 06 | 703 | 0.5− | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.0 |

**(145463)∗ 2005 SU$_{112}$ = 2000 WK$_{77}$**

Discovered 2005 Sept. 26 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 87217)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.25081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18017265 | $\omega$ | 131.75437 | | +0.74173561 | | −0.65330851 |
| $a$ | 3.1046321 | $\Omega$ | 269.62311 | | +0.56150295 | | +0.72859376 |
| $e$ | 0.0769468 | $i$ | 8.72629 | | +0.36680066 | | +0.20576474 |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.0 | 0.2+ | 2005 09 23 | 703 | 0.7− | 0.1+ | 2005 11 01 | 699 | 1.4− | 0.0 |
| 2000 11 20 | 704 | 0.5+ | 0.1+ | 2005 09 23 | 703 | (0.3+ | 2.0−) | 2005 11 01 | 644 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 0.2− | 0.3+ | 2005 09 23 | 703 | 0.6− | 0.3+ | 2005 11 01 | 699 | 0.4− | 0.6+ |
| 2000 11 20 | 704 | 0.3+ | 0.1− | 2005 09 23 | 703 | 1.0− | 0.9− | 2005 11 01 | 699 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 0.4+ | 0.1+ | 2005 09 26 | 644 | 0.2− | 0.3+ | 2005 11 01 | 644 | 0.5+ | 0.3+ |
| 2000 11 29 | 704 | 0.5− | 0.8+ | 2005 09 26 | 644 | 0.0 | 0.2− | 2005 11 01 | 699 | 0.4+ | 0.9+ |
| 2000 11 29 | 704 | 0.1− | 0.2− | 2005 09 26 | 644 | 0.0 | 0.3− | 2005 12 01 | 695 | 0.1− | 0.0 |
| 2000 11 29 | 704 | 0.3− | 0.1− | 2005 09 30 | 699 | 0.3+ | 0.7+ | 2005 12 02 | 695 | 0.0 | 0.0 |
| 2000 11 29 | 704 | 0.5− | 0.1+ | 2005 09 30 | 699 | 0.5+ | 0.4+ | 2005 12 02 | 695 | 0.1− | 0.2+ |
| 2000 11 29 | 704 | 0.1+ | 0.1+ | 2005 09 30 | 699 | (1.6− | 1.0+) | 2006 09 24 | 691 | 0.2− | 0.3+ |
| 2002 02 07 | 644 | 0.3+ | 0.5+ | 2005 09 30 | 699 | 0.6+ | 0.3− | 2006 09 24 | 691 | 0.1− | 0.1− |
| 2002 02 07 | 644 | 0.1− | 0.3+ | 2005 10 05 | 703 | 0.3− | 1.2− | 2006 09 24 | 691 | 0.1+ | 0.2+ |
| 2002 02 07 | 644 | 0.4+ | 0.2+ | 2005 10 05 | 703 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.4− |
| 2002 02 15 | 704 | 0.2+ | 0.1+ | 2005 10 05 | 703 | 0.7+ | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 02 15 | 704 | 1.5+ | 0.2+ | 2005 10 05 | 703 | 0.5+ | 0.4− | 2006 09 28 | 691 | 0.0 | 0.4− |
| 2002 02 15 | 704 | 0.2− | 0.6+ | 2005 10 10 | A50 | 0.5− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.5− |
| 2002 02 15 | 704 | 1.0− | 0.2+ | 2005 10 10 | A50 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.6− |
| 2005 09 01 | 644 | 0.0 | 0.3+ | 2005 10 27 | A35 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.4− | 0.5− |
| 2005 09 01 | 644 | 0.0 | 0.1+ | 2005 10 27 | A35 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2005 09 01 | 644 | 0.1− | 0.2+ | 2005 11 01 | 644 | 0.6+ | 0.2− | | | | |

**(145464)∗ 2005 SW$_{133}$ = 2002 AN$_{188}$**

Discovered 2005 Sept. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 95867)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.67058 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23075961 | $\omega$ | 286.81229 | | +0.64393330 | | −0.68474846 |
| $a$ | 2.6324665 | $\Omega$ | 117.98440 | | +0.76158829 | | +0.61626702 |
| $e$ | 0.0552961 | $i$ | 22.73461 | | −0.07302865 | | +0.38901737 |
| $P$ | 4.27 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 0.2+ | 0.3− | 2003 02 04 | 699 | 0.3+ | 0.0 | 2005 10 12 | E12 | 0.2− | 0.0 |
| 1994 01 11 | 691 | 0.1+ | 0.2− | 2003 02 04 | 699 | 1.0+ | 0.6+ | 2005 10 12 | E12 | 0.5− | 1.2+ |
| 1994 01 11 | 691 | 0.6− | 0.5− | 2003 03 10 | 644 | 0.4+ | 0.3+ | 2005 10 12 | E12 | 0.3+ | 0.1+ |
| 2000 07 07 | 704 | 0.1− | 0.8+ | 2003 03 10 | 644 | 0.7+ | 0.4+ | 2005 11 06 | 703 | 0.0 | 0.8+ |
| 2000 07 07 | 704 | 0.4− | 0.1+ | 2003 03 10 | 644 | 0.1+ | 0.3+ | 2005 11 06 | 703 | 0.2− | 0.8+ |
| 2000 07 07 | 704 | 0.7− | 0.3− | 2003 03 22 | 644 | 0.1+ | 0.6+ | 2005 11 06 | 703 | 0.3− | 0.1+ |
| 2000 07 07 | 704 | 0.4+ | 0.7+ | 2003 03 22 | 644 | 0.1+ | 0.8+ | 2005 11 06 | 703 | 0.6− | 0.9+ |
| 2001 10 11 | 704 | 0.4+ | 0.3− | 2003 03 22 | 644 | 0.2+ | 0.6+ | 2005 11 22 | 644 | 0.3+ | 0.1+ |
| 2001 10 11 | 704 | 0.4+ | 0.9+ | 2005 09 26 | 704 | 1.5− | 0.8+ | 2005 11 22 | 644 | 0.1+ | 0.1+ |
| 2001 10 11 | 704 | 0.4− | 0.6+ | 2005 09 26 | 704 | 0.4− | 0.6− | 2005 11 22 | 644 | 0.1+ | 0.1− |
| 2001 10 11 | 704 | 1.4− | 0.6+ | 2005 09 26 | 704 | 0.8− | 1.1+ | 2006 01 29 | 703 | 0.3− | 0.8− |
| 2001 12 09 | 699 | 0.1− | 0.2+ | 2005 09 26 | 704 | 0.2+ | 0.1+ | 2006 01 29 | 703 | 1.1+ | 1.3+ |
| 2001 12 09 | 699 | 0.9− | 0.6+ | 2005 09 26 | 704 | 0.7+ | 0.4− | 2006 01 29 | 703 | 1.2− | 0.2− |
| 2001 12 09 | 699 | 0.5− | 0.4+ | 2005 09 27 | 704 | 0.5− | 0.5− | 2006 01 29 | 703 | 0.3+ | 1.3+ |
| 2001 12 09 | 699 | 0.3− | 0.4+ | 2005 09 27 | 704 | 0.6+ | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.3− |
| 2001 12 13 | 644 | 0.4+ | 0.6− | 2005 09 27 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.2+ | 0.1+ |
| 2001 12 13 | 644 | 0.3+ | 0.6− | 2005 10 01 | 704 | 0.6+ | 1.2− | 2006 10 12 | 691 | 0.1+ | 0.3+ |
| 2001 12 13 | 644 | 0.2+ | 0.8− | 2005 10 01 | 704 | 0.3− | 0.6− | 2006 11 15 | 703 | 0.7− | 1.3+ |
| 2002 01 10 | 644 | 0.4+ | 0.3+ | 2005 10 01 | 704 | 0.3+ | 0.9− | 2006 11 15 | 703 | 2.7− | 0.2− |
| 2002 01 10 | 644 | 0.3+ | 0.5+ | 2005 10 01 | 704 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.5− |
| 2002 01 10 | 644 | 0.5+ | 0.9+ | 2005 10 01 | 704 | 0.4+ | 0.3− | 2006 11 15 | 703 | 0.0 | 1.3− |
| 2002 01 12 | 704 | 0.6+ | 0.5+ | 2005 10 01 | 704 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.8+ |
| 2002 01 12 | 704 | 0.2+ | 0.3+ | 2005 10 01 | 704 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.8− | 0.6− |
| 2002 01 12 | 704 | 0.8+ | 0.7− | 2005 10 01 | 704 | 0.0 | 0.4+ | 2006 11 17 | 703 | 1.0− | 0.3+ |
| 2002 01 12 | 704 | 0.9+ | 0.2− | 2005 10 01 | 704 | 0.3+ | 1.0− | 2006 11 17 | 703 | 0.4+ | 0.5+ |
| 2003 02 04 | 699 | 1.2+ | 0.2+ | 2005 10 01 | 704 | 0.2− | 0.1+ | | | | |
| 2003 02 04 | 699 | 0.4+ | 0.8+ | 2005 10 12 | E12 | 0.1+ | 0.1− | | | | |

**(145465)∗ 2005 SS$_{134}$ = 2002 CZ$_{188}$ = 2003 HT$_{56}$**

Discovered 2005 Sept. 25 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 89839), A. Doppler (*MPO* 95868)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.91279 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17982745 | $\omega$ | 288.86714 | | +0.91741539 | | +0.39648239 |
| $a$ | 3.1086039 | $\Omega$ | 47.79009 | | −0.34568424 | | +0.83628670 |
| $e$ | 0.1404854 | $i$ | 2.62495 | | −0.19710759 | | +0.37871660 |
| $P$ | 5.48 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2005 10 01 | 704 | 0.6+ | 0.8+ | 2005 10 25 | G96 | 0.1+ | 0.2+ |
| 1999 09 07 | 704 | 0.0 | 0.3− | 2005 10 01 | 704 | 0.2+ | 0.2− | 2005 10 27 | G96 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 0.2− | 0.9+ | 2005 10 01 | 704 | 1.4− | 0.8+ | 2005 10 27 | G96 | 0.2− | 0.2+ |
| 1999 09 07 | 704 | 0.5− | 0.7+ | 2005 10 01 | G96 | 0.2− | 0.2+ | 2005 10 27 | G96 | 0.1+ | 0.1+ |
| 2000 12 27 | 691 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.1− | 0.1+ | 2005 10 28 | 703 | 0.6+ | 1.1+ |
| 2000 12 27 | 691 | 0.4− | 0.1+ | 2005 10 01 | G96 | 0.1− | 0.2+ | 2005 10 28 | 703 | (1.2− | 2.1−) |
| 2000 12 27 | 691 | 0.1+ | 0.1+ | 2005 10 01 | G96 | 0.2− | 0.1+ | 2005 10 28 | 703 | 1.0+ | 0.8+ |
| 2002 02 10 | 704 | 0.6+ | 0.1+ | 2005 10 01 | 699 | 1.0+ | 0.9+ | 2005 11 01 | 704 | (0.6− | 2.0+) |
| 2002 02 10 | 704 | 1.3+ | 0.4+ | 2005 10 01 | 699 | 0.8− | 0.3+ | 2005 11 01 | 704 | 0.2+ | 0.6− |
| 2002 02 10 | 704 | 0.2− | 0.4− | 2005 10 01 | 699 | 0.8− | 0.8+ | 2005 11 01 | 704 | 0.1+ | 0.9+ |
| 2002 02 10 | 704 | 0.0 | 0.7− | 2005 10 01 | 699 | 0.7− | 0.3− | 2005 11 01 | 704 | 0.3+ | 0.6+ |
| 2002 02 12 | 704 | 0.0 | 0.2− | 2005 10 05 | 704 | 0.9− | 0.5+ | 2005 11 01 | 704 | 0.8+ | 0.7+ |
| 2002 02 12 | 704 | 0.3+ | 0.7− | 2005 10 05 | 704 | 1.1− | 0.3+ | 2005 11 05 | 699 | 0.4+ | 1.0+ |
| 2002 02 12 | 704 | 0.6+ | 0.1− | 2005 10 05 | 704 | 0.4− | 0.3+ | 2005 11 05 | 699 | 0.7− | 0.4+ |
| 2002 02 12 | 704 | 1.1+ | 0.1+ | 2005 10 05 | 683 | 0.5+ | 1.3− | 2005 11 05 | 704 | 0.0 | 0.3− |
| 2002 03 05 | 699 | 0.1− | 0.4+ | 2005 10 05 | 683 | 0.3− | 0.9− | 2005 11 05 | 704 | 1.0+ | 0.2− |
| 2002 03 05 | 699 | 0.8− | 1.0+ | 2005 10 05 | 683 | 1.0− | 0.8+ | 2005 11 05 | 699 | 0.1− | 0.1+ |
| 2002 03 05 | 699 | 1.0− | 1.4+ | 2005 10 07 | 691 | 0.3− | 0.6+ | 2005 11 05 | 704 | 0.3+ | 0.2+ |
| 2002 03 05 | 699 | 0.8+ | 0.3+ | 2005 10 07 | 691 | 0.1− | 0.2+ | 2005 11 05 | 704 | 0.3+ | 0.2− |
| 2003 04 05 | 691 | 0.6+ | 1.3+ | 2005 10 07 | 691 | 0.2− | 0.3+ | 2005 11 05 | 699 | 1.0+ | 0.9+ |
| 2003 04 05 | 691 | 0.8+ | 1.1+ | 2005 10 12 | 683 | 0.9− | 0.0 | 2005 11 25 | G96 | 0.0 | 0.2+ |
| 2003 04 05 | 691 | 0.6+ | 0.9+ | 2005 10 12 | 683 | 0.2− | 0.2− | 2005 11 25 | G96 | 0.0 | 0.0 |
| 2003 04 24 | 291 | 0.0 | 0.3+ | 2005 10 22 | 644 | 0.1− | 0.6+ | 2005 11 25 | G96 | 0.0 | 0.1− |
| 2003 04 24 | 291 | 0.1− | 0.2− | 2005 10 22 | 644 | 0.0 | 0.4+ | 2005 11 25 | G96 | 0.1+ | 0.2− |
| 2003 04 24 | 291 | 0.0 | 0.3− | 2005 10 22 | 644 | 0.1+ | 0.3+ | 2005 12 02 | G96 | 0.5− | 0.5− |
| 2003 04 30 | 291 | 0.2+ | 0.8+ | 2005 10 22 | 644 | 0.1− | 0.4+ | 2005 12 02 | G96 | 0.0 | 0.3− |
| 2003 04 30 | 291 | 0.1+ | 0.8+ | 2005 10 22 | 644 | 0.0 | 0.3+ | 2005 12 02 | G96 | 0.1+ | 0.3− |
| 2003 04 30 | 291 | 0.1+ | 0.8+ | 2005 10 22 | 644 | 0.2+ | 0.4+ | 2005 12 02 | G96 | 0.2+ | 0.3− |
| 2003 05 06 | 691 | (0.6+ | 1.8+) | 2005 10 22 | 644 | 0.0 | 0.4+ | 2006 01 04 | G96 | 0.1+ | 0.1− |
| 2003 05 06 | 691 | (0.2+ | 2.0+) | 2005 10 22 | 644 | 0.1+ | 0.4+ | 2006 01 04 | G96 | 0.4+ | 0.1− |
| 2003 05 06 | 691 | (0.6+ | 1.9+) | 2005 10 22 | 644 | 0.1+ | 0.6+ | 2006 01 04 | G96 | 0.1+ | 0.0 |
| 2005 09 25 | 703 | 0.0 | 0.3+ | 2005 10 24 | 699 | 0.7+ | 0.4+ | 2006 01 04 | G96 | 0.3+ | 0.4− |
| 2005 09 25 | 703 | 0.4+ | 0.3− | 2005 10 24 | 699 | 0.0 | 0.4− | 2006 10 23 | G96 | 0.6− | 0.2− |
| 2005 09 25 | 703 | 0.3− | 0.1+ | 2005 10 24 | 699 | 0.1− | 0.7+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2005 09 25 | 703 | 0.9− | 0.3+ | 2005 10 25 | 699 | 0.9− | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.8− |
| 2005 09 25 | 691 | 0.0 | 0.4+ | 2005 10 25 | 699 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2005 09 25 | 691 | 0.2− | 0.4+ | 2005 10 25 | 699 | 0.4− | 1.0+ | 2006 11 02 | G96 | 0.3− | 1.0− |
| 2005 09 25 | 691 | 0.2− | 0.4+ | 2005 10 25 | 699 | 0.6− | 0.0 | 2006 11 02 | G96 | 0.0 | 1.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 30 | 683 | 1.1− | 1.4− | 2005 10 25 | G96 | 0.4+ | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.4− |
| 2005 09 30 | 683 | 0.4− | 0.4− | 2005 10 25 | G96 | 0.0 | 0.2+ | 2006 11 02 | G96 | 1.2− | 0.0 |
| 2005 09 30 | 683 | (2.0− | 0.9−) | 2005 10 25 | G96 | 0.3+ | 0.1+ | | | | |

**(145466)∗ 2005 SN$_{165}$ = 2003 DC$_{12}$**

Discovered 2005 Sept. 28 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 89848)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.93447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26007633 | $\omega$ | 286.43698 | | +0.44077287 | −0.89704760 | |
| $a$ | 2.4307231 | $\Omega$ | 137.36347 | | +0.84053013 | +0.39996100 | |
| $e$ | 0.2043049 | $i$ | 2.70901 | | +0.31500537 | +0.18798084 | |
| $P$ | 3.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 07 | 691 | 0.3− | 0.0 | 2003 02 26 | 599 | 0.3+ | 0.3− | 2005 10 01 | 704 | 0.1+ | 0.6− |
| 1999 01 07 | 691 | 0.5− | 0.1− | 2003 02 26 | 599 | 0.7+ | 0.0 | 2005 10 01 | 704 | 0.7− | 0.2+ |
| 1999 01 07 | 691 | 0.5− | 0.0 | 2003 02 26 | 599 | 0.0 | 0.8+ | 2005 10 01 | 703 | 0.4+ | 1.1− |
| 1999 01 17 | 691 | 0.6+ | 0.2− | 2003 02 27 | 599 | 0.4+ | 0.3+ | 2005 10 01 | 703 | 1.3+ | 0.8− |
| 1999 01 17 | 691 | 0.6+ | 0.0 | 2003 03 30 | 645 | 0.0 | 0.2+ | 2005 10 01 | 703 | 0.6− | 0.1− |
| 2001 05 24 | 807 | 1.0− | 0.2+ | 2003 03 30 | 645 | 0.0 | 0.2+ | 2005 10 01 | 703 | 0.2− | 0.5− |
| 2001 05 24 | 807 | 0.9− | 0.0 | 2005 09 11 | 691 | 0.1− | 0.4+ | 2005 10 13 | 691 | 0.3− | 0.4+ |
| 2001 05 24 | 807 | 0.7− | 0.2+ | 2005 09 11 | 691 | 0.1− | 0.2+ | 2005 10 13 | 691 | 0.1+ | 0.2+ |
| 2001 05 24 | 807 | 0.9− | 0.1+ | 2005 09 11 | 691 | 0.3− | 0.4+ | 2005 10 13 | 691 | 0.3+ | 0.5+ |
| 2001 08 24 | 704 | 0.7+ | 0.5+ | 2005 09 24 | 644 | 0.2− | 0.0 | 2005 10 26 | 644 | 0.2− | 0.4+ |
| 2001 08 24 | 704 | 0.3+ | 0.3+ | 2005 09 24 | 644 | 0.4+ | 0.0 | 2005 10 26 | 644 | 0.2− | 0.3+ |
| 2001 08 24 | 704 | 0.5− | 0.1+ | 2005 09 24 | 644 | 0.0 | 0.1+ | 2005 10 26 | 644 | 0.1+ | 0.1+ |
| 2001 08 24 | 704 | 0.9+ | 1.2+ | 2005 09 28 | 644 | 0.0 | 0.0 | 2005 10 29 | G96 | 0.3+ | 0.2− |
| 2003 02 25 | 599 | 0.5+ | 0.6+ | 2005 09 28 | 644 | 0.0 | 0.1− | 2005 10 29 | G96 | 0.1+ | 0.1− |
| 2003 02 25 | 599 | 0.2+ | 0.2+ | 2005 09 28 | 644 | 0.2− | 0.0 | 2005 10 29 | G96 | 0.5+ | 0.4− |
| 2003 02 25 | 599 | 0.4+ | 0.3+ | 2005 10 01 | 704 | 0.8− | 0.7+ | 2005 10 29 | G96 | 0.2− | 0.2− |
| 2003 02 25 | 599 | 0.4+ | 0.3+ | 2005 10 01 | 704 | 0.8− | 0.5+ | | | | |

**(145467)∗ 2005 ST$_{167}$ = 2004 GE$_{80}$**

Discovered 2005 Sept. 28 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 89848)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.50564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27696760 | $\omega$ | 158.93228 | | +0.98891892 | −0.13994685 | |
| $a$ | 2.3308630 | $\Omega$ | 209.24848 | | +0.11753939 | +0.94193201 | |
| $e$ | 0.2309532 | $i$ | 5.81939 | | +0.09068553 | +0.30525229 | |
| $P$ | 3.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.8− | 1.3− | 2005 10 05 | 704 | 0.8− | 0.2+ | 2005 11 20 | 699 | 0.3+ | 0.1− |
| 1998 12 15 | 704 | (0.4− | 3.2−) | 2005 10 05 | 704 | 0.2+ | 1.1− | 2005 11 20 | 699 | 0.6− | 0.3+ |
| 1998 12 15 | 704 | 0.2+ | 0.6− | 2005 10 08 | A50 | 0.0 | 0.0 | 2005 11 20 | 699 | 0.4− | 0.2− |
| 1998 12 15 | 704 | 0.4+ | 0.2+ | 2005 10 08 | A50 | 0.2+ | 0.1− | 2005 11 21 | 683 | 1.2− | 1.7− |
| 2002 11 13 | 645 | 0.0 | 0.1− | 2005 10 12 | 704 | 0.3− | 1.0+ | 2005 11 21 | 683 | 1.6− | 1.2− |
| 2002 11 13 | 645 | 0.1− | 0.1− | 2005 10 12 | 704 | 0.9− | 0.4+ | 2005 11 21 | 683 | 0.3− | 0.1− |
| 2003 02 03 | 699 | 1.3+ | 1.1+ | 2005 10 12 | 704 | 0.2+ | 0.1− | 2005 11 22 | 683 | (1.9+ | 2.0+) |
| 2003 02 03 | 699 | 0.6− | 0.3− | 2005 10 12 | 704 | 0.1+ | 0.3− | 2005 11 22 | 683 | 0.5+ | 0.1+ |
| 2003 02 03 | 699 | 0.5+ | 1.2+ | 2005 10 25 | 703 | 0.4− | 0.5+ | 2005 11 22 | 683 | 0.4+ | 1.1+ |
| 2003 02 03 | 699 | 0.8+ | 2.3+ | 2005 10 25 | 703 | 0.8− | 0.0 | 2005 11 25 | 683 | 1.7+ | 1.0− |
| 2004 04 12 | 291 | 0.0 | 0.5+ | 2005 10 25 | 703 | 0.1− | 0.0 | 2005 11 25 | 683 | (2.1+ | 0.2+) |
| 2004 04 12 | 291 | 0.1+ | 0.6+ | 2005 10 25 | 703 | 0.1+ | 0.2+ | 2005 11 25 | 683 | 0.2+ | 0.8+ |
| 2004 04 12 | 291 | 0.2− | 0.4+ | 2005 10 28 | 704 | 0.2+ | 0.6− | 2005 11 29 | 699 | 0.3+ | 0.2+ |
| 2004 04 22 | 691 | 0.2+ | 0.2+ | 2005 10 28 | 704 | 1.0− | 0.5− | 2005 11 29 | 699 | 1.2− | 0.8− |
| 2004 04 22 | 691 | 0.1+ | 0.4+ | 2005 10 28 | 704 | 1.0− | 0.5+ | 2005 11 29 | 699 | 0.2− | 0.3+ |
| 2004 04 22 | 691 | 0.1− | 0.5+ | 2005 10 28 | 704 | 1.4− | 0.0 | 2005 11 30 | 704 | 0.1− | 0.9− |
| 2004 05 09 | 691 | 0.1+ | 0.3+ | 2005 10 28 | 704 | 1.2− | 0.1− | 2005 11 30 | 704 | 0.1− | 0.1− |
| 2004 05 09 | 691 | 0.4+ | 0.4+ | 2005 10 29 | G96 | 0.2+ | 0.3− | 2005 11 30 | 644 | 0.1+ | 0.1+ |
| 2004 05 09 | 691 | 0.1− | 0.0 | 2005 10 29 | G96 | 0.1− | 0.3− | 2005 11 30 | 704 | 0.3− | 0.2− |
| 2005 08 30 | 704 | 0.5− | 0.3+ | 2005 10 29 | G96 | 0.0 | 0.1− | 2005 11 30 | 704 | 0.3− | 0.4− |
| 2005 08 30 | 704 | 0.8− | 0.4+ | 2005 10 29 | G96 | 0.3+ | 0.2− | 2005 11 30 | 644 | 0.0 | 0.2+ |
| 2005 08 30 | 704 | 0.7+ | 0.6+ | 2005 10 31 | 704 | 0.6+ | 0.8+ | 2005 11 30 | 704 | 0.4− | 0.7− |
| 2005 09 06 | 703 | 0.7+ | 0.3− | 2005 10 31 | 704 | 0.6− | 0.6+ | 2005 11 30 | 644 | 0.0 | 0.3+ |
| 2005 09 06 | 703 | 0.6+ | 0.1− | 2005 10 31 | 704 | 0.1+ | 0.7+ | 2005 12 03 | 704 | 0.5− | 0.3− |
| 2005 09 06 | 703 | 0.3+ | 0.2− | 2005 10 31 | 704 | 0.2+ | 0.4+ | 2005 12 03 | 704 | 0.2+ | 0.5+ |
| 2005 09 06 | 703 | 0.8+ | 0.7− | 2005 10 31 | 704 | 0.1+ | 0.6+ | 2005 12 03 | 704 | 0.3− | 0.3+ |
| 2005 09 13 | 704 | 0.2− | 1.0+ | 2005 10 31 | 691 | 0.6+ | 0.9+ | 2005 12 07 | 704 | 0.1+ | 0.0 |
| 2005 09 13 | 704 | 0.0 | 0.0 | 2005 10 31 | 691 | 0.2+ | 0.3+ | 2005 12 07 | 704 | 0.9+ | 0.4+ |
| 2005 09 13 | 704 | 0.6+ | 1.2− | 2005 10 31 | 691 | 0.2+ | 0.2+ | 2005 12 07 | 704 | 0.2− | 0.1− |
| 2005 09 13 | 704 | 0.6+ | 0.6+ | 2005 11 03 | 704 | 0.9− | 0.2+ | 2005 12 07 | 704 | 0.0 | 0.2+ |
| 2005 09 13 | 704 | 0.4+ | 1.0+ | 2005 11 03 | 704 | 0.1+ | 0.2− | 2005 12 07 | 704 | 0.5+ | 0.7− |
| 2005 09 28 | 644 | 0.3− | 0.1− | 2005 11 03 | 704 | 0.1− | 0.0 | 2005 12 08 | 704 | 0.3− | 0.4− |
| 2005 09 28 | 644 | 0.2− | 0.3+ | 2005 11 03 | 704 | 0.3− | 0.2+ | 2005 12 08 | 704 | 0.4+ | 0.5− |
| 2005 09 28 | 644 | 0.1+ | 0.1− | 2005 11 03 | 704 | 0.6+ | 0.8+ | 2005 12 08 | 704 | 0.4+ | 0.3+ |
| 2005 09 28 | 644 | 0.1− | 0.3+ | 2005 11 06 | 704 | 0.4+ | 0.8+ | 2005 12 08 | 704 | 0.0 | 0.1+ |
| 2005 09 28 | 644 | 0.2+ | 0.2− | 2005 11 06 | 704 | 0.5+ | 0.8+ | 2005 12 08 | 704 | 0.2− | 0.4+ |
| 2005 09 28 | 644 | 0.3− | 0.4− | 2005 11 06 | 704 | 0.3+ | 0.7+ | 2005 12 30 | 699 | 1.2+ | 0.2− |
| 2005 10 01 | G96 | 0.0 | 0.0 | 2005 11 06 | 704 | 0.7+ | 0.7+ | 2005 12 30 | 699 | 0.3+ | 0.2− |
| 2005 10 01 | G96 | 0.1− | 0.1+ | 2005 11 06 | 704 | 0.3+ | 0.7+ | 2005 12 30 | 699 | 0.2− | 1.1+ |
| 2005 10 01 | G96 | 0.3+ | 0.1+ | 2005 11 10 | 703 | 0.2− | 0.1− | 2005 12 30 | 699 | 1.4− | 0.2− |
| 2005 10 01 | G96 | 0.2+ | 0.1+ | 2005 11 10 | 703 | 0.2− | 0.1− | 2006 01 23 | 703 | 0.5+ | 0.9− |
| 2005 10 05 | 704 | 0.5− | 1.0+ | 2005 11 10 | 703 | 0.2− | 0.1− | 2006 01 23 | 703 | 1.4− | 0.4− |
| 2005 10 05 | 704 | 0.2+ | 0.9+ | 2005 11 10 | 703 | 0.7− | 0.2+ | 2006 01 23 | 703 | 0.3− | 0.3− |
| 2005 10 05 | 704 | 0.5+ | 0.7+ | 2005 11 20 | 699 | 0.9+ | 0.4+ | 2006 01 23 | 703 | 1.2− | 0.6− |

**(145468)∗ 2005 SH$_{173}$**

Discovered 2005 Sept. 29 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.09759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17098674 | $\omega$ | 21.54337 | | −0.29855181 | +0.95258076 | |
| $a$ | 3.2148528 | $\Omega$ | 231.13499 | | −0.88629861 | −0.29957591 | |
| $e$ | 0.1408119 | $i$ | 4.33050 | | −0.35403615 | −0.05333072 | |
| $P$ | 5.76 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.1− | 2005 09 29 | 691 | 0.1− | 0.4+ | 2005 11 05 | 691 | 0.1+ | 0.3+ |
| 1999 10 13 | 645 | 0.1+ | 0.1− | 2005 10 03 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 1999 10 16 | 645 | 0.0 | 0.0 | 2005 10 03 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3− | 0.7− |
| 1999 10 16 | 645 | 0.1+ | 0.1− | 2005 10 03 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2003 03 28 | 691 | 0.3+ | 0.3− | 2005 10 07 | 691 | 0.3+ | 0.6− | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2003 03 28 | 691 | 0.4− | 0.1+ | 2005 10 07 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2003 03 28 | 691 | 0.4− | 0.3− | 2005 10 07 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2003 05 01 | 691 | 0.6+ | 0.6+ | 2005 10 10 | 291 | 0.6− | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2003 05 01 | 691 | 0.3+ | 1.0+ | 2005 10 10 | 291 | 0.6− | 0.7+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2003 05 01 | 691 | 0.3+ | 0.5+ | 2005 10 10 | 291 | 0.5− | 0.6+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2005 09 01 | 691 | 0.2− | 0.3− | 2005 10 31 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2005 09 01 | 691 | 0.0 | 0.1+ | 2005 10 31 | 691 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2005 09 01 | 691 | 0.1+ | 0.1− | 2005 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2005 09 29 | 691 | 0.1+ | 0.3+ | 2005 11 05 | 691 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2005 09 29 | 691 | 0.1− | 0.3+ | 2005 11 05 | 691 | 0.4+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |

**(145469)∗ 2005 SE$_{222}$**

Discovered 2005 Sept. 27 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.81993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23505632 | $\omega$ | 357.98364 | | −0.28346139 | −0.92438711 | |
| $a$ | 2.6002879 | $\Omega$ | 108.40974 | | +0.88357269 | −0.35521300 | |
| $e$ | 0.0474884 | $i$ | 15.60650 | | +0.37275855 | +0.13904026 | |
| $P$ | 4.19 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.4+ | 0.3+ | 2003 03 22 | 644 | 0.2− | 0.3− | 2005 10 30 | 703 | 0.4− | 0.7+ |
| 2001 10 28 | 644 | 0.0 | 0.1+ | 2003 03 22 | 644 | 0.1+ | 0.0 | 2005 11 06 | 703 | 1.0+ | 0.2− |
| 2001 10 28 | 644 | 0.0 | 0.2+ | 2003 04 07 | 644 | 0.6+ | 0.4+ | 2005 11 06 | 703 | 0.3− | 0.1− |
| 2003 01 07 | 704 | 0.0 | 0.1+ | 2003 04 07 | 644 | 0.4+ | 0.6+ | 2005 11 06 | 703 | 0.8+ | 0.3− |
| 2003 01 07 | 704 | 0.1− | 0.4+ | 2003 04 07 | 644 | 0.6+ | 0.6+ | 2005 11 06 | 703 | 0.5− | 0.4+ |
| 2003 01 07 | 704 | 0.7− | 1.0+ | 2005 09 27 | 704 | 0.1− | 0.7+ | 2005 12 01 | 703 | 0.9− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | (2.2+ | 2.1+) | 2005 09 27 | 704 | 0.3− | 0.2+ | 2005 12 01 | 703 | 1.2− | 0.3− |
| 2003 01 10 | 704 | 0.2− | 0.6+ | 2005 09 27 | 704 | 0.4− | 0.1− | 2005 12 01 | 703 | 0.2− | 0.1+ |
| 2003 01 10 | 704 | 0.3− | 0.8+ | 2005 09 27 | 704 | 0.7+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2003 01 10 | 704 | (0.6+ | 1.9−) | 2005 09 27 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2003 01 26 | 704 | 0.1+ | 0.1+ | 2005 09 27 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.6+ | 0.2− |
| 2003 01 26 | 704 | 0.0 | 0.3+ | 2005 09 27 | 644 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2003 01 26 | 704 | 0.2+ | 0.5+ | 2005 10 04 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.3− |
| 2003 02 26 | 704 | 0.4− | 0.7+ | 2005 10 04 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2003 02 26 | 704 | 0.0 | 0.1+ | 2005 10 04 | 644 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.7− | 0.5− |
| 2003 02 26 | 704 | 0.4+ | 0.3− | 2005 10 30 | 703 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.6− | 1.0+ |
| 2003 02 26 | 704 | (1.6− | 0.8+) | 2005 10 30 | 703 | 0.9− | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.7− |
| 2003 03 22 | 644 | (1.6+ | 1.7−) | 2005 10 30 | 703 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.3− | 0.5− |

**(145470)∗ 2005 SJ$_{222}$ = 2001 XS$_{68}$**

Discovered 2005 Sept. 27 by NEAT at Palomar.

Id. A. Doppler (*MPO* 100994)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.62985 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21827115 | $\omega$ | 246.29016 | | +0.97633772 | −0.04162912 | |
| $a$ | 2.7319442 | $\Omega$ | 115.51235 | | +0.10435124 | +0.95018231 | |
| $e$ | 0.0596922 | $i$ | 13.59952 | | −0.18940822 | +0.30890224 | |
| $P$ | 4.52 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 30 | I03 | 0.1− | 0.4+ | 2001 12 15 | 704 | 0.9− | 0.9+ | 2005 09 27 | 644 | 0.0 | 0.0 |
| 2000 06 30 | I03 | 0.2− | 0.3+ | 2002 01 08 | 209 | 0.2− | 0.2+ | 2005 10 04 | 644 | 0.2+ | 0.1− |
| 2000 06 30 | I03 | 0.2− | 0.2− | 2002 01 08 | 209 | 0.1+ | 0.3− | 2005 10 04 | 644 | 0.1− | 0.2− |
| 2000 07 01 | I03 | 0.1+ | 0.3+ | 2002 01 08 | 209 | 0.6+ | 1.0− | 2005 10 04 | 644 | 0.6− | 0.1− |
| 2000 07 01 | I03 | 0.6+ | 0.3+ | 2002 12 11 | 645 | 0.0 | 0.0 | 2005 10 12 | E12 | 0.4− | 0.1+ |
| 2000 07 01 | I03 | 0.1− | 0.2+ | 2002 12 11 | 645 | 0.1+ | 0.2+ | 2005 10 12 | E12 | 0.0 | 1.1+ |
| 2001 12 11 | 704 | 0.3− | 0.4+ | 2003 03 08 | 699 | 0.0 | 0.0 | 2005 10 12 | E12 | 0.3− | 0.7+ |
| 2001 12 11 | 704 | 0.4− | 0.3+ | 2003 03 08 | 699 | 0.3− | 1.7+ | 2005 10 12 | E12 | 0.8+ | 0.8− |
| 2001 12 11 | 704 | 0.2+ | 1.1+ | 2003 03 08 | 699 | 1.1− | 0.6− | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2001 12 11 | 704 | 0.2+ | 1.2− | 2003 03 08 | 699 | 0.3+ | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2001 12 11 | 704 | 0.0 | 0.1+ | 2005 09 27 | 704 | 1.3− | 0.4− | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2001 12 15 | 704 | 1.3+ | 0.3+ | 2005 09 27 | 704 | 0.3+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 12 15 | 704 | 1.5− | 0.1− | 2005 09 27 | 704 | 0.0 | 0.7+ | 2006 11 27 | G96 | 0.4− | 0.3− |
| 2001 12 15 | 704 | 0.6+ | 0.3− | 2005 09 27 | 704 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.5− |
| 2001 12 15 | 704 | 0.6− | 0.3+ | 2005 09 27 | 644 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.9+ | 0.0 |
| 2001 12 15 | 704 | 0.5+ | 0.1− | 2005 09 27 | 644 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 1.0+ | 0.5− |

**(145471)∗ 2005 ST$_{234}$**

Discovered 2005 Sept. 29 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.36264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18279283 | $\omega$ | 130.86303 | | −0.56456974 | +0.82482334 | |
| $a$ | 3.0748926 | $\Omega$ | 104.73937 | | −0.76643426 | −0.51019583 | |
| $e$ | 0.1461376 | $i$ | 1.80457 | | −0.30633241 | −0.24365276 | |
| $P$ | 5.39 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 704 | 1.0− | 1.7+ | 2003 02 28 | 704 | 0.1+ | 0.8+ | 2005 10 06 | G96 | 0.3+ | 0.2− |
| 1998 03 22 | 704 | (2.3− | 1.2−) | 2003 02 28 | 704 | 0.3− | 0.2+ | 2005 10 06 | G96 | 0.4+ | 0.3− |
| 1998 03 22 | 704 | 1.0+ | 0.4+ | 2003 02 28 | 704 | 0.2− | 0.1+ | 2005 10 06 | G96 | 0.0 | 0.4− |
| 1998 03 22 | 704 | 0.9− | 0.5− | 2003 02 28 | 704 | 0.0 | 0.3− | 2005 10 06 | G96 | 0.3+ | 0.4− |
| 1998 03 22 | 704 | (4.1− | 0.3−) | 2003 02 28 | 704 | 0.8− | 0.4+ | 2005 10 29 | G96 | 0.5+ | 0.5− |
| 1998 03 25 | 704 | 1.5− | 0.5+ | 2003 02 28 | 704 | 0.5− | 0.5− | 2005 10 29 | G96 | 0.1− | 0.5− |
| 1998 03 25 | 704 | 1.2+ | 1.3− | 2003 03 06 | 699 | 0.9+ | 0.0 | 2005 10 29 | G96 | 0.3+ | 0.4− |
| 1998 03 25 | 704 | 1.4− | 0.7− | 2003 03 06 | 699 | 1.2− | 0.8− | 2005 10 29 | G96 | 0.3+ | 0.5− |
| 1998 03 25 | 704 | 0.1− | 1.2+ | 2003 03 06 | 699 | 0.7− | 0.5+ | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 1998 03 25 | 704 | (3.6− | 0.6+) | 2003 03 06 | 699 | (0.8− | 3.1+) | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 1998 03 29 | 704 | 1.5+ | 1.2− | 2003 03 06 | 644 | 0.4+ | 1.4+ | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 1998 03 29 | 704 | 1.0+ | 1.4− | 2003 03 06 | 644 | (1.4+ | 1.8+) | 2006 10 19 | G96 | 0.2− | 0.4− |
| 1998 03 29 | 704 | 1.0+ | 0.4− | 2003 03 06 | 644 | (1.6+ | 1.4+) | 2006 11 11 | 691 | 0.0 | 0.0 |
| 1998 03 29 | 704 | 1.6− | 0.3− | 2005 08 25 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 1998 04 20 | 704 | 0.4+ | 1.5− | 2005 08 25 | 644 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 1998 04 20 | 704 | 0.1− | 0.2− | 2005 08 25 | 644 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 1998 04 20 | 704 | 0.6− | 1.6− | 2005 08 28 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 1998 04 20 | 704 | 0.9− | 1.8− | 2005 08 28 | 691 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2000 10 01 | 704 | 0.3+ | 0.9− | 2005 08 28 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.3− | 0.3− |
| 2000 10 01 | 704 | 0.2− | 1.1− | 2005 09 01 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2000 10 01 | 704 | 0.5+ | 0.1− | 2005 09 01 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2000 10 01 | 704 | 0.9− | 0.5− | 2005 09 01 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2003 02 22 | 644 | 0.5+ | 0.3+ | 2005 09 29 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.4− | 0.0 |
| 2003 02 22 | 644 | 1.0+ | 0.0 | 2005 09 29 | G96 | 0.4+ | 0.5− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2003 02 22 | 644 | 0.6+ | 0.1+ | 2005 09 29 | G96 | 0.6+ | 0.8− | | | | |
| 2003 02 28 | 704 | 0.3− | 0.5+ | 2005 09 29 | G96 | 0.2+ | 0.3− | | | | |

**(145472)∗ 2005 SD$_{256}$**

Discovered 2005 Sept. 22 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.46557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17575890 | $\omega$ | 20.24721 | | −0.51119119 | +0.85834563 | |
| $a$ | 3.1563936 | $\Omega$ | 219.04490 | | −0.79782656 | −0.49290041 | |
| $e$ | 0.1132448 | $i$ | 3.99530 | | −0.31961908 | −0.14244985 | |
| $P$ | 5.61 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 07 | 691 | 0.3+ | 0.3+ | 2005 09 22 | 644 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.5− | 0.0 |
| 1992 04 07 | 691 | 0.2+ | 0.3+ | 2005 09 23 | 699 | 0.1+ | 1.3+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 1992 04 07 | 691 | 0.3− | 0.0 | 2005 09 23 | 699 | (0.6+ | 1.7+) | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2003 02 11 | 608 | 0.4+ | 0.4− | 2005 09 23 | 699 | (0.1− | 1.6+) | 2006 11 11 | 691 | 0.4+ | 0.0 |
| 2003 02 11 | 608 | 0.1− | 1.0− | 2005 09 23 | 699 | (0.3− | 2.7+) | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2003 02 11 | 608 | 0.5+ | 0.1− | 2005 10 01 | 703 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 2003 03 06 | 699 | 0.3+ | 1.3+ | 2005 10 01 | 703 | 1.2− | 0.2+ | 2006 11 11 | 703 | (2.1− | 1.2+) |
| 2003 03 06 | 699 | 0.2− | 1.1+ | 2005 10 01 | 703 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.8+ |
| 2003 03 06 | 699 | 0.2− | 0.2+ | 2005 10 01 | 703 | 0.9− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2003 03 06 | 699 | 0.7+ | 0.2+ | 2005 10 30 | G96 | 0.5− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2003 03 25 | 699 | 0.3+ | 0.5+ | 2005 10 30 | G96 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2003 03 25 | 699 | 1.1− | 0.2− | 2005 10 30 | G96 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.4− | 0.1− |
| 2003 03 25 | 699 | 0.5− | 0.2− | 2005 10 30 | G96 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.5− |
| 2003 03 25 | 699 | 0.6− | 0.7+ | 2005 11 30 | G96 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2003 03 30 | 644 | 0.1− | 0.2+ | 2005 11 30 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2003 03 30 | 644 | 0.1+ | 0.2+ | 2005 11 30 | G96 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2003 03 30 | 644 | 0.1+ | 0.4+ | 2005 11 30 | G96 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 2003 03 31 | 704 | 0.3+ | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 1.1+ | 1.3+ |
| 2003 03 31 | 704 | (2.5+ | 0.6−) | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 1.0+ | 0.5+ |
| 2003 03 31 | 704 | (2.8+ | 0.1−) | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2003 03 31 | 704 | 1.4+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2005 08 25 | 644 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2005 08 25 | 644 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2005 08 25 | 644 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.4− | 0.4− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2005 09 22 | 644 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2005 09 22 | 644 | 0.2− | 0.5+ | 2006 11 01 | G96 | 0.4− | 0.0 | | | | |

**(145473)∗ 2005 SL$_{262}$ = 2003 JL$_{15}$**

Discovered 2005 Sept. 23 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 95960)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.00916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12645974 | $\omega$ | 90.96665 | | +0.55893278 | +0.82529307 | |
| $a$ | 3.9309832 | $\Omega$ | 213.42526 | | −0.80701933 | +0.51908254 | |
| $e$ | 0.2011462 | $i$ | 8.40662 | | −0.19056219 | +0.22236158 | |
| $P$ | 7.79 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 27 | 691 | 0.1+ | 0.5− | 2005 09 09 | 704 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.7− | 0.3+ |
| 1998 10 27 | 691 | 0.1+ | 0.5− | 2005 09 23 | 644 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 1998 10 27 | 691 | 0.0 | 0.4− | 2005 09 23 | 644 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2003 04 24 | 691 | 0.3− | 0.2+ | 2005 09 23 | 644 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 24 | 699 | 0.2− | 0.6+ | 2005 10 01 | 703 | 1.5− | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.6+ |
| 2003 04 24 | 699 | 0.1+ | 0.3− | 2005 10 01 | 703 | 1.0− | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.4+ |
| 2003 04 24 | 691 | 0.2− | 0.2+ | 2005 10 01 | 703 | 0.9− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.9+ |
| 2003 04 24 | 699 | 0.3− | 0.4+ | 2005 10 01 | 703 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2003 04 24 | 699 | 0.6+ | 0.9+ | 2005 10 08 | 704 | 0.5+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.1+ |
| 2003 04 24 | 691 | 0.2− | 0.2+ | 2005 10 08 | 704 | 0.4+ | 0.7+ | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2003 05 06 | 691 | 0.5+ | 1.4+ | 2005 10 08 | 704 | 1.2+ | 0.6− | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2003 05 06 | 691 | (0.3+ | 1.7+) | 2005 10 25 | 699 | 1.2+ | 0.5+ | 2006 11 17 | 703 | 0.6− | 0.3− |
| 2003 05 06 | 691 | (0.6+ | 2.2+) | 2005 10 25 | 699 | 1.1+ | 0.6+ | 2006 11 17 | 703 | 0.1− | 1.0+ |
| 2003 05 08 | 691 | 0.5+ | 0.0 | 2005 10 25 | 699 | 1.5− | 0.3+ | 2006 11 17 | 703 | 1.9+ | 1.2− |
| 2003 05 08 | 691 | 0.3+ | 0.2+ | 2005 10 25 | 699 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.5+ | 0.1− |
| 2003 05 08 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2005 08 31 | 699 | 1.0+ | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2005 08 31 | 699 | (0.1− | 2.1+) | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 08 31 | 699 | (1.9− | 1.5+) | 2006 09 28 | G96 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2005 08 31 | 699 | 0.2+ | 0.6+ | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2005 09 09 | 704 | 0.8− | 0.4+ | 2006 10 12 | 691 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2005 09 09 | 704 | 1.4− | 0.9+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.6+ | 0.5− |
| 2005 09 09 | 704 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2005 09 09 | 704 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.0 | | | | |

**(145474)∗ 2005 SA$_{278}$**

Discovered 2005 Sept. 27 by A. C. Becker, A. W. Puckett and J. Kubica at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.48128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00112749 | $\omega$ | 277.26912 | | +0.03412303 | −0.99832042 | |
| $a$ | 91.4241945 | $\Omega$ | 170.39418 | | +0.99138318 | +0.02788348 | |
| $e$ | 0.6387626 | $i$ | 16.29419 | | +0.12647139 | +0.05078232 | |
| $P$ | 874 | $H$ | 6.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 705 | 0.2− | 0.1− | 2003 10 24 | 705 | 0.1+ | 0.1+ | 2005 12 01 | 705 | 0.2+ | 0.1− |
| 2001 10 25 | 705 | 0.2+ | 0.0 | 2003 10 24 | 705 | 0.0 | 0.1+ | 2005 12 01 | 705 | 0.0 | 0.0 |
| 2001 11 12 | 705 | 0.0 | 0.0 | 2003 11 20 | 705 | 0.2− | 0.0 | 2006 08 28 | 705 | 0.0 | 0.0 |
| 2001 11 12 | 705 | 0.2+ | 0.1+ | 2003 11 20 | 705 | 0.2− | 0.0 | 2006 08 28 | 705 | 0.2− | 0.2− |
| 2001 11 18 | 705 | 0.0 | 0.1− | 2003 11 28 | 705 | 0.0 | 0.0 | 2006 09 16 | 705 | 0.2− | 0.0 |
| 2001 11 18 | 705 | 0.0 | 0.2+ | 2003 11 28 | 705 | 0.2− | 0.1+ | 2006 09 16 | 705 | 0.4− | 0.0 |
| 2001 11 21 | 705 | 0.1− | 0.0 | 2005 09 27 | 705 | 0.2+ | 0.1− | 2006 09 17 | 705 | 0.1− | 0.0 |
| 2001 11 21 | 705 | 0.0 | 0.0 | 2005 09 27 | 705 | 0.2− | 0.4+ | 2006 09 17 | 705 | 0.2− | 0.2+ |
| 2002 09 05 | 705 | 0.2+ | 0.1− | 2005 10 25 | 705 | 0.3+ | 0.2+ | 2006 09 29 | 705 | 0.1+ | 0.0 |
| 2002 09 05 | 705 | 0.3+ | 0.0 | 2005 10 25 | 705 | 0.1+ | 0.1+ | 2006 09 29 | 705 | 0.3+ | 0.0 |
| 2002 10 30 | 705 | 0.1+ | 0.0 | 2005 10 27 | 705 | 0.1+ | 0.0 | 2006 10 01 | 705 | 0.1+ | 0.1+ |
| 2002 10 30 | 705 | 0.1+ | 0.1+ | 2005 10 27 | 705 | 0.3+ | 0.0 | 2006 10 01 | 705 | 0.1+ | 0.0 |
| 2003 09 28 | 705 | 0.1+ | 0.1− | 2005 10 30 | 705 | 0.1− | 0.2− | 2006 10 03 | 705 | 0.2+ | 0.1+ |
| 2003 09 28 | 705 | 0.2− | 0.0 | 2005 10 30 | 705 | 0.2− | 0.0 | 2006 10 03 | 705 | 0.2− | 0.1+ |
| 2003 10 22 | 705 | 0.4− | 0.2− | 2005 11 06 | 705 | 0.0 | 0.0 | 2006 10 29 | 705 | 0.0 | 0.0 |
| 2003 10 22 | 705 | 0.2− | 0.1− | 2005 11 06 | 705 | 0.1+ | 0.1− | 2006 10 29 | 705 | 0.0 | 0.1− |

**(145475)∗ 2005 TP$_{52}$ = 2000 TZ$_{30}$**

Discovered 2005 Oct. 12 by L. A. Molnar at Calvin-Rehoboth Observatory, Rehoboth.

Id. G. V. Williams (*MPO* 89910)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.20141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21349909 | $\omega$ | 174.76476 | | −0.90943605 | +0.41503447 | |
| $a$ | 2.7725030 | $\Omega$ | 29.79920 | | −0.38339814 | −0.81269803 | |
| $e$ | 0.0202509 | $i$ | 2.99110 | | −0.16103396 | −0.40898448 | |
| $P$ | 4.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 25 | 691 | 0.1+ | 0.4− | 2005 10 08 | 291 | 0.2− | 0.3+ | 2005 11 26 | G96 | 0.0 | 0.0 |
| 1998 01 25 | 691 | 0.4− | 0.4− | 2005 10 08 | 291 | 0.2− | 0.2+ | 2005 11 26 | G96 | 0.0 | 0.1− |
| 1998 01 25 | 691 | 0.1+ | 0.1+ | 2005 10 11 | 691 | 0.1− | 0.2+ | 2005 11 26 | G96 | 0.0 | 0.1− |
| 2000 08 25 | 807 | 0.1− | 0.2+ | 2005 10 11 | 691 | 0.2+ | 0.1− | 2005 11 26 | G96 | 0.5− | 0.1− |
| 2000 08 25 | 807 | 0.1− | 0.1+ | 2005 10 11 | 691 | 0.0 | 0.2+ | 2005 12 02 | G96 | 0.5− | 0.3− |
| 2000 10 04 | 691 | 0.0 | 0.3+ | 2005 10 12 | G98 | 0.7− | 0.1+ | 2005 12 02 | G96 | 0.4+ | 0.2− |
| 2000 10 04 | 691 | 0.0 | 0.2+ | 2005 10 12 | G98 | 0.0 | 0.5+ | 2005 12 02 | G96 | 0.1+ | 0.4− |
| 2000 10 04 | 691 | 0.1+ | 0.3+ | 2005 10 12 | G98 | 0.8− | 0.2− | 2005 12 02 | G96 | 0.2+ | 0.3− |
| 2000 10 05 | 691 | 0.1− | 0.1− | 2005 10 12 | G98 | 0.2− | 0.0 | 2006 01 04 | G96 | 0.1+ | 0.2− |
| 2000 10 05 | 691 | 0.1− | 0.2− | 2005 10 12 | G98 | 0.4+ | 0.3+ | 2006 01 04 | G96 | 0.2+ | 0.2+ |
| 2000 10 05 | 691 | 0.2− | 0.4− | 2005 10 14 | G98 | 0.6+ | 0.3+ | 2006 01 04 | G96 | 0.4+ | 0.5− |
| 2003 03 24 | 691 | 0.2− | 0.2+ | 2005 10 14 | G98 | 0.0 | 0.3+ | 2006 01 04 | G96 | 0.1+ | 0.4+ |
| 2003 03 24 | 691 | 0.3+ | 0.3+ | 2005 10 14 | G98 | 0.0 | 0.0 | 2006 11 16 | G98 | 0.2+ | 0.3+ |
| 2003 03 24 | 691 | 0.2− | 0.4+ | 2005 10 14 | G98 | 0.5− | 0.4+ | 2006 11 16 | G98 | 0.3− | 0.5+ |
| 2003 04 04 | 691 | 0.5+ | 0.4+ | 2005 10 14 | G98 | 0.1+ | 0.2+ | 2006 11 16 | G98 | 0.3+ | 0.4+ |
| 2003 04 04 | 691 | 0.1+ | 0.3+ | 2005 10 14 | G98 | 0.0 | 0.2− | 2006 11 16 | G98 | 0.3− | 0.3+ |
| 2003 04 04 | 691 | 0.4+ | 0.2+ | 2005 10 22 | G98 | 0.5+ | 0.5+ | 2006 11 21 | G98 | 0.4+ | 0.4+ |
| 2005 09 29 | G96 | 0.1− | 0.1− | 2005 10 22 | G98 | 0.2− | 0.2− | 2006 11 21 | G98 | 0.5+ | 0.2+ |
| 2005 09 29 | G96 | 0.6+ | 0.2− | 2005 10 22 | G98 | 0.4− | 0.4+ | 2006 11 21 | G98 | 0.4+ | 0.1+ |
| 2005 09 29 | G96 | 0.2+ | 0.1− | 2005 10 22 | G98 | 0.5− | 0.0 | 2006 11 21 | G98 | 0.3− | 0.4+ |
| 2005 09 29 | G96 | 0.1− | 0.0 | 2005 10 22 | G98 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2005 10 03 | 703 | 1.1− | 0.8− | 2005 10 22 | G98 | 0.5− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2005 10 03 | 703 | (0.8− | 3.8−) | 2005 10 30 | 291 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2005 10 03 | 703 | 1.0+ | 1.0−) | 2005 10 30 | 291 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2005 10 03 | 703 | (2.8− | 1.0−) | 2005 10 30 | 291 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2005 10 07 | 691 | 0.1+ | 0.3+ | 2005 10 30 | 703 | 0.8− | 1.3− | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2005 10 07 | 691 | 0.2+ | 0.3+ | 2005 10 30 | 703 | 0.4− | 0.8− | 2006 11 25 | G96 | 0.4− | 0.2− |
| 2005 10 07 | 691 | 0.2+ | 0.1+ | 2005 10 30 | 703 | 0.1+ | 0.7− | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2005 10 08 | 291 | 0.1− | 0.3+ | 2005 10 30 | 703 | 0.1+ | 1.3− | | | | |

**(145476)∗ 2005 TW$_{65}$ = 1996 AZ$_{12}$**

Discovered 2005 Oct. 2 by NEAT at Palomar.

Id. A. Doppler (*MPO* 96003)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.41227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17057197 | $\omega$ | 139.81370 | | +0.66832288 | −0.72662570 | |
| $a$ | 3.2200622 | $\Omega$ | 267.61053 | | +0.63502354 | +0.66879678 | |
| $e$ | 0.0106756 | $i$ | 9.17124 | | +0.38741404 | +0.15724490 | |
| $P$ | 5.78 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.0 | 0.3− | 2005 09 27 | 644 | 0.2+ | 0.3+ | 2005 10 10 | 703 | 0.1+ | 0.1+ |
| 1996 01 15 | 691 | 0.2− | 0.0 | 2005 09 27 | 644 | 0.1+ | 1.0− | 2005 10 10 | 703 | 0.4+ | 0.1+ |
| 1996 01 15 | 691 | 0.1− | 0.0 | 2005 10 02 | 644 | 0.3+ | 0.6+ | 2005 10 10 | 703 | 1.0+ | 0.4+ |
| 1996 01 29 | 691 | 0.3+ | 0.2− | 2005 10 02 | 644 | 0.3+ | 0.4+ | 2005 10 10 | 703 | 0.3− | 0.8+ |
| 1996 01 29 | 691 | 0.0 | 0.1+ | 2005 10 02 | 644 | 0.4+ | 0.5+ | 2005 10 10 | 703 | 0.0 | 0.3+ |
| 1996 01 29 | 691 | 0.2− | 0.2+ | 2005 10 07 | G96 | 0.4+ | 0.2+ | 2005 10 10 | 703 | 0.9− | 0.2+ |
| 2002 02 07 | 644 | 0.6+ | 0.2+ | 2005 10 07 | G96 | 0.3+ | 0.3+ | 2005 10 10 | 703 | 0.3+ | 0.4− |
| 2002 02 07 | 644 | 0.5+ | 0.1+ | 2005 10 07 | G96 | 0.1+ | 0.2+ | 2005 10 29 | 703 | 0.7− | 1.0− |
| 2002 02 07 | 644 | 0.3+ | 0.2+ | 2005 10 07 | G96 | 0.1+ | 0.1+ | 2005 10 29 | 703 | 0.5− | 0.3− |
| 2002 02 15 | 704 | 1.0+ | 0.1− | 2005 10 08 | 703 | 0.6− | 0.5− | 2005 10 29 | 703 | 0.8− | 0.9− |
| 2002 02 15 | 704 | 0.4+ | 0.6+ | 2005 10 08 | 703 | 1.0+ | 0.1− | 2005 10 29 | 703 | 0.2− | 1.3− |
| 2002 02 15 | 704 | 0.9− | 1.4+ | 2005 10 08 | 703 | 0.6− | 0.9+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2004 06 14 | 691 | 0.1− | 0.3+ | 2005 10 08 | 703 | 1.1− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2004 06 14 | 691 | 0.0 | 0.4+ | 2005 10 09 | E12 | (0.1− | 1.8−) | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2004 06 14 | 691 | 0.1− | 0.1+ | 2005 10 09 | E12 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2004 08 08 | 704 | 0.2− | 1.1+ | 2005 10 09 | E12 | 0.4+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2004 08 08 | 704 | 0.1− | 0.1− | 2005 10 09 | E12 | 0.3− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2004 08 08 | 704 | 0.2− | 1.1− | 2005 10 09 | E12 | 0.8− | 0.0 | 2006 11 26 | 691 | 0.0 | 0.0 |
| 2005 09 02 | 644 | 0.0 | 0.3+ | 2005 10 09 | E12 | 0.3− | 0.9− | 2006 11 26 | 691 | 0.1− | 0.0 |
| 2005 09 02 | 644 | 0.4+ | 0.6+ | 2005 10 09 | E12 | 0.2+ | 0.2+ | 2006 11 26 | 691 | 0.0 | 0.2+ |
| 2005 09 02 | 644 | 0.1+ | 0.1+ | 2005 10 09 | E12 | 0.2− | 0.2− | | | | |
| 2005 09 27 | 644 | 0.5+ | 0.5+ | 2005 10 10 | 703 | 1.0+ | 0.0 | | | | |

**(145477)∗ 2005 TM$_{76}$**

Discovered 2005 Oct. 5 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.59224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21921842 | $\omega$ | 252.50577 | | +0.97865304 | −0.12748918 | |
| $a$ | 2.7240685 | $\Omega$ | 114.56877 | | +0.17447993 | +0.92987558 | |
| $e$ | 0.1542014 | $i$ | 10.20933 | | −0.10860471 | +0.34507667 | |
| $P$ | 4.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.2− | 0.0 | 2003 02 28 | 704 | 0.2+ | 0.7+ | 2005 10 08 | 699 | 0.0 | 0.9+ | |
| 1995 07 03 | 691 | 0.3− | 0.2− | 2003 03 23 | 644 | 0.5+ | 0.5+ | 2005 10 08 | 699 | 0.6+ | 0.9+ | |
| 1995 07 03 | 691 | 0.6− | 0.4− | 2003 03 23 | 644 | 0.7+ | 0.5+ | 2005 10 08 | 699 | 0.2− | 1.0+ | |
| 1997 12 07 | 910 | 0.5+ | 1.0− | 2003 03 23 | 644 | 0.4+ | 0.3+ | 2005 11 06 | 699 | 0.8− | 0.5+ | |
| 1997 12 08 | 910 | 0.1+ | 0.5− | 2003 04 08 | 691 | 0.5+ | 1.2+ | 2005 11 06 | 699 | 0.1− | 0.4+ | |
| 1997 12 08 | 910 | 0.2− | 0.4− | 2003 04 08 | 691 | 0.8+ | 1.2+ | 2005 11 06 | 699 | 0.9− | 0.2+ | |
| 2000 07 07 | 704 | 0.2− | 0.3− | 2003 04 08 | 691 | 0.8+ | 0.9+ | 2005 11 06 | 699 | 0.5+ | 0.3+ | |
| 2000 07 07 | 704 | 0.7+ | 0.0 | 2004 04 24 | 691 | 0.1+ | 0.5+ | 2005 11 15 | 644 | 0.0 | 0.1+ | |
| 2000 07 07 | 704 | 0.4+ | 0.4− | 2004 04 24 | 691 | 0.0 | 0.5+ | 2005 11 15 | 644 | 0.2− | 0.5+ | |
| 2000 07 07 | 704 | 0.7+ | 0.1+ | 2004 04 24 | 691 | 0.2+ | 0.6+ | 2005 11 15 | 644 | 0.3− | 0.4+ | |
| 2001 10 12 | 691 | 0.1− | 0.2+ | 2004 05 23 | 704 | (2.2+ | 0.9+) | 2005 12 07 | 703 | 0.5− | 0.5− | |
| 2001 10 12 | 691 | 0.1− | 0.4+ | 2004 05 23 | 704 | (1.8+ | 1.2+) | 2005 12 07 | 703 | 0.5− | 0.6+ | |
| 2001 10 12 | 691 | 0.2+ | 0.1+ | 2004 05 23 | 704 | 0.8+ | 1.2+ | 2005 12 07 | 703 | 0.5− | 0.2− | |
| 2001 11 17 | 704 | (3.1+ | 0.6+) | 2004 06 17 | 644 | 0.3+ | 0.4− | 2005 12 07 | 703 | 0.6− | 1.2− | |
| 2001 11 17 | 704 | (2.6+ | 1.3+) | 2004 06 17 | 644 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.2− | |
| 2001 11 17 | 704 | (3.6+ | 0.4−) | 2004 06 17 | 644 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.4− | |
| 2001 11 17 | 704 | (3.5+ | 0.8+) | 2005 09 13 | 703 | 0.1− | 0.6+ | 2006 11 01 | G96 | 0.4− | 0.3− | |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2005 09 13 | 703 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.2− | |
| 2001 12 11 | 704 | 0.2− | 0.0 | 2005 09 13 | 703 | 0.6− | 0.5+ | 2006 11 15 | G96 | 0.5+ | 0.3− | |
| 2001 12 11 | 704 | 0.1+ | 0.3+ | 2005 09 13 | 703 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.3− | |
| 2001 12 11 | 704 | 0.1+ | 0.6+ | 2005 09 27 | 704 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.6− | |
| 2001 12 11 | 704 | 0.2+ | 0.2+ | 2005 09 27 | 704 | 0.7− | 0.7+ | 2006 11 15 | G96 | 0.2+ | 0.0 | |
| 2002 01 09 | 704 | 0.7+ | 0.4+ | 2005 09 27 | 704 | 0.6− | 0.7+ | 2006 11 16 | G96 | 0.3− | 0.2− | |
| 2002 01 09 | 704 | 1.0+ | 0.3− | 2005 09 27 | 704 | 1.0− | 0.9+ | 2006 11 16 | G96 | 0.1− | 0.0 | |
| 2002 01 09 | 704 | 0.1+ | 0.2+ | 2005 09 27 | 704 | 0.9− | 0.8+ | 2006 11 16 | G96 | 0.3− | 0.1− | |
| 2002 12 11 | 645 | 0.1− | 0.0 | 2005 10 05 | 703 | 0.7+ | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.2− | |
| 2002 12 11 | 645 | 0.3− | 0.0 | 2005 10 05 | 703 | 0.4− | 0.9+ | 2006 11 28 | G96 | 0.4− | 0.2− | |
| 2003 02 28 | 704 | 0.9+ | 0.0 | 2005 10 05 | 703 | 0.1+ | 0.6+ | 2006 11 28 | G96 | 0.6− | 0.1− | |
| 2003 02 28 | 704 | 0.5+ | 0.9+ | 2005 10 05 | 703 | 0.0 | 0.5+ | 2006 11 28 | G96 | 0.3− | 0.1− | |
| 2003 02 28 | 704 | 0.3+ | 0.8+ | 2005 10 08 | 699 | 0.3+ | 0.6+ | 2006 11 28 | G96 | 0.0 | 0.1+ | |

**(145478)∗ 2005 TC$_{86}$**

Discovered 2005 Oct. 3 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.42846 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12391809 | $\omega$ | 205.94359 | | −0.06798231 | −0.98337827 | |
| $a$ | 3.9845526 | $\Omega$ | 248.34094 | | +0.94399132 | −0.00878617 | |
| $e$ | 0.2089945 | $i$ | 10.43683 | | +0.32289130 | −0.18135597 | |
| $P$ | 7.95 | $H$ | 13.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | (3.4+ | 1.0+) | 2005 10 23 | 703 | 0.1+ | 0.2− | 2005 12 02 | 704 | 0.3+ | 0.4+ | |
| 1997 10 29 | 704 | (2.3+ | 1.5−) | 2005 10 25 | 699 | 0.1− | 0.2+ | 2005 12 02 | 704 | 0.1+ | 0.1+ | |
| 1997 10 29 | 704 | 0.6+ | 0.3+ | 2005 10 25 | 699 | 0.2− | 0.4+ | 2005 12 02 | 704 | 0.2− | 0.1+ | |
| 1997 10 29 | 704 | (5.4− | 0.1+) | 2005 10 25 | 699 | 0.3+ | 0.6+ | 2005 12 05 | 704 | (0.0 | 1.9+) | |
| 1997 11 30 | 691 | 0.6− | 0.4− | 2005 10 25 | 699 | 0.2− | 0.0 | 2005 12 05 | 704 | 0.2− | 1.3+ | |
| 1997 11 30 | 691 | 0.2− | 0.3− | 2005 10 26 | 699 | 0.8+ | 0.3− | 2005 12 05 | 704 | 0.6+ | 0.1− | |
| 1997 11 30 | 691 | 0.2− | 0.4− | 2005 10 26 | 699 | 0.2+ | 0.3− | 2005 12 05 | 704 | 1.1− | 0.3+ | |
| 1999 01 14 | 699 | 1.3+ | 1.0+ | 2005 10 26 | 699 | 0.8+ | 0.1− | 2005 12 05 | 704 | 0.5+ | 0.9+ | |
| 1999 01 14 | 699 | 1.3+ | 0.6− | 2005 10 26 | 699 | 0.0 | 0.4− | 2005 12 07 | 699 | 0.5− | 0.1+ | |
| 1999 01 14 | 699 | 1.7+ | 0.5+ | 2005 10 27 | 691 | 0.2− | 0.3− | 2005 12 07 | 699 | 0.7+ | 0.1− | |
| 2003 06 02 | 291 | 0.6− | 0.0 | 2005 10 27 | 691 | 0.1+ | 0.0 | 2005 12 07 | 699 | 1.0+ | 0.5+ | |
| 2003 06 02 | 291 | 0.3− | 0.3+ | 2005 10 27 | 691 | 0.0 | 0.1− | 2005 12 07 | 699 | 0.4+ | 0.3+ | |
| 2003 06 02 | 291 | 0.4− | 0.4+ | 2005 10 29 | 703 | 0.4− | 0.1+ | 2005 12 09 | 704 | 0.2+ | 0.7+ | |
| 2003 07 06 | 691 | 0.2+ | 0.2+ | 2005 10 29 | 703 | 0.3− | 0.0 | 2005 12 09 | 704 | 0.3− | 0.3+ | |
| 2003 07 06 | 691 | 0.1+ | 0.4+ | 2005 10 29 | 703 | 0.6+ | 0.5− | 2005 12 09 | 704 | 0.1+ | 0.8+ | |
| 2003 07 06 | 691 | 0.3+ | 0.0 | 2005 10 29 | 703 | 0.1+ | 0.4− | 2005 12 09 | 704 | 0.6+ | 0.2+ | |
| 2004 08 13 | 599 | 0.3+ | 0.0 | 2005 10 30 | 704 | (2.0+ | 0.2−) | 2005 12 09 | 704 | 0.0 | 0.8+ | |
| 2004 08 13 | 599 | 0.9+ | 0.7− | 2005 10 30 | 704 | 0.4− | 0.4− | 2006 01 23 | G96 | 0.4− | 0.3− | |
| 2004 08 13 | 599 | 0.4+ | 0.0 | 2005 10 30 | 704 | 0.1+ | 0.6+ | 2006 01 23 | G96 | 0.1+ | 0.5− | |
| 2004 09 18 | 704 | (0.8+ | 1.9−) | 2005 10 31 | 703 | 0.1− | 0.2− | 2006 01 23 | G96 | 0.0 | 0.6− | |
| 2004 09 18 | 704 | 0.1− | 0.1− | 2005 10 31 | 703 | 0.2− | 0.8− | 2006 01 23 | G96 | 0.1− | 0.5− | |
| 2004 09 18 | 704 | 0.0 | 0.1− | 2005 10 31 | 703 | 0.1+ | 0.4− | 2006 01 24 | 699 | 0.1+ | 0.3− | |
| 2005 10 03 | 704 | 0.5− | 0.3+ | 2005 10 31 | 703 | 0.0 | 0.1− | 2006 01 24 | 699 | 0.5+ | 0.3+ | |
| 2005 10 03 | 704 | 0.0 | 0.5+ | 2005 11 02 | 704 | 0.5+ | 0.1− | 2006 01 24 | 699 | 0.2+ | 0.8− | |
| 2005 10 03 | 704 | 0.4− | 0.4+ | 2005 11 02 | 704 | 0.1+ | 0.1+ | 2006 01 24 | 699 | 0.6+ | 0.3+ | |
| 2005 10 03 | 704 | 0.4− | 1.4+ | 2005 11 02 | 704 | 0.2− | 0.5− | 2006 10 19 | 703 | 0.8− | 0.3+ | |
| 2005 10 03 | 704 | 1.0− | 0.5+ | 2005 11 02 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 1.0− | 0.1− | |
| 2005 10 03 | 644 | 0.1− | 0.1+ | 2005 11 02 | 704 | 0.6− | 0.4− | 2006 10 19 | 703 | 0.7− | 0.8− | |
| 2005 10 03 | 644 | 0.1+ | 0.0 | 2005 11 07 | 704 | 0.5− | 0.1− | 2006 10 19 | 703 | 1.3− | 1.2− | |
| 2005 10 03 | 644 | 0.2+ | 0.0 | 2005 11 07 | 704 | 0.2− | 1.4+ | 2006 11 16 | 703 | (1.6− | 0.4−) | |
| 2005 10 08 | 704 | 0.8+ | 0.1+ | 2005 11 07 | 704 | 0.5− | 0.9+ | 2006 11 16 | 703 | 0.4− | 0.2+ | |
| 2005 10 08 | 704 | 0.4+ | 0.5+ | 2005 11 07 | 704 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.3− | 0.2+ | |
| 2005 10 08 | 704 | 1.0+ | 0.8− | 2005 11 07 | 704 | 0.8− | 0.8+ | 2006 11 16 | 703 | 0.7− | 0.8+ | |
| 2005 10 08 | 704 | 0.3+ | 0.5+ | 2005 11 25 | 703 | 0.1− | 0.3− | 2006 11 17 | 704 | 1.2+ | 1.3+ | |
| 2005 10 14 | 699 | 0.1− | 0.7+ | 2005 11 25 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.6+ | |
| 2005 10 14 | 699 | 0.0 | 0.7+ | 2005 11 25 | 703 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.4+ | 0.4+ | |
| 2005 10 14 | 699 | 0.5+ | 0.7+ | 2005 11 25 | 703 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.3− | |
| 2005 10 14 | 699 | 0.2− | 0.5+ | 2005 11 29 | 704 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.2+ | |
| 2005 10 22 | 691 | 0.0 | 0.3− | 2005 11 29 | 704 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.0 | 1.1+ | |
| 2005 10 22 | 691 | 0.1+ | 0.4− | 2005 11 29 | 704 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.4− | |
| 2005 10 22 | 691 | 0.0 | 0.2− | 2005 11 29 | 704 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.0 | |
| 2005 10 23 | 703 | 0.6+ | 0.3− | 2005 11 29 | 704 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.5− | 0.1+ | |
| 2005 10 23 | 703 | 0.1+ | 0.8− | 2005 12 02 | 704 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.4− | 0.8+ | |
| 2005 10 23 | 703 | 0.2+ | 0.1− | 2005 12 02 | 704 | 0.1− | 0.4+ | 2006 11 27 | 703 | 1.0− | 0.1+ | |

**(145479)∗ 2005 TE$_{124}$**

Discovered 2005 Oct. 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.43974 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20168985 | $\omega$ | 73.14778 | | +0.55196641 | −0.83382999 | |
| $a$ | 2.8796963 | $\Omega$ | 343.34324 | | +0.75434337 | +0.50328538 | |
| $e$ | 0.0582209 | $i$ | 1.55671 | | +0.35538594 | +0.22678487 | |
| $P$ | 4.89 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.2− | 0.1+ | 2003 04 25 | 691 | 1.1+ | 0.6+ | 2005 10 25 | 691 | 0.1− | 0.2+ | |
| 1993 04 17 | 691 | 0.3− | 0.5− | 2003 04 25 | 691 | 0.7+ | 0.6+ | 2005 10 25 | 691 | 0.2− | 0.9− | |
| 1993 04 17 | 691 | 0.2− | 0.2− | 2003 05 10 | 691 | 0.4− | 0.6+ | 2005 11 06 | G96 | 0.3+ | 0.0 | |
| 2000 10 01 | 704 | 0.5+ | 0.4+ | 2003 05 10 | 691 | 0.1− | 0.4+ | 2005 11 06 | G96 | 0.2− | 0.1+ | |
| 2000 10 01 | 704 | 0.3− | 1.0+ | 2003 05 10 | 691 | 0.4− | 0.1+ | 2005 11 06 | G96 | 0.3+ | 0.2+ | |
| 2000 10 01 | 704 | 0.4− | 0.4+ | 2005 10 03 | 703 | 0.2− | 0.3− | 2005 11 06 | G96 | 0.2+ | 0.2+ | |
| 2000 10 01 | 704 | 0.4− | 0.7+ | 2005 10 03 | 703 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.4− | 0.3− | |
| 2000 10 01 | 704 | 0.1+ | 0.6+ | 2005 10 03 | 703 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.4− | 0.2+ | |
| 2002 01 05 | 691 | 0.0 | 0.1+ | 2005 10 03 | 703 | 1.0− | 0.0 | 2006 10 04 | G96 | 0.5− | 0.7− | |
| 2002 01 05 | 691 | 0.4+ | 0.2+ | 2005 10 07 | 691 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.7− | |
| 2002 01 05 | 691 | 0.1+ | 0.1− | 2005 10 07 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.1− | |
| 2002 01 14 | 704 | 0.3+ | 0.5+ | 2005 10 07 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.5− | 0.4− | |
| 2002 01 14 | 704 | 0.2+ | 0.3+ | 2005 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.3− | |
| 2002 01 14 | 704 | 0.2− | 0.6+ | 2005 10 11 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1− | |
| 2002 01 14 | 704 | 0.2− | 0.1− | 2005 10 11 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.4− | 0.1− | |
| 2002 01 14 | 704 | 0.0 | 0.2+ | 2005 10 22 | 703 | 1.0+ | 0.6+ | 2006 11 22 | G96 | 0.4− | 0.3− | |
| 2002 02 07 | 691 | 0.2+ | 0.1+ | 2005 10 22 | 703 | (0.7+ | 1.7+) | 2006 11 22 | G96 | 0.3− | 0.1− | |
| 2002 02 07 | 691 | 0.2+ | 0.2+ | 2005 10 22 | 703 | 0.2+ | 1.4+ | 2006 11 22 | G96 | 0.2− | 0.0 | |
| 2002 02 07 | 691 | 0.1− | 0.2+ | 2005 10 22 | 703 | 0.9− | 0.9+ | | | | | |
| 2003 04 25 | 691 | 0.7+ | 0.7+ | 2005 10 25 | 691 | 0.2− | 0.2+ | | | | | |

**(145480)∗ 2005 TB$_{190}$**

Discovered 2005 Oct. 11 by A. C. Becker, A. W. Puckett and J. Kubica at Apache Point.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.56593 | | (2000.0) | | | |
| $n$ | 0.00149949 | $\omega$ | 171.12204 | | +0.98898828 | +0.14795891 |
| $a$ | 75.5973966 | $\Omega$ | 180.41266 | | −0.14757564 | +0.98759299 |
| $e$ | 0.3886313 | $i$ | 26.51700 | | +0.01111803 | −0.05261409 |
| $P$ | 657 | $H$ | 4.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 705 | 0.2+ | 0.0 | 2005 11 03 | 705 | 0.1− | 0.1− | 2006 09 25 | 688 | 0.2+ | 0.2+ |
| 2001 11 18 | 705 | 0.2+ | 0.0 | 2005 11 03 | 705 | 0.0 | 0.1− | 2006 10 03 | 705 | 0.0 | 0.0 |
| 2002 09 04 | 644 | 0.1+ | 0.5+ | 2005 11 05 | 705 | 0.0 | 0.0 | 2006 10 03 | 705 | 0.0 | 0.0 |
| 2002 09 04 | 644 | 0.5− | 0.4− | 2005 11 05 | 705 | 0.1+ | 0.1+ | 2006 10 11 | 705 | 0.0 | 0.0 |
| 2002 09 04 | 644 | 0.0 | 0.1− | 2005 11 06 | 705 | 0.1+ | 0.0 | 2006 10 11 | 705 | 0.1− | 0.1+ |
| 2002 09 12 | 644 | 0.0 | 0.1+ | 2005 11 06 | 705 | 0.1+ | 0.2− | 2006 10 17 | 705 | 0.1− | 0.2− |
| 2002 09 12 | 644 | 0.1− | 0.2+ | 2005 11 07 | 705 | 0.0 | 0.0 | 2006 10 17 | 705 | 0.2− | 0.0 |
| 2005 10 11 | 705 | 0.2+ | 0.0 | 2005 11 07 | 705 | 0.0 | 0.1− | 2006 10 21 | 705 | 0.0 | 0.0 |
| 2005 10 11 | 705 | 0.0 | 0.0 | 2005 11 11 | 705 | 0.0 | 0.1+ | 2006 10 21 | 705 | 0.0 | 0.1+ |
| 2005 10 20 | 705 | 0.0 | 0.0 | 2005 11 11 | 705 | 0.2+ | 0.0 | 2006 10 23 | 705 | 0.2− | 0.1+ |
| 2005 10 20 | 705 | 0.1+ | 0.1− | 2005 11 13 | 705 | 0.2− | 0.3− | 2006 10 23 | 705 | 0.1+ | 0.0 |
| 2005 10 25 | 705 | 0.1+ | 0.1− | 2005 11 13 | 705 | 0.2− | 0.3− | 2006 10 27 | 705 | 0.1− | 0.0 |
| 2005 10 25 | 705 | 0.0 | 0.0 | 2005 11 23 | 705 | 0.1− | 0.0 | 2006 10 27 | 705 | 0.2+ | 0.2+ |
| 2005 10 27 | 705 | 0.0 | 0.1− | 2005 11 23 | 705 | 0.1− | 0.1+ | 2006 10 28 | 705 | 0.1+ | 0.0 |
| 2005 10 27 | 705 | 0.1+ | 0.1− | 2005 11 26 | 705 | 0.1+ | 0.0 | 2006 10 28 | 705 | 0.0 | 0.0 |
| 2005 10 30 | 705 | 0.1+ | 0.0 | 2005 11 26 | 705 | 0.0 | 0.0 | 2006 10 29 | 705 | 0.2− | 0.1− |
| 2005 10 30 | 705 | 0.0 | 0.1− | 2005 12 01 | 705 | 0.1+ | 0.1+ | 2006 10 29 | 705 | 0.1− | 0.0 |
| 2005 11 01 | 705 | 0.1+ | 0.1− | 2005 12 01 | 705 | 0.1− | 0.2− | 2006 11 01 | 705 | 0.3− | 0.2+ |
| 2005 11 01 | 705 | 0.0 | 0.0 | 2006 09 25 | 688 | 0.0 | 0.3+ | 2006 11 01 | 705 | 0.0 | 0.0 |

**(145481)∗ 2005 UA$_{72}$**

Discovered 2005 Oct. 23 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.97511 | | (2000.0) | | | |
| $n$ | 0.18175466 | $\omega$ | 151.25812 | | +0.31675324 | −0.93752808 |
| $a$ | 3.0865904 | $\Omega$ | 279.96790 | | +0.83990087 | +0.34773155 |
| $e$ | 0.0593280 | $i$ | 8.40156 | | +0.44071977 | +0.01112958 |
| $P$ | 5.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 704 | 0.3− | 0.0 | 2005 10 29 | 703 | 0.5− | 0.9+ | 2006 09 28 | G96 | 0.3− | 0.0 |
| 2000 11 30 | 704 | 0.9+ | 0.9− | 2005 10 29 | 703 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2000 11 30 | 704 | 0.1− | 0.2+ | 2005 10 29 | 703 | 1.4− | 0.9− | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2000 11 30 | 704 | 0.5− | 0.5− | 2005 10 30 | 644 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 2002 02 15 | 704 | 0.0 | 0.8+ | 2005 10 30 | 644 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2002 02 15 | 704 | 0.5+ | 0.5+ | 2005 10 30 | 644 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.2− |
| 2002 02 15 | 704 | 1.4+ | 0.4+ | 2005 11 01 | 704 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2002 03 10 | 644 | 0.3+ | 0.9+ | 2005 11 01 | 704 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2002 03 10 | 644 | 0.1− | 1.2+ | 2005 11 01 | 704 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2002 03 10 | 644 | 0.2+ | 1.0+ | 2005 11 01 | 704 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2004 07 11 | 704 | 0.0 | 0.9+ | 2005 11 01 | 704 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 07 11 | 704 | 0.2− | 0.9+ | 2005 11 03 | 704 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2004 07 11 | 704 | 0.4− | 0.2+ | 2005 11 03 | 704 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2005 10 10 | 699 | (1.1− | 3.3−) | 2005 11 03 | 704 | 0.2− | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 10 10 | 699 | 0.3− | 0.4− | 2005 11 03 | 704 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2005 10 10 | 699 | 0.2+ | 0.1− | 2005 11 03 | 704 | 0.0 | 0.4+ | 2006 11 20 | H55 | 0.1− | 0.3+ |
| 2005 10 10 | 699 | 0.3− | 0.8+ | 2005 11 07 | 704 | 0.2− | 0.5+ | 2006 11 20 | H55 | 0.0 | 0.4+ |
| 2005 10 13 | 704 | 0.4− | 0.2− | 2005 11 07 | 704 | 0.2+ | 0.6+ | 2006 11 20 | H55 | 0.1+ | 0.2+ |
| 2005 10 13 | 704 | (1.8+ | 0.5−) | 2005 11 07 | 704 | 0.5− | 0.1− | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2005 10 13 | 704 | 0.9+ | 1.1+ | 2005 11 07 | 704 | 0.0 | 0.4− | 2006 11 20 | G96 | 0.2+ | 0.5+ |
| 2005 10 13 | 704 | 1.0+ | 0.1− | 2005 11 07 | 704 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.1+ |
| 2005 10 23 | 703 | 0.7− | 0.3+ | 2005 11 25 | 703 | (1.6− | 0.1+) | 2006 11 20 | G96 | 0.1− | 0.1+ |
| 2005 10 23 | 703 | 0.6− | 0.2+ | 2005 11 25 | 703 | 1.0+ | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2005 10 23 | 703 | 0.3+ | 0.1− | 2005 11 25 | 703 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2005 10 23 | 703 | 0.2− | 0.6+ | 2005 11 25 | 703 | (2.4+ | 0.4−) | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2005 10 26 | 699 | 0.3− | 0.1− | 2005 12 02 | 703 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2005 10 26 | 699 | (1.7− | 0.3−) | 2005 12 02 | 703 | 0.4+ | 1.1− | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2005 10 26 | 699 | 0.3+ | 0.6− | 2005 12 02 | 703 | 0.3− | 0.7− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2005 10 26 | 699 | 0.2+ | 0.6+ | 2005 12 02 | 703 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2005 10 29 | 703 | 0.3− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.0 | 0.0 |

**(145482)∗ 2005 UD$_{130}$ = 1996 BN$_7$**

Discovered 2005 Oct. 24 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 96160)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.02798 | | (2000.0) | | | |
| $n$ | 0.18106184 | $\omega$ | 16.96452 | | −0.63752807 | −0.74306918 |
| $a$ | 3.0944592 | $\Omega$ | 113.13969 | | +0.67868301 | −0.66666677 |
| $e$ | 0.1088058 | $i$ | 12.78468 | | +0.36461944 | −0.05834042 |
| $P$ | 5.44 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 19 | 691 | 0.1− | 0.3− | 2002 04 22 | 644 | 0.4+ | 0.6+ | 2006 09 28 | G96 | 0.6+ | 0.2+ |
| 1996 01 19 | 691 | 0.2− | 0.6− | 2002 04 22 | 644 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.9+ | 0.6+ |
| 1996 01 19 | 691 | 0.1− | 0.5− | 2002 04 22 | 644 | 0.0 | 0.6+ | 2006 09 28 | G96 | 0.5+ | 0.2− |
| 1996 01 25 | 691 | 0.1+ | 0.3− | 2005 10 08 | 699 | (0.2− | 1.8−) | 2006 09 28 | G96 | 0.1− | 0.5− |
| 1996 01 25 | 691 | 0.1− | 0.3− | 2005 10 08 | 699 | 0.6− | 1.3+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 1996 01 25 | 691 | 0.1− | 0.4− | 2005 10 08 | 699 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2000 11 27 | 704 | 1.0+ | 0.8+ | 2005 10 08 | 699 | 0.2+ | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2000 11 27 | 704 | 0.9+ | 0.2+ | 2005 10 24 | 644 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2000 11 27 | 704 | 0.3+ | 0.3− | 2005 10 24 | 644 | 0.2− | 0.4+ | 2006 11 09 | 291 | 0.4− | 0.5+ |
| 2000 11 27 | 704 | 0.5+ | 0.9+ | 2005 10 24 | 644 | 0.3− | 0.4+ | 2006 11 09 | 291 | 0.1− | 0.4+ |
| 2000 11 27 | 704 | 0.4− | 0.1− | 2005 10 27 | 703 | 0.3+ | 0.3+ | 2006 11 09 | 291 | 0.1+ | 0.1+ |
| 2002 03 10 | 644 | 0.4+ | 0.3+ | 2005 10 27 | 703 | 0.8− | 0.1+ | 2006 11 09 | 291 | 0.3− | 0.6+ |
| 2002 03 10 | 644 | 0.2+ | 0.7+ | 2005 10 27 | 703 | 1.1− | 0.7+ | 2006 11 09 | 291 | 0.0 | 0.5+ |
| 2002 03 10 | 644 | 0.2+ | 0.5+ | 2005 10 27 | 703 | 0.1− | 0.6+ | 2006 11 09 | 291 | 0.4+ | 0.1+ |
| 2002 03 20 | 704 | 0.6+ | 0.4+ | 2005 11 01 | 703 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 03 20 | 704 | 0.3+ | 1.2+ | 2005 11 01 | 703 | 0.7− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 03 20 | 704 | 0.7+ | 1.0+ | 2005 11 01 | 703 | 0.7− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 03 20 | 704 | 0.2+ | 1.0+ | 2005 11 01 | 703 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2002 03 20 | 704 | 0.8+ | 1.2+ | 2005 11 29 | 703 | 0.5+ | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 04 11 | 644 | 0.1− | 0.5+ | 2005 11 29 | 703 | (0.4− | 1.9+) | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 04 11 | 644 | 0.1+ | 0.7+ | 2005 11 29 | 703 | 0.1+ | 0.7+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2002 04 11 | 644 | 0.3− | 0.8+ | 2005 11 29 | 703 | 0.8− | 1.4+ | 2006 11 24 | G96 | 0.4+ | 0.6− |

**(145483)∗ 2005 UM$_{142}$ = 2000 YC$_{94}$ = 2004 NR$_{16}$**

Discovered 2005 Oct. 25 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 89979)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.23820 | | (2000.0) | | | |
| $n$ | 0.17860552 | $\omega$ | 261.81770 | | +0.90468557 | −0.40394316 |
| $a$ | 3.1227661 | $\Omega$ | 121.91016 | | +0.42590000 | +0.84807901 |
| $e$ | 0.1918370 | $i$ | 9.18844 | | +0.01237821 | +0.34291679 |
| $P$ | 5.52 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 13 | 809 | (1.2+ | 2.5+) | 2005 09 11 | 704 | 0.1− | 0.0 | 2005 11 21 | 699 | 0.3+ | 0.7+ |
| 1993 07 13 | 809 | 1.6+ | 1.6+ | 2005 09 11 | 704 | 1.2− | 0.6− | 2005 11 21 | 699 | 0.3− | 0.2+ |
| 1993 07 13 | 809 | 1.6+ | 1.4+ | 2005 09 30 | 644 | 0.3− | 0.3+ | 2005 11 21 | 699 | 0.1− | 0.2+ |
| 1993 07 24 | 809 | 0.9+ | 0.4+ | 2005 09 30 | 644 | 0.0 | 0.0 | 2005 11 29 | 703 | 0.3− | 0.3− |
| 1999 09 09 | 704 | 0.5− | 0.0 | 2005 09 30 | 644 | 0.4− | 0.4+ | 2005 11 29 | 703 | 0.3− | 0.5+ |
| 1999 09 09 | 704 | 0.2+ | 0.2− | 2005 09 30 | 644 | 0.4+ | 0.2− | 2005 11 29 | 703 | 0.4+ | 0.3+ |
| 1999 09 09 | 704 | 0.4− | 0.5+ | 2005 09 30 | 644 | 0.5− | 0.4+ | 2005 11 29 | 703 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 0.8− | 0.1+ | 2005 09 30 | 644 | 0.0 | 0.2+ | 2005 11 30 | 699 | 0.9− | 0.3− |
| 1999 09 09 | 704 | 1.6− | 1.8− | 2005 10 25 | 703 | 0.4+ | 0.4+ | 2005 11 30 | 699 | 0.1+ | 0.3+ |
| 2000 12 30 | 704 | 0.7− | 0.9+ | 2005 10 25 | 703 | 0.6+ | 0.3+ | 2005 11 30 | 699 | 0.9− | 0.7− |
| 2000 12 30 | 704 | 0.2+ | 0.4+ | 2005 10 25 | 703 | 0.1+ | 0.9+ | 2005 11 30 | 699 | 0.8− | 0.5− |
| 2000 12 30 | 704 | 0.4+ | 1.9+ | 2005 10 25 | 703 | 0.2+ | 0.5− | 2005 12 06 | 704 | 0.0 | 0.3− |
| 2000 12 30 | 704 | 0.4− | 0.3+ | 2005 10 27 | 699 | 0.1− | 0.2+ | 2005 12 06 | 704 | 0.2− | 0.5+ |
| 2001 01 03 | 704 | 1.2− | 0.3+ | 2005 10 27 | 699 | 0.3− | 0.2+ | 2005 12 06 | 704 | 0.5+ | 0.6+ |
| 2001 01 03 | 704 | 0.4− | 0.1+ | 2005 10 27 | 699 | 0.3− | 0.1+ | 2005 12 06 | 704 | 0.5+ | 0.8+ |
| 2001 01 03 | 704 | 0.1+ | 0.5+ | 2005 10 27 | 699 | 0.6− | 0.3+ | 2005 12 06 | 703 | 0.6− | 0.1− |
| 2001 01 03 | 704 | 0.3− | 0.5− | 2005 10 31 | 703 | 0.1+ | 0.5+ | 2005 12 06 | 704 | 0.4+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 1.3− | 0.4+ | 2005 10 31 | 703 | 0.3− | 0.3+ | 2005 12 06 | 703 | 0.9− | 0.9+ | | |
| 2002 04 01 | 644 | 0.2+ | 1.0+ | 2005 10 31 | 703 | 0.0 | 0.2+ | 2005 12 06 | 703 | 0.1− | 0.2+ | | |
| 2002 04 01 | 644 | 0.0 | 0.8+ | 2005 10 31 | 703 | 0.4− | 0.8+ | 2005 12 06 | 703 | 0.7+ | 0.6− | | |
| 2002 04 01 | 644 | 0.4+ | 0.9+ | 2005 11 04 | 704 | 0.3+ | 1.2+ | 2006 01 23 | 703 | 0.5− | 1.1− | | |
| 2003 05 27 | 691 | 0.1+ | 0.9+ | 2005 11 04 | 704 | (1.7+ | 1.8−) | 2006 01 23 | 703 | 0.6+ | 0.2− | | |
| 2003 05 27 | 691 | 0.2+ | 0.9+ | 2005 11 04 | 704 | 0.3− | 0.9+ | 2006 01 23 | 703 | 0.4+ | 0.3+ | | |
| 2003 05 27 | 691 | 0.2+ | 0.5+ | 2005 11 04 | 704 | 0.4+ | 0.3+ | 2006 01 23 | 703 | 0.3+ | 1.0− | | |
| 2004 07 11 | 704 | 0.5− | 1.2+ | 2005 11 04 | 704 | 0.3+ | 1.3− | 2006 10 12 | 691 | 0.3+ | 0.3− | | |
| 2004 07 11 | 704 | 0.1− | 0.8+ | 2005 11 04 | 704 | 1.0+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.0 | | |
| 2004 07 11 | 704 | 0.9− | 0.3+ | 2005 11 04 | 704 | 0.4+ | 1.2+ | 2006 10 12 | 691 | 0.1− | 0.4+ | | |
| 2004 07 11 | 704 | 0.9− | 0.5+ | 2005 11 04 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.6+ | 0.1− | | |
| 2004 07 16 | 704 | 0.1− | 0.1− | 2005 11 19 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4+ | 0.1+ | | |
| 2004 07 16 | 704 | 0.1− | 0.4+ | 2005 11 19 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.6+ | 0.0 | | |
| 2004 07 16 | 704 | 0.3+ | 0.6+ | 2005 11 19 | 644 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.4− | 0.2+ | | |
| 2004 07 16 | 704 | 0.3+ | 0.4+ | 2005 11 19 | 644 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.0 | | |
| 2005 09 11 | 704 | 0.4+ | 0.5− | 2005 11 19 | 644 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.1− | | |
| 2005 09 11 | 704 | 0.5− | 0.9+ | 2005 11 19 | 644 | 0.4+ | 0.4+ | 2006 11 25 | G96 | 0.3− | 0.1+ | | |

**(145484)∗ 2005 UV$_{273}$ = 2000 WV$_{81}$**

Discovered 2005 Oct. 23 by NEAT at Palomar.

Id. A. Doppler (*MPO* 96245)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.38546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17942226 | $\omega$ | 224.82839 | | −0.58202927 | −0.79858756 | |
| $a$ | 3.1132823 | $\Omega$ | 261.36119 | | +0.78277702 | −0.49917436 | |
| $e$ | 0.0447301 | $i$ | 8.92003 | | +0.22023185 | −0.33627796 | |
| $P$ | 5.49 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.8− | 1.2− | 2004 08 09 | 599 | 1.0+ | 0.5+ | 2005 10 29 | 644 | 0.4− | 0.5+ | | |
| 2000 11 20 | 704 | 0.4− | 0.3− | 2004 08 09 | 599 | 0.3− | 0.5+ | 2005 11 01 | 644 | 0.3− | 0.0 | | |
| 2000 11 20 | 704 | 0.2+ | 0.6+ | 2004 08 09 | 599 | 0.1− | 0.1+ | 2005 11 01 | 644 | 0.1− | 0.2− | | |
| 2000 11 20 | 704 | 0.9+ | 1.2+ | 2005 09 30 | 703 | 0.3− | 0.7− | 2005 11 01 | 644 | 0.0 | 0.1− | | |
| 2000 11 29 | 704 | 0.3+ | 0.6− | 2005 09 30 | 703 | 0.0 | 0.2+ | 2005 11 02 | 704 | (1.6+ | 0.9+) | | |
| 2000 11 29 | 704 | 0.0 | 0.5+ | 2005 09 30 | 703 | 1.2− | 0.6+ | 2005 11 02 | 704 | 0.4+ | 0.2− | | |
| 2000 11 29 | 704 | 0.5+ | 0.4− | 2005 09 30 | 703 | 0.5+ | 0.7− | 2005 11 02 | 704 | 1.2− | 0.2− | | |
| 2000 11 29 | 704 | 0.3+ | 0.3− | 2005 10 23 | 644 | 0.1− | 0.2+ | 2005 11 02 | 704 | 0.1+ | 0.6+ | | |
| 2002 02 15 | 704 | 0.1− | 1.0+ | 2005 10 23 | 644 | 0.6− | 0.3+ | 2006 09 26 | 691 | 0.3+ | 0.3+ | | |
| 2002 02 15 | 704 | 0.1+ | 0.0 | 2005 10 23 | 644 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 2002 02 15 | 704 | 0.1− | 0.7+ | 2005 10 23 | 703 | 1.0− | 1.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 2002 02 15 | 704 | 0.0 | 0.1+ | 2005 10 23 | 703 | (2.1− | 1.0−) | 2006 09 28 | G96 | 0.3− | 0.5− | | |
| 2002 02 15 | 704 | 0.6− | 0.7+ | 2005 10 23 | 703 | 0.3+ | 0.6− | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2002 03 05 | 703 | 0.0 | 0.0 | 2005 10 23 | 703 | 0.8− | 0.4− | 2006 09 28 | G96 | 0.3− | 0.3− | | |
| 2002 03 05 | 703 | 0.5+ | 0.9+ | 2005 10 29 | 703 | 0.1− | 1.0+ | 2006 09 28 | G96 | 0.4− | 0.3− | | |
| 2002 03 05 | 703 | 0.4+ | 0.7+ | 2005 10 29 | 703 | 1.4+ | 1.4+ | 2006 11 01 | G96 | 0.3+ | 0.4− | | |
| 2002 03 05 | 703 | 0.8+ | 1.0+ | 2005 10 29 | 703 | 0.0 | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.4− | | |
| 2004 06 16 | 691 | 0.2+ | 0.3+ | 2005 10 29 | 703 | 0.8+ | 0.8+ | 2006 11 01 | G96 | 0.3− | 0.3− | | |
| 2004 06 16 | 691 | 0.1− | 0.4+ | 2005 10 29 | 644 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.3− | | |
| 2004 06 16 | 691 | 0.3− | 0.1+ | 2005 10 29 | 644 | 0.1− | 0.1+ | | | | | | |

**(145485)∗ 2005 UN$_{398}$**

Discovered 2005 Oct. 31 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.77965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.09956543 | $\omega$ | 233.35426 | | +0.95661282 | −0.26321742 | |
| $a$ | 4.6103121 | $\Omega$ | 141.45872 | | +0.28686840 | +0.92589662 | |
| $e$ | 0.5165019 | $i$ | 11.56683 | | −0.05097476 | +0.27098348 | |
| $P$ | 9.90 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 09 07 | 260 | 0.2− | 0.4− | 2005 11 01 | 703 | 0.2− | 0.2− | 2006 01 06 | 703 | 0.0 | 0.4+ | | |
| 1985 09 07 | 260 | 0.3− | 0.4+ | 2005 11 01 | 703 | 0.1− | 0.4− | 2006 01 14 | 699 | 0.2+ | 0.1+ | | |
| 1995 10 15 | 260 | 0.9+ | 0.1+ | 2005 11 01 | 703 | 0.1− | 0.4− | 2006 01 14 | 699 | 0.0 | 0.3+ | | |
| 1995 10 15 | 260 | 0.3+ | 0.3− | 2005 11 01 | 703 | 0.2− | 0.1− | 2006 01 14 | 699 | 0.2− | 0.0 | | |
| 2003 05 07 | 608 | 0.2+ | 0.0 | 2005 11 26 | 699 | 0.3+ | 0.0 | 2006 01 14 | 699 | (0.4− | 3.4+) | | |
| 2003 05 12 | 608 | 0.3− | 0.4− | 2005 11 26 | 699 | 0.1+ | 0.0 | 2006 01 18 | 644 | 0.3+ | 0.1− | | |
| 2003 07 21 | 608 | 0.2+ | 0.6+ | 2005 11 26 | 699 | 0.5+ | 1.0+ | 2006 01 18 | 644 | 0.0 | 0.3+ | | |
| 2005 09 09 | 704 | 0.0 | 0.4+ | 2005 11 26 | 699 | 0.9+ | 0.3+ | 2006 01 18 | 644 | 0.0 | 0.2+ | | |
| 2005 09 09 | 704 | 0.4+ | 0.8+ | 2005 11 28 | 644 | 0.0 | 0.1− | 2006 01 24 | 699 | 0.8− | 0.1− | | |
| 2005 09 09 | 704 | 0.1− | 0.1+ | 2005 11 28 | 644 | 0.1+ | 0.1− | 2006 01 24 | 699 | 0.0 | 0.3+ | | |
| 2005 09 09 | 704 | 0.1+ | 0.1+ | 2005 11 28 | 644 | 0.2+ | 0.1− | 2006 01 24 | 699 | 0.2− | 0.7− | | |
| 2005 09 09 | 704 | 0.1+ | 0.8+ | 2005 11 29 | 703 | 0.2+ | 0.3− | 2006 01 24 | 699 | 0.3− | 0.2− | | |
| 2005 09 25 | 644 | 0.0 | 0.2− | 2005 11 29 | 703 | 0.4+ | 0.3− | 2006 01 26 | 703 | 0.7+ | 0.6+ | | |
| 2005 09 25 | 644 | 0.3− | 0.2− | 2005 11 29 | 703 | 0.4− | 0.3− | 2006 01 26 | 703 | 0.1+ | 0.8− | | |
| 2005 09 25 | 644 | 0.3− | 0.2− | 2005 11 29 | 703 | 0.1− | 0.2− | 2006 01 26 | 703 | 0.3+ | 0.0 | | |
| 2005 10 08 | 699 | 0.7+ | 0.8− | 2005 12 09 | 130 | 0.1− | 0.4− | 2006 01 26 | 703 | 0.9− | 0.1+ | | |
| 2005 10 08 | 699 | 0.3+ | 0.0 | 2005 12 10 | 130 | 0.4− | 0.2+ | 2006 02 02 | 147 | 0.9+ | 0.1− | | |
| 2005 10 08 | 699 | 0.6+ | 0.1− | 2005 12 10 | 130 | 0.2+ | 0.3+ | 2006 02 02 | 147 | 0.3− | 0.1− | | |
| 2005 10 08 | 699 | 0.4+ | 0.4− | 2005 12 18 | 160 | 0.0 | 0.1− | 2006 03 01 | 147 | 0.3− | 0.7+ | | |
| 2005 10 24 | 644 | 0.0 | 0.2− | 2005 12 18 | 160 | 0.1− | 0.2− | 2006 03 01 | 147 | 0.2− | 0.4+ | | |
| 2005 10 24 | 644 | 0.0 | 0.2− | 2005 12 18 | 160 | 0.4− | 0.4− | 2006 03 01 | 147 | 0.3+ | 0.1+ | | |
| 2005 10 24 | 644 | 0.0 | 0.3− | 2005 12 20 | H93 | (0.0 | 1.6+) | 2006 03 02 | 204 | 0.6+ | 0.4− | | |
| 2005 10 27 | 704 | 0.1− | 0.8+ | 2005 12 20 | H93 | 0.3− | 1.5+ | 2006 03 02 | 204 | 0.4+ | 0.2− | | |
| 2005 10 27 | 704 | 0.4− | 0.2+ | 2005 12 20 | H93 | 0.6− | 1.0+ | 2006 03 04 | 703 | 0.8− | 0.5+ | | |
| 2005 10 27 | 704 | 0.9− | 0.6+ | 2006 01 06 | G96 | 0.2+ | 0.4− | 2006 03 04 | 703 | 0.2+ | 0.5− | | |
| 2005 10 27 | 704 | 0.6− | 0.9+ | 2006 01 06 | G96 | 0.1+ | 0.4− | 2006 03 04 | 703 | (1.0+ | 2.6+) | | |
| 2005 10 27 | 704 | 0.7− | 0.1− | 2006 01 06 | G96 | 0.1+ | 0.4− | 2006 03 04 | 703 | 0.2− | 0.4+ | | |
| 2005 10 31 | 699 | 0.3− | 0.0 | 2006 01 06 | 703 | 1.0+ | 0.6+ | 2006 03 06 | 147 | 0.3− | 0.2− | | |
| 2005 10 31 | 699 | 0.6− | 1.1− | 2006 01 06 | 703 | (1.6+ | 0.3−) | 2006 03 06 | 147 | 0.2+ | 0.5− | | |
| 2005 10 31 | 699 | 0.6+ | 0.2− | 2006 01 06 | G96 | 0.1+ | 0.6− | | | | | | |
| 2005 10 31 | 699 | 0.3− | 0.1+ | 2006 01 06 | 703 | 0.6− | 0.0 | | | | | | |

**(145486)∗ 2005 UJ$_{438}$ = 2003 UA$_{118}$**

Discovered 2005 Oct. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 96314)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.46247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.01342845 | $\omega$ | 208.27550 | | −0.36181638 | −0.92993915 | |
| $a$ | 17.5301468 | $\Omega$ | 262.99947 | | +0.86729184 | −0.30996845 | |
| $e$ | 0.5293667 | $i$ | 3.78903 | | +0.34189731 | −0.19781995 | |
| $P$ | 73.40 | $H$ | 10.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 1.1+ | 1.0− | 2005 10 24 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 461 | 0.2− | 0.2− | | |
| 2002 10 06 | 644 | 0.2+ | 0.4− | 2005 10 24 | 691 | 0.1− | 0.1− | 2006 10 15 | 461 | 0.4− | 0.0 | | |
| 2003 10 27 | 291 | 0.1+ | 0.2− | 2005 10 28 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 461 | 0.4+ | 0.3+ | | |
| 2003 10 27 | 291 | 0.7+ | 0.2− | 2005 10 28 | 691 | 0.5− | 0.1− | 2006 10 17 | 461 | 0.0 | 0.1+ | | |
| 2003 10 27 | 291 | 0.4− | 0.3− | 2005 10 28 | 691 | 0.6+ | 0.0 | 2006 10 17 | 461 | 0.4− | 0.4− | | |
| 2003 10 29 | 291 | 0.2− | 0.0 | 2005 11 01 | 691 | 0.5+ | 0.3− | 2006 10 17 | 691 | 0.1− | 0.1+ | | |
| 2003 10 29 | 291 | 0.0 | 0.0 | 2005 11 01 | 691 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.2+ | | |
| 2003 10 29 | 291 | 0.0 | 0.1− | 2005 11 01 | 691 | 0.3− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.0 | | |
| 2003 11 01 | 413 | 0.7+ | 0.7− | 2005 11 03 | G96 | 0.3+ | 0.4− | 2006 10 21 | 691 | 0.0 | 0.4+ | | |
| 2003 11 01 | 413 | 0.0 | 0.5− | 2005 11 03 | G96 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.2+ | | |
| 2003 11 02 | 291 | 0.7− | 1.1+ | 2005 11 03 | G96 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2003 11 02 | 291 | 0.3− | 0.8+ | 2005 11 03 | G96 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.2+ | 0.1+ | | |
| 2003 11 02 | 291 | 0.3− | 0.2− | 2005 11 04 | G96 | 0.5+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.0 | | |
| 2003 11 22 | 695 | 0.1+ | 0.1+ | 2005 11 04 | G96 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.2+ | 0.1+ | | |
| 2003 11 22 | 695 | 0.0 | 0.0 | 2005 11 04 | G96 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.4− | 0.9− | | |
| 2004 10 08 | 691 | 0.3+ | 0.0 | 2005 11 04 | G96 | 0.2− | 0.3− | 2006 11 01 | G96 | 0.4− | 0.5− | | |
| 2004 10 08 | 691 | 0.4+ | 0.1− | 2005 11 05 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.7− | | |
| 2004 10 08 | 691 | 0.0 | 0.1− | 2005 11 05 | 691 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.3− | | |
| 2005 09 29 | 691 | 0.1− | 0.0 | 2005 11 05 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.2− | | |
| 2005 09 29 | 691 | 0.1− | 0.2+ | 2006 01 25 | 461 | 0.8− | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.6− | | |
| 2005 09 29 | 691 | 0.4− | 0.2+ | 2006 09 26 | 461 | 0.6− | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2005 10 24 | 691 | 0.2− | 0.1+ | 2006 09 26 | 461 | 0.5− | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.3− | | |

**(145487)∗ 2005 UG$_{455}$ = 1995 WJ$_{31}$**

Discovered 2005 Oct. 29 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 96329)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.82050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17451695 | $\omega$ | 119.88813 | | +0.61610061 | −0.74237293 | |
| $a$ | 3.1713509 | $\Omega$ | 289.67165 | | +0.59118658 | +0.65668070 | |
| $e$ | 0.1168495 | $i$ | 16.23455 | | +0.52049829 | +0.13286420 | |
| $P$ | 5.65 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.1− | 0.2+ | 2005 10 12 | 699 | 0.6+ | 0.1+ | 2005 11 04 | 699 | (1.7+ | 1.2+) |
| 1995 11 19 | 691 | 0.0 | 0.1+ | 2005 10 12 | 699 | 0.3− | 0.5− | 2005 11 04 | 703 | 0.6− | 0.5− |
| 1995 11 19 | 691 | 0.3+ | 0.0 | 2005 10 12 | 699 | 0.3+ | 0.1− | 2005 11 04 | 703 | 0.3− | 0.5− |
| 1995 11 30 | 691 | 0.0 | 0.1− | 2005 10 23 | 703 | 1.1− | 1.1− | 2005 11 04 | 703 | 0.6+ | 0.6− |
| 1995 11 30 | 691 | 0.2− | 0.1− | 2005 10 23 | 703 | 0.1− | 0.3+ | 2005 11 04 | 703 | 0.4+ | 0.1+ |
| 1995 11 30 | 691 | 0.1+ | 0.1− | 2005 10 23 | 703 | 0.6− | 0.2+ | 2006 11 02 | G96 | 0.4+ | 0.2+ |
| 2000 11 19 | 704 | 0.2− | 0.5+ | 2005 10 23 | 703 | 0.3+ | 1.4+ | 2006 11 02 | G96 | 0.5− | 0.3− |
| 2000 11 19 | 704 | 0.1− | 0.2− | 2005 10 29 | 703 | 0.0 | 0.4− | 2006 11 02 | G96 | 0.1+ | 0.4− |
| 2000 11 19 | 704 | 0.0 | 0.3− | 2005 10 29 | 703 | 1.3− | 0.1− | 2006 11 02 | G96 | 0.2+ | 0.4− |
| 2001 01 05 | 704 | 0.3+ | 0.4+ | 2005 10 29 | 703 | 0.3− | 1.2− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2001 01 05 | 704 | 0.2+ | 0.2+ | 2005 10 29 | 703 | 0.6− | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.2+ |
| 2001 01 05 | 704 | 0.3− | 0.1− | 2005 10 30 | 644 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2005 09 29 | 703 | 0.4+ | 0.4− | 2005 10 30 | 644 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2005 09 29 | 703 | 0.0 | 0.2+ | 2005 10 30 | 644 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2005 09 29 | 703 | 0.7+ | 0.4− | 2005 11 04 | 699 | 0.5+ | 1.2+ | 2006 11 27 | G96 | 0.2− | 0.2+ |
| 2005 09 29 | 703 | 0.6− | 0.2+ | 2005 11 04 | 699 | 1.1+ | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2005 10 12 | 699 | (2.0+ | 0.6+) | 2005 11 04 | 699 | 0.3+ | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.0 |

**(145488)∗ 2005 VP$_3$**

Discovered 2005 Nov. 4 by K. Sárneczky at University of Szeged, Piszkéstető Stn. (Konkoly).

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.46677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27297738 | $\omega$ | 161.70803 | | +0.19218105 | −0.97635734 | |
| $a$ | 2.3535221 | $\Omega$ | 277.12122 | | +0.88747101 | +0.21595043 | |
| $e$ | 0.1012080 | $i$ | 5.72350 | | +0.41888144 | −0.00957878 | |
| $P$ | 3.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 29 | 608 | 0.3+ | 0.4+ | 2005 10 29 | 703 | (0.1+ | 1.6+) | 2005 11 28 | 703 | 0.3+ | 0.3− |
| 2000 06 29 | 608 | 0.6+ | 0.1+ | 2005 10 29 | 703 | 0.7+ | 0.7+ | 2005 11 28 | 703 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.7+ | 2005 10 30 | 704 | 0.2− | 0.0 | 2005 11 28 | 703 | 0.5+ | 0.4− |
| 2001 09 20 | 704 | 0.8+ | 1.2+ | 2005 10 30 | 704 | 0.5− | 0.6+ | 2005 11 28 | 703 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | (1.4− | 1.6+) | 2005 10 30 | 704 | 0.2− | 1.3+ | 2005 12 02 | 704 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2005 11 02 | 704 | 0.2− | 0.5− | 2005 12 02 | 704 | 0.0 | 0.4+ |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2005 11 02 | 704 | 0.3+ | 0.2− | 2005 12 02 | 704 | 0.0 | 0.2+ |
| 2001 10 12 | 644 | 0.5+ | 0.2− | 2005 11 02 | 704 | 0.4+ | 0.6− | 2005 12 05 | 704 | 0.3− | 0.1+ |
| 2001 10 12 | 644 | 0.3+ | 0.5+ | 2005 11 04 | 461 | 0.3+ | 0.2+ | 2005 12 05 | 704 | 0.3+ | 0.4− |
| 2001 10 14 | 704 | 0.9− | 0.9+ | 2005 11 04 | 461 | 0.1− | 0.4− | 2005 12 05 | 704 | 0.3− | 0.8− |
| 2001 10 14 | 704 | 0.7− | 0.7+ | 2005 11 05 | 461 | 0.4− | 0.3− | 2005 12 05 | 704 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 1.1− | 1.2+ | 2005 11 06 | 461 | 0.2+ | 0.1+ | 2005 12 05 | 704 | 0.1+ | 0.9+ |
| 2001 10 14 | 704 | 1.3− | 0.9+ | 2005 11 07 | 461 | 0.3+ | 0.1− | 2005 12 10 | 704 | 1.1+ | 0.7+ |
| 2001 10 21 | 644 | 0.2+ | 0.0 | 2005 11 07 | 461 | 0.4+ | 0.0 | 2005 12 10 | 704 | 0.1− | 0.4− |
| 2001 10 21 | 644 | 0.7− | 0.0 | 2005 11 08 | 704 | 0.3+ | 0.5− | 2005 12 10 | 704 | 0.0 | 0.9− |
| 2001 10 21 | 644 | 0.4+ | 0.1+ | 2005 11 08 | 704 | 0.1− | 0.8− | 2005 12 10 | 704 | 0.7− | 0.2+ |
| 2003 02 08 | 608 | 0.7+ | 1.2+ | 2005 11 08 | 704 | 0.3+ | 1.3− | 2005 12 10 | 704 | 0.8− | 0.0 |
| 2003 02 08 | 608 | (0.8+ | 1.9+) | 2005 11 08 | 704 | 0.6+ | 0.4− | 2005 12 24 | 703 | (1.7− | 0.2+) |
| 2003 02 08 | 608 | 0.2+ | 0.7+ | 2005 11 08 | 704 | 0.0 | 0.4− | 2005 12 24 | 703 | (1.1− | 2.0+) |
| 2003 03 24 | 608 | 0.3+ | 0.4+ | 2005 11 08 | 703 | 0.2+ | 0.5− | 2005 12 24 | 703 | 0.0 | 0.3+ |
| 2003 03 24 | 608 | 0.4+ | 0.5− | 2005 11 08 | 703 | 0.3− | 0.5+ | 2005 12 24 | 703 | 1.0− | 1.0− |
| 2003 03 24 | 608 | 1.0+ | 0.0 | 2005 11 08 | 703 | 0.3− | 0.2− | 2005 12 30 | 699 | 1.4− | 1.0+ |
| 2003 04 01 | 691 | 0.2− | 0.6+ | 2005 11 08 | 703 | 0.7+ | 0.3+ | 2005 12 30 | 699 | 1.1− | 0.4+ |
| 2003 04 01 | 691 | 0.5+ | 0.7+ | 2005 11 08 | 461 | 0.0 | 0.2− | 2005 12 30 | 699 | (0.2− | 2.4+) |
| 2003 04 01 | 691 | 0.1− | 0.2+ | 2005 11 08 | 461 | 0.3− | 0.1− | 2005 12 30 | 699 | (0.2+ | 2.6+) |
| 2005 10 23 | 644 | 0.3+ | 0.1− | 2005 11 10 | 461 | 0.1+ | 0.1− | 2006 01 07 | G96 | 0.2− | 0.5− |
| 2005 10 23 | 644 | 0.1+ | 0.1+ | 2005 11 10 | 461 | 0.0 | 0.1− | 2006 01 07 | G96 | 0.1− | 0.2− |
| 2005 10 23 | 644 | 0.2+ | 0.1+ | 2005 11 10 | 461 | 0.0 | 0.2− | 2006 01 07 | G96 | 0.1− | 0.5− |
| 2005 10 27 | 644 | 0.5+ | 0.3+ | 2005 11 28 | 704 | 0.1− | 0.3+ | 2006 01 07 | G96 | 0.1− | 0.3− |
| 2005 10 27 | 644 | 0.2+ | 0.2− | 2005 11 28 | 704 | 0.1+ | 0.5+ | 2006 03 03 | G96 | 0.0 | 0.2− |
| 2005 10 27 | 644 | 0.3+ | 0.3+ | 2005 11 28 | 704 | 0.4+ | 0.4+ | 2006 03 03 | G96 | 0.0 | 0.2− |
| 2005 10 29 | 703 | 0.1+ | 1.2+ | 2005 11 28 | 704 | (1.1+ | 1.9+) | 2006 03 03 | G96 | 0.2− | 0.2− |
| 2005 10 29 | 703 | (0.7+ | 1.8+) | 2005 11 28 | 704 | 1.0− | 0.5+ | 2006 03 03 | G96 | 0.0 | 0.1+ |

**(145489)∗ 2005 VG$_{33}$**

Discovered 2005 Nov. 4 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.66696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22723225 | $\omega$ | 179.09508 | | +0.02595125 | −0.93233206 | |
| $a$ | 2.6596393 | $\Omega$ | 269.35692 | | +0.91489224 | +0.16754982 | |
| $e$ | 0.0385396 | $i$ | 21.14280 | | +0.40286315 | −0.32044342 | |
| $P$ | 4.34 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | 0.2− | 0.0 | 2003 01 03 | 704 | 0.5− | 0.2+ | 2005 11 04 | 703 | 0.4− | 1.0− |
| 2001 09 22 | 699 | 0.1+ | 0.4+ | 2003 01 03 | 704 | 0.1+ | 0.1− | 2005 11 06 | 704 | 0.5− | 0.6+ |
| 2001 09 22 | 699 | 0.8− | 0.6− | 2003 01 03 | 704 | 1.1− | 1.3+ | 2005 11 06 | 704 | 0.5− | 0.7− |
| 2001 09 22 | 699 | 0.3− | 1.1+ | 2003 01 14 | 644 | 0.6+ | 0.0 | 2005 11 06 | 704 | 0.5− | 0.3+ |
| 2001 09 28 | 704 | 0.8− | 0.2− | 2003 01 14 | 644 | 0.1+ | 0.2+ | 2005 11 06 | 704 | 0.9− | 0.3− |
| 2001 09 28 | 704 | 0.1− | 1.5− | 2003 01 14 | 644 | 0.5+ | 0.3− | 2005 11 21 | 644 | 0.3+ | 0.3+ |
| 2001 09 28 | 704 | 0.9+ | 0.8− | 2003 02 06 | 644 | 0.0 | 0.1− | 2005 11 21 | 644 | 0.1+ | 0.2+ |
| 2001 09 28 | 704 | 1.4+ | 0.4− | 2003 02 06 | 644 | 0.0 | 0.2+ | 2005 11 21 | 644 | 0.2+ | 0.7+ |
| 2001 09 28 | 704 | (2.2+ | 0.5−) | 2003 02 06 | 644 | 0.5+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2001 10 25 | 704 | 0.3+ | 1.2− | 2004 07 16 | E12 | 0.2+ | 0.3− | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2001 10 25 | 704 | 0.6+ | 0.3+ | 2004 07 16 | E12 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2001 10 25 | 704 | 0.4+ | 0.4+ | 2004 07 16 | E12 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2001 10 25 | 704 | 0.3− | 0.1− | 2004 07 16 | E12 | 0.0 | 1.0+ | 2006 11 14 | G96 | 0.5− | 0.4− |
| 2001 10 25 | 704 | 0.1− | 0.7+ | 2005 09 11 | 291 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2001 11 11 | 704 | (1.9− | 0.5+) | 2005 09 11 | 291 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 11 11 | 704 | 1.2− | 0.8+ | 2005 09 11 | 291 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2001 11 11 | 704 | 0.5− | 0.5+ | 2005 09 13 | 704 | 0.0 | 0.4− | 2006 11 18 | 704 | 1.4+ | 0.9+ |
| 2001 11 11 | 704 | 0.4− | 0.5+ | 2005 09 13 | 704 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 01 08 | 704 | 0.7+ | 0.3− | 2005 09 13 | 704 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.7+ | 0.0 |
| 2002 01 08 | 704 | 0.6+ | 0.6+ | 2005 09 13 | 704 | 0.7− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2002 01 08 | 704 | 0.1+ | 0.4+ | 2005 11 04 | 703 | (2.0− | 1.5−) | | | | |
| 2002 01 08 | 704 | 0.0 | 0.0 | 2005 11 04 | 703 | 1.2− | 1.0− | | | | |

**(145490)∗ 2005 VB$_{102}$ = 1995 YK$_{15}$**

Discovered 2005 Nov. 1 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. A. Doppler (*MPO* 96413)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.87078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18125510 | $\omega$ | 66.75432 | | +0.90537571 | −0.41094346 | |
| $a$ | 3.0922592 | $\Omega$ | 317.29981 | | +0.30863089 | +0.80974472 | |
| $e$ | 0.0903830 | $i$ | 9.06654 | | +0.29161926 | +0.41885435 | |
| $P$ | 5.44 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 20 | 691 | 0.5− | 0.3− | 2005 11 01 | 699 | 1.0+ | 0.6+ | 2005 12 29 | 644 | 0.1+ | 0.2− |
| 1995 12 20 | 691 | 0.5− | 0.1− | 2005 11 01 | 699 | (1.8− | 1.1−) | 2005 12 29 | 644 | 0.1+ | 0.3+ |
| 1995 12 20 | 691 | 0.3− | 0.1+ | 2005 11 03 | 704 | 1.0+ | 0.1+ | 2005 12 29 | 644 | 0.1+ | 0.0 |
| 1995 12 26 | 691 | 0.2+ | 0.2− | 2005 11 03 | 704 | 0.1+ | 0.9+ | 2006 01 21 | 703 | 0.7− | 0.2− |
| 1995 12 26 | 691 | 0.1+ | 0.3− | 2005 11 03 | 704 | 0.1+ | 0.0 | 2006 01 21 | 703 | 0.8− | 1.5+ |
| 1995 12 26 | 691 | 0.1− | 0.3− | 2005 11 03 | 704 | 0.6+ | 0.8+ | 2006 01 21 | 703 | 1.0− | 0.7− |
| 1999 10 09 | 704 | (2.9+ | 0.2−) | 2005 11 03 | 704 | 0.2− | 0.3+ | 2006 01 21 | 703 | 0.1− | 0.7+ |
| 1999 10 09 | 704 | 0.9+ | 0.2+ | 2005 11 10 | 703 | 0.2− | 1.4− | 2006 01 27 | 703 | 0.7− | 0.2− |
| 1999 10 09 | 704 | 0.1+ | 0.3+ | 2005 11 10 | 703 | 0.2− | 0.6− | 2006 01 27 | 703 | 0.4− | 0.7− |
| 1999 10 09 | 704 | 1.1+ | 0.6− | 2005 11 10 | 703 | 0.3− | 0.7+ | 2006 01 27 | 703 | 0.7− | 0.7+ |
| 2004 07 19 | 699 | 1.1− | 0.0 | 2005 11 10 | 703 | 0.3− | 0.8− | 2006 01 27 | 703 | 0.5+ | 0.6− |
| 2004 07 19 | 699 | 0.2+ | 1.2− | 2005 11 21 | 703 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.8+ | 0.2+ |
| 2004 07 19 | 699 | 0.6+ | 0.0 | 2005 11 21 | 703 | 1.1− | 0.7− | 2006 10 22 | 691 | 0.6+ | 0.5+ |
| 2004 07 19 | 699 | 0.8− | 0.6+ | 2005 11 21 | 703 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.3+ | 0.2+ |
| 2004 09 09 | 704 | 0.6− | 0.8+ | 2005 11 21 | 703 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 09 | 704 | 0.6+ | 0.0 | 2005 12 03 | 703 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2004 09 09 | 704 | 0.1+ | 0.7− | 2005 12 03 | 703 | 0.1− | 0.5− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2005 10 25 | 703 | 0.4− | 0.2− | 2005 12 03 | 703 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2005 10 25 | 703 | 0.4− | 0.2− | 2005 12 03 | 703 | (0.8− | 1.6−) | 2006 11 24 | G96 | 0.3− | 0.1+ |
| 2005 10 25 | 703 | 0.8− | 0.2− | 2005 12 24 | 703 | 0.5+ | 0.9+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2005 10 25 | 703 | 0.4− | 0.2− | 2005 12 24 | 703 | 0.8+ | 0.9+ | 2006 11 24 | G96 | 0.1− | 0.2+ |
| 2005 11 01 | 699 | 0.2− | 0.2− | 2005 12 24 | 703 | 1.2+ | 0.5+ | | | | |
| 2005 11 01 | 699 | 0.2+ | 0.5− | 2005 12 24 | 703 | 0.6+ | 0.1− | | | | |

**(145491)∗ 2005 VX$_{108}$**

Discovered 2005 Nov. 6 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.88061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17882666 | $\omega$ | 339.73994 | | +0.69257094 | −0.72101918 | |
| $a$ | 3.1201911 | $\Omega$ | 66.41894 | | +0.66506402 | +0.62651531 | |
| $e$ | 0.0991197 | $i$ | 1.36525 | | +0.27934804 | +0.29598969 | |
| $P$ | 5.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 28 | 691 | 0.1+ | 0.9− | 2005 11 06 | G96 | 0.4+ | 0.2+ | 2006 01 05 | G96 | 0.1− | 0.0 |
| 2000 11 28 | 691 | 0.1− | 0.3− | 2005 11 06 | G96 | 0.4− | 0.1− | 2006 01 05 | G96 | 0.4+ | 0.4− |
| 2000 11 28 | 691 | 0.1− | 0.1− | 2005 11 06 | G96 | 0.1− | 0.2+ | 2006 01 21 | G96 | 0.0 | 0.1+ |
| 2001 01 03 | 704 | 0.3− | 0.1+ | 2005 11 12 | 691 | 0.1+ | 0.4+ | 2006 01 21 | G96 | 0.6− | 0.5− |
| 2001 01 03 | 704 | 0.7+ | 0.2− | 2005 11 12 | 691 | 0.8+ | 0.9+ | 2006 01 21 | G96 | 0.1− | 0.1+ |
| 2001 01 03 | 704 | 0.0 | 0.3+ | 2005 11 12 | 691 | 0.0 | 0.5+ | 2006 01 21 | G96 | 0.1− | 0.1+ |
| 2001 01 03 | 704 | 0.7− | 0.2− | 2005 11 25 | 703 | 0.7− | 0.2− | 2006 02 24 | G96 | 0.1− | 0.1+ |
| 2002 03 06 | 644 | 0.6+ | 0.3+ | 2005 11 25 | 703 | 0.2− | 0.9− | 2006 02 24 | G96 | 0.4− | 0.4+ |
| 2002 03 06 | 644 | 1.0+ | 0.1− | 2005 11 25 | 703 | 1.1− | 0.1− | 2006 02 24 | G96 | 0.2− | 0.6+ |
| 2002 03 06 | 644 | 0.4+ | 0.2− | 2005 11 25 | 703 | 1.2− | 0.7+ | 2006 02 24 | G96 | 0.6− | 0.0 |
| 2002 04 18 | 691 | 0.5+ | 0.3+ | 2005 11 25 | G96 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 04 18 | 691 | 0.0 | 0.7+ | 2005 11 25 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4+ |
| 2002 04 18 | 691 | 0.0 | 0.5+ | 2005 11 25 | G96 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2004 08 12 | 704 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.2− |
| 2004 08 12 | 704 | 0.1+ | 0.0 | 2005 12 01 | G96 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.7− |
| 2004 08 12 | 704 | 1.0+ | 0.3− | 2005 12 01 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2004 08 12 | 704 | 0.0 | 0.4− | 2005 12 01 | G96 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.2− | 1.0− |
| 2004 08 22 | 691 | 0.6− | 0.6− | 2005 12 01 | G96 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.8− | 0.6− |
| 2004 08 22 | 691 | 0.0 | 0.5+ | 2006 01 05 | G96 | 0.2− | 0.0 | | | | |
| 2004 08 22 | 691 | 0.3+ | 0.2+ | 2006 01 05 | G96 | 0.1+ | 0.2− | | | | |

**(145492)∗ 2005 WD$_6$**

Discovered 2005 Nov. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.28436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12559797 | $\omega$ | 335.10356 | | −0.14483889 | −0.97485911 | |
| $a$ | 3.9489440 | $\Omega$ | 122.80453 | | +0.93820129 | −0.18967419 | |
| $e$ | 0.2248722 | $i$ | 11.62196 | | +0.31432473 | +0.11693341 | |
| $P$ | 7.85 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 699 | 0.2− | 0.5+ | 2005 11 01 | 703 | 1.0− | 0.1− | 2005 11 30 | 699 | 0.6+ | 0.3− |
| 1999 02 12 | 699 | 0.4+ | 0.5+ | 2005 11 04 | 704 | 0.4+ | 0.4+ | 2005 12 05 | 703 | 0.0 | 0.4+ |
| 1999 02 12 | 699 | 0.0 | 1.5+ | 2005 11 04 | 704 | 0.5+ | 0.3+ | 2005 12 05 | 703 | 0.1− | 0.2− |
| 2001 05 14 | 691 | 0.3− | 0.7+ | 2005 11 04 | 704 | 0.2− | 0.2+ | 2005 12 05 | 703 | 0.2− | 0.0 |
| 2001 05 14 | 691 | 0.1− | 0.9+ | 2005 11 04 | 704 | 0.7+ | 0.8+ | 2005 12 05 | 703 | 0.1− | 0.5− |
| 2001 05 14 | 691 | 0.2− | 0.7+ | 2005 11 04 | 704 | 0.6− | 0.8+ | 2005 12 06 | 704 | 0.3+ | 0.2+ |
| 2001 06 26 | 691 | 0.2+ | 0.6+ | 2005 11 09 | 703 | 0.1− | 0.2+ | 2005 12 06 | 704 | 0.3− | 0.2+ |
| 2001 06 26 | 691 | 0.6+ | 0.0 | 2005 11 09 | 703 | 1.1− | 0.8− | 2005 12 06 | 704 | 0.3+ | 0.4+ |
| 2001 06 26 | 691 | 1.0+ | 0.4+ | 2005 11 09 | 703 | (1.9− | 0.2+) | 2005 12 06 | 704 | 0.2− | 0.3+ |
| 2003 08 05 | 691 | 0.3− | 0.1+ | 2005 11 09 | 703 | 0.4− | 0.7+ | 2005 12 06 | 704 | 0.9+ | 0.4+ |
| 2003 08 05 | 691 | 0.2− | 0.2+ | 2005 11 21 | 699 | 1.2− | 0.7+ | 2005 12 24 | 644 | 0.1+ | 0.2+ |
| 2003 08 05 | 691 | 0.1− | 0.3+ | 2005 11 21 | 699 | 0.6+ | 0.9+ | 2005 12 24 | 644 | 0.2− | 0.2+ |
| 2004 09 13 | 691 | 0.1+ | 0.4+ | 2005 11 21 | 699 | 0.1+ | 0.4+ | 2005 12 24 | 644 | 0.3− | 0.2+ |
| 2004 09 13 | 691 | 0.0 | 0.2+ | 2005 11 21 | 699 | 0.7− | 0.3+ | 2006 01 24 | 699 | (0.4+ | 1.7+) |
| 2004 09 13 | 691 | 0.1+ | 0.3+ | 2005 11 22 | 703 | 0.7− | 0.1+ | 2006 01 24 | 699 | 0.6− | 0.0 |
| 2004 09 21 | 704 | 0.2+ | 0.3+ | 2005 11 22 | 703 | 0.2+ | 0.6− | 2006 01 24 | 699 | 0.4− | 0.0 |
| 2004 09 21 | 704 | 0.1+ | 0.5− | 2005 11 22 | 703 | 0.4− | 0.5+ | 2006 01 24 | 699 | 0.2+ | 0.6− |
| 2004 09 21 | 704 | 0.6− | 0.2+ | 2005 11 22 | 703 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.3+ |
| 2004 09 21 | 704 | 0.3+ | 0.6+ | 2005 11 29 | 703 | 0.4− | 1.0+ | 2006 10 12 | 691 | 0.2+ | 0.2+ |
| 2005 10 24 | 644 | 0.1+ | 0.1+ | 2005 11 29 | 703 | 0.9+ | 0.8+ | 2006 10 12 | 691 | 0.0 | 0.3+ |
| 2005 10 24 | 644 | 0.1− | 0.2+ | 2005 11 29 | 703 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.8− | 1.3+ |
| 2005 10 24 | 644 | 0.3− | 0.2+ | 2005 11 29 | 703 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2005 11 01 | 703 | 0.0 | 0.3+ | 2005 11 30 | 699 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.7+ | 1.0+ |
| 2005 11 01 | 703 | 0.4+ | 0.2− | 2005 11 30 | 699 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.8+ | 0.2+ |
| 2005 11 01 | 703 | 0.2+ | 0.5+ | 2005 11 30 | 699 | 0.0 | 0.4+ | | | | |

**(145493)∗ 2005 WA$_7$ = 1997 XX$_6$ = 2004 SW$_7$**

Discovered 2005 Nov. 21 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 96437)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.78879 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12636795 | $\omega$ | 350.13342 | | +0.23399561 | −0.97181665 | |
| $a$ | 3.9328866 | $\Omega$ | 86.33001 | | +0.89395322 | +0.20349287 | |
| $e$ | 0.0919439 | $i$ | 1.64275 | | +0.38222205 | +0.11900863 | |
| $P$ | 7.80 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 05 | 910 | 0.5+ | 0.2− | 2005 11 03 | 704 | 0.7− | 0.7+ | 2005 12 04 | G96 | 0.3− | 0.2− |
| 1997 12 05 | 910 | 0.2+ | 0.6− | 2005 11 03 | 704 | 0.2− | 0.8+ | 2005 12 04 | G96 | 0.2+ | 0.3− |
| 1997 12 05 | 910 | 0.2+ | 0.6− | 2005 11 03 | 704 | 0.4− | 0.6+ | 2005 12 04 | 704 | 0.1+ | 0.1− |
| 1997 12 07 | 910 | 0.0 | 0.4− | 2005 11 03 | 704 | 0.8+ | 0.1− | 2005 12 04 | 704 | 0.4− | 0.5− |
| 1997 12 07 | 910 | 0.1− | 0.0 | 2005 11 21 | 699 | 0.2+ | 0.6+ | 2005 12 25 | G96 | 0.2+ | 0.1− |
| 1997 12 07 | 910 | 0.1− | 0.2− | 2005 11 21 | 699 | 0.4+ | 0.2+ | 2005 12 25 | G96 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2005 11 21 | 699 | 1.4+ | 0.8− | 2005 12 25 | G96 | 0.0 | 0.2− |
| 2000 03 03 | 704 | 0.2+ | 0.1+ | 2005 11 21 | 699 | 0.5− | 0.4+ | 2005 12 25 | G96 | 0.1− | 0.4− |
| 2000 03 03 | 704 | 0.2+ | 0.9+ | 2005 11 21 | 703 | 0.1− | 0.9+ | 2005 12 31 | G96 | 0.1− | 0.3− |
| 2000 04 10 | 695 | 0.1+ | 0.4+ | 2005 11 21 | 703 | (1.6− | 0.1+) | 2005 12 31 | G96 | 0.2+ | 0.2− |
| 2000 04 10 | 695 | 0.1+ | 0.4+ | 2005 11 21 | 703 | 0.0 | 0.2+ | 2005 12 31 | G96 | 0.4− | 0.1+ |
| 2004 09 17 | 691 | 0.0 | 0.1+ | 2005 11 21 | 703 | (1.1+ | 1.8+) | 2005 12 31 | G96 | 0.8− | 0.1− |
| 2004 09 17 | 691 | 0.0 | 0.0 | 2005 11 22 | 691 | 0.2− | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.0 |
| 2004 09 17 | 691 | 0.0 | 0.1+ | 2005 11 22 | 691 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.3+ | 0.1− |
| 2004 09 17 | 704 | 0.4− | 0.4+ | 2005 11 22 | 691 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.2+ | 0.1− |
| 2004 09 17 | 704 | 1.1− | 0.1+ | 2005 11 28 | 703 | 0.3− | 1.4+ | 2006 01 05 | G96 | 0.1+ | 0.1− |
| 2004 09 17 | 704 | 0.2− | 0.1− | 2005 11 28 | 703 | 0.3+ | 1.0− | 2006 10 04 | G96 | 0.5+ | 0.4− |
| 2004 09 21 | 691 | 0.1+ | 0.0 | 2005 11 28 | 703 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2004 09 21 | 691 | 0.2+ | 0.2+ | 2005 11 28 | 703 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2004 09 21 | 691 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2005 10 25 | G96 | 0.0 | 0.4− | 2005 11 29 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2005 10 25 | G96 | 0.2+ | 0.5− | 2005 11 29 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2005 10 25 | G96 | 0.2− | 0.3− | 2005 11 29 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.5+ |
| 2005 10 25 | G96 | 0.2− | 0.4− | 2005 12 04 | 704 | 1.3+ | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.4− |
| 2005 11 01 | 691 | 0.0 | 0.1− | 2005 12 04 | 704 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5+ |
| 2005 11 01 | 691 | 0.3+ | 0.1− | 2005 12 04 | G96 | 0.8+ | 0.6− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 11 01 | 691 | 0.0 | 0.0 | 2005 12 04 | G96 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.5− | 0.1+ |
| 2005 11 03 | 704 | 1.1− | 0.6+ | 2005 12 04 | 704 | 1.3− | 0.2− | 2006 11 16 | G96 | 0.7− | 0.0 |

**(145494)∗ 2005 WO$_{35}$ = 1995 SW$_{89}$ = 2000 VU$_{63}$ = 2002 CH$_{277}$**

Discovered 2005 Nov. 22 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 96464), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.51572 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21132250 | $\omega$ | 193.53552 | | +0.65309448 | −0.75715219 | |
| $a$ | 2.7915080 | $\Omega$ | 215.69201 | | +0.69695806 | +0.60805999 | |
| $e$ | 0.0866502 | $i$ | 1.34721 | | +0.29617067 | +0.23871240 | |
| $P$ | 4.66 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 08 | 691 | 0.2− | 0.3− | 2005 11 22 | 691 | 0.1+ | 0.2+ | 2005 12 04 | G96 | 0.2− | 0.2− |
| 1991 12 08 | 691 | 0.1− | 0.5− | 2005 11 25 | G96 | 0.0 | 0.3− | 2005 12 04 | G96 | 0.3+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 08 | 691 | 0.2− | 0.8− | 2005 11 25 | G96 | 0.4+ | 0.3− | 2005 12 04 | G96 | 0.2− | 0.4− |
| 1995 09 24 | 691 | 0.6+ | 0.0 | 2005 11 25 | G96 | 0.3+ | 0.2− | 2005 12 04 | G96 | 0.3+ | 0.4− |
| 1995 09 24 | 691 | 0.3+ | 0.3− | 2005 11 25 | G96 | 0.3+ | 0.3− | 2005 12 06 | 704 | 0.0 | 0.9+ |
| 1995 09 24 | 691 | 0.3+ | 0.1+ | 2005 11 26 | 691 | 0.0 | 0.2+ | 2005 12 06 | 704 | 0.1− | 0.3− |
| 1995 09 29 | 691 | 0.1− | 0.1+ | 2005 11 26 | 691 | 0.0 | 0.2+ | 2005 12 06 | 704 | 1.4− | 1.2+ |
| 1995 09 29 | 691 | 0.0 | 0.1+ | 2005 11 26 | 691 | 0.0 | 0.1+ | 2005 12 10 | 704 | 0.1− | 0.3− |
| 1995 09 29 | 691 | 0.1− | 0.0 | 2005 11 28 | G96 | 0.1+ | 0.4− | 2005 12 10 | 704 | 1.1+ | 0.2+ |
| 2000 10 01 | 704 | 1.2+ | 0.9+ | 2005 11 28 | G96 | 0.1+ | 0.2− | 2005 12 10 | 704 | 0.0 | 0.8+ |
| 2000 10 01 | 704 | 0.2+ | 0.6− | 2005 11 28 | G96 | 0.2− | 0.1− | 2005 12 10 | 704 | 0.1− | 0.5− |
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2005 11 28 | G96 | 0.3+ | 0.2− | 2005 12 10 | 704 | 0.2+ | 0.9+ |
| 2000 10 01 | 704 | 0.1+ | 0.3+ | 2005 11 29 | 704 | 0.0 | 1.3+ | 2005 12 26 | G96 | 0.4+ | 0.7− |
| 2000 10 01 | 704 | 0.0 | 0.9− | 2005 11 29 | 704 | 1.6+ | 0.1+ | 2005 12 26 | G96 | 0.1+ | 0.7− |
| 2000 11 01 | 704 | 0.2− | 0.1− | 2005 11 29 | 704 | 0.6+ | 0.5+ | 2005 12 26 | G96 | 0.5+ | 0.6− |
| 2000 11 01 | 704 | 0.2+ | 0.1+ | 2005 11 29 | 704 | 0.9+ | 0.1+ | 2005 12 26 | G96 | 0.3+ | 0.7− |
| 2000 11 01 | 704 | 1.1− | 0.3+ | 2005 11 30 | 704 | 0.4− | 0.7+ | 2005 12 28 | 704 | 0.5− | 0.8+ |
| 2000 11 24 | 691 | 0.1+ | 0.0 | 2005 11 30 | 704 | 0.0 | 0.3− | 2005 12 28 | 704 | 0.2+ | 0.0 |
| 2000 11 24 | 691 | 0.1− | 0.1+ | 2005 11 30 | 704 | 0.5+ | 0.0 | 2005 12 28 | 704 | 0.3+ | 0.9+ |
| 2000 11 24 | 691 | 0.2− | 0.2+ | 2005 11 30 | 704 | 0.8− | 0.1+ | 2005 12 29 | 704 | (0.2+ | 2.4+) |
| 2002 02 07 | 644 | 0.2+ | 0.2+ | 2005 11 30 | 704 | 0.7− | 0.5− | 2005 12 29 | 704 | (0.8− | 3.7+) |
| 2002 02 07 | 644 | 0.7+ | 0.1+ | 2005 12 01 | 704 | 0.0 | 1.3− | 2005 12 29 | G96 | 0.2+ | 0.4+ |
| 2002 02 07 | 644 | 0.8+ | 0.7+ | 2005 12 01 | 704 | 0.7+ | 0.2− | 2005 12 29 | G96 | 0.3+ | 0.0 |
| 2002 02 11 | 704 | 0.1+ | 0.0 | 2005 12 01 | 704 | 0.3+ | 0.8+ | 2005 12 29 | 704 | 0.6− | 1.8+ |
| 2002 02 11 | 704 | 0.1+ | 0.0 | 2005 12 01 | 704 | 0.6+ | 0.3+ | 2005 12 29 | G96 | 0.1+ | 0.0 |
| 2002 02 11 | 704 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.1+ | 0.4− | 2005 12 29 | G96 | 0.4+ | 0.1+ |
| 2002 02 11 | 704 | 0.1+ | 0.9+ | 2005 12 01 | 704 | 0.3+ | 0.5+ | 2006 01 06 | G96 | 0.2+ | 0.4− |
| 2002 02 11 | 704 | 0.8+ | 1.6+ | 2005 12 01 | 704 | 0.1+ | 0.2+ | 2006 01 06 | G96 | 0.4− | 0.2− |
| 2004 08 07 | 644 | 0.3− | 0.3+ | 2005 12 01 | 704 | 0.0 | 0.1− | 2006 01 06 | G96 | 0.4− | 0.4− |
| 2004 08 07 | 644 | 1.0− | 0.6+ | 2005 12 01 | 704 | 0.3− | 0.2+ | 2006 02 24 | G96 | 0.2+ | 0.0 |
| 2004 08 07 | 644 | 1.0− | 0.6+ | 2005 12 01 | 704 | 0.6+ | 0.4+ | 2006 02 24 | G96 | 0.2+ | 0.1− |
| 2004 08 07 | 644 | 0.8− | 0.7+ | 2005 12 04 | 691 | 0.1+ | 0.2− | 2006 02 24 | G96 | 0.2− | 0.1− |
| 2004 08 07 | 644 | 0.8− | 0.6+ | 2005 12 04 | 691 | 0.2+ | 0.2− | 2006 02 24 | G96 | 0.2− | 0.1+ |
| 2004 08 07 | 644 | 0.5− | 0.6+ | 2005 12 04 | 691 | 0.3+ | 0.1− | 2006 03 05 | G96 | 0.1− | 0.4− |
| 2005 11 22 | 691 | 1.1− | 0.7− | 2005 12 04 | 704 | 0.5+ | 0.1− | 2006 03 05 | G96 | 0.2+ | 0.6− |
| 2005 11 22 | 691 | 0.1− | 0.0 | 2005 12 04 | 704 | 0.8− | 0.3+ | 2006 03 05 | G96 | 0.4− | 0.1+ |
| 2005 11 22 | 691 | 0.1− | 0.0 | 2005 12 04 | 704 | 0.4− | 0.2+ | 2006 03 05 | G96 | 0.2− | 0.0 |
| 2005 11 22 | 691 | 0.8− | 0.7+ | 2005 12 04 | 704 | 0.1+ | 0.1− | | | | |
| 2005 11 22 | 691 | 0.2+ | 1.1+ | 2005 12 04 | 704 | 0.1− | 0.2+ | | | | |

**(145495)∗ 2005 WK$_{37}$ = 2001 RM$_{150}$**

Discovered 2005 Nov. 22 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 96466)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.64878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27680600 | $\omega$ | 336.39351 | | +0.34922591 | −0.93529849 | |
| $a$ | 2.3317700 | $\Omega$ | 93.12653 | | +0.86856519 | +0.30024770 | |
| $e$ | 0.1780466 | $i$ | 3.27704 | | +0.35161880 | +0.18726464 | |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 15 | 691 | 0.5− | 0.6− | 2005 11 30 | 704 | 0.4− | 0.4− | 2005 12 06 | 704 | 0.0 | 0.2+ |
| 1996 04 15 | 691 | 0.1− | 0.9− | 2005 11 30 | G96 | 0.1+ | 0.5− | 2005 12 06 | 704 | 0.5− | 0.3+ |
| 1996 04 15 | 691 | 0.3− | 0.6− | 2005 11 30 | G96 | 0.1+ | 0.4− | 2005 12 06 | 704 | 0.1+ | 0.3+ |
| 2001 08 19 | 807 | 0.2+ | 0.7+ | 2005 11 30 | G96 | 0.3− | 0.4− | 2005 12 06 | 704 | 0.0 | 0.2− |
| 2001 08 19 | 807 | 0.1+ | 0.6+ | 2005 11 30 | G96 | 0.1− | 0.4− | 2005 12 06 | 704 | 0.0 | 0.6+ |
| 2001 09 11 | 699 | 0.6− | 0.8− | 2005 12 01 | 704 | 0.1+ | 0.6+ | 2005 12 26 | G96 | 0.1+ | 0.5− |
| 2001 09 11 | 699 | 1.2+ | 0.2+ | 2005 12 01 | 704 | 0.4+ | 0.3+ | 2005 12 26 | G96 | 0.1+ | 0.5− |
| 2001 09 11 | 699 | 0.1+ | 0.5+ | 2005 12 01 | 704 | 0.4+ | 0.2+ | 2005 12 26 | G96 | 0.1− | 0.6− |
| 2001 09 11 | 699 | 0.7− | 1.1+ | 2005 12 01 | 704 | 0.4+ | 0.4+ | 2005 12 26 | G96 | 0.5− | 0.6− |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2005 12 01 | 704 | 0.5− | 0.0 | 2005 12 26 | G96 | 0.2− | 0.5− |
| 2001 09 12 | 704 | 0.1+ | 1.4+ | 2005 12 01 | 704 | 0.2− | 1.3+ | 2005 12 26 | G96 | 0.2− | 0.5− |
| 2001 09 12 | 704 | 1.6− | 1.0− | 2005 12 01 | 704 | 0.2+ | 0.3+ | 2005 12 26 | G96 | 0.1+ | 0.6− |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2005 12 01 | 704 | 0.4− | 1.0+ | 2006 01 05 | 704 | 0.2+ | 0.1− |
| 2003 03 11 | 644 | 0.8+ | 0.6+ | 2005 12 01 | 704 | 0.3− | 0.1+ | 2006 01 05 | G96 | 0.0 | 0.5− |
| 2003 03 11 | 644 | 0.5+ | 0.6+ | 2005 12 01 | 704 | 0.5− | 0.9+ | 2006 01 05 | 704 | 0.6+ | 0.1− |
| 2003 03 11 | 644 | 0.9+ | 0.7+ | 2005 12 02 | 704 | 0.1+ | 0.7+ | 2006 01 05 | G96 | 0.0 | 0.5− |
| 2003 03 26 | 644 | 0.2+ | 0.6+ | 2005 12 02 | 704 | 0.4+ | 0.5+ | 2006 01 05 | 704 | 0.1− | 0.7+ |
| 2003 03 26 | 644 | 0.5+ | 0.7+ | 2005 12 02 | 704 | 0.1+ | 1.4+ | 2006 01 05 | G96 | 0.1+ | 0.5− |
| 2003 03 26 | 644 | 0.4+ | 0.7+ | 2005 12 02 | 704 | 0.1− | 0.3+ | 2006 01 05 | G96 | 0.2+ | 0.5− |
| 2003 04 01 | 645 | 0.0 | 0.2+ | 2005 12 02 | 704 | 0.4+ | 0.4+ | 2006 01 21 | G96 | 0.3− | 0.0 |
| 2003 04 01 | 645 | 0.0 | 0.2+ | 2005 12 03 | 704 | 0.3+ | 0.4+ | 2006 01 21 | G96 | 0.2− | 0.2− |
| 2005 11 22 | 691 | 0.1− | 0.3− | 2005 12 03 | 704 | 0.1+ | 0.0 | 2006 01 21 | G96 | 0.0 | 0.3− |
| 2005 11 22 | 691 | 0.0 | 0.4− | 2005 12 03 | 704 | 1.7+ | 0.1− | 2006 01 21 | G96 | 0.5+ | 0.3− |
| 2005 11 22 | 691 | 0.0 | 0.4− | 2005 12 04 | 691 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.2− | 0.0 |
| 2005 11 26 | 691 | 0.1+ | 0.3− | 2005 12 04 | 691 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.1− | 0.7− |
| 2005 11 26 | 691 | 0.1− | 0.2− | 2005 12 04 | 691 | 0.0 | 0.2+ | 2006 01 23 | G96 | 0.4− | 0.6− |
| 2005 11 26 | 691 | 0.0 | 0.2− | 2005 12 04 | 704 | 0.1+ | 0.4+ | 2006 01 23 | G96 | 0.2+ | 0.0 |
| 2005 11 29 | 704 | 0.1− | 0.6+ | 2005 12 04 | 704 | 0.5− | 0.9+ | 2006 01 24 | 704 | 0.5− | 1.4+ |
| 2005 11 29 | 704 | 0.1+ | 0.1− | 2005 12 04 | 704 | 0.3+ | 0.7+ | 2006 01 24 | 704 | 0.1− | 1.1+ |
| 2005 11 29 | 704 | 0.1+ | 0.1− | 2005 12 04 | 704 | 0.0 | 0.4+ | 2006 01 24 | 704 | 0.5− | 0.0 |
| 2005 11 29 | 704 | 0.1+ | 0.0 | 2005 12 04 | 704 | 0.0 | 0.4+ | 2006 01 24 | 704 | (2.9+ | 0.0 ) |
| 2005 11 29 | 704 | 0.4+ | 0.4− | 2005 12 04 | 704 | 0.5+ | 0.5− | 2006 02 23 | G96 | 0.1− | 0.1+ |
| 2005 11 30 | 691 | 0.0 | 0.0 | 2005 12 04 | 704 | 1.1+ | 0.1+ | 2006 02 23 | G96 | 0.3− | 0.1+ |
| 2005 11 30 | 691 | 0.0 | 0.0 | 2005 12 04 | 704 | 1.0− | 0.1+ | 2006 02 23 | G96 | 0.1+ | 0.0 |
| 2005 11 30 | 691 | 0.0 | 0.0 | 2005 12 04 | 704 | 0.7+ | 0.4− | 2006 02 23 | G96 | 0.3− | 0.2+ |
| 2005 11 30 | 704 | 0.3− | 0.3− | 2005 12 04 | G96 | 0.3− | 0.4− | 2006 03 05 | G96 | 0.1+ | 0.0 |
| 2005 11 30 | 704 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.0 | 0.1− | 2006 03 05 | G96 | 0.2+ | 0.5− |
| 2005 11 30 | 704 | 0.1− | 0.6+ | 2005 12 04 | G96 | 0.1− | 0.2− | 2006 03 05 | G96 | 0.3+ | 0.2− |
| 2005 11 30 | 704 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.1− | 0.3− | 2006 03 05 | G96 | 0.3− | 0.2+ |

**(145496)∗ 2005 WQ$_{113}$ = 2004 SK$_{51}$**

Discovered 2005 Nov. 27 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 96526)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.27054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16198646 | $\omega$ | 244.02452 | | −0.74619638 | −0.52093329 | |
| $a$ | 3.3328587 | $\Omega$ | 261.86618 | | +0.65350971 | −0.69192085 | |
| $e$ | 0.1000068 | $i$ | 24.75401 | | −0.12694889 | −0.49987402 | |
| $P$ | 6.08 | $H$ | 13.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.5+ | 0.3+ | 2001 01 26 | 704 | 0.2+ | 0.1− | 2005 11 12 | 703 | 0.3− | 0.1− |
| 1999 10 16 | 704 | 0.5− | 0.5− | 2001 01 26 | 704 | 0.5+ | 0.3+ | 2005 11 12 | 703 | 0.3− | 0.3+ |
| 1999 10 16 | 704 | 0.5− | 0.2+ | 2001 01 26 | 704 | (0.4− | 2.0−) | 2005 11 27 | 704 | 0.3+ | 0.5− |
| 1999 10 16 | 704 | 0.0 | 0.8− | 2004 09 23 | 704 | 0.0 | 0.0 | 2005 11 27 | 704 | 0.9+ | 0.1+ |
| 1999 11 01 | 704 | 0.5− | 0.2+ | 2004 09 23 | 704 | 0.1+ | 0.5+ | 2005 11 27 | 704 | 1.0+ | 0.8− |
| 1999 11 01 | 704 | 0.0 | 0.5− | 2004 09 23 | 704 | 0.5− | 0.6+ | 2005 12 01 | 699 | 0.1+ | 0.4+ |
| 1999 11 01 | 704 | 0.7− | 0.0 | 2004 09 23 | 704 | 0.7− | 0.1− | 2005 12 01 | 699 | 0.6− | 0.3− |
| 1999 11 01 | 704 | 0.6− | 1.0− | 2004 09 23 | 704 | 0.2+ | 0.5+ | 2005 12 01 | 699 | 0.1+ | 0.7− |
| 1999 11 01 | 704 | 0.6− | 0.2− | 2004 09 24 | 704 | 0.4− | 1.0+ | 2005 12 01 | 699 | 0.4+ | 0.1+ |
| 1999 12 12 | 704 | 0.1+ | 0.5− | 2004 09 24 | 704 | 0.2− | 0.8+ | 2005 12 23 | 703 | 0.8+ | 0.7+ |
| 1999 12 12 | 704 | 0.1− | 0.1+ | 2004 09 24 | 704 | 0.1− | 0.4+ | 2005 12 23 | 703 | 0.0 | 0.1+ |
| 1999 12 12 | 704 | 0.4+ | 0.4+ | 2004 09 24 | 704 | (0.8− | 2.0+) | 2005 12 23 | 703 | 0.2+ | 1.1+ |
| 1999 12 12 | 704 | 0.3− | 0.6+ | 2004 09 24 | 704 | 0.7− | 0.2+ | 2005 12 23 | 703 | (0.5− | 2.6−) |
| 1999 12 12 | 704 | 0.1− | 1.3+ | 2005 10 25 | 703 | 0.8− | 0.9+ | 2005 12 29 | 644 | 0.5+ | 0.1+ |
| 2000 01 31 | 704 | 0.3− | 0.3+ | 2005 10 25 | 703 | 0.1+ | 1.0− | 2005 12 29 | 644 | 0.1+ | 0.4+ |
| 2000 01 31 | 704 | 0.5− | 0.1− | 2005 10 25 | 703 | 0.4+ | 0.2− | 2005 12 29 | 644 | 0.2+ | 0.1+ |
| 2000 01 31 | 704 | 1.1+ | 0.3− | 2005 10 25 | 703 | 0.4− | 0.1+ | 2006 02 20 | 704 | 1.1− | 0.2+ |
| 2000 11 25 | 704 | 0.8+ | 0.4+ | 2005 10 31 | 703 | 0.4+ | 0.3− | 2006 02 20 | 704 | 0.3+ | 0.4− |
| 2000 11 25 | 704 | 0.2+ | 1.4+ | 2005 10 31 | 703 | 0.0 | 0.6− | 2006 02 20 | 704 | 0.8+ | 0.3− |
| 2000 11 25 | 704 | 0.6− | 0.2− | 2005 10 31 | 703 | 0.9− | 0.0 | 2006 10 31 | 703 | 0.5− | 0.4− |
| 2000 11 25 | 704 | 0.3+ | 0.4− | 2005 10 31 | 703 | 0.1+ | 0.4− | 2006 10 31 | 703 | 0.8− | 0.2− |
| 2000 12 27 | 699 | 0.4− | 0.0 | 2005 11 12 | 703 | 0.2− | 0.1+ | 2006 10 31 | 703 | (1.6− | 0.3−) |
| 2000 12 27 | 699 | 1.7+ | 1.7+ | 2005 11 12 | 703 | 0.4− | 0.0 | 2006 10 31 | 703 | 0.8− | 0.8+ |
| 2000 12 27 | 699 | 0.1− | 0.0 | 2005 11 12 | 703 | 0.6+ | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2000 12 27 | 699 | 0.0 | 0.2− | 2005 11 12 | 703 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.6+ | 0.8− |
| 2001 01 26 | 704 | 0.6+ | 0.7+ | 2005 11 12 | 703 | (1.4+ | 1.6−) | 2006 11 16 | 703 | 1.1− | 0.2− |
| 2001 01 26 | 704 | 1.2+ | 0.2+ | 2005 11 12 | 703 | (2.2+ | 0.1−) | 2006 11 16 | 703 | 0.6− | 0.1− |

**(145497)∗ 2005 XZ$_{67}$ = 2004 YD$_{33}$**

Discovered 2005 Dec. 5 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 96641)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.53083 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17615528 | $\omega$ | 276.14687 | | +0.51677551 | −0.84882958 | |
| $a$ | 3.1516569 | $\Omega$ | 142.05621 | | +0.83957529 | +0.47699158 | |
| $e$ | 0.1267569 | $i$ | 10.44710 | | +0.16750046 | +0.22796355 | |
| $P$ | 5.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2003 08 31 | 704 | 0.1− | 0.6+ | 2005 12 05 | 691 | 0.1− | 0.3+ |
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2003 08 31 | 704 | 1.2− | 0.0 | 2005 12 05 | 691 | 0.3− | 0.2+ |
| 2000 02 02 | 704 | 0.2+ | 0.4+ | 2003 08 31 | 704 | 0.7− | 0.7− | 2005 12 10 | 691 | 0.4+ | 0.5+ |
| 2000 02 02 | 704 | 0.5− | 0.9+ | 2004 12 16 | 699 | 0.6+ | 0.6− | 2005 12 10 | 691 | 0.0 | 0.3+ |
| 2000 02 02 | 704 | 0.3− | 0.3+ | 2004 12 16 | 699 | 2.0+ | 0.4+ | 2005 12 10 | 691 | 0.2+ | 0.4+ |
| 2000 02 02 | 704 | 0.9− | 0.4− | 2004 12 16 | 699 | 0.3+ | 0.0 | 2006 01 21 | 691 | 0.2− | 0.2+ |
| 2000 02 02 | 704 | 0.2− | 0.3+ | 2004 12 16 | 699 | 0.8− | 0.1− | 2006 01 21 | 691 | 0.5+ | 0.5+ |
| 2000 03 10 | 691 | 0.1+ | 0.2− | 2004 12 18 | 704 | 0.7+ | 0.1− | 2006 01 21 | 691 | 0.1− | 0.2+ |
| 2000 03 10 | 691 | 0.0 | 0.9− | 2004 12 18 | 704 | 0.1+ | 0.5+ | 2006 01 25 | 691 | 0.1− | 0.3+ |
| 2000 03 10 | 691 | 0.3+ | 0.8− | 2004 12 18 | 704 | 0.0 | 0.1+ | 2006 01 25 | 691 | 0.0 | 0.4+ |
| 2003 07 24 | 644 | 0.2+ | 0.9+ | 2004 12 18 | 704 | 0.5+ | 0.1+ | 2006 01 25 | 691 | 0.1− | 0.0 |
| 2003 07 24 | 644 | 0.1− | 1.0+ | 2004 12 18 | 704 | 0.1− | 0.2+ | 2006 02 25 | 691 | 0.1+ | 0.0 |
| 2003 07 24 | 644 | 0.4+ | 1.0+ | 2005 02 04 | 691 | 0.3− | 0.1− | 2006 02 25 | 691 | 0.3+ | 0.0 |
| 2003 08 22 | 644 | 0.1+ | 0.9+ | 2005 02 04 | 691 | 0.6− | 0.1+ | 2006 02 25 | 691 | 0.0 | 0.2+ |
| 2003 08 22 | 644 | 0.2+ | 0.8+ | 2005 02 04 | 691 | 0.2− | 0.2− | | | | |
| 2003 08 22 | 644 | 0.1+ | 1.3+ | 2005 12 05 | 691 | 0.4+ | 0.2+ | | | | |

**(145498)∗ 2005 YQ$_{190}$ = 2003 OG$_{28}$**

Discovered 2005 Dec. 30 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 96834)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.31504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17414708 | $\omega$ | 239.32477 | | +0.42846711 | +0.90351223 | |
| $a$ | 3.1758398 | $\Omega$ | 56.04824 | | −0.82522788 | +0.39537493 | |
| $e$ | 0.1576308 | $i$ | 0.62390 | | −0.36798761 | +0.16536118 | |
| $P$ | 5.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 28 | 691 | 1.7+ | 0.1+ | 2002 05 11 | 704 | 0.1+ | 0.9+ | 2005 12 02 | G96 | 0.1− | 0.1− |
| 1992 09 28 | 691 | 0.3+ | 0.8+ | 2003 07 24 | 644 | 0.3− | 0.5+ | 2005 12 02 | G96 | 0.4− | 0.4+ |
| 1992 09 28 | 691 | 0.0 | 0.5+ | 2003 07 24 | 644 | 0.2− | 0.7+ | 2005 12 30 | 691 | 0.0 | 0.3+ |
| 1992 09 28 | 691 | 0.8− | 0.1− | 2003 07 24 | 644 | 0.0 | 0.5+ | 2005 12 30 | 691 | 0.1+ | 0.4+ |
| 1992 09 28 | 691 | 0.3− | 0.4− | 2003 07 25 | 644 | 0.7− | 0.0 | 2005 12 30 | 691 | 0.2+ | 0.5+ |
| 1992 09 28 | 691 | 0.1− | 0.2− | 2003 07 25 | 644 | 0.4− | 0.5+ | 2006 01 04 | G96 | 0.5+ | 0.5− |
| 1996 03 16 | 691 | 0.7+ | 1.1+ | 2003 07 25 | 644 | 0.4− | 0.7+ | 2006 01 04 | G96 | 0.9+ | 0.1+ |
| 1996 03 16 | 691 | 0.4− | 0.0 | 2003 10 01 | 691 | 0.4− | 0.3+ | 2006 01 04 | G96 | 0.9+ | 0.5− |
| 1996 03 16 | 691 | 0.9− | 0.1− | 2003 10 01 | 691 | 0.0 | 0.3+ | 2006 01 04 | G96 | 0.1− | 0.8− |
| 1998 09 30 | 691 | 0.1+ | 0.4− | 2003 10 01 | 691 | 0.0 | 0.1+ | 2006 01 10 | G96 | 0.1+ | 0.3+ |
| 1998 09 30 | 691 | 0.4− | 0.5− | 2004 10 15 | 691 | 0.3+ | 0.6+ | 2006 01 10 | G96 | 0.3− | 0.3+ |
| 1998 09 30 | 691 | 0.2+ | 0.4− | 2004 10 15 | 691 | 0.0 | 0.4+ | 2006 01 10 | G96 | 0.9+ | 0.2− |
| 1998 10 12 | 691 | 0.3− | 0.1− | 2004 10 15 | 691 | 0.1+ | 0.2+ | 2006 01 10 | G96 | 0.1+ | 0.6+ |
| 1998 10 12 | 691 | 0.1− | 0.2− | 2004 11 19 | 691 | 0.1− | 0.2+ | 2006 01 22 | G96 | 0.3− | 0.3− |
| 1998 10 12 | 691 | 0.4− | 0.0 | 2004 11 19 | 691 | 0.2− | 0.5+ | 2006 01 22 | G96 | 0.0 | 0.1− |
| 2002 05 11 | 704 | 1.6+ | 0.8+ | 2004 11 19 | 691 | 0.1− | 0.1+ | 2006 01 22 | G96 | 0.1− | 0.4+ |
| 2002 05 11 | 704 | 2.0+ | 0.8+ | 2005 12 02 | G96 | 0.4− | 0.1+ | 2006 01 22 | G96 | 0.3− | 0.1− |
| 2002 05 11 | 704 | 0.2+ | 0.9+ | 2005 12 02 | G96 | 0.2+ | 0.7− | | | | |

**(145499)∗ 2006 BV$_{33}$**

Discovered 2006 Jan. 21 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.97903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18197681 | $\omega$ | 306.20426 | | +0.29517965 | +0.95512276 | |
| $a$ | 3.0840779 | $\Omega$ | 340.91889 | | −0.85057638 | +0.25092495 | |
| $e$ | 0.1505363 | $i$ | 4.33104 | | −0.43518823 | +0.15740766 | |
| $P$ | 5.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.2+ | 0.3− | 2003 10 25 | 704 | 0.5+ | 1.2+ | 2006 02 07 | 691 | 0.1+ | 0.3+ |
| 1995 02 02 | 691 | 0.0 | 0.9− | 2003 11 21 | 691 | 0.3+ | 0.3+ | 2006 02 07 | 691 | 0.1+ | 0.4+ |
| 1997 08 11 | 691 | 0.1+ | 0.3+ | 2003 11 21 | 691 | 0.1− | 0.0 | 2006 02 07 | 691 | 0.1+ | 0.3+ |
| 1997 08 11 | 691 | 0.2+ | 0.2+ | 2003 11 21 | 691 | 0.2− | 0.1− | 2006 02 21 | G96 | 0.5− | 0.4+ |
| 1997 08 11 | 691 | 0.3+ | 0.4+ | 2004 12 18 | 691 | 0.1− | 0.3− | 2006 02 21 | G96 | 0.4− | 0.4+ |
| 1997 09 28 | 691 | 0.8− | 0.4+ | 2004 12 18 | 691 | 0.2− | 0.4− | 2006 02 21 | G96 | 0.2+ | 0.1+ |
| 1997 09 28 | 691 | 0.8− | 0.3+ | 2004 12 18 | 691 | 0.3− | 0.1+ | 2006 02 21 | G96 | 0.2+ | 0.1− |
| 1997 09 28 | 691 | 0.8− | 0.2+ | 2006 01 21 | 691 | 0.5+ | 0.3+ | 2006 02 25 | G96 | 0.5− | 0.2+ |
| 2001 03 19 | 699 | 0.1+ | 0.9− | 2006 01 21 | 691 | 0.1+ | 0.2+ | 2006 02 25 | G96 | 0.2− | 0.0 |
| 2001 03 19 | 699 | 0.3+ | 1.0+ | 2006 01 21 | 691 | 0.3+ | 0.7+ | 2006 02 25 | G96 | 0.4− | 0.1+ |
| 2001 03 19 | 699 | 0.6− | 1.1+ | 2006 01 25 | 691 | 0.5+ | 0.6+ | 2006 02 25 | G96 | 0.2− | 0.1− |
| 2001 03 19 | 699 | 0.4− | 0.2− | 2006 01 25 | 691 | 0.2+ | 0.5+ | 2006 04 21 | G96 | 0.2− | 0.2+ |
| 2002 07 05 | 644 | 0.3+ | 0.5+ | 2006 01 25 | 691 | 0.8+ | 0.1+ | 2006 04 21 | G96 | 0.2− | 0.3+ |
| 2002 07 05 | 644 | 0.3+ | 0.6+ | 2006 01 31 | 691 | 0.3+ | 0.3+ | 2006 04 21 | G96 | 0.2− | 0.0 |
| 2002 07 05 | 644 | 0.5+ | 0.8+ | 2006 01 31 | 691 | 0.1+ | 0.1+ | 2006 04 21 | G96 | 0.8− | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2006 01 31 | 691 | 0.1+ | 0.3+ | 2006 05 24 | G96 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.2+ | 0.4+ | 2006 02 06 | G96 | 0.4− | 0.1− | 2006 05 24 | G96 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2006 02 06 | G96 | 0.3− | 0.1− | 2006 05 24 | G96 | 0.1− | 0.1+ |
| 2003 10 25 | 704 | (1.6+ | 3.1+) | 2006 02 06 | G96 | 0.3+ | 0.2− | 2006 05 24 | G96 | 1.0− | 0.5+ |
| 2003 10 25 | 704 | 1.3+ | 1.7+ | 2006 02 06 | G96 | 0.1− | 0.1− | | | | |

**(145500)∗ 2006 BL$_{59}$ = 2002 CV$_{278}$**

Discovered 2006 Jan. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 97026)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.78020 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24059972 | $\omega$ | 189.61846 | | +0.88946322 | +0.43657309 | |
| $a$ | 2.5601926 | $\Omega$ | 143.51513 | | −0.40274188 | +0.88854728 | |
| $e$ | 0.1856936 | $i$ | 13.13533 | | −0.21599575 | +0.14102363 | |
| $P$ | 4.10 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 15 | 691 | 0.2− | 0.0 | 2002 02 11 | 704 | 0.7+ | 1.2+ | 2006 01 24 | 704 | 0.3− | 1.3− |
| 1994 02 15 | 691 | 1.1− | 0.0 | 2002 02 11 | 704 | 1.1+ | 1.2+ | 2006 01 24 | 704 | 0.5+ | 0.4− |
| 1994 02 15 | 691 | 0.6− | 0.7− | 2002 02 11 | 704 | 0.6+ | 1.0+ | 2006 01 24 | 704 | 1.1− | 0.0 |
| 1995 05 31 | 691 | 1.0+ | 1.3− | 2003 04 25 | 699 | 1.0− | 1.1+ | 2006 01 27 | G96 | 0.3− | 0.5− |
| 1995 05 31 | 691 | 0.5+ | 0.9− | 2003 04 25 | 699 | 2.2− | 0.3+ | 2006 01 27 | G96 | 0.3+ | 0.8− |
| 1995 05 31 | 691 | 0.9− | 0.3− | 2003 04 25 | 699 | 0.1+ | 0.1− | 2006 01 27 | G96 | 0.0 | 0.7− |
| 2000 09 26 | 704 | 0.7− | 0.0 | 2003 04 25 | 699 | 0.9− | 0.6+ | 2006 01 27 | G96 | 0.5− | 0.8− |
| 2000 09 26 | 704 | 0.3− | 0.3+ | 2004 09 21 | 699 | 0.5− | 0.5− | 2006 02 01 | G96 | 0.4+ | 0.7− |
| 2000 09 26 | 704 | 0.9+ | 0.7− | 2004 09 21 | 699 | 0.3− | 0.2+ | 2006 02 01 | G96 | 0.6+ | 0.5− |
| 2000 10 01 | 645 | 0.0 | 0.3− | 2004 09 21 | 699 | 0.3+ | 0.7− | 2006 02 01 | G96 | 0.6+ | 0.6− |
| 2000 10 01 | 645 | 0.0 | 0.3− | 2004 09 21 | 699 | 0.2− | 0.9+ | 2006 02 01 | G96 | 0.2+ | 0.3− |
| 2000 10 30 | 704 | 0.9+ | 0.3− | 2004 10 07 | 704 | 0.4− | 0.5+ | 2006 02 04 | 691 | 0.1+ | 0.4− |
| 2000 10 30 | 704 | 0.9+ | 0.4− | 2004 10 07 | 704 | 0.2− | 0.0 | 2006 02 04 | 691 | 0.2+ | 0.4− |
| 2000 10 30 | 704 | 0.6+ | 0.9− | 2004 10 07 | 704 | 0.2+ | 0.1− | 2006 02 04 | 691 | 0.1− | 0.3− |
| 2000 10 30 | 704 | 1.2+ | 0.3+ | 2004 10 07 | 704 | 0.6− | 0.6+ | 2006 02 24 | G96 | 0.4+ | 0.2− |
| 2000 11 22 | 608 | 0.7− | 0.1− | 2004 10 13 | 699 | 0.1+ | 0.7− | 2006 02 24 | G96 | 0.1+ | 0.4− |
| 2000 11 22 | 608 | 0.4− | 0.2− | 2004 10 13 | 699 | 0.9+ | 0.2+ | 2006 02 24 | G96 | 0.2− | 0.2− |
| 2000 11 22 | 608 | 0.8− | 0.2− | 2004 10 13 | 699 | 0.6+ | 0.1+ | 2006 02 24 | G96 | 0.7− | 0.3− |
| 2000 11 25 | 704 | 0.9+ | 1.3+ | 2004 10 13 | 699 | 1.0+ | 0.7+ | 2006 03 05 | G96 | 0.2− | 0.4− |
| 2000 11 25 | 704 | 0.1− | 0.4+ | 2004 11 20 | 703 | 0.8− | 0.6+ | 2006 03 05 | G96 | 0.3+ | 0.2− |
| 2000 11 25 | 704 | 0.3+ | 0.9+ | 2004 11 20 | 703 | 0.1− | 0.8+ | 2006 03 05 | G96 | 0.1+ | 0.2− |
| 2000 11 25 | 704 | 0.2+ | 1.4− | 2004 11 20 | 703 | 0.4− | 0.1+ | 2006 03 05 | G96 | 0.2+ | 0.1− |
| 2002 02 07 | 291 | 0.4+ | 0.5+ | 2004 11 20 | 703 | 0.2− | 0.6− | 2006 04 19 | G96 | 0.6− | 0.3+ |
| 2002 02 07 | 291 | 0.3+ | 0.4+ | 2004 12 03 | 644 | 0.2− | 0.8+ | 2006 04 19 | G96 | 0.4− | 0.1− |
| 2002 02 07 | 291 | 0.3+ | 0.5+ | 2004 12 03 | 644 | 0.1− | 0.0 | 2006 04 19 | G96 | 0.9− | 0.0 |
| 2002 02 11 | 704 | 0.6+ | 1.1+ | 2004 12 03 | 644 | 0.3− | 0.1+ | 2006 04 19 | G96 | 0.2− | 0.1− |
| 2002 02 11 | 704 | 1.0+ | 0.8+ | 2006 01 24 | 704 | 0.6− | 0.4− | | | | |

**(145501)∗ 2006 BC$_{101}$ = 2005 CU$_{77}$**

Discovered 2006 Jan. 23 by the Catalina Sky Survey.

Id. A. Doppler (*MPO* 97059)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.85859 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18842756 | $\omega$ | 30.21092 | | −0.66255295 | | +0.74759515 |
| $a$ | 3.0132819 | $\Omega$ | 198.42418 | | −0.71309519 | | −0.64841423 |
| $e$ | 0.0515972 | $i$ | 8.38699 | | −0.22916988 | | −0.14373752 |
| $P$ | 5.23 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 19 | 691 | 0.4− | 0.2+ | 2002 06 09 | 704 | 0.7− | 0.2− | 2005 02 18 | 809 | 0.1+ | 0.1− |
| 1993 09 19 | 691 | 0.4− | 0.3− | 2002 06 09 | 644 | 0.1− | 1.3+ | 2005 02 18 | 809 | 0.1+ | 0.3− |
| 1993 09 19 | 691 | 0.3− | 0.1+ | 2002 06 09 | 704 | 0.5+ | 0.3− | 2005 02 18 | 809 | 0.0 | 0.1− |
| 1993 10 09 | 809 | 1.9+ | 1.0+ | 2002 06 09 | 704 | 0.6− | 0.3− | 2006 01 23 | 703 | 0.3+ | 0.0 |
| 1993 10 09 | 809 | 2.1+ | 0.5+ | 2002 06 09 | 704 | 0.9− | 0.5− | 2006 01 23 | 703 | 0.4− | 0.7+ |
| 1993 10 09 | 809 | 0.0 | 0.4+ | 2002 06 09 | 644 | 0.1+ | 1.1+ | 2006 01 23 | 703 | 1.5− | 0.1− |
| 1993 10 12 | 809 | 1.0+ | 0.0 | 2003 09 18 | 691 | 0.4+ | 0.4+ | 2006 01 23 | 703 | 0.3− | 0.2− |
| 1993 10 12 | 809 | 0.4+ | 1.4− | 2003 09 18 | 691 | 0.0 | 0.3+ | 2006 01 30 | 703 | 0.4+ | 0.2− |
| 1993 10 12 | 809 | (2.6+ | 2.3+) | 2003 09 18 | 691 | 0.0 | 0.3+ | 2006 01 30 | 703 | 0.8− | 0.1− |
| 1999 12 06 | 704 | 0.5+ | 0.4− | 2003 09 23 | 644 | 0.0 | 0.3+ | 2006 01 30 | 703 | 0.3− | 0.8− |
| 1999 12 06 | 704 | 0.2− | 0.9+ | 2003 09 23 | 644 | 0.2− | 0.3+ | 2006 01 30 | 703 | 0.3− | 0.3+ |
| 1999 12 06 | 704 | 0.8− | 0.4+ | 2003 09 23 | 644 | 0.2− | 0.4+ | 2006 02 04 | 291 | 0.6+ | 0.1+ |
| 1999 12 07 | 704 | 1.6+ | 1.2− | 2004 11 04 | 691 | 0.2− | 0.2+ | 2006 02 04 | 291 | 0.7+ | 0.3+ |
| 1999 12 07 | 704 | 1.6− | 0.1+ | 2004 11 04 | 691 | 0.2− | 0.0 | 2006 02 04 | 291 | 0.6+ | 0.3+ |
| 1999 12 07 | 704 | (4.1− | 1.2+) | 2004 11 04 | 691 | 0.0 | 0.2+ | 2006 02 07 | 703 | 1.0+ | 0.5− |
| 2001 02 17 | 704 | 1.1+ | 1.2+ | 2004 11 19 | 703 | 0.2− | 0.5− | 2006 02 07 | 703 | 1.0+ | 0.1− |
| 2001 02 17 | 704 | 0.4− | 1.2+ | 2004 11 19 | 703 | 0.2+ | 0.0 | 2006 02 07 | 703 | 0.3− | 0.8− |
| 2001 02 17 | 704 | 0.5+ | 0.9+ | 2004 11 19 | 703 | 1.0− | 0.1− | 2006 02 07 | 703 | 0.4− | 0.3+ |
| 2001 03 19 | 608 | 0.1− | 0.3+ | 2004 11 19 | 703 | 0.7− | 0.3− | 2006 03 05 | 703 | 1.1− | 0.2− |
| 2001 03 19 | 608 | 0.5− | 0.6+ | 2005 02 11 | 809 | 1.1− | 0.2+ | 2006 03 05 | 703 | 0.3− | 0.3− |
| 2001 03 19 | 608 | 0.7− | 0.4+ | 2005 02 11 | 809 | 0.2− | 0.2+ | 2006 03 05 | 703 | 0.2+ | 0.5− |
| 2002 06 09 | 644 | 0.3+ | 1.4+ | 2005 02 11 | 809 | 0.1+ | 0.0 | 2006 03 05 | 703 | 0.6− | 0.3+ |
| 2002 06 09 | 704 | 0.4− | 0.7− | 2005 02 18 | 809 | 0.1− | 0.3− | | | | |

**(145502)∗ 2006 BA$_{191}$ = 1995 DE$_4$ = 2001 KS$_{73}$ = 2005 AQ$_{63}$**

Discovered 2006 Jan. 28 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 101281)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.31502 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19209201 | $\omega$ | 53.53146 | | −0.86618356 | | +0.49809629 |
| $a$ | 2.9748370 | $\Omega$ | 156.26318 | | −0.48453807 | | −0.81737596 |
| $e$ | 0.1572486 | $i$ | 5.74943 | | −0.12226570 | | −0.28947647 |
| $P$ | 5.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 21 | 691 | 0.3− | 0.4− | 2005 01 19 | 691 | 0.3+ | 0.4+ | 2006 05 03 | 691 | 0.0 | 0.0 |
| 1995 02 21 | 691 | 0.4− | 0.1− | 2005 01 19 | 691 | 0.4+ | 0.0 | 2006 05 03 | 691 | 0.3− | 0.0 |
| 1995 02 21 | 691 | 0.2− | 0.2+ | 2005 01 19 | 691 | 0.3+ | 0.4+ | 2006 05 03 | 691 | (0.6− | 2.9−) |
| 1995 03 01 | 691 | 0.3+ | 0.9+ | 2005 03 17 | G96 | 0.5− | 0.1− | 2006 05 05 | 699 | 0.0 | 0.2+ |
| 1995 03 01 | 691 | 0.5− | 0.5− | 2005 03 17 | G96 | 0.5− | 0.2+ | 2006 05 05 | 699 | 0.6− | 0.8+ |
| 1995 03 01 | 691 | 0.2+ | 0.5− | 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 05 05 | 699 | (2.7− | 0.9+) |
| 1997 08 11 | 691 | 0.6− | 0.6+ | 2005 03 17 | G96 | 0.3− | 0.1− | 2006 05 05 | 699 | (0.5− | 2.2+) |
| 1997 08 11 | 691 | 0.3− | 0.5+ | 2006 01 28 | 691 | 0.2+ | 0.1− | 2006 05 19 | 699 | 1.1− | 0.1+ |
| 1997 08 11 | 691 | 0.2− | 0.1+ | 2006 01 28 | 691 | 0.1+ | 0.1+ | 2006 05 19 | 699 | 0.9− | 0.3− |
| 2001 05 24 | 291 | 0.1− | 0.1− | 2006 01 28 | 691 | 0.3+ | 0.0 | 2006 05 19 | 699 | 0.5− | 0.4− |
| 2001 05 24 | 291 | 0.1+ | 0.1+ | 2006 02 01 | 691 | 0.0 | 0.5+ | 2006 05 19 | 699 | 1.7− | 1.2− |
| 2001 05 24 | 291 | 1.1+ | 0.2+ | 2006 02 01 | 691 | 0.3+ | 0.0 | 2006 05 27 | 644 | 0.2+ | 0.0 |
| 2001 05 26 | 704 | 0.6+ | 0.1+ | 2006 02 01 | 691 | 0.4+ | 0.0 | 2006 05 27 | 644 | 0.4− | 0.2− |
| 2001 05 26 | 704 | 1.3+ | 1.2− | 2006 02 06 | 691 | 0.0 | 0.5+ | 2006 05 27 | 644 | 0.2+ | 0.4− |
| 2001 05 26 | 704 | 0.8+ | 0.9+ | 2006 02 06 | 691 | 0.2− | 0.4+ | 2006 05 30 | 699 | 0.6+ | 0.4+ |
| 2001 05 26 | 704 | 0.2+ | 0.7+ | 2006 02 06 | 691 | 0.2− | 0.2− | 2006 05 30 | 699 | 0.6+ | 0.7+ |
| 2005 01 13 | 691 | 0.1+ | 0.1+ | 2006 04 25 | 691 | 0.3− | 0.1+ | 2006 05 30 | 699 | 0.4− | 0.1+ |
| 2005 01 13 | 691 | 0.3+ | 0.3+ | 2006 04 25 | 691 | 0.1− | 0.1+ | 2006 05 30 | 699 | 0.8+ | 0.0 |
| 2005 01 13 | 691 | 0.1+ | 0.4+ | 2006 04 25 | 691 | 0.3− | 0.0 | | | | |

**(145503)∗ 2006 BJ$_{215}$ = 1996 HT$_1$**

Discovered 2006 Jan. 24 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 97120)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.81606 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17879014 | $\omega$ | 264.43733 | | +0.73383940 | | +0.67198745 |
| $a$ | 3.1206160 | $\Omega$ | 53.29546 | | −0.56369849 | | +0.68415141 |
| $e$ | 0.0678766 | $i$ | 7.13365 | | −0.37910914 | | +0.28349554 |
| $P$ | 5.51 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.1− | 0.7+ | 2002 06 12 | 644 | 0.2+ | 0.3+ | 2003 10 17 | 644 | 0.2− | 0.0 |
| 1996 03 27 | 691 | 0.4− | 0.4+ | 2003 07 08 | 644 | 0.0 | 0.5+ | 2004 11 07 | 704 | 0.6+ | 0.6+ |
| 1996 03 27 | 691 | 0.2− | 0.2+ | 2003 07 08 | 644 | 0.0 | 0.3+ | 2004 11 07 | 704 | 0.7− | 0.5+ |
| 1996 04 22 | 608 | 0.9+ | 0.9− | 2003 07 08 | 644 | 0.3+ | 0.2+ | 2004 11 07 | 704 | 1.4+ | 1.7+ |
| 1996 04 22 | 608 | 0.4− | 0.9− | 2003 07 25 | 644 | 0.3− | 0.4+ | 2004 11 07 | 704 | 0.1− | 0.4− |
| 1996 04 23 | 608 | 0.7+ | 0.2− | 2003 07 25 | 644 | 0.1− | 0.5+ | 2004 12 02 | 644 | 0.2− | 0.5+ |
| 1996 04 23 | 608 | 0.8+ | 0.1− | 2003 07 25 | 644 | 0.0 | 0.2+ | 2004 12 02 | 644 | 0.1− | 0.3+ |
| 1998 10 11 | 699 | 0.4+ | 1.1+ | 2003 08 23 | 644 | 0.3− | 0.1+ | 2004 12 02 | 644 | 0.1+ | 0.3+ |
| 1998 10 11 | 699 | 0.6− | 1.0+ | 2003 08 23 | 644 | 0.3− | 0.0 | 2004 12 20 | G96 | 0.1− | 0.1− |
| 1998 10 11 | 699 | 0.8− | 1.1+ | 2003 08 23 | 644 | 0.3− | 0.2− | 2004 12 20 | G96 | 0.1− | 0.1− |
| 2001 03 19 | 704 | 0.6+ | 0.1+ | 2003 08 31 | 704 | 0.6− | 1.2− | 2004 12 20 | G96 | 0.2+ | 0.3− |
| 2001 03 19 | 704 | 0.7− | 0.1− | 2003 08 31 | 704 | 1.2− | 0.3− | 2004 12 20 | G96 | 0.1− | 0.1+ |
| 2001 03 19 | 704 | 1.4+ | 0.9+ | 2003 08 31 | 704 | 0.2+ | 0.0 | 2006 01 24 | 699 | 1.7− | 0.2+ |
| 2001 03 19 | 704 | 0.2+ | 0.5+ | 2003 08 31 | 704 | 0.6+ | 0.1− | 2006 01 24 | 699 | 1.7+ | 0.7+ |
| 2001 03 27 | 608 | 0.2− | 0.7− | 2003 08 31 | 704 | 0.3+ | 0.6− | 2006 01 24 | 699 | 0.0 | 0.8− |
| 2001 03 27 | 608 | 0.3− | 0.1+ | 2003 08 31 | 608 | 0.3+ | 0.2− | 2006 01 24 | 699 | 0.9− | 1.8+ |
| 2001 03 27 | 608 | 0.4+ | 0.5− | 2003 08 31 | 608 | 0.3+ | 0.4− | 2006 01 26 | 703 | 1.0− | 0.0 |
| 2002 05 11 | 704 | 0.8+ | 0.3+ | 2003 08 31 | 608 | 0.2+ | 0.4− | 2006 01 26 | 703 | 0.2− | 0.1+ |
| 2002 05 11 | 704 | 0.6+ | 0.3+ | 2003 09 19 | 699 | 0.1− | 0.5− | 2006 01 26 | 703 | 0.1+ | 0.3+ |
| 2002 05 11 | 704 | 0.4+ | 0.4+ | 2003 09 19 | 699 | 0.1+ | 0.9+ | 2006 01 26 | 703 | 0.1− | 0.1+ |
| 2002 05 11 | 704 | 0.5+ | 0.8+ | 2003 09 19 | 699 | 0.1− | 0.7− | 2006 02 04 | 703 | 1.0− | 0.1+ |
| 2002 05 11 | 704 | 0.3+ | 0.3+ | 2003 09 19 | 699 | 0.8− | 0.6+ | 2006 02 04 | 703 | 0.2+ | 0.2− |
| 2002 06 12 | 644 | 0.4+ | 0.1+ | 2003 10 17 | 644 | 0.2− | 0.5+ | 2006 02 04 | 703 | 0.9+ | 0.5− |
| 2002 06 12 | 644 | 0.2+ | 0.2+ | 2003 10 17 | 644 | 0.2− | 0.3+ | 2006 02 04 | 703 | 0.0 | 0.4− |

**(145504)∗ 2006 BC$_{242}$ = 2004 VX$_{33}$**

Discovered 2006 Jan. 31 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 97131)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.62876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27560755 | $\omega$ | 186.38219 | | +0.37022966 | | +0.92696950 |
| $a$ | 2.3385248 | $\Omega$ | 105.36061 | | −0.84948882 | | +0.36419040 |
| $e$ | 0.1959876 | $i$ | 3.59584 | | −0.37589726 | | +0.08996057 |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 704 | 0.2+ | 0.1+ | 2003 05 05 | 699 | 1.2− | 0.9+ | 2006 01 31 | 691 | 0.2− | 0.0 |
| 2000 08 28 | 704 | 0.1+ | 0.1+ | 2003 05 05 | 699 | 0.1+ | 0.3+ | 2006 01 31 | 691 | 0.0 | 0.1− |
| 2000 08 28 | 704 | 0.0 | 0.4+ | 2003 05 05 | 699 | 0.3+ | 0.2+ | 2006 02 04 | 691 | 0.0 | 0.1+ |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2003 05 05 | 699 | 0.1− | 0.2− | 2006 02 04 | 691 | 0.2+ | 0.0 |
| 2000 09 05 | 645 | 0.0 | 0.1+ | 2004 11 03 | 691 | 0.2− | 0.1+ | 2006 02 04 | 691 | 0.2− | 0.1− |
| 2000 11 27 | 645 | 0.0 | 0.1+ | 2004 11 03 | 691 | 0.1+ | 0.2+ | 2006 03 05 | 691 | 0.1+ | 0.3− |
| 2000 11 27 | 645 | 0.1− | 0.0 | 2004 11 03 | 691 | 0.0 | 0.1+ | 2006 03 05 | 691 | 0.2+ | 0.1+ |
| 2003 04 27 | 699 | 0.9+ | 0.4+ | 2004 11 10 | 691 | 0.3− | 0.4− | 2006 03 05 | 691 | 0.0 | 0.0 |
| 2003 04 27 | 699 | 1.0+ | 0.1+ | 2004 11 10 | 691 | 0.1+ | 0.0 | 2006 03 08 | 691 | 0.1+ | 0.3+ |
| 2003 04 27 | 699 | 0.2+ | 0.2+ | 2004 11 10 | 691 | 0.2+ | 0.1+ | 2006 03 08 | 691 | 0.1+ | 0.3+ |
| 2003 04 27 | 699 | 0.8− | 0.3+ | 2006 01 31 | 691 | 0.3+ | 0.4+ | 2006 03 08 | 691 | 0.4− | 0.1+ |

**(145505)∗ 2006 BN$_{258}$ = 2001 DD$_{28}$**

Discovered 2006 Jan. 31 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 97140)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.99402 | | (2000.0) | | | |
| $n$ | 0.19768676 | $\omega$ | 141.52575 | | −0.68292473 | −0.73005660 |
| $a$ | 2.9184415 | $\Omega$ | 351.44271 | | +0.62145989 | −0.56257567 |
| $e$ | 0.0230102 | $i$ | 9.72032 | | +0.38392892 | −0.38797677 |
| $P$ | 4.99 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.8+ | 0.5+ | 2006 01 26 | 703 | 0.7− | 0.0 | 2006 02 25 | 683 | 0.2− | 1.1− |
| 2001 02 17 | 704 | 1.3+ | 0.4− | 2006 01 31 | 691 | 0.0 | 0.2− | 2006 02 25 | 683 | 0.9− | 0.5+ |
| 2001 02 17 | 704 | 0.9+ | 0.2+ | 2006 01 31 | 691 | 0.1+ | 0.3− | 2006 02 25 | 683 | (1.4+ | 2.9+) |
| 2001 02 17 | 704 | 0.2+ | 1.3+ | 2006 01 31 | 691 | 0.3+ | 0.3− | 2006 02 25 | 704 | 1.2+ | 0.9+ |
| 2001 02 17 | 704 | 0.1+ | 0.5− | 2006 02 03 | 704 | 0.2− | 0.1+ | 2006 02 25 | 704 | 0.3+ | 0.7+ |
| 2001 02 20 | 704 | 0.3− | 0.2− | 2006 02 03 | 704 | 0.9− | 0.0 | 2006 02 25 | 704 | 0.0 | 1.0+ |
| 2001 02 20 | 704 | 0.2+ | 0.3+ | 2006 02 03 | 704 | 0.2+ | 0.3+ | 2006 02 25 | 704 | 0.7+ | 0.2+ |
| 2001 02 20 | 704 | 0.6+ | 0.9+ | 2006 02 03 | 704 | 0.2− | 0.5+ | 2006 02 28 | 704 | 0.5+ | 0.3+ |
| 2001 02 20 | 704 | 0.4− | 0.4− | 2006 02 04 | 691 | 0.1− | 0.4− | 2006 02 28 | 704 | 0.4+ | 0.4+ |
| 2001 03 30 | 691 | 0.1− | 0.6+ | 2006 02 04 | 691 | 0.1+ | 0.2− | 2006 02 28 | 704 | 0.2− | 0.1+ |
| 2001 03 30 | 691 | 0.0 | 0.3+ | 2006 02 04 | 691 | 0.1− | 0.2− | 2006 02 28 | 704 | 0.2− | 1.9+ |
| 2001 03 30 | 691 | 0.2+ | 0.3+ | 2006 02 06 | 699 | 0.3+ | 0.1− | 2006 03 04 | 691 | 0.0 | 0.0 |
| 2003 08 31 | 704 | 0.3− | 0.3+ | 2006 02 06 | 699 | 0.7+ | 1.2+ | 2006 03 04 | 691 | 0.1− | 0.1− |
| 2003 08 31 | 704 | 0.1− | 0.2− | 2006 02 06 | 699 | 0.7− | 0.8− | 2006 03 04 | 691 | 0.0 | 0.1− |
| 2003 08 31 | 704 | 0.8+ | 0.3+ | 2006 02 06 | 699 | 0.7− | 0.7+ | 2006 03 05 | 683 | 0.6− | 0.6− |
| 2003 11 16 | 291 | 0.1+ | 0.1− | 2006 02 20 | 703 | 1.2+ | 0.3− | 2006 03 05 | 683 | (2.7+ | 1.5−) |
| 2003 11 16 | 291 | 0.0 | 0.0 | 2006 02 20 | 703 | 0.1− | 0.6− | 2006 03 08 | 691 | 0.2+ | 0.0 |
| 2003 11 16 | 291 | 0.2− | 0.2− | 2006 02 20 | 703 | 0.6− | 0.6− | 2006 03 08 | 691 | 0.2+ | 0.1− |
| 2004 12 14 | 703 | 0.4− | 0.4+ | 2006 02 20 | 703 | 0.2− | 0.7− | 2006 03 08 | 691 | 0.0 | 0.3+ |
| 2004 12 14 | 703 | 0.1− | 0.5+ | 2006 02 22 | 683 | 0.4− | 0.1− | 2006 05 24 | G96 | 0.4− | 0.4− |
| 2004 12 14 | 703 | 0.1+ | 0.3− | 2006 02 22 | 683 | 0.2− | 0.3+ | 2006 05 24 | G96 | 0.4− | 0.2− |
| 2004 12 14 | 703 | 0.1− | 0.3+ | 2006 02 22 | 683 | (3.5− | 1.0−) | 2006 05 24 | G96 | 0.2+ | 0.0 |
| 2006 01 26 | 703 | 1.4− | 0.4− | 2006 02 24 | 683 | 0.2− | 1.3− | 2006 05 24 | G96 | 0.4− | 0.1− |
| 2006 01 26 | 703 | 0.7− | 0.9− | 2006 02 24 | 683 | 0.2− | 0.1− | | | | |
| 2006 01 26 | 703 | 0.5− | 1.2− | 2006 02 24 | 683 | 1.5− | 0.1+ | | | | |

**(145506)∗ 2006 DH$_{10}$ = 1997 GF$_{12}$**

Discovered 2006 Feb. 21 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 101330)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.25197 | | (2000.0) | | | |
| $n$ | 0.21673198 | $\omega$ | 146.25259 | | −0.97202737 | −0.23387053 |
| $a$ | 2.7448632 | $\Omega$ | 20.25546 | | +0.19932451 | −0.87011179 |
| $e$ | 0.1281796 | $i$ | 3.58014 | | +0.12422775 | −0.43383182 |
| $P$ | 4.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.6+ | 0.7+ | 2006 01 23 | 703 | 0.7− | 0.4+ | 2006 03 24 | 699 | 0.1+ | 0.2− |
| 1997 04 03 | 704 | 0.3− | 0.7− | 2006 01 23 | 703 | 0.9− | 0.2− | 2006 03 24 | 699 | 0.3− | 0.0 |
| 1997 04 05 | 704 | 0.6+ | 0.5+ | 2006 01 23 | 703 | 0.0 | 0.4− | 2006 03 24 | 699 | 0.2+ | 0.1− |
| 1997 04 05 | 704 | 0.8− | 1.3+ | 2006 02 21 | G96 | 0.6− | 0.6− | 2006 03 24 | 699 | 0.3− | 0.5− |
| 1997 04 06 | 704 | 1.0+ | 0.1− | 2006 02 21 | G96 | 0.5− | 0.9− | 2006 03 24 | 704 | 1.2+ | 0.0 |
| 1997 04 06 | 704 | 1.4+ | 0.6+ | 2006 02 21 | G96 | 0.4− | 0.4− | 2006 03 24 | 704 | 0.1+ | 0.2+ |
| 1997 04 07 | 704 | (2.3+ | 1.1+) | 2006 02 21 | G96 | 0.3− | 0.3− | 2006 03 24 | 704 | 0.5+ | 0.5+ |
| 1997 04 07 | 704 | 0.5+ | 0.8+ | 2006 02 22 | 699 | 1.9+ | 0.2− | 2006 03 24 | 704 | 1.1+ | 0.2+ |
| 2000 12 27 | 699 | 1.8− | 0.3+ | 2006 02 22 | 699 | 0.6+ | 0.4+ | 2006 03 24 | 704 | (0.0 | 2.1−) |
| 2000 12 27 | 699 | 0.5− | 0.3+ | 2006 02 22 | 699 | 0.6+ | 0.3− | 2006 03 26 | G96 | 0.2− | 0.3− |
| 2000 12 27 | 699 | 0.0 | 1.2+ | 2006 02 22 | 699 | 1.6+ | 0.1− | 2006 03 26 | G96 | 0.5− | 0.3− |
| 2000 12 27 | 699 | 0.3− | 0.3+ | 2006 02 24 | 704 | 0.5+ | 0.3+ | 2006 03 26 | G96 | 0.5− | 0.4− |
| 2001 01 04 | 704 | 0.1+ | 0.5− | 2006 02 24 | 704 | 0.6+ | 0.1+ | 2006 03 26 | G96 | 0.5− | 0.4− |
| 2001 01 04 | 704 | 0.2− | 0.2+ | 2006 02 24 | 704 | 0.7− | 0.3+ | 2006 04 07 | G96 | 0.5− | 0.3− |
| 2001 01 04 | 704 | 0.3+ | 0.3+ | 2006 02 24 | 704 | 0.4− | 0.4+ | 2006 04 07 | G96 | 0.4− | 0.2− |
| 2001 01 04 | 704 | 0.0 | 0.5+ | 2006 02 27 | 691 | 0.3− | 0.1+ | 2006 04 07 | 703 | 0.0 | 0.3− |
| 2001 01 04 | 704 | 0.2+ | 0.9+ | 2006 02 27 | 691 | 0.2− | 0.3− | 2006 04 07 | G96 | 0.7− | 0.3− |
| 2001 01 19 | 704 | 0.1+ | 0.1− | 2006 02 27 | 691 | 0.2− | 0.1− | 2006 04 07 | 703 | 0.1− | 0.6+ |
| 2001 01 19 | 704 | 0.1+ | 0.1− | 2006 03 03 | 704 | 1.2+ | 0.1− | 2006 04 07 | G96 | 0.4− | 0.2− |
| 2001 01 19 | 704 | 0.4− | 0.2− | 2006 03 03 | 704 | 0.9+ | 0.5− | 2006 04 07 | 703 | 0.2− | 0.1− |
| 2001 01 19 | 704 | 0.1+ | 0.1+ | 2006 03 03 | 704 | 1.3+ | 0.2− | 2006 04 07 | 704 | (0.2+ | 2.5+) |
| 2001 01 19 | 704 | 0.3+ | 0.2+ | 2006 03 04 | G96 | 0.5− | 0.4− | 2006 04 07 | 703 | 1.0− | 0.3− |
| 2001 02 01 | 699 | 0.6+ | 0.1+ | 2006 03 04 | G96 | 0.7− | 0.3− | 2006 04 07 | 704 | 0.9+ | 1.4+ |
| 2001 02 01 | 699 | 0.4+ | 0.2+ | 2006 03 04 | G96 | 0.2− | 0.4− | 2006 04 07 | 704 | 0.0 | 0.0 |
| 2001 02 01 | 699 | 0.2+ | 1.0+ | 2006 03 04 | G96 | 0.3− | 0.3− | 2006 04 07 | 704 | 1.6+ | 0.9+ |
| 2001 02 01 | 699 | 0.9− | 0.2− | 2006 03 05 | 704 | 0.1+ | 0.7+ | 2006 04 07 | 704 | 0.3− | 1.7+ |
| 2003 08 25 | 807 | 0.7− | 0.4+ | 2006 03 05 | 704 | 0.4+ | 1.0+ | 2006 04 18 | 644 | 0.0 | 0.2− |
| 2003 08 25 | 807 | 0.7− | 0.4+ | 2006 03 05 | 704 | 0.1+ | 1.9+ | 2006 04 18 | 644 | 0.0 | 0.2− |
| 2003 09 04 | 691 | 0.4− | 0.6+ | 2006 03 05 | 704 | 0.3+ | 0.6+ | 2006 04 18 | 644 | 0.0 | 0.2− |
| 2003 09 04 | 691 | 0.3− | 0.6+ | 2006 03 21 | 704 | 0.0 | 0.7+ | 2006 04 20 | 699 | 0.4− | 0.5+ |
| 2003 09 04 | 691 | 0.4− | 0.7+ | 2006 03 21 | 704 | 0.4+ | 0.2+ | 2006 04 20 | 699 | 0.5− | 0.2+ |
| 2004 10 15 | 691 | 0.4+ | 0.2+ | 2006 03 21 | 704 | 0.8+ | 0.8+ | 2006 04 20 | 699 | 0.5+ | 0.1+ |
| 2004 10 15 | 691 | 0.3+ | 0.3+ | 2006 03 21 | 704 | 0.5+ | 0.3+ | 2006 04 20 | 699 | 0.2+ | 0.3− |
| 2004 10 15 | 691 | 0.1+ | 0.1+ | 2006 03 23 | 704 | 0.0 | 0.6+ | 2006 04 25 | G96 | 0.2− | 0.6− |
| 2004 12 11 | 703 | 1.1− | 0.7+ | 2006 03 23 | 704 | 0.7− | 1.1+ | 2006 04 25 | G96 | 0.7− | 0.6− |
| 2004 12 11 | 703 | 0.8+ | 0.8− | 2006 03 23 | 704 | 0.9+ | 0.6+ | 2006 04 25 | G96 | 0.4− | 0.5− |
| 2004 12 11 | 703 | 0.5+ | 0.8+ | 2006 03 24 | 691 | 0.1− | 0.1− | 2006 04 25 | G96 | 0.2− | 0.3− |
| 2004 12 11 | 703 | 0.4− | 0.3− | 2006 03 24 | 691 | 0.0 | 0.1− | | | | |
| 2006 01 23 | 703 | (1.2− | 2.0+) | 2006 03 24 | 691 | 0.0 | 0.1+ | | | | |

**(145507)∗ 2006 DW$_{40}$ = 2000 DK$_{31}$ = 2004 XU$_{53}$ = 2005 XO$_{38}$**

Discovered 2006 Feb. 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 97191)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.03216 | | (2000.0) | | | |
| $n$ | 0.17135625 | $\omega$ | 65.09326 | | −0.95183735 | +0.30422614 |
| $a$ | 3.2102295 | $\Omega$ | 132.59336 | | −0.29666086 | −0.88243579 |
| $e$ | 0.1405188 | $i$ | 2.96714 | | −0.07744677 | −0.35882242 |
| $P$ | 5.75 | $H$ | 14.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.2− | 0.7+ | 2002 08 19 | 644 | 0.7− | 0.5+ | 2006 02 24 | 704 | 0.1− | 0.7+ |
| 2000 02 29 | 704 | 0.8+ | 0.1+ | 2002 08 19 | 644 | 0.5− | 0.6+ | 2006 02 27 | 691 | 0.1− | 0.7+ |
| 2000 02 29 | 704 | 0.2+ | 0.4− | 2002 08 19 | 644 | 0.1− | 0.7+ | 2006 02 27 | 691 | 0.3− | 0.1− |
| 2000 02 29 | 704 | 0.2− | 0.8− | 2002 08 27 | 644 | 0.1+ | 0.8+ | 2006 02 27 | 691 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.4− | 0.6+ | 2002 08 27 | 644 | 0.4+ | 0.6+ | 2006 02 28 | 704 | 0.8+ | 0.1+ |
| 2000 03 03 | 704 | 0.1+ | 0.5+ | 2002 08 27 | 644 | 0.3+ | 0.7+ | 2006 02 28 | 704 | 0.5+ | 0.1− |
| 2000 03 03 | 704 | 0.4+ | 0.3+ | 2003 09 29 | 691 | 0.4− | 0.7+ | 2006 02 28 | 704 | 0.3+ | 0.3+ |
| 2000 03 03 | 691 | 0.1− | 0.1+ | 2003 09 29 | 691 | 0.1− | 0.4+ | 2006 02 28 | 704 | 1.1+ | 1.0+ |
| 2000 03 03 | 704 | 0.3+ | 0.8+ | 2003 09 29 | 691 | 0.1− | 0.5+ | 2006 02 28 | 704 | 0.7+ | 0.2− |
| 2000 03 03 | 704 | 0.2− | 0.5+ | 2003 10 21 | 644 | 0.3+ | 0.7+ | 2006 03 03 | 691 | 0.2+ | 0.2+ |
| 2000 03 03 | 691 | 0.1− | 0.1+ | 2003 10 21 | 644 | 0.0 | 0.6+ | 2006 03 03 | 691 | 0.3+ | 0.1+ |
| 2000 03 03 | 691 | 1.2+ | 0.6− | 2003 10 21 | 644 | 0.5+ | 0.6+ | 2006 03 03 | 691 | 0.0 | 0.1+ |
| 2000 03 04 | 704 | 0.2− | 0.9+ | 2004 12 10 | 691 | 0.3− | 0.2− | 2006 03 23 | 703 | 0.6− | 0.4+ |
| 2000 03 04 | 704 | 0.3+ | 0.3+ | 2004 12 10 | 691 | 0.2− | 0.0 | 2006 03 23 | 703 | 0.0 | 0.1+ |
| 2000 03 04 | 704 | 0.6+ | 0.1− | 2004 12 10 | 691 | 0.0 | 0.1+ | 2006 03 23 | 703 | 1.1− | 0.3− |
| 2000 03 04 | 704 | 0.2+ | 0.7− | 2004 12 14 | 691 | 0.3+ | 0.8− | 2006 03 23 | 703 | 0.1− | 0.1− |
| 2000 03 04 | 704 | 0.8+ | 0.1− | 2004 12 14 | 691 | 0.2− | 0.1− | 2006 03 24 | 699 | 0.3− | 0.0 |
| 2000 03 05 | 704 | 1.6− | 0.3+ | 2004 12 14 | 691 | 0.3− | 0.1− | 2006 03 24 | 699 | 0.2− | 0.0 |
| 2000 03 05 | 704 | 0.4+ | 0.3+ | 2005 10 31 | 568 | 0.2+ | 0.0 | 2006 03 24 | 704 | 0.8+ | 0.0 |
| 2000 03 05 | 704 | 0.1+ | 0.1+ | 2005 10 31 | 568 | 0.2+ | 0.1− | 2006 03 24 | 699 | 0.7− | 0.2+ |
| 2000 03 05 | 704 | 0.6+ | 1.3+ | 2005 12 04 | 691 | 0.0 | 0.4+ | 2006 03 24 | 704 | 0.9+ | 0.2− |
| 2000 03 05 | 704 | 0.6+ | 0.1+ | 2005 12 04 | 691 | 0.1− | 0.4− | 2006 03 24 | 704 | 0.8+ | 0.4− |
| 2000 03 06 | 704 | 0.3− | 0.1+ | 2005 12 04 | 691 | 0.1− | 0.0 | 2006 03 24 | 699 | 0.4− | 0.5− |
| 2000 03 06 | 704 | 0.3+ | 0.4− | 2005 12 08 | 691 | 0.0 | 0.2+ | 2006 03 24 | 704 | 0.3+ | 0.1− |
| 2000 03 06 | 704 | 0.3+ | 0.3+ | 2005 12 08 | 691 | 0.0 | 0.2+ | 2006 03 24 | 704 | 1.0+ | 0.5+ |
| 2000 03 06 | 704 | 0.1+ | 0.1+ | 2005 12 08 | 691 | 0.2+ | 0.1+ | 2006 03 25 | G96 | 0.2− | 0.1− |
| 2000 03 06 | 704 | (0.5+ | 2.6+) | 2006 02 13 | 644 | 0.4− | 0.1− | 2006 03 25 | G96 | 0.1− | 0.1− |
| 2000 03 11 | 704 | 0.3− | 0.1− | 2006 02 13 | 644 | 0.3− | 0.3+ | 2006 03 25 | G96 | 0.2− | 0.1− |
| 2000 03 11 | 704 | 0.7− | 0.3+ | 2006 02 13 | 644 | 0.3+ | 0.1− | 2006 03 25 | G96 | 0.1− | 0.2− |
| 2000 03 11 | 704 | 1.0− | 0.7− | 2006 02 22 | 699 | 0.2+ | 0.1+ | 2006 03 26 | G96 | 0.6− | 0.1− |
| 2000 03 11 | 691 | 0.3− | 0.2+ | 2006 02 22 | 699 | 0.4− | 0.9− | 2006 03 26 | G96 | 0.1− | 0.0 |
| 2000 03 11 | 691 | 0.2− | 0.0 | 2006 02 22 | 699 | 0.0 | 1.1− | 2006 03 26 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 691 | 0.2− | 0.1+ | 2006 02 22 | 699 | 0.3− | 0.7− | 2006 03 26 | G96 | 0.3− | 0.0 |
| 2001 06 16 | 704 | (0.8− | 2.2+) | 2006 02 24 | 704 | 0.4+ | 0.4+ | 2006 04 21 | 699 | 0.2+ | 0.4− |
| 2001 06 16 | 704 | 0.3+ | 0.1+ | 2006 02 24 | 704 | 0.0 | 0.0 | 2006 04 21 | 699 | 0.6+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 704 | 0.8− | 0.6+ | 2006 02 24 | 704 | (0.8− | 1.6−) | 2006 04 21 | 699 | 0.0 | 0.3+ |
| 2001 06 16 | 704 | 1.0− | 0.2+ | 2006 02 24 | 704 | (0.8+ | 1.8−) | 2006 04 21 | 699 | 0.7+ | 0.0 |

**(145508)∗ 2006 DO$_{50}$**

Discovered 2006 Feb. 22 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.00911 | | (2000.0) | | | |
| $n$ | 0.21939299 | $\omega$ | 335.36211 | | −0.62055755 | −0.78077045 |
| $a$ | 2.7226233 | $\Omega$ | 152.81695 | | +0.74330468 | −0.61527454 |
| $e$ | 0.0834762 | $i$ | 9.17483 | | +0.24981288 | −0.10878762 |
| $P$ | 4.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.5− | 0.0 | 2003 09 22 | 291 | 0.4− | 0.1− | 2006 03 22 | 703 | 0.6− | 0.5− |
| 1999 10 08 | 704 | 1.4− | 0.4+ | 2003 09 22 | 291 | 0.3− | 0.1+ | 2006 03 22 | 703 | 0.8− | 1.0− |
| 1999 10 08 | 704 | 0.3+ | 0.3− | 2003 09 22 | 291 | 0.3− | 0.1+ | 2006 03 22 | 703 | 1.5− | 0.8− |
| 2001 01 03 | 699 | 0.6+ | 1.6+ | 2004 10 09 | 699 | 0.7+ | 0.9+ | 2006 03 24 | 699 | 0.8+ | 0.6− |
| 2001 01 03 | 699 | 0.1+ | 0.3− | 2004 10 09 | 699 | 1.0+ | 1.3− | 2006 03 24 | 699 | 1.0+ | 0.7− |
| 2001 01 03 | 699 | 0.3− | 0.9+ | 2004 10 09 | 699 | 0.1− | 0.2− | 2006 03 24 | 699 | 0.1+ | 0.6+ |
| 2001 01 03 | 699 | 1.9− | 0.3+ | 2004 10 09 | 699 | 1.1+ | 0.3− | 2006 03 24 | 704 | 0.8+ | 0.3+ |
| 2001 01 04 | 704 | 0.5− | 0.3+ | 2004 12 03 | 699 | 0.1− | 1.2+ | 2006 03 24 | 704 | (0.1+ | 2.4+) |
| 2001 01 04 | 704 | 0.7− | 1.2+ | 2004 12 03 | 699 | 0.1− | 1.3+ | 2006 03 24 | 699 | 0.6− | 0.5+ |
| 2001 01 04 | 704 | 0.6− | 1.0+ | 2004 12 03 | 699 | 0.3+ | 0.7+ | 2006 03 24 | 704 | (4.0− | 3.7+) |
| 2001 01 04 | 704 | 0.1− | 0.5+ | 2004 12 03 | 699 | 1.6+ | 0.4− | 2006 03 24 | 704 | (1.2− | 3.1+) |
| 2001 02 02 | 704 | 0.5+ | 0.9+ | 2005 12 03 | 568 | 0.2+ | 0.2+ | 2006 03 24 | 704 | (0.3− | 2.0+) |
| 2001 02 02 | 704 | 0.2+ | 0.1− | 2005 12 03 | 568 | 0.2+ | 0.1+ | 2006 03 24 | 704 | 0.3− | 0.9+ |
| 2001 02 02 | 704 | 0.1+ | 0.3− | 2005 12 03 | 568 | 0.2+ | 0.2+ | 2006 03 24 | 704 | 0.6− | 1.6+ |
| 2001 02 02 | 704 | 1.4+ | 0.7− | 2006 02 22 | 699 | 1.0+ | 0.0 | 2006 03 24 | 704 | (0.4− | 2.4+) |
| 2002 05 08 | 704 | 0.2− | 0.3+ | 2006 02 22 | 699 | 0.0 | 0.2+ | 2006 03 24 | 704 | 0.7− | 0.8+ |
| 2002 05 08 | 704 | 0.3+ | 0.6− | 2006 02 22 | 699 | 0.7+ | 0.6+ | 2006 03 29 | 704 | 1.8+ | 0.7− |
| 2002 05 08 | 704 | 0.2+ | 0.2+ | 2006 02 22 | 699 | 0.5− | 0.4− | 2006 03 29 | 704 | (2.1+ | 0.6−) |
| 2002 05 18 | 704 | 1.5+ | 0.4+ | 2006 02 22 | 703 | 0.7− | 0.1− | 2006 03 29 | 704 | 0.2+ | 0.3+ |
| 2002 05 18 | 704 | 1.4+ | 0.9+ | 2006 02 22 | 703 | 0.4− | 0.2− | 2006 03 31 | 704 | 0.2− | 1.0+ |
| 2002 05 18 | 704 | 0.2− | 0.8− | 2006 02 22 | 703 | 0.9− | 0.1− | 2006 03 31 | 704 | 1.0+ | 0.1− |
| 2002 05 18 | 704 | 1.3+ | 1.2− | 2006 02 22 | 703 | 0.7− | 0.3− | 2006 03 31 | 704 | 0.4− | 0.2+ |
| 2002 06 10 | 704 | 0.2+ | 0.2+ | 2006 02 25 | 704 | 0.8+ | 0.1+ | 2006 04 18 | 703 | 1.3− | 0.8+ |
| 2002 06 10 | 704 | 0.3+ | 0.4+ | 2006 02 25 | 704 | 1.2+ | 0.4+ | 2006 04 18 | 703 | 0.3+ | 0.0 |
| 2002 06 10 | 704 | 0.8+ | 1.0+ | 2006 02 25 | 704 | 1.3+ | 0.2+ | 2006 04 18 | 703 | (0.5+ | 2.8−) |
| 2003 07 07 | 691 | 0.1− | 0.2+ | 2006 02 25 | 704 | 0.1− | 0.3+ | 2006 04 18 | 703 | 0.5− | 1.6− |
| 2003 07 07 | 691 | 0.1− | 0.1− | 2006 02 25 | 704 | 0.7− | 0.1+ | 2006 04 23 | 699 | 1.2+ | 0.2+ |
| 2003 07 07 | 691 | 0.2− | 0.8+ | 2006 02 25 | 704 | 0.6− | 0.2+ | 2006 04 23 | 699 | 0.4+ | 1.3+ |
| 2003 07 24 | 644 | 0.2− | 0.3+ | 2006 02 25 | 704 | (2.1− | 0.9−) | 2006 04 23 | 699 | 1.0+ | 0.4+ |
| 2003 07 24 | 644 | 0.0 | 0.5+ | 2006 02 25 | 704 | 0.3+ | 0.9+ | 2006 04 23 | 699 | 0.3+ | 0.5− |
| 2003 07 24 | 644 | 0.2+ | 0.4+ | 2006 02 27 | 691 | 0.1− | 0.1+ | 2006 05 27 | 699 | 1.6− | 1.0+ |
| 2003 09 04 | 691 | 0.1+ | 0.2+ | 2006 02 27 | 691 | 0.1− | 0.0 | 2006 05 27 | 699 | 1.1− | 0.4− |
| 2003 09 04 | 691 | 0.0 | 0.1+ | 2006 02 27 | 691 | 0.1− | 0.0 | 2006 05 27 | 699 | 0.9− | 0.9− |
| 2003 09 04 | 691 | 0.0 | 0.3+ | 2006 03 22 | 703 | 1.5− | 0.1− | 2006 05 27 | 699 | 0.8+ | 0.1+ |

**(145509)∗ 2006 DX$_{65}$**

Discovered 2006 Feb. 21 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.13199 | | (2000.0) | | | |
| $n$ | 0.22331437 | $\omega$ | 269.37344 | | −0.94894441 | +0.30407043 |
| $a$ | 2.6906566 | $\Omega$ | 288.32636 | | −0.24264126 | −0.87365381 |
| $e$ | 0.0805891 | $i$ | 5.07291 | | −0.20156816 | −0.37982918 |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 20 | 644 | 0.2− | 0.1+ | 2002 06 09 | 644 | 0.5+ | 1.0+ | 2006 02 21 | 699 | 0.6− | 0.4− |
| 2002 04 20 | 644 | 0.1+ | 0.5+ | 2003 07 24 | 644 | 0.1− | 0.2+ | 2006 02 21 | 699 | 0.1+ | 0.8+ |
| 2002 04 20 | 644 | 0.2− | 0.5+ | 2003 07 24 | 644 | 0.3− | 0.4+ | 2006 02 21 | 699 | 0.2+ | 0.6+ |
| 2002 05 01 | 644 | 0.4− | 0.1+ | 2003 07 24 | 644 | 0.1− | 0.3+ | 2006 02 25 | 704 | 0.5− | 1.0+ |
| 2002 05 01 | 644 | 0.3+ | 0.7+ | 2003 07 24 | 644 | 0.1− | 0.3+ | 2006 02 25 | 704 | (0.3+ | 2.4+) |
| 2002 05 01 | 644 | 0.3+ | 0.1+ | 2003 07 24 | 644 | 0.3+ | 0.3+ | 2006 02 25 | 704 | 0.2− | 1.5+ |
| 2002 05 09 | 704 | 0.0 | 0.5− | 2003 07 24 | 644 | 0.2+ | 0.3+ | 2006 02 25 | 704 | 0.7− | 0.7+ |
| 2002 05 09 | 704 | 0.5+ | 0.6− | 2003 08 21 | 644 | 0.2− | 0.2+ | 2006 02 26 | 704 | 0.8+ | 1.3+ |
| 2002 05 09 | 704 | 0.3− | 0.1+ | 2003 08 21 | 644 | 0.1+ | 0.6+ | 2006 02 26 | 704 | 0.4− | 1.0+ |
| 2002 05 09 | 704 | 0.9− | 0.5− | 2003 08 21 | 644 | 0.3+ | 0.6+ | 2006 02 26 | 704 | 0.1− | 0.6− |
| 2002 05 17 | 644 | 0.2+ | 0.3+ | 2003 10 02 | 291 | 0.2− | 0.3+ | 2006 03 23 | 703 | 0.9− | 0.0 |
| 2002 05 17 | 644 | 0.2+ | 0.1− | 2003 10 02 | 291 | 0.8− | 0.3+ | 2006 03 23 | 703 | 0.1− | 1.1− |
| 2002 05 17 | 644 | 0.5+ | 0.0 | 2003 10 02 | 291 | 0.0 | 0.5+ | 2006 03 23 | 703 | 0.8− | 0.4+ |
| 2002 05 28 | 644 | 0.3+ | 0.1+ | 2004 11 11 | 691 | 0.1− | 0.5+ | 2006 03 23 | 703 | (3.3− | 0.2−) |
| 2002 05 28 | 644 | 0.0 | 0.2+ | 2004 11 11 | 691 | 0.2− | 0.6+ | 2006 03 25 | 644 | 0.3+ | 0.3+ |
| 2002 05 28 | 644 | 0.1+ | 0.1+ | 2004 11 11 | 691 | 0.1+ | 0.4+ | 2006 03 25 | 644 | 0.4+ | 0.3+ |
| 2002 06 03 | 644 | 0.2− | 0.2+ | 2006 02 06 | 699 | 1.6+ | 0.9+ | 2006 03 25 | 644 | 0.3+ | 0.2+ |
| 2002 06 03 | 644 | 0.6+ | 0.2− | 2006 02 06 | 699 | 0.0 | 0.1− | 2006 05 24 | 291 | 0.6+ | 0.0 |
| 2002 06 03 | 644 | 0.4− | 0.3+ | 2006 02 06 | 699 | 0.7− | 0.8− | 2006 05 24 | 291 | 0.5+ | 0.1− |
| 2002 06 09 | 644 | 0.4+ | 0.8+ | 2006 02 06 | 699 | 0.2+ | 0.2+ | 2006 05 24 | 291 | 0.3+ | 0.2+ |
| 2002 06 09 | 644 | 0.4+ | 0.7+ | 2006 02 21 | 699 | (2.1+ | 0.1+) | | | | |

**(145510)∗ 2006 DZ$_{82}$ = 1998 TR$_{9}$ = 2004 XQ$_{53}$**

Discovered 2006 Feb. 24 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 101384)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 126.89401 | | (2000.0) | | | |
| $n$ | 0.18036598 | $\omega$ | 233.29123 | | +0.28015856 | −0.95985062 |
| $a$ | 3.1024132 | $\Omega$ | 200.45267 | | +0.89308253 | +0.26598921 |
| $e$ | 0.0715128 | $i$ | 2.30766 | | +0.35201530 | +0.08908718 |
| $P$ | 5.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 691 | 0.2− | 0.2− | 2003 09 28 | 691 | 0.3− | 0.3+ | 2006 03 02 | 691 | 0.1− | 0.3+ |
| 1998 10 12 | 691 | 0.3− | 0.0 | 2003 10 17 | 691 | 0.7− | 0.3+ | 2006 03 02 | 691 | 0.1− | 0.4+ |
| 1998 10 12 | 691 | 0.2− | 0.2− | 2003 10 17 | 691 | 0.2+ | 0.7+ | 2006 03 02 | 691 | 0.0 | 0.4+ |
| 1998 10 18 | 691 | 0.2− | 0.0 | 2003 10 17 | 691 | 0.1− | 0.4+ | 2006 03 21 | G96 | 0.1+ | 0.0 |
| 1998 10 18 | 691 | 0.6+ | 0.1+ | 2004 12 10 | 691 | 0.1− | 0.0 | 2006 03 21 | G96 | 0.1+ | 0.1− |
| 1998 10 18 | 691 | 0.1− | 0.0 | 2004 12 10 | 691 | 0.2− | 0.1+ | 2006 03 21 | G96 | 0.1+ | 0.0 |
| 2001 03 27 | 691 | 0.0 | 1.1+ | 2004 12 10 | 691 | 0.1− | 0.3+ | 2006 03 21 | G96 | 0.2− | 0.1+ |
| 2001 03 27 | 691 | 0.2+ | 0.9+ | 2004 12 14 | 691 | 0.3+ | 0.3+ | 2006 04 24 | G96 | 0.3+ | 0.4− |
| 2001 03 27 | 691 | 0.2+ | 0.8+ | 2004 12 14 | 691 | 0.1+ | 0.2+ | 2006 04 24 | G96 | 0.0 | 0.2− |
| 2001 04 29 | 691 | 0.3+ | 0.3+ | 2004 12 14 | 691 | 0.1+ | 0.2+ | 2006 04 24 | G96 | 0.2− | 0.0 |
| 2001 04 29 | 691 | 0.7+ | 0.1− | 2004 12 14 | 704 | 0.7+ | 0.0 | 2006 04 24 | G96 | 0.5− | 0.1− |
| 2001 04 29 | 691 | 0.5+ | 0.1+ | 2004 12 14 | 704 | 1.2+ | 1.0+ | 2006 05 24 | G96 | 0.4− | 0.0 |
| 2003 09 16 | 691 | 0.0 | 0.7+ | 2004 12 14 | 704 | 0.7+ | 0.9+ | 2006 05 24 | G96 | 0.1+ | 0.2− |
| 2003 09 16 | 691 | 0.0 | 0.7+ | 2004 12 14 | 704 | 0.0 | 0.8+ | 2006 05 24 | G96 | 0.1+ | 0.3− |
| 2003 09 16 | 691 | 0.1− | 0.3+ | 2006 02 24 | 691 | 0.0 | 0.4+ | 2006 05 24 | G96 | 0.0 | 0.1+ |
| 2003 09 28 | 691 | 0.3− | 0.3+ | 2006 02 24 | 691 | 0.2− | 0.2+ | | | | |
| 2003 09 28 | 691 | 0.4− | 0.7+ | 2006 02 24 | 691 | 0.0 | 0.4+ | | | | |

**(145511)∗ 2006 DL$_{93}$ = 2004 XW$_{156}$**

Discovered 2006 Feb. 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 97204)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.39605 | | (2000.0) | | | |
| $n$ | 0.17402541 | $\omega$ | 99.35496 | | +0.00032356 | −0.99996953 |
| $a$ | 3.1773199 | $\Omega$ | 350.61595 | | +0.89768609 | +0.00372701 |
| $e$ | 0.0861318 | $i$ | 2.74163 | | +0.44063542 | −0.00685858 |
| $P$ | 5.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.3+ | 0.6+ | 2004 12 19 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.4+ | 0.2+ |
| 2000 03 03 | 704 | 1.3− | 0.5+ | 2004 12 19 | 691 | 0.2− | 0.1− | 2006 03 06 | 691 | 0.2+ | 0.0 |
| 2000 03 03 | 704 | 0.1+ | 0.1− | 2006 02 07 | G96 | 0.2+ | 0.3− | 2006 03 06 | 691 | 0.1+ | 0.3+ |
| 2000 04 03 | 691 | 0.2− | 0.6− | 2006 02 07 | G96 | 0.2− | 0.0 | 2006 03 06 | 691 | 0.2+ | 0.1+ |
| 2000 04 03 | 691 | 0.0 | 0.5− | 2006 02 07 | G96 | 0.7− | 0.3+ | 2006 03 25 | G96 | 0.0 | 0.1+ |
| 2000 04 03 | 691 | 0.2− | 0.6− | 2006 02 07 | G96 | 0.5− | 0.1− | 2006 03 25 | G96 | 0.1− | 0.1+ |
| 2003 09 18 | 691 | 0.1+ | 0.3+ | 2006 02 20 | 691 | 0.1+ | 0.0 | 2006 03 25 | G96 | 0.1− | 0.2+ |
| 2003 09 18 | 691 | 0.1+ | 0.3+ | 2006 02 20 | 691 | 0.1+ | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.3+ |
| 2003 09 18 | 691 | 0.1− | 0.2+ | 2006 02 20 | 691 | 0.4+ | 0.2− | 2006 03 25 | G96 | 0.5+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 22 | 645 | 0.2− | 0.1+ | 2006 02 24 | 691 | 0.2+ | 0.1+ | 2006 03 25 | G96 | 0.3+ | 0.3+ |
| 2003 10 22 | 645 | 0.1− | 0.1+ | 2006 02 24 | 691 | 0.1− | 0.3+ | 2006 03 25 | G96 | 0.6− | 0.1+ |
| 2003 10 24 | 645 | 0.0 | 0.1+ | 2006 02 24 | 691 | 0.4+ | 0.5+ | 2006 03 25 | G96 | 0.4− | 0.5+ |
| 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.1+ | 0.2+ | 2006 04 07 | G96 | 0.2− | 0.3+ |
| 2004 12 14 | 691 | 0.1+ | 0.0 | 2006 03 02 | 691 | 0.1− | 0.3+ | 2006 04 07 | G96 | 0.5− | 0.7+ |
| 2004 12 14 | 691 | 0.2+ | 0.1+ | 2006 03 02 | 691 | 0.3+ | 0.7+ | 2006 04 07 | G96 | 0.7− | 0.6+ |
| 2004 12 14 | 691 | 0.1+ | 0.1− | 2006 03 02 | 691 | 0.2+ | 0.1+ | 2006 04 07 | G96 | 0.4− | 0.3+ |
| 2004 12 19 | 691 | 0.2− | 0.1+ | 2006 03 02 | 691 | 0.3+ | 0.4+ | | | | |

**(145512)∗ 2006 DP$_{93}$ = 2000 CB$_{140}$**

Discovered 2006 Feb. 24 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 101394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 99.67912 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.17512082 | ω | 123.87934 | | −0.38385816 | | −0.92338167 |
| *a* | 3.1640562 | Ω | 348.69101 | | +0.83964299 | | −0.34706400 |
| *e* | 0.0565755 | *i* | 1.28079 | | +0.38425586 | | −0.16405144 |
| *P* | 5.63 | *H* | 15.6 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 12 | 691 | 0.4− | 0.3+ | 2003 09 30 | 691 | 0.1+ | 0.2+ | 2006 04 07 | G96 | 0.6− | 0.5+ |
| 1997 08 12 | 691 | 0.2− | 0.8+ | 2003 09 30 | 691 | 0.2+ | 0.1+ | 2006 04 07 | G96 | 0.1− | 0.2− |
| 1997 08 12 | 691 | 0.3− | 0.9+ | 2003 10 19 | 691 | 0.1− | 0.2+ | 2006 04 07 | G96 | 0.3− | 0.2− |
| 2000 02 04 | 691 | 0.1+ | 0.7− | 2003 10 19 | 691 | 0.5− | 0.4+ | 2006 04 07 | G96 | 0.2− | 0.3+ |
| 2000 02 04 | 691 | 0.4+ | 0.2+ | 2003 10 19 | 691 | 0.5− | 0.4+ | 2006 04 19 | G96 | 0.0 | 0.1− |
| 2000 02 04 | 691 | 0.0 | 0.2+ | 2006 02 24 | 691 | 0.3+ | 0.3+ | 2006 04 19 | G96 | 0.0 | 0.2− |
| 2000 02 06 | 691 | 0.2− | 0.1− | 2006 02 24 | 691 | 0.1+ | 0.4+ | 2006 04 19 | G96 | 0.5− | 0.2− |
| 2000 02 06 | 691 | 0.0 | 0.4+ | 2006 02 24 | 691 | 0.0 | 0.5+ | 2006 04 19 | G96 | 0.0 | 0.1− |
| 2000 02 06 | 691 | 0.4− | 0.3+ | 2006 03 02 | 691 | 0.1+ | 0.3+ | 2006 04 21 | 291 | 0.3+ | 0.2+ |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2006 03 02 | 691 | 0.2+ | 0.6+ | 2006 04 21 | 291 | 0.3+ | 0.3+ |
| 2000 03 03 | 704 | 0.3+ | 0.2+ | 2006 03 02 | 691 | 0.1+ | 0.3+ | 2006 04 21 | 291 | 0.3+ | 0.2+ |
| 2000 03 03 | 704 | 0.3+ | 0.3+ | 2006 03 25 | G96 | 0.5− | 0.1+ | 2006 04 25 | 691 | 0.4+ | 0.1− |
| 2000 03 03 | 704 | 0.2+ | 0.5+ | 2006 03 25 | G96 | 0.4− | 0.4− | 2006 04 25 | 691 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.0 | 0.1− | 2006 03 25 | G96 | 0.1− | 0.0 | 2006 04 25 | 691 | 0.1− | 0.0 |
| 2003 09 30 | 691 | 0.1+ | 0.3+ | 2006 03 25 | G96 | 0.1+ | 0.2− | | | | |

**(145513)∗ 2006 DY$_{96}$**

Discovered 2006 Feb. 24 by the Mt. Lemmon Survey at Mt. Lemmon.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 219.28336 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.21048939 | ω | 193.24261 | | +0.99387368 | | −0.10992381 |
| *a* | 2.7988690 | Ω | 173.03773 | | +0.10806023 | | +0.94466988 |
| *e* | 0.0593260 | *i* | 5.43600 | | +0.02319691 | | +0.30905595 |
| *P* | 4.68 | *H* | 16.3 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.0 | 0.1+ | 2003 09 02 | 704 | 0.9− | 0.9+ | 2006 03 02 | 691 | 0.1+ | 0.3+ |
| 2000 12 23 | 645 | 0.1− | 0.0 | 2003 09 16 | 691 | 0.4− | 0.3+ | 2006 03 02 | 691 | 0.4+ | 0.2+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2003 09 16 | 691 | 0.2− | 0.5+ | 2006 03 02 | 691 | 0.3+ | 0.3+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2003 09 16 | 691 | 0.3− | 0.4+ | 2006 03 06 | 691 | 0.0 | 0.0 |
| 2002 06 10 | 644 | 0.1+ | 0.2− | 2003 09 29 | 704 | 0.5+ | 0.6+ | 2006 03 06 | 691 | 0.1+ | 0.0 |
| 2002 06 10 | 644 | 0.3+ | 0.2+ | 2003 09 29 | 704 | 0.6+ | 1.6+ | 2006 03 06 | 691 | 0.0 | 0.0 |
| 2002 06 10 | 644 | 0.4− | 0.2+ | 2003 09 29 | 704 | 0.5− | 1.0+ | 2006 03 24 | G96 | 0.2+ | 0.1+ |
| 2003 08 25 | 704 | 0.7− | 0.3− | 2006 01 27 | G96 | 0.2− | 0.0 | 2006 03 24 | G96 | 0.1− | 0.2+ |
| 2003 08 25 | 704 | 0.0 | 0.2+ | 2006 01 27 | G96 | 0.3− | 0.5+ | 2006 03 24 | G96 | 0.0 | 0.0 |
| 2003 08 25 | 704 | 0.7+ | 1.4+ | 2006 01 27 | G96 | 0.1+ | 0.7+ | 2006 03 24 | G96 | 0.2− | 0.1+ |
| 2003 08 25 | 704 | 0.6+ | 0.6+ | 2006 01 27 | G96 | 0.0 | 0.7+ | 2006 04 07 | G96 | 0.2− | 0.1− |
| 2003 09 02 | 704 | 0.2+ | 0.5+ | 2006 02 24 | G96 | 0.3+ | 0.2+ | 2006 04 07 | G96 | 0.0 | 0.3− |
| 2003 09 02 | 704 | 0.7+ | 0.4− | 2006 02 24 | G96 | 0.7− | 0.2+ | 2006 04 07 | G96 | 0.2− | 0.4+ |
| 2003 09 02 | 704 | 0.5− | 0.0 | 2006 02 24 | G96 | 0.4− | 0.2+ | 2006 04 07 | G96 | 0.0 | 0.2+ |
| 2003 09 02 | 704 | 0.5− | 0.2+ | 2006 02 24 | G96 | 0.3+ | 0.3+ | | | | |

**(145514)∗ 2006 DN$_{119}$**

Discovered 2006 Feb. 20 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 330.89263 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.17919100 | ω | 165.85764 | | −0.51857735 | | +0.82850083 |
| *a* | 3.1159604 | Ω | 72.51652 | | −0.80443603 | | −0.38899039 |
| *e* | 0.1619597 | *i* | 12.80152 | | −0.28975888 | | −0.40283105 |
| *P* | 5.50 | *H* | 14.9 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 645 | 0.0 | 0.0 | 2001 05 23 | 699 | 1.1+ | 0.5+ | 2006 02 04 | 703 | 0.6− | 0.7− |
| 2000 04 04 | 645 | 0.1+ | 0.1− | 2001 05 23 | 704 | 0.9− | 0.7+ | 2006 02 04 | 703 | 0.1+ | 0.9+ |
| 2001 03 16 | 704 | 1.0+ | 0.6− | 2001 05 23 | 704 | 0.0 | 0.4+ | 2006 02 04 | 703 | 0.1− | 0.4+ |
| 2001 03 16 | 704 | 0.2+ | 0.3+ | 2001 05 23 | 704 | 0.9− | 1.0+ | 2006 02 04 | 703 | 0.7− | 0.0 |
| 2001 03 16 | 704 | 0.4+ | 0.5+ | 2001 05 23 | 699 | (1.7+ | 0.2−) | 2006 02 20 | 704 | (2.1+ | 0.3+) |
| 2001 03 16 | 704 | 0.1+ | 0.7+ | 2001 05 23 | 699 | 0.5+ | 0.8+ | 2006 02 20 | 704 | 0.5+ | 0.5+ |
| 2001 03 16 | 704 | 0.1− | 1.4+ | 2003 09 26 | 645 | 0.1− | 0.0 | 2006 02 20 | 704 | 1.3+ | 0.1+ |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 02 20 | 704 | 0.4+ | 0.4+ |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2003 09 27 | 645 | 0.0 | 0.0 | 2006 02 20 | 704 | (2.1+ | 0.3−) |
| 2001 04 15 | 704 | 0.0 | 0.5− | 2003 09 27 | 645 | 0.1− | 0.0 | 2006 02 27 | 703 | 0.7− | 0.5− |
| 2001 04 15 | 704 | 0.0 | 0.2− | 2003 09 28 | 645 | 0.1+ | 0.0 | 2006 02 27 | 703 | 0.3− | 0.9− |
| 2001 04 15 | 704 | 0.3+ | 0.7− | 2003 09 28 | 645 | 0.1+ | 0.1+ | 2006 02 27 | 703 | 0.5− | 0.4− |
| 2001 04 15 | 704 | 1.5− | 0.1+ | 2003 09 30 | 645 | 0.0 | 0.0 | 2006 02 27 | 703 | 0.3− | 0.2− |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2003 09 30 | 645 | 0.0 | 0.0 | 2006 03 03 | 699 | 1.1+ | 0.1− |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 03 | 699 | 0.6+ | 0.1+ |
| 2001 04 27 | 608 | 0.4− | 0.2+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 03 03 | 699 | 0.0 | 0.4+ |
| 2001 04 27 | 608 | 1.1− | 0.4+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 03 23 | 703 | 0.3+ | 0.1+ |
| 2001 04 27 | 608 | 0.9− | 0.5+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 03 23 | 703 | 0.9− | 0.4− |
| 2001 05 23 | 699 | 1.5+ | 0.7+ | 2004 12 11 | 691 | 0.0 | 0.1+ | 2006 03 23 | 703 | (1.6− | 0.1−) |
| 2001 05 23 | 704 | 0.2− | 0.5+ | 2004 12 11 | 691 | 0.3− | 0.1+ | 2006 03 23 | 703 | 0.5+ | 0.9+ |
| 2001 05 23 | 704 | 0.1+ | 0.9+ | 2004 12 11 | 691 | 0.1+ | 0.0 | | | | |

**(145515)∗ 2006 DA$_{122}$ = 2002 JW$_{127}$**

Discovered 2006 Feb. 22 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 97207)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 22.94600 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.22030718 | ω | 62.45115 | | −0.97304502 | | +0.21477123 |
| *a* | 2.7150861 | Ω | 129.82595 | | −0.23054359 | | −0.91499246 |
| *e* | 0.0118319 | *i* | 6.27966 | | +0.00574884 | | −0.34155837 |
| *P* | 4.47 | *H* | 15.5 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.0 | 0.3+ | 2004 11 04 | 703 | 1.3+ | 1.3− | 2006 02 22 | 703 | 1.0− | 0.2+ |
| 2001 01 03 | 704 | 0.7− | 0.2− | 2004 11 04 | 703 | 1.5+ | 0.6− | 2006 02 25 | 691 | 0.2+ | 0.3+ |
| 2001 01 03 | 704 | 0.1− | 0.1+ | 2004 11 04 | 703 | 0.2+ | 0.6+ | 2006 02 25 | 691 | 0.2+ | 1.3+ |
| 2002 02 17 | 291 | 0.3− | 0.8− | 2004 11 04 | 703 | 0.9− | 1.6+ | 2006 02 25 | 691 | (1.4+ | 2.4+) |
| 2002 02 17 | 291 | 0.1− | 0.3− | 2004 12 15 | 599 | 0.5− | 0.2+ | 2006 02 28 | 704 | 0.3− | 0.0 |
| 2002 02 17 | 291 | 0.7− | 1.0− | 2004 12 15 | 599 | 0.7− | 0.0 | 2006 02 28 | 704 | 0.2+ | 0.4+ |
| 2002 05 07 | 644 | 0.4− | 0.8+ | 2005 10 31 | 568 | 0.2+ | 0.1+ | 2006 02 28 | 704 | 0.4− | 0.3+ |
| 2002 05 07 | 644 | 0.3− | 0.9+ | 2005 10 31 | 568 | 0.2+ | 0.1+ | 2006 02 28 | 704 | 1.1+ | 0.3+ |
| 2002 05 07 | 644 | 0.1− | 0.8+ | 2005 11 30 | 691 | 0.0 | 0.5+ | 2006 03 05 | 704 | 1.2+ | 0.3+ |
| 2002 05 10 | 699 | 0.8+ | 0.9+ | 2005 11 30 | 691 | 0.4+ | 0.6+ | 2006 03 05 | 704 | 0.8+ | 0.6− |
| 2002 05 10 | 699 | 1.3+ | 0.3+ | 2005 11 30 | 691 | 0.6+ | 0.4+ | 2006 03 05 | 704 | 0.4+ | 0.0 |
| 2002 05 10 | 699 | 1.8+ | 0.7+ | 2005 12 02 | 695 | 0.1+ | 0.1+ | 2006 03 23 | 703 | 0.8− | 0.2+ |
| 2002 05 10 | 699 | 1.0+ | 1.1+ | 2005 12 02 | 695 | 0.3+ | 0.0 | 2006 03 23 | 703 | 2.0− | 0.6+ |
| 2003 07 24 | 644 | 0.5− | 0.4+ | 2006 02 02 | G96 | 0.2+ | 1.7− | 2006 03 23 | 703 | 0.1+ | 0.5− |
| 2003 07 24 | 644 | 0.5− | 0.3+ | 2006 02 02 | G96 | 0.1− | 1.8− | 2006 03 23 | 703 | 0.1+ | 0.5− |
| 2003 07 24 | 644 | 0.3− | 0.5+ | 2006 02 02 | G96 | 1.3− | 0.4− | 2006 04 02 | 703 | 1.0− | 0.2+ |
| 2003 08 23 | 644 | 0.2− | 0.4+ | 2006 02 22 | 703 | 0.6− | 0.1+ | 2006 04 02 | 703 | (1.0+ | 2.1−) |
| 2003 08 23 | 644 | 0.2− | 0.5+ | 2006 02 22 | 703 | 0.3+ | 0.2− | 2006 04 02 | 703 | 0.8− | 1.3− |
| 2003 08 23 | 644 | 0.0 | 0.6+ | 2006 02 22 | 703 | 1.1+ | 0.3− | 2006 04 02 | 703 | 1.0− | 1.8− |

**(145516)∗ 2006 DC$_{148}$ = 2004 XC$_{128}$**

Discovered 2006 Feb. 25 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 101423)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 193.74101 | | | (2000.0) | | | **P** | | **Q** | | |
| $n$ | 0.20286350 | | $\omega$ | 59.60332 | | | +0.94413196 | | −0.32932865 | | |
| $a$ | 2.8685788 | | $\Omega$ | 319.62098 | | | +0.29533758 | | +0.86235530 | | |
| $e$ | 0.0792869 | | $i$ | 1.10992 | | | +0.14625510 | | +0.38455945 | | |
| $P$ | 4.86 | | $H$ | 15.9 | | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 26 | 809 | (1.3+ | 2.6−) | 2003 08 25 | 704 | 0.3− | 0.1+ | 2006 02 07 | G96 | 0.2− | 0.0 | | | | | |
| 1998 07 26 | 809 | 0.7+ | 0.6− | 2003 08 25 | 704 | 0.0 | 1.1+ | 2006 02 07 | G96 | 0.1− | 0.0 | | | | | |
| 1998 07 26 | 809 | 0.7+ | 0.9− | 2003 08 25 | 704 | 0.2+ | 1.1+ | 2006 02 25 | 691 | 0.1− | 0.1+ | | | | | |
| 1998 08 17 | 704 | 0.3− | 0.8− | 2003 09 01 | 704 | 0.6+ | 0.1− | 2006 02 25 | 691 | 0.1+ | 0.1+ | | | | | |
| 1998 08 17 | 704 | 0.5+ | 0.3− | 2003 09 01 | 704 | 1.2− | 1.1+ | 2006 02 25 | 691 | 0.1+ | 0.2+ | | | | | |
| 1998 08 17 | 704 | 1.9+ | 0.3+ | 2003 09 01 | 704 | 0.9− | 0.1+ | 2006 03 04 | 691 | 0.0 | 0.1+ | | | | | |
| 1998 08 17 | 704 | 0.3+ | 1.7− | 2003 09 01 | 704 | 0.9− | 1.0+ | 2006 03 04 | 691 | 0.2+ | 0.2+ | | | | | |
| 1999 11 12 | 704 | 0.2+ | 0.5− | 2003 09 01 | 704 | 0.7− | 1.1+ | 2006 03 04 | 691 | 0.4+ | 0.2+ | | | | | |
| 1999 11 12 | 704 | 0.0 | 0.6− | 2003 09 29 | 704 | 0.2+ | 0.1+ | 2006 03 21 | G96 | 0.3− | 0.1− | | | | | |
| 1999 11 12 | 704 | 0.7− | 0.7− | 2003 09 29 | 704 | 0.4− | 0.5− | 2006 03 21 | G96 | 0.1− | 0.0 | | | | | |
| 1999 11 12 | 704 | 0.4− | 0.9− | 2003 09 29 | 704 | 0.7− | 0.5− | 2006 03 21 | G96 | 0.5− | 0.6+ | | | | | |
| 1999 11 12 | 704 | 0.6− | 0.6− | 2004 12 14 | 704 | 0.6+ | 0.8− | 2006 03 21 | G96 | 0.2+ | 0.2+ | | | | | |
| 1999 12 07 | 704 | 0.5− | 0.9− | 2004 12 14 | 704 | 0.0 | 0.7+ | 2006 03 25 | G96 | 0.3− | 0.1− | | | | | |
| 1999 12 07 | 704 | 0.4− | 0.3− | 2004 12 14 | 704 | 0.2+ | 0.9+ | 2006 03 25 | G96 | 0.1− | 0.1− | | | | | |
| 1999 12 07 | 704 | 0.8− | 0.4− | 2004 12 14 | 704 | 0.3+ | 0.8+ | 2006 03 25 | G96 | 0.2− | 0.0 | | | | | |
| 1999 12 07 | 704 | 0.2+ | 0.4− | 2004 12 16 | 704 | 0.4+ | 1.2+ | 2006 03 25 | G96 | 0.0 | 0.2− | | | | | |
| 1999 12 07 | 704 | 0.4+ | 0.4− | 2004 12 16 | 704 | 0.3+ | 1.9+ | 2006 05 26 | G96 | 0.2− | 0.1+ | | | | | |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2004 12 16 | 704 | 0.7+ | 0.5+ | 2006 05 26 | G96 | 0.3+ | 0.2+ | | | | | |
| 2000 12 23 | 645 | 0.0 | 0.1− | 2004 12 16 | 704 | 0.9+ | 0.5+ | 2006 05 26 | G96 | 0.2+ | 0.1+ | | | | | |
| 2003 08 25 | 704 | 0.1+ | 0.7+ | 2006 02 07 | G96 | 0.5− | 0.1+ | 2006 05 26 | G96 | 0.5− | 0.3+ | | | | | |
| 2003 08 25 | 704 | 0.6− | 1.1+ | 2006 02 07 | G96 | 0.3− | 0.0 | | | | | | | | | |

**(145517)∗ 2006 DX$_{152}$**

Discovered 2006 Feb. 25 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 349.36504 | | | (2000.0) | | | **P** | | **Q** | | |
| $n$ | 0.27809250 | | $\omega$ | 47.99881 | | | −0.14963756 | | +0.98852288 | | |
| $a$ | 2.3245731 | | $\Omega$ | 213.41213 | | | −0.91793376 | | −0.14669474 | | |
| $e$ | 0.1417825 | | $i$ | 2.16094 | | | −0.36743192 | | −0.03609949 | | |
| $P$ | 3.54 | | $H$ | 17.2 | | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 08 | 691 | 0.5− | 0.5− | 2003 07 25 | 704 | 0.2+ | 0.9+ | 2006 02 25 | 691 | 0.3+ | 0.3+ | | | | | |
| 1992 05 08 | 691 | 0.5− | 0.9− | 2003 07 25 | 704 | 0.7+ | 0.2+ | 2006 02 25 | 691 | 0.5+ | 0.1+ | | | | | |
| 1992 05 08 | 691 | 0.0 | 0.4+ | 2003 07 25 | 704 | 0.1+ | 0.6+ | 2006 02 25 | 691 | 0.4+ | 0.1+ | | | | | |
| 1995 02 01 | 691 | 0.1− | 0.3− | 2003 07 25 | 704 | 0.6+ | 1.3+ | 2006 03 04 | 691 | 0.2+ | 0.3+ | | | | | |
| 1995 02 01 | 691 | 2.3+ | 0.8+ | 2004 11 10 | 691 | 0.1− | 0.2+ | 2006 03 04 | 691 | 0.5+ | 0.4+ | | | | | |
| 1995 02 01 | 691 | 0.2− | 0.5− | 2004 11 10 | 691 | 0.2− | 0.1+ | 2006 03 04 | 691 | 0.1+ | 0.6+ | | | | | |
| 2000 11 17 | 691 | 0.3− | 0.2+ | 2004 11 10 | 691 | 0.2− | 0.2+ | 2006 03 26 | 699 | 1.0− | 0.4+ | | | | | |
| 2000 11 17 | 691 | 0.5− | 0.2− | 2004 11 20 | 691 | 0.3+ | 0.2+ | 2006 03 26 | 699 | 0.3− | 0.9+ | | | | | |
| 2000 11 17 | 691 | 0.4− | 0.4+ | 2004 11 20 | 691 | 0.1+ | 0.2+ | 2006 03 26 | 699 | (2.2− | 1.1−) | | | | | |
| 2002 02 20 | 691 | 0.1− | 0.3− | 2004 11 20 | 691 | 0.0 | 0.1+ | 2006 03 26 | 699 | 0.1− | 0.9+ | | | | | |
| 2002 02 20 | 691 | 0.3− | 0.3+ | 2004 12 20 | G96 | 0.0 | 0.2− | 2006 04 07 | G96 | 0.7− | 0.1+ | | | | | |
| 2002 02 20 | 691 | 0.8− | 0.0 | 2004 12 20 | G96 | 0.5+ | 0.4− | 2006 04 07 | G96 | 0.5− | 0.2− | | | | | |
| 2003 06 26 | 704 | 0.4+ | 1.1+ | 2004 12 20 | G96 | 0.3+ | 0.2+ | 2006 04 07 | G96 | 0.4− | 0.1+ | | | | | |
| 2003 06 26 | 704 | 0.5− | 0.7+ | 2004 12 20 | G96 | 0.1+ | 0.0 | 2006 04 07 | G96 | 0.4− | 0.2+ | | | | | |
| 2003 06 26 | 704 | 0.4+ | 1.5+ | 2006 02 25 | G96 | 0.1− | 0.3+ | 2006 05 04 | G96 | 0.6− | 0.3+ | | | | | |
| 2003 06 26 | 704 | 0.1− | 1.4+ | 2006 02 25 | G96 | 0.1− | 0.3+ | 2006 05 04 | G96 | 0.1+ | 0.2+ | | | | | |
| 2003 06 26 | 704 | 0.5+ | 1.0+ | 2006 02 25 | G96 | 0.1+ | 0.1− | 2006 05 04 | G96 | 0.4− | 0.2+ | | | | | |
| 2003 07 25 | 704 | 0.9− | 0.5+ | 2006 02 25 | G96 | 0.0 | 0.2− | 2006 05 04 | G96 | 0.2− | 0.1+ | | | | | |

**(145518)∗ 2006 DN$_{199}$**

Discovered 2006 Feb. 23 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 345.85929 | | | (2000.0) | | | **P** | | **Q** | | |
| $n$ | 0.26028836 | | $\omega$ | 183.09196 | | | −0.23631181 | | +0.96690265 | | |
| $a$ | 2.4294029 | | $\Omega$ | 73.25448 | | | −0.88932699 | | −0.17533055 | | |
| $e$ | 0.1563809 | | $i$ | 5.76616 | | | −0.39147699 | | −0.18536039 | | |
| $P$ | 3.79 | | $H$ | 16.2 | | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 704 | (1.0+ | 2.1−) | 2003 08 23 | 644 | 0.6− | 0.9+ | 2006 03 05 | 704 | 0.9+ | 0.0 | | | | | |
| 2002 02 12 | 704 | 1.1+ | 0.9+ | 2003 08 23 | 644 | 0.3− | 0.8+ | 2006 03 05 | 704 | 0.7+ | 0.1− | | | | | |
| 2002 02 12 | 704 | 0.6− | 0.1− | 2003 08 23 | 644 | 0.3− | 0.8+ | 2006 03 23 | 703 | 0.7− | 1.0− | | | | | |
| 2002 02 12 | 704 | 0.1+ | 1.0+ | 2003 09 19 | 644 | 0.7− | 0.9+ | 2006 03 23 | 703 | 0.5− | 0.8− | | | | | |
| 2002 02 23 | 644 | 0.3+ | 1.0+ | 2003 09 19 | 644 | 0.2− | 0.8+ | 2006 03 23 | 703 | 0.7− | 0.2− | | | | | |
| 2002 02 23 | 644 | 0.1− | 0.9+ | 2003 09 19 | 644 | 0.1− | 0.3+ | 2006 03 23 | 703 | 0.4− | 0.5− | | | | | |
| 2002 02 23 | 644 | 0.3+ | 0.9+ | 2004 11 11 | 691 | 0.1+ | 0.1+ | 2006 03 24 | 699 | 0.5+ | 0.2+ | | | | | |
| 2002 03 11 | 644 | 0.3+ | 0.1+ | 2004 11 11 | 691 | 0.0 | 0.1+ | 2006 03 24 | 699 | 0.1+ | 0.4− | | | | | |
| 2002 03 11 | 644 | 0.2+ | 0.2+ | 2004 11 11 | 691 | 0.0 | 0.1− | 2006 03 24 | 699 | 0.1− | 0.5− | | | | | |
| 2002 03 11 | 644 | 0.5+ | 0.1+ | 2006 02 23 | 699 | 0.8− | 0.1+ | 2006 03 24 | 699 | 0.0 | 0.3− | | | | | |
| 2002 04 02 | 644 | 0.3− | 0.1+ | 2006 02 23 | 699 | 0.4+ | 1.6+ | 2006 04 02 | G96 | 0.1+ | 0.3− | | | | | |
| 2002 04 02 | 644 | 0.1+ | 1.3+ | 2006 02 23 | 699 | 0.0 | 1.2− | 2006 04 02 | G96 | 0.0 | 0.3− | | | | | |
| 2002 04 02 | 644 | 0.0 | 0.4+ | 2006 02 23 | 699 | 0.9+ | 0.1+ | 2006 04 02 | G96 | 0.5− | 0.1− | | | | | |
| 2002 04 02 | 644 | 0.4+ | 1.1+ | 2006 03 03 | 703 | 0.0 | 0.1− | 2006 04 02 | G96 | 0.1+ | 0.3− | | | | | |
| 2002 04 02 | 644 | 0.1+ | 0.1+ | 2006 03 03 | 703 | 0.2− | 0.7− | 2006 04 06 | 683 | 1.1− | 0.7+ | | | | | |
| 2002 04 02 | 644 | 0.4+ | 1.5+ | 2006 03 03 | 703 | 0.3− | 0.8− | 2006 04 06 | 683 | (2.5− | 0.5−) | | | | | |
| 2003 07 08 | 644 | 0.1− | 1.0+ | 2006 03 05 | 704 | 1.7− | 0.8+ | 2006 04 06 | 683 | 0.6+ | 1.2+ | | | | | |
| 2003 07 08 | 644 | 0.1+ | 0.6+ | 2006 03 05 | 704 | 1.1+ | 1.0+ | | | | | | | | | |
| 2003 07 08 | 644 | 0.1− | 0.9+ | 2006 03 05 | 704 | 0.5+ | 0.2+ | | | | | | | | | |

**(145519)∗ 2006 DD$_{208}$**

Discovered 2006 Feb. 25 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 54.20890 | | | (2000.0) | | | **P** | | **Q** | | |
| $n$ | 0.18244120 | | $\omega$ | 300.22275 | | | −0.93560660 | | −0.35121901 | | |
| $a$ | 3.0788422 | | $\Omega$ | 219.24668 | | | +0.34025938 | | −0.86998066 | | |
| $e$ | 0.1543325 | | $i$ | 3.24877 | | | +0.09414795 | | −0.34609084 | | |
| $P$ | 5.40 | | $H$ | 15.6 | | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 0.4− | 0.2+ | 2001 05 24 | 291 | 0.6+ | 0.5+ | 2006 03 05 | 691 | 0.0 | 0.3+ | | | | | |
| 1993 12 16 | 691 | 0.5− | 0.3+ | 2001 05 24 | 291 | 0.5+ | 0.4+ | 2006 03 26 | 699 | 0.1− | 0.3+ | | | | | |
| 1993 12 16 | 691 | 0.2− | 0.5+ | 2003 09 18 | 691 | 0.1− | 0.2+ | 2006 03 26 | 699 | 0.5+ | 1.2+ | | | | | |
| 1998 09 26 | 691 | 0.1− | 0.5− | 2003 09 18 | 691 | 0.1− | 0.2+ | 2006 03 26 | 699 | 0.7+ | 0.9− | | | | | |
| 1998 09 26 | 691 | 0.2+ | 0.1− | 2003 09 18 | 691 | 0.2− | 0.3+ | 2006 03 26 | 699 | 0.3+ | 0.4− | | | | | |
| 1998 09 26 | 691 | 0.1+ | 0.3− | 2003 09 29 | 691 | 0.2+ | 0.3+ | 2006 04 07 | 703 | 0.8− | 1.1− | | | | | |
| 1998 10 13 | 691 | 0.3− | 0.1+ | 2003 09 29 | 691 | 0.1+ | 0.6+ | 2006 04 07 | 703 | 0.1− | 1.1+ | | | | | |
| 1998 10 13 | 691 | 0.4− | 0.1− | 2003 09 29 | 691 | 0.3+ | 0.4+ | 2006 04 07 | 703 | 1.1− | 0.2− | | | | | |
| 1998 10 13 | 691 | 0.4− | 0.1− | 2004 12 14 | 704 | 0.7+ | 0.6+ | 2006 04 07 | 703 | 0.9− | 1.0− | | | | | |
| 2000 01 05 | 704 | 0.2+ | 0.0 | 2004 12 14 | 704 | 0.4+ | 0.2− | 2006 04 19 | 644 | 0.6− | 0.3+ | | | | | |
| 2000 01 05 | 704 | 0.1− | 1.3− | 2004 12 14 | 704 | 0.4+ | 0.3− | 2006 04 19 | 644 | 0.0 | 0.1+ | | | | | |
| 2000 01 05 | 704 | 0.4+ | 1.2− | 2004 12 14 | 704 | 0.1+ | 0.4+ | 2006 04 19 | 644 | 0.2− | 0.0 | | | | | |
| 2000 01 05 | 704 | 1.6+ | 0.5+ | 2004 12 14 | 704 | 0.0 | 1.1+ | 2006 05 26 | G96 | 0.5− | 0.1+ | | | | | |
| 2000 02 11 | 704 | 0.8+ | 0.8− | 2006 02 25 | 691 | 0.1− | 0.1+ | 2006 05 26 | G96 | 0.6− | 0.0 | | | | | |
| 2000 02 11 | 704 | 0.7+ | 0.4+ | 2006 02 25 | 691 | 0.0 | 0.1− | 2006 05 26 | G96 | 0.6− | 0.1+ | | | | | |
| 2000 02 11 | 704 | 1.3+ | 0.5+ | 2006 02 25 | 691 | 0.2− | 0.1+ | 2006 05 26 | G96 | 0.6− | 0.1+ | | | | | |
| 2000 02 11 | 704 | 0.2+ | 1.2+ | 2006 03 05 | 691 | 0.1− | 0.4+ | | | | | | | | | |
| 2001 05 24 | 291 | 0.3+ | 0.3+ | 2006 03 05 | 691 | 0.0 | 0.2+ | | | | | | | | | |

**(145520)∗ 2006 EA$_{16}$**

Discovered 2006 Mar. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.07775 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24355528 | $\omega$ | 85.38233 | | −0.16773166 | −0.98572991 | |
| $a$ | 2.5394384 | $\Omega$ | 14.29742 | | +0.88009234 | −0.15623118 | |
| $e$ | 0.0711297 | $i$ | 3.30445 | | +0.44418866 | −0.06267662 | |
| $P$ | 4.05 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.2− | 0.1− | 2004 11 19 | 703 | 0.0 | 0.5+ | 2006 03 06 | 691 | 0.3− | 0.1− |
| 1994 04 06 | 691 | 0.2− | 0.1− | 2004 12 10 | 691 | 0.3+ | 0.1+ | 2006 03 24 | 691 | 0.1+ | 0.4+ |
| 1994 04 06 | 691 | 0.0 | 0.1− | 2004 12 10 | 691 | 0.1+ | 0.1+ | 2006 03 24 | 691 | 0.3− | 0.6+ |
| 2002 03 18 | 691 | 0.4+ | 0.1+ | 2004 12 10 | 691 | 0.4− | 0.3+ | 2006 03 24 | 691 | 0.0 | 0.4+ |
| 2002 03 18 | 691 | 0.2+ | 0.4+ | 2005 12 02 | 568 | 0.0 | 0.2+ | 2006 03 24 | 699 | 0.5− | 0.1− |
| 2002 03 18 | 691 | 0.4+ | 0.3+ | 2005 12 02 | 568 | 0.1− | 0.2+ | 2006 03 24 | 699 | 0.2+ | 0.2− |
| 2002 04 02 | 691 | 0.1+ | 0.1+ | 2006 02 20 | 691 | 0.3− | 0.3− | 2006 03 24 | 699 | 0.4+ | 0.4+ |
| 2002 04 02 | 691 | 0.2− | 0.0 | 2006 02 20 | 691 | 0.0 | 0.1+ | 2006 03 24 | 699 | 0.4− | 0.7+ |
| 2002 04 02 | 691 | 0.1+ | 0.1+ | 2006 02 20 | 691 | 0.0 | 0.1+ | 2006 04 25 | G96 | 0.9− | 0.5− |
| 2004 10 04 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.6+ | 0.7− | 2006 04 25 | G96 | 0.2− | 0.6− |
| 2004 10 04 | 691 | 0.3+ | 0.1+ | 2006 03 02 | 691 | 0.1− | 0.0 | 2006 04 25 | G96 | 0.7− | 0.5− |
| 2004 10 04 | 691 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.3− | 0.0 | 2006 04 25 | G96 | 0.2− | 0.1− |
| 2004 10 15 | 695 | 0.2+ | 0.1− | 2006 03 04 | G96 | 0.5− | 0.3+ | 2006 05 03 | G96 | 0.2− | 0.0 |
| 2004 10 15 | 695 | 0.2+ | 0.1− | 2006 03 04 | G96 | 0.4− | 0.0 | 2006 05 03 | G96 | 0.3− | 0.0 |
| 2004 11 19 | 703 | 0.1− | 0.1+ | 2006 03 04 | G96 | 0.7− | 0.3+ | 2006 05 03 | G96 | 0.8− | 0.1− |
| 2004 11 19 | 703 | 0.6− | 0.6− | 2006 03 06 | 691 | 1.4+ | 1.5− | 2006 05 03 | G96 | 1.0− | 0.0 |
| 2004 11 19 | 703 | 0.7− | 1.7− | 2006 03 06 | 691 | 0.2− | 0.0 | | | | |

**(145521)∗ 2006 EC$_{30}$ = 2003 UQ$_{53}$**

Discovered 2006 Mar. 3 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 101479)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.54224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17908523 | $\omega$ | 268.40326 | | −0.12092852 | +0.99227813 | |
| $a$ | 3.1171871 | $\Omega$ | 354.42064 | | −0.76003620 | −0.11042280 | |
| $e$ | 0.0656620 | $i$ | 16.47670 | | −0.63853056 | −0.05648813 | |
| $P$ | 5.50 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 703 | 0.3+ | 0.2− | 2003 10 19 | 644 | 0.5− | 0.6+ | 2006 03 03 | 704 | (2.1+ | 1.0+) |
| 2000 02 06 | 703 | 1.0+ | 0.5− | 2003 10 19 | 644 | 0.2− | 0.7+ | 2006 03 03 | 704 | 0.7+ | 0.6− |
| 2000 02 06 | 703 | 0.5− | 0.3− | 2003 10 19 | 644 | 0.3− | 0.7+ | 2006 03 03 | 704 | 1.3+ | 0.1+ |
| 2000 02 06 | 703 | 0.8− | 0.1− | 2004 12 16 | 703 | 0.1+ | 0.1− | 2006 03 04 | 691 | 0.1− | 0.2+ |
| 2000 03 04 | 704 | 0.3+ | 0.8+ | 2004 12 16 | 703 | 0.4− | 0.3+ | 2006 03 04 | 691 | 0.0 | 0.2+ |
| 2000 03 04 | 704 | 0.8+ | 0.6+ | 2004 12 16 | 703 | 0.7− | 0.0 | 2006 03 04 | 691 | 0.1− | 0.2+ |
| 2000 03 04 | 704 | 0.3+ | 0.0 | 2004 12 16 | 703 | 0.0 | 1.4− | 2006 03 21 | 704 | 0.4+ | 0.2− |
| 2000 03 04 | 704 | 0.1− | 1.2+ | 2005 01 15 | 703 | 0.8− | 0.6+ | 2006 03 21 | 704 | 0.5+ | 0.0 |
| 2000 03 04 | 704 | 0.1+ | 0.5+ | 2005 01 15 | 703 | 0.5− | 0.6− | 2006 03 21 | 704 | 1.1+ | 0.4+ |
| 2002 08 31 | 644 | 0.6− | 1.2+ | 2005 01 15 | 703 | 0.7− | 0.5− | 2006 04 06 | 704 | 0.8+ | 0.4+ |
| 2002 08 31 | 704 | 0.1+ | 0.6+ | 2005 01 15 | 703 | 0.6− | 0.5− | 2006 04 06 | 704 | 0.1+ | 0.2+ |
| 2002 08 31 | 704 | 0.4− | 0.3− | 2005 03 01 | 704 | 1.6+ | 0.1− | 2006 04 06 | 704 | 1.4+ | 0.6+ |
| 2002 08 31 | 644 | 0.4− | 1.2+ | 2005 03 01 | 704 | 0.1+ | 0.1+ | 2006 04 06 | 704 | 1.7+ | 1.1+ |
| 2002 08 31 | 704 | 0.3− | 0.3− | 2005 03 01 | 704 | 0.4+ | 0.5− | 2006 04 19 | 699 | 0.5+ | 0.1+ |
| 2002 08 31 | 644 | 0.7− | 1.1+ | 2006 01 26 | G96 | 0.7− | 0.3− | 2006 04 19 | 699 | 1.0− | 0.5− |
| 2002 08 31 | 704 | 0.0 | 0.1+ | 2006 01 26 | G96 | 0.4− | 0.0 | 2006 04 19 | 699 | 0.1+ | 0.1− |
| 2003 10 03 | 691 | 0.2− | 0.4+ | 2006 01 26 | G96 | 0.3− | 0.1− | 2006 04 19 | 699 | 0.4− | 0.8+ |
| 2003 10 03 | 691 | 0.2− | 0.3+ | 2006 01 26 | G96 | 0.0 | 0.4− | 2006 04 21 | 703 | 0.2− | 0.7+ |
| 2003 10 03 | 691 | 0.2− | 0.4+ | 2006 02 25 | 691 | 0.0 | 0.1− | 2006 04 21 | 703 | 0.3− | 0.3+ |
| 2003 10 18 | 644 | 0.3− | 0.6+ | 2006 02 25 | 691 | 0.1+ | 0.1− | 2006 04 21 | 703 | 0.1+ | 1.1+ |
| 2003 10 18 | 644 | 0.5− | 1.1+ | 2006 02 25 | 691 | 0.2+ | 0.1+ | 2006 04 21 | 703 | 0.1+ | 1.5+ |
| 2003 10 18 | 644 | 0.2− | 0.6+ | 2006 03 03 | 704 | (2.5+ | 1.8−) | | | | |

**(145522)∗ 2006 EU$_{38}$ = 2000 EA$_{112}$**

Discovered 2006 Mar. 4 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 101483)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.50257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17071477 | $\omega$ | 275.89824 | | −0.22954309 | −0.97137283 | |
| $a$ | 3.2182664 | $\Omega$ | 188.18294 | | +0.97227652 | −0.23172889 | |
| $e$ | 0.2245298 | $i$ | 25.46354 | | −0.04459079 | −0.05231200 | |
| $P$ | 5.77 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 910 | 0.4+ | 0.5+ | 2004 09 14 | 699 | 0.4+ | 1.7+ | 2005 01 17 | 703 | 0.5− | 0.5− |
| 1998 10 01 | 910 | 0.0 | 0.7+ | 2004 09 14 | 699 | 0.2+ | 0.8+ | 2005 01 17 | 703 | 1.5+ | 1.1+ |
| 1998 10 01 | 910 | 0.2+ | 0.7+ | 2004 10 07 | 704 | 0.1+ | 0.9+ | 2006 02 24 | 703 | 0.2+ | 0.3+ |
| 1998 10 17 | 699 | 0.5+ | 1.1+ | 2004 10 07 | 704 | 0.7+ | 0.1+ | 2006 02 24 | 703 | 0.8− | 0.2− |
| 1998 10 17 | 699 | (0.1− | 2.7+) | 2004 10 07 | 704 | 0.3− | 0.3− | 2006 02 24 | 703 | 0.2− | 0.7+ |
| 1998 10 17 | 699 | 0.3− | 0.8+ | 2004 10 07 | 704 | 1.2− | 0.7− | 2006 02 24 | 703 | 0.1− | 0.3+ |
| 2000 03 09 | 704 | 0.5− | 0.1− | 2004 10 07 | 704 | 1.1− | 0.5− | 2006 03 04 | 703 | 0.3+ | 0.4+ |
| 2000 03 09 | 704 | 0.2+ | 0.3+ | 2004 10 18 | 704 | 1.1+ | 0.9− | 2006 03 04 | 703 | 0.6− | 1.4+ |
| 2000 03 09 | 704 | 0.2− | 0.1− | 2004 10 18 | 704 | 0.4+ | 0.8− | 2006 03 04 | 703 | 0.0 | 0.1− |
| 2000 03 09 | 704 | 0.3− | 0.9+ | 2004 10 18 | 704 | 0.1+ | 0.1− | 2006 03 04 | 703 | 0.5− | 0.1− |
| 2000 03 09 | 704 | 0.3+ | 0.6+ | 2004 10 18 | 704 | 0.8− | 0.8− | 2006 03 05 | 699 | 0.3+ | 0.2− |
| 2000 03 12 | 704 | 0.7+ | 0.2+ | 2004 10 18 | 704 | 0.1− | 0.6− | 2006 03 05 | 699 | 0.5+ | 0.4− |
| 2000 03 12 | 704 | 0.1− | 0.1+ | 2004 11 02 | 644 | 0.0 | 0.6− | 2006 03 05 | 699 | 0.1+ | 0.6+ |
| 2000 03 12 | 704 | 0.6− | 0.1− | 2004 11 02 | 644 | 0.1− | 0.1− | 2006 03 05 | 699 | 0.9+ | 0.8+ |
| 2000 03 12 | 704 | 0.3− | 0.6+ | 2004 11 02 | 644 | 0.2− | 0.1− | 2006 03 21 | 704 | 0.4− | 0.4− |
| 2000 03 12 | 704 | 0.4+ | 0.9− | 2004 12 10 | 703 | 0.5− | 1.5− | 2006 03 21 | 704 | 0.2+ | 0.7+ |
| 2003 09 22 | 691 | 0.0 | 0.4+ | 2004 12 10 | 703 | 1.0− | 1.3− | 2006 03 21 | 704 | 0.2+ | 0.5− |
| 2003 09 22 | 691 | 0.0 | 0.4+ | 2004 12 10 | 703 | 0.1+ | 0.7+ | 2006 04 20 | 703 | 0.7+ | 0.6+ |
| 2003 09 22 | 691 | 0.0 | 0.2+ | 2004 12 10 | 703 | 1.2− | 0.3− | 2006 04 20 | 703 | 1.4+ | 1.5− |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2004 12 10 | 699 | 0.7+ | 0.5+ | 2006 04 20 | 703 | 0.9− | 0.4+ |
| 2003 10 23 | 645 | 0.0 | 0.1− | 2004 12 10 | 699 | 0.1+ | 0.7+ | 2006 04 20 | 703 | (2.5− | 1.6−) |
| 2003 10 24 | 645 | 0.0 | 0.0 | 2004 12 10 | 699 | 0.7+ | 0.3− | 2006 05 24 | G96 | 0.4− | 0.1− |
| 2003 10 24 | 645 | 0.0 | 0.0 | 2004 12 10 | 699 | 0.1+ | 0.4+ | 2006 05 24 | G96 | 0.0 | 0.0 |
| 2004 09 14 | 699 | 1.4− | 0.1+ | 2005 01 17 | 703 | 0.6+ | 1.3+ | 2006 05 24 | G96 | 0.5− | 0.1− |
| 2004 09 14 | 699 | 1.2+ | 0.2+ | 2005 01 17 | 703 | 0.1− | 0.8− | 2006 05 24 | G96 | 0.1− | 0.0 |

**(145523)∗ 2006 EM$_{67}$**

Discovered 2006 Mar. 7 by Q.-z. Ye at Lulin Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.22582 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21659424 | $\omega$ | 271.35257 | | −0.22061597 | +0.97424223 | |
| $a$ | 2.7460269 | $\Omega$ | 345.64154 | | −0.80316636 | −0.20862381 | |
| $e$ | 0.1856516 | $i$ | 10.85397 | | −0.55340075 | −0.08560482 | |
| $P$ | 4.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 2.4− | 2.5+ | 2002 08 24 | 644 | 1.4− | 0.4+ | 2006 04 09 | E12 | 0.3+ | 0.1− |
| 1992 03 06 | 809 | 1.7− | 2.1+ | 2002 08 24 | 644 | 0.6− | 0.6+ | 2006 04 09 | E12 | 0.2− | 0.1+ |
| 1993 08 20 | 261 | (6.9+ | 3.1+) | 2003 10 03 | 691 | 0.1+ | 0.1+ | 2006 04 09 | E12 | 0.2− | 0.3+ |
| 1993 09 07 | 261 | (4.7+ | 0.1+) | 2003 10 03 | 691 | 0.1+ | 0.0 | 2006 04 09 | E12 | 0.2+ | 0.1+ |
| 2001 02 20 | 704 | 0.2+ | 0.4+ | 2003 10 03 | 691 | 0.0 | 0.0 | 2006 04 21 | 644 | 0.3+ | 0.5− |
| 2001 02 20 | 704 | 0.6− | 1.1+ | 2004 12 16 | D35 | 0.9+ | 0.8− | 2006 04 21 | 644 | 0.3+ | 0.2− |
| 2001 02 20 | 704 | 0.4− | 0.2+ | 2004 12 16 | D35 | 1.1+ | 0.5+ | 2006 04 21 | 644 | 0.4+ | 0.4− |
| 2001 03 18 | 608 | 0.7− | 0.5+ | 2005 01 13 | D35 | 0.8+ | 0.4− | 2006 04 21 | E12 | 0.5+ | 0.2+ |
| 2001 03 30 | 691 | 0.3+ | 0.4+ | 2005 01 13 | D35 | 0.9+ | 0.5− | 2006 04 21 | E12 | 0.6+ | 0.3− |
| 2001 03 30 | 691 | 0.1+ | 0.3+ | 2006 03 07 | D35 | 0.2+ | 0.7− | 2006 04 21 | E12 | 0.1+ | 0.1+ |
| 2001 03 30 | 691 | 0.1− | 0.4+ | 2006 03 07 | D35 | 0.5+ | 0.0 | 2006 04 21 | E12 | 0.2+ | 0.0 |
| 2001 05 14 | 608 | 2.2− | 0.3+ | 2006 03 07 | D35 | 0.2− | 0.4− | 2006 04 29 | E12 | 0.4+ | 0.2+ |
| 2001 05 14 | 608 | 0.1+ | 0.1− | 2006 03 09 | D35 | 0.2− | 0.3− | 2006 04 29 | E12 | 0.1− | 0.3+ |
| 2001 05 22 | 608 | 1.4− | 0.5− | 2006 03 09 | D35 | (0.4+ | 1.9−) | 2006 04 29 | E12 | 0.5+ | 0.1− |
| 2001 05 22 | 608 | 0.2− | 0.1+ | 2006 03 09 | D35 | 0.8+ | 1.0− | 2006 04 29 | E12 | 0.6+ | 0.4− |
| 2002 07 16 | 644 | 1.1− | 0.1− | 2006 03 09 | D35 | (0.1+ | 2.0−) | 2006 05 16 | E12 | 0.2+ | 0.9− |
| 2002 07 16 | 644 | 1.0− | 0.5− | 2006 03 09 | D35 | 0.1+ | 0.3− | 2006 05 16 | E12 | 0.3+ | 0.4+ |
| 2002 07 16 | 644 | 1.1− | 0.3+ | 2006 03 09 | D35 | 0.1+ | 0.6− | 2006 05 16 | E12 | 0.8+ | 0.3− |
| 2002 07 27 | 644 | 1.1− | 0.0 | 2006 03 11 | D35 | 0.2+ | 0.3− | 2006 05 16 | E12 | 0.2− | 0.5− |
| 2002 07 27 | 644 | 1.2− | 0.1− | 2006 03 11 | D35 | 0.4+ | 0.3− | 2006 05 22 | D35 | 0.9+ | 0.5− |
| 2002 07 27 | 644 | 0.9− | 0.1− | 2006 03 11 | D35 | 0.3+ | 0.3− | 2006 05 22 | D35 | 1.5+ | 0.6− |
| 2002 08 13 | 644 | 2.5− | 0.3− | 2006 03 24 | 703 | 0.7− | 0.0 | 2006 05 28 | D35 | 0.3+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 1.3− | 0.5− | 2006 03 24 | 703 | 1.0− | 0.8− | 2006 05 28 | D35 | 0.6+ | 0.6− |
| 2002 08 13 | 644 | 1.8− | 0.3− | 2006 03 24 | 703 | 0.8+ | 0.2− | | | | |
| 2002 08 24 | 644 | 2.2− | 0.0 | 2006 03 24 | 703 | 1.0− | 0.2− | | | | |

**(145524)∗ 2006 FS = 1995 UX$_{68}$ = 2004 XV$_{179}$**

Discovered 2006 Mar. 22 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 101499), A. Doppler (*MPO* 103880)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.79258 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23130958 | $\omega$ | 157.45514 | | −0.99746422 | | +0.01046810 |
| $a$ | 2.6282921 | $\Omega$ | 23.47642 | | −0.04694389 | | −0.84021079 |
| $e$ | 0.1429308 | $i$ | 10.17810 | | +0.05349208 | | −0.54215888 |
| $P$ | 4.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.2+ | 0.3+ | 2004 12 14 | 703 | 1.7− | 0.2+ | 2006 04 18 | 699 | 0.1+ | 0.2− |
| 1995 10 19 | 691 | 0.3+ | 0.2+ | 2004 12 14 | 703 | 0.6− | 0.1+ | 2006 04 18 | 699 | 0.2− | 0.1+ |
| 1995 10 19 | 691 | 0.1− | 0.4+ | 2004 12 14 | 703 | 0.8− | 0.3+ | 2006 04 18 | 699 | 0.3− | 0.2− |
| 1995 10 28 | 691 | 0.5− | 0.1+ | 2006 02 24 | 703 | 0.2− | 1.4+ | 2006 04 18 | 699 | 0.1− | 0.2+ |
| 1995 10 28 | 691 | 0.2− | 0.1− | 2006 02 24 | 703 | 0.0 | 0.4+ | 2006 04 21 | 704 | 1.3+ | 0.1− |
| 1995 10 28 | 691 | 0.3− | 0.1+ | 2006 02 24 | 703 | 1.0− | 0.9− | 2006 04 21 | 704 | 1.0+ | 0.8− |
| 2000 12 05 | 704 | 0.7+ | 0.1+ | 2006 02 24 | 703 | 0.3− | 0.3− | 2006 04 21 | 704 | 0.3+ | 0.3+ |
| 2000 12 05 | 704 | 0.1− | 0.2+ | 2006 03 22 | 703 | 1.4− | 1.8− | 2006 04 21 | 704 | 0.8+ | 0.6− |
| 2000 12 05 | 704 | 0.2+ | 0.2+ | 2006 03 22 | 703 | 0.2+ | 0.4− | 2006 04 21 | 704 | 0.8+ | 0.3− |
| 2000 12 05 | 704 | 0.2+ | 0.4− | 2006 03 22 | 703 | 1.2− | 1.0− | 2006 04 23 | H07 | 0.1− | 0.1+ |
| 2000 12 19 | 704 | 0.4− | 0.4+ | 2006 03 22 | 703 | 0.2− | 0.1− | 2006 04 23 | H07 | 0.1+ | 0.1− |
| 2000 12 19 | 704 | 0.9+ | 0.9− | 2006 03 23 | 691 | 0.3+ | 0.1+ | 2006 04 23 | H07 | 0.3− | 0.6+ |
| 2000 12 19 | 704 | 0.0 | 0.4+ | 2006 03 23 | 691 | 0.2+ | 0.0 | 2006 04 24 | 704 | 0.3− | 1.5+ |
| 2000 12 19 | 704 | 0.8+ | 0.9+ | 2006 03 23 | 691 | 0.3+ | 0.1+ | 2006 04 24 | 704 | 0.3− | 0.1+ |
| 2001 01 05 | 704 | 0.6− | 0.1− | 2006 03 24 | G96 | 0.0 | 0.2− | 2006 04 24 | 704 | 0.0 | 0.4− |
| 2001 01 05 | 704 | 0.5− | 0.2− | 2006 03 24 | G96 | 0.2− | 0.3− | 2006 04 24 | 704 | 0.2+ | 0.1+ |
| 2001 01 05 | 704 | 0.3− | 0.0 | 2006 03 24 | G96 | 0.2+ | 0.3− | 2006 04 25 | 704 | 0.2+ | 0.7+ |
| 2001 01 05 | 704 | 0.8− | 1.1− | 2006 04 02 | 704 | 0.8+ | 0.4+ | 2006 04 25 | 704 | 0.1− | 0.7+ |
| 2004 11 19 | 704 | 1.5+ | 0.2− | 2006 04 02 | 704 | 0.8+ | 0.8+ | 2006 04 25 | 704 | 0.1+ | 0.8+ |
| 2004 11 19 | 704 | 1.4+ | 0.5− | 2006 04 02 | 704 | 0.3+ | 0.6+ | 2006 04 25 | 704 | 0.2− | 0.2+ |
| 2004 11 19 | 704 | (2.3+ | 1.5−) | 2006 04 07 | 703 | 0.5− | 0.1+ | 2006 05 23 | 699 | 0.3+ | 1.6+ |
| 2004 11 19 | 704 | 0.6+ | 1.0− | 2006 04 07 | 703 | 0.6− | 0.7− | 2006 05 23 | 699 | 0.8+ | 0.2− |
| 2004 12 01 | 703 | 0.8+ | 0.3+ | 2006 04 07 | 704 | 0.0 | 0.4+ | 2006 05 23 | 699 | 0.8+ | 0.1+ |
| 2004 12 01 | 703 | 0.0 | 0.7+ | 2006 04 07 | 703 | 0.0 | 0.4+ | 2006 05 23 | 699 | 0.8− | 1.9− |
| 2004 12 01 | 703 | 0.3+ | 0.5+ | 2006 04 07 | 704 | 0.3− | 0.5+ | 2006 05 25 | 644 | 0.5− | 0.1+ |
| 2004 12 01 | 703 | 1.3− | 0.5+ | 2006 04 07 | 703 | 0.6− | 0.1+ | 2006 05 25 | 644 | 0.4− | 0.2+ |
| 2004 12 14 | 703 | 0.7− | 0.1− | 2006 04 07 | 704 | 0.2+ | 1.3+ | 2006 05 25 | 644 | 0.2− | 0.2+ |

**(145525)∗ 2006 FY$_2$ = 1997 WW$_{25}$ = 2004 TM$_{114}$ = 2004 TC$_{366}$ = 2004 TD$_{366}$**

Discovered 2006 Mar. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 101502), A. Doppler (*MPO* 103880)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.39037 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27197689 | $\omega$ | 347.16034 | | −0.89132262 | | −0.45326359 |
| $a$ | 2.3592903 | $\Omega$ | 165.87404 | | +0.41942864 | | −0.83261119 |
| $e$ | 0.1528702 | $i$ | 2.30217 | | +0.17211510 | | −0.31829346 |
| $P$ | 3.62 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.1+ | 0.7− | 2004 10 05 | 691 | 0.5− | 0.3+ | 2006 03 24 | G96 | 0.3− | 0.1+ |
| 1997 11 22 | 691 | 0.3− | 0.6− | 2004 10 08 | 291 | 0.7− | 0.4+ | 2006 03 24 | G96 | 0.1− | 0.3+ |
| 1997 11 22 | 691 | 0.1+ | 0.7− | 2004 10 08 | 291 | 0.7− | 0.5+ | 2006 03 26 | G96 | 0.5− | 0.1+ |
| 1997 12 05 | 691 | 0.0 | 0.0 | 2004 10 08 | 291 | 0.3− | 0.9+ | 2006 03 26 | G96 | 0.2− | 0.1− |
| 1997 12 05 | 691 | 0.0 | 0.0 | 2004 10 09 | 291 | 0.1− | 0.8+ | 2006 03 26 | G96 | 0.1− | 0.1+ |
| 1997 12 05 | 691 | 0.5+ | 0.2− | 2004 10 09 | 291 | 0.2+ | 0.9+ | 2006 03 26 | G96 | 0.2− | 0.0 |
| 2001 12 19 | 691 | 0.1+ | 0.4+ | 2004 10 09 | 291 | 0.2+ | 0.6+ | 2006 04 08 | 703 | 1.3+ | 1.3+ |
| 2001 12 19 | 691 | 0.2+ | 0.2+ | 2004 10 13 | 691 | 0.4+ | 0.1+ | 2006 04 08 | 703 | 0.2+ | 0.8+ |
| 2001 12 19 | 691 | 0.1+ | 0.4+ | 2004 10 13 | 691 | 0.2+ | 0.4+ | 2006 04 08 | 703 | 0.2+ | 1.6+ |
| 2002 01 13 | 704 | 0.1+ | 0.4+ | 2004 10 13 | 691 | 0.1− | 0.2+ | 2006 04 08 | 703 | 0.4− | 0.9+ |
| 2002 01 13 | 704 | 0.6+ | 0.0 | 2006 02 22 | G96 | 0.8− | 0.3− | 2006 04 24 | 691 | 0.0 | 0.2+ |
| 2002 01 13 | 704 | 0.1+ | 0.2− | 2006 02 22 | G96 | 0.2− | 0.4+ | 2006 04 24 | 691 | 0.3− | 0.9+ |
| 2002 01 13 | 704 | 0.3+ | 0.1− | 2006 02 22 | G96 | 0.9− | 0.2− | 2006 04 24 | 691 | 0.1− | 0.2+ |
| 2002 01 13 | 704 | 0.2+ | 0.1− | 2006 02 22 | G96 | 0.4− | 0.3− | 2006 04 30 | 691 | 0.2+ | 0.4+ |
| 2002 02 15 | 691 | 0.5− | 0.2+ | 2006 03 23 | 691 | 0.2+ | 0.1− | 2006 04 30 | 691 | 0.3+ | 0.1+ |
| 2002 02 15 | 691 | 0.3+ | 0.1+ | 2006 03 23 | 691 | 0.1− | 0.0 | 2006 04 30 | 691 | 0.4+ | 0.1+ |
| 2002 02 15 | 691 | 0.2− | 0.1+ | 2006 03 23 | 691 | 0.3+ | 0.1− | 2006 05 03 | 691 | 0.3+ | 0.2+ |
| 2004 10 05 | 691 | 0.1+ | 0.1+ | 2006 03 24 | G96 | 0.2− | 0.1+ | 2006 05 03 | 691 | 0.3+ | 0.2+ |
| 2004 10 05 | 691 | 0.4− | 0.2+ | 2006 03 24 | G96 | 0.3− | 0.1+ | 2006 05 03 | 691 | 0.2+ | 0.0 |

**(145526)∗ 2006 FC$_{11}$ = 1999 JK$_{136}$ = 2002 CE$_{176}$**

Discovered 2006 Mar. 23 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 101511)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.66543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27711426 | $\omega$ | 151.87196 | | −0.30161776 | | +0.95207771 |
| $a$ | 2.3300405 | $\Omega$ | 100.53612 | | −0.88414786 | | −0.25938734 |
| $e$ | 0.1435043 | $i$ | 2.95848 | | −0.35680427 | | −0.16206865 |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 08 | 703 | 1.0+ | 0.3− | 2004 12 20 | G96 | 0.1+ | 0.2+ | 2006 03 31 | 704 | 0.6+ | 0.0 |
| 1999 05 08 | 703 | 0.1− | 0.0 | 2004 12 20 | G96 | 0.1− | 0.0 | 2006 03 31 | 704 | 1.2+ | 0.1− |
| 1999 05 08 | 703 | 0.3+ | 0.2+ | 2004 12 20 | G96 | 0.3+ | 0.3+ | 2006 04 18 | 644 | 0.3− | 0.1+ |
| 1999 05 08 | 703 | 1.3+ | 0.2− | 2006 03 04 | G96 | 0.4− | 0.1− | 2006 04 18 | 644 | 0.0 | 0.2− |
| 1999 05 13 | 704 | 0.4+ | 1.4− | 2006 03 04 | G96 | 0.6− | 0.4− | 2006 04 18 | 644 | 0.0 | 0.1− |
| 1999 05 13 | 704 | (0.4+ | 2.2−) | 2006 03 04 | G96 | 0.6− | 0.6− | 2006 04 20 | 699 | 0.5− | 1.5+ |
| 1999 05 13 | 704 | 0.2− | 1.1+ | 2006 03 23 | 691 | 0.1− | 0.1+ | 2006 04 20 | 699 | 0.7+ | 0.9− |
| 1999 05 13 | 704 | 1.8− | 0.7− | 2006 03 23 | 691 | 0.2− | 0.0 | 2006 04 20 | 699 | 0.8+ | 1.0+ |
| 2002 02 10 | 704 | 0.5− | 0.2+ | 2006 03 23 | 691 | 0.2− | 0.1+ | 2006 04 20 | 699 | 1.0− | 0.1− |
| 2002 02 10 | 704 | 0.2+ | 0.3− | 2006 03 24 | 704 | 0.2+ | 0.4− | 2006 04 20 | 703 | 0.8− | 0.3+ |
| 2002 02 10 | 704 | 0.4+ | 0.7− | 2006 03 24 | 704 | 1.0+ | 0.3+ | 2006 04 20 | 703 | 0.5− | 0.0 |
| 2002 02 10 | 704 | 0.1+ | 0.5− | 2006 03 24 | 704 | 0.5− | 0.8+ | 2006 04 20 | 703 | 0.0 | 0.3+ |
| 2002 02 12 | 704 | 0.5− | 0.6+ | 2006 03 24 | 704 | 0.1+ | 1.1+ | 2006 04 20 | 703 | 0.7+ | 0.7+ |
| 2002 02 12 | 704 | 1.0− | 0.8− | 2006 03 24 | 704 | 0.1+ | 0.0 | 2006 04 23 | 691 | 0.0 | 0.1− |
| 2002 02 12 | 704 | 1.2− | 0.4− | 2006 03 25 | 691 | 0.1− | 0.0 | 2006 04 23 | 691 | 0.0 | 0.0 |
| 2002 02 12 | 704 | 1.0− | 1.4+ | 2006 03 25 | 691 | 0.2− | 0.2− | 2006 04 23 | 691 | 0.3+ | 0.4+ |
| 2002 02 12 | 704 | 0.1− | 0.5+ | 2006 03 25 | 691 | 0.1− | 0.2− | 2006 04 23 | 185 | 0.7− | 0.9− |
| 2003 07 10 | 608 | 0.2− | 0.5− | 2006 03 26 | 699 | 0.2− | 0.3− | 2006 04 23 | 185 | 0.5− | 0.4− |
| 2003 07 10 | 608 | 0.7− | 0.5− | 2006 03 26 | 699 | 0.3− | 0.1− | 2006 04 23 | 185 | 1.0− | 0.6− |
| 2003 07 10 | 608 | 0.1− | 0.3− | 2006 03 26 | 699 | 0.4− | 0.6− | 2006 04 25 | 704 | 1.0+ | 0.0 |
| 2003 07 23 | 704 | 0.4− | 0.1+ | 2006 03 26 | 699 | 0.7− | 0.1+ | 2006 04 25 | 704 | 0.1− | 0.2− |
| 2003 07 23 | 704 | 0.2+ | 0.3+ | 2006 03 29 | 691 | 0.2− | 0.1− | 2006 04 25 | 704 | 0.2+ | 0.6− |
| 2003 07 23 | 704 | 0.2+ | 0.2+ | 2006 03 29 | 691 | 0.0 | 0.1− | 2006 04 26 | 691 | 0.4+ | 0.1+ |
| 2003 07 23 | 704 | 0.7+ | 0.7+ | 2006 03 29 | 691 | 0.0 | 0.1− | 2006 04 26 | 691 | 0.2+ | 0.2+ |
| 2003 08 04 | 704 | 0.8− | 0.6+ | 2006 03 29 | 704 | 0.4+ | 0.5− | 2006 04 26 | 699 | 0.4+ | 1.3+ |
| 2003 08 04 | 704 | 0.7− | 0.1− | 2006 03 29 | 704 | 0.2− | 0.2− | 2006 04 26 | 691 | 0.2+ | 0.1+ |
| 2003 08 04 | 704 | 0.3+ | 0.9+ | 2006 03 29 | 704 | 0.9+ | 0.2+ | 2006 04 26 | 699 | 0.1+ | 0.0 |
| 2004 11 10 | 691 | 0.3+ | 0.2+ | 2006 03 29 | 704 | 1.0+ | 0.4+ | 2006 04 26 | 699 | 0.1− | 0.0 |
| 2004 11 10 | 691 | 0.2− | 0.4+ | 2006 03 31 | 704 | 0.9+ | 0.5− | 2006 04 26 | 699 | 1.0− | 0.8+ |
| 2004 11 10 | 691 | 0.3+ | 0.4+ | 2006 03 31 | 704 | 0.8+ | 1.3+ | | | | |
| 2004 12 20 | G96 | 0.3+ | 0.2− | 2006 03 31 | 704 | 1.5+ | 0.1+ | | | | |

**(145527)∗ 2006 FV$_{19}$ = 2001 BK$_{80}$**

Discovered 2006 Mar. 23 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 101521)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.36446 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22538026 | $\omega$ | 351.22879 | | −0.97586330 | | +0.20572605 |
| $a$ | 2.6741892 | $\Omega$ | 201.07991 | | −0.18596905 | | −0.95873196 |
| $e$ | 0.1296300 | $i$ | 11.75329 | | −0.11448288 | | −0.19623922 |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 608 | 0.8− | 0.3− | 2006 03 23 | G96 | 0.4− | 0.1− | 2006 04 24 | 704 | 0.1+ | 0.2− |
| 2001 01 03 | 608 | 0.7− | 0.5− | 2006 03 23 | G96 | 0.8− | 0.1+ | 2006 04 24 | 699 | 0.6− | 0.8+ |
| 2001 01 03 | 608 | 1.1− | 0.4− | 2006 03 25 | 691 | 0.3+ | 0.1+ | 2006 04 24 | 704 | 1.0+ | 0.8+ |
| 2001 01 20 | 608 | 0.1− | 0.0 | 2006 03 25 | 691 | 0.2+ | 0.1+ | 2006 04 24 | 704 | 0.7+ | 0.9− |
| 2001 01 20 | 608 | 0.3− | 0.1+ | 2006 03 25 | 691 | 0.0 | 0.0 | 2006 04 24 | 699 | 0.3+ | 0.4+ |
| 2001 01 20 | 608 | 0.5− | 0.2− | 2006 03 26 | G96 | 0.6− | 0.0 | 2006 04 24 | 704 | 0.3+ | 0.9− |
| 2001 01 26 | 704 | 1.0+ | 0.7+ | 2006 03 26 | G96 | 0.5− | 0.1+ | 2006 04 27 | 704 | 0.7+ | 0.1+ |
| 2001 01 26 | 704 | 1.5+ | 0.0 | 2006 03 26 | G96 | 0.4− | 0.1+ | 2006 04 27 | 704 | 0.7− | 0.2+ |
| 2001 01 26 | 704 | 0.8+ | 0.8+ | 2006 03 26 | G96 | 0.2− | 0.1− | 2006 04 27 | 704 | 0.0 | 0.7− |
| 2002 07 09 | 704 | 0.5+ | 0.1− | 2006 04 09 | 691 | 0.3+ | 0.0 | 2006 04 27 | 704 | 0.1+ | 0.3+ |
| 2002 07 09 | 704 | 0.1+ | 0.7− | 2006 04 09 | 691 | 0.4+ | 0.4+ | 2006 04 30 | 704 | 0.5− | 0.1+ |
| 2002 07 09 | 704 | 0.6+ | 1.3− | 2006 04 09 | 691 | 0.2+ | 0.2+ | 2006 04 30 | 704 | 0.0 | 0.3− |
| 2002 07 09 | 704 | 0.5− | 0.3+ | 2006 04 18 | 644 | 0.2− | 0.2− | 2006 04 30 | 704 | 0.5− | 0.7− |
| 2002 07 09 | 704 | 0.4− | 0.2+ | 2006 04 18 | 644 | 0.1+ | 0.2− | 2006 04 30 | 704 | 0.5− | 0.4− |
| 2003 09 21 | 644 | 0.2+ | 0.0 | 2006 04 18 | 644 | 0.1+ | 0.2− | 2006 05 16 | 644 | 0.4− | 0.4− |
| 2003 09 21 | 644 | 0.1+ | 0.6+ | 2006 04 19 | 699 | 0.3+ | 0.3+ | 2006 05 16 | 644 | 0.1+ | 0.5− |
| 2003 09 21 | 644 | 0.1+ | 0.6+ | 2006 04 19 | 699 | 0.3+ | 0.3+ | 2006 05 16 | 644 | 0.3+ | 0.4− |
| 2003 10 20 | 691 | 0.2− | 0.2+ | 2006 04 19 | 699 | 0.5+ | 0.1+ | 2006 05 20 | 703 | (1.0+ | 2.0−) |
| 2003 10 20 | 691 | 0.0 | 0.0 | 2006 04 19 | 699 | 0.6+ | 0.0 | 2006 05 20 | 703 | 0.2− | 0.1− |
| 2003 10 20 | 691 | 0.6− | 0.2+ | 2006 04 23 | 704 | 0.4+ | 0.4+ | 2006 05 20 | 703 | 0.3− | 0.2+ |
| 2003 11 16 | 645 | 0.0 | 0.0 | 2006 04 23 | 704 | 0.3+ | 0.6+ | 2006 05 20 | 703 | 1.1− | 1.1+ |
| 2003 11 16 | 645 | 0.1− | 0.0 | 2006 04 23 | 704 | 0.3+ | 0.0 | 2006 05 26 | 703 | 1.2− | 0.3− |
| 2003 11 19 | 645 | 0.2+ | 0.0 | 2006 04 23 | 704 | 0.1+ | 0.6+ | 2006 05 26 | 703 | 0.4− | 0.3− |
| 2003 11 19 | 645 | 0.1+ | 0.1+ | 2006 04 23 | 704 | 0.8− | 1.2+ | 2006 05 26 | 703 | 0.7− | 1.0+ |
| 2006 03 23 | G96 | 0.0 | 0.2− | 2006 04 24 | 699 | 0.1+ | 0.2+ | 2006 05 26 | 703 | 1.6− | 0.7− |
| 2006 03 23 | G96 | 0.1+ | 0.6− | 2006 04 24 | 704 | 0.5+ | 0.2+ | | | | |

**(145528)∗ 2006 FB$_{29}$ = 2005 BL$_{8}$**

Discovered 2006 Mar. 24 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 101531)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.71751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15740439 | $\omega$ | 239.86155 | | −0.60928012 | +0.79214680 | |
| $a$ | 3.3972290 | $\Omega$ | 352.29622 | | −0.60413668 | −0.49296291 | |
| $e$ | 0.0564608 | $i$ | 15.48664 | | −0.51361133 | −0.35984860 | |
| $P$ | 6.26 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.1+ | 0.3+ | 2005 01 17 | 704 | 0.2+ | 1.2+ | 2006 03 24 | 703 | 0.6− | 0.5− |
| 2001 08 24 | 644 | 0.4− | 0.9+ | 2005 01 17 | 704 | 0.1− | 0.1+ | 2006 03 27 | E12 | 0.5+ | 0.4− |
| 2001 08 24 | 644 | 0.4− | 0.6+ | 2005 01 17 | 704 | 0.3+ | 0.1− | 2006 03 27 | E12 | 0.4− | 0.3− |
| 2002 09 06 | 704 | 0.2− | 0.4− | 2005 03 01 | 703 | 0.3+ | 0.4− | 2006 03 27 | E12 | 0.3− | 0.4− |
| 2002 09 06 | 704 | 0.1+ | 1.3− | 2005 03 01 | 703 | 0.7+ | 0.0 | 2006 03 27 | E12 | 0.3+ | 0.1− |
| 2002 09 06 | 704 | 0.4+ | 0.8− | 2005 03 01 | 703 | 0.9+ | 0.2+ | 2006 04 29 | E12 | 0.5+ | 0.4− |
| 2002 09 06 | 704 | 0.6− | 1.6− | 2005 03 01 | 703 | 0.2+ | 0.3− | 2006 04 29 | E12 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.2+ | 0.6+ | 2005 03 09 | 703 | 0.3− | 0.6+ | 2006 04 29 | E12 | 0.5+ | 0.8− |
| 2002 10 04 | 704 | 0.1+ | 0.1− | 2005 03 09 | 703 | 0.4+ | 0.6− | 2006 04 29 | E12 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 0.0 | 2005 03 09 | 703 | 0.6− | 0.4+ | 2006 05 20 | 699 | 0.7+ | 0.5+ |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2005 03 09 | 703 | 0.7− | 0.5− | 2006 05 20 | 699 | 1.1− | 0.1− |
| 2002 10 12 | 704 | 1.0+ | 1.0+ | 2006 03 11 | E12 | 0.6− | 0.2+ | 2006 05 20 | 699 | 0.6− | 1.9+ |
| 2002 10 12 | 704 | 0.4− | 0.3− | 2006 03 11 | E12 | 0.4− | 0.0 | 2006 05 20 | 699 | 0.3+ | 1.4− |
| 2002 10 12 | 704 | 0.2− | 0.4+ | 2006 03 11 | E12 | 0.2+ | 0.4+ | 2006 05 25 | E12 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | 0.1+ | 0.2+ | 2006 03 11 | E12 | 0.1− | 0.2+ | 2006 05 25 | E12 | 0.1+ | 0.1− |
| 2005 01 16 | 703 | 0.1− | 0.1− | 2006 03 24 | 703 | 0.7− | 0.4− | 2006 05 25 | E12 | 0.4+ | 0.3+ |
| 2005 01 16 | 703 | 0.3− | 0.0 | 2006 03 24 | 703 | 0.0 | 0.4+ | 2006 05 25 | E12 | 0.2− | 0.2+ |
| 2005 01 16 | 703 | 0.3− | 0.6+ | 2006 03 24 | 703 | 0.2+ | 0.4− | | | | |

**(145529)∗ 2006 FQ$_{31}$**

Discovered 2006 Mar. 25 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.95394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17903046 | $\omega$ | 289.79846 | | −0.54618832 | −0.83723769 | |
| $a$ | 3.1178228 | $\Omega$ | 193.40656 | | +0.80515079 | −0.51593864 | |
| $e$ | 0.2016200 | $i$ | 6.60556 | | +0.23110718 | −0.18121911 | |
| $P$ | 5.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.1+ | 0.5+ | 2003 10 23 | 645 | 0.1− | 0.1+ | 2006 04 09 | 691 | 0.7+ | 0.6+ |
| 2000 02 06 | 704 | 0.1+ | 1.3+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 04 09 | 691 | 0.3+ | 0.3+ |
| 2000 02 06 | 704 | 0.2− | 0.8+ | 2005 01 13 | 703 | 0.0 | 0.6+ | 2006 04 09 | 691 | 0.5+ | 0.5+ |
| 2000 03 27 | 699 | 0.1− | 0.4− | 2005 01 13 | 703 | 0.3+ | 1.4+ | 2006 05 01 | 703 | 1.0− | 0.1+ |
| 2000 03 27 | 699 | 0.3+ | 0.1+ | 2005 01 13 | 703 | 0.2− | 1.0+ | 2006 05 01 | 703 | 0.3− | 0.2+ |
| 2000 03 27 | 699 | 0.2+ | 0.2+ | 2005 01 13 | 703 | 0.2+ | 1.0+ | 2006 05 01 | 703 | 0.5− | 0.3+ |
| 2000 03 27 | 699 | 0.7+ | 0.7+ | 2006 01 09 | 691 | 0.1+ | 0.3+ | 2006 05 01 | 703 | 0.4− | 0.4− |
| 2003 09 29 | 691 | 0.1+ | 0.2+ | 2006 01 09 | 691 | 0.3− | 0.3+ | 2006 05 05 | G96 | 0.4− | 0.2+ |
| 2003 09 29 | 691 | 0.1− | 0.5+ | 2006 01 09 | 691 | 0.1− | 0.4+ | 2006 05 05 | G96 | 0.6− | 0.3− |
| 2003 09 29 | 691 | 0.2− | 0.5+ | 2006 03 25 | 691 | 0.1− | 0.1+ | 2006 05 05 | G96 | 0.6− | 0.1− |
| 2003 09 29 | 645 | 0.0 | 0.1+ | 2006 03 25 | 691 | 0.2+ | 0.0 | 2006 05 05 | G96 | 0.3− | 0.3− |
| 2003 09 29 | 645 | 0.1+ | 0.1+ | 2006 03 25 | 691 | 0.1+ | 0.1+ | 2006 05 06 | 691 | 0.3+ | 0.6+ |
| 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 26 | G96 | 0.3+ | 0.2+ | 2006 05 06 | 691 | 0.0 | 0.4+ |
| 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 26 | G96 | 0.0 | 0.2+ | 2006 05 06 | 691 | 0.1− | 0.1+ |
| 2003 10 22 | 645 | 0.1− | 0.0 | 2006 03 26 | G96 | 0.1− | 0.2− | | | | |
| 2003 10 22 | 645 | 0.1− | 0.0 | 2006 03 26 | G96 | 0.2− | 0.2+ | | | | |

**(145530)∗ 2006 FW$_{32}$ = 1999 XN$_{138}$**

Discovered 2006 Mar. 25 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 101534)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.88588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23169089 | $\omega$ | 212.80970 | | +0.05174511 | +0.99722626 | |
| $a$ | 2.6254077 | $\Omega$ | 60.20772 | | −0.90245294 | +0.06963472 | |
| $e$ | 0.1179138 | $i$ | 3.53440 | | −0.42766942 | −0.02628310 | |
| $P$ | 4.25 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 691 | 0.6+ | 0.6− | 2003 10 18 | 691 | 0.1+ | 0.4+ | 2006 04 07 | 691 | 0.1+ | 0.5+ |
| 1999 10 08 | 691 | 0.6+ | 0.1+ | 2003 10 18 | 691 | 0.1− | 0.5+ | 2006 04 07 | 691 | 0.2+ | 0.1+ |
| 1999 10 08 | 691 | 0.5+ | 0.2+ | 2003 10 24 | 704 | 0.2+ | 0.9+ | 2006 04 07 | 691 | 0.3+ | 0.6+ |
| 1999 12 04 | 691 | 0.7− | 1.7+ | 2003 10 24 | 704 | 0.7− | 0.6+ | 2006 04 26 | 691 | 0.2+ | 0.5+ |
| 1999 12 04 | 691 | 0.0 | 1.4+ | 2003 10 24 | 704 | (0.9− | 2.2+) | 2006 04 26 | 691 | 0.2+ | 0.3+ |
| 1999 12 04 | 691 | 1.7− | 0.7− | 2005 01 18 | 691 | 0.2+ | 0.0 | 2006 04 26 | 691 | 0.2+ | 0.4+ |
| 1999 12 07 | 691 | 0.3− | 0.1− | 2005 01 18 | 691 | 0.0 | 0.2− | 2006 04 30 | 699 | 0.6+ | 0.3+ |
| 1999 12 07 | 691 | 0.2+ | 0.4− | 2005 01 18 | 691 | 0.2− | 0.0 | 2006 04 30 | 699 | 1.1+ | 0.6+ |
| 1999 12 07 | 691 | 0.0 | 0.1− | 2006 03 25 | 691 | 0.3− | 0.3+ | 2006 04 30 | 699 | 0.4+ | 0.5+ |
| 2001 05 20 | 807 | 0.7+ | 0.2− | 2006 03 25 | 691 | 0.2+ | 0.1+ | 2006 04 30 | 699 | 0.2+ | 1.2+ |
| 2001 05 21 | 807 | 0.5+ | 0.2− | 2006 03 25 | 691 | 0.3+ | 0.3+ | 2006 05 16 | 644 | 0.1+ | 0.3+ |
| 2003 09 19 | 691 | 0.4− | 0.3+ | 2006 03 26 | G96 | 0.2− | 0.4− | 2006 05 16 | 644 | 0.0 | 0.0 |
| 2003 09 19 | 691 | 0.1− | 0.5+ | 2006 03 26 | G96 | 0.3− | 0.2− | 2006 05 16 | 644 | 0.2− | 0.5+ |
| 2003 09 19 | 691 | 0.2− | 0.4+ | 2006 03 26 | G96 | 0.2+ | 0.1− | 2006 05 24 | G96 | 0.5− | 0.1+ |
| 2003 09 29 | 691 | 0.1− | 0.3+ | 2006 03 26 | G96 | 0.3− | 0.2− | 2006 05 24 | G96 | 0.6+ | 0.1+ |
| 2003 09 29 | 691 | 0.0 | 0.3+ | 2006 04 02 | 691 | 0.0 | 0.3+ | 2006 05 24 | G96 | 0.5− | 0.1+ |
| 2003 09 29 | 691 | 0.3− | 0.2+ | 2006 04 02 | 691 | 0.0 | 0.4+ | 2006 05 24 | G96 | 0.1+ | 0.0 |
| 2003 10 18 | 691 | 0.1− | 0.3+ | 2006 04 02 | 691 | 0.1+ | 0.2+ | | | | |

**(145531)∗ 2006 FF$_{33}$ = 1995 XD$_{4}$ = 2003 TM$_{43}$**

Discovered 2006 Mar. 25 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 101535)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.45177 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23869833 | $\omega$ | 84.54802 | | +0.41929806 | +0.90604416 | |
| $a$ | 2.5737704 | $\Omega$ | 210.44598 | | −0.87123441 | +0.38387119 | |
| $e$ | 0.1690162 | $i$ | 6.48273 | | −0.25522486 | +0.17812046 | |
| $P$ | 4.13 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 14 | 691 | 0.1− | 0.2− | 2002 05 17 | 644 | 0.2− | 0.1− | 2006 03 25 | G96 | 0.7− | 0.7+ |
| 1995 12 14 | 691 | 0.5− | 0.2+ | 2002 06 05 | 699 | 0.6+ | 0.2+ | 2006 03 25 | G96 | 0.9− | 0.7+ |
| 1995 12 14 | 691 | 0.2+ | 0.1− | 2002 06 05 | 699 | 0.6− | 0.4+ | 2006 03 25 | G96 | 0.0 | 0.4+ |
| 1995 12 26 | 691 | 0.2− | 0.1+ | 2002 06 05 | 699 | 1.4+ | 0.2+ | 2006 03 25 | G96 | 0.4− | 0.2− |
| 1995 12 26 | 691 | 0.1− | 0.1+ | 2002 06 05 | 699 | 0.4− | 0.4+ | 2006 03 26 | 691 | 0.3+ | 0.2+ |
| 1995 12 26 | 691 | 0.3− | 0.1+ | 2003 10 02 | 691 | 0.1− | 0.3+ | 2006 03 26 | 691 | 0.0 | 0.1+ |
| 1999 10 08 | 691 | 0.7+ | 0.0 | 2003 10 02 | 691 | 0.0 | 0.1+ | 2006 03 26 | 691 | 0.3+ | 0.4+ |
| 1999 10 08 | 691 | 0.4+ | 0.0 | 2003 10 02 | 691 | 0.3− | 0.3+ | 2006 04 19 | G96 | 0.3− | 0.3− |
| 1999 10 08 | 691 | 0.6+ | 0.0 | 2003 10 21 | 691 | 0.0 | 0.2+ | 2006 04 19 | G96 | 0.6− | 0.1+ |
| 2002 05 12 | 704 | 0.3− | 0.5+ | 2003 10 21 | 691 | 0.5− | 0.4+ | 2006 04 19 | G96 | 0.3− | 0.0 |
| 2002 05 12 | 704 | 0.4+ | 0.1+ | 2003 10 21 | 691 | 0.1− | 0.6+ | 2006 04 19 | G96 | 0.7− | 0.3+ |
| 2002 05 12 | 704 | 0.2+ | 0.3+ | 2003 10 28 | 704 | 0.3+ | 0.5+ | 2006 04 26 | 691 | 0.1+ | 0.2+ |
| 2002 05 17 | 644 | 0.2− | 0.1+ | 2003 10 28 | 704 | 0.5− | 0.3+ | 2006 04 26 | 691 | 0.4+ | 0.2+ |
| 2002 05 17 | 644 | 0.4− | 0.1+ | 2003 10 28 | 704 | 1.1− | 0.8+ | 2006 04 26 | 691 | 0.2+ | 0.3+ |

**(145532)∗ 2006 FD$_{42}$ = 2005 GE$_{41}$**

Discovered 2006 Mar. 26 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 101546)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.63472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25174920 | $\omega$ | 199.26979 | | +0.94761575 | −0.31941124 | |
| $a$ | 2.4840328 | $\Omega$ | 179.35536 | | +0.30278597 | +0.89736323 | |
| $e$ | 0.2286978 | $i$ | 4.71439 | | +0.10171062 | +0.30449251 | |
| $P$ | 3.92 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 704 | 0.5+ | 0.0 | 2003 09 27 | 704 | 0.1+ | 0.7+ | 2005 04 06 | G96 | 0.2− | 0.2+ |
| 2001 02 02 | 704 | 0.4− | 1.1+ | 2003 09 27 | 704 | 0.6− | 0.8+ | 2005 04 06 | G96 | 0.2− | 0.2+ |
| 2001 02 02 | 704 | 0.5+ | 0.7+ | 2003 09 27 | 704 | 0.5− | 1.4+ | 2005 04 06 | G96 | 0.1+ | 0.3+ |
| 2001 02 02 | 704 | 0.3+ | 0.2+ | 2005 01 13 | 703 | 0.1+ | 0.1− | 2005 04 06 | G96 | 0.0 | 0.1− |
| 2001 02 02 | 704 | 0.4− | 0.3+ | 2005 01 13 | 703 | 0.3+ | 1.0+ | 2006 03 26 | G96 | 0.3− | 0.1+ |
| 2003 07 01 | 704 | 0.1+ | 0.4− | 2005 01 13 | 703 | 0.1− | 0.0 | 2006 03 26 | G96 | 0.1− | 0.3− |
| 2003 07 01 | 704 | 0.2− | 0.4− | 2005 01 13 | 703 | 0.4− | 0.8+ | 2006 03 26 | G96 | 0.6− | 0.0 |
| 2003 07 01 | 704 | 0.4− | 0.8+ | 2005 01 13 | 691 | 0.4+ | 0.3+ | 2006 03 26 | G96 | 0.4− | 0.1+ |
| 2003 07 01 | 704 | 0.4+ | 0.1+ | 2005 01 13 | 691 | 0.1+ | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.2+ |
| 2003 07 01 | 704 | 0.5+ | 0.4− | 2005 01 13 | 691 | 0.1+ | 0.2+ | 2006 04 02 | 691 | 0.2+ | 0.0 |
| 2003 07 08 | 691 | 0.2+ | 0.1+ | 2005 02 09 | 704 | 0.4− | 0.0 | 2006 04 02 | 691 | 0.0 | 0.1+ |
| 2003 07 08 | 691 | 0.2+ | 0.1+ | 2005 02 09 | 704 | 0.3+ | 0.0 | 2006 04 07 | 691 | 0.1− | 0.2− |
| 2003 07 08 | 691 | 0.2+ | 0.1+ | 2005 02 09 | 704 | 0.8− | 0.1+ | 2006 04 07 | 691 | 0.0 | 0.3− |
| 2003 08 05 | 704 | 0.9− | 0.4+ | 2005 02 09 | 704 | (0.9+ | 2.3−) | 2006 04 07 | 691 | 0.3+ | 0.2− |
| 2003 08 05 | 704 | 0.1− | 0.4+ | 2005 03 13 | G96 | 0.1− | 0.2− | 2006 04 24 | 691 | 0.0 | 0.1+ |
| 2003 08 05 | 704 | 0.4− | 0.3+ | 2005 03 13 | G96 | 0.1+ | 0.2+ | 2006 04 24 | 691 | 0.3− | 0.0 |
| 2003 08 05 | 704 | 0.4− | 0.8+ | 2005 03 13 | G96 | 0.1− | 0.1− | 2006 04 24 | 691 | 0.4+ | 0.2− |
| 2003 08 05 | 704 | 0.8− | 0.2+ | 2005 03 13 | G96 | 0.2− | 0.0 | 2006 04 27 | 691 | 0.2− | 0.4+ |
| 2003 08 24 | 704 | 0.1− | 0.5+ | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 04 27 | 691 | 0.0 | 0.2+ |
| 2003 08 24 | 704 | 0.7− | 0.8+ | 2005 04 05 | G96 | 0.1− | 0.2− | 2006 04 27 | 691 | 0.1+ | 0.1+ |
| 2003 08 24 | 704 | 0.0 | 0.1+ | 2005 04 05 | G96 | 0.0 | 0.2+ | | | | |
| 2003 09 27 | 704 | 0.6+ | 0.7+ | 2005 04 05 | G96 | 0.3+ | 1.0+ | | | | |

**(145533)∗ 2006 FE$_{51}$ = 2003 UO$_{271}$**

Discovered 2006 Mar. 24 by the Catalina Sky Survey.
Id. T. B. Spahr (*MPO* 101558)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.44928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21258849 | $\omega$ | 22.57784 | | −0.56769768 | +0.80732609 | |
| $a$ | 2.7804145 | $\Omega$ | 213.47236 | | −0.79286789 | −0.58884053 | |
| $e$ | 0.1952740 | $i$ | 16.98024 | | −0.22153972 | +0.03861880 | |
| $P$ | 4.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 608 | 0.8− | 0.1− | 2006 03 24 | 703 | 1.8− | 0.1+ | 2006 04 25 | 704 | 1.8+ | 0.8+ |
| 2001 02 01 | 608 | 0.8− | 0.1− | 2006 03 24 | 703 | 1.6− | 0.8− | 2006 04 25 | 704 | 0.0 | 0.4+ |
| 2001 02 01 | 608 | 0.3− | 0.9+ | 2006 03 24 | 703 | 0.9− | 0.0 | 2006 04 25 | 704 | 1.3+ | 0.8− |
| 2001 03 19 | 699 | 0.6+ | 1.2+ | 2006 03 24 | 703 | 1.7− | 1.3− | 2006 04 25 | 704 | 0.6− | 0.4− |
| 2001 03 19 | 699 | 0.5+ | 0.5+ | 2006 04 06 | 704 | 0.4+ | 0.4+ | 2006 04 28 | 704 | 0.9+ | 0.4− |
| 2001 03 19 | 699 | 0.9+ | 0.5+ | 2006 04 06 | 704 | 0.7+ | 0.5− | 2006 04 28 | 704 | 0.2+ | 0.6+ |
| 2001 03 19 | 699 | 1.4+ | 0.7+ | 2006 04 06 | 704 | 0.0 | 0.1+ | 2006 04 28 | 704 | 1.1+ | 1.1+ |
| 2001 03 27 | 608 | 0.1+ | 0.1− | 2006 04 06 | 704 | 0.8+ | 1.0+ | 2006 04 28 | 704 | 0.9+ | 0.6− |
| 2001 03 27 | 608 | 0.4− | 0.3+ | 2006 04 06 | 704 | 0.8+ | 0.1+ | 2006 04 30 | 699 | 0.2+ | 0.2+ |
| 2001 03 27 | 608 | 0.2− | 0.6+ | 2006 04 18 | 699 | 0.3+ | 0.2+ | 2006 04 30 | 699 | 0.0 | 0.7+ |
| 2002 06 08 | 644 | 0.3− | 0.6+ | 2006 04 18 | 699 | 0.1− | 0.3+ | 2006 04 30 | 699 | 0.2+ | 0.5+ |
| 2002 06 08 | 644 | 0.4− | 1.2+ | 2006 04 18 | 699 | 0.3− | 0.1+ | 2006 04 30 | 699 | 0.6+ | 0.8+ |
| 2002 06 08 | 644 | 0.1+ | 0.5+ | 2006 04 18 | 699 | 0.1− | 0.3+ | 2006 05 01 | 704 | 0.4+ | 0.9+ |
| 2002 07 18 | 644 | 0.2− | 0.4+ | 2006 04 20 | 703 | 0.6− | 0.6+ | 2006 05 01 | 704 | 0.1− | 0.3+ |
| 2002 07 18 | 644 | 0.4− | 0.4+ | 2006 04 20 | 703 | 1.8− | 0.0 | 2006 05 01 | 704 | 0.5+ | 0.0 |
| 2002 07 18 | 644 | 0.0 | 0.3+ | 2006 04 20 | 703 | 0.6− | 1.2− | 2006 05 01 | 704 | 0.2+ | 0.1− |
| 2002 07 27 | 644 | 0.4+ | 0.1+ | 2006 04 20 | 703 | 0.4− | 0.3− | 2006 05 01 | 704 | 0.3+ | 0.2+ |
| 2002 07 27 | 644 | 0.2+ | 0.3+ | 2006 04 21 | 704 | 1.4+ | 0.2+ | 2006 05 14 | 644 | 0.2− | 0.0 |
| 2002 07 27 | 644 | 0.1− | 0.4+ | 2006 04 21 | 704 | 0.7+ | 1.0+ | 2006 05 14 | 644 | 0.1− | 0.0 |
| 2003 10 21 | 691 | 0.2+ | 0.6+ | 2006 04 21 | 704 | 0.5+ | 0.6+ | 2006 05 14 | 644 | 0.1− | 0.0 |
| 2003 10 21 | 691 | 0.3+ | 0.4+ | 2006 04 21 | 704 | 0.5+ | 0.9+ | 2006 05 16 | 644 | 0.3− | 0.3− |
| 2003 10 21 | 691 | 0.1+ | 0.4+ | 2006 04 24 | 704 | 0.2− | 0.9− | 2006 05 16 | 644 | 0.3− | 0.0 |
| 2003 10 28 | 704 | 0.6− | 0.3− | 2006 04 24 | 704 | 0.4− | 0.3+ | 2006 05 16 | 644 | 0.2− | 0.0 |
| 2003 10 28 | 704 | 0.3− | 1.3+ | 2006 04 24 | 704 | 0.9− | 0.1+ | 2006 05 19 | 699 | 0.4+ | 0.1+ |
| 2003 10 28 | 704 | 0.8− | 1.8+ | 2006 04 24 | 699 | 0.1− | 0.4+ | 2006 05 19 | 699 | 0.2+ | 0.1+ |
| 2003 10 28 | 704 | 0.0 | 1.1+ | 2006 04 24 | 704 | 0.1+ | 0.5+ | 2006 05 19 | 699 | 0.1+ | 0.3+ |
| 2003 11 01 | 704 | 0.2− | 0.1+ | 2006 04 24 | 704 | 0.6− | 0.0 | 2006 05 19 | 699 | 0.6+ | 0.3+ |
| 2003 11 01 | 704 | 0.2− | 0.3+ | 2006 04 24 | 699 | 0.0 | 0.2− | 2006 05 26 | G96 | 0.2− | 0.0 |
| 2003 11 01 | 704 | 0.0 | 1.1+ | 2006 04 24 | 699 | 0.1+ | 0.6+ | 2006 05 26 | G96 | 0.9− | 0.2− |
| 2003 11 01 | 704 | 0.9− | 1.0+ | 2006 04 24 | 699 | 0.6− | 0.7+ | 2006 05 26 | G96 | 0.5− | 0.6− |

**(145534)∗ 2006 GJ**

Discovered 2006 Apr. 1 by Q.-z. Ye at Lulin Observatory.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.73640 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22120595 | $\omega$ | 187.56617 | | +0.39779876 | +0.91158804 | |
| $a$ | 2.7077268 | $\Omega$ | 105.92063 | | −0.83601328 | +0.40673570 | |
| $e$ | 0.1401166 | $i$ | 6.19341 | | −0.37793906 | +0.05977723 | |
| $P$ | 4.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 25 | 691 | 0.8− | 0.0 | 2001 03 29 | 608 | 0.1+ | 0.1− | 2006 04 06 | 703 | 0.5+ | 0.3− |
| 1992 02 25 | 691 | 1.0− | 0.5− | 2001 04 14 | 608 | 0.4− | 0.8− | 2006 04 18 | 703 | 1.0− | 0.3+ |
| 1992 02 25 | 691 | 0.7− | 0.6− | 2003 10 18 | 644 | 0.6− | 0.1− | 2006 04 18 | 703 | 0.4+ | 0.9+ |
| 1995 12 20 | 566 | (0.0 | 2.2−) | 2003 10 18 | 644 | 0.3− | 0.1+ | 2006 04 18 | 703 | 1.3− | 0.0 |
| 1995 12 20 | 566 | 0.8− | 0.3− | 2003 10 18 | 644 | 0.1− | 0.1+ | 2006 04 18 | 644 | 0.4+ | 0.2+ |
| 1995 12 20 | 566 | 0.5− | 0.2+ | 2003 10 18 | 644 | 0.2− | 0.2+ | 2006 04 18 | 703 | 1.3+ | 0.4+ |
| 1995 12 21 | 566 | 1.5+ | 1.0− | 2003 10 18 | 644 | 0.1− | 0.1− | 2006 04 18 | 644 | 0.7+ | 0.1− |
| 1995 12 21 | 566 | 2.4+ | 1.0− | 2003 10 18 | 644 | 0.2− | 0.3+ | 2006 04 18 | 644 | 0.3+ | 0.1+ |
| 1995 12 21 | 566 | 3.0+ | 0.8− | 2003 10 29 | 691 | 0.2− | 0.4+ | 2006 04 27 | 703 | 0.3+ | 0.0 |
| 1995 12 21 | 566 | 2.9+ | 1.1− | 2003 10 29 | 691 | 0.5− | 0.1+ | 2006 04 27 | 703 | 0.3− | 0.3+ |
| 1995 12 24 | 566 | 0.6− | 0.8+ | 2003 10 29 | 691 | 0.5− | 0.3+ | 2006 04 27 | 703 | 0.4+ | 0.2+ |
| 1995 12 24 | 566 | 1.9− | 1.3+ | 2003 11 01 | 704 | 0.7+ | 0.3− | 2006 04 27 | 703 | 0.6− | 0.3− |
| 1995 12 24 | 566 | 0.0 | 1.1+ | 2003 11 01 | 704 | 0.6− | 0.7+ | 2006 05 05 | G96 | 0.5+ | 0.2+ |
| 1998 08 17 | 704 | 0.2+ | 0.3− | 2003 11 01 | 704 | (2.4− | 2.4+) | 2006 05 05 | G96 | 0.3− | 0.1− |
| 1998 08 17 | 704 | 0.3+ | 0.0 | 2004 12 16 | D35 | 0.8− | 0.0 | 2006 05 05 | G96 | 0.0 | 0.0 |
| 1998 08 17 | 704 | 0.6+ | 0.5+ | 2004 12 16 | D35 | 0.8− | 1.1+ | 2006 05 05 | G96 | 0.3+ | 0.1+ |
| 1998 08 17 | 704 | (5.8− | 0.8+) | 2006 03 31 | D35 | 0.5+ | 0.9+ | 2006 05 08 | G96 | 0.4− | 0.3+ |
| 1998 08 22 | 327 | 0.6+ | 0.1− | 2006 03 31 | D35 | 1.1− | 1.3+ | 2006 05 08 | G96 | 0.0 | 0.1+ |
| 1998 08 22 | 327 | 1.0+ | 0.2+ | 2006 03 31 | D35 | 1.0− | 0.7+ | 2006 05 08 | G96 | 0.0 | 0.0 |
| 2001 02 17 | 704 | 0.2− | 0.3− | 2006 04 01 | D35 | 0.5− | 0.5+ | 2006 05 08 | G96 | 0.2+ | 0.1+ |
| 2001 02 17 | 704 | 0.6− | 0.3+ | 2006 04 01 | D35 | 0.6− | 0.5+ | 2006 05 26 | 703 | 0.7+ | 0.1+ |
| 2001 02 17 | 704 | 0.4+ | 0.9+ | 2006 04 01 | D35 | 0.4− | 0.3+ | 2006 05 26 | 703 | 0.8− | 0.1− |
| 2001 03 13 | 608 | (5.2+ | 0.8+) | 2006 04 06 | 703 | 0.6+ | 0.4− | 2006 05 26 | 703 | 0.1+ | 0.1− |
| 2001 03 13 | 608 | (5.6+ | 0.1+) | 2006 04 06 | 703 | 0.5+ | 1.0+ | 2006 05 26 | 703 | 0.3+ | 0.4+ |
| 2001 03 29 | 608 | 0.1− | 0.3+ | 2006 04 06 | 703 | 0.2− | 0.7− | | | | |

**(145535)∗ 2006 GP$_3$ = 2001 KJ$_{35}$**

Discovered 2006 Apr. 8 by P. Birtwhistle at Great Shefford.
Id. G. V. Williams (*MPO* 101564)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.80812 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17961863 | $\omega$ | 174.70999 | | −0.10094411 | | +0.97450830 |
| $a$ | 3.1110128 | $\Omega$ | 89.38879 | | −0.91998665 | | −0.01476870 |
| $e$ | 0.0996800 | $i$ | 11.55864 | | −0.37872794 | | −0.22386483 |
| $P$ | 5.49 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.4− | 1.0+ | 2002 09 10 | 644 | 0.2− | 0.1+ | 2006 04 09 | J95 | 0.3+ | 0.2+ |
| 2000 03 04 | 704 | 0.3+ | 0.0 | 2003 11 26 | 691 | 0.2− | 0.1+ | 2006 04 09 | G96 | 0.0 | 0.2+ |
| 2000 03 04 | 704 | 0.2− | 0.1+ | 2003 11 26 | 691 | 0.0 | 0.1+ | 2006 04 09 | G96 | 0.3− | 0.3+ |
| 2000 03 04 | 704 | 0.7+ | 0.3− | 2003 11 26 | 691 | 0.0 | 0.1+ | 2006 04 09 | G96 | 0.0 | 0.3+ |
| 2000 03 09 | 608 | 0.1− | 0.2+ | 2005 01 06 | 703 | 0.1− | 0.2+ | 2006 04 09 | G96 | 0.3+ | 0.2+ |
| 2000 03 09 | 608 | 0.6− | 0.2+ | 2005 01 06 | 703 | 0.3− | 0.5− | 2006 04 10 | J95 | 0.6− | 0.0 |
| 2001 05 18 | 704 | 0.4+ | 0.9+ | 2005 01 06 | 703 | 0.0 | 0.3− | 2006 04 10 | J95 | 0.5+ | 0.8− |
| 2001 05 18 | 704 | 0.3+ | 0.3+ | 2005 01 06 | 703 | 0.1− | 1.0+ | 2006 04 10 | J95 | 0.2− | 1.1− |
| 2001 05 18 | 704 | 0.2− | 0.2+ | 2005 01 16 | 704 | 0.7+ | 0.6+ | 2006 04 17 | J95 | 0.1− | 0.9+ |
| 2001 05 18 | 704 | 0.7+ | 0.6− | 2005 01 16 | 704 | 0.4+ | 1.2+ | 2006 04 17 | J95 | 0.1− | 0.2+ |
| 2001 05 25 | 704 | 0.4+ | 1.0+ | 2005 01 16 | 704 | 0.9+ | 0.5+ | 2006 04 17 | J95 | 0.4+ | 0.6+ |
| 2001 05 25 | 704 | 0.5+ | 1.9+ | 2005 01 16 | 704 | (0.9+ | 2.3+) | 2006 04 20 | 699 | 0.1+ | 1.1+ |
| 2001 05 25 | 704 | 0.1− | 0.4+ | 2006 04 02 | 699 | 1.0+ | 0.5+ | 2006 04 20 | 699 | 0.6+ | 0.1+ |
| 2002 08 16 | 608 | 0.0 | 0.2+ | 2006 04 02 | 699 | 0.7− | 0.6+ | 2006 04 20 | 699 | 0.1+ | 0.3− |
| 2002 08 16 | 608 | 0.0 | 0.4+ | 2006 04 02 | 699 | 0.4− | 1.8+ | 2006 04 23 | 699 | (2.1+ | 0.7−) |
| 2002 08 16 | 608 | 0.6+ | 0.5− | 2006 04 02 | 699 | 0.6+ | 0.3+ | 2006 04 23 | 699 | 0.4+ | 0.3− |
| 2002 08 20 | 644 | 0.1+ | 0.8+ | 2006 04 08 | 703 | 0.1− | 1.4− | 2006 04 23 | 699 | (2.3+ | 2.1+) |
| 2002 08 20 | 644 | 0.2− | 0.2− | 2006 04 08 | 703 | 0.4− | 0.4− | 2006 04 23 | 699 | 0.1− | 0.5− |
| 2002 08 20 | 644 | 0.1+ | 0.5+ | 2006 04 08 | 703 | 0.9+ | 0.8− | 2006 05 19 | 699 | (2.2− | 0.6+) |
| 2002 09 09 | 644 | 0.3− | 0.3+ | 2006 04 08 | 703 | 1.5− | 1.1− | 2006 05 19 | 699 | (2.4− | 0.8+) |
| 2002 09 09 | 644 | 0.2− | 0.1− | 2006 04 08 | J95 | 0.2− | 0.0 | 2006 05 19 | 699 | 0.3− | 0.5+ |
| 2002 09 10 | 644 | 0.4− | 0.2− | 2006 04 08 | J95 | 0.3− | 0.4− | 2006 05 19 | 699 | 0.8− | 1.0− |
| 2002 09 10 | 644 | 0.2− | 0.0 | 2006 04 08 | J95 | 0.1+ | 0.2+ | | | | |

**(145536)∗ 2006 GP$_{19}$**

Discovered 2006 Apr. 2 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.15088 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25197784 | $\omega$ | 219.66630 | | +0.39746475 | | +0.91625376 |
| $a$ | 2.4825299 | $\Omega$ | 73.80542 | | −0.82812291 | | +0.38164226 |
| $e$ | 0.1788237 | $i$ | 2.98500 | | −0.39526475 | | +0.12177124 |
| $P$ | 3.91 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.1+ | 0.8− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 04 09 | G96 | 0.1− | 0.1+ |
| 2002 03 12 | 691 | 0.1− | 0.0 | 2003 10 24 | 645 | 0.1− | 0.1− | 2006 04 09 | G96 | 0.2− | 0.1+ |
| 2002 03 12 | 691 | 0.4− | 0.2+ | 2003 10 24 | 645 | 0.1− | 0.1− | 2006 04 09 | G96 | 0.1− | 0.1+ |
| 2002 03 12 | 691 | 0.4+ | 0.4− | 2003 11 16 | 645 | 0.0 | 0.1+ | 2006 04 09 | G96 | 0.1− | 0.2+ |
| 2002 04 20 | 644 | 0.5+ | 0.8+ | 2003 11 16 | 645 | 0.0 | 0.1+ | 2006 04 24 | 704 | 0.0 | 0.2+ |
| 2002 04 20 | 644 | 0.8+ | 0.8+ | 2006 03 23 | 691 | 0.4+ | 0.2+ | 2006 04 24 | 704 | 0.1− | 1.1+ |
| 2002 04 20 | 644 | 0.7+ | 0.9+ | 2006 03 23 | 691 | 0.0 | 0.3+ | 2006 04 24 | 704 | 0.5+ | 0.3− |
| 2003 09 28 | 704 | 0.3+ | 1.3+ | 2006 03 23 | 691 | 0.1− | 0.3+ | 2006 05 06 | G96 | 0.5− | 0.2− |
| 2003 09 28 | 704 | (0.9− | 2.8+) | 2006 04 02 | 691 | 0.4+ | 0.0 | 2006 05 06 | G96 | 0.5− | 0.1− |
| 2003 09 28 | 704 | 0.8− | 1.1+ | 2006 04 02 | 691 | 0.2+ | 0.3+ | 2006 05 06 | G96 | 0.3− | 0.2+ |
| 2003 10 19 | 691 | 0.2+ | 0.4+ | 2006 04 02 | 691 | 0.3+ | 0.1+ | 2006 05 06 | G96 | 0.8− | 0.2+ |
| 2003 10 19 | 691 | 0.0 | 0.4+ | 2006 04 02 | G96 | 0.3− | 0.0 | 2006 05 26 | G96 | 0.3− | 0.1− |
| 2003 10 19 | 691 | 0.2+ | 0.4+ | 2006 04 02 | G96 | 0.0 | 0.1− | 2006 05 26 | G96 | 0.3− | 0.0 |
| 2003 10 21 | 644 | 0.4− | 0.4+ | 2006 04 02 | G96 | 0.4− | 0.2+ | 2006 05 26 | G96 | 0.4− | 0.1− |
| 2003 10 21 | 644 | 0.4− | 0.3+ | 2006 04 07 | 691 | 0.2+ | 0.1+ | 2006 05 26 | G96 | 0.4− | 0.2− |
| 2003 10 21 | 644 | 0.4− | 0.7+ | 2006 04 07 | 691 | 0.1+ | 0.2+ | | | | |
| 2003 10 22 | 645 | 0.0 | 0.0 | 2006 04 07 | 691 | 0.0 | 0.0 | | | | |

**(145537)∗ 2006 GB$_{20}$ = 2003 TL$_{52}$**

Discovered 2006 Apr. 2 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 101571)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.92540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19397930 | $\omega$ | 303.42243 | | +0.63884378 | | −0.76748306 |
| $a$ | 2.9555102 | $\Omega$ | 106.77932 | | +0.72306722 | | +0.57528120 |
| $e$ | 0.0906453 | $i$ | 3.19552 | | +0.26277825 | | +0.28288033 |
| $P$ | 5.08 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.3− | 0.4− | 2003 10 23 | 691 | 0.4− | 0.2+ | 2006 04 07 | 691 | 0.1+ | 0.3− |
| 1995 02 02 | 691 | 0.1− | 0.2− | 2004 12 19 | G96 | 0.3+ | 0.5− | 2006 04 09 | G96 | 0.5− | 0.6− |
| 1995 02 02 | 691 | 0.1− | 0.6− | 2004 12 19 | G96 | 0.5− | 0.3− | 2006 04 09 | G96 | 0.2− | 0.2− |
| 1996 05 11 | 691 | 0.7+ | 0.5− | 2004 12 19 | G96 | 0.5− | 0.2+ | 2006 04 09 | G96 | 0.5+ | 0.5− |
| 1996 05 11 | 691 | 0.4+ | 0.0 | 2004 12 19 | G96 | 0.6− | 0.0 | 2006 04 09 | G96 | 0.3− | 1.0+ |
| 2001 04 15 | 691 | 0.1+ | 0.1+ | 2005 01 15 | 691 | 0.1+ | 0.6+ | 2006 04 26 | 291 | 0.5+ | 0.4+ |
| 2001 04 15 | 691 | 0.4+ | 0.8+ | 2005 01 15 | 691 | 0.5+ | 0.5+ | 2006 04 26 | 291 | 0.4− | 0.6+ |
| 2001 04 15 | 691 | 0.3+ | 0.4+ | 2005 01 15 | 691 | 0.4+ | 0.7+ | 2006 04 26 | 291 | 0.2+ | 0.5+ |
| 2001 05 15 | 691 | 0.2− | 0.5+ | 2006 03 23 | 691 | 0.9− | 0.5+ | 2006 04 26 | 291 | 0.0 | 0.7+ |
| 2001 05 15 | 691 | 0.4− | 0.2+ | 2006 03 23 | 691 | 0.5− | 0.1+ | 2006 04 26 | 291 | 0.2+ | 0.2+ |
| 2001 05 15 | 691 | 1.7− | 0.0 | 2006 03 23 | 691 | 0.2+ | 0.0 | 2006 04 26 | 291 | 0.1+ | 0.4+ |
| 2003 10 05 | 691 | 0.1− | 0.5+ | 2006 04 02 | 691 | 0.5− | 0.1+ | 2006 05 05 | 691 | 0.5+ | 0.1− |
| 2003 10 05 | 691 | 0.2− | 0.7+ | 2006 04 02 | 691 | 0.3+ | 0.3− | 2006 05 05 | 691 | 0.5+ | 0.3− |
| 2003 10 05 | 691 | 0.1− | 0.6+ | 2006 04 02 | 691 | 0.0 | 0.2− | 2006 05 05 | 691 | 1.2+ | 0.2+ |
| 2003 10 23 | 691 | 0.2− | 0.4+ | 2006 04 07 | 691 | 0.4+ | 0.4− | | | | |
| 2003 10 23 | 691 | 0.1− | 0.5+ | 2006 04 07 | 691 | 0.0 | 0.1− | | | | |

**(145538)∗ 2006 GP$_{28}$ = 2000 YJ$_{44}$ = 2004 YP$_{33}$**

Discovered 2006 Apr. 2 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 101576)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.92768 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24381485 | $\omega$ | 135.00834 | | −0.49572283 | | +0.86814546 |
| $a$ | 2.5376357 | $\Omega$ | 105.26015 | | −0.80368492 | | −0.44802940 |
| $e$ | 0.0333819 | $i$ | 1.43333 | | −0.32916475 | | −0.21352544 |
| $P$ | 4.04 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 02 | 691 | 0.3+ | 0.4+ | 2003 09 29 | 704 | 0.5− | 0.1+ | 2006 04 26 | 691 | 0.1+ | 0.1− |
| 1991 10 02 | 691 | 0.2+ | 0.1+ | 2003 10 22 | 695 | 0.4− | 0.5+ | 2006 04 26 | 691 | 0.1+ | 0.2+ |
| 1991 10 02 | 691 | 0.5− | 0.5+ | 2003 10 22 | 695 | 0.0 | 0.5+ | 2006 04 30 | 699 | 0.7+ | 0.9− |
| 2000 12 30 | 704 | 0.8− | 0.2+ | 2004 12 16 | 704 | 1.8− | 1.2+ | 2006 04 30 | 699 | 0.4− | 0.3+ |
| 2000 12 30 | 704 | 0.5− | 0.0 | 2004 12 16 | 704 | 0.8− | 1.3+ | 2006 04 30 | 699 | 0.9+ | 0.6− |
| 2000 12 30 | 704 | 0.8− | 0.2− | 2004 12 16 | 704 | 1.4+ | 1.1+ | 2006 04 30 | 699 | 0.8+ | 0.0 |
| 2000 12 30 | 704 | 0.5− | 0.4+ | 2004 12 19 | 691 | 0.2+ | 0.4+ | 2006 05 01 | 704 | 0.4+ | 0.4+ |
| 2001 01 02 | 704 | 0.6− | 1.0+ | 2004 12 19 | 691 | 1.0+ | 0.4− | 2006 05 01 | 704 | 0.4+ | 0.4+ |
| 2001 01 02 | 704 | 1.3− | 1.4+ | 2004 12 19 | 691 | 0.3+ | 0.4+ | 2006 05 01 | 704 | 0.5+ | 0.9+ |
| 2001 01 02 | 704 | 0.1− | 1.3+ | 2006 04 02 | 691 | 0.1+ | 0.0 | 2006 05 08 | G96 | 1.0− | 0.1+ |
| 2002 02 16 | 691 | 0.1− | 0.1− | 2006 04 02 | 691 | 0.0 | 0.1+ | 2006 05 08 | G96 | 0.5− | 0.2+ |
| 2002 02 16 | 691 | 0.3+ | 0.1+ | 2006 04 02 | 691 | 0.2+ | 0.1+ | 2006 05 08 | G96 | 0.6− | 0.1+ |
| 2002 02 16 | 691 | 0.0 | 0.3+ | 2006 04 07 | 691 | 0.0 | 0.2− | 2006 05 08 | G96 | 0.8− | 0.1+ |
| 2002 04 09 | 704 | 0.1− | 1.0+ | 2006 04 07 | 691 | 0.2+ | 0.0 | 2006 05 16 | 644 | 0.0 | 0.2− |
| 2002 04 09 | 704 | 0.3− | 1.0+ | 2006 04 07 | 691 | 0.1+ | 0.1+ | 2006 05 16 | 644 | 0.2− | 0.1− |
| 2002 04 09 | 704 | 0.2− | 1.4+ | 2006 04 19 | 644 | 0.3+ | 0.2− | 2006 05 16 | 644 | 0.3− | 0.0 |
| 2002 04 09 | 704 | 0.1+ | 1.0+ | 2006 04 19 | 644 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.4− | 0.2− |
| 2002 06 06 | 291 | 0.3+ | 0.5+ | 2006 04 19 | 644 | 0.3+ | 0.1− | 2006 05 19 | G96 | 0.6− | 0.1− |
| 2002 06 06 | 291 | 0.4+ | 0.6+ | 2006 04 24 | 704 | 0.2+ | 0.5+ | 2006 05 19 | G96 | 0.4− | 0.5− |
| 2002 06 06 | 291 | 0.4+ | 0.7+ | 2006 04 24 | 704 | 0.2− | 0.3− | 2006 05 19 | G96 | 0.8− | 0.1− |
| 2003 09 24 | 644 | 0.5− | 0.8+ | 2006 04 24 | 704 | 0.2+ | 0.3− | 2006 05 19 | 703 | 1.1− | 0.2+ |
| 2003 09 24 | 644 | 0.5− | 0.8+ | 2006 04 25 | 644 | 0.3+ | 0.0 | 2006 05 19 | 703 | 1.1− | 0.1− |
| 2003 09 24 | 644 | 0.6− | 0.8+ | 2006 04 25 | 644 | 0.3− | 0.3− | 2006 05 19 | 703 | 0.1− | 1.3− |
| 2003 09 29 | 704 | 1.4− | 1.3+ | 2006 04 25 | 644 | 0.0 | 0.2− | 2006 05 19 | 703 | (2.3− | 1.0−) |
| 2003 09 29 | 704 | 0.1− | 0.7+ | 2006 04 26 | 691 | 0.1+ | 0.1+ | | | | |

**(145539)∗ 2006 GU$_{35}$ = 1994 TP$_{4}$**

Discovered 2006 Apr. 7 by the Catalina Sky Survey.

Id. G. V. Williams (*MPO* 101585)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.49925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22054625 | $\omega$ | 49.29923 | | −0.54179330 | +0.83991662 | |
| $a$ | 2.7131237 | $\Omega$ | 188.08100 | | −0.82295385 | −0.53775015 | |
| $e$ | 0.1281444 | $i$ | 13.00100 | | −0.17090050 | −0.07324513 | |
| $P$ | 4.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 02 | 691 | 0.3+ | 0.2− | 2003 10 19 | 691 | 0.0 | 0.6+ | 2006 04 08 | 691 | 0.0 | 0.2+ |
| 1994 10 02 | 691 | 0.2+ | 0.1+ | 2003 10 19 | 691 | 0.3+ | 0.4+ | 2006 04 09 | 691 | 0.3+ | 0.3+ |
| 1994 10 02 | 691 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.1− | 0.2+ | 2006 04 09 | 691 | 0.2+ | 0.2+ |
| 1994 10 11 | 691 | 0.4− | 0.5− | 2003 11 20 | 645 | 0.1− | 0.2+ | 2006 04 09 | 691 | 0.2+ | 0.0 |
| 1994 10 11 | 691 | 0.1− | 0.6− | 2006 03 24 | G96 | 0.1− | 0.1+ | 2006 04 24 | 704 | 1.5+ | 0.7− |
| 1994 10 11 | 691 | 0.3+ | 0.7− | 2006 03 24 | G96 | 0.4− | 0.2+ | 2006 04 24 | 704 | 0.3− | 0.3− |
| 2000 11 30 | 645 | 0.0 | 0.0 | 2006 03 24 | G96 | 0.0 | 0.1+ | 2006 04 24 | 704 | 0.0 | 0.3− |
| 2000 11 30 | 645 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.1− | 0.0 | 2006 04 27 | 704 | 0.6− | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 04 07 | 703 | 0.3− | 1.7+ | 2006 04 27 | 704 | 0.5+ | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 04 07 | 703 | 0.7+ | 0.5+ | 2006 04 27 | 704 | 0.6+ | 0.8+ |
| 2003 09 30 | 691 | 0.1+ | 0.4+ | 2006 04 07 | 703 | 0.1− | 1.0+ | 2006 05 07 | G96 | 0.6− | 0.4− |
| 2003 09 30 | 691 | 0.0 | 0.2+ | 2006 04 07 | 703 | 1.9− | 0.5+ | 2006 05 07 | G96 | 0.4− | 0.3− |
| 2003 09 30 | 691 | 0.2− | 0.3+ | 2006 04 08 | 691 | 0.1− | 0.0 | 2006 05 07 | G96 | 0.3− | 0.1− |
| 2003 10 19 | 691 | 0.1− | 0.4+ | 2006 04 08 | 691 | 0.0 | 0.3+ | 2006 05 07 | G96 | 0.1− | 0.2− |

**(145540)∗ 2006 GR$_{47}$**

Discovered 2006 Apr. 9 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.83537 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27699207 | $\omega$ | 126.45544 | | −0.24014840 | +0.97073437 | |
| $a$ | 2.3307257 | $\Omega$ | 129.64916 | | −0.89141219 | −0.21975763 | |
| $e$ | 0.1504167 | $i$ | 0.13986 | | −0.38433456 | −0.09685748 | |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 950 | 1.7− | 1.0− | 2002 02 20 | 704 | 0.9− | 0.6+ | 2006 04 09 | 691 | 0.1+ | 0.2+ |
| 1999 05 13 | 704 | (3.0− | 1.3−) | 2002 02 20 | 704 | 0.6− | 0.1+ | 2006 04 09 | 691 | 1.4+ | 1.2− |
| 1999 05 13 | 704 | 0.5+ | 0.1+ | 2003 07 24 | 644 | 0.4− | 0.6+ | 2006 04 09 | 691 | 0.2+ | 0.1+ |
| 1999 05 13 | 704 | 0.3+ | 1.5+ | 2003 07 24 | 644 | 0.6− | 0.7+ | 2006 04 19 | G96 | 0.6− | 0.2+ |
| 1999 05 13 | 704 | 0.3− | 0.4− | 2003 07 24 | 644 | 0.5− | 0.5+ | 2006 04 19 | G96 | 0.4− | 0.1− |
| 1999 05 13 | 704 | (4.5− | 1.5+) | 2003 09 22 | 291 | 0.3− | 0.4+ | 2006 04 19 | G96 | 0.5− | 0.1− |
| 2000 11 02 | 691 | 0.0 | 0.1− | 2003 09 22 | 291 | 0.1− | 0.4+ | 2006 04 19 | G96 | 0.4− | 0.1− |
| 2000 11 02 | 691 | 0.1+ | 0.1− | 2003 09 22 | 291 | 0.1+ | 0.6+ | 2006 04 25 | 704 | 0.6+ | 0.9+ |
| 2000 11 02 | 691 | 0.2+ | 0.1+ | 2004 12 14 | 691 | 0.4− | 0.3+ | 2006 04 25 | 704 | 0.4+ | 0.1+ |
| 2002 01 19 | 291 | 0.3+ | 0.5+ | 2004 12 14 | 691 | 0.1− | 0.2− | 2006 04 25 | 704 | 0.6− | 1.6+ |
| 2002 01 19 | 291 | 0.2+ | 0.2+ | 2004 12 14 | 691 | 0.0 | 0.1+ | 2006 05 05 | G96 | 0.2− | 0.0 |
| 2002 01 19 | 291 | 0.5+ | 0.3+ | 2006 02 27 | G96 | 0.5− | 0.1− | 2006 05 05 | G96 | 0.3− | 0.1+ |
| 2002 02 10 | 704 | 0.6+ | 0.3+ | 2006 02 27 | G96 | 0.6− | 0.5+ | 2006 05 05 | G96 | 0.3− | 0.4+ |
| 2002 02 10 | 704 | 0.2− | 0.4+ | 2006 02 27 | G96 | 0.1− | 0.0 | 2006 05 05 | G96 | 0.3− | 0.2+ |
| 2002 02 10 | 704 | 0.3− | 1.4− | 2006 02 27 | G96 | 0.2− | 0.2+ | 2006 05 22 | G96 | 0.9− | 0.3− |
| 2002 02 10 | 691 | 0.2+ | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.3+ | 2006 05 22 | G96 | 0.0 | 0.0 |
| 2002 02 10 | 691 | 0.4+ | 0.1+ | 2006 03 25 | G96 | 0.7− | 0.1− | 2006 05 22 | G96 | 0.3− | 0.0 |
| 2002 02 10 | 691 | 0.3+ | 0.6+ | 2006 03 25 | G96 | 0.5− | 0.2+ | 2006 05 22 | G96 | 0.6− | 0.2− |
| 2002 02 20 | 704 | 1.5− | 0.2+ | 2006 03 25 | G96 | 0.8− | 0.1− | | | | |

**(145541)∗ 2006 HN$_{24}$ = 1996 HM$_{3}$**

Discovered 2006 Apr. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 101637)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.94634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20027179 | $\omega$ | 194.84556 | | +0.71459776 | +0.69808314 | |
| $a$ | 2.8932737 | $\Omega$ | 120.78950 | | −0.63634767 | +0.67544980 | |
| $e$ | 0.0898952 | $i$ | 3.00640 | | −0.29053689 | +0.23758682 | |
| $P$ | 4.92 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 691 | 0.3− | 0.0 | 2002 08 28 | 644 | 0.1− | 1.0+ | 2006 04 20 | 691 | 0.0 | 0.0 |
| 1996 04 17 | 691 | 0.0 | 0.0 | 2003 11 24 | 691 | 0.2+ | 0.0 | 2006 04 20 | 691 | 0.2+ | 0.0 |
| 1996 04 17 | 691 | 0.3− | 0.1+ | 2003 11 24 | 691 | 0.4+ | 0.3+ | 2006 04 20 | 691 | 0.2− | 0.1+ |
| 1996 04 21 | 691 | 0.1− | 0.2− | 2003 11 24 | 691 | 0.4+ | 0.0 | 2006 04 24 | 691 | 0.3+ | 0.2+ |
| 1996 04 21 | 691 | 0.3+ | 0.0 | 2003 12 19 | 691 | 1.3− | 0.3− | 2006 04 24 | 691 | 0.0 | 0.2+ |
| 1996 04 21 | 691 | 0.3+ | 0.5− | 2003 12 19 | 691 | 0.1− | 0.4+ | 2006 04 24 | 691 | 0.2+ | 0.1+ |
| 2000 01 30 | 691 | 0.3− | 0.1+ | 2003 12 19 | 691 | 0.3+ | 0.2+ | 2006 05 06 | 691 | 0.0 | 0.0 |
| 2000 01 30 | 691 | 0.4+ | 0.3+ | 2005 02 09 | 691 | 0.2+ | 0.3+ | 2006 05 06 | 691 | 0.2+ | 0.3+ |
| 2000 01 30 | 691 | 0.1+ | 0.1− | 2005 02 09 | 691 | 0.2+ | 0.5+ | 2006 05 06 | 691 | 0.1+ | 0.4+ |
| 2002 08 08 | 644 | 0.7− | 0.6+ | 2005 02 09 | 691 | 0.0 | 0.2+ | 2006 05 24 | G96 | 0.3− | 0.0 |
| 2002 08 08 | 644 | 0.5− | 0.6+ | 2005 03 14 | G96 | 1.3− | 0.5− | 2006 05 24 | G96 | 0.4− | 0.3− |
| 2002 08 08 | 644 | 0.5− | 0.6+ | 2005 03 14 | G96 | 0.1+ | 0.2− | 2006 05 24 | G96 | 0.5− | 0.2+ |
| 2002 08 28 | 644 | 0.1− | 0.7+ | 2005 03 14 | G96 | 0.0 | 0.2+ | 2006 05 24 | G96 | 0.2− | 0.1+ |
| 2002 08 28 | 644 | 0.1+ | 0.6+ | 2005 03 14 | G96 | 0.0 | 1.3− | | | | |

**(145542)∗ 2006 HA$_{82}$ = 2006 KC$_{10}$ = 1999 RB$_{248}$ = 2004 YH$_{26}$**

Discovered 2006 Apr. 26 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 101698)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.30868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25871015 | $\omega$ | 141.03603 | | +0.35806679 | +0.93361149 | |
| $a$ | 2.4392730 | $\Omega$ | 149.93941 | | −0.86279926 | +0.33599024 | |
| $e$ | 0.1633599 | $i$ | 1.43684 | | −0.35688319 | +0.12441926 | |
| $P$ | 3.81 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 691 | 0.2+ | 0.2− | 2003 10 16 | 691 | 0.0 | 0.3+ | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 1999 09 05 | 691 | 0.4− | 0.1− | 2003 10 16 | 691 | 0.2− | 0.2+ | 2006 04 30 | 691 | 0.0 | 0.2+ |
| 1999 09 05 | 691 | 0.3− | 0.4+ | 2004 12 19 | G96 | 0.9− | 0.3+ | 2006 05 08 | 691 | 0.1+ | 0.1+ |
| 1999 09 14 | 704 | 0.6− | 0.2+ | 2004 12 19 | G96 | 0.8− | 0.1+ | 2006 05 08 | 691 | 0.0 | 0.1+ |
| 1999 09 14 | 704 | 0.8− | 0.6+ | 2004 12 19 | G96 | 0.4− | 0.4+ | 2006 05 08 | 691 | 0.1− | 0.2+ |
| 1999 09 14 | 704 | 0.6+ | 0.3+ | 2004 12 19 | G96 | 0.1− | 0.1+ | 2006 05 19 | 703 | 0.3+ | 0.5+ |
| 1999 09 14 | 704 | 0.3− | 0.3+ | 2004 12 20 | G96 | 0.1− | 0.2+ | 2006 05 19 | 703 | 0.5+ | 1.5+ |
| 2002 04 08 | 644 | 0.5+ | 0.2+ | 2004 12 20 | G96 | 0.1− | 0.2+ | 2006 05 19 | 703 | 0.1+ | 1.0− |
| 2002 04 08 | 644 | 0.7+ | 0.2+ | 2004 12 20 | G96 | 0.4− | 0.1+ | 2006 05 19 | 703 | 1.3− | 0.5+ |
| 2002 04 08 | 644 | 0.6+ | 0.3+ | 2004 12 20 | G96 | 0.7− | 0.2+ | 2006 05 21 | 691 | 0.1+ | 0.4+ |
| 2002 04 17 | 704 | 0.5+ | 0.1− | 2005 01 13 | 691 | 0.4+ | 0.2+ | 2006 05 21 | 691 | 0.2+ | 0.1+ |
| 2002 04 17 | 704 | 0.2− | 0.2+ | 2005 01 13 | 691 | 0.4+ | 0.6+ | 2006 05 21 | 691 | 0.4− | 0.4− |
| 2002 04 17 | 704 | 0.9+ | 0.9+ | 2005 01 13 | 691 | 0.1− | 0.3+ | 2006 06 19 | G96 | 0.0 | 0.3− |
| 2003 09 28 | 691 | 0.0 | 0.5+ | 2006 04 26 | 691 | 0.3+ | 0.2+ | 2006 06 19 | G96 | 0.0 | 0.1− |
| 2003 09 28 | 691 | 0.1+ | 0.5+ | 2006 04 26 | 691 | 0.2+ | 0.4+ | 2006 06 19 | G96 | 0.1− | 0.0 |
| 2003 09 28 | 691 | 0.1+ | 0.4+ | 2006 04 26 | 691 | 0.1− | 0.2+ | 2006 06 19 | G96 | 0.1− | 0.6− |
| 2003 10 16 | 691 | 0.1− | 0.2+ | 2006 04 30 | 691 | 0.1+ | 0.1+ | | | | |

**(145543)∗ 2006 JF$_{38}$ = 2004 YQ$_{22}$**

Discovered 2006 May 6 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 101761)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.48981 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18341715 | $\omega$ | 121.40244 | | −0.18893450 | +0.98184147 | |
| $a$ | 3.0679110 | $\Omega$ | 137.69618 | | −0.90934547 | −0.16837320 | |
| $e$ | 0.0788348 | $i$ | 1.45253 | | −0.37066773 | −0.08739448 | |
| $P$ | 5.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.2+ | 0.2− | 2003 11 19 | 691 | 0.1+ | 0.5+ | 2006 03 25 | 691 | 0.2+ | 0.4+ |
| 2000 01 12 | 691 | 0.1+ | 0.0 | 2003 11 19 | 691 | 0.0 | 0.5+ | 2006 05 02 | G96 | 0.1+ | 0.1− |
| 2000 01 12 | 691 | 0.2+ | 0.2− | 2004 12 18 | G96 | 0.2− | 0.3+ | 2006 05 02 | G96 | 0.7− | 0.0 |
| 2000 02 04 | 691 | 0.0 | 0.3+ | 2004 12 18 | G96 | 0.2− | 0.4+ | 2006 05 02 | G96 | 0.2− | 0.0 |
| 2000 02 04 | 691 | 0.0 | 0.1− | 2004 12 18 | G96 | 0.3− | 0.4+ | 2006 05 02 | G96 | 0.2− | 0.1− |
| 2000 02 04 | 691 | 0.1− | 0.2+ | 2004 12 18 | G96 | 0.2+ | 0.2+ | 2006 05 06 | 691 | 0.0 | 0.3+ |
| 2000 03 03 | 704 | 0.1+ | 0.7+ | 2004 12 19 | G96 | 0.1− | 0.8+ | 2006 05 06 | 691 | 0.3+ | 0.1+ |
| 2000 03 03 | 704 | 0.3− | 0.5+ | 2004 12 19 | G96 | 0.3− | 0.3+ | 2006 05 06 | 691 | 0.3+ | 0.2+ |
| 2000 03 03 | 704 | 0.2+ | 0.7+ | 2004 12 19 | G96 | 0.3− | 0.5+ | 2006 05 08 | 691 | 0.3+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 291 | 0.5− | 0.2+ | 2004 12 19 | G96 | 0.4− | 0.3− | 2006 05 08 | 691 | 0.2− | 0.3+ |
| 2002 08 30 | 291 | 0.5− | 0.4+ | 2005 03 04 | G96 | 0.1− | 0.3+ | 2006 05 08 | 691 | 0.3+ | 0.2− |
| 2002 08 30 | 291 | 0.6− | 0.6+ | 2005 03 04 | G96 | 0.1+ | 0.0 | 2006 05 22 | G96 | 0.1− | 0.2+ |
| 2002 10 09 | 291 | 0.0 | 0.6+ | 2005 03 04 | G96 | 0.1− | 0.1+ | 2006 05 22 | G96 | 0.6− | 0.5+ |
| 2002 10 09 | 291 | 0.3+ | 0.0 | 2005 03 04 | G96 | 0.0 | 0.2+ | 2006 05 22 | G96 | 0.9− | 0.2− |
| 2002 10 09 | 291 | 0.1+ | 0.2+ | 2006 03 25 | 691 | 0.1+ | 0.4+ | 2006 05 22 | G96 | 0.3− | 0.2+ |
| 2003 11 19 | 691 | 0.1+ | 0.4+ | 2006 03 25 | 691 | 0.3+ | 0.3+ | | | | |

**(145544)∗ 2006 JP$_{46}$**

Discovered 2006 May 7 by Spacewatch at Kitt Peak.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 38.85624 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23378577 | $\omega$ | 109.35402 | | +0.00947802 | | +0.99709505 | |
| $a$ | 2.6097005 | $\Omega$ | 160.71530 | | −0.98168204 | | +0.02366077 | |
| $e$ | 0.2454206 | $i$ | 13.22844 | | −0.19029066 | | −0.07239907 | |
| $P$ | 4.22 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.4− | 0.1− | 2006 08 18 | 644 | 0.3− | 0.3− |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2005 03 11 | G96 | 0.2− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1− |
| 2001 03 16 | 691 | 0.1− | 0.2+ | 2006 05 07 | 691 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.8+ |
| 2001 03 16 | 691 | 0.2+ | 0.4+ | 2006 05 07 | 691 | 0.5− | 0.2+ | 2006 08 30 | 704 | 0.4+ | 0.7+ |
| 2001 03 16 | 691 | 0.0 | 0.1+ | 2006 05 07 | 691 | 0.6+ | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.6+ |
| 2002 08 12 | 704 | 1.5− | 1.4+ | 2006 05 08 | 691 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.1− | 0.5+ |
| 2002 08 12 | 704 | 0.4+ | 0.8+ | 2006 05 08 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.8+ | 0.1+ |
| 2002 08 12 | 704 | 0.3+ | 0.1+ | 2006 05 08 | 691 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.3− | 0.0 |
| 2002 08 12 | 704 | 0.2− | 1.7+ | 2006 06 01 | 703 | (2.1− | 0.6−) | 2006 09 14 | 644 | 0.4− | 0.4+ |
| 2002 09 06 | 704 | 0.6+ | 0.5− | 2006 06 01 | 703 | 1.2− | 0.3+ | 2006 09 14 | 644 | 0.5− | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.5+ | 2006 06 01 | 703 | 0.7+ | 0.7− | 2006 09 20 | 704 | 0.8+ | 0.5+ |
| 2002 09 06 | 704 | 0.6+ | 1.6+ | 2006 06 01 | 703 | 1.2− | 1.0− | 2006 09 20 | 704 | 0.1+ | 0.3− |
| 2002 09 06 | 704 | 0.6+ | 0.6+ | 2006 08 14 | E12 | 0.4+ | 0.0 | 2006 09 20 | 704 | 1.3+ | 0.0 |
| 2002 09 17 | 608 | 0.9− | 1.3− | 2006 08 14 | E12 | 0.8+ | 0.8− | 2006 09 20 | 704 | 0.5− | 1.7− |
| 2002 09 17 | 608 | 1.0− | 0.8− | 2006 08 14 | E12 | 0.0 | 0.6− | 2006 09 27 | 704 | 0.0 | 1.5+ |
| 2002 09 17 | 608 | 0.1+ | 0.6− | 2006 08 14 | E12 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.4− | 0.0 |
| 2005 02 14 | 691 | 0.0 | 0.1+ | 2006 08 14 | E12 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.7− | 0.1− |
| 2005 02 14 | 691 | 0.1+ | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2005 02 14 | 691 | 0.1+ | 0.3+ | 2006 08 15 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.4− | 0.4− |
| 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.7+ | 0.5+ |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.6− |

**(145545)∗ 2006 KA$_{39}$ = 2003 YR$_{123}$**

Discovered 2006 May 22 by Q.-z. Ye at Lulin Observatory.

Id. G. V. Williams (*MPO* 101807)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 53.63331 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.16459857 | $\omega$ | 124.56522 | | −0.89397493 | | +0.36489237 | |
| $a$ | 3.2975041 | $\Omega$ | 78.07042 | | −0.44581763 | | −0.78293824 | |
| $e$ | 0.1644086 | $i$ | 15.41818 | | +0.04533732 | | −0.50384647 | |
| $P$ | 5.99 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 19 | 566 | 0.9+ | 0.4− | 2003 12 19 | 691 | 0.1+ | 0.3+ | 2005 03 08 | 704 | 0.8+ | 0.3+ |
| 1999 02 19 | 566 | 2.2+ | 0.8− | 2003 12 19 | 691 | 0.0 | 0.2− | 2006 05 22 | D35 | 0.2− | 0.0 |
| 1999 02 23 | 566 | (7.2− | 1.8+) | 2003 12 28 | 291 | 0.6− | 0.1− | 2006 05 22 | D35 | 0.0 | 0.2+ |
| 2000 06 01 | 566 | (3.3+ | 0.7+) | 2003 12 28 | 291 | 0.6− | 0.0 | 2006 05 24 | 644 | 0.1− | 0.1+ |
| 2000 06 01 | 566 | (3.3+ | 0.3+) | 2003 12 28 | 291 | 0.3− | 0.2+ | 2006 05 24 | 644 | 0.2+ | 0.3+ |
| 2001 08 10 | 644 | 1.4− | 0.9+ | 2003 12 29 | 691 | 0.3+ | 0.5+ | 2006 05 24 | 644 | 0.2− | 0.3+ |
| 2001 08 10 | 644 | 1.7− | 0.4+ | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 05 25 | D35 | 0.8− | 0.1− |
| 2001 08 10 | 644 | 0.1− | 0.9+ | 2003 12 29 | 691 | 0.0 | 0.5+ | 2006 05 25 | D35 | 0.9− | 0.3− |
| 2001 08 16 | 644 | 1.1− | 0.7− | 2005 01 31 | 644 | 0.5+ | 0.1− | 2006 05 25 | D35 | 1.2− | 0.2− |
| 2001 08 16 | 644 | 0.5− | 0.1+ | 2005 01 31 | 644 | 0.5+ | 0.4+ | 2006 05 25 | D35 | 1.0− | 0.2− |
| 2001 08 16 | 644 | 1.2− | 0.1+ | 2005 01 31 | 644 | 0.5+ | 0.3+ | 2006 05 28 | 704 | 0.1+ | 0.6+ |
| 2001 08 21 | 644 | 0.4− | 0.7+ | 2005 02 28 | 703 | 0.5− | 0.1+ | 2006 05 28 | 704 | 0.5+ | 0.5+ |
| 2001 08 21 | 644 | 1.4− | 0.2+ | 2005 02 28 | 703 | 0.3+ | 0.4− | 2006 05 28 | 704 | 0.2− | 0.8+ |
| 2001 09 07 | 644 | 0.5− | 0.0 | 2005 02 28 | 703 | 0.8+ | 0.3+ | 2006 05 28 | 704 | 0.0 | 0.0 |
| 2001 09 07 | 644 | 0.2+ | 0.3+ | 2005 02 28 | 703 | 1.4− | 0.0 | 2006 05 28 | 704 | 0.2− | 0.8+ |
| 2002 09 17 | 608 | 2.6+ | 0.1+ | 2005 03 08 | 703 | 0.6− | 0.5− | 2006 06 15 | D35 | 0.1+ | 0.1+ |
| 2002 09 17 | 608 | (3.5+ | 0.2+) | 2005 03 08 | 703 | 0.3− | 1.1+ | 2006 06 15 | D35 | 0.2+ | 0.2+ |
| 2002 10 16 | 644 | 0.4− | 0.5+ | 2005 03 08 | 703 | 0.3+ | 0.2− | 2006 06 16 | 644 | 0.5+ | 0.4+ |
| 2002 10 16 | 644 | 0.0 | 0.5+ | 2005 03 08 | 703 | 0.9− | 0.1+ | 2006 06 16 | 644 | 0.4+ | 0.3− |
| 2002 10 16 | 644 | 0.2− | 0.7+ | 2005 03 08 | 704 | 0.8+ | 1.0+ | 2006 06 16 | 644 | 0.1+ | 0.4− |
| 2002 11 05 | 644 | 0.3+ | 0.3+ | 2005 03 08 | 704 | 0.4+ | 0.2+ | 2006 06 22 | 644 | 0.7+ | 0.4+ |
| 2002 11 05 | 644 | 0.4− | 0.5+ | 2005 03 08 | 704 | 0.7+ | 0.7+ | 2006 06 22 | 644 | 0.7+ | 0.1− |
| 2003 12 19 | 691 | 0.2+ | 0.5+ | 2005 03 08 | 704 | 0.7+ | 0.9+ | 2006 06 22 | 644 | 0.1+ | 0.1+ |

**(145546)∗ 2006 KU$_{67}$ = 2000 HK$_{38}$ = 2001 QG$_{42}$ = 2005 EA$_{323}$**

Discovered 2006 May 25 by Q.-z. Ye at Lulin Observatory.

Id. T. B. Spahr (*MPO* 101822), A. Doppler (*MPO* 103925)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 345.65728 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17842541 | $\omega$ | 162.20079 | | +0.49708603 | | +0.86752040 | |
| $a$ | 3.1248673 | $\Omega$ | 137.60191 | | −0.79926086 | | +0.46573009 | |
| $e$ | 0.1757114 | $i$ | 1.50550 | | −0.33776849 | | +0.17465345 | |
| $P$ | 5.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.4+ | 0.3− | 2001 08 16 | 704 | 0.5− | 0.2+ | 2002 12 27 | 644 | 0.5+ | 0.1+ |
| 1994 03 05 | 691 | 0.5− | 0.7− | 2001 08 16 | 704 | 1.5− | 1.2− | 2003 01 19 | 644 | 0.1+ | 0.6− |
| 1994 03 05 | 691 | 0.4− | 0.1− | 2001 08 16 | 704 | 1.9− | 0.4− | 2003 01 19 | 644 | 0.1+ | 0.8+ |
| 1996 08 19 | 566 | (4.0+ | 1.4−) | 2001 08 16 | 704 | 2.0− | 0.6− | 2005 03 10 | G96 | 0.4+ | 0.4− |
| 1996 08 19 | 566 | 2.9+ | 0.9− | 2001 08 19 | 704 | 1.5− | 0.1+ | 2005 03 10 | G96 | 0.4+ | 0.4− |
| 1996 09 13 | 566 | 2.0+ | 0.1− | 2001 08 19 | 704 | 0.6− | 0.1− | 2005 03 10 | G96 | 0.4+ | 0.4− |
| 1996 09 13 | 566 | (4.0+ | 0.5−) | 2001 08 19 | 704 | 1.2− | 0.5+ | 2005 03 10 | G96 | 0.2+ | 0.1− |
| 1996 10 17 | 566 | (3.3+ | 0.2+) | 2001 08 26 | 608 | 1.9− | 0.8− | 2006 05 25 | D35 | 0.0 | 0.4+ |
| 1996 10 17 | 566 | (7.5+ | 5.2−) | 2001 08 26 | 608 | 1.9− | 0.4− | 2006 05 25 | D35 | 0.8+ | 0.3− |
| 1996 10 17 | 566 | (4.9− | 5.8−) | 2001 08 26 | 608 | 1.4− | 0.3− | 2006 05 25 | D35 | 0.7+ | 0.1+ |
| 1999 02 14 | 691 | 0.3+ | 0.4+ | 2001 09 13 | 644 | (2.2− | 1.2+) | 2006 05 26 | D35 | 0.3+ | 0.1− |
| 1999 02 14 | 691 | 0.2+ | 0.0 | 2001 09 13 | 644 | (3.0− | 1.6+) | 2006 05 26 | D35 | 0.7+ | 0.2− |
| 1999 02 14 | 691 | 0.5+ | 0.2+ | 2001 09 25 | 644 | 0.7− | 0.1+ | 2006 05 26 | D35 | 0.6+ | 0.2− |
| 2000 04 28 | 691 | 1.5− | 0.5− | 2001 09 25 | 644 | 1.9− | 0.2− | 2006 05 31 | D35 | 1.3+ | 0.1+ |
| 2000 04 28 | 691 | 0.1+ | 0.2+ | 2002 10 31 | 644 | 1.1− | 0.1+ | 2006 05 31 | D35 | 0.2+ | 0.0 |
| 2000 04 28 | 691 | 0.4− | 0.2− | 2002 10 31 | 644 | 1.0− | 0.5+ | 2006 06 16 | 644 | 1.5+ | 0.3− |
| 2000 05 04 | 691 | 0.2− | 0.5+ | 2002 10 31 | 644 | 1.0− | 0.6+ | 2006 06 16 | 644 | 1.0+ | 0.6− |
| 2000 05 04 | 691 | 0.2− | 0.3+ | 2002 11 23 | 644 | 1.1− | 0.0 | 2006 06 16 | 644 | 1.3+ | 0.6− |
| 2000 05 04 | 691 | 0.1− | 0.4+ | 2002 11 23 | 644 | 0.9− | 0.3− | 2006 06 20 | 644 | 0.6+ | 0.4− |
| 2001 05 19 | 608 | 1.2+ | 1.5+ | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 06 20 | 644 | 0.8+ | 0.3− |
| 2001 05 19 | 608 | 2.7+ | 2.4+ | 2002 12 10 | 644 | 1.8− | 0.3− | 2006 06 20 | 644 | 0.7+ | 0.4− |
| 2001 05 24 | 608 | 1.7+ | 1.0+ | 2002 12 27 | 644 | 0.9− | 0.3− | | | | |
| 2001 05 24 | 608 | 1.1+ | 1.2+ | 2002 12 27 | 644 | 1.2− | 0.4+ | | | | |

**(145547)∗ 2006 KC$_{87}$ = 2005 FP$_{4}$**

Discovered 2006 May 27 by the Siding Spring Survey at Siding Spring.

Id. T. B. Spahr (*MPO* 101830)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 25.38779 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23951734 | $\omega$ | 174.42182 | | +0.55168182 | | +0.57843663 | |
| $a$ | 2.5678998 | $\Omega$ | 127.25012 | | −0.79145071 | | +0.59037086 | |
| $e$ | 0.1487294 | $i$ | 49.01447 | | −0.26315955 | | −0.56291501 | |
| $P$ | 4.11 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 704 | 0.7− | 0.0 | 2006 05 28 | I77 | 0.4+ | 0.2+ | 2006 06 23 | 644 | 0.0 | 0.0 |
| 1999 12 16 | 704 | 0.2− | 1.2+ | 2006 05 28 | H36 | 1.2+ | 1.2− | 2006 06 26 | 704 | 0.0 | 0.1+ |
| 1999 12 16 | 704 | 1.1− | 1.7+ | 2006 05 28 | H36 | 0.3+ | 0.2− | 2006 06 26 | 704 | 0.6− | 0.6+ |
| 1999 12 16 | 704 | 0.4− | 0.6+ | 2006 05 28 | H36 | 0.0 | 0.2+ | 2006 06 26 | 704 | 0.3− | 0.4+ |
| 2001 04 15 | 645 | 0.1+ | 0.1+ | 2006 05 28 | H36 | 1.4+ | 0.7− | 2006 06 30 | 704 | 0.6+ | 0.3+ |
| 2001 04 15 | 645 | 0.0 | 0.1+ | 2006 05 28 | 703 | 0.2− | 0.1− | 2006 06 30 | 704 | 0.2− | 0.0 |
| 2002 06 08 | 608 | 0.3− | 1.0+ | 2006 05 28 | 703 | 0.0 | 0.3− | 2006 06 30 | 704 | 0.6+ | 0.6− |
| 2002 06 08 | 608 | 0.1− | 1.2+ | 2006 05 28 | 703 | 0.1+ | 0.1− | 2006 06 30 | 704 | 0.7+ | 0.3+ |
| 2002 06 08 | 608 | 0.1− | 0.8+ | 2006 05 28 | 703 | 0.3− | 0.2− | 2006 06 30 | 704 | 1.3+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 704 | 0.1+ | 0.1− | 2006 05 28 | E12 | 0.2+ | 0.4+ | 2006 07 18 | 704 | 0.3− | 1.1+ |
| 2004 01 28 | 704 | 0.0 | 0.7− | 2006 05 28 | E12 | 0.3+ | 0.1+ | 2006 07 18 | 704 | 0.1− | 0.3− |
| 2004 01 28 | 704 | 0.0 | 0.1− | 2006 05 28 | E12 | 0.4+ | 0.4+ | 2006 07 18 | 704 | 0.7+ | 0.3− |
| 2004 01 28 | 704 | 0.0 | 0.1− | 2006 05 29 | 734 | 0.1+ | 0.1− | 2006 07 18 | 704 | 0.2+ | 0.1− |
| 2004 01 28 | 704 | 0.2− | 0.4+ | 2006 05 29 | 734 | 0.2− | 0.0 | 2006 07 18 | 704 | 0.5+ | 0.5− |
| 2005 03 31 | 704 | (0.1+ | 2.5+) | 2006 05 29 | 734 | 0.1− | 0.1− | 2006 08 13 | E12 | 0.1− | 0.0 |
| 2005 03 31 | 704 | (0.0 | 3.0+) | 2006 05 29 | 854 | 0.2− | 0.2− | 2006 08 13 | E12 | 0.2− | 0.1+ |
| 2005 03 31 | 704 | (0.1− | 1.7+) | 2006 05 29 | 854 | 0.1+ | 0.1+ | 2006 08 13 | E12 | 0.2− | 0.3+ |
| 2005 03 31 | 118 | 0.1+ | 0.1+ | 2006 05 29 | 854 | 0.5+ | 0.4+ | 2006 08 13 | E12 | 0.4+ | 0.1− |
| 2005 03 31 | 118 | 0.0 | 0.3+ | 2006 06 03 | 699 | 0.2− | 0.1+ | 2006 08 25 | E12 | 0.3+ | 0.1+ |
| 2005 03 31 | 118 | 0.1+ | 0.2+ | 2006 06 03 | 699 | 1.0− | 0.6+ | 2006 08 25 | E12 | 0.4− | 0.5+ |
| 2005 04 01 | 854 | 0.8− | 0.4− | 2006 06 03 | 699 | 0.1+ | 0.0 | 2006 08 25 | E12 | 0.1− | 0.1+ |
| 2005 04 01 | 854 | 0.1− | 0.5− | 2006 06 03 | 703 | 1.1− | 0.1+ | 2006 08 26 | E12 | 0.3− | 0.1+ |
| 2005 04 01 | 854 | 0.4− | 0.9− | 2006 06 03 | 703 | 0.4− | 0.0 | 2006 08 26 | E12 | 0.3+ | 0.1+ |
| 2006 05 27 | E12 | 0.1− | 0.3− | 2006 06 03 | 703 | 0.7− | 0.7− | 2006 08 26 | E12 | 0.5+ | 0.2− |
| 2006 05 27 | E12 | 0.1− | 0.4− | 2006 06 03 | 699 | 0.5− | 0.2+ | 2006 08 26 | E12 | 0.1+ | 0.3− |
| 2006 05 27 | E12 | 0.1− | 0.2− | 2006 06 03 | 703 | 0.5− | 0.5− | 2006 08 31 | E12 | 0.5− | 0.0 |
| 2006 05 27 | E12 | 0.4− | 0.2+ | 2006 06 19 | 703 | 0.2− | 0.2+ | 2006 08 31 | E12 | 0.3− | 0.3+ |
| 2006 05 27 | E12 | 0.1+ | 0.0 | 2006 06 19 | 703 | 0.8− | 0.6+ | 2006 08 31 | E12 | 0.3− | 0.4+ |
| 2006 05 27 | E12 | 0.3− | 0.0 | 2006 06 19 | 703 | 0.3+ | 0.8− | 2006 08 31 | E12 | 0.0 | 0.3+ |
| 2006 05 27 | E12 | 0.4− | 0.7+ | 2006 06 19 | 703 | 0.8− | 0.4− | 2006 09 14 | E12 | 0.1− | 0.3+ |
| 2006 05 27 | E12 | 0.4+ | 0.0 | 2006 06 20 | G96 | 0.0 | 0.1− | 2006 09 14 | E12 | 0.3+ | 0.1− |
| 2006 05 27 | E12 | 0.1− | 0.0 | 2006 06 20 | G96 | 0.1+ | 0.1− | 2006 09 14 | E12 | 0.4+ | 0.1− |
| 2006 05 27 | E12 | 0.1+ | 0.2+ | 2006 06 20 | G96 | 0.0 | 0.2− | 2006 09 14 | E12 | 0.1+ | 0.1+ |
| 2006 05 27 | E12 | 0.0 | 0.2+ | 2006 06 20 | G96 | 0.1− | 0.2− | 2006 09 22 | E12 | 0.3+ | 0.1− |
| 2006 05 27 | E12 | 0.6+ | 0.1− | 2006 06 22 | 699 | 0.3− | 0.6+ | 2006 09 22 | E12 | 0.2+ | 0.7− |
| 2006 05 27 | E12 | 0.1− | 0.0 | 2006 06 22 | 699 | 0.2− | 0.7+ | 2006 09 22 | E12 | 0.3− | 0.4− |
| 2006 05 27 | E12 | 0.6− | 0.0 | 2006 06 22 | 699 | 0.4− | 0.3+ | 2006 09 22 | E12 | 0.0 | 0.3− |
| 2006 05 27 | E12 | 0.4+ | 0.4− | 2006 06 22 | 699 | 0.4− | 0.3+ | 2006 10 11 | E12 | 1.2+ | 0.3+ |
| 2006 05 28 | I77 | 1.0+ | 0.1− | 2006 06 23 | 644 | 0.3− | 0.0 | 2006 10 11 | E12 | 0.0 | 0.0 |
| 2006 05 28 | I77 | 0.2+ | 0.2+ | 2006 06 23 | 644 | 0.3− | 0.1+ | 2006 10 11 | E12 | 0.1+ | 0.4− |

**(145548)∗ 2006 KG$_{99}$ = 2001 FL$_{125}$**

Discovered 2006 May 26 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 103928)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.00672 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26279386 | $\omega$ | 188.64682 | | +0.94595910 | −0.32421473 |
| $a$ | 2.4139368 | $\Omega$ | 190.27894 | | +0.29975775 | +0.88221221 |
| $e$ | 0.1518960 | $i$ | 2.18262 | | +0.12372013 | +0.34144754 |
| $P$ | 3.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 809 | (3.5− | 3.2−) | 2003 12 19 | 704 | 0.9+ | 0.1+ | 2006 05 30 | G96 | 0.2− | 0.3− |
| 1995 09 19 | 809 | 1.1+ | 0.4− | 2003 12 21 | 704 | (3.7− | 0.8+) | 2006 05 30 | G96 | 0.1− | 0.1+ |
| 1995 09 29 | 691 | 0.6− | 0.5+ | 2003 12 21 | 704 | 0.9− | 0.3+ | 2006 05 30 | G96 | 0.4+ | 0.2− |
| 1995 09 29 | 691 | 0.2− | 0.6+ | 2003 12 21 | 704 | 0.2− | 0.7+ | 2006 08 12 | 644 | 0.0 | 0.0 |
| 1995 09 29 | 691 | 0.1− | 0.4+ | 2003 12 21 | 704 | 0.3+ | 0.2− | 2006 08 12 | 644 | 0.1+ | 0.1− |
| 1999 11 04 | 704 | 0.1− | 0.1− | 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 08 12 | 644 | 0.1+ | 0.3+ |
| 1999 11 04 | 704 | 0.6− | 1.4− | 2005 03 08 | G96 | 0.6− | 0.3+ | 2006 08 13 | 644 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 0.5+ | 0.4− | 2005 03 08 | G96 | 1.0− | 0.2− | 2006 08 13 | 644 | 0.0 | 0.3+ |
| 1999 11 04 | 704 | 0.0 | 0.9− | 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 0.2+ | 0.1− | 2005 04 02 | 691 | 0.3+ | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.1+ |
| 2001 03 24 | 691 | 0.2+ | 0.1+ | 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2001 03 24 | 691 | 0.5+ | 0.2− | 2005 04 02 | 691 | 0.6− | 0.5+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2001 03 24 | 691 | 0.6+ | 0.4+ | 2005 05 06 | G96 | 0.1− | 0.1− | 2006 08 20 | 644 | 0.4− | 0.2+ |
| 2001 03 30 | 691 | 0.5− | 0.0 | 2005 05 06 | G96 | 0.2+ | 1.0+ | 2006 08 20 | 644 | 0.3+ | 0.2+ |
| 2001 03 30 | 691 | 0.1− | 0.6− | 2005 05 06 | G96 | 0.9+ | 0.6+ | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2001 03 30 | 691 | 0.7− | 0.0 | 2005 05 06 | G96 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2006 05 26 | G96 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2001 04 16 | 645 | 0.2+ | 0.1− | 2006 05 26 | G96 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2003 12 19 | 704 | 0.8+ | 0.7+ | 2006 05 26 | G96 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2003 12 19 | 704 | 0.3− | 0.4+ | 2006 05 26 | G96 | 0.3+ | 0.1− | | | | |
| 2003 12 19 | 704 | 0.1− | 0.7+ | 2006 05 30 | G96 | 0.3+ | 0.1+ | | | | |

**(145549)∗ 2006 KJ$_{124}$ = 1986 TY = 1994 RC$_2$**

Discovered 2006 May 23 by the Siding Spring Survey at Siding Spring.

Id. T. B. Spahr (*MPO* 103932)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.49879 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24277983 | $\omega$ | 0.61479 | | +0.99698421 | +0.07119286 |
| $a$ | 2.5448429 | $\Omega$ | 354.97916 | | −0.07262237 | +0.71558101 |
| $e$ | 0.2787005 | $i$ | 20.66662 | | −0.02735816 | +0.69489236 |
| $P$ | 4.06 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1986 10 04 | 675 | 2.0− | 0.2+ | 2004 01 19 | 704 | 0.2+ | 0.4+ | 2006 08 31 | E12 | 0.0 | 0.1+ |
| 1986 10 04 | 675 | (2.8+ | 2.5−) | 2004 01 19 | 704 | 0.1− | 0.4+ | 2006 08 31 | E12 | 0.5− | 0.2+ |
| 1986 10 05 | 675 | 0.5− | 0.2− | 2004 01 19 | 704 | 0.4+ | 0.4− | 2006 08 31 | E12 | 0.4− | 0.1+ |
| 1986 10 05 | 675 | (5.5− | 2.2−) | 2004 01 19 | 704 | 0.4+ | 0.2+ | 2006 08 31 | E12 | 0.1+ | 0.1+ |
| 1994 09 03 | 675 | 0.9+ | 0.0 | 2004 01 19 | 704 | 1.2− | 0.2− | 2006 09 01 | I77 | 0.2+ | 0.1− |
| 1994 09 03 | 675 | 0.7+ | 0.3− | 2004 01 30 | 703 | 0.2+ | 0.5− | 2006 09 01 | I77 | 0.2− | 0.1− |
| 1994 09 05 | 675 | 1.4− | 1.0+ | 2004 01 30 | 703 | 0.4− | 0.5− | 2006 09 01 | I77 | 0.3− | 0.5− |
| 1994 09 05 | 675 | 1.3+ | 0.8+ | 2004 01 30 | 703 | 1.8+ | 0.0 | 2006 09 01 | E12 | 0.3− | 0.2+ |
| 1998 09 21 | 704 | 1.2+ | 0.4− | 2004 01 30 | 703 | 1.0+ | 0.8− | 2006 09 01 | E12 | 0.1− | 0.4− |
| 1998 09 21 | 704 | 0.2− | 0.2− | 2006 05 23 | E12 | 0.3− | 0.2+ | 2006 09 01 | E12 | 0.0 | 0.0 |
| 1998 09 21 | 704 | 0.9− | 0.1− | 2006 05 23 | E12 | 0.5+ | 1.4+ | 2006 09 01 | E12 | 0.1− | 0.3+ |
| 1998 09 21 | 704 | 1.4+ | 0.4+ | 2006 05 23 | E12 | 0.6− | 0.2− | 2006 09 01 | 423 | 0.1+ | 0.5− |
| 1998 09 21 | 704 | 1.0+ | 0.3− | 2006 05 23 | E12 | 1.0− | 0.2+ | 2006 09 01 | 423 | 0.2+ | 0.2+ |
| 2003 11 21 | 644 | 0.6+ | 0.4+ | 2006 06 06 | E12 | 0.3− | 0.3− | 2006 09 13 | E12 | 0.0 | 0.0 |
| 2003 11 21 | 644 | 0.3+ | 0.3+ | 2006 06 06 | E12 | 0.0 | 0.2− | 2006 09 13 | E12 | 0.3+ | 0.6− |
| 2003 11 21 | 644 | 0.1+ | 0.3+ | 2006 06 06 | E12 | 0.4− | 0.5+ | 2006 09 16 | E12 | 0.2+ | 0.1+ |
| 2003 12 29 | 703 | 0.5+ | 0.4+ | 2006 06 06 | E12 | 0.1− | 0.3+ | 2006 09 16 | E12 | 0.1− | 0.1− |
| 2003 12 29 | 703 | 0.7− | 0.0 | 2006 06 28 | E12 | 0.6− | 0.6+ | 2006 09 16 | E12 | 0.4+ | 0.4− |
| 2003 12 29 | 703 | 0.3− | 1.8+ | 2006 06 28 | E12 | 0.2− | 0.0 | 2006 09 27 | E12 | 0.7+ | 0.2+ |
| 2003 12 29 | 703 | 0.5− | 0.7+ | 2006 06 28 | E12 | 0.8− | 0.0 | 2006 09 27 | E12 | 0.2+ | 0.4+ |
| 2003 12 29 | 703 | 1.5+ | 0.2+ | 2006 06 28 | E12 | 0.1− | 0.1− | 2006 09 27 | E12 | 0.4+ | 0.6+ |
| 2003 12 29 | 703 | (2.8+ | 0.2+) | 2006 08 31 | E12 | 0.5− | 0.1− | 2006 10 10 | E12 | 0.5+ | 0.1+ |
| 2003 12 29 | 703 | 0.2− | 0.8+ | 2006 08 31 | E12 | 0.3− | 0.6+ | 2006 10 10 | E12 | 0.3− | 0.7− |
| 2003 12 29 | 703 | 0.6− | 0.8− | 2006 08 31 | E12 | 0.2− | 0.0 | 2006 10 10 | E12 | 0.8− | 0.0 |

**(145550)∗ 2006 KA$_{125}$**

Discovered 2006 May 29 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.88998 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22028644 | $\omega$ | 295.95532 | | +0.97876558 | +0.12858008 |
| $a$ | 2.7152566 | $\Omega$ | 57.04451 | | −0.03557386 | +0.87353091 |
| $e$ | 0.3697270 | $i$ | 10.96758 | | −0.20187232 | +0.46947940 |
| $P$ | 4.47 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 608 | 0.6− | 0.3− | 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 09 16 | E12 | 0.2+ | 0.1+ |
| 2001 06 15 | 608 | 0.1− | 0.1+ | 2005 05 13 | 691 | 0.2+ | 0.4+ | 2006 09 16 | E12 | 0.0 | 0.4+ |
| 2001 06 15 | 608 | 0.2− | 0.7− | 2005 05 13 | 691 | 0.0 | 0.6+ | 2006 09 16 | E12 | 0.6− | 0.5− |
| 2002 11 12 | 704 | 1.3+ | 0.4+ | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 09 22 | E12 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.8+ | 0.2+ | 2006 05 29 | E12 | 0.1− | 0.1− | 2006 09 22 | E12 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.2− | 0.4+ | 2006 05 29 | E12 | 0.6− | 0.1+ | 2006 09 22 | E12 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | 0.9+ | 1.3+ | 2006 05 29 | E12 | 0.6− | 0.0 | 2006 09 22 | E12 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.5− | 0.2− | 2006 05 29 | E12 | 0.3− | 0.7+ | 2006 09 28 | E12 | 0.3+ | 0.1− |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2006 06 22 | E12 | 0.7+ | 0.4+ | 2006 09 28 | E12 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 06 22 | E12 | 0.6+ | 0.5− | 2006 09 28 | E12 | 0.3− | 0.2+ |
| 2002 12 05 | 704 | 0.5+ | 0.3− | 2006 06 22 | E12 | 0.5− | 1.0+ | 2006 09 28 | E12 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.5− | 2006 06 22 | E12 | 0.1+ | 0.5+ | 2006 10 12 | E12 | 0.0 | 0.1+ |
| 2002 12 15 | 704 | 0.1− | 0.7+ | 2006 07 28 | E12 | 0.0 | 0.1− | 2006 10 12 | E12 | 0.2− | 0.3+ |
| 2002 12 15 | 704 | 1.4− | 0.9+ | 2006 07 28 | E12 | 0.4+ | 0.1+ | 2006 10 12 | E12 | 0.2− | 0.2+ |
| 2002 12 15 | 704 | 0.3+ | 1.1+ | 2006 07 28 | E12 | 0.6− | 0.0 | 2006 10 12 | E12 | 0.2− | 0.2− |
| 2002 12 15 | 704 | (0.7− | 2.3+) | 2006 07 28 | E12 | 0.0 | 0.5− | 2006 11 05 | 644 | 0.1+ | 0.2+ |
| 2003 01 04 | 704 | 0.4− | 0.3+ | 2006 07 28 | E12 | 0.4− | 0.1− | 2006 11 05 | 644 | 0.1+ | 0.2+ |
| 2003 01 04 | 704 | 0.2− | 0.3+ | 2006 07 28 | E12 | 0.1+ | 0.1− | 2006 11 05 | 644 | 0.1− | 0.3+ |
| 2003 01 04 | 704 | 0.1+ | 0.3+ | 2006 07 28 | E12 | 0.9− | 0.1− | 2006 11 11 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.8+ | 0.2− | 2006 08 14 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 644 | 0.1+ | 0.3+ | | |
| 2003 01 04 | 704 | 0.1− | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.5+ | | |
| 2003 01 31 | 704 | 0.5− | 0.3+ | 2006 08 14 | 644 | 0.0 | 0.4+ | 2006 11 23 | 703 | 1.0+ | 0.4+ | | |
| 2003 01 31 | 704 | 0.5− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.8− | 1.1− | | |
| 2003 01 31 | 704 | 0.1− | 0.3− | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.8− | 0.1+ | | |
| 2005 04 01 | 691 | 0.5+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.4− | 0.2+ | | |
| 2005 04 01 | 691 | 0.1+ | 0.4+ | 2006 09 16 | E12 | 0.3+ | 0.4+ | | | | | | |

**(145551)∗ 2006 LX$_1$**

Discovered 2006 June 10 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.23426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21609659 | $\omega$ | 234.28785 | | +0.97155563 | +0.17523542 | |
| $a$ | 2.7502412 | $\Omega$ | 115.13965 | | −0.11644744 | +0.93921119 | |
| $e$ | 0.1850240 | $i$ | 10.13416 | | −0.20620293 | +0.29525394 | |
| $P$ | 4.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 704 | 0.3− | 0.2+ | 2005 04 13 | 703 | 0.7− | 0.4+ | 2006 08 14 | 644 | 0.3+ | 0.3+ | | |
| 2001 05 26 | 704 | 0.5+ | 0.5+ | 2005 04 13 | 703 | 0.7+ | 0.3+ | 2006 08 14 | 644 | 0.4+ | 0.2+ | | |
| 2001 05 26 | 704 | 0.8+ | 0.1+ | 2005 04 13 | 703 | 0.1− | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.6+ | | |
| 2001 05 26 | 704 | 0.2+ | 1.0+ | 2006 05 24 | G96 | 0.2− | 0.1+ | 2006 08 20 | 644 | 0.3+ | 0.3+ | | |
| 2001 07 08 | 644 | 0.5− | 0.7+ | 2006 05 24 | G96 | 0.1+ | 0.1− | 2006 08 20 | 644 | 0.3+ | 0.4+ | | |
| 2001 07 08 | 644 | 0.3− | 0.5+ | 2006 05 24 | G96 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.3+ | | |
| 2001 07 08 | 644 | 0.4+ | 0.1+ | 2006 05 24 | G96 | 0.0 | 0.3− | 2006 08 21 | 644 | 0.2− | 0.4+ | | |
| 2002 09 15 | 699 | 0.9− | 1.0+ | 2006 06 10 | 644 | 0.1− | 0.2+ | 2006 08 21 | 644 | 0.0 | 0.4+ | | |
| 2002 09 15 | 699 | 0.2+ | 0.5+ | 2006 06 10 | 644 | 0.1+ | 0.4+ | 2006 08 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 09 15 | 699 | 0.3+ | 0.9+ | 2006 06 10 | 644 | 0.0 | 0.1+ | 2006 08 21 | 644 | 0.2+ | 0.5+ | | |
| 2002 09 15 | 699 | 0.3+ | 0.8+ | 2006 06 10 | 644 | 0.1+ | 0.1+ | 2006 08 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 06 10 | 644 | 0.4− | 0.1+ | 2006 08 23 | 704 | 0.2+ | 0.2− | | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 06 10 | 644 | 0.1+ | 0.1− | 2006 08 23 | 704 | 1.1− | 0.9+ | | |
| 2002 10 31 | 704 | 0.9− | 0.9+ | 2006 06 11 | 644 | 0.3− | 0.1+ | 2006 08 23 | 704 | 0.4− | 0.2− | | |
| 2002 10 31 | 704 | 0.3− | 0.9+ | 2006 06 11 | 644 | 0.0 | 0.5+ | 2006 08 23 | 704 | 0.4− | 0.4+ | | |
| 2002 10 31 | 704 | 0.4− | 1.4+ | 2006 06 11 | 644 | 0.2− | 0.2+ | 2006 08 23 | 704 | 0.1+ | 0.3− | | |
| 2002 10 31 | 704 | 0.7− | 1.7+ | 2006 07 19 | 644 | 0.0 | 0.1− | 2006 08 24 | 704 | 0.5− | 0.5− | | |
| 2002 10 31 | 704 | 0.6− | 1.1+ | 2006 07 19 | 644 | 0.2− | 0.1+ | 2006 08 24 | 704 | 0.8+ | 0.5− | | |
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2006 07 19 | 644 | 0.5− | 0.0 | 2006 08 24 | 704 | 0.2− | 0.8+ | | |
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2006 07 21 | 704 | 0.3+ | 0.3− | 2006 08 24 | 704 | 0.7− | 1.4+ | | |
| 2002 11 30 | 704 | 0.7− | 0.3+ | 2006 07 21 | 704 | 0.3+ | 0.4− | 2006 08 24 | 704 | 0.4− | 1.2− | | |
| 2002 11 30 | 704 | 0.2− | 1.2+ | 2006 07 21 | 704 | 0.3+ | 0.6− | 2006 08 24 | 704 | 0.4− | 0.4− | | |
| 2002 11 30 | 704 | 0.7− | 0.8+ | 2006 07 21 | 704 | 0.3+ | 0.1− | 2006 08 28 | 704 | 0.6+ | 0.0 | | |
| 2002 11 30 | 704 | 0.3− | 0.8+ | 2006 07 21 | 704 | 0.0 | 0.3− | 2006 08 28 | 704 | 0.3− | 0.9− | | |
| 2004 01 22 | 704 | 1.4+ | 1.0+ | 2006 08 12 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 0.6− | 1.2− | | |
| 2004 01 22 | 704 | 0.1− | 1.1+ | 2006 08 12 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 704 | 1.2− | 0.7− | | |
| 2004 01 22 | 704 | 1.1+ | 0.5+ | 2006 08 12 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 0.3+ | 1.1− | | |
| 2004 01 22 | 704 | 0.9+ | 0.9+ | 2006 08 13 | 644 | 0.4+ | 0.1+ | 2006 09 15 | 644 | 0.1− | 0.2+ | | |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2006 08 13 | 644 | 0.4+ | 0.2+ | 2006 09 15 | 644 | 0.1− | 0.4+ | | |
| 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.3+ | 0.2+ | 2006 09 15 | 644 | 0.1+ | 0.7+ | | |
| 2005 04 13 | 703 | 0.0 | 0.7− | 2006 08 14 | 644 | 0.5+ | 0.3+ | | | | | | |

**(145552)∗ 2006 LZ$_1$**

Discovered 2006 June 11 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.32505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25443301 | $\omega$ | 184.78272 | | +0.88261845 | +0.46010004 | |
| $a$ | 2.4665338 | $\Omega$ | 147.26529 | | −0.42517121 | +0.86879394 | |
| $e$ | 0.2483329 | $i$ | 10.26887 | | −0.20053457 | +0.18304381 | |
| $P$ | 3.87 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 26 | 704 | 1.6− | 0.8+ | 2006 06 01 | 703 | 0.9− | 0.7− | 2006 09 14 | 644 | 0.1− | 0.0 | | |
| 1998 05 26 | 704 | 0.6− | 1.6+ | 2006 06 01 | 703 | 0.2+ | 0.5− | 2006 09 14 | 644 | 0.1+ | 0.2− | | |
| 1998 05 26 | 704 | 0.4+ | 0.9− | 2006 06 01 | 703 | 0.1+ | 0.9− | 2006 09 14 | 644 | 0.0 | 0.0 | | |
| 1998 05 26 | 704 | 0.3− | 0.4+ | 2006 06 11 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.9+ | | |
| 1998 06 19 | 704 | 0.7− | 1.4− | 2006 06 11 | 644 | 0.3− | 0.3− | 2006 09 17 | 704 | 0.2+ | 0.3− | | |
| 1998 06 19 | 704 | 1.1+ | 1.0+ | 2006 06 11 | 644 | 0.2− | 0.3− | 2006 09 17 | 704 | 0.2+ | 0.4+ | | |
| 1998 06 19 | 704 | (3.2+ | 1.5+) | 2006 06 12 | 644 | 0.3− | 0.3− | 2006 09 17 | 704 | 0.2+ | 0.6+ | | |
| 1998 06 19 | 704 | 0.5+ | 0.3− | 2006 06 12 | 644 | 0.1+ | 0.0 | 2006 09 17 | 704 | 1.1+ | 1.0− | | |
| 1998 06 19 | 704 | 0.5+ | 0.1+ | 2006 06 12 | 644 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.5− | | |
| 2002 07 09 | 704 | 0.2+ | 0.1+ | 2006 06 20 | 644 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.3− | 0.7− | | |
| 2002 07 09 | 704 | 0.1− | 0.0 | 2006 06 20 | 644 | 0.3− | 0.3− | 2006 09 20 | 704 | 0.1− | 0.5− | | |
| 2002 07 09 | 704 | 0.1+ | 0.2+ | 2006 06 20 | 644 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.0 | 0.3− | | |
| 2002 07 09 | 704 | 0.0 | 0.2+ | 2006 07 24 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.5+ | | |
| 2002 07 09 | 704 | 0.3+ | 0.5+ | 2006 07 24 | 704 | 0.7+ | 0.9+ | 2006 09 27 | 704 | 0.3− | 0.3+ | | |
| 2002 07 18 | 704 | 0.2− | 0.1− | 2006 07 24 | 704 | 1.1+ | 0.6− | 2006 09 27 | 704 | (0.2− | 2.2−) | | |
| 2002 07 18 | 704 | 0.3+ | 0.1− | 2006 07 24 | 704 | 0.2+ | 0.6+ | 2006 09 28 | 704 | (2.3− | 3.0−) | | |
| 2002 07 18 | 704 | 0.3+ | 0.1+ | 2006 08 11 | 644 | 0.3− | 0.1− | 2006 09 28 | 704 | (3.5− | 2.8−) | | |
| 2002 07 18 | 704 | 0.2+ | 0.1+ | 2006 08 11 | 644 | 0.2− | 0.2− | 2006 09 28 | 704 | (2.5− | 2.9−) | | |
| 2003 12 20 | 704 | 0.0 | 0.6+ | 2006 08 11 | 644 | 0.2− | 0.1− | 2006 10 13 | E12 | (0.0 | 1.7+) | | |
| 2003 12 20 | 704 | 1.1− | 0.7+ | 2006 08 15 | 644 | 0.3− | 0.1− | 2006 10 13 | E12 | (1.5− | 1.6−) | | |
| 2003 12 20 | 704 | 0.5+ | 1.1+ | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 10 13 | E12 | 0.0 | 0.4+ | | |
| 2003 12 20 | 704 | 0.3+ | 1.0+ | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 10 13 | E12 | 0.1− | 0.5+ | | |
| 2005 03 12 | 704 | 1.4+ | 1.1+ | 2006 08 20 | 644 | 0.3− | 0.1− | 2006 10 22 | 704 | 1.4− | 0.5+ | | |
| 2005 03 12 | 704 | 0.5− | 0.8+ | 2006 08 20 | 644 | 0.4− | 0.0 | 2006 10 22 | 704 | 0.4− | 0.1+ | | |
| 2005 03 12 | 704 | 0.6− | 0.9+ | 2006 08 20 | 644 | 0.4− | 0.1− | 2006 10 22 | 704 | 1.0+ | 0.4− | | |
| 2005 03 16 | 704 | (1.6+ | 1.4−) | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 2.3+ | 1.2+ | | |
| 2005 03 16 | 704 | (1.8+ | 1.1+) | 2006 08 24 | 644 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.3+ | | |
| 2005 03 16 | 704 | 0.2+ | 1.2+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.3− | 1.1+ | | |
| 2005 03 16 | 704 | 0.0 | 1.1+ | 2006 08 29 | 704 | 0.7+ | 1.4+ | 2006 11 20 | 704 | 0.1+ | 0.9+ | | |
| 2005 04 18 | 691 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.6− | 0.1+ | | |
| 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.2+ | 1.1+ | 2006 11 20 | 704 | 0.3− | 0.7+ | | |
| 2005 04 18 | 691 | 0.4+ | 0.2+ | 2006 08 29 | 704 | 0.6+ | 1.2+ | | | | | | |
| 2006 06 01 | 703 | 0.5− | 0.0 | 2006 08 29 | 704 | 0.1+ | 0.4+ | | | | | | |

**(145553)∗ 2006 LN$_5$**

Discovered 2006 June 3 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.00284 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28720440 | $\omega$ | 139.71222 | | +0.97610584 | +0.21275554 | |
| $a$ | 2.2751428 | $\Omega$ | 208.09680 | | −0.21556927 | +0.92253692 | |
| $e$ | 0.2563163 | $i$ | 5.38353 | | −0.02733637 | +0.32196383 | |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.1+ | 0.6+ | 2006 09 01 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.2+ | | |
| 1999 07 13 | 704 | 0.8− | 0.3+ | 2006 09 01 | 704 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.4+ | | |
| 1999 07 13 | 704 | 0.3− | 0.5− | 2006 09 06 | 699 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.0 | | |
| 1999 07 13 | 704 | 0.1− | 0.1− | 2006 09 06 | 699 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.3+ | | |
| 1999 07 13 | 704 | 0.4− | 0.1+ | 2006 09 06 | 699 | 0.5− | 1.1+ | 2006 09 29 | 704 | 0.4+ | 0.4− | | |
| 1999 09 08 | 704 | 0.4+ | 0.3+ | 2006 09 06 | 699 | 0.5+ | 1.1+ | 2006 09 29 | 704 | 0.3+ | 0.1+ | | |
| 1999 09 08 | 704 | 0.0 | 0.6− | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.0 | 0.7− | | |
| 1999 09 08 | 704 | 0.6+ | 0.2− | 2006 09 06 | 644 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.3− | 0.1+ | | |
| 1999 09 08 | 704 | 0.0 | 0.5− | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.1− | | |
| 1999 10 15 | 704 | 1.0+ | 1.1− | 2006 09 12 | 703 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.4+ | | |
| 1999 10 15 | 704 | 0.2+ | 0.5− | 2006 09 12 | 703 | 0.4− | 0.5− | 2006 10 01 | 704 | 0.7− | 0.6− | | |
| 1999 10 15 | 704 | 0.3+ | 0.7− | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.8− | 1.2+ | | |
| 2002 04 19 | 691 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.7+ | | |
| 2002 04 19 | 691 | 0.2− | 0.0 | 2006 09 13 | 127 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.8− | 0.8+ | | |
| 2002 04 19 | 691 | 0.3+ | 0.1+ | 2006 09 13 | 127 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.1− | | |
| 2002 04 30 | 644 | 0.1− | 0.0 | 2006 09 15 | 704 | 1.0− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.1− | | |
| 2002 04 30 | 644 | 0.5+ | 0.8+ | 2006 09 15 | 704 | 0.8− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.0 | | |
| 2002 04 30 | 644 | 0.8+ | 1.0+ | 2006 09 15 | 704 | 0.9− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 05 16 | 608 | 0.5− | 0.4+ | 2006 09 15 | 704 | 0.6− | 0.2− | 2006 10 17 | 106 | 0.4+ | 0.1− | | |
| 2002 05 16 | 608 | 0.6+ | 0.2+ | 2006 09 15 | 704 | 0.8− | 0.0 | 2006 10 17 | 106 | 0.5+ | 0.2− | | |
| 2002 05 16 | 608 | 0.5+ | 0.3+ | 2006 09 16 | 704 | 0.7− | 0.2+ | 2006 10 17 | 106 | 0.0 | 0.3− | | |
| 2002 06 06 | 704 | 0.4+ | 1.2+ | 2006 09 16 | 704 | 0.4− | 0.2− | 2006 10 17 | 106 | 0.2− | 0.2− | | |
| 2002 06 06 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 0.5− | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.1− | | |
| 2002 06 06 | 704 | (0.4− | 1.9+) | 2006 09 16 | 704 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.1− | | |
| 2002 06 06 | 704 | (0.1+ | 2.2+) | 2006 09 16 | 704 | 0.3− | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.1− | | |
| 2003 12 22 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 644 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.2+ | 0.1− | | |
| 2003 12 22 | 704 | 0.6− | 1.2+ | 2006 09 16 | 644 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2− | | |
| 2003 12 22 | 704 | 0.2− | 0.3+ | 2006 09 16 | 644 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.2− | | |
| 2003 12 22 | 704 | 0.6+ | 0.9+ | 2006 09 18 | 704 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | G96 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2005 05 14 | G96 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.6− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2005 05 14 | G96 | 0.8− | 0.0 | 2006 09 18 | 704 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2005 05 14 | G96 | 0.2− | 1.2+ | 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.4− | 0.4− |
| 2006 06 03 | 703 | 0.1− | 1.0− | 2006 09 19 | 699 | (1.9− | 0.9+) | 2006 10 28 | 704 | 0.6− | 1.3+ |
| 2006 06 03 | 703 | 0.6+ | 0.8+ | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 10 28 | 704 | 0.6+ | 0.7+ |
| 2006 06 03 | 703 | (1.8+ | 1.7−) | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.2+ | 0.2− |
| 2006 06 03 | 703 | 0.2− | 1.0− | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2006 06 21 | 703 | 0.0 | 0.6− | 2006 09 19 | 703 | 0.2− | 0.3− | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2006 06 21 | 703 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 11 10 | 704 | 0.2− | 1.0+ |
| 2006 06 21 | 703 | 1.0− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 11 10 | 704 | 0.3+ | 0.9+ |
| 2006 06 21 | 703 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 11 10 | 704 | 0.2+ | 0.5+ |
| 2006 07 01 | 703 | 1.5− | 0.7− | 2006 09 20 | 127 | 0.3+ | 0.0 | 2006 11 10 | 704 | 0.5+ | 0.1+ |
| 2006 07 01 | 703 | 0.7+ | 0.7− | 2006 09 20 | 127 | 0.4+ | 0.2− | 2006 11 10 | 704 | (0.0 | 2.3+) |
| 2006 07 01 | 703 | 0.4− | 0.3− | 2006 09 20 | 127 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2006 07 01 | 703 | 0.5− | 0.9− | 2006 09 21 | 127 | 1.0− | 1.0+ | 2006 11 11 | 703 | 0.8− | 1.1+ |
| 2006 07 21 | 704 | 0.2+ | 0.2+ | 2006 09 21 | 127 | 0.7− | 0.8+ | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2006 07 21 | 704 | 0.8+ | 0.6+ | 2006 09 24 | 106 | 0.4+ | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2006 07 21 | 704 | 0.0 | 0.0 | 2006 09 24 | 106 | 0.4+ | 0.3− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2006 07 21 | 704 | 0.4+ | 0.9− | 2006 09 24 | 106 | 0.2+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.2+ |
| 2006 07 24 | 704 | 0.6+ | 0.2− | 2006 09 24 | 106 | 0.2+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2006 07 24 | 704 | 0.5+ | 1.2+ | 2006 09 25 | 704 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.8− |
| 2006 07 24 | 704 | (0.8− | 2.2+) | 2006 09 25 | 704 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.5− |
| 2006 07 24 | 704 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.6− | 0.5− |
| 2006 08 21 | 691 | 0.6− | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2006 08 21 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.4− | 2006 11 18 | 703 | 0.5− | 0.3− |
| 2006 08 21 | 691 | 1.0+ | 0.7+ | 2006 09 25 | 699 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2006 08 28 | 704 | (0.6+ | 1.6−) | 2006 09 25 | 704 | 0.3− | 0.3+ | 2006 11 18 | 703 | 0.3− | 0.1+ |
| 2006 08 28 | 704 | 0.6+ | 0.8+ | 2006 09 25 | 699 | 0.1+ | 0.2+ | 2006 11 18 | 703 | 0.7− | 0.3+ |
| 2006 08 28 | 704 | 0.8− | 0.9+ | 2006 09 25 | 699 | 0.0 | 0.0 | 2006 11 18 | 704 | 1.1+ | 0.1− |
| 2006 08 28 | 704 | (0.3− | 1.6−) | 2006 09 27 | 704 | 0.6+ | 0.3+ | 2006 11 18 | 703 | 0.9− | 0.2− |
| 2006 08 28 | 704 | 1.4− | 1.1− | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2006 08 29 | 703 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 08 29 | 703 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2006 08 29 | 703 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2006 08 29 | 703 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.7− | 0.2+ |
| 2006 09 01 | 704 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.4+ | 0.1− | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2006 09 01 | 704 | 0.4− | 0.9+ | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.6+ |
| 2006 09 01 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.1+ |

**(145554)∗ 2006 MJ$_9$ = 1995 WS$_6$ = 2003 YB$_{167}$**

Discovered 2006 June 19 by the Mt. Lemmon Survey at Mt. Lemmon.

Id. G. V. Williams (*MPO* 103941)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.58925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26336180 | $\omega$ | 186.14465 | | +0.98810526 | +0.15338880 | |
| $a$ | 2.4104652 | $\Omega$ | 165.01861 | | −0.13922492 | +0.92255090 | |
| $e$ | 0.2460665 | $i$ | 2.42733 | | −0.06530245 | +0.35407867 | |
| $P$ | 3.74 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 22 | 589 | 0.1− | 0.3+ | 2006 05 30 | G96 | 0.3− | 0.0 | 2006 08 15 | 644 | 0.1− | 0.1+ |
| 1995 11 22 | 589 | 0.5− | 0.9+ | 2006 05 30 | G96 | 0.5− | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.7+ |
| 1995 11 23 | 589 | 0.3+ | 0.2− | 2006 05 30 | G96 | 0.3− | 1.0+ | 2006 08 28 | 699 | 0.4− | 0.2+ |
| 1995 11 23 | 589 | 0.8+ | 0.2− | 2006 05 30 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.8+ | 0.3+ |
| 1995 11 23 | 589 | 0.4− | 0.2+ | 2006 06 19 | G96 | 0.2− | 0.2− | 2006 08 28 | 703 | (2.3− | 0.9−) |
| 1995 11 23 | 589 | 0.4− | 0.1+ | 2006 06 19 | G96 | 0.5− | 0.1− | 2006 08 28 | 703 | 1.2+ | 1.6+ |
| 1995 11 28 | 589 | 1.5− | 0.0 | 2006 06 19 | G96 | 0.1+ | 0.2− | 2006 08 28 | 703 | (3.0− | 1.9+) |
| 1995 11 28 | 589 | 0.7+ | 0.3+ | 2006 06 19 | G96 | 0.2− | 0.3− | 2006 08 29 | 704 | 0.1− | 0.8+ |
| 1995 11 28 | 589 | 0.1− | 0.1− | 2006 06 21 | 644 | 0.2− | 0.5+ | 2006 08 29 | 704 | 0.2− | 0.5+ |
| 1995 11 29 | 589 | (4.0− | 0.5−) | 2006 06 21 | 644 | 0.1− | 0.1+ | 2006 08 29 | 704 | 0.3+ | 0.8+ |
| 1995 11 29 | 589 | 0.3+ | 0.4− | 2006 06 21 | 644 | 0.3− | 0.2+ | 2006 08 29 | 704 | 0.5− | 1.0+ |
| 2001 02 20 | 691 | 1.7+ | 0.6− | 2006 07 20 | 644 | 0.3− | 0.3+ | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 2001 02 20 | 691 | 0.2+ | 0.4+ | 2006 07 20 | 644 | 0.3− | 0.3+ | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 2001 02 20 | 691 | 0.3+ | 0.3+ | 2006 07 20 | 644 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2001 03 18 | 691 | 0.2+ | 0.6+ | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 03 18 | 691 | 0.5− | 0.8+ | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 03 18 | 691 | 0.4− | 0.7+ | 2006 07 25 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2003 12 17 | 691 | 0.2+ | 0.4+ | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2003 12 17 | 691 | 0.3+ | 0.1− | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2003 12 17 | 691 | 0.2+ | 0.2+ | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2003 12 28 | 691 | 0.1− | 0.4+ | 2006 07 26 | 704 | 0.5+ | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 07 26 | 704 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2003 12 28 | 691 | 0.2− | 0.4+ | 2006 07 26 | 704 | 0.8+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2005 04 04 | G96 | 0.7− | 0.0 | 2006 08 12 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.4+ |
| 2005 04 04 | G96 | 0.3− | 0.4+ | 2006 08 12 | 644 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2005 04 04 | G96 | 0.2− | 0.1− | 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 11 18 | 703 | 1.3− | 0.7− |
| 2005 04 04 | G96 | 0.5− | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.2+ | 2006 11 18 | 703 | 0.3− | 1.4− |
| 2005 05 09 | G96 | 0.4− | 0.1− | 2006 08 14 | 644 | 0.1− | 0.2+ | 2006 11 18 | 703 | 1.3− | 0.2+ |
| 2005 05 09 | G96 | 0.5− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.2+ | 2006 11 18 | 703 | 1.4− | 0.1+ |
| 2005 05 09 | G96 | 0.3− | 0.1− | 2006 08 15 | 644 | 0.2− | 0.2+ | | | | |
| 2005 05 09 | G96 | 0.5− | 0.3− | 2006 08 15 | 644 | 0.1− | 0.2+ | | | | |

**(145555)∗ 2006 MQ$_{12}$**

Discovered 2006 June 19 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.75658 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17067509 | $\omega$ | 59.53200 | | +0.95132076 | −0.22972900 | |
| $a$ | 3.2187652 | $\Omega$ | 312.87336 | | +0.07940418 | +0.82682145 | |
| $e$ | 0.2315377 | $i$ | 16.28125 | | +0.29779822 | +0.51341102 | |
| $P$ | 5.77 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 1.3− | 1.9+ | 2006 06 19 | 703 | 1.3− | 0.9+ | 2006 08 29 | 703 | 0.1+ | 0.5− |
| 2000 07 07 | 704 | 0.1− | 0.9+ | 2006 06 19 | 703 | 0.1− | 1.3+ | 2006 08 30 | 704 | 0.5− | 0.1− |
| 2000 07 07 | 704 | 0.5− | 0.5+ | 2006 06 23 | 644 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.3+ |
| 2001 10 25 | 704 | 0.3+ | 0.5− | 2006 06 23 | 644 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.0 |
| 2001 10 25 | 704 | 0.0 | 0.1+ | 2006 06 23 | 644 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.2− | 0.1+ |
| 2001 10 25 | 704 | 0.9+ | 0.2− | 2006 07 19 | 644 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.2− | 0.6+ |
| 2001 10 25 | 704 | 1.1+ | 0.1+ | 2006 07 19 | 644 | 0.0 | 0.1− | 2006 09 01 | 704 | 0.0 | 0.5+ |
| 2001 12 08 | 704 | 0.9− | 0.3+ | 2006 07 19 | 644 | 0.1+ | 0.2− | 2006 09 01 | 704 | 0.1+ | 0.2+ |
| 2001 12 08 | 704 | 0.8− | 0.2− | 2006 07 21 | 704 | 0.5− | 0.8− | 2006 09 01 | 704 | 0.3+ | 0.3− |
| 2001 12 08 | 704 | 0.4− | 0.3− | 2006 07 21 | 704 | 0.3− | 0.3− | 2006 09 12 | 704 | (2.1+ | 2.0+) |
| 2001 12 08 | 704 | 0.6− | 0.5+ | 2006 07 21 | 704 | 0.9+ | 0.5− | 2006 09 12 | 704 | 0.5+ | 0.9+ |
| 2002 01 07 | 704 | 0.9+ | 0.7+ | 2006 07 21 | 704 | 0.5− | 1.4− | 2006 09 12 | 704 | 0.1+ | 0.3− |
| 2002 01 07 | 704 | 0.3+ | 0.2+ | 2006 07 21 | 704 | 0.5− | 1.1− | 2006 09 12 | 704 | 0.1+ | 0.4+ |
| 2002 01 07 | 704 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 12 | 704 | 0.0 | 0.8+ |
| 2002 01 07 | 704 | 0.9− | 0.8+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.2− |
| 2002 12 14 | 645 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.3− | 0.5+ |
| 2002 12 14 | 645 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.5− | 0.3− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 07 21 | 644 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.7− | 0.0 |
| 2003 01 28 | 645 | 0.1+ | 0.1+ | 2006 07 21 | 644 | 0.3− | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.9+ |
| 2003 01 31 | 704 | 0.7+ | 0.3+ | 2006 07 21 | 644 | 0.3− | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.5+ |
| 2003 01 31 | 704 | 0.8+ | 0.4− | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.2− |
| 2003 01 31 | 704 | 0.8+ | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.3+ | 0.0 |
| 2003 01 31 | 704 | 0.7+ | 0.3+ | 2006 08 14 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.8+ | 0.1− |
| 2003 01 31 | 704 | 0.8+ | 0.0 | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.5+ |
| 2003 02 22 | 644 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.0 |
| 2003 02 22 | 644 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.0 |
| 2003 02 22 | 644 | 0.3+ | 0.6+ | 2006 08 26 | 699 | 0.7+ | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.5+ |
| 2003 02 22 | 644 | 0.0 | 0.1+ | 2006 08 26 | 699 | 0.5− | 0.9+ | 2006 09 18 | 704 | 0.3+ | 0.1+ |
| 2003 02 22 | 644 | 0.3+ | 0.1+ | 2006 08 26 | 699 | 0.3+ | 0.5+ | 2006 09 18 | 704 | 0.0 | 0.8+ |
| 2003 02 22 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.9+ | 1.1+ | 2006 09 18 | 704 | 0.1− | 0.7+ |
| 2003 03 07 | 704 | (0.1− | 2.4−) | 2006 08 28 | 699 | 0.4+ | 1.1+ | 2006 10 21 | 703 | 0.2+ | 1.0− |
| 2003 03 07 | 704 | 0.5+ | 0.0 | 2006 08 28 | 699 | 0.0 | 0.6+ | 2006 10 21 | 703 | 1.2− | 0.2− |
| 2003 03 07 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 699 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.8− | 0.5− |
| 2003 03 07 | 704 | 0.6+ | 0.8− | 2006 08 29 | 703 | 0.6− | 0.0 | 2006 10 21 | 703 | 0.5− | 0.9− |
| 2006 06 19 | 703 | 0.4− | 0.5+ | 2006 08 29 | 703 | 1.1− | 0.1+ | | | | |
| 2006 06 19 | 703 | 0.2− | 0.7+ | 2006 08 29 | 703 | (1.6− | 0.3−) | | | | |

**(145556)∗ 2006 MG$_{14}$**

Discovered 2006 June 17 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.82729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24579626 | $\omega$ | 310.61727 | | +0.95521630 | +0.24991999 | |
| $a$ | 2.5239798 | $\Omega$ | 35.75168 | | −0.11316829 | +0.80325835 | |
| $e$ | 0.1604991 | $i$ | 15.73371 | | −0.27341317 | +0.54066258 | |
| $P$ | 4.01 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.4− | 0.3+ | 2005 03 10 | 703 | 0.8− | 1.1+ | 2006 07 26 | E12 | 0.7− | 0.2− |
| 1999 12 13 | 704 | 0.2+ | 0.1− | 2005 04 16 | 703 | 0.3+ | 0.0 | 2006 07 29 | E12 | 0.3+ | 0.4+ |
| 1999 12 13 | 704 | 0.1+ | 0.2− | 2005 04 16 | 703 | 0.8+ | 0.2+ | 2006 07 29 | E12 | 0.3− | 0.1− |
| 1999 12 13 | 704 | 0.2− | 0.2+ | 2005 04 16 | 703 | 0.7+ | 0.3+ | 2006 07 29 | E12 | 0.1+ | 0.2− |
| 1999 12 13 | 704 | 0.4+ | 0.2− | 2005 04 16 | 703 | 0.2+ | 0.3− | 2006 07 29 | E12 | 0.1+ | 0.3− |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2006 06 17 | E12 | 0.3+ | 0.3− | 2006 08 12 | E12 | 1.1+ | 0.1− |
| 2003 10 24 | 645 | 0.0 | 0.0 | 2006 06 17 | E12 | 0.0 | 0.2+ | 2006 08 12 | E12 | 0.3+ | 0.5+ |
| 2003 11 30 | 645 | 0.0 | 0.0 | 2006 06 17 | E12 | 0.1+ | 0.5+ | 2006 08 12 | E12 | 0.1− | 0.2− |
| 2003 11 30 | 645 | 0.0 | 0.0 | 2006 06 17 | E12 | 0.2+ | 1.0− | 2006 08 12 | E12 | 0.5+ | 0.4+ |
| 2003 12 30 | 704 | 0.4+ | 0.2− | 2006 06 27 | E12 | 0.4− | 0.3− | 2006 08 23 | E12 | 0.2− | 0.9− |
| 2003 12 30 | 704 | 0.2+ | 0.4+ | 2006 06 27 | E12 | 0.1− | 0.1+ | 2006 08 23 | E12 | 0.7− | 0.1+ |
| 2003 12 30 | 704 | 0.1− | 0.2+ | 2006 06 27 | E12 | 0.2− | 0.3+ | 2006 08 31 | E12 | 0.4+ | 0.2+ |
| 2003 12 30 | 704 | 0.4+ | 0.2+ | 2006 06 27 | E12 | 0.1+ | 0.2− | 2006 08 31 | E12 | 0.6+ | 0.0 |
| 2005 03 10 | 703 | 0.3− | 0.8− | 2006 07 26 | E12 | 0.4+ | 0.1+ | 2006 08 31 | E12 | 0.6− | 0.0 |
| 2005 03 10 | 703 | 0.3− | 1.3− | 2006 07 26 | E12 | 0.8− | 0.4− | 2006 08 31 | E12 | 0.1− | 0.6+ |
| 2005 03 10 | 703 | 0.9− | 0.7+ | 2006 07 26 | E12 | 0.1+ | 0.3+ | | | | |

**(145557)∗ 2006 ML$_{14}$**

Discovered 2006 June 22 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.27440 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29400849 | $\omega$ | 340.82972 | | +0.32732722 | +0.93990534 | |
| $a$ | 2.2399043 | $\Omega$ | 308.15704 | | −0.85000433 | +0.24798968 | |
| $e$ | 0.2130437 | $i$ | 7.09579 | | −0.41273421 | +0.23468928 | |
| $P$ | 3.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 08 | 691 | 0.0 | 0.5+ | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 08 19 | A50 | 0.2− | 0.7− |
| 1995 02 08 | 691 | 0.0 | 0.7+ | 2006 05 25 | E12 | (0.8+ | 1.5+) | 2006 08 23 | A50 | 0.5+ | 0.0 |
| 1995 02 08 | 691 | 0.1+ | 0.1− | 2006 05 25 | E12 | 0.3+ | 0.1+ | 2006 08 23 | A50 | 0.6+ | 0.0 |
| 2002 01 19 | 291 | 0.3+ | 0.4+ | 2006 05 25 | E12 | 0.0 | 0.4+ | 2006 08 24 | A50 | 0.7+ | 0.2+ |
| 2002 01 19 | 291 | 0.3+ | 0.5+ | 2006 06 22 | 699 | 0.4− | 0.9+ | 2006 08 24 | A50 | 0.4+ | 0.3+ |
| 2002 01 19 | 291 | 0.7+ | 0.5+ | 2006 06 22 | 699 | 0.7− | 0.1− | 2006 08 24 | A50 | 0.4+ | 0.6+ |
| 2002 03 20 | 699 | 0.6+ | 0.7+ | 2006 06 22 | 699 | 0.5+ | 0.3+ | 2006 08 24 | A50 | 0.7+ | 0.4+ |
| 2002 03 20 | 699 | (1.6+ | 0.2+) | 2006 06 22 | 699 | 1.5− | 0.5+ | 2006 08 24 | A50 | 0.7+ | 0.3+ |
| 2002 03 20 | 699 | 0.1− | 0.4+ | 2006 06 30 | 704 | 0.2+ | 0.2− | 2006 08 24 | A50 | 0.1+ | 0.2+ |
| 2002 03 20 | 699 | 1.1− | 0.6− | 2006 06 30 | 704 | 0.7+ | 0.3− | 2006 08 28 | 699 | 0.9− | 0.5− |
| 2002 04 05 | 644 | 0.6+ | 0.7+ | 2006 06 30 | 704 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.4− | 0.2+ |
| 2002 04 05 | 644 | 0.8+ | 0.2+ | 2006 06 30 | 704 | 0.0 | 0.4+ | 2006 08 28 | 699 | (2.5+ | 0.8−) |
| 2002 04 05 | 644 | 0.8+ | 0.6+ | 2006 07 18 | G96 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 2002 04 10 | 704 | 0.1+ | 0.8− | 2006 07 18 | G96 | 0.3− | 0.3− | 2006 08 28 | 703 | 0.4− | 0.2− |
| 2002 04 10 | 704 | 0.4+ | 0.0 | 2006 07 18 | G96 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.8− | 0.1− |
| 2002 04 10 | 704 | 0.7+ | 0.2+ | 2006 07 18 | G96 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.1− |
| 2003 09 21 | 699 | (2.0+ | 0.6−) | 2006 07 25 | G96 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.5− | 0.2+ |
| 2003 09 21 | 699 | 0.2+ | 0.5+ | 2006 07 25 | G96 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.5− | 0.2− |
| 2003 09 21 | 699 | 0.4+ | 0.9+ | 2006 07 25 | G96 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.4− | 0.1+ |
| 2003 09 21 | 699 | (0.6+ | 2.3+) | 2006 07 25 | G96 | 0.5− | 0.1− | 2006 08 30 | 704 | 0.6− | 0.3+ |
| 2003 10 18 | 644 | 0.4− | 0.1+ | 2006 07 28 | A50 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.6− | 0.0 |
| 2003 10 18 | 644 | 0.3− | 0.1+ | 2006 07 28 | A50 | 0.4+ | 0.7+ | 2006 08 30 | 704 | 1.4− | 0.1+ |
| 2003 10 18 | 644 | 0.1− | 0.3+ | 2006 07 28 | A50 | 0.6+ | 0.4+ | 2006 08 30 | 704 | 0.4− | 0.4+ |
| 2003 10 21 | 691 | 0.2− | 0.1− | 2006 07 28 | A50 | 0.1− | 0.2− | 2006 08 30 | 704 | 1.2− | 0.4+ |
| 2003 10 21 | 691 | 0.2− | 0.0 | 2006 07 28 | A50 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.3− | 0.1+ |
| 2003 10 21 | 691 | 0.2− | 0.2− | 2006 07 28 | A50 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.4− | 0.3+ |
| 2003 11 19 | 704 | (1.1− | 1.7+) | 2006 07 29 | A50 | 0.3+ | 0.1− | 2006 08 31 | 704 | 0.3− | 0.2− |
| 2003 11 19 | 704 | (1.2− | 1.6+) | 2006 07 29 | A50 | 0.5+ | 0.2− | 2006 08 31 | 704 | 0.2+ | 0.5+ |
| 2003 11 19 | 704 | 1.4− | 1.1+ | 2006 07 29 | A50 | 0.8+ | 0.5+ | 2006 08 31 | 704 | 0.7− | 0.4− |
| 2003 11 19 | 704 | 0.2− | 0.1− | 2006 07 29 | A50 | 0.3− | 0.2+ | 2006 09 01 | 704 | 0.5+ | 0.4− |
| 2003 11 23 | 691 | 0.2+ | 0.3+ | 2006 07 29 | A50 | 0.3− | 0.1+ | 2006 09 01 | 704 | 0.1+ | 0.1− |
| 2003 11 23 | 691 | 0.3− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 01 | 704 | 0.3+ | 0.5− |
| 2003 11 23 | 691 | 1.2+ | 0.2− | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.2+ | 1.2− |
| 2004 12 20 | G96 | 1.3− | 0.2− | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 12 | 704 | 0.4+ | 0.5+ |
| 2004 12 20 | G96 | 0.2− | 0.3− | 2006 08 16 | 644 | 0.4− | 0.1+ | 2006 09 12 | 704 | 0.2+ | 0.3+ |
| 2004 12 20 | G96 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.4− | 0.0 | 2006 09 12 | 704 | 1.1− | 0.5− |
| 2004 12 20 | G96 | 0.2− | 0.0 | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 12 | 704 | 0.3+ | 0.1+ |
| 2005 02 02 | 703 | 0.1+ | 0.1− | 2006 08 16 | A50 | 0.5+ | 0.2+ | 2006 09 12 | 704 | 0.5− | 0.0 |
| 2005 02 02 | 703 | 0.6+ | 1.0+ | 2006 08 16 | A50 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.3+ |
| 2005 02 02 | 703 | 0.3− | 0.5− | 2006 08 19 | 699 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.3+ |
| 2005 02 02 | 703 | 0.6− | 0.2+ | 2006 08 19 | 699 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 08 19 | 699 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2005 03 11 | G96 | 0.5− | 0.2− | 2006 08 19 | 699 | 0.4− | 0.8− | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 2005 03 11 | G96 | 0.1− | 0.2− | 2006 08 19 | A50 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2+ |

**(145558)∗ 2006 OR = 2002 UG$_{10}$ = 2004 BT$_{124}$**

Discovered 2006 July 17 by S. F. Hoenig at Hibiscus Observatory, Punaauia. Id. G. V. Williams (*MPO* 103948)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.16808 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21882961 | $\omega$ | 254.64800 | | +0.44849899 | +0.89301397 | |
| $a$ | 2.7272942 | $\Omega$ | 42.06292 | | −0.79733825 | +0.41850284 | |
| $e$ | 0.1703226 | $i$ | 3.17256 | | −0.40385687 | +0.16547334 | |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.1+ | 0.3+ | 2005 03 14 | G96 | 0.6− | 0.7− | 2006 08 20 | 644 | 0.1− | 0.0 |
| 1996 03 26 | 691 | 0.6+ | 0.0 | 2005 03 31 | 699 | 0.9+ | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 1996 03 26 | 691 | 0.1+ | 0.1+ | 2005 03 31 | 699 | 1.5+ | 0.0 | 2006 08 23 | 704 | 1.4+ | 0.6+ |
| 2001 05 26 | 704 | 0.2+ | 0.5+ | 2005 03 31 | 699 | 0.2− | 1.6+ | 2006 08 23 | 704 | 0.1+ | 0.4− |
| 2001 05 26 | 704 | 1.3− | 0.6+ | 2005 03 31 | 699 | 0.6− | 0.2− | 2006 08 23 | 704 | 0.4+ | 0.3− |
| 2001 05 26 | 704 | 1.2− | 0.0 | 2005 04 04 | 703 | 0.1− | 0.5+ | 2006 08 23 | 704 | 0.0 | 0.5+ |
| 2002 10 11 | 704 | 0.7− | 0.9+ | 2005 04 04 | 703 | (2.8− | 1.9−) | 2006 08 23 | 704 | 0.5+ | 0.1− |
| 2002 10 11 | 704 | 0.2− | 1.3+ | 2005 04 04 | 703 | (0.6− | 2.9−) | 2006 08 23 | 644 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2005 04 04 | 703 | 0.9+ | 0.7+ | 2006 08 23 | 644 | 0.1− | 0.0 |
| 2002 10 28 | 644 | 0.1+ | 1.3+ | 2005 04 10 | G96 | 0.1− | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.0 |
| 2002 10 28 | 644 | 0.2− | 1.8+ | 2005 04 10 | G96 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.1− |
| 2002 10 28 | 644 | 0.1+ | 1.8+ | 2005 04 10 | G96 | 0.9− | 1.0− | 2006 08 24 | 644 | 0.1− | 0.1− |
| 2002 10 30 | 644 | 0.1− | 0.4− | 2005 04 10 | G96 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.2− | 0.1− |
| 2002 10 30 | 644 | 0.2− | 0.3− | 2005 05 09 | G96 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 10 30 | 644 | 0.3+ | 0.4− | 2005 05 09 | G96 | 0.2− | 0.1− | 2006 08 24 | 644 | 0.1− | 0.0 |
| 2002 10 31 | 608 | 1.0− | 0.7− | 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.5+ |
| 2002 10 31 | 608 | 0.7− | 0.2− | 2005 05 09 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.7+ |
| 2002 10 31 | 608 | 0.6− | 0.2− | 2006 07 17 | F84 | 0.1+ | 0.8− | 2006 08 28 | 699 | 0.8− | 0.3+ |
| 2002 11 12 | 644 | 0.1+ | 0.3− | 2006 07 17 | F84 | 0.2+ | 0.4− | 2006 08 28 | 699 | 0.1− | 0.2+ |
| 2002 11 12 | 644 | 0.5− | 0.5− | 2006 07 19 | F84 | 0.5+ | 0.8− | 2006 08 28 | 699 | 0.0 | 0.5− |
| 2002 11 12 | 644 | 0.9+ | 0.6+ | 2006 07 19 | F84 | 1.1+ | 0.3+ | 2006 08 31 | 704 | 0.3+ | 0.4+ |
| 2002 11 22 | 644 | 0.4− | 0.3+ | 2006 07 19 | F84 | 0.1− | 0.3− | 2006 08 31 | 704 | 0.4+ | 1.3+ |
| 2002 11 22 | 644 | 0.1− | 0.2+ | 2006 07 26 | F84 | 0.0 | 0.3− | 2006 08 31 | 704 | 0.6+ | 0.2− |
| 2002 11 22 | 644 | 0.0 | 0.0 | 2006 07 26 | F84 | 0.3− | 0.2− | 2006 08 31 | 704 | 0.4− | 1.0− |
| 2004 01 16 | 691 | 0.3− | 0.2+ | 2006 07 26 | F84 | 0.1+ | 0.2− | 2006 09 13 | 644 | 0.3− | 0.2+ |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2006 08 15 | F84 | 0.0 | 0.7− | 2006 09 13 | 644 | 0.0 | 0.1− |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2006 08 15 | F84 | 0.3− | 0.1− | 2006 09 13 | 644 | 0.4− | 0.1− |
| 2004 01 31 | 691 | 0.1+ | 0.3− | 2006 08 15 | F84 | 0.4+ | 0.4− | 2006 09 24 | 699 | 0.1+ | 0.1− |
| 2004 01 31 | 691 | 0.1− | 0.7− | 2006 08 19 | 699 | 0.3− | 0.5+ | 2006 09 24 | 699 | 0.4+ | 0.5− |
| 2004 01 31 | 691 | 0.0 | 0.6− | 2006 08 19 | 699 | 0.4+ | 0.2− | 2006 09 24 | 699 | 0.4+ | 0.3+ |
| 2005 03 14 | G96 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.4+ | 0.6+ | 2006 09 24 | 699 | 0.9− | 0.3− |
| 2005 03 14 | G96 | 0.1+ | 0.4+ | 2006 08 19 | 699 | 0.5− | 0.2+ | | | | |
| 2005 03 14 | G96 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.1− | | | | |

**(145559)∗ 2006 OO$_1$ = 2713 P-L**

Discovered 2006 July 18 by M. Ory at the Observatoire Astronomique Jurassien-Vicques.

Id. G. V. Williams (*MPO* 103949)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.42840 | | (2000.0) | | | |
| $n$ | 0.19029323 | $\omega$ | 187.71135 | | +0.94703437 | −0.31897563 |
| $a$ | 2.9935545 | $\Omega$ | 191.10646 | | +0.30396944 | +0.92771800 |
| $e$ | 0.1131450 | $i$ | 11.12076 | | +0.10357840 | +0.19389138 |
| $P$ | 5.18 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | (0.8− | 3.2+) | 2001 10 14 | 704 | 1.0− | 1.1+ | 2006 07 18 | 185 | 0.1+ | 0.1+ | |
| 1960 09 24 | 675 | 1.8− | 2.0+ | 2002 11 28 | 608 | 0.2+ | 0.0 | 2006 07 18 | 185 | 0.8− | 0.0 | |
| 1960 09 26 | 675 | 0.4− | 1.9+ | 2002 11 28 | 608 | 0.4+ | 0.4− | 2006 07 18 | 185 | 0.3+ | 0.2+ | |
| 1960 09 28 | 675 | 0.0 | 0.9+ | 2002 11 28 | 608 | 0.2+ | 0.4− | 2006 07 18 | 185 | 0.3− | 0.2+ | |
| 1960 09 28 | 675 | 0.4+ | 2.0+ | 2002 12 14 | 704 | 0.1− | 0.1+ | 2006 07 20 | J95 | 0.4+ | 0.6+ | |
| 1960 09 29 | 675 | 0.8+ | 0.4+ | 2002 12 14 | 704 | 0.2+ | 0.8+ | 2006 07 20 | J95 | 0.1+ | 0.3− | |
| 1960 09 29 | 675 | 0.1− | 0.7+ | 2002 12 14 | 704 | 0.1− | 0.6+ | 2006 07 20 | J95 | 0.0 | 0.4+ | |
| 1999 03 22 | 645 | 0.1+ | 0.3+ | 2002 12 14 | 704 | 1.5− | 1.2− | 2006 07 20 | J95 | 0.3+ | 0.6− | |
| 1999 03 22 | 645 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.1+ | 0.6+ | 2006 07 21 | 185 | 0.2− | 0.2− | |
| 2000 05 29 | 691 | 0.4− | 0.7− | 2002 12 14 | 608 | 0.0 | 0.2− | 2006 07 21 | 185 | 0.8+ | 0.3− | |
| 2000 05 29 | 691 | 0.3− | 0.4+ | 2002 12 14 | 608 | 0.3+ | 0.5− | 2006 07 22 | 185 | 1.6+ | 0.0 | |
| 2000 05 29 | 691 | 0.1− | 0.0 | 2002 12 14 | 608 | 0.1+ | 0.4− | 2006 07 22 | 185 | 0.0 | 0.2− | |
| 2001 07 27 | 608 | 0.5+ | 0.6− | 2003 01 05 | 704 | 0.2− | 1.1+ | 2006 07 23 | 644 | 0.3+ | 0.4+ | |
| 2001 07 27 | 608 | 0.2+ | 0.6− | 2003 01 05 | 704 | 0.8+ | 0.9+ | 2006 07 23 | 644 | 0.2+ | 0.1+ | |
| 2001 07 27 | 608 | 0.0 | 0.5− | 2003 01 05 | 704 | 0.0 | 1.8+ | 2006 07 23 | 644 | 0.1+ | 0.0 | |
| 2001 08 18 | 644 | 0.2− | 0.1+ | 2004 02 26 | 704 | 0.6− | 0.6− | 2006 07 24 | 185 | 0.3− | 0.3− | |
| 2001 08 18 | 644 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.3− | 0.2− | 2006 07 24 | 185 | 0.2− | 0.2− | |
| 2001 08 18 | 644 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.3− | 0.1+ | 2006 07 24 | 185 | 0.0 | 0.5− | |
| 2001 08 25 | 704 | 1.3− | 0.6+ | 2004 03 01 | 703 | 0.7+ | 0.8− | 2006 07 29 | A13 | 0.5− | 0.1− | |
| 2001 08 25 | 704 | 0.2− | 0.9+ | 2004 03 01 | 703 | 1.5− | 0.4+ | 2006 07 29 | A13 | 0.6− | 0.0 | |
| 2001 08 25 | 704 | 0.2+ | 0.9+ | 2004 03 01 | 703 | 1.5+ | 0.4− | 2006 07 29 | A13 | 0.2− | 0.4− | |
| 2001 08 25 | 704 | 0.1+ | 0.7+ | 2004 03 01 | 703 | 1.0− | 0.8+ | 2006 08 18 | 644 | 0.1− | 0.0 | |
| 2001 08 25 | 704 | 0.1+ | 1.2+ | 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 08 18 | 644 | 0.3− | 0.1− | |
| 2001 10 14 | 704 | 1.3− | 0.2+ | 2005 04 15 | 691 | 0.1+ | 0.7+ | 2006 08 18 | 644 | 0.2− | 0.1− | |
| 2001 10 14 | 704 | 1.1− | 1.5+ | 2005 04 15 | 691 | 0.4+ | 0.6+ | | | | | |
| 2001 10 14 | 704 | 1.3− | 0.3− | 2006 07 18 | 185 | 0.7+ | 0.2− | | | | | |

**(145560)∗ 2006 OG$_2$**

Discovered 2006 July 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.89602 | | (2000.0) | | | |
| $n$ | 0.22344022 | $\omega$ | 202.40963 | | +0.71447987 | +0.66633860 |
| $a$ | 2.6896462 | $\Omega$ | 113.98506 | | −0.60129738 | +0.74069052 |
| $e$ | 0.2235527 | $i$ | 13.50298 | | −0.35771495 | +0.08585117 |
| $P$ | 4.41 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.0 | 0.1+ | 2004 01 30 | 291 | 0.3− | 0.6+ | 2006 07 21 | 644 | 0.1+ | 0.1− | |
| 2001 03 19 | 645 | 0.0 | 0.1+ | 2006 06 18 | 644 | 0.4− | 0.0 | 2006 07 21 | 704 | 0.8− | 0.1+ | |
| 2002 09 13 | 704 | 0.1− | 0.4− | 2006 06 18 | 691 | 0.1+ | 0.4+ | 2006 07 21 | 704 | 0.2+ | 0.3− | |
| 2002 09 13 | 704 | 0.2− | 0.2+ | 2006 06 18 | 644 | 0.2− | 0.2+ | 2006 07 21 | 644 | 0.0 | 0.2+ | |
| 2002 09 13 | 704 | 0.3− | 0.6+ | 2006 06 18 | 691 | 0.1− | 0.3+ | 2006 07 23 | 644 | 0.2− | 0.1+ | |
| 2002 09 29 | 608 | 0.5− | 0.5− | 2006 06 18 | 644 | 0.3− | 0.1+ | 2006 07 23 | 644 | 0.1+ | 0.1+ | |
| 2002 09 29 | 608 | 0.7− | 0.2+ | 2006 06 18 | 691 | 0.1+ | 0.5+ | 2006 07 23 | 644 | 0.2− | 0.1− | |
| 2002 09 29 | 608 | 0.6− | 0.4− | 2006 07 04 | E12 | 0.3+ | 0.1+ | 2006 08 13 | 644 | 0.7+ | 0.3+ | |
| 2002 10 28 | 704 | 0.2− | 1.8+ | 2006 07 04 | E12 | 0.1− | 0.6− | 2006 08 13 | 644 | 0.2+ | 0.1+ | |
| 2002 10 28 | 704 | 0.4+ | 1.2+ | 2006 07 18 | 704 | 0.5− | 1.1− | 2006 08 13 | 644 | 0.0 | 0.4+ | |
| 2002 10 28 | 704 | 0.5+ | 1.0+ | 2006 07 18 | 704 | 0.1− | 0.3− | 2006 08 23 | 704 | 0.3+ | 0.0 | |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 07 18 | 704 | 0.1+ | 1.3− | 2006 08 23 | 704 | 0.0 | 0.8− | |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2006 07 21 | 644 | 0.1− | 0.1− | 2006 08 23 | 704 | 0.1+ | 0.2− | |
| 2004 01 30 | 291 | 0.7+ | 0.1− | 2006 07 21 | 704 | 0.4− | 0.2+ | 2006 08 23 | 704 | 1.4+ | 0.1+ | |
| 2004 01 30 | 291 | 0.0 | 0.4− | 2006 07 21 | 704 | 0.5− | 0.2− | | | | | |

**(145561)∗ 2006 OV$_2$**

Discovered 2006 July 18 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.03231 | | (2000.0) | | | |
| $n$ | 0.21543580 | $\omega$ | 202.02809 | | +0.41790748 | +0.89003919 |
| $a$ | 2.7558620 | $\Omega$ | 93.07144 | | −0.80393945 | +0.45569148 |
| $e$ | 0.1353716 | $i$ | 10.51108 | | −0.42312492 | +0.01324828 |
| $P$ | 4.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.6+ | 0.0 | 2004 01 22 | 704 | 0.1− | 0.2− | 2006 07 29 | 428 | 0.2+ | 0.3+ | |
| 2001 05 18 | 704 | 0.6− | 0.9− | 2004 01 22 | 704 | 0.2+ | 0.7+ | 2006 07 30 | 428 | 0.7− | 0.2− | |
| 2001 05 18 | 704 | 0.7+ | 0.5+ | 2005 03 10 | 703 | 0.5+ | 0.1+ | 2006 07 30 | 428 | 0.3− | 0.6− | |
| 2001 05 18 | 704 | 0.5− | 0.1+ | 2005 03 10 | 703 | 0.8− | 0.3− | 2006 08 12 | 644 | 0.2− | 0.4+ | |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2005 03 10 | 703 | 1.0− | 0.3− | 2006 08 12 | 644 | 0.6− | 0.5+ | |
| 2002 09 05 | 645 | 0.1+ | 0.2− | 2005 03 10 | 703 | 0.2+ | 0.2− | 2006 08 12 | 644 | 0.5− | 0.4+ | |
| 2002 10 15 | 644 | 0.5− | 0.3+ | 2005 04 06 | 703 | 1.2+ | 0.4− | 2006 08 14 | 644 | 0.1+ | 0.4+ | |
| 2002 10 15 | 644 | 0.2− | 0.3+ | 2005 04 06 | 703 | 0.2+ | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.6+ | |
| 2002 10 15 | 644 | 0.4− | 0.3+ | 2005 04 06 | 703 | 0.3− | 0.9− | 2006 08 14 | 644 | 0.0 | 0.6+ | |
| 2003 12 17 | 691 | 0.0 | 0.4− | 2005 04 06 | 703 | 0.9− | 1.4+ | 2006 08 19 | 644 | 0.2− | 0.4+ | |
| 2003 12 17 | 691 | 0.6− | 0.4+ | 2006 07 18 | E12 | 0.2+ | 0.6+ | 2006 08 19 | 644 | 0.1+ | 0.5+ | |
| 2003 12 17 | 691 | 0.3+ | 0.2+ | 2006 07 18 | E12 | 0.1+ | 0.0 | 2006 08 19 | 644 | 0.1− | 0.5+ | |
| 2003 12 28 | 691 | 0.2+ | 0.4+ | 2006 07 18 | E12 | 0.1− | 0.2+ | 2006 08 26 | E12 | 0.4+ | 0.3+ | |
| 2003 12 28 | 691 | 0.2+ | 0.4+ | 2006 07 21 | 644 | 0.4+ | 0.4+ | 2006 08 26 | E12 | 0.5+ | 0.2+ | |
| 2003 12 28 | 691 | 0.1− | 0.3+ | 2006 07 21 | 644 | 0.2+ | 0.3+ | 2006 08 26 | E12 | 0.3− | 0.4+ | |
| 2004 01 22 | 704 | 0.4− | 0.5+ | 2006 07 21 | 644 | 0.3+ | 0.5+ | 2006 08 26 | E12 | 0.3− | 0.1+ | |
| 2004 01 22 | 704 | 0.7+ | 0.2+ | 2006 07 29 | 428 | 0.3+ | 0.4− | | | | | |

**(145562)∗ 2006 OY$_6$ = 2004 BL$_{66}$**

Discovered 2006 July 24 at Observatoire Naef, Marly.

Id. G. V. Williams (*MPO* 103953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.63864 | | (2000.0) | | | |
| $n$ | 0.22258990 | $\omega$ | 329.07177 | | +0.62713376 | +0.77848035 |
| $a$ | 2.6964916 | $\Omega$ | 339.73051 | | −0.69847313 | +0.54733328 |
| $e$ | 0.1558568 | $i$ | 4.28997 | | −0.34472964 | +0.30723708 |
| $P$ | 4.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 0.1− | 0.4+ | 2006 07 29 | A13 | 0.3− | 0.5− | 2006 08 30 | 704 | 0.3+ | 1.2+ | |
| 1997 10 05 | 691 | 0.2+ | 0.3+ | 2006 07 30 | A13 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.5+ | 1.1+ | |
| 1997 10 05 | 691 | 0.2− | 0.4+ | 2006 07 30 | A13 | 0.3− | 0.5− | 2006 08 31 | 704 | 0.6+ | 0.7− | |
| 2000 03 12 | 691 | 0.4− | 0.0 | 2006 07 30 | A13 | 0.2− | 0.3− | 2006 08 31 | 704 | 0.2− | 0.3− | |
| 2000 03 12 | 691 | 0.1− | 0.0 | 2006 08 01 | A50 | 0.3− | 0.4− | 2006 08 31 | 704 | 0.6− | 0.7− | |
| 2000 03 12 | 691 | 0.3− | 0.4+ | 2006 08 01 | A50 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.5− | 0.6− | |
| 2002 10 08 | 699 | 0.2+ | 0.3− | 2006 08 14 | A13 | 0.5− | 0.2− | 2006 09 11 | G92 | 0.4− | 0.6− | |
| 2002 10 08 | 699 | 1.8− | 1.3+ | 2006 08 14 | A13 | 0.5− | 0.2− | 2006 09 11 | G92 | 0.0 | 0.3− | |
| 2002 10 08 | 699 | 1.3+ | 0.7+ | 2006 08 14 | A13 | 0.1− | 0.4− | 2006 09 11 | G92 | 0.1− | 0.2− | |
| 2002 10 08 | 699 | 0.2− | 0.5+ | 2006 08 18 | 699 | 0.5+ | 0.3+ | 2006 09 12 | 704 | 0.3+ | 0.3+ | |
| 2002 10 28 | 644 | 0.1+ | 0.4+ | 2006 08 18 | 699 | 0.3+ | 0.2+ | 2006 09 12 | 704 | 0.2+ | 1.9+ | |
| 2002 10 28 | 644 | 0.1− | 0.7+ | 2006 08 18 | 699 | 0.3− | 0.9+ | 2006 09 12 | 704 | 0.1+ | 0.5+ | |
| 2002 10 28 | 644 | 0.2+ | 0.6+ | 2006 08 18 | 699 | 0.0 | 1.0− | 2006 09 12 | 704 | 0.6− | 0.4+ | |
| 2003 12 21 | 691 | 0.4+ | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.8+ | 1.6+ | |
| 2003 12 21 | 691 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.0 | |
| 2003 12 21 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.3− | 1.1+ | |
| 2004 01 22 | 704 | 0.9+ | 0.2− | 2006 08 21 | 704 | 0.5− | 0.9+ | 2006 09 17 | 704 | 1.3+ | 1.3+ | |
| 2004 01 22 | 704 | 1.0+ | 0.8+ | 2006 08 21 | 704 | 0.3− | 0.6+ | 2006 09 17 | 704 | 0.7+ | 0.3+ | |
| 2004 01 22 | 704 | 0.5− | 1.8− | 2006 08 21 | 704 | 0.1+ | 1.2+ | 2006 09 18 | 699 | 0.3− | 0.2+ | |
| 2004 01 22 | 704 | 0.9+ | 0.0 | 2006 08 21 | 704 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.0 | |
| 2004 01 27 | 691 | 0.2− | 0.4+ | 2006 08 21 | 704 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.2+ | |
| 2004 01 27 | 691 | 0.0 | 0.4+ | 2006 08 25 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.1+ | |
| 2004 01 27 | 691 | 0.1+ | 0.6+ | 2006 08 25 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.9− | |
| 2005 03 17 | G96 | 0.3+ | 0.1+ | 2006 08 25 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 1.5− | 1.4+ | |
| 2005 03 17 | G96 | 0.2+ | 0.2+ | 2006 08 25 | 704 | 0.2+ | 1.2+ | 2006 09 20 | 704 | 0.2− | 1.3+ | |
| 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.5− | 2006 09 20 | 704 | 0.5− | 0.5+ | |
| 2005 03 17 | G96 | 0.1− | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.3+ | |
| 2005 04 06 | 691 | 0.8+ | 0.6+ | 2006 08 27 | 691 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.3− | 0.3− | |
| 2005 04 06 | 691 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.4− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 691 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.4+ | 0.4− | 2006 09 25 | G96 | 0.2− | 0.5− |
| 2006 07 24 | A13 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2006 07 24 | A13 | 0.0 | 0.3− | 2006 08 28 | 699 | 0.7− | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2006 07 24 | A13 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2006 07 25 | A13 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 2006 07 25 | A13 | 0.3− | 0.2− | 2006 08 28 | 699 | 0.3− | 0.2− | 2006 10 19 | G96 | 0.4− | 0.3− |
| 2006 07 25 | A13 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.6+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.6− |
| 2006 07 25 | 644 | 0.3− | 0.1+ | 2006 08 29 | 704 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2006 07 25 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.8+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2006 07 25 | 644 | 0.1− | 0.0 | 2006 08 29 | 704 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2006 07 27 | A13 | 0.4− | 0.5− | 2006 08 30 | 704 | 1.4− | 1.7+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2006 07 27 | A13 | 0.4− | 0.3− | 2006 08 30 | 704 | (0.9− | 2.4−) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 07 27 | A13 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.2+ | 0.5− | | | | |

**(145563)∗ 2006 ON$_7$ = 1997 EN$_1$**

Discovered 2006 July 18 by the Mt. Lemmon Survey at Mt. Lemmon.
Id. G. V. Williams (*MPO* 103954)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.27207 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26329091 | $\omega$ | 39.83194 | | +0.98796769 | | +0.14686772 |
| $a$ | 2.4108979 | $\Omega$ | 311.65259 | | −0.15320992 | | +0.88656423 |
| $e$ | 0.2043980 | $i$ | 3.71968 | | −0.02113221 | | +0.43867270 |
| $P$ | 3.74 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 691 | 0.2+ | 0.6− | 2006 08 18 | 699 | (2.4+ | 0.3−) | 2006 09 13 | 644 | 0.3+ | 0.2− |
| 1997 03 03 | 691 | 0.3+ | 0.6− | 2006 08 18 | 704 | 0.8+ | 0.0 | 2006 09 18 | 704 | 0.6+ | 0.4− |
| 1997 03 03 | 691 | 0.3+ | 0.7− | 2006 08 18 | 699 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.8+ | 0.6− |
| 1997 03 04 | 691 | 0.8− | 0.3− | 2006 08 18 | 704 | 0.8+ | 0.2− | 2006 09 18 | 704 | 0.6+ | 0.6− |
| 1997 03 04 | 691 | 1.0− | 0.4− | 2006 08 18 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 1.1− | 0.6− |
| 1997 03 04 | 691 | 0.6− | 1.1− | 2006 08 18 | 699 | 0.4− | 0.3+ | 2006 09 18 | 704 | 0.2− | 0.7− |
| 2003 12 22 | 704 | (2.0+ | 0.9+) | 2006 08 18 | 699 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.8+ | 0.2− |
| 2003 12 22 | 704 | 0.7+ | 0.4+ | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.4+ | 0.3− |
| 2003 12 22 | 704 | (4.6+ | 0.6+) | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.2+ | 0.2+ |
| 2003 12 27 | 704 | 0.3− | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.0 | 0.3+ |
| 2003 12 27 | 704 | 0.7+ | 1.0+ | 2006 08 24 | 704 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.7+ |
| 2003 12 27 | 704 | 0.2− | 0.9+ | 2006 08 24 | 704 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.6+ | 1.2+ | 2006 08 24 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.0 | 1.0+ |
| 2004 01 22 | 704 | 1.0− | 0.6+ | 2006 08 24 | 704 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.7+ |
| 2004 01 22 | 704 | 0.7− | 1.2+ | 2006 08 24 | 704 | 0.3− | 0.4− | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2004 01 22 | 704 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.7− | 2006 09 28 | G96 | 0.4− | 0.5− |
| 2004 01 22 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2004 01 31 | 691 | 0.3+ | 0.0 | 2006 08 28 | 699 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2004 01 31 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.3− | 0.3+ |
| 2004 01 31 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 29 | 704 | 0.2− | 0.7+ |
| 2005 03 17 | G96 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.9− | 1.7+ |
| 2005 03 17 | G96 | 0.1+ | 0.5+ | 2006 08 28 | 699 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2005 03 17 | G96 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 0.5− | 0.8− | 2006 09 29 | 704 | 1.1− | 0.8+ |
| 2005 03 17 | G96 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2006 06 20 | 703 | (1.3− | 2.2−) | 2006 08 30 | 704 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4− |
| 2006 06 20 | 703 | 1.1− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4− |
| 2006 06 20 | 703 | (2.1− | 1.8−) | 2006 08 30 | 704 | 0.0 | 0.1− | 2006 11 10 | 704 | (2.5+ | 0.1+) |
| 2006 06 20 | G96 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 11 10 | 704 | 1.1+ | 0.2+ |
| 2006 06 20 | 703 | (2.4− | 0.3+) | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 11 10 | 704 | 1.3+ | 0.2− |
| 2006 06 20 | G96 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.2− | 2006 11 10 | 704 | (0.1− | 2.0+) |
| 2006 06 20 | G96 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.6− |
| 2006 06 20 | G96 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.9− |
| 2006 07 18 | G96 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2006 07 18 | G96 | 0.4− | 0.1+ | 2006 09 01 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2006 07 18 | G96 | 0.1+ | 0.1− | 2006 09 01 | 704 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2006 07 18 | G96 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.9− |
| 2006 07 20 | 644 | 0.1− | 0.1+ | 2006 09 01 | 704 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2006 07 20 | 644 | 0.1− | 0.2+ | 2006 09 11 | 703 | 0.0 | 0.8− | 2006 11 19 | 704 | 0.0 | 1.1− |
| 2006 07 20 | 644 | 0.1− | 0.3+ | 2006 09 11 | 703 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.6− |
| 2006 07 25 | 644 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 0.7+ | 0.6− | 2006 11 25 | 291 | 0.3+ | 0.0 |
| 2006 07 25 | 644 | 0.1− | 0.5+ | 2006 09 11 | 703 | 0.2− | 0.3− | 2006 11 25 | 291 | 0.5+ | 0.0 |
| 2006 07 25 | 644 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 11 25 | 291 | 0.4+ | 0.2− |
| 2006 08 18 | 704 | 0.8+ | 0.2− | 2006 09 13 | 644 | 0.0 | 0.2− | | | | |

**(145564)∗ 2006 OF$_9$**

Discovered 2006 July 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.88659 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23697966 | $\omega$ | 182.44898 | | +0.73838299 | | +0.64465016 |
| $a$ | 2.5861994 | $\Omega$ | 135.24817 | | −0.61385385 | | +0.76406994 |
| $e$ | 0.2073916 | $i$ | 16.33665 | | −0.27923827 | | +0.02496592 |
| $P$ | 4.16 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 608 | 0.2+ | 0.3− | 2005 04 02 | 703 | 0.9+ | 0.7+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2002 08 16 | 608 | 0.0 | 0.7− | 2005 04 02 | 703 | (3.6− | 1.2+) | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 08 16 | 608 | 0.1+ | 0.0 | 2006 06 24 | 699 | (0.2+ | 2.4−) | 2006 08 28 | E12 | 0.2+ | 0.2− |
| 2002 10 08 | 644 | 0.4+ | 0.3+ | 2006 06 24 | 699 | 0.5− | 0.6− | 2006 08 28 | E12 | 0.2+ | 0.3+ |
| 2002 10 08 | 644 | 0.3+ | 0.0 | 2006 06 24 | 699 | 1.5− | 0.4− | 2006 08 28 | E12 | 0.3− | 0.1+ |
| 2002 10 08 | 644 | 0.4+ | 0.2+ | 2006 06 24 | 699 | (2.0− | 0.1+) | 2006 08 28 | E12 | 0.1+ | 0.1+ |
| 2002 11 28 | 699 | 1.5+ | 0.5+ | 2006 07 20 | 644 | 0.5− | 0.4+ | 2006 09 14 | 644 | 0.5− | 0.0 |
| 2002 11 28 | 699 | 1.7− | 1.3+ | 2006 07 20 | 644 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.3− | 0.1+ |
| 2002 11 28 | 699 | 1.5− | 0.8+ | 2006 07 20 | 644 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.1+ |
| 2002 11 28 | 699 | 0.4− | 0.5− | 2006 07 21 | 704 | 0.4− | 0.4+ | 2006 09 17 | 699 | 0.3+ | 0.4+ |
| 2002 12 05 | 644 | 0.1+ | 0.1+ | 2006 07 21 | 704 | 0.1+ | 0.9+ | 2006 09 17 | 699 | 0.1− | 0.0 |
| 2002 12 05 | 644 | 0.1− | 0.0 | 2006 07 21 | 704 | 1.0+ | 0.6+ | 2006 09 17 | 699 | 0.2+ | 0.2− |
| 2002 12 05 | 644 | 0.0 | 0.2+ | 2006 07 21 | 699 | 1.0+ | 1.3− | 2006 09 17 | 699 | 0.2− | 0.6− |
| 2003 12 24 | 413 | 0.2− | 0.2− | 2006 07 21 | 699 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.4+ | 1.0− |
| 2003 12 24 | 413 | 0.3− | 0.3− | 2006 07 21 | 699 | 0.6+ | 0.3+ | 2006 09 26 | 703 | (1.9+ | 0.9−) |
| 2003 12 24 | 413 | 0.5− | 0.5− | 2006 07 21 | 699 | 0.9− | 0.6− | 2006 09 26 | 703 | 1.3+ | 0.2+ |
| 2004 01 28 | 291 | 0.1− | 0.1− | 2006 08 07 | E12 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.1− | 0.7− |
| 2004 01 28 | 291 | 0.1+ | 0.1+ | 2006 08 07 | E12 | 0.3− | 0.9+ | 2006 09 27 | E12 | 0.3+ | 0.1+ |
| 2004 01 28 | 291 | 0.2+ | 0.1+ | 2006 08 07 | E12 | 0.2− | 0.6+ | 2006 09 27 | E12 | 0.1− | 0.0 |
| 2005 04 02 | 703 | 0.4− | 0.1− | 2006 08 07 | E12 | 0.1+ | 0.3− | 2006 09 27 | E12 | 0.6− | 0.1− |
| 2005 04 02 | 703 | 0.1+ | 1.5+ | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 27 | E12 | 0.0 | 0.2+ |

**(145565)∗ 2006 OH$_{10}$ = 2005 LO$_{42}$**

Discovered 2006 July 24 by M. Ory at the Observatoire Astronomique Jurassien-Vicques.
Id. G. V. Williams (*MPO* 103958)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.08145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17732205 | $\omega$ | 255.52085 | | +0.96389673 | | +0.25564381 |
| $a$ | 3.1378166 | $\Omega$ | 89.62623 | | −0.20647846 | | +0.89423943 |
| $e$ | 0.0818709 | $i$ | 4.27224 | | −0.16813610 | | +0.36739909 |
| $P$ | 5.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.1− | 0.1+ | 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 07 27 | A13 | 0.6− | 0.7+ |
| 2001 10 14 | 645 | 0.1− | 0.1+ | 2005 06 10 | 691 | 0.3+ | 0.2− | 2006 07 28 | J95 | 0.2− | 0.2− |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2005 06 10 | 691 | 0.2+ | 0.4− | 2006 07 28 | J95 | 0.3+ | 1.0− |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2005 06 10 | 691 | 0.6+ | 0.8− | 2006 07 28 | J95 | 0.1+ | 0.7+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.4+ |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2005 06 14 | 691 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2005 06 14 | 691 | 0.2− | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.4+ |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2005 06 16 | G96 | 0.6− | 1.0+ | 2006 08 20 | 644 | 0.3− | 0.2+ |
| 2001 12 10 | 645 | 0.1+ | 0.0 | 2005 06 16 | G96 | 0.8− | 0.9+ | 2006 08 20 | 644 | 0.1− | 0.4+ |
| 2001 12 10 | 645 | 0.1− | 0.1− | 2005 06 16 | G96 | 1.0− | 1.2+ | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 2004 02 16 | 291 | 0.1+ | 0.3+ | 2005 06 16 | G96 | 0.7− | 1.5+ | 2006 08 28 | E12 | 1.0− | 0.8+ |
| 2004 02 16 | 291 | 0.1+ | 0.5+ | 2006 07 24 | 185 | 0.5− | 0.0 | 2006 08 28 | E12 | 0.6+ | 0.2+ |
| 2004 02 16 | 291 | 0.3+ | 0.4+ | 2006 07 24 | 185 | 0.2− | 0.2− | 2006 08 28 | E12 | 0.3+ | 0.0 |
| 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 07 26 | A13 | 0.4− | 0.4+ | 2006 08 28 | E12 | 0.6+ | 1.0− |
| 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 07 27 | A13 | 0.1+ | 0.2+ | | | | |
| 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 07 27 | A13 | 0.0 | 0.6+ | | | | |

**(145566)∗ 2006 ON$_{10}$**

Discovered 2006 July 25 by C. Rinner at Ottmarsheim.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 32.67004 | | | (2000.0) | | |
| $n$ | 0.22223299 | $\omega$ | 355.62146 | | +0.40137102 | +0.90039853 |
| $a$ | 2.6993779 | $\Omega$ | 297.96558 | | −0.83445830 | +0.28391514 |
| $e$ | 0.1713091 | $i$ | 10.95719 | | −0.37759853 | +0.32965842 |
| $P$ | 4.44 | $H$ | 15.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.2+ | 0.7+ | 2004 01 24 | 704 | 0.2− | 0.0 | 2006 08 18 | 704 | 1.2+ | 0.5− |
| 2000 02 02 | 704 | 0.4+ | 0.3+ | 2004 01 24 | 704 | 0.6+ | 0.2− | 2006 08 18 | 704 | 0.3− | 0.4+ |
| 2000 02 02 | 704 | 0.0 | 0.2+ | 2004 01 24 | 704 | 0.8+ | 0.8+ | 2006 08 18 | 704 | 0.0 | 0.1+ |
| 2000 02 02 | 704 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.8+ | 0.6+ | 2006 08 18 | 704 | 0.1− | 0.3+ |
| 2000 02 02 | 704 | 0.1+ | 0.2− | 2004 01 30 | 704 | 1.1+ | 0.0 | 2006 08 18 | 704 | 0.3+ | 0.0 |
| 2001 06 28 | 644 | 0.1+ | 0.3− | 2004 01 30 | 704 | 1.1+ | 0.3+ | 2006 08 20 | 958 | 0.2+ | 0.3+ |
| 2001 06 28 | 644 | 0.2− | 1.1− | 2004 01 30 | 704 | 0.8+ | 0.7− | 2006 08 20 | 958 | 0.5− | 0.0 |
| 2001 06 28 | 644 | 0.5− | 1.1− | 2005 04 13 | E12 | 0.0 | 0.4+ | 2006 08 20 | 958 | 0.3− | 0.0 |
| 2002 10 06 | 704 | 0.3+ | 0.1+ | 2005 04 13 | E12 | 0.3+ | 0.3+ | 2006 08 21 | 644 | 0.3− | 0.1− |
| 2002 10 06 | 704 | 0.2− | 0.3+ | 2005 04 13 | E12 | 0.1− | 0.1− | 2006 08 21 | 644 | 0.4− | 0.0 |
| 2002 10 06 | 704 | 0.8− | 0.1− | 2005 04 13 | E12 | 0.0 | 0.5+ | 2006 08 21 | 644 | 0.4− | 0.1− |
| 2002 10 06 | 704 | 0.0 | 0.4− | 2006 05 02 | G96 | 0.0 | 0.5+ | 2006 08 24 | 608 | 1.4+ | 0.3+ |
| 2002 10 06 | 704 | 0.3− | 0.7− | 2006 05 02 | G96 | 0.0 | 0.5+ | 2006 08 24 | 608 | 1.4+ | 0.1+ |
| 2002 11 07 | 704 | 1.1+ | 0.3− | 2006 05 02 | G96 | 0.2− | 0.5+ | 2006 08 24 | 608 | 1.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.8+ | 0.0 | 2006 05 02 | G96 | 0.2− | 0.3+ | 2006 08 30 | 699 | 0.3− | 0.2+ |
| 2002 11 07 | 704 | 1.1+ | 0.3− | 2006 05 26 | G96 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.9− | 0.2+ |
| 2002 11 14 | 644 | 0.3− | 0.2− | 2006 05 26 | G96 | 0.3− | 0.3+ | 2006 08 30 | 699 | 0.3− | 0.6− |
| 2002 11 14 | 644 | 0.5− | 0.2− | 2006 05 26 | G96 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.4+ |
| 2002 11 14 | 644 | 0.6− | 0.2− | 2006 05 26 | G96 | 0.3− | 0.3+ | 2006 09 11 | 703 | 0.3− | 0.2+ |
| 2003 12 22 | 704 | 0.5+ | 1.2− | 2006 07 21 | 703 | 1.2+ | 1.0+ | 2006 09 11 | 703 | 0.1− | 0.4+ |
| 2003 12 22 | 704 | 1.3+ | 0.3+ | 2006 07 21 | 703 | 0.7− | 0.0 | 2006 09 11 | 703 | 0.5− | 0.0 |
| 2003 12 22 | 704 | 0.7− | 0.6− | 2006 07 21 | 703 | 0.7− | 0.3+ | 2006 09 11 | 703 | (2.4− | 1.1+) |
| 2003 12 22 | 704 | 0.0 | 0.9+ | 2006 07 21 | 703 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.1− |
| 2003 12 28 | 691 | 0.2− | 0.3− | 2006 07 25 | 224 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.1− | 1.2− |
| 2003 12 28 | 691 | 0.3− | 0.2+ | 2006 07 25 | 224 | 0.3− | 0.6+ | 2006 09 17 | 703 | (2.0− | 1.0−) |
| 2003 12 28 | 691 | 0.3− | 0.0 | 2006 07 25 | 224 | 0.1+ | 0.8+ | 2006 10 29 | 703 | 0.1− | 0.8+ |
| 2004 01 21 | 691 | 0.1− | 0.3+ | 2006 07 27 | 224 | 0.3+ | 0.5− | 2006 10 29 | 703 | 1.0− | 0.8− |
| 2004 01 21 | 691 | 0.2− | 0.3+ | 2006 07 27 | 224 | 0.6+ | 0.7+ | 2006 10 29 | 703 | 0.9− | 1.4− |
| 2004 01 21 | 691 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.5− | 0.0 | 2006 10 29 | 703 | 0.9− | 0.4− |
| 2004 01 24 | 704 | 0.3− | 0.6− | 2006 08 16 | 644 | 0.4− | 0.1− | | | | |
| 2004 01 24 | 704 | 0.6+ | 0.3+ | 2006 08 16 | 644 | 0.5− | 0.1− | | | | |

**(145567)∗ 2006 OZ$_{10}$ = 1999 ND$_{17}$ = 2002 GV$_{168}$**

Discovered 2006 July 19 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103959)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.22166 | | | (2000.0) | | |
| $n$ | 0.28542575 | $\omega$ | 358.32735 | | +0.38745586 | +0.91919765 |
| $a$ | 2.2845848 | $\Omega$ | 294.46399 | | −0.84491561 | +0.32352905 |
| $e$ | 0.1120429 | $i$ | 4.43478 | | −0.36877577 | +0.22450978 |
| $P$ | 3.45 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.2+ | 0.6+ | 2003 09 21 | 699 | 1.0+ | 0.6− | 2006 08 12 | 644 | 0.1+ | 0.0 |
| 1999 07 14 | 704 | 1.0− | 0.5− | 2003 09 21 | 699 | 1.8+ | 1.9+ | 2006 08 12 | 644 | 0.3+ | 0.0 |
| 1999 07 14 | 704 | 0.8− | 0.1− | 2003 10 17 | 691 | 0.2+ | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.2− |
| 1999 07 14 | 704 | 0.0 | 0.1− | 2003 10 17 | 691 | 0.3+ | 0.1− | 2006 08 15 | 644 | 0.0 | 0.0 |
| 1999 07 14 | 704 | 0.2+ | 1.1− | 2003 10 17 | 691 | 0.5+ | 0.1− | 2006 08 15 | 644 | 0.3− | 0.1+ |
| 1999 07 16 | 704 | 0.6− | 0.1− | 2003 11 22 | 691 | 0.3− | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.2+ |
| 1999 07 16 | 704 | 0.5+ | 0.2− | 2003 11 22 | 691 | 0.1− | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.1− |
| 1999 07 16 | 704 | 0.6+ | 0.2− | 2003 11 22 | 691 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.1− |
| 1999 07 16 | 704 | 0.4+ | 0.7− | 2003 11 24 | 704 | 0.9− | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.0 |
| 2000 12 30 | 691 | 0.2− | 0.4− | 2003 11 24 | 704 | 0.3+ | 0.9+ | 2006 08 27 | 291 | 0.3− | 0.1+ |
| 2000 12 30 | 691 | 0.4− | 0.4− | 2003 11 24 | 704 | 1.0+ | 0.5+ | 2006 08 27 | 291 | 0.2− | 0.0 |
| 2000 12 30 | 691 | 0.3− | 0.4− | 2005 02 14 | 691 | 0.1+ | 0.9+ | 2006 08 27 | 291 | 0.4− | 0.1+ |
| 2002 04 09 | 704 | (11.4− | 4.2−) | 2005 02 14 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 291 | 0.2+ | 0.3+ |
| 2002 04 09 | 704 | (10.5− | 4.4−) | 2005 02 14 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 291 | 0.1+ | 0.2+ |
| 2002 04 09 | 704 | (11.0− | 5.3−) | 2006 06 19 | G96 | 0.2− | 0.4+ | 2006 08 28 | 291 | 0.1+ | 0.3+ |
| 2002 04 09 | 704 | (11.6− | 5.7−) | 2006 06 19 | G96 | 0.3− | 0.3+ | 2006 09 13 | 644 | 0.4− | 0.2+ |
| 2002 04 14 | 704 | 0.8+ | 0.2+ | 2006 06 19 | G96 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2002 04 14 | 704 | 0.4+ | 0.2− | 2006 06 19 | G96 | 0.4− | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2002 04 14 | 704 | 0.3+ | 0.2+ | 2006 07 19 | 644 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2002 05 08 | 608 | 0.7+ | 0.7− | 2006 07 19 | 644 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2002 05 08 | 608 | 0.7+ | 0.9− | 2006 07 19 | 644 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2002 05 08 | 608 | 0.1+ | 0.2− | 2006 07 25 | 644 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2003 09 21 | 699 | 1.5− | 0.2+ | 2006 07 25 | 644 | 0.3− | 0.2− | | | | |
| 2003 09 21 | 699 | 0.2− | 1.3+ | 2006 07 25 | 644 | 0.1− | 0.1− | | | | |

**(145568)∗ 2006 OJ$_{11}$ = 1995 SD$_{69}$**

Discovered 2006 July 20 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103959)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.91058 | | | (2000.0) | | |
| $n$ | 0.17745880 | $\omega$ | 89.44518 | | +0.80416076 | −0.55530655 |
| $a$ | 3.1362044 | $\Omega$ | 304.26820 | | +0.38988923 | +0.76202837 |
| $e$ | 0.2548684 | $i$ | 14.86705 | | +0.44867790 | +0.33308768 |
| $P$ | 5.55 | $H$ | 15.4 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1− | 0.1+ | 2001 10 08 | 704 | 0.5+ | 0.2− | 2006 07 20 | 644 | 0.1− | 0.2− |
| 1995 09 18 | 691 | 0.4− | 0.1+ | 2001 11 11 | 704 | (2.4− | 3.0−) | 2006 07 25 | 644 | 0.5− | 0.5+ |
| 1995 09 18 | 691 | 0.2− | 0.0 | 2001 11 11 | 704 | (0.7− | 2.9−) | 2006 07 25 | 644 | 0.7− | 0.1+ |
| 1995 09 23 | 691 | 0.3+ | 0.1+ | 2001 11 11 | 704 | 0.7− | 2.0− | 2006 07 25 | 644 | 0.3− | 0.0 |
| 1995 09 23 | 691 | 0.0 | 0.1+ | 2001 11 11 | 704 | (1.7− | 3.6−) | 2006 07 25 | 644 | 0.3− | 0.2+ |
| 1995 09 23 | 691 | 0.1− | 0.2+ | 2001 11 11 | 704 | (2.0− | 3.3−) | 2006 07 25 | 644 | 0.6− | 0.1+ |
| 1995 09 29 | 691 | 0.2− | 0.4+ | 2001 12 09 | 704 | 0.4+ | 0.5+ | 2006 07 25 | 644 | 0.8− | 0.0 |
| 1995 09 29 | 691 | 0.2− | 0.1+ | 2001 12 09 | 704 | 0.3+ | 0.5+ | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 1995 09 29 | 691 | 0.0 | 0.3+ | 2001 12 09 | 704 | 0.9+ | 0.8+ | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2001 08 23 | 704 | 0.0 | 0.1− | 2001 12 09 | 704 | 0.4+ | 0.8+ | 2006 08 14 | 644 | 0.1+ | 0.2+ |
| 2001 08 23 | 704 | 0.0 | 0.2+ | 2001 12 09 | 704 | 0.8+ | 0.7+ | 2006 08 14 | E12 | 0.1− | 0.2− |
| 2001 08 23 | 704 | 0.2+ | 0.0 | 2002 01 08 | 704 | 1.0− | 0.3− | 2006 08 14 | E12 | 0.8+ | 0.4− |
| 2001 08 23 | 704 | 0.1+ | 0.1− | 2002 01 08 | 704 | 0.9− | 0.0 | 2006 08 14 | E12 | 0.7+ | 0.1− |
| 2001 08 23 | 704 | 0.1− | 0.1− | 2002 01 08 | 704 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.3− | 0.1+ |
| 2001 09 28 | 704 | 0.4+ | 0.6− | 2002 01 08 | 704 | 0.8− | 1.1− | 2006 08 18 | 644 | 0.4− | 0.0 |
| 2001 09 28 | 704 | 0.0 | 0.2− | 2002 01 08 | 704 | 0.7− | 0.1− | 2006 08 18 | 644 | 0.2− | 0.3+ |
| 2001 09 28 | 704 | 0.1− | 0.2− | 2002 12 07 | 645 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.8+ | 1.2− |
| 2001 09 28 | 704 | 0.2+ | 0.2− | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.1− | 1.1− |
| 2001 09 28 | 704 | 0.0 | 0.1+ | 2003 02 07 | 644 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 1.2+ | 0.7− |
| 2001 10 08 | 704 | 0.3− | 0.2− | 2003 02 07 | 644 | 0.4+ | 0.5+ | 2006 08 29 | 703 | 0.3+ | 0.8+ |
| 2001 10 08 | 704 | 0.0 | 0.0 | 2003 02 07 | 644 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 1.0+ | 0.2− |
| 2001 10 08 | 704 | 0.4+ | 0.3− | 2006 07 20 | 644 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.1− |
| 2001 10 08 | 704 | 0.3+ | 0.4+ | 2006 07 20 | 644 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.0 |

**(145569)∗ 2006 OL$_{11}$ = 1999 LR$_{10}$**

Discovered 2006 July 20 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103960)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.94433 | | | (2000.0) | | |
| $n$ | 0.29235655 | $\omega$ | 135.52884 | | +0.26390128 | +0.96264110 |
| $a$ | 2.2483340 | $\Omega$ | 149.62101 | | −0.91501247 | +0.26974385 |
| $e$ | 0.1892676 | $i$ | 6.88780 | | −0.30513650 | +0.02367213 |
| $P$ | 3.37 | $H$ | 16.9 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 08 | 704 | 0.4− | 0.2+ | 2005 03 08 | G96 | 0.5− | 0.0 | 2006 08 28 | 699 | 0.3+ | 0.1+ |
| 1999 06 08 | 704 | 0.5+ | 0.4− | 2006 06 23 | 644 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.3+ | 0.3+ |
| 1999 06 08 | 704 | 0.5− | 0.1− | 2006 06 23 | 644 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.1+ |
| 1999 06 08 | 704 | 0.4− | 0.3− | 2006 06 23 | 644 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.2− | 0.7+ |
| 1999 06 08 | 704 | 1.4+ | 0.7+ | 2006 07 20 | 644 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.5+ | 0.6+ |
| 1999 06 14 | 704 | 0.4− | 0.1− | 2006 07 20 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 14 | 704 | 0.1− | 0.3+ | 2006 07 20 | 644 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.0 |
| 1999 06 14 | 704 | 1.1− | 0.3+ | 2006 07 25 | 644 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.1+ | 0.2+ |
| 1999 06 14 | 704 | 0.8− | 0.1+ | 2006 07 25 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.0 | 0.1+ |
| 1999 06 14 | 704 | 0.7− | 0.0 | 2006 07 25 | 644 | 0.2− | 0.1− | 2006 08 29 | 704 | 0.9+ | 0.8+ |
| 1999 07 13 | 704 | 0.7+ | 0.0 | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 08 29 | 704 | 0.1+ | 0.0 |
| 1999 07 13 | 704 | 1.0+ | 1.4− | 2006 08 15 | 644 | 0.1− | 0.3− | 2006 08 29 | 704 | 0.0 | 0.3− |
| 1999 07 13 | 704 | 0.2+ | 0.5− | 2006 08 15 | 644 | 0.2− | 0.2− | 2006 08 29 | 704 | 0.0 | 0.9+ |
| 1999 07 13 | 704 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.5− | 1.9+ |
| 1999 07 13 | 704 | 0.9+ | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.3+ | 0.4+ |
| 2002 03 12 | 691 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.8− | 0.5+ |
| 2002 03 12 | 691 | 0.4+ | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.4− | 0.1− |
| 2002 03 12 | 691 | 0.2+ | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.4− | 0.1+ |
| 2005 02 04 | 691 | 0.5+ | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.3− | 0.5+ |
| 2005 02 04 | 691 | 0.1+ | 0.4+ | 2006 08 19 | A50 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2005 02 04 | 691 | 0.1+ | 0.5+ | 2006 08 19 | A50 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.6+ |
| 2005 03 08 | G96 | 0.3− | 0.2+ | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.1− | 1.1+ |
| 2005 03 08 | G96 | 0.4− | 0.1+ | 2006 08 21 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.5+ |
| 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 08 21 | 644 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.8+ |

**(145570)∗ 2006 OM$_{11}$**

Discovered 2006 July 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.81665 | | (2000.0) | | | |
| $n$ | 0.25907608 | $\omega$ | 1.54897 | | +0.98160206 | +0.19079121 |
| $a$ | 2.4369755 | $\Omega$ | 347.44454 | | −0.17555082 | +0.88637180 |
| $e$ | 0.2093487 | $i$ | 1.97475 | | −0.07509534 | +0.42183379 |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 644 | 0.1+ | 0.4+ | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 09 12 | 704 | 0.2− | 0.3+ |
| 2002 06 05 | 644 | 0.0 | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 12 | 704 | 0.6− | 0.6+ |
| 2002 06 05 | 644 | 0.4− | 0.3+ | 2006 08 15 | 644 | 0.3− | 0.0 | 2006 09 12 | 704 | 0.6− | 0.3− |
| 2003 12 27 | 691 | 0.1− | 0.4+ | 2006 08 15 | 644 | 0.2− | 0.3+ | 2006 09 12 | 704 | (0.2− | 1.5−) |
| 2003 12 27 | 704 | 0.9− | 0.8+ | 2006 08 17 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.4+ |
| 2003 12 27 | 691 | 0.2+ | 0.1− | 2006 08 17 | 704 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.8+ | 1.2+ |
| 2003 12 27 | 704 | 0.3+ | 0.8+ | 2006 08 17 | 704 | 0.4− | 0.9− | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2003 12 27 | 704 | 0.4− | 0.3+ | 2006 08 19 | 699 | 0.6− | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 2003 12 27 | 691 | 0.1+ | 0.9+ | 2006 08 19 | 699 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.2+ |
| 2003 12 27 | 704 | (2.3− | 0.7−) | 2006 08 19 | 699 | (2.3− | 1.6+) | 2006 09 14 | 644 | 0.1− | 0.1+ |
| 2004 01 13 | 691 | 0.1+ | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2004 01 13 | 691 | 0.3+ | 0.4+ | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2− | 0.3− |
| 2004 01 13 | 691 | 0.2+ | 0.1+ | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.6− |
| 2005 03 10 | G96 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.9− |
| 2005 03 10 | G96 | 0.5− | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.8+ | 0.1+ |
| 2005 03 10 | G96 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 2005 03 10 | G96 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.2− |
| 2005 04 02 | 644 | 0.3+ | 0.8+ | 2006 08 28 | 699 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.0 |
| 2005 04 02 | 644 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 20 | 644 | 0.7− | 0.4− |
| 2005 04 02 | 644 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.1− | 1.0+ |
| 2005 05 10 | 691 | 0.9+ | 0.3+ | 2006 08 28 | 699 | (2.2− | 1.5+) | 2006 09 20 | 704 | 0.3+ | 0.4− |
| 2005 05 10 | 691 | 0.2+ | 0.5+ | 2006 08 29 | 704 | 0.6+ | 0.7+ | 2006 09 20 | 704 | 0.0 | 0.2+ |
| 2005 05 10 | 691 | 0.3+ | 0.1+ | 2006 08 29 | 704 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.5+ |
| 2005 05 12 | G96 | 0.6− | 0.3+ | 2006 08 29 | 704 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2005 05 12 | G96 | 0.3− | 0.1− | 2006 08 29 | 704 | 0.4− | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2005 05 12 | G96 | 1.0− | 1.0− | 2006 08 29 | 704 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 05 12 | G96 | (0.0 | 1.8−) | 2006 08 31 | 704 | 0.7+ | 0.3− | 2006 09 25 | G96 | 0.5− | 0.5− |
| 2006 07 20 | 644 | 0.1+ | 0.1+ | 2006 08 31 | 704 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2006 07 20 | 644 | 0.2+ | 0.3+ | 2006 08 31 | 704 | 0.2− | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2006 07 20 | 644 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 2006 07 25 | 644 | 0.2− | 0.0 | 2006 08 31 | 704 | 0.5− | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.6− |
| 2006 07 25 | 644 | 0.1− | 0.1+ | 2006 09 12 | 699 | 0.5− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2006 07 25 | 644 | 0.3− | 0.1+ | 2006 09 12 | 699 | 0.7− | 0.7+ | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 2006 08 13 | 644 | 0.2− | 0.0 | 2006 09 12 | 699 | 0.8+ | 1.1+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 09 12 | 699 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.4+ |

**(145571)∗ 2006 OY$_{11}$**

Discovered 2006 July 21 by the Catalina Sky Survey.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.60720 | | (2000.0) | | | |
| $n$ | 0.17591998 | $\omega$ | 169.47977 | | +0.80575661 | +0.57748563 |
| $a$ | 3.1544667 | $\Omega$ | 153.85101 | | −0.56273013 | +0.81568727 |
| $e$ | 0.2692409 | $i$ | 17.34731 | | −0.18463770 | +0.03412664 |
| $P$ | 5.60 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 644 | 0.5+ | 0.1+ | 2006 08 18 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.0 |
| 2001 08 23 | 644 | 0.3+ | 0.4− | 2006 08 18 | 704 | 0.6+ | 0.6− | 2006 09 15 | 704 | 0.6− | 0.6+ |
| 2001 08 23 | 644 | 0.3+ | 0.2+ | 2006 08 18 | 699 | 0.1− | 0.7− | 2006 09 15 | 704 | 0.1+ | 0.3+ |
| 2001 11 17 | 699 | 0.3− | 0.1+ | 2006 08 18 | 699 | 0.2+ | 0.5− | 2006 09 15 | 704 | 0.3− | 0.4+ |
| 2001 11 17 | 699 | 1.1− | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.3− | 0.3+ |
| 2001 11 17 | 699 | 1.2+ | 1.4+ | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.4− | 0.4+ |
| 2001 11 17 | 699 | 0.4+ | 0.8+ | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.7+ | 0.4+ |
| 2001 12 14 | 644 | 0.5− | 0.3− | 2006 08 21 | 704 | 0.3+ | 1.2+ | 2006 09 16 | 704 | 0.3+ | 0.3+ |
| 2001 12 14 | 644 | 0.6− | 0.0 | 2006 08 21 | 704 | 0.7+ | 0.8+ | 2006 09 16 | 704 | 0.3− | 0.6+ |
| 2001 12 14 | 644 | 0.7− | 0.3+ | 2006 08 21 | 704 | 1.3+ | 1.3+ | 2006 09 16 | 704 | 0.1− | 0.5+ |
| 2004 02 18 | 291 | 0.1− | 0.5+ | 2006 08 21 | 704 | 0.6+ | 0.8+ | 2006 09 16 | 704 | 0.4+ | 0.3+ |
| 2004 02 18 | 291 | 0.2+ | 0.2+ | 2006 08 21 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 0.5− | 0.1+ |
| 2004 02 18 | 291 | 0.3+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.0 |
| 2005 04 06 | 703 | (0.2+ | 1.4−) | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.2− |
| 2005 04 06 | 703 | 0.7− | 0.6− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 1.3− | 0.2− |
| 2005 04 06 | 703 | (0.3+ | 2.5−) | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.3− | 0.6− |
| 2005 04 06 | 703 | 0.4− | 1.0+ | 2006 08 28 | 691 | 0.3− | 0.5+ | 2006 09 19 | 704 | 1.1− | 0.4− |
| 2005 05 03 | 703 | 0.5+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 19 | 704 | 0.6− | 0.3− |
| 2005 05 03 | 703 | 0.4+ | 0.8+ | 2006 08 28 | 703 | 0.2− | 0.2− | 2006 09 19 | 704 | 0.6− | 0.9− |
| 2005 05 03 | 703 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 19 | 704 | 0.0 | 0.1+ |
| 2005 05 03 | 703 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 20 | 608 | 1.2+ | 0.3− |
| 2006 06 03 | 703 | 0.2− | 1.0+ | 2006 08 28 | 703 | 0.1+ | 0.6− | 2006 09 20 | 608 | 1.2+ | 0.5− |
| 2006 06 03 | 703 | 0.9− | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.8+ | 2006 09 20 | 608 | 0.8+ | 0.4− |
| 2006 06 03 | 703 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.6+ | 0.9− |
| 2006 06 03 | 703 | 0.1+ | 0.5− | 2006 08 28 | 699 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.0 | 0.7− |
| 2006 07 21 | 703 | 0.8+ | 0.5− | 2006 08 28 | 699 | 0.2+ | 0.0 | 2006 09 22 | 704 | (1.5+ | 0.5−) |
| 2006 07 21 | 703 | 0.8+ | 0.0 | 2006 08 29 | 704 | 0.0 | 0.3+ | 2006 09 22 | 704 | 1.1+ | 0.5+ |
| 2006 07 21 | 703 | 0.3+ | 0.2− | 2006 08 29 | 704 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.5− | 1.5+ |
| 2006 07 21 | 703 | 0.3− | 0.0 | 2006 08 29 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 1.0− | 0.2+ |
| 2006 07 25 | 644 | 0.2+ | 0.0 | 2006 08 29 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.6− |
| 2006 07 25 | 644 | 0.5− | 0.1− | 2006 08 31 | 704 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.4+ |
| 2006 07 25 | 644 | 0.0 | 0.2− | 2006 08 31 | 704 | 0.5+ | 0.3− | 2006 09 26 | 704 | 0.6− | 0.3+ |
| 2006 07 25 | 644 | 0.2− | 0.2− | 2006 08 31 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.6− | 0.5+ |
| 2006 07 25 | 644 | 0.0 | 0.2− | 2006 08 31 | 704 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.5− | 0.2+ |
| 2006 07 25 | 644 | 0.2− | 0.1+ | 2006 08 31 | 704 | 1.0+ | 0.0 | 2006 09 26 | 704 | 0.3− | 0.1− |
| 2006 08 08 | E12 | 0.2+ | 0.5− | 2006 09 12 | 704 | 0.4− | 1.2+ | 2006 09 28 | 704 | 0.2− | 1.1+ |
| 2006 08 08 | E12 | 0.8+ | 0.4+ | 2006 09 12 | 704 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.5+ | 0.9+ |
| 2006 08 08 | E12 | 0.3+ | 0.2− | 2006 09 12 | 704 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 0.4+ | 0.5+ |
| 2006 08 13 | 644 | 0.1+ | 0.3− | 2006 09 12 | 704 | 0.0 | 0.2− | 2006 09 28 | 704 | 1.2− | 0.4− |
| 2006 08 13 | 644 | 0.2+ | 0.2− | 2006 09 12 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.1− |
| 2006 08 13 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.9− | 0.9− | 2006 09 30 | 703 | 0.4− | 0.5− |
| 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.8− | 1.3− | 2006 09 30 | 703 | 0.5+ | 0.1− |
| 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.2− | 0.5− |
| 2006 08 15 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.4− | 2006 10 11 | 568 | 0.2+ | 0.8− |
| 2006 08 18 | 704 | 0.0 | 1.2− | 2006 09 14 | 703 | 0.9− | 0.5− | 2006 10 11 | 568 | 0.1+ | 0.6− |
| 2006 08 18 | 699 | 0.3+ | 0.3− | 2006 09 14 | 703 | 0.3− | 0.6− | 2006 10 11 | 568 | 0.2+ | 0.7− |
| 2006 08 18 | 704 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.0 | | | | |

**(145572)∗ 2006 OJ$_{12}$**

Discovered 2006 July 21 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 190.83439 | | (2000.0) | | | |
| $n$ | 0.24203220 | $\omega$ | 203.52005 | | −0.73951765 | −0.66219870 |
| $a$ | 2.5500809 | $\Omega$ | 294.44473 | | +0.63674954 | −0.62994238 |
| $e$ | 0.1142859 | $i$ | 7.62898 | | +0.21832010 | −0.40578996 |
| $P$ | 4.07 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.5− | 1.1− | 2003 12 18 | 704 | 0.3+ | 0.2− | 2006 07 21 | 644 | 0.2− | 0.3+ |
| 1999 12 12 | 704 | 0.7− | 1.6− | 2003 12 18 | 704 | 0.2+ | 0.4− | 2006 07 21 | 644 | 0.0 | 0.4+ |
| 1999 12 12 | 704 | 0.6− | 0.4− | 2003 12 18 | 691 | 0.1− | 0.2− | 2006 07 25 | 644 | 0.0 | 0.2+ |
| 1999 12 12 | 704 | 2.0− | 0.6+ | 2003 12 18 | 704 | 0.1− | 0.8+ | 2006 07 25 | 644 | 0.2− | 0.2+ |
| 2000 01 04 | 704 | 0.5+ | 0.5+ | 2003 12 18 | 704 | 0.1+ | 0.8− | 2006 07 25 | 644 | 0.3− | 0.4+ |
| 2000 01 04 | 704 | 0.7+ | 0.1− | 2003 12 18 | 691 | 0.0 | 0.1− | 2006 08 14 | E12 | 0.4+ | 0.5− |
| 2000 01 04 | 704 | 0.6+ | 0.2− | 2003 12 23 | 704 | 0.4− | 0.0 | 2006 08 14 | E12 | 0.2+ | 0.0 |
| 2000 01 04 | 704 | 0.9+ | 0.2+ | 2003 12 23 | 704 | 0.2+ | 0.1+ | 2006 08 14 | E12 | 0.5+ | 0.1− |
| 2000 01 04 | 704 | 1.1+ | 0.3− | 2003 12 23 | 704 | 0.6− | 2.6+ | 2006 08 14 | E12 | 0.3+ | 0.4− |
| 2002 08 26 | 644 | 0.1+ | 0.4+ | 2003 12 23 | 704 | 0.0 | 0.1+ | 2006 08 14 | E12 | 0.3− | 0.6− |
| 2002 08 26 | 644 | 0.1+ | 0.2+ | 2003 12 23 | 704 | 0.5− | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.0 |
| 2002 08 26 | 644 | 0.1− | 0.6+ | 2004 02 17 | 644 | 0.2+ | 0.2+ | 2006 08 15 | 644 | 0.1− | 0.1− |
| 2003 11 19 | 704 | 0.1+ | 0.9+ | 2004 02 17 | 644 | 0.2+ | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.1+ |
| 2003 11 19 | 704 | 0.1− | 0.2− | 2004 02 17 | 644 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2003 11 19 | 704 | 0.3+ | 0.9+ | 2005 04 10 | E12 | 1.3+ | 0.7+ | 2006 08 16 | 644 | 0.1+ | 0.2+ |
| 2003 11 19 | 704 | 0.0 | 0.6+ | 2005 04 10 | E12 | 1.4+ | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.0 |
| 2003 11 19 | 704 | 0.1− | 1.0+ | 2005 04 10 | E12 | 0.7+ | 1.3+ | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2003 12 04 | 704 | 0.1+ | 0.4+ | 2005 04 10 | E12 | 0.9+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.2+ |
| 2003 12 04 | 704 | 0.9+ | 0.1+ | 2005 05 12 | 703 | 0.3− | 1.4+ | 2006 08 17 | 644 | 0.1− | 0.0 |
| 2003 12 04 | 704 | 1.1− | 1.5+ | 2005 05 12 | 703 | 0.8− | 0.2− | 2006 08 28 | 703 | 0.3− | 0.6− |
| 2003 12 04 | 704 | 0.3+ | 0.0 | 2005 05 12 | 703 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.9+ | 0.6− |
| 2003 12 18 | 704 | 0.2+ | 0.6− | 2005 05 12 | 703 | 1.6− | 0.5− | 2006 08 28 | 703 | 0.0 | 0.3+ |
| 2003 12 18 | 691 | 0.0 | 0.2− | 2006 07 21 | 644 | 0.3− | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.7+ |

**(145573)∗ 2006 OA$_{13}$**

Discovered 2006 July 20 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.64138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26375229 | $\omega$ | 318.06007 | | +0.59754487 | +0.80151117 | |
| $a$ | 2.4080854 | $\Omega$ | 348.57135 | | −0.70168263 | +0.50893458 | |
| $e$ | 0.2563851 | $i$ | 6.60827 | | −0.38804847 | +0.31395133 | |
| $P$ | 3.74 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 04 | 691 | 0.3+ | 1.0− | 2003 12 17 | 704 | 0.5− | 0.0 | 2006 05 26 | E12 | 0.3− | 0.2+ |
| 1994 03 04 | 691 | 0.1− | 0.2+ | 2003 12 17 | 704 | 0.1+ | 0.2− | 2006 07 20 | E12 | 0.1+ | 0.2+ |
| 1994 03 04 | 691 | 0.0 | 0.3− | 2003 12 17 | 704 | 0.8− | 0.2+ | 2006 07 20 | E12 | 0.2+ | 0.2+ |
| 1995 09 01 | 809 | 1.7− | 0.2− | 2005 02 01 | 691 | 0.0 | 0.5+ | 2006 07 20 | E12 | 0.1− | 0.2+ |
| 1995 09 20 | 809 | 0.1+ | 1.1− | 2005 02 01 | 691 | 0.1+ | 0.5+ | 2006 07 20 | E12 | 1.7− | 0.0 |
| 1998 04 22 | 691 | 0.1+ | 0.0 | 2005 02 01 | 691 | 0.3+ | 0.1+ | 2006 07 26 | E12 | 0.3− | 0.4+ |
| 1998 04 22 | 691 | 0.1+ | 0.1+ | 2005 02 09 | 691 | 0.1+ | 0.3+ | 2006 07 26 | E12 | 0.0 | 0.5+ |
| 1998 04 22 | 691 | 0.4− | 0.3+ | 2005 02 09 | 691 | 0.0 | 0.5+ | 2006 07 26 | E12 | 0.1+ | 0.2+ |
| 1999 10 12 | 704 | 0.6+ | 0.4+ | 2005 02 09 | 691 | 0.1− | 0.3+ | 2006 08 23 | 704 | (3.4− | 0.5+) |
| 1999 10 12 | 704 | 0.2− | 0.5+ | 2005 03 14 | G96 | 0.1+ | 0.4− | 2006 08 23 | 704 | (3.4− | 0.4+) |
| 1999 10 12 | 704 | 0.9+ | 0.4+ | 2005 03 14 | G96 | 0.2− | 0.1+ | 2006 08 23 | 704 | (3.2− | 0.3+) |
| 1999 10 12 | 704 | 0.1+ | 0.3+ | 2005 03 14 | G96 | 0.2+ | 0.0 | 2006 08 23 | 704 | (2.9− | 0.6+) |
| 1999 10 12 | 704 | 0.3+ | 1.2+ | 2005 03 14 | G96 | 0.5− | 0.1+ | 2006 08 28 | 704 | 0.5− | 0.5− |
| 1999 11 03 | 704 | 0.7+ | 0.3− | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 08 28 | 704 | 0.3+ | 1.3+ |
| 1999 11 03 | 704 | 0.6+ | 0.0 | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 08 28 | 704 | 0.2+ | 0.3+ |
| 1999 11 03 | 704 | 0.6+ | 0.4+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 08 28 | 704 | 0.6− | 0.6+ |
| 1999 11 03 | 704 | 0.7− | 0.3− | 2005 04 04 | G96 | 0.2− | 0.0 | 2006 09 16 | 704 | 1.1+ | 0.3+ |
| 2002 05 17 | 704 | 1.1+ | 0.3− | 2006 05 26 | E12 | 0.2+ | 0.2+ | 2006 09 16 | 704 | 0.6+ | 0.2+ |
| 2002 05 17 | 704 | 0.3+ | 0.3+ | 2006 05 26 | E12 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.7+ | 0.2+ |
| 2002 05 17 | 704 | 0.5− | 1.1− | 2006 05 26 | E12 | 0.0 | 0.1− | | | | |

**(145574)∗ 2006 OD$_{13}$ = 2005 JY$_{176}$**

Discovered 2006 July 21 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 103963)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.09701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21882336 | $\omega$ | 207.50465 | | +0.93865690 | +0.29053454 | |
| $a$ | 2.7273462 | $\Omega$ | 134.29788 | | −0.24898282 | +0.94369502 | |
| $e$ | 0.1664583 | $i$ | 15.04433 | | −0.23860171 | +0.15820678 | |
| $P$ | 4.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.0 | 0.1+ | 2005 05 03 | 703 | 0.9+ | 0.7+ | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 2001 06 21 | 704 | 1.3+ | 0.9+ | 2005 05 03 | 703 | (3.4− | 1.9−) | 2006 08 20 | 644 | 0.1− | 0.4+ |
| 2001 06 21 | 704 | 0.3+ | 0.2− | 2005 05 03 | 703 | 0.3− | 0.7− | 2006 08 23 | 704 | 0.3+ | 0.2+ |
| 2001 06 21 | 704 | 0.3− | 1.8+ | 2005 05 09 | 703 | 0.4− | 0.5+ | 2006 08 23 | 704 | 0.3+ | 0.3+ |
| 2002 10 10 | 644 | 0.6− | 0.4+ | 2005 05 09 | 703 | 0.1+ | 1.2+ | 2006 08 23 | 704 | 0.1+ | 0.6− |
| 2002 10 10 | 644 | 0.2− | 0.5+ | 2005 05 09 | 703 | 1.2− | 0.7+ | 2006 08 23 | 704 | 1.0+ | 0.3− |
| 2002 10 10 | 644 | 0.2− | 0.6+ | 2005 05 09 | 703 | 0.1− | 0.6+ | 2006 08 23 | 704 | 0.0 | 0.2− |
| 2002 10 29 | 704 | 0.7+ | 0.9+ | 2006 07 21 | 704 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 2002 10 29 | 704 | 0.3− | 0.7+ | 2006 07 21 | 704 | 0.5− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 10 29 | 704 | 0.8− | 0.2− | 2006 07 21 | 704 | 0.1+ | 1.8+ | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 644 | 0.5− | 0.5+ | 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.0 | 0.2+ |
| 2002 11 06 | 644 | 0.6− | 0.0 | 2006 07 25 | 644 | 0.1− | 0.3+ | 2006 08 31 | 704 | 0.4+ | 0.4− |
| 2002 11 06 | 644 | 0.3− | 0.4+ | 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.4+ | 0.9− |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.6− | 0.8− |
| 2003 12 25 | 645 | 0.1+ | 0.1+ | 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 09 09 | 644 | 0.2− | 0.5+ |
| 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.1− | 0.3+ | 2006 09 09 | 644 | 0.1− | 0.4+ |
| 2004 01 31 | 691 | 0.1+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 09 | 644 | 0.3− | 0.5+ |
| 2004 01 31 | 691 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 10 11 | E12 | 0.3− | 0.5+ |
| 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 10 11 | E12 | 0.2− | 0.6+ |
| 2004 02 23 | 704 | 0.2+ | 1.6+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 10 11 | E12 | 0.3+ | 0.3− |
| 2004 02 23 | 704 | 0.8+ | 1.1+ | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 10 11 | E12 | 0.2− | 0.9+ |
| 2004 02 23 | 704 | 0.1− | 1.3+ | 2006 08 18 | 644 | 0.1− | 0.3+ | | | | |
| 2005 05 03 | 703 | 0.6− | 1.1+ | 2006 08 20 | 644 | 0.1+ | 0.3+ | | | | |

**(145575)∗ 2006 OV$_{15}$**

Discovered 2006 July 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.90827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23743324 | $\omega$ | 213.22638 | | +0.95547896 | +0.23057494 | |
| $a$ | 2.5829046 | $\Omega$ | 132.29334 | | −0.18581076 | +0.95490202 | |
| $e$ | 0.1922746 | $i$ | 14.41185 | | −0.22920364 | +0.18707571 | |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 18 | 691 | 0.5+ | 0.2− | 2002 11 04 | 644 | 0.3− | 0.0 | 2006 08 15 | 644 | 0.2+ | 0.4+ |
| 1996 02 18 | 691 | 0.3+ | 0.1− | 2003 12 28 | 291 | 0.0 | 0.5+ | 2006 08 23 | 644 | 0.1+ | 0.1+ |
| 1996 02 18 | 691 | 0.0 | 0.0 | 2003 12 28 | 291 | 0.1+ | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.2+ |
| 2001 06 16 | 645 | 0.0 | 0.1+ | 2003 12 28 | 291 | 0.5− | 0.6+ | 2006 08 23 | 644 | 0.1− | 0.0 |
| 2001 06 16 | 645 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 08 30 | 699 | 0.3+ | 0.1+ |
| 2002 08 12 | 704 | 0.8− | 1.1+ | 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.1+ | 0.8− |
| 2002 08 12 | 704 | (1.1− | 1.5+) | 2004 01 22 | 704 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.2+ | 0.1+ |
| 2002 08 12 | 704 | 0.3− | 0.5+ | 2004 02 23 | 704 | 0.7+ | 0.1+ | 2006 08 30 | 699 | 0.5− | 0.3+ |
| 2002 08 24 | 644 | 0.3− | 0.5+ | 2004 02 23 | 704 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.2− | 0.2− |
| 2002 08 24 | 644 | 0.1− | 0.3+ | 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.1− |
| 2002 08 24 | 644 | 0.3− | 0.3+ | 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 09 20 | 703 | 1.0− | 0.3− |
| 2002 09 13 | 704 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.2+ | 1.3+ | 2006 09 20 | 703 | 0.3− | 0.4+ |
| 2002 09 13 | 704 | 0.1− | 0.3− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.7+ | 0.3+ |
| 2002 09 13 | 704 | 0.1− | 0.2+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.9+ | 0.3+ |
| 2002 09 13 | 704 | 0.0 | 0.3+ | 2005 04 06 | 703 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.9+ | 0.7+ |
| 2002 10 02 | 608 | 0.0 | 0.1+ | 2005 04 06 | 703 | (1.0+ | 2.7+) | 2006 09 26 | 703 | 0.1− | 0.4+ |
| 2002 10 02 | 608 | 0.6− | 0.1− | 2005 04 06 | 703 | (2.1− | 2.9+) | 2006 09 26 | 703 | 0.4+ | 0.2+ |
| 2002 10 02 | 608 | 0.4− | 0.0 | 2005 04 06 | 703 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.7+ |
| 2002 10 28 | 704 | 0.0 | 0.5− | 2006 07 20 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2002 10 28 | 704 | 0.5+ | 0.6− | 2006 07 20 | 644 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 2002 10 28 | 704 | 0.6+ | 0.6− | 2006 07 20 | 644 | 0.0 | 0.4+ | 2006 10 28 | E12 | 0.3+ | 0.6+ |
| 2002 10 28 | 704 | 0.1− | 0.7− | 2006 07 21 | 699 | 0.8− | 0.3+ | 2006 10 28 | E12 | 0.1+ | 0.1− |
| 2002 11 04 | 644 | 0.5− | 0.1− | 2006 07 21 | 699 | 0.2+ | 0.1+ | 2006 10 28 | E12 | 0.4+ | 0.2+ |
| 2002 11 04 | 644 | 0.0 | 0.1− | 2006 07 21 | 699 | 1.5− | 0.2− | 2006 10 28 | E12 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2− | 0.0 | 2006 07 21 | 699 | 1.2+ | 0.4− | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2002 11 04 | 644 | 0.0 | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.0 |
| 2002 11 04 | 644 | 0.0 | 0.1− | 2006 08 15 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 644 | 0.3− | 0.1− |

**(145576)∗ 2006 PE = 2005 GT$_{160}$**

Discovered 2006 Aug. 3 at Cordell-Lorenz Observatory, Sewanee.

Id. T. B. Spahr (*MPO* 103972)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.69047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17259978 | $\omega$ | 317.61871 | | +0.04707239 | +0.97474600 | |
| $a$ | 3.1947918 | $\Omega$ | 313.77354 | | −0.81613121 | −0.08847744 | |
| $e$ | 0.2174420 | $i$ | 17.59698 | | −0.57594621 | +0.20504140 | |
| $P$ | 5.71 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.3− | 0.3+ | 2005 04 12 | E12 | 0.8− | 0.5+ | 2006 08 04 | 850 | 0.1− | 0.1− |
| 1993 02 26 | 691 | 0.2+ | 0.3− | 2005 04 12 | E12 | 1.5− | 0.6+ | 2006 08 04 | 850 | 0.1− | 0.0 |
| 1993 02 26 | 691 | 0.3− | 0.6− | 2005 04 12 | E12 | 0.1− | 0.5+ | 2006 08 11 | 644 | 0.1+ | 0.1+ |
| 2001 09 30 | 644 | 0.1− | 0.2+ | 2005 04 15 | 699 | 0.0 | 0.3− | 2006 08 11 | 644 | 0.0 | 0.2+ |
| 2001 09 30 | 644 | 0.0 | 0.3+ | 2005 04 15 | 699 | 0.2+ | 0.2− | 2006 08 11 | 644 | 0.2+ | 0.2+ |
| 2001 10 18 | 704 | 0.5− | 0.6− | 2005 04 15 | 699 | 0.6+ | 0.4+ | 2006 08 13 | 644 | 0.0 | 0.1+ |
| 2001 10 18 | 704 | 0.1+ | 0.2+ | 2005 04 15 | 699 | 0.5+ | 0.7+ | 2006 08 13 | 644 | 0.2+ | 0.1− |
| 2001 10 18 | 704 | 0.4+ | 0.2− | 2006 05 28 | E12 | 0.5+ | 0.4− | 2006 08 13 | 644 | 0.2+ | 0.0 |
| 2001 10 18 | 704 | 0.2− | 0.4+ | 2006 05 28 | E12 | 0.6+ | 0.6+ | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2001 10 28 | 644 | 0.1+ | 0.0 | 2006 05 28 | E12 | 0.2− | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.1− |
| 2001 10 28 | 644 | 0.4− | 0.2+ | 2006 05 28 | E12 | 0.0 | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.1− |
| 2001 10 28 | 644 | 0.2+ | 0.5− | 2006 06 10 | 644 | 0.1− | 0.5+ | 2006 08 17 | 644 | 0.2+ | 0.2− |
| 2004 01 19 | 699 | 0.6+ | 1.0+ | 2006 06 10 | 644 | 0.4− | 0.6+ | 2006 08 17 | 644 | 0.1+ | 0.1− |
| 2004 01 19 | 699 | 0.7− | 0.4− | 2006 06 10 | 644 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2004 01 19 | 699 | 0.8+ | 0.0 | 2006 07 21 | 704 | 0.1+ | 0.8+ | 2006 08 17 | 704 | 0.3− | 1.0− |
| 2004 01 19 | 699 | 1.1+ | 0.0 | 2006 07 21 | 704 | 0.0 | 0.4+ | 2006 08 17 | 704 | 0.6− | 1.2− |
| 2004 01 27 | 691 | 0.4+ | 0.3+ | 2006 07 21 | 704 | 0.4− | 0.3+ | 2006 08 17 | 704 | 0.1+ | 0.1− |
| 2004 01 27 | 691 | 0.4+ | 0.2+ | 2006 07 21 | 704 | 0.2+ | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 07 21 | 704 | 0.3+ | 0.2− | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 1.1− | 0.2− | 2006 08 03 | 850 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.1− | 0.1− |
| 2004 02 23 | 704 | 0.4− | 0.3+ | 2006 08 03 | 850 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.9− | 0.5− | 2006 08 03 | 850 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1− |
| 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 08 03 | 850 | 0.4− | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.1− |
| 2004 02 23 | 704 | 0.3− | 0.2+ | 2006 08 03 | 850 | 1.3− | 1.3+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2005 04 03 | 704 | 1.6+ | 0.6+ | 2006 08 04 | 850 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2005 04 03 | 704 | 0.6+ | 0.6− | 2006 08 04 | 850 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2005 04 03 | 704 | 0.3− | 0.9− | 2006 08 04 | 850 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2005 04 03 | 704 | 0.3+ | 0.4− | 2006 08 04 | 850 | 0.0 | 0.3+ | | | | |
| 2005 04 12 | E12 | 0.8− | 0.7+ | 2006 08 04 | 850 | 0.0 | 0.2+ | | | | |

**(145577)∗ 2006 PK$_1$ = 2002 NK$_{54}$**

Discovered 2006 Aug. 8 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 103974)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.52729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25588136 | $\omega$ | 358.82546 | | +0.97172544 | +0.23595737 | |
| $a$ | 2.4572176 | $\Omega$ | 347.51641 | | −0.21630475 | +0.87502631 | |
| $e$ | 0.2025661 | $i$ | 2.27744 | | −0.09466742 | +0.42267372 | |
| $P$ | 3.85 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 704 | 0.8− | 0.6+ | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.7− | 0.1− |
| 2002 07 05 | 704 | 0.4− | 0.1− | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.5+ | 1.1+ |
| 2002 07 05 | 704 | 0.3− | 1.2+ | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2002 07 05 | 704 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.2− |
| 2002 07 05 | 704 | 0.6− | 0.8+ | 2006 08 28 | 699 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.5+ |
| 2002 07 08 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.2− | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2002 07 08 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.6− | 1.1− | 2006 09 20 | 704 | 0.3+ | 0.6+ |
| 2002 07 08 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 09 20 | 704 | 0.3− | 0.3+ |
| 2002 07 08 | 644 | 0.0 | 0.6+ | 2006 08 28 | 703 | 1.3+ | 0.8− | 2006 09 20 | 704 | 0.2+ | 1.5− |
| 2002 07 08 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.5+ |
| 2002 07 08 | 644 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.4− | 0.4− | 2006 09 24 | 699 | 1.0− | 0.3+ |
| 2003 12 19 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.2+ | 0.7− | 2006 09 24 | 699 | 0.1− | 0.2+ |
| 2003 12 19 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.2− | 2006 09 24 | 699 | 0.4− | 0.4+ |
| 2003 12 19 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.5− | 2006 09 24 | 699 | 0.1+ | 0.8+ |
| 2004 01 22 | 704 | 0.1+ | 1.1+ | 2006 08 29 | 704 | (2.0+ | 1.6−) | 2006 09 25 | 699 | 0.4+ | 1.2+ |
| 2004 01 22 | 704 | 0.2+ | 1.6+ | 2006 08 29 | 704 | 1.4− | 0.5− | 2006 09 25 | 699 | 0.4− | 0.9+ |
| 2004 01 22 | 704 | 0.4+ | 1.2+ | 2006 08 29 | 704 | 0.1− | 0.8+ | 2006 09 25 | 699 | 0.2+ | 0.7+ |
| 2004 01 22 | 704 | 0.2− | 1.6+ | 2006 08 29 | 704 | 0.6− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2004 01 31 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 704 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2004 01 31 | 691 | 0.0 | 0.4+ | 2006 08 31 | 704 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2004 01 31 | 691 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2005 03 11 | G96 | 0.2− | 0.3+ | 2006 08 31 | 704 | 0.3− | 0.8+ | 2006 09 25 | 699 | 0.3− | 0.3− |
| 2005 03 11 | G96 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 0.7− | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2005 03 11 | G96 | 0.1− | 0.4+ | 2006 08 31 | 704 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.2+ | 2006 09 12 | 699 | 0.6− | 0.6+ | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2005 05 02 | 691 | 0.5+ | 0.7+ | 2006 09 12 | 699 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.3− |
| 2005 05 02 | 691 | 0.4+ | 0.7+ | 2006 09 12 | 699 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2005 05 02 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 699 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2006 08 08 | E12 | 0.3− | 0.2+ | 2006 09 12 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 2006 08 08 | E12 | 0.5+ | 0.1+ | 2006 09 12 | 704 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2006 08 08 | E12 | 1.1+ | 0.5+ | 2006 09 12 | 704 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2006 08 08 | E12 | 0.2+ | 0.1− | 2006 09 12 | 704 | 0.6− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2006 08 13 | 644 | 0.0 | 0.0 | 2006 09 12 | 704 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2006 08 13 | 644 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2006 08 13 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2006 08 15 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2006 08 15 | 644 | 0.0 | 0.2− | 2006 09 17 | 704 | 1.4+ | 1.6+ | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2006 08 15 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.7+ |
| 2006 08 18 | 699 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 0.3− | 1.2+ | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2006 08 18 | 699 | 0.5− | 0.3+ | 2006 09 17 | 704 | 0.8+ | 0.1− | 2006 11 11 | 703 | 1.5− | 1.1+ |
| 2006 08 18 | 699 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.7+ | | | | |
| 2006 08 18 | 699 | 1.1− | 1.6+ | 2006 09 18 | 699 | 1.3+ | 0.7+ | | | | |

**(145578)∗ 2006 PA$_4$ = 2004 BF$_{36}$**

Discovered 2006 Aug. 15 by J. Broughton at Reedy Creek.

Id. A. Doppler (*MPO* 103975)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.77518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23786771 | $\omega$ | 240.56407 | | +0.97449346 | +0.04632892 | |
| $a$ | 2.5797585 | $\Omega$ | 116.01246 | | +0.01923467 | +0.95761536 | |
| $e$ | 0.1809932 | $i$ | 14.14242 | | −0.22359008 | +0.28429994 | |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 699 | 0.5+ | 0.1− | 2004 01 19 | 691 | 0.2+ | 0.6+ | 2006 08 16 | E12 | 0.1− | 0.1+ |
| 1998 10 18 | 699 | 0.3− | 0.3− | 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 08 16 | E12 | 0.2− | 0.3+ |
| 1998 10 18 | 699 | 0.7+ | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.9+ | 2006 08 16 | E12 | 0.3− | 0.3− |
| 2002 08 11 | 608 | 0.6− | 0.1+ | 2004 01 22 | 704 | 0.2− | 0.9+ | 2006 08 16 | E12 | 0.9− | 0.9+ |
| 2002 08 11 | 608 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 08 16 | E12 | 0.5+ | 0.0 |
| 2002 08 11 | 608 | 0.4− | 0.1+ | 2004 01 22 | 704 | 0.3− | 0.7+ | 2006 08 16 | E12 | 0.1− | 0.5+ |
| 2002 08 14 | 704 | 1.5+ | 1.3+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2002 08 14 | 704 | 1.2+ | 0.7− | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2002 08 14 | 704 | 0.3− | 1.2+ | 2005 04 06 | 703 | 0.9+ | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.6+ |
| 2002 08 14 | 704 | 0.9+ | 0.4+ | 2005 04 06 | 703 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.4− | 0.6+ |
| 2002 09 26 | 704 | 0.1− | 0.1− | 2005 04 06 | 703 | 0.2− | 0.2− | 2006 08 21 | 644 | 0.1− | 0.6+ |
| 2002 09 26 | 704 | 0.6− | 0.4+ | 2005 04 06 | 703 | 0.5− | 1.4+ | 2006 08 21 | 644 | 0.2+ | 0.5+ |
| 2002 09 26 | 704 | 1.2− | 0.4− | 2006 07 19 | 644 | 0.2− | 0.6+ | 2006 09 12 | E12 | 0.3− | 0.8+ |
| 2002 10 07 | 644 | 0.3− | 0.5− | 2006 07 19 | 644 | 0.1− | 0.0 | 2006 09 12 | E12 | 0.4+ | 0.7− |
| 2002 10 07 | 644 | 0.1− | 0.5− | 2006 07 19 | 644 | 0.0 | 0.1+ | 2006 09 12 | E12 | 0.3+ | 0.2− |
| 2002 10 07 | 644 | 0.6− | 0.5− | 2006 08 15 | 428 | 0.5+ | 0.7− | 2006 09 12 | E12 | 0.4+ | 0.6− |
| 2002 10 22 | 644 | 0.2− | 0.3− | 2006 08 15 | 428 | 0.6+ | 0.6− | 2006 10 25 | E12 | 0.3+ | 1.1+ |
| 2002 10 22 | 644 | 0.1− | 0.1− | 2006 08 16 | 428 | 0.4+ | 1.6− | 2006 10 25 | E12 | 0.3+ | 0.9+ |
| 2002 10 22 | 644 | 0.6− | 0.1− | 2006 08 16 | 428 | 0.0 | 0.4− | 2006 10 25 | E12 | 0.1− | 0.0 |
| 2004 01 19 | 691 | 0.1+ | 0.3+ | 2006 08 16 | E12 | 0.3+ | 0.1+ | 2006 10 25 | E12 | 0.5− | 0.3− |
| 2004 01 19 | 691 | 0.1+ | 0.3+ | 2006 08 16 | E12 | 0.4− | 0.1− | | | | |

**(145579)∗ 2006 PQ$_6$**

Discovered 2006 Aug. 12 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.94203 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20975172 | $\omega$ | 38.11759 | +0.64376152 | | −0.76472326 | |
| $a$ | 2.8054273 | $\Omega$ | 11.89613 | +0.66489218 | | +0.54104203 | |
| $e$ | 0.2246344 | $i$ | 7.73341 | +0.37880007 | | +0.34995979 | |
| $P$ | 4.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.2− | 0.4− | 2002 11 15 | 704 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.1+ | 0.3− |
| 1997 10 21 | 691 | 0.3− | 0.1+ | 2002 11 15 | 704 | 0.1− | 0.4+ | 2004 03 19 | 704 | 1.1− | 0.0 |
| 1997 10 21 | 691 | 0.2− | 0.2− | 2002 11 15 | 704 | 0.0 | 0.6+ | 2004 04 15 | 691 | 0.6+ | 0.6+ |
| 1997 10 30 | 704 | 1.8+ | 1.3+ | 2002 12 05 | 704 | 0.0 | 0.4+ | 2004 04 15 | 691 | 0.4− | 0.1+ |
| 1997 10 30 | 704 | 1.3− | 1.3+ | 2002 12 05 | 704 | 0.4+ | 0.1+ | 2004 04 15 | 691 | 0.3− | 0.8+ |
| 1997 10 30 | 704 | 0.1− | 1.4+ | 2002 12 05 | 704 | 0.4+ | 0.1− | 2005 02 14 | 809 | 0.2− | 0.3+ |
| 1997 10 30 | 704 | 1.1+ | 0.1− | 2002 12 05 | 704 | 0.3+ | 0.0 | 2005 02 14 | 809 | 0.4− | 0.5+ |
| 1997 10 30 | 704 | (3.5− | 0.3−) | 2002 12 05 | 704 | 0.3+ | 0.6+ | 2005 02 14 | 809 | 0.0 | 0.5+ |
| 2000 04 10 | 695 | 0.0 | 0.5+ | 2002 12 15 | 704 | 1.0− | 0.3+ | 2006 07 18 | E12 | 1.1− | 0.7+ |
| 2000 04 10 | 695 | 0.3+ | 0.2+ | 2002 12 15 | 704 | 1.1− | 0.4− | 2006 07 18 | E12 | (1.5− | 2.4+) |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2002 12 15 | 704 | 1.3− | 0.2+ | 2006 07 18 | E12 | 0.3− | 0.3− |
| 2002 10 04 | 704 | 0.2− | 1.4+ | 2002 12 15 | 704 | 1.4− | 0.4+ | 2006 07 18 | E12 | 0.3− | 1.0+ |
| 2002 10 04 | 704 | 0.5− | 0.7+ | 2004 02 17 | 291 | 0.2+ | 0.5+ | 2006 08 12 | 644 | 0.4− | 0.6+ |
| 2002 10 04 | 704 | 0.0 | 1.2+ | 2004 02 17 | 291 | 0.1+ | 0.5+ | 2006 08 12 | 644 | 0.2− | 0.4+ |
| 2002 10 04 | 704 | 0.6+ | 0.3+ | 2004 02 17 | 291 | 0.1+ | 0.7+ | 2006 08 12 | 644 | 0.3− | 0.5+ |
| 2002 10 10 | 704 | 0.4+ | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.5− | 2006 08 14 | 644 | 0.1− | 0.7+ |
| 2002 10 10 | 704 | 1.1+ | 0.2− | 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 08 14 | 644 | 0.1+ | 0.6+ |
| 2002 10 10 | 704 | 1.0+ | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 08 14 | 644 | 0.1− | 1.0+ |
| 2002 10 10 | 704 | 1.0+ | 0.2− | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.5+ |
| 2002 10 12 | 704 | (4.3+ | 2.3+) | 2004 03 18 | 704 | 0.8+ | 0.5− | 2006 08 14 | 644 | 0.3− | 0.7+ |
| 2002 10 12 | 704 | 1.0− | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.4+ |
| 2002 10 12 | 704 | 0.5− | 0.3+ | 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 08 19 | 644 | 0.4− | 0.7+ |
| 2002 11 15 | 704 | 0.4+ | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 08 19 | 644 | 0.1− | 0.7+ |
| 2002 11 15 | 704 | 0.0 | 0.3+ | 2004 03 19 | 704 | 1.5+ | 0.9− | 2006 08 19 | 644 | 0.0 | 0.6+ |

**(145580)∗ 2006 PM$_{10}$ = 2004 EK$_{55}$**

Discovered 2006 Aug. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103981)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.59750 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17798107 | $\omega$ | 54.08894 | +0.94466722 | | −0.28643244 | |
| $a$ | 3.1300661 | $\Omega$ | 321.81922 | +0.14827737 | | +0.80760928 | |
| $e$ | 0.0621666 | $i$ | 14.98928 | +0.29260496 | | +0.51548396 | |
| $P$ | 5.54 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 699 | 0.0 | 0.3− | 2004 03 17 | 704 | 0.2+ | 1.0+ | 2006 08 19 | 644 | 0.1+ | 0.1− |
| 2001 08 26 | 699 | 0.7− | 0.7+ | 2004 03 23 | 704 | 1.1+ | 0.6+ | 2006 08 19 | 699 | 0.3+ | 0.2+ |
| 2001 08 26 | 699 | 0.8− | 0.6+ | 2004 03 23 | 704 | 1.0+ | 1.1+ | 2006 08 22 | 644 | 0.1+ | 0.1− |
| 2001 08 26 | 699 | 1.2+ | 0.3+ | 2004 03 23 | 704 | 0.5+ | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.1− |
| 2001 09 19 | 699 | 0.4+ | 0.1− | 2004 03 23 | 704 | 1.3+ | 0.6+ | 2006 08 22 | 644 | 0.1+ | 0.2− |
| 2001 09 19 | 699 | 0.7− | 0.0 | 2006 07 18 | G96 | 0.6− | 0.4− | 2006 08 28 | 703 | 0.0 | 0.1+ |
| 2001 09 19 | 699 | 0.1+ | 0.1+ | 2006 07 18 | G96 | 0.4− | 0.4− | 2006 08 28 | 703 | 0.1+ | 0.2− |
| 2001 09 19 | 699 | 0.6+ | 0.6− | 2006 07 18 | G96 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.7− | 0.4+ |
| 2001 09 29 | 644 | 0.2− | 0.2− | 2006 07 18 | G96 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.0 | 0.3− |
| 2001 09 29 | 644 | 0.1− | 0.1− | 2006 07 25 | 644 | 0.1− | 0.1+ | 2006 08 30 | 704 | (0.5− | 2.5+) |
| 2001 09 29 | 644 | 0.2− | 0.4− | 2006 07 25 | 644 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.4+ | 0.9+ |
| 2001 10 18 | 704 | 1.0− | 1.7− | 2006 07 25 | 644 | 0.2− | 0.3+ | 2006 08 30 | 704 | 1.2− | 1.3+ |
| 2001 10 18 | 704 | 0.1+ | 0.2− | 2006 08 13 | 644 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.5− | 0.0 |
| 2001 10 18 | 704 | 0.1+ | 0.5+ | 2006 08 13 | 644 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.7+ | 0.7+ |
| 2001 10 18 | 704 | 0.6+ | 0.1+ | 2006 08 13 | 644 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.1+ |
| 2001 10 18 | 704 | 0.0 | 0.2+ | 2006 08 13 | 644 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.5− | 0.7+ |
| 2001 11 12 | 704 | 0.8− | 0.3+ | 2006 08 13 | 644 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.4+ |
| 2001 11 12 | 704 | 0.5− | 1.3+ | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.4− | 1.3+ | 2006 08 18 | 704 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.7− | 1.3+ | 2006 08 18 | 704 | 0.5− | 1.2− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.0 | 0.6+ | 2006 08 18 | 704 | 0.8− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2001 12 10 | 704 | 0.5− | 0.8+ | 2006 08 18 | 704 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.5+ |
| 2001 12 10 | 704 | 0.6− | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.6− |
| 2001 12 10 | 704 | 1.0+ | 0.9+ | 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | 1.7+ | 1.1− |
| 2003 01 10 | 704 | 0.5+ | 0.9+ | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 1.0− | 0.8− |
| 2003 01 10 | 704 | 0.4− | 0.6+ | 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2003 01 10 | 704 | 0.3− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.3+ | 0.1− |
| 2004 03 14 | 644 | 0.0 | 0.9+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.4+ | 0.2− |
| 2004 03 14 | 644 | 0.2+ | 0.9+ | 2006 08 19 | 699 | 0.7− | 0.9+ | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 2004 03 14 | 644 | 0.3+ | 1.0+ | 2006 08 19 | 699 | 0.2+ | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 704 | 0.9+ | 0.9+ | 2006 08 19 | 644 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2004 03 17 | 704 | 0.4+ | 0.7+ | 2006 08 19 | 699 | 0.7− | 0.5+ | | | | |
| 2004 03 17 | 704 | 0.8+ | 0.6+ | 2006 08 19 | 644 | 0.4+ | 0.3− | | | | |

**(145581)∗ 2006 PJ$_{11}$ = 2002 VH$_{137}$**

Discovered 2006 Aug. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103982)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.13942 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20975598 | $\omega$ | 277.51698 | +0.93299883 | | +0.35979039 | |
| $a$ | 2.8053893 | $\Omega$ | 61.39599 | −0.32648385 | | +0.85556612 | |
| $e$ | 0.0757708 | $i$ | 0.52231 | −0.15139840 | | +0.37223310 | |
| $P$ | 4.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 691 | 0.2+ | 0.2− | 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.0 |
| 1998 12 26 | 691 | 0.2+ | 0.2− | 2002 12 05 | 704 | 1.8− | 0.3+ | 2006 08 23 | 704 | 0.2− | 0.6+ |
| 1998 12 26 | 691 | 0.3+ | 0.0 | 2005 04 07 | 691 | 0.0 | 0.1− | 2006 08 23 | 704 | 0.1− | 0.3− |
| 2000 03 25 | 691 | 0.3+ | 0.0 | 2005 04 07 | 691 | 0.1+ | 0.4− | 2006 08 23 | 704 | 0.1+ | 0.7+ |
| 2000 03 25 | 691 | 0.2+ | 0.8+ | 2005 04 07 | 691 | 0.0 | 0.3− | 2006 08 23 | 704 | 0.7− | 0.2+ |
| 2000 03 25 | 691 | 0.6+ | 0.6+ | 2005 04 17 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 1.7− | 1.4+ |
| 2000 04 13 | 691 | 0.3− | 0.1− | 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.2+ |
| 2000 04 13 | 691 | 0.3− | 0.0 | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.6+ | 1.3+ |
| 2000 04 13 | 691 | 0.2− | 0.1+ | 2005 05 13 | G96 | 0.6− | 0.2+ | 2006 08 28 | 703 | (1.7+ | 2.2+) |
| 2002 11 05 | 408 | 0.6− | 0.0 | 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.5− |
| 2002 11 05 | 408 | 0.4− | 0.1− | 2005 05 13 | G96 | 0.3− | 0.2+ | 2006 09 14 | 703 | 1.5+ | 1.0+ |
| 2002 11 06 | 408 | 0.0 | 1.1+ | 2005 05 13 | G96 | 0.5− | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.7− |
| 2002 11 06 | 408 | 0.3+ | 0.9+ | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.7+ |
| 2002 11 13 | 291 | 0.1− | 0.3+ | 2006 08 13 | 644 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2002 11 13 | 291 | 0.2− | 0.3+ | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2002 11 13 | 291 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.4− | 0.6− | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.4− |

**(145582)∗ 2006 PP$_{11}$**

Discovered 2006 Aug. 13 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.28165 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22190592 | $\omega$ | 323.42395 | +0.45664691 | | +0.88847366 | |
| $a$ | 2.7020297 | $\Omega$ | 333.65650 | −0.78988331 | | +0.38127004 | |
| $e$ | 0.1006303 | $i$ | 5.91065 | −0.40933844 | | +0.25543633 | |
| $P$ | 4.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.1− | 0.5+ | 2005 05 14 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.3− |
| 1997 09 27 | 691 | 0.0 | 0.3+ | 2005 05 14 | 644 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.1− |
| 1997 09 27 | 691 | 0.4− | 0.4+ | 2006 07 25 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.1− |
| 2000 03 03 | 704 | 0.3+ | 1.1+ | 2006 07 25 | 644 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.2− |
| 2000 03 03 | 704 | 0.8+ | 0.4+ | 2006 07 25 | 644 | 0.2+ | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.2+ |
| 2000 03 03 | 704 | 0.2+ | 0.8+ | 2006 08 13 | 644 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.3+ |
| 2000 04 05 | 691 | 0.4− | 0.6− | 2006 08 13 | 644 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.1− | 0.5+ |
| 2000 04 05 | 691 | 0.1+ | 0.0 | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.2+ | 0.4+ |
| 2000 04 05 | 691 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.6+ | 0.1+ | 2006 08 31 | 704 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2006 08 15 | 644 | 0.6+ | 0.2+ | 2006 08 31 | 704 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.1+ | 0.7− | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 09 14 | 644 | 0.3+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3− | 0.1− | 2006 08 18 | 699 | 0.3− | 1.1− | 2006 09 14 | 703 | 0.7+ | 0.5+ |
| 2002 10 12 | 704 | 1.4− | 0.5+ | 2006 08 18 | 699 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | 1.5+ | 2.1+ | 2006 08 18 | 699 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.6+ |
| 2002 10 12 | 704 | 1.4− | 0.6+ | 2006 08 18 | 699 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.2− | 0.3+ |
| 2002 10 12 | 704 | 0.4+ | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.6+ |
| 2005 04 03 | 644 | 0.3+ | 0.4+ | 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2005 04 03 | 644 | 0.2+ | 0.6+ | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 24 | 699 | 0.3− | 1.0− |
| 2005 04 03 | 644 | 0.2− | 0.3+ | 2006 08 28 | 699 | 0.7− | 0.3+ | 2006 09 24 | 699 | 0.3− | 0.4− |
| 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.8− | 2006 09 24 | 699 | 0.1− | 0.6− |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 09 24 | 699 | 0.2− | 0.1+ |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 05 01 | 644 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.9− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2005 05 01 | 644 | 0.2− | 0.4+ | 2006 08 28 | 699 | 0.3− | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2005 05 01 | 644 | 0.5− | 0.2− | 2006 08 28 | 703 | 0.2− | 0.8− | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2005 05 14 | 644 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.2+ | 0.5− | | | | |

**(145583)∗ 2006 PB$_{14}$ = 2002 SN$_{18}$**

Discovered 2006 Aug. 14 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 103985)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.90866 | | (2000.0) | | +0.99589027 | −0.08494860 |
| $n$ | 0.24660839 | $\omega$ | 354.52462 | | +0.08825289 | +0.83231665 |
| $a$ | 2.5184354 | $\Omega$ | 10.50447 | | +0.02034703 | +0.54775244 |
| $e$ | 0.2746837 | $i$ | 9.91939 | | | |
| $P$ | 4.00 | $H$ | 15.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 910 | (4.3− | 2.5−) | 2002 11 07 | 704 | 0.9+ | 0.5− | 2006 08 19 | 644 | 0.0 | 0.2+ |
| 1998 11 17 | 910 | (3.3− | 1.5−) | 2002 11 07 | 699 | 1.2+ | 0.6+ | 2006 08 19 | 644 | 0.1+ | 0.3+ |
| 1998 11 17 | 910 | (2.5− | 1.3−) | 2002 11 07 | 699 | 0.3− | 0.6+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.0 | 0.5+ | 2002 11 07 | 704 | 1.1+ | 0.0 | 2006 08 20 | 644 | 0.1− | 0.3+ |
| 2002 08 13 | 704 | 0.1− | 0.0 | 2002 11 07 | 699 | 0.4− | 0.8+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.2− | 0.2− | 2002 11 07 | 704 | 1.2+ | 0.7+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2002 08 13 | 704 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 2002 08 13 | 704 | 0.1− | 0.4− | 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2002 08 13 | 644 | 0.2+ | 0.3+ | 2002 12 05 | 704 | 0.0 | 0.2− | 2006 08 21 | 644 | 0.1− | 0.3+ |
| 2002 08 13 | 644 | 0.0 | 0.4+ | 2004 01 18 | 644 | 0.1+ | 0.8+ | 2006 08 21 | 644 | 0.2− | 0.2+ |
| 2002 08 13 | 644 | 0.1− | 0.3+ | 2004 01 18 | 644 | 0.2+ | 0.6+ | 2006 08 21 | 644 | 0.2− | 0.3+ |
| 2002 08 31 | 644 | 0.1+ | 0.0 | 2004 01 18 | 644 | 0.5+ | 0.6+ | 2006 09 15 | 644 | 0.2+ | 0.6+ |
| 2002 08 31 | 704 | 0.1+ | 0.1− | 2004 01 28 | 703 | (0.9+ | 2.3+) | 2006 09 15 | 644 | 0.2+ | 0.6+ |
| 2002 08 31 | 644 | 0.1− | 0.7− | 2004 01 28 | 703 | 1.3+ | 0.6+ | 2006 09 15 | 644 | 0.2+ | 0.4+ |
| 2002 08 31 | 699 | 0.5+ | 0.1− | 2004 01 28 | 703 | 0.6+ | 0.3+ | 2006 09 17 | 699 | 0.1− | 0.3+ |
| 2002 08 31 | 704 | 0.4− | 0.1+ | 2004 01 28 | 703 | 0.8− | 0.3+ | 2006 09 17 | 699 | 0.2− | 0.5+ |
| 2002 08 31 | 699 | 0.1+ | 0.0 | 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 09 17 | 699 | 0.2− | 0.4+ |
| 2002 08 31 | 644 | 0.2+ | 0.1+ | 2004 02 11 | 644 | 0.1− | 0.4+ | 2006 09 17 | 699 | 0.2+ | 0.4− |
| 2002 08 31 | 644 | 0.2+ | 0.7− | 2004 02 11 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2002 08 31 | 699 | 0.2− | 0.2− | 2004 02 13 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2002 08 31 | 704 | 0.3− | 0.2+ | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 2002 08 31 | 699 | 0.1− | 0.0 | 2004 02 13 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.8+ | 0.1+ |
| 2002 08 31 | 644 | 0.1+ | 0.1+ | 2004 02 15 | 704 | (0.2+ | 2.1+) | 2006 10 11 | E12 | 0.0 | 0.1− |
| 2002 08 31 | 704 | 0.7− | 0.5+ | 2004 02 15 | 704 | 0.3+ | 0.2+ | 2006 10 11 | E12 | 0.2+ | 0.1− |
| 2002 08 31 | 644 | 0.2− | 0.7− | 2004 02 15 | 704 | 0.4+ | 0.0 | 2006 10 11 | E12 | 0.4− | 0.3+ |
| 2002 09 26 | 699 | 0.1− | 0.6− | 2005 03 15 | G96 | 0.3− | 0.2+ | 2006 10 11 | E12 | 0.0 | 0.4− |
| 2002 09 26 | 699 | 0.4− | 0.4− | 2005 03 15 | G96 | 0.4− | 0.4− | 2006 10 21 | 703 | 1.1− | 0.4− |
| 2002 09 26 | 699 | 0.4− | 0.1+ | 2005 03 15 | G96 | 0.7− | 0.3− | 2006 10 21 | 703 | 1.4− | 0.6− |
| 2002 09 26 | 704 | 0.2− | 0.7+ | 2005 03 15 | G96 | 0.2+ | 1.1− | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2002 09 26 | 699 | 0.6− | 0.8− | 2005 04 15 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.7− |
| 2002 09 26 | 704 | 0.3− | 0.6+ | 2005 04 15 | 691 | 0.4+ | 0.4+ | 2006 10 22 | 704 | 0.9+ | 0.5+ |
| 2002 09 26 | 704 | 0.0 | 0.2− | 2005 04 15 | 691 | 0.5+ | 0.3+ | 2006 10 22 | 704 | (2.4− | 1.1+) |
| 2002 09 29 | 608 | (5.7+ | 13.1+) | 2006 05 28 | E12 | 0.6+ | 0.3+ | 2006 10 22 | 704 | 0.2+ | 0.8− |
| 2002 09 29 | 608 | (5.5+ | 13.1+) | 2006 05 28 | E12 | 0.3− | 0.1+ | 2006 10 22 | 704 | 1.6+ | 1.2− |
| 2002 09 29 | 608 | (6.0+ | 13.0+) | 2006 05 28 | E12 | 1.0− | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.7+ |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2006 05 28 | E12 | 0.8− | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.5− | 0.1− | 2006 07 18 | E12 | 1.6+ | 0.6+ | 2006 11 16 | 703 | 0.4+ | 0.2− |
| 2002 10 04 | 704 | 0.6− | 0.1− | 2006 07 18 | E12 | 0.3+ | 0.1− | 2006 11 16 | 703 | 1.7− | 0.8+ |
| 2002 10 04 | 704 | 0.1− | 0.8− | 2006 07 18 | E12 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 1.8+ |
| 2002 10 04 | 704 | 0.1− | 0.4− | 2006 07 18 | E12 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2002 10 06 | 608 | 0.5+ | 0.1+ | 2006 08 14 | E12 | 0.4− | 0.1− | 2006 11 18 | 704 | 1.0− | 0.2+ |
| 2002 10 06 | 608 | 0.5+ | 0.3+ | 2006 08 14 | E12 | 0.6− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2002 10 06 | 608 | 0.3+ | 0.0 | 2006 08 14 | E12 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2002 11 07 | 704 | (2.1+ | 1.2+) | 2006 08 14 | E12 | 0.7− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2002 11 07 | 699 | 1.0+ | 1.0+ | 2006 08 19 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.1+ |

**(145584)∗ 2006 PT$_{14}$ = 1991 VB$_{10}$ = 2005 ET$_{77}$**

Discovered 2006 Aug. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103986)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.08258 | | (2000.0) | | +0.54576361 | +0.83557175 |
| $n$ | 0.25462607 | $\omega$ | 210.22436 | | −0.75562291 | +0.52322718 |
| $a$ | 2.4652869 | $\Omega$ | 92.92087 | | −0.36218241 | +0.16749079 |
| $e$ | 0.1963358 | $i$ | 3.61350 | | | |
| $P$ | 3.87 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 04 | 691 | 0.1− | 0.2+ | 2005 03 03 | 703 | 0.5− | 1.6+ | 2006 08 17 | 644 | 0.1− | 0.0 |
| 1991 11 04 | 691 | 0.2+ | 0.4+ | 2005 03 03 | 703 | 0.7+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 1991 11 04 | 691 | 0.1− | 1.4+ | 2005 03 03 | 703 | 0.9− | 0.9+ | 2006 08 20 | 644 | 0.1− | 0.1+ |
| 1991 11 09 | 691 | 0.4− | 0.1− | 2005 03 03 | 703 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.0 |
| 1991 11 09 | 691 | 0.4− | 0.1− | 2005 03 09 | 704 | 0.9+ | 0.7+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 1991 11 09 | 691 | 0.2− | 0.5+ | 2005 03 09 | 704 | 1.3+ | 0.5+ | 2006 08 23 | 704 | 0.3+ | 1.1− |
| 1999 12 07 | 704 | 0.3+ | 0.2+ | 2005 03 09 | 704 | (0.7+ | 2.2+) | 2006 08 23 | 704 | 0.2− | 0.7− |
| 1999 12 07 | 704 | 0.9+ | 0.6− | 2005 03 09 | 704 | 0.4− | 0.9+ | 2006 08 23 | 704 | 0.1− | 0.1+ |
| 1999 12 07 | 704 | 0.7+ | 1.1− | 2005 04 09 | 691 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.0 |
| 2002 06 12 | 644 | 0.0 | 0.5− | 2005 04 09 | 691 | 0.9+ | 0.8+ | 2006 08 24 | 644 | 0.0 | 0.0 |
| 2002 06 12 | 644 | 0.3− | 1.2+ | 2005 04 09 | 691 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.2+ |
| 2002 06 12 | 644 | 0.8+ | 0.6− | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 08 28 | 704 | 0.3+ | 1.1− |
| 2002 06 12 | 644 | 0.2+ | 1.4+ | 2006 07 25 | 644 | 0.1− | 0.1+ | 2006 08 28 | 704 | 0.0 | 0.3− |
| 2002 06 12 | 644 | 0.5+ | 0.3− | 2006 07 25 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.0 | 0.8+ |
| 2002 06 12 | 644 | 0.1− | 1.1+ | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 08 28 | 704 | 0.8+ | 0.0 |
| 2002 07 05 | 704 | 0.4+ | 0.3+ | 2006 08 15 | 644 | 0.4− | 0.0 | 2006 08 28 | 704 | 0.1+ | 0.1+ |
| 2002 07 05 | 704 | 0.0 | 1.0+ | 2006 08 15 | 644 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | 0.2+ | 1.2+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.1+ | 0.3+ |
| 2002 07 05 | 704 | 0.4+ | 0.8+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 31 | 704 | 0.1− | 0.6− |
| 2002 07 05 | 704 | 0.6+ | 1.0+ | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.1+ | 0.5− |
| 2002 08 13 | 704 | 0.9− | 0.4− | 2006 08 16 | E12 | 0.2− | 0.2− | 2006 08 31 | 704 | 0.1+ | 0.6+ |
| 2002 08 13 | 704 | 0.5− | 0.3+ | 2006 08 16 | E12 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.3− | 0.5+ |
| 2002 08 13 | 704 | 0.5+ | 0.0 | 2006 08 16 | E12 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.0 |
| 2002 08 13 | 704 | 1.0− | 0.1+ | 2006 08 16 | E12 | 0.4− | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 2002 08 13 | 704 | 1.0− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.0 | | | | |

**(145585)∗ 2006 PU$_{15}$ = 1999 TH$_{71}$ = 1999 TQ$_{335}$ = 2005 CB$_{73}$**

Discovered 2006 Aug. 15 by NEAT at Palomar.

Id. A. Doppler (*MPO* 103987)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.11448 | | (2000.0) | | −0.10693566 | +0.99414157 |
| $n$ | 0.26453546 | $\omega$ | 242.72030 | | −0.89612645 | −0.08951672 |
| $a$ | 2.4033302 | $\Omega$ | 21.15855 | | −0.43072282 | −0.06057466 |
| $e$ | 0.1676065 | $i$ | 2.49702 | | | |
| $P$ | 3.73 | $H$ | 16.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.7+ | 1.2− | 2005 02 01 | 691 | 0.4+ | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.3+ |
| 1998 05 01 | 704 | 0.2− | 0.0 | 2005 02 01 | 691 | 0.2+ | 0.4+ | 2006 08 20 | 644 | 0.1− | 0.0 |
| 1998 05 01 | 704 | 1.3− | 1.0+ | 2005 02 09 | 691 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.1− | 0.3+ |
| 1998 05 01 | 704 | (2.5− | 2.0+) | 2005 02 09 | 691 | 0.3− | 1.1+ | 2006 08 23 | 644 | 0.1− | 0.3+ |
| 1998 05 01 | 704 | (5.4− | 1.4+) | 2005 02 09 | 691 | 0.3+ | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.3+ |
| 1998 06 01 | 691 | 0.4+ | 0.3+ | 2005 03 14 | G96 | 0.2− | 0.3+ | 2006 08 23 | 644 | 0.1− | 0.1+ |
| 1998 06 01 | 691 | 0.3+ | 0.3+ | 2005 03 14 | G96 | 0.6− | 0.4− | 2006 08 24 | 644 | 0.3− | 0.5+ |
| 1998 06 01 | 691 | 0.0 | 0.3+ | 2005 03 14 | G96 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.5+ | 0.3+ |
| 1999 10 09 | 691 | 0.3+ | 0.3+ | 2005 03 14 | G96 | 0.8− | 0.4− | 2006 08 24 | 644 | 0.2+ | 0.2+ |
| 1999 10 09 | 691 | 0.2+ | 0.0 | 2006 07 25 | 644 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.2+ |
| 1999 10 09 | 691 | 0.2+ | 0.3− | 2006 07 25 | 644 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 691 | 0.2− | 0.2− | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.3+ | | |
| 1999 10 13 | 691 | 0.2− | 0.2− | 2006 08 15 | 644 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.1+ | | |
| 1999 10 13 | 691 | 0.5− | 0.2− | 2006 08 15 | 644 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.8+ | | |
| 2003 10 18 | 691 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.6− | | |
| 2003 10 18 | 691 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.5+ | | |
| 2003 10 18 | 691 | 0.3+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2+ | | |
| 2003 10 25 | 291 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.7− | 0.6+ | | |
| 2003 10 25 | 291 | 0.1− | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.0 | | |
| 2003 10 25 | 291 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.4− | | |
| 2005 02 01 | 691 | 0.4+ | 0.2+ | 2006 08 17 | 644 | 0.5− | 0.5+ | | | | | | |

**(145586)∗ 2006 PD$_{16}$ = 2003 YZ$_{82}$ = 2005 GF$_{72}$**

Discovered 2006 Aug. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103987)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.95689 | | (2000.0) | | | |
| $n$ | 0.25409297 | $\omega$ | 290.73932 | | +0.86935781 | +0.49281556 |
| $a$ | 2.4687339 | $\Omega$ | 39.75950 | | −0.42934745 | +0.79002228 |
| $e$ | 0.2041866 | $i$ | 3.29317 | | −0.24469935 | +0.36468839 |
| $P$ | 3.88 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.2− | 0.7+ | 2005 04 09 | G96 | 0.6+ | 0.1− | 2006 08 31 | 704 | 1.4+ | 0.2− | | |
| 2002 05 18 | 644 | 0.3+ | 0.6+ | 2005 04 09 | G96 | 0.8+ | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.2− | | |
| 2002 05 18 | 644 | 0.0 | 1.2+ | 2005 04 09 | G96 | 0.3+ | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.5+ | | |
| 2002 06 12 | 704 | 0.3− | 0.1+ | 2005 04 09 | G96 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.7− | | |
| 2002 06 12 | 704 | 0.5− | 0.4+ | 2005 05 12 | G96 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.5− | | |
| 2002 06 12 | 704 | 0.5− | 0.3+ | 2005 05 12 | G96 | 0.3+ | 0.4+ | 2006 09 16 | 704 | 0.5− | 0.2− | | |
| 2002 07 05 | 704 | 0.2+ | 0.9+ | 2005 05 12 | G96 | 0.4− | 0.2− | 2006 09 16 | 704 | 0.6− | 0.0 | | |
| 2002 07 05 | 704 | 0.2− | 0.5− | 2005 05 12 | G96 | 0.2− | 0.7+ | 2006 09 16 | 704 | 0.8+ | 0.3+ | | |
| 2002 07 05 | 704 | 0.4+ | 0.2− | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 16 | 704 | 0.3+ | 0.2+ | | |
| 2002 07 05 | 704 | 0.2+ | 0.7− | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 16 | 704 | (1.1− | 2.2+) | | |
| 2002 07 05 | 704 | 0.6+ | 0.6− | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.1− | 0.3− | | |
| 2002 07 15 | 644 | 0.0 | 0.5− | 2006 08 19 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.9+ | 0.7+ | | |
| 2002 07 15 | 644 | 0.2− | 0.4− | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.7+ | | |
| 2002 07 15 | 644 | 0.0 | 0.5− | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.8+ | | |
| 2002 08 13 | 704 | (2.2+ | 0.0 ) | 2006 08 23 | 704 | 0.4− | 0.7+ | 2006 09 19 | 704 | 1.0+ | 0.1+ | | |
| 2002 08 13 | 704 | 0.4+ | 0.3− | 2006 08 23 | 704 | 0.4− | 0.7+ | 2006 09 19 | 704 | 0.6+ | 0.6+ | | |
| 2002 08 13 | 704 | 0.5+ | 0.5− | 2006 08 23 | 704 | 1.6− | 1.1+ | 2006 09 19 | 704 | 0.3+ | 0.3− | | |
| 2002 08 13 | 704 | 0.1+ | 0.9− | 2006 08 23 | 704 | 0.4− | 1.4+ | 2006 09 19 | 704 | 0.5+ | 0.6+ | | |
| 2002 08 18 | 644 | 0.4− | 0.2− | 2006 08 23 | 704 | 0.0 | 0.2+ | 2006 09 19 | 704 | 0.1+ | 0.6+ | | |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.5− | 0.0 | | |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.4− | 0.1+ | | |
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 08 23 | 644 | 0.4− | 0.1− | 2006 09 20 | 644 | 0.3− | 0.2− | | |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.5− | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.2− | | |
| 2002 08 29 | 644 | 0.4− | 0.0 | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.0 | | |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.0 | 0.8+ | | |
| 2002 08 29 | 644 | 0.4− | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.4− | 2006 09 26 | 704 | 0.2− | 0.2− | | |
| 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 08 28 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.5+ | | |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.9− | 0.1+ | | |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 703 | 1.0− | 0.1+ | | |
| 2003 12 22 | 704 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.4− | 0.1− | | |
| 2003 12 22 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.3+ | 2006 11 11 | G96 | 1.1− | 0.7− | | |
| 2003 12 22 | 704 | 0.6− | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.8− | | |
| 2003 12 22 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 699 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.7− | | |
| 2005 04 04 | G96 | 1.2+ | 0.8+ | 2006 08 31 | 704 | 0.9+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.0 | | |
| 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 08 31 | 704 | 0.5+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2005 04 04 | G96 | 0.3− | 0.3+ | 2006 08 31 | 704 | 0.0 | 1.1− | 2006 11 21 | G96 | 0.2− | 0.2− | | |
| 2005 04 04 | G96 | 0.5− | 0.2+ | 2006 08 31 | 704 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− | | |

**(145587)∗ 2006 PT$_{16}$ = 1996 XB$_{20}$ = 1999 RC$_{254}$**

Discovered 2006 Aug. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103988)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.93309 | | (2000.0) | | | |
| $n$ | 0.28497940 | $\omega$ | 175.81674 | | +0.99059927 | +0.13675782 |
| $a$ | 2.2869697 | $\Omega$ | 176.31832 | | −0.12691841 | +0.92760401 |
| $e$ | 0.2166429 | $i$ | 2.87557 | | −0.05103720 | +0.34763213 |
| $P$ | 3.46 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 684 | 0.2− | 0.3− | 2006 08 21 | 704 | 0.7+ | 0.3− | 2006 09 01 | 704 | 1.6+ | 0.9− | | |
| 1996 12 13 | 684 | 0.4− | 0.1+ | 2006 08 21 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.5− | 0.0 | | |
| 1996 12 13 | 684 | 0.5− | 0.1+ | 2006 08 21 | 704 | 0.4+ | 0.3− | 2006 09 14 | 703 | 0.1− | 0.4+ | | |
| 1996 12 14 | 684 | 0.4+ | 0.2+ | 2006 08 21 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.2+ | | |
| 1996 12 14 | 684 | 0.6− | 0.1− | 2006 08 25 | 704 | 0.1+ | 1.1− | 2006 09 14 | 703 | 0.2+ | 0.2− | | |
| 1996 12 14 | 684 | 0.5− | 0.5− | 2006 08 25 | 704 | 0.8− | 0.0 | 2006 09 17 | 704 | 0.7− | 0.2+ | | |
| 1999 08 07 | 699 | 0.3− | 0.0 | 2006 08 25 | 704 | 0.5− | 0.6+ | 2006 09 17 | 704 | 1.2− | 0.2− | | |
| 1999 08 07 | 699 | 0.6− | 0.2− | 2006 08 25 | 704 | 0.5− | 0.8+ | 2006 09 17 | 704 | 0.2+ | 0.1− | | |
| 1999 08 07 | 699 | (4.2− | 1.8+) | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.5− | 0.0 | | |
| 1999 09 04 | 703 | 1.5+ | 0.6+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 17 | 704 | 1.3− | 0.8+ | | |
| 1999 09 04 | 703 | 1.0− | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.5− | 0.1− | | |
| 1999 09 04 | 703 | 0.1− | 0.9+ | 2006 08 27 | 699 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | | |
| 1999 09 04 | 703 | 0.2− | 1.0+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | | |
| 1999 09 09 | 704 | 0.1+ | 0.3− | 2006 08 27 | 699 | 0.5+ | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.1+ | | |
| 1999 09 09 | 704 | 0.3+ | 0.0 | 2006 08 27 | 699 | 0.7− | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.0 | | |
| 1999 09 09 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 699 | 0.4+ | 0.3+ | 2006 09 20 | 699 | (2.4+ | 0.7−) | | |
| 1999 09 09 | 704 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.7+ | 0.0 | | |
| 1999 09 09 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.3− | | |
| 2002 05 17 | 644 | 0.1− | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 25 | 699 | 0.3+ | 0.2+ | | |
| 2002 05 17 | 644 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.5− | | |
| 2002 05 17 | 644 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.2+ | 0.7− | 2006 09 25 | 699 | 0.6+ | 0.7+ | | |
| 2003 12 23 | 704 | 0.4+ | 0.0 | 2006 08 28 | 699 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.2+ | | |
| 2003 12 23 | 704 | 0.8+ | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.2− | | |
| 2003 12 23 | 704 | 0.6+ | 0.0 | 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1− | | |
| 2003 12 23 | 704 | 0.3− | 0.4+ | 2006 08 30 | 704 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2004 01 28 | 691 | 0.0 | 0.5+ | 2006 08 30 | 704 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− | | |
| 2004 01 28 | 691 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 09 27 | 704 | 1.2+ | 0.9+ | | |
| 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.5+ | | |
| 2005 04 04 | G96 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.2+ | | |
| 2005 04 04 | G96 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.7− | 0.8− | 2006 09 27 | 704 | 0.2− | 0.6+ | | |
| 2005 04 04 | G96 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.2+ | 1.2− | | |
| 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.3− | | |
| 2006 08 15 | 644 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.5+ | 0.7− | 2006 10 20 | G96 | 0.2− | 0.2− | | |
| 2006 08 15 | 644 | 0.4− | 0.3− | 2006 08 30 | 704 | 0.7+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− | | |
| 2006 08 15 | 644 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.5− | 0.4− | 2006 11 15 | G96 | 0.3− | 0.1− | | |
| 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 01 | 704 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.6− | 0.2− | | |
| 2006 08 21 | 704 | 0.1+ | 0.1+ | 2006 09 01 | 704 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2− | 0.4− | | |

**(145588)∗ 2006 PQ$_{17}$ = 1992 SB$_{5}$**

Discovered 2006 Aug. 15 by C.-S. Lin and Q.-z. Ye at Lulin Observatory.

Id. G. V. Williams (*MPO* 103990)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.39415 | | (2000.0) | | | |
| $n$ | 0.27895831 | $\omega$ | 136.14698 | | +0.44348664 | +0.89543235 |
| $a$ | 2.3197607 | $\Omega$ | 160.08046 | | −0.85063842 | +0.43421036 |
| $e$ | 0.1147757 | $i$ | 6.57200 | | −0.28237189 | +0.09829685 |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.1− | 0.3+ | 2005 04 11 | 691 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.2− | 0.6+ | | |
| 1992 09 24 | 691 | 0.0 | 0.5+ | 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 08 29 | 704 | 0.9− | 0.2− | | |
| 1992 09 24 | 691 | 0.2− | 0.3+ | 2006 08 15 | D35 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.1+ | 0.4+ | | |
| 1992 09 25 | 691 | 0.4− | 0.7+ | 2006 08 15 | D35 | 0.2− | 0.1− | 2006 08 29 | 704 | 0.2− | 0.5− | | |
| 1992 09 25 | 691 | 0.1− | 0.4+ | 2006 08 15 | D35 | 0.5− | 0.1+ | 2006 09 01 | 152 | 0.4− | 0.4− | | |
| 1992 09 25 | 691 | 0.1− | 0.9+ | 2006 08 19 | 691 | 0.3+ | 0.1+ | 2006 09 01 | 152 | 0.4− | 0.6− | | |
| 2002 06 01 | 644 | 0.8+ | 0.8+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 01 | 152 | 0.4+ | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 01 | 644 | 0.3+ | 0.5+ | 2006 08 19 | 691 | 0.3+ | 0.2+ | 2006 09 02 | 152 | 0.4− | 0.2+ | | |
| 2002 06 01 | 644 | 0.6+ | 0.5+ | 2006 08 21 | 704 | 0.6+ | 0.1− | 2006 09 02 | 152 | 0.1+ | 0.6− | | |
| 2002 06 12 | 644 | 0.7− | 0.9+ | 2006 08 21 | 704 | 1.2+ | 0.3+ | 2006 09 02 | 152 | 0.1− | 0.1+ | | |
| 2002 06 12 | 644 | 0.1+ | 0.6+ | 2006 08 21 | 704 | 0.1− | 0.2− | 2006 09 02 | 152 | 0.3− | 0.0 | | |
| 2002 07 10 | 644 | 0.9− | 0.7+ | 2006 08 21 | 704 | 0.4+ | 1.2+ | 2006 09 14 | 703 | 0.0 | 0.8+ | | |
| 2002 07 10 | 644 | 0.4− | 1.2+ | 2006 08 25 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.6+ | | |
| 2003 11 26 | 691 | 0.3+ | 0.4+ | 2006 08 25 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.4+ | | |
| 2003 11 26 | 691 | 0.5− | 0.0 | 2006 08 25 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.1− | | |
| 2003 11 26 | 691 | 0.3− | 0.2+ | 2006 08 25 | 704 | 1.1+ | 0.1+ | 2006 09 17 | 704 | 0.6− | 1.0− | | |
| 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 08 25 | 704 | 1.3− | 0.2− | 2006 09 17 | 704 | 0.2− | 0.4− | | |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.7− | 0.2− | | |
| 2003 12 21 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.5− | | |
| 2005 03 04 | 691 | 0.1+ | 0.8+ | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.4− | | |
| 2005 03 04 | 691 | 0.5+ | 0.9+ | 2006 08 28 | 699 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.6− | | |
| 2005 03 04 | 691 | 0.4+ | 0.8+ | 2006 08 28 | 703 | 1.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.7− | | |
| 2005 03 16 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.6− | | |
| 2005 03 16 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 703 | (2.4− | 0.9−) | 2006 09 30 | G96 | 0.2− | 0.3− | | |
| 2005 03 16 | G96 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.4− | | |
| 2005 03 16 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 1.2− | 2006 09 30 | G96 | 0.0 | 0.3− | | |
| 2005 04 11 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.4+ | | | | | | |

**(145589)∗ 2006 PC$_{18}$ = 2005 EY$_{10}$**

Discovered 2006 Aug. 15 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103991)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 50.14014 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.27599201 | $\omega$ | 322.24538 | | +0.24576080 | | +0.96675607 |
| *a* | 2.3363526 | $\Omega$ | 321.83502 | | −0.85919806 | | +0.18354117 |
| *e* | 0.1055170 | *i* | 6.56050 | | −0.44875419 | | +0.17803183 |
| *P* | 3.57 | *H* | 17.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 691 | 0.2− | 0.1+ | 2005 03 03 | 703 | 0.9+ | 0.3− | 2006 08 28 | 703 | 0.9− | 0.2− | | |
| 2001 01 21 | 691 | 0.2− | 0.3+ | 2005 03 03 | 703 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.3+ | | |
| 2001 01 21 | 691 | 0.3− | 0.3+ | 2005 03 03 | 703 | 1.0+ | 0.7− | 2006 08 29 | 704 | 0.2− | 0.1− | | |
| 2001 02 17 | 691 | 0.2− | 0.0 | 2005 03 03 | 703 | 0.6− | 0.5− | 2006 08 29 | 704 | 0.0 | 0.3− | | |
| 2001 02 17 | 691 | 1.1+ | 0.1− | 2006 07 18 | G96 | 0.1− | 0.0 | 2006 08 29 | 704 | 0.0 | 1.2+ | | |
| 2001 02 17 | 691 | 0.2+ | 0.0 | 2006 07 18 | G96 | 0.1+ | 0.1− | 2006 08 29 | 704 | 0.1+ | 0.1− | | |
| 2003 12 01 | 691 | 0.1− | 0.2− | 2006 07 18 | G96 | 0.3− | 0.1− | 2006 08 29 | 691 | 0.1− | 0.3+ | | |
| 2003 12 01 | 691 | 0.3+ | 0.2− | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.6+ | | |
| 2003 12 01 | 691 | 0.2− | 0.2− | 2006 08 15 | 644 | 0.3− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.2+ | | |
| 2003 12 17 | 691 | 0.1− | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.5+ | 0.4− | | |
| 2003 12 17 | 691 | 0.0 | 0.0 | 2006 08 21 | 704 | 1.0− | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.4+ | | |
| 2003 12 17 | 691 | 0.1+ | 0.2+ | 2006 08 21 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.3+ | | |
| 2005 01 17 | 291 | 0.1− | 0.5+ | 2006 08 21 | 704 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | | |
| 2005 01 17 | 291 | 0.1+ | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.2+ | | |
| 2005 01 17 | 291 | 0.1− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2005 03 02 | 691 | 0.1+ | 0.4+ | 2006 08 22 | 644 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.1− | | |
| 2005 03 02 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.0 | | |
| 2005 03 02 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.1− | | | | | | |

**(145590)∗ 2006 PF$_{25}$ = 2001 QL$_{146}$ = 2005 JN$_{149}$**

Discovered 2006 Aug. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 103997)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 344.68640 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.19876482 | $\omega$ | 216.31504 | | +0.98974600 | | +0.13888096 |
| *a* | 2.9078792 | $\Omega$ | 135.66465 | | −0.11719927 | | +0.92321795 |
| *e* | 0.0969895 | *i* | 2.73857 | | −0.08165281 | | +0.35830252 |
| *P* | 4.96 | *H* | 16.3 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.9+ | 0.3+ | 2005 05 14 | G96 | 0.5− | 0.1− | | |
| 2001 08 16 | 704 | (0.6+ | 2.0+) | 2004 01 30 | 291 | 0.4− | 0.3− | 2006 07 18 | G96 | 0.5+ | 0.5− | | |
| 2001 08 16 | 704 | 0.7+ | 1.3+ | 2004 01 30 | 291 | 0.2+ | 0.0 | 2006 07 18 | G96 | 0.2− | 0.4− | | |
| 2001 08 16 | 704 | 0.9+ | 0.6+ | 2004 01 30 | 291 | 0.2+ | 0.3+ | 2006 07 18 | G96 | 0.2− | 0.1+ | | |
| 2001 08 26 | 691 | 0.5− | 0.1+ | 2004 02 14 | 691 | 0.1− | 0.3+ | 2006 07 18 | G96 | 0.3+ | 0.3− | | |
| 2001 08 26 | 691 | 0.7− | 0.2+ | 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 08 13 | 644 | 0.0 | 0.4+ | | |
| 2001 08 26 | 691 | 0.5− | 0.1+ | 2004 02 14 | 691 | 0.2− | 0.0 | 2006 08 13 | 644 | 0.2− | 0.2+ | | |
| 2001 08 27 | 691 | 0.4+ | 0.1+ | 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 08 13 | 644 | 0.0 | 0.5+ | | |
| 2001 08 27 | 691 | 0.3+ | 0.2+ | 2004 03 17 | 691 | 0.6+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.5+ | | |
| 2001 08 27 | 691 | 0.4+ | 0.1− | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 06 | 704 | (1.1+ | 2.2+) | 2005 04 16 | 691 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.3+ | | |
| 2002 11 06 | 704 | 1.3− | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 08 21 | 644 | 0.2− | 0.6+ | | |
| 2002 11 06 | 704 | 0.0 | 0.2− | 2005 04 16 | 691 | 0.1+ | 0.3− | 2006 08 21 | 644 | 0.3− | 0.2+ | | |
| 2002 11 06 | 704 | 0.3− | 0.3− | 2005 05 03 | 691 | 0.0 | 0.2− | 2006 08 21 | 644 | 0.1+ | 0.0 | | |
| 2002 12 05 | 608 | 0.3− | 0.4− | 2005 05 03 | 691 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 2002 12 05 | 608 | 0.8− | 0.5− | 2005 05 03 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.2− | 0.7− | | |
| 2002 12 05 | 608 | 0.4− | 0.6− | 2005 05 14 | G96 | 0.9− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.4+ | | |
| 2002 12 10 | 704 | 0.9+ | 0.4+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− | | |
| 2002 12 10 | 704 | 0.4+ | 0.4+ | 2005 05 14 | G96 | 0.4− | 0.2− | | | | | | |

**(145591)∗ 2006 PE$_{31}$ = 2003 CK$_{3}$**

Discovered 2006 Aug. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104000)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 306.54632 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.17036298 | $\omega$ | 215.43707 | | +0.84423406 | | −0.53591722 |
| *a* | 3.2226952 | $\Omega$ | 176.93703 | | +0.51937477 | | +0.81438326 |
| *e* | 0.0495645 | *i* | 8.44585 | | +0.13235824 | | +0.22264916 |
| *P* | 5.79 | *H* | 15.7 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 23 | 691 | 0.4+ | 1.0+ | 2003 02 03 | 291 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.5− | 0.4+ | | |
| 1993 05 23 | 691 | 0.0 | 0.5+ | 2003 02 03 | 291 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.4− | 0.1− | | |
| 1993 05 23 | 691 | 0.1+ | 0.9+ | 2003 02 03 | 291 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.6− | 0.5+ | | |
| 1993 06 12 | 691 | 0.3+ | 1.1− | 2003 02 03 | 291 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.5+ | 0.5+ | | |
| 1993 06 12 | 691 | 0.0 | 0.7− | 2003 02 04 | 291 | 0.1+ | 0.2+ | 2006 08 29 | 703 | (1.4+ | 2.0+) | | |
| 1993 06 12 | 691 | 0.9− | 1.0− | 2003 02 04 | 291 | 0.5+ | 0.3+ | 2006 08 29 | 703 | 0.4− | 0.0 | | |
| 2000 07 24 | 691 | 0.2− | 0.0 | 2003 02 04 | 291 | 0.4+ | 0.0 | 2006 08 29 | 703 | 0.1− | 1.5+ | | |
| 2000 07 24 | 691 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.5+ | 1.2+ | 2006 09 15 | 691 | 0.0 | 0.0 | | |
| 2000 07 24 | 691 | 0.4+ | 0.1− | 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | | |
| 2001 11 18 | 704 | 0.8− | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.2+ | 1.2+ | | |
| 2001 11 18 | 704 | 0.2− | 0.6− | 2004 04 19 | 691 | 0.1− | 1.0+ | 2006 09 17 | 691 | 0.1− | 0.5+ | | |
| 2001 11 18 | 704 | 0.3− | 0.1− | 2004 04 19 | 691 | 0.0 | 0.6+ | 2006 09 17 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 18 | 704 | 0.5− | 0.9− | 2004 04 19 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 18 | 704 | 0.2− | 0.7+ | 2006 08 13 | 644 | 0.5− | 0.8+ | 2006 09 19 | 691 | 0.7− | 0.3− | | |
| 2003 02 03 | 291 | 0.3− | 0.6+ | 2006 08 13 | 644 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2+ | | |
| 2003 02 03 | 291 | 0.0 | 0.4+ | 2006 08 13 | 644 | 0.5− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.4+ | | |

**(145592)∗ 2006 PL$_{33}$ = 2004 FL$_{88}$**

Discovered 2006 Aug. 13 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104001)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 280.99491 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.20413652 | $\omega$ | 286.44150 | | +0.33058772 | | −0.93402435 |
| *a* | 2.8566404 | $\Omega$ | 143.34676 | | +0.92908778 | | +0.29688421 |
| *e* | 0.1600202 | *i* | 13.10111 | | +0.16585432 | | +0.19864110 |
| *P* | 4.83 | *H* | 15.7 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 691 | 0.0 | 0.2+ | 2003 01 26 | 644 | 0.1+ | 0.8+ | 2006 08 13 | 644 | 0.1+ | 0.3+ | | |
| 2001 07 18 | 691 | 0.4− | 0.1+ | 2003 01 26 | 644 | 0.2− | 0.3+ | 2006 08 13 | 644 | 0.0 | 0.3+ | | |
| 2001 07 18 | 691 | 0.3− | 0.0 | 2003 01 26 | 644 | 0.3− | 0.3+ | 2006 08 13 | 644 | 0.0 | 0.4+ | | |
| 2001 08 25 | 608 | 0.5+ | 1.4− | 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.5+ | | |
| 2001 08 25 | 608 | 0.8+ | 0.6− | 2004 03 20 | 691 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.3+ | | |
| 2001 08 25 | 608 | 0.5+ | 0.3− | 2004 03 20 | 691 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1+ | | |
| 2002 11 11 | 699 | 1.3+ | 0.4+ | 2004 03 23 | 704 | (1.2− | 2.1+) | 2006 08 28 | 703 | 1.0+ | 0.5+ | | |
| 2002 11 11 | 699 | 0.4− | 0.6− | 2004 03 23 | 704 | 0.3− | 1.9+ | 2006 08 28 | 703 | 0.9− | 0.1+ | | |
| 2002 11 11 | 699 | 0.1− | 1.0+ | 2004 03 23 | 704 | (1.9− | 2.2+) | 2006 08 28 | 703 | 0.1− | 1.5+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 699 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.2+ | 0.1+ |
| 2002 11 30 | 704 | 0.2+ | 0.3+ | 2005 06 29 | 691 | 0.2+ | 0.1− | 2006 08 29 | 704 | 1.2+ | 0.7+ |
| 2002 11 30 | 704 | 0.4− | 0.3+ | 2005 06 29 | 691 | 0.3+ | 0.3+ | 2006 08 29 | 704 | 0.7+ | 0.5− |
| 2002 11 30 | 704 | 0.1− | 0.2+ | 2005 06 29 | 691 | 0.2+ | 0.3+ | 2006 08 29 | 704 | 0.9− | 0.4− |
| 2002 11 30 | 704 | 0.2− | 0.1− | 2006 07 18 | G96 | 0.7− | 0.4− | 2006 09 13 | 644 | 0.9− | 0.4+ |
| 2002 12 13 | 644 | 0.2− | 0.6+ | 2006 07 18 | G96 | 0.2− | 0.2+ | 2006 09 13 | 644 | 0.3− | 0.3+ |
| 2002 12 13 | 644 | 0.0 | 0.4+ | 2006 07 18 | G96 | 0.3− | 0.2− | 2006 09 13 | 644 | 0.0 | 0.7+ |
| 2002 12 13 | 644 | 0.1− | 0.6+ | 2006 07 18 | G96 | 0.4− | 0.1− | | | | |

**(145593)∗ 2006 QE$_1$ = 2005 JT$_{138}$**

Discovered 2006 Aug. 18 by K. Sárneczky at the Piszkéstető Station of the University of Szeged.

Id. A. Doppler (*MPO* 104004)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.94894 | | (2000.0) | | | |
| $n$ | 0.20201433 | $\omega$ | 50.98884 | | +0.20781014 | +0.97038596 |
| $a$ | 2.8766119 | $\Omega$ | 231.44966 | | −0.93907467 | +0.16267969 |
| $e$ | 0.0630331 | $i$ | 9.06002 | | −0.27377676 | +0.17856765 |
| $P$ | 4.88 | $H$ | 16.1 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 645 | 0.0 | 0.1− | 2005 05 20 | G96 | 0.1− | 0.2+ | 2006 08 20 | 461 | 0.1− | 0.4+ |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2005 05 20 | G96 | 0.3− | 0.1+ | 2006 08 20 | 461 | 0.1− | 0.0 |
| 2002 11 13 | 644 | 1.0+ | 1.2+ | 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 08 21 | 461 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.1− | 0.3+ | 2005 05 20 | G96 | 0.5− | 0.2+ | 2006 08 21 | 461 | 0.2− | 0.6+ |
| 2002 11 24 | 644 | 0.1− | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.5+ | 2006 08 21 | 461 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.4+ | 0.4+ | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 08 24 | 461 | 0.2− | 0.1+ |
| 2002 12 10 | 644 | 0.1− | 0.0 | 2005 06 14 | 691 | 0.4+ | 0.0 | 2006 08 24 | 461 | 0.2− | 0.3+ |
| 2002 12 10 | 644 | 0.2− | 0.6+ | 2006 08 18 | 461 | 0.2− | 0.2+ | 2006 09 22 | 461 | 0.2+ | 0.3− |
| 2002 12 27 | 644 | 0.5− | 0.1− | 2006 08 18 | 461 | 0.2+ | 0.3+ | 2006 09 22 | 461 | 0.2+ | 0.0 |
| 2002 12 27 | 644 | 0.4− | 0.8− | 2006 08 18 | 461 | 0.2+ | 0.1− | 2006 09 22 | 461 | 0.1+ | 0.1− |
| 2005 05 13 | G96 | 0.5− | 0.2− | 2006 08 19 | 461 | 0.1+ | 0.0 | 2006 09 22 | 461 | 0.2− | 0.1− |
| 2005 05 13 | G96 | 0.5− | 0.2− | 2006 08 19 | 461 | 0.3− | 0.1− | 2006 10 12 | 461 | 0.5− | 0.3+ |
| 2005 05 13 | G96 | 0.1− | 0.2− | 2006 08 19 | 461 | 0.0 | 0.0 | 2006 10 12 | 461 | 0.0 | 0.5+ |
| 2005 05 13 | G96 | 0.1− | 0.2− | 2006 08 20 | 461 | 0.1+ | 0.1+ | 2006 10 12 | 461 | 0.4− | 0.4+ |

**(145594)∗ 2006 QH$_2$ = 1998 HN$_{85}$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104005)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.51750 | | (2000.0) | | | |
| $n$ | 0.26485787 | $\omega$ | 89.19431 | | −0.03835767 | +0.99926374 |
| $a$ | 2.4013795 | $\Omega$ | 178.60664 | | −0.92956616 | −0.03538434 |
| $e$ | 0.1854433 | $i$ | 1.91201 | | −0.36665438 | −0.01482964 |
| $P$ | 3.72 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.4− | 0.9+ | 2005 03 08 | G96 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.5+ |
| 1998 04 21 | 704 | 1.4− | 1.6− | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.0 | 1.1− |
| 1998 04 21 | 704 | 0.2+ | 0.4+ | 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.9− | 0.3− |
| 1998 04 21 | 704 | (1.3− | 2.4+) | 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.2+ |
| 1998 04 21 | 704 | (2.9− | 0.1−) | 2005 04 02 | G96 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.5− | 0.0 |
| 1998 04 22 | 704 | 1.6+ | 1.6+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.8− | 0.3+ |
| 1998 04 22 | 704 | 0.7− | 0.4− | 2006 08 16 | 644 | 0.4− | 0.1− | 2006 08 28 | 699 | 1.1+ | 0.3+ |
| 1998 04 22 | 704 | 0.0 | 1.0+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 08 29 | 704 | 0.0 | 0.0 |
| 1998 04 22 | 704 | 0.8+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 08 29 | 704 | 0.2+ | 0.1+ |
| 1998 05 01 | 704 | 0.2− | 0.7+ | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 08 29 | 704 | 0.5+ | 0.0 |
| 1998 05 01 | 704 | 0.3+ | 0.3− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.8+ | 0.1+ |
| 1998 05 01 | 704 | 0.4+ | 1.6+ | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 08 30 | 704 | 1.2+ | 0.3− |
| 1998 05 01 | 704 | 0.6+ | 0.4− | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.3− | 0.1+ |
| 1998 05 01 | 704 | (4.1− | 0.0 ) | 2006 08 19 | 691 | 0.2− | 0.5− | 2006 08 30 | 704 | 0.7− | 0.3− |
| 2003 11 19 | 691 | 0.0 | 0.3+ | 2006 08 21 | 704 | 0.9+ | 0.9− | 2006 08 30 | 704 | 0.3− | 0.6− |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2006 08 21 | 704 | 1.1+ | 1.3+ | 2006 09 18 | 699 | 0.5+ | 1.4+ |
| 2003 11 19 | 691 | 0.4+ | 0.6+ | 2006 08 21 | 704 | 0.7+ | 0.8+ | 2006 09 18 | 699 | 0.8+ | 0.9+ |
| 2003 12 21 | 691 | 0.2− | 0.2− | 2006 08 21 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 699 | (2.3− | 1.1+) |
| 2003 12 21 | 691 | 0.0 | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1+ | 1.4+ |
| 2003 12 21 | 691 | 0.2− | 0.3− | 2006 08 21 | 644 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.1− | 1.0− |
| 2005 02 09 | 699 | 1.8+ | 0.4− | 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.9+ | 0.3+ |
| 2005 02 09 | 699 | 0.9− | 1.7+ | 2006 08 25 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.4− | 1.4+ |
| 2005 02 09 | 699 | 1.1+ | 0.5+ | 2006 08 25 | 704 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2005 02 09 | 704 | (3.2+ | 0.3−) | 2006 08 25 | 704 | 0.2− | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2005 02 09 | 699 | 0.3− | 0.4+ | 2006 08 25 | 704 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2005 02 09 | 704 | 1.4+ | 0.8+ | 2006 08 25 | 704 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2005 02 09 | 704 | (2.0+ | 0.2−) | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2005 03 08 | G96 | 0.3− | 0.3− | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2− | 1.1− |
| 2005 03 08 | G96 | 0.5− | 0.2− | 2006 08 27 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 03 08 | G96 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.6− | 2006 10 27 | G96 | 0.0 | 0.7− |

**(145595)∗ 2006 QE$_3$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.37523 | | (2000.0) | | | |
| $n$ | 0.29874460 | $\omega$ | 21.09352 | | +0.98337656 | −0.17960514 |
| $a$ | 2.2161680 | $\Omega$ | 349.14989 | | +0.13957885 | +0.84173582 |
| $e$ | 0.1857064 | $i$ | 8.15228 | | +0.11613906 | +0.50913927 |
| $P$ | 3.30 | $H$ | 15.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 699 | 0.5− | 1.7+ | 2006 08 25 | 704 | 0.1− | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2000 12 29 | 699 | 0.5+ | 1.5+ | 2006 08 25 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.4− |
| 2000 12 29 | 699 | 0.2− | 0.6+ | 2006 08 25 | 704 | 0.8− | 0.3− | 2006 09 29 | 704 | 0.3− | 0.5− |
| 2000 12 29 | 699 | 0.7− | 0.6+ | 2006 08 25 | 704 | 0.6− | 1.1+ | 2006 10 01 | 704 | 0.1− | 0.6+ |
| 2001 01 18 | 704 | 0.3+ | 0.2+ | 2006 08 28 | 703 | (1.4− | 1.6+) | 2006 10 01 | 704 | 0.5+ | 0.4+ |
| 2001 01 18 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 1.0− | 1.2+ | 2006 10 01 | 704 | 0.5− | 0.9+ |
| 2001 01 18 | 704 | 0.4+ | 0.6− | 2006 08 28 | 703 | 1.0− | 1.1+ | 2006 10 01 | 704 | 0.2+ | 0.1+ |
| 2001 02 21 | 704 | 0.8− | 0.4+ | 2006 08 28 | 703 | (0.6− | 1.5+) | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 2001 02 21 | 704 | 0.7− | 0.4+ | 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.1− |
| 2001 02 21 | 704 | 1.1− | 0.2+ | 2006 08 28 | 691 | 1.3− | 0.5− | 2006 10 11 | 691 | 0.3+ | 0.0 |
| 2002 05 17 | 704 | 0.0 | 0.7− | 2006 08 28 | 691 | 0.3+ | 0.8− | 2006 10 11 | 691 | 0.2+ | 0.0 |
| 2002 05 17 | 704 | 0.9+ | 1.1− | 2006 09 01 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 05 17 | 704 | 0.8+ | 0.3− | 2006 09 01 | 704 | 0.7− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2003 09 30 | 704 | 0.5− | 0.1− | 2006 09 01 | 704 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2003 09 30 | 704 | 0.0 | 0.8− | 2006 09 01 | 704 | 0.2+ | 1.0− | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2003 09 30 | 704 | 0.8+ | 0.3− | 2006 09 01 | 704 | 0.5− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2003 11 04 | 704 | (2.9+ | 0.1−) | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2003 11 04 | 704 | (2.5+ | 1.5−) | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2003 11 04 | 704 | (2.8+ | 0.2+) | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2003 11 04 | 704 | (1.9+ | 1.5+) | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2003 11 20 | 704 | 0.3− | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2003 11 20 | 704 | 0.0 | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2003 11 20 | 704 | 0.1− | 0.5− | 2006 09 16 | 691 | (0.4+ | 3.0−) | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2003 11 20 | 704 | 0.5+ | 0.0 | 2006 09 16 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2003 12 17 | 704 | 0.9+ | 0.1+ | 2006 09 16 | 691 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2003 12 17 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 699 | 0.2+ | 0.5− | 2006 10 23 | 691 | 0.1+ | 0.0 |
| 2003 12 17 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 699 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.3− |
| 2003 12 17 | 704 | 0.5+ | 0.1− | 2006 09 16 | 699 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2003 12 17 | 704 | 0.2+ | 0.3− | 2006 09 16 | 699 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2003 12 30 | 704 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 10 24 | 644 | 0.3+ | 0.3− |
| 2003 12 30 | 704 | 0.0 | 0.4+ | 2006 09 17 | 704 | 1.3+ | 1.3− | 2006 10 24 | 644 | 0.4+ | 0.1− |
| 2003 12 30 | 704 | 0.6− | 0.9+ | 2006 09 17 | 704 | 0.9− | 0.6− | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2003 12 30 | 704 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.4− | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2003 12 30 | 704 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.3− |
| 2004 02 14 | 704 | 0.9+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.2− |
| 2004 02 14 | 704 | 1.2+ | 1.1+ | 2006 09 19 | 699 | 0.1− | 0.5− | 2006 11 13 | 703 | 0.5− | 0.3− |
| 2004 02 14 | 704 | 0.8+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.6− | 0.4+ |
| 2005 04 05 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.4− | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2005 04 05 | 644 | 0.1+ | 0.9+ | 2006 09 20 | 704 | 0.8− | 0.1− | 2006 11 13 | 703 | 0.1− | 0.3+ |
| 2005 04 05 | 644 | 0.3+ | 1.0+ | 2006 09 20 | 704 | 0.9− | 0.1− | 2006 11 15 | 704 | (0.1+ | 1.8−) |
| 2005 05 01 | 644 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.9− | 0.2− | 2006 11 15 | 704 | (0.1− | 1.8+) |
| 2005 05 01 | 644 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 1.3− | 0.1+ | 2006 11 15 | 704 | 1.1+ | 1.2− |
| 2005 05 01 | 644 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.8− | 0.2− | 2006 11 15 | 704 | (0.3− | 2.1+) |
| 2006 07 21 | 704 | 1.1− | 0.6+ | 2006 09 24 | 106 | 0.1+ | 0.4− | 2006 11 16 | 704 | (2.5+ | 1.1+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 07 21 | 704 | (0.9+ | 2.1+) | 2006 09 24 | 106 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.6− | 0.2− | | |
| 2006 07 21 | 704 | 1.2− | 0.5+ | 2006 09 24 | 106 | 0.2+ | 0.4− | 2006 11 16 | 704 | 1.2+ | 1.1+ | | |
| 2006 07 21 | 704 | 0.5+ | 0.4+ | 2006 09 24 | 106 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.6+ | 1.0+ | | |
| 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.9+ | 0.5+ | | |
| 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.4+ | | |
| 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.2+ | 2006 11 19 | 704 | 1.2+ | 0.2− | | |
| 2006 08 18 | 699 | 0.5+ | 0.3+ | 2006 09 25 | 704 | 0.5− | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.1− | | |
| 2006 08 18 | 699 | 0.6− | 0.5− | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.0 | | |
| 2006 08 18 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 704 | (1.1+ | 1.8+) | | |
| 2006 08 18 | 699 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | 1.4+ | 0.2+ | | |
| 2006 08 18 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.3+ | 2006 11 20 | 704 | (0.1+ | 2.1+) | | |
| 2006 08 18 | 699 | 0.4+ | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.3+ | 2006 11 20 | 704 | 1.2− | 0.2− | | |
| 2006 08 18 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.8− | 0.2− | | |
| 2006 08 21 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.5− | 1.2+ | | |
| 2006 08 21 | 704 | 0.3+ | 0.0 | 2006 09 25 | 704 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.4− | 0.5− | | |
| 2006 08 21 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.1− | | |
| 2006 08 21 | 704 | (0.5+ | 1.6+) | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.6+ | | |
| 2006 08 21 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.8− | | |
| 2006 08 25 | 704 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.1− | | | | | | |

**(145596)∗ 2006 QS$_3$ = 2005 GY$_{107}$**

Discovered 2006 Aug. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 104008)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 14.28268 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.21026046 | $\omega$ | 156.10611 | | +0.78473124 | | +0.61979416 |
| *a* | 2.8009002 | $\Omega$ | 165.58580 | | −0.57325782 | | +0.73014088 |
| *e* | 0.2218827 | *i* | 1.66143 | | −0.23573789 | | +0.28766213 |
| *P* | 4.69 | *H* | 16.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 05 | 910 | 0.2+ | 0.3+ | 2006 08 18 | 699 | 0.3− | 0.4+ | 2006 09 12 | 704 | 0.5− | 0.9+ | | |
| 1997 09 05 | 910 | 0.3− | 0.2+ | 2006 08 18 | 699 | 0.7+ | 0.9+ | 2006 09 12 | 704 | 0.6+ | 0.7− | | |
| 1997 09 05 | 910 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 09 12 | 704 | 0.6− | 0.1− | | |
| 1997 11 03 | 704 | 1.7+ | 1.7− | 2006 08 19 | 691 | 0.3− | 0.0 | 2006 09 12 | 704 | 0.1− | 0.3− | | |
| 1997 11 03 | 704 | (1.3+ | 2.7+) | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.9+ | | |
| 1997 11 03 | 704 | 0.5+ | 1.3− | 2006 08 21 | 704 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.6− | 0.8+ | | |
| 1997 11 03 | 704 | 0.3− | 1.1− | 2006 08 21 | 704 | 1.1+ | 1.3− | 2006 09 17 | 704 | 0.9− | 0.8+ | | |
| 1999 01 07 | 691 | 0.4+ | 0.5+ | 2006 08 21 | 704 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.7− | 0.8+ | | |
| 1999 01 07 | 691 | 0.3− | 0.4+ | 2006 08 21 | 704 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.2+ | | |
| 1999 01 07 | 691 | 0.2− | 0.3− | 2006 08 21 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | (0.4+ | 2.3+) | | |
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.8+ | | |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2006 08 25 | 704 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.7+ | | |
| 2000 04 27 | 691 | 0.4− | 0.3− | 2006 08 25 | 704 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.3+ | 1.6+ | | |
| 2000 04 27 | 691 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1+ | | |
| 2000 04 27 | 691 | 0.2+ | 0.1− | 2006 08 25 | 704 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.2− | | |
| 2002 12 05 | 704 | 0.5+ | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.7+ | | |
| 2002 12 05 | 704 | 0.9− | 1.5+ | 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.4− | 0.2+ | | |
| 2002 12 05 | 704 | 0.5+ | 1.1+ | 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.1− | | |
| 2005 03 17 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.6− | 2006 09 20 | 704 | 0.0 | 0.9+ | | |
| 2005 03 17 | 691 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.6− | 2006 09 20 | 704 | 0.3− | 0.1+ | | |
| 2005 03 17 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.4+ | | |
| 2005 04 02 | 691 | 0.2+ | 0.2− | 2006 08 28 | 699 | 0.0 | 0.9+ | 2006 09 25 | 699 | 0.2+ | 0.8+ | | |
| 2005 04 02 | 691 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.5+ | 0.1+ | 2006 09 25 | 699 | 1.1+ | 0.2− | | |
| 2005 04 02 | 691 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.7+ | 0.1− | 2006 09 25 | 699 | 0.6+ | 1.6+ | | |
| 2005 04 10 | G96 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.4+ | | |
| 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.4− | | |
| 2005 04 10 | G96 | 0.4− | 0.0 | 2006 08 29 | 704 | 0.4+ | 0.7− | 2006 09 25 | G96 | 0.1+ | 0.4− | | |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2006 08 29 | 704 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.6− | | |
| 2005 04 11 | 691 | 0.1− | 0.1+ | 2006 08 29 | 704 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.5− | | |
| 2005 04 11 | 691 | 0.1− | 0.0 | 2006 08 29 | 704 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.1+ | | |
| 2005 04 11 | 691 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− | | |
| 2006 08 14 | 644 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.2+ | | |
| 2006 08 14 | 644 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2006 08 14 | 644 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.2− | 0.4− | | |
| 2006 08 17 | 644 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2006 08 17 | 644 | 0.0 | 0.2− | 2006 08 31 | 704 | 0.5− | 0.7− | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2006 08 17 | 644 | 0.2− | 0.2− | 2006 08 31 | 704 | 0.6− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− | | |
| 2006 08 18 | 699 | 0.9+ | 1.1+ | 2006 08 31 | 704 | 0.0 | 0.9+ | 2006 11 17 | G96 | 0.1− | 0.2+ | | |
| 2006 08 18 | 704 | 0.3+ | 1.5− | 2006 08 31 | 704 | 0.4+ | 1.1+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2006 08 18 | 699 | 0.1− | 0.3− | 2006 09 11 | G92 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.2− | 0.2− | | |
| 2006 08 18 | 704 | 1.4+ | 0.3− | 2006 09 11 | G92 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2006 08 18 | 704 | 1.8+ | 1.1− | 2006 09 11 | G92 | 0.0 | 0.0 | | | | | | |

**(145597)∗ 2006 QP$_6$ = 2005 JN$_{138}$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104010)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 276.73792 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.25533780 | $\omega$ | 283.85522 | | +0.15724809 | | −0.98642848 |
| *a* | 2.4607036 | $\Omega$ | 156.93649 | | +0.94625096 | | +0.13680716 |
| *e* | 0.1096547 | *i* | 6.92638 | | +0.28263432 | | +0.09078903 |
| *P* | 3.86 | *H* | 16.3 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.0 | 0.2− | 2005 05 20 | G96 | 0.3− | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.0 | | |
| 2002 08 16 | 644 | 0.2− | 0.0 | 2005 05 20 | G96 | 0.4− | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.0 | | |
| 2002 08 16 | 644 | 0.0 | 0.3+ | 2005 05 20 | G96 | 0.7− | 0.2− | 2006 08 24 | 644 | 0.4+ | 0.3+ | | |
| 2002 08 17 | 644 | 0.0 | 0.1− | 2005 06 05 | 691 | 0.3+ | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.1− | | |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2005 06 05 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.1+ | | |
| 2002 08 17 | 644 | 0.0 | 0.6+ | 2005 06 05 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 1.2+ | 1.7− | | |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2005 06 13 | 691 | 0.3+ | 0.0 | 2006 08 28 | 703 | 1.2− | 0.4− | | |
| 2002 08 27 | 644 | 0.1+ | 0.5+ | 2005 06 13 | 691 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.3− | 0.1+ | | |
| 2002 08 27 | 644 | 0.2− | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.3+ | | |
| 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.1− | | |
| 2003 12 22 | 704 | 0.9− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1+ | | |
| 2003 12 22 | 704 | 1.2− | 1.3+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.4− | 0.7+ | | |
| 2003 12 22 | 704 | 0.4− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 08 29 | 704 | 0.6− | 0.9+ | | |
| 2003 12 22 | 704 | 0.1− | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 08 29 | 704 | 1.5− | 1.2+ | | |
| 2004 01 23 | 704 | 0.7+ | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.3− | | |
| 2004 01 23 | 704 | 1.1+ | 1.1+ | 2006 08 18 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | (2.1+ | 0.7+) | | |
| 2004 01 23 | 704 | 0.2− | 1.5+ | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.1− | | |
| 2004 01 23 | 704 | 0.5+ | 1.2+ | 2006 08 18 | 644 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.5− | | |
| 2004 01 23 | 704 | 1.1+ | 0.7+ | 2006 08 21 | 691 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.1− | | |
| 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.4− | | |
| 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 08 21 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.3− | | |
| 2005 05 13 | 691 | 0.0 | 0.4+ | 2006 08 23 | 644 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.3− | | |
| 2005 05 20 | G96 | 0.7− | 0.2− | 2006 08 23 | 644 | 0.3+ | 0.3− | | | | | | |

**(145598)∗ 2006 QZ$_6$ = 2005 CE$_{47}$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104011)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 54.05397 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.28645027 | $\omega$ | 134.23578 | | +0.13397690 | | +0.98904340 |
| *a* | 2.2791342 | $\Omega$ | 143.33005 | | −0.93623116 | | +0.14683304 |
| *e* | 0.1592201 | *i* | 5.95850 | | −0.32484059 | | −0.01527120 |
| *P* | 3.44 | *H* | 17.0 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.6− | 0.9− | 2002 05 08 | 704 | 0.1− | 1.5− | 2006 08 17 | 644 | 0.3− | 0.1+ | | |
| 1995 03 26 | 691 | 0.8− | 0.8− | 2002 05 08 | 704 | 1.5+ | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.3+ | | |
| 1995 03 26 | 691 | (1.3− | 2.7−) | 2002 05 08 | 704 | 0.3− | 1.2+ | 2006 08 18 | 644 | 0.1− | 0.2+ | | |
| 1999 08 07 | 699 | 0.7+ | 0.2+ | 2003 10 29 | 691 | 0.1+ | 0.6+ | 2006 08 18 | 644 | 0.2− | 0.4+ | | |
| 1999 08 07 | 699 | 0.4− | 1.2+ | 2003 10 29 | 691 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.4+ | | |
| 1999 08 07 | 699 | 0.6+ | 0.2− | 2003 10 29 | 691 | 0.3+ | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.2+ | | |
| 2002 04 10 | 704 | 0.3+ | 1.0+ | 2003 11 29 | 691 | 0.0 | 0.2+ | 2006 08 21 | 691 | 0.3− | 0.1+ | | |
| 2002 04 10 | 704 | 0.2+ | 1.9+ | 2003 11 29 | 691 | 0.3− | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.2+ | | |
| 2002 04 10 | 704 | 0.0 | 0.3+ | 2003 11 29 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.0 | | |
| 2002 04 10 | 704 | (2.4+ | 0.8+) | 2005 02 02 | 691 | 0.1− | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 16 | 704 | 0.4+ | 0.6+ | 2005 02 02 | 691 | 0.0 | 0.6+ | 2006 08 28 | 691 | 0.3− | 0.0 | | |
| 2002 04 16 | 704 | 0.5+ | 0.5+ | 2005 02 02 | 691 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.7+ | 0.3− | | |
| 2002 04 16 | 704 | 0.4+ | 0.3− | 2005 02 14 | 691 | 0.3+ | 0.3+ | 2006 08 30 | 699 | 0.5− | 0.8+ | | |
| 2002 04 16 | 704 | 0.0 | 0.3+ | 2005 02 14 | 691 | 0.3+ | 0.5+ | 2006 08 30 | 699 | 1.1− | 0.3− | | |
| 2002 04 16 | 704 | 0.8+ | 0.6+ | 2005 02 14 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.7+ | 0.9− | | |
| 2002 04 29 | 644 | (0.5+ | 2.0+) | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 09 14 | 703 | 1.4− | 0.3− | | |
| 2002 04 29 | 644 | 0.5+ | 1.9+ | 2005 03 10 | G96 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 1.1+ | | |
| 2002 04 29 | 644 | (0.6+ | 2.1+) | 2005 03 10 | G96 | 0.4− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1− | | |
| 2002 05 07 | 644 | 0.5+ | 1.6+ | 2005 03 10 | G96 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.3+ | | |
| 2002 05 07 | 644 | 0.4+ | 1.5+ | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.3− | 1.3+ | | |
| 2002 05 07 | 644 | 1.1+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.2− | | |
| 2002 05 08 | 704 | 0.8+ | 1.5+ | 2006 08 16 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.2+ | | |
| 2002 05 08 | 704 | 0.6+ | 0.6+ | 2006 08 17 | 644 | 0.0 | 0.1+ | | | | | | |

**(145599)∗ 2006 QV$_8$ = 1999 VA$_{204}$ = 2005 EK$_{55}$ = 2005 GG$_{63}$ = 2005 GL$_{214}$**

Discovered 2006 Aug. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 104012)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.69961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26629965 | $\omega$ | 61.20817 | | +0.55054030 | +0.83475394 | |
| $a$ | 2.3927040 | $\Omega$ | 242.19902 | | −0.76963679 | +0.50309570 | |
| $e$ | 0.1880525 | $i$ | 0.61867 | | −0.32336448 | +0.22378688 | |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 16 | 691 | 0.3− | 0.4− | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.7+ | | |
| 1994 03 16 | 691 | 0.2+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.3+ | 0.4+ | | |
| 1999 11 09 | 704 | 0.2− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.6+ | | |
| 1999 11 09 | 704 | 0.9− | 1.0− | 2006 08 19 | A50 | 0.9− | 0.0 | 2006 08 30 | 704 | 0.9+ | 0.2− | | |
| 1999 11 09 | 704 | 0.4− | 0.5− | 2006 08 19 | A50 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.2+ | | |
| 1999 11 10 | 691 | 0.1− | 0.1+ | 2006 08 21 | 704 | 0.5+ | 1.4− | 2006 09 14 | 703 | 1.7+ | 1.2+ | | |
| 1999 11 10 | 691 | 0.3+ | 0.2+ | 2006 08 21 | 704 | 1.2+ | 0.1− | 2006 09 14 | 703 | 0.1− | 1.3+ | | |
| 1999 11 10 | 691 | 0.4+ | 0.0 | 2006 08 21 | 704 | 0.1+ | 0.6− | 2006 09 14 | 703 | 0.6− | 0.7+ | | |
| 1999 12 16 | 691 | 0.0 | 0.4+ | 2006 08 21 | 704 | 1.1+ | 1.2− | 2006 09 17 | 704 | 0.2− | 0.1− | | |
| 1999 12 16 | 691 | 0.3− | 0.3+ | 2006 08 23 | 104 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.3− | | |
| 1999 12 16 | 691 | 0.1− | 0.1− | 2006 08 23 | 104 | 0.6− | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.5+ | | |
| 2005 03 04 | 691 | 0.5+ | 0.1+ | 2006 08 24 | 644 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.5− | | |
| 2005 03 04 | 691 | 0.3+ | 0.3+ | 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 09 20 | 704 | 1.1+ | 0.4+ | | |
| 2005 03 04 | 691 | 0.4+ | 0.4+ | 2006 08 24 | 644 | 0.5− | 0.1+ | 2006 09 20 | 704 | 1.4+ | 1.3− | | |
| 2005 03 08 | G96 | 0.4− | 0.1− | 2006 08 25 | 704 | 0.4− | 0.4− | 2006 09 20 | 699 | 0.2− | 1.4+ | | |
| 2005 03 08 | G96 | 0.3− | 0.0 | 2006 08 25 | 704 | 0.7− | 0.5− | 2006 09 20 | 704 | 1.1+ | 0.9+ | | |
| 2005 03 08 | G96 | 0.1− | 0.0 | 2006 08 25 | 704 | 0.5− | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.4+ | | |
| 2005 03 08 | G96 | 0.1− | 0.0 | 2006 08 25 | 704 | 0.5− | 0.3− | 2006 09 20 | 699 | 0.3− | 0.6+ | | |
| 2005 03 08 | G96 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 1.3− | 0.3+ | | |
| 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.2− | | |
| 2005 03 08 | G96 | 0.3− | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.2− | | |
| 2005 03 08 | G96 | 0.2− | 0.3+ | 2006 08 27 | 699 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.3− | | |
| 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.8− | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.3− | | |
| 2005 04 02 | G96 | 0.0 | 0.2+ | 2006 08 27 | 699 | 0.0 | 0.7+ | 2006 09 27 | G96 | 0.4− | 0.4− | | |
| 2005 04 02 | G96 | 0.4− | 0.2+ | 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− | | |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.2− | | |
| 2005 04 09 | G96 | 0.2− | 0.8+ | 2006 08 28 | 703 | 0.7− | 0.1− | 2006 09 27 | G96 | 1.5− | 0.8− | | |
| 2005 04 09 | G96 | 0.3− | 0.1− | 2006 08 28 | 703 | 1.2− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 2005 04 09 | G96 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− | | |
| 2005 04 09 | G96 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.8− | 0.3+ | | |
| 2005 04 10 | 691 | 0.3+ | 0.3+ | 2006 08 30 | 704 | 0.6+ | 1.1+ | 2006 10 27 | G96 | 0.3− | 0.7− | | |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.3+ | 1.4+ | 2006 11 21 | G96 | 0.5− | 0.1− | | |
| 2005 04 10 | 691 | 0.5+ | 0.6+ | 2006 08 30 | 704 | 0.8− | 1.2− | 2006 11 21 | G96 | 0.3+ | 0.0 | | |
| 2006 08 06 | 699 | 0.9+ | 1.9− | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.7− | | |
| 2006 08 06 | 699 | 0.9− | 0.4+ | 2006 08 30 | 704 | 0.2− | 1.1+ | 2006 11 21 | G96 | 0.2− | 0.1− | | |
| 2006 08 06 | 699 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.8+ | | | | | | |
| 2006 08 06 | 699 | 0.7+ | 1.8− | 2006 08 30 | 704 | 0.2+ | 0.4+ | | | | | | |

**(145600)∗ 2006 QS$_{11}$ = 5026 T-2**

Discovered 2006 Aug. 16 by the Siding Spring Survey at Siding Spring.

Id. G. V. Williams (*MPO* 104013)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.63547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17787793 | $\omega$ | 28.28165 | | +0.99140706 | −0.06127213 | |
| $a$ | 3.1312759 | $\Omega$ | 334.43457 | | −0.02132287 | +0.79600918 | |
| $e$ | 0.2249650 | $i$ | 15.53463 | | +0.12906345 | +0.60217531 | |
| $P$ | 5.54 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | (6.6+ | 0.8−) | 2004 03 16 | 691 | 0.5+ | 0.2+ | 2006 09 16 | 699 | (0.6− | 2.3+) | | |
| 1973 09 20 | 675 | 0.6− | 0.8− | 2004 03 16 | 691 | 0.6+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.3− | | |
| 1973 09 20 | 675 | 2.5+ | 0.6− | 2006 07 25 | 644 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.1− | | |
| 1973 09 24 | 675 | 0.9+ | 0.1− | 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.1− | | |
| 1973 09 24 | 675 | 0.6+ | 1.3− | 2006 07 25 | 644 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.3+ | | |
| 1973 09 25 | 675 | 1.0− | 1.3− | 2006 08 16 | E12 | 0.3− | 0.2+ | 2006 09 24 | 699 | 0.1+ | 0.3+ | | |
| 1973 09 25 | 675 | 1.0+ | 0.8− | 2006 08 16 | E12 | 0.4− | 0.0 | 2006 09 24 | 699 | 0.2+ | 0.1+ | | |
| 1998 02 04 | 621 | 0.1+ | 0.2+ | 2006 08 16 | E12 | 0.4− | 0.1− | 2006 09 24 | 699 | 1.0− | 0.9+ | | |
| 1998 02 04 | 621 | 0.8+ | 0.5− | 2006 08 16 | E12 | 0.0 | 0.2+ | 2006 09 24 | 699 | 0.4+ | 0.1− | | |
| 1998 02 04 | 621 | 0.3+ | 0.3− | 2006 08 17 | 644 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.7+ | | |
| 2001 09 28 | 704 | 0.1+ | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.2− | 0.5+ | | |
| 2001 09 28 | 704 | 0.3− | 0.0 | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.4− | 1.3+ | | |
| 2001 09 28 | 704 | 0.5− | 0.7+ | 2006 08 20 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.6+ | | |
| 2001 10 08 | 704 | 0.2− | 0.3+ | 2006 08 20 | 644 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.8− | 1.2+ | | |
| 2001 10 08 | 704 | 0.5− | 1.1+ | 2006 08 20 | 644 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 2001 10 08 | 704 | 1.2− | 0.9+ | 2006 08 23 | 704 | 0.7+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 2001 10 08 | 704 | 0.6− | 1.6+ | 2006 08 23 | 704 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.7+ | | |
| 2001 10 08 | 704 | 0.1− | 1.2+ | 2006 08 23 | 704 | 0.8+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2− | | |
| 2001 11 11 | 704 | 0.1− | 0.1+ | 2006 08 23 | 704 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.5+ | | |
| 2001 11 11 | 704 | 0.3− | 0.3− | 2006 08 23 | 704 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 2001 11 11 | 704 | 0.2+ | 0.3− | 2006 08 28 | 704 | 0.8+ | 0.6− | 2006 09 30 | 703 | 0.2− | 1.2+ | | |
| 2001 11 11 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 704 | 0.2+ | 0.9− | 2006 09 30 | 703 | 1.0− | 0.1− | | |
| 2001 11 11 | 704 | 0.0 | 0.0 | 2006 08 28 | 704 | 0.4− | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2001 12 09 | 704 | 0.2− | 0.3+ | 2006 08 28 | E12 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2001 12 09 | 704 | 1.1+ | 1.1+ | 2006 08 28 | E12 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.0 | | |
| 2001 12 09 | 704 | 0.6+ | 0.1− | 2006 08 28 | E12 | 0.2− | 0.3− | 2006 10 22 | G96 | 0.3− | 0.0 | | |
| 2001 12 09 | 704 | 0.2+ | 0.8− | 2006 08 28 | E12 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7+ | 1.3+ | | |
| 2001 12 22 | 704 | 0.6+ | 0.3− | 2006 08 31 | 704 | 0.7− | 0.8− | 2006 11 11 | 703 | 0.9− | 0.4+ | | |
| 2001 12 22 | 704 | (2.2+ | 0.3+) | 2006 08 31 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.0 | | |
| 2001 12 22 | 704 | 0.1+ | 0.3+ | 2006 08 31 | 704 | 0.3− | 1.2− | 2006 11 11 | 703 | 0.2− | 1.8+ | | |
| 2001 12 22 | 704 | 0.7+ | 0.3− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.0 | | |
| 2003 01 10 | 704 | 0.8− | 1.3+ | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1− | 0.1− | | |
| 2003 01 10 | 704 | 0.8+ | 1.1+ | 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2003 01 10 | 704 | 0.9− | 0.7+ | 2006 09 16 | 699 | 0.4+ | 1.6+ | 2006 11 18 | G96 | 0.1+ | 0.0 | | |
| 2003 01 10 | 704 | 0.2− | 0.6+ | 2006 09 16 | 704 | 0.4+ | 1.0+ | 2006 11 19 | 704 | 0.7+ | 0.5− | | |
| 2003 02 02 | 644 | 0.1− | 0.7+ | 2006 09 16 | 704 | 1.0− | 0.1− | 2006 11 19 | 704 | 0.1− | 1.2− | | |
| 2003 02 02 | 644 | 0.5− | 0.8+ | 2006 09 16 | 699 | (2.0+ | 0.5+) | 2006 11 19 | 704 | 0.6+ | 0.7− | | |
| 2003 02 02 | 644 | 0.0 | 0.6+ | 2006 09 16 | 704 | 0.2+ | 1.5+ | | | | | | |
| 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 09 16 | 704 | 0.5+ | 0.1− | | | | | | |

**(145601)∗ 2006 QV$_{19}$ = 1999 TQ$_{63}$**

Discovered 2006 Aug. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 104019)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.44550 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25974871 | $\omega$ | 85.72329 | | +0.30220828 | +0.95269218 | |
| $a$ | 2.4327666 | $\Omega$ | 201.95117 | | −0.90533476 | +0.27622506 | |
| $e$ | 0.1465073 | $i$ | 4.96753 | | −0.29839425 | +0.12679640 | |
| $P$ | 3.79 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 1.2− | 0.7+ | 2005 03 17 | 703 | 0.5− | 0.2− | 2006 08 29 | 703 | 0.9+ | 0.1+ | | |
| 1995 10 27 | 691 | 0.3− | 0.4− | 2005 03 17 | 703 | 0.6− | 1.9− | 2006 08 29 | 703 | 0.7+ | 0.3+ | | |
| 1995 10 27 | 691 | 0.2− | 0.4− | 2005 03 17 | 703 | (2.6+ | 0.4+) | 2006 08 29 | 703 | 0.2− | 0.3+ | | |
| 1998 05 24 | 704 | 1.1+ | 1.1+ | 2005 04 04 | 703 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.9− | 1.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 0.8− | 0.0 | 2005 04 04 | 703 | 1.1− | 0.5+ | 2006 08 30 | 704 | 1.4− | 1.4− | | |
| 1998 05 24 | 704 | 0.7+ | 1.0− | 2005 04 04 | 703 | 0.8− | 1.1+ | 2006 08 30 | 704 | 1.2− | 1.3− | | |
| 1998 05 24 | 704 | 0.4+ | 0.8− | 2005 04 04 | 703 | 1.5− | 1.4+ | 2006 08 30 | 704 | (1.0− | 2.0−) | | |
| 1998 05 24 | 704 | 1.2− | 0.6− | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.7− | 1.8− | | |
| 1999 10 07 | 691 | 0.4+ | 0.5+ | 2005 04 12 | G96 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.3− | | |
| 1999 10 07 | 691 | 0.7+ | 0.4+ | 2005 04 12 | 691 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 1.1− | | |
| 1999 10 07 | 691 | 0.6+ | 0.5+ | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.4− | | |
| 1999 10 11 | 691 | 0.3+ | 0.4− | 2005 04 12 | G96 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.7− | | |
| 1999 10 11 | 691 | 0.1− | 0.1− | 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 09 24 | 699 | 0.7+ | 0.5+ | | |
| 1999 10 11 | 691 | 0.3+ | 0.3− | 2005 04 12 | 691 | 0.1+ | 0.7+ | 2006 09 24 | 699 | 0.9− | 1.2− | | |
| 2001 02 25 | 608 | 1.5+ | 0.1+ | 2006 06 24 | 699 | 1.4− | 0.2− | 2006 09 24 | 699 | 1.0− | 0.2+ | | |
| 2001 02 25 | 608 | 1.4+ | 0.6+ | 2006 06 24 | 699 | 0.6+ | 1.1− | 2006 09 24 | 699 | 0.3+ | 1.0+ | | |
| 2001 02 25 | 608 | 1.2+ | 0.4+ | 2006 06 24 | 699 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 2002 06 02 | 644 | 0.2+ | 0.1+ | 2006 06 24 | 699 | 1.4− | 1.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | | |
| 2002 06 02 | 644 | 0.0 | 0.6+ | 2006 08 18 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | | |
| 2002 06 02 | 644 | 0.2− | 0.4+ | 2006 08 18 | 704 | 0.1− | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.4+ | | |
| 2002 06 09 | 704 | 0.4+ | 0.3+ | 2006 08 18 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.4+ | | |
| 2002 06 09 | 704 | 0.7+ | 0.3− | 2006 08 19 | 699 | 0.9+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.3+ | | |
| 2002 06 09 | 704 | 0.4+ | 0.7+ | 2006 08 19 | 699 | 0.7+ | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | | |
| 2002 06 09 | 704 | 0.5+ | 0.6+ | 2006 08 19 | 699 | 0.4+ | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | | |
| 2002 06 09 | 704 | 0.2+ | 1.9+ | 2006 08 19 | 699 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.2+ | | |
| 2003 11 24 | 691 | 0.0 | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.2− | 0.2+ | | |
| 2003 11 24 | 691 | 0.2− | 0.2+ | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.3+ | | |
| 2003 11 24 | 691 | 0.2− | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.2− | 0.5− | | |
| 2005 03 03 | 703 | 0.3+ | 0.4+ | 2006 08 28 | 699 | 0.5− | 0.1+ | 2006 10 21 | 703 | 1.9− | 0.9+ | | |
| 2005 03 03 | 703 | 0.0 | 0.5+ | 2006 08 28 | 699 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.6+ | | |
| 2005 03 03 | 703 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.3− | 1.3+ | | |
| 2005 03 03 | 703 | 0.1+ | 0.9+ | 2006 08 28 | 699 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.3− | 1.1− | | |
| 2005 03 17 | 703 | 1.5− | 0.2− | 2006 08 29 | 703 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.6− | | |

**(145602)∗ 2006 QG$_{20}$ = 2005 CE$_{34}$**

Discovered 2006 Aug. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 104019)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.62322 | | (2000.0) | | | |
| $n$ | 0.30442426 | $\omega$ | 312.14510 | | +0.51337631 | +0.85801660 |
| $a$ | 2.1885167 | $\Omega$ | 348.71194 | | −0.76148110 | +0.44692582 |
| $e$ | 0.2371078 | $i$ | 4.65422 | | −0.39571617 | +0.25311028 |
| $P$ | 3.24 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 291 | 0.8+ | 0.5+ | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 09 12 | 704 | 0.0 | 0.3− | | |
| 2002 02 13 | 291 | 0.7+ | 0.7+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 12 | 704 | 0.4− | 0.1− | | |
| 2002 02 13 | 291 | 0.8+ | 0.7+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 12 | 704 | 0.2+ | 0.0 | | |
| 2002 03 05 | 645 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 12 | 704 | 0.4+ | 0.2+ | | |
| 2002 03 05 | 645 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.7+ | 0.7+ | | |
| 2003 09 27 | 704 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.6+ | 0.7− | | |
| 2003 09 27 | 704 | 0.8+ | 1.3+ | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.2− | 1.1+ | | |
| 2003 09 27 | 704 | 1.1+ | 1.3+ | 2006 08 23 | 704 | 0.4− | 0.4− | 2006 09 17 | 704 | 0.5+ | 0.1− | | |
| 2003 09 27 | 704 | 1.4− | 0.2− | 2006 08 23 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.0 | | |
| 2003 10 21 | 691 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.2− | | |
| 2003 10 21 | 691 | 0.1+ | 0.1+ | 2006 08 23 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.2− | | |
| 2003 10 21 | 691 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.1+ | 0.4− | 2006 09 18 | 699 | 0.4− | 0.3− | | |
| 2003 10 29 | 699 | 0.7− | 0.1− | 2006 08 23 | 704 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.4− | 0.6+ | | |
| 2003 10 29 | 699 | 0.6+ | 0.2− | 2006 08 23 | 704 | 0.3− | 0.4− | 2006 09 20 | 704 | 1.1+ | 0.0 | | |
| 2003 10 29 | 699 | 0.1+ | 0.5− | 2006 08 23 | 704 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.7+ | 0.2+ | | |
| 2003 10 29 | 699 | 0.1− | 0.5− | 2006 08 23 | 704 | 0.7− | 0.1− | 2006 09 20 | 704 | 0.5− | 0.5+ | | |
| 2003 11 26 | 699 | 0.9− | 0.4+ | 2006 08 23 | 704 | 0.4− | 0.5− | 2006 09 20 | 704 | 1.2+ | 0.0 | | |
| 2003 11 26 | 699 | (1.7− | 2.2+) | 2006 08 23 | 704 | 0.4− | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.6− | | |
| 2003 11 26 | 699 | 0.8+ | 1.3+ | 2006 08 23 | 704 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.4− | 0.1− | | |
| 2003 11 26 | 699 | (0.5+ | 2.1+) | 2006 08 23 | 704 | 0.4− | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.3+ | | |
| 2005 02 02 | 691 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.3+ | | |
| 2005 02 02 | 691 | 0.4+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.3+ | 0.1− | | |
| 2005 02 02 | 691 | 0.3+ | 0.4− | 2006 08 28 | 704 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1− | | |
| 2005 02 04 | G96 | 0.4+ | 0.4− | 2006 08 28 | 691 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.3− | 0.4− | | |
| 2005 02 04 | G96 | 0.0 | 0.1− | 2006 08 28 | 704 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.2− | | |
| 2005 02 04 | G96 | 0.0 | 0.5+ | 2006 08 28 | 704 | 0.9− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.4− | | |
| 2005 02 04 | G96 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.2− | 1.8+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2005 03 16 | G96 | 0.0 | 0.0 | 2006 08 28 | 704 | 1.3− | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.1− | | |
| 2005 03 16 | G96 | 0.5− | 0.2+ | 2006 08 28 | 704 | 0.2− | 0.7− | 2006 10 09 | 644 | 0.2+ | 0.0 | | |
| 2005 03 16 | G96 | 1.0− | 0.6+ | 2006 08 28 | 699 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.4− | | |
| 2005 03 16 | G96 | 0.4− | 1.1+ | 2006 08 28 | 703 | 0.7− | 0.6− | 2006 10 19 | G96 | 0.0 | 0.4− | | |
| 2006 08 18 | 699 | 0.7+ | 0.9+ | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2006 08 18 | 699 | 0.9+ | 0.7+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.5− | | |
| 2006 08 18 | 699 | 1.0+ | 0.6+ | 2006 08 28 | 699 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2006 08 18 | 699 | 1.2− | 1.5+ | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.5− | 0.2− | | |
| 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.6+ | 1.1− | | |
| 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.8+ | 2006 10 21 | 703 | 1.7− | 1.3+ | | |
| 2006 08 18 | 644 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 1.1− | 0.4− | | |
| 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.4+ | 0.7+ | 2006 10 21 | 703 | 0.5− | 1.3− | | |
| 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.7+ | 1.0+ | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2006 08 21 | 644 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.6+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2006 08 21 | 644 | 0.3− | 0.0 | 2006 08 31 | 704 | 1.6+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2006 08 21 | 644 | 0.3− | 0.3+ | 2006 08 31 | 704 | 0.6+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2006 08 21 | 644 | 0.4− | 0.1+ | 2006 08 31 | 704 | 0.1+ | 0.3+ | | | | | | |
| 2006 08 21 | 644 | 0.7− | 0.2+ | 2006 09 12 | 704 | 0.0 | 0.5− | | | | | | |

**(145603)∗ 2006 QP$_{24}$ = 2002 EA$_{9}$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104022)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.88391 | | (2000.0) | | | |
| $n$ | 0.30905439 | $\omega$ | 305.83796 | | +0.37471423 | +0.92668520 |
| $a$ | 2.1666035 | $\Omega$ | 346.08054 | | −0.80694117 | +0.31054628 |
| $e$ | 0.1891876 | $i$ | 6.93552 | | −0.45654704 | +0.21169682 |
| $P$ | 3.19 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 691 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.8− | | |
| 2002 02 12 | 691 | 0.3+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.7+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | | |
| 2002 02 12 | 691 | 0.2+ | 0.5+ | 2006 08 19 | 691 | 0.1− | 0.9+ | 2006 09 18 | 699 | 0.4+ | 0.1+ | | |
| 2002 03 13 | 704 | 0.0 | 1.2+ | 2006 08 19 | 691 | 1.5− | 0.4+ | 2006 09 24 | 291 | 0.3− | 0.3+ | | |
| 2002 03 13 | 704 | 0.9+ | 1.3+ | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 09 24 | 291 | 0.4− | 0.2+ | | |
| 2002 03 13 | 704 | 0.7+ | 1.0+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 24 | 291 | 0.3− | 0.1+ | | |
| 2002 03 13 | 644 | 0.7+ | 0.9+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.3+ | | |
| 2002 03 13 | 644 | 0.9+ | 0.9+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.1+ | | |
| 2002 03 13 | 644 | 0.5+ | 0.9+ | 2006 08 24 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 0.4− | 1.2− | | |
| 2002 03 14 | 704 | 0.3+ | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.8− | 0.1+ | | |
| 2002 03 14 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.1+ | | |
| 2002 03 14 | 704 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.3+ | 0.5− | 2006 09 25 | 704 | 0.4+ | 0.2− | | |
| 2003 10 20 | 644 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.9+ | 0.4+ | | |
| 2003 10 20 | 644 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 25 | 699 | 0.3+ | 0.9− | | |
| 2003 10 20 | 644 | 0.5+ | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 2003 10 27 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.5− | 0.7+ | | |
| 2003 10 27 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.1− | | |
| 2003 10 27 | 691 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.7+ | 1.4− | 2006 10 01 | 703 | 0.3+ | 0.2− | | |
| 2005 02 01 | 691 | 0.2− | 0.1+ | 2006 09 12 | 703 | 0.8+ | 0.9− | 2006 10 01 | 703 | 0.5+ | 0.4− | | |
| 2005 02 01 | 691 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.7− | 2006 10 01 | 703 | 0.8+ | 0.8− | | |
| 2005 02 01 | 691 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.0 | 0.4− | 2006 10 01 | 703 | 0.4+ | 1.3− | | |
| 2005 02 14 | 704 | 0.6+ | 0.0 | 2006 09 16 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2005 02 14 | 704 | 1.0+ | 0.2− | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2005 02 14 | 704 | 0.3− | 0.0 | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | | |
| 2005 03 01 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.5− | 0.1− | | |
| 2005 03 01 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.9+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.2+ | | |
| 2005 03 01 | 691 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.4− | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | |
| 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.4− | | |
| 2005 04 04 | G96 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.5+ | 0.4− | | |
| 2005 04 04 | G96 | (2.1− | 0.7−) | 2006 09 17 | 703 | 1.5− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.7− | | |
| 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 17 | 703 | 1.9+ | 1.1+ | | | | | | |
| 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.4− | | | | | | |

**(145604)∗ 2006 QD$_{25}$**

Discovered 2006 Aug. 18 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.19971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25782284 | $\omega$ | 335.34969 | | +0.36436752 | +0.92487737 | |
| $a$ | 2.4448663 | $\Omega$ | 315.79992 | | −0.82642839 | +0.26728472 | |
| $e$ | 0.2193226 | $i$ | 8.97858 | | −0.42924636 | +0.27048240 | |
| $P$ | 3.82 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 14 | 691 | 0.3− | 0.0 | 2005 02 02 | 691 | 1.0+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.0 |
| 1997 02 14 | 691 | 0.2+ | 1.0− | 2005 03 03 | 703 | 0.2− | 0.9+ | 2006 08 28 | 703 | 0.4− | 0.0 |
| 1997 02 14 | 691 | 0.6− | 0.6− | 2005 03 03 | 703 | 0.8− | 0.6+ | 2006 08 28 | 703 | 0.6− | 0.0 |
| 2002 05 16 | 644 | 0.3− | 0.5− | 2005 03 03 | 703 | 1.3− | 0.1+ | 2006 08 28 | 699 | 0.6− | 0.0 |
| 2002 05 16 | 644 | 0.1+ | 0.2− | 2005 03 03 | 703 | 0.6+ | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.1− |
| 2002 05 16 | 644 | 0.3− | 0.5− | 2005 03 10 | 703 | (2.4− | 1.7−) | 2006 08 28 | 699 | 0.5− | 0.2+ |
| 2002 06 18 | 644 | 0.4− | 0.1+ | 2005 03 10 | 703 | (2.1− | 2.1−) | 2006 08 29 | 691 | 0.0 | 0.2− |
| 2002 06 18 | 644 | 0.3+ | 0.0 | 2005 03 10 | 703 | 0.6+ | 0.5− | 2006 08 29 | 691 | 0.1− | 0.0 |
| 2002 06 18 | 644 | 0.3+ | 0.1+ | 2005 03 10 | 703 | 0.3+ | 1.3+ | 2006 08 29 | 691 | 0.1− | 0.1− |
| 2002 06 24 | 644 | 0.0 | 0.0 | 2006 08 18 | 699 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.7− | 0.2+ |
| 2002 06 24 | 644 | 0.1+ | 0.1+ | 2006 08 18 | 704 | 1.2+ | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.4− |
| 2002 06 24 | 644 | 0.2− | 0.0 | 2006 08 18 | 699 | 0.6− | 0.4+ | 2006 08 30 | 704 | 1.2+ | 1.1− |
| 2002 07 15 | 644 | 0.1+ | 0.0 | 2006 08 18 | 704 | 0.2− | 0.2+ | 2006 08 30 | 704 | 1.1− | 0.0 |
| 2002 07 15 | 644 | 0.2+ | 0.1+ | 2006 08 18 | 699 | 0.2− | 0.5+ | 2006 09 01 | 704 | 0.3+ | 0.8+ |
| 2002 07 15 | 644 | 0.2+ | 0.2+ | 2006 08 18 | 704 | 0.8+ | 0.7− | 2006 09 01 | 704 | 0.3+ | 0.1− |
| 2002 08 13 | 704 | 0.2+ | 0.7− | 2006 08 18 | 704 | 0.4+ | 0.1− | 2006 09 01 | 704 | 0.3+ | 0.1− |
| 2002 08 13 | 704 | 0.3+ | 0.3+ | 2006 08 18 | 699 | 0.0 | 1.4+ | 2006 09 01 | 704 | 0.0 | 1.6− |
| 2002 08 13 | 704 | 0.2+ | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.4+ | 0.4+ |
| 2002 08 13 | 704 | 0.6− | 0.7− | 2006 08 21 | 644 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.5− | 0.3+ |
| 2002 08 31 | 704 | 1.0+ | 0.2− | 2006 08 21 | 644 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.3− | 0.1+ |
| 2002 08 31 | 704 | 0.3+ | 0.4− | 2006 08 24 | 704 | 1.7+ | 0.3− | 2006 09 11 | 703 | 0.6− | 0.4+ |
| 2002 08 31 | 704 | 0.0 | 0.7− | 2006 08 24 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 704 | 0.7− | 0.3+ |
| 2002 09 05 | 704 | 0.3− | 0.5− | 2006 08 24 | 704 | 1.0+ | 0.4+ | 2006 09 18 | 704 | 0.7− | 0.9+ |
| 2002 09 05 | 704 | 0.5− | 0.5− | 2006 08 24 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 704 | 0.8− | 0.3+ |
| 2002 09 05 | 704 | 0.1+ | 0.4+ | 2006 08 24 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 704 | 0.9− | 0.4− |
| 2005 02 02 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.4+ | 2006 09 18 | 704 | 1.0− | 0.2− |
| 2005 02 02 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.2+ | | | | |

**(145605)∗ 2006 QE$_{27}$ = 2005 EA$_{211}$ = 2005 GW$_{121}$**

Discovered 2006 Aug. 19 by Spacewatch at Kitt Peak.

Id. A. Doppler (*MPO* 104023)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.65290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26840741 | $\omega$ | 335.74466 | | +0.37918964 | +0.92504201 | |
| $a$ | 2.3801613 | $\Omega$ | 316.52936 | | −0.84349593 | +0.33549691 | |
| $e$ | 0.1683842 | $i$ | 1.88569 | | −0.38043374 | +0.17815472 | |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.0 | 0.7+ | 2005 04 06 | G96 | 0.5− | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.2+ |
| 1999 10 06 | 704 | 0.4− | 1.2+ | 2005 04 06 | G96 | 0.1− | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.5+ |
| 1999 10 06 | 704 | 0.2− | 1.0+ | 2005 04 06 | G96 | 0.2− | 0.5+ | 2006 09 17 | 704 | 0.4− | 0.2+ |
| 1999 10 06 | 704 | 1.0+ | 0.1+ | 2005 04 12 | G96 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.3− | 0.8+ |
| 1999 12 07 | 691 | 0.3− | 0.3− | 2005 04 12 | G96 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.4+ |
| 1999 12 07 | 691 | 0.0 | 0.4− | 2005 04 12 | G96 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.1− |
| 1999 12 07 | 691 | 0.0 | 0.2− | 2005 04 12 | G96 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.4+ | 0.7+ |
| 2001 01 26 | 691 | 0.1+ | 0.3+ | 2006 07 22 | G96 | 0.4− | 0.1+ | 2006 09 20 | 704 | 1.1− | 0.3+ |
| 2001 01 26 | 691 | 0.4+ | 0.1+ | 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 09 20 | 704 | 1.1+ | 0.7− |
| 2001 01 26 | 691 | 0.1+ | 0.7+ | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 09 25 | 699 | 1.5+ | 0.9+ |
| 2001 02 27 | 691 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.5+ |
| 2001 02 27 | 691 | 0.6+ | 0.3+ | 2006 08 19 | 691 | 0.1+ | 1.1+ | 2006 09 25 | 699 | 1.5+ | 0.1− |
| 2001 02 27 | 691 | 0.1− | 0.4+ | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 09 25 | 699 | 1.8− | 0.5+ |
| 2002 06 12 | 644 | 0.0 | 0.4+ | 2006 08 19 | 691 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.6− |
| 2002 06 12 | 644 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2002 06 12 | 644 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2002 07 01 | 644 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.5− | 0.6− |
| 2002 07 01 | 644 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.4+ |
| 2002 07 01 | 644 | 0.5+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.6− | 0.1− |
| 2002 07 05 | 704 | 0.5− | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.4− | 1.0− |
| 2002 07 05 | 704 | 0.1+ | 0.8+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.4− | 0.2+ |
| 2002 07 05 | 704 | 0.6− | 0.2− | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 10 01 | 703 | 0.7− | 0.0 |
| 2002 07 05 | 704 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 01 | 703 | 1.2+ | 1.0+ |
| 2002 07 05 | 704 | (2.8+ | 0.6+) | 2006 09 14 | 644 | 0.2− | 0.2− | 2006 10 01 | 703 | 0.9+ | 0.4+ |
| 2005 03 04 | 703 | (3.2− | 0.9−) | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 01 | 703 | 1.7− | 0.9− |
| 2005 03 04 | 703 | 1.5+ | 1.4− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.1+ |
| 2005 03 04 | 703 | 0.6− | 0.6− | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 2005 03 04 | 703 | (2.8+ | 0.1+) | 2006 09 16 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2005 03 11 | G96 | 0.7− | 0.0 | 2006 09 16 | 691 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 09 16 | 699 | 0.9+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2005 03 11 | G96 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2005 03 11 | G96 | 0.3− | 0.5+ | 2006 09 16 | 699 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 04 06 | G96 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.2− | 1.0− |

**(145606)∗ 2006 QH$_{29}$ = 2005 GL$_{22}$**

Discovered 2006 Aug. 22 by the Siding Spring Survey at Siding Spring.

Id. A. Doppler (*MPO* 104025)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.52466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22266142 | $\omega$ | 281.67394 | | +0.92211623 | +0.31093897 | |
| $a$ | 2.6959142 | $\Omega$ | 60.58775 | | −0.16086696 | +0.84934566 | |
| $e$ | 0.1687401 | $i$ | 15.32698 | | −0.35188562 | +0.42653125 | |
| $P$ | 4.43 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 29 | 691 | 0.0 | 0.9+ | 2003 12 29 | 703 | 0.1+ | 1.3− | 2006 07 18 | E12 | 0.6+ | 0.1+ |
| 1992 04 29 | 691 | 0.8+ | 1.7+ | 2004 01 23 | 704 | 1.4+ | 1.4+ | 2006 08 13 | E12 | 0.2− | 0.0 |
| 1992 04 29 | 691 | 0.5+ | 0.3+ | 2004 01 23 | 704 | 1.8+ | 0.9− | 2006 08 13 | E12 | 0.1− | 0.2+ |
| 2001 05 21 | 704 | 0.9+ | 1.4− | 2004 01 23 | 704 | 0.1+ | 1.1+ | 2006 08 13 | E12 | 0.3− | 0.2+ |
| 2001 05 21 | 704 | 0.4− | 0.6+ | 2004 01 23 | 704 | 0.5+ | 1.8+ | 2006 08 22 | E12 | 0.2− | 0.9− |
| 2001 05 21 | 704 | 0.3+ | 0.3− | 2005 04 04 | 703 | 0.6− | 0.3+ | 2006 08 22 | E12 | 0.4− | 0.6+ |
| 2001 05 21 | 704 | 1.0+ | 0.2+ | 2005 04 04 | 703 | (2.2− | 0.1+) | 2006 08 22 | E12 | 0.2+ | 0.2− |
| 2001 05 29 | 608 | 0.5+ | 0.4+ | 2005 04 04 | 703 | 0.2− | 0.1− | 2006 08 22 | E12 | 0.6− | 0.4+ |
| 2001 05 29 | 608 | 0.9+ | 0.3+ | 2005 04 04 | 703 | (2.9− | 0.1+) | 2006 08 23 | E12 | 0.2+ | 0.6+ |
| 2001 05 29 | 608 | 1.0+ | 0.6+ | 2005 04 05 | 599 | 0.4− | 0.2+ | 2006 08 23 | E12 | 0.7+ | 0.2− |
| 2002 10 15 | 644 | 0.3− | 0.4+ | 2005 04 05 | 599 | 0.2+ | 0.4− | 2006 08 23 | E12 | 0.4+ | 0.1+ |
| 2002 10 15 | 644 | 0.3− | 0.2+ | 2005 04 06 | 599 | 1.4− | 0.8− | 2006 08 23 | E12 | 0.2− | 0.5+ |
| 2002 10 15 | 644 | 0.3− | 0.5+ | 2005 04 06 | 599 | 0.4− | 1.0− | 2006 08 26 | E12 | 0.2− | 0.1+ |
| 2002 10 30 | 704 | 1.1− | 0.7+ | 2005 04 13 | 703 | 0.1+ | 0.7+ | 2006 08 26 | E12 | 0.1+ | 0.2− |
| 2002 10 30 | 704 | 0.7− | 1.4+ | 2005 04 13 | 703 | 1.2− | 0.3− | 2006 08 26 | E12 | 0.2− | 0.3− |
| 2002 10 30 | 704 | 0.9− | 1.8+ | 2005 04 13 | 703 | 0.2− | 0.3− | 2006 08 26 | E12 | 0.1+ | 0.3− |
| 2002 10 30 | 704 | 0.4− | 1.6+ | 2005 04 13 | 703 | 1.0− | 0.2− | 2006 08 31 | E12 | 0.6− | 0.0 |
| 2002 10 30 | 704 | 0.9− | 0.9+ | 2006 06 18 | E12 | 0.4+ | 0.1+ | 2006 08 31 | E12 | 0.4− | 0.3+ |
| 2002 11 12 | 704 | 0.6− | 1.0+ | 2006 06 18 | E12 | 1.0+ | 0.1+ | 2006 08 31 | E12 | 0.1− | 0.8− |
| 2002 11 12 | 704 | 0.5+ | 0.0 | 2006 06 18 | E12 | 0.1+ | 0.1− | 2006 08 31 | E12 | 0.4− | 0.1− |
| 2002 11 12 | 704 | 0.8− | 0.1+ | 2006 06 18 | E12 | 0.1+ | 0.2− | 2006 09 30 | E12 | 0.8− | 0.2− |
| 2003 12 29 | 703 | 0.3+ | 0.6+ | 2006 07 18 | E12 | 0.4+ | 0.5+ | 2006 09 30 | E12 | 0.6− | 1.5− |
| 2003 12 29 | 703 | 0.2− | 0.5+ | 2006 07 18 | E12 | 0.4+ | 0.4+ | 2006 09 30 | E12 | 0.2− | 0.1− |
| 2003 12 29 | 703 | 1.2− | 0.4+ | 2006 07 18 | E12 | 0.2+ | 0.2+ | 2006 09 30 | E12 | 0.2− | 0.8− |

**(145607)∗ 2006 QK$_{30}$**

Discovered 2006 Aug. 20 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.30233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28552556 | $\omega$ | 245.41227 | | +0.99207593 | +0.07503266 | |
| $a$ | 2.2840524 | $\Omega$ | 110.15493 | | −0.03374443 | +0.93174458 | |
| $e$ | 0.1087783 | $i$ | 6.16245 | | −0.12102342 | +0.35527756 | |
| $P$ | 3.45 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 18 | 691 | 1.2− | 0.1+ | 2003 12 01 | 704 | 0.5− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.5+ |
| 1994 01 18 | 691 | 0.6+ | 0.1− | 2003 12 01 | 704 | 0.2+ | 0.7− | 2006 08 20 | 644 | 0.4− | 0.0 |
| 1994 01 18 | 691 | 0.1− | 0.2− | 2003 12 01 | 704 | 0.8− | 0.4+ | 2006 08 20 | 644 | 0.2− | 0.0 |
| 1999 08 13 | 699 | 0.5− | 0.4− | 2003 12 01 | 704 | 0.8− | 0.1+ | 2006 08 20 | 644 | 0.4− | 0.1+ |
| 1999 08 13 | 699 | 0.7+ | 0.4+ | 2003 12 16 | 691 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.0 | 0.5+ |
| 1999 08 13 | 699 | 0.2− | 0.3− | 2003 12 16 | 691 | 0.0 | 0.3+ | 2006 08 23 | 704 | 0.1− | 0.1− |
| 2001 01 04 | 691 | 0.7+ | 0.5− | 2003 12 16 | 691 | 0.1− | 0.3+ | 2006 08 23 | 704 | 0.7+ | 0.8+ |
| 2001 01 04 | 691 | 0.2+ | 0.3+ | 2003 12 22 | 704 | 0.4− | 0.4+ | 2006 08 23 | 704 | 0.2− | 0.2− |
| 2001 01 04 | 691 | 0.3+ | 0.5+ | 2003 12 22 | 704 | 1.2+ | 0.3− | 2006 08 23 | 704 | 0.7− | 0.5− |
| 2002 06 13 | 291 | 0.2+ | 0.6+ | 2003 12 22 | 704 | 1.1+ | 0.9+ | 2006 08 28 | 699 | 0.9− | 0.3+ |
| 2002 06 13 | 291 | 0.4+ | 0.6+ | 2003 12 22 | 704 | 0.4− | 0.9+ | 2006 08 28 | 699 | 0.8+ | 0.7+ |
| 2002 06 13 | 291 | 0.6+ | 0.4+ | 2005 03 10 | 703 | 0.2− | 0.9+ | 2006 08 28 | 699 | 1.2+ | 0.7+ |
| 2003 11 19 | 699 | 0.1+ | 0.1− | 2005 03 10 | 703 | 1.2− | 0.1− | 2006 08 28 | 699 | 1.7+ | 0.2− |
| 2003 11 19 | 699 | 0.3− | 0.1+ | 2005 03 10 | 703 | 0.5+ | 0.5+ | 2006 09 20 | 703 | 0.6− | 0.5+ |
| 2003 11 19 | 699 | 0.5+ | 1.2+ | 2005 03 10 | 703 | 1.2− | 0.6− | 2006 09 20 | 703 | 1.1− | 0.6− |
| 2003 11 19 | 699 | 0.1− | 0.8+ | 2005 04 04 | 703 | 0.7− | 0.5− | 2006 09 20 | 703 | 0.3− | 0.2+ |
| 2003 11 19 | 703 | 0.3− | 0.7− | 2005 04 04 | 703 | 0.0 | 1.2+ | 2006 09 20 | 703 | 0.8− | 0.2− |
| 2003 11 19 | 703 | 0.1− | 0.7+ | 2005 04 04 | 703 | 0.2+ | 0.6− | 2006 09 26 | 703 | 0.8− | 0.4− |
| 2003 11 19 | 703 | 0.1+ | 0.3− | 2005 04 04 | 703 | 0.8− | 1.7+ | 2006 09 26 | 703 | 0.6+ | 1.0− |
| 2003 11 19 | 703 | 0.1+ | 0.8+ | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2003 12 01 | 704 | 0.4+ | 0.8+ | 2006 08 14 | 644 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.5− |

**(145608)∗ 2006 QL$_{35}$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.74438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18541286 | $\omega$ | 224.95717 | | +0.99181853 | −0.01980303 | |
| $a$ | 3.0458567 | $\Omega$ | 135.71192 | | +0.05384385 | +0.96061389 | |
| $e$ | 0.0923706 | $i$ | 10.40501 | | −0.11574474 | +0.27718009 | |
| $P$ | 5.32 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 1.3+ | 0.4+ | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.2+ |
| 2001 08 27 | 699 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2001 08 27 | 699 | (1.9− | 0.2−) | 2004 03 23 | 704 | 0.7+ | 1.1+ | 2006 08 23 | 704 | (1.9+ | 0.2+) |
| 2001 08 27 | 699 | (1.8− | 0.8+) | 2004 03 23 | 704 | 1.3+ | 0.9+ | 2006 08 23 | 704 | 1.0+ | 0.5+ |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.2− | 1.0+ | 2006 08 23 | 704 | 0.1+ | 0.9+ |
| 2001 09 18 | 699 | 1.3− | 1.3+ | 2005 05 13 | 691 | 0.1− | 0.1− | 2006 08 23 | 644 | 0.3+ | 0.0 |
| 2001 09 18 | 699 | 1.2− | 0.2+ | 2005 05 13 | 691 | 0.2− | 0.2− | 2006 08 23 | 644 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.5− | 0.2+ | 2005 05 13 | 691 | 0.1− | 0.3− | 2006 08 23 | 644 | 0.3+ | 0.1+ |
| 2001 09 25 | 704 | 1.1+ | 0.6+ | 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.2+ | 0.9+ |
| 2001 09 25 | 704 | 0.4+ | 1.1+ | 2005 06 03 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.7− | 0.2− |
| 2001 09 25 | 704 | 0.5− | 0.3+ | 2005 06 03 | 691 | 0.0 | 0.1+ | 2006 08 28 | 699 | 1.4− | 0.0 |
| 2001 09 25 | 704 | 0.0 | 1.1+ | 2005 06 13 | 691 | 0.1− | 0.1− | 2006 08 28 | 699 | (2.3− | 1.0+) |
| 2001 09 25 | 704 | 0.5− | 0.3− | 2005 06 13 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.9+ |
| 2001 10 15 | 644 | 0.2− | 0.5− | 2005 06 13 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | (2.0+ | 1.9+) |
| 2001 10 15 | 644 | 0.1− | 0.3− | 2006 07 25 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.6+ | 0.2− |
| 2001 10 15 | 644 | 0.2− | 0.2− | 2006 07 25 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.4− |
| 2001 10 23 | 644 | 0.4+ | 0.7− | 2006 07 25 | 644 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.6− |
| 2001 10 23 | 644 | 0.3+ | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.0 |
| 2001 10 23 | 644 | 0.2+ | 0.3− | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.2− | 1.3+ |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 1.2− | 1.1− |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 | | | | |

**(145609)∗ 2006 QU$_{35}$ = 2003 YK$_{133}$ = 2005 JW$_{61}$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104031)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.81594 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26063791 | $\omega$ | 271.88866 | | +0.89959669 | +0.43529184 | |
| $a$ | 2.4272303 | $\Omega$ | 62.30895 | | −0.38315853 | +0.82547572 | |
| $e$ | 0.1794906 | $i$ | 2.28541 | | −0.20955985 | +0.35931998 | |
| $P$ | 3.78 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 17 | 644 | 0.5− | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 16 | 704 | 1.1+ | 1.6+ |
| 2002 06 17 | 644 | 0.2− | 0.9+ | 2006 08 23 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.5+ | 1.2+ |
| 2002 06 17 | 644 | 0.4− | 0.8+ | 2006 08 23 | 704 | 0.9− | 0.7+ | 2006 09 16 | 704 | 0.5+ | 0.8+ |
| 2002 07 05 | 704 | 1.2+ | 0.3− | 2006 08 23 | 704 | 0.8− | 0.6+ | 2006 09 16 | 704 | 1.0+ | 1.1+ |
| 2002 07 05 | 704 | 0.3− | 1.1− | 2006 08 23 | 704 | 0.9− | 0.4+ | 2006 09 16 | 704 | 1.0+ | 1.4+ |
| 2002 07 05 | 704 | 1.5+ | 0.9+ | 2006 08 23 | 704 | 0.3− | 0.2− | 2006 09 19 | 704 | 1.0− | 0.9+ |
| 2002 07 05 | 704 | 0.5+ | 0.8+ | 2006 08 23 | 644 | 0.5− | 0.0 | 2006 09 19 | 704 | 0.5− | 0.3+ |
| 2002 08 08 | 644 | 0.7− | 0.3− | 2006 08 23 | 644 | 0.4− | 0.0 | 2006 09 19 | 704 | 1.4− | 0.2+ |
| 2002 08 08 | 644 | 0.8− | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 19 | 704 | 1.2− | 1.3+ |
| 2002 08 08 | 644 | 0.8− | 0.2− | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.4− | 0.6+ |
| 2003 12 28 | 704 | 0.7+ | 0.9+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 22 | 704 | 0.9+ | 0.4− |
| 2003 12 28 | 704 | 0.3+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.8+ | 0.5− |
| 2003 12 28 | 704 | 0.0 | 0.8+ | 2006 08 28 | 704 | 0.6+ | 1.3+ | 2006 09 22 | 704 | 0.4+ | 0.5− |
| 2003 12 28 | 704 | 0.6− | 0.9+ | 2006 08 28 | 704 | 0.9+ | 0.2+ | 2006 09 22 | 704 | 0.9+ | 0.6− |
| 2003 12 29 | 704 | 0.9− | 0.7+ | 2006 08 28 | 704 | 1.8+ | 0.6+ | 2006 09 22 | 704 | 0.6+ | 1.0− |
| 2003 12 29 | 704 | 0.9− | 1.1+ | 2006 08 28 | 704 | 0.5− | 0.8+ | 2006 09 24 | 608 | 0.6− | 1.4− |
| 2003 12 29 | 704 | 0.8− | 0.6+ | 2006 08 30 | 699 | 0.1+ | 0.2− | 2006 09 24 | 608 | 0.7− | 1.7− |
| 2003 12 30 | 704 | 0.8+ | 0.9+ | 2006 08 30 | 704 | 0.1+ | 0.1+ | 2006 09 24 | 608 | 0.6− | 1.6− |
| 2003 12 30 | 704 | 1.5+ | 1.0+ | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.7− | 0.7+ |
| 2003 12 30 | 704 | 0.6+ | 1.5+ | 2006 08 30 | 699 | 0.3− | 0.1+ | 2006 09 26 | 704 | 1.5+ | 0.4+ |
| 2003 12 30 | 704 | 0.7+ | 0.9+ | 2006 08 30 | 704 | 1.3− | 0.7+ | 2006 09 26 | 704 | 0.2+ | 0.5+ |
| 2005 04 01 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.7+ |
| 2005 04 01 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.3− | 2.0+ |
| 2005 04 01 | 691 | 0.3+ | 0.4+ | 2006 08 30 | 699 | 0.4− | 0.2− | 2006 09 28 | 704 | 0.1− | 0.4− |
| 2005 05 09 | G96 | 0.3− | 0.1+ | 2006 08 31 | 704 | (2.1− | 0.5+) | 2006 09 28 | 704 | 0.3− | 0.3+ |
| 2005 05 09 | G96 | 0.0 | 0.0 | 2006 08 31 | 704 | 1.4− | 0.9− | 2006 09 28 | 704 | 1.4− | 0.2− |
| 2005 05 09 | G96 | 0.2− | 0.1− | 2006 08 31 | 704 | (2.2− | 1.0−) | 2006 09 30 | 703 | 0.4+ | 0.2− |
| 2005 05 09 | G96 | 0.5− | 0.4+ | 2006 08 31 | 704 | 1.4− | 0.1+ | 2006 09 30 | 703 | 1.0+ | 0.5− |
| 2005 05 10 | 691 | 0.5+ | 0.6+ | 2006 09 12 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.5− |
| 2005 05 10 | 691 | 0.1+ | 0.8+ | 2006 09 12 | 704 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2006 07 21 | 703 | 0.6− | 1.1− | 2006 09 12 | 704 | 0.5− | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 2006 07 21 | 703 | 1.4+ | 0.5+ | 2006 09 12 | 704 | 0.4+ | 0.2− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2006 07 21 | 703 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.4− | 0.4− |
| 2006 07 21 | 703 | 0.7+ | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.3− |

**(145610)∗ 2006 QG$_{37}$**

Discovered 2006 Aug. 16 by the Siding Spring Survey at Siding Spring.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.03642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23390391 | $\omega$ | 337.29201 | | +0.75445368 | +0.65182802 | |
| $a$ | 2.6088217 | $\Omega$ | 341.36975 | | −0.55913660 | +0.57688130 | |
| $e$ | 0.0878940 | $i$ | 13.93652 | | −0.34375268 | +0.49226843 | |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.0 | 0.2− | 2003 12 30 | 704 | 0.4− | 0.5+ | 2006 08 28 | E12 | 0.0 | 0.2− |
| 2002 08 12 | 704 | 0.2+ | 0.4+ | 2003 12 30 | 704 | 0.3− | 0.1+ | 2006 08 28 | E12 | 0.6+ | 0.1+ |
| 2002 08 12 | 704 | 0.1+ | 0.4+ | 2003 12 30 | 704 | 0.4+ | 0.5+ | 2006 08 28 | E12 | 0.0 | 0.8+ |
| 2002 08 12 | 704 | 0.5− | 0.1+ | 2004 01 18 | 644 | 0.1− | 0.2+ | 2006 08 28 | E12 | 1.0+ | 0.3− |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2004 01 18 | 644 | 0.3− | 0.0 | 2006 09 10 | E03 | 0.1+ | 0.7− |
| 2002 09 06 | 704 | 0.8− | 0.5+ | 2004 01 18 | 644 | 0.1− | 0.0 | 2006 09 10 | E03 | (1.0− | 1.6−) |
| 2002 09 06 | 704 | 0.5− | 0.3− | 2005 04 14 | 703 | 0.7+ | 0.8+ | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | 0.6− | 0.5+ | 2005 04 14 | 703 | (0.3− | 1.8+) | 2006 09 13 | 644 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.5− | 0.0 | 2005 04 14 | 703 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2002 09 11 | 644 | 0.2− | 0.1+ | 2005 04 14 | 703 | 0.4+ | 1.1+ | 2006 09 14 | 644 | 0.4+ | 0.1− |
| 2002 09 11 | 644 | 0.1− | 0.0 | 2006 07 18 | E12 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2002 09 11 | 644 | 0.1− | 0.0 | 2006 07 18 | E12 | 1.4− | 0.8+ | 2006 09 14 | 644 | 0.6− | 0.2− |
| 2002 09 30 | 704 | 0.5− | 0.3+ | 2006 07 18 | E12 | 0.1+ | 0.2+ | 2006 09 15 | 644 | 0.1+ | 0.0 |
| 2002 09 30 | 704 | 0.3+ | 0.2− | 2006 07 18 | E12 | 1.2− | 0.3+ | 2006 09 15 | 644 | 0.2+ | 0.2+ |
| 2002 09 30 | 704 | 0.4+ | 0.0 | 2006 08 16 | E12 | 0.6− | 0.2− | 2006 09 15 | 644 | 0.0 | 0.2− |
| 2002 09 30 | 704 | 0.4+ | 0.2− | 2006 08 16 | E12 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.6− |
| 2002 10 04 | 704 | 0.3− | 1.1+ | 2006 08 16 | E12 | 1.0+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2002 10 04 | 704 | 0.4− | 0.0 | 2006 08 16 | E12 | 0.7+ | 0.5+ | 2006 10 20 | G96 | 0.4+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.1+ | 0.6+ | 2006 08 17 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.3− | 0.1− | | |
| 2002 10 04 | 704 | 0.2+ | 0.4− | 2006 08 17 | 644 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.5− | | |
| 2003 12 21 | 704 | 0.6+ | 0.4+ | 2006 08 17 | 644 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.5− | | |
| 2003 12 21 | 704 | 0.2+ | 0.4− | 2006 08 23 | 644 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.9− | | |
| 2003 12 21 | 704 | 1.0+ | 0.0 | 2006 08 23 | 644 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.4− | 0.1+ | | |
| 2003 12 30 | 704 | 0.0 | 0.6+ | 2006 08 23 | 644 | 0.2− | 0.1− | | | | | | |

**(145611)∗ 2006 QP$_{42}$ = 1997 TY$_{6}$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104035)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 348.92862 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21180511 | $\omega$ | 229.76770 | | +0.99695485 | | +0.04949887 | | |
| $a$ | 2.7872661 | $\Omega$ | 127.31036 | | −0.02498251 | | +0.93472123 | | |
| $e$ | 0.1045198 | $i$ | 4.34490 | | −0.07387083 | | +0.35191773 | | |
| $P$ | 4.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 910 | 0.4+ | 0.6− | 2002 11 23 | 644 | 0.2− | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.0 | | |
| 1997 10 02 | 910 | 0.6+ | 0.2− | 2005 04 04 | G96 | 0.3+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1+ | | |
| 1997 10 02 | 910 | 0.7+ | 0.3− | 2005 04 04 | G96 | 0.4+ | 0.3+ | 2006 08 24 | 644 | 0.5− | 0.3+ | | |
| 1997 10 04 | 910 | 0.5+ | 0.1− | 2005 04 04 | G96 | 0.5+ | 0.2+ | 2006 08 24 | 644 | 0.4− | 0.1+ | | |
| 1997 10 04 | 910 | 0.5+ | 0.2− | 2005 04 04 | G96 | 0.3+ | 0.2− | 2006 08 24 | 644 | 0.2− | 0.2+ | | |
| 1997 10 04 | 910 | 0.7+ | 0.1+ | 2005 04 30 | 599 | 1.1+ | 0.4+ | 2006 08 28 | 691 | 0.1+ | 0.1+ | | |
| 1998 12 22 | 691 | 0.0 | 0.7+ | 2005 04 30 | 599 | 0.0 | 0.9+ | 2006 08 28 | 691 | 0.1+ | 0.3+ | | |
| 1998 12 22 | 691 | 0.2− | 0.5− | 2005 05 01 | 599 | 0.8+ | 1.3+ | 2006 08 28 | 691 | 0.2+ | 0.0 | | |
| 1998 12 22 | 691 | 0.1− | 0.1+ | 2005 05 01 | 599 | 0.3+ | 0.5+ | 2006 08 28 | 699 | 0.2− | 0.1+ | | |
| 2001 06 18 | 691 | 1.3− | 0.7− | 2005 05 19 | G96 | 0.6+ | 0.3+ | 2006 08 28 | 699 | 0.8+ | 0.8+ | | |
| 2001 06 18 | 691 | 0.7− | 0.0 | 2005 05 19 | G96 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.8− | 0.1+ | | |
| 2001 06 18 | 691 | 0.0 | 0.3+ | 2005 05 19 | G96 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.5+ | | |
| 2001 08 08 | 644 | 1.3+ | 0.2− | 2005 05 19 | G96 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.3− | | |
| 2001 08 08 | 644 | 1.4+ | 0.1− | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.0 | 1.2− | | |
| 2001 08 08 | 644 | 1.3+ | 0.2− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.2+ | | |
| 2002 11 16 | 644 | 0.4− | 1.0+ | 2006 08 16 | 644 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.8− | | |
| 2002 11 16 | 644 | 0.3− | 1.0+ | 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 09 22 | 461 | 0.1+ | 0.3+ | | |
| 2002 11 16 | 644 | 0.6− | 1.0+ | 2006 08 17 | 644 | 0.6+ | 0.2+ | 2006 09 22 | 461 | 0.6− | 0.0 | | |
| 2002 11 23 | 644 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 22 | 461 | 0.1+ | 0.9+ | | |
| 2002 11 23 | 644 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.4− | 0.0 | | | | | | |

**(145612)∗ 2006 QQ$_{45}$**

Discovered 2006 Aug. 19 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 39.75080 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28249159 | $\omega$ | 266.18282 | | +0.45360667 | | +0.88879252 | | |
| $a$ | 2.3003771 | $\Omega$ | 31.06052 | | −0.75898483 | | +0.42378083 | | |
| $e$ | 0.1223513 | $i$ | 7.29230 | | −0.46710064 | | +0.17452127 | | |
| $P$ | 3.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 704 | 0.2− | 0.6+ | 2003 11 20 | 704 | 1.1+ | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.2− | | |
| 2002 05 17 | 704 | 0.4+ | 0.1+ | 2003 11 20 | 704 | 0.2+ | 0.3− | 2006 08 16 | 644 | 0.4+ | 0.1− | | |
| 2002 05 17 | 704 | 0.3− | 0.2− | 2003 11 20 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 644 | 0.2− | 0.3− | | |
| 2002 05 17 | 704 | 0.0 | 0.2+ | 2003 11 24 | 699 | (0.4+ | 1.6+) | 2006 08 19 | 644 | 0.4− | 0.1− | | |
| 2002 06 05 | 644 | 0.0 | 1.2− | 2003 11 24 | 699 | 0.2− | 0.4+ | 2006 08 19 | 644 | 0.2+ | 0.1− | | |
| 2002 06 05 | 644 | 0.2+ | 0.7− | 2003 11 24 | 699 | 1.0− | 0.1− | 2006 08 23 | 644 | 0.3− | 0.3− | | |
| 2002 06 05 | 644 | 0.4+ | 0.8− | 2003 11 24 | 699 | 0.1+ | 0.9− | 2006 08 23 | 644 | 0.0 | 0.3− | | |
| 2002 06 13 | 644 | 0.2− | 0.6+ | 2003 12 17 | 691 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.1− | 0.6− | | |
| 2002 06 13 | 644 | 0.1+ | 0.6+ | 2003 12 17 | 691 | 0.5− | 0.2− | 2006 09 26 | 703 | 1.3+ | 1.3+ | | |
| 2002 06 13 | 644 | 0.4− | 0.7+ | 2003 12 17 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.5+ | | |
| 2003 10 18 | 691 | 0.1− | 0.1− | 2005 04 09 | 703 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.3− | | |
| 2003 10 18 | 691 | 0.3− | 0.2− | 2005 04 09 | 703 | (1.6+ | 2.2−) | 2006 09 26 | 703 | 0.1− | 0.3+ | | |
| 2003 10 18 | 691 | 0.2+ | 0.2− | 2005 04 09 | 703 | 0.8− | 1.3− | 2006 11 27 | G96 | 0.3+ | 0.0 | | |
| 2003 11 19 | 699 | 0.2+ | 1.5+ | 2005 04 09 | 703 | (1.1− | 3.9−) | 2006 11 27 | G96 | 0.1+ | 0.4+ | | |
| 2003 11 19 | 699 | 0.5− | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.6− | 0.4− | | |
| 2003 11 19 | 699 | 0.5+ | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.2− | | |
| 2003 11 19 | 699 | 0.7+ | 1.4− | 2006 08 16 | 644 | 0.1− | 0.0 | | | | | | |
| 2003 11 20 | 704 | 0.6+ | 0.2− | 2006 08 16 | 644 | 0.1− | 0.0 | | | | | | |

**(145613)∗ 2006 QT$_{47}$ = 2005 JN$_{82}$**

Discovered 2006 Aug. 20 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 104038)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 354.72759 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23301982 | $\omega$ | 282.77042 | | +0.99315424 | | −0.10553265 | | |
| $a$ | 2.6154162 | $\Omega$ | 83.30352 | | +0.11677262 | | +0.90786822 | | |
| $e$ | 0.1703796 | $i$ | 2.89002 | | −0.00296719 | | +0.40575628 | | |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 1.1− | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.2− | 0.7+ | | |
| 2002 10 09 | 704 | 0.1+ | 0.3− | 2006 08 20 | 691 | 0.4− | 0.1+ | 2006 09 28 | 704 | 0.1− | 0.8− | | |
| 2002 10 09 | 704 | 0.8+ | 1.5+ | 2006 08 20 | 691 | 0.1− | 0.5+ | 2006 09 28 | 704 | 0.1− | 1.0+ | | |
| 2002 10 30 | 644 | 0.2+ | 0.5− | 2006 08 20 | 691 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.6+ | 0.4+ | | |
| 2002 10 30 | 644 | 0.0 | 0.5− | 2006 08 24 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4+ | | |
| 2002 10 30 | 644 | 0.0 | 0.7− | 2006 08 24 | 644 | 0.5+ | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.9− | | |
| 2002 11 06 | 704 | 0.2+ | 0.1− | 2006 08 24 | 644 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.2+ | | |
| 2002 11 06 | 704 | 0.7+ | 0.0 | 2006 09 12 | 703 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.0 | 0.9+ | | |
| 2002 11 06 | 704 | 0.3− | 0.3+ | 2006 09 12 | 703 | 0.2+ | 0.9− | 2006 10 16 | 703 | 0.1+ | 0.3+ | | |
| 2002 11 06 | 704 | 1.2− | 0.2+ | 2006 09 12 | 703 | 0.5+ | 1.5− | 2006 10 16 | 703 | 1.1+ | 0.4+ | | |
| 2002 11 22 | 644 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.4+ | 0.3+ | | |
| 2002 11 22 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.6− | | |
| 2002 11 22 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.2+ | | |
| 2004 02 14 | 691 | 0.2− | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.5− | 0.1+ | | |
| 2004 02 14 | 691 | 0.5+ | 0.6+ | 2006 09 16 | 704 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 09 16 | 704 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2005 04 11 | G96 | 0.3− | 0.3+ | 2006 09 16 | 704 | 1.0− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2005 04 11 | G96 | 0.6− | 0.4+ | 2006 09 16 | 704 | (0.2− | 2.8+) | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2005 04 11 | G96 | 0.5+ | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.3− | | |
| 2005 05 07 | G96 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.3− | | |
| 2005 05 07 | G96 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.3+ | 1.5− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2005 05 07 | G96 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.0 | | |
| 2005 05 12 | 691 | 0.5+ | 0.2− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.3− | 0.0 | | |
| 2005 05 12 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2005 05 12 | 691 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.8+ | 0.0 | | |
| 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.0 | | | | | | |
| 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.5+ | | | | | | |

**(145614)∗ 2006 QF$_{48}$ = 1999 TR$_{335}$ = 2005 ET$_{235}$ = 2005 FB$_{11}$**

Discovered 2006 Aug. 21 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 104039)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 16.31956 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26786018 | $\omega$ | 189.73081 | | +0.80051062 | | +0.59874533 | | |
| $a$ | 2.3834019 | $\Omega$ | 133.45573 | | −0.54740833 | | +0.74827597 | | |
| $e$ | 0.1801522 | $i$ | 2.06894 | | −0.24398128 | | +0.28563458 | | |
| $P$ | 3.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 05 | 691 | 0.6− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.5− | 0.5− | | |
| 1994 04 05 | 691 | 0.5+ | 0.2+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.2+ | 0.0 | | |
| 1995 08 30 | 809 | 0.6− | 1.4− | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.4+ | 0.5+ | | |
| 1995 09 20 | 809 | 0.5+ | 0.6+ | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 08 31 | 704 | 0.5+ | 0.8+ | | |
| 1995 09 22 | 809 | 0.8+ | 1.0+ | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.2+ | | |
| 1999 10 09 | 691 | 0.1− | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.5− | | |
| 1999 10 09 | 691 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1− | | |
| 1999 10 09 | 691 | 0.5+ | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.7− | | |
| 2001 01 26 | 691 | 0.5− | 0.6+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.8+ | 0.6+ | | |
| 2001 01 26 | 691 | 0.3+ | 0.4+ | 2006 08 25 | 704 | 0.5+ | 0.5− | 2006 09 18 | 699 | 1.3− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.4− | 0.7+ | 2006 08 25 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.4+ | | |
| 2005 03 03 | 691 | 1.0+ | 0.3+ | 2006 08 25 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.0 | | |
| 2005 03 03 | 691 | 0.4+ | 0.3+ | 2006 08 25 | 704 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.0 | | |
| 2005 03 03 | 691 | 0.9+ | 0.3− | 2006 08 25 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 1.2− | 0.2+ | | |
| 2005 03 10 | G96 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.3− | | |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.4+ | | |
| 2005 03 10 | G96 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.0 | | |
| 2005 03 10 | G96 | 0.5− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.7+ | | |
| 2005 03 16 | G96 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.5− | 2006 09 27 | 704 | 0.5− | 0.1− | | |
| 2005 03 16 | G96 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 09 27 | 704 | 0.9− | 0.6− | | |
| 2005 03 16 | G96 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.4+ | 1.4+ | | |
| 2005 03 16 | G96 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 1.0+ | 1.4+ | | |
| 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | | |
| 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 1.3− | 1.4− | | |
| 2005 04 11 | G96 | 0.6− | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.6− | | |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2006 08 29 | 704 | 0.7− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.6− | | |
| 2006 06 20 | G96 | 0.2− | 0.3− | 2006 08 29 | 704 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.2− | | |
| 2006 06 20 | G96 | 0.7− | 0.9− | 2006 08 29 | 704 | 0.2− | 1.4+ | 2006 11 17 | G96 | 0.1+ | 0.3+ | | |
| 2006 06 20 | G96 | 0.3+ | 0.4− | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2006 08 14 | 644 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2006 08 14 | 644 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.4+ | | |
| 2006 08 14 | 644 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.6− | | |

**(145615)∗ 2006 QL$_{54}$ = 2004 ES$_{110}$**

Discovered 2006 Aug. 17 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104041)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.30126 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20458811 | $\omega$ | 40.80537 | | +0.94893643 | −0.31287806 | |
| $a$ | 2.8524352 | $\Omega$ | 337.33078 | | +0.25534718 | +0.83687096 | |
| $e$ | 0.1174210 | $i$ | 6.00737 | | +0.18524972 | +0.44917070 | |
| $P$ | 4.82 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.5+ | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.1− | 0.5+ | | |
| 1999 02 09 | 691 | 0.8+ | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.6− | 0.2− | | |
| 1999 02 09 | 691 | 0.7+ | 0.1− | 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.5− | | |
| 1999 03 13 | 691 | 0.4− | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.3− | 0.7− | | |
| 1999 03 13 | 691 | 0.1− | 0.5+ | 2006 08 27 | 699 | 0.8+ | 0.7− | 2006 09 19 | 699 | 0.2− | 0.2+ | | |
| 1999 03 13 | 691 | 0.6− | 0.4+ | 2006 08 27 | 699 | 0.6− | 0.2+ | 2006 09 25 | 704 | 1.4− | 1.1+ | | |
| 2001 08 19 | 704 | (2.1− | 1.4−) | 2006 08 27 | 699 | 0.5+ | 0.2+ | 2006 09 25 | 704 | 0.5− | 1.0+ | | |
| 2001 08 19 | 704 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 0.6− | 1.0+ | 2006 09 25 | 699 | 0.6− | 0.1− | | |
| 2001 08 19 | 704 | 0.4− | 0.9+ | 2006 09 12 | 703 | 0.7− | 0.1− | 2006 09 25 | 704 | 0.8+ | 1.2+ | | |
| 2001 08 27 | 699 | 0.1+ | 1.3+ | 2006 09 12 | 703 | 0.2− | 0.5− | 2006 09 25 | 704 | 0.9− | 0.3+ | | |
| 2001 08 27 | 699 | 1.2− | 0.0 | 2006 09 12 | 703 | 0.8− | 0.1− | 2006 09 25 | 699 | 0.0 | 0.4+ | | |
| 2001 08 27 | 699 | 0.3− | 0.2− | 2006 09 12 | 703 | 1.4− | 0.3− | 2006 09 25 | 704 | 1.1− | 0.8− | | |
| 2001 08 27 | 699 | 0.5− | 0.4+ | 2006 09 16 | 699 | 0.9− | 0.1− | 2006 09 25 | 699 | 0.0 | 0.1− | | |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.7+ | 0.2− | 2006 09 30 | 704 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 0.4− | 0.8+ | 2006 09 16 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.9+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.7+ | 0.4+ | 2006 09 30 | 704 | 0.4− | 0.0 | | |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2006 09 17 | 704 | 0.9− | 1.4+ | 2006 10 01 | 703 | 0.4+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.0 | 1.1+ | | |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.8+ | 1.0+ | | |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 10 01 | 703 | 0.6− | 1.6+ | | |
| 2004 03 15 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.4+ | | |
| 2004 03 23 | 691 | 0.1+ | 0.7+ | 2006 09 18 | 704 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.2− | 0.3+ | | |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 704 | (2.3+ | 1.1−) | 2006 10 18 | 691 | 0.1− | 0.4+ | | |
| 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.3− | 2006 11 14 | G96 | 0.4− | 0.0 | | |
| 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.1− | | |
| 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.1+ | | |
| 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.7+ | 2006 11 14 | G96 | 0.0 | 0.1+ | | |
| 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.8− | | | | | | |
| 2006 08 17 | 644 | 0.1− | 0.2− | 2006 09 19 | 699 | 1.0− | 1.3+ | | | | | | |

**(145616)∗ 2006 QV$_{54}$**

Discovered 2006 Aug. 18 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.03576 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17340704 | $\omega$ | 56.63954 | | +0.65724268 | −0.75208175 | |
| $a$ | 3.1848689 | $\Omega$ | 351.72158 | | +0.52717346 | +0.50524826 | |
| $e$ | 0.2418803 | $i$ | 19.91384 | | +0.53862807 | +0.42319881 | |
| $P$ | 5.68 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.4+ | 0.5+ | 2006 08 29 | 699 | 0.3− | 0.4+ | 2006 09 21 | 683 | (0.8− | 1.7−) | | |
| 2000 08 26 | 704 | 0.3− | 0.8+ | 2006 08 29 | 699 | 0.3− | 0.3+ | 2006 09 21 | 683 | 0.7− | 1.0− | | |
| 2000 08 26 | 704 | 1.0− | 0.5− | 2006 08 29 | 699 | 0.3− | 1.1+ | 2006 09 27 | 699 | 0.3− | 0.4+ | | |
| 2000 08 26 | 704 | 0.1− | 0.6− | 2006 08 29 | 699 | 0.2− | 0.8+ | 2006 09 27 | 699 | 0.4+ | 0.1+ | | |
| 2000 09 20 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.4− | 1.2+ | 2006 09 27 | 699 | 0.7− | 0.3− | | |
| 2000 09 20 | 704 | 0.1− | 0.5− | 2006 08 30 | 704 | 0.1− | 1.2+ | 2006 09 27 | 699 | 0.5− | 0.1− | | |
| 2000 09 20 | 704 | 0.2+ | 1.2+ | 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.7− | 0.1+ | | |
| 2001 12 23 | 704 | 0.8− | 0.3− | 2006 08 30 | 704 | 0.2− | 1.0+ | 2006 09 27 | 703 | 0.4− | 0.1+ | | |
| 2001 12 23 | 704 | 0.3+ | 0.1− | 2006 08 30 | 704 | 0.5+ | 1.3+ | 2006 09 27 | 703 | 0.9− | 0.4+ | | |
| 2001 12 23 | 704 | 0.7+ | 0.5− | 2006 08 31 | 704 | (2.6− | 0.7+) | 2006 09 27 | 703 | 0.5− | 0.1+ | | |
| 2001 12 23 | 704 | 0.2− | 0.1− | 2006 08 31 | 704 | (0.6− | 2.9+) | 2006 10 03 | 704 | 1.2+ | 0.3+ | | |
| 2001 12 23 | 704 | 0.1+ | 0.4+ | 2006 08 31 | 704 | (1.1− | 1.6+) | 2006 10 03 | 704 | 0.7+ | 0.3+ | | |
| 2002 01 25 | 704 | 0.2− | 0.9− | 2006 08 31 | 704 | (2.8− | 1.6+) | 2006 10 03 | 704 | 0.6+ | 0.5+ | | |
| 2002 01 25 | 704 | 1.0− | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.4− | 0.5+ | | |
| 2002 01 25 | 704 | (2.3− | 0.1+) | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.5+ | 0.3+ | | |
| 2002 02 21 | 704 | 0.5− | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 02 21 | 704 | 0.4− | 0.1+ | 2006 09 15 | 683 | (1.0+ | 1.5−) | 2006 10 09 | 644 | 0.3− | 0.1+ | | |
| 2002 02 21 | 704 | 1.1+ | 0.8+ | 2006 09 15 | 683 | 0.4+ | 1.0− | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2002 02 21 | 704 | 0.8+ | 0.9+ | 2006 09 15 | 683 | 1.4+ | 0.9− | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2003 03 26 | 644 | 0.8+ | 0.0 | 2006 09 16 | 683 | 0.1− | 0.6− | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 2003 03 26 | 644 | 0.8+ | 0.8+ | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2003 03 26 | 644 | 1.0+ | 0.5+ | 2006 09 16 | 683 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.4+ | | |
| 2003 03 31 | 691 | 1.1+ | 1.1+ | 2006 09 16 | 703 | 1.0− | 0.5− | 2006 10 17 | 703 | 0.4− | 0.0 | | |
| 2003 03 31 | 691 | 0.7+ | 1.1+ | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.2− | | |
| 2003 03 31 | 691 | 0.8+ | 0.9+ | 2006 09 16 | 683 | 0.1− | 1.4+ | 2006 10 17 | 703 | 0.8− | 0.4+ | | |
| 2006 07 21 | G96 | 0.5− | 0.0 | 2006 09 16 | 703 | 1.0− | 0.4+ | 2006 10 22 | 644 | 0.4− | 0.1+ | | |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 17 | 683 | 1.0− | 1.4− | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 09 17 | 683 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 17 | 683 | 0.6− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2006 08 18 | 699 | (0.7− | 2.0+) | 2006 09 18 | 683 | 0.5− | 0.8− | 2006 10 23 | 703 | 0.2+ | 0.8+ | | |
| 2006 08 18 | 699 | 0.3+ | 0.5+ | 2006 09 18 | 683 | 0.4+ | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2006 08 18 | 699 | 0.4− | 0.1+ | 2006 09 18 | 683 | 0.6− | 0.6− | 2006 10 23 | 703 | 0.4+ | 0.5+ | | |
| 2006 08 18 | 699 | 0.7− | 1.0+ | 2006 09 19 | 683 | 1.4+ | 0.6− | 2006 10 23 | 703 | 0.1+ | 0.6+ | | |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 19 | 683 | 1.5+ | 0.4− | 2006 10 23 | 703 | 0.0 | 0.5+ | | |
| 2006 08 24 | 644 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 19 | 683 | 1.1+ | 0.1+ | 2006 10 26 | 704 | 0.5− | 0.8+ | | |
| 2006 08 29 | 703 | 0.8− | 0.7+ | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 10 26 | 704 | 0.6+ | 1.0− | | |
| 2006 08 29 | 703 | 0.0 | 1.2+ | 2006 09 19 | 699 | 0.6− | 0.3+ | 2006 10 26 | 704 | 0.1− | 0.4− | | |
| 2006 08 29 | 703 | 0.8− | 0.1− | 2006 09 19 | 699 | 0.0 | 0.2+ | | | | | | |
| 2006 08 29 | 703 | 1.1− | 0.1− | 2006 09 21 | 683 | (0.2+ | 2.0−) | | | | | | |

**(145617)∗ 2006 QS$_{60}$ = 1993 QB$_{7}$**

Discovered 2006 Aug. 20 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104043)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.70632 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22837869 | $\omega$ | 34.02856 | | +0.92966860 | −0.36396216 | |
| $a$ | 2.6507311 | $\Omega$ | 346.94315 | | +0.25604558 | +0.74959047 | |
| $e$ | 0.1284203 | $i$ | 14.61125 | | +0.26487159 | +0.55285230 | |
| $P$ | 4.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 20 | 809 | 1.6− | 0.6+ | 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.4+ | 0.3+ | | |
| 1993 08 20 | 809 | (2.3− | 1.3+) | 2006 08 20 | 644 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.5− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 20 | 809 | 0.7− | 1.7+ | 2006 08 20 | 644 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.3+ | 0.3− | | |
| 1993 08 24 | 809 | (0.7− | 2.2+) | 2006 08 20 | 644 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.3+ | 0.6+ | | |
| 1993 08 24 | 809 | 0.3− | 1.2+ | 2006 08 23 | 644 | 0.4− | 0.4− | 2006 09 19 | 699 | 0.4− | 0.4+ | | |
| 1993 08 24 | 809 | 1.0− | 0.9+ | 2006 08 23 | 644 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.0 | | |
| 2002 10 06 | 704 | 0.1+ | 0.3+ | 2006 08 23 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.3+ | | |
| 2002 10 06 | 704 | 1.3+ | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 06 | 704 | 0.6− | 0.8+ | 2006 08 28 | 703 | 0.8+ | 0.2− | 2006 09 20 | 704 | 0.4− | 0.0 | | |
| 2002 10 06 | 704 | 0.2+ | 0.6− | 2006 08 28 | 703 | 1.0+ | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.5− | | |
| 2002 10 31 | 704 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 31 | 704 | 1.0− | 0.5− | 2006 09 03 | 152 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.1− | | |
| 2002 10 31 | 704 | 0.9− | 0.2− | 2006 09 03 | 152 | 0.2− | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.3− | | |
| 2002 11 15 | 704 | 0.2− | 1.6− | 2006 09 03 | 152 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.2− | | |
| 2002 11 15 | 704 | 0.4+ | 0.6− | 2006 09 12 | 703 | 1.2− | 1.3+ | 2006 09 25 | 704 | 0.2− | 0.2− | | |
| 2002 11 15 | 704 | 0.9+ | 0.4− | 2006 09 12 | 703 | 0.7− | 1.0+ | 2006 09 25 | 704 | 1.8+ | 1.3+ | | |
| 2002 11 15 | 704 | 0.0 | 1.2+ | 2006 09 12 | 703 | 0.9− | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.1− | | |
| 2002 11 25 | 644 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 0.6− | 1.0+ | 2006 09 25 | 704 | 0.3+ | 0.1+ | | |
| 2002 11 25 | 644 | 0.0 | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 25 | 704 | 1.3− | 0.6+ | | |
| 2002 11 25 | 644 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2004 02 17 | 704 | 0.7+ | 0.9+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2004 02 17 | 704 | 1.0+ | 0.2− | 2006 09 16 | 699 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2004 02 17 | 704 | 0.2+ | 0.1− | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.7− | | |
| 2004 02 17 | 704 | 0.8+ | 0.4+ | 2006 09 16 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.3+ | | |
| 2004 02 23 | 704 | 1.1− | 0.8+ | 2006 09 17 | 704 | 0.3+ | 0.9+ | 2006 10 22 | 703 | 0.0 | 0.9− | | |
| 2004 02 23 | 704 | 0.8+ | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.3− | 2006 10 22 | 703 | 0.0 | 0.4− | | |
| 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 09 17 | 704 | 0.7− | 0.0 | 2006 11 22 | 291 | 0.1+ | 0.0 | | |
| 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 704 | 0.1− | 0.6+ | 2006 11 22 | 291 | 0.2+ | 0.0 | | |
| 2004 03 30 | 691 | 0.2+ | 0.8+ | 2006 09 17 | 704 | 0.1+ | 0.7+ | 2006 11 22 | 291 | 0.5+ | 0.1− | | |
| 2004 03 30 | 691 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 0.3− | 0.3− | | | | | | |

**(145618)∗ 2006 QX$_{78}$ = 1999 EK$_{13}$ = 2004 DH$_{73}$ = 2005 JC$_{157}$**

Discovered 2006 Aug. 23 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 104045)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.32437 | | (2000.0) | | | |
| $n$ | 0.21372908 | $\omega$ | 214.20116 | | +0.98997303 | +0.08104743 |
| $a$ | 2.7705137 | $\Omega$ | 140.64388 | | −0.04833607 | +0.96394479 |
| $e$ | 0.1675551 | $i$ | 10.51192 | | −0.13272913 | +0.25345959 |
| $P$ | 4.61 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.6+ | 0.7− | 2006 08 23 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.8− | 0.3+ | | |
| 1999 03 10 | 691 | 0.1+ | 0.0 | 2006 08 23 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.4+ | | |
| 1999 03 10 | 691 | 0.8+ | 0.4+ | 2006 08 23 | 704 | 0.5+ | 0.5− | 2006 09 16 | 704 | 0.1+ | 0.8+ | | |
| 1999 03 13 | 691 | 0.2− | 0.0 | 2006 08 23 | 704 | 0.7− | 0.6+ | 2006 09 16 | 704 | 0.4+ | 0.2− | | |
| 1999 03 13 | 691 | 0.5− | 0.3− | 2006 08 23 | 644 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.5+ | 0.1+ | | |
| 1999 03 13 | 691 | 0.4− | 0.2− | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 09 16 | 704 | 1.2+ | 0.0 | | |
| 2002 12 03 | 644 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.8+ | | |
| 2002 12 03 | 644 | 0.1− | 0.2+ | 2006 08 28 | 704 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.2+ | 0.3+ | | |
| 2002 12 03 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.6− | 0.0 | | |
| 2002 12 14 | 608 | 0.7− | 0.9− | 2006 08 28 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.1+ | | |
| 2002 12 14 | 608 | 0.6− | 0.9− | 2006 08 28 | 704 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.1− | | |
| 2002 12 14 | 608 | 0.8− | 0.3− | 2006 08 28 | 704 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.2+ | | |
| 2004 02 17 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.1− | 2006 09 20 | 644 | 0.4− | 0.1+ | | |
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.3− | 2006 09 22 | 704 | 0.5− | 1.0+ | | |
| 2004 02 17 | 691 | 0.4+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.8+ | 2006 09 22 | 704 | 0.1− | 0.4+ | | |
| 2004 02 29 | 691 | 0.1+ | 0.6+ | 2006 08 29 | 703 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.2+ | 1.1− | | |
| 2004 02 29 | 691 | 0.0 | 0.6+ | 2006 08 30 | 699 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.7+ | 0.7+ | | |
| 2004 02 29 | 691 | 0.3− | 0.6+ | 2006 08 30 | 699 | 0.0 | 0.6+ | 2006 09 22 | 704 | 0.0 | 0.5− | | |
| 2005 05 04 | 703 | 0.5− | 1.0− | 2006 08 30 | 699 | 0.2− | 0.3+ | 2006 09 25 | 699 | 1.0+ | 0.7+ | | |
| 2005 05 04 | 703 | (2.4− | 1.8−) | 2006 08 30 | 699 | 0.1− | 0.5− | 2006 09 25 | 699 | (2.2+ | 0.7+) | | |
| 2005 05 04 | 703 | 0.6− | 0.5− | 2006 08 31 | 704 | 0.4+ | 0.4− | 2006 09 25 | 699 | 1.0+ | 0.4+ | | |
| 2005 05 04 | 703 | 1.0− | 0.1+ | 2006 08 31 | 704 | 0.7+ | 0.4+ | 2006 09 25 | 699 | 0.4− | 1.1+ | | |
| 2005 05 15 | 644 | 0.2− | 0.3+ | 2006 08 31 | 704 | 1.8+ | 1.5− | 2006 09 26 | 703 | 0.2− | 0.4− | | |
| 2005 05 15 | 644 | 0.1− | 0.3+ | 2006 08 31 | 704 | 0.7− | 0.1− | 2006 09 26 | 703 | 0.7− | 0.0 | | |
| 2005 05 15 | 644 | 0.0 | 0.0 | 2006 08 31 | 704 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.4+ | | |
| 2006 08 06 | 699 | 0.1− | 0.1+ | 2006 09 12 | 704 | 0.7+ | 0.5− | 2006 09 26 | 703 | 0.7− | 0.0 | | |
| 2006 08 06 | 699 | 0.3− | 1.0− | 2006 09 12 | 704 | 0.4+ | 1.1+ | 2006 10 02 | 703 | 0.4− | 0.3− | | |
| 2006 08 06 | 699 | 0.7+ | 0.7+ | 2006 09 12 | 704 | 1.5− | 0.4− | 2006 10 02 | 703 | 0.2− | 1.1− | | |
| 2006 08 06 | 699 | 0.0 | 1.0+ | 2006 09 12 | 704 | 0.0 | 1.0+ | 2006 10 02 | 703 | 0.5+ | 0.4+ | | |
| 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 704 | 0.3+ | 0.8+ | 2006 10 02 | 703 | 0.6− | 1.5− | | |
| 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.2+ | | | | | | |
| 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.2− | | | | | | |

**(145619)∗ 2006 QT$_{80}$ = 2000 FA$_4$**

Discovered 2006 Aug. 24 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 104046)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.06388 | | (2000.0) | | | |
| $n$ | 0.22565886 | $\omega$ | 341.53435 | | +0.64878667 | +0.75351954 |
| $a$ | 2.6719877 | $\Omega$ | 328.65493 | | −0.66992192 | +0.49935614 |
| $e$ | 0.1835139 | $i$ | 11.78311 | | −0.36094386 | +0.42761168 |
| $P$ | 4.37 | $H$ | 15.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.2− | 0.5− | 2005 05 08 | 699 | 0.5+ | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.2− | | |
| 2000 03 25 | 691 | 0.4− | 0.4− | 2005 05 08 | 699 | 0.8+ | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.2− | | |
| 2000 03 25 | 691 | 0.5− | 0.2− | 2005 05 16 | 644 | 0.7+ | 0.0 | 2006 09 06 | 644 | 0.1− | 0.2− | | |
| 2000 03 29 | 691 | 0.2− | 0.1− | 2005 05 16 | 644 | 0.4+ | 0.2+ | 2006 09 15 | 704 | 0.1+ | 0.4+ | | |
| 2000 03 29 | 691 | 0.3− | 0.1− | 2005 05 16 | 644 | 0.5+ | 0.1+ | 2006 09 15 | 704 | 0.2− | 0.6+ | | |
| 2000 03 29 | 691 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 13 | 644 | 0.4+ | 0.2− | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.1− | 0.6+ | | |
| 2002 10 13 | 644 | 0.4+ | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.2− | 0.7+ | | |
| 2002 10 13 | 644 | 0.2+ | 0.0 | 2006 08 24 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.4− | 0.3− | | |
| 2002 10 20 | 644 | 0.2+ | 0.3+ | 2006 08 24 | 704 | 0.4− | 0.5+ | 2006 09 17 | 703 | 0.2− | 0.1+ | | |
| 2002 10 20 | 644 | 0.3− | 0.0 | 2006 08 24 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.7− | | |
| 2002 10 20 | 644 | 0.0 | 0.1+ | 2006 08 24 | 704 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.4− | 0.7+ | | |
| 2002 10 31 | 704 | 0.7+ | 0.0 | 2006 08 27 | 699 | 0.2+ | 0.7− | 2006 09 20 | 699 | 0.6− | 0.1− | | |
| 2002 10 31 | 704 | 0.4− | 0.6− | 2006 08 27 | 699 | 0.6− | 0.1− | 2006 09 20 | 699 | 0.4+ | 0.4− | | |
| 2002 10 31 | 704 | 0.2+ | 0.5− | 2006 08 27 | 699 | 0.1+ | 0.7+ | 2006 09 20 | 699 | 0.1+ | 0.4− | | |
| 2002 10 31 | 704 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.4− | 0.2− | 2006 09 20 | 699 | 0.9− | 0.2− | | |
| 2002 11 25 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 704 | 0.0 | 0.4+ | 2006 09 24 | 106 | 0.4− | 0.5− | | |
| 2002 11 25 | 644 | 0.3+ | 0.6+ | 2006 08 28 | 704 | 0.3+ | 1.0− | 2006 09 24 | 106 | 0.0 | 0.3− | | |
| 2002 11 25 | 644 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.6+ | 0.4− | 2006 09 24 | 106 | 0.2+ | 0.4− | | |
| 2002 12 11 | 644 | 0.6+ | 0.2− | 2006 08 28 | 704 | 0.5+ | 0.2+ | 2006 09 24 | 106 | 0.1− | 0.1− | | |
| 2002 12 11 | 644 | 0.0 | 0.2+ | 2006 08 28 | 704 | 0.6+ | 0.0 | 2006 09 29 | 699 | 0.8+ | 0.0 | | |
| 2002 12 11 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.8− | 2006 09 29 | 699 | 0.1+ | 0.4+ | | |
| 2004 01 17 | 644 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.8− | 1.1+ | 2006 09 29 | 699 | 0.4− | 0.7+ | | |
| 2004 01 17 | 644 | 0.2− | 0.7+ | 2006 08 30 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 703 | 0.2+ | 0.2+ | | |
| 2004 01 17 | 644 | 0.8+ | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.2− | 2006 10 01 | 703 | 0.5+ | 0.3− | | |
| 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 08 30 | 704 | (0.0 | 1.6+) | 2006 10 01 | 703 | 0.4− | 0.4− | | |
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 09 01 | 704 | 0.6+ | 0.5− | 2006 10 01 | 703 | 0.9+ | 0.4− | | |
| 2004 02 17 | 691 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.0 | | |
| 2005 05 08 | 699 | (2.0+ | 1.9−) | 2006 09 01 | 704 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.1− | 0.2− | | |
| 2005 05 08 | 699 | (2.3+ | 0.1+) | 2006 09 01 | 704 | 0.5+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.3− | | |

**(145620)∗ 2006 QE$_{94}$ = 1999 EB$_{15}$**

Discovered 2006 Aug. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104047)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.18586 | | (2000.0) | | | |
| $n$ | 0.19917423 | $\omega$ | 141.62774 | | +0.80021064 | −0.59954551 |
| $a$ | 2.9038930 | $\Omega$ | 255.21566 | | +0.54648163 | +0.73887273 |
| $e$ | 0.1355567 | $i$ | 0.85490 | | +0.24702382 | +0.30759109 |
| $P$ | 4.95 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.6− | 0.5− | 2002 12 07 | 704 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.1− | 0.9− | | |
| 1999 03 10 | 691 | 0.1− | 0.7− | 2002 12 07 | 704 | 0.6− | 0.8− | 2006 08 28 | 703 | 0.4+ | 0.3− | | |
| 1999 03 10 | 691 | 0.7− | 0.2− | 2002 12 07 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.2+ | 0.1+ | 2003 01 08 | 704 | (1.7− | 1.0+) | 2006 08 28 | 703 | 0.4+ | 0.7− |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.7+ | 0.7+ | 2006 08 29 | 704 | 0.2− | 1.2+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2003 01 08 | 704 | 0.3− | 1.0+ | 2006 08 29 | 704 | 0.5+ | 0.9+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2003 01 08 | 704 | 0.5+ | 0.1− | 2006 08 29 | 704 | 0.1− | 0.8− |
| 2001 08 24 | 644 | 0.1+ | 0.7+ | 2006 08 16 | 644 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2001 08 24 | 644 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 08 24 | 644 | 0.2+ | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2001 09 12 | 695 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2001 09 12 | 695 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2001 09 22 | 704 | 1.1− | 0.5− | 2006 08 18 | 644 | 1.0+ | 0.3− | 2006 11 13 | G96 | 0.6+ | 0.3+ |
| 2001 09 22 | 704 | 0.2+ | 0.8− | 2006 08 19 | 691 | 0.1− | 0.4− | 2006 11 13 | G96 | 1.0− | 1.1+ |
| 2001 09 22 | 704 | 0.0 | 0.8+ | 2006 08 19 | 691 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.4− | 0.7+ |
| 2001 09 22 | 704 | 0.5− | 0.3− | 2006 08 19 | 691 | 0.3− | 0.2+ | | | | |

**(145621)∗ 2006 QG$_{95}$ = 2002 AM$_{205}$**

Discovered 2006 Aug. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104048)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.97128 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17805269 | $\omega$ | 267.76409 | | +0.68833263 | | −0.70992060 |
| $a$ | 3.1292267 | $\Omega$ | 137.41166 | | +0.72170788 | | +0.64953545 |
| $e$ | 0.1795080 | $i$ | 12.72236 | | +0.07304736 | | +0.27224336 |
| $P$ | 5.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 27 | 691 | 0.7− | 0.0 | 2001 12 07 | 704 | 0.8− | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.3+ |
| 1992 02 27 | 691 | 0.0 | 0.1+ | 2001 12 07 | 704 | 0.8+ | 0.4+ | 2006 08 29 | 703 | 0.4− | 0.3− |
| 1992 02 27 | 691 | 0.6− | 0.2+ | 2001 12 07 | 704 | (0.3− | 1.6+) | 2006 08 29 | 703 | 0.2+ | 0.5+ |
| 2000 06 25 | 691 | 0.2+ | 0.2+ | 2002 01 08 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.2− | 0.4+ |
| 2000 06 25 | 691 | 0.3+ | 0.1+ | 2002 01 08 | 645 | 0.1+ | 0.1− | 2006 08 29 | 703 | (1.7− | 0.6+) |
| 2000 06 25 | 691 | 0.6+ | 0.0 | 2002 01 09 | 645 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.6− |
| 2000 07 10 | 691 | 0.2+ | 0.4+ | 2002 01 09 | 645 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.1− | 0.3− |
| 2000 07 10 | 691 | 0.0 | 0.0 | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.4− |
| 2000 07 10 | 691 | 0.2+ | 0.1− | 2003 01 28 | 645 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.5+ |
| 2001 08 26 | 644 | 0.6− | 0.2+ | 2003 02 21 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 2001 08 26 | 644 | 0.5− | 0.3+ | 2003 02 21 | 644 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 2001 08 26 | 644 | 0.6− | 0.4+ | 2003 02 21 | 644 | 0.4+ | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 09 23 | 699 | 1.0+ | 1.1+ | 2003 02 21 | 644 | 0.8+ | 0.6+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2001 09 23 | 699 | 0.1+ | 1.4+ | 2003 02 21 | 644 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 09 23 | 699 | 1.0− | 0.4− | 2003 02 21 | 644 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2001 09 23 | 699 | (2.0+ | 1.3+) | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 10 14 | 699 | 0.5− | 0.1− | 2006 08 14 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.0 | 1.2+ |
| 2001 10 14 | 699 | 0.3− | 0.6+ | 2006 08 14 | 644 | 0.3− | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2001 10 14 | 699 | 0.6+ | 0.4− | 2006 08 16 | 644 | 0.7− | 0.1+ | 2006 09 26 | 703 | 1.2+ | 0.2+ |
| 2001 10 14 | 699 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2001 11 17 | 699 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.7− | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.8+ |
| 2001 11 17 | 699 | 0.2− | 0.6+ | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.6− | 0.2− |
| 2001 11 17 | 699 | 0.5− | 0.8+ | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 11 17 | 699 | 0.0 | 0.5+ | 2006 08 17 | 644 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.1− |
| 2001 12 07 | 704 | 0.5+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.1+ | | | | |
| 2001 12 07 | 704 | 0.4+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.1+ | | | | |

**(145622)∗ 2006 QM$_{95}$ = 2005 JH$_{179}$**

Discovered 2006 Aug. 16 by NEAT at Palomar.

Id. G. V. Williams (*MPO* 104048)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.04902 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21905394 | $\omega$ | 278.21235 | | +0.99495269 | | −0.00044738 |
| $a$ | 2.7254319 | $\Omega$ | 81.85502 | | +0.04164925 | | +0.91162620 |
| $e$ | 0.0277909 | $i$ | 5.81787 | | −0.09129343 | | +0.41102004 |
| $P$ | 4.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 688 | 0.6+ | 0.8+ | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.4+ |
| 2000 04 03 | 688 | 1.0+ | 0.4+ | 2005 05 14 | 644 | 0.2− | 0.0 | 2006 08 22 | 644 | 0.0 | 0.6+ |
| 2002 11 01 | 608 | 0.1− | 0.4− | 2005 05 18 | 644 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.5+ |
| 2002 11 01 | 608 | 0.2− | 0.8− | 2005 05 18 | 644 | 0.2+ | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.7+ |
| 2002 11 01 | 608 | 0.5− | 0.4− | 2005 05 18 | 644 | 0.6− | 0.8+ | 2006 08 22 | 644 | 0.1+ | 0.4+ |
| 2002 11 14 | 644 | 0.5− | 0.6+ | 2005 06 16 | G96 | 0.4+ | 0.1− | 2006 08 22 | 644 | 0.0 | 0.6+ |
| 2002 11 14 | 644 | 0.1− | 0.6+ | 2005 06 16 | G96 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.7− | 1.2− |
| 2002 11 14 | 644 | 0.0 | 0.5+ | 2005 06 16 | G96 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.6− |
| 2004 01 18 | 644 | 0.1+ | 0.8+ | 2005 06 16 | G96 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.6+ |
| 2004 01 18 | 644 | 0.1+ | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.7+ | 0.0 |
| 2004 01 18 | 644 | 0.3+ | 0.8+ | 2006 08 16 | 644 | 0.0 | 0.7+ | 2006 09 20 | 703 | (2.1− | 1.8+) |
| 2004 02 15 | 704 | 0.2− | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 703 | (1.8− | 1.7+) |
| 2004 02 15 | 704 | 0.5+ | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 20 | 703 | (1.9− | 0.4+) |
| 2004 02 15 | 704 | 0.5+ | 0.8+ | 2006 08 18 | 644 | 0.2− | 0.5+ | 2006 09 20 | 703 | 0.0 | 0.4+ |
| 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.4+ | | | | |

**(145623)∗ 2006 QL$_{100}$**

Discovered 2006 Aug. 24 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.46990 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30064120 | $\omega$ | 181.26655 | | −0.16001124 | | +0.97794948 |
| $a$ | 2.2068376 | $\Omega$ | 79.53771 | | −0.90445632 | | −0.09078911 |
| $e$ | 0.1039602 | $i$ | 7.84391 | | −0.39541771 | | −0.18807483 |
| $P$ | 3.28 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 704 | 1.7− | 0.8+ | 2002 04 16 | 704 | 0.6+ | 0.2+ | 2005 03 09 | 703 | 0.3+ | 0.9+ |
| 1999 05 18 | 704 | 1.0+ | 0.8− | 2002 05 07 | 704 | 0.4+ | 1.0+ | 2005 03 09 | 703 | (2.4− | 0.5−) |
| 1999 05 18 | 704 | (0.8− | 2.3−) | 2002 05 07 | 704 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.1− |
| 1999 05 18 | 704 | (4.9− | 1.6−) | 2002 05 07 | 704 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.4− | 0.1− |
| 1999 06 15 | 704 | 0.5− | 0.0 | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 1999 06 15 | 704 | 0.1− | 0.0 | 2003 09 26 | 645 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 1999 06 15 | 704 | 0.5− | 0.1+ | 2003 09 27 | 645 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.0 |
| 1999 06 15 | 704 | 0.2+ | 0.5+ | 2003 09 27 | 645 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 1999 06 15 | 704 | 0.4− | 0.3+ | 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.3− |
| 2000 12 01 | 691 | 0.1+ | 0.3− | 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.4+ |
| 2000 12 01 | 691 | 0.3+ | 0.5− | 2003 09 28 | 699 | 1.6− | 0.0 | 2006 08 24 | 644 | 0.3− | 0.4− |
| 2000 12 01 | 691 | 0.3+ | 0.3− | 2003 09 28 | 699 | 0.6− | 1.0+ | 2006 08 28 | E12 | 0.9+ | 0.2− |
| 2002 03 20 | 704 | 0.6+ | 0.1+ | 2003 09 28 | 699 | 0.4+ | 0.5+ | 2006 08 28 | E12 | 0.0 | 0.5+ |
| 2002 03 20 | 704 | 0.8+ | 0.6+ | 2003 09 28 | 699 | 0.6− | 0.7− | 2006 08 28 | E12 | 0.6+ | 0.3− |
| 2002 03 20 | 704 | 0.5+ | 0.1− | 2003 09 30 | 645 | 0.0 | 0.0 | 2006 08 28 | E12 | 0.0 | 0.3− |
| 2002 03 20 | 704 | 1.1+ | 0.0 | 2003 09 30 | 645 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.5− | 1.1− |
| 2002 03 20 | 704 | 0.1+ | 0.7+ | 2003 10 20 | 691 | 0.3− | 0.6+ | 2006 09 20 | 703 | 0.4+ | 0.6− |
| 2002 04 11 | 699 | 0.1− | 0.7+ | 2003 10 20 | 691 | 0.0 | 0.6+ | 2006 09 20 | 703 | 1.4+ | 0.6− |
| 2002 04 11 | 699 | 0.9− | 1.0+ | 2003 10 20 | 691 | 0.3− | 0.7+ | 2006 09 20 | 703 | 0.7− | 1.0− |
| 2002 04 11 | 699 | 0.3− | 0.0 | 2005 03 01 | 703 | 0.1− | 0.3− | 2006 09 26 | 703 | (2.1+ | 2.4+) |
| 2002 04 11 | 699 | 1.4+ | 0.8+ | 2005 03 01 | 703 | 0.5− | 0.8− | 2006 09 26 | 703 | 0.5+ | 0.4− |
| 2002 04 16 | 704 | 0.1− | 0.1− | 2005 03 01 | 703 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.5− |
| 2002 04 16 | 704 | 1.0+ | 0.4− | 2005 03 01 | 703 | 1.4− | 0.7+ | 2006 09 26 | 703 | 0.0 | 1.1+ |
| 2002 04 16 | 704 | 0.5+ | 0.6+ | 2005 03 09 | 703 | 0.9− | 1.1+ | | | | |
| 2002 04 16 | 704 | 1.2+ | 0.5+ | 2005 03 09 | 703 | (2.3− | 0.3−) | | | | |

**(145624)∗ 2006 QB$_{102}$ = 2004 FB$_{3}$**

Discovered 2006 Aug. 27 by Spacewatch at Kitt Peak.

Id. G. V. Williams (*MPO* 104049)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.22369 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21022404 | $\omega$ | 200.31990 | | +0.83965893 | | −0.54301952 |
| $a$ | 2.8012238 | $\Omega$ | 192.58462 | | +0.50450137 | | +0.78673692 |
| $e$ | 0.1021471 | $i$ | 2.66570 | | +0.20112497 | | +0.29355547 |
| $P$ | 4.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.0 | 0.0 | 2005 05 19 | G96 | 0.0 | 0.7+ | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 0.3+ | 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.6+ |
| 2002 11 24 | 644 | 0.2− | 0.3+ | 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.5+ |
| 2002 12 10 | 644 | 0.2− | 1.1+ | 2005 06 06 | 691 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.1− | 0.9+ | 2005 06 06 | 691 | 0.4+ | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 2002 12 10 | 644 | 0.1− | 1.3+ | 2005 06 06 | 691 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2004 03 12 | 644 | 0.6+ | 0.9+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.4− |
| 2004 03 12 | 644 | 0.2+ | 0.6+ | 2006 08 19 | 691 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2004 03 12 | 644 | 0.2+ | 0.8+ | 2006 08 19 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.5+ | 1.0− |
| 2004 03 16 | 599 | 0.2+ | 1.2+ | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2004 03 16 | 599 | 0.5+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2004 03 16 | 599 | 1.2− | 0.7− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.3+ | 0.6− | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2004 03 18 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 1.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.6− | 0.6− |
| 2005 05 19 | G96 | 0.1− | 0.8+ | 2006 08 28 | 703 | 0.6− | 1.3+ | | | | |

**(145625)∗ 2006 QR$_{107}$ = 1996 TA$_{48}$**

Discovered 2006 Aug. 28 by the Lincoln Laboratory Near-Earth Asteroid Research Team at Socorro.

Id. G. V. Williams (*MPO* 104050)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.11415 | | (2000.0) | | | |
| $n$ | 0.28946206 | $\omega$ | 139.44683 | | +0.98491955 | +0.16532179 |
| $a$ | 2.2632974 | $\Omega$ | 211.14852 | | −0.17293795 | +0.93204773 |
| $e$ | 0.1819416 | $i$ | 5.65966 | | −0.00509345 | +0.32242168 |
| $P$ | 3.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.8− | 0.2− | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.3+ |
| 1996 10 04 | 691 | 1.0− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.1− | 1.0+ |
| 1996 10 04 | 691 | (2.4− | 6.1−) | 2006 08 18 | 644 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.9+ |
| 1996 10 12 | 691 | 0.2− | 0.0 | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.3− |
| 1996 10 12 | 691 | 0.4− | 0.1− | 2006 08 27 | 699 | 0.7− | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.1− |
| 1996 10 12 | 691 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.6+ | 0.7− | 2006 09 29 | 704 | 0.6− | 0.0 |
| 1996 10 14 | 691 | 0.4+ | 0.2− | 2006 08 27 | 699 | 0.4− | 0.3+ | 2006 09 30 | 699 | 0.0 | 0.3− |
| 1996 10 14 | 691 | 0.7+ | 0.2− | 2006 08 27 | 699 | 0.5+ | 0.3+ | 2006 09 30 | 699 | 0.7− | 0.0 |
| 1996 10 14 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 699 | 0.3+ | 0.2+ |
| 1996 12 04 | 327 | 0.2− | 0.4+ | 2006 08 28 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 699 | 0.3+ | 0.5+ |
| 1996 12 04 | 327 | 1.0+ | 0.4+ | 2006 08 28 | 704 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.5− | 0.1+ |
| 1996 12 04 | 327 | 0.5+ | 0.3− | 2006 08 28 | 704 | (0.1− | 1.6+) | 2006 10 10 | 644 | 0.4− | 0.1+ |
| 1996 12 04 | 327 | 0.8+ | 0.6+ | 2006 08 28 | 704 | 0.1− | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 1999 07 13 | 704 | 0.6+ | 1.1− | 2006 08 29 | 703 | 0.4− | 0.1− | 2006 10 19 | 291 | 0.4+ | 0.1+ |
| 1999 07 13 | 704 | 1.2+ | 0.2− | 2006 08 29 | 703 | 0.5− | 0.3− | 2006 10 19 | 291 | 0.1+ | 0.1+ |
| 1999 07 13 | 704 | 0.5− | 0.2− | 2006 08 29 | 703 | 0.5− | 0.3− | 2006 10 19 | 291 | 0.1+ | 0.1+ |
| 1999 07 13 | 704 | 1.2+ | 1.0− | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 10 20 | 291 | 0.1+ | 0.1− |
| 2002 05 10 | 704 | 0.2+ | 0.1+ | 2006 09 01 | 704 | 0.6− | 0.2− | 2006 10 20 | 291 | 0.2+ | 0.0 |
| 2002 05 10 | 704 | 0.4+ | 0.9+ | 2006 09 01 | 704 | 0.3+ | 0.2− | 2006 10 20 | 291 | 0.1− | 0.1− |
| 2002 05 10 | 704 | 0.4+ | 0.6+ | 2006 09 01 | 704 | 0.4− | 0.3+ | 2006 10 21 | 291 | 0.3+ | 0.1− |
| 2002 05 17 | 644 | 0.3+ | 0.7+ | 2006 09 01 | 704 | 0.3− | 0.1− | 2006 10 21 | 291 | 0.2+ | 0.1− |
| 2002 05 17 | 644 | 0.1+ | 0.7+ | 2006 09 01 | 704 | 0.5− | 0.4+ | 2006 10 21 | 291 | 0.1+ | 0.1− |
| 2002 05 17 | 644 | (1.1+ | 2.3+) | 2006 09 11 | 703 | 0.4− | 0.2− | 2006 10 23 | 291 | 0.3+ | 0.0 |
| 2003 12 01 | 704 | 0.3+ | 0.2− | 2006 09 11 | 703 | 0.1− | 0.3− | 2006 10 23 | 291 | 0.3+ | 0.1+ |
| 2003 12 01 | 704 | 0.1− | 0.6− | 2006 09 11 | 703 | 0.9− | 0.5+ | 2006 10 23 | 291 | 0.6+ | 0.6− |
| 2003 12 01 | 704 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.3+ | 0.6− | 2006 11 10 | 704 | 0.3+ | 1.0+ |
| 2003 12 01 | 704 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.7− | 0.0 | 2006 11 10 | 704 | 0.2+ | 1.1+ |
| 2003 12 01 | 704 | 0.1− | 0.7− | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 11 10 | 704 | 0.5+ | 0.4− |
| 2003 12 22 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 11 10 | 704 | 0.4+ | 0.9+ |
| 2003 12 22 | 704 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.9− | 0.1− | 2006 11 11 | 703 | 0.8− | 0.5+ |
| 2003 12 22 | 704 | 1.3+ | 0.5+ | 2006 09 18 | 704 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.4+ | 1.0+ |
| 2003 12 22 | 704 | 0.5+ | 0.0 | 2006 09 18 | 704 | 0.2+ | 1.1+ | 2006 11 11 | 703 | 0.1− | 0.8+ |
| 2003 12 22 | 704 | 0.3+ | 1.3+ | 2006 09 18 | 704 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.9+ |
| 2005 03 03 | 691 | 0.0 | 0.4+ | 2006 09 18 | 704 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.7− | 0.2+ |
| 2005 03 03 | 691 | 0.5+ | 0.1− | 2006 09 18 | 704 | 0.3− | 0.3− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2005 03 03 | 691 | 0.1− | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2005 04 12 | G96 | 0.8− | 0.3+ | 2006 09 20 | 699 | 0.4+ | 0.4− | 2006 11 13 | G96 | 1.1− | 0.2+ |
| 2005 04 12 | G96 | 0.4− | 0.6+ | 2006 09 20 | 699 | 0.5− | 0.0 | 2006 11 18 | 703 | 0.9− | 0.8+ |
| 2005 04 12 | G96 | 0.4− | 0.3+ | 2006 09 20 | 699 | 0.4− | 0.1− | 2006 11 18 | 703 | 0.7− | 0.2+ |
| 2005 04 12 | G96 | 0.7− | 0.1+ | 2006 09 25 | 704 | 0.4− | 0.2− | 2006 11 18 | 703 | 1.0− | 0.7+ |
| 2005 05 14 | G96 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.5− | 2006 11 18 | 703 | 0.4− | 0.2+ |
| 2005 05 14 | G96 | 0.0 | 0.6+ | 2006 09 25 | 704 | 0.3+ | 0.0 | | | | |
| 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.1− | 0.2− | | | | |

**(145626)∗ 2006 QT$_{119}$ = 2002 GY$_{173}$**

Discovered 2006 Aug. 28 by the Lowell Observatory Near-Earth Object Search at the Anderson Mesa Station.

Id. G. V. Williams (*MPO* 104052)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.43590 | | (2000.0) | | | |
| $n$ | 0.29460723 | $\omega$ | 217.60159 | | +0.85976685 | +0.49679778 |
| $a$ | 2.2368685 | $\Omega$ | 112.21233 | | −0.43204164 | +0.83108405 |
| $e$ | 0.2053732 | $i$ | 7.34097 | | −0.27228841 | +0.24998253 |
| $P$ | 3.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 25 | 691 | 0.5− | 0.2+ | 2005 03 10 | 699 | 0.0 | 0.7− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2000 12 25 | 691 | 0.5− | 0.4+ | 2006 08 10 | 644 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2000 12 25 | 691 | 0.4− | 0.6+ | 2006 08 10 | 644 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2001 02 17 | 691 | 0.0 | 0.2+ | 2006 08 10 | 644 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2001 02 17 | 691 | 0.8+ | 0.5− | 2006 08 28 | 699 | 0.7− | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1− |
| 2001 02 17 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2002 04 10 | 704 | 0.3+ | 1.1+ | 2006 08 28 | 699 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.4− | 0.2− |
| 2002 04 10 | 704 | 0.5− | 0.8+ | 2006 08 28 | 699 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2002 04 10 | 704 | 0.2− | 1.4+ | 2006 08 30 | 704 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.1− | 1.0+ |
| 2002 04 10 | 704 | 0.2− | 0.8+ | 2006 08 30 | 704 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 2002 04 16 | 704 | 0.7+ | 0.3− | 2006 08 30 | 704 | 0.7− | 0.6+ | 2006 10 21 | 703 | 0.6+ | 0.5+ |
| 2002 04 16 | 704 | 1.1+ | 0.5− | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.2+ | 1.0+ |
| 2002 04 16 | 704 | 0.7− | 0.3+ | 2006 09 12 | 704 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 04 16 | 704 | 1.5+ | 0.3− | 2006 09 12 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2003 11 18 | 691 | 0.1+ | 0.1− | 2006 09 12 | 704 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 704 | 0.6+ | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.9+ |
| 2003 11 18 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.5− |
| 2003 12 01 | 704 | 0.2+ | 0.6− | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.1− |
| 2003 12 01 | 704 | (2.2+ | 0.5+) | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.7+ |
| 2003 12 01 | 704 | 0.7+ | 0.4− | 2006 09 19 | 703 | 0.5− | 0.3− | 2006 11 23 | 703 | 0.7+ | 0.7+ |
| 2003 12 01 | 704 | (0.4+ | 1.8−) | 2006 09 25 | 703 | 0.2+ | 0.2− | 2006 11 23 | 703 | 0.3+ | 0.6+ |
| 2003 12 01 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 703 | 0.1− | 0.5− | 2006 11 23 | 703 | 0.9+ | 1.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2006 09 25 | 703 | 0.2+ | 0.4− | 2006 11 23 | 703 | 0.9+ | 0.3+ |
| 2003 12 17 | 691 | 0.2− | 0.2− | 2006 09 25 | 703 | 0.1− | 0.7− | 2006 11 27 | G92 | 0.1− | 0.4+ |
| 2003 12 17 | 691 | 0.1+ | 0.2− | 2006 10 04 | 703 | 0.9− | 0.4+ | 2006 11 27 | G92 | 0.0 | 0.1+ |
| 2005 03 10 | 699 | 1.4+ | 1.1+ | 2006 10 04 | 703 | 1.2− | 0.4+ | 2006 11 27 | G92 | 0.0 | 0.8− |
| 2005 03 10 | 699 | 0.6− | 1.0+ | 2006 10 04 | 703 | 0.5− | 0.2+ | | | | |
| 2005 03 10 | 699 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.2− | | | | |

**(145627)∗ 2006 RY$_{102}$**

Discovered 2006 Sept. 14 by NEAT at Palomar.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.60459 | | (2000.0) | | | |
| $n$ | 0.06235074 | $\omega$ | 345.05009 | | +0.16121651 | −0.93380262 |
| $a$ | 6.2985654 | $\Omega$ | 94.88394 | | +0.93519192 | +0.04114198 |
| $e$ | 0.2752979 | $i$ | 18.69756 | | +0.31531779 | +0.35541525 |
| $P$ | 15.81 | $H$ | 11.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 05 07 | 260 | 0.3− | 0.2− | 2005 07 27 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.1− |
| 1983 05 07 | 260 | 0.0 | 0.1− | 2005 07 27 | 644 | 0.6+ | 0.3+ | 2006 10 03 | E12 | 0.7+ | 0.2− |
| 1992 11 25 | 372 | 0.6+ | 0.8+ | 2005 08 04 | 644 | 0.2+ | 0.3+ | 2006 10 03 | E12 | 0.4− | 1.1− |
| 1992 11 25 | 372 | 1.6− | 1.5+ | 2005 08 04 | 644 | 0.1+ | 0.0 | 2006 10 03 | E12 | 0.1+ | 0.2− |
| 2002 06 04 | 644 | 0.2+ | 0.8+ | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 10 03 | E12 | 0.8+ | 0.1+ |
| 2002 06 04 | 644 | 0.6+ | 0.7+ | 2005 08 28 | E12 | 0.1+ | 0.5− | 2006 10 12 | E12 | 0.2+ | 0.0 |
| 2002 06 04 | 644 | 0.1+ | 0.2− | 2005 08 28 | E12 | 0.1+ | 0.0 | 2006 10 12 | E12 | 0.5+ | 0.2+ |
| 2004 07 13 | E12 | (1.1+ | 2.5−) | 2005 08 28 | E12 | 0.4− | 0.3− | 2006 10 12 | E12 | 0.2− | 0.4+ |
| 2004 07 13 | E12 | (2.5+ | 2.6−) | 2005 08 28 | E12 | 0.2− | 0.5− | 2006 10 12 | E12 | 0.2+ | 0.1+ |
| 2004 07 13 | E12 | 0.2− | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 10 16 | 693 | 0.0 | 0.1− |
| 2004 07 13 | E12 | 0.9− | 0.9+ | 2006 08 14 | 644 | 0.0 | 0.2− | 2006 10 16 | 693 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | 644 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.2− | 2006 10 16 | 693 | 0.0 | 0.2− | | |
| 2005 07 04 | 644 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.4− | 0.2− | 2006 10 16 | 693 | 0.1− | 0.2− | | |
| 2005 07 04 | 644 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.4− | 0.0 | | |
| 2005 07 19 | 644 | 0.2+ | 0.4+ | 2006 09 14 | 644 | 0.4− | 0.2− | 2006 11 17 | 644 | 0.1− | 0.1− | | |
| 2005 07 19 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.8− | 2006 11 17 | 644 | 0.3+ | 0.1− | | |
| 2005 07 19 | 644 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.1− | | | | | | |
| 2005 07 27 | 644 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.3+ | | | | | | |

## (145628)∗ 2135 P-L = 2000 UF$_{62}$

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 7400)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.60773 | | (2000.0) | | | |
| $n$ | 0.32105162 | $\omega$ | 9.11299 | | +0.94705747 | +0.32056800 |
| $a$ | 2.1122864 | $\Omega$ | 332.16936 | | −0.29692575 | +0.85336348 |
| $e$ | 0.1883861 | $i$ | 2.19008 | | −0.12213616 | +0.41110452 |
| $P$ | 3.07 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.8+ | 0.3+ | 2003 10 21 | 704 | (2.1+ | 0.8+) | 2006 09 17 | 704 | 0.6+ | 1.4− | | |
| 1960 09 24 | 675 | 0.3− | 0.6− | 2003 10 21 | 704 | 0.4− | 1.0+ | 2006 09 17 | 704 | 1.1− | 0.2+ | | |
| 1960 09 26 | 675 | 0.1+ | 1.0+ | 2003 10 21 | 704 | (2.2+ | 0.7+) | 2006 09 17 | 704 | 0.3+ | 1.3− | | |
| 1960 09 26 | 675 | 0.1− | 1.4− | 2003 10 21 | 704 | (1.8− | 0.5+) | 2006 09 19 | 699 | 0.2− | 0.1+ | | |
| 1960 09 28 | 675 | 1.3+ | 0.4+ | 2003 10 21 | 704 | (3.1+ | 1.2+) | 2006 09 19 | 703 | 0.8− | 0.6− | | |
| 1960 09 28 | 675 | 0.1+ | 0.6− | 2003 10 21 | 704 | (2.2− | 0.1−) | 2006 09 19 | 699 | 0.4+ | 0.1+ | | |
| 1960 09 29 | 675 | 0.9− | 1.3− | 2003 10 21 | 704 | (2.0+ | 0.5+) | 2006 09 19 | 703 | 0.7− | 0.5− | | |
| 1960 10 25 | 675 | 0.7− | 0.2+ | 2003 10 21 | 704 | 0.3− | 1.2+ | 2006 09 19 | 703 | 0.6− | 0.8− | | |
| 1960 10 26 | 675 | 0.3− | 1.7+ | 2003 10 21 | 704 | (2.1+ | 1.0+) | 2006 09 19 | 699 | 0.8+ | 0.3− | | |
| 2000 10 25 | 704 | 1.3− | 0.6+ | 2003 10 25 | 704 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.9− | 0.8− | | |
| 2000 10 25 | 704 | 0.7− | 0.4− | 2003 10 25 | 704 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | | |
| 2000 10 25 | 704 | 0.0 | 0.4− | 2003 10 25 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.8+ | | |
| 2000 10 25 | 704 | 0.2+ | 0.4+ | 2003 10 25 | 704 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.8+ | 0.6+ | | |
| 2000 10 25 | 704 | 0.2− | 0.2− | 2003 10 25 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.3+ | 1.0+ | | |
| 2000 11 01 | 704 | 0.6− | 0.2− | 2003 10 30 | 704 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.0 | 0.8+ | | |
| 2000 11 01 | 704 | 1.1+ | 0.1− | 2003 10 30 | 704 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.2+ | 1.0+ | | |
| 2000 11 01 | 704 | 0.3+ | 1.0− | 2003 10 30 | 704 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.2+ | | |
| 2000 11 03 | 704 | 0.1+ | 0.2− | 2003 10 30 | 704 | 0.5− | 0.7+ | 2006 09 23 | 691 | 0.2− | 0.0 | | |
| 2000 11 03 | 704 | 0.0 | 0.1− | 2003 10 30 | 704 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.0 | | |
| 2000 11 03 | 704 | 0.1− | 0.1+ | 2003 10 30 | 704 | 0.7+ | 0.2− | 2006 09 24 | 106 | 0.3− | 0.9− | | |
| 2000 11 03 | 704 | 0.5+ | 0.0 | 2003 10 30 | 704 | 0.6− | 0.1− | 2006 09 24 | 106 | 0.5− | 0.3+ | | |
| 2000 11 03 | 704 | 0.7+ | 0.2− | 2003 11 01 | 704 | 0.1− | 0.1+ | 2006 09 24 | 106 | 0.3+ | 0.2− | | |
| 2003 09 17 | 644 | 0.1+ | 0.0 | 2003 11 01 | 704 | 0.4− | 0.4+ | 2006 09 24 | 106 | 0.0 | 0.4− | | |
| 2003 09 17 | 644 | 0.0 | 0.3+ | 2003 11 01 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.5+ | | |
| 2003 09 17 | 644 | 0.2+ | 0.2+ | 2003 11 01 | 704 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.1+ | 1.0+ | | |
| 2003 09 19 | 699 | 0.1+ | 0.2+ | 2005 03 08 | G96 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.3− | 0.3+ | | |
| 2003 09 19 | 699 | 0.3− | 0.3+ | 2005 03 08 | G96 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.0 | 0.2+ | | |
| 2003 09 19 | 699 | 1.0+ | 0.2+ | 2005 03 08 | G96 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.9+ | 0.3− | | |
| 2003 09 19 | 699 | 0.1+ | 0.3− | 2005 03 08 | G96 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 1.3+ | 0.2− | | |
| 2003 09 19 | 699 | 0.8− | 0.0 | 2005 04 09 | G96 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.2− | | |
| 2003 09 19 | 699 | 0.3+ | 0.7+ | 2005 04 09 | G96 | 0.2− | 0.0 | 2006 09 27 | 704 | (1.7+ | 0.1−) | | |
| 2003 09 19 | 699 | 0.7− | 0.1− | 2005 04 09 | G96 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 1.4+ | 0.1+ | | |
| 2003 09 19 | 699 | 0.0 | 0.7+ | 2005 04 09 | G96 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.6− | 0.7+ | | |
| 2003 09 20 | 704 | 0.3+ | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 27 | 704 | 1.0+ | 0.2− | | |
| 2003 09 20 | 704 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | 1.3− | 0.2+ | | |
| 2003 09 20 | 704 | 0.4− | 0.7+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | (1.8− | 0.4+) | | |
| 2003 09 20 | 704 | 0.6+ | 0.6+ | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 29 | 704 | (1.6− | 0.3+) | | |
| 2003 09 20 | 704 | 0.1+ | 0.2− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 1.5− | 0.1+ | | |
| 2003 09 21 | 608 | 0.1− | 1.2− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | (1.7− | 0.2+) | | |
| 2003 09 21 | 608 | 0.4− | 0.8− | 2006 08 28 | 691 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.1− | 0.8− | | |
| 2003 09 21 | 608 | 0.1+ | 0.9− | 2006 08 28 | 691 | 0.2− | 0.0 | 2006 10 01 | 703 | 0.4− | 0.2− | | |
| 2003 09 22 | 644 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.1− | 0.0 | 2006 10 01 | 703 | 0.2− | 0.1+ | | |
| 2003 09 22 | 644 | 0.3+ | 0.1− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 01 | 703 | 0.1− | 0.4+ | | |
| 2003 09 22 | 644 | 0.3+ | 0.1− | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2003 09 27 | 704 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.1− | | |
| 2003 09 27 | 704 | 0.1− | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | | |
| 2003 09 27 | 704 | 1.0− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2003 09 27 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2003 09 27 | 704 | 1.0− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2003 10 16 | 691 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.3− | | |
| 2003 10 16 | 691 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2003 10 16 | 691 | 0.2+ | 0.3− | 2006 09 17 | 704 | 1.2+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2003 10 21 | 704 | (3.7− | 0.7−) | 2006 09 17 | 704 | 0.1+ | 0.7− | 2006 11 15 | G96 | 0.9+ | 1.0+ | | |

## (145629)∗ 2188 P-L = 1999 VN$_{78}$

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (MPC 38003)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.46282 | | (2000.0) | | | |
| $n$ | 0.27859707 | $\omega$ | 113.51210 | | +0.76481551 | −0.64323713 |
| $a$ | 2.3217655 | $\Omega$ | 286.54183 | | +0.57650134 | +0.70832662 |
| $e$ | 0.1711858 | $i$ | 2.15821 | | +0.28758206 | +0.29072220 |
| $P$ | 3.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.4− | 0.2+ | 1999 11 14 | 704 | 1.1+ | 1.1+ | 2004 01 30 | 704 | 0.7+ | 1.3+ | | |
| 1960 09 26 | 675 | 0.6+ | 0.3+ | 1999 11 14 | 704 | 0.7+ | 0.8− | 2004 01 30 | 704 | 0.4+ | 0.9+ | | |
| 1960 09 28 | 675 | 0.0 | 0.4− | 1999 11 14 | 704 | 0.5+ | 0.9− | 2004 04 13 | 645 | 0.1− | 0.0 | | |
| 1960 09 29 | 675 | 1.1+ | 0.6− | 1999 11 14 | 704 | 0.5+ | 0.0 | 2004 04 13 | 645 | 0.0 | 0.0 | | |
| 1960 10 17 | 675 | 1.1− | 0.1− | 1999 11 14 | 704 | 0.8− | 1.0− | 2006 09 06 | 644 | 0.3− | 0.4+ | | |
| 1960 10 22 | 675 | 1.1− | 1.1− | 1999 11 15 | 691 | 0.1− | 0.2− | 2006 09 06 | 644 | 0.0 | 0.1+ | | |
| 1960 10 25 | 675 | 1.1+ | 1.1+ | 1999 11 15 | 691 | 0.2− | 0.2− | 2006 09 06 | 644 | 0.3− | 0.3+ | | |
| 1960 10 26 | 675 | 0.2+ | 0.4+ | 1999 11 15 | 691 | 0.2− | 0.2− | 2006 09 14 | A50 | 0.1+ | 0.3− | | |
| 1997 01 31 | 691 | 0.6− | 0.1− | 1999 11 16 | 691 | 0.0 | 0.2− | 2006 09 14 | A50 | 0.3+ | 0.2+ | | |
| 1997 01 31 | 691 | 0.2+ | 0.4− | 1999 11 16 | 704 | (0.9+ | 2.4+) | 2006 09 17 | 703 | 0.1+ | 0.4− | | |
| 1997 01 31 | 691 | 0.4− | 0.5− | 1999 11 16 | 691 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.8− | 0.4− | | |
| 1999 10 09 | 703 | 0.2− | 0.1− | 1999 11 16 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.1− | | |
| 1999 10 09 | 703 | 0.2− | 0.7+ | 1999 11 16 | 704 | 0.4− | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.0 | | |
| 1999 10 09 | 703 | 0.0 | 1.4+ | 1999 11 16 | 704 | 0.4+ | 0.6− | 2006 09 17 | 703 | 0.0 | 0.1− | | |
| 1999 10 09 | 703 | 0.4− | 0.4− | 1999 11 17 | 691 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 1999 10 10 | 704 | 0.1− | 0.5+ | 1999 11 17 | 691 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.2− | 0.4− | | |
| 1999 10 10 | 704 | 0.0 | 0.4+ | 1999 11 17 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.2+ | | |
| 1999 10 10 | 704 | 0.7+ | 0.6+ | 2003 12 18 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 1.0+ | | |
| 1999 10 10 | 704 | 1.3+ | 0.5+ | 2003 12 18 | 644 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.7+ | 0.1+ | | |
| 1999 10 10 | 704 | 0.2+ | 0.6+ | 2003 12 18 | 644 | 0.7+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.2+ | | |
| 1999 10 15 | 704 | 0.4+ | 0.3+ | 2003 12 19 | 704 | (2.0+ | 0.5−) | 2006 09 25 | 704 | 0.4− | 0.2+ | | |
| 1999 10 15 | 704 | 0.6− | 0.1− | 2003 12 19 | 704 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.2− | 1.3+ | | |
| 1999 10 15 | 704 | 1.3− | 0.7− | 2003 12 19 | 704 | 0.8+ | 1.4− | 2006 09 25 | 704 | 0.6− | 0.8+ | | |
| 1999 10 15 | 704 | 0.3+ | 0.2+ | 2003 12 19 | 704 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 1999 10 21 | 704 | 0.6+ | 0.3+ | 2004 01 12 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.5− | 0.1+ | | |
| 1999 10 21 | 704 | 0.2− | 0.5+ | 2004 01 12 | 644 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 1999 10 21 | 704 | 0.4− | 0.2− | 2004 01 12 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.1− | 0.1− | | |
| 1999 10 21 | 704 | 0.4− | 0.3+ | 2004 01 13 | 699 | 0.4− | 1.4+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 1999 10 21 | 704 | 0.5− | 0.1+ | 2004 01 13 | 699 | (1.1− | 1.6+) | 2006 09 27 | 699 | 0.2− | 0.3− | | |
| 1999 11 04 | 691 | 0.2− | 0.1− | 2004 01 13 | 699 | 0.1− | 0.8− | 2006 09 27 | 699 | 0.7+ | 0.5+ | | |
| 1999 11 04 | 704 | 0.8+ | 0.3− | 2004 01 13 | 699 | 0.0 | 0.8+ | 2006 09 27 | 699 | 0.1− | 0.9+ | | |
| 1999 11 04 | 691 | 0.4− | 0.1− | 2004 01 17 | 644 | 0.3− | 0.3+ | 2006 09 27 | 699 | 0.7+ | 0.0 | | |
| 1999 11 04 | 704 | 0.5+ | 0.3− | 2004 01 17 | 644 | 0.4− | 0.3+ | 2006 09 29 | 704 | 0.9+ | 0.1+ | | |
| 1999 11 04 | 704 | 0.5− | 1.0− | 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.6+ | 0.4− | | |
| 1999 11 04 | 691 | 0.3− | 0.2− | 2004 01 19 | 691 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.5+ | 0.0 | | |
| 1999 11 04 | 703 | 0.4+ | 0.0 | 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.2+ | 0.2+ | | |
| 1999 11 04 | 704 | 0.8+ | 0.7− | 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.9+ | | |
| 1999 11 04 | 703 | 0.6+ | 0.5+ | 2004 01 21 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.2+ | | |
| 1999 11 04 | 704 | 0.2− | 1.4− | 2004 01 21 | 704 | 0.8+ | 0.5+ | 2006 10 17 | 703 | 0.7− | 0.7+ | | |
| 1999 11 04 | 703 | 0.1+ | 0.8+ | 2004 01 21 | 704 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.3+ | | |
| 1999 11 04 | 703 | 0.0 | 0.4+ | 2004 01 21 | 704 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.4− | | |
| 1999 11 05 | 704 | 0.0 | 0.6− | 2004 01 24 | 704 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 1999 11 05 | 704 | 0.6+ | 0.3− | 2004 01 24 | 704 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 1999 11 05 | 704 | 0.4+ | 0.6− | 2004 01 24 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 1999 11 05 | 704 | 0.2− | 0.1− | 2004 01 24 | 704 | 1.0+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 1999 11 05 | 704 | 0.4+ | 0.4+ | 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.1+ | 0.1+ | 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 1999 11 10 | 691 | 0.0 | 0.0 | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.5− |
| 1999 11 10 | 691 | 0.2+ | 0.3+ | 2004 01 30 | 704 | 0.8+ | 0.1+ | | | | |

**(145630)∗ 2214 P-L = 1997 OP$_2$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (MPC 38732)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.49829 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23679067 | $\omega$ | 70.43136 | | +0.93976915 | −0.33964612 | |
| $a$ | 2.5875753 | $\Omega$ | 309.40447 | | +0.29202191 | +0.85618475 | |
| $e$ | 0.0930950 | $i$ | 2.84850 | | +0.17764335 | +0.38934327 | |
| $P$ | 4.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.1− | 1.8− | 2005 06 28 | G96 | (0.2− | 2.4+) | 2006 11 14 | 703 | 0.7+ | 0.5− |
| 1960 09 24 | 675 | 0.6− | 0.9− | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 14 | 703 | (2.3− | 2.4−) |
| 1960 09 26 | 675 | 0.1+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 1960 09 26 | 675 | 0.4− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.7+ |
| 1960 09 28 | 675 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.2− |
| 1960 09 28 | 675 | 0.4+ | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 1960 09 29 | 675 | 0.8+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.6+ |
| 1997 07 31 | 691 | 0.5+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 1997 07 31 | 691 | 0.6+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 1997 07 31 | 691 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 1997 08 07 | 691 | 0.3− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 1997 08 07 | 691 | 0.5− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | (1.6+ | 0.2−) |
| 1997 08 07 | 691 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.8+ | 0.7− |
| 2002 11 12 | 704 | (0.5− | 1.8+) | 2006 10 23 | 644 | 1.0− | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2002 11 12 | 704 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.3− | 2006 11 19 | 704 | 1.0+ | 0.1− |
| 2002 11 12 | 704 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 19 | 704 | (2.4+ | 0.0 ) |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.5− |
| 2002 12 06 | 704 | 0.8− | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.2− | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2002 12 06 | 704 | 0.1− | 0.5+ | 2006 10 29 | 704 | 0.7− | 0.9+ | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 10 29 | 704 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.0 | 2006 10 29 | 704 | 0.7+ | 0.5− | 2006 11 22 | 704 | 0.5− | 1.3+ |
| 2002 12 11 | 704 | 0.4+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 27 | 104 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 0.2− | 1.0+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 27 | 104 | 0.3+ | 0.2+ |
| 2002 12 11 | 704 | (0.5− | 1.7+) | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 27 | 104 | 1.4+ | 0.1+ |
| 2004 04 17 | 691 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 28 | 104 | 1.4− | 0.1− |
| 2004 04 17 | 691 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.5− | 0.1+ | 2006 11 28 | 104 | 1.3− | 1.1+ |
| 2004 04 17 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.1− | 2006 11 28 | 104 | (2.1+ | 3.2−) |
| 2005 06 28 | G96 | (0.5− | 1.8+) | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 28 | 104 | 0.1+ | 0.0 |
| 2005 06 28 | G96 | 1.0+ | 1.4+ | 2006 11 14 | 703 | 0.2+ | 0.1− | | | | |
| 2005 06 28 | G96 | (0.3− | 2.6+) | 2006 11 14 | 703 | 0.2+ | 0.1+ | | | | |

**(145631)∗ 2215 P-L**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.49245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17126228 | $\omega$ | 167.64394 | | +0.60952357 | −0.78976440 | |
| $a$ | 3.2114037 | $\Omega$ | 244.76029 | | +0.72070865 | +0.58824820 | |
| $e$ | 0.1711467 | $i$ | 4.37133 | | +0.33024242 | +0.17388575 | |
| $P$ | 5.75 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.9+ | 0.3− | 2001 11 21 | 704 | 0.9− | 1.0− | 2001 12 19 | 704 | 0.3− | 0.1+ |
| 1960 09 24 | 675 | 0.2+ | 0.0 | 2001 11 21 | 704 | (0.1− | 2.2−) | 2001 12 19 | 704 | 0.4− | 0.7+ |
| 1960 09 26 | 675 | 0.6+ | 1.0− | 2001 11 27 | 644 | 0.5+ | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.4+ |
| 1960 09 26 | 675 | 0.2− | 0.4+ | 2001 11 27 | 644 | 0.7+ | 0.0 | 2002 01 13 | 691 | 0.7+ | 0.3+ |
| 1960 09 28 | 675 | 0.1+ | 0.0 | 2001 11 27 | 644 | 0.1+ | 0.8− | 2002 01 13 | 691 | 0.6+ | 0.3+ |
| 1960 09 28 | 675 | 1.0+ | 0.7− | 2001 12 07 | 691 | 1.1− | 0.0 | 2002 01 13 | 691 | 0.5+ | 0.5+ |
| 1960 10 17 | 675 | (1.2− | 2.9−) | 2001 12 07 | 691 | 0.1− | 0.5− | 2002 01 15 | 704 | 0.2− | 0.2+ |
| 1960 10 22 | 675 | 1.2− | 1.0− | 2001 12 07 | 691 | 0.4+ | 0.4− | 2002 01 15 | 704 | 0.0 | 0.1+ |
| 1960 10 25 | 675 | (0.8− | 3.0−) | 2001 12 08 | 699 | 0.7− | 0.4− | 2002 01 15 | 704 | 0.4+ | 0.3+ |
| 1960 10 26 | 675 | 0.1− | 0.7− | 2001 12 08 | 699 | 1.5+ | 0.8+ | 2002 01 15 | 704 | 1.2+ | 0.2+ |
| 1991 01 16 | 691 | 0.4+ | 0.1+ | 2001 12 08 | 699 | 0.4− | 0.3− | 2002 01 19 | 691 | 0.3− | 0.8− |
| 1991 01 16 | 691 | 0.1+ | 1.0+ | 2001 12 08 | 699 | 0.1− | 0.1− | 2002 01 19 | 691 | 0.1− | 0.2+ |
| 1991 01 16 | 691 | 0.2− | 0.4+ | 2001 12 10 | 704 | 1.0− | 1.3− | 2002 01 19 | 691 | 0.4+ | 0.0 |
| 2001 10 21 | 704 | 0.5− | 0.6+ | 2001 12 10 | 704 | 0.7+ | 0.5+ | 2006 08 15 | 644 | 0.4− | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2001 12 10 | 704 | 0.2+ | 0.9+ | 2006 08 15 | 644 | 0.2− | 0.4+ |
| 2001 10 21 | 704 | 0.5+ | 0.1+ | 2001 12 10 | 704 | 0.4− | 1.5+ | 2006 08 15 | 644 | 0.2+ | 0.2+ |
| 2001 11 09 | 704 | 0.6+ | 0.2− | 2001 12 13 | 644 | 0.1+ | 0.2+ | 2006 08 19 | 644 | 0.7− | 0.3+ |
| 2001 11 09 | 704 | 1.3+ | 0.1+ | 2001 12 13 | 644 | 0.3− | 0.2+ | 2006 08 19 | 644 | 0.4− | 0.5+ |
| 2001 11 09 | 704 | 1.2+ | 0.8+ | 2001 12 13 | 644 | 0.3+ | 0.3+ | 2006 08 19 | 644 | 0.6− | 0.3+ |
| 2001 11 09 | 704 | 1.1+ | 0.3+ | 2001 12 14 | 291 | 0.6+ | 0.3− | 2006 08 24 | 704 | 0.0 | 0.7+ |
| 2001 11 09 | 704 | 0.5+ | 0.4+ | 2001 12 14 | 704 | 0.4− | 0.3− | 2006 08 24 | 704 | (0.4+ | 1.7+) |
| 2001 11 16 | 291 | 0.1+ | 0.3− | 2001 12 14 | 704 | 0.5− | 0.3− | 2006 08 24 | 704 | 0.0 | 0.8+ |
| 2001 11 16 | 291 | 0.1+ | 0.2− | 2001 12 14 | 291 | 0.2+ | 0.2− | 2006 08 28 | 699 | 1.0+ | 1.4+ |
| 2001 11 16 | 291 | 0.2− | 0.2− | 2001 12 14 | 704 | 0.4+ | 0.2− | 2006 08 28 | 699 | 0.2− | 1.2+ |
| 2001 11 19 | 699 | 0.4+ | 0.1+ | 2001 12 14 | 291 | 0.4+ | 0.2− | 2006 08 28 | 699 | 0.0 | 0.4− |
| 2001 11 19 | 699 | 0.5− | 1.2+ | 2001 12 14 | 704 | 0.5+ | 0.4− | 2006 08 28 | 699 | 0.3+ | 0.0 |
| 2001 11 19 | 699 | 0.2+ | 0.0 | 2001 12 14 | 704 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.8+ | 0.2+ |
| 2001 11 19 | 699 | 0.6− | 0.6+ | 2001 12 17 | 704 | 0.4+ | 0.6− | 2006 08 29 | 703 | 0.7− | 0.6− |
| 2001 11 19 | 704 | 0.7− | 0.5+ | 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.9− | 0.1+ |
| 2001 11 19 | 704 | 1.2− | 0.2− | 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.3− |
| 2001 11 19 | 704 | 0.7− | 0.6+ | 2001 12 17 | 704 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 1.1− | 0.5+ | 2001 12 17 | 704 | 0.5+ | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.5− | 0.3− | 2001 12 17 | 291 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.5+ |
| 2001 11 21 | 704 | 0.4− | 0.3− | 2001 12 17 | 291 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.4− | 0.1− |
| 2001 11 21 | 704 | (0.1− | 1.6−) | 2001 12 17 | 291 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.7− | 0.7− | 2001 12 18 | 291 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2001 11 21 | 704 | (0.1+ | 1.6−) | 2001 12 18 | 291 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3+ |
| 2001 11 21 | 704 | 1.0− | 1.2− | 2001 12 18 | 291 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 11 21 | 704 | 0.4− | 1.1− | 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.7+ |
| 2001 11 21 | 704 | (0.6− | 1.7−) | 2001 12 19 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.3+ |

**(145632)∗ 2216 P-L = 2001 TJ$_{86}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 20649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.62237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19238908 | $\omega$ | 158.43330 | | +0.98937559 | −0.11817550 | |
| $a$ | 2.9717740 | $\Omega$ | 208.75673 | | +0.09371239 | +0.96370174 | |
| $e$ | 0.1792410 | $i$ | 10.13766 | | +0.11114825 | +0.23940239 | |
| $P$ | 5.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.3+ | 2.5− | 2001 10 13 | 699 | (2.8+ | 0.6+) | 2001 11 21 | 704 | 0.4− | 0.4− |
| 1960 09 24 | 675 | 0.4+ | 0.7− | 2001 10 13 | 699 | 0.6− | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.1+ |
| 1960 09 26 | 675 | 0.3+ | 0.8− | 2001 10 13 | 699 | 0.3− | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.1+ |
| 1960 09 26 | 675 | 0.3+ | 0.1− | 2001 10 13 | 699 | 0.1+ | 0.2− | 2003 01 28 | 645 | 0.0 | 0.1+ |
| 1960 09 28 | 675 | 0.4− | 1.8− | 2001 10 14 | 704 | 0.3+ | 0.9+ | 2003 01 28 | 645 | 0.0 | 0.0 |
| 1960 09 28 | 675 | 0.1− | 1.5− | 2001 10 14 | 704 | 0.1− | 0.6+ | 2005 06 02 | G96 | 0.4+ | 0.2+ |
| 2001 09 17 | 704 | 0.2+ | 0.4+ | 2001 10 14 | 704 | 0.0 | 0.4− | 2005 06 02 | G96 | 0.2− | 0.7+ |
| 2001 09 17 | 704 | 0.9− | 0.4+ | 2001 10 14 | 704 | 0.7− | 0.6+ | 2005 06 02 | G96 | 0.2− | 0.3+ |
| 2001 09 17 | 704 | 0.4− | 0.7+ | 2001 10 14 | 704 | 0.0 | 0.8+ | 2005 06 02 | G96 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | 1.2− | 1.7+ | 2001 10 15 | 608 | 0.9− | 1.3− | 2005 06 11 | 691 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 1.1− | 1.8+ | 2001 10 15 | 608 | 1.2− | 0.9− | 2005 06 11 | 691 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | 1.1− | 1.9+ | 2001 10 15 | 608 | 0.6+ | 1.1− | 2005 06 11 | 691 | 0.3− | 0.9+ |
| 2001 09 23 | 704 | 0.1− | 0.9+ | 2001 10 17 | 704 | 0.5− | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 2001 09 24 | 704 | 0.7+ | 0.0 | 2001 10 17 | 704 | 0.7− | 0.5− | 2006 09 17 | 703 | 0.3− | 0.2+ |
| 2001 09 24 | 704 | 1.8+ | 0.0 | 2001 10 17 | 704 | 0.6− | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 0.3+ | 0.6+ | 2001 10 17 | 704 | 1.0+ | 0.7+ | 2006 09 17 | 703 | 0.5+ | 0.2− |
| 2001 09 24 | 704 | 1.1+ | 0.0 | 2001 10 17 | 704 | 0.4− | 1.0+ | 2006 09 20 | 699 | 0.9− | 1.4+ |
| 2001 09 24 | 704 | 0.9+ | 1.1+ | 2001 10 18 | 644 | 0.1− | 0.3+ | 2006 09 20 | 699 | 1.2+ | 0.3+ |
| 2001 09 27 | 704 | 0.3− | 0.6− | 2001 10 18 | 644 | 0.1− | 0.3+ | 2006 09 20 | 699 | 1.5− | 0.1+ |
| 2001 09 27 | 704 | 1.0− | 0.8− | 2001 10 18 | 644 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 27 | 704 | 0.4− | 0.1− | 2001 10 21 | 704 | 0.7+ | 1.3− | 2006 09 29 | 699 | 0.4+ | 0.1− |
| 2001 09 27 | 704 | 0.0 | 0.3− | 2001 10 21 | 704 | 0.3− | 0.4− | 2006 09 29 | 699 | 0.7− | 0.4+ |
| 2001 09 28 | 644 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.4+ | 0.4− | 2006 09 29 | 699 | 0.1+ | 0.2− |
| 2001 09 28 | 644 | 0.2+ | 0.2+ | 2001 10 21 | 704 | 0.9+ | 0.2− | 2006 09 29 | 699 | (2.4− | 0.2−) |
| 2001 09 28 | 644 | 0.3+ | 0.2− | 2001 10 21 | 704 | 0.2+ | 0.5− | 2006 10 01 | 703 | 0.7+ | 0.2+ |
| 2001 10 11 | 644 | 0.1+ | 0.9+ | 2001 11 21 | 704 | 0.7− | 0.5− | 2006 10 01 | 703 | 1.4+ | 0.1− |
| 2001 10 11 | 644 | 0.5+ | 1.1+ | 2001 11 21 | 704 | 0.7− | 0.6+ | 2006 10 01 | 703 | 1.1− | 0.1− |
| 2001 10 11 | 644 | 0.4+ | 0.7+ | 2001 11 21 | 704 | 0.2− | 0.5− | 2006 10 01 | 703 | 0.7+ | 1.2+ |

**(145633)∗ 2227 P-L = 2002 QM$_{21}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 35415)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.33685 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25757821 | $\omega$ | 49.99828 | | +0.89537355 | −0.44460343 | |
| $a$ | 2.4464141 | $\Omega$ | 336.36715 | | +0.38703872 | +0.80491829 | |
| $e$ | 0.2041462 | $i$ | 3.60114 | | +0.22024357 | +0.39298133 | |
| $P$ | 3.83 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.6− | 0.4− | 2002 09 16 | 644 | 0.6− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 1960 09 24 | 675 | 0.8+ | 0.3+ | 2002 09 16 | 644 | 0.3− | 0.3+ | 2006 10 03 | 691 | 0.3− | 0.4− |
| 1960 09 26 | 675 | 1.1− | 0.2− | 2002 09 17 | 644 | 0.2− | 0.2+ | 2006 10 03 | 691 | 0.2+ | 0.0 |
| 1960 09 26 | 675 | 0.2− | 0.1+ | 2002 09 17 | 644 | 0.3− | 0.5+ | 2006 10 03 | 691 | 0.1+ | 0.2− |
| 1960 09 28 | 675 | 1.0− | 0.2− | 2002 09 17 | 644 | 0.6− | 0.5+ | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 1960 09 28 | 675 | 0.3+ | 0.0 | 2002 09 18 | 644 | 0.4− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 1960 10 22 | 675 | 0.9− | 1.3− | 2002 09 18 | 644 | 1.0− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.2− |
| 1960 10 25 | 675 | 2.0+ | 0.9+ | 2002 09 18 | 644 | 0.2− | 0.4+ | 2006 10 17 | 703 | (0.8+ | 1.6+) |
| 1960 10 26 | 675 | 1.8+ | 1.1− | 2002 10 03 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 703 | (1.9+ | 1.5+) |
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2002 10 03 | 704 | 1.0+ | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 2002 08 28 | 644 | 0.6− | 0.1− | 2002 10 03 | 704 | 0.2+ | 1.0+ | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 2002 08 28 | 644 | 0.2− | 0.4+ | 2002 10 03 | 704 | 0.0 | 0.7+ | 2006 10 19 | 704 | 0.3+ | 1.0− |
| 2002 08 29 | 644 | 0.3− | 0.0 | 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 10 19 | 704 | 0.2+ | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.1− | 2002 10 06 | 704 | 0.2− | 0.6− | 2006 10 19 | 704 | 0.3− | 0.2− |
| 2002 08 29 | 644 | 0.2− | 0.1− | 2002 10 06 | 704 | 0.0 | 0.9− | 2006 10 19 | 704 | 1.1+ | 0.9+ |
| 2002 08 30 | 699 | 0.3+ | 0.4+ | 2002 10 06 | 704 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 08 30 | 699 | 0.2− | 1.0+ | 2002 10 11 | 704 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 08 30 | 699 | 0.8+ | 0.0 | 2002 10 11 | 704 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.4− |
| 2002 08 30 | 699 | 0.2+ | 0.3− | 2002 10 11 | 704 | 0.6+ | 1.1− | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 2002 08 30 | 644 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.4+ | 0.8− | 2006 10 21 | 703 | 0.8− | 0.4− |
| 2002 08 30 | 644 | 0.2+ | 0.4− | 2004 02 17 | 691 | 0.6+ | 0.7+ | 2006 10 21 | 703 | 1.4− | 0.1− |
| 2002 08 30 | 644 | 0.0 | 0.3− | 2004 02 17 | 691 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.2+ | 0.2− |
| 2002 09 05 | 704 | 0.1+ | 0.4+ | 2004 02 17 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.2+ | 2006 11 07 | 644 | 1.1− | 0.6+ |
| 2002 09 05 | 704 | (0.3+ | 1.7+) | 2006 09 20 | 699 | 0.5+ | 0.5− | 2006 11 07 | 644 | 0.3− | 0.1+ |
| 2002 09 12 | 644 | 0.4− | 1.2+ | 2006 09 25 | 704 | 0.1− | 0.5+ | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2002 09 12 | 644 | 0.2− | 1.1+ | 2006 09 25 | 704 | 0.5− | 1.0+ | 2006 11 14 | 703 | 0.3+ | 0.3+ |
| 2002 09 12 | 644 | 0.3− | 1.3+ | 2006 09 25 | 704 | 0.3− | 0.4+ | 2006 11 14 | 703 | 0.8+ | 0.8+ |
| 2002 09 14 | 644 | 0.5− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.4+ |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.5+ | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2002 09 15 | 699 | 0.9+ | 0.4+ | 2006 09 29 | 691 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2002 09 15 | 699 | 0.4+ | 0.6− | 2006 09 29 | 691 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.5− |
| 2002 09 15 | 699 | 0.2+ | 0.1+ | 2006 09 29 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 09 15 | 699 | 0.3− | 1.0+ | 2006 10 02 | 691 | 0.0 | 0.1+ | | | | |
| 2002 09 16 | 644 | 0.5− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.2− | | | | |

**(145634)∗ 2516 P-L = 2001 QS$_{26}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 15986)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.07577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21579674 | $\omega$ | 3.44440 | | +0.98512674 | −0.17082051 | |
| $a$ | 2.7527882 | $\Omega$ | 6.48064 | | +0.15345196 | +0.82591570 | |
| $e$ | 0.1846225 | $i$ | 9.48118 | | +0.07731624 | +0.53729285 | |
| $P$ | 4.57 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.6+ | 1.6+ | 2001 09 19 | 704 | 0.1− | 0.1+ | 2003 03 07 | 644 | (0.4+ | 1.8+) |
| 1960 09 26 | 675 | 0.0 | 0.4− | 2001 09 19 | 704 | 0.4+ | 0.3− | 2003 03 07 | 644 | (0.1− | 1.6+) |
| 1960 09 28 | 675 | 0.6+ | 0.4+ | 2001 09 19 | 704 | 0.3+ | 0.2− | 2003 03 07 | 644 | (0.4+ | 1.7+) |
| 1960 09 29 | 675 | 0.1− | 0.9− | 2001 09 19 | 704 | 0.2+ | 0.5− | 2003 03 07 | 644 | 0.6+ | 1.0+ |
| 1960 10 17 | 675 | 0.9− | 0.0 | 2001 09 19 | 704 | 0.2+ | 0.0 | 2003 03 07 | 644 | 0.6+ | 0.7+ |
| 1960 10 22 | 675 | 0.5− | 0.7+ | 2001 09 21 | 704 | 0.3− | 0.4+ | 2003 03 07 | 644 | 0.1− | 0.8+ |
| 1960 10 25 | 675 | 0.9− | 0.6+ | 2001 09 21 | 704 | 0.5+ | 0.3+ | 2004 04 20 | 691 | 0.1+ | 0.6+ |
| 1960 10 26 | 675 | 0.2+ | 0.7− | 2001 09 21 | 704 | 0.0 | 0.1+ | 2004 04 20 | 691 | 0.4+ | 0.4+ |
| 2001 08 11 | 608 | 0.6+ | 0.2+ | 2001 09 21 | 704 | 0.5− | 0.1+ | 2004 04 20 | 691 | 0.4+ | 0.7+ |
| 2001 08 11 | 608 | 0.8+ | 0.4+ | 2001 09 21 | 704 | 0.6− | 0.5+ | 2006 09 18 | 703 | 0.1− | 1.2+ |
| 2001 08 11 | 608 | 0.2+ | 0.1+ | 2001 09 21 | 704 | 0.3− | 0.0 | 2006 09 18 | 703 | 1.0+ | 0.5+ |
| 2001 08 16 | 704 | 0.5+ | 0.6+ | 2001 09 21 | 704 | 0.9+ | 1.0+ | 2006 09 18 | 703 | 1.5+ | 1.3− |
| 2001 08 16 | 704 | 0.6− | 0.1+ | 2001 09 21 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | (0.7+ | 2.2−) |
| 2001 08 16 | 704 | 0.7− | 0.9+ | 2001 09 21 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.5+ |
| 2001 08 16 | 704 | 0.4− | 0.4+ | 2001 10 13 | 704 | (1.5+ | 1.7−) | 2006 09 25 | 704 | (1.1− | 2.5−) |
| 2001 08 18 | 704 | 0.2+ | 0.1− | 2001 10 13 | 704 | 0.7− | 0.3+ | 2006 09 25 | 704 | 0.6− | 0.0 |
| 2001 08 18 | 704 | 0.2+ | 0.1+ | 2001 10 13 | 704 | (0.8− | 1.6−) | 2006 09 25 | 704 | 0.2− | 0.5− |
| 2001 08 18 | 704 | 0.5+ | 0.3− | 2001 10 13 | 704 | 0.9− | 0.5− | 2006 09 25 | 704 | 0.4+ | 0.6− |
| 2001 08 25 | 704 | 1.0+ | 0.6+ | 2001 10 13 | 704 | 0.7− | 1.3− | 2006 10 20 | 704 | 0.2− | 0.7+ |
| 2001 08 25 | 704 | 0.0 | 0.6+ | 2001 10 17 | 644 | 0.0 | 0.4+ | 2006 10 20 | 704 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 1.2− | 0.4+ | 2001 10 17 | 644 | 0.0 | 0.4+ | 2006 10 20 | 704 | 0.1− | 0.8− |
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2001 10 17 | 644 | 0.1+ | 0.5+ | 2006 10 29 | 703 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 0.4− | 0.5+ | 2001 10 23 | 704 | 0.8+ | 0.1− | 2006 10 29 | 703 | 0.2− | 0.2+ |
| 2001 08 25 | 699 | 0.7+ | 0.2− | 2001 10 23 | 704 | 0.6+ | 0.8− | 2006 10 29 | 703 | 0.2+ | 0.7+ |
| 2001 08 25 | 699 | 0.1− | 0.8− | 2001 10 23 | 704 | 0.8+ | 0.3+ | 2006 10 29 | 703 | 0.1− | 0.3− |
| 2001 08 25 | 699 | 0.2+ | 0.7+ | 2001 10 23 | 704 | 0.7+ | 0.3− | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2001 08 25 | 699 | 0.4− | 0.1+ | 2001 10 23 | 704 | 0.8+ | 0.5+ | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2001 09 07 | 699 | 0.6− | 0.4− | 2001 10 24 | 704 | (1.7− | 0.5−) | 2006 11 13 | 644 | 0.3− | 0.2− |
| 2001 09 07 | 699 | 0.5+ | 1.2− | 2001 10 24 | 704 | 1.3− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.2+ |
| 2001 09 07 | 699 | 0.1+ | 0.3+ | 2001 10 24 | 704 | 0.2− | 1.0− | 2006 11 16 | 704 | 0.0 | 0.8− |
| 2001 09 07 | 699 | 0.7− | 1.1+ | 2001 10 24 | 704 | (2.1− | 0.4−) | 2006 11 16 | 704 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2001 10 24 | 704 | 0.1+ | 0.9− | 2006 11 16 | 704 | 0.7+ | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2001 10 24 | 704 | (2.3− | 0.4+) | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2001 10 24 | 704 | 0.7+ | 0.1− | 2006 11 21 | 703 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2001 10 24 | 704 | 1.4− | 0.0 | 2006 11 21 | 703 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.6− | 2001 11 09 | 704 | 0.4− | 0.9+ | 2006 11 21 | 703 | 0.2− | 0.0 |
| 2001 09 19 | 699 | 0.2− | 0.2+ | 2001 11 09 | 704 | 0.7− | 0.3− | 2006 11 21 | 703 | 0.3− | 0.1+ |
| 2001 09 19 | 699 | 0.5− | 0.4+ | 2001 11 09 | 704 | 0.1− | 0.8+ | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2001 09 19 | 699 | 0.4+ | 0.4− | 2001 11 16 | 644 | 0.4− | 0.5+ | 2006 11 29 | 704 | 0.1− | 0.4+ |
| 2001 09 19 | 699 | 0.4− | 0.5+ | 2001 11 16 | 644 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.9− | 0.5− |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2001 11 16 | 644 | 0.4− | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2003 01 07 | 704 | (0.6+ | 1.5+) | 2006 11 29 | 704 | 0.8− | 0.6+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2003 01 07 | 704 | 1.2+ | 0.2+ | | | | |
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2003 01 07 | 704 | 0.1+ | 0.9+ | | | | |

**(145635)∗ 2585 P-L = 2001 QT$_{271}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 18099)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.47191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21451815 | $\omega$ | 41.91453 | | +0.61195361 | −0.79030079 | |
| $a$ | 2.7637156 | $\Omega$ | 10.48007 | | +0.67353116 | +0.50046149 | |
| $e$ | 0.1984435 | $i$ | 9.69052 | | +0.41457032 | +0.35350099 | |
| $P$ | 4.59 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.4+ | 0.2− | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.4+ | 0.0 | |
| 1960 09 26 | 675 | 0.4− | 0.8− | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.5+ | |
| 1960 09 28 | 675 | 0.9− | 0.2− | 2004 04 19 | 691 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.4+ | |
| 1960 09 29 | 675 | 0.5+ | 0.6+ | 2004 04 19 | 691 | 0.3+ | 0.5+ | 2006 09 27 | 704 | 0.0 | 0.9+ | |
| 1960 10 17 | 675 | 0.6+ | 0.9− | 2004 04 19 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.9+ | 0.5− | |
| 1960 10 22 | 675 | 1.0+ | 2.0− | 2004 04 25 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.8+ | 0.3+ | |
| 1960 10 24 | 675 | 0.3+ | 0.6− | 2004 04 25 | 691 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.3+ | |
| 1960 10 25 | 675 | (2.1+ | 2.6−) | 2004 04 25 | 691 | 0.2+ | 0.6+ | 2006 09 29 | 704 | 0.7− | 0.3+ | |
| 1960 10 26 | 675 | 0.7+ | 0.6+ | 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.3+ | |
| 1960 10 26 | 675 | 0.8+ | 1.3− | 2006 08 24 | 644 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.1+ | |
| 2001 07 27 | 644 | 0.1+ | 0.9+ | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.2+ | |
| 2001 07 27 | 644 | 0.1− | 0.7+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.1+ | |
| 2001 07 27 | 644 | (0.0 | 1.6+) | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 15 | 106 | 0.1+ | 0.1+ | |
| 2001 08 19 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.2− | 2006 10 15 | 106 | 0.0 | 0.1+ | |
| 2001 08 19 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 10 15 | 106 | 0.3+ | 0.2− | |
| 2001 08 19 | 704 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 16 | 106 | 0.4− | 0.2− | |
| 2001 08 19 | 704 | 1.0− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.1+ | |
| 2001 08 22 | 608 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.4− | |
| 2001 08 22 | 608 | 0.8+ | 1.1+ | 2006 09 14 | 703 | 0.8+ | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.0 | |
| 2001 08 22 | 608 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.9+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.3− | |
| 2002 12 15 | 704 | 0.8− | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.3+ | |
| 2002 12 15 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | 1.0− | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.6+ | |
| 2002 12 15 | 704 | 0.0 | 0.7+ | 2006 09 15 | 704 | 0.8− | 0.9+ | 2006 10 17 | 703 | 0.4− | 0.5− | |
| 2002 12 31 | 699 | 0.4+ | 0.4+ | 2006 09 15 | 704 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.3− | |
| 2002 12 31 | 699 | 0.6+ | 0.1− | 2006 09 15 | 704 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.3− | |
| 2002 12 31 | 699 | 0.3+ | 0.2+ | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.3− | |
| 2002 12 31 | 699 | 0.5+ | 1.0+ | 2006 09 16 | 644 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.4− | |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 10 23 | 704 | (1.7+ | 1.5+) | |
| 2003 01 07 | 704 | 0.7+ | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.0 | 2006 10 23 | 704 | 1.1+ | 1.3+ | |
| 2003 01 07 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 1.3− | 0.3+ | 2006 10 23 | 704 | 1.0+ | 1.4+ | |
| 2003 01 07 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.0 | 2006 10 23 | 704 | 0.5+ | 1.0− | |
| 2003 01 07 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.5− | 2006 10 29 | 704 | 0.3− | 0.5− | |
| 2003 01 10 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.2− | 0.7+ | 2006 10 29 | 704 | 0.6− | 0.8+ | |
| 2003 01 10 | 704 | 0.6− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 29 | 704 | 1.2− | 0.1+ | |
| 2003 01 10 | 704 | 1.4+ | 1.1+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 29 | 704 | 0.5− | 0.4+ | |
| 2003 01 10 | 704 | 1.0− | 0.9+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.2− | 0.2− | |
| 2003 01 10 | 704 | 1.2+ | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.3+ | |
| 2003 01 10 | 704 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.4+ | |
| 2003 01 10 | 704 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.1+ | |
| 2003 01 13 | 704 | 0.1+ | 0.7− | 2006 09 20 | 704 | 0.7+ | 0.9+ | 2006 11 11 | 703 | 0.2− | 0.0 | |
| 2003 01 13 | 704 | 0.2+ | 0.4− | 2006 09 20 | 704 | 0.2+ | 1.4+ | 2006 11 11 | 703 | 0.3− | 0.3+ | |
| 2003 01 13 | 704 | 0.1+ | 0.1− | 2006 09 20 | 704 | 1.1+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.4− | |
| 2003 01 13 | 704 | 0.3− | 0.5− | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.5+ | |
| 2003 02 06 | 699 | 0.1+ | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.2− | |
| 2003 02 06 | 699 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.7− | |
| 2003 02 06 | 699 | 0.4− | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.5− | |
| 2003 02 06 | 699 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.5− | |
| 2003 03 07 | 644 | 0.3+ | 1.4+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.1− | 0.1− | |
| 2003 03 07 | 644 | (0.2+ | 1.5+) | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.3− | 0.1− | |
| 2003 03 07 | 644 | 0.4+ | 1.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.2− | |
| 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.0 | |

**(145636)∗ 2597 P-L = 2005 GV$_{25}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 77273)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 35.58165 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.27971351 | $\omega$ | 315.98675 | | | +0.92965511 | | +0.36502786 | |
| $a$ | 2.3155834 | $\Omega$ | 22.74734 | | | −0.29212868 | | +0.81294452 | |
| $e$ | 0.2523899 | $i$ | 7.42380 | | | −0.22450438 | | +0.45373546 | |
| $P$ | 3.52 | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.3+ | 0.2− | 2006 08 29 | 703 | 0.2+ | 0.7+ | 2006 11 15 | 704 | 0.8+ | 0.2+ | |
| 1960 09 26 | 675 | 0.7+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.5+ | |
| 1960 09 28 | 675 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.5+ | |
| 1960 09 29 | 675 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 1.2− | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.7+ | |
| 1960 10 17 | 675 | 0.8− | 0.4− | 2006 09 18 | 703 | 0.2+ | 0.8− | 2006 11 16 | 704 | 0.2− | 0.7+ | |
| 1960 10 22 | 675 | 1.3− | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 704 | (1.6+ | 0.6−) | |
| 1960 10 25 | 675 | 1.4+ | 0.6− | 2006 10 19 | 703 | 0.7− | 1.5+ | 2006 11 16 | 704 | 1.4+ | 0.0 | |
| 1960 10 26 | 675 | 0.9− | 0.2+ | 2006 10 19 | 703 | 0.7− | 0.6+ | 2006 11 16 | 704 | 0.3− | 1.4− | |
| 2001 02 20 | 950 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.9+ | 0.1− | 2006 11 16 | 704 | 0.7− | 0.1− | |
| 2001 02 20 | 950 | 0.2− | 0.4− | 2006 10 19 | 703 | 0.8− | 0.7+ | 2006 11 16 | 704 | 0.4+ | 0.4− | |
| 2001 02 20 | 950 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.6− | 0.8+ | |
| 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.6− | 2006 11 17 | 691 | 0.1+ | 0.1− | |
| 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.1− | |
| 2005 04 02 | G96 | 0.2− | 0.1− | 2006 10 29 | 704 | 0.8+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.3− | |
| 2005 04 02 | G96 | 0.2− | 0.2− | 2006 10 29 | 704 | 0.2+ | 1.2+ | 2006 11 19 | 691 | 0.1− | 0.2− | |
| 2005 04 05 | G96 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 1.3− | 0.2− | |
| 2005 04 05 | G96 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.3− | |
| 2005 04 05 | G96 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.6+ | |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.4+ | |
| 2005 04 09 | 691 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.7+ | |
| 2005 04 09 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.2+ | |
| 2005 04 09 | 691 | 0.2+ | 0.1− | 2006 11 11 | 644 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.3− | |
| 2005 04 17 | 691 | 0.0 | 0.2− | 2006 11 11 | 644 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.3− | |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 644 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1− | |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2− | |
| 2005 05 12 | G96 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3− | |
| 2005 05 12 | G96 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.5− | 0.8+ | 2006 11 22 | 704 | 0.0 | 0.2+ | |
| 2005 05 12 | G96 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.5− | |
| 2005 05 12 | G96 | 0.6− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1− | 0.3− | |
| 2006 08 29 | 703 | 0.8− | 1.0− | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.0 | 0.2− | |
| 2006 08 29 | 703 | (0.1− | 2.2−) | 2006 11 15 | 691 | 0.0 | 0.1+ | | | | | |
| 2006 08 29 | 703 | 0.5− | 0.3+ | 2006 11 15 | 704 | 0.3+ | 0.2+ | | | | | |

**(145637)∗ 2671 P-L = 2001 TD$_{172}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 20649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 354.56033 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.21619548 | $\omega$ | 40.67357 | | | +0.57065646 | | −0.81854872 | |
| $a$ | 2.7494025 | $\Omega$ | 14.91831 | | | +0.67150421 | | +0.41901782 | |
| $e$ | 0.1630449 | $i$ | 14.80788 | | | +0.47268733 | | +0.39294027 | |
| $P$ | 4.56 | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.4− | 1.4− | 2001 10 13 | 704 | 0.1− | 1.2+ | 2001 11 22 | 608 | 0.0 | 1.2− | |
| 1960 09 26 | 675 | 0.6+ | 1.1+ | 2001 10 13 | 704 | (0.3+ | 2.6−) | 2001 11 22 | 608 | 0.3+ | 0.9− | |
| 1960 09 28 | 675 | 0.6+ | 0.2+ | 2001 10 13 | 704 | 0.5− | 0.1− | 2001 11 22 | 608 | 0.6+ | 0.2− | |
| 1960 10 17 | 675 | 0.3+ | 0.5+ | 2001 10 13 | 704 | 0.1− | 1.5+ | 2003 01 26 | 699 | 0.5+ | 0.3+ | |
| 1960 10 22 | 675 | 0.6− | 0.9− | 2001 10 13 | 704 | 0.0 | 0.1− | 2003 01 26 | 699 | 0.2+ | 0.7+ | |
| 1999 04 07 | 691 | 0.1+ | 0.1+ | 2001 10 13 | 704 | 0.9− | 0.4+ | 2003 01 26 | 699 | 0.5+ | 0.7+ | |
| 1999 04 07 | 691 | 0.3+ | 1.1+ | 2001 10 16 | 644 | 0.5+ | 0.8− | 2003 01 26 | 699 | 0.1− | 0.0 | |
| 1999 04 07 | 691 | 0.2+ | 0.3− | 2001 10 16 | 644 | 0.7+ | 0.7− | 2003 03 08 | 699 | 1.1+ | 0.7+ | |
| 2001 08 28 | 644 | 0.7+ | 1.2+ | 2001 10 16 | 644 | 0.6+ | 1.0− | 2003 03 08 | 699 | 1.4+ | 0.0 | |
| 2001 08 28 | 644 | 0.1− | 1.0+ | 2001 10 20 | 704 | (0.5− | 1.8−) | 2003 03 08 | 699 | 0.1− | 0.8+ | |
| 2001 08 28 | 644 | 0.4+ | 1.3+ | 2001 10 20 | 704 | 0.2− | 0.9− | 2003 03 08 | 699 | 0.2− | 0.9+ | |
| 2001 09 11 | 699 | 0.2− | 0.4+ | 2001 10 20 | 704 | 0.7+ | 0.7− | 2003 03 08 | 644 | 0.2+ | 0.6+ | |
| 2001 09 11 | 699 | 0.2+ | 0.5+ | 2001 10 23 | 704 | 0.0 | 0.5+ | 2003 03 08 | 644 | 0.1+ | 0.9+ | |
| 2001 09 11 | 699 | 0.3+ | 0.1− | 2001 10 23 | 704 | 1.4− | 0.1+ | 2003 03 08 | 644 | 0.2+ | 0.7+ | |
| 2001 09 11 | 699 | 0.4+ | 1.1+ | 2001 10 23 | 704 | 0.1− | 0.6− | 2005 08 06 | E12 | 0.1− | 0.3− | |
| 2001 09 12 | 704 | 0.3− | 0.2− | 2001 10 23 | 704 | 0.0 | 1.3+ | 2005 08 06 | E12 | 0.1+ | 0.8+ | |
| 2001 09 12 | 704 | 0.7− | 0.2+ | 2001 10 24 | 704 | 0.5− | 0.3+ | 2005 08 06 | E12 | 0.6− | 0.4+ | |
| 2001 09 12 | 704 | 0.1+ | 1.2+ | 2001 10 24 | 704 | 0.8− | 0.3+ | 2005 08 06 | E12 | 0.1+ | 0.2+ | |
| 2001 09 18 | 699 | 0.1+ | 0.6+ | 2001 10 24 | 704 | 0.6− | 0.0 | 2006 10 02 | 704 | 0.4+ | 0.7+ | |
| 2001 09 18 | 699 | 0.1− | 0.3+ | 2001 10 24 | 704 | 0.5− | 0.1+ | 2006 10 02 | 704 | 0.4+ | 0.1+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.3− | 0.6+ | 2001 10 24 | 704 | 0.3− | 0.4+ | 2006 10 02 | 704 | 1.3+ | 0.8+ |
| 2001 09 18 | 699 | 1.2− | 1.0+ | 2001 11 17 | 699 | 0.4+ | 0.2+ | 2006 10 02 | 704 | 0.9+ | 0.1− |
| 2001 09 21 | 704 | 1.0− | 1.1+ | 2001 11 17 | 699 | 0.3+ | 0.9+ | 2006 11 20 | 703 | 0.1− | 0.5− |
| 2001 09 21 | 704 | 0.9− | 1.3+ | 2001 11 17 | 699 | 0.2− | 0.2+ | 2006 11 20 | 703 | 0.1+ | 0.5− |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2001 11 17 | 699 | 0.3− | 0.4− | 2006 11 20 | 703 | 0.4− | 0.4+ |
| 2001 09 21 | 704 | 0.2− | 0.5+ | 2001 11 18 | 645 | 0.0 | 0.2− | 2006 11 20 | 703 | 0.6− | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.8+ | 2001 11 18 | 645 | 0.0 | 0.2− | | | | |

**(145638)∗ 2715 P-L = 2002 WL$_2$ = 2005 KT$_7$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 87230)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.45139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23664586 | $\omega$ | 150.79952 | | +0.87164372 | +0.49013999 | |
| $a$ | 2.5886308 | $\Omega$ | 179.85043 | | −0.46046758 | +0.81898427 | |
| $e$ | 0.1351574 | $i$ | 3.41644 | | −0.16794891 | +0.29837487 | |
| $P$ | 4.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.8− | 0.0 | 2005 06 10 | 691 | 0.5+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.4− |
| 1960 09 24 | 675 | 0.6+ | 0.1− | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 1960 09 26 | 675 | 1.2− | 0.4− | 2005 06 27 | 691 | 0.3− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 1960 09 26 | 675 | 1.1+ | 0.5− | 2005 06 27 | 691 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 1960 09 28 | 675 | 0.1− | 0.4− | 2005 06 27 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 1960 09 28 | 675 | 0.7+ | 0.0 | 2005 06 30 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.0 | 0.7+ | 2005 06 30 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.2− | 0.7+ | 2005 06 30 | 691 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2000 03 03 | 704 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.6+ | 0.2− | 2006 10 22 | 691 | 0.6− | 0.1+ |
| 2002 11 23 | 644 | 0.5+ | 0.9+ | 2006 07 21 | G96 | 0.3+ | 0.5− | 2006 10 22 | 683 | 0.7+ | 1.2− |
| 2002 11 23 | 644 | 0.7+ | 0.7+ | 2006 07 21 | G96 | 0.6+ | 0.3− | 2006 10 22 | 691 | 0.7− | 0.2+ |
| 2002 11 23 | 644 | 0.1+ | 0.6+ | 2006 07 21 | G96 | 0.7+ | 0.5− | 2006 10 22 | 683 | 1.0+ | 0.2− |
| 2002 11 24 | 644 | 0.2+ | 1.3+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 22 | 683 | 1.5+ | 1.3+ |
| 2002 11 24 | 644 | 0.4+ | 1.3+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 11 24 | 644 | 0.2+ | 1.2+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 05 20 | G96 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2005 05 20 | G96 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2005 05 20 | G96 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 1.1− |
| 2005 05 20 | G96 | 0.4− | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2005 05 22 | 644 | 0.5− | 0.3+ | 2006 10 15 | 691 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 1.1− | 1.1− |
| 2005 05 22 | 644 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.8+ | 0.0 |
| 2005 05 22 | 644 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 06 01 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2005 06 01 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.8+ | 1.0− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2005 06 01 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.7− | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2005 06 06 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.9− | 0.1+ |
| 2005 06 06 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2005 06 06 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 17 | 703 | 2.2− | 0.2− |
| 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.5− | 2006 11 17 | 703 | 0.0 | 0.2+ |

**(145639)∗ 2847 P-L = 2002 VB$_{107}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 47580)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.21478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23616560 | $\omega$ | 311.72520 | | +0.80061002 | +0.59874763 | |
| $a$ | 2.5921390 | $\Omega$ | 11.55709 | | −0.51018753 | +0.70124625 | |
| $e$ | 0.1472661 | $i$ | 6.56636 | | −0.31421695 | +0.38698187 | |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.1− | 0.3+ | 2005 05 11 | 644 | 0.6+ | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1960 09 26 | 675 | 0.4− | 0.5+ | 2005 05 11 | 644 | 0.4+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 1960 09 26 | 675 | 0.6+ | 1.2− | 2005 05 11 | 644 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 1960 09 28 | 675 | 0.5− | 0.0 | 2005 05 12 | 644 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 1960 09 29 | 675 | 1.5+ | 0.7+ | 2005 05 12 | 644 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 1960 09 29 | 675 | 0.6− | 0.3+ | 2005 05 12 | 644 | 0.2+ | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 10 10 | 704 | 0.6+ | 1.2+ | 2005 05 12 | 644 | 0.4+ | 0.9+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | 0.4+ | 0.4− | 2005 05 12 | 644 | 0.3+ | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 10 10 | 704 | 0.3− | 0.2− | 2005 05 12 | 644 | 0.4+ | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 11 01 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 699 | (1.7− | 0.5+) | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 11 01 | 644 | 0.8+ | 0.3+ | 2006 09 20 | 699 | 0.2− | 1.4− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 11 01 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.9− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.4+ | 0.6− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 11 10 | 691 | 1.1+ | 0.2+ |
| 2002 11 12 | 704 | 0.3− | 0.7− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.3+ | 0.1− | 2006 09 29 | 691 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2002 11 14 | 704 | 1.3− | 0.6+ | 2006 09 29 | 691 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.9+ |
| 2002 11 14 | 704 | 0.8− | 0.1+ | 2006 09 29 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (1.4− | 2.3+) |
| 2002 11 14 | 704 | 0.7+ | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | (0.2+ | 1.5+) |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.2+ | 0.7+ | 2006 10 03 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.6− |
| 2004 02 13 | 691 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 02 13 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | | | |

**(145640)∗ 3008 P-L = 2002 UW$_{48}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 77274)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.63445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23647254 | $\omega$ | 120.38926 | | +0.53345504 | −0.83400909 | |
| $a$ | 2.5898955 | $\Omega$ | 296.71567 | | +0.71179769 | +0.53264124 | |
| $e$ | 0.1925862 | $i$ | 9.07608 | | +0.45691331 | +0.14395191 | |
| $P$ | 4.17 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.6− | 0.4− | 2002 11 06 | 704 | (1.5− | 0.6+) | 2006 08 23 | 704 | 0.4− | 0.1− |
| 1960 09 24 | 675 | 0.2− | 0.4− | 2002 11 06 | 704 | (2.3− | 0.3+) | 2006 08 23 | 704 | 0.2− | 0.3+ |
| 1960 09 25 | 675 | 1.8+ | 0.1+ | 2002 11 06 | 704 | (2.1− | 1.0+) | 2006 10 20 | 704 | 0.2− | 0.5+ |
| 1960 09 26 | 675 | 0.8+ | 1.1+ | 2002 11 06 | 704 | 1.5− | 0.6+ | 2006 10 20 | 704 | 1.2− | 0.1− |
| 1960 09 26 | 675 | 1.2− | 1.5− | 2002 11 06 | 704 | (1.8− | 0.1+) | 2006 10 20 | 704 | 1.1+ | 0.7− |
| 1960 09 28 | 675 | 0.0 | 0.4− | 2002 11 15 | 704 | 0.2+ | 0.1− | 2006 10 20 | 704 | 1.1− | 0.8+ |
| 1960 09 29 | 675 | (3.1+ | 0.0 ) | 2002 11 15 | 704 | 0.5− | 0.9− | 2006 10 20 | 704 | 0.3− | 0.7− |
| 1998 12 17 | 704 | 0.6+ | 0.0 | 2002 11 15 | 704 | 0.1− | 1.2− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 1998 12 17 | 704 | 0.6+ | 0.5− | 2002 11 15 | 704 | 0.4− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 1998 12 17 | 704 | 0.8− | 0.7− | 2002 12 05 | 704 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 1998 12 17 | 704 | 0.2− | 1.2− | 2002 12 05 | 704 | 0.2− | 0.8+ | 2006 10 27 | 703 | 0.1− | 0.1− |
| 1998 12 17 | 704 | 1.1− | 1.5− | 2002 12 05 | 704 | 0.0 | 0.8+ | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2002 10 01 | 704 | 0.2+ | 0.7− | 2002 12 05 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.4+ | 0.1− |
| 2002 10 01 | 704 | 0.2− | 0.2− | 2002 12 05 | 704 | 0.1+ | 0.9+ | 2006 10 27 | 703 | 0.7+ | 0.3− |
| 2002 10 01 | 704 | 1.2+ | 0.7+ | 2002 12 15 | 704 | 0.0 | 0.2+ | 2006 11 15 | 703 | (0.8+ | 2.5−) |
| 2002 10 01 | 704 | 0.2+ | 0.1+ | 2002 12 15 | 704 | 0.0 | 0.3+ | 2006 11 15 | 703 | (2.6+ | 1.3−) |
| 2002 10 05 | 704 | 0.0 | 0.5+ | 2002 12 15 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.5− | 0.3+ |
| 2002 10 05 | 704 | 0.1+ | 0.7− | 2002 12 15 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2002 10 05 | 704 | 0.3+ | 0.2− | 2002 12 15 | 704 | 0.2− | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.9+ |
| 2002 10 05 | 704 | 0.4− | 0.4− | 2003 01 05 | 704 | 0.9+ | 0.3+ | 2006 11 16 | 704 | 0.9− | 0.2+ |
| 2002 10 05 | 704 | 0.2+ | 0.6− | 2003 01 05 | 704 | 0.7+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2002 10 12 | 704 | 0.3+ | 0.7+ | 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2002 10 12 | 704 | 0.4− | 0.7+ | 2003 01 05 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 1.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.2+ | 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 11 22 | 703 | 1.4+ | 0.2+ |
| 2002 10 31 | 704 | 0.6− | 0.4− | 2003 02 01 | 704 | 0.1+ | 1.0+ | 2006 11 22 | 703 | 0.4− | 0.1+ |
| 2002 10 31 | 704 | 0.8− | 0.8− | 2003 02 01 | 704 | (1.2− | 1.7+) | 2006 11 22 | 703 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.0 | 0.8− | 2003 02 01 | 704 | 0.5− | 1.4+ | 2006 11 22 | 703 | 0.3+ | 0.2− |
| 2002 10 31 | 704 | 0.7− | 1.3− | 2003 02 01 | 704 | (1.8− | 0.5−) | | | | |
| 2002 10 31 | 704 | 0.0 | 0.7− | 2006 08 23 | 704 | 0.5− | 0.5+ | | | | |

**(145641)∗ 3562 P-L = 1999 XA$_{260}$ = 1999 XY$_{257}$**

Discovered 1960 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 3835), G. V. Williams (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 76.41534 | | (2000.0) | | | |
| $n$ | 0.28220363 | $\omega$ | 56.46100 | | +0.96662394 | +0.21942528 |
| $a$ | 2.3019417 | $\Omega$ | 290.55895 | | −0.25560080 | +0.86121147 |
| $e$ | 0.1668064 | $i$ | 8.12009 | | +0.01750416 | +0.45844014 |
| $P$ | 3.49 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 10 17 | 675 | 0.5− | 0.6− | 2002 10 10 | 704 | 0.7− | 1.0+ | 2002 12 20 | 644 | 0.1+ | 0.2+ |
| 1960 10 22 | 675 | 0.6− | 1.9− | 2002 10 10 | 704 | (2.2− | 0.9+) | 2002 12 20 | 644 | 0.0 | 0.2+ |
| 1960 10 25 | 675 | 1.4+ | 0.1+ | 2002 10 10 | 704 | 0.8− | 0.6+ | 2002 12 20 | 644 | 0.1+ | 0.3+ |
| 1960 10 25 | 675 | 1.2+ | 0.5− | 2002 10 10 | 704 | (1.8− | 0.3+) | 2002 12 31 | 704 | 0.2− | 0.0 |
| 1999 12 07 | 691 | 1.1+ | 1.0− | 2002 11 03 | 704 | 0.3+ | 0.3− | 2002 12 31 | 704 | 0.2− | 0.4+ |
| 1999 12 07 | 691 | 0.2− | 0.0 | 2002 11 03 | 704 | 0.0 | 0.7− | 2002 12 31 | 704 | 0.4+ | 0.5+ |
| 1999 12 07 | 704 | 1.6+ | 0.4+ | 2002 11 03 | 704 | 0.5− | 0.0 | 2002 12 31 | 704 | 0.0 | 0.2+ |
| 1999 12 07 | 691 | 0.1− | 0.1+ | 2002 11 03 | 704 | 0.1− | 1.3− | 2002 12 31 | 704 | 0.3− | 0.2+ |
| 1999 12 07 | 704 | 0.4− | 0.3− | 2002 11 03 | 704 | 0.0 | 0.3− | 2003 02 04 | 704 | 0.9+ | 0.1− |
| 1999 12 07 | 704 | 0.7− | 0.4+ | 2002 11 07 | 704 | 0.1+ | 0.3− | 2003 02 04 | 704 | 0.6− | 0.4+ |
| 1999 12 17 | 691 | 0.3− | 0.1− | 2002 11 07 | 704 | 0.2+ | 0.4− | 2003 02 04 | 704 | 0.1− | 0.7+ |
| 1999 12 17 | 691 | 0.1− | 0.7− | 2002 11 07 | 704 | 0.4− | 0.4− | 2005 06 11 | 704 | 0.5− | 1.0+ |
| 1999 12 17 | 691 | 0.1− | 0.1− | 2002 11 07 | 704 | (3.6+ | 0.4−) | 2005 06 11 | 704 | 0.1− | 0.9+ |
| 2000 01 03 | 704 | 0.9− | 1.6+ | 2002 11 14 | 644 | 0.2+ | 0.1+ | 2005 06 11 | 704 | 0.6− | 1.5+ |
| 2000 01 03 | 704 | 0.1− | 0.6+ | 2002 11 14 | 704 | 0.1+ | 0.5+ | 2005 06 11 | 704 | 0.1− | 1.3+ |
| 2000 01 03 | 704 | 0.6− | 0.8+ | 2002 11 14 | 644 | 0.3+ | 0.1+ | 2005 07 03 | 704 | (1.9+ | 4.1−) |
| 2000 01 03 | 704 | 0.7− | 0.2− | 2002 11 14 | 704 | 0.2+ | 0.1+ | 2005 07 03 | 704 | (2.5+ | 2.5−) |
| 2000 02 02 | 704 | 1.2+ | 0.3+ | 2002 11 14 | 644 | 0.0 | 0.1+ | 2005 07 03 | 704 | (3.7+ | 4.1−) |
| 2000 02 02 | 704 | 0.8− | 0.7+ | 2002 11 14 | 704 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2000 02 02 | 704 | 0.5− | 0.3+ | 2002 11 14 | 704 | 0.0 | 0.5− | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2000 02 02 | 704 | 0.9+ | 1.2+ | 2002 11 20 | 644 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2000 02 02 | 704 | 0.1+ | 0.9+ | 2002 11 20 | 644 | 0.3− | 0.4− | 2006 10 23 | G96 | 0.5− | 0.4− |
| 2002 10 04 | 699 | 0.0 | 0.0 | 2002 11 20 | 644 | 0.9+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 10 04 | 699 | 0.4− | 0.2+ | 2002 11 21 | 644 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2002 10 04 | 699 | 0.3+ | 0.4− | 2002 11 21 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.1+ |
| 2002 10 04 | 699 | 0.3− | 0.2+ | 2002 11 21 | 644 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2002 10 05 | 699 | 0.9+ | 0.4+ | 2002 12 02 | 704 | 0.4− | 1.1+ | 2006 11 24 | 644 | 0.1− | 0.2+ |
| 2002 10 05 | 699 | 0.3+ | 0.4+ | 2002 12 02 | 704 | 0.0 | 0.3+ | 2006 11 24 | 644 | 0.3+ | 0.4+ |
| 2002 10 05 | 699 | (1.9+ | 0.3+) | 2002 12 02 | 704 | 0.3+ | 0.5− | 2006 11 24 | 644 | 0.1− | 0.9+ |
| 2002 10 05 | 699 | 0.4+ | 0.7+ | 2002 12 02 | 704 | 0.2− | 0.5− | 2006 12 01 | 704 | 0.2+ | 1.1+ |
| 2002 10 06 | 704 | 0.2+ | 0.5+ | 2002 12 05 | 704 | 0.3− | 0.8+ | 2006 12 01 | 704 | 0.8+ | 0.8+ |
| 2002 10 06 | 704 | 0.3− | 0.4+ | 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 12 01 | 704 | 1.3+ | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 0.3+ | 2002 12 05 | 704 | 0.4+ | 0.8+ | 2006 12 01 | 704 | 0.3+ | 0.7+ |
| 2002 10 06 | 704 | 0.5− | 0.3+ | 2002 12 05 | 704 | 0.5− | 0.4− | 2006 12 01 | 704 | 0.4− | 0.1+ |
| 2002 10 06 | 704 | 0.3− | 0.7+ | 2002 12 05 | 704 | 0.1− | 0.1− | | | | |

**(145642)∗ 4058 P-L**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.44892 | | (2000.0) | | | |
| $n$ | 0.21616133 | $\omega$ | 139.35018 | | +0.91982320 | −0.38703607 |
| $a$ | 2.7496919 | $\Omega$ | 243.52892 | | +0.33879367 | +0.86616307 |
| $e$ | 0.1249483 | $i$ | 4.11608 | | +0.19784874 | +0.31617181 |
| $P$ | 4.56 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.3+ | 0.9− | 2001 10 19 | 644 | 0.8+ | 1.4+ | 2003 02 21 | 608 | 0.3− | 0.8+ |
| 1960 09 25 | 675 | 0.1+ | 0.0 | 2001 10 19 | 644 | 0.7+ | 1.3+ | 2003 02 21 | 608 | 0.3− | 0.7+ |
| 1960 09 26 | 675 | 0.5+ | 0.9− | 2001 10 19 | 644 | 0.8+ | 1.3+ | 2004 04 12 | 691 | 0.2+ | 0.3+ |
| 1960 09 28 | 675 | 0.3− | 0.8− | 2001 10 21 | 704 | 0.7+ | 0.5+ | 2004 04 12 | 691 | 0.1+ | 0.2+ |
| 1960 10 17 | 675 | 0.6+ | 0.2+ | 2001 10 21 | 704 | 0.5+ | 0.3+ | 2004 04 12 | 691 | 0.3+ | 0.5+ |
| 1960 10 22 | 675 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.4+ | 0.5+ | 2004 04 14 | 699 | (3.3+ | 0.3+) |
| 1960 10 24 | 675 | 0.6− | 1.8+ | 2001 10 21 | 704 | 0.5+ | 1.0+ | 2004 04 14 | 699 | 0.2+ | 0.8+ |
| 1960 10 26 | 675 | 0.6+ | 1.1− | 2001 10 21 | 704 | 0.2− | 0.4− | 2004 04 14 | 699 | 0.5+ | 0.1+ |
| 2001 08 27 | 699 | 0.7− | 0.1+ | 2001 10 23 | 699 | (1.7+ | 0.3−) | 2004 04 14 | 699 | 0.2+ | 1.1+ |
| 2001 08 27 | 699 | 0.6− | 0.5+ | 2001 10 23 | 699 | 0.2+ | 0.6+ | 2004 04 19 | 691 | 0.3+ | 0.4+ |
| 2001 08 27 | 699 | 1.1− | 0.2+ | 2001 10 23 | 699 | 0.2− | 0.6− | 2004 04 19 | 691 | 0.3+ | 0.7+ |
| 2001 08 27 | 699 | 0.5− | 0.7+ | 2001 10 23 | 699 | 0.3− | 1.0+ | 2004 04 19 | 691 | 0.2+ | 0.3+ |
| 2001 09 08 | 704 | 0.1+ | 0.4+ | 2001 10 25 | 644 | 0.2− | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.5+ |
| 2001 09 08 | 704 | 1.0+ | 0.3+ | 2001 10 25 | 644 | 0.3− | 0.2+ | 2004 04 25 | 691 | 0.1+ | 0.5+ |
| 2001 09 08 | 704 | 0.3− | 0.5+ | 2001 10 25 | 644 | 0.3− | 0.4+ | 2004 04 25 | 691 | 0.3+ | 0.5+ |
| 2001 09 08 | 704 | 0.7+ | 0.7− | 2001 11 02 | 644 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2001 09 08 | 704 | 0.1− | 0.2+ | 2001 11 02 | 644 | 0.7− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2001 09 08 | 704 | 0.5− | 0.7+ | 2001 11 02 | 644 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2001 09 08 | 704 | 1.1+ | 1.1− | 2001 11 18 | 704 | 0.1+ | 1.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2001 09 08 | 704 | 0.7− | 0.8+ | 2001 11 18 | 704 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2001 09 10 | 699 | 0.7+ | 0.8+ | 2001 11 18 | 704 | 0.2+ | 0.7− | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2001 09 10 | 699 | 0.1+ | 1.1+ | 2001 11 18 | 704 | 0.7+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2001 09 10 | 699 | 0.7− | 0.5+ | 2001 12 07 | 704 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2001 09 10 | 699 | 0.3− | 1.3+ | 2001 12 07 | 704 | 0.2− | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 09 15 | 644 | 0.7− | 0.8+ | 2001 12 07 | 704 | 0.6+ | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 09 15 | 644 | 0.4− | 0.9+ | 2001 12 07 | 704 | 0.7− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 09 15 | 644 | 0.6− | 0.6+ | 2003 01 03 | 704 | 0.1+ | 0.8− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2003 01 03 | 704 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2001 09 16 | 704 | 0.8− | 0.1+ | 2003 01 03 | 704 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 1.1− | 0.2+ | 2003 01 03 | 704 | 0.6− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2001 09 16 | 704 | 0.5− | 0.3− | 2003 01 07 | 704 | 0.6+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.1− | 0.0 | 2003 01 07 | 704 | 1.1+ | 0.8+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.4+ | 0.1+ | 2003 01 07 | 704 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2003 01 07 | 704 | 0.7+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.5+ | 0.3+ | 2003 01 11 | 291 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2003 01 11 | 291 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 2001 09 21 | 644 | 0.0 | 1.1+ | 2003 01 11 | 291 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 1.1− |
| 2001 09 21 | 644 | 0.2− | 1.3+ | 2003 01 14 | 608 | (0.3+ | 1.7+) | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2001 09 21 | 644 | 0.2+ | 1.0+ | 2003 01 14 | 608 | (1.0+ | 1.9+) | 2006 11 17 | 704 | (1.7− | 2.8+) |
| 2001 09 22 | 704 | 0.8− | 0.1− | 2003 01 14 | 608 | (0.7+ | 1.8+) | 2006 11 17 | 704 | 0.2− | 0.8+ |
| 2001 09 22 | 704 | 0.0 | 0.0 | 2003 01 26 | 699 | 0.3+ | 0.5− | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2001 09 22 | 704 | 0.1− | 0.0 | 2003 01 26 | 699 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.9+ |
| 2001 09 22 | 704 | 0.1− | 0.1− | 2003 01 26 | 699 | 0.4+ | 0.6− | 2006 11 18 | 704 | 1.0+ | 0.4+ |
| 2001 09 23 | 704 | 0.3+ | 0.3− | 2003 01 26 | 699 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.0 |
| 2001 09 23 | 704 | 0.3− | 0.6+ | 2003 01 26 | 608 | 0.5+ | 0.1− | 2006 11 18 | 704 | (2.4+ | 0.9−) |
| 2001 09 23 | 704 | 0.3+ | 0.2+ | 2003 01 26 | 608 | 0.7+ | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.0 |
| 2001 09 23 | 704 | 0.2− | 0.3− | 2003 01 26 | 608 | 1.2+ | 0.5− | 2006 11 18 | 704 | 0.5+ | 0.2+ |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2003 01 27 | 704 | 0.4+ | 0.9+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2001 09 24 | 704 | 0.2− | 0.1− | 2003 01 27 | 704 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2001 09 24 | 704 | 0.5− | 0.1− | 2003 01 27 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.9+ | 0.0 |
| 2001 09 24 | 704 | 0.2− | 0.3− | 2003 01 27 | 704 | 0.5− | 1.3+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2001 09 24 | 704 | 0.0 | 0.5− | 2003 01 27 | 704 | 0.0 | 1.0+ | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2001 09 24 | 704 | 0.1+ | 0.3− | 2003 01 27 | 699 | 0.2+ | 0.7+ | 2006 11 22 | 691 | 0.1+ | 0.4− |
| 2001 10 05 | 644 | 0.8− | 1.5+ | 2003 01 27 | 644 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 10 05 | 644 | 0.7− | 1.2+ | 2003 01 27 | 699 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.4− |
| 2001 10 05 | 644 | 0.5− | 0.8+ | 2003 01 27 | 699 | 0.5− | 0.2+ | 2006 11 25 | 704 | 0.5− | 0.3+ |
| 2001 10 14 | 704 | 0.9− | 0.1+ | 2003 01 27 | 699 | 0.0 | 0.6+ | 2006 11 25 | 704 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.9− | 0.1− | 2003 01 27 | 644 | 0.1− | 0.3+ | 2006 11 25 | 704 | 0.4+ | 0.8+ |
| 2001 10 14 | 704 | 0.7− | 0.6− | 2003 01 27 | 644 | 0.3+ | 0.4+ | 2006 11 25 | 704 | 0.3+ | 1.3− |
| 2001 10 14 | 704 | 0.9− | 0.1− | 2003 02 02 | 704 | 0.5+ | 0.7+ | 2006 11 27 | 704 | 0.6+ | 0.6− |
| 2001 10 14 | 704 | 0.7− | 0.3− | 2003 02 02 | 704 | 0.6− | 0.6+ | 2006 11 27 | 704 | 0.2− | 0.3+ |
| 2001 10 16 | 704 | 0.4− | 0.8+ | 2003 02 02 | 704 | 0.6− | 0.2+ | 2006 11 27 | 704 | 0.2− | 1.3− |
| 2001 10 16 | 683 | 0.3− | 1.1+ | 2003 02 02 | 704 | 0.4− | 0.9+ | 2006 12 01 | 704 | 0.0 | 0.3+ |
| 2001 10 16 | 704 | 0.3− | 0.6+ | 2003 02 02 | 704 | 0.4− | 0.0 | 2006 12 01 | 704 | 0.7− | 0.2− |
| 2001 10 16 | 683 | (0.6− | 1.6−) | 2003 02 03 | 644 | 0.3− | 1.2+ | 2006 12 01 | 704 | 0.5− | 0.8+ |
| 2001 10 16 | 704 | 0.3− | 0.3+ | 2003 02 03 | 644 | 0.2+ | 1.1+ | 2006 12 01 | 704 | 1.0− | 0.3+ |
| 2001 10 16 | 704 | 0.4− | 0.1+ | 2003 02 03 | 644 | (0.2+ | 2.1+) | 2006 12 01 | 704 | 0.3− | 0.7+ |
| 2001 10 16 | 704 | 0.6− | 0.2+ | 2003 02 21 | 608 | 0.2− | 0.5+ | | | | |

**(145643)∗ 4064 P-L = 2001 QL$_{64}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 18102)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.24101 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19139284 | $\omega$ | 5.19847 | | +0.86298619 | | +0.50457162 |
| $a$ | 2.9820775 | $\Omega$ | 324.46093 | | −0.46511829 | | +0.77355332 |
| $e$ | 0.1918194 | $i$ | 2.53762 | | −0.19728103 | | +0.38343545 |
| $P$ | 5.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2+ | 0.0 | 2001 09 22 | 704 | 0.4− | 0.1− | 2006 08 19 | 699 | 0.0 | 0.2− |
| 1960 09 25 | 675 | 0.0 | 0.3− | 2001 09 22 | 704 | 0.2− | 0.2− | 2006 08 19 | 699 | 0.6− | 0.1− |
| 1960 09 26 | 675 | 0.5+ | 0.0 | 2001 09 22 | 704 | 0.4− | 0.0 | 2006 08 28 | 699 | 0.9+ | 0.5+ |
| 1960 09 28 | 675 | 0.2+ | 0.5+ | 2001 09 22 | 704 | 1.1− | 0.1− | 2006 08 28 | 699 | 0.0 | 1.3+ |
| 1960 10 17 | 675 | 0.0 | 0.6− | 2001 09 23 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | (1.1− | 2.5+) |
| 1960 10 22 | 675 | 0.9− | 1.7− | 2001 09 23 | 704 | 0.3+ | 1.1− | 2006 08 28 | 703 | (1.3+ | 2.5+) |
| 1960 10 26 | 675 | 0.7+ | 0.9+ | 2001 09 23 | 704 | 0.2− | 0.2− | 2006 08 28 | 699 | 1.3+ | 0.1+ |
| 2001 08 16 | 704 | 0.0 | 0.9+ | 2001 09 23 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.4− |
| 2001 08 16 | 704 | (0.3+ | 1.9+) | 2001 09 23 | 704 | 0.5− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.7− |
| 2001 08 16 | 704 | 0.2− | 0.5+ | 2001 10 11 | 704 | 0.5+ | 1.1− | 2006 08 28 | 699 | 0.2+ | 0.3+ |
| 2001 08 16 | 704 | 0.3− | 0.6+ | 2001 10 11 | 704 | 0.5− | 1.2+ | 2006 08 29 | 704 | 0.3+ | 0.1− |
| 2001 08 19 | 807 | 0.1− | 0.2+ | 2001 10 11 | 704 | 0.8− | 0.7+ | 2006 08 29 | 704 | 0.1+ | 0.4+ |
| 2001 08 19 | 807 | 0.1+ | 0.4+ | 2001 10 11 | 704 | 1.5+ | 0.2− | 2006 08 29 | 704 | 0.8− | 0.6+ |
| 2001 08 20 | 704 | 0.2+ | 0.5− | 2001 10 11 | 704 | 0.2+ | 0.2− | 2006 08 29 | 704 | 0.5− | 0.2− |
| 2001 08 20 | 704 | 0.0 | 0.9+ | 2004 01 30 | 291 | 0.1+ | 0.8+ | 2006 08 29 | 704 | 0.0 | 0.1+ |
| 2001 08 20 | 704 | 0.0 | 1.0+ | 2004 01 30 | 291 | 0.4− | 0.7+ | 2006 08 31 | 704 | 0.1+ | 0.1+ |
| 2001 08 20 | 704 | 0.1− | 0.3+ | 2004 01 30 | 291 | 0.5− | 0.7+ | 2006 08 31 | 704 | 0.9+ | 0.4− |
| 2001 08 21 | 691 | 0.1+ | 0.0 | 2004 02 22 | 691 | 0.3+ | 0.2+ | 2006 08 31 | 704 | 0.2+ | 0.1+ |
| 2001 08 21 | 691 | 0.0 | 0.1+ | 2004 02 22 | 691 | 0.5+ | 0.5+ | 2006 09 12 | 699 | 0.4+ | 0.5+ |
| 2001 08 21 | 691 | 0.3+ | 0.1+ | 2004 02 22 | 691 | 0.4+ | 0.2+ | 2006 09 12 | 699 | 0.2+ | 0.5− |
| 2001 08 23 | 699 | 0.5− | 0.9+ | 2004 03 18 | 691 | 0.6+ | 0.2+ | 2006 09 12 | 699 | 0.9− | 0.7+ |
| 2001 08 23 | 699 | 0.6+ | 0.4+ | 2004 03 18 | 691 | 1.1+ | 0.5+ | 2006 09 12 | 699 | 0.6− | 0.5+ |
| 2001 08 23 | 699 | 0.2− | 0.9+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.4− | 0.1+ |
| 2001 08 23 | 699 | 0.5− | 0.8+ | 2005 03 17 | G96 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2001 08 24 | 704 | 0.7− | 0.6+ | 2005 03 17 | G96 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2001 08 24 | 704 | 0.5+ | 0.4+ | 2005 03 17 | G96 | 0.4− | 0.2− | 2006 09 14 | 703 | 1.1+ | 0.4+ |
| 2001 08 24 | 704 | 0.5− | 1.1+ | 2005 03 17 | G96 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.5+ | 0.7+ |
| 2001 08 24 | 704 | 0.6− | 0.4+ | 2005 04 12 | G96 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.1+ |
| 2001 08 24 | 704 | 0.6− | 1.3+ | 2005 04 12 | G96 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.0 |
| 2001 08 31 | 644 | 0.6− | 0.6+ | 2005 04 12 | G96 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.6+ |
| 2001 08 31 | 644 | 1.1− | 0.3+ | 2005 04 12 | G96 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.9+ |
| 2001 08 31 | 644 | 0.5− | 0.8+ | 2005 04 12 | G96 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.8− | 0.0 |
| 2001 09 07 | 704 | 0.0 | 0.5+ | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.5− |
| 2001 09 07 | 704 | 0.4− | 0.3+ | 2005 04 12 | G96 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 09 07 | 704 | 0.4− | 0.4+ | 2005 04 12 | G96 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 09 07 | 704 | 0.7− | 0.4+ | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 09 12 | 704 | 0.2+ | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.4− |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 1.1− | 0.2− | 2006 08 15 | 644 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2001 09 18 | 691 | 0.1+ | 0.0 | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.7− |
| 2001 09 18 | 691 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2001 09 18 | 691 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 09 20 | 704 | 0.5− | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2006 08 16 | D35 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2006 08 16 | D35 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2001 09 20 | 704 | 0.3− | 0.3− | 2006 08 16 | D35 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2006 08 19 | 699 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 09 22 | 704 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.1+ | 0.7+ | 2006 11 16 | G96 | 0.4+ | 0.6− |

**(145644)∗ 4107 P-L = 1995 QX$_{13}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.
Id. A. Doppler (*MPO* 15987)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.79633 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16908659 | $\omega$ | 10.80126 | | +0.93183821 | | +0.36067009 |
| $a$ | 3.2388930 | $\Omega$ | 327.96653 | | −0.33829084 | | +0.82361884 |
| $e$ | 0.1055829 | $i$ | 4.31767 | | −0.13128924 | | +0.43768606 |
| $P$ | 5.83 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2+ | 0.3− | 2001 10 17 | 704 | 0.1+ | 0.6− | 2004 02 26 | 704 | 0.9+ | 0.5+ |
| 1960 09 25 | 675 | 0.6− | 0.6+ | 2001 10 17 | 704 | 0.7+ | 0.0 | 2004 02 26 | 704 | 0.0 | 0.2+ |
| 1960 09 26 | 675 | 0.1+ | 0.2− | 2001 10 17 | 704 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.5− |
| 1960 09 28 | 675 | 0.1+ | 0.2+ | 2001 10 19 | 644 | 0.0 | 1.1+ | 2004 02 26 | 704 | 1.1+ | 0.1+ |
| 1960 10 17 | 675 | 0.0 | 0.1− | 2001 10 19 | 644 | 0.3+ | 1.2+ | 2004 03 15 | 703 | 1.0− | 0.2+ |
| 1960 10 26 | 675 | 1.0+ | 0.0 | 2001 10 19 | 644 | 0.3+ | 1.0+ | 2004 03 15 | 704 | 1.3+ | 0.3+ |
| 1995 08 25 | 691 | 0.1+ | 0.6− | 2001 10 20 | 644 | 0.0 | 0.2+ | 2004 03 15 | 703 | 0.2− | 0.4+ |
| 1995 08 25 | 691 | 0.4− | 0.4− | 2001 10 20 | 644 | 0.2+ | 0.2+ | 2004 03 15 | 704 | 0.3− | 0.8+ |
| 1995 08 25 | 691 | 0.3− | 0.5− | 2001 10 20 | 644 | 0.3+ | 0.3+ | 2004 03 15 | 703 | 1.5+ | 0.3+ |
| 1995 08 28 | 691 | 0.2− | 0.2+ | 2001 10 21 | 704 | 0.1− | 0.4+ | 2004 03 15 | 704 | 1.1+ | 0.8+ |
| 1995 08 28 | 691 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 1.5− | 0.1+ | 2004 03 15 | 704 | 0.4− | 0.4+ |
| 1995 08 28 | 691 | 0.1− | 0.8− | 2001 10 21 | 704 | (2.0− | 0.5+) | 2004 03 15 | 703 | 0.3− | 1.0+ |
| 2001 09 19 | 699 | (0.1+ | 1.7+) | 2001 11 12 | 691 | 0.5− | 0.1− | 2004 03 15 | 704 | 0.0 | 0.4+ |
| 2001 09 19 | 699 | 0.6− | 1.4+ | 2001 11 12 | 691 | 0.2− | 0.5− | 2004 03 29 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 699 | 0.9+ | 0.1+ | 2001 11 12 | 691 | 0.1− | 0.3− | 2004 03 29 | 691 | 0.2− | 0.6+ |
| 2001 09 19 | 699 | 0.1− | 0.4+ | 2001 11 15 | 691 | 0.2+ | 0.3+ | 2004 03 29 | 691 | 0.1− | 0.2− |
| 2001 09 26 | 704 | 0.1− | 0.7− | 2001 11 15 | 691 | 0.1+ | 0.5+ | 2006 08 14 | 644 | 0.3− | 0.7+ |
| 2001 09 26 | 704 | 0.7+ | 0.6− | 2001 11 15 | 691 | 0.3+ | 0.6+ | 2006 08 14 | 644 | 0.1+ | 0.4+ |
| 2001 09 26 | 704 | 0.3+ | 0.6− | 2001 11 17 | 704 | 0.2− | 0.5+ | 2006 08 14 | 644 | 0.4− | 0.8+ |
| 2001 09 26 | 704 | 0.0 | 1.1− | 2001 11 17 | 704 | 0.3− | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.7+ |
| 2001 10 12 | 699 | 1.2+ | 1.2+ | 2001 11 17 | 704 | 0.3+ | 0.3+ | 2006 08 15 | 644 | 0.0 | 0.8+ |
| 2001 10 12 | 699 | 0.4+ | 1.0+ | 2001 11 17 | 704 | 0.1+ | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.7+ |
| 2001 10 12 | 699 | 0.3− | 0.5+ | 2001 11 17 | 704 | 0.4− | 0.4− | 2006 10 20 | G96 | 0.2− | 0.4+ |
| 2001 10 12 | 699 | 0.8+ | 0.5+ | 2001 11 20 | 699 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.2+ |
| 2001 10 14 | 704 | 0.2+ | 0.6+ | 2001 11 20 | 699 | 0.4+ | 0.0 | 2006 10 20 | G96 | 0.7− | 0.1+ |
| 2001 10 14 | 704 | 0.4− | 0.8+ | 2001 11 20 | 699 | 0.2− | 0.9− | 2006 10 20 | G96 | 0.3+ | 0.3+ |
| 2001 10 14 | 704 | 0.5− | 0.5+ | 2001 11 20 | 699 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.2− | 1.2+ | 2003 01 05 | 704 | 0.6+ | 0.6− | 2006 10 28 | G96 | 0.1− | 0.4+ |
| 2001 10 14 | 704 | 0.4− | 0.6+ | 2003 01 05 | 704 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.0 | 0.6+ |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2003 01 05 | 704 | 1.1− | 0.6− | 2006 10 28 | G96 | 0.0 | 0.4+ |
| 2001 10 17 | 704 | 0.1− | 0.8− | 2004 02 26 | 704 | 0.3+ | 0.1+ | | | | |

**(145645)∗ 4125 P-L = 2000 QW$_{154}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.
Id. M. E. Sansaturio (*MPO* 6138)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.21670 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17286241 | $\omega$ | 184.68004 | | +0.95131908 | | −0.30478049 |
| $a$ | 3.1915550 | $\Omega$ | 193.34083 | | +0.28883074 | | +0.93349481 |
| $e$ | 0.1968048 | $i$ | 11.45750 | | +0.10755838 | | +0.18893461 |
| $P$ | 5.70 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2+ | 0.5− | 2006 08 30 | 704 | 0.5+ | 0.2− | 2006 09 27 | 699 | 0.3− | 0.8+ |
| 1960 09 25 | 675 | 0.8+ | 1.3+ | 2006 08 30 | 704 | 0.8+ | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.2+ |
| 1960 09 26 | 675 | 0.2+ | 0.5− | 2006 08 30 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 1960 09 28 | 675 | 0.5− | 0.2− | 2006 08 30 | 704 | (0.2+ | 1.5+) | 2006 09 27 | 699 | 0.1− | 0.0 |
| 1960 10 17 | 675 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 1.4− | 2006 09 27 | 704 | 0.1− | 0.1+ |
| 1960 10 22 | 675 | 1.3− | 0.9+ | 2006 09 01 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.2+ |
| 1960 10 26 | 675 | 0.6+ | 0.2+ | 2006 09 01 | 704 | 0.8+ | 0.4− | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2000 08 03 | 704 | 0.7+ | 0.1+ | 2006 09 01 | 704 | 0.5+ | 0.7− | 2006 09 29 | 704 | 0.0 | 0.1− |
| 2000 08 03 | 704 | 0.8+ | 0.4+ | 2006 09 01 | 704 | 0.6− | 0.7+ | 2006 09 29 | 704 | 0.1− | 0.3+ |
| 2000 08 03 | 704 | 0.6− | 0.5+ | 2006 09 01 | 704 | 0.5+ | 0.4− | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2000 08 03 | 704 | 0.2+ | 1.0+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.3− | 0.2− |
| 2000 08 03 | 704 | 0.1+ | 1.3+ | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2000 08 31 | 704 | 0.1− | 0.3− | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.2+ | 0.9− | 2006 09 15 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2000 08 31 | 704 | 0.3+ | 0.1− | 2006 09 15 | 704 | 0.4+ | 0.5− | 2006 10 01 | 704 | 0.3+ | 0.7+ |
| 2000 08 31 | 704 | 0.7− | 1.4− | 2006 09 15 | 704 | 0.3+ | 0.0 | 2006 10 01 | 704 | 0.3− | 0.6+ |
| 2000 08 31 | 704 | 0.0 | 1.4− | 2006 09 15 | 704 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.3+ |
| 2000 09 03 | 704 | 0.1+ | 1.0− | 2006 09 18 | 704 | 0.6− | 0.7+ | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 2000 09 03 | 704 | 0.0 | 1.1− | 2006 09 18 | 704 | (0.8− | 2.4−) | 2006 10 01 | 704 | 0.5− | 0.0 |
| 2000 09 03 | 704 | 0.8− | 0.6− | 2006 09 18 | 704 | 0.8− | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2000 09 03 | 704 | 0.4− | 0.4− | 2006 09 18 | 704 | (0.8− | 2.6−) | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2000 09 23 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 704 | 0.7− | 1.5+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2000 09 23 | 704 | 0.3+ | 0.4− | 2006 09 18 | 704 | (0.3− | 2.3−) | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2000 09 23 | 704 | 0.9− | 0.4− | 2006 09 18 | 704 | (0.5− | 3.1−) | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2000 09 23 | 704 | 0.6− | 0.1− | 2006 09 18 | 704 | (0.5− | 2.3−) | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2000 09 23 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2000 09 25 | 704 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.7− | 0.0 | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2000 09 25 | 704 | 0.7+ | 0.9+ | 2006 09 19 | 699 | 0.9+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2000 09 25 | 704 | 0.0 | 1.4+ | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 09 25 | 704 | 0.7− | 1.5+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2000 09 25 | 704 | 0.2+ | 0.4− | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2000 10 03 | 704 | 1.2+ | 0.7− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2000 10 03 | 704 | 0.4+ | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2000 10 03 | 704 | 0.7+ | 0.6− | 2006 09 25 | 704 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.8+ | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2001 12 19 | 704 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 03 07 | 704 | (0.1− | 1.9+) | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2003 03 07 | 704 | (0.3+ | 1.7+) | 2006 09 25 | 704 | 0.4− | 1.0+ | 2006 11 06 | 644 | 0.2− | 0.1− |
| 2003 03 07 | 704 | 0.2− | 1.0+ | 2006 09 25 | 704 | 0.1− | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2004 04 14 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2004 04 14 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 09 27 | 699 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2004 04 23 | 691 | 0.1+ | 0.6+ | 2006 09 27 | 691 | 0.3− | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2004 04 23 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 699 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 04 23 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.4+ | | | | |

**(145646)∗ 4170 P-L = 2002 NK$_{35}$ = 2002 NT$_{44}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 33736), A. Doppler (d, *MPO* 35416)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.23241 | | (2000.0) | | +0.87484541 | +0.47914820 |
| $n$ | 0.25649178 | $\omega$ | 94.92076 | | −0.47135584 | +0.80818966 |
| $a$ | 2.4533175 | $\Omega$ | 236.46649 | | −0.11166549 | +0.34241274 |
| $e$ | 0.1424283 | $i$ | 4.89662 | | | |
| $P$ | 3.84 | $H$ | 16.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.9+ | 0.4− | 2002 11 04 | 291 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.3− | 0.2− |
| 1960 09 25 | 675 | 0.4+ | 0.2− | 2002 11 04 | 291 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.5− |
| 1960 09 26 | 675 | 0.6− | 1.7− | 2003 12 23 | 704 | 0.8+ | 0.6− | 2006 09 18 | 703 | 0.1− | 1.2− |
| 1960 09 28 | 675 | 0.4+ | 0.7− | 2003 12 23 | 704 | 0.4+ | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.4− |
| 1960 10 22 | 675 | 0.2− | 0.3+ | 2003 12 23 | 704 | 1.1− | 0.0 | 2006 09 18 | 704 | 0.1− | 0.7+ |
| 1960 10 26 | 675 | 0.0 | 0.5− | 2006 08 19 | 644 | 0.2− | 0.3− | 2006 09 18 | 704 | 0.5+ | 0.1− |
| 2002 07 09 | 704 | (2.0− | 3.6+) | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.4− | 0.4− |
| 2002 07 09 | 704 | (1.8− | 2.0+) | 2006 08 19 | 644 | 0.2− | 0.3− | 2006 09 18 | 704 | 0.0 | 0.3− |
| 2002 07 09 | 704 | 0.6− | 0.6+ | 2006 08 27 | 699 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.7− | 0.5+ |
| 2002 07 09 | 704 | 0.7+ | 0.3+ | 2006 08 27 | 699 | 0.8+ | 0.1− | 2006 09 20 | 699 | 0.4+ | 0.2+ |
| 2002 07 09 | 704 | 0.6− | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.3+ |
| 2002 07 12 | 644 | 0.3+ | 0.1− | 2006 08 27 | 699 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.4+ | 0.8+ |
| 2002 07 12 | 644 | 0.4+ | 0.1− | 2006 08 28 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 699 | 1.0− | 0.3+ |
| 2002 07 12 | 644 | 0.5+ | 0.2− | 2006 08 28 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 1.1− | 0.1+ |
| 2002 07 14 | 704 | 0.1− | 0.6+ | 2006 08 28 | 704 | 0.7+ | 0.4− | 2006 09 25 | 704 | 0.3+ | 0.0 |
| 2002 07 14 | 704 | 0.1+ | 0.4− | 2006 08 28 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.4+ | 0.2+ |
| 2002 07 14 | 704 | 0.1+ | 0.3− | 2006 08 29 | 703 | 1.3− | 0.0 | 2006 09 25 | 704 | 0.0 | 0.9+ |
| 2002 07 14 | 704 | 1.5− | 0.1− | 2006 08 29 | 703 | (3.8− | 1.1−) | 2006 09 25 | 704 | 0.8+ | 0.1− |
| 2002 07 14 | 704 | 0.4− | 0.5+ | 2006 08 29 | 703 | (1.5− | 1.6−) | 2006 09 29 | 704 | 1.2+ | 0.1+ |
| 2002 07 21 | 644 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.5+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.1− |
| 2002 07 21 | 644 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.1− | 0.7+ | 2006 09 29 | 704 | 0.3− | 0.6− |
| 2002 07 21 | 644 | 0.3− | 0.0 | 2006 08 30 | 699 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.8− |
| 2002 07 28 | 608 | 0.0 | 0.5− | 2006 08 30 | 699 | 0.3− | 0.4+ | 2006 09 30 | 704 | 0.7+ | 1.0+ |
| 2002 07 28 | 608 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.6− | 1.2+ | 2006 09 30 | 699 | 0.2+ | 0.3+ |
| 2002 07 28 | 608 | 1.3+ | 0.7− | 2006 09 01 | 704 | (1.7− | 0.3−) | 2006 09 30 | 704 | 0.9− | 0.2− |
| 2002 08 11 | 644 | 0.4− | 0.1− | 2006 09 01 | 704 | 0.5− | 0.4+ | 2006 09 30 | 699 | 0.5− | 0.0 |
| 2002 08 11 | 644 | 0.1− | 0.1− | 2006 09 01 | 704 | 0.4+ | 0.4− | 2006 09 30 | 699 | 0.1− | 0.4− |
| 2002 08 11 | 644 | 0.3− | 0.2− | 2006 09 01 | 704 | 0.6+ | 0.4− | 2006 09 30 | 704 | 0.9− | 0.9− |
| 2002 08 14 | 704 | (0.9− | 2.0−) | 2006 09 11 | 703 | 0.1− | 0.2+ | 2006 09 30 | 699 | 0.8+ | 0.6+ |
| 2002 08 14 | 704 | (0.6+ | 3.5−) | 2006 09 11 | 703 | 0.7− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | (0.5+ | 4.2−) | 2006 09 11 | 703 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2002 09 02 | 608 | 0.1+ | 1.2− | 2006 09 11 | 703 | 0.8− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 09 02 | 608 | 0.2+ | 1.3− | 2006 09 13 | 644 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.6− | 0.2+ |
| 2002 09 02 | 608 | 0.2− | 0.9− | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2002 11 04 | 291 | 0.3+ | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 11 04 | 291 | 0.4+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 04 | 291 | 0.3− | 0.0 | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 04 | 291 | 0.5+ | 0.0 | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |

**(145647)∗ 4193 P-L**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.16311 | | (2000.0) | | +0.51432770 | −0.85724100 |
| $n$ | 0.23751665 | $\omega$ | 90.61530 | | +0.76698201 | +0.47262589 |
| $a$ | 2.5822999 | $\Omega$ | 328.39358 | | +0.38367384 | +0.20435911 |
| $e$ | 0.1764175 | $i$ | 2.68980 | | | |
| $P$ | 4.15 | $H$ | 15.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2− | 0.7+ | 2003 01 05 | 704 | 0.5+ | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 1960 09 25 | 675 | 0.2+ | 0.5+ | 2003 01 05 | 704 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 1960 09 26 | 675 | 0.1+ | 0.6+ | 2003 01 05 | 704 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 1960 09 28 | 675 | 0.4− | 0.7+ | 2003 01 05 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 1960 09 28 | 675 | 0.4+ | 1.0+ | 2003 01 05 | 704 | 0.9− | 0.9− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 1960 10 17 | 675 | 0.3− | 0.7− | 2003 01 09 | 704 | 0.6+ | 0.4− | 2006 11 16 | 704 | 0.6+ | 0.5+ |
| 1960 10 22 | 675 | 0.3− | 1.1− | 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 1960 10 24 | 675 | 0.1+ | 0.7− | 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.5− | 0.3+ |
| 1999 01 10 | 691 | 0.5− | 0.3+ | 2003 01 09 | 704 | 0.1+ | 0.7− | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 1999 01 10 | 691 | 0.5− | 0.1− | 2003 01 09 | 704 | 0.8+ | 0.2− | 2006 11 17 | 691 | 0.1− | 0.4+ |
| 1999 01 10 | 691 | 0.6− | 0.3− | 2004 04 16 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1999 01 19 | 691 | 0.4+ | 0.1− | 2004 04 16 | 691 | 0.1+ | 1.0+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1999 01 19 | 691 | 0.3+ | 0.1− | 2004 04 16 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.6− | 0.3+ |
| 1999 01 19 | 691 | 0.5+ | 0.0 | 2004 04 30 | 691 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.7− | 0.1− |
| 1999 01 23 | 691 | 0.7− | 0.1− | 2004 04 30 | 691 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.9− | 0.4+ |
| 1999 01 23 | 691 | 0.7− | 0.3− | 2004 04 30 | 691 | 0.6+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 1999 01 23 | 691 | 0.6− | 0.1− | 2004 05 23 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.5+ |
| 2002 10 11 | 704 | 1.4+ | 0.4+ | 2004 05 23 | 691 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.2− | 1.0+ | 2004 05 23 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 1.5− |
| 2002 10 11 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.7− | 0.5− |
| 2002 10 11 | 704 | 0.5− | 0.7+ | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.5− | 0.1+ |
| 2002 12 02 | 704 | 1.2+ | 0.3− | 2006 09 18 | 703 | (0.6+ | 3.4+) | 2006 11 22 | 704 | 0.7− | 0.2+ |
| 2002 12 02 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 703 | (0.5− | 1.9+) | 2006 11 22 | 704 | 0.4− | 0.1− |
| 2002 12 02 | 704 | 1.1+ | 0.3+ | 2006 09 29 | 704 | 0.5+ | 0.5− | 2006 11 23 | 703 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.7+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.4+ | 2006 11 23 | 703 | 0.2− | 0.6− |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.0 | 0.7+ | 2006 11 23 | 703 | 0.6− | 0.6− |
| 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.0 | 2006 11 23 | 703 | 1.4− | 0.5− |
| 2002 12 11 | 704 | 0.8+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.4− | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2002 12 14 | 704 | (2.8+ | 4.1−) | 2006 11 14 | 703 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | (1.5+ | 3.6−) | 2006 11 14 | 703 | 0.3− | 0.6+ | 2006 11 27 | 704 | 0.2− | 0.6+ |
| 2002 12 14 | 704 | (0.9+ | 4.4−) | 2006 11 14 | 703 | 0.8− | 0.1+ | 2006 11 27 | 704 | 0.1− | 0.4+ |
| 2002 12 14 | 704 | (1.4+ | 3.9−) | 2006 11 14 | 703 | 0.1+ | 0.8− | 2006 11 27 | 704 | 0.1+ | 0.1− |
| 2002 12 30 | 704 | 1.2+ | 0.6− | 2006 11 15 | 704 | (2.0− | 0.0 ) | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 2002 12 30 | 704 | 0.7+ | 0.1+ | 2006 11 15 | 704 | 0.7− | 0.2+ | 2006 11 28 | 704 | 1.0+ | 1.3+ |
| 2002 12 30 | 704 | 1.1+ | 0.7+ | 2006 11 15 | 704 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.7− | 2.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 30 | 704 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.7+ | 2006 11 28 | 704 | 0.3− | 0.8+ |
| 2002 12 30 | 704 | 1.1+ | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.5− | 0.3+ |

**(145648)∗ 4223 P-L = 2005 $EX_{80}$ = 2006 $PQ_1$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 104055)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.36618 | | | (2000.0) | +0.71493157 | +0.69884123 |
| $n$ | 0.25559275 | $\omega$ | 346.46368 | | −0.63739447 | +0.63834767 |
| $a$ | 2.4590670 | $\Omega$ | 329.16467 | | −0.28740414 | +0.32269674 |
| $e$ | 0.1879992 | $i$ | 2.48470 | | | |
| $P$ | 3.86 | $H$ | 16.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.3− | 0.6+ | 2005 04 09 | G96 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.1+ |
| 1960 09 26 | 675 | 0.6+ | 0.8+ | 2006 06 03 | G96 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 1960 09 28 | 675 | 0.5+ | 0.3+ | 2006 06 03 | G96 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.4+ | 0.1− |
| 1960 10 22 | 675 | 1.8− | 0.1− | 2006 07 22 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.0 |
| 1960 10 26 | 675 | 0.2+ | 0.3− | 2006 07 22 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.3− | 0.2− |
| 2003 12 22 | 704 | 0.2− | 0.2− | 2006 07 22 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2003 12 22 | 704 | 0.7+ | 0.1− | 2006 08 11 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.6+ | 2006 08 11 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 0.6− | 0.3+ | 2006 08 11 | 644 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2005 03 04 | 691 | 0.2− | 0.5+ | 2006 08 13 | 644 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2005 03 04 | 691 | 0.1+ | 0.1− | 2006 08 13 | 644 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2005 03 04 | 691 | 0.2+ | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2005 03 09 | G96 | 0.3+ | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2005 03 09 | G96 | 0.0 | 0.1− | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2005 03 09 | G96 | 0.1+ | 0.2− | 2006 08 14 | 644 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2005 03 09 | G96 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.2+ | 2006 10 28 | G96 | (1.7− | 0.5+) |
| 2005 04 09 | G96 | 0.3+ | 0.0 | 2006 08 20 | 644 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2005 04 09 | G96 | 0.0 | 0.3− | 2006 08 20 | 644 | 0.1− | 0.2+ | | | | |
| 2005 04 09 | G96 | 0.1+ | 0.2− | 2006 08 20 | 644 | 0.1+ | 0.2+ | | | | |

**(145649)∗ 4233 P-L = 2002 $XV_{99}$ = 2004 $FA_{113}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 62169)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.95159 | | | (2000.0) | +0.90453403 | −0.42578776 |
| $n$ | 0.21334711 | $\omega$ | 100.58340 | | +0.38139348 | +0.83187604 |
| $a$ | 2.7738195 | $\Omega$ | 284.62028 | | +0.19067566 | +0.35593123 |
| $e$ | 0.1947538 | $i$ | 1.35425 | | | |
| $P$ | 4.62 | $H$ | 16.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.0− | 0.2+ | 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 09 12 | 699 | 0.5− | 0.7+ |
| 1960 09 25 | 675 | 1.0+ | 0.3+ | 2004 03 21 | 691 | 0.4+ | 0.2+ | 2006 09 12 | 699 | 1.0+ | 0.4− |
| 1960 09 25 | 675 | 0.2− | 0.6− | 2004 03 21 | 691 | 0.4+ | 0.0 | 2006 09 12 | 699 | 0.8− | 0.5+ |
| 1960 09 26 | 675 | 0.2− | 0.5+ | 2004 03 21 | 691 | 0.1+ | 0.5+ | 2006 09 12 | 699 | 0.9+ | 0.0 |
| 1960 09 26 | 675 | 0.2− | 0.4+ | 2004 03 28 | 691 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.9+ |
| 1960 09 28 | 675 | 0.1+ | 1.1+ | 2004 03 28 | 691 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.0 | 1.4+ |
| 1960 09 28 | 675 | 0.5− | 0.6+ | 2004 03 28 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.5+ |
| 2002 11 28 | 608 | 0.1− | 0.6− | 2005 05 12 | G96 | 0.6+ | 0.2− | 2006 09 14 | 703 | (0.6− | 1.6+) |
| 2002 11 28 | 608 | 0.1+ | 0.5− | 2005 05 12 | G96 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2002 11 28 | 608 | 0.4− | 0.6− | 2005 05 12 | G96 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2005 05 12 | G96 | 1.3− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2006 06 20 | G96 | 0.8− | 0.5− | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 06 20 | G96 | 0.2− | 0.7− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 06 20 | G96 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.4− | 0.5+ | 2006 06 20 | G96 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2002 12 05 | 608 | 0.6+ | 0.3− | 2006 08 16 | A50 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2002 12 05 | 608 | 0.4+ | 0.3− | 2006 08 16 | A50 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 12 05 | 608 | 0.4+ | 0.2− | 2006 08 19 | 699 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2002 12 10 | 704 | 0.3+ | 0.3− | 2006 08 19 | 699 | 0.2− | 0.5+ | 2006 10 19 | G96 | 0.4− | 0.1+ |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 08 19 | 699 | 0.7+ | 1.1+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 08 19 | 699 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 12 10 | 704 | 0.5− | 1.2+ | 2006 08 28 | 703 | 1.1+ | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 08 28 | 703 | 1.0+ | 0.8− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.7− | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.1+ | | | | |

**(145650)∗ 4242 P-L = 2002 $UL_{12}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 41489)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.19917 | | | (2000.0) | +0.53780046 | −0.84266615 |
| $n$ | 0.23534710 | $\omega$ | 224.45481 | | +0.80212657 | +0.52098777 |
| $a$ | 2.5981456 | $\Omega$ | 193.08333 | | +0.25954505 | +0.13596140 |
| $e$ | 0.3540708 | $i$ | 6.63656 | | | |
| $P$ | 4.19 | $H$ | 17.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.3− | 1.0− | 2002 12 14 | 704 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.5+ |
| 1960 09 25 | 675 | 0.0 | 0.6− | 2002 12 14 | 704 | 1.2− | 0.5− | 2006 09 29 | 704 | 0.2+ | 0.5+ |
| 1960 09 26 | 675 | 0.7+ | 0.2− | 2003 01 05 | 704 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.0 |
| 1960 09 28 | 675 | 0.9+ | 0.6+ | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.0 |
| 1960 10 17 | 675 | 1.4− | 1.9+ | 2003 01 05 | 704 | 0.9+ | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 1995 02 26 | 691 | 0.2− | 0.1− | 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.2− |
| 1995 02 26 | 691 | 0.1− | 0.4+ | 2003 01 08 | 699 | 0.2− | 0.6+ | 2006 10 01 | 704 | 1.2− | 0.0 |
| 1995 02 26 | 691 | 0.5+ | 0.6+ | 2003 01 08 | 699 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.4− | 0.0 |
| 2002 10 11 | 704 | (1.9− | 0.7−) | 2003 01 08 | 699 | 1.1+ | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 2002 10 11 | 704 | 0.3+ | 0.9− | 2003 01 08 | 699 | 1.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 1.0− | 0.6− | 2003 01 08 | 608 | 0.2− | 0.4− | 2006 10 17 | 703 | (2.1− | 0.9−) |
| 2002 10 11 | 704 | 0.4− | 0.3− | 2003 01 08 | 608 | 0.1− | 0.5− | 2006 10 17 | 703 | 1.0− | 0.3+ |
| 2002 10 11 | 704 | 0.1+ | 0.5+ | 2003 01 08 | 608 | 0.1+ | 0.8− | 2006 10 17 | 106 | 0.8+ | 0.1− |
| 2002 10 31 | 608 | 0.2− | 0.7+ | 2003 01 27 | 644 | 0.0 | 0.2+ | 2006 10 17 | 106 | 1.1+ | 0.3+ |
| 2002 10 31 | 608 | 0.3− | 1.0+ | 2003 01 27 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 106 | 0.5− | 0.5− |
| 2002 10 31 | 608 | 0.3− | 1.0+ | 2003 01 27 | 644 | 0.5+ | 0.2+ | 2006 10 17 | 106 | 0.2+ | 0.3+ |
| 2002 11 01 | 673 | 0.1+ | 0.3− | 2006 09 15 | 704 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 11 01 | 673 | 0.0 | 0.4− | 2006 09 15 | 704 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 11 01 | 673 | 0.1+ | 0.3− | 2006 09 15 | 704 | 1.0+ | 1.3+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.1+ | 0.9− | 2006 09 15 | 704 | 0.3− | 0.7− | 2006 10 22 | 703 | 0.9+ | 0.8+ |
| 2002 11 12 | 704 | 0.2+ | 0.4− | 2006 09 17 | 703 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2002 11 12 | 704 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2002 11 12 | 704 | 0.1+ | 1.1− | 2006 09 17 | 703 | 0.7+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.8− |
| 2002 11 12 | 704 | 0.5+ | 0.3− | 2006 09 18 | 704 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2002 11 17 | 644 | 0.1+ | 0.6+ | 2006 09 18 | 704 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.5− |
| 2002 11 17 | 644 | 0.1+ | 0.9+ | 2006 09 18 | 704 | 0.6+ | 1.1− | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2002 11 17 | 644 | 0.5− | 0.6+ | 2006 09 18 | 704 | 1.0+ | 0.7+ | 2006 10 27 | G96 | 0.6+ | 0.6− |
| 2002 12 01 | 704 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.4− | 0.1+ | 2006 11 11 | 703 | 1.9− | 0.6+ |
| 2002 12 01 | 704 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2002 12 01 | 704 | 0.6− | 0.3− | 2006 09 27 | 704 | 1.0− | 0.8− | 2006 11 11 | 703 | 0.1− | 1.5+ |
| 2002 12 09 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2002 12 09 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2002 12 09 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 12 14 | 704 | 0.8+ | 0.5− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2002 12 14 | 704 | 0.3− | 0.8− | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.3− |

**(145651)∗ 4264 P-L = 2004 $VH_{28}$ = 2006 $EN_{13}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 101856)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.13713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26990838 | $\omega$ | 18.14792 | | +0.99589625 | −0.09038038 | |
| $a$ | 2.3713290 | $\Omega$ | 347.03489 | | +0.08022539 | +0.90563359 | |
| $e$ | 0.1979263 | $i$ | 1.19928 | | +0.04188734 | +0.41431774 | |
| $P$ | 3.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.8− | 0.6− | 2004 10 10 | 691 | 0.2− | 0.1+ | 2005 12 03 | 568 | 0.2+ | 0.0 |
| 1960 09 26 | 675 | 0.2− | 0.4− | 2004 10 10 | 691 | 0.0 | 0.1− | 2005 12 03 | 568 | 0.2+ | 0.0 |
| 1960 09 26 | 675 | 0.1− | 1.4− | 2004 10 23 | 691 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 1960 09 26 | 675 | 0.3− | 0.0 | 2004 10 23 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.1− | 0.1+ |
| 1960 09 26 | 675 | 0.1− | 0.1+ | 2004 10 23 | 691 | 0.0 | 0.1− | 2006 03 02 | 691 | 0.1− | 0.0 |
| 1960 09 27 | 675 | 2.0+ | 1.2+ | 2004 11 07 | 704 | 0.4+ | 1.2+ | 2006 03 06 | 691 | 0.3+ | 0.4− |
| 1960 09 28 | 675 | 0.2+ | 0.8− | 2004 11 07 | 704 | 1.0+ | 1.1+ | 2006 03 06 | 691 | 0.4− | 0.2− |
| 1960 09 28 | 675 | 0.3+ | 0.3− | 2004 11 07 | 704 | 0.1+ | 0.7+ | 2006 03 06 | 691 | 0.1+ | 0.1+ |
| 1960 09 28 | 675 | 0.1− | 0.1+ | 2004 11 09 | 703 | 0.6− | 0.1+ | 2006 03 25 | G96 | 0.4− | 0.0 |
| 2002 02 07 | 291 | 0.2− | 0.1− | 2004 11 09 | 703 | 0.0 | 0.1− | 2006 03 25 | G96 | 0.3+ | 0.2+ |
| 2002 02 07 | 291 | 0.1− | 0.3− | 2004 11 09 | 703 | 0.7− | 0.1+ | 2006 03 25 | G96 | 0.2+ | 0.0 |
| 2002 02 07 | 291 | 0.0 | 0.0 | 2004 11 09 | 703 | 0.5+ | 0.7− | 2006 03 25 | G96 | 0.0 | 0.1+ |
| 2004 10 10 | 691 | 0.1− | 0.0 | 2005 12 03 | 568 | 0.2+ | 0.1− | | | | |

**(145652)∗ 4278 P-L = 2000 RU$_{58}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 4860)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.72101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17338103 | $\omega$ | 106.43848 | | +0.89781579 | +0.43751171 | |
| $a$ | 3.1851874 | $\Omega$ | 227.64695 | | −0.42546963 | +0.83245540 | |
| $e$ | 0.1628087 | $i$ | 3.88751 | | −0.11358875 | +0.34000223 | |
| $P$ | 5.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.0 | 0.0 | 2000 10 31 | 704 | 1.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 1960 09 25 | 675 | 0.1+ | 0.2+ | 2000 10 31 | 704 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1960 09 26 | 675 | 1.1− | 0.4− | 2000 10 31 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 1960 09 28 | 675 | 0.4− | 0.2+ | 2000 11 02 | 704 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 1960 10 17 | 675 | 0.2+ | 0.9+ | 2000 11 02 | 704 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.4− |
| 1960 10 22 | 675 | 0.1+ | 0.9+ | 2000 11 02 | 704 | 0.6+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 1960 10 25 | 675 | 0.7− | 1.2+ | 2000 11 02 | 704 | 0.3+ | 1.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 1960 10 26 | 675 | 0.5− | 0.6+ | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.6− |
| 1960 10 26 | 675 | 1.1+ | 0.7− | 2004 04 22 | 691 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 1998 04 28 | 691 | 0.4+ | 0.5+ | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 1998 04 28 | 691 | 0.4− | 0.3+ | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 1998 04 28 | 691 | 0.2+ | 0.4+ | 2004 05 21 | 691 | 0.5+ | 0.4+ | 2006 11 12 | 703 | 0.5+ | 0.2− |
| 2000 09 07 | 691 | 0.4+ | 0.4− | 2004 05 21 | 691 | 0.1+ | 0.2+ | 2006 11 12 | 703 | 0.2− | 0.3− |
| 2000 09 07 | 691 | 0.3+ | 0.6− | 2004 05 21 | 691 | 0.5+ | 0.3+ | 2006 11 12 | 703 | 0.2+ | 0.1+ |
| 2000 09 07 | 691 | 0.6+ | 0.3− | 2004 05 21 | 691 | 0.0 | 0.4+ | 2006 11 12 | 703 | 0.2− | 0.4− |
| 2000 09 08 | 691 | 0.2+ | 0.2− | 2004 05 21 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.3+ |
| 2000 09 08 | 691 | 0.0 | 0.2− | 2005 07 09 | G92 | 0.3− | 0.7+ | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2000 09 08 | 691 | 0.1+ | 0.3− | 2005 07 09 | G92 | 1.0− | 0.7+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2000 09 23 | 704 | 0.2− | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2000 09 23 | 704 | 1.4− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.4+ | 1.3+ |
| 2000 09 23 | 704 | 1.0− | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 1.0− | 0.4− |
| 2000 09 23 | 704 | 0.4− | 1.1+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.3+ | 0.7+ |
| 2000 10 02 | 704 | 0.5− | 0.5+ | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2000 10 02 | 704 | 0.7+ | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.1+ | 1.0+ |
| 2000 10 02 | 704 | 0.6+ | 0.6+ | 2006 10 12 | 691 | (1.2− | 1.7+) | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2000 10 02 | 704 | 0.3− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2000 10 02 | 704 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.7− |
| 2000 10 04 | 704 | 0.2− | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2000 10 04 | 704 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.5− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2000 10 04 | 704 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.9+ |
| 2000 10 04 | 704 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 1.3− | 0.7+ |
| 2000 10 04 | 704 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.7+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2000 10 04 | 704 | 0.8− | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2000 10 04 | 704 | 0.3+ | 1.6+ | 2006 10 27 | G96 | 1.2+ | 0.7+ | 2006 11 21 | 704 | 0.8− | 1.2+ |
| 2000 10 04 | 704 | 0.4+ | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.8− | 0.7+ |
| 2000 10 04 | 704 | 0.2+ | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.9+ |
| 2000 10 04 | 704 | 0.4+ | 1.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.1+ |
| 2000 10 06 | 704 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.7− | 0.5+ |
| 2000 10 06 | 704 | 0.6− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 1.0− | 0.9+ |
| 2000 10 06 | 704 | 0.0 | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.5+ |
| 2000 10 31 | 704 | 1.8− | 0.3− | 2006 11 08 | 644 | 0.0 | 0.0 | | | | |

**(145653)∗ 4333 P-L = 2000 DF$_{118}$ = 2002 RR$_{92}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 77274)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.65445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23473593 | $\omega$ | 59.91701 | | +0.52100909 | −0.85353592 | |
| $a$ | 2.6026534 | $\Omega$ | 358.65061 | | +0.68957396 | +0.42442765 | |
| $e$ | 0.1630882 | $i$ | 12.49574 | | +0.50302812 | +0.30222111 | |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.5+ | 1.6+ | 2002 09 07 | 704 | 0.9+ | 1.1+ | 2004 03 20 | 704 | 0.3− | 0.0 |
| 1960 09 25 | 675 | 0.5− | 0.5+ | 2002 09 07 | 704 | 0.0 | 0.5+ | 2006 08 18 | 644 | 0.3− | 0.2+ |
| 1960 09 25 | 675 | 0.3+ | 1.2− | 2002 10 04 | 704 | 0.2− | 0.3+ | 2006 08 18 | 644 | 0.7− | 0.0 |
| 1960 09 26 | 675 | 0.5− | 0.2− | 2002 10 04 | 704 | 0.2− | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.7+ |
| 1960 09 26 | 675 | 0.4− | 1.0+ | 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 699 | (0.6+ | 2.0−) |
| 1960 09 28 | 675 | 0.5− | 0.8− | 2002 10 04 | 704 | 0.2− | 0.2+ | 2006 08 30 | 699 | 1.3− | 0.4+ |
| 2000 02 27 | 691 | 0.3− | 0.3− | 2002 10 04 | 704 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.6+ | 0.1+ |
| 2000 02 27 | 691 | 0.0 | 0.2− | 2002 10 12 | 704 | 0.0 | 0.7+ | 2006 08 30 | 699 | 0.3− | 0.6+ |
| 2000 02 27 | 691 | 0.0 | 0.1+ | 2002 10 12 | 704 | 0.2− | 0.7+ | 2006 09 14 | 703 | (1.7− | 0.4+) |
| 2000 03 03 | 645 | 0.3+ | 0.1+ | 2002 10 12 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.8− | 1.0+ |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2002 10 12 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.5+ |
| 2000 04 05 | 704 | 0.2− | 0.6+ | 2002 10 12 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.3+ |
| 2000 04 05 | 704 | 0.2− | 0.3− | 2004 02 25 | 704 | 0.4+ | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.6− |
| 2000 04 05 | 704 | 0.5+ | 1.9+ | 2004 02 25 | 704 | 0.8+ | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2004 02 25 | 704 | 1.1− | 0.8+ | 2006 10 22 | G96 | 0.5− | 0.1− |
| 2002 09 05 | 704 | 1.1− | 0.5− | 2004 03 20 | 704 | 0.5− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.5− | 2004 03 20 | 704 | 0.1− | 0.6+ | | | | |
| 2002 09 07 | 704 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.4− | 1.4+ | | | | |

**(145654)∗ 4728 P-L = 2000 SU$_{69}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 4861)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.83505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17457067 | $\omega$ | 182.22587 | | +0.98676771 | −0.16165290 | |
| $a$ | 3.1707004 | $\Omega$ | 187.11404 | | +0.15028415 | +0.94094707 | |
| $e$ | 0.2143786 | $i$ | 5.82225 | | +0.06086186 | +0.29746755 | |
| $P$ | 5.65 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.8+ | 1.0− | 2000 10 04 | 704 | 0.5− | 0.6− | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 1960 09 26 | 675 | 0.1− | 1.1− | 2000 10 04 | 704 | 0.2+ | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 1960 09 27 | 675 | 0.5+ | 0.8+ | 2000 10 04 | 704 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 1960 09 28 | 675 | 0.9− | 1.0− | 2000 10 04 | 704 | 0.4− | 0.4− | 2006 10 23 | G96 | 0.2+ | 0.7− |
| 1960 10 22 | 675 | 0.4+ | 0.7+ | 2000 10 04 | 704 | 0.5− | 0.2− | 2006 11 13 | 703 | (2.6+ | 5.8+) |
| 1960 10 26 | 675 | 0.4− | 1.1+ | 2000 10 04 | 704 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.3+ |
| 2000 09 21 | 691 | 0.3+ | 0.3− | 2000 10 04 | 704 | 0.1+ | 0.3− | 2006 11 13 | 703 | 0.3− | 0.2− |
| 2000 09 21 | 691 | 0.3+ | 0.3− | 2000 10 04 | 704 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.3− | 0.1+ |
| 2000 09 21 | 691 | 0.4+ | 0.1− | 2000 10 04 | 704 | 0.4− | 0.5− | 2006 11 16 | 691 | 0.4− | 0.2+ |
| 2000 09 24 | 704 | 0.3− | 0.8− | 2000 10 06 | 704 | 0.1+ | 0.4− | 2006 11 16 | 691 | 0.3− | 0.3+ |
| 2000 09 24 | 704 | 0.8− | 0.1− | 2000 10 06 | 704 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.5− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.4− | 0.3+ | 2000 10 06 | 704 | 1.7− | 1.1+ | 2006 11 17 | 704 | 1.3+ | 0.3− |
| 2000 09 24 | 704 | 0.3+ | 0.8+ | 2000 10 06 | 704 | 0.4− | 0.5− | 2006 11 17 | 704 | 1.4+ | 0.7+ |
| 2000 09 24 | 704 | 0.5− | 0.1+ | 2000 10 06 | 704 | 0.9− | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.8− |
| 2000 09 26 | 704 | 0.1+ | 0.8− | 2000 10 07 | 704 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.4− |
| 2000 09 26 | 704 | 0.6+ | 0.1+ | 2000 10 07 | 704 | 0.2− | 0.0 | 2006 11 17 | 704 | (1.7+ | 0.9+) |
| 2000 09 26 | 704 | 0.4− | 1.1+ | 2000 10 07 | 704 | 0.1− | 0.8− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2000 09 26 | 704 | 0.8− | 0.7− | 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.4− | 0.2+ |
| 2000 09 26 | 704 | 0.3+ | 1.3+ | 2005 06 04 | 691 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.6− | 0.1+ |
| 2000 09 30 | 704 | 0.3+ | 0.3+ | 2005 06 04 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.0 |
| 2000 09 30 | 704 | 0.4+ | 0.5− | 2005 06 13 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2000 09 30 | 704 | 0.3− | 0.4− | 2005 06 13 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2000 10 01 | 704 | 0.3+ | 0.3− | 2005 06 13 | 691 | 0.2− | 0.6+ | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2005 06 17 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.4− |
| 2000 10 01 | 704 | 0.0 | 0.1+ | 2005 06 17 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2000 10 01 | 704 | 0.6+ | 0.1+ | 2005 06 17 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 461 | 0.0 | 0.6+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 0.4+ | 0.0 | 2006 10 17 | 461 | 0.1− | 0.9+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2000 10 02 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 461 | 0.5+ | 0.0 | 2006 11 28 | 683 | 0.5− | 0.4+ |
| 2000 10 02 | 704 | 0.1+ | 0.4− | 2006 10 17 | 461 | 0.4+ | 0.7+ | 2006 11 28 | 683 | 0.8+ | 0.7+ |
| 2000 10 02 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.6− | 2006 11 28 | 704 | 0.6+ | 1.0+ |
| 2000 10 02 | 704 | 0.8+ | 0.3− | 2006 10 19 | 703 | 0.1− | 0.3− | 2006 11 28 | 683 | 0.3− | 2.1+ |
| 2000 10 02 | 704 | 0.5+ | 0.7+ | 2006 10 19 | 703 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.9+ | 0.3+ |
| 2000 10 02 | 704 | 0.4− | 0.8− | 2006 10 19 | 703 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 0.3+ | 0.8+ |
| 2000 10 02 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.3+ |
| 2000 10 02 | 704 | 0.0 | 1.9− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.2+ |

**(145655)∗ 4740 P-L = 2000 SK$_{228}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 6140)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.74402 | | (2000.0) | | | |
| $n$ | 0.17385911 | $\omega$ | 351.28457 | | +0.86613753 | +0.49972871 |
| $a$ | 3.1793457 | $\Omega$ | 338.72644 | | −0.45709268 | +0.78489401 |
| $e$ | 0.1121589 | $i$ | 1.38591 | | −0.20216842 | +0.36635040 |
| $P$ | 5.67 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.7− | 0.1− | 2000 10 07 | 699 | 0.9+ | 0.6+ | 2005 11 25 | G96 | 0.7− | 0.3− |
| 1960 09 24 | 675 | 1.1+ | 1.5+ | 2001 11 17 | 691 | 0.1+ | 0.3+ | 2005 11 25 | G96 | 0.0 | 0.5+ |
| 1960 09 26 | 675 | 0.4+ | 1.0− | 2001 11 17 | 691 | 0.1− | 0.5+ | 2005 11 25 | G96 | 0.4− | 0.3− |
| 1960 09 27 | 675 | 1.2− | 0.7− | 2001 11 17 | 691 | 0.0 | 0.5+ | 2005 11 25 | G96 | 0.3− | 0.0 |
| 1960 09 27 | 675 | 0.1− | 0.6+ | 2004 06 08 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 1960 09 28 | 675 | 0.0 | 1.2− | 2004 06 08 | 691 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 1960 09 28 | 675 | 0.7+ | 0.6− | 2004 06 08 | 691 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2000 09 28 | 704 | 0.2− | 0.6+ | 2004 06 15 | 691 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2000 09 28 | 704 | 0.2+ | 0.1− | 2004 06 15 | 691 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2000 09 28 | 704 | 0.5+ | 0.2+ | 2004 06 15 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2000 09 28 | 704 | 0.9+ | 0.8− | 2005 08 06 | 704 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2000 09 28 | 704 | 1.5+ | 0.6+ | 2005 08 06 | 704 | 0.8+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2000 10 01 | 704 | 0.6+ | 0.7+ | 2005 08 06 | 704 | 0.3− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2000 10 01 | 704 | 0.3− | 0.0 | 2005 08 06 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2000 10 01 | 704 | 0.3+ | 0.7+ | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.4− |
| 2000 10 01 | 704 | 0.7+ | 1.2− | 2005 08 06 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2000 10 01 | 704 | 0.2− | 0.4− | 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2000 10 02 | 704 | 0.1+ | 0.1− | 2005 08 22 | 644 | 0.6− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2000 10 02 | 704 | 0.0 | 1.6+ | 2005 08 22 | 644 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.5− | 0.3− |
| 2000 10 02 | 704 | 0.1+ | 1.0+ | 2005 08 22 | 644 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2000 10 07 | 699 | 0.2− | 0.2+ | 2005 08 22 | 644 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2000 10 07 | 699 | 0.7− | 0.5+ | 2005 08 22 | 644 | 0.5− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2000 10 07 | 699 | 0.7− | 0.4+ | 2005 08 22 | 644 | 0.5− | 0.4+ | | | | |

**(145656)∗ 4788 P-L = 2003 SV$_{84}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 53544)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 293.08177 | | (2000.0) | | | |
| $n$ | 0.23134635 | $\omega$ | 97.90071 | | +0.08364299 | +0.99643994 |
| $a$ | 2.6280136 | $\Omega$ | 176.83927 | | −0.97296615 | +0.08395041 |
| $e$ | 0.5611873 | $i$ | 11.03068 | | −0.21526893 | +0.00773129 |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.0− | 0.4− | 2003 09 21 | 246 | 0.3+ | 0.6+ | 2003 09 28 | 704 | 0.2− | 0.7+ |
| 1960 09 26 | 675 | 0.2+ | 0.4+ | 2003 09 21 | 246 | 0.2+ | 0.5+ | 2003 09 28 | 704 | 0.6+ | 0.1+ |
| 1960 09 28 | 675 | 0.7+ | 1.1+ | 2003 09 21 | 246 | 0.2+ | 0.5+ | 2003 09 28 | 704 | 0.0 | 0.2− |
| 1960 10 22 | 675 | 0.8− | 0.3+ | 2003 09 22 | 611 | 0.4+ | 0.6− | 2003 10 06 | 926 | 0.1− | 0.2− |
| 1960 10 26 | 675 | 1.0+ | 2.2− | 2003 09 22 | 611 | (1.7+ | 0.2+) | 2003 10 06 | 926 | 0.1+ | 0.1+ |
| 1994 03 05 | 261 | 0.4− | 0.7+ | 2003 09 22 | 132 | 0.2− | 0.2+ | 2003 10 06 | 926 | 0.1+ | 0.2− |
| 1994 03 05 | 261 | 1.0+ | 0.8− | 2003 09 22 | 132 | 0.1− | 0.3+ | 2003 10 17 | 683 | 1.0− | 1.0− |
| 2002 02 07 | 644 | 0.7+ | 0.5+ | 2003 09 22 | 132 | 0.1− | 0.0 | 2003 10 17 | 683 | 0.6− | 0.1− |
| 2003 08 26 | 704 | 0.3− | 0.9+ | 2003 09 22 | 644 | 0.1+ | 0.3+ | 2003 10 17 | 683 | 1.0− | 0.9− |
| 2003 08 26 | 704 | 0.9+ | 0.5+ | 2003 09 22 | 704 | 0.4− | 0.3+ | 2003 10 18 | 683 | 0.5− | 0.7+ |
| 2003 08 26 | 704 | (1.6+ | 0.9+) | 2003 09 22 | 644 | 0.1+ | 0.4+ | 2003 10 18 | 683 | (0.5− | 1.6+) |
| 2003 09 20 | 704 | 0.9+ | 0.8− | 2003 09 22 | 704 | 0.7+ | 0.2+ | 2003 10 18 | 683 | (2.6− | 0.4+) |
| 2003 09 20 | 704 | 0.4+ | 1.3+ | 2003 09 22 | 644 | 0.1+ | 0.1+ | 2003 10 20 | 704 | 0.6− | 0.4+ |
| 2003 09 20 | 704 | 0.4+ | 0.7+ | 2003 09 22 | 704 | 0.3− | 0.2+ | 2003 10 20 | 704 | 1.0+ | 0.2+ |
| 2003 09 20 | 704 | 1.0− | 1.0+ | 2003 09 22 | 704 | 0.6− | 0.7+ | 2003 10 20 | 704 | 0.3+ | 0.5+ |
| 2003 09 20 | 704 | 0.1− | 0.5+ | 2003 09 22 | 704 | 1.0− | 0.9+ | 2003 10 20 | 704 | 0.1− | 0.1+ |
| 2003 09 21 | 704 | 0.7+ | 0.1+ | 2003 09 26 | 246 | 0.2− | 0.1+ | 2003 10 22 | 645 | 0.1+ | 0.2− |
| 2003 09 21 | 704 | 1.4− | 0.0 | 2003 09 26 | 246 | 0.1+ | 0.2− | 2003 10 22 | 645 | 0.1+ | 0.2− |
| 2003 09 21 | 704 | 1.3+ | 1.1− | 2003 09 26 | 246 | 0.4− | 0.7+ | 2003 10 27 | 699 | 0.4+ | 0.3− |
| 2003 09 21 | G90 | 0.6+ | 0.8+ | 2003 09 26 | 246 | 0.0 | 0.3+ | 2003 10 27 | 699 | 0.1+ | 0.6− |
| 2003 09 21 | 704 | 0.5+ | 0.2+ | 2003 09 26 | 246 | 0.3− | 0.3+ | 2003 10 27 | 699 | 1.1− | 0.1+ |
| 2003 09 21 | G90 | 0.0 | 0.0 | 2003 09 26 | 711 | 0.1+ | 0.1+ | 2003 10 27 | 699 | 0.9− | 1.0− |
| 2003 09 21 | G90 | 0.7+ | 0.7− | 2003 09 26 | 711 | 0.2− | 0.1+ | 2005 12 29 | 291 | 0.3− | 0.1− |
| 2003 09 21 | 246 | 0.3− | 0.2− | 2003 09 26 | 711 | 0.1− | 0.0 | 2005 12 29 | 291 | 0.1+ | 1.0+ |
| 2003 09 21 | 246 | 0.2− | 0.2− | 2003 09 28 | 704 | 0.6− | 0.4− | 2005 12 29 | 291 | 0.2− | 0.5− |
| 2003 09 21 | 246 | 0.0 | 0.4+ | 2003 09 28 | 704 | 0.3− | 0.1+ | | | | |

**(145657)∗ 6218 P-L = 2000 QX$_{114}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 6143)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.08722 | | (2000.0) | | | |
| $n$ | 0.17359611 | $\omega$ | 60.06865 | | +0.70264517 | −0.70941463 |
| $a$ | 3.1825561 | $\Omega$ | 344.88159 | | +0.55831578 | +0.59757316 |
| $e$ | 0.1981704 | $i$ | 12.16491 | | +0.44110458 | +0.37368061 |
| $P$ | 5.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2+ | 0.1+ | 2000 10 25 | 704 | 0.2+ | 0.3+ | 2002 01 14 | 644 | 0.1+ | 0.3+ |
| 1960 09 25 | 675 | 0.0 | 0.4− | 2000 10 25 | 704 | 0.5− | 0.3− | 2002 01 20 | 699 | 0.1− | 0.3+ |
| 1960 09 26 | 675 | 0.4+ | 0.7− | 2000 10 25 | 704 | 0.1− | 0.6− | 2002 01 20 | 699 | 0.1+ | 0.2+ |
| 1960 09 28 | 675 | 0.5+ | 0.9− | 2000 11 23 | 704 | 0.2− | 0.3+ | 2002 01 20 | 699 | 0.5+ | 0.3+ |
| 1991 02 14 | 691 | 0.3+ | 0.5+ | 2000 11 23 | 704 | 0.2− | 0.2+ | 2002 01 20 | 699 | 0.3− | 0.8+ |
| 1991 02 14 | 691 | 0.2+ | 0.5+ | 2000 11 23 | 704 | 0.5+ | 0.4− | 2002 01 21 | 704 | 0.4+ | 0.2− |
| 1991 02 14 | 691 | 0.6+ | 0.2+ | 2000 11 23 | 704 | 0.5+ | 0.4+ | 2002 01 21 | 704 | 1.2+ | 0.9+ |
| 2000 08 24 | 704 | 0.4− | 0.1+ | 2000 11 26 | 704 | 0.0 | 1.9− | 2002 01 21 | 704 | 1.1+ | 0.5+ |
| 2000 08 24 | 704 | 0.9− | 0.1− | 2000 11 26 | 704 | 0.7− | 1.8− | 2002 01 21 | 704 | (1.6+ | 0.2+) |
| 2000 08 24 | 704 | 0.6− | 0.7− | 2000 11 26 | 704 | 1.2− | 1.8+ | 2002 01 21 | 704 | (1.6+ | 0.6+) |
| 2000 08 26 | 691 | 0.2+ | 0.0 | 2000 12 28 | 699 | 0.4+ | 0.2+ | 2002 02 03 | 644 | 0.1− | 0.1+ |
| 2000 08 26 | 691 | 0.2+ | 0.2− | 2000 12 28 | 699 | 0.5− | 0.6− | 2002 02 03 | 644 | 0.0 | 0.1+ |
| 2000 08 26 | 691 | 0.1+ | 0.0 | 2000 12 28 | 699 | 0.8− | 0.8− | 2002 02 03 | 644 | 0.1− | 0.1+ |
| 2000 08 31 | 704 | 0.2+ | 0.5+ | 2000 12 28 | 699 | 0.2− | 0.7+ | 2002 02 08 | 704 | 0.3+ | 0.1+ |
| 2000 08 31 | 704 | 0.2+ | 0.9+ | 2001 10 15 | 704 | 0.1− | 0.0 | 2002 02 08 | 704 | 0.2+ | 0.6+ |
| 2000 08 31 | 704 | 0.2+ | 0.4+ | 2001 10 15 | 704 | (1.5− | 0.7−) | 2002 02 08 | 704 | 0.3+ | 0.5+ |
| 2000 08 31 | 704 | 0.0 | 0.1− | 2001 10 15 | 704 | 0.7+ | 0.8+ | 2002 02 08 | 704 | 0.4+ | 0.4+ |
| 2000 09 03 | 704 | 0.6− | 0.3+ | 2001 10 15 | 704 | 1.5− | 0.6+ | 2003 03 31 | 704 | 0.5+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.6− | 0.1− | 2001 10 27 | 704 | 0.4− | 0.7+ | 2003 03 31 | 704 | 0.9− | 0.1+ | | |
| 2000 09 03 | 704 | 0.2− | 0.8+ | 2001 10 27 | 704 | 0.5+ | 0.8− | 2003 03 31 | 704 | 0.4+ | 0.4+ | | |
| 2000 09 03 | 704 | 0.1− | 0.2+ | 2001 10 27 | 704 | 0.3+ | 0.8+ | 2003 03 31 | 704 | (0.9− | 1.6−) | | |
| 2000 09 03 | 704 | 0.7− | 0.7+ | 2001 10 27 | 704 | 0.5− | 0.3− | 2003 04 01 | 644 | 0.2+ | 0.6+ | | |
| 2000 09 22 | 608 | 1.6+ | 0.7+ | 2001 11 11 | 704 | 0.5+ | 0.1+ | 2003 04 01 | 644 | 0.5+ | 0.6+ | | |
| 2000 09 22 | 608 | 1.6+ | 0.7+ | 2001 11 11 | 704 | 1.2+ | 0.8− | 2003 04 01 | 644 | 0.6+ | 0.5+ | | |
| 2000 09 22 | 608 | 1.5+ | 0.9+ | 2001 11 11 | 704 | (1.7+ | 0.6−) | 2005 08 24 | E12 | 0.2− | 0.2− | | |
| 2000 09 23 | 704 | 0.8− | 0.9+ | 2001 12 14 | 704 | 0.4+ | 0.0 | 2005 08 24 | E12 | (1.6+ | 0.9−) | | |
| 2000 09 23 | 704 | 0.3− | 0.0 | 2001 12 14 | 704 | 1.1+ | 1.4+ | 2005 08 24 | E12 | 0.7− | 0.3+ | | |
| 2000 09 23 | 704 | 0.7+ | 0.0 | 2001 12 14 | 704 | 1.0+ | 0.3+ | 2005 08 24 | E12 | 0.1− | 0.5+ | | |
| 2000 09 23 | 704 | 0.7− | 0.2− | 2001 12 14 | 704 | 0.3+ | 0.6− | 2006 09 17 | 703 | 0.0 | 0.6+ | | |
| 2000 09 23 | 704 | 0.4− | 0.6− | 2001 12 14 | 704 | 1.1+ | 0.4+ | 2006 09 17 | 703 | 0.1+ | 0.7+ | | |
| 2000 09 24 | 704 | 0.3− | 0.4+ | 2001 12 18 | 699 | 1.2− | 1.2+ | 2006 09 17 | 703 | 0.7− | 0.2+ | | |
| 2000 09 24 | 704 | 0.0 | 0.6+ | 2001 12 18 | 699 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.2− | 0.6+ | | |
| 2000 09 24 | 704 | 0.3− | 0.3− | 2001 12 18 | 699 | 0.4− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.0 | | |
| 2000 09 24 | 704 | 0.4− | 0.0 | 2001 12 18 | 699 | 0.7− | 1.1+ | 2006 09 28 | 703 | 0.2+ | 0.8− | | |
| 2000 09 24 | 704 | 0.1+ | 0.3+ | 2001 12 19 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.1+ | 1.0− | | |
| 2000 09 25 | 704 | 0.3− | 0.3+ | 2001 12 19 | 644 | 0.1+ | 0.5+ | 2006 09 28 | 703 | 0.2+ | 0.0 | | |
| 2000 09 25 | 704 | 0.1− | 0.1− | 2001 12 19 | 644 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2− | | |
| 2000 09 25 | 704 | 0.0 | 0.3+ | 2001 12 22 | 704 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.1− | | |
| 2000 09 25 | 704 | 0.4+ | 0.0 | 2001 12 22 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2000 09 25 | 704 | 0.4− | 0.2+ | 2001 12 22 | 704 | (1.9+ | 0.0 ) | 2006 10 19 | 703 | 0.3− | 0.1− | | |
| 2000 09 26 | 704 | 0.1+ | 0.7+ | 2001 12 22 | 704 | 0.7− | 0.5− | 2006 10 19 | 703 | 0.2− | 0.3− | | |
| 2000 09 26 | 704 | 0.6− | 0.1− | 2001 12 22 | 704 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.2+ | | |
| 2000 09 26 | 704 | 0.1+ | 0.7+ | 2002 01 07 | 699 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.3− | | |
| 2000 09 26 | 704 | 0.1+ | 0.3− | 2002 01 07 | 699 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.3− | | |
| 2000 09 26 | 704 | 0.4+ | 0.1+ | 2002 01 07 | 699 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.2− | 0.2− | | |
| 2000 09 26 | 704 | 0.1+ | 0.3+ | 2002 01 07 | 699 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.7+ | | |
| 2000 09 26 | 704 | 0.0 | 0.2− | 2002 01 08 | 704 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.5+ | | |
| 2000 09 26 | 704 | 0.3− | 0.5+ | 2002 01 08 | 704 | 0.5+ | 0.5+ | 2006 11 15 | 703 | (3.7+ | 1.6−) | | |
| 2000 09 26 | 704 | 0.4− | 0.1+ | 2002 01 08 | 704 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.4+ | | |
| 2000 09 26 | 704 | 0.2− | 0.0 | 2002 01 08 | 704 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.7+ | | |
| 2000 10 01 | 699 | 0.2+ | 0.4+ | 2002 01 08 | 704 | 0.2+ | 0.5+ | 2006 11 21 | 703 | 0.4+ | 0.2− | | |
| 2000 10 01 | 699 | 0.1+ | 0.3+ | 2002 01 11 | 699 | 0.1− | 0.2− | 2006 11 21 | 703 | 0.7+ | 1.0− | | |
| 2000 10 01 | 699 | 0.2− | 0.0 | 2002 01 11 | 699 | 0.6− | 0.7+ | 2006 11 21 | 703 | 0.5+ | 0.2+ | | |
| 2000 10 01 | 699 | 0.7+ | 0.1− | 2002 01 11 | 699 | 0.1+ | 1.2+ | 2006 11 21 | 703 | 0.1− | 0.3− | | |
| 2000 10 03 | 704 | 0.3− | 0.1− | 2002 01 11 | 699 | 0.0 | 0.2+ | 2006 11 29 | 704 | 1.1+ | 0.3− | | |
| 2000 10 03 | 704 | 0.5− | 0.2+ | 2002 01 14 | 645 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.3− | | |
| 2000 10 03 | 704 | 0.1− | 0.4+ | 2002 01 14 | 645 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.0 | | |
| 2000 10 03 | 704 | 0.2− | 0.1− | 2002 01 14 | 645 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.1− | | |
| 2000 10 03 | 704 | 0.1+ | 0.3− | 2002 01 14 | 645 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.2− | 0.8+ | | |
| 2000 10 25 | 704 | 0.7− | 0.3− | 2002 01 14 | 644 | 0.2+ | 0.0 | | | | | | |
| 2000 10 25 | 704 | 0.9− | 0.1+ | 2002 01 14 | 644 | 0.4+ | 0.2+ | | | | | | |

**(145658)∗ 6596 P-L**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.99894 | | (2000.0) | | +0.99939008 | +0.03352954 |
| $n$ | 0.23688156 | $\omega$ | 349.26347 | | −0.02543191 | +0.89033680 |
| $a$ | 2.5869133 | $\Omega$ | 8.83255 | | −0.02393072 | +0.45406624 |
| $e$ | 0.1566958 | $i$ | 3.64386 | | | |
| $P$ | 4.16 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.5+ | 0.6− | 2002 12 13 | 704 | 0.1+ | 0.2− | 2006 10 19 | 704 | 0.2− | 0.7+ | | |
| 1960 09 26 | 675 | 0.3− | 0.9− | 2002 12 27 | 644 | 0.2+ | 0.5− | 2006 10 19 | 704 | 0.4− | 1.0+ | | |
| 1960 09 27 | 675 | 0.6+ | 0.1− | 2002 12 27 | 644 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 1960 09 28 | 675 | 0.3+ | 1.2− | 2002 12 27 | 644 | 0.2+ | 0.8− | 2006 10 23 | 691 | 0.6− | 0.0 | | |
| 1960 10 17 | 675 | 0.1− | 0.3− | 2002 12 31 | 699 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.7− | 0.1+ | | |
| 1960 10 22 | 675 | 0.0 | 0.7+ | 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.3+ | | |
| 1960 10 24 | 675 | 0.2+ | 0.3+ | 2002 12 31 | 699 | 0.3− | 1.3− | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 1960 10 26 | 675 | 0.3− | 0.3+ | 2002 12 31 | 704 | 0.0 | 0.7− | 2006 10 28 | 691 | 0.1− | 0.2+ | | |
| 1998 12 14 | 704 | 0.4− | 1.5− | 2002 12 31 | 699 | 0.4+ | 0.6+ | 2006 10 29 | 704 | (1.5− | 0.4+) | | |
| 1998 12 14 | 704 | (1.7+ | 2.5−) | 2002 12 31 | 704 | 0.1+ | 0.5− | 2006 10 29 | 704 | (0.3+ | 1.7+) | | |
| 1998 12 14 | 704 | 1.6+ | 0.4− | 2002 12 31 | 704 | 0.6− | 0.5− | 2006 10 29 | 704 | (0.2− | 1.7+) | | |
| 1998 12 14 | 704 | 1.3+ | 0.2+ | 2002 12 31 | 699 | 1.1− | 1.0− | 2006 10 29 | 704 | 0.5− | 1.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.8+ | 0.7+ | 2003 11 20 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2000 03 11 | 704 | 0.5− | 0.1− | 2003 11 20 | 691 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2000 03 11 | 704 | 0.2+ | 0.0 | 2003 11 20 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2000 03 11 | 704 | 0.1− | 0.3+ | 2004 02 22 | 695 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2000 03 11 | 704 | 0.2− | 0.6+ | 2004 02 22 | 695 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1− | | |
| 2000 04 05 | 704 | 1.3+ | 0.4+ | 2004 03 11 | 644 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2− | | |
| 2000 04 05 | 704 | 0.6+ | 0.9+ | 2004 03 11 | 644 | 0.5− | 0.7+ | 2006 11 10 | 691 | 0.3+ | 0.2− | | |
| 2000 04 05 | 704 | 0.3+ | 1.6+ | 2004 03 11 | 644 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.2− | | |
| 2002 09 07 | 704 | 0.1− | 0.0 | 2004 03 11 | 644 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1− | | |
| 2002 09 07 | 704 | 0.3− | 0.8+ | 2004 03 11 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.0 | | |
| 2002 09 07 | 704 | 0.0 | 0.4− | 2004 03 11 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.1− | | |
| 2002 11 12 | 704 | 0.2+ | 0.6− | 2004 03 15 | 704 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 2002 11 12 | 704 | 0.3− | 0.2− | 2004 03 15 | 704 | 0.6+ | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.2− | | |
| 2002 11 12 | 704 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.2+ | 0.8+ | 2006 11 13 | 691 | 0.3+ | 0.0 | | |
| 2002 11 12 | 704 | 0.3+ | 0.9− | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.1− | | |
| 2002 11 12 | 704 | 0.2− | 0.4− | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.3− | | |
| 2002 11 14 | 704 | 0.2+ | 0.3− | 2004 03 29 | 691 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.2+ | 1.2+ | | |
| 2002 11 14 | 704 | 0.1+ | 1.1+ | 2004 04 10 | 735 | 0.4+ | 0.7+ | 2006 11 16 | 704 | 0.5− | 0.1− | | |
| 2002 11 14 | 704 | 0.5− | 0.7+ | 2004 04 10 | 735 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.3− | 0.1− | | |
| 2002 11 14 | 704 | 0.0 | 0.3− | 2004 04 10 | 735 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.7+ | | |
| 2002 11 14 | 704 | 0.2− | 0.7+ | 2006 08 21 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.1− | | |
| 2002 11 16 | 644 | 0.2− | 0.1+ | 2006 08 21 | 704 | 0.1− | 1.1+ | 2006 11 19 | 704 | 0.3− | 0.4+ | | |
| 2002 11 16 | 644 | 0.1− | 0.2+ | 2006 08 21 | 704 | 0.9− | 0.9+ | 2006 11 19 | 704 | 0.8− | 0.2+ | | |
| 2002 11 16 | 644 | 0.1− | 0.3+ | 2006 08 21 | 704 | 0.0 | 0.8+ | 2006 11 19 | 704 | 1.2− | 0.2+ | | |
| 2002 12 05 | 699 | 1.4+ | 1.3− | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4− | 0.6+ | | |
| 2002 12 05 | 699 | 0.6− | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.1− | | |
| 2002 12 05 | 699 | 0.5+ | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.9+ | 0.9+ | | |
| 2002 12 05 | 699 | 0.7− | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.8+ | | |
| 2002 12 06 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 704 | 1.0+ | 1.0− | 2006 11 22 | 704 | 1.5+ | 0.2+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.8− | 0.1− | 2006 11 22 | 704 | 0.6+ | 2.0+ | | |
| 2002 12 06 | 704 | 0.5+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.8+ | 2006 11 22 | 704 | (3.1− | 1.8+) | | |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.3− | 1.1− | 2006 11 26 | 104 | 0.0 | 0.1+ | | |
| 2002 12 11 | 704 | 0.9− | 1.1− | 2006 09 29 | 704 | (0.5− | 1.6+) | 2006 11 26 | 104 | 0.0 | 0.1+ | | |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 26 | 104 | 0.0 | 0.0 | | |
| 2002 12 11 | 704 | 0.4− | 0.5− | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 27 | 104 | 0.1+ | 0.4+ | | |
| 2002 12 11 | 704 | (1.3+ | 1.7−) | 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 11 27 | 104 | 0.5+ | 0.4+ | | |
| 2002 12 11 | 704 | 0.8− | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 27 | 104 | 0.2+ | 0.0 | | |
| 2002 12 13 | 704 | 0.6+ | 0.5− | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.9+ | 0.5+ | | |
| 2002 12 13 | 704 | 0.2− | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.1+ | | |
| 2002 12 13 | 704 | 0.7+ | 0.7− | 2006 10 19 | 704 | 0.3+ | 0.6− | 2006 11 29 | 704 | 0.4+ | 0.2+ | | |
| 2002 12 13 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.7− | 0.4+ | | |

**(145659)∗ 6697 P-L = 2001 SJ$_{31}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 20652)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.61983 | | (2000.0) | | +0.44955769 | −0.89190531 |
| $n$ | 0.21708696 | $\omega$ | 12.13563 | | +0.81419024 | +0.38657837 |
| $a$ | 2.7418702 | $\Omega$ | 51.16987 | | +0.36741276 | +0.23465312 |
| $e$ | 0.1744243 | $i$ | 3.60767 | | | |
| $P$ | 4.54 | $H$ | 16.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.9− | 0.9− | 2001 09 21 | 704 | 0.4− | 0.5− | 2001 10 20 | 704 | 0.1− | 0.7+ | | |
| 1960 09 24 | 675 | 0.5+ | 0.6− | 2001 09 26 | 704 | 0.8− | 0.3+ | 2001 10 20 | 704 | 0.2+ | 1.2+ | | |
| 1960 09 26 | 675 | 0.2+ | 0.1− | 2001 09 26 | 704 | 0.7− | 0.1+ | 2001 10 23 | 704 | 0.5+ | 1.2+ | | |
| 1960 09 26 | 675 | 0.3+ | 0.5− | 2001 09 26 | 704 | 0.8− | 0.4+ | 2001 10 23 | 704 | 1.0+ | 0.3+ | | |
| 1960 09 27 | 675 | 0.3+ | 0.0 | 2001 09 26 | 704 | (1.8− | 0.8+) | 2001 10 23 | 704 | 1.4+ | 0.3+ | | |
| 1960 09 27 | 675 | 0.1+ | 0.9+ | 2001 09 26 | 704 | (2.0− | 0.5−) | 2001 10 23 | 704 | 0.8+ | 0.2+ | | |
| 1960 09 28 | 675 | 0.4− | 0.2+ | 2001 10 13 | 704 | 0.3− | 1.0+ | 2001 10 24 | 704 | 0.6− | 0.6+ | | |
| 1960 09 28 | 675 | 0.5+ | 0.7− | 2001 10 13 | 704 | (0.0 | 2.4+) | 2001 10 24 | 704 | 0.1+ | 0.4+ | | |
| 1999 03 19 | 691 | 0.2+ | 0.9+ | 2001 10 13 | 704 | 0.6− | 1.2+ | 2001 10 24 | 704 | 0.3+ | 0.8+ | | |
| 1999 03 19 | 691 | 0.4+ | 0.2+ | 2001 10 13 | 704 | 0.1+ | 1.2+ | 2001 10 24 | 704 | 0.1+ | 0.5+ | | |
| 1999 03 19 | 691 | 0.3+ | 0.7+ | 2001 10 16 | 704 | 0.3− | 0.4− | 2001 11 12 | 645 | 0.0 | 0.3− | | |
| 2001 09 11 | 699 | 0.4+ | 0.4− | 2001 10 16 | 704 | 0.0 | 0.2− | 2001 11 12 | 645 | 0.0 | 0.3− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.1− | 0.7+ | 2001 10 16 | 704 | 0.2− | 0.5+ | 2002 12 14 | 645 | 0.2− | 0.2− |
| 2001 09 11 | 699 | 0.9+ | 0.3+ | 2001 10 16 | 704 | 0.1+ | 0.1+ | 2002 12 14 | 645 | 0.1− | 0.1− |
| 2001 09 11 | 699 | (1.0− | 2.5+) | 2001 10 16 | 704 | 0.5− | 0.6+ | 2003 03 07 | 644 | 0.9+ | 1.0+ |
| 2001 09 16 | 704 | 0.0 | 0.2+ | 2001 10 17 | 644 | 0.3+ | 0.1− | 2003 03 07 | 644 | 0.5+ | 0.7+ |
| 2001 09 16 | 704 | 0.3− | 0.2+ | 2001 10 17 | 644 | 0.1+ | 0.0 | 2003 03 07 | 644 | 0.5+ | 0.6+ |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2001 10 17 | 644 | 0.2+ | 0.1− | 2005 07 03 | 644 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.3+ | 2001 10 17 | 644 | 0.3+ | 0.1− | 2005 07 03 | 644 | 0.7− | 0.0 |
| 2001 09 19 | 704 | 0.6+ | 0.3+ | 2001 10 17 | 644 | 0.4+ | 0.1+ | 2005 07 03 | 644 | 0.4− | 0.3+ |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2001 10 17 | 644 | 0.6+ | 0.0 | 2006 09 28 | 291 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2001 10 19 | 699 | 0.4+ | 0.2+ | 2006 09 28 | 291 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.4− | 0.5+ | 2001 10 19 | 699 | 0.6− | 1.1+ | 2006 09 28 | 291 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2001 10 19 | 699 | (0.9− | 1.7+) | 2006 12 01 | 691 | 0.3+ | 0.7+ |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2001 10 19 | 699 | 1.3− | 0.6+ | 2006 12 01 | 691 | 0.1− | 0.7+ |
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2001 10 20 | 704 | 0.3− | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.8− | 2001 10 20 | 704 | 0.0 | 0.4+ | | | | |
| 2001 09 21 | 704 | 0.3− | 0.8− | 2001 10 20 | 704 | 0.3− | 0.3+ | | | | |

**(145660)∗ 6701 P-L = 2000 EP$_{113}$ = 2002 UH$_{13}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 41490)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.34354 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21310983 | $\omega$ | 140.31085 | | +0.76400780 | +0.64520308 | |
| $a$ | 2.7758781 | $\Omega$ | 179.49151 | | −0.63742828 | +0.75533208 | |
| $e$ | 0.1072518 | $i$ | 14.68656 | | −0.09988625 | +0.11483221 | |
| $P$ | 4.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.5− | 0.4− | 2002 10 31 | 645 | 0.1+ | 0.1+ | 2005 05 04 | 703 | (0.0 | 3.0−) |
| 1960 09 24 | 675 | 0.2− | 1.1− | 2002 10 31 | 645 | 0.1+ | 0.1+ | 2005 05 04 | 703 | 1.1− | 0.3+ |
| 1960 09 26 | 675 | 0.5− | 1.9− | 2002 10 31 | 704 | 1.2− | 1.8+ | 2005 05 04 | 703 | 0.4+ | 1.1− |
| 1960 09 26 | 675 | 0.8+ | 1.4− | 2002 10 31 | 704 | 0.2− | 1.6+ | 2006 06 21 | 703 | 0.3− | 0.7− |
| 1960 09 27 | 675 | (0.1− | 2.6−) | 2002 10 31 | 704 | (0.4+ | 2.5+) | 2006 06 21 | 703 | 0.4− | 0.2+ |
| 1960 09 27 | 675 | 1.4+ | 0.0 | 2002 10 31 | 704 | 0.1− | 1.4+ | 2006 06 21 | 703 | 0.7− | 0.8+ |
| 1960 09 28 | 675 | 0.2− | 1.7− | 2002 10 31 | 704 | 0.9− | 0.7+ | 2006 06 21 | 703 | 0.1− | 0.2+ |
| 1960 09 28 | 675 | 0.7+ | 0.7− | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.5− | 0.1− |
| 2000 03 09 | 691 | 0.7− | 0.5− | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.8− | 0.1+ |
| 2000 03 09 | 691 | 1.0− | 0.5− | 2004 01 29 | 704 | 1.0+ | 0.4+ | 2006 09 11 | 703 | 0.0 | 0.1− |
| 2000 03 09 | 691 | 0.6− | 0.2− | 2004 01 29 | 704 | 0.6+ | 0.1− | 2006 09 11 | 703 | 0.7− | 0.1− |
| 2000 03 11 | 704 | 0.5+ | 1.4+ | 2004 01 29 | 704 | 0.2+ | 0.9+ | 2006 09 14 | 691 | 0.1− | 0.2− |
| 2000 03 11 | 704 | 0.6+ | 0.1+ | 2004 01 29 | 704 | 0.3− | 1.0− | 2006 09 14 | 691 | 0.1− | 0.1− |
| 2000 03 11 | 704 | 0.2− | 0.2− | 2004 01 29 | 704 | 1.1+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.1− | 0.2+ | 2005 04 18 | 691 | 1.2+ | 1.0+ | 2006 09 19 | 699 | 0.6− | 1.5+ |
| 2002 10 28 | 608 | 0.9− | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 1.3+ | 0.4+ |
| 2002 10 28 | 608 | 1.0− | 0.1− | 2005 04 18 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.7+ |
| 2002 10 28 | 608 | 1.2− | 0.4+ | 2005 05 04 | 703 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.2+ | 1.2+ |

**(145661)∗ 6714 P-L = 2000 TS$_{31}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 6145)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.76282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17377906 | $\omega$ | 58.73486 | | +0.47364415 | −0.88047173 | |
| $a$ | 3.1803219 | $\Omega$ | 3.21519 | | +0.62831216 | +0.32129551 | |
| $e$ | 0.1113371 | $i$ | 21.71831 | | +0.61715885 | +0.34862405 | |
| $P$ | 5.67 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2− | 0.5+ | 2000 10 06 | 691 | 0.2− | 0.2− | 2002 01 25 | 704 | 1.0+ | 0.2− |
| 1960 09 24 | 675 | 0.3+ | 1.1+ | 2000 10 06 | 691 | 0.4− | 0.2− | 2002 01 25 | 704 | 0.3+ | 1.2− |
| 1960 09 26 | 675 | 0.6− | 0.1+ | 2000 10 07 | 691 | 0.1− | 0.2− | 2002 02 21 | 704 | 0.3− | 0.2− |
| 1960 09 26 | 675 | 0.2− | 0.7− | 2000 10 07 | 691 | 0.2− | 0.2− | 2002 02 21 | 704 | 0.1− | 0.4− |
| 1960 09 27 | 675 | 1.7− | 1.3+ | 2000 10 07 | 691 | 0.2− | 0.1− | 2002 02 21 | 704 | 0.4+ | 0.3− |
| 1960 09 27 | 675 | 0.3− | 0.6+ | 2000 10 25 | 704 | 0.3− | 0.1− | 2002 02 21 | 704 | 0.4− | 0.5− |
| 1960 09 28 | 675 | 0.6− | 0.1+ | 2000 10 25 | 704 | 0.1− | 0.4− | 2003 03 26 | 691 | 0.3+ | 0.7+ |
| 1960 09 28 | 675 | 0.6+ | 0.5− | 2000 10 25 | 704 | 0.1− | 0.4+ | 2003 03 26 | 691 | 0.5+ | 0.6+ |
| 2000 09 25 | 608 | 1.0+ | 1.3+ | 2000 10 25 | 704 | 1.0− | 0.4− | 2003 03 26 | 691 | 1.0+ | 0.7+ |
| 2000 09 25 | 608 | 1.1+ | 1.5+ | 2000 10 25 | 704 | 0.4− | 0.3− | 2006 10 02 | 703 | 0.6+ | 0.8+ |
| 2000 09 25 | 608 | 0.8+ | 1.2+ | 2000 10 31 | 704 | 0.5− | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.8+ |
| 2000 09 26 | 699 | 0.5+ | 1.0+ | 2000 10 31 | 704 | 0.5+ | 0.1− | 2006 10 02 | 703 | 0.7− | 0.4+ |
| 2000 09 26 | 699 | 0.4+ | 0.2+ | 2000 10 31 | 704 | 0.8− | 0.7− | 2006 10 02 | 703 | 0.1− | 0.3+ |
| 2000 09 26 | 691 | 0.7+ | 0.1− | 2000 10 31 | 704 | 0.2+ | 0.2− | 2006 10 23 | 703 | 0.2− | 0.0 |
| 2000 09 26 | 699 | 0.5− | 1.7+ | 2001 12 23 | 704 | 0.9− | 0.0 | 2006 10 23 | 703 | 0.0 | 0.6+ |
| 2000 09 26 | 699 | 0.3− | 1.5+ | 2001 12 23 | 704 | 0.1− | 0.1− | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2000 09 26 | 691 | 0.6+ | 0.1− | 2001 12 23 | 704 | 0.6− | 0.2− | 2006 10 23 | 703 | 0.0 | 0.3+ |
| 2000 09 26 | 691 | 0.7+ | 0.0 | 2001 12 23 | 704 | 0.1− | 0.5− | 2006 10 29 | 703 | 0.0 | 0.1− |
| 2000 09 27 | 704 | 0.0 | 0.2+ | 2001 12 23 | 704 | 0.2− | 1.2− | 2006 10 29 | 703 | (1.5− | 0.1−) |
| 2000 09 27 | 704 | 0.3− | 0.2+ | 2002 01 19 | 699 | 0.3− | 0.8+ | 2006 10 29 | 703 | 0.8− | 0.2− |
| 2000 09 27 | 704 | 0.3+ | 0.2+ | 2002 01 19 | 699 | 1.2− | 0.7− | 2006 10 29 | 703 | 1.1− | 0.4− |
| 2000 09 27 | 704 | 0.1+ | 0.2+ | 2002 01 19 | 699 | 0.2+ | 0.7+ | 2006 11 21 | 703 | 0.4− | 0.0 |
| 2000 10 05 | 691 | 0.2− | 0.0 | 2002 01 19 | 699 | 0.7+ | 0.0 | 2006 11 21 | 703 | 0.0 | 0.4− |
| 2000 10 05 | 691 | 0.2− | 0.0 | 2002 01 25 | 704 | 0.3+ | 0.4+ | 2006 11 21 | 703 | 0.5− | 0.2+ |
| 2000 10 05 | 691 | 0.4− | 0.1− | 2002 01 25 | 704 | 0.6+ | 0.6+ | 2006 11 21 | 703 | 0.4− | 0.5+ |
| 2000 10 06 | 691 | 0.3− | 0.2− | 2002 01 25 | 704 | 0.6+ | 0.8+ | | | | |

**(145662)∗ 6737 P-L = 2006 OG$_{11}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 104055)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.27217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21291700 | $\omega$ | 298.88976 | | +0.66838233 | +0.74370231 | |
| $a$ | 2.7775538 | $\Omega$ | 13.07822 | | −0.66066858 | +0.60167259 | |
| $e$ | 0.1791011 | $i$ | 3.32200 | | −0.34173395 | +0.29137083 | |
| $P$ | 4.63 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.7− | 0.2+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 07 20 | 644 | 0.3− | 0.3+ |
| 1960 09 24 | 675 | 0.4− | 0.2− | 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 07 20 | 644 | 0.2− | 0.4+ |
| 1960 09 26 | 675 | 0.9+ | 0.1− | 2005 03 08 | G96 | 0.4− | 0.1+ | 2006 07 20 | 644 | 0.1+ | 0.4+ |
| 1960 09 26 | 675 | 0.6+ | 0.0 | 2005 03 08 | G96 | 0.4− | 0.3+ | 2006 07 25 | 644 | 0.4− | 0.3+ |
| 1960 09 27 | 675 | 0.4+ | 1.3+ | 2005 03 08 | G96 | 0.1− | 0.3+ | 2006 07 25 | 644 | 0.3− | 0.3+ |
| 1960 09 27 | 675 | 0.3− | 0.1− | 2005 03 08 | G96 | 0.0 | 0.2− | 2006 07 25 | 644 | 0.0 | 0.1+ |
| 1960 09 28 | 675 | 0.6+ | 0.1− | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 08 14 | 644 | 0.1+ | 0.1+ |
| 1960 09 28 | 675 | 0.7− | 1.7− | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.0 | 0.2+ | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.2− | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.2+ | 0.3+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2002 12 05 | 695 | 0.1− | 0.3+ | 2005 05 08 | G96 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.1+ | 0.0 |
| 2002 12 05 | 695 | 0.1+ | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.2− | | | | |
| 2004 01 27 | 691 | 0.2+ | 0.1+ | 2005 05 08 | G96 | 0.9+ | 0.7− | | | | |

**(145663)∗ 6805 P-L = 2002 XH$_{96}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 43313)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.00635 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23654884 | $\omega$ | 278.68321 | | +0.93256981 | +0.35809586 | |
| $a$ | 2.5893385 | $\Omega$ | 60.34459 | | −0.30712088 | +0.85345589 | |
| $e$ | 0.2807955 | $i$ | 3.00898 | | −0.18971113 | +0.37865603 | |
| $P$ | 4.17 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.6+ |
| 1960 09 26 | 675 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 1960 09 27 | 675 | 0.9+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 1960 09 28 | 675 | 0.4+ | 0.5− | 2006 09 30 | 703 | 0.8+ | 0.9− | 2006 11 11 | 703 | 0.4+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 10 17 | 675 | 0.1− | 0.9− | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 13 | 683 | (2.3+ | 1.3−) |
| 1960 10 22 | 675 | 0.5− | 0.4+ | 2006 10 03 | 704 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 1960 10 25 | 675 | 0.7+ | 0.2− | 2006 10 03 | 704 | 0.1+ | 0.8+ | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 1960 10 26 | 675 | 0.5− | 0.1− | 2006 10 03 | 704 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2002 11 06 | 704 | 0.0 | 0.3− | 2006 10 03 | 704 | 0.1− | 0.3− | 2006 11 13 | 683 | (1.8+ | 0.8−) |
| 2002 11 06 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2002 11 06 | 704 | 0.1+ | 1.0+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 13 | 683 | 1.5+ | 0.5− |
| 2002 11 06 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 15 | 683 | 1.3− | 0.8− |
| 2002 11 14 | 704 | 0.6+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 15 | 683 | 0.8− | 0.7− |
| 2002 11 14 | 704 | 0.6+ | 1.1− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 15 | 683 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 0.9+ | 1.0− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2002 11 24 | 644 | 0.7+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.9− | 0.4− |
| 2002 11 24 | 644 | 1.0+ | 0.7− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.4+ |
| 2002 11 24 | 644 | 0.5+ | 0.8− | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2002 11 26 | 291 | 0.9− | 0.3− | 2006 10 16 | 703 | (1.6+ | 0.5+) | 2006 11 18 | 704 | 1.0− | 0.7− |
| 2002 11 26 | 291 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2002 11 26 | 291 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.9+ | 0.3− | 2006 11 18 | 704 | 0.6− | 0.5+ |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 1.1+ | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.6− |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | (1.8− | 0.2+) |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 1.3− | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | (1.3+ | 1.8−) |
| 2002 12 10 | 704 | 0.8+ | 1.0+ | 2006 10 19 | 644 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2002 12 10 | 704 | 0.6+ | 0.5− | 2006 10 19 | 644 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.9− | 0.3− |
| 2002 12 10 | 704 | 1.2+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 22 | 683 | (1.7+ | 0.3−) |
| 2002 12 10 | 704 | 0.4− | 1.1+ | 2006 10 23 | 691 | 0.6− | 0.1+ | 2006 11 22 | 683 | 0.3+ | 0.5+ |
| 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 22 | 683 | 0.9+ | 0.7+ |
| 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 23 | 683 | 0.4+ | 0.7− |
| 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 23 | 683 | 0.4− | 0.3+ |
| 2005 05 14 | G96 | 0.6− | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 23 | 683 | 0.3+ | 1.1+ |
| 2005 05 14 | G96 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 28 | 704 | 1.9− | 0.5+ |
| 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.6− | 1.5+ |
| 2005 05 14 | G96 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.7− | 1.7+ |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 1.3+ | 1.7+ |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1− | | | | |

**(145664)∗ 6848 P-L = 2003 WO$_{76}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 57612)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.65498 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29973268 | $\omega$ | 1.18068 | | +0.95007263 | −0.31034429 | |
| $a$ | 2.2112948 | $\Omega$ | 17.00766 | | +0.28536589 | +0.82222567 | |
| $e$ | 0.1815760 | $i$ | 6.35557 | | +0.12620738 | +0.47710729 | |
| $P$ | 3.29 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.1+ | 0.0 | 2003 12 04 | 704 | 1.2− | 0.7− | 2006 09 14 | 703 | 0.5− | 0.4− |
| 1960 09 24 | 675 | 1.1+ | 0.3− | 2003 12 18 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.4− |
| 1960 09 26 | 675 | 0.6− | 0.5+ | 2003 12 18 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.3− | 1.3− |
| 1960 09 26 | 675 | 0.5+ | 0.8− | 2003 12 18 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.2− | 1.0− |
| 1960 09 27 | 675 | 0.6− | 0.5− | 2003 12 29 | 704 | 0.1− | 0.4− | 2006 09 16 | 704 | 1.0+ | 0.9+ |
| 1960 09 27 | 675 | 1.1+ | 0.2+ | 2003 12 29 | 704 | 0.2− | 0.3+ | 2006 09 16 | 704 | 0.4− | 0.2− |
| 1960 09 28 | 675 | 1.7− | 0.8+ | 2003 12 29 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 704 | 0.5− | 0.1− |
| 1960 09 28 | 675 | 0.9+ | 1.5− | 2003 12 29 | 704 | 0.9+ | 0.5− | 2006 09 16 | 704 | 0.0 | 0.6+ |
| 1993 11 06 | 691 | 0.2− | 0.0 | 2003 12 29 | 704 | 1.2+ | 0.3+ | 2006 10 19 | 703 | 1.1+ | 0.1− |
| 1993 11 06 | 691 | 0.3− | 0.2+ | 2005 03 08 | G96 | 0.6+ | 0.1− | 2006 10 19 | 703 | 0.6− | 1.3+ |
| 1993 11 06 | 691 | 0.3+ | 0.3+ | 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1− | 1.0+ |
| 2003 11 19 | 704 | 0.3− | 0.1+ | 2005 03 08 | G96 | 0.5− | 0.4− | 2006 10 19 | 703 | 0.3− | 0.9+ |
| 2003 11 19 | 704 | 0.4− | 0.3− | 2005 03 08 | G96 | 0.1− | 0.3+ | 2006 10 20 | 695 | 0.1+ | 0.0 |
| 2003 11 19 | 704 | 0.1+ | 0.4+ | 2006 08 23 | 644 | 0.1+ | 0.3− | 2006 10 20 | 695 | 0.1− | 0.0 |
| 2003 11 21 | 644 | 0.0 | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2003 11 21 | 644 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2003 11 21 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.9+ | 1.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2003 12 04 | 704 | 0.5− | 0.8− | 2006 08 30 | 699 | 0.6+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2003 12 04 | 704 | 0.8− | 1.0− | 2006 08 30 | 699 | 0.5− | 0.8+ | | | | |
| 2003 12 04 | 704 | 0.4− | 1.3− | 2006 08 30 | 699 | 0.5+ | 0.5+ | | | | |

**(145665)∗ 6859 P-L**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.09845 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19359793 | $\omega$ | 187.49996 | | +0.66247421 | +0.74705072 | |
| $a$ | 2.9593903 | $\Omega$ | 124.00723 | | −0.68377050 | +0.63314466 | |
| $e$ | 0.0545197 | $i$ | 3.81564 | | −0.30591801 | +0.20259086 | |
| $P$ | 5.09 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 2.1− | 0.2+ | 2001 10 16 | 704 | 1.0+ | 1.1− | 2004 03 28 | 704 | 1.0+ | 1.1+ |
| 1960 09 24 | 675 | 0.4+ | 0.2+ | 2001 10 16 | 704 | 0.0 | 1.4+ | 2004 03 28 | 704 | (1.8+ | 1.5+) |
| 1960 09 26 | 675 | 0.3− | 0.2− | 2001 10 16 | 704 | 0.2− | 1.3+ | 2006 09 29 | 699 | 0.9+ | 0.4+ |
| 1960 09 26 | 675 | 1.1+ | 1.1− | 2001 11 20 | 704 | 1.0− | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.3+ |
| 1960 09 27 | 675 | 0.4+ | 0.7+ | 2001 11 20 | 704 | 0.6+ | 0.5− | 2006 09 29 | 699 | 0.3− | 0.7+ |
| 1960 09 27 | 675 | 0.5+ | 1.1+ | 2001 11 20 | 704 | 0.7− | 0.2− | 2006 09 29 | 699 | (1.7− | 0.5−) |
| 1960 09 28 | 675 | 0.1− | 0.1+ | 2001 11 20 | 704 | 0.1− | 0.5− | 2006 10 02 | 691 | 0.0 | 0.5+ |
| 1960 09 28 | 675 | 0.1+ | 1.1− | 2001 11 20 | 704 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 1991 11 02 | 691 | 0.1+ | 0.1+ | 2004 03 15 | 703 | (0.4− | 1.7+) | 2006 10 02 | 691 | 0.1− | 0.5+ |
| 1991 11 02 | 691 | 0.4− | 0.3− | 2004 03 15 | 703 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 1991 11 02 | 691 | 0.1− | 0.3+ | 2004 03 15 | 703 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.7− |
| 1998 01 29 | 691 | 0.3+ | 0.1− | 2004 03 15 | 703 | 1.2− | 1.4+ | 2006 10 16 | 703 | 1.0− | 0.1+ |
| 1998 01 29 | 691 | 0.0 | 0.3− | 2004 03 19 | 704 | 0.8+ | 1.1+ | 2006 10 16 | 703 | 0.5+ | 1.0− |
| 1998 01 29 | 691 | 0.1− | 0.2− | 2004 03 19 | 704 | 1.3+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 09 16 | 704 | 0.3− | 0.2− | 2004 03 19 | 704 | (1.3+ | 1.7+) | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.1− | 0.6− | 2004 03 22 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.5+ | 0.0 | 2004 03 22 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | 0.0 | 0.7− | 2004 03 22 | 704 | (1.9+ | 2.0+) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 10 12 | 699 | 0.6+ | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 10 12 | 699 | 0.5+ | 0.8+ | 2004 03 23 | 683 | 1.3+ | 1.2+ | 2006 10 22 | 703 | 1.4− | 0.8− |
| 2001 10 12 | 699 | (1.7+ | 1.1+) | 2004 03 23 | 683 | 0.6+ | 1.3+ | 2006 10 22 | 703 | (1.8− | 1.2−) |
| 2001 10 12 | 699 | 1.2− | 0.9+ | 2004 03 23 | 683 | (0.7+ | 2.3+) | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2001 10 16 | 704 | 0.2− | 0.8+ | 2004 03 28 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.8− | 0.3+ |
| 2001 10 16 | 704 | 0.5+ | 0.1+ | 2004 03 28 | 704 | 0.5− | 0.7+ | | | | |

**(145666)∗ 6882 P-L = 2002 XY$_{76}$ = 2004 FU$_{100}$**

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 62170)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.05832 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23652777 | $\omega$ | 23.78599 | | +0.84601172 | −0.53306241 | |
| $a$ | 2.5894923 | $\Omega$ | 8.44955 | | +0.47708407 | +0.74815308 | |
| $e$ | 0.2454024 | $i$ | 4.06756 | | +0.23802301 | +0.39510940 | |
| $P$ | 4.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.4− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.2− |
| 1960 09 24 | 675 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.3− |
| 1960 09 26 | 675 | 0.5+ | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.5− |
| 1960 09 28 | 675 | 0.7− | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.7− |
| 1960 09 28 | 675 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.8− |
| 2002 12 11 | 704 | 0.4− | 0.8− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.6− | 1.3+ |
| 2002 12 11 | 704 | 0.2− | 1.0− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | 1.6− | 0.2+ |
| 2002 12 11 | 704 | 0.6− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2002 12 14 | 704 | 0.8+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | (1.8− | 0.7−) |
| 2002 12 14 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.5+ | 1.1− |
| 2002 12 14 | 704 | 0.2+ | 1.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2002 12 14 | 704 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.0 | 1.2− |
| 2002 12 14 | 704 | 0.7− | 0.8+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 291 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | (2.5− | 1.4+) |
| 2004 03 23 | 291 | 0.6+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3− |
| 2004 03 23 | 291 | 0.6+ | 0.8+ | 2006 10 29 | 704 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 1.4+ |
| 2004 03 26 | 691 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.3− | 0.7+ | 2006 11 22 | 704 | (2.6− | 0.9−) |
| 2004 03 26 | 691 | 0.6− | 0.4− | 2006 10 29 | 704 | 0.3+ | 0.2+ | 2006 11 22 | 104 | 0.5+ | 0.0 |
| 2004 03 26 | 691 | 0.3− | 0.1− | 2006 10 29 | 704 | 0.8− | 0.3− | 2006 11 22 | 104 | 0.9− | 0.2+ |
| 2006 07 21 | G96 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 22 | 104 | 0.2+ | 0.7− |
| 2006 07 21 | G96 | 0.5+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 22 | 104 | 0.1+ | 0.8+ |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.5− |
| 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 29 | 704 | 1.2+ | 0.2− |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.7+ | 0.5− |
| 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.0 | | | | |

**(145667)∗ 9537 P-L = 2000 HD$_{45}$**

Discovered 1960 Oct. 17 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 10814)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.04469 | | (2000.0) | | | |
| $n$ | 0.23794123 | $\omega$ | 257.24307 | | +0.32149428 | −0.94686087 |
| $a$ | 2.5792271 | $\Omega$ | 173.97658 | | +0.90096130 | +0.30269394 |
| $e$ | 0.0755905 | $i$ | 5.35564 | | +0.29139348 | +0.10876984 |
| $P$ | 4.14 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 10 17 | 675 | 0.2+ | 1.0+ | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 10 30 | 703 | 0.3− | 0.2+ |
| 1960 10 22 | 675 | 1.9− | 0.7− | 2004 03 22 | 704 | 0.1+ | 0.4− | 2006 10 30 | 703 | 0.6− | 0.4+ |
| 1960 10 26 | 675 | 1.0+ | 1.1+ | 2004 03 22 | 704 | 0.1+ | 0.5− | 2006 10 30 | 703 | 0.5− | 0.0 |
| 2000 04 26 | 699 | 0.4+ | 0.1+ | 2004 03 22 | 704 | 0.5− | 0.1− | 2006 10 31 | 683 | 0.0 | 0.7− |
| 2000 04 26 | 699 | 0.6+ | 0.0 | 2004 03 22 | 704 | 0.1+ | 0.1− | 2006 10 31 | 683 | (1.7− | 0.6−) |
| 2000 04 26 | 699 | 1.0+ | 0.3+ | 2004 03 22 | 704 | 0.1− | 0.0 | 2006 10 31 | 683 | 1.2+ | 0.9+ |
| 2000 04 26 | 699 | 0.2− | 0.1+ | 2004 03 24 | 699 | 0.2− | 0.3− | 2006 11 02 | 703 | 0.0 | 0.1− |
| 2000 04 27 | 699 | 0.6+ | 0.5+ | 2004 03 24 | 699 | 0.3− | 0.3− | 2006 11 02 | 703 | 0.3+ | 0.0 |
| 2000 04 27 | 699 | 0.2+ | 0.2− | 2004 03 24 | 699 | 0.6− | 0.2− | 2006 11 02 | 703 | 0.6− | 0.1+ |
| 2000 04 27 | 699 | 0.0 | 0.3+ | 2004 03 24 | 699 | 0.4− | 0.2− | 2006 11 02 | 703 | 0.3− | 0.1+ |
| 2000 04 27 | 699 | 0.1− | 0.3− | 2004 03 25 | 699 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2000 04 28 | 691 | 0.1− | 0.1+ | 2004 03 25 | 699 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 04 28 | 691 | 0.3− | 0.3+ | 2004 03 25 | 699 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2000 04 28 | 691 | 0.1+ | 0.7+ | 2004 03 25 | 699 | 0.8− | 0.1− | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 10 02 | 704 | (1.8+ | 0.2+) | 2004 03 28 | 704 | 0.0 | 1.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 704 | 0.4+ | 1.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2002 10 02 | 704 | 0.9+ | 0.6+ | 2004 03 28 | 704 | 0.0 | 1.0+ | 2006 11 13 | 703 | 1.3− | 0.1− |
| 2002 11 07 | 704 | 0.3− | 0.1+ | 2004 03 28 | 704 | 0.0 | 1.3+ | 2006 11 13 | 703 | 0.5− | 0.9− |
| 2002 11 07 | 704 | 0.2− | 0.9− | 2004 03 28 | 704 | 0.3− | 0.8+ | 2006 11 13 | 703 | 0.5− | 0.8− |
| 2002 11 07 | 704 | 0.4− | 0.3+ | 2004 04 19 | 704 | 0.2+ | 1.2+ | 2006 11 13 | 703 | 0.5+ | 0.6− |
| 2002 11 07 | 704 | 0.4+ | 0.4+ | 2004 04 19 | 704 | (0.8+ | 1.6+) | 2006 11 14 | 704 | 1.1+ | 1.0+ |
| 2002 11 07 | 704 | 0.4− | 1.1+ | 2004 04 19 | 704 | (0.7+ | 2.1+) | 2006 11 14 | 704 | (1.1− | 3.0+) |
| 2002 11 11 | 704 | 0.1+ | 0.7− | 2004 04 19 | 704 | 0.9+ | 1.2+ | 2006 11 14 | 704 | (0.1+ | 3.0+) |
| 2002 11 11 | 704 | 1.0+ | 0.2+ | 2004 04 19 | 704 | 0.8+ | 1.4+ | 2006 11 14 | 704 | (2.2− | 0.0 ) |
| 2002 11 11 | 704 | 0.7− | 0.5− | 2004 04 22 | 704 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.6− | 0.4− | 2004 04 22 | 704 | 0.7+ | 0.6+ | 2006 11 15 | A44 | 0.3+ | 0.1− |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2004 04 22 | 704 | 0.1+ | 1.4+ | 2006 11 15 | A44 | 0.5+ | 0.3− |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2004 04 22 | 704 | 0.5+ | 0.6+ | 2006 11 15 | A44 | 0.3+ | 0.1− |
| 2002 11 24 | 644 | 0.6− | 0.1− | 2004 04 22 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.8+ |
| 2002 12 01 | 704 | (2.3+ | 0.1−) | 2005 06 17 | 691 | 0.1+ | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2002 12 01 | 704 | (1.7+ | 0.6+) | 2005 06 17 | 691 | 0.1− | 0.7+ | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2002 12 01 | 704 | (1.8+ | 0.0 ) | 2005 06 17 | 691 | 0.1− | 1.0+ | 2006 11 17 | 704 | 0.3+ | 0.8+ |
| 2002 12 01 | 704 | 1.4+ | 0.2− | 2006 08 29 | 703 | 0.2− | 0.8− | 2006 11 17 | 704 | 1.0+ | 0.1+ |
| 2002 12 03 | 644 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 1.5− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2002 12 03 | 644 | 0.5+ | 0.1+ | 2006 08 29 | 703 | 1.4− | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.3+ |
| 2002 12 03 | 644 | 0.4+ | 0.2+ | 2006 08 29 | 703 | 0.6− | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2002 12 05 | 608 | 1.0+ | 0.8+ | 2006 09 16 | 703 | (1.7− | 0.5+) | 2006 11 19 | 703 | 0.4− | 0.6+ |
| 2002 12 05 | 608 | (1.7+ | 0.8+) | 2006 09 16 | 703 | 0.7− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 12 05 | 608 | (1.6+ | 1.2+) | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.4+ |
| 2002 12 10 | 644 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.7− | 2006 11 19 | 703 | 0.2− | 0.6+ |
| 2002 12 10 | 644 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.2+ | 1.1+ |
| 2002 12 10 | 644 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.7− | 0.5+ |
| 2003 01 07 | 704 | (1.4+ | 4.7+) | 2006 10 16 | 703 | 1.2− | 0.9+ | 2006 11 20 | 704 | 0.5+ | 0.4+ |
| 2003 01 07 | 704 | (3.2+ | 2.7+) | 2006 10 16 | 703 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2003 01 07 | 704 | (1.6+ | 2.7+) | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2003 01 07 | 704 | (0.7+ | 1.5+) | 2006 10 16 | 703 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.9+ |
| 2003 01 27 | 644 | (0.2− | 1.7+) | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2003 01 27 | 644 | 0.2− | 1.2+ | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 25 | 704 | 1.2+ | 0.2− |
| 2003 01 27 | 644 | 0.1+ | 1.1+ | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 25 | 704 | 0.5+ | 0.5+ |
| 2004 03 16 | 704 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 25 | 704 | 0.8− | 0.2+ |
| 2004 03 16 | 704 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 25 | 704 | 0.6− | 0.4+ |
| 2004 03 16 | 704 | 0.6+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.0 |
| 2004 03 16 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.3+ | 0.2− |
| 2004 03 16 | 704 | 0.2− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2004 03 19 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2004 03 19 | 704 | 0.4+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.9+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 | | | | |
| 2004 03 19 | 704 | 0.3+ | 1.0+ | 2006 10 30 | 703 | 0.7− | 0.4− | | | | |

**(145668)∗ 1071 T-1 = 2000 CU$_{33}$**

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (MPC 40277)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.01452 | | (2000.0) | | | |
| $n$ | 0.27012773 | $\omega$ | 146.32613 | | −0.56257630 | −0.82661278 |
| $a$ | 2.3700451 | $\Omega$ | 337.89682 | | +0.74958139 | −0.50243183 |
| $e$ | 0.1365058 | $i$ | 2.25510 | | +0.34876303 | −0.25352232 |
| $P$ | 3.65 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 24 | 675 | 1.1− | 0.9− | 2000 03 05 | 704 | 0.9+ | 0.0 | 2004 04 20 | 704 | 0.5− | 0.1+ |
| 1971 03 25 | 675 | (3.3− | 0.4−) | 2000 03 05 | 704 | 0.7+ | 0.1+ | 2004 04 26 | 704 | 0.2− | 0.1+ |
| 1971 03 25 | 675 | 0.2− | 0.0 | 2000 03 05 | 704 | 0.3− | 0.2− | 2004 04 26 | 704 | 0.6− | 0.3− |
| 1971 03 26 | 675 | 0.0 | 0.6− | 2000 03 05 | 704 | 0.1+ | 0.1− | 2004 04 26 | 704 | 0.1+ | 0.0 |
| 2000 02 04 | 120 | 0.7− | 1.2− | 2000 03 09 | 691 | 0.1− | 0.1− | 2004 04 26 | 704 | 0.3− | 0.1− |
| 2000 02 04 | 120 | 1.7− | 0.4− | 2000 03 09 | 691 | 0.2− | 0.3− | 2004 04 26 | 704 | 0.1+ | 0.3+ |
| 2000 02 06 | 120 | 1.4− | 1.6− | 2000 03 09 | 691 | 0.3− | 0.5− | 2004 04 26 | 704 | 0.2− | 0.1− |
| 2000 02 06 | 120 | 1.1− | 0.2+ | 2000 03 10 | 691 | 0.2− | 0.1+ | 2004 04 26 | 704 | 0.7− | 0.3+ |
| 2000 02 06 | 120 | (2.6− | 2.0−) | 2000 03 10 | 691 | 0.1− | 0.0 | 2004 04 26 | 704 | 0.6+ | 0.5+ |
| 2000 02 06 | 120 | 1.8+ | 0.3− | 2000 03 10 | 691 | 0.1− | 0.2+ | 2004 04 26 | 704 | 0.7− | 1.5+ |
| 2000 02 06 | 120 | 1.4− | 0.4− | 2000 03 11 | 704 | 0.9+ | 0.9+ | 2004 04 26 | 704 | 0.3− | 0.4− |
| 2000 02 25 | 703 | 0.4+ | 1.2+ | 2000 03 11 | 704 | 0.4− | 0.6+ | 2004 05 23 | 691 | 0.1+ | 0.1+ |
| 2000 02 25 | 703 | 0.1− | 0.4− | 2000 03 11 | 704 | (1.1− | 2.0+) | 2004 05 23 | 691 | 0.2+ | 0.2+ |
| 2000 02 25 | 703 | 0.4− | 0.4+ | 2000 03 11 | 704 | (0.6+ | 2.1+) | 2004 05 23 | 691 | 0.0 | 0.3− |
| 2000 02 25 | 703 | 0.3+ | 0.1− | 2000 03 11 | 704 | 0.3+ | 1.6+ | 2004 05 28 | 691 | 0.2+ | 0.0 |
| 2000 02 29 | 704 | 0.8+ | 0.4+ | 2000 03 11 | 691 | 0.2+ | 0.3+ | 2004 05 28 | 691 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 0.3+ | 0.5+ | 2000 03 11 | 691 | 0.3+ | 0.4+ | 2004 05 28 | 691 | 0.0 | 0.1+ |
| 2000 02 29 | 704 | 0.1− | 0.3+ | 2000 03 11 | 691 | 0.0 | 0.3+ | 2005 07 18 | 644 | 0.6+ | 0.5+ |
| 2000 02 29 | 704 | 0.6+ | 0.2− | 2004 04 16 | 691 | 0.0 | 0.4+ | 2005 07 18 | 644 | 0.3+ | 0.4− |
| 2000 02 29 | 704 | 0.4+ | 0.4+ | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2005 07 18 | 644 | 0.4+ | 0.1+ |
| 2000 03 02 | 691 | 0.0 | 0.4− | 2004 04 16 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2000 03 02 | 691 | 0.1− | 0.6− | 2004 04 17 | 704 | (0.1− | 1.7+) | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2000 03 02 | 691 | 0.2− | 0.8− | 2004 04 17 | 704 | 0.9+ | 1.0+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2000 03 03 | 704 | 1.7+ | 0.7− | 2004 04 17 | 704 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.5+ |
| 2000 03 03 | 704 | 0.2+ | 0.8− | 2004 04 20 | 704 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2000 03 03 | 704 | 0.7+ | 0.1− | 2004 04 20 | 704 | 0.4+ | 0.4+ | 2006 11 23 | 691 | 1.0− | 0.6+ |
| 2000 03 05 | 704 | 0.7+ | 0.3+ | 2004 04 20 | 704 | 0.5+ | 0.1− | | | | |

**(145669)∗ 2244 T-1 = 2006 DV$_{40}$**

Discovered 1971 Mar. 25 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 101856)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.83452 | | (2000.0) | | −0.88469109 | +0.46137666 |
| $n$ | 0.22509561 | $\omega$ | 186.72028 | | −0.41864159 | −0.72332096 |
| $a$ | 2.6764432 | $\Omega$ | 21.15557 | | −0.20508753 | −0.51374932 |
| $e$ | 0.1796674 | $i$ | 10.65563 | | | |
| $P$ | 4.38 | $H$ | 15.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 24 | 675 | 2.1− | 1.9− | 2006 03 23 | 703 | 0.6− | 0.6− | 2006 04 18 | 703 | 0.7− | 0.4− |
| 1971 03 25 | 675 | 0.5− | 1.6− | 2006 03 23 | 703 | 0.4− | 0.2+ | 2006 04 18 | 703 | 0.1− | 0.8− |
| 1971 03 25 | 675 | 0.6− | 0.5− | 2006 03 23 | 703 | 0.8− | 0.2− | 2006 04 18 | 703 | 0.2− | 0.1− |
| 1971 03 26 | 675 | 0.4− | 1.5− | 2006 03 23 | A80 | 0.1− | 0.2− | 2006 04 18 | 703 | 0.7− | 0.1+ |
| 1971 03 27 | 675 | 1.7− | 0.5− | 2006 03 23 | A80 | 0.3− | 0.1+ | 2006 04 21 | 699 | 0.4+ | 0.2− |
| 1971 04 02 | 675 | 0.9+ | 0.9− | 2006 03 23 | A80 | (0.6+ | 1.7−) | 2006 04 21 | 699 | 0.5+ | 0.1− |
| 2002 07 06 | 644 | 0.1− | 0.1+ | 2006 03 24 | 704 | 0.2+ | 0.7+ | 2006 04 21 | 699 | 0.4− | 0.1− |
| 2002 07 06 | 644 | 0.3− | 0.1− | 2006 03 24 | 704 | 0.5+ | 0.4+ | 2006 04 21 | 699 | 0.8+ | 0.0 |
| 2002 07 06 | 644 | 0.0 | 0.2+ | 2006 03 24 | 704 | 0.1+ | 0.3+ | 2006 04 21 | 699 | 0.7− | 0.3+ |
| 2003 08 22 | 644 | 0.1− | 0.1+ | 2006 03 24 | 704 | 0.8+ | 0.4− | 2006 04 21 | 699 | 0.2− | 1.4+ |
| 2003 08 22 | 644 | 0.2− | 0.7+ | 2006 03 24 | 704 | 0.6+ | 0.1+ | 2006 04 21 | 699 | (1.6+ | 0.8+) |
| 2003 08 22 | 644 | 0.0 | 1.1+ | 2006 03 24 | 704 | 0.6− | 0.1+ | 2006 04 23 | 704 | 0.8+ | 0.7+ |
| 2003 09 16 | 644 | 0.7− | 0.4+ | 2006 03 24 | 704 | 0.8+ | 1.4+ | 2006 04 23 | 704 | 0.3+ | 0.1+ |
| 2003 09 16 | 644 | 0.3− | 0.4+ | 2006 03 24 | 699 | 1.4+ | 0.1− | 2006 04 23 | 704 | 1.1− | 0.5− |
| 2003 09 16 | 644 | 0.7− | 0.0 | 2006 03 24 | 704 | 0.4+ | 0.6+ | 2006 04 24 | 704 | 0.5+ | 0.1+ |
| 2003 09 21 | 691 | 0.1− | 0.5+ | 2006 03 24 | 704 | 0.1+ | 1.3+ | 2006 04 24 | 704 | 1.1+ | 0.2− |
| 2003 09 21 | 691 | 0.2− | 0.5+ | 2006 03 24 | 699 | 0.0 | 0.3+ | 2006 04 24 | 704 | 0.2− | 0.2+ |
| 2003 09 21 | 691 | 0.4− | 0.3+ | 2006 03 24 | 704 | 0.2+ | 0.4+ | 2006 04 24 | 704 | 0.6+ | 0.3+ |
| 2006 02 22 | 703 | 0.8− | 0.2+ | 2006 03 24 | 699 | 0.4+ | 0.2− | 2006 04 24 | 704 | 0.9+ | 0.2+ |
| 2006 02 22 | 703 | 0.1− | 0.2+ | 2006 03 29 | 704 | 0.4− | 0.3+ | 2006 04 26 | 704 | 0.6+ | 0.1− |
| 2006 02 22 | 703 | 0.8− | 0.1− | 2006 03 29 | 704 | 0.1+ | 1.0+ | 2006 04 26 | 704 | 0.3+ | 0.9+ |
| 2006 02 22 | 703 | 0.2− | 0.1− | 2006 03 29 | 704 | 0.1− | 0.9+ | 2006 04 26 | 704 | 0.4+ | 0.6+ |
| 2006 02 23 | 699 | 0.4+ | 0.1+ | 2006 03 29 | 704 | 0.1+ | 0.9+ | 2006 04 26 | 704 | 1.2+ | 0.4+ |
| 2006 02 23 | 699 | 1.1+ | 0.1+ | 2006 03 29 | 704 | 0.1− | 0.0 | 2006 04 26 | 704 | 0.2+ | 0.7+ |
| 2006 02 23 | 699 | 0.8+ | 0.7− | 2006 03 31 | 704 | 0.2− | 0.3+ | 2006 05 05 | G96 | 0.0 | 0.4− |
| 2006 02 23 | 699 | (1.9− | 1.2+) | 2006 03 31 | 704 | 0.3+ | 0.0 | 2006 05 05 | G96 | 0.1− | 0.2− |
| 2006 02 24 | 704 | 0.0 | 0.1− | 2006 03 31 | 704 | 0.4+ | 0.0 | 2006 05 05 | G96 | 0.3− | 0.4− |
| 2006 02 24 | 704 | 0.7− | 0.3− | 2006 03 31 | 704 | 0.9+ | 0.4+ | 2006 05 05 | G96 | 0.0 | 0.2− |
| 2006 02 24 | 704 | 0.4+ | 0.2+ | 2006 03 31 | 704 | 0.9+ | 0.4+ | 2006 05 20 | G96 | 0.4− | 0.3− |
| 2006 02 24 | 704 | 0.4+ | 0.2+ | 2006 04 02 | 704 | 1.2+ | 0.8+ | 2006 05 20 | G96 | 0.1− | 0.1+ |
| 2006 02 24 | 704 | 0.5+ | 0.4+ | 2006 04 02 | 704 | 0.3+ | 0.5+ | 2006 05 20 | G96 | 0.3− | 0.2− |
| 2006 03 05 | 704 | 0.1− | 0.9+ | 2006 04 02 | 704 | 0.3+ | 0.9+ | 2006 05 20 | G96 | 0.0 | 0.2− |
| 2006 03 05 | 704 | 0.0 | 0.2− | 2006 04 02 | 704 | 0.2+ | 0.1+ | 2006 05 24 | 703 | 0.3− | 0.7− |
| 2006 03 05 | 704 | 0.5+ | 0.4+ | 2006 04 02 | 704 | 0.4+ | 0.7+ | 2006 05 24 | 703 | 0.7− | 0.1− |
| 2006 03 05 | 704 | 0.1− | 0.4+ | 2006 04 03 | 704 | 0.4− | 0.2− | 2006 05 24 | 703 | 0.7− | 0.9− |
| 2006 03 05 | 704 | 0.2− | 0.4+ | 2006 04 03 | 704 | 0.1+ | 0.3+ | 2006 05 24 | 703 | 0.7− | 0.4− |
| 2006 03 23 | 703 | 0.7− | 0.1+ | 2006 04 03 | 704 | 1.0+ | 0.7− | | | | |

**(145670)∗ 4241 T-1 = 2005 JT$_4$**

Discovered 1971 Mar. 26 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 77275)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 102.77052 | | (2000.0) | | −0.24296409 | +0.96945799 |
| $n$ | 0.23426248 | $\omega$ | 84.37345 | | −0.95453874 | −0.23279921 |
| $a$ | 2.6061589 | $\Omega$ | 171.34348 | | −0.17269699 | −0.07717340 |
| $e$ | 0.1368834 | $i$ | 12.84524 | | | |
| $P$ | 4.21 | $H$ | 15.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 24 | 675 | 0.5+ | 0.1− | 2005 05 13 | 703 | 0.4− | 0.8− | 2005 06 13 | 683 | 0.5+ | 0.3− |
| 1971 03 26 | 675 | 0.5− | 1.6− | 2005 05 14 | 691 | 0.1+ | 0.2+ | 2005 06 14 | 683 | (0.2+ | 2.2−) |
| 1971 03 26 | 675 | 0.8− | 0.6− | 2005 05 14 | 691 | 0.1+ | 0.1+ | 2005 06 14 | 683 | 0.6+ | 0.4+ |
| 1971 03 27 | 675 | 0.1+ | 0.5− | 2005 05 14 | 691 | 0.1− | 0.9− | 2005 06 14 | 683 | 1.3− | 1.0+ |
| 1971 04 02 | 675 | (0.3− | 5.0−) | 2005 05 15 | 644 | 0.0 | 0.2− | 2005 06 16 | 703 | 0.0 | 1.2+ |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2005 05 15 | 644 | 0.2− | 0.2− | 2005 06 16 | 703 | 0.3+ | 0.8+ |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.1− | 2005 06 16 | 703 | 0.4− | 0.1+ |
| 2003 01 25 | 809 | 0.0 | 0.3+ | 2005 05 19 | 703 | 0.2− | 0.2+ | 2005 06 16 | 703 | 0.8− | 0.2− |
| 2003 01 25 | 809 | 0.2+ | 0.6+ | 2005 05 19 | 703 | 0.3− | 0.1− | 2005 06 27 | 699 | 1.1+ | 0.8+ |
| 2003 01 25 | 809 | 0.0 | 0.5+ | 2005 05 19 | 703 | 0.3− | 0.2− | 2005 06 27 | 699 | 0.4− | 0.5+ |
| 2003 01 25 | 809 | 0.1− | 0.3+ | 2005 05 19 | 703 | 0.4− | 0.6+ | 2005 06 27 | 699 | 0.5− | 0.8+ |
| 2004 04 14 | 645 | 0.1+ | 0.3+ | 2005 05 20 | 644 | 0.0 | 0.2− | 2005 06 27 | 699 | 0.6− | 0.3+ |
| 2004 04 14 | 645 | 0.0 | 0.3+ | 2005 05 20 | 644 | 0.0 | 0.1− | 2005 07 01 | 644 | 0.2− | 0.1− |
| 2005 04 15 | 703 | 0.6− | 0.0 | 2005 05 20 | 644 | 0.1− | 0.1− | 2005 07 01 | 644 | 0.0 | 0.0 |
| 2005 04 15 | 703 | 1.1− | 0.4− | 2005 05 31 | 703 | 1.2+ | 0.7− | 2005 07 01 | 644 | 0.1+ | 0.0 |
| 2005 04 15 | 703 | 0.7− | 0.4+ | 2005 05 31 | 703 | 0.8− | 0.0 | 2005 07 10 | 699 | 1.3+ | 0.4+ |
| 2005 04 15 | 703 | 1.0− | 0.3− | 2005 05 31 | 703 | 0.7− | 0.1+ | 2005 07 10 | 699 | 0.7+ | 0.6− |
| 2005 05 01 | 691 | 0.1− | 0.3+ | 2005 06 05 | 683 | (0.6+ | 2.4+) | 2005 07 10 | 699 | 0.6+ | 0.1− |
| 2005 05 01 | 691 | 0.0 | 0.1+ | 2005 06 05 | 683 | 0.4+ | 1.4+ | 2005 07 10 | 699 | 0.4+ | 0.2+ |
| 2005 05 01 | 691 | 0.1+ | 0.3+ | 2005 06 05 | 683 | (0.9− | 1.5+) | 2006 09 18 | 703 | (1.5− | 0.2+) |
| 2005 05 01 | 691 | 0.3+ | 0.2+ | 2005 06 06 | 683 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.9+ | 0.1+ |
| 2005 05 01 | 691 | 0.1− | 0.2+ | 2005 06 06 | 704 | 1.0+ | 0.7− | 2006 09 18 | 703 | 0.5− | 0.0 |
| 2005 05 01 | 691 | 0.0 | 0.1+ | 2005 06 06 | 704 | 1.1+ | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.1+ |
| 2005 05 06 | 704 | 0.2− | 0.1− | 2005 06 06 | 683 | 1.1− | 1.0+ | 2006 10 16 | 703 | 0.6+ | 0.2− |
| 2005 05 06 | 704 | 0.2− | 0.3+ | 2005 06 06 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2005 05 06 | 704 | 0.3+ | 0.3− | 2005 06 06 | 683 | (1.2− | 2.0+) | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2005 05 06 | 704 | 0.5+ | 0.4− | 2005 06 06 | 704 | 1.0+ | 0.7+ | 2006 10 16 | 703 | 0.7− | 0.7− |
| 2005 05 06 | 704 | 0.3− | 0.1− | 2005 06 06 | 704 | 1.0+ | 0.1− | 2006 10 22 | 703 | 0.5− | 0.9+ |
| 2005 05 06 | 691 | 0.0 | 0.1+ | 2005 06 07 | 683 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.8− | 1.0+ |
| 2005 05 06 | 691 | 0.3− | 0.2+ | 2005 06 07 | 683 | 0.2+ | 0.0 | 2006 10 22 | 703 | (1.2− | 1.7+) |
| 2005 05 06 | 691 | 0.0 | 0.1+ | 2005 06 07 | 683 | 0.6− | 0.7− | 2006 10 22 | 703 | 0.6− | 0.8+ |
| 2005 05 10 | 691 | 0.1+ | 0.1+ | 2005 06 07 | 699 | 1.1+ | 0.3+ | 2006 10 28 | 703 | 0.8+ | 0.9+ |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2005 06 07 | 699 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 1.6− | 0.7− |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2005 06 07 | 699 | 0.3+ | 0.9+ | 2006 10 28 | 703 | 0.3+ | 0.8+ |
| 2005 05 13 | 703 | 0.3− | 0.2− | 2005 06 07 | 699 | 0.2− | 0.2− | 2006 10 28 | 703 | 1.7− | 0.6+ |
| 2005 05 13 | 703 | 0.4− | 0.3+ | 2005 06 13 | 683 | (0.7+ | 2.3−) | | | | |
| 2005 05 13 | 703 | 1.3+ | 0.1+ | 2005 06 13 | 683 | 1.1+ | 0.6+ | | | | |

**(145671)∗ 1073 T-2 = 2002 RD$_{22}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 35421)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.76262 | | (2000.0) | | +0.97984530 | +0.19959011 |
| $n$ | 0.27118584 | $\omega$ | 353.23524 | | −0.17835571 | +0.85567945 |
| $a$ | 2.3638761 | $\Omega$ | 355.22833 | | −0.08995796 | +0.47746882 |
| $e$ | 0.0662366 | $i$ | 5.64614 | | | |
| $P$ | 3.63 | $H$ | 16.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 1.7+ | 1.8− | 2002 09 28 | 291 | 0.2− | 0.4+ | 2004 02 23 | 704 | 0.0 | 0.1− |
| 1973 09 19 | 675 | 0.6+ | 0.7− | 2002 09 28 | 291 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.6+ | 0.3+ |
| 1973 09 24 | 675 | 0.5+ | 1.3− | 2002 10 01 | 608 | 0.1+ | 0.1− | 2004 03 18 | 645 | 0.0 | 0.0 |
| 1973 09 24 | 675 | 1.0− | 1.8− | 2002 10 01 | 608 | 0.2+ | 0.4− | 2004 03 18 | 645 | 0.0 | 0.0 |
| 1973 09 29 | 675 | 0.5+ | 1.7− | 2002 10 01 | 608 | 0.5+ | 1.0− | 2004 04 15 | 645 | 0.1− | 0.0 |
| 1973 09 29 | 675 | (0.3+ | 2.9−) | 2002 10 03 | 704 | 0.4− | 0.6− | 2004 04 15 | 645 | 0.1− | 0.0 |
| 1973 09 30 | 675 | 1.2− | 0.7− | 2002 10 03 | 704 | 0.4− | 0.3− | 2004 04 16 | 645 | 0.1− | 0.1+ |
| 1973 09 30 | 675 | 1.5+ | 1.4− | 2002 10 03 | 704 | 0.3− | 0.5− | 2004 04 16 | 645 | 0.1− | 0.1+ |
| 1973 10 04 | 675 | (2.8+ | 2.0−) | 2002 10 03 | 704 | 0.7− | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 1973 10 04 | 675 | 1.4+ | 2.3− | 2002 10 03 | 704 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.5− |
| 1973 10 05 | 675 | 0.5+ | 1.2+ | 2002 10 06 | 704 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.5− |
| 1973 10 05 | 675 | 1.3+ | 0.8+ | 2002 10 06 | 704 | 0.5− | 0.4− | 2006 10 04 | G96 | 0.4+ | 0.6− |
| 2001 04 23 | 704 | 1.0+ | 1.1− | 2002 10 06 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.6+ |
| 2001 04 23 | 704 | 1.2+ | 0.3+ | 2002 10 06 | 704 | 1.3− | 1.4− | 2006 10 19 | 703 | 1.2+ | 0.3+ |
| 2001 04 23 | 704 | 0.3+ | 0.2− | 2002 10 07 | 704 | 1.4+ | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.9+ |
| 2002 08 12 | 704 | 0.4− | 0.7+ | 2002 10 07 | 704 | (2.3+ | 1.5−) | 2006 10 19 | 703 | (1.6+ | 0.9+) |
| 2002 08 12 | 704 | 0.9− | 0.4+ | 2002 10 07 | 704 | 0.7+ | 0.1− | 2006 10 20 | A50 | 0.4− | 0.0 |
| 2002 08 12 | 704 | 0.1+ | 0.9+ | 2002 10 07 | 704 | 0.5+ | 0.8+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2002 08 12 | 704 | 0.4− | 0.7+ | 2002 10 11 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.1+ |
| 2002 08 12 | 704 | 0.1− | 1.2+ | 2002 10 11 | 704 | 0.2− | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.2+ |
| 2002 08 21 | 644 | 0.9− | 0.3+ | 2002 10 11 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.7− | 0.1+ |
| 2002 08 21 | 644 | 0.5− | 0.2+ | 2004 01 18 | 644 | 0.8+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2002 08 21 | 644 | 0.5− | 0.4+ | 2004 01 18 | 644 | 0.6+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 699 | (1.6− | 1.4+) | 2004 01 18 | 644 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.3− | | |
| 2002 08 30 | 699 | (0.7− | 1.5+) | 2004 01 27 | 704 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.1− | | |
| 2002 08 30 | 699 | 0.8− | 0.9+ | 2004 01 27 | 704 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.1− | | |
| 2002 08 30 | 699 | 1.4− | 1.4+ | 2004 01 27 | 704 | 0.6+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.1− | | |
| 2002 09 04 | 699 | 0.9− | 0.6+ | 2004 01 27 | 704 | 0.5− | 0.1+ | 2006 11 10 | 644 | 0.4+ | 0.1− | | |
| 2002 09 04 | 699 | 0.4+ | 0.7+ | 2004 01 27 | 704 | 0.7+ | 0.7− | 2006 11 10 | 644 | 0.3+ | 0.1− | | |
| 2002 09 04 | 699 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 11 10 | 644 | 0.3+ | 0.2− | | |
| 2002 09 04 | 699 | 0.5+ | 0.8+ | 2004 01 30 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.9− | 1.0+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.4− | | |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.6+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.1+ | 2004 01 30 | 704 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.3− | | |
| 2002 09 05 | 704 | 0.3+ | 0.7− | 2004 02 10 | 644 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.4+ | 0.0 | | |
| 2002 09 05 | 704 | 0.2+ | 0.3− | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.4− | | |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2004 02 10 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.5− | | |
| 2002 09 07 | 704 | 0.5− | 0.0 | 2004 02 15 | 704 | 0.4− | 0.6+ | 2006 11 16 | 704 | 0.1− | 0.5− | | |
| 2002 09 07 | 704 | 0.2+ | 0.0 | 2004 02 15 | 704 | 1.1− | 0.9− | 2006 11 16 | 704 | 0.0 | 0.2− | | |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.4+ | | |
| 2002 09 07 | 704 | 0.2− | 0.4− | 2004 02 15 | 704 | 0.4+ | 0.7+ | 2006 11 16 | 704 | 0.7+ | 0.2+ | | |
| 2002 09 12 | 644 | 0.7− | 0.3+ | 2004 02 15 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.3− | 0.3+ | | |
| 2002 09 12 | 644 | 0.6− | 0.4+ | 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.8+ | | |
| 2002 09 12 | 644 | 0.7− | 0.4+ | 2004 02 17 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2002 09 15 | 644 | 0.5− | 0.9+ | 2004 02 17 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.1− | | |
| 2002 09 15 | 644 | 0.6− | 0.4+ | 2004 02 17 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.3+ | | |
| 2002 09 15 | 644 | 0.4− | 0.8+ | 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.5+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.2− | 0.5+ | 2004 02 17 | 644 | 0.0 | 0.5+ | 2006 11 22 | 703 | 0.2+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.4− | 0.9+ | 2004 02 23 | 704 | 0.8+ | 0.7+ | 2006 11 22 | 703 | 0.1− | 0.5− | | |
| 2002 09 15 | 644 | 0.5− | 0.5+ | 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 11 22 | 703 | 0.4− | 0.3− | | |
| 2002 09 28 | 291 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.7+ | 0.8+ | | | | | | |

**(145672)∗ 1321 T-2 = 2000 EE$_{54}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 583), M. E. Sansaturio (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.78141 | | (2000.0) | | +0.89467663 | −0.44664859 |
| $n$ | 0.24115523 | $\omega$ | 214.83046 | | +0.42095719 | +0.83722282 |
| $a$ | 2.5562594 | $\Omega$ | 171.68771 | | +0.14949509 | +0.31553603 |
| $e$ | 0.1075693 | $i$ | 3.03982 | | | |
| $P$ | 4.09 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.3+ | 0.8− | 2002 12 01 | 704 | 0.6− | 0.6− | 2004 04 10 | 644 | 0.4+ | 0.1+ | | |
| 1973 09 19 | 675 | 1.4− | 0.8+ | 2002 12 11 | 704 | 0.6− | 0.5+ | 2004 04 10 | 644 | 0.3+ | 0.1+ | | |
| 1973 09 19 | 675 | 0.7+ | 0.9+ | 2002 12 11 | 704 | 0.2+ | 0.1− | 2004 04 10 | 644 | 0.7+ | 0.1+ | | |
| 1973 09 20 | 675 | 0.4− | 0.6+ | 2002 12 11 | 704 | 0.3+ | 0.5− | 2004 04 25 | 691 | 0.1− | 0.0 | | |
| 1973 09 24 | 675 | 0.4− | 0.7− | 2002 12 11 | 704 | 0.2− | 0.2− | 2004 04 25 | 691 | 0.1− | 0.0 | | |
| 1973 09 24 | 675 | 1.4+ | 0.3+ | 2002 12 15 | 608 | 0.1+ | 0.7− | 2004 04 25 | 691 | 0.1− | 0.1− | | |
| 1973 09 24 | 675 | 0.3+ | 0.1− | 2002 12 15 | 608 | 0.0 | 1.2− | 2006 10 16 | 703 | 0.3− | 0.4+ | | |
| 1973 09 24 | 675 | 0.9+ | 0.4+ | 2002 12 15 | 608 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.4− | 0.2− | | |
| 1973 09 25 | 675 | (3.1− | 1.2−) | 2002 12 27 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.3− | | |
| 1973 09 25 | 675 | 0.6+ | 0.7− | 2002 12 27 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.2− | | |
| 1973 09 29 | 675 | 0.1− | 1.3− | 2002 12 27 | 644 | 0.5− | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.4− | | |
| 1973 09 29 | 675 | 0.6− | 2.2− | 2002 12 31 | 704 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.4− | | |
| 1973 09 30 | 675 | 1.1− | 0.5− | 2002 12 31 | 704 | 0.6+ | 1.0+ | 2006 10 17 | G96 | 0.3+ | 0.6− | | |
| 1973 09 30 | 675 | 1.7− | 0.6+ | 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | | |
| 1973 10 04 | 675 | 0.5− | 0.7− | 2002 12 31 | 704 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 1973 10 04 | 675 | 0.6+ | 1.4− | 2004 02 26 | 704 | 0.5+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.2+ | | |
| 1973 10 05 | 675 | 2.4+ | 0.5− | 2004 02 26 | 704 | 0.5+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.3+ | | |
| 1973 10 05 | 675 | 1.6+ | 0.9− | 2004 02 26 | 704 | 0.8+ | 0.2+ | 2006 11 02 | 703 | 0.2+ | 0.1− | | |
| 2000 03 09 | 691 | 0.0 | 0.5− | 2004 02 26 | 704 | 0.8+ | 0.4+ | 2006 11 02 | 703 | 0.4− | 0.0 | | |
| 2000 03 09 | 691 | 0.3+ | 0.3− | 2004 02 26 | 704 | 1.3+ | 0.1+ | 2006 11 02 | 703 | 0.7+ | 0.7− | | |
| 2000 03 09 | 691 | 0.4+ | 0.3− | 2004 03 12 | 644 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.1+ | 1.1− | | |
| 2000 03 10 | 704 | 0.1− | 1.2+ | 2004 03 12 | 644 | 0.2+ | 0.0 | 2006 11 11 | 644 | 0.1− | 0.1− | | |
| 2000 03 10 | 704 | 0.5+ | 0.3+ | 2004 03 12 | 644 | 0.2+ | 0.2− | 2006 11 11 | 644 | 0.0 | 0.1+ | | |
| 2000 03 10 | 704 | 0.6+ | 0.5− | 2004 03 15 | 703 | 0.8− | 0.4+ | 2006 11 11 | 644 | 0.1+ | 0.1− | | |
| 2000 03 11 | 691 | 0.4− | 0.6− | 2004 03 15 | 703 | 1.3− | 0.9− | 2006 11 14 | 704 | (0.1+ | 2.5+) | | |
| 2000 03 11 | 691 | 0.3− | 0.3− | 2004 03 15 | 703 | 0.7− | 0.1+ | 2006 11 14 | 704 | 0.5+ | 1.0+ | | |
| 2000 03 11 | 704 | 0.7− | 0.5− | 2004 03 15 | 703 | 1.0− | 0.6+ | 2006 11 14 | 704 | 0.1− | 0.9+ | | |
| 2000 03 11 | 704 | 0.1− | 0.9+ | 2004 03 16 | 599 | 0.2+ | 0.3+ | 2006 11 14 | 704 | (2.0+ | 1.5+) | | |
| 2000 03 11 | 691 | 0.7− | 0.1− | 2004 03 16 | 599 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.5+ | 0.8+ | | |
| 2000 03 11 | 704 | 0.5+ | 1.1+ | 2004 03 16 | 599 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.5− | | |
| 2000 03 11 | 704 | (2.0+ | 0.9+) | 2004 03 16 | 599 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2000 04 05 | 704 | 0.4+ | 0.6− | 2004 03 17 | 691 | 0.9− | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.5− | | |
| 2000 04 05 | 704 | 0.2+ | 0.3− | 2004 03 17 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.5− | | |
| 2000 04 05 | 704 | 0.2+ | 0.0 | 2004 03 17 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6− | 0.1+ | | |
| 2000 04 05 | 704 | 0.2− | 0.6− | 2004 03 18 | 704 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.2− | | |
| 2000 04 05 | 704 | 0.0 | 0.3− | 2004 03 18 | 704 | (0.8− | 1.5+) | 2006 11 17 | 704 | 0.5+ | 0.1− | | |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2004 03 18 | 704 | (0.6+ | 2.0+) | 2006 11 17 | 704 | 0.8− | 0.0 | | |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.3− | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.5+ | | |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.4− | | |
| 2002 11 07 | 704 | 0.5+ | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.1− | | |
| 2002 11 07 | 704 | 0.5+ | 0.3− | 2004 03 19 | 704 | 0.7+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3+ | | |
| 2002 11 07 | 704 | 0.6− | 0.7− | 2004 03 19 | 704 | 0.9− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.3+ | | |
| 2002 11 07 | 704 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.4− | 0.5+ | | |
| 2002 11 11 | 704 | 0.7+ | 0.4− | 2004 03 20 | 704 | 1.0+ | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.7+ | | |
| 2002 11 11 | 704 | 0.2+ | 1.2− | 2004 03 20 | 704 | 1.2+ | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.4+ | | |
| 2002 11 11 | 704 | 0.4+ | 0.3− | 2004 03 20 | 704 | 1.0+ | 0.8− | 2006 11 20 | 704 | 0.1− | 0.5+ | | |
| 2002 11 24 | 644 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.7+ | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.8+ | | |
| 2002 11 24 | 644 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 11 27 | 958 | 0.5+ | 0.3− | | |
| 2002 11 24 | 644 | 0.4− | 0.3− | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 11 27 | 958 | 0.1− | 0.6− | | |
| 2002 11 27 | 699 | (1.0+ | 2.6−) | 2004 03 27 | 704 | 0.3+ | 0.2− | 2006 11 27 | 958 | 1.1+ | 0.5− | | |
| 2002 11 27 | 699 | 0.2+ | 0.7− | 2004 03 27 | 704 | 0.5+ | 0.4− | 2006 11 28 | 704 | 0.3− | 0.4+ | | |
| 2002 11 27 | 699 | 0.4− | 0.2+ | 2004 03 27 | 704 | 0.8+ | 0.7+ | 2006 11 28 | 704 | 0.4− | 0.6+ | | |
| 2002 11 27 | 699 | 0.3− | 0.0 | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.2− | 1.7+ | | |
| 2002 12 01 | 704 | 0.7− | 0.1− | 2004 03 31 | 691 | 0.3− | 0.6− | 2006 11 28 | 704 | 0.0 | 0.3+ | | |
| 2002 12 01 | 704 | 0.6+ | 0.0 | 2004 03 31 | 691 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.8− | 0.8+ | | |

**(145673)∗ 1333 T-2 = 2000 WE$_{80}$ = 2005 ST$_{187}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 87233)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.23548 | | (2000.0) | | +0.99956465 | −0.01767560 |
| $n$ | 0.18626669 | $\omega$ | 38.36860 | | +0.00593480 | +0.90477475 |
| $a$ | 3.0365418 | $\Omega$ | 322.62353 | | +0.02890146 | +0.42552348 |
| $e$ | 0.2223500 | $i$ | 2.23028 | | | |
| $P$ | 5.29 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.4− | 0.5− | 2005 09 23 | 703 | (2.6− | 0.1−) | 2005 10 24 | 683 | 0.1+ | 0.7+ | | |
| 1973 09 19 | 675 | 2.1+ | 0.5− | 2005 09 23 | 703 | 1.0− | 1.9− | 2005 10 25 | 683 | 0.2− | 0.1+ | | |
| 1973 09 20 | 675 | 2.2+ | 2.1− | 2005 09 29 | 691 | 0.0 | 0.2+ | 2005 10 25 | 683 | 0.1− | 0.9− | | |
| 1973 09 24 | 675 | 2.2+ | 1.5− | 2005 09 29 | 691 | 0.2− | 0.3+ | 2005 10 25 | 683 | 1.1+ | 0.1+ | | |
| 1973 09 24 | 675 | 1.6+ | 1.7− | 2005 09 29 | 691 | 0.0 | 0.1+ | 2005 10 26 | 691 | 0.3− | 0.1− | | |
| 1973 09 25 | 675 | (0.6− | 3.1−) | 2005 09 29 | 699 | 0.5+ | 0.5− | 2005 10 26 | 691 | 0.1− | 0.1+ | | |
| 1973 09 25 | 675 | (0.5− | 3.1−) | 2005 09 29 | 699 | 1.1+ | 0.0 | 2005 10 26 | 691 | 0.2− | 0.1+ | | |
| 1973 09 29 | 675 | 0.0 | 1.6− | 2005 09 29 | 699 | 0.7− | 0.3− | 2005 10 26 | 683 | 1.1+ | 1.0− | | |
| 1973 09 29 | 675 | 2.0− | 0.4− | 2005 09 29 | 699 | 0.8− | 0.6− | 2005 10 26 | 683 | 0.1+ | 0.6+ | | |
| 1973 09 30 | 675 | 0.7+ | 0.1+ | 2005 10 03 | 703 | 0.1− | 0.5+ | 2005 10 26 | 683 | 0.4− | 0.9+ | | |
| 1973 09 30 | 675 | 1.9+ | 0.1− | 2005 10 03 | 703 | 0.7− | 0.7+ | 2005 10 28 | 683 | 0.2− | 0.1+ | | |
| 1973 10 04 | 675 | 0.4+ | 2.4− | 2005 10 03 | 691 | 0.2+ | 0.0 | 2005 10 28 | 683 | 1.4+ | 1.5+ | | |
| 1973 10 04 | 675 | 0.1+ | 2.3− | 2005 10 03 | 703 | 0.6− | 1.2+ | 2005 10 28 | 683 | 0.6− | 0.8+ | | |
| 1973 10 05 | 675 | 0.1− | 2.0− | 2005 10 03 | 703 | 0.5− | 0.6+ | 2005 10 29 | 683 | 0.3+ | 0.0 | | |
| 1973 10 05 | 675 | 1.0− | 1.9− | 2005 10 03 | 691 | 0.2+ | 0.1+ | 2005 10 29 | 683 | 1.2+ | 0.4+ | | |
| 1997 03 10 | 691 | 0.3− | 0.8− | 2005 10 03 | 691 | 0.2+ | 0.0 | 2005 10 29 | 683 | 0.1− | 1.2+ | | |
| 1997 03 10 | 691 | 0.3− | 1.0− | 2005 10 06 | 699 | 0.1− | 0.3− | 2005 10 29 | 703 | 0.4− | 0.2− | | |
| 1997 03 10 | 691 | 0.3− | 0.7− | 2005 10 06 | 699 | 0.2+ | 0.1+ | 2005 10 29 | 703 | 0.2− | 0.2− | | |
| 2000 11 20 | 704 | 0.5+ | 0.0 | 2005 10 06 | 699 | 0.2− | 0.1+ | 2005 10 29 | 703 | 0.5− | 0.3− | | |
| 2000 11 20 | 704 | 0.3+ | 0.7− | 2005 10 07 | 704 | 0.6+ | 0.1+ | 2005 10 29 | 703 | 0.9− | 0.3− | | |
| 2000 11 20 | 704 | 0.3− | 0.3− | 2005 10 07 | 704 | 0.1+ | 0.2− | 2005 10 31 | 683 | 0.5+ | 0.3− | | |
| 2000 11 20 | 704 | 0.5+ | 0.3− | 2005 10 07 | 704 | 0.4− | 1.0+ | 2005 10 31 | 683 | (2.5+ | 1.3+) | | |
| 2000 11 20 | 704 | 0.0 | 0.9+ | 2005 10 07 | 704 | 0.1− | 0.2− | 2005 10 31 | 683 | 0.3− | 0.7− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 704 | 0.5− | 0.2+ | 2005 10 07 | 704 | 0.5+ | 1.6+ | 2005 11 01 | 704 | 0.0 | 0.1+ | |
| 2000 11 29 | 704 | 0.4− | 0.2− | 2005 10 09 | 691 | 0.2+ | 0.1+ | 2005 11 01 | 683 | (3.0− | 1.0+) | |
| 2000 11 29 | 704 | 0.3+ | 0.6− | 2005 10 09 | 691 | 0.1+ | 0.2+ | 2005 11 01 | 704 | 0.5+ | 0.2− | |
| 2000 11 29 | 704 | 0.5+ | 0.3− | 2005 10 09 | 691 | 0.2+ | 0.0 | 2005 11 01 | 683 | 1.1− | 1.0+ | |
| 2000 11 29 | 704 | 0.1− | 0.6+ | 2005 10 22 | 703 | 0.0 | 0.4− | 2005 11 01 | 704 | 0.1+ | 0.5− | |
| 2002 01 14 | 691 | 0.5− | 0.0 | 2005 10 22 | 703 | 0.8− | 0.4− | 2005 11 01 | 683 | (2.6− | 1.6+) | |
| 2002 01 14 | 691 | 0.0 | 0.0 | 2005 10 22 | 703 | 0.9− | 0.5− | 2005 11 01 | 704 | 0.4+ | 0.2+ | |
| 2002 01 14 | 691 | 0.3+ | 0.3+ | 2005 10 22 | 703 | 1.2− | 0.1− | 2005 11 01 | 704 | 0.4− | 0.1− | |
| 2002 02 07 | 291 | 0.0 | 0.3− | 2005 10 22 | 644 | 0.3− | 0.5+ | 2005 11 04 | 704 | 0.3+ | 0.3+ | |
| 2002 02 07 | 291 | 0.2+ | 0.2− | 2005 10 22 | 644 | 0.1− | 0.5+ | 2005 11 04 | 704 | 1.9− | 1.5+ | |
| 2002 02 07 | 291 | 0.2− | 0.3+ | 2005 10 22 | 644 | 0.0 | 0.0 | 2005 11 04 | 704 | 0.8− | 0.4+ | |
| 2005 08 30 | 644 | 0.0 | 0.3+ | 2005 10 23 | 683 | 1.8+ | 1.0− | 2005 11 04 | 704 | 0.5− | 0.1− | |
| 2005 08 30 | 644 | 0.1+ | 0.2+ | 2005 10 23 | 683 | (1.1+ | 2.5−) | 2005 11 05 | 704 | 0.4− | 0.5+ | |
| 2005 08 30 | 644 | 0.2− | 0.2+ | 2005 10 23 | 683 | 1.0+ | 0.0 | 2005 11 05 | 704 | 0.4+ | 0.4+ | |
| 2005 09 23 | 703 | 1.0− | 0.4− | 2005 10 24 | 683 | 1.2+ | 0.3− | 2005 11 05 | 704 | 1.8− | 0.1− | |
| 2005 09 23 | 703 | 1.4− | 0.1− | 2005 10 24 | 683 | 0.8+ | 0.8+ | 2005 11 05 | 704 | 0.4− | 0.1− | |

**(145674)∗ 1524 T-2 = 2002 QR$_{36}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 62171)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.45049 | | (2000.0) | | | |
| $n$ | 0.27109900 | $\omega$ | 3.02351 | | +0.97845420 | +0.20640351 |
| $a$ | 2.3643809 | $\Omega$ | 345.06199 | | −0.18983139 | +0.88985019 |
| $e$ | 0.1965693 | $i$ | 1.11072 | | −0.08118757 | +0.40689584 |
| $P$ | 3.64 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 24 | 675 | 0.6+ | 0.3+ | 2002 09 04 | 699 | 1.1− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.4− | |
| 1973 09 24 | 675 | 0.2+ | 0.8− | 2002 09 05 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.6+ | 0.1+ | |
| 1973 09 25 | 675 | (0.3+ | 3.4−) | 2002 09 05 | 704 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.2+ | 0.3− | |
| 1973 09 25 | 675 | 1.3− | 0.7− | 2002 09 05 | 704 | 0.4+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.1− | |
| 1973 09 29 | 675 | 0.2− | 0.5− | 2002 09 05 | 704 | 0.2+ | 0.4− | 2006 10 20 | G96 | 0.0 | 0.1− | |
| 1973 09 29 | 675 | 1.4+ | 1.3− | 2002 09 05 | 704 | 1.0− | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.3− | |
| 1973 09 30 | 675 | 0.2+ | 2.0+ | 2002 09 07 | 704 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.3− | |
| 1973 09 30 | 675 | 0.7+ | 1.0− | 2002 09 07 | 704 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.2− | |
| 1973 10 04 | 675 | 0.1+ | 2.2− | 2002 09 07 | 704 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.5− | 0.1− | |
| 1973 10 04 | 675 | 0.2+ | 2.3− | 2002 09 08 | 608 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.4− | 0.2− | |
| 1973 10 05 | 675 | (2.7+ | 1.1−) | 2002 09 08 | 608 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.9− | 0.2+ | |
| 1973 10 05 | 675 | 1.0+ | 0.1+ | 2002 09 08 | 608 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.5− | |
| 2002 08 28 | 644 | 0.5+ | 0.3+ | 2002 10 03 | 704 | 0.8− | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.1+ | |
| 2002 08 28 | 644 | 0.2+ | 0.3+ | 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.0 | |
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2002 10 03 | 704 | 0.2− | 0.7+ | 2006 11 10 | 691 | 0.2+ | 0.0 | |
| 2002 08 31 | 291 | 0.1+ | 0.1+ | 2005 05 11 | 691 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.3+ | |
| 2002 08 31 | 291 | 0.0 | 0.2+ | 2005 05 11 | 691 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.2+ | |
| 2002 08 31 | 291 | 0.0 | 0.2+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | |
| 2002 09 04 | 699 | 0.1− | 0.8+ | 2006 09 27 | 291 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.2+ | |
| 2002 09 04 | 699 | 0.8− | 0.4+ | 2006 09 27 | 291 | 0.3− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.2+ | |
| 2002 09 04 | 699 | 0.1− | 0.1− | 2006 09 27 | 291 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2+ | |

**(145675)∗ 2002 T-2 = 1999 YH$_{14}$ = 2000 EX$_{177}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 3844), G. V. Williams (d, *ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.40766 | | (2000.0) | | | |
| $n$ | 0.27284376 | $\omega$ | 68.60911 | | +0.97197604 | −0.23329719 |
| $a$ | 2.3542904 | $\Omega$ | 304.87122 | | +0.20052777 | +0.88697691 |
| $e$ | 0.1675795 | $i$ | 2.01841 | | +0.12268329 | +0.39855287 |
| $P$ | 3.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.7+ | 1.1− | 2002 10 09 | 704 | 0.6− | 0.1− | 2002 11 08 | 704 | 0.9+ | 0.8+ | |
| 1973 09 19 | 675 | 1.6− | 1.1− | 2002 10 09 | 704 | 0.3− | 0.1− | 2002 11 08 | 704 | 0.3+ | 0.9+ | |
| 1973 09 20 | 675 | (0.8− | 3.3−) | 2002 10 09 | 704 | 0.9− | 0.2+ | 2002 11 08 | 704 | 0.8+ | 1.5+ | |
| 1973 09 24 | 675 | 0.6+ | 2.2− | 2002 10 09 | 704 | 0.8− | 0.2+ | 2002 11 12 | 704 | 0.5+ | 0.7+ | |
| 1973 09 24 | 675 | 1.4+ | 2.2− | 2002 10 10 | 704 | 0.0 | 0.1+ | 2002 11 12 | 704 | 0.2− | 0.0 | |
| 1973 09 25 | 675 | (0.7− | 4.0−) | 2002 10 10 | 704 | 0.4− | 0.1− | 2002 11 12 | 704 | 1.4− | 0.7− | |
| 1973 09 25 | 675 | (0.2− | 4.5−) | 2002 10 10 | 704 | 0.1− | 0.1+ | 2002 11 12 | 704 | 0.2− | 0.1− | |
| 1973 09 29 | 675 | (3.3+ | 1.5−) | 2002 10 10 | 704 | 0.1+ | 0.1+ | 2002 11 12 | 644 | 0.1+ | 0.9− | |
| 1973 09 29 | 675 | 2.1+ | 0.5− | 2002 10 10 | 704 | 0.4− | 0.3+ | 2002 11 12 | 704 | 0.9− | 0.8− | |
| 1999 12 31 | 691 | 0.3+ | 0.0 | 2002 10 11 | 704 | 1.1− | 0.4+ | 2002 11 12 | 644 | 0.2+ | 0.1+ | |
| 1999 12 31 | 691 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.3− | 0.6+ | 2002 11 12 | 644 | 0.0 | 0.4+ | |
| 1999 12 31 | 691 | 0.3+ | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.0 | 2002 11 22 | 644 | 0.4+ | 1.0+ | |
| 2000 01 03 | 691 | 0.4− | 0.5− | 2002 10 11 | 704 | 0.3− | 0.1+ | 2002 11 22 | 644 | 0.2+ | 1.0+ | |
| 2000 01 03 | 691 | 0.5− | 0.0 | 2002 10 11 | 704 | 0.1− | 0.2+ | 2002 11 22 | 644 | 0.3+ | 0.9+ | |
| 2000 01 03 | 691 | 0.3− | 0.1− | 2002 10 12 | 704 | 0.2− | 0.4+ | 2002 12 11 | 704 | 0.3+ | 0.5+ | |
| 2000 01 09 | 691 | 0.1+ | 0.2− | 2002 10 12 | 704 | 0.1− | 0.4+ | 2002 12 11 | 704 | 0.2− | 0.4+ | |
| 2000 01 09 | 691 | 0.3− | 0.1− | 2002 10 12 | 704 | 0.0 | 0.3+ | 2002 12 11 | 704 | 0.1+ | 0.0 | |
| 2000 01 09 | 691 | 0.7− | 0.4− | 2002 10 12 | 704 | 0.3− | 0.5+ | 2002 12 11 | 704 | 0.0 | 0.5− | |
| 2000 02 03 | 704 | 0.5− | 1.2+ | 2002 10 12 | 704 | 0.4− | 0.6+ | 2004 03 13 | 644 | 0.6+ | 0.8+ | |
| 2000 02 03 | 704 | 0.8− | 0.6+ | 2002 10 12 | 704 | 0.6− | 0.7+ | 2004 03 13 | 644 | 0.8+ | 0.9+ | |
| 2000 02 03 | 704 | 0.1− | 0.3− | 2002 10 12 | 704 | 0.6− | 0.3+ | 2004 03 13 | 644 | 0.5+ | 0.9+ | |
| 2000 02 03 | 704 | 1.0− | 0.5+ | 2002 10 12 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 691 | 0.1+ | 0.5+ | |
| 2000 02 03 | 704 | 0.4− | 0.2− | 2002 10 12 | 704 | 0.7− | 0.6+ | 2004 03 28 | 691 | 0.4+ | 0.6+ | |
| 2000 03 04 | 691 | 0.4+ | 0.6− | 2002 10 12 | 704 | 0.3− | 0.3+ | 2004 03 28 | 691 | 0.1+ | 0.2+ | |
| 2000 03 04 | 691 | 0.4+ | 0.2+ | 2002 10 18 | 644 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.4− | |
| 2000 03 04 | 691 | 0.3+ | 0.1+ | 2002 10 18 | 644 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.4− | |
| 2000 03 12 | 691 | 0.1+ | 0.3− | 2002 10 18 | 644 | (0.9− | 1.8+) | 2006 11 27 | G96 | 0.2+ | 0.2+ | |
| 2000 03 12 | 691 | 0.2+ | 0.1− | 2002 10 31 | 644 | 0.5+ | 0.6+ | 2006 11 27 | G96 | 0.1− | 0.2− | |
| 2000 03 12 | 691 | 0.0 | 0.0 | 2002 10 31 | 644 | 0.6+ | 0.2− | 2006 12 01 | G96 | 0.1− | 0.5− | |
| 2002 10 04 | 704 | 0.0 | 0.0 | 2002 10 31 | 644 | 0.8+ | 0.2− | 2006 12 01 | G96 | 0.1− | 0.2− | |
| 2002 10 04 | 704 | 0.0 | 0.2+ | 2002 11 03 | 704 | 0.3+ | 0.9− | 2006 12 01 | G96 | 0.5− | 0.5− | |
| 2002 10 04 | 704 | 0.4− | 0.4− | 2002 11 03 | 704 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.5− | |
| 2002 10 04 | 704 | 0.1− | 0.2+ | 2002 11 03 | 704 | 0.7+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.2− | |
| 2002 10 04 | 704 | 0.2− | 0.5+ | 2002 11 08 | 704 | 0.5+ | 1.0+ | 2006 12 01 | G96 | 0.5− | 0.4− | |
| 2002 10 09 | 704 | 0.2− | 0.0 | 2002 11 08 | 704 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.2− | |

**(145676)∗ 2093 T-2 = 2003 YK$_{32}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 70172)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.86389 | | (2000.0) | | | |
| $n$ | 0.30010338 | $\omega$ | 344.62741 | | +0.99662824 | +0.08046565 |
| $a$ | 2.2094735 | $\Omega$ | 10.79542 | | −0.06330543 | +0.87850596 |
| $e$ | 0.1557757 | $i$ | 4.91416 | | −0.05219754 | +0.47090610 |
| $P$ | 3.28 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 1.1+ | 0.4+ | 2003 12 23 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.4+ | |
| 1973 09 19 | 675 | 0.5− | 0.6− | 2003 12 23 | 704 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.7− | 0.2+ | |
| 1973 09 20 | 675 | 2.2− | 0.0 | 2003 12 23 | 704 | 0.9− | 0.4− | 2006 10 27 | 703 | 0.4− | 0.5− | |
| 1973 09 24 | 675 | 0.4+ | 0.7− | 2003 12 28 | 704 | 0.8− | 0.8− | 2006 10 27 | 703 | 0.3− | 0.0 | |
| 1973 09 24 | 675 | 1.9− | 0.7+ | 2003 12 28 | 704 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.4− | |
| 1973 09 24 | 675 | 0.7− | 1.8− | 2003 12 28 | 704 | 0.8− | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.4− | |
| 1973 09 24 | 675 | 1.1− | 0.4+ | 2005 03 15 | G96 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.4− | |
| 1973 09 25 | 675 | (1.7+ | 3.0−) | 2005 03 15 | G96 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.0 | 0.3− | |
| 1973 09 25 | 675 | 0.6+ | 1.7+ | 2005 03 15 | G96 | 0.4− | 0.2− | 2006 11 10 | H55 | 0.7+ | 0.0 | |
| 1973 09 25 | 675 | 0.9+ | 1.8+ | 2005 03 15 | G96 | 0.7+ | 0.5+ | 2006 11 10 | H55 | (0.1− | 1.6−) | |
| 1973 09 29 | 675 | 0.1− | 0.4− | 2005 04 17 | 691 | 0.3+ | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.2+ | |
| 1973 09 29 | 675 | (2.9+ | 2.4−) | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.2+ | 0.4+ | |
| 1973 09 29 | 675 | 0.3+ | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.0 | |
| 1973 09 29 | 675 | 2.3+ | 0.7− | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.2+ | |
| 1973 09 30 | 675 | 0.6+ | 0.8− | 2006 07 21 | G96 | 0.6− | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.2− | |
| 1973 09 30 | 675 | 0.9+ | 0.6+ | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.5+ | |
| 1973 09 30 | 675 | 0.1+ | 0.6− | 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.0 | |
| 1973 09 30 | 675 | 1.2+ | 1.1+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.9− | |
| 1973 10 04 | 675 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 11 14 | 703 | 1.0− | 0.6+ | |
| 1973 10 04 | 675 | 0.9− | 1.6+ | 2006 07 21 | G96 | 0.5+ | 0.2− | 2006 11 14 | 703 | 0.1+ | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 10 04 | 675 | 0.6+ | 1.9− | 2006 07 21 | G96 | 0.3− | 0.6− | 2006 11 14 | 703 | 1.0− | 0.4+ | | |
| 1973 10 04 | 675 | 1.4− | 1.3+ | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.2− | | |
| 1973 10 05 | 675 | 1.3+ | 0.9− | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.1− | | |
| 1973 10 05 | 675 | 1.5− | 0.9+ | 2006 10 13 | 691 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.0 | | |
| 1973 10 05 | 675 | 1.3+ | 2.1− | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 1973 10 05 | 675 | 1.8− | 0.9+ | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.1− | | |
| 1996 10 12 | 566 | 0.3− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1− | | |
| 1996 10 12 | 566 | 0.2− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.1− | | |
| 1996 10 12 | 566 | 0.6− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.6+ | 0.1− | | |
| 2003 12 18 | 704 | 0.3+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.3+ | | |
| 2003 12 18 | 704 | 0.5+ | 0.8− | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.5− | | |
| 2003 12 18 | 704 | 0.6− | 0.6+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.5+ | | |
| 2003 12 19 | 704 | 0.6− | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.7+ | | |
| 2003 12 19 | 704 | 1.0+ | 0.8− | 2006 10 22 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.1+ | | |
| 2003 12 19 | 704 | 1.3+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 1.0+ | | | | | | |
| 2003 12 23 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.5+ | | | | | | |

**(145677)∗ 2172 T-2 = 2002 VM$_{54}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 41492)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.96541 | | (2000.0) | | +0.96911380 | +0.24557568 |
| $n$ | 0.23937480 | $\omega$ | 340.47201 | | −0.18265995 | +0.77636009 |
| $a$ | 2.5689191 | $\Omega$ | 5.46374 | | −0.16569186 | +0.58048048 |
| $e$ | 0.1907628 | $i$ | 13.73425 | | | |
| $P$ | 4.12 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 20 | 675 | 1.5− | 1.1− | 2006 08 24 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.3− | | |
| 1973 09 24 | 675 | 1.6− | 0.5− | 2006 08 25 | 704 | 0.2− | 0.2− | 2006 09 25 | 704 | 0.2− | 0.1− | | |
| 1973 09 24 | 675 | (3.0− | 0.6−) | 2006 08 25 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 683 | 0.5+ | 0.5− | | |
| 1973 09 25 | 675 | 1.0+ | 1.2− | 2006 08 25 | 704 | 0.6− | 0.0 | 2006 09 25 | 704 | 0.4− | 0.5+ | | |
| 1973 09 25 | 675 | 0.1− | 0.7− | 2006 08 25 | 704 | 0.3− | 0.4− | 2006 09 25 | 683 | 0.2+ | 0.6− | | |
| 1973 09 29 | 675 | 1.0+ | 1.2+ | 2006 08 25 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 704 | 0.3+ | 0.2+ | | |
| 1973 09 29 | 675 | 1.5+ | 0.4+ | 2006 08 31 | 704 | 0.1− | 0.6+ | 2006 09 25 | 683 | 0.2+ | 0.2− | | |
| 1973 09 30 | 675 | 0.5+ | 1.7− | 2006 08 31 | 704 | 0.4− | 0.8+ | 2006 09 26 | 683 | 0.0 | 0.2− | | |
| 1973 09 30 | 675 | 1.8+ | 1.5− | 2006 08 31 | 704 | 0.9− | 0.0 | 2006 09 26 | 683 | 0.4+ | 1.1− | | |
| 1973 10 04 | 675 | 1.9+ | 1.8− | 2006 08 31 | 704 | 0.3+ | 0.4− | 2006 09 26 | 683 | 0.2+ | 0.1+ | | |
| 1973 10 04 | 675 | 1.9+ | 1.6− | 2006 09 06 | 644 | 0.6− | 0.1+ | 2006 09 27 | 683 | (0.8− | 1.7−) | | |
| 1973 10 05 | 675 | (4.3+ | 2.3−) | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 1973 10 05 | 675 | (4.4+ | 1.5−) | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 27 | 683 | (0.1+ | 2.2−) | | |
| 2002 09 06 | 704 | 0.7+ | 0.2+ | 2006 09 14 | 703 | 0.8+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 06 | 704 | (1.7− | 1.1−) | 2006 09 14 | 703 | 0.1+ | 0.1− | 2006 09 27 | 683 | 0.3− | 1.1− | | |
| 2002 09 06 | 704 | 0.6− | 1.3− | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 09 27 | 691 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.7− | 0.8− | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 09 28 | 683 | 0.2+ | 0.8− | | |
| 2002 10 05 | 704 | 0.7− | 0.0 | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 28 | 683 | (1.5+ | 0.7−) | | |
| 2002 10 05 | 704 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 28 | 683 | 0.8+ | 0.2− | | |
| 2002 10 05 | 704 | 0.7− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.7+ | | |
| 2002 10 05 | 704 | 0.4− | 0.3+ | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.4+ | | |
| 2002 10 10 | 704 | 0.5+ | 0.2− | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 09 29 | 704 | (0.0 | 1.6+) | | |
| 2002 10 10 | 704 | 1.2− | 0.1+ | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.6− | 1.2+ | | |
| 2002 10 10 | 704 | 0.3+ | 0.8− | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 | | |
| 2002 10 10 | 704 | 0.1+ | 0.3− | 2006 09 16 | 644 | 0.4− | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.0 | | |
| 2002 10 10 | 704 | 0.2− | 0.6+ | 2006 09 18 | 704 | 0.7− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 | | |
| 2002 11 06 | 699 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.1− | 0.4+ | 2006 10 03 | 704 | 0.3+ | 0.1+ | | |
| 2002 11 06 | 699 | 0.3+ | 1.2+ | 2006 09 18 | 704 | 0.0 | 0.9+ | 2006 10 03 | 704 | 0.2+ | 0.9+ | | |
| 2002 11 06 | 699 | 0.3− | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.4+ | 2006 10 03 | 704 | 0.7+ | 0.4+ | | |
| 2002 11 06 | 699 | 0.6+ | 0.1− | 2006 09 18 | 704 | 1.3− | 1.0− | 2006 10 03 | 704 | 0.3− | 0.1+ | | |
| 2002 11 07 | 704 | 0.2− | 1.3+ | 2006 09 18 | 699 | 0.2− | 0.4− | 2006 10 03 | 704 | 0.4+ | 0.1+ | | |
| 2002 11 07 | 704 | (1.5+ | 0.6+) | 2006 09 18 | 699 | 0.7− | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.2− | | |
| 2002 11 07 | 704 | 0.0 | 0.7+ | 2006 09 18 | 699 | 0.3+ | 0.9− | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 11 07 | 704 | 0.9+ | 0.4+ | 2006 09 18 | 699 | 1.0+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1− | | |
| 2002 11 07 | 704 | (1.7+ | 0.2+) | 2006 09 19 | 683 | 1.3+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2002 11 25 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 683 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.1− | | |
| 2002 11 25 | 644 | 0.2− | 0.1+ | 2006 09 19 | 683 | 0.9− | 1.1+ | 2006 10 12 | 644 | 0.2− | 0.2− | | |
| 2002 11 25 | 644 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.2− | | |
| 2005 05 16 | 644 | 0.7+ | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.4+ | | |
| 2005 05 16 | 644 | 0.2+ | 1.0+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.1+ | | |
| 2005 05 16 | 644 | 0.6+ | 0.8+ | 2006 09 21 | 704 | (3.4+ | 1.2−) | 2006 10 17 | 703 | 0.3− | 0.1+ | | |
| 2006 08 21 | 704 | (2.1+ | 1.2+) | 2006 09 21 | 704 | (4.8+ | 0.2−) | 2006 10 19 | 644 | 0.0 | 0.3− | | |
| 2006 08 21 | 704 | 0.2+ | 0.9+ | 2006 09 21 | 683 | (1.5− | 1.2−) | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2006 08 21 | 704 | 1.4+ | 0.6+ | 2006 09 21 | 704 | (4.3+ | 1.5−) | 2006 10 19 | 644 | 0.0 | 0.1− | | |
| 2006 08 21 | 704 | 0.3− | 0.9+ | 2006 09 21 | 683 | (3.0− | 1.0+) | 2006 10 21 | 644 | 0.1− | 0.3− | | |
| 2006 08 24 | 644 | 0.4− | 0.4+ | 2006 09 21 | 683 | (1.6− | 0.2+) | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 22 | 683 | 1.0− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 09 22 | 683 | 0.2− | 0.8+ | 2006 10 26 | 704 | (2.3− | 0.4−) | | |
| 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 09 22 | 683 | 1.2− | 1.0+ | 2006 10 26 | 704 | (2.6− | 0.1+) | | |
| 2006 08 24 | 644 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.3− | 0.2+ | 2006 10 26 | 704 | (1.6− | 2.1+) | | |

**(145678)∗ 2251 T-2 = 2000 QL$_{51}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 4867)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.39098 | | (2000.0) | | +0.78013519 | −0.62557220 |
| $n$ | 0.18173637 | $\omega$ | 42.12864 | | +0.53839598 | +0.67700668 |
| $a$ | 3.0867975 | $\Omega$ | 356.57339 | | +0.31862022 | +0.38771302 |
| $e$ | 0.1692285 | $i$ | 6.69177 | | | |
| $P$ | 5.42 | $H$ | 15.0 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.3− | 0.3− | 2001 12 09 | 704 | 0.6− | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.3+ | | |
| 1973 09 19 | 675 | 0.2+ | 1.4+ | 2001 12 09 | 704 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.4+ | 0.4+ | | |
| 1973 09 20 | 675 | 0.3+ | 1.7+ | 2001 12 13 | 704 | 0.0 | 1.1+ | 2006 10 19 | 703 | 0.1+ | 0.5+ | | |
| 1973 09 24 | 675 | (3.1− | 0.5+) | 2001 12 13 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.7− | 0.1+ | | |
| 1973 09 25 | 675 | 1.2− | 2.2− | 2001 12 13 | 704 | 0.8+ | 0.3+ | 2006 10 27 | D35 | 0.1− | 0.1+ | | |
| 1973 09 29 | 675 | 0.1+ | 0.2+ | 2001 12 13 | 704 | 0.1− | 0.4− | 2006 10 27 | D35 | 0.3− | 0.0 | | |
| 1973 09 29 | 675 | 0.8+ | 2.3+ | 2001 12 13 | 704 | 0.1+ | 0.2+ | 2006 10 27 | D35 | 0.2− | 0.1+ | | |
| 1973 09 30 | 675 | 0.4− | 2.2− | 2001 12 17 | 704 | 0.1+ | 0.2− | 2006 11 02 | 703 | 1.0− | 0.5− | | |
| 1973 09 30 | 675 | 0.5− | 1.9− | 2001 12 17 | 704 | 0.2+ | 0.1− | 2006 11 02 | 703 | 0.3− | 0.2+ | | |
| 1973 10 04 | 675 | (2.7+ | 1.3−) | 2001 12 17 | 704 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.2− | 0.9+ | | |
| 1973 10 04 | 675 | 1.8+ | 1.9− | 2001 12 17 | 704 | 0.3− | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.2+ | | |
| 1973 10 05 | 675 | 0.8+ | 0.1+ | 2001 12 17 | 704 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.5+ | | |
| 1973 10 05 | 675 | 0.7+ | 1.9− | 2001 12 19 | 644 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.3+ | | |
| 2000 08 24 | 704 | 0.3− | 1.1+ | 2001 12 19 | 644 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.5+ | | |
| 2000 08 24 | 704 | 0.0 | 0.8+ | 2001 12 19 | 644 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.3+ | | |
| 2000 08 24 | 704 | 0.5− | 0.4+ | 2001 12 21 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2000 08 24 | 704 | 1.2− | 0.5+ | 2001 12 21 | 704 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.4+ | | |
| 2000 08 24 | 704 | 1.1− | 1.3+ | 2001 12 21 | 704 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.5+ | | |
| 2000 08 29 | 704 | 0.1− | 0.1+ | 2001 12 21 | 704 | 1.0+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.3+ | | |
| 2000 08 29 | 704 | 0.5+ | 0.7+ | 2001 12 22 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.2+ | | |
| 2000 08 29 | 704 | 0.5+ | 0.4+ | 2001 12 22 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.2+ | | |
| 2000 08 29 | 704 | 1.2+ | 0.2+ | 2001 12 22 | 704 | 0.5+ | 0.4− | 2006 11 13 | 644 | 0.3+ | 0.4+ | | |
| 2000 09 03 | 645 | 0.3− | 0.0 | 2001 12 22 | 704 | 0.3− | 0.6− | 2006 11 13 | 644 | 0.0 | 0.3+ | | |
| 2000 09 03 | 645 | 0.3− | 0.1+ | 2001 12 22 | 704 | 0.6+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.4+ | | |
| 2000 09 05 | 704 | 0.9− | 0.3+ | 2002 01 08 | 704 | (1.0− | 3.0+) | 2006 11 14 | 703 | 0.1− | 0.6+ | | |
| 2000 09 05 | 704 | 0.3− | 0.6+ | 2002 01 08 | 704 | (0.7− | 3.5+) | 2006 11 14 | 703 | 0.1+ | 0.6+ | | |
| 2000 09 05 | 704 | 0.1+ | 0.4+ | 2002 01 08 | 704 | (1.6− | 3.6+) | 2006 11 14 | 703 | 0.3− | 0.2+ | | |
| 2000 09 05 | 704 | 0.8+ | 0.4+ | 2002 01 08 | 704 | (1.3− | 3.2+) | 2006 11 14 | 703 | 0.3+ | 0.3+ | | |
| 2000 09 23 | 699 | 1.3+ | 0.8+ | 2002 01 08 | 704 | (0.8− | 3.3+) | 2006 11 16 | 704 | 0.2− | 0.3+ | | |
| 2000 09 23 | 699 | 1.8+ | 0.2− | 2002 02 04 | 644 | 0.2+ | 0.6− | 2006 11 16 | 704 | 0.1− | 0.4− | | |
| 2000 09 23 | 699 | 0.2− | 1.7+ | 2002 02 04 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.6− | | |
| 2000 09 23 | 699 | 0.5+ | 0.6+ | 2002 02 04 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.2− | 0.5+ | | |
| 2000 09 24 | 704 | 0.1+ | 0.4+ | 2003 04 05 | 691 | 1.4+ | 0.7+ | 2006 11 16 | 704 | 0.2− | 0.2− | | |
| 2000 09 24 | 704 | 0.9− | 0.1− | 2003 04 05 | 691 | (1.7+ | 1.1+) | 2006 11 22 | 703 | 0.2− | 0.9+ | | |
| 2000 09 24 | 704 | 1.0− | 0.6− | 2003 04 05 | 691 | 1.1+ | 0.9+ | 2006 11 22 | 703 | 0.6− | 0.1+ | | |
| 2000 09 24 | 704 | 1.2+ | 0.8+ | 2003 05 01 | 691 | 0.0 | 0.9+ | 2006 11 22 | 703 | 0.0 | 0.1+ | | |
| 2000 10 01 | 704 | 0.4+ | 0.3+ | 2003 05 01 | 691 | 0.2− | 1.0+ | 2006 11 22 | 703 | 0.6− | 0.3+ | | |
| 2000 10 01 | 704 | 0.1− | 0.6+ | 2003 05 01 | 691 | 0.0 | 1.0+ | 2006 11 22 | 703 | 0.4− | 0.0 | | |
| 2000 10 01 | 704 | 0.1+ | 1.2+ | 2005 07 10 | E12 | 0.4− | 0.4+ | 2006 11 22 | 703 | 0.4− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.2+ | 1.2+ | 2005 07 10 | E12 | 0.0 | 0.6+ | 2006 11 22 | 703 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 1.1+ | 1.2+ | 2005 07 10 | 428 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 0.1− | 0.3+ |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2005 07 10 | E12 | 0.3+ | 0.5+ | 2006 11 28 | 704 | 0.5+ | 1.0+ |
| 2001 11 24 | 704 | 0.4+ | 0.6+ | 2005 07 10 | 428 | 0.1+ | 0.7− | 2006 11 28 | 704 | 0.7+ | 0.4− |
| 2001 11 24 | 704 | 0.2− | 0.0 | 2005 07 10 | E12 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.7+ | 1.8− |
| 2001 12 09 | 704 | 0.5− | 1.0− | 2006 10 17 | A50 | 0.4+ | 1.0− | 2006 11 28 | 704 | 0.4− | 0.9− |
| 2001 12 09 | 704 | 0.9− | 0.8− | 2006 10 18 | A50 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.3− |
| 2001 12 09 | 704 | 0.5− | 0.7− | 2006 10 18 | A50 | 0.3− | 0.5+ | | | | |

**(145679)∗ 2402 T-2 = 2003 BC$_{81}$**

Discovered 1973 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 50327)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.49137 | | (2000.0) | | | |
| $n$ | 0.24161328 | $\omega$ | 70.27565 | | +0.79190979 | −0.61012269 |
| $a$ | 2.5530276 | $\Omega$ | 327.30850 | | +0.54142251 | +0.72055052 |
| $e$ | 0.2543676 | $i$ | 2.66185 | | +0.28238369 | +0.32948029 |
| $P$ | 4.08 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.7+ | 0.2+ | 2002 12 31 | 704 | 0.3+ | 0.6− | 2003 02 03 | 704 | 0.5− | 0.1+ |
| 1973 09 19 | 675 | 2.0− | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.5− | 2004 04 20 | 691 | 0.1− | 0.1− |
| 1973 09 20 | 675 | 1.8+ | 1.5− | 2002 12 31 | 704 | 0.5+ | 0.0 | 2004 04 20 | 691 | 0.0 | 0.2− |
| 1973 09 24 | 675 | 1.2+ | 2.3− | 2002 12 31 | 704 | 0.8+ | 0.1+ | 2004 04 20 | 691 | 0.2− | 0.3− |
| 1973 09 24 | 675 | 0.6+ | 1.4− | 2003 01 08 | 704 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.7+ |
| 1999 01 10 | 691 | 0.7− | 0.3− | 2003 01 08 | 704 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.2− | 0.2+ |
| 1999 01 10 | 691 | 0.6− | 0.4− | 2003 01 08 | 704 | 0.8− | 0.7− | 2006 10 27 | 703 | 0.1− | 0.1− |
| 1999 01 10 | 691 | 0.7− | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.5+ |
| 1999 01 19 | 691 | 0.5+ | 0.6− | 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 1999 01 19 | 691 | 0.5+ | 0.4− | 2003 01 31 | 704 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 1999 01 19 | 691 | 0.4+ | 0.5− | 2003 01 31 | 704 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2002 12 11 | 704 | 0.2+ | 0.5+ | 2003 01 31 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 1.2− | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 704 | 0.0 | 1.0+ | 2006 11 22 | 704 | 1.0+ | 1.0+ |
| 2002 12 11 | 704 | 0.4+ | 0.4+ | 2003 01 31 | 704 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2002 12 11 | 704 | 0.0 | 1.3+ | 2003 02 03 | 704 | 1.4− | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2002 12 11 | 704 | 0.1− | 0.8+ | 2003 02 03 | 704 | 0.8− | 0.9+ | | | | |
| 2002 12 31 | 704 | 0.6+ | 0.2+ | 2003 02 03 | 704 | 0.4− | 1.1+ | | | | |

**(145680)∗ 3002 T-2 = 2001 RO$_{130}$**

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 18116)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.48059 | | (2000.0) | | | |
| $n$ | 0.21123523 | $\omega$ | 30.26772 | | +0.77260918 | −0.63451013 |
| $a$ | 2.7922769 | $\Omega$ | 9.21083 | | +0.55189001 | +0.65430547 |
| $e$ | 0.2297750 | $i$ | 7.80030 | | +0.31383510 | +0.41143804 |
| $P$ | 4.67 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.8+ | 1.3− | 2001 09 26 | 704 | (1.7− | 1.1+) | 2003 01 27 | 704 | 0.6+ | 0.1− |
| 1973 09 19 | 675 | 0.5+ | 2.2− | 2001 09 26 | 704 | 0.7− | 0.2+ | 2003 01 27 | 704 | 0.1− | 0.7+ |
| 1973 09 20 | 675 | 1.9+ | 2.4− | 2001 09 26 | 704 | 0.7− | 0.4+ | 2003 01 27 | 704 | 0.7+ | 0.8+ |
| 1973 09 24 | 675 | 0.9+ | 0.2+ | 2001 09 26 | 704 | 0.5− | 0.7+ | 2003 01 27 | 704 | 0.2+ | 0.3+ |
| 1973 09 24 | 675 | 1.1+ | 1.9− | 2001 09 26 | 704 | 1.0− | 0.4+ | 2003 01 27 | 704 | 1.3+ | 0.8+ |
| 1973 09 25 | 675 | (0.9+ | 2.8−) | 2001 09 26 | 704 | 0.4− | 0.8+ | 2003 01 31 | 704 | (1.8− | 0.5+) |
| 1973 09 25 | 675 | 0.2+ | 1.9− | 2001 10 04 | 644 | 0.1+ | 1.0+ | 2003 01 31 | 704 | (0.6+ | 1.5+) |
| 1973 09 29 | 675 | 0.1+ | 1.4− | 2001 10 04 | 644 | 0.1+ | 1.2+ | 2003 01 31 | 704 | 0.4+ | 0.8+ |
| 1973 09 30 | 675 | 1.0+ | 0.5+ | 2001 10 04 | 644 | 0.3+ | 0.9+ | 2003 01 31 | 704 | 1.0+ | 1.1+ |
| 1973 09 30 | 675 | 0.7− | 0.1− | 2001 10 06 | 704 | 1.0+ | 1.1− | 2003 01 31 | 704 | 0.8+ | 0.9+ |
| 1973 10 04 | 675 | 1.3+ | 1.8− | 2001 10 06 | 704 | 1.0+ | 0.5− | 2003 02 22 | 049 | 0.3− | 0.7+ |
| 1973 10 04 | 675 | 0.5+ | 2.1− | 2001 10 06 | 704 | 1.2+ | 0.6− | 2003 02 22 | 049 | 0.5− | 0.7+ |
| 1973 10 05 | 675 | 0.1+ | 1.0+ | 2001 10 11 | 644 | 0.3− | 0.4+ | 2003 02 22 | 049 | 0.9− | 0.4+ |
| 1973 10 05 | 675 | 0.3+ | 0.1− | 2001 10 11 | 644 | 0.5− | 0.5+ | 2003 03 07 | 644 | 0.3− | 0.6+ |
| 2001 05 24 | 807 | 0.2− | 0.2+ | 2001 10 11 | 644 | 0.6− | 0.4+ | 2003 03 07 | 644 | 0.1− | 0.6+ |
| 2001 05 24 | 807 | 0.4+ | 0.7+ | 2001 10 13 | 704 | 0.0 | 0.7− | 2003 03 07 | 644 | 0.1− | 0.5+ |
| 2001 08 25 | 704 | 0.8− | 0.3− | 2001 10 13 | 704 | 0.6+ | 0.6− | 2003 03 08 | 704 | (1.9+ | 0.3+) |
| 2001 08 25 | 704 | (3.0+ | 0.4−) | 2001 10 13 | 704 | 0.8+ | 0.5− | 2003 03 08 | 704 | 1.4+ | 1.3+ |
| 2001 08 25 | 704 | (1.6− | 0.1+) | 2001 10 13 | 704 | 0.3− | 0.2+ | 2003 03 08 | 704 | 0.5+ | 0.9+ |
| 2001 08 25 | 704 | 1.2− | 0.1+ | 2001 10 13 | 704 | 0.2− | 0.9+ | 2003 03 08 | 704 | (0.5+ | 1.6+) |
| 2001 09 07 | 699 | 0.0 | 0.6+ | 2001 10 15 | 704 | (1.8+ | 3.1+) | 2003 03 08 | 644 | 0.2+ | 1.0+ |
| 2001 09 07 | 699 | 1.0− | 0.4− | 2001 10 15 | 704 | (0.5− | 2.7+) | 2003 03 08 | 644 | 0.6+ | 0.6+ |
| 2001 09 07 | 699 | 0.1+ | 0.8+ | 2001 10 15 | 704 | (0.5+ | 2.6+) | 2003 03 08 | 644 | 0.6+ | 0.9+ |
| 2001 09 07 | 699 | 0.5− | 0.7+ | 2001 10 15 | 704 | (0.3+ | 1.9+) | 2006 09 18 | 703 | 0.6+ | 0.6− |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2001 10 15 | 704 | (0.8− | 2.7+) | 2006 09 18 | 703 | 0.6− | 0.5− |
| 2001 09 12 | 704 | 0.2− | 0.2− | 2001 10 16 | 704 | 0.6+ | 0.1− | 2006 09 18 | 703 | 0.6− | 0.8− |
| 2001 09 12 | 704 | 0.3− | 0.3− | 2001 10 16 | 704 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.8− | 0.3− |
| 2001 09 12 | 704 | 0.4− | 0.5− | 2001 10 16 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2001 10 16 | 704 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.2− | 0.9− |
| 2001 09 19 | 704 | 0.5− | 0.1+ | 2001 10 17 | 644 | 0.8− | 0.5+ | 2006 09 25 | 704 | 0.6− | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2001 10 17 | 644 | 0.6− | 0.2+ | 2006 09 25 | 704 | 0.5− | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2001 10 17 | 644 | 0.6− | 0.3+ | 2006 09 25 | 704 | 0.8− | 0.6− |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2001 10 17 | 644 | 0.6− | 0.3+ | 2006 10 19 | 704 | 0.1+ | 0.7− |
| 2001 09 20 | 291 | 0.1− | 0.2+ | 2001 10 17 | 644 | 0.7− | 0.3+ | 2006 10 19 | 704 | 1.4+ | 1.3+ |
| 2001 09 20 | 291 | 0.1− | 0.3+ | 2001 10 17 | 644 | 0.5− | 0.1+ | 2006 10 19 | 704 | 1.2+ | 0.3− |
| 2001 09 20 | 291 | 0.3− | 0.4+ | 2001 10 20 | 704 | 0.0 | 0.2+ | 2006 10 19 | 704 | 0.1− | 0.7− |
| 2001 09 21 | 704 | 0.6+ | 0.8+ | 2001 10 20 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.7− |
| 2001 09 21 | 704 | 0.7+ | 0.9+ | 2001 10 20 | 704 | 0.5− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.9− |
| 2001 09 21 | 704 | 1.0+ | 1.3+ | 2001 10 20 | 704 | 0.0 | 0.3+ | 2006 10 19 | 703 | (0.2+ | 1.8−) |
| 2001 09 21 | 704 | 0.8+ | 1.3+ | 2001 10 20 | 704 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 0.8+ | 1.2+ | 2001 10 23 | 704 | 0.4− | 0.2+ | 2006 10 20 | 704 | 1.2+ | 0.5− |
| 2001 09 24 | 644 | 0.3− | 0.1+ | 2001 10 23 | 699 | 0.8+ | 0.1+ | 2006 10 20 | 704 | 0.1− | 0.1− |
| 2001 09 24 | 644 | 0.3− | 0.0 | 2001 10 23 | 704 | 0.4− | 0.4+ | 2006 10 20 | 704 | 0.8− | 0.4+ |
| 2001 09 24 | 644 | 0.3− | 0.1+ | 2001 10 23 | 704 | 0.8− | 0.2+ | 2006 10 20 | 704 | 0.9+ | 0.4− |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2001 10 23 | 699 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.3− | 0.5− |
| 2001 09 25 | 704 | 0.3− | 0.1+ | 2001 10 23 | 699 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.3− | 2001 10 23 | 704 | 0.7− | 0.6+ | 2006 10 27 | 703 | 0.4+ | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.7+ | 2001 10 23 | 699 | 0.4+ | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2001 10 24 | 704 | 0.7− | 0.0 | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.2+ | 2001 10 24 | 704 | 0.8− | 0.5+ | 2006 11 15 | 703 | 0.4− | 0.2− |
| 2001 09 25 | 704 | 0.2− | 0.3− | 2001 10 24 | 704 | 0.8− | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2001 10 24 | 704 | 0.5− | 0.7+ | 2006 11 15 | 703 | 0.3+ | 0.6− |
| 2001 09 25 | 704 | 0.2− | 0.3− | 2001 10 24 | 704 | 0.8− | 0.8+ | 2006 11 15 | 704 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2001 11 18 | 704 | 1.3− | 1.1+ | 2006 11 15 | 704 | 0.3+ | 0.2− |
| 2001 09 26 | 704 | 0.3+ | 0.4+ | 2001 11 18 | 704 | 0.3− | 1.4+ | 2006 11 15 | 704 | 0.7+ | 0.7− |
| 2001 09 26 | 704 | 1.1− | 1.1+ | 2001 11 18 | 704 | 0.3− | 0.6+ | 2006 11 15 | 704 | 1.3− | 0.2− |
| 2001 09 26 | 704 | 0.1+ | 0.4+ | 2001 11 18 | 704 | (0.7− | 1.8+) | 2006 11 15 | 704 | 0.0 | 0.2− |
| 2001 09 26 | 704 | 1.4− | 1.1+ | 2001 12 07 | 704 | 1.1+ | 1.3+ | 2006 11 29 | 704 | 0.5+ | 0.0 |
| 2001 09 26 | 704 | 0.2+ | 0.6+ | 2001 12 07 | 704 | (2.2+ | 1.8+) | 2006 11 29 | 704 | 0.3+ | 0.5− |
| 2001 09 26 | 704 | 1.4− | 1.3+ | 2001 12 07 | 704 | (0.2− | 2.1+) | 2006 11 29 | 704 | 0.5+ | 1.2+ |
| 2001 09 26 | 704 | 0.3+ | 0.6+ | 2001 12 07 | 704 | 0.9+ | 0.5+ | 2006 11 29 | 704 | 0.1+ | 0.8+ |
| 2001 09 26 | 704 | (0.7− | 1.8+) | 2001 12 10 | 645 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2001 09 26 | 704 | 0.2− | 0.6+ | 2001 12 10 | 645 | 0.0 | 0.3− | | | | |

**(145681)∗ 3018 T-2 = 2002 PQ**

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 33737)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.76967 | | (2000.0) | | | |
| $n$ | 0.27018454 | $\omega$ | 209.00810 | | +0.97826880 | −0.20399117 |
| $a$ | 2.3697128 | $\Omega$ | 162.64372 | | +0.20599938 | +0.93590918 |
| $e$ | 0.1296085 | $i$ | 7.14768 | | +0.02354593 | +0.28716131 |
| $P$ | 3.65 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 25 | 675 | (2.6+ | 3.3−) | 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 10 05 | 118 | 0.4− | 0.0 |
| 1973 09 29 | 675 | 1.7+ | 0.7− | 2002 08 27 | 644 | 0.3+ | 0.2− | 2006 10 05 | 118 | 0.1− | 0.5+ |
| 1973 09 29 | 675 | (2.9+ | 0.6+) | 2002 09 05 | 704 | 1.2− | 0.8+ | 2006 10 05 | 118 | 0.5+ | 0.3+ |
| 1973 09 30 | 675 | 0.5− | 0.8− | 2002 09 05 | 704 | 0.2+ | 0.4+ | 2006 10 05 | 118 | 0.3− | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 30 | 675 | 0.5+ | 1.8− | 2002 09 05 | 704 | 0.0 | 1.2− | 2006 10 05 | 118 | 0.5+ | 0.3+ |
| 1973 10 04 | 675 | 0.0 | 0.2− | 2002 09 05 | 704 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.4+ |
| 1973 10 04 | 675 | 1.1− | 0.6− | 2002 09 05 | 704 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 1973 10 05 | 675 | 0.7+ | 1.8+ | 2004 02 11 | 644 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1973 10 05 | 675 | 0.4− | 0.7− | 2004 02 11 | 644 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2002 08 02 | 599 | 0.1+ | 0.5+ | 2004 02 11 | 644 | 0.1− | 0.5+ | 2006 10 16 | 703 | (0.5+ | 2.6−) |
| 2002 08 02 | 599 | 0.1− | 0.7+ | 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | (1.8+ | 2.0−) |
| 2002 08 02 | 599 | 0.0 | 0.4+ | 2005 04 30 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2002 08 03 | 599 | 0.8− | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2002 08 04 | 599 | 0.1+ | 0.6+ | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2002 08 04 | 599 | 0.0 | 0.6+ | 2005 06 01 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.8+ |
| 2002 08 05 | 599 | 0.1− | 0.2+ | 2005 06 01 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.9− | 1.0− |
| 2002 08 05 | 599 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.0+ | 0.9− | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2002 08 05 | 599 | 0.0 | 0.6− | 2006 08 28 | 703 | 0.6+ | 1.0− | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2002 08 06 | 644 | 0.2+ | 0.0 | 2006 08 28 | 703 | 1.2− | 0.6− | 2006 10 22 | 703 | 0.7− | 0.4− |
| 2002 08 06 | 644 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.1+ |
| 2002 08 06 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 1.2− | 0.7+ | 2006 10 28 | 703 | 0.3+ | 0.2+ |
| 2002 08 07 | 644 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 10 28 | 703 | 0.8+ | 0.6+ |
| 2002 08 07 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.5+ | 0.8+ | 2006 10 28 | 703 | 1.2+ | 1.0+ |
| 2002 08 07 | 644 | 0.3− | 0.4+ | 2006 09 14 | 703 | 1.0+ | 0.1− | 2006 11 13 | 703 | 0.5− | 0.2+ |
| 2002 08 07 | 599 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.5+ | 2006 11 13 | 703 | 0.6+ | 0.7+ |
| 2002 08 07 | 599 | 0.1+ | 0.0 | 2006 09 29 | 699 | (0.6− | 1.6+) | 2006 11 13 | 703 | (1.7+ | 0.6+) |
| 2002 08 07 | 599 | 1.1+ | 0.2− | 2006 09 29 | 699 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.5− |
| 2002 08 14 | 704 | (3.1− | 4.2+) | 2006 09 29 | 699 | 0.7− | 0.1+ | 2006 11 19 | 703 | 1.1− | 0.5+ |
| 2002 08 14 | 704 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.0 | 0.1+ |
| 2002 08 14 | 704 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.0 | 2006 11 19 | 703 | 0.4− | 0.6+ |
| 2002 08 14 | 704 | 0.2+ | 1.1− | 2006 09 30 | 703 | 1.1− | 0.7− | 2006 11 19 | 703 | 0.2+ | 0.9+ |
| 2002 08 27 | 644 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.1− | 0.1+ | | | | |

**(145682)∗ 3131 T-2 = 2004 CQ$_{57}$**

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 62172)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.02578 | | (2000.0) | | | |
| $n$ | 0.24222531 | $\omega$ | 277.19491 | | +0.39790411 | +0.91495664 |
| $a$ | 2.5487253 | $\Omega$ | 16.74676 | | −0.72229761 | +0.35764562 |
| $e$ | 0.1617087 | $i$ | 13.50308 | | −0.56564872 | +0.18693303 |
| $P$ | 4.07 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 1.2− | 1.3+ | 2002 12 06 | 704 | 1.1− | 1.5+ | 2006 10 19 | 703 | 0.7+ | 1.0+ |
| 1973 09 19 | 675 | (3.2− | 0.4+) | 2002 12 06 | 704 | 0.7− | 1.3+ | 2006 10 19 | 703 | 1.0+ | 0.1− |
| 1973 09 20 | 675 | 0.4− | 0.3+ | 2004 01 17 | 644 | 0.1− | 0.5− | 2006 10 19 | 703 | 0.5− | 1.2− |
| 1973 09 24 | 675 | 1.5− | 0.4+ | 2004 01 17 | 644 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.7− | 0.9+ |
| 1973 09 24 | 675 | 0.6− | 0.4+ | 2004 01 17 | 644 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.3− | 0.2− |
| 1973 09 25 | 675 | 2.2+ | 1.3− | 2004 01 31 | 704 | (1.6− | 2.3−) | 2006 10 19 | 703 | 0.5− | 1.0+ |
| 1973 09 25 | 675 | 1.8+ | 2.0− | 2004 01 31 | 704 | 1.1− | 0.1− | 2006 10 19 | 703 | 0.5− | 0.2+ |
| 1973 09 29 | 675 | 0.6− | 0.5− | 2004 01 31 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.2− |
| 1973 09 29 | 675 | 0.4− | 0.1+ | 2004 02 12 | 644 | 0.2− | 0.0 | 2006 10 29 | 703 | 0.8+ | 1.2− |
| 1973 09 30 | 675 | 0.4+ | 0.7− | 2004 02 12 | 644 | 0.0 | 0.0 | 2006 10 29 | 703 | 0.2+ | 0.0 |
| 1973 09 30 | 675 | 0.2− | 0.1+ | 2004 02 12 | 644 | 0.4− | 0.3− | 2006 10 29 | 703 | 0.4− | 0.1+ |
| 1973 10 04 | 675 | 1.6+ | 0.4+ | 2004 02 14 | 704 | 0.1+ | 0.0 | 2006 10 29 | 703 | 0.0 | 0.2− |
| 1973 10 04 | 675 | 0.3− | 0.3− | 2004 02 14 | 704 | 0.2+ | 0.6− | 2006 11 02 | G96 | 0.4+ | 0.5− |
| 1973 10 05 | 675 | (2.8+ | 1.8−) | 2004 02 14 | 704 | 0.1+ | 0.5− | 2006 11 02 | G96 | 0.0 | 0.3− |
| 1973 10 05 | 675 | (2.6+ | 1.3+) | 2004 02 14 | 704 | 0.0 | 0.4− | 2006 11 02 | G96 | 0.0 | 0.3− |
| 1998 12 17 | 704 | 0.6+ | 1.5+ | 2004 02 14 | 704 | 0.3+ | 0.8+ | 2006 11 02 | G96 | 0.4+ | 0.5− |
| 1998 12 17 | 704 | (2.4+ | 0.3+) | 2004 03 18 | 644 | 0.3+ | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 1998 12 17 | 704 | 1.7+ | 0.4+ | 2004 03 18 | 644 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 1998 12 17 | 704 | 0.5− | 0.4+ | 2004 03 18 | 644 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2000 03 04 | 704 | 0.3− | 0.3− | 2004 03 23 | 704 | (0.7+ | 1.6+) | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2000 03 04 | 704 | 1.8− | 0.9+ | 2004 03 23 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.6− | 0.8− |
| 2000 03 04 | 704 | 1.4− | 0.1+ | 2004 03 23 | 704 | 0.3+ | 1.2+ | 2006 11 15 | 703 | 0.4− | 1.2− |
| 2002 09 06 | 704 | 0.7+ | 0.7+ | 2004 03 23 | 704 | 0.3+ | 1.0+ | 2006 11 15 | 703 | 0.3− | 0.4+ |
| 2002 09 06 | 704 | 0.3+ | 0.8+ | 2004 03 25 | 704 | 0.8+ | 1.1+ | 2006 11 15 | 703 | 0.3− | 0.6− |
| 2002 09 06 | 704 | 0.1− | 0.6+ | 2004 03 25 | 704 | 0.3+ | 0.5− | 2006 11 15 | 703 | 0.5− | 0.5− |
| 2002 11 07 | 704 | 1.1− | 0.7+ | 2004 03 25 | 704 | 0.8+ | 1.2− | 2006 11 15 | 703 | 0.0 | 0.6+ |
| 2002 11 07 | 704 | 0.5− | 0.1− | 2004 03 25 | 704 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.2− | 0.5− |
| 2002 11 07 | 704 | 1.0− | 0.0 | 2004 03 25 | 704 | 0.3+ | 1.0− | 2006 11 15 | 703 | 0.7+ | 0.5− |
| 2002 11 07 | 704 | (2.2− | 0.4+) | 2005 07 11 | 423 | (0.1+ | 1.5+) | 2006 11 21 | 703 | 0.4+ | 0.6− |
| 2002 11 15 | 704 | 1.1+ | 0.2+ | 2005 07 11 | 423 | 0.7+ | 0.5+ | 2006 11 21 | 703 | 0.6+ | 0.4− |
| 2002 11 15 | 704 | 1.0+ | 0.7+ | 2006 08 29 | 703 | (4.1− | 1.5−) | 2006 11 21 | 703 | 0.2+ | 0.1+ |
| 2002 11 15 | 704 | 0.8+ | 0.6+ | 2006 08 29 | 703 | 0.4+ | 0.7+ | 2006 11 21 | 703 | 0.2− | 0.8− |
| 2002 12 06 | 704 | 0.0 | 0.8+ | 2006 08 29 | 703 | 1.3− | 0.9+ | | | | |
| 2002 12 06 | 704 | 0.7− | 1.1+ | 2006 08 29 | 703 | 0.2− | 1.3− | | | | |

**(145683)∗ 3275 T-2 = 2002 RJ$_{11}$**

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 35424)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.50633 | | (2000.0) | | | |
| $n$ | 0.27099049 | $\omega$ | 265.22788 | | +0.99830330 | −0.04956708 |
| $a$ | 2.3650120 | $\Omega$ | 97.61102 | | +0.05760316 | +0.91737140 |
| $e$ | 0.2247025 | $i$ | 1.76654 | | −0.00850904 | +0.39493393 |
| $P$ | 3.64 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | (1.1− | 4.7−) | 2002 08 11 | 608 | 0.3− | 1.4+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 1973 09 19 | 675 | 0.3+ | 1.4− | 2002 08 11 | 608 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 1973 09 24 | 675 | 0.4+ | 1.5− | 2002 08 18 | 644 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 1973 09 24 | 675 | 0.9+ | 0.6− | 2002 08 18 | 644 | 0.0 | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 1973 09 25 | 675 | 0.2+ | 0.2+ | 2002 08 18 | 644 | 0.3+ | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 1973 09 25 | 675 | 0.7+ | 0.2+ | 2002 08 29 | 644 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 1973 09 25 | 675 | 0.2− | 1.3− | 2002 08 29 | 644 | 0.3− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 1973 09 25 | 675 | (3.9+ | 0.2−) | 2002 08 29 | 644 | 0.4− | 0.7+ | 2006 11 15 | 703 | 0.3− | 0.1− |
| 1973 09 29 | 675 | 0.1− | 2.2− | 2002 09 04 | 644 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.7− | 1.3+ |
| 1973 09 29 | 675 | (1.4+ | 3.6−) | 2002 09 04 | 644 | 0.2− | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.6+ |
| 1973 09 29 | 675 | 1.2− | 0.8− | 2002 09 04 | 644 | 0.3− | 0.6+ | 2006 11 15 | 703 | 0.4− | 1.3− |
| 1973 09 29 | 675 | (2.9+ | 2.4−) | 2002 09 05 | 704 | 0.5− | 1.0+ | 2006 11 18 | 704 | (1.8+ | 0.2−) |
| 1973 09 30 | 675 | (2.0+ | 4.8−) | 2002 09 05 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.6− |
| 1973 09 30 | 675 | (0.8− | 3.6−) | 2002 09 05 | 704 | 0.4− | 1.4+ | 2006 11 18 | 704 | 1.0+ | 0.9+ |
| 1973 10 04 | 675 | 1.6+ | 1.3− | 2002 09 05 | 704 | 0.4− | 0.5+ | 2006 11 18 | 704 | 1.0+ | 0.3− |
| 1973 10 04 | 675 | (2.9+ | 0.2−) | 2002 09 15 | 644 | 0.5− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 1973 10 05 | 675 | 1.5+ | 1.8− | 2002 09 15 | 644 | 0.8− | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 1973 10 05 | 675 | 1.1+ | 1.2− | 2002 09 15 | 644 | 0.6− | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 1999 12 13 | 691 | 0.1+ | 0.2+ | 2002 09 16 | 644 | 0.0 | 0.6+ | 2006 11 23 | 235 | 0.0 | 0.1+ |
| 1999 12 13 | 691 | 0.0 | 0.4+ | 2002 09 16 | 644 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.5− |
| 1999 12 13 | 691 | 0.1− | 0.8+ | 2002 09 16 | 644 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 1999 12 27 | 691 | 0.0 | 0.2+ | 2005 05 07 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 1999 12 27 | 691 | 0.2+ | 0.2− | 2005 05 07 | G96 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 1999 12 27 | 691 | 0.0 | 0.2+ | 2005 05 07 | G96 | 0.4− | 0.1+ | | | | |
| 2002 08 11 | 608 | 0.2+ | 0.9+ | 2005 05 07 | G96 | 0.1+ | 0.3+ | | | | |

**(145684)∗ 3279 T-2 = 2001 TW$_{31}$**

Discovered 1973 Sept. 30 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 20661)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.68136 | | (2000.0) | | | |
| $n$ | 0.17957115 | $\omega$ | 338.50500 | | +0.99338323 | +0.10155907 |
| $a$ | 3.1115611 | $\Omega$ | 15.94909 | | −0.05400995 | +0.82517882 |
| $e$ | 0.1060746 | $i$ | 11.25348 | | −0.10135428 | +0.55566686 |
| $P$ | 5.49 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.3− | 1.6− | 2001 11 11 | 699 | 0.4− | 0.2+ | 2006 09 22 | 704 | 1.0+ | 1.2+ |
| 1973 09 19 | 675 | 2.0− | 0.8− | 2001 11 11 | 699 | 0.1− | 0.5+ | 2006 09 22 | 704 | 0.5+ | 0.6+ |
| 1973 09 20 | 675 | 0.3+ | 1.6− | 2001 11 19 | 699 | 0.4+ | 0.1− | 2006 09 22 | 704 | 0.9− | 0.0 |
| 1973 09 24 | 675 | 0.8+ | 0.3+ | 2001 11 19 | 699 | 0.4− | 0.0 | 2006 09 22 | 704 | 0.2− | 0.4+ |
| 1973 09 24 | 675 | 0.2− | 0.2− | 2001 11 19 | 699 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.3− | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 25 | 675 | 2.2+ | 0.2+ | 2001 11 19 | 699 | 0.6− | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.6+ |
| 1973 09 25 | 675 | 1.9+ | 0.2+ | 2001 11 21 | 704 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.5+ |
| 1973 09 29 | 675 | 1.9+ | 0.1− | 2001 11 21 | 704 | 0.6− | 0.8− | 2006 09 26 | 704 | 0.3+ | 0.5+ |
| 1973 09 29 | 675 | 0.2− | 0.8− | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.7+ |
| 1973 09 29 | 675 | 0.4+ | 1.0− | 2001 11 21 | 704 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.5+ |
| 1973 09 29 | 675 | 0.2+ | 0.7− | 2001 11 21 | 704 | 1.2+ | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.2+ |
| 1973 09 30 | 675 | (0.5+ | 3.5−) | 2003 01 24 | 644 | 0.3− | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.2− |
| 1973 09 30 | 675 | 0.2+ | 0.6− | 2003 01 24 | 644 | 0.5− | 0.3+ | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 1973 09 30 | 675 | (0.3+ | 4.2−) | 2003 01 24 | 644 | 0.6− | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.2− |
| 1973 09 30 | 675 | 0.9− | 0.2+ | 2003 02 01 | 644 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.3− | 0.1− |
| 1973 10 04 | 675 | 2.0+ | 0.7− | 2003 02 01 | 644 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.7+ | 0.1+ |
| 1973 10 04 | 675 | 0.4− | 0.8− | 2003 02 01 | 644 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 1973 10 05 | 675 | 0.4+ | 1.5− | 2006 08 17 | 644 | 0.3− | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.8+ |
| 1973 10 05 | 675 | 1.4+ | 2.3− | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.5+ | 0.0 |
| 1998 02 28 | 327 | 1.9+ | 1.1− | 2006 08 17 | 644 | 0.5− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 1998 02 28 | 327 | 0.3− | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.6− | 0.0 |
| 1998 02 28 | 327 | 0.5− | 0.4− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.5− | 0.1+ |
| 2001 10 14 | 704 | 0.2+ | 1.1+ | 2006 08 22 | 644 | 0.4− | 0.2+ | 2006 10 17 | 703 | 1.3+ | 0.6+ |
| 2001 10 14 | 704 | (1.7+ | 0.1−) | 2006 09 12 | 703 | 1.4− | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2001 10 14 | 704 | 0.3− | 0.5− | 2006 09 12 | 703 | 0.3+ | 1.1+ | 2006 10 17 | 703 | (0.5− | 1.7+) |
| 2001 10 14 | 704 | 0.4+ | 0.4− | 2006 09 12 | 703 | 0.7− | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2001 10 15 | 704 | 0.4− | 0.5− | 2006 09 12 | 703 | (1.7− | 0.7+) | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2001 10 15 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.9+ | 1.4+ | 2006 10 19 | 644 | 0.8− | 0.0 |
| 2001 10 15 | 704 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 19 | 695 | 0.2− | 0.2− |
| 2001 10 15 | 704 | 0.5+ | 0.1− | 2006 09 18 | 703 | 1.0+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 10 15 | 704 | 0.2− | 0.2− | 2006 09 19 | 704 | 0.6− | 0.6− | 2006 10 19 | 695 | 0.3− | 0.1− |
| 2001 10 27 | 704 | 0.9+ | 0.2− | 2006 09 19 | 704 | 1.0− | 1.4+ | 2006 10 20 | 695 | 0.3− | 0.1− |
| 2001 10 27 | 704 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.8− | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2001 10 27 | 704 | 0.3+ | 0.7− | 2006 09 20 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2001 11 11 | 699 | 0.2+ | 0.0 | 2006 09 20 | 691 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 11 11 | 699 | 1.0+ | 1.2+ | 2006 09 20 | 691 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.4− |

**(145685)∗ 4075 T-2 = 2002 RA$_{12}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 38152)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.25859 | | (2000.0) | | | |
| $n$ | 0.23767066 | $\omega$ | 191.70928 | | +0.98236395 | −0.18696059 |
| $a$ | 2.5811842 | $\Omega$ | 179.05432 | | +0.18176845 | +0.95162469 |
| $e$ | 0.1730834 | $i$ | 9.09717 | | +0.04383267 | +0.24383640 |
| $P$ | 4.15 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.1+ | 0.2− | 2002 09 05 | 704 | 0.6− | 0.8− | 2006 08 16 | 644 | 0.1+ | 0.3− |
| 1973 09 19 | 675 | 0.1− | 1.4− | 2002 09 05 | 704 | 0.7+ | 0.5− | 2006 08 16 | 644 | 0.2− | 0.1− |
| 1973 09 20 | 675 | 0.3+ | 0.6+ | 2002 09 05 | 704 | 0.5+ | 0.7− | 2006 08 16 | 644 | 0.1− | 0.3− |
| 1973 09 24 | 675 | 0.6− | 1.5− | 2002 09 05 | 704 | 1.2+ | 1.5− | 2006 08 24 | 704 | (0.1− | 1.7+) |
| 1973 09 24 | 675 | 1.0− | 0.3+ | 2002 09 07 | 704 | 0.9− | 1.0+ | 2006 08 24 | 704 | 0.6+ | 0.5+ |
| 1973 09 24 | 675 | 0.3+ | 1.2− | 2002 09 07 | 704 | 0.8− | 0.7− | 2006 08 24 | 704 | 0.1+ | 0.6+ |
| 1973 09 24 | 675 | 1.0+ | 0.6− | 2002 09 07 | 704 | 0.1+ | 0.4− | 2006 08 24 | 704 | 0.5+ | 0.2+ |
| 1973 09 25 | 675 | (0.8− | 4.0−) | 2002 09 07 | 704 | 0.0 | 0.7− | 2006 08 24 | 704 | (0.0 | 1.9+) |
| 1973 09 25 | 675 | 0.5+ | 1.5− | 2002 09 13 | 644 | 0.3− | 0.8− | 2006 08 28 | 699 | 1.1+ | 0.8− |
| 1973 09 25 | 675 | (0.6+ | 2.7−) | 2002 09 13 | 644 | 0.3− | 0.9− | 2006 08 28 | 699 | (0.8− | 2.0+) |
| 1973 09 25 | 675 | 1.7+ | 0.4+ | 2002 09 13 | 644 | 0.6− | 0.8− | 2006 08 28 | 699 | 0.1+ | 0.3+ |
| 1973 09 29 | 675 | (1.4+ | 3.6−) | 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.9− | 1.5+ |
| 1973 09 29 | 675 | (2.7+ | 2.5−) | 2002 09 14 | 644 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.4− | 0.4+ |
| 1973 09 30 | 675 | 1.9+ | 0.8− | 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.9− | 0.1− |
| 1973 09 30 | 675 | (1.5+ | 4.0−) | 2002 09 15 | 608 | (1.5− | 1.0−) | 2006 08 29 | 703 | 0.3− | 0.6− |
| 1973 10 04 | 675 | 0.9+ | 0.6+ | 2002 09 15 | 608 | 1.3− | 1.4− | 2006 08 29 | 703 | 0.4+ | 0.7− |
| 1973 10 04 | 675 | 0.2− | 0.1− | 2002 09 15 | 608 | 1.2− | 1.1− | 2006 08 30 | 704 | 0.4− | 0.1+ |
| 1973 10 05 | 675 | 0.1− | 2.1− | 2002 09 27 | 699 | (1.1− | 1.5+) | 2006 08 30 | 704 | 0.8+ | 1.1− |
| 1973 10 05 | 675 | 0.2− | 2.4− | 2002 09 27 | 699 | 1.4− | 1.0+ | 2006 08 30 | 704 | 1.0− | 0.4+ |
| 1990 12 11 | 691 | 0.0 | 0.2+ | 2002 09 27 | 699 | (1.1− | 2.0+) | 2006 08 30 | 704 | 0.4+ | 0.4+ |
| 1990 12 11 | 691 | 0.1+ | 0.1+ | 2002 09 27 | 699 | 0.4+ | 1.3+ | 2006 08 30 | 704 | 0.5+ | 1.1− |
| 1990 12 11 | 691 | 0.0 | 0.2+ | 2002 10 01 | 699 | 0.8− | 0.5− | 2006 09 15 | 691 | 0.3+ | 0.1+ |
| 1997 06 01 | 691 | 0.1− | 0.4− | 2002 10 01 | 699 | 1.0− | 1.0+ | 2006 09 15 | 691 | 0.2+ | 0.0 |
| 1997 06 01 | 691 | 0.2− | 0.4− | 2002 10 01 | 699 | 1.2− | 0.8+ | 2006 09 15 | 691 | 0.2+ | 0.2+ |
| 1997 06 01 | 691 | 0.6− | 1.0+ | 2002 10 01 | 699 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.8+ |
| 1997 06 08 | 691 | 0.5− | 0.2+ | 2002 10 03 | 704 | 0.2+ | 1.3+ | 2006 09 17 | 691 | 0.2+ | 0.1+ |
| 1997 06 08 | 691 | 0.2− | 0.1− | 2002 10 03 | 704 | 0.3− | 1.0+ | 2006 09 17 | 691 | 0.4+ | 0.1+ |
| 1997 06 08 | 691 | 0.6− | 0.0 | 2002 10 03 | 704 | 0.5− | 1.5+ | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 1998 09 21 | 809 | (3.2+ | 1.7+) | 2002 10 03 | 704 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1998 09 21 | 809 | (2.7+ | 1.3+) | 2002 10 03 | 704 | 0.2− | 1.3+ | 2006 09 19 | 691 | 0.3+ | 0.0 |
| 1998 09 21 | 809 | (2.1+ | 0.6+) | 2002 10 11 | 704 | 0.4− | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 1998 09 23 | 809 | (11.3+ | 0.5−) | 2002 10 11 | 704 | 0.9− | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 1998 09 23 | 809 | (10.4+ | 1.8−) | 2002 10 11 | 704 | 0.4− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 1998 09 23 | 809 | (9.3+ | 4.6−) | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2002 09 04 | 699 | 0.4− | 1.4+ | 2002 10 11 | 704 | 0.3− | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2002 09 04 | 699 | 0.1− | 0.8+ | 2005 04 15 | 691 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 09 04 | 699 | 0.1+ | 0.1+ | 2005 04 15 | 691 | 0.6+ | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.8− |
| 2002 09 04 | 699 | 0.8+ | 1.1+ | 2005 04 15 | 691 | 0.7+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− |

**(145686)∗ 4077 T-2 = 2002 VH$_{134}$**

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 47583)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.74650 | | (2000.0) | | | |
| $n$ | 0.24001518 | $\omega$ | 53.16787 | | +0.41657190 | −0.90853758 |
| $a$ | 2.5643477 | $\Omega$ | 12.33570 | | +0.77901121 | +0.33856485 |
| $e$ | 0.1481963 | $i$ | 8.62858 | | +0.46862500 | +0.24481283 |
| $P$ | 4.11 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 1.4+ | 0.6+ | 2002 11 11 | 699 | 0.2+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 1973 09 19 | 675 | 1.2− | 1.0− | 2002 11 11 | 699 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1973 09 24 | 675 | 0.1+ | 0.8+ | 2002 11 11 | 699 | (2.4+ | 0.7+) | 2006 10 19 | 644 | 0.4+ | 0.2− |
| 1973 09 24 | 675 | 0.7− | 1.2− | 2002 11 11 | 699 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1973 09 25 | 675 | (4.6+ | 0.7+) | 2002 11 24 | 644 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.1− |
| 1973 09 25 | 675 | (4.7+ | 1.2+) | 2002 11 24 | 644 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 1973 09 29 | 675 | (2.6+ | 2.6−) | 2002 11 24 | 644 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 1973 09 29 | 675 | (3.0+ | 3.5−) | 2002 12 11 | 644 | 0.3+ | 1.1− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 1973 09 30 | 675 | 1.9− | 1.8+ | 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 1973 09 30 | 675 | 2.3+ | 0.5+ | 2002 12 11 | 644 | 0.4+ | 0.2+ | 2006 10 29 | G96 | 0.2+ | 0.3− |
| 1973 10 04 | 675 | 0.7− | 1.1+ | 2002 12 11 | 644 | 0.3− | 0.2− | 2006 10 29 | G96 | 0.2+ | 0.3− |
| 1973 10 04 | 675 | 0.7− | 1.5+ | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.3− |
| 1973 10 05 | 675 | 1.4− | 0.7− | 2002 12 11 | 644 | 0.3+ | 0.2− | 2006 10 29 | G96 | 0.2− | 0.1− |
| 1973 10 05 | 675 | 0.3+ | 0.0 | 2004 03 29 | 291 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2000 04 05 | 704 | 1.6+ | 0.2− | 2004 03 29 | 291 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2000 04 05 | 704 | 0.6+ | 0.7+ | 2004 03 29 | 291 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.6+ |
| 2000 04 05 | 704 | 0.7+ | 1.0+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2000 04 05 | 704 | (0.4− | 2.2+) | 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2002 11 06 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 691 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 11 06 | 704 | 0.4− | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2002 11 06 | 704 | 0.2+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2002 11 06 | 704 | 0.3− | 0.3− | 2006 10 03 | 691 | 0.1− | 0.0 | | | | |

**(145687)∗ 1072 T-3 = 2001 TW$_{219}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 30229)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 287.69032 | | (2000.0) | | | |
| $n$ | 0.20555747 | $\omega$ | 235.89701 | | −0.28839620 | −0.94720141 |
| $a$ | 2.8434606 | $\Omega$ | 231.49275 | | +0.92688411 | −0.23944669 |
| $e$ | 0.0368787 | $i$ | 10.31597 | | +0.24023632 | −0.21324816 |
| $P$ | 4.79 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | 1.7+ | 0.2− | 2004 04 20 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 1977 10 11 | 675 | 0.5− | 1.4+ | 2004 04 20 | 704 | 0.1+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 1977 10 11 | 675 | 1.0− | 0.7− | 2004 04 20 | 704 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 1977 10 16 | 675 | 0.0 | 1.0− | 2004 05 14 | 691 | 0.5+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 1977 10 16 | 675 | 0.3+ | 0.7− | 2004 05 14 | 691 | 0.4− | 1.5+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 09 28 | 644 | 0.5+ | 1.1− | 2004 05 14 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2001 09 28 | 644 | 0.5+ | 0.9− | 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2001 09 28 | 644 | 0.3+ | 0.9− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 10 14 | 704 | 0.4− | 0.7− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.6+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.6+ | 2.3+ |
| 2001 10 14 | 704 | 0.7− | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.8+ | 0.8− |
| 2001 10 14 | 704 | 0.0 | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.0− | 1.6+ |
| 2001 10 14 | 704 | 0.0 | 0.3+ | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2001 10 20 | 644 | 0.4− | 0.7+ | 2006 10 28 | 691 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.9+ | 1.0+ |
| 2001 10 20 | 644 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2001 10 20 | 644 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.7+ | 0.8+ |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.4− | 0.5+ | | | | |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1− | 0.3+ | | | | |

**(145688)∗ 2159 T-3 = 1999 TU$_{174}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 3849)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 345.47436 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26936773 | $\omega$ | 17.14531 | +0.98307807 | +0.18199572 | |
| $a$ | 2.3745009 | $\Omega$ | 332.34256 | −0.17290014 | +0.88421894 | |
| $e$ | 0.2394805 | $i$ | 2.57548 | −0.06052317 | +0.43015627 | |
| $P$ | 3.66 | $H$ | 17.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.2+ | 0.3− | 1999 10 15 | 704 | 0.3− | 0.7+ | 2006 07 20 | 644 | 0.0 | 0.1+ |
| 1977 10 11 | 675 | 0.4+ | 0.1+ | 1999 10 15 | 704 | 1.0− | 1.5− | 2006 07 20 | 644 | 0.0 | 0.3+ |
| 1977 10 12 | 675 | 0.2− | 1.2+ | 1999 10 15 | 704 | 0.4+ | 1.0− | 2006 07 20 | 644 | 0.0 | 0.2+ |
| 1977 10 12 | 675 | 1.2− | 1.8+ | 1999 11 04 | 704 | 0.2− | 0.2+ | 2006 08 13 | 644 | 0.2+ | 0.1+ |
| 1977 10 16 | 675 | 0.0 | 1.6− | 1999 11 04 | 704 | 0.3− | 0.2+ | 2006 08 13 | 644 | 0.2− | 0.2+ |
| 1977 10 16 | 675 | 0.5+ | 0.8− | 1999 11 04 | 704 | 0.1− | 0.4− | 2006 08 13 | 644 | 0.1+ | 0.0 |
| 1977 10 17 | 675 | 0.0 | 1.6− | 1999 11 04 | 703 | 0.3− | 0.7+ | 2006 08 16 | 644 | 0.2+ | 0.1− |
| 1977 10 17 | 675 | 0.4+ | 0.1+ | 1999 11 04 | 704 | 0.1+ | 1.1+ | 2006 08 16 | 644 | 0.1+ | 0.2+ |
| 1977 10 21 | 675 | (3.0+ | 0.9−) | 1999 11 04 | 703 | 1.0− | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.2+ |
| 1977 10 21 | 675 | (1.2+ | 2.7−) | 1999 11 04 | 703 | 0.6+ | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.1− |
| 1977 10 22 | 675 | 0.2+ | 0.3+ | 1999 11 04 | 703 | 1.3+ | 0.4− | 2006 08 20 | 644 | 0.1− | 0.1− |
| 1977 10 22 | 675 | 0.2+ | 0.4− | 1999 11 14 | 691 | 0.2− | 0.5− | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.5− | 0.1− | 1999 11 14 | 691 | 0.1− | 0.5− | 2006 10 20 | G96 | 0.4+ | 0.7− |
| 1999 10 10 | 704 | 0.7− | 1.2+ | 1999 11 14 | 691 | (4.4+ | 2.5+) | 2006 10 20 | G96 | 0.0 | 0.3− |
| 1999 10 10 | 704 | 0.5+ | 1.5+ | 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 1999 10 13 | 704 | 0.5+ | 0.4+ | 2005 03 11 | G96 | 0.1+ | 0.8+ | 2006 10 20 | G96 | 0.7− | 0.2− |
| 1999 10 13 | 704 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 1999 10 13 | 704 | 0.4+ | 0.3+ | 2005 03 11 | G96 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2− | 0.2− |
| 1999 10 13 | 704 | 0.5+ | 0.4+ | 2005 04 12 | G96 | 0.3+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 1999 10 13 | 704 | 0.5+ | 1.0+ | 2005 04 12 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.3− | 0.2− |
| 1999 10 15 | 704 | 0.9− | 0.4+ | 2005 04 12 | G96 | 0.9+ | 0.0 | | | | |
| 1999 10 15 | 704 | 0.5+ | 0.8+ | 2005 04 12 | G96 | 0.1− | 0.1− | | | | |

**(145689)∗ 2219 T-3 = 1999 AQ$_{24}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (MPC 33737)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 88.18831 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.24720893 | $\omega$ | 55.11347 | +0.91066068 | −0.41240173 | |
| $a$ | 2.5143551 | $\Omega$ | 329.22046 | +0.36138261 | +0.82434945 | |
| $e$ | 0.0562586 | $i$ | 2.79332 | +0.20024919 | +0.38777931 | |
| $P$ | 3.99 | $H$ | 14.9 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | 1.3+ | 1.6− | 2001 11 10 | 644 | 0.0 | 0.3+ | 2005 09 24 | 703 | 0.8− | 0.5− |
| 1977 10 11 | 675 | 0.6+ | 1.1− | 2001 11 10 | 704 | 1.1+ | 0.7+ | 2005 09 24 | 703 | 0.7− | 0.4− |
| 1977 10 11 | 675 | 0.1+ | 0.1+ | 2001 11 11 | 699 | 0.8− | 0.2+ | 2005 09 29 | 691 | 0.0 | 0.0 |
| 1977 10 12 | 675 | 0.8− | 0.6+ | 2001 11 11 | 699 | 0.3− | 0.1− | 2005 09 29 | 691 | 0.1+ | 0.0 |
| 1977 10 12 | 675 | 0.8− | 0.3+ | 2001 11 11 | 699 | 0.6− | 0.1+ | 2005 09 29 | 691 | 0.2+ | 0.1− |
| 1977 10 16 | 675 | 0.3− | 1.2− | 2001 11 11 | 699 | 0.2− | 0.2− | 2005 09 30 | 703 | (1.7− | 0.7−) |
| 1977 10 16 | 675 | 0.4+ | 1.5− | 2001 11 17 | 691 | 0.0 | 0.1+ | 2005 09 30 | 703 | 0.7− | 0.1+ |
| 1977 10 17 | 675 | 0.1+ | 1.8+ | 2001 11 17 | 691 | 0.2+ | 0.2− | 2005 09 30 | 703 | 0.6+ | 0.1+ |
| 1977 10 17 | 675 | 0.4− | 1.2+ | 2001 11 17 | 691 | 0.2+ | 0.2− | 2005 09 30 | 703 | (2.0+ | 0.2−) |
| 1977 10 21 | 675 | (3.5+ | 0.4−) | 2001 11 17 | 704 | 1.1+ | 1.1+ | 2005 10 07 | 704 | 0.0 | 0.5+ |
| 1977 10 21 | 675 | (3.5+ | 0.8−) | 2001 11 17 | 704 | 1.2+ | 1.0+ | 2005 10 07 | 704 | 0.0 | 0.8+ |
| 1977 10 22 | 675 | 1.1+ | 0.7+ | 2001 11 17 | 704 | 1.1+ | 1.0+ | 2005 10 07 | 704 | 0.3+ | 0.7+ |
| 1977 10 22 | 675 | 1.1+ | 1.7+ | 2001 11 17 | 704 | 1.1+ | 1.0+ | 2005 10 07 | 704 | 0.1− | 0.7+ |
| 1993 11 09 | 691 | 0.4− | 0.4− | 2001 11 17 | 704 | 0.9+ | 0.9+ | 2005 10 07 | 704 | 0.7− | 0.4+ |
| 1993 11 09 | 691 | 0.3− | 0.8− | 2001 11 17 | 644 | 0.2+ | 0.4+ | 2005 10 10 | 699 | 0.4+ | 0.3− |
| 1993 11 09 | 691 | 0.4− | 0.4− | 2001 11 17 | 644 | 0.1− | 0.1− | 2005 10 10 | 699 | 0.6+ | 0.6+ |
| 1999 01 15 | 910 | 0.8− | 0.6− | 2001 11 17 | 644 | 0.0 | 0.3+ | 2005 10 10 | 699 | 0.1+ | 0.2+ |
| 1999 01 15 | 910 | 0.0 | 1.0− | 2001 11 19 | 704 | 0.8− | 1.3+ | 2005 10 10 | 699 | 0.1− | 0.0 |
| 1999 01 15 | 910 | 0.2− | 0.4− | 2001 11 19 | 704 | (0.4− | 1.7+) | 2005 10 12 | 704 | 0.5− | 0.7+ |
| 1999 01 15 | 910 | 0.2− | 0.7− | 2001 11 19 | 704 | 0.2− | 1.3+ | 2005 10 12 | 704 | 0.3− | 0.8+ |
| 1999 01 15 | 910 | 0.3− | 0.6− | 2001 11 19 | 704 | 0.0 | 1.4+ | 2005 10 12 | 704 | 0.4− | 0.2− |
| 1999 01 15 | 910 | 0.6− | 0.8− | 2001 11 24 | 704 | 0.3+ | 0.3− | 2005 10 12 | 704 | 0.5− | 0.9+ |
| 1999 01 19 | 910 | 0.1+ | 0.7− | 2001 11 24 | 704 | 0.0 | 1.0− | 2005 10 12 | 704 | 0.3− | 0.2+ |
| 1999 01 19 | 910 | 0.3+ | 0.6− | 2001 11 24 | 704 | 0.2− | 0.3− | 2005 10 14 | 699 | 1.1+ | 0.2+ |
| 1999 01 19 | 910 | 0.5+ | 0.6− | 2001 11 24 | 704 | 0.3− | 0.0 | 2005 10 14 | 699 | 0.2+ | 0.9− |
| 1999 02 10 | 704 | (2.1− | 0.1−) | 2001 12 15 | 704 | (1.8− | 0.2+) | 2005 10 14 | 699 | 0.6− | 0.2− |
| 1999 02 10 | 704 | 0.4+ | 0.4− | 2001 12 15 | 704 | 1.2− | 0.4− | 2005 10 14 | 699 | 0.5+ | 0.6+ |
| 1999 02 10 | 704 | 1.1− | 0.1+ | 2001 12 15 | 704 | 1.3− | 1.2+ | 2005 10 22 | 703 | 0.0 | 0.2− |
| 1999 02 10 | 704 | (3.0− | 0.7−) | 2001 12 15 | 704 | 1.1− | 0.5+ | 2005 10 22 | 703 | 0.2− | 0.1− |
| 1999 02 12 | 699 | 0.5− | 0.7− | 2001 12 15 | 704 | 0.7− | 0.9+ | 2005 10 22 | 703 | 0.7+ | 0.9+ |
| 1999 02 12 | 699 | 1.3+ | 1.1+ | 2001 12 18 | 704 | 0.7− | 0.7− | 2005 10 22 | 703 | 0.1+ | 0.0 |
| 1999 02 12 | 699 | 1.3+ | 0.3+ | 2001 12 18 | 704 | 0.6− | 0.5− | 2005 10 23 | 644 | 0.2− | 0.3+ |
| 1999 02 13 | 704 | 0.0 | 0.7+ | 2001 12 18 | 704 | 0.5− | 0.6− | 2005 10 23 | 644 | 0.1+ | 0.1+ |
| 1999 02 13 | 704 | 1.0− | 1.9+ | 2001 12 18 | 704 | 0.9− | 0.5− | 2005 10 23 | 644 | 0.3− | 0.2− |
| 1999 02 13 | 704 | 0.5+ | 1.4− | 2001 12 18 | 704 | 0.6− | 0.1− | 2005 10 28 | 703 | 0.4− | 0.3− |
| 1999 02 13 | 704 | 0.2− | 0.1− | 2003 01 28 | 704 | 0.3− | 0.4− | 2005 10 28 | 703 | 0.1+ | 0.1− |
| 1999 02 13 | 704 | 0.2− | 1.0+ | 2003 01 28 | 704 | 0.3− | 0.3+ | 2005 10 28 | 703 | 0.6− | 0.2− |
| 1999 03 20 | 704 | 1.0− | 0.6+ | 2003 01 28 | 704 | 0.8− | 1.2+ | 2005 10 28 | 703 | 0.2− | 0.3− |
| 1999 03 20 | 704 | (1.6− | 3.0+) | 2003 01 28 | 704 | 0.1+ | 0.5+ | 2005 11 01 | 704 | 0.2+ | 0.4+ |
| 1999 03 20 | 704 | 0.0 | 0.5+ | 2003 01 28 | 704 | 0.4+ | 1.1+ | 2005 11 01 | 704 | 0.7− | 0.4− |
| 1999 03 20 | 704 | (3.1− | 2.4+) | 2003 01 31 | 704 | 0.5+ | 0.1+ | 2005 11 01 | 704 | 0.0 | 0.1+ |
| 2001 07 28 | 699 | 0.9− | 0.0 | 2003 01 31 | 704 | 0.9+ | 0.2+ | 2005 11 01 | 704 | 0.6− | 0.2− |
| 2001 07 28 | 699 | 0.6+ | 0.3− | 2003 01 31 | 704 | 1.1+ | 0.4+ | 2005 11 01 | 704 | 0.0 | 0.1− |
| 2001 07 28 | 699 | 0.1+ | 0.5+ | 2003 01 31 | 704 | 1.0+ | 0.6+ | 2005 11 04 | 704 | 0.3+ | 0.0 |
| 2001 07 28 | 699 | 0.7− | 0.3+ | 2003 02 03 | 699 | 0.5+ | 0.5− | 2005 11 04 | 704 | 0.5+ | 0.4+ |
| 2001 08 04 | 644 | 0.4− | 0.9+ | 2003 02 03 | 699 | 0.1+ | 0.4+ | 2005 11 04 | 704 | 0.4+ | 0.2− |
| 2001 08 04 | 644 | 0.6− | 0.4+ | 2003 02 03 | 699 | 0.8+ | 0.4− | 2005 11 04 | 704 | 0.0 | 0.4+ |
| 2001 08 04 | 644 | 0.7− | 0.4+ | 2003 02 03 | 699 | 1.1+ | 0.0 | 2005 11 04 | 704 | 0.4+ | 0.3− |
| 2001 08 04 | 644 | 0.7− | 0.7+ | 2003 02 10 | 291 | 0.4− | 0.1− | 2005 11 05 | 703 | 0.1+ | 0.3− |
| 2001 08 04 | 644 | 0.5− | 0.6+ | 2003 02 10 | 291 | 0.3− | 0.1+ | 2005 11 05 | 703 | 0.2+ | 0.5− |
| 2001 08 04 | 644 | 0.7− | 0.6+ | 2003 02 10 | 291 | 0.5− | 0.0 | 2005 11 05 | 703 | 0.4− | 0.6− |
| 2001 09 17 | 704 | 0.0 | 0.2− | 2003 02 20 | 608 | 0.5+ | 0.2− | 2005 11 05 | 703 | 0.5+ | 0.1+ |
| 2001 09 17 | 704 | 0.2+ | 0.1− | 2003 02 20 | 608 | 0.8+ | 0.5− | 2005 11 05 | 703 | 0.0 | 0.3− |
| 2001 09 17 | 704 | 0.2− | 0.3− | 2003 02 20 | 608 | 0.4+ | 0.2− | 2005 11 05 | 703 | 0.2− | 0.3− |
| 2001 09 17 | 704 | 1.2− | 0.6− | 2003 02 21 | 049 | 0.1− | 0.2− | 2005 11 05 | 703 | 0.0 | 0.4− |
| 2001 09 19 | 699 | 0.2+ | 0.0 | 2003 02 21 | 049 | 0.3− | 0.1− | 2005 11 06 | 704 | 0.8+ | 0.2+ |
| 2001 09 19 | 699 | 0.7− | 0.6+ | 2003 02 22 | 049 | 0.3− | 0.1− | 2005 11 06 | 704 | 0.2+ | 0.3− |
| 2001 09 19 | 699 | 0.3− | 0.5+ | 2003 02 22 | 644 | 0.0 | 0.0 | 2005 11 06 | 704 | 0.8+ | 0.2− |
| 2001 09 19 | 699 | 0.4− | 0.4+ | 2003 02 22 | 644 | 0.1− | 0.0 | 2005 11 06 | 704 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (2.0+ | 0.1+) | 2003 02 22 | 644 | 0.0 | 0.1− | 2005 11 06 | 704 | 0.5+ | 0.0 | | |
| 2001 09 20 | 704 | 1.3+ | 0.1− | 2003 02 23 | 699 | 0.4− | 0.2+ | 2005 11 07 | 704 | 0.2+ | 0.2− | | |
| 2001 09 20 | 704 | 1.4+ | 0.7+ | 2003 02 23 | 699 | 0.1− | 0.2+ | 2005 11 07 | 704 | 0.4+ | 0.0 | | |
| 2001 09 23 | 704 | 0.3− | 0.0 | 2003 02 23 | 699 | 0.0 | 0.2− | 2005 11 07 | 704 | 0.2+ | 0.1− | | |
| 2001 09 23 | 704 | 0.3− | 0.0 | 2003 02 23 | 699 | 0.2− | 0.2+ | 2005 11 07 | 704 | 0.0 | 0.0 | | |
| 2001 09 23 | 704 | 0.2+ | 0.5+ | 2003 02 25 | 608 | 0.6+ | 0.5+ | 2005 11 07 | 704 | 0.4+ | 0.4− | | |
| 2001 09 24 | 704 | 0.9+ | 0.2− | 2003 02 25 | 608 | 0.7+ | 0.2+ | 2005 11 08 | 704 | 0.4+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.4+ | 0.0 | 2003 02 25 | 608 | 0.5+ | 0.3+ | 2005 11 08 | 704 | 0.1− | 0.1− | | |
| 2001 09 24 | 704 | 0.5− | 0.2+ | 2003 02 26 | 608 | 0.7+ | 0.7+ | 2005 11 08 | 704 | 0.3+ | 0.2− | | |
| 2001 09 24 | 704 | 0.2+ | 0.2− | 2003 02 26 | 608 | 0.1+ | 0.3+ | 2005 11 08 | 704 | 0.4+ | 0.3− | | |
| 2001 09 24 | 704 | 0.2− | 0.6− | 2003 02 26 | 608 | 0.8+ | 0.3+ | 2005 11 08 | 704 | 0.3+ | 0.4− | | |
| 2001 10 07 | 644 | 0.2− | 0.6+ | 2003 02 26 | 599 | 0.1+ | 0.0 | 2005 11 11 | 704 | 0.2+ | 0.0 | | |
| 2001 10 07 | 644 | 0.5− | 0.5+ | 2003 02 26 | 599 | 0.1+ | 0.0 | 2005 11 11 | 704 | 0.1+ | 0.5− | | |
| 2001 10 07 | 644 | 0.5− | 0.7+ | 2003 02 26 | 599 | 0.2+ | 0.2+ | 2005 11 11 | 704 | 0.1+ | 0.4+ | | |
| 2001 10 11 | 644 | 0.2+ | 0.2− | 2003 02 26 | 209 | 0.7− | 0.1− | 2005 11 11 | 704 | 0.5+ | 0.1− | | |
| 2001 10 11 | 644 | 0.3+ | 0.2− | 2003 02 26 | 599 | 0.1+ | 0.0 | 2005 11 11 | 704 | 0.3+ | 0.2− | | |
| 2001 10 11 | 644 | 0.3+ | 0.1− | 2003 02 26 | 209 | 0.4− | 0.4+ | 2005 11 12 | 691 | 0.3+ | 0.2− | | |
| 2001 10 12 | 699 | 0.5− | 0.5− | 2003 02 26 | 209 | 0.0 | 0.7+ | 2005 11 12 | 691 | 0.3+ | 0.2− | | |
| 2001 10 12 | 699 | 0.1− | 0.1− | 2003 02 28 | 704 | (3.0+ | 1.5+) | 2005 11 12 | 691 | 0.3+ | 0.3− | | |
| 2001 10 12 | 699 | 1.0− | 0.2− | 2003 02 28 | 704 | 0.2+ | 0.1+ | 2005 11 19 | 699 | 0.4− | 0.7+ | | |
| 2001 10 12 | 699 | 0.4+ | 0.0 | 2003 02 28 | 704 | (3.6+ | 1.9+) | 2005 11 19 | 699 | 0.9− | 0.7− | | |
| 2001 10 14 | 704 | 0.1− | 0.2+ | 2003 02 28 | 704 | 0.6+ | 0.6+ | 2005 11 19 | 699 | 0.7− | 0.4+ | | |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2003 02 28 | 704 | (2.6+ | 1.9+) | 2005 11 19 | 699 | 0.4+ | 0.4− | | |
| 2001 10 14 | 704 | 0.1+ | 0.0 | 2003 02 28 | 704 | 0.8+ | 0.8+ | 2005 11 30 | 644 | 0.4− | 0.6− | | |
| 2001 10 14 | 704 | 0.5+ | 0.3− | 2003 02 28 | 704 | (3.2+ | 2.1+) | 2005 11 30 | 644 | 0.1+ | 0.4− | | |
| 2001 10 14 | 704 | 0.6+ | 0.4− | 2003 03 04 | 209 | 0.0 | 0.3− | 2005 11 30 | 644 | 0.4+ | 0.4− | | |
| 2001 10 17 | 704 | 0.7− | 0.2+ | 2003 03 04 | 209 | 0.0 | 0.3− | 2005 12 29 | 704 | 1.1− | 0.5+ | | |
| 2001 10 17 | 704 | 0.6− | 0.8+ | 2003 03 04 | 209 | 0.1+ | 0.2− | 2005 12 29 | 704 | 1.5− | 1.2− | | |
| 2001 10 17 | 704 | 0.5− | 0.3+ | 2003 03 05 | 704 | 0.6+ | 0.1− | 2005 12 29 | 704 | 0.3+ | 0.0 | | |
| 2001 10 17 | 704 | 0.3− | 0.7+ | 2003 03 05 | 704 | 0.3− | 0.1+ | 2005 12 29 | 704 | (0.1+ | 2.3+) | | |
| 2001 10 17 | 704 | 0.6− | 0.5+ | 2003 03 05 | 704 | 0.0 | 0.4− | 2006 01 03 | 704 | 0.9− | 0.7+ | | |
| 2001 10 19 | 644 | 0.4+ | 0.9+ | 2003 03 05 | 704 | 0.4+ | 0.3+ | 2006 01 03 | 704 | 1.0+ | 0.5+ | | |
| 2001 10 19 | 644 | 0.3+ | 0.9+ | 2003 03 06 | 644 | 0.0 | 0.2− | 2006 01 03 | 704 | 0.2+ | 0.6+ | | |
| 2001 10 19 | 644 | 0.4+ | 0.8+ | 2003 03 06 | 644 | 0.1+ | 0.0 | 2006 01 21 | 699 | 0.6+ | 0.6− | | |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2003 03 06 | 644 | 0.0 | 0.0 | 2006 01 21 | 699 | 0.9− | 0.2+ | | |
| 2001 10 21 | 704 | 0.0 | 0.1− | 2003 03 07 | 699 | 0.3+ | 0.5+ | 2006 01 21 | 699 | 0.5+ | 1.2+ | | |
| 2001 10 21 | 704 | 0.8+ | 0.1− | 2003 03 07 | 699 | 0.5+ | 0.0 | 2006 01 21 | 699 | 0.3+ | 0.3− | | |
| 2001 10 21 | 704 | 1.1− | 0.7− | 2003 03 07 | 699 | 0.8+ | 0.1+ | 2006 02 03 | G96 | 0.2+ | 0.5− | | |
| 2001 10 21 | 704 | 0.1− | 0.3− | 2003 03 07 | 699 | 0.3+ | 0.1− | 2006 02 03 | G96 | 0.4+ | 0.3− | | |
| 2001 10 22 | 704 | 0.1− | 0.1− | 2003 03 14 | 608 | 0.4+ | 0.5− | 2006 02 03 | G96 | 0.2+ | 0.6− | | |
| 2001 10 22 | 704 | 0.5− | 0.0 | 2003 03 14 | 608 | 0.8+ | 0.1− | 2006 02 03 | G96 | 0.2+ | 0.5− | | |
| 2001 10 22 | 704 | 0.0 | 0.1− | 2003 03 14 | 608 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.6− | 0.8− | | |
| 2001 10 22 | 704 | 0.6+ | 0.2− | 2003 04 03 | 699 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.5− | 0.5− | | |
| 2001 10 22 | 704 | 0.5+ | 0.0 | 2003 04 03 | 699 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 2001 10 26 | 644 | 0.4− | 0.2− | 2003 04 03 | 699 | 0.6− | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.6− | | |
| 2001 10 26 | 644 | 0.4− | 0.2− | 2003 04 03 | 699 | 1.3− | 0.5+ | 2006 10 30 | G96 | 0.3− | 0.4− | | |
| 2001 10 26 | 644 | 0.3− | 0.3− | 2003 04 29 | 704 | 0.8− | 0.1+ | 2006 10 30 | G96 | 0.4− | 0.3− | | |
| 2001 11 10 | 704 | 0.0 | 0.0 | 2003 04 29 | 704 | 0.7− | 1.5+ | 2006 10 30 | G96 | 0.0 | 0.5− | | |
| 2001 11 10 | 704 | 0.0 | 0.0 | 2003 04 29 | 704 | 0.3− | 0.8+ | 2006 10 30 | G96 | 0.5− | 0.5− | | |
| 2001 11 10 | 644 | 0.0 | 0.1+ | 2003 04 29 | 704 | 1.2− | 0.3− | 2006 11 16 | G96 | 0.5− | 0.3− | | |
| 2001 11 10 | 704 | 0.1+ | 0.6+ | 2003 04 29 | 704 | 0.0 | 1.3+ | 2006 11 16 | G96 | 0.2− | 0.9− | | |
| 2001 11 10 | 644 | 0.3− | 0.0 | 2005 09 24 | 703 | 0.1− | 0.6− | 2006 11 16 | G96 | 0.3− | 0.6− | | |
| 2001 11 10 | 704 | 0.2+ | 0.4+ | 2005 09 24 | 703 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.4− | 0.6− | | |

**(145690)∗ 2280 T-3 = 2002 RN$_{73}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 35426)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.12718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27383567 | $\omega$ | 71.09985 | | +0.94978246 | +0.31142854 | |
| $a$ | 2.3486017 | $\Omega$ | 270.74576 | | −0.29732295 | +0.86788814 | |
| $e$ | 0.1047153 | $i$ | 1.74352 | | −0.09753128 | +0.38701737 | |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 1.6− | 0.5− | 2002 09 07 | 704 | 0.1+ | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 1977 10 11 | 675 | 0.6− | 0.4+ | 2002 09 14 | 644 | 0.7− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 1977 10 12 | 675 | 1.2− | 2.4− | 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.3− | | |
| 1977 10 12 | 675 | 1.8− | 0.5+ | 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 1977 10 16 | 675 | 1.4+ | 2.0− | 2002 09 17 | 608 | 0.7− | 0.3− | 2006 11 09 | 691 | 0.3+ | 0.0 | | |
| 1977 10 16 | 675 | (0.5+ | 2.7−) | 2002 09 17 | 608 | 1.1− | 0.8− | 2006 11 09 | 691 | 0.1+ | 0.1− | | |
| 1977 10 17 | 675 | 1.3+ | 0.2− | 2002 09 17 | 608 | 1.0− | 0.8− | 2006 11 09 | 691 | 0.0 | 0.3+ | | |
| 1977 10 17 | 675 | 0.4− | 1.0+ | 2002 10 03 | 704 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.2− | 0.3+ | | |
| 1977 10 21 | 675 | 1.4+ | 0.2− | 2002 10 03 | 704 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1− | | |
| 1977 10 21 | 675 | 2.1+ | 0.9− | 2002 10 03 | 704 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 1977 10 22 | 675 | 0.4+ | 1.7− | 2002 10 03 | 704 | 0.6+ | 1.0+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 1977 10 22 | 675 | 1.6+ | 1.4− | 2002 10 03 | 704 | 0.5− | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 2000 01 13 | 691 | 0.2+ | 0.4− | 2003 12 19 | 291 | 0.5− | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | | |
| 2000 01 13 | 691 | 0.0 | 0.1− | 2003 12 19 | 291 | 0.6− | 0.5+ | 2006 11 18 | 704 | (0.2− | 1.6+) | | |
| 2000 01 13 | 691 | 0.1+ | 0.2− | 2003 12 19 | 291 | (1.8− | 0.7+) | 2006 11 18 | 704 | 0.9− | 1.4+ | | |
| 2002 08 12 | 704 | 0.6− | 0.7+ | 2004 01 24 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (2.0+ | 1.4+) | | |
| 2002 08 12 | 704 | 0.3− | 1.0+ | 2004 01 24 | 704 | 0.7+ | 1.4+ | 2006 11 18 | 704 | 0.3+ | 0.2+ | | |
| 2002 08 12 | 704 | 0.4− | 0.5+ | 2004 01 24 | 704 | 0.7+ | 0.4− | 2006 11 21 | 704 | 1.2− | 0.4− | | |
| 2002 08 12 | 704 | 0.1+ | 0.3+ | 2004 01 24 | 704 | (0.3− | 1.7+) | 2006 11 21 | 704 | 0.8− | 0.9+ | | |
| 2002 08 12 | 704 | 0.6− | 1.2+ | 2004 01 28 | 691 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 1.5+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.0 | 2004 01 28 | 691 | 0.6+ | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2002 09 05 | 704 | 0.3+ | 0.0 | 2004 01 28 | 691 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.1− | | |
| 2002 09 05 | 704 | 0.2+ | 0.7+ | 2005 06 14 | G96 | 0.5− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2002 09 05 | 704 | 0.5+ | 0.7+ | 2005 06 14 | G96 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2002 09 05 | 704 | 0.7+ | 0.7+ | 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.5− | | |
| 2002 09 07 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.2− | | |
| 2002 09 07 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.6− | | |

**(145691)∗ 2319 T-3 = 2001 TH$_{170}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 20664)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.59140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20473657 | $\omega$ | 117.68956 | | −0.61304927 | −0.78862427 | |
| $a$ | 2.8510562 | $\Omega$ | 10.52294 | | +0.60224201 | −0.50527411 | |
| $e$ | 0.0916894 | $i$ | 15.02776 | | +0.51134640 | −0.35038525 | |
| $P$ | 4.81 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.0 | 0.2+ | 2001 10 15 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 1977 10 11 | 675 | 0.9− | 2.0+ | 2001 10 15 | 691 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 1977 10 12 | 675 | 0.7+ | 0.1− | 2001 10 18 | 644 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1− | | |
| 1977 10 16 | 675 | 0.8− | 0.3− | 2001 10 18 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.0 | | |
| 1977 10 16 | 675 | 0.5+ | 2.4− | 2001 10 18 | 644 | 0.3− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.1+ | | |
| 1977 10 17 | 675 | 1.2− | 0.7+ | 2001 10 20 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.3− | 0.0 | | |
| 1977 10 17 | 675 | 0.6− | 0.1− | 2001 10 20 | 691 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.1+ | | |
| 1977 10 21 | 675 | 1.6+ | 0.9+ | 2001 10 20 | 691 | 0.1− | 0.1+ | 2006 10 19 | 703 | 1.0+ | 1.0− | | |
| 2001 09 16 | 704 | 0.4− | 0.4+ | 2001 10 21 | 704 | 0.3+ | 0.6− | 2006 10 19 | 703 | 0.4+ | 0.4− | | |
| 2001 09 16 | 704 | 0.6− | 0.9+ | 2001 10 21 | 704 | 0.0 | 0.4− | 2006 10 19 | 703 | (0.4− | 1.7−) | | |
| 2001 09 16 | 704 | 0.5− | 0.4− | 2001 10 21 | 704 | 0.7+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.6− | | |
| 2001 09 20 | 691 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.4− | | |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2001 10 21 | 704 | 0.8+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.5− | | |
| 2001 09 20 | 704 | 0.7+ | 0.3+ | 2002 12 30 | 704 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.5− | | |
| 2001 09 20 | 691 | 0.1− | 0.1− | 2002 12 30 | 704 | 0.3+ | 0.5− | 2006 11 14 | 703 | 0.1+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.2+ | 1.0− | 2002 12 30 | 704 | 1.1− | 0.2+ | 2006 11 14 | 703 | (0.4− | 1.7−) | | |
| 2001 09 20 | 691 | 0.5+ | 0.2+ | 2002 12 30 | 704 | 0.3− | 0.2− | 2006 11 14 | 703 | 0.0 | 0.8+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.5− | 2003 01 05 | 699 | 0.5− | 1.2+ | 2006 11 14 | 703 | 1.1− | 1.2+ | | |
| 2001 09 20 | 704 | 0.4− | 0.8+ | 2003 01 05 | 699 | 1.0+ | 1.3− | 2006 11 23 | 703 | 0.4− | 0.4− | | |
| 2001 09 23 | 704 | 0.0 | 0.0 | 2003 01 05 | 699 | 0.3− | 0.3+ | 2006 11 23 | 703 | 0.8+ | 0.9+ | | |
| 2001 09 23 | 704 | 0.2+ | 0.1− | 2003 01 05 | 699 | 0.5+ | 0.1+ | 2006 11 23 | 703 | 0.4+ | 0.1− | | |
| 2001 09 23 | 704 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 11 23 | 703 | 1.3− | 1.0− | | |
| 2001 09 23 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.2+ | | | | | | |
| 2001 10 15 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.3+ | 0.1− | | | | | | |

**(145692)∗ 2625 T-3 = 2003 UH$_{17}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 57616)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.02493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18886552 | $\omega$ | 91.93267 | | −0.10309047 | −0.99457933 | |
| $a$ | 3.0086217 | $\Omega$ | 4.06013 | | +0.81926997 | −0.09264339 | |
| $e$ | 0.0731124 | $i$ | 11.05443 | | +0.56406478 | −0.04721391 | |
| $P$ | 5.22 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 0.5+ | 1.3− | 2003 10 21 | 699 | 0.5− | 0.4+ | 2005 01 07 | 703 | 0.3− | 0.4− |
| 1977 10 16 | 675 | 0.2− | 1.0− | 2003 10 21 | 699 | 0.1− | 0.0 | 2005 01 09 | 703 | 0.2− | 0.7− |
| 1977 10 17 | 675 | 0.8+ | 0.1+ | 2003 10 21 | 699 | 0.0 | 0.2+ | 2005 01 09 | 703 | 0.5− | 1.3+ |
| 1977 10 17 | 675 | 0.1+ | 0.7+ | 2003 10 21 | 704 | 1.5− | 1.6+ | 2005 01 09 | 703 | 0.7− | 0.3+ |
| 1977 10 21 | 675 | 1.3+ | 0.1− | 2003 10 21 | 699 | 0.4− | 0.6+ | 2005 01 09 | 703 | 1.0− | 0.5− |
| 1977 10 21 | 675 | (0.9+ | 2.7−) | 2003 10 21 | 704 | 0.5− | 0.7+ | 2005 01 15 | 703 | 0.2− | 0.0 |
| 1977 10 22 | 675 | 0.2− | 0.8− | 2003 10 21 | 704 | 0.2− | 0.1− | 2005 01 15 | 703 | 0.1+ | 0.2+ |
| 1977 10 22 | 675 | 0.4− | 0.7− | 2003 10 21 | 704 | 1.5− | 0.3+ | 2005 01 15 | 703 | 0.4− | 0.3+ |
| 2002 08 13 | 644 | 0.1+ | 0.4+ | 2003 10 25 | 704 | 0.0 | 0.3− | 2005 01 15 | 703 | 0.5− | 0.1+ |
| 2002 08 13 | 644 | 0.2− | 0.4+ | 2003 10 25 | 704 | 0.0 | 0.6− | 2005 01 17 | 704 | 0.9+ | 0.2+ |
| 2002 08 13 | 644 | 0.2− | 0.4+ | 2003 10 25 | 704 | 0.0 | 0.1− | 2005 01 17 | 704 | 0.5+ | 0.6+ |
| 2003 09 21 | 644 | 0.0 | 0.4+ | 2003 10 25 | 704 | 0.2+ | 0.3− | 2005 01 17 | 704 | 0.8+ | 0.2− |
| 2003 09 21 | 644 | 0.1+ | 0.2+ | 2003 10 25 | 704 | 0.5+ | 0.1+ | 2005 02 04 | 699 | 1.2+ | 0.2− |
| 2003 09 21 | 644 | 0.2+ | 0.1+ | 2003 10 26 | 691 | 0.2+ | 0.4+ | 2005 02 04 | 699 | 0.6+ | 0.2+ |
| 2003 09 21 | 608 | 0.2− | 1.0− | 2003 10 26 | 691 | 0.3+ | 0.2+ | 2005 02 04 | 699 | 1.0+ | 0.7+ |
| 2003 09 21 | 608 | 0.1− | 1.0− | 2003 10 26 | 691 | 0.2+ | 0.1+ | 2005 02 04 | 699 | 1.2+ | 0.2+ |
| 2003 09 21 | 608 | 0.5+ | 0.8− | 2003 11 20 | 704 | 1.1− | 0.5+ | 2006 04 21 | E12 | 0.3+ | 0.5− |
| 2003 09 27 | 704 | 0.1+ | 0.5+ | 2003 11 20 | 704 | 0.3− | 0.0 | 2006 04 21 | E12 | 0.7+ | 0.5+ |
| 2003 09 27 | 704 | 0.5− | 0.4− | 2003 11 20 | 704 | 0.2− | 0.8+ | 2006 04 21 | E12 | 1.2+ | 0.4− |
| 2003 09 27 | 704 | 0.8− | 0.6+ | 2004 12 21 | 703 | 0.2+ | 0.2− | 2006 04 21 | E12 | 1.0+ | 0.3+ |
| 2003 09 27 | 704 | 1.4− | 1.4+ | 2004 12 21 | 703 | 0.5+ | 0.6+ | 2006 05 25 | E12 | 0.0 | 1.4+ |
| 2003 10 17 | 699 | (4.3− | 2.6−) | 2004 12 21 | 703 | 0.0 | 0.4− | 2006 05 25 | E12 | 0.5+ | 0.7+ |
| 2003 10 17 | 691 | 0.2+ | 0.1+ | 2004 12 21 | 703 | 1.0− | 0.0 | 2006 05 25 | E12 | 0.9− | 1.9+ |
| 2003 10 17 | 699 | (2.4− | 1.7−) | 2005 01 07 | 703 | 0.8− | 0.7+ | 2006 05 25 | E12 | 0.4− | 0.2+ |
| 2003 10 17 | 691 | 0.0 | 0.0 | 2005 01 07 | 703 | 0.5− | 0.3− | | | | |
| 2003 10 17 | 691 | 0.1− | 0.0 | 2005 01 07 | 703 | 0.6− | 0.3− | | | | |

**(145693)∗ 3112 T-3 = 1999 VB$_{172}$ = 2004 BO$_{78}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 62173)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.96095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27145403 | $\omega$ | 357.05529 | | +0.95931399 | −0.28196416 | |
| $a$ | 2.3623189 | $\Omega$ | 19.34136 | | +0.25993507 | +0.86182881 | |
| $e$ | 0.2242933 | $i$ | 2.52490 | | +0.11022896 | +0.42160091 | |
| $P$ | 3.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | (3.1+ | 0.0 ) | 2004 02 13 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.6+ |
| 1977 10 11 | 675 | 2.4− | 1.2− | 2004 02 13 | 691 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.1+ |
| 1977 10 11 | 675 | 0.3+ | 0.8− | 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 09 28 | 704 | 1.1+ | 0.1+ |
| 1977 10 12 | 675 | 1.0− | 0.0 | 2004 02 14 | 691 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.1− | 0.1+ |
| 1977 10 12 | 675 | 0.6+ | 0.4− | 2004 02 14 | 691 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.1+ | 0.4+ |
| 1977 10 16 | 675 | 0.7+ | 1.9− | 2006 08 17 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.4− | 0.0 |
| 1977 10 16 | 675 | 0.5+ | 1.0− | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 09 28 | 704 | 0.6− | 0.1+ |
| 1977 10 17 | 675 | 0.2− | 0.0 | 2006 08 17 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.2− | 0.5+ |
| 1977 10 17 | 675 | 0.6− | 0.5+ | 2006 09 12 | 703 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 1977 10 21 | 675 | 1.8+ | 0.4+ | 2006 09 12 | 703 | (1.4+ | 2.0+) | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 1977 10 21 | 675 | 0.7+ | 0.5+ | 2006 09 12 | 703 | (0.1+ | 1.5+) | 2006 10 01 | 704 | 0.3− | 0.3+ |
| 1977 10 22 | 675 | 0.1+ | 0.0 | 2006 09 12 | 703 | 1.1+ | 1.4+ | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 1977 10 22 | 675 | 1.1+ | 1.2− | 2006 09 17 | 704 | 0.8+ | 1.0+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 1999 11 14 | 704 | 0.9+ | 0.0 | 2006 09 17 | 704 | 0.3+ | 0.9+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 1999 11 14 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.6+ | 0.7− | 2006 10 09 | 644 | 0.0 | 0.0 |
| 1999 11 14 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.8− | 2006 10 16 | 703 | 0.1− | 0.9+ |
| 1999 11 14 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 113 | 1.3− | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.2+ |
| 1999 11 14 | 704 | 1.4+ | 0.1+ | 2006 09 17 | 113 | 1.3− | 0.9+ | 2006 10 16 | 703 | 0.8− | 0.0 |
| 1999 11 16 | 704 | 0.9+ | 0.1+ | 2006 09 17 | 113 | 1.0− | 1.2+ | 2006 10 16 | 703 | 0.4− | 0.9+ |
| 1999 11 16 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 1999 11 16 | 704 | 0.1+ | 0.7− | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2001 03 24 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2001 03 24 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.5− |
| 2001 03 24 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2004 01 22 | 704 | 1.0− | 1.2+ | 2006 09 19 | 703 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2004 01 22 | 704 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.3− | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2004 01 22 | 704 | 0.5− | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.4− |
| 2004 01 22 | 704 | 0.3+ | 0.3− | 2006 09 20 | 704 | 0.4+ | 1.5+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2004 01 26 | 699 | (2.8− | 0.0 ) | 2006 09 20 | 704 | 0.4+ | 1.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2004 01 26 | 699 | 0.3+ | 0.4− | 2006 09 20 | 704 | 0.5+ | 1.3+ | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2004 01 26 | 699 | 1.3+ | 1.1− | 2006 09 20 | 704 | 0.0 | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2004 01 26 | 699 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.3+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 01 28 | 691 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2004 02 10 | 926 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2004 02 10 | 926 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 704 | 1.1+ | 0.1− |
| 2004 02 10 | 926 | (1.0− | 2.0+) | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.3+ | 0.3− |
| 2004 02 11 | 291 | 0.0 | 0.2+ | 2006 09 24 | 608 | (0.2− | 2.0−) | 2006 10 23 | 704 | 0.2+ | 0.4+ |
| 2004 02 11 | 291 | 0.1− | 0.1+ | 2006 09 24 | 608 | (0.3− | 1.6−) | 2006 10 23 | 704 | 0.2− | 0.5+ |
| 2004 02 11 | 291 | 0.2+ | 0.2+ | 2006 09 24 | 608 | (0.0 | 1.9−) | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2004 02 11 | 691 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.8+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2004 02 11 | 691 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2004 02 11 | 926 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.4− | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2004 02 11 | 926 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2004 02 11 | 926 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2004 02 12 | 691 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.4− | 2006 11 21 | 704 | 1.7− | 0.1− |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2004 02 12 | 691 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.4− |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.4− | 0.1− |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.1− | 0.7+ |
| 2004 02 13 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 | | | | |

**(145694)∗ 3198 T-3 = 2005 JZ$_{117}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 77278)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.51486 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27188054 | $\omega$ | 199.06648 | | +0.88730887 | −0.46071555 | |
| $a$ | 2.3598477 | $\Omega$ | 188.45528 | | +0.43923280 | +0.85785843 | |
| $e$ | 0.0456318 | $i$ | 8.05158 | | +0.14056142 | +0.22764028 | |
| $P$ | 3.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | 2.4+ | 1.9− | 2005 05 10 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 1977 10 11 | 675 | 1.0− | 0.2+ | 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.3− | 1.1+ |
| 1977 10 11 | 675 | 1.5− | 0.6+ | 2005 05 17 | G96 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.2+ |
| 1977 10 12 | 675 | 1.0+ | 0.6− | 2005 05 17 | G96 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.2+ |
| 1977 10 12 | 675 | 0.2+ | 1.9− | 2005 05 17 | G96 | 0.1− | 0.2+ | 2006 10 03 | 691 | 0.2− | 0.1+ |
| 1977 10 16 | 675 | 0.9+ | 0.2+ | 2005 05 17 | G96 | 0.2− | 0.4+ | 2006 10 03 | 691 | 0.1− | 0.0 |
| 1977 10 17 | 675 | 0.2+ | 0.0 | 2005 05 20 | G96 | 0.2+ | 0.5− | 2006 10 03 | 691 | 0.0 | 0.4+ |
| 1977 10 17 | 675 | 0.6− | 0.2− | 2005 05 20 | G96 | 0.4− | 0.5− | 2006 10 15 | 703 | 0.8+ | 0.7+ |
| 1977 10 21 | 675 | 0.6+ | 0.6− | 2005 05 20 | G96 | 0.1+ | 0.6− | 2006 10 15 | 703 | 1.0+ | 0.7+ |
| 1977 10 21 | 675 | 1.1− | 0.7− | 2005 05 20 | G96 | 0.5− | 0.2− | 2006 10 15 | 703 | 0.7+ | 0.3+ |
| 2002 07 12 | 644 | 0.2− | 0.1− | 2005 06 05 | 691 | 0.0 | 0.3− | 2006 10 15 | 703 | 0.8+ | 1.2+ |
| 2002 07 12 | 644 | 0.3− | 0.2+ | 2005 06 05 | 691 | 0.0 | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.3− | 0.5+ | 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.1− |
| 2002 08 08 | 699 | 1.2+ | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.8− |
| 2002 08 08 | 699 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.3+ | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 2002 08 08 | 699 | (1.6+ | 0.6+) | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.3+ |
| 2002 08 08 | 699 | 1.3+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2002 08 13 | 699 | (0.7− | 1.5−) | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.2− |
| 2002 08 13 | 699 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.1− |
| 2002 08 13 | 699 | 0.8− | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 08 13 | 699 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.6− | 0.7− | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2003 11 21 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.7− | 1.4+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2003 11 21 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2003 11 21 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ | | | | |
| 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ | | | | |

**(145695)∗ 3290 T-3 = 2006 DM$_{50}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 101857)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.23605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22137423 | $\omega$ | 106.11301 | | −0.55444693 | −0.81933903 | |
| $a$ | 2.7063544 | $\Omega$ | 19.77484 | | +0.49753719 | −0.46682850 | |
| $e$ | 0.1056428 | $i$ | 25.53702 | | +0.66711719 | −0.33279830 | |
| $P$ | 4.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 1.9− | 0.9− | 2004 11 08 | 734 | 0.2+ | 0.3+ | 2006 03 31 | 704 | 0.5+ | 0.5+ |
| 1977 10 11 | 675 | 1.3− | 0.4+ | 2004 12 15 | 703 | 0.6− | 0.4− | 2006 03 31 | 704 | 1.1+ | 1.1+ |
| 1977 10 12 | 675 | 2.3+ | 0.8+ | 2004 12 15 | 703 | 0.5− | 0.0 | 2006 04 20 | 699 | 0.7− | 0.4+ |
| 1977 10 12 | 675 | 1.5+ | 0.3+ | 2004 12 15 | 703 | 0.8+ | 1.2+ | 2006 04 20 | 699 | 0.3+ | 0.0 |
| 1977 10 16 | 675 | 0.1+ | 1.1− | 2004 12 15 | 703 | 1.3− | 0.6− | 2006 04 20 | 699 | 0.5− | 0.3− |
| 1977 10 16 | 675 | 0.1− | 0.4− | 2006 02 22 | 703 | 0.2− | 0.9− | 2006 04 20 | 699 | 0.4+ | 0.3− |
| 1977 10 16 | 675 | 1.0+ | 0.8− | 2006 02 22 | 703 | 0.2− | 1.1− | 2006 04 20 | 703 | 0.2− | 0.7− |
| 1977 10 17 | 675 | 1.4− | 0.1− | 2006 02 22 | 703 | 0.4+ | 0.8− | 2006 04 20 | 703 | 0.9− | 0.0 |
| 1977 10 17 | 675 | 0.6− | 1.0+ | 2006 02 22 | 703 | 0.7− | 0.4+ | 2006 04 20 | 703 | 0.1+ | 0.7− |
| 1977 10 17 | 675 | 1.3+ | 0.0 | 2006 02 25 | 699 | 0.9+ | 0.4− | 2006 04 20 | 703 | (0.5− | 3.6−) |
| 1977 10 17 | 675 | 1.2− | 0.8+ | 2006 02 25 | 699 | 0.4+ | 0.3+ | 2006 04 20 | 703 | 0.8− | 0.8+ |
| 1977 10 21 | 675 | 2.4+ | 1.9− | 2006 02 25 | 699 | 0.3+ | 0.4+ | 2006 04 20 | 703 | 0.1− | 0.0 |
| 2000 11 27 | 645 | 0.0 | 0.0 | 2006 02 25 | 699 | 0.9+ | 0.1+ | 2006 04 20 | 703 | 1.0− | 0.6+ |
| 2000 11 27 | 645 | 0.0 | 0.1− | 2006 03 09 | 703 | (0.4+ | 2.0−) | 2006 04 20 | 703 | 0.8− | 0.4− |
| 2004 10 08 | 704 | 0.4− | 0.9+ | 2006 03 09 | 703 | 0.2+ | 0.5− | 2006 04 23 | 704 | 0.4− | 0.2+ |
| 2004 10 08 | 704 | 0.2+ | 0.4− | 2006 03 09 | 703 | 0.5+ | 1.0− | 2006 04 23 | 704 | 0.4− | 0.7− |
| 2004 10 08 | 704 | 0.7− | 0.2+ | 2006 03 09 | 703 | (2.2− | 0.7+) | 2006 04 23 | 704 | 1.2+ | 0.1− |
| 2004 10 08 | 704 | 0.7− | 0.5+ | 2006 03 23 | 703 | 0.3− | 0.1+ | 2006 04 23 | 704 | 0.8+ | 0.4− |
| 2004 10 08 | 704 | 0.2− | 0.2+ | 2006 03 23 | 703 | 0.2− | 0.6+ | 2006 04 23 | 704 | 0.1− | 0.3− |
| 2004 10 24 | 704 | 0.0 | 0.7+ | 2006 03 23 | 703 | 0.7− | 0.1+ | 2006 04 24 | 704 | (1.6+ | 0.1−) |
| 2004 10 24 | 704 | 0.7+ | 0.3− | 2006 03 23 | 703 | 0.6− | 0.5+ | 2006 04 24 | 704 | 0.8+ | 0.5+ |
| 2004 10 24 | 704 | 1.5− | 0.4− | 2006 03 24 | 704 | 0.0 | 0.1− | 2006 04 24 | 704 | 1.1+ | 0.3+ |
| 2004 10 24 | 704 | 0.3+ | 0.5+ | 2006 03 24 | 704 | 0.8− | 1.0+ | 2006 05 21 | G96 | 0.5+ | 0.1− |
| 2004 11 08 | 734 | 0.1+ | 0.6+ | 2006 03 24 | 704 | (0.2+ | 1.5+) | 2006 05 21 | G96 | 0.5− | 0.1− |
| 2004 11 08 | 734 | 0.4+ | 0.6+ | 2006 03 31 | 704 | 0.2− | 0.9+ | 2006 05 21 | G96 | 0.1+ | 0.3− |
| 2004 11 08 | 734 | 0.2+ | 0.1− | 2006 03 31 | 704 | 0.4+ | 0.3+ | 2006 05 21 | G96 | 0.4− | 0.2− |

**(145696)∗ 3361 T-3 = 2000 SW$_{31}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 6169)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.70380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17107639 | $\omega$ | 164.11589 | | +0.99762436 | +0.06637025 | |
| $a$ | 3.2137296 | $\Omega$ | 192.12345 | | −0.06879382 | +0.94578961 | |
| $e$ | 0.1558484 | $i$ | 5.04151 | | −0.00361121 | +0.31792609 | |
| $P$ | 5.76 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.9− | 1.2+ | 2000 10 04 | 704 | 0.0 | 0.4+ | 2006 10 15 | 703 | 0.8− | 0.3+ |
| 1977 10 11 | 675 | 0.2− | 0.3− | 2000 10 04 | 704 | 0.4+ | 0.2− | 2006 10 15 | 703 | 0.2+ | 0.2+ |
| 1977 10 12 | 675 | 2.3+ | 0.8− | 2000 10 04 | 704 | 0.8+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 1977 10 12 | 675 | 0.5+ | 0.2− | 2000 10 04 | 704 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.3− |
| 1977 10 16 | 675 | 0.6+ | 1.1− | 2000 10 04 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 691 | (3.5− | 0.7+) |
| 1977 10 16 | 675 | 0.6+ | 2.1− | 2004 04 16 | 691 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 1977 10 17 | 675 | 0.3+ | 1.1− | 2004 04 16 | 691 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 1977 10 17 | 675 | 0.1+ | 0.8− | 2004 04 16 | 691 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.5+ |
| 1977 10 21 | 675 | 2.0− | 1.1+ | 2004 04 22 | 691 | 0.1− | 0.7+ | 2006 10 20 | 695 | 0.2− | 0.0 |
| 1977 10 21 | 675 | 0.5− | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1977 10 22 | 675 | 1.2+ | 2.4− | 2004 04 22 | 691 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2000 08 28 | 807 | 0.4− | 0.5+ | 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2000 08 28 | 807 | 0.5− | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2000 09 02 | 143 | 1.9+ | 1.7− | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.6+ |
| 2000 09 02 | 143 | (2.4+ | 2.2−) | 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.3− |
| 2000 09 21 | 699 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.8+ | 1.0+ | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2000 09 21 | 699 | 1.3− | 0.0 | 2006 09 17 | 704 | 1.0+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 2000 09 21 | 699 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2000 09 21 | 699 | 0.5− | 0.4− | 2006 09 17 | 704 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2000 09 24 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2000 09 24 | 704 | 0.7+ | 1.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 1.2+ | 0.6+ |
| 2000 09 24 | 704 | 0.4+ | 0.6− | 2006 09 18 | 699 | (0.3+ | 1.6+) | 2006 10 28 | 704 | 0.1+ | 1.2+ |
| 2000 09 24 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.4− | 0.1− | 2006 10 28 | 704 | 0.7+ | 0.8− |
| 2000 09 24 | 704 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.1− | 2006 10 28 | 704 | 0.2− | 0.1+ |
| 2000 09 25 | 704 | 0.3− | 1.5+ | 2006 09 18 | 699 | 0.0 | 0.8+ | 2006 11 06 | 644 | 0.3− | 0.3+ |
| 2000 09 25 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | (0.7+ | 1.6−) | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2000 09 25 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 1.3+ | 2006 11 06 | 644 | 0.5− | 0.3+ |
| 2000 09 25 | 704 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.6+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2000 09 25 | 704 | 0.9+ | 0.5− | 2006 09 20 | 704 | 0.7+ | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2000 09 26 | 704 | 0.6− | 0.2− | 2006 09 20 | 704 | 0.1+ | 1.3+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2000 09 26 | 704 | 1.1− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2000 09 26 | 704 | 0.0 | 1.6+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2000 09 26 | 704 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 11 11 | 691 | 0.7− | 0.1+ |
| 2000 10 01 | 704 | 0.9+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2000 10 01 | 704 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2000 10 01 | 704 | 0.6+ | 0.4− | 2006 09 25 | G96 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.6− | 2006 09 27 | 704 | 0.5− | 0.8− | 2006 11 19 | 691 | 0.6− | 0.5+ |
| 2000 10 02 | 704 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2000 10 02 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.5+ | 1.0− | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 2000 10 02 | 704 | 0.0 | 0.1+ | 2006 09 29 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.4+ | 0.1+ |
| 2000 10 02 | 645 | 0.1− | 0.2− | 2006 09 29 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2000 10 02 | 704 | 0.6− | 1.0+ | 2006 09 29 | 691 | 1.0− | 0.5+ | 2006 11 20 | G96 | 0.4+ | 0.3− |
| 2000 10 02 | 645 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.2− | 0.6+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.3+ | 0.0 | | | | |

**(145697)∗ 3394 T-3 = 1999 VS$_{217}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. M. E. Sansaturio (*MPO* 6170)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.74878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26991890 | $\omega$ | 194.71345 | | +0.98402411 | +0.17770878 | |
| $a$ | 2.3712674 | $\Omega$ | 155.04247 | | −0.16065527 | +0.91242065 | |
| $e$ | 0.1990037 | $i$ | 1.46357 | | −0.07672313 | +0.36865721 | |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | 1.3− | 0.8− | 2005 05 09 | G96 | 0.0 | 0.2− | 2006 08 29 | 704 | 0.2+ | 0.3− |
| 1977 10 11 | 675 | 0.9− | 1.2+ | 2006 06 19 | G96 | 0.1+ | 0.6− | 2006 08 29 | 704 | 0.5+ | 0.1− |
| 1977 10 11 | 675 | 2.2− | 1.4+ | 2006 06 19 | G96 | 0.2+ | 0.7− | 2006 08 29 | 704 | 0.3+ | 0.2− |
| 1977 10 12 | 675 | 1.2+ | 1.4− | 2006 06 19 | G96 | 0.4+ | 0.4− | 2006 08 29 | 704 | 0.9+ | 0.2+ |
| 1977 10 12 | 675 | 1.1+ | 0.6− | 2006 06 19 | G96 | 0.0 | 0.3− | 2006 08 29 | 704 | 0.6+ | 0.1− |
| 1977 10 16 | 675 | 0.9+ | 2.0− | 2006 07 28 | A50 | 0.4+ | 0.7− | 2006 08 31 | 704 | 0.0 | 0.9+ |
| 1977 10 16 | 675 | 1.0+ | 1.0− | 2006 07 28 | A50 | 0.5+ | 0.7− | 2006 08 31 | 704 | 0.5+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 17 | 675 | 0.2+ | 0.2− | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.7+ | 0.1+ | | |
| 1977 10 17 | 675 | 1.2+ | 0.8− | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 09 12 | 699 | 0.2− | 0.2− | | |
| 1977 10 21 | 675 | 0.2+ | 1.1+ | 2006 08 13 | 644 | 0.3− | 0.2− | 2006 09 12 | 699 | 0.2+ | 0.7− | | |
| 1977 10 21 | 675 | 0.6− | 0.6+ | 2006 08 13 | D35 | 0.2+ | 0.3+ | 2006 09 12 | 699 | 0.4− | 0.6+ | | |
| 1998 05 23 | 691 | 0.3+ | 0.7+ | 2006 08 13 | D35 | 0.1+ | 0.3+ | 2006 09 12 | 699 | 1.1− | 0.1+ | | |
| 1998 05 23 | 691 | 0.7+ | 0.5+ | 2006 08 13 | D35 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.2+ | | |
| 1998 05 23 | 691 | 0.3− | 0.1+ | 2006 08 15 | D35 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.3− | 0.3+ | | |
| 1999 11 05 | 704 | 1.1+ | 1.1− | 2006 08 15 | D35 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.3+ | | |
| 1999 11 05 | 704 | 0.7+ | 0.1+ | 2006 08 15 | D35 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.1− | 1.0+ | | |
| 1999 11 05 | 704 | 0.9− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.4+ | 0.1+ | | |
| 1999 11 05 | 704 | 0.7− | 0.6+ | 2006 08 16 | 644 | 0.3− | 0.5− | 2006 09 16 | 699 | 1.2− | 0.2+ | | |
| 1999 11 05 | 704 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 16 | 699 | 1.0− | 1.0+ | | |
| 1999 11 12 | 704 | 0.4− | 1.5+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.0 | | |
| 1999 11 12 | 704 | 0.4− | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− | | |
| 1999 11 12 | 704 | 0.1+ | 1.2+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1− | | |
| 1999 11 12 | 704 | 0.2− | 0.3+ | 2006 08 19 | 699 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.4− | 0.2− | | |
| 2005 04 04 | 703 | 0.9− | 0.7+ | 2006 08 19 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.2+ | | |
| 2005 04 04 | 703 | (1.1+ | 3.6+) | 2006 08 19 | 699 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2005 04 04 | 703 | 0.7− | 0.2+ | 2006 08 19 | 699 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.2− | | |
| 2005 04 04 | 703 | 0.6+ | 0.0 | 2006 08 28 | 699 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1+ | | |
| 2005 04 04 | G96 | 0.3− | 0.5− | 2006 08 28 | 699 | 0.1− | 1.0+ | 2006 10 22 | G96 | 0.4− | 0.1− | | |
| 2005 04 04 | G96 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.5− | 0.4− | | |
| 2005 04 04 | G96 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.2− | 0.6− | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.7+ | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.7− | | |
| 2005 05 09 | G96 | 0.6− | 0.9− | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.2+ | | |
| 2005 05 09 | G96 | 0.3+ | 0.5− | 2006 08 28 | 703 | 0.3− | 0.7− | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2005 05 09 | G96 | 0.0 | 0.5− | 2006 08 28 | 699 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.1− | | |

**(145698)∗ 3471 T-3 = 2000 ET$_{89}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 591)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.44815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23984382 | $\omega$ | 277.07785 | | +0.79990886 | | +0.59865131 |
| $a$ | 2.5655690 | $\Omega$ | 46.15956 | | −0.52506851 | | +0.73202983 |
| $e$ | 0.1221512 | $i$ | 3.33675 | | −0.29060089 | | +0.32519062 |
| $P$ | 4.11 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | 0.4− | 0.8− | 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1− | | |
| 1977 10 11 | 675 | 0.3− | 0.8+ | 2002 12 10 | 704 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 1977 10 11 | 675 | 1.1− | 1.0+ | 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 1977 10 12 | 675 | 1.5+ | 1.1− | 2002 12 27 | 644 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.5− | | |
| 1977 10 12 | 675 | (2.7+ | 0.0 ) | 2002 12 27 | 644 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.6− | | |
| 1977 10 16 | 675 | 0.0 | 1.0− | 2002 12 31 | 704 | 0.9+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 1977 10 16 | 675 | 0.1+ | 0.9− | 2002 12 31 | 704 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 1977 10 17 | 675 | 1.5− | 0.1+ | 2002 12 31 | 704 | 1.0− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.5− | | |
| 1977 10 17 | 675 | 0.3− | 0.1− | 2002 12 31 | 704 | 0.3− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 1977 10 21 | 675 | 0.1+ | 1.2+ | 2002 12 31 | 704 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 1977 10 21 | 675 | 0.2− | 0.3+ | 2004 01 22 | 704 | 0.4− | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.2− | | |
| 1977 10 22 | 675 | 2.3+ | 0.8− | 2004 01 22 | 704 | 0.1− | 0.0 | 2006 11 12 | 703 | 0.1− | 0.2− | | |
| 1977 10 22 | 675 | (3.6+ | 0.2+) | 2004 01 22 | 704 | 0.7− | 0.1− | 2006 11 12 | 703 | 0.4+ | 0.0 | | |
| 2000 03 09 | 704 | 0.8+ | 0.3− | 2004 01 22 | 704 | 0.0 | 0.3− | 2006 11 12 | 703 | 0.2− | 0.1− | | |
| 2000 03 09 | 704 | 0.2− | 0.6+ | 2004 02 23 | 704 | 0.1− | 0.5+ | 2006 11 12 | 703 | 0.4+ | 0.0 | | |
| 2000 03 09 | 704 | 0.5+ | 0.2+ | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.0 | | |
| 2000 03 09 | 704 | 0.6+ | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 12 | 704 | 0.3− | 0.5− | 2004 02 23 | 704 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.1+ | | |
| 2000 03 12 | 704 | 0.2+ | 1.3− | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.0 | | |
| 2000 03 12 | 704 | 0.4+ | 0.5− | 2004 03 01 | 291 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.2− | | |
| 2002 09 08 | 557 | 0.2− | 0.4+ | 2004 03 01 | 291 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 08 | 557 | 0.2+ | 0.5− | 2004 03 01 | 291 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.5− | | |
| 2002 09 10 | 557 | 0.7+ | 0.2+ | 2004 03 20 | 704 | 1.1+ | 1.0+ | 2006 11 17 | 703 | 0.2+ | 0.2+ | | |
| 2002 09 10 | 557 | 0.5+ | 0.5+ | 2004 03 20 | 704 | 0.2+ | 0.8+ | 2006 11 17 | 703 | 0.4− | 0.5− | | |
| 2002 11 05 | 704 | 1.0+ | 0.3− | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.3− | 0.7− | | |
| 2002 11 05 | 704 | 1.1+ | 0.3− | 2004 03 20 | 704 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.9− | 1.4+ | | |
| 2002 11 05 | 704 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.7+ | | |
| 2002 11 06 | 704 | 1.3+ | 0.4+ | 2004 03 26 | 691 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.2+ | | |
| 2002 11 06 | 704 | 0.1+ | 0.3− | 2004 03 26 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2+ | | |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2004 03 26 | 691 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.6+ | | |
| 2002 11 06 | 704 | 0.6+ | 0.8+ | 2006 08 28 | 703 | 0.2− | 1.0− | 2006 11 18 | 704 | 0.6− | 0.9+ | | |
| 2002 11 14 | 704 | 0.9− | 1.2+ | 2006 08 28 | 703 | 0.6− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.4+ | | |
| 2002 11 14 | 704 | 0.2+ | 0.9+ | 2006 08 28 | 703 | 1.1+ | 0.2+ | 2006 11 18 | 704 | (1.6+ | 0.4+) | | |
| 2002 11 14 | 704 | 1.0− | 1.3+ | 2006 08 28 | 703 | 0.4− | 0.6− | 2006 11 18 | 704 | 0.2+ | 0.8+ | | |
| 2002 11 14 | 704 | 0.9− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.6− | | |
| 2002 11 14 | 704 | 0.8− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.3− | | |
| 2002 11 16 | 644 | 0.2+ | 0.7− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.1+ | | |
| 2002 11 16 | 644 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.9+ | 0.4+ | | |
| 2002 11 16 | 644 | 0.4+ | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.3− | | |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.4− | 0.8+ | | |
| 2002 11 24 | 644 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 1.1− | 2006 11 29 | 704 | 0.6− | 0.3+ | | |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.1− | | |
| 2002 12 05 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.2+ | | |
| 2002 12 05 | 704 | 0.7+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.4− | | |
| 2002 12 05 | 704 | 0.1+ | 0.8− | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3− | 0.1− | | |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| 2002 12 10 | 704 | 0.8− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.4− | | |
| 2002 12 10 | 704 | 1.3− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.0 | | | | | | |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1+ | | | | | | |

**(145699)∗ 3499 T-3 = 2002 TE$_{265}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 38155)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.95613 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23818849 | $\omega$ | 310.75988 | | +0.95286328 | | +0.29990557 |
| $a$ | 2.5774418 | $\Omega$ | 31.86661 | | −0.24551947 | | +0.85111094 |
| $e$ | 0.2875481 | $i$ | 4.98933 | | −0.17824636 | | +0.43089072 |
| $P$ | 4.14 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | 0.4+ | 0.8+ | 2005 04 10 | 691 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.4− | 0.0 | | |
| 1977 10 11 | 675 | 0.6− | 0.7+ | 2005 04 10 | 691 | 1.2+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 1977 10 11 | 675 | 0.1− | 0.5− | 2005 04 10 | 691 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 1977 10 12 | 675 | 0.8+ | 0.6− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 1977 10 12 | 675 | 0.8+ | 0.0 | 2005 05 08 | G96 | 0.7− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 1977 10 16 | 675 | 0.2− | 0.6− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 1977 10 16 | 675 | 1.1− | 0.8− | 2005 05 08 | G96 | 0.7− | 0.5+ | 2006 10 23 | 691 | 0.6− | 0.5+ | | |
| 1977 10 17 | 675 | 0.1− | 0.4+ | 2005 05 09 | 807 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.2+ | 0.1+ | | |
| 1977 10 17 | 675 | 0.7− | 1.1− | 2005 05 10 | 807 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.2− | 0.2− | | |
| 1977 10 21 | 675 | 0.1+ | 0.4− | 2005 05 10 | 807 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.2− | 0.2+ | | |
| 1977 10 21 | 675 | 1.0+ | 0.0 | 2006 08 28 | 703 | 0.2− | 0.9− | 2006 10 23 | 704 | 0.1+ | 0.4+ | | |
| 1977 10 22 | 675 | 1.1+ | 1.8− | 2006 08 28 | 703 | 1.1− | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 1977 10 22 | 675 | 2.0+ | 2.4− | 2006 08 28 | 703 | 0.9− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2001 05 22 | 807 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.9− | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 2001 05 23 | 807 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.3− | 0.3− | | |
| 2002 10 10 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2002 10 10 | 704 | 0.9+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2002 10 10 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.5− | | |
| 2002 10 11 | 704 | 0.3+ | 1.4+ | 2006 09 20 | 699 | 0.4− | 0.4+ | 2006 10 28 | 704 | 0.6+ | 0.5− | | |
| 2002 10 11 | 704 | 1.2+ | 0.7+ | 2006 09 20 | 699 | 0.5+ | 0.4+ | 2006 10 28 | 704 | 0.3+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.8+ | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.6+ | 2006 10 28 | 704 | 0.5+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.5− | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.9+ | 0.0 | | |
| 2002 11 05 | 704 | 1.1+ | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.2+ | | |
| 2002 11 05 | 704 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.7+ | 0.2− | | |
| 2002 11 05 | 704 | 1.5− | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.4− | | |
| 2002 11 12 | 704 | 0.3+ | 0.2− | 2006 09 27 | 704 | 0.4− | 0.6+ | 2006 10 28 | G96 | 0.4+ | 0.5− | | |
| 2002 11 12 | 704 | 0.1− | 0.5− | 2006 09 27 | 704 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2− | | |
| 2002 11 12 | 704 | 0.3− | 0.6− | 2006 09 27 | 704 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.2− | | |
| 2002 11 12 | 704 | 0.7− | 0.9− | 2006 09 28 | 704 | 0.9− | 1.3+ | 2006 10 31 | 691 | 0.1+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.3− | 0.3− | 2006 09 28 | 704 | 0.7− | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.4− | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2002 11 24 | 644 | 0.5− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2+ | | |
| 2002 11 24 | 644 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.2− | | |
| 2002 11 28 | 734 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.5− | | |
| 2002 11 28 | 734 | 0.5− | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.3+ | | |
| 2002 11 28 | 734 | 0.2− | 0.8+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2+ | | |
| 2002 12 02 | 704 | (1.1+ | 2.7+) | 2006 10 11 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 2002 12 02 | 704 | 0.3+ | 0.7− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2002 12 02 | 704 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.4− | | |
| 2002 12 02 | 704 | 0.6+ | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.3− | | |
| 2002 12 06 | 704 | 0.1− | 0.6− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.4− | | |
| 2002 12 06 | 704 | 0.1− | 0.4− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.5+ | | |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.8+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.0 | | |
| 2002 12 06 | 704 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.6− | | |
| 2002 12 11 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.3− | | |
| 2002 12 11 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.6+ | | |
| 2002 12 11 | 644 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.2+ | 0.1+ | | |
| 2005 04 02 | G96 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 1.4+ | 0.4+ | | |
| 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.2− | | |
| 2005 04 02 | G96 | 0.6− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.2+ | 0.5+ | | |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.8− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.2+ | | |

**(145700)∗ 4139 T-3 = 2002 TN$_{43}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 38157)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.33327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23782666 | $\omega$ | 275.01019 | | +0.74372808 | −0.66487732 | |
| $a$ | 2.5800553 | $\Omega$ | 126.68284 | | +0.64246654 | +0.68227733 | |
| $e$ | 0.1796142 | $i$ | 4.95951 | | +0.18467619 | +0.30403255 | |
| $P$ | 4.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.5+ | 0.7− | 2002 12 07 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 704 | 0.2+ | 0.6+ | | |
| 1977 10 11 | 675 | 0.6+ | 1.4− | 2002 12 07 | 704 | 0.3− | 1.0+ | 2006 09 19 | 704 | 0.1+ | 0.5− | | |
| 1977 10 12 | 675 | 0.0 | 0.1− | 2002 12 07 | 704 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.9− | 0.2+ | | |
| 1977 10 12 | 675 | 0.5+ | 1.2− | 2002 12 07 | 704 | 0.8− | 0.6+ | 2006 09 19 | 704 | 1.1+ | 1.1+ | | |
| 1977 10 16 | 675 | 0.2− | 0.4+ | 2002 12 07 | 704 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | | |
| 1977 10 16 | 675 | 0.5+ | 0.9+ | 2002 12 08 | 608 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | | |
| 1977 10 17 | 675 | 0.8+ | 0.7− | 2002 12 08 | 608 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.3+ | | |
| 1977 10 17 | 675 | 0.9+ | 0.6− | 2002 12 08 | 608 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.5+ | 0.7+ | | |
| 1977 10 21 | 675 | 0.6+ | 0.8− | 2002 12 11 | 704 | 1.0− | 0.6− | 2006 09 21 | 699 | 0.8+ | 0.3+ | | |
| 1977 10 21 | 675 | 1.3+ | 0.8− | 2002 12 11 | 704 | 0.4− | 0.2− | 2006 09 21 | 699 | 0.7+ | 0.5+ | | |
| 1977 10 22 | 675 | (1.9+ | 3.0−) | 2002 12 11 | 704 | 0.3− | 0.5− | 2006 09 21 | 699 | 0.8+ | 0.1+ | | |
| 1977 10 22 | 675 | 0.1+ | 1.7− | 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 09 21 | 608 | (1.0+ | 1.9−) | | |
| 1993 06 21 | 691 | 0.8− | 1.2+ | 2002 12 11 | 704 | 0.2− | 0.3− | 2006 09 21 | 608 | (0.8+ | 2.0−) | | |
| 1993 06 21 | 691 | 0.9− | 1.5+ | 2003 02 02 | 644 | 0.1− | 0.2+ | 2006 09 21 | 608 | (0.9+ | 1.8−) | | |
| 1993 06 21 | 691 | 0.6− | 1.2+ | 2003 02 02 | 644 | 0.3+ | 0.5+ | 2006 09 22 | 704 | 0.3+ | 0.4+ | | |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2003 02 02 | 644 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | | |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2004 03 15 | 703 | (1.7− | 0.0 ) | 2006 09 22 | 704 | 0.1− | 0.4+ | | |
| 2002 09 16 | 699 | 0.4− | 0.3− | 2004 03 15 | 703 | 1.1+ | 0.4− | 2006 09 22 | 704 | 0.5+ | 0.6+ | | |
| 2002 09 16 | 699 | 1.3− | 0.3+ | 2004 03 15 | 703 | 1.1+ | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | | |
| 2002 09 16 | 699 | 0.1+ | 0.7+ | 2004 03 15 | 703 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.9+ | | |
| 2002 09 16 | 699 | 1.1− | 0.6− | 2004 03 17 | 704 | 0.3− | 1.1+ | 2006 09 26 | 704 | 0.2− | 0.5+ | | |
| 2002 09 16 | 608 | 0.1+ | 0.2+ | 2004 03 17 | 704 | (0.7+ | 2.1+) | 2006 09 26 | 704 | 0.4− | 0.7+ | | |
| 2002 09 16 | 608 | 0.6+ | 0.2+ | 2004 03 17 | 704 | 0.5+ | 0.9+ | 2006 09 26 | 704 | 0.2+ | 0.2+ | | |
| 2002 09 16 | 608 | 0.3+ | 0.6− | 2004 03 17 | 704 | 0.6+ | 1.2+ | 2006 09 26 | 704 | 0.5− | 0.4+ | | |
| 2002 10 02 | 704 | (4.5− | 1.8+) | 2004 03 18 | 691 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 1.1+ | | |
| 2002 10 02 | 704 | (6.6− | 2.5+) | 2004 03 18 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.3+ | | |
| 2002 10 02 | 704 | (4.0− | 1.5+) | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.3− | | |
| 2002 10 02 | 704 | (6.5− | 1.8+) | 2004 03 18 | 704 | 0.9+ | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.5+ | | |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2004 03 18 | 704 | 0.8+ | 0.8+ | 2006 09 29 | 699 | 0.0 | 0.7+ | | |
| 2002 10 03 | 704 | 1.2− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 09 29 | 699 | 0.1+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.7− | 0.2− | 2004 03 18 | 691 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.4− | 0.7+ | | |
| 2002 10 03 | 704 | 0.2− | 0.5− | 2004 03 18 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 03 | 704 | 1.4− | 1.4− | 2004 03 20 | 704 | 0.1+ | 0.8+ | 2006 09 30 | 704 | 0.1+ | 0.6+ | | |
| 2002 10 28 | 608 | 0.7− | 0.7+ | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.3+ | | |
| 2002 10 28 | 608 | 0.7− | 1.1+ | 2004 03 20 | 704 | (2.3+ | 2.4+) | 2006 09 30 | 704 | 0.4− | 0.8+ | | |
| 2002 10 28 | 608 | 0.5− | 1.0+ | 2004 03 20 | 704 | 0.9+ | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 30 | 644 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.6− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 30 | 644 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 10 30 | 644 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.6+ | 0.2− | | |
| 2002 11 07 | 704 | 0.3− | 0.8+ | 2004 03 26 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.0 | | |
| 2002 11 07 | 704 | 0.4− | 0.6+ | 2004 03 26 | 691 | 0.4− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.4+ | | |
| 2002 11 07 | 704 | 0.9− | 1.3+ | 2004 03 26 | 691 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.5− | 0.7+ | 2005 06 17 | G96 | 0.6+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 07 | 704 | 0.5− | 1.0+ | 2005 06 17 | G96 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.9+ | 2005 06 17 | G96 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2002 11 11 | 704 | 0.4− | 0.7+ | 2005 06 17 | G96 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 11 | 704 | 0.5− | 0.1+ | 2006 08 19 | 699 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.1− | 2006 08 19 | 699 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 11 | 704 | 0.5− | 0.6+ | 2006 08 19 | 699 | 0.6− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 11 | 704 | 0.6+ | 0.8+ | 2006 08 19 | 699 | 0.1− | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.4+ | | |
| 2002 11 11 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 704 | (2.2+ | 0.3−) | 2006 10 23 | 644 | 0.4+ | 0.0 | | |
| 2002 11 11 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 704 | (1.8+ | 0.4−) | 2006 10 28 | 703 | 0.9− | 0.2+ | | |
| 2002 11 11 | 704 | 0.0 | 0.5+ | 2006 09 16 | 704 | (1.6+ | 0.1+) | 2006 10 28 | 703 | 0.1+ | 0.2+ | | |
| 2002 11 11 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 704 | (1.9+ | 0.3−) | 2006 10 28 | 703 | 0.2− | 0.3+ | | |
| 2002 12 01 | 704 | 0.8− | 0.4+ | 2006 09 16 | 704 | (2.5+ | 0.8−) | 2006 10 28 | 703 | 0.5− | 0.3+ | | |
| 2002 12 01 | 704 | 0.9− | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 11 10 | 704 | 0.8+ | 0.3− | | |
| 2002 12 01 | 704 | 0.7− | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 11 10 | 704 | 0.5− | 0.6+ | | |
| 2002 12 01 | 704 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 11 10 | 704 | 0.0 | 0.2− | | |
| 2002 12 01 | 704 | 0.7− | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 11 10 | 704 | 0.4− | 1.0− | | |

**(145701)∗ 4269 T-3 = 2004 EJ$_{61}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 62174)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.94876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23870407 | $\omega$ | 196.09029 | | +0.93571756 | −0.35206856 | |
| $a$ | 2.5737291 | $\Omega$ | 184.69934 | | +0.34590492 | +0.92796780 | |
| $e$ | 0.1500848 | $i$ | 15.51693 | | +0.06915509 | +0.12216171 | |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 2.1+ | 2.2− | 2004 03 18 | 704 | 0.4− | 0.5− | 2006 09 20 | 644 | 0.2− | 0.0 | | |
| 1977 10 11 | 675 | 2.0+ | 1.9− | 2004 03 18 | 704 | 0.2+ | 1.1+ | 2006 09 26 | 704 | 0.6+ | 0.1− | | |
| 1977 10 12 | 675 | (0.3− | 3.7−) | 2004 03 30 | 691 | 0.5− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.6+ | | |
| 1977 10 12 | 675 | 0.4+ | 1.9− | 2004 03 30 | 691 | 0.0 | 0.1− | 2006 09 26 | 704 | 1.0+ | 0.4+ | | |
| 1977 10 16 | 675 | 0.2− | 0.4− | 2004 03 30 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.4− | 0.4+ | | |
| 1977 10 16 | 675 | 0.0 | 0.9− | 2004 03 31 | 691 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.6+ | | |
| 1977 10 17 | 675 | 1.5− | 0.8+ | 2004 03 31 | 691 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.9+ | | |
| 1977 10 17 | 675 | 1.8− | 0.7− | 2004 03 31 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.7− | 0.9+ | | |
| 1977 10 21 | 675 | 0.4− | 0.0 | 2004 04 12 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 1977 10 21 | 675 | 0.8+ | 1.3− | 2004 04 12 | 691 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 1977 10 22 | 675 | 0.3− | 1.6− | 2004 04 12 | 691 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.1− | | |
| 1996 04 11 | 691 | 0.1+ | 0.1− | 2006 07 22 | G96 | (0.1+ | 1.8+) | 2006 10 12 | 644 | 0.1+ | 0.2− | | |
| 1996 04 11 | 691 | 0.2+ | 0.1− | 2006 07 22 | G96 | 0.6− | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.1− | | |
| 1996 04 11 | 691 | 0.2− | 0.5− | 2006 07 22 | G96 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.3− | | |
| 2000 04 05 | 704 | 0.2+ | 0.5+ | 2006 07 22 | G96 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.4+ | | |
| 2000 04 05 | 704 | 0.6− | 0.8+ | 2006 09 14 | 703 | (2.0− | 0.2−) | 2006 10 16 | 703 | 0.3− | 0.5+ | | |
| 2000 04 05 | 704 | 1.3− | 1.0+ | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.5+ | | |
| 2000 04 05 | 704 | 0.9+ | 0.7+ | 2006 09 14 | 703 | 0.9− | 0.7− | 2006 10 16 | 703 | 0.6− | 0.0 | | |
| 2000 04 05 | 704 | 0.9− | 0.9+ | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.3− | | |
| 2000 04 24 | 691 | 0.6+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.4− | | |
| 2000 04 24 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.3− | 0.1− | | |
| 2000 04 24 | 691 | 0.6+ | 0.0 | 2006 09 16 | 699 | 1.0+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.3+ | | |
| 2000 05 04 | 645 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.6+ | 1.0− | 2006 10 28 | 703 | (1.6+ | 0.6+) | | |
| 2000 05 04 | 645 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.6− | 2006 10 28 | 703 | 0.5+ | 1.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.3− | 0.3− | 2006 09 16 | 699 | 0.7+ | 0.2+ | 2006 10 28 | 703 | 0.6+ | 0.7+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.7+ | 0.6+ | | |
| 2002 10 31 | 704 | 0.3+ | 0.3− | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.4+ | 0.6+ | | |
| 2004 03 12 | 644 | 0.2+ | 0.1− | 2006 09 16 | 699 | 0.7+ | 0.3+ | 2006 11 16 | 703 | 0.2+ | 0.0 | | |
| 2004 03 12 | 644 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.8− | 0.4+ | | |
| 2004 03 12 | 644 | 0.1+ | 0.3− | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 2.2− | 0.6− | | |
| 2004 03 18 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.2+ | | | | | | |
| 2004 03 18 | 704 | 0.5+ | 0.2− | 2006 09 20 | 644 | 0.0 | 0.1+ | | | | | | |

**(145702)∗ 4274 T-3 = 2000 AF$_{85}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 592), M. E. Sansaturio (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.39607 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27342515 | $\omega$ | 299.77889 | | +0.38936682 | −0.92003769 | |
| $a$ | 2.3509519 | $\Omega$ | 127.24069 | | +0.86296030 | +0.34773366 | |
| $e$ | 0.2182145 | $i$ | 3.15859 | | +0.32201398 | +0.18058782 | |
| $P$ | 3.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | (3.6+ | 2.4−) | 2002 09 04 | 644 | 0.3− | 0.9+ | 2006 11 02 | 703 | 0.0 | 0.0 | | |
| 1977 10 11 | 675 | 1.7+ | 1.5− | 2002 09 05 | 704 | 0.7+ | 0.3+ | 2006 11 02 | 703 | 0.1− | 0.1− | | |
| 1977 10 11 | 675 | 0.5+ | 2.3− | 2002 09 05 | 704 | 0.5+ | 0.4+ | 2006 11 05 | 644 | 0.2− | 0.1− | | |
| 1977 10 12 | 675 | 0.9− | 1.1− | 2002 09 05 | 704 | 0.3+ | 1.4+ | 2006 11 05 | 644 | 0.3− | 0.2+ | | |
| 1977 10 12 | 675 | 1.4+ | 1.4− | 2002 09 05 | 704 | 0.8− | 0.7+ | 2006 11 05 | 644 | 0.3− | 0.6+ | | |
| 1977 10 16 | 675 | 1.1− | 0.9+ | 2002 09 05 | 704 | 0.3− | 1.1+ | 2006 11 14 | 704 | 1.0+ | 1.1+ | | |
| 1977 10 16 | 675 | 0.2+ | 0.5+ | 2002 09 11 | 608 | 0.2− | 0.2+ | 2006 11 14 | 704 | (1.0− | 2.3+) | | |
| 1977 10 17 | 675 | 0.3+ | 1.4− | 2002 09 11 | 608 | 0.4− | 0.1− | 2006 11 14 | 704 | 0.3+ | 0.4+ | | |
| 1977 10 17 | 675 | 0.6− | 2.0− | 2002 09 11 | 608 | 0.4− | 0.3− | 2006 11 14 | 704 | 1.0− | 0.9+ | | |
| 1977 10 21 | 675 | 0.5+ | 0.0 | 2004 03 12 | 644 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.3− | 1.2− | | |
| 1977 10 21 | 675 | 1.3+ | 1.4− | 2004 03 12 | 644 | 0.3− | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.6+ | | |
| 2000 01 05 | 704 | 0.4+ | 0.0 | 2004 03 12 | 644 | 0.3− | 0.8+ | 2006 11 17 | 704 | 0.2+ | 0.0 | | |
| 2000 01 05 | 704 | 1.3+ | 0.4+ | 2004 03 19 | 704 | 0.0 | 1.0+ | 2006 11 17 | 704 | 0.7+ | 0.3+ | | |
| 2000 01 05 | 704 | 0.8+ | 0.5− | 2004 03 19 | 704 | 0.3+ | 0.1− | 2006 11 17 | 704 | (0.6+ | 1.6+) | | |
| 2000 01 05 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.6− | 1.1+ | 2006 11 17 | 704 | 1.1+ | 1.2+ | | |
| 2000 01 05 | 704 | 0.7− | 0.1+ | 2004 03 22 | 704 | 0.4+ | 1.0+ | 2006 11 18 | 704 | 0.1− | 0.4+ | | |
| 2000 01 06 | 704 | 0.0 | 0.7− | 2004 03 22 | 704 | 1.2+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | | |
| 2000 01 06 | 704 | 0.3+ | 0.9− | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.1+ | | |
| 2000 01 06 | 704 | (0.0 | 2.2−) | 2006 09 19 | 699 | 0.2− | 0.9+ | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 2000 01 07 | 704 | 0.8− | 0.2− | 2006 09 19 | 699 | 0.3+ | 1.0+ | 2006 11 18 | 704 | 0.0 | 0.9+ | | |
| 2000 01 07 | 704 | 0.4− | 0.6− | 2006 09 19 | 699 | 0.7− | 1.1+ | 2006 11 18 | G96 | 0.6− | 0.2− | | |
| 2000 01 07 | 704 | 0.4+ | 0.6− | 2006 09 19 | 699 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.6− | 0.3− | | |
| 2000 01 07 | 704 | 1.0+ | 0.8− | 2006 09 30 | 703 | 0.8− | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.3− | | |
| 2000 01 07 | 704 | 0.6+ | 1.3− | 2006 09 30 | 703 | 1.1− | 0.5+ | 2006 11 18 | G96 | 0.3− | 0.3− | | |
| 2000 01 13 | 699 | 1.2+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.0 | 0.0 | | |
| 2000 01 13 | 699 | 1.0+ | 0.4− | 2006 09 30 | 703 | 1.3− | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.2+ | | |
| 2000 01 13 | 699 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.9+ | 0.6+ | | |
| 2000 01 30 | 704 | 0.3+ | 0.3− | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.3+ | | |
| 2000 01 30 | 704 | 1.3− | 1.3+ | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.0 | 0.2− | | |
| 2000 01 30 | 704 | 0.5− | 0.8+ | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 25 | 704 | 1.5+ | 0.1+ | | |
| 2000 02 03 | 704 | 1.8− | 1.8+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 25 | 704 | 1.4+ | 0.9+ | | |
| 2000 02 03 | 704 | (2.8− | 0.6+) | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 25 | 704 | 1.7+ | 0.8+ | | |
| 2000 02 03 | 704 | 1.3− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.3+ | 1.9+ | | |
| 2000 02 03 | 704 | (0.5− | 2.7−) | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 1.1− | 0.5+ | | |
| 2002 08 29 | 644 | 0.1− | 1.1+ | 2006 10 23 | G96 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.9− | 0.1− | | |
| 2002 08 29 | 644 | 0.1− | 0.8+ | 2006 10 23 | G96 | 0.5− | 0.4− | 2006 11 28 | 704 | 0.4− | 0.0 | | |
| 2002 08 29 | 644 | 0.1− | 1.0+ | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.7− | 0.3+ | | |
| 2002 09 04 | 644 | 0.2− | 0.8+ | 2006 11 02 | 703 | 0.5− | 0.2− | | | | | | |
| 2002 09 04 | 644 | 0.4− | 0.7+ | 2006 11 02 | 703 | 1.0− | 1.1− | | | | | | |

**(145703)∗ 4389 T-3 = 2002 VG$_{122}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 41496)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.12087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23938846 | $\omega$ | 278.05827 | | +0.60263135 | +0.75600195 | |
| $a$ | 2.5688214 | $\Omega$ | 33.59038 | | −0.41811455 | +0.57185637 | |
| $e$ | 0.1513772 | $i$ | 27.50801 | | −0.67971735 | +0.31849857 | |
| $P$ | 4.12 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 1.1− | 0.0 | 2003 01 22 | 644 | 0.4− | 0.7+ | 2006 10 13 | 691 | 0.2− | 0.2+ | | |
| 1977 10 16 | 675 | 0.6− | 0.2+ | 2004 02 15 | 201 | 0.2− | 0.6+ | 2006 10 13 | 691 | 0.2− | 0.0 | | |
| 1977 10 17 | 675 | 2.5+ | 2.1− | 2004 02 15 | 201 | 0.5+ | 0.5− | 2006 10 13 | 691 | 0.1− | 0.2+ | | |
| 1977 10 17 | 675 | 1.5+ | 2.1− | 2005 02 09 | 809 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.2+ | | |
| 1977 10 21 | 675 | 0.1− | 0.3− | 2005 02 09 | 809 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2+ | | |
| 1977 10 21 | 675 | 0.9+ | 0.1+ | 2005 02 09 | 809 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | | |
| 1977 10 22 | 675 | 0.7+ | 0.6+ | 2005 02 09 | 809 | 0.0 | 0.1+ | 2006 10 19 | 704 | (0.7− | 2.0+) | | |
| 2002 09 06 | 704 | 0.6+ | 0.2− | 2005 02 11 | 809 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 0.1− | 0.2+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.6+ | 2005 02 11 | 809 | 0.1− | 0.2+ | 2006 10 19 | 704 | 1.1− | 0.7+ | | |
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2005 02 11 | 809 | 0.2+ | 0.3+ | 2006 10 19 | 704 | (2.2− | 1.5+) | | |
| 2002 10 10 | 704 | 0.8+ | 0.6− | 2006 09 16 | 703 | 1.1− | 0.3+ | 2006 10 21 | 704 | (0.4+ | 2.8+) | | |
| 2002 10 10 | 704 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.3− | 0.7+ | 2006 10 21 | 704 | (0.3− | 2.0+) | | |
| 2002 10 10 | 704 | 0.5+ | 0.9− | 2006 09 16 | 703 | 0.5− | 0.6+ | 2006 10 21 | 704 | 0.8− | 0.3+ | | |
| 2002 10 10 | 704 | 0.1+ | 0.8− | 2006 09 16 | 703 | 0.7− | 0.2− | 2006 10 21 | 704 | 1.2+ | 0.7+ | | |
| 2002 10 31 | 704 | 0.7− | 0.1− | 2006 09 17 | 704 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.5− | 0.0 | | |
| 2002 10 31 | 704 | 1.2− | 0.7− | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 31 | 704 | 0.3+ | 0.5− | 2006 09 17 | 704 | 0.8+ | 0.5− | 2006 10 21 | 691 | 0.6− | 0.0 | | |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.5− | 0.8− | 2006 10 21 | 691 | 0.4− | 0.0 | | |
| 2002 10 31 | 704 | 0.7+ | 0.0 | 2006 09 17 | 699 | 0.6+ | 1.0− | 2006 10 27 | 703 | 0.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 699 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.1− | | |
| 2002 11 07 | 704 | 0.7+ | 0.2− | 2006 09 17 | 699 | 0.7− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.6− | | |
| 2002 11 07 | 704 | 1.2+ | 0.9− | 2006 09 17 | 699 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.1+ | 0.2+ | | |
| 2002 11 13 | 644 | 1.0+ | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.3+ | 2006 10 29 | 704 | 0.8− | 0.9+ | | |
| 2002 11 13 | 644 | 0.9+ | 0.2− | 2006 09 20 | 704 | 1.2+ | 0.2+ | 2006 10 29 | 704 | 0.6− | 0.0 | | |
| 2002 11 13 | 644 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.9+ | 1.1− | 2006 10 29 | 704 | 0.4+ | 1.1+ | | |
| 2002 11 15 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.3+ | 2006 10 29 | 704 | 0.5+ | 0.2+ | | |
| 2002 11 15 | 704 | 0.2− | 0.3− | 2006 09 20 | 704 | (1.1+ | 1.5−) | 2006 10 29 | 704 | (0.4+ | 1.7−) | | |
| 2002 11 15 | 704 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.3− | 0.5− | | |
| 2002 11 15 | 704 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.0 | 0.4− | | |
| 2002 11 15 | 704 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.5− | | |
| 2002 11 25 | 644 | (0.7+ | 2.5+) | 2006 09 25 | G96 | 0.4− | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.3− | | |
| 2002 11 25 | 644 | 0.6+ | 0.4+ | 2006 09 27 | 704 | (0.2− | 1.6+) | 2006 11 15 | 703 | 0.1− | 0.3− | | |
| 2002 11 25 | 644 | 0.5+ | 0.1+ | 2006 09 27 | 704 | 0.3+ | 1.0+ | 2006 11 15 | 703 | 0.3+ | 0.4− | | |
| 2002 12 07 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 1.2+ | 2006 11 15 | 703 | 0.7+ | 0.5− | | |
| 2002 12 07 | 704 | 0.4− | 1.1− | 2006 09 27 | 704 | 1.1− | 1.3+ | 2006 11 15 | 703 | 0.4− | 0.0 | | |
| 2002 12 07 | 704 | 0.7+ | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.1− | 0.2+ | | |
| 2002 12 07 | 704 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.0 | | |
| 2002 12 07 | 704 | 0.4− | 0.7− | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.3− | 0.1+ | | |
| 2002 12 12 | 644 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.6+ | 0.8+ | | |
| 2002 12 12 | 644 | 0.0 | 0.2+ | 2006 10 03 | 291 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.8+ | | |
| 2002 12 12 | 644 | 0.2− | 0.0 | 2006 10 03 | 291 | 0.0 | 0.3− | 2006 11 22 | 703 | 0.3− | 0.3− | | |
| 2002 12 15 | 704 | 0.1− | 0.5− | 2006 10 03 | 291 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.2− | 0.2+ | | |
| 2002 12 15 | 704 | 0.3− | 0.1− | 2006 10 04 | 703 | 0.4− | 0.7− | 2006 11 22 | 703 | 0.1+ | 0.0 | | |
| 2002 12 15 | 704 | 0.2− | 0.4− | 2006 10 04 | 703 | 1.4− | 0.9− | 2006 11 22 | 703 | 0.2+ | 0.3+ | | |
| 2003 01 22 | 644 | 0.1− | 0.4+ | 2006 10 04 | 703 | 0.4− | 0.3− | | | | | | |
| 2003 01 22 | 644 | 0.0 | 0.5+ | 2006 10 04 | 703 | 0.2− | 0.3+ | | | | | | |

**(145704)∗ 4537 T-3 = 2002 VO$_{130}$ = 2005 JB$_{165}$**

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. A. Doppler (*MPO* 89988), G. V. Williams (*ibid.*)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.30801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23849869 | $\omega$ | 237.60146 | | +0.35293132 | +0.93139108 | |
| $a$ | 2.5752064 | $\Omega$ | 53.32254 | | −0.81677103 | +0.35317477 | |
| $e$ | 0.1377456 | $i$ | 6.38305 | | −0.45642586 | +0.08819430 | |
| $P$ | 4.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 0.2+ | 0.6+ | 2002 11 11 | 291 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 1977 10 16 | 675 | 1.6+ | 1.0− | 2002 11 11 | 291 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 1977 10 17 | 675 | 1.8− | 1.2− | 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 1977 10 17 | 675 | 1.1+ | 2.3− | 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 1977 10 21 | 675 | (1.6+ | 2.8−) | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 1977 10 21 | 675 | (0.8+ | 3.2−) | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 1998 11 17 | 691 | 0.6+ | 0.2− | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 1998 11 17 | 691 | 0.4+ | 0.2− | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 1998 11 17 | 691 | 0.2+ | 0.6− | 2005 05 18 | E12 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 1998 11 25 | 691 | 0.1+ | 0.6− | 2005 05 18 | E12 | 0.7+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.4+ |
| 1998 11 25 | 691 | 0.0 | 0.3− | 2005 05 18 | E12 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 1998 11 25 | 691 | 0.1+ | 0.2− | 2005 05 18 | E12 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 11 06 | 704 | 1.5+ | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.8− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 703 | (0.5− | 1.7−) | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2002 11 06 | 644 | 0.4− | 0.4+ | 2006 09 30 | 703 | (2.7− | 2.8−) | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2002 11 06 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | (1.6− | 0.3−) | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 11 06 | 644 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2002 11 06 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.7+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 11 11 | 291 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |

## (145705)∗ 5149 T-3 = 2000 YY$_{119}$

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. G. V. Williams (*MPO* 9656)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.84383 | | (2000.0) | | | |
| $n$ | 0.30479489 | $\omega$ | 224.23877 | | +0.71022514 | +0.69605416 |
| $a$ | 2.1867422 | $\Omega$ | 91.33114 | | −0.61312491 | +0.68511147 |
| $e$ | 0.1995265 | $i$ | 6.04630 | | −0.34591631 | +0.21478100 |
| $P$ | 3.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 1.9− | 0.8− | 2003 11 18 | 703 | 0.3+ | 0.2− | 2006 09 21 | 699 | 0.4+ | 0.7+ |
| 1977 10 11 | 675 | 1.5− | 1.3− | 2003 11 18 | 703 | 1.0+ | 0.0 | 2006 09 26 | 703 | 0.1− | 1.2+ |
| 1977 10 12 | 675 | 0.2+ | 2.2− | 2003 11 18 | 703 | 0.4+ | 0.6+ | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 1977 10 12 | 675 | 1.2− | 1.5− | 2003 11 18 | 703 | (0.0 | 2.3−) | 2006 09 26 | 703 | 0.5− | 0.7+ |
| 1977 10 16 | 675 | 1.5+ | 0.9− | 2003 11 18 | 644 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.3+ | 1.2+ |
| 1977 10 16 | 675 | (2.2+ | 2.7−) | 2003 11 18 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.1− | 0.3− |
| 1977 10 17 | 675 | 1.3+ | 0.8− | 2003 11 18 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.1− |
| 1977 10 17 | 675 | 2.2+ | 0.2+ | 2003 11 21 | 699 | 0.9− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.5− |
| 1977 10 21 | 675 | 1.2+ | 1.3+ | 2003 11 21 | 699 | 0.4+ | 1.0− | 2006 09 26 | 703 | 0.8− | 0.3+ |
| 1977 10 21 | 675 | (3.4+ | 2.0−) | 2003 11 21 | 699 | 0.6− | 0.5+ | 2006 09 29 | 608 | 0.1− | 1.1− |
| 1977 10 21 | 675 | 0.4+ | 1.4+ | 2003 11 21 | 699 | 1.0− | 0.3− | 2006 09 29 | 608 | 0.5+ | 1.2− |
| 1977 10 21 | 675 | (1.3+ | 3.5−) | 2003 11 29 | 691 | 0.0 | 0.1+ | 2006 09 29 | 608 | 0.2− | 0.6− |
| 2000 12 18 | 691 | 0.2− | 0.3− | 2003 11 29 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.0 |
| 2000 12 18 | 691 | 0.0 | 0.2− | 2003 11 29 | 691 | (1.5− | 1.6−) | 2006 10 02 | 703 | 0.2− | 0.8+ |
| 2000 12 18 | 691 | 0.3− | 0.3− | 2003 11 30 | 704 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.1− | 0.8+ |
| 2000 12 24 | 344 | 0.4+ | 0.1− | 2003 11 30 | 704 | 1.2− | 0.8+ | 2006 10 02 | 703 | 0.4− | 0.1+ |
| 2000 12 24 | 344 | 0.3− | 0.9+ | 2003 11 30 | 704 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 04 13 | 644 | 0.6+ | 0.7+ | 2006 07 31 | E12 | 1.0+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 04 13 | 644 | 0.5+ | 0.6+ | 2006 07 31 | E12 | 0.2− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 04 13 | 644 | 0.4+ | 0.8+ | 2006 07 31 | E12 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2003 10 18 | 699 | 0.1+ | 0.6+ | 2006 07 31 | E12 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2003 10 18 | 699 | 0.0 | 1.0+ | 2006 09 12 | 704 | 0.4− | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2003 10 18 | 699 | 0.7+ | 1.2+ | 2006 09 12 | 704 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2003 10 18 | 699 | (1.8− | 0.2+) | 2006 09 12 | 704 | 0.1− | 1.0+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2003 10 21 | 704 | 0.3− | 0.1− | 2006 09 12 | 704 | 0.8+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2003 10 21 | 704 | 0.1+ | 0.3− | 2006 09 12 | 704 | 0.6− | 1.4− | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2003 10 21 | 704 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.8+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2003 10 22 | 608 | 0.5+ | 0.5− | 2006 09 18 | 703 | 0.5+ | 0.3− | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2003 10 22 | 608 | 0.4− | 1.1− | 2006 09 18 | 703 | 0.0 | 0.6− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2003 10 22 | 608 | 0.3+ | 0.8− | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2003 10 29 | 691 | 0.0 | 0.2+ | 2006 09 21 | 699 | 1.2− | 1.1− | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2003 10 29 | 691 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 1.1− | 0.8+ | | | | |
| 2003 10 29 | 691 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.5+ | | | | |

## 1978 UC$_7$ = 1999 RP$_{248}$ = 2006 HN$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 181.39279 | | (2000.0) | | | |
| $n$ | 0.23040332 | $\omega$ | 41.16900 | | +0.75593650 | −0.65464491 |
| $a$ | 2.6351797 | $\Omega$ | 359.72343 | | +0.58779250 | +0.67889105 |
| $e$ | 0.2188218 | $i$ | 2.66512 | | +0.28820128 | +0.33248607 |
| $P$ | 4.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 10 27 | 675 | 0.4− | 0.1+ | 2001 01 19 | 704 | 0.4+ | 0.0 | 2004 12 15 | 704 | 0.6+ | 1.2+ |
| 1978 10 28 | 675 | 0.3+ | 0.6− | 2001 01 19 | 704 | 0.1+ | 0.8+ | 2004 12 15 | 704 | 0.6− | 0.9+ |
| 1978 10 29 | 675 | 0.6+ | 0.2− | 2001 01 19 | 704 | 0.9+ | 0.2− | 2004 12 15 | 704 | 0.2− | 0.4+ |
| 1999 09 07 | 691 | 0.5+ | 0.5+ | 2001 01 19 | 704 | 0.5+ | 1.2+ | 2005 01 19 | 704 | 0.3+ | 0.2− |
| 1999 09 07 | 691 | 0.3+ | 0.4+ | 2001 02 03 | 704 | 0.2− | 0.1− | 2005 01 19 | 704 | 1.2+ | 0.2+ |
| 1999 09 14 | 691 | 0.0 | 0.3+ | 2001 02 03 | 704 | 0.7+ | 0.4+ | 2005 01 19 | 704 | 0.7− | 0.4+ |
| 1999 09 14 | 691 | 0.2+ | 0.5+ | 2001 02 03 | 704 | 0.5− | 1.0+ | 2005 01 19 | 704 | 0.5− | 0.1+ |
| 1999 09 14 | 691 | 2.0− | 0.7+ | 2001 02 03 | 704 | 0.2+ | 0.3− | 2005 01 19 | 704 | 0.1+ | 0.1− |
| 2001 01 04 | 704 | 0.3+ | 0.6+ | 2001 02 03 | 704 | 0.3− | 1.4− | 2006 04 26 | 691 | 0.3+ | 0.2+ |
| 2001 01 04 | 704 | 0.5+ | 1.2+ | 2001 02 17 | 704 | 0.0 | 0.6− | 2006 04 26 | 691 | 0.2+ | 0.2+ |
| 2001 01 04 | 704 | 0.2+ | 0.5+ | 2001 02 17 | 704 | 0.4− | 1.5+ | 2006 04 26 | 691 | 0.4+ | 0.5+ |
| 2001 01 04 | 691 | 0.0 | 0.2− | 2001 02 17 | 704 | 0.7− | 1.1+ | 2006 05 06 | G96 | 0.2− | 0.5+ |
| 2001 01 04 | 704 | 1.0− | 0.6+ | 2001 02 17 | 704 | 0.5− | 0.8+ | 2006 05 06 | G96 | 0.0 | 0.1− |
| 2001 01 04 | 691 | 0.1+ | 0.3− | 2004 12 15 | 704 | 0.4+ | 0.3+ | 2006 05 06 | G96 | 0.2− | 0.1− |
| 2001 01 04 | 691 | 0.1+ | 0.2− | 2004 12 15 | 704 | 0.0 | 0.2+ | 2006 05 06 | G96 | 0.4− | 0.2+ |

## 1981 EP$_{34}$ = 2006 UB$_{223}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.77922 | | (2000.0) | | | |
| $n$ | 0.21929468 | $\omega$ | 252.07329 | | −0.45484208 | −0.88469496 |
| $a$ | 2.7234369 | $\Omega$ | 225.43295 | | +0.86170392 | −0.40822793 |
| $e$ | 0.1923381 | $i$ | 8.24318 | | +0.22491118 | −0.22508838 |
| $P$ | 4.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 02 02 | 413 | 0.4− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.5+ | 0.1+ |
| 1981 02 14 | 413 | 0.5+ | 1.2− | 2006 09 28 | 691 | 0.2− | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 1981 03 02 | 413 | (3.5+ | 1.0−) | 2006 10 17 | 703 | (0.1+ | 2.3+) | 2006 11 13 | 691 | 0.3+ | 0.3− |
| 1981 03 07 | 413 | (2.6− | 1.8+) | 2006 10 17 | 703 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.3− | 0.2+ |
| 1981 03 07 | 413 | 1.2+ | 0.5− | 2006 10 17 | 703 | 1.2− | 0.1− | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 1981 03 10 | 413 | 1.2− | 1.5+ | 2006 10 17 | 703 | (0.8− | 1.6+) | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 1981 03 10 | 413 | 2.0+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.8+ | 2006 11 17 | 703 | 0.5− | 0.9+ |
| 1981 03 12 | 413 | 2.1− | 0.7+ | 2006 10 21 | 644 | 0.5− | 0.9+ | 2006 11 17 | 703 | (1.9+ | 0.9+) |
| 1997 10 08 | 691 | 0.0 | 1.1− | 2006 10 21 | 644 | 0.4− | 0.7+ | 2006 11 17 | 703 | 0.9− | 0.3+ |
| 1997 10 08 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.5− | 2006 11 17 | 703 | (1.7+ | 0.2−) |
| 1997 10 08 | 691 | 0.3+ | 1.4− | 2006 11 10 | 691 | 0.0 | 0.0 | | | | |
| 2006 09 28 | 691 | 0.2− | 0.7+ | 2006 11 10 | 691 | 0.2+ | 0.0 | | | | |

## 1981 EJ$_{41}$ = 1995 SG$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.70767 | | (2000.0) | | | |
| $n$ | 0.17462756 | $\omega$ | 306.63381 | | −0.58791332 | −0.80892324 |
| $a$ | 3.1700116 | $\Omega$ | 179.37233 | | +0.76969683 | −0.55980737 |
| $e$ | 0.1833130 | $i$ | 5.56761 | | +0.24884678 | −0.17960764 |
| $P$ | 5.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 03 02 | 413 | 1.4− | 0.2− | 2001 10 17 | 644 | 0.2− | 0.1− | 2003 01 13 | 644 | 0.3− | 0.6+ |
| 1981 03 11 | 413 | 0.8− | 1.1− | 2001 10 17 | 644 | 0.1− | 0.4+ | 2003 01 27 | 704 | 0.7− | 0.4+ |
| 1981 03 11 | 413 | 1.6+ | 1.2− | 2001 11 12 | 645 | 0.1+ | 0.2− | 2003 01 27 | 704 | 1.1+ | 0.1+ |
| 1981 03 15 | 413 | 1.1− | 1.6− | 2001 11 12 | 645 | 0.1+ | 0.2− | 2003 01 27 | 704 | 1.2+ | 0.0 |
| 1995 09 18 | 691 | 0.6− | 0.7+ | 2003 01 07 | 704 | 0.1− | 0.2− | 2004 03 16 | 291 | 0.4+ | 0.6+ |
| 1995 09 18 | 691 | 0.7− | 0.1+ | 2003 01 07 | 704 | 0.6− | 0.6+ | 2004 03 16 | 291 | 0.2− | 0.1− |
| 1995 09 18 | 691 | 0.3− | 0.2+ | 2003 01 07 | 704 | 0.1+ | 0.7+ | 2004 03 16 | 291 | 0.2+ | 0.3+ |
| 1995 09 27 | 691 | 0.5+ | 0.7+ | 2003 01 07 | 704 | 0.7+ | 1.2+ | 2006 09 27 | G96 | 0.4− | 0.2− |
| 1995 09 27 | 691 | 0.8+ | 0.0 | 2003 01 07 | 704 | (0.2+ | 2.8+) | 2006 09 27 | G96 | 0.3− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.1+ | 0.0 | 2003 01 13 | 644 | 0.6− | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2001 10 17 | 644 | 0.3+ | 0.1+ | 2003 01 13 | 644 | 0.5− | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.4− |

**1981 SK$_9$ = 1998 XQ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.44506 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24106513 | $\omega$ | 66.52283 | | +0.81448854 | −0.56755252 | |
| $a$ | 2.5568963 | $\Omega$ | 327.67716 | | +0.41529683 | +0.71522210 | |
| $e$ | 0.2079999 | $i$ | 13.01167 | | +0.40513820 | +0.40784983 | |
| $P$ | 4.09 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 09 28 | 260 | 0.9− | 0.7+ | 2002 11 25 | 704 | 0.6− | 0.4− | 2004 03 17 | 704 | 0.5+ | 0.6+ |
| 1981 09 28 | 260 | 0.4+ | 0.8− | 2002 11 25 | 704 | 0.6− | 0.5− | 2004 03 17 | 703 | 0.0 | 0.0 |
| 1981 09 29 | 260 | 0.7− | 1.2+ | 2002 11 25 | 704 | 0.4− | 0.4− | 2004 03 17 | 704 | 0.8+ | 0.1+ |
| 1981 09 29 | 260 | 0.7+ | 0.1− | 2002 11 25 | 704 | 0.8− | 0.2− | 2004 03 17 | 703 | 0.2+ | 0.7+ |
| 1998 12 14 | 704 | 0.4− | 0.2− | 2002 12 10 | 704 | 1.3+ | 0.6+ | 2004 03 17 | 704 | 0.8+ | 0.5+ |
| 1998 12 14 | 704 | 0.8− | 1.3− | 2002 12 10 | 704 | 1.1+ | 0.2+ | 2004 03 17 | 703 | 0.7+ | 1.0+ |
| 1998 12 14 | 704 | 0.2+ | 1.8− | 2002 12 10 | 704 | 0.8+ | 0.0 | 2004 03 17 | 704 | 0.5− | 0.3− |
| 1998 12 14 | 704 | (2.9− | 0.1−) | 2002 12 10 | 704 | 1.2+ | 0.4+ | 2004 03 17 | 703 | 0.7+ | 0.4+ |
| 1998 12 14 | 704 | 0.5− | 1.4− | 2002 12 10 | 704 | 1.3+ | 0.3+ | 2004 03 17 | 704 | 0.5+ | 0.3+ |
| 1998 12 17 | 704 | 0.1− | 0.4− | 2002 12 28 | 704 | 0.9− | 0.5+ | 2006 09 18 | 704 | 0.7− | 1.0+ |
| 1998 12 17 | 704 | 0.0 | 1.7− | 2002 12 28 | 704 | 0.0 | 0.7+ | 2006 09 18 | 704 | 0.4− | 0.6+ |
| 1998 12 17 | 704 | 0.7− | 0.4− | 2002 12 28 | 704 | 0.1− | 0.5− | 2006 09 18 | 704 | 0.1− | 0.4+ |
| 1998 12 17 | 704 | 1.3− | 0.4− | 2002 12 28 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 704 | 0.2+ | 0.6+ |
| 1998 12 17 | 704 | (0.9+ | 2.1−) | 2003 01 13 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 704 | 0.6− | 0.5+ |
| 2002 10 06 | 704 | (2.2− | 5.1−) | 2003 01 13 | 704 | 0.1− | 0.0 | 2006 10 16 | 704 | 0.3− | 0.1+ |
| 2002 10 06 | 704 | (2.6− | 4.1−) | 2003 01 13 | 704 | 0.0 | 0.7+ | 2006 10 16 | 704 | 0.8+ | 0.2+ |
| 2002 10 06 | 704 | (1.3− | 5.6−) | 2003 01 13 | 704 | 0.9− | 0.7+ | 2006 10 16 | 704 | 0.1+ | 0.3+ |
| 2002 10 14 | 704 | 0.1+ | 0.7− | 2003 01 13 | 704 | 0.2− | 0.8+ | 2006 10 17 | A48 | 0.2− | 0.3+ |
| 2002 10 14 | 704 | 0.3+ | 0.8+ | 2003 02 02 | 704 | 0.8− | 1.1+ | 2006 10 17 | A48 | 0.4− | 0.1− |
| 2002 10 14 | 704 | 0.1− | 0.4+ | 2003 02 02 | 704 | 0.5− | 0.6+ | 2006 10 17 | A48 | 0.4− | 0.4+ |
| 2002 10 14 | 704 | 1.0+ | 0.4+ | 2003 02 02 | 704 | (0.1− | 1.6+) | 2006 10 17 | A48 | 0.4− | 0.6+ |
| 2002 10 29 | 704 | 0.2− | 0.5+ | 2004 03 17 | 703 | 0.5+ | 1.4+ | 2006 10 17 | A48 | 0.2− | 0.3+ |
| 2002 10 29 | 704 | 0.4+ | 0.1+ | 2004 03 17 | 703 | (0.5− | 2.2+) | 2006 10 17 | 560 | 0.2− | 0.2+ |
| 2002 10 29 | 704 | 0.4+ | 0.2− | 2004 03 17 | 703 | 0.3+ | 0.0 | 2006 10 17 | 560 | 0.1− | 0.1+ |
| 2002 10 29 | 704 | 0.2− | 0.0 | 2004 03 17 | 703 | 0.3− | 0.6+ | 2006 10 17 | 560 | 0.1− | 0.4+ |

**1988 RC$_9$ = 2006 RD$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.78590 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27551794 | $\omega$ | 173.48900 | | +0.90915197 | +0.41555640 | |
| $a$ | 2.3390318 | $\Omega$ | 161.88044 | | −0.38597472 | +0.86554415 | |
| $e$ | 0.2476971 | $i$ | 5.07070 | | −0.15641679 | +0.27954642 | |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 09 11 | 675 | 0.1+ | 0.3− | 2006 09 16 | 699 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 1988 09 11 | 675 | 0.8− | 0.4− | 2006 09 16 | 699 | 0.6− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 1988 09 15 | 511 | 1.7− | 2.1− | 2006 09 16 | 699 | 0.6+ | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.3− |
| 1988 09 15 | 511 | 1.0+ | 0.3− | 2006 09 16 | 699 | 0.5+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 1988 09 15 | 511 | 2.3+ | 1.1+ | 2006 09 20 | 699 | (1.6− | 0.8+) | 2006 10 10 | 644 | 0.3− | 0.0 |
| 1988 09 16 | 675 | 0.1− | 0.2− | 2006 09 20 | 699 | 0.4− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 1988 09 16 | 675 | 0.4− | 0.4− | 2006 09 20 | 699 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1994 03 05 | 691 | 0.1− | 1.4− | 2006 09 20 | 699 | 0.0 | 0.6− | 2006 10 10 | 644 | 0.2− | 0.0 |
| 1994 03 05 | 691 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.7− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 1994 03 05 | 691 | 0.5− | 0.4− | 2006 09 22 | 704 | 0.4+ | 1.0+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 1998 05 02 | 691 | 0.2+ | 0.4+ | 2006 09 22 | 704 | (0.1− | 2.0+) | 2006 10 11 | 644 | 0.4− | 0.1− |
| 1998 05 02 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 1998 05 02 | 691 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 1999 10 20 | 704 | 1.6+ | 1.5+ | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 1999 10 20 | 704 | (0.4+ | 2.6+) | 2006 09 26 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 703 | 0.2− | 0.3+ |
| 1999 10 20 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.1− | 0.6− |
| 2005 03 11 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 1.1+ | 0.5− | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2005 03 11 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.7− | 2006 10 21 | 703 | 0.6− | 0.2− |
| 2005 03 11 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2006 07 21 | G96 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 10 22 | 704 | 0.1− | 0.1+ |
| 2006 07 21 | G96 | 0.7+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 10 22 | 704 | 0.2− | 1.0− |
| 2006 08 28 | 703 | 0.5+ | 0.3− | 2006 10 01 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 704 | 0.6− | 0.3+ |
| 2006 08 28 | 703 | 0.1− | 0.6− | 2006 10 01 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 704 | 0.4− | 0.4+ |
| 2006 08 28 | 703 | 1.1− | 0.4− | 2006 10 01 | 704 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2006 08 28 | 703 | 1.0+ | 1.1− | 2006 10 01 | 704 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2006 09 15 | 644 | 0.4− | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.5+ | 2006 11 07 | 644 | 0.3− | 0.2− |
| 2006 09 15 | 644 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.3− | | | | |
| 2006 09 15 | 644 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.2− | | | | |

**1990 RW$_2$ = 1986 TP$_{17}$ = 2004 BX$_5$**

Id. Minor Planet Center (*MPO* 55803; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.96832 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24028399 | $\omega$ | 60.97268 | | +0.99774786 | −0.03516323 | |
| $a$ | 2.5624348 | $\Omega$ | 300.98945 | | +0.00732039 | +0.90357407 | |
| $e$ | 0.3011449 | $i$ | 3.82053 | | +0.06667548 | +0.42698647 | |
| $P$ | 4.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1986 10 11 | 095 | 0.6+ | 0.6+ | 2002 06 04 | 644 | 0.6− | 0.4− | 2004 01 21 | 704 | 0.1− | 0.6+ |
| 1990 09 15 | 675 | 0.3− | 1.0− | 2002 06 04 | 644 | 0.3− | 0.4− | 2004 01 24 | 704 | 0.2+ | 0.2− |
| 1990 09 15 | 675 | 0.4+ | 0.3− | 2002 06 04 | 644 | 0.7− | 0.5− | 2004 01 24 | 704 | 1.3+ | 0.6+ |
| 1990 09 16 | 675 | 0.8+ | 0.9− | 2002 07 04 | 735 | 0.3− | 1.5+ | 2004 01 24 | 704 | 1.0+ | 0.0 |
| 1990 09 16 | 675 | 0.3− | 0.8− | 2002 07 04 | 735 | 0.4+ | 0.6− | 2004 01 24 | 704 | 0.8+ | 0.1+ |
| 1990 09 18 | 675 | 0.9− | 1.4+ | 2002 07 04 | 735 | 0.5− | 0.1+ | 2004 01 24 | 704 | 0.4+ | 0.0 |
| 1990 09 18 | 675 | (2.7− | 0.5+) | 2004 01 16 | 691 | 0.0 | 0.2+ | 2004 01 28 | 691 | 0.1+ | 0.3− |
| 1990 09 20 | 675 | 0.0 | 1.2− | 2004 01 16 | 691 | 0.0 | 0.4+ | 2004 01 28 | 691 | 0.2+ | 0.3− |
| 1990 09 20 | 675 | 0.3− | 1.1+ | 2004 01 16 | 691 | 0.0 | 0.2+ | 2004 01 28 | 691 | 0.1+ | 0.1− |
| 1996 02 10 | 691 | 0.5− | 0.6− | 2004 01 17 | 644 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.9− | 0.6− |
| 1996 02 10 | 691 | 0.6− | 0.7− | 2004 01 17 | 644 | 0.4+ | 0.4+ | 2004 01 30 | 704 | 0.4− | 0.0 |
| 1996 02 10 | 691 | 0.6− | 0.6− | 2004 01 17 | 644 | 0.2+ | 0.5+ | 2004 01 30 | 704 | 0.7− | 0.2− |
| 1998 08 17 | 704 | 1.2+ | 0.2− | 2004 01 19 | 703 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 1.6− | 0.2+ |
| 1998 08 17 | 704 | 0.0 | 1.0+ | 2004 01 19 | 703 | 0.3− | 0.2+ | 2004 02 11 | 699 | (2.3+ | 0.0 ) |
| 1998 08 17 | 704 | 0.1− | 0.1+ | 2004 01 19 | 703 | 0.3− | 0.5+ | 2004 02 11 | 699 | 0.5− | 1.1− |
| 1998 08 17 | 704 | 1.4+ | 0.6− | 2004 01 19 | 703 | 1.0+ | 0.8+ | 2004 02 11 | 699 | 1.0− | 0.2− |
| 1998 08 17 | 704 | (0.8− | 2.0+) | 2004 01 21 | 704 | 0.1− | 0.1− | 2004 02 11 | 699 | 0.6+ | 0.5+ |
| 2000 01 29 | 691 | 0.1− | 0.6− | 2004 01 21 | 704 | 0.2− | 0.3− | 2004 02 17 | 645 | 0.1− | 0.4− |
| 2000 01 29 | 691 | 0.5+ | 0.5− | 2004 01 21 | 704 | 0.4+ | 0.2+ | 2004 02 17 | 645 | 0.2− | 0.4− |
| 2000 01 29 | 691 | 0.0 | 0.6− | 2004 01 21 | 704 | 0.3+ | 0.6+ | | | | |

**1991 TQ$_9$ = 1999 VP$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.62931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25377145 | $\omega$ | 294.99706 | | +0.87926978 | +0.47042123 | |
| $a$ | 2.4708187 | $\Omega$ | 37.06890 | | −0.37996495 | +0.78734913 | |
| $e$ | 0.1026507 | $i$ | 7.12419 | | −0.28724777 | +0.39847863 | |
| $P$ | 3.88 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 691 | 0.9− | 0.4+ | 1999 11 16 | 704 | 1.1− | 1.2− | 2003 12 04 | 704 | 1.4− | 0.3− |
| 1991 10 06 | 691 | 0.5− | 1.5+ | 1999 11 16 | 704 | (2.8− | 1.9−) | 2003 12 04 | 704 | 0.0 | 0.3− |
| 1991 10 06 | 691 | 0.8− | 0.3+ | 1999 11 16 | 704 | 0.1− | 0.2− | 2003 12 18 | 691 | 0.0 | 0.1+ |
| 1991 10 07 | 691 | 1.0+ | 0.4− | 2003 11 24 | 704 | 1.1+ | 0.4+ | 2003 12 18 | 691 | 0.1− | 0.0 |
| 1991 10 07 | 691 | 0.7+ | 0.7− | 2003 11 24 | 704 | 0.5+ | 1.1+ | 2003 12 18 | 691 | 0.3+ | 0.0 |
| 1991 10 07 | 691 | 0.6+ | 1.1− | 2003 11 24 | 704 | 0.2+ | 0.3− | 2005 03 16 | 703 | 0.2+ | 0.2− |
| 1999 11 14 | 704 | 0.8+ | 0.2− | 2003 11 24 | 704 | 0.6− | 0.8+ | 2005 03 16 | 703 | 1.1− | 0.2− |
| 1999 11 14 | 704 | 0.3− | 0.2+ | 2003 11 24 | 704 | 0.4− | 0.3+ | 2005 03 16 | 703 | 0.2+ | 0.9− |
| 1999 11 14 | 704 | 0.8+ | 0.7− | 2003 12 04 | 704 | 0.6− | 0.2+ | 2005 03 16 | 703 | 0.5+ | 0.9+ |

**1991 TF$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.48248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23768031 | $\omega$ | 337.02898 | | +0.95550077 | −0.28476138 | |
| $a$ | 2.5811143 | $\Omega$ | 39.77173 | | +0.28587858 | +0.82951786 | |
| $e$ | 0.2131055 | $i$ | 6.91320 | | +0.07274415 | +0.48042801 | |
| $P$ | 4.15 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 261 | (3.4+ | 0.9−) | 1999 09 13 | 704 | 0.6− | 0.4+ | 2006 05 06 | G96 | 0.2+ | 0.0 |
| 1991 10 06 | 261 | (3.0+ | 1.0−) | 1999 09 13 | 704 | 0.4− | 1.1+ | 2006 05 06 | G96 | 0.2+ | 0.1+ |
| 1991 10 07 | 261 | 1.3− | 0.9+ | 1999 09 13 | 704 | 0.3− | 1.3+ | 2006 05 06 | G96 | 0.2− | 0.1+ |
| 1991 10 07 | 261 | 1.2− | 0.6+ | 2005 01 06 | 703 | 1.1+ | 0.2− | 2006 05 06 | G96 | 0.4+ | 0.1− |
| 1991 10 17 | 261 | 0.8+ | 0.7+ | 2005 01 06 | 703 | 1.1− | 1.1+ | 2006 05 19 | G96 | 0.1− | 0.1+ |
| 1991 10 17 | 261 | 0.6+ | 0.7+ | 2005 01 06 | 703 | 0.1− | 0.5+ | 2006 05 19 | G96 | 0.4− | 0.2− |
| 1991 11 07 | 691 | 0.2− | 0.2− | 2005 01 06 | 703 | 1.1+ | 0.5+ | 2006 05 19 | G96 | 0.7− | 0.3+ |
| 1991 11 07 | 691 | 0.1− | 0.0 | 2006 03 24 | 691 | 0.0 | 0.8+ | 2006 05 19 | G96 | 0.0 | 0.1+ |
| 1991 11 07 | 691 | 0.3+ | 0.0 | 2006 03 24 | 691 | 0.2+ | 0.2− | | | | |
| 1999 09 13 | 704 | 0.1− | 0.0 | 2006 03 24 | 691 | 0.5+ | 0.5+ | | | | |

**1991 TH$_{15}$ = 2006 QR$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.06927 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25877505 | $\omega$ | 352.44249 | | +0.88470381 | −0.46264182 | |
| $a$ | 2.4388651 | $\Omega$ | 35.29664 | | +0.43269222 | +0.76943102 | |
| $e$ | 0.2028541 | $i$ | 5.67245 | | +0.17342611 | +0.44038444 | |
| $P$ | 3.81 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 261 | 0.7− | 0.8+ | 2006 08 30 | 699 | 0.1+ | 0.4+ | 2006 09 19 | 704 | (1.7− | 0.6−) |
| 1991 10 06 | 261 | 0.1− | 0.2+ | 2006 08 31 | F84 | 0.3− | 0.3+ | 2006 09 19 | 704 | 0.5− | 0.3− |
| 1991 10 07 | 261 | 0.1+ | 0.3− | 2006 08 31 | F84 | 0.0 | 1.1− | 2006 09 19 | 704 | 0.1+ | 0.8+ |
| 1991 10 07 | 261 | 1.0+ | 0.3− | 2006 08 31 | F84 | 0.0 | 0.1+ | 2006 09 19 | 704 | (2.0− | 0.3+) |
| 1991 10 17 | 261 | 0.0 | 0.3+ | 2006 09 11 | F84 | 0.1+ | 1.0− | 2006 09 19 | 704 | (0.4− | 1.9+) |
| 1991 10 17 | 261 | 0.6− | 0.4+ | 2006 09 11 | F84 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.1+ |
| 1996 01 19 | 261 | 0.1− | 0.1+ | 2006 09 11 | F84 | 0.4+ | 0.5− | 2006 09 26 | 704 | 0.5+ | 0.2− |
| 1996 01 19 | 261 | 0.1+ | 0.1− | 2006 09 12 | 704 | 1.3+ | 0.7− | 2006 09 26 | 704 | 0.3+ | 0.9+ |
| 2002 08 11 | 644 | 0.1− | 0.1+ | 2006 09 12 | 704 | 0.4− | 0.9+ | 2006 09 26 | 704 | 0.0 | 1.3+ |
| 2002 08 11 | 644 | 0.0 | 0.5+ | 2006 09 12 | 704 | 0.5− | 0.8+ | 2006 09 26 | 704 | 0.8− | 0.1− |
| 2002 08 11 | 644 | 0.1− | 0.5+ | 2006 09 12 | 704 | 1.1+ | 0.5− | 2006 09 30 | 703 | (0.7+ | 3.1−) |
| 2006 08 16 | 644 | 0.1− | 0.2− | 2006 09 12 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.7− |
| 2006 08 16 | 644 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.9− |
| 2006 08 16 | 644 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2006 08 23 | F84 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.6+ | 0.6− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2006 08 23 | F84 | 0.2− | 0.5− | 2006 09 14 | 703 | 0.0 | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2006 08 23 | F84 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2006 08 24 | F84 | 0.6− | 0.7− | 2006 09 14 | 703 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2006 08 24 | F84 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2006 08 24 | F84 | 1.0− | 0.1− | 2006 09 16 | 704 | 0.2+ | 0.6− | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2006 08 30 | 699 | 0.8− | 0.3+ | 2006 09 16 | 704 | 0.8+ | 0.6+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2006 08 30 | 699 | 0.1− | 0.4+ | 2006 09 16 | 704 | 0.9+ | 0.1+ | | | | |
| 2006 08 30 | 699 | 0.6+ | 0.4+ | 2006 09 16 | 704 | (0.4− | 2.1−) | | | | |

**1991 TN$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.76839 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28621691 | $\omega$ | 197.89030 | | +0.96958288 | −0.24471479 | |
| $a$ | 2.2803728 | $\Omega$ | 176.26443 | | +0.23270906 | +0.91548327 | |
| $e$ | 0.1366529 | $i$ | 4.28657 | | +0.07586526 | +0.31938230 | |
| $P$ | 3.44 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 261 | 1.5− | 1.0− | 1991 10 17 | 261 | 0.2+ | 0.9+ | 2001 08 24 | 644 | 0.1− | 0.4+ |
| 1991 10 06 | 261 | 1.2− | 0.6− | 2000 04 01 | 691 | 0.4− | 0.3+ | 2001 08 24 | 644 | 0.0 | 0.4+ |
| 1991 10 07 | 261 | 0.8+ | 0.3+ | 2000 04 01 | 691 | 0.3+ | 0.2− | 2001 08 24 | 644 | 0.0 | 0.2+ |
| 1991 10 07 | 261 | 0.7+ | 0.2− | 2000 04 01 | 691 | 0.2+ | 0.3+ | 2001 09 20 | 704 | 0.3+ | 0.4+ |
| 1991 10 14 | 261 | 0.9+ | 0.2+ | 2001 08 15 | 608 | 0.3− | 1.2− | 2001 09 20 | 704 | 0.2+ | 1.1+ |
| 1991 10 14 | 261 | 0.2+ | 0.1− | 2001 08 15 | 608 | 0.3− | 1.0− | 2001 09 20 | 704 | 0.2− | 0.7+ |
| 1991 10 17 | 261 | 0.3− | 1.0+ | 2001 08 15 | 608 | 0.6− | 0.3− | 2001 09 20 | 704 | 0.7+ | 0.4+ |

**1991 VO$_{10}$ = 2006 RR$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.03749 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19197581 | $\omega$ | 288.73248 | | +0.87458537 | −0.48330968 | |
| $a$ | 2.9760374 | $\Omega$ | 100.18546 | | +0.45841792 | +0.79807762 | |
| $e$ | 0.1598137 | $i$ | 2.26432 | | +0.15796659 | +0.35983867 | |
| $P$ | 5.13 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 05 | 691 | 0.0 | 0.2+ | 2006 08 23 | 807 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.1− | 0.7+ |
| 1991 11 05 | 691 | 0.4+ | 0.3+ | 2006 08 23 | 807 | 0.1+ | 0.1− | 2006 09 19 | 699 | 1.1− | 0.2− |
| 1991 11 05 | 691 | 0.7+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.3+ |
| 1991 11 06 | 691 | 0.7− | 0.6− | 2006 08 28 | 703 | 0.8+ | 1.1+ | 2006 09 19 | 699 | 0.6+ | 0.1+ |
| 1991 11 06 | 691 | 0.2− | 0.3− | 2006 08 28 | 703 | (0.6+ | 2.8−) | 2006 09 19 | 699 | 0.1− | 0.2− |
| 1991 11 06 | 691 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.0 | 0.6− | 2006 11 27 | G96 | 0.2− | 0.4− |
| 1991 11 08 | 691 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.2+ | 1.0+ | 2006 11 27 | G96 | 0.2− | 0.1− |
| 1991 11 08 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 1991 11 08 | 691 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.2+ | 1.2− | 2006 11 27 | G96 | 0.3+ | 0.0 |

**1991 VX$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.63508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27115912 | $\omega$ | 345.29363 | | +0.64363350 | −0.76109863 | |
| $a$ | 2.3640314 | $\Omega$ | 64.57488 | | +0.71086391 | +0.55559209 | |
| $e$ | 0.2027414 | $i$ | 5.10760 | | +0.28356379 | +0.33473320 | |
| $P$ | 3.63 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 05 | 691 | 0.0 | 0.3+ | 1991 11 07 | 691 | 0.3− | 0.1+ | 2002 11 26 | 291 | 0.3− | 0.1+ |
| 1991 11 05 | 691 | 0.0 | 0.2− | 1991 11 07 | 691 | 0.2− | 0.2+ | 2002 11 26 | 291 | 0.1− | 0.0 |
| 1991 11 05 | 691 | 0.2− | 0.3+ | 1991 11 08 | 691 | 0.1− | 0.9− | 2002 11 26 | 291 | 0.1+ | 0.3− |
| 1991 11 07 | 691 | 0.9+ | 0.0 | 1991 11 08 | 691 | 0.8− | 0.0 | 2002 12 05 | 704 | 0.3+ | 0.5+ |
| 1991 11 07 | 691 | 0.4+ | 0.2− | 1991 11 08 | 691 | 0.0 | 0.4+ | 2002 12 05 | 704 | 0.4− | 0.4+ |
| 1991 11 07 | 691 | 0.8+ | 0.6− | 2002 11 07 | 695 | 0.4+ | 0.3− | 2002 12 05 | 704 | 0.2− | 0.3+ |
| 1991 11 07 | 691 | 0.5− | 0.6+ | 2002 11 07 | 695 | 0.4+ | 0.3− | 2002 12 05 | 704 | 0.9+ | 0.2+ |

**1991 VX$_{11}$ = 2005 JQ$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.63047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18165494 | $\omega$ | 283.18323 | | −0.66535321 | −0.74104229 | |
| $a$ | 3.0877200 | $\Omega$ | 209.16064 | | +0.73640671 | −0.63164809 | |
| $e$ | 0.0398516 | $i$ | 10.68477 | | +0.12251641 | −0.22776526 | |
| $P$ | 5.43 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.0 | 0.1+ | 2002 12 01 | 704 | 0.1− | 0.0 | 2004 02 19 | 704 | 0.7+ | 0.4− |
| 1991 11 08 | 691 | 0.0 | 0.3+ | 2002 12 01 | 704 | 0.7− | 1.0+ | 2004 03 16 | 704 | 0.5+ | 0.0 |
| 1991 11 08 | 691 | 0.0 | 0.2+ | 2002 12 01 | 704 | 0.8− | 0.2+ | 2004 03 16 | 704 | 0.1+ | 0.3+ |
| 1991 11 09 | 691 | 0.6+ | 0.2− | 2004 01 29 | 699 | 0.5+ | 0.4− | 2004 03 16 | 704 | 0.2+ | 1.1+ |
| 1991 11 09 | 691 | 0.1+ | 0.6+ | 2004 01 29 | 704 | 0.9+ | 0.9+ | 2004 03 16 | 704 | 0.3+ | 1.0− |
| 1991 11 09 | 691 | 0.3+ | 0.2+ | 2004 01 29 | 699 | 0.5+ | 0.7− | 2004 03 16 | 704 | 0.5+ | 0.2+ |
| 1991 11 09 | 691 | 0.2+ | 0.1+ | 2004 01 29 | 704 | 0.7+ | 1.0+ | 2005 05 04 | 691 | 0.2+ | 0.7+ |
| 1991 11 09 | 691 | 0.3− | 0.5+ | 2004 01 29 | 699 | 0.5+ | 0.3− | 2005 05 04 | 691 | 0.2+ | 0.5+ |
| 1991 11 09 | 691 | 1.2− | 1.0+ | 2004 01 29 | 699 | 0.6− | 1.0+ | 2005 05 04 | 691 | 0.1+ | 0.5+ |
| 2001 08 25 | 704 | 0.9+ | 0.2− | 2004 01 29 | 704 | 1.1+ | 0.4− | 2005 05 19 | G96 | 0.5− | 0.1+ |
| 2001 08 25 | 704 | 0.3+ | 0.6+ | 2004 02 13 | 699 | 0.5− | 0.7+ | 2005 05 19 | G96 | 0.5− | 0.1+ |
| 2001 08 25 | 704 | 0.8+ | 0.8+ | 2004 02 13 | 699 | 0.3+ | 1.2+ | 2005 05 19 | G96 | 0.5− | 0.0 |
| 2001 08 25 | 704 | 0.7− | 0.8+ | 2004 02 13 | 699 | 0.0 | 1.1+ | 2005 05 19 | G96 | 0.8− | 0.0 |
| 2002 11 11 | 704 | 0.1− | 0.1− | 2004 02 13 | 699 | 0.0 | 0.7− | 2006 06 02 | 691 | 0.3− | 0.5+ |
| 2002 11 11 | 704 | 0.3− | 1.4− | 2004 02 19 | 704 | 0.3+ | 1.0+ | 2006 06 02 | 691 | 0.0 | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.6+ | 0.9− | 2004 02 19 | 704 | 0.9− | 2.0+ | 2006 06 02 | 691 | 0.3− | 0.5+ | | |
| 2002 12 01 | 704 | 0.6− | 0.1+ | 2004 02 19 | 704 | 1.0− | 0.3+ | | | | | | |

**1992 BV$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.13486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18416375 | $\omega$ | 350.20744 | | −0.25469051 | | −0.95194189 |
| $a$ | 3.0596139 | $\Omega$ | 114.38635 | | +0.89938354 | | −0.29781775 |
| $e$ | 0.2303455 | $i$ | 10.76492 | | +0.35530549 | | +0.07149290 |
| $P$ | 5.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 09 | 691 | 0.7+ | 0.1+ | 2002 01 14 | 645 | 0.1− | 0.1+ | 2003 02 25 | 599 | 0.0 | 0.1− | | |
| 1992 01 09 | 691 | 0.6+ | 0.9− | 2002 01 14 | 645 | 0.1+ | 0.1+ | 2003 02 25 | 599 | 0.6− | 0.4+ | | |
| 1992 01 09 | 691 | 0.9+ | 1.1− | 2003 01 27 | 704 | 0.1+ | 1.2+ | 2003 02 25 | 599 | 0.1− | 0.1+ | | |
| 1992 01 30 | 691 | 0.9− | 0.3− | 2003 01 27 | 704 | 1.1+ | 1.0+ | 2003 03 08 | 644 | 0.1− | 0.0 | | |
| 1992 01 30 | 691 | 0.4+ | 1.0− | 2003 01 27 | 704 | 0.0 | 0.7+ | 2003 03 08 | 644 | 0.2− | 0.2− | | |
| 1992 01 30 | 691 | 0.6− | 0.2− | 2003 01 27 | 704 | 1.0+ | 0.5+ | 2003 03 08 | 644 | 0.0 | 0.0 | | |
| 1992 02 09 | 691 | 0.6− | 0.8+ | 2003 01 27 | 704 | 0.1− | 0.1+ | 2003 03 23 | 644 | 0.2− | 0.3− | | |
| 1992 02 09 | 691 | 0.2− | 1.0+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2003 03 23 | 644 | 0.2− | 0.2− | | |
| 1992 02 09 | 691 | 0.5− | 1.0+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2003 03 23 | 644 | 0.1− | 0.1− | | |

**1992 SV$_2$ = 2001 SZ$_{184}$ = 2006 TA$_{25}$**

Id. M. E. Sansaturio, Minor Planet Center

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.90591 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21917463 | $\omega$ | 87.05996 | | −0.17451042 | | −0.98462545 |
| $a$ | 2.7244313 | $\Omega$ | 12.99782 | | +0.88931545 | | −0.16095251 |
| $e$ | 0.0333098 | $i$ | 1.95434 | | +0.42268681 | | −0.06787495 |
| $P$ | 4.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.3+ | 0.9− | 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.1− | 0.2− | | |
| 1992 09 24 | 691 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 | | |
| 1992 09 24 | 691 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.2+ | | |
| 1992 09 25 | 691 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.4+ | | |
| 1992 09 25 | 691 | 0.2+ | 0.3− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.3− | 0.0 | | |
| 1992 09 25 | 691 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | 1.1− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.5− | 0.4− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2001 09 19 | 691 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.2− | 0.2+ | | |
| 2001 09 19 | 704 | 0.7− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2001 09 19 | 691 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.0 | | |
| 2001 09 21 | 704 | 1.2+ | 0.3− | 2006 10 21 | 644 | 0.5− | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.0 | | |
| 2001 09 21 | 704 | 1.1− | 0.8+ | 2006 10 29 | 691 | 0.0 | 0.0 | | | | | | |

**1992 SJ$_5$ = 1999 FV$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.10958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23459552 | $\omega$ | 208.56665 | | −0.91872017 | | +0.39411154 |
| $a$ | 2.6036918 | $\Omega$ | 354.46238 | | −0.29445386 | | −0.72596780 |
| $e$ | 0.1219800 | $i$ | 15.06824 | | −0.26315428 | | −0.56360167 |
| $P$ | 4.20 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 25 | 691 | 0.1− | 0.0 | 1999 03 23 | 704 | (1.2− | 2.4−) | 2003 02 26 | 704 | 0.9+ | 0.9+ | | |
| 1992 09 25 | 691 | 1.5+ | 1.2− | 2001 11 12 | 704 | 0.0 | 0.3+ | 2003 02 26 | 704 | 0.9+ | 0.6+ | | |
| 1992 09 25 | 691 | 0.3− | 0.4+ | 2001 11 12 | 704 | 0.5+ | 0.1+ | 2003 02 26 | 704 | 0.6− | 0.4+ | | |
| 1992 10 04 | 691 | 1.1+ | 0.6+ | 2001 11 12 | 704 | 0.3+ | 1.0+ | 2003 02 26 | 704 | 1.2+ | 0.1− | | |
| 1992 10 04 | 691 | 0.9− | 0.5− | 2001 11 12 | 704 | 0.6+ | 0.7+ | 2004 07 19 | E12 | 0.2− | 0.1+ | | |
| 1992 10 04 | 691 | 0.7− | 0.7− | 2003 01 24 | 644 | 0.5− | 0.1− | 2004 07 19 | E12 | 0.2− | 0.4+ | | |
| 1999 03 20 | 704 | 0.1− | 1.6− | 2003 01 24 | 644 | 0.4− | 0.0 | 2004 07 19 | E12 | 0.0 | 0.6+ | | |
| 1999 03 20 | 704 | 0.4− | 1.1− | 2003 01 24 | 644 | 0.3− | 0.2− | 2004 07 19 | E12 | 0.6+ | 0.0 | | |
| 1999 03 20 | 704 | (3.0− | 0.7−) | 2003 02 01 | 644 | 0.5− | 0.0 | 2005 10 08 | 703 | 0.5− | 0.7− | | |
| 1999 03 20 | 704 | (1.0− | 2.5−) | 2003 02 01 | 644 | 0.4− | 0.1− | 2005 10 08 | 703 | 0.3+ | 1.7− | | |
| 1999 03 20 | 704 | 1.4− | 0.1+ | 2003 02 01 | 644 | 0.4− | 0.1+ | 2005 10 08 | 703 | 0.6− | 0.3+ | | |
| 1999 03 23 | 704 | 0.3− | 1.0− | 2003 02 19 | 644 | 0.2− | 0.2+ | 2005 10 08 | 703 | 0.2+ | 0.9+ | | |
| 1999 03 23 | 704 | 0.6− | 0.7− | 2003 02 19 | 644 | 0.0 | 0.1+ | | | | | | |
| 1999 03 23 | 704 | 0.4− | 0.7− | 2003 02 19 | 644 | 0.1+ | 0.0 | | | | | | |

**1992 SC$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.14789 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18042997 | $\omega$ | 147.63663 | | +0.56415311 | | +0.82564166 |
| $a$ | 3.1016796 | $\Omega$ | 156.70466 | | −0.76118552 | | +0.52329590 |
| $e$ | 0.1955846 | $i$ | 0.99458 | | −0.31988728 | | +0.21089631 |
| $P$ | 5.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.2− | 0.1+ | 1992 09 29 | 691 | 0.1+ | 0.0 | 2003 10 01 | 699 | 0.4− | 0.5− | | |
| 1992 09 27 | 691 | 0.5− | 0.3− | 1992 09 29 | 691 | 0.4− | 0.1− | 2003 10 01 | 699 | 0.0 | 0.3+ | | |
| 1992 09 27 | 691 | (2.6+ | 0.2−) | 2001 02 20 | 645 | 0.0 | 0.0 | 2003 10 01 | 699 | 0.8+ | 1.4− | | |
| 1992 09 28 | 691 | 1.5+ | 0.7+ | 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 10 19 | 691 | 0.2− | 0.1+ | | |
| 1992 09 28 | 691 | 0.4+ | 0.1+ | 2001 03 25 | 695 | 0.6+ | 0.3+ | 2003 10 19 | 691 | 0.2+ | 0.1− | | |
| 1992 09 28 | 691 | 0.3− | 0.5− | 2001 03 25 | 695 | 0.4+ | 0.1+ | 2003 10 19 | 691 | 0.2+ | 0.3− | | |
| 1992 09 28 | 691 | 1.1− | 0.2+ | 2003 09 21 | 691 | 0.0 | 0.0 | 2005 10 24 | 568 | 0.0 | 0.0 | | |
| 1992 09 28 | 691 | 0.2− | 0.3+ | 2003 09 21 | 691 | 0.2− | 0.2+ | 2005 10 24 | 568 | 0.0 | 0.0 | | |
| 1992 09 28 | 691 | 0.8+ | 0.3+ | 2003 09 21 | 691 | 0.2+ | 0.0 | 2005 10 24 | 568 | 0.1− | 0.1+ | | |
| 1992 09 29 | 691 | 0.4− | 0.2− | 2003 10 01 | 699 | 0.6− | 0.5+ | | | | | | |

**1992 SX$_{10}$ = 2006 HZ$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.62773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26901327 | $\omega$ | 230.82157 | | +0.46030968 | | +0.88710738 |
| $a$ | 2.3765863 | $\Omega$ | 66.61703 | | −0.80265701 | | +0.43223779 |
| $e$ | 0.1950491 | $i$ | 2.12238 | | −0.37928448 | | +0.16189806 |
| $P$ | 3.66 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.2− | 0.2− | 2003 09 21 | 691 | 0.1+ | 0.5− | 2003 10 23 | 645 | 0.0 | 0.1− | | |
| 1992 09 27 | 691 | 0.6+ | 0.1+ | 2003 09 21 | 691 | 0.1− | 0.0 | 2003 10 23 | 645 | 0.1+ | 0.1− | | |
| 1992 09 27 | 691 | 0.1− | 0.2+ | 2003 10 18 | 291 | 0.4+ | 0.5+ | 2006 04 27 | 807 | 0.1− | 0.2− | | |
| 1992 10 02 | 691 | 0.4− | 0.8+ | 2003 10 18 | 291 | 0.2+ | 0.1+ | 2006 04 27 | 807 | 0.1+ | 0.3− | | |
| 1992 10 02 | 691 | 0.3− | 0.5+ | 2003 10 18 | 291 | 0.2+ | 0.1+ | 2006 04 28 | 807 | 0.3− | 0.3− | | |
| 1992 10 02 | 691 | 0.4− | 0.4+ | 2003 10 22 | 645 | 0.1− | 0.1− | 2006 04 28 | 807 | 0.1− | 0.3− | | |
| 2003 09 21 | 691 | 0.2+ | 0.2− | 2003 10 22 | 645 | 0.0 | 0.1− | | | | | | |

**1992 YB$_3$ = 2006 SJ$_{289}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.96398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27972105 | $\omega$ | 316.12084 | | +0.55354026 | | −0.82529611 |
| $a$ | 2.3155417 | $\Omega$ | 99.96531 | | +0.79195992 | | +0.48012320 |
| $e$ | 0.3115565 | $i$ | 6.51268 | | +0.25766777 | | +0.29726765 |
| $P$ | 3.52 | $H$ | 19.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 24 | 691 | 0.1+ | 0.5+ | 1993 01 22 | 691 | 0.2− | 0.5+ | 2006 10 02 | 703 | 0.3− | 0.3− | | |
| 1992 12 24 | 691 | 0.4− | 0.0 | 1993 01 22 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.5− | 0.2+ | | |
| 1992 12 24 | 691 | 0.7− | 0.1− | 2006 09 26 | 703 | 1.2+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 1992 12 26 | 691 | 1.0+ | 0.4− | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.4+ | 0.4+ | | |
| 1992 12 26 | 691 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.9+ | 0.7− | 2006 10 12 | 644 | 0.3+ | 0.2+ | | |
| 1993 01 01 | 691 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.4+ | | |
| 1993 01 01 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 703 | 1.3− | 0.8− | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 1993 01 01 | 691 | 0.1− | 0.2− | 2006 10 02 | 703 | 0.3+ | 0.3+ | | | | | | |
| 1993 01 22 | 691 | 0.1+ | 0.3− | 2006 10 02 | 703 | 0.9− | 0.0 | | | | | | |

**1993 $FO_9$ = 2006 $KL_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.10229 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23349650 | $\omega$ | 160.27609 | −0.75823250 | | +0.64782204 | |
| $a$ | 2.6118554 | $\Omega$ | 60.32270 | −0.60897415 | | −0.66339611 | |
| $e$ | 0.1364349 | $i$ | 4.85636 | −0.23288186 | | −0.37447590 | |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 1.4− | 0.3+ | 2006 01 26 | 691 | 0.5+ | 0.6+ | 2006 05 20 | E12 | 0.1+ | 1.0+ |
| 1993 03 18 | 809 | 1.5+ | 0.2− | 2006 05 19 | G96 | 0.3+ | 0.5− | 2006 05 20 | E12 | 0.4− | 1.2− |
| 1993 03 23 | 809 | 0.4− | 0.8− | 2006 05 19 | G96 | 0.1+ | 0.1− | 2006 05 20 | E12 | 0.6− | 1.1− |
| 2003 11 16 | 645 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.1+ | 0.2− | 2006 05 24 | 691 | 0.0 | 0.0 |
| 2003 11 16 | 645 | 0.0 | 0.1+ | 2006 05 19 | G96 | 0.1+ | 0.2+ | 2006 05 24 | 691 | 0.1− | 0.0 |
| 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 20 | 691 | 0.0 | 0.1− | 2006 05 24 | 691 | 0.1+ | 0.0 |
| 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 20 | 691 | 0.2− | 0.1+ | 2006 05 28 | 691 | 0.1+ | 0.1+ |
| 2006 01 26 | 691 | 0.2+ | 0.2+ | 2006 05 20 | 691 | 0.1+ | 0.1+ | 2006 05 28 | 691 | 0.1+ | 0.2− |
| 2006 01 26 | 691 | 0.0 | 0.6+ | 2006 05 20 | E12 | 0.8− | 0.8+ | 2006 05 28 | 691 | 0.2+ | 0.3+ |

**1993 $FX_{47}$ = 2006 $RP_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.17189 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25814497 | $\omega$ | 329.79123 | −0.80299955 | | −0.59593429 | |
| $a$ | 2.4428320 | $\Omega$ | 173.61450 | +0.55917789 | | −0.75762441 | |
| $e$ | 0.1589701 | $i$ | 3.78999 | +0.20618392 | | −0.26620965 | |
| $P$ | 3.82 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.6− | 0.8− | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 1993 03 20 | 809 | 0.7+ | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.0 |
| 1993 03 24 | 809 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.0 | 0.3− | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 1993 04 16 | 413 | (3.6− | 4.6+) | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.2+ |
| 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2− | 0.9− | 2006 10 16 | G96 | 0.6− | 0.1− |
| 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.8+ | 1.1− | 2006 10 16 | G96 | 0.6+ | 0.1+ |
| 2006 08 28 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.6+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.8− | 1.2+ | | | | |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.3+ | 0.9+ | | | | |

**1993 $FB_{75}$ = 2004 $HN_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.90481 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27482276 | $\omega$ | 140.33616 | −0.80507239 | | −0.59314932 | |
| $a$ | 2.3429746 | $\Omega$ | 3.29845 | +0.51605495 | | −0.70509515 | |
| $e$ | 0.0648778 | $i$ | 5.67096 | +0.29248202 | | −0.38860611 | |
| $P$ | 3.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.0 | 0.1− | 2004 04 17 | 460 | (0.2+ | 1.9+) | 2005 09 23 | 703 | 0.3+ | 0.3+ |
| 1993 03 22 | 809 | 1.3+ | 0.2+ | 2004 04 25 | 704 | 0.3− | 0.2− | 2005 09 23 | 703 | 1.4− | 0.2+ |
| 2000 03 11 | 704 | 0.1+ | 0.8+ | 2004 04 25 | 704 | 0.2+ | 0.2− | 2005 09 29 | 699 | (1.4+ | 3.1+) |
| 2000 03 11 | 704 | 0.5− | 1.0+ | 2004 04 25 | 704 | 0.2+ | 0.0 | 2005 09 29 | 699 | 0.0 | 1.2+ |
| 2000 03 11 | 704 | 0.3− | 0.7+ | 2005 08 25 | 644 | 0.2− | 0.2+ | 2005 09 29 | 699 | (0.3− | 1.8+) |
| 2000 03 11 | 704 | 0.5− | 0.1− | 2005 08 25 | 644 | 0.0 | 0.1− | 2005 09 29 | 699 | 1.2+ | 0.2− |
| 2000 03 23 | 049 | 0.7+ | 0.6+ | 2005 08 25 | 644 | 0.2− | 0.5+ | 2005 10 01 | 704 | (1.5− | 0.7+) |
| 2000 03 23 | 049 | 0.5+ | 0.6+ | 2005 08 28 | 691 | 0.3+ | 0.2− | 2005 10 01 | 704 | 0.2− | 0.7+ |
| 2000 03 23 | 049 | 0.6+ | 0.2− | 2005 08 28 | 691 | 0.1− | 0.0 | 2005 10 01 | 704 | 0.2− | 0.4+ |
| 2002 12 06 | 704 | 0.7− | 0.6− | 2005 08 28 | 691 | 0.1− | 0.1− | 2005 12 04 | G96 | 0.5+ | 0.3+ |
| 2002 12 06 | 704 | 0.3− | 0.1− | 2005 09 11 | 691 | 0.2− | 0.5+ | 2005 12 04 | G96 | 0.8+ | 0.3− |
| 2002 12 06 | 704 | 0.0 | 0.5− | 2005 09 11 | 691 | 0.0 | 0.3− | 2005 12 04 | G96 | 0.3− | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.5+ | 2005 09 11 | 691 | 0.1+ | 0.3+ | 2005 12 04 | G96 | 0.5− | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.5+ | 2005 09 23 | 703 | 0.2− | 0.1− | 2006 11 21 | 460 | 1.8+ | 0.9− |
| 2004 04 17 | 460 | 1.0− | 1.3+ | 2005 09 23 | 703 | 0.8− | 1.1+ | 2006 11 21 | 460 | 0.5+ | 0.1− |

**1993 ON = 2006 $TY_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.35891 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23654582 | $\omega$ | 165.46631 | +0.81048750 | | +0.58334570 | |
| $a$ | 2.5893606 | $\Omega$ | 158.58217 | −0.55088812 | | +0.78990557 | |
| $e$ | 0.1546310 | $i$ | 8.35851 | −0.19907862 | | +0.18909516 | |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 20 | 691 | 0.2+ | 0.0 | 1993 07 27 | 589 | (2.3− | 0.3+) | 2006 10 22 | 703 | 0.6− | 0.4− |
| 1993 07 20 | 691 | 0.6− | 0.4− | 1993 07 28 | 589 | 0.6− | 1.1− | 2006 10 22 | 703 | 0.3− | 0.7− |
| 1993 07 20 | 691 | 0.4+ | 0.4+ | 1993 07 28 | 589 | 1.2+ | 1.1+ | 2006 10 22 | 703 | 0.5+ | 0.7− |
| 1993 07 24 | 589 | 0.3− | 0.3− | 1993 07 28 | 589 | 0.9− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.8− |
| 1993 07 24 | 589 | 0.2+ | 0.3+ | 1993 07 28 | 589 | 0.6− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 1993 07 24 | 589 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 1993 07 25 | 589 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.5− |
| 1993 07 25 | 589 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.3− | 1.0+ |
| 1993 07 25 | 589 | 1.0+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 10 28 | 703 | 0.5+ | 1.3+ |
| 1993 07 26 | 589 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.2− | 2006 10 28 | 703 | 0.0 | 0.8− |
| 1993 07 26 | 589 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.6+ | 2006 10 28 | 703 | 0.0 | 0.6+ |
| 1993 07 27 | 589 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.1− | | | | |

**1993 $OH_3$ = 2001 $YZ_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.72979 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28096439 | $\omega$ | 357.49575 | +0.39850925 | | +0.91122921 | |
| $a$ | 2.3087054 | $\Omega$ | 295.97274 | −0.83945505 | | +0.31663003 | |
| $e$ | 0.1154861 | $i$ | 6.65407 | −0.36946664 | | +0.26345162 | |
| $P$ | 3.51 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 13 | 809 | (3.7+ | 0.3−) | 2001 12 18 | 704 | 0.1− | 0.2− | 2004 10 10 | 704 | 0.3+ | 0.2− |
| 1993 07 13 | 809 | 1.6+ | 0.7− | 2001 12 18 | 704 | 1.0− | 0.2− | 2004 10 10 | 704 | 0.5+ | 0.7+ |
| 1993 07 13 | 809 | (3.9+ | 1.5−) | 2001 12 19 | 704 | 0.5+ | 0.4+ | 2004 10 10 | 704 | 0.2− | 0.8+ |
| 1993 07 13 | 809 | (1.1+ | 2.7+) | 2001 12 19 | 704 | 0.5+ | 0.3+ | 2004 10 15 | 704 | 0.8− | 1.1− |
| 1993 07 13 | 809 | (1.1− | 3.3+) | 2001 12 19 | 704 | 1.2+ | 0.2− | 2004 10 15 | 704 | 1.4+ | 0.9+ |
| 1993 07 13 | 809 | (0.4+ | 2.6+) | 2003 03 29 | 699 | 0.4− | 1.3+ | 2004 10 15 | 704 | 0.1− | 0.6+ |
| 1993 07 20 | 809 | 1.2+ | 0.2+ | 2003 03 29 | 699 | 0.7+ | 1.0+ | 2004 10 15 | 704 | 0.0 | 0.7− |
| 1993 07 20 | 809 | 1.0+ | 0.3+ | 2003 03 29 | 699 | 0.5+ | 0.4− | 2004 10 15 | 704 | 0.5− | 0.4+ |
| 1993 07 20 | 809 | 0.1− | 0.6− | 2003 03 29 | 699 | 1.4+ | 0.5+ | 2005 12 06 | G96 | 0.9− | 0.3+ |
| 1993 07 20 | 809 | 1.2− | 1.0− | 2004 09 18 | 704 | 1.0+ | 0.1− | 2005 12 06 | G96 | 0.4− | 0.4− |
| 1993 07 20 | 809 | 1.6− | 1.0− | 2004 09 18 | 704 | 0.4+ | 0.0 | 2005 12 06 | G96 | 0.0 | 0.2+ |
| 1993 07 20 | 809 | (3.4− | 0.8−) | 2004 09 18 | 704 | 0.4+ | 0.2− | 2005 12 06 | G96 | 0.2− | 0.4− |
| 1993 07 24 | 809 | 0.2+ | 0.5− | 2004 09 21 | 704 | 1.4− | 1.7+ | 2006 01 08 | G96 | 0.5− | 0.3− |
| 1993 07 24 | 809 | 0.9− | 1.4+ | 2004 09 21 | 704 | 0.4− | 0.8− | 2006 01 08 | G96 | 0.8− | 0.3− |
| 2001 12 18 | 704 | 0.1− | 0.1− | 2004 09 21 | 704 | 1.3− | 0.4+ | 2006 01 08 | G96 | 0.4− | 0.7− |
| 2001 12 18 | 704 | 0.0 | 0.6+ | 2004 10 10 | 704 | 0.2− | 0.5− | 2006 01 08 | G96 | 0.2− | 0.4− |

**1993 $RX_{14}$ = 2006 $TH_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.71772 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22964102 | $\omega$ | 50.07676 | +0.99989487 | | +0.00383345 | |
| $a$ | 2.6410081 | $\Omega$ | 309.69892 | −0.00921048 | | +0.91277334 | |
| $e$ | 0.2277223 | $i$ | 1.04138 | +0.01119854 | | +0.40844844 | |
| $P$ | 4.29 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | 0.2+ | 1.4− | 2006 10 17 | A44 | 0.6+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 1993 09 15 | 809 | 1.1− | 1.3− | 2006 10 17 | A44 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1993 09 15 | 809 | 1.5− | 0.3− | 2006 10 17 | A44 | 0.6+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 1993 09 17 | 809 | 1.9+ | 0.9+ | 2006 10 18 | A44 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 1993 09 17 | 809 | 0.8+ | 1.2+ | 2006 10 18 | A44 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 1993 09 17 | 809 | 0.3− | 1.1− | 2006 10 18 | A44 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 1993 09 18 | 809 | 1.0+ | 1.8+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.3− | 1.0− |
| 1993 09 18 | 809 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.4+ | 1.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 18 | 809 | 1.1− | 0.4− | 2006 10 20 | 691 | 0.1− | 0.5− | 2006 11 17 | 703 | 1.1− | 0.5− | | |
| 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.4− | 0.4− | | |
| 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.0 | | |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.3+ | 0.1− | | | | | | |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.1+ | | | | | | |

**1993 $SO_8$ = 2004 $FR_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.04887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24099447 | $\omega$ | 334.21253 | | +0.94530874 | +0.32495223 | |
| $a$ | 2.5573961 | $\Omega$ | 7.00548 | | −0.24456878 | +0.76341856 | |
| $e$ | 0.2796371 | $i$ | 13.38744 | | −0.21581820 | +0.55820977 | |
| $P$ | 4.09 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 17 | 809 | 0.2− | 0.4+ | 2001 08 09 | 644 | 0.6− | 0.0 | 2004 03 17 | 691 | 0.1− | 0.4+ | | |
| 1993 09 17 | 809 | 1.1+ | 0.4− | 2001 08 09 | 644 | 0.5− | 0.2− | 2004 03 26 | 691 | 0.1+ | 0.4+ | | |
| 1993 09 17 | 809 | 0.2+ | 0.6− | 2001 08 22 | 644 | 0.3− | 0.3+ | 2004 03 26 | 691 | 0.4+ | 0.1+ | | |
| 1993 09 18 | 809 | 0.7+ | 0.3+ | 2001 08 22 | 644 | 0.1+ | 0.2− | 2004 03 26 | 691 | 0.5+ | 0.3+ | | |
| 1993 09 18 | 809 | 0.8+ | 0.8+ | 2001 08 22 | 644 | 0.1+ | 0.3+ | 2005 07 03 | E12 | 0.2− | 0.1+ | | |
| 1993 09 18 | 809 | 0.2+ | 0.5+ | 2001 09 14 | 644 | 0.6− | 0.5+ | 2005 07 03 | E12 | 0.1+ | 0.3− | | |
| 1993 09 18 | 691 | 0.3− | 0.1+ | 2001 09 14 | 644 | 0.3− | 0.2+ | 2005 07 03 | E12 | 0.7+ | 0.7− | | |
| 1993 09 18 | 691 | 0.5− | 0.2+ | 2001 09 14 | 644 | 0.3− | 0.2− | 2005 07 03 | E12 | 0.2− | 0.1+ | | |
| 1993 09 18 | 691 | 0.5− | 0.4+ | 2001 11 19 | 608 | 0.0 | 0.5+ | 2005 07 27 | E12 | 0.4+ | 0.4+ | | |
| 2001 08 01 | 644 | 0.1+ | 0.3+ | 2001 11 19 | 608 | 0.3+ | 0.2− | 2005 07 27 | E12 | 0.2− | 0.2− | | |
| 2001 08 01 | 644 | 0.2− | 0.2+ | 2001 11 19 | 608 | 0.4+ | 0.4+ | 2005 07 27 | E12 | 0.3+ | 0.3− | | |
| 2001 08 01 | 644 | 0.2+ | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.4+ | 2005 07 27 | E12 | 0.5+ | 0.3− | | |
| 2001 08 09 | 644 | 0.5− | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | | | | | | |

**1993 $TT_2$ = 2006 $SR_{344}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.32646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30262410 | $\omega$ | 56.31940 | | +0.47723498 | +0.87754886 | |
| $a$ | 2.1971871 | $\Omega$ | 242.25169 | | −0.82262760 | +0.42754035 | |
| $e$ | 0.2524286 | $i$ | 3.00662 | | −0.30908025 | +0.21706506 | |
| $P$ | 3.26 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 15 | 691 | 0.0 | 0.0 | 1993 10 24 | 691 | 0.5+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.8+ | | |
| 1993 10 15 | 691 | 0.1+ | 0.0 | 2003 11 30 | 291 | (5.8+ | 2.9+) | 2006 10 17 | 703 | 0.8+ | 0.4− | | |
| 1993 10 15 | 691 | 0.2− | 0.5− | 2003 11 30 | 291 | (5.2+ | 2.8+) | 2006 10 21 | 644 | 0.3− | 0.4− | | |
| 1993 10 20 | 691 | 0.2+ | 0.0 | 2003 11 30 | 291 | (6.0+ | 2.7+) | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 1993 10 20 | 691 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.9+ | | |
| 1993 10 20 | 691 | 0.4− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.2+ | | |
| 1993 10 21 | 691 | 0.5− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.0 | 0.4− | | |
| 1993 10 24 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.4+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 1993 10 24 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 1993 10 24 | 691 | 0.8− | 0.2− | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 1993 10 24 | 691 | 1.0+ | 0.1− | 2006 10 17 | 703 | 0.9− | 0.4− | 2006 11 17 | G96 | 0.3+ | 0.2+ | | |
| 1993 10 24 | 691 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.2− | | |

**1993 $TQ_7$ = 2006 $SC_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.17598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22053127 | $\omega$ | 332.63635 | | +0.82007408 | +0.57215425 | |
| $a$ | 2.7132466 | $\Omega$ | 352.43520 | | −0.50879339 | +0.72030614 | |
| $e$ | 0.1132303 | $i$ | 4.73359 | | −0.26193088 | +0.39217163 | |
| $P$ | 4.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.6+ | 1.0− | 2006 09 19 | 703 | 0.1− | 0.1+ | | |
| 1993 10 09 | 691 | 0.7− | 0.5+ | 2006 08 28 | 703 | 1.3+ | 1.0− | 2006 09 19 | 703 | 0.5− | 0.4− | | |
| 1993 10 09 | 691 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.7− | 2006 09 19 | 699 | 0.6− | 1.0− | | |
| 1993 10 13 | 691 | (2.4− | 3.9−) | 2006 09 03 | 152 | 0.4+ | 0.2− | 2006 09 19 | 703 | (0.0 | 1.6−) | | |
| 1993 10 13 | 691 | (0.4+ | 3.3−) | 2006 09 03 | 152 | 0.2− | 1.2+ | 2006 09 19 | 699 | 0.4− | 0.0 | | |
| 1993 10 13 | 691 | (2.4+ | 2.4−) | 2006 09 03 | 152 | 1.0+ | 0.6+ | 2006 09 25 | 699 | 1.1+ | 1.1+ | | |
| 1993 10 21 | 691 | 0.7+ | 0.2− | 2006 09 16 | 699 | (0.3+ | 2.0−) | 2006 09 25 | 699 | 0.8− | 0.4+ | | |
| 1993 10 21 | 691 | 0.6+ | 0.9− | 2006 09 16 | 699 | 0.5− | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 1993 10 21 | 691 | 0.3− | 0.4+ | 2006 09 16 | 699 | 0.7− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.2− | | |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.6− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.3− | | |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.8+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | (0.4+ | 1.7−) | 2006 09 25 | 699 | 0.5− | 0.4+ | | |
| 2006 08 28 | 703 | (0.5+ | 1.7−) | 2006 09 19 | 699 | (1.7− | 0.4−) | 2006 09 25 | 699 | 0.0 | 0.6+ | | |

**1993 $TZ_7$ = 2005 $JW_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.28368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21280955 | $\omega$ | 296.17759 | | +0.11663468 | +0.99285117 | |
| $a$ | 2.7784887 | $\Omega$ | 340.47048 | | −0.88200116 | +0.09180840 | |
| $e$ | 0.1276969 | $i$ | 4.34999 | | −0.45658548 | +0.07627435 | |
| $P$ | 4.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 691 | 0.6− | 0.2+ | 2002 10 01 | 699 | 1.3+ | 0.3+ | 2005 03 08 | G96 | 0.2− | 1.0− | | |
| 1993 10 10 | 691 | 0.4− | 0.2+ | 2002 10 01 | 699 | 0.3+ | 0.7− | 2005 03 08 | 704 | 0.8+ | 0.9+ | | |
| 1993 10 10 | 691 | 0.1− | 0.8− | 2002 10 01 | 699 | 0.1− | 1.8− | 2005 03 08 | G96 | 0.3− | 0.4− | | |
| 1993 10 16 | 691 | 0.7+ | 0.0 | 2002 10 03 | 704 | 0.8+ | 0.0 | 2005 03 08 | G96 | 0.1− | 0.4− | | |
| 1993 10 16 | 691 | 0.2+ | 0.1+ | 2002 10 03 | 704 | 0.5− | 0.1+ | 2005 03 08 | 704 | 1.0+ | 1.2+ | | |
| 1993 10 16 | 691 | 0.3+ | 0.2+ | 2002 10 03 | 704 | 0.4− | 1.7− | 2005 05 08 | G96 | 0.8− | 0.1− | | |
| 2002 09 07 | 704 | 0.4− | 0.0 | 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.1− | 0.4− | | |
| 2002 09 07 | 704 | 0.1− | 0.6+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.7− | 0.1− | | |
| 2002 09 07 | 704 | 0.2+ | 0.4+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.3− | 0.1− | | |
| 2002 09 13 | 644 | 0.2+ | 0.0 | 2002 10 31 | 645 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.2− | 0.4− | | |
| 2002 09 13 | 644 | 0.4+ | 0.2+ | 2005 03 08 | 704 | 0.0 | 1.2+ | 2005 05 13 | G96 | 0.4− | 0.6− | | |
| 2002 09 13 | 644 | 0.2+ | 0.5+ | 2005 03 08 | 704 | 0.4+ | 0.7− | 2005 05 13 | G96 | 0.1− | 0.1+ | | |
| 2002 10 01 | 699 | 1.4− | 1.8+ | 2005 03 08 | G96 | 0.1− | 0.3− | 2005 05 13 | G96 | 0.2+ | 0.2+ | | |

**1993 $TH_{11}$ = 2003 $SE_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.30133 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29173378 | $\omega$ | 149.34721 | | +0.67050812 | −0.74129779 | |
| $a$ | 2.2515326 | $\Omega$ | 258.52848 | | +0.67433615 | +0.62577437 | |
| $e$ | 0.1901103 | $i$ | 1.75072 | | +0.30933740 | +0.24266029 | |
| $P$ | 3.38 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 15 | 691 | 0.0 | 0.1+ | 2000 11 24 | 691 | 0.0 | 0.5− | 2003 09 27 | 704 | 0.5+ | 0.7+ | | |
| 1993 10 15 | 691 | 0.2+ | 0.4− | 2000 11 24 | 691 | 0.1+ | 0.5− | 2003 09 27 | 704 | 0.2+ | 1.1+ | | |
| 1993 10 15 | 691 | 0.2− | 0.1− | 2000 12 03 | 691 | 0.1− | 0.4+ | 2003 09 27 | 704 | 0.8− | 0.5+ | | |
| 1993 10 20 | 691 | 0.1− | 0.4+ | 2000 12 03 | 691 | 0.1− | 0.4+ | 2003 09 27 | 704 | 0.1+ | 0.4+ | | |
| 1993 10 20 | 691 | 0.0 | 0.0 | 2000 12 03 | 691 | 0.1− | 0.3+ | 2003 09 27 | 704 | 0.2+ | 0.5+ | | |
| 1993 10 20 | 691 | 0.1+ | 0.0 | 2003 09 16 | 691 | 0.0 | 0.3+ | 2003 09 28 | 645 | 0.0 | 0.1− | | |
| 1993 10 21 | 691 | 0.3− | 0.0 | 2003 09 16 | 691 | 0.1− | 0.4+ | 2003 09 28 | 645 | 0.1+ | 0.1− | | |
| 1993 10 21 | 691 | 0.2+ | 0.5+ | 2003 09 16 | 691 | 0.1+ | 0.4+ | 2003 09 29 | 645 | 0.0 | 0.1− | | |
| 1993 10 21 | 691 | 0.2− | 0.5+ | 2003 09 26 | 645 | 0.0 | 0.1− | 2003 09 29 | 645 | 0.1− | 0.0 | | |
| 2000 11 24 | 691 | 0.2+ | 0.7− | 2003 09 26 | 645 | 0.0 | 0.1− | | | | | | |

**1993 $TL_{14}$ = 2006 $WB_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.00841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23225708 | $\omega$ | 178.97240 | | +0.98310717 | +0.18272523 | |
| $a$ | 2.6211391 | $\Omega$ | 170.47936 | | −0.16838019 | +0.92554897 | |
| $e$ | 0.2809308 | $i$ | 3.66478 | | −0.07175232 | +0.33161814 | |
| $P$ | 4.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | (1.2+ | 2.4+) | 2006 11 17 | 704 | 0.4− | 0.1+ | 2006 11 22 | G98 | 0.2− | 0.0 | | |
| 1993 10 09 | 809 | 0.4+ | 0.7+ | 2006 11 17 | 704 | (0.4+ | 1.5+) | 2006 11 22 | G98 | 0.1+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 1.0− | 1.1+ | 2006 11 17 | G96 | 0.2+ | 0.0 | 2006 11 22 | G98 | 0.1− | 0.1− |
| 1993 10 11 | 809 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− | 2006 11 22 | G98 | 0.0 | 0.1+ |
| 1993 10 11 | 809 | (0.9− | 2.1−) | 2006 11 17 | G96 | 0.1+ | 0.0 | 2006 11 22 | G98 | 0.1+ | 0.0 |
| 1993 10 11 | 809 | 1.0− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.1− | 2006 11 22 | G98 | 0.1− | 0.0 |
| 1993 10 20 | 809 | 0.0 | 2.0+ | 2006 11 17 | G96 | 0.2+ | 0.0 | 2006 11 22 | G98 | 0.1+ | 0.1+ |
| 1993 10 20 | 809 | 0.0 | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.1+ | 2006 11 22 | G98 | 0.1− | 0.0 |
| 1993 10 20 | 809 | 0.8− | 1.5+ | 2006 11 17 | G96 | 0.5+ | 0.0 | 2006 11 23 | G98 | 1.0+ | 0.1+ |
| 1995 02 01 | 691 | 0.1− | 0.7+ | 2006 11 17 | G96 | 0.5+ | 0.0 | 2006 11 23 | G98 | 0.2+ | 0.2+ |
| 1995 02 01 | 691 | 0.9+ | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.1− | 2006 11 23 | G98 | 0.4+ | 0.2− |
| 1995 02 01 | 691 | 0.4− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.1− | 2006 11 23 | G98 | 0.4+ | 0.2− |
| 2005 05 14 | 644 | 0.2+ | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2005 05 14 | 644 | 0.4+ | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.2− | 2006 11 24 | 703 | 0.1− | 0.4− |
| 2005 05 14 | 644 | 0.2− | 0.4+ | 2006 11 18 | 291 | 0.2− | 0.1+ | 2006 11 24 | 703 | 0.3− | 1.0− |
| 2006 11 02 | G96 | 0.9+ | 0.1+ | 2006 11 18 | 291 | 0.1− | 0.0 | 2006 11 24 | 703 | 0.1− | 0.2+ |
| 2006 11 02 | G96 | 0.0 | 0.3− | 2006 11 18 | 291 | 0.2+ | 0.1+ | 2006 11 24 | 703 | 0.4− | 1.3− |
| 2006 11 02 | G96 | 0.1− | 0.4− | 2006 11 18 | D35 | 0.3− | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2006 11 02 | G96 | 0.0 | 0.2− | 2006 11 18 | D35 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2006 11 02 | 703 | 0.6+ | 0.3+ | 2006 11 18 | D35 | 0.0 | 0.2+ | 2006 11 25 | 703 | 1.5− | 0.4− |
| 2006 11 02 | 703 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.7− | 2006 11 25 | 703 | 0.6− | 0.6− |
| 2006 11 02 | 703 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.7+ | 1.2− | 2006 11 25 | 703 | 0.3+ | 0.7+ |
| 2006 11 02 | 703 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.4+ | 1.0− | 2006 11 25 | 703 | 0.2+ | 0.2+ |
| 2006 11 16 | 691 | 0.9− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.6− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 22 | G98 | 0.3− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2006 11 17 | 704 | 0.6+ | 0.7+ | 2006 11 22 | G98 | 0.5+ | 0.1+ | | | | |

**1993 TX$_{24}$ = 2006 QD$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.82739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22729911 | $\omega$ | 182.90560 | | +0.99617270 | −0.08735219 | |
| $a$ | 2.6591177 | $\Omega$ | 182.11316 | | +0.08178965 | +0.94404318 | |
| $e$ | 0.2297293 | $i$ | 4.80856 | | +0.03082876 | +0.31804415 | |
| $P$ | 4.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.6− | 1.8+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.5+ | 0.1− |
| 1993 10 09 | 809 | 0.9− | 1.7+ | 2006 09 20 | 704 | 0.4− | 1.1+ | 2006 10 10 | 644 | 0.2+ | 0.4− |
| 1993 10 09 | 809 | 0.7− | 3.0+ | 2006 09 20 | 704 | 0.3+ | 1.7+ | 2006 10 10 | 644 | 0.4+ | 0.2− |
| 1993 10 11 | 809 | 1.4− | 2.7+ | 2006 09 20 | 704 | 0.4+ | 0.6+ | 2006 10 15 | 703 | 0.1+ | 0.8− |
| 1993 10 11 | 809 | 0.7− | 2.2+ | 2006 09 20 | 704 | 0.3+ | 1.0+ | 2006 10 15 | 703 | 0.5− | 1.0− |
| 1993 10 11 | 809 | 1.5− | 2.1+ | 2006 09 20 | 704 | 0.1+ | 1.3+ | 2006 10 19 | 644 | 0.2+ | 0.5− |
| 1993 10 20 | 809 | 0.1+ | 1.5+ | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.6+ | 0.3− |
| 1993 10 20 | 809 | 0.0 | 2.4+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.5− |
| 1993 10 20 | 809 | 0.0 | 1.4+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.4+ | 1.2− |
| 2006 08 19 | 699 | 0.5+ | 0.7+ | 2006 09 25 | 691 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.9− |
| 2006 08 19 | 699 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.6+ | 1.2− |
| 2006 08 19 | 699 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5− | 1.4− |
| 2006 08 19 | 699 | 0.3+ | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.7− |
| 2006 08 24 | 644 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.7− |
| 2006 08 24 | 644 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.6− |
| 2006 08 24 | 644 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 22 | 704 | 1.4+ | 0.6− |
| 2006 09 14 | 703 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 22 | 704 | 0.1− | 0.2− |
| 2006 09 14 | 703 | 0.1− | 0.9+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 22 | 704 | 1.2− | 0.9+ |
| 2006 09 14 | 703 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 22 | 704 | 1.2− | 1.6− |
| 2006 09 14 | 703 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 22 | 704 | 1.0− | 0.2+ |
| 2006 09 15 | 691 | 0.3− | 0.3− | 2006 09 27 | 704 | 0.0 | 0.5− | 2006 10 22 | G96 | 0.1+ | 1.0− |
| 2006 09 15 | 691 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.9− |
| 2006 09 15 | 691 | 0.3− | 0.3− | 2006 09 27 | 704 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.3+ | 0.9− |
| 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.8− |
| 2006 09 18 | 699 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 704 | 0.4− | 1.1− |
| 2006 09 18 | 699 | 1.0− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.5− | 2006 10 28 | 704 | 0.0 | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.4+ | 0.1− | 2006 10 28 | 704 | 0.5− | 0.8− |
| 2006 09 19 | 691 | 0.6− | 0.3+ | 2006 10 01 | 691 | 0.5+ | 0.2− | | | | |

**1993 TJ$_{28}$ = 2006 UV$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.89364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23080758 | $\omega$ | 312.37045 | | +0.96707719 | +0.21929301 | |
| $a$ | 2.6321017 | $\Omega$ | 35.53621 | | −0.11314624 | +0.82499411 | |
| $e$ | 0.1916963 | $i$ | 12.83573 | | −0.22794657 | +0.52086014 | |
| $P$ | 4.27 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | (1.1− | 2.2−) | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.5− | 0.8+ |
| 1993 10 09 | 809 | (2.8− | 1.9−) | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.7− | 0.2+ |
| 1993 10 09 | 809 | 0.5− | 1.5− | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.9+ | 0.8+ |
| 1993 10 11 | 809 | 0.2+ | 0.4+ | 2006 11 01 | 400 | 0.7− | 0.5− | 2006 11 16 | 704 | (1.0− | 2.0+) |
| 1993 10 11 | 809 | 0.3+ | 0.0 | 2006 11 01 | 400 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.1− | 1.3+ |
| 1993 10 11 | 809 | 0.6− | 0.8− | 2006 11 01 | 400 | 0.6− | 0.1− | 2006 11 16 | 704 | (0.4− | 2.2+) |
| 1993 10 20 | 809 | 1.6+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | (0.6+ | 2.5+) |
| 1993 10 20 | 809 | (2.9+ | 0.5−) | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 1993 10 20 | 809 | (2.5+ | 0.4−) | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 1996 04 19 | 691 | 0.8+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 1996 04 19 | 691 | 1.0+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 1996 04 19 | 691 | 0.7− | 1.6+ | 2006 11 11 | 703 | 0.4− | 0.5− | 2006 11 16 | 704 | 0.4+ | 1.1+ |
| 2004 01 28 | 645 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 11 17 | 704 | (0.8+ | 1.8+) |
| 2004 01 28 | 645 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 11 17 | 704 | 1.0− | 1.1+ |
| 2006 08 28 | 703 | 0.4− | 0.8+ | 2006 11 13 | 644 | 0.4− | 0.1+ | 2006 11 17 | 704 | (3.1− | 0.3+) |
| 2006 08 28 | 703 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.6− | 0.6− | 2006 11 17 | 704 | 0.8+ | 0.8+ |
| 2006 08 28 | 703 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.2+ | 1.1+ | 2006 11 17 | 704 | 0.3+ | 0.1+ |
| 2006 08 28 | 703 | 0.4− | 0.5+ | 2006 11 14 | 703 | 0.5+ | 1.0+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.9+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.8+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 2006 10 24 | 400 | 0.1− | 1.1− | 2006 11 14 | G96 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2006 10 24 | 400 | 0.4+ | 0.5− | 2006 11 14 | G96 | 0.1− | 0.5− | 2006 11 22 | 704 | (2.2+ | 0.0 ) |
| 2006 10 26 | 400 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.6− | 2006 11 22 | 704 | (2.3+ | 0.0 ) |
| 2006 10 26 | 400 | 0.2+ | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | (2.6+ | 0.1−) |
| 2006 10 26 | 400 | 0.9+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | (2.0+ | 0.0 ) |
| 2006 10 29 | 400 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | (2.4+ | 0.1−) |
| 2006 10 29 | 400 | 0.1+ | 1.3− | 2006 11 15 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.6+ | 0.4− |
| 2006 10 29 | 400 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2006 10 29 | 400 | 0.6− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.8− |
| 2006 10 30 | 400 | 0.7− | 0.6− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2006 10 30 | 400 | 0.2+ | 0.5− | 2006 11 15 | 704 | 0.6+ | 1.0+ | | | | |
| 2006 10 30 | 400 | 0.3− | 0.8− | 2006 11 15 | 704 | 0.0 | 1.2+ | | | | |

**1993 TW$_{35}$ = 2000 SZ$_{360}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.10091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27436676 | $\omega$ | 329.80317 | | +0.99888197 | −0.01038403 | |
| $a$ | 2.3455699 | $\Omega$ | 30.89458 | | +0.03074395 | +0.88378336 | |
| $e$ | 0.0898860 | $i$ | 5.15327 | | −0.03591118 | +0.46778108 | |
| $P$ | 3.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 809 | (3.2+ | 1.5+) | 2000 09 24 | 699 | 0.6− | 0.5+ | 2004 12 15 | 704 | 0.3+ | 0.5− |
| 1993 10 11 | 809 | 1.8+ | 1.7+ | 2000 09 24 | 699 | 0.2− | 0.8+ | 2004 12 15 | 704 | 1.2− | 0.1− |
| 1993 10 11 | 809 | 2.3+ | 1.9+ | 2000 09 24 | 699 | 0.3− | 0.9+ | 2006 03 04 | G96 | 1.3+ | 0.4− |
| 1993 10 20 | 809 | 1.0− | 2.0+ | 2004 11 19 | 704 | 0.4− | 0.8+ | 2006 03 04 | G96 | 0.0 | 0.3− |
| 1993 10 20 | 809 | (2.4− | 1.7+) | 2004 11 19 | 704 | 0.7− | 0.2− | 2006 03 04 | G96 | 0.6+ | 0.2− |
| 1993 10 20 | 809 | 1.3− | 2.3+ | 2004 11 19 | 704 | 0.8− | 0.4− | 2006 03 04 | G96 | 0.4+ | 0.5− |
| 1999 03 19 | 691 | 1.0− | 1.0+ | 2004 11 19 | 704 | 0.1− | 0.4+ | 2006 03 29 | 691 | 0.9+ | 0.1+ |
| 1999 03 19 | 691 | 0.8− | 1.1+ | 2004 11 19 | 704 | 0.3− | 0.5+ | 2006 03 29 | 691 | 0.8+ | 0.1− |
| 1999 03 19 | 691 | 0.5− | 1.2+ | 2004 12 02 | 703 | 1.2− | 0.3+ | 2006 03 29 | 691 | 1.0+ | 0.1+ |
| 2000 09 23 | 699 | 0.3+ | 1.1+ | 2004 12 02 | 703 | 0.5− | 0.5− | 2006 05 05 | G96 | 0.4+ | 0.4− |
| 2000 09 23 | 699 | 0.7− | 1.1+ | 2004 12 02 | 703 | 0.5− | 1.7− | 2006 05 05 | G96 | 0.5+ | 0.2− |
| 2000 09 23 | 699 | 0.5− | 0.2− | 2004 12 02 | 703 | 1.2− | 0.2− | 2006 05 05 | G96 | 0.5+ | 0.4+ |
| 2000 09 23 | 699 | 0.2+ | 0.1+ | 2004 12 15 | 704 | 0.0 | 0.2+ | 2006 05 05 | G96 | 1.2+ | 0.5+ |
| 2000 09 24 | 699 | 1.1− | 1.0+ | 2004 12 15 | 704 | 0.1+ | 0.9+ | | | | |

### 1993 $TH_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 247.43054 | | (2000.0) | | | |
| $n$ | 0.20889172 | $\omega$ | 356.05186 | | +0.69567572 | −0.71449125 |
| $a$ | 2.8131220 | $\Omega$ | 49.84711 | | +0.66171654 | +0.59705980 |
| $e$ | 0.1148256 | $i$ | 5.58716 | | +0.27958275 | +0.36472162 |
| $P$ | 4.72 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | (0.07− | 0.03−) | 2002 08 19 | 644 | 0.4+ | 0.1− | 2003 12 23 | 704 | 0.9− | 0.2+ |
| 1993 10 09 | 809 | (0.07− | 0.03−) | 2002 08 19 | 644 | 0.1− | 0.1− | 2003 12 23 | 704 | 0.2− | 0.6− |
| 1993 10 09 | 809 | (0.07− | 0.03−) | 2003 11 24 | 704 | 0.0 | 0.4− | 2003 12 28 | 704 | 0.8+ | 0.1+ |
| 1993 10 11 | 809 | (0.07− | 0.03−) | 2003 11 24 | 704 | 0.2+ | 0.3+ | 2003 12 28 | 704 | 0.1− | 0.3+ |
| 1993 10 11 | 809 | (0.07− | 0.03−) | 2003 11 24 | 704 | 0.3+ | 0.5+ | 2003 12 28 | 704 | 0.4+ | 0.1+ |
| 1993 10 11 | 809 | (0.07− | 0.03−) | 2003 12 18 | 704 | 0.6− | 0.3+ | 2003 12 28 | 704 | 0.0 | 0.5− |
| 1993 10 20 | 809 | (0.07− | 0.03−) | 2003 12 18 | 704 | 0.1+ | 0.2+ | 2003 12 28 | 704 | 0.9+ | 1.7− |
| 1993 10 20 | 809 | (0.07− | 0.03−) | 2003 12 18 | 704 | 0.1+ | 1.0+ | 2005 04 30 | 691 | 0.1− | 0.2+ |
| 1993 10 20 | 809 | (0.07− | 0.03−) | 2003 12 23 | 704 | 1.1− | 0.6+ | 2005 04 30 | 691 | 0.1− | 0.0 |
| 2002 08 19 | 644 | 0.3− | 0.4+ | 2003 12 23 | 704 | 0.2+ | 0.0 | 2005 04 30 | 691 | 0.2+ | 0.1− |

### 1993 $VW_5$ = 2004 $TN_{104}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.96333 | | (2000.0) | | | |
| $n$ | 0.35691783 | $\omega$ | 260.45275 | | +0.27078458 | +0.94945451 |
| $a$ | 1.9682966 | $\Omega$ | 26.95141 | | −0.68694294 | +0.30613804 |
| $e$ | 0.0695604 | $i$ | 20.50759 | | −0.67437757 | +0.06939476 |
| $P$ | 2.76 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 08 | 691 | 0.2+ | 0.2− | 2004 10 08 | 699 | 0.1+ | 1.0− | 2006 04 20 | 703 | 0.6− | 0.2− |
| 1993 11 08 | 691 | 0.5− | 0.8− | 2004 10 08 | 699 | 0.7− | 0.8+ | 2006 04 20 | 703 | (3.2− | 0.4+) |
| 1993 11 08 | 691 | 0.2+ | 0.1+ | 2004 10 08 | 699 | 1.4− | 0.6+ | 2006 04 25 | 691 | 0.0 | 0.0 |
| 1993 11 09 | 691 | 0.0 | 0.6+ | 2004 10 08 | 699 | 0.2+ | 0.8− | 2006 04 25 | 691 | 0.5+ | 0.1+ |
| 1993 11 09 | 691 | 0.0 | 0.1+ | 2006 04 07 | 691 | 0.9+ | 0.2+ | 2006 04 25 | 691 | 0.0 | 0.0 |
| 2004 10 07 | 699 | 1.2+ | 0.5+ | 2006 04 07 | 691 | 0.2+ | 0.2+ | 2006 05 05 | G96 | 0.7− | 0.1− |
| 2004 10 07 | 699 | 0.3− | 0.2− | 2006 04 07 | 691 | 0.1− | 0.9− | 2006 05 05 | G96 | 0.4− | 0.3− |
| 2004 10 07 | 699 | 0.3+ | 0.4− | 2006 04 20 | 703 | 0.5− | 1.5+ | 2006 05 05 | G96 | 0.3− | 0.6− |
| 2004 10 07 | 699 | 0.4+ | 0.7+ | 2006 04 20 | 703 | 0.6− | 0.4− | 2006 05 05 | G96 | 0.2+ | 1.2+ |

### 1994 $AB_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 207.31450 | | (2000.0) | | | |
| $n$ | 0.26879029 | $\omega$ | 294.99003 | | +0.54490329 | −0.83740041 |
| $a$ | 2.3779004 | $\Omega$ | 121.92468 | | +0.78638439 | +0.49260837 |
| $e$ | 0.1987137 | $i$ | 2.89769 | | +0.29099827 | +0.23684920 |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.2− | 0.0 | 1994 01 19 | 691 | 0.1+ | 0.1− | 2005 01 06 | 704 | 0.6+ | 0.2+ |
| 1994 01 08 | 691 | 0.5− | 0.0 | 1994 01 19 | 691 | 0.7− | 0.5− | 2005 01 06 | 704 | 0.3+ | 0.6+ |
| 1994 01 08 | 691 | 0.6+ | 0.2− | 1994 01 21 | 691 | 0.5+ | 0.3+ | 2005 01 06 | 704 | 0.2− | 0.4+ |
| 1994 01 13 | 691 | 0.5− | 0.1+ | 1994 01 21 | 691 | 0.1+ | 0.2+ | 2005 01 15 | 704 | 0.1+ | 0.4− |
| 1994 01 13 | 691 | 0.1− | 0.2− | 1994 01 21 | 691 | 0.4+ | 0.1+ | 2005 01 15 | 704 | 0.2− | 0.3+ |
| 1994 01 13 | 691 | 0.3− | 0.5− | 2004 12 19 | G96 | 1.0+ | 1.3+ | 2005 01 15 | 704 | 0.0 | 1.6+ |
| 1994 01 19 | 691 | 0.3+ | 0.0 | 2004 12 19 | G96 | 0.2− | 0.3− | 2005 01 15 | 704 | 0.8− | 0.1− |
| 1994 01 19 | 691 | 0.5+ | 0.1+ | 2004 12 19 | G96 | 0.1− | 0.2− | | | | |
| 1994 01 19 | 691 | 0.2− | 0.0 | 2004 12 19 | G96 | 0.1− | 0.4− | | | | |

### 1994 $AT_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.78712 | | (2000.0) | | | |
| $n$ | 0.25644506 | $\omega$ | 98.23440 | | −0.81374676 | −0.58064945 |
| $a$ | 2.4536154 | $\Omega$ | 46.27398 | | +0.51825596 | −0.74492768 |
| $e$ | 0.1363226 | $i$ | 2.04106 | | +0.26311019 | −0.32852545 |
| $P$ | 3.84 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.2− | 0.3− | 2002 03 16 | 704 | 0.1+ | 0.2+ | 2004 11 04 | 691 | 0.2− | 0.1+ |
| 1994 01 08 | 691 | 0.0 | 0.5− | 2002 04 15 | 704 | 0.5− | 0.4− | 2006 04 09 | 691 | 0.2+ | 0.4+ |
| 1994 01 08 | 691 | 0.1− | 0.8− | 2002 04 15 | 704 | 0.5− | 0.2− | 2006 04 09 | 691 | 0.2− | 0.5+ |
| 1994 01 11 | 691 | 0.7− | 0.3+ | 2002 04 15 | 704 | 1.7− | 0.4− | 2006 04 09 | 691 | 0.0 | 0.5+ |
| 1994 01 11 | 691 | 0.9+ | 0.0 | 2002 04 15 | 704 | 0.1+ | 0.0 | 2006 04 19 | 703 | 0.7− | 0.5+ |
| 1994 01 11 | 691 | 0.4+ | 0.5− | 2002 04 19 | 691 | 0.8+ | 0.0 | 2006 04 19 | 703 | 1.1+ | 0.7− |
| 1994 01 17 | 691 | 0.1− | 0.3+ | 2002 04 19 | 691 | 0.7+ | 0.1− | 2006 04 19 | 703 | 0.2+ | 0.1+ |
| 1994 01 17 | 691 | 0.1− | 0.6+ | 2002 04 19 | 691 | 0.9+ | 0.2+ | 2006 04 19 | 703 | 1.7− | 0.7− |
| 1994 01 17 | 691 | 1.1− | 0.1− | 2004 10 08 | 691 | 0.2+ | 0.4+ | 2006 05 05 | G96 | 0.2− | 1.4+ |
| 2000 11 17 | 691 | 0.0 | 0.2+ | 2004 10 08 | 691 | 0.1− | 0.5+ | 2006 05 05 | G96 | 0.1− | 0.3+ |
| 2000 11 17 | 691 | 0.1− | 0.5+ | 2004 10 08 | 691 | 0.1− | 0.4+ | 2006 05 05 | G96 | 0.5− | 0.4+ |
| 2000 11 17 | 691 | 0.1+ | 0.2+ | 2004 10 23 | 691 | 0.5− | 0.3+ | 2006 05 05 | G96 | 0.4+ | 0.8+ |
| 2002 03 16 | 704 | 0.5+ | 0.8+ | 2004 10 23 | 691 | 0.1− | 0.4+ | 2006 05 22 | G96 | 0.6− | 0.0 |
| 2002 03 16 | 704 | 0.5+ | 0.6+ | 2004 10 23 | 691 | 0.4− | 0.1+ | 2006 05 22 | G96 | 0.1− | 0.1− |
| 2002 03 16 | 704 | 0.3+ | 0.6+ | 2004 11 04 | 691 | 0.2+ | 0.1+ | 2006 05 22 | G96 | 0.8− | 0.2− |
| 2002 03 16 | 704 | 1.0+ | 0.4+ | 2004 11 04 | 691 | 0.3+ | 0.2− | 2006 05 22 | G96 | 0.3− | 0.0 |

### 1994 $CR_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.44736 | | (2000.0) | | | |
| $n$ | 0.23269586 | $\omega$ | 150.76444 | | −0.62124477 | −0.77914684 |
| $a$ | 2.6178431 | $\Omega$ | 337.31609 | | +0.67026221 | −0.47309341 |
| $e$ | 0.1253704 | $i$ | 12.51642 | | +0.40595997 | −0.41123330 |
| $P$ | 4.24 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 07 | 809 | 0.8+ | 0.3+ | 2001 12 23 | 704 | 0.3− | 1.0+ | 2005 11 20 | 703 | 2.2− | 0.7+ |
| 1994 02 07 | 809 | 0.7+ | 0.2+ | 2001 12 23 | 704 | 0.9− | 0.3− | 2005 11 20 | 703 | 1.4+ | 1.0+ |
| 1994 02 07 | 809 | 1.0− | 0.5− | 2004 08 15 | 644 | 0.9− | 0.1− | 2005 11 20 | 703 | 0.3+ | 1.2+ |
| 1994 02 09 | 809 | 0.3+ | 0.3− | 2004 08 15 | 644 | 0.0 | 0.1− | 2005 11 20 | 703 | 0.5− | 0.9+ |
| 1994 02 09 | 809 | 0.1− | 0.6− | 2004 08 15 | 644 | 0.0 | 0.3+ | 2005 11 26 | 704 | 0.2+ | 0.3− |
| 1994 02 09 | 809 | 0.3− | 0.1+ | 2005 10 31 | 703 | 0.3+ | 0.1− | 2005 11 26 | 704 | 0.2+ | 0.4− |
| 1994 02 12 | 809 | (0.3− | 3.6−) | 2005 10 31 | 703 | 0.0 | 0.9− | 2005 11 26 | 704 | 0.9− | 0.7+ |
| 1994 02 12 | 809 | (0.5− | 4.7−) | 2005 10 31 | 703 | 0.1− | 0.4− | 2005 12 02 | 703 | 0.3+ | 0.3− |
| 1994 02 12 | 809 | (1.5− | 3.2−) | 2005 10 31 | 703 | 0.2+ | 0.3+ | 2005 12 02 | 703 | 0.2+ | 0.7+ |
| 2000 08 31 | 691 | 0.2+ | 0.1− | 2005 11 10 | 703 | 0.4+ | 0.6− | 2005 12 24 | 704 | (1.2− | 3.7+) |
| 2000 08 31 | 691 | 0.1− | 0.0 | 2005 11 10 | 703 | 0.0 | 0.2+ | 2005 12 24 | 704 | 1.7+ | 1.0+ |
| 2000 08 31 | 691 | 0.1+ | 0.1− | 2005 11 10 | 703 | 0.2+ | 0.8− | 2005 12 24 | 704 | (4.1+ | 2.1−) |
| 2001 10 25 | 704 | 0.7− | 0.3+ | 2005 11 10 | 703 | 0.2− | 0.7− | 2006 02 02 | 703 | 0.1− | 0.4+ |
| 2001 10 25 | 704 | 0.3+ | 0.3− | 2005 11 13 | 703 | 0.3− | 1.3+ | 2006 02 02 | 703 | 0.1− | 0.9− |
| 2001 10 25 | 704 | 0.4+ | 0.2− | 2005 11 13 | 703 | 1.3− | 1.3− | 2006 02 02 | 703 | 0.0 | 1.3− |
| 2001 12 23 | 704 | 0.6− | 0.4− | 2005 11 13 | 703 | 0.4+ | 0.4− | 2006 02 02 | 703 | 0.8− | 0.1− |
| 2001 12 23 | 704 | 0.6− | 0.1− | 2005 11 13 | 703 | 0.5− | 0.6− | | | | |

### 1994 $EA_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 275.40341 | | (2000.0) | | | |
| $n$ | 0.18348145 | $\omega$ | 201.05734 | | +0.98676497 | −0.15361807 |
| $a$ | 3.0671941 | $\Omega$ | 167.43910 | | +0.16037487 | +0.97187507 |
| $e$ | 0.0636733 | $i$ | 13.81388 | | −0.02397498 | +0.17849466 |
| $P$ | 5.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 06 | 691 | 0.2− | 0.0 | 1994 03 11 | 691 | 0.2+ | 0.1− | 2002 10 04 | 645 | 0.0 | 0.1+ |
| 1994 03 06 | 691 | 0.2− | 0.1+ | 2000 05 05 | 645 | 0.0 | 0.1+ | 2002 10 15 | 644 | 0.1− | 0.5+ |
| 1994 03 06 | 691 | 0.2− | 0.2− | 2000 05 05 | 645 | 0.0 | 0.1+ | 2002 10 15 | 644 | 0.2+ | 0.8+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.1+ | 0.1− | 2002 09 29 | 608 | 0.4− | 0.4− | 2002 10 15 | 644 | 0.0 | 0.5+ |
| 1994 03 10 | 691 | (2.4− | 1.7−) | 2002 09 29 | 608 | 0.8− | 0.0 | 2005 03 11 | 691 | 0.1− | 0.7+ |
| 1994 03 11 | 691 | 0.1− | 0.1− | 2002 09 29 | 608 | 0.2− | 0.2− | 2005 03 11 | 691 | 0.1+ | 0.4+ |
| 1994 03 11 | 691 | 0.4+ | 0.1− | 2002 10 04 | 645 | 0.0 | 0.1+ | 2005 03 11 | 691 | 0.3+ | 0.2+ |

**1994 GD$_{11}$ = 1996 TB$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.35236 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22352494 | $\omega$ | 39.13797 | | +0.53386342 | | −0.84527906 |
| $a$ | 2.6889665 | $\Omega$ | 18.62822 | | +0.75729550 | | +0.46628148 |
| $e$ | 0.0911804 | $i$ | 3.98653 | | +0.37615605 | | +0.26093081 |
| $P$ | 4.41 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.4+ | 0.7+ | 1998 04 03 | 691 | 0.2− | 0.2− | 2005 11 12 | 691 | 0.4− | 0.1+ |
| 1994 04 06 | 691 | 0.2− | 0.4+ | 1998 04 03 | 691 | 0.3− | 0.0 | 2005 11 21 | 691 | 0.1+ | 0.5+ |
| 1994 04 11 | 691 | 0.3− | 0.7− | 1998 04 03 | 691 | 0.1− | 0.3− | 2005 11 21 | 691 | 0.3+ | 0.4+ |
| 1994 04 11 | 691 | 0.0 | 0.2+ | 2002 01 14 | 645 | 0.0 | 0.1− | 2005 11 21 | 691 | 0.1− | 0.4+ |
| 1994 04 11 | 691 | 0.5+ | 0.3− | 2002 01 14 | 645 | 0.0 | 0.1− | 2005 12 28 | 644 | 0.1− | 0.4+ |
| 1996 10 10 | 691 | 0.4+ | 0.4− | 2005 10 30 | G96 | 0.2+ | 0.1− | 2005 12 28 | 644 | 0.3− | 0.3+ |
| 1996 10 10 | 691 | 0.0 | 0.5− | 2005 10 30 | G96 | 0.0 | 0.2+ | 2005 12 28 | 644 | 0.4− | 0.3+ |
| 1996 10 10 | 691 | 0.4+ | 0.3− | 2005 10 30 | G96 | 0.4+ | 0.1− | 2005 12 28 | 644 | 0.4− | 0.4+ |
| 1996 10 11 | 691 | 0.4− | 0.4− | 2005 10 30 | G96 | 0.2+ | 0.2+ | 2005 12 28 | 644 | 0.1− | 0.2+ |
| 1996 10 11 | 691 | 0.1+ | 0.1− | 2005 11 12 | 691 | 0.2− | 0.3+ | 2005 12 28 | 644 | 0.3− | 0.1− |
| 1996 10 11 | 691 | 0.1+ | 0.2− | 2005 11 12 | 691 | 0.1− | 0.1+ | | | | |

**1994 JA$_6$ = 2003 UG$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.84100 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26603209 | $\omega$ | 295.95298 | | −0.85868460 | | −0.51071742 |
| $a$ | 2.3943081 | $\Omega$ | 213.38391 | | +0.49361746 | | −0.80171471 |
| $e$ | 0.1633557 | $i$ | 4.45706 | | +0.13784981 | | −0.31051771 |
| $P$ | 3.70 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 04 | 691 | 0.1− | 0.0 | 2003 10 25 | 691 | 0.6− | 0.6+ | 2005 04 05 | G96 | 0.1− | 0.3+ |
| 1994 05 04 | 691 | 0.8+ | 0.0 | 2003 10 25 | 691 | 0.3− | 0.4+ | 2005 04 05 | G96 | 0.1− | 0.1+ |
| 1994 05 04 | 691 | 0.5+ | 0.1− | 2003 10 25 | 691 | 0.0 | 0.5+ | 2005 04 17 | 691 | 0.2+ | 0.3+ |
| 1994 05 05 | 691 | 0.7− | 0.3+ | 2005 03 15 | G96 | 0.1− | 1.0+ | 2005 04 17 | 691 | 0.3+ | 0.3+ |
| 1994 05 05 | 691 | 0.4− | 0.3+ | 2005 03 15 | G96 | 0.2+ | 0.7+ | 2005 04 17 | 691 | 0.3+ | 0.5+ |
| 1994 05 05 | 691 | 0.0 | 0.2+ | 2005 03 15 | G96 | 0.4− | 0.0 | 2005 06 30 | 291 | 0.1− | 0.2+ |
| 2003 10 24 | 291 | 0.1− | 0.3+ | 2005 03 15 | G96 | 0.4− | 0.3+ | 2005 06 30 | 291 | 0.1− | 0.2+ |
| 2003 10 24 | 291 | 0.1+ | 0.4+ | 2005 04 05 | G96 | 0.3− | 0.3+ | 2005 06 30 | 291 | 0.2+ | 0.1− |
| 2003 10 24 | 291 | 0.1+ | 0.6+ | 2005 04 05 | G96 | 0.1− | 0.1+ | | | | |

**1994 RM$_{26}$ = 2005 XV$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.91089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27394448 | $\omega$ | 141.07444 | | +0.73365890 | | +0.67951451 |
| $a$ | 2.3479797 | $\Omega$ | 176.11776 | | −0.63112742 | | +0.68258432 |
| $e$ | 0.1820445 | $i$ | 1.82324 | | −0.25183883 | | +0.26895850 |
| $P$ | 3.60 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 11 | 809 | 0.4+ | 0.8+ | 2005 10 01 | G96 | 0.1+ | 0.4− | 2005 10 28 | G96 | 0.2− | 0.2− |
| 1994 08 11 | 809 | 0.1+ | 1.4+ | 2005 10 01 | G96 | 0.0 | 0.3− | 2005 11 29 | G96 | 0.4+ | 0.1+ |
| 1994 08 11 | 809 | 0.3− | 1.3+ | 2005 10 01 | G96 | 0.1− | 0.3− | 2005 11 29 | G96 | 0.4+ | 0.2+ |
| 1994 09 03 | 809 | (2.7− | 1.0−) | 2005 10 10 | 704 | 0.1− | 0.5+ | 2005 11 29 | G96 | 0.1− | 0.4+ |
| 1994 09 03 | 809 | (3.6− | 2.5−) | 2005 10 10 | 704 | 0.1− | 0.7− | 2005 11 29 | G96 | 1.1− | 0.5+ |
| 1994 09 03 | 809 | (3.0− | 2.4−) | 2005 10 10 | 704 | 0.4+ | 0.1+ | 2005 12 04 | G96 | 0.4+ | 0.4+ |
| 1994 09 04 | 809 | 0.6+ | 0.6− | 2005 10 10 | 704 | 0.5− | 0.1− | 2005 12 04 | G96 | 0.3− | 0.5+ |
| 1994 09 04 | 809 | 0.5− | 0.9− | 2005 10 28 | G96 | 0.1+ | 0.1+ | 2005 12 04 | G96 | 0.0 | 0.3+ |
| 1994 09 04 | 809 | 0.4− | 1.7− | 2005 10 28 | G96 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.2− | 0.1+ |
| 2005 10 01 | G96 | 0.2+ | 0.3− | 2005 10 28 | G96 | 0.5+ | 0.0 | | | | |

**1994 SS$_6$ = 2006 UG$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.44624 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17205707 | $\omega$ | 243.09099 | | +0.46498147 | | +0.88478801 |
| $a$ | 3.2015064 | $\Omega$ | 54.65139 | | −0.79833154 | | +0.43403076 |
| $e$ | 0.0750861 | $i$ | 2.15696 | | −0.38269961 | | +0.16960977 |
| $P$ | 5.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 1994 09 28 | 691 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 1994 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 1994 10 04 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 1994 10 04 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 1994 10 04 | 691 | 0.1− | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− |
| 1994 10 12 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 1994 10 12 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 1994 10 12 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.2− | | | | |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.4− | | | | |

**1994 SJ$_7$ = 2005 UN$_{327}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.12540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18747613 | $\omega$ | 321.23416 | | +0.94072154 | | +0.33829311 |
| $a$ | 3.0234681 | $\Omega$ | 19.03670 | | −0.28946680 | | +0.83840658 |
| $e$ | 0.2058723 | $i$ | 4.30956 | | −0.17678223 | | +0.42735486 |
| $P$ | 5.26 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.6+ | 0.2+ | 1994 10 04 | 691 | 0.1− | 0.0 | 2005 10 29 | 691 | 0.1− | 0.1− |
| 1994 09 28 | 691 | 0.3+ | 0.0 | 1994 10 04 | 691 | 0.0 | 0.3+ | 2005 10 30 | G96 | 0.0 | 0.1− |
| 1994 09 28 | 691 | 0.2+ | 0.3+ | 1994 10 06 | 691 | (3.8+ | 0.9+) | 2005 10 30 | G96 | 0.2+ | 0.1+ |
| 1994 09 29 | 691 | 0.4− | 0.1− | 1994 10 06 | 691 | (4.2+ | 0.9+) | 2005 10 30 | G96 | 0.1− | 0.3+ |
| 1994 09 29 | 691 | 0.4− | 0.0 | 1994 10 06 | 691 | (3.6+ | 1.0+) | 2005 10 30 | G96 | 0.3− | 0.0 |
| 1994 09 29 | 691 | 0.7− | 0.4− | 2005 10 29 | 691 | 0.2+ | 0.1+ | | | | |
| 1994 10 04 | 691 | 0.4+ | 0.2− | 2005 10 29 | 691 | 0.1+ | 0.3− | | | | |

**1994 SC$_{10}$ = 2006 TQ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.89888 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17166562 | $\omega$ | 187.12030 | | −0.91600408 | | +0.39808520 |
| $a$ | 3.2063714 | $\Omega$ | 16.60777 | | −0.35897062 | | −0.75810200 |
| $e$ | 0.0623611 | $i$ | 10.00281 | | −0.17909944 | | −0.51653608 |
| $P$ | 5.74 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.4+ | 0.8+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 17 | 691 | 0.4− | 0.5+ |
| 1994 09 28 | 691 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.5+ | 0.4− | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 1994 09 28 | 691 | 0.1+ | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.7− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 1994 10 04 | 691 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 1994 10 04 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.6+ | 0.5− | 2006 11 18 | G96 | 0.3− | 0.4− |
| 1994 10 11 | 691 | 0.3− | 0.8− | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 1994 10 11 | 691 | 0.3− | 0.4− | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 1994 10 11 | 691 | 0.5− | 0.7− | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2006 10 02 | G96 | 0.1+ | 0.6− | 2006 10 17 | 691 | 0.2− | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.1− |

### 1994 $SL_{11}$ = 2006 $WW_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 11.11098 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.17367490 | $\omega$ | 22.85486 | | | +0.61862971 | | −0.78448405 | | | |
| $a$ | 3.1815934 | $\Omega$ | 28.98409 | | | +0.70631162 | | +0.53110177 | | | |
| $e$ | 0.1958665 | $i$ | 5.13649 | | | +0.34412377 | | +0.32018070 | | | |
| $P$ | 5.68 | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 2 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.0 | 0.1+ | 1994 10 12 | 691 | 0.1− | 0.3+ | 2002 02 16 | 644 | 0.4+ | 1.2+ |
| 1994 09 29 | 691 | 0.2+ | 0.1+ | 1994 10 12 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 1994 09 29 | 691 | 0.3− | 0.4+ | 2000 10 26 | 691 | 0.2+ | 0.7− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 1994 10 06 | 691 | 0.7− | 0.4+ | 2000 10 26 | 691 | 0.4+ | 0.6− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 1994 10 06 | 691 | 0.1− | 0.4− | 2000 10 26 | 691 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1994 10 06 | 691 | 0.7+ | 0.2+ | 2002 02 16 | 644 | 0.3+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1994 10 12 | 691 | 0.3− | 0.1+ | 2002 02 16 | 644 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1− | 0.1+ |

### 1994 $TK_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 147.56932 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.25252033 | $\omega$ | 56.62160 | | | −0.51387578 | | +0.85785347 | | | |
| $a$ | 2.4789731 | $\Omega$ | 182.46847 | | | −0.81694270 | | −0.49091181 | | | |
| $e$ | 0.0831477 | $i$ | 5.82634 | | | −0.26179439 | | −0.15196390 | | | |
| $P$ | 3.90 | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 04 | 691 | 0.4− | 0.2− | 2004 01 29 | 704 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 1994 10 04 | 691 | 0.1+ | 0.3+ | 2004 01 29 | 704 | (1.5+ | 1.7−) | 2006 10 22 | 691 | 0.3− | 0.0 |
| 1994 10 11 | 691 | 0.4+ | 0.4+ | 2004 02 11 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.3− |
| 1994 10 11 | 691 | 0.3+ | 0.1+ | 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 1994 10 11 | 691 | 0.0 | 0.3+ | 2004 02 11 | 644 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 1994 10 12 | 691 | 0.1− | 0.5− | 2004 02 23 | 704 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 1994 10 12 | 691 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.8− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 1994 10 12 | 691 | 0.4− | 0.7− | 2004 02 23 | 704 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2004 01 23 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 01 23 | 704 | 0.3+ | 0.7− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 01 23 | 704 | 0.8− | 0.6+ | 2006 10 02 | G96 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.4+ |
| 2004 01 23 | 704 | 0.2+ | 0.7− | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2004 01 23 | 704 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.2+ | | | | |
| 2004 01 29 | 704 | (1.6− | 0.6+) | 2006 10 18 | 691 | 0.2+ | 0.1+ | | | | |

### 1994 $UT_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 289.57986 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.21018330 | $\omega$ | 38.68619 | | | +0.35215213 | | +0.93456552 | | | |
| $a$ | 2.8015857 | $\Omega$ | 251.98469 | | | −0.87143519 | | +0.30761424 | | | |
| $e$ | 0.0807537 | $i$ | 3.05948 | | | −0.34145218 | | +0.17877574 | | | |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 0 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.1− | 0.1+ | 2002 05 11 | 704 | 0.6− | 0.3− | 2003 10 19 | 645 | 0.0 | 0.0 |
| 1994 10 28 | 691 | 0.1+ | 0.5+ | 2002 05 11 | 704 | 0.1+ | 0.0 | 2003 10 20 | 691 | 0.1+ | 0.3+ |
| 1994 10 28 | 691 | 0.5− | 0.8+ | 2002 05 11 | 704 | 0.6+ | 0.9+ | 2003 10 20 | 691 | 0.2+ | 0.2+ |
| 1994 11 05 | 691 | 0.5+ | 0.1− | 2002 05 11 | 704 | 0.8− | 0.4+ | 2003 10 20 | 691 | 0.0 | 0.1+ |
| 1994 11 05 | 691 | 0.1+ | 0.3+ | 2002 05 11 | 704 | 0.8+ | 0.1+ | 2003 10 22 | 645 | 0.1− | 0.0 |
| 1994 11 05 | 691 | 0.0 | 0.1− | 2003 09 17 | 691 | 0.2− | 0.1+ | 2003 10 22 | 645 | 0.1+ | 0.1+ |
| 1994 11 10 | 691 | 0.1− | 0.1− | 2003 09 17 | 691 | 0.1− | 0.2+ | 2003 10 24 | 645 | 0.1+ | 0.0 |
| 1994 11 10 | 691 | 0.0 | 0.1− | 2003 09 17 | 691 | 0.4− | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.0 |
| 1994 11 10 | 691 | 0.5+ | 0.2− | 2003 09 27 | 704 | 0.4+ | 0.5+ | 2003 11 19 | 645 | 0.1− | 0.1− |
| 1995 12 29 | 691 | 0.1+ | 0.0 | 2003 09 27 | 704 | 0.5− | 0.5+ | 2003 11 19 | 645 | 0.1− | 0.1− |
| 1995 12 29 | 691 | 0.8− | 1.4+ | 2003 09 27 | 704 | 0.3+ | 0.2+ | 2006 04 08 | 691 | 0.1+ | 0.2− |
| 1995 12 29 | 691 | 0.1+ | 0.4+ | 2003 09 27 | 704 | 0.6+ | 0.5+ | 2006 04 08 | 691 | 0.1+ | 0.1+ |
| 2000 01 08 | 691 | 0.3+ | 0.5− | 2003 10 18 | 645 | 0.1− | 0.0 | 2006 04 08 | 691 | 0.5+ | 0.3+ |
| 2000 01 08 | 691 | 0.2+ | 0.5− | 2003 10 18 | 645 | 0.1− | 0.0 | | | | |
| 2000 01 08 | 691 | 0.2+ | 0.7− | 2003 10 19 | 645 | 0.0 | 0.1− | | | | |

### 1994 $WG_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 226.21283 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22307256 | $\omega$ | 238.64173 | | | +0.36475006 | | −0.93063789 | | | |
| $a$ | 2.6926007 | $\Omega$ | 190.09740 | | | +0.90119951 | | +0.36082397 | | | |
| $e$ | 0.0344109 | $i$ | 9.68826 | | | +0.23408725 | | +0.06098514 | | | |
| $P$ | 4.42 | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 2 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.2+ | 0.2+ | 1998 09 18 | 703 | 0.3+ | 0.9− | 2005 03 17 | 703 | 0.9+ | 1.1− |
| 1994 11 28 | 691 | 0.2+ | 0.0 | 1998 09 18 | 703 | 0.4+ | 0.4− | 2005 04 04 | 703 | 0.0 | 1.4+ |
| 1994 11 28 | 691 | 0.2+ | 0.0 | 2002 08 15 | 644 | 0.0 | 0.3− | 2005 04 04 | 703 | 1.1+ | 0.4− |
| 1994 12 01 | 691 | 0.8− | 1.3− | 2002 08 15 | 644 | 0.0 | 0.1+ | 2005 04 04 | 703 | 0.9− | 0.3− |
| 1994 12 01 | 691 | 0.8− | 0.2− | 2002 08 15 | 644 | 0.5+ | 0.1− | 2005 04 04 | 703 | 0.2+ | 1.0+ |
| 1994 12 01 | 691 | 0.0 | 0.3− | 2005 03 04 | 691 | 0.2− | 0.3+ | 2005 05 08 | G96 | 0.6− | 0.4− |
| 1994 12 03 | 691 | 0.4+ | 0.2+ | 2005 03 04 | 691 | 0.0 | 0.1+ | 2005 05 08 | G96 | 0.9− | 0.5− |
| 1994 12 03 | 691 | 0.5+ | 0.6+ | 2005 03 04 | 691 | 0.0 | 0.1+ | 2005 05 08 | G96 | 0.6− | 0.6− |
| 1994 12 03 | 691 | 0.3+ | 0.7+ | 2005 03 17 | 703 | 1.0− | 0.1+ | 2005 05 08 | G96 | 0.4− | 0.6− |
| 1998 09 18 | 703 | 1.4− | 0.7+ | 2005 03 17 | 703 | 0.8+ | 0.8− | | | | |
| 1998 09 18 | 703 | 0.0 | 1.2+ | 2005 03 17 | 703 | 1.1+ | 0.2− | | | | |

### 1994 XG

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 80.62066 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.49646567 | $\omega$ | 46.40454 | | | +0.13197039 | | +0.97883767 | | | |
| $a$ | 1.5795859 | $\Omega$ | 231.83717 | | | −0.95710556 | | +0.08477153 | | | |
| $e$ | 0.4982606 | $i$ | 11.47355 | | | −0.25793945 | | +0.18625413 | | | |
| $P$ | 1.99 | $H$ | 18.7 | $G$ | 0.15 | | $U$ | 5 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 02 | 691 | 0.1− | 0.2− | 1994 12 10 | 691 | 1.3− | 0.8+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 1994 12 02 | 691 | 0.2− | 0.1+ | 1994 12 10 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 1994 12 02 | 691 | 0.1− | 0.1+ | 1996 12 01 | 691 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.3− | 0.5+ |
| 1994 12 04 | 691 | 0.3+ | 0.4+ | 1996 12 01 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.5− | 0.3− |
| 1994 12 04 | 691 | 0.7+ | 0.3+ | 1996 12 01 | 691 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.3− |
| 1994 12 04 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.1− |
| 1994 12 08 | 691 | 0.4+ | 0.4− | 2006 11 17 | G96 | 0.6− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.6− |
| 1994 12 08 | 691 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.1− | 0.4− | 2006 11 22 | 691 | 0.7+ | 1.1+ |
| 1994 12 08 | 691 | 0.3+ | 0.5− | 2006 11 17 | G96 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.2+ | 0.4− |
| 1994 12 10 | 691 | 0.1+ | 0.6− | 2006 11 17 | G96 | 0.6+ | 0.3− | 2006 11 22 | 691 | 0.5− | 0.3− |

### 1995 $AF_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 310.33990 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22143366 | $\omega$ | 85.94631 | | | +0.96867162 | | −0.24059384 | | | |
| $a$ | 2.7058702 | $\Omega$ | 287.96696 | | | +0.19434041 | | +0.88870211 | | | |
| $e$ | 0.1298592 | $i$ | 3.71066 | | | +0.15461917 | | +0.39028600 | | | |
| $P$ | 4.45 | $H$ | 17.1 | $G$ | 0.15 | | $U$ | 5 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 08 | 691 | 0.5+ | 0.0 | 2002 08 28 | 644 | 0.1− | 0.5+ | 2002 09 13 | 644 | 0.0 | 0.1+ |
| 1995 01 08 | 691 | 0.3− | 0.4+ | 2002 08 28 | 644 | 0.3+ | 0.0 | 2002 09 17 | 644 | 0.2+ | 0.2− |
| 1995 01 08 | 691 | 0.2+ | 0.7+ | 2002 09 11 | 644 | 0.1− | 0.2− | 2002 09 17 | 644 | 0.5+ | 0.3− |
| 1995 01 09 | 691 | 0.3+ | 1.1− | 2002 09 11 | 644 | 0.0 | 0.2+ | 2002 09 17 | 644 | 0.5+ | 0.2− |
| 1995 01 09 | 691 | 0.4− | 0.2+ | 2002 09 11 | 644 | 0.1− | 0.0 | 2002 09 18 | 644 | 0.1− | 0.3+ |
| 1995 01 09 | 691 | 0.3− | 0.1− | 2002 09 13 | 644 | 0.0 | 0.1− | 2002 09 18 | 644 | 0.4− | 0.2− |
| 2002 08 28 | 644 | 0.9− | 0.1+ | 2002 09 13 | 644 | 0.1+ | 0.1+ | | | | |

**1995 $AN_2$ = 2006 $TH_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 308.73810 | | (2000.0) | | | |
| $n$ | 0.23244483 | $\omega$ | 317.62671 | | +0.28470205 | −0.95569801 |
| $a$ | 2.6197275 | $\Omega$ | 115.70712 | | +0.90025381 | +0.23976618 |
| $e$ | 0.0685821 | $i$ | 4.75816 | | +0.32937489 | +0.17074393 |
| $P$ | 4.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 08 | 691 | 0.1+ | 0.1+ | 2000 03 09 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.4+ |
| 1995 01 08 | 691 | 0.1− | 0.2+ | 2000 03 09 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 1995 01 08 | 691 | 0.1− | 0.1− | 2004 03 26 | 691 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.3+ |
| 1995 01 09 | 691 | 0.0 | 0.1− | 2004 03 26 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.5− | 0.2− |
| 1995 01 09 | 691 | 0.4− | 0.3− | 2004 03 26 | 691 | 0.6− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.3+ |
| 1995 01 09 | 691 | 0.1+ | 0.0 | 2004 04 13 | 291 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2+ |
| 1995 01 23 | 691 | 0.3+ | 0.4− | 2004 04 13 | 291 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.2+ |
| 1995 01 23 | 691 | 0.1− | 0.3+ | 2004 04 13 | 291 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.2+ |
| 1995 01 23 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.7+ | 2006 10 04 | G96 | 0.7− | 0.4+ |
| 2000 03 09 | 691 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.3+ | 0.4+ | | | | |

**1995 $BB_5$ = 1999 $FZ_{89}$ = 2006 $CG_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.66414 | | (2000.0) | | | |
| $n$ | 0.27149725 | $\omega$ | 43.44745 | | −0.95552866 | −0.29332149 |
| $a$ | 2.3620681 | $\Omega$ | 119.47245 | | +0.26009305 | −0.88691826 |
| $e$ | 0.1193038 | $i$ | 2.00470 | | +0.13898412 | −0.35684522 |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 08 | 691 | 0.1− | 0.3− | 1999 03 21 | 645 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.1− | 0.3− |
| 1995 01 08 | 691 | 1.4− | 0.7− | 1999 03 22 | 645 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.2− | 0.1− |
| 1995 01 08 | 691 | 0.1+ | 0.5− | 1999 03 22 | 645 | 0.0 | 0.0 | 2006 02 02 | 691 | 0.3+ | 0.4+ |
| 1995 01 09 | 691 | 0.7+ | 0.7− | 2005 12 06 | G96 | 0.1+ | 0.1+ | 2006 02 02 | 691 | 0.2+ | 0.3+ |
| 1995 01 09 | 691 | (0.4+ | 2.2−) | 2005 12 06 | G96 | 0.6+ | 0.0 | 2006 02 02 | 691 | 0.2+ | 0.5+ |
| 1995 01 09 | 691 | (5.2+ | 3.2+) | 2005 12 06 | G96 | 0.7+ | 0.1+ | 2006 02 04 | 703 | 0.6− | 0.2− |
| 1995 01 23 | 691 | 0.8+ | 0.2+ | 2005 12 06 | G96 | 0.6+ | 0.0 | 2006 02 04 | 703 | 0.5− | 0.1− |
| 1995 01 23 | 691 | 0.4+ | 0.1+ | 2006 01 05 | G96 | 0.5− | 0.0 | 2006 02 04 | 703 | 1.3− | 0.7+ |
| 1995 01 23 | 691 | 0.6+ | 0.5+ | 2006 01 05 | G96 | 0.4− | 0.0 | 2006 02 04 | 703 | 0.4+ | 0.7+ |
| 1995 01 29 | 691 | 0.3− | 0.0 | 2006 01 05 | G96 | 0.2− | 0.0 | 2006 02 07 | G96 | 0.1+ | 0.1+ |
| 1995 01 29 | 691 | 0.1− | 0.1− | 2006 01 05 | G96 | 0.1− | 0.1− | 2006 02 07 | G96 | 0.2+ | 0.1+ |
| 1995 01 29 | 691 | 0.9− | 0.4+ | 2006 01 22 | G96 | 0.2− | 0.1− | 2006 02 07 | G96 | 0.4+ | 0.2− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.0 | 0.4− | 2006 02 07 | G96 | 0.2+ | 0.1− |

**1995 $BG_{15}$ = 2006 $UB_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.83752 | | (2000.0) | | | |
| $n$ | 0.24347601 | $\omega$ | 343.16738 | | +0.45081206 | −0.89174606 |
| $a$ | 2.5399895 | $\Omega$ | 80.02212 | | +0.82350824 | +0.39844365 |
| $e$ | 0.1321107 | $i$ | 2.29650 | | +0.34438736 | +0.21454984 |
| $P$ | 4.05 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.4− | 0.9− | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.5+ |
| 1995 01 29 | 691 | 0.7+ | 0.9+ | 2004 05 13 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.2+ |
| 1995 01 29 | 691 | 0.9+ | 0.4− | 2006 10 22 | G96 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.3+ |
| 1995 01 31 | 691 | 0.6+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.4+ |
| 1995 01 31 | 691 | 0.5− | 0.3− | 2006 10 22 | G96 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 1995 01 31 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.6− | 0.2+ | 2006 11 27 | G96 | 0.4− | 0.2+ |
| 1995 02 05 | 691 | 0.6− | 0.0 | 2006 10 29 | G96 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.4+ |
| 1995 02 05 | 691 | 0.6− | 0.1− | 2006 10 29 | G96 | 0.5+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 1995 02 05 | 691 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.6+ | 0.2+ | | | | |
| 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.3− | 0.2+ | | | | |

**1995 $CZ_3$ = 2006 $UN_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.70412 | | (2000.0) | | | |
| $n$ | 0.22769785 | $\omega$ | 191.54395 | | +0.94577494 | +0.31827253 |
| $a$ | 2.6560124 | $\Omega$ | 149.64953 | | −0.28685960 | +0.91213398 |
| $e$ | 0.2544976 | $i$ | 7.37986 | | −0.15238549 | +0.25829093 |
| $P$ | 4.33 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.8+ | 0.5− | 2006 09 30 | 699 | 0.5− | 1.1+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 1995 02 01 | 691 | 0.5− | 0.1+ | 2006 09 30 | 699 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 1995 02 01 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.9+ |
| 1995 02 02 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 10 22 | 703 | 0.7− | 0.4− |
| 1995 02 02 | 691 | 0.4− | 0.3+ | 2006 09 30 | 699 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 1995 02 02 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1995 02 07 | 691 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1995 02 07 | 691 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 1995 02 07 | 691 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2004 02 18 | 291 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.8+ | 0.7− |
| 2004 02 18 | 291 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.5− | 2006 11 13 | 703 | 0.4− | 1.1− |
| 2004 02 18 | 291 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 13 | 703 | 0.5− | 0.3− |
| 2006 09 30 | 699 | 0.1− | 1.4+ | 2006 10 16 | 703 | 0.6− | 0.5− | | | | |

**1995 $CA_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.52507 | | (2000.0) | | | |
| $n$ | 0.26258566 | $\omega$ | 313.55432 | | −0.47980620 | −0.87729247 |
| $a$ | 2.4152127 | $\Omega$ | 165.10517 | | +0.81783169 | −0.45215389 |
| $e$ | 0.1270013 | $i$ | 2.67513 | | +0.31770636 | −0.16098067 |
| $P$ | 3.75 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.1+ | 0.0 | 2001 10 19 | 691 | 0.1+ | 0.2− | 2001 11 20 | 704 | 0.0 | 0.1+ |
| 1995 02 01 | 691 | 0.1+ | 0.0 | 2001 10 19 | 691 | 0.0 | 0.2− | 2001 11 20 | 704 | 0.1− | 0.2+ |
| 1995 02 01 | 691 | 0.2+ | 0.0 | 2001 10 19 | 691 | 0.3+ | 0.2− | 2005 11 22 | 691 | 0.1+ | 0.2− |
| 1995 02 02 | 691 | 0.1− | 0.1+ | 2001 10 24 | 704 | 0.2− | 1.1+ | 2005 11 22 | 691 | 0.2+ | 0.1− |
| 1995 02 02 | 691 | 0.4− | 0.2+ | 2001 10 24 | 704 | 0.4+ | 0.5+ | 2005 11 22 | 691 | 0.1+ | 0.1− |
| 1995 02 02 | 691 | 0.4− | 0.1+ | 2001 10 24 | 704 | 0.6− | 0.0 | 2005 12 05 | 691 | 0.2− | 0.0 |
| 1995 02 07 | 691 | 0.1+ | 0.3− | 2001 10 24 | 704 | 1.1− | 0.5+ | 2005 12 05 | 691 | 0.1− | 0.1+ |
| 1995 02 07 | 691 | 0.3+ | 0.0 | 2001 11 20 | 704 | 0.1− | 0.4+ | 2005 12 05 | 691 | 0.1− | 0.1+ |
| 1995 02 07 | 691 | 0.1+ | 0.3− | 2001 11 20 | 704 | 0.1− | 0.1− | | | | |

**1995 $FE_3$ = 2006 $ST_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.55109 | | (2000.0) | | | |
| $n$ | 0.22382933 | $\omega$ | 38.44502 | | +0.47593748 | −0.87855623 |
| $a$ | 2.6865281 | $\Omega$ | 23.21811 | | +0.77952876 | +0.40020009 |
| $e$ | 0.0665456 | $i$ | 5.86431 | | +0.40720809 | +0.26072751 |
| $P$ | 4.40 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.3− | 0.4− | 2006 09 28 | G98 | 0.4− | 1.0− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1995 03 23 | 691 | 0.1− | 0.7+ | 2006 09 30 | G98 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 1995 03 23 | 691 | 0.4− | 0.2− | 2006 09 30 | G98 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 1995 03 29 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G98 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 1995 03 29 | 691 | 0.6+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 1995 03 29 | 691 | 0.3− | 0.7− | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.4− |
| 1995 04 04 | 691 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 1995 04 04 | 691 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.3− |
| 1995 04 04 | 691 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2006 09 18 | 691 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.3− |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2006 09 26 | G98 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2006 09 26 | G98 | 0.7+ | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 26 | G98 | 0.1− | 0.6− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2006 09 26 | G98 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2006 09 26 | G98 | 0.1+ | 0.5− | 2006 10 19 | G98 | 0.0 | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2006 09 26 | G98 | 0.2− | 0.1− | 2006 10 19 | G98 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2006 09 26 | G98 | 0.2− | 0.2+ | 2006 10 19 | G98 | 0.6+ | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.5+ |
| 2006 09 26 | G98 | 0.2+ | 0.2− | 2006 10 19 | G98 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2006 09 26 | G98 | 0.1− | 0.4− | 2006 10 19 | G98 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2006 09 26 | G98 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.3+ | 1.3− |
| 2006 09 28 | G98 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.5+ | 2006 11 16 | 691 | 0.3− | 0.1− |
| 2006 09 28 | G98 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.5+ |
| 2006 09 28 | G98 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.3+ | | | | |

### 1995 $FA_4$ = 2006 $RE_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.15919 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21894783 | $\omega$ | 249.50765 | | −0.16127957 | | +0.98674579 |
| $a$ | 2.7263124 | $\Omega$ | 11.25607 | | −0.86778635 | | −0.13313428 |
| $e$ | 0.0184075 | $i$ | 5.27178 | | −0.47003802 | | −0.09277935 |
| $P$ | 4.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.2+ | 0.3− | 2004 03 14 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 691 | 0.0 | 0.4+ |
| 1995 03 23 | 691 | 0.4+ | 0.6− | 2004 03 14 | 691 | 0.1− | 0.0 | 2006 09 29 | 691 | 0.0 | 0.3+ |
| 1995 03 23 | 691 | 0.5+ | 0.6− | 2006 09 14 | 691 | 0.2− | 0.2− | 2006 09 29 | 691 | 0.4− | 0.3+ |
| 1995 03 29 | 691 | 0.1− | 0.6− | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 10 03 | 691 | 0.5+ | 0.2+ |
| 1995 03 29 | 691 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 1995 03 29 | 691 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.2+ | 0.0 |
| 1995 04 04 | 691 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.5− | 0.4− |
| 1995 04 04 | 691 | 0.6− | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 1995 04 04 | 691 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.8+ | 0.8− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | (0.8+ | 2.0+) | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | (0.7+ | 1.8−) | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2004 02 23 | 704 | 1.0− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2004 02 23 | 704 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.7− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2004 03 14 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.6− | | | | |

### 1995 $FU_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.83425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22629253 | $\omega$ | 168.50715 | | −0.49164906 | | +0.86683083 |
| $a$ | 2.6669973 | $\Omega$ | 71.99627 | | −0.80569324 | | −0.41667184 |
| $e$ | 0.1345745 | $i$ | 5.00548 | | −0.33036283 | | −0.27384098 |
| $P$ | 4.36 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.0 | 0.1+ | 1995 04 06 | 691 | 0.4− | 0.1− | 2004 05 12 | 699 | 0.1+ | 1.0+ |
| 1995 03 25 | 691 | 0.5− | 0.1− | 2004 04 12 | 691 | 0.0 | 0.3− | 2004 05 12 | 699 | 0.4− | 0.4− |
| 1995 03 25 | 691 | 0.3+ | 1.0+ | 2004 04 12 | 691 | 0.1+ | 0.4− | 2004 05 12 | 699 | 0.3+ | 0.2+ |
| 1995 03 26 | 691 | 0.6+ | 0.1− | 2004 04 12 | 691 | 0.2− | 0.3− | 2004 05 21 | 704 | 0.4+ | 0.4− |
| 1995 03 26 | 691 | 0.1+ | 0.6− | 2004 04 21 | 691 | 0.1+ | 0.3+ | 2004 05 21 | 704 | 0.9+ | 0.1− |
| 1995 03 26 | 691 | 0.0 | 0.2+ | 2004 04 21 | 691 | 0.1+ | 0.3+ | 2004 05 21 | 704 | 1.2− | 0.0 |
| 1995 04 06 | 691 | 0.0 | 0.2− | 2004 04 21 | 691 | 0.1− | 0.5+ | | | | |
| 1995 04 06 | 691 | 0.2− | 0.2− | 2004 05 12 | 699 | 0.1+ | 0.7− | | | | |

### 1995 $FB_{15}$ = 2006 $TS_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.40825 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21820264 | $\omega$ | 303.16519 | | +0.97713859 | | +0.19352233 |
| $a$ | 2.7325160 | $\Omega$ | 45.84952 | | −0.12993885 | | +0.87133153 |
| $e$ | 0.0415287 | $i$ | 7.04724 | | −0.16827380 | | +0.45092180 |
| $P$ | 4.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 1995 03 27 | 691 | 0.1+ | 0.9− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 1995 03 27 | 691 | 0.7− | 0.8− | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.7− | 1.0− |
| 1995 04 01 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | (2.3+ | 1.0−) |
| 1995 04 01 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 1995 04 01 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.1− |
| 1995 04 08 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.4− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 1995 04 08 | 691 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.4− | 0.2− |
| 1995 04 08 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.6+ | 0.0 | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.2− | 2006 11 27 | 703 | 1.4− | 0.1− |
| 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | (1.8− | 0.1+) |
| 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.9− | 1.2+ |

### 1995 $HO_3$ = 2006 $SS_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.60084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28636243 | $\omega$ | 227.43152 | | +0.67522978 | | +0.73407593 |
| $a$ | 2.2796002 | $\Omega$ | 85.19004 | | −0.65377962 | | +0.64087944 |
| $e$ | 0.1832269 | $i$ | 4.14880 | | −0.34152151 | | +0.22451298 |
| $P$ | 3.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.0 | 0.3− | 2002 06 16 | 644 | (1.0+ | 1.6+) | 2006 09 30 | 704 | 0.2+ | 0.1− |
| 1995 04 26 | 691 | 0.4+ | 0.0 | 2003 11 29 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.3− |
| 1995 04 26 | 691 | 0.3+ | 0.0 | 2003 11 29 | 691 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.0 |
| 1995 05 01 | 691 | 0.6+ | 0.0 | 2003 11 29 | 691 | 0.4− | 0.3+ | 2006 09 30 | 703 | 1.3− | 0.2+ |
| 1995 05 01 | 691 | 0.1− | 0.1− | 2003 12 29 | 691 | 0.3− | 0.6+ | 2006 09 30 | 704 | 0.3+ | 0.7+ |
| 1995 05 01 | 691 | 0.5− | 0.2+ | 2003 12 29 | 691 | 0.5+ | 0.5+ | 2006 09 30 | 704 | 0.3+ | 1.3+ |
| 1995 05 04 | 691 | 0.7− | 0.2− | 2003 12 29 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.5+ |
| 1995 05 04 | 691 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.4− | 0.3− | 2006 10 16 | 703 | 1.2− | 0.4+ |
| 1995 05 04 | 691 | 0.1− | 0.4+ | 2006 09 16 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 1.1− | 0.2− |
| 2002 05 18 | 644 | 0.4+ | 1.3+ | 2006 09 16 | 704 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.9− | 0.4+ |
| 2002 05 18 | 644 | 0.2+ | 1.4+ | 2006 09 18 | 703 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 05 18 | 644 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 06 11 | 644 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 06 11 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 06 11 | 644 | 0.9+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 06 11 | 644 | 0.5+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2002 06 11 | 644 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.7− |
| 2002 06 11 | 644 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.7+ | 0.6− | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2002 06 16 | 644 | (0.8+ | 1.7+) | 2006 09 30 | 703 | 0.7+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.7− |
| 2002 06 16 | 644 | (1.0+ | 1.9+) | 2006 09 30 | 703 | 0.1− | 0.8− | 2006 11 24 | G96 | 0.1− | 0.2− |

### 1995 $KK_3$ = 2005 $CP_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.14333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17872892 | $\omega$ | 241.86283 | | +0.48661090 | | +0.87200532 |
| $a$ | 3.1213287 | $\Omega$ | 57.35211 | | −0.77779691 | | +0.46009887 |
| $e$ | 0.0531641 | $i$ | 3.61374 | | −0.39779618 | | +0.16708007 |
| $P$ | 5.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.0 | 0.0 | 2002 09 28 | 608 | 1.6− | 0.5+ | 2006 02 04 | 691 | 0.5+ | 0.1− |
| 1991 09 30 | 691 | 0.1− | 0.2+ | 2002 09 28 | 608 | 1.2− | 0.7− | 2006 02 04 | 691 | 0.6− | 0.5+ |
| 1991 09 30 | 691 | 0.8− | 0.6+ | 2002 10 05 | 704 | 0.4+ | 0.8+ | 2006 02 04 | 691 | 0.2− | 0.2+ |
| 1995 05 25 | 691 | 0.3+ | 0.6+ | 2002 10 05 | 704 | 0.7+ | 0.3− | 2006 04 09 | 691 | 0.2+ | 0.0 |
| 1995 05 25 | 691 | 0.4+ | 0.1− | 2002 10 05 | 704 | 0.2− | 0.8− | 2006 04 09 | 691 | 0.0 | 0.1+ |
| 1995 05 31 | 691 | (2.2+ | 0.1−) | 2002 10 05 | 704 | 1.1+ | 0.7+ | 2006 04 09 | 691 | 0.2+ | 0.0 |
| 1995 05 31 | 691 | (2.9+ | 0.7−) | 2005 02 03 | 704 | (2.3+ | 2.5+) | 2006 04 28 | 807 | 0.6− | 0.1+ |
| 2002 09 04 | 699 | 1.8− | 1.1+ | 2005 02 03 | 704 | 1.3+ | 1.5+ | 2006 04 28 | 807 | 0.5− | 0.1+ |
| 2002 09 04 | 699 | 1.0+ | 0.5+ | 2005 02 03 | 704 | 1.7+ | 0.2− | 2006 05 06 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 2.7+ | 0.1+ | 2005 02 03 | 704 | 0.4+ | 0.6+ | 2006 05 06 | 691 | 0.2− | 0.0 |
| 2002 09 04 | 699 | 2.4+ | 2.3+ | 2005 02 03 | 704 | 0.8+ | 1.6+ | 2006 05 06 | 691 | 0.2+ | 0.1+ |
| 2002 09 15 | 608 | 1.2− | 0.7+ | 2005 02 09 | G96 | 0.4− | 0.5+ | 2006 05 20 | G96 | 0.5− | 0.6− |
| 2002 09 15 | 608 | 0.6− | 0.8+ | 2005 02 09 | G96 | 0.2− | 0.9+ | 2006 05 20 | G96 | 0.4− | 0.1− |
| 2002 09 15 | 608 | 0.9− | 0.2+ | 2005 02 09 | G96 | 0.4− | 0.7+ | 2006 05 20 | G96 | 0.7− | 0.3− |
| 2002 09 28 | 608 | 1.3− | 0.2− | 2005 02 09 | G96 | 0.4− | 0.5+ | 2006 05 20 | G96 | 0.5− | 0.3− |

**1995 NA$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.25595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26818730 | $\omega$ | 152.66183 | | +0.16741127 | +0.98059224 | |
| $a$ | 2.3814634 | $\Omega$ | 126.80131 | | −0.92621824 | +0.19189521 | |
| $e$ | 0.1449059 | $i$ | 7.32149 | | −0.33777690 | −0.04018821 | |
| $P$ | 3.68 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 03 | 691 | 0.2− | 0.1+ | 2003 09 22 | 691 | 0.4+ | 0.2− | 2006 04 24 | 691 | 0.1− | 0.3+ |
| 1995 06 03 | 691 | 0.8− | 0.2+ | 2003 09 22 | 691 | 0.2− | 0.0 | 2006 05 06 | 691 | 0.1+ | 0.4− |
| 1995 07 01 | 691 | 0.3+ | 0.7− | 2003 09 22 | 691 | 0.2− | 0.0 | 2006 05 06 | 691 | 0.1+ | 0.1+ |
| 1995 07 01 | 691 | 0.1+ | 0.6− | 2003 09 22 | 691 | 0.2+ | 0.2− | 2006 05 06 | 691 | 0.0 | 0.2− |
| 1995 07 01 | 691 | 0.1+ | 0.4− | 2003 09 22 | 691 | 0.0 | 0.0 | 2006 05 26 | 703 | 1.0− | 0.2+ |
| 1995 07 04 | 691 | 0.0 | 0.2− | 2003 09 22 | 691 | 0.1+ | 0.1+ | 2006 05 26 | 703 | 0.3− | 0.4+ |
| 1995 07 04 | 691 | 0.2+ | 0.6− | 2006 02 02 | 691 | 0.3+ | 0.5+ | 2006 06 23 | 691 | 0.2+ | 0.1+ |
| 1995 07 04 | 691 | 0.0 | 0.5− | 2006 02 02 | 691 | 0.1+ | 1.0+ | 2006 06 23 | 691 | 0.2+ | 0.1+ |
| 1999 07 20 | 691 | 0.2− | 0.6+ | 2006 02 02 | 691 | 0.4− | 0.2+ | 2006 06 23 | 691 | 0.1+ | 0.2+ |
| 1999 07 20 | 691 | 0.1− | 0.8+ | 2006 04 24 | 691 | 0.2+ | 0.0 | | | | |
| 1999 07 20 | 691 | 0.0 | 0.2+ | 2006 04 24 | 691 | 0.1+ | 0.1+ | | | | |

**1995 OP$_4$ = 2006 SA$_{365}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.53857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18670842 | $\omega$ | 57.20432 | | +0.89957764 | −0.43118323 | |
| $a$ | 3.0317505 | $\Omega$ | 328.17986 | | +0.34345538 | +0.79677784 | |
| $e$ | 0.0966927 | $i$ | 7.58303 | | +0.26981192 | +0.42335103 | |
| $P$ | 5.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.0 | 0.9+ | 2006 10 04 | G96 | 0.2+ | 0.4− |
| 1995 07 22 | 691 | 0.6− | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.4− |
| 1995 07 22 | 691 | 0.6− | 0.0 | 2006 09 16 | 703 | 0.4− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 1995 07 27 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.4− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 1995 07 27 | 691 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.2+ | 2006 10 19 | 644 | 0.7+ | 0.4+ |
| 1995 07 27 | 691 | 1.2+ | 1.0− | 2006 09 30 | 703 | 0.9− | 0.0 | 2006 10 19 | 644 | 0.5+ | 0.0 |
| 1995 08 03 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 1995 08 03 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | (1.6− | 0.1+) | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 1995 08 03 | 691 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.3− |

**1995 OW$_4$ = 2006 RU$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.05730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27236651 | $\omega$ | 175.68998 | | +0.64042442 | +0.76422795 | |
| $a$ | 2.3570398 | $\Omega$ | 134.11074 | | −0.70778184 | +0.62581512 | |
| $e$ | 0.1982426 | $i$ | 6.09523 | | −0.29816343 | +0.15592009 | |
| $P$ | 3.62 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.9+ | 2006 09 30 | 704 | 0.6− | 0.8+ |
| 1995 07 22 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.5+ | 0.7+ |
| 1995 07 22 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 1995 07 27 | 691 | 0.3− | 0.5− | 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 09 30 | 704 | 0.3+ | 1.4+ |
| 1995 07 27 | 691 | 0.3+ | 0.5− | 2006 09 18 | 699 | 1.0+ | 0.4+ | 2006 10 16 | 703 | 1.0+ | 0.0 |
| 1995 07 27 | 691 | 0.3− | 0.5− | 2006 09 18 | 699 | 1.4+ | 0.7+ | 2006 10 16 | 703 | (1.6− | 1.8−) |
| 1995 08 01 | 691 | 0.7+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.9− | 0.4− |
| 1995 08 01 | 691 | 0.8− | 0.6+ | 2006 09 18 | 699 | (2.4+ | 1.0−) | 2006 10 16 | 703 | 0.4+ | 0.4+ |
| 1995 08 01 | 691 | 0.6+ | 0.4+ | 2006 09 22 | 704 | 0.8− | 0.0 | 2006 10 22 | 703 | 0.7− | 0.2− |
| 2006 08 23 | 644 | 0.4+ | 0.3− | 2006 09 22 | 704 | 1.1− | 0.3− | 2006 10 22 | 703 | 0.3− | 0.9− |
| 2006 08 23 | 644 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 1.2− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.4− |
| 2006 08 23 | 644 | 0.1+ | 0.4− | 2006 09 22 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 1.0− | 0.9− |
| 2006 09 12 | 703 | 0.7− | 0.1− | 2006 09 26 | 703 | 0.5+ | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2006 09 12 | 703 | 0.3− | 0.6+ | 2006 09 26 | 703 | 0.8+ | 0.5− | 2006 10 23 | 644 | 0.5+ | 0.6+ |
| 2006 09 12 | 703 | (2.6− | 0.3−) | 2006 09 26 | 703 | 0.2− | 0.8− | 2006 10 23 | 644 | 0.5+ | 0.0 |
| 2006 09 12 | 703 | 0.4− | 0.9+ | 2006 09 26 | 703 | 0.7+ | 0.5− | | | | |

**1995 OY$_5$ = 2006 UG$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.69110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18736116 | $\omega$ | 197.55086 | | +0.86418387 | +0.50144777 | |
| $a$ | 3.0247048 | $\Omega$ | 132.27914 | | −0.45463644 | +0.81362394 | |
| $e$ | 0.1974887 | $i$ | 3.22860 | | −0.21561989 | +0.29422137 | |
| $P$ | 5.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 1995 07 22 | 691 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.4− |
| 1995 07 22 | 691 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.5+ |
| 1995 07 27 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1995 07 27 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 01 | G96 | 0.9+ | 0.1+ |
| 1995 07 27 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.2− | 0.1− |
| 1995 08 01 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.1+ |
| 1995 08 01 | 691 | 0.6− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2006 10 03 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.5+ | 0.2+ | | | | |

**1995 OW$_{11}$ = 2006 QZ$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.25527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17951798 | $\omega$ | 358.07688 | | +0.87550676 | +0.47800041 | |
| $a$ | 3.1121755 | $\Omega$ | 333.00607 | | −0.44122647 | +0.73115317 | |
| $e$ | 0.1559290 | $i$ | 8.96557 | | −0.19699524 | +0.48675522 | |
| $P$ | 5.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.2− | 0.2− | 1995 08 03 | 691 | 0.1+ | 0.3− | 2006 08 27 | 691 | 0.3− | 0.2− |
| 1995 07 22 | 691 | 0.1− | 0.0 | 1995 08 03 | 691 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.3− | 0.1− |
| 1995 07 22 | 691 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.2+ |
| 1995 07 27 | 691 | 0.1− | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 1995 07 27 | 691 | 0.0 | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 1995 07 27 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.0 | | | | |
| 1995 08 03 | 691 | 0.1− | 0.3− | 2006 08 27 | 691 | 0.0 | 0.0 | | | | |

**1995 OE$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.92362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21889362 | $\omega$ | 142.86015 | | −0.38738759 | −0.91586876 | |
| $a$ | 2.7267625 | $\Omega$ | 329.51689 | | +0.78805779 | −0.26962132 | |
| $e$ | 0.0196949 | $i$ | 11.99522 | | +0.47843053 | −0.29747059 | |
| $P$ | 4.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.2+ | 0.1− | 1995 08 03 | 691 | 0.1− | 0.1+ | 2004 08 12 | 704 | 0.2− | 0.3− |
| 1995 07 22 | 691 | 0.3− | 0.1+ | 2002 01 12 | 644 | 0.2− | 0.1+ | 2004 08 22 | 691 | 0.4− | 0.1− |
| 1995 07 22 | 691 | 0.3− | 0.4− | 2002 01 12 | 644 | 0.0 | 0.1− | 2004 08 22 | 691 | 0.2− | 0.1+ |
| 1995 07 27 | 691 | 0.4+ | 0.2+ | 2002 01 12 | 644 | 0.3+ | 0.1+ | 2004 08 22 | 691 | 0.0 | 0.2− |
| 1995 07 27 | 691 | 0.2+ | 0.1− | 2004 08 12 | 704 | 0.4− | 1.5+ | 2004 09 10 | 691 | 0.4+ | 0.1− |
| 1995 07 27 | 691 | 0.4+ | 0.3+ | 2004 08 12 | 704 | 0.9− | 0.9+ | 2004 09 10 | 691 | 0.0 | 0.4+ |
| 1995 08 03 | 691 | 0.3− | 0.2− | 2004 08 12 | 704 | 0.0 | 1.2− | 2004 09 10 | 691 | 0.2+ | 0.1− |
| 1995 08 03 | 691 | 0.2− | 0.1+ | 2004 08 12 | 704 | 0.7+ | 1.0− | | | | |

**1995 OB$_{14}$ = 1999 TW$_{78}$ = 2006 SE$_{67}$**

Id. M. E. Sansaturio, Minor Planet Center

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.76467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27989098 | $\omega$ | 324.25961 | | −0.85071686 | −0.52558207 | |
| $a$ | 2.3146044 | $\Omega$ | 184.05013 | | +0.50149612 | −0.80780788 | |
| $e$ | 0.0847461 | $i$ | 5.40785 | | +0.15742447 | −0.26685185 | |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 23 | 691 | 0.0 | 0.5− | 2005 05 16 | G96 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.7+ |
| 1995 07 23 | 691 | 0.0 | 0.5− | 2005 06 11 | 691 | 0.4+ | 0.5+ | 2006 09 27 | 691 | 0.3+ | 0.5+ |
| 1995 07 23 | 691 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.1− | 0.3+ | 2006 10 03 | 291 | 0.0 | 0.5+ |
| 1995 07 26 | 691 | 0.5+ | 0.1− | 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 10 03 | 291 | 0.1− | 0.5+ |
| 1995 07 26 | 691 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 03 | 291 | 0.3− | 0.3+ |
| 1995 07 26 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 1999 10 11 | 691 | 0.2− | 1.0− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.2− | 0.6− |
| 1999 10 11 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.4− |
| 1999 10 11 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.4− | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.9− |
| 1999 10 17 | 691 | 0.4+ | 0.3− | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.5− | 0.2− |
| 1999 10 17 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 1999 10 17 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.9+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2005 05 16 | G96 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2005 05 16 | G96 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.0 | | | | |
| 2005 05 16 | G96 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.3+ | | | | |

**1995 OA$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.37255 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30212215 | $\omega$ | 129.58201 | | +0.94604064 | +0.32204828 | |
| $a$ | 2.1996200 | $\Omega$ | 211.67864 | | −0.31432583 | +0.88502743 | |
| $e$ | 0.1510190 | $i$ | 3.92471 | | −0.07878053 | +0.33617161 | |
| $P$ | 3.26 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.2+ | 0.1+ | 2005 09 27 | 691 | 0.0 | 0.3− | 2005 10 07 | 703 | 0.0 | 0.4− |
| 1995 07 27 | 691 | 0.3+ | 0.4+ | 2005 09 27 | 691 | 0.0 | 0.0 | 2005 10 07 | 703 | 0.8+ | 0.6− |
| 1995 07 27 | 691 | 0.1+ | 0.7+ | 2005 10 07 | 691 | 0.0 | 0.2− | 2005 10 07 | 703 | 0.5+ | 0.2− |
| 1995 08 02 | 691 | 0.1− | 0.2+ | 2005 10 07 | 691 | 0.1− | 0.3− | 2005 10 27 | 691 | 0.2− | 0.1− |
| 1995 08 02 | 691 | 0.1− | 0.1+ | 2005 10 07 | 691 | 0.1− | 0.2− | 2005 10 27 | 691 | 0.0 | 0.2+ |
| 1995 08 02 | 691 | 0.2− | 0.1− | 2005 10 07 | 703 | 0.5+ | 0.8+ | 2005 10 27 | 691 | 0.1− | 0.4+ |
| 1995 08 03 | 691 | 0.1− | 0.2+ | 2005 10 07 | 703 | 0.3− | 0.3+ | 2005 11 25 | G96 | 0.1+ | 0.4+ |
| 1995 08 03 | 691 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.5− | 0.7+ | 2005 11 25 | G96 | 0.0 | 0.2+ |
| 1995 08 03 | 691 | 0.2− | 1.6− | 2005 10 07 | 703 | 0.8+ | 0.8+ | 2005 11 25 | G96 | 0.4+ | 0.5+ |
| 2005 09 27 | 691 | 0.1− | 0.1− | 2005 10 07 | 703 | 0.3+ | 0.2− | 2005 11 25 | G96 | 0.2+ | 0.1− |

**1995 QK$_5$ = 2006 WJ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.69961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28635816 | $\omega$ | 180.35398 | | +0.19267070 | −0.97733789 | |
| $a$ | 2.2796229 | $\Omega$ | 258.53875 | | +0.90051136 | +0.21160656 | |
| $e$ | 0.0606571 | $i$ | 5.13306 | | +0.38981700 | −0.00577125 | |
| $P$ | 3.44 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.0 | 0.0 | 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.5− |
| 1995 08 22 | 691 | 0.4− | 0.5+ | 2004 02 11 | 644 | 0.3− | 0.3− | 2006 11 10 | 691 | 0.4+ | 0.5+ |
| 1995 08 22 | 691 | 0.1− | 0.2− | 2004 02 11 | 644 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 1995 08 27 | 691 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.7− | 0.1+ |
| 1995 08 27 | 691 | 0.0 | 0.4− | 2006 10 04 | G96 | 0.3− | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 1995 09 02 | 691 | 0.9+ | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.5− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 1995 09 02 | 691 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.2− | 0.6− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 1995 09 02 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1− |

**1995 QP$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.16834 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28107021 | $\omega$ | 42.61186 | | +0.76259490 | +0.64016912 | |
| $a$ | 2.3081259 | $\Omega$ | 277.34389 | | −0.61586645 | +0.67457235 | |
| $e$ | 0.1461007 | $i$ | 5.37534 | | −0.19788263 | +0.36760799 | |
| $P$ | 3.51 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.1+ | 0.3+ | 1995 09 03 | 691 | 0.3+ | 1.3− | 2006 11 15 | G96 | 0.8− | 0.0 |
| 1995 07 03 | 691 | 0.1− | 0.3− | 1995 09 03 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 1995 07 03 | 691 | 0.4− | 0.1+ | 2002 08 05 | 644 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.1− |
| 1995 08 22 | 691 | 0.2− | 0.2+ | 2002 08 05 | 644 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 1995 08 22 | 691 | 0.2− | 0.1+ | 2002 08 05 | 644 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 1995 08 22 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 1995 08 28 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 1995 08 28 | 691 | 0.6+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− | | | | |
| 1995 08 28 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.0 | | | | |

**1995 SB$_6$ = 1999 VO$_{229}$ = 2006 PY$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.33835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26611484 | $\omega$ | 14.57165 | | +0.99773154 | −0.06669535 | |
| $a$ | 2.3938117 | $\Omega$ | 349.24012 | | +0.05582259 | +0.89556232 | |
| $e$ | 0.1373538 | $i$ | 2.80568 | | +0.03762472 | +0.43990892 | |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 809 | 0.2+ | 1.0− | 1999 11 03 | 704 | 0.8− | 0.3− | 2006 08 19 | 699 | 0.1− | 0.6+ |
| 1995 09 17 | 691 | 0.7− | 0.2− | 1999 11 03 | 704 | 0.5− | 0.7+ | 2006 08 19 | 699 | 0.6− | 0.5− |
| 1995 09 17 | 691 | 0.1− | 0.1+ | 1999 11 03 | 704 | 0.7− | 0.8+ | 2006 08 19 | 699 | 0.4+ | 0.4− |
| 1995 09 17 | 691 | 0.4− | 0.2+ | 1999 11 14 | 704 | 0.2− | 0.1+ | 2006 08 19 | 699 | 0.2− | 0.2− |
| 1995 09 18 | 809 | 0.8+ | 0.0 | 1999 11 14 | 704 | 0.5− | 0.3+ | 2006 09 13 | 644 | 0.1+ | 0.1− |
| 1995 09 18 | 809 | 0.1+ | 0.2− | 1999 11 14 | 704 | 0.8− | 0.6+ | 2006 09 13 | 644 | 0.2− | 0.0 |
| 1995 09 20 | 809 | 0.9+ | 0.9+ | 2005 04 04 | 691 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 1995 09 22 | 809 | 0.1+ | 0.5+ | 2005 04 04 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 1995 09 22 | 691 | 0.3+ | 0.2+ | 2005 04 04 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 1995 09 22 | 691 | 0.0 | 0.2+ | 2006 08 13 | 644 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.2− |
| 1995 09 22 | 691 | 0.0 | 0.3+ | 2006 08 13 | 644 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.2− | 0.5− |
| 1999 10 13 | 704 | 1.9+ | 0.1+ | 2006 08 13 | 644 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 1999 10 13 | 704 | 0.8+ | 0.4− | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 1999 10 13 | 704 | 1.0+ | 1.3− | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.7+ | 0.0 |
| 1999 11 03 | 704 | 0.0 | 1.0− | 2006 08 15 | 644 | 0.0 | 0.1+ | | | | |

**1995 SA$_9$ = 2006 UF$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.47455 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18715604 | $\omega$ | 280.85024 | | +0.17337573 | +0.98485568 | |
| $a$ | 3.0269145 | $\Omega$ | 359.13364 | | −0.89368633 | +0.15716709 | |
| $e$ | 0.1167687 | $i$ | 1.41224 | | −0.41384249 | +0.07319690 | |
| $P$ | 5.27 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.3− | 0.0 | 2003 01 25 | 645 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.3− |
| 1995 09 17 | 691 | 0.1− | 0.3+ | 2003 01 25 | 645 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.5− | 0.3− |
| 1995 09 17 | 691 | 0.4− | 0.3− | 2004 04 23 | 291 | 0.5+ | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.6+ |
| 1995 09 20 | 809 | 0.7+ | 0.3− | 2004 04 23 | 291 | 0.5+ | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 1995 09 22 | 691 | 0.7+ | 0.4+ | 2004 04 23 | 291 | 0.6+ | 0.7+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 1995 09 22 | 691 | 0.1− | 0.2+ | 2005 07 07 | 691 | 0.7− | 0.9+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 1995 09 22 | 691 | 0.1− | 0.1+ | 2005 07 07 | 691 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.5+ | 0.3+ |
| 1995 09 27 | 691 | 0.5− | 0.1+ | 2005 07 07 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.3+ |
| 1995 09 27 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.5+ |
| 1995 09 27 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.4+ | 0.1− |
| 1998 01 25 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1998 01 25 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 11 17 | 691 | 0.3+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 25 | 691 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.4− | 0.3+ | |
| 2001 11 11 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1+ | |
| 2001 11 11 | 691 | 0.2+ | 0.7+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.2− | 0.1+ | |
| 2001 11 11 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | | | | | |

**1995 SQ$_9$ = 2006 RG$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.46418 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27200429 | $\omega$ | 65.22194 | | +0.47467665 | −0.88012767 | |
| $a$ | 2.3591319 | $\Omega$ | 356.41256 | | +0.75749758 | +0.41289044 | |
| $e$ | 0.1396810 | $i$ | 6.95210 | | +0.44819582 | +0.23430059 | |
| $P$ | 3.62 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.2+ | 0.2+ | 1995 09 27 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.5+ | |
| 1995 09 17 | 691 | 0.7− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.4+ | |
| 1995 09 17 | 691 | 0.0 | 0.4− | 2006 09 15 | 691 | 0.3+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.1+ | |
| 1995 09 22 | 691 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.3− | |
| 1995 09 22 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.4− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.0 | |
| 1995 09 27 | 691 | 0.2+ | 0.5− | 2006 09 19 | 691 | 0.0 | 0.5− | 2006 10 01 | 691 | 0.1+ | 0.1− | |
| 1995 09 27 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | | | | | |

**1995 SK$_{10}$ = 2006 RQ$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.29160 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18268971 | $\omega$ | 304.16207 | | +0.76686204 | +0.64173276 | |
| $a$ | 3.0760496 | $\Omega$ | 15.92455 | | −0.57609393 | +0.69517965 | |
| $e$ | 0.1164932 | $i$ | 2.10606 | | −0.28291058 | +0.32388936 | |
| $P$ | 5.39 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.3− | 0.3+ | 1995 09 27 | 691 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.6+ | |
| 1995 09 17 | 691 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.5+ | |
| 1995 09 17 | 691 | 0.2− | 0.3− | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1+ | |
| 1995 09 22 | 691 | 0.3− | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.4+ | |
| 1995 09 22 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.7− | 0.4− | |
| 1995 09 22 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.5− | |
| 1995 09 27 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.3+ | 0.2− | |
| 1995 09 27 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.5− | 0.0 | | | | | |

**1995 SR$_{10}$ = 2006 UX$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.92182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18310343 | $\omega$ | 36.85364 | | +0.69950240 | −0.71445712 | |
| $a$ | 3.0714143 | $\Omega$ | 8.79825 | | +0.62867981 | +0.60475691 | |
| $e$ | 0.1315219 | $i$ | 5.90247 | | +0.33979125 | +0.35188081 | |
| $P$ | 5.38 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.3− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.1+ | |
| 1995 09 17 | 691 | 0.2+ | 0.5− | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1+ | |
| 1995 09 17 | 691 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.8− | 0.6− | |
| 1995 09 22 | 691 | 0.6− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | (3.2− | 3.8+) | |
| 1995 09 22 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | (1.5+ | 3.9+) | |
| 1995 09 22 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.7+ | 0.1+ | |
| 1995 09 27 | 691 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.0 | |
| 1995 09 27 | 691 | 0.6+ | 0.2+ | 2006 10 27 | 703 | 1.2− | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.1+ | |
| 1995 09 27 | 691 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1− | |
| 2003 03 08 | 291 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.8+ | 2006 11 18 | G96 | 0.4+ | 0.0 | |
| 2003 03 08 | 291 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.0 | | | | | |
| 2003 03 08 | 291 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.2− | | | | | |

**1995 SJ$_{11}$ = 2006 RL$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.24358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26688550 | $\omega$ | 60.61708 | | +0.25137084 | −0.96736691 | |
| $a$ | 2.3892012 | $\Omega$ | 14.92617 | | +0.83965595 | +0.20158430 | |
| $e$ | 0.0958249 | $i$ | 7.10139 | | +0.48144634 | +0.15350905 | |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.3− | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 1.4− | 1.0− | |
| 1995 09 17 | 691 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.5− | |
| 1995 09 17 | 691 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | |
| 1995 09 22 | 691 | 1.1− | 1.4+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.3+ | |
| 1995 09 22 | 691 | 0.5+ | 0.2− | 2006 09 19 | 703 | (1.8− | 0.6−) | 2006 09 27 | 691 | 0.0 | 0.0 | |
| 1995 09 22 | 691 | 1.2+ | 0.8− | 2006 09 19 | 703 | (0.6− | 2.8−) | 2006 10 27 | G96 | 0.5− | 0.2− | |
| 1995 09 27 | 691 | 0.4− | 0.2− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.6− | 0.0 | |
| 1995 09 27 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.5− | 0.1+ | |
| 1995 09 27 | 691 | 0.4− | 0.0 | 2006 09 23 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 1.3+ | 0.4− | |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.5− | 0.1+ | | | | | |
| 2006 09 15 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3− | | | | | |

**1995 ST$_{14}$ = 2006 SO$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.21363 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18222702 | $\omega$ | 208.00463 | | +0.85738213 | −0.51466168 | |
| $a$ | 3.0812543 | $\Omega$ | 182.98115 | | +0.48656590 | +0.81329695 | |
| $e$ | 0.1456118 | $i$ | 4.83931 | | +0.16777817 | +0.27142480 | |
| $P$ | 5.41 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.0 | 0.3+ | 1995 09 27 | 691 | 0.2− | 0.5− | 2006 09 28 | 691 | 0.1+ | 0.2+ | |
| 1995 09 18 | 691 | 0.2− | 0.3+ | 1995 09 27 | 691 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.1− | 0.1+ | |
| 1995 09 18 | 691 | 0.2− | 0.2− | 2006 09 15 | 691 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.4− | 0.1+ | |
| 1995 09 23 | 691 | 1.0+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.1− | |
| 1995 09 23 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.4− | 2006 10 16 | 291 | 0.0 | 0.1+ | |
| 1995 09 23 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 16 | 291 | 0.1+ | 0.1+ | |
| 1995 09 27 | 691 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 291 | 0.1+ | 0.1+ | |

**1995 SC$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.69065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26937373 | $\omega$ | 21.67413 | | +0.99341331 | −0.11256069 | |
| $a$ | 2.3744656 | $\Omega$ | 344.74190 | | +0.08946409 | +0.87886961 | |
| $e$ | 0.2131120 | $i$ | 4.67516 | | +0.07159736 | +0.46359281 | |
| $P$ | 3.66 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.1+ | |
| 1995 09 18 | 691 | 0.5− | 0.0 | 2006 09 19 | 699 | 1.0− | 1.4+ | 2006 09 27 | 704 | 1.1− | 0.1− | |
| 1995 09 18 | 691 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.1− | 0.9− | 2006 09 27 | 704 | 0.2+ | 0.2+ | |
| 1995 09 24 | 691 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.2− | 1.4+ | 2006 09 27 | 704 | 0.1− | 0.4+ | |
| 1995 09 24 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.9− | 0.6− | 2006 09 28 | G96 | 0.1− | 0.4− | |
| 1995 09 24 | 691 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.8− | 2006 09 28 | G96 | 0.3+ | 0.5− | |
| 1995 09 29 | 691 | 0.6+ | 0.1− | 2006 09 19 | 699 | 0.5+ | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.3− | |
| 1995 09 29 | 691 | 0.8+ | 0.2− | 2006 09 19 | 703 | (0.9− | 1.7−) | 2006 09 28 | G96 | 0.0 | 0.3− | |
| 1995 09 29 | 691 | 0.5+ | 0.3− | 2006 09 19 | 699 | 0.3− | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.5+ | |
| 1995 10 20 | 691 | 0.2− | 0.1+ | 2006 09 20 | 691 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.5+ | |
| 1995 10 20 | 691 | 0.1− | 0.1+ | 2006 09 20 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ | |
| 1995 10 20 | 691 | 0.1− | 0.3+ | 2006 09 20 | 691 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.3− | 0.1− | |
| 2006 09 17 | 704 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.4− | |
| 2006 09 17 | 704 | 0.9− | 0.6+ | 2006 09 20 | 704 | 1.2+ | 1.2− | 2006 10 23 | G96 | 0.0 | 0.2− | |
| 2006 09 17 | 704 | 1.4− | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.4− | |

### 1995 $SP_{16}$ = 2006 $SX_{133}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.73967 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18342230 | $\omega$ | 63.97512 | | +0.53561559 | −0.84422953 | |
| $a$ | 3.0678536 | $\Omega$ | 353.53211 | | +0.69823145 | +0.45593853 | |
| $e$ | 0.0195255 | $i$ | 10.12871 | | +0.47496188 | +0.28177395 | |
| $P$ | 5.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.4+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 1995 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 1995 09 18 | 691 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.7− | 0.5+ | 2006 10 17 | 703 | 0.8+ | 0.2− |
| 1995 09 23 | 691 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.8− |
| 1995 09 23 | 691 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 10 17 | 703 | 1.2− | 0.6+ |
| 1995 09 23 | 691 | 0.8− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.9− | 2006 11 11 | 703 | 0.8− | 0.5+ |
| 1995 09 29 | 691 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | (1.8− | 0.3−) |
| 1995 09 29 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (0.8+ | 2.2+) |
| 1995 09 29 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2006 09 17 | 703 | 0.0 | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.4− | | | | |
| 2006 09 17 | 703 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.4− | | | | |

### 1995 $SL_{22}$ = 2006 $RE_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.07990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18081086 | $\omega$ | 276.25428 | | +0.26305621 | +0.96176820 | |
| $a$ | 3.0973221 | $\Omega$ | 10.03496 | | −0.61741106 | +0.22849186 | |
| $e$ | 0.1961278 | $i$ | 25.92464 | | −0.74135350 | +0.15097481 | |
| $P$ | 5.45 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.3− | 0.3− | 1995 09 30 | 691 | 0.3+ | 0.1+ | 2006 09 22 | A50 | 0.2− | 0.3+ |
| 1995 09 19 | 691 | 0.5− | 0.1− | 2006 09 15 | 691 | 0.4− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 1995 09 19 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 1995 09 25 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.2− |
| 1995 09 25 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.5+ | 0.4− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 1995 09 25 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1995 09 30 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 1995 09 30 | 691 | 0.1− | 0.0 | 2006 09 21 | A50 | 0.1− | 0.3+ | | | | |

### 1995 $SD_{23}$ = 2006 $TC_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.07787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27201277 | $\omega$ | 44.49484 | | +0.18915926 | −0.98075016 | |
| $a$ | 2.3590828 | $\Omega$ | 34.68594 | | +0.87551579 | +0.14610747 | |
| $e$ | 0.1679019 | $i$ | 4.88447 | | +0.44462441 | +0.12954435 | |
| $P$ | 3.62 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 1995 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 1995 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 1995 09 24 | 691 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 1995 09 24 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.4+ | 0.3− |
| 1995 09 30 | 691 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 1995 09 30 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.3− | 0.5− |
| 1995 09 30 | 691 | 0.3+ | 0.6− | 2006 10 22 | 683 | 0.2− | 0.4− | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 22 | 683 | 0.9+ | 0.8+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 22 | 683 | (1.6+ | 1.0+) | 2006 11 20 | G96 | 1.0+ | 0.0 |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 27 | 683 | (2.2+ | 0.0 ) | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2006 09 30 | G96 | (1.9− | 1.4−) | 2006 10 27 | 683 | 0.4+ | 1.3+ | 2006 11 21 | 691 | 0.1− | 0.3− |
| 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 683 | 1.3− | 0.9+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 1.0− | 0.7− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.6− | | | | |

### 1995 $SY_{25}$ = 2006 $SK_{221}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.52542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26704651 | $\omega$ | 33.45199 | | +0.91315454 | −0.40757939 | |
| $a$ | 2.3882408 | $\Omega$ | 350.59642 | | +0.36654076 | +0.82673505 | |
| $e$ | 0.2093169 | $i$ | 1.85050 | | +0.17831620 | +0.38779917 | |
| $P$ | 3.69 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.3− | 0.3− | 1995 09 30 | 691 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.3− |
| 1995 09 19 | 691 | 0.0 | 0.1− | 1995 09 30 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 1995 09 19 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 1995 09 25 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 1995 09 25 | 691 | 0.2− | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 1995 09 25 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.0 | | | | |
| 1995 09 30 | 691 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.3− | | | | |

### 1995 $SP_{28}$ = 2006 $UG_{257}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.11728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27520388 | $\omega$ | 323.61465 | | +0.58577678 | +0.81044899 | |
| $a$ | 2.3408110 | $\Omega$ | 342.24063 | | −0.73874398 | +0.53079071 | |
| $e$ | 0.1900694 | $i$ | 1.15795 | | −0.33335101 | +0.24785812 | |
| $P$ | 3.58 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.5− | 0.1− | 2006 10 03 | 691 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.7− |
| 1995 09 20 | 691 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.3− | 0.4+ | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 1995 09 20 | 691 | 0.2− | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 1995 09 25 | 691 | 0.5+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 1995 09 25 | 691 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.8− |
| 1995 09 25 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 1995 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 1995 10 01 | 691 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.4+ |
| 1995 10 01 | 691 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.4− | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.3− | 0.5− |
| 2006 09 25 | 691 | 0.3− | 0.5− | 2006 10 28 | G96 | 0.5+ | 0.4− | | | | |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.2− | | | | |

### 1995 $SR_{30}$ = 2005 $FE_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.94951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26332038 | $\omega$ | 198.93407 | | −0.83319953 | +0.55293976 | |
| $a$ | 2.4107179 | $\Omega$ | 14.63952 | | −0.50422149 | −0.75523322 | |
| $e$ | 0.1296429 | $i$ | 1.36354 | | −0.22702253 | −0.35196648 | |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1− | 0.2+ | 2003 10 25 | 691 | 0.2− | 0.1− | 2005 02 09 | 699 | 0.5+ | 1.2+ |
| 1995 09 20 | 691 | 0.0 | 0.1+ | 2003 10 25 | 691 | 0.0 | 0.2− | 2005 03 02 | 699 | 0.8− | 2.5− |
| 1995 09 20 | 691 | 0.1+ | 0.2+ | 2003 11 18 | 291 | 0.4+ | 0.2− | 2005 03 02 | 699 | 0.3− | 1.0+ |
| 1995 09 22 | 691 | 0.3− | 0.1− | 2003 11 18 | 291 | 0.1− | 0.1− | 2005 03 02 | 699 | 0.5+ | 0.0 |
| 1995 09 22 | 691 | 0.4+ | 0.0 | 2003 11 18 | 291 | 0.2+ | 0.4+ | 2005 03 02 | 699 | 1.5− | 1.0− |
| 1995 09 22 | 691 | 0.1+ | 0.4− | 2004 12 20 | G96 | 0.6− | 0.5− | 2005 03 10 | G96 | 0.4− | 0.3− |
| 1995 09 25 | 691 | 0.5− | 0.1+ | 2004 12 20 | G96 | 0.3− | 0.5− | 2005 03 10 | G96 | 0.3− | 0.2− |
| 1995 09 25 | 691 | 0.4− | 0.0 | 2004 12 20 | G96 | 0.5− | 0.6− | 2005 03 10 | G96 | 0.3− | 0.1− |
| 1995 09 25 | 691 | 0.1+ | 0.1− | 2004 12 20 | G96 | 0.3− | 0.1− | 2005 03 10 | G96 | 0.1− | 0.3− |
| 1995 10 01 | 691 | 0.0 | 0.1+ | 2005 02 09 | 699 | 2.8+ | 0.3− | 2005 03 16 | 703 | 0.5− | 0.1+ |
| 1995 10 01 | 691 | 0.0 | 0.1+ | 2005 02 09 | 704 | 1.3+ | 0.0 | 2005 03 16 | 703 | 1.2− | 0.9+ |
| 1995 10 01 | 691 | 0.1+ | 0.4+ | 2005 02 09 | 704 | 0.2+ | 1.0+ | 2005 03 16 | 703 | 0.3− | 1.4+ |
| 2003 09 28 | 691 | 0.2+ | 0.2− | 2005 02 09 | 699 | 0.3+ | 0.4+ | 2005 03 16 | 703 | 1.3+ | 1.7+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 691 | 0.1+ | 0.2− | 2005 02 09 | 704 | 0.4+ | 0.1+ | 2006 08 20 | 644 | 0.4− | 0.7+ |
| 2003 09 28 | 691 | 0.0 | 0.3− | 2005 02 09 | 704 | 0.7+ | 1.1+ | 2006 08 20 | 644 | 0.1− | 0.6+ |
| 2003 10 25 | 691 | 0.6− | 0.7+ | 2005 02 09 | 699 | 0.1+ | 0.8+ | 2006 08 20 | 644 | 0.1− | 0.6+ |

**1995 SA$_{31}$ = 2006 SQ$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.04879 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27254421 | $\omega$ | 221.29606 | | +0.98971704 | −0.14197539 | |
| $a$ | 2.3560151 | $\Omega$ | 146.85405 | | +0.13817119 | +0.91743965 | |
| $e$ | 0.1959161 | $i$ | 1.82486 | | +0.03699867 | +0.37168195 | |
| $P$ | 3.62 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.6− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 1.5+ | 0.4− |
| 1995 09 20 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 1.0+ | 0.0 |
| 1995 09 20 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 10 21 | 703 | 1.3− | 0.2− |
| 1995 09 20 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | (1.9+ | 0.9−) |
| 1995 09 20 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3− | 2006 10 21 | 703 | (1.8− | 0.6+) |
| 1995 09 20 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 1995 09 20 | 691 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.3+ |
| 1995 09 20 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 1995 09 20 | 691 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 1995 09 22 | 691 | 0.3+ | 0.0 | 2006 10 15 | 703 | (1.6− | 1.0+) | 2006 10 22 | G96 | 0.3− | 0.1− |
| 1995 09 22 | 691 | 0.5+ | 0.0 | 2006 10 15 | 703 | 0.3+ | 1.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 1995 09 22 | 691 | 0.2+ | 0.2− | 2006 10 15 | 703 | (0.9+ | 1.7+) | 2006 10 31 | G96 | (1.3+ | 2.0−) |
| 1995 09 25 | 691 | 0.3− | 0.6+ | 2006 10 15 | 703 | (1.1− | 1.5+) | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 1995 09 25 | 691 | 0.3− | 0.2+ | 2006 10 17 | G96 | (0.4+ | 1.7−) | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1995 09 25 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.4− | | | | |

**1995 SY$_{31}$ = 2006 UX$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.72006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27385464 | $\omega$ | 291.60200 | | +0.68968680 | +0.72405446 | |
| $a$ | 2.3484932 | $\Omega$ | 22.01091 | | −0.65538030 | +0.62934232 | |
| $e$ | 0.1957164 | $i$ | 1.34395 | | −0.30791037 | +0.28226476 | |
| $P$ | 3.60 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.1− | 0.0 | 1995 10 01 | 691 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 1995 09 21 | 691 | 0.4− | 0.3− | 1995 10 01 | 691 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 1995 09 21 | 691 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 1995 09 26 | 691 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 1995 09 26 | 691 | 0.6+ | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2− |
| 1995 09 26 | 691 | 0.7+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 10 | 691 | 0.3− | 0.2− |
| 1995 10 01 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.7+ |

**1995 SA$_{32}$ = 2006 SD$_{239}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.67390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27190338 | $\omega$ | 101.72682 | | +0.04205192 | +0.99895966 | |
| $a$ | 2.3597155 | $\Omega$ | 170.62946 | | −0.95368863 | +0.04539747 | |
| $e$ | 0.1088026 | $i$ | 6.22037 | | −0.29784161 | −0.00432070 | |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.6− | 0.2+ | 2005 04 04 | 703 | 0.6+ | 1.0+ | 2006 09 26 | 691 | 0.4− | 0.3+ |
| 1995 07 26 | 691 | 0.3− | 0.1+ | 2005 04 04 | 703 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.4− | 0.0 |
| 1995 07 26 | 691 | 0.3− | 0.0 | 2006 08 19 | 691 | 0.5− | 0.5− | 2006 09 26 | 691 | 0.5− | 0.2− |
| 1995 09 21 | 691 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.8+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 1995 09 21 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.9+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1995 09 21 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | (1.3− | 2.2+) | 2006 09 26 | G96 | 0.0 | 0.1− |
| 1995 09 26 | 691 | 0.2+ | 0.7− | 2006 08 28 | 703 | 1.3− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 1995 09 26 | 691 | 0.7+ | 0.4− | 2006 08 28 | 703 | (1.8− | 0.5−) | 2006 09 26 | G96 | 0.0 | 0.0 |
| 1995 09 26 | 691 | 0.5+ | 0.1+ | 2006 08 28 | 703 | (0.8− | 3.1+) | 2006 09 26 | G96 | 0.4+ | 0.1+ |
| 2005 03 10 | G96 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 0.4− | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.4− | 0.3+ |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 2005 04 04 | 703 | 0.7+ | 1.2+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.4− | 0.3+ |
| 2005 04 04 | 703 | 0.1+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.5+ | | | | |

**1995 SV$_{33}$ = 2006 UK$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.31450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17891742 | $\omega$ | 264.53751 | | −0.17612962 | +0.98410685 | |
| $a$ | 3.1191359 | $\Omega$ | 355.13970 | | −0.76381792 | −0.15113222 | |
| $e$ | 0.1676364 | $i$ | 15.49061 | | −0.62093522 | −0.09323496 | |
| $P$ | 5.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1− | 0.1− | 1995 09 27 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 1995 09 17 | 691 | 0.0 | 0.1− | 1995 09 27 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 1995 09 17 | 691 | 0.1+ | 0.6− | 1995 09 27 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.9+ | 0.5+ |
| 1995 09 22 | 691 | 0.8+ | 0.8+ | 2006 10 16 | G96 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2+ |
| 1995 09 22 | 691 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.6− | 0.6− | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 1995 09 22 | 691 | 0.6− | 0.0 | 2006 10 16 | G96 | 0.2− | 0.5− | | | | |

**1995 SR$_{34}$ = 2006 UR$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.42485 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27333794 | $\omega$ | 318.49381 | | +0.76278757 | +0.64664373 | |
| $a$ | 2.3514519 | $\Omega$ | 1.22641 | | −0.55587897 | +0.65780214 | |
| $e$ | 0.1930437 | $i$ | 7.10826 | | −0.33038417 | +0.38619714 | |
| $P$ | 3.61 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.0 | 0.1+ | 2005 03 17 | 691 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1995 09 22 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 1995 09 22 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 1995 09 24 | 691 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 1995 09 24 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 1995 09 24 | 691 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1995 09 27 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 1995 09 27 | 691 | 0.0 | 0.4+ | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 1995 09 27 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.8− | 0.9+ | 2006 10 31 | 691 | 0.3+ | 0.3− |
| 2005 03 17 | 691 | 0.2+ | 0.7+ | 2006 10 17 | 691 | 0.4+ | 0.4− | 2006 10 31 | 691 | 0.4+ | 0.2− |
| 2005 03 17 | 691 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.5+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.1+ |

**1995 SB$_{39}$ = 2006 SO$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.66039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17727497 | $\omega$ | 119.48556 | | −0.69298281 | −0.71844784 | |
| $a$ | 3.1383722 | $\Omega$ | 14.87608 | | +0.55351598 | −0.58357176 | |
| $e$ | 0.1347376 | $i$ | 13.52995 | | +0.46194684 | −0.37851910 | |
| $P$ | 5.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.4− | 0.3− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.5+ | 0.4+ |
| 1995 09 19 | 691 | 0.6− | 1.2+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 1995 09 19 | 691 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 1995 09 24 | 691 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 1995 09 24 | 691 | 0.6+ | 0.6− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.3+ |
| 1995 09 24 | 691 | 0.1− | 0.7− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.5− | 0.2+ |
| 1995 09 30 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.5+ |
| 1995 09 30 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4+ |
| 1995 09 30 | 691 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.6− | 0.2− |
| 2006 09 18 | 691 | 0.7− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.7− | 0.4− |
| 2006 09 18 | 691 | 0.6+ | 0.0 | 2006 10 16 | G96 | 0.3− | 0.7+ | | | | |
| 2006 09 18 | 691 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.4+ | 0.3+ | | | | |

**1995 SH$_{40}$ = 2006 QK$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 352.10045 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.26990370 | $\omega$ | 357.39920 | +0.99273920 | −0.12021832 | | | | | | | | |
| $a$ | 2.3713564 | $\Omega$ | 9.50837 | +0.11079920 | +0.90079623 | | | | | | | | |
| $e$ | 0.1903141 | $i$ | 1.40654 | +0.04682332 | +0.41726934 | | | | | | | | |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.5+ | 1.2− | 2005 04 17 | 691 | 0.5+ | 0.6+ | 2006 09 20 | 644 | 0.2+ | 0.2+ | | | | | |
| 1995 09 21 | 691 | 0.7+ | 1.2− | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.6+ | | | | | |
| 1995 09 21 | 691 | 0.8+ | 0.9− | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.1− | | | | | |
| 1995 09 25 | 691 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.1+ | | | | | |
| 1995 09 25 | 691 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.9+ | | | | | |
| 1995 09 25 | 691 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.2+ | | | | | |
| 1995 10 01 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.5+ | | | | | |
| 1995 10 01 | 691 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.8− | 2006 09 26 | 691 | 0.2− | 0.4+ | | | | | |
| 1995 10 01 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.7− | 0.5+ | 2006 09 26 | 691 | 0.5− | 0.8+ | | | | | |
| 1999 10 06 | 704 | 0.9− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.0 | | | | | |
| 1999 10 06 | 704 | 0.0 | 0.9− | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− | | | | | |
| 1999 10 06 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2− | | | | | |
| 1999 10 06 | 704 | 0.2− | 0.4+ | 2006 09 16 | 699 | 0.6− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− | | | | | |
| 1999 12 06 | 691 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.5− | 0.7+ | 2006 09 30 | 704 | (0.1+ | 1.8+) | | | | | |
| 1999 12 06 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.0 | 1.0+ | | | | | |
| 1999 12 06 | 691 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.2+ | | | | | |
| 1999 12 08 | 704 | 1.1− | 1.4+ | 2006 09 17 | 704 | 0.7− | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.5− | | | | | |
| 1999 12 08 | 704 | 1.8+ | 1.2+ | 2006 09 17 | 704 | 0.5− | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.3− | | | | | |
| 1999 12 08 | 704 | 1.5+ | 0.8− | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 10 16 | G96 | 0.3+ | 0.3− | | | | | |
| 2003 12 19 | 691 | 0.2+ | 0.4− | 2006 09 17 | 704 | 0.3− | 0.5+ | 2006 10 16 | G96 | 0.2− | 0.2+ | | | | | |
| 2003 12 19 | 691 | 0.4− | 0.8− | 2006 09 19 | 699 | 0.1− | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.1− | | | | | |
| 2003 12 19 | 691 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.5+ | | | | | |
| 2004 01 22 | 704 | 0.6− | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.8+ | 2006 10 27 | G96 | 0.4− | 0.0 | | | | | |
| 2004 01 22 | 704 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.3− | | | | | |
| 2004 01 22 | 704 | 1.1− | 0.5− | 2006 09 19 | 703 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.4− | | | | | |
| 2004 01 22 | 704 | 1.1+ | 0.4+ | 2006 09 19 | 699 | (0.0 | 2.4+) | 2006 11 11 | G96 | 0.2− | 0.2− | | | | | |
| 2004 01 27 | 691 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.2+ | | | | | |
| 2004 01 27 | 691 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.0 | | | | | |
| 2004 01 27 | 691 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.3+ | | | | | | | | | |

**1995 SS$_{41}$ = 2006 ST$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 264.56344 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.17731986 | $\omega$ | 291.27342 | −0.35519661 | −0.93478938 | | | | | | | | |
| $a$ | 3.1378425 | $\Omega$ | 179.51765 | +0.92219888 | −0.35076898 | | | | | | | | |
| $e$ | 0.1475343 | $i$ | 14.06913 | +0.15292024 | −0.05594584 | | | | | | | | |
| $P$ | 5.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.4+ | 0.2− | 2001 11 12 | 645 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2+ | | | | | |
| 1995 09 20 | 691 | 0.2+ | 0.2− | 2001 11 21 | 645 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.4+ | | | | | |
| 1995 09 20 | 691 | 0.4+ | 0.3− | 2001 11 21 | 645 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1+ | | | | | |
| 1995 09 25 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.7− | | | | | |
| 1995 09 25 | 691 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.4− | | | | | |
| 1995 09 25 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.5− | | | | | |
| 1995 09 30 | 691 | 0.6+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− | | | | | |
| 1995 09 30 | 691 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.4+ | | | | | |
| 1995 09 30 | 691 | 0.9− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.2− | | | | | |
| 2001 11 11 | 645 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.8+ | 0.2− | 2006 10 20 | G96 | 0.5+ | 0.1+ | | | | | |
| 2001 11 11 | 645 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1+ | | | | | | | | | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2− | 0.6+ | | | | | | | | | |

**1995 SZ$_{41}$ = 2006 SX$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 281.54120 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.18354293 | $\omega$ | 313.74120 | −0.37866918 | −0.92522265 | | | | | | | | |
| $a$ | 3.0665092 | $\Omega$ | 158.47514 | +0.86680205 | −0.36358598 | | | | | | | | |
| $e$ | 0.0871009 | $i$ | 3.73973 | +0.32444393 | −0.10848171 | | | | | | | | |
| $P$ | 5.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.3+ | 0.1− | 2003 03 31 | 291 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.1+ | | | | | |
| 1995 09 20 | 691 | 0.4− | 1.2− | 2003 03 31 | 291 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.4− | | | | | |
| 1995 09 20 | 691 | 0.2+ | 0.5− | 2003 04 01 | 291 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.8− | | | | | |
| 1995 09 25 | 691 | 0.1+ | 0.3+ | 2003 04 01 | 291 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.4− | | | | | |
| 1995 09 25 | 691 | 0.2+ | 0.5+ | 2003 04 01 | 291 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.4− | | | | | |
| 1995 09 25 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3− | | | | | |
| 1995 09 30 | 691 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.5− | | | | | |
| 1995 09 30 | 691 | 0.1+ | 0.5− | 2006 09 19 | 691 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1− | | | | | |
| 1995 09 30 | 691 | 0.5− | 0.0 | 2006 09 23 | 691 | 0.4− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.3− | | | | | |
| 2003 03 11 | 291 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.5+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− | | | | | |
| 2003 03 11 | 291 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.8− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.0 | | | | | |
| 2003 03 11 | 291 | 0.1− | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.5+ | 0.2− | | | | | |
| 2003 03 31 | 291 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | | | | | | | | | |

**1995 SU$_{42}$ = 2006 SB$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 315.90627 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.18056365 | $\omega$ | 37.20672 | +0.53439215 | −0.84305945 | | | | | | | | |
| $a$ | 3.1001486 | $\Omega$ | 20.70500 | +0.72838480 | +0.42293714 | | | | | | | | |
| $e$ | 0.0148402 | $i$ | 9.87395 | +0.42881303 | +0.33222724 | | | | | | | | |
| $P$ | 5.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.6− | 2006 09 26 | G96 | 0.2− | 0.1− | | | | | |
| 1995 09 20 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.4− | | | | | |
| 1995 09 20 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 16 | G96 | 0.4+ | 0.3− | | | | | |
| 1995 09 25 | 691 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.4− | 0.2− | | | | | |
| 1995 09 25 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3+ | | | | | |
| 1995 09 25 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.6− | 0.2− | | | | | |
| 1995 09 30 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3− | | | | | |
| 1995 09 30 | 691 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.0 | | | | | |
| 1995 09 30 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.2− | 0.2+ | | | | | |

**1995 SE$_{43}$ = 2006 UR$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 121.73593 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.27689154 | $\omega$ | 222.05383 | −0.11612613 | +0.99217430 | | | | | | | | |
| $a$ | 2.3312898 | $\Omega$ | 41.33923 | −0.89176758 | −0.08381268 | | | | | | | | |
| $e$ | 0.1288527 | $i$ | 3.98293 | −0.43733890 | −0.09255049 | | | | | | | | |
| $P$ | 3.56 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.0 | 0.1− | 1995 09 30 | 691 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 | | | | | |
| 1995 09 20 | 691 | 0.2+ | 0.1− | 1995 09 30 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.4+ | | | | | |
| 1995 09 20 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.2− | | | | | |
| 1995 09 25 | 691 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.2− | | | | | |
| 1995 09 25 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.3− | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.2− | | | | | |
| 1995 09 25 | 691 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.2+ | | | | | |

**1995 $SB_{46}$ = 2006 $SA_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.90708 | | | (2000.0) | | |
| $n$ | 0.27077915 | $\omega$ | 207.74320 | | +0.98690554 | −0.16106058 |
| $a$ | 2.3662424 | $\Omega$ | 161.51903 | | +0.15264054 | +0.91496706 |
| $e$ | 0.1866643 | $i$ | 1.58571 | | +0.05213751 | +0.36999292 |
| $P$ | 3.64 | $H$ | 18.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 1995 09 21 | 691 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 1995 09 21 | 691 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 1995 09 26 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 1995 09 26 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 1995 09 26 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 1995 10 01 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 1995 10 01 | 691 | 0.3− | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.5− |
| 1995 10 01 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.4+ |
| 2006 08 28 | 691 | 0.5− | 0.3+ | 2006 09 30 | G96 | 0.6− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2006 08 28 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.4− | | | | |

**1995 $SB_{47}$ = 2003 $YT_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.65576 | | | (2000.0) | | |
| $n$ | 0.27144574 | $\omega$ | 329.03082 | | +0.96030128 | +0.27716109 |
| $a$ | 2.3623670 | $\Omega$ | 14.97792 | | −0.22423541 | +0.83445187 |
| $e$ | 0.1481623 | $i$ | 7.03935 | | −0.16595158 | +0.47631062 |
| $P$ | 3.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.2− | 2003 12 29 | 704 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 1995 09 20 | 691 | 0.2+ | 0.2− | 2004 01 18 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 1995 09 20 | 691 | 0.0 | 0.1− | 2004 01 18 | 691 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 1995 09 26 | 691 | 0.1− | 0.0 | 2004 01 18 | 691 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2− |
| 1995 09 26 | 691 | 0.2− | 0.1− | 2005 03 17 | G96 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.3− |
| 1995 09 26 | 691 | 0.1− | 0.2− | 2005 03 17 | G96 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 1995 09 30 | 691 | 0.1− | 0.2+ | 2005 03 17 | G96 | 0.4− | 0.1− | 2006 10 20 | 701 | 0.2+ | 0.2− |
| 1995 09 30 | 691 | 0.0 | 0.3− | 2005 03 17 | G96 | 0.3− | 0.1− | 2006 10 20 | 701 | 0.1+ | 0.2− |
| 1995 09 30 | 691 | 0.0 | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.5+ | 2006 10 20 | 701 | 0.1+ | 0.1− |
| 1999 12 12 | 704 | 0.8+ | 1.1− | 2005 04 14 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1999 12 12 | 704 | 1.7+ | 0.9− | 2005 04 14 | 691 | 0.2− | 0.5+ | 2006 10 20 | 701 | 0.2+ | 0.2− |
| 1999 12 12 | 704 | 1.0+ | 1.2− | 2006 08 28 | 683 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 02 27 | 691 | 0.4+ | 0.6+ | 2006 08 28 | 683 | 0.2+ | 0.4− | 2006 10 25 | 106 | 0.2+ | 0.7− |
| 2001 02 27 | 691 | 0.6+ | 1.0+ | 2006 08 28 | 683 | (0.2+ | 2.3+) | 2006 10 25 | 106 | 0.0 | 0.2− |
| 2001 02 27 | 691 | 0.8+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 25 | 106 | 0.4+ | 0.4− |
| 2001 03 27 | 691 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 25 | 106 | 0.4+ | 0.3− |
| 2001 03 27 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 03 27 | 691 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.7− | 0.7− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 07 16 | 644 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.9+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2002 07 16 | 644 | 0.2− | 0.4+ | 2006 09 20 | 699 | 0.7− | 0.3+ | 2006 10 29 | 704 | 1.1− | 0.4+ |
| 2002 07 16 | 644 | 0.3− | 0.2+ | 2006 09 20 | 704 | 1.2− | 1.0− | 2006 10 29 | 704 | 0.4− | 1.1+ |
| 2002 07 29 | 644 | 0.2− | 0.5+ | 2006 09 20 | 704 | 0.4− | 0.2− | 2006 10 29 | 704 | 0.6− | 0.5+ |
| 2002 07 29 | 644 | 0.5− | 0.5+ | 2006 09 20 | 699 | 0.6− | 0.0 | 2006 10 29 | 704 | 0.1− | 1.0+ |
| 2002 07 29 | 644 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.8− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 08 13 | 704 | 0.2+ | 0.1− | 2006 09 20 | 699 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 08 13 | 704 | 0.2+ | 0.8+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 13 | 704 | 0.9+ | 0.5+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 11 07 | 644 | 0.7− | 0.2− |
| 2002 08 13 | 704 | 0.8+ | 0.7+ | 2006 09 24 | 691 | 0.2− | 0.5+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2002 08 31 | 704 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.4− | 0.0 | 2006 11 07 | 644 | 0.3+ | 0.4+ |
| 2002 08 31 | 704 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.9+ | 0.3+ | 2006 11 19 | 704 | (1.3+ | 2.6+) |
| 2002 08 31 | 704 | (0.0 | 2.9+) | 2006 09 29 | 704 | 1.3− | 0.1− | 2006 11 19 | 704 | (1.0+ | 2.1+) |
| 2003 12 28 | 704 | 0.3− | 1.0+ | 2006 09 29 | 704 | 1.1− | 1.4+ | 2006 11 19 | 704 | (1.0+ | 4.3+) |
| 2003 12 28 | 704 | 0.7+ | 0.7+ | 2006 10 03 | 704 | 0.0 | 1.5+ | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2003 12 28 | 704 | (0.1+ | 1.7+) | 2006 10 03 | 704 | (0.3+ | 1.9+) | 2006 11 22 | 704 | 0.5− | 0.6+ |
| 2003 12 28 | 704 | 0.5+ | 1.3+ | 2006 10 03 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.9− | 1.4− |
| 2003 12 28 | 704 | (0.9− | 2.1+) | 2006 10 03 | 704 | 0.7− | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2003 12 28 | 704 | 0.3− | 0.6+ | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2003 12 29 | 704 | 0.1− | 0.8+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.6− |
| 2003 12 29 | 704 | 0.5− | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2003 12 29 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.1− | | | | |

**1995 $SN_{49}$ = 2006 $TC_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.56258 | | | (2000.0) | | |
| $n$ | 0.18658182 | $\omega$ | 153.78172 | | +0.99712159 | −0.07535913 |
| $a$ | 3.0331217 | $\Omega$ | 210.54366 | | +0.06636037 | +0.92062899 |
| $e$ | 0.1070058 | $i$ | 0.94020 | | +0.03667201 | +0.38309693 |
| $P$ | 5.28 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 1995 09 18 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 1995 09 18 | 691 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.4+ |
| 1995 09 22 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.7− | 0.1− |
| 1995 09 22 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.6+ | 0.6− |
| 1995 09 22 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 1995 09 27 | 691 | 0.0 | 0.2− | 2006 10 26 | A13 | 0.5+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.5− |
| 1995 09 27 | 691 | 0.5− | 0.1+ | 2006 10 26 | A13 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.5+ | 0.3− |
| 1995 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2006 10 12 | 691 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | | | |

**1995 $SA_{51}$ = 2005 $WY_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.25529 | | | (2000.0) | | |
| $n$ | 0.20315734 | $\omega$ | 244.75018 | | −0.37823821 | −0.92549601 |
| $a$ | 2.8658120 | $\Omega$ | 227.48934 | | +0.85870279 | −0.34278054 |
| $e$ | 0.2131904 | $i$ | 1.54103 | | +0.34578226 | −0.16111683 |
| $P$ | 4.85 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.3+ | 0.1+ | 2002 03 21 | 691 | 0.0 | 0.6+ | 2005 11 29 | 699 | 0.9+ | 0.9+ |
| 1995 09 20 | 691 | 0.2+ | 0.3+ | 2002 03 21 | 691 | 0.6− | 0.5+ | 2005 11 29 | 699 | 1.0+ | 0.2+ |
| 1995 09 20 | 691 | 0.3+ | 0.0 | 2002 03 21 | 691 | 0.2+ | 0.5+ | 2005 11 29 | 699 | 1.5+ | 0.5+ |
| 1995 09 26 | 691 | 0.1+ | 0.0 | 2002 04 03 | 691 | 0.2+ | 0.2+ | 2005 12 02 | G96 | 0.2+ | 0.3− |
| 1995 09 26 | 691 | 0.2− | 0.5+ | 2002 04 03 | 691 | 0.2− | 0.2+ | 2005 12 02 | G96 | 0.1+ | 0.3− |
| 1995 09 26 | 691 | 0.0 | 0.4+ | 2002 04 03 | 691 | 0.1− | 0.3+ | 2005 12 02 | G96 | 0.1+ | 0.3− |
| 1995 10 01 | 691 | 0.4− | 0.2+ | 2002 04 14 | 704 | 0.7+ | 0.4− | 2005 12 02 | G96 | 0.3+ | 0.6− |
| 1995 10 01 | 691 | 0.1− | 0.2+ | 2002 04 14 | 704 | 1.7+ | 0.2− | 2005 12 04 | 704 | 0.4+ | 0.2+ |
| 1995 10 01 | 691 | 0.3− | 0.0 | 2002 04 14 | 704 | 0.4− | 1.2− | 2005 12 04 | 704 | 0.3+ | 0.1− |
| 2000 11 02 | 691 | 0.1+ | 0.3− | 2002 04 14 | 704 | 0.5+ | 0.4− | 2005 12 04 | 704 | 0.2+ | 0.2+ |
| 2000 11 02 | 691 | 0.9− | 0.4− | 2002 04 14 | 704 | 0.3+ | 0.9− | 2005 12 04 | 704 | 0.6− | 0.9+ |
| 2000 11 02 | 691 | 0.0 | 0.4− | 2005 10 26 | 691 | 0.0 | 0.0 | 2005 12 04 | 704 | (0.6+ | 2.6+) |
| 2000 11 20 | 691 | 0.1+ | 0.0 | 2005 10 26 | 691 | 0.1+ | 0.1− | 2006 01 21 | G96 | 0.2− | 0.6− |
| 2000 11 20 | 691 | 0.1+ | 0.1+ | 2005 10 26 | 691 | 0.1+ | 0.1+ | 2006 01 21 | G96 | 0.1− | 0.8− |
| 2000 11 20 | 691 | 0.1+ | 0.1+ | 2005 11 05 | 691 | 0.1− | 0.0 | 2006 01 21 | G96 | 0.1+ | 0.5− |
| 2002 03 13 | 704 | 0.9+ | 0.0 | 2005 11 05 | 691 | 0.7− | 0.2+ | 2006 01 21 | G96 | 0.1− | 0.6− |
| 2002 03 13 | 704 | 0.8+ | 0.8− | 2005 11 05 | 691 | 0.2− | 0.2+ | | | | |
| 2002 03 13 | 704 | 0.5− | 1.3− | 2005 11 29 | 699 | 0.3− | 0.1+ | | | | |

**1995 $SN_{51}$ = 2006 $VD_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.04105 | | | (2000.0) | | |
| $n$ | 0.18453450 | $\omega$ | 2.49609 | | +0.95864951 | −0.28187933 |
| $a$ | 3.0555144 | $\Omega$ | 14.06607 | | +0.25823339 | +0.80372120 |
| $e$ | 0.1448816 | $i$ | 9.27724 | | +0.11961030 | +0.52400027 |
| $P$ | 5.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.5+ | 0.0 | 1995 10 02 | 691 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.6− | 0.3− |
| 1995 09 20 | 691 | 0.1− | 0.0 | 1995 10 02 | 691 | 0.1− | 0.2− | 2006 11 02 | 703 | 0.9− | 0.1+ |
| 1995 09 20 | 691 | 0.1− | 0.2− | 1995 10 17 | 691 | 1.0− | 0.3− | 2006 11 15 | 703 | 0.6− | 0.5+ |
| 1995 09 26 | 691 | 0.1+ | 0.0 | 1995 10 17 | 691 | 0.8− | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 1995 09 26 | 691 | 0.1+ | 0.1− | 1995 10 17 | 691 | 0.7− | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 1995 09 26 | 691 | 0.2+ | 0.1− | 1995 10 22 | 691 | 0.8+ | 0.2+ | 2006 11 15 | 703 | 0.6+ | 0.2− |
| 1995 09 29 | 691 | 0.3− | 0.1+ | 1995 10 22 | 691 | 0.8+ | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.1+ |
| 1995 09 29 | 691 | 0.1− | 0.1+ | 1995 10 22 | 691 | 1.1+ | 0.2+ | 2006 11 20 | G96 | 0.5+ | 0.1− |
| 1995 09 29 | 691 | 0.3− | 0.2+ | 2006 11 02 | 703 | (1.9− | 1.5+) | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 1995 10 02 | 691 | 0.1− | 0.2− | 2006 11 02 | 703 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.1+ |

**1995 SA$_{52}$ = 2006 SK$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.78498 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17827028 | $\omega$ | 238.61672 | | +0.21797415 | | −0.97185191 |
| $a$ | 3.1266798 | $\Omega$ | 199.40649 | | +0.96163283 | | +0.22950673 |
| $e$ | 0.0277155 | $i$ | 15.60711 | | +0.16658200 | | −0.05320268 |
| $P$ | 5.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1995 09 26 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 1995 09 26 | 691 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.4+ |
| 1995 09 29 | 691 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.5+ | 0.6+ |
| 1995 09 29 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 691 | 1.2− | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 1995 09 29 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 1995 10 01 | 691 | 0.5− | 1.3+ | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 1995 10 01 | 691 | 0.5− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 1995 10 01 | 691 | 0.3− | 0.3− | 2006 10 15 | 703 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 2004 04 26 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2004 04 26 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2004 04 26 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 1.1− | 0.9− | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 1.5+ | 0.7+ | 2006 10 17 | G96 | 0.8− | 1.3− | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2006 08 28 | 703 | 0.4+ | 0.5+ | 2006 10 17 | G96 | (1.0− | 2.2−) | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2006 08 28 | 703 | 1.2− | 0.5+ | 2006 10 17 | G96 | 1.3+ | 0.4− | 2006 11 14 | G96 | 0.5+ | 0.4+ |
| 2006 08 28 | 703 | 1.4− | 0.8− | 2006 10 17 | G96 | 1.1+ | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.4+ | | | | |

**1995 SD$_{60}$ = 2006 TK$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.82951 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18486325 | $\omega$ | 264.93600 | | −0.31605379 | | −0.94813260 |
| $a$ | 3.0518908 | $\Omega$ | 203.57545 | | +0.90064536 | | −0.28858059 |
| $e$ | 0.2107420 | $i$ | 4.87353 | | +0.29824142 | | −0.13328844 |
| $P$ | 5.33 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 1995 09 19 | 691 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1995 09 19 | 691 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.7− |
| 1995 09 21 | 691 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 1995 09 21 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.3− |
| 1995 09 21 | 691 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.8− |
| 1995 09 24 | 691 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.4− | 0.3+ |
| 1995 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2− | 1.2− |
| 1995 09 24 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 1995 09 27 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.8− |
| 1995 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.7+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 1995 09 27 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2006 09 28 | G96 | 0.3+ | 0.6− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2006 09 28 | G96 | 0.5+ | 0.8− | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2006 09 28 | G96 | 0.3+ | 0.5− | 2006 11 01 | 691 | 0.0 | 0.3+ | | | | |
| 2006 09 28 | G96 | 0.0 | 0.6− | 2006 11 09 | 644 | 0.2− | 0.1+ | | | | |

**1995 SX$_{60}$ = 2006 SJ$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.19805 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18081635 | $\omega$ | 272.52960 | | +0.97377086 | | −0.22157536 |
| $a$ | 3.0972595 | $\Omega$ | 100.27551 | | +0.22400737 | | +0.89375116 |
| $e$ | 0.1705793 | $i$ | 3.01287 | | +0.03988746 | | +0.39001696 |
| $P$ | 5.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.2− | 0.2+ | 1995 09 30 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1995 09 19 | 691 | 0.0 | 0.0 | 1995 09 30 | 691 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 1995 09 19 | 691 | 0.1− | 0.4− | 1995 09 30 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.5− |
| 1995 09 25 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.3− | 2006 10 01 | 691 | 0.3− | 0.4+ |
| 1995 09 25 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 1995 09 25 | 691 | 0.7− | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.3− | 0.1+ |

**1995 SD$_{62}$ = 2006 ST$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.34147 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26791019 | $\omega$ | 204.50499 | | +0.98069376 | | −0.19405492 |
| $a$ | 2.3831053 | $\Omega$ | 166.61749 | | +0.19217392 | | +0.93356243 |
| $e$ | 0.1278410 | $i$ | 5.98516 | | +0.03617914 | | +0.30133682 |
| $P$ | 3.68 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.3+ | 0.2− | 2003 12 22 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 1995 09 20 | 691 | 0.1+ | 0.3− | 2003 12 22 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.6+ |
| 1995 09 20 | 691 | 0.3+ | 0.5− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.2+ |
| 1995 09 25 | 691 | 0.2− | 0.2− | 2006 08 19 | 691 | 0.7+ | 1.1+ | 2006 09 30 | 703 | 0.5+ | 0.5+ |
| 1995 09 25 | 691 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.8+ |
| 1995 09 25 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 1995 09 30 | 691 | 0.1+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 1995 09 30 | 691 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 1995 09 30 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2003 12 22 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.1+ | | | | |

**1995 SM$_{63}$ = 2006 UW$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.89017 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27284923 | $\omega$ | 342.75607 | | −0.99646813 | | +0.07857711 |
| $a$ | 2.3542589 | $\Omega$ | 201.81558 | | −0.06453525 | | −0.94224839 |
| $e$ | 0.0935722 | $i$ | 4.57047 | | −0.05372588 | | −0.32556660 |
| $P$ | 3.61 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.0 | 1995 09 30 | 691 | 0.3+ | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 1995 09 20 | 691 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 1995 09 20 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 1995 09 25 | 691 | 0.5− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− |
| 1995 09 25 | 691 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 1995 09 25 | 691 | 0.5− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 1995 09 30 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− | | | | |
| 1995 09 30 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.4− | | | | |

**1995 SM$_{64}$ = 2006 VT$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.67531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19049095 | $\omega$ | 93.25993 | | +0.74050361 | | −0.67155819 |
| $a$ | 2.9914826 | $\Omega$ | 308.92938 | | +0.60269416 | | +0.68055708 |
| $e$ | 0.1365586 | $i$ | 1.89824 | | +0.29734517 | | +0.29300454 |
| $P$ | 5.17 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.3− | 0.2+ | 1995 09 24 | 691 | 0.6+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.4+ |
| 1995 09 18 | 691 | 0.2− | 0.4+ | 1995 09 24 | 691 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 1995 09 18 | 691 | 1.5− | 0.2− | 2006 11 14 | 691 | 0.4− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.4− |
| 1995 09 21 | 691 | 0.3+ | 0.3− | 2006 11 14 | 691 | 0.4− | 0.2+ | 2006 11 18 | 691 | 0.5+ | 0.2− |
| 1995 09 21 | 691 | 0.4+ | 0.3− | 2006 11 14 | 691 | 0.4− | 0.6+ | 2006 11 18 | 691 | 0.4+ | 0.1− |
| 1995 09 21 | 691 | 0.5+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.1+ | | | | |
| 1995 09 24 | 691 | 0.1+ | 0.8+ | 2006 11 15 | G96 | 0.2− | 0.1+ | | | | |

**1995 SZ$_{64}$ = 2006 UR$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.26173 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18124807 | $\omega$ | 354.89027 | | −0.93211284 | | +0.35989330 |
| $a$ | 3.0923391 | $\Omega$ | 206.31696 | | −0.32896008 | | −0.88813688 |
| $e$ | 0.0718810 | $i$ | 5.24499 | | −0.15149560 | | −0.28581409 |
| $P$ | 5.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.3− | 2004 06 15 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 1995 09 19 | 691 | 0.4+ | 0.0 | 2004 06 15 | 691 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 1995 09 19 | 691 | 0.4+ | 0.8− | 2004 06 15 | 691 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.0 |
| 1995 09 21 | 691 | 0.1− | 0.1− | 2005 07 08 | 691 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.4+ |
| 1995 09 21 | 691 | 0.3+ | 0.6− | 2005 07 08 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.0 |
| 1995 09 21 | 691 | 0.1− | 0.5− | 2005 07 08 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 1995 09 24 | 691 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.4+ | 0.2+ |
| 1995 09 24 | 691 | 0.1+ | 0.2− | 2006 09 24 | 691 | 0.5+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 1995 09 24 | 691 | 0.1− | 0.5+ | 2006 09 24 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1− | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.3− | 0.2+ | | | | |

**1995 SR$_{65}$ = 2006 QL$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.50970 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17939787 | $\omega$ | 179.08099 | | +0.79360065 | | +0.60825707 |
| $a$ | 3.1135645 | $\Omega$ | 143.44201 | | −0.55839109 | | +0.73781586 |
| $e$ | 0.1583993 | $i$ | 1.43124 | | −0.24165552 | | +0.29266208 |
| $P$ | 5.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.3+ | 0.0 | 1995 10 02 | 691 | 0.0 | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 1995 09 21 | 691 | 0.1+ | 0.2− | 1995 10 02 | 691 | 0.2+ | 0.9− | 2006 08 27 | 691 | 0.1− | 0.0 |
| 1995 09 21 | 691 | 0.0 | 0.1− | 1995 10 02 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 1995 09 26 | 691 | 0.4− | 0.1− | 2006 08 23 | 807 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1995 09 26 | 691 | 0.1− | 0.4+ | 2006 08 23 | 807 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1995 09 26 | 691 | 0.2− | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |

**1995 SO$_{68}$ = 2006 UJ$_{259}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.65085 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18724714 | $\omega$ | 311.93868 | | +0.83577500 | | +0.54903213 |
| $a$ | 3.0259327 | $\Omega$ | 14.76463 | | −0.49576153 | | +0.75975791 |
| $e$ | 0.1324108 | $i$ | 1.48923 | | −0.23600985 | | +0.34832691 |
| $P$ | 5.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.2− | 0.3+ | 1995 10 01 | 691 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 1995 09 20 | 691 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 1995 09 20 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 1995 09 22 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 1995 09 22 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.3+ | 0.3+ |
| 1995 09 22 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.4− |
| 1995 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.3− | 0.4− |
| 1995 10 01 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− | | | | |

**1995 SB$_{69}$ = 2006 SN$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.19289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17980471 | $\omega$ | 172.13614 | | +0.96944452 | | +0.24385689 |
| $a$ | 3.1088661 | $\Omega$ | 173.56123 | | −0.23602172 | | +0.95683911 |
| $e$ | 0.1489326 | $i$ | 13.75670 | | −0.06686603 | | +0.15809091 |
| $P$ | 5.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.1+ | 0.2− | 1995 09 27 | 691 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.4+ |
| 1995 09 22 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.2− |
| 1995 09 22 | 691 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 1995 09 24 | 691 | 0.0 | 0.4− | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.5+ | 0.5− |
| 1995 09 24 | 691 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.8+ | 0.4− |
| 1995 09 24 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.5+ | 0.5− |
| 1995 09 27 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.2+ | | | | |
| 1995 09 27 | 691 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.3− | 0.1+ | | | | |

**1995 SB$_{72}$ = 2006 SA$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.81575 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17541511 | $\omega$ | 223.37414 | | +0.50103021 | | −0.86425944 |
| $a$ | 3.1605164 | $\Omega$ | 196.71851 | | +0.83060309 | | +0.49481743 |
| $e$ | 0.0832953 | $i$ | 8.99827 | | +0.24303754 | | +0.09061645 |
| $P$ | 5.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.1− | 1995 09 27 | 691 | 0.2+ | 0.1− | 2006 09 20 | 691 | 0.0 | 0.4+ |
| 1995 09 19 | 691 | 0.1+ | 0.3− | 2004 04 24 | 691 | 0.2− | 0.4− | 2006 09 20 | 691 | 0.0 | 0.5+ |
| 1995 09 19 | 691 | 0.1+ | 0.1+ | 2004 04 24 | 691 | 0.1− | 0.3− | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 1995 09 24 | 691 | 0.2+ | 0.4− | 2004 04 24 | 691 | 0.1+ | 0.6− | 2006 10 23 | G96 | 0.3− | 0.0 |
| 1995 09 24 | 691 | 0.1+ | 0.6− | 2006 09 19 | 703 | 0.0 | 0.7− | 2006 10 23 | G96 | 0.0 | 0.0 |
| 1995 09 24 | 691 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 1995 09 27 | 691 | 0.1− | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.1− |
| 1995 09 27 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.5+ | | | | |

**1995 SW$_{74}$ = 2006 UR$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.39187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18301605 | $\omega$ | 313.02720 | | +0.89112552 | | +0.45202981 |
| $a$ | 3.0723918 | $\Omega$ | 20.19839 | | −0.37585213 | | +0.78415625 |
| $e$ | 0.2627552 | $i$ | 6.57785 | | −0.25422527 | | +0.42516822 |
| $P$ | 5.39 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.6+ | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 1995 09 19 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.6+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 1995 09 19 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.3− |
| 1995 09 25 | 691 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 1995 09 25 | 691 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 17 | 691 | 1.0+ | 0.1+ |
| 1995 09 25 | 691 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.5− | 0.0 | 2006 11 17 | 691 | 0.4− | 0.3− |
| 1995 09 30 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 17 | 691 | 0.9+ | 0.1+ |
| 1995 09 30 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.4− | 0.3+ | | | | |
| 1995 09 30 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | | | |

**1995 SJ$_{76}$ = 2006 SY$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.23445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17826948 | $\omega$ | 152.31079 | | +0.84046626 | | +0.54169953 |
| $a$ | 3.1266892 | $\Omega$ | 174.82981 | | −0.52049742 | | +0.81392816 |
| $e$ | 0.0668590 | $i$ | 8.51612 | | −0.15066157 | | +0.20995851 |
| $P$ | 5.53 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 1995 09 20 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.5− | | |
| 1995 09 20 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 09 30 | G96 | 0.2− | 0.2− | | |
| 1995 09 25 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.6− | 0.3− | | |
| 1995 09 25 | 691 | 0.8− | 0.4− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.5− | 0.0 | | |
| 1995 09 25 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 1995 09 30 | 691 | 1.4+ | 1.0− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 23 | G96 | 0.3− | 0.2− | | |
| 1995 09 30 | 691 | 0.8− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.0 | | |
| 1995 09 30 | 691 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.2− | | |

### 1995 $SB_{79}$ = 2006 $US_{230}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.22880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28139781 | $\omega$ | 240.08792 | | −0.59349293 | | +0.80472846 |
| $a$ | 2.3063342 | $\Omega$ | 353.45836 | | −0.69211498 | | −0.51876573 |
| $e$ | 0.1519082 | $i$ | 6.72993 | | −0.41078339 | | −0.28860739 |
| $P$ | 3.50 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.0 | 0.0 | 1995 10 02 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.3+ | | |
| 1995 09 21 | 691 | 0.1− | 0.2− | 1995 10 02 | 691 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.2+ | 0.2− | | |
| 1995 09 21 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.2+ | 2006 10 28 | 291 | 0.5− | 0.2+ | | |
| 1995 09 26 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.7− | 2006 10 28 | 291 | 0.5+ | 0.0 | | |
| 1995 09 26 | 691 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.4+ | 0.2+ | 2006 10 28 | 291 | 0.3− | 0.4− | | |
| 1995 09 26 | 691 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.4− | | | | | | |
| 1995 10 02 | 691 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.2+ | | | | | | |

### 1995 $SM_{80}$ = 2006 $TP_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.30627 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18355073 | $\omega$ | 274.91140 | | +0.37704434 | | +0.92423104 |
| $a$ | 3.0664224 | $\Omega$ | 17.61372 | | −0.75106323 | | +0.34319085 |
| $e$ | 0.0887076 | $i$ | 11.49205 | | −0.54197933 | | +0.16738287 |
| $P$ | 5.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3− | 0.9− | 1995 10 22 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.2− | | |
| 1995 09 26 | 691 | 0.4− | 0.8− | 1995 10 22 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 1995 09 26 | 691 | 0.7+ | 1.2+ | 1995 10 22 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1+ | | |
| 1995 09 29 | 691 | 0.1− | 0.3+ | 2006 10 13 | 691 | 0.3− | 0.5− | 2006 11 01 | G96 | 0.0 | 0.3+ | | |
| 1995 09 29 | 691 | 0.1+ | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.4+ | | |
| 1995 09 29 | 691 | 0.1+ | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.9+ | 2006 11 01 | G96 | 0.5− | 0.3− | | |
| 1995 10 17 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.1+ | | |
| 1995 10 17 | 691 | 0.2+ | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.3− | | | | | | |
| 1995 10 17 | 691 | 0.3− | 0.3− | 2006 10 17 | 691 | 0.5+ | 0.3+ | | | | | | |

### 1995 $SN_{80}$ = 2006 $UE_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.84647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18202428 | $\omega$ | 69.16261 | | +0.78828742 | | −0.61529122 |
| $a$ | 3.0835418 | $\Omega$ | 328.80998 | | +0.56130182 | | +0.72203384 |
| $e$ | 0.1972210 | $i$ | 0.49068 | | +0.25207781 | | +0.31636032 |
| $P$ | 5.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.0 | 0.4− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.5− | | |
| 1995 09 26 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.8− | | |
| 1995 09 26 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.8+ | 0.7− | | |
| 1995 09 29 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.4− | | |
| 1995 09 29 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 1995 09 29 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 1995 10 02 | 691 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 1995 10 02 | 691 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 1995 10 02 | 691 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.6+ | 2006 11 27 | G96 | 0.5+ | 0.4− | | |
| 1995 10 15 | 691 | 0.6− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.7+ | 0.1− | | |
| 1995 10 15 | 691 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.6+ | 0.1− | | |
| 1995 10 15 | 691 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.9+ | 0.5− | | |

### 1995 $SB_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.64519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19922072 | $\omega$ | 100.31259 | | +0.52275623 | | +0.85242600 |
| $a$ | 2.9034413 | $\Omega$ | 201.21348 | | −0.79234424 | | +0.48160964 |
| $e$ | 0.0588038 | $i$ | 1.55040 | | −0.31450999 | | +0.20352414 |
| $P$ | 4.95 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1+ | 0.3− | 1995 09 27 | 691 | 0.2+ | 0.3− | 2005 10 22 | 691 | 0.1+ | 0.3+ | | |
| 1995 09 18 | 691 | 0.2− | 0.1− | 2004 07 16 | 807 | 0.2+ | 0.3+ | 2005 10 30 | 691 | 0.7− | 0.5− | | |
| 1995 09 18 | 691 | 0.2− | 0.1− | 2004 07 16 | 807 | 0.2− | 0.0 | 2005 10 30 | 691 | 0.2+ | 0.1+ | | |
| 1995 09 22 | 691 | 0.5+ | 0.0 | 2005 10 11 | 691 | 0.3− | 0.2+ | 2005 10 30 | 691 | 0.3+ | 0.2− | | |
| 1995 09 22 | 691 | 0.1+ | 0.4+ | 2005 10 11 | 691 | 0.1+ | 0.4+ | 2005 11 25 | G96 | 0.6− | 0.2+ | | |
| 1995 09 22 | 691 | 0.2+ | 0.3− | 2005 10 11 | 691 | 0.1+ | 0.3+ | 2005 11 25 | G96 | 0.2+ | 0.2+ | | |
| 1995 09 27 | 691 | 0.6− | 0.1+ | 2005 10 22 | 691 | 0.1+ | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.2+ | | |
| 1995 09 27 | 691 | 0.2+ | 0.1+ | 2005 10 22 | 691 | 0.0 | 0.3− | 2005 11 25 | G96 | 0.1+ | 0.3− | | |

### 1995 $TJ_3$ = 2006 $QE_{154}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.80692 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17346884 | $\omega$ | 171.74676 | | +0.97538281 | | +0.22051655 |
| $a$ | 3.1841125 | $\Omega$ | 175.51357 | | −0.20297468 | | +0.89937651 |
| $e$ | 0.1667733 | $i$ | 0.66097 | | −0.08619539 | | +0.37748423 |
| $P$ | 5.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.1− | 0.5− | 1995 10 23 | 691 | 0.5− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | | |
| 1995 10 01 | 691 | 0.2+ | 0.1− | 1995 10 23 | 691 | 0.6+ | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.5− | | |
| 1995 10 01 | 691 | 0.0 | 0.5− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.5− | | |
| 1995 10 15 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.2− | | |
| 1995 10 15 | 691 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 1995 10 15 | 691 | 0.2− | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1+ | | | | | | |
| 1995 10 23 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.2+ | 0.1+ | | | | | | |

### 1995 $TH_6$ = 2006 $VD_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.10942 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18181425 | $\omega$ | 313.48502 | | +0.92458348 | | +0.35708234 |
| $a$ | 3.0859160 | $\Omega$ | 26.44677 | | −0.20164525 | | +0.75443096 |
| $e$ | 0.2417912 | $i$ | 17.34931 | | −0.32324075 | | +0.55075051 |
| $P$ | 5.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1− | 0.2+ | 2006 11 13 | 104 | 0.3+ | 0.2+ | 2006 11 15 | 704 | 0.7− | 0.4+ | | |
| 1995 10 15 | 691 | 0.2− | 0.1− | 2006 11 13 | 104 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.4− | 0.1+ | | |
| 1995 10 15 | 691 | 0.1− | 0.0 | 2006 11 14 | A55 | 0.2+ | 0.4+ | 2006 11 15 | A55 | 0.6− | 0.1+ | | |
| 1995 10 22 | 691 | 0.1+ | 0.3− | 2006 11 14 | A55 | 0.2+ | 0.5+ | 2006 11 15 | A55 | 0.2+ | 0.0 | | |
| 1995 10 22 | 691 | 0.2+ | 0.1− | 2006 11 14 | A55 | 0.3+ | 0.1+ | 2006 11 15 | A55 | 0.1− | 0.0 | | |
| 1995 10 22 | 691 | 0.5+ | 0.6− | 2006 11 14 | A55 | 0.3+ | 0.2+ | 2006 11 15 | A55 | 0.0 | 0.2+ | | |
| 1995 10 23 | 691 | 0.0 | 0.5+ | 2006 11 14 | A55 | 0.6+ | 0.2+ | 2006 11 17 | 644 | 0.4+ | 0.1+ | | |
| 1995 10 23 | 691 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.1+ | 2006 11 17 | 644 | 0.3+ | 0.2+ | | |
| 1995 10 23 | 691 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.6− | 2006 11 17 | 644 | 0.4+ | 0.2+ | | |
| 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.8− | 2006 11 21 | 703 | 0.6− | 0.4− | | |
| 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.4− | 0.3− | 2006 11 21 | 703 | 0.4− | 0.3− | | |
| 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 15 | 704 | 0.4− | 0.1+ | 2006 11 21 | 703 | 1.0− | 0.1− | | |
| 2006 11 13 | 104 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.6+ | 0.5+ | 2006 11 21 | 703 | 0.6− | 0.8− | | |

**1995 $TS_8$ = 2006 $SA_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 189.56063 | | (2000.0) | | | |
| $n$ | 0.26505934 | $\omega$ | 161.04615 | | −0.99894665 | −0.04367246 |
| $a$ | 2.4001625 | $\Omega$ | 16.46979 | | +0.03299470 | −0.89690592 |
| $e$ | 0.1333360 | $i$ | 2.84713 | | +0.03188956 | −0.44005964 |
| $P$ | 3.72 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.6+ | 0.2+ | 1995 10 15 | 691 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.5+ | 0.0 |
| 1995 09 25 | 691 | 0.5+ | 0.1− | 2001 03 28 | 691 | (0.3− | 2.1+) | 2006 09 25 | G96 | 0.1− | 0.4− |
| 1995 09 25 | 691 | 0.7+ | 0.2+ | 2001 03 28 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1995 10 01 | 691 | 0.2− | 0.3− | 2001 03 28 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 1995 10 01 | 691 | 0.9− | 0.9− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 1995 10 01 | 691 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.7− | 0.2− |
| 1995 10 15 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.4− | 0.0 |
| 1995 10 15 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1+ | | | | |

**1995 $UF_1$ = 2006 $WS_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.35648 | | (2000.0) | | | |
| $n$ | 0.18715968 | $\omega$ | 323.07396 | | +0.86405991 | +0.50306600 |
| $a$ | 3.0268752 | $\Omega$ | 6.79618 | | −0.41774117 | +0.73657119 |
| $e$ | 0.1253386 | $i$ | 8.76350 | | −0.28087859 | +0.45209233 |
| $P$ | 5.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 046 | 0.1+ | 0.5+ | 1995 11 11 | 046 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.7− |
| 1995 10 22 | 046 | 0.2− | 1.5+ | 1995 11 11 | 046 | 0.9− | 0.1− | 2006 11 14 | 703 | 1.2+ | 0.5+ |
| 1995 10 22 | 046 | 0.4+ | 0.5+ | 1995 11 11 | 046 | 0.5− | 0.5− | 2006 11 14 | 703 | 0.9− | 1.2+ |
| 1995 10 22 | 046 | 0.1+ | 0.6+ | 1995 11 11 | 046 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.6− |
| 1995 10 22 | 046 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 1.0− | 2006 11 22 | 703 | (1.6− | 0.3+) |
| 1995 10 23 | 046 | 0.5+ | 1.0− | 2006 10 19 | 703 | 1.1+ | 0.2− | 2006 11 22 | 703 | 1.0− | 0.5− |
| 1995 10 23 | 046 | 0.2+ | 0.7− | 2006 10 19 | 703 | 1.0+ | 0.3+ | 2006 11 22 | 703 | 0.1− | 0.8+ |
| 1995 10 23 | 046 | 0.3+ | 0.2− | 2006 10 19 | 703 | (1.8+ | 0.4−) | 2006 11 22 | 703 | 0.5− | 0.7− |
| 1995 10 23 | 046 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.8− | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 1995 10 24 | 046 | 0.1− | 0.8− | 2006 10 27 | 703 | (1.6− | 0.3−) | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 1995 10 24 | 046 | 1.0+ | 0.2+ | 2006 10 27 | 703 | 0.6+ | 0.6+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 1995 10 24 | 046 | 0.9− | 0.4− | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 25 | G96 | 0.1− | 0.1+ |

**1995 $UB_{11}$ = 2006 $QB_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 321.29736 | | (2000.0) | | | |
| $n$ | 0.17790089 | $\omega$ | 44.04380 | | +0.68283976 | −0.73051807 |
| $a$ | 3.1310065 | $\Omega$ | 2.92956 | | +0.61542855 | +0.56887210 |
| $e$ | 0.1135911 | $i$ | 9.63715 | | +0.39367188 | +0.37779344 |
| $P$ | 5.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 1995 10 17 | 691 | 0.3− | 0.4− | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | (0.7− | 1.8+) |
| 1995 10 17 | 691 | 0.5− | 0.3− | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.0 |
| 1995 10 23 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.3− | 0.5+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 1995 10 23 | 691 | 0.5+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 1995 10 23 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 1995 10 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 10 23 | G96 | 0.4− | 0.3− |
| 1995 10 28 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 1995 10 28 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 10 23 | G96 | 0.5− | 0.4− |
| 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.2+ | 0.1− | | | | |
| 2006 08 18 | 691 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.4− | 0.3− | | | | |

**1995 $UK_{12}$ = 2006 $RB_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.28617 | | (2000.0) | | | |
| $n$ | 0.26855922 | $\omega$ | 352.71874 | | +0.92268171 | +0.38553909 |
| $a$ | 2.3792642 | $\Omega$ | 344.60196 | | −0.35293469 | +0.84011066 |
| $e$ | 0.2004996 | $i$ | 0.91731 | | −0.15522745 | +0.38154120 |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 16 | 691 | 0.9+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.0 |
| 1994 04 16 | 691 | 0.4− | 0.9+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.5− | 1.1− |
| 1994 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | (1.9− | 1.1−) |
| 1995 10 17 | 691 | 0.5− | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 703 | (2.1− | 0.5−) |
| 1995 10 17 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 23 | 704 | 0.1+ | 0.6− |
| 1995 10 17 | 691 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 23 | 704 | 1.3− | 0.3− |
| 1995 10 22 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.2− | 0.0 |
| 1995 10 22 | 691 | 0.0 | 0.6− | 2006 09 20 | 704 | 0.6+ | 0.7+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1995 10 22 | 691 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 1995 10 28 | 691 | 0.7+ | 0.3− | 2006 09 20 | 704 | 0.3− | 1.3+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1995 10 28 | 691 | 0.4+ | 0.2− | 2006 09 20 | 704 | (1.0− | 1.5+) | 2006 10 31 | 691 | 0.2− | 0.3− |
| 1995 10 28 | 691 | 0.1+ | 0.2− | 2006 09 20 | 704 | 1.2+ | 0.6− | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 2002 07 05 | 704 | 1.0+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 07 05 | 704 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 07 05 | 704 | 0.0 | 0.9− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2002 07 05 | 704 | 0.3+ | 0.1− | 2006 09 29 | 704 | (1.5− | 2.2+) | 2006 11 01 | 691 | 0.2− | 0.3− |
| 2002 08 28 | 644 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.7− | 0.9+ | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2002 08 28 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2002 08 28 | 644 | 0.2− | 0.3− | 2006 09 29 | 704 | (1.9− | 0.2+) | 2006 11 11 | 703 | 0.1+ | 0.9+ |
| 2006 07 22 | G96 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.5− | 2.0+ |
| 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.4− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2006 07 22 | G96 | 0.6− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ | | | | |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ | | | | |

**1995 $UD_{14}$ = 2006 $TM_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 92.40939 | | (2000.0) | | | |
| $n$ | 0.18048167 | $\omega$ | 65.82741 | | +0.00270740 | +0.99688461 |
| $a$ | 3.1010873 | $\Omega$ | 204.71959 | | −0.97221673 | −0.01582701 |
| $e$ | 0.2095261 | $i$ | 10.86538 | | −0.23406688 | +0.07726959 |
| $P$ | 5.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.7+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 1995 10 17 | 691 | 0.1− | 0.3+ | 2006 09 25 | G96 | 1.0+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 1995 10 17 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.9− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 1995 10 22 | 691 | 0.1− | 0.3− | 2006 10 15 | 691 | 0.9+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 1995 10 22 | 691 | 0.1− | 0.7− | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 1995 10 22 | 691 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 1995 10 27 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 1995 10 27 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− |
| 1995 10 27 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.5− | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.8− | 1.2+ | | | | |

**1995 $UP_{15}$ = 2006 $VO_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.94656 | | (2000.0) | | | |
| $n$ | 0.18175200 | $\omega$ | 355.25624 | | +0.54460233 | −0.82214135 |
| $a$ | 3.0866206 | $\Omega$ | 61.65718 | | +0.77555159 | +0.41840530 |
| $e$ | 0.0616349 | $i$ | 10.85888 | | +0.31926170 | +0.38603188 |
| $P$ | 5.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 1995 10 17 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 1995 10 17 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.3+ |
| 1995 10 23 | 691 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.1+ | 1.2+ |
| 1995 10 23 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.5− | 1.3+ |
| 1995 10 23 | 691 | 0.6+ | 0.2+ | 2006 11 14 | J75 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.4+ | 0.2+ |
| 1995 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 14 | J75 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 1995 10 28 | 691 | 0.2− | 0.2− | 2006 11 14 | J75 | 0.5+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 1995 10 28 | 691 | 0.6− | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.2+ | 0.5− |
| 2006 09 28 | G96 | 0.4− | 0.3− | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.8− |
| 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.5− |
| 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 18 | J75 | 0.1+ | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.3− |
| 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 18 | J75 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 18 | 691 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.0 |

### 1995 $UU_{15}$ = 2006 $UZ_{231}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.25969 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18148044 | $\omega$ | 358.02055 | | +0.48495372 | | −0.85623080 |
| $a$ | 3.0896990 | $\Omega$ | 62.92932 | | +0.80509633 | | +0.35760829 |
| $e$ | 0.1004820 | $i$ | 11.53197 | | +0.34152567 | | +0.37280709 |
| $P$ | 5.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.5− | 0.1+ | 2006 10 20 | 695 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 1995 10 17 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.2− |
| 1995 10 17 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.8+ |
| 1995 10 23 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.5+ |
| 1995 10 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.4− | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 1995 10 23 | 691 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 1995 10 28 | 691 | 0.1− | 0.8+ | 2006 10 28 | G96 | 0.4− | 0.3+ | 2006 11 27 | 703 | 0.1− | 1.2+ |
| 1995 10 28 | 691 | 0.1− | 0.6− | 2006 10 28 | G96 | 0.5+ | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.8− |
| 1995 10 28 | 691 | 0.4+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | (4.4+ | 0.1+) |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.8+ | 1.0+ |
| 2006 09 28 | G96 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 12 01 | 691 | 0.4− | 0.6− |
| 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2006 09 28 | G96 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 12 01 | 691 | 0.4− | 0.4− |
| 2006 10 19 | 695 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− | | | | |
| 2006 10 20 | 695 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.0 | | | | |

### 1995 $UZ_{15}$ = 2006 $VW_{147}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.36277 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18168238 | $\omega$ | 341.11398 | | +0.63205852 | | −0.75731153 |
| $a$ | 3.0874091 | $\Omega$ | 69.33523 | | +0.73166526 | | +0.51338782 |
| $e$ | 0.0891779 | $i$ | 10.11094 | | +0.25528018 | | +0.40362383 |
| $P$ | 5.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1− | 0.4+ | 2005 07 30 | 644 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 1995 10 17 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.6+ |
| 1995 10 17 | 691 | 0.2+ | 1.2− | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 1995 10 23 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 1995 10 23 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 1995 10 23 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 1995 10 28 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 1995 10 28 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1995 10 28 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 645 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2001 11 21 | 645 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 644 | 0.3+ | 1.2+ | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 12 19 | 644 | 0.3+ | 1.6+ | 2006 11 15 | 691 | 1.2− | 0.8− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2001 12 19 | 644 | 0.7+ | 1.6+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.5− | 0.2+ |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.7+ | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2005 07 30 | 644 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.5+ | | | | |
| 2005 07 30 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.8+ | | | | |

### 1995 $UL_{17}$ = 2006 $QN_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.77091 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26094364 | $\omega$ | 235.38884 | | +0.98561261 | | −0.16503398 |
| $a$ | 2.4253341 | $\Omega$ | 134.07977 | | +0.16688406 | | +0.91599106 |
| $e$ | 0.2283347 | $i$ | 2.91168 | | +0.02678620 | | +0.36568313 |
| $P$ | 3.78 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.2− | 0.1+ | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.4+ |
| 1995 10 17 | 691 | 0.4− | 0.3+ | 2004 01 27 | 691 | 0.2+ | 0.2− | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 1995 10 17 | 691 | 0.0 | 0.0 | 2004 01 27 | 691 | 0.2− | 0.7+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 1995 10 23 | 691 | 0.3+ | 0.0 | 2006 07 18 | G96 | 0.3− | 0.2− | 2006 08 20 | 644 | 0.4+ | 0.4+ |
| 1995 10 23 | 691 | 0.2+ | 0.0 | 2006 07 18 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | 1.0− | 0.2− |
| 1995 10 23 | 691 | 0.4+ | 0.2− | 2006 07 18 | G96 | 0.5− | 0.4− | 2006 08 28 | 703 | 0.2+ | 0.6+ |
| 1995 10 28 | 691 | 0.2− | 0.4− | 2006 07 18 | G96 | 0.4+ | 0.4− | 2006 08 28 | 703 | 0.2− | 0.3+ |
| 1995 10 28 | 691 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.7− |
| 1995 10 28 | 691 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.6+ | | | | |

### 1995 $UD_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.02966 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27110031 | $\omega$ | 320.57958 | | +0.71567001 | | +0.69843561 |
| $a$ | 2.3643732 | $\Omega$ | 355.11729 | | −0.63461983 | | +0.64905830 |
| $e$ | 0.1983741 | $i$ | 1.36881 | | −0.29167465 | | +0.30151455 |
| $P$ | 3.64 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.1− | 0.1+ | 2002 08 15 | 644 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 |
| 1995 10 19 | 691 | 0.1− | 0.2− | 2002 08 30 | 291 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 1995 10 19 | 691 | 0.1+ | 0.1− | 2002 08 30 | 291 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.7+ |
| 1995 10 24 | 691 | 0.4+ | 0.1+ | 2002 08 30 | 291 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 1995 10 24 | 691 | 0.1+ | 0.0 | 2002 09 04 | 644 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2− |
| 1995 10 24 | 691 | 0.1+ | 0.4− | 2002 09 04 | 644 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 1995 10 28 | 691 | 0.1− | 0.4− | 2002 09 04 | 644 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.4+ | 0.4+ |
| 1995 10 28 | 691 | 0.2− | 0.1+ | 2002 10 11 | 291 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 1995 10 28 | 691 | 0.1+ | 0.1+ | 2002 10 11 | 291 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 08 15 | 644 | 0.3+ | 0.3− | 2002 10 11 | 291 | 0.3+ | 0.0 | | | | |
| 2002 08 15 | 644 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.3− | 0.3− | | | | |

### 1995 $US_{21}$ = 2006 $US_{278}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.87205 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18196812 | $\omega$ | 289.42930 | | +0.48432454 | | +0.87486178 |
| $a$ | 3.0841762 | $\Omega$ | 9.54761 | | −0.78646460 | | +0.43877968 |
| $e$ | 0.0537439 | $i$ | 2.35886 | | −0.38327949 | | +0.20515666 |
| $P$ | 5.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.2+ | 0.5+ | 1995 10 28 | 691 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.3− | 0.5+ |
| 1993 04 21 | 691 | 0.3+ | 0.9+ | 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.3− | 0.9+ |
| 1993 04 21 | 691 | 0.4+ | 0.8+ | 2004 05 14 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.6+ |
| 1995 10 19 | 691 | 0.4− | 0.2+ | 2004 05 14 | 691 | 0.4+ | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1995 10 19 | 691 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1995 10 19 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 1995 10 24 | 691 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 1995 10 24 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 1995 10 24 | 691 | 0.1+ | 0.6+ | 2006 10 15 | 691 | 0.8− | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.5− | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 1995 10 28 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.2+ | | | | |

**1995 UY$_{21}$ = 1999 VO$_{230}$ = 2001 FP$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.35829 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25932974 | $\omega$ | 271.86898 | | −0.03003124 | +0.99954861 | |
| $a$ | 2.4353861 | $\Omega$ | 356.40978 | | −0.91164993 | −0.02773509 | |
| $e$ | 0.1617641 | $i$ | 0.76899 | | −0.40986892 | −0.01154755 | |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.1− | 0.3+ | 2002 06 12 | 644 | 0.6+ | 0.0 | 2005 03 13 | J95 | 1.1− | 0.7+ |
| 1995 10 19 | 691 | 0.4+ | 0.1+ | 2002 06 12 | 644 | 0.1+ | 0.2+ | 2005 04 02 | G96 | 0.5− | 0.1− |
| 1995 10 19 | 691 | 0.5− | 0.1− | 2002 07 14 | 644 | 0.3+ | 0.0 | 2005 04 02 | G96 | 0.4− | 0.2+ |
| 1995 10 28 | 691 | 0.2− | 0.2+ | 2002 07 14 | 644 | 0.0 | 0.2− | 2005 04 02 | G96 | 1.2− | 0.3− |
| 1995 10 28 | 691 | 0.0 | 0.2− | 2002 07 14 | 644 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.3− | 0.1− |
| 1995 10 28 | 691 | 0.7− | 0.6− | 2002 07 19 | 644 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.4− | 0.8+ |
| 1999 11 09 | 691 | 0.5+ | 0.2+ | 2002 07 19 | 644 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.5− | 0.4+ |
| 1999 11 09 | 691 | 0.3+ | 0.1− | 2002 07 19 | 644 | 1.0+ | 1.2+ | 2006 08 28 | 699 | 0.8− | 0.0 |
| 1999 11 09 | 691 | 0.5+ | 0.3+ | 2005 02 01 | 691 | 0.4− | 1.0+ | 2006 08 28 | 703 | 1.0− | 0.7+ |
| 2001 01 24 | 691 | 0.0 | 0.1+ | 2005 02 01 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.7+ | 0.2+ |
| 2001 01 24 | 691 | 0.1− | 0.0 | 2005 02 01 | 691 | 0.1− | 0.3+ | 2006 08 28 | 699 | 1.1+ | 0.2− |
| 2001 01 24 | 691 | 0.3+ | 0.3− | 2005 02 09 | G96 | 0.7− | 0.3− | 2006 08 28 | 703 | 0.4− | 1.7+ |
| 2001 03 24 | 695 | 0.0 | 0.4+ | 2005 02 09 | G96 | 0.6− | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.3− |
| 2001 03 24 | 695 | 0.0 | 0.5+ | 2005 02 09 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.6− | 0.9+ |
| 2001 03 25 | 695 | 0.1− | 0.4+ | 2005 02 09 | G96 | 1.3− | 0.1− | 2006 08 28 | 703 | 0.4− | 1.0− |
| 2001 03 25 | 695 | 0.0 | 0.5+ | 2005 03 13 | J95 | 1.4+ | 0.9− | 2006 08 28 | 703 | 0.7− | 0.1− |
| 2002 06 12 | 644 | 0.4− | 0.4− | 2005 03 13 | J95 | 0.9+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.2− |

**1995 UH$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.31077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21234950 | $\omega$ | 109.02093 | | −0.64177526 | −0.76645540 | |
| $a$ | 2.7825003 | $\Omega$ | 20.96970 | | +0.67359279 | −0.57951798 | |
| $e$ | 0.0451661 | $i$ | 4.14968 | | +0.36660232 | −0.27695674 | |
| $P$ | 4.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.2− | 0.1− | 1995 10 28 | 691 | 0.0 | 0.3+ | 2002 03 09 | 691 | 0.1+ | 0.0 |
| 1995 10 19 | 691 | 0.1− | 0.3− | 2002 02 21 | 691 | 0.3− | 0.0 | 2002 03 09 | 644 | 0.3− | 1.1− |
| 1995 10 24 | 691 | 0.1+ | 0.1− | 2002 02 21 | 691 | 0.3+ | 0.1+ | 2002 03 09 | 644 | 0.4+ | 0.0 |
| 1995 10 24 | 691 | 0.1+ | 0.0 | 2002 02 21 | 691 | 0.2− | 0.1+ | 2002 03 16 | 704 | 0.6− | 0.8+ |
| 1995 10 24 | 691 | 0.4+ | 0.5+ | 2002 03 09 | 644 | 0.2− | 0.4− | 2002 03 16 | 704 | 0.4− | 0.4+ |
| 1995 10 28 | 691 | 0.3− | 0.1− | 2002 03 09 | 691 | 0.2+ | 0.2+ | 2002 03 16 | 704 | 0.5− | 0.3− |
| 1995 10 28 | 691 | 0.0 | 0.2− | 2002 03 09 | 691 | 0.3+ | 0.2− | | | | |

**1995 UL$_{23}$ = 2006 UU$_{291}$ = 2006 VA$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.86310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18221296 | $\omega$ | 132.08285 | | +0.99212500 | −0.06113363 | |
| $a$ | 3.0814128 | $\Omega$ | 231.71638 | | +0.02378917 | +0.94888096 | |
| $e$ | 0.1388742 | $i$ | 8.00551 | | +0.12297181 | +0.30965722 | |
| $P$ | 5.41 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.7+ | 0.1− | 1995 11 21 | 691 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 1995 10 19 | 691 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1995 10 19 | 691 | 0.4+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1− |
| 1995 10 24 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.3− | 0.1− |
| 1995 10 24 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.2− | 0.2− |
| 1995 10 24 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 1995 11 16 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 1995 11 16 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.7+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 1995 11 16 | 691 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.7+ | 0.6− |
| 1995 11 21 | 691 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.6+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 1995 11 21 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1+ | | | | |

**1995 UK$_{38}$ = 2006 UY$_{277}$ = 2006 VX$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.59177 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27075540 | $\omega$ | 77.49526 | | −0.07779951 | −0.99694298 | |
| $a$ | 2.3663808 | $\Omega$ | 16.97182 | | +0.90484746 | −0.07364333 | |
| $e$ | 0.1505032 | $i$ | 1.41453 | | +0.41856698 | −0.02610263 | |
| $P$ | 3.64 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1+ | 0.2+ | 2002 08 29 | 291 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 1995 10 17 | 691 | 0.4+ | 0.1+ | 2002 10 09 | 291 | 0.4+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 1995 10 17 | 691 | 0.1+ | 0.0 | 2002 10 09 | 291 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1995 10 22 | 691 | 0.3− | 0.3− | 2002 10 09 | 291 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3− | 0.1− |
| 1995 10 22 | 691 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.4− | 0.2− |
| 1995 10 22 | 691 | 0.0 | 0.6− | 2006 09 27 | G96 | 0.5− | 0.3− | 2006 11 11 | G96 | 0.7− | 0.0 |
| 1995 10 28 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.8− | 1.0− | 2006 11 11 | G96 | 0.2+ | 0.1+ |
| 1995 10 28 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.0 | 1.0− | 2006 11 15 | G96 | 0.2+ | 0.3+ |
| 1995 10 28 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2002 08 29 | 291 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.4− | 0.0 |
| 2002 08 29 | 291 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.5− |

**1995 UV$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.01480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17635639 | $\omega$ | 180.09475 | | +0.93908615 | −0.33970732 | |
| $a$ | 3.1492605 | $\Omega$ | 200.00770 | | +0.31542202 | +0.91211881 | |
| $e$ | 0.1529749 | $i$ | 8.76152 | | +0.13647764 | +0.22943019 | |
| $P$ | 5.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.8+ | 0.5+ | 2006 10 20 | 291 | 0.1+ | 0.2+ |
| 1995 08 28 | 691 | 0.3+ | 0.2− | 2001 12 11 | 704 | 0.3− | 0.7+ | 2006 10 20 | 291 | 0.0 | 0.1− |
| 1995 08 28 | 691 | 0.1+ | 0.2− | 2006 08 29 | 703 | 0.5− | 0.3+ | 2006 10 23 | 291 | 0.0 | 0.0 |
| 1995 10 23 | 691 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.0 | 0.3− | 2006 10 23 | 291 | 0.0 | 0.1+ |
| 1995 10 23 | 691 | 0.4+ | 0.2− | 2006 08 29 | 703 | 0.5+ | 0.9− | 2006 10 23 | 291 | 0.1+ | 0.0 |
| 1995 10 23 | 691 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.6− | 0.6− | 2006 10 27 | 291 | 0.2+ | 0.1+ |
| 1995 10 27 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 10 27 | 291 | 0.3− | 0.0 |
| 1995 10 27 | 691 | 0.5− | 0.3− | 2006 09 18 | 703 | 1.1− | 0.7+ | 2006 10 27 | 291 | 0.1+ | 0.0 |
| 1995 10 27 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.0 | 0.3+ | 2006 10 27 | 291 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 0.6− | 0.5− | 2006 09 18 | 703 | 0.4− | 0.4− | 2006 10 27 | 291 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 0.2+ | 0.7− | 2006 10 20 | 291 | 0.1+ | 0.3+ | 2006 10 27 | 291 | 0.1+ | 0.2+ |

**1995 UN$_{50}$ = 2006 TC$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.94324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18064795 | $\omega$ | 269.15779 | | +0.87550576 | +0.45951075 | |
| $a$ | 3.0991840 | $\Omega$ | 63.47475 | | −0.34956495 | +0.81585566 | |
| $e$ | 0.1641982 | $i$ | 9.61623 | | −0.33360757 | +0.35104047 | |
| $P$ | 5.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.4+ |
| 1995 10 17 | 691 | 0.0 | 0.2− | 2006 09 30 | G96 | 1.3− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 1995 10 17 | 691 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 1995 10 23 | 691 | (2.7+ | 1.1−) | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 1995 10 23 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 1.3− | 0.6− |
| 1995 10 23 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.9− |
| 1995 10 28 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.1− | 1.5− |
| 1995 10 28 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.2− |
| 1995 10 28 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.5+ | 2006 11 23 | H07 | 0.5+ | 0.3− |
| 2006 09 30 | G96 | 0.1+ | 0.6− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 23 | H07 | 0.6− | 0.8+ |

### 1995 $UX_{51}$ = 2006 $WP_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 338.17165 | | (2000.0) | | | |
| $n$ | 0.27039152 | $\omega$ | 258.95614 | | +0.35302820 | −0.93557729 |
| $a$ | 2.3685034 | $\Omega$ | 170.35932 | | +0.87626400 | +0.32757340 |
| $e$ | 0.1680470 | $i$ | 2.78543 | | +0.32792147 | +0.13187419 |
| $P$ | 3.65 | $H$ | 18.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.1− | 0.1− | 1995 10 28 | 691 | 0.5+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.3− |
| 1995 10 18 | 691 | 0.3+ | 0.2− | 1995 10 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 1995 10 18 | 691 | 0.4− | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 1995 10 20 | 691 | 0.5− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 1995 10 20 | 691 | 0.2− | 0.2− | 2006 10 03 | G96 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 1995 10 20 | 691 | 0.1− | 0.8− | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.4+ | 0.3+ |
| 1995 10 25 | 691 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 1995 10 25 | 691 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 1995 10 25 | 691 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.6+ | 0.1− | 2006 11 24 | 691 | 0.2− | 0.1− |
| 1995 10 28 | 691 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.6− | 0.3− | 2006 11 24 | 691 | 0.0 | 0.1+ |

### 1995 $UV_{55}$ = 2006 $TH_{9}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.80469 | | (2000.0) | | | |
| $n$ | 0.18364792 | $\omega$ | 192.32362 | | +0.76194603 | −0.64682542 |
| $a$ | 3.0653404 | $\Omega$ | 208.06152 | | +0.59990700 | +0.72379784 |
| $e$ | 0.1440732 | $i$ | 3.95945 | | +0.24402835 | +0.24027809 |
| $P$ | 5.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.5+ | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.5− | 0.1− |
| 1995 10 18 | 691 | 0.4+ | 0.3− | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.7− |
| 1995 10 18 | 691 | 0.8+ | 0.3− | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 1995 10 23 | 691 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 1995 10 23 | 691 | 0.6− | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 1995 10 23 | 691 | 0.2− | 0.4− | 2006 10 12 | 291 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.7− | 0.7− |
| 1995 10 27 | 691 | 0.0 | 0.2+ | 2006 10 12 | 291 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.1+ |
| 1995 10 27 | 691 | 0.4− | 0.2+ | 2006 10 12 | 291 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3− | 1.0− |
| 1995 10 27 | 691 | (0.5− | 2.6−) | 2006 10 19 | 691 | 0.5+ | 0.1+ | 2006 11 13 | G96 | (1.7+ | 1.0−) |
| 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1− | | | | |
| 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.4− | 0.4+ | | | | |

### 1995 $UT_{59}$ = 2006 $AD_{7}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 132.89332 | | (2000.0) | | | |
| $n$ | 0.21490713 | $\omega$ | 9.71653 | | +0.85764182 | −0.51355972 |
| $a$ | 2.7603797 | $\Omega$ | 21.24900 | | +0.46675095 | +0.75568524 |
| $e$ | 0.0826277 | $i$ | 4.20715 | | +0.21585659 | +0.40644339 |
| $P$ | 4.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.0 | 0.2− | 1997 02 15 | 691 | 0.4+ | 0.3− | 2004 10 07 | 704 | 0.3− | 0.2− |
| 1995 10 19 | 691 | 0.1+ | 0.5− | 2004 09 12 | G92 | 1.0+ | 0.6− | 2004 10 07 | 704 | 0.1− | 0.1+ |
| 1995 10 19 | 691 | 0.3+ | 0.4+ | 2004 09 12 | G92 | 0.6− | 1.1+ | 2004 10 07 | 704 | 0.2− | 0.1+ |
| 1995 10 28 | 691 | 0.6− | 0.2− | 2004 09 12 | G92 | 0.3− | 0.1+ | 2004 10 07 | 704 | 0.9+ | 0.1− |
| 1995 10 28 | 691 | 0.2− | 0.1− | 2004 09 22 | G92 | 0.0 | 0.2− | 2006 01 05 | 704 | 0.7+ | 0.5+ |
| 1995 10 28 | 691 | 0.3− | 0.2− | 2004 09 22 | G92 | 0.1− | 0.1+ | 2006 01 05 | 704 | 0.0 | 0.4+ |
| 1995 11 15 | 691 | 1.1+ | 1.7+ | 2004 09 22 | G92 | 0.3+ | 0.1+ | 2006 01 05 | 704 | (1.2− | 2.5−) |
| 1995 11 15 | 691 | 0.0 | 0.8− | 2004 09 23 | G92 | 0.5− | 0.0 | 2006 01 06 | 704 | 0.0 | 0.9− |
| 1995 11 15 | 691 | 0.1− | 0.5− | 2004 09 23 | G92 | 0.7− | 0.2− | 2006 01 06 | 704 | 0.1− | 0.1+ |
| 1997 02 15 | 691 | 0.0 | 0.1+ | 2004 09 23 | G92 | 0.8− | 1.1+ | 2006 01 06 | 704 | 0.2− | 1.3+ |
| 1997 02 15 | 691 | 0.4− | 0.0 | 2004 10 07 | 704 | 0.6+ | 0.2+ | | | | |

### 1995 $UX_{59}$ = 2006 $QH_{151}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.37144 | | (2000.0) | | | |
| $n$ | 0.26176183 | $\omega$ | 93.80302 | | +0.41709908 | +0.90885351 |
| $a$ | 2.4202776 | $\Omega$ | 200.84976 | | −0.83792883 | +0.38296923 |
| $e$ | 0.1817759 | $i$ | 0.59466 | | −0.35199946 | +0.16528719 |
| $P$ | 3.77 | $H$ | 18.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.3+ | 0.4+ | 1995 10 28 | 691 | 0.3− | 0.0 | 2006 08 27 | 691 | 0.4+ | 0.2− |
| 1995 10 19 | 691 | 0.3+ | 0.5+ | 2005 03 08 | G96 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.0 |
| 1995 10 19 | 691 | 0.1− | 0.1+ | 2005 03 08 | G96 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 1995 10 22 | 691 | 0.7− | 0.2− | 2005 03 08 | G96 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1995 10 22 | 691 | 0.6− | 0.1+ | 2005 03 08 | G96 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 1995 10 22 | 691 | 1.0+ | 0.5− | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 1995 10 28 | 691 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.3− |
| 1995 10 28 | 691 | 0.0 | 0.3− | 2006 08 19 | 691 | 0.1− | 0.0 | | | | |

### 1995 $UR_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 166.28635 | | (2000.0) | | | |
| $n$ | 0.21672801 | $\omega$ | 303.62750 | | +0.98929158 | +0.03969746 |
| $a$ | 2.7448968 | $\Omega$ | 54.48505 | | +0.03358900 | +0.87454659 |
| $e$ | 0.1964895 | $i$ | 9.93617 | | −0.14203504 | +0.48331395 |
| $P$ | 4.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.9− | 0.2+ | 2004 09 08 | 704 | 0.4− | 0.3+ | 2004 10 07 | A50 | 1.4+ | 0.3+ |
| 1995 10 21 | 691 | 0.8− | 0.3+ | 2004 09 08 | 704 | 0.9− | 1.0+ | 2004 10 07 | 704 | 0.2− | 0.8+ |
| 1995 10 21 | 691 | 0.8− | 0.0 | 2004 09 08 | 704 | 0.1− | 0.6− | 2004 10 07 | 704 | 0.1+ | 0.4+ |
| 1995 10 27 | 691 | 0.6+ | 0.0 | 2004 09 08 | 704 | 0.7− | 0.3− | 2004 10 07 | 704 | 0.5+ | 0.1+ |
| 1995 10 27 | 691 | 0.6+ | 0.1− | 2004 09 08 | 704 | 0.3− | 0.2− | 2004 10 07 | 704 | 0.1− | 0.8+ |
| 1995 10 27 | 691 | 0.2+ | 0.0 | 2004 09 21 | 699 | 1.0− | 0.5− | 2004 10 07 | 704 | 0.3− | 0.3+ |
| 1995 11 15 | 691 | 0.0 | 0.0 | 2004 09 21 | 699 | 0.0 | 0.2− | 2004 10 18 | 704 | 0.4+ | 0.7+ |
| 1995 11 15 | 691 | 0.4+ | 0.2+ | 2004 09 21 | 699 | 0.0 | 0.2+ | 2004 10 18 | 704 | 0.2+ | 1.1− |
| 1995 11 15 | 691 | 0.2+ | 0.0 | 2004 09 21 | 699 | (1.5− | 3.6−) | 2004 10 18 | 704 | 0.9+ | 0.4− |
| 1998 04 19 | 691 | 0.0 | 0.2+ | 2004 10 07 | A50 | 0.9+ | 0.2+ | 2004 10 18 | 704 | 0.2+ | 0.7− |
| 1998 04 19 | 691 | 0.1+ | 0.1+ | 2004 10 07 | A50 | 0.2+ | 0.3+ | 2004 10 18 | 704 | 0.5− | 0.6+ |
| 1998 04 19 | 691 | 0.2+ | 0.3+ | 2004 10 07 | A50 | 0.9+ | 1.5+ | | | | |

### 1995 $UE_{67}$ = 2006 $QO_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.04795 | | (2000.0) | | | |
| $n$ | 0.08320274 | $\omega$ | 22.77766 | | +0.99155652 | −0.12669017 |
| $a$ | 5.1965002 | $\Omega$ | 344.42462 | | +0.09734008 | +0.86812078 |
| $e$ | 0.0147774 | $i$ | 5.91351 | | +0.08567712 | +0.47991240 |
| $P$ | 11.85 | $H$ | 13.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.6+ | 0.8+ | 1995 10 28 | 691 | 0.6− | 0.0 | 2006 08 28 | 691 | 0.3+ | 0.0 |
| 1995 10 18 | 691 | 0.8+ | 0.4+ | 1995 10 28 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 1995 10 18 | 691 | 0.7+ | 0.7+ | 1995 10 28 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.5+ | 0.3+ |
| 1995 10 23 | 691 | 1.0+ | 0.5+ | 2006 08 21 | 691 | 0.5− | 0.1− | 2006 10 19 | 695 | 0.1+ | 0.2− |
| 1995 10 23 | 691 | 1.7+ | 0.3+ | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 10 19 | 695 | 0.1+ | 0.2− |
| 1995 10 23 | 691 | 1.2+ | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.0 | 2006 10 20 | 695 | 0.1+ | 0.2− |

### 1995 $US_{67}$ = 2006 $UK_{72}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.10283 | | (2000.0) | | | |
| $n$ | 0.17790984 | $\omega$ | 112.74585 | | +0.69324909 | +0.71998419 |
| $a$ | 3.1309015 | $\Omega$ | 201.24634 | | −0.68943866 | +0.64956022 |
| $e$ | 0.1187818 | $i$ | 5.07720 | | −0.20995245 | +0.24432414 |
| $P$ | 5.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 691 | 0.1− | 0.6− | 2005 07 12 | G96 | 0.5− | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.4+ |
| 1995 08 27 | 691 | 0.1− | 0.7− | 2005 07 12 | G96 | 0.6+ | 1.2− | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 1995 08 27 | 691 | 0.0 | 0.8− | 2006 08 28 | 703 | 1.3+ | 0.8− | 2006 10 17 | 703 | 1.1− | 0.0 |
| 1995 10 18 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 10 17 | 703 | (0.2+ | 1.9+) |
| 1995 10 18 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.7− | 1.3+ |
| 1995 10 18 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.7− | 1.1+ | 2006 10 17 | 703 | 1.1− | 1.0− |
| 1995 10 25 | 691 | 0.1+ | 0.3− | 2006 09 12 | 703 | (0.4− | 2.2+) | 2006 10 23 | G96 | 0.1− | 0.0 |
| 1995 10 25 | 691 | 0.0 | 0.2− | 2006 09 12 | 703 | 1.3+ | 0.7+ | 2006 10 23 | G96 | 0.9+ | 0.0 |
| 1995 10 25 | 691 | 0.1+ | 0.2− | 2006 09 12 | 703 | (1.8+ | 1.3+) | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2004 03 17 | 691 | 0.3+ | 0.1− | 2006 09 12 | 703 | (0.2+ | 2.6+) | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.9− | 0.0 |
| 2004 03 17 | 691 | 0.3− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2005 07 12 | G96 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2005 07 12 | G96 | 0.4− | 0.8+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.0 |

## 1995 $UM_{81}$ = 2006 $SQ_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.53815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17929808 | $\omega$ | 86.57293 | | −0.12996081 | | −0.98728863 |
| $a$ | 3.1147197 | $\Omega$ | 12.10792 | | +0.64408824 | | −0.15421873 |
| $e$ | 0.2475898 | $i$ | 25.86184 | | +0.75383057 | | −0.03844147 |
| $P$ | 5.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.5− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 09 29 | 291 | 0.1+ | 0.3− |
| 1995 10 16 | 691 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2− | 0.1− |
| 1995 10 16 | 691 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 1995 10 23 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.5− | 0.6− |
| 1995 10 23 | 691 | 0.7+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.9+ | 0.5− |
| 1995 10 23 | 691 | 0.6+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.0 |
| 1995 10 28 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.2+ |
| 1995 10 28 | 691 | 0.4− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 1995 10 28 | 691 | 0.3− | 0.1− | 2006 09 29 | 291 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 291 | 0.5− | 0.2+ | | | | |

## 1995 $VB_5$ = 2006 $UW_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.09418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17757908 | $\omega$ | 263.39441 | | +0.78954905 | | +0.59358935 |
| $a$ | 3.1347881 | $\Omega$ | 60.07779 | | −0.46767806 | | +0.74634048 |
| $e$ | 0.2536098 | $i$ | 10.35379 | | −0.39735315 | | +0.30104413 |
| $P$ | 5.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.1+ | 0.0 | 2005 06 14 | G96 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.1+ |
| 1995 11 14 | 691 | 0.1+ | 0.1+ | 2005 06 14 | G96 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.3+ |
| 1995 11 14 | 691 | 0.1+ | 0.0 | 2005 06 14 | G96 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.5+ |
| 1995 11 19 | 691 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.9+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 1995 11 19 | 691 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.1+ |
| 1995 11 19 | 691 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.0 | 0.0 |
| 1995 11 26 | 691 | 1.0+ | 0.8− | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.2+ | 0.5+ |
| 1995 11 26 | 691 | 0.1− | 0.4+ | 2006 09 26 | 703 | (2.5− | 0.1−) | 2006 10 22 | 703 | 0.6+ | 0.6− |
| 1995 11 26 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.4− | 2006 10 28 | 703 | 0.3− | 1.1+ |
| 2005 05 13 | G96 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.5− | 0.5− | 2006 10 28 | 703 | 0.1+ | 0.5− |
| 2005 05 13 | G96 | 0.3− | 0.2− | 2006 09 26 | 703 | 1.1− | 0.2+ | 2006 10 28 | 703 | 0.6+ | 0.1+ |
| 2005 05 13 | G96 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.6+ | 0.9+ |
| 2005 05 13 | G96 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.3+ | | | | |
| 2005 06 14 | G96 | (2.3− | 0.4−) | 2006 10 16 | 703 | 1.3− | 0.3− | | | | |

## 1995 $VK_6$ = 2006 $PC_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.51989 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25809945 | $\omega$ | 151.04038 | | +0.98854245 | | −0.15063374 |
| $a$ | 2.4431192 | $\Omega$ | 217.62715 | | +0.13526202 | | +0.91243062 |
| $e$ | 0.1533652 | $i$ | 0.90651 | | +0.06699258 | | +0.38049945 |
| $P$ | 3.82 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.1− | 0.2− | 2003 12 29 | 691 | 0.0 | 0.2+ | 2006 07 18 | G96 | 0.0 | 0.5− |
| 1995 11 14 | 691 | 0.0 | 0.3− | 2003 12 29 | 691 | 0.1+ | 0.3+ | 2006 07 18 | G96 | 0.2− | 0.0 |
| 1995 11 14 | 691 | 0.3+ | 0.1− | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 08 13 | 644 | 0.1+ | 0.4+ |
| 1995 11 16 | 691 | 0.2+ | 0.0 | 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 08 13 | 644 | 0.1+ | 0.1+ |
| 1995 11 16 | 691 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.2− | 0.2− | 2006 08 13 | 644 | 0.3+ | 0.6+ |
| 1995 11 16 | 691 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 08 19 | 699 | 0.4+ | 0.0 |
| 1995 12 18 | 691 | 0.1− | 0.6+ | 2005 04 02 | G96 | 0.3+ | 0.0 | 2006 08 19 | 699 | 0.2− | 1.3+ |
| 1995 12 18 | 691 | 0.0 | 0.1− | 2006 07 18 | G96 | 0.4+ | 0.3− | 2006 08 19 | 699 | 0.9− | 0.3+ |
| 1995 12 18 | 691 | 0.3− | 0.1− | 2006 07 18 | G96 | 0.4− | 0.2− | 2006 08 19 | 699 | 0.3− | 0.0 |

## 1995 $VT_6$ = 2006 $SG_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.96510 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17501802 | $\omega$ | 292.12058 | | +0.99928441 | | −0.02013523 |
| $a$ | 3.1652951 | $\Omega$ | 69.04501 | | +0.03147682 | | +0.91208387 |
| $e$ | 0.1764144 | $i$ | 1.96488 | | −0.02097310 | | +0.40950895 |
| $P$ | 5.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.2+ | 0.2− | 1995 11 19 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.3− |
| 1995 11 14 | 691 | 0.0 | 0.2− | 1995 11 19 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 1995 11 14 | 691 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 1995 11 16 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.3− |
| 1995 11 16 | 691 | 0.4− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 1995 11 19 | 691 | 0.6− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | | | | |

## 1995 $VY_6$ = 2005 $TB_{174}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.13578 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29162719 | $\omega$ | 265.16311 | | +0.02151870 | | −0.99976820 |
| $a$ | 2.2520812 | $\Omega$ | 183.60409 | | +0.92159661 | | +0.02010565 |
| $e$ | 0.1181483 | $i$ | 0.63355 | | +0.38755210 | | +0.00770066 |
| $P$ | 3.38 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.2− | 0.1− | 2005 09 29 | G96 | 0.3− | 0.2− | 2005 10 07 | G96 | 0.0 | 0.2+ |
| 1995 11 14 | 691 | 0.3+ | 0.1+ | 2005 09 29 | G96 | 0.1− | 0.1− | 2005 10 23 | 703 | 0.1+ | 0.2+ |
| 1995 11 14 | 691 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.5− | 0.5− | 2005 10 23 | 703 | 0.1+ | 0.5+ |
| 1995 11 19 | 691 | 0.1− | 0.2− | 2005 10 06 | G96 | 0.1+ | 0.5+ | 2005 10 23 | 703 | 0.7+ | 0.7− |
| 1995 11 19 | 691 | 0.3+ | 0.5− | 2005 10 06 | G96 | 0.1+ | 0.2+ | 2005 10 23 | 703 | 0.3+ | 0.3+ |
| 1995 11 19 | 691 | 0.0 | 0.0 | 2005 10 06 | G96 | 0.0 | 0.3+ | 2005 11 25 | G96 | 0.2− | 0.1+ |
| 1995 12 18 | 691 | 0.8− | 0.9+ | 2005 10 06 | G96 | 0.1− | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.1− |
| 1995 12 18 | 691 | 0.8+ | 0.4+ | 2005 10 07 | G96 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.0 | 0.3+ |
| 1995 12 18 | 691 | 0.3− | 0.7− | 2005 10 07 | G96 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.1− | 0.1− |
| 2005 09 29 | G96 | 0.1− | 0.3− | 2005 10 07 | G96 | 0.1− | 0.1+ | | | | |

## 1995 $VU_8$ = 2006 $UJ_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.70743 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17932696 | $\omega$ | 288.47162 | | +0.94687838 | | +0.26788544 |
| $a$ | 3.1143852 | $\Omega$ | 56.35205 | | −0.14840481 | | +0.85482499 |
| $e$ | 0.2906288 | $i$ | 12.34158 | | −0.28530219 | | +0.44442279 |
| $P$ | 5.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 1995 11 14 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 1995 11 14 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 1995 11 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 1995 11 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 1995 11 19 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 1995 11 27 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 1995 11 27 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.3− | 2006 11 16 | 703 | 1.0− | 0.6− |
| 1995 11 27 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.5− | 0.1+ |
| 2006 09 30 | G96 | 0.5+ | 0.8− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 1.2− | 0.8− |
| 2006 09 30 | G96 | 0.5+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.3− | 1.4− |
| 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.5+ | 0.4+ | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2006 10 17 | G96 | 0.2+ | 0.7− | 2006 11 11 | 703 | 0.3+ | 0.5− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 11 | 703 | 1.0+ | 1.3+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2006 10 17 | G96 | 0.9+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.7+ | 2006 11 27 | 104 | 0.9− | 0.9− |
| 2006 10 17 | G96 | 0.2− | 0.7− | 2006 11 12 | 703 | 0.4+ | 0.4+ | 2006 11 27 | 104 | 0.5+ | 0.3+ |
| 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 12 | 703 | 0.4+ | 1.3+ | 2006 11 27 | 104 | 1.0+ | 0.2− |
| 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 12 | 703 | 0.6− | 0.6+ | | | | |
| 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.5+ | 0.7− | | | | |

### 1995 VX$_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.35384 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18521291 | $\omega$ | 175.03796 | | +0.83226444 | −0.55430496 | |
| $a$ | 3.0480485 | $\Omega$ | 218.62939 | | +0.50813255 | +0.76926288 | |
| $e$ | 0.1007374 | $i$ | 0.83065 | | +0.22166914 | +0.31777449 | |
| $P$ | 5.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.0 | 0.2− | 2000 10 06 | 699 | 0.3+ | 0.2− | 2005 08 31 | 691 | 0.4− | 0.1+ |
| 1995 11 14 | 691 | 0.3+ | 0.3+ | 2000 10 06 | 699 | 0.1+ | 0.9− | 2005 08 31 | 691 | 0.7− | 0.0 |
| 1995 11 14 | 691 | 0.4+ | 0.1+ | 2000 10 06 | 699 | 2.9− | 0.1− | 2005 09 13 | 691 | 0.0 | 0.4+ |
| 1995 11 19 | 691 | 0.1+ | 0.0 | 2000 11 17 | 691 | 0.5+ | 0.4− | 2005 09 13 | 691 | 0.0 | 0.5+ |
| 1995 11 19 | 691 | 0.4+ | 0.2+ | 2000 11 17 | 691 | 0.1+ | 0.5− | 2005 09 13 | 691 | 0.0 | 0.3+ |
| 1995 11 19 | 691 | 0.3− | 0.1− | 2000 11 17 | 691 | 0.1− | 0.2− | 2005 09 30 | 691 | 0.5+ | 0.5+ |
| 1995 11 27 | 691 | 0.6− | 0.0 | 2002 01 13 | 704 | 0.2+ | 1.5+ | 2005 09 30 | 691 | 0.0 | 0.3+ |
| 1995 11 27 | 691 | 0.1− | 0.4− | 2002 01 13 | 704 | 0.6− | 1.9+ | 2005 09 30 | 691 | 0.3+ | 0.4+ |
| 1995 11 27 | 691 | 0.1+ | 0.3− | 2002 01 13 | 704 | 1.0− | 1.7+ | 2005 09 30 | G96 | 0.2− | 0.1− |
| 2000 10 01 | 704 | 0.0 | 1.2− | 2002 01 13 | 704 | 0.2− | 1.6+ | 2005 09 30 | G96 | 0.0 | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.4− | 2002 01 21 | 291 | 0.5+ | 0.1+ | 2005 09 30 | G96 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 0.5+ | 0.5+ | 2002 01 21 | 291 | 0.2+ | 0.2+ | 2005 09 30 | G96 | 0.1+ | 0.1+ |
| 2000 10 01 | 704 | 0.2− | 0.2− | 2002 01 21 | 291 | 0.2+ | 0.1+ | | | | |
| 2000 10 06 | 699 | 2.1+ | 0.2− | 2005 08 31 | 691 | 0.7− | 0.0 | | | | |

### 1995 VF$_9$ = 2006 SU$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.92292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17310041 | $\omega$ | 273.88316 | | +0.86384161 | +0.47144476 | |
| $a$ | 3.1886289 | $\Omega$ | 58.07130 | | −0.33765011 | +0.80338408 | |
| $e$ | 0.0853053 | $i$ | 12.07425 | | −0.37385836 | +0.36374973 | |
| $P$ | 5.69 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.1− | 0.2− | 2006 09 25 | 699 | 1.3− | 0.6− | 2006 10 16 | 703 | 0.3− | 1.5− |
| 1995 11 14 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 1.1− | 0.3+ | 2006 10 16 | 703 | (2.1+ | 0.9−) |
| 1995 11 14 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.6+ | 0.2+ |
| 1995 11 19 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.4+ |
| 1995 11 19 | 691 | 0.0 | 0.0 | 2006 09 26 | 703 | 1.1− | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 1995 11 19 | 691 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.6+ |
| 1995 11 27 | 691 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.1+ | 1.3− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 1995 11 27 | 691 | 0.2+ | 0.0 | 2006 09 29 | 699 | (1.0+ | 1.8−) | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 1995 11 27 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2006 09 18 | 703 | 1.0+ | 0.5− | 2006 09 29 | 699 | 1.1− | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.5+ |
| 2006 09 18 | 703 | 0.5− | 1.3+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.4− | 0.7− |
| 2006 09 18 | 703 | 0.7+ | 0.0 | 2006 10 04 | G96 | 0.7+ | 0.1− | 2006 11 16 | 703 | 0.9− | 0.1+ |
| 2006 09 18 | 703 | 0.9+ | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.0 | 0.6+ |
| 2006 09 21 | 699 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2006 09 21 | 699 | 0.9+ | 1.4+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2006 09 21 | 699 | 1.2− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.2+ |
| 2006 09 21 | 699 | 0.6+ | 1.1− | 2006 10 10 | 644 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2006 09 25 | 699 | (2.6− | 1.3+) | 2006 10 16 | 703 | 0.1+ | 0.3− | | | | |
| 2006 09 25 | 699 | (0.4+ | 1.7−) | 2006 10 16 | 703 | 0.2+ | 0.7− | | | | |

### 1995 VZ$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.44635 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18629477 | $\omega$ | 94.99092 | | −0.59778955 | −0.80160097 | |
| $a$ | 3.0362366 | $\Omega$ | 31.72648 | | +0.72844295 | −0.54792204 | |
| $e$ | 0.1658360 | $i$ | 0.99594 | | +0.33469169 | −0.23920144 | |
| $P$ | 5.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.2+ | 0.0 | 2001 12 18 | 644 | 0.1+ | 1.1+ | 2003 05 03 | 691 | 0.3+ | 0.5+ |
| 1995 10 28 | 691 | 0.2+ | 0.3− | 2001 12 18 | 644 | (0.1− | 1.5+) | 2003 05 10 | 691 | 0.3− | 0.5+ |
| 1995 10 28 | 691 | 0.3+ | 0.1+ | 2001 12 18 | 691 | 0.1+ | 0.0 | 2003 05 10 | 691 | 0.2− | 0.9+ |
| 1995 11 15 | 691 | 0.3− | 0.0 | 2001 12 18 | 704 | 0.2+ | 0.2− | 2003 05 10 | 691 | 0.4− | 0.5+ |
| 1995 11 15 | 691 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.6+ | 0.5− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1995 11 15 | 691 | 0.4+ | 0.3− | 2001 12 18 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 1995 11 25 | 691 | 0.3− | 0.1+ | 2001 12 18 | 644 | 0.1− | 1.3+ | 2006 11 19 | 691 | 0.2− | 0.2− |
| 1995 11 25 | 691 | 0.7− | 0.6+ | 2001 12 18 | 704 | 1.3+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1995 11 25 | 691 | 0.3− | 0.3− | 2001 12 18 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2000 09 24 | 691 | 0.7+ | 1.5+ | 2001 12 18 | 704 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2000 09 24 | 691 | 1.0− | 1.4+ | 2002 01 14 | 704 | 0.8+ | 1.4+ | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2000 09 24 | 691 | 0.4− | 0.4− | 2002 01 14 | 704 | 0.2+ | 0.4+ | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2001 12 07 | 691 | 0.2− | 0.1+ | 2002 01 14 | 704 | 0.2+ | 0.5+ | 2006 11 24 | 691 | 0.2+ | 0.2+ |
| 2001 12 07 | 691 | 0.3− | 0.2− | 2003 05 03 | 691 | 0.2+ | 0.4+ | | | | |
| 2001 12 07 | 691 | 0.1− | 0.1+ | 2003 05 03 | 691 | 1.3+ | 0.3+ | | | | |

### 1995 VV$_{10}$ = 2006 UL$_{221}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.04304 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26560765 | $\omega$ | 265.57261 | | +0.85609676 | +0.50218584 | |
| $a$ | 2.3968581 | $\Omega$ | 64.24013 | | −0.40389959 | +0.79750632 | |
| $e$ | 0.1444893 | $i$ | 7.79156 | | −0.32243364 | +0.33435467 | |
| $P$ | 3.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.7− | 0.6− | 2006 10 02 | 703 | 0.4− | 0.7− |
| 1995 11 15 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.1+ | 0.3− |
| 1995 11 15 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 1.2− | 1.4− | 2006 10 17 | 703 | 1.3− | 1.3+ |
| 1995 11 26 | 691 | 0.3− | 0.7+ | 2006 09 26 | 703 | (0.2+ | 1.9−) | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 1995 11 26 | 691 | 0.7+ | 1.0− | 2006 09 26 | 703 | 0.1− | 0.4+ | 2006 10 17 | 703 | 1.3+ | 0.4+ |
| 1995 11 26 | 691 | 0.4+ | 0.1+ | 2006 09 26 | 703 | (1.8+ | 1.2−) | 2006 10 21 | 644 | 0.3− | 0.3− |
| 1995 11 27 | 691 | 0.3− | 0.3− | 2006 09 26 | 703 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.2− |
| 1995 11 27 | 691 | 1.3− | 0.2+ | 2006 10 02 | 703 | (1.6+ | 2.3+) | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1995 11 27 | 691 | 0.1+ | 0.1− | 2006 10 02 | 703 | 0.1+ | 1.2+ | | | | |
| 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.6+ | 0.4+ | | | | |

### 1995 VA$_{13}$ = 2006 VR$_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.83637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17946401 | $\omega$ | 221.41929 | | +0.89849176 | −0.43858305 | |
| $a$ | 3.1127994 | $\Omega$ | 164.56208 | | +0.41914281 | +0.84426951 | |
| $e$ | 0.1787893 | $i$ | 4.07293 | | +0.13050618 | +0.30798363 | |
| $P$ | 5.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.5− | 0.4+ | 1997 01 31 | 691 | 0.2− | 0.6− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 1995 10 15 | 691 | 0.6− | 0.5+ | 2003 03 08 | 291 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.5− | 0.3+ | 2003 03 08 | 291 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 1995 11 15 | 691 | 0.5+ | 0.0 | 2003 03 08 | 291 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.1+ |
| 1995 11 15 | 691 | 0.3+ | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 1995 11 15 | 691 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.0 | 0.0 |
| 1995 11 26 | 691 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 1995 11 26 | 691 | 0.3− | 0.6− | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 1995 11 26 | 691 | 0.3+ | 0.3− | 2006 10 16 | 703 | 1.3− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.7+ |
| 1995 11 27 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 1.1− | 2006 11 13 | 703 | 0.2− | 0.4− |
| 1995 11 27 | 691 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.9+ | 2006 11 13 | 703 | 0.8− | 0.0 |
| 1995 11 27 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.8+ | 0.5− | 2006 11 13 | 703 | 0.2− | 1.1+ |
| 1997 01 31 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.3− | 0.6+ |
| 1997 01 31 | 691 | (4.6+ | 2.8−) | 2006 10 21 | G96 | 0.2+ | 0.1+ | | | | |

### 1995 VL$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.87392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26555904 | $\omega$ | 249.11975 | | +0.60647707 | −0.79492089 | |
| $a$ | 2.3971506 | $\Omega$ | 163.51104 | | +0.74985598 | +0.56475926 | |
| $e$ | 0.1187374 | $i$ | 3.41793 | | +0.26438906 | +0.22169293 | |
| $P$ | 3.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.1+ | 0.1− | 1995 11 26 | 691 | 0.1+ | 0.0 | 2002 08 27 | 644 | 0.3− | 0.5− |
| 1995 11 15 | 691 | 0.0 | 0.2+ | 2002 08 08 | 644 | 0.1− | 0.3+ | 2002 08 27 | 644 | 0.2+ | 0.7− |
| 1995 11 15 | 691 | 0.3+ | 0.0 | 2002 08 08 | 644 | 0.1+ | 0.0 | 2002 09 14 | 644 | 0.1+ | 0.2+ |
| 1995 11 20 | 691 | 0.2− | 0.1+ | 2002 08 08 | 644 | 0.4+ | 0.5+ | 2002 09 14 | 644 | 0.0 | 0.2+ |
| 1995 11 20 | 691 | 0.4− | 0.1+ | 2002 08 17 | 644 | 0.1− | 0.1+ | 2002 09 14 | 644 | 0.3− | 0.0 |
| 1995 11 20 | 691 | 0.2− | 0.1+ | 2002 08 17 | 644 | 0.2− | 0.3+ | 2002 09 14 | 644 | 0.1− | 0.3− |
| 1995 11 26 | 691 | 0.2+ | 0.3− | 2002 08 17 | 644 | 0.1− | 0.1+ | 2002 09 14 | 644 | 0.6+ | 0.3− |
| 1995 11 26 | 691 | 0.0 | 0.1+ | 2002 08 27 | 644 | 0.1+ | 0.5− | 2002 09 14 | 644 | 0.4− | 0.4+ |

### 1995 VV$_{14}$ = 2000 SE$_{359}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.55245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17358146 | $\omega$ | 68.45835 | | +0.47566597 | +0.80973619 | |
| $a$ | 3.1827351 | $\Omega$ | 234.65327 | | −0.87840950 | +0.45780401 | |
| $e$ | 0.2168382 | $i$ | 24.91451 | | +0.04624537 | +0.36707329 | |
| $P$ | 5.68 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.2− | 0.1+ | 2001 12 11 | 704 | (0.6+ | 2.7+) | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 1995 11 15 | 691 | 0.1− | 0.2− | 2005 05 16 | 704 | 1.2+ | 0.9+ | 2006 09 28 | 703 | 0.7− | 0.1+ |
| 1995 11 15 | 691 | 0.2− | 0.1− | 2005 05 16 | 704 | 0.6− | 1.0+ | 2006 09 28 | 703 | 0.4− | 0.6+ |
| 1995 11 19 | 691 | 0.3− | 0.3− | 2005 05 16 | 704 | 0.5− | 0.4+ | 2006 10 02 | 703 | 0.2+ | 0.5− |
| 1995 11 19 | 691 | 0.2− | 0.2− | 2005 05 16 | 704 | 0.1− | 0.7− | 2006 10 02 | 703 | 0.6− | 0.2− |
| 1995 11 19 | 691 | 0.1− | 0.1− | 2005 06 09 | 704 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.8+ | 0.6− |
| 1999 05 13 | 704 | 0.2+ | 0.2− | 2005 06 09 | 704 | 0.2− | 0.3− | 2006 10 02 | 703 | 0.6+ | 0.7− |
| 1999 05 13 | 699 | 1.7+ | 0.1− | 2005 06 09 | 704 | 0.3− | 0.5− | 2006 10 16 | 104 | 0.6− | 0.8− |
| 1999 05 13 | 704 | 0.5− | 1.7− | 2005 06 09 | 704 | 1.1− | 0.9+ | 2006 10 16 | 104 | 0.2− | 0.3− |
| 1999 05 13 | 704 | 0.1+ | 1.2+ | 2005 06 09 | 704 | 0.4− | 0.5− | 2006 10 16 | 104 | 0.0 | 0.2+ |
| 1999 05 13 | 699 | 0.2+ | 0.3− | 2005 06 09 | 703 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.1− | 0.2− |
| 1999 05 13 | 704 | 0.3+ | 0.4− | 2005 06 09 | 703 | 0.7− | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.3+ |
| 1999 05 13 | 704 | (2.8− | 1.7+) | 2005 06 09 | 703 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.2− | 0.2− |
| 1999 05 13 | 699 | 0.9+ | 0.8+ | 2005 06 09 | 703 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.3+ |
| 2000 09 26 | 699 | 0.0 | 0.6+ | 2005 06 28 | 704 | 0.6+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2000 09 26 | 699 | 0.7+ | 0.6+ | 2005 06 28 | 704 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2000 09 26 | 699 | 0.1− | 0.0 | 2005 06 28 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2000 09 26 | 699 | 0.4+ | 0.5+ | 2005 06 28 | 704 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2000 09 27 | 704 | 0.2+ | 1.0+ | 2005 06 28 | 704 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2000 09 27 | 704 | 0.2+ | 0.1+ | 2005 07 14 | 608 | 0.2− | 0.5− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2000 09 27 | 704 | 0.3− | 0.0 | 2005 07 14 | 608 | 0.4− | 0.4− | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2000 09 27 | 704 | 0.2− | 0.7− | 2005 07 14 | 608 | 0.3− | 0.5− | 2006 11 15 | 703 | 0.2− | 1.1+ |
| 2000 09 27 | 704 | 0.7+ | 0.5+ | 2005 08 26 | 644 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.6+ | 1.4+ |
| 2001 11 17 | 704 | 0.2+ | 0.3− | 2005 08 26 | 644 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.0 |
| 2001 11 17 | 704 | 0.0 | 0.7+ | 2005 08 26 | 644 | 0.0 | 0.0 | 2006 11 23 | 703 | 1.2+ | 0.4+ |
| 2001 11 17 | 704 | 0.5+ | 0.5− | 2006 09 19 | 703 | 0.8+ | 0.2− | 2006 11 23 | 703 | 0.2− | 0.8− |
| 2001 11 17 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.5+ | 0.5− | 2006 11 23 | 703 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 11 23 | 703 | 0.6+ | 0.7− |
| 2001 12 11 | 704 | 0.1+ | 1.2+ | 2006 09 19 | 703 | 0.1+ | 0.4− | | | | |
| 2001 12 11 | 704 | 0.6+ | 0.9+ | 2006 09 28 | 703 | 0.4− | 0.1+ | | | | |

### 1995 VB$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.42049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22479200 | $\omega$ | 35.91439 | | +0.22982159 | −0.97299487 | |
| $a$ | 2.6788526 | $\Omega$ | 40.81127 | | +0.88506583 | +0.19975498 | |
| $e$ | 0.2203702 | $i$ | 1.88673 | | +0.40477219 | +0.11566732 | |
| $P$ | 4.38 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.2+ | 0.3− | 2004 12 21 | 703 | 0.1− | 0.2+ | 2005 03 16 | G96 | 0.6+ | 0.2− |
| 1995 11 15 | 691 | 0.2+ | 0.2− | 2004 12 21 | 703 | 0.7− | 0.6+ | 2005 03 16 | G96 | 0.8− | 0.3+ |
| 1995 11 21 | 691 | 0.1+ | 0.1− | 2004 12 21 | 703 | 0.8− | 0.8+ | 2005 03 16 | G96 | 0.1+ | 0.4+ |
| 1995 11 21 | 691 | 0.1− | 0.3+ | 2005 01 07 | 704 | 0.0 | 0.3− | 2005 03 16 | G96 | 0.8− | 0.6+ |
| 1995 11 21 | 691 | 0.0 | 0.4− | 2005 01 07 | 704 | 0.4+ | 0.5+ | 2006 05 03 | G96 | 0.3− | 0.1− |
| 1995 11 27 | 691 | 0.0 | 0.1− | 2005 01 07 | 704 | 0.2+ | 0.1− | 2006 05 03 | G96 | 0.3+ | 0.2− |
| 1995 11 27 | 691 | 0.0 | 0.3− | 2005 01 07 | 704 | 0.1+ | 0.4+ | 2006 05 03 | G96 | 0.2+ | 0.5− |
| 1995 11 27 | 691 | 0.0 | 0.2− | 2005 01 07 | 704 | 0.6+ | 0.9+ | 2006 05 03 | G96 | 0.2+ | 0.2− |
| 2001 03 15 | 691 | 0.4− | 0.3− | 2005 01 17 | 704 | 1.5+ | 0.1− | 2006 05 25 | G96 | 0.4+ | 0.0 |
| 2001 03 15 | 691 | 0.0 | 0.5− | 2005 01 17 | 704 | 0.2+ | 0.7+ | 2006 05 25 | G96 | 0.6− | 0.5+ |
| 2001 03 15 | 691 | 0.2− | 0.4− | 2005 01 17 | 704 | 0.7+ | 0.4− | 2006 05 25 | G96 | 0.7− | 0.2− |
| 2004 12 21 | 703 | 1.5− | 0.8+ | 2005 01 17 | 704 | 0.7+ | 1.2+ | 2006 05 25 | G96 | 0.3+ | 0.2+ |

### 1995 VZ$_{17}$ = 2006 UG$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.53258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17919259 | $\omega$ | 331.59905 | | +0.97509100 | −0.22136431 | |
| $a$ | 3.1159419 | $\Omega$ | 41.19779 | | +0.20730657 | +0.88713095 | |
| $e$ | 0.1718212 | $i$ | 1.21601 | | +0.07887666 | +0.40496483 | |
| $P$ | 5.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 1995 11 15 | 691 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 1995 11 15 | 691 | 0.2+ | 0.5− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 1995 11 21 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.3− | 0.4+ |
| 1995 11 21 | 691 | 0.7+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 1995 11 21 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 1995 11 27 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 1995 11 27 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 1995 11 27 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2006 10 17 | 691 | 0.3+ | 0.5− | 2006 11 13 | 691 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.7+ | 0.6− |
| 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.2− | 0.1− | | | | |

### 1995 VV$_{18}$ = 2005 YU$_{122}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.21933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30089787 | $\omega$ | 137.48286 | | −0.99510259 | −0.07116527 | |
| $a$ | 2.2055825 | $\Omega$ | 38.59640 | | +0.03023256 | −0.87988678 | |
| $e$ | 0.0098487 | $i$ | 6.31360 | | +0.09411077 | −0.46982418 | |
| $P$ | 3.28 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 327 | 0.2+ | 0.4+ | 2003 02 26 | 704 | 0.2− | 0.1+ | 2004 07 12 | E12 | 0.5+ | 1.3+ |
| 1995 11 14 | 327 | 0.3+ | 0.6+ | 2003 02 26 | 704 | 0.3− | 0.8+ | 2005 12 24 | 704 | 0.5− | 0.7− |
| 1995 11 14 | 327 | 1.2+ | 0.1− | 2003 02 26 | 704 | 0.2+ | 0.9+ | 2005 12 24 | 704 | 0.2+ | 0.1− |
| 1995 11 14 | 327 | 0.2− | 0.9+ | 2003 02 26 | 704 | 0.4+ | 1.6+ | 2005 12 24 | 704 | 0.7+ | 0.3+ |
| 1995 11 15 | 327 | 0.9− | 0.7+ | 2003 03 03 | 644 | 0.1+ | 0.1+ | 2005 12 24 | 704 | 0.0 | 0.4− |
| 1995 11 15 | 327 | 1.2− | 0.0 | 2003 03 03 | 644 | 0.1+ | 0.0 | 2005 12 29 | 704 | 0.0 | 0.0 |
| 1995 11 15 | 327 | 0.1− | 0.1+ | 2003 03 03 | 644 | 0.1+ | 0.0 | 2005 12 29 | 704 | 0.6+ | 0.3− |
| 2003 02 19 | 644 | 0.5− | 0.3− | 2004 07 12 | E12 | 0.2− | 0.2− | 2005 12 29 | 704 | 0.7− | 0.6− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 02 19 | 644 | 0.0 | 0.3− | 2004 07 12 | E12 | 1.7− | 0.9+ | |
| 2003 02 19 | 644 | 0.8+ | 0.1+ | 2004 07 12 | E12 | 0.9+ | 0.3+ | |

**1995 WO$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.94189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26504681 | $\omega$ | 319.43959 | | +0.94106119 | | +0.33765147 |
| $a$ | 2.4002381 | $\Omega$ | 20.85225 | | −0.29408393 | | +0.84584160 |
| $e$ | 0.1808542 | $i$ | 3.20200 | | −0.16708824 | | +0.41296910 |
| $P$ | 3.72 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 1.8+ | 1.3+ | 2006 08 28 | 703 | 1.4+ | 0.2− | 2006 09 25 | 699 | 0.1− | 0.5+ |
| 1995 10 24 | 691 | 0.7− | 0.3− | 2006 08 28 | 703 | 0.6− | 0.7− | 2006 09 25 | 699 | 0.2− | 0.7+ |
| 1995 10 24 | 691 | 0.4− | 0.2+ | 2006 08 28 | 703 | 1.4− | 0.7+ | 2006 10 02 | G96 | 0.8+ | 0.1− |
| 1995 10 28 | 691 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 1995 10 28 | 691 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.7+ | 0.2− |
| 1995 10 28 | 691 | 0.3− | 0.4− | 2006 09 14 | 703 | (1.8+ | 0.0 ) | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 1995 11 17 | 691 | 0.1− | 0.1− | 2006 09 14 | 703 | 1.2− | 0.6+ | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 1995 11 17 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 1995 11 17 | 691 | 0.5− | 0.4− | 2006 09 19 | 699 | (0.2+ | 1.8+) | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 1995 11 23 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 1995 11 23 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 1995 11 23 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.5− | 0.1+ |
| 2006 08 28 | 703 | 0.0 | 0.6− | 2006 09 25 | 699 | 0.2− | 0.8− | 2006 11 21 | G96 | 0.2− | 0.1− |

**1995 WJ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.75170 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27660980 | $\omega$ | 164.11628 | | −0.98681783 | | +0.15614076 |
| $a$ | 2.3328725 | $\Omega$ | 24.98658 | | −0.15727694 | | −0.86331794 |
| $e$ | 0.1186603 | $i$ | 5.78155 | | −0.03813826 | | −0.47989811 |
| $P$ | 3.56 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.2+ | 0.4− | 2002 10 30 | 291 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.1− | 1.0+ |
| 1995 10 23 | 691 | 0.5+ | 0.0 | 2002 11 07 | 695 | 0.6− | 0.3− | 2004 03 20 | 704 | (2.2+ | 1.0+) |
| 1995 10 23 | 691 | 0.2+ | 0.5− | 2002 11 07 | 695 | 1.4− | 0.7− | 2004 03 20 | 704 | 0.4+ | 0.7+ |
| 1995 11 17 | 691 | 0.6− | 0.3+ | 2004 02 02 | 699 | 1.3+ | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.1+ |
| 1995 11 17 | 691 | 0.1− | 0.1+ | 2004 02 02 | 699 | 1.1− | 0.2− | 2004 04 19 | 704 | 0.0 | 0.7+ |
| 1995 11 17 | 691 | 0.5− | 0.5+ | 2004 02 02 | 699 | (0.9+ | 1.6+) | 2004 04 19 | 704 | 0.2+ | 0.9− |
| 1995 11 23 | 691 | 0.1+ | 0.6+ | 2004 02 02 | 699 | 0.8− | 0.7− | 2004 04 19 | 704 | 0.2+ | 0.1+ |
| 1995 11 23 | 691 | 0.7− | 0.4+ | 2004 02 17 | 704 | 1.5+ | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.3− |
| 1995 11 23 | 691 | 0.1− | 0.7+ | 2004 02 17 | 704 | 0.2+ | 0.4− | 2006 11 17 | 691 | 0.4− | 1.0− |
| 2002 10 09 | 291 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 691 | 0.3+ | 0.3− |
| 2002 10 09 | 291 | 0.0 | 0.1+ | 2004 03 15 | 703 | (0.3− | 2.2+) | 2006 11 25 | 691 | 0.3− | 0.1− |
| 2002 10 09 | 291 | 0.3− | 0.2− | 2004 03 15 | 703 | 0.5− | 0.5+ | 2006 11 25 | 691 | 0.5+ | 0.2− |
| 2002 10 30 | 291 | 0.0 | 0.3+ | 2004 03 15 | 703 | 0.6+ | 1.4+ | 2006 11 25 | 691 | 0.1− | 0.3− |
| 2002 10 30 | 291 | 0.1+ | 0.4+ | 2004 03 15 | 703 | 0.4− | 0.7+ | | | | |

**1995 WW$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.60104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27492943 | $\omega$ | 79.80212 | | +0.87122728 | | +0.48900080 |
| $a$ | 2.3423685 | $\Omega$ | 250.91161 | | −0.46627950 | | +0.79707255 |
| $e$ | 0.1588543 | $i$ | 2.60249 | | −0.15344852 | | +0.35433540 |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.3+ | 0.2− | 2002 10 04 | 704 | 0.1− | 0.0 | 2005 06 14 | G96 | 0.1+ | 0.6+ |
| 1995 10 24 | 691 | 0.3+ | 0.2− | 2002 10 04 | 704 | 0.6− | 0.4− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 1995 10 24 | 691 | 0.2+ | 0.1− | 2002 10 12 | 704 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 1995 11 17 | 691 | 0.2− | 0.4+ | 2002 10 12 | 704 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 1995 11 17 | 691 | 0.1− | 0.3+ | 2002 10 12 | 704 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 1995 11 17 | 691 | 0.1+ | 0.5+ | 2002 10 31 | 704 | 0.9+ | 0.7+ | 2006 11 27 | 691 | 0.3− | 0.0 |
| 1995 11 28 | 691 | 0.4− | 0.4− | 2002 10 31 | 704 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.5− | 0.1+ |
| 1995 11 28 | 691 | 0.1− | 0.2− | 2002 10 31 | 704 | 0.0 | 0.3+ | 2006 12 01 | 691 | 0.5− | 0.2+ |
| 1995 11 28 | 691 | 0.1− | 0.5− | 2005 06 14 | G96 | 0.1+ | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2005 06 14 | G96 | 0.3+ | 0.3+ | 2006 12 01 | 691 | 1.1+ | 0.5− |
| 2002 10 04 | 704 | 0.3− | 0.4+ | 2005 06 14 | G96 | 0.1− | 0.6+ | | | | |

**1995 WH$_{18}$ = 2006 UR$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.16235 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17790073 | $\omega$ | 48.51066 | | +0.09136399 | | −0.98137269 |
| $a$ | 3.1310084 | $\Omega$ | 37.28307 | | +0.81016985 | | −0.02542573 |
| $e$ | 0.0431955 | $i$ | 16.19980 | | +0.57903146 | | +0.19042366 |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1− | 1.1− | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 1995 11 17 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 14 | 701 | 0.0 | 0.4− |
| 1995 11 17 | 691 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.2− | 2006 11 14 | 701 | 0.2− | 0.4− |
| 1995 11 23 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 1995 11 23 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 1995 11 23 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 1995 11 30 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 14 | 701 | 1.1− | 1.0− |
| 1995 11 30 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1+ | 2006 11 14 | 701 | 0.5+ | 0.3− |
| 1995 11 30 | 691 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.6− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2006 10 17 | G96 | 0.6+ | 0.4− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 14 | 701 | 0.7− | 0.4− |
| 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 03 | G96 | 0.0 | 0.2+ | 2006 11 14 | 701 | 0.2+ | 0.1− |
| 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 03 | G96 | 0.0 | 0.1− | 2006 11 14 | 701 | 0.6− | 0.6− |
| 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 03 | G96 | 0.4+ | 0.2− | 2006 11 14 | 701 | 0.1+ | 0.4− |
| 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 03 | G96 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.4+ | 0.2+ |
| 2006 10 18 | 691 | 0.0 | 0.5+ | 2006 11 10 | 691 | 0.4− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 10 22 | 691 | 0.6− | 0.1− | 2006 11 11 | 703 | (0.0 | 1.5−) | 2006 11 27 | 691 | 0.3+ | 0.2− |
| 2006 10 22 | 691 | 0.9− | 0.5+ | 2006 11 11 | 703 | 1.2+ | 0.2− | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.1+ | | | | |

**1995 WB$_{20}$ = 2006 WB$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.29422 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27147045 | $\omega$ | 98.20273 | | +0.23940834 | | +0.97087477 |
| $a$ | 2.3622236 | $\Omega$ | 185.67430 | | −0.92361889 | | +0.22479272 |
| $e$ | 0.1824368 | $i$ | 5.37666 | | −0.29935229 | | +0.08288801 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.4− | 0.9+ | 2001 04 23 | 691 | 0.1+ | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.2+ |
| 1991 10 07 | 691 | 0.0 | 1.2+ | 2002 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 1991 10 07 | 691 | 0.3− | 0.3+ | 2002 10 11 | 644 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 1995 11 17 | 691 | 0.1+ | 0.0 | 2002 10 11 | 644 | 0.6− | 0.6+ | 2006 11 21 | G96 | 0.4− | 0.2− |
| 1995 11 17 | 691 | 0.5− | 0.1+ | 2006 11 20 | 691 | 0.4− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 1995 11 17 | 691 | 0.4− | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 1995 11 21 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 1995 11 21 | 691 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.6+ | 0.2+ |
| 1995 11 21 | 691 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.1− | 0.1− | 2006 11 21 | G96 | 1.4+ | 0.1+ |
| 1995 11 28 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.0 | 2006 11 24 | 691 | 0.3− | 0.3+ |
| 1995 11 28 | 691 | 0.2+ | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.4− | 0.5− |
| 1995 11 28 | 691 | 0.3+ | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.4+ |
| 2001 03 29 | 691 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2001 03 29 | 691 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.7− |
| 2001 03 29 | 691 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.4+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2001 04 23 | 691 | 0.3+ | 0.6+ | 2006 11 20 | G96 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2001 04 23 | 691 | 0.1+ | 0.5+ | 2006 11 20 | G96 | 0.4+ | 0.3− | | | | |

**1995 WP$_{27}$ = 2006 UM$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.01838 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26560519 | $\omega$ | 295.32333 | | +0.85564012 | | +0.51122181 |
| $a$ | 2.3968729 | $\Omega$ | 34.09828 | | −0.40772838 | | +0.76196805 |
| $e$ | 0.1543326 | $i$ | 8.28907 | | −0.31880645 | | +0.39756377 |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.1+ | 0.6+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 09 28 | 699 | 0.3− | 0.1− |
| 1995 10 27 | 691 | 0.3+ | 0.4− | 2005 04 11 | G96 | 0.3− | 0.5− | 2006 09 28 | 699 | 0.2+ | 0.1− |
| 1995 10 27 | 691 | 0.2− | 0.1− | 2005 04 11 | G96 | 0.2− | 0.0 | 2006 09 28 | 699 | 0.0 | 0.1− |
| 1995 11 19 | 691 | 0.5− | 0.3− | 2005 04 11 | G96 | 0.1− | 0.3− | 2006 09 28 | 699 | 0.5− | 0.9− |
| 1995 11 19 | 691 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.0 | 0.1− | 2006 10 16 | 703 | (1.6− | 0.2−) |
| 1995 11 19 | 691 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.1− |
| 1995 11 27 | 691 | 0.5+ | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.1− | 2006 10 16 | 703 | 1.0− | 1.0− |
| 1995 11 27 | 691 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 1995 11 27 | 691 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.9+ | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.6+ |
| 2005 04 01 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.7+ |
| 2005 04 01 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.0 | 1.5− | 2006 10 22 | 644 | 0.6+ | 0.8+ |
| 2005 04 01 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 1.2− | 0.8+ | | | | |

**1995 WT$_{30}$ = 2006 QX$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.81427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26212786 | $\omega$ | 291.37577 | | +0.99321306 | | +0.10541828 |
| $a$ | 2.4180239 | $\Omega$ | 62.60155 | | −0.07515942 | | +0.90415736 |
| $e$ | 0.2006466 | $i$ | 3.17290 | | −0.08876303 | | +0.41398848 |
| $P$ | 3.76 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 02 | 691 | 0.4− | 1.5+ | 2004 01 27 | 691 | 0.0 | 0.5+ | 2006 09 19 | 699 | (1.0− | 1.6−) |
| 1991 10 02 | 691 | 0.7− | 0.7+ | 2004 01 27 | 691 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.2+ |
| 1991 10 02 | 691 | (0.8− | 2.8+) | 2006 08 22 | 644 | 0.1− | 0.6− | 2006 09 25 | 699 | 0.5+ | 0.3− |
| 1995 11 14 | 691 | (2.0− | 4.0−) | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.3− | 0.1+ |
| 1995 11 14 | 691 | 0.3+ | 0.4− | 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.7+ | 0.1− |
| 1995 11 14 | 691 | 0.1+ | 0.3− | 2006 08 28 | 699 | 0.1+ | 0.2− | 2006 09 25 | 699 | (1.6+ | 0.9+) |
| 1995 11 19 | 691 | 0.0 | 0.3− | 2006 08 28 | 699 | 1.0+ | 0.8+ | 2006 09 30 | 703 | 0.7− | 0.3− |
| 1995 11 19 | 691 | 0.1− | 0.3− | 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.0 |
| 1995 11 19 | 691 | 0.0 | 0.3− | 2006 08 28 | 699 | 1.4− | 0.2− | 2006 09 30 | 703 | 0.5− | 0.2− |
| 1995 11 27 | 691 | 0.2+ | 0.5− | 2006 08 29 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.8− |
| 1995 11 27 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 1995 11 27 | 691 | 0.3+ | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2001 03 26 | 695 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.9− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 03 26 | 695 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.6− | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2003 12 21 | 691 | 0.6− | 0.3+ | 2006 09 14 | 703 | 1.5+ | 0.9+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2003 12 21 | 691 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2003 12 21 | 691 | 0.3+ | 0.0 | 2006 09 19 | 699 | (1.7+ | 0.1+) | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 01 27 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.7− | 0.1+ | | | | |

**1995 WC$_{33}$ = 2006 SJ$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.05627 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26618734 | $\omega$ | 294.33132 | | +0.82111272 | | −0.56766913 |
| $a$ | 2.3933770 | $\Omega$ | 100.30797 | | +0.54310560 | | +0.74508780 |
| $e$ | 0.1885872 | $i$ | 3.45998 | | +0.17552836 | | +0.35013702 |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 20 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 1.2+ | 1.0− | 2006 10 16 | 703 | 0.3− | 0.2− |
| 1995 11 20 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | 1.0+ | 0.7− | 2006 10 16 | 703 | 0.3− | 0.2− |
| 1995 11 20 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 1995 11 26 | 691 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 1995 11 26 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1995 11 26 | 691 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.7− | 0.6− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1995 11 27 | 691 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 1995 11 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 1995 11 27 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2006 09 18 | 703 | 1.2− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 09 18 | 703 | 1.0− | 1.1+ | 2006 10 01 | 691 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2006 09 18 | 703 | 0.9− | 0.3+ | 2006 10 01 | 691 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2006 09 18 | 699 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.1− | | | | |

**1995 XG$_{4}$ = 2006 SM$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.71276 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17338537 | $\omega$ | 222.28656 | | +0.66932395 | | −0.74292757 |
| $a$ | 3.1851344 | $\Omega$ | 185.71525 | | +0.70136721 | | +0.63536245 |
| $e$ | 0.1712124 | $i$ | 4.61051 | | +0.24513157 | | +0.21064944 |
| $P$ | 5.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 14 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 1995 12 14 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.6− |
| 1995 12 14 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1995 12 20 | 691 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.4− |
| 1995 12 20 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 1995 12 26 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.7+ | 1.4− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1995 12 26 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 1.5+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1995 12 26 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.7− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 1997 03 09 | 691 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 1997 03 09 | 691 | 0.2− | 0.5− | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 1997 03 09 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 15 | A44 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.5− | 0.0 | 2006 11 15 | A44 | 0.0 | 0.3− |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.0 | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.3+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | (0.3− | 3.8−) | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.5− | | | | |
| 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.4− | | | | |

**1995 YU$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.88973 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.44074305 | $\omega$ | 23.49769 | | −0.74403920 | | −0.64572883 |
| $a$ | 1.7100641 | $\Omega$ | 115.14312 | | +0.57900819 | | −0.75130765 |
| $e$ | 0.1402685 | $i$ | 10.92593 | | +0.33339945 | | −0.13627582 |
| $P$ | 2.24 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 20 | 691 | 0.2− | 0.1+ | 1996 01 27 | 413 | 0.1+ | 0.3+ | 2005 03 01 | 703 | 0.5+ | 0.4+ |
| 1995 12 20 | 691 | 0.1+ | 0.1+ | 1996 01 27 | 413 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 1995 12 20 | 691 | 0.1− | 0.4− | 1996 02 02 | 658 | 0.3− | 1.0− | 2006 10 28 | G96 | 0.1− | 0.4+ |
| 1995 12 26 | 691 | 0.9+ | 0.0 | 1996 02 02 | 658 | 0.7− | 0.9− | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 1995 12 26 | 691 | 0.4+ | 0.2+ | 1996 02 02 | 658 | 0.6− | 1.1− | 2006 10 28 | G96 | 0.0 | 0.5+ |
| 1995 12 26 | 691 | 0.1+ | 0.1+ | 1996 02 09 | 711 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.4− | 0.1− |
| 1995 12 30 | 691 | 0.2+ | 0.3− | 1996 02 09 | 711 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.8+ | 0.2+ |
| 1995 12 30 | 691 | 0.2+ | 0.3− | 1996 02 10 | 711 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.4− | 0.0 |
| 1995 12 30 | 691 | 0.3+ | 0.5− | 1996 02 10 | 711 | 0.8− | 0.5+ | 2006 11 16 | 703 | 0.1+ | 0.3+ |
| 1995 12 31 | 691 | 0.0 | 0.0 | 1996 02 24 | 658 | 0.9− | 0.5+ | 2006 11 16 | 703 | (0.3+ | 2.8+) |
| 1995 12 31 | 691 | 0.3+ | 0.3+ | 1996 02 24 | 658 | 0.6− | 0.4+ | 2006 11 16 | 703 | 1.3− | 0.2+ |
| 1995 12 31 | 691 | 0.8− | 0.7− | 1996 02 24 | 658 | 1.0− | 0.7+ | 2006 11 16 | 703 | 0.7− | 0.1+ |
| 1996 01 10 | 413 | 0.2+ | 0.3+ | 1996 03 11 | 711 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.9+ | 0.0 |
| 1996 01 10 | 413 | 1.4+ | 0.6+ | 1996 03 11 | 711 | 0.5− | 0.3+ | 2006 11 22 | 703 | 0.0 | 0.1+ |
| 1996 01 23 | 711 | 0.2+ | 0.6+ | 2005 03 01 | 703 | 0.1+ | 0.6+ | 2006 11 22 | 703 | 0.3− | 0.1+ |
| 1996 01 23 | 711 | 0.3+ | 0.3+ | 2005 03 01 | 703 | 0.1+ | 0.6+ | 2006 11 22 | 703 | 0.1− | 0.4+ |
| 1996 01 25 | 413 | 0.5− | 0.5+ | 2005 03 01 | 703 | 0.2+ | 0.4− | | | | |

**1995 YN$_8$ = 2000 QF$_{194}$ = 2006 SL$_{212}$**

Id. M. E. Sansaturio, Minor Planet Center

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.56083 | | (2000.0) | | | |
| $n$ | 0.17652505 | $\omega$ | 100.60707 | | +0.92083334 | +0.37019668 |
| $a$ | 3.1472542 | $\Omega$ | 237.76648 | | −0.38971416 | +0.86255541 |
| $e$ | 0.2902766 | $i$ | 8.33077 | | −0.01374154 | +0.34489502 |
| $P$ | 5.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.0 | 0.0 | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 1995 12 18 | 691 | 0.0 | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1995 12 18 | 691 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1995 12 23 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 1995 12 23 | 691 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.6− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 1995 12 23 | 691 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2000 08 31 | 704 | 0.4+ | 0.3− | 2006 09 28 | 703 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.3− |
| 2000 08 31 | 704 | 0.8− | 0.2− | 2006 09 28 | 703 | 0.5− | 0.4− | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2000 08 31 | 704 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2000 08 31 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.7− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2000 08 31 | 704 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 1.1+ |
| 2000 09 04 | 704 | 0.5− | 1.4− | 2006 10 20 | 644 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.8− | 0.7+ |
| 2000 09 04 | 704 | 1.0+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2000 09 04 | 704 | 1.0+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2000 09 04 | 704 | 0.6− | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− | | | | |
| 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.0 | | | | |

**1995 YF$_{18}$ = 1998 KH$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.67307 | | (2000.0) | | | |
| $n$ | 0.22506249 | $\omega$ | 195.52357 | | +0.12801978 | +0.95684574 |
| $a$ | 2.6767058 | $\Omega$ | 82.37231 | | −0.87961377 | +0.23105322 |
| $e$ | 0.2331958 | $i$ | 15.26042 | | −0.45813813 | −0.17624031 |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 22 | 691 | 0.1− | 0.0 | 1998 05 25 | 699 | 1.2+ | 0.8+ | 2002 03 16 | 699 | 0.0 | 1.5− |
| 1995 12 22 | 691 | 0.3− | 0.2+ | 1998 05 25 | 699 | 0.3− | 0.5+ | 2002 03 16 | 699 | 0.1+ | 1.2+ |
| 1995 12 22 | 691 | 0.2− | 0.4+ | 1998 05 25 | 699 | 0.5+ | 0.8+ | 2002 03 16 | 699 | 0.5− | 0.1+ |
| 1995 12 27 | 691 | 0.6+ | 0.1− | 2002 02 21 | 704 | 0.3− | 0.2+ | 2002 03 16 | 699 | 1.7− | 0.7+ |
| 1995 12 27 | 691 | 0.1− | 0.1− | 2002 02 21 | 704 | 0.0 | 0.2+ | 2002 04 10 | 644 | 0.3+ | 0.1+ |
| 1995 12 27 | 691 | 0.1− | 0.0 | 2002 02 21 | 704 | 0.6+ | 0.2+ | 2002 04 10 | 644 | 0.5+ | 0.2− |
| 1998 05 23 | 704 | 0.5+ | 0.7− | 2002 03 06 | 704 | 0.1− | 0.0 | 2002 04 10 | 644 | 0.0 | 0.0 |
| 1998 05 23 | 704 | 0.1+ | 0.5+ | 2002 03 06 | 704 | 0.6+ | 0.3− | 2004 12 12 | 691 | 0.1− | 0.0 |
| 1998 05 23 | 704 | 1.0+ | 0.8+ | 2002 03 06 | 704 | 0.1+ | 0.6− | 2004 12 12 | 691 | 0.2− | 0.3+ |
| 1998 05 23 | 704 | 0.4− | 0.4− | 2002 03 06 | 704 | 0.2− | 1.2− | 2004 12 12 | 691 | 0.0 | 0.3+ |
| 1998 05 23 | 704 | 1.1− | 0.8+ | 2002 03 06 | 704 | 0.2+ | 0.0 | | | | |

**1996 AQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.91956 | | (2000.0) | | | |
| $n$ | 0.26194233 | $\omega$ | 181.62132 | | +0.56190909 | −0.82698833 |
| $a$ | 2.4191656 | $\Omega$ | 234.19117 | | +0.75919907 | +0.52454642 |
| $e$ | 0.1766741 | $i$ | 1.31899 | | +0.32844322 | +0.20233972 |
| $P$ | 3.76 | $H$ | 17.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.2+ | 0.2− | 2002 10 28 | 291 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 1996 01 13 | 691 | 0.1− | 0.0 | 2002 10 28 | 291 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.6− |
| 1996 01 13 | 691 | 0.1+ | 0.1− | 2002 11 05 | 291 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 1996 01 19 | 691 | 0.1− | 0.1− | 2002 11 05 | 291 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 1.0+ | 0.8− |
| 1996 01 19 | 691 | 0.2− | 0.2− | 2002 11 05 | 291 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 1996 01 19 | 691 | 0.1− | 0.1+ | 2004 03 26 | 691 | 0.5+ | 0.8+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 1996 01 26 | 691 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.6+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1996 01 26 | 691 | 0.1+ | 0.0 | 2004 03 26 | 691 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.4− | 0.2+ |
| 1996 01 26 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 08 19 | 807 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.2+ | 1.0+ |
| 2002 10 03 | 704 | 1.3− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 691 | 0.2− | 0.3− | 2006 12 01 | 691 | 0.1− | 0.2− |
| 2002 10 28 | 291 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.6− | 2006 12 01 | 691 | 0.4− | 0.1− |

**1996 AD$_{13}$ = 1998 SQ$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.78593 | | (2000.0) | | | |
| $n$ | 0.22625257 | $\omega$ | 147.11364 | | +0.79233747 | +0.60994000 |
| $a$ | 2.6673113 | $\Omega$ | 175.23696 | | −0.58846285 | +0.76979285 |
| $e$ | 0.1149574 | $i$ | 9.15451 | | −0.16097452 | +0.18812805 |
| $P$ | 4.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.1+ | 0.2+ | 2002 07 09 | 704 | 1.0+ | 0.4− | 2003 11 18 | 691 | 0.0 | 0.4+ |
| 1996 01 15 | 691 | 0.2+ | 0.3+ | 2002 07 09 | 704 | 0.1+ | 1.1− | 2003 11 18 | 691 | 0.1− | 0.3+ |
| 1996 01 15 | 691 | 0.1− | 0.1− | 2002 07 21 | 644 | 0.5− | 1.1+ | 2005 03 11 | G96 | 0.1− | 0.0 |
| 1996 01 24 | 691 | 0.3+ | 0.0 | 2002 07 21 | 644 | 0.3− | 1.2+ | 2005 03 11 | G96 | 0.2+ | 0.1− |
| 1996 01 24 | 691 | 0.2− | 0.1+ | 2002 07 21 | 644 | 0.1− | 1.1+ | 2005 03 11 | G96 | 0.3+ | 0.4+ |
| 1996 01 24 | 691 | 0.1+ | 0.2+ | 2002 08 05 | 644 | 0.4+ | 1.2+ | 2005 03 11 | G96 | 0.1+ | 0.1+ |
| 1998 09 19 | 645 | 0.0 | 0.2− | 2002 08 05 | 644 | 0.0 | 0.9+ | 2005 05 04 | G96 | 0.4− | 0.4+ |
| 1998 09 19 | 645 | 0.0 | 0.2− | 2002 08 05 | 644 | 0.1+ | 1.0+ | 2005 05 04 | G96 | 0.3− | 0.4− |
| 1998 09 25 | 699 | 1.3+ | 0.3+ | 2002 08 16 | 644 | 0.6− | 0.6+ | 2005 05 04 | G96 | 0.3− | 0.7+ |
| 1998 09 25 | 699 | 0.2+ | 2.4+ | 2002 08 16 | 644 | 0.2− | 0.7+ | 2005 05 04 | G96 | 0.6− | 0.1+ |
| 1998 09 25 | 699 | 0.5+ | 1.5+ | 2002 08 16 | 644 | 0.1− | 0.6+ | 2006 06 23 | 644 | 0.5− | 0.2− |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2002 08 26 | 644 | 0.0 | 0.0 | 2006 06 23 | 644 | 0.0 | 0.4− |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2002 08 26 | 644 | 0.0 | 0.5+ | 2006 06 23 | 644 | 0.0 | 0.0 |
| 2002 07 09 | 704 | 0.5+ | 0.5− | 2002 08 26 | 644 | 0.2− | 0.5+ | | | | |
| 2002 07 09 | 704 | 0.6+ | 0.4+ | 2003 11 18 | 691 | 0.2+ | 0.1+ | | | | |

**1996 EH$_6$ = 2004 XF$_{191}$ = 2005 US$_{504}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.58099 | | (2000.0) | | | |
| $n$ | 0.19793378 | $\omega$ | 187.82635 | | −0.95033990 | −0.31098769 |
| $a$ | 2.9160129 | $\Omega$ | 334.04528 | | +0.28698124 | −0.86095822 |
| $e$ | 0.0763348 | $i$ | 1.55320 | | +0.12039868 | −0.40253893 |
| $P$ | 4.98 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.0 | 0.2− | 2001 04 13 | 691 | 0.3+ | 0.1+ | 2006 02 20 | G96 | 0.5− | 0.3+ |
| 1996 03 11 | 691 | 0.1− | 0.2− | 2001 04 16 | 645 | 0.3− | 0.1− | 2006 02 20 | G96 | 0.4− | 0.1+ |
| 1996 03 11 | 691 | 0.1− | 0.1− | 2001 04 16 | 645 | 0.2− | 0.0 | 2006 02 20 | G96 | 0.3− | 0.4− |
| 1996 03 18 | 691 | 0.2+ | 0.3+ | 2004 12 13 | 599 | 0.2+ | 0.3− | 2006 03 02 | 691 | 0.1+ | 0.3+ |
| 1996 03 18 | 691 | 0.4+ | 0.2+ | 2004 12 13 | 599 | 0.2+ | 0.2− | 2006 03 02 | 691 | 0.1− | 0.0 |
| 1996 03 18 | 691 | 0.1+ | 0.4+ | 2004 12 13 | 599 | 0.4− | 0.1− | 2006 03 02 | 691 | 0.3+ | 0.1− |
| 2001 02 03 | 691 | 0.3− | 0.0 | 2004 12 13 | 599 | 0.1− | 0.4− | 2006 03 25 | G96 | 0.2+ | 0.1− |
| 2001 02 03 | 691 | 0.2+ | 0.3+ | 2005 10 24 | 568 | 0.4+ | 0.1− | 2006 03 25 | G96 | 0.3+ | 0.2− |
| 2001 02 03 | 691 | 0.1+ | 0.3+ | 2005 10 24 | 568 | 0.2+ | 0.0 | 2006 03 25 | G96 | 0.0 | 0.1− |
| 2001 03 26 | 691 | 0.1− | 0.2− | 2005 10 24 | 568 | 0.3+ | 0.0 | 2006 03 25 | G96 | 0.1+ | 0.1+ |
| 2001 03 26 | 691 | 0.2+ | 0.0 | 2005 10 31 | 568 | 0.1+ | 0.0 | 2006 04 24 | G96 | 0.3+ | 0.0 |
| 2001 03 26 | 691 | 0.4+ | 0.3+ | 2005 10 31 | 568 | 0.2+ | 0.1− | 2006 04 24 | G96 | 0.2+ | 0.4− |
| 2001 04 13 | 691 | 0.4+ | 0.2− | 2005 10 31 | 568 | 0.1+ | 0.1− | 2006 04 24 | G96 | 0.2+ | 0.1+ |
| 2001 04 13 | 691 | 0.4+ | 0.3− | 2006 02 20 | G96 | 0.0 | 0.2− | 2006 04 24 | G96 | 0.4− | 0.2− |

**1996 EH$_7$ = 2006 QY$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.46962 | | (2000.0) | | | |
| $n$ | 0.22750564 | $\omega$ | 298.26489 | | +0.39032500 | +0.92065731 |
| $a$ | 2.6575082 | $\Omega$ | 354.69899 | | −0.82013790 | +0.34471146 |
| $e$ | 0.1396250 | $i$ | 3.74970 | | −0.41835418 | +0.18320513 |
| $P$ | 4.33 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.0 | 0.3+ | 2005 05 01 | 644 | 0.5+ | 0.3+ | 2006 09 23 | 691 | 0.6− | 0.1+ |
| 1996 03 11 | 691 | 0.3− | 0.5+ | 2005 05 01 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 1996 03 11 | 691 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.1+ |
| 1996 03 18 | 691 | 0.6+ | 0.6+ | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 1996 03 18 | 691 | 0.6+ | 1.6− | 2006 08 22 | 644 | 0.6− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 1996 03 27 | 691 | 0.0 | 0.4+ | 2006 08 23 | 644 | 0.3− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.2+ |
| 1996 03 27 | 691 | 0.1− | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 1996 03 27 | 691 | 0.0 | 0.6+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.3+ |
| 2004 01 18 | 691 | 0.4+ | 0.4+ | 2006 08 27 | 699 | 0.1+ | 0.9+ | 2006 10 19 | G96 | 0.2− | 0.3+ |
| 2004 01 18 | 691 | 0.4− | 0.6+ | 2006 08 27 | 699 | (0.9− | 2.5+) | 2006 11 13 | G96 | 1.4− | 0.3+ |
| 2004 01 18 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 0.7− | 0.8+ | 2006 11 13 | G96 | 0.1+ | 0.2+ |
| 2005 04 11 | 691 | 0.1− | 0.3+ | 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 1.0+ | 0.1− |
| 2005 04 11 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.3+ | 1.5+ | 2006 11 13 | G96 | 0.5+ | 0.8− |
| 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.2+ | 1.0+ | 2006 11 21 | G96 | 0.1− | 1.0+ |
| 2005 04 11 | 691 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.3+ | 1.0+ | 2006 11 21 | G96 | 0.2− | 0.6+ |
| 2005 04 11 | 691 | 0.4+ | 0.4+ | 2006 09 16 | 699 | 0.8− | 1.3+ | 2006 11 21 | G96 | 0.7− | 0.3+ |
| 2005 04 11 | 691 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.6+ | 2006 11 21 | G96 | 0.3+ | 0.6+ |
| 2005 05 01 | 644 | 0.4+ | 0.4+ | 2006 09 23 | 691 | 0.5− | 0.2+ | | | | |

**1996 EL$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.86315 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18956004 | $\omega$ | 155.00921 | | −0.83390655 | | −0.55114051 |
| $a$ | 3.0012685 | $\Omega$ | 351.36864 | | +0.46824231 | | −0.67864989 |
| $e$ | 0.2275619 | $i$ | 11.16178 | | +0.29214553 | | −0.48546726 |
| $P$ | 5.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.6− | 0.0 | 2000 12 20 | 695 | 0.3+ | 0.5− | 2001 02 16 | 704 | 0.2− | 0.6+ |
| 1996 03 12 | 691 | 0.4− | 0.0 | 2000 12 20 | 695 | 0.2+ | 0.5+ | 2001 02 16 | 704 | 0.4− | 0.5− |
| 1996 03 12 | 691 | 0.4− | 0.4− | 2000 12 20 | 695 | 0.1− | 0.3− | 2001 02 16 | 704 | 0.5− | 1.2+ |
| 1996 03 17 | 691 | 0.6+ | 0.1+ | 2000 12 20 | 695 | 0.2+ | 0.1− | 2001 02 16 | 704 | 0.1+ | 0.3+ |
| 1996 03 17 | 691 | 0.2+ | 0.0 | 2000 12 20 | 695 | 0.1+ | 0.1+ | 2001 03 18 | 699 | 0.9+ | 0.5− |
| 1996 03 17 | 691 | 0.8+ | 0.1+ | 2001 01 05 | 704 | 0.3+ | 0.8− | 2001 03 18 | 699 | 0.1− | 0.3− |
| 1996 03 24 | 691 | 0.2− | 0.3− | 2001 01 05 | 704 | 0.8+ | 0.2+ | 2001 03 18 | 699 | 1.3− | 0.1+ |
| 1996 03 24 | 691 | 0.1− | 0.0 | 2001 01 05 | 704 | 0.1− | 0.2− | 2001 03 18 | 699 | 0.4− | 0.1+ |
| 1996 03 24 | 691 | 0.4− | 0.1− | 2001 01 18 | 704 | 0.3+ | 0.4− | 2005 12 31 | 704 | 0.4− | 0.5+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2001 01 18 | 704 | 1.1+ | 0.7+ | 2005 12 31 | 704 | 0.4− | 0.4− |
| 1999 10 13 | 645 | 0.2+ | 0.0 | 2001 01 18 | 704 | 0.0 | 0.5− | 2005 12 31 | 704 | 0.2− | 0.0 |
| 1999 10 14 | 645 | 0.1− | 0.0 | 2001 01 18 | 704 | 0.3+ | 1.1+ | 2005 12 31 | 704 | 0.4+ | 0.1− |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2001 01 18 | 704 | 0.2+ | 0.2+ | | | | |

**1996 GS$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.88075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21095512 | $\omega$ | 127.46993 | | +0.06288415 | | +0.99685148 |
| $a$ | 2.7947481 | $\Omega$ | 146.04013 | | −0.94079532 | | +0.07536053 |
| $e$ | 0.0301232 | $i$ | 4.96004 | | −0.33309120 | | −0.02465594 |
| $P$ | 4.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 11 | 691 | 0.4− | 0.1+ | 1996 04 23 | 691 | 0.1+ | 0.2− | 2002 08 29 | 644 | 0.1− | 0.1+ |
| 1996 04 11 | 691 | 0.0 | 0.2− | 1996 04 23 | 691 | 0.7+ | 0.4− | 2002 08 29 | 644 | 0.1− | 0.2− |
| 1996 04 11 | 691 | 0.3+ | 0.1+ | 2002 08 17 | 644 | 0.1− | 0.0 | 2002 08 29 | 644 | 0.2− | 0.2+ |
| 1996 04 18 | 691 | 0.1− | 0.7+ | 2002 08 17 | 644 | 0.0 | 0.3+ | 2002 09 01 | 644 | 0.0 | 0.6− |
| 1996 04 18 | 691 | 0.2− | 0.2− | 2002 08 17 | 644 | 0.3+ | 0.6− | 2002 09 01 | 644 | 0.1− | 0.4− |
| 1996 04 18 | 691 | 0.4− | 0.2− | 2002 08 18 | 644 | 0.1+ | 0.5+ | | | | |
| 1996 04 23 | 691 | 0.2+ | 0.1+ | 2002 08 18 | 644 | 0.2+ | 0.7+ | | | | |

**1996 GR$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.81524 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26569911 | $\omega$ | 162.05630 | | −0.55926675 | | +0.82742685 |
| $a$ | 2.3963081 | $\Omega$ | 73.90992 | | −0.76691965 | | −0.49313195 |
| $e$ | 0.1328920 | $i$ | 3.03357 | | −0.31472996 | | −0.26867396 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.0 | 0.3− | 1996 04 23 | 691 | 0.3+ | 0.3+ | 2005 11 12 | 691 | 0.0 | 0.4+ |
| 1996 04 12 | 691 | 0.1+ | 0.2− | 2005 10 25 | G96 | 0.2− | 0.5− | 2005 11 12 | 691 | 0.1− | 0.2− |
| 1996 04 12 | 691 | 0.2+ | 0.3− | 2005 10 25 | G96 | 0.4− | 0.3− | 2005 11 12 | 691 | 0.3+ | 0.2+ |
| 1996 04 18 | 691 | 0.5− | 0.2+ | 2005 10 25 | G96 | 0.1− | 0.5− | 2005 12 04 | G96 | 0.3+ | 0.1+ |
| 1996 04 18 | 691 | 0.6− | 0.2+ | 2005 10 25 | G96 | 0.2+ | 0.1− | 2005 12 04 | G96 | 0.2+ | 0.0 |
| 1996 04 18 | 691 | 0.6− | 0.1+ | 2005 11 01 | 691 | 0.0 | 0.2+ | 2005 12 04 | G96 | 0.1+ | 0.2+ |
| 1996 04 23 | 691 | 0.7+ | 0.1− | 2005 11 01 | 691 | 0.1+ | 0.3− | 2005 12 04 | G96 | 0.1+ | 0.2+ |
| 1996 04 23 | 691 | 0.5+ | 0.1+ | 2005 11 01 | 691 | 0.3− | 0.1+ | | | | |

**1996 GA$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.65416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28290777 | $\omega$ | 216.06067 | | +0.32663412 | | +0.94320781 |
| $a$ | 2.2981205 | $\Omega$ | 73.07245 | | −0.85165889 | | +0.32151126 |
| $e$ | 0.1683301 | $i$ | 3.63023 | | −0.40986252 | | +0.08360347 |
| $P$ | 3.48 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.3+ | 0.1− | 1996 04 15 | 691 | 0.1+ | 0.2+ | 2003 04 11 | 691 | 0.1− | 0.0 |
| 1996 04 13 | 691 | 0.2+ | 0.0 | 1996 04 15 | 691 | 0.1+ | 0.2+ | 2003 04 21 | 691 | 0.1+ | 0.1− |
| 1996 04 13 | 691 | 0.2− | 0.2− | 1996 04 18 | 691 | 0.5− | 0.4− | 2003 04 21 | 691 | 0.4− | 0.4− |
| 1996 04 14 | 691 | 0.1+ | 0.2+ | 1996 04 18 | 691 | 0.2− | 0.3− | 2003 04 21 | 691 | 0.3+ | 0.1− |
| 1996 04 14 | 691 | 0.0 | 0.6+ | 1996 04 18 | 691 | 0.2− | 0.6− | 2003 05 02 | 691 | 0.1+ | 0.1+ |
| 1996 04 14 | 691 | 0.3+ | 0.3+ | 2003 04 11 | 691 | 0.0 | 0.1+ | 2003 05 02 | 691 | 0.1− | 0.1+ |
| 1996 04 15 | 691 | 0.0 | 0.1+ | 2003 04 11 | 691 | 0.0 | 0.3+ | 2003 05 02 | 691 | 0.2+ | 0.3+ |

**1996 RL$_7$ = 2006 RR$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.25543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29751316 | $\omega$ | 34.00459 | | +0.86740749 | | −0.49758501 |
| $a$ | 2.2222791 | $\Omega$ | 355.83071 | | +0.44460142 | | +0.77830733 |
| $e$ | 0.1618601 | $i$ | 2.88693 | | +0.22345878 | | +0.38294499 |
| $P$ | 3.31 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 05 | 691 | 0.5+ | 0.2+ | 1996 09 22 | 691 | 0.2− | 0.3− | 2006 09 24 | 691 | 0.3− | 0.3+ |
| 1996 09 05 | 691 | 0.4+ | 0.1+ | 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.1+ |
| 1996 09 05 | 691 | 0.4+ | 0.4− | 2004 01 19 | 691 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.0 |
| 1996 09 15 | 691 | 0.0 | 0.1− | 2004 01 19 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 1996 09 15 | 691 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 1996 09 15 | 691 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 1996 09 19 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.8+ | 0.1− |
| 1996 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 1996 09 19 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.6+ | 0.2− |
| 1996 09 22 | 691 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 1996 09 22 | 691 | 0.3− | 0.2− | 2006 09 24 | 691 | 0.3− | 0.2+ | | | | |

**1996 RZ$_9$ = 2001 TZ$_{255}$ = 2006 VB$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.85038 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21387597 | $\omega$ | 220.08785 | | +0.32568665 | | +0.94520666 |
| $a$ | 2.7692450 | $\Omega$ | 68.93005 | | −0.86112562 | | +0.30643175 |
| $e$ | 0.0368876 | $i$ | 1.39025 | | −0.39037273 | | +0.11262304 |
| $P$ | 4.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 07 | 691 | 0.7− | 0.3+ | 2001 10 18 | 644 | 0.3+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 1996 09 07 | 691 | 0.7− | 0.1+ | 2001 10 18 | 644 | 0.5+ | 0.8− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 1996 09 07 | 691 | 0.5− | 0.1− | 2003 01 05 | 291 | 0.1− | 0.4+ | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 1996 09 08 | 691 | 0.0 | 0.2+ | 2003 01 05 | 291 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 1996 09 08 | 691 | 0.2+ | 0.1+ | 2003 01 05 | 291 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 1996 09 08 | 691 | 0.3+ | 0.4+ | 2004 01 18 | 807 | 1.2+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.4+ |
| 1996 09 17 | 691 | 0.6+ | 0.2+ | 2004 01 18 | 807 | 0.6+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1996 09 17 | 691 | 0.4+ | 0.4+ | 2004 05 21 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 1996 09 17 | 691 | 0.2+ | 0.0 | 2004 05 21 | 691 | 0.1− | 0.5+ | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 1996 09 21 | 691 | 0.2+ | 0.0 | 2004 05 21 | 691 | 0.3+ | 0.6+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 1996 09 21 | 691 | 0.6− | 0.0 | 2006 09 27 | G96 | 0.6− | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 1996 09 21 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2001 10 14 | 291 | (2.7+ | 1.0+) | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2001 10 14 | 291 | (3.0+ | 1.4+) | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.3− | 0.6− |
| 2001 10 14 | 291 | (3.6+ | 1.3+) | 2006 11 10 | 691 | 0.6− | 0.1+ | | | | |
| 2001 10 18 | 644 | 0.0 | 0.7− | 2006 11 10 | 691 | 0.2+ | 0.0 | | | | |

**1996 RG$_{19}$ = 2006 UW$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 111.02963 | | (2000.0) | | | |
| $n$ | 0.20282009 | $\omega$ | 249.70731 | | −0.08322774 | +0.99647974 |
| $a$ | 2.8689880 | $\Omega$ | 15.52878 | | −0.89970195 | −0.07079464 |
| $e$ | 0.0274128 | $i$ | 2.15428 | | −0.42849685 | −0.04490273 |
| $P$ | 4.86 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 15 | 691 | 0.4+ | 0.2− | 2006 10 16 | 701 | 0.2− | 0.1− | 2006 10 19 | 701 | 0.2+ | 0.3+ |
| 1996 09 15 | 691 | 0.1− | 0.3+ | 2006 10 16 | 701 | 0.3− | 0.2− | 2006 10 19 | 701 | 0.3+ | 0.6+ |
| 1996 09 15 | 691 | 0.0 | 0.4+ | 2006 10 16 | 701 | 0.2− | 0.1+ | 2006 10 19 | 701 | 0.4− | 0.2− |
| 1996 09 19 | 691 | 0.1+ | 0.0 | 2006 10 16 | 701 | 0.4− | 0.3− | 2006 10 20 | 701 | 0.1+ | 0.2+ |
| 1996 09 19 | 691 | 0.0 | 0.2+ | 2006 10 16 | 701 | 0.3− | 0.2+ | 2006 10 20 | 701 | 0.3− | 0.1+ |
| 1996 09 19 | 691 | 0.1+ | 0.1− | 2006 10 19 | 701 | 0.4− | 0.1+ | 2006 10 20 | 701 | 0.2+ | 0.3+ |
| 1996 09 22 | 691 | 0.3− | 0.3+ | 2006 10 19 | 701 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 1996 09 22 | 691 | 0.7− | 0.1+ | 2006 10 19 | 701 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.4− | 0.2− |
| 2004 03 30 | 291 | 0.2+ | 0.3+ | 2006 10 19 | 701 | 0.4− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.5− |
| 2004 03 30 | 291 | 0.6+ | 0.3+ | 2006 10 19 | 701 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2004 03 30 | 291 | 0.3+ | 0.5+ | 2006 10 19 | 701 | 1.2+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 2004 04 23 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 701 | 1.0− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2004 04 23 | 691 | 0.5− | 0.4+ | 2006 10 19 | 701 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 10 19 | 701 | 1.4+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2006 10 16 | 701 | 0.9− | 0.4− | 2006 10 19 | 701 | 0.1+ | 0.8+ | 2006 11 11 | 691 | 0.7+ | 0.7+ |
| 2006 10 16 | 701 | 0.0 | 0.3+ | 2006 10 19 | 701 | 0.4+ | 0.6+ | 2006 11 11 | 691 | 0.5− | 0.2− |
| 2006 10 16 | 701 | 0.8− | 0.0 | 2006 10 19 | 701 | 1.1+ | 0.5+ | | | | |

**1996 RW$_{25}$ = 2004 GG$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.71844 | | (2000.0) | | | |
| $n$ | 0.21619975 | $\omega$ | 171.10658 | | +0.98700783 | +0.16066949 |
| $a$ | 2.7493662 | $\Omega$ | 179.64364 | | −0.15508281 | +0.95417159 |
| $e$ | 0.2679016 | $i$ | 8.61009 | | −0.04201041 | +0.25247157 |
| $P$ | 4.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 566 | 0.4+ | 0.6− | 2004 04 14 | 691 | 0.2+ | 0.6+ | 2005 09 07 | 699 | 0.3− | 0.4− |
| 1996 09 13 | 566 | 0.9+ | 0.4− | 2004 04 23 | 691 | 0.4− | 0.3− | 2005 09 07 | 699 | 0.2− | 0.1+ |
| 1996 09 13 | 566 | 1.5+ | 0.0 | 2004 04 23 | 691 | 0.4+ | 0.7+ | 2005 09 07 | 699 | 0.4− | 0.9+ |
| 1996 09 22 | 691 | 0.1− | 0.3− | 2004 04 23 | 691 | 0.1+ | 0.8+ | 2005 09 07 | 699 | 1.3− | 2.9+ |
| 1996 09 22 | 691 | 0.0 | 0.7− | 2005 06 23 | 644 | 0.3− | 0.1+ | 2005 09 17 | 644 | 0.3+ | 0.5− |
| 1996 09 22 | 691 | 0.2− | 0.2− | 2005 06 23 | 644 | 0.1− | 0.2+ | 2005 09 17 | 644 | 0.1+ | 0.4+ |
| 2001 11 21 | 291 | 0.5− | 0.3+ | 2005 06 23 | 644 | 0.3− | 0.4+ | 2005 09 17 | 644 | 0.4+ | 0.3+ |
| 2001 11 21 | 291 | 0.5− | 0.3+ | 2005 07 29 | 699 | 0.2+ | 0.2+ | 2005 09 23 | 699 | 0.3− | 0.9+ |
| 2001 11 21 | 291 | 0.6− | 0.4+ | 2005 07 29 | 699 | 0.6+ | 0.3+ | 2005 09 23 | 699 | 0.9+ | 0.5+ |
| 2001 12 11 | 704 | 0.5+ | 1.0+ | 2005 07 29 | 699 | 0.4+ | 0.4+ | 2005 09 23 | 699 | 0.1+ | 1.0+ |
| 2001 12 11 | 704 | 0.4+ | 1.4+ | 2005 08 06 | 644 | 0.0 | 0.8− | 2005 09 23 | 699 | 0.3− | 0.0 |
| 2001 12 11 | 704 | 0.9+ | 0.6+ | 2005 08 06 | 644 | 0.1+ | 0.1+ | 2005 10 04 | 699 | 0.5− | 0.9− |
| 2001 12 17 | 291 | 0.3+ | 0.3+ | 2005 08 06 | 644 | 0.2+ | 0.0 | 2005 10 04 | 699 | 0.0 | 1.2+ |
| 2001 12 17 | 291 | 0.2+ | 0.1− | 2005 08 24 | 644 | 0.0 | 0.2+ | 2005 10 04 | 699 | 0.1+ | 1.0+ |
| 2001 12 17 | 291 | 0.3+ | 0.1+ | 2005 08 24 | 644 | 0.1− | 0.2+ | 2005 10 04 | 699 | 1.3− | 0.6+ |
| 2002 01 05 | 209 | 0.1+ | 1.1+ | 2005 08 24 | 644 | 0.1+ | 0.0 | 2005 10 25 | G96 | 0.3− | 0.1+ |
| 2002 01 05 | 209 | 0.7+ | 0.6+ | 2005 08 29 | 699 | 0.3+ | 0.2+ | 2005 10 25 | G96 | 0.1− | 0.3+ |
| 2002 01 05 | 209 | 0.1+ | 0.9+ | 2005 08 29 | 699 | 1.6− | 0.5+ | 2005 10 25 | G96 | 0.0 | 0.2+ |
| 2004 04 14 | 691 | 0.2+ | 0.2+ | 2005 08 29 | 699 | 0.3+ | 1.1+ | 2005 10 25 | G96 | 0.2+ | 0.4+ |
| 2004 04 14 | 691 | 0.2+ | 0.3+ | 2005 08 29 | 699 | 0.3+ | 0.1+ | | | | |

**1996 TJ$_1$ = 2006 UW$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.04704 | | (2000.0) | | | |
| $n$ | 0.20199326 | $\omega$ | 189.38049 | | +0.99967090 | +0.01352516 |
| $a$ | 2.8768119 | $\Omega$ | 169.76864 | | −0.00678031 | +0.95881072 |
| $e$ | 0.1372726 | $i$ | 7.04927 | | −0.02474124 | +0.28372357 |
| $P$ | 4.88 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 19 | 691 | 0.1+ | 0.3− | 1999 03 21 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4− | 0.8+ |
| 1996 09 19 | 691 | 0.4+ | 0.1− | 1999 03 22 | 645 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.2+ |
| 1996 09 19 | 691 | 0.4+ | 0.3+ | 1999 03 22 | 645 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.4− | 0.2− |
| 1996 10 06 | 684 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1996 10 06 | 684 | 0.3− | 0.4− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.5+ | 0.2+ |
| 1996 10 07 | 684 | 1.7− | 0.6− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1996 10 07 | 684 | 1.1− | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.3− | | | | |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.9− | 0.4− | | | | |

**1996 TA$_{17}$ = 2006 RK$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.08584 | | (2000.0) | | | |
| $n$ | 0.19311471 | $\omega$ | 173.13052 | | +0.77628282 | −0.62427718 |
| $a$ | 2.9643250 | $\Omega$ | 225.88973 | | +0.57241136 | +0.75623223 |
| $e$ | 0.0994835 | $i$ | 7.00290 | | +0.26406480 | +0.19593574 |
| $P$ | 5.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.6− | 0.1+ | 2001 09 16 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 1996 10 04 | 691 | 0.2− | 0.1− | 2001 09 16 | 704 | 0.3+ | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.1− |
| 1996 10 04 | 691 | 0.4− | 0.3− | 2001 09 16 | 704 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.2− |
| 1996 10 05 | 691 | 0.5+ | 0.1− | 2004 03 28 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 1996 10 05 | 691 | 0.6+ | 0.2+ | 2004 03 28 | 691 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 1996 10 05 | 691 | 0.3+ | 0.2− | 2004 03 28 | 691 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 1996 10 12 | 691 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.6− | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 1996 10 12 | 691 | 0.1+ | 0.2− | 2006 08 17 | 644 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 1996 10 12 | 691 | 0.3− | 0.0 | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2− | 0.2+ |

**1996 TT$_{27}$ = 2006 VK$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.48784 | | (2000.0) | | | |
| $n$ | 0.30118865 | $\omega$ | 9.44462 | | +0.44999381 | −0.88867914 |
| $a$ | 2.2041627 | $\Omega$ | 53.86278 | | +0.81205864 | +0.36616771 |
| $e$ | 0.1394177 | $i$ | 6.26004 | | +0.37157280 | +0.27599021 |
| $P$ | 3.27 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 1996 10 07 | 691 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 1996 10 07 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1996 10 11 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 1996 10 11 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.5− | 2006 11 18 | 704 | 0.9+ | 0.4+ |
| 1996 10 11 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.6+ | 0.2− |
| 1996 10 15 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 1996 10 15 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 1996 10 15 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 1996 10 15 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 1.2+ | 0.9+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.8− |
| 1996 10 15 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.7+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.9− | 1.2+ | 2006 11 22 | 691 | 1.0− | 0.2+ |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.1+ | 0.1+ |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.6+ | 0.3− | 2006 12 01 | 704 | 0.5− | 0.6+ |
| 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.7− | 2006 12 01 | 704 | 0.1+ | 0.2+ |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.5− | | | | |

**1996 TC$_{37}$ = 2002 JQ$_{130}$ = 2006 SD$_{92}$**

Id. M. E. Sansaturio, Minor Planet Center

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 38.52003 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29377602 | $\omega$ | 108.22941 | | | +0.78469576 | | +0.61961075 | |
| $a$ | 2.2410858 | $\Omega$ | 213.48981 | | | −0.58052822 | | +0.72420519 | |
| $e$ | 0.1943746 | $i$ | 1.90109 | | | −0.21734660 | | +0.30267037 | |
| $P$ | 3.35 | $H$ | 17.9 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 691 | 0.7− | 0.2− | 2006 09 18 | 691 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1996 10 12 | 691 | 0.5− | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 1996 10 12 | 691 | 0.4− | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 1996 10 15 | 691 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1− |
| 1996 10 15 | 691 | 0.6+ | 0.5+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1996 10 15 | 691 | 0.4+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 05 08 | 291 | 0.2− | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2002 05 08 | 291 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2002 05 08 | 291 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2002 05 11 | 704 | 1.2+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2002 05 11 | 704 | 0.6+ | 1.0+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2002 05 11 | 704 | 1.1+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2005 03 11 | G96 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2005 03 11 | G96 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2005 03 11 | G96 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3− | 0.6− |
| 2005 04 05 | G96 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.6+ | 2006 11 13 | G96 | 0.1− | 0.1+ |
| 2005 04 05 | G96 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.1− |
| 2005 04 05 | G96 | 0.2− | 1.0+ | 2006 10 21 | 703 | 1.2− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2005 04 05 | G96 | 1.2+ | 0.6+ | 2006 10 21 | 703 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.4+ | 0.2+ |
| 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.3+ | 2006 11 21 | 691 | 0.2+ | 0.6+ |
| 2006 09 18 | 691 | 1.0− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.0 |

**1996 TH$_{50}$ = 2005 AR$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 239.96861 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26743804 | $\omega$ | 172.20991 | | | +0.88562130 | | −0.46237680 | |
| $a$ | 2.3859093 | $\Omega$ | 215.43482 | | | +0.42194951 | | +0.84016077 | |
| $e$ | 0.2090250 | $i$ | 4.29188 | | | +0.19399360 | | +0.28343885 | |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 809 | 0.6+ | 2.0+ | 2000 11 21 | 704 | 0.2+ | 0.8+ | 2006 04 02 | 691 | 0.1+ | 0.1+ |
| 1996 10 04 | 809 | 1.1− | 1.1+ | 2000 11 21 | 704 | 0.1+ | 0.2− | 2006 04 02 | 691 | 0.1− | 0.2+ |
| 1996 10 04 | 809 | 0.6− | 1.8+ | 2002 04 14 | 704 | 0.3− | 0.8+ | 2006 05 02 | 695 | 0.1− | 0.1+ |
| 1996 10 05 | 809 | (1.9+ | 4.9+) | 2002 04 14 | 704 | 1.1+ | 0.5+ | 2006 05 02 | 695 | 0.1+ | 0.1+ |
| 1996 10 05 | 809 | (1.0+ | 3.9+) | 2002 04 14 | 704 | 1.0+ | 1.7+ | 2006 05 02 | 695 | 0.0 | 0.1+ |
| 1996 10 05 | 809 | (0.1+ | 3.7+) | 2005 01 07 | 703 | 0.7+ | 0.1− | 2006 05 06 | 691 | 0.2+ | 0.1+ |
| 1997 01 03 | 683 | 0.3+ | 1.0− | 2005 01 07 | 703 | 0.4− | 0.6+ | 2006 05 06 | 691 | 0.1+ | 0.1− |
| 1997 01 03 | 683 | 0.1− | 0.5− | 2005 01 07 | 703 | 1.3− | 0.3− | 2006 05 06 | 691 | 0.0 | 0.0 |
| 1997 01 03 | 683 | 1.6− | 1.2− | 2005 01 07 | 703 | 0.0 | 0.2+ | 2006 05 20 | G96 | 0.4− | 0.1− |
| 2000 09 06 | 704 | 0.4+ | 0.7+ | 2005 01 08 | 599 | 0.3+ | 0.3+ | 2006 05 20 | G96 | 0.7− | 0.2+ |
| 2000 09 06 | 704 | 0.2+ | 0.2+ | 2005 01 08 | 599 | 0.1− | 0.2+ | 2006 05 20 | G96 | 0.8− | 0.4+ |
| 2000 09 06 | 704 | 0.8+ | 0.2+ | 2005 01 08 | 599 | 0.5+ | 0.5+ | 2006 05 20 | G96 | 0.5− | 0.1− |
| 2000 09 06 | 704 | 0.0 | 0.2− | 2005 01 08 | 599 | 0.1+ | 0.6+ | | | | |
| 2000 11 21 | 704 | 0.3− | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.2+ | | | | |

**1996 UD$_{2}$ = 2006 QB$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 74.53074 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29067252 | $\omega$ | 312.03450 | | | −0.18681985 | | +0.97869637 | |
| $a$ | 2.2570096 | $\Omega$ | 307.00095 | | | −0.86689200 | | −0.20501451 | |
| $e$ | 0.0641174 | $i$ | 6.12107 | | | −0.46216513 | | −0.01106632 | |
| $P$ | 3.39 | $H$ | 17.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 691 | 0.1+ | 0.1− | 2003 10 17 | 691 | 0.1− | 0.0 | 2006 06 20 | G96 | 0.3+ | 0.2− |
| 1996 10 10 | 691 | 0.3+ | 0.1− | 2003 11 02 | 691 | 0.1− | 0.1− | 2006 06 20 | G96 | 0.6− | 0.4− |
| 1996 10 10 | 691 | 0.3+ | 0.4+ | 2003 11 02 | 691 | 0.0 | 0.0 | 2006 06 20 | G96 | 0.3+ | 0.2− |
| 1996 10 17 | 691 | 0.2+ | 0.1− | 2003 11 02 | 691 | 0.2+ | 0.0 | 2006 08 24 | 704 | 0.4− | 0.0 |
| 1996 10 17 | 691 | 0.0 | 0.3− | 2005 03 03 | 703 | 0.5+ | 0.8+ | 2006 08 24 | 704 | 0.7+ | 1.0+ |
| 1996 10 18 | 691 | 0.3− | 0.3− | 2005 03 03 | 703 | 0.4− | 0.5+ | 2006 08 24 | 704 | 0.4+ | 0.3+ |
| 1996 10 18 | 691 | 0.3+ | 0.7− | 2005 03 03 | 703 | 0.0 | 0.2+ | 2006 08 28 | 703 | (2.3− | 0.1+) |
| 1996 10 18 | 691 | 0.0 | 0.2− | 2005 03 03 | 703 | 0.5+ | 1.7− | 2006 08 28 | 703 | 0.4− | 0.3+ |
| 2003 09 30 | 691 | 0.1− | 0.2+ | 2005 03 10 | 703 | 0.5− | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.6+ |
| 2003 09 30 | 691 | 0.2− | 0.2+ | 2005 03 10 | 703 | (0.9+ | 2.2+) | 2006 08 28 | 703 | 1.1− | 0.2− |
| 2003 09 30 | 691 | 0.5− | 0.3+ | 2005 03 10 | 703 | 0.8+ | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2003 10 17 | 691 | 0.1+ | 0.2+ | 2005 03 10 | 703 | 0.1+ | 0.8+ | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 2003 10 17 | 691 | 0.3+ | 0.2+ | 2006 06 20 | G96 | 0.0 | 0.4− | 2006 09 17 | 691 | 0.2− | 0.2+ |

**1996 VR$_{11}$ = 2006 RF$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 31.37866 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18961194 | $\omega$ | 32.26171 | | | +0.60844493 | | +0.78619670 | |
| $a$ | 3.0007208 | $\Omega$ | 275.44272 | | | −0.74922530 | | +0.52415377 | |
| $e$ | 0.1416005 | $i$ | 6.23506 | | | −0.26164139 | | +0.32734933 | |
| $P$ | 5.20 | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 04 | 691 | 0.2+ | 0.5− | 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | 1.2+ | 0.8+ |
| 1996 11 04 | 691 | 0.2+ | 0.1+ | 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3− | 1.0− |
| 1996 11 04 | 691 | 0.3− | 0.2− | 2001 08 27 | 644 | 0.8− | 0.1+ | 2006 09 18 | 703 | 1.3− | 0.5+ |
| 1996 11 11 | 691 | 0.4− | 0.1+ | 2001 08 27 | 644 | 0.7− | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.3+ |
| 1996 11 11 | 691 | 0.5− | 0.1+ | 2001 08 27 | 644 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.2− | 1.4− |
| 1996 11 11 | 691 | 1.0− | 0.1− | 2006 09 13 | 644 | 0.0 | 0.4− | 2006 09 20 | 699 | 0.8+ | 0.1+ |
| 1996 11 13 | 691 | 0.5+ | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.3− | 0.5+ |
| 1996 11 13 | 691 | 0.6+ | 0.0 | 2006 09 13 | 644 | 0.3+ | 0.0 | | | | |
| 1996 11 13 | 691 | 0.9+ | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.9+ | | | | |

**1996 VO$_{13}$ = 2006 PF$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 26.45063 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28065453 | $\omega$ | 81.21583 | | | +0.47166880 | | +0.88161415 | |
| $a$ | 2.3104044 | $\Omega$ | 216.94208 | | | −0.81965537 | | +0.43130050 | |
| $e$ | 0.1338269 | $i$ | 1.60972 | | | −0.32510556 | | +0.19166736 | |
| $P$ | 3.51 | $H$ | 18.1 | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 05 | 691 | 0.1− | 0.2− | 2003 11 20 | 691 | 0.2− | 0.4− | 2006 08 19 | 461 | 0.3− | 0.2+ |
| 1996 11 05 | 691 | 0.3+ | 0.2− | 2003 11 20 | 691 | 0.1− | 0.2− | 2006 08 19 | 461 | 0.2− | 0.5+ |
| 1996 11 05 | 691 | 0.5− | 0.4− | 2003 11 20 | 691 | 0.1− | 0.6− | 2006 08 19 | 461 | 0.4+ | 0.2− |
| 1996 11 10 | 691 | 0.1+ | 0.2− | 2003 11 30 | 291 | 0.2+ | 0.4+ | 2006 08 21 | 461 | 0.0 | 0.4+ |
| 1996 11 10 | 691 | 0.3+ | 0.2− | 2003 11 30 | 291 | 0.1− | 0.1+ | 2006 08 21 | 461 | 0.5+ | 0.2− |
| 1996 11 10 | 691 | 0.2+ | 0.1+ | 2003 11 30 | 291 | 0.1+ | 1.1+ | 2006 08 21 | 461 | 0.1− | 0.6− |
| 1996 11 18 | 691 | 0.1− | 0.5+ | 2006 08 15 | 644 | 0.4+ | 0.0 | 2006 08 23 | 461 | 0.2+ | 0.4+ |
| 1996 11 18 | 691 | 0.1+ | 0.3+ | 2006 08 15 | 644 | 0.0 | 0.1− | 2006 08 23 | 461 | 0.7− | 0.1− |
| 1996 11 18 | 691 | 0.2− | 0.3− | 2006 08 15 | 644 | 0.0 | 0.1− | 2006 08 23 | 461 | 0.3− | 0.1+ |

**1996 VH$_{15}$ = 2006 UV$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.45437 | | (2000.0) | | | |
| $n$ | 0.19398558 | $\omega$ | 275.08589 | | +0.96062659 | −0.27761804 |
| $a$ | 2.9554463 | $\Omega$ | 101.03254 | | +0.25921255 | +0.88101545 |
| $e$ | 0.0227416 | $i$ | 0.65208 | | +0.10002701 | +0.38306657 |
| $P$ | 5.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 05 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.6− | 2006 10 23 | 691 | 0.8− | 0.2+ |
| 1996 11 05 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 1996 11 05 | 691 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 1996 11 11 | 691 | 0.5+ | 0.0 | 2006 10 04 | G96 | 0.6+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 1996 11 11 | 691 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 1996 11 11 | 691 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 1996 11 18 | 691 | 0.8− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1996 11 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 1996 11 18 | 691 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.1− |

**1996 VJ$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.10096 | | (2000.0) | | | |
| $n$ | 0.29440138 | $\omega$ | 332.06864 | | +0.06376029 | +0.99454102 |
| $a$ | 2.2379111 | $\Omega$ | 301.47922 | | −0.89662232 | +0.02074731 |
| $e$ | 0.1473091 | $i$ | 5.55805 | | −0.43818152 | +0.10226291 |
| $P$ | 3.35 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.5+ |
| 1996 11 09 | 691 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.8− | 2006 09 30 | 703 | 0.8− | 0.5− |
| 1996 11 09 | 691 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.5− |
| 1996 11 17 | 691 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 1996 11 17 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 1996 11 17 | 691 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.6+ | | | | |

**1996 VW$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 141.94467 | | (2000.0) | | | |
| $n$ | 0.22501300 | $\omega$ | 216.59575 | | +0.99657781 | +0.03251582 |
| $a$ | 2.6770983 | $\Omega$ | 141.32741 | | −0.00757857 | +0.95145062 |
| $e$ | 0.0623476 | $i$ | 6.98555 | | −0.08231178 | +0.30607913 |
| $P$ | 4.38 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 691 | 0.7− | 0.1+ | 1996 12 05 | 691 | 0.3+ | 0.1− | 2003 04 11 | 691 | 0.0 | 0.7+ |
| 1996 11 09 | 691 | 0.6− | 0.0 | 1996 12 05 | 691 | 0.3+ | 0.2− | 2003 04 24 | 691 | 0.2− | 0.6− |
| 1996 11 09 | 691 | 0.5+ | 0.1− | 1998 03 01 | 691 | 0.1+ | 0.2− | 2003 04 24 | 691 | 0.1− | 0.8− |
| 1996 11 18 | 691 | 0.4+ | 0.2+ | 1998 03 01 | 691 | 0.2+ | 0.1+ | 2003 04 24 | 691 | 0.2− | 0.8− |
| 1996 11 18 | 691 | 0.1+ | 0.3+ | 1998 03 01 | 691 | 0.3− | 0.1+ | 2003 05 06 | 691 | 0.0 | 0.0 |
| 1996 11 18 | 691 | 0.0 | 0.3+ | 2003 04 11 | 691 | 0.5+ | 0.7+ | 2003 05 06 | 691 | 0.1− | 0.0 |
| 1996 12 05 | 691 | 0.1− | 0.6− | 2003 04 11 | 691 | 0.1+ | 0.7+ | 2003 05 06 | 691 | 0.1+ | 0.0 |

**1996 WU$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.24131 | | (2000.0) | | | |
| $n$ | 0.18929265 | $\omega$ | 234.88689 | | +0.80865260 | +0.53751806 |
| $a$ | 3.0040943 | $\Omega$ | 91.45727 | | −0.43120877 | +0.81802258 |
| $e$ | 0.1145631 | $i$ | 13.83633 | | −0.40017492 | +0.20472763 |
| $P$ | 5.21 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 691 | 0.1+ | 0.6− | 2001 11 12 | 645 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.2+ | 0.2+ |
| 1996 11 18 | 691 | 0.1− | 0.3− | 2001 11 12 | 608 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.1+ | 0.3+ |
| 1996 11 18 | 691 | 0.2− | 0.8− | 2001 11 12 | 608 | 0.4− | 0.2+ | 2006 09 25 | 703 | 0.7+ | 0.0 |
| 1996 12 03 | 691 | 0.8− | 1.9+ | 2001 11 12 | 608 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.9− | 0.0 |
| 1996 12 03 | 691 | 0.6− | 0.9+ | 2001 12 07 | 704 | 0.2− | 0.2+ | 2006 09 25 | 703 | 0.8− | 0.5− |
| 1996 12 03 | 691 | 0.2− | 1.4+ | 2001 12 07 | 704 | 0.4− | 0.9+ | 2006 10 21 | 703 | 0.5+ | 0.7+ |
| 1996 12 12 | 691 | 0.2+ | 0.7− | 2001 12 07 | 704 | 0.7− | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.6+ |
| 1996 12 12 | 691 | 0.1+ | 0.3− | 2001 12 07 | 704 | (3.1− | 0.3+) | 2006 10 21 | 703 | 0.4+ | 0.2− |
| 1996 12 12 | 691 | 0.1+ | 0.1− | 2001 12 07 | 704 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1− | 0.9+ |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2001 12 18 | 645 | 0.1+ | 0.2− | 2006 10 31 | 703 | 1.2− | 0.1− |
| 2001 09 19 | 645 | 0.0 | 0.2+ | 2001 12 18 | 645 | 0.1+ | 0.3− | 2006 10 31 | 703 | 0.7− | 1.0+ |
| 2001 09 21 | 645 | 0.1+ | 0.1− | 2003 01 05 | 704 | (1.9− | 1.2+) | 2006 10 31 | 703 | (0.0 | 1.7+) |
| 2001 09 21 | 645 | 0.1+ | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 0.5+ | 0.3+ |
| 2001 10 23 | 644 | 0.2− | 0.5+ | 2003 01 05 | 704 | 0.3+ | 0.7− | 2006 11 23 | 703 | 0.9− | 0.0 |
| 2001 10 23 | 644 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.4+ | 1.3− | 2006 11 23 | 703 | 0.5+ | 0.4+ |
| 2001 10 23 | 644 | 0.0 | 0.7+ | 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 11 23 | 703 | 2.0− | 1.3− |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.4+ |

**1996 XP$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.61237 | | (2000.0) | | | |
| $n$ | 0.24241289 | $\omega$ | 304.99457 | | +0.56892375 | +0.82239000 |
| $a$ | 2.5474103 | $\Omega$ | 359.67830 | | −0.70974401 | +0.49057959 |
| $e$ | 0.2686871 | $i$ | 6.92963 | | −0.41543856 | +0.28810824 |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.6+ | 0.4− | 2000 09 24 | 699 | (0.8+ | 2.4+) | 2004 10 04 | 691 | 0.1+ | 0.4+ |
| 1996 12 01 | 691 | 0.5+ | 0.0 | 2003 03 27 | 691 | 0.1+ | 0.2+ | 2004 10 04 | 691 | 0.0 | 0.6+ |
| 1996 12 01 | 691 | 0.3+ | 0.1− | 2003 03 27 | 691 | 0.1+ | 0.6+ | 2004 10 21 | 704 | 0.6− | 0.4− |
| 1996 12 06 | 691 | 0.6− | 0.0 | 2003 03 27 | 691 | 0.1+ | 0.2+ | 2004 10 21 | 704 | 0.1− | 0.9+ |
| 1996 12 06 | 691 | 0.8− | 0.1+ | 2003 04 01 | 704 | 1.3+ | 1.3+ | 2004 10 21 | 704 | 0.2+ | 0.4− |
| 1996 12 06 | 691 | 0.7− | 0.4+ | 2003 04 01 | 704 | 0.6+ | 0.3+ | 2004 10 21 | 704 | 0.2+ | 0.5− |
| 1996 12 09 | 691 | 0.4+ | 0.1− | 2003 04 01 | 704 | 0.5+ | 0.0 | 2004 10 21 | 704 | 0.2+ | 0.4− |
| 1996 12 09 | 691 | 0.4+ | 0.2− | 2004 08 11 | 704 | 0.2− | 0.4+ | 2004 11 04 | 703 | 1.2− | 0.3− |
| 1996 12 09 | 691 | 0.6+ | 0.5− | 2004 08 11 | 704 | 0.9− | 0.5+ | 2004 11 04 | 703 | 0.4− | 0.6+ |
| 1996 12 14 | 691 | 0.3− | 0.2− | 2004 08 11 | 704 | 0.5− | 1.7+ | 2004 11 04 | 703 | 0.4− | 0.8+ |
| 1996 12 14 | 691 | 0.4− | 0.1+ | 2004 09 18 | 704 | 0.6− | 0.1+ | 2004 11 04 | 703 | 1.2+ | 0.1− |
| 1996 12 14 | 691 | 0.1− | 0.2+ | 2004 09 18 | 704 | 0.1− | 0.2− | 2004 11 12 | 703 | 0.4− | 0.5+ |
| 2000 09 24 | 699 | 0.8+ | 0.7− | 2004 09 18 | 704 | 0.8− | 0.2− | 2004 11 12 | 703 | 0.9− | 0.1− |
| 2000 09 24 | 699 | 1.5+ | 0.6− | 2004 09 18 | 704 | 0.8− | 0.8− | 2004 11 12 | 703 | 0.1+ | 0.5+ |
| 2000 09 24 | 699 | 0.0 | 0.7+ | 2004 10 04 | 691 | 0.0 | 0.5+ | 2004 11 12 | 703 | 0.3+ | 1.0+ |

**1996 XW$_{9}$ = 2006 SL$_{346}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.64922 | | (2000.0) | | | |
| $n$ | 0.29282288 | $\omega$ | 28.05814 | | +0.97981567 | −0.19890813 |
| $a$ | 2.2459463 | $\Omega$ | 343.37915 | | +0.16789840 | +0.87293345 |
| $e$ | 0.2107750 | $i$ | 3.99338 | | +0.10849597 | +0.44544669 |
| $P$ | 3.37 | $H$ | 18.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2− | 0.9− |
| 1996 12 01 | 691 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.3− |
| 1996 12 01 | 691 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.8+ | 0.9− |
| 1996 12 09 | 691 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 1996 12 09 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.6+ |
| 1996 12 09 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 1996 12 15 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.6− | 0.5+ |
| 1996 12 15 | 691 | 0.2+ | 0.7− | 2006 10 02 | 691 | 0.1+ | 0.0 | | | | |
| 1996 12 15 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.1+ | | | | |

**1996 XZ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.95140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26924346 | $\omega$ | 308.86046 | | −0.26735412 | | +0.96094005 |
| $a$ | 2.3752315 | $\Omega$ | 305.48687 | | −0.85464543 | | −0.27075669 |
| $e$ | 0.0857229 | $i$ | 5.03954 | | −0.44508759 | | −0.05731525 |
| $P$ | 3.66 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.0 | 0.1+ | 1996 12 14 | 691 | 0.1+ | 0.3− | 2002 08 17 | 644 | 0.1− | 0.3+ |
| 1996 12 04 | 691 | 0.2− | 0.3− | 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.4− |
| 1996 12 04 | 691 | 0.1+ | 0.5− | 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.9− | 0.5+ |
| 1996 12 09 | 691 | 0.4− | 0.3+ | 2002 07 22 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.9+ | 0.7+ |
| 1996 12 09 | 691 | 0.1+ | 0.1+ | 2002 07 22 | 644 | 0.6− | 0.1− | 2006 09 17 | 703 | 0.9− | 0.4+ |
| 1996 12 09 | 691 | 0.1− | 0.8+ | 2002 07 22 | 644 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− |
| 1996 12 11 | 691 | 0.1− | 0.3+ | 2002 08 07 | 644 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 1996 12 11 | 691 | 0.0 | 0.3− | 2002 08 07 | 644 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 1996 12 11 | 691 | 0.0 | 0.2− | 2002 08 07 | 644 | 0.3− | 0.7+ | 2006 10 02 | G96 | 0.4− | 0.5+ |
| 1996 12 14 | 691 | 0.5+ | 0.2− | 2002 08 17 | 644 | 0.2− | 0.1− | | | | |
| 1996 12 14 | 691 | 0.1− | 0.1+ | 2002 08 17 | 644 | 0.1+ | 0.2+ | | | | |

**1996 XE$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.57237 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28428653 | $\omega$ | 8.08408 | | −0.22480363 | | +0.96945911 |
| $a$ | 2.2906841 | $\Omega$ | 248.96729 | | −0.89977131 | | −0.24515125 |
| $e$ | 0.0796228 | $i$ | 6.02953 | | −0.37399856 | | +0.00706456 |
| $P$ | 3.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.1+ | 0.4− | 2003 12 21 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.7+ | 1.4+ |
| 1996 12 04 | 691 | 0.3+ | 0.3− | 2003 12 21 | 704 | (1.9− | 0.1−) | 2006 09 19 | 699 | 0.6− | 1.0+ |
| 1996 12 04 | 691 | 0.5+ | 0.8− | 2003 12 27 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.5− | 0.4+ |
| 1996 12 12 | 691 | 0.3− | 0.2− | 2003 12 27 | 691 | 0.3− | 0.1− | 2006 09 27 | 703 | 1.3− | 0.0 |
| 1996 12 12 | 691 | 0.3− | 0.1− | 2003 12 27 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.4+ |
| 1996 12 12 | 691 | 0.4− | 0.4− | 2005 04 05 | 644 | 0.4+ | 0.5+ | 2006 09 27 | 703 | (1.0+ | 1.7+) |
| 1996 12 17 | 691 | 0.1+ | 0.4− | 2005 04 05 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 0.8− | 0.5+ |
| 1996 12 17 | 691 | 0.4+ | 0.3− | 2005 04 05 | 644 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.7− |
| 1996 12 17 | 691 | (2.4− | 0.4−) | 2005 04 14 | 703 | 1.2+ | 1.4+ | 2006 10 04 | G96 | 1.0− | 0.3+ |
| 2003 11 19 | 691 | 0.0 | 0.9+ | 2005 04 14 | 703 | 0.4− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2003 11 19 | 691 | 0.2− | 0.4+ | 2005 04 14 | 703 | 0.1− | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2003 11 19 | 691 | 0.5− | 0.1+ | 2005 04 14 | 703 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2003 12 01 | 691 | 0.4+ | 0.5+ | 2005 05 01 | 644 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.2+ |
| 2003 12 01 | 291 | 0.0 | 0.2+ | 2005 05 01 | 644 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.2+ |
| 2003 12 01 | 691 | 0.2+ | 0.5+ | 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.4+ | 0.2+ |
| 2003 12 01 | 291 | 0.3− | 0.2+ | 2006 09 16 | 703 | (0.6− | 1.7+) | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 2003 12 01 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 2003 12 01 | 291 | 0.3− | 0.2+ | 2006 09 16 | 703 | 1.1− | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2003 12 21 | 704 | (1.6+ | 1.2+) | 2006 09 16 | 703 | 0.9+ | 0.1+ | | | | |
| 2003 12 21 | 704 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.8+ | 0.8+ | | | | |

**1996 XD$_{17}$ = 2004 XG$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.36151 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25967007 | $\omega$ | 204.14922 | | +0.83634574 | | +0.53740557 |
| $a$ | 2.4332577 | $\Omega$ | 122.90794 | | −0.47964551 | | +0.81297200 |
| $e$ | 0.1639241 | $i$ | 7.40924 | | −0.26545432 | | +0.22421368 |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.6+ | 0.6− | 2003 07 23 | 704 | 0.5− | 0.4+ | 2004 12 13 | 691 | 0.2+ | 0.2− |
| 1996 12 04 | 691 | 0.5− | 0.0 | 2003 07 23 | 704 | 0.2− | 1.4+ | 2004 12 13 | 691 | 0.3+ | 0.2+ |
| 1996 12 04 | 691 | 0.3− | 0.3− | 2003 07 23 | 704 | 0.6− | 0.9+ | 2004 12 13 | 691 | 0.3+ | 0.2+ |
| 1996 12 04 | 691 | 0.1− | 0.1+ | 2003 08 03 | 608 | 1.0+ | 0.9+ | 2006 03 23 | 703 | 1.6− | 0.3+ |
| 1996 12 12 | 691 | 0.1+ | 0.6− | 2003 08 03 | 608 | 0.8+ | 0.6+ | 2006 03 23 | 703 | 0.2+ | 0.8− |
| 1996 12 12 | 691 | 0.2− | 0.0 | 2003 08 03 | 608 | 1.0+ | 0.7+ | 2006 03 23 | 703 | 0.9− | 1.0− |
| 1996 12 12 | 691 | 0.0 | 0.3+ | 2003 08 23 | 704 | 0.1+ | 0.4− | 2006 03 23 | 703 | 0.8− | 0.1+ |
| 2003 07 08 | 644 | 0.1+ | 0.2− | 2003 08 23 | 704 | 0.8− | 0.5− | 2006 04 04 | 599 | 1.3+ | 0.3− |
| 2003 07 08 | 644 | 0.3− | 0.3+ | 2003 08 23 | 704 | 0.6− | 0.2− | 2006 04 04 | 599 | (0.9+ | 3.9+) |
| 2003 07 08 | 644 | 0.1− | 0.1+ | 2004 12 03 | 691 | 0.5+ | 0.6+ | 2006 04 04 | 599 | (4.6− | 2.0+) |
| 2003 07 23 | 704 | 0.4− | 0.9+ | 2004 12 03 | 691 | 0.4+ | 0.4+ | 2006 04 04 | 599 | 1.5+ | 1.0+ |
| 2003 07 23 | 704 | 0.1− | 0.7+ | 2004 12 03 | 691 | 0.1+ | 0.5+ | | | | |

**1996 XF$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.69994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17396007 | $\omega$ | 119.85085 | | +0.99012459 | | −0.12794024 |
| $a$ | 3.1781154 | $\Omega$ | 247.55088 | | +0.09738618 | | +0.92177888 |
| $e$ | 0.2371177 | $i$ | 3.55523 | | +0.10084262 | | +0.36599862 |
| $P$ | 5.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.3+ | 0.0 | 2001 08 17 | 704 | 0.4− | 0.5+ | 2001 09 08 | 704 | 0.2− | 0.8+ |
| 1996 12 04 | 691 | 0.2− | 0.0 | 2001 08 17 | 704 | 0.3− | 0.5+ | 2001 09 20 | 704 | 0.8+ | 0.6− |
| 1996 12 04 | 691 | 0.3− | 0.0 | 2001 08 24 | 699 | 0.1+ | 1.1− | 2001 09 20 | 704 | 0.2+ | 0.2− |
| 1996 12 13 | 691 | 0.3− | 0.1+ | 2001 08 24 | 699 | 0.1+ | 0.6− | 2001 09 20 | 704 | 0.0 | 0.6+ |
| 1996 12 13 | 691 | 0.4− | 0.0 | 2001 08 24 | 699 | 1.2+ | 0.8− | 2001 09 20 | 704 | 0.2+ | 0.2− |
| 1996 12 13 | 691 | 0.4− | 0.0 | 2001 08 24 | 699 | 0.6+ | 0.2− | 2001 09 20 | 704 | 0.8− | 0.2− |
| 1996 12 17 | 691 | 0.3+ | 0.1+ | 2001 09 08 | 704 | 0.2− | 0.0 | 2005 03 17 | G96 | 0.5− | 0.0 |
| 1996 12 17 | 691 | 0.4+ | 0.1− | 2001 09 08 | 704 | 0.1+ | 0.3− | 2005 03 17 | G96 | 0.3+ | 0.5− |
| 1996 12 17 | 691 | 0.6+ | 0.2− | 2001 09 08 | 704 | 0.2− | 0.2− | 2005 03 17 | G96 | 0.1− | 0.0 |
| 2001 08 17 | 704 | 0.7− | 0.4+ | 2001 09 08 | 704 | 0.2− | 1.2+ | 2005 03 17 | G96 | 0.1+ | 0.0 |

**1996 XQ$_{23}$ = 2001 YR$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.53956 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18517386 | $\omega$ | 125.27731 | | +0.68873273 | | −0.71109002 |
| $a$ | 3.0484771 | $\Omega$ | 280.52958 | | +0.60969773 | | +0.67360798 |
| $e$ | 0.0974442 | $i$ | 8.26995 | | +0.39232117 | | +0.20150255 |
| $P$ | 5.32 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.0 | 0.2+ | 2001 12 19 | 704 | 0.1+ | 1.1+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 1996 12 12 | 691 | 0.3− | 0.1+ | 2005 07 29 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.5− |
| 1996 12 12 | 691 | 0.2+ | 0.7− | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.5− |
| 1996 12 13 | 691 | 0.2+ | 0.3+ | 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 1996 12 13 | 691 | 0.0 | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.7+ | 1.0− |
| 1996 12 13 | 691 | 0.3− | 0.3+ | 2005 08 06 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 1.1+ | 0.2− |
| 2000 09 05 | 699 | 0.6− | 0.6+ | 2005 08 06 | 644 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.3− |
| 2000 09 05 | 699 | 1.6+ | 1.5+ | 2005 08 24 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2000 09 05 | 699 | 1.5− | 1.6+ | 2005 08 24 | 644 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2000 09 05 | 699 | 1.1− | 0.9− | 2005 08 24 | 644 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2001 12 18 | 704 | 0.2+ | 0.1− | 2005 09 03 | 644 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2005 09 03 | 644 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2001 12 18 | 704 | 0.2+ | 0.3+ | 2005 09 03 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.8+ |
| 2001 12 18 | 704 | 0.0 | 0.7+ | 2006 11 15 | 704 | 0.5− | 1.0− | 2006 11 22 | 704 | 1.0− | 0.4+ |
| 2001 12 19 | 704 | 1.5+ | 0.7+ | 2006 11 15 | 704 | 0.4+ | 0.8− | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.9+ | 0.9+ | 2006 11 15 | 704 | 0.4− | 1.1− | 2006 11 22 | 704 | 0.4− | 0.8+ |
| 2001 12 19 | 704 | 0.7+ | 1.1+ | 2006 11 17 | G96 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.7− | 0.4− |

**1996 XY$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.09133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26659662 | $\omega$ | 299.91812 | | +0.98173897 | | −0.18575882 |
| $a$ | 2.3909269 | $\Omega$ | 70.81317 | | +0.18605717 | | +0.89267870 |
| $e$ | 0.1860049 | $i$ | 2.48900 | | +0.03963991 | | +0.41063170 |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 05 | 691 | 0.5− | 0.2+ | 2003 07 25 | 644 | 0.2+ | 0.0 | 2003 08 31 | 704 | 0.0 | 0.9+ |
| 1996 12 05 | 691 | 0.5− | 0.0 | 2003 07 25 | 644 | 0.4+ | 0.2+ | 2003 08 31 | 704 | 0.2− | 0.2− |
| 1996 12 05 | 691 | 0.4− | 0.1+ | 2003 08 22 | 608 | 0.1+ | 0.2− | 2003 08 31 | 704 | 0.0 | 0.6+ |
| 1996 12 14 | 691 | 0.3+ | 0.1+ | 2003 08 22 | 608 | 0.6− | 0.6− | 2003 10 24 | 695 | 0.0 | 0.1+ |
| 1996 12 14 | 691 | 0.3+ | 0.0 | 2003 08 22 | 608 | 0.2− | 1.2− | 2003 10 24 | 695 | 0.1− | 0.1+ |
| 1996 12 14 | 691 | 0.5+ | 0.1+ | 2003 08 23 | 644 | 0.4+ | 0.0 | 2006 05 24 | 691 | 0.0 | 0.1+ |
| 1996 12 17 | 691 | 0.2+ | 0.1+ | 2003 08 23 | 644 | 0.2+ | 0.0 | 2006 05 24 | 691 | 0.1− | 0.0 |
| 1996 12 17 | 691 | 0.0 | 0.1− | 2003 08 23 | 644 | 0.3+ | 0.3− | 2006 05 24 | 691 | 0.2+ | 0.3+ |
| 1996 12 17 | 691 | 0.1+ | 0.1− | 2003 08 31 | 704 | 0.7− | 0.4+ | | | | |
| 2003 07 25 | 644 | 0.3+ | 0.0 | 2003 08 31 | 704 | 0.0 | 0.7+ | | | | |

**1997 AQ$_3$ = 2006 BU$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.00314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22488079 | $\omega$ | 253.52812 | | +0.97264740 | −0.12476372 | |
| $a$ | 2.6781474 | $\Omega$ | 113.29294 | | +0.18233260 | +0.93268036 | |
| $e$ | 0.2049364 | $i$ | 12.31718 | | −0.14391618 | +0.33843958 | |
| $P$ | 4.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 03 | 691 | 0.2+ | 0.3− | 2004 09 21 | 704 | 1.0− | 1.4− | 2004 11 11 | 699 | 0.4+ | 0.0 |
| 1997 01 03 | 691 | 0.0 | 0.4− | 2004 09 21 | 704 | 0.4+ | 1.0− | 2004 11 11 | 699 | 0.6− | 0.2− |
| 1997 01 03 | 691 | 0.2+ | 0.4− | 2004 09 21 | 704 | 0.2+ | 0.1+ | 2004 11 11 | 699 | 0.1− | 0.5+ |
| 1997 01 06 | 691 | 0.1− | 0.2− | 2004 09 21 | 704 | 0.3− | 0.2+ | 2004 11 11 | 699 | 1.4+ | 0.9+ |
| 1997 01 06 | 691 | 0.0 | 0.8+ | 2004 09 21 | 704 | 0.0 | 0.2− | 2006 01 27 | 691 | 0.1− | 0.0 |
| 1997 01 06 | 691 | 0.3− | 0.1− | 2004 10 06 | 704 | 0.2+ | 0.7+ | 2006 01 27 | 691 | 0.0 | 0.3+ |
| 2004 09 07 | 704 | 0.7− | 0.1+ | 2004 10 06 | 704 | 0.6+ | 0.6+ | 2006 01 27 | 691 | 0.2− | 0.3+ |
| 2004 09 07 | 704 | 0.6+ | 0.0 | 2004 10 06 | 704 | 0.5− | 0.1+ | 2006 01 31 | 691 | 0.1+ | 0.1− |
| 2004 09 07 | 704 | 0.3− | 0.1− | 2004 10 06 | 704 | 0.4+ | 0.2+ | 2006 01 31 | 691 | 0.2+ | 0.2+ |
| 2004 09 07 | 704 | 1.0− | 0.1+ | 2004 10 06 | 704 | 0.3+ | 0.4+ | 2006 01 31 | 691 | 0.1+ | 0.2+ |

**1997 AT$_{10}$ = 2006 SN$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.67168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17142450 | $\omega$ | 110.29277 | | +0.63397306 | −0.71186094 | |
| $a$ | 3.2093773 | $\Omega$ | 296.60294 | | +0.52108289 | +0.68195605 | |
| $e$ | 0.0899649 | $i$ | 19.75478 | | +0.57144622 | +0.16789862 | |
| $P$ | 5.75 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.5+ | 0.2− | 2006 09 21 | 185 | 0.8+ | 0.2− | 2006 09 27 | 703 | 0.8− | 0.6− |
| 1997 01 09 | 691 | 0.4+ | 0.1− | 2006 09 21 | 185 | 0.0 | 0.1− | 2006 09 27 | 703 | 1.5− | 0.3− |
| 1997 01 09 | 691 | 0.2− | 0.4+ | 2006 09 21 | 185 | 0.7+ | 0.0 | 2006 09 27 | 703 | 0.3− | 0.4− |
| 1997 01 10 | 691 | 0.2− | 0.1− | 2006 09 25 | 152 | 0.5+ | 0.2+ | 2006 09 27 | 185 | 0.2+ | 0.1+ |
| 1997 01 10 | 691 | 0.3− | 0.1− | 2006 09 25 | 152 | 0.5+ | 0.1− | 2006 09 27 | 185 | 0.3+ | 0.2+ |
| 1997 01 10 | 691 | 0.3− | 0.0 | 2006 09 25 | 152 | 0.7− | 0.0 | 2006 10 10 | 185 | 0.1+ | 0.1+ |
| 1997 01 26 | 118 | 0.5− | 0.0 | 2006 09 26 | 734 | 0.1+ | 0.5− | 2006 10 10 | 185 | 0.3+ | 0.1+ |
| 1997 01 26 | 118 | 0.0 | 0.2+ | 2006 09 26 | 734 | 0.6+ | 0.1+ | 2006 10 10 | 185 | 0.2− | 0.6− |
| 1997 01 26 | 118 | 1.2+ | 0.1− | 2006 09 26 | 152 | 0.4+ | 0.8+ | 2006 10 10 | 185 | 0.2− | 0.3− |
| 2006 09 20 | 185 | 0.6+ | 0.9+ | 2006 09 26 | 152 | 0.4− | 0.5+ | 2006 10 10 | 185 | 0.1− | 0.2+ |
| 2006 09 20 | 185 | 0.3+ | 0.7+ | 2006 09 26 | 152 | (5.1− | 0.3−) | 2006 10 10 | 185 | 0.3− | 0.0 |
| 2006 09 20 | 185 | 0.1+ | 0.4− | 2006 09 27 | 703 | 0.9− | 0.4− | | | | |

**1997 AZ$_{19}$ = 2004 RT$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.68534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21028179 | $\omega$ | 227.05936 | | +0.62270739 | −0.78245098 | |
| $a$ | 2.8007109 | $\Omega$ | 184.42860 | | +0.72678879 | +0.57956033 | |
| $e$ | 0.0216145 | $i$ | 1.81350 | | +0.28985092 | +0.22777246 | |
| $P$ | 4.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3− | 0.1− | 2002 03 09 | 291 | 0.3+ | 0.7+ | 2004 09 10 | 691 | 0.1+ | 0.4+ |
| 1995 09 26 | 691 | 0.4− | 0.3+ | 2002 03 09 | 291 | 0.4+ | 0.6+ | 2004 09 16 | 691 | 0.0 | 0.7+ |
| 1995 09 26 | 691 | 0.3− | 0.1− | 2002 03 21 | 691 | 0.3− | 0.5+ | 2004 09 16 | 691 | 0.1+ | 0.5+ |
| 1997 01 10 | 691 | 0.3+ | 0.4− | 2002 03 21 | 691 | 0.1− | 0.2+ | 2004 09 16 | 691 | 0.0 | 0.6+ |
| 1997 01 10 | 691 | 0.2+ | 0.0 | 2002 03 21 | 691 | 0.4− | 0.6+ | 2005 12 05 | 691 | 0.0 | 0.0 |
| 1997 01 10 | 691 | 0.7+ | 0.9− | 2002 04 06 | 807 | 0.2+ | 0.4+ | 2005 12 05 | 691 | 0.4− | 0.1+ |
| 1997 01 17 | 691 | 0.2− | 0.2− | 2002 04 06 | 807 | 0.1+ | 0.3+ | 2005 12 05 | 691 | 0.0 | 0.2+ |
| 1997 01 17 | 691 | 0.2− | 0.4− | 2004 09 08 | 704 | 0.8− | 0.7− | 2006 02 03 | 691 | 0.4+ | 0.1− |
| 2002 02 14 | 691 | 0.1+ | 0.5+ | 2004 09 08 | 704 | 1.0− | 0.5+ | 2006 02 03 | 691 | 0.2− | 0.1− |
| 2002 02 14 | 691 | 0.2+ | 0.7+ | 2004 09 08 | 704 | 0.5− | 2.0+ | 2006 02 03 | 691 | 0.1+ | 0.2− |
| 2002 02 14 | 691 | 0.4+ | 0.4+ | 2004 09 10 | 691 | (2.0+ | 0.3+) | | | | |
| 2002 03 09 | 291 | 0.2+ | 0.4+ | 2004 09 10 | 691 | 0.0 | 0.4+ | | | | |

**1997 CE$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.83223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24127270 | $\omega$ | 217.27835 | | +0.93068185 | +0.34476409 | |
| $a$ | 2.5554296 | $\Omega$ | 122.12218 | | −0.29109485 | +0.90047311 | |
| $e$ | 0.1248529 | $i$ | 8.30618 | | −0.22157411 | +0.26511489 | |
| $P$ | 4.09 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.3− | 0.3+ | 2003 08 23 | 644 | 0.3+ | 0.3+ | 2005 01 16 | 691 | 0.2+ | 0.3+ |
| 1997 02 02 | 691 | 0.1− | 0.0 | 2003 08 23 | 644 | 0.3+ | 0.3+ | 2005 01 16 | 691 | 0.1− | 0.4+ |
| 1997 02 02 | 691 | 0.1− | 0.4− | 2003 08 23 | 644 | 0.3+ | 0.2+ | 2005 01 16 | 691 | 0.1− | 0.2+ |
| 1997 02 03 | 691 | 0.1+ | 0.4− | 2003 09 14 | 644 | 0.3− | 0.2− | 2006 04 09 | G96 | 0.4− | 0.4+ |
| 1997 02 03 | 691 | 0.1− | 0.4− | 2003 09 14 | 644 | 0.5− | 0.1− | 2006 04 09 | G96 | 0.8+ | 0.1+ |
| 1997 02 03 | 691 | 0.0 | 0.1+ | 2003 09 14 | 644 | 0.3− | 0.0 | 2006 04 09 | G96 | 0.1− | 0.1+ |
| 1997 02 04 | 691 | 0.2− | 0.1+ | 2003 09 25 | 644 | 0.1+ | 0.3− | 2006 04 09 | G96 | 0.1+ | 0.4+ |
| 1997 02 04 | 691 | 0.2+ | 0.3− | 2003 09 25 | 644 | 0.1− | 0.0 | | | | |
| 1997 02 04 | 691 | 0.5+ | 0.1− | 2003 09 25 | 644 | 0.0 | 0.1− | | | | |

**1997 CV$_3$ = 2006 QF$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.81595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26186705 | $\omega$ | 118.71204 | | −0.59531466 | +0.80198146 | |
| $a$ | 2.4196292 | $\Omega$ | 114.66930 | | −0.75480859 | −0.53717792 | |
| $e$ | 0.1354712 | $i$ | 3.10715 | | −0.27543503 | −0.26127692 | |
| $P$ | 3.76 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.1+ | 0.4− | 1997 02 06 | 691 | 0.1− | 0.4+ | 2005 05 04 | 691 | 0.2− | 0.1− |
| 1997 02 03 | 691 | 0.2+ | 0.3− | 2005 03 10 | 691 | 0.2− | 0.2− | 2005 05 04 | 691 | 0.2− | 0.3+ |
| 1997 02 03 | 691 | 0.2+ | 0.1+ | 2005 03 10 | 691 | 0.2+ | 0.2− | 2005 05 04 | 691 | 0.2− | 0.0 |
| 1997 02 04 | 691 | 0.3− | 0.0 | 2005 03 10 | 691 | 0.4− | 0.5− | 2006 08 18 | 691 | 0.4+ | 0.1− |
| 1997 02 04 | 691 | 0.2+ | 0.0 | 2005 04 01 | 691 | 0.1+ | 0.0 | 2006 08 18 | 691 | 0.5− | 0.4+ |
| 1997 02 04 | 691 | 0.4+ | 0.1+ | 2005 04 01 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 691 | 0.3− | 0.0 |
| 1997 02 04 | 691 | 0.0 | 0.2+ | 2005 04 01 | 691 | 0.1− | 0.4− | 2006 08 27 | 691 | 0.1+ | 0.2− |
| 1997 02 04 | 691 | 0.0 | 0.1− | 2005 04 09 | 699 | 1.4+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 1997 02 04 | 691 | 0.0 | 0.3− | 2005 04 09 | 699 | 0.5+ | 1.3+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 1997 02 06 | 691 | 0.9− | 0.6+ | 2005 04 09 | 699 | 0.8+ | 2.0+ | | | | |
| 1997 02 06 | 691 | 0.4+ | 0.1+ | 2005 04 09 | 699 | 0.3+ | 0.2+ | | | | |

**1997 CR$_{25}$ = 2006 SM$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.18968 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17728371 | $\omega$ | 41.51643 | | +0.39416185 | −0.91870972 | |
| $a$ | 3.1382689 | $\Omega$ | 25.29932 | | +0.82724808 | +0.34296880 | |
| $e$ | 0.1018941 | $i$ | 3.31018 | | +0.40037115 | +0.19581841 | |
| $P$ | 5.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.4− |
| 1995 11 21 | 691 | 0.3+ | 0.5− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.1− |
| 1995 11 21 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1− |
| 1997 02 06 | 691 | 0.5− | 0.4− | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 1997 02 06 | 691 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 1.0− | 0.3− | 2006 10 23 | 691 | 0.7− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 691 | 1.5− | 1.7+ | 2006 09 24 | 691 | 0.3− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.3− | | |
| 1997 02 13 | 691 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 1997 02 13 | 691 | 0.3+ | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.4+ | 0.2− | | |
| 1997 02 13 | 691 | 0.3+ | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 1997 02 15 | 691 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 1997 02 15 | 691 | 0.5− | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 1997 02 15 | 691 | 0.4− | 1.0− | 2006 10 11 | 691 | 0.7+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2001 12 19 | 704 | 0.7+ | 0.0 | 2006 10 12 | A13 | 0.3+ | 1.3− | 2006 10 31 | 691 | 0.2− | 0.1+ | | |
| 2001 12 19 | 704 | 1.3+ | 0.1− | 2006 10 12 | A13 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | | |
| 2001 12 19 | 704 | 1.3+ | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.4+ | 0.2+ | | |
| 2003 04 01 | 645 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2003 04 01 | 645 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.4− | 0.2+ | | | | | | |

**1997 EK$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.19304 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25271256 | $\omega$ | 354.19414 | | −0.08970635 | | +0.99058574 |
| $a$ | 2.4777158 | $\Omega$ | 270.62795 | | −0.90957149 | | −0.12377889 |
| $e$ | 0.1131432 | $i$ | 5.93565 | | −0.40574927 | | +0.05846941 |
| $P$ | 3.90 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 691 | 0.2− | 0.1+ | 1997 03 09 | 691 | 0.9− | 0.3− | 2002 08 05 | 644 | 0.1+ | 0.5+ | | |
| 1997 03 03 | 691 | 0.7− | 0.1− | 1997 03 09 | 691 | 0.0 | 0.4− | 2002 08 05 | 644 | 0.2+ | 0.0 | | |
| 1997 03 04 | 691 | 0.5+ | 0.5+ | 1997 03 09 | 691 | 0.4+ | 0.5− | 2002 08 16 | 644 | 0.4− | 1.0− | | |
| 1997 03 04 | 691 | 0.3− | 0.1+ | 1997 03 09 | 691 | 0.5+ | 0.1− | 2002 08 16 | 644 | 0.2+ | 0.4− | | |
| 1997 03 04 | 691 | 0.1− | 0.1+ | 1997 03 09 | 691 | 0.5+ | 0.1+ | 2002 08 16 | 644 | 0.1− | 0.6− | | |
| 1997 03 08 | 691 | 0.1+ | 0.5+ | 1997 03 10 | 691 | 0.3− | 0.1− | 2002 08 26 | 644 | 0.0 | 0.3+ | | |
| 1997 03 08 | 691 | 0.4+ | 0.2− | 1997 03 10 | 691 | 0.2− | 0.1+ | 2002 08 26 | 644 | 0.3+ | 0.4+ | | |
| 1997 03 08 | 691 | 0.4+ | 0.2+ | 1997 03 10 | 691 | 0.1− | 0.2+ | 2002 08 26 | 644 | 0.3− | 0.3+ | | |
| 1997 03 09 | 691 | 0.2+ | 0.1− | 2002 08 05 | 644 | 0.1+ | 0.6+ | | | | | | |

**1997 EE$_{24}$ = 1999 VU$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.51026 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29263777 | $\omega$ | 23.75460 | | +0.19732405 | | −0.97799133 |
| $a$ | 2.2468934 | $\Omega$ | 54.93109 | | +0.88564924 | | +0.14818630 |
| $e$ | 0.1409797 | $i$ | 4.75139 | | +0.42034349 | | +0.14688017 |
| $P$ | 3.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.5+ | 0.0 | 1999 11 14 | 704 | 0.1+ | 0.2+ | 2002 10 03 | 704 | 0.3− | 0.7+ | | |
| 1997 03 05 | 691 | 0.6+ | 0.4+ | 1999 11 16 | 704 | 0.2+ | 0.2− | 2002 10 06 | 608 | 0.2+ | 0.4+ | | |
| 1997 03 05 | 691 | 0.4+ | 0.2+ | 1999 11 16 | 704 | 0.2+ | 0.1+ | 2002 10 06 | 608 | 0.6+ | 0.1− | | |
| 1997 03 12 | 691 | 0.2+ | 0.1+ | 1999 11 16 | 704 | 0.7− | 0.2− | 2002 10 06 | 608 | 0.1− | 0.5− | | |
| 1997 03 12 | 691 | 1.6− | 0.8− | 2002 09 17 | 608 | 0.1+ | 0.4− | 2004 03 22 | 704 | 0.2+ | 0.2− | | |
| 1997 03 12 | 691 | 0.2− | 0.1+ | 2002 09 17 | 608 | 0.1+ | 0.5− | 2004 03 22 | 704 | 0.2+ | 0.0 | | |
| 1999 11 14 | 704 | 0.7+ | 0.3− | 2002 09 17 | 608 | 0.3+ | 0.9− | 2004 03 22 | 704 | 0.1− | 0.7+ | | |
| 1999 11 14 | 704 | 0.2− | 0.2− | 2002 10 03 | 704 | 0.8− | 0.4+ | | | | | | |
| 1999 11 14 | 704 | 0.2− | 0.3+ | 2002 10 03 | 704 | 0.3− | 1.3+ | | | | | | |

**1997 EK$_{28}$ = 2006 TA$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.34646 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25522742 | $\omega$ | 296.80639 | | +0.46024557 | | +0.88779126 |
| $a$ | 2.4614130 | $\Omega$ | 0.59849 | | −0.78346934 | | +0.40660600 |
| $e$ | 0.1978771 | $i$ | 4.59163 | | −0.41755217 | | +0.21563451 |
| $P$ | 3.86 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 07 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.6− | 0.5+ | | |
| 1997 03 07 | 691 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 21 | 691 | 0.3− | 0.8+ | | |
| 1997 03 07 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.4− | 0.5− | 2006 11 01 | G96 | 0.7+ | 0.5− | | |
| 1997 03 13 | 691 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.6− | 2006 11 01 | G96 | 0.3+ | 0.6− | | |
| 1997 03 13 | 691 | 0.5+ | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.5− | | |
| 1997 03 13 | 691 | 1.0+ | 0.1− | 2006 10 13 | 691 | 0.6+ | 0.6− | 2006 11 01 | G96 | 0.1− | 0.7− | | |
| 1997 03 14 | 691 | 0.6− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.5− | | |
| 1997 03 14 | 691 | 0.6− | 0.5− | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.6− | | |
| 1997 03 14 | 691 | 0.9− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.6− | | |
| 2002 11 09 | 695 | (4.0− | 2.2−) | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2002 11 09 | 695 | (3.7− | 2.1−) | 2006 10 21 | 691 | 0.2− | 0.7+ | | | | | | |

**1997 EZ$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.26551 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27173164 | $\omega$ | 165.49719 | | −0.46289191 | | −0.88207880 |
| $a$ | 2.3607097 | $\Omega$ | 311.99292 | | +0.80108233 | | −0.37399350 |
| $e$ | 0.1887193 | $i$ | 6.76634 | | +0.37947092 | | −0.28647139 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 704 | 0.2+ | 0.5− | 2003 12 17 | 704 | (2.5− | 0.5+) | 2003 12 28 | 704 | (1.8+ | 2.5−) | | |
| 1997 03 10 | 704 | 1.0+ | 1.2− | 2003 12 17 | 704 | (2.8− | 0.2+) | 2003 12 28 | 704 | 0.3− | 0.7− | | |
| 1997 03 11 | 704 | 0.9− | 0.0 | 2003 12 17 | 704 | 0.4+ | 0.3− | 2003 12 28 | 704 | 0.4− | 0.0 | | |
| 1997 03 11 | 704 | 0.1+ | 0.0 | 2003 12 17 | 704 | 0.0 | 0.8− | 2003 12 28 | 704 | 0.2− | 0.2+ | | |
| 1997 03 12 | 704 | 0.0 | 1.4+ | 2003 12 17 | 704 | 0.1− | 0.0 | 2003 12 29 | 704 | 0.1− | 0.6+ | | |
| 1997 03 12 | 704 | 0.4− | 0.3+ | 2003 12 23 | 704 | 0.7+ | 1.2+ | 2003 12 29 | 704 | 0.6− | 0.1+ | | |
| 2003 11 24 | 691 | 0.4− | 0.1+ | 2003 12 23 | 704 | 0.3+ | 0.6+ | 2003 12 29 | 704 | 0.7+ | 1.2− | | |
| 2003 11 24 | 691 | 0.0 | 0.1+ | 2003 12 23 | 704 | 0.5+ | 0.5+ | | | | | | |
| 2003 11 24 | 691 | 0.4+ | 0.3− | 2003 12 23 | 704 | 0.5− | 0.0 | | | | | | |

**1997 FO$_4$ = 2006 HC$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.95558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22921841 | $\omega$ | 23.10909 | | −0.78128787 | | +0.60274806 |
| $a$ | 2.6442533 | $\Omega$ | 197.22193 | | −0.62313655 | | −0.76816922 |
| $e$ | 0.1747153 | $i$ | 33.20104 | | −0.03591817 | | +0.21589540 |
| $P$ | 4.30 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 31 | 704 | 0.4+ | 0.6− | 1997 04 10 | 360 | 0.6− | 0.1− | 2006 04 21 | 734 | 0.1− | 0.4+ | | |
| 1997 03 31 | 704 | 0.2− | 1.1− | 1997 04 10 | 360 | 0.2− | 0.1+ | 2006 04 21 | 734 | 1.1+ | 1.2+ | | |
| 1997 04 03 | 704 | 1.1+ | 0.0 | 1997 04 12 | 360 | 0.5− | 0.1− | 2006 04 21 | G96 | 0.0 | 0.0 | | |
| 1997 04 03 | 704 | 1.4+ | 0.2− | 1997 04 12 | 402 | 0.6− | 0.4− | 2006 04 21 | G96 | 0.2+ | 0.2+ | | |
| 1997 04 05 | 704 | 0.7+ | 0.6− | 1997 04 12 | 402 | 0.6− | 0.3− | 2006 04 21 | G96 | 0.2− | 0.0 | | |
| 1997 04 05 | 704 | 0.1− | 0.4+ | 1997 04 12 | 360 | 0.6− | 0.1− | 2006 04 21 | 651 | 0.3+ | 0.2− | | |
| 1997 04 06 | 704 | 0.5− | 0.1+ | 1997 04 12 | 402 | 0.3− | 0.1+ | 2006 04 21 | 651 | 0.4+ | 0.2+ | | |
| 1997 04 06 | 704 | 1.2+ | 0.2+ | 1997 04 12 | 360 | 0.4− | 0.0 | 2006 04 21 | 651 | 0.2+ | 0.1+ | | |
| 1997 04 07 | 704 | 0.8+ | 0.6+ | 2006 04 20 | G96 | 0.0 | 0.0 | 2006 07 21 | 699 | 0.2− | 0.4+ | | |
| 1997 04 07 | 704 | 0.5+ | 0.0 | 2006 04 20 | G96 | 0.2− | 0.2+ | 2006 07 21 | 699 | 0.7+ | 0.7− | | |
| 1997 04 07 | 360 | 0.3− | 0.7+ | 2006 04 20 | G96 | 0.4− | 0.1+ | 2006 07 21 | 699 | 0.0 | 0.5+ | | |
| 1997 04 07 | 360 | 0.4− | 0.5+ | 2006 04 20 | G96 | 0.5− | 0.2+ | 2006 07 21 | 699 | 0.3− | 0.3− | | |
| 1997 04 07 | 360 | 0.5− | 0.5+ | 2006 04 21 | 734 | 0.7− | 1.3− | | | | | | |
| 1997 04 10 | 360 | 0.4− | 0.0 | 2006 04 21 | 734 | 0.3− | 1.0− | | | | | | |

**1997 GK$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.18167 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25494307 | $\omega$ | 269.73119 | | −0.85929296 | | +0.51145602 |
| $a$ | 2.4632429 | $\Omega$ | 301.02967 | | −0.46677120 | | −0.78838942 |
| $e$ | 0.1284450 | $i$ | 0.35598 | | −0.20914170 | | −0.34184042 |
| $P$ | 3.87 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 08 | 691 | 0.1− | 0.3− | 2005 04 11 | G96 | 0.9− | 0.7+ | 2006 09 25 | G96 | 0.4+ | 0.1− | | |
| 1997 04 08 | 691 | 0.3− | 0.1− | 2005 04 11 | G96 | 0.6− | 0.2− | 2006 09 25 | G96 | 0.6− | 0.6− | | |
| 1997 04 08 | 691 | 0.4− | 0.3− | 2005 05 09 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.6− | | |
| 1997 04 09 | 691 | 0.2− | 0.6+ | 2005 05 09 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.7− | | |
| 1997 04 09 | 691 | 0.1+ | 0.6+ | 2005 05 09 | G96 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.8+ | 0.2− | | |
| 1997 04 09 | 691 | 0.1+ | 0.5+ | 2005 05 09 | G96 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 15 | 691 | 0.4+ | 0.4− | 2005 05 16 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.0 |
| 1997 04 15 | 691 | 0.0 | 0.5− | 2005 05 16 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.5− | 0.2+ |
| 1997 04 15 | 691 | 0.2− | 0.9− | 2005 05 16 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2001 04 29 | 691 | 0.5+ | 0.1− | 2005 06 06 | 691 | 0.5+ | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.0 |
| 2001 04 29 | 691 | 0.4+ | 0.5+ | 2005 06 06 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.6− | 0.3− |
| 2001 04 29 | 691 | 0.1+ | 0.1+ | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2005 04 11 | G96 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.5+ | 0.5− | 2006 10 20 | G96 | 0.7− | 0.6− |
| 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.7+ | 0.0 | | | | |

**1997 GN$_{25}$ = 1995 UB$_{67}$ = 2006 UJ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.19459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26452979 | $\omega$ | 211.99334 | | +0.81287854 | −0.58240281 | |
| $a$ | 2.4033646 | $\Omega$ | 183.64309 | | +0.55217354 | +0.77385786 | |
| $e$ | 0.0698481 | $i$ | 5.37611 | | +0.18529127 | +0.24889954 | |
| $P$ | 3.73 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 05 | 691 | 0.2− | 1.1− | 1997 04 12 | 691 | 0.4− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.1− |
| 1991 10 05 | 691 | 0.5+ | 0.1− | 1997 04 12 | 691 | 1.0− | 0.5− | 2006 10 01 | 691 | 0.3+ | 0.2− |
| 1991 10 05 | 691 | 0.2+ | 0.5− | 1997 04 16 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.3− |
| 1995 10 17 | 691 | 0.0 | 0.5+ | 1997 04 16 | 691 | 0.5+ | 0.5− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1995 10 17 | 691 | 0.1− | 0.1+ | 1997 04 16 | 691 | 0.6+ | 0.9− | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 1995 10 17 | 691 | 0.3− | 0.3− | 2002 09 14 | 644 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 1995 10 23 | 691 | 0.4+ | 0.2+ | 2002 09 14 | 644 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 1995 10 23 | 691 | 0.1+ | 0.0 | 2002 09 14 | 644 | 0.4− | 0.6− | 2006 10 17 | G96 | (0.9+ | 2.3−) |
| 1995 10 23 | 691 | 0.1− | 0.3+ | 2005 06 27 | 691 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.8− |
| 1997 04 08 | 691 | 0.0 | 0.7− | 2005 06 27 | 691 | 0.2− | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.5− |
| 1997 04 08 | 691 | 0.2− | 0.5+ | 2005 06 27 | 691 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 1997 04 08 | 691 | 0.5− | 0.3+ | 2006 09 14 | 691 | 0.4− | 0.4− | | | | |
| 1997 04 12 | 691 | 0.3− | 0.4− | 2006 09 14 | 691 | 0.4− | 0.2− | | | | |

**1997 GW$_{31}$ = 2000 YK$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.25398 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21403944 | $\omega$ | 211.37091 | | +0.76780628 | −0.63943789 | |
| $a$ | 2.7678349 | $\Omega$ | 188.72007 | | +0.62872045 | +0.76398856 | |
| $e$ | 0.0201021 | $i$ | 15.26223 | | +0.12322384 | +0.08625933 | |
| $P$ | 4.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 09 | 691 | 1.0− | 1.1+ | 2000 12 30 | 608 | 0.3+ | 1.3+ | 2003 08 28 | 644 | 0.2+ | 0.2+ |
| 1997 04 09 | 691 | 0.4− | 0.6+ | 2000 12 30 | 608 | 1.0+ | 0.8+ | 2003 08 28 | 644 | 0.0 | 0.1+ |
| 1997 04 09 | 691 | 0.6+ | 0.3+ | 2001 01 04 | 608 | 0.5− | 0.2+ | 2004 11 11 | 699 | 0.1+ | 0.2+ |
| 1997 04 15 | 691 | 0.5+ | 0.9− | 2001 01 04 | 608 | 0.3− | 0.0 | 2004 11 11 | 699 | 0.3− | 0.6− |
| 1997 04 15 | 691 | 0.6+ | 0.6− | 2001 01 04 | 608 | 0.1+ | 0.6+ | 2004 11 11 | 699 | 0.4+ | 0.5− |
| 1997 04 15 | 691 | 0.3+ | 0.2− | 2002 05 08 | 704 | 0.5+ | 1.1+ | 2004 11 11 | 699 | 0.5+ | 0.5+ |
| 1997 04 16 | 691 | 0.3− | 0.7− | 2002 05 08 | 704 | 1.0+ | 0.5+ | 2004 11 20 | 683 | 0.2− | 0.4+ |
| 1997 04 16 | 691 | 0.7− | 0.8− | 2002 05 08 | 704 | 0.7+ | 0.7+ | 2004 11 20 | 683 | 0.7+ | 1.2− |
| 1997 04 16 | 691 | 0.1− | 0.6− | 2003 07 23 | 644 | 0.0 | 0.3+ | 2004 11 30 | 644 | 0.3− | 0.1+ |
| 1999 10 09 | 704 | 0.4+ | 0.8− | 2003 07 23 | 644 | 0.0 | 0.4+ | 2004 11 30 | 644 | 0.4− | 0.3+ |
| 1999 10 09 | 704 | 0.6− | 0.5− | 2003 07 23 | 644 | 0.1− | 0.0 | 2004 11 30 | 644 | 0.3− | 0.0 |
| 1999 10 09 | 704 | 0.3+ | 0.4− | 2003 08 22 | 644 | 0.5− | 0.0 | 2006 05 26 | G96 | 0.3− | 0.2+ |
| 1999 10 09 | 704 | 0.2− | 0.4− | 2003 08 22 | 644 | 0.2− | 0.1− | 2006 05 26 | G96 | 1.0− | 0.4+ |
| 1999 10 09 | 704 | 0.4+ | 0.8− | 2003 08 22 | 644 | 0.1− | 0.1− | 2006 05 26 | G96 | 0.0 | 0.3+ |
| 2000 12 30 | 608 | 0.5+ | 0.7+ | 2003 08 28 | 644 | 0.1− | 0.4+ | 2006 05 26 | G96 | 0.1− | 0.3+ |

**1997 GY$_{31}$ = 2006 TB$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.76967 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35682814 | $\omega$ | 263.72097 | | +0.67493451 | +0.66722270 | |
| $a$ | 1.9686265 | $\Omega$ | 53.88541 | | −0.42179912 | +0.69924085 | |
| $e$ | 0.0877222 | $i$ | 22.95646 | | −0.60543283 | +0.25666340 | |
| $P$ | 2.76 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 10 | 691 | 0.9+ | 0.3− | 2005 04 11 | 703 | 0.4+ | 1.1− | 2006 10 20 | 703 | 0.1+ | 0.3+ |
| 1997 04 10 | 691 | 0.4− | 0.3+ | 2005 04 11 | 703 | (0.2− | 2.1+) | 2006 10 20 | 703 | 0.3+ | 0.3+ |
| 1997 04 10 | 691 | (1.9− | 3.5+) | 2005 04 11 | 703 | 0.3− | 0.5− | 2006 10 28 | 703 | 0.5+ | 0.7− |
| 1997 04 15 | 691 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.6− |
| 1997 04 15 | 691 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.2+ | 1.1+ | 2006 10 28 | 703 | 0.6− | 1.0− |
| 1997 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.1− | 0.4− |
| 1997 04 16 | 691 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.6− | 0.2− | 2006 11 10 | 704 | 0.5− | 0.1− |
| 1997 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 11 10 | 704 | 0.4− | 1.5+ |
| 2001 12 18 | 645 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.4+ | 2006 11 10 | 704 | 0.2+ | 0.5− |
| 2001 12 18 | 645 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 704 | 0.4+ | 0.4+ |
| 2005 03 11 | 703 | 0.4+ | 0.6− | 2006 10 20 | 703 | 0.4− | 0.3− | 2006 11 10 | 704 | (2.1+ | 0.1+) |
| 2005 03 11 | 703 | 0.6+ | 0.7− | 2006 10 20 | 703 | 0.6− | 0.5+ | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2005 03 11 | 703 | 0.4− | 1.1+ | 2006 10 20 | 703 | 0.2+ | 0.5+ | 2006 11 16 | 703 | 0.1+ | 0.2− |
| 2005 03 11 | 703 | 1.2− | 0.0 | 2006 10 20 | 703 | 0.2− | 0.5+ | 2006 11 16 | 703 | 0.6− | 1.0− |
| 2005 04 11 | 703 | 0.0 | 1.0+ | 2006 10 20 | 703 | 0.2− | 0.4+ | 2006 11 16 | 703 | 0.1+ | 0.1− |

**1997 HS$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.65342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24573325 | $\omega$ | 340.27219 | | −0.91347002 | +0.39609244 | |
| $a$ | 2.5244112 | $\Omega$ | 223.43510 | | −0.35276354 | −0.88501853 | |
| $e$ | 0.1401293 | $i$ | 7.78952 | | −0.20280635 | −0.24464868 | |
| $P$ | 4.01 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 30 | 704 | 0.2− | 0.3+ | 1997 05 05 | 704 | 0.6− | 0.2+ | 2005 05 04 | 699 | 0.4+ | 0.7+ |
| 1997 04 30 | 704 | 1.5− | 0.9+ | 1997 05 05 | 704 | 0.8+ | 0.3− | 2005 05 04 | 699 | 0.8+ | 1.1− |
| 1997 04 30 | 704 | 1.1− | 0.6+ | 1997 05 05 | 704 | 0.5− | 1.3− | 2005 05 04 | 699 | 1.8− | 0.2+ |
| 1997 04 30 | 704 | 1.1− | 0.3+ | 2005 04 14 | 703 | 0.1− | 0.0 | 2005 05 14 | 644 | 0.0 | 0.5+ |
| 1997 04 30 | 704 | 0.2− | 0.1− | 2005 04 14 | 703 | 1.2− | 0.1− | 2005 05 14 | 644 | 0.3+ | 0.0 |
| 1997 05 01 | 704 | 1.8+ | 1.4− | 2005 04 14 | 703 | 0.1− | 0.3+ | 2005 05 14 | 644 | 0.1− | 0.1− |
| 1997 05 01 | 704 | 1.8+ | 0.6− | 2005 04 14 | 703 | 0.5+ | 1.5+ | 2005 06 13 | G96 | 0.3+ | 0.0 |
| 1997 05 01 | 704 | 0.4+ | 1.3+ | 2005 04 14 | 691 | 0.3+ | 0.3+ | 2005 06 13 | G96 | 0.5− | 0.0 |
| 1997 05 01 | 704 | 1.1+ | 0.0 | 2005 04 14 | 691 | 0.0 | 0.3− | 2005 06 13 | G96 | 0.0 | 0.0 |
| 1997 05 01 | 704 | 1.4− | 0.4+ | 2005 04 14 | 691 | 0.0 | 0.4− | 2005 06 13 | G96 | 0.4+ | 0.0 |
| 1997 05 05 | 704 | 0.6+ | 0.1− | 2005 05 04 | 699 | 0.3− | 0.6− | | | | |

**1997 HK$_{13}$ = 2000 VO$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.87919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18169821 | $\omega$ | 278.17014 | | −0.65223992 | −0.73992099 | |
| $a$ | 3.0872297 | $\Omega$ | 214.40107 | | +0.75787911 | −0.63248524 | |
| $e$ | 0.2457142 | $i$ | 16.94020 | | +0.01422475 | −0.22908372 | |
| $P$ | 5.42 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 30 | 704 | 0.2− | 0.2− | 2000 11 01 | 704 | 0.8+ | 0.2− | 2002 04 08 | 644 | 0.8+ | 0.2− |
| 1997 04 30 | 704 | 0.5+ | 1.0− | 2000 11 01 | 704 | 0.1− | 0.3+ | 2002 04 08 | 644 | 0.5+ | 0.3− |
| 1997 04 30 | 704 | 0.2+ | 0.4+ | 2000 11 01 | 704 | 0.2− | 0.2+ | 2002 04 08 | 644 | 0.7+ | 0.2− |
| 1997 04 30 | 704 | 0.5+ | 0.8+ | 2000 11 01 | 704 | 0.6− | 0.4+ | 2002 04 14 | 608 | 0.6− | 0.0 |
| 1997 05 01 | 704 | 1.3− | 0.1− | 2000 11 01 | 704 | 0.3− | 0.4+ | 2002 04 14 | 608 | 0.4− | 0.2+ |
| 1997 05 01 | 704 | 1.3− | 0.9+ | 2000 11 02 | 704 | 0.1− | 0.9+ | 2002 04 14 | 608 | 0.6− | 0.2+ |
| 1997 05 01 | 704 | 0.5+ | 0.2+ | 2000 11 02 | 704 | 0.2+ | 0.5+ | 2002 04 19 | 644 | 0.2− | 0.2+ |
| 1997 05 01 | 704 | 0.9+ | 0.3+ | 2000 11 02 | 704 | 0.1− | 0.2− | 2002 04 19 | 644 | 0.1− | 0.1− |
| 1997 05 01 | 704 | 0.0 | 0.5− | 2000 11 02 | 704 | 0.4+ | 1.3− | 2002 04 19 | 644 | 0.1− | 0.3+ |

**1997 KO = 2006 RG$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.20366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25685111 | $\omega$ | 340.45427 | | −0.99279942 | +0.11366157 | |
| $a$ | 2.4510288 | $\Omega$ | 206.16049 | | −0.09528726 | −0.94066972 | |
| $e$ | 0.1020382 | $i$ | 4.92098 | | −0.07259236 | −0.31972102 | |
| $P$ | 3.84 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 29 | 696 | 0.4+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1997 05 29 | 696 | 0.6+ | 0.2+ | 2006 10 12 | 143 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1997 05 30 | 696 | 0.8− | 0.5− | 2006 10 12 | 143 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 1997 05 30 | 696 | 0.6− | 0.4− | 2006 10 13 | 143 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.4− | 0.3+ |
| 1997 05 31 | 696 | 0.6− | 0.7+ | 2006 10 13 | 143 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 1997 05 31 | 696 | 1.1+ | 0.2− | 2006 10 13 | 143 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.0 | 0.8− |
| 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 13 | 143 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.7− | 0.2− |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 13 | 143 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2006 09 15 | 691 | 0.5− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.3+ |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2006 09 30 | 691 | 0.7− | 0.1− | 2006 10 27 | G96 | 0.8+ | 0.1− | | | | |
| 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | | | | |

**1997 KA$_1$ = 2005 FD$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.93540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22723350 | $\omega$ | 271.86290 | | +0.83236644 | | +0.52089500 |
| $a$ | 2.6596295 | $\Omega$ | 56.79212 | | −0.37429282 | | +0.78022705 |
| $e$ | 0.2050242 | $i$ | 13.07633 | | −0.40874318 | | +0.34628622 |
| $P$ | 4.34 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 27 | 910 | 0.3+ | 0.7+ | 1998 11 11 | 704 | 0.2− | 1.2− | 2003 12 17 | 704 | 0.4− | 0.1+ |
| 1997 05 27 | 910 | 0.2+ | 0.7+ | 1998 11 11 | 704 | 0.6− | 0.1+ | 2003 12 17 | 704 | 0.8+ | 1.0+ |
| 1997 05 27 | 910 | 0.1+ | 0.9+ | 1998 11 11 | 704 | 1.3+ | 1.6− | 2003 12 17 | 704 | 0.2+ | 0.2+ |
| 1997 05 29 | 910 | 0.3+ | 0.4+ | 1998 11 14 | 699 | 1.0+ | 0.9+ | 2005 03 16 | 703 | 0.3− | 0.5− |
| 1997 05 29 | 910 | 0.3+ | 0.4+ | 1998 11 14 | 699 | 0.7+ | 0.5+ | 2005 03 16 | 703 | 0.2+ | 0.0 |
| 1997 05 29 | 910 | 0.8+ | 0.3+ | 1998 11 14 | 699 | 0.5+ | 0.4+ | 2005 03 16 | 703 | 0.5− | 0.7− |
| 1998 09 28 | 699 | 0.9+ | 1.4− | 2003 12 03 | 704 | 0.0 | 0.4− | 2005 03 16 | 703 | 0.3− | 0.6− |
| 1998 09 28 | 699 | 0.0 | 0.3+ | 2003 12 03 | 704 | 0.7+ | 0.1+ | 2005 03 17 | G96 | 0.2− | 0.2+ |
| 1998 09 28 | 699 | 0.8+ | 0.5+ | 2003 12 03 | 704 | 0.2− | 0.4+ | 2005 03 17 | G96 | 0.1+ | 0.1− |
| 1998 10 17 | 699 | 0.5− | 1.2+ | 2003 12 03 | 704 | 0.2− | 0.0 | 2005 03 17 | G96 | 0.0 | 0.2− |
| 1998 10 17 | 699 | 1.3− | 0.7+ | 2003 12 03 | 704 | 0.9− | 0.3+ | 2005 03 17 | G96 | 0.0 | 0.0 |
| 1998 10 17 | 699 | 1.1− | 1.6+ | 2003 12 17 | 704 | 1.0− | 1.0+ | | | | |
| 1998 11 11 | 704 | 1.8− | 1.0− | 2003 12 17 | 704 | 0.8+ | 0.3+ | | | | |

**1997 LQ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.26073 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19170283 | $\omega$ | 39.97567 | | −0.16810778 | | +0.98161334 |
| $a$ | 2.9788619 | $\Omega$ | 220.58220 | | −0.93622575 | | −0.18769784 |
| $e$ | 0.1979295 | $i$ | 7.98918 | | −0.30857919 | | +0.03470976 |
| $P$ | 5.14 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 08 | 809 | (4.3+ | 1.3−) | 1997 07 12 | 691 | 0.1+ | 0.3− | 2002 05 11 | 704 | 0.3− | 0.9− |
| 1997 06 08 | 809 | (4.1+ | 0.3−) | 2002 04 14 | 704 | 1.3− | 0.6+ | 2002 05 11 | 704 | 0.2− | 0.4− |
| 1997 06 08 | 809 | (2.4+ | 0.3−) | 2002 04 14 | 704 | 0.7+ | 0.2+ | 2002 05 18 | 644 | 0.0 | 0.5+ |
| 1997 06 09 | 809 | 1.6+ | 0.5− | 2002 04 14 | 704 | 1.1− | 0.5+ | 2002 05 18 | 644 | 0.1− | 0.4+ |
| 1997 06 09 | 809 | (2.9+ | 0.7−) | 2002 04 14 | 704 | 0.2− | 0.5+ | 2002 05 18 | 644 | 0.0 | 0.5+ |
| 1997 06 09 | 809 | (2.5+ | 0.6−) | 2002 04 14 | 704 | 0.4+ | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.0 |
| 1997 06 10 | 691 | 0.3− | 0.3− | 2002 04 22 | 691 | 0.2+ | 0.5+ | 2003 10 23 | 645 | 0.1− | 0.0 |
| 1997 06 10 | 691 | 0.5− | 0.4− | 2002 04 22 | 691 | 0.1− | 0.5+ | 2003 10 24 | 645 | 0.1+ | 0.1+ |
| 1997 06 10 | 691 | 0.5− | 0.2+ | 2002 04 22 | 691 | 0.7+ | 0.0 | 2003 10 24 | 645 | 0.1− | 0.1+ |
| 1997 07 12 | 691 | 0.2+ | 0.0 | 2002 05 11 | 704 | 0.2− | 0.0 | | | | |
| 1997 07 12 | 691 | 0.6+ | 0.2− | 2002 05 11 | 704 | 0.5+ | 0.6− | | | | |

**1997 LM$_{18}$ = 2003 BA$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.03785 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28656143 | $\omega$ | 132.68979 | | +0.48009817 | | +0.87678135 |
| $a$ | 2.2785447 | $\Omega$ | 165.92676 | | −0.83434065 | | +0.46611379 |
| $e$ | 0.2434053 | $i$ | 6.51071 | | −0.27089006 | | +0.11828946 |
| $P$ | 3.44 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 08 | 691 | 0.0 | 0.3− | 2001 09 17 | 704 | 0.9+ | 0.6+ | 2003 01 24 | 809 | 0.2+ | 0.4+ |
| 1997 06 08 | 691 | 1.5+ | 1.0+ | 2001 09 17 | 704 | 0.3+ | 1.2+ | 2003 01 24 | 809 | 0.3+ | 0.9+ |
| 1997 06 08 | 691 | 0.2− | 0.1− | 2001 10 16 | 704 | 2.0− | 0.9+ | 2003 01 24 | 809 | 0.4+ | 0.6+ |
| 1997 06 13 | 691 | 1.3− | 0.1− | 2001 10 16 | 704 | 0.3+ | 0.4+ | 2003 01 24 | 809 | 0.0 | 0.4+ |
| 1997 06 13 | 691 | 0.3− | 0.3+ | 2001 10 16 | 704 | 0.5− | 0.8+ | 2003 01 24 | 809 | 0.7+ | 1.0+ |
| 1997 06 13 | 691 | 0.1+ | 0.2− | 2001 10 16 | 704 | 0.9− | 0.8+ | 2004 07 16 | 704 | 0.1− | 0.4+ |
| 1997 06 27 | 691 | 0.5+ | 0.0 | 2003 01 23 | 809 | 0.1+ | 0.9+ | 2004 07 16 | 704 | 0.4− | 0.3+ |
| 1997 06 27 | 691 | 0.1− | 0.3+ | 2003 01 23 | 809 | 0.0 | 0.8+ | 2004 07 16 | 704 | 0.3+ | 0.5+ |
| 1997 06 27 | 691 | 0.2+ | 0.3+ | 2003 01 23 | 809 | 0.1+ | 0.7+ | 2004 07 16 | 704 | 0.1+ | 0.0 |
| 2001 09 17 | 704 | 0.3+ | 1.0+ | 2003 01 24 | 809 | 0.1+ | 0.7+ | | | | |

**1997 NU$_5$ = 2006 QW$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.86942 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22754169 | $\omega$ | 157.71854 | | +0.90713168 | | −0.42013506 |
| $a$ | 2.6572274 | $\Omega$ | 227.14844 | | +0.38091142 | | +0.84438169 |
| $e$ | 0.2739110 | $i$ | 1.91255 | | +0.17893744 | | +0.33242456 |
| $P$ | 4.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 07 | 691 | 0.4+ | 1.0− | 2006 09 27 | 683 | (2.5+ | 1.6−) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1997 07 07 | 691 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1997 07 07 | 691 | 0.1− | 0.0 | 2006 09 27 | 683 | (3.3+ | 0.1−) | 2006 10 23 | 704 | 0.9− | 0.4+ |
| 1997 07 11 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 683 | (1.7+ | 0.7−) | 2006 10 23 | 704 | 0.7− | 0.5+ |
| 1997 07 11 | 691 | 0.5+ | 0.5+ | 2006 09 28 | 683 | (1.6+ | 0.2+) | 2006 10 23 | 704 | 0.3− | 0.4+ |
| 1997 07 11 | 691 | 0.3+ | 0.0 | 2006 09 28 | 683 | (1.7+ | 0.2−) | 2006 10 23 | 704 | 1.2− | 0.1+ |
| 1997 07 12 | 691 | 0.7− | 0.6+ | 2006 09 28 | 683 | 1.1+ | 0.5− | 2006 10 23 | 704 | 0.6− | 0.7− |
| 1997 07 12 | 691 | 0.1+ | 0.1− | 2006 09 30 | 683 | 0.5+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 1997 07 12 | 691 | 0.7− | 0.0 | 2006 09 30 | 683 | 0.9+ | 0.3− | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2003 01 04 | 704 | 0.5− | 0.2+ | 2006 09 30 | 683 | 0.4+ | 0.2− | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2003 01 04 | 704 | 0.7+ | 0.7+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.1− | 0.3− |
| 2003 01 04 | 704 | 0.0 | 1.0+ | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 28 | 704 | 0.4+ | 0.2+ |
| 2003 01 04 | 704 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.7− | 0.3+ |
| 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 10 03 | 704 | 0.4+ | 0.4+ | 2006 10 28 | 704 | 0.2− | 0.3− |
| 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.3− | 0.8+ | 2006 10 28 | 704 | 0.3+ | 0.4+ |
| 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.8+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2006 08 18 | 644 | 0.5− | 0.5+ | 2006 10 03 | 704 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.4+ |
| 2006 08 18 | 644 | 0.2− | 0.6+ | 2006 10 03 | 704 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2006 08 18 | 644 | 0.4− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.4− | 0.1− |
| 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2006 08 30 | 699 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2006 08 30 | 699 | 0.9− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2006 08 30 | 699 | 0.3+ | 0.9− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2006 08 30 | 699 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.9− |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.6− |
| 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | (0.6− | 1.7−) | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2006 09 27 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 1.0+ | 0.8− | 2006 11 13 | G96 | 0.1− | 0.6− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 27 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 703 | (2.5+ | 0.0 | ) |
| 2006 09 27 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | |

### 1997 $NZ_5$ = 2006 $VD_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.72575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23398455 | $\omega$ | 208.81285 | | +0.96851445 | −0.24873641 | |
| $a$ | 2.6082223 | $\Omega$ | 165.57845 | | +0.23572560 | +0.90267646 | |
| $e$ | 0.1897578 | $i$ | 2.41309 | | +0.08008248 | +0.35114870 | |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.2− |
| 1995 02 01 | 691 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1995 02 01 | 691 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.1− | 0.7− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 1995 02 07 | 691 | (2.0+ | 3.0−) | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1995 02 07 | 691 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 1995 02 07 | 691 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.7− | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 1997 07 07 | 691 | 0.2− | 0.4− | 2006 11 14 | 704 | 0.2− | 1.2− | 2006 11 20 | 704 | 0.1− | 0.0 |
| 1997 07 07 | 691 | 1.2− | 0.4− | 2006 11 14 | 704 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.5− |
| 1997 07 07 | 691 | 0.1− | 0.5− | 2006 11 14 | 704 | 0.4+ | 0.5− | 2006 11 20 | 704 | 0.6− | 0.3+ |
| 1997 07 11 | 691 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.5+ | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 1997 07 11 | 691 | 0.4+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 1997 07 11 | 691 | 0.4+ | 0.8+ | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 1997 07 12 | 691 | 0.5+ | 0.4− | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 1997 07 12 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.8+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 1997 07 12 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 1.4+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2000 03 27 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.3+ | 1.4+ |
| 2000 03 27 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.3+ | 2006 11 29 | 704 | 0.8+ | 0.3+ |
| 2000 03 27 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.6− | 2006 11 29 | 704 | 0.2+ | 1.2+ |
| 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.9+ |
| 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.3+ |
| 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1− | 0.7+ | 2006 12 01 | 691 | 0.5− | 0.1− |
| 2006 11 05 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.6− | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2006 11 05 | 644 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.4+ | 2006 12 01 | 691 | 0.5− | 0.0 |
| 2006 11 05 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.4− | | | | |
| 2006 11 11 | 691 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.1− | 0.2+ | | | | |

### 1997 $RL_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.30097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18850611 | $\omega$ | 169.43539 | | +0.97620715 | +0.21679025 | |
| $a$ | 3.0124448 | $\Omega$ | 178.02588 | | −0.20748440 | +0.94009915 | |
| $e$ | 0.2504669 | $i$ | 7.75035 | | −0.06300647 | +0.26308852 | |
| $P$ | 5.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 06 | 910 | 0.3− | 0.1+ | 1997 09 28 | 691 | 0.2+ | 0.4+ | 2002 07 21 | 644 | 0.2+ | 0.0 |
| 1997 09 06 | 910 | 0.1+ | 0.2− | 1997 09 28 | 691 | 0.2− | 0.1− | 2002 08 05 | 644 | 0.2− | 0.3+ |
| 1997 09 06 | 910 | 0.2− | 0.0 | 1997 09 30 | 691 | 0.0 | 0.1− | 2002 08 05 | 644 | 0.3− | 0.0 |
| 1997 09 06 | 910 | 0.2+ | 0.2− | 1997 09 30 | 691 | 0.0 | 0.4− | 2002 08 05 | 644 | 0.2+ | 0.2+ |
| 1997 09 06 | 910 | 0.2+ | 0.1− | 1997 09 30 | 691 | 0.1− | 0.1− | 2002 08 11 | 644 | 0.0 | 0.1− |
| 1997 09 06 | 910 | 0.1− | 0.0 | 2002 07 21 | 644 | 0.1− | 0.4− | 2002 08 11 | 644 | 0.3+ | 0.1+ |
| 1997 09 28 | 691 | 0.2+ | 0.5+ | 2002 07 21 | 644 | 0.2− | 0.1− | 2002 08 11 | 644 | 0.1− | 0.0 |

### 1997 $SC_6$ = 2006 $SH_{142}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.87181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21946376 | $\omega$ | 285.79683 | | +0.22949922 | +0.97325734 | |
| $a$ | 2.7220379 | $\Omega$ | 357.40722 | | −0.78663747 | +0.17941569 | |
| $e$ | 0.1852959 | $i$ | 12.78728 | | −0.57317676 | +0.14345784 | |
| $P$ | 4.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 23 | 691 | 0.0 | 0.1− | 1997 10 28 | 691 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 1997 09 23 | 691 | 0.0 | 0.1+ | 1997 10 28 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | (1.6− | 0.4+) |
| 1997 09 23 | 691 | 0.0 | 0.1+ | 2005 03 09 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | (0.0 | 1.8+) |
| 1997 09 29 | 691 | 0.2+ | 0.1+ | 2005 03 09 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.2− |
| 1997 09 29 | 691 | 0.2+ | 0.2+ | 2005 03 09 | 691 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.1− | 0.1− |
| 1997 09 29 | 691 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 1997 10 06 | 691 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 1997 10 06 | 691 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.5+ | 1.1− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 1997 10 06 | 691 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.8+ | 1.5+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 1997 10 28 | 691 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.7− |

### 1997 $SV_9$ = 2006 $SP_{167}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.55619 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21532396 | $\omega$ | 84.96962 | | +0.56933334 | −0.82115219 | |
| $a$ | 2.7568162 | $\Omega$ | 330.21676 | | +0.71914500 | +0.52079519 | |
| $e$ | 0.0430676 | $i$ | 4.57334 | | +0.39835916 | +0.23341264 | |
| $P$ | 4.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.5− | 0.2− | 1997 10 05 | 691 | 0.1− | 0.9− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 1997 09 28 | 691 | 0.5− | 0.1− | 2002 12 06 | 704 | 0.2+ | 0.4− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 1997 09 28 | 691 | 0.3− | 0.0 | 2002 12 06 | 704 | 0.6− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 1997 09 29 | 691 | 0.7+ | 0.0 | 2002 12 06 | 704 | 0.5+ | 1.4+ | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 1997 09 29 | 691 | 0.0 | 0.2− | 2002 12 06 | 704 | 0.4− | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 1997 09 29 | 691 | 0.1+ | 0.2− | 2004 03 30 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 1997 09 30 | 691 | 0.5+ | 0.0 | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.3− | 0.0 |
| 1997 09 30 | 691 | 0.4+ | 0.0 | 2004 03 30 | 691 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.3+ |
| 1997 09 30 | 691 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.2− | 0.2+ |
| 1997 10 05 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2+ |
| 1997 10 05 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | | | | |

### 1997 $SC_{11}$ = 2004 $TR_{212}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.33233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28531123 | $\omega$ | 149.26669 | | +0.84066919 | +0.54154467 | |
| $a$ | 2.2851961 | $\Omega$ | 177.94063 | | −0.50831206 | +0.79044768 | |
| $e$ | 0.1598471 | $i$ | 3.45631 | | −0.18679980 | +0.28621991 | |
| $P$ | 3.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 816 | 0.3+ | 0.1+ | 2004 09 22 | 704 | 0.2− | 0.4+ | 2004 10 09 | 704 | 0.1− | 0.1+ |
| 1997 09 27 | 816 | 0.7+ | 0.1+ | 2004 09 22 | 704 | 0.8− | 0.2+ | 2004 10 10 | 704 | 1.0− | 0.5+ |
| 1997 09 27 | 816 | 0.2+ | 0.2+ | 2004 10 08 | 291 | 0.1− | 0.0 | 2004 10 10 | 704 | 0.3+ | 0.0 |
| 1997 09 28 | 816 | 0.9+ | 0.5+ | 2004 10 08 | 291 | 0.2+ | 0.0 | 2004 10 10 | 704 | 0.1− | 0.6− |
| 1997 09 28 | 816 | 0.1+ | 0.3− | 2004 10 08 | 291 | 0.4+ | 0.1− | 2004 10 10 | 704 | 0.4+ | 0.6+ |
| 1997 09 28 | 816 | 0.8− | 0.9− | 2004 10 09 | 704 | (1.6+ | 2.5−) | 2006 01 30 | 691 | 0.2+ | 0.1+ |
| 1997 10 07 | 816 | 0.4− | 0.3− | 2004 10 09 | 704 | 0.6− | 0.9− | 2006 01 30 | 691 | 0.2− | 0.2+ |
| 1997 10 07 | 816 | 0.6− | 0.7− | 2004 10 09 | 704 | 0.7+ | 0.2− | 2006 01 30 | 691 | 0.0 | 0.2− |
| 1997 10 07 | 816 | 0.6− | 1.6+ | 2004 10 09 | 704 | (2.1− | 0.2+) | | | | |
| 2004 09 22 | 704 | 0.6− | 0.8− | 2004 10 09 | 704 | 0.1+ | 0.6+ | | | | |

### 1997 $SR_{14}$ = 2006 $SQ_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.69538 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22054133 | $\omega$ | 168.69659 | | +0.77271790 | −0.63073512 | |
| $a$ | 2.7131641 | $\Omega$ | 230.64655 | | +0.57494871 | +0.74307278 | |
| $e$ | 0.1410396 | $i$ | 5.28887 | | +0.26896287 | +0.22364268 | |
| $P$ | 4.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.4+ | 0.3− | 2006 09 20 | 699 | 0.4− | 1.0+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 1997 09 28 | 691 | 0.3+ | 0.3− | 2006 09 20 | 699 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1997 09 28 | 691 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.4+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 691 | 0.7− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 1997 09 30 | 691 | 0.2+ | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.9+ | 1.1+ |
| 1997 09 30 | 691 | 0.1− | 0.4− | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 1997 10 05 | 691 | 0.3− | 0.4− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 1.5+ |
| 1997 10 05 | 691 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.5+ | 1.1+ |
| 1997 10 05 | 691 | 0.3+ | 0.4− | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1997 10 30 | 704 | (1.1− | 3.2−) | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 1997 10 30 | 704 | 0.5+ | 0.0 | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 1997 10 30 | 704 | (1.7+ | 2.5−) | 2006 10 20 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 1.0+ |
| 1997 10 30 | 704 | (5.2− | 0.6−) | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.1− |
| 2000 05 11 | 691 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.6− |
| 2000 05 11 | 691 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2000 05 11 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.3− |
| 2000 05 28 | 691 | 0.6− | 0.5− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.2− |
| 2000 05 28 | 691 | 0.5− | 0.9− | 2006 10 21 | 644 | 0.4− | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.3− |
| 2000 05 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2001 08 17 | 644 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2001 08 17 | 644 | 0.4+ | 1.0+ | 2006 11 07 | 644 | 0.5− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2001 08 17 | 644 | 0.1− | 1.2+ | 2006 11 07 | 644 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.5+ | 1.5+ |
| 2001 08 25 | 704 | 1.4− | 1.1+ | 2006 11 07 | 644 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.7− | 1.9+ |
| 2001 08 25 | 704 | (2.0− | 0.3+) | 2006 11 11 | 703 | 1.1− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2001 08 25 | 704 | 0.8− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.4− |
| 2006 09 20 | 699 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2006 09 20 | 699 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.5− | | | | |

**1997 ST$_{14}$ = 2006 UO$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.67356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22320861 | $\omega$ | 303.78802 | | −0.97025300 | | +0.23164831 |
| $a$ | 2.6915064 | $\Omega$ | 249.69266 | | −0.18983035 | | −0.90829742 |
| $e$ | 0.0928469 | $i$ | 4.30152 | | −0.15024496 | | −0.34833153 |
| $P$ | 4.42 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2+ | 0.2− | 1997 10 05 | 691 | 0.1+ | 0.7− | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 1997 09 28 | 691 | 0.3+ | 0.2− | 2005 07 15 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.4+ |
| 1997 09 28 | 691 | 0.0 | 0.4− | 2005 07 15 | 691 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.5+ |
| 1997 09 30 | 691 | 0.7− | 0.0 | 2005 07 15 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 1997 09 30 | 691 | 0.4− | 0.1− | 2006 10 02 | G96 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 1997 10 05 | 691 | 0.6+ | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 1997 10 05 | 691 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.0 |

**1997 SB$_{31}$ = 2006 SC$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.38953 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22841352 | $\omega$ | 302.94262 | | +0.00894315 | | +0.99341897 |
| $a$ | 2.6504616 | $\Omega$ | 326.98795 | | −0.83317577 | | −0.05574062 |
| $e$ | 0.1288460 | $i$ | 12.09828 | | −0.55293594 | | +0.10005865 |
| $P$ | 4.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.5− | 0.1− | 2006 09 17 | 703 | 1.3− | 1.0− | 2006 09 27 | 703 | 0.7− | 0.5− |
| 1997 09 27 | 691 | 0.6+ | 0.3− | 2006 09 17 | 703 | 0.5− | 0.9− | 2006 09 27 | 703 | 0.3− | 0.2− |
| 1997 09 27 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.7+ | 0.7− |
| 1997 10 07 | 691 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.3− | 1.4− | 2006 10 17 | 691 | 0.4+ | 0.0 |
| 1997 10 07 | 691 | 0.3− | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.1+ |
| 1997 10 07 | 691 | 0.1+ | 0.1− | 2006 09 20 | 699 | 1.0+ | 0.6+ | 2006 10 17 | 691 | 0.2+ | 0.3+ |
| 2006 08 25 | D35 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.9− | 0.6− | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 2006 08 25 | D35 | 0.2+ | 0.5+ | 2006 09 20 | 699 | (0.6− | 1.6−) | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2006 08 25 | D35 | 0.4+ | 0.2− | 2006 09 24 | 106 | 1.2− | 0.7− | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | (2.4+ | 0.3+) | 2006 09 24 | 106 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 09 24 | 106 | 0.2− | 1.4+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2006 08 29 | 703 | (0.3− | 1.9+) | 2006 09 24 | 106 | 0.9− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2006 08 29 | 703 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.0 | 0.6+ | | | | |

**1997 SB$_{33}$ = 2006 RQ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.46314 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21720598 | $\omega$ | 20.02104 | | +0.85866907 | | −0.51251805 |
| $a$ | 2.7408685 | $\Omega$ | 10.81278 | | +0.46761437 | | +0.78055534 |
| $e$ | 0.2652728 | $i$ | 1.08775 | | +0.20981953 | | +0.35785276 |
| $P$ | 4.54 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 29 | 691 | 0.6− | 0.6− | 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 10 01 | 704 | 1.2− | 0.8+ |
| 1997 09 29 | 691 | 0.8− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.3− |
| 1997 09 29 | 691 | 0.7− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 1.1− | 0.4+ |
| 1997 10 10 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 1997 10 10 | 691 | 0.1+ | 0.4− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 1997 10 10 | 691 | 0.2+ | 0.6− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.0 | 0.3− |
| 1997 10 21 | 691 | 0.6+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 1997 10 21 | 691 | 0.4+ | 0.2− | 2006 09 19 | 699 | (1.7+ | 0.9−) | 2006 10 16 | G96 | 0.5+ | 0.3− |
| 1997 10 21 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.9+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 1997 10 31 | 910 | 1.4+ | 0.4+ | 2006 09 19 | 699 | 0.8+ | 0.8+ | 2006 10 16 | G96 | 0.5+ | 0.1− |
| 1997 10 31 | 910 | 1.2+ | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1997 10 31 | 910 | 1.3+ | 0.6+ | 2006 09 24 | 691 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.8+ | 0.5+ |
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2006 07 21 | G96 | 0.6+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.8+ | 1.0− |
| 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2006 07 21 | G96 | 0.7+ | 0.2+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |

**1997 TT$_{1}$ = 2006 QT$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.50315 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21276382 | $\omega$ | 46.17736 | | +0.82213185 | | −0.56905474 |
| $a$ | 2.7788868 | $\Omega$ | 348.47362 | | +0.49555616 | | +0.72969831 |
| $e$ | 0.0828118 | $i$ | 4.76841 | | +0.28022011 | | +0.37910034 |
| $P$ | 4.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 910 | 0.5+ | 0.6− | 1997 10 04 | 910 | 0.7− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1997 10 02 | 910 | 0.2− | 0.4− | 2006 08 18 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 1997 10 03 | 910 | 0.5+ | 0.2− | 2006 08 18 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 1997 10 03 | 910 | 0.1+ | 0.2+ | 2006 08 18 | 691 | 0.3+ | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 1997 10 03 | 910 | 0.6+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 1997 10 03 | 910 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 1997 10 04 | 910 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.5+ |
| 1997 10 04 | 910 | 0.6− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.4− | | | | |

**1997 TX$_{3}$ = 2006 QL$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.06696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21531198 | $\omega$ | 329.28357 | | +0.95672817 | | +0.28871129 |
| $a$ | 2.7569184 | $\Omega$ | 14.07565 | | −0.22733194 | | +0.81946241 |
| $e$ | 0.1241679 | $i$ | 8.58170 | | −0.18163537 | | +0.49510316 |
| $P$ | 4.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 910 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.7+ | 0.2− |
| 1997 10 03 | 910 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 1997 10 03 | 910 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 1997 10 04 | 910 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 1997 10 04 | 910 | 0.7+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 1997 10 04 | 910 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 1997 10 26 | 688 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.6+ | 0.2− |
| 1997 10 26 | 688 | 0.8− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2006 08 18 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 10 15 | 291 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.5+ |
| 2006 08 18 | 691 | 0.1− | 0.0 | 2006 10 15 | 291 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.4− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 27 | 691 | 0.1− | 0.2− | 2006 10 15 | 291 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.5− |
| 2006 08 27 | 691 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2006 08 27 | 691 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.0 | | | | |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1− | | | | |

**1997 $TB_5$ = 2006 $RZ_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.06604 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22726977 | $\omega$ | 328.19098 | | +0.44089530 | | +0.89200359 |
| $a$ | 2.6593465 | $\Omega$ | 327.65511 | | −0.77947501 | | +0.32544620 |
| $e$ | 0.1767571 | $i$ | 10.74032 | | −0.44500566 | | +0.31371064 |
| $P$ | 4.34 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 910 | 0.2− | 0.3+ | 2006 08 29 | 699 | 0.2+ | 0.6+ | 2006 09 27 | 703 | 0.5− | 0.1+ |
| 1997 10 01 | 910 | 0.4+ | 0.2− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.1+ | 0.3− |
| 1997 10 01 | 910 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 1997 10 03 | 910 | 0.3+ | 0.3− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 1997 10 03 | 910 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.3+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.4+ |
| 1997 10 03 | 910 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.5− | 0.4− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 1997 10 05 | 910 | 0.4− | 0.1− | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 1997 10 05 | 910 | 0.0 | 0.3− | 2006 09 16 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 1997 10 05 | 910 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 23 | 703 | 0.2+ | 1.1+ |
| 2005 04 10 | E12 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.4− | 0.3+ | 2006 10 23 | 703 | 1.9+ | 0.0 |
| 2005 04 10 | E12 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.5− | 0.2+ | 2006 10 23 | 703 | 0.4+ | 0.3− |
| 2005 04 10 | E12 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.5− | 0.4+ | 2006 10 23 | 703 | 0.5+ | 0.3+ |
| 2005 04 10 | E12 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.8− | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.3− |
| 2006 08 29 | 699 | 0.4− | 0.7− | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2006 08 29 | 699 | 0.5+ | 0.6+ | 2006 09 27 | 703 | 0.7− | 0.6− | 2006 10 24 | 644 | 0.2− | 0.3− |
| 2006 08 29 | 699 | 0.8+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.5− | | | | |

**1997 $TN_9$ = 2006 $UM_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.57699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22005221 | $\omega$ | 205.11519 | | +0.44997077 | | −0.89197812 |
| $a$ | 2.7171830 | $\Omega$ | 218.18492 | | +0.83079913 | | +0.43601848 |
| $e$ | 0.1032258 | $i$ | 4.04467 | | +0.32756544 | | +0.11942746 |
| $P$ | 4.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 691 | 0.7− | 0.3− | 2006 09 27 | G96 | 0.8+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1997 10 02 | 691 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 1997 10 02 | 691 | 0.9− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 1997 10 06 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 1997 10 06 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | (1.9− | 0.1−) |
| 1997 10 06 | 691 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | (1.7− | 0.1+) |
| 1997 10 11 | 691 | 0.6+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.7− |
| 1997 10 11 | 691 | 1.2+ | 0.5+ | 2006 10 29 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 1997 10 11 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.9− | 1.0− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | (0.3+ | 2.1+) | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2006 09 27 | G96 | 0.9+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.1− |

**1997 $UH_6$ = 2006 $KE_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.67984 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18668785 | $\omega$ | 12.32489 | | +0.73242642 | | −0.68065123 |
| $a$ | 3.0319731 | $\Omega$ | 30.58960 | | +0.62191434 | | +0.65909992 |
| $e$ | 0.1971343 | $i$ | 1.83467 | | +0.27708138 | | +0.31984559 |
| $P$ | 5.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 11 | 691 | 0.1− | 0.5+ | 1997 10 28 | 691 | 0.2− | 0.8− | 2004 01 16 | 691 | 0.1+ | 0.1− |
| 1997 10 11 | 691 | 0.2− | 0.2− | 1997 10 28 | 691 | 0.4+ | 0.0 | 2004 01 16 | 691 | 0.2+ | 0.1+ |
| 1997 10 23 | 691 | 0.0 | 0.8− | 1997 11 01 | 691 | 0.1− | 0.1− | 2006 05 25 | 568 | 0.0 | 0.3− |
| 1997 10 23 | 691 | 0.2− | 0.1+ | 1997 11 01 | 691 | 0.5+ | 0.7+ | 2006 05 25 | 568 | 0.1− | 0.3− |
| 1997 10 23 | 691 | 0.2− | 0.0 | 1997 11 01 | 691 | 0.0 | 0.4+ | 2006 05 25 | 568 | 0.1− | 0.2− |
| 1997 10 28 | 691 | 0.1+ | 0.0 | 2004 01 16 | 691 | 0.3− | 0.2− | 2006 05 26 | 568 | 0.0 | 0.4− |

**1997 $WL_5$ = 2006 $RS_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.35237 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21125825 | $\omega$ | 181.92269 | | +0.77860870 | | −0.62566262 |
| $a$ | 2.7920741 | $\Omega$ | 216.94985 | | +0.57679185 | | +0.74376860 |
| $e$ | 0.0609154 | $i$ | 4.59076 | | +0.24714299 | | +0.23527549 |
| $P$ | 4.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.8− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | G98 | 0.3+ | 0.3+ |
| 1997 11 23 | 691 | 0.5+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 27 | G98 | 0.4+ | 0.3+ |
| 1997 11 23 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.2− | 2006 10 27 | G98 | 0.3− | 0.2− |
| 1997 11 25 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.7− | 0.0 |
| 1997 11 25 | 691 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 1997 11 25 | 691 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 1997 11 29 | 691 | 0.3+ | 0.7− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 1997 11 29 | 691 | 0.6+ | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 1997 11 29 | 691 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2006 09 15 | 691 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4+ |
| 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 | | | | |
| 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 27 | G98 | 0.2+ | 0.3+ | | | | |

**1997 $WV_5$ = 2004 $GC_{32}$ = 2006 $UN_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.55926 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20925758 | $\omega$ | 106.06479 | | +0.77149341 | | +0.63433380 |
| $a$ | 2.8098421 | $\Omega$ | 214.60835 | | −0.61182062 | | +0.71845837 |
| $e$ | 0.0271980 | $i$ | 4.96735 | | −0.17456645 | | +0.28537379 |
| $P$ | 4.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 22 | 691 | (1.7+ | 3.6−) | 1997 12 05 | 691 | 1.1+ | 0.1− | 2006 09 27 | 699 | 0.3− | 0.1− |
| 1992 10 22 | 691 | 0.0 | 0.6+ | 1997 12 05 | 691 | 0.6+ | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 1992 10 22 | 691 | 0.1+ | 0.2+ | 1997 12 05 | 691 | 1.0+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 1992 11 16 | 691 | 0.2− | 0.1+ | 2004 04 12 | 691 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 1992 11 16 | 691 | 0.6− | 0.4+ | 2004 04 12 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.7− | 0.3+ |
| 1992 11 16 | 691 | 0.5− | 0.2+ | 2004 04 12 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 1997 11 23 | 691 | 0.2− | 0.0 | 2004 04 17 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1997 11 23 | 691 | 0.1− | 0.5+ | 2004 04 17 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1997 11 23 | 691 | 0.0 | 0.2+ | 2004 04 17 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1997 11 25 | 691 | 1.1− | 0.3+ | 2006 09 27 | 699 | 0.7− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 1997 11 25 | 691 | 0.5− | 0.2+ | 2006 09 27 | 699 | 0.4+ | 1.5+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 1997 11 25 | 691 | 0.8− | 0.3+ | 2006 09 27 | 699 | 0.5− | 1.2+ | | | | |

**1997 $WT_{11}$ = 2006 $SF_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.09785 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21546703 | $\omega$ | 147.41979 | | +0.95441493 | | −0.29027762 |
| $a$ | 2.7555957 | $\Omega$ | 229.61519 | | +0.25057154 | | +0.90572403 |
| $e$ | 0.1138221 | $i$ | 5.23550 | | +0.16219137 | | +0.30887358 |
| $P$ | 4.57 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1997 11 22 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.6− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1997 11 28 | 691 | 0.5− | 0.4− | 2006 09 18 | 703 | 0.6− | 0.8− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 1997 11 28 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.5− | 0.7+ |
| 1997 11 28 | 691 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 1997 12 04 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | 1.4− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.9+ |
| 1997 12 04 | 691 | 0.5+ | 0.2+ | 2006 09 19 | 703 | (1.5− | 1.5−) | 2006 10 17 | 703 | 0.9− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 691 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.6− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2006 09 17 | 691 | 0.4+ | 0.1+ | 2006 10 01 | 691 | 0.3+ | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.3− | 0.3− |
| 2006 09 17 | 691 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.3− |

## 1997 WD$_{45}$ = 2006 SR$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.94499 | | (2000.0) | | +0.97419266 | −0.21073414 |
| $n$ | 0.21839147 | $\omega$ | 143.17946 | | +0.17311286 | +0.92746153 |
| $a$ | 2.7309407 | $\Omega$ | 229.18928 | | +0.14484679 | +0.30887900 |
| $e$ | 0.3186358 | $i$ | 6.13354 | | | |
| $P$ | 4.51 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 26 | 704 | (2.6+ | 0.6−) | 2006 09 19 | 704 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.2+ |
| 1997 11 26 | 704 | (3.4+ | 0.0 ) | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 1997 11 26 | 704 | (3.1+ | 0.0 ) | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.1− |
| 1997 11 29 | 704 | 1.0− | 0.3− | 2006 09 20 | 704 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.9− | 0.5+ |
| 1997 11 29 | 704 | 1.4− | 1.3− | 2006 09 20 | 704 | 0.7+ | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 1997 11 29 | 704 | 0.5− | 0.1− | 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 1997 11 29 | 704 | 1.3− | 0.5− | 2006 09 20 | 704 | 1.4+ | 0.6− | 2006 11 18 | G96 | 0.2− | 0.3− |
| 1997 11 30 | 566 | 0.7+ | 0.3− | 2006 09 20 | 704 | 0.7− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 1997 11 30 | 566 | 1.1+ | 0.9− | 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 1997 11 30 | 566 | 0.6+ | 1.2− | 2006 09 20 | 704 | 0.5− | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.4− |
| 1997 12 04 | 704 | 0.8+ | 0.9+ | 2006 09 29 | 704 | (0.4− | 1.6+) | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 1997 12 04 | 704 | (2.4+ | 0.5−) | 2006 09 29 | 704 | 0.8− | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 1997 12 04 | 704 | 1.2+ | 0.2− | 2006 09 29 | 704 | 1.0+ | 0.5− | 2006 11 18 | 711 | 0.3− | 0.2+ |
| 1997 12 04 | 704 | (2.8+ | 1.2−) | 2006 09 29 | 704 | 0.9+ | 0.6− | 2006 11 18 | 711 | 0.2− | 0.4+ |
| 1997 12 04 | 704 | 0.3− | 2.0− | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 18 | 711 | 0.3− | 0.2+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.2− | 0.0 |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2001 07 21 | 608 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2001 07 21 | 608 | 0.6+ | 0.3− | 2006 10 23 | 704 | 1.5+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2001 07 21 | 608 | 0.3+ | 0.2+ | 2006 10 23 | 704 | 0.5+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2003 01 27 | 644 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.6+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2003 01 27 | 644 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.6− | 1.3− | 2006 11 19 | 704 | 1.0− | 0.4+ |
| 2003 01 27 | 644 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 2005 05 19 | G96 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2005 05 19 | G96 | 0.4− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.4− | 0.3+ |
| 2006 08 28 | 703 | 0.1+ | 1.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2006 08 28 | 703 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.4− |
| 2006 08 28 | 703 | 0.2− | 1.2+ | 2006 11 11 | 703 | 0.6− | 0.8− | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2006 08 28 | 703 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.9− | 2006 11 21 | 704 | 0.2− | 0.6− |
| 2006 08 28 | 703 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.4− | 0.1− |
| 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2006 08 28 | 703 | 0.7+ | 1.2+ | 2006 11 14 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2006 08 28 | 703 | 0.8− | 0.2+ | 2006 11 14 | 691 | 0.4− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2006 09 17 | 699 | 0.2− | 0.6− | 2006 11 17 | 703 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2006 09 17 | 699 | 0.2+ | 0.9+ | 2006 11 17 | 703 | 0.1+ | 0.3− | 2006 11 27 | 224 | 1.9+ | 1.8+ |
| 2006 09 17 | 699 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.1− | 0.3− | 2006 11 27 | 224 | 2.0+ | 2.2+ |
| 2006 09 17 | 699 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.2− | 2006 11 27 | 224 | 2.3+ | 1.7+ |
| 2006 09 19 | 704 | (1.6+ | 2.0+) | 2006 11 17 | 703 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2006 09 19 | 704 | 1.1+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.3+ |
| 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.2+ |
| 2006 09 19 | 703 | 0.0 | 1.2− | 2006 11 17 | 703 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.8+ |
| 2006 09 19 | 704 | 1.1− | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2006 09 19 | 703 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.3− | 0.1+ | | | | |

## 1997 YG$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.14258 | | (2000.0) | | −0.25959593 | −0.94783869 |
| $n$ | 0.21091319 | $\omega$ | 10.70896 | | +0.87174902 | −0.31240939 |
| $a$ | 2.7951185 | $\Omega$ | 94.52805 | | +0.41552809 | +0.06326291 |
| $e$ | 0.1410254 | $i$ | 10.69281 | | | |
| $P$ | 4.67 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 29 | 691 | 0.5− | 1.1− | 2003 02 09 | 644 | 0.2+ | 0.7+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 1992 11 29 | 691 | 0.2+ | 0.2+ | 2003 02 28 | 608 | 0.7− | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 1997 12 23 | 327 | 0.4− | 0.4− | 2003 02 28 | 608 | 0.6− | 0.8+ | 2006 11 22 | 683 | 1.0− | 0.3− |
| 1997 12 23 | 327 | 0.1+ | 1.1− | 2003 02 28 | 608 | 0.1+ | 0.2+ | 2006 11 22 | 683 | 0.3+ | 0.2+ |
| 1997 12 23 | 327 | 0.4− | 0.3− | 2003 03 08 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 683 | (1.5− | 4.7−) |
| 1997 12 23 | 327 | 0.4+ | 0.1− | 2003 03 08 | 644 | 0.3+ | 0.4+ | 2006 11 23 | 683 | 0.9− | 1.1− |
| 1997 12 24 | 327 | 0.4+ | 0.2− | 2003 03 08 | 644 | 0.3+ | 0.4+ | 2006 11 23 | 683 | (0.4− | 2.2−) |
| 1997 12 24 | 327 | 0.5+ | 0.0 | 2003 03 22 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 683 | 1.0− | 0.4+ |
| 1997 12 24 | 327 | 0.5+ | 0.4− | 2003 03 22 | 644 | 0.3− | 0.3+ | 2006 11 25 | 704 | 0.3− | 0.0 |
| 1997 12 24 | 327 | 0.8+ | 0.4− | 2003 03 22 | 644 | 0.3+ | 0.4+ | 2006 11 25 | 683 | 0.4+ | 0.0 |
| 1997 12 29 | 327 | 0.6+ | 0.7− | 2006 11 15 | 703 | 0.2− | 0.1− | 2006 11 25 | 704 | 0.9− | 1.1+ |
| 1997 12 29 | 327 | 0.4+ | 0.7− | 2006 11 15 | 703 | 0.2+ | 0.4− | 2006 11 25 | 683 | 1.1+ | 0.6− |
| 1997 12 29 | 327 | 0.8+ | 0.5− | 2006 11 15 | 703 | 0.8− | 0.3+ | 2006 11 25 | 704 | 0.1+ | 0.6+ |
| 2001 10 15 | 644 | 0.2+ | 0.9+ | 2006 11 15 | 703 | 0.2+ | 0.1+ | 2006 11 25 | 683 | 0.3− | 0.4+ |
| 2001 10 15 | 644 | 0.3+ | 0.7+ | 2006 11 20 | 704 | 0.6− | 0.6+ | 2006 11 25 | 704 | 0.6+ | 1.2+ |
| 2001 10 15 | 644 | 0.4+ | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.6+ | 2006 11 28 | 704 | 0.8+ | 0.1− |
| 2001 10 23 | 644 | 0.6− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.8− |
| 2001 10 23 | 644 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2001 10 23 | 644 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.6+ |
| 2003 02 09 | 644 | 0.2+ | 0.9+ | 2006 11 22 | G96 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.6+ |
| 2003 02 09 | 644 | 0.2− | 0.7+ | 2006 11 22 | G96 | 0.1+ | 0.0 | | | | |

## 1997 YL$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.94019 | | (2000.0) | | −0.61148732 | −0.78920559 |
| $n$ | 0.22587511 | $\omega$ | 91.14442 | | +0.68287858 | −0.56269417 |
| $a$ | 2.6702820 | $\Omega$ | 36.74930 | | +0.39970001 | −0.24602807 |
| $e$ | 0.4210600 | $i$ | 5.45725 | | | |
| $P$ | 4.36 | $H$ | 17.6 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 29 | 566 | 0.2+ | 0.3− | 1998 01 08 | 658 | 0.6− | 0.1+ | 1998 02 27 | 728 | 0.9− | 0.9+ |
| 1997 12 29 | 566 | 0.8+ | 0.3− | 1998 01 09 | 658 | 0.3− | 0.2− | 1998 02 27 | 728 | 0.4+ | 0.2+ |
| 1997 12 29 | 566 | 0.6+ | 0.2− | 1998 01 09 | 658 | 0.6− | 0.1− | 1998 02 28 | 728 | 0.2− | 0.6− |
| 1997 12 30 | 046 | 0.5+ | 0.1− | 1998 01 09 | 658 | 0.8− | 0.2− | 1998 03 02 | 402 | 0.3+ | 0.6− |
| 1997 12 30 | 046 | 0.2− | 0.0 | 1998 01 10 | 046 | 0.3+ | 0.4+ | 1998 03 02 | 402 | 0.1− | 0.3− |
| 1997 12 30 | 046 | 0.1+ | 0.3− | 1998 01 10 | 046 | 0.3+ | 0.3− | 1998 03 02 | 402 | 0.3− | 0.6− |
| 1997 12 30 | 046 | 0.5+ | 0.3− | 1998 01 10 | 046 | 0.5+ | 0.3− | 1998 03 03 | 711 | 0.2− | 0.0 |
| 1997 12 30 | 557 | 0.0 | 0.1− | 1998 01 19 | 104 | 0.0 | 0.0 | 1998 03 03 | 711 | 0.3− | 0.0 |
| 1997 12 31 | 557 | 0.1+ | 0.2− | 1998 01 19 | 104 | 0.2+ | 0.0 | 1998 03 04 | 711 | 0.2− | 0.1+ |
| 1997 12 31 | 658 | 0.4− | 0.1+ | 1998 01 19 | 104 | 0.5+ | 0.0 | 1998 03 04 | 711 | 0.2− | 0.0 |
| 1997 12 31 | 658 | 0.8− | 0.1+ | 1998 01 28 | 566 | 0.0 | 0.5+ | 1998 03 17 | 658 | 0.3+ | 0.6+ |
| 1998 01 01 | 046 | 0.7+ | 0.4− | 1998 01 28 | 566 | 0.2− | 0.3+ | 1998 03 17 | 658 | 0.2+ | 0.4+ |
| 1998 01 01 | 046 | 0.1+ | 0.1+ | 1998 01 28 | 566 | 0.6− | 0.2+ | 1998 03 17 | 658 | 0.4+ | 0.7+ |
| 1998 01 01 | 966 | 0.5+ | 1.6− | 1998 02 01 | 422 | (3.0+ | 1.6+) | 1998 03 18 | 402 | 0.9+ | 0.4+ |
| 1998 01 01 | 046 | 0.3− | 0.2− | 1998 02 01 | 422 | 1.5+ | 1.2+ | 1998 03 18 | 402 | 0.8+ | 0.3+ |
| 1998 01 01 | 966 | 0.0 | 0.2− | 1998 02 03 | 711 | 0.1− | 0.2+ | 1998 03 18 | 402 | 0.6+ | 0.7+ |
| 1998 01 04 | 897 | 0.0 | 0.9− | 1998 02 03 | 711 | 0.1+ | 0.1+ | 2001 10 17 | 644 | 0.2− | 0.3− |
| 1998 01 04 | 897 | 1.0+ | 0.1+ | 1998 02 03 | 046 | 0.3− | 0.2+ | 2001 10 17 | 644 | 0.0 | 0.6− |
| 1998 01 04 | 897 | 0.9− | 0.4− | 1998 02 03 | 046 | 0.2− | 0.3+ | 2001 10 17 | 644 | 0.1− | 0.4+ |
| 1998 01 04 | 897 | 0.7− | 0.1− | 1998 02 03 | 046 | 0.0 | 0.2+ | 2001 12 18 | 291 | 0.3− | 0.4+ |
| 1998 01 08 | 658 | 0.9− | 0.1+ | 1998 02 04 | 711 | 0.4− | 0.2− | 2001 12 18 | 291 | 0.1− | 0.5+ |
| 1998 01 08 | 658 | 0.5− | 0.2+ | 1998 02 04 | 711 | 0.3− | 0.1+ | 2001 12 18 | 291 | 0.0 | 0.3+ |

**1998 DY$_6$ = 2006 RQ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.39422 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17825786 | $\omega$ | 332.46957 | −0.27707144 | | +0.94819432 | |
| $a$ | 3.1268251 | $\Omega$ | 281.10319 | −0.84987630 | | −0.31731151 | |
| $e$ | 0.0329619 | $i$ | 9.11383 | −0.44826521 | | +0.01552200 | |
| $P$ | 5.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 17 | 691 | 0.5+ | 0.6+ | 2002 12 31 | 704 | 0.2− | 0.5− | 2006 09 11 | 703 | 0.4+ | 0.1+ |
| 1998 02 17 | 691 | 0.2+ | 0.6+ | 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 09 11 | 703 | 0.5+ | 1.1+ |
| 1998 02 17 | 691 | 0.4+ | 0.1− | 2002 12 31 | 704 | 0.1− | 0.0 | 2006 09 11 | 703 | 0.6− | 1.0− |
| 1998 02 23 | 691 | 0.4− | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.8− | 0.3− |
| 1998 02 23 | 691 | 0.2− | 0.4− | 2006 08 27 | 699 | (2.1+ | 0.5+) | 2006 09 18 | 703 | 0.1+ | 0.7+ |
| 1998 02 23 | 691 | 0.5− | 0.2− | 2006 08 27 | 699 | 0.2− | 1.3+ | 2006 09 18 | 703 | 0.3+ | 0.5− |
| 1998 03 02 | 691 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.3+ | 0.6− | 2006 09 18 | 703 | 0.1+ | 1.2− |
| 1998 03 02 | 691 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.5+ | 0.7+ | | | | |
| 1998 03 02 | 691 | 0.2− | 0.1+ | 2006 09 11 | 703 | 0.7− | 0.0 | | | | |

**1998 DZ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.56670 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28595541 | $\omega$ | 26.55575 | −0.92759799 | | +0.37342713 | |
| $a$ | 2.2817629 | $\Omega$ | 175.33247 | −0.36184443 | | −0.89097927 | |
| $e$ | 0.0808543 | $i$ | 7.54452 | −0.09290093 | | −0.25827916 | |
| $P$ | 3.45 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 17 | 691 | 0.5+ | 0.3+ | 2003 10 22 | 645 | 0.1+ | 0.0 | 2005 03 03 | 703 | 0.3− | 0.2− |
| 1998 02 17 | 691 | 0.3+ | 0.3+ | 2003 10 22 | 645 | 0.1+ | 0.0 | 2005 03 13 | G96 | 0.4− | 0.1− |
| 1998 02 17 | 691 | 0.4+ | 0.8− | 2003 11 16 | 645 | 0.1− | 0.0 | 2005 03 13 | G96 | 0.2− | 0.2− |
| 1998 02 23 | 691 | 0.7− | 0.3+ | 2003 11 16 | 645 | 0.1− | 0.0 | 2005 03 13 | G96 | 0.8+ | 0.0 |
| 1998 02 23 | 691 | 0.5− | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2005 03 13 | G96 | 0.2− | 0.1+ |
| 1998 02 23 | 691 | 0.8− | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2005 04 09 | G96 | 0.1+ | 0.0 |
| 1998 02 28 | 691 | 0.5+ | 0.3− | 2005 03 03 | 703 | 0.5+ | 0.1− | 2005 04 09 | G96 | 0.1− | 0.2− |
| 1998 02 28 | 691 | 0.2+ | 0.1− | 2005 03 03 | 703 | 1.0− | 1.1+ | 2005 04 09 | G96 | 0.2− | 0.3− |
| 1998 02 28 | 691 | 0.4+ | 0.1+ | 2005 03 03 | 703 | 0.7+ | 1.7− | 2005 04 09 | G96 | 0.1− | 0.2− |

**1998 DM$_{12}$ = 2006 SY$_{305}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.17463 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29102898 | $\omega$ | 51.45249 | −0.97544226 | | +0.21052386 | |
| $a$ | 2.2551662 | $\Omega$ | 140.57972 | −0.22009104 | | −0.92029804 | |
| $e$ | 0.0950137 | $i$ | 5.85218 | −0.00850514 | | −0.32974417 | |
| $P$ | 3.39 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.2− | 0.1+ | 1998 03 03 | 691 | 0.3− | 0.1− | 2005 05 06 | 703 | 0.3− | 0.6− |
| 1998 02 23 | 691 | 0.2+ | 0.0 | 2003 11 18 | 691 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 1998 02 26 | 691 | 0.5+ | 0.2− | 2003 11 18 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 1998 02 26 | 691 | 0.7+ | 0.2− | 2003 11 18 | 691 | 0.5+ | 0.2− | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 1998 02 26 | 691 | 0.1+ | 0.3+ | 2005 05 06 | 703 | 0.8+ | 1.0− | 2006 10 01 | 691 | 0.2− | 0.1− |
| 1998 03 03 | 691 | 0.3− | 0.3+ | 2005 05 06 | 703 | 0.8− | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1998 03 03 | 691 | 0.4− | 0.1+ | 2005 05 06 | 703 | (2.4− | 3.7−) | 2006 10 01 | 691 | 0.1+ | 0.0 |

**1998 DT$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.93315 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17528766 | $\omega$ | 323.01289 | −0.51828347 | | +0.84374731 | |
| $a$ | 3.1620483 | $\Omega$ | 275.37296 | −0.74727244 | | −0.52615164 | |
| $e$ | 0.0412951 | $i$ | 8.05713 | −0.41589198 | | −0.10608923 | |
| $P$ | 5.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 29 | 691 | 0.4− | 0.1+ | 1998 02 22 | 691 | 0.8+ | 0.4+ | 2004 02 14 | 644 | 0.3+ | 0.7+ |
| 1997 12 29 | 691 | 0.4− | 0.2+ | 1998 02 28 | 691 | 0.1+ | 0.4− | 2004 02 14 | 644 | 0.4+ | 0.6+ |
| 1997 12 29 | 691 | 0.6− | 0.5+ | 1998 02 28 | 691 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 1998 01 26 | 691 | 0.3+ | 0.0 | 1998 02 28 | 691 | 0.3− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1998 01 26 | 691 | 0.1+ | 0.1− | 2001 09 29 | 644 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.0 |
| 1998 01 26 | 691 | 0.8− | 0.4− | 2001 09 29 | 644 | 0.1− | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 1998 02 22 | 691 | 0.4+ | 0.1+ | 2001 09 29 | 644 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 1998 02 22 | 691 | 0.8+ | 0.0 | 2004 02 14 | 644 | 0.3+ | 0.9+ | 2006 09 28 | 691 | 0.1+ | 0.2− |

**1998 DT$_{19}$ = 2006 SZ$_{311}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.44233 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18140899 | $\omega$ | 164.10093 | −0.97102940 | | −0.23863526 | |
| $a$ | 3.0905102 | $\Omega$ | 2.21029 | +0.16847326 | | −0.72063452 | |
| $e$ | 0.1162413 | $i$ | 18.84076 | +0.16946585 | | −0.65095245 | |
| $P$ | 5.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 691 | 0.6+ | 1.2+ | 1998 03 04 | 691 | 0.4+ | 0.3− | 2006 09 27 | 691 | 0.2− | 0.1− |
| 1998 02 26 | 691 | 0.3− | 0.5− | 1998 03 29 | 704 | 0.6− | 1.3+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 1998 02 26 | 691 | 0.6− | 0.2+ | 1998 03 29 | 704 | 1.0− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 1998 02 28 | 691 | 0.0 | 0.4− | 1998 03 29 | 704 | (1.2+ | 2.7+) | 2006 10 02 | G96 | 0.2− | 0.3− |
| 1998 02 28 | 691 | 0.1− | 0.5− | 1998 03 29 | 704 | 1.1− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 1998 02 28 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 1998 03 04 | 691 | 0.5+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 1998 03 04 | 691 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.2+ | | | | |

**1998 FG$_{47}$ = 2006 TO$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.28609 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.30302949 | $\omega$ | 166.52212 | −0.88931154 | | −0.45687774 | |
| $a$ | 2.1952271 | $\Omega$ | 346.24091 | +0.41151728 | | −0.78075344 | |
| $e$ | 0.0892967 | $i$ | 4.74886 | +0.19944550 | | −0.42624735 | |
| $P$ | 3.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 11 | 941 | 0.4+ | 0.4− |
| 1993 10 12 | 691 | 0.4− | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 11 | 941 | 0.6+ | 0.8− |
| 1993 10 12 | 691 | 1.2− | 0.9+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 11 | 941 | 0.3+ | 0.6− |
| 1993 11 10 | 691 | 0.4+ | 0.7+ | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 11 | 291 | 0.2− | 0.1− |
| 1993 11 10 | 691 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 11 | 291 | 0.0 | 0.3− |
| 1993 11 10 | 691 | 0.0 | 1.0+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 291 | 0.1− | 0.2− |
| 1998 03 20 | 704 | 0.7+ | 0.5− | 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 13 | 291 | 0.1− | 0.0 |
| 1998 03 20 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 13 | 291 | 0.2− | 0.2− |
| 1998 03 20 | 704 | 0.6− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 13 | 291 | 0.1− | 0.2− |
| 1998 03 20 | 704 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 14 | 703 | 0.5+ | 0.2− |
| 1998 03 20 | 704 | (4.3− | 1.3−) | 2006 10 22 | 644 | 0.4+ | 0.1+ | 2006 11 14 | 703 | (0.6− | 1.8−) |
| 1998 03 22 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.8− |
| 1998 03 22 | 704 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.3− |
| 1998 03 22 | 704 | (2.8− | 2.1+) | 2006 10 27 | 703 | (0.9+ | 1.6+) | 2006 11 22 | 704 | 1.2+ | 0.4− |
| 1998 03 22 | 704 | 0.1+ | 1.4+ | 2006 10 27 | 703 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.6− |
| 1998 03 22 | 704 | (4.5− | 0.1+) | 2006 10 27 | 703 | 0.5+ | 0.2+ | 2006 11 22 | 704 | (2.0+ | 0.1+) |
| 1998 03 28 | 704 | 1.0− | 0.6− | 2006 10 27 | 703 | 0.3− | 1.1+ | 2006 11 22 | 704 | 0.7− | 0.1− |
| 1998 03 28 | 704 | (2.9− | 1.4−) | 2006 11 01 | G96 | 0.3+ | 0.7− | 2006 11 22 | 704 | 0.4+ | 0.1− |
| 1998 03 28 | 704 | 0.4− | 0.8− | 2006 11 01 | G96 | 0.2+ | 0.6− | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 1998 03 28 | 704 | (0.9+ | 3.0−) | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.5+ | 0.6− |
| 1998 03 29 | 704 | (3.1− | 0.9−) | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.1− | 0.7− |
| 1998 03 29 | 704 | 0.6+ | 0.1− | 2006 11 02 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 1998 03 29 | 704 | (0.5− | 2.1−) | 2006 11 02 | 691 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.8− | 1.0+ |
| 1998 03 29 | 704 | (0.5+ | 2.7−) | 2006 11 02 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.4− | 0.1+ |
| 2006 10 02 | G96 | 0.3− | 0.4− | 2006 11 10 | 291 | 0.2+ | 0.2− | 2006 11 23 | 703 | 0.1+ | 0.1− |
| 2006 10 02 | G96 | 0.3− | 0.4− | 2006 11 10 | 291 | 0.1+ | 0.3− | 2006 11 23 | 703 | 0.4− | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.5− | 2006 11 10 | 291 | 0.3+ | 0.3− | | | | |

**1998 FN$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.44858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38084865 | $\omega$ | 134.58268 | | −0.96588259 | −0.24321026 | |
| $a$ | 1.8849555 | $\Omega$ | 31.65613 | | +0.16215109 | −0.83586220 | |
| $e$ | 0.1517947 | $i$ | 9.76263 | | +0.20193525 | −0.49212107 | |
| $P$ | 2.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.7+ | 2.0− | 1999 10 09 | 704 | 0.6+ | 0.8+ | 2002 12 15 | 704 | 0.9+ | 0.5+ |
| 1998 03 24 | 704 | 0.7+ | 0.1+ | 1999 10 09 | 704 | 0.7+ | 1.5+ | 2002 12 15 | 704 | 0.8+ | 0.4+ |
| 1998 03 24 | 704 | 1.0+ | 0.1− | 1999 10 09 | 704 | 0.5+ | 0.3+ | 2002 12 15 | 704 | 0.9+ | 0.7+ |
| 1998 03 24 | 704 | 0.1− | 1.1+ | 1999 11 09 | 704 | 0.4− | 0.7− | 2002 12 28 | 704 | 0.2− | 0.3− |
| 1998 03 25 | 704 | 0.9+ | 1.9− | 1999 11 09 | 704 | 0.6− | 0.0 | 2002 12 28 | 704 | 0.3− | 0.7− |
| 1998 03 25 | 704 | 0.8+ | 1.0− | 1999 11 09 | 704 | 1.0− | 0.1+ | 2002 12 28 | 704 | 0.8− | 0.2− |
| 1998 03 25 | 704 | 0.2− | 0.1+ | 1999 11 09 | 704 | 0.9+ | 0.3− | 2003 01 14 | 704 | 0.2+ | 0.5+ |
| 1998 03 25 | 704 | 0.8− | 0.4− | 1999 12 05 | 691 | 0.1+ | 0.1+ | 2003 01 14 | 704 | 0.1+ | 0.0 |
| 1998 03 25 | 704 | (6.2− | 0.0 ) | 1999 12 05 | 691 | 0.0 | 0.5− | 2003 01 14 | 704 | 0.3+ | 0.3+ |
| 1998 04 19 | 704 | 1.0− | 0.3− | 1999 12 05 | 691 | 0.2− | 0.6− | 2003 01 14 | 704 | 0.1+ | 0.6− |
| 1998 04 19 | 704 | 0.4− | 0.7+ | 2002 12 06 | 704 | 0.9− | 0.0 | 2003 01 14 | 704 | 0.1− | 0.4+ |
| 1998 04 19 | 704 | 0.2+ | 0.5+ | 2002 12 06 | 704 | 0.5− | 0.0 | 2006 01 26 | 691 | 0.2+ | 0.7+ |
| 1998 04 19 | 704 | (4.4− | 1.0+) | 2002 12 06 | 704 | 1.1− | 0.3+ | 2006 01 26 | 691 | 0.7+ | 0.3+ |
| 1999 10 09 | 704 | 0.1+ | 0.4+ | 2002 12 15 | 704 | 0.2+ | 0.1− | 2006 01 26 | 691 | 0.0 | 0.4+ |
| 1999 10 09 | 704 | 0.6− | 0.8+ | 2002 12 15 | 704 | 0.6+ | 0.1+ | | | | |

**1998 HQ$_2$ = 2006 VH$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.24775 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18082178 | $\omega$ | 265.83242 | | +0.57477730 | +0.80995426 | |
| $a$ | 3.0971974 | $\Omega$ | 40.00029 | | −0.66020284 | +0.54320647 | |
| $e$ | 0.0306483 | $i$ | 10.45483 | | −0.48349071 | +0.22113532 | |
| $P$ | 5.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 691 | 1.1− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 1.2+ |
| 1998 04 20 | 691 | 0.9− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.0 |
| 1998 04 20 | 691 | 0.9− | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.0 |
| 1998 04 21 | 691 | 0.6+ | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.4+ |
| 1998 04 21 | 691 | 0.7+ | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.0 |
| 1998 04 21 | 691 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.3− | 0.6− | 2006 11 12 | G96 | 0.3− | 0.2− |
| 1998 04 29 | 691 | 0.0 | 0.5− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 1998 04 29 | 691 | 0.7+ | 0.1+ | 2006 11 02 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.6− |
| 1998 04 29 | 691 | 0.4+ | 0.3− | 2006 11 02 | 691 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.9− | 0.1+ |
| 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 02 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.4+ | 1.2+ |
| 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.9− |
| 2006 09 25 | G96 | 0.0 | 0.6− | 2006 11 08 | 644 | 0.4+ | 0.1− | 2006 11 17 | 703 | (0.7+ | 1.7+) |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 1.1+ | 1.0+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 17 | 703 | 1.4− | 0.1− |
| 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | (2.0+ | 1.2+) |

**1998 HC$_4$ = 2006 SZ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.56093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28602606 | $\omega$ | 207.47873 | | +0.97157086 | −0.23491075 | |
| $a$ | 2.2813871 | $\Omega$ | 166.01350 | | +0.23336158 | +0.92927069 | |
| $e$ | 0.1261168 | $i$ | 6.99758 | | +0.03990527 | +0.28508406 | |
| $P$ | 3.45 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 19 | 691 | 0.3− | 0.7+ | 2006 09 21 | 699 | 0.6+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1998 04 19 | 691 | 0.2− | 0.2+ | 2006 09 21 | 699 | 0.7+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1998 04 19 | 691 | 0.5− | 0.5+ | 2006 09 21 | 699 | (0.6− | 1.6+) | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1998 04 22 | 691 | 0.2+ | 0.2− | 2006 09 21 | 699 | 0.9− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 |
| 1998 04 22 | 691 | 0.7+ | 0.8+ | 2006 09 25 | 699 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 1998 04 22 | 691 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 1998 04 27 | 691 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 1998 04 27 | 691 | 0.5− | 0.6− | 2006 09 25 | 699 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 1998 04 27 | 691 | 0.5+ | 0.2− | 2006 09 29 | 699 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 1.1− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2005 04 02 | 691 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 1.0+ | 0.5− | 2006 10 22 | 291 | 0.3− | 0.3+ |
| 2005 04 02 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 10 22 | 291 | 0.3− | 0.3+ |
| 2005 04 02 | 691 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.8+ | 2006 10 22 | 291 | 0.3− | 0.5+ |
| 2005 04 14 | 691 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.8− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.4+ |
| 2005 04 14 | 691 | 0.6− | 0.1− | 2006 10 01 | 704 | 1.0+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.6− |
| 2006 07 21 | G96 | 0.4+ | 0.4− | 2006 10 01 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2006 07 21 | G96 | 0.5+ | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.3− | 0.8− |
| 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.9− | 0.2− |
| 2006 09 18 | 699 | 0.5+ | 1.3− | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 25 | 246 | 0.3− | 0.1+ |
| 2006 09 18 | 699 | 1.5+ | 1.3+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 25 | 246 | 0.1− | 0.7+ |
| 2006 09 18 | 699 | 0.1+ | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 25 | 246 | 0.5+ | 0.5+ |
| 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 25 | 246 | 0.7− | 0.2− |
| 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 10 25 | 246 | 1.4− | 0.8− |
| 2006 09 20 | 644 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.2+ | | | | |

**1998 HB$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.86513 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23883211 | $\omega$ | 93.58244 | | −0.67163474 | −0.65563761 | |
| $a$ | 2.5728091 | $\Omega$ | 45.86724 | | +0.32711225 | −0.68027160 | |
| $e$ | 0.2107069 | $i$ | 28.73282 | | +0.66475887 | −0.32767343 | |
| $P$ | 4.13 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 02 | 704 | 0.2− | 0.9− | 1998 04 24 | 704 | 0.4− | 1.0− | 2002 04 04 | 704 | 0.4+ | 1.3− |
| 1998 04 02 | 704 | 1.8+ | 0.5+ | 1998 04 24 | 704 | 0.0 | 1.0+ | 2002 04 09 | 644 | 0.3− | 0.2+ |
| 1998 04 02 | 704 | 0.4+ | 0.2+ | 1998 04 24 | 704 | 0.6+ | 0.7+ | 2002 04 09 | 644 | 0.5− | 0.2+ |
| 1998 04 23 | 704 | (2.5+ | 1.5−) | 2002 03 05 | 704 | 0.5+ | 0.2− | 2002 04 09 | 644 | 0.4− | 0.0 |
| 1998 04 23 | 704 | 0.6− | 0.3+ | 2002 03 05 | 704 | 0.2− | 0.8− | 2002 04 22 | 644 | 0.8− | 0.2+ |
| 1998 04 23 | 704 | 0.7+ | 0.3− | 2002 03 05 | 704 | 0.4+ | 0.8+ | 2002 04 22 | 644 | 0.2+ | 0.1+ |
| 1998 04 23 | 704 | 0.3− | 1.9− | 2002 03 05 | 704 | 0.0 | 0.1+ | 2002 04 22 | 644 | 0.1− | 0.3+ |
| 1998 04 23 | 704 | 1.4− | 1.1+ | 2002 04 04 | 704 | 0.4− | 0.3+ | | | | |
| 1998 04 24 | 704 | 0.0 | 0.8+ | 2002 04 04 | 704 | 0.7+ | 0.4− | | | | |

**1998 HT$_{41}$ = 2006 US$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.82123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29031949 | $\omega$ | 86.67647 | | −0.63286024 | +0.77376547 | |
| $a$ | 2.2588389 | $\Omega$ | 144.01331 | | −0.72786160 | −0.58228639 | |
| $e$ | 0.1312631 | $i$ | 2.71539 | | −0.26401782 | −0.24945852 | |
| $P$ | 3.39 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 691 | 0.4+ | 0.0 | 2002 08 16 | 291 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 1998 04 24 | 691 | 0.5+ | 0.4+ | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.2− | 0.5− |
| 1998 04 24 | 691 | 0.7+ | 0.0 | 2005 05 19 | G96 | 0.6− | 1.3− | 2006 10 18 | 691 | 0.4+ | 0.2− |
| 1998 05 01 | 691 | 0.8− | 0.1− | 2005 05 19 | G96 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.4+ | 0.1− |
| 1998 05 01 | 691 | 0.9− | 0.7− | 2005 05 19 | G96 | 0.5− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.5− |
| 1998 05 01 | 691 | 1.6− | 0.2− | 2005 06 08 | 691 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.5− |
| 1998 05 03 | 691 | 0.5+ | 0.3+ | 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.3+ |
| 1998 05 03 | 691 | 0.1+ | 0.2− | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.3− | 0.3− |
| 1998 05 03 | 691 | 0.7+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2002 08 16 | 291 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.8+ | 0.6− | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2002 08 16 | 291 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.5− |

**1998 HH$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 213.51764 | | (2000.0) | | | |
| $n$ | 0.17442543 | $\omega$ | 132.30653 | | −0.92759492 | −0.34341419 |
| $a$ | 3.1724601 | $\Omega$ | 28.55788 | | +0.18133068 | −0.75809431 |
| $e$ | 0.1523730 | $i$ | 17.91959 | | +0.32662952 | −0.55440032 |
| $P$ | 5.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.1− | 0.7+ | 2001 11 24 | 704 | 0.5+ | 0.2− | 2003 02 11 | 704 | (0.3− | 1.8+) | |
| 1998 03 29 | 704 | 0.5+ | 1.3+ | 2001 11 24 | 704 | 1.2+ | 0.3+ | 2003 03 09 | 644 | 0.1+ | 0.6+ | |
| 1998 03 29 | 704 | (0.6− | 2.4−) | 2003 01 13 | 704 | 0.5+ | 1.0+ | 2003 03 09 | 644 | 0.3+ | 0.4+ | |
| 1998 03 29 | 704 | 0.3+ | 0.1− | 2003 01 13 | 704 | 0.5+ | 0.9+ | 2003 03 09 | 644 | 0.2+ | 0.5+ | |
| 1998 03 29 | 704 | (4.9− | 1.0−) | 2003 01 13 | 704 | 0.6+ | 1.0+ | 2003 04 26 | 645 | 0.1− | 0.1− | |
| 1998 04 21 | 704 | 0.2+ | 0.1+ | 2003 01 13 | 704 | 0.0 | 0.4+ | 2003 04 26 | 645 | 0.1− | 0.0 | |
| 1998 04 21 | 704 | 1.4− | 0.3− | 2003 01 13 | 704 | 0.4+ | 0.8+ | 2006 11 23 | G96 | 0.5− | 0.2+ | |
| 1998 04 21 | 704 | 0.9+ | 0.6− | 2003 01 25 | 704 | 0.0 | 0.8− | 2006 11 23 | G96 | 0.4− | 0.2+ | |
| 1998 04 21 | 704 | (0.9+ | 3.4−) | 2003 01 25 | 704 | 0.5+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2− | |
| 1998 04 21 | 704 | (3.9− | 0.1−) | 2003 01 25 | 704 | 0.9+ | 0.3− | 2006 11 23 | G96 | 0.1− | 0.4− | |
| 1998 04 22 | 704 | 1.5+ | 0.5− | 2003 01 25 | 704 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.5+ | 0.7+ | |
| 1998 04 22 | 704 | 0.4+ | 1.1+ | 2003 01 27 | 645 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.4− | 0.6+ | |
| 1998 04 22 | 704 | (3.4+ | 0.5+) | 2003 01 27 | 645 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1+ | |
| 1998 04 22 | 704 | 0.0 | 0.0 | 2003 02 11 | 704 | 0.2+ | 1.0+ | 2006 11 23 | G96 | 0.1− | 0.3+ | |
| 1998 04 22 | 704 | (3.5− | 1.4−) | 2003 02 11 | 704 | 0.3+ | 1.3+ | | | | | |
| 2001 11 24 | 704 | 1.4− | 0.3− | 2003 02 11 | 704 | (1.0− | 1.7+) | | | | | |

**1998 HV$_{71}$ = 2006 QU$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 68.17516 | | (2000.0) | | | |
| $n$ | 0.26672523 | $\omega$ | 184.35582 | | −0.24337768 | +0.96491739 |
| $a$ | 2.3901582 | $\Omega$ | 71.58120 | | −0.88672904 | −0.18019932 |
| $e$ | 0.1909676 | $i$ | 5.95894 | | −0.39303807 | −0.19095193 |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.7+ | 0.7+ | 1999 09 16 | 691 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.1+ | 0.9+ | |
| 1998 04 21 | 704 | 1.0+ | 1.5− | 1999 09 16 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.1− | 0.1− | |
| 1998 04 21 | 704 | 0.9− | 0.2+ | 1999 09 16 | 691 | 0.3− | 0.9+ | 2006 08 30 | 699 | 0.6− | 0.9+ | |
| 1998 04 21 | 704 | (2.9− | 2.7+) | 2003 11 18 | 691 | 0.2− | 0.0 | 2006 08 30 | 699 | 0.6+ | 0.3+ | |
| 1998 04 21 | 704 | 0.6− | 0.3+ | 2003 11 18 | 691 | 0.2− | 0.1− | 2006 09 20 | 703 | 0.4+ | 0.4− | |
| 1998 04 22 | 704 | 0.9− | 0.2− | 2003 11 18 | 691 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.7+ | 0.8− | |
| 1998 04 22 | 704 | 1.6− | 0.5− | 2005 03 09 | 703 | 0.2+ | 1.2+ | 2006 09 20 | 703 | 1.3− | 0.1− | |
| 1998 04 22 | 704 | 0.2+ | 0.1+ | 2005 03 09 | 703 | 0.3+ | 0.0 | 2006 09 20 | 703 | 1.0− | 0.1+ | |
| 1998 04 22 | 704 | 0.5+ | 1.4− | 2005 03 09 | 703 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.8− | |
| 1998 04 22 | 704 | 0.8− | 0.1+ | 2005 03 09 | 703 | 1.3+ | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.1+ | |
| 1998 05 01 | 691 | 0.3+ | 0.8+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 1.4+ | 0.5− | |
| 1998 05 01 | 691 | 0.1+ | 0.5+ | 2006 08 16 | 644 | 0.7+ | 0.3− | 2006 09 26 | 703 | 1.6− | 0.8+ | |
| 1998 05 01 | 691 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.3+ | 0.1+ | | | | | |

**1998 HK$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 117.92946 | | (2000.0) | | | |
| $n$ | 0.26280712 | $\omega$ | 109.80264 | | −0.98720097 | −0.12266131 |
| $a$ | 2.4138557 | $\Omega$ | 63.26575 | | +0.06547765 | −0.89448338 |
| $e$ | 0.1482297 | $i$ | 6.55306 | | +0.14541982 | −0.42994614 |
| $P$ | 3.75 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | (7.3− | 0.8−) | 1998 05 01 | 704 | 1.0− | 0.4+ | 2004 12 21 | 703 | 0.3− | 0.6+ | |
| 1992 10 01 | 691 | 0.8− | 0.6+ | 2000 11 29 | 704 | 0.1− | 0.2− | 2004 12 21 | 703 | 0.6− | 0.5+ | |
| 1992 10 01 | 691 | 0.0 | 0.3− | 2000 11 29 | 704 | 0.4− | 0.4− | 2004 12 21 | 703 | 0.1+ | 0.1+ | |
| 1998 04 21 | 704 | 0.5+ | 1.3+ | 2000 11 29 | 704 | 0.1− | 0.5− | 2004 12 21 | 703 | 1.2− | 0.9+ | |
| 1998 04 21 | 704 | 0.9− | 0.1+ | 2000 11 29 | 704 | 0.6− | 0.4+ | 2005 01 07 | 704 | 0.7− | 0.6+ | |
| 1998 04 21 | 704 | 0.1− | 0.6− | 2000 11 29 | 704 | 0.1− | 0.7− | 2005 01 07 | 704 | 0.2− | 0.2+ | |
| 1998 04 22 | 704 | 1.7+ | 1.1− | 2000 12 21 | 691 | 0.3+ | 0.0 | 2005 01 07 | 704 | 0.5− | 0.3+ | |
| 1998 04 22 | 704 | 1.1+ | 1.5+ | 2000 12 21 | 691 | 0.3+ | 0.2− | 2005 01 07 | 704 | 0.3+ | 0.6− | |
| 1998 04 22 | 704 | 1.3+ | 0.6+ | 2000 12 21 | 691 | 0.4+ | 0.1− | 2005 01 16 | 704 | 0.6− | 1.0+ | |
| 1998 04 22 | 704 | (2.0+ | 0.7−) | 2000 12 30 | 704 | 0.0 | 0.1+ | 2005 01 16 | 704 | 0.5− | 0.3+ | |
| 1998 04 22 | 704 | 1.7− | 1.7− | 2000 12 30 | 704 | 0.5+ | 0.1+ | 2005 01 16 | 704 | 0.1+ | 1.2+ | |
| 1998 05 01 | 704 | 0.7+ | 1.0+ | 2000 12 30 | 704 | 1.7+ | 1.4+ | 2005 01 16 | 704 | 0.2− | 0.9+ | |
| 1998 05 01 | 704 | 1.2+ | 1.7+ | 2003 09 22 | 691 | 0.2− | 0.4+ | 2005 02 03 | 704 | 1.4+ | 0.3+ | |
| 1998 05 01 | 704 | 0.5+ | 1.3+ | 2003 09 22 | 691 | 0.1− | 0.8+ | 2005 02 03 | 704 | 1.4+ | 0.4− | |
| 1998 05 01 | 704 | 0.4− | 0.9+ | 2003 09 22 | 691 | 0.3− | 0.3+ | 2005 02 03 | 704 | 0.2− | 0.1+ | |

**1998 HO$_{86}$ = 2005 UC$_{468}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.89731 | | (2000.0) | | | |
| $n$ | 0.18396424 | $\omega$ | 249.09818 | | +0.13843236 | +0.98538747 |
| $a$ | 3.0618256 | $\Omega$ | 29.40697 | | −0.81687956 | +0.17026083 |
| $e$ | 0.2923758 | $i$ | 11.66028 | | −0.55995023 | −0.00477378 |
| $P$ | 5.36 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.3− | 0.7− | 1998 05 01 | 566 | 0.3− | 0.7− | 2004 09 03 | 699 | 0.5+ | 0.3− | |
| 1998 04 21 | 704 | 1.5+ | 0.1− | 1998 05 01 | 566 | 0.6− | 0.5− | 2004 09 03 | 699 | 0.2− | 0.3+ | |
| 1998 04 21 | 704 | 0.7+ | 0.7+ | 1998 05 01 | 566 | 0.5− | 0.3− | 2004 09 03 | 699 | 1.9− | 0.2+ | |
| 1998 04 21 | 704 | 0.8+ | 0.0 | 2002 12 11 | 645 | 0.1− | 0.0 | 2004 09 03 | 699 | 0.5+ | 0.1− | |
| 1998 04 21 | 704 | 0.9− | 0.5− | 2002 12 11 | 645 | 0.0 | 0.0 | 2004 09 03 | 699 | 0.9− | 0.1− | |
| 1998 04 22 | 704 | 0.1+ | 1.3+ | 2003 03 23 | 645 | 0.0 | 0.0 | 2004 09 03 | E12 | 0.2− | 0.8+ | |
| 1998 04 22 | 704 | 1.1− | 0.6+ | 2003 03 23 | 645 | 0.1+ | 0.0 | 2004 09 03 | E12 | 0.1+ | 0.1− | |
| 1998 04 22 | 704 | 0.2− | 0.6− | 2003 03 25 | 644 | 0.3+ | 0.5+ | 2004 09 03 | E12 | 0.8+ | 0.2− | |
| 1998 04 22 | 704 | 0.9+ | 0.7+ | 2003 03 25 | 644 | 0.4+ | 0.5+ | 2004 09 03 | E12 | 1.2+ | 1.6+ | |
| 1998 04 22 | 704 | 0.6− | 0.1− | 2003 03 25 | 644 | 0.2+ | 0.5+ | 2005 10 30 | 691 | 0.3+ | 0.2+ | |
| 1998 05 01 | 704 | 0.6+ | 0.5+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2005 10 30 | 691 | 0.1− | 0.7+ | |
| 1998 05 01 | 704 | 1.5+ | 1.5+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2005 10 30 | 691 | 0.1− | 0.4+ | |
| 1998 05 01 | 704 | 1.0+ | 0.5+ | 2004 09 03 | 699 | 0.4+ | 0.9+ | 2005 11 03 | 691 | 0.1− | 0.2+ | |
| 1998 05 01 | 704 | 0.7+ | 1.5+ | 2004 09 03 | 699 | 2.0− | 0.7+ | 2005 11 03 | 691 | 0.3− | 0.1+ | |
| 1998 05 01 | 704 | (2.9+ | 0.7+) | 2004 09 03 | 699 | 0.2− | 0.2+ | 2005 11 03 | 691 | 0.3− | 0.0 | |

**1998 HC$_{111}$ = 2006 QY$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 97.49498 | | (2000.0) | | | |
| $n$ | 0.26940625 | $\omega$ | 145.61188 | | −0.70287462 | +0.70226615 |
| $a$ | 2.3742745 | $\Omega$ | 79.43234 | | −0.67573487 | −0.60957160 |
| $e$ | 0.1564030 | $i$ | 6.60605 | | −0.22214782 | −0.36775633 |
| $P$ | 3.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.7+ | 0.6− | 1998 04 24 | 704 | 1.4− | 0.7+ | 2005 03 09 | 703 | 0.6− | 0.1+ | |
| 1998 04 21 | 704 | 0.5− | 0.5+ | 1998 04 24 | 704 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.2− | |
| 1998 04 21 | 704 | 1.0+ | 1.1− | 2005 02 01 | 703 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.0 | |
| 1998 04 21 | 704 | 0.1− | 1.0− | 2005 02 01 | 703 | 0.2+ | 0.9+ | 2006 08 17 | 644 | 0.1− | 0.2+ | |
| 1998 04 21 | 704 | 0.2+ | 1.2− | 2005 02 01 | 703 | 0.7+ | 0.4+ | 2006 08 24 | 644 | 0.3+ | 0.3+ | |
| 1998 04 23 | 704 | 0.9+ | 0.3+ | 2005 02 01 | 703 | 0.0 | 0.7− | 2006 08 24 | 644 | 0.2+ | 0.4+ | |
| 1998 04 23 | 704 | 0.1− | 0.4+ | 2005 03 01 | 703 | 0.0 | 0.5− | 2006 08 24 | 644 | 0.4+ | 0.4+ | |
| 1998 04 23 | 704 | 0.6+ | 1.1− | 2005 03 01 | 703 | 0.5− | 0.8− | 2006 09 26 | 703 | 0.0 | 1.5− | |
| 1998 04 23 | 704 | 0.5+ | 0.5+ | 2005 03 01 | 703 | 0.2− | 0.3+ | 2006 09 26 | 703 | 1.8− | 0.2+ | |
| 1998 04 23 | 704 | 0.6+ | 0.1− | 2005 03 01 | 703 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.5− | |
| 1998 04 24 | 704 | 0.5− | 0.6+ | 2005 03 09 | 703 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.7+ | 0.6+ | |
| 1998 04 24 | 704 | 0.8− | 1.1+ | 2005 03 09 | 703 | 0.3− | 0.1− | | | | | |
| 1998 04 24 | 704 | 1.3− | 1.0+ | 2005 03 09 | 703 | 0.4+ | 0.5+ | | | | | |

**1998 HY$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 277.46071 | | (2000.0) | | | |
| $n$ | 0.24085363 | $\omega$ | 234.94031 | | +0.90336802 | +0.37190716 |
| $a$ | 2.5583929 | $\Omega$ | 102.38591 | | −0.28637729 | +0.89380066 |
| $e$ | 0.0813488 | $i$ | 12.63018 | | −0.31924013 | +0.25061015 |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 09 | 691 | 0.1− | 0.2+ | 1998 05 23 | 691 | 0.8− | 0.0 | 2005 01 07 | 704 | 0.0 | 0.5− |
| 1994 06 09 | 691 | 0.3+ | 0.3− | 2002 05 06 | 644 | 0.2+ | 0.2− | 2005 01 07 | 704 | 0.1− | 0.1+ |
| 1998 04 18 | 691 | 0.4+ | 0.5+ | 2002 05 06 | 644 | 0.3+ | 0.3− | 2005 01 18 | 691 | 0.2− | 0.2+ |
| 1998 04 18 | 691 | 0.8+ | 0.5+ | 2002 05 06 | 644 | 0.1− | 0.5− | 2005 01 18 | 691 | 0.0 | 0.1+ |
| 1998 04 18 | 691 | 0.6+ | 0.8+ | 2004 12 18 | G96 | 0.4− | 0.5− | 2005 01 18 | 691 | 0.2+ | 0.1+ |
| 1998 05 03 | 691 | 0.1+ | 0.1− | 2004 12 18 | G96 | 0.4− | 0.6− | 2005 02 04 | G96 | 0.2+ | 0.2− |
| 1998 05 03 | 691 | 0.4+ | 0.2− | 2004 12 18 | G96 | 0.1+ | 0.9− | 2005 02 04 | G96 | 0.2− | 0.1− |
| 1998 05 03 | 691 | 0.4− | 0.5− | 2004 12 18 | G96 | 0.4+ | 0.2− | 2005 02 04 | G96 | 0.2− | 0.2+ |
| 1998 05 23 | 691 | 0.6− | 0.5− | 2005 01 07 | 704 | 0.3+ | 0.2− | 2005 02 04 | G96 | 0.4− | 0.4+ |
| 1998 05 23 | 691 | 0.9− | 0.3− | 2005 01 07 | 704 | 1.1+ | 0.3− | | | | |

**1998 JZ$_3$ = 2006 VP$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.34717 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28716874 | $\omega$ | 184.02297 | | −0.37656343 | +0.84379980 | |
| $a$ | 2.2753311 | $\Omega$ | 64.22530 | | −0.83765807 | −0.13386582 | |
| $e$ | 0.1951148 | $i$ | 25.12581 | | −0.39563738 | −0.51969398 | |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 07 | 910 | 0.6+ | 0.3− | 1998 05 24 | 704 | (0.4− | 3.2+) | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 1998 05 07 | 910 | 0.8+ | 0.3− | 1998 05 24 | 704 | 0.9+ | 1.3+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 1998 05 07 | 910 | 0.6+ | 0.3− | 1998 06 03 | 704 | 0.9− | 0.9− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 1998 05 08 | 910 | 0.3+ | 0.2− | 1998 06 03 | 704 | 0.3− | 1.3+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 1998 05 08 | 910 | 0.2+ | 0.2− | 1998 06 03 | 704 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 1998 05 08 | 910 | 0.2+ | 0.1− | 1998 06 03 | 704 | 0.1− | 1.1− | 2006 11 25 | G96 | 0.0 | 0.6− |
| 1998 05 22 | 704 | 0.9+ | 0.5+ | 2006 11 12 | G96 | 0.1+ | 0.5− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 1998 05 22 | 704 | 0.3+ | 0.4− | 2006 11 12 | G96 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 1998 05 22 | 704 | 0.6− | 0.9+ | 2006 11 12 | G96 | 0.1+ | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.6− |
| 1998 05 22 | 704 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 1998 05 22 | 704 | 0.7− | 0.7− | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 1998 05 24 | 704 | 1.0− | 1.1+ | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 1998 05 24 | 704 | 1.3− | 0.3− | 2006 11 15 | 691 | 0.5− | 0.0 | | | | |
| 1998 05 24 | 704 | 0.8+ | 1.1+ | 2006 11 19 | 691 | 0.1− | 0.3+ | | | | |

**1998 KT$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.41050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26543910 | $\omega$ | 160.30587 | | −0.93116349 | +0.33702750 | |
| $a$ | 2.3978727 | $\Omega$ | 40.26021 | | −0.35668118 | −0.76295474 | |
| $e$ | 0.2162088 | $i$ | 12.42893 | | −0.07558500 | −0.55164530 | |
| $P$ | 3.71 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.6+ | 0.3− | 2004 12 11 | 703 | 0.1− | 0.7− | 2005 03 08 | 703 | 0.4− | 0.2− |
| 1998 05 01 | 704 | 2.3+ | 0.1− | 2005 01 01 | 703 | 0.6− | 0.5− | 2005 03 08 | 703 | 0.4− | 0.4− |
| 1998 05 01 | 704 | 0.5− | 0.4− | 2005 01 01 | 703 | 0.3− | 0.3− | 2005 03 08 | 704 | 0.1+ | 0.2+ |
| 1998 05 01 | 704 | 1.4+ | 2.5+ | 2005 01 01 | 703 | 0.7− | 0.5− | 2005 03 08 | 703 | 0.0 | 0.3− |
| 1998 05 22 | 704 | 1.3+ | 0.3− | 2005 01 01 | 703 | 0.4− | 0.1− | 2005 03 08 | 703 | 0.3− | 0.1+ |
| 1998 05 22 | 704 | 1.9− | 1.8+ | 2005 01 15 | 699 | 0.0 | 0.2− | 2005 03 08 | 704 | 0.0 | 1.0+ |
| 1998 05 22 | 704 | 1.4+ | 0.7− | 2005 01 15 | 699 | 0.2− | 0.2− | 2005 03 08 | 704 | 0.3− | 0.9+ |
| 1998 05 22 | 704 | 0.2+ | 0.1+ | 2005 01 15 | 699 | 0.1− | 0.4− | 2005 03 08 | 704 | 0.2+ | 0.5+ |
| 1998 05 22 | 704 | 0.6+ | 0.2+ | 2005 01 15 | 699 | 0.0 | 0.3− | 2005 03 08 | 704 | 0.3− | 0.9+ |
| 1998 05 22 | 566 | 0.3− | 0.1− | 2005 01 15 | 703 | 0.7− | 0.7− | 2005 03 31 | 703 | 0.1− | 0.3− |
| 1998 05 22 | 566 | 0.5− | 0.2− | 2005 01 15 | 703 | 0.3− | 0.5− | 2005 03 31 | 703 | 0.2− | 0.5− |
| 1998 05 22 | 566 | 0.9− | 0.1+ | 2005 01 15 | 703 | 0.4− | 0.4− | 2005 03 31 | 703 | 1.0− | 1.0− |
| 1998 05 24 | 704 | 0.3+ | 0.7+ | 2005 01 15 | 703 | 0.1− | 0.6− | 2005 03 31 | 703 | 1.2− | 0.1+ |
| 1998 05 24 | 704 | 0.2+ | 0.4+ | 2005 01 15 | 704 | 1.3+ | 0.7+ | 2005 04 14 | 704 | 0.1− | 0.2+ |
| 1998 05 24 | 704 | 1.5− | 0.4− | 2005 01 15 | 704 | 0.8+ | 0.2+ | 2005 04 14 | 704 | 0.4− | 0.4− |
| 1998 05 24 | 704 | 0.3− | 0.7+ | 2005 01 15 | 704 | 0.5+ | 0.5+ | 2005 04 14 | 704 | 0.2+ | 0.8− |
| 1998 05 24 | 704 | 0.0 | 0.8+ | 2005 01 15 | 704 | 0.7+ | 0.4+ | 2005 04 14 | 704 | 0.1+ | 0.2− |
| 2003 09 28 | 704 | 0.5− | 1.0+ | 2005 01 15 | 704 | 0.8+ | 0.1+ | 2005 04 14 | 704 | 0.4+ | 0.1+ |
| 2003 09 28 | 704 | 0.4− | 0.7+ | 2005 01 31 | 704 | 0.3+ | 0.5+ | 2005 05 01 | 703 | 0.5− | 0.1− |
| 2003 09 28 | 704 | 0.2− | 2.2+ | 2005 01 31 | 704 | 0.4+ | 0.9+ | 2005 05 01 | 703 | 0.0 | 0.7− |
| 2003 10 24 | 704 | 0.0 | 0.1− | 2005 01 31 | 704 | 0.4+ | 0.8+ | 2005 05 01 | 703 | 0.5− | 0.2− |
| 2003 10 24 | 704 | 0.1− | 0.3+ | 2005 01 31 | 704 | 0.5+ | 0.4+ | 2005 05 01 | 703 | 0.3− | 0.5+ |
| 2003 10 24 | 704 | 0.8− | 0.5+ | 2005 02 14 | 704 | 0.3− | 0.6+ | 2005 05 09 | 704 | 0.5+ | 0.9− |
| 2003 10 24 | 704 | 0.5+ | 0.8+ | 2005 02 14 | 704 | 0.6− | 1.3+ | 2005 05 09 | 704 | 0.7+ | 0.2− |
| 2003 10 24 | 704 | 0.3− | 0.7+ | 2005 02 14 | 704 | 0.3+ | 1.5+ | 2005 05 09 | 704 | 0.0 | 0.4− |
| 2004 11 22 | 704 | 0.2− | 0.4− | 2005 02 14 | 704 | 1.0− | 1.4+ | 2005 05 09 | 704 | 1.4+ | 0.2+ |
| 2004 11 22 | 704 | 0.0 | 0.6− | 2005 02 14 | 704 | 0.1− | 0.8+ | 2005 05 09 | 704 | 1.8+ | 1.9− |
| 2004 11 22 | 704 | 0.8+ | 0.5+ | 2005 03 01 | 704 | 0.1− | 0.1+ | 2006 08 16 | E12 | 0.6− | 1.0+ |
| 2004 11 22 | 704 | 0.2− | 1.5+ | 2005 03 01 | 704 | 0.0 | 0.1− | 2006 08 16 | E12 | 0.5− | 0.1− |
| 2004 12 11 | 703 | 0.5− | 0.3− | 2005 03 01 | 704 | 0.3− | 0.1− | 2006 08 16 | E12 | 0.2− | 0.1− |
| 2004 12 11 | 703 | 1.4+ | 0.6− | 2005 03 01 | 704 | 0.5+ | 0.2+ | 2006 08 16 | E12 | 0.1− | 0.3− |
| 2004 12 11 | 703 | 0.2+ | 0.3− | 2005 03 01 | 704 | 0.3− | 0.2+ | | | | |

**1998 LW$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.89741 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25519374 | $\omega$ | 107.30483 | | −0.96285734 | −0.19791431 | |
| $a$ | 2.4616296 | $\Omega$ | 61.61702 | | +0.08783231 | −0.87282535 | |
| $e$ | 0.1443970 | $i$ | 12.05021 | | +0.25532573 | −0.44610069 | |
| $P$ | 3.86 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 704 | 1.5+ | 2.1− | 2000 12 20 | 704 | 0.8+ | 0.3− | 2005 01 17 | 704 | 0.0 | 0.1− |
| 1998 05 22 | 704 | 0.5+ | 0.5− | 2003 09 19 | 699 | 0.2+ | 0.6− | 2005 01 17 | 704 | 1.0+ | 0.8+ |
| 1998 05 22 | 704 | 0.2+ | 1.4− | 2003 09 19 | 699 | 0.4− | 0.0 | 2005 01 17 | 704 | 0.8+ | 0.8+ |
| 1998 05 22 | 704 | 1.2+ | 0.7− | 2003 09 19 | 699 | 0.0 | 0.1− | 2005 01 17 | 704 | 0.3− | 0.0 |
| 1998 05 22 | 704 | 2.4− | 0.9− | 2003 09 19 | 699 | 0.5+ | 0.3− | 2005 01 31 | 704 | 0.7+ | 0.5+ |
| 1998 06 01 | 809 | 0.3− | 1.9+ | 2004 12 15 | 704 | 0.3− | 0.1+ | 2005 01 31 | 704 | 0.3+ | 0.4+ |
| 1998 06 01 | 809 | 0.7− | 1.7+ | 2004 12 15 | 704 | 0.1− | 1.3− | 2005 01 31 | 704 | 0.7+ | 0.1− |
| 1998 06 01 | 809 | (0.6+ | 3.5+) | 2004 12 15 | 704 | 0.0 | 1.5+ | 2005 01 31 | 704 | 0.1+ | 0.1− |
| 1998 06 02 | 809 | 0.0 | 1.5+ | 2004 12 15 | 704 | 0.6− | 0.4+ | 2005 01 31 | 704 | 0.0 | 0.2− |
| 1998 06 02 | 809 | 0.3− | 0.2− | 2004 12 15 | 704 | 0.1− | 1.1− | 2005 03 15 | 703 | 1.4− | 0.7− |
| 1998 06 02 | 809 | (3.4+ | 0.6−) | 2005 01 06 | 703 | 0.2+ | 0.4− | 2005 03 15 | 703 | 0.8− | 0.7− |
| 2000 12 20 | 704 | 0.1− | 0.0 | 2005 01 06 | 703 | 0.2+ | 0.3− | 2005 03 15 | 703 | 1.1− | 0.1− |
| 2000 12 20 | 704 | 0.2− | 0.3+ | 2005 01 06 | 703 | 0.6+ | 0.4− | 2005 03 15 | 703 | 1.1− | 0.0 |
| 2000 12 20 | 704 | 0.7− | 0.2+ | 2005 01 06 | 703 | 0.1+ | 0.3− | | | | |

**1998 QV$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.74894 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22469288 | $\omega$ | 30.09902 | | +0.99340298 | +0.10273981 | |
| $a$ | 2.6796404 | $\Omega$ | 323.89407 | | −0.11464946 | +0.88029359 | |
| $e$ | 0.2786274 | $i$ | 4.95926 | | −0.00245450 | +0.46317139 | |
| $P$ | 4.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.4− | 0.1+ | 2003 12 04 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 704 | 0.5− | 1.3− |
| 1998 08 17 | 704 | 0.8− | 0.3+ | 2003 12 04 | 704 | 0.1+ | 0.2− | 2004 01 22 | 704 | 0.6− | 1.0+ |
| 1998 08 17 | 704 | 0.4− | 0.9+ | 2003 12 04 | 704 | 0.2+ | 0.2− | 2004 01 22 | 704 | 1.8− | 0.4+ |
| 1998 08 17 | 704 | 0.7− | 1.4+ | 2003 12 04 | 704 | 0.0 | 0.4+ | 2004 01 22 | 704 | 0.9− | 0.3+ |
| 1998 08 17 | 704 | 0.9− | 1.4+ | 2003 12 18 | 704 | 0.9+ | 1.2− | 2004 01 22 | 704 | 0.1− | 1.1+ |
| 1998 08 23 | 704 | 0.9+ | 0.1+ | 2003 12 18 | 704 | 0.7+ | 1.3− | 2005 03 11 | G96 | 0.2− | 0.1− |
| 1998 08 23 | 704 | 0.8+ | 0.5− | 2003 12 18 | 704 | (0.7+ | 2.4−) | 2005 03 11 | G96 | 0.1− | 0.3− |
| 1998 08 23 | 704 | 1.1− | 0.3− | 2003 12 18 | 704 | 0.6+ | 1.4− | 2005 03 11 | G96 | 0.2− | 0.3− |
| 1998 08 23 | 704 | (0.6+ | 2.7+) | 2003 12 18 | 704 | 0.8+ | 1.5− | 2005 03 11 | G96 | 0.3+ | 0.4− |
| 1998 08 23 | 704 | 0.3+ | 0.4− | 2003 12 23 | 704 | (2.0− | 2.1+) | 2005 04 02 | 691 | 0.1− | 0.2+ |
| 1998 08 27 | 699 | 0.7+ | 0.6− | 2003 12 23 | 704 | 0.5− | 0.9+ | 2005 04 02 | 691 | 0.2+ | 0.3+ |
| 1998 08 27 | 699 | 0.1+ | 0.7− | 2003 12 23 | 704 | 0.2− | 1.6+ | 2005 04 02 | 691 | 0.1+ | 0.1− |
| 1998 08 27 | 699 | 1.0+ | 0.5− | 2003 12 23 | 704 | 0.6+ | 1.0+ | 2005 04 12 | G96 | 0.3− | 0.5+ |
| 2003 11 24 | 704 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.1− | 1.3+ | 2005 04 12 | G96 | 0.2+ | 0.3+ |
| 2003 11 24 | 704 | 1.0+ | 0.1+ | 2003 12 28 | 704 | 1.4− | 0.3+ | 2005 04 12 | G96 | 0.3+ | 0.1− |
| 2003 11 24 | 704 | 0.7+ | 0.3+ | 2003 12 28 | 704 | (2.1− | 0.7−) | 2005 04 12 | G96 | 0.1− | 0.1+ |
| 2003 11 24 | 704 | 0.7+ | 0.0 | 2003 12 28 | 704 | 1.6− | 0.7− | | | | |
| 2003 11 24 | 704 | 1.2+ | 0.5+ | 2003 12 28 | 704 | 1.1− | 0.6− | | | | |

### 1998 QV$_{53}$ = 2006 WN$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 77.51491 | | (2000.0) | | | |
| $n$ | 0.26751415 | $\omega$ | 181.16231 | | +0.78319005 | +0.62027824 |
| $a$ | 2.3854567 | $\Omega$ | 140.39402 | | −0.56992573 | +0.74392790 |
| $e$ | 0.1412233 | $i$ | 3.88768 | | −0.24859206 | +0.24864873 |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 426 | 0.2− | 0.5− | 1998 09 15 | 426 | 1.0+ | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.5− |
| 1998 08 26 | 426 | 0.3+ | 0.0 | 1998 09 15 | 426 | 0.4− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 1998 08 26 | 426 | 0.3− | 0.5− | 1998 09 15 | 426 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 1998 08 27 | 426 | 0.1+ | 0.3− | 2002 10 31 | 608 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 1998 08 27 | 426 | 0.4+ | 0.5− | 2002 10 31 | 608 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 1998 08 27 | 426 | 0.4− | 0.4+ | 2002 10 31 | 608 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 1998 09 12 | 426 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 1998 09 12 | 426 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.5− | 0.4− | | | | |
| 1998 09 12 | 426 | 0.9− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.3− | | | | |

### 1998 QV$_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.69201 | | (2000.0) | | | |
| $n$ | 0.21021226 | $\omega$ | 1.71520 | | +0.99488579 | +0.10016718 |
| $a$ | 2.8013284 | $\Omega$ | 352.49869 | | −0.09381595 | +0.86872576 |
| $e$ | 0.0218036 | $i$ | 5.71142 | | −0.03742756 | +0.48505885 |
| $P$ | 4.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 691 | 0.1− | 0.5− | 1998 09 28 | 691 | 0.6− | 0.8+ | 2003 10 25 | 704 | 0.7+ | 0.1− |
| 1998 08 26 | 691 | 0.1+ | 0.3− | 1998 09 28 | 691 | 0.7− | 0.8+ | 2003 11 02 | 691 | 0.2+ | 0.0 |
| 1998 08 26 | 691 | 0.3+ | 0.2+ | 2003 09 30 | 691 | 0.1+ | 0.0 | 2003 11 02 | 691 | 0.2+ | 0.4− |
| 1998 08 31 | 691 | 1.0+ | 0.4− | 2003 09 30 | 691 | 0.3− | 0.3− | 2003 11 02 | 691 | 0.6− | 0.4− |
| 1998 08 31 | 691 | 0.9+ | 0.2+ | 2003 09 30 | 691 | 0.4+ | 0.0 | 2005 01 18 | 691 | 0.1+ | 0.2+ |
| 1998 08 31 | 691 | 1.2+ | 0.3− | 2003 10 17 | 691 | 0.1+ | 0.2− | 2005 01 18 | 691 | 0.1− | 0.5+ |
| 1998 09 16 | 691 | 0.7− | 0.2+ | 2003 10 17 | 691 | 0.3+ | 0.5− | 2005 01 18 | 691 | 1.0+ | 0.4− |
| 1998 09 16 | 691 | 0.6− | 0.3+ | 2003 10 17 | 691 | 0.0 | 0.2− | 2005 01 19 | 291 | 0.7− | 0.1+ |
| 1998 09 16 | 691 | 0.7− | 0.2+ | 2003 10 25 | 704 | 0.4+ | 1.2+ | 2005 01 19 | 291 | 0.1+ | 0.3+ |
| 1998 09 28 | 691 | 0.8− | 0.4+ | 2003 10 25 | 704 | 0.2− | 1.2+ | 2005 01 19 | 291 | 0.1− | 0.0 |

### 1998 RC$_{33}$ = 2001 HZ$_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.56615 | | (2000.0) | | | |
| $n$ | 0.26686795 | $\omega$ | 196.27058 | | +0.99343875 | +0.10464825 |
| $a$ | 2.3893060 | $\Omega$ | 157.56771 | | −0.08674736 | +0.95237377 |
| $e$ | 0.1360269 | $i$ | 6.94375 | | −0.07452753 | +0.28641393 |
| $P$ | 3.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | (2.6− | 0.2+) | 2001 04 30 | 691 | 0.2+ | 0.5+ | 2002 11 12 | 704 | 2.1− | 2.1+ |
| 1998 09 14 | 704 | 0.3− | 0.9+ | 2002 10 07 | 608 | 0.9− | 1.0− | 2002 11 12 | 704 | 1.1− | 1.2+ |
| 1998 09 14 | 704 | (2.6− | 2.8+) | 2002 10 07 | 608 | 0.0 | 0.3− | 2002 11 21 | 644 | 0.7− | 0.1− |
| 1998 09 14 | 704 | 0.4− | 0.7+ | 2002 10 07 | 608 | 0.5− | 0.5− | 2002 11 21 | 644 | 0.6− | 0.3+ |
| 1998 09 18 | 704 | (4.0− | 1.2+) | 2002 10 16 | 699 | 0.7+ | 0.3+ | 2002 11 21 | 644 | 0.1− | 0.1+ |
| 1998 09 18 | 704 | 0.2+ | 0.3− | 2002 10 16 | 699 | 1.0− | 0.7− | 2004 02 13 | 291 | 0.5+ | 0.3+ |
| 1998 09 18 | 704 | 0.3+ | 0.8+ | 2002 10 16 | 699 | 1.4− | 0.7+ | 2004 02 13 | 291 | 0.1− | 0.2+ |
| 2001 04 26 | 291 | 0.0 | 0.7+ | 2002 10 16 | 699 | 0.1− | 0.2+ | 2004 02 13 | 291 | 0.2− | 0.3+ |
| 2001 04 26 | 291 | 0.1+ | 0.7+ | 2002 10 30 | 644 | (3.9+ | 2.4+) | 2004 03 18 | 691 | 0.1+ | 0.1− |
| 2001 04 26 | 291 | 0.5+ | 0.6+ | 2002 10 30 | 644 | 0.9+ | 0.5+ | 2004 03 18 | 691 | 0.3+ | 0.0 |
| 2001 04 30 | 691 | 0.3− | 0.6+ | 2002 10 30 | 644 | 0.3+ | 0.2+ | 2004 03 18 | 691 | 0.1+ | 0.1+ |
| 2001 04 30 | 691 | 0.2− | 0.5− | 2002 11 12 | 704 | 0.3− | 3.0+ | | | | |

### 1998 RQ$_{65}$ = 2006 RY$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.77386 | | (2000.0) | | | |
| $n$ | 0.12483258 | $\omega$ | 130.86494 | | +0.97442317 | +0.22398492 |
| $a$ | 3.9650691 | $\Omega$ | 216.20262 | | −0.21432475 | +0.90198796 |
| $e$ | 0.3622224 | $i$ | 1.76313 | | −0.06756027 | +0.36911851 |
| $P$ | 7.90 | $H$ | 14.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.4− | 0.8− | 2006 09 17 | 704 | 0.4+ | 0.4− | 2006 10 15 | 691 | 0.2− | 0.2+ |
| 1998 09 14 | 704 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 1998 09 14 | 704 | 0.2− | 0.5− | 2006 09 17 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 1998 09 15 | 699 | 0.4− | 1.3+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 1998 09 15 | 699 | 0.7+ | 0.5− | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.4− | 0.0 |
| 1998 09 15 | 699 | 0.6+ | 0.3− | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1998 09 18 | 704 | 1.4− | 1.2− | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 1998 09 18 | 704 | 0.7+ | 0.7− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.2− |
| 1998 09 18 | 704 | 1.0− | 1.3− | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1998 09 18 | 704 | (2.1− | 0.3+) | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1998 09 18 | 704 | 0.1− | 0.6− | 2006 09 20 | 704 | 0.7− | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1998 09 25 | 699 | 0.1+ | 1.3+ | 2006 09 20 | 704 | 0.1+ | 1.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 1998 09 25 | 699 | 0.9+ | 1.3+ | 2006 09 20 | 704 | 0.7+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1998 09 25 | 699 | 0.9+ | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.3− |
| 1998 09 26 | 704 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 1998 09 26 | 704 | 0.7− | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.3− |
| 1998 09 26 | 704 | 1.1− | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 1998 09 26 | 704 | 0.9+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.0 |
| 1998 09 26 | 704 | 1.1− | 0.7− | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 1998 09 27 | 704 | 0.9+ | 0.2+ | 2006 09 26 | 691 | 0.7+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.1+ |
| 1998 09 27 | 704 | 0.1+ | 0.4− | 2006 09 27 | 704 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 1998 09 27 | 704 | 0.4+ | 0.9− | 2006 09 27 | 704 | 0.8+ | 0.5+ | 2006 10 23 | 704 | 0.4− | 0.5+ |
| 1998 09 27 | 704 | 0.3− | 0.4− | 2006 09 27 | 704 | (0.9− | 1.8−) | 2006 10 23 | 704 | 0.1− | 0.4+ |
| 1998 09 27 | 704 | 0.5+ | 0.9− | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.1+ | 0.5+ |
| 1998 10 14 | 699 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.9+ | 0.0 | 2006 10 23 | 704 | 0.2− | 0.6+ |
| 1998 10 14 | 699 | 0.6+ | 0.3+ | 2006 09 29 | 704 | 0.3− | 1.4+ | 2006 10 23 | 704 | 0.1− | 0.2+ |
| 1998 10 14 | 699 | 0.2− | 0.5− | 2006 09 29 | 704 | 0.5− | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 1998 10 19 | 699 | 0.5− | 1.6+ | 2006 09 29 | 704 | 1.4− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 1998 10 19 | 699 | 0.0 | 1.4+ | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 1998 10 19 | 699 | 0.6+ | 0.3− | 2006 09 30 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2004 03 23 | 291 | 0.0 | 0.7+ | 2006 09 30 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2004 03 23 | 291 | 0.6+ | 0.6+ | 2006 09 30 | 608 | 0.4+ | 1.4+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2004 03 23 | 291 | 0.2+ | 1.2+ | 2006 09 30 | 608 | 0.0 | 1.2+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2006 07 22 | G96 | 0.2− | 0.2− | 2006 09 30 | 608 | 1.0+ | 1.0+ | 2006 11 06 | 644 | 0.0 | 0.4+ |
| 2006 07 22 | G96 | 0.4− | 0.2− | 2006 10 10 | 143 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2006 07 22 | G96 | 0.3− | 0.1− | 2006 10 10 | 143 | 0.1+ | 0.3− | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2006 07 22 | G96 | 0.0 | 0.4− | 2006 10 10 | 143 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2006 08 06 | 699 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2006 08 06 | 699 | 0.8+ | 0.4− | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2006 08 06 | 699 | 0.4+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2006 08 06 | 699 | 0.0 | 0.3+ | 2006 10 12 | 143 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 12 | 143 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 13 | 143 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 10 13 | 143 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 13 | 143 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 13 | 143 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 13 | 143 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2006 09 17 | 704 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2006 09 17 | 704 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.2− | 0.3+ | | | | |

**1998 RT$_{76}$ = 1989 SW$_5$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.58954 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21728778 | $\omega$ | 287.37135 | | +0.73753439 | | +0.67181413 |
| $a$ | 2.7401806 | $\Omega$ | 30.52885 | | −0.55690438 | | +0.66254568 |
| $e$ | 0.2440730 | $i$ | 7.76368 | | −0.38196929 | | +0.33120839 |
| $P$ | 4.54 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 09 26 | 809 | 1.9+ | 2.2− | 2003 11 21 | 704 | 1.5− | 0.0 | 2006 03 26 | G96 | 0.2− | 0.1+ |
| 1989 09 26 | 809 | 1.0+ | 2.4− | 2003 11 21 | 704 | 0.7− | 1.4+ | 2006 03 26 | G96 | 0.2+ | 0.2+ |
| 1989 09 26 | 809 | 1.7+ | 3.1− | 2003 11 21 | 704 | 1.5− | 0.9+ | 2006 03 26 | G96 | 0.1− | 0.4+ |
| 1998 09 14 | 704 | 0.9− | 0.6+ | 2003 11 21 | 704 | 1.1− | 1.4+ | 2006 03 26 | G96 | 0.0 | 0.3+ |
| 1998 09 14 | 704 | 1.6− | 0.4− | 2003 11 21 | 704 | 1.2+ | 0.5+ | 2006 03 26 | G96 | 0.2− | 0.3+ |
| 1998 09 14 | 704 | 0.5− | 0.7+ | 2003 11 21 | 704 | 0.5+ | 1.2+ | 2006 03 26 | G96 | 0.0 | 0.1− |
| 1998 09 17 | 699 | 0.3− | 0.3+ | 2003 11 21 | 704 | 0.9+ | 1.2− | 2006 03 26 | G96 | 0.1+ | 0.3+ |
| 1998 09 17 | 699 | 0.2− | 1.2+ | 2003 11 21 | 704 | 0.5− | 0.4+ | 2006 03 26 | G96 | 0.1+ | 0.2+ |
| 1998 09 17 | 699 | 0.0 | 0.1+ | 2003 11 21 | 691 | 0.0 | 0.1− | 2006 03 26 | G96 | 0.0 | 0.4+ |
| 1998 09 18 | 704 | 1.1− | 0.7+ | 2003 11 21 | 691 | 0.1+ | 0.1− | 2006 03 26 | G96 | 0.2+ | 0.1+ |
| 1998 09 18 | 704 | 1.1− | 0.2+ | 2003 11 21 | 691 | 0.2+ | 0.3− | 2006 04 04 | 185 | 1.0− | 1.1− |
| 1998 09 18 | 704 | 1.1− | 0.1− | 2003 11 24 | 704 | 0.4− | 0.2+ | 2006 04 04 | 185 | 0.4− | 0.4+ |
| 1998 09 18 | 704 | 1.0− | 1.1+ | 2003 11 24 | 704 | 0.1− | 0.1− | 2006 04 08 | 703 | 0.7+ | 0.2+ |
| 1998 09 18 | 704 | 0.1− | 0.1+ | 2003 11 24 | 704 | 0.7− | 0.1+ | 2006 04 08 | 703 | 1.3+ | 0.1− |
| 1998 09 26 | 704 | 0.0 | 0.4+ | 2003 11 24 | 704 | 0.4− | 0.0 | 2006 04 08 | 703 | 1.0+ | 0.8+ |
| 1998 09 26 | 704 | 0.6− | 0.4+ | 2003 11 24 | 704 | 0.1+ | 0.2+ | 2006 04 08 | 703 | 0.5+ | 1.0+ |
| 1998 09 26 | 704 | 1.1− | 0.4− | 2003 11 26 | 704 | (6.6− | 0.3+) | 2006 04 09 | 691 | 0.3+ | 0.2+ |
| 1998 09 26 | 704 | 0.0 | 0.4− | 2003 11 26 | 704 | 1.2− | 0.2− | 2006 04 09 | 691 | 0.3+ | 0.2+ |
| 1998 09 26 | 704 | 0.3+ | 0.2− | 2003 11 26 | 704 | (8.0− | 0.7−) | 2006 04 09 | 691 | 0.1− | 0.5+ |
| 1998 09 27 | 704 | 0.5+ | 1.1+ | 2003 11 26 | 704 | 1.0− | 0.1− | 2006 04 18 | 699 | 0.1− | 0.1+ |
| 1998 09 27 | 704 | 0.2− | 1.4+ | 2003 11 26 | 704 | (6.5− | 0.9+) | 2006 04 18 | 699 | 0.1+ | 0.8+ |
| 1998 09 27 | 704 | 0.2+ | 1.8+ | 2003 11 26 | 704 | 0.2− | 0.1− | 2006 04 18 | 699 | 0.5+ | 0.3+ |
| 1998 09 27 | 704 | 0.4+ | 1.8+ | 2003 11 29 | 704 | 0.5+ | 0.3− | 2006 04 18 | 699 | 0.7+ | 0.5− |
| 1998 09 27 | 704 | 0.5− | 0.1− | 2003 11 29 | 704 | 0.3+ | 0.2− | 2006 04 18 | 644 | 0.4+ | 0.2+ |
| 1998 10 17 | 699 | 0.7+ | 1.1+ | 2003 11 29 | 704 | 0.2− | 0.1− | 2006 04 18 | 644 | 0.7+ | 0.7+ |
| 1998 10 17 | 699 | 0.8+ | 1.0+ | 2003 11 29 | 704 | 0.2+ | 0.3− | 2006 04 18 | 644 | 0.3+ | 0.2+ |
| 1998 10 17 | 699 | 0.1+ | 0.5+ | 2003 11 29 | 704 | 0.2− | 0.2− | 2006 04 20 | 703 | 0.3+ | 0.0 |
| 2003 10 22 | 704 | 1.0+ | 0.5+ | 2003 12 04 | 704 | 0.5− | 1.2+ | 2006 04 20 | 703 | 1.0− | 0.6− |
| 2003 10 22 | 704 | 0.2− | 0.3− | 2003 12 04 | 704 | 0.2+ | 0.4− | 2006 04 20 | 703 | 0.0 | 0.3− |
| 2003 10 22 | 704 | 0.2+ | 0.3+ | 2003 12 04 | 704 | 0.0 | 0.5− | 2006 04 20 | 703 | 0.2− | 0.2+ |
| 2003 10 22 | 704 | 0.6+ | 0.0 | 2003 12 04 | 704 | 0.3+ | 1.0− | 2006 05 01 | 704 | 0.4+ | 1.2+ |
| 2003 10 22 | 704 | 0.1+ | 0.5+ | 2003 12 04 | 704 | 0.5+ | 0.7+ | 2006 05 01 | 704 | 1.0+ | 0.7+ |
| 2003 10 25 | 704 | 0.1+ | 0.1− | 2003 12 18 | 691 | 0.3− | 0.3− | 2006 05 01 | 704 | 0.4+ | 0.2− |
| 2003 10 25 | 704 | 0.3+ | 0.0 | 2003 12 18 | 691 | 0.2− | 0.5− | 2006 05 01 | 704 | 0.2+ | 0.3+ |
| 2003 10 25 | 704 | 0.2+ | 0.4+ | 2003 12 18 | 691 | 0.1− | 0.8− | 2006 05 19 | G96 | 0.3+ | 0.0 |
| 2003 10 25 | 704 | 0.7+ | 1.1+ | 2003 12 18 | 704 | 0.3+ | 1.5− | 2006 05 19 | G96 | 0.2+ | 0.1+ |
| 2003 11 03 | 704 | 0.6+ | 1.0− | 2003 12 18 | 704 | (0.3− | 2.4−) | 2006 05 19 | G96 | 0.3+ | 0.1+ |
| 2003 11 03 | 704 | 0.1+ | 0.6− | 2003 12 18 | 704 | 0.3+ | 0.6− | 2006 05 19 | G96 | 0.4− | 0.1+ |
| 2003 11 03 | 704 | 0.4+ | 0.2− | 2006 03 03 | G96 | 0.5− | 0.6+ | 2006 05 21 | 644 | 0.6+ | 0.3+ |
| 2003 11 03 | 704 | 0.5+ | 0.6− | 2006 03 03 | G96 | 0.6− | 0.0 | 2006 05 21 | 644 | 0.5+ | 0.3+ |
| 2003 11 20 | 704 | 0.6− | 0.2+ | 2006 03 03 | G96 | 0.3+ | 0.0 | 2006 05 21 | 644 | 0.4+ | 0.2+ |
| 2003 11 20 | 704 | 0.4− | 0.0 | 2006 03 03 | G96 | 0.4− | 0.3+ | 2006 06 19 | G96 | 0.7− | 0.2− |
| 2003 11 20 | 704 | 1.1+ | 0.9+ | 2006 03 23 | 691 | 0.1+ | 0.1+ | 2006 06 19 | G96 | 0.3− | 0.3− |
| 2003 11 20 | 704 | 0.2− | 1.2+ | 2006 03 23 | 691 | 0.2− | 0.5+ | 2006 06 19 | G96 | 1.2− | 0.4− |
| 2003 11 20 | 704 | 0.5+ | 1.9+ | 2006 03 23 | 691 | 0.4+ | 0.2+ | 2006 06 19 | G96 | 0.4− | 0.0 |
| 2003 11 21 | 704 | 0.4− | 0.3+ | 2006 03 26 | G96 | 0.0 | 0.1− | | | | |
| 2003 11 21 | 704 | 0.1− | 0.9+ | 2006 03 26 | G96 | 0.1− | 0.1+ | | | | |

**1998 SE$_{21}$ = 1983 JV$_1$ = 2005 EF$_{37}$**

Id. Minor Planet Center (*MPO* 74584; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.60287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22124882 | $\omega$ | 337.43755 | | −0.96564181 | | −0.25974054 |
| $a$ | 2.7073771 | $\Omega$ | 187.52260 | | +0.24716289 | | −0.90791941 |
| $e$ | 0.1010638 | $i$ | 3.68371 | | +0.08028949 | | −0.32896383 |
| $P$ | 4.45 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 05 08 | 260 | 0.6+ | 0.3+ | 2005 03 04 | G96 | 0.9− | 0.2− | 2005 04 02 | G96 | 0.0 | 0.3− |
| 1983 05 08 | 260 | 0.6+ | 0.3− | 2005 03 04 | G96 | 1.1− | 0.0 | 2005 04 02 | G96 | 0.1− | 0.4− |
| 1983 05 12 | 260 | 0.9− | 1.0+ | 2005 03 04 | G96 | 0.3− | 0.6− | 2005 04 02 | G96 | 0.2− | 0.4− |
| 1983 05 12 | 260 | 0.1+ | 0.8+ | 2005 03 04 | G96 | 0.8− | 0.4− | 2005 04 04 | 704 | 1.1+ | 0.1− |
| 1998 09 21 | 691 | 0.4+ | 0.2+ | 2005 03 07 | 704 | 0.6+ | 1.3+ | 2005 04 04 | 704 | 0.3− | 1.2− |
| 1998 09 21 | 691 | 0.2+ | 0.3+ | 2005 03 07 | 704 | 0.2+ | 0.1+ | 2005 04 04 | 704 | 0.2+ | 0.5− |
| 1998 09 21 | 691 | 0.1+ | 0.4+ | 2005 03 07 | 704 | 0.1+ | 0.7− | 2005 04 04 | 704 | 0.6+ | 0.2+ |
| 1998 09 23 | 691 | 0.3− | 0.0 | 2005 03 07 | 704 | 0.4+ | 0.7+ | 2005 04 12 | 704 | 0.2+ | 1.2+ |
| 1998 09 23 | 691 | 0.8− | 0.1+ | 2005 03 07 | 704 | 0.1+ | 1.7+ | 2005 04 12 | 704 | 0.0 | 0.2− |
| 1998 09 23 | 691 | 0.4− | 0.4+ | 2005 03 13 | 703 | 0.2+ | 0.4− | 2005 04 12 | 704 | 0.2+ | 1.8+ |
| 1998 09 27 | 691 | 0.2+ | 0.1+ | 2005 03 13 | 703 | 0.1+ | 1.0− | 2005 04 12 | 704 | 1.1+ | 0.1+ |
| 1998 09 27 | 691 | 0.2+ | 0.1+ | 2005 03 13 | 703 | 0.5+ | 0.4+ | 2005 04 13 | 699 | 0.2+ | 0.4+ |
| 1998 09 27 | 691 | 0.0 | 0.3+ | 2005 03 13 | 703 | 0.3+ | 0.0 | 2005 04 13 | 699 | 1.0+ | 0.2+ |
| 2001 05 22 | 691 | 0.0 | 0.7+ | 2005 03 31 | 699 | 0.3+ | 0.1+ | 2005 04 13 | 699 | 0.0 | 0.3+ |
| 2001 05 22 | 691 | 0.0 | 0.6+ | 2005 03 31 | 699 | 0.4+ | 0.3− | 2005 04 13 | 699 | 0.1− | 0.4− |
| 2001 05 22 | 691 | 0.0 | 0.5+ | 2005 03 31 | 699 | 0.3− | 1.0+ | 2005 04 29 | 185 | 0.7− | 0.2− |
| 2003 12 01 | 704 | 0.1− | 0.2− | 2005 03 31 | 699 | 0.4− | 0.9+ | 2005 04 29 | 185 | 0.7− | 0.3+ |
| 2003 12 01 | 704 | 0.6− | 0.9+ | 2005 04 02 | G96 | 0.0 | 0.3− | 2005 05 06 | G96 | 0.4− | 0.4− |
| 2003 12 01 | 704 | 0.8+ | 1.2+ | 2005 04 02 | G96 | 0.2+ | 0.3− | 2005 05 06 | G96 | 0.4− | 0.5− |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2005 04 02 | G96 | 0.2− | 0.3− | 2005 05 06 | G96 | 0.1− | 0.3− |
| 2003 12 19 | 691 | 0.3− | 0.6+ | 2005 04 02 | G96 | 0.2− | 0.3− | 2005 05 06 | G96 | 0.3− | 0.3− |
| 2003 12 19 | 691 | 0.4− | 0.3+ | 2005 04 02 | G96 | 0.1− | 0.3− | | | | |

**1998 SX$_{31}$ = 2002 RE$_{252}$ = 2006 QH$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.14946 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24463878 | $\omega$ | 324.96944 | | +0.95392678 | | −0.29994556 |
| $a$ | 2.5319348 | $\Omega$ | 52.48664 | | +0.27739672 | | +0.87212621 |
| $e$ | 0.2128206 | $i$ | 0.54228 | | +0.11434491 | | +0.38655987 |
| $P$ | 4.03 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 691 | 0.4+ | 0.9− | 2002 09 12 | 644 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 1998 08 26 | 691 | 0.3+ | 0.4− | 2002 09 15 | 644 | 0.3− | 0.7− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 1998 08 26 | 691 | 0.5+ | 0.6− | 2002 09 15 | 644 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.1− |
| 1998 09 20 | 691 | 0.2− | 0.4+ | 2002 09 15 | 644 | 0.0 | 0.7− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 1998 09 20 | 691 | 0.1+ | 0.6+ | 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.8+ | 0.3− |
| 1998 09 26 | 691 | 0.3− | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.5+ | 0.0 |
| 1998 09 26 | 691 | 0.2− | 0.2+ | 2006 08 21 | 691 | 0.8− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 1998 09 26 | 691 | 0.2− | 0.3+ | 2006 08 28 | 691 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2002 09 12 | 644 | 0.2− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.1+ | | | | |
| 2002 09 12 | 644 | 0.2− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.3+ | | | | |

**1998 SG$_{33}$ = 2006 QG$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.10519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37088387 | $\omega$ | 208.88829 | | +0.81985249 | | −0.57115836 |
| $a$ | 1.9185690 | $\Omega$ | 186.40340 | | +0.56973251 | | +0.82076017 |
| $e$ | 0.0867571 | $i$ | 21.15498 | | +0.05698033 | | +0.01143992 |
| $P$ | 2.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 704 | 0.0 | 1.1− | 2006 08 29 | 699 | (2.4− | 0.1+) | 2006 09 22 | 703 | 0.5− | 0.3+ |
| 1998 08 27 | 704 | 0.9+ | 0.3− | 2006 08 29 | 699 | 0.6− | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 1998 08 27 | 704 | 0.7+ | 0.4− | 2006 08 29 | 699 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 1998 08 27 | 704 | (5.2− | 2.8−) | 2006 08 31 | 704 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.5+ | 0.6+ |
| 1998 09 16 | 699 | 0.4− | 1.7+ | 2006 08 31 | 704 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.1+ |
| 1998 09 16 | 699 | 0.0 | 1.7+ | 2006 08 31 | 704 | 1.1+ | 1.4+ | 2006 09 25 | 699 | 0.6− | 0.4− |
| 1998 09 16 | 699 | 0.4+ | 1.5+ | 2006 08 31 | 704 | (1.6+ | 1.4−) | 2006 09 25 | 704 | 0.4− | 0.1− |
| 1998 09 19 | 704 | 1.0− | 0.0 | 2006 09 15 | 704 | 1.0+ | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.3+ |
| 1998 09 19 | 704 | 1.1− | 0.7+ | 2006 09 15 | 704 | 0.7+ | 0.2− | 2006 09 25 | 699 | 0.1− | 1.0− |
| 1998 09 19 | 704 | 1.3− | 1.1+ | 2006 09 15 | 704 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.8− | 1.5+ |
| 1998 09 27 | 704 | 0.3+ | 1.5− | 2006 09 15 | 704 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.6+ | 0.8+ |
| 1998 09 27 | 704 | 0.1− | 0.2+ | 2006 09 15 | 704 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.1+ |
| 1998 09 27 | 704 | 0.1− | 0.2+ | 2006 09 16 | 704 | 0.9+ | 0.1− | 2006 09 29 | 704 | (0.5− | 1.9+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 704 | 0.1− | 0.2− | 2006 09 16 | 704 | 0.6− | 0.6− | 2006 09 29 | 704 | 0.5+ | 1.0+ |
| 1998 09 27 | 704 | 0.1− | 0.8+ | 2006 09 16 | 704 | 0.1− | 0.9− | 2006 10 01 | 703 | 0.3− | 0.2− |
| 1998 09 27 | 699 | 1.5+ | 1.6+ | 2006 09 16 | 704 | 0.5− | 0.4− | 2006 10 01 | 703 | 0.1+ | 0.7− |
| 1998 09 27 | 699 | 0.1− | 0.5+ | 2006 09 16 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.1+ | 0.5− |
| 1998 09 27 | 699 | 0.6+ | 0.9+ | 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 10 01 | 703 | 0.6+ | 0.5− |
| 2001 11 18 | 608 | 0.2− | 0.0 | 2006 09 17 | 703 | 1.0− | 0.0 | 2006 10 01 | 704 | 0.6+ | 0.4− |
| 2001 11 18 | 608 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.0 | 2006 10 01 | 704 | 1.0+ | 0.4+ |
| 2001 11 18 | 608 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.1− | 0.9− | 2006 10 01 | 704 | 0.3− | 0.1+ |
| 2001 12 22 | 608 | 0.5− | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.3+ | 0.1− |
| 2001 12 22 | 608 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.1− | 0.8+ |
| 2001 12 22 | 608 | 0.2− | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.7− | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2002 01 08 | 608 | 0.1+ | 0.4− | 2006 09 18 | 704 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.3− | 0.3− |
| 2002 01 08 | 608 | 0.6− | 0.1− | 2006 09 18 | 704 | 0.5+ | 0.5− | 2006 10 03 | G96 | 0.1+ | 0.7− |
| 2002 01 08 | 608 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.7+ | 0.7− | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2003 07 27 | 644 | 0.1− | 0.3− | 2006 09 18 | 704 | 0.5+ | 0.6− | 2006 10 16 | 703 | 0.3+ | 0.5− |
| 2003 07 27 | 644 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2003 07 27 | 644 | 0.5− | 0.8+ | 2006 09 20 | 699 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2005 03 13 | 703 | 0.1− | 0.1− | 2006 09 20 | 699 | 0.3− | 1.0+ | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2005 03 13 | 703 | 0.6− | 0.3− | 2006 09 20 | 703 | 0.1− | 0.4− | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2005 03 13 | 703 | (1.8− | 0.4+) | 2006 09 20 | 699 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2005 03 13 | 703 | 0.9+ | 1.3+ | 2006 09 20 | 703 | 0.6− | 0.8− | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.7− | 0.2− | 2006 11 19 | 703 | 0.5− | 0.1− |
| 2005 05 08 | G96 | 0.5+ | 0.2− | 2006 09 20 | 703 | 0.9− | 0.3− | 2006 11 19 | 703 | 0.9+ | 0.0 |
| 2005 05 08 | G96 | 0.6+ | 0.5+ | 2006 09 22 | 703 | (2.4+ | 1.3−) | 2006 11 19 | 703 | 0.1− | 0.1+ |
| 2005 05 08 | G96 | 0.2− | 0.0 | 2006 09 22 | 703 | (3.0+ | 2.1+) | 2006 11 19 | 703 | 0.4− | 0.2− |
| 2006 08 29 | 699 | 0.1+ | 0.3− | 2006 09 22 | 703 | 0.2− | 0.3− | | | | |

### 1998 $SY_{49}$ = 2006 $SM_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.05482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12643933 | $\omega$ | 335.55178 | | +0.98453011 | +0.17519430 | |
| $a$ | 3.9314063 | $\Omega$ | 14.35904 | | −0.15889361 | +0.89926586 | |
| $e$ | 0.2695140 | $i$ | 0.62970 | | −0.07384642 | +0.40078406 | |
| $P$ | 7.80 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 691 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1998 09 25 | 691 | 0.3+ | 0.3− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 1.0+ | 0.3− |
| 1998 09 25 | 691 | 0.7+ | 0.2− | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.9− | 0.1− |
| 1998 09 26 | 704 | 0.2− | 0.6+ | 2006 09 28 | 699 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.6− | 0.7− |
| 1998 09 26 | 704 | 0.9+ | 0.0 | 2006 09 28 | 699 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.4− | 1.0− |
| 1998 09 26 | 704 | 0.5+ | 0.5− | 2006 09 28 | 699 | 0.3+ | 0.7+ | 2006 10 23 | 691 | 0.0 | 0.4− |
| 1998 09 26 | 704 | 1.1− | 1.0− | 2006 09 28 | 699 | 0.2+ | 0.7− | 2006 10 23 | 691 | 0.1+ | 0.2− |
| 1998 09 26 | 704 | 0.4− | 0.5− | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.3− |
| 1998 09 27 | 704 | 0.9+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1998 09 27 | 704 | 1.2+ | 0.6+ | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 1998 09 27 | 704 | 1.0+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 1998 09 27 | 704 | 0.8+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1998 10 01 | 691 | 0.3− | 0.2− | 2006 10 02 | 691 | (3.6− | 0.1+) | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 1998 10 01 | 691 | 1.1− | 0.0 | 2006 10 03 | 704 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 1998 10 01 | 691 | 0.7− | 0.2+ | 2006 10 03 | 704 | 0.8− | 0.8− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 1998 10 19 | 699 | 0.1+ | 0.8+ | 2006 10 03 | 704 | 1.2− | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 1998 10 19 | 699 | 0.4− | 0.4+ | 2006 10 03 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.5+ |
| 1998 10 19 | 699 | 0.0 | 1.2+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.5+ |
| 2003 04 07 | 291 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.2− |
| 2003 04 07 | 291 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2003 04 07 | 291 | 0.8+ | 0.2+ | 2006 10 15 | 691 | 0.4+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 16 | 683 | 0.1+ | 0.5− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 16 | 683 | (0.2+ | 1.7+) | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2006 09 17 | J75 | 0.5− | 0.6+ | 2006 10 16 | 683 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.4+ | 0.2− |
| 2006 09 17 | J75 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2006 09 17 | J75 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2006 09 19 | J75 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2006 09 19 | J75 | 0.5+ | 0.3− | 2006 10 19 | 683 | 1.2− | 0.8+ | 2006 11 21 | 704 | 0.0 | 0.6− |
| 2006 09 19 | J75 | 0.4+ | 0.2− | 2006 10 19 | 683 | 1.1− | 0.7+ | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2006 09 20 | J75 | 0.1+ | 0.1− | 2006 10 19 | 683 | (1.8− | 0.7+) | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2006 09 20 | J75 | 0.4+ | 0.0 | 2006 10 20 | 683 | 0.9− | 0.7− | 2006 11 21 | 704 | 0.4− | 0.7− |
| 2006 09 21 | J75 | 0.0 | 0.5− | 2006 10 20 | 683 | 0.1+ | 1.3+ | 2006 11 23 | 691 | 0.3+ | 0.3− |
| 2006 09 21 | J75 | 0.6+ | 0.5− | 2006 10 20 | 683 | 1.1− | 0.9+ | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2006 09 24 | J75 | 0.8+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.1+ |
| 2006 09 24 | J75 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ | | | | |

### 1998 $SA_{51}$ = 2006 $TN_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.61884 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12587273 | $\omega$ | 342.93340 | | +0.99985782 | −0.00492585 | |
| $a$ | 3.9431952 | $\Omega$ | 17.37271 | | +0.01158190 | +0.89570928 | |
| $e$ | 0.2424490 | $i$ | 3.09605 | | −0.01225530 | +0.44461289 | |
| $P$ | 7.83 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 691 | 0.3− | 0.0 | 1998 10 13 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.2+ |
| 1998 09 26 | 691 | 0.4− | 0.1− | 1998 10 13 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 1998 09 26 | 691 | 0.5− | 0.4+ | 1998 10 15 | 691 | (6.1+ | 1.8+) | 2006 10 21 | 691 | 0.6− | 0.2− |
| 1998 10 01 | 691 | 0.0 | 0.2− | 1998 10 15 | 691 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 1998 10 01 | 691 | 0.2+ | 0.1− | 1998 10 15 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.6− |
| 1998 10 01 | 691 | 0.4+ | 0.3− | 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 1998 10 12 | 691 | 0.1+ | 0.4+ | 2006 10 13 | 691 | 0.5+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 1998 10 12 | 691 | 0.1− | 0.1− | 2006 10 13 | 691 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1998 10 12 | 691 | 0.3− | 0.3− | 2006 10 17 | 691 | 0.1− | 0.1+ | | | | |
| 1998 10 13 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.0 | | | | |

### 1998 $SE_{53}$ = 2006 $UZ_{129}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.36457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12394315 | $\omega$ | 338.53865 | | +0.99275541 | −0.09364337 | |
| $a$ | 3.9840155 | $\Omega$ | 27.16936 | | +0.11933326 | +0.84150256 | |
| $e$ | 0.1894891 | $i$ | 9.48972 | | −0.01400982 | +0.53207552 | |
| $P$ | 7.95 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 30 | 691 | 0.2+ | 0.3+ | 1998 10 18 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.5+ |
| 1998 09 30 | 691 | 0.0 | 0.2− | 1998 10 18 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 1998 09 30 | 691 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | (0.5− | 1.7+) |
| 1998 10 01 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 1998 10 01 | 691 | 0.7− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.8− |
| 1998 10 01 | 691 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.1+ |
| 1998 10 12 | 691 | 0.4+ | 0.2− | 2006 10 23 | 691 | (1.5− | 1.7−) | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 1998 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.9− | 0.9− |
| 1998 10 12 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.5+ | 0.0 | | | | |
| 1998 10 18 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2− | | | | |

### 1998 $SD_{77}$ = 2005 $XF_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.71161 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17544818 | $\omega$ | 24.77659 | | +0.34654515 | +0.93551581 | |
| $a$ | 3.1601193 | $\Omega$ | 265.56019 | | −0.87170418 | +0.29413431 | |
| $e$ | 0.1213314 | $i$ | 3.94992 | | −0.34646542 | +0.19569156 | |
| $P$ | 5.62 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.2− | 0.1+ | 2002 04 09 | 704 | 0.0 | 0.8+ | 2004 11 04 | 699 | 0.1− | 0.3+ |
| 1998 09 26 | 704 | (0.4+ | 2.3−) | 2004 10 08 | 699 | 0.5− | 0.8+ | 2004 11 04 | 703 | 0.1+ | 0.3− |
| 1998 09 26 | 704 | 0.1+ | 1.2+ | 2004 10 08 | 699 | 0.3+ | 0.4+ | 2004 11 04 | 703 | 1.6+ | 0.1+ |
| 1998 09 27 | 704 | 0.4+ | 0.9− | 2004 10 08 | 699 | 0.0 | 0.3+ | 2004 11 04 | 703 | 1.2− | 0.1− |
| 1998 09 27 | 704 | (2.5+ | 0.2+) | 2004 10 08 | 699 | 0.9+ | 0.2+ | 2004 11 04 | 703 | 0.4− | 0.2+ |
| 1998 09 27 | 704 | 0.3+ | 1.1− | 2004 10 21 | 704 | 0.3− | 0.2+ | 2005 12 01 | 691 | 0.1+ | 0.0 |
| 1998 09 27 | 704 | (2.5+ | 2.4−) | 2004 10 21 | 704 | 2.2− | 1.1+ | 2005 12 01 | 691 | 0.1+ | 0.1+ |
| 1998 09 27 | 704 | 0.2+ | 1.4− | 2004 10 21 | 704 | 0.3− | 0.7+ | 2005 12 01 | 691 | 0.0 | 0.2+ |
| 2002 04 04 | 644 | 0.1− | 0.7+ | 2004 10 21 | 704 | 0.1+ | 0.3+ | 2005 12 05 | 691 | 0.4+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.0 | 0.8+ | 2004 10 21 | 704 | 0.1− | 1.4+ | 2005 12 05 | 691 | 0.1+ | 0.1+ |
| 2002 04 04 | 644 | 0.2+ | 0.8+ | 2004 11 04 | 699 | 0.5− | 0.5− | 2005 12 05 | 691 | 0.7− | 0.5− |
| 2002 04 09 | 704 | 0.8+ | 0.1+ | 2004 11 04 | 699 | 0.8+ | 0.6+ | | | | |
| 2002 04 09 | 704 | 0.3+ | 0.2− | 2004 11 04 | 699 | 0.0 | 0.2+ | | | | |

**1998 SK$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.83622 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27156464 | $\omega$ | 165.90396 | | +0.88488670 | −0.46089371 | |
| $a$ | 2.3616774 | $\Omega$ | 221.75563 | | +0.41695354 | +0.84830541 | |
| $e$ | 0.1997185 | $i$ | 5.81499 | | +0.20766623 | +0.26068165 | |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 24 | 691 | 0.0 | 0.1+ | 1998 09 27 | 704 | 0.1− | 0.3+ | 2005 08 24 | 644 | 0.1+ | 0.2− |
| 1996 01 24 | 691 | 0.0 | 0.3+ | 1998 09 27 | 704 | 0.0 | 0.2− | 2005 08 24 | 644 | 0.1+ | 0.3− |
| 1996 01 24 | 691 | 0.0 | 0.2− | 1998 09 27 | 704 | 0.1− | 0.4+ | 2005 08 24 | 644 | 0.0 | 0.2+ |
| 1998 09 26 | 704 | 0.6+ | 0.5− | 1998 10 14 | 699 | 0.6− | 0.3+ | 2005 09 03 | 644 | 0.4+ | 0.1+ |
| 1998 09 26 | 704 | (2.3− | 1.2−) | 1998 10 14 | 699 | 0.3− | 0.2− | 2005 09 03 | 644 | 0.1+ | 0.1− |
| 1998 09 26 | 704 | (0.7− | 2.2−) | 1998 10 14 | 699 | 0.0 | 0.3+ | 2005 09 03 | 644 | 0.1− | 0.2− |
| 1998 09 26 | 704 | (3.1− | 2.4−) | 2005 07 15 | 691 | 0.1− | 0.1+ | 2005 09 12 | 691 | 0.1− | 0.2+ |
| 1998 09 27 | 704 | 0.4− | 0.0 | 2005 07 15 | 691 | 0.0 | 0.1+ | 2005 09 12 | 691 | 0.0 | 0.2− |
| 1998 09 27 | 704 | 0.8+ | 0.0 | 2005 07 15 | 691 | 0.0 | 0.1+ | 2005 09 12 | 691 | 0.1+ | 0.1− |

**1998 ST$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.83079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26255385 | $\omega$ | 225.73526 | | +0.95617210 | −0.29182594 | |
| $a$ | 2.4154077 | $\Omega$ | 151.20718 | | +0.28080476 | +0.89076145 | |
| $e$ | 0.2261705 | $i$ | 2.84759 | | +0.08296747 | +0.34839871 | |
| $P$ | 3.75 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.1− | 0.1− | 1998 09 27 | 704 | (1.2− | 2.6+) | 2002 11 24 | 644 | 0.0 | 0.3− |
| 1998 09 25 | 645 | 0.1+ | 0.2− | 1998 09 27 | 704 | 0.4− | 0.6+ | 2002 11 24 | 644 | 0.2+ | 0.2− |
| 1998 09 25 | 699 | 0.3+ | 0.9+ | 1998 09 27 | 704 | 0.5+ | 1.5+ | 2002 12 01 | 704 | 1.5− | 1.9− |
| 1998 09 25 | 699 | 1.0+ | 1.0+ | 1998 09 27 | 704 | 0.1+ | 0.3+ | 2002 12 01 | 704 | 0.6+ | 0.2− |
| 1998 09 25 | 699 | 1.5+ | 1.0+ | 2002 11 07 | 704 | 0.1+ | 0.1− | 2002 12 01 | 704 | 0.6− | 0.1+ |
| 1998 09 26 | 704 | 1.4− | 1.4− | 2002 11 07 | 704 | 0.5− | 0.0 | 2002 12 01 | 704 | 0.1+ | 0.7+ |
| 1998 09 26 | 704 | 0.7− | 0.1− | 2002 11 07 | 704 | 0.4− | 1.4+ | 2002 12 10 | 644 | 0.4+ | 0.3+ |
| 1998 09 26 | 704 | (2.3− | 1.7−) | 2002 11 07 | 704 | 0.9+ | 0.2+ | 2002 12 10 | 644 | 0.3+ | 0.2+ |
| 1998 09 27 | 704 | 0.5− | 0.9+ | 2002 11 24 | 644 | 0.1+ | 0.4− | 2002 12 10 | 644 | 0.2+ | 0.4+ |

**1998 SZ$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.88702 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17983791 | $\omega$ | 165.41679 | | +0.96978851 | +0.24394018 | |
| $a$ | 3.1084833 | $\Omega$ | 180.47595 | | −0.24013539 | +0.95327132 | |
| $e$ | 0.0586710 | $i$ | 12.87610 | | −0.04295622 | +0.17823291 | |
| $P$ | 5.48 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 24 | 691 | 0.2− | 0.4− | 2001 05 23 | 807 | 0.2+ | 0.1+ | 2003 08 28 | 608 | 0.3+ | 1.5− |
| 1996 04 24 | 691 | 0.6− | 0.3− | 2001 05 24 | 807 | 0.3+ | 0.1− | 2003 08 28 | 608 | 0.1− | 1.0− |
| 1996 04 24 | 691 | 0.4− | 0.6− | 2002 04 10 | 704 | 1.0+ | 0.8+ | 2003 08 28 | 608 | 0.1+ | 0.1+ |
| 1998 09 16 | 691 | 0.3+ | 0.4− | 2002 04 10 | 704 | 0.3+ | 0.1+ | 2003 09 16 | 699 | 1.8+ | 1.8+ |
| 1998 09 16 | 691 | 0.1+ | 0.3− | 2002 04 10 | 704 | 0.5− | 0.0 | 2003 09 16 | 699 | 0.9− | 0.5− |
| 1998 09 16 | 691 | 0.4+ | 0.1− | 2002 05 18 | 704 | 0.2− | 0.0 | 2003 09 16 | 699 | 0.2+ | 0.1− |
| 1998 09 26 | 704 | 0.9− | 0.6− | 2002 05 18 | 704 | 0.7− | 0.5− | 2003 09 16 | 699 | 0.3− | 0.4− |
| 1998 09 26 | 704 | 0.8− | 0.9− | 2002 05 18 | 704 | 0.1− | 0.3− | 2003 09 27 | 704 | 0.6− | 1.1+ |
| 1998 09 26 | 704 | 1.3+ | 0.8+ | 2002 05 18 | 704 | 0.5− | 0.1− | 2003 09 27 | 704 | 0.7+ | 0.4+ |
| 1998 09 27 | 704 | 1.0+ | 0.1+ | 2002 05 29 | 608 | 0.3− | 0.2− | 2003 09 27 | 704 | 0.6+ | 0.0 |
| 1998 09 27 | 704 | 1.4− | 0.9− | 2002 05 29 | 608 | 0.2+ | 0.5− | 2003 09 27 | 704 | 1.5− | 1.1+ |
| 1998 09 27 | 704 | 0.2+ | 0.4− | 2002 05 29 | 608 | 0.3− | 0.4− | 2004 11 05 | 699 | 0.0 | 0.5− |
| 1998 09 27 | 704 | 1.0+ | 0.5− | 2002 06 05 | 699 | 1.4+ | 1.2+ | 2004 11 05 | 699 | 0.0 | 0.9+ |
| 1998 09 27 | 704 | 0.8− | 0.3− | 2002 06 05 | 699 | 0.1− | 0.6+ | 2004 11 05 | 699 | 0.1+ | 0.2+ |
| 2000 01 08 | 704 | 0.0 | 0.2− | 2002 06 05 | 699 | 0.8+ | 0.6+ | 2004 11 05 | 699 | 1.1− | 1.3+ |
| 2000 01 08 | 704 | 0.3− | 0.0 | 2002 06 05 | 699 | 1.0+ | 0.5+ | 2006 01 23 | 703 | 0.6− | 0.5− |
| 2000 01 08 | 704 | 0.3+ | 0.2+ | 2003 07 30 | 599 | 0.7− | 0.0 | 2006 01 23 | 703 | 0.5− | 0.1+ |
| 2001 02 22 | 645 | 0.1+ | 0.0 | 2003 07 30 | 599 | 0.3− | 1.0+ | 2006 01 23 | 703 | 0.4− | 0.1− |
| 2001 02 22 | 645 | 0.1+ | 0.0 | 2003 07 30 | 599 | 0.8− | 0.1+ | 2006 01 23 | 703 | 0.8− | 0.7− |

**1998 SS$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.95464 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22919449 | $\omega$ | 161.31848 | | +0.99440407 | −0.06207012 | |
| $a$ | 2.6444373 | $\Omega$ | 202.76037 | | +0.04380487 | +0.97861108 | |
| $e$ | 0.1782316 | $i$ | 12.76564 | | +0.09613363 | +0.19613171 | |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.3− | 0.2+ | 1998 10 14 | 699 | 0.5− | 0.2+ | 2002 08 24 | 644 | 0.1+ | 0.6− |
| 1998 09 25 | 699 | (0.8+ | 2.1−) | 1998 10 14 | 699 | 0.7− | 0.3+ | 2002 08 24 | 644 | 0.3− | 0.7− |
| 1998 09 25 | 699 | 0.2− | 0.8− | 1998 10 14 | 699 | 0.3− | 1.1+ | 2002 08 24 | 644 | 0.1− | 0.6− |
| 1998 09 26 | 704 | 0.0 | 0.7+ | 2000 02 08 | 645 | 0.1− | 0.1+ | 2002 09 01 | 644 | 0.2− | 0.9− |
| 1998 09 26 | 704 | 0.8+ | 0.3− | 2000 02 08 | 645 | 0.0 | 0.0 | 2002 09 01 | 644 | 0.1− | 0.6− |
| 1998 09 26 | 704 | 0.1− | 1.5− | 2002 07 09 | 644 | 0.8+ | 0.0 | 2002 09 01 | 644 | 0.1− | 0.6− |
| 1998 09 26 | 704 | 1.5+ | 0.8+ | 2002 07 09 | 644 | 0.6+ | 0.3− | 2005 05 12 | G96 | 0.1+ | 0.2+ |
| 1998 09 26 | 704 | 0.8− | 0.4− | 2002 07 09 | 644 | 0.7+ | 0.1− | 2005 05 12 | G96 | 1.1+ | 0.1+ |
| 1998 09 27 | 704 | 0.2− | 0.0 | 2002 08 11 | 704 | 0.9− | 2.0+ | 2005 05 12 | G96 | 0.3+ | 0.4+ |
| 1998 09 27 | 704 | 0.2+ | 0.8+ | 2002 08 11 | 704 | 0.6− | 1.6+ | 2005 05 12 | G96 | 0.2+ | 0.6+ |
| 1998 09 27 | 704 | 1.0+ | 0.2+ | 2002 08 11 | 704 | 0.7− | 2.0+ | | | | |

**1998 SF$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.64422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21406539 | $\omega$ | 213.38281 | | +0.85873692 | −0.51229462 | |
| $a$ | 2.7676112 | $\Omega$ | 177.35729 | | +0.50699827 | +0.84628781 | |
| $e$ | 0.1738112 | $i$ | 14.03983 | | +0.07432128 | +0.14612035 | |
| $P$ | 4.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 691 | 0.2− | 1.4− | 1998 09 27 | 704 | 0.3+ | 1.5+ | 2003 12 25 | 704 | 0.4+ | 0.2− |
| 1996 03 24 | 691 | 0.4− | 0.9− | 1998 09 27 | 704 | 1.6− | 1.7+ | 2003 12 25 | 704 | 0.5+ | 0.4− |
| 1996 03 24 | 691 | 0.1+ | 0.2+ | 2003 11 19 | 644 | 0.2− | 0.3− | 2004 01 29 | 699 | 0.1+ | 2.0+ |
| 1998 09 25 | 645 | 0.1+ | 0.3− | 2003 11 19 | 644 | 0.1− | 0.3− | 2004 01 29 | 699 | 0.7+ | 0.0 |
| 1998 09 25 | 699 | 0.8+ | 1.7+ | 2003 11 19 | 644 | 0.1+ | 0.1− | 2004 01 29 | 699 | 1.2+ | 1.0− |
| 1998 09 25 | 645 | 0.1+ | 0.4− | 2003 11 29 | 704 | 0.8− | 1.2+ | 2004 01 29 | 699 | 1.5+ | 0.3− |
| 1998 09 25 | 699 | 0.4+ | 1.7+ | 2003 11 29 | 704 | 0.1− | 0.4− | 2005 03 11 | G96 | 0.1+ | 0.1+ |
| 1998 09 25 | 699 | 0.3+ | 1.4+ | 2003 11 29 | 704 | 0.1+ | 0.2− | 2005 03 11 | G96 | 0.2+ | 0.2+ |
| 1998 09 26 | 704 | 0.6+ | 0.9− | 2003 11 29 | 704 | 0.2− | 0.1+ | 2005 03 11 | G96 | 0.0 | 0.3+ |
| 1998 09 26 | 704 | (1.4+ | 2.4−) | 2003 11 29 | 704 | 0.1− | 0.9+ | 2005 03 11 | G96 | 0.0 | 0.1+ |
| 1998 09 26 | 704 | 0.4− | 1.5+ | 2003 12 05 | 703 | 2.2− | 0.9+ | 2005 04 02 | G96 | 0.1− | 0.3+ |
| 1998 09 26 | 704 | 1.1− | 0.8+ | 2003 12 05 | 703 | 0.3+ | 0.5+ | 2005 04 02 | G96 | 0.2+ | 0.0 |
| 1998 09 26 | 704 | 0.7− | 0.3+ | 2003 12 05 | 703 | 0.6− | 0.6− | 2005 04 02 | G96 | 0.1− | 0.3+ |
| 1998 09 27 | 704 | 0.2+ | 0.5− | 2003 12 05 | 703 | 0.5− | 0.6− | 2005 04 02 | G96 | 0.2+ | 0.3+ |
| 1998 09 27 | 704 | 0.9− | 0.1+ | 2003 12 25 | 704 | 1.2+ | 0.7− | | | | |
| 1998 09 27 | 704 | 1.1− | 0.3− | 2003 12 25 | 704 | 0.6− | 1.0− | | | | |

**1998 SM$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.89207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26369750 | $\omega$ | 274.95410 | | +0.94793509 | −0.31279535 | |
| $a$ | 2.4084190 | $\Omega$ | 103.28326 | | +0.31108968 | +0.86931842 | |
| $e$ | 0.1871877 | $i$ | 3.52373 | | +0.06813433 | +0.38268075 | |
| $P$ | 3.74 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.2+ | 0.7+ | 1998 09 29 | 910 | 0.9+ | 0.7+ | 2002 12 01 | 704 | 1.0+ | 0.7+ |
| 1998 09 26 | 704 | 0.7− | 0.4− | 1998 09 29 | 910 | 0.7+ | 0.7+ | 2002 12 01 | 704 | (1.6+ | 0.6+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.6− | 0.2− | 1998 09 29 | 910 | 0.8+ | 0.8+ | 2002 12 10 | 644 | 0.3− | 0.4− |
| 1998 09 26 | 704 | 1.5+ | 0.1− | 2002 11 24 | 644 | 0.4− | 0.7+ | 2002 12 10 | 644 | 0.2− | 0.1− |
| 1998 09 27 | 704 | 0.7+ | 1.1− | 2002 11 24 | 644 | 0.4− | 0.5+ | 2002 12 10 | 644 | 0.5+ | 0.6− |
| 1998 09 27 | 704 | 1.7− | 0.7− | 2002 11 24 | 644 | 0.6− | 0.5+ | 2006 10 29 | G96 | 0.3− | 0.2− |
| 1998 09 27 | 704 | 1.7− | 0.8− | 2002 12 01 | 704 | 0.3+ | 0.7− | 2006 10 29 | G96 | 0.3− | 0.3− |
| 1998 09 27 | 704 | (3.6− | 1.9−) | 2002 12 01 | 704 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.5+ | 0.3− |

**1998 SX$_{115}$ = 1980 DW$_2$ = 2000 BP$_{27}$**

Id. Minor Planet Center (MPC 38511; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.70781 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24588778 | $\omega$ | 161.57912 | | −0.81560985 | −0.57844862 |
| $a$ | 2.5233535 | $\Omega$ | 343.05904 | | +0.52494004 | −0.73007852 |
| $e$ | 0.0485133 | $i$ | 2.62256 | | +0.24334857 | −0.36384412 |
| $P$ | 4.01 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1980 02 20 | 095 | (0.3− | 2.7−) | 2002 09 05 | 704 | 0.6+ | 0.7− | 2004 02 12 | 333 | 0.8− | 0.0 |
| 1990 10 18 | 691 | 0.4− | 0.2− | 2002 09 28 | 608 | (2.0− | 0.8+) | 2004 02 13 | 333 | 0.1+ | 0.2− |
| 1990 10 18 | 691 | 0.6− | 0.0 | 2002 09 28 | 608 | (2.1− | 0.8+) | 2004 02 13 | 333 | 0.1− | 0.2− |
| 1990 10 18 | 691 | 0.3− | 0.0 | 2002 09 28 | 608 | (1.7− | 0.1−) | 2004 02 13 | 333 | 0.3− | 0.2− |
| 1998 09 25 | 327 | 0.3− | 0.2+ | 2002 10 01 | 699 | 0.7− | 0.5+ | 2004 02 17 | 704 | 0.3+ | 0.2+ |
| 1998 09 25 | 327 | 0.2− | 0.0 | 2002 10 01 | 699 | 0.4− | 0.3+ | 2004 02 17 | 704 | 0.4+ | 0.2− |
| 1998 09 25 | 327 | 0.2− | 0.2+ | 2002 10 01 | 699 | 0.2− | 0.2− | 2004 02 17 | 704 | 0.2+ | 0.3+ |
| 1998 09 26 | 704 | 1.0+ | 0.5− | 2002 10 01 | 699 | 0.1− | 0.1+ | 2004 02 17 | 704 | 0.3+ | 0.1+ |
| 1998 09 26 | 704 | 0.5+ | 1.1− | 2002 10 02 | 704 | 0.0 | 0.2− | 2004 02 17 | 704 | 0.2+ | 0.3+ |
| 1998 09 26 | 704 | 1.0− | 0.6− | 2002 10 02 | 704 | 0.1− | 0.1+ | 2004 02 20 | 608 | 0.3+ | 0.5− |
| 1998 09 26 | 704 | 1.9+ | 0.1− | 2002 10 02 | 704 | 0.2− | 0.3+ | 2004 02 20 | 608 | 0.6+ | 0.4− |
| 1998 09 26 | 704 | 0.3+ | 0.5− | 2002 10 02 | 704 | 0.2− | 0.2− | 2004 02 20 | 608 | 0.3+ | 0.4− |
| 1998 09 27 | 704 | 0.1+ | 0.1+ | 2002 10 02 | 704 | 0.3− | 0.4+ | 2004 02 23 | 704 | 0.2− | 0.0 |
| 1998 09 27 | 704 | 0.6− | 0.4+ | 2002 10 03 | 704 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.6− | 0.4+ |
| 1998 09 27 | 704 | 1.3+ | 0.3− | 2002 10 03 | 704 | 0.2− | 0.2− | 2004 02 23 | 704 | 0.4− | 0.4− |
| 1998 09 27 | 704 | 0.6+ | 0.5+ | 2002 10 03 | 704 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.4− | 0.5− |
| 1998 10 19 | 327 | 0.2− | 0.6− | 2002 10 03 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.4− | 0.6− |
| 1998 10 19 | 327 | 0.6+ | 0.4− | 2002 10 03 | 704 | 0.1− | 0.4− | 2004 03 14 | 704 | 0.4+ | 0.6+ |
| 1998 10 19 | 327 | 0.1+ | 0.4− | 2002 10 03 | 704 | 0.4+ | 0.1+ | 2004 03 14 | 704 | 0.1+ | 0.0 |
| 1998 10 20 | 327 | 0.6+ | 1.0− | 2002 10 03 | 704 | 0.3− | 0.2+ | 2004 03 14 | 704 | 0.5+ | 0.3− |
| 1998 10 20 | 327 | 0.2− | 0.3− | 2002 10 03 | 704 | 0.0 | 0.2− | 2004 03 14 | 704 | 0.1+ | 0.1+ |
| 1998 10 20 | 327 | 0.7+ | 0.3− | 2002 10 03 | 704 | 0.2+ | 0.3− | 2004 03 14 | 704 | 0.4− | 0.3+ |
| 1998 10 26 | 327 | 0.5+ | 0.6+ | 2002 10 03 | 704 | 0.2+ | 1.0+ | 2004 03 18 | 704 | 1.5+ | 0.2+ |
| 1998 10 26 | 327 | 0.3+ | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.1+ |
| 1998 10 26 | 327 | 0.5+ | 0.6+ | 2002 10 03 | 704 | 0.1− | 0.9+ | 2004 03 18 | 704 | (1.6+ | 1.1−) |
| 1998 10 28 | 704 | 0.4+ | 0.4− | 2002 10 03 | 704 | 0.2+ | 0.7+ | 2004 03 18 | 704 | 0.3− | 0.5+ |
| 1998 10 28 | 704 | 1.6− | 0.6+ | 2002 10 03 | 704 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.9− | 1.1+ |
| 1998 10 28 | 704 | 0.2+ | 0.7− | 2002 10 03 | 704 | 0.3+ | 0.2− | 2004 03 19 | 644 | 0.2− | 0.2+ |
| 1998 10 28 | 704 | (4.8− | 0.8+) | 2002 10 04 | 644 | 0.1+ | 0.1+ | 2004 03 19 | 644 | 0.3− | 0.2+ |
| 1998 10 29 | 704 | 0.4+ | 1.3− | 2002 10 04 | 644 | 0.1+ | 0.0 | 2004 03 19 | 644 | 0.2− | 0.2+ |
| 1998 10 29 | 704 | 0.9+ | 0.5− | 2002 10 04 | 644 | 0.1+ | 0.3+ | 2004 04 12 | 699 | 0.2− | 0.0 |
| 1998 10 29 | 704 | 1.5+ | 0.5+ | 2002 10 09 | 704 | 0.1− | 0.1+ | 2004 04 12 | 644 | 0.0 | 0.5+ |
| 2000 01 07 | 704 | 0.7− | 0.9− | 2002 10 09 | 704 | 0.3− | 0.5+ | 2004 04 12 | 699 | 0.0 | 0.4+ |
| 2000 01 07 | 704 | 0.3+ | 0.7− | 2002 10 09 | 704 | 0.6− | 0.2+ | 2004 04 12 | 644 | 0.0 | 0.3+ |
| 2000 01 07 | 704 | 0.3− | 0.9− | 2002 10 09 | 704 | 0.7− | 0.4+ | 2004 04 12 | 699 | 0.9− | 0.1+ |
| 2000 01 07 | 704 | 0.2+ | 1.1− | 2002 10 09 | 704 | 0.0 | 0.1+ | 2004 04 12 | 699 | 0.3− | 0.0 |
| 2000 01 13 | 699 | 1.3+ | 0.0 | 2002 10 11 | 704 | 0.0 | 0.4+ | 2004 04 12 | 644 | 0.1− | 0.4+ |
| 2000 01 13 | 699 | 0.9− | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.6+ | 2006 07 22 | G96 | 0.5− | 0.0 |
| 2000 01 13 | 699 | 0.1+ | 1.3− | 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 07 22 | G96 | 0.5− | 0.1+ |
| 2000 01 30 | 704 | 0.8− | 0.9+ | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 07 22 | G96 | 0.1+ | 0.2− |
| 2000 01 30 | 704 | 0.2+ | 1.1+ | 2002 10 11 | 704 | 0.0 | 0.9+ | 2006 07 22 | G96 | 0.3− | 0.1− |
| 2000 01 30 | 704 | 0.4+ | 0.3− | 2002 10 31 | 699 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2000 01 30 | 704 | 0.3+ | 0.1+ | 2002 10 31 | 699 | 0.8− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.6+ |
| 2000 01 30 | 703 | 0.2− | 0.0 | 2002 10 31 | 699 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.4− | 1.2+ |
| 2000 01 30 | 703 | 0.4− | 0.7+ | 2002 10 31 | 699 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2000 01 30 | 703 | 0.6− | 0.4− | 2002 11 01 | 704 | 0.4+ | 0.7− | 2006 09 15 | 691 | 0.0 | 0.1− |
| 2000 01 30 | 703 | 0.2− | 0.0 | 2002 11 01 | 704 | 0.1+ | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2000 02 04 | 704 | 0.0 | 0.2+ | 2002 11 01 | 704 | 0.4+ | 0.6+ | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2000 02 04 | 704 | 0.1+ | 0.5− | 2002 11 01 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.3+ |
| 2000 02 04 | 704 | 0.5+ | 0.3− | 2002 11 01 | 704 | 0.6− | 0.4+ | 2006 09 16 | 644 | 0.2− | 0.1+ |
| 2000 02 04 | 704 | 0.6+ | 0.7− | 2002 11 08 | 704 | 0.6− | 0.5+ | 2006 09 16 | 644 | 0.5− | 0.2+ |
| 2000 02 04 | 704 | 0.8+ | 0.2+ | 2002 11 08 | 704 | 0.1+ | 0.5− | 2006 09 17 | 704 | 0.5+ | 1.0− |
| 2000 02 05 | 691 | 0.5+ | 0.4− | 2002 11 08 | 704 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.1+ |
| 2000 02 05 | 691 | 0.6+ | 0.4− | 2002 11 08 | 704 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.5+ | 0.2− |
| 2000 02 05 | 691 | 0.5+ | 0.2− | 2002 11 08 | 704 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.3+ | 0.7+ |
| 2000 02 06 | 120 | 1.1+ | 0.6+ | 2002 11 11 | 644 | 0.7+ | 0.3+ | 2006 09 17 | 704 | 0.6− | 0.2+ |
| 2000 02 06 | 704 | 0.2− | 0.1− | 2002 11 11 | 644 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.0 |
| 2000 02 06 | 704 | 0.0 | 0.5+ | 2002 11 11 | 644 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| 2000 02 06 | 704 | 0.1− | 0.1+ | 2002 11 12 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.1− |
| 2000 02 06 | 704 | 0.0 | 0.5+ | 2002 11 12 | 704 | (0.5+ | 1.7+) | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2000 02 06 | 704 | 0.5+ | 0.1+ | 2002 11 12 | 704 | 0.2+ | 1.4+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2000 02 06 | 120 | 0.3+ | 0.2− | 2002 11 12 | 704 | 1.0− | 0.6− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2000 02 06 | 120 | 0.1− | 0.1− | 2002 11 21 | 644 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.5− | 0.0 |
| 2000 02 06 | 120 | 1.2+ | 0.4− | 2002 11 21 | 644 | 0.2− | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.4+ |
| 2000 02 06 | 120 | 0.5− | 0.8− | 2002 11 21 | 644 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.3+ |
| 2000 02 06 | 120 | (2.3− | 1.1−) | 2002 12 10 | 704 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.6− | 0.0 |
| 2000 02 06 | 120 | 0.3− | 0.3− | 2002 12 10 | 704 | 0.4+ | 1.1− | 2006 09 20 | 704 | 0.4− | 0.0 |
| 2000 02 08 | 704 | 0.0 | 0.1+ | 2002 12 10 | 704 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.4− | 0.9− |
| 2000 02 08 | 704 | 0.3− | 0.1− | 2002 12 10 | 704 | 0.3+ | 1.3+ | 2006 09 25 | 704 | 0.4− | 0.3− |
| 2000 02 08 | 704 | 0.7− | 0.2+ | 2003 10 29 | 704 | 0.5+ | 0.4− | 2006 09 25 | 704 | 0.3− | 1.2− |
| 2000 02 08 | 704 | 0.3− | 0.2+ | 2003 10 29 | 704 | 0.4− | 0.5+ | 2006 09 25 | 704 | 0.0 | 0.8− |
| 2000 02 08 | 704 | 0.3− | 0.4+ | 2003 10 29 | 704 | 0.1− | 1.2+ | 2006 09 25 | 704 | 0.5− | 1.1− |
| 2000 02 11 | 704 | 0.9− | 0.2+ | 2003 10 29 | 704 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2000 02 11 | 704 | 0.4− | 0.8− | 2003 10 29 | 704 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2000 02 11 | 704 | 0.2− | 0.2+ | 2003 12 01 | 704 | 1.3+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.3− | 0.4+ | 2003 12 01 | 704 | 1.0+ | 0.4+ | 2006 09 28 | 699 | 0.6− | 0.4+ |
| 2000 02 11 | 704 | 0.2− | 0.2+ | 2003 12 01 | 704 | 0.7− | 0.8+ | 2006 09 28 | 699 | 0.9− | 0.3+ |
| 2000 02 27 | 703 | 0.2+ | 0.7+ | 2003 12 01 | 704 | 0.7+ | 0.9+ | 2006 09 28 | 699 | 0.6+ | 0.4+ |
| 2000 02 27 | 703 | 0.1− | 0.5+ | 2003 12 01 | 704 | 0.9+ | 0.4− | 2006 09 29 | 704 | 0.8− | 0.1− |
| 2000 02 27 | 703 | 1.7− | 0.2+ | 2003 12 17 | 291 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.7− | 0.2− |
| 2000 02 27 | 703 | 0.3− | 0.1− | 2003 12 17 | 291 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.5+ |
| 2000 02 29 | 704 | 0.2+ | 0.2+ | 2003 12 17 | 291 | 0.5− | 0.5+ | 2006 09 29 | 704 | 0.8− | 0.2− |
| 2000 02 29 | 704 | 0.6+ | 0.7+ | 2003 12 18 | 703 | 0.6+ | 0.9− | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2000 02 29 | 704 | 0.7+ | 0.0 | 2003 12 18 | 703 | 0.7− | 0.5− | 2006 09 29 | 608 | 1.4+ | 0.9+ |
| 2000 02 29 | 704 | 0.6+ | 0.2+ | 2003 12 18 | 703 | 0.5+ | 0.6+ | 2006 09 29 | 608 | 1.2+ | 1.1+ |
| 2000 02 29 | 704 | 0.4+ | 0.1+ | 2003 12 18 | 703 | 0.3− | 0.9− | 2006 09 29 | 608 | 1.5+ | 0.7+ |
| 2000 03 03 | 704 | 0.0 | 0.3− | 2004 01 05 | 699 | 0.0 | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.3− |
| 2000 03 03 | 704 | 0.1+ | 0.3− | 2004 01 05 | 699 | (0.6− | 2.6−) | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2000 03 03 | 704 | 0.3− | 0.5− | 2004 01 05 | 699 | 0.2− | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2000 03 03 | 704 | 0.1+ | 1.0− | 2004 01 05 | 699 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.8+ |
| 2000 03 03 | 704 | 0.2+ | 1.1− | 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.5− |
| 2000 03 05 | 704 | 0.0 | 0.1+ | 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.0 |
| 2000 03 05 | 704 | 0.6+ | 0.2+ | 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.8− |
| 2000 03 05 | 704 | 0.3+ | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2000 03 05 | 704 | 0.2+ | 0.4+ | 2004 01 22 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2000 03 05 | 704 | 0.4+ | 0.0 | 2004 01 22 | 704 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2000 03 06 | 704 | 0.1+ | 0.3+ | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2000 03 06 | 704 | 0.1+ | 0.3− | 2004 01 22 | 704 | 0.8+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2000 03 06 | 704 | 0.1+ | 0.0 | 2004 01 23 | 699 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2000 03 06 | 704 | 0.1+ | 0.5+ | 2004 01 23 | 699 | 0.9− | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.5− |
| 2000 03 06 | 704 | 0.0 | 0.0 | 2004 01 23 | 699 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2000 03 08 | 704 | 0.3+ | 0.2+ | 2004 01 23 | 699 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2000 03 08 | 704 | 0.0 | 0.3+ | 2004 01 30 | 704 | 1.4+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2000 03 08 | 704 | 0.7+ | 0.6+ | 2004 01 30 | 704 | 1.1+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2000 03 08 | 704 | 0.2− | 0.8+ | 2004 01 30 | 704 | 0.7+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2000 03 08 | 704 | 0.3+ | 0.1+ | 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 03 09 | 704 | 0.4+ | 0.4+ | 2004 01 30 | 704 | 1.3+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2000 03 09 | 704 | 0.0 | 0.2+ | 2004 01 30 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 03 09 | 704 | 0.4+ | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2000 03 09 | 704 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2000 03 09 | 704 | 0.8+ | 0.9+ | 2004 02 09 | 333 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.3+ | 0.5+ | 2004 02 09 | 333 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 0.6+ | 2004 02 09 | 333 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.2− |
| 2000 03 11 | 691 | 0.5− | 0.1− | 2004 02 10 | 333 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 2000 03 11 | 704 | 0.1− | 0.4+ | 2004 02 10 | 333 | 0.3− | 0.1− | 2006 11 15 | 704 | 1.5+ | 0.2+ |
| 2000 03 11 | 691 | 0.5− | 0.3− | 2004 02 10 | 333 | 0.0 | 0.6− | 2006 11 15 | 704 | 0.5+ | 0.1− |
| 2000 03 11 | 704 | 0.1− | 0.2+ | 2004 02 10 | 703 | 0.6− | 0.3+ | 2006 11 15 | 704 | 0.2− | 0.2− |
| 2000 03 11 | 704 | 0.4− | 0.9+ | 2004 02 10 | 703 | (3.6− | 4.4+) | 2006 11 15 | G96 | 0.2+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 691 | 0.5− | 0.2− | 2004 02 10 | 703 | 1.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 09 05 | 704 | 1.5+ | 0.3+ | 2004 02 10 | 703 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 09 05 | 704 | 0.4+ | 0.2− | 2004 02 12 | 333 | 0.5− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2002 09 05 | 704 | 0.8+ | 0.5− | 2004 02 12 | 333 | 1.0− | 0.2− | | | | |

**1998 SB$_{130}$ = 2005 EM$_{200}$ = 2006 LQ$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.33594 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22820634 | $\omega$ | 301.85136 | | +0.74957035 | | +0.65743933 |
| $a$ | 2.6520655 | $\Omega$ | 17.44533 | | −0.48673580 | | +0.62621094 |
| $e$ | 0.1519878 | $i$ | 14.86836 | | −0.44858950 | | +0.41908637 |
| $P$ | 4.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.4+ | 0.1+ | 2002 08 21 | 644 | 0.3− | 0.2− | 2003 12 30 | 704 | 0.3+ | 1.2+ |
| 1998 09 26 | 704 | 0.0 | 0.2+ | 2002 08 21 | 644 | 0.2− | 0.8+ | 2005 03 10 | 152 | 1.1+ | 0.6− |
| 1998 09 26 | 704 | 0.7− | 1.8− | 2002 08 21 | 644 | 0.3− | 0.2− | 2005 03 10 | 152 | 0.2− | 0.8− |
| 1998 09 27 | 704 | 1.0− | 0.9+ | 2002 08 21 | 644 | 0.2− | 0.8+ | 2005 03 10 | 152 | 0.1+ | 0.1+ |
| 1998 09 27 | 704 | 0.5− | 0.5+ | 2002 08 21 | 644 | 0.3− | 0.4− | 2005 03 10 | 152 | 0.1− | 0.1− |
| 1998 09 27 | 704 | 0.8− | 0.7+ | 2002 08 21 | 644 | 0.1− | 0.6+ | 2005 03 13 | 152 | 1.2+ | 1.5+ |
| 1998 09 27 | 704 | 0.3+ | 0.6− | 2002 09 01 | 644 | 0.0 | 0.3− | 2005 03 13 | 152 | 1.5− | 1.4− |
| 1998 09 27 | 704 | (2.5− | 1.4−) | 2002 09 01 | 644 | 0.2− | 0.2− | 2005 03 13 | 152 | 0.0 | 0.2− |
| 1998 10 11 | 699 | 0.6+ | 1.4+ | 2002 09 01 | 644 | 0.2− | 0.4− | 2005 03 13 | 152 | 0.0 | 0.1− |
| 1998 10 11 | 699 | 0.6+ | 0.2+ | 2002 09 09 | 644 | 0.2− | 0.6+ | 2005 04 16 | 691 | 0.3− | 0.1+ |
| 1998 10 11 | 699 | 0.7+ | 1.2+ | 2002 09 09 | 644 | 0.4− | 0.6+ | 2005 04 16 | 691 | 0.5− | 0.1+ |
| 2001 04 15 | 608 | 0.4+ | 0.0 | 2002 09 09 | 644 | 0.2− | 0.4+ | 2005 04 16 | 691 | 0.2− | 0.2+ |
| 2001 04 15 | 608 | 0.2+ | 0.5+ | 2002 09 26 | 704 | 0.8− | 0.3+ | 2006 06 07 | E12 | 0.2− | 0.5+ |
| 2001 04 15 | 608 | 0.5+ | 0.1− | 2002 09 26 | 704 | 0.0 | 0.2− | 2006 06 07 | E12 | 0.1+ | 0.2+ |
| 2001 04 30 | 691 | 0.4+ | 0.4+ | 2002 09 26 | 704 | 0.4− | 0.3+ | 2006 06 07 | E12 | 0.1+ | 0.4+ |
| 2001 04 30 | 691 | 0.4+ | 0.2+ | 2002 09 26 | 704 | 0.3− | 0.9+ | 2006 06 07 | E12 | 0.4+ | 0.0 |
| 2001 04 30 | 691 | 0.2− | 0.2+ | 2002 10 07 | 608 | 0.7− | 0.7+ | 2006 06 27 | 428 | 0.1− | 0.6+ |
| 2002 08 13 | 704 | 0.7+ | 0.4− | 2002 10 07 | 608 | 0.6− | 0.2+ | 2006 06 27 | 428 | 0.9− | 0.2− |
| 2002 08 13 | 704 | 1.1+ | 1.1− | 2002 10 07 | 608 | 0.8− | 0.4− | 2006 06 27 | E12 | 0.3+ | 0.4+ |
| 2002 08 13 | 704 | 0.9+ | 1.3− | 2003 12 30 | 704 | 0.0 | 1.3+ | 2006 06 27 | E12 | 1.6+ | 1.0+ |
| 2002 08 13 | 704 | 1.0+ | 1.1− | 2003 12 30 | 704 | 0.3+ | 0.6+ | 2006 06 27 | E12 | 0.5+ | 1.0+ |
| 2002 08 13 | 704 | 0.8+ | 1.9− | 2003 12 30 | 704 | 0.1− | 0.6+ | | | | |

**1998 SA$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.06236 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27458197 | $\omega$ | 263.54461 | | +0.99213949 | | +0.11033096 |
| $a$ | 2.3443442 | $\Omega$ | 90.10969 | | −0.07807183 | | +0.91450102 |
| $e$ | 0.2116628 | $i$ | 3.38500 | | −0.09779580 | | +0.38924924 |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 05 | 691 | 0.8+ | 0.5− | 2005 06 29 | 644 | 0.1+ | 0.1+ | 2005 08 27 | E12 | 0.4− | 0.0 |
| 1991 11 05 | 691 | 0.5+ | 0.2− | 2005 06 29 | 644 | 0.0 | 0.5+ | 2005 08 27 | E12 | 0.0 | 0.4− |
| 1991 11 05 | 691 | 1.6− | 1.5+ | 2005 06 29 | 644 | 0.2− | 0.2+ | 2005 08 27 | E12 | 0.1− | 1.8− |
| 1998 09 26 | 704 | 0.4− | 0.4− | 2005 07 18 | 644 | 0.3− | 0.3+ | 2005 08 27 | E12 | 0.2− | 0.3− |
| 1998 09 26 | 704 | 0.9− | 0.3+ | 2005 07 18 | 644 | 0.2− | 0.2+ | 2005 09 01 | 644 | 0.2+ | 0.2− |
| 1998 09 26 | 704 | (1.3− | 3.4−) | 2005 07 18 | 644 | 0.2− | 0.3+ | 2005 09 01 | 644 | 0.3− | 0.1− |
| 1998 09 26 | 704 | (1.1− | 2.7−) | 2005 07 26 | 644 | 0.1− | 0.3+ | 2005 09 01 | 644 | 0.2+ | 0.2+ |
| 1998 09 27 | 704 | 0.8− | 1.1− | 2005 07 26 | 644 | 0.5− | 0.4+ | 2005 09 01 | 644 | 0.0 | 0.1− |
| 1998 09 27 | 704 | 0.1− | 0.1− | 2005 07 26 | 644 | 0.2− | 0.2+ | 2005 09 01 | 644 | 0.0 | 0.1+ |
| 1998 09 27 | 704 | 1.0− | 1.4+ | 2005 08 06 | 704 | 0.5− | 0.2− | 2005 09 01 | 644 | 0.1+ | 0.1+ |
| 1998 09 27 | 704 | 0.2+ | 0.3− | 2005 08 06 | 704 | 0.6+ | 0.1+ | 2005 09 08 | E12 | 0.0 | 0.5+ |
| 1998 09 29 | 910 | 1.4+ | 0.5− | 2005 08 06 | 704 | 0.1− | 0.3+ | 2005 09 08 | E12 | 0.1+ | 0.1− |
| 1998 09 29 | 910 | 1.3+ | 0.7− | 2005 08 06 | 704 | 0.5+ | 0.4+ | 2005 09 08 | E12 | 0.7+ | 0.5+ |
| 1998 09 29 | 910 | 1.3+ | 0.6− | 2005 08 22 | 644 | 0.2− | 0.1− | 2005 09 08 | E12 | 0.8+ | 0.0 |
| 2001 05 22 | 807 | 0.2+ | 0.6+ | 2005 08 22 | 644 | 0.1+ | 0.1− | | | | |
| 2001 05 22 | 807 | 0.3+ | 0.6+ | 2005 08 22 | 644 | 0.0 | 0.1+ | | | | |

**1998 SM$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.94815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12543498 | $\omega$ | 192.47597 | | +0.99900060 | | −0.02062450 |
| $a$ | 3.9523640 | $\Omega$ | 168.48326 | | +0.02855755 | | +0.97700448 |
| $e$ | 0.3381011 | $i$ | 11.45586 | | −0.03438414 | | +0.21221892 |
| $P$ | 7.86 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 17 | 699 | 0.3+ | 0.0 | 2006 08 31 | 704 | 0.5− | 0.3+ | 2006 10 17 | 046 | 0.9+ | 0.3− |
| 1998 09 17 | 699 | 0.6+ | 0.1+ | 2006 08 31 | 704 | 0.3+ | 0.9− | 2006 10 17 | 046 | 0.2− | 0.0 |
| 1998 09 17 | 699 | 0.9+ | 1.5− | 2006 09 30 | 703 | 0.1+ | 1.0+ | 2006 10 17 | 046 | (0.2+ | 2.1+) |
| 1998 09 22 | 699 | 0.4+ | 0.8+ | 2006 09 30 | 703 | (3.6− | 1.3+) | 2006 10 17 | 046 | 0.7− | 0.4− |
| 1998 09 22 | 699 | 0.0 | 1.3+ | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 10 17 | 046 | 0.3− | 0.0 |
| 1998 09 22 | 699 | 0.4− | 0.6+ | 2006 10 01 | 704 | 0.6+ | 1.3+ | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 1998 09 24 | 699 | 0.3− | 0.5− | 2006 10 01 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.1− |
| 1998 09 24 | 699 | 0.6− | 0.5+ | 2006 10 01 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.8− | 0.5+ |
| 1998 09 24 | 699 | 0.8− | 1.1+ | 2006 10 01 | 704 | 0.6− | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 1998 09 26 | 704 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.6− | 0.6+ | 2006 11 13 | 703 | 1.0+ | 0.5− |
| 1998 09 26 | 704 | 0.3+ | 1.6− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.7− | 1.5− |
| 1998 09 26 | 704 | 0.2− | 1.1− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.4− | 0.1− |
| 1998 09 26 | 704 | 0.2− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.4+ | 0.8− |
| 1998 09 26 | 704 | 0.9− | 0.2− | 2006 10 14 | 941 | 0.5+ | 0.6− | 2006 11 14 | 644 | 0.3+ | 0.1− |
| 1998 09 27 | 704 | 0.9+ | 0.8− | 2006 10 14 | 941 | 0.3+ | 0.5− | 2006 11 14 | 644 | 0.3+ | 0.4+ |
| 1998 09 27 | 704 | 0.1− | 0.7+ | 2006 10 14 | 941 | 0.4+ | 0.5− | 2006 11 14 | 644 | 0.1− | 0.1− |
| 1998 09 27 | 704 | 0.7+ | 0.8+ | 2006 10 14 | 941 | 0.2+ | 0.4− | 2006 11 16 | 703 | 0.9− | 0.5+ |
| 1998 09 27 | 704 | 1.0+ | 1.1− | 2006 10 16 | 703 | 0.6+ | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.3− |
| 1998 10 17 | 699 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.5− | 1.0+ | 2006 11 16 | 703 | 0.2− | 0.3+ |
| 1998 10 17 | 699 | 0.8− | 0.6+ | 2006 10 16 | 703 | (1.4− | 2.8+) | 2006 11 16 | 703 | 0.0 | 0.0 |
| 1998 10 17 | 699 | 0.4− | 0.9+ | 2006 10 16 | 703 | (0.7+ | 1.7+) | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2006 08 31 | 704 | 0.6− | 0.2− | 2006 10 17 | 046 | 0.3− | 0.6+ | 2006 11 17 | 644 | 0.3− | 0.2− |
| 2006 08 31 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 046 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.0 | 0.2+ |

**1998 SF$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.76150 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27004415 | $\omega$ | 200.91211 | | +0.92753444 | | +0.36667376 |
| $a$ | 2.3705341 | $\Omega$ | 137.35439 | | −0.32595420 | | +0.88832791 |
| $e$ | 0.2406890 | $i$ | 6.12810 | | −0.18284889 | | +0.27644870 |
| $P$ | 3.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.4+ | 1.6− | 1998 09 22 | 699 | 1.6+ | 0.1− | 2002 11 23 | 644 | 0.0 | 0.3+ |
| 1998 08 17 | 704 | 1.7− | 1.4+ | 1998 09 22 | 699 | 0.6+ | 0.5+ | 2002 11 28 | 699 | 0.3− | 0.8+ |
| 1998 08 17 | 704 | 1.0− | 0.6+ | 2001 05 24 | 645 | 0.0 | 0.1+ | 2002 11 28 | 699 | 0.3− | 0.9+ |
| 1998 08 17 | 704 | 1.2− | 0.2− | 2001 05 24 | 645 | 0.1+ | 0.1+ | 2002 11 28 | 699 | 0.7− | 0.6+ |
| 1998 08 17 | 704 | 0.4+ | 1.2− | 2002 11 16 | 644 | 0.1+ | 0.2+ | 2002 11 28 | 699 | 0.4+ | 1.0+ |
| 1998 09 16 | 699 | 0.4+ | 1.5+ | 2002 11 16 | 644 | 0.1− | 0.5+ | 2005 07 12 | G96 | 0.2+ | 0.1− |
| 1998 09 16 | 699 | 0.2− | 0.1− | 2002 11 16 | 644 | 0.1+ | 0.5+ | 2005 07 12 | G96 | 1.3− | 0.6+ |
| 1998 09 16 | 699 | (0.5+ | 2.6+) | 2002 11 23 | 644 | 0.1− | 0.5+ | 2005 07 12 | G96 | 1.3+ | 1.9+ |
| 1998 09 22 | 699 | 0.7+ | 0.4− | 2002 11 23 | 644 | 0.4− | 0.7+ | 2005 07 12 | G96 | 0.0 | 0.1− |

**1998 SW$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.03326 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18503118 | $\omega$ | 154.10661 | | +0.91436705 | | −0.40470051 |
| $a$ | 3.0500440 | $\Omega$ | 229.77130 | | +0.36862991 | | +0.84463399 |
| $e$ | 0.0941619 | $i$ | 0.92036 | | +0.16746606 | | +0.35044388 |
| $P$ | 5.33 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 691 | 0.2− | 0.1+ | 2004 12 14 | 599 | 0.1+ | 0.0 | 2006 02 25 | 691 | 0.2− | 0.3+ |
| 1998 09 15 | 691 | 0.2− | 0.2− | 2004 12 14 | 599 | 0.1− | 0.1+ | 2006 02 25 | 691 | 0.0 | 0.1+ |
| 1998 09 15 | 691 | 0.1− | 0.2+ | 2004 12 14 | 599 | 0.4+ | 0.3+ | 2006 02 25 | 691 | 0.5+ | 0.2− |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 12 14 | 599 | 0.6− | 0.3+ | 2006 02 25 | 691 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 01 26 | 691 | 0.1− | 0.3+ | 2006 02 25 | 691 | 0.1+ | 0.2+ | | |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2006 01 26 | 691 | 0.1− | 0.0 | 2006 02 25 | 691 | 0.2− | 0.9− | | |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2006 01 26 | 691 | 0.1− | 0.1− | 2006 03 23 | G96 | 0.2+ | 0.2− | | |
| 2004 11 10 | 691 | 0.1− | 0.0 | 2006 02 07 | 691 | 0.2− | 0.0 | 2006 03 23 | G96 | 0.0 | 0.5− | | |
| 2004 11 10 | 691 | 0.2+ | 0.3− | 2006 02 07 | 691 | 0.8− | 0.1+ | 2006 03 23 | G96 | 0.7− | 0.2+ | | |
| 2004 11 10 | 691 | 0.0 | 0.1+ | 2006 02 07 | 691 | 0.6+ | 0.1− | 2006 03 23 | G96 | 0.1+ | 0.5+ | | |

**1998 SX$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.71394 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28081314 | $\omega$ | 191.75994 | | −0.45713958 | | +0.88934546 |
| $a$ | 2.3095344 | $\Omega$ | 51.03812 | | −0.81502241 | | −0.41466593 |
| $e$ | 0.1547710 | $i$ | 0.69148 | | −0.35603633 | | −0.19265726 |
| $P$ | 3.51 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1− | 2004 02 26 | 704 | (0.1− | 2.8−) | 2005 08 31 | 691 | 0.2− | 0.4+ | |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 02 27 | 695 | 0.2+ | 0.3− | 2005 08 31 | 691 | 0.0 | 0.6+ | |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2004 02 27 | 695 | 0.2+ | 0.3− | 2005 08 31 | 691 | 0.4− | 0.1+ | |
| 1998 09 25 | 645 | 0.1− | 0.0 | 2004 03 14 | 691 | 0.5+ | 1.2+ | 2005 09 29 | G96 | 0.1+ | 0.5+ | |
| 1998 09 28 | 691 | 0.4+ | 0.3− | 2004 03 14 | 691 | 0.1+ | 0.1− | 2005 09 29 | G96 | 0.1− | 0.4+ | |
| 1998 09 28 | 691 | 0.2+ | 0.1− | 2004 03 14 | 691 | 0.3− | 0.2+ | 2005 09 29 | G96 | 0.4− | 0.7+ | |
| 1998 09 28 | 691 | 0.2+ | 0.4− | 2004 03 28 | 691 | 0.1− | 0.1− | 2005 09 29 | G96 | 0.1− | 0.4+ | |
| 2004 02 26 | 704 | 0.8+ | 0.1− | 2004 03 28 | 691 | 0.3− | 0.1− | | | | | |
| 2004 02 26 | 704 | 0.6+ | 0.3− | 2004 03 28 | 691 | 0.2− | 0.4− | | | | | |

**1998 SG$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.24907 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22336290 | $\omega$ | 201.01267 | | +0.87233266 | | −0.48886405 |
| $a$ | 2.6902669 | $\Omega$ | 188.26345 | | +0.45514175 | | +0.81715350 |
| $e$ | 0.2994164 | $i$ | 2.75331 | | +0.17855450 | | +0.30540482 |
| $P$ | 4.41 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.6− | 2.0+ | 1998 10 28 | 691 | 0.8− | 0.3− | 2004 01 17 | 691 | 0.0 | 0.9+ | |
| 1998 09 25 | 699 | 0.8− | 0.1+ | 1998 10 28 | 691 | 0.3− | 0.2− | 2004 01 17 | 691 | 0.5+ | 0.6+ | |
| 1998 09 25 | 699 | 0.3− | 0.2+ | 1998 11 19 | 691 | 0.2+ | 0.4− | 2004 01 17 | 691 | 0.2− | 0.1− | |
| 1998 10 16 | 691 | 0.5+ | 0.4+ | 1998 11 19 | 691 | 0.4+ | 0.1− | 2004 01 28 | 691 | 0.2+ | 0.2− | |
| 1998 10 16 | 691 | 0.4+ | 0.5+ | 1998 11 19 | 691 | 0.2+ | 0.6− | 2004 01 28 | 691 | 0.2− | 0.1− | |
| 1998 10 16 | 691 | 0.5+ | 0.4+ | 2001 05 24 | 807 | 0.4+ | 0.8+ | 2004 01 28 | 691 | 0.0 | 0.4− | |
| 1998 10 28 | 691 | 0.6− | 0.2− | 2001 05 24 | 807 | 0.2+ | 1.0+ | | | | | |

**1998 TO$_{12}$ = 1998 WM$_{25}$**

Id. Minor Planet Center (d, MPC 33785)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.56552 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24499469 | $\omega$ | 104.90209 | | +0.85260327 | | +0.52253998 |
| $a$ | 2.5294821 | $\Omega$ | 223.59537 | | −0.48187471 | | +0.78291469 |
| $e$ | 0.1629719 | $i$ | 0.36820 | | −0.20214952 | | +0.33763377 |
| $P$ | 4.02 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4− | |
| 1998 10 13 | 691 | 0.3− | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.1+ | |
| 1998 10 13 | 691 | 0.5− | 0.1+ | 2006 10 16 | 691 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 1998 10 18 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− | |
| 1998 10 18 | 691 | 0.5+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.4− | |
| 1998 10 18 | 691 | 0.7+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.3− | |
| 1998 11 16 | 691 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8− | 1.0+ | |
| 1998 11 16 | 691 | 0.2− | 0.5− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.1+ | |
| 1998 11 16 | 691 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.4+ | 0.6− | |
| 1998 11 16 | 691 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.2− | 0.5+ | |
| 1998 11 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.5− | 0.5+ | |
| 1998 11 19 | 691 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.7+ | 0.7− | 2006 11 27 | 691 | 0.0 | 0.4+ | |
| 1998 11 19 | 691 | 0.8+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.4− | | | | | |
| 2006 10 12 | 691 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− | | | | | |

**1998 TS$_{20}$ = 2006 TC$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.13594 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24420123 | $\omega$ | 17.29785 | | +0.65582655 | | −0.75288141 |
| $a$ | 2.5349583 | $\Omega$ | 31.78552 | | +0.67960162 | | +0.55690353 |
| $e$ | 0.1898551 | $i$ | 6.02931 | | +0.32868399 | | +0.35075353 |
| $P$ | 4.04 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.0 | 0.2− | 2002 10 10 | 291 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.8− | |
| 1998 10 13 | 691 | 0.2+ | 0.0 | 2002 10 10 | 291 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.8+ | 1.3− | |
| 1998 10 13 | 691 | 0.3+ | 0.0 | 2006 09 17 | 691 | 0.7+ | 0.0 | 2006 10 17 | G96 | 0.6− | 0.1+ | |
| 1998 10 19 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.4− | 0.3+ | |
| 1998 10 19 | 691 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ | |
| 1998 10 19 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 1998 10 27 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 29 | 291 | 0.0 | 0.3+ | |
| 1998 10 27 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 29 | 291 | 0.1− | 0.3+ | |
| 1998 10 27 | 691 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.6− | 0.8− | 2006 10 29 | 291 | 0.1+ | 0.4+ | |
| 2002 10 10 | 644 | 0.3− | 0.3+ | 2006 10 15 | 703 | (0.2− | 1.9−) | 2006 11 13 | G96 | 0.2+ | 0.0 | |
| 2002 10 10 | 644 | 0.4− | 0.8+ | 2006 10 15 | 703 | 1.4− | 0.5+ | 2006 11 13 | G96 | 0.7− | 0.1− | |
| 2002 10 10 | 644 | 0.2− | 0.5+ | 2006 10 15 | 703 | (0.4− | 2.1−) | 2006 11 13 | G96 | 0.1+ | 0.3− | |
| 2002 10 10 | 291 | 0.1− | 0.1− | 2006 10 17 | G96 | (2.1+ | 0.8−) | 2006 11 13 | G96 | 0.1− | 0.1+ | |

**1998 TO$_{24}$ = 2006 SJ$_{369}$ = 2006 UH$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.95458 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12401080 | $\omega$ | 312.59557 | | +0.90050863 | | +0.43448495 |
| $a$ | 3.9825667 | $\Omega$ | 21.66981 | | −0.38377120 | | +0.81305575 |
| $e$ | 0.2629869 | $i$ | 2.71991 | | −0.20445997 | | +0.38750895 |
| $P$ | 7.95 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 691 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.5+ | 0.0 | |
| 1998 10 14 | 691 | 0.7− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.9− | 0.5+ | |
| 1998 10 14 | 691 | 0.3− | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ | |
| 1998 10 19 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.7− | 2006 10 27 | G96 | 0.1− | 0.3− | |
| 1998 10 19 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.4− | |
| 1998 10 19 | 691 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 1998 10 27 | 691 | 0.4+ | 0.4− | 2006 10 16 | 701 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.3− | 0.4− | |
| 1998 10 27 | 691 | 0.6+ | 0.2− | 2006 10 16 | 701 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.3− | 0.1− | |
| 1998 10 27 | 691 | 0.1+ | 0.4− | 2006 10 16 | 701 | 1.0+ | 0.5− | 2006 10 28 | G96 | 0.1+ | 0.1− | |
| 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 701 | 1.2+ | 0.7− | 2006 10 28 | G96 | 0.0 | 0.0 | |
| 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 10 17 | 701 | (1.6− | 0.2−) | 2006 10 28 | G96 | 0.1− | 0.4− | |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 17 | 701 | 0.2− | 1.0+ | 2006 10 31 | 691 | 0.2− | 0.6+ | |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 19 | 701 | 0.7+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.4+ | |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 19 | 701 | 0.6+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.3+ | |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 19 | 701 | 0.1+ | 0.2− | | | | | |
| 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 19 | 701 | 0.1− | 0.1− | | | | | |

**1998 TR$_{35}$ = 2006 SW$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.31187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24303131 | $\omega$ | 219.37695 | | +0.11385499 | | −0.99215828 |
| $a$ | 2.5430871 | $\Omega$ | 224.15538 | | +0.92917758 | | +0.12471216 |
| $e$ | 0.2102135 | $i$ | 4.24513 | | +0.35166188 | | −0.00829653 |
| $P$ | 4.06 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 910 | 1.9+ | 0.7+ | 2002 10 12 | 704 | 0.1− | 1.0− | 2006 09 25 | 691 | 0.0 | 0.2+ | |
| 1998 10 15 | 910 | 1.8+ | 0.8+ | 2002 10 12 | 704 | 0.7+ | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.2− | |
| 1998 10 15 | 910 | 1.8+ | 0.7+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.7+ | 1.3+ | |
| 1998 10 18 | 327 | 0.5− | 0.2− | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.1− | 1.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 327 | 0.8+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.5− |
| 1998 10 18 | 327 | 0.8+ | 0.4− | 2006 09 17 | 291 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.3− |
| 1998 10 28 | 691 | 0.5− | 0.3− | 2006 09 17 | 291 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1998 10 28 | 691 | 0.5− | 0.0 | 2006 09 17 | 291 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1998 10 28 | 691 | 0.6− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 10 04 | 644 | 0.5− | 0.6+ | 2006 09 19 | 703 | 0.8− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2002 10 04 | 644 | 0.2− | 0.6+ | 2006 09 19 | 703 | (0.6− | 1.9−) | 2006 11 15 | G96 | 0.9+ | 0.2− |
| 2002 10 04 | 644 | 0.6− | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.1− | 0.8− | 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.4− |

**1998 TN$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 155.94234 | | (2000.0) | | +0.73083911 | −0.67853006 |
| $n$ | 0.17905692 | $\omega$ | 210.72396 | | +0.67408252 | +0.73453872 |
| $a$ | 3.1175157 | $\Omega$ | 192.85912 | | +0.10717724 | +0.00705927 |
| $e$ | 0.2628672 | $i$ | 19.41183 | | | |
| $P$ | 5.50 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.8+ | 0.9+ | 2003 07 29 | 704 | 0.5− | 0.9+ | 2003 09 23 | 644 | 0.4+ | 0.4+ |
| 1998 10 12 | 699 | 0.6+ | 0.4+ | 2003 07 29 | 704 | 1.0+ | 0.2+ | 2003 09 23 | 644 | 0.6+ | 0.4+ |
| 1998 10 12 | 699 | 0.4+ | 2.0+ | 2003 07 29 | 704 | 0.3+ | 0.1+ | 2003 10 17 | 645 | 0.1− | 0.0 |
| 1998 10 29 | 699 | 0.0 | 0.9+ | 2003 07 29 | 704 | 0.7− | 0.3+ | 2003 10 17 | 645 | 0.2− | 0.0 |
| 1998 10 29 | 699 | 0.6+ | 0.4+ | 2003 09 03 | 704 | 0.6+ | 0.8+ | 2003 10 18 | 645 | 0.1− | 0.0 |
| 1998 10 29 | 699 | 0.4+ | 0.1− | 2003 09 03 | 704 | 0.6+ | 0.9+ | 2003 10 18 | 645 | 0.1− | 0.1+ |
| 1998 11 13 | 704 | 1.9− | 0.1− | 2003 09 03 | 704 | 0.7+ | 1.7+ | 2006 02 25 | 691 | 0.3+ | 0.8+ |
| 1998 11 13 | 704 | 0.5+ | 1.7+ | 2003 09 03 | 704 | 0.6+ | 0.7− | 2006 02 25 | 691 | 0.2+ | 0.4+ |
| 1998 11 13 | 704 | 1.4− | 0.1+ | 2003 09 17 | 691 | 0.1+ | 0.4+ | 2006 02 25 | 691 | 0.3− | 0.5+ |
| 1998 11 13 | 704 | (4.7− | 1.4−) | 2003 09 17 | 691 | 0.0 | 0.2+ | 2006 03 09 | 691 | 0.4+ | 0.3+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2003 09 17 | 691 | 0.2+ | 0.2+ | 2006 03 09 | 691 | 0.1− | 0.4+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2003 09 23 | 644 | 0.7+ | 0.4+ | 2006 03 09 | 691 | 0.4− | 0.8+ |

**1998 UV$_3$ = 2006 VZ$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.56569 | | (2000.0) | | +0.63565595 | +0.76956766 |
| $n$ | 0.25600749 | $\omega$ | 73.67247 | | −0.73335968 | +0.57734855 |
| $a$ | 2.4564104 | $\Omega$ | 235.95591 | | −0.24109146 | +0.27282643 |
| $e$ | 0.0998894 | $i$ | 4.21390 | | | |
| $P$ | 3.85 | $H$ | 16.8 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 910 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.6+ | 0.2− | 2006 11 18 | A79 | 0.5− | 0.9+ |
| 1998 10 15 | 910 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1+ | 2006 11 18 | A79 | 0.5− | 1.2− |
| 1998 10 15 | 910 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.7+ | 0.0 | 2006 11 19 | 691 | 0.3− | 0.0 |
| 1998 10 20 | 910 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 1998 10 20 | 910 | 0.7+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 1998 10 20 | 910 | 0.5+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 1998 10 21 | 910 | 0.3− | 0.5− | 2006 11 11 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 1998 10 21 | 910 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 1998 10 22 | 910 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.7+ | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.6+ | 0.3− |
| 2006 09 27 | G96 | 0.2− | 0.7− | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2006 10 19 | G96 | 0.2+ | 0.8− | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2006 10 19 | G96 | 0.5+ | 0.2− | 2006 11 15 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 18 | A79 | 0.8+ | 0.1+ | | | | |

**1998 UM$_5$ = 1989 TV$_6$ = 2002 NY$_{15}$**

Id. Minor Planet Center (*MPO* 33056; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.04384 | | (2000.0) | | +0.90204662 | +0.42722901 |
| $n$ | 0.22101035 | $\omega$ | 242.18651 | | −0.37118195 | +0.84054875 |
| $a$ | 2.7093242 | $\Omega$ | 92.46555 | | −0.22030852 | +0.33309633 |
| $e$ | 0.2203704 | $i$ | 3.53153 | | | |
| $P$ | 4.46 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 07 | 809 | 0.5+ | 0.6+ | 2002 07 05 | 644 | 0.0 | 0.4+ | 2002 08 29 | 644 | 0.4+ | 0.1− |
| 1989 10 07 | 809 | 0.2+ | 0.3− | 2002 07 05 | 644 | 0.3+ | 0.6+ | 2002 08 29 | 644 | 0.4+ | 0.4− |
| 1989 10 07 | 809 | 1.0− | 0.5+ | 2002 07 05 | 644 | 0.0 | 0.4+ | 2002 08 29 | 644 | 0.2+ | 0.3− |
| 1998 10 14 | 699 | 0.1− | 0.3+ | 2002 07 06 | 333 | 0.3+ | 0.2− | 2006 05 20 | 691 | 0.3+ | 0.1+ |
| 1998 10 14 | 699 | 0.8+ | 0.2− | 2002 07 06 | 333 | 0.6− | 0.1− | 2006 05 20 | 691 | 0.1− | 0.3+ |
| 1998 10 14 | 699 | 0.1− | 0.1+ | 2002 07 06 | 333 | 0.0 | 0.5− | 2006 05 20 | 691 | 0.0 | 0.0 |
| 1998 10 22 | 910 | 0.3− | 0.0 | 2002 07 06 | 699 | 0.3+ | 0.1− | 2006 05 24 | 644 | 0.3− | 0.0 |
| 1998 10 22 | 910 | 0.5− | 0.2− | 2002 07 06 | 699 | 0.1+ | 0.1+ | 2006 05 24 | 644 | 0.1− | 0.2− |
| 1998 10 22 | 910 | 0.7− | 0.2− | 2002 07 06 | 699 | 0.6+ | 0.0 | 2006 05 24 | 644 | 0.0 | 0.1+ |
| 1998 10 23 | 910 | 0.1− | 0.2+ | 2002 07 06 | 699 | 1.1− | 1.2− | 2006 05 24 | 691 | 0.0 | 0.0 |
| 1998 10 23 | 910 | 0.5+ | 0.2+ | 2002 08 08 | 644 | 0.1− | 0.1− | 2006 05 24 | 691 | 0.0 | 0.2+ |
| 1998 10 23 | 910 | 0.4+ | 0.0 | 2002 08 08 | 644 | 0.0 | 0.1− | 2006 05 24 | 691 | 0.0 | 0.2+ |
| 2002 06 08 | 704 | 0.4− | 0.0 | 2002 08 08 | 644 | 0.3+ | 0.2+ | 2006 05 28 | 691 | 0.4+ | 0.2− |
| 2002 06 08 | 704 | 0.1− | 0.3− | 2002 08 13 | 704 | 1.1+ | 0.5− | 2006 05 28 | 691 | 0.3+ | 0.3+ |
| 2002 06 08 | 704 | 0.1+ | 0.5+ | 2002 08 13 | 704 | 0.6− | 0.3+ | 2006 05 28 | 691 | 0.0 | 0.1+ |
| 2002 06 08 | 704 | 0.0 | 0.3+ | 2002 08 13 | 704 | 0.1− | 0.6+ | 2006 06 16 | 691 | 0.4− | 0.1− |
| 2002 06 16 | 644 | 0.0 | 0.2+ | 2002 08 18 | 644 | 0.9− | 0.2+ | 2006 06 16 | 691 | 0.4+ | 0.1+ |
| 2002 06 16 | 644 | 0.1+ | 0.1− | 2002 08 18 | 644 | 0.1+ | 0.6− | 2006 06 16 | 691 | 0.1− | 0.0 |
| 2002 06 16 | 644 | 0.0 | 0.2− | 2002 08 18 | 644 | 0.3− | 0.0 | | | | |

**1998 UN$_{31}$ = 2006 UJ$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.10111 | | (2000.0) | | +0.83028393 | +0.50705922 |
| $n$ | 0.37404085 | $\omega$ | 108.18176 | | −0.54410364 | +0.82736517 |
| $a$ | 1.9077583 | $\Omega$ | 222.19885 | | +0.12074695 | +0.24157365 |
| $e$ | 0.0921708 | $i$ | 20.14585 | | | |
| $P$ | 2.64 | $H$ | 17.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 704 | 0.3+ | 1.6+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.3− | 0.7+ |
| 1998 10 18 | 704 | 0.8− | 0.6+ | 2006 10 31 | 704 | (1.6− | 0.6+) | 2006 11 14 | 704 | 0.8+ | 0.6+ |
| 1998 10 18 | 704 | 0.5+ | 0.3+ | 2006 10 31 | 704 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.1+ |
| 1998 10 18 | 704 | 0.6+ | 0.8− | 2006 10 31 | 704 | 1.0− | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.5+ |
| 1998 10 18 | 704 | 0.5− | 0.6− | 2006 10 31 | 704 | (1.7+ | 3.1+) | 2006 11 17 | 704 | 0.7− | 0.1+ |
| 1998 10 22 | 327 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.3− |
| 1998 10 22 | 327 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.1+ |
| 1998 10 22 | 327 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2− | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.6− |
| 1998 10 23 | 327 | 0.7− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3− | 0.3− |
| 1998 10 23 | 327 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 1998 10 23 | 327 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 1.3+ | 0.3+ |
| 1998 11 10 | 704 | 1.9+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 1998 11 10 | 704 | 0.0 | 0.8− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− |
| 1998 11 10 | 704 | (2.3+ | 0.9+) | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.8+ |
| 1998 11 10 | 704 | 0.8− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2000 04 25 | 699 | 0.3+ | 1.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.3− |
| 2000 04 25 | 699 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | (2.0− | 2.6+) |
| 2000 04 25 | 699 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.7− | 0.6− |
| 2000 04 25 | 699 | 0.5+ | 0.7− | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.0 | 1.2+ |
| 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 11 | 683 | 1.1− | 0.7+ | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 11 | 683 | 1.1− | 1.2− | 2006 11 20 | 704 | 0.8− | 0.3+ |
| 2006 10 28 | 704 | 1.5+ | 0.4− | 2006 11 11 | 683 | 1.0− | 0.9− | 2006 11 20 | 704 | 0.1+ | 0.9+ |
| 2006 10 28 | 704 | 1.3+ | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.7− | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2006 10 28 | 704 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 10 28 | 704 | 0.9+ | 0.5− | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2006 10 28 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.4− | 0.3− |
| 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.1+ | | | | |

### 1998 $UT_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 63.37437 | | | (2000.0) | | |
| $n$ | 0.27062504 | $\omega$ | 335.29097 | | +0.87563611 | −0.46674837 |
| $a$ | 2.3671407 | $\Omega$ | 53.10437 | | +0.46490884 | +0.74494692 |
| $e$ | 0.1519196 | $i$ | 8.92899 | | +0.13084790 | +0.47665507 |
| $P$ | 3.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 11 | 699 | 0.7− | 1.0+ | 2002 12 05 | 704 | 0.1− | 0.5+ | 2005 08 10 | E12 | 0.3− | 0.5+ |
| 1998 10 11 | 699 | 0.8− | 0.8+ | 2002 12 05 | 704 | 0.3+ | 1.0+ | 2005 08 10 | E12 | 0.1− | 0.7− |
| 1998 10 11 | 699 | 1.4+ | 0.8+ | 2002 12 05 | 704 | 0.1− | 0.7+ | 2005 08 28 | E12 | 0.0 | 0.7+ |
| 1998 10 28 | 704 | 1.4+ | 1.8− | 2003 01 04 | 704 | 0.1− | 0.2− | 2005 08 28 | E12 | 0.2+ | 0.0 |
| 1998 10 28 | 704 | 0.4− | 0.3+ | 2003 01 04 | 704 | 0.3+ | 0.7− | 2005 08 28 | E12 | 0.3+ | 0.1− |
| 1998 10 28 | 704 | 1.5+ | 0.6+ | 2003 01 04 | 704 | 0.3− | 0.6− | 2005 08 28 | E12 | 0.2+ | 0.6− |
| 1998 10 28 | 704 | 0.1− | 0.3− | 2003 01 04 | 704 | 0.0 | 0.4− | 2005 09 08 | E12 | 0.3− | 0.3− |
| 1998 10 29 | 704 | 0.4− | 1.1− | 2005 07 27 | 644 | 0.2+ | 0.3+ | 2005 09 08 | E12 | 0.0 | 0.3− |
| 1998 10 29 | 704 | 0.2− | 0.2+ | 2005 07 27 | 644 | 0.2+ | 0.3+ | 2005 09 08 | E12 | 0.2− | 0.0 |
| 1998 10 29 | 704 | 1.4− | 0.9− | 2005 07 27 | 644 | 0.3+ | 0.0 | 2005 09 08 | E12 | 0.3− | 0.4+ |
| 1998 10 29 | 704 | (0.5− | 2.3−) | 2005 08 10 | E12 | 0.4− | 0.1− | | | | |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2005 08 10 | E12 | 0.3+ | 0.1− | | | | |

### 1998 $UF_{50}$ = 2002 $RG_{176}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.75290 | | | (2000.0) | | |
| $n$ | 0.23240465 | $\omega$ | 171.55218 | | +0.82434655 | −0.56462508 |
| $a$ | 2.6200295 | $\Omega$ | 222.90747 | | +0.51582302 | +0.77878629 |
| $e$ | 0.2161508 | $i$ | 3.42186 | | +0.23319387 | +0.27329550 |
| $P$ | 4.24 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 691 | 0.1− | 0.0 | 1998 11 16 | 691 | 0.5+ | 0.2− | 2002 09 13 | 644 | 0.5− | 0.5− |
| 1998 10 19 | 691 | 0.1+ | 0.0 | 1998 11 16 | 691 | 0.6+ | 0.2− | 2002 09 13 | 644 | 0.1− | 0.3+ |
| 1998 10 19 | 691 | 0.2+ | 0.3− | 1998 11 16 | 691 | 0.4+ | 0.6− | 2002 09 14 | 644 | 0.4+ | 0.2+ |
| 1998 10 29 | 691 | 0.5− | 0.3+ | 1998 11 25 | 691 | 0.6− | 0.5+ | 2002 09 14 | 644 | 0.2− | 0.2+ |
| 1998 10 29 | 691 | 0.2− | 0.0 | 1998 11 25 | 691 | 0.5− | 0.4+ | 2002 09 14 | 644 | 0.2+ | 0.3+ |
| 1998 10 29 | 691 | 0.4− | 0.0 | 1998 11 25 | 691 | 0.1+ | 0.1+ | | | | |
| 1998 11 16 | 691 | 0.4+ | 0.1− | 2002 09 13 | 644 | 0.0 | 0.2− | | | | |

### 1998 $UG_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 120.72594 | | | (2000.0) | | |
| $n$ | 0.26995459 | $\omega$ | 272.69713 | | +0.66488633 | +0.73436898 |
| $a$ | 2.3710583 | $\Omega$ | 40.10701 | | −0.57304603 | +0.61870856 |
| $e$ | 0.2296831 | $i$ | 12.23155 | | −0.47910794 | +0.27910916 |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 28 | 691 | 0.2+ | 0.2+ | 2005 07 27 | 644 | 0.1− | 0.2+ | 2005 09 26 | 704 | 0.1+ | 0.1+ |
| 1998 10 28 | 691 | 0.4+ | 0.1+ | 2005 08 10 | E12 | 0.6− | 0.1+ | 2005 09 26 | 704 | 0.9− | 0.9− |
| 1998 10 28 | 691 | 0.3+ | 0.1+ | 2005 08 10 | E12 | 0.3− | 0.1− | 2005 09 26 | 704 | 0.1+ | 0.3+ |
| 1998 11 17 | 691 | (3.7− | 1.0−) | 2005 08 10 | E12 | 0.2+ | 0.2− | 2005 10 02 | E12 | 0.6+ | 0.5− |
| 1998 11 17 | 691 | 0.6− | 0.0 | 2005 08 10 | E12 | 0.0 | 0.5− | 2005 10 02 | E12 | 0.3− | 0.4+ |
| 1998 11 24 | 691 | 0.3− | 0.0 | 2005 08 27 | E12 | 0.5+ | 0.1− | 2005 10 02 | E12 | 0.0 | 0.8− |
| 1998 11 24 | 691 | 0.2− | 0.5− | 2005 08 27 | E12 | 0.6+ | 0.0 | 2005 10 02 | E12 | 0.9− | 0.4− |
| 1998 11 24 | 691 | 0.0 | 0.1+ | 2005 08 27 | E12 | 0.4− | 0.3+ | 2005 10 03 | 644 | 0.2+ | 0.2+ |
| 2005 07 27 | 644 | 0.1− | 0.3+ | 2005 08 27 | E12 | 0.4− | 0.6+ | 2005 10 03 | 644 | 0.3+ | 0.4+ |
| 2005 07 27 | 644 | 0.2− | 0.2+ | 2005 09 26 | 704 | 1.0+ | 0.2− | 2005 10 03 | 644 | 0.6+ | 0.3+ |

### 1998 $VO_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.79292 | | | (2000.0) | | |
| $n$ | 0.36705484 | $\omega$ | 175.06587 | | +0.65848672 | −0.70614621 |
| $a$ | 1.9318886 | $\Omega$ | 233.46523 | | +0.67893324 | +0.70660731 |
| $e$ | 0.1109437 | $i$ | 18.90206 | | +0.32472280 | −0.04542732 |
| $P$ | 2.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 704 | 0.3− | 0.4− | 2005 05 08 | 699 | (2.2+ | 1.4+) | 2006 11 17 | 704 | 0.3+ | 1.0+ |
| 1998 10 29 | 704 | 1.2− | 1.6− | 2005 05 08 | 699 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.2− | 1.0+ |
| 1998 10 29 | 704 | 1.6+ | 1.2+ | 2006 10 03 | 703 | 0.6− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.6+ |
| 1998 10 29 | 704 | 1.4+ | 0.2+ | 2006 10 03 | 703 | 0.8− | 0.2+ | 2006 11 17 | 704 | 0.5− | 0.8+ |
| 1998 10 29 | 704 | 0.7+ | 0.4− | 2006 10 03 | 703 | 1.1− | 0.0 | 2006 11 17 | 704 | 0.1− | 1.1+ |
| 1998 11 10 | 704 | 0.9+ | 2.0− | 2006 10 03 | 703 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 1998 11 10 | 704 | 1.4+ | 1.3− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 1998 11 10 | 704 | 0.7− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 1998 11 10 | 704 | (2.2+ | 2.5−) | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 1998 11 11 | 704 | 1.2+ | 1.3− | 2006 10 19 | 703 | 0.4− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 1998 11 11 | 704 | 1.0+ | 0.5− | 2006 10 19 | 703 | 0.4− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.5− |
| 1998 11 11 | 704 | (2.6+ | 3.3−) | 2006 10 19 | 703 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2− |
| 1998 11 18 | 704 | 0.4− | 0.3+ | 2006 10 20 | 704 | 0.8+ | 1.3+ | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 1998 11 18 | 704 | 0.1− | 0.1+ | 2006 10 20 | 704 | (0.6− | 1.6+) | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 1998 11 18 | 704 | 0.7− | 0.8+ | 2006 10 20 | 704 | (0.5− | 2.8−) | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 1998 11 18 | 704 | 1.0− | 0.9+ | 2006 10 20 | 704 | 0.3− | 1.4− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 1998 11 18 | 704 | 1.2− | 1.0+ | 2006 10 27 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 1998 11 21 | 704 | 0.6− | 1.0− | 2006 10 27 | 703 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.3− |
| 1998 11 21 | 704 | 0.6− | 1.1+ | 2006 10 27 | 703 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 1998 11 21 | 704 | 0.2+ | 0.3− | 2006 10 27 | 703 | 0.7+ | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.1+ |
| 1998 11 21 | 704 | (1.0− | 2.8+) | 2006 11 03 | H51 | 0.4− | 0.6− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 1998 11 21 | 704 | (2.6− | 5.0+) | 2006 11 03 | H51 | 0.6− | 0.4− | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 1998 11 24 | 699 | 1.1+ | 0.0 | 2006 11 03 | H51 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 1998 11 24 | 699 | 0.2− | 0.6+ | 2006 11 03 | H51 | 0.9+ | 0.4− | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 1998 11 24 | 699 | 0.6+ | 0.3− | 2006 11 03 | H51 | 0.6+ | 0.3− | 2006 11 22 | 704 | 0.6− | 0.3+ |
| 1998 12 11 | 699 | 1.6− | 0.7− | 2006 11 14 | 703 | 0.8− | 0.5− | 2006 11 22 | 704 | 0.1− | 0.5+ |
| 1998 12 11 | 699 | 1.0− | 0.3− | 2006 11 14 | 703 | 0.3− | 1.0− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 1998 12 11 | 699 | 1.2− | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.5− | 2006 11 28 | 704 | 0.4+ | 0.4+ |
| 2005 04 14 | 703 | 1.2− | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.9− | 2006 11 28 | 704 | 0.6+ | 0.6− |
| 2005 04 14 | 703 | (2.0− | 0.8+) | 2006 11 16 | 704 | 0.2− | 0.7+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2005 04 14 | 703 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.3− |
| 2005 04 14 | 703 | (0.0 | 2.2+) | 2006 11 16 | 704 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2005 05 08 | 699 | 1.1+ | 0.8+ | 2006 11 16 | 704 | 0.6+ | 0.2+ | | | | |
| 2005 05 08 | 699 | 0.7+ | 0.8+ | 2006 11 16 | 704 | 0.5− | 0.6− | | | | |

### 1998 $VW_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.87132 | | | (2000.0) | | |
| $n$ | 0.26775050 | $\omega$ | 336.72546 | | +0.84642198 | −0.53140397 |
| $a$ | 2.3840527 | $\Omega$ | 55.41945 | | +0.49489357 | +0.76117706 |
| $e$ | 0.1819650 | $i$ | 2.39085 | | +0.19659651 | +0.37177856 |
| $P$ | 3.68 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 29 | 691 | 0.3− | 0.8− | 1998 11 14 | 691 | 0.8− | 0.0 | 2005 08 04 | 644 | 0.3+ | 0.1+ |
| 1992 01 29 | 691 | 0.1+ | 0.1− | 1998 11 19 | 910 | 1.6+ | 0.3− | 2005 08 04 | 644 | 0.2+ | 0.2+ |
| 1992 01 29 | 691 | 0.2− | 0.9− | 1998 11 19 | 910 | 1.7+ | 0.1− | 2005 08 04 | 644 | 0.2+ | 0.1− |
| 1998 11 10 | 910 | 0.6+ | 0.1− | 1998 11 19 | 910 | 1.8+ | 0.2− | 2005 08 30 | 644 | 0.6− | 0.4− |
| 1998 11 11 | 910 | 0.1+ | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.5+ | 2005 08 30 | 644 | 0.3− | 0.3− |
| 1998 11 11 | 910 | 0.8+ | 0.5+ | 2003 01 05 | 704 | 0.9+ | 0.6+ | 2005 08 30 | 644 | 1.1+ | 0.5− |
| 1998 11 11 | 910 | 0.3+ | 0.5+ | 2003 01 05 | 704 | 0.0 | 2.3+ | 2005 11 06 | G96 | 0.2− | 1.4− |
| 1998 11 11 | 910 | 0.1+ | 0.8+ | 2003 01 05 | 704 | 0.3+ | 1.1+ | 2005 11 06 | G96 | 0.5− | 0.7− |
| 1998 11 11 | 910 | 0.2+ | 1.0+ | 2005 07 28 | 644 | 0.2+ | 0.0 | 2005 11 06 | G96 | 0.3+ | 0.3− |
| 1998 11 14 | 691 | 0.5− | 0.3− | 2005 07 28 | 644 | 0.1+ | 0.5− | 2005 11 06 | G96 | 0.3+ | 0.4+ |
| 1998 11 14 | 691 | 0.5− | 0.0 | 2005 07 28 | 644 | 0.1+ | 0.2− | | | | |

**1998 VR$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.04117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22200125 | $\omega$ | 133.44051 | | +0.99299066 | | −0.09677465 |
| $a$ | 2.7012562 | $\Omega$ | 232.22847 | | +0.06734296 | | +0.93504723 |
| $e$ | 0.1558082 | $i$ | 4.92442 | | +0.09713119 | | +0.34105914 |
| $P$ | 4.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 10 | 910 | 1.0+ | 0.4+ | 1998 11 18 | 910 | 1.1+ | 0.4+ | 2002 09 06 | 704 | 0.4+ | 1.2− |
| 1998 11 11 | 910 | 1.2+ | 0.1+ | 1998 11 19 | 691 | 1.0− | 0.2− | 2002 09 06 | 704 | 0.1+ | 0.1− |
| 1998 11 11 | 910 | 1.5+ | 0.1− | 1998 11 19 | 691 | 1.1− | 0.3− | 2002 09 06 | 704 | 0.9− | 1.3+ |
| 1998 11 11 | 910 | 1.1+ | 0.2+ | 1998 11 19 | 691 | 0.8− | 0.3− | 2002 09 13 | 644 | 0.5− | 0.1− |
| 1998 11 11 | 910 | 1.1+ | 0.2+ | 1998 11 27 | 691 | 0.0 | 0.0 | 2002 09 13 | 644 | 0.2− | 0.1− |
| 1998 11 11 | 910 | 1.2+ | 0.2+ | 1998 11 27 | 691 | 0.1+ | 0.1− | 2002 09 13 | 644 | 0.2− | 0.1+ |
| 1998 11 12 | 910 | 1.1+ | 0.3+ | 1998 11 27 | 691 | 0.1− | 0.2− | 2003 12 22 | 691 | 0.0 | 0.0 |
| 1998 11 12 | 910 | 0.7+ | 0.6+ | 2002 08 28 | 644 | 0.3+ | 0.1− | 2003 12 22 | 691 | 0.1− | 0.1+ |
| 1998 11 12 | 910 | 0.6+ | 0.5+ | 2002 08 28 | 644 | 0.3+ | 0.1+ | 2003 12 22 | 691 | 0.1+ | 0.2− |
| 1998 11 17 | 910 | 0.5+ | 0.7+ | 2002 08 28 | 644 | 0.3+ | 0.0 | | | | |
| 1998 11 17 | 910 | 0.6+ | 0.5+ | 2002 09 06 | 704 | 0.5+ | 0.2− | | | | |

**1998 VM$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.02975 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24648554 | $\omega$ | 133.02276 | | +0.98363488 | | −0.05863963 |
| $a$ | 2.5192721 | $\Omega$ | 231.07867 | | +0.01216835 | | +0.96501709 |
| $e$ | 0.1150463 | $i$ | 12.64878 | | +0.17976193 | | +0.25554533 |
| $P$ | 4.00 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.3− | 0.3− | 2002 12 10 | 644 | 1.3+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 1998 11 14 | 691 | 0.6− | 0.3− | 2006 09 30 | G96 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.5+ |
| 1998 11 14 | 691 | 0.6− | 0.6− | 2006 09 30 | G96 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.6− |
| 1998 11 16 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.7+ |
| 1998 11 16 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 18 | J95 | 0.1− | 0.1− |
| 1998 11 16 | 691 | 0.1+ | 0.3− | 2006 10 17 | 691 | (1.6− | 2.9+) | 2006 11 18 | J95 | 0.1+ | 0.0 |
| 1998 11 21 | 691 | 0.9+ | 0.2− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 18 | J95 | 0.2+ | 1.0− |
| 1998 11 21 | 691 | 0.3+ | 0.2− | 2006 10 17 | 691 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 1998 11 21 | 691 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2002 10 30 | 608 | 0.5− | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2002 10 30 | 608 | 0.2− | 1.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 10 30 | 608 | 0.2− | 1.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2002 11 04 | 291 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.0 |
| 2002 11 04 | 291 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2002 11 04 | 291 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2002 11 13 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.7− | 1.1− | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 2002 11 13 | 644 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.5+ | 0.4− | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 11 13 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 21 | 691 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 11 14 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 1.2− | 0.6+ |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.1+ | 2006 11 21 | 704 | (1.5+ | 1.1+) |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.3+ | 2006 11 21 | 704 | (0.4+ | 1.6+) |
| 2002 12 10 | 644 | 0.9− | 0.4+ | 2006 11 17 | 703 | 0.7− | 0.2− | | | | |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.3− | | | | |

**1998 VA$_{47}$ = 2001 HS$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.21164 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23396661 | $\omega$ | 240.33005 | | +0.36051006 | | +0.91984085 |
| $a$ | 2.6083556 | $\Omega$ | 51.62630 | | −0.77301695 | | +0.38743675 |
| $e$ | 0.2030910 | $i$ | 11.37905 | | −0.52199358 | | +0.06152702 |
| $P$ | 4.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.5− | 0.0 | 2005 03 18 | 703 | 1.2+ | 0.8+ | 2006 09 17 | 699 | 0.1+ | 0.4− |
| 1998 11 14 | 691 | 0.5− | 0.2+ | 2005 03 18 | 703 | 0.2+ | 0.3− | 2006 09 17 | 699 | 0.6− | 0.0 |
| 1998 11 14 | 691 | 0.3− | 0.1− | 2005 03 18 | 703 | 1.2+ | 0.0 | 2006 09 17 | 699 | 0.3− | 0.2− |
| 1998 11 19 | 910 | 1.3+ | 0.9+ | 2005 03 18 | 703 | (2.1− | 0.2+) | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 1998 11 19 | 910 | 1.3+ | 0.2+ | 2005 04 01 | 699 | 0.9+ | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 1998 11 19 | 910 | 1.0+ | 0.0 | 2005 04 01 | 699 | 0.7− | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.0 |
| 2001 04 23 | 704 | 0.0 | 1.0+ | 2005 04 01 | 699 | 0.5+ | 1.0+ | 2006 09 19 | 703 | 0.4− | 0.1− |
| 2001 04 23 | 704 | 0.1− | 0.8+ | 2005 04 01 | 699 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.8+ |
| 2001 04 23 | 704 | 0.7− | 0.3+ | 2005 04 06 | 703 | 1.0+ | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2001 04 23 | 704 | 0.1+ | 0.1+ | 2005 04 06 | 703 | 1.4− | 0.5− | 2006 09 19 | 703 | 0.8+ | 0.5+ |
| 2001 04 24 | 608 | 0.3+ | 0.3− | 2005 04 06 | 703 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 1.2+ | 0.1− |
| 2001 04 24 | 608 | 0.5+ | 0.5− | 2005 04 06 | 703 | (2.0− | 0.3−) | 2006 09 25 | 703 | 0.5− | 0.5− |
| 2001 04 24 | 608 | 0.1+ | 0.1− | 2005 04 09 | 699 | 1.0− | 0.7+ | 2006 09 25 | 703 | 1.4− | 0.2+ |
| 2002 10 01 | 704 | 0.2− | 0.4+ | 2005 04 09 | 699 | 1.0+ | 0.6− | 2006 09 25 | 703 | 0.7− | 0.2+ |
| 2002 10 01 | 704 | 1.3+ | 0.0 | 2005 04 09 | 699 | 0.6+ | 0.5+ | 2006 09 25 | 703 | 0.9− | 0.2+ |
| 2002 10 01 | 704 | (2.3+ | 0.0 ) | 2005 04 09 | 699 | 0.9− | 0.9+ | 2006 10 21 | 703 | 0.4+ | 0.3− |
| 2002 10 31 | 704 | 0.7+ | 0.2− | 2005 05 04 | 644 | 0.7+ | 0.2+ | 2006 10 21 | 703 | 1.7− | 1.0+ |
| 2002 10 31 | 704 | 0.1− | 1.0+ | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.6+ |
| 2002 10 31 | 704 | 0.8− | 0.6− | 2005 05 04 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 703 | (0.3+ | 3.0+) |
| 2002 10 31 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.2+ | 0.2+ | | | | |

**1998 VB$_{57}$ = 1996 ER$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.45175 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25593270 | $\omega$ | 33.00900 | | +0.87372567 | | −0.48625907 |
| $a$ | 2.4568890 | $\Omega$ | 356.02383 | | +0.39815326 | | +0.72967395 |
| $e$ | 0.2510781 | $i$ | 10.36238 | | +0.27942339 | | +0.48075778 |
| $P$ | 3.85 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 691 | 0.3− | 0.1+ | 1998 11 16 | 704 | 0.3+ | 0.3− | 2002 12 28 | 704 | 0.6− | 0.4− |
| 1994 09 12 | 691 | 0.1− | 0.1− | 1998 11 16 | 704 | 0.7+ | 0.5− | 2002 12 28 | 704 | 0.2+ | 0.2− |
| 1994 09 12 | 691 | 0.1+ | 0.3+ | 1998 11 26 | 699 | 0.4+ | 0.2+ | 2002 12 28 | 704 | 0.6− | 0.5+ |
| 1994 09 27 | 691 | 0.1− | 0.1− | 1998 11 26 | 699 | 0.8+ | 0.6+ | 2002 12 28 | 704 | 0.1− | 0.1+ |
| 1994 09 27 | 691 | 0.1+ | 0.1− | 1998 11 26 | 699 | 0.4+ | 0.9+ | 2003 01 07 | 704 | 0.3+ | 0.3+ |
| 1994 09 27 | 691 | 0.0 | 0.3− | 2002 09 06 | 704 | 0.3− | 0.5+ | 2003 01 07 | 704 | 0.1+ | 0.1+ |
| 1996 03 11 | 691 | 0.4− | 0.1+ | 2002 09 06 | 704 | 0.7− | 0.8+ | 2003 01 07 | 704 | 0.3− | 1.0+ |
| 1996 03 11 | 691 | 0.3− | 0.2+ | 2002 09 06 | 704 | 0.0 | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.1− |
| 1996 03 11 | 691 | 0.4− | 0.2+ | 2002 10 30 | 704 | 1.2+ | 0.7+ | 2004 03 29 | 691 | 0.1+ | 0.2+ |
| 1996 03 18 | 691 | 0.2+ | 0.3− | 2002 10 30 | 704 | 1.1+ | 0.8+ | 2004 03 29 | 691 | 0.2+ | 0.1+ |
| 1996 03 18 | 691 | 0.5+ | 0.2− | 2002 10 30 | 704 | 1.4+ | 0.3− | 2006 10 19 | 703 | 0.4+ | 0.1+ |
| 1996 03 18 | 691 | 0.2+ | 0.1− | 2002 10 30 | 704 | 1.0+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.4− |
| 1998 11 14 | 704 | 0.4− | 0.4+ | 2002 11 07 | 704 | 0.6− | 0.5− | 2006 10 19 | 703 | 1.2− | 0.2+ |
| 1998 11 14 | 704 | 0.1+ | 0.6− | 2002 11 07 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 703 | 0.6+ | 1.2+ |
| 1998 11 14 | 704 | 0.3+ | 0.4− | 2002 11 07 | 704 | 0.5− | 0.6− | 2006 10 27 | 703 | 0.3− | 0.0 |
| 1998 11 14 | 704 | 0.9+ | 0.7− | 2002 11 07 | 704 | 0.2− | 0.2+ | 2006 10 27 | 703 | 1.9− | 1.0− |
| 1998 11 14 | 704 | (4.2− | 0.8−) | 2002 12 07 | 704 | 0.2− | 0.6− | 2006 10 27 | 703 | 0.7− | 1.0− |
| 1998 11 16 | 704 | 0.5− | 0.0 | 2002 12 07 | 704 | 0.0 | 0.6− | 2006 10 27 | 703 | 0.6− | 0.7+ |
| 1998 11 16 | 704 | 1.7− | 1.5+ | 2002 12 07 | 704 | 0.5− | 0.5− | | | | |

**1998 WD$_{28}$ = 2006 TW$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.59763 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24571085 | $\omega$ | 261.68409 | | −0.67414269 | | −0.73129605 |
| $a$ | 2.5245646 | $\Omega$ | 231.23666 | | +0.71913372 | | −0.61788392 |
| $e$ | 0.1606107 | $i$ | 7.63688 | | +0.16845866 | | −0.28883482 |
| $P$ | 4.01 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 691 | 0.3− | 0.2− | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.3− |
| 1998 11 18 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.5+ | 0.3− | 2006 11 13 | G96 | 0.6+ | 0.8− |
| 1998 11 18 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.7− |
| 1998 11 21 | 691 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 1998 11 21 | 691 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.9− |
| 1998 11 21 | 691 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 27 | 691 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.3− | 1.2+ |
| 1998 11 27 | 691 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 1998 11 27 | 691 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2006 10 13 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.7− | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2− | 2006 11 27 | 703 | 0.1+ | 0.3− |
| 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.1− |
| 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.3− | 0.3+ |
| 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.4− | 2006 11 27 | 703 | 0.4− | 0.0 |

## 1998 WC$_{32}$ = 1988 VQ$_6$ = 2006 BR$_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.87809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29954930 | $\omega$ | 318.18565 | | +0.98894728 | +0.13308846 | |
| $a$ | 2.2121972 | $\Omega$ | 34.32991 | | −0.08537352 | +0.87150688 | |
| $e$ | 0.2505529 | $i$ | 6.65434 | | −0.12122146 | +0.47197799 | |
| $P$ | 3.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 11 03 | 033 | 0.3− | 0.2+ | 1998 12 11 | 699 | 0.4− | 0.5+ | 2001 09 25 | 704 | 0.0 | 0.2− |
| 1988 11 03 | 033 | 0.6− | 0.2+ | 1998 12 11 | 699 | 0.2− | 1.0+ | 2001 09 25 | 704 | 0.3+ | 0.0 |
| 1988 11 04 | 033 | 0.5+ | 0.0 | 2001 07 31 | 644 | 0.6+ | 1.5+ | 2001 09 25 | 704 | 0.2− | 0.2− |
| 1998 11 18 | 704 | 0.3+ | 1.4+ | 2001 07 31 | 644 | 1.0+ | 1.8+ | 2001 09 25 | 704 | 0.8+ | 0.8− |
| 1998 11 18 | 704 | 0.3+ | 0.3+ | 2001 07 31 | 644 | 0.9+ | 1.6+ | 2001 10 14 | 699 | 0.3− | 0.4+ |
| 1998 11 18 | 704 | 0.7+ | 1.7− | 2001 08 16 | 644 | 0.5− | 0.9− | 2001 10 14 | 699 | 0.7− | 0.2+ |
| 1998 11 18 | 704 | 0.7− | 1.1− | 2001 08 16 | 644 | 0.6− | 1.0− | 2001 10 14 | 699 | 0.3− | 0.9+ |
| 1998 11 18 | 704 | 1.8− | 0.2− | 2001 08 16 | 644 | 0.5− | 1.1− | 2001 10 14 | 699 | 0.3+ | 0.7+ |
| 1998 11 21 | 704 | (1.1+ | 2.2+) | 2001 08 28 | 644 | 0.5− | 1.0− | 2006 01 24 | 699 | 1.4+ | 0.8+ |
| 1998 11 21 | 704 | 0.8+ | 0.7− | 2001 08 28 | 644 | 0.0 | 1.6− | 2006 01 24 | 699 | 0.0 | 0.2− |
| 1998 11 21 | 704 | (2.8+ | 2.5+) | 2001 08 28 | 644 | 0.4− | 1.4− | 2006 01 24 | 699 | 1.2− | 0.5− |
| 1998 11 24 | 704 | 0.3+ | 0.4+ | 2001 09 11 | 704 | 0.1− | 0.9+ | 2006 01 24 | 699 | 0.6+ | 0.2+ |
| 1998 11 24 | 704 | 0.5+ | 0.5− | 2001 09 11 | 704 | 0.5− | 0.7+ | 2006 01 25 | 703 | 0.5− | 0.3+ |
| 1998 11 24 | 704 | 0.4+ | 0.6− | 2001 09 11 | 704 | 0.1− | 0.3+ | 2006 01 25 | 703 | 0.2+ | 0.6+ |
| 1998 11 24 | 704 | 0.5+ | 0.4+ | 2001 09 11 | 704 | 0.3− | 0.1+ | 2006 01 25 | 703 | 0.8− | 0.9+ |
| 1998 12 11 | 699 | (0.8− | 3.7+) | 2001 09 11 | 704 | 0.3+ | 0.9+ | 2006 01 25 | 703 | 0.5+ | 0.2− |

## 1998 WC$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.39517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28605567 | $\omega$ | 277.14084 | | +0.83824119 | +0.53879458 | |
| $a$ | 2.2812297 | $\Omega$ | 50.29640 | | −0.44725412 | +0.76742350 | |
| $e$ | 0.2043633 | $i$ | 6.26641 | | −0.31195426 | +0.34750766 | |
| $P$ | 3.45 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.4− | 0.7+ | 1998 11 27 | 691 | 0.2+ | 0.1+ | 2005 11 12 | 691 | 0.0 | 0.0 |
| 1991 10 08 | 691 | 0.8− | 0.5+ | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2005 11 12 | 691 | 0.2− | 0.0 |
| 1991 10 08 | 691 | 0.2− | 0.6− | 2004 05 13 | 691 | 0.4+ | 0.6+ | 2005 11 12 | 691 | 0.2− | 0.2+ |
| 1998 11 15 | 691 | 0.3− | 0.2+ | 2004 05 13 | 691 | 0.3+ | 0.6+ | 2005 11 21 | 691 | 0.1− | 0.2+ |
| 1998 11 15 | 691 | 0.3− | 0.3+ | 2005 09 30 | G96 | 0.2− | 0.0 | 2005 11 21 | 691 | 0.1− | 0.0 |
| 1998 11 15 | 691 | 0.5− | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.1− | 2005 11 21 | 691 | 0.3− | 0.2+ |
| 1998 11 21 | 691 | 0.9+ | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.3− | 2005 12 05 | 704 | 1.5+ | 1.6+ |
| 1998 11 21 | 691 | 1.0+ | 0.2+ | 2005 09 30 | G96 | 0.4− | 0.3− | 2005 12 05 | 704 | 0.3+ | 0.4+ |
| 1998 11 21 | 691 | 1.6+ | 0.5− | 2005 11 03 | 691 | 0.3− | 0.1− | 2005 12 05 | 704 | 0.2+ | 0.5+ |
| 1998 11 27 | 691 | 0.1− | 0.3+ | 2005 11 03 | 691 | 0.3− | 0.0 | | | | |
| 1998 11 27 | 691 | 0.1+ | 0.5− | 2005 11 03 | 691 | 0.5− | 0.1+ | | | | |

## 1998 WC$_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.80593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17378022 | $\omega$ | 22.68892 | | −0.53976481 | −0.79027664 | |
| $a$ | 3.1803078 | $\Omega$ | 101.13739 | | +0.71987931 | −0.61191666 | |
| $e$ | 0.2390279 | $i$ | 17.19328 | | +0.43638026 | +0.03195062 | |
| $P$ | 5.67 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 22 | 691 | 0.1+ | 0.4− | 2000 05 07 | 691 | 0.5− | 0.4− | 2005 03 01 | 703 | 0.1+ | 0.0 |
| 1998 11 22 | 691 | 0.2+ | 0.6− | 2000 05 07 | 691 | 0.0 | 0.6− | 2005 03 01 | 703 | 0.0 | 0.3− |
| 1998 11 22 | 691 | 0.0 | 0.6− | 2000 05 07 | 691 | 0.2− | 0.6− | 2005 03 01 | 703 | 0.5− | 0.2− |
| 1998 12 16 | 699 | 0.5+ | 0.3− | 2003 10 24 | 699 | 0.4− | 1.3− | 2005 03 08 | 704 | 1.2+ | 0.7+ |
| 1998 12 16 | 699 | (2.2+ | 0.0 ) | 2003 10 24 | 699 | 1.5+ | 0.4− | 2005 03 08 | 704 | 2.0− | 1.1+ |
| 1998 12 16 | 699 | 1.3+ | 0.4+ | 2003 10 24 | 699 | 0.1− | 0.4+ | 2005 03 08 | 704 | 0.2− | 0.1− |
| 1999 01 10 | 699 | 0.4− | 0.1− | 2003 10 24 | 699 | 0.0 | 0.2+ | 2005 03 08 | 704 | 0.3+ | 0.1+ |
| 1999 01 10 | 699 | 0.3+ | 0.5− | 2004 12 22 | 703 | 0.6+ | 1.6− | 2005 03 08 | 704 | 0.8+ | 1.3+ |
| 1999 01 10 | 699 | 0.6− | 0.2+ | 2004 12 22 | 703 | 0.1+ | 0.1+ | 2005 03 31 | 703 | 0.4+ | 0.2+ |
| 1999 01 19 | 704 | (1.5− | 2.1−) | 2004 12 22 | 703 | 1.5+ | 1.9+ | 2005 03 31 | 703 | 0.5− | 0.3+ |
| 1999 01 19 | 704 | 0.8− | 0.4− | 2004 12 22 | 703 | 0.5− | 0.2+ | 2005 03 31 | 703 | 0.8+ | 1.8+ |
| 1999 01 19 | 704 | 1.5− | 1.1+ | 2005 01 09 | 703 | 0.1+ | 1.4− | 2005 03 31 | 703 | 0.6+ | 0.9+ |
| 1999 01 19 | 704 | 0.5+ | 0.5+ | 2005 01 09 | 703 | 0.4− | 0.1+ | 2005 04 30 | 703 | 0.2+ | 0.7− |
| 1999 02 12 | 699 | 0.2+ | 0.5− | 2005 01 09 | 703 | 0.2− | 0.6− | 2005 04 30 | 703 | 0.0 | 0.0 |
| 1999 02 12 | 699 | 0.8+ | 0.9+ | 2005 01 09 | 703 | 0.9− | 0.0 | 2005 04 30 | 703 | 0.5− | 0.3− |
| 1999 02 12 | 699 | 0.6− | 0.6− | 2005 03 01 | 703 | 0.3+ | 0.3+ | 2005 04 30 | 703 | 0.7− | 0.7− |

## 1998 XM$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.43242 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21859754 | $\omega$ | 122.60199 | | +0.98411770 | +0.15928518 | |
| $a$ | 2.7292242 | $\Omega$ | 228.36140 | | −0.17641029 | +0.92675623 | |
| $e$ | 0.3058296 | $i$ | 6.01869 | | +0.01979287 | +0.34022216 | |
| $P$ | 4.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.2+ | 0.0 | 1998 12 08 | 910 | 0.1− | 1.0+ | 2002 07 18 | 704 | 0.2+ | 0.4+ |
| 1998 11 14 | 691 | 0.1+ | 0.1+ | 1998 12 08 | 910 | 0.1+ | 0.5+ | 2002 07 18 | 704 | 0.2− | 0.1+ |
| 1998 11 14 | 691 | 0.2− | 0.0 | 2002 07 01 | 644 | 0.4− | 0.3− | 2006 05 08 | 691 | 0.0 | 0.4+ |
| 1998 11 23 | 691 | 0.1− | 0.0 | 2002 07 01 | 644 | 0.2− | 0.1− | 2006 05 08 | 691 | 1.2− | 0.2− |
| 1998 11 23 | 691 | 0.0 | 0.1− | 2002 07 01 | 644 | 0.3− | 0.0 | 2006 05 08 | 691 | 0.1− | 0.2+ |
| 1998 11 23 | 691 | (3.2− | 5.6−) | 2002 07 09 | 704 | 0.1+ | 0.2− | 2006 05 20 | 691 | 0.5+ | 0.4+ |
| 1998 12 07 | 910 | 0.1− | 0.9+ | 2002 07 09 | 704 | 0.4− | 0.8+ | 2006 05 20 | 691 | 0.4+ | 0.2− |
| 1998 12 07 | 910 | 0.1− | 0.7+ | 2002 07 09 | 704 | 0.3+ | 0.0 | 2006 05 20 | 691 | 0.5+ | 0.3+ |
| 1998 12 07 | 910 | 0.2− | 0.7+ | 2002 07 09 | 704 | 1.0+ | 0.5+ | | | | |
| 1998 12 08 | 910 | 0.2− | 0.6+ | 2002 07 18 | 704 | 0.3− | 0.4− | | | | |

## 1998 XH$_6$ = 2006 SJ$_{201}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.68497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24075088 | $\omega$ | 238.95331 | | +0.84285925 | −0.53795955 | |
| $a$ | 2.5591208 | $\Omega$ | 153.58413 | | +0.50363195 | +0.77959238 | |
| $e$ | 0.1054337 | $i$ | 1.76519 | | +0.18958675 | +0.32067934 | |
| $P$ | 4.09 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 08 | 691 | 0.8+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 1998 12 08 | 691 | 0.8+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 1998 12 08 | 691 | 0.5+ | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2− |
| 1998 12 13 | 691 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 1998 12 13 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 1998 12 13 | 691 | 0.0 | 0.4− | 2006 10 15 | 691 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1998 12 20 | 691 | 0.9− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1998 12 20 | 691 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 1998 12 20 | 691 | 0.8− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.3− | 0.0 |
| 2002 11 01 | 950 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 950 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 11 01 | 950 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.7+ | 0.1+ |
| 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 22 | 691 | (2.5+ | 0.9−) | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.6+ | 0.3+ | | | | |

**1998 XB$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.87618 | | (2000.0) | | | |
| $n$ | 0.27851719 | $\omega$ | 55.43870 | | −0.63893472 | −0.76112376 |
| $a$ | 2.3222094 | $\Omega$ | 74.67222 | | +0.66244381 | −0.61813998 |
| $e$ | 0.1970072 | $i$ | 6.64452 | | +0.39106345 | −0.19645251 |
| $P$ | 3.54 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 07 | 910 | 1.5+ | 0.2+ | 2003 02 09 | 291 | 0.1+ | 0.2− | 2003 03 08 | 644 | 0.1+ | 0.1+ |
| 1998 12 07 | 910 | 1.1+ | 0.0 | 2003 02 09 | 291 | 0.2+ | 0.1+ | 2003 03 08 | 644 | 0.2− | 0.2+ |
| 1998 12 07 | 910 | 1.0+ | 0.9− | 2003 02 24 | 608 | 0.1+ | 0.4+ | 2003 03 31 | 704 | 1.9+ | 0.1+ |
| 1998 12 08 | 691 | 0.0 | 0.5− | 2003 02 24 | 608 | 0.3− | 1.1− | 2003 03 31 | 704 | 0.9+ | 1.7+ |
| 1998 12 08 | 691 | 0.5− | 0.6+ | 2003 02 24 | 608 | 1.3− | 0.7− | 2003 03 31 | 704 | 0.5+ | 1.9+ |
| 1998 12 08 | 691 | 1.0− | 0.3+ | 2003 03 08 | 704 | 1.1− | 0.2− | 2003 04 08 | 691 | 0.1− | 0.2− |
| 1998 12 15 | 910 | 0.9+ | 0.1− | 2003 03 08 | 704 | 0.3− | 0.2− | 2003 04 08 | 691 | 0.0 | 0.1+ |
| 1998 12 15 | 910 | 0.7+ | 0.2− | 2003 03 08 | 704 | 0.0 | 0.4+ | 2003 04 08 | 691 | 0.0 | 0.3− |
| 1998 12 15 | 910 | 0.7+ | 0.1− | 2003 03 08 | 704 | 1.4− | 1.0− | | | | |
| 2003 02 09 | 291 | 0.1+ | 0.0 | 2003 03 08 | 644 | 0.1+ | 0.2+ | | | | |

**1998 XK$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.16222 | | (2000.0) | | | |
| $n$ | 0.22749826 | $\omega$ | 165.51762 | | +0.76497722 | −0.63675026 |
| $a$ | 2.6575656 | $\Omega$ | 234.44883 | | +0.57845245 | +0.74530822 |
| $e$ | 0.2999351 | $i$ | 6.82899 | | +0.28320065 | +0.19764810 |
| $P$ | 4.33 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 910 | 0.5− | 0.1+ | 1998 12 26 | 910 | 0.3− | 0.7− | 2002 10 05 | 704 | 0.5− | 0.6+ |
| 1998 12 16 | 910 | 0.2− | 0.4+ | 2002 08 27 | 644 | 0.3− | 0.5+ | 2002 10 05 | 704 | 2.2+ | 0.5+ |
| 1998 12 16 | 910 | 0.5− | 0.4+ | 2002 08 27 | 644 | 0.1− | 0.8+ | 2002 10 05 | 704 | 0.6− | 0.6+ |
| 1998 12 16 | 910 | 0.5− | 0.1+ | 2002 08 27 | 644 | 0.0 | 0.8+ | 2002 10 05 | 645 | 0.0 | 0.0 |
| 1998 12 16 | 910 | 0.4− | 0.1− | 2002 09 04 | 644 | 0.2− | 0.5+ | 2002 10 05 | 704 | 0.6+ | 0.8− |
| 1998 12 16 | 910 | 0.9− | 0.1+ | 2002 09 04 | 644 | 0.1+ | 0.4+ | 2002 10 05 | 645 | 0.1+ | 0.0 |
| 1998 12 21 | 910 | 1.3+ | 0.1+ | 2002 09 04 | 644 | 0.1− | 0.5+ | 2002 10 30 | 645 | 0.1− | 0.1− |
| 1998 12 21 | 910 | 1.2+ | 0.8+ | 2002 09 12 | 644 | 0.3− | 0.4+ | 2002 10 30 | 645 | 0.1− | 0.1− |
| 1998 12 21 | 910 | 1.3+ | 0.4+ | 2002 09 12 | 644 | 0.2− | 0.5+ | 2004 03 16 | 291 | 0.5+ | 0.4+ |
| 1998 12 25 | 910 | 0.0 | 0.2− | 2002 09 12 | 644 | 0.1+ | 0.2+ | 2004 03 16 | 291 | 0.0 | 0.1+ |
| 1998 12 26 | 910 | 0.3− | 0.4− | 2002 10 05 | 704 | 0.9− | 0.4+ | 2004 03 16 | 291 | 0.2− | 0.2+ |

**1998 XF$_{17}$ = 2002 RM$_{252}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.40056 | | (2000.0) | | | |
| $n$ | 0.22312876 | $\omega$ | 264.50667 | | +0.44169972 | −0.89700682 |
| $a$ | 2.6921485 | $\Omega$ | 159.25579 | | +0.84070911 | +0.40732056 |
| $e$ | 0.2462386 | $i$ | 2.70847 | | +0.31322445 | +0.17166459 |
| $P$ | 4.42 | $H$ | 17.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 910 | 0.1− | 0.1− | 1998 12 25 | 910 | 0.1+ | 0.5+ | 2002 09 14 | 644 | 0.3+ | 0.5+ |
| 1998 12 16 | 910 | 0.2+ | 0.4− | 1998 12 26 | 910 | 0.5− | 0.1+ | 2002 09 14 | 644 | 0.0 | 0.2+ |
| 1998 12 16 | 910 | 0.3+ | 0.4− | 1998 12 26 | 910 | 0.2+ | 0.0 | 2002 09 14 | 644 | 0.3− | 0.6+ |
| 1998 12 17 | 910 | 0.1− | 0.1+ | 2002 09 12 | 644 | 0.2+ | 0.0 | 2002 09 15 | 644 | 0.3+ | 0.5− |
| 1998 12 17 | 910 | 0.1− | 0.2+ | 2002 09 12 | 644 | 0.2+ | 0.2+ | 2002 09 15 | 644 | 0.7− | 0.9− |
| 1998 12 17 | 910 | 0.2+ | 0.1+ | 2002 09 12 | 644 | 0.1+ | 0.0 | | | | |

**1998 XR$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.40732 | | (2000.0) | | | |
| $n$ | 0.24060651 | $\omega$ | 132.58915 | | +0.14726767 | −0.97719161 |
| $a$ | 2.5601444 | $\Omega$ | 308.29947 | | +0.84077855 | +0.20515181 |
| $e$ | 0.2667027 | $i$ | 11.24225 | | +0.52096416 | −0.05485696 |
| $P$ | 4.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.6− | 0.9+ | 2002 10 30 | 704 | 0.6+ | 0.2− | 2003 01 31 | 704 | 1.2+ | 0.1+ |
| 1998 12 14 | 704 | 1.2+ | 1.4− | 2002 10 30 | 704 | 0.1− | 0.8− | 2003 01 31 | 704 | 0.6− | 0.7+ |
| 1998 12 14 | 704 | 0.6− | 0.0 | 2002 10 30 | 704 | (1.6+ | 0.1+) | 2003 01 31 | 704 | 0.5− | 0.8+ |
| 1998 12 14 | 704 | 0.9− | 0.5− | 2002 10 30 | 704 | 0.3− | 1.3− | 2006 10 16 | 704 | 0.4+ | 0.2− |
| 1998 12 14 | 704 | 1.9− | 0.5− | 2002 10 30 | 704 | 1.1+ | 0.7− | 2006 10 16 | 704 | 0.1− | 0.0 |
| 1998 12 17 | 704 | 0.2− | 0.5+ | 2002 11 08 | 704 | 0.3− | 1.5− | 2006 10 16 | 704 | 0.3− | 0.4+ |
| 1998 12 17 | 704 | 1.5+ | 0.4− | 2002 11 08 | 704 | 0.1− | 1.1− | 2006 10 16 | 704 | 0.2− | 1.3− |
| 1998 12 17 | 704 | (0.2− | 2.4+) | 2002 11 08 | 704 | (0.4− | 2.4−) | 2006 10 16 | 704 | 0.9− | 0.3+ |
| 1998 12 17 | 704 | 0.3− | 0.0 | 2002 12 07 | 704 | 0.7− | 0.5+ | 2006 10 23 | G92 | 0.3+ | 0.3+ |
| 1998 12 17 | 704 | (2.2− | 0.5−) | 2002 12 07 | 704 | 0.0 | 0.6+ | 2006 10 23 | G92 | 1.0+ | 0.3+ |
| 1999 01 16 | 704 | 0.3+ | 0.9− | 2002 12 07 | 704 | 0.1+ | 0.2+ | 2006 10 23 | G92 | 0.5− | 1.2+ |
| 1999 01 16 | 704 | 0.4+ | 0.1− | 2002 12 07 | 704 | 0.3− | 0.3+ | 2006 11 16 | 703 | 0.6+ | 0.0 |
| 1999 01 16 | 704 | 0.7+ | 0.9+ | 2002 12 07 | 704 | 0.2− | 0.6+ | 2006 11 16 | 703 | 0.7+ | 0.4+ |
| 1999 01 16 | 704 | (3.0− | 0.1+) | 2002 12 15 | 704 | 0.3+ | 0.6+ | 2006 11 16 | 703 | 0.8+ | 0.4− |
| 2002 10 01 | 704 | 0.2+ | 0.2+ | 2002 12 15 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 703 | (1.0− | 2.1+) |
| 2002 10 01 | 704 | 0.4+ | 0.2− | 2002 12 15 | 704 | 0.4+ | 0.7+ | 2006 11 21 | 703 | 0.2+ | 0.1− |
| 2002 10 01 | 704 | 0.6+ | 0.5+ | 2002 12 15 | 704 | 0.2+ | 0.5+ | 2006 11 21 | 703 | 2.1− | 0.2− |
| 2002 10 06 | 704 | 0.6− | 0.8+ | 2002 12 29 | 704 | 0.5− | 0.5− | 2006 11 21 | 703 | 0.9− | 0.9+ |
| 2002 10 06 | 704 | 0.4− | 0.4− | 2002 12 29 | 704 | 0.6+ | 0.2− | 2006 11 21 | 703 | 0.2− | 1.6+ |
| 2002 10 06 | 704 | 0.8− | 0.7− | 2002 12 29 | 704 | 0.5− | 0.8− | | | | |
| 2002 10 06 | 704 | 0.2− | 0.7− | 2003 01 31 | 704 | 0.0 | 0.2− | | | | |

**1998 XB$_{100}$ = 2006 QQ$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.99241 | | (2000.0) | | | |
| $n$ | 0.24311547 | $\omega$ | 64.31079 | | +0.71033808 | −0.69938797 |
| $a$ | 2.5425002 | $\Omega$ | 339.74871 | | +0.53538813 | +0.60994877 |
| $e$ | 0.2958617 | $i$ | 13.23095 | | +0.45692380 | +0.37258417 |
| $P$ | 4.05 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 0.0 | 0.8− | 2002 10 29 | 704 | 1.0− | 0.2+ | 2003 02 02 | 704 | (1.8− | 0.3−) |
| 1998 12 12 | 704 | 0.3− | 0.7− | 2002 10 29 | 704 | 0.0 | 0.2+ | 2003 02 02 | 704 | (1.8− | 0.2−) |
| 1998 12 12 | 704 | 0.5− | 0.9− | 2002 11 16 | 704 | 0.7+ | 0.6− | 2003 02 02 | 704 | 1.3− | 0.3− |
| 1998 12 12 | 704 | 0.3+ | 0.1+ | 2002 11 16 | 704 | 0.6+ | 1.0− | 2006 08 23 | 704 | (3.1− | 2.0+) |
| 1998 12 12 | 704 | 1.2− | 0.3+ | 2002 11 16 | 704 | 0.8+ | 0.8− | 2006 08 23 | 704 | (1.6− | 0.6+) |
| 1999 01 09 | 704 | 0.2− | 0.2− | 2002 11 16 | 704 | 0.1+ | 1.3− | 2006 08 23 | 704 | 1.1− | 1.2+ |
| 1999 01 09 | 704 | 0.7− | 0.4− | 2002 11 16 | 704 | 0.7+ | 0.6− | 2006 09 04 | 106 | 0.1− | 0.3+ |
| 1999 01 09 | 704 | 0.3− | 1.4+ | 2002 11 24 | 704 | 0.6− | 0.2− | 2006 09 04 | 106 | 1.0− | 0.8+ |
| 1999 01 09 | 704 | 0.6− | 0.0 | 2002 11 24 | 704 | 0.1− | 0.0 | 2006 09 04 | 106 | 0.1+ | 0.7− |
| 1999 01 09 | 704 | 0.5+ | 0.1− | 2002 11 24 | 704 | 0.1+ | 0.3+ | 2006 09 04 | 106 | 0.4− | 0.4+ |
| 1999 01 14 | 704 | 1.2+ | 0.7− | 2002 11 24 | 704 | 0.2+ | 0.5+ | 2006 09 04 | 106 | 0.5+ | 0.1− |
| 1999 01 14 | 704 | 0.9+ | 1.9+ | 2002 11 24 | 704 | 0.3+ | 0.1+ | 2006 09 05 | 106 | 0.1− | 0.1− |
| 1999 01 14 | 704 | (3.0+ | 1.2−) | 2002 12 10 | 704 | 0.7− | 1.0+ | 2006 09 05 | 106 | 0.3− | 0.1− |
| 1999 01 14 | 704 | (1.2− | 2.1−) | 2002 12 10 | 704 | 0.9− | 0.8+ | 2006 10 03 | 704 | 0.8+ | 0.8+ |
| 2002 10 01 | 704 | 0.9+ | 0.0 | 2002 12 10 | 704 | 0.9− | 0.9+ | 2006 10 03 | 704 | 1.0+ | 0.1− |
| 2002 10 01 | 704 | 1.0+ | 0.5− | 2002 12 10 | 704 | 0.8− | 1.0+ | 2006 10 03 | 704 | (1.9+ | 0.5+) |
| 2002 10 01 | 704 | (1.0+ | 1.6−) | 2002 12 10 | 704 | 0.3− | 0.6+ | 2006 10 03 | 703 | 0.0 | 0.4+ |
| 2002 10 01 | 704 | 0.3+ | 0.5− | 2002 12 28 | 704 | 0.6+ | 0.3− | 2006 10 03 | 703 | 0.4− | 0.4+ |
| 2002 10 06 | 704 | 0.2− | 0.4− | 2002 12 28 | 704 | 0.3+ | 0.5− | 2006 10 03 | 703 | 0.0 | 0.1+ |
| 2002 10 06 | 704 | 0.0 | 0.6− | 2002 12 28 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 704 | 0.7+ | 0.0 |
| 2002 10 06 | 704 | 0.3− | 0.7− | 2002 12 28 | 704 | 1.3+ | 0.2+ | 2006 10 16 | 704 | 0.1+ | 0.1− |
| 2002 10 06 | 704 | (0.6− | 3.1−) | 2002 12 28 | 704 | 0.9− | 1.0− | 2006 10 16 | 704 | 1.1− | 1.7− |
| 2002 10 06 | 704 | 0.1− | 0.0 | 2003 01 11 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 704 | 0.7− | 0.4+ |
| 2002 10 29 | 704 | 0.2− | 1.1+ | 2003 01 11 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 704 | 0.3+ | 0.4− |
| 2002 10 29 | 704 | 0.4− | 0.5+ | 2003 01 11 | 704 | 0.3+ | 0.3+ | | | | |
| 2002 10 29 | 704 | 0.6− | 0.2+ | 2003 01 11 | 704 | 0.8+ | 0.1+ | | | | |

**1998 YP$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 72.79739 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.21249580 | $\omega$ | 352.11723 | +0.34105974 | +0.91919932 | |
| $a$ | 2.7812230 | $\Omega$ | 297.63919 | −0.84989561 | +0.21203422 | |
| $e$ | 0.1336791 | $i$ | 12.83884 | −0.40169105 | +0.33183444 | |
| $P$ | 4.64 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 691 | 0.1+ | 0.0 | 2001 09 09 | 699 | 0.7+ | 0.5− | 2006 09 17 | 703 | (0.7− | 1.5+) |
| 1998 12 26 | 691 | 0.0 | 0.4− | 2001 09 09 | 699 | 0.5+ | 0.0 | 2006 09 17 | 703 | 0.6− | 0.9+ |
| 1998 12 26 | 691 | 0.6− | 0.8− | 2001 09 09 | 699 | 0.7+ | 1.1+ | 2006 09 17 | 703 | 0.3− | 0.1+ |
| 1998 12 28 | 691 | 0.3− | 0.1− | 2001 09 16 | 704 | 0.5− | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.6− |
| 1998 12 28 | 691 | 0.0 | 0.1− | 2001 09 16 | 704 | 0.5− | 0.1− | 2006 09 28 | 703 | 0.0 | 0.0 |
| 1998 12 28 | 691 | 0.5− | 0.3− | 2001 09 16 | 704 | 0.7− | 0.4− | 2006 09 28 | 703 | 0.1+ | 0.8+ |
| 1999 01 13 | 691 | 0.3+ | 0.1+ | 2001 09 16 | 704 | 0.6− | 0.5− | 2006 09 28 | 703 | 0.3− | 0.1− |
| 1999 01 13 | 691 | 0.1+ | 0.4+ | 2001 09 16 | 704 | 1.0− | 0.9− | 2006 10 22 | 644 | 0.1+ | 0.8+ |
| 1999 01 13 | 691 | 0.1+ | 0.0 | 2001 09 25 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.5+ |
| 2001 05 22 | 807 | 0.1+ | 0.0 | 2001 09 25 | 704 | 0.7− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.6+ |
| 2001 05 22 | 807 | 0.0 | 0.1− | 2001 09 25 | 704 | 0.3− | 0.3− | 2006 11 15 | 703 | 0.0 | 0.2+ |
| 2001 06 25 | 644 | 0.6+ | 0.8+ | 2004 02 18 | 691 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.7+ |
| 2001 06 25 | 644 | 0.3+ | 0.8+ | 2004 02 18 | 691 | 0.4+ | 0.5+ | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2001 06 25 | 644 | 0.1+ | 0.5+ | 2004 02 18 | 691 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.6− | 0.2+ |
| 2001 09 09 | 699 | 0.4+ | 1.3+ | 2006 09 17 | 703 | 1.4− | 1.2− | | | | |

**1999 AL$_6$ = 2004 FV$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 324.71419 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22129953 | $\omega$ | 284.43191 | +0.57357191 | −0.81553172 | |
| $a$ | 2.7069634 | $\Omega$ | 130.30425 | +0.78506826 | +0.52045164 | |
| $e$ | 0.1588145 | $i$ | 5.79209 | +0.23384416 | +0.25305751 | |
| $P$ | 4.45 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 02 | 691 | 0.3+ | 0.1− | 2004 03 20 | 704 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.0 |
| 1995 04 02 | 691 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.2+ | 1.0+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 1995 04 02 | 691 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.6+ | 0.3− | 2006 10 02 | G96 | 0.2− | 0.2− |
| 1999 01 15 | 691 | 0.3+ | 0.3− | 2006 09 12 | 703 | 1.2− | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 1999 01 15 | 691 | 0.5+ | 0.1+ | 2006 09 12 | 703 | 0.5+ | 0.7− | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 1999 01 15 | 691 | 0.6+ | 0.2− | 2006 09 12 | 703 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 1999 01 18 | 691 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 1999 01 18 | 691 | 0.4− | 0.5− | 2006 09 18 | 703 | 1.0+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.8+ |
| 1999 01 18 | 691 | 0.6− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2001 08 26 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.8+ | 2006 10 17 | 703 | 0.5− | 1.3− |
| 2001 08 26 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | (1.9− | 0.9+) | 2006 10 17 | 703 | 0.4+ | 0.5− |
| 2001 08 26 | 691 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.7+ | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 12 01 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 0.4− | 0.8− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2002 12 01 | 704 | 1.0+ | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 12 01 | 704 | (1.6+ | 0.2−) | 2006 09 22 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 1.0− |
| 2002 12 11 | 704 | (0.5− | 1.6+) | 2006 09 22 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2002 12 11 | 704 | (0.1− | 1.9+) | 2006 09 22 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 11 | 704 | 0.8− | 1.4+ | 2006 09 22 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.3+ | 0.6− |
| 2002 12 11 | 704 | (1.1− | 1.9+) | 2006 09 26 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2002 12 11 | 704 | (1.4− | 1.8+) | 2006 09 26 | 704 | 1.4+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2003 01 07 | 704 | 0.6− | 0.6+ | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.5− |
| 2003 01 07 | 704 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.6+ | 1.2+ |
| 2003 01 07 | 704 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.4+ | 0.2− | 2006 10 28 | 703 | 1.0+ | 0.3+ |
| 2003 01 07 | 704 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 28 | 703 | (1.6+ | 0.4+) |
| 2003 01 07 | 704 | 1.1− | 0.1− | 2006 09 26 | 704 | 0.3− | 0.7+ | 2006 10 28 | 703 | 0.1− | 0.6+ |
| 2003 01 27 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.4− | 0.4+ | 2006 11 06 | 644 | 0.5− | 0.0 |
| 2003 01 27 | 704 | (0.8+ | 1.7+) | 2006 09 26 | 703 | 0.5+ | 0.1− | 2006 11 06 | 644 | 0.6− | 0.2+ |
| 2003 01 27 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 703 | 0.4+ | 0.3− | 2006 11 06 | 644 | 0.1− | 0.4+ |
| 2003 01 27 | 704 | 0.6+ | 0.6+ | 2006 09 26 | 703 | 0.9− | 0.5+ | 2006 11 17 | G92 | (0.7+ | 1.7+) |
| 2004 03 18 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.5− | 0.8− | 2006 11 17 | G92 | 0.1+ | 0.7+ |
| 2004 03 18 | 691 | 0.1+ | 0.7+ | 2006 09 30 | 704 | 0.6− | 0.1+ | 2006 11 17 | G92 | 0.1+ | 0.8+ |
| 2004 03 18 | 691 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.2− | 2006 11 19 | G92 | 0.2− | 1.3+ |
| 2004 03 20 | 704 | 0.7+ | 0.3− | 2006 09 30 | 704 | 0.1− | 0.1+ | 2006 11 19 | G92 | 0.7+ | 1.0+ |
| 2004 03 20 | 704 | (0.3− | 2.8+) | 2006 09 30 | 704 | 1.2− | 0.6+ | 2006 11 19 | G92 | 0.7− | 1.0+ |
| 2004 03 20 | 704 | 0.2− | 1.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− | | | | |

**1999 AY$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 23.29317 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26829000 | $\omega$ | 200.72628 | −0.65839577 | −0.75058811 | |
| $a$ | 2.3808556 | $\Omega$ | 290.49646 | +0.69870189 | −0.58184333 | |
| $e$ | 0.0967300 | $i$ | 3.42555 | +0.27987619 | −0.31317061 | |
| $P$ | 3.67 | $H$ | 17.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 07 | 691 | 0.4+ | 0.3− | 2004 06 22 | 691 | 0.0 | 0.3+ | 2005 12 05 | 704 | 0.3− | 0.1+ |
| 1999 01 07 | 691 | 0.1+ | 0.2− | 2004 06 22 | 691 | 0.2− | 0.1− | 2005 12 05 | 704 | 0.0 | 0.1− |
| 1999 01 07 | 691 | 0.6+ | 0.1+ | 2005 11 12 | 691 | 0.1+ | 0.0 | 2005 12 05 | 704 | 0.4+ | 0.4+ |
| 1999 01 14 | 691 | 0.4+ | 0.3+ | 2005 11 12 | 691 | 0.1− | 0.1− | 2005 12 05 | 704 | 0.4+ | 1.2− |
| 1999 01 14 | 691 | 0.4+ | 0.1+ | 2005 11 12 | 691 | 0.1− | 0.1− | 2005 12 29 | 703 | 0.1− | 0.1+ |
| 1999 01 14 | 691 | 0.7+ | 0.2+ | 2005 11 21 | 691 | 0.1+ | 0.0 | 2005 12 29 | 703 | 0.4+ | 1.1− |
| 1999 01 22 | 691 | 0.7− | 0.2− | 2005 11 21 | 691 | 0.0 | 0.1− | 2005 12 29 | 703 | 1.7+ | 1.1− |
| 1999 01 22 | 691 | 1.0− | 0.0 | 2005 11 21 | 691 | 0.2+ | 0.8+ | 2005 12 29 | 703 | 0.3− | 2.2− |
| 1999 01 22 | 691 | 0.7− | 0.1+ | 2005 11 28 | 703 | 1.9− | 0.4− | 2006 01 27 | G96 | 0.0 | 0.2− |
| 2003 03 31 | 704 | 0.3+ | 0.5− | 2005 11 28 | 703 | 0.7− | 1.2+ | 2006 01 27 | G96 | 0.2− | 0.2− |
| 2003 03 31 | 704 | 0.1+ | 0.9+ | 2005 11 28 | 703 | 1.0− | 1.2+ | 2006 01 27 | G96 | 0.4− | 0.2+ |
| 2003 03 31 | 704 | 0.1+ | 0.7+ | 2005 11 28 | 703 | 1.1+ | 1.8+ | 2006 01 27 | G96 | 0.4+ | 0.2− |
| 2004 06 22 | 691 | 0.1+ | 0.1+ | 2005 12 05 | 704 | 0.4− | 0.1+ | | | | |

**1999 AX$_{12}$ = 2006 UA$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 40.91824 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.23054014 | $\omega$ | 237.56665 | +0.99856542 | +0.03865689 | |
| $a$ | 2.6341369 | $\Omega$ | 120.19349 | −0.02182445 | +0.92569846 | |
| $e$ | 0.0894790 | $i$ | 2.45680 | −0.04889573 | +0.37628182 | |
| $P$ | 4.28 | $H$ | 16.8 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 07 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1999 01 07 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 1999 01 07 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.1− |
| 1999 01 15 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 1999 01 15 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 1999 01 15 | 691 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 1999 01 19 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.4− | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 1999 01 19 | 691 | 0.8− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.4− | 0.3+ | | | | |
| 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.0 | | | | |

**1999 AX$_{14}$ = 2006 UN$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 347.59939 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.23586376 | $\omega$ | 110.10894 | +0.63925339 | −0.76645283 | |
| $a$ | 2.5943501 | $\Omega$ | 299.99676 | +0.67584355 | +0.59872755 | |
| $e$ | 0.2355316 | $i$ | 4.13785 | +0.36686592 | +0.23254114 | |
| $P$ | 4.18 | $H$ | 16.6 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 15 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.5+ | 0.7− | 2006 11 14 | 703 | 0.8− | 0.6+ |
| 1993 08 15 | 691 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.2− | 0.4− | 2006 11 14 | 703 | 0.5− | 0.4+ |
| 1993 08 15 | 691 | 0.6− | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.3− | 2006 11 14 | 703 | 0.2− | 0.3+ |
| 1999 01 08 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.1− |
| 1999 01 08 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.6− | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.3− |
| 1999 01 08 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.1− |
| 1999 01 15 | 691 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | (5.2+ | 1.2−) |
| 1999 01 15 | 691 | 0.7+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | (0.9− | 2.6+) |
| 1999 01 15 | 691 | 0.5+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 691 | 0.8− | 0.0 | 2006 11 02 | 703 | (1.9+ | 2.0−) | 2006 11 16 | 704 | 1.0− | 1.5+ |
| 1999 01 19 | 691 | 0.9− | 0.0 | 2006 11 02 | 703 | 0.6+ | 1.4− | 2006 11 16 | 704 | 0.4− | 0.1− |
| 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 11 02 | 703 | 1.2+ | 1.1− | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2006 09 18 | 703 | 0.5− | 0.6+ | 2006 11 02 | 703 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.3+ |
| 2006 10 19 | 703 | 0.5+ | 1.1− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.9− | 0.4− |
| 2006 10 19 | 703 | 0.8+ | 0.4− | 2006 11 11 | 703 | 0.7− | 0.7+ | 2006 12 01 | 704 | 0.1− | 0.4− |
| 2006 10 19 | 703 | 0.2+ | 0.7− | 2006 11 11 | 703 | 0.1− | 0.6+ | 2006 12 01 | 704 | 1.1+ | 0.5+ |
| 2006 10 19 | 703 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.5+ | 2006 12 01 | 704 | 0.3+ | 0.8− |
| 2006 10 20 | A50 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.8+ | | | | |
| 2006 10 27 | 703 | 0.7+ | 0.3− | 2006 11 14 | 703 | 0.1− | 0.6+ | | | | |

**1999 AR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.75126 | | | (2000.0) | | |
| $n$ | 0.22373639 | $\omega$ | 91.54989 | | +0.57433580 | −0.81818459 |
| $a$ | 2.6872721 | $\Omega$ | 323.35519 | | +0.73216702 | +0.52799142 |
| $e$ | 0.0713081 | $i$ | 2.56302 | | +0.36615550 | +0.22759400 |
| $P$ | 4.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.8− | 0.5− | 2001 09 21 | 704 | 0.8− | 0.4− | 2006 11 11 | 703 | 1.2− | 1.2− |
| 1999 01 13 | 691 | 0.6+ | 0.1− | 2001 09 21 | 704 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 1999 01 15 | 691 | 0.4+ | 0.3− | 2004 04 13 | 691 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 1999 01 15 | 691 | 0.3+ | 0.5+ | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | (0.1+ | 1.6+) |
| 1999 01 15 | 691 | 0.9+ | 0.0 | 2004 04 13 | 691 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 1999 01 18 | 691 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.1− |
| 1999 01 18 | 691 | 0.7− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 704 | (0.0 | 1.6+) |
| 1999 01 18 | 691 | 0.8− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 1999 01 23 | 691 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 1999 01 23 | 691 | 0.3+ | 0.9− | 2006 10 22 | 644 | 0.2− | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 1999 01 23 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2001 08 13 | 621 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.6− |
| 2001 08 13 | 621 | 0.5+ | 0.4− | 2006 10 27 | 703 | 0.5+ | 0.2− | 2006 11 19 | 704 | 0.1− | 1.0+ |
| 2001 08 13 | 621 | 0.2− | 0.6+ | 2006 10 27 | 703 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2001 08 27 | 699 | 0.3+ | 1.0− | 2006 10 27 | 703 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 1.3+ |
| 2001 08 27 | 699 | 0.5− | 1.3− | 2006 11 01 | G96 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2001 08 27 | 699 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6− | 0.2+ |
| 2001 08 27 | 699 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 704 | (0.1− | 1.6+) |
| 2001 09 07 | 704 | 0.1+ | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 1.1− | 0.6+ |
| 2001 09 07 | 704 | 0.7+ | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.4− | 0.1− |
| 2001 09 07 | 704 | (0.2+ | 1.8+) | 2006 11 01 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6− | 0.6+ |
| 2001 09 07 | 704 | 1.0+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 27 | 185 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 27 | 185 | 0.7+ | 0.4− |
| 2001 09 21 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 1.2+ | 2006 11 27 | 185 | 1.5− | 0.8− |

**1999 AW$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.67578 | | | (2000.0) | | |
| $n$ | 0.24621690 | $\omega$ | 171.55481 | | −0.62581850 | −0.77962635 |
| $a$ | 2.5211043 | $\Omega$ | 317.18324 | | +0.71360647 | −0.56036208 |
| $e$ | 0.2094784 | $i$ | 1.94837 | | +0.31482855 | −0.27960167 |
| $P$ | 4.00 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.1− | 0.7− | 2003 02 03 | 704 | 0.4− | 1.0+ | 2003 03 23 | 291 | 0.0 | 0.0 |
| 1999 01 13 | 691 | 0.4− | 0.3+ | 2003 02 03 | 704 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 1999 01 13 | 691 | 0.6− | 0.3+ | 2003 02 03 | 704 | 0.0 | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 1999 01 18 | 691 | 0.0 | 0.3+ | 2003 02 03 | 704 | 0.2− | 1.1+ | 2006 11 22 | G96 | 0.5+ | 0.3+ |
| 1999 01 18 | 691 | 0.2− | 0.0 | 2003 03 11 | 291 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 1999 01 18 | 691 | 0.2+ | 0.2− | 2003 03 11 | 291 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 1999 02 13 | 691 | 0.2+ | 0.3− | 2003 03 11 | 291 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 1.0− | 0.0 |
| 1999 02 13 | 691 | 0.3+ | 0.4− | 2003 03 23 | 291 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.3+ |
| 1999 02 13 | 691 | 0.2+ | 0.3− | 2003 03 23 | 291 | 0.0 | 0.1+ | 2006 11 27 | G96 | 1.2+ | 0.0 |

**1999 AL$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.71817 | | | (2000.0) | | |
| $n$ | 0.21514941 | $\omega$ | 249.73191 | | +0.95841549 | −0.27048720 |
| $a$ | 2.7583071 | $\Omega$ | 125.85578 | | +0.28523771 | +0.89802787 |
| $e$ | 0.0300313 | $i$ | 6.44481 | | +0.00889928 | +0.34696199 |
| $P$ | 4.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 691 | 1.2− | 0.1− | 2004 02 23 | 704 | 0.9+ | 1.3+ | 2006 09 18 | 699 | 0.5− | 0.1− |
| 1998 12 22 | 691 | 1.1− | 0.2− | 2004 02 23 | 704 | 0.5+ | 1.0+ | 2006 09 18 | 699 | 0.9+ | 0.5+ |
| 1998 12 22 | 691 | 1.0− | 0.1+ | 2004 02 23 | 704 | 0.6+ | 1.1+ | 2006 09 18 | 699 | 0.4− | 0.6+ |
| 1999 01 14 | 691 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.1− | 1.4+ | 2006 09 30 | 703 | 1.0− | 0.2− |
| 1999 01 14 | 691 | 0.2+ | 0.4− | 2004 02 23 | 704 | (1.1+ | 1.6+) | 2006 09 30 | 703 | 0.5+ | 0.9− |
| 1999 01 22 | 691 | 1.2+ | 0.2+ | 2005 06 27 | G96 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.2− |
| 1999 01 22 | 691 | 0.8+ | 0.3− | 2005 06 27 | G96 | 0.5+ | 0.1− | 2006 09 30 | 703 | (0.5+ | 2.0−) |
| 1999 01 22 | 691 | 1.0+ | 0.2− | 2005 06 27 | G96 | 0.5+ | 0.2− | 2006 09 30 | 703 | (0.7+ | 1.7−) |
| 2002 11 23 | 644 | 0.3− | 0.1+ | 2005 06 27 | G96 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.5− | 0.5− |
| 2002 11 23 | 644 | 0.3− | 0.1− | 2005 07 12 | G96 | 1.1− | 0.0 | 2006 09 30 | 703 | 1.3+ | 0.1+ |
| 2002 11 23 | 644 | 0.6− | 0.3+ | 2005 07 12 | G96 | 1.0− | 0.7+ | 2006 09 30 | 703 | (0.6+ | 1.6−) |
| 2002 12 03 | 608 | 0.2+ | 0.2− | 2005 07 12 | G96 | 0.5+ | 0.9+ | 2006 10 09 | 644 | 0.3− | 0.5+ |
| 2002 12 03 | 608 | 0.1+ | 0.2− | 2005 07 12 | G96 | 1.1− | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2002 12 03 | 608 | 0.4+ | 0.6+ | 2006 08 20 | 691 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2002 12 10 | 644 | 0.6− | 0.3+ | 2006 08 20 | 691 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 12 10 | 644 | 0.7− | 0.9+ | 2006 08 20 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 12 10 | 644 | 0.9− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |

**1999 AC$_{31}$ = 2006 UW$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.97264 | | | (2000.0) | | |
| $n$ | 0.23285217 | $\omega$ | 291.62325 | | +0.50258984 | −0.86120920 |
| $a$ | 2.6166714 | $\Omega$ | 127.98086 | | +0.82443946 | +0.45111321 |
| $e$ | 0.2774512 | $i$ | 5.50714 | | +0.26019806 | +0.23412727 |
| $P$ | 4.23 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 691 | 0.0 | 0.3− | 2006 09 25 | 699 | 1.0− | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.3− |
| 1999 01 14 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.4+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.6− |
| 1999 01 14 | 691 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3− |
| 1999 01 17 | 691 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.7+ | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 1999 01 17 | 691 | 0.4− | 0.3+ | 2006 09 29 | 699 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 1999 02 13 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.6+ | 1.1+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 1999 02 13 | 691 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 1.3− | 0.9− | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 1999 02 13 | 691 | 0.3− | 0.8− | 2006 10 10 | 644 | 0.2− | 0.2− | | | | |
| 2006 09 25 | 699 | (3.3− | 0.1+) | 2006 10 10 | 644 | 0.0 | 0.1− | | | | |

**1999 BD$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 94.98525 | | | (2000.0) | | |
| $n$ | 0.15073651 | $\omega$ | 341.11792 | | +0.07490545 | −0.99435587 |
| $a$ | 3.4966896 | $\Omega$ | 104.53199 | | +0.92460620 | +0.04103469 |
| $e$ | 0.0580458 | $i$ | 4.45179 | | +0.37348702 | +0.09783940 |
| $P$ | 6.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 15 | 691 | 0.3+ | 0.2− | 1999 01 23 | 691 | 0.4+ | 0.2− | 2003 10 02 | 691 | 0.1− | 0.2+ |
| 1999 01 15 | 691 | 0.0 | 0.3− | 1999 01 23 | 691 | 0.2+ | 0.3− | 2003 10 02 | 691 | 0.1− | 0.2+ |
| 1999 01 15 | 691 | 0.5+ | 0.1− | 2003 09 19 | 644 | 0.3− | 0.7+ | 2003 10 02 | 691 | 0.2− | 0.1+ |
| 1999 01 19 | 691 | 0.4− | 0.2+ | 2003 09 19 | 644 | 0.3− | 0.4+ | 2006 01 23 | 691 | 0.3+ | 0.1− |
| 1999 01 19 | 691 | 0.4− | 0.1+ | 2003 09 19 | 644 | 0.1− | 0.5+ | 2006 01 23 | 691 | 0.0 | 0.1− |
| 1999 01 19 | 691 | 0.5− | 0.1+ | 2003 09 26 | 645 | 0.0 | 0.1− | 2006 01 23 | 691 | 0.3− | 0.1+ |
| 1999 01 23 | 691 | 0.1− | 0.9+ | 2003 09 26 | 645 | 0.1+ | 0.1− | | | | |

**1999 $BD_{32}$ = 2006 $UV_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.19413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22371693 | $\omega$ | 61.90876 | | +0.86363756 | −0.50325339 | |
| $a$ | 2.6874279 | $\Omega$ | 328.28098 | | +0.44064628 | +0.78197798 | |
| $e$ | 0.1271389 | $i$ | 3.20901 | | +0.24486939 | +0.36775869 | |
| $P$ | 4.41 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 24 | 691 | 0.1− | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 1993 10 24 | 691 | 0.1− | 0.3+ | 2004 07 15 | 807 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1993 10 24 | 691 | 0.0 | 0.2+ | 2004 07 16 | 807 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.1− |
| 1999 01 10 | 691 | 0.2− | 0.5+ | 2006 07 22 | G96 | 0.2− | 0.1− | 2006 10 17 | 703 | (1.8− | 0.6−) |
| 1999 01 10 | 691 | 0.2− | 0.1+ | 2006 07 22 | G96 | 0.7+ | 0.2− | 2006 10 17 | 703 | 0.5+ | 0.8+ |
| 1999 01 10 | 691 | (3.3+ | 1.9+) | 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 1999 01 19 | 691 | 0.2− | 0.3− | 2006 07 22 | G96 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.1− | 1.2+ |
| 1999 01 19 | 691 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 1999 01 19 | 691 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1999 01 23 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 1999 01 23 | 691 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 1999 01 23 | 691 | 0.4+ | 0.6− | 2006 09 17 | 703 | 1.5+ | 1.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2004 04 13 | 691 | 0.4+ | 0.5+ | 2006 09 17 | 703 | 0.3− | 0.2− | | | | |

**1999 $CY_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.91210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24114014 | $\omega$ | 283.69696 | | +0.04287115 | −0.99497051 | |
| $a$ | 2.5563661 | $\Omega$ | 163.04300 | | +0.99384134 | +0.03320316 | |
| $e$ | 0.2097009 | $i$ | 18.08353 | | +0.10218343 | +0.09450518 | |
| $P$ | 4.09 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 699 | 0.1+ | 0.3− | 2001 08 25 | 704 | 0.7+ | 0.6− | 2003 01 28 | 704 | 0.1+ | 0.0 |
| 1999 01 17 | 699 | 0.3− | 0.1+ | 2001 08 25 | 704 | 1.0− | 0.1− | 2003 01 28 | 704 | 0.3+ | 0.1+ |
| 1999 01 17 | 699 | 0.4+ | 0.2+ | 2001 08 25 | 704 | 0.7+ | 1.3− | 2004 04 13 | 291 | 0.3− | 0.0 |
| 1999 02 12 | 704 | 0.1− | 0.2− | 2003 01 02 | 704 | 0.5− | 0.7+ | 2004 04 13 | 291 | 0.5+ | 0.9+ |
| 1999 02 12 | 704 | 1.1+ | 0.2+ | 2003 01 02 | 704 | 0.1+ | 0.2− | 2004 04 13 | 291 | 0.2+ | 0.1+ |
| 1999 02 12 | 704 | 0.3− | 0.4+ | 2003 01 02 | 704 | 0.3+ | 0.7+ | 2004 05 21 | 691 | 0.1+ | 0.3− |
| 1999 02 12 | 704 | 1.1− | 0.1+ | 2003 01 02 | 704 | 0.0 | 1.4+ | 2004 05 21 | 691 | 0.3− | 0.1− |
| 1999 02 16 | 704 | (1.8+ | 2.3−) | 2003 01 15 | 644 | 0.3− | 0.2− | 2004 05 21 | 691 | 0.0 | 0.2− |
| 1999 02 16 | 704 | 0.2+ | 1.1− | 2003 01 15 | 644 | 0.3− | 0.0 | 2005 06 30 | 644 | 0.5− | 0.5+ |
| 1999 02 16 | 704 | (0.6+ | 2.9−) | 2003 01 15 | 644 | 0.1+ | 0.2+ | 2005 06 30 | 644 | 0.0 | 0.4+ |
| 1999 02 16 | 704 | 0.2− | 1.6− | 2003 01 28 | 704 | 0.1− | 0.4+ | 2005 06 30 | 644 | 0.4− | 0.3+ |
| 2001 08 25 | 704 | 0.2− | 1.7+ | 2003 01 28 | 704 | 0.1+ | 0.1+ | | | | |
| 2001 08 25 | 704 | 0.2+ | 0.0 | 2003 01 28 | 704 | 0.2+ | 0.1− | | | | |

**1999 $CN_{24}$ = 2006 $ON_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.23077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23161733 | $\omega$ | 59.64181 | | +0.34706170 | −0.93767486 | |
| $a$ | 2.6259635 | $\Omega$ | 10.09782 | | +0.82203359 | +0.29505506 | |
| $e$ | 0.2072250 | $i$ | 5.80088 | | +0.45145205 | +0.18359837 | |
| $P$ | 4.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 29 | 691 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1995 03 29 | 691 | 0.2− | 0.6+ | 2006 07 21 | G96 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 1995 03 29 | 691 | 0.2+ | 0.3+ | 2006 07 22 | G96 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 1999 02 10 | 704 | 0.6− | 1.4+ | 2006 07 22 | G96 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.1− | 0.0 |
| 1999 02 10 | 704 | 0.1+ | 0.2− | 2006 07 22 | G96 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.6− |
| 1999 02 10 | 704 | 0.2+ | 0.6− | 2006 07 22 | G96 | 0.5− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.6+ |
| 1999 02 10 | 704 | 0.9+ | 1.4+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.3− | 0.0 |
| 1999 02 13 | 704 | 1.7− | 1.2− | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.4+ | 0.0 |
| 1999 02 13 | 704 | 0.8+ | 1.5− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.5− | 0.2+ |
| 1999 02 13 | 704 | 0.1+ | 1.0+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2001 07 13 | 644 | 0.2+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | (1.7− | 1.0−) |
| 2001 07 13 | 644 | 0.2+ | 1.0+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | (1.5− | 0.3+) |
| 2001 07 13 | 644 | 0.0 | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 1.3+ |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2002 11 12 | 704 | 0.3− | 0.4+ | 2006 10 19 | 704 | 0.5− | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 11 12 | 704 | 0.6− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2006 10 19 | 704 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2002 12 05 | 704 | 0.9− | 0.1− | 2006 10 19 | 704 | 0.4− | 0.9+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.5− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2006 10 19 | 704 | 0.9− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.6− | 0.2+ | 2006 10 19 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.6− |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2002 12 15 | 704 | 0.9+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2002 12 15 | 704 | 1.5+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2002 12 15 | 704 | 1.5+ | 1.2+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 1.2+ | 0.8+ |
| 2002 12 15 | 704 | 1.4+ | 0.5+ | 2006 10 20 | 644 | 0.5− | 0.1− | 2006 11 22 | 704 | (0.9+ | 1.7+) |
| 2002 12 15 | 704 | 1.4+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.8+ | 1.0+ |
| 2003 01 04 | 704 | 0.9− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2003 01 04 | 704 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2003 01 04 | 704 | 0.1− | 1.1− | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2004 04 16 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2004 04 16 | 691 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.0 |
| 2004 04 16 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.3− | 1.2− |
| 2004 05 23 | 691 | 0.4+ | 0.4+ | 2006 10 29 | 704 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2004 05 23 | 691 | 0.2+ | 0.4+ | 2006 10 29 | 704 | 0.9+ | 0.6+ | 2006 11 29 | 704 | 1.1− | 0.5− |
| 2004 05 23 | 691 | 0.0 | 0.5+ | 2006 10 29 | 704 | 0.5+ | 0.0 | 2006 11 29 | 704 | 0.8− | 0.4− |
| 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 10 29 | 704 | (1.7+ | 2.3+) | | | | |
| 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.4− | 0.7+ | | | | |

**1999 $CN_{93}$ = 2006 $RB_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.54438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22079332 | $\omega$ | 277.80019 | | +0.52804528 | −0.83779172 | |
| $a$ | 2.7110993 | $\Omega$ | 139.32109 | | +0.83864098 | +0.48873526 | |
| $e$ | 0.1723540 | $i$ | 12.29737 | | +0.13360198 | +0.24339861 | |
| $P$ | 4.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.0 | 0.3− | 2002 12 14 | 704 | 1.1− | 0.5− | 2006 09 13 | 644 | 0.0 | 0.3− |
| 1999 02 07 | 691 | 0.3− | 0.1− | 2002 12 14 | 704 | 0.2− | 0.4− | 2006 09 17 | 699 | 0.1− | 0.4+ |
| 1999 02 07 | 691 | 0.1+ | 0.3− | 2002 12 14 | 704 | 0.8− | 1.2− | 2006 09 17 | 699 | 0.4− | 0.7+ |
| 1999 02 10 | 704 | 1.1+ | 0.1− | 2003 01 01 | 704 | (1.6+ | 0.3−) | 2006 09 17 | 699 | 0.1+ | 0.4− |
| 1999 02 10 | 704 | 0.6− | 0.0 | 2003 01 01 | 704 | 0.5− | 0.3+ | 2006 09 17 | 699 | (1.6+ | 1.5+) |
| 1999 02 10 | 704 | (2.5− | 1.0−) | 2003 01 01 | 704 | (0.8+ | 1.8+) | 2006 09 17 | 699 | 1.2+ | 0.1+ |
| 1999 02 10 | 704 | 0.1+ | 0.7+ | 2003 01 01 | 704 | 0.8− | 0.9+ | 2006 09 17 | 699 | 0.0 | 0.9+ |
| 1999 02 12 | 699 | 0.1− | 0.4+ | 2003 01 27 | 644 | 0.4− | 0.7+ | 2006 09 17 | 699 | 0.4+ | 0.5− |
| 1999 02 12 | 699 | 1.4− | 0.8− | 2003 01 27 | 644 | 0.4− | 0.7+ | 2006 09 17 | 699 | 0.2− | 1.1+ |
| 1999 02 12 | 699 | 0.1− | 0.2− | 2003 01 27 | 644 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.5+ | 0.3+ |
| 1999 02 13 | 704 | (0.4− | 2.3+) | 2003 02 01 | 704 | (2.5+ | 0.8+) | 2006 09 19 | 703 | 0.3− | 0.6− |
| 1999 02 13 | 704 | 0.1+ | 0.9− | 2003 02 01 | 704 | 0.8+ | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.3− |
| 1999 02 13 | 704 | 2.0+ | 1.0+ | 2003 02 01 | 704 | (0.6+ | 1.8+) | 2006 09 19 | 703 | 0.2+ | 0.4− |
| 1999 02 13 | 704 | 0.5− | 1.5+ | 2004 03 15 | 704 | (0.5+ | 1.7+) | 2006 09 24 | 608 | (0.5+ | 2.5−) |
| 2000 04 30 | 691 | 0.1− | 0.8− | 2004 03 15 | 704 | 0.4+ | 1.0+ | 2006 09 24 | 608 | (0.7+ | 2.7−) |
| 2000 04 30 | 691 | 0.4− | 0.5− | 2004 03 15 | 704 | 0.3+ | 0.8+ | 2006 09 24 | 608 | (0.5+ | 2.7−) |
| 2000 04 30 | 691 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.1− | 1.3+ | 2006 09 25 | 703 | 0.9− | 0.4− |
| 2001 08 24 | 704 | 0.2+ | 0.1+ | 2004 04 12 | 703 | 0.3− | 1.0+ | 2006 09 25 | 703 | 0.3− | 0.1+ |
| 2001 08 24 | 704 | 0.2− | 0.5− | 2004 04 12 | 703 | 0.3+ | 0.9− | 2006 09 25 | 703 | 0.8− | 0.0 |
| 2001 08 24 | 704 | 0.2+ | 0.7+ | 2004 04 12 | 703 | (0.6− | 1.6+) | 2006 09 25 | 703 | 0.8+ | 0.5+ |
| 2002 10 31 | 704 | 1.0+ | 0.5+ | 2004 04 12 | 703 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.8+ | 0.8− | 2006 08 10 | 644 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 10 31 | 704 | 0.6+ | 0.4− | 2006 08 10 | 644 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 10 31 | 704 | 0.3+ | 0.3− | 2006 08 10 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 11 30 | 704 | (0.5+ | 1.7−) | 2006 08 28 | 699 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2002 11 30 | 704 | 1.3+ | 0.4− | 2006 08 28 | 699 | 0.2− | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2002 11 30 | 704 | 0.9+ | 1.3− | 2006 08 28 | 699 | 1.2− | 0.1− | 2006 11 05 | 644 | 0.7+ | 0.2− |
| 2002 11 30 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.1+ | 0.1− | 2006 11 05 | 644 | 0.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.8− | 0.5− | 2006 09 13 | 644 | 0.0 | 0.5− | 2006 11 05 | 644 | 0.5− | 0.4− |
| 2002 12 14 | 704 | 0.0 | 0.6− | 2006 09 13 | 644 | 0.2+ | 0.4− | | | | |

**1999 CX$_{97}$ = 1982 JH$_1$ = 1995 JQ$_1$ = 2003 AR$_{68}$**

Id. Minor Planet Center (*MPO* 74600; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 241.10367 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.22681391 | $\omega$ | 115.13126 | | −0.95586163 | | +0.27372237 |
| *a* | 2.6629086 | $\Omega$ | 80.90122 | | −0.29311110 | | −0.86316475 |
| *e* | 0.2484975 | *i* | 6.20887 | | −0.02035759 | | −0.42429080 |
| *P* | 4.35 | *H* | 15.5 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 05 15 | 675 | 0.0 | 2.2− | 1999 02 13 | 704 | 1.6− | 1.2− | 2006 09 28 | G96 | 0.2− | 0.3− |
| 1982 05 16 | 675 | 0.5− | 1.3− | 1999 02 13 | 704 | 0.6− | 1.4+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 1982 05 16 | 675 | 1.8− | 0.4− | 1999 02 13 | 704 | 0.0 | 0.8− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 1982 05 18 | 675 | 0.5− | 0.5− | 2001 11 12 | 645 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1995 05 05 | 010 | 0.7+ | 0.4+ | 2001 11 12 | 645 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.3− |
| 1995 05 05 | 010 | 0.1+ | 1.0+ | 2002 12 05 | 704 | 0.1− | 0.6+ | 2006 11 20 | 691 | 0.4− | 0.4− |
| 1995 05 05 | 010 | 0.4− | 1.9+ | 2002 12 05 | 704 | 0.3− | 0.4− | 2006 11 20 | 691 | 0.3− | 0.2− |
| 1995 05 08 | 010 | (2.3+ | 1.7+) | 2002 12 05 | 704 | 1.3− | 0.1− | 2006 11 20 | 691 | 0.8+ | 0.8+ |
| 1995 05 08 | 010 | (1.6+ | 2.1+) | 2002 12 05 | 704 | 0.6− | 0.0 | 2006 11 24 | G96 | 0.4− | 0.5− |
| 1995 05 08 | 010 | (1.5+ | 2.1+) | 2003 01 09 | 704 | (3.0+ | 0.0 ) | 2006 11 24 | G96 | 0.3− | 0.3− |
| 1999 01 22 | 699 | 0.3+ | 0.8− | 2003 01 09 | 704 | (1.9+ | 1.0+) | 2006 11 24 | G96 | 0.4− | 0.3− |
| 1999 01 22 | 699 | 1.5+ | 0.5+ | 2003 01 09 | 704 | 1.0+ | 1.2+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 1999 01 22 | 699 | 1.4+ | 0.1− | 2003 01 09 | 704 | 1.3+ | 0.7+ | 2006 11 24 | G96 | 0.1− | 0.5− |
| 1999 02 10 | 704 | 0.8+ | 0.3− | 2003 01 10 | 704 | 0.1+ | 1.1− | 2006 11 24 | G96 | 0.3− | 0.5− |
| 1999 02 10 | 704 | 0.1− | 1.2− | 2003 01 10 | 704 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.5− |
| 1999 02 10 | 704 | 1.2+ | 0.2+ | 2003 01 10 | 704 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.3− | 0.3− |
| 1999 02 10 | 704 | 1.0− | 0.1− | 2005 08 31 | 644 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.3− | 0.1− |
| 1999 02 10 | 704 | 0.8− | 0.1− | 2005 08 31 | 644 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.4− | 0.8+ |
| 1999 02 13 | 699 | 0.7+ | 0.1+ | 2005 08 31 | 644 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.3− |
| 1999 02 13 | 699 | 0.8+ | 0.4− | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.4− | 0.4− |
| 1999 02 13 | 699 | 0.7+ | 0.2− | 2006 09 28 | G96 | 0.3− | 0.6− | 2006 12 01 | 691 | 0.1+ | 0.2− |
| 1999 02 13 | 704 | 0.4− | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.5− | 2006 12 01 | 691 | 0.4− | 0.5+ |

**1999 CL$_{107}$ = 2006 VX$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 266.87213 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.22560613 | $\omega$ | 276.65709 | | −0.78379958 | | −0.61436590 |
| *a* | 2.6724040 | $\Omega$ | 225.48571 | | +0.60808644 | | −0.72964711 |
| *e* | 0.2568084 | *i* | 7.30143 | | +0.12605200 | | −0.30028259 |
| *P* | 4.37 | *H* | 16.5 | *G* | 0.15 | *U* | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.6+ | 0.2+ | 1999 02 16 | 704 | 1.4− | 1.3+ | 2006 11 11 | G96 | 0.3− | 0.3+ |
| 1999 02 12 | 704 | 0.4+ | 1.1− | 1999 02 21 | 699 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.6− | 0.0 |
| 1999 02 12 | 704 | 0.2+ | 1.2+ | 1999 02 21 | 699 | 1.3+ | 0.5− | 2006 11 11 | G96 | 0.3− | 0.3+ |
| 1999 02 12 | 704 | 0.7+ | 1.3+ | 1999 02 21 | 699 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1999 02 12 | 704 | 0.4− | 1.8− | 2006 11 10 | 691 | 0.1+ | 0.4− | 2006 11 16 | 691 | (0.0 | 1.7+) |
| 1999 02 16 | 704 | 0.3− | 1.3− | 2006 11 10 | 691 | 0.3− | 0.3+ | 2006 11 16 | 691 | (0.3− | 2.0+) |
| 1999 02 16 | 704 | 0.8− | 0.3+ | 2006 11 10 | 691 | 0.5+ | 0.1+ | 2006 11 16 | 691 | (0.2+ | 1.5+) |

**1999 CR$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 328.46497 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.22558037 | $\omega$ | 313.01547 | | +0.52028566 | | −0.85397857 |
| *a* | 2.6726075 | $\Omega$ | 105.63252 | | +0.78497774 | | +0.47599861 |
| *e* | 0.1022949 | *i* | 0.28809 | | +0.33632244 | | +0.21010933 |
| *P* | 4.37 | *H* | 17.1 | *G* | 0.15 | *U* | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.5+ | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.1− |
| 1995 03 02 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1995 03 02 | 691 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1999 01 08 | 691 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1999 01 08 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 1999 01 08 | 691 | 0.1− | 0.5− | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.6+ |
| 1999 01 17 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1− | 1.1+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 1999 01 17 | 691 | 0.3+ | 0.6− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 1999 01 17 | 691 | 0.8− | 0.5+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 1999 02 09 | 691 | 0.5− | 0.4− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.7+ | 0.1+ |
| 1999 02 09 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1999 02 09 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 1999 02 12 | 691 | 0.5+ | 0.4− | 2006 10 23 | 691 | 0.6− | 0.3− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 1999 02 12 | 691 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 1999 02 12 | 691 | 0.3+ | 0.7+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 24 | A44 | 0.8− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 24 | A44 | 0.2+ | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.1− | 0.2− | | | | |

**1999 CL$_{142}$ = 2006 WD$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 18.56500 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.23350741 | $\omega$ | 259.04268 | | +0.83190880 | | −0.55217469 |
| *a* | 2.6117741 | $\Omega$ | 134.44589 | | +0.53447675 | | +0.77064321 |
| *e* | 0.1476675 | *i* | 4.42275 | | +0.14920573 | | +0.31813858 |
| *P* | 4.22 | *H* | 16.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 691 | 0.0 | 0.0 | 2001 08 14 | 608 | 0.5− | 0.5+ | 2005 07 04 | G96 | 0.2− | 0.0 |
| 1999 02 10 | 691 | 0.1+ | 0.2− | 2001 08 14 | 608 | 0.2− | 1.0+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 1999 02 10 | 691 | 0.1+ | 0.2− | 2001 08 14 | 608 | 0.1+ | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 1999 02 13 | 691 | 0.6− | 0.1+ | 2005 06 10 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 1999 02 13 | 691 | 0.6− | 0.1+ | 2005 06 10 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 1999 02 13 | 691 | 0.9− | 0.0 | 2005 06 10 | 691 | 0.3+ | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 1999 02 16 | 691 | 0.5+ | 0.3− | 2005 07 04 | G96 | 0.6− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1999 02 16 | 691 | 1.6+ | 2.0+ | 2005 07 04 | G96 | 0.3− | 0.2− | | | | |
| 1999 02 16 | 691 | 0.2+ | 0.4− | 2005 07 04 | G96 | 1.0− | 0.0 | | | | |

**1999 CP$_{142}$ = 2006 QU$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 199.31269 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.20163419 | $\omega$ | 154.02611 | | −0.77924237 | | −0.62670160 |
| *a* | 2.8802262 | $\Omega$ | 347.16277 | | +0.57089984 | | −0.70642565 |
| *e* | 0.0047810 | *i* | 1.32612 | | +0.25856276 | | −0.32894971 |
| *P* | 4.89 | *H* | 16.2 | *G* | 0.15 | *U* | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 691 | 0.4+ | 0.2+ | 2004 03 18 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.4+ |
| 1999 02 10 | 691 | 0.4+ | 0.1− | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.3− |
| 1999 02 10 | 691 | 0.5+ | 0.1+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.2− |
| 1999 02 13 | 691 | 0.5− | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.2− | 0.2+ |
| 1999 02 13 | 691 | 0.3− | 0.1+ | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 1999 02 13 | 691 | 0.6− | 0.1− | 2006 08 20 | 291 | 0.6− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 1999 02 16 | 691 | 0.1+ | 0.1+ | 2006 08 20 | 291 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.5+ |
| 1999 02 16 | 691 | 0.3− | 0.3− | 2006 08 20 | 291 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.4+ |
| 1999 02 16 | 691 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 691 | 0.0 | 0.2+ | | | | |

**1999 CN$_{157}$ = 2000 JZ$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 255.85748 | | (2000.0) | | **P** | | **Q** |
| *n* | 0.17635333 | $\omega$ | 228.40520 | | +0.85597153 | | −0.51088275 |
| *a* | 3.1492969 | $\Omega$ | 161.86242 | | +0.51677452 | | +0.84063650 |
| *e* | 0.0809064 | *i* | 14.78574 | | +0.01602625 | | +0.17980292 |
| *P* | 5.59 | *H* | 15.4 | *G* | 0.15 | *U* | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.0 | 0.3+ | 2000 05 09 | 691 | 0.4− | 0.1− | 2002 10 10 | 644 | 0.2− | 0.5+ |
| 1999 02 08 | 691 | 0.4+ | 0.2− | 2000 05 09 | 691 | 0.5− | 0.1+ | 2004 01 18 | 644 | 0.4+ | 0.4+ |
| 1999 02 08 | 691 | 0.7+ | 0.0 | 2000 05 09 | 691 | 0.5− | 0.2+ | 2004 01 18 | 644 | 0.0 | 0.2+ |
| 1999 02 09 | 691 | 0.5− | 0.2− | 2002 10 04 | 645 | 0.0 | 0.1− | 2004 01 18 | 644 | 0.2+ | 0.0 |
| 1999 02 09 | 691 | 0.3− | 0.3− | 2002 10 04 | 645 | 0.0 | 0.0 | 2004 01 28 | 645 | 0.0 | 0.0 |
| 1999 02 09 | 691 | 0.4− | 0.0 | 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 28 | 645 | 0.0 | 0.0 |
| 2000 05 01 | 691 | 0.1+ | 0.5− | 2002 10 05 | 645 | 0.0 | 0.1− | 2005 04 05 | 644 | 0.3− | 0.1+ |
| 2000 05 01 | 691 | 1.1+ | 0.1− | 2002 10 10 | 644 | 0.2− | 0.2+ | 2005 04 05 | 644 | 0.5− | 0.6+ |
| 2000 05 01 | 691 | 0.4+ | 0.3− | 2002 10 10 | 644 | 0.4− | 0.2+ | 2005 04 05 | 644 | 0.4+ | 0.3+ |

### 1999 ED$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.13794 | | | (2000.0) | | |
| $n$ | 0.42731506 | $\omega$ | 273.84207 | | +0.16077788 | +0.98650454 |
| $a$ | 1.7457039 | $\Omega$ | 5.69711 | | −0.73549862 | +0.14067743 |
| $e$ | 0.4662478 | $i$ | 18.17974 | | −0.65817343 | +0.08377738 |
| $P$ | 2.31 | $H$ | 19.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 691 | 0.1+ | 0.1+ | 1999 03 22 | 691 | 0.2+ | 0.6− | 1999 05 01 | 426 | 0.4+ | 0.5+ |
| 1999 03 13 | 691 | 0.1− | 0.1+ | 1999 03 22 | 691 | 0.3+ | 0.8− | 1999 05 01 | 426 | 0.6+ | 0.1+ |
| 1999 03 13 | 691 | 0.3− | 0.1+ | 1999 03 22 | 691 | 0.3+ | 0.6− | 1999 05 01 | 426 | 0.1− | 0.1+ |
| 1999 03 14 | 711 | 0.2− | 0.3+ | 1999 03 22 | 360 | 0.5+ | 0.4+ | 1999 08 03 | 413 | 0.3− | 0.2+ |
| 1999 03 14 | 711 | 0.1+ | 1.1+ | 1999 03 22 | 360 | 0.2+ | 0.4+ | 1999 08 03 | 413 | 0.2− | 0.0 |
| 1999 03 14 | 711 | 0.1− | 0.6+ | 1999 03 22 | 360 | 0.3+ | 0.7+ | 1999 08 04 | 413 | 0.1− | 0.1− |
| 1999 03 15 | 691 | 0.2− | 0.7+ | 1999 03 24 | 691 | 0.5− | 0.2+ | 1999 08 04 | 413 | 0.4− | 0.1+ |
| 1999 03 15 | 691 | 0.2− | 0.6+ | 1999 03 24 | 691 | 1.3− | 0.1− | 1999 09 15 | 848 | 0.1− | 1.1+ |
| 1999 03 16 | 691 | 0.4+ | 0.4+ | 1999 03 24 | 691 | 0.4− | 0.2+ | 1999 09 15 | 848 | 0.3− | 1.9+ |
| 1999 03 16 | 691 | 0.2+ | 0.8+ | 1999 04 10 | 426 | 0.0 | 0.3+ | 1999 09 28 | 413 | 0.4− | 0.4+ |
| 1999 03 16 | 691 | 0.5+ | 0.4+ | 1999 04 10 | 426 | 0.1− | 0.5− | 1999 09 28 | 413 | 0.7− | 1.1− |
| 1999 03 17 | 402 | 0.1− | 0.9− | 1999 04 10 | 426 | 0.1+ | 0.7− | 1999 10 16 | 413 | 0.4− | 0.1+ |
| 1999 03 17 | 402 | 1.0+ | 0.3+ | 1999 04 11 | 422 | 0.0 | 0.7− | 1999 10 16 | 413 | 0.3− | 0.3+ |
| 1999 03 17 | 402 | 1.1+ | 1.1+ | 1999 04 11 | 422 | 0.3+ | 0.6− | 1999 10 18 | 658 | 0.3+ | 0.7+ |
| 1999 03 17 | 402 | (1.0− | 3.5−) | 1999 04 11 | 422 | 0.1+ | 0.5− | 1999 10 18 | 658 | 0.2+ | 0.3+ |
| 1999 03 19 | 910 | (0.5+ | 3.1+) | 1999 04 12 | 426 | 0.3+ | 0.4− | 1999 10 18 | 658 | 0.1− | 0.5+ |
| 1999 03 19 | 910 | (0.1+ | 3.9+) | 1999 04 12 | 426 | 0.2− | 0.3− | 2006 08 27 | 291 | 0.4− | 0.4− |
| 1999 03 19 | 910 | (0.1+ | 4.2+) | 1999 04 12 | 426 | 0.4− | 0.3− | 2006 08 27 | 291 | 0.5− | 0.1+ |
| 1999 03 20 | 658 | 0.8+ | 0.1− | 1999 04 13 | 422 | 0.3+ | 1.1− | 2006 09 21 | 540 | 1.9+ | 0.3+ |
| 1999 03 20 | 658 | 1.4− | 1.0− | 1999 04 13 | 422 | 0.8+ | 0.7− | 2006 09 21 | 540 | 0.3− | 0.4+ |
| 1999 03 20 | 658 | 0.1− | 0.3− | 1999 04 23 | 426 | 0.7+ | 0.1+ | 2006 09 21 | 540 | 0.1+ | 0.5+ |
| 1999 03 21 | 104 | 0.7+ | 0.8− | 1999 04 23 | 426 | 0.6+ | 0.3+ | 2006 09 22 | 540 | 1.7+ | 0.7− |
| 1999 03 21 | 104 | 0.4+ | 1.1+ | 1999 04 23 | 426 | 0.5+ | 0.9+ | 2006 09 22 | 540 | 0.4− | 0.1− |
| 1999 03 21 | 104 | (0.8+ | 2.4+) | 1999 05 01 | 426 | 0.6+ | 0.5+ | | | | |

### 1999 EH$_{15}$ = 2001 TO$_{222}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.37916 | | | (2000.0) | | |
| $n$ | 0.23106873 | $\omega$ | 264.78071 | | −0.60961015 | +0.78951166 |
| $a$ | 2.6301182 | $\Omega$ | 327.31934 | | −0.66516820 | −0.55822352 |
| $e$ | 0.0379448 | $i$ | 7.56021 | | −0.43119222 | −0.25506439 |
| $P$ | 4.27 | $H$ | 16.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 16 | 691 | 0.3+ | 0.3+ | 2001 10 20 | 644 | 0.6+ | 1.4− | 2003 02 04 | 644 | 0.1− | 0.2+ |
| 1999 02 16 | 691 | 0.2+ | 0.1+ | 2001 10 20 | 644 | 0.5+ | 0.8− | 2003 02 04 | 644 | 0.3+ | 0.5+ |
| 1999 02 16 | 691 | 0.5+ | 0.2+ | 2001 10 20 | 644 | 0.7+ | 0.7− | 2003 02 04 | 644 | 1.0+ | 0.6+ |
| 1999 03 06 | 691 | 0.3− | 0.5− | 2003 01 09 | 704 | 0.4+ | 0.2+ | 2005 08 31 | 691 | 0.2− | 0.3− |
| 1999 03 06 | 691 | 0.3− | 0.4− | 2003 01 09 | 704 | 0.5− | 1.9+ | 2005 08 31 | 691 | 0.1+ | 0.1+ |
| 1999 03 12 | 691 | 0.9+ | 0.4− | 2003 01 09 | 704 | 0.3− | 1.8+ | 2005 08 31 | 691 | 0.3+ | 0.1+ |
| 1999 03 12 | 691 | 0.8− | 0.1− | 2003 01 25 | 645 | 0.0 | 0.1− | 2005 09 14 | 691 | 0.1− | 0.3+ |
| 1999 03 12 | 691 | 0.8− | 0.0 | 2003 01 25 | 645 | 0.0 | 0.1− | 2005 09 14 | 691 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.9− | 0.0 | 2003 01 26 | 644 | 0.3+ | 0.3+ | 2005 09 14 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2003 01 26 | 644 | 0.1− | 0.3+ | | | | |
| 2001 10 14 | 704 | 0.7+ | 0.4+ | 2003 01 26 | 644 | 0.1− | 0.3+ | | | | |

### 1999 FF$_{17}$ = 2005 VU$_{68}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.34158 | | | (2000.0) | | |
| $n$ | 0.24293543 | $\omega$ | 348.86470 | | −0.99868769 | +0.04771572 |
| $a$ | 2.5437562 | $\Omega$ | 193.91082 | | −0.03899826 | −0.94398787 |
| $e$ | 0.0829756 | $i$ | 4.43826 | | −0.03319700 | −0.32651203 |
| $P$ | 4.06 | $H$ | 17.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 17 | 691 | 0.6+ | 0.3− | 1999 03 24 | 691 | 0.5− | 0.5− | 2003 04 25 | 691 | 0.6+ | 0.6+ |
| 1999 03 17 | 691 | 0.5+ | 0.2+ | 1999 03 24 | 691 | 0.5− | 0.3+ | 2003 04 25 | 691 | 0.4+ | 0.9+ |
| 1999 03 17 | 691 | 0.1+ | 0.8− | 2000 09 03 | 691 | 0.1+ | 0.4+ | 2003 05 01 | 291 | 0.1− | 0.1− |
| 1999 03 19 | 691 | 0.5− | 0.3+ | 2000 09 03 | 691 | 0.1− | 0.5+ | 2003 05 01 | 291 | 0.1− | 0.3− |
| 1999 03 19 | 691 | 0.9− | 0.0 | 2000 09 03 | 691 | 0.4− | 0.4+ | 2003 05 01 | 291 | 0.5+ | 0.5− |
| 1999 03 19 | 691 | 0.4− | 0.2+ | 2003 03 24 | 691 | 0.3− | 0.7− | 2005 11 01 | G96 | 0.8+ | 0.1− |
| 1999 03 23 | 691 | 1.0+ | 0.8+ | 2003 03 24 | 691 | 0.5− | 0.2− | 2005 11 01 | G96 | 0.4+ | 0.1+ |
| 1999 03 23 | 691 | 0.3− | 0.7+ | 2003 03 24 | 691 | 0.4− | 0.1− | 2005 11 01 | G96 | 0.6+ | 0.0 |
| 1999 03 23 | 691 | 0.9+ | 1.0− | 2003 04 08 | 691 | 0.0 | 0.4+ | 2005 11 01 | G96 | 0.2+ | 0.1− |
| 1999 03 23 | 691 | 0.1− | 0.5+ | 2003 04 08 | 691 | 0.1− | 0.2− | 2005 11 04 | 691 | 0.3− | 0.7+ |
| 1999 03 23 | 691 | 0.3− | 0.7+ | 2003 04 08 | 691 | 0.1+ | 0.0 | 2005 11 04 | 691 | 0.4− | 0.6+ |
| 1999 03 24 | 691 | 0.8+ | 0.4+ | 2003 04 25 | 691 | 0.2+ | 0.9+ | 2005 11 04 | 691 | 0.2− | 0.8+ |

### 1999 FE$_{74}$ = 2004 TY$_{189}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 137.22306 | | | (2000.0) | | |
| $n$ | 0.28880178 | $\omega$ | 71.57576 | | −0.20961917 | −0.97755282 |
| $a$ | 2.2667457 | $\Omega$ | 30.54891 | | +0.88060659 | −0.19817385 |
| $e$ | 0.1432960 | $i$ | 2.39273 | | +0.42496097 | −0.07153742 |
| $P$ | 3.41 | $H$ | 18.1 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2002 01 06 | 644 | 0.1+ | 0.4− | 2004 10 11 | 691 | 0.3− | 0.1+ |
| 1999 03 20 | 645 | 0.0 | 0.1− | 2002 01 14 | 704 | 0.2− | 0.3+ | 2006 03 26 | G96 | 0.0 | 0.2+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2002 01 14 | 704 | 0.6+ | 0.5+ | 2006 03 26 | G96 | 0.0 | 0.6+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.5+ | 1.0+ | 2006 03 26 | G96 | 0.1+ | 0.7+ |
| 2001 12 23 | 704 | 1.0+ | 0.6− | 2002 01 14 | 704 | 0.2+ | 0.3− | 2006 03 26 | G96 | 0.3+ | 0.4+ |
| 2001 12 23 | 704 | 0.7− | 0.1+ | 2004 10 07 | 691 | 0.1+ | 0.2+ | 2006 05 01 | 568 | 0.4+ | 0.6+ |
| 2001 12 23 | 704 | 0.1+ | 0.6+ | 2004 10 07 | 691 | 0.1+ | 0.0 | 2006 05 01 | 568 | 0.4+ | 0.5+ |
| 2001 12 23 | 704 | 1.2− | 0.3+ | 2004 10 07 | 691 | 0.0 | 0.0 | 2006 05 01 | 568 | 0.3+ | 0.5+ |
| 2002 01 06 | 644 | 0.2− | 0.4− | 2004 10 11 | 691 | 0.3− | 0.1+ | | | | |
| 2002 01 06 | 644 | 0.2− | 0.2− | 2004 10 11 | 691 | 0.1+ | 0.3+ | | | | |

### 1999 FO$_{75}$ = 2006 VL$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 306.27829 | | | (2000.0) | | |
| $n$ | 0.22501138 | $\omega$ | 297.73451 | | −0.40120224 | −0.91584253 |
| $a$ | 2.6771111 | $\Omega$ | 175.81543 | | +0.89949424 | −0.39729828 |
| $e$ | 0.2174172 | $i$ | 12.99464 | | +0.17305162 | −0.05819400 |
| $P$ | 4.38 | $H$ | 16.7 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 11 13 | 703 | 1.1+ | 0.2− | 2006 11 16 | 703 | 0.9− | 0.3+ |
| 1999 03 20 | 645 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.4− | 0.3+ | 2006 11 16 | 703 | 0.3− | 0.5+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.7+ | 0.5− | 2006 12 01 | G96 | 0.3+ | 0.4+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.2− | 1.0− | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 11 16 | 703 | 1.2− | 0.8+ | 2006 12 01 | G96 | 0.2+ | 0.3− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.0 |

**1999 FQ$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.59399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23779865 | $\omega$ | 230.43642 | | −0.25861677 | +0.95984844 | |
| $a$ | 2.5802580 | $\Omega$ | 25.21890 | | −0.78950864 | −0.14521155 | |
| $e$ | 0.1740871 | $i$ | 14.77586 | | −0.55659094 | −0.24000954 | |
| $P$ | 4.14 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1− | 1999 03 23 | 703 | 0.2− | 0.6− | 2003 03 08 | 644 | 0.6− | 0.4+ |
| 1999 03 20 | 645 | 0.0 | 0.1− | 2003 02 28 | 704 | 0.5+ | 0.1+ | 2003 03 20 | 644 | 0.1+ | 0.4− |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2003 02 28 | 704 | 0.3+ | 0.3− | 2003 03 20 | 644 | 0.1+ | 0.3− |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2003 02 28 | 704 | 0.1+ | 0.2− | 2003 03 20 | 644 | 0.1− | 0.1− |
| 1999 03 23 | 703 | 0.9+ | 0.1− | 2003 02 28 | 704 | 0.7+ | 0.0 | 2003 03 28 | 049 | 0.3− | 0.0 |
| 1999 03 23 | 703 | 0.2− | 0.9− | 2003 03 08 | 644 | 0.4− | 0.2+ | 2003 03 28 | 049 | 0.1+ | 0.1+ |
| 1999 03 23 | 703 | 0.0 | 0.3− | 2003 03 08 | 644 | 0.6− | 0.3+ | 2003 03 28 | 049 | 0.3+ | 0.2+ |

**1999 FK$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.45151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22806585 | $\omega$ | 343.53663 | | −0.80020892 | −0.59356445 | |
| $a$ | 2.6531545 | $\Omega$ | 159.32834 | | +0.57397154 | −0.79941881 | |
| $e$ | 0.1909012 | $i$ | 14.05234 | | +0.17384578 | −0.09279447 | |
| $P$ | 4.32 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 1999 03 22 | 645 | 0.1− | 0.1+ | 2003 03 23 | 645 | 0.1− | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 03 06 | 699 | 0.3+ | 0.2+ | 2003 03 23 | 645 | 0.1− | 0.1− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 03 06 | 699 | 0.4− | 0.9+ | 2003 03 30 | 645 | 0.0 | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 03 06 | 699 | 1.1+ | 0.8− | 2003 03 30 | 645 | 0.1+ | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 03 06 | 699 | 1.1+ | 0.6− | | | | |

**1999 FU$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.95997 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24299513 | $\omega$ | 55.26234 | | −0.78339876 | +0.61629676 | |
| $a$ | 2.5433395 | $\Omega$ | 162.33558 | | −0.62070638 | −0.76918484 | |
| $e$ | 0.1187411 | $i$ | 15.36524 | | −0.03178001 | −0.16891708 | |
| $P$ | 4.06 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.0 | 2003 03 29 | 699 | 0.2+ | 0.2− | 2003 04 09 | 704 | 0.4+ | 0.3+ |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2003 03 29 | 699 | 0.6+ | 0.5+ | 2003 04 09 | 704 | 0.1− | 0.4+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 03 29 | 699 | 0.4− | 0.6+ | 2003 04 09 | 704 | 1.3+ | 0.5+ |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2003 03 29 | 699 | 0.9− | 1.6− | 2003 04 27 | 645 | 0.0 | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 04 09 | 704 | 0.6+ | 0.4− | 2003 04 27 | 645 | 0.0 | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 04 09 | 704 | 0.7− | 0.0 | | | | |

**1999 FL$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.51545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21575943 | $\omega$ | 78.25527 | | −0.25973425 | +0.96558198 | |
| $a$ | 2.7531055 | $\Omega$ | 176.59639 | | −0.95147300 | −0.25345034 | |
| $e$ | 0.1370243 | $i$ | 13.40960 | | −0.16503711 | −0.05843265 | |
| $P$ | 4.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 09 | 691 | 0.5− | 0.0 | 2000 09 03 | 704 | 1.4+ | 0.2+ | 2004 06 13 | 704 | 0.2+ | 1.0− |
| 1996 10 09 | 691 | 0.2− | 0.2+ | 2000 09 03 | 704 | 0.3− | 0.0 | 2004 06 13 | 691 | 0.1− | 0.1+ |
| 1996 10 09 | 691 | 0.3− | 0.2+ | 2004 05 24 | 704 | 0.9− | 0.1− | 2004 06 13 | 691 | 0.1− | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 05 24 | 704 | 0.2− | 1.0− | 2004 06 27 | 691 | 0.1+ | 0.1+ |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2004 05 24 | 704 | 1.2− | 0.1+ | 2004 06 27 | 691 | 0.1− | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 05 24 | 704 | 0.7− | 0.1+ | 2004 06 27 | 691 | 0.0 | 0.2+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 05 24 | 704 | 0.1+ | 0.1− | 2005 10 07 | 703 | 0.6+ | 0.4+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 06 13 | 704 | 0.3+ | 1.1− | 2005 10 07 | 703 | 0.7+ | 0.2− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 06 13 | 704 | 0.3+ | 0.8− | 2005 10 07 | 703 | 0.5− | 0.3+ |
| 2000 09 03 | 704 | 1.5+ | 1.0+ | 2004 06 13 | 691 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.6+ | 0.3− |
| 2000 09 03 | 704 | 0.1+ | 0.7+ | 2004 06 13 | 704 | 0.7+ | 0.4+ | | | | |

**1999 FL$_{96}$ = 2004 VH$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.91023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25540815 | $\omega$ | 213.16978 | | +0.65405096 | +0.72207708 | |
| $a$ | 2.4602517 | $\Omega$ | 98.76668 | | −0.63487683 | +0.68602221 | |
| $e$ | 0.1750327 | $i$ | 13.18537 | | −0.41127697 | +0.08932084 | |
| $P$ | 3.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2003 06 03 | 704 | 0.5+ | 1.2+ | 2003 07 23 | 644 | 0.2+ | 0.3+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 06 03 | 691 | 0.4− | 0.2+ | 2003 07 23 | 644 | 0.1− | 0.7+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 06 03 | 691 | 0.1− | 0.2+ | 2003 07 23 | 644 | 0.2+ | 0.8+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 06 22 | 699 | 0.7+ | 0.4− | 2004 11 05 | 644 | 0.1− | 0.0 |
| 2003 05 26 | 691 | 0.3+ | 0.2− | 2003 06 22 | 699 | 0.9+ | 0.9− | 2004 11 05 | 644 | 0.3+ | 0.6+ |
| 2003 05 26 | 691 | 0.0 | 0.3− | 2003 06 22 | 699 | 0.1+ | 0.3− | 2004 11 05 | 644 | 0.3− | 0.4+ |
| 2003 05 26 | 691 | 0.1+ | 0.2− | 2003 06 22 | 699 | 0.8− | 0.4− | 2004 11 11 | 699 | 0.8+ | 0.6− |
| 2003 06 03 | 704 | 0.6− | 0.7− | 2003 07 04 | 691 | 0.0 | 0.1− | 2004 11 11 | 699 | 0.4− | 0.5+ |
| 2003 06 03 | 704 | 0.1+ | 1.7+ | 2003 07 04 | 691 | 0.1+ | 0.1− | 2004 11 11 | 699 | 0.3+ | 0.5− |
| 2003 06 03 | 691 | 0.3− | 0.1− | 2003 07 04 | 691 | 0.1+ | 0.0 | 2004 11 11 | 699 | 0.6− | 0.2− |

**1999 FX$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.85945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24241474 | $\omega$ | 120.26890 | | +0.26738068 | +0.96349745 | |
| $a$ | 2.5473974 | $\Omega$ | 165.22140 | | −0.90117424 | +0.25496962 | |
| $e$ | 0.1349302 | $i$ | 3.01688 | | −0.34116355 | +0.08162815 | |
| $P$ | 4.07 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.4+ | 0.6− | 2003 04 01 | 695 | 0.6+ | 0.6+ | 2004 08 26 | 703 | 1.0− | 0.9+ |
| 1999 03 19 | 691 | 0.1+ | 0.4− | 2003 04 01 | 695 | 0.4+ | 0.5+ | 2004 08 26 | 703 | 0.7− | 0.2− |
| 1999 03 19 | 691 | 0.5+ | 0.3− | 2003 04 07 | 691 | 0.8+ | 0.3+ | 2004 08 26 | 703 | 0.7− | 0.9− |
| 1999 03 21 | 645 | 0.2− | 0.1− | 2003 04 07 | 691 | 0.6+ | 0.4+ | 2004 08 26 | 703 | 0.5− | 0.2− |
| 1999 03 21 | 645 | 0.1− | 0.1− | 2003 04 07 | 691 | 0.8+ | 0.6+ | 2004 09 09 | 704 | 0.6− | 0.4+ |
| 1999 03 22 | 645 | 0.2− | 0.1− | 2004 08 09 | 704 | 0.1− | 1.6− | 2004 09 09 | 704 | 0.2− | 0.3− |
| 1999 03 22 | 645 | 0.2− | 0.1− | 2004 08 09 | 704 | 1.1+ | 0.2− | 2004 09 09 | 704 | 0.2− | 0.3+ |
| 2000 08 29 | 704 | 0.9− | 0.4− | 2004 08 09 | 704 | 0.3+ | 0.4+ | 2004 09 09 | 704 | 0.2+ | 0.6+ |
| 2000 08 29 | 704 | 0.2+ | 0.0 | 2004 08 09 | 704 | 0.7− | 0.7+ | 2004 09 09 | 704 | 0.5+ | 0.6− |
| 2000 08 29 | 704 | 0.3+ | 0.1+ | 2004 08 09 | 699 | 0.4+ | 0.6+ | 2005 12 01 | 691 | 1.3− | 0.8+ |
| 2000 08 29 | 704 | 0.8− | 1.7+ | 2004 08 09 | 699 | 0.1+ | 0.7− | 2005 12 01 | 691 | 1.1− | 0.4+ |
| 2000 09 03 | 645 | 0.2+ | 0.2− | 2004 08 09 | 699 | 1.1− | 0.7− | 2005 12 01 | 691 | 2.2+ | 2.4− |
| 2000 09 03 | 645 | 0.2+ | 0.2− | 2004 08 09 | 699 | 0.1+ | 0.1− | | | | |

**1999 HY$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.67194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29259816 | $\omega$ | 46.16040 | | +0.18505426 | −0.98013211 | |
| $a$ | 2.2470962 | $\Omega$ | 33.37086 | | +0.86030096 | +0.12646069 | |
| $e$ | 0.0321584 | $i$ | 7.45686 | | +0.47501283 | +0.15280297 | |
| $P$ | 3.37 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 15 | 691 | 0.4− | 0.2− | 2002 02 25 | 644 | 0.5+ | 0.7− | 2002 04 02 | 644 | 0.2+ | 0.1+ |
| 1999 04 15 | 691 | 0.3+ | 0.1− | 2002 02 25 | 644 | 0.6+ | 0.5− | 2002 04 02 | 644 | 0.1+ | 0.3+ |
| 1999 04 19 | 691 | 0.4+ | 0.4− | 2002 03 05 | 608 | 0.8− | 0.4− | 2002 04 02 | 644 | 0.2+ | 0.2+ |
| 1999 04 19 | 691 | 0.2+ | 0.1− | 2002 03 05 | 608 | 0.7− | 0.1− | 2005 01 06 | 703 | 0.6+ | 0.5− |
| 1999 04 20 | 691 | 0.2− | 0.1+ | 2002 03 05 | 608 | 0.9− | 0.4+ | 2005 01 06 | 703 | 0.1− | 0.7− |
| 1999 04 20 | 691 | 0.2− | 0.0 | 2002 03 11 | 644 | 0.7+ | 1.3+ | 2005 01 06 | 703 | 0.1+ | 0.6− |
| 1999 04 20 | 691 | 0.4− | 0.0 | 2002 03 11 | 644 | 0.6+ | 1.4+ | 2005 01 06 | 703 | 0.9− | 0.6− |
| 2002 02 25 | 644 | 0.3+ | 0.6− | 2002 03 11 | 644 | 0.8+ | 1.2+ | | | | |

**1999 JV$_5$ = 1987 YB$_3$ = 2006 HG$_{56}$**

Id. Minor Planet Center (*MPO* 99904; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.45039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28305632 | $\omega$ | 71.50882 | | −0.63908732 | −0.69684204 | |
| $a$ | 2.2973164 | $\Omega$ | 62.73067 | | +0.49144799 | −0.69555851 | |
| $e$ | 0.2608305 | $i$ | 21.48436 | | +0.59164709 | −0.17495579 | |
| $P$ | 3.48 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 12 20 | 010 | 0.2+ | 0.3− | 2001 12 23 | 704 | 0.4− | 0.6+ | 2006 05 02 | 704 | 0.4− | 0.5+ |
| 1987 12 20 | 010 | 0.7− | 0.4+ | 2001 12 23 | 704 | 0.8− | 0.5+ | 2006 05 04 | 291 | 0.0 | 0.3− |
| 1999 05 10 | 699 | 1.8+ | 0.8+ | 2002 01 07 | 704 | 1.9+ | 0.8− | 2006 05 04 | 291 | 0.2− | 0.4− |
| 1999 05 10 | 699 | (0.5+ | 2.2+) | 2002 01 07 | 704 | 0.6+ | 0.7− | 2006 05 04 | 291 | 0.3− | 0.4− |
| 1999 05 10 | 699 | 0.4+ | 0.9+ | 2002 01 07 | 704 | 0.3+ | 0.6− | 2006 05 08 | 691 | 0.0 | 0.3− |
| 1999 05 12 | 704 | 1.7− | 1.1− | 2006 03 02 | 691 | 1.3+ | 0.1+ | 2006 05 08 | 691 | 0.2− | 0.3− |
| 1999 05 12 | 704 | 0.9+ | 0.2+ | 2006 03 02 | 691 | 0.2+ | 0.1+ | 2006 05 08 | 691 | 0.3− | 0.4− |
| 1999 05 12 | 704 | 0.5− | 0.5− | 2006 03 02 | 691 | 0.3+ | 0.0 | 2006 05 18 | 644 | 0.3− | 0.3− |
| 1999 05 13 | 704 | 0.7− | 1.8− | 2006 04 24 | 704 | 0.3+ | 0.8− | 2006 05 18 | 644 | 0.1− | 0.3− |
| 1999 05 13 | 704 | (0.5+ | 2.4−) | 2006 04 24 | 704 | 1.3+ | 0.0 | 2006 05 18 | 644 | 0.1− | 0.2− |
| 1999 05 13 | 704 | 1.4+ | 1.5− | 2006 04 24 | 704 | 0.3+ | 0.7+ | 2006 05 19 | 703 | 0.5− | 0.5− |
| 1999 05 13 | 704 | (0.3− | 2.8−) | 2006 04 24 | 704 | 0.2+ | 0.4− | 2006 05 19 | 703 | 0.5− | 0.7+ |
| 1999 05 17 | 704 | (2.4− | 0.4−) | 2006 04 24 | 704 | 1.0+ | 1.2+ | 2006 05 19 | 703 | 1.3− | 0.4− |
| 1999 05 17 | 704 | 0.7− | 1.1+ | 2006 04 28 | 704 | 0.5− | 0.7+ | 2006 05 19 | 703 | 0.2+ | 1.2− |
| 1999 05 17 | 704 | (2.5− | 2.1−) | 2006 04 28 | 704 | 0.6− | 1.6+ | 2006 05 25 | 691 | 0.0 | 0.0 |
| 1999 05 17 | 704 | (5.6− | 0.7+) | 2006 04 28 | 704 | 0.8− | 0.3+ | 2006 05 25 | 691 | 0.1+ | 0.0 |
| 1999 05 18 | 704 | 0.4− | 0.5+ | 2006 05 01 | 704 | 0.8− | 0.2+ | 2006 05 25 | 644 | 0.2− | 0.1− |
| 1999 05 18 | 704 | 1.1+ | 0.6+ | 2006 05 01 | 691 | 0.1− | 0.1− | 2006 05 25 | 691 | 0.2− | 0.0 |
| 1999 05 18 | 704 | 0.8+ | 0.3+ | 2006 05 01 | 704 | 0.1+ | 0.7− | 2006 05 25 | 644 | 0.6− | 0.4− |
| 1999 05 18 | 704 | 1.2− | 0.2+ | 2006 05 01 | 691 | 0.2+ | 0.0 | 2006 05 25 | 644 | 0.3− | 0.2− |
| 2001 11 21 | 704 | 0.5− | 0.4− | 2006 05 01 | 704 | 0.3+ | 0.1+ | 2006 05 27 | 704 | 1.0+ | 0.1+ |
| 2001 11 21 | 704 | 1.1+ | 0.5− | 2006 05 01 | 704 | 0.1− | 0.3+ | 2006 05 27 | 704 | 0.5+ | 0.7− |
| 2001 11 21 | 704 | 0.0 | 0.1− | 2006 05 01 | 704 | 0.1+ | 0.4+ | 2006 05 27 | 704 | 0.5+ | 0.4+ |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2006 05 01 | 704 | 0.5− | 0.3+ | 2006 05 29 | 691 | 0.2− | 0.3− |
| 2001 12 23 | 704 | 0.1+ | 0.1− | 2006 05 01 | 691 | 0.1− | 0.1− | 2006 05 29 | 691 | 1.2− | 0.8− |
| 2001 12 23 | 644 | 0.2− | 0.1+ | 2006 05 01 | 704 | 0.0 | 0.0 | 2006 05 29 | 691 | 0.1− | 0.3− |
| 2001 12 23 | 704 | 0.2− | 0.5+ | 2006 05 01 | 704 | 0.5+ | 0.9+ | 2006 06 04 | 691 | 0.1+ | 0.1+ |
| 2001 12 23 | 644 | 0.1− | 0.0 | 2006 05 02 | 704 | 0.7+ | 0.5+ | 2006 06 04 | 691 | 0.0 | 0.2+ |
| 2001 12 23 | 644 | 0.1− | 0.1+ | 2006 05 02 | 704 | 0.8− | 0.3+ | 2006 06 04 | 691 | 0.1+ | 0.0 |
| 2001 12 23 | 704 | 0.6− | 0.3+ | 2006 05 02 | 704 | 1.0+ | 0.3− | | | | |

**1999 JB$_{70}$ = 2006 SO$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.98662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17724338 | $\omega$ | 194.81908 | | −0.33093920 | +0.90678162 | |
| $a$ | 3.1387451 | $\Omega$ | 56.50549 | | −0.83079239 | −0.14870905 | |
| $e$ | 0.1595532 | $i$ | 18.25306 | | −0.44750783 | −0.39450312 | |
| $P$ | 5.56 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 1.0− | 0.5+ | 1999 05 18 | 704 | 1.4+ | 1.3+ | 2001 12 17 | 704 | 0.5− | 0.3+ |
| 1999 05 12 | 704 | 0.2+ | 0.1+ | 1999 05 19 | 704 | 0.6+ | 0.9+ | 2004 03 09 | 644 | 0.1+ | 0.5+ |
| 1999 05 12 | 704 | 0.2+ | 0.8− | 1999 05 19 | 704 | 0.8− | 0.1− | 2004 03 09 | 644 | 0.3+ | 0.3+ |
| 1999 05 12 | 704 | 0.2− | 1.1+ | 1999 05 19 | 704 | 0.6+ | 0.9− | 2004 03 09 | 644 | 0.4+ | 0.4+ |
| 1999 05 12 | 704 | 0.2− | 0.6− | 1999 05 19 | 704 | 1.9− | 1.5− | 2006 09 17 | 699 | 0.2− | 0.8+ |
| 1999 05 13 | 704 | 0.2− | 0.2+ | 1999 05 19 | 704 | 0.6− | 0.9− | 2006 09 17 | 699 | (2.7− | 0.1−) |
| 1999 05 13 | 704 | 0.0 | 0.3− | 1999 05 20 | 699 | 1.0+ | 1.7+ | 2006 09 17 | 699 | 0.6+ | 0.6+ |
| 1999 05 13 | 704 | 0.9− | 1.0+ | 1999 05 20 | 699 | 1.9+ | 0.6+ | 2006 09 17 | 699 | 0.1− | 0.2− |
| 1999 05 13 | 704 | 0.7+ | 0.8+ | 1999 05 20 | 699 | 1.7+ | 0.3+ | 2006 09 22 | 703 | 0.4− | 1.0+ |
| 1999 05 15 | 703 | 0.1+ | 0.8+ | 2001 11 20 | 704 | 0.2− | 0.1+ | 2006 09 22 | 703 | 0.0 | 0.1− |
| 1999 05 15 | 703 | 0.7+ | 0.8+ | 2001 11 20 | 704 | 0.2− | 0.5+ | 2006 09 22 | 703 | 0.2+ | 0.2− |
| 1999 05 15 | 703 | 0.6+ | 0.5+ | 2001 11 20 | 704 | 0.4− | 1.2+ | 2006 09 22 | 703 | 0.7+ | 0.4− |
| 1999 05 15 | 703 | 0.6+ | 0.6+ | 2001 11 20 | 704 | 0.8− | 1.5+ | 2006 09 27 | 703 | 1.0− | 0.3+ |
| 1999 05 18 | 704 | 0.6− | 0.6+ | 2001 11 20 | 704 | 1.2− | 0.9+ | 2006 09 27 | 703 | 0.3− | 0.5− |
| 1999 05 18 | 704 | 1.1+ | 0.3− | 2001 12 17 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.1− |
| 1999 05 18 | 704 | 1.2− | 1.2− | 2001 12 17 | 704 | 0.1− | 0.3+ | 2006 09 27 | 703 | 1.0− | 0.7+ |
| 1999 05 18 | 704 | 0.3+ | 0.6+ | 2001 12 17 | 704 | 0.6− | 0.9+ | | | | |

**1999 JL$_{111}$ = 2005 XK$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.51563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23958919 | $\omega$ | 163.89857 | | −0.20077015 | +0.97116538 | |
| $a$ | 2.5673864 | $\Omega$ | 94.38439 | | −0.91242646 | −0.13760493 | |
| $e$ | 0.2368536 | $i$ | 7.40852 | | −0.35660806 | −0.19468614 | |
| $P$ | 4.11 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 699 | 0.8+ | 1.3+ | 1999 05 19 | 704 | 0.9− | 0.0 | 2003 05 02 | 704 | 0.3+ | 0.1− |
| 1999 05 12 | 699 | 1.5+ | 0.2+ | 1999 06 14 | 704 | 1.5+ | 0.8+ | 2003 05 02 | 704 | 0.3− | 0.1− |
| 1999 05 12 | 699 | 1.6+ | 0.2+ | 1999 06 14 | 704 | 0.7+ | 0.4− | 2003 05 09 | 704 | 0.6− | 0.4+ |
| 1999 05 13 | 704 | 0.5− | 0.3− | 1999 06 14 | 704 | 1.5+ | 0.4+ | 2003 05 09 | 704 | 0.3− | 0.6+ |
| 1999 05 13 | 704 | (2.7− | 1.1+) | 1999 06 14 | 704 | 0.3− | 1.1− | 2003 05 09 | 704 | 0.1+ | 0.3+ |
| 1999 05 13 | 704 | (0.8− | 2.3+) | 1999 06 14 | 704 | (3.2− | 0.3−) | 2003 05 09 | 704 | 0.5− | 0.2− |
| 1999 05 13 | 704 | 0.3+ | 0.7− | 2003 04 08 | 704 | 1.1+ | 1.7+ | 2003 05 09 | 704 | 0.2− | 0.8+ |
| 1999 05 13 | 704 | 1.1− | 0.6+ | 2003 04 08 | 704 | 0.5+ | 0.5+ | 2005 12 01 | 691 | 0.1+ | 0.0 |
| 1999 05 18 | 704 | 1.4− | 2.0− | 2003 04 08 | 704 | 0.7+ | 0.6− | 2005 12 01 | 691 | 0.1+ | 0.1− |
| 1999 05 18 | 704 | 0.8+ | 0.5− | 2003 04 27 | 699 | 0.2+ | 0.3− | 2005 12 01 | 691 | 0.2− | 0.0 |
| 1999 05 18 | 704 | 1.2− | 1.1+ | 2003 04 27 | 699 | 0.3− | 0.8− | 2005 12 05 | 691 | 0.0 | 0.1− |
| 1999 05 18 | 704 | 0.9+ | 1.7− | 2003 04 27 | 699 | 1.4− | 1.0+ | 2005 12 05 | 691 | 0.2+ | 0.1− |
| 1999 05 18 | 704 | 1.5− | 0.1− | 2003 04 27 | 699 | 0.4+ | 0.8− | 2005 12 05 | 691 | 0.5+ | 0.2− |
| 1999 05 19 | 704 | 1.7− | 0.3− | 2003 05 02 | 704 | 0.1+ | 0.2− | 2006 01 05 | 691 | 0.4− | 0.2+ |
| 1999 05 19 | 704 | 0.7− | 0.8+ | 2003 05 02 | 704 | 0.9+ | 0.1− | 2006 01 05 | 691 | 0.4− | 0.2− |
| 1999 05 19 | 704 | 1.1− | 1.7− | 2003 05 02 | 704 | 0.3+ | 0.2+ | 2006 01 05 | 691 | 0.1+ | 0.2− |

**1999 JT$_{114}$ = 2002 CZ$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.79368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27104223 | $\omega$ | 241.93870 | | −0.02401789 | +0.99943889 | |
| $a$ | 2.3647110 | $\Omega$ | 26.71572 | | −0.89802459 | −0.01130729 | |
| $e$ | 0.1811246 | $i$ | 2.97677 | | −0.43928917 | −0.03152864 | |
| $P$ | 3.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 01 | 691 | 0.1+ | 0.0 | 1999 05 18 | 699 | 0.5+ | 0.9+ | 2003 09 03 | 608 | 0.7+ | 0.1+ |
| 1995 03 01 | 691 | 0.2+ | 0.5− | 1999 05 18 | 699 | 0.5+ | 0.5+ | 2005 12 02 | 568 | 0.3+ | 0.0 |
| 1995 03 01 | 691 | 0.1− | 0.4− | 2002 02 10 | 704 | 0.2− | 0.3+ | 2005 12 02 | 568 | 0.2+ | 0.0 |
| 1995 04 05 | 691 | 0.0 | 0.5− | 2002 02 10 | 704 | 0.6− | 0.3+ | 2005 12 02 | 568 | 0.2+ | 0.0 |
| 1995 04 05 | 691 | 0.1− | 0.4− | 2002 02 10 | 704 | 0.0 | 0.3+ | 2006 03 24 | G96 | 0.4+ | 0.1− |
| 1995 04 05 | 691 | 0.3− | 0.3− | 2002 02 10 | 704 | 0.6− | 0.1+ | 2006 03 24 | G96 | 0.0 | 0.2− |
| 1999 05 10 | 704 | (4.4+ | 1.2+) | 2002 02 10 | 704 | 0.0 | 0.6− | 2006 03 24 | G96 | 0.3+ | 0.3− |
| 1999 05 10 | 704 | 0.2+ | 0.6− | 2002 02 12 | 704 | 0.1− | 0.5+ | 2006 03 24 | G96 | 0.1− | 0.3− |
| 1999 05 10 | 704 | 0.8− | 0.9− | 2002 02 12 | 704 | 0.6− | 1.6+ | 2006 04 07 | G96 | 0.3+ | 0.1− |
| 1999 05 10 | 704 | (3.5− | 1.3−) | 2002 02 12 | 704 | 0.5− | 0.6+ | 2006 04 07 | G96 | 0.0 | 0.3− |
| 1999 05 13 | 704 | 0.7+ | 0.3+ | 2002 02 12 | 704 | 0.4− | 0.5+ | 2006 04 07 | G96 | 0.3+ | 0.5− |
| 1999 05 13 | 704 | 0.4+ | 1.3+ | 2002 02 12 | 704 | 0.8+ | 0.6+ | 2006 04 07 | G96 | 0.1+ | 0.2+ |
| 1999 05 13 | 704 | 0.3− | 0.7+ | 2002 03 16 | 291 | 0.1− | 0.2+ | 2006 04 26 | 699 | 0.2− | 2.4+ |
| 1999 05 13 | 704 | 0.3+ | 0.1+ | 2002 03 16 | 291 | 0.1+ | 0.3+ | 2006 04 26 | 699 | 0.4+ | 0.9+ |
| 1999 05 13 | 704 | 1.9− | 0.6− | 2002 03 16 | 291 | 0.4+ | 0.4+ | 2006 04 26 | 699 | 1.6+ | 1.2+ |
| 1999 05 18 | 704 | 0.3− | 0.1+ | 2003 07 08 | 644 | 0.0 | 0.5+ | 2006 04 26 | 699 | 0.4+ | 0.2− |
| 1999 05 18 | 704 | 1.2− | 0.4+ | 2003 07 08 | 644 | 0.1− | 0.2+ | 2006 05 20 | G96 | 0.3− | 0.1− |
| 1999 05 18 | 704 | (2.4− | 0.5−) | 2003 07 08 | 644 | 0.2− | 0.3+ | 2006 05 20 | G96 | 0.4− | 0.4− |
| 1999 05 18 | 699 | 0.4− | 0.0 | 2003 09 03 | 608 | 0.3+ | 0.2− | 2006 05 20 | G96 | 0.5− | 0.5− |
| 1999 05 18 | 704 | (4.9− | 1.6+) | 2003 09 03 | 608 | 0.3− | 0.5+ | 2006 05 20 | G96 | 0.2− | 0.2− |

**1999 JL$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.83500 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22852448 | $\omega$ | 154.24083 | | +0.40493205 | | +0.89986542 |
| $a$ | 2.6496036 | $\Omega$ | 139.09230 | | −0.87585993 | | +0.43263449 |
| $e$ | 0.1693908 | $i$ | 14.33086 | | −0.26248699 | | −0.05540414 |
| $P$ | 4.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 15 | 703 | 0.7− | 0.1+ | 1999 06 12 | 704 | 1.0+ | 0.1− | 2004 09 07 | 704 | 0.6− | 0.6+ |
| 1999 05 15 | 703 | 0.3+ | 0.0 | 1999 06 12 | 704 | 0.2− | 0.4+ | 2004 09 07 | 704 | 0.1− | 0.5+ |
| 1999 05 15 | 703 | 1.9− | 0.2+ | 2004 08 09 | 704 | 0.7+ | 0.8+ | 2004 09 07 | 704 | 0.2+ | 0.1+ |
| 1999 05 15 | 703 | 1.3+ | 0.3− | 2004 08 09 | 704 | 0.4+ | 0.2+ | 2004 09 07 | 704 | 0.9− | 0.2+ |
| 1999 05 17 | 704 | 0.0 | 0.3− | 2004 08 09 | 704 | 0.5− | 0.0 | 2004 09 21 | 704 | 0.3+ | 0.2− |
| 1999 05 17 | 704 | 1.7+ | 0.6− | 2004 08 23 | 699 | 0.4+ | 0.6− | 2004 09 21 | 704 | 0.3− | 0.4− |
| 1999 05 17 | 704 | 0.7− | 0.0 | 2004 08 23 | 699 | 0.3− | 0.8− | 2004 09 21 | 704 | 0.2− | 1.0− |
| 1999 05 17 | 704 | 0.4− | 0.5+ | 2004 08 23 | 699 | 0.8+ | 0.3+ | 2004 09 21 | 704 | 0.6− | 0.1− |
| 1999 06 12 | 704 | 0.1− | 0.2+ | 2004 08 23 | 699 | 0.4+ | 0.0 | 2004 09 21 | 704 | 0.4+ | 0.4+ |
| 1999 06 12 | 704 | 0.4− | 0.0 | 2004 09 07 | 704 | 0.1+ | 0.0 | | | | |

**1999 LF$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.53149 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21327357 | $\omega$ | 126.03388 | | −0.73049387 | | +0.39173234 |
| $a$ | 2.7744572 | $\Omega$ | 83.51512 | | −0.64811450 | | −0.65583004 |
| $e$ | 0.2372046 | $i$ | 34.26344 | | +0.21523545 | | −0.64531599 |
| $P$ | 4.62 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 704 | 0.2+ | 0.2+ | 2002 12 28 | 704 | 0.1+ | 0.8+ | 2003 02 10 | 644 | 0.1+ | 0.2− |
| 1999 04 09 | 704 | 0.8+ | 0.8+ | 2002 12 28 | 704 | 0.5− | 0.7+ | 2003 02 10 | 644 | 0.2− | 0.6+ |
| 1999 04 09 | 704 | 0.5+ | 0.2+ | 2002 12 28 | 704 | 0.2+ | 0.3+ | 2003 02 10 | 644 | 0.4+ | 0.8+ |
| 1999 04 09 | 704 | 0.4− | 1.5+ | 2003 01 14 | 704 | 0.6− | 0.2+ | 2003 02 10 | 644 | 1.1+ | 0.3− |
| 1999 06 07 | 704 | 0.5− | 0.5− | 2003 01 14 | 704 | 0.2− | 0.5+ | 2003 02 10 | 644 | 0.2− | 0.6+ |
| 1999 06 07 | 704 | 0.1+ | 0.4− | 2003 01 14 | 704 | 0.1− | 0.3+ | 2003 03 23 | 704 | 0.9+ | 0.2− |
| 1999 06 07 | 704 | (2.2− | 1.9−) | 2003 01 14 | 704 | 0.1+ | 0.6+ | 2003 03 23 | 704 | 0.3+ | 0.8− |
| 1999 06 07 | 704 | 0.2+ | 0.1+ | 2003 01 14 | 704 | 0.2+ | 0.2+ | 2003 03 23 | 704 | 0.6+ | 1.5− |
| 1999 06 07 | 704 | 0.4+ | 0.3− | 2003 01 22 | 644 | 0.3+ | 0.4− | 2003 03 23 | 704 | 1.1+ | 1.4− |
| 1999 06 08 | 704 | 0.8− | 0.1− | 2003 01 22 | 644 | 0.4+ | 0.0 | 2004 05 15 | 704 | 0.2+ | 0.1+ |
| 1999 06 08 | 704 | 0.4+ | 0.3− | 2003 01 22 | 644 | 0.2+ | 0.3− | 2004 05 15 | 704 | (0.1+ | 2.6−) |
| 1999 06 08 | 704 | 0.2+ | 0.2− | 2003 01 31 | 644 | 0.2− | 0.2+ | 2004 05 15 | 704 | 0.1+ | 0.0 |
| 1999 06 08 | 704 | 0.3− | 0.6− | 2003 01 31 | 644 | 0.4− | 0.1+ | 2004 05 15 | 704 | 0.1+ | 0.4+ |
| 1999 06 08 | 704 | 0.3− | 0.1− | 2003 01 31 | 644 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.7− |
| 2002 12 15 | 704 | 0.3− | 1.0− | 2003 02 10 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.5− | 0.7− |
| 2002 12 15 | 704 | 0.3− | 0.2− | 2003 02 10 | 644 | 0.3+ | 0.5− | 2006 11 13 | 703 | 0.3− | 0.1+ |
| 2002 12 15 | 704 | 0.0 | 0.2− | 2003 02 10 | 644 | 0.2− | 0.7+ | 2006 11 13 | 703 | 0.1− | 0.9+ |
| 2002 12 15 | 704 | 0.5− | 0.1− | 2003 02 10 | 644 | 0.1+ | 0.3+ | | | | |

**1999 LG$_4$ = 2006 VV$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.28189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30373594 | $\omega$ | 79.72632 | | +0.76722782 | | +0.51394869 |
| $a$ | 2.1918219 | $\Omega$ | 248.35385 | | −0.61697514 | | +0.75484565 |
| $e$ | 0.2585950 | $i$ | 24.38092 | | +0.17522314 | | +0.40751046 |
| $P$ | 3.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 17 | 691 | 0.3+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 1993 12 17 | 691 | 0.2− | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 1.0+ |
| 1993 12 17 | 691 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.3− | 0.9+ |
| 1994 01 08 | 691 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 1994 01 08 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 1994 01 08 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 1999 06 09 | 704 | 0.8− | 0.4− | 2006 11 15 | 704 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 1999 06 09 | 704 | 0.4− | 0.2+ | 2006 11 15 | 704 | 1.0− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 1999 06 09 | 704 | 1.3− | 0.6− | 2006 11 15 | 704 | 0.7− | 0.2− | 2006 11 22 | 691 | 0.2− | 0.1− |
| 1999 06 09 | 704 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.3− | 0.1− |
| 1999 06 09 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 704 | 0.5− | 0.8+ | 2006 11 22 | 691 | 0.2− | 0.1− |
| 1999 06 11 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.9− | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 1999 06 11 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 1999 06 11 | 704 | 0.7− | 0.6+ | 2006 11 16 | 704 | 0.6− | 0.9+ | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 1999 06 11 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.7+ | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 1999 06 14 | 704 | 0.4+ | 0.6+ | 2006 11 16 | 704 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 1999 06 14 | 704 | 0.7+ | 0.6+ | 2006 11 16 | 704 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 1999 06 14 | 704 | 0.5+ | 0.5+ | 2006 11 16 | 704 | 0.2− | 1.1+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 1999 06 14 | 704 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.8− | 0.6− |
| 1999 06 14 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.6− | 0.6+ | 2006 11 28 | 704 | 0.5+ | 0.1− |
| 1999 07 12 | 704 | 0.4+ | 0.4− | 2006 11 16 | 704 | 0.4+ | 0.4+ | 2006 11 28 | 704 | 0.4+ | 0.3+ |
| 1999 07 12 | 704 | 0.5− | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.3+ | 2006 12 01 | 691 | 0.3+ | 0.0 |
| 1999 07 12 | 704 | 0.7− | 0.3− | 2006 11 16 | 704 | 0.3− | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.1− |
| 1999 07 12 | 704 | 0.5+ | 0.5− | 2006 11 16 | 704 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.7+ |
| 2006 10 23 | 703 | 0.2+ | 0.4− | 2006 11 18 | 691 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.3+ | 0.1+ |
| 2006 10 23 | 703 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.3− | 0.1+ |
| 2006 10 23 | 703 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.9+ |
| 2006 10 23 | 703 | 0.2− | 0.6− | 2006 11 18 | 704 | 0.7+ | 0.1+ | 2006 12 01 | 704 | 0.4+ | 0.3− |
| 2006 11 13 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.6− | 0.8+ | 2006 12 01 | 704 | 0.5+ | 0.2+ |

**1999 LO$_6$ = 2006 RJ$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.38006 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17426176 | $\omega$ | 65.51444 | | −0.16841359 | | +0.97859609 |
| $a$ | 3.1744463 | $\Omega$ | 196.18059 | | −0.98569574 | | −0.16797076 |
| $e$ | 0.1395251 | $i$ | 25.11247 | | −0.00638536 | | +0.11889291 |
| $P$ | 5.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 06 | 691 | 0.5− | 0.0 | 1999 06 12 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.4+ |
| 1999 06 06 | 691 | 0.2+ | 0.0 | 1999 06 20 | 691 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 1999 06 06 | 691 | 0.2+ | 0.0 | 1999 06 20 | 691 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 1999 06 12 | 691 | 0.2− | 0.0 | 1999 06 20 | 691 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1999 06 12 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.9− | 0.2− | 2006 09 19 | 691 | 0.4+ | 0.0 |

**1999 LD$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.15559 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17357036 | $\omega$ | 107.19166 | | −0.78106042 | | +0.43969745 |
| $a$ | 3.1828708 | $\Omega$ | 100.90582 | | −0.58583598 | | −0.76179278 |
| $e$ | 0.2870369 | $i$ | 26.84405 | | +0.21619627 | | −0.47574985 |
| $P$ | 5.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 14 | 704 | 0.4− | 0.1+ | 1999 06 14 | 704 | 0.2+ | 0.0 | 2004 01 19 | 704 | 2.1+ | 0.7+ |
| 1999 05 14 | 704 | 0.8+ | 0.5+ | 1999 06 14 | 704 | 0.6− | 0.3− | 2004 01 19 | 704 | 1.3+ | 0.2− |
| 1999 05 14 | 704 | 1.5− | 1.3+ | 1999 06 14 | 704 | 0.4+ | 0.0 | 2004 01 19 | 704 | 1.3+ | 0.3+ |
| 1999 05 14 | 704 | 0.3+ | 0.9− | 1999 06 14 | 704 | 0.5− | 0.2+ | 2004 01 19 | 704 | 0.2+ | 0.7+ |
| 1999 05 14 | 704 | 0.5+ | 0.4− | 1999 06 14 | 704 | 0.1+ | 0.4+ | 2004 01 30 | 699 | 0.8+ | 0.5− |
| 1999 06 12 | 704 | 0.0 | 0.3− | 1999 06 14 | 704 | 0.7+ | 0.1− | 2004 01 30 | 699 | 0.8− | 0.0 |
| 1999 06 12 | 704 | 0.4+ | 0.0 | 1999 06 14 | 704 | 0.1− | 0.3− | 2004 01 30 | 699 | 0.4− | 0.8− |
| 1999 06 12 | 704 | 0.2+ | 0.4+ | 2003 12 21 | 645 | 0.1− | 0.0 | 2004 01 30 | 699 | 0.5− | 0.2− |
| 1999 06 12 | 704 | 0.5+ | 0.4+ | 2003 12 21 | 645 | 0.3− | 0.1+ | 2004 02 11 | 704 | 0.5+ | 0.4− |
| 1999 06 12 | 704 | 0.4+ | 0.6− | 2004 01 18 | 703 | 0.4− | 0.4+ | 2004 02 11 | 704 | 0.8+ | 0.1− |
| 1999 06 14 | 704 | 0.8− | 0.9+ | 2004 01 18 | 703 | 0.8+ | 1.7− | 2004 02 11 | 704 | 0.1+ | 0.3+ |
| 1999 06 14 | 704 | 0.4− | 0.3− | 2004 01 18 | 703 | 0.5− | 0.8+ | 2004 02 11 | 704 | 0.4+ | 1.4− |
| 1999 06 14 | 704 | 0.1− | 0.6− | 2004 01 18 | 703 | 1.3+ | 1.4+ | 2004 02 11 | 704 | 0.0 | 0.3+ |

**1999 MU$_1$ = 2006 SA$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.60261 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28658038 | $\omega$ | 27.15048 | | +0.41257432 | +0.87965369 | |
| $a$ | 2.2784443 | $\Omega$ | 268.03446 | | −0.87283388 | +0.30742066 | |
| $e$ | 0.3460485 | $i$ | 13.69570 | | −0.26065962 | +0.36290760 | |
| $P$ | 3.44 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 08 | 699 | 0.6+ | 0.5− | 1999 07 02 | 413 | 0.1+ | 0.3− | 2006 08 12 | 644 | 0.3− | 0.3− |
| 1999 06 08 | 699 | 0.2− | 0.3− | 1999 07 02 | 413 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.5− | 0.2+ |
| 1999 06 08 | 699 | 0.3+ | 0.4− | 1999 07 02 | 413 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.0 | 0.1+ |
| 1999 06 20 | 699 | 1.6+ | 1.1+ | 1999 07 22 | 704 | 0.7+ | 0.0 | 2006 09 17 | 703 | 0.0 | 0.3+ |
| 1999 06 20 | 699 | 0.8− | 0.1+ | 1999 07 22 | 704 | 0.1− | 0.4− | 2006 09 17 | 703 | 0.1− | 0.7− |
| 1999 06 20 | 699 | 0.0 | 0.2− | 1999 07 22 | 704 | 0.1+ | 0.1− | 2006 09 22 | 699 | 0.8+ | 0.2− |
| 1999 06 29 | 413 | 0.2− | 0.2+ | 1999 07 22 | 704 | 0.1− | 0.3+ | 2006 09 22 | 699 | 0.5+ | 1.3+ |
| 1999 06 29 | 413 | 0.3− | 0.3+ | 1999 07 22 | 704 | 0.8− | 0.5+ | 2006 09 22 | 699 | 0.1− | 0.2+ |
| 1999 06 29 | 413 | 0.3− | 0.2+ | 2006 08 12 | 644 | 0.2− | 0.1− | 2006 09 22 | 699 | 0.2+ | 1.0− |
| 1999 07 02 | 413 | 0.2− | 0.0 | 2006 08 12 | 644 | 0.2− | 0.2− | | | | |

**1999 ML$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.59863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29656730 | $\omega$ | 19.41396 | | +0.82922776 | +0.55195688 | |
| $a$ | 2.2270016 | $\Omega$ | 306.77069 | | −0.52620496 | +0.71798569 | |
| $e$ | 0.1576062 | $i$ | 6.29930 | | −0.18838699 | +0.42407564 | |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.1− | 0.1+ | 2000 12 31 | 691 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 1996 12 07 | 691 | 0.0 | 0.1− | 2001 02 19 | 691 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.6− |
| 1996 12 07 | 691 | 0.0 | 0.0 | 2001 02 19 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 1999 06 22 | 703 | 0.1− | 0.3− | 2001 02 19 | 691 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 1999 06 22 | 703 | 0.4+ | 0.2+ | 2003 12 23 | 704 | 0.5− | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 1999 06 22 | 703 | 0.7− | 0.6+ | 2003 12 23 | 704 | 1.1− | 0.1+ | 2006 10 27 | 703 | (0.8+ | 1.7+) |
| 1999 06 22 | 703 | (0.6+ | 2.4+) | 2003 12 23 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 0.6+ | 1.0+ |
| 1999 07 14 | 704 | 0.2+ | 0.1+ | 2003 12 23 | 704 | 0.6+ | 0.3− | 2006 10 27 | 703 | (0.6− | 2.1+) |
| 1999 07 14 | 704 | 0.3+ | 1.1+ | 2003 12 28 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.5+ |
| 1999 07 14 | 704 | 0.1− | 0.5+ | 2003 12 28 | 704 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.9− |
| 1999 07 14 | 704 | 0.5+ | 0.6+ | 2003 12 28 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 703 | 1.1− | 0.5− |
| 1999 07 14 | 704 | 0.7− | 0.6− | 2003 12 28 | 704 | 0.6+ | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.5− |
| 1999 08 07 | 699 | (3.5+ | 1.2+) | 2004 01 18 | 691 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.2− | 0.3− |
| 1999 08 07 | 699 | (0.5− | 2.5+) | 2004 01 18 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.1− | 0.4+ |
| 1999 08 07 | 699 | 0.1− | 1.0+ | 2004 01 18 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.0 | 0.2− |
| 1999 08 08 | 699 | 1.2− | 1.7+ | 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 1999 08 08 | 699 | 0.7− | 0.2+ | 2005 03 13 | 691 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.9− |
| 1999 08 08 | 699 | 0.2− | 1.5+ | 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.9+ | 1.0+ |
| 1999 10 13 | 704 | 0.4+ | 0.8− | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 23 | 703 | 0.3− | 0.2+ |
| 1999 10 13 | 704 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.2− | 0.5+ | 2006 11 23 | 703 | 1.5− | 1.3+ |
| 2000 12 31 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.1+ | | | | |
| 2000 12 31 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.1− | | | | |

**1999 NK$_{27}$ = 2005 EU$_{225}$ = 2005 EA$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.09781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25618838 | $\omega$ | 266.82476 | | +0.90577297 | −0.39079134 | |
| $a$ | 2.4552540 | $\Omega$ | 116.12699 | | +0.42349641 | +0.84849403 | |
| $e$ | 0.2465857 | $i$ | 10.51737 | | −0.01503706 | +0.35684732 | |
| $P$ | 3.85 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.2− | 0.8+ | 2001 02 03 | 704 | 0.2− | 0.1+ | 2003 09 19 | 699 | 0.6− | 0.2+ |
| 1997 01 09 | 691 | 0.5− | 0.1+ | 2001 02 03 | 704 | 0.1+ | 0.6− | 2003 10 17 | 704 | 0.6− | 1.1+ |
| 1997 01 09 | 691 | 0.4− | 0.1+ | 2001 02 17 | 704 | 0.2− | 0.4− | 2003 10 17 | 704 | 0.1− | 0.4− |
| 1999 07 14 | 704 | 0.4+ | 0.7+ | 2001 02 17 | 704 | 0.1− | 0.4− | 2003 10 17 | 704 | 0.5+ | 0.5+ |
| 1999 07 14 | 704 | 0.3− | 1.2+ | 2001 02 17 | 704 | 0.2+ | 0.8+ | 2005 03 02 | 703 | 1.1− | 0.1− |
| 1999 07 14 | 704 | 0.2+ | 0.2− | 2001 02 17 | 704 | 0.3+ | 0.0 | 2005 03 02 | 703 | 0.1− | 0.8+ |
| 1999 07 14 | 704 | 0.3− | 0.1+ | 2002 04 12 | 644 | 0.3+ | 0.3− | 2005 03 02 | 703 | 1.0− | 0.2+ |
| 1999 07 14 | 704 | 0.3− | 0.4+ | 2002 04 12 | 644 | 0.3+ | 0.3− | 2005 03 02 | 703 | 0.4− | 0.1+ |
| 1999 07 16 | 704 | 0.6+ | 1.3− | 2002 04 12 | 644 | 0.0 | 0.3− | 2005 03 09 | 703 | 0.1− | 0.5+ |
| 1999 07 16 | 704 | 0.2− | 0.7− | 2003 07 08 | 644 | 0.3− | 0.5+ | 2005 03 09 | 703 | 0.0 | 0.2− |
| 1999 07 16 | 704 | 0.4+ | 0.8− | 2003 07 08 | 644 | 0.2− | 0.4+ | 2005 03 09 | 703 | 0.6− | 0.3− |
| 1999 07 20 | 699 | 0.6− | 1.9+ | 2003 07 08 | 644 | 0.1− | 0.4+ | 2005 03 09 | 703 | 0.7+ | 0.4− |
| 1999 07 20 | 699 | 0.3+ | 1.9+ | 2003 07 25 | 704 | 0.2+ | 0.5+ | 2005 03 16 | 703 | 0.8− | 0.3+ |
| 1999 07 20 | 699 | 0.2− | 0.1+ | 2003 07 25 | 644 | 0.4+ | 0.4+ | 2005 03 16 | 703 | 0.4+ | 0.2− |
| 2001 01 04 | 704 | 0.1− | 0.6+ | 2003 07 25 | 704 | 0.2+ | 1.4+ | 2005 03 16 | 703 | 0.1+ | 1.5+ |
| 2001 01 04 | 704 | 0.9+ | 0.8+ | 2003 07 25 | 704 | 0.5+ | 1.5+ | 2005 03 16 | 703 | 1.3− | 0.3+ |
| 2001 01 04 | 704 | 0.0 | 0.8− | 2003 07 25 | 644 | 0.1− | 0.0 | 2006 05 24 | 699 | 0.2− | 0.8+ |
| 2001 01 04 | 704 | 0.4− | 0.5− | 2003 07 25 | 704 | 0.2− | 0.2+ | 2006 05 24 | 699 | 0.4+ | 0.8+ |
| 2001 01 20 | 691 | 0.8+ | 0.5+ | 2003 07 25 | 644 | 0.1+ | 0.3− | 2006 05 24 | 699 | 1.3− | 1.0+ |
| 2001 01 20 | 691 | 0.8+ | 0.7+ | 2003 09 19 | 699 | 0.6− | 0.6+ | 2006 05 24 | 699 | 0.1+ | 0.3+ |
| 2001 01 20 | 691 | 1.0+ | 0.6+ | 2003 09 19 | 699 | 0.1− | 0.7+ | | | | |
| 2001 02 03 | 704 | 0.2+ | 1.0− | 2003 09 19 | 699 | 0.3− | 0.4+ | | | | |

**1999 PL$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.65716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24253622 | $\omega$ | 311.16319 | | +0.97490192 | +0.15407103 | |
| $a$ | 2.5465467 | $\Omega$ | 40.74019 | | −0.03936152 | +0.82977267 | |
| $e$ | 0.3145312 | $i$ | 14.25589 | | −0.21912764 | +0.53641349 | |
| $P$ | 4.06 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 03 | 413 | 0.5− | 0.7− | 1999 08 31 | 413 | 0.2+ | 0.3+ | 2003 06 15 | 413 | 0.1+ | 0.1− |
| 1999 08 03 | 413 | 0.3− | 0.2− | 1999 08 31 | 413 | 0.1+ | 0.1+ | 2003 06 15 | 413 | 0.2− | 0.4+ |
| 1999 08 05 | 413 | 0.3+ | 0.3− | 1999 10 05 | 413 | 0.0 | 0.1+ | | | | |
| 1999 08 05 | 413 | 0.7+ | 0.5+ | 1999 10 05 | 413 | 0.3− | 0.1− | | | | |

**1999 PB$_9$ = 2005 EU$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.32677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27162494 | $\omega$ | 199.97868 | | +0.99403293 | +0.10343078 | |
| $a$ | 2.3613278 | $\Omega$ | 154.01027 | | −0.08621475 | +0.93957059 | |
| $e$ | 0.2362441 | $i$ | 4.53518 | | −0.06682477 | +0.32635745 | |
| $P$ | 3.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 699 | 0.8− | 0.6+ | 2003 11 24 | 691 | 0.0 | 0.1− | 2003 12 17 | 699 | 0.6− | 0.7− |
| 1999 08 08 | 699 | 1.3− | 1.9+ | 2003 11 24 | 691 | 0.1+ | 0.0 | 2003 12 17 | 699 | 0.7− | 0.3+ |
| 1999 08 08 | 699 | (0.5+ | 2.6+) | 2003 12 01 | 704 | 0.8− | 0.5− | 2003 12 17 | 699 | 0.1+ | 0.4+ |
| 1999 08 22 | 703 | 0.4− | 0.1− | 2003 12 01 | 704 | 0.3+ | 0.3+ | 2005 03 10 | G96 | 0.0 | 0.2+ |
| 1999 08 22 | 703 | 0.6+ | 0.4+ | 2003 12 01 | 704 | 0.6− | 0.6+ | 2005 03 10 | G96 | 0.4+ | 0.1+ |
| 1999 08 22 | 703 | 0.0 | 0.1− | 2003 12 01 | 704 | 0.4− | 0.6+ | 2005 03 10 | G96 | 0.5+ | 0.0 |
| 1999 08 22 | 703 | 1.5+ | 0.7− | 2003 12 01 | 704 | 0.2+ | 0.9+ | 2005 03 10 | G96 | 0.0 | 0.1+ |
| 1999 09 04 | 699 | 0.9− | 0.5− | 2003 12 17 | 691 | 0.0 | 0.2+ | 2005 03 16 | G96 | 0.2− | 0.2+ |
| 1999 09 04 | 699 | 1.0+ | 0.8− | 2003 12 17 | 691 | 0.1+ | 0.3− | 2005 03 16 | G96 | 0.2− | 0.7+ |
| 1999 09 04 | 699 | 0.2− | 0.5+ | 2003 12 17 | 691 | 0.0 | 0.1− | 2005 03 16 | G96 | 0.1− | 0.4+ |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2003 12 17 | 699 | 1.0+ | 0.1− | 2005 03 16 | G96 | 0.4+ | 0.1− |

**1999 RF$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.79365 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28217813 | $\omega$ | 348.58329 | | +0.96395482 | +0.26403031 | |
| $a$ | 2.3020804 | $\Omega$ | 355.66907 | | −0.19672354 | +0.62414690 | |
| $e$ | 0.2053507 | $i$ | 25.78525 | | −0.17913950 | +0.73534254 | |
| $P$ | 3.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 703 | 0.7+ | 1.4+ | 1999 10 14 | 704 | 0.2− | 0.3+ | 2006 08 29 | 703 | (0.9− | 1.7+) |
| 1999 09 05 | 703 | 0.2− | 0.3+ | 1999 10 14 | 704 | 0.1− | 0.4+ | 2006 08 29 | 703 | 0.2− | 0.4+ |
| 1999 09 05 | 703 | 0.4− | 0.5− | 1999 10 14 | 704 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.4+ | 0.9+ |
| 1999 09 05 | 703 | 1.5+ | 0.4− | 1999 10 14 | 704 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.7+ |
| 1999 09 08 | 704 | 0.1+ | 0.4− | 1999 10 15 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 703 | 0.7+ | 0.7+ |
| 1999 09 08 | 704 | 0.9− | 1.1− | 1999 10 15 | 704 | 0.5+ | 0.7+ | 2006 09 17 | 703 | 0.3− | 0.0 |
| 1999 09 08 | 704 | 0.3− | 0.8− | 1999 10 15 | 704 | 0.2− | 0.4+ | 2006 09 25 | 703 | 0.7− | 0.1+ |
| 1999 09 08 | 704 | 0.5+ | 0.7− | 1999 10 15 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 703 | 0.2− | 0.3+ |
| 1999 09 09 | 704 | 0.4+ | 1.0− | 1999 10 15 | 704 | 0.4+ | 0.0 | 2006 09 25 | 703 | 0.2− | 0.2− |
| 1999 09 09 | 704 | 0.4− | 0.4− | 1999 10 16 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.2− | 0.2+ |
| 1999 09 09 | 704 | 1.1+ | 1.0− | 1999 10 16 | 704 | 0.3+ | 0.4− | 2006 10 02 | 704 | 0.0 | 1.2− |
| 1999 09 09 | 704 | 0.5− | 0.2− | 1999 10 16 | 704 | 0.3+ | 0.2− | 2006 10 02 | 704 | 0.3− | 0.2+ |
| 1999 10 05 | 704 | 0.5− | 0.4+ | 1999 10 16 | 704 | 0.1− | 0.3− | 2006 10 02 | 704 | 0.8+ | 0.1+ |
| 1999 10 05 | 704 | 0.8− | 0.6+ | 1999 10 16 | 704 | 0.1+ | 0.1− | 2006 10 02 | 704 | 0.3+ | 0.4− |
| 1999 10 05 | 704 | 0.2− | 0.1− | 2006 08 12 | 644 | 0.4− | 0.4+ | 2006 10 29 | 703 | 0.1− | 0.7− |
| 1999 10 05 | 704 | 1.1− | 0.5− | 2006 08 12 | 644 | 0.2− | 0.3+ | 2006 10 29 | 703 | 0.3− | 0.3− |
| 1999 10 14 | 704 | 0.2+ | 0.1+ | 2006 08 12 | 644 | 0.3− | 0.6+ | 2006 10 29 | 703 | 0.3+ | 0.4− |

**1999 RK$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.11830 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28887173 | $\omega$ | 190.40431 | | +0.99890465 | | −0.04494167 |
| $a$ | 2.2663798 | $\Omega$ | 172.13645 | | +0.04676712 | | +0.94977535 |
| $e$ | 0.2318200 | $i$ | 5.46462 | | +0.00153118 | | +0.30968859 |
| $P$ | 3.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 699 | 1.0− | 0.1+ | 1999 09 14 | 704 | 0.5+ | 0.0 | 1999 10 15 | 704 | 0.5− | 0.3+ |
| 1999 08 22 | 699 | 0.2− | 0.5+ | 1999 09 14 | 704 | 0.4+ | 0.0 | 1999 10 15 | 704 | 0.4− | 0.1+ |
| 1999 08 22 | 699 | 1.2− | 0.2− | 1999 09 14 | 704 | 0.3+ | 0.0 | 1999 10 15 | 704 | 0.2− | 0.1− |
| 1999 09 04 | 699 | 0.1− | 0.1− | 1999 09 14 | 703 | 0.6+ | 1.1+ | 1999 10 15 | 704 | 0.1+ | 0.3+ |
| 1999 09 04 | 699 | 0.7+ | 0.3− | 1999 09 14 | 703 | 0.7− | 0.0 | 1999 10 15 | 704 | 0.1+ | 0.6− |
| 1999 09 04 | 699 | 0.0 | 0.6+ | 1999 09 14 | 703 | 0.2+ | 0.6+ | 1999 10 15 | 704 | 0.5− | 0.4+ |
| 1999 09 07 | 704 | 0.1− | 0.0 | 1999 09 14 | 703 | 0.5+ | 0.1+ | 1999 10 15 | 704 | 0.1− | 0.8− |
| 1999 09 07 | 704 | 0.2− | 0.6− | 1999 09 14 | 703 | 0.1− | 0.9+ | 1999 10 15 | 704 | 0.7− | 0.4+ |
| 1999 09 07 | 704 | 0.4− | 0.7− | 1999 09 14 | 703 | 0.1+ | 0.1+ | 1999 10 15 | 704 | 0.1− | 0.0 |
| 1999 09 07 | 704 | 0.9+ | 0.4+ | 1999 09 14 | 703 | 0.1+ | 0.2+ | 1999 10 15 | 704 | 0.1− | 0.4+ |
| 1999 09 07 | 704 | 0.1+ | 0.2+ | 1999 09 14 | 703 | 0.8+ | 0.5− | 2006 11 13 | 644 | 0.5− | 0.6+ |
| 1999 09 09 | 120 | 0.1− | 0.8− | 1999 10 01 | 120 | 0.6+ | 0.6− | 2006 11 13 | 644 | 0.5− | 0.5+ |
| 1999 09 09 | 120 | 0.6+ | 0.8− | 1999 10 01 | 120 | 0.2− | 0.8− | 2006 11 13 | 644 | 0.6− | 0.4+ |
| 1999 09 09 | 120 | 0.1+ | 0.0 | 1999 10 02 | 704 | 0.5− | 0.5+ | 2006 11 19 | 703 | 0.2− | 0.2− |
| 1999 09 10 | 120 | 1.6− | 0.5+ | 1999 10 02 | 704 | 0.9+ | 0.7− | 2006 11 19 | 703 | 0.4− | 0.0 |
| 1999 09 10 | 120 | 0.6+ | 0.9+ | 1999 10 02 | 704 | 0.6+ | 0.9− | 2006 11 19 | 703 | 0.1− | 0.6− |
| 1999 09 11 | 120 | 0.5+ | 0.4− | 1999 10 02 | 704 | 0.5+ | 1.1− | 2006 11 19 | 703 | 1.0− | 0.2+ |
| 1999 09 11 | 120 | 0.8+ | 1.0+ | 1999 10 02 | 704 | 0.2+ | 0.8− | 2006 11 25 | G96 | 1.0+ | 0.2+ |
| 1999 09 13 | 848 | 0.4− | 0.5+ | 1999 10 07 | 704 | 0.4+ | 0.3− | 2006 11 25 | G96 | 0.8+ | 0.1+ |
| 1999 09 13 | 848 | 0.8− | 0.4+ | 1999 10 07 | 704 | 0.7− | 0.8− | 2006 11 25 | G96 | 0.7+ | 0.1− |
| 1999 09 13 | 848 | 0.4+ | 0.7+ | 1999 10 07 | 704 | 0.7− | 0.3− | 2006 11 25 | G96 | 0.5+ | 0.2+ |
| 1999 09 14 | 704 | 0.5− | 0.8+ | 1999 10 07 | 704 | 0.5− | 0.9− | | | | |
| 1999 09 14 | 704 | 0.6+ | 0.7+ | 1999 10 07 | 704 | 0.1− | 0.4− | | | | |

**1999 RR$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.40866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24547092 | $\omega$ | 274.25809 | | −0.01334589 | | +0.99971952 |
| $a$ | 2.5262094 | $\Omega$ | 354.85382 | | −0.80890892 | | −0.02229618 |
| $e$ | 0.1684502 | $i$ | 12.59843 | | −0.58778249 | | +0.00798498 |
| $P$ | 4.02 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.3+ | 0.4− | 2002 03 12 | 704 | 0.4+ | 0.6− | 2006 02 27 | G96 | 0.1+ | 0.1− |
| 1994 04 02 | 691 | 0.1+ | 0.4− | 2002 03 12 | 291 | 0.0 | 0.3+ | 2006 02 27 | G96 | 0.3− | 0.2− |
| 1994 04 02 | 691 | 0.3− | 0.4+ | 2002 03 12 | 704 | 0.7− | 0.5+ | 2006 03 03 | 691 | 0.1+ | 0.1+ |
| 1999 09 07 | 704 | 0.2+ | 1.0− | 2002 04 04 | 644 | 0.3− | 0.1− | 2006 03 03 | 691 | 0.6+ | 0.6− |
| 1999 09 07 | 704 | 0.2− | 0.2+ | 2002 04 04 | 644 | 0.0 | 0.0 | 2006 03 03 | 691 | 0.3+ | 0.5+ |
| 1999 09 07 | 704 | 0.4− | 0.6− | 2002 04 04 | 644 | 0.1+ | 0.1− | 2006 03 24 | 699 | 1.3+ | 1.1+ |
| 1999 09 07 | 704 | 1.2− | 0.5− | 2003 08 26 | 704 | 0.0 | 0.3− | 2006 03 24 | G96 | 0.1+ | 0.0 |
| 1999 09 14 | 046 | 0.0 | 0.1+ | 2003 08 26 | 704 | 0.4− | 0.2− | 2006 03 24 | 699 | 0.2+ | 1.2+ |
| 1999 09 14 | 046 | 0.1− | 0.0 | 2003 08 26 | 704 | 0.5− | 0.8− | 2006 03 24 | G96 | 0.1+ | 0.0 |
| 1999 09 14 | 046 | 0.1+ | 0.1+ | 2003 08 26 | 704 | 0.4+ | 0.8+ | 2006 03 24 | G96 | 0.0 | 0.1− |
| 1999 09 14 | 046 | 0.5+ | 0.5+ | 2003 09 01 | 704 | 0.1− | 0.5+ | 2006 03 24 | G96 | 0.2− | 0.2+ |
| 1999 09 15 | 046 | 0.4− | 0.2− | 2003 09 01 | 704 | 0.9− | 0.9− | 2006 03 24 | 699 | 1.0+ | 0.2− |
| 1999 09 15 | 046 | 0.8+ | 0.6+ | 2003 09 01 | 704 | 0.8+ | 0.6+ | 2006 03 24 | 699 | 0.5− | 0.3+ |
| 1999 09 15 | 046 | 0.4− | 1.0+ | 2003 09 01 | 704 | 0.9+ | 0.2+ | 2006 04 25 | G96 | 0.0 | 0.0 |
| 1999 09 15 | 046 | 0.3+ | 0.7+ | 2003 09 21 | 691 | 0.2− | 0.3+ | 2006 04 25 | G96 | 0.3− | 0.1− |
| 2002 03 12 | 704 | 1.4− | 0.6+ | 2003 09 21 | 691 | 0.1− | 0.2+ | 2006 04 25 | G96 | 0.7− | 0.0 |
| 2002 03 12 | 291 | 0.0 | 0.1+ | 2003 09 21 | 691 | 0.3− | 0.2+ | 2006 04 25 | G96 | 0.6− | 0.2+ |
| 2002 03 12 | 704 | 0.2+ | 1.2− | 2006 02 27 | G96 | 0.6− | 1.5+ | | | | |
| 2002 03 12 | 291 | 0.0 | 0.1+ | 2006 02 27 | G96 | 0.2+ | 0.1− | | | | |

**1999 RW$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.25089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28922070 | $\omega$ | 144.10483 | | +0.99852126 | | +0.02783685 |
| $a$ | 2.2645563 | $\Omega$ | 214.38980 | | −0.04186384 | | +0.94170574 |
| $e$ | 0.1848955 | $i$ | 4.74217 | | +0.03468023 | | +0.33528407 |
| $P$ | 3.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.8− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.4− |
| 1999 09 09 | 704 | 0.2− | 1.7+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 10 29 | G96 | 0.0 | 0.5− |
| 1999 09 09 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 10 29 | G96 | 0.2+ | 0.5− |
| 1999 09 09 | 704 | 0.1− | 1.5+ | 2006 10 17 | 104 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.3− |
| 1999 09 09 | 704 | 1.0+ | 1.4+ | 2006 10 17 | 104 | 0.1+ | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.2− |
| 1999 09 13 | 158 | 0.1+ | 0.4− | 2006 10 17 | 104 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.1− |
| 1999 09 13 | 158 | 0.9+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.2− | 2006 11 09 | 691 | 0.3+ | 0.3+ |
| 1999 09 13 | 158 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 09 | 691 | 0.3+ | 0.2+ |
| 1999 09 14 | 704 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.2+ |
| 1999 09 14 | 704 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.6− | 1.0− |
| 1999 09 14 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.0 | 0.5− |
| 1999 09 14 | 704 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3− | 0.3− |
| 1999 09 14 | 704 | 1.0+ | 0.4+ | 2006 10 26 | 104 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.2− | 1.0− |
| 1999 09 16 | 158 | 0.5− | 0.3− | 2006 10 26 | 104 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 1999 09 16 | 158 | 0.5− | 0.5+ | 2006 10 26 | 104 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 1999 09 17 | 158 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.6− | 2006 11 13 | 691 | 0.3− | 0.8+ |
| 1999 09 19 | 848 | 1.4− | 1.6− | 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | (0.7+ | 2.0+) |
| 1999 09 19 | 848 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.8+ | 1.1+ |
| 1999 09 19 | 848 | 0.1+ | 0.7− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 1.0+ | 0.5+ |
| 1999 09 20 | 848 | 0.4− | 0.5− | 2006 10 28 | 704 | 0.4+ | 0.6+ | 2006 11 17 | 703 | 1.2+ | 0.9+ |
| 1999 09 20 | 848 | 0.9− | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.5+ | 2006 11 18 | 704 | (0.1− | 1.7−) |
| 1999 09 20 | 848 | 0.6− | 1.7− | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 18 | 704 | (0.1− | 2.2−) |
| 1999 10 15 | 704 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 1999 10 15 | 704 | 0.0 | 0.2+ | 2006 10 28 | 704 | 0.8− | 0.9+ | 2006 11 21 | 704 | 0.2− | 1.4+ |
| 1999 10 15 | 704 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 1999 10 15 | 704 | 0.4− | 0.4+ | 2006 10 28 | 704 | 1.0+ | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2006 10 16 | 104 | 0.1+ | 0.6− | 2006 10 28 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2006 10 16 | 104 | (1.2+ | 1.6−) | 2006 10 28 | 704 | 1.0+ | 0.8+ | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2006 10 16 | 104 | 0.4+ | 0.1− | 2006 10 29 | G96 | 0.3+ | 0.4− | | | | |

**1999 RG$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.85594 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22801516 | $\omega$ | 136.44671 | | +0.58304239 | | +0.81121770 |
| $a$ | 2.6535477 | $\Omega$ | 168.96278 | | −0.79454260 | | +0.58079277 |
| $e$ | 0.2663190 | $i$ | 13.46552 | | −0.16959843 | | +0.06786450 |
| $P$ | 4.32 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 691 | 0.2+ | 0.2+ | 1999 09 09 | 704 | 1.2− | 0.4+ | 2003 07 09 | 644 | 0.2− | 0.1− |
| 1999 09 05 | 691 | 0.1− | 0.1− | 1999 09 09 | 704 | 0.3+ | 0.6− | 2003 07 09 | 644 | 0.4− | 0.1− |
| 1999 09 05 | 691 | 0.3+ | 0.0 | 1999 09 09 | 704 | 0.1− | 1.0+ | 2003 07 09 | 644 | 0.3− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 0.2− | 2002 03 05 | 645 | 0.0 | 0.0 | 2003 07 23 | 644 | 0.1− | 0.3+ | | |
| 1999 09 07 | 704 | 0.2− | 0.2− | 2002 03 05 | 645 | 0.0 | 0.0 | 2003 07 23 | 644 | 0.1+ | 0.1− | | |
| 1999 09 07 | 704 | 0.5− | 0.2− | 2003 06 29 | 704 | 0.1+ | 0.3− | 2003 07 23 | 644 | 0.0 | 0.6+ | | |
| 1999 09 07 | 704 | 0.1− | 0.5+ | 2003 06 29 | 704 | 0.4+ | 0.3+ | | | | | | |
| 1999 09 09 | 704 | 0.2− | 1.2− | 2003 06 29 | 704 | 0.3+ | 0.4− | | | | | | |

**1999 RT$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.60475 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19023347 | $\omega$ | 274.22237 | | +0.98618145 | −0.15267713 | |
| $a$ | 2.9941813 | $\Omega$ | 94.56860 | | +0.16566012 | +0.90482565 | |
| $e$ | 0.2190350 | $i$ | 3.69904 | | +0.00169530 | +0.39746727 | |
| $P$ | 5.18 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.6+ | 0.7− | 1999 09 14 | 704 | 0.4− | 0.3+ | 2004 08 12 | 704 | 0.1− | 0.0 | | |
| 1999 09 07 | 704 | 0.6− | 0.5+ | 1999 09 14 | 704 | 0.1+ | 0.8− | 2004 08 12 | 704 | 0.3− | 0.3+ | | |
| 1999 09 07 | 704 | 0.7− | 0.7+ | 1999 09 14 | 704 | 0.7− | 1.4− | 2004 08 12 | 704 | 0.5− | 0.1+ | | |
| 1999 09 07 | 704 | 1.4+ | 0.6+ | 1999 09 14 | 704 | 0.1− | 1.0+ | 2004 08 22 | E12 | 0.3+ | 0.0 | | |
| 1999 09 07 | 704 | 0.6+ | 0.7+ | 1999 09 14 | 704 | 0.7− | 0.2+ | 2004 08 22 | E12 | 0.2+ | 0.2+ | | |
| 1999 09 08 | 703 | 0.8− | 0.5− | 1999 09 14 | 704 | 0.1+ | 0.5− | 2004 08 22 | E12 | 0.1+ | 0.4+ | | |
| 1999 09 08 | 703 | 0.9+ | 0.7− | 2004 08 08 | 704 | 0.2+ | 1.0− | 2004 08 22 | E12 | 0.1− | 0.7+ | | |
| 1999 09 08 | 703 | 0.7− | 0.5+ | 2004 08 08 | 704 | 0.4− | 0.2− | 2004 09 07 | 704 | 0.4+ | 0.6− | | |
| 1999 09 08 | 703 | 0.3− | 1.2+ | 2004 08 08 | 704 | 1.2+ | 0.2− | 2004 09 07 | 704 | 0.3− | 0.4− | | |
| 1999 09 14 | 704 | 0.3+ | 0.4+ | 2004 08 08 | 704 | 0.1− | 1.3+ | 2004 09 07 | 704 | 0.1+ | 0.8− | | |
| 1999 09 14 | 704 | 0.9+ | 0.6− | 2004 08 12 | 704 | 0.4− | 0.2− | | | | | | |
| 1999 09 14 | 704 | 0.2− | 0.4− | 2004 08 12 | 704 | 0.3− | 0.1− | | | | | | |

**1999 RT$_{75}$ = 1999 VZ$_{214}$**

Id. Minor Planet Center (d, *MPO* 11068)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.42704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27732288 | $\omega$ | 108.53195 | | +0.76929885 | +0.63728629 | |
| $a$ | 2.3288718 | $\Omega$ | 211.92406 | | −0.61368532 | +0.71740961 | |
| $e$ | 0.2566094 | $i$ | 4.90640 | | −0.17767839 | +0.28140653 | |
| $P$ | 3.55 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 1.4− | 0.9+ | 1999 10 13 | 704 | 0.8+ | 0.1− | 1999 11 10 | 691 | 0.1+ | 0.2− | | |
| 1999 09 07 | 704 | 0.7+ | 0.2+ | 1999 10 13 | 704 | 1.1− | 0.8− | 1999 11 10 | 691 | 0.1+ | 0.1+ | | |
| 1999 09 07 | 704 | 0.2− | 0.2+ | 1999 10 13 | 704 | 0.4− | 0.1− | 1999 11 10 | 691 | 0.1+ | 0.3+ | | |
| 1999 09 07 | 704 | 1.2+ | 0.7− | 1999 10 13 | 704 | (0.5+ | 2.4−) | 2006 11 16 | 291 | 0.0 | 0.3+ | | |
| 1999 09 07 | 704 | 0.5+ | 1.2− | 1999 10 15 | 704 | 1.4− | 0.3− | 2006 11 16 | 291 | 0.1− | 0.2+ | | |
| 1999 09 09 | 704 | 0.0 | 0.3+ | 1999 10 15 | 704 | 0.7− | 0.6− | 2006 11 16 | 291 | 0.5− | 0.6+ | | |
| 1999 09 09 | 704 | 0.4+ | 0.2+ | 1999 10 15 | 704 | 0.8− | 1.7− | 2006 11 17 | 291 | 0.2+ | 0.5+ | | |
| 1999 09 09 | 704 | 0.1− | 0.8− | 1999 11 01 | 691 | 0.3+ | 0.2− | 2006 11 17 | 291 | 0.5− | 0.6+ | | |
| 1999 09 09 | 704 | 0.2+ | 0.2− | 1999 11 01 | 691 | 0.3+ | 0.1− | 2006 11 17 | 291 | 0.2+ | 0.2+ | | |
| 1999 10 13 | 704 | 0.2+ | 0.1+ | 1999 11 01 | 691 | 0.3+ | 0.3− | | | | | | |

**1999 RY$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.64580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29600369 | $\omega$ | 352.73691 | | +0.99727910 | −0.07023571 | |
| $a$ | 2.2298277 | $\Omega$ | 11.36335 | | +0.07205324 | +0.86451256 | |
| $e$ | 0.2757946 | $i$ | 6.52522 | | +0.01557965 | +0.49767960 | |
| $P$ | 3.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 22 | 703 | 2.0− | 1.1+ | 1999 10 07 | 703 | 0.2− | 0.4+ | 1999 11 06 | 704 | 0.7− | 0.4+ | | |
| 1999 08 22 | 703 | (2.2− | 0.5−) | 1999 10 07 | 703 | 0.2− | 0.1+ | 1999 11 14 | 704 | 0.8− | 0.2− | | |
| 1999 08 22 | 703 | 0.5− | 1.1+ | 1999 10 07 | 703 | 0.2+ | 0.5+ | 1999 11 14 | 704 | 0.4+ | 0.3+ | | |
| 1999 08 22 | 703 | 0.2− | 1.2+ | 1999 10 07 | 699 | 0.4+ | 0.7+ | 1999 11 14 | 704 | 0.4+ | 0.2− | | |
| 1999 09 07 | 704 | 0.7− | 0.2− | 1999 10 07 | 704 | 1.1+ | 0.4− | 1999 11 14 | 704 | 0.1− | 0.3+ | | |
| 1999 09 07 | 704 | 0.6− | 0.1+ | 1999 10 07 | 699 | 0.3+ | 0.5+ | 1999 11 14 | 704 | 0.2− | 0.4+ | | |
| 1999 09 07 | 704 | 1.0− | 0.2+ | 1999 10 07 | 704 | 0.1− | 0.4− | 1999 11 16 | 704 | 0.2+ | 0.0 | | |
| 1999 09 07 | 704 | 0.6− | 0.5− | 1999 10 07 | 704 | 0.3− | 1.2− | 1999 11 16 | 704 | 0.1− | 0.2+ | | |
| 1999 09 07 | 704 | 0.7− | 0.1− | 1999 10 07 | 699 | 0.1− | 1.2+ | 1999 11 16 | 704 | 0.8+ | 0.4+ | | |
| 1999 09 14 | 704 | 0.4− | 0.3+ | 1999 10 07 | 704 | 0.8+ | 0.4− | 1999 11 16 | 704 | 0.4+ | 0.7+ | | |
| 1999 09 14 | 704 | 0.3− | 0.3+ | 1999 10 07 | 704 | 0.3+ | 0.8− | 1999 11 16 | 704 | 0.2− | 1.0− | | |
| 1999 09 14 | 704 | 0.1− | 0.0 | 1999 10 15 | 699 | 0.3− | 1.4+ | 1999 11 16 | 704 | 0.4− | 0.2+ | | |
| 1999 09 14 | 704 | 0.7− | 0.2+ | 1999 10 15 | 699 | 0.3− | 0.3+ | 1999 11 16 | 704 | 0.5+ | 0.5− | | |
| 1999 09 14 | 704 | 0.5− | 0.3+ | 1999 10 15 | 699 | 0.8+ | 0.8+ | 1999 11 16 | 704 | 0.3− | 0.2+ | | |
| 1999 10 01 | 699 | 0.0 | 0.7+ | 1999 10 15 | 704 | 0.1+ | 0.6− | 1999 11 16 | 704 | 0.0 | 0.8+ | | |
| 1999 10 01 | 699 | 0.2− | 0.1+ | 1999 10 15 | 704 | 0.4+ | 0.8− | 1999 11 16 | 704 | 0.0 | 0.1+ | | |
| 1999 10 01 | 699 | 0.2+ | 0.1− | 1999 10 15 | 704 | 0.1− | 0.4− | 2001 03 20 | 691 | 0.0 | 0.6+ | | |
| 1999 10 02 | 704 | 0.7+ | 0.3+ | 1999 10 15 | 704 | 0.1+ | 0.7− | 2001 03 20 | 691 | 0.3+ | 0.5+ | | |
| 1999 10 02 | 704 | 0.5+ | 0.2− | 1999 10 15 | 704 | 0.1− | 0.9− | 2001 03 20 | 691 | 0.4+ | 0.4+ | | |
| 1999 10 02 | 704 | 0.2+ | 0.1− | 1999 11 06 | 704 | 0.0 | 0.5− | 2004 02 13 | 691 | 0.1− | 0.0 | | |
| 1999 10 02 | 704 | 0.6+ | 0.0 | 1999 11 06 | 704 | 1.0− | 0.5− | 2004 02 13 | 691 | 0.4+ | 0.2+ | | |
| 1999 10 02 | 704 | 0.6+ | 0.2− | 1999 11 06 | 704 | 0.2− | 0.4− | 2004 02 13 | 691 | 0.0 | 0.2+ | | |
| 1999 10 07 | 703 | 0.6+ | 0.3+ | 1999 11 06 | 704 | 0.2+ | 0.0 | | | | | | |

**1999 RK$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.30117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29489298 | $\omega$ | 324.72386 | | +0.93892242 | +0.34366161 | |
| $a$ | 2.2354232 | $\Omega$ | 15.20657 | | −0.29794747 | +0.83788462 | |
| $e$ | 0.1861932 | $i$ | 3.91904 | | −0.17219756 | +0.42408260 | |
| $P$ | 3.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.3− | 0.1− | 1999 10 02 | 704 | 0.1+ | 0.6− | 2006 11 16 | 704 | 0.5+ | 0.4+ | | |
| 1999 09 08 | 704 | 0.3− | 0.3− | 1999 10 07 | 703 | 0.4+ | 1.4+ | 2006 11 16 | 704 | 0.3+ | 0.1+ | | |
| 1999 09 08 | 704 | 0.1+ | 0.6+ | 1999 10 07 | 703 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.3+ | | |
| 1999 09 08 | 704 | 0.3− | 0.3− | 1999 10 07 | 703 | 0.9− | 0.6+ | 2006 11 17 | 691 | 0.1− | 0.2− | | |
| 1999 09 09 | 704 | 0.0 | 1.1− | 1999 10 07 | 703 | 0.6+ | 0.5− | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 1999 09 09 | 704 | 0.5+ | 0.4− | 1999 10 09 | 704 | 0.6− | 0.1− | 2006 11 17 | 691 | 0.2− | 0.3+ | | |
| 1999 09 09 | 704 | 0.4+ | 0.1+ | 1999 10 09 | 704 | 0.2+ | 0.1− | 2006 11 22 | 704 | 1.2− | 0.1+ | | |
| 1999 09 09 | 704 | 0.4− | 0.7+ | 1999 10 09 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.4− | | |
| 1999 09 30 | 703 | 0.4+ | 0.1− | 1999 10 09 | 704 | 0.1+ | 0.7− | 2006 11 22 | 704 | 0.3− | 0.1− | | |
| 1999 09 30 | 703 | 0.0 | 0.8+ | 1999 10 09 | 704 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.4− | 0.4− | | |
| 1999 09 30 | 703 | 0.1− | 0.5+ | 1999 10 15 | 704 | 0.5+ | 0.1− | 2006 11 25 | 691 | 0.3+ | 0.1− | | |
| 1999 09 30 | 703 | 0.5+ | 0.1+ | 1999 10 15 | 704 | 0.1− | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.3− | | |
| 1999 10 02 | 704 | 0.0 | 0.1+ | 1999 10 15 | 704 | 0.3− | 0.5− | 2006 11 25 | 691 | 0.2+ | 0.1− | | |
| 1999 10 02 | 704 | 0.4− | 0.5+ | 1999 10 15 | 704 | 0.8− | 1.1− | | | | | | |
| 1999 10 02 | 704 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.9+ | 1.1+ | | | | | | |

**1999 RS$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.29915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15495049 | $\omega$ | 39.93102 | | +0.82226080 | +0.55341486 | |
| $a$ | 3.4330022 | $\Omega$ | 285.98029 | | −0.55103177 | +0.71586152 | |
| $e$ | 0.1465761 | $i$ | 7.93635 | | −0.14230658 | +0.42576318 | |
| $P$ | 6.36 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 703 | 0.7− | 1.2+ | 2005 05 19 | G96 | 0.1+ | 0.1− | 2005 09 17 | 644 | 0.3+ | 0.2+ | | |
| 1999 09 07 | 703 | (2.4− | 0.5+) | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.1+ | | |
| 1999 09 07 | 703 | 1.1− | 0.4+ | 2005 05 19 | G96 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.8+ | | |
| 1999 09 07 | 703 | 1.3− | 0.2− | 2005 06 29 | 644 | 0.0 | 0.4+ | 2006 10 27 | 703 | 1.2+ | 0.2− | | |
| 1999 09 08 | 704 | 0.9+ | 1.4− | 2005 06 29 | 644 | 0.2− | 0.2+ | 2006 10 27 | 703 | 1.0+ | 0.8+ | | |
| 1999 09 08 | 704 | 0.2+ | 0.6− | 2005 06 29 | 644 | 0.1− | 0.3+ | 2006 10 30 | 240 | (2.5− | 0.8−) | | |
| 1999 09 08 | 704 | 1.1+ | 1.0− | 2005 07 11 | 703 | 1.2− | 0.5+ | 2006 10 30 | 240 | (2.0− | 0.7−) | | |
| 1999 09 08 | 704 | 0.5+ | 1.0− | 2005 07 11 | 703 | 0.7− | 0.5+ | 2006 10 30 | 240 | (1.5− | 0.6−) | | |
| 1999 09 09 | 704 | 0.2− | 0.7− | 2005 07 11 | 703 | 0.5+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.3+ | | |
| 1999 09 09 | 704 | 0.9+ | 1.1− | 2005 07 11 | 703 | 0.5− | 1.1+ | 2006 11 10 | 644 | 0.2− | 0.2+ | | |
| 1999 09 09 | 704 | 1.0+ | 1.3− | 2005 07 29 | 644 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.4+ | | |
| 1999 09 09 | 704 | 0.3− | 0.6− | 2005 07 29 | 644 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.0 | | |
| 1999 10 16 | 704 | 0.7+ | 1.1+ | 2005 07 29 | 644 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.6+ | | |
| 1999 10 16 | 704 | 1.1+ | 0.7+ | 2005 08 06 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.7+ | | |
| 1999 10 16 | 704 | 0.1− | 1.0+ | 2005 08 06 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 1.2− | 0.2− | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.9− | 0.1− |
| 2002 02 11 | 704 | 0.6+ | 0.3+ | 2005 08 24 | 644 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.1+ |
| 2002 02 11 | 704 | 0.1+ | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.1− | 0.3− |
| 2002 02 11 | 704 | 0.6+ | 0.8+ | 2005 08 24 | 644 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.4− | 0.2− |
| 2004 05 18 | 704 | 0.3− | 0.4− | 2005 09 03 | 644 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2004 05 18 | 704 | 0.0 | 0.1− | 2005 09 03 | 644 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2004 05 18 | 704 | 0.5− | 0.2+ | 2005 09 03 | 644 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2004 05 18 | 704 | (2.2+ | 1.1+) | 2005 09 17 | 644 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.8− | 1.7− |
| 2005 05 19 | G96 | 0.1+ | 0.1− | 2005 09 17 | 644 | 0.3+ | 0.0 | | | | |

**1999 RS$_{126}$ = 2006 UD$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.55846 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29544460 | $\omega$ | 110.70556 | +0.90346204 | | +0.42315198 | |
| $a$ | 2.2326399 | $\Omega$ | 224.33601 | −0.42067687 | | +0.84447806 | |
| $e$ | 0.1886798 | $i$ | 5.62885 | −0.08238523 | | +0.32832791 | |
| $P$ | 3.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 06 | 699 | 1.4− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 1999 09 06 | 699 | 0.5− | 1.6+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.7− | 0.9+ |
| 1999 09 06 | 699 | (0.3− | 3.7+) | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 1999 09 09 | 704 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 1999 09 09 | 704 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.2− | 1.1+ |
| 1999 09 09 | 704 | 1.4+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 1999 09 09 | 704 | 0.6+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.0+ | 0.2− |
| 1999 09 09 | 704 | 0.4− | 0.6− | 2006 11 01 | 691 | 0.7+ | 0.9+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 1999 09 14 | 704 | 1.2+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.2− |
| 1999 09 14 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.7− | 2006 11 21 | 704 | 0.7+ | 0.6+ |
| 1999 09 14 | 704 | 0.9− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.7− | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.3− |
| 2005 04 17 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2005 04 17 | 691 | 0.0 | 0.1− | 2006 11 12 | 703 | 0.5− | 0.3− | 2006 11 27 | 703 | 0.0 | 0.7− |
| 2006 08 28 | 703 | 1.4− | 1.3− | 2006 11 12 | 703 | 0.3− | 0.5− | 2006 11 27 | 703 | 0.0 | 1.0− |
| 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.1− | 0.6− | 2006 11 27 | 703 | 0.1+ | 0.1+ |
| 2006 08 28 | 703 | 0.3+ | 0.8− | 2006 11 12 | 703 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.5− |
| 2006 08 28 | 703 | 0.7+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.7− |
| 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 2.2− | 0.7+ |
| 2006 09 27 | G96 | 0.5+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 13 | 644 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.7− | 0.3+ |
| 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.2+ | | | | |

**1999 RO$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.74500 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28791049 | $\omega$ | 135.70335 | +0.98937906 | | +0.13717131 | |
| $a$ | 2.2714214 | $\Omega$ | 216.49309 | −0.14535107 | | +0.93028009 | |
| $e$ | 0.2589950 | $i$ | 4.63850 | −0.00146138 | | +0.34023961 | |
| $P$ | 3.42 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.1− | 0.3+ | 1999 10 15 | 704 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 1999 09 08 | 704 | 0.3+ | 0.9− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 09 08 | 704 | 0.2+ | 0.9− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 1999 09 09 | 704 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.3− |
| 1999 09 09 | 704 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 1999 09 09 | 704 | 0.4− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.0 | 0.3− |
| 1999 09 09 | 704 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.7− |
| 1999 09 09 | 704 | 0.6+ | 0.8+ | 2006 10 21 | 644 | 0.6+ | 0.5+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 1999 09 14 | 704 | 0.6+ | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.7+ | 1.0− |
| 1999 09 14 | 704 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 1999 09 14 | 704 | 0.2− | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.6− |
| 1999 10 13 | 704 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.6− |
| 1999 10 13 | 704 | 0.7− | 1.3− | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 1999 10 13 | 704 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 1.0− | 0.9− |
| 1999 10 13 | 704 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 1999 10 13 | 704 | 0.4+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.4+ |
| 1999 10 15 | 704 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.1+ | 1.1+ |
| 1999 10 15 | 704 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.2+ | | | | |

**1999 RQ$_{153}$ = 2006 TV$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.93176 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29017202 | $\omega$ | 152.79346 | +0.98052512 | | −0.18869595 | |
| $a$ | 2.2596041 | $\Omega$ | 218.20784 | +0.16035501 | | +0.92927341 | |
| $e$ | 0.1886515 | $i$ | 5.05008 | +0.11338770 | | +0.31756066 | |
| $P$ | 3.40 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 703 | 1.1− | 1.0+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 1999 09 05 | 703 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 1999 09 05 | 703 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.4+ | 0.3− |
| 1999 09 05 | 703 | 0.8− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.9+ |
| 1999 09 09 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 1999 09 09 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 1999 09 09 | 704 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.9+ | 1.1+ |
| 1999 09 09 | 704 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 1999 09 09 | 704 | 0.3+ | 0.9− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.6− | 0.9+ |
| 1999 09 14 | 704 | 0.4+ | 0.7− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | (1.6+ | 0.8+) |
| 1999 09 14 | 704 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 1999 09 14 | 704 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 1999 09 14 | 704 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 1.1+ | 0.5− |
| 1999 09 14 | 704 | 0.5+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 1.0− | 0.8− |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.7− | 0.9− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.6− | 0.6− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 1.0− | 0.0 |
| 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.2+ | 1.0− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | | | | |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.1+ | | | | |

**1999 RG$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.58944 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29023941 | $\omega$ | 5.97086 | +0.79620360 | | +0.60043285 | |
| $a$ | 2.2592543 | $\Omega$ | 316.83826 | −0.55950824 | | +0.68389077 | |
| $e$ | 0.1511409 | $i$ | 6.24673 | −0.23023980 | | +0.41445603 | |
| $P$ | 3.40 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 699 | 0.1+ | 0.4− | 1999 09 09 | 704 | 0.7− | 0.5− | 2006 10 25 | 106 | (0.4+ | 2.1−) |
| 1999 08 08 | 699 | 0.2− | 0.7− | 1999 09 09 | 704 | 0.3+ | 0.8− | 2006 10 25 | 106 | 0.3− | 0.5− |
| 1999 08 08 | 699 | 0.3+ | 0.9+ | 1999 09 14 | 704 | 0.5− | 0.6− | 2006 10 25 | 106 | 0.2+ | 0.3− |
| 1999 09 07 | 704 | 1.0+ | 0.1− | 1999 09 14 | 704 | 0.1− | 0.9+ | 2006 10 25 | 106 | 0.2+ | 0.2− |
| 1999 09 07 | 704 | 0.2+ | 0.0 | 1999 09 14 | 704 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.4+ | 0.3− |
| 1999 09 07 | 704 | 1.0+ | 0.2− | 1999 09 14 | 704 | 0.2− | 0.9− | 2006 10 27 | 703 | 0.2− | 0.1− |
| 1999 09 07 | 704 | 0.5− | 0.3+ | 1999 09 14 | 704 | 0.1− | 0.7− | 2006 10 27 | 703 | 0.4− | 0.0 |
| 1999 09 08 | 699 | 0.3+ | 1.0+ | 2006 10 21 | 704 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 1999 09 08 | 699 | (0.2+ | 2.4+) | 2006 10 21 | 704 | 0.1− | 0.5+ | 2006 11 07 | 644 | 0.4+ | 0.6− |
| 1999 09 08 | 699 | 0.3+ | 0.7+ | 2006 10 21 | 704 | 1.0− | 1.1+ | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 1999 09 09 | 704 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.1+ | 2006 11 07 | 644 | 0.5+ | 0.3− |
| 1999 09 09 | 704 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.1+ | | | | |
| 1999 09 09 | 704 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 | | | | |

**1999 RY$_{168}$ = 2006 RG$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.90168 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28537280 | $\omega$ | 29.72247 | +0.99124115 | | −0.12904181 | |
| $a$ | 2.2848674 | $\Omega$ | 337.63964 | +0.10185406 | | +0.88239762 | |
| $e$ | 0.2409720 | $i$ | 4.23481 | +0.08406384 | | +0.45246288 | |
| $P$ | 3.45 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.3− | 0.5+ | 2003 11 23 | 291 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.4+ |
| 1999 09 07 | 704 | 0.6− | 0.5+ | 2003 11 23 | 291 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.5− |
| 1999 09 07 | 704 | 0.5− | 0.8+ | 2006 07 21 | G96 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.9− |
| 1999 09 07 | 704 | 0.1+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.5− | 0.8+ |
| 1999 09 07 | 704 | 0.1− | 0.6+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.2+ |
| 1999 09 09 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 1999 09 09 | 704 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 1999 09 09 | 704 | 0.7− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.0 | 0.3− |
| 1999 09 09 | 704 | 1.5− | 1.1− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 1999 09 09 | 704 | 2.0− | 0.5− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.6− |
| 1999 09 14 | 704 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.8− |
| 1999 09 14 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 1.3+ | 0.3− | 2006 10 17 | 703 | 0.0 | 0.6− |
| 1999 09 14 | 704 | 0.3− | 0.2+ | 2006 09 18 | 703 | 1.1+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1999 09 14 | 704 | 0.7− | 0.5+ | 2006 09 18 | 703 | (1.5+ | 0.9−) | 2006 10 19 | 644 | 0.1− | 0.5+ |
| 1999 09 14 | 704 | 0.2− | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 10 13 | 704 | 1.1+ | 0.9− | 2006 09 18 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 1999 10 13 | 704 | 1.8+ | 0.1+ | 2006 09 18 | 704 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 1999 10 13 | 704 | 0.8+ | 0.3+ | 2006 09 18 | 704 | (0.8− | 1.7+) | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 1999 10 13 | 704 | 0.7+ | 0.8+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 02 20 | 645 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.6− | 0.5+ | | | | |
| 2003 11 23 | 291 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 1.2− | 0.8− | | | | |

**1999 RN$_{170}$ = 2006 QM$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.02784 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28163337 | $\omega$ | 143.12859 | | +0.72807074 | | +0.68548821 |
| $a$ | 2.3050480 | $\Omega$ | 173.59206 | | −0.63786862 | | +0.67978893 |
| $e$ | 0.2292049 | $i$ | 2.23277 | | −0.25107095 | | +0.26075452 |
| $P$ | 3.50 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 06 | 691 | 0.5− | 0.4− | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.9− | 0.7+ |
| 1999 09 06 | 691 | 0.5− | 0.2− | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 17 | 704 | 1.2+ | 0.2− |
| 1999 09 06 | 691 | 0.3− | 0.2− | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.2+ |
| 1999 09 09 | 704 | 0.8+ | 0.3+ | 2006 08 27 | 699 | 0.0 | 0.1+ | 2006 09 17 | 704 | (1.6− | 1.9+) |
| 1999 09 09 | 704 | 0.4+ | 0.7+ | 2006 08 27 | 699 | 1.0− | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.5+ |
| 1999 09 09 | 704 | 1.4+ | 0.1+ | 2006 08 27 | 699 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.9− | 0.8+ |
| 1999 09 11 | 704 | 1.3− | 1.2+ | 2006 08 27 | 699 | 0.9+ | 1.1+ | 2006 09 19 | 703 | 0.1− | 0.5+ |
| 1999 09 11 | 704 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 1999 09 11 | 704 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.5− | 0.2+ |
| 1999 09 14 | 691 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.8− | 0.2− |
| 1999 09 14 | 691 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.3+ |
| 1999 09 14 | 691 | 0.5− | 0.1+ | 2006 09 03 | 152 | 0.5+ | 0.7+ | 2006 09 20 | 704 | 1.3− | 0.1− |
| 1999 09 18 | 691 | 0.5+ | 0.2− | 2006 09 03 | 152 | (1.8− | 0.1−) | 2006 09 20 | 644 | 0.2− | 0.0 |
| 1999 09 18 | 691 | 0.4+ | 0.1− | 2006 09 03 | 152 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.1− | 0.0 |
| 1999 09 18 | 691 | 0.4+ | 0.1− | 2006 09 03 | 152 | (2.9+ | 0.6−) | 2006 09 20 | 704 | 0.9+ | 0.1+ |
| 2002 04 08 | 291 | 0.0 | 0.2− | 2006 09 03 | 152 | 1.3− | 1.2− | 2006 09 20 | 704 | 0.4− | 0.2− |
| 2002 04 08 | 291 | 0.1+ | 0.1+ | 2006 09 03 | 152 | 1.1+ | 0.6+ | 2006 09 20 | 704 | 0.9+ | 0.4+ |
| 2002 04 08 | 291 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.7+ | 0.1− | 2006 09 20 | 644 | 0.3− | 0.0 |
| 2005 03 08 | G96 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2005 03 08 | G96 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.0 | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.2− | 0.5+ | 2006 09 16 | 699 | 0.7+ | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2005 03 08 | G96 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.5+ | 1.0− | 2006 09 25 | G96 | 0.2− | 0.3− |

**1999 RJ$_{181}$ = 2006 RD$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.65163 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28646124 | $\omega$ | 50.95357 | | −0.70873781 | | +0.70537657 |
| $a$ | 2.2790760 | $\Omega$ | 173.87420 | | −0.67619260 | | −0.67454225 |
| $e$ | 0.1340988 | $i$ | 6.24173 | | −0.20113251 | | −0.21779956 |
| $P$ | 3.44 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 691 | 0.2− | 0.3− | 2005 04 10 | G96 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1999 09 05 | 691 | 0.4− | 0.2− | 2005 04 10 | G96 | 0.5+ | 0.0 | 2006 09 19 | 691 | 0.5+ | 0.3− |
| 1999 09 05 | 691 | 0.1− | 0.0 | 2005 04 10 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 1999 09 14 | 691 | 0.1+ | 0.0 | 2005 05 04 | 644 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1999 09 14 | 691 | 0.3− | 0.0 | 2005 05 04 | 644 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.5− |
| 1999 09 14 | 691 | 0.3+ | 0.6+ | 2005 05 04 | 644 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.5− |
| 1999 09 18 | 691 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1999 09 18 | 691 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.6− | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.2− |
| 1999 09 18 | 691 | 0.1+ | 0.3− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.8+ |
| 2005 04 10 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.5+ | 0.3+ | | | | |

**1999 RU$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.93362 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28206357 | $\omega$ | 334.25177 | | +0.99474161 | | +0.09336734 |
| $a$ | 2.3027036 | $\Omega$ | 20.52231 | | −0.06011967 | | +0.86505286 |
| $e$ | 0.2416987 | $i$ | 6.89581 | | −0.08291413 | | +0.49291590 |
| $P$ | 3.49 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 1999 09 09 | 704 | 0.3+ | 0.7− | 2006 09 18 | 699 | 0.7+ | 0.5− | 2006 10 16 | 703 | 0.2− | 1.0− |
| 1999 09 09 | 704 | 1.2+ | 0.4− | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.0 |
| 1999 09 09 | 704 | 0.9+ | 0.7− | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 1999 09 09 | 704 | 0.3− | 1.5− | 2006 09 19 | 704 | 1.2+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.4− |
| 1999 09 13 | 704 | 0.2− | 0.7− | 2006 09 19 | 704 | 0.1+ | 0.2− | 2006 10 17 | 106 | 0.8− | 0.3+ |
| 1999 09 13 | 704 | 0.2− | 0.9− | 2006 09 19 | 704 | 0.3− | 0.2− | 2006 10 17 | 106 | 0.2− | 0.8− |
| 1999 09 13 | 704 | 0.1+ | 0.4− | 2006 09 19 | 704 | 0.6+ | 0.9+ | 2006 10 17 | 106 | 0.3+ | 0.3− |
| 1999 09 13 | 704 | 0.1− | 0.3+ | 2006 09 19 | 704 | 1.0− | 0.5+ | 2006 10 17 | 106 | 0.0 | 0.7− |
| 1999 10 08 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 704 | 0.1+ | 0.8+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 1999 10 08 | 704 | 0.6+ | 1.2− | 2006 09 19 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 1999 10 08 | 704 | 0.1+ | 0.9− | 2006 09 19 | 704 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 1999 10 15 | 704 | 0.4− | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 1999 10 15 | 704 | 0.4+ | 0.2− | 2006 09 22 | 704 | 0.0 | 0.9+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 1999 10 15 | 704 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 1999 10 15 | 704 | 0.5+ | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.8+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 1999 11 12 | 691 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 1999 11 12 | 691 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1999 11 12 | 691 | 0.3+ | 0.5− | 2006 09 22 | 704 | 0.5− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 11 13 | 691 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.6− | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 1999 11 13 | 691 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 1999 11 13 | 691 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2006 08 17 | 644 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2006 08 17 | 644 | 0.6− | 0.1− | 2006 09 25 | 699 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2006 09 14 | 703 | 0.2− | 0.4− | 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 1.1− |
| 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 09 14 | 703 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.5− | 0.7+ | 2006 11 11 | 703 | 1.2− | 0.7+ |
| 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.8− | 2006 11 11 | G96 | 0.5− | 0.2− |
| 2006 09 16 | 704 | 0.7+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.0 | 0.2+ |
| 2006 09 16 | 704 | 0.2+ | 0.4+ | 2006 09 28 | 704 | 0.6− | 0.5− | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2006 09 16 | 704 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.8− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2006 09 16 | 704 | 0.2+ | 0.7+ | 2006 09 28 | 704 | 0.2− | 1.2− | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.4+ | 0.0 | 2006 11 18 | 703 | 0.0 | 0.7+ |
| 2006 09 18 | 703 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 18 | 703 | 0.5+ | 0.4− |
| 2006 09 18 | 703 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 18 | 703 | 0.4− | 0.4+ |
| 2006 09 18 | 703 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.4+ | 2006 11 18 | 703 | 1.3+ | 0.9+ |

**1999 RU$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.08267 | | | (2000.0) | | |
| $n$ | 0.28393100 | $\omega$ | 355.53036 | | +0.91397412 | +0.40547997 |
| $a$ | 2.2925959 | $\Omega$ | 340.52618 | | −0.37084193 | +0.81928410 |
| $e$ | 0.1846792 | $i$ | 2.64841 | | −0.16470448 | +0.40541283 |
| $P$ | 3.47 | $H$ | 17.6 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 17 | 691 | 0.3− | 0.2− | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 09 27 | H55 | 0.5− | 0.1− |
| 1999 08 17 | 691 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 09 27 | H55 | 0.3− | 0.8+ |
| 1999 08 17 | 691 | 0.4− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 27 | H55 | 0.8− | 0.5+ |
| 1999 09 04 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.9+ | 2006 09 27 | G96 | (0.2− | 1.6−) |
| 1999 09 04 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.7+ | 2006 09 27 | G96 | (1.7+ | 1.1−) |
| 1999 09 04 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.4+ | 0.3− |
| 1999 09 08 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.6+ | 0.4− |
| 1999 09 08 | 691 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.2+ | 0.8+ |
| 1999 09 08 | 691 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.7+ |
| 1999 09 09 | 704 | 0.3+ | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.5+ |
| 1999 09 09 | 704 | 0.6− | 1.3+ | 2006 09 16 | 691 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.5+ |
| 1999 09 09 | 704 | 0.5− | 1.1− | 2006 09 16 | 691 | 0.2+ | 0.6− | 2006 10 01 | 704 | 0.5− | 0.2+ |
| 1999 09 09 | 704 | 0.6+ | 0.3− | 2006 09 16 | 691 | 0.4− | 0.4+ | 2006 10 01 | 704 | 0.0 | 1.1+ |
| 1999 09 14 | 704 | 0.0 | 0.1+ | 2006 09 17 | 704 | 1.2− | 0.3− | 2006 10 01 | 704 | 0.6− | 1.3+ |
| 1999 09 14 | 704 | 0.8+ | 0.4+ | 2006 09 17 | 704 | 0.7− | 0.3− | 2006 10 01 | 704 | 0.4− | 0.3+ |
| 1999 09 14 | 704 | 0.7+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 09 14 | 704 | 0.1+ | 0.5− | 2006 09 17 | 704 | 1.0− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 1999 09 17 | 691 | 0.0 | 0.4− | 2006 09 17 | 704 | 1.3− | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 1999 09 17 | 691 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.6− |
| 1999 09 17 | 691 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.6− | 2006 10 23 | G96 | 0.3+ | 0.8+ |
| 2001 03 24 | 695 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.3+ | 0.4− | 2006 10 23 | G96 | 1.1+ | 0.8+ |
| 2001 03 24 | 695 | 0.2− | 0.8+ | 2006 09 18 | 699 | 0.2+ | 1.1− | 2006 10 23 | G96 | 0.6+ | 0.5− |
| 2005 04 07 | G96 | 0.1− | 0.3+ | 2006 09 20 | 704 | 1.4+ | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.9− |
| 2005 04 07 | G96 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.6− | 2006 11 15 | G96 | 0.4+ | 0.7− |
| 2005 04 07 | G96 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.9+ | 2006 11 15 | G96 | 0.5+ | 0.6− |
| 2005 04 07 | G96 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.8− |
| 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.5− | | | | |

**1999 RY$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.72750 | | | (2000.0) | | |
| $n$ | 0.29396467 | $\omega$ | 345.86873 | | +0.97915369 | +0.20309014 |
| $a$ | 2.2401269 | $\Omega$ | 2.42191 | | −0.17731497 | +0.86309610 |
| $e$ | 0.2304234 | $i$ | 4.78718 | | −0.09908302 | +0.46240623 |
| $P$ | 3.35 | $H$ | 17.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.1+ | 1.1+ | 1999 09 14 | 704 | 0.2− | 0.5+ | 1999 10 30 | 691 | 0.1− | 0.0 |
| 1999 09 05 | 699 | 0.2+ | 0.3+ | 1999 09 14 | 704 | 0.3− | 0.2+ | 1999 10 30 | 691 | 0.0 | 0.2− |
| 1999 09 05 | 699 | 1.3− | 0.3+ | 1999 09 30 | 691 | 0.2+ | 0.4+ | 1999 10 30 | 691 | 0.2− | 0.1+ |
| 1999 09 07 | 704 | 1.2− | 1.1− | 1999 09 30 | 691 | 0.2+ | 0.3+ | 1999 11 15 | 691 | 0.3− | 0.1− |
| 1999 09 07 | 704 | 0.2− | 1.1− | 1999 09 30 | 691 | 0.0 | 0.4+ | 1999 11 15 | 691 | 0.3− | 0.2− |
| 1999 09 07 | 704 | 0.3− | 1.2− | 1999 10 08 | 691 | 0.1+ | 0.1− | 1999 11 15 | 691 | 0.2− | 0.1− |
| 1999 09 07 | 704 | 0.5− | 0.8− | 1999 10 08 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 1999 09 07 | 704 | 0.2+ | 0.9− | 1999 10 08 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.0− | 0.2+ |
| 1999 09 09 | 704 | 1.3+ | 0.2− | 1999 10 15 | 704 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 1999 09 09 | 704 | 0.7− | 0.1− | 1999 10 15 | 704 | 0.1− | 0.6+ | 2006 11 19 | 704 | 0.9+ | 0.2− |
| 1999 09 09 | 704 | 0.2− | 0.6− | 1999 10 15 | 704 | 0.7+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 1999 09 09 | 704 | 0.8− | 1.0+ | 1999 10 15 | 704 | 0.7+ | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 1999 09 14 | 704 | 0.3− | 0.3− | 1999 10 18 | 691 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 1999 09 14 | 704 | 0.4− | 0.3− | 1999 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 1999 09 14 | 704 | 0.5− | 0.1+ | 1999 10 18 | 691 | 0.3+ | 0.2− | | | | |

**1999 RS$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.63144 | | | (2000.0) | | |
| $n$ | 0.28369755 | $\omega$ | 62.76655 | | +0.97044702 | +0.22990441 |
| $a$ | 2.2938534 | $\Omega$ | 283.86728 | | −0.23936824 | +0.87859440 |
| $e$ | 0.1869035 | $i$ | 4.33146 | | −0.03058487 | +0.41858791 |
| $P$ | 3.47 | $H$ | 16.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.4+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.5− |
| 1999 09 08 | 704 | 0.0 | 0.3− | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.3+ | 0.6− |
| 1999 09 08 | 704 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.5+ |
| 1999 09 08 | 704 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.4+ | 0.3− | 2006 10 03 | 704 | 0.2+ | 0.7− |
| 1999 09 08 | 704 | 0.4− | 0.9− | 2006 09 14 | 644 | 0.1+ | 0.5+ | 2006 10 03 | 704 | 0.5+ | 0.2− |
| 1999 09 18 | 704 | 1.5+ | 0.7− | 2006 09 16 | 703 | 0.3− | 0.2− | 2006 10 03 | 704 | 0.0 | 0.0 |
| 1999 09 18 | 704 | 0.6+ | 1.2− | 2006 09 16 | 703 | 0.9− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 1999 09 18 | 704 | 0.3− | 0.4− | 2006 09 16 | 703 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 1999 09 18 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.8− | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 1999 09 18 | 704 | 0.2− | 0.5− | 2006 09 19 | 699 | 0.3+ | 0.1− | 2006 10 16 | 683 | 0.6+ | 1.1− |
| 1999 09 29 | 703 | (5.9+ | 0.2−) | 2006 09 19 | 699 | 0.3+ | 0.4+ | 2006 10 16 | 683 | 0.3+ | 0.2− |
| 1999 09 29 | 703 | (4.7+ | 0.1−) | 2006 09 19 | 699 | 0.4+ | 0.1− | 2006 10 17 | 683 | 0.6− | 0.4− |
| 1999 09 29 | 703 | (8.2+ | 0.1+) | 2006 09 19 | 699 | 0.3+ | 0.3− | 2006 10 17 | 683 | 0.1− | 0.9+ |
| 1999 09 29 | 703 | (8.6+ | 0.8+) | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 17 | 683 | 0.4− | 0.5+ |
| 1999 10 04 | 704 | 1.1− | 0.6− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.8− |
| 1999 10 04 | 704 | 0.9− | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.0 | 0.2− |
| 1999 10 04 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 1999 10 04 | 704 | 0.7− | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.5− |
| 1999 10 04 | 704 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 683 | 0.3+ | 0.0 |
| 1999 10 19 | 704 | 0.7+ | 1.4+ | 2006 09 23 | 104 | 0.1+ | 0.1− | 2006 10 19 | 683 | (0.2− | 1.8+) |
| 1999 10 19 | 704 | 0.5− | 0.9+ | 2006 09 24 | 104 | 0.3− | 0.1+ | 2006 10 19 | 683 | 0.2− | 1.0+ |
| 1999 10 19 | 704 | 0.5+ | 0.1− | 2006 09 24 | 104 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1999 10 19 | 704 | 0.5+ | 0.8− | 2006 09 24 | 104 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 08 21 | 291 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2006 08 21 | 291 | 0.1− | 0.2+ | 2006 09 27 | 699 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2006 08 21 | 291 | 0.1− | 0.2+ | 2006 09 27 | 699 | 0.4− | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.2− |
| 2006 08 29 | 699 | 0.1+ | 0.6+ | 2006 09 27 | 703 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2006 08 29 | 699 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2006 08 29 | 699 | 0.8+ | 0.5+ | 2006 09 27 | 703 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2006 08 29 | 699 | 0.5− | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 09 27 | 703 | 1.0− | 0.3− | | | | |

**1999 RD$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.73512 | | | (2000.0) | | |
| $n$ | 0.28863478 | $\omega$ | 19.42345 | | +0.84285571 | +0.53307295 |
| $a$ | 2.2676200 | $\Omega$ | 308.14211 | | −0.50529649 | +0.73687036 |
| $e$ | 0.1909029 | $i$ | 5.37490 | | −0.18512077 | +0.41575872 |
| $P$ | 3.41 | $H$ | 16.7 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.2+ | 0.0 | 1999 10 09 | 703 | 1.1− | 1.1+ | 2006 10 27 | 703 | 0.2+ | 0.8+ |
| 1999 09 08 | 704 | 1.4+ | 1.1+ | 1999 10 09 | 703 | 0.5− | 1.3+ | 2006 10 27 | 703 | 0.7− | 0.5+ |
| 1999 09 08 | 704 | 0.7+ | 0.3− | 1999 10 09 | 703 | 1.1− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1999 09 08 | 704 | 0.7+ | 0.7+ | 1999 10 09 | 703 | 0.6− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 1999 09 08 | 704 | 0.3+ | 0.1+ | 1999 10 10 | 704 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 1999 09 18 | 704 | 0.1+ | 1.3− | 1999 10 10 | 704 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 1999 09 18 | 704 | 0.2+ | 0.9− | 1999 10 10 | 704 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 09 18 | 704 | 0.1− | 0.8− | 1999 10 10 | 704 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 1999 09 18 | 704 | 0.6+ | 0.3− | 1999 10 10 | 704 | 0.1+ | 1.1+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 1999 09 30 | 703 | 0.4− | 0.2− | 1999 10 20 | 704 | 0.5+ | 1.9− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 1999 09 30 | 703 | 0.3− | 0.7+ | 1999 10 20 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | (4.2− | 0.6−) |
| 1999 09 30 | 703 | 0.0 | 0.5+ | 1999 10 20 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.9+ |
| 1999 09 30 | 703 | 1.3− | 0.2+ | 1999 10 20 | 704 | 0.8+ | 1.0− | 2006 11 14 | 703 | 1.3+ | 0.7+ |
| 1999 10 03 | 704 | 0.1+ | 0.1− | 2003 09 30 | 291 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.3− |
| 1999 10 03 | 704 | 0.7− | 0.3+ | 2003 09 30 | 291 | 0.1+ | 0.0 | 2006 11 14 | 703 | 1.1+ | 0.1− |
| 1999 10 03 | 704 | 0.3− | 0.7− | 2003 09 30 | 291 | 0.0 | 0.1− | 2006 11 14 | 703 | (0.3− | 1.8+) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.6− | 0.3− | 2006 10 19 | 703 | 0.2− | 0.1− | 2006 11 22 | 703 | 0.1+ | 1.4− |
| 1999 10 05 | 683 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.7− | 0.8− |
| 1999 10 05 | 683 | 0.7+ | 0.7− | 2006 10 27 | 703 | (2.7− | 0.2−) | 2006 11 22 | 703 | 0.8+ | 0.7− |
| 1999 10 05 | 683 | 0.3+ | 0.6− | 2006 10 27 | 703 | (2.3− | 0.7−) | 2006 11 22 | 703 | 0.0 | 0.1+ |

**1999 RL$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.16392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29495093 | $\omega$ | 15.33281 | | +0.80527323 | +0.58623367 | |
| $a$ | 2.2351304 | $\Omega$ | 308.43274 | | −0.55519301 | +0.69307811 | |
| $e$ | 0.1421358 | $i$ | 6.50066 | | −0.20807629 | +0.41949113 | |
| $P$ | 3.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 1.2− | 0.7+ | 1999 10 09 | 704 | 0.1− | 0.4− | 2006 10 27 | 703 | 0.4+ | 0.5− |
| 1999 09 04 | 703 | 1.3− | 1.0+ | 1999 10 09 | 704 | 0.5+ | 0.4− | 2006 11 02 | G96 | 0.4+ | 0.1− |
| 1999 09 04 | 703 | 0.6− | 0.5− | 1999 10 09 | 704 | 0.4− | 0.1− | 2006 11 02 | G96 | 0.6+ | 0.1− |
| 1999 09 04 | 703 | 0.0 | 0.0 | 2006 10 19 | 703 | 1.1− | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.1− |
| 1999 09 08 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.2− | 1.4+ | 2006 11 02 | G96 | 0.2+ | 0.1− |
| 1999 09 08 | 704 | 0.4+ | 1.2− | 2006 10 19 | 703 | 1.1+ | 0.6+ | 2006 11 15 | 703 | 0.8+ | 0.7− |
| 1999 09 08 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.5+ | 0.6+ |
| 1999 09 08 | 704 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.7− | 0.7+ |
| 1999 10 01 | 703 | 0.7+ | 1.9+ | 2006 10 19 | 703 | 0.2+ | 0.8− | 2006 11 15 | 703 | 0.4− | 0.3− |
| 1999 10 01 | 703 | 0.6− | 1.4+ | 2006 10 19 | 703 | 0.7− | 0.2+ | 2006 11 21 | 703 | 1.5− | 0.6+ |
| 1999 10 01 | 703 | 0.1− | 0.6− | 2006 10 19 | 703 | 0.2− | 1.0− | 2006 11 21 | 703 | 0.8− | 0.1− |
| 1999 10 01 | 703 | 0.4+ | 0.4− | 2006 10 27 | 703 | 0.5− | 0.3− | 2006 11 21 | 703 | 0.2+ | 0.2− |
| 1999 10 09 | 704 | 1.1+ | 1.7− | 2006 10 27 | 703 | 0.1+ | 0.5− | 2006 11 21 | 703 | 0.4+ | 0.5− |
| 1999 10 09 | 704 | 0.2+ | 0.9− | 2006 10 27 | 703 | 0.7+ | 1.4+ | | | | |

**1999 RC$_{235}$ = 2006 SC$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.34467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28662712 | $\omega$ | 303.07353 | | +0.99769976 | −0.01486972 | |
| $a$ | 2.2781966 | $\Omega$ | 57.85936 | | +0.04222252 | +0.89959177 | |
| $e$ | 0.2375927 | $i$ | 4.47977 | | −0.05303243 | +0.43647856 | |
| $P$ | 3.44 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 1.1+ | 1.0+ | 2006 09 30 | 703 | 0.5+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 1999 09 05 | 699 | 1.0− | 1.9+ | 2006 10 16 | 703 | 0.3+ | 0.4+ | 2006 11 11 | 703 | (1.7− | 0.1−) |
| 1999 09 05 | 699 | 1.3− | 1.3+ | 2006 10 16 | 703 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.5− | 0.6− |
| 1999 09 08 | 703 | 0.0 | 0.8− | 2006 10 16 | 703 | 1.0− | 1.3− | 2006 11 11 | 703 | 0.8+ | 0.6− |
| 1999 09 08 | 703 | 1.0+ | 0.0 | 2006 10 16 | 703 | 0.3− | 1.4− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 1999 09 08 | 703 | 0.6− | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 1999 09 08 | 703 | 1.8− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 1999 09 14 | 704 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 1999 09 14 | 704 | 0.4+ | 1.0− | 2006 10 23 | 704 | (1.4+ | 1.8+) | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 1999 09 14 | 704 | 1.0+ | 0.9− | 2006 10 23 | 704 | 0.6− | 0.2+ | 2006 11 17 | 703 | (1.7+ | 1.1+) |
| 1999 09 14 | 704 | 1.0+ | 1.6− | 2006 10 23 | 704 | 0.8+ | 0.9+ | 2006 11 17 | 703 | 0.3− | 1.3+ |
| 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | (0.3+ | 2.0+) |
| 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.9+ |
| 2006 09 30 | 703 | 0.6− | 1.0+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | (0.1− | 1.6+) |
| 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.7− | 0.6+ |

**1999 RE$_{237}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.64517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28013369 | $\omega$ | 290.10544 | | +0.34051290 | −0.93331578 | |
| $a$ | 2.3132673 | $\Omega$ | 139.41046 | | +0.91475598 | +0.30083239 | |
| $e$ | 0.1286044 | $i$ | 10.08189 | | +0.21742232 | +0.19601408 | |
| $P$ | 3.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.1+ | 0.1− | 1999 10 16 | 704 | 0.5− | 0.5+ | 2006 09 19 | 703 | 1.2− | 0.7− |
| 1999 09 08 | 703 | 1.0+ | 0.4− | 2002 07 03 | 644 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.1− |
| 1999 09 08 | 703 | (2.0+ | 1.8+) | 2002 07 03 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.7− |
| 1999 09 08 | 703 | 1.5− | 0.7− | 2002 07 03 | 644 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.3− | 0.2− |
| 1999 09 14 | 704 | 1.5− | 0.8+ | 2006 08 28 | 704 | (0.7− | 2.3+) | 2006 09 25 | 703 | 0.0 | 0.3+ |
| 1999 09 14 | 704 | 0.7+ | 0.3− | 2006 08 28 | 704 | (1.0− | 1.9+) | 2006 09 25 | 703 | (0.3− | 1.6−) |
| 1999 09 14 | 704 | 1.3− | 0.3+ | 2006 08 28 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 703 | 0.1+ | 0.3− |
| 1999 09 14 | 704 | 0.0 | 0.3− | 2006 08 28 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 703 | 1.1− | 0.2− |
| 1999 09 14 | 704 | 0.5− | 0.6− | 2006 08 28 | 699 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 1999 09 30 | 704 | 1.0+ | 1.5− | 2006 08 28 | 699 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.4+ |
| 1999 09 30 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.3+ | 0.8− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 1999 09 30 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 699 | 0.5+ | 0.6+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 1999 10 16 | 704 | 0.4+ | 0.2− | 2006 09 17 | 699 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.3+ | 0.1− |
| 1999 10 16 | 704 | 0.7+ | 0.2− | 2006 09 17 | 699 | 0.1+ | 1.3+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 1999 10 16 | 704 | 0.8+ | 1.0+ | 2006 09 17 | 699 | 0.5+ | 0.3+ | | | | |
| 1999 10 16 | 704 | 0.4+ | 0.2− | 2006 09 17 | 699 | (0.8+ | 1.6+) | | | | |

**1999 RK$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.85059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28596239 | $\omega$ | 341.58836 | | +0.85546581 | +0.51662445 | |
| $a$ | 2.2817257 | $\Omega$ | 347.12222 | | −0.45270096 | +0.71253055 | |
| $e$ | 0.2097414 | $i$ | 9.22817 | | −0.25147582 | +0.47476246 | |
| $P$ | 3.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.9+ | 0.3+ | 2006 09 17 | 703 | 0.2+ | 1.1− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 1999 09 07 | 704 | 0.1+ | 0.8− | 2006 09 17 | 703 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 1999 09 07 | 704 | 1.6+ | 0.3+ | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 1999 09 18 | 703 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.6− | 1.4+ | 2006 11 07 | 644 | 0.4+ | 0.4+ |
| 1999 09 18 | 703 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.9+ | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.5+ |
| 1999 09 18 | 703 | (2.1− | 1.2+) | 2006 09 28 | 703 | 1.3− | 0.9− | 2006 11 07 | 644 | 0.2− | 0.8+ |
| 1999 09 18 | 703 | 0.3+ | 0.4+ | 2006 09 28 | 703 | 0.0 | 1.1− | 2006 11 15 | 703 | 0.9+ | 0.4− |
| 1999 10 09 | 703 | 1.0− | 0.5− | 2006 09 28 | 703 | 0.6− | 0.5− | 2006 11 15 | 703 | 0.3+ | 0.5− |
| 1999 10 09 | 703 | 0.8− | 0.4+ | 2006 10 19 | 703 | 0.5− | 0.5+ | 2006 11 15 | 703 | 0.2− | 1.2− |
| 1999 10 09 | 703 | 1.4− | 0.4− | 2006 10 19 | 703 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.3+ | 1.3− |
| 1999 10 09 | 703 | 0.5− | 0.4+ | 2006 10 19 | 703 | 1.1+ | 0.5+ | 2006 11 22 | 703 | 0.2− | 1.5+ |
| 1999 10 20 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 1999 10 20 | 704 | 0.5+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.9+ | 2006 11 22 | 703 | 0.9+ | 0.9− |
| 1999 10 20 | 704 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.5+ | 2006 11 22 | 703 | 0.7− | 0.6− |
| 1999 10 20 | 704 | 0.4+ | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.3+ | | | | |

**1999 RF$_{259}$ = 2005 GW$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.84279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28798780 | $\omega$ | 355.33573 | | +0.75701909 | −0.64882560 | |
| $a$ | 2.2710149 | $\Omega$ | 45.43231 | | +0.60292319 | +0.64817614 | |
| $e$ | 0.1566577 | $i$ | 6.21444 | | +0.25180493 | +0.39861389 | |
| $P$ | 3.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.4+ | 1.2+ | 2006 09 28 | 704 | 0.6− | 1.4+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 1999 09 04 | 699 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 11 07 | 644 | 0.3+ | 0.1+ |
| 1999 09 04 | 699 | 0.6− | 1.1+ | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 11 07 | 644 | 0.0 | 0.3− |
| 1999 09 13 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 11 07 | 644 | 0.6+ | 0.0 |
| 1999 09 13 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.5− |
| 1999 09 13 | 704 | 0.4+ | 0.5− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.4− |
| 1999 09 13 | 704 | 0.6− | 0.9+ | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.4− |
| 1999 09 30 | 704 | (0.8− | 2.2−) | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 1999 09 30 | 704 | 0.1+ | 1.6− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 1999 09 30 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 1999 10 16 | 704 | 0.8+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 1999 10 16 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 1999 10 16 | 704 | 0.1+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.8− |
| 1999 10 16 | 704 | 0.9− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.6− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 1999 12 07 | 704 | 0.2+ | 0.4− | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 1999 12 07 | 704 | 0.1+ | 0.7− | 2006 10 17 | G96 | 1.2− | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 1999 12 07 | 704 | 0.8− | 0.6− | 2006 10 17 | G96 | 1.2+ | 0.5+ | 2006 11 18 | 704 | 0.6− | 0.1+ |
| 2001 03 20 | 608 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2001 03 20 | 608 | 0.1+ | 0.2− | 2006 10 19 | A79 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2001 03 20 | 608 | 0.1− | 0.1+ | 2006 10 19 | A79 | 0.9+ | 1.0− | 2006 11 18 | 704 | 0.4− | 0.7+ |
| 2003 11 20 | 704 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 2003 11 20 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.4− | 1.1+ |
| 2003 11 20 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | (1.6− | 1.1+) |
| 2003 11 20 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2003 11 20 | 704 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2003 12 21 | 645 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2004 01 13 | 699 | 0.3− | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2004 01 13 | 699 | 0.1+ | 1.3− | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2004 01 13 | 699 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2004 01 13 | 699 | 0.5+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2004 01 31 | 704 | 0.4− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2004 01 31 | 704 | 0.8− | 0.1+ | 2006 10 23 | 691 | 0.3+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2004 01 31 | 704 | 0.6− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2004 01 31 | 704 | 0.7− | 1.0+ | 2006 10 23 | 704 | 0.9− | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2004 01 31 | 704 | 0.6− | 1.2+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 26 | 704 | 0.5+ | 0.6+ |
| 2004 02 14 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 704 | 0.3− | 0.3− | 2006 11 26 | 704 | 0.4+ | 0.3+ |
| 2004 02 14 | 704 | 0.4− | 0.1+ | 2006 10 23 | 704 | 1.2− | 0.5+ | 2006 11 26 | 704 | 1.0− | 0.6+ |
| 2004 02 14 | 704 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.2− | 0.1− | 2006 11 26 | 958 | 1.6− | 1.0+ |
| 2004 02 14 | 704 | 0.5− | 1.0+ | 2006 10 23 | 704 | 0.3− | 0.6− | 2006 11 26 | 958 | 0.1+ | 0.1− |
| 2004 02 14 | 704 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 26 | 958 | 1.4+ | 1.4− |
| 2005 04 10 | 695 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.6− | 0.3+ |
| 2005 04 10 | 695 | 0.1+ | 0.3+ | 2006 10 28 | 704 | 0.7+ | 0.5+ | 2006 11 27 | 703 | 0.2− | 0.1− |
| 2005 04 11 | 695 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.2− | 0.8− |
| 2006 09 26 | 704 | 1.2+ | 0.9+ | 2006 10 28 | 704 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.9− | 0.2− |
| 2006 09 26 | 704 | 0.4+ | 0.2+ | 2006 10 28 | 704 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.9+ | 0.4+ |
| 2006 09 26 | 704 | 0.3+ | 1.2+ | 2006 10 28 | 704 | 0.3− | 0.6+ | 2006 11 28 | 704 | 0.0 | 0.5+ |
| 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 28 | 704 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2006 09 28 | 704 | 0.1+ | 1.0+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2006 09 28 | 704 | (0.1− | 1.8+) | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.7− | 0.8+ |

### 1999 $RG_{259}$ = 2006 $FB_{16}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.15657 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23320375 | $\omega$ | 344.91794 | | +0.98803219 | | +0.15234026 |
| $a$ | 2.6140408 | $\Omega$ | 6.46651 | | −0.10968393 | | +0.80412409 |
| $e$ | 0.2057178 | $i$ | 12.39962 | | −0.10845193 | | +0.57461022 |
| $P$ | 4.23 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 1.3+ | 0.3+ | 1999 10 15 | 704 | 0.1− | 0.0 | 2006 03 23 | G96 | 0.6− | 0.4− |
| 1999 09 14 | 704 | 0.1+ | 0.3− | 1999 10 15 | 704 | 0.2− | 0.5− | 2006 03 23 | G96 | 0.4+ | 0.2+ |
| 1999 09 14 | 704 | 0.9+ | 0.0 | 1999 10 15 | 704 | 0.0 | 0.1− | 2006 03 23 | G96 | 0.2− | 0.7− |
| 1999 09 14 | 704 | 0.7+ | 0.3− | 1999 10 15 | 704 | 0.9+ | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.2+ |
| 1999 09 14 | 703 | 0.0 | 1.0+ | 1999 10 15 | 704 | 0.7− | 0.1+ | 2006 03 25 | G96 | 0.2+ | 0.5+ |
| 1999 09 14 | 703 | 1.1− | 0.4+ | 1999 10 16 | 645 | 0.1− | 0.2+ | 2006 03 25 | G96 | 0.0 | 0.4+ |
| 1999 09 14 | 703 | 0.8− | 0.0 | 1999 10 16 | 645 | 0.0 | 0.2+ | 2006 03 25 | G96 | 0.5+ | 0.1− |
| 1999 09 14 | 703 | 1.0− | 0.9− | 2006 03 23 | G96 | 0.1− | 0.3+ | | | | |

### 1999 $SS_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.14293 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28272220 | $\omega$ | 28.18238 | | +0.77746253 | | −0.62369350 |
| $a$ | 2.2991260 | $\Omega$ | 11.52112 | | +0.47346109 | | +0.49564651 |
| $e$ | 0.2133897 | $i$ | 23.92057 | | +0.41398866 | | +0.60443441 |
| $P$ | 3.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 704 | 0.9+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.2− |
| 1999 09 13 | 704 | 1.1+ | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 1999 09 13 | 704 | 1.4+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.1+ |
| 1999 09 30 | 704 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 704 | 0.2+ | 0.3+ |
| 1999 09 30 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.8+ | 2006 10 23 | 704 | 0.3+ | 0.1+ |
| 1999 09 30 | 704 | 0.1− | 0.3+ | 2006 09 30 | H06 | 0.3+ | 0.6− | 2006 10 23 | 704 | 0.9+ | 0.4+ |
| 1999 09 30 | 704 | 0.5+ | 0.2− | 2006 09 30 | 704 | 0.2− | 0.7+ | 2006 10 23 | 704 | 0.4+ | 0.3+ |
| 1999 09 30 | 704 | 0.1+ | 0.1− | 2006 09 30 | H06 | 0.7+ | 0.3− | 2006 10 23 | 704 | 1.3+ | 0.5+ |
| 1999 10 01 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.4− | 0.3+ | 2006 11 06 | 644 | 0.0 | 0.1− |
| 1999 10 01 | 704 | 0.4+ | 1.0+ | 2006 09 30 | 704 | 0.6− | 0.6+ | 2006 11 06 | 644 | 0.1+ | 0.3− |
| 1999 10 01 | 704 | 1.1− | 0.2− | 2006 09 30 | H06 | 0.5+ | 0.3− | 2006 11 06 | 644 | 0.3+ | 0.1+ |
| 1999 10 15 | 704 | 0.3− | 0.4− | 2006 10 01 | 704 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.0 | 0.4− |
| 1999 10 15 | 704 | 1.1− | 0.9− | 2006 10 01 | 704 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.3− | 0.2+ |
| 1999 10 15 | 704 | 1.4− | 0.8− | 2006 10 01 | 704 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.4− | 0.9− |
| 1999 10 15 | 704 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.2− | 0.1− | 2006 11 13 | 703 | 1.1− | 0.3+ |
| 1999 10 15 | 704 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.0 | 0.5+ | 2006 11 15 | 704 | 1.1+ | 0.8+ |
| 2006 09 17 | 699 | 0.3+ | 0.2− | 2006 10 09 | 644 | 0.4+ | 0.3− | 2006 11 15 | 704 | 1.1− | 0.4+ |
| 2006 09 17 | 699 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.8− | 0.8− |
| 2006 09 17 | 699 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.6− | 0.3+ |
| 2006 09 17 | 699 | 0.7− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.4+ | 1.0+ |
| 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.4+ | 0.8− |
| 2006 09 26 | 704 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2006 09 26 | 704 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.0 |
| 2006 09 26 | 704 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2006 09 26 | 704 | 0.8− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2006 09 29 | H06 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 19 | 704 | (2.0− | 1.2−) |
| 2006 09 29 | H06 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 1.4+ | 0.5+ |
| 2006 09 29 | H06 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1+ | | | | |
| 2006 09 30 | 703 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.3− | 0.3− | | | | |

### 1999 $SH_{21}$ = 2006 $SX_{103}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.48187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27701551 | $\omega$ | 264.38191 | | +0.00954403 | | +0.99990165 |
| $a$ | 2.3305942 | $\Omega$ | 6.19290 | | −0.87559982 | | +0.01331977 |
| $e$ | 0.2392892 | $i$ | 5.46602 | | −0.48294292 | | −0.00438911 |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.3+ | 0.3− | 2005 02 09 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 1999 09 30 | 691 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 1999 09 30 | 691 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.3+ |
| 1999 10 06 | 704 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | (2.3+ | 0.6−) |
| 1999 10 06 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 1999 10 06 | 704 | 0.7+ | 0.5− | 2006 09 19 | 699 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.6− | 1.1+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 1999 10 13 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 1999 10 13 | 704 | 0.3+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 1999 10 13 | 704 | 0.1+ | 0.5+ | 2006 09 24 | 691 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 1999 10 13 | 704 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.7+ | 0.4− |
| 2005 02 09 | 691 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.8+ | 0.6+ |
| 2005 02 09 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | | | | |

### 1999 $SK_{25}$ = 2006 $SH_{332}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.69960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28611930 | $\omega$ | 345.04141 | | +0.98498842 | | +0.17255555 |
| $a$ | 2.2808915 | $\Omega$ | 5.02933 | | −0.15231821 | | +0.88171209 |
| $e$ | 0.2334692 | $i$ | 3.09375 | | −0.08122171 | | +0.43909950 |
| $P$ | 3.44 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 16 | 691 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.5− | 2006 10 20 | G96 | 0.4+ | 0.6− |
| 1999 09 16 | 691 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.8− |
| 1999 09 16 | 691 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.6+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 703 | 0.3− | 0.6+ | 2006 10 03 | G96 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.0 | 0.1+ | | |
| 1999 09 30 | 703 | 1.7− | 0.7+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 1999 09 30 | 703 | 0.4+ | 1.3+ | 2006 10 11 | 691 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.0 | | |
| 1999 09 30 | 703 | 0.3− | 1.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.5+ | | |
| 1999 10 09 | 704 | 0.4+ | 0.6− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.4+ | | |
| 1999 10 09 | 704 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 1999 10 09 | 704 | 0.2− | 1.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.5− | | | | | | |
| 2006 09 28 | G96 | 0.6+ | 0.4− | 2006 10 20 | G96 | 0.5+ | 0.5− | | | | | | |

**1999 TX$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.84076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22716207 | $\omega$ | 340.36310 | | +0.93868847 | −0.32905445 | |
| $a$ | 2.6601870 | $\Omega$ | 39.32949 | | +0.33403355 | +0.79413161 | |
| $e$ | 0.3170281 | $i$ | 9.34330 | | +0.08535538 | +0.51095808 | |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 699 | 0.5− | 0.8+ | 1999 10 15 | 704 | 0.7+ | 0.1− | 1999 11 14 | 699 | 0.9− | 0.3+ | | |
| 1999 10 02 | 699 | 0.8− | 0.2+ | 1999 10 15 | 704 | 0.1− | 0.5− | 1999 11 14 | 699 | 0.1+ | 1.0+ | | |
| 1999 10 02 | 699 | 1.3− | 0.2+ | 1999 10 16 | 678 | 1.2+ | 1.4− | 1999 11 14 | 699 | 0.0 | 2.0+ | | |
| 1999 10 04 | 703 | 0.3− | 0.6+ | 1999 10 16 | 678 | 0.3− | 0.2− | 1999 11 16 | 704 | 0.9+ | 0.7+ | | |
| 1999 10 04 | 703 | 0.2− | 0.8+ | 1999 10 19 | 704 | 0.0 | 0.0 | 1999 11 16 | 704 | 0.6+ | 0.7+ | | |
| 1999 10 04 | 703 | 0.2+ | 0.8+ | 1999 10 19 | 704 | 0.3+ | 0.3− | 1999 11 16 | 704 | 0.8+ | 0.2+ | | |
| 1999 10 04 | 703 | 0.2+ | 0.5+ | 1999 10 19 | 678 | 0.6+ | 0.6+ | 1999 11 16 | 704 | 0.5+ | 0.2+ | | |
| 1999 10 07 | 704 | 0.3+ | 0.0 | 1999 10 19 | 678 | 0.8+ | 0.6+ | 1999 12 05 | 678 | 0.3− | 0.4+ | | |
| 1999 10 07 | 704 | 0.2− | 0.5+ | 1999 10 19 | 704 | 0.5− | 0.2+ | 1999 12 05 | 678 | 0.2− | 0.5+ | | |
| 1999 10 07 | 704 | 0.6+ | 0.6− | 1999 10 19 | 704 | 0.4− | 0.3− | 1999 12 06 | 704 | 1.2+ | 0.4− | | |
| 1999 10 07 | 704 | 0.4+ | 0.5− | 1999 10 19 | 704 | 0.6− | 0.1+ | 1999 12 06 | 704 | 0.5− | 0.6+ | | |
| 1999 10 07 | 704 | 0.5− | 0.0 | 1999 10 28 | 678 | 0.8− | 0.1− | 1999 12 06 | 704 | 0.3− | 0.8+ | | |
| 1999 10 09 | 704 | 0.0 | 0.1+ | 1999 10 28 | 678 | 1.0− | 0.9+ | 1999 12 06 | 704 | 0.4+ | 0.3+ | | |
| 1999 10 09 | 704 | 0.3+ | 0.2− | 1999 10 28 | 678 | 0.6− | 0.5+ | 1999 12 07 | 704 | 0.6+ | 1.3+ | | |
| 1999 10 09 | 704 | 0.4+ | 0.4− | 1999 11 02 | 703 | 0.2+ | 0.3+ | 1999 12 07 | 704 | 0.4+ | 0.1− | | |
| 1999 10 09 | 704 | 0.4+ | 0.4+ | 1999 11 02 | 703 | 0.7− | 0.2− | 1999 12 07 | 704 | 0.2− | 0.8+ | | |
| 1999 10 09 | 704 | 0.1+ | 0.3− | 1999 11 02 | 703 | 0.3− | 0.5− | 1999 12 07 | 704 | 0.5− | 0.2+ | | |
| 1999 10 12 | 678 | 0.7+ | 0.6− | 1999 11 02 | 703 | 0.3− | 0.4+ | 2000 01 08 | 704 | 0.3+ | 0.4+ | | |
| 1999 10 12 | 678 | 0.7− | 0.2+ | 1999 11 05 | 704 | 0.0 | 0.0 | 2000 01 08 | 704 | 0.8− | 1.0− | | |
| 1999 10 12 | 678 | 1.0+ | 0.2− | 1999 11 05 | 704 | 0.5− | 0.2+ | 2000 01 08 | 704 | 0.0 | 1.6− | | |
| 1999 10 12 | 699 | 0.7− | 1.0+ | 1999 11 05 | 704 | 0.3+ | 0.4− | 2002 04 08 | 291 | 0.4− | 0.4+ | | |
| 1999 10 12 | 699 | 0.4− | 0.0 | 1999 11 05 | 704 | 0.4− | 0.2− | 2002 04 08 | 291 | 0.5+ | 0.1− | | |
| 1999 10 12 | 699 | 0.6− | 0.9+ | 1999 11 05 | 704 | 1.1+ | 0.5− | 2002 04 08 | 291 | 0.0 | 0.1− | | |
| 1999 10 13 | 678 | 0.3+ | 0.3− | 1999 11 12 | 704 | 0.0 | 1.0− | 2006 05 01 | 691 | 0.1+ | 0.3+ | | |
| 1999 10 13 | 678 | 0.0 | 0.6− | 1999 11 12 | 704 | 0.1+ | 1.2− | 2006 05 01 | 691 | 0.0 | 0.2+ | | |
| 1999 10 15 | 704 | 0.1− | 0.2− | 1999 11 12 | 704 | 0.3− | 1.4− | 2006 05 01 | 691 | 0.2+ | 0.1+ | | |
| 1999 10 15 | 704 | 0.0 | 0.7− | 1999 11 12 | 704 | 0.1+ | 1.0− | | | | | | |
| 1999 10 15 | 704 | 0.2+ | 0.5− | 1999 11 12 | 704 | 0.4− | 1.3− | | | | | | |

**1999 TX$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.54526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28750030 | $\omega$ | 107.28711 | | +0.99365559 | +0.10144118 | |
| $a$ | 2.2735815 | $\Omega$ | 246.91267 | | −0.11229181 | +0.91887573 | |
| $e$ | 0.2080706 | $i$ | 3.02604 | | +0.00625420 | +0.38128345 | |
| $P$ | 3.43 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 23 | 691 | 0.1− | 0.1+ | 1999 10 15 | 704 | 0.8− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.1− | | |
| 1992 09 23 | 691 | 0.2+ | 0.2+ | 1999 10 15 | 704 | 0.6+ | 0.4+ | 2006 10 17 | G96 | 0.2− | 0.2− | | |
| 1992 09 23 | 691 | 0.2− | 0.3+ | 1999 10 20 | 704 | 0.3+ | 0.6− | 2006 10 17 | G96 | (3.6− | 0.8+) | | |
| 1999 10 02 | 703 | 0.2+ | 0.4+ | 1999 10 20 | 704 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.3− | | |
| 1999 10 02 | 703 | 0.2+ | 0.7+ | 1999 10 20 | 704 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 1999 10 02 | 703 | 0.0 | 0.4+ | 1999 10 20 | 704 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.3− | | |
| 1999 10 02 | 703 | 0.2− | 0.3+ | 1999 10 20 | 704 | 0.7− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2− | | |
| 1999 10 03 | 704 | 0.1+ | 0.5− | 1999 10 30 | 703 | 0.8− | 0.2− | 2006 11 10 | 691 | 0.0 | 0.4− | | |
| 1999 10 03 | 704 | 0.8− | 0.8+ | 1999 10 30 | 703 | 0.8+ | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.1− | | |
| 1999 10 03 | 704 | 1.2− | 0.1− | 1999 10 30 | 703 | 0.7− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.3+ | | |
| 1999 10 03 | 704 | 0.5− | 0.1+ | 1999 10 30 | 703 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.1+ | | |
| 1999 10 07 | 683 | 0.3+ | 0.1− | 1999 11 05 | 704 | 0.2− | 0.4− | 2006 11 11 | 703 | 1.3+ | 0.3− | | |
| 1999 10 07 | 683 | 1.1+ | 0.0 | 1999 11 05 | 704 | 1.5− | 0.5− | 2006 11 11 | 703 | 0.7− | 0.1− | | |
| 1999 10 08 | 683 | 0.6+ | 0.2+ | 1999 11 05 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 644 | 0.3+ | 0.2+ | | |
| 1999 10 08 | 683 | 0.4− | 0.7− | 1999 11 05 | 704 | 1.4− | 0.2+ | 2006 11 13 | 644 | 0.5+ | 0.4+ | | |
| 1999 10 08 | 683 | 0.6+ | 0.4− | 1999 11 14 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.5+ | | |
| 1999 10 10 | 704 | 0.5− | 0.8− | 1999 11 14 | 704 | 0.1− | 0.7+ | 2006 11 18 | 704 | (1.5− | 0.6+) | | |
| 1999 10 10 | 704 | 0.3− | 0.9− | 1999 11 14 | 704 | 0.2− | 0.4+ | 2006 11 18 | 704 | 1.5− | 0.7− | | |
| 1999 10 10 | 704 | 0.0 | 0.3− | 1999 11 14 | 704 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 1.3+ | | |
| 1999 10 10 | 704 | 0.4− | 0.8− | 1999 11 14 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1− | 0.4+ | | |
| 1999 10 10 | 704 | 0.4+ | 0.2− | 1999 11 15 | 704 | 1.5+ | 1.4+ | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 1999 10 11 | 691 | 0.1− | 0.0 | 1999 11 15 | 704 | 0.9+ | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.1− | | |
| 1999 10 11 | 691 | 0.1+ | 0.1+ | 1999 11 15 | 704 | 0.2− | 0.9+ | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 1999 10 11 | 691 | 0.2− | 0.2− | 1999 11 15 | 704 | 0.3+ | 0.8+ | 2006 11 21 | 704 | 0.3− | 0.7+ | | |
| 1999 10 14 | 645 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.3+ | | |
| 1999 10 14 | 645 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.0 | | |
| 1999 10 15 | 704 | 1.2− | 1.0+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 22 | 691 | (0.5+ | 1.8−) | | |
| 1999 10 15 | 704 | 1.0− | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 1999 10 15 | 704 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.1− | | | | | | |

**1999 TR$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.21166 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29068848 | $\omega$ | 318.93117 | | +0.99807473 | −0.04241651 | |
| $a$ | 2.2569269 | $\Omega$ | 43.56414 | | +0.05804647 | +0.89583930 | |
| $e$ | 0.1891109 | $i$ | 3.76479 | | −0.02185031 | +0.44234917 | |
| $P$ | 3.39 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.1+ | 0.2+ | 2004 02 17 | 691 | 0.0 | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 1999 10 03 | 691 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 1999 10 03 | 691 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.0 | 0.2+ | | |
| 1999 10 06 | 691 | 0.0 | 0.4− | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 15 | 703 | 1.1− | 0.1− | | |
| 1999 10 06 | 691 | 0.2− | 0.5− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.2− | 0.4+ | | |
| 1999 10 06 | 691 | 0.0 | 0.4− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.2− | 0.5− | | |
| 1999 10 09 | 704 | 0.6− | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.6+ | 1.2− | | |
| 1999 10 09 | 704 | 1.3− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.0 | | |
| 1999 10 09 | 704 | 0.6+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1+ | | |
| 1999 10 09 | 704 | 0.2+ | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.0 | | |
| 1999 10 13 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.3+ | | |
| 1999 10 13 | 691 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 1999 10 13 | 691 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.2+ | | |
| 1999 11 04 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 1999 11 04 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 1999 11 04 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 1999 11 10 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.0 | | |
| 1999 11 10 | 691 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.5− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.2− | | |
| 1999 11 10 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.3+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.4− | 1.1− | | |
| 2004 02 17 | 691 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.7+ | | |

**1999 TQ$_{29}$ = 2006 SA$_{363}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.15938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28607448 | $\omega$ | 179.75760 | | +0.96475593 | −0.26134609 | |
| $a$ | 2.2811296 | $\Omega$ | 195.49761 | | +0.24123809 | +0.92503170 | |
| $e$ | 0.2317967 | $i$ | 6.60368 | | +0.10511981 | +0.27570739 | |
| $P$ | 3.45 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.4+ | 0.8− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 01 | 703 | 0.4− | 1.0− | | |
| 1999 09 07 | 704 | 0.8+ | 0.5− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 01 | 703 | 0.2− | 0.6+ | | |
| 1999 09 07 | 704 | 1.2− | 0.4+ | 2006 10 16 | 683 | 1.3− | 1.1− | 2006 11 01 | 703 | 0.6− | 0.1− | | |
| 1999 09 07 | 704 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.8+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.0 | 1.0− | 2006 10 16 | 703 | 0.9+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 1999 09 30 | 703 | 0.0 | 0.8+ | 2006 10 16 | 683 | (0.7− | 2.3−) | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 1999 09 30 | 703 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.4− | | |
| 1999 09 30 | 703 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.8+ | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 1999 09 30 | 703 | 0.2− | 0.7+ | 2006 10 16 | 683 | (2.9− | 0.4−) | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 1999 10 04 | 704 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.1+ | 0.5+ | | |
| 1999 10 04 | 704 | 0.3+ | 1.0− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 13 | 703 | 0.7− | 0.4− | | |
| 1999 10 04 | 704 | 0.3+ | 0.8+ | 2006 10 17 | G96 | 0.2− | 0.6− | 2006 11 13 | 703 | 0.1+ | 0.5+ | | |
| 1999 10 04 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 683 | (0.2− | 1.9−) | 2006 11 13 | 703 | 1.3− | 0.3+ | | |
| 1999 10 04 | 704 | 0.4+ | 1.2+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 14 | 704 | 0.2+ | 0.7− | | |
| 1999 10 06 | 704 | 0.2+ | 0.1+ | 2006 10 17 | 683 | 0.5+ | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.7− | | |
| 1999 10 06 | 704 | 0.1+ | 0.2− | 2006 10 17 | 683 | (0.5+ | 1.6−) | 2006 11 14 | 704 | 0.3+ | 0.5− | | |
| 1999 10 06 | 704 | 0.4− | 0.1− | 2006 10 18 | A44 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.4− | | |
| 1999 10 06 | 704 | 0.2+ | 0.2+ | 2006 10 18 | A44 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.2− | | |
| 1999 10 06 | 704 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.2+ | 1.0+ | | |
| 1999 10 09 | 704 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.6+ | | |
| 1999 10 09 | 704 | 0.1− | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.4− | | |
| 1999 10 09 | 704 | 0.8+ | 0.1+ | 2006 10 18 | A44 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.5+ | | |
| 1999 10 09 | 704 | 0.6− | 0.4− | 2006 10 18 | A44 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.6+ | | |
| 1999 10 09 | 704 | 0.4+ | 0.7− | 2006 10 19 | A44 | 0.5− | 0.2− | 2006 11 20 | 704 | 0.5+ | 0.4+ | | |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.6− | 0.3+ | | |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.1+ | | |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2006 10 03 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.5+ | | |
| 2006 10 03 | 704 | 1.2+ | 1.1+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | (0.6+ | 1.6+) | | |
| 2006 10 03 | 704 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.4− | | |
| 2006 10 03 | 704 | 0.4− | 0.5+ | 2006 10 27 | 704 | 0.5+ | 0.9+ | 2006 11 20 | 704 | 0.5− | 0.5− | | |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.6+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.5− | | |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.5− | | |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.0 | 0.6− | 2006 11 23 | G96 | 0.0 | 0.5− | | |
| 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.5− | | |

## 1999 TO$_{30}$ = 2006 UA$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.57499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28709300 | $\omega$ | 212.90790 | | +0.57581012 | | −0.81672395 |
| $a$ | 2.2757313 | $\Omega$ | 202.00722 | | +0.77007443 | | +0.55717921 |
| $e$ | 0.2702563 | $i$ | 5.74024 | | +0.27464175 | | +0.15004440 |
| $P$ | 3.43 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.1+ | 0.6+ | 1999 10 15 | 704 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.2+ | 1.0+ | | |
| 1999 10 01 | 703 | 0.3− | 0.1− | 1999 10 15 | 704 | 0.2+ | 1.4+ | 2006 11 14 | 704 | 0.1− | 1.0+ | | |
| 1999 10 01 | 703 | 0.5− | 0.8− | 2006 10 16 | 703 | 0.5+ | 0.8− | 2006 11 14 | 704 | 0.3− | 0.2+ | | |
| 1999 10 01 | 703 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.7− | 2006 11 14 | 704 | 0.6+ | 0.4+ | | |
| 1999 10 04 | 704 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.7+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 1.3+ | | |
| 1999 10 04 | 704 | 1.7+ | 0.4− | 2006 10 16 | 703 | (2.2+ | 0.2−) | 2006 11 17 | 704 | 0.2− | 0.6+ | | |
| 1999 10 04 | 704 | 0.1− | 0.5− | 2006 10 19 | 703 | 0.8− | 0.3+ | 2006 11 17 | 704 | 0.5− | 0.4+ | | |
| 1999 10 04 | 704 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.9+ | | |
| 1999 10 04 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 703 | 0.4+ | 0.3− | 2006 11 17 | 704 | 0.0 | 0.4+ | | |
| 1999 10 06 | 704 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.9− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.4+ | | |
| 1999 10 06 | 704 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.6− | | |
| 1999 10 06 | 704 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.1+ | | |
| 1999 10 06 | 704 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 1999 10 06 | 704 | 0.0 | 0.4+ | 2006 11 02 | 703 | 0.6− | 0.8− | 2006 11 19 | 704 | 0.1+ | 0.4− | | |
| 1999 10 07 | 704 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.5+ | 1.0− | 2006 11 20 | 704 | 0.1+ | 0.0 | | |
| 1999 10 07 | 704 | 0.4+ | 0.7− | 2006 11 02 | 703 | 1.0− | 1.1− | 2006 11 20 | 704 | 1.0− | 0.5− | | |
| 1999 10 07 | 704 | 0.6+ | 0.5+ | 2006 11 02 | 703 | 0.5− | 0.7− | 2006 11 20 | 704 | 1.3− | 0.8− | | |
| 1999 10 07 | 704 | 0.2− | 0.1− | 2006 11 05 | 644 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.4− | | |
| 1999 10 07 | 704 | 0.8+ | 1.2+ | 2006 11 05 | 644 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.4− | | |
| 1999 10 09 | 704 | 0.7− | 0.3− | 2006 11 05 | 644 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.3− | | |
| 1999 10 09 | 704 | 0.8− | 0.4− | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.4− | | |
| 1999 10 09 | 704 | 0.4− | 0.4− | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 25 | 704 | (0.7+ | 1.6+) | | |
| 1999 10 09 | 704 | 0.5− | 0.4+ | 2006 11 10 | 644 | 0.6− | 0.6+ | 2006 11 25 | 704 | 1.1+ | 0.1− | | |
| 1999 10 15 | 704 | 0.5+ | 0.6+ | 2006 11 14 | 704 | 0.6+ | 0.1− | 2006 11 25 | 704 | 0.5+ | 0.9+ | | |

## 1999 TT$_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.14307 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23235506 | $\omega$ | 354.58099 | | +0.99923325 | | +0.03880029 |
| $a$ | 2.6204022 | $\Omega$ | 3.20939 | | −0.03147884 | | +0.87573738 |
| $e$ | 0.2260401 | $i$ | 5.36996 | | −0.02328081 | | +0.48122613 |
| $P$ | 4.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 1.0− | 1.4+ | 1999 10 09 | 704 | 0.5+ | 0.8− | 2003 08 23 | 704 | 0.4− | 0.8+ | | |
| 1999 10 01 | 703 | 0.8− | 0.2− | 1999 10 09 | 704 | 0.2+ | 0.5− | 2003 08 31 | 704 | 0.4− | 0.7− | | |
| 1999 10 01 | 703 | 1.1− | 1.2+ | 1999 10 09 | 704 | 0.3+ | 0.8− | 2003 08 31 | 704 | 0.3+ | 0.2+ | | |
| 1999 10 01 | 703 | (3.8− | 0.6+) | 1999 10 09 | 704 | 0.4+ | 0.2+ | 2003 08 31 | 704 | 0.0 | 0.3− | | |
| 1999 10 04 | 704 | 0.9+ | 0.3− | 1999 10 09 | 704 | 0.5− | 0.4+ | 2003 08 31 | 704 | 0.0 | 0.0 | | |
| 1999 10 04 | 704 | 0.4+ | 0.4+ | 1999 10 13 | 704 | 0.1− | 0.3+ | 2003 08 31 | 704 | 0.5+ | 0.7+ | | |
| 1999 10 04 | 704 | 0.1+ | 1.9+ | 1999 10 13 | 704 | 0.7+ | 0.4− | 2003 09 25 | 644 | 0.2+ | 0.2+ | | |
| 1999 10 06 | 704 | 0.5− | 0.1+ | 1999 10 13 | 704 | 0.1+ | 0.6− | 2003 09 25 | 644 | 0.0 | 0.1+ | | |
| 1999 10 06 | 704 | 0.4− | 0.0 | 1999 10 13 | 704 | 0.3+ | 0.8− | 2003 09 25 | 644 | 0.1+ | 0.1− | | |
| 1999 10 06 | 704 | 0.5+ | 0.2− | 1999 10 13 | 704 | 0.3+ | 0.9− | 2005 01 17 | 691 | 0.1− | 0.1− | | |
| 1999 10 06 | 704 | 0.2− | 0.1− | 2003 08 23 | 704 | 0.6− | 1.1− | 2005 01 17 | 691 | 0.3+ | 0.1+ | | |
| 1999 10 06 | 704 | 0.1+ | 0.3− | 2003 08 23 | 704 | 0.4+ | 0.1+ | 2005 01 17 | 691 | 0.2− | 0.1+ | | |

## 1999 TH$_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.55403 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28909891 | $\omega$ | 135.73650 | | +0.95248820 | | +0.30347715 |
| $a$ | 2.2651923 | $\Omega$ | 206.62904 | | −0.29300023 | | +0.88981573 |
| $e$ | 0.2555673 | $i$ | 3.30537 | | −0.08316911 | | +0.34077792 |
| $P$ | 3.41 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 1.1+ | 0.1− | 1999 10 15 | 704 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 1999 10 04 | 704 | 0.1+ | 0.5− | 1999 10 15 | 704 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 1999 10 04 | 704 | 0.9− | 0.8− | 1999 10 15 | 704 | 1.4− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 1999 10 06 | 704 | 0.1+ | 0.5+ | 1999 10 19 | 704 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 1999 10 06 | 704 | 0.4− | 0.3− | 1999 10 19 | 704 | 0.6+ | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 1999 10 06 | 704 | 0.1+ | 0.2− | 1999 10 19 | 704 | 0.9+ | 0.5+ | 2006 11 11 | 691 | 0.3− | 0.1− | | |
| 1999 10 06 | 704 | 0.5+ | 0.4− | 1999 10 19 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 1999 10 06 | 704 | 0.3+ | 0.2+ | 1999 11 29 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.2+ | | |
| 1999 10 09 | 704 | 0.2− | 0.3− | 1999 11 29 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.0 | | |
| 1999 10 09 | 704 | 0.5− | 0.6+ | 1999 11 29 | 691 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 1999 10 09 | 704 | 0.0 | 0.1+ | 1999 12 03 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 1999 10 09 | 704 | 0.4+ | 0.3+ | 1999 12 03 | 691 | 0.3+ | 0.1+ | | | | | | |
| 1999 10 09 | 704 | 0.4− | 0.1+ | 1999 12 03 | 691 | 0.0 | 0.5− | | | | | | |

## 1999 TY$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.29764 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24032622 | $\omega$ | 331.91499 | | +0.81900152 | | +0.57368324 |
| $a$ | 2.5621346 | $\Omega$ | 353.04585 | | −0.50771499 | | +0.71550754 |
| $e$ | 0.0656818 | $i$ | 5.27813 | | −0.26732378 | | +0.39866841 |
| $P$ | 4.10 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.4− | 0.2+ | 1999 10 13 | 645 | 0.0 | 0.1− | 2003 09 27 | 691 | 0.2− | 0.2− | | |
| 1999 10 03 | 691 | 0.1+ | 0.2+ | 1999 10 13 | 645 | 0.1+ | 0.1− | 2003 09 27 | 691 | 0.1− | 0.0 | | |
| 1999 10 03 | 691 | 0.4− | 0.1+ | 2003 09 18 | 291 | 0.0 | 0.0 | 2003 10 20 | 691 | 0.6+ | 0.1+ | | |
| 1999 10 08 | 691 | 0.0 | 0.2+ | 2003 09 18 | 291 | 0.0 | 0.1− | 2003 10 20 | 691 | 0.3− | 0.1+ | | |
| 1999 10 08 | 691 | 0.0 | 0.1+ | 2003 09 18 | 291 | 0.1+ | 0.1− | 2003 10 20 | 691 | 0.1− | 0.1+ | | |
| 1999 10 08 | 691 | 0.1+ | 0.2+ | 2003 09 27 | 691 | 0.0 | 0.1+ | | | | | | |

**1999 TC$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.44486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23063705 | $\omega$ | 336.13318 | | +0.34323198 | | +0.93864981 |
| $a$ | 2.6333990 | $\Omega$ | 313.92139 | | −0.85406606 | | +0.29702105 |
| $e$ | 0.0706290 | $i$ | 2.67295 | | −0.39084904 | | +0.17525703 |
| $P$ | 4.27 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.2+ | 0.0 | 1999 10 08 | 691 | 0.2+ | 0.1+ | 2003 09 16 | 691 | 0.1+ | 0.2+ |
| 1995 11 18 | 691 | 0.1+ | 0.1− | 1999 10 13 | 691 | 0.5+ | 0.8+ | 2003 09 16 | 691 | 0.0 | 0.0 |
| 1995 11 18 | 691 | 0.2− | 0.1− | 1999 10 13 | 645 | 0.2− | 0.1− | 2003 09 16 | 691 | 0.3+ | 0.1+ |
| 1999 10 03 | 691 | 0.3− | 0.1+ | 1999 10 13 | 645 | 0.1− | 0.0 | 2003 09 26 | 645 | 0.0 | 0.0 |
| 1999 10 03 | 691 | 0.2− | 0.1+ | 1999 10 13 | 691 | 0.5+ | 0.4+ | 2003 09 26 | 645 | 0.0 | 0.0 |
| 1999 10 03 | 691 | 0.3− | 0.2− | 1999 10 13 | 691 | 1.0+ | 1.3+ | 2003 09 28 | 691 | 0.4− | 0.3− |
| 1999 10 08 | 691 | 0.0 | 0.0 | 1999 10 14 | 645 | 0.0 | 0.1− | 2003 09 28 | 691 | 0.2− | 0.1− |
| 1999 10 08 | 691 | 0.6+ | 0.4− | 1999 10 14 | 645 | 0.1− | 0.1− | 2003 09 28 | 691 | 0.0 | 0.0 |

**1999 TY$_{45}$ = 2006 WU$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.30790 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29537765 | $\omega$ | 100.73346 | | −0.20387034 | | −0.97899721 |
| $a$ | 2.2329772 | $\Omega$ | 1.03208 | | +0.87110423 | | −0.18194391 |
| $e$ | 0.0994487 | $i$ | 3.70035 | | +0.44678218 | | −0.09198304 |
| $P$ | 3.34 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.0 | 0.0 | 1999 10 13 | 645 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.4− | 0.2− |
| 1999 10 03 | 691 | 0.1+ | 0.3− | 1999 10 14 | 691 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 1999 10 03 | 691 | 0.0 | 0.1− | 1999 10 14 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.3− | 0.4+ |
| 1999 10 09 | 691 | 0.2− | 0.1+ | 1999 10 14 | 691 | 0.4+ | 0.3− | 2006 11 23 | 691 | 0.4+ | 0.2− |
| 1999 10 09 | 691 | 0.1− | 0.2+ | 2004 02 29 | 691 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1999 10 09 | 691 | 0.0 | 0.2− | 2004 02 29 | 691 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 1999 10 13 | 645 | 0.1− | 0.1+ | 2004 02 29 | 691 | 0.3− | 0.4+ | | | | |

**1999 TB$_{46}$ = 1999 TX$_{229}$ = 2006 SN$_{217}$**

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Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.34119 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27932063 | $\omega$ | 119.25962 | | +0.86671678 | | +0.49229586 |
| $a$ | 2.3177542 | $\Omega$ | 211.44856 | | −0.49415644 | | +0.82553492 |
| $e$ | 0.2808965 | $i$ | 8.85271 | | −0.06790760 | | +0.27592914 |
| $P$ | 3.53 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.4− | 0.4− |
| 1999 10 03 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1999 10 03 | 691 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 1999 10 06 | 704 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 0.2+ | 0.6− | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 0.1− | 0.4− | 2006 10 15 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 1999 10 06 | 704 | 0.1+ | 0.7− | 2006 10 17 | 703 | 0.5− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 1999 10 07 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.3+ | 2006 11 11 | 691 | 1.1+ | 0.7− |
| 1999 10 07 | 691 | 0.6+ | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 1999 10 07 | 691 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.6− |
| 1999 10 12 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 1999 10 12 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 1999 10 12 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2006 09 20 | 699 | 0.4+ | 1.1− | 2006 10 21 | 703 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.1+ |
| 2006 09 20 | 699 | 0.5− | 0.2− | 2006 10 21 | 703 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.6− |
| 2006 09 20 | 699 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2006 09 20 | 699 | 0.0 | 0.9− | 2006 10 21 | 703 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2006 09 29 | 704 | 0.1+ | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2006 09 29 | 704 | 0.1− | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2006 09 29 | 704 | 0.4+ | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.2− | | | | |

**1999 TZ$_{46}$ = 2006 SM$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.90938 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28419352 | $\omega$ | 7.41755 | | +0.83553995 | | −0.54879958 |
| $a$ | 2.2911838 | $\Omega$ | 25.92102 | | +0.50095113 | | +0.74127848 |
| $e$ | 0.1686681 | $i$ | 3.45009 | | +0.22565672 | | +0.38642624 |
| $P$ | 3.47 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 691 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 1999 09 18 | 691 | 0.1+ | 0.5− | 2006 09 28 | 691 | 0.7− | 0.0 | 2006 10 27 | 691 | 0.2− | 0.2− |
| 1999 09 18 | 691 | 0.3+ | 0.5− | 2006 10 02 | 691 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.5+ | 0.1− |
| 1999 10 04 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.3− |
| 1999 10 04 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 1999 10 04 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 1999 10 04 | 704 | 0.4− | 0.8− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1999 10 04 | 704 | (0.9+ | 2.1−) | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 1999 10 04 | 704 | 1.7+ | 0.8− | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.4+ | 0.0 |
| 1999 10 07 | 703 | 0.3+ | 0.9+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 1999 10 07 | 703 | 0.3− | 0.4− | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.5− | 0.2+ |
| 1999 10 07 | 703 | 0.9+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1999 10 07 | 703 | 0.5+ | 1.3+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1999 10 10 | 691 | 0.3− | 0.7− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 1999 10 10 | 691 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 1999 10 10 | 691 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 1999 10 15 | 704 | 0.3+ | 1.3+ | 2006 10 19 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.4+ | 0.2+ |
| 1999 10 15 | 704 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 1999 10 15 | 704 | 0.8+ | 1.0− | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 1999 10 15 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 1999 10 15 | 704 | (1.2+ | 2.4−) | 2006 10 20 | 703 | 1.2− | 0.2− | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 2001 04 16 | 645 | 0.1− | 0.3− | 2006 10 20 | 703 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2006 09 19 | 691 | 0.0 | 0.5+ | 2006 10 20 | 703 | 0.2+ | 1.0− | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | (3.6+ | 0.7+) | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.7− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 09 20 | 704 | 0.3+ | 1.2+ | 2006 10 21 | 703 | 0.8− | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2006 09 20 | 704 | 0.6− | 1.0+ | 2006 10 21 | 703 | 0.9− | 0.3− | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2006 09 20 | 704 | 0.9− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.1− |
| 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.1− |
| 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.3+ | 0.3− |
| 2006 09 23 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.7− | 0.4− |
| 2006 09 27 | 704 | (0.2+ | 1.8+) | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.3− | 0.3− |
| 2006 09 27 | 704 | 1.5− | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2006 09 27 | 704 | 0.3− | 1.0+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.3− | | | | |

**1999 TT$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.12241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17277171 | $\omega$ | 63.95263 | | +0.19930962 | | −0.97962187 |
| $a$ | 3.1926719 | $\Omega$ | 14.61512 | | +0.86023566 | | +0.16277061 |
| $e$ | 0.1189480 | $i$ | 5.64792 | | +0.46932961 | | +0.11767205 |
| $P$ | 5.70 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.0 | 0.3+ | 1999 10 09 | 691 | 0.4+ | 0.4− | 2005 11 12 | 291 | 0.2+ | 0.1− |
| 1999 09 30 | 691 | 0.0 | 0.1+ | 1999 10 09 | 691 | 0.2+ | 0.1− | 2005 11 12 | 291 | 0.3+ | 0.2+ |
| 1999 09 30 | 691 | 0.4+ | 0.1− | 1999 10 09 | 691 | 0.2+ | 0.2− | 2005 11 28 | 704 | 0.9− | 0.6− |
| 1999 10 06 | 691 | 0.4− | 0.3− | 1999 10 13 | 645 | 0.0 | 0.1+ | 2005 11 28 | 704 | 0.6− | 0.2+ |
| 1999 10 06 | 704 | 0.1+ | 0.7− | 1999 10 13 | 645 | 0.0 | 0.1+ | 2005 11 28 | 704 | 0.5− | 0.8− |
| 1999 10 06 | 691 | 0.4− | 0.0 | 2005 11 01 | 691 | 0.1− | 0.0 | 2005 11 28 | 704 | 0.2+ | 0.8− |
| 1999 10 06 | 691 | 0.4− | 0.0 | 2005 11 01 | 691 | 0.2− | 0.1− | 2005 12 05 | 704 | (2.7+ | 4.3−) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.8+ | 0.3+ | 2005 11 01 | 691 | 0.0 | 0.1+ | 2005 12 05 | 704 | 0.6+ | 0.4− |
| 1999 10 06 | 704 | 0.1+ | 0.1+ | 2005 11 12 | 291 | 0.1+ | 0.2+ | 2005 12 05 | 704 | 0.1+ | 1.4+ |

**1999 TU$_{58}$ = 2006 WE$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.12180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28283029 | $\omega$ | 176.81555 | | +0.96554638 | +0.26004929 | |
| $a$ | 2.2985402 | $\Omega$ | 168.09787 | | −0.23978704 | +0.90358856 | |
| $e$ | 0.2045084 | $i$ | 2.70241 | | −0.10110572 | +0.34044393 | |
| $P$ | 3.48 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.1− | 0.1+ | 1999 10 15 | 691 | 0.1+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 1999 10 06 | 691 | 0.2− | 0.3− | 1999 10 15 | 691 | 0.0 | 0.5− | 2006 11 23 | G96 | 0.5+ | 0.5− |
| 1999 10 06 | 691 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.8− |
| 1999 10 09 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 1999 10 09 | 691 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.7− |
| 1999 10 09 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.3− | 0.2+ | | | | |
| 1999 10 15 | 691 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.3− | | | | |

**1999 TR$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.95522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28331356 | $\omega$ | 139.37834 | | +0.95922939 | +0.28025653 | |
| $a$ | 2.2959256 | $\Omega$ | 204.41943 | | −0.27676538 | +0.90524704 | |
| $e$ | 0.2217942 | $i$ | 5.07091 | | −0.05727039 | +0.31934946 | |
| $P$ | 3.48 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 1.3+ | 0.1− | 2006 09 19 | 699 | 0.5− | 0.8− | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 1999 09 04 | 703 | 0.5− | 1.4+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 1999 09 04 | 703 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.4− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 1999 09 04 | 703 | 0.7+ | 0.6− | 2006 09 19 | 699 | 0.1+ | 0.6− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 1999 09 09 | 704 | 1.6+ | 1.2+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 1999 09 09 | 704 | 1.0+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 1999 09 09 | 704 | 0.9+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 09 09 | 704 | (0.9+ | 2.3+) | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 1999 10 07 | 691 | 0.5− | 1.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.4− |
| 1999 10 07 | 691 | 0.0 | 1.0− | 2006 09 25 | 704 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.7+ | 1.2− |
| 1999 10 07 | 691 | 0.2− | 0.9− | 2006 09 25 | 704 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.8− | 1.1− |
| 1999 10 11 | 691 | 0.1− | 0.6− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 1999 10 11 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 0.3− | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 1999 10 11 | 691 | 0.4− | 0.4− | 2006 09 25 | 704 | 0.3+ | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 1999 10 13 | 704 | 0.6+ | 0.8− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 1999 10 13 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 1999 10 13 | 704 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.1− |
| 1999 10 13 | 704 | 0.2+ | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 1999 10 13 | 704 | 0.4− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 1999 11 13 | 691 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 1999 11 13 | 691 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.5− | 0.9+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 1999 11 13 | 691 | 0.1− | 0.6+ | 2006 10 01 | 704 | 0.3− | 1.1+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2006 09 17 | 703 | 0.6− | 0.4+ | 2006 10 01 | 704 | 0.8+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2006 09 17 | 703 | 0.8− | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.2+ | | | | |
| 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ | | | | |

**1999 TT$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.30232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28325897 | $\omega$ | 143.39579 | | +0.99469005 | +0.09690573 | |
| $a$ | 2.2962206 | $\Omega$ | 211.09698 | | −0.10291108 | +0.93325179 | |
| $e$ | 0.2179351 | $i$ | 3.84732 | | −0.00100956 | +0.34590517 | |
| $P$ | 3.48 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.3+ | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 1999 10 07 | 691 | 0.3+ | 0.8− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 1999 10 07 | 691 | 0.1+ | 0.3− | 2006 09 25 | 704 | 0.5− | 1.0+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 1999 10 11 | 691 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.7− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 1999 10 11 | 691 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 1999 10 11 | 691 | 0.3+ | 0.9− | 2006 09 25 | 704 | 0.6− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 1999 10 16 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.5− | 0.1− |
| 1999 10 16 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.4− |
| 1999 10 16 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.6+ | 2006 11 13 | G96 | 1.0− | 0.0 |
| 1999 11 10 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1− | 0.5+ | 2006 11 13 | G96 | 0.3− | 0.3− |
| 1999 11 10 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.6− |
| 1999 11 10 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.6+ | 2006 11 13 | G96 | 0.3− | 0.3− |

**1999 TP$_{61}$ = 2006 SF$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.11030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28278813 | $\omega$ | 39.82937 | | +0.80470189 | −0.59363169 | |
| $a$ | 2.2987686 | $\Omega$ | 356.56004 | | +0.50785421 | +0.69486069 | |
| $e$ | 0.0967996 | $i$ | 7.18294 | | +0.30747191 | +0.40591876 | |
| $P$ | 3.49 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 23 | 691 | 0.4− | 0.4+ | 1999 10 12 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.2− | 0.2− |
| 1992 09 23 | 691 | 0.1− | 0.1− | 1999 10 16 | 645 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 1992 09 23 | 691 | 0.1+ | 0.5+ | 1999 10 16 | 645 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 1999 10 06 | 704 | 1.0+ | 0.5− | 1999 10 17 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 1999 10 06 | 704 | 0.2+ | 0.7+ | 1999 10 17 | 691 | 0.6− | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1999 10 06 | 704 | 0.2− | 0.4− | 1999 10 17 | 691 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 1999 10 06 | 704 | 0.5− | 0.5− | 1999 11 03 | 691 | 0.0 | 0.6− | 2006 10 02 | 691 | 0.1+ | 0.6+ |
| 1999 10 06 | 704 | 0.0 | 0.1− | 1999 11 03 | 691 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.3− | 0.5+ |
| 1999 10 07 | 691 | 0.1− | 0.4− | 1999 11 03 | 691 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.6+ |
| 1999 10 07 | 691 | 0.3− | 0.7− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.0 | 0.0 |
| 1999 10 07 | 691 | 0.4+ | 0.2− | 2006 09 15 | 691 | 0.5+ | 0.2− | 2006 10 23 | G96 | 0.8− | 0.2+ |
| 1999 10 12 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 1999 10 12 | 691 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1+ |

**1999 TV$_{66}$ = 2006 UE$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.16032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28310685 | $\omega$ | 150.31196 | | +0.93110246 | −0.36373124 | |
| $a$ | 2.2970430 | $\Omega$ | 231.04326 | | +0.32734885 | +0.86633057 | |
| $e$ | 0.2200657 | $i$ | 2.01530 | | +0.16090665 | +0.34230241 | |
| $P$ | 3.48 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 691 | 0.2− | 0.1+ | 2005 05 04 | G96 | 0.6+ | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 1999 10 08 | 691 | 0.1− | 0.1+ | 2005 05 04 | G96 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 1999 10 08 | 691 | 0.2+ | 0.4− | 2005 05 04 | G96 | 0.3− | 0.9+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 1999 10 13 | 691 | 0.1− | 0.0 | 2005 05 04 | G96 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 1999 10 13 | 645 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 1999 10 13 | 645 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 1999 10 13 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7− | 1.1− |
| 1999 10 13 | 691 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.3+ | 2006 11 11 | 703 | (1.7− | 1.0+) |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 1.1+ |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 1999 10 15 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 1999 10 15 | 704 | (2.1+ | 0.8+) | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 1999 10 15 | 704 | 1.0+ | 1.1+ | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 1999 10 20 | 704 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 1999 10 20 | 704 | 1.3− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 1.1+ |
| 1999 10 20 | 704 | 1.8− | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4− | 1.3+ |
| 1999 10 20 | 704 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 1999 10 20 | 704 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1− | | | | |

**1999 TY$_{67}$ = 2006 QG$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.44172 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12596368 | $\omega$ | 252.42076 | | +0.92968012 | | +0.36426675 |
| $a$ | 3.9412969 | $\Omega$ | 86.18878 | | −0.31370627 | | +0.86091042 |
| $e$ | 0.2773996 | $i$ | 3.14917 | | −0.19308870 | | +0.35516614 |
| $P$ | 7.82 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 691 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.0 | 0.0 |
| 1999 10 08 | 691 | 0.7− | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.3− |
| 1999 10 08 | 691 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.4+ | 2006 08 24 | 644 | 0.1+ | 0.2+ |
| 1999 10 11 | 691 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.2+ |
| 1999 10 11 | 691 | 0.3+ | 0.0 | 2006 08 17 | 644 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 1999 10 11 | 691 | 0.2+ | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 1999 10 17 | 691 | 0.2− | 0.3− | 2006 08 23 | 704 | 0.4+ | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 1999 10 17 | 691 | 0.3+ | 0.3+ | 2006 08 23 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 1.3− | 0.6+ |
| 1999 10 17 | 691 | 0.3+ | 0.1+ | 2006 08 23 | 704 | 0.0 | 1.2− | 2006 09 14 | 703 | 0.8− | 0.1− |
| 2005 04 10 | 695 | 0.2+ | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.8− | 0.7− |
| 2005 04 10 | 695 | 0.1− | 0.3+ | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.4− |

**1999 TW$_{70}$ = 2006 SC$_{294}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.69755 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27633237 | $\omega$ | 90.51282 | | +0.47619268 | | +0.87879350 |
| $a$ | 2.3344337 | $\Omega$ | 207.99112 | | −0.83079026 | | +0.43805951 |
| $e$ | 0.1574752 | $i$ | 3.79020 | | −0.28814593 | | +0.18927719 |
| $P$ | 3.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.0 | 0.2− | 2005 03 13 | 691 | (23.4+ | 7.8−) | 2006 10 02 | 691 | 0.1− | 0.0 |
| 1999 10 09 | 691 | 0.1− | 0.0 | 2005 03 13 | 691 | (23.7+ | 7.8−) | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 1999 10 09 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1999 10 12 | 691 | 0.2+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 10 12 | 691 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 1999 10 12 | 691 | 0.2+ | 0.3− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 1999 10 19 | 691 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 1999 10 19 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 1999 10 19 | 691 | 0.2− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.0 | | | | |
| 2005 03 13 | 691 | (23.5+ | 7.7−) | 2006 10 02 | 691 | 0.0 | 0.3+ | | | | |

**1999 TJ$_{71}$ = 1999 TV$_{325}$**

Id. M. E. Sansaturio (d, *MPO* 12345)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.01547 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27030148 | $\omega$ | 170.86063 | | −0.96105162 | | +0.27031257 |
| $a$ | 2.3690293 | $\Omega$ | 25.05313 | | −0.26137439 | | −0.82134416 |
| $e$ | 0.0571644 | $i$ | 7.80964 | | −0.08979545 | | −0.50231951 |
| $P$ | 3.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.1+ | 0.0 | 1999 10 15 | 691 | 0.1+ | 0.0 | 2005 05 01 | 644 | 0.1− | 0.1− |
| 1999 10 09 | 691 | 0.1+ | 0.3− | 2005 04 14 | 703 | (3.8− | 2.4−) | 2005 05 10 | 699 | 0.9+ | 0.3− |
| 1999 10 09 | 691 | 0.2+ | 0.2− | 2005 04 14 | 703 | 1.5− | 0.6+ | 2005 05 10 | 699 | 1.1− | 0.3+ |
| 1999 10 13 | 691 | 0.3− | 0.2− | 2005 04 14 | 703 | 0.1− | 0.9+ | 2005 05 10 | 699 | (2.2+ | 0.2−) |
| 1999 10 13 | 691 | 0.0 | 0.1− | 2005 04 14 | 703 | 0.7+ | 0.4+ | 2005 05 10 | 699 | (2.6+ | 0.1+) |
| 1999 10 13 | 691 | 0.1− | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.0 | 2005 05 19 | 644 | 0.1− | 0.1+ |
| 1999 10 14 | 645 | 0.0 | 0.1+ | 2005 04 14 | 691 | 0.1+ | 0.2− | 2005 05 19 | 644 | 0.4+ | 0.2− |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.3+ | 0.1+ |
| 1999 10 15 | 691 | 0.3+ | 0.3+ | 2005 05 01 | 644 | 0.1− | 0.0 | | | | |
| 1999 10 15 | 691 | 0.4− | 0.0 | 2005 05 01 | 644 | 0.1+ | 0.2− | | | | |

**1999 TL$_{74}$ = 2006 RQ$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.13397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28274378 | $\omega$ | 286.47774 | | −0.47984805 | | −0.87726131 |
| $a$ | 2.2990090 | $\Omega$ | 192.22120 | | +0.82593410 | | −0.44684048 |
| $e$ | 0.0915334 | $i$ | 3.40899 | | +0.29593700 | | −0.17534588 |
| $P$ | 3.49 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.5+ | 0.0 | 1999 10 15 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 1999 10 10 | 691 | 0.4+ | 0.1− | 1999 11 01 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1999 10 10 | 691 | 0.3+ | 0.3− | 1999 11 01 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 1999 10 13 | 691 | 0.2− | 0.1+ | 1999 11 01 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 1999 10 13 | 691 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1999 10 13 | 691 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 1999 10 14 | 691 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.0 |
| 1999 10 14 | 691 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1− |
| 1999 10 14 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 1999 10 14 | 691 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.2+ |
| 1999 10 14 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.3− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 1999 10 14 | 691 | 0.4− | 0.2− | 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.7− |
| 1999 10 15 | 691 | 0.5− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1999 10 15 | 691 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.6− |

**1999 TO$_{76}$ = 2006 UE$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.50660 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27540946 | $\omega$ | 192.22753 | | +0.69817498 | | −0.71455986 |
| $a$ | 2.3396460 | $\Omega$ | 213.52176 | | +0.66341265 | | +0.66894968 |
| $e$ | 0.2180744 | $i$ | 4.59329 | | +0.26913817 | | +0.20472061 |
| $P$ | 3.58 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.1+ | 0.2+ | 1999 10 10 | 691 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 1999 10 03 | 691 | 0.1− | 0.0 | 1999 10 13 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 1999 10 03 | 691 | 0.0 | 0.1− | 1999 10 13 | 691 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 1999 10 10 | 691 | 0.3+ | 0.1+ | 1999 10 13 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.4+ | 0.0 |
| 1999 10 10 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.4− | 0.3+ |

**1999 TY$_{76}$ = 2006 PV$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.96584 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26280268 | $\omega$ | 87.33796 | | +0.41980140 | | +0.90752309 |
| $a$ | 2.4138828 | $\Omega$ | 207.49561 | | −0.84349816 | | +0.38482299 |
| $e$ | 0.2153317 | $i$ | 1.61172 | | −0.33507856 | | +0.16826498 |
| $P$ | 3.75 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.3+ | 0.1− | 2003 11 30 | 291 | 0.2− | 0.3+ | 2006 07 20 | 644 | 0.5− | 0.1+ |
| 1999 10 10 | 691 | 0.6− | 0.1− | 2003 11 30 | 291 | 0.0 | 0.2+ | 2006 07 20 | 644 | 0.1− | 0.1− |
| 1999 10 10 | 691 | 0.5− | 0.2+ | 2003 11 30 | 291 | 0.1+ | 0.3+ | 2006 07 20 | 644 | 0.0 | 0.1− |
| 1999 10 13 | 691 | 0.2+ | 0.4+ | 2005 03 11 | 695 | 0.1+ | 0.4+ | 2006 08 13 | 644 | 0.1+ | 0.0 |
| 1999 10 13 | 691 | 0.1− | 0.1− | 2005 03 11 | 695 | 0.1+ | 0.2+ | 2006 08 13 | 644 | 0.0 | 0.1− |
| 1999 10 13 | 691 | 0.1+ | 0.6+ | 2006 05 26 | G96 | 0.2+ | 0.0 | 2006 08 13 | 644 | 0.3− | 0.2+ |
| 1999 11 16 | 691 | 0.3+ | 0.8− | 2006 05 26 | G96 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.6+ | 0.8+ |
| 1999 11 16 | 691 | 0.5− | 0.6− | 2006 05 26 | G96 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 1999 11 16 | 691 | 1.0+ | 0.1− | 2006 05 26 | G96 | 0.2+ | 0.1− | 2006 08 24 | 644 | 0.0 | 0.3+ |

**1999 TC$_{79}$ = 2006 UQ$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.91580 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28038226 | $\omega$ | 293.98654 | | +0.72369141 | | +0.68845576 |
| $a$ | 2.3118999 | $\Omega$ | 22.60184 | | −0.57913388 | | +0.64362470 |
| $e$ | 0.1343476 | $i$ | 7.16747 | | −0.37533279 | | +0.33432904 |
| $P$ | 3.52 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.2− | 0.6+ | 1999 10 16 | 691 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 1992 10 03 | 691 | 0.1− | 0.9+ | 2005 03 11 | 691 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 1992 10 03 | 691 | 0.5− | 0.6+ | 2005 03 11 | 691 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.5− | 0.1− |
| 1999 10 04 | 691 | 0.1+ | 0.3− | 2005 03 11 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 291 | 0.2+ | 0.4+ |
| 1999 10 04 | 691 | 0.1+ | 0.7− | 2005 05 06 | G96 | 0.6− | 0.1+ | 2006 10 22 | 291 | 0.1+ | 0.5+ |
| 1999 10 04 | 691 | 0.2− | 0.5− | 2005 05 06 | G96 | 0.3− | 0.4+ | 2006 10 22 | 291 | 0.2+ | 0.5+ |
| 1999 10 09 | 704 | 1.2+ | 0.1− | 2005 05 06 | G96 | 0.7− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 1999 10 09 | 704 | 0.1+ | 0.4− | 2005 05 06 | G96 | 0.9+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 1999 10 09 | 704 | 0.3+ | 0.4− | 2006 09 18 | 703 | 0.8+ | 1.4− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 1999 10 09 | 704 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.8− | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 1999 10 11 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | (3.5− | 0.7+) | 2006 11 21 | G96 | 1.4− | 0.5+ |
| 1999 10 11 | 691 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.7− | 1.4+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 1999 10 11 | 691 | 0.2+ | 0.4− | 2006 09 20 | 691 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 1999 10 16 | 691 | 0.3+ | 0.3− | 2006 09 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.6+ |
| 1999 10 16 | 691 | 0.2+ | 0.5− | 2006 09 20 | 691 | 0.2− | 0.0 | | | | |

**1999 TU$_{82}$ = 2006 UY$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.23856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28580971 | $\omega$ | 140.39602 | | +0.81750121 | | +0.57588651 |
| $a$ | 2.2825383 | $\Omega$ | 184.45843 | | −0.54815099 | | +0.77438717 |
| $e$ | 0.2536740 | $i$ | 5.03290 | | −0.17669822 | | +0.26206724 |
| $P$ | 3.45 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 1.3− | 1.1+ | 1999 10 16 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 1999 10 09 | 704 | 0.4+ | 0.1− | 1999 10 16 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 1999 10 09 | 704 | 0.1− | 0.4+ | 1999 10 17 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.7− |
| 1999 10 09 | 704 | 0.3− | 1.1− | 1999 10 17 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.3+ |
| 1999 10 09 | 704 | 0.3+ | 0.0 | 1999 10 17 | 691 | 0.9+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.0 |
| 1999 10 12 | 691 | 0.2− | 0.1− | 1999 10 17 | 691 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 1999 10 12 | 691 | 0.0 | 0.1− | 1999 10 17 | 691 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 1999 10 12 | 691 | 0.1− | 0.0 | 1999 10 17 | 691 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 1999 10 16 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 22 | 691 | 0.3− | 0.4− |

**1999 TF$_{84}$ = 1999 TW$_{68}$ = 2006 RS$_{5}$**

Id. Minor Planet Center (d, *MPO* 87831)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.31355 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27788880 | $\omega$ | 283.15343 | | +0.34155730 | | +0.93976739 |
| $a$ | 2.3257089 | $\Omega$ | 6.86218 | | −0.81359385 | | +0.30270485 |
| $e$ | 0.2249377 | $i$ | 6.37243 | | −0.47053550 | | +0.15876721 |
| $P$ | 3.55 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.4− | 0.2− | 1999 10 14 | 691 | 0.5+ | 0.1− | 2006 09 24 | 691 | 0.1− | 0.2+ |
| 1999 10 09 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.4− | 2006 09 24 | 691 | 0.0 | 0.1− |
| 1999 10 09 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.1− |
| 1999 10 13 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.6+ | 0.8+ |
| 1999 10 13 | 691 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.2− | 0.1− |
| 1999 10 13 | 691 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 1999 10 13 | 704 | 0.1+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.5− | 0.2− |
| 1999 10 13 | 704 | 0.8− | 0.3+ | 2006 09 20 | J75 | 1.3+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 1999 10 13 | 704 | 1.6− | 0.1− | 2006 09 20 | J75 | 0.5+ | 1.3− | 2006 10 19 | G96 | 0.4− | 0.2− |
| 1999 10 13 | 704 | 0.9− | 0.4− | 2006 09 20 | J75 | 0.8+ | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.4− |
| 1999 10 14 | 691 | 0.2+ | 0.0 | 2006 09 20 | J75 | 0.0 | 0.2+ | | | | |
| 1999 10 14 | 691 | 0.2+ | 0.0 | 2006 09 21 | J75 | (0.5+ | 1.7−) | | | | |

**1999 TK$_{84}$ = 2006 TR$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.13911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28221241 | $\omega$ | 206.06344 | | +0.53819580 | | −0.84160431 |
| $a$ | 2.3018939 | $\Omega$ | 211.43438 | | +0.78764430 | | +0.52134312 |
| $e$ | 0.1548611 | $i$ | 4.97743 | | +0.29993621 | | +0.14107988 |
| $P$ | 3.49 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1999 10 10 | 704 | 0.0 | 0.4− | 2006 10 12 | 691 | 1.1+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1999 10 10 | 704 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 0.2+ | 0.3− | 2006 10 14 | 958 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 1999 10 10 | 704 | 1.6− | 0.3+ | 2006 10 15 | 958 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 1999 10 13 | 691 | 0.6+ | 0.6+ | 2006 10 15 | 958 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 1999 10 13 | 691 | 0.1+ | 0.9+ | 2006 10 15 | 958 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 1999 10 13 | 691 | 0.6+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 1999 10 13 | 645 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | (1.7− | 0.3−) |
| 1999 10 13 | 645 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 1999 10 15 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 1999 10 15 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.7− |
| 1999 10 15 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.6− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− |
| 1999 10 20 | 691 | 0.2+ | 0.6− | 2006 10 23 | 683 | 0.8+ | 0.6− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 1999 10 20 | 691 | 0.3− | 0.4− | 2006 10 23 | 683 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 1999 10 20 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 683 | (4.7+ | 4.0−) | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 27 | 683 | 1.1− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 27 | 683 | (2.0− | 2.1+) | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 27 | 683 | 0.5+ | 0.9+ | | | | |

**1999 TP$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.79672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23629971 | $\omega$ | 29.72495 | | −0.99759290 | | −0.06328706 |
| $a$ | 2.5911582 | $\Omega$ | 146.61014 | | +0.04899380 | | −0.93251169 |
| $e$ | 0.0851027 | $i$ | 2.95181 | | +0.04907151 | | −0.35555126 |
| $P$ | 4.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.5− | 0.0 | 2001 03 18 | 699 | 1.2+ | 0.8+ | 2003 10 21 | 691 | 0.3+ | 0.2+ |
| 1999 10 06 | 691 | 0.3− | 0.0 | 2001 03 18 | 699 | 1.9+ | 2.2+ | 2003 10 21 | 691 | 0.3+ | 0.3+ |
| 1999 10 06 | 691 | 0.6− | 0.2+ | 2001 03 18 | 699 | 0.5− | 0.1− | 2003 10 21 | 691 | 0.8+ | 0.1+ |
| 1999 10 15 | 691 | 1.3+ | 0.3− | 2001 03 18 | 699 | 0.3+ | 0.8+ | 2005 02 09 | 704 | 0.3+ | 0.3+ |
| 1999 10 15 | 691 | 0.3+ | 0.2− | 2001 03 28 | 691 | 0.1− | 0.3+ | 2005 02 09 | 704 | 1.2+ | 0.0 |
| 1999 10 15 | 691 | 0.1+ | 0.7− | 2001 03 28 | 691 | 0.6− | 0.4+ | 2005 02 09 | 704 | 1.1+ | 0.2+ |
| 1999 10 19 | 691 | 0.1− | 0.3− | 2001 03 28 | 691 | 0.1− | 0.3+ | 2005 02 09 | G96 | 1.0− | 0.5− |
| 1999 10 19 | 691 | 0.1− | 0.1+ | 2001 04 16 | 645 | 0.0 | 0.2− | 2005 02 09 | G96 | 0.7− | 0.1− |
| 1999 10 19 | 691 | 0.0 | 0.4+ | 2001 04 16 | 645 | 0.1− | 0.1− | 2005 02 09 | G96 | 0.8− | 0.3− |
| 2001 03 02 | 691 | 0.2+ | 0.2− | 2003 10 03 | 291 | 0.6− | 0.2+ | 2005 02 09 | G96 | 0.6− | 0.5− |
| 2001 03 02 | 691 | 0.2+ | 0.1+ | 2003 10 03 | 291 | 0.5− | 0.1+ | | | | |
| 2001 03 02 | 691 | 0.4+ | 0.2− | 2003 10 03 | 291 | 0.5− | 0.0 | | | | |

**1999 TY$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.06813 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28247475 | $\omega$ | 227.65612 | | +0.99525329 | | +0.01478970 |
| $a$ | 2.3004685 | $\Omega$ | 131.25795 | | +0.01655472 | | +0.94825032 |
| $e$ | 0.1360054 | $i$ | 7.35130 | | −0.09590013 | | +0.31717914 |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.5− | 1.3+ | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.3− |
| 1999 09 08 | 703 | 0.1+ | 0.6− | 2006 08 19 | 699 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.9− | 1.4− | 2006 08 19 | 699 | 0.5− | 1.0+ | 2006 09 26 | 703 | 0.7+ | 1.1− |
| 1999 09 08 | 703 | 0.9+ | 0.2+ | 2006 08 19 | 699 | 0.1+ | 1.4+ | 2006 09 29 | 699 | 0.2− | 0.2+ |
| 1999 10 02 | 704 | 0.2+ | 0.5− | 2006 08 19 | 699 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 1.0+ | 0.5+ |
| 1999 10 02 | 704 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 0.9− | 0.1+ |
| 1999 10 02 | 704 | 1.1+ | 0.1− | 2006 09 18 | 703 | 1.0− | 0.2− | 2006 10 17 | 703 | 0.8− | 0.6− |
| 1999 10 02 | 704 | 0.2+ | 0.7− | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 1999 10 08 | 704 | 0.3+ | 1.1+ | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 1999 10 08 | 704 | 0.6− | 1.2+ | 2006 09 21 | 699 | 0.2+ | 0.8− | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 1999 10 08 | 704 | 0.6− | 0.1+ | 2006 09 21 | 699 | 0.4+ | 0.4+ | 2006 10 25 | D35 | 0.1+ | 0.6+ |
| 1999 10 08 | 704 | 0.4+ | 1.0+ | 2006 09 21 | 699 | 0.2+ | 0.4+ | 2006 10 25 | D35 | 0.1− | 0.3+ |
| 1999 10 08 | 704 | 1.0− | 0.1+ | 2006 09 21 | 699 | (0.4− | 1.7+) | 2006 10 25 | D35 | 0.1+ | 0.6+ |
| 2004 01 30 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.3− | 2006 10 28 | 703 | 0.3− | 0.9− |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.7+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.3− |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.6− | 0.6− |
| 2005 04 14 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.3− | 2006 10 28 | 703 | 0.9+ | 0.3+ |
| 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.6+ | 0.3+ | | | | |

**1999 TT$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.04556 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28140809 | $\omega$ | 54.70267 | | +0.99669725 | | +0.06367151 |
| $a$ | 2.3062780 | $\Omega$ | 301.59724 | | −0.07910811 | | +0.90148147 |
| $e$ | 0.1697707 | $i$ | 3.39255 | | +0.01834411 | | +0.42810875 |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.2+ | 1.2− | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.4− |
| 1999 10 01 | 703 | 0.9− | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.5+ | 2006 10 04 | G96 | 0.4+ | 0.3− |
| 1999 10 01 | 703 | 0.5− | 1.0+ | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.5− |
| 1999 10 01 | 703 | 0.1+ | 0.2− | 2006 09 18 | 704 | 1.0− | 1.1+ | 2006 10 04 | G96 | 0.7+ | 0.6− |
| 1999 10 03 | 704 | 0.9+ | 0.9− | 2006 09 18 | 704 | 0.6− | 0.5− | 2006 10 12 | 448 | 0.5− | 0.2+ |
| 1999 10 03 | 704 | 1.0+ | 0.3− | 2006 09 18 | 704 | 0.8− | 0.8+ | 2006 10 12 | 448 | 0.8− | 0.1− |
| 1999 10 03 | 704 | 1.4+ | 1.8− | 2006 09 18 | 704 | 0.7− | 0.1− | 2006 10 12 | 448 | 0.3− | 0.1+ |
| 1999 10 03 | 704 | 0.3+ | 0.0 | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 10 13 | 448 | 0.0 | 0.5− |
| 1999 10 07 | 704 | 0.1− | 1.0+ | 2006 09 20 | 699 | 0.1− | 0.1+ | 2006 10 13 | 448 | 0.2+ | 0.4− |
| 1999 10 07 | 704 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.6− | 2006 10 13 | 448 | 0.4+ | 0.4− |
| 1999 10 07 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 1.4+ | 1.1− | 2006 10 16 | 448 | 0.0 | 0.1− |
| 1999 10 07 | 704 | 0.3+ | 1.0+ | 2006 09 25 | 704 | 0.7+ | 0.1− | 2006 10 16 | 448 | 0.1+ | 0.2− |
| 1999 10 07 | 704 | 1.2− | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.1− | 2006 10 16 | 448 | 0.3+ | 0.3− |
| 1999 10 10 | 704 | 0.0 | 0.0 | 2006 09 25 | 704 | 1.4+ | 0.5− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1999 10 10 | 704 | 0.3+ | 0.3− | 2006 09 29 | 704 | 0.8+ | 1.1+ | 2006 10 19 | 644 | 0.4+ | 0.1− |
| 1999 10 10 | 704 | 1.0− | 0.8− | 2006 09 29 | 704 | 0.2+ | 1.1+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 0.6− | 0.5− | 2006 09 29 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.6− | 0.5− | 2006 09 29 | 704 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1999 11 04 | 703 | 1.7+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 1999 11 04 | 703 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 10 26 | 704 | 0.6+ | 0.5+ |
| 1999 11 04 | 704 | 0.7− | 0.6− | 2006 09 30 | 703 | 0.9− | 0.3− | 2006 10 26 | 704 | 0.6+ | 0.3+ |
| 1999 11 04 | 703 | 0.9+ | 1.0+ | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 26 | 704 | 0.3+ | 0.6+ |
| 1999 11 04 | 704 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.6+ | 0.0 | 2006 11 06 | 644 | 0.6− | 0.1+ |
| 1999 11 04 | 703 | 0.1− | 0.8+ | 2006 10 03 | 704 | (0.5− | 1.6+) | 2006 11 06 | 644 | 0.8− | 0.4+ |
| 1999 11 04 | 704 | 0.3− | 0.2+ | 2006 10 03 | 704 | 0.3− | 0.4+ | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 1999 11 04 | 704 | 0.7+ | 0.8− | 2006 10 03 | 704 | 0.6− | 0.5+ | | | | |
| 1999 11 04 | 704 | 0.2− | 0.4− | 2006 10 03 | 704 | 1.0− | 0.5− | | | | |

**1999 TC$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.32865 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22496869 | $\omega$ | 139.33761 | | +0.92924328 | | +0.36206943 |
| $a$ | 2.6774498 | $\Omega$ | 199.81137 | | −0.36941973 | | +0.90728148 |
| $e$ | 0.2382943 | $i$ | 12.53705 | | −0.00599817 | | +0.21388326 |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 06 18 | 691 | 0.0 | 0.2− | 1999 10 08 | 699 | 1.0− | 1.9+ | 1999 10 15 | 704 | 0.2− | 0.5− |
| 1990 06 18 | 691 | 0.0 | 0.1+ | 1999 10 08 | 699 | 0.3+ | 0.2+ | 1999 10 15 | 704 | 0.2+ | 0.2− |
| 1990 06 18 | 691 | 0.1− | 0.1+ | 1999 10 08 | 699 | 0.4− | 0.2+ | 1999 10 15 | 704 | 0.3+ | 0.3− |
| 1999 09 08 | 704 | 0.5+ | 0.0 | 1999 10 09 | 704 | 0.3+ | 0.0 | 1999 10 15 | 704 | 0.2+ | 0.2+ |
| 1999 09 08 | 704 | 0.3+ | 0.0 | 1999 10 09 | 704 | 0.0 | 0.1+ | 1999 10 29 | 703 | 1.7− | 0.1+ |
| 1999 09 08 | 704 | 0.1− | 0.1− | 1999 10 09 | 704 | 0.2− | 0.2− | 1999 10 29 | 703 | 0.2+ | 0.2+ |
| 1999 09 08 | 704 | 0.0 | 0.7+ | 1999 10 09 | 704 | 0.6+ | 0.2− | 1999 10 29 | 703 | 1.2− | 0.5+ |
| 1999 09 08 | 704 | 0.2+ | 0.4+ | 1999 10 09 | 704 | 0.1− | 0.0 | 1999 10 29 | 703 | 1.5− | 0.9+ |
| 1999 09 29 | 703 | 0.2+ | 0.2− | 1999 10 10 | 704 | 0.1+ | 0.4− | 1999 10 31 | 699 | 0.1+ | 1.6+ |
| 1999 09 29 | 703 | 0.2+ | 0.1+ | 1999 10 10 | 704 | 0.1− | 0.1− | 1999 10 31 | 699 | 0.2+ | 0.7+ |
| 1999 09 29 | 703 | 0.3+ | 0.4+ | 1999 10 10 | 704 | 1.2− | 0.2− | 1999 10 31 | 699 | 0.5− | 1.2+ |
| 1999 09 29 | 703 | 0.2+ | 1.0+ | 1999 10 10 | 704 | 0.0 | 0.9− | 1999 11 06 | 704 | 1.4+ | 1.1− |
| 1999 10 04 | 704 | 0.1− | 0.6− | 1999 10 10 | 704 | 0.2+ | 1.1− | 1999 11 06 | 704 | 0.1+ | 0.2+ |
| 1999 10 04 | 704 | 0.1+ | 0.3− | 1999 10 11 | 704 | 0.1− | 0.5− | 1999 11 06 | 704 | 0.4+ | 0.8− |
| 1999 10 04 | 704 | 0.3+ | 0.2− | 1999 10 11 | 704 | 0.2+ | 0.4− | 1999 11 09 | 704 | 1.0+ | 0.4+ |
| 1999 10 04 | 704 | 0.1− | 0.1− | 1999 10 11 | 704 | 0.0 | 0.3− | 1999 11 09 | 704 | 0.1+ | 0.4+ |
| 1999 10 04 | 704 | 0.4+ | 0.3− | 1999 10 11 | 704 | 0.1− | 0.3− | 1999 11 09 | 704 | 0.5+ | 0.0 |
| 1999 10 07 | 704 | 0.1− | 0.8+ | 1999 10 11 | 704 | 0.1− | 0.4− | 1999 11 09 | 704 | 0.4+ | 0.7− |
| 1999 10 07 | 704 | 0.5− | 0.7− | 1999 10 13 | 704 | 0.1− | 0.1+ | 2002 04 04 | 644 | 0.6− | 1.4− |
| 1999 10 07 | 704 | 0.1+ | 0.6− | 1999 10 13 | 704 | 0.1+ | 0.1− | 2002 04 04 | 644 | 0.1+ | 0.5+ |
| 1999 10 07 | 704 | 1.2− | 0.4+ | 1999 10 13 | 704 | 0.4+ | 0.1− | 2002 04 04 | 644 | 0.4+ | 0.1+ |
| 1999 10 07 | 704 | 0.3+ | 0.9− | 1999 10 13 | 704 | 0.3+ | 0.1− | | | | |

**1999 TE$_{115}$ = 2001 DL$_{107}$ = 2006 QU$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.53309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27891034 | $\omega$ | 8.98696 | | +0.88316714 | | +0.46518979 |
| $a$ | 2.3200266 | $\Omega$ | 323.09747 | | −0.43633464 | | +0.76774380 |
| $e$ | 0.2075678 | $i$ | 5.74619 | | −0.17212754 | | +0.44064489 |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 0.2+ | 0.9− | 2006 07 21 | 703 | 0.2− | 1.0+ | 2006 09 16 | 699 | 0.4− | 0.3− |
| 1999 10 04 | 704 | 1.5+ | 1.1− | 2006 07 21 | 699 | 0.4+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.2− |
| 1999 10 04 | 704 | 0.9+ | 0.9− | 2006 07 21 | 703 | 0.2+ | 1.0+ | 2006 09 16 | 699 | 0.0 | 0.1+ |
| 1999 10 04 | 704 | 0.4+ | 0.7− | 2006 07 21 | 703 | 0.0 | 1.1+ | 2006 09 18 | 704 | 0.4− | 0.1+ |
| 1999 10 04 | 704 | 0.4+ | 0.4− | 2006 07 21 | 699 | 0.8+ | 0.0 | 2006 09 18 | 704 | 0.7− | 0.2+ |
| 1999 10 09 | 703 | 0.7+ | 0.4+ | 2006 07 21 | 703 | 1.4+ | 1.2+ | 2006 09 18 | 704 | 0.4− | 0.3+ |
| 1999 10 09 | 703 | 1.3− | 0.5− | 2006 07 21 | 699 | 0.9− | 1.1+ | 2006 09 18 | 704 | 0.5− | 0.1+ |
| 1999 10 09 | 703 | 0.1− | 0.5− | 2006 08 24 | 704 | 0.6+ | 0.9+ | 2006 09 18 | 704 | 0.5− | 0.1+ |
| 1999 10 09 | 703 | 0.0 | 0.3+ | 2006 08 24 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.1− |
| 1999 10 10 | 704 | 0.5+ | 0.2+ | 2006 08 24 | 704 | 0.4+ | 0.9+ | 2006 09 19 | 703 | 0.1− | 0.0 |
| 1999 10 10 | 704 | 0.2− | 0.1+ | 2006 08 24 | 704 | (2.1+ | 0.5+) | 2006 09 19 | 699 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.1+ | 0.1− | 2006 08 24 | 704 | 0.6+ | 1.1+ | 2006 09 19 | 703 | 0.2+ | 0.7− |
| 1999 10 10 | 704 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | (3.8− | 0.7−) |
| 1999 10 10 | 704 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 19 | 703 | (1.9+ | 0.2−) |
| 1999 10 20 | 704 | 0.3+ | 0.9− | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 1999 10 20 | 704 | 0.6− | 0.4− | 2006 08 26 | 704 | 0.8− | 0.1+ | 2006 09 23 | 106 | 0.8+ | 0.1− |
| 1999 10 20 | 704 | 0.1− | 0.9+ | 2006 08 26 | 704 | 0.2+ | 0.1− | 2006 09 23 | 106 | 0.0 | 0.5− |
| 1999 10 20 | 704 | 0.1− | 0.0 | 2006 08 26 | 704 | 0.5− | 0.0 | 2006 09 23 | 106 | 0.2+ | 0.2− |
| 1999 10 20 | 704 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 0.2− | 0.2− | 2006 09 23 | 106 | 0.1+ | 0.5− |
| 2001 01 26 | 691 | 0.6+ | 0.4+ | 2006 08 27 | 699 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.1− | 0.1+ |
| 2001 01 26 | 691 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 09 25 | 704 | 0.5+ | 0.7+ |
| 2001 01 26 | 691 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.2− |
| 2001 02 19 | 691 | 0.0 | 0.3+ | 2006 08 28 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 0.0 | 0.6+ |
| 2001 02 19 | 691 | 0.4− | 0.4+ | 2006 08 28 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.1+ |
| 2001 02 19 | 691 | 0.5− | 0.4+ | 2006 08 28 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.0 |
| 2001 02 27 | 691 | 0.6+ | 0.0 | 2006 08 28 | 704 | 0.2− | 0.7+ | 2006 09 25 | 704 | 0.3− | 0.9+ |
| 2001 02 27 | 691 | 0.5+ | 0.4+ | 2006 08 28 | 704 | 0.8− | 0.5+ | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2001 02 27 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 09 25 | 699 | 0.4+ | 0.2+ |
| 2002 06 18 | 644 | 0.5− | 0.9+ | 2006 08 29 | 703 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2002 06 18 | 644 | 0.4− | 0.5+ | 2006 08 29 | 703 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2002 06 18 | 644 | 0.5− | 0.8+ | 2006 08 29 | 703 | 0.8− | 0.5− | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2003 11 20 | 704 | 0.2+ | 0.5+ | 2006 08 30 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 704 | 0.2+ | 0.0 |
| 2003 11 20 | 704 | 0.8− | 0.4+ | 2006 08 30 | 704 | 0.5− | 1.3+ | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 2003 11 20 | 704 | 0.2− | 0.4+ | 2006 08 30 | 704 | 0.8− | 0.7+ | 2006 10 01 | 704 | 0.2+ | 0.2− |
| 2003 12 17 | 704 | 0.6− | 0.6− | 2006 08 30 | 704 | 1.3− | 1.0+ | 2006 10 01 | 704 | 0.0 | 0.8+ |
| 2003 12 17 | 704 | 0.4+ | 1.0− | 2006 08 30 | 704 | 0.3− | 0.7+ | 2006 10 01 | 704 | 0.0 | 0.8+ |
| 2003 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 0.4− | 1.3+ | 2006 10 01 | 704 | 0.3+ | 0.5+ |
| 2003 12 17 | 704 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.7− | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.4+ | 0.7+ | 2006 09 01 | 704 | 0.7− | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2003 12 23 | 704 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.5− | 0.9+ | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2003 12 23 | 704 | 0.6− | 0.3+ | 2006 09 01 | 704 | 0.1+ | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2003 12 23 | 704 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2005 03 08 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 03 08 | 691 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.5− | 0.5− |
| 2005 03 08 | 691 | 0.7+ | 0.5+ | 2006 09 12 | 703 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.7− | 0.3+ |
| 2006 05 28 | E12 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.5− | 1.2− |
| 2006 05 28 | E12 | 1.0+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.5− | 0.0 |
| 2006 05 28 | E12 | 0.2− | 0.4− | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.7− | 0.9− |
| 2006 05 28 | E12 | 0.3− | 0.5+ | 2006 09 16 | 699 | 0.2− | 0.2+ | | | | |

**1999 TZ$_{120}$ = 2006 RM$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.67467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27963429 | $\omega$ | 291.61416 | | +0.61905116 | | +0.78497184 |
| $a$ | 2.3160207 | $\Omega$ | 16.70307 | | −0.68551786 | | +0.55525089 |
| $e$ | 0.1800696 | $i$ | 4.86804 | | −0.38319829 | | +0.27480112 |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 704 | 0.7+ | 0.2− |
| 1999 10 01 | 703 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.5− | 0.7+ | 2006 09 28 | 704 | 0.4+ | 0.0 |
| 1999 10 01 | 703 | 1.0+ | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.1− | 2006 09 28 | 704 | 0.1− | 0.1− |
| 1999 10 01 | 703 | 0.6− | 0.5+ | 2006 09 17 | 704 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.1+ |
| 1999 10 04 | 704 | 1.4+ | 0.0 | 2006 09 18 | 699 | 0.3+ | 1.5− | 2006 09 28 | 704 | 0.1− | 0.5+ |
| 1999 10 04 | 704 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 09 28 | 704 | 0.5+ | 0.4+ |
| 1999 10 04 | 704 | 0.1− | 1.7+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 01 | 704 | 1.0− | 0.0 |
| 1999 10 09 | 704 | 0.9− | 0.0 | 2006 09 18 | 699 | (2.7− | 1.4+) | 2006 10 01 | 704 | 0.6− | 0.5+ |
| 1999 10 09 | 704 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 1999 10 09 | 704 | 0.5− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 1999 10 09 | 704 | 0.6− | 0.0 | 2006 09 19 | 691 | 0.8+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1999 10 09 | 704 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.8− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 1.3− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2005 03 11 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 1.2− | 0.4+ | 2006 10 16 | 703 | 0.1− | 1.0− |
| 2005 03 11 | 691 | 0.0 | 0.2− | 2006 09 20 | 704 | (2.2− | 0.3−) | 2006 10 16 | 703 | (1.8− | 1.4−) |
| 2005 04 17 | 691 | 0.1+ | 0.7+ | 2006 09 20 | 704 | 1.5− | 0.7+ | 2006 10 16 | 703 | 0.8− | 1.1− |
| 2005 04 17 | 691 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 16 | 703 | (2.5− | 0.9+) |
| 2005 04 17 | 691 | 0.4+ | 0.6+ | 2006 09 20 | 644 | 0.4− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2005 05 06 | G96 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.4− | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 2005 05 06 | G96 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2005 05 06 | G96 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2005 05 06 | G96 | 0.7− | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 106 | 0.1+ | 0.1− |
| 2006 07 21 | 703 | (3.2− | 1.0−) | 2006 09 24 | 608 | (2.4+ | 5.7+) | 2006 10 17 | 106 | 0.8+ | 0.9+ |
| 2006 07 21 | 703 | (0.1− | 2.3−) | 2006 09 24 | 608 | (2.6+ | 5.2+) | 2006 10 17 | 106 | 0.7− | 0.5− |
| 2006 07 21 | 703 | (3.0− | 2.4−) | 2006 09 24 | 608 | (2.4+ | 4.6+) | 2006 10 17 | 106 | 0.7− | 0.2− |
| 2006 07 21 | 703 | (3.1− | 0.0 ) | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2006 08 22 | 644 | 0.5− | 0.4− | 2006 09 26 | G96 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2006 08 22 | 644 | 0.6− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.7− | 2006 10 20 | 644 | 0.5+ | 0.2+ |
| 2006 08 22 | 644 | 0.7− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 12 | 703 | 1.1+ | 1.0+ | 2006 09 27 | 704 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 12 | 703 | 0.8+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2006 09 12 | 703 | 1.1+ | 1.2+ | 2006 09 27 | 704 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.1+ |
| 2006 09 12 | 703 | (0.9+ | 2.2+) | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | | | | |

**1999 TE$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.99165 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22382246 | $\omega$ | 334.32785 | | +0.97323213 | | −0.22763277 |
| $a$ | 2.6865831 | $\Omega$ | 38.87229 | | +0.21859816 | | +0.87433314 |
| $e$ | 0.2129543 | $i$ | 2.89192 | | +0.07095118 | | +0.42863140 |
| $P$ | 4.40 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 1.0− | 0.5+ | 1999 10 11 | 704 | 0.0 | 0.1+ | 1999 11 13 | 691 | 0.6+ | 0.2− |
| 1999 10 04 | 704 | 1.8− | 0.3− | 1999 10 11 | 704 | 0.2− | 0.7+ | 1999 11 13 | 691 | 0.6+ | 0.0 |
| 1999 10 04 | 704 | 1.5− | 1.3+ | 1999 10 11 | 704 | 0.2+ | 0.5+ | 1999 11 13 | 691 | 0.3− | 0.5− |
| 1999 10 09 | 704 | 0.8+ | 0.4+ | 1999 10 11 | 704 | 0.5− | 1.0− | 1999 11 28 | 691 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.2− | 0.7+ | 1999 10 11 | 704 | 0.4− | 0.0 | 1999 11 28 | 691 | 0.2+ | 0.5− |
| 1999 10 09 | 704 | 0.4− | 0.0 | 1999 10 11 | 704 | 0.4− | 1.3− | 1999 11 28 | 691 | 0.3− | 0.2+ |
| 1999 10 09 | 704 | 0.4+ | 0.7+ | 1999 10 11 | 704 | 1.9− | 0.1+ | 1999 12 08 | 691 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.3+ | 0.1+ | 1999 11 01 | 691 | 0.5+ | 0.0 | 1999 12 08 | 691 | 0.2− | 0.5+ |
| 1999 10 11 | 704 | 0.2− | 0.2+ | 1999 11 01 | 691 | 0.7+ | 0.0 | 1999 12 08 | 691 | 0.2− | 0.6− |
| 1999 10 11 | 704 | 0.5− | 0.3+ | 1999 11 01 | 691 | 0.6+ | 0.0 | 2002 04 06 | 807 | 0.2+ | 0.2+ |
| 1999 10 11 | 704 | 0.4− | 0.2+ | 1999 11 09 | 704 | 1.3− | 0.8+ | 2002 04 06 | 807 | 0.1− | 0.2+ |
| 1999 10 11 | 704 | 0.2+ | 0.0 | 1999 11 09 | 704 | 0.3− | 1.2+ | 2005 01 18 | 691 | 0.0 | 0.1+ |
| 1999 10 11 | 704 | 0.4+ | 0.6− | 1999 11 09 | 704 | 0.7− | 1.0− | 2005 01 18 | 691 | 0.4+ | 0.1− |
| 1999 10 11 | 704 | 0.5+ | 0.1− | 1999 11 09 | 704 | 0.3− | 0.3− | 2005 01 18 | 691 | 0.3− | 0.3+ |

**1999 TG$_{126}$ = 2006 SO$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.08951 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28083913 | $\omega$ | 323.05167 | | +0.95172885 | | +0.30637558 |
| $a$ | 2.3093919 | $\Omega$ | 19.13281 | | −0.26629284 | | +0.85432209 |
| $e$ | 0.1844829 | $i$ | 3.25435 | | −0.15264440 | | +0.41984256 |
| $P$ | 3.51 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.2+ | 0.7+ |
| 1999 10 01 | 703 | (2.3− | 0.1−) | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 09 28 | 704 | 0.6+ | 0.2+ |
| 1999 10 01 | 703 | 0.3+ | 0.8− | 2006 09 19 | 691 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 1999 10 01 | 703 | 1.4− | 0.8+ | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 1999 10 04 | 704 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 1999 10 04 | 704 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.7− |
| 1999 10 04 | 704 | 0.9+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.5− |
| 1999 10 04 | 704 | 1.2− | 0.8+ | 2006 09 19 | 703 | 0.4− | 0.1+ | 2006 10 01 | 704 | 1.0+ | 1.5− |
| 1999 10 09 | 704 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.0 |
| 1999 10 09 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 0.7+ | 0.5− | 2006 10 01 | 704 | (2.7− | 0.4+) |
| 1999 10 09 | 704 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.2− | 0.7− | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 1999 10 09 | 704 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.3− |
| 1999 10 09 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 1.0− | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.9+ | 1.3+ |
| 1999 10 15 | 704 | 0.7− | 1.2+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | (1.7+ | 1.2+) |
| 1999 10 15 | 704 | 0.7+ | 1.8+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.0+ | 0.9+ |
| 2005 03 08 | G96 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.9+ |
| 2005 03 08 | G96 | 0.9+ | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.7− |
| 2005 03 08 | G96 | 0.1+ | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.8− |
| 2005 03 08 | G96 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.6− |
| 2006 08 17 | 644 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1− | 0.7− |
| 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 16 | 703 | (2.0− | 2.1−) |
| 2006 08 17 | 644 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.8− |
| 2006 09 12 | 703 | 1.4− | 1.0− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 2006 09 12 | 703 | 0.5+ | 0.1− | 2006 09 27 | 704 | 0.2− | 1.3+ | 2006 10 16 | 703 | (1.3+ | 1.9−) |
| 2006 09 12 | 703 | 1.1− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2006 09 12 | 703 | 1.2− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.5− |
| 2006 09 15 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.8+ | 0.9+ | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2006 09 17 | 704 | 0.7+ | 1.2− | 2006 09 27 | 704 | 0.8+ | 1.4+ | 2006 10 28 | G96 | 0.2+ | 0.8− |
| 2006 09 17 | 704 | 0.4+ | 1.4− | 2006 09 28 | 704 | 0.7+ | 1.3+ | 2006 10 28 | G96 | 0.6+ | 0.6− |
| 2006 09 18 | 699 | 0.8+ | 0.1+ | 2006 09 28 | 704 | 0.6+ | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.6− |
| 2006 09 18 | 699 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.7+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.8− |

**1999 TX$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.01834 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28450637 | $\omega$ | 169.82271 | | +0.99510720 | −0.09376929 | |
| $a$ | 2.2895039 | $\Omega$ | 195.65979 | | +0.08059395 | +0.95263454 | |
| $e$ | 0.2331700 | $i$ | 6.62224 | | +0.05715136 | +0.28930044 | |
| $P$ | 3.46 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 1.2− | 2006 08 28 | 703 | 0.1− | 1.1+ | 2006 09 29 | 704 | 0.8− | 1.1+ |
| 1999 09 07 | 704 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 09 29 | 691 | 0.1− | 0.1− |
| 1999 09 07 | 704 | 1.2+ | 0.2− | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 09 29 | 691 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 0.4+ | 0.9− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 29 | 691 | 0.2− | 0.2− |
| 1999 10 06 | 704 | 0.0 | 0.4− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.3+ | 0.3− |
| 1999 10 06 | 704 | 0.7+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.0 | 0.2− |
| 1999 10 06 | 704 | 0.3+ | 1.2− | 2006 09 16 | 644 | 0.1− | 0.5+ | 2006 10 15 | 703 | 0.2− | 0.1+ |
| 1999 10 06 | 704 | 0.1− | 1.0− | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.0 |
| 1999 10 06 | 704 | 0.5+ | 0.1− | 2006 09 16 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.7+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 1999 10 09 | 704 | 0.3− | 0.9− | 2006 09 17 | 704 | 0.7+ | 1.4+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.3− | 2006 10 17 | G96 | 1.4− | 1.2− |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.1+ | 1.3+ | 2006 10 17 | G96 | 0.4− | 0.1+ |
| 1999 10 09 | 704 | 0.7+ | 0.1− | 2006 09 20 | 704 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.6+ | 0.8+ |
| 1999 10 12 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.4− |
| 1999 10 12 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.6− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 10 12 | 691 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 1999 10 15 | 704 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1999 10 15 | 704 | 0.6− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.5− | 0.0 |
| 1999 10 15 | 704 | 0.8− | 0.5− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.9+ | 0.4+ |
| 1999 10 15 | 704 | 0.8− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.9− | 0.5+ |
| 1999 10 15 | 704 | 0.6− | 0.6− | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 21 | 703 | (1.6− | 0.5+) |
| 1999 10 16 | 645 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 1999 10 16 | 645 | 0.2+ | 0.1+ | 2006 09 27 | 704 | (1.3− | 1.7+) | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 1999 10 19 | 691 | 1.1− | 0.7− | 2006 09 27 | 704 | 0.4+ | 0.9+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 1999 10 19 | 691 | 0.2− | 0.4− | 2006 09 27 | 704 | 0.3+ | 1.1+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 1999 10 19 | 691 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.7+ | 2006 11 23 | G96 | 0.4+ | 0.5− |
| 2001 02 22 | 645 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.7− | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2001 02 22 | 645 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.5+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2006 08 28 | 703 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.5− | 1.0+ | 2006 11 23 | G96 | 0.1+ | 0.2− |

**1999 TG$_{131}$ = 2006 RK$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.22849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27854109 | $\omega$ | 254.18465 | | −0.20647537 | +0.97800522 | |
| $a$ | 2.3220766 | $\Omega$ | 4.24610 | | −0.67285476 | −0.11998981 | |
| $e$ | 0.2540692 | $i$ | 23.52966 | | −0.71037624 | −0.17061138 | |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.7− | 0.4− | 1999 10 11 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 1.4+ |
| 1999 10 06 | 704 | 0.6− | 0.3+ | 2006 08 19 | 644 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.5− | 0.7+ |
| 1999 10 06 | 704 | 0.6− | 0.3+ | 2006 08 19 | 644 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.5− |
| 1999 10 06 | 704 | 0.3− | 0.1+ | 2006 08 19 | 644 | 0.2− | 0.4− | 2006 09 19 | 699 | 1.2+ | 0.6+ |
| 1999 10 06 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 1999 10 09 | 704 | 1.2+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.8− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 10 16 | G96 | 0.6+ | 0.1− |
| 1999 10 11 | 704 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.5+ | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 1999 10 11 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 16 | G96 | 0.1− | 0.2− |
| 1999 10 11 | 704 | 0.2− | 0.3− | 2006 09 18 | 703 | (2.9− | 0.9−) | 2006 10 16 | G96 | 0.0 | 0.4− |
| 1999 10 11 | 704 | 0.0 | 0.7− | 2006 09 18 | 703 | (2.0+ | 2.5−) | | | | |

**1999 TN$_{137}$ = 1999 TB$_{244}$ = 2006 VR$_{30}$**

Id. Minor Planet Center (d, *MPO* 4024; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.89348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29087062 | $\omega$ | 70.36282 | | +0.99739771 | −0.06997164 | |
| $a$ | 2.2559847 | $\Omega$ | 293.64635 | | +0.05697983 | +0.91267953 | |
| $e$ | 0.2143273 | $i$ | 1.08663 | | +0.04417140 | +0.40264134 | |
| $P$ | 3.39 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.7− | 0.2− | 2004 01 19 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 0.2− | 0.4− | 2004 01 19 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 1999 10 06 | 704 | 0.5− | 0.1− | 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.5+ |
| 1999 10 07 | 703 | 1.4+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.8− | 2006 11 15 | 703 | 0.1− | 0.4− |
| 1999 10 07 | 703 | 0.2− | 0.8+ | 2006 10 20 | G96 | 0.6+ | 0.4− | 2006 11 15 | 703 | 0.7− | 0.5+ |
| 1999 10 07 | 703 | 0.2+ | 0.7+ | 2006 10 20 | G96 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.5+ | 0.6− |
| 1999 10 07 | 703 | 0.4+ | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.6+ | 1.1− |
| 1999 10 09 | 704 | 0.9− | 1.2− | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 1999 10 09 | 704 | 0.1− | 1.0+ | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.5+ | 1.1− |
| 1999 10 09 | 704 | 1.0− | 1.3+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.6− | 1.0+ |
| 1999 10 09 | 704 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.5− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 1999 10 09 | 704 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 1999 10 09 | 704 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.1− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 1999 10 09 | 704 | 1.2+ | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.0 | | | | |
| 1999 10 09 | 704 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.0 | | | | |

**1999 TF$_{138}$ = 1981 KQ$_{1}$ = 2006 SJ$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.31427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28368195 | $\omega$ | 282.28007 | | +0.40962567 | +0.91195370 | |
| $a$ | 2.2939375 | $\Omega$ | 11.98242 | | −0.78706263 | +0.36626083 | |
| $e$ | 0.1933921 | $i$ | 6.46977 | | −0.46123662 | +0.18491472 | |
| $P$ | 3.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 05 28 | 809 | 0.3+ | 0.5+ | 2005 03 01 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.7+ |
| 1999 10 06 | 704 | 0.3− | 0.4− | 2005 03 12 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | (2.0− | 1.2+) |
| 1999 10 06 | 704 | 0.1− | 0.6− | 2005 03 12 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.2+ | 1.1+ |
| 1999 10 06 | 704 | 0.0 | 0.2− | 2005 03 12 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.1+ | 1.4− |
| 1999 10 06 | 704 | 0.0 | 0.0 | 2005 04 04 | 703 | 0.1− | 0.6− | 2006 09 25 | 691 | 0.3− | 0.1− |
| 1999 10 06 | 704 | 0.0 | 0.2− | 2005 04 04 | 703 | 0.3− | 0.4− | 2006 09 25 | 691 | 0.2− | 0.1− |
| 1999 10 10 | 704 | 0.3+ | 0.7+ | 2005 04 04 | 703 | (0.1+ | 1.6−) | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.3+ | 0.5+ | 2005 04 04 | 703 | 0.7− | 1.0− | 2006 10 19 | 644 | 1.0+ | 0.9+ |
| 1999 10 10 | 704 | 0.9+ | 0.1+ | 2005 05 04 | G96 | 0.1− | 0.8+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 1999 10 10 | 704 | 1.0+ | 0.3+ | 2005 05 04 | G96 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 1999 10 20 | 704 | 1.2− | 0.6− | 2005 05 04 | G96 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 1999 10 20 | 704 | 0.1− | 1.3− | 2005 05 04 | G96 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 1999 10 20 | 704 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.4− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 1999 10 20 | 704 | 0.8− | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2005 03 01 | 691 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2005 03 01 | 691 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |

**1999 TK$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.84084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28554623 | $\omega$ | 27.99378 | | +0.97475161 | +0.22306348 | |
| $a$ | 2.2839421 | $\Omega$ | 319.11314 | | −0.20763914 | +0.88885885 | |
| $e$ | 0.2506032 | $i$ | 0.88400 | | −0.08212969 | +0.40021573 | |
| $P$ | 3.45 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.4− | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.2− | 2006 11 20 | 703 | 1.1− | 0.0 |
| 1999 10 06 | 704 | 0.3− | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.1− | 2006 11 20 | 703 | 0.3+ | 0.5+ |
| 1999 10 06 | 704 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.3− | 2006 11 20 | 703 | (0.4− | 2.7−) |
| 1999 10 06 | 704 | 0.4− | 0.1+ | 2006 10 29 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | (0.6+ | 2.1+) |
| 1999 10 06 | 704 | 0.5+ | 0.0 | 2006 11 09 | D35 | 0.3+ | 0.0 | 2006 11 20 | 703 | 0.9+ | 0.9− |
| 1999 10 10 | 704 | 0.2− | 0.5+ | 2006 11 09 | D35 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.3+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.3− | 1.1+ | 2006 11 09 | D35 | 0.4+ | 0.4− | 2006 11 20 | 704 | (2.5− | 0.9−) |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.6− | 1.3+ |
| 1999 10 10 | 704 | 0.9− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.3− | 0.2− |
| 1999 10 15 | 704 | 0.8+ | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 1999 10 15 | 704 | 0.3− | 1.1+ | 2006 11 14 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 1.2+ | 0.3+ |
| 1999 10 15 | 704 | 0.1− | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 1999 10 15 | 704 | 0.7+ | 1.0+ | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 1999 11 15 | 691 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 1999 11 15 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 1999 11 15 | 691 | 0.1− | 0.5− | 2006 11 18 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2004 01 27 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | (1.6− | 0.5+) | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2004 01 27 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.8− | 1.4+ | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.8+ | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.4+ | 1.2− | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.7+ | | | | |

**1999 TP$_{140}$ = 2006 SK$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.01454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27599235 | $\omega$ | 8.24353 | | +0.91881048 | −0.39361567 | |
| $a$ | 2.3363506 | $\Omega$ | 15.03802 | | +0.35540222 | +0.79285557 | |
| $e$ | 0.1854252 | $i$ | 6.46705 | | +0.17168741 | +0.46523837 | |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3− | 0.2− | 2006 09 28 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.9+ |
| 1999 10 06 | 704 | 0.3− | 0.4− | 2006 09 28 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 703 | (1.7+ | 0.2+) |
| 1999 10 06 | 704 | 0.0 | 0.9+ | 2006 09 28 | 704 | 0.4+ | 1.3− | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 1999 10 06 | 704 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 1999 10 06 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 1999 10 10 | 704 | 0.7+ | 1.2− | 2006 09 30 | 703 | 1.0− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 1999 10 10 | 704 | 1.0+ | 0.6− | 2006 09 30 | 703 | 1.1+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 0.7− | 0.4− | 2006 09 30 | 703 | 0.9− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 1999 10 13 | 704 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.8− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 1999 10 13 | 704 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 1999 10 13 | 704 | 0.2− | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.4− |
| 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.0+ | 0.2− | 2006 10 22 | 703 | 0.0 | 0.4+ |
| 2006 08 27 | 691 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2006 09 18 | 699 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.1− | 0.2+ | 2006 10 22 | 703 | (1.5− | 2.0+) |
| 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.5− | 0.4+ | 2006 10 27 | G96 | 0.7+ | 0.6− |
| 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2006 09 18 | 699 | 0.3+ | 0.4− | 2006 10 09 | 644 | 0.8− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2006 09 28 | 704 | 1.3+ | 1.2+ | 2006 10 09 | 644 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.4− |

**1999 TP$_{141}$ = 2006 RX$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.37958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28018870 | $\omega$ | 60.76194 | | +0.63394540 | +0.77275301 | |
| $a$ | 2.3129645 | $\Omega$ | 248.61343 | | −0.72064283 | +0.57565472 | |
| $e$ | 0.1753224 | $i$ | 1.91285 | | −0.28069047 | +0.26734704 | |
| $P$ | 3.52 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 0.0 | 0.7+ | 2006 10 10 | 644 | 0.5− | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 1999 10 06 | 704 | 0.1− | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 1999 10 06 | 704 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.6+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 1999 10 09 | 704 | 1.0+ | 1.7+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 1.2+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 1999 10 13 | 704 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1− |
| 1999 10 13 | 704 | 0.5+ | 0.7− | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1999 10 13 | 704 | 0.4− | 0.6− | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 0.5− | 0.7− | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.4− |
| 1999 10 14 | 645 | 0.0 | 0.2− | 2006 10 16 | 683 | 0.4− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2006 09 14 | 291 | 0.2− | 0.1− | 2006 10 16 | 683 | 0.4+ | 1.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2006 09 14 | 291 | 0.1− | 0.1− | 2006 10 16 | 683 | 0.9+ | 1.0+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2006 09 14 | 291 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.4+ | 0.2− |
| 2006 09 14 | 291 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.4− | 0.0 |
| 2006 09 14 | 291 | 0.2− | 0.0 | 2006 10 17 | 703 | 1.2− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2006 09 14 | 291 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.2− | 0.2+ |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ | | | | |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | | | | |

**1999 TD$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.37771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28773578 | $\omega$ | 149.59902 | | +0.96105942 | +0.27558122 | |
| $a$ | 2.2723408 | $\Omega$ | 194.44764 | | −0.26718578 | +0.90773203 | |
| $e$ | 0.1657504 | $i$ | 4.71046 | | −0.07054469 | +0.31635037 | |
| $P$ | 3.43 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.4− | 0.0 | 2005 04 04 | G96 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 1999 10 01 | 703 | 0.1− | 0.7+ | 2005 04 04 | G96 | 0.3− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.4+ |
| 1999 10 01 | 703 | 0.2+ | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.4+ |
| 1999 10 01 | 703 | 0.1− | 0.2+ | 2006 08 28 | 703 | (0.6− | 1.7−) | 2006 11 10 | 644 | 0.1+ | 0.5+ |
| 1999 10 07 | 704 | (0.8+ | 2.3+) | 2006 08 28 | 703 | (1.1+ | 1.7−) | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 1999 10 07 | 704 | 0.2− | 1.1+ | 2006 08 28 | 703 | (0.5− | 2.1−) | 2006 11 11 | 703 | 0.4− | 0.1− |
| 1999 10 07 | 704 | 0.8+ | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.9+ | 2006 11 11 | 703 | 0.2+ | 1.1− |
| 1999 10 07 | 704 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 1999 10 09 | 704 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 1999 10 09 | 704 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.4− | 0.0 |
| 1999 10 15 | 704 | 0.3+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.7+ | 0.1+ |
| 1999 10 15 | 704 | 0.8− | 1.1+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.0 |
| 1999 10 15 | 704 | 1.2− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 1.1− | 0.4− |
| 1999 10 31 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 1999 10 31 | 691 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 11 20 | 704 | (0.2− | 2.0+) |
| 1999 10 31 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.4− | 2006 11 20 | 704 | (0.5− | 2.4+) |
| 1999 11 06 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.9+ | 0.9+ | 2006 11 20 | 704 | (0.3− | 2.3+) |
| 1999 11 06 | 704 | 1.8+ | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 1999 11 06 | 704 | 0.9− | 0.2+ | 2006 11 02 | 703 | 0.5− | 0.0 | 2006 11 20 | 704 | (1.0+ | 2.6+) |
| 1999 11 06 | 704 | 0.6+ | 0.7− | 2006 11 02 | 703 | 1.3− | 0.3− | 2006 11 28 | 704 | 0.4− | 0.1+ |
| 1999 11 06 | 704 | 0.5+ | 0.7− | 2006 11 02 | 703 | 0.2− | 0.2+ | 2006 11 28 | 704 | 1.5+ | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.5− | 0.6+ | 2006 11 28 | 704 | 1.2+ | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.3+ | | | | |
| 2005 04 04 | G96 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | | | |

**1999 TM$_{145}$ = 2006 QH$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.10461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27981310 | $\omega$ | 346.98203 | | +0.99962958 | +0.01229534 | |
| $a$ | 2.3150339 | $\Omega$ | 12.39042 | | +0.00138656 | +0.86796566 | |
| $e$ | 0.2571076 | $i$ | 6.49724 | | −0.02718033 | +0.49647199 | |
| $P$ | 3.52 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 703 | 0.5− | 0.2+ | 2006 08 30 | 704 | 1.1− | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.5− |
| 1999 09 30 | 703 | 0.3− | 0.6+ | 2006 08 30 | 699 | 0.9+ | 0.3− | 2006 09 28 | 704 | 0.7+ | 0.6+ |
| 1999 09 30 | 703 | 1.2− | 0.5− | 2006 08 30 | 699 | 0.2+ | 0.2+ | 2006 09 28 | 704 | (0.2+ | 2.8+) |
| 1999 09 30 | 703 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.9− | 0.6− | 2006 09 28 | 704 | 0.1− | 0.5+ |
| 1999 10 04 | 691 | 0.3+ | 0.5− | 2006 09 16 | 704 | 0.6− | 0.7− | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 1999 10 04 | 691 | 0.1+ | 0.5− | 2006 09 16 | 704 | 0.9− | 0.1− | 2006 09 30 | 703 | 0.7− | 0.1+ |
| 1999 10 04 | 691 | 0.2+ | 0.4− | 2006 09 16 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.5+ | 0.0 |
| 1999 10 07 | 703 | 0.6+ | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 703 | 0.1− | 0.4+ | 2006 09 19 | 704 | 0.9− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.3+ |
| 1999 10 07 | 703 | 0.6− | 0.7+ | 2006 09 19 | 699 | 0.0 | 0.5− | 2006 10 16 | 703 | 1.1+ | 0.1− |
| 1999 10 07 | 703 | 0.3− | 0.1+ | 2006 09 19 | 704 | 1.3− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.7− |
| 1999 10 07 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 704 | (1.9− | 0.4−) | 2006 10 16 | 703 | 0.7− | 0.8− |
| 1999 10 07 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 1999 10 07 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 704 | (1.7− | 0.2−) | 2006 10 20 | G96 | 0.2− | 0.4− |
| 1999 10 07 | 704 | 1.0+ | 0.7− | 2006 09 22 | 704 | 1.3+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 1999 10 09 | 704 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.5+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 1999 10 09 | 704 | 0.5+ | 0.2+ | 2006 09 22 | 704 | 0.0 | 0.9+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.5+ | 0.6+ | 2006 09 22 | 704 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 10 09 | 704 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.6+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 01 16 | 691 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 01 16 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2004 01 16 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2006 08 30 | 699 | 1.1+ | 0.4+ | 2006 09 26 | 704 | 0.1− | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2006 08 30 | 704 | 1.3− | 0.4− | 2006 09 26 | 704 | 0.4+ | 0.8+ | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2006 08 30 | 704 | 1.0− | 0.4− | 2006 09 26 | 704 | 0.1− | 1.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2006 08 30 | 699 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.2+ | 1.2+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 08 30 | 704 | 0.4− | 0.8− | 2006 09 26 | 704 | 1.0+ | 0.7− | 2006 11 15 | G96 | 0.1− | 0.0 |

### 1999 TK$_{147}$ = 2006 RD$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.98053 | | (2000.0) | | +0.95420301 | +0.29266548 |
| $n$ | 0.27843004 | $\omega$ | 254.26760 | | −0.24521181 | +0.88386274 |
| $a$ | 2.3226940 | $\Omega$ | 88.68353 | | −0.17137031 | +0.36487473 |
| $e$ | 0.1777531 | $i$ | 3.55534 | | | |
| $P$ | 3.54 | $H$ | 16.7 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 703 | 0.9− | 1.1+ | 2006 08 28 | 699 | 0.7− | 0.5+ | 2006 09 22 | 704 | 0.5+ | 0.4+ |
| 1999 10 02 | 703 | 0.1− | 0.8+ | 2006 08 28 | 699 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.9− | 0.1+ |
| 1999 10 02 | 703 | 0.2+ | 0.3− | 2006 08 28 | 699 | 0.3− | 0.4+ | 2006 09 26 | 704 | (1.7− | 0.2−) |
| 1999 10 02 | 703 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.7− | 0.8− |
| 1999 10 07 | 704 | 0.9− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.8− | 0.3− |
| 1999 10 07 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 09 26 | 704 | 1.3− | 0.1− |
| 1999 10 07 | 704 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.1− | 1.0− | 2006 10 02 | 703 | 0.0 | 0.5− |
| 1999 10 07 | 704 | 1.1+ | 0.4+ | 2006 09 16 | 704 | 0.7+ | 0.7− | 2006 10 02 | 703 | 0.4+ | 0.3− |
| 1999 10 08 | 704 | 0.4+ | 0.8− | 2006 09 16 | 704 | 0.3− | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.1+ |
| 1999 10 08 | 704 | 0.3+ | 0.2− | 2006 09 16 | 704 | 0.4+ | 0.4− | 2006 10 02 | 703 | 0.8+ | 0.6+ |
| 1999 10 08 | 704 | 0.5− | 0.5− | 2006 09 16 | 704 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.1− | 1.1+ |
| 1999 10 08 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.4+ | 0.3− | 2006 10 19 | 703 | 0.2− | 0.2+ |
| 1999 10 08 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2005 03 11 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 1.1− | 0.6− | 2006 10 19 | 703 | 0.7− | 0.8+ |
| 2005 03 11 | 691 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2005 03 11 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 1.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2005 04 04 | 703 | 1.3+ | 1.5+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2005 04 04 | 703 | (1.8− | 2.6−) | 2006 09 19 | 699 | 0.6+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2005 04 04 | 703 | 0.6+ | 0.5− | 2006 09 19 | 699 | 1.0+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 04 04 | 703 | 0.1+ | 1.3+ | 2006 09 19 | 699 | 1.0+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2006 08 28 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.9− | 2006 11 25 | G96 | 0.3+ | 0.4+ |
| 2006 08 28 | 704 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.7+ |
| 2006 08 28 | 704 | 0.3+ | 1.3+ | 2006 09 22 | 704 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.4+ |
| 2006 08 28 | 704 | 0.0 | 0.7+ | 2006 09 22 | 704 | 0.7+ | 0.9+ | 2006 11 25 | G96 | 0.0 | 0.6+ |

### 1999 TN$_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.15150 | | (2000.0) | | +0.98652660 | −0.12092843 |
| $n$ | 0.23792802 | $\omega$ | 144.52042 | | +0.08541407 | +0.95515205 |
| $a$ | 2.5793226 | $\Omega$ | 222.84784 | | +0.13953385 | +0.27029776 |
| $e$ | 0.2337375 | $i$ | 9.32472 | | | |
| $P$ | 4.14 | $H$ | 16.7 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.1+ | 0.9+ | 1999 10 20 | 704 | 0.2+ | 0.3+ | 2003 09 20 | 704 | 0.8− | 0.7− |
| 1999 10 07 | 704 | 0.0 | 0.5− | 1999 10 20 | 704 | 1.1+ | 1.1+ | 2003 09 20 | 704 | 0.5− | 0.2− |
| 1999 10 07 | 704 | 0.2− | 1.0+ | 2003 08 25 | 644 | 0.7+ | 0.5− | 2003 09 20 | 704 | 0.7− | 0.0 |
| 1999 10 10 | 704 | 0.4+ | 0.4− | 2003 08 25 | 644 | 0.2+ | 0.2− | 2003 09 30 | 704 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.2− | 0.6+ | 2003 08 25 | 644 | 0.4+ | 0.3− | 2003 09 30 | 704 | 0.4+ | 0.4− |
| 1999 10 10 | 704 | 0.5− | 0.3+ | 2003 09 04 | 704 | 0.4+ | 0.3+ | 2003 09 30 | 704 | 0.7− | 0.4+ |
| 1999 10 10 | 704 | 0.2− | 0.7− | 2003 09 04 | 704 | 0.3+ | 0.8+ | 2003 09 30 | 704 | 0.2+ | 0.1+ |
| 1999 10 10 | 704 | 0.1+ | 1.3− | 2003 09 04 | 704 | (1.3− | 2.5+) | 2003 10 05 | 691 | 0.1+ | 0.0 |
| 1999 10 20 | 704 | 0.8− | 0.1− | 2003 09 04 | 704 | 0.6− | 1.3+ | 2003 10 05 | 691 | 0.2+ | 0.0 |
| 1999 10 20 | 704 | 0.2+ | 0.6− | 2003 09 20 | 704 | 0.2+ | 0.2− | 2003 10 05 | 691 | 0.1+ | 0.1− |
| 1999 10 20 | 704 | 0.4− | 0.3− | 2003 09 20 | 704 | 0.5− | 0.2− | | | | |

### 1999 TM$_{154}$ = 2006 SZ$_{272}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.90581 | | (2000.0) | | +0.82564667 | +0.56409715 |
| $n$ | 0.28193886 | $\omega$ | 168.34998 | | −0.51971135 | +0.76740312 |
| $a$ | 2.3033826 | $\Omega$ | 157.30141 | | −0.21956249 | +0.30477347 |
| $e$ | 0.2440852 | $i$ | 1.49962 | | | |
| $P$ | 3.50 | $H$ | 16.8 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 1.2+ | 1.1+ | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 10 28 | 704 | (0.9+ | 2.0+) |
| 1999 10 07 | 704 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 11 11 | 691 | (0.5+ | 2.3+) |
| 1999 10 07 | 704 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.4+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 1999 10 10 | 704 | 0.9+ | 0.4− | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.2− | 1.4+ | 2006 11 11 | 703 | 0.0 | 0.8− |
| 1999 10 10 | 704 | 0.2+ | 0.4− | 2006 08 28 | 703 | 1.2− | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 1999 10 10 | 704 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 1999 10 15 | 704 | 1.6− | 0.7− | 2006 08 28 | 703 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.5− |
| 1999 10 15 | 704 | 0.4+ | 0.4− | 2006 09 27 | 704 | 1.2+ | 0.2− | 2006 11 14 | G96 | 0.3− | 0.0 |
| 1999 10 15 | 704 | 0.1+ | 0.2− | 2006 09 27 | 704 | (1.6+ | 0.5+) | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.6+ | 1.0− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 1999 10 20 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 704 | (0.0 | 1.7−) | 2006 11 14 | G96 | 0.0 | 0.0 |
| 1999 10 20 | 704 | 0.1+ | 0.7− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.4− | 0.6− |
| 1999 10 20 | 704 | 0.3− | 0.7− | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 17 | 703 | 0.9− | 0.9+ |
| 1999 10 20 | 704 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 17 | 703 | 1.0+ | 0.9− |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.7− |
| 2005 04 04 | G96 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.5+ | 0.8− |
| 2005 04 04 | G96 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.8− | 0.3− |
| 2005 05 09 | G96 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2005 05 09 | G96 | 0.1+ | 0.5− | 2006 10 28 | 704 | (1.5− | 1.5+) | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2005 05 09 | G96 | 0.3− | 0.2− | 2006 10 28 | 704 | 0.5− | 0.4+ | 2006 11 27 | 691 | 0.3+ | 0.5+ |
| 2005 05 09 | G96 | 0.0 | 0.0 | 2006 10 28 | 704 | 1.1+ | 0.1+ | | | | |

### 1999 TS$_{156}$ = 2006 TP$_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.17162 | | (2000.0) | | +0.97552442 | −0.21717370 |
| $n$ | 0.28661277 | $\omega$ | 31.02284 | | +0.17297100 | +0.85465377 |
| $a$ | 2.2782726 | $\Omega$ | 341.42621 | | +0.13576868 | +0.47159571 |
| $e$ | 0.1347961 | $i$ | 6.21127 | | | |
| $P$ | 3.44 | $H$ | 17.1 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.3− | 0.3− | 1999 10 15 | 704 | 1.7+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 1999 10 08 | 704 | 0.7− | 0.4− | 1999 10 15 | 704 | 0.6− | 0.2+ | 2006 10 17 | 703 | 1.0− | 1.1+ |
| 1999 10 08 | 704 | 0.7− | 1.4− | 2006 09 30 | 703 | 0.8− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 1999 10 09 | 704 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.5− |
| 1999 10 09 | 704 | 1.1− | 0.2− | 2006 09 30 | 703 | 1.0− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.1− | 2006 10 31 | 703 | 0.4+ | 0.3+ |
| 1999 10 09 | 704 | 0.4− | 1.2+ | 2006 10 15 | 291 | 0.6+ | 0.3+ | 2006 10 31 | 703 | 1.0− | 1.2− |
| 1999 10 10 | 704 | 0.0 | 0.1− | 2006 10 15 | 291 | 0.5+ | 0.1+ | 2006 10 31 | 703 | (0.4+ | 1.8−) |
| 1999 10 10 | 704 | 0.2− | 0.0 | 2006 10 15 | 291 | 0.2+ | 0.0 | 2006 10 31 | 703 | 0.5+ | 1.0− |
| 1999 10 10 | 704 | 2.0+ | 0.3− | 2006 10 17 | 703 | 1.1− | 0.1+ | | | | |
| 1999 10 15 | 704 | 1.0+ | 0.5− | 2006 10 17 | 703 | (1.7− | 3.0+) | | | | |

**1999 TZ$_{156}$ = 2006 SQ$_{290}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.74181 | | (2000.0) | | +0.96378856 | +0.26406158 |
| $n$ | 0.28506344 | $\omega$ | 135.42131 | | −0.26092608 | +0.90503767 |
| $a$ | 2.2865202 | $\Omega$ | 209.32731 | | −0.05503816 | +0.33343411 |
| $e$ | 0.2246279 | $i$ | 4.35462 | | | |
| $P$ | 3.46 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 152 | 0.7− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 1999 10 09 | 704 | 1.3+ | 0.2+ | 2006 10 15 | 691 | 0.6+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.2− |
| 1999 10 09 | 704 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.4− |
| 1999 10 09 | 704 | 0.9+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.4− |
| 1999 10 09 | 704 | 0.3− | 0.7− | 2006 10 16 | 683 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 1999 10 10 | 704 | 0.9− | 1.1− | 2006 10 16 | 683 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 1999 10 10 | 704 | 0.0 | 0.4− | 2006 10 16 | 683 | (1.5+ | 2.6−) | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1999 10 10 | 704 | 0.6− | 0.8− | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1999 10 11 | 704 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 1999 10 11 | 704 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.7+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 1999 10 11 | 704 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 1.0− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2006 09 26 | 152 | 0.7− | 0.5− | 2006 10 21 | 703 | 1.1+ | 0.5− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2006 09 26 | 152 | (2.9− | 1.6+) | 2006 10 21 | 703 | (1.5− | 1.9−) | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2006 09 26 | 152 | 0.5− | 0.9− | 2006 10 21 | 703 | 0.1+ | 0.7+ | 2006 11 14 | G96 | 0.7− | 0.0 |
| 2006 09 27 | 152 | 1.0+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.7− | 0.0 |
| 2006 09 27 | 152 | 0.2− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | | | |

**1999 TC$_{158}$ = 2006 RM$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.34597 | | (2000.0) | | +0.69768063 | +0.71570270 |
| $n$ | 0.28255595 | $\omega$ | 357.33152 | | −0.65642725 | +0.62085580 |
| $a$ | 2.3000277 | $\Omega$ | 316.90694 | | −0.28695820 | +0.31985579 |
| $e$ | 0.1722663 | $i$ | 2.66809 | | | |
| $P$ | 3.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.2− | 0.2− | 1999 10 15 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 683 | (0.8+ | 1.7+) |
| 1992 10 03 | 691 | 0.1+ | 0.3+ | 1999 10 15 | 704 | 0.7+ | 0.8+ | 2006 09 28 | 683 | 0.6− | 0.9+ |
| 1992 10 03 | 691 | 0.5+ | 0.0 | 2001 01 24 | 691 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.3− | 0.0 |
| 1999 10 07 | 704 | 0.0 | 0.9− | 2001 01 24 | 691 | 0.4− | 0.2− | 2006 10 03 | 704 | 0.1− | 0.2+ |
| 1999 10 07 | 704 | 0.1− | 1.3− | 2001 01 24 | 691 | 0.1+ | 0.1− | 2006 10 03 | 704 | (1.4− | 1.7+) |
| 1999 10 07 | 704 | 0.1− | 0.4− | 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 10 03 | 704 | 0.1− | 0.3+ |
| 1999 10 07 | 704 | 1.8− | 0.1+ | 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 1999 10 09 | 704 | 1.6− | 0.2+ | 2005 03 17 | 691 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 1.2− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 1999 10 09 | 704 | 0.0 | 1.0− | 2006 09 14 | 703 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 1.4+ | 1.5− | 2006 09 14 | 703 | 0.9− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1999 10 13 | 704 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.6+ | 0.4− | 2006 09 17 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | (2.3+ | 2.7−) |
| 1999 10 13 | 704 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 1.3− | 0.4+ |
| 1999 10 13 | 704 | 0.5+ | 0.4− | 2006 09 27 | 683 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 1999 10 15 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 683 | (0.0 | 2.0+) | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1999 10 15 | 704 | 0.6− | 0.5+ | 2006 09 27 | 683 | 0.5+ | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1999 10 15 | 704 | 1.0− | 0.1− | 2006 09 28 | 683 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |

**1999 TR$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.40384 | | (2000.0) | | +0.76264553 | +0.64570729 |
| $n$ | 0.28686334 | $\omega$ | 119.93138 | | −0.62512860 | +0.72077665 |
| $a$ | 2.2769457 | $\Omega$ | 199.92885 | | −0.16609045 | +0.25207758 |
| $e$ | 0.2607608 | $i$ | 6.37840 | | | |
| $P$ | 3.44 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 22 | 704 | 0.5− | 0.0 | 2006 09 15 | 704 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.0 |
| 1999 07 22 | 704 | 0.1− | 0.3+ | 2006 09 15 | 704 | 0.4+ | 0.5− | 2006 09 29 | 704 | 1.1− | 0.5− |
| 1999 07 22 | 704 | 0.7+ | 0.3− | 2006 09 18 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.5+ |
| 1999 08 22 | 703 | 0.3− | 0.4− | 2006 09 18 | 704 | 0.1− | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 1999 08 22 | 703 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.3+ | 0.6− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 1999 08 22 | 703 | 0.9− | 1.2− | 2006 09 18 | 704 | 0.6− | 0.3− | 2006 10 01 | 691 | 0.0 | 0.2− |
| 1999 08 22 | 703 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.3− | 0.6+ | 2006 10 01 | 704 | (1.3− | 1.9+) |
| 1999 09 09 | 704 | 0.2− | 0.7+ | 2006 09 19 | 699 | 0.7+ | 0.4+ | 2006 10 01 | 704 | 0.6− | 1.2+ |
| 1999 09 09 | 704 | 0.1+ | 1.4+ | 2006 09 19 | 699 | 0.7+ | 0.4+ | 2006 10 01 | 704 | 0.8− | 1.1+ |
| 1999 09 09 | 704 | 1.2+ | 0.5− | 2006 09 19 | 699 | 0.4− | 1.2+ | 2006 10 01 | 704 | 0.3+ | 0.5+ |
| 1999 09 09 | 704 | 0.3− | 0.4− | 2006 09 24 | 106 | 0.5+ | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 1999 10 08 | 704 | 0.1+ | 0.6− | 2006 09 24 | 106 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 1999 10 08 | 704 | 0.2+ | 0.0 | 2006 09 24 | 106 | 0.9+ | 0.7− | 2006 10 09 | 644 | 0.4− | 0.1− |
| 1999 10 08 | 704 | 0.4+ | 1.0− | 2006 09 24 | 106 | 0.4− | 0.8− | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 1999 10 13 | 704 | 0.4+ | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 10 13 | 704 | 0.9− | 0.4+ | 2006 09 25 | 704 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 1999 10 13 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 704 | 0.2− | 0.1− | 2006 10 17 | 703 | 1.0+ | 0.0 |
| 1999 10 13 | 704 | 0.3− | 1.1+ | 2006 09 25 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 1.1+ | 0.5− |
| 2002 04 09 | 644 | 0.3+ | 0.6+ | 2006 09 25 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2002 04 09 | 644 | 0.2+ | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.7− | 0.5− |
| 2002 04 09 | 644 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2006 08 30 | 704 | 0.1− | 0.7+ | 2006 09 27 | 699 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2006 08 30 | 704 | 1.5+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 08 30 | 704 | 0.1+ | 0.3− | 2006 09 27 | 699 | 1.1− | 0.9− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 08 30 | 704 | 0.1− | 1.1− | 2006 09 27 | 699 | 1.1− | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2006 09 15 | 704 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.8+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2006 09 15 | 704 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.6− | | | | |

**1999 TL$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.66565 | | (2000.0) | | +0.87347782 | −0.48535891 |
| $n$ | 0.30051375 | $\omega$ | 180.84744 | | +0.44716244 | +0.83084571 |
| $a$ | 2.2074616 | $\Omega$ | 208.28991 | | +0.19256753 | +0.27225381 |
| $e$ | 0.1329272 | $i$ | 4.62951 | | | |
| $P$ | 3.28 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 29 | 703 | 0.1− | 0.3+ | 1999 10 09 | 704 | 0.4− | 0.6− | 2002 07 21 | 644 | 0.5− | 0.0 |
| 1999 09 29 | 703 | 0.7− | 0.7+ | 1999 10 09 | 704 | 1.0+ | 0.8− | 2002 07 21 | 644 | 0.1− | 0.0 |
| 1999 09 29 | 703 | 0.5− | 0.5+ | 1999 10 13 | 704 | 0.3+ | 0.3− | 2002 07 28 | 608 | 0.1− | 0.4+ |
| 1999 09 29 | 703 | 1.0+ | 0.5+ | 1999 10 13 | 704 | 0.0 | 0.2− | 2002 07 28 | 608 | 0.6+ | 0.4− |
| 1999 10 07 | 703 | 0.6+ | 0.8+ | 1999 10 13 | 704 | 0.3− | 0.1− | 2002 07 28 | 608 | 0.5+ | 0.5− |
| 1999 10 07 | 703 | 0.5− | 0.5+ | 1999 10 13 | 704 | 0.1+ | 0.0 | 2004 02 11 | 644 | 0.1+ | 0.2+ |
| 1999 10 07 | 703 | 0.3+ | 0.2+ | 1999 10 13 | 704 | 0.2+ | 0.1− | 2004 02 11 | 644 | 0.3− | 0.4+ |
| 1999 10 07 | 703 | 0.7− | 0.1− | 2002 07 12 | 644 | 0.1− | 0.3+ | 2004 02 11 | 644 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 0.2+ | 0.5− | 2002 07 12 | 644 | 0.1+ | 0.1+ | 2004 02 18 | 691 | 0.0 | 0.2− |
| 1999 10 09 | 704 | 0.4+ | 1.1− | 2002 07 12 | 644 | 0.1+ | 0.0 | 2004 02 18 | 691 | 0.1+ | 0.1− |
| 1999 10 09 | 704 | 0.8− | 0.4+ | 2002 07 21 | 644 | 0.4− | 0.1− | 2004 02 18 | 691 | 0.0 | 0.0 |

**1999 TJ$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 234.87675 | | (2000.0) | | | |
| $n$ | 0.21932487 | $\omega$ | 44.48794 | | +0.86687082 | +0.49696259 |
| $a$ | 2.7231870 | $\Omega$ | 285.67455 | | −0.46807871 | +0.78405858 |
| $e$ | 0.1000751 | $i$ | 2.35345 | | −0.17157300 | +0.37186063 |
| $P$ | 4.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 09 | 691 | 0.6− | 0.1− | 2002 04 04 | 644 | 0.8+ | 0.2+ | 2003 08 04 | 704 | 0.6− | 0.0 |
| 1997 03 09 | 691 | 0.1− | 0.2− | 2002 04 04 | 644 | 0.4+ | 0.3+ | 2003 08 04 | 704 | 0.5− | 0.3+ |
| 1997 03 09 | 691 | 0.3− | 0.1− | 2002 04 04 | 644 | 0.9+ | 0.3+ | 2003 08 04 | 704 | 0.3− | 0.2+ |
| 1999 10 09 | 704 | 0.1+ | 0.9+ | 2002 04 14 | 704 | 0.8+ | 0.6− | 2003 08 04 | 704 | 0.6− | 0.2+ |
| 1999 10 09 | 704 | 0.1− | 1.2+ | 2002 04 14 | 704 | 0.1− | 0.3− | 2006 01 27 | G96 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.6− | 0.8+ | 2002 04 14 | 704 | 0.2+ | 0.9+ | 2006 01 27 | G96 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 1.5− | 0.5+ | 2002 04 14 | 704 | 0.4+ | 0.7− | 2006 01 27 | G96 | 0.0 | 0.0 |
| 1999 10 09 | 704 | 0.5− | 0.6+ | 2002 04 14 | 704 | 0.8+ | 0.0 | 2006 01 27 | G96 | 1.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.8+ | 0.3− | 2003 07 08 | 644 | 0.2+ | 0.7− | 2006 02 06 | 691 | 0.3+ | 0.5+ |
| 1999 10 13 | 704 | 0.6+ | 0.5− | 2003 07 08 | 644 | 0.1+ | 0.2− | 2006 02 06 | 691 | 0.1+ | 0.2+ |
| 1999 10 13 | 704 | 0.4+ | 0.5− | 2003 07 08 | 644 | 0.2+ | 0.7− | 2006 02 06 | 691 | 1.1− | 0.6− |
| 1999 10 13 | 704 | 0.3+ | 0.6− | 2003 07 21 | 599 | 0.1− | 0.6− | 2006 02 22 | 699 | 0.9+ | 0.5− |
| 1999 10 13 | 704 | 0.2+ | 0.2− | 2003 07 22 | 599 | 0.2+ | 0.6− | 2006 02 22 | 699 | 0.8− | 0.5− |
| 1999 10 15 | 704 | 0.1+ | 0.3− | 2003 07 22 | 599 | 0.2+ | 0.6− | 2006 02 22 | 699 | 0.4− | 0.9+ |
| 1999 10 15 | 704 | 0.9+ | 1.4− | 2003 07 22 | 599 | 0.2+ | 0.3− | 2006 02 22 | 699 | 0.7+ | 1.1− |
| 1999 10 15 | 704 | 1.4+ | 0.2+ | 2003 08 04 | 704 | 0.5− | 0.2+ | | | | |

**1999 TO$_{161}$ = 2006 QE$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.34199 | | (2000.0) | | | |
| $n$ | 0.28025533 | $\omega$ | 184.68576 | | +0.94565392 | +0.32462513 |
| $a$ | 2.3125979 | $\Omega$ | 156.34449 | | −0.29679058 | +0.88539789 |
| $e$ | 0.2365416 | $i$ | 2.69977 | | −0.13286838 | +0.33269971 |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.4+ | 0.9+ | 2006 08 24 | 644 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.0 |
| 1999 10 03 | 703 | 0.1− | 0.7+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 09 28 | 704 | (2.1− | 2.8+) |
| 1999 10 03 | 703 | 0.9+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.6+ | 1.3+ |
| 1999 10 03 | 703 | 0.2+ | 0.1− | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 28 | 704 | (1.7+ | 0.5+) |
| 1999 10 09 | 704 | 0.8+ | 0.6− | 2006 09 12 | 703 | 0.1+ | 1.4+ | 2006 09 28 | 704 | (1.9+ | 0.5+) |
| 1999 10 09 | 704 | 0.9− | 0.5− | 2006 09 12 | 703 | 0.5+ | 0.5+ | 2006 10 01 | 704 | 0.0 | 1.0+ |
| 1999 10 09 | 704 | 0.3+ | 0.3+ | 2006 09 12 | 703 | 0.9+ | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.2+ |
| 1999 10 09 | 704 | 0.6− | 0.8− | 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.1+ | 0.7− |
| 1999 10 09 | 704 | 0.1+ | 0.9− | 2006 09 17 | 704 | 0.6+ | 0.8+ | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 1999 10 11 | 704 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.9− | 2006 10 11 | 644 | 0.4− | 0.1− |
| 1999 10 11 | 704 | 0.4− | 0.3− | 2006 09 17 | 704 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.5− | 0.0 |
| 1999 10 11 | 704 | 0.1+ | 0.5− | 2006 09 17 | 704 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 1999 10 11 | 704 | 0.4+ | 0.8− | 2006 09 17 | 704 | 0.6− | 0.3+ | 2006 10 15 | 106 | 1.0− | 0.3− |
| 1999 10 11 | 704 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.3− | 0.2− | 2006 10 15 | 106 | 0.3+ | 0.6− |
| 1999 10 15 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.7− | 2006 10 15 | 106 | 0.3− | 0.0 |
| 1999 10 15 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 16 | 106 | 0.4− | 0.4− |
| 1999 10 15 | 704 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 1999 10 15 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.9+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.2− | 1.2+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2006 08 18 | 644 | 0.3− | 0.3− | 2006 09 20 | 704 | 0.9− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2006 08 18 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 08 19 | 699 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 08 19 | 699 | 0.6− | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3− | 0.3+ |
| 2006 08 19 | 699 | 0.4+ | 0.2− | 2006 09 20 | 644 | 0.4− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.4+ |
| 2006 08 19 | 699 | 0.9+ | 1.5− | 2006 09 27 | 704 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2006 08 24 | 644 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.6+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.8+ | 0.2− | | | | |

**1999 TQ$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.41048 | | (2000.0) | | | |
| $n$ | 0.26456279 | $\omega$ | 94.26843 | | +0.90543295 | +0.42023450 |
| $a$ | 2.4031648 | $\Omega$ | 240.89185 | | −0.41158665 | +0.83455580 |
| $e$ | 0.2207773 | $i$ | 3.93457 | | −0.10386339 | +0.35625775 |
| $P$ | 3.73 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 02 | 696 | 0.4+ | 0.7+ | 1999 10 13 | 645 | 0.1− | 0.1+ | 1999 10 20 | 704 | 0.0 | 0.2− |
| 1998 05 02 | 696 | 0.0 | 0.5+ | 1999 10 13 | 645 | 0.1− | 0.1+ | 2003 11 24 | 691 | 0.1+ | 0.1+ |
| 1998 05 02 | 696 | 0.1+ | 0.3+ | 1999 10 15 | 704 | 0.1− | 0.6− | 2003 11 24 | 691 | 0.0 | 0.1− |
| 1999 10 03 | 704 | 0.7+ | 0.3+ | 1999 10 15 | 704 | 0.8+ | 0.2− | 2003 11 24 | 691 | 0.1+ | 0.1− |
| 1999 10 03 | 704 | 0.3+ | 0.1− | 1999 10 15 | 704 | 0.7− | 0.3− | 2003 11 30 | 691 | 0.0 | 0.0 |
| 1999 10 03 | 704 | 1.4+ | 0.1− | 1999 10 15 | 704 | 1.0− | 0.3+ | 2003 11 30 | 691 | 0.0 | 0.0 |
| 1999 10 03 | 704 | 0.6− | 0.1− | 1999 10 15 | 704 | 0.0 | 0.2− | 2003 11 30 | 691 | 0.3− | 0.1− |
| 1999 10 03 | 704 | 1.2+ | 0.1− | 1999 10 20 | 704 | 0.1+ | 0.3+ | 2003 12 14 | 691 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | (2.1+ | 0.8−) | 1999 10 20 | 704 | 0.1− | 0.1− | 2003 12 14 | 691 | 0.2− | 0.1+ |
| 1999 10 10 | 704 | 1.1+ | 0.5− | 1999 10 20 | 704 | 0.1− | 0.7− | 2003 12 14 | 691 | 0.1+ | 0.1+ |
| 1999 10 10 | 704 | (2.1+ | 0.9−) | 1999 10 20 | 704 | 0.0 | 0.8− | | | | |

**1999 TG$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.47797 | | (2000.0) | | | |
| $n$ | 0.29304323 | $\omega$ | 144.89400 | | +0.97490222 | −0.20905000 |
| $a$ | 2.2448203 | $\Omega$ | 227.36430 | | +0.17292932 | +0.92767438 |
| $e$ | 0.1123964 | $i$ | 5.97464 | | +0.14021809 | +0.30938381 |
| $P$ | 3.36 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1− | 0.5− | 1999 10 15 | 704 | 0.5+ | 1.0− | 1999 11 14 | 704 | 0.9+ | 0.7+ |
| 1999 10 10 | 704 | 0.7+ | 0.7− | 1999 10 15 | 704 | 0.6+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 1999 10 10 | 704 | 1.7+ | 0.4− | 1999 10 15 | 704 | 1.8+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 1999 10 10 | 704 | 1.7+ | 0.9− | 1999 10 20 | 704 | 0.5− | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 1999 10 13 | 645 | 0.1− | 0.1+ | 1999 10 20 | 704 | 0.7− | 0.6+ | 2006 11 17 | G96 | 0.0 | 1.1+ |
| 1999 10 13 | 645 | 0.1− | 0.1+ | 1999 10 20 | 704 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 1999 10 14 | 645 | 0.1− | 0.0 | 1999 10 20 | 704 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1999 10 14 | 645 | 0.0 | 0.0 | 1999 10 20 | 704 | 0.5+ | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.3− |
| 1999 10 15 | 704 | 0.7+ | 0.4+ | 1999 11 14 | 704 | 1.0− | 0.3− | | | | |
| 1999 10 15 | 704 | 0.6+ | 0.2+ | 1999 11 14 | 704 | 0.6+ | 0.5− | | | | |

**1999 TJ$_{169}$ = 2006 QW$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 325.00766 | | (2000.0) | | | |
| $n$ | 0.12635429 | $\omega$ | 93.24987 | | +0.96808576 | −0.24733435 |
| $a$ | 3.9331701 | $\Omega$ | 281.07276 | | +0.21045236 | +0.88990280 |
| $e$ | 0.1891151 | $i$ | 2.36188 | | +0.13608738 | +0.38327370 |
| $P$ | 7.80 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 19 | 691 | (3.4+ | 5.3−) | 1999 10 15 | 704 | 0.2− | 1.0+ | 2006 08 28 | 703 | 0.4+ | 0.0 |
| 1998 06 19 | 691 | 0.1− | 0.6+ | 2002 02 11 | 704 | 0.2+ | 0.9+ | 2006 08 28 | 703 | 0.3+ | 0.1+ |
| 1998 06 19 | 691 | 0.2− | 0.1+ | 2002 02 11 | 704 | (1.9+ | 0.1−) | 2006 08 28 | 703 | 0.0 | 0.2+ |
| 1999 10 10 | 704 | 0.4− | 0.3− | 2002 02 11 | 704 | (1.0− | 2.0+) | 2006 08 28 | 703 | 0.9− | 0.4+ |
| 1999 10 10 | 704 | 0.2− | 0.4− | 2002 02 11 | 704 | (0.5− | 2.1+) | 2006 09 13 | 644 | 0.3+ | 0.6− |
| 1999 10 10 | 704 | 0.5+ | 0.0 | 2004 05 23 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.5+ | 0.1+ |
| 1999 10 10 | 704 | 0.6+ | 0.0 | 2004 05 23 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.2+ | 0.4+ |
| 1999 10 10 | 704 | 0.6+ | 1.2+ | 2004 05 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 1999 10 13 | 704 | 0.4+ | 0.2− | 2006 07 25 | G96 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.3− | 0.5− |
| 1999 10 13 | 704 | 0.1+ | 0.1− | 2006 07 25 | G96 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.3− | 0.2− |
| 1999 10 13 | 704 | 0.5+ | 0.3− | 2006 07 25 | G96 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.3− | 0.6− |
| 1999 10 13 | 704 | 0.2+ | 0.5− | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 1999 10 13 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 1999 10 15 | 704 | 0.6− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.0 |
| 1999 10 15 | 704 | 0.5− | 0.5+ | 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.8− | 0.2+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.1+ | |
| 1999 10 15 | 704 | 1.0− | 0.2− | 2006 08 24 | 644 | 0.3+ | 0.2− | |

**1999 TQ$_{170}$ = 2006 SP$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.30769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28281234 | $\omega$ | 32.81848 | | +0.50675931 | −0.86181495 | |
| $a$ | 2.2986375 | $\Omega$ | 26.75212 | | +0.78020411 | +0.44778377 | |
| $e$ | 0.2189940 | $i$ | 2.76056 | | +0.36671045 | +0.23825341 | |
| $P$ | 3.49 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.7− | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.3− | |
| 1999 10 10 | 704 | 0.1+ | 1.7− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 1999 10 10 | 704 | 0.5− | 0.6− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.2− | |
| 1999 10 15 | 704 | 0.4− | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | (1.6− | 0.6−) | |
| 1999 10 15 | 704 | 0.8− | 0.8− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.4+ | |
| 1999 10 15 | 704 | 0.6− | 1.0− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.8− | |
| 1999 10 19 | 704 | 1.4+ | 0.7− | 2006 10 11 | 644 | 0.5− | 0.3+ | 2006 11 11 | 703 | (0.1+ | 2.0−) | |
| 1999 10 19 | 704 | 1.5+ | 1.5− | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.2+ | |
| 1999 10 19 | 704 | 1.3+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.1− | |
| 1999 10 19 | 704 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.3− | |
| 1999 10 19 | 704 | 1.3+ | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 17 | 703 | 1.4− | 0.4+ | |
| 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.4+ | 1.3− | |
| 2006 09 26 | G96 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.4+ | |
| 2006 09 26 | G96 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.9+ | 0.5+ | |
| 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1− | |
| 2006 09 30 | 703 | 0.1+ | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.1+ | |
| 2006 09 30 | 703 | 0.5− | 0.7+ | 2006 10 20 | 691 | 0.9− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.0 | |
| 2006 09 30 | 703 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1− | | | | | |

**1999 TS$_{176}$ = 2006 RP$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.28716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27709123 | $\omega$ | 59.75532 | | +0.49513118 | −0.86881771 | |
| $a$ | 2.3301696 | $\Omega$ | 0.56888 | | +0.76057072 | +0.43291238 | |
| $e$ | 0.1767054 | $i$ | 5.49870 | | +0.41997296 | +0.24029703 | |
| $P$ | 3.56 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 11 | 691 | 0.2+ | 0.0 | 1999 10 16 | 704 | 0.6+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.3− | |
| 1997 01 11 | 691 | 0.0 | 0.1− | 1999 10 16 | 704 | 0.5+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.2+ | |
| 1997 01 11 | 691 | 0.3− | 0.1+ | 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.0 | |
| 1999 09 30 | 691 | 1.0+ | 0.5+ | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1+ | |
| 1999 09 30 | 691 | 0.5− | 0.3− | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.0 | |
| 1999 09 30 | 691 | 0.4− | 0.2− | 2006 08 18 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.5+ | 0.3− | |
| 1999 10 06 | 691 | 0.3+ | 0.1+ | 2006 08 18 | 691 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2− | |
| 1999 10 06 | 691 | 0.1− | 0.1− | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.3+ | |
| 1999 10 06 | 691 | 0.4− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.6− | |
| 1999 10 10 | 704 | 0.2− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.0 | |
| 1999 10 10 | 704 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.4− | |
| 1999 10 10 | 704 | 0.6+ | 0.2− | 2006 09 18 | 699 | 0.7− | 1.2+ | 2006 10 23 | G96 | 0.2− | 0.1− | |
| 1999 10 13 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 1.2− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.3+ | |
| 1999 10 13 | 704 | 1.4− | 0.5− | 2006 09 18 | 699 | (0.9+ | 1.8+) | 2006 11 15 | G96 | 0.5− | 0.1− | |
| 1999 10 13 | 704 | 0.8+ | 0.5− | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.5− | 0.8− | |
| 1999 10 16 | 704 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.5− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− | |
| 1999 10 16 | 704 | 0.4+ | 1.1− | 2006 09 25 | G96 | 0.0 | 0.2− | | | | | |

**1999 TH$_{177}$ = 1999 UA$_{62}$ = 1999 UB$_{62}$**

Id. Minor Planet Center (d, *MPO* 11068)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.34359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30044130 | $\omega$ | 197.26411 | | +0.56264992 | −0.82559242 | |
| $a$ | 2.2078164 | $\Omega$ | 218.52675 | | +0.76633884 | +0.54024346 | |
| $e$ | 0.0980926 | $i$ | 3.92971 | | +0.31008039 | +0.16289311 | |
| $P$ | 3.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1+ | 0.7+ | 1999 11 12 | 704 | 0.5+ | 0.1+ | 2004 02 26 | 704 | 0.1− | 0.8+ | |
| 1999 10 10 | 704 | 0.4+ | 0.3+ | 1999 11 12 | 704 | 1.1+ | 0.1− | 2004 02 26 | 704 | 0.2− | 1.3+ | |
| 1999 10 10 | 704 | 0.2− | 0.1− | 1999 11 12 | 704 | 0.1− | 0.5+ | 2004 02 26 | 704 | 0.5− | 1.5+ | |
| 1999 10 10 | 704 | 0.5− | 1.6− | 1999 11 12 | 704 | 0.2+ | 0.3− | 2004 03 18 | 704 | 0.5+ | 0.0 | |
| 1999 10 15 | 704 | 1.1− | 0.6− | 1999 11 12 | 704 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.1− | |
| 1999 10 15 | 704 | 0.2− | 0.3− | 2002 08 16 | 644 | 0.1− | 0.6+ | 2004 03 18 | 704 | 1.0+ | 1.5+ | |
| 1999 10 15 | 704 | 1.6− | 0.6− | 2002 08 16 | 644 | 0.4− | 0.6+ | 2004 03 18 | 704 | 0.5− | 0.4+ | |
| 1999 10 20 | 704 | 0.3+ | 0.0 | 2002 08 16 | 644 | 0.2− | 0.3+ | 2004 03 20 | 704 | 0.3+ | 0.5+ | |
| 1999 10 20 | 691 | 0.2− | 0.0 | 2002 09 13 | 644 | 0.5− | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.8− | |
| 1999 10 20 | 704 | 0.3+ | 0.1− | 2002 09 13 | 644 | 0.4− | 0.5+ | 2004 03 20 | 704 | 0.1− | 0.1+ | |
| 1999 10 20 | 691 | 0.1− | 0.0 | 2002 09 13 | 644 | 0.5− | 0.3+ | 2004 03 20 | 704 | 0.7− | 1.8− | |
| 1999 10 20 | 704 | 0.2+ | 0.6+ | 2004 02 19 | 704 | (3.4+ | 0.8+) | 2005 06 13 | 691 | 0.0 | 0.0 | |
| 1999 10 20 | 691 | 0.1+ | 0.3+ | 2004 02 19 | 704 | (2.6+ | 1.3+) | 2005 06 13 | 691 | 0.3+ | 0.1− | |
| 1999 10 20 | 704 | 0.7+ | 0.6− | 2004 02 19 | 704 | (2.6+ | 1.6+) | 2005 06 13 | 691 | 0.0 | 0.1− | |
| 1999 10 20 | 704 | 1.5+ | 0.8+ | 2004 02 26 | 704 | 0.5− | 1.6− | | | | | |

**1999 TJ$_{177}$ = 2006 PP$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.85434 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26951656 | $\omega$ | 347.86143 | | +0.99875524 | +0.04971340 | |
| $a$ | 2.3736266 | $\Omega$ | 9.29191 | | −0.04339684 | +0.90626873 | |
| $e$ | 0.1973824 | $i$ | 1.44403 | | −0.02459050 | +0.41976846 | |
| $P$ | 3.66 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.7+ | 0.1− | 1999 10 15 | 704 | 0.8− | 1.3− | 2006 08 14 | 644 | 0.1+ | 0.2+ | |
| 1999 10 10 | 704 | 0.0 | 0.5+ | 1999 10 31 | 691 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.2− | 0.0 | |
| 1999 10 10 | 704 | 1.7+ | 0.6+ | 1999 10 31 | 691 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.0 | 0.0 | |
| 1999 10 13 | 645 | 0.1− | 0.1+ | 1999 10 31 | 691 | 0.2+ | 0.4− | 2006 08 20 | 644 | 0.1− | 0.0 | |
| 1999 10 13 | 645 | 0.0 | 0.1+ | 2006 08 12 | 644 | 0.2+ | 0.1− | 2006 08 20 | 644 | 0.0 | 0.2− | |
| 1999 10 15 | 704 | 0.1+ | 0.5− | 2006 08 12 | 644 | 0.1+ | 0.0 | 2006 08 20 | 644 | 0.1− | 0.0 | |
| 1999 10 15 | 704 | 1.4− | 1.3− | 2006 08 12 | 644 | 0.0 | 0.1− | | | | | |

**1999 TF$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.37617 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24256102 | $\omega$ | 83.90405 | | +0.56597477 | +0.81985784 | |
| $a$ | 2.5463731 | $\Omega$ | 220.96424 | | −0.79899203 | +0.51958010 | |
| $e$ | 0.0209381 | $i$ | 7.59380 | | −0.20318535 | +0.24056112 | |
| $P$ | 4.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1− | 0.3− | 2001 02 20 | 645 | 0.0 | 0.0 | 2003 10 24 | 704 | 0.2− | 0.2+ | |
| 1995 10 15 | 691 | 0.1+ | 0.0 | 2001 02 20 | 645 | 0.0 | 0.0 | 2003 10 24 | 704 | 0.4− | 0.0 | |
| 1995 10 15 | 691 | 0.1− | 0.1− | 2002 06 09 | 704 | 0.6− | 0.3+ | 2003 10 24 | 704 | 0.6− | 0.5+ | |
| 1999 10 10 | 704 | 0.7− | 0.5+ | 2002 06 09 | 704 | 0.0 | 0.0 | 2003 10 24 | 704 | 0.1+ | 0.3− | |
| 1999 10 10 | 704 | 0.0 | 0.3+ | 2002 06 09 | 704 | (3.1+ | 1.0−) | 2003 10 24 | 704 | 0.7− | 0.4− | |
| 1999 10 10 | 704 | (0.4+ | 2.7+) | 2003 10 03 | 691 | 0.3+ | 0.2+ | 2003 10 24 | 704 | 0.4− | 0.2− | |
| 1999 10 13 | 704 | 0.1− | 0.2+ | 2003 10 03 | 691 | 0.1+ | 0.3+ | 2003 10 24 | 704 | 0.7− | 0.5− | |
| 1999 10 13 | 704 | 0.0 | 0.5− | 2003 10 03 | 691 | 0.1+ | 0.1+ | 2003 10 24 | 704 | 0.1+ | 0.1− | |
| 1999 10 13 | 704 | 1.3− | 0.2− | 2003 10 18 | 291 | 0.7− | 0.3− | 2003 10 24 | 704 | 0.2+ | 0.5− | |
| 1999 10 13 | 704 | 0.5− | 0.3− | 2003 10 18 | 291 | 0.3+ | 0.1− | 2003 10 24 | 704 | 1.3+ | 0.3+ | |
| 1999 10 13 | 704 | 0.8− | 0.2+ | 2003 10 18 | 291 | 0.0 | 0.1− | 2006 06 04 | G96 | 0.8− | 0.1+ | |
| 1999 10 18 | 691 | 0.0 | 0.1+ | 2003 10 18 | 291 | 0.3+ | 0.2+ | 2006 06 04 | G96 | 1.1− | 0.3+ | |
| 1999 10 18 | 691 | 0.1+ | 0.3− | 2003 10 18 | 291 | 0.4+ | 0.3+ | 2006 06 04 | G96 | 0.8− | 0.1+ | |
| 1999 10 18 | 691 | 0.3+ | 0.2+ | 2003 10 18 | 291 | 0.1+ | 0.1− | | | | | |

**1999 TG$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 215.70338 | | | (2000.0) | | |
| $n$ | 0.22041296 | $\omega$ | 57.01019 | | +0.98073100 | +0.01747554 |
| $a$ | 2.7142174 | $\Omega$ | 301.28800 | | −0.11371353 | +0.86094735 |
| $e$ | 0.1436052 | $i$ | 13.16134 | | +0.15885826 | +0.50839381 |
| $P$ | 4.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 1.3+ | 0.6− | 2003 07 08 | 644 | 0.0 | 0.4+ | 2003 08 24 | 704 | 0.4+ | 0.6− |
| 1999 09 08 | 704 | 1.1+ | 0.1− | 2003 07 08 | 644 | 0.3− | 0.3+ | 2003 08 24 | 704 | 0.1+ | 0.1− |
| 1999 09 08 | 704 | 0.2+ | 0.7+ | 2003 07 08 | 644 | 0.1− | 0.3+ | 2003 08 24 | 704 | 0.2− | 0.6+ |
| 1999 10 12 | 704 | 1.0− | 0.0 | 2003 07 25 | 704 | 0.3− | 0.2− | 2003 08 24 | 704 | 0.4− | 0.3− |
| 1999 10 12 | 704 | 0.3+ | 0.1+ | 2003 07 25 | 704 | 0.5− | 0.1+ | 2003 08 31 | 608 | 0.3+ | 0.2− |
| 1999 10 12 | 704 | 0.9+ | 0.8+ | 2003 07 25 | 704 | 0.7− | 0.3− | 2003 08 31 | 608 | 0.3+ | 0.0 |
| 1999 10 13 | 704 | 0.2− | 0.6− | 2003 07 25 | 704 | 0.4− | 0.1− | 2003 08 31 | 608 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.8− | 1.4− | 2003 07 25 | 704 | 0.3− | 0.3+ | 2006 02 06 | G96 | 0.5+ | 0.6+ |
| 1999 10 13 | 704 | 0.5− | 0.0 | 2003 08 04 | 704 | 2.1+ | 1.1+ | 2006 02 06 | G96 | 0.3+ | 0.1− |
| 1999 10 13 | 704 | 1.2− | 1.3+ | 2003 08 04 | 704 | 0.6+ | 0.4− | 2006 02 06 | G96 | 0.3− | 0.3+ |
| 1999 10 13 | 704 | 0.3− | 0.4+ | 2003 08 04 | 704 | 0.7− | 0.0 | 2006 02 06 | G96 | 0.1+ | 0.3+ |

**1999 TA$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.40452 | | | (2000.0) | | |
| $n$ | 0.29401805 | $\omega$ | 330.60347 | | +0.99771424 | +0.04227560 |
| $a$ | 2.2398558 | $\Omega$ | 27.12636 | | −0.01108047 | +0.87192210 |
| $e$ | 0.1991996 | $i$ | 6.63930 | | −0.06665965 | +0.48781618 |
| $P$ | 3.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3+ | 0.2+ | 1999 10 13 | 704 | 0.1− | 0.7− | 2002 08 13 | 704 | 0.5+ | 1.0− |
| 1999 10 06 | 704 | 0.2+ | 0.1+ | 1999 10 15 | 704 | 0.3+ | 1.2+ | 2002 08 13 | 704 | 0.6+ | 1.6− |
| 1999 10 06 | 704 | 0.1− | 0.0 | 1999 10 15 | 704 | 0.7+ | 0.1− | 2002 08 13 | 644 | 0.1+ | 0.2+ |
| 1999 10 06 | 704 | 0.4+ | 0.0 | 1999 10 15 | 704 | 0.4+ | 0.2+ | 2002 08 13 | 644 | 0.1− | 0.4+ |
| 1999 10 06 | 704 | 0.4− | 0.1− | 1999 10 15 | 704 | 1.1− | 0.9− | 2002 08 13 | 644 | 0.2+ | 0.5+ |
| 1999 10 13 | 704 | 0.4+ | 0.6− | 2002 07 16 | 644 | 0.1− | 0.3+ | 2002 08 30 | 644 | 0.3− | 0.2+ |
| 1999 10 13 | 704 | 0.7− | 0.2+ | 2002 07 16 | 644 | 0.1− | 0.0 | 2002 08 30 | 644 | 0.4− | 0.3+ |
| 1999 10 13 | 704 | 0.3− | 0.7+ | 2002 07 16 | 644 | 0.1+ | 0.1+ | 2002 08 30 | 644 | 0.4− | 0.8+ |
| 1999 10 13 | 704 | 0.0 | 0.3− | 2002 08 13 | 704 | 0.1− | 0.0 | | | | |

**1999 TS$_{212}$ = 2006 SA$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.41762 | | | (2000.0) | | |
| $n$ | 0.27988683 | $\omega$ | 326.55145 | | +0.87068022 | +0.49180920 |
| $a$ | 2.3146273 | $\Omega$ | 4.00461 | | −0.42917876 | +0.76593220 |
| $e$ | 0.2471919 | $i$ | 5.17441 | | −0.24025311 | +0.41409126 |
| $P$ | 3.52 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 699 | (1.5− | 0.9+) | 2006 09 29 | 704 | 1.3+ | 0.5− |
| 1999 10 10 | 704 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 09 29 | 704 | (1.9+ | 0.3+) |
| 1999 10 10 | 704 | 1.0+ | 1.0+ | 2006 09 18 | 699 | 0.9+ | 0.6+ | 2006 10 17 | 703 | 0.5+ | 0.6− |
| 1999 10 10 | 704 | 0.7+ | 1.3+ | 2006 09 18 | 699 | (2.3− | 2.0+) | 2006 10 17 | 703 | 0.6+ | 1.0− |
| 1999 10 13 | 704 | 0.0 | 0.3+ | 2006 09 18 | J75 | 0.7+ | 0.5− | 2006 10 17 | 703 | 0.7+ | 0.4+ |
| 1999 10 13 | 704 | 1.1− | 0.2− | 2006 09 18 | J75 | 0.2+ | 0.9− | 2006 10 17 | 703 | 0.1+ | 0.9− |
| 1999 10 13 | 704 | 0.2− | 0.6− | 2006 09 18 | J75 | 0.6+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 1999 10 13 | 704 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.5− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.3− |
| 1999 10 13 | 704 | 0.3− | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 1999 10 15 | 704 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3− |
| 1999 10 15 | 704 | 0.9− | 0.6− | 2006 09 20 | J75 | 0.7+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 0.3− | 0.4+ | 2006 09 20 | J75 | 1.1+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 1999 10 15 | 704 | 0.0 | 0.4− | 2006 09 20 | J75 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 1999 10 16 | 704 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 1999 10 16 | 704 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.7+ |
| 1999 10 16 | 704 | 0.5+ | 0.8− | 2006 09 25 | G96 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.6+ | 0.2+ |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 09 29 | 704 | (1.5− | 1.6+) | | | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.8+ | | | | |

**1999 TZ$_{221}$ = 2006 SK$_{357}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.64406 | | | (2000.0) | | |
| $n$ | 0.28523704 | $\omega$ | 186.22736 | | +0.99689553 | −0.07870139 |
| $a$ | 2.2855923 | $\Omega$ | 178.28141 | | +0.07516853 | +0.94253559 |
| $e$ | 0.2464524 | $i$ | 4.44293 | | +0.02343072 | +0.32470411 |
| $P$ | 3.46 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.8+ | 1.3+ |
| 1999 10 01 | 703 | 1.3− | 0.0 | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.1+ |
| 1999 10 01 | 703 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 1.0− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 1999 10 01 | 703 | 1.4+ | 1.3+ | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.3− |
| 1999 10 04 | 691 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.4− | 0.2− |
| 1999 10 04 | 691 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.2− |
| 1999 10 04 | 691 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.5+ | 0.1− |
| 1999 10 04 | 704 | 1.1+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.5+ | 0.2− |
| 1999 10 04 | 704 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 1999 10 04 | 704 | 1.2− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 10 09 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1999 10 09 | 704 | 0.0 | 0.6− | 2006 10 14 | D35 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 1.0− | 0.7+ |
| 1999 10 09 | 704 | 0.3+ | 0.3+ | 2006 10 14 | D35 | 0.8− | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.7+ |
| 1999 10 09 | 704 | 0.8− | 0.5− | 2006 10 14 | D35 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.5+ |
| 1999 10 09 | 704 | 1.2− | 0.3+ | 2006 10 16 | 703 | 1.1− | 0.6− | 2006 11 13 | 703 | 0.7− | 0.5− |
| 1999 10 15 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 1.1+ | 2006 11 23 | G96 | 0.1− | 0.6− |
| 1999 10 15 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.8− |
| 1999 10 15 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.6− |
| 1999 10 15 | 704 | 0.4+ | 0.9− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.6− |

**1999 TL$_{226}$ = 1999 TE$_{327}$ = 2006 WZ$_{72}$**

Id. Minor Planet Center (d, *MPO* 21170; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.76288 | | | (2000.0) | | |
| $n$ | 0.29368412 | $\omega$ | 9.56322 | | +0.89800329 | +0.43988232 |
| $a$ | 2.2415533 | $\Omega$ | 324.33536 | | −0.40477062 | +0.81730299 |
| $e$ | 0.1494396 | $i$ | 0.95095 | | −0.17248430 | +0.37218189 |
| $P$ | 3.36 | $H$ | 18.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 691 | 0.3+ | 0.6+ | 1999 10 06 | 704 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.4− | 0.3− |
| 1999 09 04 | 691 | 0.4+ | 0.1− | 1999 10 06 | 704 | 0.2+ | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 1999 09 04 | 691 | 1.1− | 0.5+ | 1999 10 06 | 704 | 0.2− | 1.3− | 2006 11 20 | 691 | 0.4+ | 0.1+ |
| 1999 10 03 | 691 | 0.0 | 0.2− | 1999 10 09 | 691 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.2− | 0.0 |
| 1999 10 03 | 691 | 0.1− | 0.1− | 1999 10 09 | 691 | 0.3+ | 0.3− | 2006 11 20 | 691 | 0.3− | 0.5+ |
| 1999 10 03 | 691 | 0.2− | 0.2+ | 1999 10 09 | 691 | 0.3+ | 0.1− | | | | |
| 1999 10 06 | 704 | 0.8− | 1.0− | 2006 11 18 | 691 | 0.3+ | 0.1+ | | | | |

**1999 TS$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.71898 | | | (2000.0) | | |
| $n$ | 0.28347492 | $\omega$ | 39.55201 | | +0.96909265 | −0.24658916 |
| $a$ | 2.2950542 | $\Omega$ | 334.72092 | | +0.22179257 | +0.88382836 |
| $e$ | 0.2239989 | $i$ | 0.97890 | | +0.10801616 | +0.39754399 |
| $P$ | 3.48 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.1− | 0.1− | 1999 11 07 | 704 | 0.2+ | 0.8− | 2006 11 11 | 703 | 0.5+ | 1.2− |
| 1999 10 03 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2+ | | |
| 1999 10 06 | 704 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.1+ | | |
| 1999 10 06 | 704 | 0.9− | 0.6− | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 1999 10 06 | 704 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.2+ | | |
| 1999 10 06 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 1999 10 06 | 704 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.5+ | | |
| 1999 10 10 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.0 | 2006 11 22 | 704 | 1.1− | 0.8− | | |
| 1999 10 10 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.5− | | |
| 1999 10 10 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.9+ | | |
| 1999 10 15 | 704 | 1.5− | 0.7+ | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.8− | 0.5− | | |
| 1999 10 15 | 704 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 1999 10 15 | 704 | 1.1+ | 1.3+ | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.5− | | |
| 1999 10 29 | 703 | 1.1− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 1999 10 29 | 703 | 0.8+ | 1.0− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.2− | | |
| 1999 10 29 | 703 | 0.7+ | 0.6− | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.0 | 0.2+ | | |
| 1999 10 29 | 703 | 0.9+ | 0.6− | 2006 11 09 | 644 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.1+ | 0.8+ | | |
| 1999 11 07 | 704 | 0.1+ | 1.0− | 2006 11 11 | 703 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.8+ | 1.0+ | | |
| 1999 11 07 | 704 | 0.6+ | 1.5− | 2006 11 11 | 703 | 0.3− | 0.5− | 2006 11 27 | 703 | 0.4+ | 0.5+ | | |
| 1999 11 07 | 704 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.9− | | | | | | |

**1999 TK$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.42878 | | (2000.0) | | +0.83189457 | +0.54507994 |
| $n$ | 0.29226527 | $\omega$ | 70.80330 | | −0.54088514 | +0.75448958 |
| $a$ | 2.2488021 | $\Omega$ | 256.04063 | | −0.12407532 | +0.36555892 |
| $e$ | 0.3094288 | $i$ | 6.15855 | | | |
| $P$ | 3.37 | $H$ | 17.4 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 11 | 704 | 0.1+ | 0.1− | 1999 10 09 | 703 | (2.4− | 0.5−) | 1999 10 20 | 704 | 0.7− | 0.7− | | |
| 1999 08 11 | 704 | 0.1+ | 0.6+ | 1999 10 09 | 703 | 0.6− | 1.7+ | 1999 10 20 | 704 | 0.2− | 0.9− | | |
| 1999 08 11 | 704 | 1.1+ | 0.1+ | 1999 10 09 | 703 | 0.6− | 0.5+ | 1999 10 29 | 703 | 0.1− | 0.7+ | | |
| 1999 09 08 | 704 | 0.0 | 0.5+ | 1999 10 09 | 703 | 0.2− | 0.1+ | 1999 10 29 | 703 | 0.2− | 1.3+ | | |
| 1999 09 08 | 704 | 0.9− | 0.0 | 1999 10 10 | 704 | 0.4+ | 0.3− | 1999 10 29 | 703 | 0.5+ | 0.7− | | |
| 1999 09 08 | 704 | 0.1− | 0.1+ | 1999 10 10 | 704 | 0.2+ | 0.4+ | 1999 10 29 | 703 | 1.3+ | 0.4− | | |
| 1999 09 08 | 704 | 0.8− | 0.0 | 1999 10 10 | 704 | 0.7+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.7− | | |
| 1999 09 08 | 704 | 0.4− | 0.8− | 1999 10 10 | 704 | 0.1− | 0.7+ | 2006 11 21 | 704 | 0.8+ | 0.6+ | | |
| 1999 09 18 | 704 | 0.4− | 0.2− | 1999 10 10 | 704 | 0.6+ | 0.7+ | 2006 11 21 | 704 | 0.8+ | 0.5− | | |
| 1999 09 18 | 704 | 0.6− | 0.2− | 1999 10 10 | 704 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.8− | 0.3+ | | |
| 1999 09 18 | 704 | 1.1+ | 0.7− | 1999 10 10 | 704 | 0.7+ | 0.7− | 2006 11 26 | H07 | 0.5− | 0.3+ | | |
| 1999 09 18 | 704 | (0.9− | 2.3−) | 1999 10 10 | 704 | 0.3+ | 0.2− | 2006 11 26 | H07 | 0.2+ | 0.4+ | | |
| 1999 10 03 | 704 | 0.6− | 0.2+ | 1999 10 10 | 704 | 0.1− | 0.7− | 2006 11 26 | H07 | 0.3+ | 0.4+ | | |
| 1999 10 03 | 704 | 0.0 | 0.4+ | 1999 10 10 | 704 | 0.6− | 0.2− | 2006 11 28 | H07 | 0.1− | 0.6+ | | |
| 1999 10 03 | 704 | 0.2− | 0.2− | 1999 10 20 | 704 | 0.1+ | 0.3− | 2006 11 28 | H07 | 0.4+ | 0.4+ | | |
| 1999 10 03 | 704 | 1.0+ | 0.5− | 1999 10 20 | 704 | 0.3− | 0.5+ | 2006 11 28 | H07 | 0.7− | 0.1− | | |
| 1999 10 03 | 704 | 0.3− | 0.2− | 1999 10 20 | 704 | 0.5− | 0.4− | 2006 11 28 | H07 | 0.7− | 1.7− | | |

**1999 TX$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.12989 | | (2000.0) | | +0.99762653 | +0.06869647 |
| $n$ | 0.23547925 | $\omega$ | 174.77670 | | −0.06823814 | +0.97721627 |
| $a$ | 2.5971734 | $\Omega$ | 181.31208 | | −0.00921219 | +0.20082121 |
| $e$ | 0.0989199 | $i$ | 11.84806 | | | |
| $P$ | 4.19 | $H$ | 16.7 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 691 | 0.4− | 0.1− | 1999 10 09 | 704 | 0.4− | 0.2− | 2003 09 02 | 704 | 0.8− | 0.6+ | | |
| 1999 09 07 | 691 | 0.3+ | 0.1+ | 1999 10 09 | 704 | 0.2+ | 0.3− | 2003 09 02 | 704 | 0.5+ | 0.8+ | | |
| 1999 09 07 | 691 | 0.1+ | 0.1+ | 1999 10 09 | 704 | 0.6+ | 0.8+ | 2003 09 23 | 644 | 0.1− | 0.2− | | |
| 1999 10 03 | 691 | 0.1− | 0.2− | 2003 08 22 | 599 | 0.3+ | 0.5− | 2003 09 23 | 644 | 0.3− | 0.4− | | |
| 1999 10 03 | 691 | 0.0 | 0.1− | 2003 08 22 | 599 | 0.3− | 0.0 | 2003 09 23 | 644 | 0.2− | 0.2− | | |
| 1999 10 03 | 691 | 0.0 | 0.1− | 2003 09 02 | 704 | 1.3+ | 0.2− | | | | | | |
| 1999 10 09 | 704 | 0.2− | 0.7+ | 2003 09 02 | 704 | 0.3− | 0.1− | | | | | | |

**1999 TC$_{234}$ = 2005 EJ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 212.59686 | | (2000.0) | | +0.66870262 | −0.74268627 |
| $n$ | 0.23412661 | $\omega$ | 270.31330 | | +0.70137660 | +0.61426787 |
| $a$ | 2.6071671 | $\Omega$ | 137.64788 | | +0.24679481 | +0.26663099 |
| $e$ | 0.2029674 | $i$ | 3.01300 | | | |
| $P$ | 4.21 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.4+ | 0.3+ | 2001 03 20 | 691 | 0.2+ | 0.5+ | 2003 09 18 | 699 | 0.8+ | 0.1+ | | |
| 1995 11 17 | 691 | 0.5+ | 0.3+ | 2001 03 20 | 691 | 0.1+ | 0.1− | 2003 09 18 | 699 | 1.7− | 0.9− | | |
| 1995 11 17 | 691 | 1.6− | 1.2− | 2003 07 24 | 644 | 0.3+ | 0.1− | 2003 09 18 | 699 | 0.3− | 1.3− | | |
| 1999 10 03 | 691 | 0.4+ | 0.4+ | 2003 07 24 | 644 | 0.2− | 0.3+ | 2005 03 01 | 691 | 0.3+ | 0.6+ | | |
| 1999 10 03 | 691 | 0.1+ | 0.3+ | 2003 07 24 | 644 | 0.2− | 0.5+ | 2005 03 01 | 691 | 0.3+ | 0.5+ | | |
| 1999 10 03 | 691 | 0.3+ | 0.4+ | 2003 08 23 | 644 | 0.2− | 0.2+ | 2005 03 01 | 691 | 0.1+ | 0.5+ | | |
| 1999 10 09 | 704 | 0.7− | 0.4+ | 2003 08 23 | 644 | 0.1− | 0.3+ | 2005 03 04 | G96 | 0.3− | 0.2− | | |
| 1999 10 09 | 704 | 0.5+ | 0.8− | 2003 08 23 | 644 | 0.2+ | 0.6+ | 2005 03 04 | G96 | 0.2− | 0.0 | | |
| 1999 10 09 | 704 | 0.8+ | 0.7+ | 2003 09 04 | 691 | 0.4− | 0.3+ | 2005 03 04 | G96 | 0.2− | 0.2+ | | |
| 1999 10 09 | 704 | 0.3+ | 0.3+ | 2003 09 04 | 691 | 0.5− | 0.3+ | 2005 03 04 | G96 | 0.3− | 0.0 | | |
| 1999 10 09 | 704 | 0.4+ | 0.5+ | 2003 09 04 | 691 | 0.4− | 0.3+ | | | | | | |
| 2001 03 20 | 691 | 0.3+ | 0.3+ | 2003 09 18 | 699 | 0.6+ | 1.3+ | | | | | | |

**1999 TM$_{237}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.68880 | | (2000.0) | | +0.94674706 | −0.32197535 |
| $n$ | 0.25570090 | $\omega$ | 197.32582 | | +0.30142315 | +0.88779586 |
| $a$ | 2.4583735 | $\Omega$ | 181.45874 | | +0.11319935 | +0.32886226 |
| $e$ | 0.2026088 | $i$ | 3.08765 | | | |
| $P$ | 3.85 | $H$ | 17.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 568 | 0.3+ | 0.2− | 1999 10 09 | 704 | 0.4+ | 0.3− | 2003 10 28 | 704 | 2.1− | 2.8− | | |
| 1999 09 07 | 568 | 0.0 | 0.0 | 2001 02 20 | 645 | 0.0 | 0.0 | 2003 11 18 | 644 | 0.1+ | 0.6+ | | |
| 1999 09 07 | 568 | 0.2− | 0.8+ | 2001 02 20 | 645 | 0.0 | 0.0 | 2003 11 18 | 644 | 0.0 | 0.4+ | | |
| 1999 10 04 | 691 | 0.1+ | 0.4− | 2003 10 19 | 691 | 0.1+ | 0.1+ | 2003 11 18 | 644 | 0.1− | 0.2+ | | |
| 1999 10 04 | 691 | 0.1+ | 0.1− | 2003 10 19 | 691 | 0.0 | 0.2+ | 2005 03 08 | G96 | 0.2− | 0.1− | | |
| 1999 10 04 | 691 | 0.1− | 0.2− | 2003 10 19 | 691 | 0.2− | 0.0 | 2005 03 08 | G96 | 0.1+ | 0.5− | | |
| 1999 10 09 | 704 | 0.1− | 0.4+ | 2003 10 28 | 704 | 0.9+ | 0.3+ | 2005 03 08 | G96 | 0.2+ | 0.4− | | |
| 1999 10 09 | 704 | 0.1+ | 0.0 | 2003 10 28 | 704 | 0.5+ | 0.6+ | 2005 03 08 | G96 | 0.5− | 0.3− | | |
| 1999 10 09 | 704 | 0.1+ | 0.5− | 2003 10 28 | 704 | 0.6+ | 0.8+ | | | | | | |

**1999 TV$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.68350 | | (2000.0) | | −0.46972145 | −0.88263759 |
| $n$ | 0.18824082 | $\omega$ | 125.00484 | | +0.75581567 | −0.39171826 |
| $a$ | 3.0152744 | $\Omega$ | 352.94339 | | +0.45618465 | −0.25982243 |
| $e$ | 0.0736368 | $i$ | 8.27543 | | | |
| $P$ | 5.24 | $H$ | 15.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2+ | 0.1+ | 1999 10 16 | 645 | 0.0 | 0.2+ | 2002 03 13 | 704 | 0.4+ | 0.8+ | | |
| 1999 10 06 | 704 | 0.2− | 0.7− | 1999 10 16 | 645 | 0.2+ | 0.1+ | 2002 03 20 | 695 | 0.2− | 0.1+ | | |
| 1999 10 06 | 704 | 0.8− | 0.1− | 1999 10 19 | 691 | 0.3− | 0.4− | 2002 03 20 | 695 | 0.2− | 0.2+ | | |
| 1999 10 06 | 704 | 0.1+ | 0.3− | 1999 10 19 | 691 | 0.0 | 0.7− | 2002 04 12 | 704 | 0.1− | 0.1− | | |
| 1999 10 06 | 704 | 0.1− | 1.1− | 1999 10 19 | 691 | 0.2− | 0.2− | 2002 04 12 | 704 | 0.1− | 0.1+ | | |
| 1999 10 10 | 691 | 0.0 | 0.0 | 2002 03 13 | 704 | 0.1− | 0.3+ | 2002 04 12 | 704 | 0.5− | 0.0 | | |
| 1999 10 10 | 691 | 0.1− | 0.2+ | 2002 03 13 | 704 | 0.0 | 0.4− | 2002 04 12 | 704 | 0.7+ | 0.7− | | |
| 1999 10 10 | 691 | 0.2− | 0.0 | 2002 03 13 | 704 | 0.1+ | 0.5− | 2002 04 12 | 704 | 0.1+ | 0.4+ | | |

**1999 TJ$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.21122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28286259 | $\omega$ | 154.16038 | | +0.99788376 | −0.06096183 | |
| $a$ | 2.2983652 | $\Omega$ | 209.36161 | | +0.04873540 | +0.93149871 | |
| $e$ | 0.1894848 | $i$ | 2.64413 | | +0.04304480 | +0.35859978 | |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.7− |
| 1999 10 02 | 691 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.5+ | 0.1+ | 2006 11 13 | G96 | (0.0 | 1.8−) |
| 1999 10 02 | 691 | 0.3+ | 0.4− | 2006 09 25 | G96 | 0.6+ | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 1999 10 13 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.6+ | 0.1− | 2006 11 13 | G96 | 0.3− | 0.2− |
| 1999 10 13 | 691 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | (0.4− | 1.5+) |
| 1999 10 13 | 691 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 1999 10 16 | 704 | 0.5− | 0.8+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 1999 10 16 | 704 | 0.1+ | 0.9+ | 2006 10 13 | 291 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 1999 10 16 | 704 | 1.2− | 0.6− | 2006 10 13 | 291 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 1999 11 12 | 704 | 0.5+ | 0.1− | 2006 10 13 | 291 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 1999 11 12 | 704 | 0.1− | 0.4− | 2006 10 28 | G96 | (1.5+ | 0.1−) | 2006 11 18 | 704 | 0.7− | 0.2− |
| 1999 11 12 | 704 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.6− | 0.4+ |
| 1999 11 12 | 704 | 0.3− | 0.9− | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.6+ | 0.5− |
| 1999 11 12 | 704 | 1.0+ | 0.5− | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.7+ | 0.3− |
| 2005 05 10 | G96 | 0.9− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.6+ | 2006 11 28 | 704 | 1.0+ | 1.1+ |
| 2005 05 10 | G96 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.6+ | | | | |
| 2005 05 10 | G96 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.5− | | | | |

**1999 TZ$_{261}$ = 2006 UY$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.99525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28416717 | $\omega$ | 72.19760 | | +0.15864622 | −0.98724013 | |
| $a$ | 2.2913255 | $\Omega$ | 8.70850 | | +0.86807037 | +0.13284717 | |
| $e$ | 0.1796527 | $i$ | 5.20006 | | +0.47040962 | +0.08779841 | |
| $P$ | 3.47 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 691 | 0.2+ | 0.2− | 1999 11 03 | 691 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 1999 10 11 | 691 | 0.2+ | 0.3− | 1999 11 03 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.2+ |
| 1999 10 11 | 691 | 0.2+ | 0.1− | 1999 11 03 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 1999 10 13 | 704 | 0.3− | 0.2− | 2006 10 13 | 691 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 1999 10 13 | 704 | 0.2− | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.4+ | 1.3+ |
| 1999 10 13 | 704 | 0.5− | 0.3− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.5− |
| 1999 10 13 | 704 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 14 | 703 | 0.8− | 0.5+ |
| 1999 10 13 | 704 | 1.1− | 0.0 | 2006 10 21 | 691 | 0.4− | 0.2− | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 1999 10 14 | 645 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 1999 10 18 | 691 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 1999 10 18 | 691 | 0.4− | 0.5+ | 2006 10 27 | 703 | (0.4+ | 2.2−) | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 1999 10 18 | 691 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.6+ | 0.9+ | | | | |

**1999 TW$_{266}$ = 2006 SH$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.10545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28088334 | $\omega$ | 100.47076 | | +0.65866396 | −0.74312736 | |
| $a$ | 2.3091496 | $\Omega$ | 307.66555 | | +0.61881438 | +0.62420560 | |
| $e$ | 0.1586272 | $i$ | 8.57270 | | +0.42805437 | +0.24109977 | |
| $P$ | 3.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.0 | 0.2− | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.1− |
| 1999 10 03 | 704 | 0.6− | 0.8− | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 09 29 | 699 | 1.1+ | 0.1+ |
| 1999 10 03 | 704 | 0.0 | 0.7+ | 2006 09 16 | 703 | (2.1+ | 1.0+) | 2006 09 29 | 699 | 1.0+ | 0.6+ |
| 1999 10 03 | 704 | 0.1+ | 0.3− | 2006 09 16 | 703 | 0.5+ | 0.2+ | 2006 09 29 | 699 | (0.3+ | 2.1−) |
| 1999 10 03 | 704 | 1.1− | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 10 03 | 703 | 0.5+ | 0.8− |
| 1999 10 10 | 704 | 0.2+ | 0.9− | 2006 09 16 | 703 | 0.6− | 0.2+ | 2006 10 03 | 703 | 0.2+ | 0.2− |
| 1999 10 10 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 10 03 | 703 | 0.2+ | 0.7+ |
| 1999 10 10 | 704 | 0.6− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 10 03 | 703 | 0.5+ | 0.5− |
| 1999 10 10 | 704 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.2+ | 2006 10 16 | 106 | 0.3+ | 0.8− |
| 1999 10 20 | 704 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.4− | 0.7− | 2006 10 16 | 106 | 0.9− | 0.0 |
| 1999 10 20 | 704 | 1.3+ | 0.1+ | 2006 09 21 | 699 | 0.2− | 0.5+ | 2006 10 16 | 106 | 0.4+ | 0.1− |
| 1999 10 20 | 704 | 0.1+ | 1.2+ | 2006 09 21 | 699 | 0.2+ | 0.1+ | 2006 10 16 | 106 | 1.4− | 1.2+ |
| 2004 01 22 | 704 | 0.4− | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2004 01 22 | 704 | 0.0 | 0.5+ | 2006 09 21 | 699 | (0.6− | 1.6−) | 2006 10 17 | 703 | 0.9+ | 0.7− |
| 2004 01 22 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.6+ | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.4− | 2006 09 27 | 703 | (0.1+ | 2.7−) | 2006 10 17 | 703 | 1.2− | 0.9− |
| 2004 01 22 | 704 | 0.5+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.6+ | | | | |
| 2006 09 06 | 644 | 0.5− | 0.2+ | 2006 09 27 | 703 | 0.8− | 0.4+ | | | | |

**1999 TX$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.99026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29278209 | $\omega$ | 78.88245 | | +0.90399214 | +0.41600025 | |
| $a$ | 2.2461549 | $\Omega$ | 256.47418 | | −0.42109703 | +0.82634589 | |
| $e$ | 0.2265262 | $i$ | 5.82655 | | −0.07399671 | +0.37960014 | |
| $P$ | 3.37 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.2+ | 0.5− | 1999 10 10 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1999 09 08 | 704 | 0.4+ | 0.3+ | 1999 10 10 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 1999 09 08 | 704 | 0.6− | 0.3+ | 1999 10 10 | 704 | 1.0+ | 0.7− | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 1999 09 18 | 704 | 0.6+ | 1.0+ | 1999 10 10 | 704 | 0.4+ | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.0 |
| 1999 09 18 | 704 | 0.5− | 0.6+ | 1999 10 10 | 704 | 0.6− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 1999 09 18 | 704 | 0.3− | 0.7− | 1999 11 04 | 704 | 0.5+ | 0.6− | 2006 11 20 | 691 | 0.4+ | 0.1+ |
| 1999 09 18 | 704 | 0.7− | 0.0 | 1999 11 04 | 704 | 0.2− | 0.5− | 2006 11 30 | 691 | 1.3− | 0.4+ |
| 1999 10 03 | 704 | 0.1− | 0.6− | 1999 11 04 | 704 | 0.3+ | 0.7− | 2006 11 30 | 691 | 0.1+ | 0.3− |
| 1999 10 03 | 704 | 1.0− | 0.1+ | 1999 11 04 | 704 | (2.4− | 0.0 ) | 2006 11 30 | 691 | 0.0 | 0.1+ |
| 1999 10 03 | 704 | 0.1+ | 0.3+ | 2001 02 20 | 645 | 0.0 | 0.0 | | | | |
| 1999 10 03 | 704 | 0.0 | 0.3− | 2001 02 20 | 645 | 0.1− | 0.0 | | | | |

**1999 TW$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.11963 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28055163 | $\omega$ | 326.96371 | | +0.65522234 | −0.74948125 | |
| $a$ | 2.3109693 | $\Omega$ | 81.91195 | | +0.71218207 | +0.57104292 | |
| $e$ | 0.2193412 | $i$ | 5.48681 | | +0.25195314 | +0.33494453 | |
| $P$ | 3.51 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 704 | 0.5− | 0.2+ |
| 1999 10 03 | 703 | 0.5+ | 0.6+ | 2006 09 29 | 699 | 0.2− | 0.6+ | 2006 10 22 | 704 | 0.6− | 0.7+ |
| 1999 10 03 | 703 | 0.7+ | 0.4− | 2006 09 29 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.8− | 0.4− |
| 1999 10 03 | 703 | 0.7+ | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.7+ | 2006 10 22 | 703 | 0.3− | 0.5+ |
| 1999 10 09 | 704 | 1.3+ | 0.7+ | 2006 09 29 | 699 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.5− | 0.8− |
| 1999 10 09 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 10 22 | 703 | 0.6− | 0.5− |
| 1999 10 09 | 704 | 0.3− | 1.4− | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 10 28 | 703 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.5− | 2006 10 28 | 703 | 0.4− | 0.6− |
| 1999 10 09 | 704 | 0.4− | 1.3− | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 10 28 | 703 | 0.0 | 0.4+ |
| 1999 10 19 | 704 | 0.7+ | 0.7− | 2006 10 01 | 704 | 0.5+ | 0.3− | 2006 10 28 | 703 | 0.4+ | 0.2+ |
| 1999 10 19 | 704 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.6− | 0.8+ | 2006 11 13 | 703 | 0.2− | 0.4− |
| 1999 10 19 | 704 | 0.5− | 1.0− | 2006 10 01 | 704 | 0.2+ | 1.1+ | 2006 11 13 | 703 | 0.7− | 0.6− |
| 1999 10 19 | 704 | 0.7+ | 1.1− | 2006 10 01 | 704 | 1.0− | 0.3− | 2006 11 13 | 703 | 0.5− | 0.1− |
| 1999 10 19 | 704 | 0.4+ | 0.8− | 2006 10 15 | 461 | 0.1+ | 0.0 | 2006 11 13 | 703 | 1.4− | 0.6+ |
| 1999 10 30 | 703 | 0.1− | 0.0 | 2006 10 16 | 461 | 0.8+ | 0.1− | 2006 11 14 | 704 | 0.5+ | 0.2+ |
| 1999 10 30 | 703 | 0.5− | 0.7− | 2006 10 16 | 461 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.5+ | 0.5+ |
| 1999 10 30 | 703 | 0.6+ | 0.1− | 2006 10 16 | 461 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 1999 10 30 | 703 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.5+ | 2006 11 14 | 704 | 0.2+ | 0.7+ |
| 1999 11 05 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.8+ | 2006 11 14 | 704 | (2.3− | 2.3+) |
| 1999 11 05 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.8+ | 2006 11 17 | 704 | 0.6+ | 1.0+ |
| 1999 11 05 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.7+ | 0.9+ |
| 1999 11 05 | 704 | 1.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.1+ | 1.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.7− | 0.3− |
| 2002 07 12 | 644 | 0.0 | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 1.0+ | 0.1+ |
| 2002 07 12 | 644 | 0.4− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2002 07 12 | 644 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2002 07 12 | 644 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2002 07 12 | 644 | 0.5+ | 0.8+ | 2006 10 22 | 704 | 0.6− | 1.2+ | 2006 11 20 | 704 | 0.7− | 0.7+ |
| 2006 09 20 | 644 | 0.4+ | 0.7− | 2006 10 22 | 704 | 1.0− | 0.1− | | | | |
| 2006 09 20 | 644 | 0.4+ | 0.2− | 2006 10 22 | 704 | 0.2− | 0.7− | | | | |

### 1999 TN$_{294}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.77865 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25648383 | $\omega$ | 127.10381 | | +0.59872442 | | +0.80095461 |
| $a$ | 2.4533682 | $\Omega$ | 179.67086 | | −0.77509277 | | +0.57967064 |
| $e$ | 0.2078709 | $i$ | 8.87774 | | −0.20189170 | | +0.14984548 |
| $P$ | 3.84 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.2− | 0.7− | 1999 10 08 | 691 | 0.2− | 0.6+ | 2003 10 29 | 699 | 0.3− | 0.8+ |
| 1999 09 14 | 704 | 0.4− | 0.8− | 2003 09 19 | 691 | 0.2− | 0.1− | 2003 10 29 | 699 | 0.2+ | 1.4− |
| 1999 09 14 | 704 | 0.1+ | 1.6− | 2003 09 19 | 691 | 0.2− | 0.0 | 2003 10 29 | 699 | 0.0 | 0.8− |
| 1999 09 14 | 704 | 0.4− | 0.2− | 2003 09 19 | 691 | 0.3− | 0.1− | 2003 11 20 | 645 | 0.1+ | 0.1+ |
| 1999 09 14 | 704 | 0.1− | 0.3+ | 2003 10 20 | 704 | 0.3− | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.0 |
| 1999 10 01 | 691 | 0.2+ | 0.1− | 2003 10 20 | 704 | 0.1− | 1.3+ | 2006 04 21 | 691 | 0.1− | 0.1+ |
| 1999 10 01 | 691 | 0.1+ | 0.2− | 2003 10 20 | 704 | 1.2− | 0.4+ | 2006 04 21 | 691 | 0.1+ | 0.1+ |
| 1999 10 01 | 691 | 0.3+ | 0.4− | 2003 10 20 | 704 | 0.0 | 0.4+ | 2006 04 21 | 691 | 0.1+ | 0.3+ |
| 1999 10 08 | 691 | 0.3− | 0.5+ | 2003 10 20 | 704 | 0.1− | 0.3+ | | | | |
| 1999 10 08 | 691 | 0.0 | 0.6+ | 2003 10 29 | 699 | 1.6+ | 0.3− | | | | |

### 1999 TV$_{317}$ = 2006 SF$_{214}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.48914 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28261479 | $\omega$ | 324.35372 | | −0.94776964 | | −0.31749643 |
| $a$ | 2.2997085 | $\Omega$ | 197.21193 | | +0.31128268 | | −0.89990651 |
| $e$ | 0.0343113 | $i$ | 5.91128 | | +0.06953993 | | −0.29893859 |
| $P$ | 3.49 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.0 | 1.1− | 1999 11 01 | 691 | 0.5+ | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 1992 10 01 | 691 | 0.2− | 0.0 | 1999 11 01 | 691 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.6− | 0.5− |
| 1992 10 01 | 691 | 0.1− | 0.5− | 1999 11 01 | 691 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 1999 10 12 | 691 | 0.1− | 0.4+ | 2005 04 16 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.4− | 0.5− |
| 1999 10 12 | 691 | 0.1+ | 0.0 | 2005 04 16 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.4− | 0.0 |
| 1999 10 12 | 691 | 0.1+ | 0.1− | 2005 04 16 | 691 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 1999 10 19 | 691 | 0.2+ | 0.2+ | 2005 05 04 | 691 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 1999 10 19 | 691 | 0.1− | 0.3+ | 2005 05 04 | 691 | 0.1+ | 0.0 | | | | |
| 1999 10 19 | 691 | 0.0 | 0.1− | 2005 05 04 | 691 | 0.1+ | 0.2+ | | | | |

### 1999 TL$_{321}$ = 2006 ST$_{159}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.23929 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28521389 | $\omega$ | 124.63662 | | −0.99237876 | | −0.11536263 |
| $a$ | 2.2857160 | $\Omega$ | 48.77975 | | +0.08552203 | | −0.89784356 |
| $e$ | 0.0946629 | $i$ | 3.30096 | | +0.08871513 | | −0.42493340 |
| $P$ | 3.46 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 691 | 0.0 | 0.4− | 2001 03 18 | 699 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 1999 10 12 | 691 | 0.2+ | 0.2− | 2001 03 18 | 699 | 0.9+ | 0.3− | 2006 10 01 | 691 | 0.2− | 0.4+ |
| 1999 10 12 | 691 | 0.0 | 0.4− | 2001 03 18 | 699 | 0.1+ | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.5+ |
| 1999 10 20 | 691 | 0.5+ | 0.1− | 2001 03 18 | 699 | 0.9− | 1.2− | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 1999 10 20 | 691 | 0.2+ | 0.2− | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.5+ | 0.1+ |
| 1999 10 20 | 691 | 0.1+ | 0.3− | 2006 09 23 | 691 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 1999 11 10 | 691 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 1999 11 10 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 1999 11 10 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3+ | | | | |

### 1999 UY$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.58623 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28019721 | $\omega$ | 29.19892 | | +0.41814935 | | −0.90604763 |
| $a$ | 2.3129177 | $\Omega$ | 36.19374 | | +0.81059237 | | +0.33986782 |
| $e$ | 0.2398126 | $i$ | 6.32239 | | +0.40998918 | | +0.25212608 |
| $P$ | 3.52 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.7+ | 0.6+ | 1999 11 14 | 703 | 0.9− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 1999 10 07 | 691 | 0.3+ | 0.4+ | 1999 11 14 | 704 | 0.3− | 0.5+ | 2006 11 13 | 683 | 0.1+ | 1.5+ |
| 1999 10 07 | 691 | 0.2+ | 0.4+ | 1999 11 14 | 703 | 1.2− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 1999 10 13 | 691 | 0.4− | 0.1− | 1999 11 14 | 703 | 0.5− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 1999 10 13 | 691 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 1999 10 13 | 691 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 13 | 683 | 0.0 | 0.4+ |
| 1999 10 21 | 704 | 0.3+ | 0.6− | 2006 10 19 | 644 | 0.4+ | 0.3− | 2006 11 14 | 683 | 0.3− | 1.2− |
| 1999 10 21 | 704 | 0.1+ | 0.9− | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 14 | 683 | 0.4− | 0.1− |
| 1999 10 21 | 704 | 1.1− | 1.3− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 14 | 683 | 0.8− | 0.1− |
| 1999 10 29 | 691 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.9+ | 0.1− |
| 1999 10 29 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 1999 10 29 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 1999 10 30 | 691 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 1999 10 30 | 691 | 0.6− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 1999 10 30 | 691 | 1.1− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1999 11 04 | 704 | 0.9+ | 1.7− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 1.4− | 0.1− |
| 1999 11 04 | 704 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 1.0− | 0.2− |
| 1999 11 04 | 704 | 0.2+ | 0.9− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.6− | 0.5− |
| 1999 11 04 | 704 | 0.4+ | 0.9− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.5− |
| 1999 11 04 | 704 | 0.1− | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 1999 11 10 | 691 | 1.0+ | 0.8+ | 2006 10 28 | 704 | 1.1+ | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 1999 11 10 | 691 | 1.1+ | 0.6+ | 2006 10 28 | 704 | 0.3+ | 1.1+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 1999 11 10 | 691 | 1.3+ | 0.5+ | 2006 10 28 | 704 | 0.1− | 1.0+ | 2006 11 18 | 704 | 0.0 | 0.2− |
| 1999 11 11 | 703 | 1.1− | 1.1+ | 2006 10 28 | 704 | 0.6+ | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 1999 11 11 | 703 | 0.4− | 0.4+ | 2006 11 11 | 683 | 0.6− | 0.8− | 2006 11 21 | 704 | 0.8+ | 0.2− |
| 1999 11 11 | 703 | 0.3+ | 1.0− | 2006 11 11 | 683 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 1999 11 11 | 703 | 1.4− | 0.5− | 2006 11 11 | 683 | 0.0 | 0.4− | 2006 11 21 | 704 | 1.1− | 0.5− |
| 1999 11 14 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.5− | 2006 11 21 | 704 | 1.0+ | 0.3+ |
| 1999 11 14 | 704 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.9− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 1999 11 14 | 703 | 1.3− | 0.7+ | 2006 11 11 | 703 | 0.3+ | 0.9− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1999 11 14 | 704 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.5− | 0.6+ |
| 1999 11 14 | 704 | 0.0 | 0.4+ | 2006 11 13 | 683 | 0.4− | 0.0 | | | | |

### 1999 UX$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.25299 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28557553 | $\omega$ | 140.97646 | | +0.67066050 | | −0.63930476 |
| $a$ | 2.2837859 | $\Omega$ | 263.19469 | | +0.54952483 | | +0.76885101 |
| $e$ | 0.2679522 | $i$ | 22.26180 | | +0.49823384 | | +0.01255178 |
| $P$ | 3.45 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 704 | 0.2+ | 0.0 | 1999 12 11 | 704 | 0.2− | 0.1+ | 2000 01 04 | 704 | 0.7+ | 0.0 |
| 1999 10 31 | 704 | 0.6+ | 0.1+ | 1999 12 11 | 704 | 0.2− | 0.3+ | 2000 01 04 | 704 | 0.4+ | 0.3+ |
| 1999 10 31 | 704 | 0.3− | 0.0 | 1999 12 12 | 704 | 0.1+ | 0.5+ | 2000 01 04 | 704 | 0.6+ | 0.5+ |
| 1999 10 31 | 704 | 1.0− | 0.2− | 1999 12 12 | 704 | 0.2+ | 0.0 | 2000 01 04 | 704 | 0.6+ | 0.7+ |
| 1999 10 31 | 704 | 0.1− | 0.6− | 1999 12 12 | 704 | 0.0 | 0.3+ | 2000 01 30 | 704 | 0.6− | 0.0 |
| 1999 11 01 | 704 | 0.0 | 0.1+ | 1999 12 12 | 704 | 0.2+ | 0.6+ | 2000 01 30 | 704 | 1.6− | 0.4+ |
| 1999 11 01 | 704 | 0.3− | 0.1+ | 1999 12 12 | 704 | 0.1+ | 0.5+ | 2000 01 30 | 704 | 0.7− | 0.2− |
| 1999 11 01 | 704 | 0.1− | 0.0 | 1999 12 13 | 704 | 0.3− | 0.2+ | 2000 01 30 | 704 | 0.1− | 0.8− |
| 1999 11 01 | 704 | 0.2− | 0.2+ | 1999 12 13 | 704 | 0.9− | 0.4− | 2006 11 03 | 130 | 0.4− | 0.2+ |
| 1999 11 01 | 704 | 0.1+ | 0.5+ | 1999 12 13 | 704 | 0.3− | 0.1+ | 2006 11 03 | 130 | 0.3− | 0.2+ |
| 1999 11 01 | 704 | 0.4− | 0.2− | 1999 12 13 | 704 | 0.2+ | 0.5+ | 2006 11 03 | 130 | 0.4− | 0.1+ |
| 1999 11 01 | 704 | 0.1+ | 0.6+ | 1999 12 13 | 704 | 0.3+ | 0.2− | 2006 11 03 | 130 | 0.5− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.7− | 0.4+ | 2000 01 03 | 704 | 0.3+ | 0.6+ | 2006 11 29 | 704 | 0.5− | 0.1− |
| 1999 11 01 | 704 | 0.7+ | 1.3− | 2000 01 03 | 704 | 0.4+ | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.5− |
| 1999 11 01 | 704 | 0.0 | 1.4− | 2000 01 03 | 704 | 0.6+ | 1.5− | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 1999 12 11 | 704 | 0.2+ | 0.4+ | 2000 01 03 | 704 | 0.4+ | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.9− |
| 1999 12 11 | 704 | 0.5− | 0.6+ | 2000 01 04 | 704 | 1.0+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.5− |

**1999 US$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.95165 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28240310 | $\omega$ | 264.58507 | | +0.75534642 | | +0.65413444 |
| $a$ | 2.3008576 | $\Omega$ | 54.55403 | | −0.58041799 | | +0.69577069 |
| $e$ | 0.2450802 | $i$ | 2.77886 | | −0.30424782 | | +0.29666696 |
| $P$ | 3.49 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 29 | 691 | 0.1+ | 0.2− | 2005 05 09 | G96 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1999 10 29 | 691 | 0.2+ | 0.2− | 2005 05 09 | G96 | 0.0 | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1999 10 29 | 691 | 0.3+ | 0.0 | 2005 05 09 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 1999 11 03 | 691 | 0.3− | 0.4+ | 2005 05 09 | G96 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1999 11 03 | 691 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.1+ |
| 1999 11 03 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 1999 11 17 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.4+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 1999 11 17 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 21 | G96 | 0.1− | 0.3+ |
| 1999 11 17 | 691 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 1999 11 29 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.0 | 0.4+ |
| 1999 11 29 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.3− | | | | |
| 1999 11 29 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.3+ | | | | |

**1999 UQ$_{18}$ = 2006 KH$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.59175 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23447225 | $\omega$ | 33.37656 | | −0.03173955 | | −0.99721898 |
| $a$ | 2.6046042 | $\Omega$ | 58.52648 | | +0.89884968 | | −0.05798255 |
| $e$ | 0.1382113 | $i$ | 4.53467 | | +0.43710622 | | +0.04682230 |
| $P$ | 4.20 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.1− | 0.0 | 1999 11 04 | 691 | 0.1+ | 0.3+ | 2006 05 25 | 568 | 0.0 | 0.1− |
| 1999 10 30 | 691 | 0.3− | 0.1− | 1999 11 10 | 691 | 0.0 | 0.1+ | 2006 05 25 | 568 | 0.1+ | 0.1− |
| 1999 10 30 | 691 | 0.1+ | 0.1+ | 1999 11 10 | 691 | 0.1− | 0.0 | 2006 05 26 | 568 | 0.1− | 0.2+ |
| 1999 11 04 | 691 | 0.4+ | 0.4− | 1999 11 10 | 691 | 0.2− | 0.1− | | | | |
| 1999 11 04 | 691 | 0.1+ | 0.0 | 2006 05 25 | 568 | 0.0 | 0.0 | | | | |

**1999 UP$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.18681 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25790649 | $\omega$ | 198.73295 | | +0.35103838 | | +0.93578714 |
| $a$ | 2.4443377 | $\Omega$ | 91.82845 | | −0.85485045 | | +0.33456940 |
| $e$ | 0.0735735 | $i$ | 1.87942 | | −0.38210307 | | +0.11120139 |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.3− | 0.2− | 1999 11 10 | 691 | 0.1− | 0.3− | 2005 02 09 | 691 | 0.2+ | 0.2+ |
| 1999 10 31 | 691 | 0.2+ | 0.1− | 2003 11 19 | 691 | 0.1+ | 0.1+ | 2005 02 09 | 691 | 0.1− | 0.2+ |
| 1999 10 31 | 691 | 0.1+ | 0.1+ | 2003 11 19 | 691 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.4− | 0.4− |
| 1999 11 04 | 691 | 0.7− | 0.7+ | 2003 11 19 | 691 | 0.1− | 0.0 | 2005 03 10 | G96 | 0.4− | 0.4− |
| 1999 11 04 | 691 | 0.2+ | 0.1+ | 2005 02 01 | 691 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.4− | 0.4− |
| 1999 11 04 | 691 | 0.3+ | 0.1− | 2005 02 01 | 691 | 0.2+ | 0.2+ | 2005 03 10 | G96 | 0.8− | 0.2− |
| 1999 11 10 | 691 | 0.2+ | 0.0 | 2005 02 01 | 691 | 0.0 | 0.1− | | | | |
| 1999 11 10 | 691 | 0.1+ | 0.2− | 2005 02 09 | 691 | 0.1+ | 0.1− | | | | |

**1999 UP$_{30}$ = 2006 SG$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.64831 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28184708 | $\omega$ | 266.41380 | | +0.53945257 | | +0.83877945 |
| $a$ | 2.3038827 | $\Omega$ | 36.54455 | | −0.71498812 | | +0.50257402 |
| $e$ | 0.2107410 | $i$ | 7.11530 | | −0.44472791 | | +0.20944779 |
| $P$ | 3.50 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 20 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.5− | 2006 10 01 | 291 | 0.1− | 0.3+ |
| 1999 10 20 | 691 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.5+ | 0.4− | 2006 10 02 | 291 | 0.2+ | 0.4+ |
| 1999 10 20 | 691 | 0.0 | 0.0 | 2006 09 28 | 291 | 0.4− | 0.2− | 2006 10 02 | 291 | 0.1− | 0.2+ |
| 1999 10 31 | 691 | 0.0 | 0.1− | 2006 09 28 | 291 | 0.0 | 0.2− | 2006 10 02 | 291 | 0.2− | 0.2+ |
| 1999 10 31 | 691 | 0.3+ | 0.0 | 2006 09 28 | 291 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 1999 10 31 | 691 | 0.3− | 0.4− | 2006 09 30 | 291 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 1999 11 05 | 691 | 0.5+ | 0.2+ | 2006 09 30 | 291 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.2+ |
| 1999 11 05 | 691 | 0.1− | 0.3+ | 2006 09 30 | 291 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.2+ |
| 1999 11 05 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.3− | 0.2+ |
| 1999 11 12 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.2+ |
| 1999 11 12 | 691 | 0.1+ | 0.1− | 2006 10 01 | 291 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.5− | 0.0 |
| 1999 11 12 | 691 | 0.3− | 0.4+ | 2006 10 01 | 291 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.4− | 0.3+ |
| 2006 09 27 | 691 | 0.3+ | 0.4− | 2006 10 01 | 691 | 0.3− | 0.3+ | | | | |

**1999 UR$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.88579 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27144443 | $\omega$ | 27.46842 | | +0.08661241 | | −0.99547943 |
| $a$ | 2.3623746 | $\Omega$ | 57.58671 | | +0.90535480 | | +0.06232532 |
| $e$ | 0.2090446 | $i$ | 2.64610 | | +0.41572946 | | +0.07166763 |
| $P$ | 3.63 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.2+ | 0.2− | 1999 11 11 | 691 | 0.1− | 0.2+ | 2003 12 29 | 691 | 0.1− | 0.2− |
| 1999 10 31 | 691 | 0.2+ | 0.1+ | 1999 11 11 | 691 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.1− | 0.5+ |
| 1999 10 31 | 691 | 0.0 | 0.2− | 2003 12 22 | 704 | 0.1+ | 0.5+ | 2004 01 22 | 704 | 0.4+ | 0.6− |
| 1999 11 05 | 691 | 0.3− | 0.2+ | 2003 12 22 | 704 | 0.3+ | 0.2+ | 2004 01 22 | 704 | 0.1+ | 0.3+ |
| 1999 11 05 | 691 | 0.3− | 0.2− | 2003 12 22 | 704 | 0.4+ | 0.4+ | 2004 01 22 | 704 | 0.2− | 1.5+ |
| 1999 11 05 | 691 | 0.1− | 0.1+ | 2003 12 29 | 691 | 0.0 | 0.3− | | | | |
| 1999 11 11 | 691 | 0.2+ | 0.1+ | 2003 12 29 | 691 | 0.0 | 0.3− | | | | |

**1999 US$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.31631 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18825959 | $\omega$ | 46.90579 | | +0.73344034 | | +0.67967131 |
| $a$ | 3.0150740 | $\Omega$ | 270.27325 | | −0.62669799 | | +0.67007750 |
| $e$ | 0.0950009 | $i$ | 0.60684 | | −0.26327723 | | +0.29840083 |
| $P$ | 5.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.1+ | 2000 12 31 | 691 | 0.1− | 0.1+ | 2004 09 22 | 704 | 1.3− | 0.7− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2002 04 03 | 691 | 0.1− | 0.5+ | 2004 09 22 | 704 | 0.3+ | 0.9+ |
| 1999 10 31 | 691 | 0.1− | 0.3− | 2002 04 03 | 691 | 0.3+ | 0.0 | 2004 09 22 | 704 | 0.6− | 1.0+ |
| 1999 10 31 | 691 | 0.0 | 0.1− | 2002 04 03 | 691 | 0.2+ | 0.3+ | 2004 10 05 | 699 | 0.9+ | 0.4+ |
| 1999 10 31 | 691 | 0.1− | 0.3− | 2004 09 17 | 704 | 0.3− | 1.4+ | 2004 10 05 | 699 | 1.5+ | 0.1+ |
| 1999 11 05 | 691 | 0.2+ | 0.2− | 2004 09 17 | 704 | 1.3− | 0.6+ | 2004 10 05 | 699 | 1.6+ | 1.3− |
| 1999 11 05 | 691 | 0.2+ | 0.1+ | 2004 09 17 | 704 | 0.0 | 1.4+ | 2004 10 05 | 699 | 1.2− | 0.8+ |
| 1999 11 05 | 691 | 0.2+ | 0.0 | 2004 09 17 | 704 | 0.4− | 0.6− | 2004 10 15 | 691 | 0.4− | 0.2+ |
| 2000 12 31 | 691 | 0.1+ | 0.3− | 2004 09 22 | 704 | 0.9+ | 0.1+ | 2004 10 15 | 691 | 0.2+ | 0.0 |
| 2000 12 31 | 691 | 0.0 | 0.3+ | 2004 09 22 | 704 | 0.0 | 0.9− | 2004 10 15 | 691 | 0.3− | 0.3+ |

**1999 UF$_{34}$ = 2006 TU$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.89348 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27535936 | $\omega$ | 266.49279 | +0.59291687 | | +0.80447435 | |
| $a$ | 2.3399298 | $\Omega$ | 39.94185 | −0.71501945 | | +0.54631491 | |
| $e$ | 0.2131603 | $i$ | 3.18280 | −0.37040082 | | +0.23315453 | |
| $P$ | 3.58 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.1+ | 0.1− | 1999 11 12 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 1999 10 31 | 691 | 0.1+ | 0.1+ | 1999 11 12 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | (2.9+ | 2.0+) |
| 1999 10 31 | 691 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 16 | G96 | (3.8+ | 2.3+) |
| 1999 11 05 | 691 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 11 16 | G96 | (3.5+ | 2.1+) |
| 1999 11 05 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | (3.2+ | 2.2+) |
| 1999 11 05 | 691 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 | | | | |
| 1999 11 12 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 | | | | |

**1999 UR$_{37}$ = 2006 DU$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.87573 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21408403 | $\omega$ | 323.33162 | −0.86588645 | | −0.49965520 | |
| $a$ | 2.7674505 | $\Omega$ | 186.82318 | +0.49356684 | | −0.84546113 | |
| $e$ | 0.0786048 | $i$ | 11.74988 | +0.08143971 | | −0.18852095 | |
| $P$ | 4.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 05 | 566 | 0.7− | 0.2− | 1999 10 17 | 691 | 0.0 | 0.1+ | 2006 02 22 | 699 | 0.7+ | 0.3+ |
| 1997 04 05 | 566 | 0.3+ | 0.7− | 1999 10 17 | 691 | 0.4+ | 0.0 | 2006 02 22 | 699 | 0.1+ | 0.2+ |
| 1997 04 05 | 566 | 0.1+ | 0.6− | 2002 03 13 | 291 | 0.0 | 0.0 | 2006 02 22 | 699 | 0.4− | 0.6− |
| 1999 10 12 | 691 | 0.1− | 0.0 | 2002 03 13 | 291 | 0.3+ | 0.3+ | 2006 02 26 | 704 | 1.0+ | 0.1+ |
| 1999 10 12 | 691 | 0.1− | 0.1− | 2002 03 13 | 291 | 0.2− | 0.1+ | 2006 02 26 | 704 | (2.2+ | 0.6+) |
| 1999 10 12 | 691 | 0.1+ | 0.2− | 2006 02 06 | 703 | 0.8− | 0.3− | 2006 02 26 | 704 | 1.4+ | 0.8+ |
| 1999 10 16 | 691 | 0.6− | 0.1+ | 2006 02 06 | 703 | 0.3+ | 0.1− | 2006 03 03 | 704 | 1.3+ | 0.1− |
| 1999 10 16 | 691 | 0.0 | 0.1+ | 2006 02 06 | 703 | 0.6− | 0.2+ | 2006 03 03 | 704 | 0.6− | 0.2− |
| 1999 10 16 | 691 | 0.2− | 0.1+ | 2006 02 06 | 703 | 2.2− | 1.1+ | 2006 03 03 | 704 | 0.3+ | 0.7+ |
| 1999 10 17 | 691 | 0.4+ | 0.1+ | 2006 02 22 | 699 | 0.4− | 0.4− | 2006 03 03 | 704 | 0.2− | 0.4− |

**1999 UG$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.47467 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23942503 | $\omega$ | 90.33642 | +0.72252613 | | −0.69072016 | |
| $a$ | 2.5685598 | $\Omega$ | 313.35100 | +0.61715601 | | +0.66354586 | |
| $e$ | 0.2678050 | $i$ | 2.31354 | +0.31156775 | | +0.28742399 | |
| $P$ | 4.12 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1+ | 0.6+ | 1999 10 15 | 704 | 0.3+ | 0.8− | 2003 09 27 | 691 | 0.1+ | 0.3+ |
| 1999 10 10 | 704 | 0.3− | 0.1− | 1999 10 15 | 704 | 0.2+ | 0.3− | 2003 09 27 | 691 | 0.0 | 0.5+ |
| 1999 10 10 | 704 | 0.9− | 0.3− | 1999 10 16 | 704 | 1.1+ | 0.8− | 2003 09 27 | 691 | 0.1+ | 0.3+ |
| 1999 10 10 | 704 | 0.3− | 1.1+ | 1999 10 16 | 704 | 0.4+ | 0.8− | 2003 10 19 | 645 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.0 | 0.3+ | 1999 10 16 | 704 | 0.4− | 0.5− | 2003 10 19 | 645 | 0.0 | 0.0 |
| 1999 10 11 | 691 | 0.1+ | 0.0 | 1999 10 16 | 704 | 0.4− | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 |
| 1999 10 11 | 691 | 0.1− | 0.1+ | 1999 10 16 | 704 | 0.2+ | 1.1− | 2003 10 23 | 645 | 0.0 | 0.1− |
| 1999 10 11 | 691 | 0.1+ | 0.1− | 1999 10 18 | 691 | 0.1+ | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 1999 10 13 | 645 | 0.0 | 0.0 | 1999 10 18 | 691 | 0.3− | 0.1− | 2003 10 24 | 645 | 0.1− | 0.1− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 1999 10 18 | 691 | 0.3− | 0.1+ | 2003 11 19 | 645 | 0.0 | 0.2+ |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2003 09 22 | 699 | 0.8+ | 1.7− | 2003 11 19 | 645 | 0.0 | 0.1+ |
| 1999 10 14 | 645 | 0.2+ | 0.0 | 2003 09 22 | 699 | 0.4+ | 0.6− | 2003 11 20 | 645 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 0.7− | 0.6− | 2003 09 22 | 699 | 1.5− | 0.5+ | 2003 11 20 | 645 | 0.1− | 0.1+ |
| 1999 10 15 | 704 | 0.2− | 0.1− | 2003 09 22 | 699 | 0.7− | 0.4− | | | | |

**1999 UU$_{40}$ = 2006 VN$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.55281 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.14737609 | $\omega$ | 343.03553 | +0.92167417 | | −0.38185320 | |
| $a$ | 3.5496431 | $\Omega$ | 39.63248 | +0.36726556 | | +0.80177723 | |
| $e$ | 0.0373858 | $i$ | 6.17320 | +0.12503091 | | +0.45971883 | |
| $P$ | 6.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 1999 10 16 | 691 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 1999 10 16 | 691 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 1999 10 20 | 691 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1999 10 20 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.7+ | 0.0 |
| 1999 10 20 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 1999 10 31 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.5− | 0.6− |
| 1999 10 31 | 691 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.4− |
| 1999 10 31 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 1.0+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.5− |

**1999 UF$_{43}$ = 2006 PG$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.60987 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27246353 | $\omega$ | 41.98818 | +0.97704852 | | −0.20868545 | |
| $a$ | 2.3564802 | $\Omega$ | 329.97753 | +0.16554548 | | +0.87013381 | |
| $e$ | 0.2933831 | $i$ | 4.90012 | +0.13405555 | | +0.44644993 | |
| $P$ | 3.62 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 0.1+ | 1999 11 03 | 704 | 1.3− | 0.9− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 1999 10 12 | 704 | 0.1− | 0.4− | 1999 11 03 | 704 | 0.8− | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1999 10 12 | 704 | 0.1− | 0.8+ | 2006 08 14 | 644 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 1999 10 12 | 704 | 0.2− | 0.6− | 2006 08 14 | 644 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 1999 10 12 | 704 | 0.3+ | 0.7+ | 2006 08 14 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 1999 10 28 | 703 | 0.3+ | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 1999 10 28 | 703 | 0.3+ | 0.7− | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 1999 10 28 | 703 | 0.5+ | 0.5− | 2006 08 15 | 644 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 1999 10 28 | 703 | 0.8+ | 1.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.6+ | 0.2− |
| 1999 11 03 | 704 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.1− | 0.1− |

**1999 UG$_{52}$ = 2006 UX$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.89790 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28214231 | $\omega$ | 244.31820 | +0.98020805 | | −0.17584948 | |
| $a$ | 2.3022752 | $\Omega$ | 125.68113 | +0.19640913 | | +0.92138615 | |
| $e$ | 0.1857500 | $i$ | 6.42778 | −0.02481198 | | +0.34658984 | |
| $P$ | 3.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 703 | 0.3+ | 0.4+ | 1999 11 16 | 703 | 0.3− | 1.7+ | 2006 09 30 | 703 | 0.8+ | 0.2+ |
| 1999 10 31 | 703 | 1.1+ | 1.5− | 2003 12 19 | 291 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.3+ | 1.4+ |
| 1999 10 31 | 703 | 0.7− | 0.3+ | 2003 12 19 | 291 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.4− |
| 1999 10 31 | 703 | 1.0− | 0.4− | 2003 12 19 | 291 | 0.7− | 0.3− | 2006 10 16 | 703 | 0.2− | 0.8− |
| 1999 11 06 | 704 | 0.1+ | 1.4− | 2006 09 30 | 699 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.4− |
| 1999 11 06 | 704 | 0.4− | 0.2+ | 2006 09 30 | 699 | 0.7− | 0.7+ | 2006 10 16 | 703 | 1.2− | 0.1− |
| 1999 11 06 | 704 | 0.7+ | 0.2+ | 2006 09 30 | 699 | 0.8+ | 1.0+ | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 1999 11 16 | 703 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.9− |
| 1999 11 16 | 703 | 0.7− | 1.4+ | 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.2− |
| 1999 11 16 | 703 | 0.0 | 0.0 | 2006 09 30 | 699 | 0.8+ | 1.5− | 2006 10 22 | 703 | 0.7+ | 0.8− |

### 1999 UQ$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 244.48840 | | (2000.0) | | | |
| $n$ | 0.23424202 | $\omega$ | 250.21497 | | +0.90602676 | −0.41058517 |
| $a$ | 2.6063107 | $\Omega$ | 133.87051 | | +0.42161995 | +0.85458167 |
| $e$ | 0.1942766 | $i$ | 8.18550 | | +0.03677130 | +0.31797797 |
| $P$ | 4.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.4− | 1.0+ | 2002 05 07 | 291 | 0.1− | 0.1− | 2003 10 01 | 699 | 0.1− | 0.3+ |
| 1999 10 09 | 704 | 0.7− | 0.3− | 2003 08 22 | 608 | 0.1+ | 1.2− | 2003 10 01 | 699 | 0.8− | 0.9+ |
| 1999 10 09 | 704 | 0.4− | 0.4− | 2003 08 22 | 608 | 0.1+ | 1.3− | 2003 10 18 | 699 | 1.7− | 0.2+ |
| 1999 10 09 | 704 | 0.2+ | 0.9− | 2003 08 22 | 608 | 0.0 | 0.9− | 2003 10 18 | 699 | 1.0+ | 0.6+ |
| 1999 10 09 | 704 | 0.4+ | 0.2− | 2003 09 03 | 704 | 0.3− | 0.8+ | 2003 10 18 | 699 | 0.1+ | 0.1+ |
| 1999 10 31 | 703 | 0.1− | 0.8+ | 2003 09 03 | 704 | 0.2− | 0.7+ | 2003 10 18 | 699 | 0.2+ | 0.1+ |
| 1999 10 31 | 703 | 0.3+ | 1.4+ | 2003 09 03 | 704 | 0.0 | 0.2+ | 2003 10 19 | 704 | 0.0 | 1.0− |
| 1999 10 31 | 703 | 0.3− | 0.2+ | 2003 09 03 | 704 | 0.3− | 0.0 | 2003 10 19 | 704 | 0.1+ | 0.2− |
| 1999 10 31 | 703 | 0.9+ | 0.7− | 2003 09 03 | 704 | 0.4+ | 0.2+ | 2003 10 19 | 704 | 0.8− | 0.3+ |
| 1999 11 06 | 704 | 0.7− | 0.6− | 2003 09 18 | 704 | 0.5− | 0.3+ | 2003 10 19 | 704 | 0.2+ | 0.5− |
| 1999 11 06 | 704 | 0.3− | 0.5− | 2003 09 18 | 704 | 0.0 | 0.1+ | 2003 10 19 | 704 | 0.4+ | 0.3+ |
| 1999 11 06 | 704 | 0.4+ | 1.4+ | 2003 09 18 | 704 | 0.6− | 0.3+ | 2003 10 19 | 704 | 0.4+ | 0.0 |
| 1999 11 06 | 704 | 0.2+ | 0.4− | 2003 09 18 | 704 | 0.0 | 0.7− | 2003 10 19 | 704 | 0.5+ | 0.3− |
| 1999 11 06 | 704 | 0.3+ | 0.4− | 2003 09 18 | 704 | 0.4− | 0.1− | 2003 10 19 | 704 | 0.9+ | 0.2− |
| 2002 05 07 | 291 | 0.2+ | 0.2+ | 2003 10 01 | 699 | 0.7+ | 1.0+ | 2003 10 19 | 704 | 0.4+ | 0.0 |
| 2002 05 07 | 291 | 0.0 | 0.1+ | 2003 10 01 | 699 | 0.4+ | 0.3+ | 2003 10 19 | 704 | 0.0 | 0.5− |

### 1999 VF$_3$ = 2006 UJ$_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 126.56978 | | (2000.0) | | | |
| $n$ | 0.27304268 | $\omega$ | 31.05161 | | −0.38949703 | +0.91774087 |
| $a$ | 2.3531468 | $\Omega$ | 216.19002 | | −0.86974011 | −0.39426894 |
| $e$ | 0.0827041 | $i$ | 7.56562 | | −0.30305809 | −0.04799685 |
| $P$ | 3.61 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.2− | 0.1+ | 1999 11 06 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.1− |
| 1999 11 01 | 691 | 0.2− | 0.2+ | 1999 11 06 | 691 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 1999 11 01 | 691 | 0.3− | 0.2+ | 1999 11 09 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.8+ |
| 1999 11 02 | 691 | 0.0 | 0.6− | 1999 11 09 | 691 | 0.6− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.3− |
| 1999 11 02 | 691 | 0.0 | 0.3− | 1999 11 09 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 11 02 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.5− | 0.3− |
| 1999 11 06 | 691 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.0 |

### 1999 VE$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.95094 | | (2000.0) | | | |
| $n$ | 0.28026955 | $\omega$ | 137.38278 | | +0.89862076 | −0.28470214 |
| $a$ | 2.3125197 | $\Omega$ | 242.06184 | | +0.22523630 | +0.95230508 |
| $e$ | 0.2483569 | $i$ | 22.19997 | | +0.37649614 | +0.10981675 |
| $P$ | 3.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.2− | 0.8− | 1999 12 08 | 704 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.2− |
| 1999 10 14 | 704 | 0.2+ | 0.4− | 1999 12 08 | 704 | 0.2+ | 0.4− | 2006 11 14 | 703 | 0.1− | 0.3− |
| 1999 10 14 | 704 | 0.2+ | 0.7− | 1999 12 08 | 704 | 0.6− | 1.0+ | 2006 11 14 | 703 | 0.1− | 0.5− |
| 1999 10 14 | 704 | 0.2+ | 0.7− | 1999 12 13 | 699 | 1.3− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1999 10 14 | 704 | 0.1+ | 0.9− | 1999 12 13 | 699 | 0.8− | 1.1+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 1999 11 02 | 704 | 0.5+ | 0.3− | 1999 12 13 | 699 | 0.7− | 1.8+ | 2006 11 15 | 691 | 0.2+ | 0.5+ |
| 1999 11 02 | 704 | 0.3+ | 0.6+ | 1999 12 14 | 704 | 1.6− | 1.9− | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 1999 11 02 | 704 | 0.2+ | 0.7+ | 1999 12 14 | 704 | 0.2+ | 0.5− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1999 11 02 | 704 | 0.3+ | 0.9+ | 1999 12 14 | 704 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.5− |
| 1999 11 02 | 704 | 0.8+ | 0.2− | 2000 01 07 | 704 | 1.4+ | 0.4− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 1999 11 03 | 704 | 0.3− | 0.5+ | 2000 01 07 | 704 | 1.0+ | 0.5+ | 2006 11 15 | 704 | 0.1+ | 0.3− |
| 1999 11 03 | 704 | 0.1− | 0.3+ | 2000 01 07 | 704 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.4+ | 0.0 |
| 1999 11 03 | 704 | 0.5− | 0.4− | 2000 01 07 | 704 | 0.6+ | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.5− |
| 1999 11 03 | 704 | 0.0 | 0.7+ | 2000 01 11 | 704 | 0.0 | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 1999 11 03 | 704 | 0.9− | 0.4− | 2000 01 11 | 704 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 1999 11 14 | 704 | 0.1− | 0.1− | 2000 01 11 | 704 | 0.9+ | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 1999 11 14 | 704 | 0.2− | 0.1+ | 2000 01 11 | 704 | 0.9+ | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 1999 11 14 | 704 | 0.3− | 0.0 | 2000 01 11 | 704 | 0.3+ | 1.1+ | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 1999 11 14 | 704 | 0.2− | 0.1+ | 2006 10 23 | 703 | 1.2+ | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.5+ |
| 1999 11 14 | 704 | 0.1− | 0.3+ | 2006 10 23 | 703 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.3+ |
| 1999 11 16 | 704 | 0.5− | 0.5− | 2006 10 23 | 703 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 1999 11 16 | 704 | 0.1− | 0.5− | 2006 10 23 | 703 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 1999 11 16 | 704 | 0.1− | 0.4− | 2006 10 29 | 703 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 1999 11 16 | 704 | 0.2+ | 0.1+ | 2006 10 29 | 703 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.2− | 0.1− |
| 1999 11 16 | 704 | 0.3+ | 0.5− | 2006 10 29 | 703 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1999 11 17 | 704 | 0.2− | 0.4− | 2006 11 02 | 703 | 0.5− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 1999 11 17 | 704 | 0.5− | 0.9− | 2006 11 02 | 703 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 1999 11 17 | 704 | 0.5− | 0.3− | 2006 11 02 | 703 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 1999 11 17 | 704 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 1999 11 17 | 704 | 0.2+ | 0.5− | 2006 11 09 | 644 | 0.0 | 0.7− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 1999 12 06 | 704 | (0.8− | 2.1+) | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 1999 12 06 | 704 | 0.8+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 1999 12 06 | 704 | 0.4+ | 0.6− | 2006 11 11 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.2− |
| 1999 12 06 | 704 | (1.0+ | 2.1−) | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 0.2− |
| 1999 12 07 | 704 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 1999 12 07 | 704 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 27 | 704 | 1.4− | 0.4− |
| 1999 12 07 | 704 | 0.1− | 0.0 | 2006 11 11 | 644 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.5− | 0.3− |
| 1999 12 07 | 704 | 0.0 | 0.1− | 2006 11 11 | 644 | 0.0 | 0.1− | 2006 11 27 | 704 | 0.6− | 0.1− |
| 1999 12 08 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.5− | 0.6− |
| 1999 12 08 | 704 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.2− | 2006 11 27 | 704 | 0.4− | 0.3− |

### 1999 VX$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.82226 | | (2000.0) | | | |
| $n$ | 0.25311254 | $\omega$ | 166.89606 | | +0.75737033 | −0.65108599 |
| $a$ | 2.4751049 | $\Omega$ | 233.84046 | | +0.59340587 | +0.71807319 |
| $e$ | 0.2038725 | $i$ | 3.53430 | | +0.27250625 | +0.24588192 |
| $P$ | 3.89 | $H$ | 18.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 02 | 691 | 0.1+ | 0.1− | 1999 11 15 | 691 | 0.0 | 0.3− | 2003 12 01 | 291 | 0.1− | 0.0 |
| 1999 11 02 | 691 | 0.3− | 0.1− | 2003 10 18 | 691 | 0.1+ | 0.3− | 2003 12 01 | 291 | 0.1− | 0.2− |
| 1999 11 02 | 691 | 0.1+ | 0.1+ | 2003 10 18 | 691 | 0.2+ | 0.1− | 2003 12 01 | 291 | 0.3− | 0.0 |
| 1999 11 03 | 691 | 0.1− | 0.6+ | 2003 10 18 | 691 | 0.3− | 0.0 | 2003 12 18 | 691 | 0.2− | 0.3+ |
| 1999 11 03 | 691 | 0.0 | 0.5+ | 2003 11 21 | 704 | (1.1+ | 2.1+) | 2003 12 18 | 691 | 0.1+ | 0.0 |
| 1999 11 03 | 691 | 0.1+ | 0.3+ | 2003 11 21 | 704 | 0.4+ | 0.4+ | 2003 12 18 | 691 | 0.2+ | 0.1+ |
| 1999 11 15 | 691 | 0.2− | 0.6− | 2003 11 21 | 704 | 0.8+ | 0.3− | | | | |
| 1999 11 15 | 691 | 0.3+ | 0.2− | 2003 11 21 | 704 | 0.3+ | 0.3+ | | | | |

### 1999 VW$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.47991 | | (2000.0) | | | |
| $n$ | 0.27472748 | $\omega$ | 152.81551 | | +0.87077704 | −0.48076198 |
| $a$ | 2.3435163 | $\Omega$ | 236.29262 | | +0.42560144 | +0.84194350 |
| $e$ | 0.2924151 | $i$ | 7.11447 | | +0.24619252 | +0.24494706 |
| $P$ | 3.59 | $H$ | 18.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.8− | 0.2+ | 1999 11 12 | 704 | 0.6− | 0.5− | 2006 09 15 | 704 | 0.1+ | 0.8+ |
| 1999 10 13 | 704 | 0.1− | 0.0 | 1999 11 28 | 691 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.6+ | 0.0 |
| 1999 10 13 | 704 | 0.5− | 0.8+ | 1999 11 28 | 691 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.4+ |
| 1999 10 13 | 704 | 1.1+ | 1.1+ | 1999 11 28 | 691 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.4+ | 0.8− |
| 1999 10 13 | 704 | 0.6+ | 0.5+ | 1999 11 30 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.2− | 0.0 |
| 1999 11 03 | 704 | 1.3− | 0.6− | 1999 11 30 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.7+ | 0.2− |
| 1999 11 03 | 704 | 0.2− | 0.3− | 1999 11 30 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 703 | (2.0− | 0.4−) |
| 1999 11 03 | 704 | 0.3− | 1.0− | 1999 12 07 | 704 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.9− | 1.4− |
| 1999 11 09 | 704 | 0.9− | 0.5− | 1999 12 07 | 704 | 0.4− | 0.4− | 2006 09 27 | 703 | 0.9− | 0.2+ |
| 1999 11 09 | 704 | 0.4+ | 0.5− | 1999 12 07 | 704 | 0.4− | 0.5+ | 2006 09 27 | 703 | 0.3− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2+ | 0.5− | 1999 12 07 | 704 | 0.1+ | 0.8− | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.5+ | 1.0− | 2006 09 14 | 703 | 1.3+ | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 1.0+ | 0.4− | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1999 11 12 | 704 | 0.2− | 0.7− | 2006 09 14 | 703 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.5+ | 0.5− |
| 1999 11 12 | 704 | 0.3+ | 1.0+ | 2006 09 14 | 703 | 0.7− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 1999 11 12 | 704 | 0.0 | 0.7− | 2006 09 15 | 704 | 0.6− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.0 |

**1999 VU$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.49313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21189974 | $\omega$ | 217.47776 | | +0.59117440 | | −0.80619065 |
| $a$ | 2.7864362 | $\Omega$ | 196.32570 | | +0.75901701 | | +0.56610148 |
| $e$ | 0.0633186 | $i$ | 4.86990 | | +0.27277464 | | +0.17200509 |
| $P$ | 4.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 0.5+ | 1.3− | 2003 08 02 | 608 | 0.0 | 0.9+ | 2004 11 04 | 703 | 1.8+ | 1.9+ |
| 1999 11 09 | 691 | 0.3− | 0.3− | 2003 08 02 | 608 | 0.3+ | 0.8+ | 2004 11 04 | 703 | 0.3+ | 0.1− |
| 1999 11 09 | 691 | 0.1+ | 0.2− | 2004 10 07 | 691 | 0.3− | 0.0 | 2004 11 04 | 703 | 0.0 | 0.3+ |
| 1999 11 09 | 691 | 0.1− | 0.3− | 2004 10 07 | 691 | 0.4− | 0.1+ | 2004 11 04 | 703 | 0.1+ | 0.1+ |
| 1999 11 11 | 691 | 0.0 | 0.4− | 2004 10 07 | 691 | 0.2+ | 0.1+ | 2004 11 19 | 703 | 0.5+ | 0.3+ |
| 1999 11 11 | 691 | 0.1+ | 0.3− | 2004 10 15 | 691 | 0.0 | 0.2+ | 2004 11 19 | 703 | 0.1− | 0.1+ |
| 1999 11 11 | 691 | 0.0 | 0.5− | 2004 10 15 | 691 | 0.3+ | 0.3+ | 2004 11 19 | 703 | 0.3− | 0.3+ |
| 1999 11 12 | 691 | 0.0 | 0.4− | 2004 10 15 | 691 | 0.0 | 0.1− | 2004 11 19 | 703 | 0.2+ | 0.7+ |
| 1999 11 12 | 691 | 0.1+ | 0.4− | 2004 11 04 | 691 | 0.0 | 0.3+ | 2006 02 06 | 691 | 0.3− | 0.1+ |
| 1999 11 12 | 691 | 0.4+ | 0.2− | 2004 11 04 | 691 | 0.2− | 0.3+ | 2006 02 06 | 691 | 0.2− | 0.3− |
| 2003 08 02 | 608 | 0.2+ | 1.3+ | 2004 11 04 | 691 | 0.1− | 0.2+ | 2006 02 06 | 691 | 0.0 | 0.0 |

**1999 VB$_{40}$ = 2006 US$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.46791 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28561706 | $\omega$ | 38.16506 | | +0.10128724 | | −0.99173801 |
| $a$ | 2.2835645 | $\Omega$ | 46.17491 | | +0.88384597 | | +0.05338109 |
| $e$ | 0.1210645 | $i$ | 6.26404 | | +0.45668063 | | +0.11664551 |
| $P$ | 3.45 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.5− | 1.0− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 1999 11 05 | 691 | 0.6+ | 0.5+ | 2006 10 22 | 691 | 0.6− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 1999 11 05 | 691 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 17 | 703 | (1.1+ | 2.6+) |
| 1999 11 11 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 1.3+ |
| 1999 11 11 | 691 | 0.1− | 0.2− | 2006 11 10 | 291 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.9+ |
| 1999 11 11 | 691 | 0.3+ | 0.0 | 2006 11 10 | 291 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 1999 11 12 | 691 | 0.1− | 0.5− | 2006 11 10 | 291 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 1999 11 12 | 691 | 0.3− | 0.7− | 2006 11 10 | 291 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.5+ | 0.3− |
| 1999 11 12 | 691 | 0.2− | 0.1+ | 2006 11 10 | 291 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.6− |
| 2006 10 17 | G96 | (0.8− | 1.7−) | 2006 11 10 | 291 | 0.4+ | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.5− |
| 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.7− | | | | |
| 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 1.1− | | | | |

**1999 VM$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.05645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28744531 | $\omega$ | 306.52217 | | +0.84811132 | | +0.52802500 |
| $a$ | 2.2738714 | $\Omega$ | 21.70897 | | −0.44064541 | | +0.74862188 |
| $e$ | 0.1398726 | $i$ | 6.76186 | | −0.29417481 | | +0.40094249 |
| $P$ | 3.43 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.9+ | 0.3− | 1999 11 14 | 704 | 0.8+ | 0.2− | 2006 11 11 | 691 | 0.3− | 0.5+ |
| 1999 10 06 | 704 | 0.6+ | 0.4− | 2002 07 06 | 644 | 0.3− | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1999 10 06 | 704 | 1.2+ | 0.3− | 2002 07 06 | 644 | 0.2− | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 0.8+ | 0.0 | 2002 07 06 | 644 | 0.1− | 0.6+ | 2006 11 14 | 703 | (0.8+ | 2.3−) |
| 1999 10 06 | 704 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.9− | 1.0+ |
| 1999 11 04 | 691 | 0.3+ | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.1− | 0.6− |
| 1999 11 04 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.1+ |
| 1999 11 04 | 691 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.2− |
| 1999 11 11 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1999 11 11 | 691 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 1999 11 11 | 691 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 1999 11 13 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 1999 11 13 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.3− | 2006 11 17 | 691 | 0.1− | 0.1− |
| 1999 11 13 | 691 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 1999 11 14 | 704 | 1.0− | 0.2− | 2006 10 31 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.2− |
| 1999 11 14 | 704 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 1999 11 14 | 704 | 0.4+ | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.1− | | | | |

**1999 VT$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.84543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29682121 | $\omega$ | 297.32662 | | +0.86735090 | | −0.49748508 |
| $a$ | 2.2257315 | $\Omega$ | 92.51034 | | +0.46161269 | | +0.79321180 |
| $e$ | 0.1361297 | $i$ | 0.83313 | | +0.18605414 | | +0.35117464 |
| $P$ | 3.32 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1− | 0.6− | 1999 11 09 | 704 | 0.2− | 0.4+ | 2002 07 23 | 644 | 0.2− | 0.5− |
| 1999 10 10 | 704 | 0.3+ | 0.6− | 1999 11 09 | 704 | 0.8+ | 0.3− | 2002 07 23 | 644 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.3− | 0.2+ | 1999 11 09 | 704 | 0.6+ | 0.3− | 2002 08 08 | 644 | 0.2+ | 0.1− |
| 1999 10 10 | 704 | 0.7+ | 0.1+ | 1999 11 09 | 704 | 0.3+ | 0.1− | 2002 08 08 | 644 | 0.5− | 0.3+ |
| 1999 10 10 | 704 | 0.3+ | 0.1− | 1999 11 12 | 704 | 0.4− | 0.0 | 2002 08 08 | 644 | 0.1+ | 0.4+ |
| 1999 10 29 | 703 | 1.0− | 0.3+ | 1999 11 12 | 704 | 0.4− | 0.1+ | 2002 08 29 | 644 | 0.1− | 0.2− |
| 1999 10 29 | 703 | 0.3− | 0.6+ | 1999 11 12 | 704 | 0.1+ | 0.0 | 2002 08 29 | 644 | 0.1− | 0.3− |
| 1999 10 29 | 703 | 0.3+ | 0.8+ | 1999 11 12 | 704 | 0.6+ | 0.0 | 2002 08 29 | 644 | 0.5+ | 0.4+ |
| 1999 10 29 | 703 | 0.5− | 0.3− | 1999 11 12 | 704 | 0.2+ | 0.7− | 2002 09 15 | 644 | 0.4+ | 0.1− |
| 1999 11 04 | 704 | 0.8− | 0.2− | 1999 11 13 | 691 | 0.2+ | 0.3+ | 2002 09 15 | 644 | 0.3− | 0.0 |
| 1999 11 04 | 704 | 1.0− | 1.5+ | 1999 11 13 | 691 | 0.2− | 0.3− | 2002 09 15 | 644 | 0.3− | 0.1− |
| 1999 11 04 | 704 | 0.7− | 1.0+ | 1999 11 13 | 691 | 0.2+ | 0.5− | | | | |
| 1999 11 09 | 704 | 0.9+ | 0.2+ | 2002 07 23 | 644 | 0.4+ | 0.1+ | | | | |

**1999 VV$_{58}$ = 2006 UO$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.55020 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27816563 | $\omega$ | 178.51322 | | +0.72010130 | | −0.69205174 |
| $a$ | 2.3241656 | $\Omega$ | 225.42015 | | +0.63588292 | | +0.68713911 |
| $e$ | 0.2345249 | $i$ | 4.04025 | | +0.27768151 | | +0.22114303 |
| $P$ | 3.54 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.4− | 0.1+ | 1999 11 17 | 704 | 0.8− | 0.1+ | 2006 10 27 | 691 | 0.5+ | 0.3− |
| 1999 11 01 | 703 | 0.0 | 0.2+ | 1999 11 17 | 704 | 1.2+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 1999 11 01 | 703 | 0.8− | 0.1+ | 1999 12 04 | 703 | 0.5+ | 0.9− | 2006 10 31 | 691 | 0.7+ | 0.6+ |
| 1999 11 01 | 703 | 1.0+ | 0.5+ | 1999 12 04 | 703 | 0.6− | 1.1+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.8+ | 0.2− | 1999 12 04 | 703 | 1.3+ | 0.5+ | 2006 10 31 | 691 | 0.3− | 0.0 |
| 1999 11 04 | 704 | 0.2+ | 0.1− | 1999 12 04 | 703 | 1.5− | 0.5+ | 2006 11 11 | 703 | 0.7+ | 1.0− |
| 1999 11 04 | 704 | 0.1+ | 0.2+ | 2006 10 13 | H06 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.5− |
| 1999 11 04 | 704 | 1.8− | 0.4− | 2006 10 13 | H06 | 0.2− | 0.2+ | 2006 11 11 | 703 | (0.7+ | 1.5−) |
| 1999 11 09 | 704 | 0.5+ | 0.3+ | 2006 10 13 | H06 | 1.0+ | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.1− |
| 1999 11 09 | 704 | 0.2− | 0.2+ | 2006 10 16 | 683 | 0.4− | 1.2− | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 1999 11 09 | 704 | 0.8− | 0.2− | 2006 10 16 | 683 | 0.8+ | 1.0− | 2006 11 13 | 691 | 0.2− | 0.2− |
| 1999 11 09 | 704 | 0.4− | 0.2− | 2006 10 16 | 683 | 0.4− | 0.6− | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 1999 11 09 | 704 | 0.1− | 0.3− | 2006 10 17 | 683 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 1999 11 12 | 704 | 0.4− | 0.1− | 2006 10 17 | 683 | 1.1− | 0.8+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 1999 11 12 | 704 | 0.2+ | 0.5− | 2006 10 17 | 683 | 0.8− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 1999 11 12 | 704 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.5− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 1999 11 12 | 704 | 0.0 | 0.7− | 2006 10 17 | 703 | 0.8− | 0.5− | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 1999 11 12 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.5− | 0.0 | 2006 11 21 | 704 | (0.4+ | 1.8+) |
| 1999 11 14 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.1− | 2006 11 21 | 704 | (1.7− | 0.4−) |
| 1999 11 14 | 704 | 0.4+ | 0.2− | 2006 10 19 | 683 | 0.9+ | 1.0+ | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 1999 11 14 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 683 | 0.8− | 1.1+ | 2006 11 27 | 703 | 1.0− | 0.5+ |
| 1999 11 14 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 683 | (0.4+ | 1.8+) | 2006 11 27 | 703 | 0.5− | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.1+ | 2006 11 27 | 703 | (2.0− | 1.3+) |
| 1999 11 17 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.9− | 0.6− |
| 1999 11 17 | 704 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.2+ | | | | |
| 1999 11 17 | 704 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.0 | | | | |

### 1999 $VD_{59}$ = 2006 $UT_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.15580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27985569 | $\omega$ | 24.39448 | | +0.54184207 | −0.84043454 | |
| $a$ | 2.3147990 | $\Omega$ | 32.79839 | | +0.76844062 | +0.49114464 | |
| $e$ | 0.2010167 | $i$ | 0.92792 | | +0.34044998 | +0.22901252 | |
| $P$ | 3.52 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.3+ | 0.6− | 2006 10 21 | H07 | 0.7+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 1999 11 04 | 704 | 1.1+ | 0.2− | 2006 10 21 | H07 | 1.0+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 1999 11 04 | 704 | 0.6+ | 0.4− | 2006 10 21 | H07 | (1.1+ | 2.4−) | 2006 11 17 | 703 | 0.7− | 0.7+ |
| 1999 11 04 | 704 | 0.9− | 1.4+ | 2006 10 23 | H07 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 1999 11 12 | 704 | 0.9− | 0.2− | 2006 10 23 | H07 | 0.2+ | 0.7− | 2006 11 17 | 703 | 0.2+ | 0.7+ |
| 1999 11 12 | 704 | 0.2− | 0.6− | 2006 10 23 | H07 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 1999 11 12 | 704 | 0.8− | 0.0 | 2006 10 26 | A13 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.7− | 0.2+ |
| 1999 11 12 | 704 | 0.2− | 0.1− | 2006 10 26 | A13 | 0.3− | 0.5− | 2006 11 18 | 704 | 0.0 | 1.4+ |
| 1999 11 12 | 704 | 0.3− | 0.4+ | 2006 10 26 | A13 | 0.5− | 0.5− | 2006 11 18 | 704 | 0.3+ | 0.5− |
| 1999 11 16 | 704 | 0.2+ | 1.5− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 1999 11 16 | 704 | 0.4− | 1.5− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 1999 11 16 | 704 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.9− | 0.0 |
| 1999 11 16 | 704 | 1.1+ | 0.8− | 2006 10 27 | G96 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.9− | 0.3+ |
| 1999 12 07 | 704 | 0.5+ | 0.0 | 2006 10 28 | 704 | 0.8+ | 0.1− | 2006 11 21 | 704 | 0.8− | 0.5+ |
| 1999 12 07 | 704 | 0.9+ | 0.5− | 2006 10 28 | 704 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.6+ | 0.6+ | 2006 10 28 | 704 | 0.6− | 0.3+ | 2006 11 21 | 704 | 0.7− | 1.1+ |
| 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 10 28 | 704 | 0.0 | 0.5+ | 2006 11 22 | G96 | 0.8+ | 0.1− |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3+ | | | | |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.6− | | | | |

### 1999 $VJ_{61}$ = 2006 $SV_{72}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.67461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27937778 | $\omega$ | 287.51038 | | +0.95155804 | +0.30431728 | |
| $a$ | 2.3174381 | $\Omega$ | 54.79389 | | −0.25776360 | +0.86740855 | |
| $e$ | 0.2360132 | $i$ | 3.08072 | | −0.16761631 | +0.39369201 | |
| $P$ | 3.53 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.2− | 0.3− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.5+ |
| 1999 10 10 | 704 | 0.5+ | 0.8− | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 1999 10 10 | 704 | 0.6− | 1.0+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 1999 11 04 | 704 | 1.7− | 0.6+ | 2006 09 26 | 704 | 0.6+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1999 11 04 | 704 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 11 04 | 704 | 1.3+ | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.5+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.1− |
| 1999 11 09 | 704 | 1.1+ | 0.4− | 2006 09 27 | 691 | (0.4− | 1.9+) | 2006 10 22 | 691 | 0.4− | 0.0 |
| 1999 11 09 | 704 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 1999 11 09 | 704 | 0.8+ | 0.7− | 2006 10 01 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1999 11 09 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 1999 11 12 | 704 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 1999 11 12 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 07 | 644 | 0.1− | 0.0 |
| 1999 11 12 | 704 | 1.0− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 0.9− | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5− | 1.6+ |
| 2005 04 11 | G96 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2005 04 11 | G96 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.7− | 2006 11 14 | G96 | 0.5+ | 0.2+ |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.6− | 0.5− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2006 09 19 | 691 | 0.8− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.2− |

### 1999 $VV_{69}$ = 2003 $XF_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.56886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26673698 | $\omega$ | 354.97738 | | +0.76240751 | −0.63927446 | |
| $a$ | 2.3900880 | $\Omega$ | 45.29053 | | +0.59850741 | +0.63769781 | |
| $e$ | 0.0910609 | $i$ | 8.11450 | | +0.24601557 | +0.42973209 | |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 29 | 691 | 0.1− | 0.1− | 1999 11 13 | 691 | 0.1− | 0.4+ | 2005 04 30 | 691 | 0.6+ | 0.4− |
| 1999 10 29 | 691 | 0.5− | 0.3− | 1999 11 13 | 691 | 0.3− | 0.5+ | 2005 04 30 | 691 | 0.4+ | 0.8+ |
| 1999 10 29 | 691 | 0.1− | 0.1− | 1999 11 13 | 691 | 0.0 | 0.3+ | 2005 04 30 | 691 | 0.0 | 0.8+ |
| 1999 11 04 | 704 | 0.1+ | 0.3− | 2003 12 03 | 704 | 0.3+ | 1.1+ | 2005 05 11 | G96 | 0.5− | 0.0 |
| 1999 11 04 | 704 | 0.8− | 0.6+ | 2003 12 03 | 704 | 0.1− | 0.4− | 2005 05 11 | G96 | 0.1− | 0.2− |
| 1999 11 04 | 704 | 0.6− | 1.6− | 2003 12 03 | 704 | 0.3+ | 0.1+ | 2005 05 11 | G96 | 0.3− | 0.0 |
| 1999 11 04 | 704 | 0.3− | 0.6− | 2003 12 17 | 704 | 0.2− | 0.3− | 2005 05 11 | G96 | 0.0 | 0.2+ |
| 1999 11 06 | 691 | 0.2− | 0.2+ | 2003 12 17 | 704 | 0.2− | 0.4+ | 2006 09 20 | 703 | 0.4− | 0.9+ |
| 1999 11 06 | 691 | 0.2− | 0.2+ | 2003 12 17 | 704 | 0.4− | 0.0 | 2006 09 20 | 703 | 0.8− | 0.3+ |
| 1999 11 06 | 691 | 0.2− | 0.4+ | 2003 12 17 | 704 | 0.5+ | 0.6− | 2006 09 20 | 703 | 0.2− | 0.8+ |
| 1999 11 09 | 704 | 0.8+ | 0.4+ | 2005 04 06 | G96 | 0.4− | 0.4− | 2006 09 20 | 703 | 0.1+ | 0.2+ |
| 1999 11 09 | 704 | 0.7+ | 0.5− | 2005 04 06 | G96 | 0.6− | 0.7+ | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 1999 11 09 | 704 | 0.5+ | 0.3− | 2005 04 06 | G96 | 0.6− | 0.6+ | 2006 09 26 | 703 | 0.7+ | 0.8+ |
| 1999 11 12 | 704 | 1.2+ | 0.5+ | 2005 04 06 | G96 | 0.8− | 0.1+ | 2006 09 26 | 703 | 1.0+ | 1.2− |
| 1999 11 12 | 704 | 0.6+ | 1.0+ | 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 1.1− | 0.5− |
| 1999 11 12 | 704 | 0.9+ | 0.9+ | 2005 04 16 | 691 | 0.4+ | 0.4+ | | | | |
| 1999 11 12 | 704 | 0.3+ | 0.2+ | 2005 04 16 | 691 | 0.3+ | 0.4+ | | | | |

### 1999 $VH_{70}$ = 2006 $UH_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.22815 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27954085 | $\omega$ | 15.60269 | | +0.45243516 | −0.88635350 | |
| $a$ | 2.3165368 | $\Omega$ | 47.61097 | | +0.80329559 | +0.35713245 | |
| $e$ | 0.2121324 | $i$ | 7.65510 | | +0.38732237 | +0.29467590 | |
| $P$ | 3.53 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 1.4+ | 0.6+ | 1999 11 15 | 691 | 0.2+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.3+ |
| 1999 11 04 | 704 | 1.3+ | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 1999 11 04 | 704 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 1999 11 09 | 704 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.5+ | 0.4− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 1999 11 09 | 704 | 0.9− | 1.0− | 2006 10 17 | G96 | 0.6+ | 0.7− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 1999 11 09 | 704 | 1.7+ | 1.1+ | 2006 10 21 | 644 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 1999 11 10 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.6+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 1999 11 10 | 691 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.6+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 1999 11 10 | 691 | 0.4− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 1999 11 12 | 704 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.2+ | 0.9+ |
| 1999 11 12 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.0 | 2006 11 25 | 703 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 0.3− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.6+ | 2006 11 25 | 703 | 0.3− | 0.0 |
| 1999 11 12 | 704 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 25 | 703 | 0.8− | 0.4+ |
| 1999 11 12 | 704 | 0.3− | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 1999 11 15 | 691 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 1999 11 15 | 691 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.5− |

### 1999 $VU_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.44973 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27770145 | $\omega$ | 6.28768 | | +0.50075729 | −0.86248315 | |
| $a$ | 2.3267548 | $\Omega$ | 53.68639 | | +0.79014867 | +0.42092443 | |
| $e$ | 0.1995581 | $i$ | 5.21537 | | +0.35342215 | +0.28097232 | |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.2+ | 0.3− | 1999 12 07 | 704 | 0.6− | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.5+ |
| 1999 10 06 | 691 | 0.0 | 0.4− | 1999 12 07 | 704 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.3+ |
| 1999 10 06 | 691 | 0.3+ | 0.4− | 1999 12 07 | 704 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 1999 10 10 | 704 | 1.3+ | 1.2− | 1999 12 07 | 704 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1999 10 10 | 704 | 0.1+ | 0.7+ | 1999 12 08 | 704 | 0.7− | 0.4− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1999 10 10 | 704 | 0.9+ | 0.9+ | 1999 12 08 | 704 | 1.0+ | 0.5+ | 2006 10 21 | G96 | 0.7− | 0.9− |
| 1999 10 10 | 704 | 0.3+ | 0.7+ | 1999 12 08 | 704 | 1.1− | 1.5+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 10 10 | 691 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.9+ | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 10 10 | 691 | 0.4+ | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 10 10 | 691 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.5− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1999 10 17 | 120 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1999 10 17 | 120 | 0.7− | 2.0+ | 2006 09 30 | 703 | 0.2− | 1.0+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 1999 10 17 | 691 | 0.1− | 1.1− | 2006 09 30 | 703 | 0.6+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 1.3+ |
| 1999 10 17 | 691 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 13 | 703 | 1.2− | 0.4− |
| 1999 10 17 | 691 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 13 | 703 | 0.5− | 0.5+ |
| 1999 11 04 | 704 | 0.5− | 0.2− | 2006 10 01 | 704 | 0.7− | 1.1+ | 2006 11 13 | 703 | 0.8− | 0.5+ |
| 1999 11 04 | 704 | 0.4− | 0.8− | 2006 10 01 | 704 | 0.5− | 0.1− | 2006 11 18 | 704 | (3.8+ | 0.5−) |
| 1999 11 04 | 704 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.3− | 0.4+ | 2006 11 18 | G96 | 0.4− | 0.0 |
| 1999 11 04 | 704 | 0.4− | 0.5− | 2006 10 01 | 704 | 1.2+ | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 1999 11 09 | 704 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.1+ | 0.8+ | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 1999 11 09 | 704 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 1999 11 09 | 704 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.3− | 0.0 |
| 1999 11 09 | 704 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | (0.0 | 1.8+) |
| 1999 11 09 | 704 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 1999 11 12 | 704 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.2− |
| 1999 11 12 | 704 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1999 11 12 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 1999 11 12 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.0 |
| 1999 11 16 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.3+ |
| 1999 11 16 | 704 | 0.3+ | 0.5+ | 2006 10 15 | 703 | 1.1− | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.0 |
| 1999 11 16 | 704 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.6− | 0.4+ | 2006 11 20 | G96 | 0.3+ | 0.5− |
| 1999 11 16 | 704 | 0.2− | 0.3− | 2006 10 15 | 703 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 1999 11 16 | 704 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.5− | 1.4+ |
| 1999 12 04 | 703 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | (1.8− | 1.5+) |
| 1999 12 04 | 703 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | (0.1+ | 1.6+) |
| 1999 12 04 | 703 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.8+ | | | | |
| 1999 12 04 | 703 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.3− | | | | |

## 1999 VD$_{76}$ = 2006 UO$_{280}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.17680 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27952441 | $\omega$ | 7.66295 | | −0.91436666 | +0.40473299 | |
| $a$ | 2.3166276 | $\Omega$ | 196.22532 | | −0.37356528 | −0.85395192 | |
| $e$ | 0.0901986 | $i$ | 2.29148 | | −0.15614927 | −0.32704330 | |
| $P$ | 3.53 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.5− | 0.2+ | 1999 11 16 | 691 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 1992 11 26 | 691 | 0.6+ | 0.1− | 1999 11 16 | 691 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 1992 11 26 | 691 | 0.2− | 1.5+ | 2003 12 22 | 691 | 0.1− | 0.5− | 2006 10 28 | G96 | 0.5+ | 0.5− |
| 1999 11 05 | 691 | 0.5+ | 0.5− | 2003 12 22 | 691 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 1999 11 05 | 691 | 0.1+ | 0.0 | 2003 12 22 | 691 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.2− | 0.2− |
| 1999 11 05 | 691 | 0.3− | 0.6+ | 2004 01 27 | 691 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 1999 11 11 | 691 | 0.3− | 1.0− | 2004 01 27 | 691 | 0.4− | 1.2+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 1999 11 11 | 691 | 0.3+ | 0.3+ | 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.5+ | 0.0 |
| 1999 11 11 | 691 | 0.5− | 0.5− | 2006 10 20 | 691 | 0.5− | 0.1+ | | | | |
| 1999 11 16 | 691 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.4− | 0.2+ | | | | |

## 1999 VA$_{78}$ = 1999 TV$_{183}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.40263 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28167269 | $\omega$ | 185.08706 | | +0.67919148 | −0.67883425 | |
| $a$ | 2.3048335 | $\Omega$ | 222.54826 | | +0.68711500 | +0.72174982 | |
| $e$ | 0.2380810 | $i$ | 24.37483 | | +0.25801534 | −0.13513419 | |
| $P$ | 3.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.0 | 0.3+ | 1999 11 04 | 704 | 1.0+ | 0.2+ | 2006 10 02 | 703 | 0.7− | 0.1− |
| 1999 10 12 | 704 | 0.8− | 0.3− | 1999 11 05 | 704 | 0.2− | 0.8+ | 2006 10 02 | 703 | 0.2− | 0.1+ |
| 1999 10 12 | 704 | 0.0 | 0.2+ | 1999 11 05 | 704 | 0.6− | 0.1− | 2006 10 02 | 703 | 0.0 | 1.0− |
| 1999 10 12 | 704 | 0.6+ | 0.5− | 1999 11 05 | 704 | 0.3+ | 0.3+ | 2006 10 02 | 703 | 0.5+ | 0.2+ |
| 1999 10 12 | 704 | 0.1− | 0.0 | 1999 11 05 | 704 | 0.1− | 0.1− | 2006 10 20 | 703 | 0.1+ | 0.3+ |
| 1999 10 13 | 704 | 0.7+ | 1.0− | 2006 09 24 | 699 | 0.5+ | 0.3+ | 2006 10 20 | 703 | 0.3+ | 0.7− |
| 1999 10 13 | 704 | 0.3− | 0.5− | 2006 09 24 | 699 | 0.1+ | 0.1− | 2006 10 20 | 703 | 0.1+ | 0.0 |
| 1999 10 13 | 704 | 0.0 | 0.3− | 2006 09 24 | 699 | 0.1+ | 0.2− | 2006 10 20 | 703 | 0.5− | 0.2− |
| 1999 10 13 | 704 | 0.6− | 0.2+ | 2006 09 24 | 699 | 1.0− | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.2− |
| 1999 10 13 | 704 | 0.2− | 1.6− | 2006 09 25 | 703 | 1.1− | 0.4+ | 2006 11 14 | 703 | 0.5+ | 0.5− |
| 1999 10 31 | 703 | 0.5− | 0.4+ | 2006 09 25 | 703 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.2− |
| 1999 10 31 | 703 | 0.0 | 0.6+ | 2006 09 25 | 703 | 1.2+ | 0.1− | 2006 11 14 | 703 | 1.4− | 0.7− |
| 1999 10 31 | 703 | 0.6+ | 0.9+ | 2006 09 25 | 703 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.4− |
| 1999 10 31 | 703 | 0.1− | 0.4+ | 2006 10 02 | 704 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.4+ | 0.3+ |
| 1999 11 04 | 704 | 0.4− | 0.1+ | 2006 10 02 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 1999 11 04 | 704 | 0.8+ | 0.3+ | 2006 10 02 | 704 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 1999 11 04 | 704 | 0.3+ | 0.3+ | 2006 10 02 | 704 | 1.0+ | 0.6+ | | | | |

## 1999 VW$_{95}$ = 2006 VR$_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.52755 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28813248 | $\omega$ | 322.45807 | | +0.99828045 | −0.00473505 | |
| $a$ | 2.2702547 | $\Omega$ | 37.93964 | | +0.03139727 | +0.88489119 | |
| $e$ | 0.1419059 | $i$ | 5.45301 | | −0.04950098 | +0.46577371 | |
| $P$ | 3.42 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 02 | 703 | 0.3− | 0.3+ | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.4− | 1.2− |
| 1999 11 02 | 703 | 1.1− | 0.7− | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 1999 11 02 | 703 | 0.3− | 0.2− | 2005 05 12 | G96 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 1999 11 02 | 703 | 0.5− | 0.3+ | 2005 05 12 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.3+ |
| 1999 11 09 | 704 | 0.5+ | 1.0+ | 2005 05 12 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | (1.0− | 1.9+) |
| 1999 11 09 | 704 | 0.5+ | 0.3− | 2005 05 12 | G96 | 0.7− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.0 |
| 1999 11 09 | 704 | 0.4− | 0.6− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 1.3+ | 1.0+ |
| 1999 11 09 | 704 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 1999 11 12 | 704 | 1.7+ | 0.7− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 1999 11 12 | 704 | 0.2+ | 0.7− | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.7+ |
| 1999 11 12 | 704 | 0.3+ | 0.8− | 2006 10 17 | G96 | 0.7− | 0.4− | 2006 11 22 | 704 | 0.4− | 0.0 |
| 1999 11 12 | 704 | 0.2+ | 0.8− | 2006 10 17 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.2− |
| 1999 11 12 | 704 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 25 | 691 | 0.1− | 0.2+ |
| 2002 07 06 | 644 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2002 07 06 | 644 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 1.5− | 0.8− | 2006 11 25 | 691 | 0.1+ | 0.4+ |
| 2002 07 06 | 644 | 0.4− | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.2− | 2006 11 27 | 704 | 0.2+ | 0.2+ |
| 2002 07 06 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.0 | 2006 11 27 | 704 | 0.1− | 0.3+ |
| 2002 07 06 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.1− | 2006 11 27 | 704 | 0.8− | 0.2+ |
| 2002 07 06 | 644 | 0.7+ | 1.2+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | | | | |
| 2004 01 28 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.2+ | | | | |

## 1999 VV$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.67708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28108862 | $\omega$ | 10.93053 | | +0.47007868 | −0.88059240 | |
| $a$ | 2.3080252 | $\Omega$ | 51.05846 | | +0.80387668 | +0.39915064 | |
| $e$ | 0.0958951 | $i$ | 4.41385 | | +0.36442874 | +0.25541297 | |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 1.0− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− | | |
| 1999 11 09 | 704 | 0.6− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.3− | | |
| 1999 11 09 | 704 | 0.2− | 0.6+ | 2006 10 24 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | (2.0− | 0.2+) | | |
| 1999 11 12 | 704 | 0.4− | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.7− | | |
| 1999 11 12 | 704 | 0.4− | 0.1− | 2006 10 24 | 644 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 1999 11 12 | 704 | 0.4− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.4− | | |
| 1999 11 12 | 704 | 0.7− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.0 | 0.5− | | |
| 1999 11 12 | 704 | 0.2+ | 0.6− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 1999 11 12 | 691 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.3+ | | |
| 1999 11 12 | 691 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.3+ | | |
| 1999 11 12 | 691 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.8− | | |
| 1999 12 04 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.1− | | |
| 1999 12 04 | 691 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.8− | | |
| 1999 12 04 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.4− | | |
| 1999 12 16 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.6+ | | |
| 1999 12 16 | 691 | 0.4+ | 0.0 | 2006 11 10 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.3− | 1.0+ | | |
| 1999 12 16 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 1.1+ | | |
| 2001 04 14 | 691 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 1.0− | 0.0 | | |
| 2001 04 14 | 691 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.5+ | 2006 11 21 | G96 | 1.0− | 0.7− | | |
| 2001 04 14 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.3+ | | |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2− | | |
| 2004 02 18 | 691 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.6+ | | |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.3+ | | |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 1.3+ | | |
| 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 1.2+ | 1.4+ | | |
| 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.6− | 0.5− | | |
| 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.2− | 0.4− | | |
| 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.9− | 0.1+ | | |
| 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.8− | 2006 11 27 | 703 | 0.7+ | 2.0− | | |
| 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.3− | | | | | | |
| 2006 10 21 | 644 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− | | | | | | |

**1999 VM$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.17995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28277500 | $\omega$ | 98.16638 | | +0.91218639 | −0.40967559 | |
| $a$ | 2.2988398 | $\Omega$ | 286.01845 | | +0.37215705 | +0.83748696 | |
| $e$ | 0.2120833 | $i$ | 0.53949 | | +0.17150836 | +0.36163725 | |
| $P$ | 3.49 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 1.1+ | 0.4− | 1999 12 05 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.7+ | | |
| 1999 11 04 | 704 | 1.0+ | 1.3− | 1999 12 05 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | (0.5− | 1.9+) | | |
| 1999 11 04 | 704 | 1.7− | 0.5− | 1999 12 05 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.2+ | | |
| 1999 11 09 | 704 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 1.5+ | | |
| 1999 11 09 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.2− | | |
| 1999 11 09 | 704 | 0.7− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3− | | |
| 1999 11 12 | 704 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3− | 0.2− | | |
| 1999 11 12 | 704 | 0.3− | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.1+ | | |
| 1999 11 12 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.1+ | | |
| 1999 11 12 | 704 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 1999 11 12 | 704 | 0.0 | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 1999 11 16 | 704 | 0.4− | 0.6− | 2006 11 13 | 644 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 1999 11 16 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.0 | 0.5− | | |
| 1999 11 16 | 704 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2− | 0.4− | | |
| 1999 11 16 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.6− | | |
| 1999 11 16 | 704 | 1.3− | 0.2+ | 2006 11 19 | 704 | (0.5− | 2.2+) | 2006 11 24 | G96 | 0.1+ | 0.5− | | |

**1999 VG$_{104}$ = 2006 SO$_{287}$**

Id. Minor Planet Center, F. Bowman

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.92352 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12442645 | $\omega$ | 106.56527 | | +0.95432684 | +0.27083628 | |
| $a$ | 3.9736923 | $\Omega$ | 237.88089 | | −0.29758173 | +0.89922095 | |
| $e$ | 0.1627869 | $i$ | 8.56434 | | +0.02655948 | +0.34358315 | |
| $P$ | 7.92 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.6− | 0.1+ | 1999 11 29 | 691 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.6+ | 0.0 | | |
| 1999 11 09 | 704 | 0.7− | 0.3+ | 2003 03 31 | 691 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.9− | 0.9− | | |
| 1999 11 09 | 704 | 0.0 | 0.5+ | 2003 03 31 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.9+ | | |
| 1999 11 12 | 704 | 0.2+ | 0.3− | 2003 03 31 | 691 | 0.4− | 0.7+ | 2006 09 29 | 699 | 0.4− | 0.2+ | | |
| 1999 11 12 | 704 | 0.4+ | 0.3+ | 2004 05 19 | 691 | 0.4+ | 0.5− | 2006 10 01 | 704 | 0.5− | 0.9+ | | |
| 1999 11 12 | 704 | 0.1− | 0.3− | 2004 05 19 | 691 | 0.2− | 0.3− | 2006 10 01 | 704 | 0.4− | 0.7+ | | |
| 1999 11 12 | 704 | 0.6+ | 0.3− | 2004 05 19 | 691 | 0.2− | 0.3− | 2006 10 01 | 704 | 0.3− | 0.7+ | | |
| 1999 11 12 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.9− | 2006 10 11 | 644 | 0.4− | 0.2− | | |
| 1999 11 14 | 704 | 0.8− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.4− | | |
| 1999 11 14 | 704 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.6− | 2006 10 11 | 644 | 0.3− | 0.3− | | |
| 1999 11 14 | 704 | 0.4+ | 1.4− | 2006 09 14 | 703 | 0.1− | 0.4− | 2006 11 22 | 291 | 0.5+ | 0.3+ | | |
| 1999 11 14 | 704 | 0.2− | 0.3− | 2006 09 22 | 703 | 0.0 | 0.5+ | 2006 11 22 | 291 | 0.6+ | 0.2+ | | |
| 1999 11 14 | 704 | 0.8+ | 1.6− | 2006 09 22 | 703 | 0.4− | 1.2+ | 2006 11 22 | 291 | 0.3+ | 0.2+ | | |
| 1999 11 29 | 691 | 0.0 | 0.1− | 2006 09 22 | 703 | (1.2− | 1.9+) | | | | | | |
| 1999 11 29 | 691 | 0.0 | 0.0 | 2006 09 22 | 703 | 1.4− | 0.6− | | | | | | |

**1999 VA$_{106}$ = 2006 SL$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.92024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27504834 | $\omega$ | 162.87982 | | +0.79242071 | −0.60904798 | |
| $a$ | 2.3416934 | $\Omega$ | 234.68871 | | +0.55470681 | +0.74244854 | |
| $e$ | 0.2316732 | $i$ | 2.36090 | | +0.25371199 | +0.27898158 | |
| $P$ | 3.58 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | | |
| 1999 11 09 | 704 | 1.2+ | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.7− | 2006 10 12 | 644 | 0.3+ | 0.2− | | |
| 1999 11 09 | 704 | 1.1− | 0.5+ | 2006 09 17 | 703 | 1.0+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 1999 11 09 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.7+ | 0.5+ | 2006 10 12 | 644 | 0.4+ | 0.1+ | | |
| 1999 11 09 | 704 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 1999 11 12 | 704 | 0.6− | 1.1+ | 2006 09 19 | 699 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.6− | | |
| 1999 11 12 | 704 | 0.4+ | 0.0 | 2006 09 19 | 699 | 0.3− | 0.8+ | 2006 10 22 | G96 | 0.2+ | 0.3− | | |
| 1999 11 12 | 704 | 0.6+ | 0.3− | 2006 09 19 | 699 | 0.0 | 1.2− | 2006 10 22 | G96 | 0.0 | 0.5− | | |
| 1999 11 12 | 704 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.7− | | |
| 1999 11 29 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.8− | | |
| 1999 11 29 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.6− | | |
| 1999 11 29 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.7− | | |
| 1999 12 07 | 691 | 0.3+ | 0.2− | 2006 10 01 | 291 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.3− | | |
| 1999 12 07 | 691 | 0.3− | 0.1+ | 2006 10 01 | 291 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 1999 12 07 | 691 | 0.3− | 0.1− | 2006 10 01 | 291 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.1− | | |
| 2006 09 17 | 691 | 1.5− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1− | | | | | | |

**1999 VC$_{106}$ = 2006 UL$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.69410 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28273828 | $\omega$ | 158.14267 | | +0.86531833 | −0.49599407 | |
| $a$ | 2.2990388 | $\Omega$ | 231.79646 | | +0.44518242 | +0.82674557 | |
| $e$ | 0.2196036 | $i$ | 5.27232 | | +0.23029720 | +0.26548377 | |
| $P$ | 3.49 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.4− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2+ | | |
| 1999 11 09 | 704 | 1.0− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 1999 11 09 | 704 | 0.9+ | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.6+ | | |
| 1999 11 09 | 704 | 1.5− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.4− | 0.0 | | |
| 1999 11 09 | 704 | 0.1− | 0.9− | 2006 10 31 | G96 | 0.5− | 0.1− | 2006 11 19 | 691 | 0.7− | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 0.6− | 0.8− | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | (1.1+ | 2.3+) |
| 1999 11 12 | 704 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.3− | 2006 11 21 | 704 | (1.1+ | 2.7+) |
| 1999 11 12 | 704 | 0.7+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 1999 11 12 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | (1.2+ | 1.6+) |
| 1999 11 17 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.7+ | 2006 11 21 | 704 | 0.9+ | 0.7+ |
| 1999 11 17 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.2+ | 2006 11 27 | 703 | 0.2− | 0.7+ |
| 1999 11 17 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1+ | 2006 11 27 | 703 | 1.0− | 1.0− |
| 1999 11 30 | 691 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.2− | 0.0 |
| 1999 11 30 | 691 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.7+ | 0.1− | 2006 11 27 | 703 | 0.0 | 0.4− |
| 1999 11 30 | 691 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.2− | 2006 11 29 | 704 | (1.7+ | 0.2−) |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.3− |
| 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 1.1+ | 1.1− |
| 2006 09 27 | G96 | 0.7+ | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.4− | 2006 11 29 | 704 | 1.2+ | 0.3+ |
| 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 15 | 703 | 1.3− | 0.3+ | | | | |

**1999 VK$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 306.71868 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27166607 | $\omega$ | 180.49962 | | +0.27392575 | −0.96148478 |
| $a$ | 2.3610895 | $\Omega$ | 253.60252 | | +0.88247091 | +0.26062703 |
| $e$ | 0.1503618 | $i$ | 1.35116 | | +0.38237386 | +0.08729588 |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.7+ | 0.1− | 2000 01 11 | 691 | 1.1+ | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 1999 11 09 | 704 | 0.2− | 0.5+ | 2002 08 13 | 291 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.1+ |
| 1999 11 09 | 704 | 0.5− | 0.1+ | 2002 08 13 | 291 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 1999 11 09 | 704 | 0.9− | 0.5− | 2002 08 13 | 291 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 1999 11 12 | 704 | 1.1− | 0.8− | 2004 02 11 | 691 | 0.3+ | 0.9+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 1999 11 12 | 704 | 0.8− | 0.0 | 2004 02 11 | 691 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 1999 11 12 | 704 | 1.3− | 0.4− | 2004 02 11 | 691 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 1999 11 12 | 704 | 1.1− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.8− | 0.1− |
| 1999 12 13 | 691 | 0.4− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 1999 12 13 | 691 | 0.3− | 0.3− | 2006 09 25 | 691 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.9− | 1.0+ |
| 1999 12 13 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2000 01 11 | 691 | 0.7+ | 0.5− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2000 01 11 | 691 | 1.2+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.3+ | | | | |

**1999 VA$_{107}$ = 2006 TL$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 332.10730 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27514932 | $\omega$ | 355.82841 | | +0.60822080 | −0.77504216 |
| $a$ | 2.3411204 | $\Omega$ | 56.61721 | | +0.73407839 | +0.46706475 |
| $e$ | 0.1302664 | $i$ | 11.84491 | | +0.30198738 | +0.42562914 |
| $P$ | 3.58 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2+ | 0.1− | 1999 12 05 | 703 | 1.1+ | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.6− |
| 1999 11 09 | 704 | 0.1+ | 0.3− | 1999 12 05 | 703 | 0.6− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 1999 11 09 | 704 | 0.4+ | 0.1+ | 1999 12 05 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | (2.2+ | 2.5+) |
| 1999 11 09 | 704 | 0.0 | 0.3+ | 1999 12 05 | 691 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.4+ | 1.1− |
| 1999 11 09 | 704 | 0.7+ | 0.0 | 1999 12 05 | 691 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.7+ |
| 1999 11 12 | 704 | 0.4+ | 0.0 | 1999 12 08 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 1999 11 12 | 704 | 0.3+ | 0.1− | 1999 12 08 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | (0.7− | 2.5+) |
| 1999 11 12 | 704 | 0.2+ | 0.6− | 1999 12 08 | 704 | 0.5− | 0.8− | 2006 10 22 | 703 | 0.7+ | 0.7+ |
| 1999 11 12 | 704 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.7+ |
| 1999 11 12 | 704 | 1.0+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.0 | 0.1− |
| 1999 12 05 | 703 | (2.8− | 0.9+) | 2006 10 11 | 644 | 0.0 | 0.1− | | | | |
| 1999 12 05 | 703 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.4− | | | | |

**1999 VQ$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 262.13617 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27099847 | $\omega$ | 58.79073 | | −0.62998572 | −0.77391057 |
| $a$ | 2.3649656 | $\Omega$ | 70.39865 | | +0.68713450 | −0.59426618 |
| $e$ | 0.1206532 | $i$ | 3.93551 | | +0.36188972 | −0.21888383 |
| $P$ | 3.64 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2+ | 0.1− | 2004 01 26 | 699 | 0.3− | 0.7+ | 2004 04 16 | 645 | 0.2− | 0.1− |
| 1999 11 09 | 704 | 0.3− | 0.1+ | 2004 01 26 | 699 | 0.7+ | 0.6+ | 2004 04 16 | 645 | 0.2− | 0.1− |
| 1999 11 09 | 704 | 1.1+ | 0.8+ | 2004 01 30 | 704 | (0.4− | 2.2+) | 2004 04 24 | 291 | 1.5+ | 0.4− |
| 1999 11 09 | 704 | 1.2+ | 0.5+ | 2004 01 30 | 704 | (0.6+ | 1.9+) | 2004 04 24 | 291 | 1.2+ | 0.5+ |
| 1999 11 09 | 704 | 0.9− | 0.0 | 2004 01 30 | 704 | 0.6+ | 1.0+ | 2004 04 24 | 291 | (1.6+ | 0.4+) |
| 1999 11 10 | 691 | 0.4− | 0.3− | 2004 01 30 | 704 | (0.6+ | 4.3+) | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 1999 11 10 | 691 | 0.4− | 0.3− | 2004 01 30 | 704 | 0.8− | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.3+ |
| 1999 11 10 | 691 | 0.2− | 0.4− | 2004 02 10 | 703 | 0.7+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.4+ |
| 1999 11 12 | 704 | 0.3− | 0.0 | 2004 02 10 | 703 | (0.4+ | 2.1+) | 2006 10 02 | G96 | 0.4− | 0.1+ |
| 1999 11 12 | 704 | 0.3− | 0.6− | 2004 02 10 | 703 | 0.3+ | 0.9+ | 2006 10 21 | G96 | 0.2− | 0.3+ |
| 1999 11 12 | 704 | 0.1+ | 0.2+ | 2004 02 10 | 703 | (0.5+ | 2.1+) | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.2+ | 0.1− | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.2− | 0.3+ |
| 1999 11 12 | 704 | 0.6+ | 0.2+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 1999 12 14 | 691 | 0.2+ | 0.1+ | 2004 04 13 | 291 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 1999 12 14 | 691 | 0.2+ | 0.0 | 2004 04 13 | 291 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.4− | 0.0 |
| 1999 12 14 | 691 | 0.3+ | 0.0 | 2004 04 13 | 291 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.3+ |
| 2004 01 26 | 699 | 1.0+ | 0.6+ | 2004 04 15 | 645 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2004 01 26 | 699 | 1.1+ | 1.4− | 2004 04 15 | 645 | 0.2− | 0.1− | | | | |

**1999 VQ$_{115}$ = 1999 VJ$_{228}$**

Id. Minor Planet Center (d, *MPO* 11069)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 53.46137 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.29317968 | $\omega$ | 295.42636 | | +0.99154497 | +0.08790688 |
| $a$ | 2.2441238 | $\Omega$ | 59.66118 | | −0.03626794 | +0.89400278 |
| $e$ | 0.2030080 | $i$ | 6.34974 | | −0.12459216 | +0.43935340 |
| $P$ | 3.36 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.8− | 0.4− | 1999 11 09 | 704 | 0.7+ | 0.9+ | 1999 12 05 | 691 | 0.2+ | 0.1+ |
| 1999 10 02 | 691 | 0.9− | 0.3− | 1999 11 09 | 704 | 0.5− | 1.3+ | 1999 12 05 | 691 | 0.2+ | 0.1+ |
| 1999 10 02 | 691 | 1.0− | 0.4− | 1999 11 09 | 704 | (0.9+ | 2.2+) | 2002 07 16 | 644 | 0.5+ | 0.6+ |
| 1999 11 01 | 703 | 0.6− | 0.7+ | 1999 11 12 | 704 | 0.4+ | 0.2+ | 2002 07 16 | 644 | 0.1+ | 0.2+ |
| 1999 11 01 | 703 | 1.7− | 0.4+ | 1999 11 12 | 704 | 0.3+ | 0.0 | 2002 07 16 | 644 | 0.2+ | 0.3+ |
| 1999 11 01 | 703 | 0.3− | 0.1+ | 1999 11 12 | 704 | 0.3+ | 0.2− | 2005 06 14 | G96 | 0.1+ | 0.2+ |
| 1999 11 01 | 703 | 0.1− | 0.2+ | 1999 11 12 | 704 | 0.1+ | 0.5+ | 2005 06 14 | G96 | 0.4− | 0.3+ |
| 1999 11 04 | 691 | 0.3+ | 0.2− | 1999 11 12 | 704 | 0.3+ | 0.2+ | 2005 06 14 | G96 | 0.1− | 0.1+ |
| 1999 11 04 | 691 | 0.2+ | 0.2− | 1999 11 12 | 691 | 0.1+ | 0.1+ | 2005 06 14 | G96 | 0.5− | 0.1+ |
| 1999 11 04 | 691 | 0.3+ | 0.0 | 1999 11 12 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.4− | 0.4+ |
| 1999 11 09 | 691 | 0.2+ | 0.2− | 1999 11 12 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.3+ |
| 1999 11 09 | 691 | 0.2+ | 0.0 | 1999 11 17 | 704 | 0.4+ | 0.2− | 2006 11 25 | G96 | 0.1− | 1.0+ |
| 1999 11 09 | 691 | 0.3+ | 0.1− | 1999 11 17 | 704 | 0.6+ | 0.2− | 2006 11 25 | G96 | 0.5+ | 0.1− |
| 1999 11 09 | 704 | 0.9− | 0.1− | 1999 11 17 | 704 | 0.0 | 0.1− | | | | |
| 1999 11 09 | 704 | 0.0 | 1.3+ | 1999 12 05 | 691 | 0.1+ | 0.0 | | | | |

**1999 VD$_{116}$ = 2006 SH$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 13.37321 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27004697 | $\omega$ | 170.80784 | | +0.91235970 | +0.40929908 |
| $a$ | 2.3705176 | $\Omega$ | 165.02246 | | −0.37769142 | +0.84964096 |
| $e$ | 0.1972702 | $i$ | 1.90793 | | −0.15795241 | +0.33254247 |
| $P$ | 3.65 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.1+ | 0.4− | 2006 09 16 | 699 | (3.0− | 0.0 ) | 2006 09 20 | 644 | 0.0 | 0.1− |
| 1999 11 04 | 691 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.2− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.2− | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.3− |
| 1999 11 09 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.9− | 2006 09 20 | 644 | 0.2− | 0.1− |
| 1999 11 09 | 691 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.1− | 0.4+ |
| 1999 11 09 | 691 | 0.4− | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.5− |
| 1999 11 15 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.4− | 0.2+ |
| 1999 11 15 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 1999 11 15 | 691 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.4− | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2006 09 16 | 699 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2006 09 16 | 699 | 0.1+ | 0.8+ | 2006 09 20 | 704 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.5− |

### 1999 VN$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 208.58368 | | (2000.0) | | | |
| $n$ | 0.22931411 | $\omega$ | 227.40542 | | +0.45284599 | −0.89146601 |
| $a$ | 2.6435176 | $\Omega$ | 195.68731 | | +0.83320316 | +0.42903887 |
| $e$ | 0.1842638 | $i$ | 3.13641 | | +0.31733735 | +0.14565026 |
| $P$ | 4.30 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.2+ | 0.4− | 1999 11 15 | 691 | 0.6− | 0.2+ | 2003 09 29 | 691 | 0.5+ | 0.4+ |
| 1999 11 04 | 691 | 0.3− | 0.2− | 1999 11 15 | 691 | 0.3− | 0.1+ | 2003 10 02 | 291 | 0.8− | 0.2+ |
| 1999 11 04 | 691 | 0.6+ | 0.5− | 2003 09 18 | 691 | 0.5+ | 0.3+ | 2003 10 02 | 291 | 0.8− | 0.1+ |
| 1999 11 09 | 691 | 0.0 | 0.1+ | 2003 09 18 | 691 | 0.4+ | 0.1+ | 2003 10 02 | 291 | 0.9− | 0.0 |
| 1999 11 09 | 691 | 0.1− | 0.2+ | 2003 09 18 | 691 | 0.2+ | 0.1− | 2003 10 24 | 645 | 0.0 | 0.2− |
| 1999 11 09 | 691 | 0.5+ | 0.6+ | 2003 09 29 | 691 | 0.3+ | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.1− |
| 1999 11 15 | 691 | (2.5− | 0.1+) | 2003 09 29 | 691 | 0.2+ | 0.1+ | | | | |

### 1999 VQ$_{116}$ = 2006 QN$_{89}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.85371 | | (2000.0) | | | |
| $n$ | 0.12569571 | $\omega$ | 172.83614 | | +0.98833654 | −0.15111607 |
| $a$ | 3.9468966 | $\Omega$ | 195.89278 | | +0.13608518 | +0.93192953 |
| $e$ | 0.2914523 | $i$ | 3.94428 | | +0.06834982 | +0.32965328 |
| $P$ | 7.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.1+ | 0.3− | 2006 08 29 | 673 | 0.3+ | 0.0 | 2006 09 21 | 673 | 0.1+ | 0.7+ |
| 1999 11 04 | 691 | 0.4+ | 0.2− | 2006 08 29 | 673 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 1999 11 04 | 691 | 0.3+ | 0.3− | 2006 08 30 | 673 | 0.0 | 0.5− | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 1999 11 09 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 673 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 1999 11 09 | 691 | 0.0 | 0.3+ | 2006 08 30 | 673 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.1− |
| 1999 11 09 | 691 | 0.1+ | 0.1+ | 2006 09 04 | 673 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 1999 11 15 | 691 | 0.4− | 0.1+ | 2006 09 04 | 673 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 1999 11 15 | 691 | 0.1+ | 0.1+ | 2006 09 04 | 673 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.4− |
| 1999 11 15 | 691 | 0.9− | 0.1− | 2006 09 21 | 673 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2006 08 29 | 673 | 0.1− | 0.0 | 2006 09 21 | 673 | 0.1+ | 0.2+ | | | | |

### 1999 VB$_{118}$ = 2004 TX$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.65038 | | (2000.0) | | | |
| $n$ | 0.21058784 | $\omega$ | 53.68595 | | −0.38690090 | +0.92148927 |
| $a$ | 2.7979966 | $\Omega$ | 193.67621 | | −0.88554530 | −0.38162228 |
| $e$ | 0.0507715 | $i$ | 8.30110 | | −0.25713270 | −0.07226311 |
| $P$ | 4.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 04 | 691 | 0.8− | 1.5+ | 2002 03 16 | 291 | 0.1+ | 0.1+ | 2004 10 08 | 291 | 0.2+ | 0.2+ |
| 1994 09 04 | 691 | 0.1+ | 0.6− | 2002 03 16 | 291 | 0.2+ | 0.5+ | 2004 10 09 | 291 | 0.1− | 0.5+ |
| 1994 09 04 | 691 | 0.3− | 0.8− | 2002 03 21 | 691 | 0.3− | 0.0 | 2004 10 09 | 291 | 0.3− | 0.7+ |
| 1999 11 09 | 691 | 0.3+ | 0.1− | 2002 03 21 | 691 | 0.0 | 0.0 | 2004 10 09 | 291 | 0.1− | 0.1− |
| 1999 11 09 | 691 | 0.4+ | 0.1+ | 2002 03 21 | 691 | 0.2+ | 0.3− | 2006 02 23 | 699 | 0.4+ | 0.4− |
| 1999 11 09 | 691 | 0.5− | 0.1+ | 2002 04 08 | 644 | 0.5+ | 0.0 | 2006 02 23 | 699 | 0.8− | 0.2− |
| 1999 11 12 | 691 | 0.7+ | 0.2+ | 2002 04 08 | 644 | 0.2+ | 0.1+ | 2006 02 23 | 699 | 0.2− | 0.2− |
| 1999 11 12 | 691 | 0.4+ | 0.2+ | 2002 04 08 | 644 | 0.3+ | 0.0 | 2006 02 23 | 699 | 0.6+ | 0.2− |
| 1999 11 12 | 691 | 0.7+ | 0.2− | 2004 10 08 | 291 | 1.0− | 0.8− | | | | |
| 2002 03 16 | 291 | 0.1− | 0.5+ | 2004 10 08 | 291 | 0.0 | 0.3+ | | | | |

### 1999 VL$_{119}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 199.16216 | | (2000.0) | | | |
| $n$ | 0.22648788 | $\omega$ | 173.35596 | | +0.68462512 | −0.72331056 |
| $a$ | 2.6654635 | $\Omega$ | 233.39180 | | +0.66347913 | +0.66956457 |
| $e$ | 0.0969888 | $i$ | 6.44147 | | +0.30180109 | +0.16883458 |
| $P$ | 4.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 11 | 691 | 0.6+ | 0.3+ | 1999 11 14 | 704 | 0.3− | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.0 |
| 1997 04 11 | 691 | 0.3+ | 0.9+ | 2003 09 18 | 691 | 0.2− | 0.1− | 2006 05 09 | G96 | 0.2+ | 0.2− |
| 1997 04 11 | 691 | 0.1− | 0.8+ | 2003 09 18 | 691 | 0.1− | 0.2+ | 2006 05 09 | G96 | 0.1+ | 0.3− |
| 1999 11 03 | 691 | 0.2+ | 0.0 | 2003 09 18 | 691 | 0.2− | 0.1+ | 2006 05 09 | G96 | 0.5− | 0.1− |
| 1999 11 03 | 691 | 0.3+ | 0.0 | 2003 09 18 | 644 | 0.1+ | 0.6+ | 2006 05 09 | G96 | 0.0 | 0.2− |
| 1999 11 03 | 691 | 0.2+ | 0.1+ | 2003 09 18 | 644 | 0.2+ | 0.4+ | 2006 05 31 | G96 | 0.3− | 0.0 |
| 1999 11 10 | 691 | 0.0 | 0.3+ | 2003 09 18 | 644 | 0.5+ | 0.5+ | 2006 05 31 | G96 | 0.3+ | 0.6+ |
| 1999 11 10 | 691 | 0.2− | 0.2+ | 2003 09 30 | 691 | 0.2+ | 0.3+ | 2006 05 31 | G96 | 0.0 | 0.2+ |
| 1999 11 10 | 691 | 0.2− | 0.2+ | 2003 09 30 | 691 | 0.1− | 0.3+ | 2006 05 31 | G96 | 0.0 | 0.0 |
| 1999 11 14 | 704 | 1.6− | 0.1+ | 2003 09 30 | 691 | 0.2− | 0.1+ | | | | |
| 1999 11 14 | 704 | 0.4− | 0.3+ | 2003 10 23 | 645 | 0.0 | 0.1− | | | | |

### 1999 VM$_{123}$ = 2006 RF$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.53711 | | (2000.0) | | | |
| $n$ | 0.27555699 | $\omega$ | 180.87968 | | +0.88718783 | −0.46081918 |
| $a$ | 2.3388108 | $\Omega$ | 206.59950 | | +0.42365129 | +0.83356529 |
| $e$ | 0.1484725 | $i$ | 2.98440 | | +0.18280410 | +0.30465487 |
| $P$ | 3.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 691 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.6+ | 0.1− |
| 1995 09 02 | 691 | 0.3+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1995 09 02 | 691 | 0.1− | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1999 11 05 | 691 | 0.1+ | 0.4− | 2006 09 20 | 704 | 1.4− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1999 11 05 | 691 | 0.6− | 0.1− | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 1999 11 05 | 691 | 0.2+ | 0.3− | 2006 09 20 | 704 | 1.1− | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1999 11 10 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 1.1− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 1999 11 10 | 691 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.6− | 0.5− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1999 11 10 | 691 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.6− | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 0.6− | 0.8− | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 11 12 | 704 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 1999 11 12 | 704 | 1.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 1999 11 15 | 704 | 0.6+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 1999 11 15 | 704 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 1999 11 15 | 704 | 0.5+ | 0.1− | 2006 10 11 | 691 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 1999 11 15 | 704 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 1999 11 15 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2002 07 08 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.3+ | 0.5+ |
| 2002 07 08 | 644 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.4− | 0.8+ |
| 2002 07 08 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2005 05 07 | G96 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2005 05 07 | G96 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2005 05 07 | G96 | 0.2+ | 0.2+ | 2006 10 18 | 106 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2005 05 07 | G96 | 0.1− | 0.1− | 2006 10 18 | 106 | 0.4− | 0.8− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 10 18 | 106 | 1.4+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.5− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 18 | 106 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.1+ | 1.3− |

**1999 VU$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.84685 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26702118 | $\omega$ | 338.16096 | | +0.35328228 | −0.93454586 | |
| $a$ | 2.3883918 | $\Omega$ | 91.13014 | | +0.86450304 | +0.30871933 | |
| $e$ | 0.1530784 | $i$ | 2.44262 | | +0.35752780 | +0.17696441 | |
| $P$ | 3.69 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.3− | 0.0 | 1999 11 16 | 691 | 0.2− | 0.0 | 2003 12 28 | 691 | 0.2+ | 0.5− |
| 1999 11 05 | 691 | 0.1− | 0.0 | 1999 11 16 | 691 | 0.2+ | 0.1− | 2004 01 15 | 691 | 0.5− | 0.2+ |
| 1999 11 05 | 691 | 0.5− | 0.0 | 2003 12 21 | 291 | 0.0 | 0.1− | 2004 01 15 | 691 | 0.3− | 0.2+ |
| 1999 11 10 | 691 | 0.3+ | 0.2− | 2003 12 21 | 291 | 0.2− | 0.3+ | 2004 01 15 | 691 | 0.1− | 0.1+ |
| 1999 11 10 | 691 | 0.4+ | 0.0 | 2003 12 21 | 291 | 0.3− | 0.3− | 2006 09 26 | 291 | 0.0 | 0.1+ |
| 1999 11 10 | 691 | 0.3+ | 0.2+ | 2003 12 28 | 691 | 0.8+ | 0.5+ | 2006 09 26 | 291 | 0.1− | 0.3+ |
| 1999 11 16 | 691 | 0.0 | 0.2− | 2003 12 28 | 691 | 0.4+ | 0.0 | 2006 09 26 | 291 | 0.0 | 0.0 |

**1999 VM$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.48875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22921764 | $\omega$ | 349.88189 | | +0.99097504 | +0.13394456 | |
| $a$ | 2.6442592 | $\Omega$ | 2.43886 | | −0.11279819 | +0.85432329 | |
| $e$ | 0.2290824 | $i$ | 7.05525 | | −0.07242259 | +0.50218579 | |
| $P$ | 4.30 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 10 | 561 | 0.1− | 0.6+ | 1999 11 09 | 691 | 0.3− | 0.4+ | 1999 11 14 | 691 | 0.1− | 0.2+ |
| 1999 09 10 | 561 | 0.3+ | 0.5+ | 1999 11 09 | 691 | 0.6+ | 0.6− | 2002 04 09 | 691 | 0.1− | 0.4+ |
| 1999 09 10 | 561 | 0.5− | 0.8+ | 1999 11 10 | 691 | 0.0 | 0.1− | 2002 04 09 | 691 | 0.2+ | 0.2+ |
| 1999 10 31 | 691 | 0.1− | 0.2+ | 1999 11 10 | 691 | 0.2− | 0.1− | 2002 04 09 | 691 | 0.3+ | 0.3+ |
| 1999 10 31 | 691 | 0.1− | 0.2+ | 1999 11 10 | 691 | 0.2− | 0.2+ | 2006 03 06 | 691 | 0.3+ | 0.5+ |
| 1999 10 31 | 691 | 0.2− | 0.3+ | 1999 11 14 | 691 | 0.1− | 0.1+ | 2006 03 06 | 691 | 0.2− | 0.2+ |
| 1999 11 09 | 691 | 0.1+ | 0.1− | 1999 11 14 | 691 | 0.3− | 0.2+ | 2006 03 06 | 691 | 0.4+ | 0.1+ |

**1999 VU$_{124}$ = 2006 SO$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.93219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26535462 | $\omega$ | 13.40474 | | −0.97595903 | +0.21795316 | |
| $a$ | 2.3983816 | $\Omega$ | 179.18331 | | −0.20381104 | −0.91160464 | |
| $e$ | 0.0897941 | $i$ | 2.52441 | | −0.07723363 | −0.34853035 | |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.4+ | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 30 | 291 | 0.2− | 0.4+ |
| 1999 11 10 | 691 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.1− | 2006 09 30 | 291 | 0.5+ | 0.0 |
| 1999 11 10 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 09 30 | 291 | 0.4+ | 0.1− |
| 1999 11 11 | 691 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 01 | 291 | 0.1− | 0.0 |
| 1999 11 11 | 691 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 01 | 291 | 0.2− | 0.2+ |
| 1999 11 11 | 691 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.2+ | 2006 10 01 | 291 | 0.2− | 0.0 |
| 1999 11 15 | 691 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.4+ | 2006 10 01 | 291 | 0.0 | 0.3+ |
| 1999 11 15 | 691 | 0.1− | 0.6− | 2006 09 28 | G96 | 0.2− | 0.2+ | 2006 10 01 | 291 | 0.3− | 0.0 |
| 1999 11 15 | 691 | 0.4− | 0.3− | 2006 09 28 | 291 | 0.3− | 0.0 | 2006 10 01 | 291 | 0.0 | 0.1+ |
| 1999 11 28 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 291 | 0.3− | 0.1− | 2006 10 02 | 291 | 0.4+ | 0.1+ |
| 1999 11 28 | 691 | 0.1+ | 0.0 | 2006 09 28 | 291 | 0.3− | 0.1+ | 2006 10 02 | 291 | 0.0 | 0.1− |
| 1999 11 28 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 10 02 | 291 | 0.1− | 0.1+ |
| 2001 03 20 | 691 | 0.0 | 0.3+ | 2006 09 29 | 291 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 03 20 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 291 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 2001 03 20 | 691 | 0.4+ | 0.1+ | 2006 09 29 | 291 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2002 08 31 | 291 | 0.1+ | 0.2+ | 2006 09 30 | 291 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2002 08 31 | 291 | 0.1− | 0.2+ | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 10 02 | 291 | 0.0 | 0.1− |
| 2002 08 31 | 291 | 0.0 | 0.2+ | 2006 09 30 | 291 | 0.1+ | 0.0 | 2006 10 02 | 291 | 0.2− | 0.2− |
| 2005 07 05 | G96 | 0.1− | 0.0 | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 10 02 | 291 | 0.2− | 0.1+ |
| 2005 07 05 | G96 | 0.4− | 0.2+ | 2006 09 30 | 291 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2005 07 05 | G96 | 0.7− | 0.2+ | 2006 09 30 | 291 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.5− | 0.2+ |
| 2005 07 05 | G96 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.7− |
| 2006 07 21 | G96 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.7+ | 0.3− |
| 2006 07 21 | G96 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.4+ | 0.1− | | | | |
| 2006 07 21 | G96 | 0.2+ | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.0 | | | | |

**1999 VV$_{125}$ = 2006 QH$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.74574 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26888522 | $\omega$ | 345.73540 | | +0.75731890 | −0.65220158 | |
| $a$ | 2.3773407 | $\Omega$ | 55.02166 | | +0.60305681 | +0.67894712 | |
| $e$ | 0.1844425 | $i$ | 2.32109 | | +0.25058049 | +0.33714077 | |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 691 | 0.2+ | 0.2− | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.6+ | 0.4+ |
| 1999 10 19 | 691 | 0.2+ | 0.2− | 2003 12 22 | 704 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.3− | 0.5+ |
| 1999 10 19 | 691 | 0.2+ | 0.3− | 2003 12 22 | 704 | 0.7+ | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.3+ |
| 1999 11 06 | 691 | 0.1− | 0.3+ | 2003 12 22 | 704 | 0.9+ | 1.1+ | 2006 08 21 | 644 | 0.4− | 0.2+ |
| 1999 11 06 | 691 | 0.0 | 0.3+ | 2003 12 22 | 704 | 1.0− | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.1+ |
| 1999 11 06 | 691 | 0.1+ | 0.2+ | 2003 12 29 | 699 | (0.8− | 1.7+) | 2006 08 21 | 644 | 0.1+ | 0.3+ |
| 1999 11 09 | 704 | (0.7+ | 2.3+) | 2003 12 29 | 699 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.0 | 0.9− |
| 1999 11 09 | 704 | 0.2− | 0.3+ | 2003 12 29 | 699 | 0.7− | 0.2− | 2006 08 28 | 699 | 1.0+ | 0.4− |
| 1999 11 09 | 704 | 0.1− | 0.5− | 2003 12 29 | 699 | 0.1− | 0.0 | 2006 08 28 | 699 | 1.2− | 0.4+ |
| 1999 11 12 | 704 | 0.6− | 0.8+ | 2004 01 22 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 699 | 1.1− | 0.9− |
| 1999 11 12 | 704 | 0.7− | 0.4+ | 2004 01 22 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.2+ |
| 1999 11 12 | 704 | 0.1− | 0.3+ | 2004 01 22 | 704 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.5+ |
| 1999 11 12 | 704 | 0.4+ | 0.6+ | 2004 01 22 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.6+ | 0.3− |
| 1999 11 12 | 704 | 0.6− | 1.0+ | 2004 01 22 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | (0.1− | 2.3+) |
| 1999 11 13 | 691 | 0.0 | 1.2− | 2005 05 13 | G96 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 1999 11 13 | 691 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.5− | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 1999 11 13 | 691 | 0.0 | 0.2+ | 2005 05 13 | G96 | 0.3+ | 0.8− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2005 05 13 | G96 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.0 |

**1999 VZ$_{126}$ = 2004 TU$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.33174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20183104 | $\omega$ | 30.40310 | | +0.37858948 | −0.92306869 | |
| $a$ | 2.8783531 | $\Omega$ | 37.46969 | | +0.82512669 | +0.30334678 | |
| $e$ | 0.0422850 | $i$ | 6.41106 | | +0.41932797 | +0.23648451 | |
| $P$ | 4.88 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.1+ | 0.5− | 2002 04 09 | 644 | 0.2+ | 0.3− | 2002 05 04 | 291 | 0.1− | 0.4− |
| 1999 11 09 | 691 | 0.2− | 0.2− | 2002 04 09 | 644 | 0.3+ | 0.1− | 2004 10 07 | 691 | 0.1− | 0.0 |
| 1999 11 09 | 691 | 0.0 | 0.0 | 2002 04 19 | 291 | 0.1+ | 0.3− | 2004 10 07 | 691 | 0.3− | 0.2+ |
| 1999 11 13 | 691 | 0.1− | 0.1+ | 2002 04 19 | 291 | 0.1− | 0.3− | 2004 10 07 | 691 | 0.0 | 0.1− |
| 1999 11 13 | 691 | 0.4+ | 0.0 | 2002 04 19 | 291 | 0.2− | 0.2− | 2004 10 11 | 691 | 0.1− | 0.2+ |
| 1999 11 13 | 691 | 0.0 | 0.1+ | 2002 05 04 | 291 | 0.2− | 1.7+ | 2004 10 11 | 691 | 0.2+ | 0.1+ |
| 2002 04 09 | 644 | 0.2+ | 0.2− | 2002 05 04 | 291 | 0.2+ | 0.4− | 2004 10 11 | 691 | 0.2+ | 0.1− |

**1999 VC$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.70041 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22598384 | $\omega$ | 100.98915 | | −0.78807153 | −0.60767809 | |
| $a$ | 2.6694254 | $\Omega$ | 41.68952 | | +0.49112676 | −0.71697867 | |
| $e$ | 0.1704373 | $i$ | 8.50280 | | +0.37113040 | −0.34156834 | |
| $P$ | 4.36 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 691 | 0.3− | 0.1− | 2001 03 26 | 704 | 0.0 | 1.4+ | 2005 01 16 | 703 | 0.1+ | 0.4+ |
| 1999 10 19 | 691 | 0.3− | 0.3− | 2003 09 26 | 645 | 0.0 | 0.0 | 2005 02 02 | 704 | 0.1+ | 0.7+ |
| 1999 10 19 | 691 | 0.2− | 0.1− | 2003 09 26 | 645 | 0.0 | 0.0 | 2005 02 02 | 704 | 0.2+ | 0.0 |
| 1999 11 09 | 691 | 0.3− | 0.0 | 2003 09 28 | 645 | 0.0 | 0.1− | 2005 02 02 | 704 | 0.6+ | 0.8+ |
| 1999 11 09 | 691 | 0.5− | 0.1+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2005 02 02 | 704 | 0.1− | 0.2+ |
| 1999 11 09 | 691 | 0.3− | 0.3+ | 2003 10 02 | 691 | 0.1+ | 0.2+ | 2005 03 08 | 703 | 1.2− | 1.2− |
| 1999 11 13 | 691 | 0.4+ | 0.1+ | 2003 10 02 | 691 | 0.1+ | 0.2+ | 2005 03 08 | 703 | 1.1− | 1.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 691 | 0.5+ | 0.0 | 2003 10 02 | 691 | 0.1− | 0.1+ | 2005 03 08 | 703 | 1.0− | 1.5− |
| 1999 11 13 | 691 | 0.7+ | 0.2+ | 2005 01 16 | 703 | 0.5+ | 0.5+ | 2005 03 08 | 703 | 0.8− | 0.2+ |
| 2001 03 26 | 704 | 0.7+ | 0.3− | 2005 01 16 | 703 | 0.3+ | 0.1− | | | | |
| 2001 03 26 | 704 | 0.0 | 0.2− | 2005 01 16 | 703 | 1.8+ | 0.6− | | | | |

**1999 VQ$_{129}$ = 2006 SN$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.23642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27639688 | $\omega$ | 240.31468 | | −0.89020477 | −0.45411435 | |
| $a$ | 2.3340704 | $\Omega$ | 272.65637 | | +0.42951335 | −0.81010514 | |
| $e$ | 0.1074225 | $i$ | 2.08090 | | +0.15183460 | −0.37082317 | |
| $P$ | 3.57 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 11 | 691 | 0.3+ | 0.1− | 1999 11 15 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 1999 11 11 | 691 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.5− | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 1999 11 11 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.5− |
| 1999 11 13 | 691 | 1.0− | 0.0 | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.2− |
| 1999 11 13 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.6+ |
| 1999 11 13 | 691 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 1999 11 15 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 1999 11 15 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.1− |

**1999 VZ$_{130}$ = 2006 RS$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.67875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27745129 | $\omega$ | 15.28922 | | +0.69484629 | −0.71898414 | |
| $a$ | 2.3281532 | $\Omega$ | 30.70097 | | +0.65652097 | +0.62519070 | |
| $e$ | 0.1874576 | $i$ | 1.77625 | | +0.29354531 | +0.30364190 | |
| $P$ | 3.55 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1999 10 30 | 691 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1999 10 30 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1999 11 09 | 691 | 0.4+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 1999 11 09 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.3− |
| 1999 11 09 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.3− |
| 1999 11 14 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 1999 11 14 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1999 11 14 | 691 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2004 02 26 | 695 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | (0.2− | 1.7−) |
| 2004 02 26 | 695 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2006 09 15 | 691 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 29 | 291 | 0.1+ | 0.1− |
| 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 29 | 291 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 29 | 291 | 0.3+ | 0.0 |

**1999 VZ$_{131}$ = 2006 WC$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.00884 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28319368 | $\omega$ | 341.34652 | | +0.86617900 | −0.49888453 | |
| $a$ | 2.2965735 | $\Omega$ | 48.61514 | | +0.46329376 | +0.77980748 | |
| $e$ | 0.2241884 | $i$ | 2.22455 | | +0.18733078 | +0.37817260 | |
| $P$ | 3.48 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 18 | 926 | 0.0 | 0.0 |
| 1999 11 09 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1− | 0.0 |
| 1999 11 09 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.3− | 0.5− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 1999 11 12 | 704 | 1.1+ | 0.2+ | 2006 11 10 | 691 | 1.4+ | 0.2− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 1999 11 12 | 704 | 0.0 | 0.4+ | 2006 11 17 | 926 | 0.2− | 0.0 | 2006 11 25 | 926 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 1.1− | 0.9+ | 2006 11 17 | 926 | 0.2− | 0.1+ | 2006 11 25 | 926 | 0.0 | 0.0 |
| 1999 11 14 | 691 | 0.0 | 0.2+ | 2006 11 17 | 926 | 0.2− | 0.1+ | 2006 11 25 | 926 | 0.2− | 0.0 |
| 1999 11 14 | 691 | 0.1− | 0.2+ | 2006 11 17 | 926 | 0.2− | 0.1+ | 2006 11 25 | 926 | 0.0 | 0.1+ |
| 1999 11 14 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.0 | 2006 11 25 | 926 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.0 | 2006 11 25 | 926 | 0.2+ | 0.0 |
| 2001 05 24 | 807 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.0 | 2006 11 25 | 926 | 0.0 | 0.0 |
| 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 18 | 926 | 0.7− | 0.4− | 2006 11 25 | 926 | 0.1+ | 0.0 |
| 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 18 | 926 | 0.0 | 0.1− | | | | |
| 2006 10 27 | G96 | 0.1− | 0.1+ | 2006 11 18 | 926 | 0.1− | 0.1+ | | | | |

**1999 VE$_{133}$ = 2003 UJ$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.00965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24046669 | $\omega$ | 281.22513 | | −0.82415026 | −0.56416149 | |
| $a$ | 2.5611368 | $\Omega$ | 224.45490 | | +0.54349620 | −0.76295127 | |
| $e$ | 0.0983920 | $i$ | 4.09250 | | +0.15933686 | −0.31563774 | |
| $P$ | 4.10 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.2+ | 0.2+ | 2003 10 16 | 691 | 0.2+ | 0.0 | 2005 03 03 | 703 | 0.5+ | 0.7+ |
| 1999 11 10 | 691 | 0.1− | 0.0 | 2003 10 26 | 291 | 0.1− | 0.1− | 2005 03 03 | 703 | 0.0 | 0.1− |
| 1999 11 10 | 691 | 0.1+ | 0.0 | 2003 10 26 | 291 | 0.0 | 0.2+ | 2005 03 03 | 703 | 0.2− | 0.9+ |
| 1999 11 14 | 691 | 0.1− | 0.2− | 2003 10 26 | 291 | 0.2− | 0.1− | 2005 03 10 | 703 | 0.7+ | 0.4+ |
| 1999 11 14 | 691 | 0.1− | 0.0 | 2005 02 14 | 809 | 0.2+ | 0.5− | 2005 03 10 | 703 | 0.7+ | 0.0 |
| 1999 11 14 | 691 | 0.0 | 0.1+ | 2005 02 14 | 809 | 0.2+ | 0.5− | 2005 03 10 | 703 | 2.0− | 0.6− |
| 2003 10 16 | 691 | 0.1+ | 0.0 | 2005 02 14 | 809 | 0.3+ | 0.4− | 2005 03 10 | 703 | 1.0− | 0.1+ |
| 2003 10 16 | 691 | 0.1+ | 0.1− | 2005 03 03 | 703 | 0.6+ | 0.1− | | | | |

**1999 VQ$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.20165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21874625 | $\omega$ | 83.49076 | | +0.51018345 | +0.85022390 | |
| $a$ | 2.7279870 | $\Omega$ | 218.10262 | | −0.84855933 | +0.47300589 | |
| $e$ | 0.1487844 | $i$ | 12.13696 | | −0.14021380 | +0.23105140 | |
| $P$ | 4.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.0 | 0.1− | 2003 09 17 | 691 | 0.2+ | 0.1+ | 2003 09 27 | 699 | 0.4+ | 0.1− |
| 1999 10 06 | 704 | 0.8− | 0.2− | 2003 09 17 | 691 | 0.1+ | 0.2+ | 2003 10 17 | 645 | 0.0 | 0.0 |
| 1999 10 06 | 704 | 0.8+ | 0.1+ | 2003 09 17 | 691 | 0.2+ | 0.2+ | 2003 10 17 | 645 | 0.0 | 0.0 |
| 1999 11 10 | 691 | 0.3+ | 0.1− | 2003 09 22 | 691 | 0.1+ | 0.1− | 2003 10 19 | 645 | 0.0 | 0.0 |
| 1999 11 10 | 691 | 0.1− | 0.2− | 2003 09 22 | 691 | 0.0 | 0.2− | 2003 10 19 | 645 | 0.0 | 0.1− |
| 1999 11 10 | 691 | 0.0 | 0.1− | 2003 09 22 | 691 | 0.3+ | 0.0 | 2003 10 22 | 645 | 0.0 | 0.1− |
| 1999 11 14 | 691 | 0.2+ | 0.2+ | 2003 09 27 | 699 | 1.0− | 0.5+ | 2003 10 22 | 645 | 0.0 | 0.0 |
| 1999 11 14 | 691 | 0.3− | 0.2+ | 2003 09 27 | 699 | 2.3− | 0.6+ | | | | |
| 1999 11 14 | 691 | 0.1− | 0.1+ | 2003 09 27 | 699 | 0.7− | 1.0+ | | | | |

**1999 VR$_{134}$ = 2006 QV$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.68755 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26543398 | $\omega$ | 263.57101 | | +0.47267583 | +0.88108444 | |
| $a$ | 2.3979035 | $\Omega$ | 34.65234 | | −0.79671715 | +0.43520312 | |
| $e$ | 0.1802073 | $i$ | 1.64913 | | −0.37658909 | +0.18517141 | |
| $P$ | 3.71 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3+ | 0.1− | 2006 08 16 | 644 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 1995 09 26 | 691 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.3− |
| 1995 09 26 | 691 | 0.0 | 0.3− | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 1999 11 10 | 691 | 0.6− | 0.1− | 2006 08 22 | 644 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.1− | 0.2− |
| 1999 11 10 | 691 | 0.4− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 1999 11 10 | 691 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.4+ | 1.3+ | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1999 11 14 | 691 | 0.3+ | 0.1− | 2006 08 28 | 703 | 1.4− | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1999 11 14 | 691 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.4− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 1999 11 14 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.7− | 0.9+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 1999 12 16 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.3+ | 0.5− | 2006 10 22 | G96 | 0.5+ | 0.0 |
| 1999 12 16 | 691 | 0.6+ | 0.0 | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 1999 12 16 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 28 | 699 | (1.7− | 1.0+) | | | | |

**1999 VT$_{136}$ = 2006 SS$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.56358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27723419 | $\omega$ | 93.94584 | | +0.77164508 | +0.62976067 | |
| $a$ | 2.3293685 | $\Omega$ | 227.04941 | | −0.62118342 | +0.71598624 | |
| $e$ | 0.1629359 | $i$ | 7.00376 | | −0.13672978 | +0.30127262 | |
| $P$ | 3.56 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 1.1+ | 0.4+ | 2006 09 20 | 699 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1999 10 13 | 704 | 0.5+ | 0.9− | 2006 09 20 | 699 | (1.6+ | 0.7+) | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 1.1− | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1999 10 15 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1999 10 15 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | 1.1+ | 1.0− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 1999 10 15 | 704 | 0.3+ | 1.0+ | 2006 09 25 | 704 | 1.1+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 1999 11 12 | 704 | 0.0 | 0.2− | 2006 09 25 | 704 | (1.8+ | 1.5−) | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 1999 11 12 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 704 | 1.2+ | 1.0+ | 2006 10 17 | 683 | 0.5− | 1.1− |
| 1999 11 12 | 704 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.3− | 2006 10 17 | 683 | (2.3+ | 0.6−) |
| 1999 11 14 | 704 | 0.4− | 0.9− | 2006 09 29 | 704 | 0.2− | 0.0 | 2006 10 17 | 683 | (1.8+ | 0.1−) |
| 1999 11 14 | 704 | 0.6− | 0.2− | 2006 09 29 | 704 | 0.5+ | 0.8+ | 2006 10 19 | 683 | 0.6+ | 0.7− |
| 1999 11 14 | 704 | 0.7− | 0.9− | 2006 09 29 | 704 | 1.2− | 1.2+ | 2006 10 19 | 683 | 0.6− | 0.6+ |
| 2005 03 09 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.2+ | 2006 10 19 | 683 | 0.0 | 1.0+ |
| 2005 03 09 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2005 03 09 | 691 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2006 09 16 | 703 | 0.5− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2006 09 16 | 703 | 1.0− | 0.8− | 2006 10 03 | G96 | 0.3− | 0.3− | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2006 09 16 | 703 | (1.4− | 2.0−) | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2006 09 16 | 703 | (2.0− | 1.7−) | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.3− | 0.2+ |

**1999 VA$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.48561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24203206 | $\omega$ | 0.41468 | | −0.64128075 | +0.76416921 | |
| $a$ | 2.5500818 | $\Omega$ | 229.69963 | | −0.70425118 | −0.62203741 | |
| $e$ | 0.0477197 | $i$ | 5.21446 | | −0.30461332 | −0.17063084 | |
| $P$ | 4.07 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 1.2+ | 0.2− | 1999 11 17 | 691 | 0.1− | 0.4− | 2003 11 20 | 291 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 0.8− | 0.6− | 1999 12 17 | 691 | 0.3− | 0.3+ | 2003 11 20 | 691 | 0.1− | 0.3+ |
| 1999 11 12 | 704 | 0.5+ | 0.9− | 1999 12 17 | 691 | 0.0 | 0.1− | 2003 11 20 | 291 | 0.0 | 0.1+ |
| 1999 11 12 | 704 | 0.5− | 0.3− | 1999 12 17 | 691 | 0.1+ | 0.0 | 2003 11 20 | 691 | 0.3+ | 0.3+ |
| 1999 11 14 | 704 | 0.5− | 0.3− | 2003 10 19 | 691 | 0.0 | 0.0 | 2003 11 20 | 291 | 0.2− | 0.1+ |
| 1999 11 14 | 704 | 0.4+ | 0.2+ | 2003 10 19 | 691 | 0.2− | 0.0 | 2005 03 10 | 703 | 0.2− | 0.1− |
| 1999 11 14 | 704 | 0.0 | 0.1+ | 2003 10 19 | 691 | 0.1+ | 0.1+ | 2005 03 10 | 703 | 0.2− | 0.4+ |
| 1999 11 14 | 704 | 0.3+ | 0.8+ | 2003 10 29 | 704 | 0.2+ | 0.3− | 2005 03 10 | 703 | 0.5+ | 0.1+ |
| 1999 11 14 | 704 | 0.8− | 0.3− | 2003 10 29 | 704 | 0.4− | 0.0 | 2005 03 10 | 703 | (3.4− | 0.5+) |
| 1999 11 17 | 691 | 0.0 | 0.3− | 2003 10 29 | 704 | 0.0 | 0.3+ | | | | |
| 1999 11 17 | 691 | 0.4+ | 0.2− | 2003 11 20 | 691 | 0.0 | 0.2+ | | | | |

**1999 VB$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.88515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27917615 | $\omega$ | 340.45271 | | +0.94552916 | −0.30635850 | |
| $a$ | 2.3185538 | $\Omega$ | 37.95153 | | +0.31740011 | +0.79244358 | |
| $e$ | 0.3490275 | $i$ | 10.31177 | | +0.07233100 | +0.52742549 | |
| $P$ | 3.53 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 1999 10 03 | 704 | 0.7− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1999 10 03 | 704 | 0.2− | 0.7+ | 2006 09 26 | 704 | 1.0+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 1999 10 03 | 704 | 0.5− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 1999 10 10 | 704 | 1.7+ | 0.7− | 2006 09 26 | 703 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 1999 10 10 | 704 | 0.6+ | 0.7− | 2006 09 26 | 703 | 0.1+ | 0.4+ | 2006 11 06 | 644 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 0.4+ | 1.1− | 2006 09 26 | 703 | 0.0 | 0.5+ | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 1999 10 22 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 699 | 0.3− | 0.2− | 2006 11 06 | 644 | 0.1− | 0.3− |
| 1999 10 22 | 704 | 0.4+ | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 1999 10 22 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.5− | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 1999 10 22 | 704 | 0.7+ | 1.2+ | 2006 09 30 | 704 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.6+ |
| 1999 11 03 | 012 | 0.7− | 0.4+ | 2006 09 30 | 704 | 1.0− | 1.5+ | 2006 11 11 | 703 | 0.0 | 0.4+ |
| 1999 11 03 | 012 | 0.7+ | 0.1+ | 2006 09 30 | 704 | 1.2− | 0.3+ | 2006 11 11 | 703 | 1.4− | 0.4+ |
| 1999 11 03 | 704 | 1.2+ | 1.8− | 2006 09 30 | 704 | 1.3− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 1999 11 03 | 704 | 0.7+ | 1.3− | 2006 09 30 | 704 | 1.2− | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.6− |
| 1999 11 03 | 704 | 0.0 | 1.1− | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 1999 11 04 | 703 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 1999 11 04 | 703 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 13 | G96 | 0.0 | 0.5− |
| 1999 11 04 | 703 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1− | 0.5− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 1999 11 04 | 703 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 1999 11 09 | 703 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.7− |
| 1999 11 09 | 703 | (3.1− | 2.4−) | 2006 10 19 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.7− |
| 1999 11 09 | 703 | 0.8− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.1+ |
| 1999 11 09 | 703 | 1.4− | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 1999 12 07 | 703 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.3− |
| 1999 12 07 | 703 | 0.1− | 0.8− | 2006 10 22 | 704 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.3− |
| 1999 12 07 | 703 | 0.0 | 0.0 | 2006 10 22 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 1999 12 07 | 703 | 0.1+ | 0.5− | 2006 10 22 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 704 | (3.9− | 3.0+) |
| 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 10 22 | 704 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3− | 1.0+ |
| 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 10 22 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 1.1− | 0.8+ |
| 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.7+ | 2006 11 19 | 704 | 0.9− | 1.2+ |
| 2006 09 18 | 703 | 0.5+ | 0.2− | 2006 10 22 | 703 | 1.2+ | 1.4+ | 2006 11 19 | 704 | (1.0− | 2.2+) |
| 2006 09 19 | 958 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.8+ | 0.4+ | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2006 09 19 | 958 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2006 09 19 | 958 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.6− | 2006 11 19 | 704 | 1.5− | 0.3+ |
| 2006 09 20 | 958 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | (1.1+ | 1.7+) |
| 2006 09 20 | 958 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.9+ | 1.1− |
| 2006 09 20 | 958 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2006 09 21 | 699 | 0.0 | 0.3− | 2006 10 27 | 704 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2006 09 21 | 699 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.6− | 0.2− | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2006 09 21 | 699 | 0.1− | 0.4− | 2006 10 27 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.7− | 1.4+ |
| 2006 09 25 | 699 | 0.6+ | 0.2+ | 2006 10 27 | 704 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2006 09 25 | 699 | 0.3− | 0.4+ | 2006 10 27 | 704 | 1.0− | 0.0 | 2006 11 28 | 704 | 0.6+ | 1.0+ |
| 2006 09 25 | 699 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.3− | 0.6+ |
| 2006 09 25 | 699 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | | | |

**1999 VO$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.17096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28123955 | $\omega$ | 15.64434 | | +0.10341491 | −0.98951054 | |
| $a$ | 2.3071994 | $\Omega$ | 68.50498 | | +0.90054008 | +0.05009232 | |
| $e$ | 0.1356158 | $i$ | 6.22351 | | +0.42229482 | +0.13549775 | |
| $P$ | 3.50 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.5− | 0.1+ | 1999 11 15 | 691 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.6+ |
| 1999 10 02 | 691 | 0.5− | 0.1+ | 1999 11 15 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.9− | 0.1− |
| 1999 10 02 | 691 | 0.8− | 0.5− | 1999 11 15 | 691 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.7− |
| 1999 10 15 | 691 | 0.9+ | 0.1− | 1999 12 04 | 691 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.7− | 0.5+ |
| 1999 10 15 | 691 | 0.5+ | 0.0 | 1999 12 04 | 691 | 0.1− | 0.6− | 2006 11 11 | 703 | 1.1− | 0.0 |
| 1999 10 15 | 691 | 0.4+ | 0.2+ | 1999 12 04 | 691 | 0.6− | 0.7+ | 2006 11 17 | 704 | (0.0 | 1.9+) |
| 1999 10 19 | 691 | 0.5+ | 0.1− | 1999 12 18 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.2+ |
| 1999 10 19 | 691 | 0.8+ | 0.0 | 1999 12 18 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.3+ |
| 1999 10 19 | 691 | 0.7+ | 0.3− | 1999 12 18 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.9+ |
| 1999 11 01 | 691 | 0.4− | 0.3− | 2006 10 17 | G96 | 1.0+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.6− |
| 1999 11 01 | 691 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 17 | 703 | 0.2− | 0.7− |
| 1999 11 01 | 691 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 17 | 703 | 0.4− | 0.0 |
| 1999 11 09 | 691 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 1999 11 09 | 691 | 0.3− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 1999 11 09 | 691 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.5− | 0.1− |
| 1999 11 15 | 704 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 1.0+ | 1.0− |
| 1999 11 15 | 704 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.4+ | | | | |
| 1999 11 15 | 704 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.4+ | | | | |

**1999 VQ$_{139}$ = 2006 WY$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.25231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28047783 | $\omega$ | 276.13776 | | −0.50806854 | | +0.86111883 |
| $a$ | 2.3113747 | $\Omega$ | 323.30811 | | −0.77752217 | | −0.46775531 |
| $e$ | 0.0763092 | $i$ | 1.77027 | | −0.37057473 | | −0.19919670 |
| $P$ | 3.51 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.0 | 0.5− | 1999 11 15 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− |
| 1995 07 22 | 691 | 0.3+ | 0.6− | 2002 08 17 | 644 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1995 07 22 | 691 | 0.3− | 0.7− | 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 1995 09 02 | 691 | 0.1+ | 0.6+ | 2002 08 17 | 644 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.1− |
| 1995 09 02 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1995 09 02 | 691 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.3− | 0.1− |
| 1999 11 03 | 691 | 0.2+ | 0.5− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 1999 11 03 | 691 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.4+ |
| 1999 11 03 | 691 | 0.7+ | 0.1+ | 2006 10 16 | 691 | 0.5+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 1999 11 10 | 691 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 1999 11 10 | 691 | 0.8+ | 0.0 | 2006 10 20 | 691 | 0.7− | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.3− |
| 1999 11 10 | 691 | 0.0 | 0.5− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 1999 11 15 | 691 | 0.7− | 0.5− | 2006 10 20 | 691 | 0.0 | 0.7+ | 2006 11 20 | 691 | 0.1+ | 0.5+ |
| 1999 11 15 | 691 | 0.5− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.1− |

**1999 VE$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.70247 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27265481 | $\omega$ | 260.32172 | | +0.61946791 | | +0.76784556 |
| $a$ | 2.3553780 | $\Omega$ | 49.24887 | | −0.60881446 | | +0.60124655 |
| $e$ | 0.1756409 | $i$ | 12.44992 | | −0.49558498 | | +0.22116912 |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.0 | 0.0 | 1999 11 14 | 691 | 1.2+ | 0.5− | 2006 09 21 | 699 | 0.6− | 0.1+ |
| 1999 10 02 | 691 | 0.1+ | 0.1+ | 1999 11 14 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.5− |
| 1999 10 02 | 691 | 0.1+ | 0.1− | 1999 11 14 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.6+ |
| 1999 10 10 | 691 | 0.3+ | 0.1+ | 1999 11 15 | 691 | 0.6− | 0.0 | 2006 09 25 | 699 | 1.0− | 0.7+ |
| 1999 10 10 | 691 | 0.4− | 0.2+ | 1999 11 15 | 691 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.7+ | 0.4+ |
| 1999 10 10 | 691 | 0.1+ | 0.3− | 1999 11 15 | 691 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 1999 11 09 | 704 | 0.8− | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 1999 11 09 | 704 | 1.1+ | 0.1+ | 2006 09 21 | 699 | 0.8+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1999 11 09 | 704 | 0.4− | 0.2+ | 2006 09 21 | 699 | 1.2− | 0.4− | | | | |

**1999 VB$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.25082 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17490388 | $\omega$ | 52.87657 | | +0.03974271 | | −0.99911949 |
| $a$ | 3.1666720 | $\Omega$ | 34.85298 | | +0.90913403 | | +0.03057377 |
| $e$ | 0.1426817 | $i$ | 1.34807 | | +0.41460323 | | +0.02873123 |
| $P$ | 5.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.4− | 1.3− | 1999 12 17 | 691 | 0.1+ | 0.3+ | 2005 12 27 | G96 | 0.2− | 0.9+ |
| 1999 11 12 | 704 | 0.0 | 0.6− | 2004 09 11 | 691 | 0.3+ | 0.4+ | 2005 12 27 | G96 | 0.8+ | 0.6+ |
| 1999 11 12 | 704 | 0.4+ | 0.1+ | 2004 09 11 | 691 | 0.2+ | 0.0 | 2005 12 27 | G96 | 0.2− | 0.0 |
| 1999 11 13 | 691 | 0.2− | 0.1− | 2004 09 11 | 691 | 0.0 | 0.1− | 2006 01 06 | G96 | 0.4+ | 0.1+ |
| 1999 11 13 | 691 | 0.0 | 0.4− | 2004 09 23 | 691 | 0.1− | 0.0 | 2006 01 06 | G96 | 0.0 | 0.1+ |
| 1999 11 13 | 691 | 0.1+ | 0.1− | 2004 09 23 | 691 | 0.0 | 0.2− | 2006 01 06 | G96 | 0.0 | 0.0 |
| 1999 11 15 | 704 | 0.0 | 0.0 | 2004 09 23 | 691 | 0.1− | 0.0 | 2006 01 06 | G96 | 0.1+ | 0.2+ |
| 1999 11 15 | 704 | 0.0 | 0.6+ | 2004 10 10 | 691 | 0.9− | 0.2+ | 2006 01 25 | G96 | 0.5− | 0.1− |
| 1999 11 15 | 704 | 0.2+ | 0.1+ | 2004 10 10 | 691 | 0.2+ | 0.2− | 2006 01 25 | G96 | 0.3− | 0.2− |
| 1999 11 15 | 704 | 0.1− | 0.7+ | 2004 10 10 | 691 | 0.3+ | 0.1+ | 2006 01 25 | G96 | 0.2− | 0.1− |
| 1999 11 15 | 704 | 1.2+ | 0.6− | 2005 12 07 | 691 | 0.1− | 0.2− | 2006 01 25 | G96 | 0.1− | 0.0 |
| 1999 12 17 | 691 | 0.1− | 0.2+ | 2005 12 07 | 691 | 0.1+ | 0.0 | | | | |
| 1999 12 17 | 691 | 0.0 | 0.0 | 2005 12 07 | 691 | 0.0 | 0.0 | | | | |

**1999 VN$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.59333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29240180 | $\omega$ | 346.67549 | | +0.99706774 | | −0.06963046 |
| $a$ | 2.2481020 | $\Omega$ | 17.41164 | | +0.07625466 | | +0.86928392 |
| $e$ | 0.1900746 | $i$ | 6.08914 | | +0.00641487 | | +0.48938437 |
| $P$ | 3.37 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.1− | 0.0 | 1999 10 31 | 691 | 0.5+ | 0.3− | 2006 11 16 | 704 | 0.7− | 0.9+ |
| 1999 09 14 | 704 | 1.0− | 0.5+ | 1999 10 31 | 691 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.5− | 0.4+ |
| 1999 09 14 | 704 | 0.2− | 0.3+ | 1999 10 31 | 691 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 1999 09 14 | 704 | 0.3− | 0.4+ | 1999 11 10 | 691 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 1999 09 14 | 704 | 1.0− | 0.8+ | 1999 11 10 | 691 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.2− |
| 1999 09 14 | 703 | 1.0+ | 0.1+ | 1999 11 10 | 691 | 0.4+ | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.2− |
| 1999 09 14 | 703 | 0.7+ | 0.5+ | 1999 11 16 | 691 | 0.5− | 0.0 | 2006 11 17 | 691 | 0.6+ | 0.2+ |
| 1999 09 14 | 703 | 0.7− | 0.5− | 1999 11 16 | 691 | 0.5− | 0.2+ | | | | |
| 1999 09 14 | 703 | 0.5− | 1.0− | 1999 11 16 | 691 | 0.0 | 0.2− | | | | |

**1999 VQ$_{153}$ = 2006 UE$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.15442 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27887862 | $\omega$ | 233.94424 | | +0.11841276 | | −0.99245749 |
| $a$ | 2.3202025 | $\Omega$ | 209.30327 | | +0.93060303 | | +0.12206391 |
| $e$ | 0.0291643 | $i$ | 3.71665 | | +0.34634726 | | +0.01133714 |
| $P$ | 3.53 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 11 | 691 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 1999 11 11 | 691 | 0.7+ | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1999 11 11 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.4− | 0.1− |
| 1999 11 16 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 1999 11 16 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.3− |
| 1999 11 16 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.0 |
| 1999 11 28 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 1999 11 28 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 1999 11 28 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.5− | 1.3− |
| 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.5+ | 0.5− |
| 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2006 10 16 | 691 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.6− | 0.6+ |

**1999 VQ$_{156}$ = 2006 RD$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.20649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27333580 | $\omega$ | 4.98420 | | +0.81750811 | | −0.57575143 |
| $a$ | 2.3514642 | $\Omega$ | 30.18132 | | +0.52743957 | | +0.73884833 |
| $e$ | 0.2140954 | $i$ | 1.57436 | | +0.23127472 | | +0.35016201 |
| $P$ | 3.61 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.9+ | 0.0 | 2006 09 16 | 699 | 0.5− | 0.6+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 1999 11 09 | 704 | 1.0+ | 0.2− | 2006 09 16 | 699 | 0.1− | 1.1+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 1999 11 09 | 704 | 1.3+ | 0.3− | 2006 09 16 | 699 | (0.7+ | 1.7+) | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1999 11 09 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | (1.0− | 2.0−) | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1999 11 12 | 704 | 0.6− | 0.7− | 2006 09 19 | 703 | 0.5+ | 0.7− | 2006 10 20 | 644 | 0.5+ | 0.3− |
| 1999 11 12 | 704 | 0.6+ | 0.6− | 2006 09 19 | 703 | 1.0+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1999 11 12 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 1999 11 12 | 704 | 0.9− | 0.4+ | 2006 09 20 | 704 | 1.0+ | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 1999 11 16 | 704 | 1.6− | 0.6− | 2006 09 20 | 704 | 0.8+ | 0.8+ | 2006 10 20 | G96 | 0.6− | 0.2− |
| 1999 11 16 | 704 | 0.6+ | 0.4− | 2006 09 20 | 704 | 0.1+ | 1.0+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 1999 11 16 | 704 | 1.0− | 0.8− | 2006 09 20 | 704 | 0.4− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 1999 11 16 | 704 | 0.2− | 0.2+ | 2006 09 25 | 699 | 1.1+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2004 01 28 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.9− | 1.0+ | 2006 11 15 | G96 | 0.9+ | 0.7− |
| 2004 01 28 | 691 | 0.0 | 0.7+ | 2006 09 25 | 699 | 0.9− | 0.5− | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2004 01 28 | 691 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 1.1− | 0.6+ | 2006 11 21 | G96 | 0.5+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 12 | 703 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 09 12 | 703 | 1.1− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 09 12 | 703 | 1.0− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.8+ | 0.1+ |
| 2006 09 12 | 703 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.4− | 0.4− | | | | |

**1999 VH$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.14388 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27802127 | $\omega$ | 128.54712 | | +0.98192292 | | −0.17564580 |
| $a$ | 2.3249701 | $\Omega$ | 241.67181 | | +0.13893488 | | +0.92191978 |
| $e$ | 0.2504016 | $i$ | 4.59645 | | +0.12854759 | | +0.34527158 |
| $P$ | 3.55 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.2− | 0.0 | 2006 10 17 | 703 | 1.0− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 10 13 | 704 | 0.8− | 0.6+ | 2006 10 17 | A55 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.7− | 0.6+ | 2006 10 18 | A55 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 1999 10 13 | 704 | 0.0 | 0.2+ | 2006 10 18 | A55 | 0.8+ | 0.1+ | 2006 10 29 | 704 | 0.9+ | 0.4− |
| 1999 10 13 | 704 | 0.2+ | 0.6− | 2006 10 18 | A55 | 0.3+ | 0.0 | 2006 10 29 | 704 | 0.5− | 0.3− |
| 1999 11 14 | 704 | 0.6+ | 0.5− | 2006 10 18 | A55 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.2+ | 0.1− |
| 1999 11 14 | 704 | 0.5+ | 0.2− | 2006 10 18 | A55 | 0.8+ | 0.4+ | 2006 10 29 | 704 | 1.3+ | 0.1+ |
| 1999 11 14 | 704 | 0.5+ | 1.3− | 2006 10 18 | A55 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 1999 11 14 | 704 | 0.8+ | 1.0− | 2006 10 18 | A55 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 1999 11 16 | 704 | 0.9+ | 1.4− | 2006 10 19 | G96 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 1999 11 16 | 704 | 1.6+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1999 11 16 | 704 | 0.8− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 1999 11 29 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 1999 11 29 | 691 | 0.1− | 0.2− | 2006 10 20 | 704 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 1999 11 29 | 691 | 0.2− | 0.0 | 2006 10 20 | 704 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.1− | 0.6+ | 2006 10 20 | 704 | 0.0 | 0.7+ | 2006 11 11 | 703 | 1.1− | 0.2+ |
| 1999 12 07 | 704 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.2− |
| 1999 12 07 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.2+ |
| 1999 12 07 | 704 | 0.6− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 1999 12 18 | 691 | 0.1− | 0.3+ | 2006 10 20 | 704 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 1999 12 18 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 1.3+ |
| 1999 12 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.9+ |
| 2006 10 17 | 703 | 0.6− | 0.2− | 2006 10 21 | 703 | 0.5− | 0.5+ | 2006 11 19 | 704 | 0.9− | 0.1− |
| 2006 10 17 | 703 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.3− | 1.2+ | | | | |
| 2006 10 17 | 703 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.5− | 0.1− | | | | |

**1999 VP$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.45947 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28770726 | $\omega$ | 339.25110 | | +0.98431141 | | +0.17617991 |
| $a$ | 2.2724910 | $\Omega$ | 10.61512 | | −0.15367120 | | +0.88269346 |
| $e$ | 0.2357616 | $i$ | 2.97959 | | −0.08669607 | | +0.43567523 |
| $P$ | 3.43 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 25 | 691 | 0.2+ | 0.4− | 1999 10 06 | 704 | 0.4− | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.7− |
| 1992 09 25 | 691 | 0.2+ | 0.4− | 1999 11 03 | 691 | 0.1+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 1992 09 25 | 691 | 0.2+ | 0.6− | 1999 11 03 | 691 | 0.0 | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 1992 09 25 | 691 | 0.3− | 0.5+ | 1999 11 03 | 691 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 1992 09 25 | 691 | (1.9+ | 3.9+) | 1999 11 11 | 691 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.7− |
| 1992 09 25 | 691 | 0.2− | 0.8+ | 1999 11 11 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.0 |
| 1999 10 06 | 704 | 0.0 | 0.0 | 1999 11 11 | 691 | 0.5− | 0.3− | 2006 10 04 | G96 | 0.3− | 0.5− |
| 1999 10 06 | 704 | 0.2+ | 0.0 | 1999 11 15 | 691 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.6− |
| 1999 10 06 | 704 | 0.1− | 0.3+ | 1999 11 15 | 691 | 0.1− | 0.1− | | | | |
| 1999 10 06 | 704 | 0.1− | 0.2+ | 1999 11 15 | 691 | 0.1− | 0.1− | | | | |

**1999 VX$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.54544 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27515071 | $\omega$ | 168.85684 | | +0.90047472 | | −0.42958044 |
| $a$ | 2.3411126 | $\Omega$ | 216.82430 | | +0.38981050 | | +0.86641045 |
| $e$ | 0.2759622 | $i$ | 6.50165 | | +0.19285500 | | +0.25454585 |
| $P$ | 3.58 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.1+ | 0.4+ | 1999 12 05 | 703 | 0.1+ | 0.7+ | 2006 10 10 | 644 | 0.9− | 0.3− |
| 1999 11 01 | 703 | 0.7− | 0.8+ | 1999 12 05 | 703 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.8− | 0.3− |
| 1999 11 01 | 703 | 0.9− | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2− |
| 1999 11 01 | 703 | 1.0+ | 0.8+ | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 1999 11 03 | 691 | 0.8− | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 1999 11 03 | 691 | 0.2+ | 0.1− | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 1999 11 03 | 691 | 0.4+ | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 1999 11 04 | 704 | 0.3+ | 0.2− | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 1999 11 04 | 704 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.0 | 0.5− | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 1999 11 04 | 704 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.8+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1999 11 04 | 704 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 1999 11 04 | 704 | 0.8+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1999 11 15 | 704 | 0.7+ | 0.9− | 2006 09 20 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 1999 11 15 | 704 | 0.5− | 0.9− | 2006 09 20 | 699 | 0.1+ | 0.8+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 1999 11 15 | 704 | 0.5− | 0.1+ | 2006 09 20 | 699 | 0.9− | 1.0− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 1999 11 15 | 704 | 0.0 | 0.4− | 2006 09 20 | 699 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 2.9− | 2.9− |
| 1999 11 15 | 704 | 0.2− | 0.7− | 2006 09 22 | 703 | 0.1− | 1.0− | 2006 11 11 | 703 | 0.9+ | 0.5+ |
| 1999 11 17 | 704 | 0.5+ | 0.4+ | 2006 09 22 | 703 | 1.1− | 0.8− | 2006 11 11 | 703 | 2.0+ | 1.4+ |
| 1999 11 17 | 704 | 0.3+ | 0.5+ | 2006 09 22 | 703 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.3+ | 1.6+ |
| 1999 11 17 | 704 | 0.4+ | 0.3− | 2006 09 22 | 703 | 0.7+ | 0.5− | 2006 11 14 | G96 | 0.4− | 0.6− |
| 1999 11 17 | 704 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.8− | 0.4+ | 2006 11 14 | G96 | 0.5+ | 0.2− |
| 1999 11 17 | 704 | 0.9− | 1.0− | 2006 10 01 | 704 | 0.9+ | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 1999 12 05 | 703 | 1.1− | 0.1− | 2006 10 01 | 704 | 0.5+ | 1.1+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 1999 12 05 | 703 | 0.6+ | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.6+ | | | | |

**1999 VT$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.96004 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28830457 | $\omega$ | 290.94590 | | +0.91875994 | | +0.19635076 |
| $a$ | 2.2693511 | $\Omega$ | 59.21489 | | +0.02770112 | | +0.83337001 |
| $e$ | 0.2951035 | $i$ | 23.49761 | | −0.39384364 | | +0.51666314 |
| $P$ | 3.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.5+ | 0.8+ | 1999 12 05 | 704 | 0.3− | 0.6+ | 2006 11 15 | 704 | 0.7+ | 0.8− |
| 1999 10 16 | 704 | 0.8+ | 0.2− | 1999 12 05 | 704 | 0.1− | 0.4− | 2006 11 15 | 704 | 0.2− | 0.2− |
| 1999 10 16 | 704 | 0.1− | 0.3+ | 1999 12 05 | 704 | 0.3+ | 1.0− | 2006 11 15 | 704 | 0.2− | 0.1+ |
| 1999 10 16 | 704 | 0.8+ | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.5− | 2006 11 16 | 704 | 0.9+ | 0.0 |
| 1999 10 16 | 704 | 0.7+ | 0.5+ | 2006 11 12 | G96 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.3− |
| 1999 11 05 | 703 | 0.6− | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.0 |
| 1999 11 05 | 703 | 0.3− | 0.0 | 2006 11 13 | 448 | 0.2+ | 0.8− | 2006 11 16 | 704 | 0.3+ | 0.4− |
| 1999 11 05 | 703 | 0.5+ | 0.0 | 2006 11 13 | 854 | 1.1+ | 0.1− | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 1999 11 05 | 703 | 0.3+ | 0.6− | 2006 11 13 | 854 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 1999 11 07 | 704 | 0.4− | 0.6+ | 2006 11 13 | 448 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.5− |
| 1999 11 07 | 704 | 0.2+ | 0.4− | 2006 11 13 | 854 | 0.7− | 0.8+ | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 1999 11 07 | 704 | 1.4− | 0.0 | 2006 11 13 | G96 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 1999 11 07 | 704 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.9+ |
| 1999 11 10 | 704 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.1+ | 2006 11 22 | 704 | 1.3− | 0.9− |
| 1999 11 10 | 704 | 0.5− | 0.9− | 2006 11 13 | G96 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2− | 1.3+ |
| 1999 11 10 | 704 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 1999 11 10 | 704 | 0.5− | 0.5− | 2006 11 15 | 704 | 1.1+ | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 1999 11 10 | 704 | 0.6− | 0.4− | 2006 11 15 | 704 | 0.6+ | 0.0 | 2006 11 23 | G96 | 0.4− | 0.0 |
| 1999 12 04 | 699 | 0.4+ | 0.9+ | 2006 11 15 | 704 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.6− | 0.1− |
| 1999 12 04 | 699 | 0.4+ | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.5− | 0.1− |
| 1999 12 04 | 699 | 0.3+ | 0.2− | 2006 11 15 | 704 | 0.7+ | 0.1+ | | | | |
| 1999 12 05 | 704 | 0.3+ | 0.9+ | 2006 11 15 | 704 | 0.1+ | 0.0 | | | | |

**1999 VW$_{182}$ = 2006 VN$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.42137 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28351596 | $\omega$ | 279.99944 | | +0.91503532 | +0.39127360 | |
| $a$ | 2.2948328 | $\Omega$ | 57.02894 | | −0.30891326 | +0.83605692 | |
| $e$ | 0.2622195 | $i$ | 6.71220 | | −0.25938957 | +0.38459563 | |
| $P$ | 3.48 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.7+ | 0.1− | 1999 11 17 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 | |
| 1999 11 09 | 704 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.5+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.2+ | |
| 1999 11 09 | 704 | 0.7− | 0.5− | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.4− | 0.2+ | |
| 1999 11 12 | 704 | 0.6− | 1.3− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.1− | |
| 1999 11 12 | 704 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.0 | |
| 1999 11 12 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.2− | |
| 1999 11 17 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.3− | 0.2− | | | | | |
| 1999 11 17 | 691 | 0.0 | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 | | | | | |

**1999 VH$_{191}$ = 2006 UL$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.16074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28422016 | $\omega$ | 315.58674 | | +0.99816407 | +0.05243027 | |
| $a$ | 2.2910407 | $\Omega$ | 41.43634 | | −0.03438698 | +0.90270824 | |
| $e$ | 0.2298271 | $i$ | 2.62631 | | −0.04986011 | +0.42704672 | |
| $P$ | 3.47 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 02 | 174 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1+ | |
| 1999 11 02 | 174 | 0.9+ | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.5− | 2006 11 18 | 691 | 0.8− | 0.3+ | |
| 1999 11 05 | 704 | 0.2− | 0.9+ | 2006 10 17 | G96 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1− | |
| 1999 11 05 | 704 | 0.8− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.2+ | |
| 1999 11 05 | 704 | 0.2− | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.1+ | |
| 1999 11 05 | 704 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | (0.1+ | 2.7+) | |
| 1999 11 05 | 704 | 0.6− | 1.3+ | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.7+ | |
| 1999 11 09 | 704 | 0.8+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 1.1+ | |
| 1999 11 09 | 704 | 0.9− | 0.7− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 1.0− | 1.1+ | |
| 1999 11 09 | 704 | (2.4− | 0.3−) | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.2− | |
| 1999 11 12 | 704 | 0.6− | 1.5− | 2006 10 31 | G96 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.0 | 0.2− | |
| 1999 11 12 | 704 | 1.2+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.3− | |
| 1999 11 12 | 704 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.1− | |
| 1999 11 14 | 704 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.2− | |
| 1999 11 14 | 704 | 1.0+ | 1.8− | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.5− | |
| 1999 11 14 | 704 | 0.2− | 0.6− | 2006 11 09 | 691 | 0.2+ | 0.0 | 2006 12 01 | G96 | 1.1+ | 0.2− | |
| 2006 10 17 | G96 | 0.8+ | 0.2− | 2006 11 18 | 691 | 0.8− | 0.6− | 2006 12 01 | G96 | 0.6+ | 0.3+ | |

**1999 VZ$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.54199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28322958 | $\omega$ | 83.84474 | | +0.99627607 | −0.05582531 | |
| $a$ | 2.2963794 | $\Omega$ | 279.34200 | | +0.02433885 | +0.91318770 | |
| $e$ | 0.2416400 | $i$ | 3.81822 | | +0.08271410 | +0.40369761 | |
| $P$ | 3.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.8+ | 0.4− | 2006 11 13 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.2+ | |
| 1999 11 03 | 704 | 0.5− | 0.0 | 2006 11 14 | 703 | 0.6− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.3+ | |
| 1999 11 03 | 704 | 0.8+ | 0.2− | 2006 11 14 | 703 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.1− | |
| 1999 11 03 | 704 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.1− | 0.4+ | |
| 1999 11 04 | 703 | 0.3− | 1.2+ | 2006 11 14 | 703 | 1.2+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.7+ | |
| 1999 11 04 | 703 | 1.3− | 0.9− | 2006 11 15 | 704 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 0.0 | 0.9+ | |
| 1999 11 04 | 703 | 0.5+ | 0.0 | 2006 11 15 | 704 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.8+ | |
| 1999 11 04 | 703 | 0.3− | 0.6− | 2006 11 15 | 704 | 1.2+ | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.7+ | |
| 1999 12 08 | 704 | 0.5− | 1.0− | 2006 11 16 | 704 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.2+ | |
| 1999 12 08 | 704 | 1.0+ | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.7+ | 2006 11 22 | 704 | 0.6− | 0.5+ | |
| 1999 12 08 | 704 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.4− | 0.7+ | |
| 1999 12 08 | 704 | 0.8+ | 0.2+ | 2006 11 16 | 704 | 0.9+ | 0.3− | 2006 11 22 | 704 | 0.2− | 0.1+ | |
| 1999 12 13 | 703 | 1.1+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.3− | 2006 11 27 | 704 | 0.5+ | 0.2+ | |
| 1999 12 13 | 703 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.3− | |
| 1999 12 13 | 703 | 1.5− | 0.8+ | 2006 11 16 | 704 | 0.1− | 0.2+ | 2006 11 27 | 704 | 0.5+ | 0.4+ | |
| 1999 12 13 | 703 | 0.1− | 0.8− | 2006 11 16 | 704 | 0.2+ | 0.5+ | 2006 11 27 | 704 | 0.1+ | 0.2− | |
| 2004 01 30 | 691 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.4+ | 0.0 | |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.3+ | 2006 11 28 | 704 | 0.3+ | 0.2− | |
| 2004 01 30 | 691 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.2− | |
| 2006 11 13 | 691 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.9+ | 1.0− | |
| 2006 11 13 | 691 | 0.2− | 0.2− | 2006 11 18 | 691 | (0.8− | 1.8−) | 2006 11 28 | 704 | 0.6− | 0.2− | |

**1999 VW$_{205}$ = 2006 QG$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.65438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26864516 | $\omega$ | 335.76104 | | +0.78568780 | −0.61742408 | |
| $a$ | 2.3787567 | $\Omega$ | 62.42281 | | +0.57443279 | +0.70505023 | |
| $e$ | 0.1964727 | $i$ | 2.48935 | | +0.22961194 | +0.34884334 | |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.4+ | 0.8+ | 1999 11 12 | 704 | 0.1− | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | |
| 1999 10 10 | 704 | 1.3− | 0.6+ | 1999 11 12 | 704 | 0.7+ | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.2− | |
| 1999 10 10 | 704 | 0.4− | 0.5+ | 1999 11 13 | 691 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.1− | 0.5− | |
| 1999 11 12 | 704 | 0.3+ | 0.2+ | 1999 11 13 | 691 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.0 | 0.2+ | |
| 1999 11 12 | 704 | 0.3− | 0.2− | 1999 11 13 | 691 | 0.2− | 0.4− | 2006 08 23 | 644 | 0.0 | 0.1+ | |
| 1999 11 12 | 704 | 0.8+ | 1.0− | 2006 08 18 | 644 | 0.3+ | 0.4− | | | | | |

**1999 VC$_{210}$ = 2005 GW$_{170}$ = 2006 SG$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.73009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27218570 | $\omega$ | 143.27118 | | +0.99547359 | −0.06340892 | |
| $a$ | 2.3580835 | $\Omega$ | 220.54225 | | +0.03759212 | +0.94684832 | |
| $e$ | 0.1226690 | $i$ | 6.25253 | | +0.08728784 | +0.31536895 | |
| $P$ | 3.62 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 29 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ | |
| 1999 10 29 | 691 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.6+ | 0.1− | |
| 1999 10 29 | 691 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.4− | |
| 1999 11 12 | 704 | 0.4− | 0.2− | 2006 09 17 | 703 | 0.4− | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.7− | |
| 1999 11 12 | 704 | 0.5+ | 0.2− | 2006 09 20 | 699 | (1.9+ | 1.1−) | 2006 10 22 | 644 | 0.3+ | 0.3+ | |
| 1999 11 12 | 704 | 0.6+ | 0.0 | 2006 09 20 | 699 | (0.4− | 2.0+) | 2006 10 22 | 644 | 0.1+ | 0.0 | |
| 1999 11 12 | 704 | 0.6+ | 0.5+ | 2006 09 20 | 699 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1− | |
| 1999 11 12 | 704 | 0.2+ | 0.4− | 2006 09 20 | 699 | 0.4+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.0 | |
| 1999 11 16 | 691 | 0.4− | 0.3+ | 2006 09 25 | 704 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 | |
| 1999 11 16 | 691 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.7− | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.2− | |
| 1999 11 16 | 691 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.1+ | 0.8− | 2006 10 24 | 644 | 0.2+ | 0.2− | |
| 2005 04 12 | G96 | 0.5− | 0.2+ | 2006 09 25 | 704 | 0.1+ | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.2+ | |
| 2005 04 12 | G96 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.5− | 1.2− | 2006 10 24 | 644 | 0.1+ | 0.1− | |
| 2005 04 12 | G96 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.1+ | 1.1+ | 2006 10 28 | 691 | 0.0 | 0.4+ | |
| 2005 04 12 | G96 | 0.2− | 0.3− | 2006 09 29 | 699 | 0.7− | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2005 04 17 | 691 | 0.3+ | 0.7+ | 2006 09 29 | 699 | 0.4− | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.1+ | |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.6+ | 0.6− | 2006 10 31 | 691 | 0.2− | 0.5+ | |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.0 | |
| 2006 08 25 | D35 | 0.6+ | 0.3− | 2006 10 10 | 644 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.4+ | |
| 2006 08 25 | D35 | 0.5+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1− | | | | | |
| 2006 08 25 | D35 | 0.4+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.2− | | | | | |

**1999 VN$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.27469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27776537 | $\omega$ | 341.56213 | | +0.71765691 | −0.68969179 | |
| $a$ | 2.3263978 | $\Omega$ | 62.43953 | | +0.65183275 | +0.61653917 | |
| $e$ | 0.2356991 | $i$ | 6.24293 | | +0.24511756 | +0.37974292 | |
| $P$ | 3.55 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.4− | 0.6+ | 1999 12 05 | 691 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.0 |
| 1999 10 30 | 691 | 0.4− | 0.1+ | 1999 12 05 | 691 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.8− | 0.1− |
| 1999 10 30 | 691 | 0.2− | 0.3+ | 1999 12 05 | 691 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.9− | 0.8− |
| 1999 11 15 | 704 | 0.7+ | 1.2+ | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 1999 11 15 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 1999 11 15 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 1999 11 15 | 704 | 1.1+ | 0.3+ | 2006 10 16 | 703 | 1.5+ | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.4− |
| 1999 11 16 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 1999 11 16 | 691 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 1999 11 16 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.2− |

**1999 VQ$_{212}$ = 2006 TW$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.07937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12514668 | $\omega$ | 114.27012 | | +0.97504424 | +0.19512253 | |
| $a$ | 3.9584317 | $\Omega$ | 234.64377 | | −0.21940727 | +0.91974494 | |
| $e$ | 0.1513530 | $i$ | 7.46117 | | +0.03389964 | +0.34058250 | |
| $P$ | 7.88 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.0 | 0.2+ | 1999 11 29 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.5− | 0.4− | 1999 11 29 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 1.1− | 0.0 | 1999 12 07 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | 0.0 | 0.3+ | 1999 12 07 | 691 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.0 | 0.5− |
| 1999 11 17 | 691 | 0.2+ | 0.0 | 1999 12 07 | 691 | 0.2+ | 0.0 | 2006 10 23 | 703 | 0.1+ | 0.4− |
| 1999 11 17 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 23 | 703 | 0.3− | 0.1+ |
| 1999 11 17 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 23 | 703 | (2.3− | 0.5+) |
| 1999 11 29 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2+ | | | | |

**1999 VW$_{214}$ = 2006 TH$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.37453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29193248 | $\omega$ | 63.40800 | | +0.34089369 | −0.94006920 | |
| $a$ | 2.2505108 | $\Omega$ | 6.67508 | | +0.83677418 | +0.29961621 | |
| $e$ | 0.0746065 | $i$ | 3.86522 | | +0.42848625 | +0.16278829 | |
| $P$ | 3.38 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 691 | 0.1+ | 0.2+ | 1999 11 10 | 691 | 1.0− | 0.7− | 2006 10 13 | 691 | 0.4− | 0.3− |
| 1999 10 16 | 691 | 0.2− | 0.1− | 1999 11 10 | 691 | 0.5+ | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.0 |
| 1999 10 16 | 691 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 1999 11 01 | 691 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 1999 11 01 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 1999 11 01 | 691 | 0.2+ | 0.6+ | 2006 09 30 | G96 | 0.5+ | 0.0 | | | | |
| 1999 11 10 | 691 | 0.3+ | 0.1− | 2006 10 13 | 691 | 0.2− | 0.1+ | | | | |

**1999 VF$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.49492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21721883 | $\omega$ | 349.77802 | | −0.06026282 | −0.97493104 | |
| $a$ | 2.7407604 | $\Omega$ | 103.43368 | | +0.93065759 | −0.13245953 | |
| $e$ | 0.2348885 | $i$ | 12.72174 | | +0.36089450 | +0.17878461 | |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.0 | 0.1+ | 1999 12 14 | 704 | 0.3+ | 0.0 | 2005 02 09 | 599 | 0.2− | 0.1+ |
| 1996 02 10 | 691 | 0.2+ | 0.2+ | 1999 12 14 | 704 | 0.3− | 0.8− | 2005 02 09 | 599 | 0.2− | 0.2+ |
| 1996 02 10 | 691 | 0.1+ | 0.4+ | 1999 12 14 | 704 | 0.1+ | 1.0+ | 2005 03 01 | 703 | 0.3− | 0.5− |
| 1999 11 05 | 704 | 0.3− | 0.7+ | 2000 01 05 | 704 | 0.2− | 1.2+ | 2005 03 01 | 703 | 0.4+ | 0.6− |
| 1999 11 05 | 704 | 0.5+ | 0.8− | 2000 01 05 | 704 | 0.0 | 0.4− | 2005 03 01 | 703 | 0.3+ | 0.9− |
| 1999 11 05 | 704 | (0.2+ | 2.3−) | 2000 01 05 | 704 | 0.4+ | 0.3+ | 2005 03 01 | 703 | 0.0 | 0.7− |
| 1999 11 16 | 703 | 0.7− | 0.8+ | 2000 01 07 | 704 | 0.2− | 0.6− | 2006 05 26 | 691 | 0.6+ | 0.5+ |
| 1999 11 16 | 703 | 0.1− | 0.7+ | 2000 01 07 | 704 | 0.4+ | 1.0− | 2006 05 26 | 691 | 0.3+ | 0.6+ |
| 1999 11 16 | 703 | 0.0 | 0.7+ | 2000 01 07 | 704 | 0.9+ | 2.0+ | 2006 05 26 | 691 | 0.4− | 0.3+ |
| 1999 11 16 | 703 | 1.2− | 1.2+ | 2005 02 09 | 599 | 0.1− | 0.0 | | | | |
| 1999 12 14 | 704 | 1.2− | 0.1+ | 2005 02 09 | 599 | 0.3− | 0.6− | | | | |

**1999 WR$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.21889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22010554 | $\omega$ | 63.16327 | | −0.12258986 | −0.98815111 | |
| $a$ | 2.7167441 | $\Omega$ | 34.27128 | | +0.84239735 | −0.15280233 | |
| $e$ | 0.2186647 | $i$ | 9.43944 | | +0.52472701 | +0.01445128 | |
| $P$ | 4.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2− | 0.2+ | 2004 11 22 | 704 | 1.9+ | 0.4+ | 2005 01 07 | 703 | 0.2+ | 0.3+ |
| 1999 10 09 | 704 | 0.1− | 0.2− | 2004 11 22 | 704 | 1.5+ | 0.2− | 2005 01 07 | 703 | 0.4− | 0.4+ |
| 1999 10 09 | 704 | 1.2+ | 1.0+ | 2004 11 22 | 704 | 1.4+ | 0.0 | 2005 01 07 | 703 | 0.1− | 0.3− |
| 1999 11 29 | 691 | 0.9+ | 0.7− | 2004 12 14 | 703 | 0.4− | 1.0+ | 2005 01 07 | 703 | 1.5+ | 0.7− |
| 1999 11 29 | 691 | 0.0 | 0.4+ | 2004 12 14 | 703 | 0.6− | 0.2+ | 2005 01 07 | 703 | 1.2− | 0.7+ |
| 1999 11 29 | 691 | 0.1+ | 0.3+ | 2004 12 14 | 703 | 0.3− | 0.2+ | 2005 01 17 | 704 | 0.5+ | 0.4+ |
| 1999 11 30 | 691 | 0.3− | 0.2+ | 2004 12 14 | 703 | 0.1− | 0.0 | 2005 01 17 | 704 | 0.0 | 0.2+ |
| 1999 11 30 | 691 | 0.5− | 0.2+ | 2004 12 22 | 703 | 0.7− | 0.7− | 2005 01 17 | 704 | 0.7+ | 0.5+ |
| 1999 11 30 | 691 | 0.3− | 0.1+ | 2004 12 22 | 703 | 0.4− | 0.5− | 2005 01 17 | 704 | 0.2+ | 0.8+ |
| 1999 12 05 | 691 | 0.0 | 0.1+ | 2004 12 22 | 703 | 0.5− | 0.9− | 2005 01 17 | 704 | 0.6+ | 0.9+ |
| 1999 12 05 | 691 | 0.6− | 0.1+ | 2004 12 22 | 703 | 0.8− | 0.2− | 2005 01 31 | 704 | 1.6− | 2.8− |
| 1999 12 05 | 691 | 0.4− | 0.1+ | 2005 01 07 | 703 | 0.1+ | 0.1+ | 2005 01 31 | 704 | 0.2− | 0.2+ |
| 2001 03 26 | 704 | 1.1− | 1.0+ | 2005 01 07 | 703 | 0.1− | 0.3− | 2005 01 31 | 704 | 0.4+ | 0.1+ |
| 2001 03 26 | 704 | 0.6− | 2.3+ | 2005 01 07 | 703 | 0.5+ | 0.0 | 2005 01 31 | 704 | 1.6− | 2.7− |
| 2001 03 26 | 704 | 0.1+ | 2.3+ | 2005 01 07 | 703 | 0.0 | 0.2− | 2005 03 08 | 703 | 0.1− | 0.5+ |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2005 01 07 | 703 | 0.0 | 0.2+ | 2005 03 08 | 703 | 1.6− | 0.4+ |
| 2001 04 16 | 645 | 0.2+ | 0.0 | 2005 01 07 | 703 | 0.1− | 0.9− | 2005 03 08 | 703 | 0.9+ | 1.5− |
| 2004 11 22 | 704 | 1.6+ | 1.7+ | 2005 01 07 | 703 | 0.0 | 0.3+ | 2005 03 08 | 703 | 0.7− | 0.4− |

**1999 WZ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.30909 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28087355 | $\omega$ | 295.84312 | | +0.67440799 | −0.58566523 | |
| $a$ | 2.3092032 | $\Omega$ | 103.48043 | | +0.72512303 | +0.64013726 | |
| $e$ | 0.3422856 | $i$ | 27.54026 | | −0.13917777 | +0.49721276 | |
| $P$ | 3.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 704 | 0.9+ | 0.3+ | 2000 01 07 | 699 | 0.1− | 0.3− | 2000 01 11 | 704 | 0.5− | 0.4+ |
| 1999 11 13 | 704 | 0.2− | 0.1− | 2000 01 08 | 704 | 0.0 | 0.1− | 2000 01 11 | 704 | 0.4+ | 0.5− |
| 1999 11 13 | 704 | 0.5− | 0.8− | 2000 01 08 | 704 | 0.0 | 0.8+ | 2000 01 11 | 704 | 0.2− | 0.3− |
| 1999 11 13 | 704 | 0.9− | 0.1− | 2000 01 08 | 704 | 1.5+ | 0.6+ | 2000 01 11 | 704 | 0.5+ | 0.3− |
| 1999 11 30 | 704 | 0.0 | 0.3+ | 2000 01 08 | 704 | 1.0+ | 1.6+ | 2006 09 26 | E12 | 0.3+ | 0.5− |
| 1999 11 30 | 704 | 0.5+ | 1.0+ | 2000 01 08 | 704 | 1.3− | 0.2+ | 2006 09 26 | E12 | 0.2+ | 0.2+ |
| 1999 11 30 | 704 | 0.2+ | 0.2− | 2000 01 10 | 704 | 0.1+ | 0.2− | 2006 09 26 | E12 | 0.4+ | 0.3+ |
| 1999 12 01 | 704 | 0.3+ | 0.2+ | 2000 01 10 | 704 | 0.3− | 0.4− | 2006 09 26 | E12 | 0.1− | 0.5+ |
| 1999 12 01 | 704 | 0.2− | 0.4+ | 2000 01 10 | 704 | 0.7+ | 0.2− | 2006 11 20 | E12 | 0.1− | 0.2− |
| 1999 12 01 | 704 | 0.7− | 0.8− | 2000 01 10 | 704 | 0.1− | 0.3− | 2006 11 20 | E12 | 0.0 | 0.2− |
| 2000 01 07 | 699 | 0.2− | 0.3− | 2000 01 10 | 704 | 0.2− | 0.4− | 2006 11 20 | E12 | 0.0 | 0.2− |
| 2000 01 07 | 699 | 0.5− | 0.3+ | 2000 01 11 | 704 | 0.2+ | 0.4− | 2006 11 20 | E12 | 0.4− | 0.1− |

**1999 WJ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.25916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28396674 | $\omega$ | 169.92087 | | −0.47404857 | +0.87825490 | |
| $a$ | 2.2924035 | $\Omega$ | 71.75802 | | −0.81237649 | −0.40874137 | |
| $e$ | 0.1277992 | $i$ | 3.79252 | | −0.33959152 | −0.24819112 | |
| $P$ | 3.47 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.3+ | 0.1+ | 1999 11 28 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.6− | 0.3+ |
| 1999 10 06 | 691 | 0.0 | 0.3+ | 1999 11 28 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 1999 10 06 | 691 | 0.1+ | 0.2+ | 1999 11 28 | 691 | 0.1+ | 0.3− | 2006 11 14 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.1+ | 0.1− | 1999 12 05 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.2+ | | | |
| 1999 10 10 | 691 | 0.3− | 0.1+ | 1999 12 05 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.5+ | | | |
| 1999 10 10 | 691 | 0.6− | 0.5− | 1999 12 05 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | (1.7− | 0.9+) | | | |
| 1999 11 12 | 704 | 0.2− | 0.8+ | 2006 11 12 | G96 | 0.8+ | 0.7− | 2006 11 17 | 703 | 0.0 | 0.4− | | | |
| 1999 11 12 | 704 | 0.1− | 1.0− | 2006 11 12 | G96 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.4− | | | |
| 1999 11 12 | 704 | 0.6− | 1.5− | 2006 11 12 | G96 | 0.0 | 0.2− | | | | | | | |

**1999 WT$_{15}$ = 2006 QQ$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.74289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26733362 | $\omega$ | 98.88048 | | +0.67026864 | +0.74189306 | |
| $a$ | 2.3865305 | $\Omega$ | 213.23063 | | −0.69332674 | +0.61722008 | |
| $e$ | 0.2074410 | $i$ | 1.91294 | | −0.26464690 | +0.26198105 | |
| $P$ | 3.69 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 691 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 1999 11 12 | 691 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.2+ | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 1999 11 12 | 691 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.4− |
| 1999 11 29 | 691 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 1999 11 29 | 691 | 0.4+ | 0.0 | 2006 08 28 | 699 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.7− |
| 1999 11 29 | 691 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.5+ | 2006 10 19 | G96 | 0.3− | 0.7− |
| 1999 12 05 | 691 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 1999 12 05 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 1999 12 05 | 691 | 0.2− | 0.4+ | 2006 09 14 | 703 | 1.1+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2006 08 21 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 1.2− | 0.6− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2006 08 21 | 704 | 0.2− | 1.0+ | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.7− |
| 2006 08 21 | 704 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.7+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.5+ |
| 2006 08 21 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.0 | | | | |
| 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 09 17 | 704 | 0.7− | 0.8+ | | | | |

**1999 WP$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.58096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27578338 | $\omega$ | 216.98271 | | +0.19998432 | −0.97109724 | |
| $a$ | 2.3375307 | $\Omega$ | 221.93206 | | +0.93914015 | +0.22789346 | |
| $e$ | 0.2525928 | $i$ | 11.24342 | | +0.27932428 | −0.07095580 | |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6− | 0.2− | 1999 11 05 | 704 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.5− | 1.4+ |
| 1999 10 10 | 704 | 0.4+ | 0.1+ | 1999 11 30 | 691 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.2− | 0.5− |
| 1999 10 10 | 704 | 0.3+ | 0.5− | 1999 11 30 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.5+ |
| 1999 10 10 | 704 | 0.5+ | 0.2− | 1999 11 30 | 691 | 0.1+ | 0.1− | 2006 09 15 | 704 | 1.0+ | 0.2+ |
| 1999 10 10 | 704 | 0.7+ | 1.0− | 1999 12 05 | 691 | 0.3− | 0.1+ | 2006 09 15 | 704 | 0.2− | 0.3+ |
| 1999 10 20 | 704 | 0.1+ | 0.3+ | 1999 12 05 | 691 | 0.3− | 0.1+ | 2006 09 15 | 704 | 0.5+ | 0.0 |
| 1999 10 20 | 704 | 0.7− | 0.3− | 1999 12 05 | 691 | 0.2− | 0.4+ | 2006 09 15 | 704 | 0.1+ | 0.0 |
| 1999 10 20 | 704 | 0.3+ | 0.8− | 2004 02 19 | 704 | 0.1− | 1.1+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 1999 10 20 | 704 | 0.5+ | 0.3− | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 1.9+ |
| 1999 10 20 | 704 | 0.5+ | 0.2− | 2004 02 19 | 704 | 0.5+ | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 1999 11 05 | 704 | 0.3+ | 0.4+ | 2004 02 19 | 704 | 0.4− | 0.6+ | 2006 10 17 | 703 | 1.5− | 0.9− |
| 1999 11 05 | 704 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.3− | 0.6+ | | | | |

**1999 WT$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.45657 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27037437 | $\omega$ | 117.49534 | | +0.88959087 | +0.45670483 | |
| $a$ | 2.3686035 | $\Omega$ | 215.33123 | | −0.42321344 | +0.81841061 | |
| $e$ | 0.2006258 | $i$ | 0.69196 | | −0.17180939 | +0.34874744 | |
| $P$ | 3.65 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 1.1− | 0.2− | 2006 08 27 | 699 | 0.7− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 1999 11 12 | 704 | 0.4− | 0.2+ | 2006 08 27 | 691 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 1999 11 12 | 704 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 1999 11 12 | 704 | (3.0+ | 1.6−) | 2006 08 27 | 699 | 1.1+ | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 1999 11 30 | 691 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1999 11 30 | 691 | 0.3+ | 0.1− | 2006 08 27 | 699 | 1.0− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.6− |
| 1999 11 30 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 1.2− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 1999 12 07 | 691 | 0.4− | 0.1− | 2006 08 27 | 699 | 0.4+ | 0.1− | 2006 11 11 | G96 | 1.9− | 0.7− |
| 1999 12 07 | 691 | 0.4+ | 0.2+ | 2006 08 27 | 699 | 0.1− | 1.1+ | 2006 11 11 | G96 | 0.5− | 0.4− |
| 1999 12 07 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.7+ | 2006 11 11 | G96 | 0.8− | 0.9− |
| 1999 12 13 | 691 | 0.1+ | 0.7− | 2006 09 20 | 699 | 1.2− | 0.9+ | 2006 11 20 | 291 | 0.3+ | 0.1+ |
| 1999 12 13 | 691 | 0.6− | 0.0 | 2006 09 20 | 699 | 0.6− | 0.4+ | 2006 11 20 | 291 | 0.2+ | 0.6+ |
| 1999 12 13 | 691 | 0.3− | 0.1− | 2006 09 20 | 699 | 0.4+ | 0.5+ | 2006 11 20 | 291 | 0.3+ | 0.1+ |
| 2006 08 27 | 691 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.4− | | | | |
| 2006 08 27 | 699 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.7− | | | | |

**1999 WO$_{23}$ = 2004 TQ$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.95063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18557016 | $\omega$ | 237.63842 | | −0.37901020 | −0.92534837 | |
| $a$ | 3.0441354 | $\Omega$ | 234.63659 | | +0.85271092 | −0.34543191 | |
| $e$ | 0.2477095 | $i$ | 0.63494 | | +0.35949318 | −0.15622802 | |
| $P$ | 5.31 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.3+ | 0.2− | 2004 10 14 | 691 | 0.6− | 0.5+ | 2006 02 23 | 691 | 0.6− | 0.4+ |
| 1999 11 17 | 691 | 0.1+ | 0.2− | 2004 10 14 | 691 | 0.2− | 0.2+ | 2006 03 03 | 691 | 0.3+ | 0.2+ |
| 1999 11 17 | 691 | 0.1+ | 0.2− | 2004 10 14 | 691 | 0.0 | 0.3+ | 2006 03 03 | 691 | 0.3+ | 0.2+ |
| 1999 11 29 | 691 | 0.2− | 0.3− | 2005 12 25 | G96 | 0.4− | 0.1− | 2006 03 03 | 691 | 0.3+ | 0.1+ |
| 1999 11 29 | 691 | 0.2− | 0.2− | 2005 12 25 | G96 | 0.5+ | 0.2− | 2006 03 25 | G96 | 0.1− | 0.1− |
| 1999 11 29 | 691 | 0.1+ | 0.2− | 2005 12 25 | G96 | 0.2+ | 0.0 | 2006 03 25 | G96 | 0.2− | 0.0 |
| 2004 10 10 | 691 | 0.1+ | 0.5+ | 2005 12 25 | G96 | 0.5− | 0.1+ | 2006 03 25 | G96 | 0.4− | 0.1+ |
| 2004 10 10 | 691 | 0.0 | 0.5+ | 2006 02 23 | 691 | 0.4+ | 0.1− | 2006 03 25 | G96 | 0.5+ | 0.1+ |
| 2004 10 10 | 691 | 0.0 | 0.1+ | 2006 02 23 | 691 | 0.1− | 0.4+ | | | | |

**1999 WX$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.49925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27347915 | $\omega$ | 169.60662 | | +0.83426383 | −0.55089175 | |
| $a$ | 2.3506424 | $\Omega$ | 223.84706 | | +0.50347135 | +0.77803606 | |
| $e$ | 0.2106214 | $i$ | 1.89029 | | +0.22476759 | +0.30195723 | |
| $P$ | 3.60 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.1+ | 0.1− | 1999 12 17 | 691 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 1999 11 12 | 704 | 0.3+ | 0.9− | 1999 12 17 | 691 | 0.1+ | 0.3− | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.5− | 0.3+ | 1999 12 17 | 691 | 0.1+ | 0.4− | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 1999 11 12 | 704 | 0.1− | 0.9− | 2003 12 25 | 645 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.6− | 0.3− |
| 1999 11 12 | 704 | 0.6+ | 0.5+ | 2003 12 25 | 645 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.3− |
| 1999 11 29 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.7− | 0.1− |
| 1999 11 29 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 1999 11 29 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 1999 12 07 | 691 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.5− |
| 1999 12 07 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.7− |
| 1999 12 07 | 691 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.4− |

**1999 XO**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.38071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27707908 | $\omega$ | 239.66298 | | +0.77220780 | +0.63175544 | |
| $a$ | 2.3302377 | $\Omega$ | 81.07057 | | −0.55689185 | +0.72425751 | |
| $e$ | 0.1714492 | $i$ | 3.92826 | | −0.30588655 | +0.27628992 | |
| $P$ | 3.56 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 02 | 691 | 0.3− | 0.6− | 2005 04 10 | 691 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 1999 12 02 | 691 | 0.3+ | 0.5− | 2005 04 10 | 691 | 0.2+ | 0.8+ | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 1999 12 02 | 691 | 0.3+ | 0.6− | 2005 04 10 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.5− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 691 | 0.1+ | 0.5− | 2005 04 18 | 691 | 0.4+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.5+ |
| 1999 12 03 | 691 | 0.0 | 0.5− | 2005 04 18 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 1999 12 03 | 691 | 0.2+ | 0.2− | 2005 04 18 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.5+ |
| 1999 12 07 | 691 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 1999 12 07 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 1999 12 07 | 691 | 0.3+ | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.6− | 1.4− | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2002 08 13 | 704 | 0.1− | 0.5− | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.7+ |
| 2002 08 13 | 704 | 1.1+ | 0.1− | 2006 10 18 | 691 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2002 08 13 | 704 | 0.6− | 0.4− | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2002 08 13 | 704 | 0.9− | 1.0− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.0 | 0.6− | 2006 10 22 | 448 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2002 08 30 | 644 | 0.3+ | 0.4+ | 2006 10 22 | 448 | 1.0+ | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2002 08 30 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 448 | 0.1− | 0.3+ | | | | |
| 2002 08 30 | 644 | 0.9+ | 0.8+ | 2006 10 22 | 691 | 0.3− | 0.0 | | | | |

**1999 XZ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.09198 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27382857 | $\omega$ | 154.20285 | | +0.74887981 | | −0.64547619 |
| $a$ | 2.3486423 | $\Omega$ | 246.83725 | | +0.57624738 | | +0.74613133 |
| $e$ | 0.2837315 | $i$ | 9.39818 | | +0.32728886 | | +0.16324376 |
| $P$ | 3.60 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.1− | 0.2+ | 1999 12 04 | 703 | 0.1+ | 0.1− | 2000 01 06 | 704 | 0.4− | 0.6− |
| 1999 10 14 | 704 | 0.6− | 0.4− | 1999 12 04 | 703 | 0.1+ | 0.0 | 2000 01 06 | 704 | 0.1+ | 0.8− |
| 1999 10 14 | 704 | 0.7+ | 0.2− | 1999 12 04 | 703 | 0.3− | 0.2− | 2006 08 29 | 699 | 0.3+ | 0.9− |
| 1999 10 14 | 704 | 0.1+ | 0.0 | 1999 12 05 | 703 | 0.5− | 0.2+ | 2006 08 29 | 699 | (0.2+ | 2.7−) |
| 1999 10 14 | 704 | 0.3+ | 0.5− | 1999 12 05 | 703 | 0.2− | 0.0 | 2006 08 29 | 699 | 1.1− | 0.0 |
| 1999 11 14 | 704 | 1.2− | 1.3+ | 1999 12 05 | 703 | 0.3+ | 0.4+ | 2006 08 29 | 699 | 0.2− | 0.5+ |
| 1999 11 14 | 704 | 0.5− | 0.5− | 1999 12 05 | 703 | 0.3− | 0.3+ | 2006 09 16 | 850 | 0.0 | 0.7+ |
| 1999 11 14 | 704 | 0.2+ | 0.3− | 1999 12 07 | 704 | 0.2+ | 0.6− | 2006 09 16 | 850 | 0.6− | 0.5+ |
| 1999 11 14 | 704 | 0.1+ | 0.1+ | 1999 12 07 | 704 | 0.3+ | 0.4− | 2006 09 17 | 850 | 0.7+ | 0.1− |
| 1999 11 16 | 704 | 1.5− | 0.3− | 1999 12 07 | 704 | 1.0+ | 1.0− | 2006 09 17 | 850 | 1.3+ | 0.0 |
| 1999 11 16 | 704 | 0.1− | 0.4+ | 1999 12 07 | 704 | 0.2+ | 0.3− | 2006 09 17 | 850 | 0.9− | 0.2− |
| 1999 11 16 | 704 | 0.4+ | 0.4− | 1999 12 07 | 704 | 0.3+ | 0.7− | 2006 09 17 | 850 | 0.9+ | 0.8− |
| 1999 11 16 | 704 | 0.1+ | 0.3− | 1999 12 08 | 704 | 0.1− | 0.5+ | 2006 09 17 | 850 | 0.3+ | 0.4+ |
| 1999 11 16 | 704 | 0.4+ | 0.1+ | 1999 12 08 | 704 | 1.4− | 0.3− | 2006 09 17 | 850 | 0.2+ | 0.7− |
| 1999 12 02 | 049 | 0.4+ | 1.3+ | 1999 12 08 | 704 | 1.3− | 0.2− | 2006 09 17 | 850 | 0.1+ | 1.0− |
| 1999 12 02 | 049 | 0.8+ | 1.2+ | 1999 12 08 | 704 | 0.1− | 0.9− | 2006 09 20 | 850 | 0.0 | 0.4+ |
| 1999 12 02 | 049 | 0.5+ | 0.9+ | 1999 12 08 | 704 | 0.2+ | 0.1− | 2006 09 20 | 850 | 0.3− | 0.3− |
| 1999 12 03 | 699 | 1.5+ | 0.2+ | 2000 01 02 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 850 | 0.5− | 0.2− |
| 1999 12 03 | 699 | 0.3+ | 0.0 | 2000 01 02 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 850 | 0.1− | 0.1+ |
| 1999 12 03 | 699 | 0.3+ | 1.0+ | 2000 01 02 | 691 | 0.0 | 0.4+ | 2006 09 20 | 850 | 0.2+ | 1.4+ |
| 1999 12 04 | 703 | 0.7− | 0.8− | 2000 01 06 | 704 | 1.4− | 1.5− | 2006 09 20 | 850 | 0.3− | 0.3+ |

**1999 XE$_{14}$ = 2004 CO$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.57508 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28598593 | $\omega$ | 282.90243 | | +0.61974141 | | −0.77886231 |
| $a$ | 2.2816005 | $\Omega$ | 128.37563 | | +0.75927811 | | +0.56396585 |
| $e$ | 0.0857809 | $i$ | 7.06373 | | +0.19853802 | | +0.27443765 |
| $P$ | 3.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.6+ | 1.6− | 2002 08 30 | 644 | 0.4− | 0.6+ | 2004 02 11 | 644 | 0.5− | 0.4+ |
| 1999 12 05 | 704 | 1.0+ | 0.7+ | 2002 08 30 | 644 | 0.4− | 0.6+ | 2004 02 11 | 644 | 0.3− | 0.2+ |
| 1999 12 05 | 704 | 0.2+ | 1.2+ | 2002 08 30 | 644 | 0.7− | 0.5+ | 2004 02 11 | 644 | 0.9+ | 0.6− |
| 1999 12 06 | 704 | 0.6− | 0.2+ | 2002 09 05 | 704 | 0.5+ | 0.7+ | 2004 02 17 | 704 | 0.2+ | 0.1+ |
| 1999 12 06 | 704 | 0.5− | 0.1+ | 2002 09 05 | 704 | 0.9+ | 0.6− | 2004 02 17 | 704 | 1.0+ | 1.6+ |
| 1999 12 06 | 704 | 0.7+ | 0.1− | 2002 09 05 | 704 | 0.5− | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.6+ |
| 1999 12 06 | 704 | 1.5− | 0.1− | 2002 09 05 | 704 | 0.0 | 0.2+ | 2004 02 17 | 704 | 0.7+ | 0.4+ |
| 2002 08 20 | 644 | 0.0 | 0.4+ | 2002 10 01 | 608 | 0.2+ | 0.8− | 2004 02 17 | 691 | 0.1− | 0.0 |
| 2002 08 20 | 644 | 0.1+ | 0.3+ | 2002 10 01 | 608 | 0.2+ | 0.9− | 2004 02 17 | 691 | 0.2− | 0.2− |
| 2002 08 20 | 644 | 0.2− | 0.5+ | 2002 10 01 | 608 | 0.1− | 0.9− | 2004 02 17 | 691 | 0.2− | 0.2− |

**1999 XX$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.08472 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28835311 | $\omega$ | 51.01765 | | −0.67908851 | | −0.60222773 |
| $a$ | 2.2690965 | $\Omega$ | 87.65400 | | +0.47329194 | | −0.79627229 |
| $e$ | 0.3307525 | $i$ | 24.83881 | | +0.56110030 | | −0.05720310 |
| $P$ | 3.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 704 | 0.7− | 0.1− | 2000 01 03 | 704 | 0.1+ | 0.5− | 2000 01 04 | 651 | 0.6+ | 1.0− |
| 1999 12 06 | 704 | 0.7− | 0.7− | 2000 01 03 | 704 | 0.4+ | 0.7− | 2000 01 04 | 106 | 0.3+ | 0.5+ |
| 1999 12 06 | 704 | 0.3+ | 0.0 | 2000 01 03 | 704 | 0.6− | 0.4− | 2000 01 04 | 106 | 0.3− | 0.7+ |
| 1999 12 06 | 704 | 0.3− | 0.5− | 2000 01 04 | 704 | 0.2− | 0.3− | 2000 01 04 | 106 | 0.5+ | 0.1+ |
| 1999 12 06 | 704 | 0.5− | 0.2− | 2000 01 04 | 704 | (2.1− | 1.7+) | 2000 01 06 | 651 | 0.1− | 0.8+ |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2000 01 04 | 704 | 0.5+ | 0.0 | 2000 01 06 | 651 | 0.2− | 0.8+ |
| 1999 12 07 | 704 | 0.0 | 0.4+ | 2000 01 04 | 704 | 0.8+ | 0.0 | 2000 01 06 | 651 | 0.4+ | 0.1− |
| 1999 12 07 | 704 | 0.1+ | 0.0 | 2000 01 04 | 704 | 0.4− | 0.0 | 2000 01 29 | 704 | 0.2− | 0.6− |
| 1999 12 07 | 704 | 0.2− | 0.0 | 2000 01 04 | 704 | 1.1− | 0.3− | 2000 01 29 | 704 | 0.5− | 0.0 |
| 1999 12 07 | 704 | 0.1+ | 0.1+ | 2000 01 04 | 704 | 0.5− | 1.5+ | 2000 01 29 | 704 | 0.3+ | 0.4+ |
| 1999 12 08 | 704 | 0.0 | 0.2− | 2000 01 04 | 704 | 0.7− | 0.3+ | 2000 01 29 | 704 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 0.0 | 0.3+ | 2000 01 04 | 704 | 0.1− | 0.4− | 2000 01 29 | 704 | 0.2+ | 0.5− |
| 1999 12 08 | 704 | 0.5− | 0.3+ | 2000 01 04 | 704 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1999 12 08 | 704 | 0.3+ | 0.1+ | 2000 01 04 | 704 | 0.3− | 0.7− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.3− | 0.3− | 2000 01 04 | 704 | (0.9− | 2.2+) | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 1999 12 14 | 704 | 0.7+ | 0.0 | 2000 01 04 | 704 | 0.3− | 1.4− | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 1999 12 14 | 704 | 0.8+ | 0.0 | 2000 01 04 | 704 | 0.7+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 1999 12 14 | 704 | 0.3− | 0.3− | 2000 01 04 | 704 | 0.4− | 0.1+ | 2006 11 22 | 704 | 1.7+ | 0.3+ |
| 1999 12 14 | 704 | 0.4− | 1.1+ | 2000 01 04 | 704 | 0.4− | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 1999 12 14 | 704 | 0.6+ | 0.7+ | 2000 01 04 | 704 | 0.1+ | 1.3+ | 2006 11 22 | 704 | 0.6+ | 1.0+ |
| 1999 12 15 | 704 | 0.5+ | 0.4− | 2000 01 04 | 704 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.2+ | 1.0− |
| 1999 12 15 | 704 | 0.2+ | 0.0 | 2000 01 04 | 704 | 0.9+ | 0.5+ | 2006 11 22 | 703 | 1.7− | 0.3+ |
| 1999 12 15 | 704 | 0.3+ | 0.1− | 2000 01 04 | 704 | 0.2+ | 0.0 | 2006 11 22 | 703 | 0.6− | 0.1− |
| 1999 12 15 | 704 | 0.3+ | 0.2+ | 2000 01 04 | 704 | 0.5− | 0.2− | 2006 11 22 | 703 | 0.9− | 1.0− |
| 1999 12 15 | 704 | 0.4+ | 0.0 | 2000 01 04 | 704 | 0.9− | 1.5+ | 2006 11 23 | 703 | 0.3+ | 0.0 |
| 1999 12 27 | 691 | 0.3+ | 0.2− | 2000 01 04 | 704 | 0.4− | 0.5− | 2006 11 23 | 703 | 0.1− | 0.5− |
| 1999 12 27 | 691 | 0.3− | 0.4+ | 2000 01 04 | 704 | 0.6+ | 0.4+ | 2006 11 23 | 703 | 0.2+ | 0.7+ |
| 1999 12 27 | 691 | 0.4+ | 0.1− | 2000 01 04 | 704 | 0.0 | 0.4+ | 2006 11 23 | 703 | 0.2− | 0.0 |
| 2000 01 03 | 704 | 0.1− | 0.3+ | 2000 01 04 | 651 | 0.2− | 0.9− | | | | |
| 2000 01 03 | 704 | 0.0 | 0.7− | 2000 01 04 | 651 | 0.2+ | 0.7− | | | | |

**1999 XZ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.46571 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27885344 | $\omega$ | 273.82891 | | +0.91391652 | | −0.05090710 |
| $a$ | 2.3203423 | $\Omega$ | 89.41354 | | +0.21252191 | | +0.90526300 |
| $e$ | 0.3265269 | $i$ | 23.74822 | | −0.34581936 | | +0.42179067 |
| $P$ | 3.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.4+ | 1.3− | 1999 12 08 | 704 | 1.3− | 0.2− | 2006 10 01 | E12 | 0.4+ | 0.2+ |
| 1999 10 09 | 704 | 0.0 | 0.2− | 1999 12 14 | 704 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.6+ | 0.1− | 1999 12 14 | 704 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 0.1− | 0.8− | 1999 12 14 | 704 | 0.3− | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 1.0− | 0.3− | 1999 12 14 | 704 | 0.4+ | 1.6+ | 2006 11 10 | 704 | 0.7+ | 0.3+ |
| 1999 11 05 | 704 | 0.4+ | 0.4+ | 1999 12 14 | 704 | 0.1+ | 0.5+ | 2006 11 10 | 704 | 0.1− | 0.1+ |
| 1999 11 05 | 704 | 0.1+ | 0.1− | 1999 12 15 | 704 | 0.2− | 0.5+ | 2006 11 10 | 704 | 0.0 | 0.5+ |
| 1999 11 05 | 704 | 0.1+ | 0.3+ | 1999 12 15 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 704 | 0.1+ | 0.0 |
| 1999 11 05 | 704 | 0.5− | 0.1− | 1999 12 15 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.7+ | 0.5− |
| 1999 12 06 | 704 | (2.1+ | 0.1+) | 1999 12 15 | 704 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.2− | 0.2+ |
| 1999 12 06 | 704 | 0.2+ | 0.2− | 1999 12 15 | 704 | 0.2+ | 0.8+ | 2006 11 16 | 703 | 0.0 | 0.4+ |
| 1999 12 06 | 704 | 0.4+ | 0.1+ | 2000 01 03 | 704 | 0.4+ | 0.3− | 2006 11 16 | 703 | 0.1− | 0.2− |
| 1999 12 06 | 704 | 0.5+ | 0.4− | 2000 01 03 | 704 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.5− | 0.2− |
| 1999 12 06 | 704 | 1.1− | 1.6+ | 2000 01 03 | 704 | 0.3− | 0.7− | 2006 11 22 | 704 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5+ | 0.4− | 2000 01 03 | 704 | 0.8− | 0.4− | 2006 11 22 | 704 | 0.4− | 0.1− | | |
| 1999 12 07 | 704 | 0.4+ | 0.5− | 2000 01 03 | 704 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.9− | 0.5− | | |
| 1999 12 07 | 704 | 0.5+ | 0.5− | 2000 01 05 | 704 | 0.6− | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.6+ | | |
| 1999 12 07 | 704 | 0.5+ | 0.3− | 2000 01 05 | 704 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.4− | | |
| 1999 12 07 | 704 | 0.3− | 0.2+ | 2000 01 05 | 704 | 0.7+ | 0.9− | 2006 11 22 | 703 | 0.1− | 0.2− | | |
| 1999 12 08 | 704 | 0.7+ | 0.8− | 2000 01 05 | 704 | 0.5− | 0.2− | 2006 11 22 | 703 | 0.3+ | 0.1− | | |
| 1999 12 08 | 704 | 0.3+ | 0.7− | 2006 10 01 | E12 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.1− | | |
| 1999 12 08 | 704 | 0.4+ | 0.8− | 2006 10 01 | E12 | 0.0 | 0.1+ | | | | | | |
| 1999 12 08 | 704 | 0.2+ | 0.6− | 2006 10 01 | E12 | 0.0 | 0.6+ | | | | | | |

**1999 XR$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.66403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27912800 | $\omega$ | 282.41604 | | +0.99083092 | +0.08809600 | |
| $a$ | 2.3188204 | $\Omega$ | 72.59807 | | −0.03648766 | +0.90448837 | |
| $e$ | 0.2441056 | $i$ | 6.16255 | | −0.13008743 | +0.41730070 | |
| $P$ | 3.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.3− | 0.5− | | |
| 1999 10 09 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 699 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 1999 10 09 | 704 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 0.2+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 1999 10 09 | 704 | 0.7− | 0.0 | 2006 09 21 | 699 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.4− | | |
| 1999 10 09 | 704 | 1.0− | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3− | | |
| 1999 10 19 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.7+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.3− | | |
| 1999 10 19 | 704 | 0.4+ | 0.4− | 2006 09 25 | 699 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 1999 10 19 | 704 | 0.4+ | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2− | | |
| 1999 10 19 | 704 | 0.9+ | 0.3− | 2006 09 26 | 704 | 1.1+ | 0.3− | 2006 10 23 | 644 | 0.2− | 0.3− | | |
| 1999 10 19 | 704 | 0.3+ | 0.1− | 2006 09 26 | 704 | 0.3− | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.3− | | |
| 1999 10 30 | 703 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.3− | | |
| 1999 10 30 | 703 | 0.2+ | 0.2+ | 2006 09 26 | 704 | (2.6+ | 1.5+) | 2006 10 28 | 703 | 0.1+ | 1.3− | | |
| 1999 10 30 | 703 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.4+ | 0.6− | | |
| 1999 10 30 | 703 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.3+ | | |
| 1999 11 05 | 704 | 0.4+ | 0.5− | 2006 09 26 | 703 | 0.2− | 1.4+ | 2006 10 28 | 703 | 0.0 | 0.2− | | |
| 1999 11 05 | 704 | 0.8− | 0.7− | 2006 09 26 | 703 | 0.5+ | 0.2+ | 2006 11 10 | 704 | 0.8+ | 0.3+ | | |
| 1999 11 05 | 704 | 0.1+ | 0.6− | 2006 09 29 | 699 | 0.5− | 0.2− | 2006 11 10 | 704 | 0.2+ | 0.3+ | | |
| 1999 11 15 | 704 | 0.3− | 0.6+ | 2006 09 29 | 699 | 0.3+ | 0.3− | 2006 11 10 | 704 | 0.0 | 0.5+ | | |
| 1999 11 15 | 704 | 0.3− | 0.7+ | 2006 09 29 | 699 | 0.0 | 0.5+ | 2006 11 10 | 704 | 1.1+ | 0.2+ | | |
| 1999 11 15 | 704 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.3− | | |
| 1999 12 05 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 704 | 1.0− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.1− | | |
| 1999 12 05 | 704 | 0.4− | 0.9+ | 2006 09 30 | 704 | 1.2− | 0.5+ | 2006 11 17 | 704 | (0.3+ | 2.4+) | | |
| 1999 12 05 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 704 | 0.5− | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.0 | | |
| 1999 12 07 | 704 | 0.1+ | 0.5− | 2006 09 30 | 704 | 1.3− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 1999 12 07 | 704 | 1.7− | 0.3+ | 2006 09 30 | 704 | 1.0− | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 1999 12 07 | 704 | (2.3− | 0.7+) | 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.4− | | |
| 1999 12 07 | 704 | 1.2− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.4+ | | | | | | |

**1999 XB$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.16399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28490570 | $\omega$ | 120.52969 | | +0.94076162 | −0.32546449 | |
| $a$ | 2.2873640 | $\Omega$ | 258.60636 | | +0.26826531 | +0.88594930 | |
| $e$ | 0.2392814 | $i$ | 5.56602 | | +0.20736755 | +0.33040384 | |
| $P$ | 3.46 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.6+ | 1.1− | 1999 12 07 | 704 | 0.4− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 1999 11 03 | 704 | 0.2− | 0.0 | 1999 12 07 | 704 | 0.6− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.6+ | | |
| 1999 11 03 | 704 | 0.1+ | 0.0 | 1999 12 07 | 704 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.6− | 0.6+ | | |
| 1999 11 03 | 704 | 0.3+ | 0.1+ | 1999 12 07 | 704 | 0.6− | 0.3+ | 2006 11 18 | 704 | 0.3+ | 1.1+ | | |
| 1999 11 03 | 704 | 0.7+ | 0.4− | 1999 12 08 | 704 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 1999 11 04 | 703 | 0.3− | 0.1− | 1999 12 08 | 704 | 0.2− | 0.7− | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 1999 11 04 | 703 | 0.1− | 0.4+ | 1999 12 08 | 704 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 1999 11 04 | 703 | 0.0 | 0.9+ | 1999 12 08 | 704 | 1.0− | 0.0 | 2006 11 24 | 691 | 0.1− | 0.0 | | |
| 1999 11 04 | 703 | 0.0 | 0.2− | 1999 12 08 | 704 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ | | |
| 1999 11 09 | 703 | 0.0 | 0.5− | 2000 01 06 | 691 | 0.1− | 0.8− | 2006 11 24 | 691 | 0.1− | 0.0 | | |
| 1999 11 09 | 703 | 0.4+ | 1.0− | 2000 01 06 | 691 | 0.2+ | 0.6− | 2006 12 01 | 704 | 0.5− | 0.3− | | |
| 1999 11 09 | 703 | 0.8− | 0.7+ | 2000 01 06 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.0 | 0.8+ | | |
| 1999 11 09 | 703 | 0.7− | 0.6− | 2006 08 29 | 703 | 0.4+ | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.7+ | | |
| 1999 12 04 | 691 | 0.4+ | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.6− | 2006 12 01 | G96 | 0.2− | 0.0 | | |
| 1999 12 04 | 691 | 0.5+ | 0.0 | 2006 08 29 | 703 | (0.4− | 2.0−) | 2006 12 01 | 704 | 0.4− | 0.6+ | | |
| 1999 12 04 | 691 | 0.5+ | 0.0 | 2006 08 29 | 703 | (3.3+ | 2.1−) | 2006 12 01 | G96 | 0.2+ | 0.0 | | |
| 1999 12 05 | 703 | 0.6− | 0.5− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.2− | 0.2− | | |
| 1999 12 05 | 703 | 0.1+ | 0.7+ | 2006 11 10 | 691 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.3− | 1.2− | | |
| 1999 12 05 | 703 | 0.8− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 704 | (0.0 | 1.9+) | | |
| 1999 12 05 | 703 | 0.2− | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.1− | | | | | | |
| 1999 12 07 | 704 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1− | | | | | | |

**1999 XN$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.89468 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27583918 | $\omega$ | 327.19917 | | +0.98050070 | −0.19363588 | |
| $a$ | 2.3372155 | $\Omega$ | 44.00559 | | +0.18909429 | +0.88321615 | |
| $e$ | 0.2290739 | $i$ | 2.76545 | | +0.05349505 | +0.42712338 | |
| $P$ | 3.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 10 23 | 704 | 1.1+ | 0.5− | | |
| 1999 11 09 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.6+ | 2006 10 23 | 704 | 0.3− | 0.1− | | |
| 1999 11 09 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 10 23 | 704 | 0.2+ | 0.2− | | |
| 1999 11 09 | 704 | 0.5− | 0.4− | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 1999 11 12 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.9− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 1999 11 12 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 | | |
| 1999 11 12 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.7+ | 2006 10 29 | G96 | 0.0 | 0.5− | | |
| 1999 11 12 | 704 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.3+ | 0.5− | | |
| 1999 11 16 | 704 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.4− | | |
| 1999 11 16 | 704 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.6− | | |
| 1999 11 16 | 704 | 0.6+ | 0.2+ | 2006 10 15 | 703 | 0.2− | 0.8+ | 2006 11 01 | 691 | 0.3+ | 0.1− | | |
| 1999 11 16 | 704 | 0.4+ | 0.2+ | 2006 10 15 | 703 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 1999 12 06 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.1− | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 1999 12 06 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.0 | 0.7+ | 2006 11 06 | 644 | 0.1+ | 0.1− | | |
| 1999 12 06 | 691 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.0 | | |
| 1999 12 07 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 06 | 644 | 0.2− | 0.3+ | | |
| 1999 12 07 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.3− | 0.1+ | | |
| 1999 12 07 | 704 | 0.4− | 0.8− | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.1− | | |
| 1999 12 07 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.0 | 0.5+ | | |
| 1999 12 08 | 704 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 07 | 644 | 0.2− | 0.2+ | | |
| 1999 12 08 | 704 | 1.1− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.3− | | |
| 1999 12 08 | 704 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1− | | |
| 1999 12 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1+ | | |
| 1999 12 14 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.5− | 2006 11 09 | 644 | 0.1− | 0.2− | | |
| 1999 12 14 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.8− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.1− | | |
| 2004 01 28 | 691 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.2+ | 1.0+ | 2006 11 11 | G96 | 0.1+ | 0.5− | | |
| 2004 01 28 | 691 | 0.3+ | 0.9+ | 2006 10 21 | 703 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1− | 0.5− | | |
| 2004 01 28 | 691 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.9− | | |
| 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.3− | | |
| 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.9− | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.5− | | |
| 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.6− | | |
| 2006 09 27 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3+ | | |
| 2006 09 27 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5− | | |
| 2006 09 27 | 704 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2006 09 27 | 704 | 0.6− | 0.8+ | 2006 10 23 | 704 | 1.2+ | 0.8− | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2006 09 30 | 703 | 1.2− | 0.1+ | 2006 10 23 | 704 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.2+ | | |

**1999 XJ$_{62}$ = 2006 QL$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.87772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26527380 | $\omega$ | 303.48879 | | +0.97622228 | −0.18261992 | |
| $a$ | 2.3988687 | $\Omega$ | 67.27242 | | +0.21569455 | +0.87198135 | |
| $e$ | 0.1524547 | $i$ | 7.27446 | | −0.02158513 | +0.45420094 | |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.5+ | 0.1− | 1999 12 08 | 704 | 0.1− | 0.5+ | 2006 08 16 | E12 | 0.4− | 0.3+ |
| 1999 11 12 | 704 | 0.1+ | 0.1+ | 1999 12 08 | 704 | 1.1− | 0.4− | 2006 08 16 | E12 | 0.1+ | 0.9− |
| 1999 11 12 | 704 | 0.3+ | 0.1+ | 1999 12 08 | 704 | 0.4+ | 0.0 | 2006 08 16 | E12 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.2+ | 0.3− | 1999 12 08 | 704 | 0.4− | 0.2− | 2006 08 28 | E12 | 0.5+ | 0.9− |
| 1999 11 12 | 704 | 0.7− | 0.4+ | 2003 12 27 | 691 | 0.2+ | 0.6+ | 2006 08 28 | E12 | 0.4− | 0.5− |
| 1999 12 07 | 704 | 0.4+ | 0.2+ | 2003 12 27 | 691 | 0.6− | 0.2− | 2006 08 28 | E12 | 0.9+ | 0.5+ |
| 1999 12 07 | 704 | 0.3+ | 0.6+ | 2003 12 27 | 691 | 0.4+ | 0.3− | 2006 08 28 | E12 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 1.1− | 2006 08 16 | E12 | 0.7− | 1.3+ | | | | |

### 1999 XP$_{69}$ = 2006 SG$_{282}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.42787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27334733 | $\omega$ | 136.92991 | | +0.83557377 | −0.54684252 | |
| $a$ | 2.3513981 | $\Omega$ | 256.29235 | | +0.48815499 | +0.78305656 | |
| $e$ | 0.2290020 | $i$ | 3.11091 | | +0.25203408 | +0.29628648 | |
| $P$ | 3.61 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 16 | 683 | (1.7+ | 0.5−) |
| 1999 12 07 | 704 | 0.7+ | 0.6− | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 17 | 683 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.1− | 0.3+ | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 17 | 683 | (0.4− | 1.6+) |
| 1999 12 07 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 704 | 1.0− | 0.6+ | 2006 10 17 | 683 | 0.9− | 0.8+ |
| 1999 12 07 | 704 | 0.6− | 0.2+ | 2006 09 25 | 704 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.7− |
| 1999 12 08 | 704 | 0.1+ | 0.3− | 2006 09 25 | 704 | 0.9+ | 0.2+ | 2006 10 17 | 703 | 1.3+ | 0.1+ |
| 1999 12 08 | 704 | 0.5− | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 1999 12 08 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 704 | (1.4− | 3.9−) | 2006 10 17 | 703 | 1.1+ | 1.2− |
| 1999 12 08 | 704 | 0.2− | 0.4− | 2006 09 29 | 704 | 1.4− | 0.9− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 12 08 | 704 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 12 27 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 1999 12 27 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 12 27 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2000 01 02 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2000 01 02 | 691 | 0.1+ | 0.2− | 2006 10 16 | 683 | 0.5− | 0.1− | | | | |
| 2000 01 02 | 691 | 0.0 | 0.1+ | 2006 10 16 | 683 | 0.5− | 1.1+ | | | | |

### 1999 XO$_{107}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.69258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27639755 | $\omega$ | 101.51896 | | +0.88770191 | +0.38016694 | |
| $a$ | 2.3340667 | $\Omega$ | 236.64828 | | −0.43790256 | +0.87137975 | |
| $e$ | 0.1564727 | $i$ | 18.11559 | | +0.14222051 | +0.31011357 | |
| $P$ | 3.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.3+ | 0.2+ | 1999 12 07 | 704 | 0.7− | 0.6− | 2006 09 25 | 703 | 0.1+ | 0.3− |
| 1999 10 12 | 704 | 0.4− | 0.2+ | 1999 12 07 | 704 | 0.3− | 0.4+ | 2006 09 25 | 703 | 0.1+ | 0.4− |
| 1999 10 12 | 704 | 0.6+ | 0.4− | 1999 12 07 | 704 | 0.5+ | 0.3+ | 2006 10 02 | 704 | 0.4+ | 0.2+ |
| 1999 10 12 | 704 | 1.1+ | 0.7− | 1999 12 12 | 703 | 0.2− | 0.7+ | 2006 10 02 | 704 | 0.3− | 0.9+ |
| 1999 10 12 | 704 | 0.6+ | 0.6− | 1999 12 12 | 703 | 0.4+ | 0.5+ | 2006 10 02 | 704 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.3+ | 0.0 | 1999 12 12 | 703 | 0.5+ | 0.3− | 2006 10 02 | 704 | 0.5+ | 0.4− |
| 1999 10 13 | 704 | 0.3+ | 0.2+ | 1999 12 12 | 703 | 0.3− | 1.7+ | 2006 10 02 | 704 | 0.8+ | 0.2+ |
| 1999 10 13 | 704 | 0.2− | 0.5− | 2002 07 11 | 704 | 0.5− | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.1− |
| 1999 10 13 | 704 | 0.8+ | 1.2− | 2002 07 11 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.2− |
| 1999 10 13 | 704 | 0.9+ | 0.4− | 2002 07 11 | 704 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.0 |
| 1999 11 03 | 704 | 0.7− | 0.4+ | 2002 07 11 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.9− |
| 1999 11 03 | 704 | 0.2+ | 0.9+ | 2002 07 11 | 704 | 0.3− | 0.7+ | 2006 10 20 | 704 | 0.2+ | 0.8+ |
| 1999 11 03 | 704 | 1.3+ | 0.0 | 2005 04 10 | E12 | 0.3+ | 0.0 | 2006 10 20 | 704 | 1.1− | 0.4+ |
| 1999 11 03 | 704 | 0.1+ | 0.1+ | 2005 04 10 | E12 | 0.1− | 0.2− | 2006 10 20 | 704 | (2.4− | 0.5−) |
| 1999 11 03 | 704 | 0.4+ | 1.1+ | 2005 04 10 | E12 | 0.1+ | 0.7+ | 2006 10 20 | 704 | 1.4− | 0.0 |
| 1999 11 14 | 703 | 1.1− | 0.0 | 2005 04 10 | E12 | 0.2+ | 0.2− | 2006 10 20 | 704 | 1.4− | 0.3+ |
| 1999 11 14 | 703 | 0.6− | 0.1− | 2006 05 19 | G96 | 0.7− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.2+ |
| 1999 11 14 | 703 | 0.1+ | 0.2+ | 2006 05 19 | G96 | 0.0 | 0.7− | 2006 10 27 | 703 | 0.1+ | 0.3+ |
| 1999 11 14 | 703 | 1.4− | 0.7+ | 2006 05 19 | G96 | 0.2− | 0.5− | 2006 10 27 | 703 | 0.0 | 0.4+ |
| 1999 11 16 | 704 | 0.1+ | 1.1− | 2006 05 19 | G96 | 0.2− | 0.6− | 2006 10 27 | 703 | 0.3+ | 0.1− |
| 1999 11 16 | 704 | 0.3− | 0.8− | 2006 09 19 | 703 | 0.4+ | 0.3− | 2006 11 14 | 703 | 0.1− | 0.2− |
| 1999 11 16 | 704 | 0.7− | 0.7− | 2006 09 19 | 703 | 0.3+ | 0.6− | 2006 11 14 | 703 | 0.2+ | 0.5+ |
| 1999 11 16 | 704 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.6− | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.1− |
| 1999 12 04 | 703 | 0.2− | 0.4− | 2006 09 19 | 704 | 0.2− | 0.2− | 2006 11 25 | 703 | 0.4− | 0.1+ |
| 1999 12 04 | 703 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.6− | 0.1+ | 2006 11 25 | 703 | 0.1− | 0.3+ |
| 1999 12 04 | 703 | 0.8− | 0.3+ | 2006 09 19 | 704 | 0.7+ | 0.3+ | 2006 11 25 | 703 | 0.3− | 0.2− |
| 1999 12 04 | 703 | 1.0− | 0.4+ | 2006 09 19 | 704 | 1.2+ | 0.4− | 2006 11 25 | 703 | 0.4− | 0.3− |
| 1999 12 07 | 704 | 0.1+ | 0.8+ | 2006 09 25 | 703 | 0.5+ | 0.2− | | | | |
| 1999 12 07 | 704 | 0.1+ | 0.1− | 2006 09 25 | 703 | 0.5+ | 0.1+ | | | | |

### 1999 XE$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.67953 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27640534 | $\omega$ | 305.76256 | | +0.96405374 | −0.23074374 | |
| $a$ | 2.3340228 | $\Omega$ | 67.90252 | | +0.26549364 | +0.85640557 | |
| $e$ | 0.2355028 | $i$ | 8.17479 | | −0.01065416 | +0.46187318 | |
| $P$ | 3.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.4+ | 0.9− | 1999 12 13 | 704 | 0.5− | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.3− |
| 1999 10 10 | 704 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.6− | 0.2− | 2006 11 14 | 704 | 0.1− | 0.0 |
| 1999 10 10 | 704 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.2+ |
| 1999 11 09 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.3− | 0.3+ |
| 1999 11 09 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2− | 2006 11 14 | 704 | 0.0 | 0.1− |
| 1999 11 09 | 704 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.2− | 0.4+ |
| 1999 11 09 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.0 | 1.2− |
| 1999 11 09 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.1− | 2006 11 17 | 644 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 1999 11 12 | 704 | 0.3− | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.4+ |
| 1999 11 12 | 704 | 0.6− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.1− |
| 1999 11 12 | 704 | 0.3− | 0.0 | 2006 10 31 | 704 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 1999 11 17 | 704 | 0.1+ | 0.6+ | 2006 10 31 | 704 | 0.1− | 0.3− | 2006 11 17 | 644 | 0.0 | 0.1− |
| 1999 11 17 | 704 | 0.5+ | 0.6− | 2006 10 31 | 704 | 0.4− | 0.6− | 2006 11 20 | 704 | 0.5+ | 0.4+ |
| 1999 11 17 | 704 | 1.1− | 0.5− | 2006 10 31 | 704 | 0.4− | 1.1+ | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 1999 12 07 | 704 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 1999 12 07 | 704 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.5− | 1.1+ |
| 1999 12 07 | 704 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.2− |
| 1999 12 12 | 704 | 0.4− | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 1999 12 12 | 704 | 0.5+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 1.2+ | 0.2+ |
| 1999 12 12 | 704 | 0.8+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.4− |
| 1999 12 12 | 704 | 1.0+ | 1.1− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.4− |
| 1999 12 13 | 704 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.6− |
| 1999 12 13 | 704 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 1999 12 13 | 704 | 0.5− | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.2− | | | | |
| 1999 12 13 | 704 | 0.2+ | 0.5− | 2006 11 13 | 703 | 0.1+ | 0.3− | | | | |

### 1999 XO$_{113}$ = 2003 WU$_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.01217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23818696 | $\omega$ | 119.95991 | | −0.46340568 | −0.88607948 | |
| $a$ | 2.5774529 | $\Omega$ | 357.56778 | | +0.69873827 | −0.35782423 | |
| $e$ | 0.1945672 | $i$ | 14.85265 | | +0.54499542 | −0.29466078 | |
| $P$ | 4.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.6+ | 0.3− | 2003 09 30 | 691 | 0.3+ | 0.1+ | 2003 11 24 | 703 | 0.8− | 1.2+ |
| 1999 11 01 | 704 | 0.7− | 0.0 | 2003 09 30 | 691 | 0.4+ | 0.1+ | 2003 11 24 | 703 | 0.3+ | 0.6+ |
| 1999 11 01 | 704 | 0.6+ | 1.1− | 2003 09 30 | 691 | 0.1− | 0.1+ | 2003 11 24 | 703 | 0.7+ | 0.2− |
| 1999 12 11 | 704 | 1.2− | 0.1− | 2003 10 05 | 291 | 1.0− | 0.2+ | 2003 11 24 | 703 | 0.7− | 0.0 |
| 1999 12 11 | 704 | 0.3+ | 0.2− | 2003 10 05 | 291 | 0.7− | 0.3+ | 2005 03 12 | 699 | 0.3− | 1.1+ |
| 1999 12 11 | 704 | 0.4− | 0.1− | 2003 10 05 | 291 | 0.8− | 0.2+ | 2005 03 12 | 699 | 0.4+ | 0.1+ |
| 1999 12 12 | 704 | (0.6+ | 2.2−) | 2003 10 22 | 704 | 1.0+ | 0.4− | 2005 03 12 | 699 | 1.5+ | 1.1+ |
| 1999 12 12 | 704 | 0.8− | 0.2+ | 2003 10 22 | 704 | 1.5+ | 1.0+ | 2005 03 12 | 699 | 0.8+ | 0.5+ |
| 1999 12 12 | 704 | 0.6+ | 0.1+ | 2003 10 22 | 704 | 0.4+ | 0.3− | 2005 04 06 | 699 | 0.3− | 0.5− |
| 1999 12 12 | 704 | 0.5+ | 0.2− | 2003 10 22 | 704 | 0.5+ | 0.3+ | 2005 04 06 | 699 | 0.7+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 1.0+ | 0.4+ | 2003 10 22 | 704 | 0.3+ | 0.7+ | 2005 04 06 | 699 | 0.1+ | 0.4+ |
| 2003 09 30 | 704 | 0.2− | 0.2+ | 2003 11 20 | 704 | 0.8+ | 0.3− | 2005 04 06 | 699 | 0.2− | 0.5+ |
| 2003 09 30 | 704 | 0.6+ | 0.7− | 2003 11 20 | 704 | 0.6− | 0.2− | 2005 05 01 | 644 | 0.4− | 0.0 |
| 2003 09 30 | 704 | 0.1+ | 0.5+ | 2003 11 20 | 704 | 0.3+ | 0.3− | 2005 05 01 | 644 | 0.3+ | 0.0 |
| 2003 09 30 | 704 | 0.8− | 0.9− | 2003 11 20 | 704 | 1.5+ | 1.4− | 2005 05 01 | 644 | 0.2− | 0.1+ |
| 2003 09 30 | 704 | 0.2− | 0.3+ | 2003 11 20 | 704 | 0.3+ | 0.3+ | | | | |

**1999 XD$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.62670 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27068665 | $\omega$ | 340.42475 | | +0.12612487 | | −0.99021511 |
| $a$ | 2.3667814 | $\Omega$ | 102.29418 | | +0.91810739 | | +0.09371522 |
| $e$ | 0.1929879 | $i$ | 3.50423 | | +0.37572773 | | +0.10339964 |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 684 | 0.1+ | 0.3+ | 2000 01 08 | 704 | 0.9+ | 0.6− | 2006 10 16 | 703 | 0.6+ | 0.6− |
| 1999 12 12 | 684 | 0.4+ | 0.4+ | 2000 01 08 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 1999 12 13 | 684 | 0.9− | 0.3+ | 2000 01 08 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 1999 12 13 | 684 | 0.1+ | 0.7− | 2000 01 08 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.5+ |
| 1999 12 13 | 684 | 0.2− | 0.2+ | 2000 01 08 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 1999 12 15 | 684 | 0.8− | 0.1+ | 2000 01 09 | 691 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 1999 12 15 | 684 | 0.6− | 0.5+ | 2000 01 09 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2000 01 03 | 691 | 0.3+ | 0.1− | 2000 01 09 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2000 01 03 | 704 | 0.3+ | 0.4− | 2000 01 15 | 691 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2000 01 03 | 704 | 0.3− | 0.9+ | 2000 01 15 | 691 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.5− |
| 2000 01 03 | 691 | 0.0 | 0.1− | 2000 01 15 | 691 | 0.4− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2000 01 03 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.9− | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2000 01 03 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.5− | 2006 11 17 | 644 | 0.2− | 0.4+ |
| 2000 01 03 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.8− | | | | |

**1999 XH$_{146}$ = 2006 RX$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.72432 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26774586 | $\omega$ | 249.67901 | | +0.76710890 | | +0.63120041 |
| $a$ | 2.3840803 | $\Omega$ | 71.00324 | | −0.53406638 | | +0.72730954 |
| $e$ | 0.1973583 | $i$ | 6.96057 | | −0.35541108 | | +0.26945664 |
| $P$ | 3.68 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 09 26 | 703 | 1.0+ | 0.5+ |
| 1999 11 28 | 691 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.5− | 0.1− | 2006 10 02 | 703 | (1.7− | 1.5+) |
| 1999 11 28 | 691 | 0.2+ | 0.3− | 2006 09 17 | 699 | 0.5− | 0.5+ | 2006 10 02 | 703 | 0.8+ | 0.3− |
| 1999 12 07 | 691 | 0.2+ | 0.4− | 2006 09 17 | 699 | 0.3− | 0.6+ | 2006 10 02 | 703 | 0.7− | 0.9− |
| 1999 12 07 | 691 | 0.3− | 0.2− | 2006 09 17 | 699 | 0.1+ | 0.9+ | 2006 10 02 | 703 | (1.8+ | 1.0−) |
| 1999 12 07 | 691 | 0.1+ | 0.4− | 2006 09 17 | 699 | 0.2− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 1999 12 13 | 691 | 0.1− | 0.2+ | 2006 09 25 | 703 | 0.1− | 0.9− | 2006 10 09 | 644 | 0.4+ | 0.1+ |
| 1999 12 13 | 691 | 0.2− | 0.2+ | 2006 09 25 | 703 | 0.8+ | 1.1− | 2006 10 09 | 644 | 0.4+ | 0.1− |
| 1999 12 13 | 691 | 0.1− | 0.6+ | 2006 09 25 | 703 | 0.5− | 0.5− | 2006 10 23 | 644 | 0.3− | 0.5+ |
| 2006 08 16 | 644 | 0.4+ | 0.2− | 2006 09 25 | 703 | 1.2− | 1.2− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 08 16 | 644 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.6− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 08 16 | 644 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.4+ | 0.1+ | | | | |
| 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.5+ | 0.8+ | | | | |

**1999 XA$_{147}$ = 2003 YD$_{109}$ = 2006 QR$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.99767 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26156737 | $\omega$ | 223.85151 | | +0.26952990 | | +0.96201818 |
| $a$ | 2.4214769 | $\Omega$ | 61.82864 | | −0.86944106 | | +0.26243101 |
| $e$ | 0.1591888 | $i$ | 2.81525 | | −0.41403608 | | +0.07517308 |
| $P$ | 3.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.1− | 0.4− | 2002 08 13 | 704 | 0.8+ | 0.5− | 2005 04 16 | 691 | 0.1+ | 0.1+ |
| 1991 10 01 | 691 | 0.3+ | 0.2− | 2002 08 13 | 704 | 0.7− | 1.2+ | 2005 04 16 | 691 | 0.1− | 0.2+ |
| 1999 12 07 | 691 | 0.4+ | 0.1− | 2002 08 13 | 704 | 1.1+ | 1.6+ | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 1999 12 07 | 691 | 0.2+ | 0.2− | 2002 08 13 | 704 | 1.0− | 0.1− | 2006 08 17 | 644 | 0.2− | 0.5+ |
| 1999 12 07 | 691 | 0.4+ | 0.3− | 2002 08 13 | 704 | 0.2+ | 0.8+ | 2006 08 17 | 644 | 0.1− | 0.4+ |
| 1999 12 13 | 691 | 0.3− | 0.4− | 2002 08 29 | 644 | 0.0 | 0.4+ | 2006 08 24 | 644 | 0.2+ | 0.4+ |
| 1999 12 13 | 691 | 0.1− | 0.2+ | 2002 08 29 | 644 | 0.3− | 0.5+ | 2006 08 24 | 644 | 0.1+ | 0.3+ |
| 1999 12 13 | 691 | 0.3− | 0.0 | 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.6− | 0.6+ |
| 2002 06 08 | 704 | 0.6− | 0.3+ | 2003 12 22 | 704 | 0.3− | 1.6+ | 2006 09 14 | 703 | 0.7− | 0.1− |
| 2002 06 08 | 704 | 0.4− | 0.2− | 2003 12 22 | 704 | 0.5+ | 0.2− | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2002 06 08 | 704 | 0.2− | 0.3+ | 2003 12 22 | 704 | 0.2− | 1.6+ | 2006 09 14 | 703 | 0.7− | 1.2+ |
| 2002 07 05 | 644 | 0.2− | 0.1+ | 2003 12 22 | 704 | 1.7− | 0.8− | 2006 09 14 | 703 | 1.0− | 0.6+ |
| 2002 07 05 | 644 | 0.1+ | 0.0 | 2003 12 25 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 704 | 1.2+ | 0.3+ |
| 2002 07 05 | 644 | 0.3− | 0.1+ | 2003 12 25 | 691 | 0.0 | 0.5+ | 2006 09 16 | 704 | 1.1− | 0.0 |
| 2002 07 13 | 608 | 0.9+ | 0.1+ | 2003 12 25 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 704 | 0.9− | 0.0 |
| 2002 07 13 | 608 | 0.2+ | 0.1+ | 2005 03 08 | 699 | 0.8+ | 0.2+ | 2006 09 16 | 704 | 0.6+ | 0.1+ |
| 2002 07 13 | 608 | 0.0 | 0.5+ | 2005 03 08 | 699 | 0.3− | 1.4+ | 2006 09 19 | 699 | 0.4− | 0.7− |
| 2002 08 06 | 644 | 0.2− | 0.9− | 2005 03 08 | 699 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.5+ | 1.0+ |
| 2002 08 06 | 644 | 0.1+ | 0.8− | 2005 03 08 | 699 | (2.3+ | 1.4+) | 2006 09 19 | 699 | 0.8+ | 0.2− |
| 2002 08 06 | 644 | 0.1+ | 0.6− | 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.2− |

**1999 XJ$_{147}$ = 2006 SE$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.58066 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27304711 | $\omega$ | 266.72761 | | +0.93130602 | | +0.36237138 |
| $a$ | 2.3531214 | $\Omega$ | 72.02399 | | −0.31691991 | | +0.85600095 |
| $e$ | 0.2026600 | $i$ | 2.21875 | | −0.17952955 | | +0.36871311 |
| $P$ | 3.61 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 29 | 691 | 0.0 | 0.1+ | 2001 05 20 | 807 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 1999 11 29 | 691 | 0.1+ | 0.2+ | 2001 05 21 | 807 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1999 11 29 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 1999 12 07 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 1999 12 07 | 691 | 0.6− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 1999 12 07 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.9− | 0.4+ |
| 1999 12 13 | 691 | 0.2+ | 0.8− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.3+ |
| 1999 12 13 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 1999 12 13 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.0 |

**1999 XG$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.58274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27427396 | $\omega$ | 280.22931 | | +0.99906579 | | +0.04198321 |
| $a$ | 2.3460990 | $\Omega$ | 77.36507 | | −0.03438946 | | +0.91592991 |
| $e$ | 0.2364683 | $i$ | 0.60154 | | −0.02617065 | | +0.39913633 |
| $P$ | 3.59 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 1.0− | 0.7+ | 2006 09 18 | H07 | 0.0 | 0.0 | 2006 09 28 | 704 | (1.7− | 0.4+) |
| 1999 11 09 | 704 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.6− | 0.1− |
| 1999 11 09 | 704 | 0.8+ | 1.5+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.7− | 0.2+ |
| 1999 11 09 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.4− | 0.8+ |
| 1999 11 09 | 704 | (2.2+ | 1.1+) | 2006 09 20 | H07 | 0.6+ | 1.0+ | 2006 09 28 | 691 | 0.0 | 0.2− |
| 1999 11 12 | 704 | 1.3+ | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.6+ | 1.0− | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 1999 11 12 | 704 | 0.5− | 0.9− | 2006 09 20 | 704 | 0.4− | 0.0 | 2006 10 01 | 704 | 0.3+ | 1.0+ |
| 1999 12 08 | 691 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.8+ | 0.9− | 2006 10 01 | 704 | 0.4+ | 0.8+ |
| 1999 12 08 | 691 | 0.3− | 0.0 | 2006 09 20 | H07 | 0.1+ | 0.3− | 2006 10 01 | 704 | 0.2− | 0.8+ |
| 1999 12 08 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.2− |
| 1999 12 13 | 691 | 0.2+ | 0.1− | 2006 09 20 | H07 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.9− | 0.3+ |
| 1999 12 13 | 691 | 0.3− | 0.4− | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1999 12 13 | 691 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2000 01 06 | 691 | 0.3+ | 0.6− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2000 01 06 | 691 | 0.3+ | 0.3+ | 2006 09 20 | H07 | 0.6+ | 1.0− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2000 01 06 | 691 | 0.2+ | 0.5− | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 03 26 | 695 | 0.0 | 0.8+ | 2006 09 24 | 691 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 03 26 | 695 | 0.6+ | 0.5+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.3− | 0.2− | | |
| 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.4− | | |
| 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.2+ | | |
| 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.2− | | |
| 2006 09 16 | 644 | 0.7− | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.3− | 0.1+ | | |
| 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.5− | 2006 11 21 | G96 | 0.1− | 0.1+ | | |
| 2006 09 18 | H07 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.9− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 18 | H07 | 0.0 | 0.5− | 2006 09 28 | 704 | 0.6− | 0.7+ | 2006 11 21 | G96 | 0.2− | 0.2+ | | |

## 1999 XW$_{200}$ = 1980 BF$_5$ = 2002 PS$_{116}$

Id. Minor Planet Center (*MPO* 33171; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.67780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24413969 | $\omega$ | 212.33927 | | −0.94483699 | −0.30539141 | |
| $a$ | 2.5353843 | $\Omega$ | 309.41441 | | +0.32355805 | −0.81402927 | |
| $e$ | 0.1741869 | $i$ | 8.81573 | | +0.05092404 | −0.49405711 | |
| $P$ | 4.04 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1980 01 22 | 095 | 2.4− | 4.5− | 2002 08 22 | 644 | 0.2− | 0.2+ | 2004 02 14 | 704 | 0.3− | 1.3+ | | |
| 1999 12 12 | 704 | 0.2+ | 1.4− | 2002 08 22 | 644 | 0.1+ | 0.2+ | 2004 02 14 | 704 | 0.6− | 0.6+ | | |
| 1999 12 12 | 704 | 0.4− | 1.2− | 2002 09 05 | 699 | 0.1− | 0.1− | 2004 02 14 | 704 | 0.4+ | 0.4+ | | |
| 1999 12 12 | 704 | 0.2+ | 1.4− | 2002 09 05 | 699 | 0.8− | 0.2+ | 2004 02 14 | 704 | 0.5− | 0.1+ | | |
| 1999 12 12 | 704 | 0.3+ | 1.0− | 2002 09 05 | 699 | 0.8+ | 0.5+ | 2004 04 21 | 599 | 1.6+ | 0.3− | | |
| 1999 12 15 | 704 | 0.2− | 0.1+ | 2002 09 05 | 699 | 0.5− | 0.3− | 2004 04 21 | 599 | 1.3+ | 0.5+ | | |
| 1999 12 15 | 704 | 0.3+ | 0.2+ | 2002 09 13 | 644 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.3− | 0.4− | | |
| 1999 12 15 | 704 | 0.4+ | 0.2− | 2002 09 13 | 644 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.1− | 0.2− | | |
| 1999 12 15 | 704 | 0.1+ | 0.2− | 2002 09 13 | 644 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.1− | 0.2− | | |
| 1999 12 15 | 704 | 0.5− | 0.1− | 2002 09 30 | 704 | 0.9+ | 0.5+ | 2006 08 30 | 704 | 0.3− | 0.4− | | |
| 2000 01 02 | 704 | 0.2− | 0.4+ | 2002 09 30 | 704 | 1.0+ | 0.0 | 2006 08 30 | 704 | 0.3− | 0.2− | | |
| 2000 01 02 | 704 | 0.0 | 0.1− | 2002 09 30 | 704 | 0.4+ | 0.0 | 2006 08 30 | 704 | 1.5− | 0.3+ | | |
| 2000 01 02 | 704 | 0.1− | 0.7+ | 2002 09 30 | 704 | 0.5+ | 0.3+ | 2006 08 30 | 704 | 0.6− | 0.4− | | |
| 2000 01 02 | 704 | 0.3− | 0.4− | 2002 10 05 | 644 | 0.2− | 0.0 | 2006 09 11 | 703 | (0.5+ | 2.0+) | | |
| 2000 01 02 | 704 | 0.3+ | 0.5+ | 2002 10 05 | 644 | 0.5+ | 0.3− | 2006 09 11 | 703 | (3.2+ | 4.4+) | | |
| 2000 01 04 | 704 | 0.4− | 0.2− | 2002 10 05 | 644 | 0.3+ | 0.4− | 2006 09 11 | 703 | 0.5+ | 0.2− | | |
| 2000 01 04 | 704 | 0.5− | 0.2− | 2003 11 19 | 704 | 0.1+ | 0.0 | 2006 09 11 | 703 | 1.2+ | 0.1− | | |
| 2000 01 04 | 704 | 0.1− | 0.3− | 2003 11 19 | 704 | 0.4+ | 0.5− | 2006 09 13 | 644 | 0.4− | 0.3− | | |
| 2000 01 04 | 704 | 0.1− | 0.2+ | 2003 11 19 | 704 | 0.3+ | 0.4− | 2006 09 13 | 644 | 0.6− | 0.4− | | |
| 2000 01 04 | 704 | 0.1− | 0.0 | 2003 11 19 | 704 | 0.3− | 0.7− | 2006 09 13 | 644 | 0.6− | 0.7− | | |
| 2000 01 25 | 704 | 0.2+ | 0.6+ | 2003 11 19 | 704 | 0.6− | 0.0 | 2006 09 18 | 704 | 1.0+ | 0.3+ | | |
| 2000 01 25 | 704 | 0.4− | 0.5+ | 2003 12 03 | 704 | 1.4− | 0.7+ | 2006 09 18 | 704 | 1.1− | 0.1+ | | |
| 2000 01 25 | 704 | 0.7− | 1.0+ | 2003 12 03 | 704 | 0.4− | 0.3+ | 2006 09 18 | 704 | 1.1+ | 1.1+ | | |
| 2000 01 25 | 704 | 0.9− | 0.3+ | 2003 12 03 | 704 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.2− | 0.7+ | | |
| 2000 01 29 | 704 | (2.7− | 1.4+) | 2003 12 03 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.9− | 0.5+ | | |
| 2000 01 29 | 704 | 1.1− | 0.2− | 2003 12 17 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.3− | 0.9− | | |
| 2000 01 29 | 704 | 0.1+ | 0.5− | 2003 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 699 | 1.0− | 0.4+ | | |
| 2000 01 29 | 704 | 0.2− | 0.5− | 2003 12 17 | 704 | 0.1+ | 0.8− | 2006 09 20 | 699 | (1.9+ | 2.3−) | | |
| 2000 02 11 | 704 | 0.1− | 0.6+ | 2003 12 17 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 1.4+ | 0.7− | | |
| 2000 02 11 | 704 | 1.0+ | 0.3− | 2003 12 17 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 1.0+ | 1.1+ | | |
| 2000 02 11 | 704 | 1.4+ | 1.3+ | 2003 12 19 | 704 | (0.1− | 2.7−) | 2006 09 25 | 704 | 0.2+ | 0.0 | | |
| 2000 02 11 | 704 | 1.3+ | 0.4+ | 2003 12 19 | 704 | (0.6+ | 2.8−) | 2006 09 25 | 704 | 1.1+ | 0.3− | | |
| 2002 08 11 | 704 | 0.2+ | 1.0+ | 2003 12 19 | 704 | (0.7+ | 2.7−) | 2006 09 26 | 704 | 0.3− | 0.7− | | |
| 2002 08 11 | 704 | 0.1+ | 0.0 | 2003 12 19 | 704 | (0.6+ | 2.2−) | 2006 09 26 | 704 | 0.3− | 0.7+ | | |
| 2002 08 11 | 704 | 0.0 | 0.8+ | 2003 12 19 | 704 | (0.8+ | 2.6−) | 2006 09 26 | 704 | 0.1+ | 0.2− | | |
| 2002 08 11 | 704 | 0.5− | 0.7+ | 2003 12 28 | 704 | 0.4− | 0.1+ | 2006 09 30 | 699 | 0.1− | 0.5− | | |
| 2002 08 14 | 699 | 0.7+ | 0.5− | 2003 12 28 | 704 | 0.5− | 0.2+ | 2006 09 30 | 699 | 1.1− | 0.6− | | |
| 2002 08 14 | 699 | 0.3− | 0.6− | 2003 12 28 | 704 | 0.4− | 0.1+ | 2006 09 30 | 699 | 0.1− | 0.1+ | | |
| 2002 08 14 | 699 | 0.3+ | 0.3− | 2003 12 28 | 704 | 0.5− | 0.2+ | 2006 09 30 | 699 | 0.3− | 0.1+ | | |
| 2002 08 14 | 699 | 1.6+ | 1.6+ | 2003 12 28 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.5+ | 1.2− | | |
| 2002 08 16 | 704 | 0.8− | 0.5+ | 2004 01 19 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.2− | 1.0− | | |
| 2002 08 16 | 704 | 0.2− | 0.2+ | 2004 01 19 | 704 | 1.5+ | 0.8+ | 2006 10 16 | 703 | 0.3+ | 2.0− | | |
| 2002 08 16 | 704 | 0.2− | 0.7+ | 2004 01 19 | 704 | 0.7+ | 0.7+ | 2006 10 16 | 703 | (2.6− | 3.4−) | | |
| 2002 08 22 | 644 | 0.2− | 0.0 | 2004 01 19 | 704 | 0.9+ | 0.9+ | | | | | | |

## 1999 XC$_{217}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.18335 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19172647 | $\omega$ | 204.54454 | | +0.62434326 | +0.77882242 | |
| $a$ | 2.9786170 | $\Omega$ | 104.14658 | | −0.70603136 | +0.59562940 | |
| $e$ | 0.0986477 | $i$ | 3.56286 | | −0.33423825 | +0.19662468 | |
| $P$ | 5.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 691 | 0.2− | 0.0 | 1999 12 31 | 691 | 0.1+ | 0.3+ | 2003 10 29 | 699 | 0.8+ | 0.9− | | |
| 1999 12 13 | 691 | 0.2− | 0.3+ | 2003 09 17 | 644 | 0.2− | 0.4+ | 2003 10 29 | 699 | 0.9− | 1.4+ | | |
| 1999 12 13 | 691 | 0.1− | 0.1− | 2003 09 17 | 644 | 0.3+ | 0.4+ | 2003 10 29 | 699 | 0.3− | 1.0− | | |
| 1999 12 16 | 691 | 0.1− | 0.1+ | 2003 09 17 | 644 | 0.1+ | 0.2+ | 2003 10 29 | 699 | 0.5+ | 0.1+ | | |
| 1999 12 16 | 691 | 0.0 | 0.4− | 2003 10 05 | 691 | 0.3+ | 0.3− | 2004 12 14 | 691 | 0.0 | 0.2− | | |
| 1999 12 16 | 691 | 0.3− | 0.1− | 2003 10 05 | 691 | 0.1+ | 0.3− | 2004 12 14 | 691 | 0.0 | 0.1− | | |
| 1999 12 27 | 691 | 0.1− | 0.0 | 2003 10 05 | 691 | 0.1− | 0.3− | 2004 12 14 | 691 | 0.0 | 0.0 | | |
| 1999 12 27 | 691 | 0.1+ | 0.2+ | 2003 10 20 | 704 | 0.4− | 2.0+ | 2006 03 04 | G96 | 0.4+ | 0.3+ | | |
| 1999 12 27 | 691 | 0.1+ | 0.4− | 2003 10 20 | 704 | 1.0− | 0.5+ | 2006 03 04 | G96 | 0.2+ | 0.1− | | |
| 1999 12 31 | 691 | 0.3+ | 0.2+ | 2003 10 20 | 704 | 0.4− | 0.7+ | 2006 03 04 | G96 | 0.2− | 0.4+ | | |
| 1999 12 31 | 691 | 0.4+ | 0.2+ | 2003 10 20 | 704 | 0.2+ | 0.1− | 2006 03 04 | G96 | 0.3− | 0.2− | | |

## 1999 XP$_{218}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.30000 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26679033 | $\omega$ | 345.45253 | | +0.12429710 | −0.97941101 | |
| $a$ | 2.3897694 | $\Omega$ | 97.22109 | | +0.92563756 | +0.05670618 | |
| $e$ | 0.1850045 | $i$ | 9.22692 | | +0.35741481 | +0.19374849 | |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1+ | 0.1− | 2000 01 31 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 1999 12 07 | 704 | 0.9+ | 0.4+ | 2000 01 31 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 1999 12 07 | 704 | 0.6+ | 0.7+ | 2004 03 19 | 644 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.0 | | |
| 1999 12 13 | 691 | 0.0 | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.3+ | | |
| 1999 12 13 | 691 | 0.0 | 0.3+ | 2004 03 19 | 644 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.0 | | |
| 1999 12 13 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.8− | 2006 10 17 | 703 | 0.3+ | 0.2+ | | |
| 1999 12 16 | 691 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.6− | 2006 10 17 | 703 | 1.1+ | 0.5+ | | |
| 1999 12 16 | 691 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.5− | 0.9+ | 2006 10 28 | 703 | 1.1+ | 0.1+ | | |
| 1999 12 16 | 691 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.7− | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.9+ | | |
| 2000 01 03 | 704 | 0.0 | 0.3− | 2006 09 29 | 699 | 0.7+ | 1.0+ | 2006 10 28 | 703 | 0.8− | 0.3+ | | |
| 2000 01 03 | 704 | 0.6+ | 1.9− | 2006 09 29 | 699 | (1.3− | 1.8−) | 2006 10 28 | 703 | 0.8+ | 1.0− | | |
| 2000 01 03 | 704 | 0.3+ | 1.2− | 2006 09 29 | 699 | 0.3+ | 0.9− | 2006 11 16 | 703 | 0.1− | 0.2+ | | |
| 2000 01 03 | 704 | (2.3− | 0.1−) | 2006 09 29 | 699 | 0.5− | 0.3− | 2006 11 16 | 703 | 0.9− | 0.7− | | |
| 2000 01 03 | 704 | 1.2− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.1+ | 0.1− | | |
| 2000 01 31 | 704 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.5− | 0.6− | | |
| 2000 01 31 | 704 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ | | | | | | |

## 1999 XC$_{246}$ = 2005 LA$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.93705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28735816 | $\omega$ | 170.67750 | | +0.94399289 | −0.32046134 | |
| $a$ | 2.2743311 | $\Omega$ | 208.40430 | | +0.29108886 | +0.92099428 | |
| $e$ | 0.2125823 | $i$ | 9.51390 | | +0.15538563 | +0.22152666 | |
| $P$ | 3.43 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.5− | 0.5+ | 2002 08 04 | 644 | 0.0 | 0.6+ | 2002 10 01 | 699 | 0.6− | 0.8+ | | |
| 1999 12 05 | 704 | 0.4+ | 0.7+ | 2002 08 04 | 644 | 0.1+ | 0.5+ | 2002 10 05 | 704 | 0.8+ | 0.7+ | | |
| 1999 12 05 | 704 | 0.2− | 0.7+ | 2002 08 11 | 704 | 0.0 | 0.3+ | 2002 10 05 | 704 | 0.6− | 0.5+ | | |
| 1999 12 05 | 704 | 0.1− | 0.6+ | 2002 08 11 | 704 | 0.8+ | 0.8+ | 2002 10 05 | 704 | 0.2+ | 0.3− | | |
| 1999 12 05 | 704 | 0.2− | 0.5+ | 2002 08 11 | 704 | 0.6+ | 0.6− | 2002 10 05 | 704 | 0.6− | 0.1− | | |
| 1999 12 14 | 704 | 0.6+ | 0.2+ | 2002 08 11 | 704 | 0.8+ | 0.4− | 2005 06 08 | 691 | 0.0 | 0.2+ | | |
| 1999 12 14 | 704 | 1.4+ | 0.9+ | 2002 08 25 | 644 | 0.1− | 0.4+ | 2005 06 08 | 691 | 0.1+ | 0.1− | | |
| 1999 12 14 | 704 | 0.0 | 0.5− | 2002 08 25 | 644 | 0.0 | 0.4+ | 2005 06 08 | 691 | 0.3− | 1.0+ | | |
| 1999 12 14 | 704 | 0.5+ | 0.2+ | 2002 08 25 | 644 | 0.1+ | 0.5+ | 2005 06 09 | 291 | 0.6+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.4+ | 0.3+ | 2002 09 04 | 644 | 0.2− | 0.1+ | 2005 06 09 | 291 | 0.0 | 0.2+ |
| 2000 01 11 | 704 | 0.1+ | 0.7+ | 2002 09 04 | 644 | 0.2− | 0.2+ | 2005 06 09 | 291 | 0.3+ | 0.6+ |
| 2000 01 11 | 704 | 0.9− | 0.8+ | 2002 09 04 | 644 | 0.2− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.2+ |
| 2000 01 11 | 704 | 1.6− | 0.1+ | 2002 09 05 | 645 | 0.1− | 0.2− | 2005 06 10 | 691 | 0.1− | 0.0 |
| 2002 07 20 | 644 | 0.1+ | 0.2+ | 2002 09 05 | 645 | 0.0 | 0.1− | 2005 06 10 | 691 | 0.2− | 1.9− |
| 2002 07 20 | 644 | 0.4+ | 0.1+ | 2002 10 01 | 699 | 0.7+ | 1.1+ | 2005 06 27 | 691 | 0.0 | 0.3+ |
| 2002 07 20 | 644 | 0.0 | 0.5+ | 2002 10 01 | 699 | 0.0 | 0.1+ | 2005 06 27 | 691 | 0.4− | 0.3+ |
| 2002 08 04 | 644 | 0.2− | 0.5+ | 2002 10 01 | 699 | 0.3− | 0.5+ | 2005 06 27 | 691 | 0.1+ | 0.3+ |

**1999 XO$_{247}$ = 2006 SK$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.74309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26727228 | $\omega$ | 203.32531 | | −0.21884259 | | −0.97121036 |
| $a$ | 2.3868957 | $\Omega$ | 259.42077 | | +0.90964659 | | −0.16816236 |
| $e$ | 0.1458087 | $i$ | 5.49428 | | +0.35305948 | | −0.16873607 |
| $P$ | 3.69 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 691 | 0.0 | 0.1+ | 2000 01 09 | 691 | 0.1− | 0.5− | 2006 09 20 | 703 | 0.2− | 0.2+ |
| 1999 12 06 | 691 | 0.3+ | 0.0 | 2000 01 09 | 691 | 0.3− | 0.6− | 2006 09 20 | 703 | 0.4+ | 0.1− |
| 1999 12 06 | 691 | 0.1+ | 0.1+ | 2004 01 26 | 699 | 1.1+ | 0.1− | 2006 09 20 | 703 | 0.2− | 0.3+ |
| 1999 12 14 | 691 | 0.0 | 0.8+ | 2004 01 26 | 699 | 0.3− | 0.8+ | 2006 09 27 | 703 | 0.4+ | 0.9− |
| 1999 12 14 | 691 | 0.1− | 0.4+ | 2004 01 26 | 699 | 0.2− | 0.8+ | 2006 09 27 | 703 | 0.1+ | 0.4+ |
| 1999 12 14 | 691 | 0.0 | 0.1− | 2004 01 26 | 699 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.6− | 0.5− |
| 2000 01 09 | 691 | 0.1+ | 0.8− | 2006 09 20 | 703 | 0.4− | 0.7+ | 2006 09 27 | 703 | 0.3+ | 0.5+ |

**1999 XE$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.70836 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23423195 | $\omega$ | 118.56038 | | +0.96316505 | | −0.17852873 |
| $a$ | 2.6063853 | $\Omega$ | 252.32183 | | +0.10498403 | | +0.93812118 |
| $e$ | 0.2704331 | $i$ | 12.18480 | | +0.24757110 | | +0.29674257 |
| $P$ | 4.21 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.6+ | 0.8+ | 2003 09 27 | 645 | 0.1− | 0.2− | 2003 10 22 | 704 | 0.9+ | 0.5− |
| 1999 12 07 | 704 | 0.8− | 0.3− | 2003 09 27 | 645 | 0.0 | 0.2− | 2003 10 22 | 704 | 0.2− | 0.0 |
| 1999 12 07 | 704 | 0.2− | 0.2− | 2003 09 29 | 699 | 0.7− | 0.3+ | 2003 10 27 | 691 | 0.1+ | 0.1+ |
| 1999 12 14 | 691 | 0.2+ | 0.2− | 2003 09 29 | 699 | 0.7+ | 0.1+ | 2003 10 27 | 691 | 0.1− | 0.0 |
| 1999 12 14 | 691 | 0.1− | 0.3− | 2003 09 29 | 699 | 0.7+ | 0.6+ | 2003 10 27 | 691 | 0.0 | 0.1+ |
| 1999 12 14 | 691 | 0.1+ | 0.5− | 2003 09 29 | 699 | 0.1+ | 0.6+ | 2003 11 02 | 704 | 0.0 | 0.4+ |
| 2000 01 05 | 691 | 0.1+ | 0.3+ | 2003 10 05 | 704 | 0.0 | 0.6+ | 2003 11 02 | 704 | 0.5− | 0.5+ |
| 2000 01 05 | 691 | 0.1− | 0.2+ | 2003 10 05 | 704 | 0.3− | 0.4+ | 2003 11 02 | 704 | 0.4+ | 1.1+ |
| 2000 01 05 | 691 | 0.1− | 0.2+ | 2003 10 05 | 704 | 0.4− | 0.5+ | 2003 11 02 | 704 | 0.2+ | 0.4+ |
| 2003 08 25 | 644 | 0.1+ | 0.0 | 2003 10 05 | 704 | 0.3− | 0.7+ | 2003 11 02 | 704 | 0.2+ | 0.4+ |
| 2003 08 25 | 644 | 0.1+ | 0.1+ | 2003 10 05 | 704 | 0.6+ | 0.7+ | | | | |
| 2003 08 25 | 644 | 0.2+ | 0.0 | 2003 10 22 | 704 | 0.1− | 0.8+ | | | | |

**1999 XJ$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.40571 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24022223 | $\omega$ | 301.63612 | | +0.92970420 | | −0.31043785 |
| $a$ | 2.5628740 | $\Omega$ | 77.09440 | | +0.36712284 | | +0.82422429 |
| $e$ | 0.1498615 | $i$ | 11.73141 | | −0.02951148 | | +0.47358491 |
| $P$ | 4.10 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.1− | 0.2− | 2000 01 10 | 691 | 0.1+ | 0.1− | 2003 11 19 | 644 | 0.1− | 0.2+ |
| 1999 12 09 | 691 | 0.1− | 0.1+ | 2000 01 10 | 691 | 0.2− | 0.1+ | 2003 11 19 | 644 | 0.3+ | 0.4+ |
| 1999 12 09 | 691 | 0.0 | 0.2− | 2000 01 10 | 691 | 0.1+ | 0.2+ | 2003 11 19 | 644 | 0.1− | 0.4+ |
| 1999 12 12 | 691 | 0.4+ | 0.2− | 2003 10 29 | 691 | 0.3+ | 0.1− | 2003 11 29 | 691 | 0.0 | 0.0 |
| 1999 12 12 | 691 | 0.3− | 0.0 | 2003 10 29 | 691 | 0.4+ | 0.1− | 2003 11 29 | 691 | 0.4− | 0.2− |
| 1999 12 12 | 691 | 0.1+ | 0.1+ | 2003 10 29 | 691 | 0.1+ | 0.2+ | 2003 11 29 | 691 | 0.5− | 0.2+ |

**1999 XQ$_{252}$ = 2006 RP$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.55488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27404173 | $\omega$ | 226.51074 | | +0.99458321 | | −0.10212222 |
| $a$ | 2.3474242 | $\Omega$ | 139.33923 | | +0.10187033 | | +0.92063142 |
| $e$ | 0.2004100 | $i$ | 1.70373 | | +0.02065601 | | +0.37684061 |
| $P$ | 3.60 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 29 | 691 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.1− |
| 1999 11 29 | 691 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.1− |
| 1999 11 29 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.3− | 0.3− |
| 1999 12 12 | 691 | 0.4− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.4− | 0.3+ |
| 1999 12 12 | 691 | 1.6− | 0.8− | 2006 09 14 | 691 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 1999 12 12 | 691 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 1999 12 16 | 691 | 0.7+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1999 12 16 | 691 | 1.1+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 1999 12 16 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2006 07 21 | G96 | 0.2− | 0.5− | 2006 09 25 | 691 | 0.2+ | 0.3+ | | | | |
| 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | | | | |

**1999 XV$_{254}$ = 2006 SJ$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.55085 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26144501 | $\omega$ | 81.24329 | | +0.93984664 | | −0.33992086 |
| $a$ | 2.4222324 | $\Omega$ | 298.62273 | | +0.29632248 | | +0.86050151 |
| $e$ | 0.1276527 | $i$ | 2.20642 | | +0.16994491 | | +0.37946140 |
| $P$ | 3.77 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.2− | 0.0 | 2004 01 31 | 691 | (13.4+ | 4.8−) | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 1999 12 05 | 691 | 0.3− | 0.2− | 2004 01 31 | 691 | (13.1+ | 5.0−) | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 1999 12 05 | 691 | 0.2− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.5− | 2006 10 17 | 703 | 1.3+ | 0.8− |
| 1999 12 12 | 691 | 0.3+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.3+ | 1.1− |
| 1999 12 12 | 691 | 0.8+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.9+ | 0.2+ |
| 1999 12 12 | 691 | 0.7+ | 0.0 | 2006 09 18 | 703 | 1.1+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 1999 12 17 | 691 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.7+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.5− |
| 1999 12 17 | 691 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.6− | 0.2+ |
| 1999 12 17 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.8− | 0.8− | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2002 09 14 | 644 | (11.8+ | 5.8+) | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | (11.7+ | 5.7+) | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2002 09 14 | 644 | (11.7+ | 5.8+) | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 01 31 | 691 | (13.4+ | 4.6−) | 2006 10 01 | 691 | 0.2− | 0.1+ | | | | |

**1999 XW$_{254}$ = 2004 XT$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.96992 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18188642 | $\omega$ | 311.98616 | | +0.59398302 | | −0.79145071 |
| $a$ | 3.0850997 | $\Omega$ | 101.00793 | | +0.77469525 | | +0.51441487 |
| $e$ | 0.1478836 | $i$ | 8.44673 | | +0.21686734 | | +0.33012593 |
| $P$ | 5.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.8− | 1.7+ | 1999 12 16 | 691 | 0.4+ | 0.4− | 2004 12 09 | 703 | 0.1+ | 0.8− |
| 1999 12 04 | 691 | 0.0 | 0.1− | 1999 12 16 | 691 | 0.4+ | 0.6− | 2004 12 09 | 703 | 0.4+ | 0.1− |
| 1999 12 04 | 691 | 0.1− | 0.0 | 2003 07 08 | 644 | 0.3− | 0.3+ | 2004 12 14 | 699 | 0.3− | 0.2− |
| 1999 12 12 | 691 | 0.2− | 0.0 | 2003 07 08 | 644 | 0.0 | 0.1+ | 2004 12 14 | 699 | 0.4− | 0.1+ |
| 1999 12 12 | 691 | 0.1− | 0.0 | 2003 07 08 | 644 | 0.2+ | 0.3− | 2004 12 14 | 699 | 0.4+ | 0.8+ |
| 1999 12 12 | 691 | 0.2− | 0.0 | 2004 12 09 | 703 | 0.3+ | 0.1− | 2004 12 14 | 699 | 0.2− | 0.2+ |
| 1999 12 16 | 691 | 0.6+ | 0.4− | 2004 12 09 | 703 | 0.2− | 0.4− | | | | |

**1999 XN$_{256}$ = 2006 QT$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.04907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26735768 | $\omega$ | 137.88606 | | +0.72170676 | −0.66608913 | |
| $a$ | 2.3863874 | $\Omega$ | 264.91192 | | +0.57390193 | +0.72790609 | |
| $e$ | 0.2489491 | $i$ | 10.89826 | | +0.38700896 | +0.16272056 | |
| $P$ | 3.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.6− | 0.1− | 2000 01 04 | 704 | 0.2− | 0.1− | 2004 02 18 | 704 | 0.3− | 1.8− |
| 1999 12 07 | 703 | 0.2− | 0.4+ | 2000 01 04 | 704 | 1.1+ | 0.1− | 2004 02 18 | 704 | 0.6+ | 0.5− |
| 1999 12 07 | 703 | 0.4− | 0.0 | 2000 01 04 | 704 | 0.5+ | 0.4− | 2006 08 22 | 644 | 0.3− | 0.2+ |
| 1999 12 07 | 703 | 0.1+ | 0.1+ | 2004 01 29 | 704 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.5− | 0.1+ |
| 1999 12 15 | 704 | 0.9− | 0.2− | 2004 01 29 | 704 | 0.6− | 1.2+ | 2006 08 22 | 644 | 0.4+ | 0.1− |
| 1999 12 15 | 704 | 0.2− | 0.5− | 2004 01 29 | 704 | 0.8− | 1.1+ | 2006 08 23 | 644 | 0.3+ | 0.3+ |
| 1999 12 15 | 704 | 0.7+ | 0.1+ | 2004 01 29 | 704 | 0.7− | 0.6+ | 2006 08 23 | 644 | 0.1+ | 0.1+ |
| 1999 12 15 | 704 | 0.4+ | 0.0 | 2004 02 18 | 704 | 0.1+ | 0.6− | 2006 08 23 | 644 | 0.0 | 0.3− |
| 2000 01 04 | 704 | 0.0 | 0.6+ | 2004 02 18 | 704 | 2.1+ | 0.2+ | | | | |

**1999 XG$_{258}$ = 2006 SR$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.73647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26480934 | $\omega$ | 132.01178 | | +0.71543383 | −0.69734929 | |
| $a$ | 2.4016729 | $\Omega$ | 272.25274 | | +0.62760097 | +0.66854005 | |
| $e$ | 0.2195719 | $i$ | 2.47265 | | +0.30703658 | +0.25837602 | |
| $P$ | 3.72 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 02 | 691 | 0.2− | 0.6+ | 2006 09 25 | 704 | 0.8− | 1.1+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 12 02 | 691 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.4− | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 1999 12 02 | 691 | 0.4+ | 0.4− | 2006 09 25 | 704 | 0.6− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.4− |
| 1999 12 08 | 691 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.8− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 12 08 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1999 12 08 | 691 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.9+ | 0.9− |
| 1999 12 15 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 1999 12 15 | 691 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.6− | 1.3+ | 2006 10 17 | 703 | (2.1− | 1.6−) |
| 1999 12 15 | 691 | 0.1− | 0.3− | 2006 09 29 | 704 | 1.2− | 0.9+ | 2006 10 17 | 703 | 0.4− | 0.5− |
| 2001 05 22 | 807 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.7+ | 1.2− |
| 2001 05 23 | 807 | 0.2− | 0.3+ | 2006 09 29 | 704 | (1.6+ | 0.5+) | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2006 09 17 | 703 | 0.3− | 0.0 | 2006 09 29 | 704 | (1.6− | 2.7+) | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2006 09 17 | 703 | 1.0− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 09 17 | 703 | 0.0 | 0.8− | 2006 10 01 | 691 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2006 09 17 | 703 | 0.5+ | 0.6+ | 2006 10 01 | 691 | 0.9+ | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.7− |
| 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.3− | 0.7− |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1− | 0.0 | | | | |

**1999 XE$_{259}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.74293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17754687 | $\omega$ | 54.09220 | | +0.95226305 | +0.26392252 | |
| $a$ | 3.1351672 | $\Omega$ | 290.16461 | | −0.30504118 | +0.84244052 | |
| $e$ | 0.0960991 | $i$ | 9.40695 | | +0.01203984 | +0.46972213 | |
| $P$ | 5.55 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.1+ | 0.1− | 2003 08 01 | 704 | 0.7+ | 0.2− | 2004 12 02 | 703 | 1.1− | 0.7+ |
| 1999 12 07 | 691 | 0.7− | 0.2− | 2003 08 22 | 644 | 0.1− | 0.0 | 2004 12 02 | 703 | 1.1− | 0.7+ |
| 1999 12 07 | 691 | 1.0− | 0.0 | 2003 08 22 | 644 | 0.2− | 0.2− | 2004 12 14 | 703 | 0.8+ | 0.5− |
| 1999 12 12 | 691 | 0.2+ | 0.1+ | 2003 08 22 | 644 | 0.1− | 0.2− | 2004 12 14 | 703 | 0.6+ | 0.1+ |
| 1999 12 12 | 691 | 0.4+ | 0.0 | 2003 09 02 | 704 | 0.2+ | 0.1− | 2004 12 14 | 703 | 0.3− | 0.4− |
| 1999 12 12 | 691 | 0.3+ | 0.3− | 2003 09 02 | 704 | 0.1+ | 0.4− | 2004 12 14 | 703 | 0.3+ | 0.0 |
| 1999 12 16 | 691 | 0.0 | 0.1+ | 2003 09 02 | 704 | 0.2+ | 0.4− | 2006 03 19 | 461 | 0.6+ | 0.0 |
| 1999 12 16 | 691 | 0.2+ | 0.1+ | 2003 09 18 | 644 | 0.0 | 0.3+ | 2006 03 19 | 461 | 0.5+ | 0.6+ |
| 1999 12 16 | 691 | 0.2+ | 0.2− | 2003 09 18 | 644 | 0.2− | 0.3+ | 2006 03 19 | 461 | 0.3+ | 0.1+ |
| 2003 07 23 | 644 | 0.1+ | 0.1+ | 2003 09 18 | 644 | 0.1− | 0.2+ | 2006 03 23 | G96 | 0.2+ | 0.5+ |
| 2003 07 23 | 644 | 0.1+ | 0.2+ | 2003 09 23 | 644 | 0.2− | 0.5+ | 2006 03 23 | G96 | 0.0 | 0.8+ |
| 2003 07 23 | 644 | 0.1+ | 0.0 | 2003 09 23 | 644 | 0.6− | 0.3+ | 2006 03 23 | G96 | 0.1− | 0.7+ |
| 2003 08 01 | 704 | 0.3− | 0.5+ | 2003 09 23 | 644 | 0.3− | 0.5+ | 2006 03 23 | G96 | 0.2+ | 0.4+ |
| 2003 08 01 | 704 | 0.0 | 0.1− | 2004 12 02 | 703 | 0.3+ | 0.6+ | | | | |
| 2003 08 01 | 704 | 0.2− | 0.1+ | 2004 12 02 | 703 | 0.2+ | 0.1− | | | | |

**1999 XY$_{259}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.18626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22733098 | $\omega$ | 135.34468 | | +0.49765006 | −0.83933320 | |
| $a$ | 2.6588692 | $\Omega$ | 283.64556 | | +0.71950820 | +0.54032824 | |
| $e$ | 0.0944662 | $i$ | 13.01073 | | +0.48440930 | +0.05970906 | |
| $P$ | 4.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.7− | 0.4− | 1999 12 17 | 691 | 0.9+ | 0.6+ | 2003 12 18 | 691 | 0.7− | 0.0 |
| 1999 12 07 | 691 | 0.8− | 0.5− | 2003 11 20 | 704 | 0.6− | 1.2+ | 2003 12 18 | 691 | 0.0 | 0.1− |
| 1999 12 07 | 691 | 0.5− | 0.2− | 2003 11 20 | 704 | 0.2+ | 1.1+ | 2003 12 18 | 691 | 0.2− | 0.2− |
| 1999 12 12 | 691 | 0.2− | 0.4− | 2003 11 20 | 704 | 0.1+ | 0.3+ | 2003 12 29 | 704 | 0.5+ | 0.5+ |
| 1999 12 12 | 691 | 0.3− | 0.1− | 2003 11 20 | 704 | 0.4+ | 0.5+ | 2003 12 29 | 704 | 1.3+ | 0.2+ |
| 1999 12 12 | 691 | 0.2− | 0.3− | 2003 12 03 | 704 | 0.2− | 1.1− | 2003 12 29 | 704 | 0.3− | 0.0 |
| 1999 12 17 | 691 | 0.7+ | 0.5+ | 2003 12 03 | 704 | 1.2+ | 0.6− | | | | |
| 1999 12 17 | 691 | 0.9+ | 0.7+ | 2003 12 03 | 704 | 1.1+ | 0.2− | | | | |

**1999 XQ$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.48914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27869148 | $\omega$ | 160.79176 | | +0.78650941 | −0.60038499 | |
| $a$ | 2.3212411 | $\Omega$ | 236.96197 | | +0.54162526 | +0.78315796 | |
| $e$ | 0.1356544 | $i$ | 9.94022 | | +0.29672382 | +0.16186873 | |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 1999 10 06 | 704 | 0.5+ | 0.3− | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 1999 10 06 | 704 | 0.2− | 0.0 | 2006 10 19 | 703 | 1.2− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 1999 10 06 | 704 | 0.6− | 0.7− | 2006 10 19 | 703 | 0.6− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 1999 11 12 | 704 | 0.8− | 0.2− | 2006 10 22 | 644 | 0.6− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 1999 11 12 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.3− | 0.4+ |
| 1999 11 12 | 704 | 0.4+ | 0.9− | 2006 10 22 | 644 | 0.2+ | 0.7+ | 2006 11 15 | 704 | 0.3+ | 0.3+ |
| 1999 11 12 | 704 | 0.8+ | 0.4+ | 2006 10 27 | 703 | (0.8− | 1.5+) | 2006 11 15 | 704 | 0.7+ | 0.6− |
| 1999 11 12 | 704 | 1.6+ | 0.5+ | 2006 10 27 | 703 | 0.4− | 0.9− | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 1999 12 07 | 704 | 1.1+ | 0.4+ | 2006 10 27 | 703 | 0.6+ | 0.8− | 2006 11 17 | 703 | 0.0 | 0.4− |
| 1999 12 07 | 704 | 0.2+ | 0.9− | 2006 10 27 | 703 | 0.5− | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 0.8− | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.2− |
| 1999 12 07 | 704 | 0.2+ | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 1999 12 09 | 691 | 0.5− | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.7− |
| 1999 12 09 | 691 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.0 |
| 1999 12 09 | 691 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.9+ | 0.1+ |
| 1999 12 16 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 1999 12 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 29 | 704 | 0.5+ | 0.2+ |
| 1999 12 16 | 691 | 0.7+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.8+ |
| 2006 10 19 | 703 | 0.1− | 0.4− | 2006 11 11 | 703 | 1.2− | 0.5− | 2006 11 29 | 704 | 0.7+ | 0.2+ |
| 2006 10 19 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 29 | 704 | 1.1+ | 1.4+ |
| 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1− | 0.5+ | | | | |
| 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 13 | 691 | 0.0 | 0.1+ | | | | |

**1999 XC$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.03283 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26852136 | $\omega$ | 187.09639 | | +0.30787859 | +0.94860416 | |
| $a$ | 2.3794879 | $\Omega$ | 100.85537 | | −0.86921149 | +0.31173376 | |
| $e$ | 0.1184926 | $i$ | 4.27550 | | −0.38688778 | +0.05451799 | |
| $P$ | 3.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.0 | 0.6+ | 2005 05 08 | 703 | (2.0− | 2.1−) |
| 1999 12 09 | 691 | 0.8− | 0.3− | 2002 08 29 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 1999 12 09 | 691 | 0.5− | 0.1− | 2002 08 29 | 644 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 1999 12 16 | 691 | 0.3− | 0.2+ | 2002 09 11 | 608 | 0.6+ | 0.9− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 1999 12 16 | 691 | 0.2+ | 0.3+ | 2002 09 11 | 608 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 12 16 | 691 | 0.0 | 0.1+ | 2002 09 11 | 608 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 1999 12 31 | 691 | 0.5+ | 0.3+ | 2005 04 02 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 1999 12 31 | 691 | 0.5+ | 0.3+ | 2005 04 02 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 12 31 | 691 | 0.4+ | 0.2+ | 2005 04 02 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2002 08 15 | 699 | 0.2− | 0.4+ | 2005 04 13 | 699 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 08 15 | 699 | 0.4− | 0.4+ | 2005 04 13 | 699 | 0.4+ | 0.8+ | 2006 10 22 | 703 | 1.0+ | 0.3+ |
| 2002 08 15 | 699 | 0.6− | 0.6+ | 2005 04 13 | 699 | 1.1+ | 1.0− | 2006 10 22 | 703 | 0.4− | 0.8− |
| 2002 08 15 | 699 | 0.2− | 0.3− | 2005 04 13 | 699 | 1.3− | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.6+ |
| 2002 08 18 | 644 | 0.3− | 0.1− | 2005 04 18 | 691 | 0.6+ | 0.2+ | 2006 10 22 | 703 | (1.8− | 0.1+) |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2002 08 18 | 644 | 0.4− | 0.1+ | 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.2+ |
| 2002 08 19 | 644 | 0.2+ | 0.0 | 2005 05 08 | 703 | (1.7− | 0.7+) | 2006 11 24 | G96 | 0.2− | 0.1+ |
| 2002 08 19 | 644 | 0.3+ | 0.0 | 2005 05 08 | 703 | (1.6− | 0.1−) | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2005 05 08 | 703 | 1.5− | 0.3+ | | | | |

**1999 YO$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.77821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28261962 | $\omega$ | 65.90623 | | +0.63305804 | −0.76576058 | |
| $a$ | 2.2996823 | $\Omega$ | 343.23194 | | +0.48672227 | +0.50761083 | |
| $e$ | 0.3053418 | $i$ | 23.13491 | | +0.60194598 | +0.39489490 | |
| $P$ | 3.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 20 | 704 | 0.5+ | 0.1+ | 1999 12 30 | 704 | 0.6− | 0.1− | 1999 12 31 | 704 | 0.2+ | 0.8− |
| 1999 12 20 | 704 | 0.5+ | 0.3− | 1999 12 30 | 704 | 0.1+ | 0.7− | 2000 01 26 | 704 | 0.1+ | 0.4+ |
| 1999 12 20 | 704 | 0.1− | 0.7+ | 1999 12 30 | 704 | 0.2− | 0.9+ | 2000 01 26 | 704 | 0.7+ | 0.2+ |
| 1999 12 20 | 704 | 1.0− | 0.9− | 1999 12 30 | 704 | 0.1+ | 0.1+ | 2000 01 26 | 704 | 0.6− | 0.5− |
| 1999 12 28 | 704 | 0.3+ | 0.7+ | 1999 12 30 | 704 | 1.0− | 0.3+ | 2006 11 15 | 704 | 0.3+ | 0.6− |
| 1999 12 28 | 704 | 0.1+ | 0.2− | 1999 12 31 | 704 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.1− | 0.3− |
| 1999 12 28 | 704 | (1.6+ | 2.2+) | 1999 12 31 | 704 | 0.5− | 0.1− | 2006 11 15 | 704 | 0.2− | 0.0 |
| 1999 12 28 | 704 | 0.7+ | 0.7+ | 1999 12 31 | 704 | 0.3+ | 0.5− | 2006 11 15 | 704 | 0.0 | 0.6− |
| 1999 12 28 | 704 | 1.1+ | 0.9+ | 1999 12 31 | 704 | 0.8− | 0.5− | 2006 11 15 | 704 | 0.2+ | 0.3− |
| 1999 12 29 | 704 | 0.3+ | 0.5− | 1999 12 31 | 704 | 0.5+ | 1.3− | 2006 11 16 | 704 | 0.3+ | 0.7+ |
| 1999 12 29 | 704 | 0.1− | 0.1+ | 1999 12 31 | 704 | 0.2+ | 1.3+ | 2006 11 16 | 704 | 0.3− | 0.4+ |
| 1999 12 29 | 704 | 0.3+ | 0.5+ | 1999 12 31 | 704 | 0.4− | 1.4− | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 1999 12 29 | 704 | 0.2+ | 1.7+ | 1999 12 31 | 704 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.3− | 0.1− |
| 1999 12 29 | 704 | 0.8− | 0.5+ | 1999 12 31 | 704 | 0.1− | 1.6− | 2006 11 16 | 704 | 0.1− | 0.9+ |

**1999 YH$_{15}$ = 2006 RV$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.01325 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12519950 | $\omega$ | 128.99113 | | +0.97746828 | +0.20326005 | |
| $a$ | 3.9573184 | $\Omega$ | 219.37544 | | −0.21053052 | +0.91929463 | |
| $e$ | 0.2268537 | $i$ | 5.14863 | | −0.01525329 | +0.33702039 | |
| $P$ | 7.87 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 30 | 691 | 0.3+ | 0.0 | 2006 09 13 | 644 | 0.3+ | 0.7+ | 2006 09 25 | 699 | (1.9− | 0.6+) |
| 1999 11 30 | 691 | 0.7− | 0.0 | 2006 09 16 | 699 | (1.7− | 1.2+) | 2006 09 25 | 699 | 0.3+ | 1.4+ |
| 1999 11 30 | 691 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.4+ | 0.2+ | 2006 09 25 | 699 | (0.1− | 1.6−) |
| 1999 12 09 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | (0.0 | 1.9+) | 2006 09 30 | 291 | 0.1− | 0.1+ |
| 1999 12 09 | 691 | 0.3+ | 0.5− | 2006 09 16 | 699 | 0.7+ | 0.1− | 2006 09 30 | 291 | 0.0 | 0.2+ |
| 1999 12 09 | 691 | 0.2− | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.4− | 2006 09 30 | 291 | 0.2+ | 0.1+ |
| 1999 12 31 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.3− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 1999 12 31 | 691 | 0.3− | 0.0 | 2006 09 19 | 699 | 1.3− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 1999 12 31 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.4− | 1.0− | 2006 10 20 | 691 | 0.1− | 0.3− |
| 2000 01 05 | 691 | 0.7+ | 0.3+ | 2006 09 19 | 703 | (1.2− | 1.8−) | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2000 01 05 | 691 | 0.1+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 1.3− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2000 01 05 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | (2.0+ | 0.1−) | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | (1.6+ | 0.4−) | | | | |
| 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.6+ | | | | |

**1999 YP$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.40893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26895729 | $\omega$ | 17.28170 | | +0.71736208 | −0.68906926 | |
| $a$ | 2.3769160 | $\Omega$ | 27.16706 | | +0.60964116 | +0.54939748 | |
| $e$ | 0.2984473 | $i$ | 13.01625 | | +0.33723774 | +0.47259492 | |
| $P$ | 3.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 699 | 0.8+ | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.3− |
| 1999 12 03 | 699 | 0.2− | 0.5− | 2006 09 25 | 703 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.4− |
| 1999 12 03 | 699 | 1.3+ | 0.9− | 2006 09 25 | 703 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.4− |
| 1999 12 13 | 704 | 0.3− | 0.5− | 2006 09 25 | 703 | (1.6− | 0.4−) | 2006 10 24 | 644 | 0.3− | 0.3− |
| 1999 12 13 | 704 | 0.3− | 0.6− | 2006 09 25 | 703 | 1.0− | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.3− |
| 1999 12 13 | 704 | 0.4− | 0.6− | 2006 09 25 | 703 | 0.4− | 0.2− | 2006 10 24 | 644 | 0.4− | 1.0− |
| 1999 12 13 | 704 | 0.9− | 0.4− | 2006 09 25 | 703 | 0.2− | 0.6− | 2006 10 27 | 704 | 0.1+ | 1.0+ |
| 1999 12 13 | 704 | 0.0 | 0.4− | 2006 09 25 | 703 | 0.4+ | 0.7− | 2006 10 27 | 704 | 1.5+ | 1.5+ |
| 1999 12 30 | 704 | 0.4− | 0.5+ | 2006 09 25 | 703 | 1.0+ | 0.4− | 2006 10 27 | 704 | 0.3+ | 1.1+ |
| 1999 12 30 | 704 | 1.2− | 0.2+ | 2006 10 04 | 703 | 0.6+ | 0.3− | 2006 10 27 | 704 | 0.9+ | 0.5+ |
| 1999 12 30 | 704 | 1.0− | 0.0 | 2006 10 04 | 703 | 0.1− | 0.1− | 2006 10 27 | 704 | 1.2+ | 1.1+ |
| 2000 01 11 | 699 | 0.4+ | 0.4+ | 2006 10 04 | 703 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.3+ | 0.1+ |
| 2000 01 11 | 699 | 0.1+ | 0.1+ | 2006 10 04 | 703 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.2− | 0.2+ |
| 2000 01 11 | 699 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 11 10 | 704 | 0.5+ | 0.3− |
| 2000 01 27 | 704 | 0.5+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 11 10 | 704 | 0.6− | 0.1− |
| 2000 01 27 | 704 | 0.2+ | 1.7+ | 2006 10 10 | 644 | 0.2− | 0.3− | 2006 11 10 | 704 | 0.0 | 0.3+ |
| 2000 01 27 | 704 | 0.8+ | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.8− | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2006 09 12 | 704 | 0.7+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2006 09 12 | 704 | 0.1− | 1.1− | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 18 | 704 | 0.2− | 0.9− |
| 2006 09 12 | 704 | 1.0− | 1.4+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2006 09 12 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 704 | 0.5+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2006 09 12 | 704 | (2.0− | 0.7+) | 2006 10 22 | 644 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2006 09 14 | 644 | 0.6− | 0.1+ | 2006 10 22 | 704 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.1− | 1.2− |
| 2006 09 14 | 644 | 0.7− | 0.2+ | 2006 10 22 | 704 | 0.6+ | 0.9+ | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2006 09 14 | 644 | 0.6− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3− | 2006 11 21 | 704 | (1.9+ | 1.4+) |
| 2006 09 17 | 699 | 0.3+ | 0.3+ | 2006 10 22 | 704 | (1.0+ | 1.8+) | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2006 09 17 | 699 | 0.6+ | 0.6+ | 2006 10 22 | 704 | 0.9+ | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.4− |
| 2006 09 17 | 699 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.3− | 2006 11 21 | 704 | (3.0+ | 1.2−) |
| 2006 09 17 | 699 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.8− | 0.0 | 2006 11 21 | 704 | 1.3− | 0.2− |
| 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.5− | 0.1− | | | | |
| 2006 09 19 | 703 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.7− | 0.0 | | | | |

**2000 AJ$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.54155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27554648 | $\omega$ | 162.36833 | | +0.16575213 | −0.87832879 | |
| $a$ | 2.3388703 | $\Omega$ | 276.20449 | | +0.84172213 | +0.36291925 | |
| $e$ | 0.3180498 | $i$ | 26.81071 | | +0.51383859 | −0.31117223 | |
| $P$ | 3.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 704 | 1.2+ | 0.3− | 2000 01 02 | 704 | 0.3+ | 1.1− | 2002 06 07 | 291 | 0.3− | 0.2+ |
| 1999 10 04 | 704 | 0.3− | 0.1+ | 2000 01 02 | 704 | 0.6− | 1.0− | 2002 06 07 | 291 | 0.7+ | 0.2+ |
| 1999 10 04 | 704 | 0.1+ | 0.2− | 2000 01 03 | 704 | 0.0 | 0.2− | 2004 01 03 | 704 | 0.0 | 0.7+ |
| 1999 10 20 | 704 | 0.2− | 0.1− | 2000 01 03 | 704 | 0.6+ | 0.3− | 2004 01 03 | 704 | 0.1− | 0.2+ |
| 1999 10 20 | 704 | 0.4− | 0.2− | 2000 01 03 | 704 | 0.0 | 0.2− | 2004 01 03 | 704 | 0.6+ | 0.6+ |
| 1999 10 20 | 704 | 0.0 | 0.6+ | 2000 01 04 | 704 | 0.2− | 0.2− | 2004 01 03 | 704 | 0.5+ | 0.1+ |
| 1999 10 20 | 704 | 0.7+ | 0.2+ | 2000 01 04 | 704 | 0.0 | 0.2− | 2004 01 03 | 704 | 0.1+ | 0.5− |
| 1999 10 20 | 704 | 0.1+ | 0.7− | 2000 01 04 | 704 | 0.0 | 0.2+ | 2006 08 26 | 106 | (1.8+ | 0.8−) |
| 1999 10 30 | 704 | 0.3+ | 0.7+ | 2000 01 04 | 704 | 1.1+ | 0.0 | 2006 08 26 | 106 | 0.3+ | 0.4− |
| 1999 10 30 | 704 | 0.9− | 1.5+ | 2000 01 04 | 704 | 0.2− | 0.5+ | 2006 08 26 | 106 | 0.2− | 0.4− |
| 1999 10 30 | 704 | 0.7+ | 0.8+ | 2000 01 31 | 704 | 0.5− | 0.7+ | 2006 08 26 | 106 | 0.3− | 0.1+ |
| 1999 10 30 | 704 | 0.8+ | 0.6+ | 2000 01 31 | 704 | 0.5+ | 0.6+ | 2006 09 23 | B03 | 0.4− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 704 | 0.2+ | 0.5+ | 2000 01 31 | 704 | 0.2− | 0.6+ | 2006 09 23 | B03 | 0.3− | 0.2+ |
| 1999 12 13 | 704 | 0.2− | 0.2− | 2000 01 31 | 704 | 0.3+ | 0.8+ | 2006 09 23 | B03 | 0.5− | 0.2+ |
| 1999 12 13 | 704 | 0.4− | 0.7− | 2000 01 31 | 704 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.8+ | 0.0 |
| 1999 12 13 | 704 | 0.8− | 0.9− | 2000 03 05 | 704 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.2+ | 0.7+ |
| 1999 12 13 | 704 | 0.8− | 1.1− | 2000 03 05 | 704 | 0.0 | 0.6+ | 2006 11 15 | 704 | 0.5+ | 0.1+ |
| 1999 12 13 | 704 | 1.1− | 0.8− | 2000 03 05 | 704 | 0.6− | 0.9+ | 2006 11 22 | 703 | 1.1− | 0.1+ |
| 2000 01 02 | 704 | 0.0 | 0.2− | 2000 03 05 | 704 | 0.9+ | 1.2+ | 2006 11 22 | 703 | 0.8− | 0.4+ |
| 2000 01 02 | 704 | 0.5+ | 0.9− | 2000 03 05 | 704 | 0.6+ | 0.8+ | 2006 11 22 | 703 | 0.3− | 0.4+ |
| 2000 01 02 | 704 | 0.1− | 1.0− | 2002 06 07 | 291 | 0.5− | 0.1− | | | | |

**2000 AT$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.59847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29015722 | $\omega$ | 249.16364 | | −0.86831331 | | +0.41234526 |
| $a$ | 2.2596810 | $\Omega$ | 313.96646 | | −0.17260746 | | −0.77225634 |
| $e$ | 0.1735220 | $i$ | 22.52172 | | −0.46501468 | | −0.48331307 |
| $P$ | 3.40 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 691 | 0.4− | 0.1+ | 2000 02 06 | 704 | 1.1+ | 0.4+ | 2000 03 03 | 703 | 0.2+ | 0.1− |
| 2000 01 03 | 691 | 0.5− | 0.0 | 2000 02 06 | 704 | 0.1+ | 0.2+ | 2000 03 08 | 704 | 0.6+ | 0.1+ |
| 2000 01 03 | 691 | 0.4− | 0.2− | 2000 02 06 | 704 | 0.5+ | 0.4− | 2000 03 08 | 704 | 0.3− | 0.0 |
| 2000 01 05 | 691 | 0.3− | 0.1+ | 2000 02 06 | 704 | 0.0 | 0.1− | 2000 03 08 | 704 | 0.4− | 0.7− |
| 2000 01 05 | 691 | 0.4− | 0.1+ | 2000 02 08 | 704 | 0.3+ | 0.2+ | 2001 08 24 | 699 | 1.2− | 0.8+ |
| 2000 01 05 | 691 | 0.1− | 0.0 | 2000 02 08 | 704 | 0.6+ | 0.5+ | 2001 08 24 | 699 | (0.3+ | 2.4+) |
| 2000 02 02 | 704 | 0.1+ | 0.2+ | 2000 02 08 | 704 | 0.8+ | 0.6+ | 2001 08 24 | 699 | 0.5− | 0.7+ |
| 2000 02 02 | 704 | 0.2+ | 0.5− | 2000 02 08 | 704 | 0.2− | 0.4− | 2001 08 24 | 699 | 0.6− | 1.0+ |
| 2000 02 02 | 704 | 1.3+ | 0.2+ | 2000 02 08 | 704 | 1.2+ | 0.4+ | 2003 01 14 | 704 | 0.8− | 0.3+ |
| 2000 02 02 | 704 | 0.6+ | 1.2+ | 2000 03 03 | 703 | 0.8+ | 0.3− | 2003 01 14 | 704 | 0.7+ | 0.6+ |
| 2000 02 02 | 704 | 1.2+ | 0.7+ | 2000 03 03 | 703 | 0.1− | 0.8+ | 2003 01 14 | 704 | 0.4+ | 0.9− |
| 2000 02 06 | 704 | 0.1− | 0.4− | 2000 03 03 | 703 | 0.3− | 0.5− | 2003 01 14 | 704 | 0.3− | 0.3+ |

**2000 AP$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.64583 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19780020 | $\omega$ | 151.76823 | | −0.14393950 | | −0.98013963 |
| $a$ | 2.9173256 | $\Omega$ | 306.18975 | | +0.87315616 | | −0.06092112 |
| $e$ | 0.2091406 | $i$ | 9.73083 | | +0.46570349 | | −0.18871914 |
| $P$ | 4.98 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.8+ | 0.4− | 2000 01 04 | 704 | 0.4− | 1.0+ | 2005 01 07 | 704 | 0.3− | 0.3+ |
| 1999 12 12 | 704 | 0.3+ | 0.1+ | 2004 12 15 | 704 | 0.1− | 0.6+ | 2005 01 07 | 704 | 0.3− | 0.7+ |
| 1999 12 12 | 704 | 0.4− | 0.9− | 2004 12 15 | 704 | 0.3+ | 0.7+ | 2005 01 16 | 704 | 0.2− | 0.8− |
| 2000 01 02 | 704 | 0.2− | 0.2− | 2004 12 15 | 704 | 0.2+ | 0.7− | 2005 01 16 | 704 | 0.6+ | 0.3− |
| 2000 01 02 | 704 | 0.5− | 0.1− | 2004 12 15 | 704 | 1.2+ | 0.1+ | 2005 01 16 | 704 | 0.4+ | 0.2− |
| 2000 01 02 | 704 | 0.5+ | 0.1− | 2004 12 17 | 704 | 0.2+ | 1.2+ | 2005 01 16 | 704 | 0.1− | 0.2+ |
| 2000 01 04 | 704 | 0.3+ | 0.0 | 2004 12 17 | 704 | 0.6− | 0.5− | 2005 02 03 | 704 | 0.3− | 0.0 |
| 2000 01 04 | 704 | 0.2+ | 0.1+ | 2004 12 17 | 704 | 0.7− | 1.1− | 2005 02 03 | 704 | 0.1+ | 0.9− |
| 2000 01 04 | 704 | 0.8− | 0.3− | 2005 01 07 | 704 | 0.3− | 1.0+ | 2005 02 03 | 704 | 0.2+ | 0.3+ |

**2000 AD$_{42}$ = 2006 VJ$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.80957 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27338515 | $\omega$ | 124.50598 | | +0.17417087 | | −0.98341535 |
| $a$ | 2.3511812 | $\Omega$ | 315.37615 | | +0.87821185 | | +0.17836468 |
| $e$ | 0.1984543 | $i$ | 4.12951 | | +0.44543064 | | +0.03286782 |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 046 | 0.0 | 0.1− | 2000 01 12 | 046 | 1.1+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2000 01 06 | 046 | 0.1− | 0.1+ | 2000 01 12 | 046 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2000 01 06 | 046 | 0.3+ | 0.1+ | 2000 01 12 | 046 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 01 06 | 046 | 0.4− | 0.0 | 2000 01 12 | 046 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2000 01 06 | 046 | 0.3− | 0.2− | 2000 01 12 | 046 | 0.4− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2000 01 06 | 046 | 0.0 | 0.3+ | 2000 01 13 | 046 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.3− |
| 2000 01 06 | 046 | 0.3+ | 0.1+ | 2000 01 13 | 046 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.1+ |
| 2000 01 06 | 046 | 0.7− | 1.1+ | 2000 01 13 | 046 | 0.8− | 0.0 | 2006 11 14 | 703 | 0.8− | 0.9− |
| 2000 01 06 | 046 | 0.1+ | 0.7− | 2000 01 14 | 046 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.6− |
| 2000 01 06 | 046 | 0.3− | 0.1+ | 2000 01 14 | 046 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.0 | 1.5− |
| 2000 01 06 | 046 | 0.1− | 0.3+ | 2000 01 14 | 046 | 0.0 | 0.0 | 2006 11 22 | 703 | (1.0− | 1.6+) |
| 2000 01 09 | 046 | 0.7+ | 0.9− | 2006 11 02 | 703 | 0.9+ | 0.2+ | 2006 11 22 | 703 | 0.4+ | 0.4+ |
| 2000 01 09 | 046 | 0.2+ | 0.4− | 2006 11 02 | 703 | 0.0 | 0.8+ | 2006 11 22 | 703 | 0.7+ | 0.5+ |
| 2000 01 09 | 046 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 0.4− | 0.3+ | 2006 11 22 | 703 | 0.5− | 1.0+ |
| 2000 01 12 | 046 | 0.8+ | 0.1+ | 2006 11 02 | 703 | (0.2+ | 1.6−) | | | | |

**2000 AB$_{45}$ = 2006 TE$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.42742 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27075615 | $\omega$ | 117.26736 | | −0.10919671 | | −0.99395329 |
| $a$ | 2.3663764 | $\Omega$ | 338.99215 | | +0.90024709 | | −0.09397081 |
| $e$ | 0.1928052 | $i$ | 1.84301 | | +0.42146324 | | −0.05680089 |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.1+ | 0.2+ | 2000 01 13 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2000 01 05 | 691 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.4− | 0.0 |
| 2000 01 05 | 691 | 0.1+ | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2000 01 06 | 691 | 0.3− | 0.3− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2000 01 06 | 691 | 0.2− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.9+ |
| 2000 01 06 | 691 | 0.3− | 0.5− | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2000 01 08 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2000 01 08 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2000 01 08 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2000 01 11 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.4− |
| 2000 01 11 | 704 | 0.4− | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.5− |
| 2000 01 11 | 704 | 0.1+ | 0.4− | 2006 11 09 | 691 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2000 01 13 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.6− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.2− |
| 2000 01 13 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | | | |

**2000 AE$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.10830 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27650652 | $\omega$ | 222.27638 | | −0.49631805 | | −0.86490793 |
| $a$ | 2.3334534 | $\Omega$ | 257.60793 | | +0.81560487 | | −0.43500864 |
| $e$ | 0.1760789 | $i$ | 4.39525 | | +0.29741736 | | −0.25040318 |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.0 | 0.3− | 2002 09 28 | 608 | (1.7− | 0.9−) | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2000 01 05 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2000 01 05 | 704 | 0.4+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2000 01 06 | 704 | 0.7+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.1− |
| 2000 01 06 | 704 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2000 01 06 | 704 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.9+ | 1.0+ | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2002 09 13 | 644 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.8− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2002 09 13 | 644 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.7+ | 0.8+ | 2006 11 22 | 691 | 0.5− | 0.0 |
| 2002 09 13 | 644 | 1.0+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2002 09 15 | 608 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.4− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2002 09 15 | 608 | 0.4+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.4+ | 0.1+ |
| 2002 09 15 | 608 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.4− | 0.2+ | 2006 12 01 | 704 | 1.0+ | 0.4+ |
| 2002 09 19 | 644 | 0.5− | 0.6− | 2006 11 18 | 704 | 0.2+ | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.4− |
| 2002 09 19 | 644 | 0.3− | 0.7− | 2006 11 18 | 704 | 0.4+ | 0.4+ | 2006 12 01 | 704 | 0.2+ | 0.2+ |
| 2002 09 28 | 608 | 1.0− | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.0 | 2006 12 01 | 704 | 0.6+ | 0.4− |
| 2002 09 28 | 608 | 0.5− | 0.9− | 2006 11 18 | 704 | 0.2+ | 0.2+ | | | | |

**2000 AY$_{109}$ = 2006 SW$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.15219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26798456 | $\omega$ | 123.93920 | | +0.77318470 | −0.61883831 | |
| $a$ | 2.3826643 | $\Omega$ | 274.68790 | | +0.52622252 | +0.74806312 | |
| $e$ | 0.2217810 | $i$ | 7.99682 | | +0.35394248 | +0.23966792 | |
| $P$ | 3.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.1− | 1.0+ |
| 2000 01 05 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 19 | 703 | 1.1− | 0.1− |
| 2000 01 05 | 704 | 0.2− | 1.0+ | 2006 09 16 | 703 | 1.1− | 0.3− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2000 01 05 | 704 | 1.2− | 0.8+ | 2006 09 16 | 703 | 0.6− | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2000 01 07 | 704 | 0.3− | 0.5+ | 2006 09 22 | 699 | 0.6+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2000 01 07 | 704 | 1.1+ | 0.1+ | 2006 09 22 | 699 | 0.5− | 0.1− | 2006 10 31 | 703 | 0.3+ | 0.9+ |
| 2000 01 07 | 704 | 0.1− | 0.4− | 2006 09 22 | 699 | 1.0+ | 0.5− | 2006 10 31 | 703 | 0.1− | 0.4+ |
| 2000 01 09 | 704 | 0.1+ | 0.0 | 2006 09 22 | 699 | 0.7− | 0.3+ | 2006 10 31 | 703 | 1.0+ | 0.6− |
| 2000 01 09 | 704 | 0.4+ | 0.5− | 2006 09 28 | 703 | 0.4− | 0.5+ | 2006 10 31 | 703 | 0.6+ | 0.4− |
| 2000 01 09 | 704 | 0.3− | 1.1− | 2006 09 28 | 703 | 0.6− | 0.5+ | 2006 11 14 | 703 | 0.7+ | 0.1+ |
| 2000 01 09 | 704 | 0.0 | 0.8− | 2006 09 28 | 703 | 0.3+ | 0.1− | 2006 11 14 | 703 | 0.9+ | 0.1− |
| 2002 08 05 | 644 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 2002 08 05 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2002 08 05 | 644 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.8− | 0.4+ | | | | |

**2000 AB$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.94003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17911798 | $\omega$ | 197.63668 | | −0.40079652 | −0.90593167 | |
| $a$ | 3.1168072 | $\Omega$ | 276.16999 | | +0.85625367 | −0.31738183 | |
| $e$ | 0.0326082 | $i$ | 7.89514 | | +0.32587084 | −0.28027947 | |
| $P$ | 5.50 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 684 | 0.4+ | 0.1+ | 2000 01 07 | 704 | 0.1+ | 0.4− | 2004 12 02 | 703 | 0.3− | 0.5− |
| 1999 12 16 | 684 | 0.3− | 1.0+ | 2004 11 19 | 704 | 0.0 | 0.9− | 2004 12 02 | 703 | 0.6− | 0.5− |
| 2000 01 05 | 704 | 0.3− | 0.2− | 2004 11 19 | 704 | 0.1− | 0.1+ | 2004 12 15 | 704 | 0.4+ | 1.2+ |
| 2000 01 05 | 704 | 0.4+ | 1.1+ | 2004 11 19 | 704 | 0.4− | 0.5+ | 2004 12 15 | 704 | 1.0+ | 0.5− |
| 2000 01 05 | 704 | 0.2− | 0.3− | 2004 11 19 | 704 | 0.3+ | 0.3+ | 2004 12 15 | 704 | 1.5+ | 0.3+ |
| 2000 01 07 | 704 | 0.3− | 1.0− | 2004 11 19 | 704 | 1.0− | 0.1+ | 2004 12 15 | 704 | 0.1− | 0.8− |
| 2000 01 07 | 704 | 0.5+ | 0.2− | 2004 12 02 | 703 | 1.3− | 0.6+ | | | | |
| 2000 01 07 | 704 | 0.3− | 0.1+ | 2004 12 02 | 703 | 0.6+ | 0.0 | | | | |

**2000 AG$_{113}$ = 2006 QR$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.15092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23971045 | $\omega$ | 252.85222 | | −0.81927425 | −0.55885065 | |
| $a$ | 2.5665205 | $\Omega$ | 252.99497 | | +0.56377477 | −0.74422996 | |
| $e$ | 0.0754486 | $i$ | 7.71387 | | +0.10463133 | −0.36579737 | |
| $P$ | 4.11 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 1.1− | 0.5− | 2003 12 19 | 704 | 0.6+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2000 01 05 | 704 | 0.7+ | 1.2− | 2003 12 19 | 704 | 0.6− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2000 01 05 | 704 | 0.4+ | 0.2+ | 2003 12 19 | 704 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2000 01 07 | 704 | 0.7+ | 0.7+ | 2005 05 12 | 644 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2000 01 07 | 704 | 0.4− | 0.4− | 2005 05 12 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.2− |
| 2000 01 07 | 704 | 0.1− | 0.0 | 2005 05 12 | 644 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2000 01 07 | 704 | 0.4− | 1.1− | 2005 06 03 | 703 | 0.9− | 0.9− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.2+ | 2005 06 03 | 703 | 0.7+ | 0.8+ | 2006 09 22 | 691 | 0.1+ | 0.0 |
| 2000 02 02 | 704 | 0.8+ | 0.6+ | 2005 06 03 | 703 | 0.9− | 1.9+ | 2006 09 22 | 691 | 0.1+ | 0.2− |
| 2000 02 02 | 704 | 0.7+ | 0.6+ | 2005 06 03 | 703 | 0.2− | 0.3− | 2006 09 22 | 691 | 0.1− | 0.2+ |
| 2002 09 04 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 1.5+ | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2002 09 04 | 644 | 0.2− | 0.3+ | 2006 08 27 | 699 | 0.7+ | 0.0 | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2002 09 04 | 644 | 0.2− | 0.3+ | 2006 08 27 | 699 | (1.6+ | 2.5+) | 2006 09 25 | 691 | 0.1− | 0.3− |
| 2002 09 12 | 644 | 0.1− | 0.3+ | 2006 08 27 | 699 | (2.7− | 2.0+) | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2002 09 12 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 1.6+ | 0.9+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 09 12 | 644 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.5− | 0.7− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 10 31 | 645 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2003 12 19 | 704 | 0.8− | 1.4+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.2− | 1.0+ | 2006 09 15 | 691 | 0.4− | 0.3− | | | | |

**2000 AO$_{129}$ = 2006 UZ$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.08831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26567581 | $\omega$ | 173.36158 | | −0.21071946 | −0.97166302 | |
| $a$ | 2.3964482 | $\Omega$ | 288.76178 | | +0.89160041 | −0.14611937 | |
| $e$ | 0.2485111 | $i$ | 6.49403 | | +0.40080671 | −0.18579585 | |
| $P$ | 3.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.3− | 0.1− | 2000 02 05 | 704 | 0.2+ | 1.2+ | 2006 10 19 | 703 | 0.7− | 0.2+ |
| 2000 01 05 | 704 | 0.8− | 1.5+ | 2000 02 05 | 704 | 0.9− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2000 01 05 | 704 | 0.4+ | 0.3+ | 2000 02 05 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2000 01 07 | 704 | 1.0+ | 0.1+ | 2000 02 05 | 704 | 0.7− | 1.0+ | 2006 10 22 | 644 | 0.5+ | 0.4+ |
| 2000 01 07 | 704 | 0.1+ | 0.8− | 2000 02 06 | 704 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2000 01 07 | 704 | 0.1+ | 0.6− | 2000 02 06 | 704 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2000 02 02 | 704 | 0.3+ | 1.7− | 2000 02 06 | 704 | 0.6− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2000 02 02 | 704 | 0.2− | 0.9− | 2000 02 06 | 704 | 0.3+ | 0.2− | 2006 10 27 | 703 | (1.5− | 1.9+) |
| 2000 02 02 | 704 | 0.4+ | 1.8− | 2006 09 18 | 703 | (1.8+ | 3.3+) | 2006 10 27 | 703 | (2.1+ | 1.4+) |
| 2000 02 02 | 704 | 1.0+ | 1.3− | 2006 09 18 | 703 | 1.0+ | 0.2− | 2006 10 27 | 703 | 0.6+ | 0.1− |
| 2000 02 05 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 10 27 | 703 | 0.6+ | 0.6− |
| 2000 02 05 | 704 | 0.2+ | 0.1− | 2006 09 18 | 703 | 1.3− | 1.0+ | 2006 10 31 | 703 | 1.1− | 0.9− |
| 2000 02 05 | 704 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.3+ | 1.4− | 2006 10 31 | 703 | 0.1− | 0.8+ |
| 2000 02 05 | 704 | 0.8− | 0.7+ | 2006 10 19 | 703 | 0.4+ | 0.2+ | 2006 10 31 | 703 | 0.4− | 1.0+ |
| 2000 02 05 | 704 | 0.6− | 0.8+ | 2006 10 19 | 703 | 0.6+ | 0.6+ | 2006 10 31 | 703 | 0.9− | 0.2− |

**2000 AZ$_{131}$ = 2002 QB$_{101}$ = 2006 SB$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.84804 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26814955 | $\omega$ | 334.24431 | | +0.19067003 | −0.97066092 | |
| $a$ | 2.3816869 | $\Omega$ | 104.48094 | | +0.92478085 | +0.12755225 | |
| $e$ | 0.1734956 | $i$ | 8.70269 | | +0.32928000 | +0.20383279 | |
| $P$ | 3.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 691 | 0.9− | 0.2+ | 2000 01 15 | 691 | 0.3+ | 0.1− | 2006 09 18 | 703 | 1.1+ | 0.0 |
| 2000 01 03 | 691 | 0.3− | 0.3+ | 2000 01 15 | 691 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.9+ | 0.3+ |
| 2000 01 03 | 691 | 0.2− | 0.4+ | 2000 01 15 | 691 | 0.4+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.6+ |
| 2000 01 03 | 704 | 0.6− | 0.0 | 2001 05 24 | 691 | 0.0 | 0.3+ | 2006 09 18 | 703 | 1.0+ | 0.2+ |
| 2000 01 03 | 704 | 0.5− | 0.1+ | 2001 05 24 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.5− | 0.2− |
| 2000 01 03 | 704 | 0.1+ | 0.5+ | 2001 05 24 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.4+ | 0.3+ |
| 2000 01 03 | 704 | 0.0 | 0.2+ | 2002 08 19 | 644 | 0.5− | 0.6+ | 2006 09 26 | 703 | 0.3+ | 0.5+ |
| 2000 01 03 | 704 | 0.5− | 0.1− | 2002 08 19 | 644 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.8− | 0.4+ |
| 2000 01 08 | 704 | 1.3+ | 0.4+ | 2002 08 19 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.9− | 0.8− |
| 2000 01 08 | 704 | 1.1+ | 0.5− | 2002 08 30 | 644 | 0.3− | 0.7− | 2006 09 29 | 699 | (0.9+ | 2.0+) |
| 2000 01 08 | 704 | 0.0 | 0.9− | 2002 08 30 | 644 | 0.2+ | 1.0− | 2006 09 29 | 699 | 1.2− | 1.1+ |
| 2000 01 08 | 704 | 0.5+ | 0.2− | 2002 08 30 | 644 | 0.5+ | 0.2− | 2006 09 29 | 699 | 1.6− | 1.3+ |

**2000 AW$_{157}$ = 2002 RK$_{241}$ = 2006 VK$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.30463 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27342566 | $\omega$ | 139.58461 | | +0.02070647 | −0.99766640 | |
| $a$ | 2.3509490 | $\Omega$ | 309.12736 | | +0.89429872 | +0.04757683 | |
| $e$ | 0.1863581 | $i$ | 4.81103 | | +0.44699109 | −0.04897134 | |
| $P$ | 3.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 1.3+ | 0.1− | 2004 03 16 | 703 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.5+ |
| 1999 12 15 | 704 | 1.0− | 0.3− | 2004 03 16 | 703 | 0.0 | 0.9+ | 2006 11 09 | 644 | 0.3+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.4+ | 0.2− | 2004 03 16 | 703 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 1999 12 15 | 704 | 0.1− | 1.4− | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2000 01 03 | 704 | 0.2+ | 0.9− | 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 2000 01 03 | 704 | 0.3− | 0.5− | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.8+ |
| 2000 01 03 | 704 | 0.1− | 0.6− | 2004 03 27 | 703 | 2.8− | 0.2− | 2006 11 14 | 703 | 0.8− | 0.8− |
| 2000 01 03 | 704 | 0.5− | 0.6− | 2004 03 27 | 703 | (3.5+ | 0.9−) | 2006 11 14 | 703 | 0.4− | 0.2+ |
| 2000 01 03 | 704 | 0.2− | 0.5− | 2004 03 27 | 703 | 0.7+ | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.1+ |
| 2000 01 04 | 704 | 0.8+ | 1.3− | 2004 03 27 | 703 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.2− |
| 2000 01 04 | 704 | 0.6− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.6− | 0.1+ |
| 2000 01 04 | 704 | 0.9− | 1.1+ | 2006 10 27 | 703 | 0.2− | 1.2+ | 2006 11 22 | 703 | 0.0 | 0.0 |
| 2002 09 09 | 644 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.2− | 0.1− |
| 2002 09 14 | 644 | (0.2+ | 2.9+) | 2006 10 27 | 703 | 0.6+ | 0.7+ | 2006 11 22 | 703 | 0.6− | 0.1+ |
| 2002 09 14 | 644 | (0.0 | 2.6+) | 2006 11 02 | 703 | 0.8− | 1.3+ | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2002 09 14 | 644 | (0.1+ | 2.6+) | 2006 11 02 | 703 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2002 09 16 | 608 | 0.3− | 0.9+ | 2006 11 02 | 703 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2002 09 16 | 608 | 0.4− | 0.7− | 2006 11 02 | 703 | 0.4− | 0.6+ | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2004 03 16 | 703 | 0.6+ | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.3+ | | | | |

**2000 AZ$_{208}$ = 2005 QR$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.68023 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28616814 | $\omega$ | 47.13647 | | −0.98052530 | | −0.17659499 |
| $a$ | 2.2806319 | $\Omega$ | 122.51816 | | +0.13693197 | | −0.92839557 |
| $e$ | 0.0940164 | $i$ | 5.84914 | | +0.14078272 | | −0.32694935 |
| $P$ | 3.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 691 | 0.4− | 0.7+ | 2004 04 23 | 704 | 0.2+ | 0.1− | 2004 05 23 | 704 | 0.9− | 0.9+ |
| 2000 01 04 | 691 | 0.6− | 0.0 | 2004 04 23 | 704 | 0.4− | 2.3− | 2004 05 23 | 704 | 0.3− | 1.0+ |
| 2000 01 04 | 691 | 0.4− | 0.6+ | 2004 04 23 | 704 | 1.3+ | 0.2+ | 2004 05 23 | 704 | 0.3− | 0.8− |
| 2000 01 11 | 691 | 0.3+ | 0.3− | 2004 04 23 | 704 | 0.8+ | 0.5+ | 2004 06 09 | 691 | 0.1+ | 0.9+ |
| 2000 01 11 | 691 | 0.4+ | 0.3− | 2004 05 15 | 704 | 1.2− | 1.7+ | 2004 06 09 | 691 | 0.2− | 0.2+ |
| 2000 01 11 | 691 | 0.4+ | 0.1− | 2004 05 15 | 704 | 0.5− | 0.5− | 2004 06 09 | 691 | 1.2+ | 0.1− |
| 2002 11 11 | 704 | 0.2+ | 0.5+ | 2004 05 15 | 704 | 0.5+ | 0.6− | 2004 06 16 | 704 | 0.2− | 0.6− |
| 2002 11 11 | 704 | 0.5− | 1.3+ | 2004 05 15 | 704 | 0.3− | 0.5+ | 2004 06 16 | 704 | 0.2− | 0.6+ |
| 2002 11 11 | 704 | 0.1− | 1.6+ | 2004 05 15 | 704 | 0.1+ | 0.8− | 2004 06 16 | 704 | 0.2+ | 0.4+ |
| 2002 11 11 | 704 | 1.0+ | 1.1+ | 2004 05 15 | 704 | 0.6+ | 0.9− | 2005 08 27 | 691 | 0.4− | 0.2+ |
| 2004 04 17 | 704 | 0.5− | 0.3+ | 2004 05 15 | 704 | 0.3+ | 0.0 | 2005 08 27 | 691 | 0.1+ | 0.1+ |
| 2004 04 17 | 704 | 0.3− | 0.1− | 2004 05 15 | 704 | 0.7+ | 0.5+ | 2005 08 27 | 691 | 0.2− | 0.0 |
| 2004 04 17 | 704 | 0.2+ | 0.3+ | 2004 05 15 | 704 | 0.5− | 1.4− | 2005 08 28 | 691 | 0.0 | 0.0 |
| 2004 04 17 | 704 | 0.4− | 0.6+ | 2004 05 23 | 704 | 0.7− | 1.6+ | 2005 08 28 | 691 | 0.1+ | 0.0 |
| 2004 04 23 | 704 | 0.4+ | 0.1+ | 2004 05 23 | 704 | 0.5− | 0.7+ | 2005 08 28 | 691 | 0.1− | 0.0 |

**2000 AG$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.49033 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18262379 | $\omega$ | 290.86111 | | +0.93127480 | | −0.29789278 |
| $a$ | 3.0767898 | $\Omega$ | 86.94665 | | +0.35967513 | | +0.84338480 |
| $e$ | 0.2061101 | $i$ | 12.12407 | | −0.05797446 | | +0.44717108 |
| $P$ | 5.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.2− | 0.1+ | 2004 09 06 | 644 | 0.1− | 0.2− | 2004 10 04 | 644 | 0.2+ | 0.2+ |
| 1999 12 08 | 704 | 0.0 | 0.9− | 2004 09 06 | 644 | 0.1− | 0.2− | 2004 10 04 | 644 | 0.3− | 0.0 |
| 1999 12 08 | 704 | 0.9+ | 0.4− | 2004 09 21 | 704 | 0.9+ | 0.2− | 2004 11 05 | 699 | 0.5+ | 1.0+ |
| 1999 12 08 | 704 | 1.1+ | 1.4+ | 2004 09 21 | 704 | 0.1+ | 0.9− | 2004 11 05 | 699 | 1.8+ | 1.4− |
| 2000 01 05 | 691 | 0.5− | 0.5− | 2004 09 21 | 704 | 0.4− | 0.3+ | 2004 11 05 | 699 | 0.3− | 1.1+ |
| 2000 01 05 | 691 | 0.2− | 0.2− | 2004 09 21 | 704 | 0.5− | 0.7+ | 2004 11 05 | 699 | 1.0+ | 1.1+ |
| 2000 01 05 | 691 | 0.0 | 0.0 | 2004 09 21 | 704 | 2.1− | 0.1+ | 2004 11 11 | 703 | 0.1+ | 0.7+ |
| 2000 01 10 | 691 | 1.2+ | 0.1+ | 2004 10 04 | 644 | 0.2− | 0.2− | 2004 11 11 | 703 | 0.3− | 0.1+ |
| 2000 01 10 | 691 | 0.6− | 0.3+ | 2004 10 04 | 644 | 0.4+ | 0.1+ | 2004 11 11 | 703 | 0.4− | 1.5− |
| 2000 01 10 | 691 | 0.5− | 0.3+ | 2004 10 04 | 644 | 0.1+ | 0.5+ | 2004 11 11 | 703 | 0.1+ | 1.7− |
| 2004 09 06 | 644 | 0.5− | 0.1+ | 2004 10 04 | 644 | 0.2+ | 0.1− | | | | |

**2000 AO$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.78134 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27846667 | $\omega$ | 150.05373 | | +0.69622997 | | −0.71092693 |
| $a$ | 2.3224902 | $\Omega$ | 255.61756 | | +0.63657124 | | +0.67538219 |
| $e$ | 0.1774706 | $i$ | 5.87977 | | +0.33172411 | | +0.19606582 |
| $P$ | 3.54 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.6− | 1.4− | 2006 11 01 | G96 | 0.1− | 0.4− |
| 1999 11 14 | 704 | 0.9− | 0.0 | 2006 10 19 | 703 | (0.6+ | 2.0−) | 2006 11 19 | 704 | 0.3+ | 0.6− |
| 1999 11 14 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | (0.5+ | 1.9−) | 2006 11 19 | 704 | 0.8− | 0.8+ |
| 1999 11 14 | 704 | 0.6− | 0.2+ | 2006 10 19 | 703 | 1.3+ | 1.1− | 2006 11 19 | 704 | 0.5+ | 1.2+ |
| 1999 11 14 | 704 | 1.0− | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.2− |
| 1999 11 16 | 704 | 0.4− | 0.8− | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 1999 11 16 | 704 | 1.1+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 22 | 291 | 0.1− | 0.4+ |
| 1999 11 16 | 704 | 0.3+ | 1.1+ | 2006 10 22 | 644 | 0.2+ | 0.1− | 2006 11 22 | 291 | 0.1− | 0.4+ |
| 1999 12 04 | 691 | 0.1− | 1.4− | 2006 10 22 | 644 | 0.6− | 0.3+ | 2006 11 22 | 291 | 0.0 | 0.3+ |
| 1999 12 04 | 691 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 23 | 291 | 0.1− | 0.3+ |
| 1999 12 04 | 691 | 0.5+ | 0.3− | 2006 10 27 | 703 | 0.7− | 0.0 | 2006 11 23 | 291 | 0.2− | 0.1+ |
| 2000 01 06 | 691 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.1− | 0.3− | 2006 11 23 | 291 | 0.1+ | 0.0 |
| 2000 01 06 | 691 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.2− | 0.3− | 2006 11 24 | 291 | 0.1+ | 0.0 |
| 2000 01 06 | 691 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.5− | 2006 11 24 | 291 | 0.1+ | 0.0 |
| 2000 01 12 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 24 | 291 | 0.2+ | 0.1+ |
| 2000 01 12 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.3− | | | | |
| 2000 01 12 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.6− | | | | |

**2000 AT$_{215}$ = 2006 UA$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.84622 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26575406 | $\omega$ | 149.42130 | | −0.18365227 | | −0.98268116 |
| $a$ | 2.3959777 | $\Omega$ | 311.14926 | | +0.89511195 | | −0.15680041 |
| $e$ | 0.1535326 | $i$ | 1.87899 | | +0.40625909 | | −0.09874905 |
| $P$ | 3.71 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.5+ | 0.0 |
| 2000 01 07 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.4− |
| 2000 01 07 | 691 | 0.1− | 0.7− | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2000 01 10 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2000 01 10 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 2000 01 10 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.3− | 0.2− |
| 2000 01 28 | 691 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.5+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.4− |
| 2000 01 28 | 691 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.3− |
| 2000 01 28 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.3− |
| 2006 10 21 | 691 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |

**2000 AY$_{221}$ = 2006 US$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.69382 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23871127 | $\omega$ | 274.31613 | | −0.69530996 | | +0.71402114 |
| $a$ | 2.5736774 | $\Omega$ | 311.27452 | | −0.60855407 | | −0.64557199 |
| $e$ | 0.1717970 | $i$ | 6.26096 | | −0.38236893 | | −0.27094394 |
| $P$ | 4.13 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 691 | 0.1− | 0.0 | 2006 09 16 | 703 | (1.5+ | 1.6+) | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2000 01 08 | 691 | 0.3− | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2000 01 08 | 691 | 0.1− | 0.1− | 2006 09 16 | 703 | 1.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2000 01 13 | 691 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.8− | 0.4− | 2006 10 22 | 644 | 0.6+ | 0.4+ |
| 2000 01 13 | 691 | 0.2+ | 0.0 | 2006 09 27 | 703 | 0.4+ | 0.8− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2000 01 13 | 691 | 0.2+ | 0.0 | 2006 09 27 | 703 | (0.1− | 1.7−) | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2006 09 16 | 703 | 0.6+ | 0.3− | 2006 09 27 | 703 | (1.1+ | 2.1−) | | | | |

**2000 AL$_{236}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.68077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27134738 | $\omega$ | 170.46351 | | −0.35615904 | −0.93241611 | |
| $a$ | 2.3629378 | $\Omega$ | 300.37888 | | +0.85257206 | −0.29743541 | |
| $e$ | 0.1566304 | $i$ | 4.07097 | | +0.38245472 | −0.20526171 | |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.3− | 0.1− | 2000 02 02 | 704 | 1.1+ | 0.1+ | 2000 02 12 | 704 | 0.3+ | 0.1− |
| 2000 01 05 | 691 | 0.3− | 0.2− | 2000 02 02 | 704 | 0.4+ | 0.4− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2000 01 05 | 691 | 0.0 | 0.1+ | 2000 02 02 | 704 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.3− | 0.3+ |
| 2000 01 11 | 691 | 0.1− | 0.3− | 2000 02 02 | 704 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2000 01 11 | 691 | 0.1− | 0.2− | 2000 02 03 | 704 | 0.2− | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2000 01 11 | 691 | 0.3− | 0.2− | 2000 02 03 | 704 | 0.6− | 0.6+ | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2000 01 30 | 703 | 0.3− | 0.2+ | 2000 02 03 | 704 | 0.0 | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2000 01 30 | 703 | 0.3+ | 0.6+ | 2000 02 03 | 704 | 2.2+ | 0.5− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2000 01 30 | 703 | 0.4− | 1.6+ | 2000 02 12 | 704 | 0.2+ | 1.1+ | 2006 11 17 | 691 | 0.1− | 0.3− |
| 2000 01 30 | 703 | 1.3+ | 1.1− | 2000 02 12 | 704 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.3+ | 0.3− |

**2000 AS$_{253}$ = 1995 UY$_{82}$ = 2006 VH$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.16303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27077160 | $\omega$ | 354.81488 | | −0.34491704 | −0.93811216 | |
| $a$ | 2.3662864 | $\Omega$ | 115.35887 | | +0.86241830 | −0.32988447 | |
| $e$ | 0.1450196 | $i$ | 1.98308 | | +0.37049549 | −0.10546003 | |
| $P$ | 3.64 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.3+ | 0.8+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 1995 10 20 | 691 | 0.2− | 0.8+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 1995 10 20 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.8− | 2006 11 15 | 691 | 0.2− | 0.8+ |
| 1995 10 25 | 691 | 0.0 | 0.6− | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2− |
| 1995 10 25 | 691 | 0.1− | 0.7− | 2006 10 21 | G96 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.3− |
| 1995 10 25 | 691 | 0.2− | 0.7− | 2006 10 21 | G96 | 0.5− | 0.4− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2000 01 07 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2000 01 07 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.6− | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2000 01 07 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2000 01 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.9− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2000 01 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.7− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2000 01 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2000 01 28 | 691 | 0.3− | 0.4− | 2006 11 11 | G96 | 0.2− | 0.8− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2000 01 28 | 691 | 0.3− | 0.5− | 2006 11 15 | 691 | 0.1+ | 0.0 | | | | |
| 2000 01 28 | 691 | 0.4− | 1.1− | 2006 11 15 | 691 | 0.1+ | 0.1− | | | | |

**2000 AY$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.54315 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29441464 | $\omega$ | 39.65964 | | −0.98564117 | +0.15980956 | |
| $a$ | 2.2378438 | $\Omega$ | 149.40538 | | −0.16884836 | −0.93532765 | |
| $e$ | 0.0620162 | $i$ | 6.14930 | | +0.00131059 | −0.31563127 | |
| $P$ | 3.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.4+ | 0.4− | 2004 05 15 | 704 | 0.9− | 1.8+ | 2005 10 07 | 703 | 1.7− | 1.4+ |
| 2000 01 07 | 704 | 0.1− | 0.6− | 2004 05 15 | 704 | 0.3+ | 0.4− | 2005 10 07 | 699 | 0.1+ | 1.0+ |
| 2000 01 07 | 704 | 1.0− | 0.7+ | 2004 05 15 | 704 | 0.0 | 0.1− | 2005 10 07 | 699 | 0.1− | 0.6+ |
| 2000 01 07 | 704 | 0.7− | 0.0 | 2004 05 15 | 704 | 0.4+ | 0.5+ | 2005 10 07 | 699 | 0.2− | 0.0 |
| 2000 01 07 | 704 | 0.9+ | 1.1+ | 2004 05 15 | 704 | 0.3+ | 0.1− | 2005 10 22 | 703 | 0.3+ | 0.9− |
| 2000 02 02 | 704 | 0.0 | 0.3+ | 2004 05 23 | 704 | 0.7+ | 0.2+ | 2005 10 22 | 703 | 0.4+ | 0.4+ |
| 2000 02 02 | 704 | 0.2− | 0.1+ | 2004 05 23 | 704 | 0.3+ | 0.5+ | 2005 10 22 | 703 | 0.0 | 0.6+ |
| 2000 02 02 | 704 | 0.1− | 0.8+ | 2004 05 23 | 704 | 0.8+ | 0.4+ | 2005 10 22 | 703 | 1.0− | 1.8− |
| 2000 02 02 | 704 | 0.1− | 0.1+ | 2004 05 23 | 704 | 0.8− | 0.3− | 2005 10 28 | 703 | 1.3+ | 0.5− |
| 2000 02 02 | 704 | 0.3+ | 0.4− | 2004 06 22 | 599 | 0.4+ | 0.6+ | 2005 10 28 | 703 | 0.0 | 0.3+ |
| 2000 03 02 | 561 | 0.7+ | 0.1− | 2004 06 22 | 599 | 0.2+ | 0.3+ | 2005 10 28 | 703 | 0.2+ | 0.1− |
| 2000 03 02 | 561 | 0.5− | 0.2+ | 2004 06 22 | 599 | 0.8− | 0.6− | 2005 10 28 | 703 | 0.4− | 0.5− |
| 2002 12 14 | 704 | 0.2+ | 0.5− | 2005 10 07 | 703 | 0.4− | 1.7+ | 2005 11 06 | 699 | 0.1+ | 0.2+ |
| 2002 12 14 | 704 | 0.5+ | 0.3− | 2005 10 07 | 699 | 0.3+ | 0.1− | 2005 11 06 | 699 | 0.2− | 0.6+ |
| 2002 12 14 | 704 | 0.8+ | 0.1+ | 2005 10 07 | 703 | 0.6− | 0.4− | 2005 11 06 | 699 | 0.4+ | 0.3− |
| 2002 12 14 | 704 | 0.2− | 1.4+ | 2005 10 07 | 703 | 0.1− | 0.0 | 2005 11 06 | 699 | 0.1− | 0.1− |

**2000 AZ$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.95032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23012556 | $\omega$ | 1.01453 | | −0.99988766 | −0.01283662 | |
| $a$ | 2.6372997 | $\Omega$ | 178.19467 | | +0.01143026 | −0.98699715 | |
| $e$ | 0.1953503 | $i$ | 14.21969 | | +0.00969608 | −0.16022434 | |
| $P$ | 4.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 21 | 691 | 0.3+ | 0.2− | 2002 10 01 | 699 | 0.5+ | 0.6− | 2006 08 29 | 691 | 0.3+ | 0.4+ |
| 1996 04 21 | 691 | 0.6+ | 1.2+ | 2002 10 01 | 699 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.2+ | 0.4− |
| 1996 04 21 | 691 | 0.6− | 0.2− | 2002 10 01 | 699 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.8+ | 0.7+ |
| 2000 01 11 | 704 | 0.3− | 0.7− | 2002 10 01 | 699 | 0.8− | 0.6− | 2006 09 19 | 703 | 0.5+ | 0.2− |
| 2000 01 11 | 704 | (2.2− | 1.2−) | 2002 10 05 | 645 | 0.1− | 0.1+ | 2006 09 19 | 703 | 1.1+ | 0.3− |
| 2000 01 11 | 704 | 0.6− | 1.1− | 2002 10 05 | 645 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2+ |
| 2000 01 11 | 704 | 0.5− | 0.9− | 2002 10 06 | 644 | 0.5− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2000 01 11 | 704 | 0.0 | 1.3− | 2002 10 06 | 644 | 0.7− | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2000 02 05 | 703 | 0.1+ | 0.6+ | 2002 10 06 | 644 | 0.7− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.2+ |
| 2000 02 05 | 703 | 1.2+ | 0.8+ | 2005 05 14 | 704 | 0.7− | 0.6− | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 2000 02 05 | 703 | 0.5+ | 0.5+ | 2005 05 14 | 704 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2000 02 05 | 703 | 0.2+ | 0.9+ | 2005 05 14 | 704 | 0.5− | 0.8+ | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2000 02 08 | 645 | 0.0 | 0.1+ | 2005 05 14 | 704 | 1.0− | 0.8+ | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 2000 02 08 | 645 | 0.0 | 0.0 | 2005 06 30 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2000 02 28 | 703 | 0.8+ | 0.6+ | 2005 06 30 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.9+ |
| 2000 02 28 | 703 | 0.2+ | 0.8+ | 2005 06 30 | 644 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.6− | 0.0 |
| 2000 02 28 | 703 | 0.4− | 0.9+ | 2006 08 29 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2000 02 28 | 703 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.2+ | 0.2+ | | | | |

**2000 BQ$_{8}$ = 2003 WL$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.40800 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22737833 | $\omega$ | 257.47993 | | +0.84121819 | +0.48225585 | |
| $a$ | 2.6585000 | $\Omega$ | 73.23618 | | −0.34105163 | +0.82415532 | |
| $e$ | 0.1768655 | $i$ | 14.79457 | | −0.41956613 | +0.29698030 | |
| $P$ | 4.33 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.1+ | 1.0− | 2003 10 24 | 704 | 0.1− | 0.5+ | 2003 12 23 | 704 | 0.1− | 0.0 |
| 1999 12 12 | 704 | 0.1− | 0.7− | 2003 10 24 | 704 | 0.9+ | 0.4+ | 2003 12 23 | 704 | 0.1+ | 0.3− |
| 1999 12 12 | 704 | 1.2− | 1.2− | 2003 11 20 | 704 | 0.8+ | 0.2+ | 2003 12 23 | 704 | 0.4+ | 0.1+ |
| 2000 01 29 | 704 | 0.5− | 0.6− | 2003 11 20 | 704 | 0.1− | 0.0 | 2003 12 28 | 704 | 2.2− | 0.5+ |
| 2000 01 29 | 704 | 0.1− | 0.0 | 2003 11 20 | 704 | 0.4− | 0.4+ | 2003 12 28 | 704 | 1.9− | 0.0 |
| 2000 01 29 | 704 | 0.5+ | 0.5− | 2003 11 20 | 704 | 0.3+ | 0.6− | 2003 12 28 | 704 | 0.6+ | 0.9− |
| 2000 01 29 | 704 | 0.5+ | 0.3+ | 2003 11 20 | 704 | 0.0 | 1.1− | 2003 12 28 | 704 | 2.2− | 0.8+ |
| 2000 01 29 | 704 | 1.3+ | 0.7+ | 2003 11 24 | 704 | 0.4− | 0.2− | 2003 12 28 | 704 | 2.1− | 1.0+ |
| 2000 01 30 | 704 | 1.0− | 0.2+ | 2003 11 24 | 704 | 0.6+ | 0.4+ | 2005 03 08 | 704 | 0.5+ | 0.8+ |
| 2000 01 30 | 704 | 0.1− | 0.1+ | 2003 11 24 | 704 | 0.5+ | 0.2− | 2005 03 08 | 704 | 0.5+ | 0.2− |
| 2000 01 30 | 704 | 0.1− | 0.4+ | 2003 12 17 | 644 | 0.8+ | 0.1− | 2005 03 08 | 704 | 0.1− | 0.5+ |
| 2000 01 30 | 704 | 0.3+ | 0.8− | 2003 12 17 | 704 | 0.1+ | 0.4+ | 2005 03 08 | 704 | 0.1+ | 0.1+ |
| 2001 03 24 | 608 | 0.2− | 0.7− | 2003 12 17 | 704 | 0.7+ | 0.2− | 2005 04 01 | 703 | 0.4− | 0.4+ |
| 2001 03 24 | 608 | 0.6− | 0.5− | 2003 12 17 | 704 | 0.5+ | 0.5+ | 2005 04 01 | 703 | 0.3+ | 0.3− |
| 2001 03 24 | 608 | 0.4− | 0.4− | 2003 12 17 | 704 | 0.2− | 0.2+ | 2005 04 01 | 703 | 0.2+ | 0.2+ |
| 2001 04 15 | 704 | 0.5− | 1.2+ | 2003 12 17 | 644 | 0.8+ | 0.4+ | 2005 04 01 | 703 | 0.1− | 0.1− |
| 2001 04 15 | 704 | 0.2+ | 0.2+ | 2003 12 17 | 704 | 0.2− | 0.1+ | 2005 04 10 | 703 | 0.1+ | 0.6+ |
| 2001 04 15 | 704 | 1.7+ | 0.1− | 2003 12 17 | 644 | 0.9+ | 0.0 | 2005 04 10 | 703 | 0.4+ | 0.4− |
| 2001 04 15 | 704 | 0.5− | 0.2− | 2003 12 23 | 704 | 0.2+ | 0.2− | 2005 04 10 | 703 | 0.4+ | 0.1+ |
| 2003 10 24 | 704 | 0.7+ | 0.2+ | 2003 12 23 | 704 | 1.0+ | 0.1− | 2005 04 10 | 703 | 1.2− | 0.4− |

**2000 $BQ_9$ = 2002 $RF_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.04698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26109531 | $\omega$ | 291.34880 | | +0.15056510 | −0.98852845 | |
| $a$ | 2.4243948 | $\Omega$ | 149.98388 | | +0.91560971 | +0.13489828 | |
| $e$ | 0.1648847 | $i$ | 1.36335 | | +0.37281230 | +0.06792616 | |
| $P$ | 3.77 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 26 | 691 | 0.2+ | 0.1+ | 2000 02 01 | 691 | 0.1+ | 0.0 | 2002 09 14 | 644 | 0.3+ | 0.3− |
| 2000 01 26 | 691 | 0.4+ | 0.0 | 2000 02 01 | 691 | 0.2+ | 0.3− | 2002 09 14 | 644 | 0.8− | 0.5− |
| 2000 01 26 | 691 | 0.1+ | 0.1+ | 2000 02 06 | 695 | 0.3− | 0.6+ | 2002 09 14 | 644 | 0.4+ | 0.1+ |
| 2000 01 29 | 691 | 0.4− | 0.0 | 2000 02 06 | 695 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.7− | 0.1− |
| 2000 01 29 | 691 | 0.6− | 0.3− | 2002 09 12 | 644 | 0.3+ | 0.2+ | 2006 11 20 | G96 | 0.7+ | 0.2− |
| 2000 01 29 | 691 | 0.4− | 0.3+ | 2002 09 12 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.5+ |
| 2000 02 01 | 691 | 0.5+ | 0.3− | 2002 09 12 | 644 | 0.0 | 0.0 | | | | |

**2000 $BP_{11}$ = 2006 $VD_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.57054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27403181 | $\omega$ | 257.64659 | | +0.91579358 | −0.40115214 | |
| $a$ | 2.3474809 | $\Omega$ | 126.00033 | | +0.37743575 | +0.84251149 | |
| $e$ | 0.2230158 | $i$ | 1.41495 | | +0.13734764 | +0.35951544 | |
| $P$ | 3.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 26 | 691 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2000 01 26 | 691 | 0.2− | 0.3+ | 2006 07 22 | G96 | 0.7+ | 0.1− | 2006 11 23 | 691 | 0.3− | 0.1− |
| 2000 01 26 | 691 | 0.2− | 0.1+ | 2006 07 22 | G96 | 0.4+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2000 01 30 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2000 01 30 | 691 | 0.5− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2000 01 30 | 691 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2000 02 04 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2000 02 04 | 691 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.9− | 0.4− |
| 2000 02 04 | 691 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 12 01 | 704 | 1.2+ | 0.2− |
| 2002 08 29 | 644 | 0.4− | 0.8− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 12 01 | 704 | 1.5− | 1.6+ |
| 2002 08 29 | 644 | 0.4− | 0.8− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.3− | 0.8− | 2006 11 15 | 691 | 0.4+ | 0.8− | 2006 12 01 | 704 | 2.1− | 1.1+ |
| 2002 08 30 | 291 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.2+ | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2002 08 30 | 291 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.2+ | 2006 12 01 | 704 | 0.2− | 0.5+ |
| 2002 08 30 | 291 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.6+ | 2006 12 01 | 691 | 0.3+ | 0.1− |
| 2006 07 22 | G96 | 1.1− | 0.4− | 2006 11 21 | 704 | 0.1− | 0.8+ | | | | |

**2000 $BG_{13}$ = 2006 $VT_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.08933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26811506 | $\omega$ | 172.34804 | | −0.35163499 | −0.93571387 | |
| $a$ | 2.3818911 | $\Omega$ | 298.23565 | | +0.85718788 | −0.30974795 | |
| $e$ | 0.1511103 | $i$ | 1.83098 | | +0.37627353 | −0.16880686 | |
| $P$ | 3.68 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 691 | 0.1+ | 0.2− | 2000 02 03 | 704 | 0.5− | 0.9+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2000 01 29 | 691 | 0.0 | 0.2+ | 2000 02 03 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2000 01 29 | 691 | 0.0 | 0.4+ | 2000 02 03 | 704 | 0.4− | 0.7+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2000 01 30 | 691 | 0.0 | 0.6− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2000 01 30 | 691 | 0.2− | 0.4− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.5− |
| 2000 01 30 | 691 | 0.0 | 0.5− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 1.1+ | 0.4+ |
| 2000 01 30 | 703 | 1.0+ | 0.7+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2000 01 30 | 703 | 0.5− | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.4− | 0.1+ |
| 2000 01 30 | 703 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.3− | 0.2− |
| 2000 01 30 | 703 | 0.9+ | 1.4+ | 2006 11 13 | 691 | 0.0 | 0.0 | | | | |

**2000 $BO_{20}$ = 2000 $CV_{105}$**

Id. Minor Planet Center (d, MPC 39649)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.66729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22808614 | $\omega$ | 71.07436 | | +0.91363848 | −0.39988650 | |
| $a$ | 2.6529971 | $\Omega$ | 312.42302 | | +0.32561979 | +0.82762383 | |
| $e$ | 0.3015258 | $i$ | 5.68948 | | +0.24338545 | +0.39386494 | |
| $P$ | 4.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 26 | 691 | 0.1+ | 0.0 | 2000 02 07 | 691 | 0.0 | 0.4+ | 2003 12 23 | 704 | 0.3+ | 0.7+ |
| 2000 01 26 | 691 | 0.2+ | 0.1+ | 2003 11 24 | 704 | 0.1+ | 0.8− | 2003 12 23 | 704 | 0.0 | 1.0+ |
| 2000 01 26 | 691 | 0.1+ | 0.1+ | 2003 11 24 | 704 | 0.1− | 0.2+ | 2003 12 23 | 704 | 1.9− | 0.9+ |
| 2000 02 01 | 691 | 0.1− | 0.1− | 2003 11 24 | 704 | 0.2+ | 0.2+ | 2003 12 23 | 704 | 0.3− | 1.0+ |
| 2000 02 01 | 691 | 0.1− | 0.3− | 2003 11 24 | 704 | 0.2− | 0.2− | 2003 12 23 | 704 | 0.2− | 0.6− |
| 2000 02 01 | 691 | 0.6− | 0.3− | 2003 12 18 | 704 | 0.4+ | 0.0 | 2003 12 28 | 704 | 0.2+ | 0.4− |
| 2000 02 05 | 695 | 0.3+ | 0.2+ | 2003 12 18 | 704 | 0.4+ | 0.1− | 2003 12 28 | 704 | 0.6+ | 0.2− |
| 2000 02 05 | 695 | 0.0 | 0.2+ | 2003 12 18 | 704 | 0.3− | 0.3− | 2003 12 28 | 704 | 0.4+ | 0.1− |
| 2000 02 07 | 691 | 0.1+ | 0.1− | 2003 12 18 | 704 | 0.1+ | 0.4+ | 2003 12 28 | 704 | 0.0 | 0.9− |
| 2000 02 07 | 691 | 0.1+ | 0.1+ | 2003 12 18 | 704 | 0.3− | 0.6− | 2003 12 28 | 704 | 0.4+ | 0.2− |

**2000 $BG_{22}$ = 2006 $WQ_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.81246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26678455 | $\omega$ | 322.23840 | | +0.04449196 | −0.99817178 | |
| $a$ | 2.3898039 | $\Omega$ | 125.17558 | | +0.92833338 | +0.02618105 | |
| $e$ | 0.1509584 | $i$ | 2.86877 | | +0.36907668 | +0.05447613 | |
| $P$ | 3.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 691 | 0.1− | 0.3− | 2000 02 04 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2000 01 30 | 691 | 0.3− | 0.2+ | 2000 02 04 | 691 | 0.6+ | 0.6+ | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2000 01 30 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.3− | 2006 11 24 | 691 | 0.2− | 0.4− |
| 2000 02 01 | 691 | 0.0 | 0.8− | 2006 10 22 | G96 | 0.4+ | 1.0− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2000 02 01 | 691 | 0.1− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.6− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2000 02 01 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.2− | 1.0− | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2000 02 02 | 691 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.4− | 0.4+ | 2006 11 29 | 704 | 1.1+ | 0.3− |
| 2000 02 02 | 691 | 0.0 | 0.3− | 2006 11 16 | 691 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.8+ | 0.2+ |
| 2000 02 02 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.5+ | 2006 11 29 | 704 | 0.1− | 0.8+ |
| 2000 02 04 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.2+ | | | | |

**2000 $BV_{42}$ = 2006 $RX_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.47509 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23541960 | $\omega$ | 351.24919 | | +0.62417473 | +0.76157007 | |
| $a$ | 2.5976121 | $\Omega$ | 317.11930 | | −0.70041113 | +0.44653838 | |
| $e$ | 0.1275855 | $i$ | 14.85054 | | −0.34616493 | +0.46969618 | |
| $P$ | 4.19 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 691 | 0.6− | 0.1− | 2006 08 29 | 699 | 1.0+ | 0.3− | 2006 09 21 | 699 | 0.6+ | 0.7− |
| 2000 01 27 | 691 | 0.0 | 0.3− | 2006 08 29 | 699 | 1.2+ | 0.3− | 2006 09 21 | 699 | 0.1+ | 0.7− |
| 2000 01 27 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 699 | 0.5− | 0.0 | 2006 09 21 | 699 | 1.6+ | 0.5+ |
| 2000 02 03 | 691 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 09 21 | 699 | (2.3+ | 1.6−) |
| 2000 02 03 | 691 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.4− | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.8+ |
| 2000 02 03 | 691 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.4+ | 0.8+ |
| 2000 02 08 | 691 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 09 28 | 703 | 1.8− | 0.4+ |
| 2000 02 08 | 691 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 28 | 703 | (0.9+ | 2.4+) |
| 2000 02 08 | 691 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2004 01 19 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2004 01 19 | 691 | 0.2− | 0.2+ | 2006 09 16 | 703 | 1.0− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.8− | 1.0+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2006 08 29 | 699 | 0.9− | 0.0 | 2006 09 16 | 703 | 0.6+ | 0.3− | | | | |

**2000 BQ$_{45}$ = 2005 SD$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.30448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27479356 | $\omega$ | 240.95592 | | −0.75107489 | | +0.66018109 |
| $a$ | 2.3431406 | $\Omega$ | 340.35515 | | −0.59839005 | | −0.68511007 |
| $e$ | 0.1378308 | $i$ | 1.17387 | | −0.27895492 | | −0.30787192 |
| $P$ | 3.59 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.2+ | 0.2− | 2001 08 25 | 691 | 0.2+ | 0.4+ | 2005 09 30 | G96 | 0.2− | 0.5+ |
| 2000 01 28 | 691 | 0.2+ | 0.4− | 2004 04 25 | 704 | 0.6− | 1.2− | 2005 10 05 | 691 | 0.4− | 0.4+ |
| 2000 01 28 | 691 | 0.4+ | 0.5− | 2004 04 25 | 704 | 0.2+ | 0.2− | 2005 10 05 | 691 | 0.2− | 0.3+ |
| 2000 02 05 | 691 | 0.3+ | 0.3+ | 2004 04 25 | 704 | 0.4− | 0.2+ | 2005 10 05 | 691 | 0.2− | 0.5+ |
| 2000 02 05 | 691 | 0.2+ | 0.1+ | 2004 04 25 | 704 | 0.5− | 1.0+ | 2005 10 27 | G96 | 0.9+ | 0.3− |
| 2000 02 05 | 691 | 0.4+ | 0.1− | 2004 05 14 | 691 | 0.3+ | 0.3+ | 2005 10 27 | G96 | 0.8+ | 0.2− |
| 2000 02 07 | 691 | 0.2− | 0.1+ | 2004 05 14 | 691 | 0.0 | 0.3+ | 2005 10 27 | G96 | 0.3+ | 0.0 |
| 2000 02 07 | 691 | 0.2− | 0.3+ | 2004 05 14 | 691 | 0.1+ | 0.2+ | 2005 10 27 | G96 | 0.2− | 0.1+ |
| 2000 02 07 | 691 | 0.0 | 0.2+ | 2004 05 23 | 691 | 0.3+ | 0.0 | 2005 11 03 | G96 | 1.1− | 0.5+ |
| 2000 03 01 | 691 | 0.2− | 0.5+ | 2004 05 23 | 691 | 0.2− | 0.1+ | 2005 11 03 | G96 | 0.1+ | 0.3+ |
| 2000 03 01 | 691 | 0.4− | 0.4+ | 2004 05 23 | 691 | 0.2+ | 0.2+ | 2005 11 03 | G96 | 0.2+ | 0.3+ |
| 2000 03 01 | 691 | 0.3− | 0.4+ | 2005 09 30 | G96 | 0.2− | 0.2+ | 2005 11 03 | G96 | 0.3− | 0.7+ |
| 2001 08 25 | 691 | 0.7− | 0.1− | 2005 09 30 | G96 | 0.2+ | 0.0 | | | | |
| 2001 08 25 | 691 | 0.3+ | 0.1+ | 2005 09 30 | G96 | 0.2− | 0.1+ | | | | |

**2000 BM$_{47}$ = 2006 SA$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.12433 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23695404 | $\omega$ | 43.52856 | | +0.97807043 | | −0.16002536 |
| $a$ | 2.5863858 | $\Omega$ | 325.01914 | | +0.05847738 | | +0.82529360 |
| $e$ | 0.0922974 | $i$ | 13.44550 | | +0.19989652 | | +0.54155550 |
| $P$ | 4.16 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 691 | 0.5+ | 0.4− | 2000 02 15 | 691 | 0.1− | 0.0 | 2006 09 18 | 291 | 0.0 | 0.0 |
| 2000 01 30 | 691 | 0.8− | 0.1− | 2000 02 15 | 691 | 0.1+ | 0.2− | 2006 09 18 | 291 | 0.2+ | 0.2+ |
| 2000 01 30 | 691 | 0.3+ | 0.4+ | 2000 02 15 | 691 | 0.1+ | 0.0 | 2006 09 18 | 291 | 0.2+ | 0.1+ |
| 2000 02 07 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2000 02 07 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2− |
| 2000 02 07 | 691 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.0 |

**2000 CY$_{9}$ = 2002 RV$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.98582 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27288644 | $\omega$ | 315.05661 | | +0.01658237 | | −0.99915845 |
| $a$ | 2.3540449 | $\Omega$ | 133.95365 | | +0.93137706 | | +0.00178836 |
| $e$ | 0.1763909 | $i$ | 2.98715 | | +0.36367816 | | +0.04097792 |
| $P$ | 3.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.1− | 0.1+ | 2000 02 03 | 704 | 0.2+ | 0.8+ | 2004 03 28 | 704 | 0.1+ | 0.3− |
| 1995 10 27 | 691 | 0.1+ | 0.3+ | 2000 02 03 | 704 | 0.2+ | 1.8+ | 2004 03 28 | 704 | 0.4− | 0.1− |
| 1995 10 27 | 691 | 0.0 | 0.1+ | 2002 09 13 | 644 | 0.6− | 0.9+ | 2004 03 28 | 704 | 0.3+ | 0.6+ |
| 2000 01 06 | 704 | 1.8+ | 0.1+ | 2002 09 13 | 644 | 0.3− | 0.7+ | 2004 04 21 | 691 | 0.1+ | 0.3+ |
| 2000 01 06 | 704 | 0.3− | 0.4− | 2002 09 13 | 644 | 0.4− | 0.8+ | 2004 04 21 | 691 | 0.1+ | 0.1+ |
| 2000 01 06 | 704 | 0.6− | 0.6− | 2002 09 15 | 644 | 0.4− | 0.7+ | 2004 04 21 | 691 | 0.1+ | 0.2+ |
| 2000 01 06 | 704 | 0.4− | 0.5+ | 2002 09 15 | 644 | 0.5− | 0.7+ | 2006 11 05 | 644 | 0.1− | 0.1+ |
| 2000 02 02 | 691 | 0.2− | 0.4− | 2002 09 15 | 644 | 0.3− | 0.5+ | 2006 11 05 | 644 | 0.0 | 0.5+ |
| 2000 02 02 | 691 | 0.4− | 0.4− | 2004 03 15 | 703 | 0.6+ | 0.1+ | 2006 11 05 | 644 | 0.1+ | 0.8+ |
| 2000 02 02 | 691 | 0.4− | 0.4− | 2004 03 15 | 703 | (0.2− | 1.5+) | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2000 02 02 | 704 | 0.6+ | 0.1+ | 2004 03 15 | 703 | (2.4+ | 0.4+) | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2000 02 02 | 704 | 0.6+ | 0.5+ | 2004 03 15 | 703 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2000 02 02 | 704 | 0.1− | 0.3+ | 2004 03 24 | 699 | 0.6+ | 0.3− | 2006 11 29 | 704 | 0.5+ | 0.8− |
| 2000 02 02 | 704 | 0.3+ | 0.8+ | 2004 03 24 | 699 | 0.8− | 0.3− | 2006 11 29 | 704 | 0.9− | 0.8− |
| 2000 02 02 | 704 | 1.4+ | 1.0+ | 2004 03 24 | 699 | 1.0− | 1.2+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2000 02 03 | 704 | 0.2− | 0.8+ | 2004 03 24 | 699 | 1.3+ | 1.0+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2000 02 03 | 704 | 0.4+ | 0.3+ | 2004 03 28 | 704 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2000 02 03 | 704 | 0.1− | 0.9+ | 2004 03 28 | 704 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.4+ | 0.2− |

**2000 CK$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.37926 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17045438 | $\omega$ | 318.37506 | | +0.55720944 | | −0.82293247 |
| $a$ | 3.2215431 | $\Omega$ | 97.47625 | | +0.78835034 | | +0.48232239 |
| $e$ | 0.1896059 | $i$ | 6.42228 | | +0.26080908 | | +0.30024534 |
| $P$ | 5.78 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 06 | 691 | 0.0 | 0.1− | 2000 02 11 | 704 | 0.2+ | 0.5+ | 2004 12 03 | 699 | 0.5+ | 0.2+ |
| 1995 04 06 | 691 | 0.1− | 0.1− | 2000 02 11 | 704 | 0.3− | 0.5+ | 2004 12 03 | 699 | 0.3+ | 0.0 |
| 1995 04 06 | 691 | 0.2+ | 0.3− | 2000 02 11 | 704 | 0.1+ | 0.5− | 2004 12 03 | 699 | 0.1+ | 0.0 |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2000 02 11 | 704 | 1.4+ | 0.4+ | 2004 12 03 | 699 | 0.2+ | 0.4− |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2004 11 02 | 699 | 0.4+ | 0.3+ | 2005 10 24 | 691 | 0.3− | 0.0 |
| 2000 02 02 | 704 | 0.4+ | 1.3+ | 2004 11 02 | 699 | 0.6+ | 0.3+ | 2005 10 24 | 691 | 0.2− | 0.3− |
| 2000 02 02 | 704 | 0.4+ | 0.7+ | 2004 11 02 | 699 | 1.2− | 0.5− | 2005 10 24 | 691 | 0.7− | 0.6− |
| 2000 02 02 | 704 | 0.5+ | 0.8+ | 2004 11 02 | 699 | 0.5+ | 0.0 | 2006 02 04 | 704 | 0.6− | 0.8+ |
| 2000 02 02 | 704 | 0.3− | 0.3+ | 2004 11 11 | 608 | 1.1+ | 1.4− | 2006 02 04 | 704 | 0.0 | 1.1+ |
| 2000 02 03 | 704 | 0.2− | 0.4+ | 2004 11 11 | 608 | 0.8+ | 1.2− | 2006 02 04 | 704 | 0.5− | 0.1− |
| 2000 02 03 | 704 | 0.3+ | 0.9+ | 2004 11 11 | 608 | 1.0+ | 0.6− | 2006 02 20 | 703 | 0.4+ | 0.2− |
| 2000 02 03 | 704 | 1.0− | 1.0− | 2004 11 18 | 704 | 0.7− | 0.3+ | 2006 02 20 | 703 | 0.5+ | 0.2+ |
| 2000 02 03 | 704 | (0.7− | 2.0−) | 2004 11 18 | 704 | 0.6− | 0.9+ | 2006 02 20 | 703 | 0.5+ | 0.7− |
| 2000 02 11 | 704 | 0.3+ | 0.3− | 2004 11 18 | 704 | 0.2− | 0.3− | 2006 02 20 | 703 | 0.0 | 0.0 |

**2000 CD$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.37113 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28187538 | $\omega$ | 213.47314 | | −0.99887657 | | −0.03429152 |
| $a$ | 2.3037285 | $\Omega$ | 324.51761 | | +0.04518415 | | −0.89723208 |
| $e$ | 0.2023702 | $i$ | 3.23010 | | −0.01428283 | | −0.44022572 |
| $P$ | 3.50 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.1− | 0.4− | 2000 02 11 | 691 | 0.5− | 0.1− | 2000 03 05 | 704 | 0.8+ | 0.7+ |
| 2000 02 03 | 691 | 0.1− | 0.3− | 2000 02 27 | 735 | 0.9+ | 0.6+ | 2000 03 10 | 691 | 0.0 | 0.4− |
| 2000 02 03 | 691 | 0.1− | 0.3− | 2000 02 27 | 735 | 0.4+ | 1.7+ | 2000 03 10 | 691 | 0.1+ | 0.4− |
| 2000 02 04 | 704 | 0.3− | 0.5− | 2000 02 27 | 703 | 0.9− | 1.0+ | 2000 03 10 | 691 | 0.1+ | 0.5− |
| 2000 02 04 | 704 | 0.4− | 0.6+ | 2000 02 27 | 735 | 1.4+ | 0.6− | 2000 03 11 | 704 | 1.5+ | 0.5+ |
| 2000 02 04 | 704 | 0.3+ | 1.3+ | 2000 02 27 | 703 | 0.8− | 0.5+ | 2000 03 11 | 704 | 0.6− | 0.4+ |
| 2000 02 04 | 704 | 0.0 | 0.3+ | 2000 02 27 | 703 | 0.7− | 0.0 | 2000 03 11 | 704 | 0.3+ | 0.0 |
| 2000 02 04 | 704 | 0.7− | 0.3+ | 2000 02 27 | 703 | 0.7− | 0.4+ | 2000 03 11 | 704 | 1.3+ | 0.9+ |
| 2000 02 06 | 735 | 0.6− | 0.3+ | 2000 02 29 | 704 | 0.8− | 0.8+ | 2000 03 12 | 691 | 0.2+ | 0.5− |
| 2000 02 06 | 735 | 0.2− | 0.1+ | 2000 02 29 | 704 | 0.3+ | 0.7+ | 2000 03 12 | 691 | 0.1+ | 0.4− |
| 2000 02 06 | 735 | 0.1+ | 0.5+ | 2000 02 29 | 704 | 0.1+ | 0.8+ | 2000 03 12 | 691 | 0.6+ | 0.4− |
| 2000 02 08 | 684 | 0.0 | 0.0 | 2000 03 02 | 691 | 0.1+ | 0.0 | 2000 04 06 | 735 | 0.9+ | 0.0 |
| 2000 02 08 | 684 | 0.1+ | 0.0 | 2000 03 02 | 691 | 0.0 | 0.2− | 2000 04 06 | 735 | 0.8− | 1.0+ |
| 2000 02 08 | 684 | 0.1+ | 0.2+ | 2000 03 02 | 691 | 0.2− | 0.0 | 2000 04 06 | 735 | 0.1− | 0.8+ |
| 2000 02 09 | 735 | 0.2+ | 0.6+ | 2000 03 03 | 704 | 0.4+ | 0.5+ | 2002 11 24 | 644 | 0.1− | 0.6+ |
| 2000 02 09 | 735 | 0.2− | 0.8− | 2000 03 03 | 704 | 0.3+ | 1.0+ | 2002 11 24 | 644 | 0.4− | 0.8+ |
| 2000 02 11 | 704 | 0.6+ | 0.2− | 2000 03 03 | 704 | 1.2+ | 1.7+ | 2002 11 24 | 644 | 0.2+ | 0.6+ |
| 2000 02 11 | 691 | 0.2− | 0.6− | 2000 03 03 | 704 | 0.3+ | 1.0+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2000 02 11 | 704 | 0.3− | 0.5− | 2000 03 03 | 704 | 0.5+ | 1.5+ | 2006 11 24 | G96 | 0.7− | 0.3− |
| 2000 02 11 | 704 | 0.5− | 0.1− | 2000 03 05 | 704 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 2000 02 11 | 691 | 0.6− | 0.2− | 2000 03 05 | 704 | 0.3+ | 0.7+ | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2000 02 11 | 704 | 0.3− | 0.6+ | 2000 03 05 | 704 | 0.3+ | 0.2+ | | | | |

**2000 $CP_{64}$ = 2006 $SL_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.25926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25816241 | $\omega$ | 356.63387 | | +0.29758648 | −0.95312137 | |
| $a$ | 2.4427220 | $\Omega$ | 76.04798 | | +0.87722871 | +0.25034347 | |
| $e$ | 0.1907824 | $i$ | 3.23638 | | +0.37671219 | +0.16996412 | |
| $P$ | 3.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.2− | 0.3− | 2006 08 22 | 644 | 0.1+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2000 02 03 | 704 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2000 02 03 | 704 | 0.1− | 0.9+ | 2006 09 19 | 703 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2000 02 03 | 704 | 0.1− | 1.4+ | 2006 09 19 | 703 | 1.1− | 0.6− | 2006 10 03 | 704 | 0.1+ | 0.9+ |
| 2000 02 03 | 704 | 0.4− | 0.8+ | 2006 09 26 | 704 | (1.5+ | 2.9+) | 2006 10 03 | 704 | 0.4− | 0.6+ |
| 2000 02 08 | 704 | 0.6+ | 0.1− | 2006 09 26 | 704 | (0.0 | 2.5+) | 2006 10 03 | 704 | 0.2+ | 0.9+ |
| 2000 02 08 | 704 | 0.0 | 0.6− | 2006 09 26 | 704 | 1.1+ | 0.7+ | 2006 10 16 | 703 | 0.8− | 0.7− |
| 2000 02 08 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 704 | (1.5+ | 1.5−) | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2000 02 08 | 704 | 0.5+ | 0.8+ | 2006 09 28 | 704 | 0.6− | 0.2+ | 2006 10 16 | 703 | 1.1+ | 1.4− |
| 2000 02 11 | 704 | 0.5− | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.9+ | 2006 10 16 | 703 | (2.4+ | 0.3−) |
| 2000 02 11 | 704 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.1− | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2000 02 11 | 704 | 0.7+ | 0.8− | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2000 02 11 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.1− | 1.0− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2000 02 11 | 704 | 0.1− | 1.3− | 2006 09 30 | 703 | 0.8− | 0.8− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.4+ | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 08 22 | 644 | 0.5− | 0.3+ | 2006 09 30 | 704 | 0.9+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2006 08 22 | 644 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.4+ |

**2000 $CK_{68}$ = 2006 $UK_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.74180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26414425 | $\omega$ | 287.32261 | | +0.28826127 | −0.95736920 | |
| $a$ | 2.4057026 | $\Omega$ | 145.90568 | | +0.89071770 | +0.26092285 | |
| $e$ | 0.1668775 | $i$ | 1.91160 | | +0.35146468 | +0.12394949 | |
| $P$ | 3.73 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 01 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | (1.9+ | 0.2−) | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2000 02 01 | 691 | 0.0 | 0.2− | 2006 10 16 | 703 | 1.4+ | 0.5− | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2000 02 01 | 691 | 0.9+ | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2000 02 07 | 691 | 0.2− | 0.7+ | 2006 10 19 | 691 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.8− |
| 2000 02 07 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2000 02 07 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2000 02 10 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2000 02 10 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2000 02 10 | 691 | 0.3− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2006 10 16 | 703 | (0.5+ | 2.3+) | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2006 10 16 | 703 | 0.4− | 1.4− | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.5− |

**2000 $CM_{69}$ = 2006 $QG_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.95077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22383112 | $\omega$ | 298.68438 | | −0.22979010 | +0.97128810 | |
| $a$ | 2.6865138 | $\Omega$ | 317.88438 | | −0.85780413 | −0.23203312 | |
| $e$ | 0.1008093 | $i$ | 5.27123 | | −0.45974839 | −0.05253617 | |
| $P$ | 4.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 691 | 0.1− | 0.2+ | 2000 02 07 | 691 | 0.2− | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 1997 10 01 | 691 | 0.2− | 0.2+ | 2000 02 14 | 691 | 0.1− | 0.4− | 2006 08 27 | 691 | 0.3+ | 0.0 |
| 1997 10 01 | 691 | 0.0 | 0.3+ | 2000 02 14 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.4− | 0.8− |
| 2000 02 01 | 691 | 0.3+ | 0.3− | 2000 02 14 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.5− |
| 2000 02 01 | 691 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.5− | 0.7− |
| 2000 02 01 | 691 | 0.5+ | 0.2− | 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 09 27 | G96 | (1.0− | 2.1−) |
| 2000 02 07 | 691 | 0.2− | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.0 | | | | |
| 2000 02 07 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | | | | |

**2000 $CD_{72}$ = 2006 $RH_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.43339 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24116479 | $\omega$ | 354.77306 | | +0.75119697 | +0.65980446 | |
| $a$ | 2.5561919 | $\Omega$ | 323.91868 | | −0.60443442 | +0.67601656 | |
| $e$ | 0.1055524 | $i$ | 1.84927 | | −0.26525864 | +0.32811536 | |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 24 | 691 | 0.0 | 0.5− | 2002 10 31 | 644 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 1998 10 24 | 691 | 0.2+ | 0.4− | 2005 05 16 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 1998 10 24 | 691 | 0.1+ | 0.1− | 2005 05 16 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2000 01 30 | 691 | 0.0 | 0.3+ | 2005 05 16 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2000 01 30 | 691 | 0.2+ | 1.0+ | 2006 07 22 | G96 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2000 01 30 | 691 | 0.2+ | 0.6+ | 2006 07 22 | G96 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2000 02 07 | 691 | 0.0 | 0.4+ | 2006 07 22 | G96 | 0.8+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2000 02 07 | 691 | 0.0 | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2000 02 07 | 691 | 0.3+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2000 02 08 | 691 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.5− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2000 02 08 | 691 | 0.2− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 2000 02 08 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2000 02 10 | 691 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2000 02 10 | 691 | 0.3+ | 0.7− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2000 02 10 | 691 | 0.2− | 0.9− | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1− | 1.1− |
| 2002 10 31 | 644 | 0.1− | 0.8+ | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 644 | 0.2− | 0.5+ | 2006 09 26 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1− |

**2000 $CH_{76}$ = 2002 $TG_{104}$ = 2006 $SO_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.76275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23825904 | $\omega$ | 204.81079 | | −0.99896815 | +0.01102678 | |
| $a$ | 2.5769330 | $\Omega$ | 335.69800 | | +0.01173811 | −0.87443126 | |
| $e$ | 0.0535073 | $i$ | 6.14548 | | −0.04387322 | −0.48502411 | |
| $P$ | 4.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.4+ | 0.4+ | 2002 10 04 | 704 | 0.7+ | 0.7+ | 2006 09 16 | 699 | 0.3+ | 0.3+ |
| 2000 02 03 | 704 | 0.9+ | 0.3+ | 2002 10 05 | 644 | 0.3+ | 0.8− | 2006 09 16 | 699 | 0.1− | 0.6− |
| 2000 02 03 | 704 | 1.1+ | 0.2+ | 2002 10 05 | 644 | 0.3+ | 0.8− | 2006 09 16 | 699 | 1.0+ | 0.8− |
| 2000 02 03 | 704 | 0.4+ | 0.7− | 2002 10 05 | 644 | 0.0 | 1.0− | 2006 09 16 | 699 | 0.2− | 0.1− |
| 2000 02 04 | 120 | (2.9+ | 0.3+) | 2002 10 06 | 644 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.2− | 1.3+ |
| 2000 02 04 | 120 | 1.2− | 1.0− | 2002 10 06 | 644 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.2+ |
| 2000 02 09 | 120 | 0.3+ | 1.1− | 2002 10 06 | 644 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.8+ |
| 2000 02 09 | 120 | 0.7− | 0.9− | 2004 01 31 | 704 | 0.2+ | 0.5− | 2006 09 19 | 703 | 0.6− | 0.7+ |
| 2000 02 10 | 120 | 0.3+ | 1.0− | 2004 01 31 | 704 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.5+ |
| 2000 02 10 | 120 | (2.5+ | 0.3−) | 2004 01 31 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.3− |
| 2000 02 10 | 120 | (2.7+ | 1.6−) | 2004 01 31 | 704 | 0.5+ | 0.9+ | 2006 09 19 | 703 | 0.2− | 0.7− |
| 2000 02 10 | 120 | 1.4− | 0.1+ | 2006 08 28 | 703 | 1.3− | 0.9− | 2006 09 19 | 699 | 1.3+ | 0.2− |
| 2000 02 11 | 704 | 0.2− | 0.9+ | 2006 08 28 | 703 | 0.2− | 0.4+ | 2006 09 20 | 691 | 0.1− | 0.2+ |
| 2000 02 11 | 704 | 0.2− | 1.0+ | 2006 08 28 | 703 | (1.6− | 0.2−) | 2006 09 20 | 691 | 0.2+ | 0.3+ |
| 2000 02 11 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 1.2− | 2006 09 20 | 691 | 0.2+ | 0.3+ |
| 2000 02 11 | 704 | 0.2− | 1.1+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 0.7− | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.3− |

**2000 $CY_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.09701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17625214 | $\omega$ | 90.39484 | | −0.11661213 | +0.99316085 | |
| $a$ | 3.1505022 | $\Omega$ | 172.90080 | | −0.92874770 | −0.10699173 | |
| $e$ | 0.0445333 | $i$ | 2.66977 | | −0.35189391 | −0.04673645 | |
| $P$ | 5.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 691 | 0.0 | 0.1− | 2002 10 10 | 291 | 0.2+ | 0.2+ | 2006 03 26 | 699 | 0.6+ | 0.0 |
| 2000 02 07 | 691 | 0.3+ | 0.1+ | 2002 10 10 | 291 | 0.1− | 0.1+ | 2006 03 26 | 699 | 0.8+ | 0.9+ |
| 2000 02 07 | 691 | 0.2+ | 0.0 | 2003 10 21 | 691 | 0.2+ | 0.4+ | 2006 03 26 | 699 | 1.4+ | 0.5+ |
| 2000 02 11 | 691 | 0.2− | 0.2− | 2003 10 21 | 691 | 0.4+ | 0.4+ | 2006 03 26 | 699 | 0.7− | 1.5+ |
| 2000 02 11 | 691 | 0.3− | 0.3+ | 2003 10 21 | 691 | 0.0 | 0.0 | 2006 04 07 | G96 | 0.2− | 0.1+ |
| 2000 02 11 | 691 | 0.3− | 0.3− | 2003 11 21 | 691 | 0.3− | 0.2+ | 2006 04 07 | G96 | 0.3+ | 0.1+ |
| 2000 04 06 | 691 | 0.0 | 0.1− | 2003 11 21 | 691 | 0.3− | 0.0 | 2006 04 07 | G96 | 0.2+ | 0.1+ |
| 2000 04 06 | 691 | 0.3+ | 0.1+ | 2003 11 21 | 691 | 0.3− | 0.1+ | 2006 04 07 | G96 | 0.1+ | 0.7+ |
| 2000 04 06 | 691 | 0.0 | 0.2− | 2006 01 26 | G96 | 0.3+ | 0.2+ | 2006 04 19 | G96 | 0.5− | 0.5+ |
| 2002 08 06 | 644 | 0.3− | 0.1+ | 2006 01 26 | G96 | 0.4− | 0.1− | 2006 04 19 | G96 | 0.2− | 0.4+ |
| 2002 08 06 | 644 | 0.0 | 0.3+ | 2006 01 26 | G96 | 0.1− | 0.5+ | 2006 04 19 | G96 | 0.3+ | 0.3+ |
| 2002 08 06 | 644 | 0.2− | 0.2+ | 2006 01 26 | G96 | 0.2− | 0.2− | 2006 04 19 | G96 | 0.1+ | 0.3+ |
| 2002 08 17 | 644 | 0.6− | 0.0 | 2006 03 23 | G96 | 0.0 | 0.4+ | 2006 04 26 | 807 | 0.2+ | 0.4+ |
| 2002 08 17 | 644 | 0.1− | 0.2+ | 2006 03 23 | G96 | 0.2+ | 0.1− | 2006 04 26 | 807 | 0.2+ | 0.3+ |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2006 03 23 | G96 | 0.1− | 0.2+ | | | | |
| 2002 10 10 | 291 | 0.1+ | 0.2+ | 2006 03 23 | G96 | 0.0 | 0.0 | | | | |

**2000 CB$_{111}$ = 2006 SL$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.12836 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25920182 | $\omega$ | 25.44627 | | −0.11207703 | | −0.99364929 |
| $a$ | 2.4361874 | $\Omega$ | 70.99010 | | +0.90988581 | | −0.10666039 |
| $e$ | 0.1884606 | $i$ | 0.60550 | | +0.39943279 | | −0.03584204 |
| $P$ | 3.80 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 691 | 0.3− | 0.4+ | 2004 03 15 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.8+ | 0.1+ |
| 2000 01 30 | 691 | 0.2+ | 0.1+ | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2000 01 30 | 691 | 0.1+ | 0.2+ | 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.5− | 0.0 |
| 2000 02 04 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2000 02 04 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2000 02 04 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2000 02 06 | 695 | 0.7− | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2000 02 06 | 695 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2000 02 10 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2000 02 10 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2000 02 10 | 691 | 0.2+ | 0.4− | 2006 10 16 | G96 | 0.4+ | 0.8+ | 2006 10 27 | G96 | 1.2+ | 0.0 |

**2000 CE$_{132}$ = 2006 SU$_{242}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.49707 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23540543 | $\omega$ | 131.39313 | | +0.12944566 | | +0.99089378 |
| $a$ | 2.5977163 | $\Omega$ | 145.99116 | | −0.92839059 | | +0.13423976 |
| $e$ | 0.0228925 | $i$ | 3.79899 | | −0.34833136 | | +0.01044972 |
| $P$ | 4.19 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.2+ | 0.1+ | 2000 02 05 | 691 | 0.4− | 0.5− | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2000 02 03 | 691 | 0.3+ | 0.2− | 2000 02 06 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.3+ | 0.0 |
| 2000 02 03 | 691 | 0.1+ | 0.1+ | 2000 02 06 | 691 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2000 02 04 | 691 | 0.1− | 0.1− | 2000 02 06 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2000 02 04 | 691 | 0.1− | 0.1+ | 2004 02 11 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.2− |
| 2000 02 04 | 691 | 0.2− | 0.2− | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2000 02 05 | 691 | 0.2− | 0.3− | 2004 02 11 | 691 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2000 02 05 | 691 | 0.0 | 0.4− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ |

**2000 CL$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.46063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22725952 | $\omega$ | 107.24303 | | +0.76988667 | | −0.63802479 |
| $a$ | 2.6594265 | $\Omega$ | 292.40404 | | +0.57957179 | | +0.70826212 |
| $e$ | 0.0824497 | $i$ | 0.87401 | | +0.26715361 | | +0.30214093 |
| $P$ | 4.34 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.1+ | 0.1− | 2000 02 08 | 691 | 0.3− | 0.0 | 2002 09 14 | 644 | 0.4+ | 0.5− |
| 2000 02 04 | 691 | 0.1+ | 0.3+ | 2002 08 17 | 644 | 0.1− | 0.3+ | 2002 09 14 | 644 | 0.2− | 0.2+ |
| 2000 02 04 | 691 | 0.0 | 0.0 | 2002 08 17 | 644 | 0.5− | 0.4+ | 2002 09 14 | 644 | 0.1− | 0.8− |
| 2000 02 08 | 691 | 0.2+ | 0.2− | 2002 09 01 | 644 | 0.1− | 0.5+ | | | | |
| 2000 02 08 | 691 | 0.0 | 0.1+ | 2002 09 01 | 644 | 0.3+ | 0.2+ | | | | |

**2000 CP$_{137}$ = 2000 CT$_{99}$ = 2006 ST$_{280}$**

Id. Minor Planet Center (d, *MPO* 87831; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.00301 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24248225 | $\omega$ | 194.45172 | | +0.88422264 | | +0.46235239 |
| $a$ | 2.5469246 | $\Omega$ | 137.80453 | | −0.41814772 | | +0.84676037 |
| $e$ | 0.2263996 | $i$ | 5.65515 | | −0.20809328 | | +0.26311051 |
| $P$ | 4.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.2− | 0.3− | 2006 09 29 | 699 | 0.9+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2000 02 04 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2000 02 04 | 691 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2000 02 05 | 691 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.3+ |
| 2000 02 05 | 691 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2000 02 05 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2000 02 05 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2000 02 05 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.7− |
| 2000 02 05 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | (0.1− | 1.6−) | 2006 10 22 | 703 | 0.2+ | 0.3− |
| 2000 02 08 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.8+ | 1.1− |
| 2000 02 08 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2000 02 08 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2006 09 29 | 699 | 0.4+ | 0.9− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.2− | 1.0+ |
| 2006 09 29 | 699 | 0.1− | 0.9− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.6− | 1.3+ |
| 2006 09 29 | 699 | 1.0− | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.1− | 0.5− |

**2000 CE$_{149}$ = 2005 NY$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.98173 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26831096 | $\omega$ | 284.00400 | | +0.31169680 | | −0.94799273 |
| $a$ | 2.3807316 | $\Omega$ | 147.60663 | | +0.91160729 | | +0.27922114 |
| $e$ | 0.0862112 | $i$ | 6.91051 | | +0.26798741 | | +0.15279179 |
| $P$ | 3.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.4+ | 0.1+ | 2002 10 04 | 704 | 0.4+ | 0.7+ | 2004 03 20 | 704 | 0.4+ | 0.0 |
| 1993 03 19 | 691 | 0.0 | 0.1− | 2002 10 04 | 704 | 0.1− | 1.0+ | 2004 03 20 | 704 | 1.2+ | 0.2+ |
| 1993 03 19 | 691 | 0.0 | 0.9+ | 2002 10 31 | 704 | 0.7+ | 2.0+ | 2004 03 20 | 704 | 0.2+ | 0.3+ |
| 2000 02 08 | 691 | 0.1− | 0.2− | 2002 10 31 | 704 | 0.4− | 1.2+ | 2004 04 16 | 691 | 0.1+ | 0.5+ |
| 2000 02 08 | 691 | 0.2− | 0.3− | 2002 10 31 | 704 | 1.1− | 1.8+ | 2004 04 16 | 691 | 0.0 | 0.3+ |
| 2000 02 08 | 691 | 0.2+ | 0.4− | 2002 10 31 | 704 | 0.3− | 1.4+ | 2004 04 16 | 691 | 0.1− | 0.4+ |
| 2000 02 28 | 691 | 0.3− | 0.0 | 2002 10 31 | 608 | 0.1+ | 0.2− | 2005 07 08 | 691 | 0.0 | 0.3+ |
| 2000 02 28 | 691 | 0.4− | 0.3+ | 2002 10 31 | 608 | 0.3+ | 0.3+ | 2005 07 08 | 691 | 0.3− | 0.1+ |
| 2000 02 28 | 691 | 0.3− | 0.1+ | 2002 10 31 | 608 | 0.1+ | 0.2+ | 2005 07 08 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 691 | 0.4+ | 0.1− | 2004 02 23 | 704 | 0.6− | 1.0+ | 2005 07 11 | G96 | 0.3+ | 0.5− |
| 2000 03 11 | 691 | 0.0 | 0.3− | 2004 02 23 | 704 | 0.7+ | 1.3+ | 2005 07 11 | G96 | 0.1− | 0.6− |
| 2000 03 11 | 691 | 0.1− | 0.2− | 2004 02 23 | 704 | 1.5+ | 0.8+ | 2005 07 11 | G96 | 0.4− | 0.4− |
| 2002 10 04 | 704 | 1.1− | 0.7+ | 2004 02 23 | 704 | 1.0+ | 0.8+ | | | | |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2004 03 20 | 704 | 0.4+ | 0.4+ | | | | |

**2000 CF$_{149}$ = 2005 JH$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.71726 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21366324 | $\omega$ | 13.11761 | | −0.98127670 | | +0.19245850 |
| $a$ | 2.7710829 | $\Omega$ | 177.93423 | | −0.19006589 | | −0.96134839 |
| $e$ | 0.2343910 | $i$ | 11.95581 | | −0.03116074 | | −0.19689843 |
| $P$ | 4.61 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2000 03 11 | 704 | 0.3+ | 1.0− | 2005 05 07 | 691 | 0.1+ | 0.0 |
| 2000 02 12 | 645 | 0.1+ | 0.0 | 2000 03 11 | 704 | 0.6+ | 0.1− | 2005 05 07 | 691 | 0.2− | 0.1+ |
| 2000 02 27 | 703 | 0.3+ | 0.8+ | 2000 03 11 | 704 | 0.2+ | 0.3− | 2005 05 07 | 691 | 0.1− | 0.1− |
| 2000 02 27 | 703 | 1.5− | 0.6− | 2000 04 05 | 704 | 0.3+ | 0.9+ | 2005 05 11 | 691 | 0.1+ | 0.2+ |
| 2000 02 27 | 703 | 0.8− | 0.3+ | 2000 04 05 | 704 | 0.4− | 0.2− | 2005 05 11 | 691 | 0.1− | 0.1− |
| 2000 02 27 | 703 | 1.3− | 0.5− | 2000 04 05 | 704 | 0.4+ | 0.0 | 2005 05 11 | 691 | 0.3+ | 0.1− |
| 2000 03 11 | 704 | 0.1+ | 0.7− | 2000 04 05 | 704 | 0.5− | 1.0+ | | | | |
| 2000 03 11 | 704 | 0.2− | 0.3− | 2000 04 05 | 704 | 0.0 | 0.6+ | | | | |

**2000 CG$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.78571 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28383706 | $\omega$ | 281.95103 | | −0.90800659 | | −0.41090486 |
| $a$ | 2.2931017 | $\Omega$ | 233.84125 | | +0.41288634 | | −0.84456629 |
| $e$ | 0.1077101 | $i$ | 5.81051 | | +0.07105563 | | −0.34331469 |
| $P$ | 3.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 1.1+ | 0.0 | 2002 12 12 | 644 | 0.2+ | 0.1+ | 2005 10 03 | 703 | 1.5− | 1.1− |
| 2000 02 08 | 704 | 0.5− | 1.2− | 2002 12 12 | 644 | 0.1+ | 0.0 | 2005 10 03 | 703 | 0.2+ | 0.5+ |
| 2000 02 08 | 704 | 1.6+ | 0.3+ | 2003 01 07 | 704 | 0.4− | 0.7+ | 2005 10 08 | 704 | 0.1− | 0.7+ |
| 2000 03 08 | 704 | 0.2+ | 0.1+ | 2003 01 07 | 704 | 0.3− | 0.4− | 2005 10 08 | 704 | 0.3− | 0.2− |
| 2000 03 08 | 704 | 0.0 | 1.5− | 2003 01 07 | 704 | 0.0 | 0.2+ | 2005 10 08 | 704 | 0.5+ | 0.7− |
| 2000 03 08 | 704 | 1.6− | 1.3− | 2003 01 07 | 704 | 0.4+ | 1.1+ | 2005 10 08 | 704 | 0.7+ | 1.9+ |
| 2000 03 08 | 704 | 1.7− | 0.8+ | 2005 09 29 | 699 | 0.5+ | 1.0+ | 2005 10 27 | 703 | 0.6+ | 0.1− |
| 2000 04 25 | 699 | 0.7+ | 0.9− | 2005 09 29 | 699 | 1.7+ | 0.7− | 2005 10 27 | 703 | 0.6− | 1.2− |
| 2000 04 25 | 699 | 0.6− | 0.5+ | 2005 09 29 | 699 | 0.6+ | 0.5+ | 2005 10 27 | 703 | 0.3− | 1.6− |
| 2000 04 25 | 699 | 0.1+ | 1.2+ | 2005 09 29 | 699 | 0.1+ | 0.5− | 2005 10 27 | 703 | 0.1+ | 1.4− |
| 2000 04 25 | 699 | 0.1+ | 0.2− | 2005 10 03 | 703 | 1.2− | 0.0 | | | | |
| 2002 12 12 | 644 | 0.1+ | 0.1+ | 2005 10 03 | 703 | 0.0 | 0.2+ | | | | |

**2000 CH$_{149}$ = 2006 QT$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.90767 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21233700 | $\omega$ | 289.00643 | | +0.15370625 | | +0.98808869 |
| $a$ | 2.7826095 | $\Omega$ | 349.82678 | | −0.89003646 | | +0.13518184 |
| $e$ | 0.0885899 | $i$ | 2.40916 | | −0.42919632 | | +0.07352962 |
| $P$ | 4.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.6+ | 0.8+ | 2006 08 19 | 691 | 0.0 | 0.0 |
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.2+ | 0.7+ | 2006 08 19 | 691 | 1.1− | 0.6+ |
| 2000 03 11 | 704 | 1.2+ | 1.6+ | 2004 01 22 | 704 | 0.7+ | 1.1+ | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 2000 03 11 | 704 | 0.3+ | 1.1+ | 2005 04 12 | G96 | 0.2− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 2000 03 11 | 704 | (0.7− | 2.3+) | 2005 04 12 | G96 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.0 | 0.6+ |
| 2000 04 02 | 691 | 0.0 | 0.2+ | 2005 04 12 | G96 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2000 04 02 | 691 | 0.0 | 0.0 | 2005 04 12 | G96 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.5+ |
| 2000 04 02 | 691 | 0.1− | 0.0 | 2005 05 01 | 644 | 0.4+ | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.5+ |
| 2000 04 10 | 695 | 0.2+ | 0.3+ | 2005 05 01 | 644 | 0.5+ | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.4− |
| 2000 04 10 | 695 | 0.2− | 0.4+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 2000 04 24 | 691 | 0.5+ | 0.3− | 2006 08 18 | 644 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.6+ |
| 2000 04 24 | 691 | 0.3+ | 0.4− | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.2+ |
| 2000 04 24 | 691 | 0.3+ | 0.1− | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2004 01 16 | 691 | 0.0 | 0.4+ | 2006 08 18 | 644 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2004 01 16 | 691 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2004 01 16 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.7− | 0.3− | 2006 08 19 | 691 | 0.1− | 0.1− | | | | |

**2000 CJ$_{149}$ = 2006 RX$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.45113 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22526447 | $\omega$ | 17.69663 | | +0.97517922 | | −0.22122701 |
| $a$ | 2.6751055 | $\Omega$ | 355.05709 | | +0.18809673 | | +0.84956730 |
| $e$ | 0.0448451 | $i$ | 6.10962 | | +0.11681228 | | +0.47884655 |
| $P$ | 4.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.0 | 2002 11 05 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.3+ |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2002 11 05 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.7+ | 1.3− |
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2002 11 05 | 704 | 0.9− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.1− |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2004 02 23 | 704 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.3− |
| 2000 03 10 | 704 | 0.3+ | 0.6+ | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.1+ |
| 2000 03 10 | 704 | 0.7− | 0.3+ | 2004 02 23 | 704 | 0.2− | 0.6+ | 2006 09 19 | 703 | 0.2+ | 0.4+ |
| 2000 03 10 | 704 | 0.5− | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 0.8− | 1.1+ |
| 2000 03 10 | 704 | 0.4+ | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.8− | 1.3+ |
| 2000 04 10 | 691 | 0.3− | 0.4+ | 2006 08 24 | 644 | 0.4− | 0.5+ | 2006 09 20 | 644 | 0.6− | 0.4− |
| 2000 04 10 | 691 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2000 04 10 | 691 | 0.1− | 0.4+ | 2006 09 12 | 703 | (1.6− | 0.2+) | 2006 09 20 | 644 | 0.1− | 0.4+ |
| 2002 10 28 | 644 | 0.4− | 1.1− | 2006 09 12 | 703 | 0.7− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2002 10 28 | 644 | 0.2+ | 1.1+ | 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 2002 10 28 | 644 | 0.2+ | 0.7− | 2006 09 12 | 703 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2+ |
| 2002 10 28 | 644 | 0.5+ | 1.2+ | 2006 09 16 | 699 | (2.7+ | 0.5−) | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2002 10 28 | 644 | 0.0 | 0.7− | 2006 09 16 | 699 | 1.3+ | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.6− |
| 2002 10 28 | 644 | 0.3+ | 1.2+ | 2006 09 16 | 699 | 0.2+ | 1.3+ | 2006 10 16 | G96 | 0.3− | 0.5− |
| 2002 11 05 | 704 | 0.5− | 0.5− | 2006 09 16 | 699 | 0.4− | 0.9+ | 2006 10 16 | G96 | 0.2+ | 0.6− |

**2000 DP$_3$ = 2006 SO$_{217}$ = 2006 SX$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.17887 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23206930 | $\omega$ | 214.39302 | | −0.85217908 | | +0.52323711 |
| $a$ | 2.6225529 | $\Omega$ | 357.14895 | | −0.46177388 | | −0.75536948 |
| $e$ | 0.2318870 | $i$ | 4.27340 | | −0.24608066 | | −0.39451219 |
| $P$ | 4.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 28 | 747 | 0.1− | 0.0 | 2000 03 06 | 747 | 0.3− | 0.2− | 2006 09 24 | 691 | 0.1− | 0.3+ |
| 2000 02 28 | 747 | 0.9− | 0.1+ | 2000 03 06 | 747 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.1+ |
| 2000 02 28 | 747 | 0.1− | 0.5+ | 2000 03 06 | 747 | 0.5− | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2000 02 28 | 747 | 0.2+ | 0.3− | 2005 01 18 | 809 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2000 02 29 | 747 | 0.5− | 0.1+ | 2005 01 18 | 809 | 0.5− | 0.5− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2000 02 29 | 747 | 0.3+ | 0.2− | 2005 01 18 | 809 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2000 02 29 | 747 | 0.4− | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1− |
| 2000 02 29 | 747 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2000 03 03 | 747 | 0.9+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.8+ | 1.0− |
| 2000 03 03 | 747 | 1.0+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2000 03 03 | 747 | 0.0 | 0.7− | 2006 09 19 | 691 | 0.6− | 0.3+ | 2006 10 19 | G96 | 0.4− | 0.7− |
| 2000 03 03 | 747 | 0.6− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.6− | 0.5− |
| 2000 03 06 | 747 | 0.7+ | 0.5− | 2006 09 24 | 691 | 0.4+ | 0.2− | | | | |

**2000 DW$_{10}$ = 2006 UT$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.82025 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25761556 | $\omega$ | 134.12372 | | −0.28861849 | | −0.95680106 |
| $a$ | 2.4461776 | $\Omega$ | 332.59402 | | +0.85523604 | | −0.24116008 |
| $e$ | 0.1462104 | $i$ | 4.37177 | | +0.43043081 | | −0.16239936 |
| $P$ | 3.83 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 26 | 691 | 0.1− | 0.2− | 2000 03 12 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.5+ |
| 2000 02 26 | 691 | 0.2+ | 0.1− | 2000 03 12 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2000 02 26 | 691 | 0.0 | 0.0 | 2000 03 12 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2000 03 02 | 691 | 0.4+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2000 03 02 | 691 | 0.4− | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 02 | 691 | 0.1+ | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.5− | 0.0 |
| 2000 03 02 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2000 03 02 | 691 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.3− | 0.4− | | | | |
| 2000 03 02 | 691 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1+ | | | | |

**2000 $DO_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.29924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22911935 | $\omega$ | 80.04219 | | −0.63588875 | +0.75729500 | |
| $a$ | 2.6450154 | $\Omega$ | 148.85336 | | −0.77135837 | −0.61723329 | |
| $e$ | 0.1631786 | $i$ | 16.72273 | | −0.02552968 | −0.21337137 | |
| $P$ | 4.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.5+ | 0.2+ | 2005 05 06 | 704 | 0.2+ | 0.5− | 2005 06 11 | 703 | 0.7− | 0.2− |
| 1997 08 11 | 691 | 0.6− | 0.3+ | 2005 05 06 | 704 | 0.3+ | 0.4+ | 2005 06 24 | 644 | 0.2− | 0.4− |
| 2000 02 26 | 691 | 0.6− | 0.0 | 2005 05 06 | 704 | 1.0− | 0.3+ | 2005 06 24 | 644 | 0.4− | 0.3− |
| 2000 02 26 | 691 | 0.4+ | 0.1− | 2005 05 06 | 704 | 0.1− | 0.4− | 2005 06 24 | 644 | 0.1− | 0.3− |
| 2000 02 26 | 691 | 0.2− | 0.1− | 2005 05 06 | 704 | 0.4+ | 0.4+ | 2005 06 24 | 644 | 0.4− | 0.4− |
| 2000 02 29 | 704 | 1.6+ | 0.1− | 2005 06 01 | 704 | 0.1− | 0.9+ | 2005 06 24 | 644 | 0.3− | 0.3− |
| 2000 02 29 | 704 | 1.4+ | 2.0+ | 2005 06 01 | 704 | 0.3+ | 0.1+ | 2005 06 24 | 644 | 0.4− | 0.3− |
| 2000 02 29 | 704 | 1.2+ | 0.0 | 2005 06 01 | 704 | 0.2− | 0.7− | 2005 07 05 | 703 | 1.0+ | 1.1+ |
| 2000 02 29 | 704 | 0.4+ | 0.4− | 2005 06 01 | 704 | 0.4+ | 0.1− | 2005 07 05 | 703 | 1.4+ | 0.4+ |
| 2000 03 03 | 704 | 1.9− | 0.2− | 2005 06 01 | 704 | 0.1+ | 0.5+ | 2005 07 05 | 703 | 1.0+ | 0.1− |
| 2000 03 03 | 704 | 1.1− | 0.5+ | 2005 06 11 | 703 | 0.7− | 0.4− | 2005 07 05 | 703 | 0.3+ | 0.8+ |
| 2000 03 03 | 704 | 0.1+ | 1.1+ | 2005 06 11 | 703 | 0.7− | 0.4− | | | | |

**2000 $DR_{23}$ = 2005 $EG_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.47286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21259473 | $\omega$ | 56.60801 | | +0.89481576 | −0.43015571 | |
| $a$ | 2.7803601 | $\Omega$ | 328.38853 | | +0.29483353 | +0.77033257 | |
| $e$ | 0.2161172 | $i$ | 13.17406 | | +0.33522820 | +0.47069500 | |
| $P$ | 4.64 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 699 | 0.2+ | 0.3+ | 2003 11 23 | 704 | 0.1− | 0.2+ | 2004 01 19 | 704 | 1.5+ | 1.0+ |
| 1998 09 19 | 699 | 0.4+ | 0.9− | 2003 11 23 | 704 | 1.1− | 0.9− | 2004 01 19 | 704 | 0.0 | 0.3+ |
| 1998 09 19 | 699 | 1.1+ | 0.4+ | 2003 11 23 | 704 | 0.1− | 0.7+ | 2004 01 19 | 704 | 1.5+ | 0.3+ |
| 1998 10 18 | 699 | 1.0− | 0.2+ | 2003 11 23 | 704 | 0.1+ | 0.2+ | 2004 01 19 | 704 | 1.1+ | 0.2− |
| 1998 10 18 | 699 | 0.4− | 0.7+ | 2003 12 05 | 704 | 0.4− | 0.5− | 2004 01 19 | 704 | 0.5+ | 0.5+ |
| 1998 10 18 | 699 | 1.2− | 0.4+ | 2003 12 05 | 704 | 0.9− | 0.8− | 2004 02 11 | 704 | 0.1+ | 0.2+ |
| 2000 02 27 | 691 | 0.4− | 0.1− | 2003 12 05 | 704 | 0.3+ | 0.4− | 2004 02 11 | 704 | 0.3+ | 0.1− |
| 2000 02 27 | 691 | 0.3− | 0.0 | 2003 12 05 | 704 | 0.7− | 0.3− | 2004 02 11 | 704 | 0.6− | 0.1+ |
| 2000 02 27 | 691 | 0.2− | 0.1− | 2003 12 15 | 704 | 0.3− | 0.3− | 2004 02 11 | 704 | 0.6− | 0.1+ |
| 2000 02 29 | 704 | 1.5+ | 0.7+ | 2003 12 15 | 704 | 0.0 | 0.4+ | 2005 03 08 | 691 | 0.3+ | 0.2− |
| 2000 02 29 | 704 | 0.1− | 0.2+ | 2003 12 15 | 704 | 0.5− | 0.1+ | 2005 03 08 | 691 | 0.1+ | 0.1− |
| 2000 02 29 | 704 | 0.7+ | 0.5+ | 2003 12 15 | 704 | 0.8+ | 1.5+ | 2005 03 08 | 691 | 0.2+ | 0.1− |
| 2000 02 29 | 704 | 1.1− | 0.3+ | 2003 12 29 | 704 | 0.2− | 0.1− | 2005 03 13 | 703 | 0.3+ | 1.3+ |
| 2000 02 29 | 704 | 0.8− | 1.2− | 2003 12 29 | 704 | 0.1− | 0.0 | 2005 03 13 | 703 | 0.1− | 1.0+ |
| 2000 03 03 | 704 | 0.5+ | 0.7− | 2003 12 29 | 704 | 0.5+ | 0.5− | 2005 03 13 | 703 | (2.0+ | 1.5+) |
| 2000 03 03 | 704 | 1.2+ | 0.6− | 2003 12 29 | 704 | 0.9− | 0.5− | 2005 03 13 | 703 | 0.3− | 1.7+ |
| 2000 03 03 | 704 | 0.4+ | 0.5− | 2003 12 29 | 704 | 0.2− | 0.5− | | | | |

**2000 $DQ_{32}$ = 2006 $SH_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.21215 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26664929 | $\omega$ | 95.84323 | | +0.41248128 | −0.91030342 | |
| $a$ | 2.3906120 | $\Omega$ | 329.72098 | | +0.80616136 | +0.38251972 | |
| $e$ | 0.2757979 | $i$ | 3.95082 | | +0.42422053 | +0.15819720 | |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.9+ | 0.6− | 2006 09 18 | 703 | 0.2− | 1.0− | 2006 11 02 | 703 | 0.7− | 0.0 |
| 2000 02 29 | 704 | 0.7+ | 0.2− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 0.2− | 1.0+ | 2006 09 18 | 703 | 0.5− | 0.6+ | 2006 11 02 | 703 | 0.7+ | 0.4− |
| 2000 02 29 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 704 | 0.4+ | 0.2− | 2006 11 10 | 644 | 0.4+ | 0.1+ |
| 2000 03 03 | 704 | 1.7+ | 0.9− | 2006 09 25 | 704 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2000 03 03 | 704 | 1.1+ | 0.3+ | 2006 09 25 | 704 | (0.8+ | 1.6−) | 2006 11 14 | 703 | 0.1+ | 0.7− |
| 2000 03 03 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.7+ | 0.3− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 14 | 703 | 1.0− | 0.5+ |
| 2000 03 03 | 704 | 0.4+ | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.3+ |
| 2000 03 11 | 704 | 1.2− | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.5− | 0.2− |
| 2000 03 11 | 704 | 0.9− | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 1.1− | 0.3− | 2006 10 19 | 703 | 0.4− | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.6− |
| 2000 03 11 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.4− | 2006 11 16 | 704 | 0.7+ | 0.3+ |
| 2000 03 11 | 699 | 0.0 | 1.0+ | 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 16 | 704 | 1.0+ | 0.3+ |
| 2000 03 11 | 699 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.5− | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 2000 03 11 | 699 | 0.2+ | 0.2− | 2006 10 20 | A50 | 0.8+ | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.1+ |
| 2000 03 11 | 699 | 0.6+ | 0.1+ | 2006 10 20 | 704 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.4+ | 0.2− |
| 2000 03 25 | 691 | 0.6− | 0.6− | 2006 10 20 | 704 | 0.6− | 0.5+ | 2006 11 22 | 703 | 0.3+ | 0.3+ |
| 2000 03 25 | 691 | 0.4− | 0.4− | 2006 10 20 | 704 | 0.2− | 0.5− | 2006 11 22 | 703 | 0.5− | 0.1+ |
| 2000 03 25 | 691 | 0.3− | 0.1+ | 2006 10 20 | 704 | (1.6− | 0.1+) | 2006 11 28 | 704 | 0.0 | 0.9+ |
| 2006 09 18 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.6− |
| 2006 09 18 | 704 | 0.5+ | 1.3− | 2006 10 27 | 703 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.5− | 0.3− |
| 2006 09 18 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.1− | 0.5+ |
| 2006 09 18 | 704 | 0.0 | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.9− | 0.4+ |
| 2006 09 18 | 703 | 0.2− | 0.7− | 2006 11 02 | 703 | 0.3− | 0.1− | | | | |

**2000 $DE_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.98254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17456504 | $\omega$ | 286.77680 | | +0.06154638 | −0.99313354 | |
| $a$ | 3.1707685 | $\Omega$ | 158.92288 | | +0.98826853 | +0.04667751 | |
| $e$ | 0.2747607 | $i$ | 16.05998 | | +0.13977606 | +0.10727056 | |
| $P$ | 5.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 691 | 0.1+ | 0.5− | 2000 03 11 | 699 | 0.1+ | 0.6+ | 2004 12 10 | 703 | 0.3− | 0.3− |
| 1999 11 14 | 691 | 0.1+ | 0.5− | 2000 03 11 | 699 | 0.3+ | 0.2− | 2004 12 10 | 703 | 0.1− | 0.3− |
| 1999 11 14 | 691 | 0.2+ | 0.5− | 2000 03 11 | 699 | 0.0 | 0.1− | 2004 12 10 | 703 | 0.5+ | 0.3+ |
| 2000 02 29 | 704 | 0.4− | 0.1− | 2004 10 07 | 704 | 0.0 | 0.4− | 2004 12 10 | 699 | 0.1− | 0.0 |
| 2000 02 29 | 704 | 0.3− | 0.1+ | 2004 10 07 | 704 | 0.4− | 0.1+ | 2004 12 10 | 699 | 0.1+ | 0.1+ |
| 2000 02 29 | 704 | 0.5− | 0.1− | 2004 10 07 | 704 | 0.0 | 0.4+ | 2004 12 10 | 699 | 0.7− | 0.6+ |
| 2000 02 29 | 704 | 0.1+ | 0.4+ | 2004 10 07 | 704 | 0.7+ | 0.2+ | 2004 12 10 | 699 | 0.4− | 1.1− |
| 2000 02 29 | 704 | 0.3− | 0.0 | 2004 10 07 | 704 | 0.3+ | 0.1+ | 2004 12 18 | 703 | 1.0+ | 0.2+ |
| 2000 03 03 | 704 | 0.3+ | 0.2+ | 2004 10 18 | 704 | 0.9+ | 0.1+ | 2004 12 18 | 703 | 0.1+ | 0.1− |
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2004 10 18 | 704 | 0.3− | 0.3+ | 2004 12 18 | 703 | 0.4− | 0.5+ |
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2004 10 18 | 704 | 0.9− | 0.1− | 2004 12 18 | 703 | 0.5− | 0.2+ |
| 2000 03 03 | 704 | 0.0 | 0.7+ | 2004 10 18 | 704 | 0.6+ | 0.5+ | 2005 02 04 | 703 | 1.2+ | 0.7− |
| 2000 03 11 | 704 | 1.2− | 0.6− | 2004 11 19 | 699 | 0.3− | 0.8+ | 2005 02 04 | 703 | 0.8+ | 0.3+ |
| 2000 03 11 | 704 | 0.3− | 0.9+ | 2004 11 19 | 699 | 0.6− | 0.5+ | 2005 02 04 | 703 | 0.7− | 0.3− |
| 2000 03 11 | 704 | 0.2+ | 0.9+ | 2004 11 19 | 699 | 0.4+ | 0.0 | 2005 02 04 | 703 | 0.0 | 0.5− |
| 2000 03 11 | 704 | 0.7+ | 0.5+ | 2004 11 19 | 699 | 0.5− | 0.3+ | | | | |
| 2000 03 11 | 699 | 0.2− | 0.1+ | 2004 12 10 | 703 | 0.4− | 0.0 | | | | |

**2000 $DY_{43}$ = 2006 $QH_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.49462 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22704627 | $\omega$ | 137.12862 | | +0.41384391 | +0.90651263 | |
| $a$ | 2.6610915 | $\Omega$ | 156.93331 | | −0.88223063 | +0.42198564 | |
| $e$ | 0.0412186 | $i$ | 12.30137 | | −0.22450463 | +0.01276621 | |
| $P$ | 4.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 24 | 809 | 0.2− | 0.8− | 2000 03 03 | 704 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.3+ |
| 1993 08 24 | 809 | 0.7− | 0.1+ | 2000 03 03 | 704 | 0.4+ | 0.1+ | 2006 08 27 | 699 | 1.4+ | 1.1+ |
| 1993 08 24 | 809 | 0.4+ | 1.1− | 2002 10 15 | 644 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.3+ | 0.3+ |
| 2000 02 14 | 691 | 0.3+ | 0.2− | 2002 10 15 | 644 | 0.4− | 0.1− | 2006 08 27 | 699 | 1.0+ | 0.7+ |
| 2000 02 14 | 691 | 0.0 | 0.1− | 2002 10 15 | 644 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 14 | 691 | 0.1+ | 0.1− | 2004 04 15 | 645 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.2− | 0.5+ |
| 2000 02 29 | 704 | 0.3− | 0.0 | 2004 04 15 | 645 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.4− | 0.6+ |
| 2000 02 29 | 704 | 0.1− | 0.1+ | 2005 05 13 | 699 | (0.2− | 2.3−) | 2006 09 14 | 703 | 0.0 | 0.5+ |
| 2000 02 29 | 704 | 0.7+ | 1.9+ | 2005 05 13 | 699 | 0.1+ | 1.1− | 2006 09 14 | 703 | 0.1+ | 0.2− |
| 2000 02 29 | 704 | 0.0 | 0.1+ | 2005 05 13 | 699 | 0.9− | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.5+ |
| 2000 02 29 | 704 | 0.3+ | 1.6+ | 2005 05 13 | 699 | 0.7− | 0.9+ | 2006 09 14 | 703 | 0.8− | 0.7− |
| 2000 03 03 | 704 | 0.1+ | 0.6+ | 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 2000 03 03 | 704 | 0.9+ | 0.8+ | 2006 08 19 | 644 | 0.5− | 0.0 | 2006 09 30 | 703 | (2.9+ | 0.7+) |
| 2000 03 03 | 704 | 0.9+ | 0.0 | 2006 08 19 | 644 | 0.8− | 0.0 | | | | |

**2000 DQ$_{55}$ = 2006 SN$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.34968 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21918147 | $\omega$ | 209.95532 | | −0.96482584 | +0.26057026 | |
| $a$ | 2.7243746 | $\Omega$ | 345.02724 | | −0.20635956 | −0.83279225 | |
| $e$ | 0.2086096 | $i$ | 7.75132 | | −0.16287059 | −0.48842626 | |
| $P$ | 4.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.2+ | 0.5+ | 2000 03 03 | 704 | 0.5+ | 1.0+ | 2000 03 11 | 704 | 0.2− | 0.4+ |
| 2000 02 29 | 704 | 0.3+ | 1.2+ | 2000 03 04 | 691 | 0.0 | 0.5− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2000 02 29 | 704 | 0.0 | 1.1+ | 2000 03 04 | 691 | 0.1− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2000 02 29 | 704 | 0.3+ | 1.7+ | 2000 03 04 | 691 | 0.0 | 0.7− | 2006 09 25 | G96 | 0.5+ | 0.0 |
| 2000 03 02 | 691 | 0.1− | 0.3− | 2000 03 04 | 049 | 0.8+ | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 2000 03 02 | 691 | 0.2− | 0.2− | 2000 03 04 | 049 | 0.5+ | 0.4− | 2006 09 27 | G96 | 0.4− | 0.0 |
| 2000 03 02 | 691 | 0.1− | 0.5− | 2000 03 04 | 049 | 0.8+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.1− | 0.9+ | 2000 03 11 | 704 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.1+ | 1.3+ | 2000 03 11 | 704 | 0.2− | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2000 03 03 | 704 | 0.1− | 0.7+ | 2000 03 11 | 704 | 0.0 | 0.5+ | | | | |
| 2000 03 03 | 704 | 0.3− | 0.8+ | 2000 03 11 | 704 | 0.3− | 0.5+ | | | | |

**2000 DM$_{91}$ = 2006 SK$_{356}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.83353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23985864 | $\omega$ | 184.71543 | | +0.99212074 | +0.12422760 | |
| $a$ | 2.5654633 | $\Omega$ | 168.11149 | | −0.11221432 | +0.93877836 | |
| $e$ | 0.1497662 | $i$ | 4.52322 | | −0.05571704 | +0.32134515 | |
| $P$ | 4.11 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.2− | 0.1+ | 2000 03 09 | 691 | 0.3− | 0.3− | 2006 09 30 | 703 | 1.1− | 0.5+ |
| 2000 02 27 | 691 | 0.1+ | 0.2+ | 2000 03 09 | 691 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2000 02 27 | 691 | 0.1− | 0.2+ | 2002 11 22 | 644 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2000 03 04 | 691 | 0.0 | 0.1+ | 2002 11 22 | 644 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2000 03 04 | 691 | 0.1− | 0.2+ | 2002 11 22 | 644 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.2− | 0.1− |
| 2000 03 04 | 691 | 0.1+ | 0.3− | 2004 02 29 | 691 | 0.1− | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2000 03 08 | 691 | 0.4− | 0.2− | 2004 02 29 | 691 | 0.3+ | 0.6+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2000 03 08 | 691 | 0.4+ | 0.7− | 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.8+ | 0.2− |
| 2000 03 08 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.5− | 0.6− | 2006 11 22 | G96 | 0.7+ | 0.3− |
| 2000 03 09 | 691 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.0 | 0.6+ | 2006 11 22 | G96 | 0.4+ | 0.2− |

**2000 DH$_{97}$ = 2006 UA$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.61611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22957710 | $\omega$ | 236.43327 | | −0.90451597 | +0.41222553 | |
| $a$ | 2.6414983 | $\Omega$ | 327.52200 | | −0.29165443 | −0.78479385 | |
| $e$ | 0.1292380 | $i$ | 11.73175 | | −0.31110857 | −0.46278367 | |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.1− | 0.7+ | 2000 03 05 | 704 | 0.7+ | 0.5− | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 2000 02 29 | 704 | 0.4+ | 1.7+ | 2000 03 11 | 704 | 0.4− | 0.4+ | 2006 10 19 | 691 | 0.4+ | 0.1+ |
| 2000 02 29 | 704 | 0.7− | 1.2− | 2000 03 11 | 704 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2000 02 29 | 704 | 0.7− | 0.4− | 2000 03 11 | 704 | 0.1+ | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2000 02 29 | 704 | 0.5− | 0.3− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.4− |
| 2000 03 05 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.2+ | 0.1+ |
| 2000 03 05 | 704 | 0.5+ | 0.4+ | 2006 10 17 | 691 | 0.6− | 0.4− | | | | |

**2000 DF$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.18393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21607114 | $\omega$ | 228.27616 | | +0.95463243 | −0.28255185 | |
| $a$ | 2.7504571 | $\Omega$ | 147.80426 | | +0.29742808 | +0.92019413 | |
| $e$ | 0.2487655 | $i$ | 10.16454 | | −0.01461006 | +0.27093767 | |
| $P$ | 4.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 28 | 704 | (0.3− | 2.2−) | 2000 02 11 | 691 | 0.2− | 0.3− | 2006 04 21 | 691 | 0.0 | 0.1+ |
| 1998 08 28 | 704 | 0.3+ | 1.6− | 2000 02 11 | 691 | 0.3− | 0.0 | 2006 04 21 | 691 | 0.0 | 0.0 |
| 1998 08 28 | 704 | 1.8− | 0.1+ | 2000 02 11 | 691 | 0.2− | 0.3− | 2006 04 25 | 691 | 0.1− | 0.0 |
| 1998 08 28 | 704 | 1.1+ | 1.0− | 2000 02 26 | 691 | 0.0 | 0.3− | 2006 04 25 | 691 | 0.1− | 0.1− |
| 1998 08 28 | 704 | 1.2+ | 0.7− | 2000 02 26 | 691 | 0.8+ | 0.5− | 2006 04 25 | 691 | 1.1+ | 0.8− |
| 1998 10 18 | 699 | 0.1+ | 0.2− | 2000 02 26 | 691 | 0.3+ | 0.2− | 2006 04 29 | 691 | 1.8+ | 0.7+ |
| 1998 10 18 | 699 | 0.5− | 0.8+ | 2000 03 03 | 704 | 0.9+ | 1.1− | 2006 04 29 | 691 | 0.2+ | 0.0 |
| 1998 10 18 | 699 | 0.2− | 1.5+ | 2000 03 03 | 704 | 0.3+ | 1.8+ | 2006 04 29 | 691 | 1.5− | 0.0 |
| 2000 02 11 | 691 | 0.0 | 0.0 | 2000 03 03 | 704 | 0.1− | 1.1+ | 2006 06 19 | 691 | 1.1− | 0.9− |
| 2000 02 11 | 691 | 0.5− | 0.1+ | 2000 03 03 | 704 | 0.2+ | 1.2+ | 2006 06 19 | 691 | 0.2− | 0.2+ |
| 2000 02 11 | 691 | 0.2− | 0.4+ | 2006 04 21 | 691 | 0.1+ | 0.4+ | 2006 06 19 | 691 | 0.4− | 0.5+ |

**2000 EM$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.53715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26674181 | $\omega$ | 207.30587 | | −0.96132504 | −0.27425176 | |
| $a$ | 2.3900591 | $\Omega$ | 316.75196 | | +0.25894944 | −0.86873821 | |
| $e$ | 0.1893947 | $i$ | 2.11624 | | +0.09380485 | −0.41240744 | |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.3− | 0.1− | 2000 03 04 | 704 | 0.0 | 0.3− | 2000 03 11 | 704 | 0.9+ | 1.1+ |
| 2000 01 28 | 691 | 0.1− | 0.3− | 2000 03 04 | 704 | 0.3− | 0.5− | 2000 03 11 | 699 | 0.8+ | 0.0 |
| 2000 01 28 | 691 | 0.2− | 0.3− | 2000 03 04 | 704 | 0.2+ | 0.4− | 2000 03 11 | 704 | 0.0 | 0.3− |
| 2000 02 05 | 691 | 0.2− | 0.1− | 2000 03 04 | 704 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2000 02 05 | 691 | 0.3− | 0.3− | 2000 03 04 | 704 | 0.4− | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2000 02 05 | 691 | 0.0 | 0.2− | 2000 03 11 | 699 | 0.3+ | 0.8+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2000 03 03 | 704 | 0.4+ | 0.7+ | 2000 03 11 | 704 | 0.4− | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.5+ | 0.8+ | 2000 03 11 | 699 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.7+ | 0.3+ | 2000 03 11 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2000 03 03 | 704 | 0.8+ | 0.6+ | 2000 03 11 | 699 | 0.0 | 0.2− | | | | |
| 2000 03 03 | 704 | 0.2+ | 0.7+ | 2000 03 11 | 704 | 0.0 | 0.8+ | | | | |

**2000 EU$_3$ = 2006 WV$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.73653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25940634 | $\omega$ | 316.10055 | | −0.46446434 | −0.88549231 | |
| $a$ | 2.4349067 | $\Omega$ | 161.56250 | | +0.82365344 | −0.43743891 | |
| $e$ | 0.1072482 | $i$ | 2.40578 | | +0.32537346 | −0.15668622 | |
| $P$ | 3.80 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 12 | 691 | 0.3− | 0.3+ | 2000 03 04 | 704 | 0.5− | 0.6+ | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 1998 09 12 | 691 | 0.2− | 0.3+ | 2000 03 04 | 704 | 0.5− | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 1998 09 12 | 691 | 0.1− | 0.2− | 2000 03 04 | 704 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 1998 10 01 | 691 | 0.4+ | 0.2− | 2000 03 11 | 704 | (1.0+ | 2.2+) | 2006 11 16 | G96 | 0.3− | 0.0 |
| 1998 10 01 | 691 | 0.2+ | 0.3− | 2000 03 11 | 704 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 1998 10 01 | 691 | 0.0 | 0.0 | 2000 03 11 | 704 | 0.6+ | 0.1+ | 2006 11 20 | H07 | (0.6− | 1.6+) |
| 2000 02 25 | 691 | 0.4+ | 0.0 | 2000 03 11 | 704 | 1.5+ | 0.9− | 2006 11 20 | H07 | 0.5− | 0.5+ |
| 2000 02 25 | 691 | 0.4− | 0.3− | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 11 20 | H07 | 0.4− | 0.7+ |
| 2000 02 25 | 691 | (0.5− | 2.5−) | 2004 03 16 | 691 | 0.3− | 0.1+ | 2006 11 20 | H07 | (0.6− | 1.7+) |
| 2000 03 03 | 704 | 0.6− | 0.0 | 2004 03 16 | 691 | 0.3+ | 0.0 | 2006 11 21 | H07 | 0.3+ | 0.2− |
| 2000 03 03 | 704 | 0.2− | 0.9− | 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 11 21 | H07 | 0.1+ | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.8− | 0.1− | 2004 04 13 | 691 | 0.1− | 0.5+ | 2006 11 21 | H07 | 1.2+ | 0.9+ |
| 2000 03 03 | 704 | 0.2− | 1.1− | 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2000 03 03 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.1+ |
| 2000 03 03 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2000 03 03 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.3− |

**2000 EB$_7$ = 2006 VA$_{45}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.50614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25572681 | $\omega$ | 336.53082 | | −0.88831264 | −0.45923308 | |
| $a$ | 2.4582075 | $\Omega$ | 176.12908 | | +0.42671664 | −0.82730279 | |
| $e$ | 0.1517509 | $i$ | 2.01450 | | +0.16974557 | −0.32353528 | |
| $P$ | 3.85 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 25 | 691 | 0.2+ | 0.7− | 2000 03 05 | 704 | 0.5− | 0.3− | 2000 03 10 | 704 | 0.5+ | 0.8+ |
| 2000 02 25 | 691 | 0.7− | 0.4+ | 2000 03 08 | 691 | 0.3+ | 0.5− | 2000 03 11 | 691 | 0.0 | 0.2− |
| 2000 02 25 | 691 | 0.1+ | 0.4− | 2000 03 08 | 691 | 0.3+ | 0.3− | 2000 03 11 | 691 | 0.3− | 0.4− |
| 2000 03 03 | 704 | 0.7+ | 0.4+ | 2000 03 08 | 691 | 0.6− | 0.2+ | 2000 03 11 | 691 | 0.4− | 0.4− |
| 2000 03 03 | 691 | 0.3+ | 0.3− | 2000 03 08 | 691 | 0.3+ | 0.2− | 2000 03 12 | 691 | 0.4− | 0.2− |
| 2000 03 03 | 704 | 0.1+ | 1.6+ | 2000 03 08 | 691 | 0.2+ | 0.4− | 2000 03 12 | 691 | 0.4− | 0.5− |
| 2000 03 03 | 704 | 0.1− | 0.2+ | 2000 03 08 | 691 | 0.1+ | 0.6+ | 2000 03 12 | 691 | 0.5− | 0.2− |
| 2000 03 03 | 691 | 0.5+ | 0.5− | 2000 03 09 | 691 | 0.5+ | 0.4+ | 2000 03 15 | 691 | 0.1− | 0.5− |
| 2000 03 03 | 704 | 0.1+ | 1.0+ | 2000 03 09 | 691 | 0.2+ | 0.0 | 2000 03 15 | 691 | 0.0 | 0.3− |
| 2000 03 03 | 691 | 0.3+ | 0.4− | 2000 03 09 | 691 | 0.3+ | 0.0 | 2000 03 15 | 691 | 0.2− | 0.3− |
| 2000 03 03 | 704 | 1.0+ | 1.1+ | 2000 03 10 | 704 | 0.6+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2000 03 04 | 691 | 0.4− | 0.2− | 2000 03 10 | 704 | 0.4+ | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2000 03 04 | 691 | 0.6− | 0.2− | 2000 03 10 | 704 | 0.4+ | 0.8+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2000 03 04 | 691 | 0.6− | 0.4− | 2000 03 10 | 691 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.6+ | 0.5+ |
| 2000 03 05 | 704 | 0.1− | 1.2− | 2000 03 10 | 704 | 1.0+ | 1.1+ | 2006 11 15 | 621 | 0.3− | 0.0 |
| 2000 03 05 | 704 | 0.9− | 0.2− | 2000 03 10 | 691 | 0.0 | 0.2− | 2006 11 15 | 621 | 0.1+ | 0.0 |
| 2000 03 05 | 704 | 1.0− | 0.6+ | 2000 03 10 | 691 | 0.2− | 0.1− | 2006 11 15 | 621 | 0.3− | 0.1+ |

**2000 EJ$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.74436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29833022 | $\omega$ | 328.40432 | | −0.38571333 | −0.92138628 | |
| $a$ | 2.2182197 | $\Omega$ | 144.22039 | | +0.86257060 | −0.37846372 | |
| $e$ | 0.0757255 | $i$ | 4.67684 | | +0.32740981 | −0.08838860 | |
| $P$ | 3.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.5− | 1.6− | 2000 03 09 | 704 | 0.9− | 0.1− | 2005 11 04 | 703 | 0.3− | 0.6+ |
| 2000 03 03 | 704 | 0.3− | 0.2+ | 2000 03 09 | 704 | 0.4+ | 0.6+ | 2005 11 04 | 703 | 0.1− | 0.7− |
| 2000 03 03 | 704 | 0.3+ | 0.6− | 2000 03 09 | 704 | 0.4− | 0.4+ | 2005 11 04 | 703 | 0.6− | 0.3+ |
| 2000 03 03 | 704 | 0.7− | 0.7+ | 2002 12 31 | 704 | 0.2− | 0.2− | 2005 11 10 | 703 | 1.0+ | 0.3− |
| 2000 03 03 | 704 | 0.6− | 0.3− | 2002 12 31 | 704 | 0.5− | 0.4+ | 2005 11 10 | 703 | 0.3− | 0.1− |
| 2000 03 05 | 704 | 0.3+ | 0.2+ | 2002 12 31 | 704 | 0.7+ | 0.1− | 2005 11 10 | 703 | 0.1− | 1.1+ |
| 2000 03 05 | 704 | 0.4+ | 0.4− | 2005 11 03 | 703 | 0.6+ | 0.3+ | 2005 11 10 | 703 | 0.9− | 0.4+ |
| 2000 03 05 | 704 | 1.5+ | 1.0+ | 2005 11 03 | 703 | 0.3+ | 0.6+ | 2005 11 25 | 703 | 0.0 | 0.3+ |
| 2000 03 05 | 704 | 0.4− | 0.1− | 2005 11 03 | 703 | 0.0 | 0.5− | 2005 11 25 | 703 | 0.1− | 0.1− |
| 2000 03 05 | 704 | 1.1+ | 0.5− | 2005 11 03 | 703 | 0.1− | 0.6− | 2005 11 25 | 703 | 0.2− | 0.1+ |
| 2000 03 09 | 704 | 0.2− | 0.3+ | 2005 11 04 | 703 | 0.1+ | 0.0 | 2005 11 25 | 703 | 0.7+ | 1.5− |

**2000 ET$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.28119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17405086 | $\omega$ | 347.76845 | | +0.87696315 | +0.46270843 | |
| $a$ | 3.1770101 | $\Omega$ | 342.76283 | | −0.39570746 | +0.54209230 | |
| $e$ | 0.1204200 | $i$ | 25.96864 | | −0.27267425 | +0.70145338 | |
| $P$ | 5.66 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.1+ | 0.4+ | 2000 03 10 | 691 | 0.2− | 0.6− | 2002 09 29 | 608 | 0.5+ | 2.5+ |
| 2000 03 03 | 691 | 0.1+ | 0.0 | 2002 08 13 | 704 | 0.1− | 0.3+ | 2005 03 08 | 703 | 1.2− | 0.1+ |
| 2000 03 03 | 704 | 0.4+ | 0.7+ | 2002 08 13 | 704 | 0.1− | 1.3− | 2005 03 08 | 703 | 0.3+ | 0.6+ |
| 2000 03 03 | 704 | 0.8+ | 1.3+ | 2002 08 13 | 704 | 0.1− | 0.8− | 2005 03 08 | 703 | 0.7+ | 0.3− |
| 2000 03 03 | 691 | 0.2− | 0.1− | 2002 08 13 | 704 | 0.0 | 0.4− | 2005 03 08 | 703 | 0.1− | 0.4+ |
| 2000 03 03 | 704 | 1.4+ | 0.4+ | 2002 08 13 | 704 | 0.7+ | 2.3− | 2006 03 04 | 703 | (0.1− | 3.0−) |
| 2000 03 03 | 704 | 0.2− | 0.4+ | 2002 08 13 | 644 | 0.1− | 0.5− | 2006 03 04 | 703 | 0.1− | 0.7+ |
| 2000 03 03 | 691 | 0.3− | 0.2− | 2002 08 13 | 644 | 0.3− | 0.4− | 2006 03 04 | 703 | 0.4+ | 0.6+ |
| 2000 03 05 | 704 | 0.5+ | 0.8+ | 2002 08 13 | 644 | 0.3− | 0.5− | 2006 03 04 | 703 | 0.0 | 1.5+ |
| 2000 03 05 | 704 | 0.4+ | 0.7+ | 2002 08 19 | 644 | 0.3− | 0.2− | 2006 03 05 | 699 | 2.0+ | 0.6+ |
| 2000 03 05 | 704 | 0.6− | 1.6+ | 2002 08 19 | 644 | 0.4+ | 0.1+ | 2006 03 05 | 699 | 0.5+ | 0.1+ |
| 2000 03 05 | 704 | 0.1+ | 0.9+ | 2002 08 19 | 644 | 0.2− | 0.1+ | 2006 03 05 | 699 | 0.2+ | 1.1+ |
| 2000 03 10 | 691 | 0.3− | 0.5− | 2002 09 29 | 608 | 0.0 | 1.8+ | 2006 03 05 | 699 | 0.3− | 0.1+ |
| 2000 03 10 | 691 | 0.2− | 0.8− | 2002 09 29 | 608 | 0.3+ | 2.2+ | | | | |

**2000 EX$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.32311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26966524 | $\omega$ | 43.93875 | | −0.82200139 | +0.56948445 | |
| $a$ | 2.3727541 | $\Omega$ | 170.77535 | | −0.52434530 | −0.75609989 | |
| $e$ | 0.1609338 | $i$ | 0.38826 | | −0.22220650 | −0.32249096 | |
| $P$ | 3.65 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 25 | 691 | 0.0 | 0.2+ | 2000 03 11 | 704 | 0.8− | 0.1− | 2004 04 23 | 599 | 0.3+ | 0.1+ |
| 2000 02 25 | 691 | 0.0 | 0.4− | 2000 03 11 | 691 | 0.0 | 0.0 | 2004 04 23 | 599 | 0.0 | 0.2+ |
| 2000 02 25 | 691 | 0.0 | 0.2+ | 2000 03 11 | 691 | 0.2+ | 0.1− | 2004 04 23 | 599 | 0.2+ | 0.0 |
| 2000 03 03 | 704 | 0.8+ | 0.9+ | 2000 03 11 | 691 | 0.0 | 0.2− | 2004 05 15 | 704 | 0.5+ | 0.6+ |
| 2000 03 03 | 704 | 0.1− | 1.8+ | 2000 03 12 | 691 | 0.1+ | 0.3+ | 2004 05 15 | 704 | 0.2− | 0.3− |
| 2000 03 03 | 704 | 1.2+ | 0.6+ | 2000 03 12 | 691 | 0.1+ | 0.1− | 2004 05 15 | 704 | 0.2+ | 0.0 |
| 2000 03 03 | 704 | 0.6+ | 0.4+ | 2000 03 12 | 691 | 0.1− | 0.0 | 2004 05 15 | 704 | 0.5− | 0.4+ |
| 2000 03 03 | 704 | 0.4+ | 1.1+ | 2000 03 15 | 691 | 0.4− | 0.0 | 2004 05 15 | 704 | 0.4+ | 0.1+ |
| 2000 03 03 | 691 | 0.2+ | 0.1− | 2000 03 15 | 691 | 0.9− | 0.1− | 2004 06 09 | E12 | 0.7− | 0.4+ |
| 2000 03 03 | 691 | 0.1− | 0.1+ | 2000 03 15 | 691 | 0.2− | 0.3− | 2004 06 09 | E12 | 0.4+ | 0.4+ |
| 2000 03 03 | 691 | 0.2+ | 0.1+ | 2000 03 15 | 691 | 0.2+ | 0.2− | 2004 06 09 | E12 | 0.1− | 0.5+ |
| 2000 03 05 | 704 | 0.7+ | 0.2+ | 2000 03 15 | 691 | 0.1+ | 0.3− | 2004 06 09 | E12 | 0.3− | 0.6+ |
| 2000 03 05 | 704 | 0.0 | 1.7+ | 2000 03 15 | 691 | 0.0 | 0.4− | 2005 10 05 | 691 | 0.2+ | 0.0 |
| 2000 03 05 | 704 | 0.7+ | 0.3+ | 2001 09 18 | 691 | 0.2+ | 0.0 | 2005 10 05 | 691 | 0.3+ | 0.1+ |
| 2000 03 05 | 704 | 0.7+ | 0.2− | 2001 09 18 | 691 | 0.2− | 0.6+ | 2005 10 05 | 691 | 0.1− | 0.1+ |
| 2000 03 05 | 704 | 0.4− | 0.6+ | 2001 09 18 | 691 | 0.6− | 0.4+ | 2005 10 25 | G96 | 0.5− | 0.3+ |
| 2000 03 11 | 704 | 0.2+ | 0.1+ | 2003 01 04 | 291 | 0.0 | 0.1+ | 2005 10 25 | G96 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.0 | 1.1+ | 2003 01 04 | 291 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.4+ | 0.8+ |
| 2000 03 11 | 704 | 0.4+ | 1.3+ | 2003 01 04 | 291 | 0.3− | 0.2+ | 2005 10 25 | G96 | 0.5− | 0.1− |

**2000 EZ$_{15}$ = 2006 TF$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.79292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24157262 | $\omega$ | 358.41729 | | +0.94418126 | +0.32880613 | |
| $a$ | 2.5533141 | $\Omega$ | 342.34551 | | −0.30150610 | +0.83781861 | |
| $e$ | 0.0199368 | $i$ | 3.82017 | | −0.13272459 | +0.43582853 | |
| $P$ | 4.08 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 691 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.4− | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2000 03 03 | 691 | 0.3+ | 0.2− | 2006 10 17 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2000 03 03 | 691 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2000 03 08 | 691 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2000 03 08 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.1+ |
| 2000 03 08 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.4+ |
| 2000 03 10 | 691 | 0.8− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2000 03 10 | 691 | 0.6− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2000 03 10 | 691 | 0.0 | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2006 10 15 | 691 | 0.2+ | 0.6− | 2006 10 21 | 691 | 0.4− | 0.2− | 2006 11 01 | 691 | 0.5+ | 0.1+ |
| 2006 10 15 | 691 | 0.5+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.0 |

**2000 EF$_{16}$ = 2006 RC$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.31062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24442138 | $\omega$ | 290.04319 | | −0.18849431 | | −0.98206767 |
| $a$ | 2.5334359 | $\Omega$ | 170.81951 | | +0.90926723 | | −0.17590572 |
| $e$ | 0.0998995 | $i$ | 1.29451 | | +0.37108356 | | −0.06782534 |
| $P$ | 4.03 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.2− | 0.4− | 2004 03 23 | 291 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 1996 03 11 | 691 | 0.2+ | 0.1− | 2004 03 23 | 291 | 0.3+ | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 1996 03 11 | 691 | 0.1− | 0.2+ | 2004 03 23 | 291 | 0.4+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2000 03 03 | 704 | 1.2+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2000 03 03 | 704 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.4+ | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 1.3− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2000 03 04 | 691 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 1.0+ | 0.2+ |
| 2000 03 04 | 691 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.4+ | 0.1− | 2006 10 16 | G96 | 0.6− | 0.7+ |
| 2000 03 04 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2000 03 08 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.4+ |
| 2000 03 08 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2000 03 08 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.7+ | 0.5− |

**2000 EK$_{30}$ = 1985 SK$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.67102 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23864898 | $\omega$ | 315.76729 | | +0.80607232 | | +0.59072087 |
| $a$ | 2.5741251 | $\Omega$ | 8.25752 | | −0.44917732 | | +0.65027077 |
| $e$ | 0.1925832 | $i$ | 14.51796 | | −0.38534031 | | +0.47769947 |
| $P$ | 4.13 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 09 20 | 809 | 1.2+ | 1.6− | 2002 10 14 | 704 | 0.0 | 0.4− | 2004 03 23 | 704 | 0.6+ | 0.7+ |
| 1985 09 20 | 809 | 1.3+ | 1.6− | 2002 10 30 | 704 | 1.1− | 0.6+ | 2004 03 23 | 704 | 0.6+ | 0.2− |
| 1985 09 20 | 809 | 1.5+ | 1.4− | 2002 10 30 | 704 | 0.6+ | 0.8− | 2004 03 23 | 704 | 0.0 | 0.7+ |
| 2000 02 04 | 704 | 1.0− | 0.4+ | 2002 10 30 | 704 | 0.5− | 0.1− | 2004 04 14 | 644 | 0.4− | 0.1− |
| 2000 02 04 | 704 | 0.4+ | 1.0+ | 2002 10 30 | 704 | 0.1− | 0.0 | 2004 04 14 | 644 | 0.2− | 0.3− |
| 2000 02 04 | 704 | 1.4+ | 0.6+ | 2002 11 07 | 704 | 0.3+ | 0.7− | 2004 04 14 | 644 | 0.5− | 0.4+ |
| 2000 03 02 | 703 | (1.7− | 3.0+) | 2002 11 07 | 704 | 0.5+ | 0.6− | 2004 04 22 | 704 | 0.4+ | 0.2+ |
| 2000 03 02 | 703 | 1.1+ | 1.2− | 2002 11 07 | 704 | 0.4+ | 0.4− | 2004 04 22 | 704 | 0.2+ | 0.7− |
| 2000 03 02 | 703 | 0.3+ | 0.4− | 2002 12 07 | 704 | 0.4− | 0.0 | 2004 04 22 | 704 | 1.2+ | 0.2− |
| 2000 03 02 | 703 | 1.2− | 1.1+ | 2002 12 07 | 704 | 0.1+ | 0.4+ | 2006 08 23 | 704 | 0.6+ | 0.2− |
| 2000 03 05 | 704 | 0.2+ | 0.0 | 2002 12 07 | 704 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.2+ | 0.7+ |
| 2000 03 05 | 704 | 0.1+ | 0.3+ | 2002 12 07 | 704 | 0.3+ | 0.4+ | 2006 08 23 | 704 | 1.0− | 0.8+ |
| 2000 03 05 | 704 | 0.3− | 0.9+ | 2002 12 07 | 704 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.0 | 0.2+ |
| 2000 03 05 | 704 | 0.5+ | 0.5+ | 2003 01 28 | 645 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.8− | 0.9+ |
| 2000 03 09 | 704 | 0.1− | 0.1− | 2003 01 28 | 645 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.2− | 0.5− |
| 2000 03 09 | 704 | 0.3− | 0.0 | 2003 02 02 | 704 | (1.5+ | 0.6−) | 2006 08 29 | 703 | (1.5− | 0.5+) |
| 2000 03 09 | 704 | 0.2+ | 0.4− | 2003 02 02 | 704 | 1.4+ | 1.2− | 2006 08 29 | 703 | 0.0 | 0.0 |
| 2000 03 09 | 704 | 0.1+ | 0.3− | 2003 02 02 | 704 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 1.2− | 0.6+ |
| 2000 03 09 | 704 | 0.1+ | 0.2− | 2003 02 02 | 704 | (1.7+ | 0.2−) | 2006 08 29 | 703 | 0.3+ | 0.2+ |
| 2000 03 09 | 704 | 0.7− | 0.1− | 2004 01 30 | 704 | 0.4− | 0.6− | 2006 08 29 | 703 | 0.6− | 1.2+ |
| 2000 03 09 | 704 | 0.1− | 0.5− | 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 08 30 | 704 | 1.4− | 0.3+ |
| 2000 03 09 | 704 | 0.1+ | 0.2− | 2004 01 30 | 704 | (0.3− | 1.8+) | 2006 08 30 | 704 | 0.1− | 0.2+ |
| 2000 03 09 | 704 | 0.4+ | 0.1− | 2004 01 30 | 704 | (0.2+ | 2.1+) | 2006 08 30 | 704 | 1.3− | 0.9+ |
| 2000 03 09 | 704 | 0.4− | 0.5+ | 2004 02 11 | 644 | 0.3− | 0.4− | 2006 08 30 | 704 | 0.1− | 0.7+ |
| 2000 03 12 | 704 | 0.0 | 0.3+ | 2004 02 11 | 644 | 0.1− | 0.2− | 2006 10 02 | 704 | 0.4− | 0.5+ |
| 2000 03 12 | 704 | 0.5− | 0.2− | 2004 02 11 | 644 | 0.1− | 0.2− | 2006 10 02 | 704 | 0.5− | 0.5+ |
| 2000 03 12 | 704 | 0.4+ | 0.3− | 2004 02 14 | 608 | 0.1− | 0.0 | 2006 10 02 | 704 | 0.4− | 0.8+ |
| 2000 03 12 | 704 | 0.3+ | 0.3+ | 2004 02 14 | 608 | 0.6− | 0.3− | 2006 10 02 | 704 | 0.3− | 0.9+ |
| 2000 03 12 | 704 | 0.1+ | 0.6+ | 2004 02 14 | 608 | 0.3+ | 0.3− | 2006 10 23 | 703 | 0.6− | 0.0 |
| 2000 03 28 | 704 | 0.6− | 0.5+ | 2004 02 16 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 703 | 0.9− | 0.1+ |
| 2000 03 28 | 704 | 0.4− | 0.3− | 2004 02 16 | 704 | 0.2− | 0.3− | 2006 10 23 | 703 | 0.3− | 0.6+ |
| 2000 03 28 | 704 | 0.4+ | 0.9+ | 2004 02 16 | 704 | 0.0 | 0.1− | 2006 10 29 | 703 | 0.2+ | 0.1+ |
| 2002 09 07 | 704 | 0.8− | 1.0− | 2004 02 16 | 704 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 1.1− | 1.1− | 2004 02 16 | 704 | 0.3− | 0.0 | 2006 10 29 | 703 | 0.1+ | 0.1+ |
| 2002 09 07 | 704 | 0.9− | 0.8− | 2004 03 14 | 704 | 0.2+ | 0.6− | 2006 10 29 | 703 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.1+ | 1.1+ | 2004 03 14 | 704 | 0.0 | 0.7− | 2006 11 14 | 704 | 1.1+ | 0.6+ |
| 2002 10 05 | 704 | 0.8+ | 0.2+ | 2004 03 14 | 704 | 0.3+ | 0.4− | 2006 11 14 | 704 | 0.9+ | 1.1+ |
| 2002 10 05 | 704 | 0.8− | 0.5+ | 2004 03 18 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.8+ | 1.2+ |
| 2002 10 05 | 704 | 0.2+ | 1.5− | 2004 03 18 | 644 | 0.1− | 0.3− | 2006 11 14 | 704 | 1.0+ | 0.9+ |
| 2002 10 14 | 704 | 0.4− | 0.8+ | 2004 03 18 | 644 | 0.1− | 0.2− | 2006 11 21 | 703 | 0.5− | 0.4+ |
| 2002 10 14 | 704 | 0.4− | 0.5+ | 2004 03 23 | 704 | 0.4+ | 1.0+ | 2006 11 21 | 703 | 0.5− | 1.0+ |
| 2002 10 14 | 704 | 0.7+ | 0.5+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 703 | 0.9− | 0.7+ |

**2000 EH$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.60168 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18767230 | $\omega$ | 309.11433 | | −0.67295225 | | −0.73968056 |
| $a$ | 3.0213608 | $\Omega$ | 183.18530 | | +0.69333552 | | −0.62945198 |
| $e$ | 0.1557747 | $i$ | 2.90609 | | +0.25772296 | | −0.23803964 |
| $P$ | 5.25 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 691 | 0.1− | 0.1+ | 2003 09 28 | 291 | 0.1− | 0.6+ | 2005 03 13 | 691 | 0.1− | 0.3+ |
| 2000 03 03 | 691 | 0.4− | 0.1+ | 2003 09 28 | 291 | 0.1− | 0.5+ | 2005 03 13 | 691 | 0.2− | 0.0 |
| 2000 03 03 | 691 | 0.3− | 0.1+ | 2003 09 28 | 291 | 0.2− | 0.1+ | 2005 03 13 | 691 | 0.3− | 0.1+ |
| 2000 03 10 | 691 | 0.5+ | 0.4− | 2005 01 17 | 691 | 0.1+ | 0.4− | 2005 04 06 | G96 | 0.6− | 0.3− |
| 2000 03 10 | 691 | 0.2+ | 0.3− | 2005 01 17 | 691 | 0.6+ | 0.1+ | 2005 04 06 | G96 | 0.2+ | 0.1− |
| 2000 03 10 | 691 | 0.1− | 0.2− | 2005 01 17 | 691 | 0.0 | 0.3+ | 2005 04 06 | G96 | 0.6− | 0.1+ |
| 2000 03 11 | 704 | 0.7+ | 0.5+ | 2005 02 02 | 691 | 0.1− | 0.2+ | 2005 04 06 | G96 | 0.0 | 0.1+ |
| 2000 03 11 | 704 | 0.4+ | 1.1+ | 2005 02 02 | 691 | 0.2− | 0.1+ | 2006 05 24 | 691 | 0.1− | 0.6+ |
| 2000 03 11 | 704 | 0.2+ | 0.2− | 2005 02 02 | 691 | 0.0 | 0.2+ | 2006 05 24 | 691 | 0.2+ | 0.1+ |
| 2000 03 14 | 691 | 0.0 | 0.1− | 2005 03 02 | 691 | 0.2+ | 0.0 | 2006 05 24 | 691 | 0.3+ | 0.7+ |
| 2000 03 14 | 691 | 0.0 | 0.1− | 2005 03 02 | 691 | 0.5+ | 0.3+ | | | | |
| 2000 03 14 | 691 | 0.3− | 0.0 | 2005 03 02 | 691 | 0.0 | 0.1+ | | | | |

**2000 ET$_{52}$ = 2006 RQ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.18194 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22650347 | $\omega$ | 172.08730 | | +0.94413886 | | +0.32886375 |
| $a$ | 2.6653412 | $\Omega$ | 168.64392 | | −0.30794999 | | +0.90336177 |
| $e$ | 0.0413048 | $i$ | 6.18774 | | −0.11733975 | | +0.27529283 |
| $P$ | 4.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 691 | 0.0 | 0.6+ | 2005 06 01 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2000 03 03 | 691 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.1− | 2006 09 19 | D35 | 0.8+ | 0.1+ |
| 2000 03 03 | 691 | 0.5− | 0.3+ | 2005 06 13 | 691 | 0.2+ | 0.0 | 2006 09 19 | D35 | 0.4+ | 0.8+ |
| 2000 03 10 | 691 | 0.2+ | 0.0 | 2005 06 13 | 691 | 0.1+ | 0.0 | 2006 09 19 | D35 | 0.2− | 0.5+ |
| 2000 03 10 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2000 03 10 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.2+ |
| 2000 03 12 | 691 | 0.3− | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2000 03 12 | 691 | 0.0 | 0.3+ | 2006 09 12 | 703 | 1.0− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2000 03 12 | 691 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.6− | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2000 03 14 | 691 | 0.4+ | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2000 03 14 | 691 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 0.3+ | 0.8+ | 2006 11 17 | G96 | 0.4− | 0.5+ |
| 2000 03 14 | 691 | 0.0 | 0.2− | 2006 09 19 | 703 | (0.4+ | 2.2+) | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2005 06 01 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.1− | | | | |
| 2005 06 01 | 691 | 0.2+ | 0.1− | 2006 09 19 | 703 | (0.3− | 1.7−) | | | | |

**2000 EP$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.64851 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30688164 | $\omega$ | 40.12762 | | −0.33411539 | | +0.94236418 |
| $a$ | 2.1768180 | $\Omega$ | 210.36589 | | −0.87353005 | | −0.31669064 |
| $e$ | 0.1286208 | $i$ | 2.01727 | | −0.35399456 | | −0.10796658 |
| $P$ | 3.21 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 0.5+ | 0.2− | 2000 04 05 | 704 | 0.1+ | 0.5− | 2004 09 14 | 699 | 0.1− | 0.4+ |
| 2000 03 10 | 704 | 0.6− | 0.4+ | 2000 04 05 | 704 | 0.6− | 0.7+ | 2004 09 14 | 699 | 0.8+ | 1.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 0.3+ | 0.5+ | 2000 04 05 | 704 | 0.0 | 1.0− | 2004 09 14 | 699 | 0.2+ | 1.6+ |
| 2000 03 10 | 704 | 0.1+ | 0.3+ | 2004 09 09 | 704 | 0.7+ | 0.2+ | 2004 09 14 | 699 | 1.8− | 0.5+ |
| 2000 03 10 | 704 | 0.5+ | 0.6+ | 2004 09 09 | 704 | 0.1− | 1.1+ | 2004 09 22 | 691 | 0.1− | 0.1− |
| 2000 03 11 | 704 | 0.3− | 0.7+ | 2004 09 09 | 704 | 0.2+ | 0.3+ | 2004 09 22 | 691 | 0.7− | 0.3− |
| 2000 03 11 | 704 | (0.5+ | 2.2+) | 2004 09 09 | 699 | 1.7+ | 1.0+ | 2004 09 22 | 691 | 0.5− | 0.3− |
| 2000 03 11 | 704 | 0.7− | 0.6+ | 2004 09 09 | 699 | 1.4+ | 0.8− | 2004 10 11 | 691 | 0.3− | 0.3+ |
| 2000 03 11 | 704 | 0.0 | 0.7+ | 2004 09 09 | 699 | 0.0 | 0.2− | 2004 10 11 | 691 | 0.2+ | 0.3− |
| 2000 04 05 | 704 | 1.3+ | 1.4− | 2004 09 09 | 699 | 1.1+ | 1.3+ | 2004 10 11 | 691 | 0.1+ | 0.0 |

**2000 EF$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.22404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23096884 | $\omega$ | 299.02932 | | +0.00384136 | +0.99328822 | |
| $a$ | 2.6308765 | $\Omega$ | 330.50131 | | −0.81628224 | −0.06366259 | |
| $e$ | 0.0943755 | $i$ | 13.57808 | | −0.57764051 | +0.09656909 | |
| $P$ | 4.27 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 1.1+ | 0.8+ | 2005 06 09 | E12 | 0.4− | 0.1+ | 2006 09 19 | 699 | 1.2+ | 1.2+ |
| 2000 02 06 | 695 | 0.4+ | 0.4+ | 2005 06 09 | E12 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.9+ |
| 2000 02 26 | 691 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.3− |
| 2000 02 26 | 691 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 09 21 | A13 | 0.4− | 0.3− |
| 2000 02 26 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 21 | A13 | 0.3− | 1.2− |
| 2000 03 10 | 691 | 0.2+ | 0.2− | 2006 08 29 | 703 | 1.4+ | 0.2+ | 2006 09 21 | A13 | 0.4+ | 0.1− |
| 2000 03 10 | 691 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.2− | 1.1+ | 2006 09 27 | 699 | 0.1+ | 0.8+ |
| 2000 03 10 | 691 | 0.2+ | 0.1− | 2006 08 29 | 699 | 0.2+ | 1.3+ | 2006 09 27 | 699 | 1.1− | 0.8+ |
| 2000 03 12 | 691 | 0.2− | 0.1+ | 2006 08 29 | 699 | (0.6− | 2.0+) | 2006 09 27 | 699 | 0.1+ | 0.6+ |
| 2000 03 12 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 699 | 0.3+ | 0.2− | 2006 09 27 | 699 | 0.4− | 0.1− |
| 2000 03 12 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.4− | 0.4− |
| 2002 10 06 | 704 | 1.0+ | 0.6− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.4− |
| 2002 10 06 | 704 | 0.7− | 1.0− | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.3− |
| 2002 10 06 | 704 | 0.2+ | 1.0− | 2006 09 16 | 703 | 0.9− | 0.6+ | 2006 10 23 | 703 | 0.8− | 1.4− |
| 2002 10 06 | 704 | 0.3− | 0.2+ | 2006 09 16 | 703 | 1.1− | 0.2+ | 2006 10 23 | 703 | 0.1+ | 1.2− |
| 2002 10 06 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 703 | 0.4+ | 0.2− | 2006 10 23 | 703 | 1.1− | 0.5+ |
| 2005 06 09 | E12 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.9+ | 0.4− | 2006 10 23 | 703 | 0.9− | 0.5− |
| 2005 06 09 | E12 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.8+ | 0.0 | | | | |

**2000 EZ$_{72}$ = 2006 WT$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.40328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26362918 | $\omega$ | 348.38732 | | −0.81885909 | −0.57255359 | |
| $a$ | 2.4088351 | $\Omega$ | 156.54164 | | +0.53446775 | −0.78637980 | |
| $e$ | 0.1333668 | $i$ | 5.86051 | | +0.20931796 | −0.23192498 | |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.7+ | 0.7+ | 2000 03 10 | 691 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2000 03 03 | 704 | 0.3+ | 0.5− | 2000 03 12 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2000 03 03 | 704 | 0.1+ | 0.3− | 2000 03 12 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2000 03 03 | 704 | 0.7+ | 0.1+ | 2000 03 12 | 691 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.8− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2000 03 10 | 691 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.0 | | | | |
| 2000 03 10 | 691 | 0.5− | 0.4− | 2006 11 21 | G96 | 0.0 | 0.1+ | | | | |

**2000 EO$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.47273 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26412458 | $\omega$ | 347.19146 | | −0.09435772 | −0.99360278 | |
| $a$ | 2.4058221 | $\Omega$ | 108.19701 | | +0.91905183 | −0.11089700 | |
| $e$ | 0.2090797 | $i$ | 3.74500 | | +0.38267525 | +0.02133925 | |
| $P$ | 3.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 0.8+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.6− |
| 2000 02 11 | 704 | 0.4− | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.9− | 0.4− |
| 2000 02 11 | 704 | 0.8− | 0.5− | 2006 10 22 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2000 03 02 | 703 | 1.0− | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2000 03 02 | 703 | 0.6+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2000 03 02 | 703 | 0.4− | 0.4+ | 2006 11 13 | 703 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2000 03 02 | 703 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2000 03 05 | 704 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.4− | 0.1+ |
| 2000 03 05 | 704 | 1.0− | 1.3− | 2006 11 14 | 704 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.8+ | 0.3− |
| 2000 03 05 | 704 | 0.7+ | 0.3− | 2006 11 14 | 704 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.4− | 0.2− |
| 2000 03 05 | 704 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.6− |
| 2000 03 12 | 704 | 0.2+ | 0.7− | 2006 11 14 | 704 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.7+ |
| 2000 03 12 | 704 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.3− | 2006 11 28 | 704 | 0.2− | 0.6+ |
| 2000 03 12 | 704 | 0.1− | 0.8+ | 2006 11 16 | G96 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.1− | 0.5+ |
| 2000 03 12 | 704 | 0.2+ | 0.6+ | 2006 11 16 | G96 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2000 03 12 | 704 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.9+ |
| 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.7+ | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.7− | 0.6− | | | | |
| 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.3− | | | | |

**2000 EL$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.68323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21876636 | $\omega$ | 306.81883 | | −0.09720681 | −0.98629837 | |
| $a$ | 2.7278199 | $\Omega$ | 147.97541 | | +0.97432051 | −0.12163379 | |
| $e$ | 0.1762523 | $i$ | 14.55784 | | +0.20310191 | +0.11144837 | |
| $P$ | 4.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.3+ | 0.2− | 2000 03 12 | 704 | 0.0 | 0.4+ | 2002 08 27 | 644 | 0.0 | 0.2− |
| 2000 03 05 | 704 | 0.6+ | 0.5+ | 2002 08 08 | 644 | 0.1− | 0.1+ | 2002 08 27 | 644 | 0.3− | 0.2+ |
| 2000 03 05 | 704 | 1.6+ | 0.3+ | 2002 08 08 | 644 | 0.2− | 0.3+ | 2002 08 27 | 644 | 0.0 | 0.6− |
| 2000 03 05 | 704 | 0.2− | 0.5− | 2002 08 08 | 644 | 0.2− | 0.2− | 2002 09 15 | 644 | 0.1+ | 0.3+ |
| 2000 03 12 | 704 | 0.9− | 0.4− | 2002 08 17 | 644 | 0.3− | 0.5− | 2002 09 15 | 644 | 0.0 | 0.2− |
| 2000 03 12 | 704 | 1.3− | 0.3− | 2002 08 17 | 644 | 0.5+ | 0.3+ | 2002 09 15 | 644 | 0.1+ | 0.4+ |
| 2000 03 12 | 704 | 0.2− | 0.4+ | 2002 08 17 | 644 | 0.5+ | 0.2+ | | | | |

**2000 ET$_{114}$ = 2006 UM$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.36285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25875375 | $\omega$ | 199.34247 | | −0.64142719 | −0.76666666 | |
| $a$ | 2.4389990 | $\Omega$ | 290.56634 | | +0.70778175 | −0.57719753 | |
| $e$ | 0.1517257 | $i$ | 1.72399 | | +0.29600027 | −0.28118543 | |
| $P$ | 3.81 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.0 | 0.9+ | 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2000 03 03 | 704 | 0.5− | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.3+ |
| 2000 03 03 | 704 | 0.5+ | 0.2+ | 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 11 09 | 691 | 0.4− | 0.2+ |
| 2000 03 03 | 704 | 0.3+ | 1.1+ | 2006 10 17 | 691 | 0.7− | 0.5+ | 2006 11 09 | 691 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.1− | 0.8+ | 2006 10 17 | 691 | 0.3+ | 0.3− | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2000 03 10 | 691 | 0.4− | 0.5− | 2006 10 17 | 691 | 0.4+ | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2000 03 10 | 691 | 0.3− | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2000 03 10 | 691 | 0.6− | 0.4− | 2006 10 21 | 691 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.7− |
| 2000 03 11 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2000 03 11 | 704 | 0.8+ | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.7− |
| 2000 03 11 | 704 | 1.8+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.7− |
| 2000 03 11 | 704 | 1.5+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.2− | | | | |

**2000 EZ$_{114}$ = 2006 SR$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.75498 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24565545 | $\omega$ | 121.60196 | | −0.01569494 | −0.99957835 | |
| $a$ | 2.5249442 | $\Omega$ | 329.26882 | | +0.90041198 | −0.00350606 | |
| $e$ | 0.0890539 | $i$ | 2.74011 | | +0.43475503 | −0.02882409 | |
| $P$ | 4.01 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.4− | 0.7+ | 2004 02 17 | 291 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2000 03 03 | 704 | 1.0+ | 1.8+ | 2004 02 26 | 704 | (0.7+ | 1.8+) | 2006 09 26 | 691 | 0.4+ | 0.2+ |
| 2000 03 03 | 704 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.7− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2000 03 03 | 704 | 0.1− | 0.9+ | 2004 02 26 | 704 | 0.5− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2000 03 10 | 691 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.9− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2000 03 10 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | (1.8+ | 0.5+) | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2000 03 10 | 691 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2000 03 11 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.8+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2000 03 11 | 704 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.6− | 0.3− |
| 2000 03 11 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.5− |
| 2000 03 11 | 704 | 0.9+ | 0.6− | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2000 03 11 | 704 | 0.5− | 0.2+ | 2006 09 23 | 152 | (3.8+ | 4.5−) | 2006 11 18 | G96 | 0.0 | 0.7− |
| 2004 02 17 | 291 | 0.1− | 0.0 | 2006 09 23 | 152 | 0.4− | 1.0− | 2006 11 18 | G96 | 0.1− | 0.6− |
| 2004 02 17 | 291 | 0.2+ | 0.1− | 2006 09 23 | 152 | 0.4+ | 0.0 | | | | |

**2000 EN$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.72766 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22228596 | $\omega$ | 17.92755 | | −0.98577263 | | −0.14436130 |
| $a$ | 2.6989491 | $\Omega$ | 153.31302 | | +0.12092779 | | −0.96486638 |
| $e$ | 0.1214495 | $i$ | 11.05178 | | +0.11674239 | | −0.21952832 |
| $P$ | 4.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 02 | 703 | 1.7+ | 0.3− | 2002 12 07 | 291 | 0.5− | 0.1+ | 2005 06 09 | 703 | 0.8+ | 0.4+ |
| 2000 03 02 | 703 | 1.3− | 0.1+ | 2002 12 07 | 291 | 0.4+ | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.1+ |
| 2000 03 02 | 703 | 0.2− | 0.9+ | 2005 05 14 | 691 | 0.2+ | 0.0 | 2005 06 14 | 691 | 0.3+ | 0.2+ |
| 2000 03 02 | 703 | 0.8− | 1.4+ | 2005 05 14 | 691 | 0.2+ | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 699 | 0.8+ | 0.3+ | 2005 05 14 | 691 | 1.0− | 0.6− | 2006 07 18 | G96 | 0.3− | 0.2+ |
| 2000 03 11 | 699 | 0.7+ | 0.6+ | 2005 06 02 | 703 | 0.5+ | 0.2+ | 2006 07 18 | G96 | 0.8− | 0.3− |
| 2000 03 11 | 699 | 0.7+ | 0.7+ | 2005 06 02 | 703 | 0.4+ | 0.1− | 2006 07 18 | G96 | 0.3− | 0.1+ |
| 2000 03 11 | 699 | 0.9+ | 0.5+ | 2005 06 02 | 703 | 0.2+ | 1.1+ | 2006 07 18 | G96 | 0.8− | 0.1− |
| 2000 03 12 | 704 | 0.1− | 0.8+ | 2005 06 02 | 703 | 0.1+ | 0.4+ | 2006 08 28 | 691 | 0.3+ | 0.3+ |
| 2000 03 12 | 704 | 0.0 | 0.9− | 2005 06 09 | 703 | 0.8− | 0.2− | 2006 08 28 | 691 | 0.0 | 0.3+ |
| 2000 03 12 | 704 | 0.6− | 0.4+ | 2005 06 09 | 703 | 0.9− | 0.0 | 2006 08 28 | 691 | 0.4+ | 0.3+ |
| 2002 12 07 | 291 | 0.5− | 0.2+ | 2005 06 09 | 703 | 0.3− | 0.3− | | | | |

**2000 EC$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.17064 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30661366 | $\omega$ | 182.96033 | | +0.14914212 | | +0.97874008 |
| $a$ | 2.1780862 | $\Omega$ | 95.64684 | | −0.90428941 | | +0.19260743 |
| $e$ | 0.2386627 | $i$ | 8.13385 | | −0.40002162 | | −0.07049992 |
| $P$ | 3.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 1.0+ | 0.0 | 2000 03 27 | 704 | 1.4− | 0.5− | 2004 10 07 | 704 | 0.1− | 0.1+ |
| 2000 03 09 | 704 | 0.8+ | 0.6+ | 2000 03 27 | 704 | 0.5− | 0.3+ | 2004 10 07 | 704 | 0.0 | 0.7+ |
| 2000 03 09 | 704 | 0.6− | 0.1+ | 2000 03 27 | 704 | 0.4− | 0.1+ | 2004 10 07 | 704 | 0.2+ | 0.3− |
| 2000 03 09 | 704 | 0.2− | 1.0− | 2000 03 27 | 704 | 0.7+ | 0.6− | 2004 10 18 | 704 | 0.6− | 0.1− |
| 2000 03 09 | 704 | 0.6− | 0.0 | 2000 03 27 | 704 | 0.5+ | 1.1− | 2004 10 18 | 704 | 0.2+ | 0.0 |
| 2000 03 12 | 704 | 0.3+ | 0.4− | 2000 03 27 | 704 | 0.5+ | 0.2+ | 2004 10 18 | 704 | 0.2+ | 0.0 |
| 2000 03 12 | 704 | 0.3− | 0.7+ | 2000 03 27 | 704 | 0.1+ | 0.4− | 2004 10 18 | 704 | 0.7+ | 0.5+ |
| 2000 03 12 | 704 | (2.5− | 0.0 ) | 2000 03 27 | 704 | 0.6− | 0.3+ | 2004 10 18 | 704 | 0.2− | 0.3− |
| 2000 03 26 | 699 | 1.6− | 0.9+ | 2004 10 04 | 644 | 0.2− | 0.3− | 2004 11 01 | 644 | 0.0 | 0.2− |
| 2000 03 26 | 699 | 1.1+ | 1.1+ | 2004 10 04 | 644 | 0.3− | 0.1− | 2004 11 01 | 644 | 0.2− | 0.1− |
| 2000 03 26 | 699 | 0.4+ | 0.1− | 2004 10 04 | 644 | 0.2− | 0.3− | 2004 11 01 | 644 | 0.1− | 0.1+ |
| 2000 03 26 | 699 | 1.1+ | 0.4− | 2004 10 07 | 704 | (2.4− | 0.6+) | | | | |
| 2000 03 27 | 704 | 0.3− | 0.0 | 2004 10 07 | 704 | 0.6+ | 0.3+ | | | | |

**2000 EV$_{151}$ = 2002 UA$_{55}$ = 2006 RW$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.51998 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23224832 | $\omega$ | 12.14661 | | −0.94366200 | | +0.32805032 |
| $a$ | 2.6212050 | $\Omega$ | 187.44840 | | −0.32467230 | | −0.94322426 |
| $e$ | 0.1822740 | $i$ | 19.56770 | | −0.06395254 | | −0.05206711 |
| $P$ | 4.24 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 691 | 0.1− | 0.5+ | 2000 03 06 | 608 | 0.5− | 0.8− | 2006 09 19 | 691 | 0.3+ | 0.1− |
| 1993 09 16 | 691 | 0.3− | 0.5+ | 2000 03 06 | 608 | 0.5− | 0.8− | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 1993 09 16 | 691 | 0.9+ | 0.3+ | 2000 03 08 | 704 | 0.7− | 1.2+ | 2006 09 19 | 691 | 0.2+ | 0.2− |
| 1996 03 16 | 691 | 0.3+ | 0.7+ | 2000 03 08 | 704 | 1.2− | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.0 |
| 1996 03 16 | 691 | 0.3+ | 0.4+ | 2000 03 08 | 704 | 0.5+ | 0.1− | 2006 09 24 | 691 | 0.2+ | 0.2+ |
| 1996 03 16 | 691 | 0.2+ | 0.4+ | 2000 03 08 | 704 | 1.2+ | 1.6+ | 2006 09 24 | 691 | 0.0 | 0.0 |
| 1996 03 22 | 566 | 1.6− | 0.2− | 2000 03 08 | 704 | 1.5+ | 1.5+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1996 03 22 | 566 | 1.4− | 0.1+ | 2002 10 29 | 645 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 1996 03 22 | 566 | 1.6− | 0.2+ | 2002 10 29 | 645 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.2+ |
| 2000 03 03 | 703 | 0.8+ | 0.4− | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2000 03 03 | 703 | 0.9+ | 0.4− | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2000 03 03 | 703 | 0.4+ | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2000 03 03 | 703 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2000 03 06 | 608 | 0.5− | 1.1− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2+ |

**2000 EQ$_{169}$ = 2005 HA$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.87098 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20406977 | $\omega$ | 342.52189 | | +0.13340679 | | −0.95156976 |
| $a$ | 2.8572633 | $\Omega$ | 99.12264 | | +0.93950357 | | +0.03245877 |
| $e$ | 0.1086593 | $i$ | 16.29171 | | +0.31549275 | | +0.30571459 |
| $P$ | 4.83 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.0 | 0.7+ | 2004 01 21 | 704 | 0.4+ | 0.7− | 2005 04 02 | 703 | 0.3+ | 0.2+ |
| 2000 03 04 | 704 | 0.5− | 0.7+ | 2004 01 21 | 704 | 0.1− | 0.1− | 2005 04 02 | 699 | 1.0+ | 0.3− |
| 2000 03 04 | 704 | 0.1+ | 0.8+ | 2004 02 26 | 704 | 0.1+ | 0.1− | 2005 04 02 | 703 | 0.2− | 1.2− |
| 2000 03 04 | 704 | 0.2+ | 0.6+ | 2004 02 26 | 704 | 1.0− | 0.1− | 2005 04 02 | 703 | 0.7− | 0.0 |
| 2000 03 12 | 704 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.8− | 0.5− | 2005 04 02 | 703 | 0.2− | 0.7− |
| 2000 03 12 | 704 | 0.9+ | 0.0 | 2004 02 26 | 704 | 1.7− | 0.5− | 2005 04 02 | 699 | 0.8+ | 0.1+ |
| 2000 03 12 | 704 | 0.7+ | 0.3− | 2004 03 15 | 291 | 0.5+ | 0.1+ | 2005 04 02 | 699 | 0.7+ | 0.9+ |
| 2000 03 12 | 704 | 0.5− | 0.2− | 2004 03 15 | 291 | 0.6+ | 0.2− | 2005 04 02 | 699 | 0.9+ | 0.8+ |
| 2003 11 30 | 704 | 0.1+ | 0.0 | 2004 03 15 | 291 | 0.5+ | 0.0 | 2005 04 12 | 704 | 0.0 | 1.5+ |
| 2003 11 30 | 704 | 0.4− | 0.1+ | 2005 01 15 | 703 | 0.3− | 0.8+ | 2005 04 12 | 704 | 0.8+ | 0.9+ |
| 2003 11 30 | 704 | 0.9− | 1.4+ | 2005 01 15 | 703 | 0.8− | 0.4− | 2005 04 12 | 704 | 1.4+ | 0.6+ |
| 2003 11 30 | 704 | 0.1− | 0.3− | 2005 01 15 | 703 | 1.5− | 1.2− | 2005 04 17 | 703 | 1.0− | 0.4− |
| 2003 12 14 | 644 | 0.3− | 0.3− | 2005 01 15 | 703 | 0.8− | 1.6− | 2005 04 17 | 703 | 0.4+ | 0.7+ |
| 2003 12 14 | 644 | 0.1− | 0.2− | 2005 03 08 | 704 | 0.9− | 0.9+ | 2005 04 17 | 703 | 0.2− | 0.7− |
| 2003 12 14 | 644 | 0.9− | 0.8+ | 2005 03 08 | 704 | 1.1+ | 0.3+ | 2005 04 17 | 703 | 0.5− | 0.1− |
| 2003 12 22 | 704 | 0.4+ | 0.3+ | 2005 03 08 | 704 | 0.9+ | 0.1− | 2005 05 02 | 703 | 1.3− | 0.5− |
| 2003 12 22 | 704 | 0.1+ | 0.6+ | 2005 03 08 | 704 | 1.4+ | 0.5− | 2005 05 02 | 703 | 0.7− | 0.9− |
| 2003 12 22 | 704 | 0.2+ | 0.4+ | 2005 03 15 | 703 | 0.6− | 0.5− | 2005 05 02 | 703 | 1.1− | 0.4+ |
| 2003 12 22 | 704 | 0.3− | 0.5− | 2005 03 15 | 703 | 0.5− | 0.4+ | 2005 05 02 | 703 | 0.9− | 0.3+ |
| 2004 01 21 | 704 | 0.3+ | 0.5− | 2005 03 15 | 703 | 0.1− | 0.5− | | | | |
| 2004 01 21 | 704 | 0.2+ | 0.1− | 2005 03 15 | 703 | 0.8+ | 0.7− | | | | |

**2000 EH$_{178}$ = 2006 UX$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.52245 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26216274 | $\omega$ | 124.31527 | | −0.22291695 | | −0.97467052 |
| $a$ | 2.4178094 | $\Omega$ | 338.54354 | | +0.87741274 | | −0.19254071 |
| $e$ | 0.1488309 | $i$ | 2.82668 | | +0.42479985 | | −0.11377808 |
| $P$ | 3.76 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 26 | 691 | 0.1+ | 0.2+ | 2000 03 04 | 691 | 0.6+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2000 02 26 | 691 | 0.3+ | 0.0 | 2000 03 12 | 691 | 0.5− | 0.4− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2000 02 26 | 691 | 0.6+ | 0.1− | 2000 03 12 | 691 | 0.3− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2000 02 26 | 691 | 0.5− | 0.1− | 2000 03 12 | 691 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.1+ |
| 2000 02 26 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2000 02 26 | 691 | 0.5− | 0.4+ | 2006 10 19 | G96 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2000 03 04 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.2+ | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2000 03 04 | 691 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.4− | | | | |

**2000 ES$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.96496 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27654901 | $\omega$ | 124.67414 | | −0.26013793 | | −0.96468381 |
| $a$ | 2.3332144 | $\Omega$ | 340.27978 | | +0.84091527 | | −0.20527701 |
| $e$ | 0.0606600 | $i$ | 7.04641 | | +0.47454164 | | −0.16506515 |
| $P$ | 3.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.0 | 2002 12 05 | 704 | 0.3− | 0.1+ | 2004 05 22 | 704 | 0.1+ | 1.1+ |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.7+ | 0.4− | 2004 05 22 | 704 | 1.2+ | 1.4+ |
| 2000 03 03 | 704 | 0.5− | 0.3− | 2002 12 05 | 704 | 1.5− | 0.1− | 2005 08 29 | 691 | 0.2− | 0.4+ |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2002 12 15 | 704 | 0.1− | 0.4+ | 2005 08 29 | 691 | 0.1+ | 0.5+ |
| 2000 03 03 | 704 | 0.5− | 0.6+ | 2002 12 15 | 704 | 1.0− | 0.4+ | 2005 08 29 | 691 | 0.1− | 0.3+ |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2002 12 15 | 704 | 0.2+ | 0.5+ | 2005 09 09 | 704 | 2.1− | 1.6+ |
| 2000 03 03 | 704 | 1.3− | 0.2+ | 2002 12 15 | 704 | 0.1+ | 0.4+ | 2005 09 09 | 704 | 0.8− | 1.3+ |
| 2000 03 11 | 704 | 0.6+ | 0.3+ | 2003 01 04 | 704 | 0.4+ | 0.7+ | 2005 09 09 | 704 | 0.7+ | 0.3+ |
| 2000 03 11 | 704 | 0.1+ | 0.3+ | 2003 01 04 | 704 | 0.1+ | 0.0 | 2005 09 09 | 704 | 0.5− | 0.1+ |
| 2000 03 11 | 704 | 1.1+ | 0.8+ | 2003 01 04 | 704 | 0.9+ | 0.8+ | 2005 09 22 | 644 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.3+ | 0.1− | 2003 01 04 | 704 | 1.2+ | 0.6+ | 2005 09 22 | 644 | 0.3− | 0.4+ |
| 2000 03 11 | 704 | 0.5+ | 0.3+ | 2003 01 04 | 704 | 0.5− | 0.2− | 2005 09 22 | 644 | 0.5− | 0.1+ |
| 2002 12 05 | 704 | 0.3− | 1.5− | 2004 05 22 | 704 | 0.7− | 0.2− | | | | |

**2000 EF$_{208}$ = 2006 JM$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.60791 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17607115 | $\omega$ | 350.26941 | | −0.99779748 | | −0.06360905 |
| $a$ | 3.1526608 | $\Omega$ | 186.17742 | | +0.06624181 | | −0.97042324 |
| $e$ | 0.1857650 | $i$ | 10.07084 | | −0.00349386 | | −0.23287899 |
| $P$ | 5.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2000 04 02 | 691 | 0.7− | 0.1− | 2006 05 05 | 699 | 0.2− | 0.6+ |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2000 04 02 | 691 | 1.0− | 0.0 | 2006 05 05 | 699 | 0.9+ | 0.2+ |
| 2000 03 11 | 704 | 0.8+ | 0.8+ | 2000 04 02 | 691 | 0.5− | 0.3− | 2006 05 05 | 699 | 1.4− | 0.8− |
| 2000 03 11 | 704 | 0.7+ | 0.6+ | 2000 04 27 | 691 | 0.1+ | 0.1+ | 2006 05 19 | 699 | 0.4− | 0.5+ |
| 2000 03 11 | 704 | 0.8+ | 0.4+ | 2000 04 27 | 691 | 0.1+ | 0.1+ | 2006 05 19 | 699 | 0.8− | 0.6+ |
| 2000 03 11 | 704 | 0.0 | 0.9+ | 2000 04 27 | 691 | 0.4+ | 0.2+ | 2006 05 19 | 699 | 1.2+ | 0.1+ |
| 2000 03 11 | 704 | 0.7+ | 1.2+ | 2006 05 05 | 699 | 0.1+ | 1.2− | 2006 05 19 | 699 | 0.5+ | 0.3− |

**2000 FX$_9$ = 2006 SW$_{98}$ = 2006 SS$_{369}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.24632 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22802215 | $\omega$ | 241.63643 | | −0.10967263 | | +0.99354668 |
| $a$ | 2.6534935 | $\Omega$ | 22.12357 | | −0.88294879 | | −0.08401524 |
| $e$ | 0.0334196 | $i$ | 4.40560 | | −0.45647929 | | −0.07620001 |
| $P$ | 4.32 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.5+ | 0.3− |
| 2000 03 30 | 691 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.1+ |
| 2000 03 30 | 691 | 0.6+ | 0.2+ | 2006 09 18 | 691 | 0.5− | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.6+ |
| 2000 04 01 | 691 | 0.2− | 0.1+ | 2006 09 24 | 691 | 0.5− | 0.4+ | 2006 10 15 | 691 | 0.6+ | 0.1− |
| 2000 04 01 | 691 | 0.1+ | 0.5− | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.4− | 0.2+ |
| 2000 04 01 | 691 | 0.0 | 0.2− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.7− |
| 2000 04 03 | 691 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.7− | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2000 04 03 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 10 27 | 691 | 0.0 | 0.3− |
| 2000 04 03 | 691 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 2000 04 05 | 704 | 0.2+ | 0.7+ | 2006 09 25 | G96 | 0.5− | 0.5− | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2000 04 05 | 704 | 1.4+ | 1.3+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2000 04 05 | 704 | 0.6+ | 1.7+ | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2000 04 05 | 704 | 0.4+ | 1.1+ | 2006 09 28 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 0.2+ | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.7+ |
| 2000 04 06 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.8− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2000 04 06 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1− | | | | |
| 2000 04 06 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.3− | | | | |

**2000 FA$_{21}$ = 2006 WG$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.07092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27839618 | $\omega$ | 118.98562 | | −0.83181071 | | +0.54153355 |
| $a$ | 2.3228823 | $\Omega$ | 94.04929 | | −0.54222375 | | −0.74586101 |
| $e$ | 0.1386620 | $i$ | 7.01291 | | −0.11867750 | | −0.38785663 |
| $P$ | 3.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 703 | 0.4− | 0.6− | 2000 04 03 | 704 | 0.2− | 0.1− | 2000 04 27 | 699 | 0.7+ | 0.3+ |
| 2000 03 12 | 703 | 0.3+ | 0.0 | 2000 04 03 | 704 | 0.6− | 0.6− | 2000 04 27 | 699 | 0.1+ | 0.3− |
| 2000 03 12 | 703 | 0.2− | 0.3− | 2000 04 03 | 704 | 0.6+ | 0.0 | 2000 04 27 | 699 | 0.1+ | 0.7+ |
| 2000 03 12 | 703 | 0.4− | 0.1+ | 2000 04 03 | 704 | 0.1+ | 0.6− | 2000 04 30 | 608 | 0.4+ | 0.3+ |
| 2000 03 12 | 704 | 0.3− | 0.3+ | 2000 04 08 | 704 | 0.6+ | 0.2− | 2000 04 30 | 608 | 0.1+ | 1.0+ |
| 2000 03 12 | 704 | 0.3+ | 0.1+ | 2000 04 08 | 704 | 0.0 | 0.6− | 2000 04 30 | 608 | 0.6+ | 0.3− |
| 2000 03 12 | 704 | 0.8− | 0.6+ | 2000 04 08 | 704 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.5+ |
| 2000 03 12 | 704 | 0.1+ | 0.2− | 2000 04 08 | 704 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.4− | 0.4+ |
| 2000 03 29 | 704 | 0.7− | 0.5− | 2000 04 08 | 704 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2000 03 29 | 704 | 0.4+ | 1.1− | 2000 04 13 | 704 | 0.0 | 0.2+ | 2006 11 28 | 691 | 0.1+ | 0.1− |
| 2000 03 29 | 704 | 0.0 | 0.7− | 2000 04 13 | 704 | 0.3− | 0.2+ | 2006 11 28 | 691 | 0.2+ | 0.3− |
| 2000 03 29 | 704 | 0.1− | 0.1+ | 2000 04 13 | 704 | 0.0 | 1.4+ | 2006 11 28 | 691 | 0.4+ | 0.3− |
| 2000 04 03 | 704 | 0.1+ | 0.1− | 2000 04 27 | 699 | 0.5− | 0.8+ | | | | |

**2000 FQ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.88689 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21232821 | $\omega$ | 196.63715 | | −0.61572689 | | +0.76670948 |
| $a$ | 2.7826863 | $\Omega$ | 35.95610 | | −0.68309656 | | −0.40441053 |
| $e$ | 0.1912701 | $i$ | 18.03250 | | −0.39275882 | | −0.49860676 |
| $P$ | 4.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 691 | 0.1+ | 0.2− | 2000 04 03 | 704 | 0.1− | 0.5− | 2000 04 27 | 704 | 1.3+ | 0.3+ |
| 1997 10 01 | 691 | 0.1− | 0.4+ | 2000 04 03 | 704 | 0.6+ | 0.7+ | 2000 04 27 | 699 | 0.0 | 0.2− |
| 1997 10 01 | 691 | 0.1− | 0.1+ | 2000 04 03 | 704 | 0.7+ | 0.4+ | 2000 04 27 | 699 | 1.2− | 0.3− |
| 2000 03 11 | 703 | 0.4− | 0.0 | 2000 04 03 | 704 | 0.5+ | 0.3+ | 2000 04 27 | 704 | 0.1− | 1.0+ |
| 2000 03 11 | 703 | 0.6+ | 1.5− | 2000 04 05 | 704 | 0.0 | 0.3− | 2000 04 27 | 699 | 1.1+ | 0.0 |
| 2000 03 11 | 703 | 0.1− | 0.5+ | 2000 04 05 | 704 | 0.6− | 1.1− | 2000 04 27 | 704 | 0.7+ | 1.3+ |
| 2000 03 11 | 703 | 0.4− | 0.2+ | 2000 04 05 | 704 | 0.6+ | 0.2− | 2000 05 30 | 699 | 0.3− | 0.5− |
| 2000 03 11 | 699 | 0.0 | 0.7− | 2000 04 05 | 704 | 0.0 | 0.1+ | 2000 05 30 | 699 | 0.9− | 0.1+ |
| 2000 03 11 | 699 | 0.1− | 0.3− | 2000 04 05 | 704 | 0.6− | 0.0 | 2000 05 30 | 699 | 0.3+ | 0.6− |
| 2000 03 11 | 699 | 0.1− | 0.4+ | 2000 04 08 | 704 | 0.1− | 0.4+ | 2000 05 30 | 699 | 1.4− | 0.0 |
| 2000 03 11 | 699 | 0.6+ | 0.9− | 2000 04 08 | 704 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 1.1− | 0.5+ |
| 2000 03 29 | 704 | 0.0 | 0.4− | 2000 04 08 | 704 | 0.8+ | 1.0+ | 2006 09 19 | 703 | (0.2− | 2.5+) |
| 2000 03 29 | 704 | 0.2− | 0.1− | 2000 04 08 | 704 | 0.5− | 1.6− | 2006 09 19 | 703 | 1.0− | 0.0 |
| 2000 03 29 | 704 | 1.2+ | 0.6+ | 2000 04 08 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 1.3+ | 0.5+ |
| 2000 03 29 | 704 | 0.6− | 0.8+ | 2000 04 27 | 704 | 0.4− | 0.9+ | | | | |
| 2000 04 03 | 704 | 0.2+ | 0.0 | 2000 04 27 | 699 | 0.7− | 0.2+ | | | | |

**2000 FM$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.19770 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21773755 | $\omega$ | 70.54285 | | −0.83332090 | | +0.54723783 |
| $a$ | 2.7364057 | $\Omega$ | 142.52004 | | −0.54302464 | | −0.78392478 |
| $e$ | 0.2361494 | $i$ | 7.37887 | | −0.10344332 | | −0.29324512 |
| $P$ | 4.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1+ | 0.2− | 2000 04 08 | 704 | 0.2− | 0.4− | 2000 05 01 | 704 | 0.3− | 0.6+ |
| 2000 02 12 | 645 | 0.0 | 0.3− | 2000 04 08 | 704 | 0.2− | 0.4− | 2000 05 01 | 704 | 0.5+ | 0.8− |
| 2000 03 29 | 704 | 0.7− | 0.0 | 2000 04 08 | 704 | 0.2− | 0.5+ | 2000 05 01 | 704 | 0.4+ | 0.3− |
| 2000 03 29 | 704 | 0.5+ | 0.3+ | 2000 04 27 | 704 | 0.7+ | 1.2+ | 2000 05 01 | 704 | 0.4+ | 0.7− |
| 2000 03 29 | 704 | 0.3+ | 0.1− | 2000 04 27 | 704 | 0.1+ | 0.3− | 2000 05 03 | 704 | 0.5+ | 0.3+ |
| 2000 03 29 | 704 | 0.1− | 0.3− | 2000 04 27 | 704 | 1.0− | 0.7+ | 2000 05 03 | 704 | 0.0 | 1.5+ |
| 2000 03 29 | 704 | 0.3+ | 0.7+ | 2000 04 27 | 699 | 1.4− | 0.2+ | 2000 05 03 | 704 | 0.3+ | 0.5+ |
| 2000 04 02 | 699 | 0.1+ | 0.2− | 2000 04 27 | 704 | 0.9− | 1.2+ | 2000 05 03 | 704 | 0.9− | 0.7− |
| 2000 04 02 | 699 | 0.0 | 0.3− | 2000 04 27 | 699 | 0.2− | 0.7+ | 2004 01 18 | 691 | 0.4+ | 0.4+ |
| 2000 04 02 | 699 | 0.6+ | 0.2+ | 2000 04 27 | 699 | 0.3− | 1.7+ | 2004 01 18 | 691 | 0.1− | 0.2+ |
| 2000 04 02 | 699 | 0.2− | 0.4− | 2000 04 27 | 699 | 1.1− | 0.2+ | 2004 01 18 | 691 | 0.2− | 0.4+ |
| 2000 04 05 | 704 | 0.5+ | 0.7− | 2000 04 30 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.7+ |
| 2000 04 05 | 704 | 0.4− | 0.0 | 2000 04 30 | 704 | 0.5− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 0.5− | 0.8+ | 2000 04 30 | 704 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2000 04 08 | 704 | 0.1+ | 0.7+ | 2000 04 30 | 704 | 0.7+ | 0.9+ | | | | |
| 2000 04 08 | 704 | 1.1+ | 0.2− | 2000 04 30 | 704 | 1.3+ | 1.8+ | | | | |

**2000 FX$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.70549 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20277981 | $\omega$ | 336.38879 | | +0.50118904 | | +0.86417620 |
| $a$ | 2.8693679 | $\Omega$ | 323.64491 | | −0.78139885 | | +0.42971101 |
| $e$ | 0.0909813 | $i$ | 4.33643 | | −0.37178675 | | +0.26181663 |
| $P$ | 4.86 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 21 | 691 | 0.1+ | 0.0 | 2000 04 06 | 691 | 0.4− | 0.0 | 2005 03 11 | G96 | 0.4− | 0.2+ |
| 1995 02 21 | 691 | 0.0 | 0.3+ | 2000 04 06 | 691 | 0.5− | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.0 |
| 1995 02 21 | 691 | 0.4+ | 0.3− | 2000 04 06 | 691 | 0.5− | 0.4− | 2005 03 11 | G96 | 0.0 | 0.0 |
| 2000 02 04 | 691 | 0.1+ | 0.2− | 2002 09 11 | 644 | 0.2+ | 0.2+ | 2005 03 11 | G96 | 0.2− | 0.2+ |
| 2000 02 04 | 691 | 0.2− | 0.0 | 2002 09 11 | 644 | 0.5+ | 0.5+ | 2005 04 04 | 691 | 0.2+ | 0.4+ |
| 2000 02 04 | 691 | 0.2+ | 0.3− | 2002 09 11 | 644 | 0.0 | 0.4+ | 2005 04 04 | 691 | 0.7+ | 0.3+ |
| 2000 03 03 | 704 | 1.0+ | 0.5+ | 2002 09 15 | 608 | 0.0 | 0.4− | 2005 04 04 | 691 | 0.5+ | 0.0 |
| 2000 03 03 | 704 | 0.2+ | 1.6+ | 2002 09 15 | 608 | 0.1+ | 0.5− | 2005 04 12 | G96 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 0.8− | 0.8+ | 2002 09 15 | 608 | 0.1− | 0.6− | 2005 04 12 | G96 | 0.3− | 0.0 |
| 2000 03 03 | 704 | 0.3− | 0.8+ | 2002 10 04 | 704 | (1.8− | 2.6+) | 2005 04 12 | G96 | 0.1− | 0.2+ |
| 2000 03 30 | 691 | 0.1− | 0.1− | 2002 10 04 | 704 | 0.4− | 1.1+ | 2005 04 12 | G96 | 0.3− | 0.3+ |
| 2000 03 30 | 691 | 0.0 | 0.2− | 2002 10 04 | 704 | 0.1− | 1.0+ | | | | |
| 2000 03 30 | 691 | 0.2− | 0.4− | 2002 10 04 | 704 | 0.9− | 0.6− | | | | |

**2000 FN$_{53}$ = 2006 SU$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.89722 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22403939 | $\omega$ | 316.85190 | | +0.89602149 | | +0.43667238 |
| $a$ | 2.6848486 | $\Omega$ | 17.75649 | | −0.30057550 | | +0.72980376 |
| $e$ | 0.0946978 | $i$ | 15.28386 | | −0.32680248 | | +0.52602633 |
| $P$ | 4.40 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.1− | 0.2+ | 2000 04 11 | 691 | 0.1+ | 0.2− | 2006 09 24 | 691 | 0.1− | 0.1+ |
| 2000 03 30 | 691 | 0.1− | 0.5− | 2000 04 11 | 691 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2000 03 30 | 691 | 0.5+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2000 04 05 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2000 04 05 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | (0.0 | 2.4+) | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2000 04 05 | 691 | 0.3− | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.0 |
| 2000 04 11 | 691 | 0.2− | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.2− |

**2000 FX$_{54}$ = 2006 UU$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.05930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22895291 | $\omega$ | 303.27467 | | +0.83907357 | | +0.54390516 |
| $a$ | 2.6462971 | $\Omega$ | 23.78115 | | −0.48954541 | | +0.76378220 |
| $e$ | 0.1240881 | $i$ | 1.57425 | | −0.23727798 | | +0.34756858 |
| $P$ | 4.30 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.4+ | 0.7− | 2001 07 27 | 699 | 0.1− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2000 03 30 | 691 | 0.4+ | 0.0 | 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2000 03 30 | 691 | 0.2+ | 0.1+ | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.8− | 0.1+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2000 04 05 | 704 | 0.5− | 0.6+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2000 04 05 | 704 | 0.1− | 1.2+ | 2006 10 17 | G96 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2000 04 13 | 691 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.1+ | 1.3− |
| 2000 04 13 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.5− | 0.5+ |
| 2000 04 13 | 691 | 0.2− | 0.1− | 2006 10 18 | 291 | 0.1− | 0.1+ | 2006 11 20 | 703 | 0.4− | 0.5+ |
| 2001 07 27 | 699 | 0.5− | 0.4+ | 2006 10 18 | 291 | 0.2+ | 0.2+ | 2006 11 20 | 703 | 1.2+ | 0.2+ |
| 2001 07 27 | 699 | 0.1− | 0.6+ | 2006 10 18 | 291 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.7− |
| 2001 07 27 | 699 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.3− | 0.1− |

**2000 FV$_{67}$ = 2006 QY$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.62584 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21257217 | $\omega$ | 205.51093 | | +0.41152512 | | +0.91136817 |
| $a$ | 2.7805569 | $\Omega$ | 88.79049 | | −0.83491410 | | +0.38024473 |
| $e$ | 0.0427037 | $i$ | 0.42557 | | −0.36546618 | | +0.15755001 |
| $P$ | 4.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.2+ | 0.3+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 07 25 | G96 | 0.3+ | 0.1+ |
| 2000 03 25 | 691 | 0.2+ | 0.2+ | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 07 25 | G96 | 0.4− | 0.1+ |
| 2000 03 25 | 691 | 0.0 | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 08 18 | 691 | 0.2− | 0.0 |
| 2000 04 05 | 704 | 0.9+ | 0.5+ | 2005 05 04 | G96 | 0.5+ | 1.3− | 2006 08 18 | 691 | 0.2− | 0.2+ |
| 2000 04 05 | 704 | 0.8+ | 0.9+ | 2005 05 04 | G96 | 0.5+ | 0.3+ | 2006 08 18 | 691 | 0.3+ | 0.3+ |
| 2000 04 05 | 704 | 1.5+ | 0.2+ | 2005 05 04 | G96 | 0.2+ | 0.7+ | 2006 08 27 | 691 | 0.5− | 0.5+ |
| 2000 04 05 | 704 | 0.1+ | 0.5+ | 2005 05 04 | G96 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.9− |
| 2000 04 13 | 691 | 0.3− | 0.0 | 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.4− | 0.4+ |
| 2000 04 13 | 691 | 0.6− | 0.2− | 2005 05 13 | G96 | 0.6+ | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2000 04 13 | 691 | 0.4− | 0.2− | 2005 05 13 | G96 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2002 11 05 | 291 | 0.1+ | 0.0 | 2005 05 13 | G96 | 1.6+ | 1.2+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 2002 11 05 | 291 | 0.1+ | 0.4+ | 2006 07 25 | G96 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3+ |
| 2002 11 05 | 291 | 0.3+ | 0.2+ | 2006 07 25 | G96 | 0.1− | 0.2+ | | | | |

**2000 FO$_{73}$ = 2006 SS$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.50140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23001787 | $\omega$ | 284.72856 | | −0.38741929 | | −0.92188637 |
| $a$ | 2.6381227 | $\Omega$ | 188.07227 | | +0.86053308 | | −0.35942705 |
| $e$ | 0.0294836 | $i$ | 2.30232 | | +0.33074025 | | −0.14469874 |
| $P$ | 4.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.1− | 0.4+ | 2006 08 28 | 691 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.5− | 0.1+ |
| 2000 03 25 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2000 03 25 | 691 | 0.3− | 0.7+ | 2006 08 28 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2000 04 02 | 691 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2000 04 02 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2000 04 02 | 691 | 0.0 | 0.7− | 2006 09 25 | G96 | 0.1+ | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.6− |
| 2000 04 25 | 691 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2000 04 25 | 691 | 0.0 | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2000 04 25 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.6+ | 2006 10 16 | G96 | 0.3+ | 0.2− |

**2000 $FF_{74}$ = 1992 $AA_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 6.90124 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26588936 | $\omega$ | 277.85773 | | | +0.10161044 | | −0.99481047 | | | |
| $a$ | 2.3951648 | $\Omega$ | 166.30705 | | | +0.92123296 | | +0.09210470 | | | |
| $e$ | 0.1426701 | $i$ | 1.26822 | | | +0.37550652 | | +0.04323027 | | | |
| $P$ | 3.71 | $H$ | 17.7 | $G$ | 0.15 | | $U$ | 1 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 02 | 691 | 0.5− | 1.0− | | 2000 04 05 | 704 | (1.0+ | 2.3−) | | 2005 08 06 | 644 | 0.3+ | 0.1+ | | | |
| 1992 01 02 | 691 | 0.4− | 0.3− | | 2000 04 13 | 691 | 0.1− | 0.4+ | | 2005 08 06 | 644 | 0.1− | 0.1+ | | | |
| 1992 01 02 | 691 | 0.2− | 0.7− | | 2000 04 13 | 691 | 0.1− | 0.4− | | 2005 08 06 | 644 | 0.1+ | 0.1+ | | | |
| 1992 01 09 | 691 | 0.6+ | 0.6+ | | 2000 04 13 | 691 | 0.1− | 0.1+ | | 2005 08 27 | 644 | 0.1+ | 0.1+ | | | |
| 1992 01 09 | 691 | 0.4+ | 1.0+ | | 2002 12 11 | 704 | 0.2− | 0.0 | | 2005 08 27 | 644 | 0.0 | 0.2+ | | | |
| 2000 03 30 | 691 | 0.4+ | 0.0 | | 2002 12 11 | 704 | 0.1− | 0.4+ | | 2005 08 27 | 644 | 0.2− | 0.1+ | | | |
| 2000 03 30 | 691 | 0.1− | 0.4+ | | 2002 12 11 | 704 | 0.0 | 0.4+ | | 2006 11 21 | G96 | 0.1+ | 0.0 | | | |
| 2000 03 30 | 691 | 0.2+ | 0.1− | | 2004 04 21 | 691 | 0.5− | 0.0 | | 2006 11 21 | G96 | 0.4+ | 0.3− | | | |
| 2000 04 05 | 704 | 0.2+ | 0.9+ | | 2004 04 21 | 691 | 0.1− | 0.4− | | 2006 11 21 | G96 | (0.3− | 1.6+) | | | |
| 2000 04 05 | 704 | 0.6+ | 0.5− | | 2004 04 21 | 691 | 0.1+ | 0.3− | | 2006 11 21 | G96 | 0.1− | 0.2+ | | | |

**2000 $GZ_{14}$ = 2006 $US_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 125.36238 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22335412 | $\omega$ | 238.33143 | | | −0.41010380 | | +0.91154654 | | | |
| $a$ | 2.6903373 | $\Omega$ | 7.63996 | | | −0.74176407 | | −0.31424371 | | | |
| $e$ | 0.1426904 | $i$ | 13.02483 | | | −0.53066084 | | −0.26520519 | | | |
| $P$ | 4.41 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 4 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.5− | 0.3− | | 2000 04 05 | 704 | 0.1+ | 0.3− | | 2000 04 07 | 704 | 0.6− | 0.5+ | | | |
| 2000 03 11 | 704 | 0.1+ | 0.8+ | | 2000 04 05 | 704 | 0.1− | 0.3− | | 2006 09 25 | 691 | 0.2− | 0.0 | | | |
| 2000 03 11 | 704 | 1.0− | 0.5+ | | 2000 04 06 | 704 | 0.4+ | 0.9+ | | 2006 09 25 | 691 | 0.2− | 0.2− | | | |
| 2000 03 11 | 704 | 0.2− | 0.4− | | 2000 04 06 | 704 | 0.3+ | 0.2+ | | 2006 09 25 | 691 | 0.1− | 0.0 | | | |
| 2000 03 27 | 699 | 0.3− | 0.5− | | 2000 04 06 | 704 | 0.2+ | 0.1− | | 2006 10 19 | G96 | 0.5+ | 0.1+ | | | |
| 2000 03 27 | 699 | 0.5− | 0.3+ | | 2000 04 07 | 699 | 1.3+ | 0.2+ | | 2006 10 19 | G96 | 0.5+ | 0.1− | | | |
| 2000 03 27 | 699 | 0.4+ | 0.3+ | | 2000 04 07 | 699 | 0.0 | 1.1− | | 2006 10 19 | G96 | 0.5+ | 0.2− | | | |
| 2000 03 27 | 699 | 0.1+ | 0.3+ | | 2000 04 07 | 699 | 0.6+ | 0.4− | | 2006 10 19 | G96 | 0.1+ | 0.0 | | | |
| 2000 04 05 | 704 | 0.4− | 0.2+ | | 2000 04 07 | 704 | 0.5+ | 0.2− | | 2006 10 21 | 644 | 0.2+ | 0.4+ | | | |
| 2000 04 05 | 704 | 0.2− | 0.1+ | | 2000 04 07 | 699 | 0.5+ | 0.0 | | 2006 10 21 | 644 | 0.1− | 0.5+ | | | |
| 2000 04 05 | 704 | 0.4+ | 0.6− | | 2000 04 07 | 704 | 0.7− | 0.1− | | 2006 10 21 | 644 | 0.0 | 0.5+ | | | |

**2000 $GL_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 153.92124 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23664358 | $\omega$ | 60.03688 | | | −0.34749985 | | +0.93751073 | | | |
| $a$ | 2.5886474 | $\Omega$ | 189.67876 | | | −0.89269255 | | −0.33658311 | | | |
| $e$ | 0.1240307 | $i$ | 6.08364 | | | −0.28695620 | | −0.08823510 | | | |
| $P$ | 4.16 | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 0 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.2+ | 0.0 | | 2001 09 20 | 704 | 0.5+ | 0.7+ | | 2005 08 24 | 644 | 0.1− | 0.4+ | | | |
| 2000 03 30 | 691 | 0.2+ | 0.2+ | | 2001 09 20 | 704 | 0.1+ | 0.0 | | 2005 08 24 | 644 | 0.2+ | 0.3+ | | | |
| 2000 03 30 | 691 | 0.2+ | 0.1+ | | 2001 09 20 | 704 | 0.6− | 0.5− | | 2005 08 24 | 644 | 0.5− | 0.2+ | | | |
| 2000 04 05 | 699 | 0.3+ | 0.3+ | | 2004 03 21 | 691 | 0.3+ | 0.2+ | | 2005 09 03 | 644 | 0.0 | 0.4+ | | | |
| 2000 04 05 | 704 | 0.3+ | 0.6+ | | 2004 03 21 | 691 | 0.0 | 0.2+ | | 2005 09 03 | 644 | 0.1− | 0.5+ | | | |
| 2000 04 05 | 699 | 1.0− | 0.1− | | 2004 03 21 | 691 | 0.2+ | 0.3+ | | 2005 09 03 | 644 | 0.2+ | 0.1+ | | | |
| 2000 04 05 | 704 | 1.5+ | 1.2+ | | 2004 03 27 | 704 | 0.3− | 0.5− | | 2006 11 16 | 691 | (0.1− | 1.6+) | | | |
| 2000 04 05 | 699 | 0.0 | 0.7+ | | 2004 03 27 | 704 | 1.0− | 1.1− | | 2006 11 16 | 691 | 0.2− | 0.1+ | | | |
| 2000 04 05 | 704 | 1.1+ | 0.6+ | | 2004 03 27 | 704 | 0.6+ | 0.1− | | 2006 11 16 | 691 | 0.1− | 0.2+ | | | |
| 2000 04 05 | 699 | 0.5+ | 0.5− | | 2004 03 27 | 704 | 0.7− | 0.3− | | 2006 11 20 | 691 | 0.1+ | 0.3+ | | | |
| 2000 04 05 | 704 | 0.7+ | 0.2+ | | 2005 07 08 | 691 | 0.1− | 0.1+ | | 2006 11 20 | 691 | 0.1+ | 0.1− | | | |
| 2000 04 05 | 704 | 0.9+ | 1.1+ | | 2005 07 08 | 691 | 0.1− | 0.4+ | | 2006 11 20 | 691 | 0.0 | 0.4+ | | | |
| 2000 04 06 | 704 | 0.7+ | 0.5+ | | 2005 07 08 | 691 | 0.0 | 0.5+ | | 2006 11 24 | G96 | 0.2+ | 0.1− | | | |
| 2000 04 06 | 704 | 0.2− | 0.8+ | | 2005 07 30 | 644 | 0.1+ | 0.2+ | | 2006 11 24 | G96 | 0.4− | 0.2− | | | |
| 2000 04 06 | 704 | 1.2+ | 0.1+ | | 2005 07 30 | 644 | 0.2− | 0.3+ | | 2006 11 24 | G96 | 0.1+ | 0.0 | | | |
| 2000 04 06 | 704 | 0.6+ | 0.7+ | | 2005 07 30 | 644 | 0.2− | 0.3+ | | 2006 11 24 | G96 | 0.1+ | 0.0 | | | |
| 2000 04 07 | 691 | 0.7− | 0.0 | | 2005 08 06 | 644 | 0.1+ | 0.0 | | 2006 11 27 | 291 | 0.3− | 0.5+ | | | |
| 2000 04 07 | 691 | 0.5− | 0.0 | | 2005 08 06 | 644 | 0.3− | 0.1+ | | 2006 11 27 | 291 | 0.0 | 0.5+ | | | |
| 2000 04 07 | 691 | 0.4− | 0.0 | | 2005 08 06 | 644 | 0.0 | 0.4+ | | 2006 11 27 | 291 | 0.0 | 0.2+ | | | |

**2000 $GW_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 236.29536 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.25340306 | $\omega$ | 235.14206 | | | −0.94989604 | | +0.31247700 | | | |
| $a$ | 2.4732127 | $\Omega$ | 323.06492 | | | −0.28256998 | | −0.86869325 | | | |
| $e$ | 0.1747066 | $i$ | 0.71119 | | | −0.13361030 | | −0.38435683 | | | |
| $P$ | 3.89 | $H$ | 17.8 | $G$ | 0.15 | | $U$ | 4 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.4− | 0.5− | | 2000 04 05 | 699 | 1.3+ | 0.0 | | 2004 04 24 | 691 | 0.1− | 0.0 | | | |
| 2000 03 25 | 691 | 0.2− | 0.5− | | 2000 04 05 | 704 | 0.1+ | 0.4+ | | 2004 04 24 | 691 | 0.2+ | 0.2+ | | | |
| 2000 03 25 | 691 | 0.1− | 0.4− | | 2000 04 05 | 704 | 0.9+ | 0.3+ | | 2004 05 14 | 691 | 0.1− | 0.1− | | | |
| 2000 04 05 | 699 | 0.4+ | 0.0 | | 2000 04 06 | 704 | 0.5+ | 0.9+ | | 2004 05 14 | 691 | 0.2− | 0.1− | | | |
| 2000 04 05 | 704 | 0.7− | 0.1− | | 2000 04 06 | 704 | 0.1+ | 0.2− | | 2004 05 14 | 691 | 0.1− | 0.1− | | | |
| 2000 04 05 | 699 | 0.4+ | 0.6+ | | 2000 04 06 | 704 | 0.3− | 1.5+ | | 2004 05 23 | 691 | 0.1− | 0.0 | | | |
| 2000 04 05 | 704 | 0.1− | 0.1+ | | 2000 04 06 | 704 | 0.2+ | 1.0+ | | 2004 05 23 | 691 | 0.0 | 0.0 | | | |
| 2000 04 05 | 699 | (2.3+ | 0.7−) | | 2000 04 06 | 704 | 0.3+ | 0.6+ | | 2004 05 23 | 691 | 0.2+ | 0.0 | | | |
| 2000 04 05 | 704 | 0.2− | 0.5+ | | 2004 04 24 | 691 | 0.1+ | 0.0 | | | | | | | | |

**2000 $GN_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 238.88251 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.25451988 | $\omega$ | 351.46938 | | | −0.95050277 | | +0.30733440 | | | |
| $a$ | 2.4659726 | $\Omega$ | 206.56883 | | | −0.27870570 | | −0.90834599 | | | |
| $e$ | 0.0850032 | $i$ | 5.86662 | | | −0.13735947 | | −0.28364261 | | | |
| $P$ | 3.87 | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.4+ | 0.6+ | | 2000 04 29 | 704 | 0.1− | 0.4+ | | 2004 05 27 | 691 | 0.1− | 0.0 | | | |
| 2000 04 05 | 704 | 0.3− | 0.2− | | 2000 04 29 | 704 | 0.2+ | 0.6+ | | 2004 05 27 | 691 | 0.3+ | 0.0 | | | |
| 2000 04 05 | 704 | 0.1+ | 0.6+ | | 2000 04 29 | 704 | 0.2− | 0.9+ | | 2004 05 27 | 691 | 0.3+ | 0.3− | | | |
| 2000 04 05 | 704 | 0.2+ | 0.9+ | | 2004 04 20 | 291 | 0.1+ | 0.1+ | | 2005 08 29 | 691 | 0.1− | 0.0 | | | |
| 2000 04 05 | 704 | 0.0 | 0.3+ | | 2004 04 20 | 291 | 0.2− | 0.1+ | | 2005 08 29 | 691 | 0.1− | 0.1− | | | |
| 2000 04 06 | 704 | 1.3+ | 0.2+ | | 2004 04 20 | 291 | 0.4− | 0.1+ | | 2005 08 29 | 691 | 0.2+ | 0.2− | | | |
| 2000 04 06 | 704 | 0.8+ | 0.1− | | 2004 05 14 | 621 | 0.9+ | 1.8− | | 2005 09 27 | 691 | 0.0 | 0.0 | | | |
| 2000 04 06 | 704 | 0.5− | 0.7− | | 2004 05 14 | 621 | 0.1− | 0.2+ | | 2005 09 27 | 691 | 0.0 | 0.6+ | | | |
| 2000 04 06 | 704 | 0.7− | 0.4+ | | 2004 05 14 | 621 | 1.1− | 0.4− | | 2005 09 27 | 691 | 0.2− | 0.2+ | | | |

**2000 $GG_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 120.95091 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.21870509 | $\omega$ | 228.49210 | | | −0.34246246 | | +0.93756020 | | | |
| $a$ | 2.7283293 | $\Omega$ | 21.71073 | | | −0.80558291 | | −0.25970368 | | | |
| $e$ | 0.1844882 | $i$ | 9.46479 | | | −0.48348281 | | −0.23137603 | | | |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 4 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1+ | 0.5+ | | 2000 04 10 | 704 | 1.1+ | 0.0 | | 2000 05 05 | 704 | 0.1+ | 1.6+ | | | |
| 2000 04 05 | 704 | 0.2− | 0.1− | | 2000 04 12 | 691 | 0.4− | 0.2+ | | 2006 10 16 | 691 | 0.0 | 0.1− | | | |
| 2000 04 05 | 704 | 0.4+ | 0.2+ | | 2000 04 12 | 691 | 0.4− | 0.1+ | | 2006 10 16 | 691 | 1.2− | 0.1+ | | | |
| 2000 04 05 | 704 | 0.2+ | 0.3+ | | 2000 04 12 | 691 | 0.5− | 0.0 | | 2006 10 16 | 691 | 0.3− | 0.1+ | | | |
| 2000 04 05 | 704 | 0.2− | 0.7− | | 2000 04 26 | 691 | 0.6− | 0.6− | | 2006 10 20 | 691 | 0.4− | 0.2+ | | | |
| 2000 04 06 | 704 | 0.2+ | 0.1− | | 2000 04 26 | 691 | 0.7− | 0.5− | | 2006 10 20 | 691 | 0.1− | 0.6+ | | | |
| 2000 04 06 | 704 | 0.9+ | 0.4− | | 2000 04 26 | 691 | 0.6− | 0.5− | | 2006 10 20 | 691 | 0.3− | 0.3+ | | | |
| 2000 04 06 | 704 | 0.2+ | 0.2− | | 2000 04 29 | 704 | 0.1+ | 0.5+ | | 2006 10 29 | 691 | 0.7+ | 0.0 | | | |
| 2000 04 06 | 704 | 0.0 | 0.6− | | 2000 04 29 | 704 | 0.5+ | 0.2− | | 2006 10 29 | 691 | 0.4+ | 0.2− | | | |
| 2000 04 06 | 704 | 0.5+ | 0.1− | | 2000 04 29 | 704 | 1.9+ | 0.0 | | 2006 10 29 | 691 | 0.3+ | 0.1− | | | |
| 2000 04 06 | 704 | 0.5+ | 0.1− | | 2000 04 29 | 704 | 0.1+ | 0.5+ | | 2006 10 29 | 691 | 0.0 | 0.0 | | | |
| 2000 04 06 | 704 | 0.0 | 0.0 | | 2000 04 29 | 704 | 0.3+ | 1.0+ | | 2006 10 29 | 691 | 0.3+ | 0.2+ | | | |
| 2000 04 06 | 704 | 0.2+ | 0.5+ | | 2000 04 30 | 704 | 0.3+ | 1.0+ | | 2006 10 29 | 691 | 0.3+ | 0.1+ | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.2+ | 0.3+ | 2000 04 30 | 704 | 0.4− | 0.2+ | 2006 11 17 | 691 | 0.4+ | 0.0 |
| 2000 04 06 | 704 | 0.4+ | 0.2− | 2000 04 30 | 704 | 0.7+ | 0.8+ | 2006 11 17 | 691 | 0.7+ | 0.2− |
| 2000 04 07 | 704 | 0.2+ | 0.0 | 2000 04 30 | 704 | 0.5+ | 0.0 | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2000 04 07 | 704 | 1.0+ | 0.2+ | 2000 04 30 | 704 | 0.4+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.4− |
| 2000 04 07 | 704 | 1.1+ | 0.5+ | 2000 05 04 | 699 | 0.7+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2000 04 07 | 704 | 0.4+ | 1.1+ | 2000 05 04 | 699 | 0.7− | 0.9+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2000 04 07 | 704 | 0.3− | 0.0 | 2000 05 04 | 699 | 0.0 | 1.1+ | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2000 04 10 | 704 | 0.0 | 0.0 | 2000 05 04 | 699 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.7− | 0.4− |
| 2000 04 10 | 704 | 0.6+ | 0.2+ | 2000 05 05 | 704 | 0.2+ | 0.7− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2000 04 10 | 704 | 0.1− | 0.9− | 2000 05 05 | 704 | 0.3+ | 1.2− | | | | |
| 2000 04 10 | 704 | 0.1+ | 0.4− | 2000 05 05 | 704 | 1.2+ | 1.1+ | | | | |

**2000 GC$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.70082 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21475439 | $\omega$ | 138.49483 | | −0.91603513 | −0.39785983 | |
| $a$ | 2.7616885 | $\Omega$ | 18.25500 | | +0.31170670 | −0.78594218 | |
| $e$ | 0.0873205 | $i$ | 9.34496 | | +0.25242537 | −0.47328896 | |
| $P$ | 4.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1+ | 0.0 | 2000 04 29 | 704 | 0.8+ | 0.2− | 2004 01 18 | 703 | 1.0+ | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.0 | 2000 04 29 | 704 | 0.0 | 0.7+ | 2004 01 18 | 703 | 0.1− | 0.1− |
| 2000 04 05 | 704 | 0.9− | 0.4− | 2000 04 29 | 704 | (1.3− | 2.4+) | 2004 01 18 | 703 | 0.9+ | 2.4− |
| 2000 04 05 | 704 | 0.3+ | 0.6− | 2000 04 29 | 704 | 0.0 | 0.7+ | 2004 01 30 | 699 | 0.3− | 2.1+ |
| 2000 04 05 | 704 | 0.2+ | 0.5+ | 2002 10 03 | 704 | 1.1− | 1.3+ | 2004 01 30 | 699 | 0.4− | 0.5− |
| 2000 04 06 | 704 | 0.3+ | 0.1− | 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 01 30 | 699 | 1.2+ | 0.4− |
| 2000 04 06 | 704 | 0.7+ | 1.1+ | 2002 10 03 | 704 | 0.3− | 1.3+ | 2004 01 30 | 699 | 0.1− | 0.8+ |
| 2000 04 06 | 704 | 0.3+ | 0.7− | 2003 12 30 | 704 | 0.4+ | 1.1− | 2004 02 14 | 704 | 1.0− | 1.1+ |
| 2000 04 06 | 704 | 0.6+ | 0.6+ | 2003 12 30 | 704 | 0.3− | 0.4− | 2004 02 14 | 704 | 0.1+ | 0.2+ |
| 2000 04 06 | 704 | 0.4+ | 0.5+ | 2003 12 30 | 704 | 0.1+ | 0.1+ | 2004 02 14 | 704 | 0.0 | 0.2+ |
| 2000 04 29 | 704 | 1.4− | 0.4+ | 2004 01 18 | 703 | 1.5− | 0.3+ | | | | |

**2000 GC$_{63}$ = 2002 XC$_{116}$ = 2006 TM$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.91924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23333487 | $\omega$ | 44.56576 | | −0.20218641 | +0.97612853 | |
| $a$ | 2.6130614 | $\Omega$ | 214.00150 | | −0.93347816 | −0.21658411 | |
| $e$ | 0.0440200 | $i$ | 8.15580 | | −0.29620801 | +0.01626089 | |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1− | 0.7− | 2002 12 10 | 644 | 0.6− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 2000 04 05 | 704 | 0.6+ | 0.8+ | 2002 12 10 | 644 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.2− | 2002 12 12 | 644 | 0.2+ | 0.6− | 2006 11 01 | 691 | 0.5− | 0.4+ |
| 2000 04 05 | 704 | 1.1− | 0.1+ | 2002 12 12 | 644 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 2000 04 06 | 704 | 0.3+ | 1.6− | 2002 12 13 | 644 | 0.0 | 0.6− | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2000 04 06 | 704 | 0.0 | 0.7+ | 2002 12 13 | 644 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2000 04 06 | 704 | 0.6− | 0.7+ | 2002 12 13 | 644 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2000 04 06 | 704 | 0.6+ | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2000 04 06 | 704 | 1.5+ | 0.7+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.6+ |
| 2000 04 29 | 704 | 1.0− | 0.9− | 2006 10 12 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 1.1− |
| 2000 04 29 | 704 | 0.7− | 1.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.2+ |
| 2000 04 29 | 704 | 0.1− | 0.9+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2000 05 02 | 688 | 0.6+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.4− |
| 2000 05 02 | 688 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.8− | 2006 11 28 | 704 | 0.0 | 0.3− |
| 2000 05 02 | 688 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.9+ |
| 2002 12 10 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 28 | 704 | 1.2− | 1.0+ |

**2000 GO$_{73}$ = 2006 QP$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.15568 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22741053 | $\omega$ | 173.80582 | | +0.83063284 | −0.53822105 | |
| $a$ | 2.6582490 | $\Omega$ | 219.85127 | | +0.50083815 | +0.83416945 | |
| $e$ | 0.1859080 | $i$ | 12.86841 | | +0.24333152 | +0.12033048 | |
| $P$ | 4.33 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.5+ | 0.1+ | 2006 08 30 | 704 | 1.0+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2000 04 05 | 704 | 0.4+ | 0.9+ | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2000 04 05 | 704 | 0.8+ | 0.8+ | 2006 08 30 | 704 | 0.5− | 0.8− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2000 04 06 | 704 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2000 04 06 | 704 | 1.6+ | 0.6+ | 2006 08 30 | 704 | 0.6+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 04 06 | 704 | 1.7+ | 1.8+ | 2006 09 21 | 704 | 1.1+ | 0.5+ | 2006 11 02 | 704 | 0.2− | 0.7+ |
| 2000 04 25 | 691 | 0.3− | 0.1− | 2006 09 21 | 704 | (2.2+ | 0.3+) | 2006 11 02 | 704 | 0.4+ | 0.1+ |
| 2000 04 25 | 691 | 0.4− | 0.4− | 2006 09 21 | 704 | 0.7+ | 0.3+ | 2006 11 02 | 704 | 0.0 | 0.2+ |
| 2000 04 25 | 691 | (2.4− | 0.9−) | 2006 09 21 | 704 | 0.5− | 0.5− | 2006 11 02 | 704 | 0.4− | 0.3+ |
| 2000 04 26 | 691 | 0.9− | 0.3− | 2006 09 25 | 704 | 0.0 | 0.4+ | 2006 11 02 | 704 | 0.1− | 0.5+ |
| 2000 04 26 | 691 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.6− | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2000 04 26 | 691 | 0.7− | 0.0 | 2006 09 25 | 704 | 0.7− | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2000 04 29 | 704 | 1.5+ | 0.8+ | 2006 09 25 | 704 | 0.6− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2000 04 29 | 704 | 0.1+ | 1.1+ | 2006 09 25 | 704 | 0.3− | 0.6− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 1.3+ | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2000 04 29 | 704 | 0.8+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.5− | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2000 04 29 | 704 | 0.6+ | 1.1+ | 2006 09 29 | 704 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2000 04 29 | 704 | 1.0+ | 0.1− | 2006 09 29 | 704 | 0.7− | 1.4− | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2000 04 29 | 704 | 0.9+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.7− | 1.2+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 11 12 | 704 | 0.5− | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 11 12 | 704 | 0.8− | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 11 12 | 704 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.8+ | 0.4+ |
| 2002 12 14 | 704 | 0.4− | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.3+ | 0.9− | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2002 12 14 | 704 | 0.3− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2002 12 14 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | (0.2− | 1.6+) |
| 2003 01 01 | 704 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.9− | 0.7+ |
| 2003 01 01 | 704 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.6− | 1.5+ |
| 2003 01 01 | 704 | 0.0 | 0.5− | 2006 10 20 | 691 | 0.2− | 0.3− | 2006 11 18 | 704 | 1.0− | 1.0+ |
| 2003 01 01 | 704 | 1.0+ | 0.2− | 2006 10 23 | 704 | 0.3+ | 0.8+ | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2003 01 28 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 704 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2003 01 28 | 704 | 0.3+ | 0.3− | 2006 10 23 | 704 | 0.5+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2003 01 28 | 704 | 0.6+ | 0.2− | 2006 10 23 | 704 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2003 01 28 | 704 | 0.5+ | 0.6− | 2006 10 23 | 704 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2003 01 28 | 704 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.4− | 0.1+ |
| 2004 04 21 | 704 | (0.5− | 2.0+) | 2006 10 23 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.8− | 0.2+ |
| 2004 04 21 | 704 | (0.8− | 1.9+) | 2006 10 23 | 644 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.3− | 0.5− |
| 2004 04 21 | 704 | (0.4+ | 3.2+) | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.5− | 0.4+ |
| 2004 04 21 | 704 | (0.4− | 3.1+) | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2006 08 24 | 704 | (0.7− | 1.5+) | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 26 | 958 | 0.5+ | 0.5− |
| 2006 08 24 | 704 | 0.5− | 1.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 26 | 958 | 0.2− | 0.4− |
| 2006 08 24 | 704 | 1.5− | 1.2+ | 2006 10 28 | 704 | 0.1+ | 0.5+ | 2006 11 26 | 958 | 0.8+ | 0.4− |
| 2006 08 24 | 704 | 0.1+ | 0.9+ | 2006 10 28 | 704 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.5+ |
| 2006 08 29 | 703 | 0.4+ | 0.4+ | 2006 10 28 | 704 | 1.0+ | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2006 08 29 | 703 | 0.2− | 0.3+ | 2006 10 28 | 704 | 0.6+ | 0.3− | 2006 11 28 | 704 | 0.5− | 0.1− |
| 2006 08 29 | 703 | 0.2+ | 0.4+ | 2006 10 28 | 704 | 0.2+ | 1.3− | 2006 11 28 | 704 | 0.2− | 0.2+ |
| 2006 08 29 | 703 | 0.8+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.4− | 0.5+ |

**2000 GR$_{118}$ = 2005 SN$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.90762 | | (2000.0) | | | |
| $n$ | 0.27158469 | $\omega$ | 344.34429 | | −0.93032286 | +0.36616196 |
| $a$ | 2.3615611 | $\Omega$ | 217.15568 | | −0.33270970 | −0.86630193 |
| $e$ | 0.1361185 | $i$ | 1.95557 | | −0.15428425 | −0.33977403 |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.9+ | 0.6+ | 2000 04 07 | 691 | 0.4− | 0.4− | 2005 10 01 | G96 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.2+ | 0.6+ | 2000 05 04 | 645 | 0.1+ | 0.2+ | 2005 10 01 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 704 | 0.3+ | 0.7+ | 2000 05 04 | 645 | 0.1+ | 0.2+ | 2005 10 27 | G96 | 0.2− | 0.2− |
| 2000 03 11 | 704 | 0.2+ | 0.3− | 2001 05 23 | 807 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.2+ | 0.1+ |
| 2000 03 11 | 704 | 0.3+ | 0.2− | 2001 05 23 | 807 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.2+ | 0.1− |
| 2000 04 03 | 691 | 0.1− | 0.1− | 2005 09 27 | 691 | 0.1+ | 0.0 | 2005 10 27 | G96 | 0.3+ | 0.5− |
| 2000 04 03 | 691 | 0.1− | 0.2− | 2005 09 27 | 691 | 0.2+ | 0.2+ | 2005 10 28 | G96 | 0.5− | 0.1− |
| 2000 04 03 | 691 | 0.2− | 0.1− | 2005 09 27 | 691 | 0.1+ | 0.2− | 2005 10 28 | G96 | 0.3+ | 0.3− |
| 2000 04 05 | 704 | 0.9+ | 0.6+ | 2005 09 30 | G96 | 0.3+ | 0.1− | 2005 10 28 | G96 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.4− | 0.3+ | 2005 09 30 | G96 | 0.3+ | 0.1− | 2005 10 28 | G96 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.9+ | 0.5+ | 2005 09 30 | G96 | 0.0 | 0.0 | 2005 10 28 | 291 | 0.3− | 0.7+ |
| 2000 04 05 | 704 | 0.7+ | 1.2+ | 2005 09 30 | G96 | 0.2+ | 0.1− | 2005 10 28 | 291 | 0.3− | 0.3+ |
| 2000 04 07 | 691 | 0.2− | 0.4− | 2005 10 01 | G96 | 0.2− | 0.4− | 2005 10 28 | 291 | 0.3− | 0.2+ |
| 2000 04 07 | 691 | 0.3− | 0.5− | 2005 10 01 | G96 | 0.2− | 0.0 | | | | |

**2000 GW$_{119}$ = 2006 AD$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 145.69365 | | (2000.0) | | | |
| $n$ | 0.29558594 | $\omega$ | 11.76584 | | +0.91873287 | −0.39414205 |
| $a$ | 2.2319281 | $\Omega$ | 11.53579 | | +0.35180676 | +0.78924490 |
| $e$ | 0.1597760 | $i$ | 6.92852 | | +0.17933743 | +0.47089758 |
| $P$ | 3.33 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 691 | 0.1− | 0.1− | 2001 08 14 | 644 | 0.2+ | 0.3+ | 2006 01 02 | 703 | 1.1+ | 0.3− |
| 2000 03 27 | 691 | 0.1+ | 0.1+ | 2001 08 14 | 644 | 0.0 | 0.3+ | 2006 01 02 | 703 | 0.5− | 1.4− |
| 2000 03 27 | 691 | 0.0 | 0.0 | 2001 08 14 | 644 | 0.1− | 0.4+ | 2006 01 02 | 703 | 0.0 | 1.3+ |
| 2000 04 05 | 691 | 0.2− | 0.1+ | 2001 08 27 | 608 | 0.5− | 0.9− | 2006 01 02 | 703 | 1.2− | 0.7− |
| 2000 04 05 | 691 | 0.2+ | 0.4+ | 2001 08 27 | 608 | 0.5− | 0.7− | 2006 01 07 | 704 | 0.8+ | 0.6+ |
| 2000 04 05 | 691 | 0.3− | 0.1+ | 2001 08 27 | 608 | 0.4− | 1.1− | 2006 01 07 | 704 | 0.7+ | 0.1+ |
| 2000 04 08 | 691 | 0.1− | 0.3− | 2001 09 11 | 704 | 1.1+ | 1.4+ | 2006 01 07 | 704 | 0.8+ | 0.4+ |
| 2000 04 08 | 691 | 0.1− | 0.1− | 2001 09 11 | 704 | 0.4+ | 0.8+ | 2006 01 07 | 704 | 1.7− | 0.5+ |
| 2000 04 08 | 691 | 0.5+ | 0.0 | 2001 09 11 | 704 | 0.5− | 0.5+ | | | | |

**2000 GC$_{120}$ = 2000 FG$_{51}$ = 2006 WX$_{150}$**

Id. Minor Planet Center (d, *MPO* 11070; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 284.87469 | | (2000.0) | | | |
| $n$ | 0.25961788 | $\omega$ | 316.98584 | | −0.87864732 | −0.47742245 |
| $a$ | 2.4335838 | $\Omega$ | 194.50141 | | +0.44514305 | −0.81389632 |
| $e$ | 0.1542981 | $i$ | 1.56368 | | +0.17270365 | −0.33112021 |
| $P$ | 3.80 | $H$ | 18.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.0 | 0.3+ | 2000 04 05 | 704 | 0.9+ | 1.6+ | 2000 04 11 | 691 | 0.0 | 0.2− |
| 2000 03 29 | 691 | 0.1− | 0.0 | 2000 04 05 | 704 | 0.6+ | 1.2+ | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2000 03 29 | 691 | 0.1+ | 0.5− | 2000 04 05 | 704 | 0.4+ | 1.2+ | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2000 04 05 | 691 | 0.2− | 0.0 | 2000 04 07 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 0.5+ | 0.7+ | 2000 04 07 | 691 | 0.5− | 0.5− | 2006 11 20 | G96 | 0.3− | 0.2+ |
| 2000 04 05 | 691 | 0.2− | 0.0 | 2000 04 07 | 691 | 0.1+ | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2000 04 05 | 704 | 0.7+ | 0.2+ | 2000 04 11 | 691 | 0.2+ | 0.5− | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2000 04 05 | 691 | 0.0 | 0.0 | 2000 04 11 | 691 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.0 | 0.0 |

**2000 GQ$_{120}$ = 2006 VU$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.66347 | | (2000.0) | | | |
| $n$ | 0.23069253 | $\omega$ | 185.39340 | | +0.99805301 | +0.06201056 |
| $a$ | 2.6329768 | $\Omega$ | 171.04313 | | −0.05549535 | +0.93191336 |
| $e$ | 0.2293965 | $i$ | 2.46625 | | −0.02846858 | +0.35734043 |
| $P$ | 4.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.2− | 0.2− | 2005 06 17 | G96 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 1997 08 11 | 691 | 0.2+ | 0.2− | 2005 06 17 | G96 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 1997 08 11 | 691 | 0.1+ | 0.2+ | 2005 06 17 | G96 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 2000 04 05 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2000 04 05 | 691 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2000 04 05 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2000 04 08 | 691 | 0.1+ | 0.6− | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2000 04 08 | 691 | 0.3− | 0.2+ | 2006 11 02 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2000 04 08 | 691 | 0.4− | 0.2− | 2006 11 02 | G96 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2000 04 12 | 691 | 0.3− | 0.0 | 2006 11 02 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2000 04 12 | 691 | 0.1+ | 0.3+ | 2006 11 02 | G96 | 0.4− | 0.4− | 2006 11 29 | 704 | 1.4+ | 0.4− |
| 2000 04 12 | 691 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.1− | 0.5− |
| 2001 06 14 | 691 | 0.9− | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2001 06 14 | 691 | 0.4− | 0.5− | 2006 11 12 | G96 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.1− |
| 2001 06 14 | 691 | 1.4+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.1− | | | | |
| 2005 06 17 | G96 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.0 | 0.2+ | | | | |

**2000 GS$_{122}$ = 2006 SL$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 118.79847 | | (2000.0) | | | |
| $n$ | 0.21980743 | $\omega$ | 238.50455 | | −0.42514403 | +0.90480532 |
| $a$ | 2.7191999 | $\Omega$ | 6.47596 | | −0.74104799 | −0.33267613 |
| $e$ | 0.1366451 | $i$ | 12.32801 | | −0.51971187 | −0.26580806 |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.4+ | 0.1− | 2000 04 10 | 621 | 0.0 | 0.2+ | 2006 09 27 | 152 | 0.8− | 0.1+ |
| 2000 04 05 | 699 | 0.4+ | 0.4+ | 2000 04 10 | 621 | 0.3− | 1.6+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2000 04 05 | 699 | 0.6+ | 0.5+ | 2000 04 10 | 621 | 0.6− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 699 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2000 04 07 | 704 | 0.3+ | 0.4+ | 2006 07 21 | G96 | 0.4− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2000 04 07 | 704 | 1.6+ | 1.5+ | 2006 07 21 | G96 | 0.3− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2000 04 07 | 704 | 0.4+ | 0.5− | 2006 07 21 | G96 | 0.5− | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2000 04 07 | 704 | 0.0 | 1.8+ | 2006 09 19 | 691 | 0.4− | 0.5+ | 2006 11 18 | G96 | 0.6− | 0.6− |
| 2000 04 07 | 704 | 1.1+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2+ |
| 2000 04 08 | 621 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.6− | 0.4− |
| 2000 04 08 | 621 | 0.3+ | 0.2+ | 2006 09 27 | 152 | (0.6+ | 1.7+) | 2006 11 18 | G96 | 0.4− | 0.5− |
| 2000 04 08 | 621 | 0.5+ | 0.1+ | 2006 09 27 | 152 | 0.9+ | 0.6− | | | | |

**2000 GA$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 141.71417 | | (2000.0) | | | |
| $n$ | 0.22777324 | $\omega$ | 217.51650 | | −0.49407740 | +0.86861633 |
| $a$ | 2.6554263 | $\Omega$ | 22.94641 | | −0.77268781 | −0.41902202 |
| $e$ | 0.0927303 | $i$ | 5.49382 | | −0.39854870 | −0.26443567 |
| $P$ | 4.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 691 | 0.1+ | 0.0 | 2000 04 13 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2000 03 27 | 691 | 0.2+ | 0.2− | 2000 04 29 | 704 | 0.3+ | 1.6+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2000 03 27 | 691 | 0.2+ | 0.1− | 2000 04 29 | 704 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2000 04 05 | 699 | 0.1+ | 1.0+ | 2000 04 29 | 704 | 0.4+ | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2000 04 05 | 699 | 0.1+ | 0.5− | 2000 04 29 | 704 | 0.7+ | 0.8− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2000 04 05 | 699 | 1.1+ | 0.1− | 2006 10 16 | 691 | 0.5− | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 699 | 0.9+ | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.5+ |
| 2000 04 06 | 691 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.4+ | 0.5+ | 2006 11 10 | 691 | 0.6− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 691 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.2+ | |
| 2000 04 06 | 691 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.2− | 0.4− | |
| 2000 04 13 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.5+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.6− | |
| 2000 04 13 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.3− | |

**2000 $GF_{156}$ = 2006 $UH_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 124.43747 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22212887 | $\omega$ | 22.11337 | | −0.43988256 | | +0.89617397 | | |
| $a$ | 2.7002214 | $\Omega$ | 221.85110 | | −0.83643984 | | −0.43239432 | | |
| $e$ | 0.0729584 | $i$ | 4.99564 | | −0.32691241 | | −0.09953572 | | |
| $P$ | 4.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 5 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.4+ | 0.3− | 2000 04 07 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.8− | 0.8− | |
| 2000 04 05 | 699 | 0.9− | 0.2+ | 2000 04 07 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.5− | |
| 2000 04 05 | 699 | 0.8− | 0.1+ | 2000 04 07 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.1− | |
| 2000 04 05 | 699 | 0.0 | 0.5− | 2000 04 07 | 704 | 0.7+ | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.3− | |
| 2000 04 06 | 699 | 0.3− | 0.3− | 2006 09 28 | 699 | 0.7+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 2000 04 06 | 699 | 0.0 | 0.4− | 2006 09 28 | 699 | (2.1+ | 0.4+) | 2006 10 20 | 644 | 0.5+ | 0.4+ | |
| 2000 04 06 | 699 | 1.1+ | 0.3− | 2006 09 28 | 699 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 1.0+ | |
| 2000 04 06 | 699 | 0.6− | 0.8+ | 2006 09 28 | 699 | 0.5− | 0.2+ | | | | | |

**2000 $GQ_{187}$ = 1999 $AB_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 116.49123 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23059295 | $\omega$ | 171.91919 | | +0.39536548 | | +0.87904956 | | |
| $a$ | 2.6337347 | $\Omega$ | 120.99796 | | −0.85915191 | | +0.45649067 | | |
| $e$ | 0.2377546 | $i$ | 18.10507 | | −0.32487556 | | −0.13743413 | | |
| $P$ | 4.27 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 07 | 691 | 0.7− | 0.4− | 2000 05 02 | 704 | 0.7+ | 0.1+ | 2001 09 27 | 699 | 0.0 | 1.1+ | |
| 1999 01 07 | 691 | 0.2− | 0.1+ | 2000 05 02 | 704 | 0.1− | 0.7− | 2004 01 28 | 645 | 0.0 | 0.1+ | |
| 1999 01 07 | 691 | 0.2− | 0.2+ | 2000 05 02 | 704 | 0.2+ | 0.6− | 2004 01 28 | 645 | 0.1+ | 0.1+ | |
| 1999 01 14 | 691 | 0.4+ | 0.4+ | 2000 05 02 | 704 | 0.4− | 0.5+ | 2005 07 27 | 644 | 0.1− | 0.1− | |
| 1999 01 14 | 691 | 0.9+ | 0.0 | 2000 05 30 | 699 | 0.0 | 0.4+ | 2005 07 27 | 644 | 0.3− | 0.1+ | |
| 1999 01 14 | 691 | 0.1− | 0.4− | 2000 05 30 | 699 | 0.2− | 0.2− | 2005 07 27 | 644 | 0.1− | 0.1+ | |
| 2000 04 12 | 608 | 0.2− | 0.2+ | 2000 05 30 | 699 | 1.4+ | 0.3+ | 2005 08 28 | E12 | 0.0 | 0.6− | |
| 2000 04 12 | 608 | 0.2+ | 0.2+ | 2000 05 30 | 699 | 1.6− | 0.8+ | 2005 08 28 | E12 | 0.5+ | 0.1+ | |
| 2000 04 12 | 608 | 0.3+ | 0.1+ | 2001 08 18 | 644 | 0.8− | 0.8+ | 2005 08 28 | E12 | 1.4− | 0.4+ | |
| 2000 04 28 | 699 | 0.2+ | 0.4+ | 2001 08 18 | 644 | 1.0− | 0.7+ | 2005 08 28 | E12 | 0.5+ | 0.0 | |
| 2000 04 28 | 699 | 0.2− | 0.3− | 2001 08 18 | 644 | 0.9− | 0.5+ | 2005 09 11 | I10 | 0.1+ | 0.0 | |
| 2000 04 28 | 699 | 2.0− | 1.1+ | 2001 09 27 | 699 | 0.7+ | 0.7+ | 2005 09 11 | I10 | 0.3− | 0.0 | |
| 2000 04 28 | 699 | 0.5+ | 0.7+ | 2001 09 27 | 699 | 0.9− | 0.5+ | 2005 09 11 | I10 | 0.7+ | 0.9+ | |
| 2000 05 02 | 704 | 1.4+ | 0.2+ | 2001 09 27 | 699 | 0.7+ | 1.0+ | | | | | |

**2000 $HL_1$ = 2006 $TX_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 103.11889 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22518760 | $\omega$ | 250.16848 | | +0.28898569 | | +0.95690596 | | |
| $a$ | 2.6757143 | $\Omega$ | 36.66736 | | −0.85943861 | | +0.27248165 | | |
| $e$ | 0.0414126 | $i$ | 2.74561 | | −0.42172567 | | +0.10042280 | | |
| $P$ | 4.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.3+ | 0.1− | 2004 03 16 | 599 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | |
| 2000 04 25 | 691 | 0.3+ | 0.1− | 2004 03 16 | 599 | 0.5+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.4− | |
| 2000 04 25 | 691 | 0.2+ | 0.0 | 2004 03 16 | 599 | 0.5− | 0.5− | 2006 11 12 | G96 | 0.3+ | 0.2− | |
| 2000 04 26 | 691 | 0.1+ | 0.0 | 2004 04 25 | 691 | 0.5+ | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.4− | |
| 2000 04 26 | 691 | 0.3+ | 0.1+ | 2004 04 25 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.6+ | 0.2− | |
| 2000 04 26 | 691 | 0.2− | 0.1+ | 2004 04 25 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− | |
| 2000 05 06 | 691 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.0 | 0.4− | |
| 2000 05 06 | 691 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− | |
| 2000 05 06 | 691 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.2+ | |
| 2000 05 09 | 691 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 27 | G96 | 0.0 | 0.3− | |
| 2000 05 09 | 691 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.4− | 0.6− | |
| 2000 05 09 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.4− | |
| 2002 12 07 | 695 | 0.2− | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2− | |
| 2002 12 07 | 695 | 0.3+ | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.0 | | | | | |
| 2004 03 16 | 599 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.4− | 0.0 | | | | | |

**2000 $HO_1$ = 2006 $SV_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 256.70507 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22571878 | $\omega$ | 261.94180 | | −0.56377453 | | −0.81442727 | | |
| $a$ | 2.6715148 | $\Omega$ | 223.33477 | | +0.81446748 | | −0.52060023 | | |
| $e$ | 0.0776704 | $i$ | 11.54577 | | +0.13711673 | | −0.25628816 | | |
| $P$ | 4.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.0 | 0.1− | 2002 10 30 | 608 | 0.6+ | 0.9+ | 2006 09 28 | 291 | 0.2+ | 0.1+ | |
| 2000 04 25 | 691 | 0.2− | 0.2− | 2002 10 30 | 608 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.7+ | 0.4− | |
| 2000 04 25 | 691 | 0.2− | 0.2− | 2002 11 07 | 704 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.6+ | |
| 2000 04 26 | 691 | 0.3− | 0.0 | 2002 11 07 | 704 | 0.4− | 0.3− | 2006 09 30 | 703 | 1.0− | 0.2+ | |
| 2000 04 26 | 691 | 0.6− | 0.1+ | 2002 11 07 | 704 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.3− | |
| 2000 04 26 | 691 | 0.6− | 0.2+ | 2004 04 25 | 703 | 0.2− | 0.1− | 2006 10 04 | G96 | (1.2− | 2.0−) | |
| 2000 05 07 | 704 | 1.2+ | 0.0 | 2004 04 25 | 703 | (2.2+ | 0.4+) | 2006 10 04 | G96 | 0.1+ | 0.1− | |
| 2000 05 07 | 704 | 0.5+ | 1.2+ | 2004 04 25 | 703 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.8− | |
| 2000 05 07 | 704 | 0.8+ | 1.1+ | 2004 04 25 | 703 | 0.1− | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.3− | |
| 2000 05 07 | 704 | 0.3+ | 0.9+ | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2000 05 07 | 704 | 0.9+ | 0.9+ | 2006 09 16 | 703 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.4− | 0.1+ | |
| 2000 05 13 | 691 | 0.0 | 0.2+ | 2006 09 16 | 703 | 1.0− | 1.1− | 2006 10 20 | 644 | 0.2+ | 1.1+ | |
| 2000 05 13 | 691 | 0.8+ | 0.1− | 2006 09 16 | 703 | (4.0− | 0.8−) | 2006 10 21 | 644 | 0.1+ | 0.3+ | |
| 2000 05 13 | 691 | 0.3+ | 0.2− | 2006 09 28 | 291 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | |
| 2002 10 30 | 608 | 0.5+ | 1.2+ | 2006 09 28 | 291 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− | |

**2000 $HC_7$ = 2006 $SL_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 61.14531 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21028978 | $\omega$ | 259.85994 | | +0.40768102 | | +0.88796902 | | |
| $a$ | 2.8006399 | $\Omega$ | 36.64730 | | −0.63375871 | | +0.44297630 | | |
| $e$ | 0.1310343 | $i$ | 20.89203 | | −0.65737819 | | +0.12362448 | | |
| $P$ | 4.69 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.4− | 0.1+ | 2000 05 07 | 704 | 1.2− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2000 04 25 | 691 | 0.2− | 0.1+ | 2000 05 07 | 704 | 0.7− | 0.7− | 2006 10 21 | 644 | 0.3− | 0.2+ | |
| 2000 04 25 | 691 | 0.4− | 0.1+ | 2000 05 07 | 704 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.0 | |
| 2000 04 29 | 691 | 0.2+ | 0.1− | 2000 05 07 | 704 | 1.1+ | 0.1+ | 2006 10 22 | 703 | 0.7+ | 0.3− | |
| 2000 04 29 | 691 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.9+ | 0.9− | 2006 10 22 | 703 | 0.4+ | 0.7+ | |
| 2000 04 29 | 704 | 0.5+ | 0.4− | 2006 09 21 | 699 | (1.6− | 1.2−) | 2006 10 22 | 703 | 0.4− | 0.1− | |
| 2000 04 29 | 691 | 0.3+ | 0.1− | 2006 09 21 | 699 | (0.8+ | 2.3+) | 2006 10 22 | 703 | (1.7− | 0.0 ) | |
| 2000 04 29 | 704 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.7− | 0.5+ | 2006 10 28 | 703 | 0.5+ | 0.3+ | |
| 2000 04 29 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 10 28 | 703 | 1.4− | 0.2− | |
| 2000 05 02 | 688 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.5− | 0.8+ | |
| 2000 05 02 | 688 | 0.5+ | 0.3− | 2006 09 26 | 703 | 0.7+ | 0.8− | 2006 10 28 | 703 | 0.3− | 0.1+ | |
| 2000 05 02 | 688 | 0.9+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.6− | |
| 2000 05 05 | 704 | 0.9− | 1.3− | 2006 10 16 | 703 | 0.5+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.7− | |
| 2000 05 05 | 704 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.6− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.1− | |
| 2000 05 05 | 704 | 1.8+ | 0.3+ | 2006 10 16 | 703 | 0.8+ | 0.9+ | 2006 11 23 | G96 | 0.1− | 0.5− | |
| 2000 05 07 | 704 | 0.9− | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.4+ | | | | | |

**2000 $HJ_{20}$ = 2006 $UN_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 358.30627 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.37581505 | $\omega$ | 159.28216 | | +0.92374416 | | −0.30015534 | | |
| $a$ | 1.9017493 | $\Omega$ | 220.72722 | | +0.27956153 | | +0.95299007 | | |
| $e$ | 0.0484718 | $i$ | 21.38566 | | +0.26180542 | | +0.04143298 | | |
| $P$ | 2.62 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 691 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.3− | 0.1− |
| 2000 04 29 | 691 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2000 04 29 | 691 | 0.2− | 0.5− | 2006 10 20 | G96 | 0.7− | 0.8− | 2006 11 11 | 683 | (2.0+ | 1.0−) |
| 2000 04 30 | 691 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.3− | 0.6− | 2006 11 11 | 683 | (2.9+ | 0.8−) |
| 2000 04 30 | 691 | 0.3− | 0.5− | 2006 10 20 | G96 | 0.1− | 0.0 | 2006 11 11 | 683 | 0.9− | 0.2− |
| 2000 04 30 | 691 | 0.3− | 0.3− | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2000 05 07 | 704 | 1.7+ | 0.7− | 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.4− |
| 2000 05 07 | 704 | 0.6+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2000 05 07 | 704 | 0.9+ | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.6− |
| 2000 05 07 | 704 | 1.3+ | 1.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2000 05 07 | 704 | 2.0+ | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2006 09 17 | 703 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.6− |
| 2006 09 17 | 703 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2006 09 17 | 703 | 1.4+ | 0.6− | 2006 10 22 | 644 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.3− |
| 2006 09 28 | 703 | 0.4+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.7− |
| 2006 09 28 | 703 | 1.3+ | 0.6− | 2006 10 29 | 704 | (0.3+ | 2.0−) | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2006 09 28 | 703 | (1.7+ | 0.5+) | 2006 10 29 | 704 | 0.8− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2006 09 28 | 703 | 0.7− | 0.3− | 2006 10 29 | 704 | 0.6− | 0.5+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2006 10 19 | 703 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.6− | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.4− |
| 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 10 29 | 704 | 0.6+ | 0.9− | 2006 11 21 | 704 | 0.8+ | 0.0 |
| 2006 10 19 | 703 | 1.0− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2006 10 19 | A50 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2006 10 19 | A50 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.3+ |

**2000 HA$_{46}$ = 2006 UW$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.20303 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36728130 | $\omega$ | 237.64122 | | +0.15911959 | | +0.95367235 |
| $a$ | 1.9310944 | $\Omega$ | 43.91118 | | −0.73598446 | | +0.28696098 |
| $e$ | 0.0746903 | $i$ | 21.60119 | | −0.65803330 | | −0.09034629 |
| $P$ | 2.68 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 1.4+ | 0.5− | 2000 05 09 | 704 | (2.2+ | 0.3+) | 2006 10 17 | 703 | 0.2− | 1.5− |
| 2000 04 29 | 704 | 0.3+ | 0.5− | 2000 05 09 | 704 | 0.4+ | 0.5− | 2006 10 22 | 703 | 1.0− | 1.5+ |
| 2000 04 29 | 704 | 0.6− | 0.2+ | 2000 05 09 | 704 | 0.7− | 0.9+ | 2006 10 22 | 703 | 0.4+ | 1.7+ |
| 2000 04 30 | 699 | 0.2+ | 0.7+ | 2000 05 09 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2000 04 30 | 699 | 0.2+ | 0.4− | 2000 05 10 | 704 | (2.5+ | 0.0 ) | 2006 10 22 | 703 | 0.7− | 0.7− |
| 2000 04 30 | 699 | 0.6− | 0.3− | 2000 05 10 | 704 | (2.3+ | 3.6−) | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2000 04 30 | 699 | 0.0 | 1.0+ | 2000 05 10 | 704 | (2.2+ | 4.2−) | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2000 05 07 | 704 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.5+ | 0.1+ |
| 2000 05 07 | 704 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.4− |
| 2000 05 07 | 704 | 0.5+ | 0.5− | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.6+ |
| 2000 05 07 | 704 | 0.4− | 0.0 | 2006 10 17 | 703 | (2.2− | 1.0−) | 2006 10 28 | 703 | 0.8− | 1.0− |
| 2000 05 07 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 1.4+ | 0.9− | 2006 10 28 | 703 | 0.2+ | 0.4+ |
| 2000 05 09 | 704 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.1− | | | | |

**2000 HC$_{62}$ = 2000 JK$_{67}$**

Id. Minor Planet Center (d, *MPO* 11070)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.88894 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26920604 | $\omega$ | 59.93315 | | +0.25743460 | | +0.96598825 |
| $a$ | 2.3754516 | $\Omega$ | 225.00631 | | −0.89800199 | | +0.22984935 |
| $e$ | 0.2137986 | $i$ | 1.97523 | | −0.35681908 | | +0.11847356 |
| $P$ | 3.66 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.2− | 0.1+ | 2000 05 06 | 691 | 0.8+ | 0.3− | 2004 07 11 | 704 | 0.5− | 0.0 |
| 2000 04 25 | 691 | 0.2− | 0.3+ | 2000 05 09 | 691 | 1.0− | 0.3+ | 2004 07 11 | 704 | 2.4− | 0.4+ |
| 2000 04 25 | 691 | 0.8+ | 0.2− | 2000 05 09 | 691 | 0.7− | 0.0 | 2004 07 11 | 704 | 0.9− | 0.0 |
| 2000 04 28 | 704 | 0.1− | 0.8+ | 2000 05 09 | 691 | 0.7+ | 0.5− | 2004 07 22 | 699 | 0.6− | 0.4− |
| 2000 04 28 | 704 | 0.2+ | 1.2− | 2001 11 14 | 291 | 0.2− | 0.4− | 2004 07 22 | 699 | 0.3+ | 0.3− |
| 2000 04 28 | 704 | 0.7+ | 2.0− | 2001 11 14 | 291 | 0.0 | 0.2+ | 2004 07 22 | 699 | 0.3+ | 0.3+ |
| 2000 04 29 | 704 | 0.6+ | 1.1+ | 2001 11 14 | 291 | 0.1+ | 0.2+ | 2004 07 22 | 699 | 0.0 | 0.0 |
| 2000 04 29 | 704 | 0.5+ | 0.5+ | 2003 01 28 | 645 | 0.1+ | 0.2+ | 2004 08 11 | 704 | 0.7+ | 0.7− |
| 2000 04 29 | 704 | 0.7+ | 0.4+ | 2003 01 28 | 645 | 0.1+ | 0.2+ | 2004 08 11 | 704 | 0.7+ | 1.0+ |
| 2000 05 05 | 691 | (3.5− | 1.0−) | 2004 06 27 | 691 | 0.0 | 0.3+ | 2004 08 11 | 704 | 0.9+ | 0.6+ |
| 2000 05 05 | 691 | 0.4− | 0.3− | 2004 06 27 | 691 | 0.0 | 0.4+ | 2004 08 11 | 704 | 0.4+ | 0.6+ |
| 2000 05 05 | 691 | 0.3− | 0.4− | 2004 06 27 | 691 | 0.0 | 0.2+ | 2004 08 11 | 704 | 1.0+ | 0.4+ |
| 2000 05 06 | 691 | 0.5− | 0.5+ | 2004 07 11 | 704 | 0.8+ | 0.3+ | | | | |
| 2000 05 06 | 691 | 0.3+ | 0.0 | 2004 07 11 | 704 | 1.8− | 0.6+ | | | | |

**2000 HF$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.59230 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21283400 | $\omega$ | 316.55471 | | −0.92319258 | | −0.37822001 |
| $a$ | 2.7782759 | $\Omega$ | 201.50992 | | +0.38341521 | | −0.89401164 |
| $e$ | 0.2390595 | $i$ | 10.73571 | | +0.02661293 | | −0.24019329 |
| $P$ | 4.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 699 | 0.0 | 0.4− | 2000 05 05 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 691 | 0.4+ | 0.1− |
| 2000 04 24 | 699 | 0.4+ | 1.0+ | 2000 05 05 | 704 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.1− | 0.3− |
| 2000 04 24 | 699 | 0.0 | 0.5+ | 2000 05 05 | 704 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.3− |
| 2000 04 24 | 699 | 1.0− | 0.2+ | 2000 05 05 | 704 | 0.5+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2000 04 27 | 704 | (0.3− | 3.5+) | 2000 05 24 | 699 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2000 04 27 | 704 | (0.0 | 2.2+) | 2000 05 24 | 699 | 0.4+ | 0.3− | 2006 09 22 | 691 | 0.3+ | 0.6+ |
| 2000 04 27 | 704 | (3.0+ | 2.0−) | 2000 05 24 | 699 | 0.9− | 0.0 | 2006 09 22 | 691 | 0.2+ | 0.2+ |
| 2000 04 30 | 699 | 0.3− | 0.2− | 2000 05 24 | 699 | 0.3+ | 0.1+ | 2006 09 22 | 691 | 0.1− | 0.3+ |
| 2000 04 30 | 699 | 0.2+ | 0.4− | 2006 09 14 | 691 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2000 04 30 | 699 | 0.5+ | 0.5− | 2006 09 14 | 691 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2− |
| 2000 04 30 | 699 | 0.1− | 0.3− | 2006 09 14 | 691 | 0.2+ | 0.4− | 2006 09 25 | 691 | 0.4− | 0.4+ |
| 2000 05 05 | 704 | 0.4− | 1.0+ | 2006 09 17 | 691 | 0.2− | 0.1− | | | | |

**2000 HB$_{71}$ = 2001 SB$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.42968 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27209008 | $\omega$ | 227.87207 | | −0.96391735 | | +0.25897091 |
| $a$ | 2.3586359 | $\Omega$ | 326.99783 | | −0.19840772 | | −0.85325449 |
| $e$ | 0.1292868 | $i$ | 6.49626 | | −0.17747599 | | −0.45264870 |
| $P$ | 3.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 19 | 691 | 0.2+ | 0.3+ | 2001 09 20 | 704 | 0.1− | 1.3+ | 2001 09 23 | 704 | 0.2+ | 0.6+ |
| 1996 01 19 | 691 | 0.2+ | 0.2+ | 2001 09 20 | 704 | (0.7− | 2.3+) | 2001 09 23 | 704 | 0.2+ | 0.0 |
| 1996 01 19 | 691 | 0.1− | 0.3+ | 2001 09 21 | 704 | 0.7− | 1.2− | 2001 09 23 | 704 | 0.2+ | 0.5+ |
| 2000 04 30 | 699 | 0.3− | 0.2− | 2001 09 21 | 704 | 0.4− | 1.2− | 2001 09 23 | 704 | 0.3+ | 0.9+ |
| 2000 04 30 | 699 | 0.3− | 0.6− | 2001 09 21 | 704 | 0.5− | 0.5− | 2001 09 23 | 704 | 0.1+ | 0.6+ |
| 2000 04 30 | 699 | 0.9− | 1.4− | 2001 09 21 | 704 | 1.1− | 1.2− | 2001 09 23 | 704 | 0.3+ | 0.4− |
| 2000 04 30 | 699 | 0.4− | 1.1+ | 2001 09 21 | 704 | 0.6− | 1.0− | 2001 12 10 | 645 | 0.0 | 0.0 |
| 2000 05 05 | 699 | 0.0 | 0.5+ | 2001 09 22 | 704 | 0.4− | 0.2+ | 2001 12 10 | 645 | 0.0 | 0.0 |
| 2000 05 05 | 699 | 0.9+ | 0.2− | 2001 09 22 | 704 | 0.4+ | 0.5+ | 2005 10 29 | 703 | 0.1+ | 0.9− |
| 2000 05 05 | 699 | 0.3+ | 0.9+ | 2001 09 22 | 704 | 0.3− | 1.1+ | 2005 10 29 | 703 | 0.5− | 0.1− |
| 2000 05 05 | 699 | 1.5+ | 1.6+ | 2001 09 22 | 704 | 0.5− | 1.0+ | 2005 10 29 | 703 | 0.4+ | 1.5+ |
| 2000 05 06 | 704 | 0.5− | 0.7+ | 2001 09 22 | 704 | 0.3− | 0.1+ | 2005 10 29 | 703 | 0.1− | 0.3− |
| 2000 05 06 | 704 | 0.7+ | 0.4− | 2001 09 22 | 704 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2000 05 06 | 704 | (0.2− | 2.9+) | 2001 09 23 | 704 | 0.2− | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2000 05 06 | 704 | 0.6+ | 0.9+ | 2001 09 23 | 704 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.3− | 0.0 |
| 2001 09 20 | 704 | (0.2− | 1.7+) | 2001 09 23 | 704 | 0.5+ | 0.6+ | 2006 11 25 | G96 | 0.5− | 0.4− |
| 2001 09 20 | 704 | 0.1+ | 1.5+ | 2001 09 23 | 704 | 0.2+ | 0.2+ | | | | |

**2000 HB$_{74}$ = 2004 EE$_{69}$ = 2006 RU$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.24106 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22586887 | $\omega$ | 11.07098 | | −0.97456693 | | +0.22409558 |
| $a$ | 2.6703312 | $\Omega$ | 181.87913 | | −0.20715729 | | −0.90205407 |
| $e$ | 0.0714344 | $i$ | 1.18915 | | −0.08547017 | | −0.36888972 |
| $P$ | 4.36 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 1.3+ | 0.9− | 2004 03 23 | 291 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1+ |
| 2000 04 29 | 704 | 0.0 | 0.2+ | 2004 03 23 | 291 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2000 04 29 | 704 | 0.6+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.5+ |
| 2000 05 01 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2000 05 01 | 691 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2000 05 01 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2000 05 09 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 29 | 291 | 0.1+ | 0.6+ |
| 2000 05 09 | 691 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.8− | 0.0 | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2000 05 09 | 691 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2004 03 15 | 704 | 1.1− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2+ |
| 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2004 03 15 | 704 | 0.6+ | 0.4− | 2006 09 25 | G96 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.6− | 0.4+ |
| 2004 03 15 | 704 | 0.9+ | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 03 23 | 291 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.2+ | | | | |

**2000 HV$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.47840 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18587414 | $\omega$ | 169.51901 | | +0.78803896 | | +0.60949167 |
| $a$ | 3.0408155 | $\Omega$ | 152.34556 | | −0.57747887 | | +0.78063998 |
| $e$ | 0.0634005 | $i$ | 10.76424 | | −0.21333717 | | +0.13827918 |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 1.2+ | 0.7− | 2002 10 30 | 704 | 0.2+ | 0.6+ | 2005 03 18 | 703 | 0.4− | 1.4+ |
| 2000 04 27 | 699 | 1.2+ | 0.1− | 2002 10 30 | 704 | 0.0 | 1.2+ | 2005 03 18 | 703 | 0.4+ | 0.9+ |
| 2000 04 27 | 699 | 1.1+ | 0.2+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2005 03 18 | 703 | 0.2− | 0.9− |
| 2000 04 27 | 699 | 0.8+ | 0.9+ | 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 03 18 | 703 | 0.0 | 0.1+ |
| 2000 05 04 | 704 | 0.0 | 0.4+ | 2002 11 07 | 645 | 0.1− | 0.0 | 2005 03 18 | 703 | 0.2− | 0.2+ |
| 2000 05 04 | 704 | 0.1+ | 0.4+ | 2002 11 07 | 645 | 0.1− | 0.0 | 2005 03 18 | 703 | 0.5− | 0.2− |
| 2000 05 04 | 704 | 0.5+ | 0.4− | 2003 12 22 | 691 | 0.4+ | 0.1− | 2005 03 30 | 703 | 1.0− | 0.6− |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2003 12 22 | 691 | 0.4+ | 0.4− | 2005 03 30 | 703 | 0.4+ | 0.7+ |
| 2000 05 05 | 645 | 0.2− | 0.1+ | 2003 12 22 | 691 | 0.2− | 0.7+ | 2005 03 30 | 703 | 0.1− | 0.3− |
| 2001 07 21 | 608 | 0.9+ | 0.3+ | 2004 03 17 | 291 | 0.0 | 0.1+ | 2005 03 30 | 703 | 0.4+ | 1.3− |
| 2001 07 21 | 608 | 0.8+ | 0.2+ | 2004 03 17 | 291 | 0.3+ | 0.2− | 2005 04 16 | 703 | 0.8+ | 0.1− |
| 2001 07 21 | 608 | 0.6+ | 0.4+ | 2004 03 17 | 291 | 0.3+ | 0.0 | 2005 04 16 | 703 | 0.1− | 0.6+ |
| 2002 10 30 | 704 | 0.2− | 0.2− | 2005 03 18 | 703 | 0.2− | 0.9− | 2005 04 16 | 703 | 0.7− | 0.8+ |
| 2002 10 30 | 704 | 0.1− | 0.3+ | 2005 03 18 | 703 | 0.7+ | 0.4− | 2005 04 16 | 703 | 1.2− | 0.8+ |

**2000 HR$_{105}$ = 1997 RN$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.62319 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24518505 | $\omega$ | 17.03646 | | −0.75853512 | | +0.65112343 |
| $a$ | 2.5281726 | $\Omega$ | 203.64961 | | −0.60509107 | | −0.71847137 |
| $e$ | 0.0568895 | $i$ | 3.67957 | | −0.24184555 | | −0.24461636 |
| $P$ | 4.02 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 06 | 910 | 0.4+ | 0.3− | 2000 04 24 | 699 | 0.9− | 0.2− | 2004 05 13 | 691 | 0.0 | 0.2− |
| 1997 09 06 | 910 | 0.2+ | 0.5− | 2000 05 07 | 704 | 0.8+ | 0.9− | 2004 05 13 | 691 | 0.1− | 0.3− |
| 1997 09 06 | 910 | 0.1− | 0.1− | 2000 05 07 | 704 | 0.6+ | 0.1+ | 2005 07 31 | 644 | 0.0 | 0.1+ |
| 1997 09 06 | 910 | 0.2− | 0.3− | 2000 05 07 | 704 | 0.4+ | 0.1− | 2005 07 31 | 644 | 0.1+ | 0.1− |
| 1997 09 06 | 910 | 0.0 | 0.2− | 2000 05 07 | 704 | 0.3− | 0.5+ | 2005 07 31 | 644 | 0.3+ | 0.2− |
| 1997 09 06 | 910 | 0.2+ | 0.3− | 2004 03 23 | 291 | 0.1− | 0.1+ | 2005 09 13 | 691 | 0.1− | 0.1− |
| 2000 04 06 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 291 | 0.0 | 0.3+ | 2005 09 13 | 691 | 0.1− | 0.0 |
| 2000 04 06 | 704 | 0.1− | 0.0 | 2004 03 23 | 291 | 0.1+ | 0.4+ | 2005 09 13 | 691 | 0.1− | 0.2− |
| 2000 04 06 | 704 | 0.2− | 1.0− | 2004 04 21 | 704 | 0.7+ | 0.5+ | 2005 09 25 | 691 | 0.0 | 0.0 |
| 2000 04 06 | 704 | 0.4− | 0.4+ | 2004 04 21 | 704 | 0.4− | 0.3− | 2005 09 25 | 691 | 0.0 | 0.0 |
| 2000 04 06 | 704 | 0.6− | 0.8− | 2004 04 21 | 704 | 0.4− | 0.7+ | 2005 09 25 | 691 | 0.1+ | 0.0 |
| 2000 04 24 | 699 | 0.6− | 0.0 | 2004 04 21 | 704 | 0.1− | 0.3− | 2005 10 07 | 691 | 0.1− | 0.2+ |
| 2000 04 24 | 699 | 0.1+ | 0.2+ | 2004 04 21 | 704 | 0.5+ | 0.2+ | 2005 10 07 | 691 | 0.0 | 0.4+ |
| 2000 04 24 | 699 | 0.5+ | 1.5+ | 2004 05 13 | 691 | 0.2+ | 0.1− | 2005 10 07 | 691 | 0.1− | 0.5+ |

**2000 JF$_6$ = 2006 UR$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.65148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22771713 | $\omega$ | 6.08072 | | −0.73264309 | | +0.66408660 |
| $a$ | 2.6558625 | $\Omega$ | 216.97792 | | −0.63442837 | | −0.74565376 |
| $e$ | 0.1950225 | $i$ | 14.34939 | | −0.24644421 | | −0.05467591 |
| $P$ | 4.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | 0.8+ | 0.0 | 2000 05 05 | 704 | 0.9− | 0.5− | 2006 10 27 | G96 | 0.5+ | 0.3+ |
| 2000 04 26 | 699 | 1.1+ | 0.9− | 2000 05 05 | 704 | 0.5+ | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.7+ |
| 2000 04 26 | 699 | 0.5+ | 0.2− | 2000 05 05 | 704 | 0.6+ | 0.2+ | 2006 10 29 | 691 | 0.3− | 0.0 |
| 2000 04 26 | 699 | 0.0 | 0.5+ | 2000 05 05 | 704 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.8+ |
| 2000 05 03 | 704 | 0.6− | 0.3+ | 2000 05 28 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2000 05 03 | 704 | 0.2− | 1.0+ | 2000 05 28 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2000 05 03 | 704 | 0.2− | 0.4− | 2000 05 28 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.8− |
| 2000 05 03 | 704 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.7− | 0.1+ | 2006 11 14 | G96 | 0.6− | 0.7− |
| 2000 05 03 | 704 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | | | |
| 2000 05 05 | 704 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.4− | | | | |

**2000 JH$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.38159 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25802339 | $\omega$ | 127.31607 | | −0.83112492 | | −0.55584015 |
| $a$ | 2.4435994 | $\Omega$ | 18.93292 | | +0.49273063 | | −0.74988493 |
| $e$ | 0.1320606 | $i$ | 2.91948 | | +0.25777488 | | −0.35876777 |
| $P$ | 3.82 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 11 | 691 | 0.1− | 0.0 | 2001 08 24 | 644 | 1.4− | 1.4+ | 2002 12 14 | 704 | 0.5− | 1.4+ |
| 1992 03 11 | 691 | 0.0 | 0.0 | 2001 08 24 | 644 | 1.5− | 1.3+ | 2002 12 14 | 704 | 1.6− | 0.7+ |
| 1992 03 11 | 691 | 0.3+ | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.3+ | 2003 01 05 | 704 | 1.2+ | 0.5+ |
| 2000 05 03 | 704 | 0.8− | 1.3+ | 2002 12 06 | 704 | 0.2+ | 0.2− | 2003 01 05 | 704 | 0.3− | 0.8+ |
| 2000 05 03 | 704 | 0.8+ | 1.1+ | 2002 12 06 | 704 | 0.4− | 0.3+ | 2003 01 05 | 704 | 0.3− | 0.1+ |
| 2000 05 03 | 704 | 0.4+ | 0.9+ | 2002 12 06 | 704 | 0.5+ | 0.5+ | 2003 01 05 | 704 | 0.5+ | 0.4+ |
| 2000 05 07 | 704 | 0.7+ | 0.8+ | 2002 12 06 | 704 | 0.2+ | 1.3+ | 2005 08 30 | 691 | 0.1+ | 0.5+ |
| 2000 05 07 | 704 | 1.1+ | 1.5+ | 2002 12 06 | 695 | 0.2+ | 0.1+ | 2005 08 30 | 691 | 0.0 | 0.3+ |
| 2000 05 07 | 704 | 0.6− | 0.4+ | 2002 12 06 | 704 | 0.5+ | 0.4+ | 2005 08 30 | 691 | 0.1− | 0.0 |
| 2000 05 07 | 704 | 0.2+ | 0.7+ | 2002 12 06 | 704 | 0.1+ | 0.8+ | 2005 10 06 | G96 | 0.6+ | 0.0 |
| 2000 05 10 | 704 | 0.1+ | 0.0 | 2002 12 06 | 704 | 0.4− | 1.4+ | 2005 10 06 | G96 | 0.7+ | 0.3+ |
| 2000 05 10 | 704 | 0.8+ | 1.4+ | 2002 12 06 | 695 | 0.2+ | 0.1+ | 2005 10 06 | G96 | 0.2+ | 0.3+ |
| 2000 05 10 | 704 | 0.8+ | 1.9+ | 2002 12 14 | 704 | 0.4− | 0.5+ | 2005 10 06 | G96 | 0.2+ | 0.4+ |
| 2001 08 24 | 644 | 1.3− | 0.9+ | 2002 12 14 | 704 | 1.5− | 0.8+ | | | | |

**2000 JJ$_{43}$ = 1998 XT$_{98}$ = 2006 VA$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.48933 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24438084 | $\omega$ | 59.73798 | | −0.77860671 | | −0.62656766 |
| $a$ | 2.5337161 | $\Omega$ | 81.44248 | | +0.56311218 | | −0.72185121 |
| $e$ | 0.1647919 | $i$ | 1.99457 | | +0.27690477 | | −0.29384316 |
| $P$ | 4.03 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.1− | 0.1− | 2000 05 10 | 704 | 0.7+ | 0.6+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 1998 12 14 | 691 | 0.4+ | 0.3− | 2000 05 10 | 704 | 0.0 | 1.0+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 1998 12 14 | 691 | 0.5+ | 0.1+ | 2004 05 09 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 1998 12 25 | 691 | 0.3− | 0.5+ | 2004 05 09 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 1998 12 25 | 691 | 0.1− | 0.3− | 2004 05 09 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 1998 12 25 | 691 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.5− | 0.1+ | 2006 11 14 | 691 | 1.0+ | 0.9+ |
| 2000 04 28 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.5+ | 0.1− |
| 2000 04 28 | 691 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.5− | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.3+ |
| 2000 04 28 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.5− | 0.2+ |
| 2000 05 07 | 704 | 0.8+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.1− |
| 2000 05 07 | 704 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.3− | 0.1+ |
| 2000 05 07 | 704 | 0.4+ | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.7+ | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2000 05 10 | 704 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.6− | 2006 12 01 | G96 | 0.3+ | 0.0 |

**2000 JL$_{68}$ = 2006 SF$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.65533 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22073468 | $\omega$ | 331.60066 | | +0.41747642 | | −0.90694181 |
| $a$ | 2.7115794 | $\Omega$ | 93.67630 | | +0.84401491 | | +0.36406190 |
| $e$ | 0.0553066 | $i$ | 3.23427 | | +0.33667830 | | +0.21193273 |
| $P$ | 4.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2000 04 27 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.7− | 2006 09 30 | 703 | 0.9− | 0.4− |
| 2000 04 27 | 691 | 0.2− | 0.3+ | 2006 09 18 | 703 | (2.9− | 0.7−) | 2006 09 30 | 703 | 0.0 | 0.2− |
| 2000 05 07 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | (0.2+ | 1.5+) | 2006 09 30 | 703 | 0.6+ | 1.1+ |
| 2000 05 07 | 691 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.7− | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2000 05 07 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.3− | 1.1− | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2000 05 09 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | (0.7− | 1.8−) | 2006 10 03 | G96 | 0.5+ | 0.0 |
| 2000 05 09 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.8+ | 0.3− | 2006 10 03 | G96 | 0.8+ | 0.1− |
| 2000 05 09 | 691 | 0.1− | 0.6− | 2006 09 25 | 699 | 0.6− | 1.4+ | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2006 08 29 | 691 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.8− | 0.5− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 08 29 | 691 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.5+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 1.2− | 0.1− | 2006 11 23 | G96 | 0.3− | 0.8− |

**2000 JD$_{94}$ = 2005 EX$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.71387 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38648272 | $\omega$ | 51.44553 | | +0.44876996 | | −0.89015209 |
| $a$ | 1.8665917 | $\Omega$ | 12.62727 | | +0.66551435 | | +0.27393128 |
| $e$ | 0.0726434 | $i$ | 21.17377 | | +0.59640269 | | +0.36413034 |
| $P$ | 2.55 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.5+ | 0.2− | 2001 11 11 | 704 | 0.5+ | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.3+ |
| 2000 04 25 | 691 | 0.2+ | 0.1− | 2005 03 08 | 704 | 0.4+ | 0.0 | 2006 09 28 | 704 | 0.2− | 0.1− |
| 2000 04 25 | 691 | 0.2+ | 0.3− | 2005 03 08 | 704 | 0.1+ | 0.7+ | 2006 09 28 | 704 | 0.4+ | 0.2+ |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2005 03 08 | 704 | 0.0 | 0.0 | 2006 09 28 | 704 | (0.0 | 2.0+) |
| 2000 05 04 | 645 | 0.0 | 0.2+ | 2005 03 08 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 703 | 0.8− | 1.0+ |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2005 03 11 | 704 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.8− | 0.5+ |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2005 03 11 | 704 | 0.9+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2001 10 18 | 704 | 0.1− | 0.8+ | 2005 03 11 | 704 | 1.1+ | 0.9− | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2001 10 18 | 704 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.6− | 0.9+ | 2006 10 09 | 644 | 0.3+ | 0.2+ |
| 2001 10 18 | 704 | 0.9− | 0.3− | 2006 09 18 | 703 | 0.5− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.7+ |
| 2001 10 18 | 704 | 0.2− | 0.4+ | 2006 09 18 | 703 | 1.2− | 0.7− | 2006 10 09 | 644 | 0.3+ | 0.5+ |
| 2001 11 11 | 704 | 0.1− | 1.1− | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2001 11 11 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.6− |
| 2001 11 11 | 704 | 0.5+ | 0.3− | 2006 09 20 | 644 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 11 11 | 704 | 1.0+ | 0.2− | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.5− |

**2000 JE$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.08393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23421059 | $\omega$ | 161.72587 | | +0.33853412 | | +0.91990050 |
| $a$ | 2.6065438 | $\Omega$ | 127.58287 | | −0.89146608 | | +0.38087339 |
| $e$ | 0.1540812 | $i$ | 14.46375 | | −0.30113598 | | −0.09337309 |
| $P$ | 4.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 699 | 0.2− | 0.5− | 2004 03 27 | 699 | 0.2+ | 0.5− | 2004 06 18 | 703 | 1.4− | 0.1+ |
| 2000 05 02 | 699 | 0.3− | 0.1+ | 2004 04 15 | 704 | 0.0 | 0.2+ | 2004 06 18 | 703 | 0.5− | 0.2− |
| 2000 05 02 | 699 | 0.8+ | 0.4+ | 2004 04 15 | 704 | 0.3+ | 1.4+ | 2005 09 14 | 703 | 0.7− | 0.4− |
| 2000 05 02 | 699 | 0.7− | 0.1+ | 2004 04 15 | 704 | 0.2+ | 0.5+ | 2005 09 14 | 703 | 1.1+ | 0.6+ |
| 2000 05 28 | 704 | 1.3− | 0.6+ | 2004 04 15 | 704 | 1.1+ | 1.5+ | 2005 09 14 | 703 | 0.3− | 0.1+ |
| 2000 05 28 | 704 | 0.8− | 0.3+ | 2004 04 15 | 704 | 0.1+ | 0.4+ | 2005 09 14 | 703 | 0.0 | 0.4− |
| 2000 05 28 | 704 | 1.6+ | 0.9+ | 2004 04 26 | 704 | 0.3− | 0.7+ | 2005 09 27 | 704 | 0.3− | 0.6− |
| 2000 05 31 | 699 | 0.5+ | 1.1− | 2004 04 26 | 704 | 0.4− | 0.4+ | 2005 09 27 | 704 | 0.6− | 0.1+ |
| 2000 05 31 | 699 | 0.7+ | 0.9− | 2004 04 26 | 704 | 0.4+ | 0.2− | 2005 09 27 | 704 | 1.1− | 0.8+ |
| 2000 05 31 | 699 | 0.3− | 0.4− | 2004 04 26 | 704 | 1.0+ | 0.1− | 2005 09 27 | 704 | 1.1− | 0.6+ |
| 2000 05 31 | 699 | 0.9− | 1.0− | 2004 04 26 | 704 | 1.1− | 0.0 | 2005 10 04 | 644 | 0.0 | 0.0 |
| 2001 08 20 | 644 | 0.1− | 0.4+ | 2004 05 13 | 704 | 0.8+ | 0.8+ | 2005 10 04 | 644 | 0.1+ | 0.1− |
| 2001 08 20 | 644 | 0.1+ | 0.8+ | 2004 05 13 | 704 | 0.2− | 0.2+ | 2005 10 04 | 644 | 0.1+ | 0.4+ |
| 2001 08 20 | 644 | 0.1− | 0.8+ | 2004 05 13 | 704 | 1.0+ | 0.0 | 2005 11 06 | 699 | 0.0 | 0.8+ |
| 2004 03 27 | 699 | 0.3− | 0.4− | 2004 05 13 | 704 | 0.2+ | 0.7− | 2005 11 06 | 699 | 1.1+ | 0.8+ |
| 2004 03 27 | 699 | 0.1+ | 0.4− | 2004 06 18 | 703 | 0.3− | 0.2− | 2005 11 06 | 699 | 0.7+ | 0.7− |
| 2004 03 27 | 699 | 0.2+ | 0.3+ | 2004 06 18 | 703 | 0.1+ | 0.4+ | 2005 11 06 | 699 | 0.4+ | 0.5− |

**2000 JF$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.17641 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27842346 | $\omega$ | 169.15941 | | −0.23199172 | | +0.87062664 |
| $a$ | 2.3227305 | $\Omega$ | 86.32444 | | −0.92181441 | | −0.05439738 |
| $e$ | 0.1691318 | $i$ | 25.76632 | | −0.31054474 | | −0.48892758 |
| $P$ | 3.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 704 | 0.5− | 0.6+ | 2000 06 09 | 608 | 0.4− | 1.2− | 2004 09 13 | E12 | 0.2− | 0.0 |
| 2000 05 04 | 704 | 0.2− | 0.2− | 2000 06 09 | 608 | 0.6− | 1.4− | 2004 09 13 | E12 | 0.2+ | 0.0 |
| 2000 05 04 | 704 | 0.7+ | 0.9− | 2000 07 03 | 691 | 0.1− | 0.2+ | 2004 09 13 | E12 | 0.2+ | 0.0 |
| 2000 05 04 | 704 | 1.2+ | 0.1− | 2000 07 03 | 691 | 0.0 | 0.2+ | 2004 09 13 | E12 | 1.0+ | 1.0− |
| 2000 05 04 | 704 | 0.1− | 0.1+ | 2000 07 03 | 691 | 0.1+ | 0.2+ | 2005 12 04 | 691 | 0.2− | 0.1+ |
| 2000 05 28 | 704 | 0.2− | 0.8+ | 2002 01 08 | 645 | 0.1+ | 0.2+ | 2005 12 04 | 691 | 0.4− | 0.2+ |
| 2000 05 28 | 704 | 0.4+ | 0.9+ | 2002 01 08 | 645 | 0.0 | 0.2− | 2005 12 04 | 691 | 0.5− | 0.1− |
| 2000 05 28 | 704 | 0.1+ | 0.8+ | 2004 08 19 | E12 | 0.4− | 0.4+ | 2005 12 21 | 691 | 0.1+ | 0.2− |
| 2000 05 28 | 704 | 1.1+ | 0.0 | 2004 08 19 | E12 | 0.9− | 0.0 | 2005 12 21 | 691 | 0.8+ | 0.9+ |
| 2000 05 28 | 704 | 0.3− | 1.1+ | 2004 08 19 | E12 | 0.3− | 0.8+ | 2005 12 21 | 691 | 0.1− | 0.1− |
| 2000 06 09 | 608 | 0.1− | 1.4− | 2004 08 19 | E12 | 0.3− | 0.8+ | | | | |

**2000 KQ$_{8}$ = 2005 UN$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.30353 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25823486 | $\omega$ | 106.01252 | | +0.49494302 | | +0.86891954 |
| $a$ | 2.4422651 | $\Omega$ | 193.65485 | | −0.80231797 | | +0.45558563 |
| $e$ | 0.1769344 | $i$ | 0.77689 | | −0.33364245 | | +0.19344398 |
| $P$ | 3.82 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 0.1− | 0.5− | 2001 11 11 | 704 | 0.3+ | 0.0 | 2005 11 05 | 691 | 0.1+ | 0.1+ |
| 2000 04 28 | 691 | 0.1− | 0.4− | 2001 11 11 | 704 | 0.5+ | 0.4− | 2005 11 22 | 691 | 0.1− | 0.1+ |
| 2000 04 28 | 691 | 0.5− | 0.5− | 2001 11 11 | 704 | 1.1+ | 0.1+ | 2005 11 22 | 691 | 0.1− | 0.3+ |
| 2000 05 07 | 704 | 1.3+ | 0.4+ | 2001 11 21 | 704 | 0.3+ | 0.1+ | 2005 11 22 | 691 | 0.2− | 0.0 |
| 2000 05 07 | 704 | 0.6+ | 0.7+ | 2001 11 21 | 704 | 0.2+ | 0.5− | 2005 11 29 | G96 | 0.2+ | 0.3+ |
| 2000 05 07 | 704 | 1.0+ | 0.9+ | 2001 11 21 | 704 | 0.4− | 1.0− | 2005 11 29 | G96 | 0.0 | 0.0 |
| 2000 05 07 | 704 | 0.3+ | 0.2− | 2001 11 21 | 704 | 0.2− | 1.0− | 2005 11 29 | G96 | 0.2+ | 0.2+ |
| 2000 05 28 | 704 | 0.4+ | 0.7+ | 2001 11 21 | 704 | 0.9− | 0.9− | 2005 11 29 | G96 | 0.6+ | 0.0 |
| 2000 05 28 | 704 | 0.2− | 1.0+ | 2005 10 25 | G96 | 0.1+ | 0.0 | 2005 12 25 | G96 | 0.1− | 0.0 |
| 2000 05 28 | 704 | 0.5− | 0.5+ | 2005 10 25 | G96 | 0.1+ | 0.2+ | 2005 12 25 | G96 | 0.3− | 0.4+ |
| 2000 05 28 | 704 | 0.1− | 1.1+ | 2005 10 25 | G96 | 0.1+ | 0.6+ | 2005 12 25 | G96 | 0.7+ | 0.2− |
| 2000 05 29 | 704 | (3.1+ | 2.1+) | 2005 10 25 | G96 | 0.1+ | 0.2+ | 2005 12 25 | G96 | 0.1− | 0.4− |
| 2000 05 29 | 704 | 0.2− | 0.4+ | 2005 11 05 | 691 | 0.1− | 0.3− | | | | |
| 2000 05 29 | 704 | 0.2+ | 0.1+ | 2005 11 05 | 691 | 0.2− | 0.3+ | | | | |

**2000 KX$_{10}$ = 2006 TT$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.34819 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22516104 | $\omega$ | 334.62605 | | −0.84099217 | | +0.50973072 |
| $a$ | 2.6759247 | $\Omega$ | 237.21898 | | −0.45232070 | | −0.84635540 |
| $e$ | 0.1044181 | $i$ | 12.46032 | | −0.29688073 | | −0.15445757 |
| $P$ | 4.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 704 | 0.4− | 1.1− | 2000 05 28 | 704 | 0.1+ | 0.9+ | 2006 10 13 | 691 | 0.1− | 0.0 |
| 2000 05 10 | 704 | 0.5− | 0.2− | 2000 05 29 | 704 | 0.8− | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2000 05 10 | 704 | 0.5+ | 0.5+ | 2000 05 29 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 691 | 0.4− | 0.3− |
| 2000 05 10 | 704 | 0.3+ | 0.9+ | 2000 05 29 | 704 | 1.2+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2000 05 10 | 704 | 0.6+ | 0.6− | 2000 05 31 | 691 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2000 05 28 | 704 | 0.6+ | 0.3+ | 2000 05 31 | 691 | 0.3− | 0.3− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2000 05 28 | 704 | 0.8+ | 0.6+ | 2000 05 31 | 691 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2000 05 28 | 704 | 0.5+ | 0.8+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 2000 05 28 | 704 | 0.0 | 0.7+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | | | | |

**2000 KR$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.10760 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28222213 | $\omega$ | 258.67580 | | +0.97441273 | +0.18212231 | |
| $a$ | 2.3018411 | $\Omega$ | 90.73107 | | −0.11738291 | +0.91211526 | |
| $e$ | 0.1468763 | $i$ | 7.56986 | | −0.19167963 | +0.36725633 | |
| $P$ | 3.49 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 24 | 691 | 0.5− | 0.3− | 2001 12 09 | 644 | 0.0 | 0.4+ | 2004 08 08 | 704 | 0.2+ | 0.1+ |
| 2000 05 24 | 691 | 0.6− | 0.2+ | 2001 12 17 | 704 | 0.6+ | 0.0 | 2004 08 08 | 704 | 0.4− | 0.1+ |
| 2000 05 24 | 691 | 0.4+ | 0.3+ | 2001 12 17 | 704 | 0.1− | 0.4+ | 2004 08 08 | 704 | 0.1+ | 0.3− |
| 2000 05 31 | 691 | 0.5+ | 0.1+ | 2001 12 17 | 704 | 0.8− | 0.9− | 2004 08 22 | E12 | 0.1− | 0.4+ |
| 2000 05 31 | 691 | 0.5+ | 0.1+ | 2001 12 17 | 704 | 0.6+ | 0.0 | 2004 08 22 | E12 | 0.7− | 0.3− |
| 2000 05 31 | 691 | 0.4+ | 0.3− | 2001 12 17 | 704 | 0.7− | 0.3− | 2004 08 22 | E12 | 0.2− | 0.2+ |
| 2000 06 05 | 691 | 0.2− | 0.2− | 2003 04 10 | 691 | 0.1+ | 0.3+ | 2004 08 22 | E12 | 0.8+ | 0.6+ |
| 2000 06 05 | 691 | 0.5− | 0.2+ | 2003 04 10 | 691 | 0.2+ | 0.2+ | 2004 09 15 | E12 | 0.7+ | 0.0 |
| 2000 06 05 | 691 | 0.2− | 0.4− | 2003 04 10 | 691 | 0.1+ | 0.2+ | 2004 09 15 | E12 | 0.1− | 0.5− |
| 2001 12 09 | 644 | 0.1− | 0.4+ | 2004 08 08 | 704 | 0.0 | 0.4− | 2004 09 15 | E12 | 0.3+ | 1.5+ |
| 2001 12 09 | 644 | 0.5+ | 0.4+ | 2004 08 08 | 704 | 0.8− | 0.7+ | 2004 09 15 | E12 | 0.2− | 0.2− |

**2000 KU$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.64211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36759169 | $\omega$ | 89.76892 | | −0.87921234 | +0.29266364 | |
| $a$ | 1.9300072 | $\Omega$ | 107.22994 | | −0.40285804 | −0.87794077 | |
| $e$ | 0.0471098 | $i$ | 23.17914 | | +0.25434437 | −0.37890368 | |
| $P$ | 2.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 704 | 0.4− | 0.3− | 2000 05 29 | 699 | 0.2+ | 0.8+ | 2000 06 03 | 699 | 0.1− | 0.0 |
| 2000 05 02 | 704 | 0.1+ | 0.4− | 2000 05 30 | 704 | 0.4+ | 0.0 | 2000 06 03 | 699 | 0.5− | 0.0 |
| 2000 05 02 | 704 | 0.1− | 0.2+ | 2000 05 30 | 704 | 0.1− | 0.1− | 2006 09 30 | E12 | 0.6− | 0.4+ |
| 2000 05 02 | 704 | 0.6+ | 0.2+ | 2000 05 30 | 704 | 0.4− | 0.9+ | 2006 09 30 | E12 | 0.7+ | 0.0 |
| 2000 05 29 | 699 | 0.7− | 0.2− | 2000 05 30 | 704 | 0.4+ | 0.4− | 2006 09 30 | E12 | 0.2− | 0.2+ |
| 2000 05 29 | 699 | 0.9+ | 0.2+ | 2000 06 03 | 699 | 0.7− | 1.1− | 2006 09 30 | E12 | 0.1+ | 0.6− |
| 2000 05 29 | 699 | 0.2+ | 0.2+ | 2000 06 03 | 699 | (2.6+ | 1.6+) | | | | |

**2000 KV$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.35289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28484931 | $\omega$ | 80.60943 | | +0.61028205 | +0.79206134 | |
| $a$ | 2.2876659 | $\Omega$ | 227.00997 | | −0.73409522 | +0.55882390 | |
| $e$ | 0.2896910 | $i$ | 1.09293 | | −0.29775833 | +0.24567190 | |
| $P$ | 3.46 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 21 | 691 | 0.2+ | 0.2− | 2003 04 07 | 291 | 0.3− | 0.4− | 2004 11 10 | 691 | 0.4+ | 0.3+ |
| 1997 11 21 | 691 | 0.2− | 0.1+ | 2003 04 07 | 291 | 0.1− | 0.4+ | 2004 11 10 | 691 | 0.3+ | 0.2+ |
| 1997 11 21 | 691 | 0.1+ | 0.2− | 2003 04 07 | 291 | 0.1− | 0.2+ | 2006 01 23 | G96 | 0.2− | 0.1− |
| 2000 05 29 | 704 | 0.5+ | 0.1+ | 2004 10 07 | 691 | 0.3− | 0.2− | 2006 01 23 | G96 | 0.2− | 0.3− |
| 2000 05 29 | 704 | 0.7+ | 1.0+ | 2004 10 07 | 691 | 0.0 | 0.1− | 2006 01 23 | G96 | 0.3− | 0.1+ |
| 2000 05 29 | 704 | 0.7+ | 0.4+ | 2004 10 07 | 691 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.3− | 0.2+ |
| 2000 06 07 | 704 | 1.1− | 0.8− | 2004 10 15 | 691 | 0.1− | 0.1+ | 2006 02 01 | 691 | 0.2+ | 0.4+ |
| 2000 06 07 | 704 | 0.3− | 0.3− | 2004 10 15 | 691 | 0.1− | 0.2− | 2006 02 01 | 691 | 0.1+ | 0.0 |
| 2000 06 07 | 704 | 0.7− | 0.1− | 2004 10 15 | 691 | 0.3− | 0.1+ | 2006 02 01 | 691 | 0.6+ | 0.0 |
| 2000 06 24 | 704 | 1.0− | 0.8− | 2004 10 23 | 691 | 0.6− | 0.0 | 2006 02 24 | G96 | 0.0 | 0.2+ |
| 2000 06 24 | 704 | 0.2+ | 0.9+ | 2004 10 23 | 691 | 0.0 | 0.4+ | 2006 02 24 | G96 | 0.3+ | 0.1− |
| 2000 06 24 | 704 | 0.2+ | 0.8+ | 2004 10 23 | 691 | 0.2− | 0.2+ | 2006 02 24 | G96 | 0.1+ | 0.2− |
| 2000 06 24 | 704 | 1.5+ | 1.5+ | 2004 11 10 | 691 | 0.4+ | 0.3+ | 2006 02 24 | G96 | 0.3− | 0.2− |

**2000 LP$_2$ = 2006 TT$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.17229 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21212642 | $\omega$ | 47.65363 | | +0.02881373 | +0.98755069 | |
| $a$ | 2.7844507 | $\Omega$ | 224.72636 | | −0.96951810 | −0.01004753 | |
| $e$ | 0.1724389 | $i$ | 12.69408 | | −0.24331960 | +0.15697988 | |
| $P$ | 4.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 24 | 691 | 0.3− | 0.0 | 2000 06 06 | 699 | 1.1+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2000 05 24 | 691 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | (1.4− | 1.6+) |
| 2000 05 24 | 691 | 0.5− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2000 06 01 | 691 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.7− | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2000 06 01 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2000 06 01 | 691 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2000 06 04 | 691 | 0.8+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2000 06 04 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2000 06 04 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.9+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2000 06 06 | 699 | 0.2+ | 0.5− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2000 06 06 | 699 | 0.8+ | 0.9+ | 2006 11 11 | G96 | 0.3+ | 0.5− | | | | |
| 2000 06 06 | 699 | 1.0+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.4− | | | | |

**2000 LN$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.24882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23159821 | $\omega$ | 106.37014 | | +0.59411213 | +0.80083915 | |
| $a$ | 2.6261080 | $\Omega$ | 200.63908 | | −0.79522524 | +0.57065529 | |
| $e$ | 0.2970117 | $i$ | 12.35426 | | −0.12102729 | +0.18168431 | |
| $P$ | 4.26 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 01 | 704 | 0.2− | 0.4− | 2000 09 23 | 704 | 0.6− | 0.1− | 2004 06 09 | 699 | 0.6+ | 0.2− |
| 2000 06 01 | 704 | 0.1− | 0.3− | 2000 09 23 | 704 | 0.5− | 0.3+ | 2004 06 09 | 699 | 0.5+ | 0.2+ |
| 2000 06 01 | 704 | 0.1− | 0.1− | 2004 04 16 | 644 | 0.0 | 0.2+ | 2004 06 09 | 699 | 0.1− | 0.3− |
| 2000 06 01 | 704 | 0.8− | 0.2+ | 2004 04 16 | 644 | 0.2− | 0.2+ | 2004 06 09 | 699 | 0.4− | 0.2+ |
| 2000 06 01 | 704 | 0.3− | 0.0 | 2004 04 16 | 644 | 0.0 | 0.0 | 2004 06 12 | 704 | 0.1− | 0.0 |
| 2000 06 11 | 704 | 0.7+ | 0.5− | 2004 05 23 | 704 | 0.3− | 0.4− | 2004 06 12 | 704 | 0.4+ | 0.4+ |
| 2000 06 11 | 704 | 0.4+ | 0.0 | 2004 05 23 | 704 | 0.4− | 0.2+ | 2004 06 12 | 704 | 0.7− | 0.2+ |
| 2000 06 11 | 704 | 0.9+ | 0.4+ | 2004 05 23 | 704 | 0.1+ | 0.4− | 2004 06 12 | 704 | 0.0 | 0.2− |
| 2000 06 11 | 704 | 0.3− | 0.7− | 2004 05 23 | 704 | 0.2− | 0.4+ | 2004 06 12 | 704 | 0.2+ | 0.1− |
| 2000 09 23 | 704 | 0.8+ | 0.8+ | 2004 05 23 | 704 | 0.5+ | 0.6+ | | | | |

**2000 NH$_1$ = 2006 SD$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.28977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17502242 | $\omega$ | 104.26526 | | +0.92467397 | −0.34500107 | |
| $a$ | 3.1652421 | $\Omega$ | 276.11434 | | +0.25579078 | +0.87625199 | |
| $e$ | 0.0821552 | $i$ | 9.32410 | | +0.28204455 | +0.33638775 | |
| $P$ | 5.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 03 | 691 | 0.3− | 0.5+ | 2000 07 10 | 691 | 0.2− | 0.2− | 2006 09 22 | 691 | 0.2+ | 0.1+ |
| 2000 07 03 | 691 | 0.3+ | 0.5+ | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 09 22 | 691 | 0.2− | 0.0 |
| 2000 07 03 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.4+ |
| 2000 07 05 | 691 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.8− | 0.2+ |
| 2000 07 05 | 691 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.4+ | 0.0 |
| 2000 07 05 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.4+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2000 07 10 | 691 | 0.1− | 0.2− | 2006 09 22 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ |

**2000 OM**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.32269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.44437402 | $\omega$ | 73.75772 | | −0.93125457 | +0.30753715 | |
| $a$ | 1.7007362 | $\Omega$ | 123.76129 | | −0.35223374 | −0.89708233 | |
| $e$ | 0.6404535 | $i$ | 13.59462 | | +0.09325404 | −0.31727620 | |
| $P$ | 2.22 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 23 | 704 | 0.0 | 0.3+ | 2000 07 25 | 557 | 0.1+ | 0.1− | 2000 07 31 | 352 | 0.1− | 0.2− |
| 2000 07 23 | 704 | 0.4+ | 0.7+ | 2000 07 25 | 557 | 0.2− | 0.1− | 2000 07 31 | 118 | 0.1+ | 0.5+ |
| 2000 07 23 | 704 | 0.3− | 0.1+ | 2000 07 26 | 151 | 0.0 | 0.3− | 2000 07 31 | 118 | 0.6− | 0.5+ |
| 2000 07 23 | 704 | 0.3+ | 0.3+ | 2000 07 26 | 151 | 0.1+ | 0.1− | 2000 08 01 | 118 | 0.1− | 0.3+ |
| 2000 07 24 | 739 | 0.5− | 0.2− | 2000 07 26 | 151 | 0.1+ | 0.2+ | 2000 08 01 | 118 | 0.2+ | 0.3+ |
| 2000 07 24 | 739 | 0.1− | 0.3− | 2000 07 26 | 151 | 0.4+ | 0.2− | 2000 08 02 | 704 | 0.1− | 0.2+ |
| 2000 07 24 | 739 | 1.5− | 0.6− | 2000 07 26 | 151 | 0.2+ | 0.3− | 2000 08 02 | 704 | 0.1+ | 0.1− |
| 2000 07 24 | 739 | 0.8− | 0.6− | 2000 07 26 | 151 | 0.3− | 1.2− | 2000 08 02 | 704 | 0.2+ | 0.4+ |
| 2000 07 24 | 670 | 0.5+ | 0.5+ | 2000 07 27 | 808 | 0.4− | 0.6+ | 2000 08 02 | 704 | 0.1+ | 0.2− |
| 2000 07 24 | 670 | 0.0 | 0.1+ | 2000 07 27 | 859 | 1.0+ | 0.4− | 2000 08 02 | 704 | 0.5+ | 0.0 |
| 2000 07 24 | 704 | 0.5+ | 0.1− | 2000 07 27 | 859 | 0.0 | 0.4− | 2000 08 03 | 360 | 0.0 | 0.1− |
| 2000 07 24 | 704 | 0.1+ | 0.5+ | 2000 07 27 | 474 | 0.0 | 0.2+ | 2000 08 03 | 360 | 0.3+ | 0.1+ |
| 2000 07 24 | 670 | 0.0 | 0.0 | 2000 07 27 | 474 | 0.0 | 0.3− | 2000 08 03 | 360 | 0.0 | 0.0 |
| 2000 07 24 | 854 | 0.7− | 0.8− | 2000 07 27 | 474 | 0.3− | 0.5+ | 2000 08 07 | 587 | 0.4+ | 1.8− |
| 2000 07 24 | 854 | 0.6− | 0.1+ | 2000 07 27 | 474 | 0.9− | 0.0 | 2000 08 07 | 587 | 0.7+ | 0.2− |
| 2000 07 24 | 704 | 0.4+ | 0.3+ | 2000 07 27 | 428 | 0.6+ | 0.3− | 2000 08 08 | 860 | 0.1− | 0.1+ |
| 2000 07 24 | 658 | 0.4+ | 0.4+ | 2000 07 27 | 428 | 1.0+ | 0.3+ | 2000 08 08 | 860 | 0.1− | 0.1− |
| 2000 07 24 | 658 | 0.2+ | 0.5+ | 2000 07 27 | 587 | 0.9− | 0.3+ | 2000 08 08 | 860 | 0.3+ | 0.3− |
| 2000 07 24 | 704 | 0.3+ | 0.3+ | 2000 07 27 | 587 | 0.3+ | 1.7+ | 2000 08 26 | 413 | 0.1+ | 0.3− |
| 2000 07 24 | 658 | 0.3− | 0.2− | 2000 07 27 | 587 | 0.2− | 0.1+ | 2000 08 26 | 413 | 0.2+ | 0.2− |
| 2000 07 24 | 413 | 0.0 | 0.4− | 2000 07 29 | 474 | 0.1− | 0.5− | 2000 08 26 | 413 | 0.3+ | 0.2− |
| 2000 07 24 | 413 | 0.0 | 0.4− | 2000 07 29 | 474 | 0.3− | 0.6− | 2000 08 26 | 413 | 0.1+ | 0.3− |
| 2000 07 24 | 413 | 0.1+ | 0.3− | 2000 07 29 | 474 | 0.3− | 0.7− | 2000 08 31 | 711 | 1.0− | 0.4+ |
| 2000 07 24 | 413 | 0.0 | 0.2− | 2000 07 30 | 808 | 0.8+ | 0.1− | 2000 08 31 | 711 | 1.1− | 0.4+ |
| 2000 07 25 | 859 | 0.2− | 0.4+ | 2000 07 30 | 808 | (0.7+ | 2.2+) | 2000 08 31 | 711 | 0.7− | 0.3+ |
| 2000 07 25 | 859 | 1.9+ | 1.0+ | 2000 07 30 | 046 | 0.1− | 0.1− | 2000 08 31 | 413 | (2.6+ | 1.5+) |
| 2000 07 25 | 859 | 0.9− | 0.5− | 2000 07 30 | 046 | 0.6− | 0.4+ | 2000 08 31 | 413 | (3.3+ | 1.8+) |
| 2000 07 25 | 670 | 0.4− | 1.1− | 2000 07 30 | 046 | 0.2+ | 0.8+ | 2006 10 30 | G96 | 0.0 | 0.4− |
| 2000 07 25 | 670 | 0.1+ | 0.4− | 2000 07 30 | 046 | 0.2− | 0.1− | 2006 10 30 | G96 | 0.0 | 0.0 |
| 2000 07 25 | 046 | 0.2− | 0.3− | 2000 07 30 | 151 | 1.1+ | 0.2+ | 2006 10 30 | G96 | 0.2− | 0.1+ |
| 2000 07 25 | 046 | 0.1− | 0.0 | 2000 07 30 | 151 | 1.8− | 0.1− | 2006 10 30 | G96 | 0.4+ | 0.2+ |
| 2000 07 25 | 046 | 0.7+ | 0.2+ | 2000 07 30 | 151 | 1.2+ | 0.8+ | 2006 10 30 | G96 | 0.4− | 0.0 |
| 2000 07 25 | 046 | 0.6+ | 0.4+ | 2000 07 30 | 151 | 0.4+ | 0.4+ | 2006 10 30 | G96 | 0.2+ | 0.3+ |
| 2000 07 25 | 046 | 0.5− | 1.5+ | 2000 07 30 | 151 | 0.5+ | 0.2+ | 2006 10 30 | G96 | 0.1− | 0.5+ |
| 2000 07 25 | 557 | 0.2+ | 0.3− | 2000 07 30 | 151 | 0.1+ | 0.2+ | 2006 10 30 | G96 | 0.2+ | 0.1+ |
| 2000 07 25 | 557 | 0.1− | 0.1− | 2000 07 31 | 352 | 0.8− | 0.6− | | | | |
| 2000 07 25 | 557 | 0.1+ | 0.2− | 2000 07 31 | 352 | 1.0− | 0.8− | | | | |

**2000 ON$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.75978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17235677 | $\omega$ | 341.83008 | | +0.34960276 | +0.86793598 | |
| $a$ | 3.1977940 | $\Omega$ | 307.07242 | | −0.79537974 | +0.07594870 | |
| $e$ | 0.1444224 | $i$ | 26.24242 | | −0.49512521 | +0.49083494 | |
| $P$ | 5.72 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 0.5+ | 0.0 | 2000 08 31 | 704 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.4− |
| 2000 07 30 | 704 | 0.1+ | 0.5− | 2000 10 02 | 691 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.0 |
| 2000 07 30 | 704 | 0.4+ | 0.7+ | 2000 10 02 | 691 | 0.2+ | 0.0 | 2006 09 28 | 703 | 1.6+ | 1.1− |
| 2000 07 30 | 704 | 0.4− | 0.5− | 2000 10 02 | 691 | 0.0 | 0.0 | 2006 09 28 | 703 | (2.5+ | 0.8−) |
| 2000 08 03 | 704 | 0.5+ | 0.2+ | 2006 09 15 | 703 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.1− | 0.2− |
| 2000 08 03 | 704 | 1.3− | 0.2+ | 2006 09 15 | 703 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 1.3+ | 1.0− |
| 2000 08 03 | 704 | 0.3+ | 1.2− | 2006 09 15 | 703 | 0.0 | 0.6+ | 2006 10 20 | 703 | 0.3+ | 1.8+ |
| 2000 08 03 | 704 | 0.7− | 0.7+ | 2006 09 15 | 703 | 0.5+ | 0.3+ | 2006 10 20 | 703 | 0.3− | 1.2− |
| 2000 08 31 | 704 | 0.4+ | 0.3− | 2006 09 17 | 703 | 0.5− | 0.0 | 2006 10 20 | 703 | 1.4− | 0.5+ |
| 2000 08 31 | 704 | 1.1− | 0.5+ | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 10 20 | 703 | 1.2− | 0.1+ |

**2000 OC$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.42306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30053408 | $\omega$ | 351.93880 | | +0.86385449 | +0.50134542 | |
| $a$ | 2.2073620 | $\Omega$ | 337.76243 | | −0.45463944 | +0.73399059 | |
| $e$ | 0.2674032 | $i$ | 7.45053 | | −0.21692950 | +0.45816001 | |
| $P$ | 3.28 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.3+ | 0.5− | 2000 09 02 | 699 | 1.3− | 0.6+ | 2000 09 23 | 699 | 1.5+ | 0.5+ |
| 2000 07 07 | 704 | 1.7+ | 1.2+ | 2000 09 02 | 699 | 1.3− | 0.7+ | 2000 09 23 | 704 | 0.3− | 0.2+ |
| 2000 07 07 | 704 | 0.4− | 0.4− | 2000 09 02 | 699 | 1.0− | 0.4+ | 2000 09 27 | 704 | 0.2− | 0.0 |
| 2000 07 07 | 704 | 0.0 | 0.4+ | 2000 09 03 | 704 | 1.2+ | 0.8− | 2000 09 27 | 704 | 0.1− | 0.4+ |
| 2000 07 31 | 704 | 0.8− | 0.2+ | 2000 09 03 | 704 | 0.4+ | 0.0 | 2000 09 27 | 704 | 0.1+ | 0.1+ |
| 2000 07 31 | 704 | 1.2− | 0.2− | 2000 09 03 | 704 | 0.4+ | 0.7− | 2000 09 27 | 704 | 0.4+ | 0.2+ |
| 2000 07 31 | 704 | 0.7− | 0.4+ | 2000 09 03 | 704 | 0.5+ | 0.3− | 2000 09 27 | 704 | 0.1+ | 0.5+ |
| 2000 07 31 | 704 | 0.7− | 0.5+ | 2000 09 03 | 704 | 0.2+ | 0.7− | 2000 10 02 | 699 | 0.0 | 0.2+ |
| 2000 07 31 | 704 | 0.0 | 1.6+ | 2000 09 08 | 106 | 0.4− | 0.3+ | 2000 10 02 | 699 | 0.3+ | 0.1− |
| 2000 08 03 | 704 | 0.4− | 0.1+ | 2000 09 08 | 106 | 0.3− | 0.1− | 2000 10 02 | 699 | 0.4+ | 0.1+ |
| 2000 08 03 | 704 | 0.9− | 0.5+ | 2000 09 09 | 106 | 0.1+ | 0.1− | 2000 10 02 | 699 | 0.2− | 0.1+ |
| 2000 08 03 | 704 | 1.0− | 0.4+ | 2000 09 17 | 739 | 0.8+ | 1.7− | 2000 10 03 | 704 | 0.3+ | 0.4− |
| 2000 08 03 | 704 | 1.1− | 0.7+ | 2000 09 17 | 739 | 0.7+ | 0.1+ | 2000 10 03 | 704 | 0.2− | 0.2− |
| 2000 08 24 | 704 | 0.3− | 0.3− | 2000 09 17 | 739 | 0.6− | 0.4+ | 2000 10 03 | 704 | 0.0 | 0.0 |
| 2000 08 24 | 704 | 0.4+ | 0.2− | 2000 09 17 | 739 | 1.7+ | 0.8+ | 2000 10 03 | 704 | 0.6+ | 0.3+ |
| 2000 08 24 | 704 | 0.0 | 0.2− | 2000 09 19 | 608 | 0.4− | 0.2+ | 2000 10 03 | 704 | 0.3+ | 1.0+ |
| 2000 08 26 | I02 | 0.2− | 0.3− | 2000 09 19 | 608 | 0.2− | 0.2+ | 2000 10 04 | 608 | (1.6+ | 3.6+) |
| 2000 08 27 | 106 | 0.3− | 0.3+ | 2000 09 19 | 608 | 0.4− | 0.2+ | 2000 10 04 | 608 | (1.3+ | 3.4+) |
| 2000 08 27 | 106 | 0.4− | 0.2+ | 2000 09 20 | G91 | 0.5− | 1.2− | 2000 10 04 | 608 | (1.5+ | 3.5+) |
| 2000 08 27 | 106 | 0.1− | 0.3+ | 2000 09 23 | 704 | 0.2− | 0.3+ | 2002 02 06 | 291 | 0.1+ | 0.2− |
| 2000 09 01 | 704 | 0.6+ | 0.7− | 2000 09 23 | 699 | 0.2+ | 0.1+ | 2002 02 06 | 291 | 0.0 | 0.0 |
| 2000 09 01 | 704 | 0.7+ | 0.6− | 2000 09 23 | 704 | 0.0 | 0.1− | 2002 02 06 | 291 | 0.3− | 0.0 |
| 2000 09 01 | 704 | 0.4+ | 1.9− | 2000 09 23 | 699 | 0.3+ | 0.3+ | 2005 01 17 | 691 | 0.2+ | 0.1+ |
| 2000 09 01 | 704 | 0.7+ | 1.9− | 2000 09 23 | 704 | 0.1− | 0.3+ | 2005 01 17 | 691 | 0.0 | 0.4+ |
| 2000 09 01 | 704 | (0.6+ | 2.5−) | 2000 09 23 | 699 | 0.3+ | 0.2− | 2005 01 17 | 691 | 0.2+ | 0.4+ |
| 2000 09 02 | 699 | 1.1− | 0.7+ | 2000 09 23 | 704 | 0.1+ | 0.2− | | | | |

**2000 PX$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.17776 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17118660 | $\omega$ | 123.98643 | | +0.96783524 | −0.02826442 | |
| $a$ | 3.2123501 | $\Omega$ | 238.82990 | | −0.03410462 | +0.96975731 | |
| $e$ | 0.2027681 | $i$ | 16.98801 | | +0.24926256 | +0.24242913 | |
| $P$ | 5.76 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 09 | 704 | 0.7− | 0.5+ | 2006 09 17 | 703 | 0.3− | 0.9− | 2006 10 21 | 704 | 0.8+ | 0.5+ |
| 2000 08 09 | 704 | 0.6− | 1.1+ | 2006 09 17 | 703 | 0.3+ | 0.9− | 2006 10 21 | 704 | 0.3− | 0.0 |
| 2000 08 09 | 704 | 0.1− | 1.3+ | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2000 08 10 | 704 | 0.2+ | 0.3− | 2006 09 22 | 699 | 0.4− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2000 08 10 | 704 | 0.8+ | 0.1− | 2006 09 22 | 699 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2000 08 10 | 704 | 0.3+ | 0.9− | 2006 09 22 | 699 | 0.4− | 0.9+ | 2006 10 23 | 644 | 0.1− | 0.4− |
| 2000 08 10 | 704 | 0.8+ | 0.4− | 2006 09 22 | 699 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2000 08 10 | 704 | 0.4+ | 0.3− | 2006 09 30 | 704 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2000 09 06 | 704 | 0.6+ | 0.0 | 2006 09 30 | 704 | 0.3− | 0.5+ | 2006 10 31 | 703 | 0.8+ | 0.7− |
| 2000 09 06 | 704 | 0.5− | 0.4− | 2006 09 30 | 704 | 0.1− | 0.1− | 2006 10 31 | 703 | 0.2− | 0.7− |
| 2000 09 06 | 704 | 0.0 | 0.4+ | 2006 09 30 | 704 | 1.3− | 0.4+ | 2006 10 31 | 703 | 0.6− | 0.2+ |
| 2000 09 06 | 704 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.3+ | 2006 10 31 | 703 | 0.4+ | 0.3+ |
| 2000 09 06 | 704 | 0.2− | 0.4− | 2006 10 19 | 703 | 0.9+ | 0.1− | 2006 11 14 | 703 | 0.8− | 1.3+ |
| 2000 09 22 | 704 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.3− | 0.2− | 2006 11 14 | 703 | 0.8+ | 0.1+ |
| 2000 09 22 | 704 | 1.0− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.4+ | 0.5+ |
| 2000 09 22 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 704 | 0.7− | 1.0+ | 2006 11 14 | 703 | 1.1+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.5− | 0.2+ | 2006 10 21 | 704 | (0.0 | 2.0+) | | | | | | |
| 2006 09 17 | 703 | 0.2+ | 0.7− | 2006 10 21 | 704 | 0.2− | 0.5+ | | | | | | |

**2000 PK$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.72393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30538173 | $\omega$ | 252.90869 | | +0.25447874 | +0.96629571 | |
| $a$ | 2.1839399 | $\Omega$ | 31.91518 | | −0.85695127 | +0.24395886 | |
| $e$ | 0.2994125 | $i$ | 4.21969 | | −0.44819092 | +0.08219903 | |
| $P$ | 3.23 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.2+ | 0.2+ | 2000 08 26 | 704 | 1.0+ | 0.3− | 2003 05 10 | 691 | 0.7+ | 0.5+ | | |
| 2000 08 01 | 704 | 1.1+ | 1.4+ | 2000 08 26 | 704 | 0.1+ | 0.6− | 2003 05 22 | 691 | 0.2− | 0.6− | | |
| 2000 08 01 | 704 | 0.3+ | 0.3+ | 2003 04 29 | 704 | (0.1+ | 2.7−) | 2003 05 22 | 691 | 0.4− | 0.6− | | |
| 2000 08 01 | 704 | 0.5+ | 0.5+ | 2003 04 29 | 704 | (0.4+ | 2.5−) | 2003 05 22 | 691 | 0.4− | 0.5− | | |
| 2000 08 04 | 608 | 1.0− | 0.1− | 2003 04 29 | 704 | (0.5− | 4.8−) | 2003 06 05 | 691 | 0.2− | 0.2+ | | |
| 2000 08 04 | 608 | 0.8− | 0.2− | 2003 04 29 | 704 | (1.4− | 2.8−) | 2003 06 05 | 691 | 0.1− | 0.1− | | |
| 2000 08 04 | 608 | 0.9− | 0.7− | 2003 04 29 | 704 | (0.2− | 2.7−) | 2003 06 05 | 691 | 0.3− | 0.1− | | |
| 2000 08 26 | 704 | 0.1− | 0.4+ | 2003 05 10 | 691 | 0.4+ | 0.6+ | | | | | | |
| 2000 08 26 | 704 | 0.8− | 0.3− | 2003 05 10 | 691 | 0.3+ | 0.5+ | | | | | | |

**2000 PO$_{30}$ = 2006 EY$_{52}$**

Id. S. Foglia

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.19184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.39598572 | $\omega$ | 217.73722 | | +0.51673919 | −0.85584566 | |
| $a$ | 1.8366076 | $\Omega$ | 201.17787 | | +0.79991388 | +0.49202448 | |
| $e$ | 0.3995397 | $i$ | 3.57980 | | +0.30515306 | +0.15949956 | |
| $P$ | 2.49 | $H$ | 19.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 568 | 0.6− | 0.9+ | 2006 03 05 | 691 | 0.1+ | 0.3− | 2006 03 23 | 291 | 0.2+ | 0.0 | | |
| 2000 08 02 | 568 | 1.4+ | 0.9+ | 2006 03 05 | 691 | 0.4− | 0.0 | 2006 03 23 | 291 | 0.1+ | 0.0 | | |
| 2000 08 02 | 568 | 0.2− | 0.9+ | 2006 03 06 | 291 | 0.1+ | 0.1+ | 2006 03 23 | 291 | 0.2+ | 0.0 | | |
| 2000 08 02 | 568 | 0.2+ | 0.9+ | 2006 03 06 | 291 | 0.1− | 0.2+ | 2006 03 23 | 291 | 0.3+ | 0.1− | | |
| 2000 08 03 | 568 | 0.1− | 0.2− | 2006 03 06 | 291 | 0.0 | 0.2+ | 2006 03 24 | 291 | 0.0 | 0.3+ | | |
| 2000 08 03 | 568 | 0.2− | 0.1− | 2006 03 06 | 734 | 1.9− | 0.6− | 2006 03 24 | 291 | 0.3+ | 0.2− | | |
| 2000 08 03 | 568 | 0.5− | 0.0 | 2006 03 06 | 734 | 1.1+ | 0.4+ | 2006 03 24 | 291 | 0.6− | 0.1+ | | |
| 2000 08 04 | 568 | 0.6+ | 1.2− | 2006 03 06 | 734 | 0.8− | 0.2+ | 2006 03 25 | 291 | 0.1+ | 0.3+ | | |
| 2000 08 04 | 568 | 0.3− | 0.2+ | 2006 03 09 | 291 | 0.2+ | 0.1+ | 2006 03 25 | 291 | 0.4− | 0.1+ | | |
| 2000 08 04 | 568 | 0.3− | 0.6− | 2006 03 09 | 291 | 0.3+ | 0.1+ | 2006 03 25 | 291 | 0.1− | 0.3+ | | |
| 2000 08 04 | 568 | 0.3− | 0.3− | 2006 03 09 | 291 | 0.1+ | 0.1+ | 2006 04 02 | G96 | 0.2− | 0.2− | | |
| 2000 08 04 | 568 | 0.2− | 0.5− | 2006 03 09 | 691 | 0.4+ | 0.1− | 2006 04 02 | G96 | 0.2− | 0.2− | | |
| 2000 08 07 | 568 | 0.1+ | 0.3− | 2006 03 09 | 691 | 0.3+ | 0.2− | 2006 04 02 | G96 | 0.5− | 0.2− | | |
| 2000 08 07 | 568 | 0.2+ | 0.5− | 2006 03 09 | 691 | 0.4+ | 0.3+ | 2006 04 02 | G96 | 0.8− | 0.2− | | |
| 2000 08 07 | 568 | 0.1+ | 0.3− | 2006 03 23 | G96 | 0.6− | 0.5− | 2006 04 07 | 291 | 0.0 | 0.0 | | |
| 2000 08 07 | 568 | 0.2+ | 0.4− | 2006 03 23 | G96 | 0.3+ | 0.8− | 2006 04 07 | 291 | 0.1− | 0.4− | | |
| 2000 09 05 | 568 | 0.0 | 0.1− | 2006 03 23 | G96 | 0.6− | 0.2+ | 2006 04 07 | 291 | 0.1+ | 0.0 | | |
| 2000 09 05 | 568 | 0.2− | 0.1− | 2006 03 23 | 291 | 0.0 | 0.1− | | | | | | |
| 2006 03 05 | 691 | 0.4− | 0.4− | 2006 03 23 | 291 | 0.2− | 0.1− | | | | | | |

**2000 PN$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.09383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19121532 | $\omega$ | 345.90001 | | +0.80417934 | +0.58594223 | |
| $a$ | 2.9839229 | $\Omega$ | 337.32335 | | −0.51716464 | +0.60696895 | |
| $e$ | 0.1829212 | $i$ | 15.00828 | | −0.29297838 | +0.53689887 | |
| $P$ | 5.15 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.4− | 0.6− | 2000 09 02 | 704 | 0.3+ | 0.1+ | 2005 07 04 | E12 | 0.0 | 0.2− | | |
| 2000 08 02 | 704 | 0.6+ | 0.4+ | 2000 09 02 | 704 | 0.0 | 0.2+ | 2005 07 04 | E12 | 0.1− | 0.1− | | |
| 2000 08 02 | 704 | 1.3− | 0.2+ | 2000 09 20 | 704 | 0.4+ | 1.2− | 2005 07 04 | E12 | 0.2− | 0.2− | | |
| 2000 08 02 | 704 | 0.5+ | 0.3− | 2000 09 20 | 704 | 0.4− | 0.2+ | 2005 07 04 | E12 | 0.0 | 0.1+ | | |
| 2000 08 20 | 699 | 1.7+ | 0.6+ | 2000 09 20 | 704 | 0.2+ | 0.5+ | 2005 07 25 | E12 | 0.1− | 0.1+ | | |
| 2000 08 20 | 699 | 0.4+ | 0.4+ | 2003 01 31 | 644 | 0.1− | 0.1− | 2005 07 25 | E12 | 0.3+ | 0.1− | | |
| 2000 08 20 | 699 | 0.9− | 0.4+ | 2003 01 31 | 644 | 0.3+ | 0.7− | 2005 07 25 | E12 | 0.1+ | 0.3+ | | |
| 2000 08 20 | 699 | 0.8+ | 1.3− | 2003 01 31 | 644 | 0.0 | 0.2− | 2005 07 25 | E12 | 1.0+ | 0.4− | | |
| 2000 09 02 | 704 | 1.5− | 0.6+ | 2003 02 22 | 644 | 0.2+ | 0.8+ | 2005 08 05 | E12 | 0.6+ | 0.1+ | | |
| 2000 09 02 | 704 | 0.8− | 0.1− | 2003 02 22 | 644 | 0.2− | 0.6+ | 2005 08 05 | E12 | 0.8− | 0.4+ | | |
| 2000 09 02 | 704 | 0.1− | 0.3+ | 2003 02 22 | 644 | 0.2+ | 0.7+ | 2005 08 05 | E12 | 0.9− | 0.2+ | | |

**2000 PO$_{32}$ = 2230 P-L**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.36287 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24484032 | $\omega$ | 131.70127 | | +0.89523647 | +0.44280361 | |
| $a$ | 2.5305451 | $\Omega$ | 202.15594 | | −0.43789406 | +0.85359836 | |
| $e$ | 0.1249853 | $i$ | 7.58285 | | −0.08246490 | +0.27439899 | |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.0− | 1.2+ | 2000 09 27 | 645 | 0.0 | 0.0 | 2004 07 17 | 704 | 0.6− | 0.5+ | | |
| 1960 09 24 | 675 | 0.1− | 1.3+ | 2000 09 27 | 645 | 0.0 | 0.1− | 2004 07 17 | 704 | 0.5+ | 0.2+ | | |
| 1960 09 26 | 675 | 0.4− | 0.6+ | 2003 03 24 | 691 | 0.1− | 0.1+ | 2004 08 10 | 699 | 0.3+ | 2.4− | | |
| 1960 09 26 | 675 | 0.7− | 0.0 | 2003 03 24 | 691 | 0.1− | 0.0 | 2004 08 10 | 699 | 0.4+ | 0.3− | | |
| 1960 09 28 | 675 | 0.8+ | 0.7+ | 2003 03 24 | 691 | 0.0 | 0.2+ | 2004 08 10 | 699 | 0.5+ | 0.1+ | | |
| 1960 09 28 | 675 | 0.6− | 0.9+ | 2003 04 01 | 644 | 1.2+ | 0.7+ | 2004 08 10 | 699 | 0.3+ | 0.3− | | |
| 1960 09 29 | 675 | 0.4+ | 0.8+ | 2003 04 01 | 644 | 1.0+ | 0.7+ | 2004 09 10 | 704 | 0.1− | 0.4+ | | |
| 2000 08 03 | 704 | 0.2+ | 0.2+ | 2003 04 01 | 644 | 0.6+ | 0.1+ | 2004 09 10 | 704 | 1.3− | 0.2− | | |
| 2000 08 03 | 704 | 0.0 | 0.4+ | 2003 04 08 | 691 | 0.1− | 0.5+ | 2004 09 10 | 704 | 0.7+ | 0.1+ | | |
| 2000 08 03 | 704 | 0.8+ | 0.4− | 2003 04 08 | 691 | 0.4+ | 0.3+ | 2004 09 10 | 704 | 0.6− | 0.1+ | | |
| 2000 09 03 | 704 | 0.3− | 1.1+ | 2003 04 08 | 691 | 0.5− | 0.6+ | 2004 10 10 | 644 | 0.4− | 1.2+ | | |
| 2000 09 03 | 704 | 0.4− | 0.1− | 2003 04 25 | 691 | 0.0 | 0.1− | 2004 10 10 | 644 | 0.1− | 1.0+ | | |
| 2000 09 03 | 704 | (2.2+ | 0.9+) | 2003 04 25 | 691 | 0.1+ | 0.1− | 2004 10 10 | 644 | 0.8− | 0.6+ | | |
| 2000 09 03 | 704 | 0.9+ | 0.4+ | 2003 04 25 | 691 | 0.0 | 0.3− | | | | | | |
| 2000 09 03 | 704 | 0.3− | 0.0 | 2004 07 17 | 704 | 0.7− | 0.7+ | | | | | | |

**2000 QY$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.97548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26807346 | $\omega$ | 354.66325 | | +0.86620061 | +0.49187859 | |
| $a$ | 2.3821375 | $\Omega$ | 335.25711 | | −0.45032828 | +0.69204714 | |
| $e$ | 0.2625610 | $i$ | 12.14340 | | −0.21656624 | +0.52832396 | |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.5− | 0.1− | 2000 08 28 | 704 | 0.3− | 0.1+ | 2000 09 24 | 704 | 0.2+ | 0.6− | | |
| 2000 08 01 | 704 | 0.1− | 0.4− | 2000 08 28 | 704 | 0.4− | 0.5− | 2000 09 24 | 704 | 0.7− | 0.1+ | | |
| 2000 08 01 | 704 | 0.3− | 0.4− | 2000 08 28 | 704 | 0.2+ | 0.1− | 2000 09 24 | 704 | 0.7+ | 0.2+ | | |
| 2000 08 01 | 704 | 1.3+ | 0.9+ | 2000 08 29 | 704 | 0.0 | 0.1− | 2000 09 24 | 704 | 0.5+ | 0.3+ | | |
| 2000 08 21 | 699 | 0.1− | 0.3+ | 2000 08 29 | 704 | 0.1− | 0.1+ | 2000 09 27 | 645 | 0.0 | 0.1− | | |
| 2000 08 21 | 699 | 0.2− | 0.1− | 2000 08 29 | 704 | 0.0 | 0.0 | 2000 09 27 | 645 | 0.0 | 0.1− | | |
| 2000 08 21 | 699 | 0.7− | 0.2+ | 2000 08 29 | 704 | 0.0 | 0.0 | 2000 10 03 | 704 | 0.8+ | 0.1− | | |
| 2000 08 21 | 699 | 1.2− | 0.6+ | 2000 08 29 | 704 | 0.2+ | 0.2+ | 2000 10 03 | 704 | (0.2+ | 2.1+) | | |
| 2000 08 24 | 704 | 0.3+ | 0.1+ | 2000 09 05 | 704 | 0.1− | 0.1− | 2000 10 03 | 704 | 0.8+ | 1.1+ | | |
| 2000 08 24 | 704 | 0.1+ | 0.1− | 2000 09 05 | 704 | 0.8− | 1.0+ | 2004 11 03 | 703 | 0.1+ | 0.5− | | |
| 2000 08 24 | 704 | 0.3− | 0.2+ | 2000 09 05 | 704 | 0.5+ | 0.4+ | 2004 11 03 | 703 | 0.7+ | 0.5− | | |
| 2000 08 24 | 704 | 0.1− | 0.0 | 2000 09 05 | 704 | 0.7− | 0.1− | 2004 11 03 | 703 | 0.1− | 0.3+ | | |
| 2000 08 24 | 704 | 0.1− | 0.1+ | 2000 09 05 | 704 | 0.7+ | 0.5+ | 2004 11 03 | 703 | 0.8− | 1.2+ | | |
| 2000 08 26 | 704 | 0.1− | 0.3− | 2000 09 21 | 704 | 0.3− | 0.5+ | 2006 02 02 | G96 | 0.6+ | 0.2+ | | |
| 2000 08 26 | 704 | 0.0 | 0.3+ | 2000 09 21 | 704 | 0.7+ | 0.4+ | 2006 02 02 | G96 | 0.3+ | 0.1+ | | |
| 2000 08 26 | 704 | 0.0 | 0.1− | 2000 09 21 | 704 | 0.3− | 0.2− | 2006 02 02 | G96 | 0.3− | 0.3+ | | |
| 2000 08 26 | 704 | 0.0 | 0.3− | 2000 09 21 | 704 | 0.2+ | 0.7+ | 2006 02 02 | G96 | 0.4+ | 0.8+ | | |
| 2000 08 26 | 704 | 0.1+ | 0.1− | 2000 09 24 | 704 | 0.4+ | 0.1+ | | | | | | |

### 2000 QM$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 217.61071 | | (2000.0) | | | |
| $n$ | 0.27418933 | $\omega$ | 237.55238 | | +0.66158305 | −0.74695841 |
| $a$ | 2.3465817 | $\Omega$ | 170.16477 | | +0.74924095 | +0.66206997 |
| $e$ | 0.3540087 | $i$ | 22.74334 | | −0.03075493 | +0.06096298 |
| $P$ | 3.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 05 | 910 | 0.6− | 1.0− | 2000 09 20 | 608 | 0.4+ | 0.4− | 2000 10 02 | 699 | 0.1+ | 0.3+ |
| 1998 03 06 | 910 | 0.6+ | 1.5− | 2000 09 20 | 608 | 0.4+ | 0.4− | 2000 10 05 | 704 | 1.0+ | 0.0 |
| 1998 03 06 | 910 | 0.2+ | 1.4− | 2000 09 20 | 608 | 0.5+ | 0.6− | 2000 10 05 | 704 | 0.1+ | 0.4+ |
| 2000 08 25 | 704 | 0.4+ | 0.2+ | 2000 09 21 | 704 | 0.2− | 0.5+ | 2000 10 05 | 704 | 0.5− | 1.0− |
| 2000 08 25 | 704 | 0.2− | 0.1− | 2000 09 21 | 704 | 0.0 | 0.3+ | 2000 10 06 | 704 | 0.3+ | 0.1+ |
| 2000 08 25 | 704 | 0.7+ | 0.2+ | 2000 09 21 | 704 | 1.4− | 0.1+ | 2000 10 06 | 704 | 0.8+ | 0.5− |
| 2000 08 25 | 704 | 0.3− | 1.1+ | 2000 09 21 | 699 | 0.5+ | 0.0 | 2000 10 06 | 704 | 0.6+ | 0.3− |
| 2000 08 26 | 704 | 0.2− | 0.0 | 2000 09 21 | 699 | 0.2+ | 0.2+ | 2000 10 06 | 704 | 0.2+ | 0.0 |
| 2000 08 26 | 704 | 0.5+ | 0.1− | 2000 09 21 | 699 | 0.4− | 0.1− | 2000 10 06 | 704 | 0.1+ | 1.1+ |
| 2000 08 26 | 704 | 0.1+ | 0.1− | 2000 09 21 | 699 | 0.1− | 0.4− | 2000 10 18 | 704 | 0.1+ | 0.2− |
| 2000 08 26 | 704 | 0.1+ | 0.6+ | 2000 09 24 | 704 | 0.0 | 0.1+ | 2000 10 18 | 699 | 0.1+ | 0.5− |
| 2000 08 26 | 704 | 0.7+ | 0.5− | 2000 09 24 | 704 | 0.1− | 0.4+ | 2000 10 18 | 699 | 0.2− | 0.3− |
| 2000 08 31 | 704 | 0.2− | 0.6− | 2000 09 24 | 704 | 0.2+ | 0.0 | 2000 10 18 | 704 | 0.1+ | 1.0− |
| 2000 08 31 | 704 | 0.1− | 0.2− | 2000 09 24 | 704 | 0.1+ | 0.1− | 2000 10 18 | 699 | 0.7− | 0.5− |
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2000 09 24 | 704 | 0.0 | 0.1+ | 2000 10 18 | 704 | 0.3− | 1.0− |
| 2000 08 31 | 704 | 0.2− | 0.2+ | 2000 09 26 | 608 | 0.6− | 1.3− | 2000 10 18 | 699 | 0.9− | 0.5− |
| 2000 08 31 | 704 | 0.0 | 0.4+ | 2000 09 26 | 608 | 0.6− | 1.3− | 2000 12 27 | 608 | 0.2− | 0.7+ |
| 2000 09 05 | 704 | 0.1+ | 0.1− | 2000 09 26 | 608 | 0.7− | 1.1− | 2000 12 27 | 608 | 0.2− | 1.2+ |
| 2000 09 05 | 704 | 0.3+ | 0.2+ | 2000 10 01 | 704 | 0.2− | 0.2− | 2000 12 27 | 608 | 0.2− | 1.3+ |
| 2000 09 05 | 704 | 0.1+ | 0.3− | 2000 10 01 | 704 | 0.6− | 0.1+ | 2005 02 03 | 644 | 0.9+ | 0.3+ |
| 2000 09 05 | 704 | 0.5+ | 0.2+ | 2000 10 01 | 704 | 0.0 | 0.0 | 2005 02 03 | 644 | (2.6+ | 0.9−) |
| 2000 09 05 | 704 | 0.2+ | 0.3− | 2000 10 01 | 704 | 0.3− | 0.0 | 2005 02 03 | 644 | (3.3+ | 0.8−) |
| 2000 09 09 | 699 | 0.3+ | 0.2+ | 2000 10 01 | 704 | 0.5− | 0.2+ | 2005 03 10 | 703 | 0.6+ | 0.0 |
| 2000 09 09 | 699 | 0.2− | 0.0 | 2000 10 02 | 699 | 0.1+ | 0.0 | 2005 03 10 | 703 | 0.4− | 0.6+ |
| 2000 09 09 | 699 | 0.3− | 0.8+ | 2000 10 02 | 699 | 0.2+ | 0.4+ | 2005 03 10 | 703 | 0.7− | 0.3− |
| 2000 09 09 | 699 | 0.2− | 0.2− | 2000 10 02 | 699 | 0.4+ | 2.0+ | 2005 03 10 | 703 | 0.5− | 0.2− |

### 2000 QM$_{15}$ = 2006 UP$_{133}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.87476 | | (2000.0) | | | |
| $n$ | 0.18337543 | $\omega$ | 133.93642 | | +0.74657777 | +0.66529630 |
| $a$ | 3.0683763 | $\Omega$ | 184.35939 | | −0.61616399 | +0.69054875 |
| $e$ | 0.2313336 | $i$ | 1.18373 | | −0.25092541 | +0.28376622 |
| $P$ | 5.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 691 | 0.2− | 0.5+ | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 10 27 | 691 | 0.4− | 0.3+ |
| 1999 04 12 | 691 | 0.1+ | 1.2+ | 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 1999 04 12 | 691 | 0.1+ | 1.7− | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2000 08 24 | 704 | 0.1− | 0.2+ | 2006 07 22 | G96 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2000 08 24 | 704 | 0.0 | 0.2+ | 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.0 |
| 2000 08 24 | 704 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.0 | 0.6+ |
| 2000 08 24 | 704 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2000 08 24 | 704 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2000 08 26 | 704 | 0.4+ | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2000 08 26 | 704 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.5− | 0.4+ |
| 2000 08 26 | 704 | 0.2+ | 0.9− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2000 09 02 | 704 | 0.6− | 1.3+ | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2000 09 02 | 704 | 0.7− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2000 09 02 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2004 03 17 | 691 | 0.3+ | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.0 | | | | |

### 2000 QS$_{21}$ = 2006 TF$_{64}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.62615 | | (2000.0) | | | |
| $n$ | 0.17933847 | $\omega$ | 209.09246 | | +0.98505074 | −0.12991156 |
| $a$ | 3.1142519 | $\Omega$ | 157.50885 | | +0.14423436 | +0.98106005 |
| $e$ | 0.1242494 | $i$ | 17.20126 | | −0.09418863 | +0.14368075 |
| $P$ | 5.50 | $H$ | 14.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 1.3+ | 1.3+ | 2000 09 19 | 608 | 0.5− | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.4+ |
| 2000 08 24 | 704 | 0.8− | 0.5+ | 2000 09 19 | 608 | 0.0 | 0.5− | 2006 10 20 | 703 | 0.6− | 0.3− |
| 2000 08 24 | 704 | 0.6+ | 1.3− | 2000 09 19 | 608 | 0.6− | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.3− |
| 2000 08 24 | 704 | 1.1+ | 1.8− | 2000 10 02 | 704 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 2000 08 26 | 704 | 0.7− | 0.2+ | 2000 10 02 | 704 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.8− | 0.2− |
| 2000 08 26 | 704 | 0.2− | 0.0 | 2000 10 02 | 704 | 1.3+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2000 08 26 | 704 | 0.3− | 0.4− | 2006 10 10 | 644 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.6− |
| 2000 08 26 | 704 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.8− | 0.6− |
| 2000 08 26 | 704 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.0 |
| 2000 09 05 | 704 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.9+ | 0.5+ |
| 2000 09 05 | 704 | 0.5+ | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 1.0+ | 0.2+ |
| 2000 09 05 | 704 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 1.4− | 0.6+ |
| 2000 09 05 | 704 | 0.6+ | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.6+ | 0.1+ |
| 2000 09 05 | 704 | 0.1− | 0.1− | 2006 10 20 | 703 | 0.1− | 0.1− | 2006 11 23 | 703 | 0.7+ | 0.5− |

### 2000 QM$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.92908 | | (2000.0) | | | |
| $n$ | 0.29931173 | $\omega$ | 124.22821 | | +0.29283864 | +0.95564471 |
| $a$ | 2.2133676 | $\Omega$ | 162.71711 | | −0.90838870 | +0.28832181 |
| $e$ | 0.1816479 | $i$ | 6.07557 | | −0.29845520 | +0.06011429 |
| $P$ | 3.29 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.1− | 0.3+ | 2000 08 29 | 704 | 0.2− | 1.1+ | 2006 02 24 | 691 | 0.3− | 0.7+ |
| 1994 11 28 | 691 | 0.1+ | 0.4+ | 2000 08 29 | 704 | 0.4+ | 1.1+ | 2006 03 06 | 691 | 0.6− | 0.6+ |
| 1994 11 28 | 691 | 0.0 | 0.3− | 2000 08 29 | 704 | 0.3− | 0.5+ | 2006 03 06 | 691 | 0.0 | 0.0 |
| 2000 08 02 | 704 | 0.0 | 0.2+ | 2000 08 29 | 704 | 0.1+ | 0.7+ | 2006 03 06 | 691 | 0.1+ | 0.0 |
| 2000 08 02 | 704 | 0.2− | 0.8+ | 2006 02 07 | G96 | 0.5− | 0.1+ | 2006 03 24 | 699 | 2.8+ | 0.9− |
| 2000 08 02 | 704 | 0.4− | 0.5− | 2006 02 07 | G96 | 0.1+ | 0.3+ | 2006 03 24 | 699 | 0.4+ | 0.3+ |
| 2000 08 24 | 704 | 1.1+ | 1.1− | 2006 02 07 | G96 | 0.1+ | 0.2− | 2006 03 24 | 699 | 1.3+ | 0.3− |
| 2000 08 24 | 704 | 0.5− | 0.5− | 2006 02 07 | G96 | 0.2+ | 0.1+ | 2006 03 24 | 699 | 0.5+ | 0.1− |
| 2000 08 24 | 704 | 0.9− | 0.1+ | 2006 02 24 | 691 | 0.0 | 0.1+ | | | | |
| 2000 08 24 | 704 | 0.4+ | 0.3− | 2006 02 24 | 691 | 0.3− | 0.4− | | | | |

### 2000 QY$_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.24757 | | (2000.0) | | | |
| $n$ | 0.18296712 | $\omega$ | 178.59080 | | +0.95478927 | +0.29544193 |
| $a$ | 3.0729395 | $\Omega$ | 164.10521 | | −0.27391872 | +0.91748533 |
| $e$ | 0.1837199 | $i$ | 6.92863 | | −0.11552478 | +0.26633576 |
| $P$ | 5.39 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 1.0+ | 1.3+ | 2000 09 24 | 704 | 0.7− | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2000 08 21 | 699 | 1.4+ | 1.7+ | 2000 09 24 | 704 | 0.1− | 0.6− | 2006 11 09 | 644 | 0.7− | 0.1+ |
| 2000 08 21 | 699 | 0.5+ | 0.2+ | 2000 11 17 | 684 | 0.1+ | 1.0− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2000 08 21 | 699 | 1.8+ | 1.4+ | 2000 11 17 | 684 | 0.9+ | 0.8− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2000 08 24 | 704 | 0.1− | 0.2− | 2000 11 17 | 684 | 1.6− | 1.4− | 2006 11 11 | 703 | 0.5− | 0.9− |
| 2000 08 24 | 704 | 0.5+ | 0.6− | 2000 11 17 | 684 | 0.8+ | 0.4− | 2006 11 11 | 703 | 1.0+ | 1.7− |
| 2000 08 24 | 704 | 1.3− | 0.2− | 2000 11 17 | 684 | 0.4+ | 0.8− | 2006 11 11 | 703 | 1.2− | 1.2− |
| 2000 08 24 | 704 | 0.5− | 0.4+ | 2006 10 22 | 703 | 1.0+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.7+ |
| 2000 08 24 | 704 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.3− | 2006 11 19 | 703 | 0.8+ | 0.0 |
| 2000 08 29 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.8− | 0.0 |
| 2000 08 29 | 704 | 0.3− | 0.4− | 2006 10 22 | 703 | 1.2− | 0.4− | 2006 11 19 | 703 | 0.8− | 0.1− |
| 2000 08 29 | 704 | 1.8− | 0.3− | 2006 11 01 | 703 | 0.6+ | 0.8+ | 2006 11 19 | 703 | 0.1+ | 1.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.1− | 1.2− | 2006 11 01 | 703 | 1.1+ | 1.9+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2000 08 29 | 704 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.4+ | 0.2− | | |
| 2000 09 24 | 704 | 0.5− | 0.2+ | 2006 11 01 | 703 | 0.1− | 1.2+ | 2006 11 23 | G96 | 0.4+ | 0.2− | | |
| 2000 09 24 | 704 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.0 | 0.3+ | | | | | | |
| 2000 09 24 | 704 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.3− | 0.2+ | | | | | | |

### 2000 $QD_{47}$ = 2005 $YH_{245}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.53470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26181048 | $\omega$ | 168.70966 | | +0.34497846 | | +0.93803384 |
| $a$ | 2.4199777 | $\Omega$ | 121.46324 | | −0.86413426 | | +0.33109354 |
| $e$ | 0.2038050 | $i$ | 2.21046 | | −0.36641758 | | +0.10232097 |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 08 | 691 | 0.2− | 0.3+ | 2000 10 02 | 688 | 0.3− | 0.2+ | 2004 10 07 | 699 | 0.9+ | 0.1− | | |
| 1992 05 08 | 691 | 0.1− | 0.2+ | 2003 03 24 | 691 | 0.5+ | 1.5+ | 2004 10 07 | 699 | 0.3+ | 0.4− | | |
| 1992 05 08 | 691 | 0.1+ | 0.0 | 2003 03 24 | 691 | 0.8+ | 1.3+ | 2004 11 05 | 691 | 0.3− | 0.4+ | | |
| 2000 08 24 | 704 | 0.7− | 0.1+ | 2003 03 24 | 691 | 0.1+ | 1.3+ | 2004 11 05 | 691 | 0.3− | 0.1+ | | |
| 2000 08 24 | 704 | 0.1− | 1.8+ | 2004 09 22 | 704 | 0.0 | 1.1+ | 2004 11 05 | 691 | 0.3− | 0.2+ | | |
| 2000 08 24 | 704 | 0.3+ | 0.5+ | 2004 09 22 | 704 | 0.4+ | 0.4− | 2005 12 30 | 691 | 0.1+ | 0.3+ | | |
| 2000 08 24 | 704 | 1.9+ | 1.3+ | 2004 09 22 | 704 | 0.4+ | 0.9+ | 2005 12 30 | 691 | 0.6+ | 0.3+ | | |
| 2000 08 24 | 704 | 0.1− | 0.9+ | 2004 09 22 | 704 | 0.2+ | 1.3+ | 2005 12 30 | 691 | 0.1+ | 0.4+ | | |
| 2000 08 29 | 704 | 0.5− | 0.5+ | 2004 10 05 | 691 | 0.4− | 0.3+ | 2006 01 07 | G96 | 0.6+ | 0.2− | | |
| 2000 08 29 | 704 | 0.5− | 1.0+ | 2004 10 05 | 691 | 0.2− | 0.4+ | 2006 01 07 | G96 | 0.1− | 0.6− | | |
| 2000 08 29 | 704 | 0.1+ | 0.9+ | 2004 10 05 | 691 | 0.4− | 0.3+ | 2006 01 07 | G96 | 0.9+ | 0.7− | | |
| 2000 08 29 | 704 | 0.8+ | 0.6+ | 2004 10 07 | 699 | 2.0− | 0.8− | 2006 01 07 | G96 | 0.2− | 0.4− | | |
| 2000 10 02 | 688 | 0.1− | 0.3+ | 2004 10 07 | 699 | 2.1− | 0.6+ | | | | | | |

### 2000 $QY_{51}$ = 2006 $SO_{155}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.56815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17768773 | $\omega$ | 255.48711 | | +0.62850583 | | −0.74900753 |
| $a$ | 3.1335100 | $\Omega$ | 151.95881 | | +0.76531305 | | +0.64363743 |
| $e$ | 0.2418566 | $i$ | 26.48984 | | −0.13883932 | | +0.15722144 |
| $P$ | 5.55 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.2+ | 0.3+ | 2000 08 29 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 703 | (2.1+ | 0.6−) | | |
| 2000 08 21 | 699 | 0.9+ | 0.1− | 2000 09 02 | 691 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.3− | | |
| 2000 08 21 | 699 | 0.1+ | 0.6+ | 2000 09 02 | 691 | 0.2+ | 0.5− | 2006 09 27 | 703 | 0.3− | 0.4− | | |
| 2000 08 21 | 699 | 1.1+ | 0.6− | 2000 09 02 | 691 | 0.6− | 0.0 | 2006 10 11 | E12 | 0.7+ | 0.1− | | |
| 2000 08 24 | 704 | 1.4+ | 1.9− | 2006 09 22 | 703 | 0.3− | 0.1+ | 2006 10 11 | E12 | 0.0 | 0.1+ | | |
| 2000 08 24 | 704 | 0.6− | 0.1− | 2006 09 22 | 703 | 0.4− | 0.4+ | 2006 10 11 | E12 | 0.6+ | 0.1+ | | |
| 2000 08 24 | 704 | 0.3+ | 0.9+ | 2006 09 22 | 703 | 0.4− | 0.2+ | 2006 10 11 | E12 | 1.2+ | 0.4− | | |
| 2000 08 24 | 704 | 0.4− | 0.7+ | 2006 09 27 | 703 | 0.5− | 0.0 | 2006 11 18 | E12 | 0.6− | 0.4+ | | |
| 2000 08 29 | 704 | 0.4− | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.0 | 2006 11 18 | E12 | 0.1− | 0.5+ | | |
| 2000 08 29 | 704 | 0.4− | 0.1+ | 2006 09 27 | 703 | 0.1+ | 0.1+ | 2006 11 18 | E12 | 0.1+ | 0.0 | | |
| 2000 08 29 | 704 | 0.0 | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.0 | 2006 11 18 | E12 | 0.4− | 0.3− | | |
| 2000 08 29 | 704 | 0.7− | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.5− | | | | | | |

### 2000 $QV_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.45147 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23535686 | $\omega$ | 134.79292 | | +0.07725724 | | +0.99543811 |
| $a$ | 2.5980737 | $\Omega$ | 139.53934 | | −0.93736715 | | +0.09165127 |
| $e$ | 0.1825847 | $i$ | 4.94922 | | −0.33966770 | | −0.02651440 |
| $P$ | 4.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 08 | 691 | 0.1− | 0.4− | 2003 03 07 | 704 | 0.2+ | 0.8+ | 2004 10 07 | 291 | 0.2− | 0.0 | | |
| 1995 04 08 | 691 | 0.1− | 0.1− | 2004 07 11 | 704 | 0.1− | 0.2− | 2004 10 07 | 291 | 0.1+ | 0.0 | | |
| 1995 04 08 | 691 | 0.0 | 0.3− | 2004 07 11 | 704 | (1.6+ | 1.8−) | 2004 10 07 | 291 | 0.1+ | 0.1+ | | |
| 2000 08 24 | 704 | 0.4+ | 0.6− | 2004 07 11 | 704 | (1.3+ | 2.0−) | 2005 11 21 | 699 | (0.6− | 1.7−) | | |
| 2000 08 24 | 704 | 0.3+ | 0.1+ | 2004 07 11 | 704 | (1.9+ | 3.4−) | 2005 11 21 | 699 | 0.7+ | 0.3+ | | |
| 2000 08 24 | 704 | 0.3+ | 0.2+ | 2004 07 16 | 704 | 0.2+ | 0.5+ | 2005 11 21 | 699 | 0.5− | 1.5− | | |
| 2000 08 24 | 704 | 0.3+ | 0.3+ | 2004 07 16 | 704 | 0.3+ | 0.5+ | 2005 11 21 | 699 | (0.3− | 2.0−) | | |
| 2000 08 29 | 704 | 0.1+ | 0.1− | 2004 07 16 | 704 | 0.6+ | 0.1+ | 2006 01 28 | G96 | 0.1+ | 0.4− | | |
| 2000 08 29 | 704 | 0.2− | 0.3+ | 2004 07 16 | 704 | 0.7− | 1.1+ | 2006 01 28 | G96 | (1.0+ | 1.5−) | | |
| 2000 08 29 | 704 | 0.1+ | 0.6+ | 2004 08 08 | 704 | 0.3− | 0.2− | 2006 01 28 | G96 | 0.1− | 0.5− | | |
| 2000 08 29 | 704 | 0.3− | 0.0 | 2004 08 08 | 704 | 0.6+ | 0.6− | 2006 01 28 | G96 | 1.4+ | 0.5− | | |
| 2000 08 31 | 704 | 0.1− | 0.4+ | 2004 08 08 | 704 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.3+ | | |
| 2000 08 31 | 704 | 0.8− | 0.4+ | 2004 08 08 | 704 | 0.3+ | 0.7− | 2006 11 21 | G96 | 0.3− | 0.3+ | | |
| 2000 08 31 | 704 | 0.5− | 0.2− | 2004 08 21 | E12 | 0.2− | 0.5− | 2006 11 21 | G96 | 0.7− | 0.7+ | | |
| 2000 08 31 | 704 | 0.1− | 1.3− | 2004 08 21 | E12 | 0.5+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.1+ | | |
| 2003 03 07 | 704 | 0.4+ | 0.5− | 2004 08 21 | E12 | 0.2+ | 0.0 | | | | | | |
| 2003 03 07 | 704 | 0.4+ | 1.5+ | 2004 08 21 | E12 | 1.2− | 0.5− | | | | | | |

### 2000 $QV_{62}$ = 2006 $TH_{64}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.67326 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17717649 | $\omega$ | 210.57268 | | +0.98515010 | | +0.02135302 |
| $a$ | 3.1395349 | $\Omega$ | 146.86011 | | +0.00249611 | | +0.99035039 |
| $e$ | 0.2126791 | $i$ | 18.15736 | | −0.17167715 | | +0.13693121 |
| $P$ | 5.56 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 704 | 1.2+ | 0.2− | 2000 09 29 | 699 | 1.0− | 0.3+ | 2006 10 20 | 703 | 0.4+ | 0.0 | | |
| 2000 08 28 | 704 | 0.1− | 0.5+ | 2000 10 02 | 699 | 0.7+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.3+ | | |
| 2000 08 28 | 704 | 0.4− | 0.0 | 2000 10 02 | 699 | 0.2+ | 0.5− | 2006 10 28 | 703 | 0.5− | 0.6− | | |
| 2000 08 28 | 704 | 0.5− | 0.2− | 2000 10 02 | 699 | 0.1+ | 0.7− | 2006 10 28 | 703 | 0.2+ | 0.1− | | |
| 2000 08 29 | 704 | 0.4− | 0.2− | 2000 10 02 | 699 | 1.0− | 0.1− | 2006 10 28 | 703 | 0.8− | 0.9− | | |
| 2000 08 29 | 704 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.4− | | |
| 2000 08 29 | 704 | 0.3− | 0.5− | 2006 10 10 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.5− | | |
| 2000 09 21 | 699 | 1.3+ | 1.2+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.4+ | | |
| 2000 09 21 | 699 | 0.9+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.1+ | | |
| 2000 09 21 | 699 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.2+ | 0.4+ | | |
| 2000 09 21 | 699 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.4− | 0.1− | | |
| 2000 09 29 | 699 | 0.6− | 0.1− | 2006 10 20 | 703 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.2+ | 0.3− | | |
| 2000 09 29 | 699 | 0.8− | 0.3− | 2006 10 20 | 703 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 0.4− | 0.1+ | | |
| 2000 09 29 | 699 | 0.4− | 0.7− | 2006 10 20 | 703 | 0.1− | 0.2+ | | | | | | |

### 2000 $QT_{97}$ = 2006 $TH_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.87401 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17583505 | $\omega$ | 170.33176 | | +0.76819947 | | +0.63571316 |
| $a$ | 3.1554823 | $\Omega$ | 149.77464 | | −0.59697653 | | +0.75403446 |
| $e$ | 0.2060377 | $i$ | 8.65473 | | −0.23127601 | | +0.16522957 |
| $P$ | 5.61 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 704 | 0.3− | 0.6− | 2000 09 21 | 699 | 1.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2000 08 28 | 704 | 0.3+ | 0.4+ | 2000 09 21 | 699 | 1.1+ | 0.8− | 2006 10 16 | 703 | 0.5− | 0.6+ | | |
| 2000 08 28 | 704 | 0.7− | 0.3+ | 2000 09 24 | 704 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.0 | 1.1− | | |
| 2000 08 31 | 704 | 0.2+ | 0.3− | 2000 09 24 | 704 | 0.3+ | 0.4− | 2006 10 16 | 703 | 1.1+ | 0.5− | | |
| 2000 08 31 | 704 | 0.6− | 0.1− | 2000 09 24 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.1+ | | |
| 2000 08 31 | 704 | 0.1− | 0.7+ | 2000 09 24 | 704 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.2− | 0.3+ | | |
| 2000 08 31 | 704 | 0.5− | 0.8+ | 2000 09 24 | 704 | 0.4+ | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.8− | | |
| 2000 09 02 | 704 | 0.6− | 0.2+ | 2000 10 02 | 704 | 0.9− | 0.2− | 2006 10 22 | 703 | 1.1− | 0.0 | | |
| 2000 09 02 | 704 | 1.3+ | 0.0 | 2000 10 02 | 704 | 0.8− | 0.3− | 2006 10 22 | 703 | 0.2− | 0.6− | | |
| 2000 09 02 | 704 | 1.0+ | 0.3+ | 2000 10 02 | 704 | 0.8− | 0.1+ | 2006 11 13 | 703 | (1.8− | 1.3−) | | |
| 2000 09 05 | 704 | 0.6− | 0.4− | 2000 10 02 | 704 | 0.9− | 0.1− | 2006 11 13 | 703 | 0.1− | 0.7− | | |
| 2000 09 05 | 704 | 0.7− | 0.5− | 2000 10 02 | 704 | 0.7− | 0.8− | 2006 11 13 | 703 | 0.8+ | 0.7− | | |
| 2000 09 05 | 704 | 0.8+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 13 | 703 | (1.7+ | 0.3−) | | |
| 2000 09 05 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 17 | 644 | 0.1− | 0.4+ | | |
| 2000 09 09 | 699 | 0.9+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.8− | 0.2+ | | |
| 2000 09 09 | 699 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.4+ | | |
| 2000 09 09 | 699 | 0.2− | 0.7− | 2006 10 12 | 644 | 0.4− | 0.5+ | 2006 11 19 | 703 | 1.0+ | 0.7+ | | |
| 2000 09 09 | 699 | 0.1+ | 0.7− | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.5− | 0.1+ | | |
| 2000 09 21 | 699 | 1.4+ | 1.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.6+ | 0.2− | | |
| 2000 09 21 | 699 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.7+ | 0.3+ | | |

**2000 QA$_{107}$ = 2004 FT$_{56}$ = 2006 SV$_{355}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.74986 | | (2000.0) | | | |
| $n$ | 0.18009991 | $\omega$ | 153.27875 | | +0.90682568 | +0.42146763 |
| $a$ | 3.1054679 | $\Omega$ | 181.82279 | | −0.41157362 | +0.88247040 |
| $e$ | 0.0933602 | $i$ | 10.28171 | | −0.09096346 | +0.20883255 |
| $P$ | 5.47 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2000 08 29 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.7+ | 0.0 |
| 2000 08 29 | 704 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.9+ |
| 2000 08 29 | 704 | (0.8+ | 2.2+) | 2006 09 30 | 703 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.9+ | 0.6+ |
| 2000 08 31 | 704 | 0.2+ | 0.4− | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 10 22 | 703 | 1.1− | 0.3+ |
| 2000 08 31 | 704 | 0.8− | 0.4+ | 2006 10 03 | G96 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.8− | 0.6− |
| 2000 08 31 | 704 | 0.5− | 0.7− | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.5− | 0.8− |
| 2000 08 31 | 704 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.2− | 0.5+ |
| 2000 08 31 | 704 | 0.8− | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.9+ | 2006 11 19 | 703 | 0.7+ | 0.0 |
| 2000 09 03 | 704 | 1.5+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.8− | 2006 11 19 | 703 | 0.6− | 0.0 |
| 2000 09 03 | 704 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.6+ | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2000 09 03 | 704 | 0.5+ | 0.9− | 2006 10 16 | 703 | 0.5− | 1.1+ | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2000 09 03 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2004 03 16 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | | | |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.0 | | | | |

**2000 QN$_{109}$ = 2006 SR$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 126.35066 | | (2000.0) | | | |
| $n$ | 0.17861884 | $\omega$ | 261.59327 | | −0.56106977 | +0.82510342 |
| $a$ | 3.1226109 | $\Omega$ | 333.93104 | | −0.68755848 | −0.50918146 |
| $e$ | 0.0514641 | $i$ | 8.68664 | | −0.46093823 | −0.24482359 |
| $P$ | 5.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 691 | 0.2+ | 0.3+ | 2000 09 01 | 691 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2000 08 02 | 691 | 0.4− | 0.3− | 2000 09 01 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2000 08 02 | 691 | 0.3+ | 0.1+ | 2000 09 01 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.3− |
| 2000 08 31 | 691 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2000 08 31 | 691 | 0.5− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2000 08 31 | 691 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ |

**2000 QC$_{116}$ = 2000 SH$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 149.25987 | | (2000.0) | | | |
| $n$ | 0.22760947 | $\omega$ | 358.59704 | | +0.91113833 | +0.41191975 |
| $a$ | 2.6566999 | $\Omega$ | 337.06544 | | −0.37778916 | +0.82307480 |
| $e$ | 0.1553397 | $i$ | 1.79546 | | −0.16462776 | +0.39098592 |
| $P$ | 4.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 29 | 691 | 0.1− | 0.4− | 2000 09 24 | 704 | 0.1+ | 0.1− | 2005 11 25 | 691 | 0.1− | 0.1+ |
| 1998 01 29 | 691 | 0.6+ | 0.2− | 2002 01 11 | 291 | 0.3+ | 0.1+ | 2005 11 25 | 691 | 0.0 | 0.1− |
| 1998 01 29 | 691 | 1.1− | 0.1− | 2002 01 11 | 291 | 0.3+ | 0.1+ | 2005 12 05 | G96 | 0.7− | 0.5− |
| 2000 08 26 | 704 | 0.6− | 0.4+ | 2002 01 11 | 291 | 0.1− | 0.0 | 2005 12 05 | G96 | 1.4+ | 0.5+ |
| 2000 08 26 | 704 | 0.3− | 0.2− | 2004 06 11 | 691 | 0.0 | 0.2+ | 2005 12 05 | G96 | 0.0 | 0.3− |
| 2000 08 26 | 704 | 1.5+ | 1.0− | 2004 06 11 | 691 | 0.1− | 0.2+ | 2005 12 05 | G96 | 0.1+ | 0.3− |
| 2000 09 21 | 691 | 0.1− | 0.0 | 2004 06 11 | 691 | 0.1+ | 0.1+ | 2005 12 10 | 691 | 0.2+ | 0.2+ |
| 2000 09 21 | 691 | 0.0 | 0.4− | 2005 11 09 | 461 | 0.1− | 0.6− | 2005 12 10 | 691 | 0.0 | 0.2+ |
| 2000 09 21 | 691 | 0.2− | 0.1− | 2005 11 21 | 691 | 0.2− | 0.3+ | 2005 12 10 | 691 | 0.1+ | 0.2+ |
| 2000 09 24 | 704 | 0.3+ | 0.6+ | 2005 11 21 | 691 | 0.2− | 0.2+ | 2005 12 28 | 691 | 0.5+ | 0.0 |
| 2000 09 24 | 704 | 1.0+ | 0.2+ | 2005 11 21 | 691 | 0.2− | 0.1− | 2005 12 28 | 691 | 0.4− | 0.2+ |
| 2000 09 24 | 704 | 0.5+ | 0.1+ | 2005 11 25 | 691 | 0.2− | 0.2− | 2005 12 28 | 691 | 0.1− | 0.1+ |

**2000 QY$_{124}$ = 2006 SS$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.76953 | | (2000.0) | | | |
| $n$ | 0.17566094 | $\omega$ | 224.80406 | | +0.98510225 | −0.12102141 |
| $a$ | 3.1575671 | $\Omega$ | 141.64975 | | +0.14839573 | +0.95724730 |
| $e$ | 0.2319051 | $i$ | 11.35646 | | −0.08690375 | +0.26273834 |
| $P$ | 5.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.8− | 0.7− | 2000 09 03 | 704 | 0.5+ | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.9+ |
| 2000 08 29 | 704 | 0.3− | 0.4+ | 2000 09 03 | 704 | 0.6+ | 0.3− | 2006 09 29 | 699 | 0.3+ | 0.1+ |
| 2000 08 29 | 704 | 0.4+ | 0.2+ | 2000 09 04 | 704 | 0.4− | 0.6+ | 2006 09 29 | 699 | 0.2− | 0.1+ |
| 2000 08 29 | 704 | 0.1+ | 1.1− | 2000 09 04 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.4+ | 0.4+ |
| 2000 09 01 | 704 | 0.7− | 0.3+ | 2000 09 04 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 704 | 0.2+ | 0.6− |
| 2000 09 01 | 704 | 0.7− | 0.3− | 2000 09 04 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 704 | 0.8− | 1.0− |
| 2000 09 01 | 704 | 0.5− | 1.2+ | 2000 09 05 | 704 | 0.4− | 0.3− | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2000 09 01 | 704 | 0.6+ | 0.6− | 2000 09 05 | 704 | 0.4− | 0.9− | 2006 09 30 | 704 | 0.5− | 0.6− |
| 2000 09 01 | 704 | 0.8− | 0.4+ | 2000 09 05 | 704 | 0.8− | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.7+ |
| 2000 09 02 | 704 | 0.2+ | 0.5+ | 2000 09 24 | 704 | 0.3− | 1.5− | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2000 09 02 | 704 | 0.3− | 1.4+ | 2000 09 24 | 704 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.5− |
| 2000 09 02 | 704 | 0.3+ | 1.1− | 2000 09 24 | 704 | 0.5+ | 0.9+ | 2006 10 17 | 703 | 0.9+ | 0.3+ |
| 2000 09 02 | 704 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.1+ | 0.9− | 2006 10 28 | 703 | 0.4+ | 0.1+ |
| 2000 09 02 | 704 | 0.1+ | 0.6− | 2006 09 26 | 703 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.6+ | 0.1+ |
| 2000 09 03 | 704 | 1.1+ | 0.0 | 2006 09 26 | 703 | 0.7+ | 0.2+ | 2006 10 28 | 703 | 1.0− | 0.5− |
| 2000 09 03 | 704 | 1.1+ | 0.3− | 2006 09 26 | 703 | 0.5− | 0.8+ | 2006 10 28 | 703 | 0.7+ | 0.4− |

**2000 QD$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.52036 | | (2000.0) | | | |
| $n$ | 0.18583294 | $\omega$ | 118.88163 | | +0.84228810 | +0.53746928 |
| $a$ | 3.0412649 | $\Omega$ | 208.66431 | | −0.51950778 | +0.78917645 |
| $e$ | 0.1523701 | $i$ | 4.89821 | | −0.14374430 | +0.29719911 |
| $P$ | 5.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 691 | 0.0 | 0.5− | 2001 12 07 | 644 | 0.3− | 0.3+ | 2006 10 12 | 691 | 0.5− | 0.1+ |
| 1999 04 09 | 691 | 0.5− | 0.2− | 2001 12 07 | 644 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.6+ | 0.2+ |
| 1999 04 09 | 691 | 0.1− | 0.1− | 2001 12 14 | 704 | (0.2+ | 1.6+) | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2000 08 29 | 704 | 0.2+ | 0.1− | 2001 12 14 | 704 | 0.7− | 0.9+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2000 08 29 | 704 | 0.6− | 0.8− | 2001 12 14 | 704 | 0.3+ | 1.1+ | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2000 08 29 | 704 | 0.5+ | 1.0+ | 2002 12 14 | 645 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.9+ |
| 2000 08 29 | 704 | 0.4+ | 1.3+ | 2002 12 14 | 645 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.5+ |
| 2000 09 01 | 704 | 0.3+ | 0.0 | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.7+ |
| 2000 09 01 | 704 | 0.0 | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | (0.5+ | 1.5+) |
| 2000 09 01 | 704 | 0.1− | 0.8+ | 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 1.4− |
| 2000 09 01 | 704 | (1.3− | 3.4+) | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.8− |
| 2000 09 02 | 704 | 0.8− | 1.7+ | 2004 03 29 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2000 09 02 | 704 | 0.4− | 0.2+ | 2004 04 20 | 691 | 0.3+ | 0.7+ | 2006 11 13 | G96 | 0.3+ | 0.7− |
| 2000 09 02 | 704 | 1.1− | 1.0+ | 2004 04 20 | 691 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2000 09 02 | 704 | 0.7− | 0.7+ | 2004 04 20 | 691 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2000 09 02 | 704 | 0.0 | 0.6− | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2000 09 02 | 704 | 0.7+ | 1.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2000 09 02 | 704 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2000 09 02 | 704 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2000 09 02 | 704 | 0.3+ | 0.8+ | 2006 10 04 | G96 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2001 11 20 | 704 | (0.3+ | 2.0+) | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.2− |
| 2001 11 20 | 704 | 0.0 | 1.4+ | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.8− |
| 2001 11 20 | 704 | 0.2+ | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.7+ |
| 2001 11 20 | 704 | 0.5+ | 0.9+ | 2006 10 12 | 691 | 0.5− | 0.1− | 2006 11 17 | 703 | (0.3+ | 1.7−) |
| 2001 12 07 | 644 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.3− | 0.1+ | | | | |

**2000 QV$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.35377 | | (2000.0) | | | |
| $n$ | 0.19571065 | $\omega$ | 165.25308 | | +0.95420937 | −0.28654197 |
| $a$ | 2.9380538 | $\Omega$ | 211.80594 | | +0.25530086 | +0.92972747 |
| $e$ | 0.1487825 | $i$ | 9.37977 | | +0.15590365 | +0.23130184 |
| $P$ | 5.04 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 07 | 691 | 0.5− | 0.0 | 2005 07 31 | 644 | 0.2− | 0.0 | 2005 09 23 | 644 | 0.1− | 0.4− |
| 2000 06 07 | 691 | 0.3+ | 0.3+ | 2005 07 31 | 644 | 0.4− | 0.1− | 2005 09 23 | 644 | 0.2− | 0.0 |
| 2000 06 07 | 691 | 0.1+ | 0.2+ | 2005 07 31 | 644 | 0.2− | 0.1− | 2005 09 30 | 703 | (1.8+ | 2.8+) |
| 2000 08 31 | 704 | 0.4− | 0.0 | 2005 08 31 | 704 | 0.7+ | 0.2− | 2005 09 30 | 703 | 0.2− | 0.2− |
| 2000 08 31 | 704 | 1.3− | 0.2+ | 2005 08 31 | 704 | 0.0 | 0.4− | 2005 09 30 | 703 | 0.0 | 0.7− |
| 2000 08 31 | 704 | 0.1− | 0.1+ | 2005 08 31 | 704 | 0.9+ | 0.4+ | 2005 09 30 | 703 | 0.1+ | 0.1− |
| 2000 08 31 | 704 | 0.2+ | 0.7+ | 2005 09 11 | 699 | 0.4+ | 0.2+ | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2000 09 03 | 704 | 0.1− | 0.3+ | 2005 09 11 | 699 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.6+ | 0.3+ |
| 2000 09 03 | 704 | 0.5+ | 1.6− | 2005 09 11 | 699 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2000 09 03 | 704 | 1.1+ | 0.2+ | 2005 09 11 | 699 | 0.3− | 0.4− | | | | |
| 2000 09 03 | 704 | 0.3− | 0.6+ | 2005 09 23 | 644 | 0.1+ | 0.0 | | | | |

**2000 QL$_{158}$ = 2006 UJ$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.63103 | | (2000.0) | | | |
| $n$ | 0.17729032 | $\omega$ | 53.12303 | | +0.96759901 | +0.20473222 |
| $a$ | 3.1381910 | $\Omega$ | 294.63804 | | −0.25029610 | +0.85476876 |
| $e$ | 0.3135660 | $i$ | 9.35632 | | +0.03322677 | +0.47692251 |
| $P$ | 5.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 704 | 1.1+ | 0.5− | 2000 09 03 | 704 | 0.2− | 0.6− | 2006 10 23 | 703 | 0.8+ | 0.4+ |
| 2000 07 30 | 704 | 0.6− | 0.8+ | 2000 09 03 | 704 | 0.2+ | 0.8− | 2006 10 23 | 703 | 0.2+ | 0.3+ |
| 2000 07 30 | 704 | 0.7− | 0.5− | 2000 09 21 | 699 | 0.6− | 0.3+ | 2006 10 23 | 703 | 0.5+ | 0.5− |
| 2000 07 30 | 704 | 0.4− | 1.7+ | 2000 09 21 | 699 | 0.3+ | 0.2+ | 2006 10 29 | 703 | 0.2− | 1.0+ |
| 2000 08 31 | 704 | 0.1− | 0.2+ | 2000 09 21 | 699 | 0.9− | 0.9+ | 2006 10 29 | 703 | 0.7− | 1.2− |
| 2000 08 31 | 704 | 0.5− | 0.0 | 2000 09 21 | 699 | 0.1− | 1.0− | 2006 10 29 | 703 | 0.2− | 0.5+ |
| 2000 08 31 | 704 | 0.2+ | 0.2− | 2000 09 23 | 704 | 0.5− | 0.3+ | 2006 10 29 | 703 | 0.2− | 0.6+ |
| 2000 08 31 | 704 | 0.2− | 0.1+ | 2000 09 23 | 704 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2000 08 31 | 704 | 0.2− | 0.1− | 2000 09 23 | 704 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2000 09 03 | 704 | 0.7+ | 0.2− | 2000 09 23 | 704 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2000 09 03 | 704 | 1.0+ | 1.4− | 2000 09 23 | 704 | 0.6+ | 0.9+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2000 09 03 | 704 | 0.0 | 1.1− | 2006 10 23 | 703 | 0.4+ | 0.2+ | | | | |

**2000 QW$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 248.98992 | | (2000.0) | | | |
| $n$ | 0.28280364 | $\omega$ | 173.80234 | | +0.97123585 | −0.23451455 |
| $a$ | 2.2986846 | $\Omega$ | 199.90785 | | +0.21293444 | +0.93295378 |
| $e$ | 0.3207732 | $i$ | 6.96275 | | +0.10658262 | +0.27313033 |
| $P$ | 3.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.3− | 0.2− | 2000 09 23 | 704 | 0.6+ | 0.1− | 2000 10 29 | 704 | 0.3+ | 0.8+ |
| 2000 08 31 | 704 | 0.0 | 0.3+ | 2000 09 23 | 704 | 0.3+ | 0.2+ | 2000 11 02 | 704 | 1.0+ | 0.7+ |
| 2000 08 31 | 704 | 0.3+ | 0.2+ | 2000 09 23 | 704 | 0.0 | 0.2+ | 2000 11 02 | 704 | 0.5− | 0.9− |
| 2000 08 31 | 704 | 0.2− | 0.3+ | 2000 09 25 | 704 | 0.5+ | 0.2+ | 2000 11 02 | 704 | (1.2− | 3.2−) |
| 2000 08 31 | 704 | 0.2+ | 0.2+ | 2000 09 25 | 704 | 0.2+ | 0.3+ | 2000 11 18 | 699 | 0.1− | 0.4− |
| 2000 09 03 | 704 | 0.1− | 0.2+ | 2000 09 25 | 704 | 0.4+ | 0.4+ | 2000 11 18 | 699 | 0.8− | 1.4+ |
| 2000 09 03 | 704 | 0.3+ | 0.1+ | 2000 09 25 | 704 | 0.3+ | 0.7+ | 2000 11 18 | 699 | 0.3− | 0.1+ |
| 2000 09 03 | 704 | 0.1− | 0.2+ | 2000 09 25 | 704 | 0.4+ | 0.0 | 2000 11 18 | 699 | 0.1+ | 0.0 |
| 2000 09 03 | 704 | 0.2+ | 0.0 | 2000 10 03 | 704 | 0.1− | 0.3− | 2000 11 25 | 704 | 0.4+ | 0.7+ |
| 2000 09 03 | 704 | 0.1− | 0.3+ | 2000 10 03 | 704 | 0.1− | 0.5− | 2000 11 25 | 704 | 0.3+ | 0.4+ |
| 2000 09 20 | 608 | 0.7− | 1.2− | 2000 10 03 | 704 | 0.0 | 0.3− | 2000 11 25 | 704 | 0.5+ | 0.5+ |
| 2000 09 20 | 608 | 0.7− | 1.1− | 2000 10 03 | 704 | 0.0 | 0.3− | 2005 02 02 | 703 | 0.3− | 0.7− |
| 2000 09 20 | 608 | 0.8− | 1.0− | 2000 10 03 | 704 | 0.2− | 0.1− | 2005 02 02 | 703 | 0.1− | 0.5+ |
| 2000 09 22 | 699 | 0.1+ | 0.9− | 2000 10 24 | 704 | 0.1+ | 0.6− | 2005 02 02 | 703 | 0.3− | 0.4− |
| 2000 09 22 | 699 | 0.3− | 0.1+ | 2000 10 24 | 704 | 1.6− | 0.5− | 2005 02 02 | 703 | 0.6+ | 0.5− |
| 2000 09 22 | 699 | 0.5+ | 0.0 | 2000 10 24 | 704 | 0.5+ | 0.2+ | 2006 04 19 | G96 | 0.1− | 0.0 |
| 2000 09 22 | 699 | (4.9+ | 1.8−) | 2000 10 29 | 704 | 0.1+ | 0.6+ | 2006 04 19 | G96 | 0.2− | 0.3+ |
| 2000 09 23 | 704 | 0.3+ | 0.0 | 2000 10 29 | 704 | 0.8− | 1.0− | 2006 04 19 | G96 | 0.1− | 0.0 |
| 2000 09 23 | 704 | 0.3+ | 0.5+ | 2000 10 29 | 704 | 0.1− | 0.3+ | 2006 04 19 | G96 | 0.4+ | 0.2+ |

**2000 QG$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.37501 | | (2000.0) | | | |
| $n$ | 0.17803903 | $\omega$ | 94.80789 | | +0.99139679 | −0.02251916 |
| $a$ | 3.1293867 | $\Omega$ | 266.52264 | | −0.02943419 | +0.92150234 |
| $e$ | 0.2402752 | $i$ | 7.42203 | | +0.12753836 | +0.38771940 |
| $P$ | 5.54 | $H$ | 14.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.8+ | 0.2− | 2000 09 04 | 704 | 0.7− | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2000 08 02 | 704 | 0.7+ | 0.1+ | 2000 09 04 | 704 | 0.6− | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.5− |
| 2000 08 02 | 704 | 0.3+ | 0.8− | 2000 09 04 | 704 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2000 08 02 | 704 | 0.0 | 0.7− | 2000 09 26 | 699 | 0.6− | 0.4+ | 2006 11 14 | 703 | 0.4+ | 0.8− |
| 2000 08 02 | 704 | 0.2+ | 0.3+ | 2000 09 26 | 699 | 0.9+ | 0.9− | 2006 11 14 | 703 | 0.7+ | 0.5+ |
| 2000 08 31 | 704 | 0.5+ | 0.5+ | 2000 09 26 | 699 | 0.5− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.9− |
| 2000 08 31 | 704 | 0.1+ | 0.2+ | 2000 09 26 | 699 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.7− | 0.1− |
| 2000 08 31 | 704 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 14 | 703 | 0.1− | 0.2+ |
| 2000 08 31 | 704 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2000 09 03 | 704 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2000 09 03 | 704 | 0.7− | 0.1+ | 2006 10 21 | 704 | (1.0− | 1.7−) | 2006 11 18 | 704 | 0.2− | 1.2+ |
| 2000 09 03 | 704 | 0.1− | 0.2+ | 2006 10 21 | 704 | (1.4+ | 1.8+) | 2006 11 18 | 704 | 0.6+ | 0.8− |
| 2000 09 03 | 704 | 0.5+ | 0.2− | 2006 10 21 | 704 | 0.8+ | 1.1+ | 2006 11 18 | 704 | 0.2− | 0.1− |
| 2000 09 03 | 704 | 0.1− | 0.0 | 2006 10 21 | 704 | (0.5+ | 3.4−) | 2006 11 18 | 704 | 0.3− | 0.5− |
| 2000 09 03 | 704 | 0.7− | 1.2− | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.4− | 0.5+ |
| 2000 09 03 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.4− |
| 2000 09 03 | 704 | 1.2− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.2− |
| 2000 09 03 | 704 | 0.7+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.4− |
| 2000 09 03 | 704 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.8− | 0.7+ |
| 2000 09 04 | 704 | 0.3− | 0.6− | 2006 10 23 | 644 | 0.1− | 0.2+ | | | | |
| 2000 09 04 | 704 | 0.8+ | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.5− | | | | |

**2000 QV$_{162}$ = 2006 SG$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 83.51529 | | (2000.0) | | | |
| $n$ | 0.17591859 | $\omega$ | 354.29587 | | −0.21098172 | +0.96242251 |
| $a$ | 3.1544832 | $\Omega$ | 263.43788 | | −0.88988837 | −0.26148316 |
| $e$ | 0.1860717 | $i$ | 9.90960 | | −0.40445692 | +0.07327670 |
| $P$ | 5.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.2− | 0.6− | 2000 10 02 | 645 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 2000 08 31 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 699 | 0.0 | 0.4− | 2006 09 19 | 699 | (2.2+ | 0.2−) |
| 2000 08 31 | 704 | 0.3+ | 1.1+ | 2006 08 29 | 699 | 0.4+ | 0.2+ | 2006 09 27 | 703 | (0.3− | 1.6−) |
| 2000 08 31 | 704 | (1.0− | 2.2+) | 2006 08 29 | 699 | 0.7− | 0.4+ | 2006 09 27 | 703 | (2.0− | 0.6−) |
| 2000 09 03 | 704 | 0.1+ | 0.2− | 2006 08 29 | 699 | 0.2+ | 0.7+ | 2006 09 27 | 703 | 0.2− | 0.3− |
| 2000 09 03 | 704 | 0.2− | 0.1+ | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 09 27 | 703 | (1.9− | 0.0 ) |
| 2000 09 03 | 704 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 09 29 | 699 | (0.2− | 2.1+) |
| 2000 09 03 | 704 | 0.0 | 1.2+ | 2006 09 06 | 644 | 0.7− | 0.2+ | 2006 09 29 | 699 | 0.2− | 0.6+ |
| 2000 09 03 | 704 | 0.6− | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 09 29 | 699 | 0.3− | 0.2− |
| 2000 09 04 | 704 | 0.4− | 0.3+ | 2006 09 16 | 703 | 0.3+ | 1.1− | 2006 09 29 | 699 | 1.4+ | 0.8+ |
| 2000 09 04 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2000 09 04 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 703 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.5− | 1.3− |
| 2000 09 04 | 704 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.5+ | 1.0− |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.6+ |

**2000 QB$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.22984 | | (2000.0) | | | |
| $n$ | 0.18369941 | $\omega$ | 31.82726 | | +0.91085221 | +0.39149326 |
| $a$ | 3.0647676 | $\Omega$ | 304.57192 | | −0.40410132 | +0.78149007 |
| $e$ | 0.1629048 | $i$ | 9.13282 | | −0.08396650 | +0.48580479 |
| $P$ | 5.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.5+ | 0.3+ | 2000 09 30 | 704 | 0.6− | 1.0− | 2006 11 02 | G96 | 0.5− | 0.6− |
| 2000 08 31 | 704 | 0.1− | 0.3− | 2000 09 30 | 704 | 0.6+ | 1.7+ | 2006 11 02 | G96 | 0.3+ | 0.6− |
| 2000 08 31 | 704 | 0.6+ | 0.6− | 2000 09 30 | 704 | 0.0 | 0.7+ | 2006 11 02 | G96 | 0.3− | 0.2+ |
| 2000 08 31 | 704 | 0.0 | 0.9+ | 2006 10 23 | 703 | 0.8+ | 1.1+ | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2000 09 03 | 704 | 0.2+ | 0.6− | 2006 10 23 | 703 | 0.2− | 0.9− | 2006 11 13 | G96 | 0.4− | 0.0 |
| 2000 09 03 | 704 | 1.1− | 0.4− | 2006 10 23 | 703 | 1.2− | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.2+ |
| 2000 09 03 | 704 | 0.8− | 0.2+ | 2006 10 23 | 703 | 0.5+ | 0.7+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2000 09 03 | 704 | 0.2+ | 0.1− | 2006 10 29 | 703 | 0.2− | 1.3+ | 2006 11 21 | 703 | 0.7+ | 1.0− |
| 2000 09 05 | 704 | 0.2+ | 0.5− | 2006 10 29 | 703 | 0.5− | 0.7− | 2006 11 21 | 703 | 0.0 | 1.1+ |
| 2000 09 05 | 704 | 0.2− | 0.4+ | 2006 10 29 | 703 | 0.5+ | 1.2− | 2006 11 21 | 703 | 0.5+ | 0.1− |
| 2000 09 05 | 704 | 0.8+ | 0.3+ | 2006 10 29 | 703 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.2− | 0.3+ |
| 2000 09 30 | 704 | 0.4− | 1.0− | 2006 11 02 | G96 | 0.1+ | 0.1+ | | | | |

**2000 QS$_{178}$ = 2006 SZ$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.34869 | | (2000.0) | | | |
| $n$ | 0.17467032 | $\omega$ | 254.10752 | | +0.52114916 | −0.84300210 |
| $a$ | 3.1694943 | $\Omega$ | 162.45645 | | +0.84808884 | +0.52901228 |
| $e$ | 0.2335283 | $i$ | 26.23168 | | −0.09564976 | +0.09743440 |
| $P$ | 5.64 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.5− | 0.2+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.2− | 1.4+ |
| 2000 08 31 | 704 | 0.0 | 0.4− | 2003 03 31 | 645 | 0.0 | 0.1− | 2006 09 24 | 699 | 0.3+ | 0.0 |
| 2000 08 31 | 704 | 0.1+ | 0.2+ | 2003 04 21 | 291 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.0 | 0.4+ |
| 2000 08 31 | 704 | 0.4− | 0.5+ | 2003 04 21 | 291 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.0 | 0.1− |
| 2000 09 03 | 704 | 0.1+ | 0.5− | 2003 04 21 | 291 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.5+ | 0.4+ |
| 2000 09 03 | 704 | 0.6− | 0.2− | 2006 08 28 | 699 | 0.4− | 0.1+ | 2006 09 25 | 703 | 0.3− | 0.5− |
| 2000 09 03 | 704 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.2− | 1.1+ | 2006 10 16 | 291 | 0.1+ | 0.1− |
| 2000 09 03 | 704 | 1.5+ | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.8+ | 2006 10 16 | 291 | 0.1− | 0.1− |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.7− | 0.3− | 2006 10 16 | 291 | 0.0 | 0.0 |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 09 24 | 699 | 0.5+ | 0.1+ | | | | |

**2000 QS$_{184}$ = 2006 TS$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.70180 | | (2000.0) | | | |
| $n$ | 0.18044275 | $\omega$ | 341.95410 | | +0.91149399 | +0.41084407 |
| $a$ | 3.1015332 | $\Omega$ | 353.68237 | | −0.35195014 | +0.75433660 |
| $e$ | 0.2419055 | $i$ | 10.28295 | | −0.21286100 | +0.51203852 |
| $P$ | 5.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.4− | 0.3+ | 2006 10 19 | 703 | 1.0− | 0.0 |
| 2000 08 01 | 704 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.7− | 0.0 |
| 2000 08 01 | 704 | 0.2+ | 0.3− | 2006 09 28 | 703 | 1.4− | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.3− |
| 2000 08 26 | 704 | 0.2− | 1.3− | 2006 09 28 | 703 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.6− |
| 2000 08 26 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.7+ |
| 2000 08 26 | 704 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 15 | 703 | 0.8+ | 0.2− |
| 2000 08 26 | 704 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 1.2+ | 1.4+ |
| 2000 08 26 | 704 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.7+ | 0.2+ |
| 2000 09 04 | 704 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 11 22 | 703 | 0.5− | 0.6− |
| 2000 09 04 | 704 | 1.0+ | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 22 | 703 | 0.6− | 0.6− |
| 2000 09 04 | 704 | 0.4+ | 1.2+ | 2006 10 19 | 703 | 0.1+ | 0.8− | 2006 11 22 | 703 | (0.6+ | 2.6−) |

**2000 QT$_{187}$ = 2005 YB$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 140.60195 | | (2000.0) | | | |
| $n$ | 0.23331757 | $\omega$ | 352.74081 | | +0.99602812 | +0.08887899 |
| $a$ | 2.6131906 | $\Omega$ | 2.18154 | | −0.07300735 | +0.84954562 |
| $e$ | 0.0903060 | $i$ | 8.06295 | | −0.05096967 | +0.51997381 |
| $P$ | 4.22 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.8+ | 1.0+ | 2001 12 19 | 644 | 0.1− | 1.1+ | 2004 07 13 | E12 | 0.5− | 0.5+ |
| 2000 08 26 | 704 | 1.1− | 0.6+ | 2001 12 23 | 704 | 0.8− | 0.8− | 2004 07 13 | E12 | 0.2− | 0.3+ |
| 2000 08 26 | 704 | 0.3+ | 0.1− | 2001 12 23 | 704 | 0.7− | 0.2+ | 2004 07 13 | E12 | 0.3+ | 0.4− |
| 2000 08 26 | 704 | 0.6− | 0.3+ | 2001 12 23 | 704 | 0.6− | 0.3+ | 2004 08 19 | E12 | 0.1+ | 0.7− |
| 2000 08 26 | 704 | 0.3− | 0.7+ | 2001 12 23 | 704 | 0.8+ | 0.8+ | 2004 08 19 | E12 | 0.0 | 0.5+ |
| 2000 09 04 | 704 | 0.6− | 1.7+ | 2003 04 01 | 704 | 0.9+ | 0.9+ | 2004 08 19 | E12 | 0.8− | 0.2+ |
| 2000 09 04 | 704 | 0.3− | 0.6+ | 2003 04 01 | 704 | 0.5− | 1.0+ | 2004 08 19 | E12 | 0.2− | 1.1+ |
| 2000 09 04 | 704 | 0.6− | 0.4− | 2003 04 01 | 704 | 0.3− | 1.4+ | 2005 12 31 | 703 | 0.3− | 0.8− |
| 2000 09 04 | 704 | 0.2+ | 0.9+ | 2003 04 08 | 691 | 0.2− | 0.2+ | 2005 12 31 | 703 | 0.2− | 0.4+ |
| 2001 12 09 | 704 | 0.2+ | 0.7+ | 2003 04 08 | 691 | 0.3− | 0.1+ | 2005 12 31 | 703 | 0.4+ | 0.1+ |
| 2001 12 09 | 704 | 0.6+ | 0.0 | 2003 04 08 | 691 | 0.3− | 0.0 | 2005 12 31 | 703 | 0.1− | 0.1+ |
| 2001 12 09 | 704 | 1.0+ | 0.3+ | 2003 05 03 | 691 | 0.8+ | 0.0 | 2006 01 07 | 703 | 0.3− | 0.6− |
| 2001 12 09 | 704 | 0.2+ | 0.9+ | 2003 05 03 | 691 | 0.6+ | 0.1+ | 2006 01 07 | 703 | 0.5+ | 0.5+ |
| 2001 12 19 | 644 | 0.1+ | 1.2+ | 2003 05 03 | 691 | 0.3+ | 0.1+ | 2006 01 07 | 703 | (2.3+ | 0.1+) |
| 2001 12 19 | 644 | 0.0 | 1.1+ | 2004 07 13 | E12 | 0.3+ | 0.0 | 2006 01 07 | 703 | 0.6+ | 0.7+ |

**2000 QZ$_{198}$ = 2006 SM$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.89316 | | (2000.0) | | | |
| $n$ | 0.17293076 | $\omega$ | 197.89543 | | +0.97463361 | +0.17762423 |
| $a$ | 3.1907140 | $\Omega$ | 150.79733 | | −0.15555745 | +0.97503190 |
| $e$ | 0.2623084 | $i$ | 16.20464 | | −0.16090743 | +0.13327579 |
| $P$ | 5.70 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.2+ | 0.1+ | 2000 10 02 | 704 | 0.6− | 0.6− | 2006 10 04 | 703 | 0.5− | 0.1− |
| 2000 08 29 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.8− | 0.7+ | 2006 10 04 | 703 | 0.2+ | 0.3− |
| 2000 08 29 | 704 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2000 08 29 | 704 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 10 10 | 644 | 0.4− | 0.0 |
| 2000 08 29 | 704 | 0.4− | 0.5+ | 2006 09 21 | 699 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2000 09 05 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.7− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2000 09 05 | 704 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2000 09 05 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2000 09 05 | 704 | 0.2+ | 1.3− | 2006 09 24 | 699 | 0.0 | 1.2− | 2006 10 21 | 703 | 0.6+ | 1.2+ |
| 2000 09 05 | 704 | 0.3− | 0.0 | 2006 09 24 | 699 | 0.3+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.9+ |
| 2000 09 24 | 704 | 0.6+ | 0.3− | 2006 09 24 | 699 | 0.4+ | 1.0+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2000 09 24 | 704 | 0.3− | 0.2+ | 2006 09 24 | 699 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.4+ | 0.0 |
| 2000 09 24 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.6− | 2006 10 31 | 703 | 0.2+ | 0.6− |
| 2000 09 24 | 704 | 0.4− | 0.7+ | 2006 09 26 | 703 | 0.8+ | 0.1+ | 2006 10 31 | 703 | 0.3− | 0.2− |
| 2000 09 24 | 704 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 10 31 | 703 | 0.8− | 0.6− |
| 2000 10 02 | 704 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.6+ | 0.3− | 2006 10 31 | 703 | 0.2− | 0.6− |
| 2000 10 02 | 704 | 0.3− | 0.2− | 2006 10 04 | 703 | 0.1− | 0.8+ | | | | |
| 2000 10 02 | 704 | 0.9+ | 0.2− | 2006 10 04 | 703 | 0.6− | 0.2− | | | | |

**2000 QF$_{210}$ = 2006 SM$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.18270 | | (2000.0) | | | |
| $n$ | 0.17322720 | $\omega$ | 24.53466 | | +0.99657112 | −0.07889580 |
| $a$ | 3.1870728 | $\Omega$ | 339.94301 | | +0.05867532 | +0.88630459 |
| $e$ | 0.1594965 | $i$ | 4.16842 | | +0.05833697 | +0.45633280 |
| $P$ | 5.69 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 1.0+ | 0.4+ | 2006 09 16 | 644 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2000 08 31 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2000 08 31 | 704 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.4− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2000 09 05 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2000 09 05 | 704 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2000 09 05 | 704 | 0.0 | 0.0 | 2006 09 18 | 699 | 1.0+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 09 05 | 704 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.7+ | 0.7− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 09 19 | 691 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.8+ | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2000 09 19 | 691 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.8− | 0.1− |
| 2000 09 19 | 691 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2006 09 14 | 703 | 1.1− | 1.0− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2006 09 14 | 703 | (1.0− | 1.8−) | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2006 09 14 | 703 | (0.4− | 2.2−) | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2006 09 14 | 703 | 1.1+ | 0.6− | 2006 09 29 | 704 | 0.3+ | 1.0− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 09 16 | 644 | 0.3− | 0.7+ | 2006 09 29 | 704 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2006 09 16 | 644 | 0.2− | 0.5− | 2006 09 29 | 704 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2006 09 16 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.3− | 0.3− | | | | |
| 2006 09 16 | 644 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | | | |

**2000 QP$_{220}$ = 1993 TS$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.38426 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27219518 | $\omega$ | 204.50179 | | +0.99376887 | | −0.10872472 |
| $a$ | 2.3580287 | $\Omega$ | 161.68966 | | +0.11073494 | | +0.93798493 |
| $e$ | 0.1463173 | $i$ | 4.48063 | | +0.01269661 | | +0.32918566 |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.5− | 0.3+ | 2000 08 21 | 699 | 0.2+ | 0.9− | 2006 02 07 | G96 | 0.7− | 0.4+ |
| 1993 10 09 | 809 | 1.3− | 0.9+ | 2000 08 24 | 704 | 1.7+ | 1.0− | 2006 02 07 | G96 | 0.1− | 0.4− |
| 1993 10 09 | 809 | 0.9− | 0.2+ | 2000 08 24 | 704 | 0.1+ | 0.8+ | 2006 02 07 | G96 | 0.1− | 0.5+ |
| 1993 10 11 | 809 | 0.1− | 0.1− | 2000 08 24 | 704 | 0.3+ | 0.4− | 2006 02 07 | G96 | 0.2+ | 0.2+ |
| 1993 10 11 | 809 | 0.3− | 1.1+ | 2000 08 24 | 704 | 0.6− | 1.6+ | 2006 03 02 | 691 | 0.3+ | 0.4+ |
| 1993 10 11 | 809 | 1.7− | 1.3+ | 2002 02 11 | 704 | 0.3+ | 1.0− | 2006 03 02 | 691 | 0.3+ | 0.2+ |
| 1993 10 11 | 809 | 0.5+ | 1.7+ | 2002 02 11 | 704 | 1.2+ | 0.3+ | 2006 03 02 | 691 | 0.1+ | 0.4+ |
| 1993 10 11 | 809 | 0.8+ | 2.1+ | 2002 02 11 | 704 | 0.9− | 0.4− | 2006 03 26 | G96 | 0.1− | 0.0 |
| 1993 10 11 | 809 | 0.4+ | 1.8+ | 2002 02 11 | 704 | 0.6− | 1.2− | 2006 03 26 | G96 | 0.1− | 0.5+ |
| 2000 08 07 | 608 | 0.1− | 1.6− | 2003 05 25 | 691 | 0.3− | 0.4+ | 2006 03 26 | G96 | 0.1+ | 0.2+ |
| 2000 08 07 | 608 | 0.5− | 1.4− | 2003 05 25 | 691 | 0.4− | 0.2+ | 2006 03 26 | G96 | 0.1+ | 0.2− |
| 2000 08 07 | 608 | 0.6− | 1.5− | 2003 05 25 | 691 | 0.3− | 0.2+ | 2006 04 07 | 291 | 0.0 | 0.3+ |
| 2000 08 21 | 699 | 0.2− | 1.1− | 2003 07 04 | 691 | 0.3+ | 0.6+ | 2006 04 07 | 291 | 0.1+ | 0.1− |
| 2000 08 21 | 699 | 0.5+ | 0.1+ | 2003 07 04 | 691 | 0.9+ | 0.2− | 2006 04 07 | 291 | 0.1− | 0.1− |
| 2000 08 21 | 699 | 0.3+ | 1.2+ | 2003 07 04 | 691 | 0.4+ | 0.5+ | | | | |

**2000 QN$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.97950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22642196 | $\omega$ | 227.80437 | | +0.79204382 | | −0.60916539 |
| $a$ | 2.6659808 | $\Omega$ | 169.51139 | | +0.60444549 | | +0.77343360 |
| $e$ | 0.2837728 | $i$ | 12.62905 | | +0.08551160 | | +0.17526547 |
| $P$ | 4.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.9− | 0.8− | 2000 09 24 | 704 | 0.6− | 1.2+ | 2000 11 20 | 699 | 0.1− | 1.4− |
| 2000 08 31 | 704 | 0.6− | 0.1− | 2000 09 24 | 704 | 0.0 | 0.8+ | 2000 11 29 | 608 | 0.5− | 0.9+ |
| 2000 08 31 | 704 | 0.5− | 0.1+ | 2000 09 25 | 704 | 0.3− | 0.4+ | 2000 11 29 | 608 | 0.8− | 0.9+ |
| 2000 09 04 | 699 | 0.1− | 0.8− | 2000 09 25 | 704 | 0.2− | 0.2− | 2000 11 29 | 608 | 0.3− | 0.3+ |
| 2000 09 04 | 699 | 0.4− | 0.3− | 2000 09 25 | 704 | 0.7+ | 0.1+ | 2002 02 14 | 291 | 0.2+ | 0.4+ |
| 2000 09 04 | 699 | 0.3− | 0.2− | 2000 09 25 | 704 | 0.5+ | 0.1− | 2002 02 14 | 291 | 0.2+ | 0.5+ |
| 2000 09 04 | 699 | 0.3+ | 0.7− | 2000 10 01 | 704 | 0.2+ | 0.7+ | 2002 02 14 | 291 | 0.0 | 0.7+ |
| 2000 09 23 | 699 | 1.9+ | 0.3− | 2000 10 01 | 704 | 0.2+ | 0.6+ | 2004 08 09 | 704 | 0.8− | 0.2+ |
| 2000 09 23 | 699 | 1.5+ | 0.0 | 2000 10 01 | 704 | 0.4+ | 0.4+ | 2004 08 09 | 704 | 0.6+ | 0.3+ |
| 2000 09 23 | 699 | (4.4+ | 0.5−) | 2000 10 01 | 704 | 0.4− | 0.3+ | 2004 08 09 | 704 | 0.4+ | 0.8+ |
| 2000 09 23 | 699 | 0.7+ | 0.1+ | 2000 10 01 | 704 | 1.2− | 0.5+ | 2004 08 09 | 704 | 0.2− | 1.0+ |
| 2000 09 24 | 704 | 0.4− | 0.6+ | 2000 11 20 | 699 | (0.6+ | 2.8−) | 2004 08 09 | 704 | 0.4− | 0.8+ |
| 2000 09 24 | 704 | 0.3− | 0.6+ | 2000 11 20 | 699 | 0.4+ | 0.8− | | | | |
| 2000 09 24 | 704 | 0.3− | 0.7+ | 2000 11 20 | 699 | 0.1+ | 0.8− | | | | |

**2000 QB$_{231}$ = 2006 UT$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.80262 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17817973 | $\omega$ | 203.88915 | | +0.86015325 | | −0.50938471 |
| $a$ | 3.1277391 | $\Omega$ | 186.90387 | | +0.49564645 | | +0.84673211 |
| $e$ | 0.1450381 | $i$ | 12.37492 | | +0.12029545 | | +0.15353157 |
| $P$ | 5.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 049 | 0.2+ | 0.9+ | 2000 09 24 | 704 | 0.2+ | 1.2− | 2006 10 16 | 703 | 0.6+ | 0.0 |
| 2000 08 31 | 049 | 0.6+ | 0.1− | 2000 09 26 | 704 | 0.9+ | 0.1− | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2000 08 31 | 049 | 1.2+ | 0.1+ | 2000 09 26 | 704 | 0.7+ | 1.2− | 2006 10 16 | 703 | 0.2− | 0.6− |
| 2000 09 04 | 691 | 0.1− | 0.1− | 2000 09 26 | 704 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2000 09 04 | 691 | 0.1− | 0.1− | 2000 09 26 | 704 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.8− | 0.2− |
| 2000 09 04 | 691 | 0.1− | 0.0 | 2000 09 26 | 704 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.5+ | 0.5− |
| 2000 09 21 | 699 | 0.0 | 0.8+ | 2000 09 26 | 608 | 0.5− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.0 |
| 2000 09 21 | 699 | 0.3− | 1.1− | 2000 09 26 | 608 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2000 09 21 | 699 | 1.1− | 0.5+ | 2000 09 26 | 608 | 0.8− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2000 09 21 | 699 | 1.2+ | 0.9+ | 2006 09 30 | 703 | 0.4+ | 0.9+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2000 09 24 | 704 | 0.1+ | 1.1+ | 2006 09 30 | 703 | 1.0+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2000 09 24 | 704 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.0 | | | | |
| 2000 09 24 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.9− | 0.4+ | | | | |

**2000 QM$_{240}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.12874 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21005949 | $\omega$ | 55.43836 | | +0.77212149 | | −0.63500444 |
| $a$ | 2.8026865 | $\Omega$ | 343.93643 | | +0.55025804 | | +0.68733051 |
| $e$ | 0.0076148 | $i$ | 5.06917 | | +0.31787496 | | +0.35262746 |
| $P$ | 4.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 807 | 0.1+ | 0.7+ | 2003 03 24 | 691 | 0.2− | 0.4− | 2005 09 27 | 291 | 0.1− | 0.2+ |
| 2000 08 25 | 807 | 0.1− | 0.5+ | 2003 03 24 | 691 | 0.0 | 0.1+ | 2005 10 13 | 691 | 0.3+ | 0.1+ |
| 2000 08 28 | 807 | 0.2− | 0.9+ | 2003 03 30 | 691 | 0.0 | 0.2+ | 2005 10 13 | 691 | 0.2+ | 0.1+ |
| 2000 08 28 | 807 | 0.3− | 0.7+ | 2003 03 30 | 691 | 0.4+ | 0.4− | 2005 10 13 | 691 | 0.3− | 0.1− |
| 2000 09 28 | 691 | 0.1− | 0.4− | 2003 03 30 | 691 | 0.4+ | 0.3− | 2005 10 22 | 703 | (2.1− | 1.1−) |
| 2000 09 28 | 691 | 0.0 | 0.6− | 2003 04 08 | 691 | 0.3− | 0.4+ | 2005 10 22 | 703 | 0.4+ | 0.4− |
| 2000 09 28 | 691 | 0.1+ | 0.5− | 2003 04 08 | 691 | 0.7− | 0.1− | 2005 10 22 | 703 | (1.5+ | 3.3−) |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 04 08 | 691 | 0.3+ | 0.7+ | 2005 10 22 | 703 | (2.2− | 2.0−) |
| 2000 10 02 | 645 | 0.0 | 0.2+ | 2005 09 27 | 291 | 0.2− | 0.0 | | | | |
| 2003 03 24 | 691 | 0.3+ | 0.2+ | 2005 09 27 | 291 | 0.2− | 0.2+ | | | | |

**2000 QU$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.78764 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19715371 | $\omega$ | 68.47791 | | +0.53702088 | | +0.84309271 |
| $a$ | 2.9236996 | $\Omega$ | 234.03452 | | −0.78633995 | | +0.48814191 |
| $e$ | 0.1901461 | $i$ | 2.00675 | | −0.30541457 | | +0.22563723 |
| $P$ | 5.00 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 04 | 691 | 0.7− | 0.1− | 2005 06 18 | G96 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.2− |
| 1995 06 04 | 691 | 0.5− | 0.3+ | 2005 06 18 | G96 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.3− | 0.2− |
| 1995 06 04 | 691 | 0.1+ | 0.5+ | 2005 07 05 | 644 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.4− | 0.2− |
| 2000 07 30 | 807 | 0.2+ | 0.3+ | 2005 07 05 | 644 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2000 07 30 | 807 | 0.1+ | 0.3+ | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2000 08 21 | 699 | 0.9+ | 0.1− | 2005 07 28 | 644 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2000 08 21 | 699 | 0.5+ | 0.8+ | 2005 07 28 | 644 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2000 08 21 | 699 | 1.8+ | 0.9− | 2005 07 28 | 644 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2000 08 21 | 699 | 0.1+ | 1.5+ | 2005 08 06 | 644 | 0.3− | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2000 08 25 | 807 | 0.3+ | 0.6+ | 2005 08 06 | 644 | 0.4− | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2000 08 25 | 807 | 0.3+ | 0.5+ | 2005 08 06 | 644 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2004 03 29 | 691 | 0.2+ | 0.8+ | 2005 10 26 | G96 | 0.5− | 0.2− | 2006 11 19 | 691 | 0.3+ | 0.3+ |
| 2004 03 29 | 691 | 0.2+ | 0.6+ | 2005 10 26 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 29 | 691 | 0.4+ | 0.3+ | 2005 10 26 | G96 | 0.7− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2005 06 18 | G96 | 0.0 | 0.5− | 2005 10 26 | G96 | 0.5− | 0.1− | 2006 11 27 | 691 | 0.6− | 0.9+ | | |
| 2005 06 18 | G96 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.5− | 0.6− | 2006 11 27 | 691 | 0.2− | 0.4+ | | |

**2000 QQ$_{254}$ = 2004 LZ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 112.89295 | | (2000.0) | | | |
| $n$ | 0.21960400 | $\omega$ | 186.09081 | | +0.94376393 | +0.31374833 |
| $a$ | 2.7208790 | $\Omega$ | 154.84298 | | −0.29204464 | +0.93894063 |
| $e$ | 0.1335014 | $i$ | 14.19817 | | −0.15498248 | +0.14125324 |
| $P$ | 4.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.8+ | 0.4+ | 2003 03 23 | 645 | 0.0 | 0.0 | 2004 06 16 | 691 | 0.1+ | 0.0 | | |
| 2000 08 02 | 704 | 1.3− | 0.5+ | 2003 03 23 | 645 | 0.1− | 0.0 | 2004 06 16 | 691 | 0.1− | 0.1+ | | |
| 2000 08 02 | 704 | 0.9+ | 0.7− | 2003 03 26 | 691 | 0.2+ | 0.0 | 2004 06 16 | 691 | 0.2− | 0.0 | | |
| 2000 08 02 | 704 | 0.1− | 0.0 | 2003 03 26 | 691 | 0.4+ | 0.1+ | 2005 10 05 | 703 | 0.9+ | 2.9+ | | |
| 2000 08 02 | 704 | 0.7− | 1.0+ | 2003 03 26 | 691 | 0.6+ | 0.0 | 2005 10 05 | 703 | 0.2− | 1.0+ | | |
| 2000 08 21 | 699 | 0.1− | 1.0+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2005 10 05 | 703 | 0.4− | 0.4+ | | |
| 2000 08 21 | 699 | 0.2− | 0.6+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2005 10 05 | 703 | 0.1+ | 1.3+ | | |
| 2000 08 21 | 699 | 0.3− | 1.0− | 2003 04 08 | 691 | 0.4+ | 0.3+ | 2005 11 03 | 703 | 0.2+ | 0.1+ | | |
| 2000 08 21 | 699 | 0.3− | 1.0+ | 2003 04 08 | 691 | 0.5− | 0.9+ | 2005 11 03 | 703 | 0.5− | 0.4− | | |
| 2000 08 29 | 704 | 1.7+ | 0.6+ | 2003 04 08 | 691 | 0.1− | 0.7+ | 2005 11 03 | 703 | 0.7− | 0.7+ | | |
| 2000 08 29 | 704 | 0.1− | 1.1+ | 2004 06 11 | 691 | 0.1+ | 0.0 | 2005 11 03 | 703 | 0.9− | 0.3+ | | |
| 2000 08 29 | 704 | 0.4− | 0.2− | 2004 06 11 | 691 | 0.0 | 0.1+ | | | | | | |
| 2000 08 29 | 704 | 0.3− | 0.5− | 2004 06 11 | 691 | 0.0 | 0.1+ | | | | | | |

**2000 QR$_{254}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.58292 | | (2000.0) | | | |
| $n$ | 0.25970523 | $\omega$ | 231.26077 | | +0.65311698 | +0.71627461 |
| $a$ | 2.4330381 | $\Omega$ | 81.37364 | | −0.59449643 | +0.68599931 |
| $e$ | 0.1486297 | $i$ | 14.39192 | | −0.46905459 | +0.12788911 |
| $P$ | 3.80 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 1.2− | 0.1− | 2003 04 09 | 704 | 2.0+ | 0.4+ | 2004 10 06 | 704 | 0.2− | 0.5− | | |
| 2000 08 26 | 704 | 0.5+ | 0.7+ | 2003 04 09 | 704 | 1.5+ | 0.1+ | 2004 10 06 | 644 | 0.2+ | 0.2− | | |
| 2000 08 26 | 704 | 0.2− | 0.6− | 2003 04 09 | 704 | 1.7+ | 0.5+ | 2004 10 14 | 699 | 0.2+ | 0.4+ | | |
| 2000 09 21 | 704 | 0.5+ | 0.8+ | 2003 04 26 | 704 | 0.1− | 0.2− | 2004 10 14 | 699 | 1.2− | 0.2+ | | |
| 2000 09 21 | 704 | 0.9− | 0.9− | 2003 04 26 | 704 | 2.3− | 0.8+ | 2004 10 14 | 699 | 0.6− | 0.1+ | | |
| 2000 09 21 | 704 | 0.5− | 0.7− | 2003 04 26 | 704 | 0.2− | 0.7+ | 2004 10 14 | 699 | 0.6+ | 0.2− | | |
| 2000 09 28 | 699 | (2.8+ | 0.1−) | 2003 04 26 | 704 | 0.9− | 0.3− | 2004 11 01 | 644 | 0.3+ | 0.6+ | | |
| 2000 09 28 | 699 | 0.5− | 0.2− | 2003 04 26 | 704 | 0.4+ | 0.6+ | 2004 11 01 | 644 | 0.1− | 0.6+ | | |
| 2000 09 28 | 699 | 1.2+ | 0.6+ | 2004 09 21 | 704 | 1.0− | 0.3+ | 2004 11 01 | 644 | 0.3+ | 0.3+ | | |
| 2000 09 28 | 699 | 0.9+ | 0.7+ | 2004 09 21 | 704 | 0.9− | 0.5+ | 2004 11 20 | 703 | 1.1− | 0.5+ | | |
| 2001 12 19 | 644 | 0.0 | 0.1− | 2004 09 21 | 704 | 0.0 | 1.0+ | 2004 11 20 | 703 | 0.3+ | 0.1− | | |
| 2001 12 19 | 644 | 0.1+ | 0.2+ | 2004 09 21 | 699 | 0.3+ | 0.5+ | 2004 11 20 | 703 | 0.3− | 0.0 | | |
| 2001 12 19 | 644 | 0.3− | 0.1− | 2004 09 21 | 704 | 0.4− | 0.4+ | 2004 11 20 | 703 | 1.2+ | 0.6− | | |
| 2002 02 03 | 644 | 0.1+ | 0.3− | 2004 09 21 | 699 | 0.3− | 0.6+ | 2006 01 06 | 704 | 0.5− | 0.9+ | | |
| 2002 02 03 | 644 | 0.4+ | 0.1+ | 2004 09 21 | 699 | 0.6− | 0.3+ | 2006 01 06 | 704 | 0.2− | 0.2− | | |
| 2002 02 03 | 644 | 0.4+ | 0.2− | 2004 09 21 | 699 | 0.2− | 0.1− | 2006 01 06 | 704 | 0.1− | 0.0 | | |
| 2003 03 29 | 699 | 0.3− | 2.0+ | 2004 10 06 | 644 | 0.2+ | 0.1− | 2006 01 06 | 704 | 0.6+ | 0.2+ | | |
| 2003 03 29 | 699 | 0.2− | 1.0+ | 2004 10 06 | 704 | 0.1+ | 0.1− | 2006 01 27 | 703 | 0.3+ | 1.0− | | |
| 2003 03 29 | 699 | 0.5− | 0.4+ | 2004 10 06 | 704 | 0.9− | 0.3+ | 2006 01 27 | 703 | 0.8− | 0.4− | | |
| 2003 03 29 | 699 | 0.4− | 0.1+ | 2004 10 06 | 704 | 0.1+ | 0.6+ | 2006 01 27 | 703 | 0.8+ | 0.5+ | | |
| 2003 04 09 | 704 | 0.8+ | 0.3+ | 2004 10 06 | 704 | 0.3− | 0.3+ | 2006 01 27 | 703 | 0.6+ | 1.7+ | | |
| 2003 04 09 | 704 | 1.2+ | 0.0 | 2004 10 06 | 644 | 0.4+ | 0.1+ | | | | | | |

**2000 QS$_{254}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 280.69908 | | (2000.0) | | | |
| $n$ | 0.29469221 | $\omega$ | 287.85284 | | +0.97509485 | −0.18115290 |
| $a$ | 2.2364384 | $\Omega$ | 82.73214 | | +0.21829959 | +0.88584167 |
| $e$ | 0.2037666 | $i$ | 7.41158 | | −0.03918322 | +0.42716292 |
| $P$ | 3.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 704 | 0.2− | 0.7+ | 2000 10 02 | 699 | 0.3+ | 0.5+ | 2006 05 08 | 691 | 0.2− | 0.2− | | |
| 2000 08 28 | 704 | 0.8+ | 0.2+ | 2000 10 02 | 699 | 0.2− | 0.6− | 2006 05 08 | 691 | 0.2+ | 0.1− | | |
| 2000 08 28 | 704 | 1.0+ | 0.2− | 2000 10 02 | 699 | 0.5+ | 0.2− | 2006 05 08 | 691 | 0.1− | 0.0 | | |
| 2000 08 28 | 704 | 0.2− | 0.2− | 2000 10 02 | 699 | 0.3+ | 0.5− | 2006 05 21 | 691 | 0.1− | 0.1− | | |
| 2000 09 10 | 699 | 0.8− | 0.0 | 2000 10 27 | 704 | 0.7− | 0.1+ | 2006 05 21 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 10 | 699 | 0.4− | 0.3− | 2000 10 27 | 704 | 0.5+ | 0.3− | 2006 05 21 | 691 | 0.2+ | 0.1+ | | |
| 2000 09 10 | 699 | 0.2− | 0.0 | 2000 10 27 | 704 | 0.1− | 0.9+ | 2006 05 25 | 691 | 0.1+ | 0.2− | | |
| 2000 09 10 | 699 | 0.9− | 0.4− | 2000 10 27 | 704 | 0.1+ | 0.3+ | 2006 05 25 | 691 | 0.0 | 0.0 | | |
| 2000 09 23 | 699 | 0.3+ | 0.0 | 2000 10 27 | 704 | 0.0 | 0.1− | 2006 05 25 | 691 | 1.1− | 0.3− | | |
| 2000 09 23 | 699 | 0.1− | 0.4+ | 2006 04 26 | 691 | 0.2+ | 0.1+ | 2006 06 02 | 691 | 0.4+ | 0.1+ | | |
| 2000 09 23 | 699 | 0.1+ | 0.4− | 2006 04 26 | 691 | 0.1+ | 0.1+ | 2006 06 02 | 691 | 0.2+ | 0.2+ | | |
| 2000 09 23 | 699 | 0.1− | 0.3+ | 2006 04 26 | 691 | 0.1− | 0.1+ | 2006 06 02 | 691 | 0.2+ | 0.1+ | | |

**2000 RX$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.20186 | | (2000.0) | | | |
| $n$ | 0.17986417 | $\omega$ | 154.68876 | | +0.98665911 | −0.14205194 |
| $a$ | 3.1081808 | $\Omega$ | 213.77714 | | +0.11409815 | +0.95183378 |
| $e$ | 0.2281805 | $i$ | 8.22432 | | +0.11612671 | +0.27172358 |
| $P$ | 5.48 | $H$ | 14.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 915 | 0.3− | 0.7− | 2000 10 29 | 704 | 0.0 | 0.9+ | 2006 11 18 | 704 | 0.6+ | 0.3+ | | |
| 2000 09 01 | 915 | 0.3+ | 1.1− | 2000 11 03 | 704 | 1.1− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.1− | | |
| 2000 09 01 | 704 | 0.1+ | 0.2+ | 2000 11 03 | 704 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.8+ | | |
| 2000 09 01 | 704 | 0.5+ | 0.6− | 2000 11 03 | 704 | 0.7− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2000 09 01 | 704 | 0.1− | 0.5− | 2000 11 03 | 704 | 0.1+ | 1.0+ | 2006 11 20 | H55 | 0.3− | 0.1− | | |
| 2000 09 01 | 704 | 0.5− | 0.3− | 2000 11 03 | 704 | 0.4+ | 1.4+ | 2006 11 20 | 691 | 0.3− | 0.1− | | |
| 2000 09 01 | 704 | 0.2− | 0.0 | 2000 11 18 | 699 | 0.7− | 1.6+ | 2006 11 20 | H55 | 0.1− | 0.0 | | |
| 2000 09 02 | 915 | 0.1− | 1.0− | 2000 11 18 | 699 | 0.2− | 0.4− | 2006 11 20 | H55 | 0.0 | 0.0 | | |
| 2000 09 02 | 915 | 1.1− | 0.7+ | 2000 11 18 | 699 | 0.2+ | 0.6− | 2006 11 20 | H55 | 0.2− | 0.0 | | |
| 2000 09 02 | 699 | 0.7− | 0.3− | 2000 11 18 | 699 | 0.1− | 0.6+ | 2006 11 20 | H55 | 0.3− | 0.0 | | |
| 2000 09 02 | 699 | 1.2− | 0.7− | 2000 11 20 | 704 | (3.5+ | 2.0+) | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2000 09 02 | 699 | 1.2− | 0.8− | 2000 11 20 | 704 | 0.3+ | 0.7+ | 2006 11 20 | G96 | 0.0 | 0.3− | | |
| 2000 09 02 | 699 | 0.9− | 0.5− | 2000 11 20 | 704 | 0.9+ | 0.9+ | 2006 11 20 | G96 | 0.0 | 0.1− | | |
| 2000 09 03 | 704 | 0.3+ | 0.1+ | 2000 11 20 | 704 | 0.0 | 0.7+ | 2006 11 20 | G96 | 0.0 | 0.1− | | |
| 2000 09 03 | 704 | 0.1− | 0.6+ | 2006 09 16 | 703 | 0.7+ | 1.3+ | 2006 11 20 | 704 | 0.2+ | 0.1+ | | |
| 2000 09 03 | 704 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.5+ | 0.5+ | 2006 11 20 | G96 | 0.1+ | 0.1− | | |
| 2000 09 03 | 704 | 0.7− | 0.4+ | 2006 09 16 | 703 | 0.8− | 0.6+ | 2006 11 20 | 704 | 0.5− | 0.2+ | | |
| 2000 09 03 | 704 | 0.0 | 0.1+ | 2006 09 16 | 703 | (0.0 | 1.9+) | 2006 11 20 | 704 | 0.2+ | 0.2− | | |
| 2000 09 05 | 699 | 0.0 | 0.3+ | 2006 10 01 | 703 | 0.6− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.1− | | |
| 2000 09 05 | 699 | 0.5− | 0.2+ | 2006 10 01 | 703 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.3+ | | |
| 2000 09 05 | 699 | 0.2− | 0.8− | 2006 10 01 | 703 | 0.7+ | 0.7+ | 2006 11 20 | G96 | 0.1+ | 0.1− | | |
| 2000 09 05 | 699 | 0.1− | 0.6− | 2006 10 01 | 703 | 0.5+ | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.1+ | | |
| 2000 09 23 | 704 | 0.5+ | 0.1− | 2006 11 02 | G96 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.2− | | |
| 2000 09 23 | 704 | 0.6+ | 0.0 | 2006 11 02 | G96 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.4+ | 0.2+ | | |
| 2000 09 23 | 704 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.1+ | 0.4− | 2006 11 20 | G96 | 0.2+ | 0.1− | | |
| 2000 09 23 | 704 | 0.4+ | 0.2− | 2006 11 02 | G96 | 0.2− | 0.3− | 2006 11 20 | G96 | 0.4+ | 0.0 | | |
| 2000 09 23 | 704 | 0.6+ | 0.7− | 2006 11 02 | 703 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.1− | | |
| 2000 09 26 | 704 | 0.9+ | 0.6+ | 2006 11 02 | 703 | 0.1+ | 0.3− | 2006 11 20 | G96 | 0.4+ | 0.1− | | |
| 2000 09 26 | 704 | 0.3+ | 0.4− | 2006 11 02 | 703 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.4− | | |
| 2000 09 26 | 704 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.9− | 0.2− | 2006 11 21 | G96 | 0.5+ | 0.1− | | |
| 2000 09 26 | 704 | 0.0 | 0.2− | 2006 11 05 | 644 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2000 09 26 | 704 | 0.3+ | 0.3− | 2006 11 05 | 644 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.0 | 0.2− | | |
| 2000 09 26 | 608 | 1.1+ | 1.5− | 2006 11 05 | 644 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.0 | | |
| 2000 09 26 | 608 | 1.0+ | 1.3− | 2006 11 14 | 704 | 0.5+ | 0.5− | 2006 11 24 | 691 | 0.0 | 0.1+ | | |
| 2000 09 26 | 608 | 1.0+ | 1.6− | 2006 11 14 | 704 | 0.2+ | 0.4+ | 2006 11 25 | 703 | 0.9− | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 699 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.1+ | 2006 11 25 | 704 | 0.3+ | 0.1+ | | |
| 2000 10 01 | 699 | 0.3− | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.2+ | 2006 11 25 | 703 | 0.2− | 0.3− | | |
| 2000 10 01 | 699 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1− | 0.2− | 2006 11 25 | 703 | 0.6− | 0.4− | | |
| 2000 10 01 | 699 | 0.6− | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.1− | 2006 11 25 | 703 | 0.9− | 0.8− | | |
| 2000 10 03 | 704 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.3+ | 0.2− | | |
| 2000 10 03 | 704 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.4− | 0.0 | 2006 11 25 | 704 | 0.6+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.0 | 2006 11 28 | 704 | 1.0+ | 1.1− | | |
| 2000 10 03 | 704 | 0.0 | 0.9+ | 2006 11 17 | 704 | 1.1− | 0.2− | 2006 11 28 | 704 | 1.0+ | 0.1− | | |
| 2000 10 03 | 704 | 0.0 | 0.6+ | 2006 11 17 | 704 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.7− | 0.0 | | |
| 2000 10 25 | 704 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.6+ | | |
| 2000 10 25 | 704 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 0.8− | 0.5+ | | |
| 2000 10 25 | 704 | 0.4− | 1.3+ | 2006 11 17 | G96 | 0.3+ | 0.2− | 2006 12 01 | 704 | 0.0 | 0.1+ | | |
| 2000 10 25 | 704 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.4+ | 0.1− | 2006 12 01 | 704 | 0.3− | 0.6+ | | |
| 2000 10 25 | 704 | 0.5+ | 0.6+ | 2006 11 17 | G96 | 0.3+ | 0.1− | 2006 12 01 | 704 | 0.8+ | 0.4+ | | |
| 2000 10 29 | 704 | 0.4+ | 1.4+ | 2006 11 18 | 704 | (2.2+ | 0.4+) | 2006 12 01 | 704 | 0.2− | 0.3+ | | |
| 2000 10 29 | 704 | 0.8+ | 0.4− | 2006 11 18 | 704 | 0.3− | 1.1− | 2006 12 01 | 704 | 0.4+ | 0.5+ | | |

**2000 RW$_{17}$ = 2006 RX$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.03611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17304089 | $\omega$ | 173.42701 | | +0.96818730 | −0.23961391 | |
| $a$ | 3.1893601 | $\Omega$ | 200.86939 | | +0.21937664 | +0.95142174 | |
| $e$ | 0.1196422 | $i$ | 11.67703 | | +0.12036299 | +0.19334386 | |
| $P$ | 5.70 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.1− | | |
| 2000 09 01 | 704 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.3− | 2006 10 16 | G96 | 0.1− | 0.2− | | |
| 2000 09 01 | 704 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.1− | 0.2− | | |
| 2000 09 01 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 1.2− | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.3− | | |
| 2000 09 01 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.5+ | 0.7+ | 2006 10 18 | 106 | 0.9+ | 0.7− | | |
| 2000 09 03 | 704 | 0.3+ | 0.9− | 2006 09 20 | 704 | 0.6− | 0.2− | 2006 10 18 | 106 | 0.0 | 0.1+ | | |
| 2000 09 03 | 704 | 0.2− | 0.5+ | 2006 09 20 | 704 | 0.2+ | 0.5− | 2006 10 18 | 106 | 0.3+ | 1.1+ | | |
| 2000 09 03 | 704 | 0.4− | 0.3− | 2006 09 20 | 704 | 0.6− | 0.4+ | 2006 10 18 | 106 | 0.2+ | 0.5+ | | |
| 2000 09 03 | 704 | 0.2− | 0.4− | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2000 09 26 | 704 | 1.4− | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2000 09 26 | 704 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2000 09 26 | 704 | 0.4− | 0.7− | 2006 09 27 | 704 | 1.3− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2000 10 01 | 699 | 0.3+ | 0.7+ | 2006 09 27 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2000 10 01 | 699 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2000 10 01 | 699 | 0.4− | 0.0 | 2006 09 27 | 704 | (0.6+ | 1.5−) | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2000 10 01 | 699 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.2− | | |
| 2000 10 03 | 704 | 0.1+ | 0.9− | 2006 09 29 | 704 | 0.4− | 0.4− | 2006 10 27 | G96 | 0.2− | 0.3− | | |
| 2000 10 03 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.8− | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2000 10 03 | 704 | 1.1+ | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1− | | |
| 2000 10 03 | 704 | 0.0 | 1.4+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2003 04 01 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2003 04 01 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2003 04 01 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2006 09 14 | 703 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2− | | |
| 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.9− | | |
| 2006 09 14 | 703 | 0.4+ | 0.8+ | 2006 10 13 | A50 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.9+ | | |
| 2006 09 14 | 703 | 0.2+ | 1.2− | 2006 10 13 | A50 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.5− | | |
| 2006 09 15 | 691 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.4+ | | |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 1.0− | 0.9+ | 2006 11 16 | G96 | 0.4− | 0.2− | | |
| 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2006 09 18 | 699 | 0.9+ | 0.9+ | 2006 10 15 | 703 | 0.5− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.5− | | |
| 2006 09 18 | 699 | 0.6− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2006 09 18 | 699 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | | | | | |
| 2006 09 18 | 699 | 0.5+ | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.1+ | | | | | | |

**2000 RF$_{18}$ = 2006 SZ$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.03107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17373245 | $\omega$ | 6.73924 | | +0.93032961 | +0.34557934 | |
| $a$ | 3.1808908 | $\Omega$ | 332.04884 | | −0.34750229 | +0.72381058 | |
| $e$ | 0.2588415 | $i$ | 15.17889 | | −0.11717075 | +0.59722120 | |
| $P$ | 5.67 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.8+ | 1.8+ | 2000 09 25 | 699 | 0.3+ | 0.3+ | 2006 10 02 | 704 | 1.3+ | 0.8+ | | |
| 2000 09 01 | 704 | 0.3+ | 0.0 | 2000 09 25 | 699 | 0.2+ | 1.0+ | 2006 10 02 | 704 | 0.7+ | 0.1+ | | |
| 2000 09 01 | 704 | 0.5+ | 0.6+ | 2000 09 27 | 704 | 0.2+ | 1.2+ | 2006 10 02 | 703 | 0.2+ | 0.1− | | |
| 2000 09 01 | 704 | 0.2− | 0.4− | 2000 09 27 | 704 | 0.5+ | 0.0 | 2006 10 02 | 703 | 1.2− | 0.1+ | | |
| 2000 09 03 | 704 | 0.9+ | 0.3− | 2000 09 27 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.1+ | | |
| 2000 09 03 | 704 | 0.7+ | 0.6− | 2000 09 27 | 704 | 0.1− | 0.2− | 2006 10 02 | 703 | 0.0 | 0.2+ | | |
| 2000 09 03 | 704 | 0.5+ | 0.4+ | 2000 09 27 | 704 | 0.2+ | 0.4− | 2006 10 23 | 703 | 0.1− | 1.1+ | | |
| 2000 09 03 | 704 | 0.3− | 0.7+ | 2000 10 01 | 699 | 0.8− | 0.1+ | 2006 10 23 | 703 | 1.3− | 0.0 | | |
| 2000 09 03 | 704 | 1.2+ | 0.5− | 2000 10 01 | 699 | 0.5− | 0.4+ | 2006 10 23 | 703 | 0.4− | 0.6+ | | |
| 2000 09 19 | 608 | 0.5− | 0.5− | 2000 10 01 | 699 | 0.7− | 0.7+ | 2006 10 23 | 703 | 0.2− | 0.3+ | | |
| 2000 09 19 | 608 | 0.7− | 0.1− | 2000 10 01 | 699 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 0.5+ | 0.4+ | | |
| 2000 09 19 | 608 | 0.4− | 0.8− | 2000 10 03 | 704 | 0.4− | 0.4− | 2006 10 31 | 703 | 0.3+ | 0.1− | | |
| 2000 09 23 | 704 | 0.3− | 0.2− | 2000 10 03 | 704 | 0.0 | 1.0− | 2006 10 31 | 703 | 0.6+ | 0.0 | | |
| 2000 09 23 | 704 | 0.1− | 0.1− | 2000 10 03 | 704 | 0.8− | 0.7− | 2006 10 31 | 703 | 0.0 | 0.4− | | |
| 2000 09 23 | 704 | 0.2+ | 0.1− | 2000 10 03 | 704 | 0.4− | 1.6− | 2006 11 16 | 703 | 0.8− | 0.5− | | |
| 2000 09 23 | 704 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.1− | | |
| 2000 09 23 | 704 | 0.6+ | 0.6− | 2006 09 19 | 703 | 0.5+ | 0.8− | 2006 11 16 | 703 | 0.3− | 0.4− | | |
| 2000 09 25 | 704 | 0.2− | 0.6− | 2006 09 19 | 703 | 0.5− | 0.2− | 2006 11 16 | 703 | 0.9+ | 0.3+ | | |
| 2000 09 25 | 704 | 0.1+ | 0.6− | 2006 09 19 | 703 | 0.5+ | 0.5− | 2006 11 22 | 703 | 0.7+ | 0.0 | | |
| 2000 09 25 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 703 | 0.3− | 0.4− | 2006 11 22 | 703 | 0.4+ | 0.1− | | |
| 2000 09 25 | 704 | 0.7− | 0.3− | 2006 09 25 | 703 | 0.1+ | 0.3− | 2006 11 22 | 703 | 0.1+ | 0.2− | | |
| 2000 09 25 | 704 | 1.5− | 0.0 | 2006 09 25 | 703 | 0.1− | 0.8− | 2006 11 22 | 703 | 1.2− | 0.0 | | |
| 2000 09 25 | 699 | 0.1− | 1.1+ | 2006 09 25 | 703 | 0.2+ | 0.3+ | | | | | | |
| 2000 09 25 | 699 | 0.6− | 1.2+ | 2006 10 02 | 704 | 0.1− | 0.0 | | | | | | |

**2000 RD$_{75}$ = 2006 UK$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.77981 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17628980 | $\omega$ | 82.50733 | | +0.49787480 | +0.86146041 | |
| $a$ | 3.1500535 | $\Omega$ | 217.89084 | | −0.84600535 | +0.45706392 | |
| $e$ | 0.1262897 | $i$ | 9.37401 | | −0.19077638 | +0.22131095 | |
| $P$ | 5.59 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.8+ | 0.9+ | 2006 10 16 | 683 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.3− | | |
| 2000 09 03 | 704 | 1.1+ | 0.3+ | 2006 10 16 | 683 | (0.8+ | 1.8−) | 2006 10 31 | 691 | 0.2− | 0.0 | | |
| 2000 09 03 | 704 | 0.0 | 1.3+ | 2006 10 16 | 683 | 0.9− | 0.3− | 2006 10 31 | 691 | 0.3− | 0.0 | | |
| 2000 09 05 | 704 | 0.7+ | 0.6− | 2006 10 17 | 703 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2000 09 05 | 704 | 0.5− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.8− | 2006 11 13 | 691 | 0.3+ | 0.3+ | | |
| 2000 09 05 | 704 | 1.2+ | 0.3+ | 2006 10 17 | 703 | 0.6+ | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.4− | | |
| 2000 09 05 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | | |
| 2000 09 05 | 699 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.7− | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.1− | | |
| 2000 09 05 | 699 | 0.3− | 1.3− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.4− | 0.1− | | |
| 2000 09 05 | 699 | 0.8− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.4− | | |
| 2000 09 05 | 699 | 0.8− | 1.0− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.4− | | |
| 2000 09 26 | 704 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.4+ | | |
| 2000 09 26 | 704 | 0.4− | 0.8− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.7+ | | |
| 2000 09 26 | 704 | 0.2+ | 0.9+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.4+ | | |
| 2000 09 26 | 704 | 1.0− | 1.2+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2− | 0.9+ | | |

**2000 RU$_{79}$ = 2006 TM$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.02933 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17926424 | $\omega$ | 328.10719 | | +0.92537719 | | +0.37893152 |
| $a$ | 3.1151116 | $\Omega$ | 9.63911 | | −0.33493703 | | +0.82902277 |
| $e$ | 0.1759809 | $i$ | 3.21080 | | −0.17746617 | | +0.41125679 |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.8+ | 0.3− | 2000 10 01 | 704 | 0.1+ | 0.9− | 2006 11 11 | 703 | (3.6− | 4.7+) |
| 2000 09 01 | 704 | 0.6+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.5− |
| 2000 09 01 | 704 | 0.5− | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.7+ | 0.2+ |
| 2000 09 01 | 704 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2000 09 01 | 704 | 1.3+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8+ | 1.1+ |
| 2000 09 02 | 699 | 1.7− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2000 09 02 | 699 | 1.4− | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | (1.9+ | 1.0+) |
| 2000 09 02 | 699 | 1.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2000 09 02 | 699 | (2.4− | 0.9+) | 2006 10 23 | 691 | 0.4− | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2000 09 24 | 704 | 1.3+ | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2000 09 24 | 704 | 0.1− | 0.6− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.7− |
| 2000 09 24 | 704 | 0.6+ | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.9− |
| 2000 09 24 | 704 | 0.8− | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.7+ |
| 2000 10 01 | 704 | 0.6− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.7+ |
| 2000 10 01 | 704 | 0.9+ | 0.4− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 2000 10 01 | 704 | 0.9+ | 0.6− | 2006 11 01 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | (2.9− | 0.4−) |

**2000 RV$_{86}$ = 2006 UL$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.05283 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17726263 | $\omega$ | 158.95280 | | +0.99321420 | | +0.09251136 |
| $a$ | 3.1385177 | $\Omega$ | 196.22414 | | −0.10294552 | | +0.98129161 |
| $e$ | 0.1669649 | $i$ | 14.61086 | | +0.05410886 | | +0.16884440 |
| $P$ | 5.56 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 699 | 1.1− | 1.5− | 2000 09 23 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.8+ |
| 2000 09 02 | 699 | 0.7− | 0.3+ | 2000 09 23 | 704 | 1.1+ | 0.5+ | 2006 10 22 | 703 | (0.7+ | 1.5+) |
| 2000 09 02 | 699 | 0.9− | 0.9− | 2000 09 23 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.7+ |
| 2000 09 02 | 699 | 0.9− | 0.4+ | 2000 09 23 | 704 | 0.6+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2000 09 03 | 704 | 0.1+ | 0.4− | 2000 09 23 | 704 | 0.3− | 0.9+ | 2006 11 01 | 703 | 0.7− | 0.2− |
| 2000 09 03 | 704 | 0.1+ | 1.3− | 2000 10 01 | 699 | 0.4+ | 0.4− | 2006 11 01 | 703 | 1.0+ | 0.0 |
| 2000 09 03 | 704 | 0.1+ | 0.3+ | 2000 10 01 | 699 | 0.8+ | 0.1+ | 2006 11 01 | 703 | 0.8+ | 0.3+ |
| 2000 09 03 | 704 | 0.8+ | 0.1− | 2000 10 01 | 699 | 0.2+ | 0.1− | 2006 11 01 | 703 | 1.3− | 0.4− |
| 2000 09 03 | 704 | 0.3+ | 0.5+ | 2000 10 01 | 699 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.3− | 0.3− |
| 2000 09 19 | 608 | 1.2− | 1.1− | 2006 09 18 | 703 | 0.1+ | 0.6+ | 2006 11 13 | 703 | 0.3− | 0.4− |
| 2000 09 19 | 608 | 0.3− | 0.8− | 2006 09 18 | 703 | 0.3− | 0.6+ | 2006 11 13 | 703 | 0.0 | 0.4− |
| 2000 09 19 | 608 | 0.2− | 1.6+ | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 11 26 | 104 | 0.3− | 0.3+ |
| 2000 09 23 | 704 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.7− | 0.5− | 2006 11 26 | 104 | 0.1+ | 0.3+ |
| 2000 09 23 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.5− | 2006 11 26 | 104 | 0.1− | 0.2+ |
| 2000 09 23 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 1.2− | 2006 11 27 | 104 | 0.2+ | 0.5+ |
| 2000 09 23 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 1.1+ | 1.1− | 2006 11 27 | 104 | 0.4− | 0.2+ |
| 2000 09 23 | 704 | 0.6+ | 0.3− | 2006 10 16 | 703 | 1.3+ | 0.3− | 2006 11 27 | 104 | 0.1− | 0.4+ |

**2000 RS$_{87}$ = 1980 FS$_{6}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.43013 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21089856 | $\omega$ | 264.51402 | | −0.38183646 | | +0.92313812 |
| $a$ | 2.7952478 | $\Omega$ | 342.82634 | | −0.77628480 | | −0.34670646 |
| $e$ | 0.1873553 | $i$ | 8.74860 | | −0.50158033 | | −0.16616448 |
| $P$ | 4.67 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1980 03 23 | 809 | 0.2− | 0.1− | 2000 10 30 | 691 | 1.0− | 1.2− | 2003 02 21 | 699 | 0.1− | 0.1− |
| 1999 05 10 | 704 | 0.1+ | 0.3− | 2001 12 09 | 704 | 1.0+ | 0.3− | 2003 03 06 | 704 | 1.5+ | 0.2+ |
| 1999 05 10 | 704 | 0.7+ | 1.8+ | 2001 12 09 | 704 | 0.3− | 0.5− | 2003 03 06 | 704 | 0.8− | 1.0+ |
| 1999 05 10 | 704 | 0.7+ | 0.3+ | 2001 12 09 | 704 | 1.0+ | 1.1− | 2003 03 06 | 704 | 1.3− | 0.3+ |
| 1999 05 10 | 704 | 0.8− | 0.3+ | 2003 01 26 | 699 | 0.7+ | 0.3+ | 2003 03 06 | 704 | 0.3+ | 0.9+ |
| 1999 05 10 | 704 | 0.9+ | 0.5+ | 2003 01 26 | 699 | 0.8+ | 0.5+ | 2003 03 08 | 704 | 0.1+ | 0.1− |
| 2000 09 02 | 699 | 1.6− | 0.5+ | 2003 01 26 | 699 | 0.6+ | 0.3− | 2003 03 08 | 704 | 0.7+ | 0.4+ |
| 2000 09 02 | 699 | 1.2− | 0.7+ | 2003 01 26 | 699 | 0.0 | 0.0 | 2003 03 08 | 704 | 0.4+ | 0.2− |
| 2000 09 02 | 699 | 1.7− | 0.8+ | 2003 01 27 | 699 | 0.8+ | 0.8+ | 2003 03 08 | 704 | 0.1+ | 1.3+ |
| 2000 09 02 | 699 | 1.7− | 0.1+ | 2003 01 27 | 699 | 0.2− | 0.3+ | 2003 03 08 | 704 | 0.2− | 0.2+ |
| 2000 09 05 | 704 | 1.2+ | 0.4+ | 2003 01 27 | 699 | 0.4− | 0.1− | 2003 03 09 | 704 | 0.5− | 0.3+ |
| 2000 09 05 | 704 | 0.7+ | 0.5+ | 2003 01 27 | 699 | 0.2− | 0.1− | 2003 03 09 | 704 | 0.1− | 0.6+ |
| 2000 09 05 | 704 | 0.2+ | 0.1− | 2003 01 27 | 704 | 0.4+ | 0.3− | 2003 03 09 | 704 | 0.4+ | 0.3− |
| 2000 09 05 | 704 | 0.1+ | 0.3+ | 2003 01 27 | 704 | 0.4+ | 0.1− | 2005 09 24 | 703 | 0.3− | 0.3− |
| 2000 09 21 | 699 | 0.1− | 0.2+ | 2003 01 27 | 704 | 0.0 | 0.9− | 2005 09 24 | 703 | 0.0 | 1.5+ |
| 2000 09 21 | 699 | 0.3− | 0.4+ | 2003 01 27 | 704 | 0.1+ | 1.2− | 2005 09 24 | 703 | 0.8− | 0.3− |
| 2000 09 21 | 699 | 0.1− | 0.8+ | 2003 01 27 | 704 | 0.1+ | 0.7− | 2005 09 24 | 703 | 0.6− | 1.1− |
| 2000 09 21 | 699 | 1.0− | 0.1+ | 2003 02 01 | 704 | 0.0 | 1.1+ | 2005 10 01 | 703 | 0.1+ | 0.5− |
| 2000 09 23 | 704 | 0.3− | 0.8+ | 2003 02 01 | 704 | 1.0+ | 0.2+ | 2005 10 01 | 703 | 0.8+ | 0.0 |
| 2000 09 23 | 704 | 0.6− | 0.7+ | 2003 02 01 | 704 | 0.4+ | 0.4+ | 2005 10 01 | 703 | 0.1− | 0.6− |
| 2000 09 23 | 704 | 0.4− | 0.2− | 2003 02 01 | 704 | 0.1− | 0.5+ | 2005 10 01 | 703 | 0.1+ | 0.3− |
| 2000 09 23 | 704 | 0.0 | 0.2+ | 2003 02 03 | 644 | 0.1+ | 0.8+ | 2005 10 03 | 704 | 0.4+ | 0.2− |
| 2000 09 23 | 704 | 0.2− | 1.0+ | 2003 02 03 | 644 | 0.1− | 0.6+ | 2005 10 03 | 704 | 0.2+ | 0.1− |
| 2000 09 26 | 704 | 0.2− | 0.3+ | 2003 02 03 | 644 | 0.0 | 0.3+ | 2005 10 03 | 704 | 0.1+ | 0.1+ |
| 2000 09 26 | 704 | 0.5+ | 1.0+ | 2003 02 04 | 699 | 0.4− | 0.7+ | 2005 10 03 | 704 | 0.6− | 0.6+ |
| 2000 09 26 | 704 | 0.2+ | 0.7+ | 2003 02 04 | 699 | 0.6− | 0.2+ | 2005 10 10 | 699 | 0.2+ | 0.0 |
| 2000 09 26 | 704 | 1.8+ | 1.5+ | 2003 02 04 | 699 | 0.4− | 0.5+ | 2005 10 10 | 699 | 0.7+ | 0.3+ |
| 2000 09 26 | 704 | 0.2+ | 1.2+ | 2003 02 04 | 704 | 0.8+ | 0.7− | 2005 10 10 | 699 | 0.5+ | 0.0 |
| 2000 10 02 | 704 | 0.3− | 0.5+ | 2003 02 04 | 699 | 0.8− | 0.5+ | 2005 10 10 | 699 | 0.8+ | 0.4− |
| 2000 10 02 | 704 | 0.3+ | 0.4− | 2003 02 04 | 704 | 0.1+ | 0.3− | 2005 10 23 | 644 | 0.4+ | 0.2− |
| 2000 10 02 | 704 | 0.8− | 1.1− | 2003 02 04 | 704 | 1.2+ | 0.1− | 2005 10 23 | 644 | 0.3+ | 0.3− |
| 2000 10 02 | 704 | 0.8− | 0.4− | 2003 02 04 | 704 | 0.7+ | 0.9+ | 2005 10 23 | 644 | 0.0 | 0.1− |
| 2000 10 02 | 704 | 0.8+ | 0.3− | 2003 02 04 | 704 | 0.5+ | 0.4− | 2005 10 26 | 699 | 0.0 | 0.6− |
| 2000 10 04 | 704 | 0.8− | 0.8+ | 2003 02 07 | 644 | 0.2− | 0.5+ | 2005 10 26 | 699 | 0.2− | 0.2+ |
| 2000 10 04 | 704 | 0.4+ | 0.4+ | 2003 02 07 | 644 | 0.1− | 0.4+ | 2005 10 26 | 699 | 1.2+ | 0.7+ |
| 2000 10 04 | 704 | 0.2− | 0.1+ | 2003 02 07 | 644 | 0.1+ | 0.6+ | 2005 10 26 | 699 | 0.2+ | 0.9+ |
| 2000 10 04 | 704 | 0.4− | 0.5+ | 2003 02 19 | 644 | 0.2− | 0.1− | 2005 11 02 | 704 | 0.6− | 0.9− |
| 2000 10 07 | 691 | 0.2+ | 0.0 | 2003 02 19 | 644 | 0.3− | 0.2+ | 2005 11 02 | 704 | 0.6− | 0.7− |
| 2000 10 07 | 691 | 0.2+ | 0.2− | 2003 02 19 | 644 | 0.2− | 0.2+ | 2005 11 02 | 704 | 1.0− | 0.4+ |
| 2000 10 07 | 691 | 0.2+ | 0.1− | 2003 02 21 | 699 | 0.9− | 0.4− | 2005 11 02 | 704 | 0.6− | 0.1+ |
| 2000 10 30 | 691 | 0.1− | 0.5− | 2003 02 21 | 699 | 0.7− | 0.6− | | | | |
| 2000 10 30 | 691 | 0.1− | 0.3− | 2003 02 21 | 699 | 0.4− | 0.2− | | | | |

**2000 RV$_{88}$ = 2006 SV$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.92789 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17285054 | $\omega$ | 115.39527 | | +0.54424305 | | +0.83754034 |
| $a$ | 3.1917011 | $\Omega$ | 188.10402 | | −0.83850253 | | +0.54123811 |
| $e$ | 0.2553824 | $i$ | 20.00454 | | −0.02670234 | | +0.07474946 |
| $P$ | 5.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 05 | 608 | 0.1+ | 0.3+ | 2000 09 25 | 704 | 0.2− | 0.8+ | 2006 09 30 | 291 | 0.4− | 0.0 |
| 2000 08 05 | 608 | 0.3+ | 0.1+ | 2000 09 25 | 704 | 1.1+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2000 08 05 | 608 | 0.0 | 0.2+ | 2000 09 25 | 704 | 1.5+ | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2000 09 03 | 704 | 1.5− | 0.0 | 2000 09 25 | 699 | 0.3+ | 1.0+ | 2006 10 01 | 291 | 0.0 | 0.1+ |
| 2000 09 03 | 704 | 0.3+ | 0.4+ | 2000 09 25 | 699 | 1.1+ | 1.5+ | 2006 10 01 | 291 | 0.1− | 0.1+ |
| 2000 09 03 | 704 | 0.3+ | 0.1− | 2000 09 25 | 699 | 0.5+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2000 09 03 | 704 | 0.7+ | 0.2+ | 2000 09 25 | 699 | 0.1− | 1.1+ | 2006 10 01 | 291 | 0.3− | 0.2+ |
| 2000 09 05 | 699 | 0.4− | 0.9− | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2000 09 05 | 699 | 0.9− | 0.3− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.5− |
| 2000 09 05 | 699 | 1.5− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.3− |
| 2000 09 05 | 699 | 0.8− | 1.0− | 2006 09 18 | 699 | 0.1+ | 1.2− | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2000 09 20 | 608 | 0.2− | 1.2− | 2006 09 18 | 699 | 0.1+ | 1.1− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2000 09 20 | 608 | 0.4+ | 1.0− | 2006 09 18 | 699 | (1.8+ | 1.0+) | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2000 09 20 | 608 | 0.4+ | 0.1− | 2006 09 18 | 699 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.6+ | 0.3− |
| 2000 09 23 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | (1.9− | 2.4−) |
| 2000 09 23 | 704 | 1.0− | 0.9− | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | (1.3+ | 1.5−) |
| 2000 09 23 | 704 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 291 | 0.3− | 0.3+ | | | | | | |
| 2000 09 25 | 704 | 0.9− | 1.7− | 2006 09 30 | 291 | 0.3− | 0.1+ | | | | | | |

**2000 RV$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.25107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16961954 | $\omega$ | 209.11596 | | +0.47876571 | −0.83218201 | |
| $a$ | 3.2321050 | $\Omega$ | 214.59465 | | +0.87024637 | +0.49193118 | |
| $e$ | 0.1899829 | $i$ | 29.51876 | | +0.11599422 | −0.25588437 | |
| $P$ | 5.81 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 699 | 0.3− | 0.1− | 2000 11 20 | 704 | 0.2− | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.3+ | | |
| 2000 09 05 | 699 | 0.4− | 0.5− | 2000 11 20 | 704 | 1.3− | 1.3− | 2006 10 29 | 691 | 0.1+ | 0.4+ | | |
| 2000 09 05 | 699 | 0.7+ | 1.0− | 2000 11 26 | 704 | 0.4− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2+ | | |
| 2000 09 05 | 699 | 0.6− | 0.3− | 2000 11 26 | 704 | 0.5− | 0.5− | 2006 10 30 | 203 | 0.3+ | 0.0 | | |
| 2000 09 06 | 704 | 0.3+ | 0.2+ | 2000 11 26 | 704 | 0.6+ | 0.5− | 2006 10 31 | 203 | 0.3+ | 0.2+ | | |
| 2000 09 06 | 704 | 0.8+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 31 | 683 | (0.8+ | 1.5−) | | |
| 2000 09 06 | 704 | 0.6− | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 31 | 683 | 1.0+ | 0.8− | | |
| 2000 09 26 | 608 | (2.5+ | 0.1−) | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 31 | 683 | 0.7+ | 1.0− | | |
| 2000 09 26 | 608 | (2.5+ | 0.4+) | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 03 | G96 | 0.1+ | 0.0 | | |
| 2000 09 26 | 608 | (2.6+ | 0.1+) | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 11 03 | G96 | 0.3+ | 0.7− | | |
| 2000 09 28 | 704 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.5+ | 2006 11 03 | G96 | 0.3+ | 0.8− | | |
| 2000 09 28 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 03 | G96 | 0.1+ | 0.1+ | | |
| 2000 09 28 | 704 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 11 03 | G96 | 0.2+ | 0.1− | | |
| 2000 09 28 | 704 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.9− | 1.2− | 2006 11 03 | G96 | 0.1+ | 0.4− | | |
| 2000 09 28 | 704 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 11 03 | G96 | 0.2+ | 0.5− | | |
| 2000 09 30 | 704 | 0.5− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 03 | G96 | 0.6+ | 0.4− | | |
| 2000 09 30 | 704 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2+ | | |
| 2000 09 30 | 704 | 0.7− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2000 09 30 | 704 | 0.1− | 0.4− | 2006 10 23 | 704 | 0.4− | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2000 09 30 | 704 | 0.0 | 0.1− | 2006 10 23 | 704 | 0.3− | 0.6− | 2006 11 11 | 703 | 0.5− | 0.5− | | |
| 2000 10 03 | 699 | 0.5+ | 0.3+ | 2006 10 23 | 704 | 1.2+ | 1.4− | 2006 11 11 | 703 | 0.1− | 0.1+ | | |
| 2000 10 03 | 699 | 0.4− | 0.6+ | 2006 10 23 | 704 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.1+ | | |
| 2000 10 03 | 699 | 0.7+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7− | 0.4− | | |
| 2000 10 03 | 699 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.1− | | |
| 2000 10 03 | 704 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.4+ | | |
| 2000 10 03 | 704 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.4+ | | |
| 2000 10 03 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.6+ | | |
| 2000 10 03 | 704 | 0.7+ | 0.2+ | 2006 10 28 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.0 | 0.3+ | | |
| 2000 10 25 | 704 | 1.0+ | 1.5− | 2006 10 28 | 704 | 0.6− | 0.2+ | 2006 11 20 | 704 | (1.4− | 4.5+) | | |
| 2000 10 25 | 704 | 0.7− | 0.4+ | 2006 10 28 | 704 | 0.9− | 0.5+ | 2006 11 20 | 704 | (2.8− | 3.7+) | | |
| 2000 10 25 | 704 | 0.9+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | (0.6− | 4.8+) | | |
| 2000 10 25 | 704 | 0.3− | 0.4+ | 2006 10 28 | 704 | 0.1− | 0.4+ | 2006 11 20 | 704 | (1.1− | 5.3+) | | |
| 2000 10 25 | 704 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | (1.3− | 5.0+) | | |
| 2000 11 01 | 704 | 0.6+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | (0.8− | 4.4+) | | |
| 2000 11 01 | 704 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | (0.8− | 5.4+) | | |
| 2000 11 01 | 704 | (0.4− | 2.5+) | 2006 10 28 | G96 | 0.3+ | 0.0 | 2006 11 20 | 704 | (1.1− | 4.0+) | | |
| 2000 11 01 | 704 | (0.0 | 2.1+) | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | (2.9− | 4.1+) | | |
| 2000 11 01 | 704 | 0.5+ | 1.4+ | 2006 10 28 | G96 | 0.1− | 0.2− | | | | | | |
| 2000 11 20 | 704 | 0.4− | 1.0− | 2006 10 28 | G96 | 0.2+ | 0.3− | | | | | | |

**2000 RM$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.52446 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17648258 | $\omega$ | 75.32236 | | +0.88698773 | +0.43690908 | |
| $a$ | 3.1477591 | $\Omega$ | 258.58547 | | −0.46017246 | +0.80914144 | |
| $e$ | 0.2255640 | $i$ | 8.77536 | | −0.03865335 | +0.39293841 | |
| $P$ | 5.58 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 05 | 608 | 0.0 | 0.1− | 2000 10 25 | 704 | 0.5− | 0.5− | 2006 11 14 | 703 | 0.5− | 0.8− | | |
| 2000 08 05 | 608 | 0.6+ | 0.1− | 2000 10 25 | 704 | 0.6− | 0.2+ | 2006 11 15 | 704 | 0.4+ | 0.1− | | |
| 2000 08 05 | 608 | 0.5+ | 0.1− | 2000 10 25 | 704 | 0.7+ | 0.0 | 2006 11 15 | 704 | 0.3− | 0.0 | | |
| 2000 09 05 | 699 | 0.1+ | 0.6− | 2000 11 01 | 704 | 0.8− | 0.4+ | 2006 11 15 | 704 | 0.0 | 0.3− | | |
| 2000 09 05 | 699 | 0.4− | 0.2+ | 2000 11 01 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 704 | 0.2− | 0.3− | | |
| 2000 09 05 | 699 | 0.5− | 0.6− | 2000 11 01 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | 1.5+ | 0.5− | | |
| 2000 09 05 | 699 | 0.5− | 0.7− | 2000 11 01 | 704 | 0.3+ | 0.6− | 2006 11 16 | 704 | 1.1− | 0.8− | | |
| 2000 09 06 | 704 | 0.4− | 0.1− | 2000 11 01 | 704 | 0.9+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.9− | | |
| 2000 09 06 | 704 | 0.0 | 0.0 | 2000 11 19 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.2− | | |
| 2000 09 06 | 704 | 0.3+ | 0.1− | 2000 11 19 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.1+ | | |
| 2000 09 06 | 704 | 0.5+ | 0.3+ | 2000 11 19 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.2− | | |
| 2000 09 06 | 704 | 0.1+ | 0.1− | 2000 11 19 | 704 | 0.8+ | 0.5− | 2006 11 16 | 704 | 0.5+ | 0.4+ | | |
| 2000 09 22 | 699 | 0.1+ | 0.3+ | 2000 11 19 | 704 | 0.6− | 0.2− | 2006 11 16 | 704 | 0.6− | 0.2− | | |
| 2000 09 22 | 699 | 0.1− | 0.0 | 2006 10 17 | A50 | 0.4− | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.1− | | |
| 2000 09 22 | 699 | 0.0 | 0.2+ | 2006 10 18 | A50 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.4+ | 0.4+ | | |
| 2000 09 22 | 699 | 0.5− | 0.3+ | 2006 10 18 | A50 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.1+ | | |
| 2000 09 23 | 704 | 0.7+ | 0.2+ | 2006 10 19 | A50 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.6+ | | |
| 2000 09 23 | 704 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.1+ | | |
| 2000 09 23 | 704 | 0.9+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2000 09 23 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.6− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2000 09 23 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.5− | 2006 11 22 | 704 | 0.3− | 0.3+ | | |
| 2000 09 24 | 704 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.5+ | | |
| 2000 09 24 | 704 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.6+ | | |
| 2000 09 24 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.3+ | | |
| 2000 09 24 | 704 | 1.0− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7− | 0.3+ | | |
| 2000 09 25 | 704 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | (0.6+ | 1.6−) | | |
| 2000 09 25 | 704 | 0.3− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 1.2+ | 0.5− | | |
| 2000 09 25 | 704 | 0.6− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.7+ | 1.5− | | |
| 2000 09 25 | 704 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.0 | | |
| 2000 09 25 | 704 | 0.1+ | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 1.3− | 0.3+ | | |
| 2000 10 03 | 704 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.3+ | | |
| 2000 10 03 | 704 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.2− | 0.2+ | | |
| 2000 10 03 | 704 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.2+ | 2006 12 01 | 704 | 0.3+ | 0.6− | | |
| 2000 10 03 | 704 | 1.2− | 0.2− | 2006 11 14 | 703 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.7+ | 0.3+ | | |
| 2000 10 25 | 704 | 0.4− | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.4+ | | | | | | |
| 2000 10 25 | 704 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 0.4− | 0.3+ | | | | | | |

**2000 RN$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.56617 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17665292 | $\omega$ | 69.19136 | | +0.84101338 | +0.50025414 | |
| $a$ | 3.1457353 | $\Omega$ | 260.27873 | | −0.54059016 | +0.76196566 | |
| $e$ | 0.3045662 | $i$ | 12.06473 | | −0.02141903 | +0.41128350 | |
| $P$ | 5.58 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 06 | 704 | 0.2+ | 0.1− | 2000 10 26 | 699 | 0.3− | 0.9+ | 2006 11 16 | 704 | (1.1− | 2.4+) | | |
| 2000 09 06 | 704 | 0.2+ | 0.4+ | 2000 10 26 | 699 | 0.5− | 0.8+ | 2006 11 16 | 704 | (1.9− | 1.5+) | | |
| 2000 09 06 | 704 | 0.4− | 0.3− | 2000 11 01 | 704 | 0.8− | 0.4− | 2006 11 16 | 704 | 0.5− | 0.6+ | | |
| 2000 09 06 | 704 | 0.4+ | 0.0 | 2000 11 01 | 704 | 0.5− | 0.5− | 2006 11 17 | 691 | 0.1− | 0.2− | | |
| 2000 09 06 | 704 | 0.1− | 0.0 | 2000 11 01 | 704 | 0.7− | 0.5+ | 2006 11 17 | 691 | 0.1− | 0.1− | | |
| 2000 09 08 | 699 | 0.7+ | 0.2− | 2000 11 19 | 704 | 1.0− | 0.3− | 2006 11 17 | 691 | 0.3− | 0.1− | | |
| 2000 09 08 | 699 | 0.0 | 0.8− | 2000 11 19 | 704 | 0.4+ | 1.3− | 2006 11 18 | 704 | 0.1+ | 0.5+ | | |
| 2000 09 08 | 699 | 0.1− | 0.4− | 2000 11 19 | 704 | 1.2+ | 0.2− | 2006 11 18 | 704 | 1.2− | 0.6− | | |
| 2000 09 08 | 699 | 0.3+ | 0.1− | 2000 11 19 | 704 | 0.7+ | 0.6− | 2006 11 18 | 704 | 0.2− | 0.9+ | | |
| 2000 09 27 | 704 | 0.1− | 0.2− | 2000 11 28 | 704 | 0.2− | 0.4− | 2006 11 18 | 704 | (0.0 | 1.8+) | | |
| 2000 09 27 | 704 | 0.7− | 0.2+ | 2000 11 28 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2000 09 27 | 704 | 0.9− | 0.4− | 2000 11 28 | 704 | 0.2− | 1.1+ | 2006 11 19 | 704 | 0.3+ | 0.3− | | |
| 2000 09 27 | 704 | 0.2− | 0.2− | 2000 11 28 | 704 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.0 | | |
| 2000 09 27 | 704 | 1.0− | 0.2+ | 2000 11 28 | 704 | 0.9− | 0.8+ | 2006 11 19 | 704 | 0.5+ | 0.7− | | |
| 2000 09 28 | 704 | 0.6+ | 0.2− | 2000 12 04 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.5+ | | |
| 2000 09 28 | 704 | 0.4+ | 0.1+ | 2000 12 04 | 704 | 0.5+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.6− | | |
| 2000 09 28 | 704 | 0.3+ | 0.1+ | 2000 12 04 | 704 | 0.6− | 0.7+ | 2006 11 22 | 704 | 0.1− | 0.2− | | |
| 2000 09 28 | 704 | 0.3+ | 0.2+ | 2000 12 04 | 704 | 1.2+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 2000 09 28 | 704 | 0.3+ | 0.3− | 2000 12 04 | 704 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.0 | | |
| 2000 10 04 | 704 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.0 | | |
| 2000 10 04 | 704 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.2+ | | |
| 2000 10 04 | 704 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.2− | 2006 11 27 | 704 | 0.9+ | 0.5− | | |
| 2000 10 04 | 704 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.6+ | 0.2− | 2006 11 27 | 704 | 0.9+ | 0.0 | | |
| 2000 10 04 | 704 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.6− | 0.4− | 2006 11 27 | 704 | 0.0 | 0.5+ | | |
| 2000 10 26 | 699 | 1.2+ | 0.5+ | 2006 11 15 | 704 | 0.0 | 0.9+ | 2006 11 27 | 704 | 0.8− | 1.1+ | | |
| 2000 10 26 | 699 | 0.4− | 1.1+ | 2006 11 15 | 704 | 0.3+ | 0.2+ | | | | | | |

**2000 RS$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.74037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18158314 | $\omega$ | 103.95239 | | −0.29578016 | −0.95519705 | |
| $a$ | 3.0885339 | $\Omega$ | 3.30925 | | +0.79000645 | −0.25084552 | |
| $e$ | 0.2514373 | $i$ | 10.59682 | | +0.53703249 | −0.15708317 | |
| $P$ | 5.43 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2002 02 10 | 704 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2002 02 10 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2000 09 05 | 645 | 0.0 | 0.1− | 2002 02 10 | 704 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2002 02 10 | 704 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2000 09 26 | 691 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2000 09 26 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 1.3+ | 1.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 09 26 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 1.1− | 0.7− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 12 23 | 704 | 0.2+ | 1.1− | 2006 09 20 | 699 | 0.9+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2001 12 23 | 704 | 0.2− | 0.5− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 12 23 | 704 | 0.4− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2001 12 23 | 704 | 0.2+ | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 01 06 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.8+ | 1.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 01 06 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.9− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 01 06 | 704 | 0.1− | 0.3+ | 2006 09 28 | 703 | 1.1− | 0.9− | 2006 10 27 | 703 | 0.4− | 0.5+ |
| 2002 01 06 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.8− | 0.5− | 2006 10 27 | 703 | (2.4− | 0.6+) |
| 2002 01 06 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.7− | 1.1+ |
| 2002 01 14 | 644 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | (0.3+ | 1.9+) |
| 2002 01 14 | 644 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ | | | | |
| 2002 01 14 | 644 | (1.7+ | 0.1+) | 2006 10 20 | 644 | 0.2− | 0.1− | | | | |

**2000 RR$_{107}$ = 2005 MZ$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.00606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18557981 | $\omega$ | 161.85629 | | +0.77819311 | +0.62429204 | |
| $a$ | 3.0440298 | $\Omega$ | 159.05205 | | −0.59729431 | +0.76935413 | |
| $e$ | 0.1094482 | $i$ | 11.02538 | | −0.19404892 | +0.13547574 | |
| $P$ | 5.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 03 | 691 | 0.2+ | 0.1− | 2000 09 05 | 704 | 0.3+ | 0.1+ | 2005 06 27 | 644 | 0.0 | 0.1+ |
| 1998 04 03 | 691 | 0.5− | 0.4− | 2000 09 05 | 704 | 0.1+ | 0.1− | 2005 06 27 | 644 | 0.1− | 0.2− |
| 1998 04 03 | 691 | 0.2− | 0.3− | 2003 01 28 | 645 | 0.0 | 0.2+ | 2005 07 05 | 644 | 0.1− | 0.1+ |
| 2000 08 24 | 704 | 1.1− | 0.1+ | 2003 01 28 | 645 | 0.1+ | 0.1+ | 2005 07 05 | 644 | 0.1− | 0.2+ |
| 2000 08 24 | 704 | 0.2− | 1.3+ | 2003 02 07 | 644 | 0.4− | 0.4+ | 2005 07 05 | 644 | 0.0 | 0.1− |
| 2000 08 24 | 704 | 1.1+ | 0.3+ | 2003 02 07 | 644 | 0.5+ | 0.4+ | 2006 11 19 | 703 | 0.2+ | 1.0+ |
| 2000 08 24 | 704 | 0.3+ | 0.3+ | 2003 02 07 | 644 | 0.8+ | 0.7+ | 2006 11 19 | 703 | 1.5− | 2.0− |
| 2000 08 24 | 704 | 0.5+ | 0.9+ | 2004 03 31 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.5+ | 0.5− |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2004 03 31 | 691 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.8+ | 1.1− |
| 2000 09 03 | 645 | 0.1− | 0.1+ | 2004 03 31 | 691 | 0.2− | 0.1+ | | | | |
| 2000 09 05 | 704 | 0.2+ | 1.0+ | 2005 06 27 | 644 | 0.3− | 0.1− | | | | |

**2000 RS$_{107}$ = 2003 GP$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.69251 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21485396 | $\omega$ | 161.19465 | | +0.80796481 | +0.58824586 | |
| $a$ | 2.7608351 | $\Omega$ | 162.64184 | | −0.55418957 | +0.77827855 | |
| $e$ | 0.0722899 | $i$ | 6.55419 | | −0.20016688 | +0.21965726 | |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 13 | 691 | 0.6+ | 0.2+ | 2000 10 06 | 691 | 0.4− | 0.7+ | 2005 11 03 | 703 | 0.5− | 0.2+ |
| 1999 06 13 | 691 | 0.8− | 0.1+ | 2003 04 07 | 691 | 0.3+ | 0.7+ | 2005 11 03 | 703 | 1.4− | 0.4− |
| 1999 06 13 | 691 | 0.3− | 0.2+ | 2003 04 07 | 691 | 0.2+ | 0.9+ | 2005 11 04 | 703 | 0.7− | 0.9+ |
| 2000 09 07 | 691 | 0.2+ | 0.2+ | 2003 04 07 | 691 | 0.1− | 0.8+ | 2005 11 04 | 703 | 0.4− | 0.2+ |
| 2000 09 07 | 691 | 0.3+ | 0.3+ | 2003 04 10 | 691 | 0.5+ | 0.7+ | 2005 11 04 | 703 | 0.1− | 0.4− |
| 2000 09 07 | 691 | 0.3+ | 0.3+ | 2003 04 10 | 691 | 0.4+ | 0.2+ | 2005 11 04 | 703 | 0.3+ | 0.4+ |
| 2000 09 24 | 699 | 0.4− | 0.9+ | 2003 04 10 | 691 | 0.4+ | 0.5+ | 2005 11 04 | 703 | 0.2− | 0.2+ |
| 2000 09 24 | 699 | 0.1− | 0.8+ | 2005 11 01 | 291 | 0.0 | 0.3+ | 2005 11 04 | 703 | 0.1− | 0.4+ |
| 2000 09 24 | 699 | 0.0 | 0.2− | 2005 11 01 | 291 | 0.1− | 0.3+ | 2005 11 04 | 703 | 0.4− | 0.2− |
| 2000 09 24 | 699 | 0.1+ | 0.8− | 2005 11 01 | 291 | 0.1+ | 0.1+ | 2005 11 04 | 703 | 0.3− | 0.1+ |
| 2000 10 06 | 691 | 0.5− | 1.0+ | 2005 11 03 | 703 | 0.8+ | 0.4+ | | | | |
| 2000 10 06 | 691 | 0.4− | 0.5+ | 2005 11 03 | 703 | 0.5+ | 0.1− | | | | |

**2000 RT$_{107}$ = 2005 BV$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.59971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27281604 | $\omega$ | 311.68945 | | +0.72064923 | −0.67798242 | |
| $a$ | 2.3544499 | $\Omega$ | 91.54671 | | +0.67135244 | +0.63023682 | |
| $e$ | 0.2391661 | $i$ | 8.33625 | | +0.17306239 | +0.37834031 | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 10 | 699 | (3.4− | 0.8+) | 2000 10 27 | 704 | 0.5+ | 0.3− | 2005 01 18 | 691 | 0.5+ | 0.8+ |
| 2000 09 10 | 699 | 1.0− | 0.7− | 2000 10 27 | 704 | 0.6− | 0.9+ | 2005 01 18 | 691 | 0.1− | 0.2− |
| 2000 09 10 | 699 | 0.6− | 0.5− | 2000 11 29 | 608 | 0.2+ | 0.4− | 2005 01 19 | 704 | (2.8+ | 3.1+) |
| 2000 09 10 | 699 | 0.5− | 0.7− | 2000 11 29 | 608 | 0.3+ | 0.7− | 2005 01 19 | 704 | (2.2+ | 2.4+) |
| 2000 09 25 | 608 | (1.0− | 2.4+) | 2000 11 29 | 608 | 0.3+ | 0.5− | 2005 01 19 | 704 | (1.3+ | 2.2+) |
| 2000 09 25 | 608 | (0.9− | 2.6+) | 2005 01 07 | 704 | 1.1− | 1.4− | 2005 01 19 | 704 | (3.4+ | 1.9+) |
| 2000 09 25 | 608 | (1.3− | 2.6+) | 2005 01 07 | 704 | 0.1− | 0.6+ | 2005 02 03 | 704 | (1.8+ | 1.3−) |
| 2000 09 29 | 699 | 0.6+ | 0.3+ | 2005 01 07 | 704 | 1.2+ | 0.3+ | 2005 02 03 | 704 | 0.6+ | 1.0+ |
| 2000 09 29 | 699 | 0.8+ | 0.8+ | 2005 01 07 | 704 | 0.4+ | 0.2+ | 2005 02 03 | 704 | 1.4− | 0.6+ |
| 2000 09 29 | 699 | 0.6+ | 0.4+ | 2005 01 16 | 704 | 0.1+ | 0.5− | 2005 02 04 | G96 | 0.5− | 0.2− |
| 2000 09 29 | 699 | 0.4+ | 0.6+ | 2005 01 16 | 704 | 0.3− | 0.2− | 2005 02 04 | G96 | 0.0 | 0.5− |
| 2000 10 27 | 704 | 0.8− | 0.2+ | 2005 01 16 | 704 | 0.5+ | 0.1+ | 2005 02 04 | G96 | 0.1− | 0.3− |
| 2000 10 27 | 704 | 0.0 | 0.1+ | 2005 01 18 | 691 | 0.2− | 0.3− | 2005 02 04 | G96 | 0.3− | 0.3− |

**2000 SJ = 2006 SY$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.20602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17295533 | $\omega$ | 185.58293 | | +0.76394695 | −0.63709779 | |
| $a$ | 3.1904119 | $\Omega$ | 214.68389 | | +0.59877955 | +0.75907362 | |
| $e$ | 0.0968208 | $i$ | 10.36967 | | +0.24051633 | +0.13384188 | |
| $P$ | 5.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 843 | 0.4+ | 0.6− | 2001 12 11 | 704 | (0.5− | 2.4+) | 2006 09 27 | 699 | 0.3+ | 0.6− |
| 2000 09 19 | 843 | 0.1+ | 0.2− | 2001 12 11 | 704 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.1− |
| 2000 09 19 | 843 | 0.3+ | 0.7− | 2001 12 11 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 699 | (1.8− | 1.9+) |
| 2000 09 20 | 843 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.1− | 0.6− | 2006 09 27 | 699 | (0.2− | 2.4+) |
| 2000 09 20 | 843 | 0.6+ | 0.5− | 2006 09 16 | 703 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.5− | 0.4− |
| 2000 09 20 | 843 | 0.1− | 1.6+ | 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.5− | 0.5− |
| 2000 09 20 | 843 | 0.6− | 0.6− | 2006 09 16 | 703 | 0.5− | 1.1− | 2006 09 27 | 703 | (0.9− | 1.6−) |
| 2000 09 29 | 843 | 0.1− | 0.5− | 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 09 27 | 703 | 0.3+ | 1.5− |
| 2000 09 29 | 843 | 0.7+ | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2000 09 29 | 843 | 0.1+ | 1.1+ | 2006 09 18 | 703 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2000 09 29 | 843 | 0.7− | 1.3+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2000 09 30 | 843 | 1.3+ | 0.4+ | 2006 09 19 | 699 | 1.2+ | 1.1+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2000 09 30 | 843 | 1.1+ | 0.7+ | 2006 09 19 | 699 | (1.6+ | 0.5−) | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2000 09 30 | 843 | 1.2+ | 0.4− | 2006 09 19 | 699 | 0.9+ | 0.8+ | 2006 10 17 | 703 | 0.9+ | 1.2− |
| 2000 09 30 | 704 | 1.0− | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2000 09 30 | 704 | 1.2− | 0.6+ | 2006 09 22 | 104 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.8− |
| 2000 09 30 | 704 | 0.9− | 0.1+ | 2006 09 22 | 104 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.7+ |
| 2000 09 30 | 704 | 1.6− | 1.4− | 2006 09 22 | 104 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2000 09 30 | 704 | 0.1+ | 0.8− | 2006 09 24 | 104 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 12 11 | 704 | 0.5− | 0.1+ | 2006 09 24 | 104 | 0.6+ | 0.2+ | | | | |
| 2001 12 11 | 704 | 0.4+ | 0.5− | 2006 09 24 | 104 | 0.5+ | 0.4− | | | | |

**2000 SM = 2006 TT$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.96329 | | | (2000.0) | | |
| $n$ | 0.17354894 | $\omega$ | 64.70058 | | +0.95913110 | +0.28286214 |
| $a$ | 3.1831327 | $\Omega$ | 278.86759 | | −0.26227262 | +0.87871394 |
| $e$ | 0.1819569 | $i$ | 0.43603 | | −0.10621016 | +0.38451375 |
| $P$ | 5.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 691 | 0.0 | 0.1− | 2000 10 01 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2000 09 19 | 691 | 0.2+ | 0.0 | 2000 10 02 | 704 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2000 09 19 | 691 | 0.0 | 0.1− | 2000 10 02 | 704 | 0.4− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 09 20 | 691 | 0.2− | 0.1− | 2000 10 02 | 704 | 0.6+ | 0.5− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 09 20 | 691 | 0.3− | 0.0 | 2000 10 02 | 704 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.5+ |
| 2000 09 20 | 691 | 0.0 | 0.1+ | 2000 10 02 | 704 | 1.0+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2000 09 26 | 699 | 0.2− | 0.5− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2000 09 26 | 699 | 0.5+ | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2000 09 26 | 699 | 1.1− | 0.8+ | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2000 09 26 | 699 | 0.6+ | 0.2+ | 2006 10 16 | 691 | 1.0− | 0.2− | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2000 09 28 | 704 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.6− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2000 09 28 | 704 | 0.6− | 0.6+ | 2006 10 16 | 691 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2000 09 28 | 704 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2000 10 01 | 704 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.5− |
| 2000 10 01 | 704 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.3− | 2006 11 27 | G96 | 0.4− | 0.5− |
| 2000 10 01 | 704 | 0.7+ | 0.8− | 2006 10 28 | 691 | 0.0 | 0.1− | | | | |
| 2000 10 01 | 704 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.2− | | | | |

**2000 SQ$_5$ = 2006 UQ$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.69593 | | | (2000.0) | | |
| $n$ | 0.17854198 | $\omega$ | 126.45876 | | +0.96066233 | −0.20835886 |
| $a$ | 3.1235071 | $\Omega$ | 246.21611 | | +0.14316978 | +0.93808236 |
| $e$ | 0.1857717 | $i$ | 11.57533 | | +0.23797123 | +0.27674548 |
| $P$ | 5.52 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.1− | 0.1+ | 2000 09 27 | 704 | 0.5+ | 0.0 | 2006 11 16 | 704 | 0.2− | 0.6− |
| 1995 11 18 | 691 | 0.0 | 0.0 | 2000 09 27 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.5+ | 0.2− |
| 1995 11 18 | 691 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.8− | 2006 11 17 | 704 | 0.6− | 0.5+ |
| 2000 09 01 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.6− | 0.8+ | 2006 11 17 | 704 | 0.2+ | 0.5− |
| 2000 09 01 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.6− | 2006 11 17 | 704 | (1.8− | 0.9+) |
| 2000 09 01 | 704 | 0.8+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2000 09 01 | 704 | 0.4− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2000 09 01 | 704 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2000 09 22 | 704 | 0.3− | 0.8− | 2006 10 23 | 644 | 0.0 | 0.5− | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2000 09 22 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.5− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2000 09 22 | 704 | 1.0− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2000 09 22 | 704 | 0.2− | 1.5− | 2006 10 27 | 703 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2000 09 23 | 704 | 0.8+ | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2000 09 23 | 704 | 1.0+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2000 09 23 | 704 | 0.5− | 0.5− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.7+ |
| 2000 09 23 | 704 | 0.5+ | 0.7− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 2000 09 23 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2000 09 25 | 699 | 0.6− | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2000 09 25 | 699 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2000 09 25 | 699 | 0.4− | 0.0 | 2006 11 11 | 703 | 1.3+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2000 09 25 | 699 | 0.1− | 0.2− | 2006 11 16 | 704 | (0.1− | 1.8−) | 2006 11 22 | 704 | 0.7+ | 0.5+ |
| 2000 09 27 | 704 | 0.5− | 0.2− | 2006 11 16 | 704 | (0.4+ | 1.6−) | 2006 11 22 | 704 | (3.5− | 0.6+) |
| 2000 09 27 | 704 | 0.2− | 0.2+ | 2006 11 16 | 704 | (1.1+ | 2.2−) | | | | |
| 2000 09 27 | 704 | 0.7+ | 0.9+ | 2006 11 16 | 704 | 0.2− | 0.6− | | | | |

**2000 SW$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.85210 | | | (2000.0) | | |
| $n$ | 0.17246989 | $\omega$ | 154.95299 | | +0.95567328 | −0.23053157 |
| $a$ | 3.1963956 | $\Omega$ | 219.80710 | | +0.19804308 | +0.96361387 |
| $e$ | 0.2080773 | $i$ | 16.62340 | | +0.21787042 | +0.13529049 |
| $P$ | 5.71 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 06 | 704 | 0.0 | 1.2− | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2000 09 06 | 704 | 0.1− | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2000 09 06 | 704 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2000 09 22 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2000 09 22 | 704 | 0.4+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 15 | 683 | 1.0− | 1.3− |
| 2000 09 22 | 704 | 0.2− | 0.7+ | 2006 10 21 | H07 | 0.1− | 1.2− | 2006 11 15 | 683 | (0.4+ | 1.8−) |
| 2000 09 22 | 704 | 0.8− | 0.5− | 2006 10 21 | H07 | 1.1+ | 0.4+ | 2006 11 15 | 683 | 0.9− | 0.9− |
| 2000 09 23 | 704 | 1.1− | 0.3+ | 2006 10 21 | H07 | 1.2+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2000 09 23 | 699 | 1.0+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.7+ | 0.6− |
| 2000 09 23 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 1.3− |
| 2000 09 23 | 699 | 0.7+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.7+ | 0.9− |
| 2000 09 23 | 704 | 0.2− | 0.4− | 2006 10 23 | H07 | 0.4+ | 0.9− | 2006 11 18 | 704 | 1.0− | 0.5+ |
| 2000 09 23 | 699 | 0.4+ | 1.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 18 | 704 | 1.0− | 0.6− |
| 2000 09 23 | 704 | 0.1+ | 0.3+ | 2006 10 23 | H07 | 1.1+ | 1.2− | 2006 11 18 | 704 | 0.0 | 0.6− |
| 2000 09 23 | 699 | 0.9+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 18 | 704 | (1.8− | 0.1+) |
| 2000 10 03 | 704 | 0.8− | 0.1− | 2006 10 23 | H07 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.4− | 1.0− |
| 2000 10 03 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2000 10 03 | 704 | 0.8− | 0.4− | 2006 10 28 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2000 10 03 | 704 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.3− |
| 2000 11 23 | 704 | 0.6− | 1.2− | 2006 10 28 | 704 | 1.4+ | 0.6+ | 2006 11 19 | 704 | 0.6+ | 1.0+ |
| 2000 11 23 | 704 | 0.5− | 0.3+ | 2006 10 28 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.3− | 1.2+ |
| 2000 11 23 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2000 11 23 | 704 | 1.1+ | 0.9+ | 2006 10 28 | 704 | 0.9+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 1.2+ |
| 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 26 | 704 | 0.6+ | 0.1+ |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 26 | 704 | 1.3+ | 0.4− |
| 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 26 | 704 | 0.1− | 0.1− |
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.6+ | 1.4+ | 2006 11 28 | 704 | 0.5+ | 0.8+ |
| 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2− | 1.1+ |
| 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.6− | 0.9+ |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.2− | 1.6− |
| 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.4− | | | | |

**2000 SZ$_{16}$ = 2006 VH$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.17854 | | | (2000.0) | | |
| $n$ | 0.18563892 | $\omega$ | 94.13612 | | +0.89786077 | +0.42155837 |
| $a$ | 3.0433836 | $\Omega$ | 240.97313 | | −0.43908250 | +0.83608614 |
| $e$ | 0.0974806 | $i$ | 8.35285 | | −0.03244369 | +0.35106766 |
| $P$ | 5.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 608 | 0.2− | 0.5− | 2000 10 03 | 704 | 0.7+ | 0.4− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2000 09 20 | 608 | 0.2− | 0.7− | 2000 10 03 | 704 | 0.5+ | 0.7+ | 2006 11 15 | 691 | 0.4+ | 0.2+ |
| 2000 09 20 | 608 | 0.4− | 1.1− | 2000 10 03 | 704 | 0.3+ | 0.5− | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2000 09 23 | 704 | 0.1+ | 1.0− | 2004 04 21 | 691 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2000 09 23 | 704 | 0.9+ | 0.0 | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2000 09 23 | 704 | 0.4− | 0.1+ | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | (3.5+ | 3.0−) |
| 2000 09 23 | 704 | 0.8− | 1.3+ | 2005 08 26 | 699 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2000 09 23 | 704 | 0.5− | 0.2− | 2005 08 26 | 699 | 1.0+ | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2000 09 23 | 704 | 1.1− | 0.5− | 2005 08 26 | 699 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2000 09 23 | 704 | 0.4+ | 0.3+ | 2005 08 26 | 699 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2000 09 23 | 704 | 0.0 | 0.5− | 2005 09 11 | 699 | 0.6+ | 1.2− | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2000 09 23 | 704 | 0.7− | 0.7− | 2005 09 11 | 699 | 0.1− | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2000 09 23 | 704 | 0.8+ | 0.9+ | 2005 09 11 | 699 | 1.1− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2000 09 23 | 704 | 0.1− | 0.6+ | 2005 09 11 | 699 | 0.8− | 1.3+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2000 09 23 | 704 | 0.4− | 0.6− | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2000 09 24 | 704 | 0.6+ | 0.9− | 2006 09 28 | G96 | 0.4− | 0.8− | 2006 11 24 | G96 | 0.5− | 0.6− | | |
| 2000 09 24 | 704 | 0.5+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 24 | 704 | 0.6+ | 1.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.0 | | |
| 2000 10 02 | 699 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2000 10 02 | 699 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.3− | 2006 12 01 | 691 | 0.0 | 0.1+ | | |
| 2000 10 02 | 699 | 0.8− | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.2− | 0.4− | | |
| 2000 10 02 | 699 | 1.4+ | 1.2+ | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.3− | 0.1− | | |
| 2000 10 03 | 704 | 0.7− | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | | | | | |
| 2000 10 03 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.2+ | | | | | | |

**2000 SS$_{17}$ = 2006 ER$_{62}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.14706 | | (2000.0) | | +0.37423589 | +0.92634737 |
| $n$ | 0.28096545 | $\omega$ | 90.63514 | | −0.89045986 | +0.34610073 |
| $a$ | 2.3086996 | $\Omega$ | 201.49667 | | −0.25889909 | +0.14864333 |
| $e$ | 0.1005514 | $i$ | 6.70033 | | | |
| $P$ | 3.51 | $H$ | 17.2 | $G$ 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.0 | 0.5− | 2000 09 25 | 704 | 0.2− | 0.2+ | 2000 10 02 | 704 | (0.3+ | 2.9+) | |
| 2000 09 23 | 704 | 0.7+ | 0.2+ | 2000 09 25 | 704 | 0.6− | 0.0 | 2000 10 02 | 704 | 0.3+ | 0.3+ | |
| 2000 09 23 | 704 | 0.1− | 0.2− | 2000 09 25 | 704 | 0.4− | 1.0− | 2006 03 05 | 691 | 0.0 | 0.2− | |
| 2000 09 23 | 704 | 0.3− | 0.0 | 2000 10 02 | 704 | 0.8+ | 0.2− | 2006 03 05 | 691 | 0.1− | 0.1− | |
| 2000 09 23 | 704 | 0.8− | 0.5− | 2000 10 02 | 704 | 0.3− | 0.3− | 2006 03 05 | 691 | 0.1− | 0.3− | |
| 2000 09 24 | 704 | 0.2+ | 1.0+ | 2000 10 02 | 704 | 0.1+ | 0.0 | 2006 03 09 | 691 | 0.2+ | 0.1+ | |
| 2000 09 24 | 704 | 0.4+ | 0.1+ | 2000 10 02 | 704 | 0.3− | 0.5+ | 2006 03 09 | 691 | 0.2+ | 0.3+ | |
| 2000 09 24 | 704 | 0.1− | 0.9+ | 2000 10 02 | 704 | 0.2− | 0.7− | 2006 03 09 | 691 | 0.2− | 0.3+ | |
| 2000 09 24 | 704 | 0.0 | 0.5− | 2000 10 02 | 704 | 0.1− | 1.4+ | | | | | |
| 2000 09 25 | 704 | 1.4+ | 0.2+ | 2000 10 02 | 704 | 0.4− | 0.8− | | | | | |

**2000 SU$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.20769 | | (2000.0) | | +0.76687760 | −0.63949233 |
| $n$ | 0.17968177 | $\omega$ | 179.55353 | | +0.58857378 | +0.73449662 |
| $a$ | 3.1102839 | $\Omega$ | 220.37057 | | +0.25588994 | +0.22707768 |
| $e$ | 0.2687943 | $i$ | 4.80868 | | | |
| $P$ | 5.49 | $H$ | 16.5 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 695 | 0.1− | 0.0 | 2000 09 25 | 704 | 0.1+ | 0.6+ | 2000 11 01 | 691 | 0.5+ | 0.2− | |
| 2000 09 21 | 695 | 0.1− | 0.0 | 2000 09 25 | 704 | 0.5− | 0.6+ | 2000 11 01 | 691 | 0.1− | 0.3− | |
| 2000 09 23 | 704 | 1.2+ | 1.7− | 2000 09 26 | 704 | 0.9+ | 1.1− | 2000 11 01 | 691 | 0.4− | 0.3+ | |
| 2000 09 23 | 704 | 0.2+ | 0.9− | 2000 09 26 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.0 | |
| 2000 09 23 | 704 | 0.4− | 1.3− | 2000 09 26 | 704 | 0.7+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 2000 09 23 | 704 | 0.7+ | 0.3− | 2000 09 26 | 704 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.6− | |
| 2000 09 24 | 704 | 0.3+ | 0.6− | 2000 09 26 | 704 | 0.5− | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.0 | |
| 2000 09 24 | 704 | 0.5− | 0.2− | 2000 10 01 | 699 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1+ | |
| 2000 09 24 | 704 | 0.2− | 0.3− | 2000 10 01 | 699 | 0.8− | 1.2+ | 2006 11 23 | 691 | 0.5+ | 0.6+ | |
| 2000 09 24 | 704 | 0.5− | 0.1+ | 2000 10 01 | 699 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.0 | 0.7+ | |
| 2000 09 24 | 704 | 0.2+ | 1.7+ | 2000 10 01 | 699 | 0.4− | 0.5+ | 2006 11 29 | 704 | 0.1+ | 0.4− | |
| 2000 09 25 | 704 | 0.6+ | 0.8+ | 2000 10 03 | 704 | 1.6− | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.1+ | |
| 2000 09 25 | 704 | 0.1− | 0.5− | 2000 10 03 | 704 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.6− | |
| 2000 09 25 | 704 | 1.2− | 0.2+ | 2000 10 03 | 704 | 0.7+ | 0.5+ | | | | | |

**2000 SX$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 182.52349 | | (2000.0) | | +0.78970401 | −0.61100625 |
| $n$ | 0.26010426 | $\omega$ | 83.63938 | | +0.52820993 | +0.72288317 |
| $a$ | 2.4305491 | $\Omega$ | 314.00595 | | +0.31202860 | +0.32266279 |
| $e$ | 0.1558445 | $i$ | 4.39561 | | | |
| $P$ | 3.79 | $H$ | 16.7 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 0.0 | 0.1− | 2000 09 26 | 704 | 0.2− | 0.8− | 2004 10 21 | 704 | 0.4+ | 0.3− | |
| 2000 09 21 | 699 | 0.1− | 0.1+ | 2000 09 26 | 704 | 1.0+ | 0.7− | 2004 10 21 | 704 | 1.1+ | 0.2+ | |
| 2000 09 21 | 699 | 1.4− | 0.2+ | 2000 09 26 | 704 | 0.4− | 0.1− | 2004 10 21 | 704 | 0.4+ | 0.4− | |
| 2000 09 21 | 699 | 0.1− | 0.1+ | 2000 09 26 | 704 | 0.2− | 0.0 | 2004 11 09 | 703 | 0.1− | 0.4− | |
| 2000 09 23 | 704 | 0.3− | 0.0 | 2000 09 26 | 704 | 0.6− | 0.9+ | 2004 11 09 | 703 | 0.4− | 0.6− | |
| 2000 09 23 | 704 | 1.3+ | 0.5− | 2000 09 26 | 704 | 0.4− | 0.7+ | 2004 11 09 | 703 | 0.4− | 1.2− | |
| 2000 09 23 | 704 | 0.5+ | 0.2+ | 2000 09 26 | 704 | 0.8+ | 1.1− | 2004 11 09 | 703 | 0.8− | 0.7− | |
| 2000 09 23 | 704 | 0.2− | 0.5− | 2000 10 01 | 699 | 0.7+ | 0.6− | 2004 11 19 | 704 | 0.3− | 0.3+ | |
| 2000 09 24 | 704 | 0.8− | 0.0 | 2000 10 01 | 699 | 0.9+ | 0.1− | 2004 11 19 | 704 | 0.3− | 0.1− | |
| 2000 09 24 | 704 | 0.6− | 0.1− | 2000 10 01 | 699 | 0.3− | 0.2+ | 2004 11 19 | 704 | 1.0+ | 0.4+ | |
| 2000 09 24 | 704 | 0.7+ | 0.3− | 2000 10 01 | 699 | 0.9+ | 0.2− | 2004 11 19 | 704 | 0.3+ | 0.7− | |
| 2000 09 24 | 704 | 0.2+ | 0.2+ | 2004 09 17 | 291 | 0.2− | 0.2+ | 2004 12 02 | 644 | 0.1+ | 0.4+ | |
| 2000 09 26 | 704 | (1.0+ | 2.0−) | 2004 09 17 | 291 | 0.1− | 0.2+ | 2004 12 02 | 644 | 0.1− | 0.2+ | |
| 2000 09 26 | 704 | 0.1− | 1.1+ | 2004 09 17 | 291 | 0.2− | 0.3+ | 2004 12 02 | 644 | 0.0 | 0.1+ | |
| 2000 09 26 | 704 | 0.1− | 0.1+ | 2004 10 21 | 704 | 0.1+ | 1.3+ | | | | | |
| 2000 09 26 | 704 | 0.7− | 0.1+ | 2004 10 21 | 704 | 0.4+ | 0.5+ | | | | | |

**2000 SD$_{19}$ = 2006 TP$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.32235 | | (2000.0) | | +0.12494896 | −0.98565938 |
| $n$ | 0.17850733 | $\omega$ | 220.95481 | | +0.94861361 | +0.15217719 |
| $a$ | 3.1239112 | $\Omega$ | 222.23206 | | +0.29072320 | −0.07292243 |
| $e$ | 0.0761067 | $i$ | 9.71462 | | | |
| $P$ | 5.52 | $H$ | 14.6 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.1+ | |
| 2000 09 23 | 704 | 0.6+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 2000 09 23 | 704 | 1.6+ | 0.7− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.6− | |
| 2000 09 23 | 704 | (0.3+ | 2.1−) | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.6− | |
| 2000 09 24 | 704 | 0.8− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.8− | |
| 2000 09 24 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.4− | |
| 2000 09 24 | 704 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.3+ | 0.0 | |
| 2000 09 24 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.3− | 0.1+ | |
| 2000 09 24 | 704 | 0.8+ | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.8− | |
| 2000 09 27 | 704 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.4+ | 1.4− | |
| 2000 09 27 | 704 | 0.5+ | 0.5− | 2006 10 28 | 704 | 0.6+ | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.1− | |
| 2000 09 27 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 704 | 0.1− | 1.2+ | 2006 11 18 | 704 | 0.6− | 0.0 | |
| 2000 09 27 | 704 | 0.2− | 1.0− | 2006 10 28 | 704 | 1.4− | 0.9− | 2006 11 18 | 704 | 0.2− | 0.3+ | |
| 2000 09 27 | 704 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.2+ | |
| 2000 09 28 | 704 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (1.7+ | 0.0 ) | |
| 2000 09 28 | 704 | 0.7− | 0.8− | 2006 10 28 | 691 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− | |
| 2000 09 28 | 704 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− | |
| 2000 09 28 | 704 | 1.2+ | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.7+ | |
| 2000 09 28 | 704 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2− | |
| 2000 10 02 | 699 | 0.7− | 0.7− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.0 | |
| 2000 10 02 | 699 | 1.3− | 1.3+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 0.5+ | |
| 2000 10 02 | 699 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.7+ | |
| 2000 10 02 | 699 | 0.5− | 1.1− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 1.1+ | 0.2+ | |
| 2000 10 03 | 704 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.4− | |
| 2000 10 03 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2− | |
| 2000 10 03 | 704 | 0.5− | 0.3+ | 2006 11 10 | 644 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.2− | |
| 2000 10 03 | 704 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.1− | |
| 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.1− | |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.8+ | 0.6+ | |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.8− | 0.4+ | |
| 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.7+ | |
| 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.4− | |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 11 28 | 704 | 0.1− | 0.5+ | |

**2000 SC$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 271.00516 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27060856 | $\omega$ | 47.47160 | | +0.72336210 | | +0.67975816 | |
| $a$ | 2.3672367 | $\Omega$ | 269.31347 | | −0.66368914 | | +0.63613092 | |
| $e$ | 0.2206175 | $i$ | 6.95869 | | −0.19043107 | | +0.36505656 | |
| $P$ | 3.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 04 | 608 | 0.7+ | 0.0 | 2000 09 30 | 704 | 0.0 | 0.4+ | 2000 11 19 | 704 | 0.3− | 0.3+ |
| 2000 08 04 | 608 | 0.8+ | 0.3+ | 2000 10 03 | 704 | 0.2− | 0.2− | 2000 11 19 | 704 | 0.7− | 0.6+ |
| 2000 08 04 | 608 | 1.2+ | 0.1+ | 2000 10 03 | 704 | 0.9− | 0.0 | 2000 11 19 | 704 | 0.0 | 0.0 |
| 2000 09 23 | 704 | 0.2+ | 0.4− | 2000 10 03 | 704 | 0.2− | 0.0 | 2000 11 19 | 704 | 0.1+ | 0.0 |
| 2000 09 23 | 704 | 0.2+ | 0.2+ | 2000 10 03 | 704 | 0.2− | 0.1+ | 2000 11 27 | 704 | 0.3+ | 0.6+ |
| 2000 09 23 | 704 | 1.1+ | 0.4− | 2000 10 03 | 704 | 0.2− | 0.0 | 2000 11 27 | 704 | 0.4− | 1.0+ |
| 2000 09 23 | 704 | 1.2− | 0.3− | 2000 10 25 | 704 | (2.6− | 0.3+) | 2000 11 27 | 704 | 0.7− | 0.0 |
| 2000 09 24 | 704 | 1.2− | 0.0 | 2000 10 25 | 704 | 0.7− | 0.1+ | 2000 11 30 | 645 | 0.2+ | 0.1− |
| 2000 09 24 | 704 | 0.7− | 1.0+ | 2000 10 25 | 704 | 0.5− | 0.1+ | 2000 11 30 | 645 | 0.1+ | 0.1− |
| 2000 09 24 | 704 | 0.9− | 0.1+ | 2000 10 25 | 704 | 0.1− | 0.1− | 2003 05 26 | 608 | 0.1− | 0.1+ |
| 2000 09 24 | 704 | 0.1+ | 0.4− | 2000 11 01 | 704 | 0.6− | 0.5− | 2003 05 26 | 608 | 0.1+ | 0.0 |
| 2000 09 24 | 704 | 0.1− | 0.1− | 2000 11 01 | 704 | 0.8− | 0.4− | 2003 05 26 | 608 | 0.1+ | 0.3+ |
| 2000 09 30 | 704 | 0.3+ | 0.1− | 2000 11 01 | 704 | 0.4+ | 0.7+ | 2004 12 16 | 691 | 0.2− | 0.4+ |
| 2000 09 30 | 704 | 0.2− | 0.6+ | 2000 11 01 | 704 | 0.6+ | 0.9− | 2004 12 16 | 691 | 0.3+ | 0.5+ |
| 2000 09 30 | 704 | 0.2− | 0.5+ | 2000 11 01 | 704 | 1.3+ | 0.5+ | 2004 12 16 | 691 | 0.1− | 0.5− |

**2000 SG$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 24.57042 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17890521 | $\omega$ | 150.71475 | | +0.99253062 | | −0.00382749 | |
| $a$ | 3.1192778 | $\Omega$ | 210.25310 | | −0.02006889 | | +0.98076808 | |
| $e$ | 0.2889800 | $i$ | 14.00591 | | +0.12033370 | | +0.19513923 | |
| $P$ | 5.51 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.1− | 0.4+ | 2000 09 26 | 704 | 0.0 | 0.7− | 2006 10 22 | 703 | 1.2+ | 0.3+ |
| 2000 09 01 | 704 | 0.5− | 0.0 | 2000 09 27 | 704 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.7+ |
| 2000 09 01 | 704 | 0.2− | 0.1− | 2000 09 27 | 704 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2000 09 01 | 704 | 0.0 | 0.4− | 2000 09 27 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.7+ | 0.8− |
| 2000 09 01 | 704 | 0.3+ | 0.2+ | 2000 09 27 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 1.3+ | 0.1+ |
| 2000 09 22 | 699 | 0.6+ | 0.5+ | 2000 09 27 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 1.3− | 0.1− |
| 2000 09 22 | 699 | 0.5+ | 0.2− | 2000 09 28 | 704 | 0.7− | 0.8− | 2006 10 22 | 703 | 0.5+ | 0.1+ |
| 2000 09 22 | 699 | 0.5− | 0.3− | 2000 09 28 | 704 | 0.5− | 0.1+ | 2006 10 30 | 703 | 0.5− | 0.9− |
| 2000 09 22 | 699 | (2.2− | 1.1+) | 2000 09 28 | 704 | 0.1− | 0.1+ | 2006 10 30 | 703 | 0.8+ | 0.7− |
| 2000 09 23 | 704 | 0.8+ | 0.3+ | 2000 09 28 | 704 | 0.2− | 0.5− | 2006 10 30 | 703 | 0.3+ | 0.2− |
| 2000 09 23 | 704 | 0.6− | 0.4+ | 2000 09 28 | 704 | 0.2+ | 0.2− | 2006 10 30 | 703 | 0.4− | 0.1− |
| 2000 09 23 | 704 | 0.1− | 0.0 | 2000 10 03 | 704 | 0.1+ | 0.0 | 2006 11 05 | 644 | 0.1+ | 0.1− |
| 2000 09 23 | 704 | 0.2− | 0.1− | 2000 10 03 | 704 | 0.1− | 0.0 | 2006 11 05 | 644 | 0.2− | 0.3+ |
| 2000 09 23 | 704 | 0.0 | 0.3− | 2000 10 03 | 704 | 0.1− | 0.3− | 2006 11 05 | 644 | 0.6+ | 0.1+ |
| 2000 09 25 | 704 | 0.0 | 1.0+ | 2000 10 03 | 704 | 0.3− | 0.1+ | 2006 11 15 | 703 | 0.9− | 0.6− |
| 2000 09 25 | 704 | 0.4+ | 0.2+ | 2000 10 03 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2000 09 25 | 699 | 0.3+ | 0.2+ | 2000 11 03 | 704 | 0.6+ | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.7+ |
| 2000 09 25 | 704 | 0.4+ | 0.1+ | 2000 11 03 | 704 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2000 09 25 | 704 | 0.2+ | 0.1− | 2000 11 03 | 704 | 1.2− | 1.1+ | 2006 11 19 | 704 | (1.9− | 0.4−) |
| 2000 09 25 | 699 | 0.5+ | 0.3− | 2005 06 26 | G96 | 0.9− | 0.7− | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2000 09 25 | 704 | 0.4+ | 0.6− | 2005 06 26 | G96 | 1.0+ | 1.0− | 2006 11 19 | 704 | 0.8+ | 0.6+ |
| 2000 09 25 | 699 | 0.6+ | 0.0 | 2005 06 26 | G96 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2000 09 25 | 699 | 0.3− | 0.3+ | 2005 06 26 | G96 | 0.2+ | 0.5+ | 2006 12 01 | G96 | 0.2− | 0.0 |
| 2000 09 26 | 704 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2000 09 26 | 704 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2000 09 26 | 704 | 0.3− | 0.3− | 2006 10 09 | 644 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2000 09 26 | 704 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.2− | | | | |

**2000 SM$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 150.22474 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22879987 | $\omega$ | 147.55578 | | +0.95711340 | | +0.28954882 | |
| $a$ | 2.6474770 | $\Omega$ | 195.62223 | | −0.27294739 | | +0.88990752 | |
| $e$ | 0.2176199 | $i$ | 2.07877 | | −0.09712702 | | +0.35245722 | |
| $P$ | 4.31 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 1.2+ | 0.1+ | 2000 10 01 | 704 | 0.5+ | 0.6− | 2004 06 11 | 691 | 0.6− | 0.4+ |
| 2000 09 24 | 704 | 0.9+ | 0.1− | 2000 10 01 | 704 | 0.3+ | 0.4− | 2004 06 11 | 691 | 0.3+ | 0.1− |
| 2000 09 24 | 704 | 0.3+ | 0.3+ | 2000 10 01 | 704 | 0.5+ | 0.6− | 2004 06 11 | 691 | 0.1+ | 0.1− |
| 2000 09 24 | 704 | 0.2+ | 0.2+ | 2000 10 01 | 699 | 1.0− | 1.6+ | 2004 06 20 | 691 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.4− | 0.2− | 2000 10 01 | 704 | 0.7+ | 1.2− | 2004 06 20 | 691 | 0.1+ | 0.2− |
| 2000 09 25 | 704 | 0.1+ | 1.2+ | 2000 10 01 | 704 | 0.8+ | 0.6− | 2004 06 20 | 691 | 0.1+ | 0.3+ |
| 2000 09 25 | 704 | 0.7− | 0.1+ | 2000 10 01 | 699 | 1.5+ | 0.2− | 2004 07 11 | 704 | 0.4+ | 0.4− |
| 2000 09 25 | 704 | 0.1+ | 0.2− | 2000 10 01 | 699 | 0.1+ | 0.4+ | 2004 07 11 | 704 | 0.5− | 0.2+ |
| 2000 09 28 | 691 | 0.4− | 0.2− | 2000 10 01 | 699 | 0.4+ | 0.3+ | 2004 07 11 | 704 | 0.1+ | 0.1+ |
| 2000 09 28 | 691 | 0.3− | 0.1− | 2000 10 02 | 645 | 0.0 | 0.0 | 2004 07 11 | 704 | 0.3− | 0.3− |
| 2000 09 28 | 691 | 0.5− | 0.2− | 2000 10 02 | 645 | 0.0 | 0.1+ | 2004 07 11 | 704 | 0.2+ | 0.9− |

**2000 SL$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 16.41285 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19211641 | $\omega$ | 44.27647 | | +0.35965421 | | −0.92846272 | |
| $a$ | 2.9745851 | $\Omega$ | 25.08435 | | +0.78377414 | | +0.24665889 | |
| $e$ | 0.2167799 | $i$ | 12.63952 | | +0.50630717 | | +0.27769835 | |
| $P$ | 5.13 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.4+ | 0.3+ | 2000 10 02 | 704 | 0.0 | 0.4+ | 2002 04 01 | 644 | 0.5+ | 0.5+ |
| 2000 09 23 | 699 | 0.5− | 0.3+ | 2002 01 23 | 704 | 1.4+ | 1.0+ | 2002 04 01 | 644 | 0.3+ | 0.4+ |
| 2000 09 23 | 699 | 1.2− | 0.5+ | 2002 01 23 | 704 | 0.5− | 0.1+ | 2005 08 27 | 644 | 0.5+ | 0.5+ |
| 2000 09 23 | 699 | 0.0 | 0.3− | 2002 01 23 | 704 | 0.1+ | 0.5+ | 2005 08 27 | 644 | 0.4+ | 0.5+ |
| 2000 09 24 | 704 | 0.6+ | 0.2− | 2002 01 23 | 704 | 0.9+ | 0.5+ | 2005 08 27 | 644 | 0.5+ | 0.5+ |
| 2000 09 24 | 704 | 0.2− | 0.3− | 2002 01 23 | 704 | 0.4− | 0.7+ | 2005 10 03 | 703 | 1.1− | 0.1+ |
| 2000 09 24 | 704 | 0.1+ | 0.6− | 2002 02 06 | 704 | 0.9− | 0.1+ | 2005 10 03 | 703 | 0.3− | 0.1− |
| 2000 09 24 | 704 | 0.9+ | 0.4+ | 2002 02 06 | 704 | 0.2+ | 0.0 | 2005 10 03 | 703 | 0.1− | 1.3− |
| 2000 09 25 | 704 | 0.1+ | 0.0 | 2002 02 06 | 704 | (1.6− | 1.3−) | 2005 10 03 | 703 | 0.2+ | 1.0− |
| 2000 09 25 | 704 | 0.2− | 0.6− | 2002 02 06 | 704 | 0.6− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.8− |
| 2000 09 25 | 704 | 0.3+ | 0.3+ | 2002 02 06 | 704 | 1.3− | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.8− |
| 2000 09 25 | 704 | 1.0+ | 0.1− | 2002 02 12 | 644 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.9− |
| 2000 10 01 | 699 | 1.1− | 0.7+ | 2002 02 12 | 644 | 0.7+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.8− |
| 2000 10 01 | 699 | 0.5− | 1.8+ | 2002 02 12 | 644 | 0.5+ | 0.3+ | 2006 11 21 | 703 | 0.4− | 0.2+ |
| 2000 10 01 | 699 | 0.2+ | 0.6+ | 2002 03 16 | 699 | 0.4+ | 0.6− | 2006 11 21 | 703 | 1.1− | 0.3− |
| 2000 10 01 | 699 | 0.8− | 0.1− | 2002 03 16 | 699 | 0.3+ | 0.6− | 2006 11 21 | 703 | 0.1+ | 0.9− |
| 2000 10 02 | 704 | 0.4− | 0.3− | 2002 03 16 | 699 | 0.4− | 0.3+ | 2006 11 21 | 703 | 0.7− | 0.9+ |
| 2000 10 02 | 704 | 0.5− | 0.3+ | 2002 03 16 | 699 | 0.4− | 0.0 | | | | |
| 2000 10 02 | 704 | 0.5+ | 0.6− | 2002 04 01 | 644 | 0.5+ | 0.7+ | | | | |

**2000 SG$_{35}$ = 2006 TH$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 18.73589 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17004435 | $\omega$ | 224.32698 | | +0.98285605 | | +0.18178657 | |
| $a$ | 3.2267197 | $\Omega$ | 125.17501 | | −0.15696087 | | +0.91257280 | |
| $e$ | 0.1390653 | $i$ | 2.15829 | | −0.09673296 | | +0.36628477 | |
| $P$ | 5.80 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 691 | 0.0 | 0.1− | 2000 09 25 | 704 | 0.6− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2000 09 07 | 691 | 0.3+ | 0.2− | 2000 09 25 | 704 | 2.0+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2000 09 07 | 691 | 0.4− | 0.1+ | 2000 09 25 | 704 | 0.7+ | 1.1− | 2006 10 21 | 703 | 0.3+ | 0.7− |
| 2000 09 24 | 699 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.1+ | 0.5+ |
| 2000 09 24 | 699 | 1.2− | 0.2+ | 2006 10 10 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.5− |
| 2000 09 24 | 704 | 1.5+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.1+ | 1.0− | 2006 10 11 | 291 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2000 09 24 | 704 | 0.8− | 0.5− | 2006 10 11 | 291 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.5− | 0.1− | | |
| 2000 09 24 | 699 | 0.1+ | 0.6− | 2006 10 11 | 291 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2000 09 24 | 704 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.9+ | 2006 10 22 | G96 | 0.4+ | 0.6− | | |
| 2000 09 24 | 704 | 0.1+ | 0.7+ | 2006 10 15 | 703 | 1.1− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.5− | | |
| 2000 09 24 | 704 | 0.2− | 0.3+ | 2006 10 15 | 703 | (0.1− | 2.1+) | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2000 09 24 | 704 | 0.7+ | 1.0+ | 2006 10 15 | 703 | 1.1− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.4− | | |
| 2000 09 24 | 699 | 1.9− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2000 09 24 | 704 | 0.4− | 0.7− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1+ | | |
| 2000 09 24 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.2− | | |
| 2000 09 25 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | |

### 2000 $SB_{41}$ = 2006 $TF_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.14685 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17538420 | $\omega$ | 307.27373 | +0.93420460 | | +0.35601706 | |
| $a$ | 3.1608877 | $\Omega$ | 31.88854 | −0.31221879 | | +0.84670171 | |
| $e$ | 0.1784037 | $i$ | 2.45880 | −0.17257229 | | +0.39540874 | |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 704 | 0.9− | 0.0 | 2000 10 01 | 704 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2000 09 05 | 704 | 0.2+ | 0.2− | 2000 10 01 | 704 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2000 09 05 | 704 | 0.4− | 1.4− | 2000 10 01 | 704 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.3+ | | |
| 2000 09 05 | 704 | 0.2− | 0.8− | 2000 10 01 | 704 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.3+ | | |
| 2000 09 24 | 699 | (3.2+ | 1.7+) | 2000 10 01 | 699 | 0.8+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.5− | | |
| 2000 09 24 | 699 | (2.7+ | 0.7+) | 2000 10 01 | 699 | 0.7− | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.7− | | |
| 2000 09 24 | 704 | 0.5− | 0.3+ | 2000 10 01 | 699 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.6− | | |
| 2000 09 24 | 699 | (2.8+ | 0.5−) | 2000 10 01 | 699 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.6− | | |
| 2000 09 24 | 704 | 0.3+ | 0.2− | 2000 10 02 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.0 | | |
| 2000 09 24 | 699 | (3.7+ | 0.0 ) | 2000 10 02 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.5+ | | |
| 2000 09 24 | 704 | 0.3− | 0.1− | 2000 10 02 | 704 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.3− | | |
| 2000 09 24 | 704 | 0.5− | 0.2− | 2000 10 02 | 704 | 0.2− | 0.6+ | 2006 11 12 | G96 | 0.4+ | 0.2− | | |
| 2000 09 25 | 704 | 0.2+ | 0.8− | 2000 10 02 | 704 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2000 09 25 | 704 | 0.1− | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.2− | | |
| 2000 09 25 | 704 | 0.2− | 0.7− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 1.4+ | 1.4− | | |
| 2000 09 25 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.5− | 0.2− | | |
| 2000 09 25 | 704 | 0.5− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.6+ | | |
| 2000 09 25 | 704 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.2+ | | |
| 2000 09 25 | 704 | 0.2+ | 1.0− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.1+ | 0.2− | | |
| 2000 09 25 | 704 | 0.1− | 0.7+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.2+ | | |
| 2000 09 25 | 704 | 0.7− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.7− | | |
| 2000 09 25 | 704 | 0.9+ | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.3+ | | |
| 2000 09 27 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.5− | | |
| 2000 09 27 | 704 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.3− | | |
| 2000 09 27 | 704 | 0.7+ | 0.8− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− | | |
| 2000 09 27 | 704 | 1.0− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2+ | | |
| 2000 09 27 | 704 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 1.2− | 0.4− | | |
| 2000 09 28 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.5− | | |
| 2000 09 28 | 704 | 0.4− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.2− | | |
| 2000 09 28 | 704 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.4+ | 2006 11 27 | 703 | 1.0− | 0.0 | | |
| 2000 09 28 | 704 | 1.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.3+ | | | | | | |
| 2000 10 01 | 704 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.0 | | | | | | |

### 2000 $SC_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.51220 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18014925 | $\omega$ | 261.18717 | +0.20282236 | | −0.97899435 | |
| $a$ | 3.1049008 | $\Omega$ | 176.87215 | +0.97912004 | | +0.20245994 | |
| $e$ | 0.2146104 | $i$ | 22.42213 | +0.01367579 | | +0.02408392 | |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3+ | 0.1+ | 2002 02 15 | 704 | 0.8+ | 1.2+ | 2006 11 17 | 703 | (0.8− | 1.8−) | | |
| 2000 09 24 | 704 | 1.2− | 0.1− | 2002 02 15 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 703 | 0.6− | 0.1+ | | |
| 2000 09 24 | 704 | 1.4− | 0.2+ | 2002 02 15 | 704 | 0.4+ | 0.0 | 2006 11 19 | 703 | 0.8− | 0.2+ | | |
| 2000 09 25 | 704 | 0.5+ | 0.5+ | 2002 02 15 | 704 | 0.5+ | 0.0 | 2006 11 19 | 703 | 0.6+ | 0.1+ | | |
| 2000 09 25 | 704 | 0.1+ | 0.6+ | 2002 02 15 | 704 | 0.4+ | 0.4− | 2006 11 19 | 703 | 1.5− | 0.8+ | | |
| 2000 09 25 | 704 | 0.3+ | 0.6+ | 2002 02 21 | 644 | 0.7− | 0.9− | 2006 11 19 | 703 | 1.0+ | 0.5+ | | |
| 2000 09 25 | 704 | 0.2− | 0.4− | 2002 02 21 | 644 | 0.6− | 0.7− | 2006 11 19 | 703 | 0.5− | 0.3+ | | |
| 2000 10 02 | 704 | 0.1+ | 0.9+ | 2002 02 21 | 644 | 0.1− | 0.4− | 2006 11 19 | 703 | 0.9+ | 0.3+ | | |
| 2000 10 02 | 704 | 0.5+ | 0.3+ | 2003 04 27 | 645 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.1− | | |
| 2000 10 02 | 704 | 1.0+ | 1.1+ | 2003 04 27 | 645 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.7+ | 0.6+ | | |
| 2000 10 02 | 704 | 0.3− | 0.0 | 2003 04 28 | 645 | 0.0 | 0.1+ | 2006 11 24 | 703 | 0.4− | 0.5+ | | |
| 2002 02 09 | 644 | 0.1+ | 0.3+ | 2003 04 28 | 645 | 0.1+ | 0.1+ | 2006 11 24 | 703 | 0.8+ | 0.4− | | |
| 2002 02 09 | 644 | 0.3− | 0.6+ | 2006 11 17 | 703 | 0.8− | 0.7+ | 2006 11 24 | 703 | 0.9+ | 0.5+ | | |
| 2002 02 09 | 644 | 0.7− | 0.2− | 2006 11 17 | 703 | 0.5− | 0.5− | 2006 11 24 | 703 | 0.6+ | 0.1− | | |

### 2000 $SD_{42}$ = 2006 $UO_{229}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.32743 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17686145 | $\omega$ | 225.71939 | +0.81133171 | | −0.58407945 | |
| $a$ | 3.1432621 | $\Omega$ | 169.93475 | +0.56814148 | | +0.77802252 | |
| $e$ | 0.2066259 | $i$ | 8.00288 | +0.13768120 | | +0.23137016 | |
| $P$ | 5.57 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.8− | 1.1− | | |
| 2000 09 24 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.6− | 2006 11 15 | 703 | 0.4− | 0.4− | | |
| 2000 09 24 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.0 | 0.6+ | | |
| 2000 09 25 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.2+ | 2006 11 19 | 703 | 1.0+ | 0.8+ | | |
| 2000 09 25 | 704 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.7+ | 0.1+ | 2006 11 19 | 703 | 1.6− | 0.3+ | | |
| 2000 09 25 | 704 | 0.3− | 0.6− | 2006 10 22 | 703 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.0 | 0.7+ | | |
| 2000 09 25 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 1.5− | 1.3− | 2006 11 19 | 703 | 0.8+ | 0.9+ | | |
| 2000 10 02 | 704 | 0.9− | 1.0− | 2006 10 30 | 703 | 0.1− | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.1+ | 0.4+ | 2006 10 30 | 703 | 0.5+ | 0.5− | 2006 12 01 | G96 | 0.4+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.3+ | 0.5− | 2006 10 30 | 703 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.1− | | |
| 2000 10 02 | 704 | 0.1+ | 0.4+ | 2006 10 30 | 703 | 0.4+ | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.1+ | | |
| 2000 10 02 | 704 | 1.1+ | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.4− | | | | | | |

### 2000 $SO_{48}$ = 2006 $VV_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.07096 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18332212 | $\omega$ | 121.85982 | +0.98743796 | | −0.06595200 | |
| $a$ | 3.0689712 | $\Omega$ | 242.27708 | +0.01618686 | | +0.94616526 | |
| $e$ | 0.1711284 | $i$ | 9.33489 | +0.15717591 | | +0.31689374 | |
| $P$ | 5.38 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.2+ | | |
| 2000 09 23 | 704 | 0.5− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 0.2− | | |
| 2000 09 23 | 704 | 1.0− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.4+ | | |
| 2000 09 25 | 699 | (2.4− | 0.4+) | 2006 10 28 | 704 | 0.2− | 0.8− | 2006 11 18 | 704 | 1.2− | 0.3− | | |
| 2000 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 28 | 704 | 0.4+ | 1.0− | 2006 11 18 | 704 | 0.5− | 0.1− | | |
| 2000 09 25 | 699 | 0.8+ | 0.2− | 2006 10 28 | 704 | 1.3+ | 1.3− | 2006 11 21 | 704 | 0.0 | 0.7+ | | |
| 2000 09 25 | 699 | 1.1+ | 0.5− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.1+ | | |
| 2000 09 26 | 704 | 0.7− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.0− | 0.9+ | | |
| 2000 09 26 | 704 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.3− | 0.8+ | | |
| 2000 09 26 | 704 | 0.1+ | 1.0+ | 2006 11 09 | D35 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.9+ | | |
| 2000 09 26 | 704 | 0.9− | 0.5+ | 2006 11 09 | D35 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.2+ | | |
| 2000 10 03 | 704 | 0.9+ | 1.1+ | 2006 11 09 | D35 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.3+ | | |
| 2000 10 03 | 704 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.9+ | 1.4+ | 2006 11 22 | 691 | 0.4+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.8− | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2004 05 23 | 691 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2004 05 23 | 691 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.7+ | 0.7+ | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2004 05 23 | 691 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2005 05 13 | G96 | 0.2− | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.1− | 2006 11 27 | 704 | 0.1− | 0.3− | | |
| 2005 05 13 | G96 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 704 | 0.5− | 1.0+ | | |
| 2005 05 13 | G96 | 0.1+ | 0.5− | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 27 | 704 | 0.3− | 0.0 | | |
| 2005 05 13 | G96 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.3− | 0.1+ | 2006 11 27 | 185 | 0.2+ | 1.2+ | | |
| 2006 10 16 | 703 | (1.3+ | 1.7+) | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 27 | 185 | 0.7+ | 0.4+ | | |
| 2006 10 16 | 703 | 1.0+ | 1.3+ | 2006 11 18 | 691 | 0.4− | 0.1+ | 2006 11 27 | 185 | 0.5− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 16 | 703 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.4− | 0.2− | | | | | | |
| 2006 10 16 | 703 | 0.3+ | 0.4− | 2006 11 18 | 691 | 0.7+ | 1.0− | | | | | | |

**2000 SQ$_{48}$ = 2006 UE$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.77695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17918531 | $\omega$ | 178.66322 | | +0.99807754 | | −0.05667300 |
| $a$ | 3.1160263 | $\Omega$ | 184.80622 | | +0.05372240 | | +0.99293790 |
| $e$ | 0.1939075 | $i$ | 17.42316 | | +0.03090514 | | +0.10422328 |
| $P$ | 5.50 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.1− | 0.8− | 2000 10 03 | 704 | 1.0+ | 0.9+ | 2006 10 29 | G96 | 0.2+ | 0.1− | | |
| 2000 09 01 | 704 | 0.0 | 0.6+ | 2006 09 30 | 699 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.2+ | 0.1− | | |
| 2000 09 01 | 704 | 0.5− | 0.1+ | 2006 09 30 | 699 | 0.2− | 0.3+ | 2006 10 30 | G96 | 0.4+ | 0.4− | | |
| 2000 09 01 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 699 | 0.1+ | 1.3− | 2006 10 30 | G96 | 0.1+ | 0.2− | | |
| 2000 09 01 | 704 | 0.3− | 0.1− | 2006 09 30 | 699 | 0.4+ | 0.9+ | 2006 10 30 | G96 | 0.3+ | 0.1− | | |
| 2000 09 23 | 704 | 0.2+ | 0.2− | 2006 10 12 | 291 | 0.4− | 0.2+ | 2006 10 30 | G96 | 0.0 | 0.2− | | |
| 2000 09 23 | 704 | 0.2− | 0.3+ | 2006 10 12 | 291 | 0.3− | 0.0 | 2006 11 10 | 704 | 1.2− | 0.0 | | |
| 2000 09 23 | 704 | 0.5− | 0.2+ | 2006 10 12 | 291 | 0.3− | 0.0 | 2006 11 10 | 704 | 1.0+ | 1.2+ | | |
| 2000 09 23 | 704 | 0.4− | 0.3− | 2006 10 28 | 703 | 0.4+ | 0.8− | 2006 11 10 | 704 | 0.2+ | 0.1+ | | |
| 2000 09 23 | 704 | 0.0 | 0.6− | 2006 10 28 | 703 | 0.3+ | 0.4− | 2006 11 10 | 704 | 1.0+ | 0.0 | | |
| 2000 09 26 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.2+ | | |
| 2000 09 26 | 704 | 0.0 | 0.5− | 2006 10 28 | 703 | 0.3− | 0.4− | 2006 11 16 | 703 | 0.0 | 0.8+ | | |
| 2000 09 26 | 704 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.4− | 2006 11 16 | 703 | 0.0 | 0.7+ | | |
| 2000 09 26 | 704 | 0.0 | 0.3− | 2006 10 29 | G96 | 0.6+ | 0.3− | 2006 11 16 | 703 | 0.5+ | 0.1− | | |
| 2000 09 26 | 704 | 0.4− | 0.0 | 2006 10 29 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.1− | 0.1+ | | |
| 2000 10 03 | 704 | 1.0− | 0.5+ | 2006 10 29 | G96 | 0.4+ | 0.2− | 2006 11 16 | 703 | 0.8− | 0.2− | | |
| 2000 10 03 | 704 | 1.3+ | 0.7− | 2006 10 29 | G96 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.4− | 0.9+ | | |
| 2000 10 03 | 704 | 0.2+ | 0.4+ | 2006 10 29 | G96 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.4+ | 0.0 | | |

**2000 SB$_{52}$ = 2006 SK$_{355}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.04984 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17988231 | $\omega$ | 338.63660 | | −0.99680271 | | −0.06199500 |
| $a$ | 3.1079719 | $\Omega$ | 198.02997 | | +0.07270449 | | −0.96541354 |
| $e$ | 0.0161467 | $i$ | 9.37303 | | −0.03314220 | | −0.25324556 |
| $P$ | 5.48 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.7+ | 0.3+ | 2003 03 07 | 704 | 0.5+ | 0.9+ | 2006 10 02 | G96 | 0.3+ | 0.5− | | |
| 2000 09 23 | 704 | 0.5− | 0.7+ | 2003 03 07 | 704 | (0.2− | 2.4+) | 2006 10 02 | G96 | 0.2+ | 0.3− | | |
| 2000 09 23 | 704 | 1.2− | 1.0+ | 2003 03 07 | 704 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.9− | 0.3+ | | |
| 2000 09 26 | 704 | (1.4− | 2.1+) | 2003 03 07 | 704 | (0.3− | 1.7+) | 2006 10 16 | 703 | 0.1− | 0.8+ | | |
| 2000 09 26 | 704 | 0.2+ | 0.4+ | 2003 04 01 | 691 | 0.3+ | 1.3+ | 2006 10 16 | 703 | 1.3− | 0.5+ | | |
| 2000 09 26 | 704 | 0.5+ | 0.1+ | 2003 04 01 | 691 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.3− | | |
| 2000 09 26 | 704 | 0.0 | 0.1+ | 2003 04 01 | 691 | 0.6+ | 0.6− | 2006 10 22 | 691 | 0.4− | 0.0 | | |
| 2000 10 03 | 704 | 0.7− | 0.5+ | 2004 04 30 | 691 | 0.4− | 0.8+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 2000 10 03 | 704 | 0.3+ | 1.4+ | 2004 04 30 | 691 | 0.1− | 0.8+ | 2006 10 22 | 691 | 0.3− | 0.0 | | |
| 2000 10 03 | 704 | 0.2+ | 0.9+ | 2004 04 30 | 691 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 2000 10 03 | 704 | 0.8− | 0.5+ | 2005 07 30 | 644 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2001 11 17 | 704 | 0.7− | 0.1− | 2005 07 30 | 644 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2001 11 17 | 704 | 0.2+ | 0.1− | 2005 07 30 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.0 | | |
| 2001 11 17 | 704 | 0.4− | 0.0 | 2005 09 02 | 644 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.2+ | | |
| 2001 11 17 | 704 | 0.0 | 0.3+ | 2005 09 02 | 644 | 0.5+ | 0.4+ | 2006 11 17 | 704 | 0.9+ | 0.7+ | | |
| 2001 11 17 | 704 | 0.4− | 0.4+ | 2005 09 02 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 1.2+ | | |
| 2001 12 11 | 704 | 0.4+ | 0.8+ | 2006 07 22 | G96 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.4+ | | |
| 2001 12 11 | 704 | 0.5+ | 0.9+ | 2006 07 22 | G96 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 1.4+ | 1.2+ | | |
| 2001 12 11 | 704 | 0.2− | 0.9+ | 2006 07 22 | G96 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.8+ | 2.3+ | | |
| 2001 12 11 | 704 | 0.3+ | 0.5+ | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.9+ | 0.1+ | | |
| 2002 01 08 | 209 | 0.7− | 0.6+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2002 01 08 | 209 | 0.7− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.2+ | | |
| 2002 01 08 | 209 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.4− | 0.4− | | |
| 2003 03 07 | 704 | 0.6− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.2− | | |
| 2003 03 07 | 704 | 0.4− | 1.4+ | 2006 10 02 | G96 | 0.0 | 0.2− | | | | | | |
| 2003 03 07 | 704 | 0.5− | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.4− | | | | | | |

**2000 SS$_{53}$ = 2006 UE$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.28869 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17950658 | $\omega$ | 354.01240 | | +0.88032783 | | −0.46436668 |
| $a$ | 3.1123073 | $\Omega$ | 34.19949 | | +0.44206149 | | +0.72900434 |
| $e$ | 0.0769007 | $i$ | 9.92553 | | +0.17205971 | | +0.50290780 |
| $P$ | 5.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.7+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.5− | | |
| 2000 09 24 | 704 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1− | 0.5− | | |
| 2000 09 24 | 704 | 0.4− | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.4− | 0.2+ | | |
| 2000 09 24 | 704 | 1.6+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.6− | | |
| 2000 09 26 | 704 | 0.5+ | 1.3+ | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.7+ | | |
| 2000 09 26 | 704 | 0.4− | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | (1.8+ | 0.4+) | | |
| 2000 09 26 | 704 | 0.4− | 0.6− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.4− | | |
| 2000 09 26 | 645 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− | | |
| 2000 09 26 | 645 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.5+ | 0.4+ | 2006 11 14 | G96 | 0.3− | 0.4− | | |
| 2000 09 26 | 704 | 1.0− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.4− | | |
| 2000 09 27 | 704 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.8− | 1.3+ | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2000 09 27 | 704 | 0.2+ | 1.0+ | 2006 10 27 | 703 | 1.0− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2000 09 27 | 704 | 0.6− | 0.7+ | 2006 10 27 | 703 | 0.3− | 0.9− | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2000 09 27 | 704 | 0.3− | 1.4+ | 2006 10 27 | 703 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.1− | | |
| 2003 03 24 | 557 | 0.1+ | 0.7− | 2006 11 01 | G96 | 0.4+ | 0.4− | | | | | | |
| 2003 03 24 | 557 | 0.5− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− | | | | | | |

**2000 SG$_{62}$ = 1994 RD$_{21}$ = 2006 SW$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.84516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17033430 | $\omega$ | 356.66815 | | +0.99875765 | | −0.04979616 |
| $a$ | 3.2230569 | $\Omega$ | 6.18707 | | +0.04611151 | | +0.90930851 |
| $e$ | 0.1989690 | $i$ | 0.99521 | | +0.01889154 | | +0.41313239 |
| $P$ | 5.79 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 05 | 809 | 0.5− | 0.4− | 2000 10 02 | 704 | 0.9− | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.2+ | | |
| 1994 09 05 | 809 | 1.0− | 0.7− | 2000 10 02 | 704 | 0.9+ | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.1+ | | |
| 1994 09 05 | 809 | (2.6− | 1.7−) | 2000 10 02 | 704 | 1.6+ | 0.8− | 2006 10 20 | 691 | 0.1− | 0.2− | | |
| 1994 09 06 | 809 | 1.5+ | 0.5+ | 2000 10 02 | 704 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.4− | | |
| 1994 09 06 | 809 | 1.0+ | 0.7− | 2006 09 22 | 184 | 0.4+ | 0.9+ | 2006 10 21 | 703 | 0.0 | 1.2+ | | |
| 1994 09 06 | 809 | 0.1+ | 0.4− | 2006 09 22 | 184 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.5− | | |
| 2000 09 24 | 704 | 0.3+ | 0.8+ | 2006 09 22 | 184 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.6+ | | |
| 2000 09 24 | 704 | 0.5+ | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.4− | | |
| 2000 09 24 | 704 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2000 09 24 | 691 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2000 09 24 | 704 | 1.4− | 0.5− | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.3− | 0.4− | | |
| 2000 09 24 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.1− | | |
| 2000 09 24 | 704 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.2− | | |
| 2000 09 24 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.4+ | | |
| 2000 09 26 | 704 | 0.8+ | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.5− | | |
| 2000 09 26 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.5− | 0.1− | | |
| 2000 09 26 | 704 | 0.7+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.2− | | |
| 2000 09 26 | 704 | 0.2+ | 0.5+ | 2006 10 13 | 958 | (1.5− | 0.5−) | 2006 11 13 | G96 | 0.4− | 0.4− | | |
| 2000 09 26 | 704 | 0.1− | 0.9+ | 2006 10 13 | 958 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.5− | 0.6− | | |
| 2000 10 01 | 704 | 0.3− | 1.0− | 2006 10 14 | 958 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.1− | 0.2− | | |
| 2000 10 01 | 704 | 0.2+ | 0.7− | 2006 10 14 | 958 | 0.6+ | 0.5+ | 2006 11 17 | 691 | 0.3+ | 0.1− | | |
| 2000 10 01 | 704 | 0.6+ | 0.8− | 2006 10 15 | 958 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.3− | | |
| 2000 10 01 | 699 | 0.3− | 0.9+ | 2006 10 15 | 958 | 0.1+ | 0.2− | 2006 11 21 | 691 | 0.2− | 0.0 | | |
| 2000 10 01 | 699 | 0.6− | 0.6+ | 2006 10 15 | 958 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.3+ | | |
| 2000 10 01 | 699 | 0.2− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.2− | 0.2− | | |
| 2000 10 01 | 699 | 1.0− | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.0 | | | | | | |
| 2000 10 02 | 704 | 0.7+ | 0.6− | 2006 10 16 | 691 | 0.7+ | 0.2+ | | | | | | |

**2000 SK$_{65}$ = 2006 VY$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.87561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17682511 | $\omega$ | 295.70008 | | +0.99716735 | +0.07114625 | |
| $a$ | 3.1436927 | $\Omega$ | 60.22864 | | −0.05490009 | +0.91023917 | |
| $e$ | 0.2054370 | $i$ | 1.61098 | | −0.05141264 | +0.40792508 | |
| $P$ | 5.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.7+ | 0.7− | 2000 10 02 | 704 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.0+ | 0.3− |
| 2000 09 24 | 704 | 1.0− | 0.9+ | 2000 10 02 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.3+ | 1.9+ | 2000 10 02 | 645 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.1− |
| 2000 09 26 | 704 | 0.0 | 0.5+ | 2000 10 02 | 645 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2000 09 26 | 704 | 0.1− | 0.0 | 2004 04 24 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 1.2+ | 1.2− |
| 2000 09 26 | 704 | 0.8− | 0.9+ | 2004 04 24 | 691 | 0.3+ | 0.6+ | 2006 11 20 | 704 | (1.6− | 1.1−) |
| 2000 09 26 | 704 | 1.0− | 0.1− | 2004 04 24 | 691 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.8+ |
| 2000 09 26 | 704 | 0.1+ | 1.5+ | 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.7− | 0.6+ |
| 2000 10 01 | 704 | 0.5− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2000 10 01 | 704 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2000 10 01 | 704 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.3− | 1.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.6− | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6− | 0.2− |
| 2000 10 01 | 699 | 0.7+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2000 10 01 | 699 | 0.6+ | 1.0+ | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2000 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 1.2− | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2000 10 01 | 699 | 1.0+ | 0.9+ | 2006 11 11 | 703 | 1.3+ | 0.5− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2000 10 01 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.7− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2000 10 01 | 699 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.7− | 0.8− | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2000 10 01 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2000 10 02 | 704 | 0.4+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.5− | 0.5+ | 2006 11 18 | 691 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2000 10 02 | 704 | 0.5− | 0.9+ | 2006 11 18 | 704 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.2− |

**2000 SR$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.66511 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27442842 | $\omega$ | 296.23231 | | +0.69333680 | +0.72004622 | |
| $a$ | 2.3452186 | $\Omega$ | 17.75839 | | −0.62318425 | +0.61904630 | |
| $e$ | 0.1659320 | $i$ | 5.37907 | | −0.36183625 | +0.31355242 | |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 19 | 691 | 0.1− | 0.6− | 2000 10 01 | 704 | 0.1+ | 0.1+ | 2006 02 02 | G96 | 0.1− | 0.3− |
| 1999 04 19 | 691 | 0.1− | 0.5− | 2000 10 01 | 699 | 0.4− | 0.2+ | 2006 02 02 | G96 | 0.3− | 0.7− |
| 1999 04 19 | 691 | 0.0 | 0.8+ | 2000 10 01 | 704 | 0.5+ | 0.0 | 2006 02 27 | G96 | 0.0 | 0.2− |
| 2000 09 24 | 704 | 0.6− | 0.7− | 2000 10 01 | 699 | 0.2+ | 0.9+ | 2006 02 27 | G96 | 0.0 | 0.1+ |
| 2000 09 24 | 704 | 0.5− | 0.5+ | 2000 10 01 | 699 | 0.0 | 0.4− | 2006 02 27 | G96 | 0.0 | 0.2− |
| 2000 09 24 | 704 | 0.7+ | 0.4+ | 2000 10 01 | 699 | 0.2− | 0.4+ | 2006 02 27 | G96 | 0.0 | 0.3− |
| 2000 09 24 | 704 | 0.3− | 0.5− | 2000 10 02 | 704 | 1.2+ | 0.1− | 2006 03 08 | 691 | 0.3+ | 0.3− |
| 2000 09 24 | 704 | 1.1− | 1.2− | 2000 10 02 | 704 | 0.3− | 0.1+ | 2006 03 08 | 691 | 0.6+ | 0.2+ |
| 2000 09 26 | 704 | 0.6+ | 0.0 | 2000 10 02 | 704 | 0.2− | 0.6+ | 2006 03 08 | 691 | 0.0 | 0.4+ |
| 2000 09 26 | 704 | 0.2− | 1.0− | 2000 11 18 | 691 | 0.2+ | 0.5− | 2006 03 29 | 691 | 0.0 | 0.2+ |
| 2000 09 26 | 704 | 0.4− | 0.1+ | 2000 11 18 | 691 | 0.6+ | 0.5− | 2006 03 29 | 691 | 0.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2000 11 18 | 691 | 0.8− | 1.0+ | 2006 03 29 | 691 | 1.0− | 0.1− |
| 2000 10 01 | 704 | 0.6+ | 0.4− | 2006 02 02 | G96 | 0.1+ | 0.4− | | | | |
| 2000 10 01 | 704 | 0.5+ | 0.2+ | 2006 02 02 | G96 | 0.1− | 0.6− | | | | |

**2000 SP$_{88}$ = 2006 HE$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.89570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28994889 | $\omega$ | 178.77556 | | +0.93665220 | +0.34847262 | |
| $a$ | 2.2607632 | $\Omega$ | 160.71454 | | −0.32226092 | +0.89691437 | |
| $e$ | 0.1663081 | $i$ | 6.14393 | | −0.13722448 | +0.27223418 | |
| $P$ | 3.40 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.2+ | 1.1+ | 2002 02 14 | 291 | 0.0 | 1.0+ | 2005 01 16 | 691 | 0.1+ | 0.2− |
| 2000 09 24 | 704 | 0.8− | 0.7+ | 2002 03 12 | 291 | 0.3+ | 0.6+ | 2005 01 16 | 691 | 0.1+ | 0.1− |
| 2000 09 24 | 704 | 0.3+ | 0.3− | 2002 03 12 | 291 | 0.2+ | 0.3+ | 2006 04 30 | 691 | 0.3− | 0.2+ |
| 2000 09 26 | 704 | 0.4+ | 0.5+ | 2002 03 12 | 645 | 0.1− | 0.2− | 2006 04 30 | 691 | 0.2+ | 0.1− |
| 2000 09 26 | 704 | 0.5− | 0.9+ | 2002 03 12 | 645 | 0.1− | 0.2− | 2006 04 30 | 691 | 0.3+ | 0.2+ |
| 2000 09 26 | 704 | 0.4− | 0.5− | 2002 03 12 | 291 | 0.1− | 0.3+ | 2006 05 05 | 691 | 0.1− | 0.1+ |
| 2002 02 13 | 645 | 0.1− | 0.1− | 2002 03 21 | 291 | 0.3+ | 0.5+ | 2006 05 05 | 691 | 0.0 | 0.2− |
| 2002 02 13 | 645 | 0.3− | 0.2− | 2002 03 21 | 291 | 0.7+ | 0.2+ | 2006 05 05 | 691 | 0.0 | 0.0 |
| 2002 02 14 | 291 | 1.0+ | 0.5+ | 2002 03 21 | 291 | 0.1− | 0.5+ | | | | |
| 2002 02 14 | 291 | 0.6+ | 0.7+ | 2005 01 16 | 691 | 0.2− | 0.1− | | | | |

**2000 SD$_{89}$ = 2006 SL$_{364}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.50513 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17881240 | $\omega$ | 21.66852 | | +0.47925212 | −0.86831868 | |
| $a$ | 3.1203571 | $\Omega$ | 40.00389 | | +0.77322477 | +0.34880494 | |
| $e$ | 0.0734112 | $i$ | 11.46969 | | +0.41526000 | +0.35264400 | |
| $P$ | 5.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | (2.4− | 1.1+) | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.7+ |
| 2000 09 23 | 699 | 1.4− | 0.4− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1− | 1.5− |
| 2000 09 23 | 699 | 0.4− | 1.1− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.9+ | 0.3− |
| 2000 09 23 | 699 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2000 09 25 | 704 | 0.0 | 0.6− | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.4+ | 1.2− |
| 2000 09 25 | 704 | 0.2+ | 0.7− | 2006 10 20 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.4− |
| 2000 09 25 | 704 | 0.2+ | 1.4− | 2006 10 20 | G96 | 0.5− | 0.2− | 2006 11 19 | 704 | 0.4− | 0.8− |
| 2000 09 25 | 704 | (0.3− | 2.2−) | 2006 10 20 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2000 09 26 | 704 | 1.1+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 1.2− | 2006 11 19 | 704 | 0.1+ | 1.1+ |
| 2000 09 26 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2000 09 26 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 1.4− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2000 09 26 | 704 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.1− | 0.8+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2000 10 02 | 704 | 0.3− | 1.1+ | 2006 11 16 | 704 | 0.1− | 1.0+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2000 10 02 | 704 | 0.4+ | 0.6+ | 2006 11 16 | 704 | 1.0+ | 0.2− | 2006 11 22 | 704 | 0.7+ | 0.4− |
| 2000 10 02 | 704 | 0.2+ | 1.0+ | 2006 11 16 | 704 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 1.1+ |
| 2000 10 02 | 704 | 0.1− | 0.6+ | 2006 11 16 | 704 | 0.5+ | 1.4+ | 2006 11 22 | 704 | 1.4− | 0.4+ |
| 2001 11 21 | 645 | 0.1− | 0.0 | 2006 11 17 | 704 | (0.4− | 1.9−) | 2006 11 22 | 704 | 0.7+ | 0.3+ |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 11 17 | 704 | 1.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 01 14 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.4− | 2006 11 27 | 704 | 0.5− | 0.5+ |
| 2002 01 14 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 1.4+ | 0.3+ | 2006 11 27 | 704 | 0.5− | 0.0 |
| 2002 01 14 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.6+ | 1.4+ |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.1− | 2006 11 27 | 704 | (0.4− | 1.6+) |
| 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.1− | 0.1− | | | | |
| 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 17 | G96 | 0.0 | 0.4− | | | | |

**2000 SZ$_{89}$ = 2006 UO$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.25900 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18208182 | $\omega$ | 86.26418 | | +0.88860782 | +0.41655303 | |
| $a$ | 3.0828921 | $\Omega$ | 249.03671 | | −0.45798308 | +0.82867427 | |
| $e$ | 0.2850367 | $i$ | 11.86447 | | +0.02505254 | +0.37387501 | |
| $P$ | 5.41 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.3+ | 0.5− | 2000 09 27 | 704 | 0.6+ | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2000 09 01 | 704 | 0.0 | 0.4+ | 2000 09 27 | 704 | 0.6− | 1.1+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2000 09 01 | 704 | 0.8− | 0.1− | 2000 09 27 | 704 | 0.5+ | 0.6− | 2006 10 20 | G96 | 0.1− | 0.2+ |
| 2000 09 01 | 704 | 0.2+ | 0.3− | 2000 09 27 | 704 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2000 09 01 | 704 | 0.2+ | 0.1− | 2000 10 04 | 704 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2000 09 20 | 608 | 0.4− | 0.5− | 2000 10 04 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2000 09 20 | 608 | 0.2+ | 1.0− | 2000 10 04 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.1+ | 1.4− |
| 2000 09 20 | 608 | 0.3+ | 0.4− | 2000 10 04 | 704 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2000 09 22 | 704 | 0.2+ | 0.3+ | 2000 10 04 | 704 | 1.1+ | 0.7− | 2006 11 11 | 703 | 0.6− | 0.3+ |
| 2000 09 22 | 704 | 0.6− | 1.2+ | 2006 10 19 | 703 | 0.6− | 1.0− | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2000 09 22 | 704 | 0.5− | 0.0 | 2006 10 19 | 703 | 1.3− | 0.3− | 2006 11 19 | 704 | 0.9+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.2+ | | |
| 2000 09 22 | 704 | 0.9− | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.7+ | 2006 11 19 | 704 | 1.2+ | 0.8+ | | |
| 2000 09 27 | 704 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.3− | | |

**2000 SB$_{92}$ = 2006 UO$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.47421 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17992690 | $\omega$ | 135.19034 | | +0.94213400 | | −0.28176500 |
| $a$ | 3.1074583 | $\Omega$ | 241.97714 | | +0.21962783 | | +0.92812730 |
| $e$ | 0.1268284 | $i$ | 11.87401 | | +0.25327286 | | +0.24328624 |
| $P$ | 5.48 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 699 | 0.9− | 0.2+ | 2006 10 27 | 703 | 1.2− | 0.5− | 2006 11 16 | 704 | 0.3− | 0.8+ | | |
| 2000 09 22 | 699 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 1.0+ | 1.5− | 2006 11 18 | G96 | 0.2+ | 0.0 | | |
| 2000 09 22 | 699 | 0.1+ | 1.3+ | 2006 10 27 | 703 | 0.1− | 0.8− | 2006 11 18 | G96 | 0.1− | 0.0 | | |
| 2000 09 22 | 699 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.0 | | |
| 2000 09 23 | 704 | 0.2+ | 1.3− | 2006 10 29 | 704 | 0.5+ | 0.8+ | 2006 11 18 | G96 | 0.4+ | 0.1− | | |
| 2000 09 23 | 704 | 0.3− | 0.2+ | 2006 10 29 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 704 | (0.4− | 6.2+) | | |
| 2000 09 23 | 704 | 0.3− | 0.4+ | 2006 10 29 | 704 | (2.3+ | 0.2−) | 2006 11 19 | 704 | (1.8+ | 4.9+) | | |
| 2000 09 27 | 704 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.1− | 0.1+ | 2006 11 19 | 704 | (1.7− | 4.5+) | | |
| 2000 09 27 | 704 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 19 | 704 | (0.1+ | 3.8+) | | |
| 2000 09 27 | 704 | 0.3+ | 0.9− | 2006 11 01 | G96 | 0.4+ | 0.1− | 2006 11 19 | 704 | (0.4− | 3.9+) | | |
| 2000 09 27 | 704 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.6+ | | |
| 2000 09 27 | 704 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.4+ | 0.7+ | 2006 11 22 | 704 | 0.4− | 0.0 | | |
| 2006 10 19 | 703 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.6− | 2006 11 22 | 704 | 0.4+ | 0.4+ | | |
| 2006 10 19 | 703 | 0.4− | 0.5− | 2006 11 14 | 703 | 0.7− | 0.5− | 2006 11 22 | 704 | 0.7− | 0.0 | | |
| 2006 10 19 | 703 | 0.8− | 0.2− | 2006 11 14 | 703 | 0.2− | 0.7− | 2006 11 22 | 704 | 0.8− | 0.2+ | | |
| 2006 10 19 | 703 | 0.1− | 0.3− | 2006 11 14 | 703 | 0.2− | 0.8+ | 2006 11 27 | 104 | 0.1+ | 0.3− | | |
| 2006 10 19 | 644 | 0.5− | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.4− | 2006 11 27 | 104 | 0.1+ | 0.4− | | |
| 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.0 | 2006 11 27 | 104 | 0.3− | 0.3− | | |
| 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.7− | 0.1− | 2006 11 28 | 104 | 0.2− | 0.0 | | |
| 2006 10 22 | 644 | 0.3− | 0.3+ | 2006 11 16 | 704 | 1.4+ | 0.8+ | 2006 11 28 | 104 | (4.8+ | 3.5+) | | |
| 2006 10 22 | 644 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.6+ | 2006 11 28 | 104 | 0.0 | 0.5− | | |
| 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 1.4+ | 0.5+ | 2006 11 28 | 104 | 0.2+ | 0.2− | | |

**2000 SM$_{92}$ = 2006 UH$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.61910 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17963288 | $\omega$ | 167.03489 | | +0.95320034 | | −0.26411998 |
| $a$ | 3.1108482 | $\Omega$ | 209.58283 | | +0.24392276 | | +0.95935778 |
| $e$ | 0.2241141 | $i$ | 17.34014 | | +0.17863595 | | +0.09936438 |
| $P$ | 5.49 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.1+ | 0.3− | 2000 10 03 | 704 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.5+ | 0.1− | | |
| 2000 09 23 | 704 | 0.3+ | 0.0 | 2000 10 03 | 704 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.2+ | 1.9+ | | |
| 2000 09 23 | 704 | 0.3+ | 0.1− | 2000 10 03 | 704 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.2− | | |
| 2000 09 23 | 704 | 0.6− | 1.0+ | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 10 30 | 703 | 0.3− | 0.4+ | | |
| 2000 09 23 | 704 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.5+ | 0.2− | 2006 10 30 | 703 | 0.5+ | 0.2− | | |
| 2000 09 27 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.9− | 2006 10 30 | 703 | 0.0 | 1.7− | | |
| 2000 09 27 | 704 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 0.9+ | 0.0 | 2006 10 30 | 703 | 0.7− | 0.4− | | |
| 2000 09 27 | 704 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.1− | | |
| 2000 09 27 | 704 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.1+ | | |
| 2000 10 03 | 704 | 0.7− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.2− | 0.3+ | | |
| 2000 10 03 | 704 | 0.8− | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.2+ | 2006 11 19 | 703 | 0.1− | 0.1− | | |

**2000 SP$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.85835 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22312415 | $\omega$ | 135.38540 | | +0.99590123 | | +0.07039978 |
| $a$ | 2.6921856 | $\Omega$ | 220.67897 | | −0.08545254 | | +0.93810350 |
| $e$ | 0.1071206 | $i$ | 4.99786 | | +0.02964127 | | +0.33912490 |
| $P$ | 4.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.6+ | 0.2− | 2000 10 01 | 699 | 0.9+ | 0.4− | 2004 07 18 | 704 | 0.1+ | 0.2+ | | |
| 2000 09 23 | 704 | 0.7+ | 0.6+ | 2000 10 03 | 704 | 0.2+ | 0.8+ | 2004 07 18 | 704 | 0.9− | 0.3− | | |
| 2000 09 23 | 704 | 0.3− | 0.7+ | 2000 10 03 | 704 | 0.3+ | 0.2+ | 2004 07 18 | 704 | 0.1+ | 0.5+ | | |
| 2000 09 27 | 704 | 0.4− | 0.1− | 2000 10 03 | 704 | 1.5− | 0.6+ | 2004 07 18 | 704 | 0.4− | 0.5+ | | |
| 2000 09 27 | 704 | 0.2+ | 0.8+ | 2003 04 05 | 691 | 0.1− | 0.7+ | 2004 08 12 | 704 | 0.1− | 0.3+ | | |
| 2000 09 27 | 704 | 0.1− | 0.6+ | 2003 04 05 | 691 | 0.4+ | 0.6+ | 2004 08 12 | 704 | 0.6+ | 0.4+ | | |
| 2000 09 27 | 704 | 0.2− | 0.3− | 2003 04 05 | 691 | 0.3+ | 0.4+ | 2004 08 12 | 704 | 0.1+ | 0.3− | | |
| 2000 09 27 | 704 | 0.9− | 0.4+ | 2004 07 16 | 704 | 1.6− | 0.2+ | 2005 12 21 | 703 | 1.2− | 0.6+ | | |
| 2000 10 01 | 699 | 0.7− | 0.5+ | 2004 07 16 | 704 | 0.5+ | 0.2+ | 2005 12 21 | 703 | 0.7+ | 1.6+ | | |
| 2000 10 01 | 699 | 0.7− | 0.2+ | 2004 07 16 | 704 | 0.0 | 0.6− | 2005 12 21 | 703 | 0.3− | 0.3− | | |
| 2000 10 01 | 699 | 0.2+ | 0.2+ | 2004 07 16 | 704 | 1.4+ | 0.0 | 2005 12 21 | 703 | 0.6+ | 1.4+ | | |

**2000 SR$_{122}$ = 2006 WN**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.81804 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17226317 | $\omega$ | 234.43816 | | +0.99523991 | | +0.08746861 |
| $a$ | 3.1989522 | $\Omega$ | 120.50797 | | −0.06515446 | | +0.92511706 |
| $e$ | 0.2631592 | $i$ | 2.85906 | | −0.07247352 | | +0.36946945 |
| $P$ | 5.72 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 699 | 0.9+ | 0.7− | 2000 11 02 | 704 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2000 09 22 | 699 | 1.0+ | 1.4+ | 2000 11 02 | 704 | 0.6+ | 0.6+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2000 09 22 | 699 | 0.4− | 0.4+ | 2000 11 02 | 704 | 0.6− | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.1− | | |
| 2000 09 22 | 699 | 1.0+ | 0.4− | 2000 11 02 | 704 | 0.7− | 0.7+ | 2006 11 20 | H07 | 0.1+ | 0.3+ | | |
| 2000 09 24 | 704 | 0.3+ | 0.5+ | 2000 11 02 | 704 | 0.1+ | 0.3+ | 2006 11 20 | H07 | 0.0 | 0.2+ | | |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2000 11 19 | 699 | 0.3+ | 0.5− | 2006 11 20 | H07 | 0.0 | 0.3+ | | |
| 2000 09 24 | 704 | 0.4+ | 0.8− | 2000 11 19 | 699 | 0.4+ | 1.3+ | 2006 11 20 | H07 | 0.1− | 0.6+ | | |
| 2000 09 24 | 704 | 1.0− | 0.6+ | 2000 11 19 | 699 | 0.1− | 1.0− | 2006 11 21 | 704 | 0.7+ | 0.6+ | | |
| 2000 09 24 | 704 | 0.5− | 0.2− | 2000 11 19 | 699 | 0.2− | 0.8+ | 2006 11 21 | 704 | 0.6− | 0.3− | | |
| 2000 09 26 | 608 | 0.4− | 0.5− | 2006 11 17 | H07 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.6− | | |
| 2000 09 26 | 608 | 0.8− | 0.2− | 2006 11 17 | H07 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.3+ | | |
| 2000 09 26 | 608 | 0.9− | 0.3− | 2006 11 18 | H07 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.0 | | |
| 2000 09 27 | 704 | 0.3+ | 0.0 | 2006 11 18 | H07 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.4− | 0.2− | | |
| 2000 09 27 | 704 | 0.1+ | 0.7− | 2006 11 18 | H07 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.2− | 0.2− | | |
| 2000 09 27 | 704 | 0.2− | 0.1− | 2006 11 18 | H07 | 0.0 | 0.4+ | 2006 11 24 | 691 | 0.1− | 0.1− | | |
| 2000 09 27 | 704 | 0.2+ | 1.0+ | 2006 11 18 | 704 | (0.6+ | 2.2−) | 2006 11 29 | 704 | 0.1+ | 0.3+ | | |
| 2000 09 27 | 704 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.7+ | | |
| 2000 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 704 | (0.3+ | 2.1−) | 2006 11 29 | 704 | 0.1+ | 0.3+ | | |
| 2000 09 27 | 704 | 0.3+ | 0.4− | 2006 11 18 | 704 | 1.0+ | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.2− | | |
| 2000 09 27 | 704 | 0.1+ | 0.3− | 2006 11 18 | 704 | (0.3+ | 2.6−) | 2006 11 29 | 704 | 0.2+ | 0.1− | | |
| 2000 09 27 | 704 | 0.5+ | 0.1− | 2006 11 19 | H07 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.2− | | |
| 2000 09 27 | 691 | 0.0 | 0.1− | 2006 11 19 | H07 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| 2000 09 27 | 691 | 0.2− | 0.2− | 2006 11 19 | H07 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.0 | 0.6− | | |
| 2000 09 27 | 691 | 0.1− | 0.1− | 2006 11 19 | H07 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.4− | | |

**2000 SQ$_{124}$ = 2000 TC$_{63}$**

Id. Minor Planet Center (d, *MPO* 11071)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.49800 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28542013 | $\omega$ | 338.72001 | | +0.93929566 | | −0.33233089 |
| $a$ | 2.2846148 | $\Omega$ | 41.00597 | | +0.33057668 | | +0.80996516 |
| $e$ | 0.1316251 | $i$ | 7.47171 | | +0.09188428 | | +0.48323144 |
| $P$ | 3.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.6− | 0.4+ | 2000 10 03 | 704 | 0.9+ | 0.5+ | 2000 10 25 | 704 | 0.6+ | 0.3+ | | |
| 2000 09 24 | 704 | 0.1+ | 0.3+ | 2000 10 03 | 704 | 0.5− | 0.8− | 2000 10 25 | 704 | 0.1− | 0.1+ | | |
| 2000 09 24 | 704 | 0.4+ | 0.6+ | 2000 10 03 | 684 | 0.3− | 1.0+ | 2000 10 31 | 704 | 0.3− | 0.6+ | | |
| 2000 09 24 | 704 | 0.4− | 0.1+ | 2000 10 03 | 684 | 0.3− | 0.7+ | 2000 10 31 | 704 | 0.2+ | 0.6− | | |
| 2000 09 27 | 704 | 0.6− | 0.3+ | 2000 10 03 | 684 | 0.5− | 0.7+ | 2000 10 31 | 704 | 0.4− | 0.0 | | |
| 2000 09 27 | 704 | 0.0 | 0.4+ | 2000 10 04 | 704 | 0.1+ | 0.2− | 2000 10 31 | 704 | 0.2− | 0.2− | | |
| 2000 09 27 | 704 | 0.2− | 0.1+ | 2000 10 04 | 704 | 0.0 | 0.3+ | 2000 11 02 | 704 | 1.0− | 0.4+ | | |
| 2000 09 27 | 704 | 0.4+ | 0.3− | 2000 10 04 | 704 | 0.3+ | 0.4− | 2000 11 02 | 704 | 0.4− | 0.1− | | |
| 2000 09 28 | 704 | 0.4− | 0.5− | 2000 10 05 | 704 | 0.1+ | 0.3− | 2000 11 02 | 704 | 0.2− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 1.1− | 0.1+ | 2000 10 05 | 704 | 0.1+ | 0.3+ | 2000 11 02 | 704 | 0.7− | 0.8+ | | |
| 2000 09 28 | 704 | 0.1− | 0.3+ | 2000 10 05 | 704 | 0.3+ | 0.7+ | 2000 11 02 | 704 | 0.3− | 0.1− | | |
| 2000 09 28 | 704 | 0.5− | 0.4+ | 2000 10 05 | 704 | 0.2+ | 0.3− | 2000 11 27 | 704 | 0.1− | 0.5+ | | |
| 2000 10 02 | 691 | 0.1+ | 0.1− | 2000 10 05 | 704 | 0.2+ | 0.4− | 2000 11 27 | 704 | 0.5+ | 0.2− | | |
| 2000 10 02 | 691 | 0.7+ | 1.2− | 2000 10 05 | 704 | 0.6+ | 0.4+ | 2000 11 27 | 704 | 0.3+ | 0.6+ | | |
| 2000 10 02 | 691 | 0.0 | 0.0 | 2000 10 05 | 704 | 0.5+ | 0.5− | 2000 11 27 | 704 | 0.7+ | 1.1− | | |
| 2000 10 03 | 704 | 0.4− | 0.3+ | 2000 10 05 | 704 | 0.5− | 0.4+ | 2000 11 27 | 704 | 0.1− | 0.5+ | | |
| 2000 10 03 | 704 | 0.0 | 0.8+ | 2000 10 05 | 684 | 0.3− | 0.4+ | 2000 11 27 | 704 | 0.6− | 0.3− | | |
| 2000 10 03 | 704 | 0.5− | 0.4− | 2000 10 05 | 684 | 0.2− | 0.5+ | 2000 11 27 | 704 | 0.5− | 1.2+ | | |
| 2000 10 03 | 704 | 0.5+ | 0.2− | 2000 10 05 | 704 | 0.2− | 0.3− | 2000 11 27 | 704 | 0.1+ | 0.1+ | | |
| 2000 10 03 | 704 | 0.5− | 0.1+ | 2000 10 05 | 704 | 1.1+ | 1.0+ | 2000 11 27 | 704 | 0.6− | 0.3− | | |
| 2000 10 03 | 704 | 0.2− | 0.1+ | 2000 10 06 | 684 | 0.3− | 0.2+ | 2002 04 12 | 644 | 0.3+ | 0.5+ | | |
| 2000 10 03 | 704 | 0.2− | 1.0− | 2000 10 06 | 684 | 0.5− | 0.5+ | 2002 04 12 | 644 | 0.4+ | 0.5+ | | |
| 2000 10 03 | 704 | 0.4+ | 0.5+ | 2000 10 24 | 704 | 0.2+ | 0.3+ | 2002 04 12 | 644 | 0.2+ | 0.5+ | | |
| 2000 10 03 | 704 | 0.9− | 0.4− | 2000 10 24 | 704 | 0.9+ | 1.2− | 2005 01 06 | 703 | 0.7+ | 0.1− | | |
| 2000 10 03 | 704 | 0.4− | 0.4+ | 2000 10 24 | 704 | 0.1− | 1.0− | 2005 01 06 | 703 | 1.1− | 0.4− | | |
| 2000 10 03 | 704 | 0.4− | 0.0 | 2000 10 25 | 704 | 0.8+ | 0.0 | 2005 01 06 | 703 | 0.2+ | 0.5− | | |
| 2000 10 03 | 704 | 0.7− | 0.3− | 2000 10 25 | 704 | 0.6+ | 0.2− | 2005 01 06 | 703 | 0.1− | 0.1+ | | |
| 2000 10 03 | 704 | 1.2+ | 0.6− | 2000 10 25 | 704 | 0.5+ | 0.5+ | | | | | | |

**2000 SS$_{130}$ = 2006 UX$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.59458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17788234 | $\omega$ | 126.91069 | | +0.96546785 | +0.18062913 | |
| $a$ | 3.1312241 | $\Omega$ | 223.59296 | | −0.21789355 | +0.95487530 | |
| $e$ | 0.2194712 | $i$ | 15.79921 | | +0.14280836 | +0.23576742 | |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 699 | 0.7− | 1.1− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.0 | | |
| 2000 09 05 | 699 | (2.2− | 0.8+) | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.3− | 1.1− | | |
| 2000 09 05 | 699 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | (0.9+ | 2.3+) | | |
| 2000 09 05 | 699 | (0.6− | 2.6−) | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.4− | | |
| 2000 09 06 | 704 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.4− | | |
| 2000 09 06 | 704 | 0.5− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.3− | | |
| 2000 09 06 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.4− | | |
| 2000 09 06 | 704 | 0.8− | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.4− | | |
| 2000 09 06 | 704 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.3− | 0.6− | | |
| 2000 09 22 | 704 | 0.1− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.3+ | | |
| 2000 09 22 | 704 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | (0.2+ | 1.8+) | | |
| 2000 09 22 | 704 | 0.7+ | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.7− | | |
| 2000 09 22 | 704 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.3− | | |
| 2000 09 22 | 704 | 0.8− | 1.7− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.8+ | | |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 1.3+ | | |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.4+ | | |
| 2000 09 28 | 704 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.1+ | | |
| 2000 09 28 | 704 | 0.8+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.4− | | |
| 2000 09 28 | 704 | 0.2+ | 0.1+ | 2006 11 02 | 703 | (0.9− | 2.0+) | 2006 11 21 | 704 | 0.8+ | 0.2− | | |
| 2000 09 28 | 704 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.0 | 1.3− | | |
| 2000 09 28 | 704 | 0.8− | 0.5+ | 2006 11 02 | 703 | 0.5− | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.4− | | |
| 2000 10 04 | 704 | 0.7+ | 0.9+ | 2006 11 02 | 703 | 0.9− | 0.4− | 2006 11 21 | 704 | 0.5− | 0.2+ | | |
| 2000 10 04 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.1− | 0.3+ | | |
| 2000 10 04 | 704 | 0.4+ | 1.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.0 | 1.2+ | | |
| 2000 10 04 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.5+ | | |
| 2000 10 04 | 704 | 0.0 | 0.8+ | 2006 11 09 | 644 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.1+ | | |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.9+ | 0.8+ | | |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | | | | | | |

**2000 SY$_{130}$ = 2006 SH$_{349}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.29138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18040004 | $\omega$ | 209.30781 | | +0.24629591 | −0.94564527 | |
| $a$ | 3.1020226 | $\Omega$ | 227.33853 | | +0.93593752 | +0.28896888 | |
| $e$ | 0.1243818 | $i$ | 16.78425 | | +0.25171272 | −0.14917108 | |
| $P$ | 5.46 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 608 | 0.2− | 0.6− | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 2000 09 19 | 608 | 0.6− | 0.7− | 2006 10 19 | 704 | 0.6+ | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.0 | | |
| 2000 09 19 | 608 | 0.3− | 0.4− | 2006 10 19 | 704 | (1.8− | 0.1−) | 2006 11 11 | 703 | 0.3+ | 0.9+ | | |
| 2000 09 22 | 704 | 0.1+ | 0.1− | 2006 10 19 | 704 | 0.8− | 0.8+ | 2006 11 11 | 703 | 1.1+ | 0.7+ | | |
| 2000 09 22 | 704 | 0.2− | 0.6+ | 2006 10 19 | 704 | (1.9− | 0.7+) | 2006 11 11 | 703 | 0.8+ | 0.5+ | | |
| 2000 09 22 | 704 | 0.5− | 1.0− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 1.0+ | | |
| 2000 09 22 | 704 | 0.2− | 0.9− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.4− | | |
| 2000 09 25 | 699 | 0.6− | 0.7+ | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1− | 0.2− | | |
| 2000 09 25 | 699 | (2.6− | 1.3+) | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.3+ | | |
| 2000 09 25 | 699 | 1.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 0.3− | | |
| 2000 09 25 | 699 | 1.2+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.0 | 0.3+ | | |
| 2000 09 28 | 704 | 0.3− | 0.9+ | 2006 10 29 | 704 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.1− | 0.5+ | | |
| 2000 09 28 | 704 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.8− | 0.5− | 2006 11 18 | 704 | 0.0 | 0.7− | | |
| 2000 09 28 | 704 | 0.7+ | 0.1+ | 2006 10 29 | 704 | 0.6− | 0.4+ | 2006 11 18 | 704 | 0.6+ | 0.3+ | | |
| 2000 09 28 | 704 | 0.0 | 0.3+ | 2006 10 29 | 704 | 1.1− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.1+ | | |
| 2000 09 28 | 704 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.3+ | 0.8+ | 2006 11 18 | 704 | 0.0 | 0.2− | | |
| 2006 09 29 | 704 | 0.9+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.3− | | |
| 2006 09 29 | 704 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.5− | | |
| 2006 09 29 | 704 | 0.7+ | 0.6− | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.2+ | | |
| 2006 09 29 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.4− | | |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.4− | | |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.4− | | |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.6+ | | |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5− | 0.0 | | |
| 2006 10 13 | 691 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.1+ | | |
| 2006 10 13 | 691 | 0.4− | 0.2− | 2006 11 10 | 644 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 0.5+ | 0.9− | | |
| 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.7+ | 0.6− | | |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.2− | | |
| 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | (1.6+ | 1.7−) | | |

**2000 SG$_{132}$ = 2006 UW$_{254}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.92218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17518531 | $\omega$ | 99.44178 | | +0.75515533 | +0.59374749 | |
| $a$ | 3.1632797 | $\Omega$ | 224.79895 | | −0.63885102 | +0.76159540 | |
| $e$ | 0.2699507 | $i$ | 23.22450 | | +0.14700273 | +0.25968512 | |
| $P$ | 5.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.2− | 0.1− | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.0 | | |
| 2000 09 22 | 704 | 0.9+ | 0.1− | 2006 10 13 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | | |
| 2000 09 22 | 704 | 0.4− | 1.5− | 2006 10 13 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 1.1− | | |
| 2000 09 22 | 704 | 0.8+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | (0.7+ | 1.8−) | | |
| 2000 09 22 | 704 | 0.2+ | 1.0− | 2006 10 27 | G96 | 0.5− | 0.7− | 2006 11 11 | 703 | (0.1+ | 2.0+) | | |
| 2000 09 22 | 704 | 0.0 | 0.7− | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 1.2− | 0.1− | | |
| 2000 09 28 | 704 | 0.7+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 11 | 644 | 0.1+ | 0.3+ | | |
| 2000 09 28 | 704 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 644 | 0.1+ | 0.0 | | |
| 2000 09 28 | 704 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2− | 2006 11 11 | 644 | 0.4− | 0.3− | | |
| 2000 09 28 | 704 | 0.5− | 0.8+ | 2006 10 28 | 691 | 0.5+ | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.3− | | |
| 2000 09 28 | 704 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.4− | | |
| 2000 10 04 | 704 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.2− | | |
| 2000 10 04 | 704 | 0.3+ | 1.2+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.0 | | |
| 2000 10 04 | 704 | 0.4− | 0.7+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.7+ | | |
| 2000 10 04 | 704 | 1.2− | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 1.5− | 0.1+ | | |
| 2002 02 08 | 645 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.8+ | | |
| 2002 02 08 | 645 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1− | 0.3− | 2006 11 18 | 704 | 1.6− | 0.2− | | |

**2000 SD$_{133}$ = 2006 VD$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.38211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18205730 | $\omega$ | 177.20960 | | +0.51555143 | −0.83896863 | |
| $a$ | 3.0831689 | $\Omega$ | 241.69942 | | +0.78227195 | +0.54379714 | |
| $e$ | 0.2159448 | $i$ | 11.40978 | | +0.34965315 | +0.02040372 | |
| $P$ | 5.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.6− | 0.2+ | 2005 06 30 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 1.2− | 0.2+ |
| 2000 09 23 | 704 | 0.2+ | 0.8+ | 2005 07 31 | 644 | 0.6+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2000 09 23 | 704 | 0.1+ | 0.1+ | 2005 07 31 | 644 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2000 09 23 | 704 | 0.3+ | 1.4+ | 2005 07 31 | 644 | 0.1+ | 0.6− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2000 09 28 | 704 | 0.7+ | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.3+ | 2006 11 25 | 291 | 0.1− | 0.1− |
| 2000 09 28 | 704 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.5+ | 2006 11 25 | 291 | 0.3− | 0.1+ |
| 2000 09 28 | 704 | 0.4− | 0.7− | 2006 11 14 | 704 | 0.3− | 1.1+ | 2006 11 25 | 291 | 0.2− | 0.0 |
| 2000 09 28 | 704 | 0.1− | 0.8− | 2006 11 14 | 704 | 0.3+ | 0.7− | 2006 11 27 | 291 | 1.1− | 0.6+ |
| 2000 09 28 | 704 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.0 | 2006 11 27 | 291 | 0.6− | 0.0 |
| 2000 10 03 | 704 | 0.7− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.0 | 2006 11 27 | 291 | 0.5− | 0.0 |
| 2000 10 03 | 704 | 0.4+ | 0.6− | 2006 11 17 | 704 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.5+ | 1.0− |
| 2000 10 03 | 704 | 0.5+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2000 10 03 | 704 | 0.6− | 0.8+ | 2006 11 19 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.1− |
| 2000 10 03 | 704 | 0.1− | 0.3+ | 2006 11 19 | 691 | 1.8+ | 0.7− | 2006 11 29 | 704 | 0.8+ | 0.6− |
| 2005 06 30 | 644 | 0.2− | 0.3− | 2006 11 20 | 704 | 1.0+ | 0.4+ | 2006 11 29 | 704 | 0.7+ | 0.3+ |
| 2005 06 30 | 644 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.7+ | | | | |

**2000 SB$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.00763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17978638 | $\omega$ | 163.45792 | | +0.85131767 | −0.50888407 | |
| $a$ | 3.1090774 | $\Omega$ | 227.84078 | | +0.45974783 | +0.84080695 | |
| $e$ | 0.1153365 | $i$ | 9.91607 | | +0.25276504 | +0.18460951 | |
| $P$ | 5.48 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.4− | 0.8− | 2006 09 27 | G96 | 0.6− | 0.2− | 2006 11 18 | 704 | 0.6+ | 1.2− |
| 2000 09 23 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.7− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.7− |
| 2000 09 23 | 704 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2000 09 23 | 704 | 0.6− | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.4− | 0.5− |
| 2000 09 23 | 704 | 0.6− | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2000 09 28 | 704 | 0.1− | 0.7− | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.7− | 0.5+ |
| 2000 09 28 | 704 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.8− | 0.3+ |
| 2000 09 28 | 704 | 0.5+ | 0.8− | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2000 09 28 | 704 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2000 09 28 | 704 | 1.1+ | 1.1− | 2006 11 02 | 703 | (1.0− | 2.0+) | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2000 10 03 | 704 | 0.3− | 0.5− | 2006 11 02 | 703 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2000 10 03 | 704 | 1.0− | 1.0− | 2006 11 02 | 703 | 0.8− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2000 10 03 | 704 | 1.1− | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.7− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2000 10 03 | 704 | 1.0+ | 0.3− | 2006 11 11 | 703 | 0.3− | 1.0− | 2006 11 25 | 704 | 0.9− | 0.9+ |
| 2000 10 03 | 704 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.4− | 2006 11 25 | 704 | 1.1− | 1.6+ |
| 2000 10 03 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.5+ | 0.8− | 2006 11 25 | 704 | 1.6+ | 0.4+ |
| 2000 10 03 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.2− | 2006 11 25 | 704 | 0.3+ | 0.3− |
| 2000 10 03 | 704 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2000 10 03 | 704 | 0.4+ | 1.9+ | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2000 10 25 | 704 | 0.7+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2000 10 25 | 704 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.3− | 0.5− | 2006 11 29 | 704 | 0.9− | 0.2+ |
| 2000 10 25 | 704 | 0.1− | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.7− | 0.2+ |
| 2005 10 25 | 291 | 0.4− | 0.5+ | 2006 11 15 | 691 | 0.6+ | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.2+ |
| 2005 10 25 | 291 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 1.2− | 0.1− |
| 2005 10 25 | 291 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.8− | 0.5+ |
| 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 18 | 704 | 1.0+ | 0.2− | | | | |
| 2006 09 27 | G96 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.7+ | | | | |

**2000 SS$_{135}$ = 2006 VK$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.25547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17417399 | $\omega$ | 140.17180 | | +0.98846594 | +0.10081110 | |
| $a$ | 3.1755126 | $\Omega$ | 214.54522 | | −0.12554257 | +0.96282392 | |
| $e$ | 0.1464424 | $i$ | 11.49601 | | +0.08470029 | +0.25061369 | |
| $P$ | 5.66 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.7− | 0.8− | 2006 10 04 | 703 | 0.4+ | 0.8+ | 2006 11 13 | 683 | 0.3+ | 0.0 |
| 2000 09 01 | 704 | 0.8− | 0.2− | 2006 10 04 | 703 | 0.9+ | 0.7+ | 2006 11 15 | 683 | 0.2+ | 0.1− |
| 2000 09 01 | 704 | 0.0 | 0.6− | 2006 10 04 | 703 | (0.5− | 1.7−) | 2006 11 15 | 683 | 0.3+ | 0.2− |
| 2000 09 23 | 704 | 0.0 | 0.1− | 2006 10 04 | 703 | 0.1+ | 1.1− | 2006 11 15 | 683 | 1.4− | 0.8+ |
| 2000 09 23 | 704 | 0.4+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2000 09 23 | 704 | 0.4− | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2000 09 28 | 704 | 0.5+ | 0.2− | 2006 10 24 | 644 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2000 09 28 | 704 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.4− |
| 2000 09 28 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.1− | 0.7− |
| 2000 09 28 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.7+ | 0.6+ |
| 2000 10 03 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2000 10 03 | 704 | 0.4+ | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2000 10 03 | 704 | 0.4− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.0+ | 0.0 |
| 2000 10 03 | 704 | 1.1+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.4− | 0.7− |
| 2000 10 03 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.7+ |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.2− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.7+ |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 13 | 683 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.4− |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 13 | 683 | (1.6+ | 0.3−) | 2006 11 20 | 704 | 0.2+ | 0.7− |

**2000 SL$_{136}$ = 2006 VS$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.64649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17623747 | $\omega$ | 150.40115 | | +0.99254527 | −0.07464091 | |
| $a$ | 3.1506770 | $\Omega$ | 214.29414 | | +0.04702003 | +0.96383843 | |
| $e$ | 0.1555745 | $i$ | 9.84575 | | +0.11244112 | +0.25582068 | |
| $P$ | 5.59 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.7− | 1.2+ |
| 2000 09 23 | 704 | 0.5− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2000 09 23 | 704 | 0.7− | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 1.3+ | 0.6− |
| 2000 09 28 | 704 | 1.0+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 1.4− | 0.2+ |
| 2000 09 28 | 704 | 0.5− | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 1.2+ |
| 2000 09 28 | 704 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.1+ |
| 2000 09 28 | 704 | 1.0− | 0.0 | 2006 11 02 | 703 | 0.9− | 1.0− | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2000 09 28 | 704 | 0.2+ | 1.3− | 2006 11 02 | 703 | 0.6− | 1.4− | 2006 11 18 | 704 | 1.0− | 0.6+ |
| 2000 10 03 | 704 | 0.0 | 0.2+ | 2006 11 02 | 703 | 0.7+ | 1.4− | 2006 11 18 | 704 | 1.4− | 0.3+ |
| 2000 10 03 | 704 | 1.0− | 0.3+ | 2006 11 02 | 703 | 1.0+ | 0.1− | 2006 11 20 | 704 | 1.0− | 0.6+ |
| 2000 10 03 | 704 | 0.9− | 0.0 | 2006 11 14 | 704 | 0.3+ | 1.3+ | 2006 11 20 | 704 | 0.1+ | 1.2+ |
| 2000 10 03 | 704 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.2+ | 1.4+ | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2000 10 06 | 691 | 0.5+ | 0.3− | 2006 11 14 | 704 | 1.1+ | 0.0 | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2000 10 06 | 691 | 0.3+ | 0.1− | 2006 11 14 | 704 | (0.7+ | 2.1+) | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2000 10 06 | 691 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2000 10 07 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2000 10 07 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2000 10 07 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.5− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2000 10 30 | 704 | 1.7− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2000 10 30 | 704 | 0.9− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.4− | 1.0− |
| 2000 10 30 | 704 | 0.4− | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.6+ | 0.6− |
| 2005 05 14 | G96 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2− | 0.6− | 2006 11 28 | 704 | 0.4− | 0.3− |
| 2005 05 14 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.8− | 2006 11 28 | 704 | 0.4+ | 0.5+ |
| 2005 05 14 | G96 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.2− |
| 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.5− | | | | |

**2000 SV$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.91656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17141870 | $\omega$ | 102.92030 | | +0.95132161 | +0.21632494 | |
| $a$ | 3.2094498 | $\Omega$ | 244.94050 | | −0.27559977 | +0.91593036 | |
| $e$ | 0.2331436 | $i$ | 14.02441 | | +0.13795639 | +0.33804599 | |
| $P$ | 5.75 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 08 | 699 | 0.7− | 0.8+ | 2000 11 30 | 645 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 2000 09 08 | 699 | 1.3− | 0.6+ | 2000 11 30 | 645 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.3− | 0.3+ |
| 2000 09 08 | 699 | 0.8− | 1.2− | 2006 10 19 | 703 | 0.5− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.2− |
| 2000 09 08 | 699 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.7− | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.7− | | |
| 2000 09 23 | 704 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.1+ | | |
| 2000 09 23 | 704 | 0.9+ | 0.1+ | 2006 10 19 | 703 | 1.1− | 1.0− | 2006 11 14 | 703 | 0.3+ | 0.7− | | |
| 2000 09 28 | 704 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.5− | 2006 11 14 | 703 | 0.1+ | 0.2− | | |
| 2000 09 28 | 704 | 0.7− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.1− | | |
| 2000 09 28 | 704 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.7+ | | |
| 2000 09 28 | 704 | 0.2+ | 0.0 | 2006 10 20 | A50 | 0.7+ | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.1− | | |
| 2000 09 28 | 704 | 0.5+ | 0.6+ | 2006 10 20 | A50 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.8+ | 0.5− | | |
| 2000 09 30 | 704 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.8+ | 1.1− | 2006 11 14 | G96 | 0.0 | 0.2− | | |
| 2000 09 30 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2000 09 30 | 704 | 0.4− | 1.0+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.7− | 0.7+ | | |
| 2000 09 30 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 691 | 0.2+ | 0.5+ | 2006 11 15 | 704 | 0.3− | 0.1− | | |
| 2000 10 03 | 699 | 1.9+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.3− | 1.0+ | | |
| 2000 10 03 | 699 | 0.7− | 0.6− | 2006 10 27 | 691 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.4− | | |
| 2000 10 03 | 699 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.0− | 0.9+ | | |
| 2000 10 03 | 699 | 0.1− | 0.8+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | (0.3+ | 1.9+) | | |
| 2000 10 25 | 704 | 1.6+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.5+ | | |
| 2000 10 25 | 704 | 0.2− | 1.0− | 2006 11 08 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.8+ | | |
| 2000 10 25 | 704 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | (1.6+ | 1.1+) | | |
| 2000 10 25 | 704 | 0.6+ | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 1.4+ | 1.3+ | | |
| 2000 11 01 | 704 | 1.1+ | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.5− | 1.2+ | | |
| 2000 11 01 | 704 | 0.7+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.1− | | |
| 2000 11 01 | 704 | (1.7+ | 2.9+) | 2006 11 09 | 644 | 0.0 | 0.4+ | | | | | | |
| 2000 11 01 | 704 | 1.0+ | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.3+ | | | | | | |

**2000 SR$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.54088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22973803 | $\omega$ | 323.99543 | | +0.77331742 | +0.63383553 | |
| $a$ | 2.6402646 | $\Omega$ | 356.55291 | | −0.50605451 | +0.60256509 | |
| $e$ | 0.2024069 | $i$ | 14.69674 | | −0.38195419 | +0.48494106 | |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.6+ | 0.1+ | 2000 10 02 | 704 | 0.5− | 0.7+ | 2004 07 14 | E12 | 0.1+ | 0.0 | | |
| 2000 09 23 | 704 | 0.5− | 0.9− | 2000 10 02 | 704 | 0.5− | 0.8+ | 2004 07 14 | E12 | 0.3+ | 0.1− | | |
| 2000 09 23 | 704 | 0.0 | 0.8− | 2000 10 02 | 704 | 0.5+ | 0.1+ | 2004 07 27 | E12 | 0.6+ | 0.1+ | | |
| 2000 09 28 | 704 | 0.5+ | 0.0 | 2000 10 03 | 704 | 0.5− | 0.8+ | 2004 07 27 | E12 | 0.1+ | 0.3+ | | |
| 2000 09 28 | 704 | 0.6+ | 0.1+ | 2000 10 03 | 704 | 0.6− | 0.6+ | 2004 07 27 | E12 | 2.6− | 1.5− | | |
| 2000 09 28 | 704 | 1.0− | 0.1− | 2000 10 03 | 704 | 0.9− | 0.2+ | 2004 07 27 | E12 | 0.7− | 0.6− | | |
| 2000 09 28 | 704 | 0.0 | 0.3− | 2000 10 03 | 704 | 0.1+ | 0.6+ | 2004 08 12 | E12 | 0.6− | 1.0+ | | |
| 2000 09 28 | 704 | 0.4− | 0.3+ | 2000 10 03 | 704 | 0.0 | 0.0 | 2004 08 12 | E12 | 0.2− | 0.3− | | |
| 2000 10 01 | 704 | 0.1− | 0.4− | 2002 01 09 | 645 | 0.1− | 0.0 | 2004 08 12 | E12 | 0.1+ | 0.1+ | | |
| 2000 10 01 | 704 | 0.9− | 0.3+ | 2002 01 09 | 645 | 0.1+ | 0.0 | 2004 08 12 | E12 | 0.2+ | 0.6+ | | |
| 2000 10 01 | 704 | 1.4+ | 0.1− | 2003 03 24 | 691 | 0.4+ | 0.1+ | 2004 09 05 | E12 | 0.1+ | 0.8+ | | |
| 2000 10 01 | 704 | 0.3− | 0.1+ | 2003 03 24 | 691 | 0.1+ | 0.6+ | 2004 09 05 | E12 | 0.9+ | 0.7+ | | |
| 2000 10 01 | 704 | 0.7− | 0.2+ | 2003 03 24 | 691 | 0.4+ | 0.3+ | 2004 09 05 | E12 | 0.1+ | 0.7− | | |
| 2000 10 02 | 704 | 0.4+ | 0.4− | 2004 07 14 | E12 | 0.6+ | 0.6+ | 2004 09 05 | E12 | 0.3+ | 0.1− | | |
| 2000 10 02 | 704 | 0.3+ | 1.0+ | 2004 07 14 | E12 | 0.1+ | 0.1+ | | | | | | |

**2000 ST$_{143}$ = 2006 VO$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.75946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17780318 | $\omega$ | 276.25725 | | −0.27061676 | −0.96093099 | |
| $a$ | 3.1321535 | $\Omega$ | 190.03498 | | +0.96109784 | −0.26620932 | |
| $e$ | 0.2142368 | $i$ | 19.48488 | | +0.05529471 | −0.07579068 | |
| $P$ | 5.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.0 | 0.2+ | 2000 09 28 | 704 | 0.3+ | 0.8− | 2006 10 17 | 703 | 0.3− | 0.1− | | |
| 2000 09 20 | 691 | 0.0 | 0.0 | 2000 10 01 | 704 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.6− | 0.2+ | | |
| 2000 09 20 | 691 | 0.1+ | 0.0 | 2000 10 01 | 704 | 0.4− | 0.6− | 2006 10 28 | 703 | 0.1+ | 0.3+ | | |
| 2000 09 24 | 704 | 0.7+ | 0.5+ | 2000 10 01 | 704 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.4− | | |
| 2000 09 24 | 704 | 1.6− | 0.1+ | 2000 10 01 | 704 | 0.2− | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.1+ | | |
| 2000 09 24 | 704 | 0.2− | 0.4+ | 2000 10 01 | 699 | 0.3− | 1.5+ | 2006 10 28 | 703 | 0.4+ | 0.1− | | |
| 2000 09 24 | 704 | 0.0 | 1.8− | 2000 10 01 | 704 | 0.5− | 0.2+ | 2006 11 10 | 704 | 0.5+ | 0.3− | | |
| 2000 09 26 | 699 | 0.2+ | 0.2− | 2000 10 01 | 699 | 0.6+ | 0.4+ | 2006 11 10 | 704 | 0.7+ | 0.5+ | | |
| 2000 09 26 | 699 | 0.2+ | 0.3− | 2000 10 01 | 699 | 1.2+ | 0.7− | 2006 11 10 | 704 | 0.7− | 0.1− | | |
| 2000 09 26 | 699 | 0.4+ | 0.3+ | 2000 10 01 | 699 | 0.6+ | 0.4+ | 2006 11 10 | 704 | 0.0 | 1.0+ | | |
| 2000 09 26 | 699 | 0.2− | 0.2+ | 2000 10 02 | 704 | 0.5+ | 0.3+ | 2006 11 10 | 704 | 1.4− | 0.2+ | | |
| 2000 09 28 | 704 | 0.3− | 0.7− | 2000 10 02 | 704 | 0.5− | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.1− | | |
| 2000 09 28 | 704 | 0.6+ | 0.3+ | 2000 10 02 | 704 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.2+ | 0.1+ | | |
| 2000 09 28 | 704 | 0.9− | 0.8+ | 2006 10 17 | 703 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.1− | | |
| 2000 09 28 | 704 | 0.3+ | 1.1− | 2006 10 17 | 703 | 0.0 | 0.5− | 2006 11 16 | 703 | 0.1+ | 0.7− | | |

**2000 SY$_{143}$ = 2006 WQ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.03145 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17427796 | $\omega$ | 142.37765 | | +0.96803977 | −0.13632528 | |
| $a$ | 3.1742496 | $\Omega$ | 226.88091 | | +0.09384974 | +0.97528694 | |
| $e$ | 0.2325964 | $i$ | 16.76193 | | +0.23257522 | +0.17387008 | |
| $P$ | 5.66 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.4− | 0.6+ | 2000 10 03 | 704 | 0.8+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2000 09 24 | 704 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.3+ | | |
| 2000 09 24 | 704 | 0.0 | 0.4− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 24 | 704 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.3+ | 0.0 | | |
| 2000 09 26 | 699 | 0.7− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.3− | | |
| 2000 09 26 | 699 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.0 | | |
| 2000 09 26 | 699 | 1.1− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.1− | | |
| 2000 09 26 | 699 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.2− | | |
| 2000 09 28 | 704 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.7− | | |
| 2000 09 28 | 704 | 0.2+ | 0.5+ | 2006 11 02 | 703 | (3.1− | 0.5+) | 2006 11 24 | G96 | 0.3+ | 0.0 | | |
| 2000 09 28 | 704 | 0.2+ | 0.2− | 2006 11 02 | 703 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.2− | | |
| 2000 09 28 | 704 | 0.1− | 0.8− | 2006 11 02 | 703 | 0.5+ | 0.7− | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2000 09 28 | 704 | 0.2+ | 0.2− | 2006 11 02 | 703 | 1.1− | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2000 09 30 | 704 | 0.4− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 1.4− | 0.4+ | | |
| 2000 09 30 | 704 | 1.0− | 0.7− | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.7− | 1.0+ | | |
| 2000 09 30 | 704 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.1− | 0.1− | | |
| 2000 10 03 | 704 | 0.5+ | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.6− | 0.9+ | | |
| 2000 10 03 | 704 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.2− | | |
| 2000 10 03 | 704 | 0.6+ | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.0 | | | | | | |
| 2000 10 03 | 704 | 1.0+ | 0.6− | 2006 11 18 | G96 | 0.3− | 0.1− | | | | | | |

**2000 SW$_{156}$ = 2006 UL$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.08023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17722374 | $\omega$ | 143.31234 | | +0.95001562 | −0.26048221 | |
| $a$ | 3.1389769 | $\Omega$ | 232.68505 | | +0.20929844 | +0.94040998 | |
| $e$ | 0.1592623 | $i$ | 12.49742 | | +0.23165597 | +0.21858199 | |
| $P$ | 5.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.1+ | 0.3+ | | |
| 2000 09 25 | 704 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.1− | | |
| 2000 09 25 | 704 | 0.6− | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.6+ | 1.0+ | | |
| 2000 09 25 | 704 | 0.6− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.2+ | | |
| 2000 09 25 | 704 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.5− | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.2+ | | |
| 2000 09 25 | 704 | 0.9− | 1.3− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5+ | 1.0+ | | |
| 2000 09 25 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.9− | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.5+ | | |
| 2000 09 25 | 704 | 1.8− | 1.3+ | 2006 11 11 | 703 | 0.7− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.1− | | |
| 2000 09 25 | 704 | 0.7− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 1.4− | 0.1− | | |
| 2000 09 28 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.1+ | 0.5+ | | |
| 2000 09 28 | 704 | 0.4+ | 0.6− | 2006 11 11 | G96 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.5− | 0.6+ | | |
| 2000 09 28 | 704 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.7− | | |
| 2000 09 28 | 704 | 1.0+ | 0.7+ | 2006 11 11 | 703 | 1.0− | 1.0+ | 2006 11 21 | 704 | 0.3+ | 0.6+ | | |
| 2000 10 03 | 704 | 0.6+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.6− | 2006 11 27 | G96 | 0.1− | 0.4− | | |
| 2000 10 03 | 704 | 0.8+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.3− | 0.3− | | |
| 2000 10 03 | 704 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.6+ | 0.2+ | | |
| 2000 10 03 | 704 | 0.9+ | 0.2− | 2006 11 13 | 644 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.3− | | |
| 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.4− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 16 | 703 | 0.7+ | 0.7− | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.6− | 0.7− |
| 2006 10 16 | 703 | (1.6− | 0.1−) | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.1− | 0.9− |
| 2006 10 16 | 703 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.3+ | 1.1− |
| 2006 10 17 | 691 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.2+ |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.4− | 0.0 | 2006 11 29 | 704 | (2.0+ | 0.8−) |
| 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.9+ | 0.5+ |
| 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.5− | 0.6+ | 2006 11 29 | 704 | 0.3+ | 0.1− |
| 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.1− | 2006 11 29 | 704 | 1.0+ | 1.0+ |
| 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.9− | 2006 12 01 | G96 | 0.6− | 0.2− |
| 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.8+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2006 10 31 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | (1.5+ | 0.9+) | 2006 12 01 | G96 | 0.1− | 0.3− |

**2000 SY$_{164}$ = 2006 VE$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.19844 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17929099 | $\omega$ | 165.80614 | | +0.96028137 | −0.26390191 | |
| $a$ | 3.1148017 | $\Omega$ | 209.97358 | | +0.23503841 | +0.94008252 | |
| $e$ | 0.0958144 | $i$ | 10.45268 | | +0.15038828 | +0.21587181 | |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.1− | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 14 | 704 | 1.3+ | 0.1− |
| 2000 09 23 | 704 | 0.5− | 0.3− | 2006 11 02 | 703 | 0.3+ | 0.9− | 2006 11 14 | 704 | 1.0+ | 0.0 |
| 2000 09 23 | 704 | 0.3− | 0.2+ | 2006 11 02 | 703 | 0.2− | 1.4+ | 2006 11 14 | 704 | 0.5− | 0.9+ |
| 2000 09 23 | 704 | 0.1+ | 0.3− | 2006 11 02 | 703 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2000 09 23 | 704 | 0.9+ | 0.6+ | 2006 11 02 | 703 | 1.3− | 0.4− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2000 09 26 | 608 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2000 09 26 | 608 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2000 09 26 | 608 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 703 | (2.3− | 0.5−) |
| 2000 09 30 | 704 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2000 09 30 | 704 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2000 09 30 | 704 | 0.7+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2000 10 03 | 704 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.1− | 1.2− | 2006 11 20 | 704 | (1.5+ | 0.5+) |
| 2000 10 03 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 1.2− | 0.7− | 2006 11 20 | 704 | 1.0+ | 0.6+ |
| 2000 10 03 | 704 | 0.9− | 0.4− | 2006 11 11 | 703 | 0.8− | 0.3− | 2006 11 20 | 704 | 1.5+ | 0.6+ |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.2+ | 0.7− | 2006 11 28 | 704 | (1.1− | 1.9−) |
| 2006 09 26 | G96 | 0.4− | 0.4− | 2006 11 11 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 1.4− | 0.2+ |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 11 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | (0.4− | 1.8+) |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 11 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.6− |
| 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 704 | (2.5+ | 0.5+) | | | | |
| 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.6+ | 1.3+ | | | | |

**2000 SE$_{173}$ = 2006 VL$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.80047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17438395 | $\omega$ | 34.70088 | | +0.93545075 | +0.21607677 | |
| $a$ | 3.1729632 | $\Omega$ | 310.24491 | | −0.34476206 | +0.73224905 | |
| $e$ | 0.0784388 | $i$ | 21.49777 | | +0.07791673 | +0.64584995 | |
| $P$ | 5.65 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 699 | 0.3− | 0.4+ | 2000 10 02 | 704 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.3− |
| 2000 09 25 | 699 | 0.8− | 0.0 | 2000 10 02 | 704 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.9− |
| 2000 09 25 | 699 | 1.1+ | 0.2+ | 2000 10 04 | 704 | 0.8− | 1.2+ | 2006 11 19 | 704 | 0.3+ | 0.9− |
| 2000 09 25 | 699 | 0.0 | 0.2+ | 2000 10 04 | 704 | 0.5− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2000 09 28 | 704 | 0.2− | 0.3+ | 2000 10 04 | 704 | 0.9− | 0.8− | 2006 11 19 | 704 | (0.5+ | 2.0−) |
| 2000 09 28 | 704 | 0.5− | 0.5− | 2000 10 04 | 704 | 1.2+ | 1.3+ | 2006 11 19 | 704 | 0.5− | 0.2− |
| 2000 09 28 | 704 | 1.2− | 0.1+ | 2000 10 04 | 704 | 0.7+ | 0.5− | 2006 11 19 | 704 | 0.1− | 0.5− |
| 2000 09 28 | 704 | 0.3− | 0.8− | 2006 10 16 | 704 | 0.2− | 0.3+ | 2006 11 20 | 703 | 0.3− | 0.5− |
| 2000 09 30 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 704 | 0.6− | 0.4+ | 2006 11 20 | 703 | (0.5− | 1.9−) |
| 2000 09 30 | 704 | 0.1− | 0.5+ | 2006 10 16 | 704 | 0.6+ | 0.4− | 2006 11 20 | 703 | 0.6+ | 0.2− |
| 2000 09 30 | 704 | 1.1+ | 0.5− | 2006 10 16 | 704 | 0.0 | 0.7+ | 2006 11 20 | 703 | 0.0 | 0.1+ |
| 2000 09 30 | 704 | 1.1+ | 0.5+ | 2006 11 13 | 704 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2000 10 02 | 704 | 0.7− | 0.3− | 2006 11 13 | 704 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 0.6− | 0.3+ |
| 2000 10 02 | 704 | 0.6+ | 0.0 | 2006 11 17 | 704 | 0.4− | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2000 10 02 | 704 | 0.2+ | 0.9− | 2006 11 17 | 704 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.7+ |

**2000 SK$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.50661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17625292 | $\omega$ | 182.31427 | | +0.72523767 | −0.63816525 | |
| $a$ | 3.1504929 | $\Omega$ | 221.37360 | | +0.63779879 | +0.76407729 | |
| $e$ | 0.2045830 | $i$ | 23.01407 | | +0.25931261 | −0.09450406 | |
| $P$ | 5.59 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 1.1+ | 0.5− | 2000 10 25 | 704 | 0.8+ | 0.5− | 2006 10 29 | 703 | 0.3− | 0.4− |
| 2000 09 28 | 704 | 0.2+ | 0.0 | 2000 11 01 | 704 | 0.5+ | 0.3− | 2006 10 29 | 703 | 0.4− | 0.7− |
| 2000 09 28 | 704 | 0.5+ | 0.3+ | 2000 11 01 | 704 | 0.9+ | 0.0 | 2006 11 15 | 703 | 0.6+ | 0.3− |
| 2000 09 28 | 704 | 0.3+ | 0.2+ | 2000 11 01 | 704 | 0.1− | 1.5− | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2000 09 30 | 704 | 0.4− | 0.0 | 2000 11 01 | 704 | 0.1+ | 0.8− | 2006 11 15 | 703 | 0.6+ | 0.3− |
| 2000 09 30 | 704 | 0.8− | 0.9+ | 2003 05 03 | 691 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.8− | 0.2− |
| 2000 09 30 | 704 | 1.2− | 0.3+ | 2003 05 03 | 691 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.2− | 0.0 |
| 2000 09 30 | 704 | 1.3− | 0.1+ | 2003 05 03 | 691 | 0.2+ | 0.4− | 2006 11 19 | 703 | 0.7− | 0.2+ |
| 2000 10 03 | 699 | 0.4− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.9− | 2006 11 19 | 703 | 0.7− | 0.1+ |
| 2000 10 03 | 699 | 0.5+ | 1.1+ | 2006 10 19 | 703 | 0.4− | 0.8− | 2006 11 19 | 703 | 0.6− | 0.9+ |
| 2000 10 03 | 699 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.2− | 0.7− | 2006 11 20 | 704 | 1.3+ | 1.3+ |
| 2000 10 03 | 699 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.6− | 2006 11 20 | 704 | 0.5+ | 0.9− |
| 2000 10 04 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.2+ | 1.3+ |
| 2000 10 04 | 704 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.5+ | 1.3+ |
| 2000 10 04 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.5+ | 0.6+ |
| 2000 10 25 | 704 | 0.2+ | 0.5− | 2006 10 29 | 703 | 0.0 | 0.4− | | | | |
| 2000 10 25 | 704 | 0.7+ | 0.0 | 2006 10 29 | 703 | 0.7− | 0.5+ | | | | |

**2000 SO$_{173}$ = 2006 VC$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.41101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17568349 | $\omega$ | 112.16708 | | +0.96911990 | +0.07983055 | |
| $a$ | 3.1572969 | $\Omega$ | 243.92244 | | −0.14543679 | +0.94910765 | |
| $e$ | 0.2513441 | $i$ | 15.05542 | | +0.19913501 | +0.30466663 | |
| $P$ | 5.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 0.8+ | 0.7− | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.3− | 0.2− |
| 2000 09 26 | 699 | 0.6+ | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2000 09 26 | 699 | 1.1+ | 1.3+ | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 16 | 704 | (0.9+ | 2.0+) |
| 2000 09 26 | 699 | 0.3+ | 0.7+ | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.9− |
| 2000 09 26 | 608 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.9+ | 0.9− |
| 2000 09 26 | 608 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.6+ |
| 2000 09 26 | 608 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2000 09 28 | 704 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2000 09 28 | 704 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2000 09 28 | 704 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2000 09 28 | 704 | 0.5+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.3− |
| 2000 09 28 | 704 | 0.4− | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 2000 09 30 | 704 | 0.4− | 0.9+ | 2006 11 01 | G96 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2000 09 30 | 704 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2000 09 30 | 704 | 0.6+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2000 10 03 | 699 | 0.7+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.4− | 0.3+ |
| 2000 10 03 | 699 | 0.8+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.8+ | 0.3+ |
| 2000 10 03 | 699 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2000 10 03 | 699 | 0.4− | 0.5+ | 2006 11 14 | J75 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.1− |
| 2000 10 04 | 704 | 0.7− | 0.6+ | 2006 11 14 | J75 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 0.2− | 0.1+ |
| 2000 10 04 | 704 | 0.7+ | 0.4+ | 2006 11 14 | J75 | 0.6+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2000 10 04 | 704 | 0.5+ | 1.6− | 2006 11 15 | 703 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.9− | 1.1− |
| 2000 10 04 | 704 | 1.1− | 1.5− | 2006 11 15 | 703 | 0.9− | 0.8+ | 2006 11 27 | 691 | 0.7+ | 0.2+ |
| 2000 11 30 | 645 | 0.0 | 0.1− | 2006 11 15 | 703 | 1.0− | 1.1− | 2006 12 01 | 691 | 0.3+ | 0.1+ |
| 2000 11 30 | 645 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2006 09 18 | 703 | (2.1− | 0.3+) | 2006 11 15 | 703 | 0.4+ | 0.3− | 2006 12 01 | 691 | 0.0 | 0.1+ |

**2000 SJ$_{195}$ = 2006 UQ$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.59939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17463012 | $\omega$ | 59.33292 | | +0.59162626 | −0.80578861 | |
| $a$ | 3.1699806 | $\Omega$ | 354.18470 | | +0.62286699 | +0.47742351 | |
| $e$ | 0.1790059 | $i$ | 14.94835 | | +0.51187409 | +0.35038765 | |
| $P$ | 5.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.1− | 0.3− | 2001 12 19 | 645 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.6− | 0.8+ |
| 2000 09 24 | 704 | 0.6+ | 0.3+ | 2003 03 30 | 691 | 0.2+ | 1.0+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2000 09 24 | 704 | 0.7− | 1.4+ | 2003 03 30 | 691 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 1.1+ | 0.2− |
| 2000 10 01 | 704 | 0.3− | 0.4+ | 2003 03 30 | 691 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 1.1− | 1.3− |
| 2000 10 01 | 704 | 0.3+ | 0.4− | 2006 10 19 | 703 | 1.1− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.5− |
| 2000 10 01 | 704 | 0.4− | 0.6+ | 2006 10 19 | 703 | 0.9+ | 0.0 | 2006 10 27 | 703 | 1.1+ | 0.5+ |
| 2000 10 01 | 704 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.7− | 0.6+ | 2006 11 16 | 703 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.9− | 0.9+ | 2006 10 19 | 703 | 0.8+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.4− |
| 2000 10 02 | 704 | 0.6− | 0.3+ | 2006 10 22 | 644 | 0.5+ | 0.5+ | 2006 11 16 | 703 | 0.9− | 0.2− |
| 2000 10 02 | 704 | 0.6− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.7+ |
| 2000 10 02 | 704 | 0.0 | 1.0+ | 2006 10 22 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.7− |
| 2000 10 02 | 704 | (0.0 | 2.1+) | 2006 10 23 | 644 | 0.3− | 0.5+ | 2006 11 22 | 703 | 0.2− | 0.1− |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.9− | 0.5− |
| 2001 11 21 | 645 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.8+ | 2006 11 22 | 703 | 0.3+ | 0.7− |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.4+ | | | | |

**2000 SV$_{197}$ = 2006 UR$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.20493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17419949 | $\omega$ | 176.01631 | | +0.99717636 | −0.07161522 | |
| $a$ | 3.1752027 | $\Omega$ | 188.19376 | | +0.06377221 | +0.96646072 | |
| $e$ | 0.0876690 | $i$ | 9.12234 | | +0.03965365 | +0.24662712 | |
| $P$ | 5.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 0.1− | 0.5− | 2000 10 01 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 1.2− | 0.4− |
| 2000 09 24 | 699 | 1.6− | 0.1+ | 2000 10 02 | 704 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 2000 09 24 | 704 | 0.5+ | 0.1+ | 2000 10 02 | 704 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2000 09 24 | 704 | 0.9− | 1.1+ | 2000 10 02 | 704 | 0.4+ | 1.2+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2000 09 24 | 699 | 0.3− | 1.6+ | 2003 04 01 | 691 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2000 09 24 | 704 | 0.7+ | 0.3+ | 2003 04 01 | 691 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.6+ | 0.1+ |
| 2000 09 24 | 704 | 0.6+ | 0.6− | 2003 04 01 | 691 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2000 09 24 | 699 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2000 09 24 | 704 | 1.1+ | 1.3+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.6− | 2006 11 22 | G96 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.5− | 0.5− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2000 10 01 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 1.2− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.5+ |
| 2000 10 01 | 704 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.9− | 2006 11 22 | G96 | 0.4− | 0.2+ |

**2000 SS$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.35841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17443529 | $\omega$ | 12.52489 | | +0.36185134 | −0.93186244 | |
| $a$ | 3.1723407 | $\Omega$ | 56.26675 | | +0.85254980 | +0.31934008 | |
| $e$ | 0.2677807 | $i$ | 1.81790 | | +0.37712391 | +0.17220427 | |
| $P$ | 5.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.5− | 0.1− |
| 2000 08 31 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.2− |
| 2000 08 31 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2000 09 24 | 704 | 1.1+ | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2000 09 24 | 704 | 0.6− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2000 09 24 | 704 | 0.1− | 0.6+ | 2006 11 14 | J75 | 0.8+ | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2000 10 01 | 704 | 0.0 | 0.1− | 2006 11 14 | J75 | 0.9+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2000 10 01 | 704 | 0.7− | 0.0 | 2006 11 14 | J75 | 0.8+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2000 10 01 | 704 | 0.3− | 0.1+ | 2006 11 14 | J75 | 1.1+ | 0.5− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2000 10 01 | 704 | 0.2+ | 0.0 | 2006 11 14 | J75 | 0.9+ | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.1+ |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2006 11 14 | J75 | 0.4+ | 0.6+ | 2006 11 27 | 703 | 0.2− | 0.1− |
| 2000 10 02 | 704 | 0.3− | 0.4− | 2006 11 15 | 703 | 0.2+ | 1.2+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2000 10 02 | 704 | 0.6− | 0.8− | 2006 11 15 | 703 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.4+ | 0.2− |
| 2000 10 02 | 704 | 1.2+ | 0.2+ | 2006 11 15 | 703 | 1.1+ | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2000 10 02 | 704 | 1.0+ | 1.2+ | 2006 11 15 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.3+ |
| 2000 10 05 | 704 | 0.6− | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.4+ | 2006 11 27 | 704 | 1.0+ | 0.2− |
| 2000 10 05 | 704 | 0.4+ | 0.1− | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 11 27 | 704 | 1.1+ | 0.1+ |
| 2000 10 05 | 704 | 1.4− | 0.5− | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.9+ | 0.4− |
| 2000 10 05 | 704 | 0.6+ | 0.4− | 2006 11 18 | J75 | 0.4+ | 0.4− | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2000 10 05 | 704 | 0.6+ | 0.0 | 2006 11 18 | J75 | 1.3+ | 0.3− | 2006 12 01 | 691 | 0.3− | 0.6− |
| 2000 10 05 | 704 | 0.9− | 0.0 | 2006 11 18 | J75 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.7− | 0.5+ |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.9+ | 2006 12 01 | 691 | 0.2− | 0.3− |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | (0.1− | 1.7+) | 2006 12 01 | 704 | 0.3+ | 0.1+ |
| 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.8+ | 2006 12 01 | 704 | 1.1− | 0.2+ |
| 2006 09 27 | G96 | 0.5+ | 0.7− | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 1.4− | 0.9+ |
| 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.2− | 0.2+ | | | | |
| 2006 10 27 | G96 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.2− | 0.1+ | | | | |

**2000 SL$_{209}$ = 2000 SS$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.67065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18842565 | $\omega$ | 25.68835 | | +0.48665860 | −0.85707793 | |
| $a$ | 3.0133023 | $\Omega$ | 35.89601 | | +0.74354165 | +0.30479060 | |
| $e$ | 0.1110547 | $i$ | 16.75863 | | +0.45859484 | +0.41535540 | |
| $P$ | 5.23 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.4− | 0.3+ | 2000 10 01 | 704 | 1.2− | 0.2+ | 2003 04 09 | 644 | 0.3+ | 0.2+ |
| 1995 11 16 | 691 | 0.2− | 0.1+ | 2001 12 20 | 645 | 0.0 | 0.0 | 2003 04 09 | 644 | 0.4+ | 0.4+ |
| 1995 11 16 | 691 | 0.1− | 0.3+ | 2001 12 20 | 645 | 0.0 | 0.0 | 2003 04 09 | 644 | 0.7+ | 0.5+ |
| 1995 11 28 | 691 | 0.2− | 0.6+ | 2001 12 23 | 704 | 0.3+ | 1.2+ | 2003 04 29 | 691 | 0.6+ | 0.9+ |
| 1995 11 28 | 691 | 0.1− | 0.3+ | 2001 12 23 | 704 | 0.0 | 0.0 | 2003 04 29 | 691 | 0.5+ | 0.8+ |
| 1995 11 28 | 691 | 0.2− | 0.4− | 2001 12 23 | 704 | 0.2− | 1.0+ | 2003 04 29 | 691 | 0.4+ | 0.9+ |
| 2000 09 25 | 704 | (2.1− | 1.0+) | 2001 12 23 | 704 | 0.7+ | 0.7+ | 2003 05 05 | 691 | 0.2+ | 0.1− |
| 2000 09 25 | 704 | 1.0− | 1.3+ | 2002 01 06 | 704 | 0.3− | 0.4− | 2003 05 05 | 691 | 0.2− | 0.1− |
| 2000 09 25 | 704 | 0.1− | 0.3+ | 2002 01 06 | 704 | 0.6+ | 0.5− | 2003 05 05 | 691 | 0.0 | 0.2− |
| 2000 09 25 | 608 | 1.0+ | 0.2− | 2002 01 06 | 704 | 0.6− | 0.7− | 2006 11 22 | 703 | 1.2− | 0.7+ |
| 2000 09 25 | 608 | 1.0+ | 0.3− | 2002 01 06 | 704 | 0.2+ | 1.4− | 2006 11 22 | 703 | (2.2− | 0.6−) |
| 2000 09 25 | 608 | 1.4+ | 0.0 | 2002 02 21 | 704 | 1.2+ | 0.5− | 2006 11 22 | 703 | (1.6− | 0.6−) |
| 2000 10 01 | 704 | 1.4− | 1.2+ | 2002 02 21 | 704 | 1.0− | 0.9− | 2006 11 22 | 703 | (1.9− | 0.5−) |
| 2000 10 01 | 704 | 0.6− | 0.3+ | 2002 02 21 | 704 | 0.5− | 0.3− | | | | |
| 2000 10 01 | 704 | 0.8− | 1.4+ | 2002 02 21 | 704 | 0.3+ | 0.3+ | | | | |

**2000 SU$_{214}$ = 2006 TC$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.50933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17504376 | $\omega$ | 328.53865 | | +0.96333876 | +0.26641487 | |
| $a$ | 3.1649848 | $\Omega$ | 16.10214 | | −0.21631885 | +0.84108625 | |
| $e$ | 0.1430700 | $i$ | 6.55206 | | −0.15869654 | +0.47074095 | |
| $P$ | 5.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 0.3+ | 0.6+ | 2000 10 21 | 691 | 1.1− | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2000 09 26 | 704 | 0.5+ | 0.8+ | 2000 10 21 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2000 09 26 | 704 | 1.3+ | 0.7− | 2000 10 21 | 691 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2000 09 26 | 704 | 0.7+ | 0.2− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2000 09 26 | 704 | 0.5+ | 0.9+ | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2000 10 01 | 704 | 0.1+ | 0.4− | 2006 10 13 | 691 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 2.0+ | 1.2− |
| 2000 10 01 | 704 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.9− |
| 2000 10 01 | 691 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.4+ | 0.0 |
| 2000 10 01 | 691 | 0.2− | 0.4− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | (3.9+ | 0.0 ) |
| 2000 10 01 | 691 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.3− | 0.4+ |
| 2000 10 02 | 704 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.3− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.4− | 0.4+ | | |
| 2000 10 02 | 704 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.4− | 0.3+ | | |

**2000 SB$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.96804 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17690645 | $\omega$ | 5.29670 | | +0.85644976 | | −0.51298556 |
| $a$ | 3.1427291 | $\Omega$ | 25.82246 | | +0.46862711 | | +0.72563350 |
| $e$ | 0.1613439 | $i$ | 7.62398 | | +0.21652353 | | +0.45858678 |
| $P$ | 5.57 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 1.3+ | 1.6+ | 2000 10 04 | 704 | 0.1+ | 0.2+ | 2000 10 07 | 699 | 0.1− | 0.0 | | |
| 2000 09 27 | 704 | 0.1− | 0.3− | 2000 10 04 | 704 | 0.4+ | 0.5+ | 2000 10 07 | 699 | 0.4− | 0.5− | | |
| 2000 09 27 | 704 | 1.8+ | 0.6− | 2000 10 04 | 704 | 0.3− | 0.7+ | 2000 10 30 | 704 | 1.3− | 0.3+ | | |
| 2000 09 27 | 704 | 0.5+ | 0.1+ | 2000 10 04 | 704 | 0.5+ | 0.2− | 2000 10 30 | 704 | 0.6− | 0.1+ | | |
| 2000 09 27 | 704 | 0.5− | 0.1+ | 2000 10 04 | 704 | 0.4− | 0.0 | 2000 10 30 | 704 | 1.6− | 1.2+ | | |
| 2000 09 28 | 691 | 0.4+ | 0.1− | 2000 10 04 | 704 | 0.1− | 0.4+ | 2000 11 02 | 704 | 0.4− | 0.1+ | | |
| 2000 09 28 | 691 | 0.1+ | 0.6+ | 2000 10 05 | 704 | 1.5+ | 0.3− | 2000 11 02 | 704 | 0.2+ | 0.8− | | |
| 2000 09 28 | 691 | 0.5+ | 0.2− | 2000 10 05 | 704 | 0.6+ | 0.2+ | 2000 11 02 | 704 | 1.2+ | 0.8+ | | |
| 2000 10 01 | 704 | 0.1− | 0.4− | 2000 10 05 | 704 | 0.6+ | 0.8− | 2000 11 02 | 704 | 1.3− | 1.1− | | |
| 2000 10 01 | 704 | 0.3− | 0.3− | 2000 10 05 | 704 | 0.5− | 0.5− | 2000 11 02 | 704 | 0.6+ | 0.3+ | | |
| 2000 10 01 | 704 | 0.4− | 0.0 | 2000 10 05 | 704 | 0.8+ | 0.0 | 2000 11 17 | 691 | 0.2+ | 0.1+ | | |
| 2000 10 01 | 704 | 0.4− | 0.1+ | 2000 10 05 | 704 | 1.5− | 0.2− | 2000 11 17 | 691 | 0.1+ | 0.1− | | |
| 2000 10 01 | 704 | 0.3− | 0.1− | 2000 10 05 | 704 | 0.8+ | 0.6+ | 2000 11 17 | 691 | 0.2+ | 0.9− | | |
| 2000 10 02 | 704 | 0.1− | 0.6− | 2000 10 05 | 704 | 0.7− | 0.7− | 2000 11 17 | 691 | 0.3− | 0.3+ | | |
| 2000 10 02 | 704 | 2.0− | 0.4+ | 2000 10 06 | 699 | 0.0 | 1.0− | 2000 11 17 | 691 | 0.3− | 0.4+ | | |
| 2000 10 02 | 704 | 0.1− | 0.2− | 2000 10 06 | 699 | 0.7− | 0.1− | 2000 11 17 | 691 | 0.5− | 0.4+ | | |
| 2000 10 02 | 704 | 0.4− | 0.5+ | 2000 10 06 | 699 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.6− | | |
| 2000 10 02 | 704 | 0.1+ | 1.3+ | 2000 10 06 | 699 | 1.1+ | 0.2+ | 2006 11 22 | 704 | 0.4− | 1.0+ | | |
| 2000 10 03 | 704 | 0.9− | 1.3− | 2000 10 06 | 699 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.2− | | |
| 2000 10 03 | 704 | 0.5− | 0.2− | 2000 10 06 | 699 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.5+ | | |
| 2000 10 03 | 704 | 0.6+ | 0.3+ | 2000 10 06 | 699 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2000 10 03 | 704 | 0.2+ | 0.4− | 2000 10 06 | 699 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2000 10 03 | 704 | 1.1+ | 1.3− | 2000 10 07 | 699 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.3− | | |
| 2000 10 04 | 704 | 0.2− | 0.3+ | 2000 10 07 | 699 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.5− | | |

**2000 SE$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.87963 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25813602 | $\omega$ | 226.68520 | | +0.90109210 | | −0.43346745 |
| $a$ | 2.4428885 | $\Omega$ | 158.99416 | | +0.40675807 | | +0.83552199 |
| $e$ | 0.1939667 | $i$ | 1.88472 | | +0.15026940 | | +0.33765215 |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 0.3− | 0.6+ | 2000 10 07 | 699 | 0.6− | 0.3− | 2004 12 02 | 699 | 0.0 | 0.5+ | | |
| 2000 09 27 | 704 | 0.5+ | 0.8+ | 2000 10 07 | 699 | 0.5− | 0.1+ | 2004 12 02 | 699 | 0.1− | 0.1− | | |
| 2000 09 27 | 704 | 1.1+ | 0.2+ | 2002 03 16 | 291 | 0.0 | 0.4+ | 2004 12 18 | G96 | 0.4− | 0.1− | | |
| 2000 10 01 | 704 | 0.4− | 0.3+ | 2002 03 16 | 291 | 0.5+ | 0.3+ | 2004 12 18 | G96 | 0.0 | 0.2− | | |
| 2000 10 01 | 704 | 0.2+ | 0.5+ | 2002 03 16 | 291 | 0.0 | 0.3+ | 2004 12 18 | G96 | 0.2− | 0.3− | | |
| 2000 10 01 | 704 | 0.0 | 0.3+ | 2004 11 04 | 703 | 1.8+ | 0.8− | 2004 12 18 | G96 | 0.2− | 0.3− | | |
| 2000 10 01 | 704 | 0.3− | 0.8+ | 2004 11 04 | 703 | 0.4+ | 0.4− | 2006 03 24 | G96 | 0.1− | 0.2+ | | |
| 2000 10 01 | 704 | 0.4− | 0.6+ | 2004 11 04 | 703 | 0.1+ | 0.4− | 2006 03 24 | G96 | 0.1+ | 0.3− | | |
| 2000 10 02 | 704 | 0.5− | 1.0+ | 2004 11 04 | 703 | 1.2− | 0.0 | 2006 03 24 | G96 | 0.0 | 0.1+ | | |
| 2000 10 02 | 704 | 0.2− | 0.5+ | 2004 11 07 | 704 | 1.4− | 0.3− | 2006 03 24 | G96 | 0.2+ | 0.2+ | | |
| 2000 10 02 | 704 | 0.9+ | 0.9+ | 2004 11 07 | 704 | 0.1− | 0.3− | 2006 04 19 | G96 | 0.0 | 0.1+ | | |
| 2000 10 02 | 704 | 0.2+ | 0.5+ | 2004 11 07 | 704 | 0.4+ | 0.3− | 2006 04 19 | G96 | 0.3+ | 0.5+ | | |
| 2000 10 07 | 699 | 1.2− | 0.5− | 2004 12 02 | 699 | 0.2− | 0.5+ | 2006 04 19 | G96 | 0.0 | 0.5+ | | |
| 2000 10 07 | 699 | 0.8− | 0.0 | 2004 12 02 | 699 | 1.4+ | 0.2− | 2006 04 19 | G96 | 0.0 | 0.6+ | | |

**2000 SR$_{237}$ = 2006 TJ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.55125 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17363099 | $\omega$ | 260.18321 | | +0.35413315 | | +0.90780575 |
| $a$ | 3.1821298 | $\Omega$ | 33.47417 | | −0.61532050 | | +0.40709698 |
| $e$ | 0.3120656 | $i$ | 24.03798 | | −0.70425166 | | +0.10080061 |
| $P$ | 5.68 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 06 | 691 | 0.2+ | 0.5+ | 2000 10 02 | 699 | 1.2− | 0.6+ | 2006 10 27 | 703 | 0.7− | 0.1+ | | |
| 1999 04 06 | 691 | 0.1+ | 0.1− | 2000 11 27 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 703 | (2.3− | 0.3+) | | |
| 1999 04 06 | 691 | 0.1− | 0.1− | 2000 11 27 | 691 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.1+ | 1.0− | | |
| 2000 09 25 | 704 | 0.1+ | 0.1− | 2000 11 27 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.2− | | |
| 2000 09 25 | 704 | 0.8+ | 0.6− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.1− | | |
| 2000 09 25 | 704 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.3− | 0.3− | | |
| 2000 09 25 | 704 | 1.2+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.3+ | 0.3− | | |
| 2000 10 01 | 704 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 11 14 | 703 | 0.6− | 1.0− | | |
| 2000 10 01 | 704 | 0.5+ | 0.4− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.1+ | | |
| 2000 10 01 | 704 | 0.2− | 0.4− | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.3+ | | |
| 2000 10 01 | 704 | 1.0− | 0.8− | 2006 10 13 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.7− | 1.0+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 691 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.5− | | |
| 2000 10 02 | 699 | 1.8− | 0.3− | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.5− | 0.1− | | |
| 2000 10 02 | 699 | 0.5− | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2000 10 02 | 699 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 1.0− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.3− | | |

**2000 SJ$_{238}$ = 2006 UK$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.78807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17283045 | $\omega$ | 36.77673 | | +0.63288169 | | −0.77356519 |
| $a$ | 3.1919485 | $\Omega$ | 14.05705 | | +0.67465416 | | +0.53037643 |
| $e$ | 0.1908990 | $i$ | 7.69480 | | +0.37987174 | | +0.34683964 |
| $P$ | 5.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 1.3− | 0.6+ | 2000 10 21 | 691 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.2− | | |
| 2000 09 26 | 704 | 0.3− | 0.3+ | 2002 02 08 | 645 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.4− | | |
| 2000 09 26 | 704 | 0.9+ | 0.3+ | 2002 02 08 | 645 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.0 | 0.1− | | |
| 2000 09 26 | 704 | 1.1+ | 0.9− | 2006 10 13 | 691 | 0.5+ | 0.0 | 2006 11 14 | 703 | 0.2− | 0.0 | | |
| 2000 10 01 | 704 | 0.2− | 0.0 | 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.4+ | 1.2− | | |
| 2000 10 01 | 704 | 0.5− | 0.3− | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.7+ | | |
| 2000 10 01 | 704 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.6− | | |
| 2000 10 01 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.9− | 0.7− | | |
| 2000 10 01 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.4+ | 2006 11 22 | 704 | 1.5− | 1.3− | | |
| 2000 10 01 | 691 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 1.0− | 0.5− | | |
| 2000 10 02 | 704 | 0.7+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.3+ | | |
| 2000 10 02 | 704 | 0.9− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2000 10 02 | 704 | 0.6− | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2000 10 02 | 704 | 0.5− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 1.0+ | 2006 11 23 | G96 | 0.6+ | 0.2− | | |
| 2000 10 02 | 704 | 0.5+ | 0.9+ | 2006 10 27 | 703 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2000 10 21 | 691 | 0.4+ | 0.0 | 2006 10 27 | 703 | 1.1− | 0.4+ | | | | | | |
| 2000 10 21 | 691 | 0.2+ | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.2− | | | | | | |

**2000 SZ$_{245}$ = 2006 SK**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.05555 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16787847 | $\omega$ | 255.88186 | | +0.85067233 | | +0.51560303 |
| $a$ | 3.2544133 | $\Omega$ | 72.99043 | | −0.43143279 | | +0.79615981 |
| $e$ | 0.0951795 | $i$ | 6.15442 | | −0.30037032 | | +0.31667504 |
| $P$ | 5.87 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.0 | 0.7+ | 2006 09 12 | 703 | 0.2− | 0.9− | 2006 10 16 | 703 | 0.4+ | 0.6+ | | |
| 2000 09 23 | 699 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.9− | | |
| 2000 09 23 | 699 | 1.0− | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.6− | 0.2− | | |
| 2000 09 23 | 699 | 1.1+ | 1.0+ | 2006 09 16 | F84 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3+ | 0.1− | 2006 09 16 | F84 | 1.3+ | 0.6− | 2006 10 20 | 644 | 0.3− | 0.3+ | | |
| 2000 09 24 | 704 | 0.9− | 0.8− | 2006 09 17 | F84 | 0.4+ | 1.0− | 2006 10 20 | 644 | 0.6− | 0.3− | | |
| 2000 09 24 | 704 | 0.4+ | 0.1− | 2006 09 17 | F84 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2000 09 24 | 699 | 0.3+ | 0.9− | 2006 09 17 | F84 | 0.1+ | 1.3− | 2006 10 20 | 644 | 0.4− | 0.7+ | | |
| 2000 09 24 | 699 | 0.2+ | 1.1+ | 2006 09 18 | 699 | (1.6− | 0.2+) | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2000 09 24 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 2000 09 24 | 699 | 0.5− | 0.8+ | 2006 09 18 | 699 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2000 09 24 | 699 | 1.4− | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2000 10 02 | 699 | 0.0 | 1.6− | 2006 09 26 | 703 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.2+ | | |
| 2000 10 02 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.5+ | 0.6+ | 2006 10 22 | 703 | 1.1− | 0.6− | | |
| 2000 10 02 | 704 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.6+ | 2006 10 22 | 703 | (1.5− | 0.8−) | | |
| 2000 10 02 | 699 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.0 | | |
| 2000 10 02 | 704 | 0.4− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.2− | | |
| 2000 10 02 | 699 | 1.2+ | 1.1− | 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 11 23 | G96 | 0.3− | 0.0 | | |
| 2000 10 02 | 704 | 0.5+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.3− | | |
| 2000 10 02 | 699 | 0.9− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− | | | | | | |
| 2006 09 12 | 703 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.3− | | | | | | |

**2000 SM$_{248}$ = 2000 SE$_{321}$ = 2006 VM$_{87}$**

Id. Minor Planet Center (d, *MPO* 13879; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.68909 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17949535 | $\omega$ | 346.45214 | | +0.98282219 | −0.16955929 | |
| $a$ | 3.1124371 | $\Omega$ | 23.68694 | | +0.18167906 | +0.81945959 | |
| $e$ | 0.1125973 | $i$ | 10.45068 | | +0.03245405 | +0.54748117 | |
| $P$ | 5.49 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.5+ | 0.0 | 2000 10 02 | 704 | 0.5+ | 0.8− | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2000 09 23 | 699 | 0.3− | 0.1− | 2000 10 02 | 704 | 0.6− | 0.9− | 2006 11 14 | 703 | 0.1+ | 0.2+ | | |
| 2000 09 23 | 699 | 0.3+ | 0.0 | 2000 10 02 | 704 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.1− | | |
| 2000 09 23 | 699 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.5− | 0.5+ | | |
| 2000 09 24 | 704 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 14 | 703 | 0.1− | 0.5− | | |
| 2000 09 24 | 699 | 0.3− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.5− | 0.7− | | |
| 2000 09 24 | 704 | 1.0− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.3+ | | |
| 2000 09 24 | 704 | 1.4− | 0.9+ | 2006 10 19 | 703 | 0.6+ | 0.1− | 2006 11 16 | 704 | 1.2− | 1.1− | | |
| 2000 09 24 | 699 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.1− | 2006 11 16 | 704 | 1.1− | 0.0 | | |
| 2000 09 24 | 704 | 0.7− | 0.2− | 2006 10 19 | 703 | 0.5− | 0.0 | 2006 11 22 | 703 | 0.0 | 0.3+ | | |
| 2000 09 24 | 699 | 0.5+ | 0.7+ | 2006 10 19 | 703 | 0.6+ | 0.3− | 2006 11 22 | 703 | 0.3− | 0.6− | | |
| 2000 09 24 | 699 | 1.0− | 0.5+ | 2006 10 27 | 703 | (1.6+ | 0.9−) | 2006 11 22 | 703 | 0.7− | 0.1+ | | |
| 2000 09 25 | 704 | 1.6+ | 0.6− | 2006 10 27 | 703 | 0.0 | 0.5+ | 2006 11 22 | 703 | 0.8+ | 0.2− | | |
| 2000 09 25 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.4+ | 0.9+ | 2006 11 23 | 703 | 0.5+ | 0.4+ | | |
| 2000 09 25 | 704 | 1.4− | 0.6− | 2006 10 27 | 703 | 0.3+ | 0.6+ | 2006 11 23 | 703 | 0.3− | 0.1− | | |
| 2000 10 02 | 704 | 1.5+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.4+ | | |
| 2000 10 02 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 23 | 703 | 0.9+ | 0.2− | | |

**2000 SS$_{249}$ = 2006 VN$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.10626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17615731 | $\omega$ | 269.37562 | | +0.99438519 | −0.08044298 | |
| $a$ | 3.1516327 | $\Omega$ | 95.23692 | | +0.10104292 | +0.91480771 | |
| $e$ | 0.1730515 | $i$ | 3.95894 | | −0.03143913 | +0.39579766 | |
| $P$ | 5.60 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | (0.8− | 2.4+) | 2000 10 07 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2000 09 24 | 704 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.7− | 2006 11 15 | G96 | 0.0 | 0.1+ | | |
| 2000 09 24 | 704 | 0.6− | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.2+ | | |
| 2000 09 24 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.1− | | |
| 2000 09 24 | 704 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.4+ | | |
| 2000 10 01 | 699 | 0.4− | 0.4+ | 2006 11 02 | 703 | 0.4+ | 0.6+ | 2006 11 17 | 703 | 0.6− | 0.4− | | |
| 2000 10 01 | 699 | 0.5− | 0.4+ | 2006 11 02 | 703 | 0.6− | 0.8− | 2006 11 20 | 704 | 0.5+ | 1.4+ | | |
| 2000 10 01 | 699 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.9+ | 0.9+ | | |
| 2000 10 01 | 699 | 0.4− | 0.4+ | 2006 11 02 | 703 | 0.3+ | 0.4− | 2006 11 20 | 704 | (0.5+ | 2.0+) | | |
| 2000 10 02 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.9− | 2006 11 20 | 704 | 0.3+ | 0.9+ | | |
| 2000 10 02 | 704 | 1.4+ | 0.1− | 2006 11 11 | 703 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 1.1+ | | |
| 2000 10 02 | 704 | 1.0+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.9− | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2000 10 02 | 704 | 1.5+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.3− | | |
| 2000 10 07 | 691 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2000 10 07 | 691 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.3− | | |

**2000 SQ$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.54722 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18794345 | $\omega$ | 216.29105 | | +0.50045335 | −0.86360110 | |
| $a$ | 3.0184542 | $\Omega$ | 203.86089 | | +0.82566092 | +0.49732840 | |
| $e$ | 0.0890152 | $i$ | 8.69491 | | +0.26044285 | +0.08281064 | |
| $P$ | 5.24 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.6− | 0.4+ | 2002 02 07 | 644 | 0.4+ | 1.2+ | 2005 09 09 | 704 | 0.4− | 0.0 | | |
| 2000 09 24 | 704 | 0.8+ | 0.5− | 2002 02 07 | 644 | 0.3+ | 0.9+ | 2005 09 09 | 704 | 0.0 | 0.1+ | | |
| 2000 09 24 | 704 | 0.1+ | 0.8+ | 2002 02 07 | 644 | 0.2− | 1.0+ | 2005 09 09 | 704 | 0.1− | 0.3− | | |
| 2000 09 24 | 704 | 0.6− | 0.1− | 2003 04 24 | 691 | 0.1− | 0.2+ | 2005 09 23 | 703 | 2.7− | 0.0 | | |
| 2000 10 02 | 704 | 1.0+ | 1.2+ | 2003 04 24 | 691 | 0.0 | 0.4+ | 2005 09 23 | 703 | 1.1− | 0.7+ | | |
| 2000 10 02 | 704 | 0.3+ | 0.1+ | 2003 04 24 | 691 | 0.1− | 0.2+ | 2005 09 23 | 703 | 0.6+ | 0.0 | | |
| 2000 10 02 | 704 | 0.4− | 0.9+ | 2003 05 05 | 291 | 0.0 | 0.8+ | 2005 09 23 | 703 | 1.1+ | 0.3− | | |
| 2000 10 02 | 704 | 0.2− | 1.0+ | 2003 05 05 | 291 | 0.1+ | 0.5+ | 2005 10 01 | 691 | 0.0 | 0.9+ | | |
| 2000 10 02 | 704 | 0.1− | 0.2+ | 2003 05 05 | 291 | 0.7+ | 0.1+ | 2005 10 01 | 691 | 0.1− | 0.4+ | | |
| 2000 11 24 | 691 | 0.1− | 0.0 | 2005 08 31 | 699 | 0.5− | 0.2− | 2005 10 01 | 691 | 0.2+ | 0.3+ | | |
| 2000 11 24 | 691 | 0.0 | 0.3− | 2005 08 31 | 699 | 1.0+ | 0.7− | 2005 11 01 | G96 | 0.0 | 0.1− | | |
| 2000 11 24 | 691 | 0.1− | 0.1− | 2005 08 31 | 699 | 0.9+ | 0.3+ | 2005 11 01 | G96 | 0.0 | 0.1− | | |
| 2002 01 25 | 704 | 0.0 | 0.5+ | 2005 08 31 | 699 | 1.0− | 0.9+ | 2005 11 01 | G96 | 0.5− | 0.1+ | | |
| 2002 01 25 | 704 | 0.3+ | 1.3+ | 2005 09 09 | 704 | 0.2+ | 0.4+ | 2005 11 01 | G96 | 0.0 | 0.1− | | |
| 2002 01 25 | 704 | 0.2− | 0.0 | 2005 09 09 | 704 | 0.3+ | 0.4+ | | | | | | |

**2000 SV$_{262}$ = 2006 WE$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.23991 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17717627 | $\omega$ | 221.03382 | | +0.92624431 | +0.36477332 | |
| $a$ | 3.1395376 | $\Omega$ | 117.33623 | | −0.31187049 | +0.88312172 | |
| $e$ | 0.2571433 | $i$ | 6.13463 | | −0.21167966 | +0.29501940 | |
| $P$ | 5.56 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 04 | 699 | (2.4− | 1.6+) | 2000 10 06 | 608 | 0.6− | 1.5− | 2006 11 17 | 644 | 0.3+ | 0.1+ | | |
| 2000 09 04 | 699 | 0.7− | 0.7− | 2000 10 06 | 608 | 0.3− | 1.2− | 2006 11 17 | 644 | 0.1+ | 0.3+ | | |
| 2000 09 04 | 699 | 0.0 | 0.3− | 2000 10 06 | 608 | 0.2− | 1.7− | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2000 09 04 | 699 | 0.5− | 0.3− | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.3− | | |
| 2000 09 23 | 699 | 0.7− | 0.1− | 2004 04 14 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.3− | | |
| 2000 09 23 | 699 | 0.6− | 0.9+ | 2004 04 14 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.2− | | |
| 2000 09 23 | 699 | 0.3− | 1.2+ | 2006 10 23 | G96 | 0.1− | 0.5− | 2006 11 24 | 691 | 1.4− | 0.2− | | |
| 2000 09 23 | 699 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.6− | 2006 11 24 | 691 | 0.1− | 0.1+ | | |
| 2000 09 25 | 704 | 0.4+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.4− | 2006 11 24 | 691 | 0.1− | 0.1+ | | |
| 2000 09 25 | 704 | 1.0+ | 0.6+ | 2006 10 23 | G96 | 0.7+ | 0.4− | 2006 11 24 | G96 | 0.1− | 0.1+ | | |
| 2000 09 25 | 704 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.9+ | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.2+ | | |
| 2000 09 25 | 704 | 1.0− | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.1+ | | |
| 2000 09 25 | 704 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.3+ | | |
| 2000 10 02 | 704 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.2− | | |
| 2000 10 02 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.0 | 2006 11 28 | 704 | 1.3+ | 0.5− | | |
| 2000 10 02 | 704 | 1.5+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.7+ | 0.1− | | |
| 2000 10 02 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.2+ | | |
| 2000 10 02 | 704 | 0.8+ | 1.6+ | 2006 11 17 | 644 | 0.0 | 0.1+ | | | | | | |

**2000 SA$_{263}$ = 2000 TD$_{72}$**

Id. Minor Planet Center (d, *MPO* 87831)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.26105 | | (2000.0) | | | |
| $n$ | 0.18909506 | $\omega$ | 278.72516 | | +0.92071257 | +0.38769421 |
| $a$ | 3.0061866 | $\Omega$ | 58.47470 | | −0.33436112 | +0.84254163 |
| $e$ | 0.0735266 | $i$ | 2.99348 | | −0.20122379 | +0.37392085 |
| $P$ | 5.21 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 704 | 0.3− | 0.8+ | 2001 12 19 | 704 | 0.5+ | 0.7+ | 2005 09 13 | 703 | 1.2− | 0.8+ |
| 2000 09 25 | 704 | 0.7+ | 1.4+ | 2001 12 19 | 704 | 0.1+ | 0.5+ | 2005 09 13 | 703 | 0.1+ | 0.2− |
| 2000 09 25 | 704 | 0.6− | 0.8− | 2001 12 19 | 704 | 0.1+ | 0.5− | 2005 09 22 | 644 | 0.3− | 0.0 |
| 2000 09 25 | 704 | 1.4+ | 0.0 | 2004 06 14 | 704 | 0.1+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.1+ |
| 2000 10 01 | 691 | 0.1− | 0.4− | 2004 06 14 | 704 | 0.2+ | 0.0 | 2005 09 22 | 644 | 0.1+ | 0.2− |
| 2000 10 01 | 691 | 0.1+ | 0.4− | 2004 06 14 | 704 | 0.5− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2000 10 01 | 691 | 0.0 | 0.5− | 2005 07 30 | 644 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2000 10 02 | 704 | 0.3− | 1.1+ | 2005 07 30 | 644 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2000 10 02 | 704 | 0.8− | 0.5+ | 2005 07 30 | 644 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2000 10 02 | 704 | 0.2+ | 0.6+ | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2000 10 02 | 704 | 0.0 | 0.1+ | 2005 08 27 | 644 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.5− | 0.3− |
| 2000 10 02 | 704 | 0.5− | 0.0 | 2005 08 27 | 644 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 0.8+ | 0.3− | 2005 09 13 | 703 | 0.8+ | 0.0 | | | | |
| 2001 12 19 | 704 | 0.3− | 0.8+ | 2005 09 13 | 703 | 0.1+ | 0.7+ | | | | |

**2000 SP$_{264}$ = 2006 BP$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.06646 | | (2000.0) | | | |
| $n$ | 0.27650341 | $\omega$ | 219.03807 | | +0.49325182 | +0.86815374 |
| $a$ | 2.3334709 | $\Omega$ | 80.57986 | | −0.78352059 | +0.47080056 |
| $e$ | 0.2272555 | $i$ | 3.18897 | | −0.37788639 | +0.15702200 |
| $P$ | 3.56 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 0.2− | 1.3+ | 2003 04 24 | 699 | 0.1− | 0.2+ | 2003 05 05 | 704 | 0.1+ | 0.5+ |
| 2000 09 26 | 704 | 0.7− | 0.7+ | 2003 04 24 | 699 | 0.1− | 0.8− | 2004 11 10 | 691 | 0.1+ | 0.2− |
| 2000 09 26 | 704 | 0.3− | 0.9+ | 2003 04 24 | 699 | 0.4− | 0.4+ | 2004 11 10 | 691 | 0.4− | 0.7− |
| 2000 09 26 | 704 | 0.5− | 0.8− | 2003 04 24 | 699 | 1.1− | 0.7− | 2004 11 10 | 691 | 0.4+ | 0.3+ |
| 2000 10 02 | 704 | 0.0 | 1.2+ | 2003 05 02 | 703 | 0.2+ | 0.1+ | 2006 01 31 | 691 | 0.3− | 0.5+ |
| 2000 10 02 | 704 | 1.1+ | 0.2+ | 2003 05 02 | 703 | 1.3+ | 0.9+ | 2006 01 31 | 691 | 0.1+ | 0.6− |
| 2000 10 02 | 704 | 0.3− | 1.4+ | 2003 05 02 | 703 | 0.2− | 0.6+ | 2006 01 31 | 691 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 0.3+ | 0.8+ | 2003 05 02 | 703 | 1.2+ | 0.8+ | 2006 02 04 | 691 | 0.2− | 0.5− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 05 05 | 704 | 0.2+ | 0.4+ | 2006 02 04 | 691 | 0.1− | 0.2− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 05 05 | 704 | 0.5− | 0.4+ | 2006 02 04 | 691 | 0.1+ | 0.0 |
| 2002 02 08 | 645 | 0.0 | 0.3+ | 2003 05 05 | 704 | 0.2+ | 0.6+ | 2006 04 27 | 807 | 0.1− | 0.1+ |
| 2002 02 08 | 645 | 0.1+ | 0.2+ | 2003 05 05 | 704 | 0.5+ | 0.3+ | 2006 04 27 | 807 | 0.0 | 0.3+ |

**2000 SW$_{274}$ = 1978 VC$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.73978 | | (2000.0) | | | |
| $n$ | 0.17773102 | $\omega$ | 53.86785 | | −0.10419022 | −0.97515955 |
| $a$ | 3.1330012 | $\Omega$ | 43.43450 | | +0.79649553 | −0.19951295 |
| $e$ | 0.1812472 | $i$ | 16.51753 | | +0.59559992 | +0.09622078 |
| $P$ | 5.55 | $H$ | 13.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 01 | 010 | 0.8+ | 1.4− | 2000 12 30 | 699 | 0.5− | 0.5− | 2002 03 31 | 644 | 0.4+ | 0.9+ |
| 2000 09 28 | 704 | 0.1− | 1.9+ | 2000 12 30 | 699 | 0.5+ | 0.5+ | 2002 04 14 | 699 | (1.7+ | 1.0−) |
| 2000 09 28 | 704 | 1.0− | 0.0 | 2000 12 30 | 699 | 0.3− | 0.7+ | 2002 04 14 | 699 | 0.6+ | 0.9+ |
| 2000 09 28 | 704 | 0.5− | 0.2− | 2000 12 30 | 699 | 0.2+ | 0.4+ | 2002 04 14 | 699 | 0.1+ | 1.0+ |
| 2000 09 28 | 704 | 0.3+ | 0.1+ | 2001 01 19 | 704 | 0.6− | 0.6+ | 2002 04 14 | 699 | 0.1+ | 0.5+ |
| 2000 09 30 | 699 | 1.0+ | 0.0 | 2001 01 19 | 704 | 0.7− | 0.3− | 2002 04 17 | 704 | 0.2+ | 0.3+ |
| 2000 09 30 | 699 | 0.8− | 0.6− | 2001 01 19 | 704 | 0.9− | 0.5+ | 2002 04 17 | 704 | 0.4− | 0.3+ |
| 2000 09 30 | 699 | 0.9− | 0.3+ | 2001 01 19 | 704 | (2.0− | 0.1−) | 2002 04 17 | 704 | 0.9+ | 0.8− |
| 2000 09 30 | 699 | 0.5+ | 0.1+ | 2001 12 21 | 704 | 0.1− | 0.7+ | 2002 04 17 | 704 | 0.3+ | 0.4+ |
| 2000 10 02 | 704 | 0.0 | 0.5+ | 2001 12 21 | 704 | 0.3− | 0.1− | 2002 05 05 | 704 | 0.1− | 0.2+ |
| 2000 10 02 | 704 | 0.5− | 0.1− | 2001 12 21 | 704 | 0.3− | 0.3+ | 2002 05 05 | 704 | 0.4+ | 0.9+ |
| 2000 10 02 | 704 | 0.2− | 0.2+ | 2001 12 21 | 704 | 0.6− | 0.5+ | 2002 05 05 | 704 | 0.9− | 0.8+ |
| 2000 10 26 | 704 | 0.1− | 0.2+ | 2001 12 21 | 704 | 0.5− | 0.6+ | 2002 05 05 | 704 | 0.2+ | 0.3+ |
| 2000 10 26 | 704 | 0.3− | 0.1+ | 2002 01 08 | 704 | 0.2+ | 1.1− | 2002 05 05 | 704 | 0.6+ | 0.1+ |
| 2000 10 26 | 704 | 1.0+ | 0.8+ | 2002 01 08 | 704 | 0.5+ | 0.4+ | 2002 05 14 | 704 | 0.5+ | 0.5− |
| 2000 11 01 | 704 | 0.1− | 0.0 | 2002 01 08 | 704 | 1.4+ | 0.2+ | 2002 05 14 | 704 | 0.5+ | 0.2− |
| 2000 11 01 | 704 | 0.2+ | 0.2+ | 2002 01 08 | 704 | 0.3− | 1.0+ | 2002 05 14 | 704 | 0.2+ | 0.1− |
| 2000 11 01 | 704 | 0.4− | 0.1+ | 2002 02 06 | 704 | 0.1− | 0.4+ | 2005 09 25 | 703 | (0.3+ | 1.9+) |
| 2000 11 01 | 704 | 0.5− | 0.4+ | 2002 02 06 | 704 | 0.3− | 0.1− | 2005 09 25 | 703 | 0.1+ | 1.3+ |
| 2000 11 01 | 704 | 0.0 | 0.2− | 2002 02 06 | 704 | 0.1− | 0.2+ | 2005 09 25 | 703 | (1.0− | 2.9+) |
| 2000 11 02 | 704 | 0.1− | 0.3+ | 2002 02 06 | 704 | 0.3− | 0.0 | 2005 09 25 | 703 | (1.1− | 2.2+) |
| 2000 11 02 | 704 | 0.1− | 0.0 | 2002 02 06 | 704 | 0.4− | 0.1− | 2005 09 26 | 704 | (0.0 | 1.7+) |
| 2000 11 02 | 704 | 0.8− | 0.2+ | 2002 02 09 | 699 | 0.8+ | 0.1+ | 2005 09 26 | 704 | 0.6− | 0.1+ |
| 2000 11 02 | 704 | 0.1− | 0.1+ | 2002 02 09 | 699 | 0.5− | 0.2+ | 2005 09 26 | 704 | 0.3− | 0.3− |
| 2000 11 02 | 704 | 0.1− | 0.6− | 2002 02 09 | 699 | 0.4+ | 0.9− | 2005 09 26 | 704 | 0.0 | 0.9− |
| 2000 11 21 | 704 | 0.1+ | 0.2− | 2002 02 09 | 699 | 0.6+ | 0.4− | 2005 10 10 | 703 | 1.4− | 0.4− |
| 2000 11 21 | 704 | 0.3+ | 1.1− | 2002 02 21 | 704 | 0.1− | 0.2− | 2005 10 10 | 703 | 0.5− | 0.4+ |
| 2000 11 21 | 704 | 0.1− | 0.9− | 2002 02 21 | 704 | 0.2− | 0.2+ | 2005 10 10 | 703 | 0.8− | 0.8+ |
| 2000 11 21 | 704 | 0.0 | 0.7− | 2002 02 21 | 704 | 0.1+ | 0.3+ | 2005 10 10 | 703 | 1.1+ | 0.9+ |
| 2000 11 27 | 704 | 0.1+ | 0.3− | 2002 02 21 | 704 | 0.2− | 0.2− | 2005 10 24 | 644 | 0.5− | 0.1+ |
| 2000 11 27 | 704 | 0.2+ | 0.2+ | 2002 02 21 | 704 | 0.1+ | 0.9+ | 2005 10 24 | 644 | 0.3− | 0.5+ |
| 2000 11 27 | 704 | 0.3+ | 0.2+ | 2002 03 19 | 644 | 0.6+ | 0.3− | 2005 10 24 | 644 | 0.4− | 0.3+ |
| 2000 11 27 | 704 | 0.2+ | 0.2+ | 2002 03 19 | 644 | 0.5+ | 0.3− | 2005 11 05 | 699 | 0.5− | 0.8+ |
| 2000 11 27 | 704 | 0.1+ | 0.3+ | 2002 03 19 | 644 | 0.3+ | 0.1+ | 2005 11 05 | 699 | 0.5+ | 1.1+ |
| 2000 12 16 | 699 | 0.4− | 0.3− | 2002 03 20 | 644 | 0.1+ | 0.3− | 2005 11 05 | 699 | 0.4− | 0.1− |
| 2000 12 16 | 699 | 1.4− | 0.2+ | 2002 03 20 | 644 | 0.0 | 0.1− | 2005 11 05 | 699 | 0.0 | 0.6+ |
| 2000 12 16 | 699 | 0.8+ | 0.6− | 2002 03 20 | 644 | 0.3− | 0.1− | 2006 11 13 | 704 | 0.1− | 0.8− |
| 2000 12 16 | 699 | 0.2+ | 0.6+ | 2002 03 21 | 704 | 0.3− | 0.3+ | 2006 11 13 | 704 | 0.4+ | 0.4− |
| 2000 12 20 | 704 | 0.6+ | 0.9− | 2002 03 21 | 704 | 0.5− | 0.2− | 2006 11 13 | 704 | 0.2+ | 0.6− |
| 2000 12 20 | 704 | 1.6+ | 0.9− | 2002 03 21 | 704 | 0.3− | 0.2− | 2006 11 13 | 704 | 0.1+ | 0.6− |
| 2000 12 20 | 704 | 0.8+ | 1.6+ | 2002 03 21 | 704 | 0.2− | 0.3− | 2006 11 13 | 704 | 0.0 | 0.6− |
| 2000 12 20 | 704 | 0.2+ | 0.1+ | 2002 03 31 | 644 | 0.5+ | 0.9+ | | | | |
| 2000 12 20 | 704 | 0.1− | 0.6+ | 2002 03 31 | 644 | 0.4+ | 0.9+ | | | | |

**2000 SD$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.99127 | | (2000.0) | | | |
| $n$ | 0.17546866 | $\omega$ | 53.80827 | | +0.06201077 | −0.95902332 |
| $a$ | 3.1598733 | $\Omega$ | 35.84617 | | +0.69482280 | −0.15736692 |
| $e$ | 0.2677345 | $i$ | 28.16968 | | +0.71650258 | +0.23560543 |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 1.6− | 0.1− | 2000 11 03 | 704 | 0.5+ | 0.6− | 2000 11 20 | 704 | 0.1+ | 0.2+ |
| 2000 09 28 | 704 | 0.7+ | 0.4− | 2000 11 03 | 704 | 0.3+ | 0.1+ | 2000 11 20 | 704 | 0.3+ | 0.4+ |
| 2000 09 28 | 704 | 0.3+ | 0.6+ | 2000 11 03 | 704 | 0.4− | 0.1+ | 2000 12 30 | 704 | 0.4+ | 0.8− |
| 2000 10 02 | 704 | 0.4+ | 0.0 | 2000 11 03 | 704 | 0.3− | 0.1+ | 2000 12 30 | 704 | 0.1+ | 0.2− |
| 2000 10 02 | 704 | 0.4+ | 0.2− | 2000 11 18 | 699 | 0.2− | 0.6+ | 2000 12 30 | 704 | 1.1− | 0.0 |
| 2000 10 02 | 704 | 0.5− | 0.2− | 2000 11 18 | 699 | 1.0+ | 0.7+ | 2006 11 20 | 703 | 0.1− | 0.1− |
| 2000 11 01 | 704 | 0.2− | 0.2+ | 2000 11 18 | 699 | 0.1− | 0.5+ | 2006 11 20 | 703 | 0.0 | 0.1− |
| 2000 11 01 | 704 | 0.3− | 0.2− | 2000 11 18 | 699 | 0.1− | 0.6+ | 2006 11 20 | 703 | 0.2+ | 0.1+ |
| 2000 11 01 | 704 | 0.1+ | 0.0 | 2000 11 20 | 704 | 0.1+ | 0.2− | 2006 11 20 | 703 | 0.2− | 0.1− |
| 2000 11 01 | 704 | 0.0 | 0.9− | 2000 11 20 | 704 | 0.3− | 0.1− | | | | |
| 2000 11 01 | 704 | 0.0 | 0.3− | 2000 11 20 | 704 | 0.2+ | 0.0 | | | | |

**2000 SH$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.16542 | | (2000.0) | | | |
| $n$ | 0.17452975 | $\omega$ | 118.08391 | | +0.95649160 | +0.22208436 |
| $a$ | 3.1711959 | $\Omega$ | 229.74295 | | −0.26414556 | +0.93456604 |
| $e$ | 0.3200699 | $i$ | 14.35557 | | +0.12389895 | +0.27796556 |
| $P$ | 5.65 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 05 | 608 | 0.2− | 0.9− | 2000 10 04 | 704 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.4+ | 0.3+ |
| 2000 08 05 | 608 | 0.2+ | 0.6− | 2000 10 04 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2000 08 05 | 608 | 0.3− | 1.1− | 2000 10 04 | 704 | 1.3+ | 1.0+ | 2006 11 14 | 691 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 06 | 704 | 0.3+ | 0.1+ | 2000 10 04 | 704 | (1.2+ | 2.1+) | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2000 09 06 | 704 | 0.6− | 0.4− | 2006 10 17 | G96 | 0.5− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2000 09 06 | 704 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.6− | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2000 09 06 | 704 | 0.2+ | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 2000 09 06 | 704 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 17 | 703 | 1.2− | 0.1− |
| 2000 09 22 | 704 | 0.2− | 0.8− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2000 09 22 | 704 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 17 | 703 | (0.0 | 2.7−) |
| 2000 09 22 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | (3.1+ | 1.0−) |
| 2000 09 22 | 704 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.2+ |
| 2000 09 22 | 704 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 2000 09 30 | 704 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2000 09 30 | 704 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2000 09 30 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2000 09 30 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.7+ | 2006 11 19 | 704 | 1.3+ | 0.2− |
| 2000 09 30 | 704 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.3− | 2006 11 19 | 704 | (0.7+ | 1.9+) |
| 2000 09 30 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.6− | 2006 11 19 | 704 | (0.5− | 1.5+) |
| 2000 09 30 | 704 | 0.4+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2000 10 02 | 704 | 0.3− | 0.6+ | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2000 10 02 | 704 | 0.4− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2000 10 02 | 704 | 1.1+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.7− | 0.7+ |
| 2000 10 02 | 704 | 0.7− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2000 10 04 | 704 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.6− | 0.0 |

### 2000 SK$_{282}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.49725 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29237338 | $\omega$ | 109.62984 | | +0.99460504 | | +0.04327273 |
| $a$ | 2.2482477 | $\Omega$ | 247.98263 | | −0.07464176 | | +0.92967600 |
| $e$ | 0.1398561 | $i$ | 5.83674 | | +0.07203764 | | +0.36582785 |
| $P$ | 3.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.7− | 0.8+ | 2000 10 02 | 699 | 0.2− | 0.0 | 2006 05 06 | G96 | 0.1+ | 0.4+ |
| 2000 09 03 | 704 | 0.5− | 0.8+ | 2000 10 02 | 699 | 0.8− | 0.6+ | 2006 05 06 | G96 | 0.2− | 0.1− |
| 2000 09 03 | 704 | 1.4+ | 0.0 | 2000 10 02 | 699 | 0.3− | 0.0 | 2006 05 06 | G96 | 0.3− | 0.2− |
| 2000 09 03 | 704 | 0.8− | 0.1− | 2000 10 02 | 699 | 0.4− | 0.5+ | 2006 05 20 | 691 | 0.2+ | 0.3+ |
| 2000 09 03 | 704 | 0.3+ | 0.3+ | 2000 10 03 | 704 | 0.1+ | 0.3+ | 2006 05 20 | 691 | 0.2+ | 0.1+ |
| 2000 09 23 | 704 | 0.2− | 0.2− | 2000 10 03 | 704 | 0.2+ | 0.1− | 2006 05 20 | 691 | 0.0 | 0.1− |
| 2000 09 23 | 699 | 0.9+ | 0.6− | 2000 10 03 | 704 | 0.1+ | 0.5+ | 2006 06 02 | 691 | 0.1− | 0.3− |
| 2000 09 23 | 704 | 0.1− | 0.1− | 2000 10 03 | 704 | 0.4− | 0.1+ | 2006 06 02 | 691 | 0.2+ | 0.1− |
| 2000 09 23 | 699 | 0.6+ | 0.0 | 2000 10 03 | 704 | 0.1+ | 0.2+ | 2006 06 02 | 691 | 0.2− | 0.1− |
| 2000 09 23 | 704 | 0.1+ | 0.2− | 2000 10 27 | 704 | 0.5− | 0.3+ | 2006 06 02 | G96 | 0.1− | 0.2+ |
| 2000 09 23 | 699 | 0.6+ | 0.6− | 2000 10 27 | 704 | 1.3− | 0.4− | 2006 06 02 | G96 | 0.1− | 0.1− |
| 2000 09 23 | 704 | 0.4+ | 0.4− | 2000 10 27 | 704 | 0.2+ | 0.0 | 2006 06 02 | G96 | 0.0 | 0.2+ |
| 2000 09 23 | 699 | 0.1+ | 0.4− | 2000 10 27 | 704 | 1.8+ | 0.7− | 2006 06 02 | G96 | 0.6− | 0.0 |
| 2000 09 23 | 704 | 0.5− | 0.7− | 2006 05 06 | G96 | 0.4+ | 0.2+ | | | | |

### 2000 SV$_{284}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.24294 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17958531 | $\omega$ | 113.21260 | | +0.97259059 | | −0.21093961 |
| $a$ | 3.1113976 | $\Omega$ | 259.07774 | | +0.15966876 | | +0.91173574 |
| $e$ | 0.1173198 | $i$ | 5.71854 | | +0.16903679 | | +0.35248040 |
| $P$ | 5.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.7+ | 0.0 | 2005 06 29 | 644 | 0.0 | 0.2− | 2006 11 15 | 703 | (1.1− | 2.4+) |
| 2000 09 23 | 704 | 0.1+ | 0.4− | 2005 06 29 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | (1.7+ | 3.4+) |
| 2000 09 23 | 704 | 0.4+ | 1.1− | 2005 07 29 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.8− |
| 2000 09 26 | 699 | 1.1− | 0.0 | 2005 07 29 | 644 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.8− | 0.8+ |
| 2000 09 26 | 699 | 0.7− | 0.9+ | 2005 07 29 | 644 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2000 09 26 | 699 | 0.5− | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2000 09 26 | 699 | 0.8+ | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2000 10 03 | 704 | 1.1+ | 0.0 | 2005 08 06 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.9− | 1.3+ |
| 2000 10 03 | 704 | 0.3− | 0.2− | 2005 08 24 | 644 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2000 10 03 | 704 | 0.4− | 0.4+ | 2005 08 24 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 2000 10 03 | 704 | 0.3− | 0.5− | 2005 08 24 | 644 | 0.5− | 0.2− | 2006 11 18 | 704 | (1.7− | 0.7−) |
| 2000 10 03 | 704 | 0.4− | 0.5+ | 2005 09 03 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2000 10 03 | 704 | 1.5− | 1.2+ | 2005 09 03 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2000 10 03 | 704 | 0.9+ | 1.3+ | 2005 09 03 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2001 12 09 | 691 | 0.2+ | 0.5− | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | (2.8− | 1.0+) |
| 2001 12 09 | 691 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.8− | 0.5− |
| 2001 12 09 | 691 | 0.2+ | 0.8− | 2006 10 20 | G96 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.0+ | 1.2+ |
| 2001 12 19 | 644 | 0.2− | 1.0+ | 2006 10 20 | G96 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.5+ | 0.1− |
| 2001 12 19 | 644 | 0.4− | 0.8+ | 2006 11 01 | G96 | 0.3− | 0.4− | 2006 11 22 | 691 | 0.4+ | 0.2− |
| 2001 12 19 | 644 | 0.5− | 0.9+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 01 13 | 704 | 0.8− | 1.5+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 27 | 704 | 0.5+ | 0.3+ |
| 2002 01 13 | 704 | 0.1− | 1.1+ | 2006 11 01 | G96 | 0.4− | 0.9− | 2006 11 27 | 704 | 0.5+ | 0.5− |
| 2002 01 13 | 704 | 0.5− | 1.1+ | 2006 11 10 | 691 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.2− | 0.3− |
| 2002 01 13 | 704 | 0.6− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.7− | 2006 12 01 | 704 | 0.4− | 0.1+ |
| 2004 06 12 | E12 | (1.2+ | 2.0−) | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 1.3+ | 0.7+ |
| 2004 06 12 | E12 | (3.1− | 2.5−) | 2006 11 11 | 703 | 0.3− | 0.7− | 2006 12 01 | 704 | 0.4+ | 1.5+ |
| 2004 06 12 | E12 | (0.1+ | 1.7−) | 2006 11 11 | 703 | 0.1+ | 1.4− | 2006 12 01 | 704 | (0.1− | 2.4+) |
| 2004 06 12 | E12 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.4+ | | | | |
| 2005 06 29 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.3+ | | | | |

### 2000 SA$_{286}$ = 2006 UY

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.00666 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17312816 | $\omega$ | 105.32787 | | −0.66199937 | | −0.73879501 |
| $a$ | 3.1882882 | $\Omega$ | 27.43803 | | +0.53839646 | | −0.58592872 |
| $e$ | 0.0216843 | $i$ | 15.90148 | | +0.52142698 | | −0.33297066 |
| $P$ | 5.69 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.6− | 0.7− | 2006 10 17 | A44 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2000 09 24 | 704 | 0.1+ | 0.7− | 2006 10 17 | A44 | 0.2− | 0.4− | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.0 | 0.2− | 2006 10 18 | A44 | 0.9− | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2000 10 01 | 699 | 1.2+ | 0.1+ | 2006 10 18 | A44 | 0.7− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 699 | 0.1− | 0.6− | 2006 10 18 | A44 | 0.6− | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.4+ |
| 2000 10 01 | 699 | 0.6+ | 1.3+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2000 10 01 | 699 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.4− | 0.0 |
| 2000 10 03 | 704 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2000 10 03 | 704 | 0.8− | 0.6+ | 2006 10 20 | A44 | 0.3+ | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2000 10 03 | 704 | 0.0 | 0.6+ | 2006 10 20 | A44 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2000 10 03 | 704 | 0.6− | 0.4− | 2006 10 20 | A44 | 0.2+ | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2000 10 03 | 704 | 0.4+ | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2000 10 03 | 704 | 0.9− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2000 10 03 | 704 | 0.4− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2006 10 16 | A44 | 0.6− | 0.1+ | 2006 10 29 | 704 | 1.0+ | 0.5− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2006 10 16 | A44 | 0.7− | 0.2+ | 2006 10 29 | 704 | 0.6+ | 1.0− | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 2006 10 16 | A44 | 0.8− | 0.1+ | 2006 10 29 | 704 | 0.5+ | 0.6+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2006 10 17 | A44 | 0.1− | 0.3− | 2006 10 29 | 704 | 0.3+ | 0.3− | 2006 11 21 | 691 | 0.2− | 0.4− |

### 2000 SM$_{288}$ = 2006 VE$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.75078 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17874041 | $\omega$ | 127.60012 | | +0.97504744 | | −0.12480183 |
| $a$ | 3.1211949 | $\Omega$ | 240.26144 | | +0.06700892 | | +0.95389826 |
| $e$ | 0.1374346 | $i$ | 12.20687 | | +0.21164192 | | +0.27295166 |
| $P$ | 5.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.8+ | 0.5− | 2006 10 19 | 703 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2000 09 01 | 704 | 0.5− | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2000 09 01 | 704 | 0.3− | 0.7+ | 2006 11 08 | 644 | (1.4− | 1.6+) | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2000 09 22 | 699 | 0.4− | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2000 09 22 | 699 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2000 09 22 | 699 | 1.4+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2000 09 22 | 699 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2000 09 27 | 704 | 0.7− | 0.8+ | 2006 11 14 | 703 | 0.9+ | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2000 09 27 | 704 | 0.7− | 0.3− | 2006 11 14 | 703 | 1.0+ | 1.2− | 2006 11 22 | 704 | 0.3− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 0.1+ | 0.5− | 2006 11 14 | 703 | 1.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2000 09 27 | 704 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.8− | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2000 09 27 | 704 | 1.0+ | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.1− | 2006 11 22 | 704 | 1.1+ | 0.9+ |
| 2000 10 03 | 704 | 0.5+ | 0.0 | 2006 11 14 | 703 | 0.7+ | 1.1− | 2006 11 29 | 704 | 1.0− | 0.1− |
| 2000 10 03 | 704 | 0.6+ | 0.4− | 2006 11 16 | 704 | 1.4− | 0.6− | 2006 11 29 | 704 | 0.4− | 1.1+ |
| 2000 10 03 | 704 | 0.8− | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.4− | 0.7− |
| 2000 10 03 | 704 | 0.5− | 0.2− | 2006 11 16 | 704 | 0.7− | 0.2− | 2006 11 29 | 704 | 0.7− | 1.1+ |
| 2006 10 19 | 703 | 0.2+ | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.7− | 2006 11 29 | 704 | 0.5− | 0.6+ |
| 2006 10 19 | 703 | 0.7− | 0.6+ | 2006 11 16 | 704 | 0.5+ | 1.0+ | | | | |

**2000 SD$_{295}$ = 1983 VM$_3$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.16861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23235432 | $\omega$ | 146.00270 | | +0.87043664 | −0.45014014 | |
| $a$ | 2.6204078 | $\Omega$ | 241.96894 | | +0.38634057 | +0.87552648 | |
| $e$ | 0.2920984 | $i$ | 13.04802 | | +0.30509183 | +0.17557687 | |
| $P$ | 4.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 11 08 | 381 | 0.1− | 3.3− | 2000 12 16 | 699 | 0.1− | 0.9+ | 2004 09 11 | 704 | 0.1− | 0.1+ |
| 2000 09 27 | 704 | 0.0 | 0.1− | 2000 12 16 | 699 | 0.7− | 0.5+ | 2004 09 11 | 704 | 0.3+ | 0.1+ |
| 2000 09 27 | 704 | 0.1− | 0.2+ | 2000 12 16 | 699 | 0.7+ | 0.1− | 2004 09 11 | 704 | 0.1+ | 0.2+ |
| 2000 09 27 | 704 | 0.4+ | 0.3+ | 2000 12 17 | 699 | 0.5+ | 1.1+ | 2004 09 14 | 704 | 0.6− | 0.2+ |
| 2000 09 27 | 704 | 0.7+ | 0.4+ | 2000 12 17 | 699 | 0.4− | 1.5+ | 2004 09 14 | 704 | 0.4+ | 0.3+ |
| 2000 09 27 | 704 | 1.0− | 0.6+ | 2000 12 17 | 699 | 0.9− | 0.0 | 2004 09 14 | 704 | 0.6− | 0.1+ |
| 2000 10 03 | 704 | 0.1− | 0.1+ | 2000 12 17 | 699 | 0.1− | 1.1+ | 2004 09 14 | 704 | 0.7− | 0.6+ |
| 2000 10 03 | 704 | 0.2+ | 0.4+ | 2000 12 29 | 699 | 0.2− | 0.5− | 2004 09 14 | 704 | 0.8− | 0.1+ |
| 2000 10 03 | 704 | 0.6− | 0.4+ | 2000 12 29 | 699 | 0.1− | 0.5− | 2004 09 22 | 699 | 0.1+ | 0.1− |
| 2000 10 25 | 704 | 0.8− | 0.2+ | 2000 12 29 | 699 | 0.2− | 0.5− | 2004 09 22 | 699 | 0.3+ | 0.3+ |
| 2000 10 25 | 704 | 0.6+ | 0.1− | 2000 12 29 | 699 | 0.4− | 0.8− | 2004 09 22 | 699 | 0.6+ | 0.6+ |
| 2000 10 25 | 704 | 1.4− | 0.4− | 2001 01 03 | 704 | 0.7+ | 0.6− | 2004 09 22 | 699 | 0.2+ | 0.0 |
| 2000 10 25 | 704 | 0.4− | 0.8− | 2001 01 03 | 704 | 0.7+ | 0.1+ | 2004 09 23 | 704 | 0.1− | 0.6+ |
| 2000 10 25 | 704 | 0.2− | 0.9− | 2001 01 03 | 704 | 0.1+ | 0.1+ | 2004 09 23 | 704 | 0.1− | 0.6+ |
| 2000 11 01 | 919 | 0.2− | 1.1+ | 2001 01 03 | 704 | 0.1− | 0.7+ | 2004 09 23 | 704 | 0.0 | 0.8+ |
| 2000 11 01 | 919 | 0.2− | 1.0+ | 2004 08 11 | 170 | 0.9− | 0.5− | 2004 09 23 | 704 | 0.2+ | 0.4+ |
| 2000 11 02 | 919 | 0.5+ | 1.6− | 2004 08 11 | 170 | 0.4− | 0.6− | 2004 09 23 | 704 | 0.1− | 0.6+ |
| 2000 11 02 | 919 | 0.2− | 1.2− | 2004 08 11 | 170 | 0.0 | 0.7− | 2004 10 12 | 699 | 0.2+ | 0.0 |
| 2000 11 03 | 704 | 0.3− | 0.2+ | 2004 08 12 | 170 | 0.4+ | 0.6− | 2004 10 12 | 699 | 0.2+ | 0.2− |
| 2000 11 03 | 704 | 0.2− | 0.2− | 2004 08 18 | 170 | 0.7− | 1.2− | 2004 10 12 | 699 | 0.3+ | 0.2+ |
| 2000 11 03 | 704 | 0.4+ | 0.5− | 2004 08 18 | 170 | 0.5+ | 0.5− | 2004 10 12 | 699 | 0.2− | 0.0 |
| 2000 11 03 | 704 | 0.7− | 0.4− | 2004 08 18 | 170 | 0.1+ | 0.5− | 2004 11 03 | 644 | 0.1+ | 0.3+ |
| 2000 11 05 | 704 | 0.2+ | 0.1+ | 2004 08 18 | 170 | 0.2+ | 0.3− | 2004 11 03 | 644 | 0.1− | 0.0 |
| 2000 11 05 | 704 | 0.1− | 0.8− | 2004 08 18 | 170 | 0.1− | 0.5+ | 2004 11 03 | 644 | 0.1+ | 0.1+ |
| 2000 11 05 | 704 | 0.2− | 0.4− | 2004 08 18 | 170 | 0.6+ | 0.4− | 2004 11 04 | 703 | 0.4− | 0.5− |
| 2000 11 05 | 704 | 0.2+ | 0.2+ | 2004 08 29 | 699 | 0.4− | 0.6− | 2004 11 04 | 703 | 0.6− | 0.5− |
| 2000 11 28 | 704 | 0.7+ | 0.2+ | 2004 08 29 | 699 | 0.8+ | 1.0+ | 2004 11 04 | 703 | 0.2− | 0.2− |
| 2000 11 28 | 704 | 0.1+ | 0.6+ | 2004 08 29 | 699 | 0.5− | 0.7− | 2004 11 04 | 703 | 0.8+ | 0.0 |
| 2000 11 28 | 704 | 0.4+ | 0.8+ | 2004 08 29 | 699 | 0.3+ | 0.5+ | 2004 12 09 | 704 | 0.4− | 0.2− |
| 2000 11 30 | 699 | 0.9+ | 0.2− | 2004 09 09 | A35 | 0.0 | 0.1− | 2004 12 09 | 704 | 0.4− | 0.7+ |
| 2000 11 30 | 699 | 1.0+ | 0.1− | 2004 09 09 | A35 | 0.1− | 0.1+ | 2004 12 09 | 704 | 0.4+ | 0.4+ |
| 2000 11 30 | 699 | 0.9+ | 0.3− | 2004 09 09 | A35 | 0.1− | 0.2− | 2004 12 09 | 704 | 0.5− | 0.2− |
| 2000 11 30 | 699 | 0.2+ | 0.2− | 2004 09 11 | 704 | 0.8+ | 0.0 | | | | |
| 2000 12 16 | 699 | 0.7− | 0.8+ | 2004 09 11 | 704 | 0.3− | 0.3+ | | | | |

**2000 SQ$_{296}$ = 2006 TB$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.13838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17732966 | $\omega$ | 150.32208 | | +0.98169899 | −0.14617655 | |
| $a$ | 3.1377268 | $\Omega$ | 218.68935 | | +0.11207407 | +0.96166524 | |
| $e$ | 0.1500692 | $i$ | 11.26057 | | +0.15396917 | +0.23201809 | |
| $P$ | 5.56 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 608 | 0.0 | 0.8+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.8− | 0.3+ |
| 2000 09 21 | 608 | 0.1− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 2000 09 21 | 608 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.7+ | 1.0+ |
| 2000 09 28 | 704 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2− | 1.3− |
| 2000 09 28 | 704 | 1.9+ | 0.7− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (1.9+ | 0.4−) |
| 2000 09 28 | 704 | 0.6+ | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.1+ |
| 2000 09 28 | 704 | 0.8− | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.0 |
| 2000 09 28 | 704 | 0.4+ | 1.3− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.5− |
| 2000 10 03 | 704 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.3− |
| 2000 10 03 | 704 | 0.4− | 0.4− | 2006 11 01 | 691 | 1.4− | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.2− |
| 2000 10 03 | 704 | 0.6− | 0.6+ | 2006 11 15 | G96 | 0.5+ | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.4− |
| 2000 10 03 | 704 | 0.4− | 0.5− | 2006 11 15 | G96 | 0.6+ | 0.4− | 2006 11 28 | 704 | 0.2− | 1.3+ |
| 2000 10 03 | 704 | 0.5− | 0.6+ | 2006 11 15 | G96 | 0.5+ | 0.7− | 2006 11 28 | 704 | 0.2+ | 0.1− |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.2− |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 17 | 704 | 1.1+ | 0.1− | | | | |

**2000 SH$_{299}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.84239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17647696 | $\omega$ | 138.98558 | | +0.98355045 | +0.15735644 | |
| $a$ | 3.1478259 | $\Omega$ | 212.28545 | | −0.17551876 | +0.94857052 | |
| $e$ | 0.2366026 | $i$ | 9.55879 | | +0.04268103 | +0.27468696 | |
| $P$ | 5.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 0.9− | 0.6+ | 2000 10 03 | 704 | 0.3+ | 0.5− | 2004 04 21 | 291 | 0.2+ | 1.0+ |
| 2000 09 26 | 699 | 1.7− | 0.6− | 2000 10 03 | 704 | 0.5− | 0.5− | 2004 04 21 | 291 | 0.1+ | 1.0+ |
| 2000 09 26 | 699 | (0.9− | 2.2+) | 2000 10 25 | 704 | 0.0 | 0.6+ | 2006 10 28 | 291 | 0.2+ | 0.3+ |
| 2000 09 26 | 699 | 0.8− | 0.7+ | 2000 10 25 | 704 | 0.3+ | 0.1+ | 2006 10 28 | 291 | 0.3+ | 0.2+ |
| 2000 09 28 | 704 | 0.3− | 0.6− | 2000 10 25 | 704 | 0.3− | 0.1− | 2006 10 28 | 291 | 0.1− | 0.0 |
| 2000 09 28 | 704 | 0.3+ | 0.2− | 2000 10 25 | 704 | 0.0 | 0.6+ | 2006 11 20 | 691 | 0.3− | 0.3+ |
| 2000 09 28 | 704 | 0.5− | 1.0− | 2000 10 25 | 704 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.3− | 0.2− |
| 2000 09 28 | 704 | 0.1+ | 1.1+ | 2000 11 03 | 704 | 0.4+ | 0.7+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2000 09 30 | 049 | 1.1+ | 0.3+ | 2000 11 03 | 704 | 0.3+ | 1.1+ | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2000 09 30 | 049 | 1.6+ | 1.5+ | 2000 11 03 | 704 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.2+ |
| 2000 09 30 | 049 | 1.0+ | 1.0+ | 2000 11 26 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.7+ | 0.0 |
| 2000 10 03 | 704 | 1.9− | 0.4+ | 2000 11 26 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2000 10 03 | 704 | 0.3− | 0.3+ | 2000 11 26 | 691 | 0.2+ | 0.1+ | | | | |
| 2000 10 03 | 704 | 1.0+ | 0.2+ | 2004 04 21 | 291 | 0.2+ | 0.8+ | | | | |

**2000 SZ$_{302}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.59331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28130893 | $\omega$ | 158.22007 | | −0.18026860 | −0.98258611 | |
| $a$ | 2.3068200 | $\Omega$ | 302.13944 | | +0.89442073 | −0.14470008 | |
| $e$ | 0.1137458 | $i$ | 3.04845 | | +0.40928570 | −0.11656082 | |
| $P$ | 3.50 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 691 | 0.0 | 0.1− | 2000 10 03 | 704 | 0.4+ | 0.2− | 2005 01 01 | 703 | 1.0− | 0.4− |
| 2000 09 07 | 691 | 0.0 | 0.0 | 2000 10 03 | 704 | 0.5− | 0.2− | 2005 01 01 | 703 | 1.8− | 0.0 |
| 2000 09 07 | 691 | 0.1+ | 0.1+ | 2004 12 21 | 703 | 0.7+ | 0.5− | 2005 01 01 | 703 | 0.2− | 0.1− |
| 2000 09 28 | 704 | 0.4− | 0.4− | 2004 12 21 | 703 | 0.1+ | 0.3+ | 2005 01 18 | 691 | 0.1+ | 0.1+ |
| 2000 09 28 | 704 | 0.0 | 0.3+ | 2004 12 21 | 703 | 0.4+ | 0.2+ | 2005 01 18 | 691 | 0.0 | 0.1+ |
| 2000 09 28 | 704 | 0.1+ | 1.0+ | 2004 12 21 | 703 | 0.6− | 0.3+ | 2005 01 18 | 691 | 0.2+ | 0.1+ |
| 2000 10 03 | 704 | 0.1+ | 0.3− | 2005 01 01 | 703 | 1.3+ | 0.8− | | | | |

**2000 SF$_{303}$ = 2004 VA$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.07676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25681422 | $\omega$ | 128.42894 | | +0.99862830 | +0.01883792 | |
| $a$ | 2.4512635 | $\Omega$ | 230.54676 | | −0.03520176 | +0.93225202 | |
| $e$ | 0.1582505 | $i$ | 3.62752 | | +0.03876032 | +0.36131884 | |
| $P$ | 3.84 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.5− | 0.1− | 2000 10 06 | 704 | 0.6+ | 1.8− | 2004 11 12 | 703 | 0.2+ | 0.5− |
| 2000 09 28 | 704 | 1.3− | 0.8+ | 2000 10 06 | 704 | 1.0+ | 0.0 | 2004 11 19 | 703 | 0.5− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.4− | 0.6+ | 2000 10 06 | 704 | 0.4− | 0.1+ | 2004 11 19 | 703 | 0.6− | 0.2− |
| 2000 10 03 | 704 | 0.4+ | 0.1+ | 2004 10 09 | 691 | 0.1− | 1.0− | 2004 11 19 | 703 | 0.0 | 0.5+ |
| 2000 10 03 | 704 | 0.4− | 0.3− | 2004 10 09 | 691 | 0.2+ | 0.0 | 2004 11 19 | 703 | 0.1+ | 0.6+ |
| 2000 10 03 | 704 | 0.2− | 0.4− | 2004 10 09 | 691 | 0.4+ | 0.0 | 2004 12 13 | 691 | 0.1− | 0.1− |
| 2000 10 03 | 704 | 0.1+ | 0.1− | 2004 11 04 | 691 | 0.1+ | 0.0 | 2004 12 13 | 691 | 0.0 | 0.0 |
| 2000 10 04 | 704 | 0.2− | 0.7+ | 2004 11 04 | 691 | 0.1+ | 0.2+ | 2004 12 13 | 691 | 0.0 | 0.0 |
| 2000 10 04 | 704 | 0.4− | 1.5+ | 2004 11 04 | 691 | 0.1+ | 0.1+ | 2006 02 06 | 691 | 0.2− | 0.2+ |
| 2000 10 04 | 704 | 1.0+ | 1.1+ | 2004 11 12 | 703 | 0.3− | 0.5− | 2006 02 06 | 691 | 0.0 | 0.0 |
| 2000 10 04 | 704 | 0.0 | 0.2+ | 2004 11 12 | 703 | 1.7− | 0.6+ | 2006 02 06 | 691 | 0.3+ | 0.2+ |
| 2000 10 06 | 704 | 0.3− | 0.4+ | 2004 11 12 | 703 | 0.1+ | 0.3− | | | | |

**2000 SJ$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.40882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17612344 | $\omega$ | 175.40333 | | +0.54423439 | −0.82179242 | |
| $a$ | 3.1520368 | $\Omega$ | 241.53482 | | +0.76345869 | +0.56852017 | |
| $e$ | 0.1023769 | $i$ | 11.06492 | | +0.34776392 | +0.03797414 | |
| $P$ | 5.60 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.4− | 0.6− | 2000 11 19 | 704 | (0.2− | 2.9−) | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2000 09 30 | 704 | 0.2− | 1.0− | 2005 08 26 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2000 09 30 | 704 | 0.6− | 0.3+ | 2005 08 26 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2000 10 03 | 704 | 0.2+ | 0.9+ | 2005 08 26 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2000 10 03 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 691 | 0.5+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.3− |
| 2000 10 03 | 704 | 0.6− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2000 10 25 | 704 | 1.1+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2000 10 25 | 704 | 0.6− | 0.3+ | 2006 11 10 | 691 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2000 10 25 | 704 | 0.7− | 0.3− | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2000 11 03 | 704 | 0.6+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2000 11 03 | 704 | 0.8+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2000 11 03 | 704 | 0.5+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2000 11 03 | 704 | 0.9+ | 0.6+ | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 12 01 | 704 | 0.9− | 0.8+ |
| 2000 11 03 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | 1.6+ | 0.4+ | 2006 12 01 | 704 | 0.6− | 0.7− |
| 2000 11 19 | 704 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.9+ | 2006 12 01 | 704 | 1.0− | 0.4− |
| 2000 11 19 | 704 | 0.9− | 0.5− | 2006 11 18 | 704 | 1.5+ | 0.1+ | 2006 12 01 | 704 | 0.4+ | 0.0 |

**2000 SJ$_{308}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.96567 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18531089 | $\omega$ | 119.69039 | | +0.91744714 | −0.35283088 | |
| $a$ | 3.0469740 | $\Omega$ | 261.49393 | | +0.26936779 | +0.89093539 | |
| $e$ | 0.1290618 | $i$ | 10.71335 | | +0.29279982 | +0.28590994 | |
| $P$ | 5.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.8− | 0.5+ | 2000 11 01 | 704 | 0.2− | 0.1+ | 2005 09 11 | 704 | 0.4+ | 0.6+ |
| 2000 09 30 | 704 | 0.2+ | 0.3− | 2000 11 01 | 704 | 0.4− | 1.3+ | 2005 09 11 | 704 | 0.9+ | 0.1− |
| 2000 09 30 | 704 | 0.0 | 0.4− | 2000 11 19 | 704 | 0.1− | 0.8− | 2005 09 11 | 704 | 0.0 | 0.3+ |
| 2000 09 30 | 704 | 0.6− | 0.4− | 2000 11 19 | 704 | 0.5+ | 0.2+ | 2005 09 30 | 644 | 0.1− | 0.2+ |
| 2000 10 03 | 704 | 0.0 | 0.1+ | 2000 11 19 | 704 | 0.9+ | 1.7+ | 2005 09 30 | 644 | 0.1− | 0.8+ |
| 2000 10 03 | 704 | 0.2− | 0.2− | 2005 09 03 | 683 | 0.9− | 0.6− | 2005 09 30 | 644 | 0.3+ | 0.4+ |
| 2000 10 03 | 704 | 0.3− | 0.5− | 2005 09 03 | 683 | 0.2− | 1.6+ | 2005 10 08 | 703 | 0.2− | 0.8− |
| 2000 10 03 | 704 | 0.0 | 1.1+ | 2005 09 03 | 683 | 1.1− | 0.7+ | 2005 10 08 | 703 | 0.2− | 0.5− |
| 2000 10 03 | 704 | 1.1+ | 0.7− | 2005 09 11 | 704 | 0.3+ | 0.1+ | 2005 10 08 | 703 | 0.9+ | 1.2− |
| 2000 11 01 | 704 | 0.2− | 1.2− | 2005 09 11 | 704 | 1.0+ | 0.4− | 2005 10 08 | 703 | 0.9− | 1.2− |

**2000 SQ$_{308}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.88820 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27859146 | $\omega$ | 64.54566 | | +0.99704335 | +0.01666441 | |
| $a$ | 2.3217967 | $\Omega$ | 294.42327 | | −0.04726375 | +0.90269470 | |
| $e$ | 0.1885464 | $i$ | 4.72564 | | +0.06058627 | +0.42995881 | |
| $P$ | 3.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 29 | 691 | 0.2+ | 0.3− | 2000 10 04 | 704 | 0.6− | 0.3+ | 2000 10 25 | 704 | 0.0 | 0.5+ |
| 1998 01 29 | 691 | 0.2− | 0.1− | 2000 10 05 | 704 | 0.8+ | 1.4+ | 2000 10 25 | 691 | 0.2+ | 0.3− |
| 1998 01 29 | 691 | 0.1− | 0.1− | 2000 10 05 | 704 | 0.2− | 0.1− | 2000 10 25 | 704 | 0.3− | 0.3− |
| 2000 09 08 | 699 | 1.1+ | 0.5+ | 2000 10 05 | 704 | 0.6− | 0.1+ | 2000 10 25 | 704 | 0.4− | 0.3− |
| 2000 09 08 | 699 | 0.4+ | 1.2+ | 2000 10 05 | 704 | 1.0+ | 1.9− | 2000 10 25 | 691 | 0.2+ | 0.4− |
| 2000 09 08 | 699 | 0.6+ | 0.9+ | 2000 10 05 | 704 | 0.0 | 0.4+ | 2000 10 25 | 704 | 0.6− | 0.8− |
| 2000 09 08 | 699 | 0.3+ | 0.2+ | 2000 10 05 | 704 | 0.4− | 0.1− | 2000 10 25 | 704 | 0.0 | 0.3+ |
| 2000 09 25 | 699 | 1.5− | 0.9+ | 2000 10 05 | 704 | 0.3− | 0.2+ | 2000 10 25 | 691 | 0.1+ | 0.5− |
| 2000 09 25 | 699 | 0.1− | 0.2+ | 2000 10 05 | 704 | 1.0+ | 1.5− | 2000 11 01 | 704 | 0.7− | 1.4+ |
| 2000 09 25 | 699 | 1.0+ | 0.7+ | 2000 10 05 | 704 | 0.4− | 0.5+ | 2000 11 01 | 704 | 0.1+ | 0.4+ |
| 2000 09 25 | 699 | 0.6+ | 0.7+ | 2000 10 05 | 704 | 0.6− | 0.1+ | 2000 11 01 | 704 | 0.7+ | 0.9− |
| 2000 09 30 | 704 | 0.2− | 0.9+ | 2000 10 05 | 704 | 0.6− | 0.7+ | 2000 11 27 | 704 | 0.8+ | 1.0+ |
| 2000 09 30 | 704 | 0.1− | 1.1+ | 2000 10 05 | 704 | 1.2+ | 1.5− | 2000 11 27 | 704 | 0.3+ | 1.0+ |
| 2000 09 30 | 704 | 1.4− | 0.9+ | 2000 10 05 | 704 | 0.4− | 0.3+ | 2000 11 27 | 704 | 0.1+ | 0.4+ |
| 2000 09 30 | 704 | 0.8− | 0.2+ | 2000 10 05 | 704 | 0.2− | 0.4− | 2000 11 27 | 704 | 0.8− | 0.5+ |
| 2000 10 03 | 704 | 0.3− | 1.0+ | 2000 10 05 | 704 | 0.5+ | 1.0− | 2000 11 27 | 704 | 0.4− | 0.4+ |
| 2000 10 03 | 704 | 0.3− | 0.1− | 2000 10 05 | 704 | (2.7+ | 1.4−) | 2000 11 30 | 645 | 0.0 | 0.2− |
| 2000 10 03 | 704 | 0.6+ | 0.9+ | 2000 10 05 | 704 | 0.3− | 0.1− | 2000 11 30 | 645 | 0.0 | 0.2− |
| 2000 10 03 | 704 | 1.2+ | 0.2− | 2000 10 07 | 704 | 0.0 | 1.0+ | 2005 01 17 | 691 | 0.1+ | 0.4+ |
| 2000 10 03 | 704 | 0.6+ | 0.3− | 2000 10 07 | 704 | 0.3− | 0.7+ | 2005 01 17 | 691 | 0.2− | 0.5+ |
| 2000 10 04 | 704 | 0.0 | 0.0 | 2000 10 07 | 704 | 0.2− | 0.7− | 2005 01 17 | 691 | 0.3+ | 0.3+ |
| 2000 10 04 | 704 | 0.2− | 0.8+ | 2000 10 07 | 704 | 0.2+ | 1.4− | | | | |
| 2000 10 04 | 704 | 1.0− | 0.1− | 2000 10 07 | 704 | 1.4− | 0.6− | | | | |

**2000 ST$_{314}$ = 2006 VN$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.77878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18510871 | $\omega$ | 80.03308 | | +0.87083856 | +0.42368656 | |
| $a$ | 3.0491923 | $\Omega$ | 254.53986 | | −0.48705605 | +0.81224308 | |
| $e$ | 0.1430343 | $i$ | 14.98798 | | +0.06645751 | +0.40093750 | |
| $P$ | 5.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 699 | 1.0− | 0.0 | 2000 10 04 | 704 | 0.7+ | 0.4− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2000 09 25 | 699 | 0.2− | 1.4+ | 2000 10 04 | 704 | 0.1+ | 0.7− | 2006 11 20 | 691 | 0.2− | 0.3− |
| 2000 09 25 | 699 | 0.6− | 0.4− | 2006 11 15 | 703 | (1.8− | 0.2−) | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2000 09 25 | 699 | 0.8− | 0.3− | 2006 11 15 | 703 | 0.2+ | 0.3− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2000 09 28 | 704 | 0.7+ | 0.0 | 2006 11 15 | 703 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2000 09 28 | 704 | 0.1− | 0.1+ | 2006 11 15 | 703 | (1.9− | 0.3−) | 2006 11 30 | 691 | 0.3+ | 0.2+ |
| 2000 09 28 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.3+ | 2006 11 30 | 691 | 0.2+ | 0.0 |
| 2000 09 28 | 704 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.1− | 2006 11 30 | 691 | 0.2+ | 0.2− |
| 2000 09 28 | 704 | 0.6+ | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1+ | | | | |
| 2000 10 04 | 704 | 0.6+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1− | | | | |

**2000 SX$_{314}$ = 2006 VQ$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.12729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18106385 | $\omega$ | 138.87860 | | +0.88291923 | −0.39438831 | |
| $a$ | 3.0944363 | $\Omega$ | 246.06207 | | +0.32366531 | +0.90433590 | |
| $e$ | 0.1213544 | $i$ | 16.18587 | | +0.34013879 | +0.16320063 | |
| $P$ | 5.44 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.2+ | 0.4− | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2000 09 28 | 704 | 0.3− | 0.4− | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2000 09 28 | 704 | 0.1− | 0.7− | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2000 09 28 | 704 | 1.1− | 0.3− | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2000 09 28 | 704 | 1.0− | 0.6− | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2000 10 03 | 699 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2000 10 03 | 699 | 1.5+ | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2000 10 03 | 699 | 0.7+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2000 10 03 | 699 | 1.8− | 1.4+ | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2000 10 04 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.4− | 0.4+ |
| 2000 10 04 | 704 | 0.3+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.8+ | 0.8+ |
| 2000 10 04 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.4+ | 2006 12 01 | 704 | 0.3+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 04 | 704 | 0.6+ | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.9+ | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2000 10 04 | 704 | 0.5+ | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.2+ | 2006 12 01 | 704 | 0.3+ | 0.4− |
| 2005 06 30 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.5+ | 2006 12 01 | 704 | 0.5− | 0.6− |
| 2005 06 30 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2005 06 30 | 644 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2006 10 20 | G96 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.3− | 0.1− | | | | |
| 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.0 | | | | |

**2000 SD$_{318}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.17271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17247571 | $\omega$ | 157.65596 | | +0.40205849 | −0.87704928 | |
| $a$ | 3.1963238 | $\Omega$ | 267.79669 | | +0.79524035 | +0.47682128 | |
| $e$ | 0.1313425 | $i$ | 15.25569 | | +0.45380806 | −0.05853227 | |
| $P$ | 5.71 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 1.1+ | 0.4+ | 2002 01 23 | 704 | 0.5+ | 0.4+ | 2006 11 27 | 621 | 0.3− | 0.0 |
| 2000 09 30 | 704 | 0.6+ | 0.1+ | 2002 01 23 | 704 | 1.2+ | 0.4− | 2006 11 27 | 621 | 0.3+ | 0.5− |
| 2000 09 30 | 704 | 0.1+ | 0.1+ | 2002 01 23 | 704 | 0.2− | 0.6− | 2006 11 28 | 621 | 0.1− | 0.1− |
| 2000 09 30 | 704 | 0.3+ | 0.9+ | 2002 01 23 | 704 | 0.1+ | 0.3− | 2006 11 28 | 621 | 0.0 | 0.6− |
| 2000 10 04 | 704 | 0.9− | 0.6− | 2002 02 08 | 644 | 0.4+ | 0.4− | 2006 11 28 | 621 | 0.3− | 0.4− |
| 2000 10 04 | 704 | 0.3+ | 0.6− | 2002 02 08 | 644 | 0.3+ | 0.4− | 2006 11 29 | 704 | 1.4− | 0.6+ |
| 2000 10 04 | 704 | 0.3− | 1.1− | 2002 02 08 | 644 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.8+ | 0.4− |
| 2000 10 04 | 704 | 0.7+ | 0.1+ | 2002 02 13 | 645 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1− | 0.7+ |
| 2000 11 19 | 704 | 0.4+ | 0.4+ | 2002 02 13 | 645 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.8− |
| 2000 11 19 | 704 | 0.2− | 0.5+ | 2002 03 05 | 645 | 0.0 | 0.1+ | 2006 11 30 | A24 | 0.1− | 0.1+ |
| 2000 11 19 | 704 | 1.0− | 0.5+ | 2002 03 05 | 645 | 0.0 | 0.1+ | 2006 11 30 | A24 | 1.2+ | 0.2+ |
| 2000 11 19 | 704 | 1.5− | 0.2+ | 2006 11 27 | 621 | 0.1− | 0.3− | 2006 11 30 | A24 | 0.3− | 0.3+ |

**2000 SO$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.26028 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25895508 | $\omega$ | 75.97979 | | +0.81769092 | −0.57558478 | |
| $a$ | 2.4377346 | $\Omega$ | 319.15971 | | +0.52260862 | +0.74890889 | |
| $e$ | 0.1833186 | $i$ | 0.80171 | | +0.24137481 | +0.32838640 | |
| $P$ | 3.81 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.2− | 0.2+ | 2000 10 02 | 645 | 0.0 | 0.0 | 2004 11 04 | 703 | 0.0 | 0.4− |
| 2000 09 28 | 691 | 0.1− | 0.3+ | 2000 10 02 | 645 | 0.1− | 0.0 | 2004 11 04 | 703 | 0.2− | 0.3+ |
| 2000 09 28 | 691 | 0.3− | 0.2+ | 2004 10 06 | 691 | 0.1− | 0.1+ | 2004 11 04 | 703 | 0.4+ | 0.3+ |
| 2000 10 01 | 704 | 0.5+ | 0.0 | 2004 10 06 | 691 | 0.1+ | 0.2+ | 2004 11 04 | 703 | 1.4− | 0.7+ |
| 2000 10 01 | 704 | 0.9+ | 0.1− | 2004 10 06 | 691 | 0.3− | 0.1+ | 2004 11 09 | 695 | 0.4+ | 0.1− |
| 2000 10 01 | 704 | 1.0+ | 0.5− | 2004 10 14 | 691 | 0.3+ | 0.2− | 2004 11 09 | 695 | 0.2+ | 0.1− |
| 2000 10 01 | 704 | 0.9+ | 0.2− | 2004 10 14 | 691 | 0.2+ | 0.1− | | | | |
| 2000 10 01 | 704 | 0.7+ | 0.3− | 2004 10 14 | 691 | 0.1− | 0.2− | | | | |

**2000 SX$_{322}$ = 2006 UL$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.21617 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17238717 | $\omega$ | 91.62203 | | +0.97432144 | −0.02461696 | |
| $a$ | 3.1974180 | $\Omega$ | 269.82972 | | −0.06567838 | +0.91970562 | |
| $e$ | 0.2558438 | $i$ | 12.93308 | | +0.21536964 | +0.39183617 | |
| $P$ | 5.72 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 699 | 0.8+ | 1.0+ | 2000 10 03 | 699 | 0.3+ | 0.0 | 2006 10 29 | 703 | 0.0 | 0.1+ |
| 2000 09 05 | 699 | 0.3+ | 0.9− | 2000 10 03 | 699 | 0.4− | 0.5− | 2006 10 29 | 703 | 0.6− | 0.4− |
| 2000 09 05 | 699 | 1.4− | 0.6+ | 2000 10 03 | 699 | 0.8+ | 0.8+ | 2006 11 15 | 703 | 1.0+ | 0.8− |
| 2000 09 05 | 699 | 0.8− | 0.1− | 2006 10 23 | 703 | (0.9− | 2.3−) | 2006 11 15 | 703 | 0.1− | 0.2+ |
| 2000 09 28 | 704 | 0.9− | 0.0 | 2006 10 23 | 703 | 0.1− | 1.0− | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2000 09 28 | 704 | 0.4− | 0.0 | 2006 10 23 | 703 | (1.7+ | 1.2−) | 2006 11 21 | 703 | 0.1+ | 0.5+ |
| 2000 09 28 | 704 | 0.0 | 0.5− | 2006 10 23 | 703 | 0.2− | 0.3− | 2006 11 21 | 703 | 0.1− | 0.4+ |
| 2000 09 28 | 704 | 0.6+ | 0.1− | 2006 10 29 | 703 | 0.6+ | 0.2+ | 2006 11 21 | 703 | 0.7− | 0.3− |
| 2000 10 03 | 699 | 1.0+ | 0.2− | 2006 10 29 | 703 | 0.3− | 0.9+ | 2006 11 21 | 703 | 0.0 | 0.7+ |

**2000 SX$_{323}$ = 2006 EN$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.56106 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27466393 | $\omega$ | 130.85333 | | +0.67546451 | +0.73738932 | |
| $a$ | 2.3438778 | $\Omega$ | 181.64171 | | −0.69722911 | +0.63771648 | |
| $e$ | 0.1252559 | $i$ | 4.33011 | | −0.24004012 | +0.22265372 | |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 691 | 0.1+ | 0.5+ | 2000 10 07 | 699 | 0.4− | 1.0− | 2006 03 24 | 691 | 0.2+ | 0.4+ |
| 1999 03 24 | 691 | 0.1+ | 0.6+ | 2000 10 07 | 699 | 0.6+ | 0.2+ | 2006 03 24 | 691 | 0.0 | 0.1+ |
| 1999 03 24 | 691 | 0.2+ | 0.4+ | 2000 10 07 | 699 | 0.7− | 0.7− | 2006 04 07 | G96 | 0.2− | 0.2− |
| 2000 09 28 | 691 | 0.0 | 0.3+ | 2006 02 20 | 691 | 0.3+ | 0.6+ | 2006 04 07 | G96 | 0.2− | 0.1− |
| 2000 09 28 | 691 | 0.0 | 0.3+ | 2006 02 20 | 691 | 0.0 | 0.1+ | 2006 04 07 | G96 | 0.1− | 0.2− |
| 2000 09 28 | 691 | 0.3+ | 0.4+ | 2006 02 20 | 691 | 0.3+ | 0.3+ | 2006 04 07 | G96 | 1.1− | 0.2+ |
| 2000 10 01 | 704 | 0.3− | 1.5+ | 2006 03 02 | 691 | 0.8− | 0.8− | 2006 04 25 | G96 | 0.2+ | 0.6− |
| 2000 10 01 | 704 | 1.8− | 0.5+ | 2006 03 02 | 691 | 0.1+ | 0.2− | 2006 04 25 | G96 | 0.2+ | 0.1− |
| 2000 10 01 | 704 | 1.0− | 0.2+ | 2006 03 02 | 691 | 0.1+ | 0.4− | 2006 04 25 | G96 | 0.3− | 0.5− |
| 2000 10 07 | 699 | 0.8+ | 0.5+ | 2006 03 24 | 691 | 0.1+ | 0.3+ | 2006 04 25 | G96 | 0.4+ | 0.0 |

**2000 SR$_{328}$ = 2006 TR$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.47668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17740984 | $\omega$ | 291.48858 | | −0.84342120 | −0.53002784 | |
| $a$ | 3.1367813 | $\Omega$ | 216.66463 | | +0.53109438 | −0.79786340 | |
| $e$ | 0.0183987 | $i$ | 8.45652 | | +0.08111373 | −0.28720112 | |
| $P$ | 5.56 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 511 | 1.2− | 0.5+ | 2000 09 24 | 511 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2000 09 22 | 511 | 1.4+ | 0.2+ | 2000 09 24 | 511 | 0.3+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2000 09 22 | 511 | 0.9− | 1.0+ | 2000 09 24 | 511 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2000 09 22 | 511 | 1.2− | 0.2+ | 2000 09 24 | 511 | 0.5+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2000 09 22 | 511 | 1.1− | 0.5+ | 2000 09 24 | 511 | 0.9+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2000 09 22 | 511 | 1.3− | 0.6+ | 2000 09 24 | 511 | 0.6+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2000 09 22 | 511 | 1.0− | 0.3+ | 2000 09 24 | 511 | 0.9+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2000 09 22 | 511 | 0.6− | 0.4+ | 2000 09 24 | 511 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.0 | 0.3− |
| 2000 09 22 | 511 | 1.3− | 0.3+ | 2000 09 24 | 511 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.7+ | 1.1− |
| 2000 09 22 | 511 | 1.0− | 0.3+ | 2000 09 24 | 511 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 1.5+ | 0.1+ |
| 2000 09 22 | 511 | 0.9− | 0.4+ | 2000 09 24 | 511 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.7+ | 1.2− |
| 2000 09 23 | 511 | 0.1− | 0.3+ | 2000 09 26 | 699 | 0.2+ | 1.2− | 2006 11 11 | 703 | 0.4+ | 0.4− |
| 2000 09 23 | 511 | 0.4+ | 0.1+ | 2000 09 26 | 699 | 0.6− | 0.7− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2000 09 23 | 511 | 0.5+ | 0.1− | 2000 09 26 | 699 | 0.9− | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2000 09 23 | 511 | 0.5+ | 0.1− | 2000 09 26 | 699 | 0.2− | 2.0− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2000 09 23 | 511 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.8− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2000 09 23 | 511 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2000 09 23 | 511 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 11 17 | 703 | 0.6− | 0.4− |
| 2000 09 23 | 511 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 11 17 | 703 | 0.3+ | 0.6+ |
| 2000 09 23 | 511 | 0.6+ | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2000 09 23 | 511 | 0.4+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2000 09 23 | 511 | 0.4+ | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2000 09 23 | 511 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2000 09 23 | 511 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.2− | 0.0 |
| 2000 09 23 | 511 | 0.6+ | 0.4− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2000 09 23 | 511 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2000 09 23 | 511 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2000 09 23 | 511 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2000 09 24 | 511 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− | | | | |
| 2000 09 24 | 511 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | | | |

**2000 SA$_{334}$ = 2006 SE$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.92903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16959523 | $\omega$ | 290.48233 | | +0.83559187 | +0.54168865 | |
| $a$ | 3.2324138 | $\Omega$ | 36.88592 | | −0.42995635 | +0.74846174 | |
| $e$ | 0.1978634 | $i$ | 8.76188 | | −0.34194116 | +0.38259434 | |
| $P$ | 5.81 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.0 | 0.7+ | 2006 09 26 | 704 | (1.0+ | 1.8−) | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2000 09 24 | 704 | 1.1+ | 1.1+ | 2006 09 26 | 704 | 1.3+ | 1.3− | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2000 09 24 | 704 | 0.0 | 0.4− | 2006 09 26 | 704 | 0.8− | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2000 09 24 | 704 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 1.1+ | 1.3+ |
| 2000 09 24 | 704 | 0.2+ | 1.4− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2000 09 26 | 645 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.8+ |
| 2000 09 26 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.9+ | 0.3− | 2006 10 19 | 644 | 0.5+ | 0.3+ |
| 2000 09 26 | 608 | 0.8− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.3+ | 0.4+ |
| 2000 09 26 | 608 | 1.1− | 0.6− | 2006 09 30 | 703 | 1.1+ | 0.9− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2000 09 26 | 608 | 1.0− | 0.4− | 2006 09 30 | 703 | 0.2+ | 0.6− | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2000 10 02 | 699 | 0.4− | 1.2+ | 2006 10 01 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 2000 10 02 | 699 | 0.6+ | 1.3+ | 2006 10 01 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2000 10 02 | 699 | 1.1+ | 0.9+ | 2006 10 01 | 704 | 0.7− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2000 10 02 | 699 | 0.4+ | 1.4+ | 2006 10 01 | 704 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2006 09 21 | 699 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.5− | 0.3− | 2006 10 22 | 703 | 0.5− | 0.8− |
| 2006 09 21 | 699 | 0.1+ | 0.6− | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.9− | 0.2− |
| 2006 09 21 | 699 | 0.6+ | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.3+ | 1.0− |
| 2006 09 21 | 699 | 0.4− | 0.7+ | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 22 | 703 | 1.3− | 1.0− |
| 2006 09 25 | 699 | 0.5− | 0.5− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2006 09 25 | 699 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2006 09 25 | 699 | 0.4+ | 0.9+ | 2006 10 10 | 644 | 0.4+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2006 09 25 | 699 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 26 | 704 | 1.1− | 0.9+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | | | | |

**2000 SX$_{343}$ = 2006 UO$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.01496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18008559 | $\omega$ | 93.69500 | | +0.90294964 | +0.38372556 | |
| $a$ | 3.1056326 | $\Omega$ | 243.82472 | | −0.42689589 | +0.85267707 | |
| $e$ | 0.2902154 | $i$ | 12.45044 | | +0.04941509 | +0.35453704 | |
| $P$ | 5.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.3+ | 1.1+ | 2005 07 12 | G96 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2000 09 22 | 704 | 0.6+ | 0.4− | 2005 07 12 | G96 | 0.1+ | 0.6+ | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2000 09 22 | 704 | 0.1+ | 0.3+ | 2005 07 12 | G96 | 0.1+ | 0.4+ | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2000 09 22 | 704 | 0.8+ | 1.4+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.1− | 0.3+ |
| 2000 09 26 | 608 | 0.7− | 1.4− | 2006 10 23 | 691 | 0.0 | 0.4− | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2000 09 26 | 608 | 0.7− | 1.7− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2000 09 26 | 608 | 0.7− | 1.3− | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.3− | 0.0 |
| 2000 10 04 | 704 | 0.9− | 0.4− | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2000 10 04 | 704 | 0.8+ | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2000 10 04 | 704 | 0.9+ | 1.1+ | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2000 10 04 | 704 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2005 06 27 | G96 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2005 06 27 | G96 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.7− |
| 2005 07 12 | G96 | 0.5− | 1.0− | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.7− |

**2000 SS$_{348}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.65628 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19325227 | $\omega$ | 249.43086 | | +0.90533280 | +0.38280278 | |
| $a$ | 2.9629181 | $\Omega$ | 87.68913 | | −0.28756838 | +0.87124524 | |
| $e$ | 0.0791667 | $i$ | 10.60817 | | −0.31253313 | +0.30723569 | |
| $P$ | 5.10 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 699 | 0.1+ | 0.2− | 2000 10 02 | 699 | 0.7− | 0.3+ | 2005 10 03 | 703 | 0.4− | 1.3+ |
| 2000 09 29 | 699 | 1.7− | 0.9+ | 2000 10 02 | 699 | 0.8+ | 1.1− | 2005 10 07 | 699 | 0.4− | 0.5− |
| 2000 09 29 | 699 | 1.0+ | 0.1+ | 2005 09 26 | 704 | 0.8+ | 0.5+ | 2005 10 07 | 699 | 0.0 | 0.8+ |
| 2000 09 29 | 699 | 1.0+ | 0.4+ | 2005 09 26 | 704 | 0.2+ | 1.2+ | 2005 10 07 | 699 | 0.5− | 1.8+ |
| 2000 09 30 | 699 | 0.2+ | 0.0 | 2005 09 26 | 704 | 0.4+ | 0.4+ | 2005 10 07 | 699 | 0.9− | 0.0 |
| 2000 09 30 | 699 | 0.0 | 0.6+ | 2005 09 26 | 704 | 0.2− | 1.0− | 2005 10 10 | 703 | (0.7+ | 2.7−) |
| 2000 09 30 | 699 | 1.6− | 1.0− | 2005 09 26 | 704 | 1.0− | 0.9− | 2005 10 10 | 703 | 0.4+ | 0.6− |
| 2000 09 30 | 699 | 0.1− | 0.1+ | 2005 10 03 | 703 | 0.7+ | 1.2− | 2005 10 10 | 703 | 0.8− | 0.7+ |
| 2000 10 02 | 699 | 0.3− | 0.3+ | 2005 10 03 | 703 | 0.3− | 1.3− | 2005 10 10 | 703 | 1.4+ | 0.8− |
| 2000 10 02 | 699 | 1.3+ | 0.3− | 2005 10 03 | 703 | 0.6+ | 0.6− | | | | |

**2000 SD$_{352}$ = 2006 SJ$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.48756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17294009 | $\omega$ | 312.68562 | | +0.96997253 | +0.02672581 | |
| $a$ | 3.1905993 | $\Omega$ | 47.36986 | | +0.12232157 | +0.80548278 | |
| $e$ | 0.2461800 | $i$ | 19.18194 | | −0.21021589 | +0.59201623 | |
| $P$ | 5.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2000 09 20 | 704 | 1.0+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 15 | G96 | (2.2− | 0.9−) |
| 2000 09 20 | 704 | 0.1− | 1.0− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | (1.7− | 1.1−) |
| 2000 09 20 | 704 | 0.4+ | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.5+ | 0.9− |
| 2000 09 20 | 704 | 0.9− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.4+ | 1.1− |
| 2000 09 30 | 699 | 0.4− | 0.3− | 2006 10 22 | 704 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2000 09 30 | 699 | 0.5+ | 0.5− | 2006 10 22 | 704 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 2000 09 30 | 699 | 0.1+ | 0.6− | 2006 10 22 | 704 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.9− |
| 2000 09 30 | 699 | 0.2+ | 0.6− | 2006 10 22 | 704 | 1.0− | 1.2+ | 2006 11 18 | 704 | 0.1+ | 0.9+ |
| 2000 10 06 | 608 | 0.2− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2000 10 06 | 608 | 0.4− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 1.3− | 0.8− |
| 2000 10 06 | 608 | 0.4− | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 1.2− | 1.2+ |
| 2006 09 29 | 699 | 0.9+ | 0.3+ | 2006 10 27 | 704 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.9+ |
| 2006 09 29 | 699 | 0.4+ | 0.4+ | 2006 10 27 | 704 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2006 09 29 | 699 | 0.3+ | 0.0 | 2006 10 27 | 704 | 0.5− | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.3− |
| 2006 09 29 | 699 | 0.2− | 0.3+ | 2006 10 27 | 704 | 0.7− | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2006 09 30 | 703 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.0+ | 0.7+ | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2006 10 12 | 644 | 0.3+ | 0.2− | 2006 11 11 | 703 | 1.1+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.5+ | 2006 11 25 | 683 | 0.4− | 0.1− |
| 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.8+ | 2006 11 25 | 683 | 0.8+ | 0.2− |
| 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.5− | 2006 11 25 | 683 | 0.9− | 0.8+ |
| 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.4− | | | | |
| 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.4− | | | | |

**2000 SF$_{361}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.86001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19640532 | $\omega$ | 270.90181 | | +0.90642857 | −0.40647921 | |
| $a$ | 2.9311219 | $\Omega$ | 113.08914 | | +0.41983516 | +0.83748397 | |
| $e$ | 0.2454596 | $i$ | 7.16433 | | +0.04610520 | +0.36523316 | |
| $P$ | 5.02 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.1+ | 0.1− | 2002 01 11 | 291 | 0.8− | 0.0 | 2005 09 13 | 703 | 0.6+ | 0.6− |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2002 01 11 | 291 | 0.6+ | 0.0 | 2005 09 27 | 704 | 0.3+ | 0.2+ |
| 2000 09 23 | 699 | 0.4− | 0.3+ | 2002 02 07 | 695 | 1.0+ | 0.1− | 2005 09 27 | 704 | 0.2+ | 0.4+ |
| 2000 09 23 | 699 | 0.6− | 0.4+ | 2002 02 07 | 695 | 0.1+ | 0.3+ | 2005 09 27 | 704 | 0.2− | 0.2− |
| 2000 09 23 | 699 | 1.2− | 1.1+ | 2005 09 03 | 703 | 0.5− | 0.3− | 2005 09 27 | 704 | 1.2+ | 0.1− |
| 2000 09 23 | 699 | 0.3− | 0.7+ | 2005 09 03 | 703 | 0.1− | 0.3− | 2005 09 27 | 704 | 0.9− | 0.1− |
| 2000 09 24 | 699 | 0.4− | 1.0+ | 2005 09 03 | 703 | 1.3− | 0.6+ | 2005 10 03 | 703 | 0.1− | 0.2+ |
| 2000 09 24 | 699 | 0.1+ | 0.1+ | 2005 09 03 | 703 | (2.2− | 0.8+) | 2005 10 03 | 703 | 0.3+ | 0.3− |
| 2000 09 24 | 699 | 1.0+ | 0.1+ | 2005 09 13 | 703 | 0.2+ | 0.8− | 2005 10 03 | 703 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 0.3− | 0.9− | 2005 09 13 | 703 | 0.9+ | 0.5− | 2005 10 03 | 703 | 0.1− | 0.8+ | | |
| 2002 01 11 | 291 | 0.1− | 0.1− | 2005 09 13 | 703 | 0.2− | 0.0 | | | | | | |

**2000 SJ$_{361}$ = 2006 RD$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.23004 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16985133 | $\omega$ | 287.47513 | | +0.55881905 | | +0.81782234 |
| $a$ | 3.2291638 | $\Omega$ | 18.57878 | | −0.49694404 | | +0.46291009 |
| $e$ | 0.2344607 | $i$ | 25.55357 | | −0.66390353 | | +0.34187843 |
| $P$ | 5.80 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.5+ | 0.2+ | 2000 10 02 | 699 | 0.8− | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.4− | | |
| 2000 09 23 | 699 | 0.8+ | 0.6+ | 2000 10 02 | 699 | 1.9+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.5− | | |
| 2000 09 23 | 699 | 0.3+ | 0.3+ | 2000 10 02 | 699 | (2.4− | 0.1+) | 2006 09 29 | 691 | 0.0 | 0.2+ | | |
| 2000 09 23 | 699 | 0.6+ | 1.3+ | 2006 09 14 | 703 | 0.6− | 0.2− | 2006 09 29 | 691 | 0.0 | 0.1− | | |
| 2000 09 24 | 699 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.4− | 2006 09 29 | 691 | 0.0 | 0.0 | | |
| 2000 09 24 | 699 | 0.6− | 0.6+ | 2006 09 14 | 703 | 0.5+ | 1.0+ | 2006 10 15 | 703 | 0.2+ | 0.8+ | | |
| 2000 09 24 | 699 | 0.6− | 0.5− | 2006 09 14 | 703 | 1.3− | 0.2+ | 2006 10 15 | 703 | (0.7+ | 2.6−) | | |
| 2000 09 24 | 699 | 1.3− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.1+ | | |
| 2000 09 27 | 645 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 15 | 703 | 0.0 | 0.2− | | |
| 2000 09 27 | 645 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2000 10 01 | 704 | 0.7+ | 0.6+ | 2006 09 25 | 691 | 0.5+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2000 10 01 | 704 | 0.1+ | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2000 10 01 | 704 | 1.0+ | 1.6+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2000 10 01 | 704 | 1.0+ | 1.0+ | 2006 09 26 | G96 | 0.2− | 0.4− | | | | | | |
| 2000 10 02 | 699 | 1.5+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.6− | | | | | | |

**2000 SP$_{376}$ = 2004 XR$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.26797 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28935405 | $\omega$ | 98.39737 | | +0.99321310 | | +0.01152042 |
| $a$ | 2.2638606 | $\Omega$ | 260.99948 | | −0.05479151 | | +0.92409384 |
| $e$ | 0.1378402 | $i$ | 6.72936 | | +0.10259448 | | +0.38199196 |
| $P$ | 3.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 20 | 691 | 0.0 | 0.2+ | 2000 09 03 | 704 | 0.1− | 0.4+ | 2000 10 02 | 645 | 0.0 | 0.1− | | |
| 1993 06 20 | 691 | 0.0 | 0.2+ | 2000 09 03 | 704 | 0.5+ | 0.6− | 2004 12 10 | 691 | 0.0 | 0.1− | | |
| 1993 06 20 | 691 | 0.1− | 0.1+ | 2000 09 03 | 704 | 0.1+ | 0.8− | 2004 12 10 | 691 | 0.3+ | 0.1+ | | |
| 2000 08 09 | 704 | 0.5+ | 0.6+ | 2000 09 23 | 704 | 0.1− | 0.3− | 2004 12 10 | 691 | 0.1+ | 0.3− | | |
| 2000 08 09 | 704 | 0.4− | 0.4− | 2000 09 23 | 704 | 0.0 | 0.4+ | 2004 12 13 | 691 | 0.1− | 0.4+ | | |
| 2000 08 09 | 704 | 0.5− | 0.9+ | 2000 09 23 | 704 | 0.1− | 0.1+ | 2004 12 13 | 691 | 0.0 | 0.2+ | | |
| 2000 08 09 | 704 | 0.5− | 0.3+ | 2000 09 23 | 704 | 0.8− | 0.9+ | 2004 12 13 | 691 | 0.1− | 0.3+ | | |
| 2000 09 03 | 704 | 0.4+ | 0.3+ | 2000 10 02 | 645 | 0.0 | 0.1− | | | | | | |

**2000 SQ$_{376}$ = 1999 FV$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.67573 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28687075 | $\omega$ | 152.09077 | | +0.68911820 | | +0.72403459 |
| $a$ | 2.2769066 | $\Omega$ | 161.41781 | | −0.68106657 | | +0.66118571 |
| $e$ | 0.0911304 | $i$ | 5.37187 | | −0.24751654 | | +0.19648760 |
| $P$ | 3.44 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1− | 2000 09 24 | 704 | 0.1+ | 0.7+ | 2002 02 11 | 704 | 1.0+ | 0.8+ | | |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2000 09 24 | 704 | 0.5+ | 0.9+ | 2002 02 21 | 691 | 0.1− | 0.1+ | | |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2000 09 24 | 704 | 0.0 | 0.1+ | 2002 02 21 | 691 | 0.1− | 0.1− | | |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2000 10 05 | 691 | 0.5− | 0.2+ | 2002 02 21 | 691 | 0.4− | 0.5+ | | |
| 2000 09 07 | 691 | 0.7+ | 0.2− | 2000 10 05 | 691 | 0.7− | 0.3+ | 2006 04 07 | 691 | 0.3+ | 0.3+ | | |
| 2000 09 07 | 691 | 0.4+ | 0.3− | 2000 10 05 | 691 | 0.8− | 0.4+ | 2006 04 07 | 691 | 0.1− | 0.6+ | | |
| 2000 09 07 | 691 | 0.5+ | 0.3− | 2002 02 11 | 704 | 0.5− | 1.2− | 2006 04 07 | 691 | 0.1+ | 0.3+ | | |
| 2000 09 24 | 704 | 0.1− | 0.7− | 2002 02 11 | 704 | 1.1+ | 0.4− | | | | | | |
| 2000 09 24 | 704 | 0.4+ | 0.5+ | 2002 02 11 | 704 | 1.2+ | 0.4− | | | | | | |

**2000 SR$_{376}$ = 2003 HJ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.95095 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24161545 | $\omega$ | 335.80884 | | +0.98464276 | | −0.11891141 |
| $a$ | 2.5530123 | $\Omega$ | 31.84844 | | +0.17124898 | | +0.80023223 |
| $e$ | 0.2367287 | $i$ | 14.01870 | | −0.03394741 | | +0.58778266 |
| $P$ | 4.08 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.8− | 0.7+ | 2000 09 29 | 699 | 0.5+ | 0.3+ | 2003 04 28 | 691 | 0.7− | 0.3− | | |
| 2000 08 26 | 704 | 0.7− | 0.3+ | 2000 09 29 | 699 | 1.0− | 0.2− | 2003 04 28 | 691 | 0.2− | 0.1+ | | |
| 2000 08 26 | 704 | 1.3+ | 0.9+ | 2000 10 02 | 699 | 0.3− | 0.4− | 2004 09 03 | E12 | 0.1− | 0.1− | | |
| 2000 08 26 | 704 | 2.2+ | 0.6− | 2000 10 02 | 699 | 0.5− | 0.1+ | 2004 09 03 | E12 | 0.4− | 0.0 | | |
| 2000 09 20 | 704 | 0.7− | 0.7− | 2000 10 02 | 699 | 0.4− | 0.0 | 2004 09 03 | E12 | 0.6− | 0.3+ | | |
| 2000 09 20 | 704 | 1.0− | 1.1− | 2000 10 02 | 699 | 0.4− | 0.0 | 2004 09 03 | E12 | 0.1− | 0.0 | | |
| 2000 09 20 | 704 | 0.2+ | 1.9− | 2003 04 25 | 691 | 0.3+ | 0.1− | 2004 09 18 | E12 | 0.7− | 1.0+ | | |
| 2000 09 20 | 704 | 1.2+ | 1.2− | 2003 04 25 | 691 | 0.4+ | 0.1+ | 2004 09 18 | E12 | 0.7+ | 0.1− | | |
| 2000 09 29 | 699 | 2.2+ | 1.2+ | 2003 04 25 | 691 | 0.4+ | 0.1+ | 2004 09 18 | E12 | 0.6+ | 0.7+ | | |
| 2000 09 29 | 699 | 0.3− | 0.5+ | 2003 04 28 | 691 | 0.2− | 0.0 | 2004 09 18 | E12 | 0.5− | 0.5+ | | |

**2000 ST$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.52688 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24397800 | $\omega$ | 267.50914 | | +0.89470642 | | +0.39586504 |
| $a$ | 2.5365043 | $\Omega$ | 69.10803 | | −0.26801871 | | +0.84631324 |
| $e$ | 0.2659543 | $i$ | 12.79232 | | −0.35730435 | | +0.35643342 |
| $P$ | 4.04 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.4+ | 0.5− | 2000 11 24 | 699 | 0.3− | 1.9+ | 2004 10 18 | 704 | 0.7+ | 0.1+ | | |
| 1997 01 09 | 691 | 0.5+ | 0.1− | 2000 11 24 | 699 | 1.7− | 0.2− | 2004 10 18 | 704 | 0.6+ | 0.0 | | |
| 1997 01 09 | 691 | 0.1− | 0.0 | 2000 11 24 | 699 | 0.9− | 1.5+ | 2004 11 02 | 699 | 0.3+ | 0.6− | | |
| 2000 09 25 | 699 | 0.4+ | 0.0 | 2003 04 24 | 691 | 0.1− | 0.5+ | 2004 11 02 | 699 | 0.1+ | 0.4− | | |
| 2000 09 25 | 699 | 1.2− | 0.1+ | 2003 04 24 | 691 | 0.2+ | 0.2+ | 2004 11 02 | 699 | 0.3+ | 0.2− | | |
| 2000 09 25 | 699 | 1.0− | 0.9+ | 2003 04 24 | 691 | 0.4+ | 0.3+ | 2004 11 02 | 699 | 0.6+ | 0.2− | | |
| 2000 09 25 | 699 | 0.7− | 0.7− | 2004 10 07 | 704 | 1.3− | 0.4− | 2004 11 18 | 704 | 2.3− | 2.1+ | | |
| 2000 10 31 | 704 | 0.3+ | 0.0 | 2004 10 07 | 704 | 0.6+ | 0.0 | 2004 11 18 | 704 | 0.8− | 0.2+ | | |
| 2000 10 31 | 704 | 0.1− | 0.2− | 2004 10 07 | 704 | 0.1+ | 0.2− | 2004 11 18 | 704 | 0.4− | 0.4+ | | |
| 2000 10 31 | 704 | 0.2+ | 0.2− | 2004 10 07 | 704 | 0.7− | 0.7+ | 2004 11 18 | 704 | 1.3− | 2.0+ | | |
| 2000 10 31 | 704 | 0.7+ | 0.5− | 2004 10 07 | 704 | 0.3− | 0.7− | 2004 12 15 | 691 | 0.3+ | 0.2+ | | |
| 2000 10 31 | 704 | 0.0 | 0.2− | 2004 10 18 | 704 | 0.1+ | 0.0 | 2004 12 15 | 691 | 0.4+ | 0.0 | | |
| 2000 11 24 | 699 | 0.2− | 0.0 | 2004 10 18 | 704 | 0.3− | 0.1− | 2004 12 15 | 691 | 0.4+ | 0.1− | | |

**2000 TJ$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.65431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17380825 | $\omega$ | 283.23782 | | +0.98076839 | | +0.19000667 |
| $a$ | 3.1799658 | $\Omega$ | 65.82359 | | −0.15472283 | | +0.89625449 |
| $e$ | 0.1348938 | $i$ | 2.80338 | | −0.11897150 | | +0.40078093 |
| $P$ | 5.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 643 | 0.1− | 0.5+ | 2005 07 11 | 691 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2000 10 02 | 643 | 1.3− | 1.0+ | 2005 07 11 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3− | | |
| 2000 10 02 | 643 | 1.5− | 0.2+ | 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 1.1− | | |
| 2000 10 02 | 643 | 1.1− | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.5− | | |
| 2000 10 05 | 643 | 0.6+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.7− | | |
| 2000 10 05 | 643 | 1.2− | 0.8+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2000 10 05 | 643 | 0.3− | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.5+ | | |
| 2000 10 20 | 643 | 0.4− | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2000 10 20 | 643 | 0.1− | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.4− | | |
| 2000 10 25 | 643 | 1.7− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2000 10 25 | 643 | 0.5+ | 0.6+ | 2006 10 28 | G96 | 0.6+ | 0.4− | 2006 11 12 | 703 | 1.2+ | 0.1− | | |
| 2000 11 02 | 691 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 12 | 703 | 0.1− | 1.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 691 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 12 | 703 | 0.4+ | 0.1− | | |
| 2000 11 02 | 691 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 12 | 703 | 0.7+ | 0.1+ | | |

**2000 TL$_6$ = 2006 TJ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.60375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17055363 | $\omega$ | 175.02190 | | +0.98620791 | | −0.16422303 |
| $a$ | 3.2202931 | $\Omega$ | 194.47944 | | +0.14886652 | | +0.93454862 |
| $e$ | 0.1296489 | $i$ | 4.72816 | | +0.07233756 | | +0.31567338 |
| $P$ | 5.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2000 09 20 | 691 | 0.5+ | 0.3+ | 2006 09 30 | 703 | (1.9+ | 1.7−) | 2006 10 23 | 691 | 0.3− | 0.3− | | |
| 2000 09 20 | 691 | 0.2− | 0.3− | 2006 09 30 | 703 | (0.3− | 1.9+) | 2006 10 23 | 691 | 0.4− | 0.2− | | |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | (1.7− | 2.5−) | 2006 10 23 | 691 | 0.2− | 0.2− | | |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2000 10 01 | 704 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.2− | | |
| 2000 10 01 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2000 10 01 | 699 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− | | |
| 2000 10 01 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2000 10 01 | 699 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2000 10 01 | 699 | 1.3− | 1.1− | 2006 10 12 | 644 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.7+ | 0.8+ | | |
| 2000 10 01 | 699 | 0.7+ | 0.4− | 2006 10 12 | 644 | 0.7+ | 0.4+ | 2006 11 11 | 703 | 0.9− | 1.2− | | |
| 2000 10 02 | 704 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 1.4− | | |
| 2000 10 02 | 704 | 1.0+ | 0.7+ | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.9− | | |
| 2000 10 02 | 704 | 1.1− | 0.2+ | 2006 10 15 | 691 | 0.6+ | 0.6− | 2006 11 11 | 703 | (0.7− | 1.6−) | | |
| 2000 10 02 | 704 | 1.2− | 0.6− | 2006 10 15 | 691 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2000 10 02 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.3− | | |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ | | | | | | |
| 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | | | | | | |

**2000 TN$_6$ = 1998 HO$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.27100 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18257158 | $\omega$ | 350.30364 | | −0.99956136 | | −0.01549438 |
| $a$ | 3.0773763 | $\Omega$ | 188.92530 | | +0.02121209 | | −0.96928313 |
| $e$ | 0.0447251 | $i$ | 9.36240 | | −0.02066713 | | −0.24545904 |
| $P$ | 5.40 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.1− | 0.2− | 2003 03 07 | 699 | 0.4+ | 0.2+ | 2005 11 01 | G96 | 0.1− | 0.1− | | |
| 1998 04 21 | 704 | (1.2− | 2.0−) | 2003 03 07 | 699 | (2.1+ | 2.4+) | 2005 11 01 | G96 | 0.0 | 0.6+ | | |
| 1998 04 21 | 704 | 0.3+ | 0.8− | 2003 03 07 | 704 | 0.3− | 0.1− | 2005 11 01 | G96 | 0.3+ | 0.1− | | |
| 1998 04 22 | 704 | 1.3− | 0.8+ | 2003 03 07 | 704 | 1.1+ | 1.1+ | 2005 11 01 | G96 | 0.2− | 0.2− | | |
| 1998 04 22 | 704 | 0.9+ | 1.6+ | 2003 03 07 | 704 | (0.2− | 1.8+) | 2006 10 16 | 703 | 0.9+ | 0.1− | | |
| 1998 04 22 | 704 | 1.1+ | 0.9− | 2003 03 30 | 644 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 0.5− | 0.6− | | |
| 1998 04 22 | 704 | 0.2+ | 0.5+ | 2003 03 30 | 644 | 0.3+ | 1.5+ | 2006 10 16 | 703 | 0.6+ | 0.3− | | |
| 1998 04 22 | 704 | 0.7− | 1.6+ | 2003 03 30 | 644 | 0.5+ | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.1− | | |
| 2000 09 19 | 691 | 0.1+ | 0.3+ | 2003 04 07 | 691 | 0.4+ | 0.6+ | 2006 11 01 | 703 | 0.3− | 0.5+ | | |
| 2000 09 19 | 691 | 0.3− | 0.0 | 2003 04 07 | 691 | 0.0 | 0.8+ | 2006 11 01 | 703 | 0.4− | 0.4+ | | |
| 2000 09 19 | 691 | 0.2− | 0.1+ | 2003 04 07 | 691 | 0.1− | 0.6+ | 2006 11 01 | 703 | 1.2− | 0.8+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.1− | 0.5+ | 2006 11 01 | 703 | 0.1+ | 0.5+ | | |
| 2000 10 01 | 704 | 0.2− | 0.1+ | 2004 05 15 | 704 | (0.2− | 1.6+) | 2006 11 09 | 644 | 0.1+ | 0.5+ | | |
| 2000 10 01 | 704 | 0.3+ | 0.0 | 2004 05 15 | 704 | 0.4− | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.4+ | | |
| 2000 10 01 | 704 | 0.0 | 0.6+ | 2004 05 15 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2000 10 01 | 704 | 0.1− | 0.3− | 2004 06 12 | 704 | 1.4− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.2+ | | |
| 2000 10 02 | 704 | 0.1− | 0.0 | 2004 06 12 | 704 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.4+ | | |
| 2000 10 02 | 704 | 0.7+ | 0.9+ | 2004 06 12 | 704 | 0.5+ | 0.7− | 2006 11 13 | 644 | 0.3− | 0.0 | | |
| 2000 10 02 | 704 | 0.1− | 0.2+ | 2004 06 12 | 704 | 0.3− | 0.1+ | 2006 11 19 | 703 | 0.5− | 0.7+ | | |
| 2000 10 02 | 704 | 0.0 | 0.8+ | 2005 09 12 | 691 | 0.1− | 0.5+ | 2006 11 19 | 703 | 0.8− | 0.3− | | |
| 2001 12 11 | 704 | 1.0− | 0.2+ | 2005 09 12 | 691 | 0.1− | 0.5+ | 2006 11 19 | 703 | 0.4+ | 0.2− | | |
| 2001 12 11 | 704 | 0.5+ | 0.3+ | 2005 09 12 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 703 | 0.1+ | 0.8− | | |
| 2001 12 11 | 704 | 0.1+ | 0.1− | 2005 09 25 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.0 | | |
| 2001 12 11 | 704 | 0.4− | 0.7+ | 2005 09 25 | 691 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.1− | | |
| 2001 12 11 | 704 | 0.2+ | 0.7+ | 2005 09 25 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1− | | |
| 2003 03 07 | 699 | 1.0+ | 0.8+ | 2005 10 07 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.2− | | |
| 2003 03 07 | 704 | (1.5+ | 1.5+) | 2005 10 07 | 691 | 0.1+ | 0.4+ | | | | | | |
| 2003 03 07 | 699 | 0.3+ | 0.4− | 2005 10 07 | 691 | 0.1− | 0.2+ | | | | | | |

**2000 TD$_7$ = 2005 SP$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.60524 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18680270 | $\omega$ | 257.17976 | | +0.05000958 | | +0.99651619 |
| $a$ | 3.0307302 | $\Omega$ | 16.14165 | | −0.79769699 | | +0.08006458 |
| $e$ | 0.0277515 | $i$ | 13.89059 | | −0.60098133 | | −0.02334833 |
| $P$ | 5.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.4− | 0.6+ | 2003 03 26 | 699 | 0.5− | 0.2+ | 2005 09 24 | 644 | 0.2+ | 0.3− | | |
| 2000 10 01 | 704 | 0.2+ | 0.2+ | 2003 03 26 | 699 | 0.5+ | 0.9− | 2005 09 24 | 644 | 0.2+ | 0.3− | | |
| 2000 10 01 | 704 | 1.1− | 0.1− | 2003 03 26 | 699 | 0.5+ | 0.0 | 2005 09 24 | 644 | 0.6+ | 0.1− | | |
| 2000 10 01 | 704 | 0.6+ | 0.2− | 2003 03 26 | 699 | 0.2+ | 0.1+ | 2005 09 25 | 703 | 0.1− | 0.5− | | |
| 2000 10 01 | 704 | 0.3− | 0.3− | 2003 03 31 | 645 | 0.0 | 0.0 | 2005 09 25 | 703 | 0.5− | 1.1+ | | |
| 2000 10 02 | 704 | 0.9+ | 0.2− | 2003 03 31 | 645 | 0.0 | 0.0 | 2005 09 25 | 703 | 0.4− | 0.1− | | |
| 2000 10 02 | 704 | 0.5− | 0.6+ | 2003 04 04 | 691 | 0.2− | 0.2+ | 2005 09 25 | 703 | 0.1+ | 0.3+ | | |
| 2000 10 02 | 704 | 0.5+ | 0.0 | 2003 04 04 | 691 | 0.0 | 0.2− | | | | | | |
| 2000 10 02 | 704 | 0.1+ | 0.5− | 2003 04 04 | 691 | 0.1+ | 0.1− | | | | | | |

**2000 TS$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.80881 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28194519 | $\omega$ | 28.24274 | | +0.74761005 | | −0.66374284 |
| $a$ | 2.3033482 | $\Omega$ | 13.41973 | | +0.58924854 | | +0.64700329 |
| $e$ | 0.1252152 | $i$ | 5.66406 | | +0.30637457 | | +0.37527614 |
| $P$ | 3.50 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.2+ | 0.5+ | 2000 10 07 | 691 | 0.2+ | 0.4+ | 2005 01 06 | 703 | 0.2− | 1.1+ | | |
| 2000 10 01 | 704 | 1.2+ | 0.2− | 2000 10 07 | 691 | 0.3− | 0.1+ | 2005 01 16 | 704 | 0.8+ | 0.2+ | | |
| 2000 10 01 | 704 | 0.0 | 0.6+ | 2004 12 21 | 703 | 0.4+ | 0.1− | 2005 01 16 | 704 | 0.8+ | 1.2+ | | |
| 2000 10 01 | 704 | 0.4+ | 0.3+ | 2004 12 21 | 703 | 0.2− | 0.9− | 2005 01 16 | 704 | 0.5+ | 0.0 | | |
| 2000 10 01 | 704 | 0.3− | 0.0 | 2004 12 21 | 703 | 1.0− | 0.9− | 2005 02 04 | 699 | 1.1− | 1.3+ | | |
| 2000 10 02 | 704 | 0.6+ | 1.7− | 2004 12 21 | 703 | 0.1+ | 1.0− | 2005 02 04 | 699 | 1.4+ | 1.1− | | |
| 2000 10 02 | 704 | 0.7− | 0.8− | 2005 01 06 | 703 | 0.9− | 0.3+ | 2005 02 04 | 699 | 0.4− | 0.5− | | |
| 2000 10 02 | 704 | 0.3− | 0.5− | 2005 01 06 | 703 | 0.2− | 0.5− | 2005 02 04 | 699 | 0.6− | 0.7− | | |
| 2000 10 07 | 691 | 0.2− | 0.1+ | 2005 01 06 | 703 | 0.4+ | 1.2+ | | | | | | |

**2000 TT$_{22}$ = 2006 UV$_{266}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.15854 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17968523 | $\omega$ | 81.73158 | | +0.17583394 | | −0.98440438 |
| $a$ | 3.1102440 | $\Omega$ | 358.11439 | | +0.82425004 | | +0.15028723 |
| $e$ | 0.1528329 | $i$ | 9.65377 | | +0.53823257 | | +0.09144271 |
| $P$ | 5.49 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.2− | 0.4− | 2006 10 19 | A50 | 0.1− | 0.0 | 2006 11 14 | A55 | 0.5+ | 0.0 | | |
| 2000 09 28 | 691 | 0.4− | 0.4− | 2006 10 19 | A50 | 0.5+ | 0.0 | 2006 11 14 | A55 | 0.9+ | 0.2+ | | |
| 2000 09 28 | 691 | 0.2− | 0.4− | 2006 10 19 | A50 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.3− | 0.1− | | |
| 2000 10 01 | 704 | 0.2+ | 0.1− | 2006 10 19 | A50 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.3− | | |
| 2000 10 01 | 704 | 0.2+ | 0.8+ | 2006 10 19 | A50 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.0 | | |
| 2000 10 01 | 704 | 0.3+ | 0.2+ | 2006 10 19 | A50 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.2− | 0.3+ | | |
| 2000 10 01 | 704 | 0.9+ | 0.4+ | 2006 10 27 | 703 | 0.4+ | 0.7− | 2006 11 15 | 704 | 0.9− | 0.2+ | | |
| 2000 10 01 | 704 | 0.5+ | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.6+ | 2006 11 15 | 704 | 0.4+ | 0.2+ | | |
| 2000 10 03 | 704 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.4+ | 0.0 | 2006 11 15 | 704 | 1.4− | 0.2+ | | |
| 2000 10 03 | 704 | 0.7+ | 0.8+ | 2006 10 27 | 703 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.1− | | |
| 2000 10 03 | 704 | 0.8+ | 1.4+ | 2006 11 02 | 703 | 0.3− | 0.0 | 2006 11 15 | A55 | 0.3+ | 0.2+ | | |
| 2000 10 03 | 704 | 0.4− | 1.1+ | 2006 11 02 | 703 | 0.3− | 1.0+ | 2006 11 15 | A55 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 03 | 644 | 0.3+ | 0.2+ | 2006 11 02 | 703 | 0.4− | 0.1+ | 2006 11 15 | A55 | 0.4+ | 0.1− |
| 2002 02 03 | 644 | 0.1+ | 0.3+ | 2006 11 02 | 703 | 0.0 | 0.6− | 2006 11 15 | A55 | 0.0 | 0.1+ |
| 2002 02 03 | 644 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 703 | 0.2− | 0.2− |
| 2006 10 19 | 703 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 21 | 703 | 0.4− | 0.7− |
| 2006 10 19 | 703 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | 703 | 0.2− | 0.6− |
| 2006 10 19 | A50 | 0.4+ | 0.2+ | 2006 11 14 | A55 | 0.8+ | 0.0 | 2006 11 21 | 703 | 0.1− | 1.0− |
| 2006 10 19 | A50 | 0.1+ | 0.6− | 2006 11 14 | A55 | 0.2+ | 0.1− | | | | |
| 2006 10 19 | A50 | 0.2+ | 0.0 | 2006 11 14 | A55 | 0.5+ | 0.1+ | | | | |

### 2000 $TH_{23}$ = 2006 $UK_{216}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.95925 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17290901 | $\omega$ | 180.05194 | | +0.98140436 | | −0.18900306 |
| $a$ | 3.1909816 | $\Omega$ | 191.01557 | | +0.17617551 | | +0.95622887 |
| $e$ | 0.0467469 | $i$ | 10.10237 | | +0.07620812 | | +0.22339244 |
| $P$ | 5.70 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.2+ | 0.1+ | 2003 03 24 | 691 | 0.2− | 0.0 | 2006 11 01 | 703 | 0.8+ | 0.5− |
| 1994 10 09 | 691 | 0.1− | 0.5− | 2003 03 24 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 703 | 0.1− | 0.8− |
| 1994 10 09 | 691 | 0.3− | 0.3− | 2003 03 24 | 691 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.6− | 0.1+ |
| 2000 09 28 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2000 09 28 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2000 09 28 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2000 10 01 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 1.4− | 0.1− | 2006 11 19 | 703 | 0.0 | 0.2+ |
| 2000 10 01 | 704 | 0.6+ | 0.2+ | 2006 10 29 | 400 | 0.6+ | 0.1+ | 2006 11 19 | 703 | 0.3+ | 0.1+ |
| 2000 10 01 | 704 | 0.3+ | 0.4+ | 2006 10 29 | 400 | 0.4− | 0.9+ | 2006 11 19 | 703 | 1.1− | 0.0 |
| 2000 10 01 | 704 | 0.2+ | 0.0 | 2006 10 29 | 400 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.2+ | 0.2− |
| 2000 10 01 | 704 | 0.6+ | 0.7− | 2006 10 30 | 400 | 0.8− | 0.5− | 2006 11 23 | G96 | 0.6+ | 0.3− |
| 2000 10 03 | 704 | 0.8− | 0.5+ | 2006 10 30 | 400 | 0.8+ | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2000 10 03 | 704 | 1.0− | 1.1+ | 2006 10 30 | 400 | 0.4− | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2000 10 03 | 704 | 0.3− | 0.0 | 2006 11 01 | 703 | 0.8− | 0.4− | 2006 11 23 | G96 | 0.4+ | 0.4− |

### 2000 $TO_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.58745 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23861250 | $\omega$ | 271.54436 | | +0.38131012 | | +0.92096703 |
| $a$ | 2.5743875 | $\Omega$ | 21.42302 | | −0.73670229 | | +0.35509484 |
| $e$ | 0.1789039 | $i$ | 12.67433 | | −0.55845530 | | +0.16039757 |
| $P$ | 4.13 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.1− | 0.1+ | 2000 10 03 | 704 | 0.1− | 1.1+ | 2003 04 08 | 691 | 0.3+ | 0.1+ |
| 2000 09 28 | 691 | 0.3− | 0.2+ | 2000 10 03 | 704 | 1.0+ | 0.3+ | 2003 04 30 | 691 | 0.1+ | 0.2+ |
| 2000 09 28 | 691 | 0.2− | 0.1+ | 2003 04 03 | 699 | 0.9+ | 0.7− | 2003 04 30 | 691 | 0.1− | 0.2+ |
| 2000 10 01 | 704 | 0.6− | 1.0− | 2003 04 03 | 699 | 0.9+ | 0.5+ | 2003 04 30 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.4− | 0.0 | 2003 04 03 | 699 | 0.3− | 0.4− | 2004 09 17 | 291 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 1.0+ | 0.4+ | 2003 04 03 | 699 | 2.3− | 0.6− | 2004 09 17 | 291 | 0.1+ | 0.0 |
| 2000 10 03 | 704 | 1.1+ | 0.7− | 2003 04 08 | 691 | 0.2+ | 0.1− | 2004 09 17 | 291 | 0.0 | 0.0 |
| 2000 10 03 | 704 | 0.6− | 0.4+ | 2003 04 08 | 691 | 0.1+ | 0.3+ | | | | |

### 2000 $TQ_{31}$ = 2006 $DK_{133}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.44373 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.08310677 | $\omega$ | 280.19979 | | +0.15251723 | | +0.98826617 |
| $a$ | 5.2005000 | $\Omega$ | 358.49665 | | −0.73739025 | | +0.10821761 |
| $e$ | 0.0598142 | $i$ | 18.38445 | | −0.65802289 | | +0.10779110 |
| $P$ | 11.86 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 05 | 691 | 0.6− | 1.4+ | 2000 10 07 | 691 | 0.5+ | 1.2− | 2006 03 04 | 691 | 0.8− | 0.1− |
| 2000 10 05 | 691 | 0.3− | 1.3+ | 2000 10 07 | 691 | 0.4+ | 1.1− | 2006 03 04 | 691 | 0.1− | 0.0 |
| 2000 10 05 | 691 | 0.1− | 1.2+ | 2000 10 07 | 691 | 0.5+ | 1.7− | 2006 03 04 | 691 | 0.8− | 0.1− |
| 2000 10 06 | 691 | 0.3− | 0.2− | 2006 02 25 | 691 | 0.0 | 0.2− | 2006 03 08 | 691 | 0.1+ | 0.2+ |
| 2000 10 06 | 691 | 0.0 | 0.1+ | 2006 02 25 | 691 | 0.3+ | 0.4− | 2006 03 08 | 691 | 0.8+ | 0.6+ |
| 2000 10 06 | 691 | 0.3− | 0.1+ | 2006 02 25 | 691 | 0.2+ | 0.6− | 2006 03 08 | 691 | 0.2+ | 0.6+ |

### 2000 $TT_{36}$ = 2000 $UN_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.07715 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22831332 | $\omega$ | 306.54282 | | +0.96946069 | | +0.19664260 |
| $a$ | 2.6512370 | $\Omega$ | 42.67380 | | −0.08974243 | | +0.84057198 |
| $e$ | 0.1952051 | $i$ | 12.48656 | | −0.22823730 | | +0.50474790 |
| $P$ | 4.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 699 | 0.5− | 0.1+ | 2000 10 30 | 704 | 0.0 | 0.5− | 2004 07 15 | E12 | 0.1+ | 0.6+ |
| 2000 10 06 | 699 | 0.0 | 0.7− | 2000 10 30 | 704 | 0.5+ | 0.3− | 2004 08 09 | 644 | 0.1− | 0.1− |
| 2000 10 06 | 699 | 0.0 | 0.5− | 2000 10 30 | 704 | 0.3+ | 0.7+ | 2004 08 09 | 644 | 0.0 | 0.0 |
| 2000 10 06 | 699 | 0.5+ | 1.0+ | 2000 10 30 | 704 | 0.5+ | 0.1+ | 2004 08 09 | 644 | 0.2− | 0.4− |
| 2000 10 07 | 699 | 0.3− | 0.2+ | 2000 10 30 | 704 | 0.7+ | 0.1+ | 2004 08 11 | E12 | 0.6+ | 0.1− |
| 2000 10 07 | 699 | 1.2− | 0.7− | 2004 07 15 | E12 | 0.1+ | 0.1+ | 2004 08 11 | E12 | 0.3− | 0.2+ |
| 2000 10 07 | 699 | 0.1+ | 0.0 | 2004 07 15 | E12 | 0.4− | 0.3+ | 2004 08 11 | E12 | 0.4+ | 0.8− |
| 2000 10 07 | 699 | 0.7− | 0.5+ | 2004 07 15 | E12 | 0.1− | 1.0− | 2004 08 11 | E12 | 0.1− | 1.1+ |

### 2000 $TZ_{36}$ = 2006 $QP_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.20206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15702575 | $\omega$ | 10.28032 | | +0.98137757 | | −0.19207869 |
| $a$ | 3.4026880 | $\Omega$ | 0.80174 | | +0.16478175 | | +0.83657353 |
| $e$ | 0.1201453 | $i$ | 8.06072 | | +0.09871702 | | +0.51307943 |
| $P$ | 6.28 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 27 | 691 | 0.0 | 0.9− | 2000 10 06 | 691 | 0.2− | 0.0 | 2006 08 16 | 644 | 0.1− | 0.1− |
| 1994 10 27 | 691 | 0.1+ | 0.1+ | 2000 10 06 | 691 | 0.3− | 0.1− | 2006 08 16 | 644 | 0.3− | 0.2− |
| 1994 10 27 | 691 | 0.0 | 0.2− | 2000 10 06 | 691 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.1− |
| 2000 09 05 | 704 | 0.6− | 0.6+ | 2001 12 22 | 704 | 0.8− | 0.3+ | 2006 08 16 | E12 | 0.2+ | 0.6+ |
| 2000 09 05 | 704 | 0.5+ | 1.3+ | 2001 12 22 | 704 | 0.0 | 0.5+ | 2006 08 16 | E12 | 0.2− | 0.5+ |
| 2000 09 05 | 704 | 0.0 | 0.9+ | 2001 12 22 | 704 | 0.3+ | 0.7+ | 2006 08 16 | E12 | 0.7− | 0.1+ |
| 2000 10 01 | 704 | 0.1− | 0.3+ | 2001 12 22 | 704 | 0.5− | 1.4+ | 2006 08 16 | E12 | 1.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.2+ | 0.9+ | 2001 12 22 | 704 | 0.8+ | 1.2+ | 2006 08 24 | 644 | 0.3− | 0.1− |
| 2000 10 01 | 704 | 0.2+ | 1.1+ | 2004 03 27 | 704 | 0.7− | 0.5+ | 2006 08 24 | 644 | 0.4− | 0.1− |
| 2000 10 01 | 699 | 1.3+ | 0.6− | 2004 03 27 | 704 | 0.2− | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.4− | 1.0+ | 2004 03 27 | 704 | 0.8− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2000 10 01 | 699 | (2.1+ | 2.3+) | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.6− | 0.4− |
| 2000 10 01 | 699 | (2.1+ | 0.3+) | 2004 04 13 | 691 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.6− | 0.2− |
| 2000 10 01 | 699 | 1.8+ | 0.1+ | 2004 04 13 | 691 | 0.5+ | 0.3+ | 2006 11 23 | G96 | 0.6− | 0.4− |

### 2000 $TH_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.50093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17943270 | $\omega$ | 326.29567 | | +0.98082002 | | −0.16705931 |
| $a$ | 3.1131615 | $\Omega$ | 43.67623 | | +0.19488504 | | +0.84963695 |
| $e$ | 0.2920751 | $i$ | 8.36085 | | −0.00345140 | | +0.50020819 |
| $P$ | 5.49 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 1.0+ | 0.0 | 2000 10 01 | 704 | 0.6− | 0.9− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2000 09 21 | 699 | 0.4+ | 0.1+ | 2000 10 02 | 699 | (3.3+ | 0.6−) | 2006 11 19 | 704 | (0.5+ | 2.0+) |
| 2000 09 21 | 699 | 1.5+ | 0.4+ | 2000 10 02 | 699 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.7+ | 1.2+ |
| 2000 09 21 | 699 | 1.2+ | 0.1+ | 2000 10 02 | 699 | (1.4+ | 2.7−) | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2000 09 29 | 699 | 0.9− | 0.2− | 2000 10 02 | 699 | 0.6− | 0.9− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2000 09 29 | 699 | 0.1− | 0.8− | 2000 10 02 | 699 | 1.3+ | 1.1+ | 2006 11 22 | 704 | 1.5+ | 0.6+ |
| 2000 09 29 | 699 | 0.8− | 0.6− | 2000 10 02 | 699 | 0.7− | 0.8+ | 2006 11 22 | 704 | 0.2+ | 0.2− |
| 2000 09 29 | 699 | 0.3− | 0.1+ | 2000 10 02 | 699 | 0.4+ | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2000 09 29 | 699 | 0.5+ | 0.1− | 2000 10 02 | 699 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2000 09 29 | 699 | 0.7− | 1.2+ | 2000 11 27 | 645 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.1+ |
| 2000 09 29 | 699 | 0.0 | 0.9− | 2000 11 27 | 645 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 699 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.2+ | 2006 11 25 | 691 | 0.2− | 1.0− | | |
| 2000 10 01 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.6− | 0.0 | 2006 11 25 | 691 | 0.0 | 0.0 | | |
| 2000 10 01 | 704 | 1.1− | 0.6+ | 2006 11 16 | 704 | 0.4− | 0.5− | | | | | | |
| 2000 10 01 | 704 | 0.7− | 0.7− | 2006 11 16 | 704 | 0.8− | 0.2− | | | | | | |

**2000 TC$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.45708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17326039 | $\omega$ | 302.52875 | | +0.84661029 | +0.52060483 | |
| $a$ | 3.1866659 | $\Omega$ | 26.59737 | | −0.36657672 | +0.72099887 | |
| $e$ | 0.2722457 | $i$ | 14.29546 | | −0.38584003 | +0.45730870 | |
| $P$ | 5.69 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.5− | 0.1− | 2006 09 19 | 683 | 1.3− | 0.8− | 2006 10 29 | 691 | 0.2+ | 0.1+ | | |
| 2000 08 26 | 704 | 0.4− | 1.3+ | 2006 09 19 | 683 | 0.4+ | 0.5− | 2006 10 29 | 691 | 0.3+ | 0.1+ | | |
| 2000 08 26 | 704 | 1.2− | 0.3− | 2006 09 19 | 683 | 0.9− | 1.0− | 2006 10 29 | 704 | 0.6− | 0.0 | | |
| 2000 08 26 | 704 | 0.7− | 1.9− | 2006 09 20 | 699 | (1.1− | 2.1+) | 2006 10 29 | 704 | 0.5− | 0.5+ | | |
| 2000 09 19 | 608 | 0.1− | 0.5− | 2006 09 20 | 704 | 0.7+ | 0.9+ | 2006 10 29 | 704 | 1.3+ | 0.6+ | | |
| 2000 09 19 | 608 | 0.2+ | 0.4− | 2006 09 20 | 704 | 0.3− | 1.4+ | 2006 10 29 | 704 | 0.1− | 0.8+ | | |
| 2000 09 19 | 608 | 0.0 | 0.8− | 2006 09 20 | 699 | 0.7− | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.3+ | | |
| 2000 09 21 | 699 | 0.7+ | 0.2+ | 2006 09 20 | 704 | 1.1− | 1.2+ | 2006 11 07 | 644 | 0.2− | 0.3− | | |
| 2000 09 21 | 699 | 0.6+ | 0.2+ | 2006 09 20 | 699 | 0.0 | 1.0+ | 2006 11 07 | 644 | 0.2− | 0.2+ | | |
| 2000 09 21 | 699 | 1.0+ | 0.1− | 2006 09 20 | 644 | 0.4− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2000 09 21 | 699 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1− | | |
| 2000 09 29 | 699 | 0.9− | 0.6+ | 2006 09 20 | 644 | 0.8+ | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.0 | | |
| 2000 09 29 | 699 | 0.4− | 1.1+ | 2006 09 21 | 683 | 0.8+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.0 | | |
| 2000 09 29 | 699 | 0.4− | 0.7+ | 2006 09 21 | 683 | 0.8+ | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.2− | | |
| 2000 09 29 | 699 | 0.4− | 0.5− | 2006 09 21 | 683 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.6+ | | |
| 2000 10 01 | 704 | 0.3− | 0.5+ | 2006 09 22 | 683 | (1.5+ | 0.4−) | 2006 11 11 | 703 | 0.3− | 0.8+ | | |
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2006 09 22 | 683 | 1.1+ | 0.5− | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2000 10 01 | 704 | 0.4− | 0.3+ | 2006 09 22 | 683 | 0.3− | 0.7+ | 2006 11 15 | 691 | 0.2− | 0.6− | | |
| 2000 10 01 | 704 | 0.7+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.2+ | | |
| 2000 10 02 | 699 | 1.0+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.1− | | |
| 2000 10 02 | 699 | 0.8+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.2− | | |
| 2000 10 02 | 699 | 0.7− | 0.0 | 2006 09 26 | G96 | 0.8− | 0.7− | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2000 10 02 | 699 | 1.4+ | 0.6− | 2006 09 27 | 704 | 1.1+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.3− | | |
| 2000 10 27 | 704 | 0.4+ | 0.7− | 2006 09 27 | 704 | 1.2+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2000 10 27 | 704 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.6+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.0 | | |
| 2000 10 27 | 704 | 0.7− | 0.2− | 2006 09 27 | 704 | 1.5+ | 0.6− | 2006 11 19 | 704 | 0.8− | 0.2+ | | |
| 2000 10 27 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.5− | | |
| 2000 10 27 | 704 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.6− | 0.0 | | |
| 2006 09 16 | 683 | 1.2− | 0.9− | 2006 10 16 | 691 | (1.4− | 2.3+) | 2006 11 19 | 704 | 0.4− | 1.2+ | | |
| 2006 09 16 | 683 | 0.1− | 0.8+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.5+ | | |
| 2006 09 16 | 683 | 1.0− | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.5− | 1.4− | | |
| 2006 09 17 | 683 | 0.6+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.0 | | |
| 2006 09 17 | 683 | (1.7+ | 0.9−) | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.0 | | |
| 2006 09 17 | 683 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 1.0− | 0.3− | 2006 11 22 | 704 | 0.1− | 1.0+ | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.4+ | | |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.4− | | | | | | |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.1+ | | | | | | |

**2000 TH$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.89102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24665402 | $\omega$ | 202.98452 | | +0.68046804 | +0.72293617 | |
| $a$ | 2.5181248 | $\Omega$ | 110.13005 | | −0.65095643 | +0.67137320 | |
| $e$ | 0.2729306 | $i$ | 7.32404 | | −0.33648026 | +0.16316042 | |
| $P$ | 4.00 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.7− | 0.7− | 2004 08 27 | 699 | 0.0 | 0.5+ | 2004 10 20 | 703 | 0.4+ | 0.0 | | |
| 2000 08 31 | 704 | 0.3+ | 0.0 | 2004 08 27 | 699 | 0.3+ | 0.2+ | 2004 10 20 | 703 | 0.4− | 0.6− | | |
| 2000 08 31 | 704 | 0.0 | 0.4+ | 2004 08 27 | 699 | 0.7− | 0.3+ | 2004 10 20 | 703 | 0.3+ | 0.4+ | | |
| 2000 08 31 | 704 | 0.7+ | 0.3− | 2004 09 08 | 704 | 1.0− | 0.4− | 2004 10 20 | 703 | 0.5− | 0.4− | | |
| 2000 09 26 | 645 | 0.1− | 0.0 | 2004 09 08 | 704 | 0.5− | 0.9+ | 2004 10 20 | 703 | 0.3+ | 0.0 | | |
| 2000 09 26 | 645 | 0.1− | 0.1− | 2004 09 08 | 704 | 0.6− | 0.4+ | 2004 10 20 | 703 | 0.4+ | 1.4− | | |
| 2000 10 01 | 704 | 1.4+ | 0.9+ | 2004 09 08 | 704 | 1.3− | 0.5+ | 2004 10 20 | 703 | 0.6+ | 1.1− | | |
| 2000 10 01 | 704 | 0.8+ | 0.0 | 2004 09 21 | 704 | 0.1− | 0.8+ | 2004 10 20 | 703 | 0.8− | 0.4− | | |
| 2000 10 01 | 704 | 0.8+ | 0.1− | 2004 09 21 | 704 | 0.3+ | 0.4− | 2005 12 30 | 691 | 0.1− | 0.1+ | | |
| 2000 10 01 | 704 | 1.0+ | 1.0+ | 2004 09 21 | 704 | 0.7− | 0.5+ | 2005 12 30 | 691 | 0.1− | 0.3+ | | |
| 2000 10 02 | 699 | 0.1+ | 0.2− | 2004 09 21 | 704 | 1.5+ | 0.5− | 2005 12 30 | 691 | 0.3+ | 0.2+ | | |
| 2000 10 02 | 699 | 0.7− | 0.3− | 2004 10 06 | 704 | 0.8+ | 0.9+ | 2006 01 22 | G96 | 0.3− | 0.9− | | |
| 2000 10 02 | 699 | 0.5− | 0.5− | 2004 10 06 | 704 | 0.9+ | 0.3+ | 2006 01 22 | G96 | 0.2+ | 0.2− | | |
| 2000 10 02 | 699 | 0.3+ | 0.3+ | 2004 10 06 | 704 | 0.3+ | 1.4+ | 2006 01 22 | G96 | 0.1+ | 0.1+ | | |
| 2004 08 27 | 699 | 0.8− | 0.4− | 2004 10 06 | 704 | 0.3+ | 0.3+ | 2006 01 22 | G96 | 0.4− | 0.2− | | |

**2000 TE$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.59205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17525475 | $\omega$ | 189.66536 | | +0.76533568 | −0.63924155 | |
| $a$ | 3.1624441 | $\Omega$ | 210.48112 | | +0.59996042 | +0.75075706 | |
| $e$ | 0.0914029 | $i$ | 8.50760 | | +0.23304246 | +0.16653551 | |
| $P$ | 5.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2000 11 18 | 691 | 0.4+ | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.1− | | |
| 2000 10 01 | 704 | 0.4+ | 0.7+ | 2000 11 18 | 691 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2000 10 01 | 704 | 0.1− | 0.6− | 2000 11 18 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.3− | | |
| 2000 10 01 | 704 | 0.0 | 0.6− | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2000 10 01 | 704 | 0.2+ | 1.5+ | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.4− | | |
| 2000 10 07 | 691 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.5− | | |
| 2000 10 07 | 691 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1− | | | | | | |
| 2000 10 07 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.2− | | | | | | |

**2000 UE$_1$ = 2006 WR$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.92272 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17231455 | $\omega$ | 299.97268 | | +0.97161337 | −0.01681164 | |
| $a$ | 3.1983164 | $\Omega$ | 61.91103 | | +0.13596234 | +0.85596765 | |
| $e$ | 0.2085359 | $i$ | 15.51442 | | −0.19360192 | +0.51675599 | |
| $P$ | 5.72 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.1+ | 0.1+ | 2005 08 25 | E12 | 0.2+ | 1.3− | 2006 11 15 | 703 | 0.0 | 0.3+ | | |
| 2000 10 01 | 704 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2000 10 01 | 704 | 0.4− | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.9+ | 0.3− | | |
| 2000 10 22 | 557 | 0.5− | 0.3− | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 | | |
| 2000 10 22 | 557 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.6− | 2006 11 15 | 691 | 0.7+ | 1.4+ | | |
| 2000 10 23 | 557 | 0.4− | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 1.0+ | 0.9+ | | |
| 2000 10 23 | 557 | 0.1− | 0.4+ | 2006 10 29 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.4− | 0.8− | | |
| 2000 10 30 | 704 | 0.3+ | 0.0 | 2006 10 29 | G96 | 0.3− | 0.7− | 2006 11 18 | 704 | 0.6+ | 0.4− | | |
| 2000 10 30 | 704 | 0.1+ | 0.8+ | 2006 10 29 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.4+ | | |
| 2000 10 30 | 704 | 0.6+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.7− | 0.1+ | | |
| 2000 10 30 | 704 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.1+ | | |
| 2005 08 06 | E12 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2005 08 06 | E12 | 1.9− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− | 2006 11 21 | 704 | 0.5− | 1.0− | | |
| 2005 08 06 | E12 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 1.1− | 0.8− | | |
| 2005 08 06 | E12 | 0.6+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2005 08 25 | E12 | 0.8+ | 0.8− | 2006 11 11 | G96 | 0.1+ | 0.6− | 2006 11 21 | 704 | 0.2+ | 0.3− | | |
| 2005 08 25 | E12 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.4− | 0.5− | | | | | | |
| 2005 08 25 | E12 | 0.5+ | 0.5+ | 2006 11 15 | 703 | 0.5− | 0.9− | | | | | | |

**2000 UH$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.17653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17904422 | $\omega$ | 171.49320 | | +0.85567217 | −0.50876292 | |
| $a$ | 3.1176631 | $\Omega$ | 219.55634 | | +0.46562530 | +0.83679002 | |
| $e$ | 0.0919854 | $i$ | 8.56013 | | +0.22587211 | +0.20234315 | |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 699 | 0.5+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.9− | 2006 11 20 | 704 | 0.0 | 0.4− |
| 2000 09 25 | 699 | 0.3− | 0.4+ | 2006 10 21 | D35 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.9− | 1.2+ |
| 2000 09 25 | 699 | 0.2+ | 1.0+ | 2006 10 21 | D35 | 0.0 | 0.1− | 2006 11 24 | 703 | 0.2+ | 0.5− |
| 2000 09 25 | 699 | 0.2− | 0.7− | 2006 10 21 | D35 | 0.3− | 0.6− | 2006 11 24 | 703 | 0.1− | 0.3− |
| 2000 09 28 | 704 | 0.6− | 0.7− | 2006 10 25 | D35 | 0.2+ | 0.2+ | 2006 11 24 | 703 | 0.2− | 0.3− |
| 2000 09 28 | 704 | 0.3− | 0.1− | 2006 10 25 | D35 | 0.5+ | 0.5− | 2006 11 24 | 703 | 0.4− | 0.4− |
| 2000 09 28 | 704 | 0.3+ | 0.5+ | 2006 10 25 | D35 | 0.1+ | 0.5− | 2006 11 25 | H55 | 1.7+ | 0.0 |
| 2000 09 28 | 704 | 0.2− | 0.4+ | 2006 11 02 | G96 | 0.0 | 0.5− | 2006 11 25 | H55 | 0.2− | 0.1+ |
| 2000 10 25 | 704 | 0.4− | 1.2+ | 2006 11 02 | G96 | 0.0 | 0.5− | 2006 11 25 | H55 | 0.2− | 0.2− |
| 2000 10 25 | 704 | 0.7− | 0.6+ | 2006 11 02 | G96 | 0.2+ | 0.3− | 2006 11 25 | H55 | 0.2− | 0.0 |
| 2000 10 25 | 704 | 0.6− | 0.4+ | 2006 11 02 | G96 | 0.3− | 0.1− | 2006 11 25 | 703 | 0.1+ | 0.3− |
| 2000 10 31 | 704 | 1.0+ | 0.1− | 2006 11 14 | 704 | 0.1− | 1.0+ | 2006 11 25 | 703 | 0.1+ | 0.4+ |
| 2000 10 31 | 704 | 0.1+ | 0.0 | 2006 11 14 | 704 | 1.4− | 0.4+ | 2006 11 25 | 703 | 0.1− | 0.4+ |
| 2000 10 31 | 704 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.8+ | 1.1+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2003 03 27 | 644 | 0.5+ | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.4− | 2006 11 25 | 703 | 0.7− | 0.2+ |
| 2003 03 27 | 644 | 0.2+ | 1.1+ | 2006 11 17 | 704 | 0.5+ | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2003 03 27 | 644 | 0.2+ | 1.2+ | 2006 11 17 | 704 | 0.6+ | 1.0+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2005 08 30 | 599 | 0.8− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2005 08 30 | 599 | 0.9+ | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.5+ | 0.1+ |
| 2005 08 30 | 599 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.8+ | 0.0 |
| 2005 08 30 | 599 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.6+ | 0.3+ |
| 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 20 | 704 | 1.5− | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.2+ |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 1.5− | 1.4+ | 2006 11 29 | 704 | 0.6+ | 0.3− |

**2000 UA$_{33}$ = 2002 GN$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.91352 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25621375 | $\omega$ | 253.82430 | | −0.23874708 | | −0.96980550 |
| $a$ | 2.4550919 | $\Omega$ | 210.12851 | | +0.92453634 | | −0.21132733 |
| $e$ | 0.0816318 | $i$ | 5.69060 | | +0.29703937 | | −0.12172945 |
| $P$ | 3.85 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 29 | 691 | 0.1− | 0.0 | 2002 04 12 | 704 | 0.2− | 0.5+ | 2006 04 19 | 691 | 0.1+ | 0.4− |
| 2000 10 29 | 691 | 0.0 | 0.1− | 2002 04 12 | 704 | 0.0 | 0.1− | 2006 04 19 | G96 | 0.4+ | 0.2− |
| 2000 10 29 | 691 | 0.0 | 0.1− | 2002 04 14 | 704 | 0.2− | 0.6− | 2006 04 19 | G96 | 1.3− | 0.4+ |
| 2000 11 02 | 691 | 0.0 | 0.6+ | 2002 04 14 | 704 | 0.8+ | 0.9− | 2006 04 19 | G96 | 0.0 | 0.3+ |
| 2000 11 02 | 691 | 0.4+ | 0.6+ | 2002 04 14 | 704 | 0.1− | 0.8− | 2006 04 19 | G96 | 0.3− | 0.3+ |
| 2000 11 02 | 691 | 0.1+ | 0.8+ | 2002 04 14 | 704 | 0.1− | 0.5− | 2006 05 02 | G96 | 0.5− | 0.0 |
| 2000 11 02 | 691 | 0.1− | 0.7− | 2006 04 02 | 691 | 0.2+ | 0.1+ | 2006 05 02 | G96 | 0.3− | 0.4+ |
| 2000 11 02 | 691 | 0.0 | 0.4− | 2006 04 02 | 691 | 0.1− | 0.1+ | 2006 05 02 | G96 | 0.2− | 0.4+ |
| 2000 11 02 | 691 | 0.3− | 0.4− | 2006 04 02 | 691 | 0.0 | 0.2+ | 2006 05 02 | G96 | 0.2− | 0.2+ |
| 2002 04 12 | 704 | 0.2− | 0.4+ | 2006 04 19 | 691 | 0.4+ | 0.1+ | | | | |
| 2002 04 12 | 704 | 0.3− | 0.8+ | 2006 04 19 | 691 | 0.1+ | 0.1+ | | | | |

**2000 UL$_{33}$ = 2006 VS$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.46616 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17598984 | $\omega$ | 104.33303 | | +0.77135015 | | +0.62949675 |
| $a$ | 3.1536318 | $\Omega$ | 216.78807 | | −0.62734920 | | +0.72738669 |
| $e$ | 0.0856843 | $i$ | 8.98784 | | −0.10701364 | | +0.27320770 |
| $P$ | 5.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 30 | 691 | 0.1− | 0.0 | 2005 07 31 | 644 | 0.3− | 0.8+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2000 10 30 | 691 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2000 10 30 | 691 | 0.0 | 0.4− | 2006 10 12 | 691 | 0.4− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2000 11 02 | 691 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.5− | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2000 11 02 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2000 11 02 | 691 | 0.3− | 0.6− | 2006 10 19 | G96 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2000 11 19 | 691 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2000 11 19 | 691 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.5+ | 0.1+ |
| 2000 11 19 | 691 | 0.3+ | 0.5− | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2005 07 31 | 644 | 0.1− | 0.8+ | 2006 11 12 | G96 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2005 07 31 | 644 | 0.2− | 0.8+ | 2006 11 12 | G96 | 0.5+ | 0.2− | | | | |

**2000 UZ$_{81}$ = 2005 NV$_{99}$ = 2006 WA$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.73352 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17270470 | $\omega$ | 135.95111 | | +0.98855300 | | +0.00561836 |
| $a$ | 3.1934977 | $\Omega$ | 224.40386 | | −0.04320274 | | +0.96800185 |
| $e$ | 0.1223139 | $i$ | 12.44332 | | +0.14455621 | | +0.25088014 |
| $P$ | 5.71 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.6+ | 0.2+ | 2005 07 11 | 703 | 0.7− | 0.4+ | 2006 11 02 | 703 | 0.3+ | 0.1− |
| 2000 10 25 | 704 | 0.7− | 0.0 | 2005 07 11 | 703 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2000 10 25 | 704 | 0.0 | 0.3+ | 2005 07 16 | 703 | 0.3+ | 0.9− | 2006 11 12 | G96 | 0.2− | 0.4− |
| 2000 10 25 | 704 | 1.0+ | 0.6− | 2005 07 16 | 703 | 0.5+ | 0.2− | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2000 10 25 | 704 | 0.5− | 0.6+ | 2005 07 16 | 703 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.3− | 0.5− |
| 2000 11 02 | 704 | 0.5− | 0.0 | 2005 07 16 | 703 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.2+ |
| 2000 11 02 | 704 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2000 11 02 | 704 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2000 11 02 | 704 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.1− | 1.1+ |
| 2000 11 02 | 704 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.3− | 0.5+ |
| 2000 11 03 | 704 | 0.7− | 0.9+ | 2006 10 19 | 703 | (0.5− | 2.6+) | 2006 11 17 | 704 | 0.3+ | 1.0+ |
| 2000 11 03 | 704 | 0.5+ | 0.5− | 2006 10 19 | 703 | 0.3− | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2000 11 03 | 704 | (1.1+ | 2.1−) | 2006 10 19 | 703 | 0.9+ | 0.6− | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2000 12 04 | 691 | 0.5+ | 0.8+ | 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2000 12 04 | 691 | 0.2− | 0.3− | 2006 10 22 | G96 | 0.4− | 0.5− | 2006 11 28 | 704 | 0.3+ | 0.5− |
| 2000 12 04 | 691 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.4− |
| 2004 05 20 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.5− | 2006 11 28 | 704 | 0.6+ | 0.6+ |
| 2004 05 20 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.6− | 2006 11 28 | 704 | 1.0+ | 0.3− |
| 2004 05 20 | 691 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.7+ | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.4− |
| 2005 07 11 | 703 | 0.1− | 0.2− | 2006 11 02 | 703 | (1.0− | 1.6+) | | | | |
| 2005 07 11 | 703 | 0.1+ | 0.3− | 2006 11 02 | 703 | 0.6− | 0.7− | | | | |

**2000 UC$_{88}$ = 2006 WV$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.18402 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17472540 | $\omega$ | 321.39895 | | +0.96497398 | | −0.22167513 |
| $a$ | 3.1688282 | $\Omega$ | 51.98745 | | +0.26224124 | | +0.83013800 |
| $e$ | 0.0946578 | $i$ | 10.25791 | | −0.00739974 | | +0.51159655 |
| $P$ | 5.64 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 31 | 704 | 1.3+ | 0.4+ | 2000 11 27 | 704 | 0.9− | 0.4− | 2006 11 23 | 703 | 0.3− | 0.2− |
| 2000 10 31 | 704 | 0.6+ | 0.4− | 2000 11 27 | 704 | 1.6− | 0.4− | 2006 11 23 | 703 | 0.0 | 0.3− |
| 2000 10 31 | 704 | 0.4+ | 0.4+ | 2000 11 27 | 704 | 0.1+ | 0.7+ | 2006 11 23 | 703 | 0.9− | 0.3− |
| 2000 11 02 | 704 | 0.3+ | 0.6− | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.8+ | 0.1− |
| 2000 11 02 | 704 | 1.2+ | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2000 11 02 | 704 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2000 11 02 | 704 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.5+ | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2000 11 02 | 704 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.4+ | | | | |
| 2000 11 27 | 704 | 0.9− | 0.0 | 2006 11 19 | 704 | 0.4− | 1.0+ | | | | |

**2000 UY$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.85460 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26358345 | $\omega$ | 279.22149 | | +0.86864743 | | −0.48346557 |
| $a$ | 2.4091136 | $\Omega$ | 109.75601 | | +0.48760891 | | +0.79562202 |
| $e$ | 0.1924661 | $i$ | 6.60326 | | +0.08768805 | | +0.36502965 |
| $P$ | 3.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.0 | 0.2− | 2000 11 03 | 704 | 0.6+ | 0.8+ | 2000 12 19 | 608 | 0.1− | 1.1+ |
| 2000 10 01 | 704 | 0.5+ | 0.4− | 2000 11 03 | 704 | 0.1+ | 0.1− | 2000 12 19 | 608 | 0.4+ | 0.9+ |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2000 11 03 | 704 | (2.4− | 0.0 ) | 2004 12 16 | 691 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.5+ | 0.1− | 2000 11 03 | 704 | 0.4+ | 0.1+ | 2004 12 16 | 691 | 0.1+ | 0.2− |
| 2000 10 29 | 704 | 0.1− | 0.5− | 2000 11 26 | 704 | 0.1− | 0.2− | 2004 12 16 | 691 | 0.1+ | 0.2− |
| 2000 10 29 | 704 | 0.8− | 0.1− | 2000 11 26 | 704 | 0.6− | 0.2+ | 2006 04 09 | G96 | 0.5+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 29 | 704 | 0.2+ | 0.6+ | 2000 11 26 | 704 | 0.2− | 1.2− | 2006 04 09 | G96 | 0.1+ | 0.3+ |
| 2000 10 29 | 704 | 1.0− | 0.4− | 2000 11 26 | 704 | 0.2− | 0.5+ | 2006 04 09 | G96 | 0.3+ | 0.6+ |
| 2000 11 03 | 704 | 0.5− | 0.6+ | 2000 12 19 | 608 | 0.4+ | 0.8+ | 2006 04 09 | G96 | 0.3− | 0.6+ |

**2000 UT$_{114}$ = 2005 AW$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.92898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27928747 | $\omega$ | 14.73213 | | +0.98178325 | −0.18997097 | |
| $a$ | 2.3179377 | $\Omega$ | 356.21354 | | +0.16841518 | +0.87875401 | |
| $e$ | 0.1774987 | $i$ | 3.09167 | | +0.08796580 | +0.43783835 | |
| $P$ | 3.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.0 | 0.4− | 2000 11 05 | 704 | 0.2+ | 0.0 | 2005 01 15 | 691 | 0.2+ | 0.1− |
| 1995 03 27 | 691 | 0.2− | 0.2+ | 2000 11 05 | 704 | 0.0 | 0.5− | 2005 01 15 | 691 | 0.2− | 0.1+ |
| 1995 03 27 | 691 | 0.1+ | 0.0 | 2000 11 05 | 704 | 1.0+ | 0.0 | 2005 01 15 | 691 | 0.1− | 0.1+ |
| 2000 10 25 | 704 | 0.3− | 0.2+ | 2000 11 20 | 704 | 0.3+ | 0.5− | 2005 01 19 | 691 | 0.1+ | 0.4− |
| 2000 10 25 | 704 | 0.5− | 0.9+ | 2000 11 20 | 704 | 0.6+ | 1.0− | 2005 01 19 | 691 | 0.2− | 0.0 |
| 2000 10 25 | 704 | 0.1+ | 1.1+ | 2000 11 20 | 704 | 0.2− | 1.0− | 2005 01 19 | 691 | 0.2+ | 0.3+ |
| 2000 10 25 | 704 | 0.7+ | 0.7− | 2000 12 29 | 699 | 0.9− | 1.1+ | 2006 05 06 | G96 | 0.2− | 0.3+ |
| 2000 10 25 | 704 | 1.2+ | 0.4+ | 2000 12 29 | 699 | 0.6− | 0.7+ | 2006 05 06 | G96 | 0.2+ | 0.3+ |
| 2000 11 05 | 704 | 0.2− | 0.5+ | 2000 12 29 | 699 | 1.3− | 0.5+ | 2006 05 06 | G96 | 0.1+ | 0.5+ |
| 2000 11 05 | 704 | 0.1− | 0.3− | 2000 12 29 | 699 | 1.2− | 0.3− | 2006 05 06 | G96 | 0.3+ | 0.4+ |

**2000 UU$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.95252 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17671048 | $\omega$ | 275.22203 | | +0.60712785 | +0.77215967 | |
| $a$ | 3.1450521 | $\Omega$ | 34.49123 | | −0.53210797 | +0.57034917 | |
| $e$ | 0.1524967 | $i$ | 19.33862 | | −0.59013293 | +0.28012724 | |
| $P$ | 5.58 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 1.8+ | 1.0− | 2005 08 08 | E12 | 0.7+ | 0.2+ | 2005 10 02 | E12 | 0.5+ | 0.2+ |
| 2000 10 25 | 704 | 0.6− | 0.8− | 2005 08 08 | E12 | 0.1+ | 0.6+ | 2005 10 02 | E12 | 0.4+ | 0.1+ |
| 2000 10 25 | 704 | 0.4− | 0.3− | 2005 08 08 | E12 | 0.2+ | 0.2+ | 2005 10 02 | E12 | 0.1+ | 0.4+ |
| 2000 11 03 | 704 | (0.7− | 2.7+) | 2005 08 26 | E12 | 0.4− | 0.0 | 2005 10 07 | 699 | 0.8+ | 0.1− |
| 2000 11 03 | 704 | 0.8− | 0.7+ | 2005 08 26 | E12 | 0.8+ | 0.0 | 2005 10 07 | 699 | 1.1− | 0.5− |
| 2000 11 03 | 704 | 0.1− | 1.3+ | 2005 08 26 | E12 | 1.0− | 0.1+ | 2005 10 07 | 699 | (2.3− | 0.6−) |
| 2000 11 03 | 704 | 0.6− | 0.2+ | 2005 08 26 | E12 | 0.3− | 0.2− | 2005 10 07 | 699 | 0.2+ | 0.3+ |
| 2000 11 20 | 704 | 0.4− | 0.6− | 2005 09 25 | 703 | 1.2− | 0.3+ | 2005 10 24 | 644 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 0.8+ | 0.3+ | 2005 09 25 | 703 | 0.6+ | 0.6− | 2005 10 24 | 644 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 0.1+ | 0.0 | 2005 09 25 | 703 | 2.0− | 0.1+ | 2005 10 24 | 644 | 0.2+ | 0.0 |
| 2000 11 20 | 704 | 0.2+ | 0.1+ | 2005 09 25 | 703 | 0.0 | 0.3− | | | | |
| 2005 08 08 | E12 | 0.2+ | 0.5− | 2005 10 02 | E12 | 0.8+ | 0.4− | | | | |

**2000 VV = 2006 WY$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.68138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17161143 | $\omega$ | 11.28987 | | +0.30473198 | −0.95015525 | |
| $a$ | 3.2070464 | $\Omega$ | 60.99737 | | +0.86787196 | +0.24850504 | |
| $e$ | 0.1691454 | $i$ | 4.32157 | | +0.39234766 | +0.18828234 | |
| $P$ | 5.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 691 | 0.1− | 0.0 | 2000 11 03 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.4− |
| 2000 11 01 | 691 | 0.0 | 0.5+ | 2000 11 03 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.3+ | 0.3+ |
| 2000 11 01 | 691 | 0.0 | 0.0 | 2000 11 03 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2000 11 02 | 691 | 0.9− | 0.0 | 2000 11 05 | 691 | 0.6+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2000 11 02 | 691 | 0.3− | 0.3− | 2000 11 05 | 691 | 0.7+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2000 11 02 | 691 | 0.5− | 0.0 | 2000 11 05 | 691 | 0.6+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.0 |

**2000 VQ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.34897 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17182095 | $\omega$ | 359.52149 | | +0.61921055 | −0.78265996 | |
| $a$ | 3.2044387 | $\Omega$ | 52.21845 | | +0.72069614 | +0.53440584 | |
| $e$ | 0.1898595 | $i$ | 4.60228 | | +0.31172964 | +0.31914540 | |
| $P$ | 5.74 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 1.1+ | 1.0− | 2000 11 25 | 691 | 0.5+ | 0.2+ | 2000 11 29 | 691 | 0.3− | 0.2− |
| 2000 11 01 | 704 | 0.3+ | 0.9+ | 2000 11 26 | 691 | 0.1− | 0.1+ | 2000 11 29 | 691 | 0.2− | 0.2− |
| 2000 11 01 | 704 | 1.2− | 1.2+ | 2000 11 26 | 691 | 0.1− | 0.1− | 2001 01 04 | 691 | 0.2+ | 0.5− |
| 2000 11 02 | 704 | 0.5− | 0.3+ | 2000 11 26 | 691 | (2.6− | 0.2+) | 2001 01 04 | 691 | 0.4+ | 0.0 |
| 2000 11 02 | 704 | 0.2+ | 0.0 | 2000 11 26 | 691 | 0.0 | 0.0 | 2001 01 04 | 691 | 0.6+ | 0.1− |
| 2000 11 02 | 704 | 0.0 | 0.2− | 2000 11 26 | 691 | 0.2+ | 0.2− | 2002 02 16 | 644 | (8.0− | 1.0−) |
| 2000 11 02 | 704 | 0.4− | 0.2− | 2000 11 26 | 691 | 0.0 | 0.2− | 2002 02 16 | 644 | (7.8− | 1.3−) |
| 2000 11 02 | 704 | 0.5+ | 0.5+ | 2000 11 27 | 691 | 0.2− | 0.0 | 2002 02 16 | 644 | (8.2− | 1.5−) |
| 2000 11 24 | 699 | 0.6+ | 0.2+ | 2000 11 27 | 691 | 0.2− | 0.1− | 2005 08 04 | 644 | 0.1− | 0.1+ |
| 2000 11 24 | 699 | 0.4− | 0.3+ | 2000 11 27 | 691 | 0.2− | 0.1− | 2005 08 04 | 644 | 0.1+ | 0.1− |
| 2000 11 24 | 699 | 0.8− | 0.7+ | 2000 11 28 | 691 | 0.2− | 0.2+ | 2005 08 04 | 644 | 0.0 | 0.0 |
| 2000 11 24 | 699 | 0.8+ | 0.5+ | 2000 11 28 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2000 11 25 | 691 | 0.3+ | 0.2− | 2000 11 28 | 691 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2000 11 25 | 691 | 0.4+ | 0.1− | 2000 11 29 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.3− | 0.8+ |

**2000 VF$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.07728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17721742 | $\omega$ | 234.68944 | | −0.37380826 | −0.90018849 | |
| $a$ | 3.1390515 | $\Omega$ | 238.76713 | | +0.91299778 | −0.31467985 | |
| $e$ | 0.1026406 | $i$ | 15.14838 | | +0.16340880 | −0.30106024 | |
| $P$ | 5.56 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 08 | 699 | 0.7− | 0.5− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2000 09 08 | 699 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 1.1− | 0.2+ |
| 2000 09 08 | 699 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2000 09 08 | 699 | 1.7− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | (1.9+ | 2.4+) |
| 2000 09 26 | 699 | (2.4+ | 0.2+) | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2000 09 26 | 699 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2000 09 26 | 699 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2000 09 26 | 699 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2000 09 30 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.9− |
| 2000 09 30 | 704 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.8− | 2006 11 26 | 704 | 0.2− | 1.1+ |
| 2000 09 30 | 704 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.3+ | 2006 11 26 | 704 | 0.7− | 0.2− |
| 2000 10 25 | 704 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 26 | 704 | 1.1+ | 0.6+ |
| 2000 10 25 | 704 | 0.0 | 0.4− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 26 | 704 | 0.2− | 0.2+ |
| 2000 10 25 | 704 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.6+ | 0.5− | 2006 11 26 | 704 | 0.8+ | 0.5+ |
| 2000 10 25 | 704 | 1.6+ | 0.0 | 2006 11 15 | 704 | 1.3+ | 0.3+ | 2006 11 26 | 704 | 0.3+ | 0.5− |
| 2000 11 02 | 704 | 1.0+ | 0.7+ | 2006 11 15 | 704 | 1.1+ | 0.0 | 2006 11 27 | 703 | 0.5+ | 0.4+ |
| 2000 11 02 | 704 | 0.6+ | 0.1− | 2006 11 15 | 704 | 0.5+ | 1.3+ | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2000 11 02 | 704 | 0.4− | 0.1+ | 2006 11 16 | 704 | (1.9+ | 1.5+) | 2006 11 27 | 703 | 0.4− | 0.6+ |
| 2000 11 03 | 704 | 0.1+ | 1.1− | 2006 11 16 | 704 | 0.0 | 0.9− | 2006 11 27 | 703 | 0.4− | 0.7+ |
| 2000 11 03 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | (2.2+ | 2.6+) | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2000 11 03 | 704 | 0.8+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.3− | 0.7+ |
| 2000 11 03 | 704 | 0.1+ | 1.1− | 2006 11 18 | 704 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.5− | 0.3+ |
| 2005 08 29 | 644 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.5+ |
| 2005 08 29 | 644 | 0.2+ | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.5+ | 2006 11 29 | 704 | 0.1− | 0.6− |
| 2005 08 29 | 644 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 18 | A13 | 0.2− | 0.4− | 2006 12 01 | G96 | 0.0 | 0.7− |
| 2006 10 19 | 691 | 0.3+ | 0.2− | 2006 11 18 | A13 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 18 | A13 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 18 | A13 | 0.1− | 0.5− | | | | |

**2000 WG = 1984 BK$_3$ = 2005 EY$_{27}$**

Id. Minor Planet Center (*MPO* 74854; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 192.55416 | | (2000.0) | | | |
| $n$ | 0.28456008 | $\omega$ | 288.51618 | | −0.60750122 | −0.79428277 |
| $a$ | 2.2892158 | $\Omega$ | 198.89889 | | +0.73729384 | −0.56032154 |
| $e$ | 0.1068062 | $i$ | 1.33742 | | +0.29553351 | −0.23485027 |
| $P$ | 3.46 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 01 25 | 675 | 0.5− | 0.2− | 2005 03 03 | 704 | 0.1+ | 1.1− | 2005 03 14 | 704 | 0.3+ | 0.7+ | |
| 1984 01 26 | 675 | 0.3+ | 0.4+ | 2005 03 04 | 691 | 0.3− | 0.2+ | 2005 03 14 | 704 | 0.1− | 0.4− | |
| 2000 11 16 | 691 | 0.4+ | 0.0 | 2005 03 04 | 691 | 0.4− | 0.2+ | 2005 03 14 | 704 | 0.5+ | 0.5+ | |
| 2000 11 16 | 691 | 0.2+ | 0.3+ | 2005 03 04 | 691 | 0.3− | 0.2+ | 2005 03 30 | 703 | (2.3− | 2.2+) | |
| 2000 11 16 | 691 | 0.0 | 0.3+ | 2005 03 08 | 699 | 0.1− | 0.0 | 2005 03 30 | 703 | 1.6− | 0.4+ | |
| 2000 11 17 | 691 | 0.5+ | 0.2− | 2005 03 08 | 699 | 0.4− | 0.9+ | 2005 03 30 | 703 | (0.6+ | 2.2+) | |
| 2000 11 17 | 691 | 0.0 | 0.4− | 2005 03 08 | 704 | 0.2+ | 0.2+ | 2005 03 30 | 703 | (2.0+ | 1.0−) | |
| 2000 11 17 | 691 | 0.1+ | 0.2− | 2005 03 08 | 699 | 0.8− | 0.0 | 2005 04 01 | 699 | (2.1+ | 0.3+) | |
| 2000 11 19 | 691 | 0.3+ | 0.5− | 2005 03 08 | 704 | 0.2+ | 0.3− | 2005 04 01 | 699 | 0.5− | 0.3− | |
| 2000 11 19 | 691 | 0.0 | 0.6− | 2005 03 08 | 704 | 0.3+ | 0.7+ | 2005 04 01 | 699 | 0.3+ | 0.2+ | |
| 2000 11 19 | 691 | 0.3+ | 0.5− | 2005 03 08 | 699 | 0.2− | 0.6+ | 2005 04 01 | 699 | 0.4+ | 0.5+ | |
| 2002 06 07 | 291 | 0.3+ | 0.6− | 2005 03 08 | 704 | 0.2+ | 0.4− | 2005 04 10 | 691 | 0.2− | 0.3+ | |
| 2002 06 07 | 291 | 0.1+ | 0.3− | 2005 03 08 | 704 | 0.2+ | 0.3− | 2005 04 10 | 691 | 0.1− | 0.1+ | |
| 2002 06 07 | 291 | 0.2+ | 0.2− | 2005 03 09 | 699 | 1.5+ | 0.3− | 2005 04 10 | 691 | 0.2− | 0.0 | |
| 2003 09 17 | 691 | 0.3− | 0.8+ | 2005 03 09 | 699 | 0.5+ | 0.1+ | 2005 05 13 | G96 | 0.3− | 0.4+ | |
| 2003 09 17 | 691 | 0.3− | 0.7+ | 2005 03 09 | 699 | 1.3+ | 0.0 | 2005 05 13 | G96 | 0.0 | 0.0 | |
| 2003 09 17 | 691 | 0.7− | 0.8+ | 2005 03 09 | G96 | 0.7− | 0.2− | 2005 05 13 | G96 | 0.1+ | 0.1− | |
| 2003 09 26 | 645 | 0.4− | 0.3+ | 2005 03 09 | 699 | 1.3− | 0.0 | 2005 05 13 | G96 | 0.5− | 0.2− | |
| 2003 09 26 | 645 | 0.4− | 0.3+ | 2005 03 09 | G96 | 0.8− | 0.1− | 2006 06 05 | G96 | (3.7− | 0.5+) | |
| 2003 09 28 | 645 | 0.5− | 0.4+ | 2005 03 09 | G96 | 0.8− | 0.1− | 2006 06 05 | G96 | 0.7− | 0.0 | |
| 2003 09 28 | 645 | 0.5− | 0.3+ | 2005 03 09 | G96 | 0.5− | 0.1− | 2006 06 05 | G96 | 0.2+ | 0.0 | |
| 2005 03 03 | 704 | 1.5+ | 0.2+ | 2005 03 14 | 704 | 0.7+ | 0.1+ | 2006 06 05 | G96 | 1.3+ | 0.1− | |
| 2005 03 03 | 704 | 1.0+ | 0.7+ | 2005 03 14 | 704 | 0.7+ | 0.1+ | | | | | |

## 2000 $WE_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 135.18194 | | (2000.0) | | | |
| $n$ | 0.23427944 | $\omega$ | 185.09553 | | +0.74076204 | −0.67090769 |
| $a$ | 2.6060331 | $\Omega$ | 217.11535 | | +0.61830690 | +0.70071132 |
| $e$ | 0.2253229 | $i$ | 3.22793 | | +0.26261794 | +0.24266545 |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.8+ | 0.5+ | 2000 11 24 | 701 | 0.1− | 0.5+ | 2004 09 18 | 704 | 0.8− | 0.3+ | |
| 2000 09 24 | 704 | 0.1+ | 0.1+ | 2000 11 26 | 701 | 0.2+ | 0.4− | 2004 09 18 | 704 | 0.7− | 0.7+ | |
| 2000 09 24 | 704 | 0.1+ | 0.2+ | 2000 11 26 | 701 | 0.2+ | 0.0 | 2004 09 18 | 704 | 0.4− | 0.3+ | |
| 2000 09 24 | 704 | 1.9+ | 0.2+ | 2000 11 26 | 701 | 0.2+ | 1.0− | 2004 09 18 | 704 | 0.2+ | 0.4+ | |
| 2000 11 20 | 701 | 0.2− | 0.8− | 2004 09 09 | 704 | 0.0 | 0.4+ | 2004 09 18 | 704 | 1.4− | 0.4+ | |
| 2000 11 20 | 701 | 0.1+ | 0.0 | 2004 09 09 | 704 | 1.1+ | 1.0+ | 2006 01 09 | G96 | 0.0 | 0.4+ | |
| 2000 11 20 | 701 | 1.0+ | 0.2+ | 2004 09 09 | 704 | 0.5+ | 0.9+ | 2006 01 09 | G96 | 0.4+ | 0.5+ | |
| 2000 11 23 | 701 | 0.8− | 0.9− | 2004 09 09 | 704 | 0.1− | 0.3+ | 2006 01 09 | G96 | 0.8+ | 0.6+ | |
| 2000 11 23 | 701 | 1.4− | 1.3− | 2004 09 15 | 699 | 0.5− | 1.4+ | 2006 01 09 | G96 | 0.5+ | 0.2+ | |
| 2000 11 23 | 701 | 0.5− | 0.1− | 2004 09 15 | 699 | 0.5+ | 1.0+ | 2006 02 02 | 691 | 0.0 | 0.4+ | |
| 2000 11 24 | 701 | 1.0− | 0.2+ | 2004 09 15 | 699 | 1.1+ | 0.5− | 2006 02 02 | 691 | 0.1− | 0.4+ | |
| 2000 11 24 | 701 | 0.2− | 0.2+ | 2004 09 15 | 699 | 2.0− | 0.6− | 2006 02 02 | 691 | 0.3+ | 0.3+ | |

## 2000 $WQ_{11}$ = 2006 $VV_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 68.22099 | | (2000.0) | | | |
| $n$ | 0.17533826 | $\omega$ | 287.74147 | | +0.79370874 | +0.59810782 |
| $a$ | 3.1614398 | $\Omega$ | 35.75496 | | −0.46101212 | +0.71036804 |
| $e$ | 0.0505487 | $i$ | 10.93832 | | −0.39685546 | +0.37100442 |
| $P$ | 5.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 02 25 | 599 | 0.7+ | 0.9+ | 2006 10 16 | 691 | 0.3+ | 0.4+ | |
| 2000 10 02 | 645 | 0.1− | 0.1+ | 2003 02 25 | 599 | 0.6− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.0 | |
| 2000 10 27 | 691 | 0.1− | 0.1+ | 2005 09 01 | E12 | 0.3− | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.0 | |
| 2000 10 27 | 691 | 0.1− | 0.2+ | 2005 09 01 | E12 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.3− | 0.1+ | |
| 2000 10 27 | 691 | 0.1− | 0.1+ | 2005 09 01 | E12 | 0.2− | 0.9− | 2006 11 11 | 703 | 0.4+ | 0.4+ | |
| 2000 11 20 | 691 | 0.1+ | 0.2− | 2005 09 01 | E12 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.2− | 0.1− | |
| 2000 11 20 | 691 | 0.5+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.8− | 0.1− | |
| 2000 11 20 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.4+ | |
| 2000 11 25 | 691 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.4− | |
| 2000 11 25 | 691 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.3− | |
| 2000 11 25 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.7+ | 0.2− | |
| 2003 02 25 | 599 | 0.3+ | 0.8− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.6− | |

## 2000 $WO_{14}$ = 2005 $CB_{35}$ = 1960 SJ = 4508 P-L

Id. Minor Planet Center (*MPO* 72226; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 234.38184 | | (2000.0) | | | |
| $n$ | 0.27280612 | $\omega$ | 28.87041 | | +0.69872168 | −0.71529156 |
| $a$ | 2.3545069 | $\Omega$ | 16.81481 | | +0.64807790 | +0.62573192 |
| $e$ | 0.1793174 | $i$ | 2.39387 | | +0.30295718 | +0.31115519 |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.1+ | 0.5+ | 2000 11 25 | 704 | 1.3+ | 0.9− | 2004 12 20 | G96 | 0.2− | 0.4− | |
| 1960 09 26 | 675 | 0.5+ | 0.6− | 2000 11 25 | 704 | 0.1− | 0.0 | 2004 12 20 | G96 | 0.0 | 0.3− | |
| 1960 09 26 | 675 | 0.1+ | 0.3+ | 2000 11 26 | 704 | 0.4− | 0.1− | 2004 12 20 | G96 | 0.3+ | 0.2− | |
| 1960 09 27 | 675 | 0.6− | 0.3+ | 2000 11 26 | 704 | 0.1− | 1.0+ | 2004 12 20 | G96 | 0.1+ | 0.1− | |
| 1960 09 27 | 675 | 0.4+ | 0.0 | 2000 11 26 | 704 | 1.1− | 0.3− | 2005 01 18 | 703 | 0.0 | 1.8+ | |
| 1960 09 28 | 675 | 0.2+ | 0.2− | 2000 11 26 | 704 | 0.9+ | 0.0 | 2005 01 18 | 703 | 0.8− | 0.3+ | |
| 1960 09 28 | 675 | 0.2− | 0.2+ | 2000 11 26 | 704 | 0.1+ | 0.4+ | 2005 01 18 | 703 | 0.5− | 0.8+ | |
| 2000 11 20 | 704 | 0.0 | 0.3+ | 2000 11 29 | 704 | 0.1− | 0.4+ | 2005 01 18 | 703 | 1.3− | 0.0 | |
| 2000 11 20 | 704 | 0.1− | 0.1− | 2000 11 29 | 704 | 0.1+ | 0.5+ | 2005 02 02 | 691 | 0.5+ | 0.1− | |
| 2000 11 20 | 704 | 0.4− | 0.1+ | 2000 11 29 | 704 | 0.2+ | 0.3+ | 2005 02 02 | 691 | 0.5+ | 0.1+ | |
| 2000 11 20 | 704 | 0.1− | 0.5− | 2000 11 29 | 704 | 0.2+ | 0.2− | 2005 02 02 | 691 | 0.3+ | 0.1− | |
| 2000 11 20 | 704 | 0.2+ | 1.0− | 2000 11 29 | 704 | 0.5− | 0.2+ | 2005 02 04 | G96 | 0.2− | 0.5− | |
| 2000 11 25 | 704 | 0.1− | 0.4+ | 2002 04 02 | 291 | 0.4+ | 0.4+ | 2005 02 04 | G96 | 0.7+ | 1.5− | |
| 2000 11 25 | 704 | 0.1+ | 0.6+ | 2002 04 02 | 291 | 0.3+ | 0.9+ | 2005 02 04 | G96 | 0.1+ | 0.3− | |
| 2000 11 25 | 704 | 0.3− | 0.2+ | 2002 04 02 | 291 | 0.0 | 0.4+ | 2005 02 04 | G96 | 0.1+ | 0.4− | |

## 2000 $WV_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 157.51811 | | (2000.0) | | | |
| $n$ | 0.22676128 | $\omega$ | 277.32037 | | +0.96796512 | +0.14584758 |
| $a$ | 2.6633206 | $\Omega$ | 74.45505 | | −0.04200066 | +0.89658048 |
| $e$ | 0.2588187 | $i$ | 12.24791 | | −0.24754690 | +0.41817690 |
| $P$ | 4.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.0 | 0.2− | 2000 11 20 | 704 | 0.3− | 0.3+ | 2004 09 04 | E12 | 0.8+ | 0.7+ | |
| 2000 10 01 | 704 | 0.1− | 0.5+ | 2000 11 20 | 704 | 0.9− | 0.0 | 2004 09 04 | E12 | 0.2− | 0.5− | |
| 2000 10 01 | 704 | 0.5− | 0.0 | 2000 11 26 | 704 | 0.5+ | 0.2− | 2004 09 04 | E12 | 1.1− | 0.9+ | |
| 2000 10 01 | 704 | 0.4− | 0.3+ | 2000 11 26 | 704 | 0.1+ | 0.1+ | 2004 09 04 | E12 | 0.5+ | 0.3+ | |
| 2000 10 01 | 704 | 0.1+ | 0.2− | 2000 11 26 | 704 | 0.6− | 0.5− | 2004 09 18 | E12 | 0.1+ | 0.1− | |
| 2000 11 19 | 699 | 0.5+ | 0.3− | 2004 07 09 | 644 | 0.4− | 0.0 | 2004 09 18 | E12 | 0.1− | 0.3− | |
| 2000 11 19 | 699 | 0.2− | 0.0 | 2004 07 09 | 644 | 0.2− | 0.0 | 2004 09 18 | E12 | 0.0 | 0.4+ | |
| 2000 11 19 | 699 | 0.0 | 0.4− | 2004 07 09 | 644 | 0.2− | 0.1− | 2004 09 18 | E12 | 0.1− | 0.4− | |
| 2000 11 19 | 699 | 0.5− | 0.0 | 2004 08 23 | E12 | 0.6+ | 0.2+ | 2004 10 06 | E12 | 0.4+ | 0.3− | |
| 2000 11 20 | 704 | 2.0+ | 0.2− | 2004 08 23 | E12 | 0.0 | 0.2− | 2004 10 06 | E12 | 0.1+ | 0.3− | |
| 2000 11 20 | 704 | 0.1− | 0.6+ | 2004 08 23 | E12 | 0.3+ | 0.1− | 2004 10 06 | E12 | 0.3− | 0.2+ | |
| 2000 11 20 | 704 | 0.0 | 0.5+ | 2004 08 23 | E12 | 0.2− | 0.0 | 2004 10 06 | E12 | 0.0 | 0.9− | |

**2000 WA$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.30563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22995545 | $\omega$ | 137.61323 | | +0.83416772 | −0.51569132 | |
| $a$ | 2.6386001 | $\Omega$ | 254.42607 | | +0.43575459 | +0.83358087 | |
| $e$ | 0.1858832 | $i$ | 11.71060 | | +0.33805643 | +0.19800352 | |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.2+ | 1.1+ | 2000 11 29 | 704 | 0.3− | 0.1+ | 2004 09 14 | 704 | 0.3+ | 0.0 |
| 2000 11 20 | 704 | 0.2+ | 0.2− | 2000 11 29 | 704 | 0.2− | 0.3+ | 2004 09 14 | 704 | 0.3+ | 0.2+ |
| 2000 11 20 | 704 | 0.5+ | 0.4+ | 2000 11 29 | 704 | 0.8− | 0.4− | 2004 09 23 | 704 | 0.1− | 0.4− |
| 2000 11 20 | 704 | 0.4− | 0.1− | 2004 09 11 | 704 | 0.3+ | 0.6− | 2004 09 23 | 704 | 0.3− | 0.2+ |
| 2000 11 26 | 704 | 0.2− | 0.1− | 2004 09 11 | 704 | 1.2+ | 0.8+ | 2004 09 23 | 704 | 0.3+ | 0.2− |
| 2000 11 26 | 704 | 0.0 | 0.2+ | 2004 09 11 | 704 | 0.8− | 1.0+ | 2004 10 07 | 644 | 0.1+ | 0.0 |
| 2000 11 26 | 704 | 0.0 | 0.5− | 2004 09 11 | 704 | 1.0− | 0.8+ | 2004 10 07 | 644 | 0.0 | 0.1− |
| 2000 11 26 | 704 | 0.5+ | 0.1− | 2004 09 14 | 704 | 0.3+ | 0.1+ | 2004 10 07 | 644 | 0.1+ | 0.4− |
| 2000 11 26 | 704 | 0.5+ | 0.1+ | 2004 09 14 | 704 | 0.6− | 1.1− | | | | |
| 2000 11 29 | 704 | 0.1+ | 0.6− | 2004 09 14 | 704 | 0.1+ | 0.3− | | | | |

**2000 WB$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.48710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24373653 | $\omega$ | 273.33855 | | +0.89861701 | −0.42813381 | |
| $a$ | 2.5381793 | $\Omega$ | 112.02899 | | +0.43229251 | +0.82672879 | |
| $e$ | 0.2697784 | $i$ | 5.93546 | | +0.07490432 | +0.36499446 | |
| $P$ | 4.04 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.3− | 0.5− | 2004 11 03 | 699 | 0.2+ | 1.6− | 2004 11 30 | 699 | 0.1− | 1.1+ |
| 2000 11 20 | 704 | 0.5− | 0.5+ | 2004 11 03 | 699 | 0.2+ | 0.6− | 2004 11 30 | 699 | 1.1+ | 1.1+ |
| 2000 11 20 | 704 | 1.1− | 0.5+ | 2004 11 03 | 699 | 0.1− | 0.1− | 2004 12 09 | 703 | 0.3+ | 0.2− |
| 2000 11 20 | 704 | 0.5+ | 0.7+ | 2004 11 03 | 699 | 0.3+ | 1.1+ | 2004 12 09 | 703 | 0.8− | 0.6− |
| 2000 11 27 | 704 | 0.1+ | 0.3− | 2004 11 03 | 644 | 0.5− | 0.0 | 2004 12 09 | 703 | 0.5− | 0.3+ |
| 2000 11 27 | 704 | 0.2− | 0.2− | 2004 11 03 | 644 | 0.4− | 0.1− | 2004 12 09 | 703 | 0.5− | 1.7− |
| 2000 11 27 | 704 | 0.0 | 0.1+ | 2004 11 03 | 644 | 0.1+ | 0.2− | 2004 12 18 | 704 | 0.2+ | 0.7+ |
| 2000 11 27 | 704 | 0.1− | 1.8+ | 2004 11 12 | 703 | 1.1− | 0.5− | 2004 12 18 | 704 | 0.9+ | 0.1+ |
| 2000 11 27 | 704 | 0.4+ | 0.4+ | 2004 11 12 | 703 | 0.1+ | 0.4− | 2004 12 18 | 704 | 0.6+ | 0.6+ |
| 2000 12 30 | 704 | 0.5− | 1.0− | 2004 11 12 | 703 | 0.4+ | 0.4− | 2005 01 13 | 703 | 0.5+ | 0.1− |
| 2000 12 30 | 704 | 1.4+ | 1.3− | 2004 11 12 | 703 | 0.4+ | 1.0− | 2005 01 13 | 703 | 0.2− | 0.5+ |
| 2000 12 30 | 704 | 0.6+ | 0.3+ | 2004 11 30 | 699 | 0.6− | 0.5+ | 2005 01 13 | 703 | 0.0 | 0.5− |
| 2000 12 30 | 704 | 0.3− | 0.4− | 2004 11 30 | 699 | 0.8+ | 1.4+ | 2005 01 13 | 703 | 1.0− | 0.4− |

**2000 WA$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.94201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17266682 | $\omega$ | 337.33377 | | +0.38263451 | −0.79322399 | |
| $a$ | 3.1939647 | $\Omega$ | 87.28297 | | +0.90360690 | +0.21443069 | |
| $e$ | 0.1481484 | $i$ | 28.30908 | | +0.19257570 | +0.56992560 | |
| $P$ | 5.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.1+ | 0.3− | 2000 12 30 | 704 | 1.2+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.1+ |
| 2000 11 20 | 704 | 0.4+ | 0.4+ | 2000 12 30 | 704 | 0.3+ | 0.9− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2000 11 20 | 704 | 0.4− | 0.1+ | 2000 12 30 | 704 | 0.5− | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.1+ |
| 2000 11 20 | 704 | 0.0 | 0.5− | 2001 01 24 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2000 11 27 | 704 | 0.6+ | 0.3+ | 2001 01 24 | 691 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.4+ |
| 2000 11 27 | 704 | 0.2+ | 0.4+ | 2001 01 24 | 691 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.3− | 0.3− |
| 2000 11 27 | 704 | 0.1− | 0.5− | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.4− | 0.3+ |
| 2000 11 27 | 704 | 0.5− | 0.4+ | 2006 10 01 | 691 | 0.2+ | 0.0 | | | | |
| 2000 11 27 | 704 | 0.7− | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.5− | | | | |

**2000 WR$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.80959 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18360409 | $\omega$ | 141.79206 | | +0.93542679 | −0.23306950 | |
| $a$ | 3.0658282 | $\Omega$ | 233.78095 | | +0.18397326 | +0.96299739 | |
| $e$ | 0.2853038 | $i$ | 19.23708 | | +0.30187839 | +0.13533158 | |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 699 | 0.4− | 0.2− | 2000 11 27 | 704 | 0.2+ | 1.2− | 2005 10 23 | 703 | 0.4+ | 0.1− |
| 2000 11 20 | 699 | 0.2+ | 0.4− | 2000 11 27 | 704 | 0.5+ | 0.5− | 2005 10 28 | 703 | 1.0+ | 0.5− |
| 2000 11 20 | 699 | 0.9− | 0.2+ | 2005 09 14 | 704 | 0.5+ | 0.4+ | 2005 10 28 | 703 | 0.2− | 1.8+ |
| 2000 11 20 | 699 | 0.2− | 0.2+ | 2005 09 14 | 704 | 0.3+ | 0.0 | 2005 10 28 | 703 | 0.4− | 0.2+ |
| 2000 11 21 | 704 | 0.1+ | 0.3− | 2005 09 14 | 704 | 1.1− | 0.8− | 2005 10 28 | 703 | 1.1− | 0.1+ |
| 2000 11 21 | 704 | 0.7+ | 0.6+ | 2005 10 23 | 644 | 0.2− | 0.1+ | 2005 11 06 | 704 | 0.3+ | 1.7+ |
| 2000 11 21 | 704 | 1.9− | 0.5+ | 2005 10 23 | 644 | 0.1+ | 0.0 | 2005 11 06 | 704 | 0.7+ | 0.4− |
| 2000 11 21 | 704 | 0.2+ | 0.0 | 2005 10 23 | 644 | 0.0 | 0.4− | 2005 11 06 | 704 | 0.1+ | 0.1+ |
| 2000 11 27 | 704 | 1.0+ | 0.7+ | 2005 10 23 | 703 | 0.6− | 0.5− | 2005 11 06 | 704 | 0.4+ | 0.9+ |
| 2000 11 27 | 704 | 0.0 | 0.6− | 2005 10 23 | 703 | 0.1+ | 0.8− | | | | |
| 2000 11 27 | 704 | 0.4+ | 0.7+ | 2005 10 23 | 703 | 0.2− | 1.4− | | | | |

**2000 WD$_{53}$ = 2002 CY$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.01422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21078675 | $\omega$ | 74.92551 | | +0.66355965 | +0.74800506 | |
| $a$ | 2.7962362 | $\Omega$ | 236.65425 | | −0.69236214 | +0.60726690 | |
| $e$ | 0.0889198 | $i$ | 0.91259 | | −0.28341358 | +0.26779719 | |
| $P$ | 4.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 691 | 0.4− | 0.4+ | 2002 02 07 | 644 | 0.3+ | 0.6+ | 2004 09 09 | 704 | 0.4− | 0.5+ |
| 2000 10 25 | 691 | 0.1− | 0.5+ | 2002 02 07 | 644 | 0.5+ | 0.9+ | 2004 09 09 | 704 | 0.4− | 0.6+ |
| 2000 10 25 | 691 | 0.5− | 0.4+ | 2002 02 07 | 644 | 0.1+ | 1.2+ | 2004 09 13 | 699 | 0.2− | 0.4+ |
| 2000 11 27 | 691 | 0.3+ | 0.2− | 2002 02 11 | 704 | 0.9+ | 1.5+ | 2004 09 13 | 699 | 0.5+ | 0.5+ |
| 2000 11 27 | 691 | 0.1+ | 0.1− | 2002 02 11 | 704 | 0.6+ | 0.3+ | 2004 09 13 | 699 | 2.0− | 0.3− |
| 2000 11 27 | 691 | 0.0 | 0.2− | 2002 02 11 | 704 | 0.3− | 1.3+ | 2004 09 13 | 699 | 0.1+ | 0.1+ |
| 2000 11 28 | 691 | 0.3+ | 0.3− | 2002 02 11 | 704 | (2.3+ | 1.4+) | 2004 09 17 | 704 | 0.5+ | 0.5+ |
| 2000 11 28 | 691 | 0.3+ | 0.5− | 2004 09 09 | 704 | 0.1− | 0.2+ | 2004 09 17 | 704 | 0.8− | 1.1+ |
| 2000 11 28 | 691 | 0.3+ | 0.5− | 2004 09 09 | 704 | 0.7+ | 1.1+ | 2004 09 17 | 704 | (2.9− | 0.3+) |

**2000 WL$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.81500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.57529413 | $\omega$ | 71.68173 | | −0.82899986 | −0.46653539 | |
| $a$ | 1.4317793 | $\Omega$ | 79.49372 | | +0.31589104 | −0.84567153 | |
| $e$ | 0.2984822 | $i$ | 18.27919 | | +0.46148898 | −0.25919951 | |
| $P$ | 1.71 | $H$ | 19.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 704 | 0.1− | 0.2− | 2000 11 29 | 853 | 0.3− | 0.1+ | 2000 12 20 | 704 | 0.6+ | 0.1− |
| 2000 11 26 | 704 | 0.0 | 1.2− | 2000 11 29 | 853 | 0.3− | 0.1− | 2000 12 20 | 704 | 0.1+ | 0.3− |
| 2000 11 26 | 704 | 0.3− | 0.1− | 2000 11 29 | 711 | 0.2− | 0.4− | 2000 12 20 | 704 | 0.0 | 0.3− |
| 2000 11 26 | 704 | 0.3+ | 0.0 | 2000 11 29 | 711 | 0.3− | 0.1− | 2000 12 20 | 704 | 0.5+ | 0.0 |
| 2000 11 27 | 704 | 0.7− | 0.2+ | 2000 11 29 | 704 | 0.0 | 0.4+ | 2000 12 21 | 113 | 0.2+ | 1.1+ |
| 2000 11 27 | 853 | 0.4− | 0.1+ | 2000 11 29 | 711 | 0.3− | 0.6− | 2000 12 21 | 113 | 0.4+ | 1.3+ |
| 2000 11 27 | 853 | 0.3− | 0.1+ | 2000 11 29 | 704 | 0.0 | 0.5+ | 2000 12 21 | 113 | 0.2+ | 0.1+ |
| 2000 11 27 | 853 | 0.3− | 0.0 | 2000 11 29 | 704 | 0.3− | 0.6+ | 2000 12 21 | 113 | 0.2+ | 0.6+ |
| 2000 11 27 | 704 | 0.5− | 0.3+ | 2000 11 29 | 474 | 0.2− | 0.3+ | 2000 12 21 | 113 | 0.0 | 0.2+ |
| 2000 11 27 | 704 | 1.4+ | 0.1− | 2000 11 29 | 474 | 0.4+ | 0.5+ | 2000 12 22 | 143 | 0.3− | 0.3− |
| 2000 11 27 | 704 | 0.4− | 0.1− | 2000 11 29 | 474 | 0.2− | 0.4+ | 2000 12 22 | 143 | 0.2+ | 1.5− |
| 2000 11 27 | 704 | 0.2− | 0.5+ | 2000 11 30 | 704 | 0.4+ | 1.1+ | 2000 12 22 | 143 | 0.1− | 0.2+ |
| 2000 11 27 | 704 | 0.0 | 0.2+ | 2000 11 30 | 704 | 1.0+ | 0.3+ | 2000 12 22 | 143 | 0.4+ | 0.4+ |
| 2000 11 27 | 704 | 0.0 | 0.4+ | 2000 11 30 | 704 | 0.1− | 0.2− | 2000 12 22 | 143 | 0.9− | 0.7− |
| 2000 11 27 | 704 | 0.4− | 0.1+ | 2000 11 30 | 704 | 0.3+ | 0.2− | 2000 12 22 | 143 | 1.0+ | 0.5− |
| 2000 11 27 | 704 | 0.5− | 0.4− | 2000 11 30 | 704 | 0.1+ | 0.4− | 2000 12 22 | 143 | 0.7− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.6− | 0.2+ | 2000 12 04 | 402 | 0.1− | 0.3+ | 2000 12 23 | 113 | 0.2+ | 0.1+ |
| 2000 11 27 | 046 | 0.1+ | 0.2− | 2000 12 04 | 402 | 0.1− | 0.3− | 2000 12 23 | 113 | 0.6+ | 0.1+ |
| 2000 11 27 | 046 | 0.9− | 0.4+ | 2000 12 04 | 402 | 0.5+ | 0.4+ | 2000 12 23 | 113 | 0.2− | 0.5+ |
| 2000 11 27 | 046 | 0.5− | 0.3− | 2000 12 05 | 693 | 0.4− | 0.5+ | 2000 12 23 | 113 | 0.0 | 0.5+ |
| 2000 11 27 | 046 | 0.8− | 0.3+ | 2000 12 05 | 693 | 0.3− | 0.5+ | 2000 12 23 | 113 | 0.3+ | 0.4− |
| 2000 11 27 | 557 | 0.4− | 0.1+ | 2000 12 05 | 693 | 0.5− | 0.4+ | 2001 04 24 | 540 | 1.1− | 0.4+ |
| 2000 11 27 | 557 | 0.5− | 0.3− | 2000 12 05 | 360 | 0.4− | 0.4+ | 2001 04 24 | 540 | 0.2+ | 0.8+ |
| 2000 11 27 | 557 | 0.5− | 0.2− | 2000 12 05 | 360 | 0.2− | 0.4+ | 2001 04 26 | 540 | (3.0+ | 0.6+) |
| 2000 11 27 | 557 | 0.4− | 0.3+ | 2000 12 05 | 360 | 0.1+ | 0.1+ | 2001 04 26 | 540 | 1.1+ | 2.0+ |
| 2000 11 27 | 557 | 0.4− | 0.1− | 2000 12 12 | 413 | 0.3+ | 0.0 | 2001 05 24 | 608 | 0.4− | 1.3− |
| 2000 11 27 | 118 | 0.1− | 0.0 | 2000 12 12 | 413 | 0.1+ | 0.0 | 2001 05 24 | 608 | 0.7− | 0.4− |
| 2000 11 27 | 118 | 0.5− | 0.1− | 2000 12 12 | 413 | 0.2+ | 0.0 | 2001 05 24 | 608 | 0.6− | 0.7− |
| 2000 11 27 | 118 | 0.5− | 0.1− | 2000 12 15 | 402 | 0.2− | 0.7+ | 2001 06 22 | 493 | 0.1− | 0.5+ |
| 2000 11 28 | 837 | 0.6+ | 1.0− | 2000 12 15 | 402 | 0.8+ | 0.9− | 2001 06 22 | 493 | 0.4+ | 0.5+ |
| 2000 11 28 | 837 | 0.1− | 0.5− | 2000 12 15 | 402 | 0.7+ | 0.0 | 2001 06 22 | 493 | 0.0 | 0.1− |
| 2000 11 28 | 837 | 0.5− | 0.5− | 2000 12 18 | 104 | 0.9+ | 0.9+ | 2006 08 15 | 568 | 0.1+ | 0.1+ |
| 2000 11 29 | 704 | 0.3− | 0.0 | 2000 12 18 | 104 | 0.6+ | 0.7+ | 2006 08 15 | 568 | 0.2+ | 0.2+ |
| 2000 11 29 | 704 | 0.3+ | 0.7+ | 2000 12 18 | 104 | 0.5− | 0.5+ | 2006 09 04 | 568 | 0.1+ | 0.2+ |
| 2000 11 29 | 853 | 0.2− | 0.0 | 2000 12 20 | 704 | 0.1− | 0.1− | 2006 09 04 | 568 | 0.1− | 0.1+ |

**2000 WX$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.70756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24248559 | $\omega$ | 177.76922 | | +0.36600505 | −0.90326914 | |
| $a$ | 2.5469012 | $\Omega$ | 250.69673 | | +0.85010483 | +0.42242033 | |
| $e$ | 0.0712128 | $i$ | 13.72547 | | +0.37863186 | −0.07527231 | |
| $P$ | 4.06 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 1.0+ | 0.7− | 2000 12 29 | 699 | 0.1− | 0.5− | 2004 11 19 | 704 | 0.2− | 0.7+ |
| 2000 11 21 | 704 | 0.6+ | 1.7+ | 2000 12 29 | 699 | (3.3+ | 1.8+) | 2004 11 19 | 704 | 0.4− | 0.5+ |
| 2000 11 21 | 704 | 0.1− | 0.2+ | 2004 10 21 | 704 | 0.4− | 0.2+ | 2004 11 19 | 704 | 0.0 | 0.5+ |
| 2000 11 21 | 704 | 0.4+ | 0.2− | 2004 10 21 | 704 | 0.3+ | 1.1− | 2004 12 02 | 703 | (0.2+ | 4.7−) |
| 2000 11 29 | 704 | 0.1+ | 0.1− | 2004 10 21 | 704 | 1.3+ | 0.3− | 2004 12 02 | 703 | (3.9+ | 2.1−) |
| 2000 11 29 | 704 | 0.6− | 0.2+ | 2004 11 05 | 644 | 0.0 | 0.3+ | 2004 12 02 | 703 | 0.2− | 0.9− |
| 2000 11 29 | 704 | 0.1+ | 0.4− | 2004 11 05 | 644 | 0.0 | 0.2+ | 2004 12 02 | 703 | 0.2− | 0.4− |
| 2000 11 29 | 704 | 0.9− | 0.3+ | 2004 11 05 | 644 | 0.1+ | 0.9+ | 2005 01 06 | 704 | 0.1+ | 0.2+ |
| 2000 12 29 | 699 | 0.1− | 0.8+ | 2004 11 19 | 704 | 0.6− | 0.2− | 2005 01 06 | 704 | 1.0− | 0.0 |
| 2000 12 29 | 699 | 0.4− | 0.5− | 2004 11 19 | 704 | 0.1+ | 1.3− | 2005 01 06 | 704 | 1.0+ | 0.4− |

**2000 WE$_{94}$ = 1986 VU$_{9}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.76825 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21317498 | $\omega$ | 165.62988 | | +0.38165125 | −0.91622875 | |
| $a$ | 2.7753125 | $\Omega$ | 261.81809 | | +0.83540943 | +0.39837853 | |
| $e$ | 0.2047879 | $i$ | 7.07596 | | +0.39551664 | +0.04265476 | |
| $P$ | 4.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1986 11 05 | 675 | 0.1− | 0.6− | 2004 09 10 | 704 | 0.0 | 0.3+ | 2006 01 02 | 704 | 0.4+ | 0.7+ |
| 1986 11 05 | 675 | 1.0+ | 0.7− | 2004 09 10 | 704 | 0.5+ | 0.7+ | 2006 01 08 | 703 | 0.8− | 0.6− |
| 2000 09 06 | 704 | 0.5+ | 0.2+ | 2004 09 10 | 704 | 0.3+ | 0.1+ | 2006 01 08 | 703 | 0.7− | 0.2− |
| 2000 09 06 | 704 | 0.8+ | 0.3− | 2004 09 10 | 704 | 0.4+ | 1.0+ | 2006 01 08 | 703 | 0.6− | 0.1− |
| 2000 09 06 | 704 | 0.1+ | 1.1− | 2004 09 13 | 704 | 0.0 | 1.2+ | 2006 01 08 | 703 | 0.9− | 0.3+ |
| 2000 09 06 | 704 | 0.4− | 0.3+ | 2004 09 13 | 704 | 0.6+ | 0.5+ | 2006 01 20 | 703 | 0.7− | 0.5− |
| 2000 11 05 | 704 | 0.0 | 0.2+ | 2004 09 13 | 704 | 0.7− | 1.1+ | 2006 01 20 | 703 | 0.8+ | 0.6+ |
| 2000 11 05 | 704 | 0.3− | 0.4+ | 2004 09 13 | 704 | 0.5− | 1.3+ | 2006 01 20 | 703 | 0.1+ | 0.9− |
| 2000 11 05 | 704 | 0.8− | 0.4+ | 2004 09 15 | 683 | 1.4− | 1.0− | 2006 01 20 | 703 | 0.8− | 0.1− |
| 2000 11 05 | 704 | 0.4− | 0.2− | 2004 09 15 | 683 | 0.7+ | 1.5− | 2006 01 23 | 704 | 1.4+ | 0.6− |
| 2000 11 21 | 704 | 0.1− | 0.0 | 2004 09 15 | 683 | 0.4+ | 1.0− | 2006 01 23 | 704 | 0.6+ | 0.1+ |
| 2000 11 21 | 704 | 0.4− | 0.1− | 2004 09 16 | 683 | (0.8+ | 3.4−) | 2006 01 23 | 704 | 0.8+ | 0.3+ |
| 2000 11 21 | 704 | 0.1− | 0.0 | 2004 09 16 | 683 | 1.5+ | 1.6− | 2006 01 23 | 704 | 0.9+ | 0.1+ |
| 2000 11 21 | 704 | 0.4− | 0.4− | 2004 09 16 | 683 | 1.0− | 0.7+ | 2006 01 23 | 704 | 0.4+ | 0.5+ |
| 2000 11 21 | 704 | 1.0+ | 0.1+ | 2004 09 18 | 704 | 0.5− | 0.4+ | 2006 01 30 | 703 | 0.9− | 0.1− |
| 2000 11 29 | 704 | 0.0 | 0.5− | 2004 09 18 | 704 | 0.9− | 0.8+ | 2006 01 30 | 703 | 0.1− | 0.2− |
| 2000 11 29 | 704 | 0.2− | 0.2− | 2004 09 18 | 704 | 0.0 | 0.4− | 2006 01 30 | 703 | 0.4− | 0.3+ |
| 2000 11 29 | 704 | 0.2− | 0.1+ | 2004 09 18 | 704 | 1.1+ | 0.2− | 2006 01 30 | 703 | 0.2− | 0.4− |
| 2000 11 29 | 704 | 0.2− | 0.3− | 2004 09 18 | 704 | 0.4− | 0.4+ | 2006 02 03 | 699 | 0.7+ | 1.1− |
| 2000 11 29 | 704 | 0.4− | 0.3− | 2004 09 20 | 683 | 0.4+ | 1.2− | 2006 02 03 | 699 | 0.6− | 0.0 |
| 2000 12 21 | 704 | 0.0 | 0.2− | 2004 09 20 | 683 | 0.1− | 0.8+ | 2006 02 03 | 699 | 0.2+ | 0.2+ |
| 2000 12 21 | 704 | 0.2− | 0.6− | 2004 09 20 | 683 | 0.2+ | 1.6− | 2006 02 03 | 699 | 0.3− | 0.3+ |
| 2000 12 21 | 704 | 0.0 | 0.7+ | 2004 10 05 | 699 | 0.7− | 0.9+ | 2006 02 07 | 703 | 0.2− | 0.0 |
| 2000 12 30 | 704 | 0.3− | 0.1+ | 2004 10 05 | 699 | 0.0 | 1.1− | 2006 02 07 | 703 | 0.3+ | 0.2+ |
| 2000 12 30 | 704 | 0.7+ | 0.1− | 2004 10 05 | 699 | 0.8+ | 0.2+ | 2006 02 07 | 703 | 0.6− | 0.6− |
| 2000 12 30 | 704 | 0.0 | 0.3+ | 2004 10 05 | 699 | 0.2− | 0.6+ | 2006 02 07 | 703 | 0.2+ | 0.0 |
| 2000 12 30 | 704 | 0.2− | 0.2+ | 2005 10 01 | G96 | 1.2+ | 0.8− | 2006 02 07 | 703 | 0.2− | 0.2+ |
| 2000 12 30 | 704 | 0.1+ | 0.2− | 2005 10 01 | G96 | 0.1+ | 0.3− | 2006 02 07 | 703 | 0.2− | 0.6+ |
| 2001 01 03 | 704 | 0.4− | 0.1− | 2005 10 01 | G96 | 0.8+ | 0.4− | 2006 02 07 | 703 | 0.5+ | 0.2− |
| 2001 01 03 | 704 | 0.1− | 0.2+ | 2005 10 01 | G96 | 0.4+ | 0.4− | 2006 02 07 | 703 | 0.7− | 0.7+ |
| 2001 01 03 | 704 | 0.4− | 0.1+ | 2005 10 06 | G96 | 0.2+ | 0.3− | 2006 02 08 | 703 | 0.3− | 0.5+ |
| 2001 01 03 | 704 | 0.1− | 0.5− | 2005 10 06 | G96 | 0.5+ | 0.1− | 2006 02 08 | 703 | 0.1− | 0.2+ |
| 2001 01 03 | 704 | 0.3− | 0.3− | 2005 10 06 | G96 | 0.2+ | 0.2− | 2006 02 08 | 703 | 0.2− | 0.1− |
| 2004 08 21 | 703 | 0.9− | 1.9+ | 2005 10 06 | G96 | 0.6+ | 0.0 | 2006 03 03 | 703 | 1.1+ | 0.7+ |
| 2004 08 21 | 703 | 0.0 | 0.8+ | 2005 12 24 | 644 | 0.9+ | 0.0 | 2006 03 03 | 703 | 0.2+ | 1.5+ |
| 2004 08 21 | 703 | 1.8− | 0.1+ | 2005 12 24 | 644 | 0.5+ | 0.6+ | 2006 03 03 | 703 | 0.5+ | 1.0+ |
| 2004 08 21 | 703 | 1.1− | 1.0+ | 2005 12 24 | 644 | 0.5+ | 0.2− | 2006 03 03 | 703 | 0.2− | 1.2+ |
| 2004 09 08 | 704 | 0.3− | 0.5+ | 2005 12 30 | 704 | 0.7+ | 1.3+ | 2006 03 05 | 704 | 0.0 | 0.6+ |
| 2004 09 08 | 704 | 0.2+ | 0.8+ | 2005 12 30 | 704 | 0.1+ | 1.2+ | 2006 03 05 | 704 | 1.5− | 0.7+ |
| 2004 09 08 | 704 | 0.2+ | 0.1+ | 2005 12 30 | 704 | 0.2+ | 0.1+ | 2006 03 05 | 704 | 1.5+ | 0.3+ |
| 2004 09 08 | 704 | 0.4− | 0.8+ | 2006 01 02 | 704 | 0.2− | 0.3+ | 2006 03 05 | 704 | 0.2+ | 0.8+ |
| 2004 09 08 | 704 | 0.1+ | 0.8+ | 2006 01 02 | 704 | 0.4+ | 0.4+ | | | | |
| 2004 09 10 | 704 | 0.1+ | 0.7+ | 2006 01 02 | 704 | 0.5+ | 0.4− | | | | |

**2000 WQ$_{100}$ = 2003 QA$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.26167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28295712 | $\omega$ | 119.78738 | | +0.87267670 | −0.48671214 | |
| $a$ | 2.2978533 | $\Omega$ | 269.36254 | | +0.43333158 | +0.80904932 | |
| $e$ | 0.0948740 | $i$ | 2.25403 | | +0.22507581 | +0.32947000 | |
| $P$ | 3.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 0.4− | 0.6− | 2003 08 24 | 704 | 1.0+ | 0.1+ | 2003 09 02 | 704 | 0.7+ | 0.7+ |
| 2000 11 21 | 704 | 0.6+ | 0.3+ | 2003 08 24 | 704 | 0.5+ | 0.3+ | 2003 09 02 | 704 | 0.8+ | 0.6+ |
| 2000 11 21 | 704 | 0.1+ | 0.3+ | 2003 08 24 | 704 | 1.0− | 0.8+ | 2003 09 02 | 704 | 0.1− | 0.1− |
| 2000 11 29 | 704 | 0.2+ | 0.2− | 2003 08 24 | 704 | 1.0− | 0.5+ | 2003 09 18 | 644 | 0.0 | 0.2− |
| 2000 11 29 | 704 | 0.8− | 0.4+ | 2003 08 28 | 608 | 0.6− | 0.8− | 2003 09 18 | 644 | 0.0 | 0.1+ |
| 2000 11 29 | 704 | 0.1+ | 0.4+ | 2003 08 28 | 608 | 0.0 | 0.8− | 2003 09 18 | 644 | 0.2− | 0.2− |
| 2000 11 29 | 704 | 0.2+ | 0.6− | 2003 08 28 | 608 | 0.1− | 1.0− | | | | |

**2000 WX$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.28518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17175248 | $\omega$ | 291.14072 | | −0.62574588 | −0.77384494 | |
| $a$ | 3.2052904 | $\Omega$ | 198.65808 | | +0.77957512 | −0.61615075 | |
| $e$ | 0.1666955 | $i$ | 17.84001 | | +0.02654646 | −0.14670468 | |
| $P$ | 5.74 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.1− | 0.2− | 2002 03 18 | 704 | 0.2− | 0.1+ | 2005 10 01 | 703 | 0.9− | 0.1+ |
| 1994 10 08 | 691 | 0.1+ | 0.1+ | 2002 03 18 | 704 | 0.0 | 0.9+ | 2005 10 08 | 704 | 0.7− | 0.4− |
| 1994 10 08 | 691 | 0.3+ | 0.2+ | 2002 03 18 | 704 | 0.4− | 0.9− | 2005 10 08 | 704 | 0.5+ | 0.1− |
| 1997 03 15 | 691 | 0.0 | 0.1+ | 2002 04 10 | 704 | 0.9+ | 0.4− | 2005 10 08 | 704 | 0.7+ | 0.6+ |
| 1997 03 15 | 691 | 0.2− | 0.2+ | 2002 04 10 | 704 | 0.2+ | 0.0 | 2006 01 28 | G96 | 1.3− | 0.5+ |
| 1997 03 15 | 691 | 0.4− | 0.0 | 2002 04 10 | 704 | 0.7+ | 0.4+ | 2006 01 28 | G96 | 0.0 | 0.3+ |
| 2000 11 25 | 608 | 0.2− | 0.8+ | 2003 04 21 | 291 | 0.1− | 0.2+ | 2006 01 28 | G96 | 0.3− | 0.4− |
| 2000 11 25 | 608 | 0.4− | 0.6+ | 2003 04 21 | 291 | 0.2− | 0.2+ | 2006 01 28 | G96 | 0.3− | 1.0+ |
| 2000 11 25 | 608 | 0.2+ | 1.0+ | 2003 04 21 | 291 | 0.2− | 0.2+ | 2006 11 01 | 703 | 0.6+ | 0.6− |
| 2000 11 26 | 704 | 0.4− | 0.0 | 2003 07 05 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 703 | 0.2− | 0.6+ |
| 2000 11 26 | 704 | 1.0− | 0.3− | 2003 07 05 | 691 | 0.3+ | 0.5+ | 2006 11 01 | 703 | 0.3− | 0.1− |
| 2000 11 26 | 704 | 0.2+ | 0.8+ | 2003 07 05 | 691 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.1+ | 0.3− |
| 2000 11 26 | 704 | 0.1+ | 0.2+ | 2005 08 29 | 644 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.1+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 704 | 0.1− | 0.2− | 2005 08 29 | 644 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.9− | 0.2− |
| 2000 11 29 | 704 | 0.2+ | 0.4+ | 2005 08 29 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.4− |
| 2000 11 29 | 704 | 0.0 | 1.4+ | 2005 09 11 | 704 | 0.0 | 0.6+ | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2000 11 29 | 704 | 0.3− | 1.5+ | 2005 09 11 | 704 | 0.7+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.4− |
| 2000 11 29 | 704 | 0.2+ | 1.7+ | 2005 09 11 | 704 | 0.1− | 0.5− | 2006 11 19 | 703 | 0.6− | 0.6− |
| 2002 02 08 | 644 | 0.6+ | 0.8+ | 2005 09 29 | 699 | 0.9− | 0.8+ | 2006 11 19 | 703 | 0.7− | 0.2− |
| 2002 02 08 | 644 | 0.8+ | 0.6+ | 2005 09 29 | 699 | 0.9+ | 1.5+ | 2006 12 01 | 703 | 0.4− | 0.4− |
| 2002 02 08 | 644 | 0.5+ | 0.8+ | 2005 09 29 | 699 | 0.2+ | 0.5+ | 2006 12 01 | 703 | 0.5+ | 0.2− |
| 2002 02 14 | 704 | 0.5+ | 0.8+ | 2005 09 29 | 699 | (1.8+ | 0.9+) | 2006 12 01 | 703 | 1.5+ | 0.8+ |
| 2002 02 14 | 704 | 0.0 | 0.8+ | 2005 10 01 | 703 | 0.5+ | 0.8+ | 2006 12 01 | 703 | 0.2+ | 0.5+ |
| 2002 02 14 | 704 | 0.3− | 0.8+ | 2005 10 01 | 703 | (0.2+ | 1.7+) | | | | |
| 2002 03 18 | 704 | 0.3− | 1.0+ | 2005 10 01 | 703 | 0.0 | 0.9− | | | | |

**2000 WT$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.59701 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31314649 | $\omega$ | 263.12594 | | −0.75096850 | | +0.65873719 |
| $a$ | 2.1476872 | $\Omega$ | 318.06328 | | −0.57544801 | | −0.68697400 |
| $e$ | 0.0478455 | $i$ | 3.94272 | | −0.32389179 | | −0.30680945 |
| $P$ | 3.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.5+ | 0.8− | 2003 10 23 | 699 | 0.1+ | 1.0− | 2006 10 17 | 703 | 0.0 | 0.9+ |
| 2000 11 20 | 704 | 0.1+ | 0.6− | 2003 10 23 | 699 | 0.1− | 1.4+ | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2000 11 20 | 704 | 0.3− | 0.3− | 2003 10 23 | 699 | 0.1− | 1.0− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2000 11 20 | 704 | 0.8+ | 0.1− | 2003 10 23 | 699 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.8− | 0.1− |
| 2000 11 20 | 704 | 0.1− | 0.3+ | 2003 11 14 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 11 30 | 704 | 0.7+ | 0.5+ | 2003 11 14 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 2000 11 30 | 704 | 0.1+ | 0.7+ | 2003 11 14 | 644 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2000 11 30 | 704 | 1.1− | 0.5+ | 2003 11 20 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2000 11 30 | 704 | 0.5− | 0.1− | 2003 11 20 | 704 | 0.5+ | 1.0− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2000 12 01 | 704 | 0.3+ | 0.4− | 2003 11 20 | 704 | 1.1+ | 1.0− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2000 12 01 | 704 | 0.5− | 0.3+ | 2003 11 20 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2000 12 01 | 704 | 0.3− | 0.6+ | 2003 11 20 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 12 01 | 704 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2000 12 01 | 704 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.8− | 0.4+ |
| 2002 06 06 | 704 | 0.7+ | 0.7+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.9− | 0.8+ |
| 2002 06 06 | 704 | 0.1+ | 0.5− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2002 06 06 | 704 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.5+ |
| 2002 06 06 | 704 | (1.9− | 0.0 ) | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 07 07 | 644 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.1− | 1.0− | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2002 07 07 | 644 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.4− | 2006 11 25 | G96 | 0.3− | 0.4− |
| 2002 07 07 | 644 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.6− |

**2000 WX$_{128}$ = 1976 JB$_8$ = 1999 ND$_{60}$**

Id. M. E. Sansaturio (*MPO* 9430), Minor Planet Center

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.54985 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21883448 | $\omega$ | 33.68972 | | +0.05124111 | | +0.97922033 |
| $a$ | 2.7272537 | $\Omega$ | 239.96470 | | −0.95899737 | | −0.00659326 |
| $e$ | 0.1694091 | $i$ | 13.10021 | | −0.27874431 | | +0.20269205 |
| $P$ | 4.50 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 05 02 | 809 | 0.1− | 0.5− | 2003 04 30 | 704 | 0.5− | 0.0 | 2004 09 11 | 704 | 0.7− | 0.2+ |
| 1999 07 13 | 704 | 0.3+ | 1.0− | 2003 04 30 | 704 | 0.3+ | 0.6− | 2004 09 11 | 704 | 0.0 | 0.3+ |
| 1999 07 13 | 704 | 0.4+ | 0.3− | 2003 04 30 | 704 | 0.2− | 0.2+ | 2004 09 11 | 704 | 0.2− | 0.1− |
| 1999 07 13 | 704 | 0.3− | 0.7+ | 2003 04 30 | 704 | 0.4+ | 0.8− | 2004 09 11 | 704 | 1.0+ | 0.3+ |
| 1999 07 13 | 704 | 0.0 | 0.1+ | 2003 04 30 | 704 | 0.3− | 0.1+ | 2004 09 14 | 704 | (1.5− | 3.0+) |
| 1999 07 13 | 704 | 0.5+ | 0.8+ | 2003 05 01 | 704 | 0.5+ | 1.0+ | 2004 09 14 | 704 | 0.1− | 0.6+ |
| 1999 07 22 | 704 | 0.5+ | 0.3+ | 2003 05 01 | 704 | 0.8− | 1.2+ | 2004 09 14 | 704 | 0.6− | 0.4+ |
| 1999 07 22 | 704 | 0.4+ | 0.3+ | 2003 05 01 | 704 | 0.7− | 0.4+ | 2004 09 14 | 704 | 0.7+ | 0.3− |
| 1999 07 22 | 704 | 0.6− | 0.8− | 2003 05 01 | 704 | 0.5+ | 1.3+ | 2004 09 14 | 704 | 0.3− | 0.2+ |
| 1999 07 22 | 704 | 0.4− | 1.1− | 2003 05 11 | 703 | (2.5− | 0.1+) | 2004 09 22 | 699 | 0.3+ | 0.8− |
| 2000 11 01 | 704 | 0.0 | 0.8+ | 2003 05 11 | 703 | 1.3− | 0.6− | 2004 09 22 | 699 | 0.1+ | 0.2+ |
| 2000 11 01 | 704 | 0.9+ | 0.5+ | 2003 05 11 | 703 | 0.1− | 0.5− | 2004 09 22 | 699 | 0.2− | 0.9− |
| 2000 11 01 | 704 | 0.2+ | 0.3+ | 2003 05 11 | 703 | 0.7− | 1.1+ | 2004 09 22 | 699 | 0.9− | 0.3− |
| 2000 11 19 | 691 | 0.0 | 0.4− | 2003 05 11 | 608 | 0.8+ | 1.1− | 2004 09 23 | 704 | 0.4− | 0.3− |
| 2000 11 19 | 691 | 0.3− | 0.2− | 2003 05 11 | 608 | 1.0+ | 0.8− | 2004 09 23 | 704 | 0.1+ | 0.6+ |
| 2000 11 19 | 691 | 0.3− | 0.1− | 2003 05 11 | 608 | 0.4+ | 1.7− | 2004 09 23 | 704 | 0.2− | 0.4+ |
| 2000 11 20 | 704 | 0.4− | 1.0− | 2003 05 27 | 699 | 0.4− | 0.7+ | 2004 09 23 | 704 | 0.2− | 0.0 |
| 2000 11 20 | 704 | 1.2− | 0.1+ | 2003 05 27 | 699 | 0.0 | 0.5+ | 2004 09 23 | 704 | 0.5− | 0.1− |
| 2000 11 20 | 704 | 0.9+ | 1.1+ | 2003 05 27 | 699 | 0.2+ | 0.4− | 2004 10 15 | 699 | 1.0+ | 0.4+ |
| 2000 11 20 | 704 | 0.0 | 0.5+ | 2003 05 27 | 699 | 0.7− | 1.0+ | 2004 10 15 | 699 | 0.7+ | 0.4+ |
| 2000 11 20 | 704 | 0.4− | 0.0 | 2003 06 22 | 699 | 1.2+ | 0.8+ | 2004 10 15 | 699 | 1.4+ | 0.6+ |
| 2003 04 28 | 699 | 0.2− | 0.3+ | 2003 06 22 | 699 | 1.9+ | 1.2− | 2004 10 15 | 699 | 1.3− | 0.1− |
| 2003 04 28 | 699 | 0.1− | 0.4+ | 2003 06 22 | 699 | 0.6+ | 1.1+ | 2005 12 01 | 691 | 0.3+ | 0.1+ |
| 2003 04 28 | 699 | 0.3− | 0.5+ | 2003 06 22 | 699 | 0.1− | 1.0+ | 2005 12 01 | 691 | 0.2+ | 0.1+ |
| 2003 04 28 | 699 | 0.6− | 0.4+ | 2004 09 11 | 704 | 0.7− | 0.4+ | 2005 12 01 | 691 | 0.4+ | 0.2+ |

**2000 WP$_{138}$ = 2006 WU$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.43538 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16644015 | $\omega$ | 91.81026 | | +0.98006190 | | −0.19788588 |
| $a$ | 3.2731355 | $\Omega$ | 279.60340 | | +0.17432472 | | +0.89956669 |
| $e$ | 0.3005429 | $i$ | 1.03933 | | +0.09533922 | | +0.38938536 |
| $P$ | 5.92 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 0.5+ | 1.1+ | 2000 12 17 | 691 | 0.1− | 0.4− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2000 11 21 | 704 | 1.3+ | 0.3− | 2000 12 19 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.7+ |
| 2000 11 21 | 704 | 0.8+ | 0.4− | 2000 12 19 | 691 | 0.1− | 0.4− | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2000 11 21 | 704 | 1.1+ | 0.2− | 2000 12 19 | 691 | 0.4+ | 0.6− | 2006 11 21 | 704 | 0.1+ | 0.7− |
| 2000 11 24 | 699 | (0.4+ | 2.3+) | 2000 12 24 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.3− |
| 2000 11 24 | 699 | 0.2− | 1.7+ | 2000 12 24 | 691 | 0.2− | 0.5+ | 2006 11 21 | 704 | (1.6+ | 0.1+) |
| 2000 11 24 | 699 | 1.1− | 1.1+ | 2000 12 24 | 691 | 0.0 | 0.4+ | 2006 11 24 | 691 | 0.2− | 0.5+ |
| 2000 11 24 | 699 | 0.3− | 1.5+ | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 24 | 691 | 0.0 | 0.3+ |
| 2000 12 17 | 691 | 0.2+ | 0.8− | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.6+ | 0.6− |
| 2000 12 17 | 691 | 0.0 | 0.6− | 2006 10 28 | G96 | 0.5− | 0.4− | 2006 11 30 | 691 | 0.2+ | 0.4+ |
| 2000 12 17 | 691 | 0.1+ | 0.8− | 2006 11 16 | 691 | 0.3− | 0.2+ | 2006 11 30 | 691 | 0.0 | 0.3+ |
| 2000 12 17 | 691 | 0.2− | 0.5− | 2006 11 16 | 691 | 0.0 | 0.1+ | 2006 11 30 | 691 | 0.2− | 0.1+ |
| 2000 12 17 | 691 | 0.2− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.3+ | | | | |

**2000 WC$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.86763 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21001545 | $\omega$ | 345.94439 | | +0.98075337 | | −0.19156908 |
| $a$ | 2.8030783 | $\Omega$ | 25.19490 | | +0.18661051 | | +0.86282003 |
| $e$ | 0.0486931 | $i$ | 5.08583 | | +0.05743985 | | +0.46780645 |
| $P$ | 4.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.7− | 0.5− | 2003 06 05 | 691 | 0.3− | 0.4+ | 2005 11 12 | 691 | 0.4− | 0.0 |
| 2000 10 01 | 704 | 0.7− | 0.3− | 2003 06 05 | 691 | 0.3+ | 0.2+ | 2005 11 12 | 691 | 0.0 | 0.3− |
| 2000 10 01 | 704 | 0.8− | 0.3− | 2003 06 05 | 691 | 0.3+ | 0.0 | 2005 11 21 | 691 | 0.2+ | 0.6+ |
| 2000 10 01 | 704 | 0.8− | 0.2+ | 2004 08 08 | 644 | 0.1− | 0.6+ | 2005 11 21 | 691 | 0.0 | 0.4+ |
| 2000 10 01 | 704 | 0.8− | 0.7− | 2004 08 08 | 644 | 0.2− | 0.5+ | 2005 11 21 | 691 | 0.2+ | 0.6+ |
| 2000 11 29 | 691 | 0.2− | 0.1− | 2004 08 08 | 644 | 0.1− | 0.2+ | 2005 11 28 | 703 | 0.9− | 0.3+ |
| 2000 11 29 | 691 | 0.3+ | 0.0 | 2005 10 30 | G96 | 0.2− | 0.1− | 2005 11 28 | 703 | 0.3− | 0.7− |
| 2000 11 29 | 691 | 0.4+ | 0.5+ | 2005 10 30 | G96 | 0.2+ | 0.1− | 2005 11 28 | 703 | 0.2− | 0.1+ |
| 2000 12 04 | 691 | 0.4+ | 0.1− | 2005 10 30 | G96 | 0.4− | 0.2− | 2005 11 28 | 703 | 0.9+ | 1.5− |
| 2000 12 04 | 691 | 0.1+ | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.1− | | | | |
| 2000 12 04 | 691 | 0.1+ | 0.3− | 2005 11 12 | 691 | 0.2− | 0.3+ | | | | |

**2000 WZ$_{152}$ = 2006 WX$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.74620 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18006814 | $\omega$ | 176.07860 | | −0.55358315 | | −0.82789584 |
| $a$ | 3.1058332 | $\Omega$ | 307.51038 | | +0.76094724 | | −0.45884534 |
| $e$ | 0.2909098 | $i$ | 6.52850 | | +0.33838585 | | −0.32256694 |
| $P$ | 5.47 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 05 | 704 | 0.8+ | 0.5+ | 2000 11 29 | 704 | 1.2− | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.3+ |
| 2000 11 05 | 704 | 0.0 | 0.8− | 2000 11 29 | 704 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2000 11 05 | 704 | 0.4− | 1.5− | 2000 11 29 | 704 | 1.1+ | 0.6+ | 2006 11 22 | G96 | 0.3+ | 0.3+ |
| 2000 11 19 | 704 | 0.4− | 0.2− | 2000 11 29 | 704 | 0.4− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2000 11 19 | 704 | 0.1+ | 0.3− | 2000 12 04 | 704 | (0.4− | 2.6−) | 2006 11 25 | G96 | 0.5− | 0.1+ |
| 2000 11 19 | 704 | 0.2+ | 0.6+ | 2000 12 04 | 704 | 0.2+ | 0.5− | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2000 11 19 | 704 | 0.6− | 0.9+ | 2000 12 04 | 704 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.6− |
| 2000 11 19 | 704 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.4+ | | | | |

**2000 WN$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.73435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00331115 | $\omega$ | 67.76070 | | −0.96107823 | −0.26725661 | |
| $a$ | 44.5810267 | $\Omega$ | 96.68260 | | +0.22035101 | −0.89438330 | |
| $e$ | 0.1148437 | $i$ | 4.04254 | | +0.16665552 | −0.35868149 | |
| $P$ | 298 | $H$ | 7.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 809 | 0.0 | 0.1+ | 2000 11 27 | 809 | 0.0 | 0.1− | 2001 01 31 | 809 | 0.0 | 0.1+ |
| 2000 11 26 | 809 | 0.4− | 0.1− | 2000 11 27 | 809 | 0.1+ | 0.2+ | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2000 11 26 | 809 | 0.4+ | 0.2− | 2001 01 23 | 675 | 0.3+ | 0.3− | 2006 10 20 | 695 | 0.1− | 0.1− |
| 2000 11 27 | 809 | 0.1− | 0.0 | 2001 01 23 | 675 | 0.0 | 0.2− | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2000 11 27 | 809 | 0.0 | 0.0 | 2001 01 31 | 809 | 0.2− | 0.3+ | | | | |
| 2000 11 27 | 809 | 0.0 | 0.2+ | 2001 01 31 | 809 | 0.0 | 0.3+ | | | | |

**2000 WE$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.25664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22711046 | $\omega$ | 316.08435 | | +0.92787745 | −0.30147852 | |
| $a$ | 2.6605900 | $\Omega$ | 62.65791 | | +0.37201444 | +0.78863486 | |
| $e$ | 0.1852978 | $i$ | 14.30241 | | −0.02546928 | +0.53587849 | |
| $P$ | 4.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.6+ | 0.7+ | 2000 11 18 | 699 | 0.7+ | 0.1− | 2004 09 21 | 704 | 0.5− | 1.1+ |
| 2000 11 01 | 704 | 0.1+ | 0.0 | 2000 11 24 | 699 | 0.2− | 0.6− | 2004 09 21 | 704 | 0.5+ | 0.2+ |
| 2000 11 01 | 704 | 0.4+ | 0.4− | 2000 11 24 | 699 | 0.2+ | 0.4+ | 2004 09 21 | 704 | 0.3− | 0.4+ |
| 2000 11 01 | 704 | 0.1− | 0.2+ | 2000 11 24 | 699 | 0.2− | 0.2− | 2004 09 21 | 704 | 0.0 | 0.3+ |
| 2000 11 01 | 704 | 0.2+ | 0.4− | 2000 11 24 | 699 | 0.6− | 0.6+ | 2004 10 02 | 644 | 0.1− | 0.2− |
| 2000 11 18 | 699 | 0.5− | 0.1− | 2004 09 08 | 644 | 0.2− | 0.1− | 2004 10 02 | 644 | 0.5+ | 0.5− |
| 2000 11 18 | 699 | 0.1+ | 0.1− | 2004 09 08 | 644 | 0.1− | 0.2− | 2004 10 02 | 644 | 0.0 | 0.5− |
| 2000 11 18 | 699 | 0.6− | 0.0 | 2004 09 08 | 644 | 0.2+ | 0.4− | | | | |

**2000 WT$_{197}$ = 2004 VO$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.93101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23252618 | $\omega$ | 161.32980 | | −0.03507881 | −0.98462863 | |
| $a$ | 2.6191165 | $\Omega$ | 290.39147 | | +0.89210447 | +0.04631966 | |
| $e$ | 0.2394603 | $i$ | 10.51782 | | +0.45046542 | −0.16840710 | |
| $P$ | 4.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 03 | 691 | 0.0 | 0.4− | 2000 12 04 | 704 | 0.1+ | 0.3+ | 2001 01 19 | 704 | 0.5− | 0.1+ |
| 1997 01 03 | 691 | 0.2− | 0.0 | 2000 12 19 | 704 | 0.1− | 0.9+ | 2001 01 19 | 704 | 0.7− | 0.2− |
| 1997 01 03 | 691 | 0.0 | 0.0 | 2000 12 19 | 704 | 0.7+ | 0.4+ | 2001 01 19 | 704 | 0.5− | 0.5+ |
| 2000 11 19 | 704 | 0.2+ | 0.6+ | 2000 12 19 | 704 | 1.1+ | 0.0 | 2001 01 19 | 704 | 0.7+ | 0.3− |
| 2000 11 19 | 704 | 0.3+ | 0.2+ | 2000 12 19 | 704 | 0.9+ | 0.7− | 2004 11 05 | 644 | 0.2− | 0.1+ |
| 2000 11 19 | 704 | 0.6− | 0.5+ | 2000 12 19 | 704 | 0.6− | 1.0+ | 2004 11 05 | 644 | 0.2− | 0.1− |
| 2000 11 19 | 704 | 0.1− | 0.2− | 2001 01 04 | 704 | 0.6+ | 1.2− | 2004 11 05 | 644 | 0.4− | 0.0 |
| 2000 11 19 | 704 | 0.0 | 0.1− | 2001 01 04 | 704 | 0.1+ | 0.4+ | 2004 11 10 | 704 | 0.3+ | 0.4− |
| 2000 12 04 | 704 | 0.6− | 0.6+ | 2001 01 04 | 704 | 0.6− | 0.0 | 2004 11 10 | 704 | 0.5+ | 0.7− |
| 2000 12 04 | 704 | 0.3− | 0.9− | 2001 01 04 | 704 | 0.1+ | 0.3+ | 2004 11 10 | 704 | 1.0+ | 0.8− |
| 2000 12 04 | 704 | 0.4+ | 0.1+ | 2001 01 04 | 704 | 0.1+ | 0.4+ | 2004 11 10 | 704 | 0.3− | 0.3+ |
| 2000 12 04 | 704 | 0.3− | 0.1+ | 2001 01 19 | 704 | 0.2− | 0.6− | | | | |

**2000 WU$_{197}$ = 2004 RY$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.04777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21918484 | $\omega$ | 184.33946 | | +0.34182173 | −0.91647556 | |
| $a$ | 2.7243467 | $\Omega$ | 245.78339 | | +0.86893388 | +0.39249152 | |
| $e$ | 0.2151984 | $i$ | 13.17826 | | +0.35792711 | −0.07760775 | |
| $P$ | 4.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 07 | 691 | 0.1+ | 0.8− | 2000 11 21 | 704 | 0.2+ | 0.8+ | 2004 09 11 | 704 | 1.1− | 0.4− |
| 1991 12 07 | 691 | 0.3− | 0.2− | 2000 11 21 | 704 | 0.1+ | 0.9+ | 2004 09 11 | 704 | 0.4+ | 0.6+ |
| 1991 12 07 | 691 | 0.2+ | 0.1+ | 2000 11 21 | 704 | 0.2− | 0.8+ | 2004 09 14 | 704 | 1.0+ | 0.2− |
| 2000 11 02 | 704 | 0.7− | 0.9+ | 2000 11 29 | 691 | 0.0 | 0.1− | 2004 09 14 | 704 | 0.2− | 0.3+ |
| 2000 11 02 | 704 | 0.1+ | 0.3+ | 2000 11 29 | 691 | 0.2− | 0.1− | 2004 09 14 | 704 | 0.2+ | 0.5+ |
| 2000 11 02 | 704 | 0.6+ | 1.1+ | 2000 11 29 | 691 | 0.2− | 0.2− | 2006 02 25 | 703 | 1.2+ | 0.5+ |
| 2000 11 02 | 704 | 0.4+ | 0.0 | 2004 09 11 | 704 | 0.8− | 0.2+ | 2006 02 25 | 703 | 0.3− | 0.2+ |
| 2000 11 21 | 704 | 0.4+ | 0.7− | 2004 09 11 | 704 | 0.1− | 0.5+ | 2006 02 25 | 703 | 0.8− | 0.6+ |
| 2000 11 21 | 704 | 0.5+ | 0.9+ | 2004 09 11 | 704 | 0.3+ | 0.3+ | 2006 02 25 | 703 | 0.9+ | 1.0+ |

**2000 XK$_{19}$ = 1978 TA$_{8}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.63558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27134326 | $\omega$ | 5.44201 | | +0.98850764 | +0.14807006 | |
| $a$ | 2.3629617 | $\Omega$ | 345.93236 | | −0.14299491 | +0.85049507 | |
| $e$ | 0.2495224 | $i$ | 7.19928 | | −0.04904174 | +0.50471120 | |
| $P$ | 3.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 10 08 | 095 | 0.0 | 0.1+ | 2000 12 06 | 704 | 0.4+ | 0.0 | 2004 12 21 | 703 | (0.4− | 2.8−) |
| 2000 09 27 | 704 | 0.0 | 0.7− | 2000 12 06 | 704 | 0.7+ | 0.1− | 2005 01 06 | 703 | 0.4− | 0.2− |
| 2000 09 27 | 704 | 0.2+ | 0.6+ | 2000 12 06 | 704 | 1.2+ | 0.6− | 2005 01 06 | 703 | 0.6+ | 0.7− |
| 2000 09 27 | 704 | 0.4+ | 0.4− | 2000 12 06 | 704 | (2.6+ | 1.8−) | 2005 01 06 | 703 | 0.3+ | 0.8− |
| 2000 09 27 | 704 | 0.1− | 0.5+ | 2002 02 10 | 704 | 1.1− | 0.9− | 2005 01 06 | 703 | (0.7+ | 2.1−) |
| 2000 09 27 | 704 | 0.2+ | 1.3+ | 2002 02 10 | 704 | 1.2+ | 0.0 | 2005 01 07 | 599 | 0.6+ | 0.1− |
| 2000 10 25 | 704 | 0.5− | 0.0 | 2002 02 10 | 704 | 0.1+ | 1.1− | 2005 01 07 | 599 | 0.0 | 0.1+ |
| 2000 10 25 | 704 | 0.5− | 0.9+ | 2002 02 10 | 704 | 0.5+ | 1.4− | 2005 01 07 | 599 | 0.0 | 0.1+ |
| 2000 10 25 | 704 | 0.1− | 0.1− | 2002 02 12 | 691 | 0.5− | 0.6− | 2005 01 07 | 599 | 0.1+ | 0.3+ |
| 2000 10 25 | 704 | 0.3− | 0.1+ | 2002 02 12 | 691 | 0.4− | 0.2+ | 2005 01 16 | 704 | 0.4− | 0.3+ |
| 2000 10 25 | 704 | 0.3− | 0.1+ | 2002 02 12 | 691 | 0.4− | 0.4+ | 2005 01 16 | 704 | 1.4+ | 0.6− |
| 2000 11 19 | 704 | 0.3− | 0.4− | 2002 03 13 | 704 | 0.1− | 0.4+ | 2005 01 16 | 704 | 0.2− | 1.1+ |
| 2000 11 19 | 704 | 0.1+ | 0.2+ | 2002 03 13 | 704 | 0.7+ | 0.6+ | 2005 01 16 | 704 | 0.6+ | 0.4− |
| 2000 11 19 | 704 | 0.3− | 0.6+ | 2002 03 13 | 704 | 0.5+ | 1.0+ | 2005 01 16 | 704 | 0.5+ | 0.2− |
| 2000 11 19 | 704 | 0.2+ | 0.3+ | 2002 03 13 | 644 | 0.0 | 0.4+ | 2005 01 19 | 704 | 0.5+ | 1.0+ |
| 2000 11 19 | 704 | 0.1− | 0.1+ | 2002 03 13 | 644 | 0.1− | 0.1+ | 2005 01 19 | 704 | 0.0 | 0.0 |
| 2000 12 04 | 704 | 0.2− | 0.2− | 2002 03 13 | 644 | 0.4− | 0.4+ | 2005 01 19 | 704 | 0.2− | 0.0 |
| 2000 12 04 | 704 | 0.1− | 0.5− | 2002 03 20 | 695 | 0.4+ | 0.9+ | 2005 01 19 | 704 | 0.7− | 0.8+ |
| 2000 12 04 | 704 | 0.2− | 0.4− | 2002 03 20 | 695 | 0.4+ | 0.6+ | 2005 02 04 | G96 | 0.1+ | 0.3− |
| 2000 12 04 | 704 | 1.3− | 0.9+ | 2004 12 21 | 703 | 1.0− | 0.2+ | 2005 02 04 | G96 | 0.1+ | 0.2− |
| 2000 12 04 | 704 | 0.3− | 0.5− | 2004 12 21 | 703 | 0.8− | 0.0 | 2005 02 04 | G96 | 0.1+ | 0.2− |
| 2000 12 06 | 704 | 1.3+ | 0.2− | 2004 12 21 | 703 | 1.6− | 0.4− | 2005 02 04 | G96 | 0.2− | 0.1− |

**2000 XH$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.68775 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27302804 | $\omega$ | 75.32531 | | +0.13813876 | −0.99029562 | |
| $a$ | 2.3532309 | $\Omega$ | 6.78973 | | +0.85185147 | +0.11094907 | |
| $e$ | 0.0750280 | $i$ | 7.40637 | | +0.50523930 | +0.08369516 | |
| $P$ | 3.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 704 | 1.2+ | 0.4+ | 2003 08 23 | 644 | 0.6+ | 0.6+ | 2005 02 01 | 703 | 1.9− | 0.5+ |
| 2000 11 19 | 704 | 0.9− | 0.6− | 2003 08 23 | 644 | 0.7+ | 0.5+ | 2005 02 01 | 703 | 0.3+ | 0.2+ |
| 2000 11 19 | 704 | 1.0− | 1.5− | 2003 09 28 | 704 | 0.4+ | 0.5+ | 2005 02 03 | 704 | 0.8+ | 1.4+ |
| 2000 12 04 | 704 | 0.1− | 0.1− | 2003 09 28 | 704 | 1.4− | 0.2+ | 2005 02 03 | 704 | 0.6+ | 0.1+ |
| 2000 12 04 | 704 | 0.6+ | 0.3− | 2003 09 28 | 704 | 0.7− | 0.2+ | 2005 02 03 | 704 | 0.5+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 04 | 704 | 0.1+ | 0.0 | 2003 09 28 | 704 | 1.4− | 0.8− | 2005 02 03 | 704 | 0.4+ | 0.2+ |
| 2000 12 04 | 704 | 0.4− | 0.3+ | 2005 01 09 | 703 | 0.7− | 0.7− | 2005 03 01 | 703 | 0.9− | 1.0+ |
| 2000 12 06 | 704 | 0.5+ | 0.5+ | 2005 01 09 | 703 | 0.1+ | 1.5− | 2005 03 01 | 703 | 1.3− | 0.4+ |
| 2000 12 06 | 704 | 0.2− | 0.7+ | 2005 01 09 | 703 | 0.1− | 1.0− | 2005 03 01 | 703 | 0.9+ | 0.1+ |
| 2000 12 06 | 704 | 0.3+ | 0.6+ | 2005 01 09 | 703 | 1.0+ | 0.1− | 2005 03 01 | 703 | 1.1+ | 0.9+ |
| 2000 12 06 | 704 | 0.3− | 0.2− | 2005 02 01 | 703 | 0.0 | 0.9− | | | | |
| 2003 08 23 | 644 | 0.8+ | 0.3+ | 2005 02 01 | 703 | 0.5− | 0.2+ | | | | |

**2000 XT$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.90180 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23447922 | $\omega$ | 112.61133 | | −0.41472243 | | −0.90992259 |
| $a$ | 2.6045526 | $\Omega$ | 1.93078 | | +0.74311284 | | −0.34298621 |
| $e$ | 0.1717149 | $i$ | 11.63839 | | +0.52515580 | | −0.23324096 |
| $P$ | 4.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.1+ | 0.5− | 2000 12 17 | 704 | 0.3− | 0.6− | 2004 11 04 | 704 | 0.6− | 0.3+ |
| 1991 10 07 | 691 | 0.1+ | 0.1+ | 2000 12 17 | 704 | 0.2− | 0.7− | 2004 11 04 | 704 | 1.0− | 0.8+ |
| 1991 10 07 | 691 | 0.2− | 0.3+ | 2000 12 17 | 704 | 0.5− | 0.1+ | 2004 11 04 | 704 | 0.8+ | 0.6+ |
| 2000 12 04 | 704 | 1.5+ | 1.3+ | 2004 10 15 | 704 | 0.2− | 0.5+ | 2004 12 02 | 704 | 0.5+ | 0.2− |
| 2000 12 04 | 704 | 0.1− | 0.5+ | 2004 10 15 | 704 | 0.3− | 0.4− | 2004 12 02 | 704 | 0.3− | 0.1+ |
| 2000 12 04 | 704 | 0.4+ | 0.9+ | 2004 10 15 | 704 | 1.2+ | 0.2+ | 2004 12 02 | 704 | 0.6− | 0.3− |
| 2000 12 04 | 704 | 0.3− | 0.4+ | 2004 10 15 | 704 | 0.1+ | 0.1+ | 2004 12 02 | 704 | 0.3+ | 0.6+ |
| 2000 12 07 | 704 | 0.3+ | 0.8− | 2004 10 15 | 704 | 0.8− | 0.1− | 2004 12 02 | 704 | 0.0 | 0.4+ |
| 2000 12 07 | 704 | 0.1− | 0.2− | 2004 10 24 | 704 | 0.3+ | 0.9− | 2006 04 09 | E12 | 0.0 | 0.2+ |
| 2000 12 07 | 704 | 0.3− | 0.7− | 2004 10 24 | 704 | 0.4+ | 0.0 | 2006 04 09 | E12 | 2.7+ | 1.0+ |
| 2000 12 07 | 704 | 0.3− | 0.5− | 2004 10 24 | 704 | 0.0 | 0.4+ | 2006 04 09 | E12 | 0.6− | 0.4− |
| 2000 12 17 | 704 | 0.2+ | 0.6− | 2004 10 24 | 704 | 0.4− | 1.3− | 2006 04 09 | E12 | 1.7− | 0.1− |
| 2000 12 17 | 704 | 0.3− | 0.0 | 2004 11 04 | 704 | 0.2+ | 0.9+ | | | | |

**2000 XN$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.99293 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24318813 | $\omega$ | 135.05135 | | −0.82461035 | | −0.56374352 |
| $a$ | 2.5419937 | $\Omega$ | 10.92402 | | +0.42374623 | | −0.67061547 |
| $e$ | 0.1440018 | $i$ | 14.36658 | | +0.37477580 | | −0.48214949 |
| $P$ | 4.05 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.0 | 0.2+ | 2000 12 17 | 704 | 0.4+ | 0.4+ | 2001 01 17 | 704 | 0.3− | 0.8+ |
| 1991 09 30 | 691 | 0.2− | 0.1− | 2000 12 17 | 704 | 1.4+ | 0.0 | 2001 01 17 | 704 | 0.1+ | 1.5− |
| 1991 09 30 | 691 | 0.1− | 0.2+ | 2000 12 17 | 704 | (2.1− | 1.0+) | 2003 08 31 | 704 | 0.5+ | 1.6− |
| 2000 12 05 | 704 | 0.2+ | 0.9+ | 2001 01 04 | 699 | 0.6+ | 1.4− | 2003 08 31 | 704 | 0.4− | 0.8− |
| 2000 12 05 | 704 | 0.6+ | 0.1+ | 2001 01 04 | 699 | 0.2− | 0.1+ | 2003 08 31 | 704 | 0.9+ | 0.3+ |
| 2000 12 05 | 704 | 0.7− | 0.1+ | 2001 01 04 | 699 | 0.2− | 0.2− | 2003 08 31 | 704 | 0.7+ | 0.3+ |
| 2000 12 05 | 704 | 1.0− | 0.4+ | 2001 01 04 | 699 | 0.1− | 0.2+ | 2005 01 15 | 704 | 0.3− | 0.3− |
| 2000 12 05 | 704 | 0.2+ | 0.8+ | 2001 01 17 | 704 | 1.2− | 0.7+ | 2005 01 15 | 704 | 0.4− | 1.1− |
| 2000 12 17 | 704 | 0.4+ | 0.5− | 2001 01 17 | 704 | 0.8+ | 0.4+ | 2005 01 15 | 704 | 0.2+ | 0.6− |

**2000 YY$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.19900 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25856873 | $\omega$ | 305.74366 | | −0.91646507 | | +0.33183511 |
| $a$ | 2.4401623 | $\Omega$ | 254.57172 | | −0.24906583 | | −0.91041211 |
| $e$ | 0.1300058 | $i$ | 13.40973 | | −0.31314213 | | −0.24705314 |
| $P$ | 3.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 704 | 0.1− | 0.4+ | 2002 05 04 | 699 | 0.2+ | 0.8+ | 2002 06 13 | 644 | 0.1+ | 0.3− |
| 2000 11 29 | 704 | 0.6− | 0.7+ | 2002 05 04 | 699 | 0.2− | 0.9+ | 2002 06 13 | 644 | 0.3+ | 0.3− |
| 2000 11 29 | 704 | 0.7+ | 0.3+ | 2002 05 04 | 699 | 0.4− | 0.7+ | 2003 09 20 | 691 | 0.0 | 0.1+ |
| 2000 12 18 | 691 | 0.7− | 0.0 | 2002 05 04 | 699 | 1.0+ | 0.6− | 2003 09 20 | 691 | 0.0 | 0.1+ |
| 2000 12 18 | 691 | 0.0 | 0.1+ | 2002 05 17 | 704 | 0.3− | 0.4− | 2003 09 20 | 691 | 0.1− | 0.0 |
| 2000 12 18 | 691 | 0.1+ | 0.3− | 2002 05 17 | 704 | 0.7+ | 0.0 | 2004 12 02 | 691 | 0.1+ | 0.3− |
| 2000 12 21 | 691 | 0.0 | 0.6− | 2002 05 17 | 704 | 1.4− | 0.3− | 2004 12 02 | 691 | 0.0 | 0.6+ |
| 2000 12 21 | 691 | 0.1+ | 0.1− | 2002 05 17 | 704 | 0.1− | 0.1− | 2004 12 02 | 691 | 0.1+ | 0.4+ |
| 2000 12 21 | 691 | 0.4+ | 0.2− | 2002 06 13 | 644 | 0.2+ | 0.3− | | | | |

**2000 YH$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.43896 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24308509 | $\omega$ | 106.77113 | | −0.81619607 | | +0.53077776 |
| $a$ | 2.5427120 | $\Omega$ | 105.82429 | | −0.57776769 | | −0.74780510 |
| $e$ | 0.2534418 | $i$ | 13.72387 | | −0.00291128 | | −0.39882642 |
| $P$ | 4.05 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 28 | 691 | 0.6− | 0.2+ | 2002 06 13 | 644 | 0.0 | 0.0 | 2006 05 25 | 644 | 0.0 | 0.2+ |
| 2000 12 28 | 691 | 0.3− | 0.1+ | 2002 06 13 | 644 | 0.2− | 0.2+ | 2006 05 25 | 644 | 0.1+ | 0.4+ |
| 2000 12 28 | 691 | 0.7− | 0.2+ | 2002 06 13 | 644 | 0.5+ | 0.1+ | 2006 06 03 | G96 | 0.0 | 0.5+ |
| 2000 12 30 | 691 | 0.2+ | 0.4+ | 2002 07 05 | 644 | 0.2− | 0.3+ | 2006 06 03 | G96 | 0.3+ | 0.1+ |
| 2000 12 30 | 691 | 0.4+ | 0.2+ | 2002 07 05 | 644 | 0.3− | 0.2+ | 2006 06 03 | G96 | 0.2− | 0.3+ |
| 2000 12 30 | 691 | 0.4+ | 0.2+ | 2002 07 05 | 644 | 0.1− | 0.2+ | 2006 06 03 | G96 | 0.4− | 0.4+ |
| 2001 01 03 | 704 | 0.2+ | 0.1+ | 2002 08 11 | 644 | 0.1+ | 0.2+ | 2006 06 22 | G96 | 0.3+ | 0.7− |
| 2001 01 03 | 704 | 0.5+ | 0.3− | 2002 08 11 | 644 | 0.0 | 0.6+ | 2006 06 22 | G96 | 0.1+ | 0.3− |
| 2001 01 03 | 704 | 1.1+ | 1.0− | 2002 08 11 | 644 | 0.1+ | 0.7+ | 2006 06 22 | G96 | 0.3− | 0.2+ |
| 2001 01 03 | 704 | 0.4− | 0.2+ | 2006 05 05 | G96 | 0.3+ | 0.1+ | 2006 06 22 | G96 | 0.2− | 0.3+ |
| 2001 01 03 | 704 | 0.2+ | 0.5− | 2006 05 05 | G96 | 0.0 | 0.0 | 2006 06 22 | G96 | 0.4− | 0.3+ |
| 2001 02 27 | 691 | 0.0 | 0.3+ | 2006 05 05 | G96 | 0.4+ | 0.3+ | 2006 06 22 | G96 | 0.1+ | 0.1+ |
| 2001 02 27 | 691 | 0.2+ | 0.1+ | 2006 05 05 | G96 | 0.2− | 0.4+ | 2006 06 22 | G96 | 0.0 | 0.3+ |
| 2001 02 27 | 691 | 0.2− | 0.1+ | 2006 05 25 | 644 | 0.7+ | 0.4+ | | | | |

**2000 YV$_{27}$ = 2006 DS$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.00276 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22067173 | $\omega$ | 312.90773 | | +0.58889030 | | −0.80503699 |
| $a$ | 2.7120951 | $\Omega$ | 100.87822 | | +0.76113786 | | +0.52262572 |
| $e$ | 0.0867428 | $i$ | 4.17997 | | +0.27180392 | | +0.28067384 |
| $P$ | 4.47 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 14 | 691 | 0.3− | 0.2− | 2001 01 03 | 691 | 0.4+ | 0.0 | 2004 11 10 | 691 | 0.0 | 0.1+ |
| 1996 01 14 | 691 | 0.2+ | 0.1− | 2001 01 03 | 691 | 0.4+ | 0.6− | 2004 12 14 | 599 | 0.0 | 0.1+ |
| 1996 01 14 | 691 | 0.1+ | 0.1− | 2001 01 04 | 691 | 0.4+ | 0.2− | 2004 12 14 | 599 | 0.4+ | 0.1+ |
| 2000 12 30 | 691 | 1.2− | 0.1− | 2001 01 04 | 691 | 0.4+ | 0.2− | 2004 12 14 | 599 | 0.0 | 0.5+ |
| 2000 12 30 | 691 | 0.6− | 0.3+ | 2001 01 04 | 691 | 0.3+ | 0.2− | 2006 02 27 | 691 | 0.3− | 0.1+ |
| 2000 12 30 | 691 | 0.7− | 0.6+ | 2001 02 17 | 691 | 0.1+ | 0.1− | 2006 02 27 | 691 | 0.4+ | 0.0 |
| 2000 12 31 | 691 | 0.2− | 0.4+ | 2001 02 17 | 691 | 0.1− | 0.3− | 2006 02 27 | 691 | 0.0 | 0.0 |
| 2000 12 31 | 691 | 0.1+ | 0.1+ | 2001 02 17 | 691 | 0.3+ | 0.4+ | 2006 03 03 | 691 | 0.2− | 0.0 |
| 2000 12 31 | 691 | 0.0 | 0.2+ | 2004 11 10 | 691 | 0.2− | 0.1+ | 2006 03 03 | 691 | 0.1+ | 0.3− |
| 2001 01 03 | 691 | 0.5+ | 0.3− | 2004 11 10 | 691 | 0.0 | 0.0 | 2006 03 03 | 691 | 0.1+ | 0.5+ |

**2000 YF$_{46}$ = 2006 DL$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.82529 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22324887 | $\omega$ | 253.83381 | | −0.97312439 | | −0.09609320 |
| $a$ | 2.6911828 | $\Omega$ | 280.29103 | | +0.17877628 | | −0.88806252 |
| $e$ | 0.0547161 | $i$ | 12.28029 | | −0.14514806 | | −0.44956764 |
| $P$ | 4.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 20 | 691 | 0.4− | 0.0 | 2000 12 30 | 704 | 1.5+ | 0.5+ | 2006 02 24 | 703 | 1.1− | 0.4− |
| 2000 12 20 | 691 | 0.6− | 0.2+ | 2001 01 02 | 704 | 1.0+ | 0.7− | 2006 02 24 | 703 | 0.3+ | 0.3+ |
| 2000 12 20 | 691 | 0.9− | 0.3+ | 2001 01 02 | 704 | 1.6+ | 1.0− | 2006 02 24 | 703 | 0.5− | 0.5− |
| 2000 12 22 | 735 | (2.2− | 1.1+) | 2001 01 02 | 704 | 1.0+ | 0.4− | 2006 03 04 | 703 | 0.3+ | 0.6− |
| 2000 12 22 | 735 | 0.8+ | 0.5− | 2004 12 01 | 703 | 0.0 | 0.4− | 2006 03 04 | 703 | 0.4− | 0.1+ |
| 2000 12 30 | 704 | 1.0+ | 0.5+ | 2004 12 01 | 703 | 0.1+ | 0.2+ | 2006 03 04 | 703 | 0.8+ | 0.3+ |
| 2000 12 30 | 704 | 0.9− | 1.0− | 2004 12 01 | 703 | 0.5+ | 0.1− | 2006 03 04 | 703 | 0.6+ | 0.6+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.6+ | 0.7+ | 2004 12 01 | 703 | 0.7− | 0.6+ | |
| 2000 12 30 | 704 | 0.7+ | 0.2− | 2006 02 24 | 703 | 0.1+ | 0.2+ | |

**2000 YP$_{47}$ = 2006 DW$_{196}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.39138 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21202457 | $\omega$ | 216.30196 | | −0.68227624 | | −0.69475875 |
| $a$ | 2.7853424 | $\Omega$ | 277.96259 | | +0.71317162 | | −0.56395720 |
| $e$ | 0.0462197 | $i$ | 13.28722 | | +0.16088931 | | −0.44638835 |
| $P$ | 4.65 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 1.0− | 0.4− | 2001 01 02 | 704 | 0.6+ | 0.2− | 2001 01 04 | 704 | 0.6+ | 0.7− |
| 2000 12 30 | 704 | 1.6− | 0.1− | 2001 01 02 | 704 | 0.3+ | 0.1− | 2006 02 24 | 703 | 0.1− | 0.4+ |
| 2000 12 30 | 704 | 0.1+ | 0.3+ | 2001 01 03 | 704 | 0.7− | 0.1− | 2006 02 24 | 703 | 0.2+ | 0.6− |
| 2000 12 30 | 704 | 0.6+ | 1.2+ | 2001 01 03 | 704 | 0.2+ | 0.3− | 2006 02 24 | 703 | 0.2− | 0.6− |
| 2000 12 30 | 704 | 0.1− | 0.6− | 2001 01 03 | 704 | 0.3+ | 1.0+ | 2006 02 24 | 703 | 1.1+ | 0.1− |
| 2000 12 31 | 691 | 0.1+ | 0.1+ | 2001 01 03 | 704 | 0.2+ | 0.4− | 2006 03 04 | 703 | 0.4− | 0.3+ |
| 2000 12 31 | 691 | 0.2+ | 0.2− | 2001 01 04 | 704 | 0.3− | 0.4− | 2006 03 04 | 703 | 0.2− | 0.1− |
| 2000 12 31 | 691 | 0.1+ | 0.1+ | 2001 01 04 | 704 | 0.6+ | 1.4+ | 2006 03 04 | 703 | 0.0 | 0.7+ |
| 2001 01 02 | 704 | 0.2+ | 0.6+ | 2001 01 04 | 704 | 0.6− | 0.3− | 2006 03 04 | 703 | 0.3− | 0.1+ |
| 2001 01 02 | 704 | 0.7− | 0.1+ | 2001 01 04 | 704 | 0.6+ | 0.8− | | | | |

**2000 YB$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.51617 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16909191 | $\omega$ | 235.17550 | | −0.95674871 | | −0.20305379 |
| $a$ | 3.2388250 | $\Omega$ | 292.31371 | | +0.27962678 | | −0.83943327 |
| $e$ | 0.1441427 | $i$ | 13.01416 | | −0.08025439 | | −0.50410410 |
| $P$ | 5.83 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 20 | 327 | 0.4− | 1.1− | 2001 01 04 | 704 | 0.0 | 0.5− | 2005 11 21 | 703 | 0.3+ | 1.1− |
| 1998 07 20 | 327 | 1.2+ | 1.1− | 2001 01 04 | 704 | 0.9+ | 0.0 | 2005 11 21 | 703 | 0.4+ | 0.3+ |
| 1998 07 20 | 327 | 0.8+ | 0.7+ | 2001 01 04 | 704 | 0.3+ | 0.4+ | 2005 11 21 | 703 | (1.7+ | 0.8+) |
| 1999 10 14 | 704 | 0.5+ | 0.1+ | 2001 01 04 | 704 | 0.2+ | 0.5+ | 2005 11 21 | 703 | 0.7− | 0.6+ |
| 1999 10 14 | 704 | 0.3+ | 0.4+ | 2001 01 04 | 704 | 0.0 | 0.1+ | 2005 11 28 | 703 | 1.0− | 0.9− |
| 1999 10 14 | 704 | 0.3+ | 0.0 | 2001 01 04 | 704 | 0.4− | 1.5+ | 2005 11 28 | 703 | (1.6− | 0.2+) |
| 1999 10 14 | 704 | 0.3+ | 0.5− | 2001 01 04 | 704 | 0.6− | 0.8+ | 2005 11 28 | 703 | 0.8− | 0.4− |
| 2000 12 30 | 704 | 0.6− | 0.0 | 2001 01 17 | 012 | 1.2− | 0.3− | 2005 11 28 | 703 | 0.1+ | 1.0+ |
| 2000 12 30 | 704 | 0.2− | 0.0 | 2001 01 17 | 012 | (0.3− | 3.6+) | 2006 10 23 | G96 | 0.2− | 0.8− |
| 2000 12 30 | 704 | 0.2+ | 0.9− | 2002 05 17 | 704 | 0.0 | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.8− |
| 2000 12 30 | 704 | (2.2+ | 0.2−) | 2002 05 17 | 704 | 0.5− | 0.8− | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2000 12 30 | 704 | 0.4+ | 0.9+ | 2002 05 17 | 704 | 0.5− | 1.2− | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2001 01 02 | 704 | 0.2+ | 0.3+ | 2005 10 10 | 703 | 0.5+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.8− |
| 2001 01 02 | 704 | 0.2+ | 0.3− | 2005 10 10 | 703 | 0.8+ | 0.2− | 2006 11 16 | G96 | 0.4− | 0.8− |
| 2001 01 02 | 704 | 0.1+ | 0.6+ | 2005 10 10 | 703 | 0.7− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.8− |
| 2001 01 02 | 704 | 0.5+ | 0.2+ | 2005 10 10 | 703 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.8− |
| 2001 01 02 | 704 | 0.4+ | 0.2− | 2005 10 25 | 703 | 0.6− | 0.3− | 2006 11 27 | 703 | 0.1+ | 0.8+ |
| 2001 01 03 | 704 | 0.1− | 0.1− | 2005 10 25 | 703 | (2.8+ | 0.7−) | 2006 11 27 | 703 | 0.9− | 0.0 |
| 2001 01 03 | 704 | 0.0 | 0.2+ | 2005 10 25 | 703 | 1.1+ | 0.6+ | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2001 01 03 | 704 | 0.5+ | 0.2− | 2005 10 25 | 703 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.6− | 0.4− |
| 2001 01 03 | 704 | 0.9+ | 0.1+ | 2005 11 02 | 703 | (2.9+ | 0.3−) | 2006 11 27 | G96 | 0.0 | 1.0− |
| 2001 01 04 | 704 | 0.4− | 1.2+ | 2005 11 02 | 703 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.3− | 0.8− |
| 2001 01 04 | 704 | 0.9− | 0.8+ | 2005 11 02 | 703 | 1.2− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.7− |
| 2001 01 04 | 704 | 0.6+ | 0.2− | 2005 11 02 | 703 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.7− |

**2000 YC$_{56}$ = 2005 CC$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.07924 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26549048 | $\omega$ | 139.56220 | | +0.61712805 | | −0.77860236 |
| $a$ | 2.3975633 | $\Omega$ | 272.02389 | | +0.68939190 | | +0.60467603 |
| $e$ | 0.1232580 | $i$ | 6.53367 | | +0.37933071 | | +0.16776550 |
| $P$ | 3.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.2+ | 0.9− | 2003 08 20 | 644 | 0.3+ | 0.3+ | 2003 09 30 | 704 | 0.1− | 0.0 |
| 1997 02 03 | 691 | 0.1− | 0.0 | 2003 08 20 | 644 | 0.1+ | 0.1+ | 2003 09 30 | 704 | 0.2− | 0.3− |
| 1997 02 03 | 691 | 0.3+ | 0.3− | 2003 09 02 | 704 | 0.3+ | 0.2+ | 2005 02 09 | 699 | 0.1− | 0.0 |
| 2000 12 30 | 704 | 1.0− | 0.1+ | 2003 09 02 | 704 | 0.0 | 1.2+ | 2005 02 09 | 699 | 0.1+ | 0.7+ |
| 2000 12 30 | 704 | 0.7− | 1.4+ | 2003 09 02 | 704 | 0.2− | 1.4+ | 2005 02 09 | 699 | 0.5+ | 0.9+ |
| 2000 12 30 | 704 | 0.0 | 0.2+ | 2003 09 02 | 704 | 1.3+ | 0.5+ | 2005 02 09 | 699 | 0.9+ | 0.1+ |
| 2000 12 30 | 704 | 0.1+ | 0.0 | 2003 09 16 | 699 | 1.0− | 0.1− | 2005 02 14 | 703 | 0.0 | 0.6+ |
| 2001 01 02 | 704 | 0.3− | 1.0+ | 2003 09 16 | 699 | 0.3− | 0.7− | 2005 02 14 | 703 | 0.1− | 0.3+ |
| 2001 01 02 | 704 | 0.4− | 0.7+ | 2003 09 16 | 699 | 0.1− | 0.8+ | 2005 02 14 | 703 | 0.5+ | 0.3− |
| 2001 01 02 | 704 | 0.6+ | 0.7+ | 2003 09 16 | 699 | 1.5− | 0.5− | 2005 02 14 | 703 | 0.0 | 0.3+ |
| 2001 01 02 | 704 | 1.3+ | 0.6− | 2003 09 30 | 704 | 0.0 | 0.4− | | | | |
| 2003 08 20 | 644 | 0.4+ | 0.0 | 2003 09 30 | 704 | 0.8− | 1.1+ | | | | |

**2000 YJ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.25752 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27268999 | $\omega$ | 330.20583 | | +0.11201119 | | −0.98769627 |
| $a$ | 2.3551754 | $\Omega$ | 113.17663 | | +0.93356395 | | +0.06696869 |
| $e$ | 0.1418688 | $i$ | 6.81774 | | +0.34045829 | | +0.14131976 |
| $P$ | 3.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.1− | 0.1+ | 2001 01 20 | 704 | 0.1+ | 0.6+ | 2005 03 13 | 152 | 0.1− | 0.1+ |
| 2000 12 30 | 704 | 1.4− | 0.4+ | 2001 01 20 | 704 | 0.5− | 0.1− | 2005 03 16 | 703 | 0.7− | 0.7− |
| 2000 12 30 | 704 | 0.1− | 0.1+ | 2001 01 20 | 704 | 0.5+ | 1.9− | 2005 03 16 | 703 | 0.7+ | 0.4+ |
| 2000 12 30 | 704 | 0.1+ | 0.8− | 2005 03 13 | 152 | 0.6+ | 0.2+ | 2005 03 16 | 703 | 1.6− | 0.7− |
| 2001 01 03 | 704 | 0.1+ | 0.4− | 2005 03 13 | 152 | 0.5+ | 0.4+ | 2005 03 16 | 703 | (2.8− | 3.2+) |
| 2001 01 03 | 704 | 0.9+ | 0.6+ | 2005 03 13 | 152 | 0.7− | 0.5+ | 2005 04 06 | 644 | 0.1− | 0.1+ |
| 2001 01 03 | 704 | 0.0 | 0.1− | 2005 03 13 | 152 | 0.1+ | 0.0 | 2005 04 06 | 644 | 0.0 | 0.0 |
| 2001 01 03 | 704 | 0.5+ | 0.4+ | 2005 03 13 | 152 | 1.1+ | 0.4− | 2005 04 06 | 644 | 0.0 | 0.1+ |
| 2001 01 20 | 704 | 0.0 | 1.1+ | 2005 03 13 | 152 | (2.4− | 0.3−) | | | | |

**2000 YU$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.79694 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22688798 | $\omega$ | 70.07031 | | +0.97589384 | | −0.09300823 |
| $a$ | 2.6623290 | $\Omega$ | 294.84013 | | −0.01150321 | | +0.88146842 |
| $e$ | 0.2988641 | $i$ | 12.56596 | | +0.21794238 | | +0.46299340 |
| $P$ | 4.34 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.3− | 0.6+ | 2001 01 20 | 704 | 0.2− | 1.1− | 2004 12 01 | 704 | 0.2+ | 0.2− |
| 2000 12 30 | 704 | 0.2− | 0.1− | 2004 08 19 | 704 | 0.2− | 1.1− | 2004 12 01 | 704 | 0.2+ | 0.1− |
| 2000 12 30 | 704 | 0.1− | 0.7+ | 2004 08 19 | 704 | 0.0 | 0.1+ | 2004 12 01 | 704 | 0.2+ | 0.2+ |
| 2000 12 30 | 704 | 0.2+ | 1.2+ | 2004 08 19 | 704 | 0.9+ | 0.1− | 2004 12 01 | 704 | 0.4+ | 0.3+ |
| 2000 12 30 | 704 | 0.5− | 0.1− | 2004 09 06 | 704 | 0.1− | 0.3− | 2004 12 01 | 704 | 0.1− | 0.8+ |
| 2001 01 03 | 704 | 0.0 | 0.1− | 2004 09 06 | 704 | 0.5− | 0.1− | 2004 12 01 | 703 | 1.0− | 0.6+ |
| 2001 01 03 | 704 | 0.2+ | 0.8+ | 2004 09 06 | 704 | 0.2+ | 0.1− | 2004 12 01 | 703 | 0.4− | 0.5− |
| 2001 01 03 | 704 | 0.2+ | 1.1− | 2004 09 14 | 704 | 0.1− | 0.5+ | 2004 12 01 | 703 | 1.2− | 0.3+ |
| 2001 01 03 | 704 | 1.0− | 0.3− | 2004 09 14 | 704 | 0.6− | 0.4+ | 2004 12 01 | 703 | 0.4+ | 1.4+ |
| 2001 01 03 | 704 | 1.0+ | 0.1− | 2004 09 14 | 704 | 0.6+ | 0.2− | 2004 12 15 | 703 | 0.5+ | 0.8− |
| 2001 01 03 | 704 | 0.2+ | 0.8− | 2004 09 14 | 704 | 0.1− | 0.2+ | 2004 12 15 | 703 | 0.2− | 0.5− |
| 2001 01 03 | 704 | 0.4− | 0.1+ | 2004 11 10 | 704 | 0.6+ | 0.1− | 2004 12 15 | 703 | 0.4− | 0.3− |
| 2001 01 20 | 704 | 0.8+ | 0.8+ | 2004 11 10 | 704 | 0.1+ | 0.1+ | 2004 12 15 | 703 | 0.8− | 0.9− |
| 2001 01 20 | 704 | 0.9+ | 0.0 | 2004 11 10 | 704 | 0.3+ | 0.4+ | | | | |
| 2001 01 20 | 704 | 0.8− | 0.6− | 2004 11 10 | 704 | 1.2+ | 0.5− | | | | |

**2000 YD$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.55777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22972257 | $\omega$ | 308.31290 | | +0.82027835 | −0.55534162 | |
| $a$ | 2.6403831 | $\Omega$ | 85.82548 | | +0.55821967 | +0.72514628 | |
| $e$ | 0.2715490 | $i$ | 7.88904 | | +0.12463641 | +0.40713457 | |
| $P$ | 4.29 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 19 | 691 | (3.0− | 3.5+) | 2001 01 04 | 704 | 0.0 | 1.1− | 2004 11 18 | 704 | 0.6+ | 0.1+ |
| 2000 12 19 | 691 | 0.9+ | 0.8− | 2004 10 07 | 704 | 0.3+ | 0.6+ | 2004 11 18 | 704 | 1.1− | 0.0 |
| 2000 12 19 | 691 | 1.1+ | 1.1− | 2004 10 07 | 704 | 1.2− | 0.9+ | 2004 12 13 | 703 | 0.9+ | 0.9− |
| 2000 12 30 | 704 | 0.4+ | 0.5− | 2004 10 07 | 704 | 0.3+ | 0.5− | 2004 12 13 | 703 | 0.7+ | 0.1+ |
| 2000 12 30 | 704 | 0.4+ | 0.0 | 2004 10 07 | 704 | 0.6− | 0.3− | 2004 12 13 | 703 | 0.2− | 0.4− |
| 2000 12 30 | 704 | 0.8+ | 0.1− | 2004 11 02 | 699 | 0.4+ | 0.0 | 2004 12 13 | 703 | 0.2+ | 0.9− |
| 2000 12 30 | 704 | 0.8+ | 0.2+ | 2004 11 02 | 699 | 0.1+ | 0.3+ | 2005 03 13 | G96 | 0.7+ | 0.4− |
| 2001 01 04 | 704 | 0.1+ | 0.4− | 2004 11 02 | 699 | 0.1− | 0.3− | 2005 03 13 | G96 | 0.5+ | 1.1− |
| 2001 01 04 | 704 | 0.8+ | 0.8− | 2004 11 02 | 699 | 0.6+ | 0.4− | 2005 03 13 | G96 | 0.1+ | 0.3− |
| 2001 01 04 | 704 | 0.2+ | 0.4− | 2004 11 18 | 704 | 0.5− | 0.5+ | 2005 03 13 | G96 | 0.2+ | 0.8− |
| 2001 01 04 | 704 | 0.6+ | 1.1− | 2004 11 18 | 704 | 0.1− | 0.2+ | | | | |

**2000 YY$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.37473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28240237 | $\omega$ | 209.31313 | | −0.84514466 | +0.53449051 | |
| $a$ | 2.3008616 | $\Omega$ | 3.02459 | | −0.46048970 | −0.72126102 | |
| $e$ | 0.0587187 | $i$ | 7.73211 | | −0.27144013 | −0.44057058 | |
| $P$ | 3.49 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 691 | 0.0 | 0.2− | 2000 12 21 | 695 | 0.4+ | 0.6+ | 2002 03 12 | 644 | 0.9− | 0.3− |
| 2000 10 06 | 691 | 0.3+ | 0.0 | 2000 12 21 | 695 | 0.3− | 0.6+ | 2002 03 12 | 644 | 0.9− | 0.2+ |
| 2000 10 06 | 691 | 0.0 | 0.3− | 2000 12 21 | 695 | 0.0 | 0.4+ | 2002 03 16 | 704 | 1.9+ | 0.7− |
| 2000 12 20 | 695 | 0.5− | 0.2− | 2002 02 22 | 644 | 0.1− | 0.5+ | 2002 03 16 | 704 | 0.1+ | 0.5+ |
| 2000 12 20 | 695 | 0.5− | 0.2+ | 2002 02 22 | 644 | 0.2+ | 0.2+ | 2002 03 16 | 704 | 0.6+ | 0.6− |
| 2000 12 20 | 695 | 0.4− | 0.0 | 2002 02 22 | 644 | 0.2+ | 0.7+ | 2002 03 16 | 704 | 0.8− | 1.0− |
| 2000 12 21 | 695 | 0.2+ | 0.4+ | 2002 03 12 | 644 | 0.9− | 0.3− | | | | |

**2000 YV$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.61446 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21908247 | $\omega$ | 248.49223 | | +0.83122417 | −0.53859546 | |
| $a$ | 2.7251953 | $\Omega$ | 143.69160 | | +0.55591420 | +0.80299772 | |
| $e$ | 0.1988468 | $i$ | 13.45446 | | +0.00507801 | +0.25516582 | |
| $P$ | 4.50 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.2+ | 0.1+ | 2004 09 08 | 704 | 0.9− | 0.0 | 2004 11 11 | 704 | 0.0 | 0.5+ |
| 1999 07 13 | 704 | 0.4+ | 1.1+ | 2004 09 08 | 704 | 0.5− | 0.8+ | 2004 11 11 | 704 | 0.9− | 1.6+ |
| 1999 07 13 | 704 | 1.2− | 0.3+ | 2004 09 08 | 704 | 0.8+ | 1.2+ | 2004 11 20 | 703 | 0.5− | 0.1+ |
| 1999 07 13 | 704 | 0.5+ | 1.5+ | 2004 09 08 | 704 | 0.2− | 0.2+ | 2004 11 20 | 703 | 0.2+ | 0.5+ |
| 2000 12 19 | 608 | 0.3+ | 0.4+ | 2004 09 21 | 699 | 1.1+ | 0.7− | 2004 11 20 | 703 | 0.7− | 0.2− |
| 2000 12 19 | 608 | 0.1− | 0.7+ | 2004 09 21 | 699 | 0.4+ | 0.2− | 2004 11 20 | 703 | 1.2− | 0.7− |
| 2000 12 19 | 608 | 0.0 | 0.5+ | 2004 09 21 | 699 | 0.6− | 0.2+ | 2006 02 01 | 691 | 0.2− | 0.1+ |
| 2000 12 28 | 704 | (6.1+ | 4.0−) | 2004 09 21 | 699 | 0.7− | 0.3− | 2006 02 01 | 691 | 0.0 | 0.4+ |
| 2000 12 28 | 704 | 0.6+ | 0.4− | 2004 10 07 | 704 | 0.0 | 0.1+ | 2006 02 01 | 691 | 0.1− | 0.1+ |
| 2000 12 28 | 704 | 0.5+ | 0.6− | 2004 10 07 | 704 | 0.0 | 0.2+ | 2006 02 22 | 699 | 0.3+ | 0.3− |
| 2001 01 19 | 704 | 0.4+ | 0.3− | 2004 10 07 | 704 | 0.2− | 0.1+ | 2006 02 22 | 699 | 0.9− | 0.7− |
| 2001 01 19 | 704 | 0.2+ | 0.6− | 2004 10 07 | 704 | 0.0 | 0.2+ | 2006 02 22 | 699 | 0.1− | 0.7+ |
| 2001 01 19 | 704 | 0.3− | 0.4+ | 2004 10 07 | 704 | 0.1+ | 0.4− | 2006 02 22 | 699 | 0.1+ | 0.2+ |
| 2001 01 19 | 704 | 0.2+ | 0.5+ | 2004 10 13 | 699 | 0.9+ | 0.1− | 2006 03 03 | 699 | 1.5+ | 0.1− |
| 2001 01 19 | 704 | 0.5− | 0.4+ | 2004 10 13 | 699 | 0.1+ | 0.0 | 2006 03 03 | 699 | 0.8+ | 0.1+ |
| 2001 02 02 | 704 | 0.8− | 0.0 | 2004 10 13 | 699 | 0.4− | 0.1+ | 2006 03 03 | 699 | 0.2+ | 1.0+ |
| 2001 02 02 | 704 | 0.7− | 0.3− | 2004 10 13 | 699 | 0.4+ | 0.4− | 2006 03 03 | 699 | 0.1− | 0.3− |
| 2001 02 02 | 704 | 0.1− | 0.1+ | 2004 11 11 | 704 | 1.7+ | 1.0− | | | | |
| 2004 09 08 | 704 | 0.7− | 0.3+ | 2004 11 11 | 704 | 1.1+ | 0.5− | | | | |

**2000 YW$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.17920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21529545 | $\omega$ | 305.07037 | | −0.96668028 | +0.24680309 | |
| $a$ | 2.7570595 | $\Omega$ | 249.30201 | | −0.20479257 | −0.90487768 | |
| $e$ | 0.0447570 | $i$ | 4.16566 | | −0.15358787 | −0.34682073 | |
| $P$ | 4.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.1− | 0.0 | 2001 02 19 | 608 | 0.4+ | 0.4− | 2003 09 27 | 704 | 0.5− | 0.1+ |
| 2000 12 23 | 645 | 0.1− | 0.1− | 2001 02 20 | 645 | 0.0 | 0.0 | 2003 09 27 | 291 | 0.2− | 0.1+ |
| 2001 02 19 | 699 | 0.4+ | 1.1+ | 2001 02 20 | 645 | 0.1+ | 0.0 | 2003 09 27 | 291 | 0.2− | 0.2+ |
| 2001 02 19 | 699 | 0.2+ | 0.1− | 2003 09 20 | 691 | 0.4+ | 0.0 | 2003 09 27 | 291 | 0.4− | 0.1+ |
| 2001 02 19 | 699 | 0.1− | 0.6+ | 2003 09 20 | 691 | 0.3+ | 0.1+ | 2003 10 16 | 291 | 0.0 | 0.1− |
| 2001 02 19 | 699 | 0.7+ | 1.7+ | 2003 09 20 | 691 | 0.2+ | 0.1+ | 2003 10 16 | 291 | 0.1− | 0.2− |
| 2001 02 19 | 608 | 0.2+ | 0.6− | 2003 09 27 | 704 | 0.2− | 0.2+ | 2003 10 16 | 291 | 0.3+ | 0.0 |
| 2001 02 19 | 608 | 0.2+ | 0.5− | 2003 09 27 | 704 | 0.9− | 0.6− | | | | |

**2000 YX$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.06077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23286676 | $\omega$ | 125.47857 | | −0.01190642 | +0.99874114 | |
| $a$ | 2.6165621 | $\Omega$ | 143.74539 | | −0.94203949 | +0.00513642 | |
| $e$ | 0.0943464 | $i$ | 4.72636 | | −0.33529068 | −0.04989740 | |
| $P$ | 4.23 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 24 | 691 | 0.4+ | 0.0 | 2001 03 19 | 704 | 0.4+ | 0.0 | 2003 11 18 | 691 | 0.1− | 0.3+ |
| 1993 04 24 | 691 | 0.8− | 0.2− | 2002 06 16 | 644 | 0.4− | 0.4− | 2005 01 19 | 691 | 0.2+ | 0.1+ |
| 1998 08 17 | 704 | 1.2+ | 0.9− | 2002 06 16 | 644 | 0.0 | 0.1− | 2005 01 19 | 691 | 0.1+ | 0.3+ |
| 1998 08 17 | 704 | 0.5− | 2.4+ | 2002 06 16 | 644 | 0.0 | 0.5− | 2005 01 19 | 691 | 0.4+ | 0.4+ |
| 1998 08 17 | 704 | 0.2− | 1.1− | 2002 07 14 | 704 | 0.2+ | 0.7+ | 2005 02 02 | 703 | 2.9− | 0.2+ |
| 1998 08 17 | 704 | 0.2− | 0.2+ | 2002 07 14 | 704 | 0.7− | 0.7+ | 2005 02 02 | 703 | 1.8− | 0.1+ |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2002 07 14 | 704 | 0.5− | 0.8+ | 2005 02 02 | 703 | 0.7+ | 1.0− |
| 2000 12 23 | 645 | 0.1− | 0.0 | 2002 07 14 | 704 | 0.0 | 1.4+ | 2005 02 02 | 703 | 0.5+ | 1.4− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 07 22 | 644 | 0.3− | 2.3+ | 2005 02 09 | 699 | 0.3− | 0.9+ |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2002 07 22 | 644 | 0.6− | 0.2+ | 2005 02 09 | 699 | 1.1− | 0.6+ |
| 2001 03 19 | 691 | 0.4+ | 0.4+ | 2002 07 22 | 644 | 0.1+ | 0.0 | 2005 02 09 | 699 | 0.0 | 0.7+ |
| 2001 03 19 | 691 | 0.3+ | 0.6+ | 2002 08 07 | 644 | 0.2+ | 0.3+ | 2005 02 09 | 699 | 1.0+ | 0.3+ |
| 2001 03 19 | 691 | 0.4+ | 0.5+ | 2002 08 07 | 644 | 0.6+ | 0.8+ | 2005 03 04 | G96 | 0.4− | 0.2+ |
| 2001 03 19 | 704 | 0.5+ | 0.4+ | 2002 08 07 | 644 | 0.1+ | 0.4+ | 2005 03 04 | G96 | 0.2− | 0.1+ |
| 2001 03 19 | 704 | 0.1+ | 0.2− | 2003 11 18 | 691 | 0.1− | 0.2+ | 2005 03 04 | G96 | 0.1− | 0.1+ |
| 2001 03 19 | 704 | 1.6+ | 0.0 | 2003 11 18 | 691 | 0.0 | 0.4+ | 2005 03 04 | G96 | 0.0 | 0.1+ |

**2000 YY$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.14937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26900366 | $\omega$ | 355.97181 | | +0.50513839 | −0.85600563 | |
| $a$ | 2.3766428 | $\Omega$ | 63.65607 | | +0.79521116 | +0.41213857 | |
| $e$ | 0.1288613 | $i$ | 7.04766 | | +0.33537207 | +0.31208358 | |
| $P$ | 3.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 699 | 0.6+ | 0.5− | 2001 02 16 | 704 | 0.7+ | 0.0 | 2003 10 06 | 699 | 0.8+ | 1.1− |
| 2000 12 29 | 699 | 0.0 | 0.2− | 2001 02 16 | 704 | 1.4− | 0.2− | 2003 10 18 | 699 | 0.5− | 0.5+ |
| 2000 12 29 | 699 | 0.5+ | 1.0+ | 2001 02 16 | 704 | 0.2+ | 0.0 | 2003 10 18 | 699 | 0.7+ | 0.6+ |
| 2000 12 29 | 699 | 0.8+ | 0.5− | 2001 02 16 | 704 | 0.0 | 0.8− | 2003 10 18 | 699 | 0.0 | 0.7+ |
| 2001 01 18 | 704 | 0.0 | 0.2− | 2003 09 20 | 644 | 0.0 | 0.1− | 2003 10 18 | 699 | 0.5+ | 0.0 |
| 2001 01 18 | 704 | 0.3+ | 0.2− | 2003 09 20 | 644 | 0.1+ | 0.0 | 2005 03 16 | 703 | 1.3− | 0.9− |
| 2001 01 18 | 704 | 0.4− | 0.6− | 2003 09 20 | 644 | 0.1+ | 0.1+ | 2005 03 16 | 703 | 0.7− | 0.1+ |
| 2001 01 18 | 704 | 0.2− | 0.8+ | 2003 09 25 | 608 | 0.6+ | 2.0+ | 2005 03 16 | 703 | 1.3− | 2.7− |
| 2001 02 01 | 699 | 0.1− | 0.5+ | 2003 09 25 | 608 | 0.1+ | 0.6+ | 2005 03 16 | 703 | 0.4+ | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 699 | 0.8+ | 0.6− | 2003 09 25 | 608 | 0.3+ | 0.9+ | 2005 03 16 | 704 | 1.3+ | 1.7+ |
| 2001 02 01 | 699 | 0.5− | 0.4+ | 2003 10 06 | 699 | 0.9− | 1.8− | 2005 03 16 | 704 | 1.2+ | 1.2+ |
| 2001 02 01 | 699 | 0.6− | 0.8+ | 2003 10 06 | 699 | 1.6− | 0.2+ | 2005 03 16 | 704 | 0.0 | 0.6+ |
| 2001 02 16 | 704 | 0.8− | 0.2− | 2003 10 06 | 699 | 0.5− | 1.9− | 2005 03 16 | 704 | 0.9+ | 1.3+ |

**2001 AU$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.64255 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22665998 | $\omega$ | 50.63052 | | +0.93669567 | −0.34975079 | |
| $a$ | 2.6641141 | $\Omega$ | 329.83091 | | +0.31023747 | +0.85098634 | |
| $e$ | 0.1467926 | $i$ | 1.89306 | | +0.16233894 | +0.39178646 | |
| $P$ | 4.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.3+ | 0.1− | 2004 11 09 | 703 | 0.2+ | 0.2− | 2005 12 04 | 691 | 0.5− | 0.4− |
| 1995 10 18 | 691 | 0.3+ | 0.0 | 2004 11 09 | 703 | 0.0 | 0.1+ | 2005 12 04 | 691 | 0.1+ | 0.1− |
| 1995 10 18 | 691 | 0.1+ | 0.1− | 2004 11 09 | 703 | 0.1+ | 0.4+ | 2006 01 22 | G96 | 0.2+ | 0.0 |
| 1995 10 28 | 691 | 0.1− | 0.1− | 2004 11 19 | 704 | 0.9− | 0.4− | 2006 01 22 | G96 | 0.3+ | 0.0 |
| 1995 10 28 | 691 | 0.2− | 0.4− | 2004 11 19 | 704 | 0.4+ | 0.0 | 2006 01 22 | G96 | 0.1− | 0.2− |
| 1995 10 28 | 691 | 0.1+ | 0.1− | 2004 11 19 | 704 | 0.1+ | 0.5+ | 2006 01 22 | G96 | 0.0 | 0.1+ |
| 2001 01 03 | 704 | 0.7− | 0.5+ | 2004 11 19 | 704 | 0.2− | 0.5+ | 2006 02 06 | G96 | 0.2− | 0.5− |
| 2001 01 03 | 704 | 0.4+ | 0.7+ | 2004 11 19 | 704 | 0.5+ | 0.8+ | 2006 02 06 | G96 | 0.3− | 0.2− |
| 2001 01 03 | 704 | 0.2− | 0.1− | 2004 12 02 | 699 | 0.2− | 0.3+ | 2006 02 06 | G96 | 0.4− | 0.5− |
| 2001 01 03 | 704 | 0.4− | 0.0 | 2004 12 02 | 699 | 0.6+ | 0.2+ | 2006 02 06 | G96 | 0.4− | 0.5− |
| 2001 01 05 | 732 | 0.4+ | 0.8+ | 2004 12 02 | 699 | 0.0 | 0.8+ | 2006 02 21 | G96 | 0.2− | 0.2− |
| 2001 01 05 | 732 | (2.2− | 1.8+) | 2004 12 02 | 699 | 0.4− | 0.6+ | 2006 02 21 | G96 | 0.2− | 0.1+ |
| 2001 01 06 | 732 | 1.3+ | 1.1− | 2004 12 02 | 644 | 0.2+ | 0.2+ | 2006 02 21 | G96 | 0.0 | 0.3− |
| 2001 01 06 | 732 | 0.6+ | 1.4− | 2004 12 02 | 644 | 0.0 | 0.3+ | 2006 02 21 | G96 | 0.1+ | 0.0 |
| 2001 01 13 | 732 | 0.5+ | 1.2− | 2004 12 02 | 644 | 0.1+ | 0.7+ | 2006 03 03 | 691 | 0.1+ | 0.2+ |
| 2001 01 14 | 732 | 0.8+ | 0.2− | 2004 12 16 | 704 | 0.3− | 0.3− | 2006 03 03 | 691 | 0.2+ | 0.3+ |
| 2001 01 14 | 732 | 0.2− | 0.4+ | 2004 12 16 | 704 | 1.3− | 0.8+ | 2006 03 03 | 691 | 0.1+ | 0.2+ |
| 2001 01 14 | 732 | 0.1− | 0.8− | 2004 12 16 | 704 | 0.3− | 0.9+ | 2006 03 25 | G96 | 0.3− | 0.2− |
| 2001 01 15 | 732 | 1.5− | 1.2− | 2005 10 24 | 568 | 0.0 | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.1+ |
| 2001 01 15 | 732 | 0.6− | 0.6− | 2005 10 24 | 568 | 0.1− | 0.4+ | 2006 03 25 | G96 | 0.1+ | 0.1+ |
| 2001 01 15 | 732 | 0.8− | 0.6− | 2005 10 24 | 568 | 0.1+ | 0.2+ | 2006 03 25 | G96 | 0.3− | 0.2+ |
| 2004 11 09 | 703 | 0.4− | 0.1+ | 2005 12 04 | 691 | 0.3+ | 0.0 | | | | |

**2001 BA$_2$ = 2006 TM$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.43174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31009181 | $\omega$ | 283.37021 | | −0.63617474 | −0.77141519 | |
| $a$ | 2.1617685 | $\Omega$ | 206.15338 | | +0.71972427 | −0.58673706 | |
| $e$ | 0.1167198 | $i$ | 1.84002 | | +0.27799041 | −0.24628892 | |
| $P$ | 3.18 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 16 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2001 01 16 | 691 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.9− |
| 2001 01 16 | 691 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2001 01 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2001 01 19 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 01 19 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.9− | 0.1+ |
| 2001 01 23 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2001 01 23 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2001 01 23 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.7+ | 0.4− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.4+ |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.1+ | | | | |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.4− | 0.6− | | | | |

**2001 BU$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.22292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27926237 | $\omega$ | 258.06274 | | −0.95703818 | +0.28559196 | |
| $a$ | 2.3180765 | $\Omega$ | 298.51378 | | −0.23884328 | −0.87450755 | |
| $e$ | 0.2615666 | $i$ | 3.27190 | | −0.16441354 | −0.39201247 | |
| $P$ | 3.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.1− | 0.7+ | 2001 02 14 | 046 | 0.5+ | 0.0 | 2001 03 02 | 699 | 0.2− | 0.9+ |
| 2001 01 03 | 704 | 0.1+ | 1.1− | 2001 02 14 | 046 | 0.2+ | 0.2− | 2001 03 02 | 699 | 1.5+ | 0.7− |
| 2001 01 03 | 704 | 0.1+ | 0.1− | 2001 02 14 | 046 | 0.2+ | 0.4− | 2001 03 02 | 699 | 0.5+ | 1.6+ |
| 2001 01 03 | 704 | 0.9+ | 0.2− | 2001 02 15 | 046 | 0.1+ | 0.3− | 2001 03 02 | 699 | 0.2+ | 0.5+ |
| 2001 01 03 | 704 | 0.3− | 1.3− | 2001 02 15 | 046 | 0.1+ | 0.2− | 2001 03 31 | 704 | (7.2+ | 4.6−) |
| 2001 01 20 | 704 | 0.4− | 0.5− | 2001 02 15 | 046 | 0.1+ | 0.4− | 2001 03 31 | 704 | 0.1+ | 0.4− |
| 2001 01 20 | 704 | 1.2− | 0.3− | 2001 02 15 | 046 | 0.2+ | 0.3− | 2001 03 31 | 704 | 0.6+ | 0.3− |
| 2001 01 20 | 704 | 1.4+ | 0.5− | 2001 02 15 | 046 | 0.2+ | 0.1+ | 2001 04 21 | 704 | 0.8− | 0.4+ |
| 2001 01 20 | 704 | 0.5− | 0.0 | 2001 02 16 | 699 | 0.5+ | 0.1+ | 2001 04 21 | 704 | 0.6− | 1.4+ |
| 2001 01 21 | 704 | 0.2− | 0.5+ | 2001 02 16 | 699 | 0.3+ | 0.4+ | 2001 04 21 | 704 | 0.8− | 1.0+ |
| 2001 01 21 | 704 | 0.3+ | 0.1+ | 2001 02 16 | 699 | 0.2+ | 0.4+ | 2001 04 21 | 704 | 0.4− | 1.2+ |
| 2001 01 21 | 704 | 0.4− | 0.7− | 2001 02 16 | 699 | 0.2+ | 1.0+ | 2001 04 21 | 704 | 0.6− | 1.8+ |
| 2001 01 21 | 704 | 0.5+ | 0.3+ | 2001 02 19 | 704 | 0.2+ | 0.2− | 2002 09 14 | 644 | 0.4− | 0.7+ |
| 2001 02 01 | 699 | 0.0 | 0.3+ | 2001 02 19 | 704 | 0.2− | 0.3− | 2002 09 14 | 644 | 0.4− | 0.7+ |
| 2001 02 01 | 699 | 0.4− | 0.3+ | 2001 02 19 | 704 | 0.4+ | 0.7− | 2002 09 14 | 644 | 0.5− | 0.8+ |
| 2001 02 01 | 699 | 0.1− | 0.5+ | 2001 02 19 | 704 | 0.1− | 0.8− | 2003 11 20 | 704 | 0.5− | 0.5− |
| 2001 02 01 | 699 | 0.2− | 0.5+ | 2001 02 20 | 704 | 1.6− | 0.3− | 2003 11 20 | 704 | 0.8− | 0.5− |
| 2001 02 02 | 704 | 0.1+ | 0.5+ | 2001 02 20 | 704 | 0.3− | 0.5− | 2003 11 20 | 704 | 0.7− | 0.2− |
| 2001 02 02 | 704 | 0.3+ | 1.3+ | 2001 02 20 | 704 | 1.0+ | 0.2− | 2003 11 20 | 704 | 0.1+ | 0.2+ |
| 2001 02 02 | 704 | 0.3− | 0.3+ | 2001 02 20 | 704 | 0.0 | 0.1+ | 2003 11 20 | 704 | 0.6− | 0.5+ |
| 2001 02 02 | 704 | 0.1− | 0.1+ | 2001 02 20 | 704 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2001 02 02 | 704 | 0.0 | 0.3+ | 2001 02 22 | 704 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.5+ |
| 2001 02 14 | 046 | 0.3+ | 0.4− | 2001 02 22 | 704 | 0.6− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2001 02 14 | 046 | 0.0 | 0.3− | 2001 02 22 | 704 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 2001 02 14 | 046 | 0.4+ | 0.1− | 2001 02 22 | 704 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.3+ | 0.1− |
| 2001 02 14 | 046 | 0.5− | 0.2− | 2001 02 22 | 704 | 0.5− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.1+ |

**2001 BV$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.49523 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36639522 | $\omega$ | 221.39049 | | −0.97841365 | +0.02949189 | |
| $a$ | 1.9342066 | $\Omega$ | 318.89673 | | +0.09991596 | −0.79888150 | |
| $e$ | 0.0527633 | $i$ | 18.12719 | | −0.18089649 | −0.60076499 | |
| $P$ | 2.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 691 | 0.3− | 0.3+ | 2001 02 17 | 704 | 0.9+ | 0.6+ | 2001 03 18 | 608 | 0.5− | 0.5− |
| 1999 08 12 | 691 | 0.2− | 0.2+ | 2001 02 17 | 704 | 0.7+ | 0.0 | 2001 03 26 | 608 | 0.0 | 0.5+ |
| 1999 08 12 | 691 | 0.2− | 0.2+ | 2001 02 17 | 704 | 1.3+ | 0.7+ | 2001 03 26 | 608 | 0.1− | 0.6+ |
| 2001 01 21 | 704 | 0.9− | 0.9+ | 2001 02 22 | 704 | 0.8+ | 0.7− | 2001 03 26 | 608 | 0.1+ | 0.3+ |
| 2001 01 21 | 704 | 0.4− | 0.1− | 2001 02 22 | 704 | 0.9+ | 0.1− | 2002 09 03 | 644 | 0.4− | 0.3+ |
| 2001 01 21 | 704 | 0.1− | 0.1+ | 2001 02 22 | 704 | 1.2+ | 0.8+ | 2002 09 03 | 644 | 0.0 | 0.6+ |
| 2001 01 21 | 704 | 0.6+ | 0.1+ | 2001 02 22 | 704 | 0.7+ | 0.4+ | 2002 09 03 | 644 | 0.1− | 0.8+ |
| 2001 01 26 | 704 | 0.1+ | 0.4+ | 2001 02 22 | 704 | 0.1+ | 1.3+ | 2005 12 21 | 704 | 0.1− | 0.2− |
| 2001 01 26 | 704 | 0.2+ | 0.2+ | 2001 02 24 | 608 | 0.7− | 0.1− | 2005 12 21 | 704 | 0.2+ | 0.2− |
| 2001 01 26 | 704 | 0.1+ | 0.0 | 2001 02 24 | 608 | 0.5− | 0.3− | 2005 12 21 | 704 | 0.4− | 0.3+ |
| 2001 01 26 | 704 | 0.3+ | 0.7+ | 2001 02 24 | 608 | 0.7− | 0.2− | 2005 12 21 | 704 | 0.1− | 0.1+ |
| 2001 01 26 | 704 | 0.2+ | 0.2+ | 2001 03 18 | 608 | 0.6− | 1.1− | 2005 12 21 | 704 | 0.1+ | 0.2− |
| 2001 02 17 | 704 | (1.9+ | 0.5−) | 2001 03 18 | 608 | 0.4− | 1.0− | | | | |

**2001 BD$_{83}$ = 2006 GG$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.87310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22494875 | $\omega$ | 315.63949 | | +0.27490875 | −0.95840121 | |
| $a$ | 2.6776080 | $\Omega$ | 118.26426 | | +0.90459668 | +0.23077013 | |
| $e$ | 0.1431654 | $i$ | 4.99979 | | +0.32577603 | +0.16796505 | |
| $P$ | 4.38 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 691 | 0.3+ | 0.1+ | 2001 01 21 | 704 | 0.2− | 1.3+ | 2004 12 14 | 699 | 0.3− | 0.4− |
| 2000 12 22 | 691 | 0.2− | 0.2− | 2001 01 21 | 704 | 0.6+ | 1.1+ | 2004 12 14 | 699 | 1.7− | 0.6+ |
| 2000 12 22 | 691 | 0.2− | 0.1+ | 2001 02 03 | 691 | 0.3− | 0.0 | 2006 04 02 | 691 | 0.9− | 0.0 |
| 2001 01 21 | 704 | 0.4+ | 0.1+ | 2001 02 03 | 691 | 0.6− | 0.2+ | 2006 04 02 | 691 | 0.6+ | 0.0 |
| 2001 01 21 | 704 | 0.2+ | 0.5+ | 2001 02 03 | 691 | 0.9− | 0.1+ | 2006 04 02 | 691 | 0.4+ | 0.1+ |
| 2001 01 21 | 704 | 0.7+ | 1.9+ | 2001 02 22 | 691 | 0.2+ | 0.5− | 2006 04 07 | 691 | 0.0 | 0.3+ |
| 2001 01 21 | 704 | 0.7+ | 0.9− | 2001 02 22 | 691 | 0.1+ | 0.5− | 2006 04 07 | 691 | 0.1+ | 0.2− |
| 2001 01 21 | 704 | 0.0 | 0.9+ | 2001 02 22 | 691 | 1.1+ | 0.6− | 2006 04 07 | 691 | 0.1− | 0.0 |
| 2001 01 21 | 704 | 0.5+ | 0.2− | 2004 12 14 | 699 | 1.1+ | 0.4− | | | | |
| 2001 01 21 | 704 | 0.4+ | 0.2− | 2004 12 14 | 699 | 0.9+ | 0.1+ | | | | |

**2001 BE$_{83}$ = 1994 AO$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.93824 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28611338 | $\omega$ | 213.54175 | | −0.87562475 | −0.47806162 | |
| $a$ | 2.2809229 | $\Omega$ | 297.75349 | | +0.45847473 | −0.77786170 | |
| $e$ | 0.0893056 | $i$ | 4.46122 | | +0.15192832 | −0.40790718 | |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 05 | 691 | 0.6+ | 0.1+ | 2001 02 19 | 704 | 0.3+ | 1.5+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 1994 01 05 | 691 | 0.1− | 0.0 | 2003 11 20 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.6− | 0.3+ |
| 1994 01 17 | 691 | 0.1− | 0.1− | 2003 11 20 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2− |
| 1994 01 17 | 691 | 0.1+ | 0.0 | 2003 11 20 | 691 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 1994 01 17 | 691 | 0.5− | 0.2− | 2003 12 29 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.3+ | 0.1− |
| 2001 01 21 | 704 | 1.0+ | 0.0 | 2003 12 29 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.2− | 0.4+ |
| 2001 01 21 | 704 | 1.3+ | 0.9+ | 2003 12 29 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1− |
| 2001 01 21 | 704 | 1.3+ | 0.6+ | 2005 01 19 | 809 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.5+ |
| 2001 01 21 | 704 | 0.7− | 0.1− | 2005 01 19 | 809 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 2001 02 02 | 704 | 0.6+ | 0.1+ | 2005 01 19 | 809 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 02 02 | 704 | 0.7− | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2001 02 02 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.0 |
| 2001 02 02 | 704 | 0.7− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2001 02 19 | 704 | 0.3− | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | | | | |
| 2001 02 19 | 704 | 0.5− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.0 | | | | |

**2001 BF$_{83}$ = 2005 JA$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.28401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27220972 | $\omega$ | 202.31533 | | −0.85194259 | −0.51383125 | |
| $a$ | 2.3579448 | $\Omega$ | 306.37271 | | +0.49735844 | −0.73379462 | |
| $e$ | 0.1187675 | $i$ | 7.19551 | | +0.16379380 | −0.44443548 | |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.9+ | 0.7+ | 2003 10 03 | 691 | 0.1− | 0.3− | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2001 01 21 | 704 | 0.7+ | 1.0+ | 2003 10 19 | 644 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.3− | 0.3+ |
| 2001 01 21 | 704 | 0.1+ | 0.6− | 2003 10 19 | 644 | 0.3+ | 0.3− | 2006 08 29 | 691 | 0.1− | 0.3+ |
| 2001 01 21 | 704 | 0.1− | 0.7+ | 2003 10 19 | 644 | 0.0 | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.5− |
| 2001 01 31 | 704 | 1.0− | 0.0 | 2003 12 18 | 291 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 2001 01 31 | 704 | 0.4+ | 0.7+ | 2003 12 18 | 291 | 0.2− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1− |
| 2001 01 31 | 704 | 1.0− | 0.7+ | 2003 12 18 | 291 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2001 01 31 | 704 | 0.7+ | 0.6+ | 2005 05 05 | 644 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2001 02 19 | 704 | 1.0+ | 0.3− | 2005 05 05 | 644 | 0.4+ | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.4+ |
| 2001 02 19 | 704 | 0.2+ | 0.1+ | 2005 05 05 | 644 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2001 02 19 | 704 | 0.1+ | 0.0 | 2005 05 11 | 644 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2003 10 03 | 691 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2003 10 03 | 691 | 0.1− | 0.3− | 2005 05 11 | 644 | 0.3+ | 0.5+ | | | | |

**2001 BG$_{83}$ = 2005 LG$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.80218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26930371 | $\omega$ | 63.71362 | | −0.89475682 | −0.42382630 | |
| $a$ | 2.3748772 | $\Omega$ | 90.93116 | | +0.34285793 | −0.85381503 | |
| $e$ | 0.2898343 | $i$ | 8.08634 | | +0.28610953 | −0.30227662 | |
| $P$ | 3.66 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 03 | 691 | 0.1+ | 0.3− | 2001 02 03 | 704 | 0.2− | 1.1+ | 2001 02 21 | 704 | 1.2+ | 0.1+ |
| 1996 12 03 | 691 | 0.3− | 0.7− | 2001 02 03 | 704 | 0.3+ | 0.1+ | 2001 03 23 | 699 | 0.2− | 0.3+ |
| 1996 12 03 | 691 | 0.3− | 1.4− | 2001 02 16 | 704 | 0.3+ | 0.2− | 2001 03 23 | 699 | 0.2− | 0.5+ |
| 1996 12 12 | 691 | 0.4+ | 0.6+ | 2001 02 16 | 704 | 0.8− | 1.6− | 2001 03 23 | 699 | 0.5+ | 0.6− |
| 1996 12 12 | 691 | 0.1+ | 0.6+ | 2001 02 16 | 704 | 1.4− | 0.6+ | 2001 03 23 | 699 | 0.1− | 0.8− |
| 1996 12 12 | 691 | 0.4+ | 0.2+ | 2001 02 16 | 704 | 0.6+ | 0.1+ | 2005 06 08 | 691 | 0.0 | 0.1+ |
| 2001 01 18 | 704 | 0.2+ | 0.4+ | 2001 02 16 | 704 | 0.2+ | 0.3− | 2005 06 08 | 691 | 0.0 | 0.1− |
| 2001 01 18 | 704 | 0.7− | 0.3+ | 2001 02 21 | 704 | 0.1− | 0.6+ | 2005 06 08 | 691 | 0.0 | 0.4− |
| 2001 01 18 | 704 | 0.3− | 0.0 | 2001 02 21 | 704 | 0.9+ | 0.6− | 2005 06 13 | 691 | 0.2− | 0.4− |
| 2001 01 18 | 704 | 0.7+ | 0.6− | 2001 02 21 | 704 | 0.1− | 0.4+ | 2005 06 13 | 691 | 0.3+ | 0.2− |
| 2001 02 03 | 704 | 0.3− | 0.2+ | 2001 02 21 | 704 | 0.8− | 0.3− | 2005 06 13 | 691 | 0.3− | 0.1− |

**2001 BH$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.87790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17893060 | $\omega$ | 266.80692 | | −0.59491060 | +0.76216896 | |
| $a$ | 3.1189828 | $\Omega$ | 322.57248 | | −0.46226852 | −0.58426234 | |
| $e$ | 0.2060227 | $i$ | 24.83930 | | −0.65756307 | −0.27881175 | |
| $P$ | 5.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.4− | 0.2+ | 2003 07 24 | 644 | 0.2− | 0.0 | 2003 08 28 | 608 | 0.4+ | 0.8− |
| 2001 01 18 | 704 | 0.5− | 0.4+ | 2003 08 05 | 704 | 0.3− | 0.3− | 2003 09 02 | 704 | 0.3+ | 0.3+ |
| 2001 01 18 | 704 | 0.1− | 0.0 | 2003 08 05 | 704 | 0.4− | 0.2− | 2003 09 02 | 704 | 0.0 | 0.5+ |
| 2001 02 16 | 704 | 0.1+ | 0.4+ | 2003 08 05 | 704 | 0.8+ | 0.1− | 2003 09 02 | 704 | 0.6+ | 0.9+ |
| 2001 02 16 | 704 | 0.1+ | 1.1+ | 2003 08 05 | 704 | 0.2+ | 0.1+ | 2003 09 02 | 704 | 0.3− | 0.9+ |
| 2001 02 16 | 704 | 0.7− | 0.2+ | 2003 08 28 | 704 | 0.0 | 0.5− | 2003 09 02 | 704 | 0.5+ | 1.1− |
| 2001 02 22 | 645 | 0.1+ | 0.0 | 2003 08 28 | 704 | 0.3− | 0.1− | 2003 09 23 | 644 | 0.2− | 0.6+ |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2003 08 28 | 704 | 1.2− | 0.6+ | 2003 09 23 | 644 | 0.2+ | 0.5+ |
| 2003 07 24 | 644 | 0.4− | 0.1+ | 2003 08 28 | 608 | 0.3+ | 0.3− | 2003 09 23 | 644 | 0.1+ | 0.3+ |
| 2003 07 24 | 644 | 0.5− | 0.1+ | 2003 08 28 | 608 | 0.3+ | 1.5− | | | | |

**2001 CT$_3$ = 1978 VD**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.36180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27798511 | $\omega$ | 261.66273 | | +0.96587120 | −0.22740931 | |
| $a$ | 2.3251717 | $\Omega$ | 111.41110 | | +0.25701135 | +0.90095028 | |
| $e$ | 0.3048794 | $i$ | 7.65456 | | −0.03221774 | +0.36955865 | |
| $P$ | 3.55 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 05 | 809 | 0.0 | 0.2− | 2003 09 20 | 704 | 0.2− | 0.3+ | 2003 12 18 | 291 | 0.4− | 0.2− |
| 2001 02 01 | 704 | 0.6+ | 0.8− | 2003 09 20 | 704 | 0.3+ | 1.0− | 2003 12 20 | 704 | 0.4+ | 0.1+ |
| 2001 02 01 | 704 | 0.1− | 0.9+ | 2003 09 20 | 704 | 0.2+ | 0.4+ | 2003 12 20 | 704 | 0.6+ | 0.0 |
| 2001 02 01 | 704 | 0.9+ | 0.7+ | 2003 09 20 | 704 | 0.2+ | 0.6+ | 2003 12 20 | 704 | 0.6+ | 0.3+ |
| 2001 02 01 | 704 | 0.2− | 0.2− | 2003 09 20 | 704 | 0.1+ | 0.6− | 2003 12 20 | 704 | 0.4+ | 0.1− |
| 2001 02 02 | 704 | 1.2+ | 0.3+ | 2003 11 01 | 704 | 1.5+ | 0.0 | 2003 12 20 | 704 | 1.0+ | 0.1− |
| 2001 02 02 | 704 | 0.3+ | 0.3− | 2003 11 01 | 704 | 0.3+ | 1.1+ | 2003 12 22 | 704 | 0.5+ | 0.2− |
| 2001 02 02 | 704 | 0.2− | 0.2− | 2003 11 01 | 704 | 1.2+ | 0.1+ | 2003 12 22 | 704 | (2.1+ | 2.0+) |
| 2001 02 02 | 704 | 0.6− | 0.6+ | 2003 11 01 | 704 | (2.1− | 1.0+) | 2003 12 22 | 704 | 0.5− | 0.7+ |
| 2001 02 17 | 704 | 0.5+ | 1.3+ | 2003 11 24 | 691 | 0.0 | 0.1− | 2003 12 22 | 704 | 0.0 | 0.0 |
| 2001 02 17 | 704 | 0.1− | 0.1− | 2003 11 24 | 699 | 0.2− | 0.0 | 2003 12 22 | 704 | 0.1− | 0.0 |
| 2001 02 17 | 704 | 0.4+ | 0.4− | 2003 11 24 | 691 | 0.0 | 0.1− | 2003 12 24 | 704 | 0.3+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.2+ | 0.3+ | 2003 11 24 | 699 | 0.0 | 0.1+ | 2003 12 24 | 704 | 0.4+ | 0.1+ | | |
| 2001 02 17 | 704 | 0.1− | 0.5− | 2003 11 24 | 699 | 0.0 | 0.0 | 2003 12 24 | 704 | 0.3+ | 0.4+ | | |
| 2001 02 20 | 704 | 1.5− | 0.2− | 2003 11 24 | 691 | 0.1+ | 0.2− | 2004 01 11 | 699 | 0.5+ | 0.6− | | |
| 2001 02 20 | 704 | 0.5+ | 0.4+ | 2003 11 24 | 699 | 0.2+ | 0.0 | 2004 01 11 | 699 | 0.5− | 0.1− | | |
| 2001 02 20 | 704 | 0.4− | 0.8+ | 2003 11 30 | 704 | 0.1+ | 0.5+ | 2004 01 11 | 699 | 0.6+ | 0.4+ | | |
| 2002 03 21 | 691 | 0.3− | 0.3+ | 2003 11 30 | 704 | 0.1+ | 0.2+ | 2004 01 11 | 699 | 0.2+ | 0.5− | | |
| 2002 03 21 | 691 | 0.2− | 0.3+ | 2003 11 30 | 704 | 0.1− | 0.2+ | 2004 01 19 | 703 | 1.0− | 0.2+ | | |
| 2002 03 21 | 691 | 0.4− | 0.2+ | 2003 11 30 | 704 | 0.3− | 0.3+ | 2004 01 19 | 703 | 0.9− | 0.1+ | | |
| 2002 05 08 | 704 | 0.1+ | 1.6− | 2003 11 30 | 704 | 0.1+ | 0.2+ | 2004 01 19 | 703 | 0.3− | 1.1+ | | |
| 2002 05 08 | 704 | 1.3+ | 0.2− | 2003 12 16 | 703 | 0.6− | 0.3− | 2004 01 19 | 703 | 0.0 | 1.4+ | | |
| 2002 05 08 | 704 | 1.7+ | 0.6− | 2003 12 16 | 703 | 0.8− | 0.3+ | 2004 01 21 | 704 | 0.9− | 0.2− | | |
| 2003 08 23 | 704 | 0.1+ | 0.7+ | 2003 12 16 | 703 | 0.2− | 0.1− | 2004 01 21 | 704 | (1.7− | 0.6+) | | |
| 2003 08 23 | 704 | 0.1− | 0.0 | 2003 12 16 | 703 | 0.6− | 0.2+ | 2004 01 21 | 704 | 0.4− | 0.4+ | | |
| 2003 08 23 | 704 | 0.3+ | 0.3+ | 2003 12 16 | 691 | 0.0 | 0.1− | 2004 02 10 | 644 | 0.3+ | 0.1+ | | |
| 2003 08 23 | 704 | 0.4− | 1.3+ | 2003 12 16 | 691 | 0.1+ | 0.2− | 2004 02 10 | 644 | 0.5+ | 0.1+ | | |
| 2003 08 26 | 704 | 0.9+ | 0.6+ | 2003 12 16 | 691 | 0.0 | 0.2− | 2004 02 10 | 644 | 0.1− | 0.2+ | | |
| 2003 08 26 | 704 | 0.5− | 0.6+ | 2003 12 17 | 691 | 0.0 | 0.2− | 2004 02 24 | 608 | (0.7+ | 2.0+) | | |
| 2003 08 26 | 704 | 0.6− | 0.3− | 2003 12 17 | 691 | 0.1− | 0.1− | 2004 02 24 | 608 | (0.5+ | 2.3+) | | |
| 2003 08 26 | 704 | 0.2− | 0.7+ | 2003 12 17 | 691 | 0.0 | 0.1− | 2004 02 24 | 608 | (0.9+ | 2.0+) | | |
| 2003 08 26 | 704 | 0.2− | 0.4+ | 2003 12 17 | 699 | 0.1− | 0.4+ | 2005 03 10 | 703 | 0.6− | 0.3− | | |
| 2003 08 26 | 704 | 0.3− | 0.0 | 2003 12 17 | 699 | 0.1+ | 0.2− | 2005 03 10 | 703 | 0.3+ | 0.7+ | | |
| 2003 09 11 | 699 | 0.9+ | 2.8− | 2003 12 17 | 699 | 0.3+ | 0.0 | 2005 03 10 | 703 | 0.5− | 0.9− | | |
| 2003 09 11 | 699 | 0.3− | 0.3+ | 2003 12 17 | 699 | 0.2+ | 0.2− | 2005 03 10 | 703 | 0.6− | 1.5− | | |
| 2003 09 11 | 699 | 0.0 | 1.0+ | 2003 12 18 | 291 | 0.3− | 0.2− | | | | | | |
| 2003 09 11 | 699 | 0.8− | 0.4+ | 2003 12 18 | 291 | 0.3− | 0.2− | | | | | | |

### 2001 $CH_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.39867 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29531606 | $\omega$ | 200.95758 | | −0.92731347 | | +0.37428451 |
| $a$ | 2.2332877 | $\Omega$ | 1.02387 | | −0.33571822 | | −0.83067923 |
| $e$ | 0.1129822 | $i$ | 2.92987 | | −0.16547811 | | −0.41216881 |
| $P$ | 3.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 704 | 0.7− | 0.5− | 2001 03 19 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 1.1− | 0.2+ | | |
| 2001 02 01 | 704 | 0.1+ | 0.2+ | 2001 03 19 | 691 | 0.5+ | 0.6+ | 2006 11 09 | 691 | 0.3+ | 0.1− | | |
| 2001 02 01 | 704 | 0.5+ | 0.2+ | 2001 03 19 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 691 | 0.2+ | 0.4− | | |
| 2001 02 02 | 704 | 0.6− | 0.4− | 2002 08 28 | 644 | 0.4− | 0.9+ | 2006 11 09 | 691 | 0.3+ | 0.1− | | |
| 2001 02 02 | 704 | 0.2+ | 0.2+ | 2002 08 28 | 644 | 0.5− | 1.1+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | | |
| 2001 02 02 | 704 | 0.6+ | 0.1+ | 2002 08 28 | 644 | 0.6− | 1.1+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | | |
| 2001 02 17 | 704 | 0.7− | 0.4− | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.2− | | |
| 2001 02 17 | 704 | 0.3− | 0.6− | 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.4− | | |
| 2001 02 17 | 704 | 0.5− | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2001 02 17 | 704 | 0.8− | 0.5− | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.4− | | |
| 2001 02 17 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.4− | | |

### 2001 $CC_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.25779 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23787271 | $\omega$ | 72.51239 | | −0.88402844 | | −0.38638719 |
| $a$ | 2.5797224 | $\Omega$ | 84.09502 | | +0.26072785 | | −0.87469173 |
| $e$ | 0.0565146 | $i$ | 15.33485 | | +0.38796224 | | −0.29260778 |
| $P$ | 4.14 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.7+ | 1.7+ | 2001 03 14 | 704 | 0.7+ | 0.1+ | 2005 01 17 | 704 | 0.3+ | 0.2− | | |
| 1999 10 08 | 704 | 0.6− | 1.0+ | 2001 03 14 | 704 | 0.3+ | 0.5+ | 2005 01 31 | 704 | 0.2− | 0.2+ | | |
| 1999 10 08 | 704 | 1.9− | 0.5+ | 2004 12 15 | 704 | 0.3+ | 1.3− | 2005 01 31 | 704 | 0.1+ | 0.2+ | | |
| 2001 02 13 | 704 | 1.6+ | 0.0 | 2004 12 15 | 704 | 0.6+ | 1.1− | 2005 01 31 | 704 | 0.0 | 0.4+ | | |
| 2001 02 13 | 704 | 1.1+ | 0.9+ | 2004 12 15 | 704 | 1.0+ | 0.1+ | 2005 02 28 | 703 | 0.1+ | 0.2+ | | |
| 2001 02 13 | 704 | 0.8− | 0.6+ | 2004 12 15 | 704 | 0.2− | 0.5+ | 2005 02 28 | 703 | 1.4− | 0.6− | | |
| 2001 02 13 | 704 | 1.1− | 0.5+ | 2005 01 07 | 703 | 0.5− | 0.2− | 2005 02 28 | 703 | 1.3− | 1.2− | | |
| 2001 02 15 | 704 | 0.3+ | 0.6+ | 2005 01 07 | 703 | 0.1− | 0.1− | 2005 02 28 | 703 | 0.0 | 0.9− | | |
| 2001 02 15 | 704 | 0.1+ | 0.1+ | 2005 01 07 | 703 | 0.2− | 0.3− | 2006 07 21 | G96 | 0.3+ | 0.5+ | | |
| 2001 02 15 | 704 | 0.5− | 0.4+ | 2005 01 07 | 703 | 0.4+ | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.6+ | | |
| 2001 02 15 | 704 | 0.2− | 1.1+ | 2005 01 17 | 704 | 0.7+ | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.6+ | | |
| 2001 02 15 | 704 | 0.8+ | 0.6+ | 2005 01 17 | 704 | 0.6+ | 0.4+ | 2006 07 21 | G96 | 0.3+ | 0.6+ | | |
| 2001 03 14 | 704 | 0.8− | 0.3+ | 2005 01 17 | 704 | 0.0 | 0.3+ | | | | | | |

### 2001 $CY_{49}$ = 1995 $ON_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.49365 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28534686 | $\omega$ | 272.11254 | | −0.54866896 | | +0.83439413 |
| $a$ | 2.2850058 | $\Omega$ | 324.44934 | | −0.72673805 | | −0.50700001 |
| $e$ | 0.0972314 | $i$ | 5.17361 | | −0.41329672 | | −0.21618841 |
| $P$ | 3.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.1− | 0.4+ | 2001 03 02 | 699 | 0.5+ | 0.3+ | 2002 09 14 | 644 | 0.2− | 0.7+ | | |
| 1995 07 22 | 691 | 0.1+ | 0.3+ | 2001 03 02 | 699 | 0.6+ | 0.4+ | 2002 09 14 | 644 | 0.1− | 0.6+ | | |
| 1995 07 22 | 691 | 0.4+ | 0.6+ | 2001 03 18 | 704 | 1.3+ | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.6+ | | |
| 1995 07 27 | 691 | 0.5− | 0.1− | 2001 03 18 | 704 | 0.7+ | 1.1+ | 2003 12 28 | 704 | 0.1− | 0.0 | | |
| 1995 07 27 | 691 | 0.3− | 0.3+ | 2001 03 18 | 704 | 0.4+ | 0.4− | 2003 12 28 | 704 | 0.2− | 0.4+ | | |
| 1995 07 27 | 691 | 0.2− | 0.1− | 2001 03 18 | 704 | 0.7+ | 0.3+ | 2003 12 28 | 704 | 0.2+ | 1.1+ | | |
| 2001 02 03 | 691 | 0.2− | 0.3+ | 2001 03 18 | 704 | 1.2+ | 0.5+ | 2003 12 28 | 704 | 0.5− | 0.4− | | |
| 2001 02 03 | 691 | 0.4− | 0.5+ | 2002 09 05 | 699 | 0.0 | 1.2+ | 2003 12 28 | 691 | 0.2+ | 0.1− | | |
| 2001 02 03 | 691 | 0.0 | 0.5+ | 2002 09 05 | 699 | 2.2− | 1.3+ | 2003 12 28 | 691 | 0.2+ | 0.0 | | |
| 2001 02 19 | 704 | 0.5+ | 1.1+ | 2002 09 05 | 699 | 0.4− | 1.6+ | 2003 12 28 | 691 | 0.1+ | 0.1− | | |
| 2001 02 19 | 704 | 0.5− | 0.6+ | 2002 09 05 | 699 | 0.5− | 0.3+ | 2004 01 22 | 704 | 0.1+ | 0.1+ | | |
| 2001 02 19 | 704 | 0.2− | 0.6+ | 2002 09 05 | 704 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.3− | 1.1+ | | |
| 2001 02 19 | 704 | 1.3+ | 1.3+ | 2002 09 05 | 704 | 0.4− | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.6+ | | |
| 2001 03 02 | 699 | 1.3+ | 0.0 | 2002 09 05 | 704 | 0.2− | 0.7+ | 2004 01 22 | 704 | 0.6− | 0.2− | | |
| 2001 03 02 | 699 | 0.1+ | 0.4+ | 2002 09 05 | 704 | 0.1− | 0.2+ | 2004 01 22 | 704 | 0.2+ | 0.4+ | | |

### 2001 $DH_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.09194 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28397446 | $\omega$ | 267.13762 | | −0.63927655 | | +0.72749542 |
| $a$ | 2.2923620 | $\Omega$ | 319.33315 | | −0.46049584 | | −0.62165757 |
| $e$ | 0.2389163 | $i$ | 22.47821 | | −0.61584826 | | −0.29033132 |
| $P$ | 3.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.7+ | 0.9+ | 2001 02 20 | 704 | 0.5+ | 0.3− | 2005 06 17 | E12 | 0.2+ | 0.5− | | |
| 2001 01 19 | 704 | 1.3+ | 0.2− | 2001 02 20 | 704 | 0.7+ | 0.5+ | 2005 06 17 | E12 | 0.3− | 0.1+ | | |
| 2001 01 19 | 704 | 0.4+ | 0.1− | 2001 02 21 | 704 | 1.5− | 0.4− | 2005 06 17 | E12 | 0.1− | 0.3+ | | |
| 2001 02 19 | 704 | 0.3+ | 0.6+ | 2001 02 21 | 704 | 0.6+ | 0.3− | 2005 06 17 | E12 | 0.4+ | 0.0 | | |
| 2001 02 19 | 704 | 0.5+ | 1.1+ | 2001 02 21 | 704 | 0.7+ | 0.3+ | 2005 07 04 | E12 | 0.9− | 0.2− | | |
| 2001 02 19 | 704 | 0.4− | 0.2+ | 2001 03 23 | 699 | 0.2− | 0.1+ | 2005 07 04 | E12 | 0.2+ | 0.4+ | | |
| 2001 02 20 | 704 | 0.2− | 0.1− | 2001 03 23 | 699 | 0.8− | 1.0− | 2005 07 04 | E12 | 0.6− | 0.3+ | | |
| 2001 02 20 | 704 | 0.6− | 0.3+ | 2001 03 23 | 699 | 0.1− | 1.1+ | 2005 07 04 | E12 | 0.9− | 1.2− | | |
| 2001 02 20 | 704 | 0.5+ | 0.4− | 2001 03 23 | 699 | 1.1− | 0.1+ | 2005 07 25 | E12 | 0.5− | 0.3+ | | |
| 2001 02 20 | 704 | 0.1+ | 0.2+ | 2002 09 03 | 644 | 0.3− | 0.5+ | 2005 07 25 | E12 | 0.1+ | 0.3− | | |
| 2001 02 20 | 704 | 0.6+ | 0.1+ | 2002 09 03 | 644 | 0.6− | 0.8+ | 2005 07 25 | E12 | 0.2+ | 0.1− | | |
| 2001 02 20 | 704 | 1.0+ | 0.3+ | 2002 09 03 | 644 | 0.5− | 0.9+ | 2005 08 05 | E12 | 0.3+ | 0.1− | | |
| 2001 02 20 | 704 | 0.1+ | 0.4+ | 2005 06 08 | E12 | 0.4+ | 1.7+ | 2005 08 05 | E12 | 1.0− | 1.0+ | | |
| 2001 02 20 | 704 | 0.0 | 0.1− | 2005 06 08 | E12 | 0.2+ | 0.4+ | 2005 08 05 | E12 | 0.3+ | 0.0 | | |
| 2001 02 20 | 704 | 0.8+ | 0.0 | 2005 06 08 | E12 | 0.6+ | 0.3+ | 2005 08 05 | E12 | 0.3− | 0.5+ | | |
| 2001 02 20 | 704 | 1.4− | 0.1+ | 2005 06 08 | E12 | 0.0 | 0.2− | | | | | | |

### 2001 $DV_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.23242 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28656748 | $\omega$ | 122.63668 | | −0.94241337 | | −0.32962218 |
| $a$ | 2.2785127 | $\Omega$ | 38.20247 | | +0.26791734 | | −0.84537947 |
| $e$ | 0.0864984 | $i$ | 5.25329 | | +0.20019325 | | −0.42033651 |
| $P$ | 3.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.2+ | 0.7− | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2001 02 16 | 704 | 0.1− | 0.2+ | 2003 12 23 | 704 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 02 16 | 704 | 0.2− | 0.1− | 2003 12 23 | 704 | 0.1− | 0.5− | 2006 10 01 | 691 | 0.5+ | 0.2+ |
| 2001 02 16 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 691 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2001 02 20 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2001 02 20 | 704 | 0.5+ | 0.3− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1− |
| 2001 02 20 | 704 | 0.8+ | 0.7− | 2006 09 23 | 691 | 0.9− | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.6− |
| 2001 02 20 | 704 | 0.5− | 0.4− | 2006 09 23 | 691 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.4+ |
| 2001 03 04 | 704 | 0.2− | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.7− | 0.5+ |
| 2001 03 04 | 704 | 0.4+ | 0.4− | 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.0 |
| 2001 03 04 | 704 | 0.5− | 0.3− | 2006 09 27 | 691 | 0.5+ | 0.2+ | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2001 03 04 | 704 | 0.3− | 1.0+ | 2006 09 27 | 691 | 0.4+ | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.1− |
| 2001 03 04 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.3+ | 2006 11 22 | G96 | 0.8− | 0.1+ |
| 2001 03 26 | 704 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.2+ | 1.4− | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2001 03 26 | 704 | 0.4− | 0.1+ | 2006 09 30 | 703 | (1.6− | 0.4+) | | | | |
| 2001 03 26 | 704 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.8− | 0.4+ | | | | |

**2001 DY$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.12114 | | | (2000.0) | | |
| $n$ | 0.27287526 | $\omega$ | 209.05305 | | −0.81712337 | +0.57639126 |
| $a$ | 2.3541092 | $\Omega$ | 6.16766 | | −0.51121864 | −0.71726917 |
| $e$ | 0.1495004 | $i$ | 4.85015 | | −0.26639238 | −0.39153295 |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.1− | 0.2− | 2001 03 15 | 699 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 2001 02 17 | 704 | (1.7+ | 0.7−) | 2001 03 15 | 699 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2001 02 17 | 704 | 1.0+ | 0.2− | 2001 03 15 | 699 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.4− | 0.2+ |
| 2001 02 17 | 704 | 1.3+ | 0.2+ | 2001 03 15 | 699 | 0.9+ | 0.7+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2001 02 20 | 704 | 0.9+ | 0.3− | 2001 03 19 | 704 | 0.2+ | 0.5− | 2006 09 26 | 691 | 0.6− | 0.5+ |
| 2001 02 20 | 704 | 0.0 | 0.3− | 2001 03 19 | 704 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2001 02 20 | 704 | 0.1− | 0.2− | 2001 03 19 | 704 | 0.9+ | 0.2+ | 2006 09 30 | 691 | 0.5+ | 0.3+ |
| 2001 02 20 | 704 | (1.6+ | 1.0−) | 2001 03 19 | 704 | 1.5+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2001 03 03 | 704 | 0.2− | 0.2− | 2001 03 21 | 608 | 0.2+ | 0.5− | 2006 10 11 | 691 | 0.2− | 0.2− |
| 2001 03 03 | 704 | 0.7− | 1.2+ | 2001 03 21 | 608 | 0.3+ | 0.3− | 2006 10 11 | 691 | 0.2− | 0.3− |
| 2001 03 03 | 704 | 0.2+ | 0.1+ | 2001 03 21 | 608 | 0.8+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.2− |
| 2001 03 03 | 704 | 0.6− | 0.6+ | 2006 09 14 | 691 | 0.4+ | 0.4− | 2006 10 19 | G96 | 0.5− | 1.1− |
| 2001 03 04 | 691 | 0.5− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.6− |
| 2001 03 04 | 691 | 0.3− | 0.1− | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 03 04 | 691 | 0.7− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.1− |

**2001 DS$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 273.40840 | | | (2000.0) | | |
| $n$ | 0.29175562 | $\omega$ | 342.81852 | | −0.40516691 | −0.91063530 |
| $a$ | 2.2514202 | $\Omega$ | 131.00211 | | +0.85092786 | −0.40807137 |
| $e$ | 0.1153006 | $i$ | 6.17182 | | +0.33430756 | −0.06497008 |
| $P$ | 3.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 1.0− | 0.2− | 2001 03 18 | 699 | 0.5− | 0.4− | 2006 10 22 | 703 | 0.2+ | 1.4+ |
| 2001 02 17 | 704 | 0.2+ | 0.4+ | 2001 03 27 | 699 | 0.7+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2001 02 17 | 704 | 0.3+ | 0.0 | 2001 03 27 | 699 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.1+ | 1.0− |
| 2001 02 17 | 704 | 1.1+ | 0.3+ | 2001 03 27 | 699 | 1.1− | 0.9− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 02 20 | 704 | 0.3+ | 0.1− | 2001 03 27 | 699 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2001 02 20 | 704 | 0.6+ | 1.2+ | 2006 10 16 | 703 | 0.4+ | 0.4+ | 2006 11 16 | 703 | (1.6− | 1.5−) |
| 2001 02 20 | 704 | 0.4− | 0.7− | 2006 10 16 | 703 | 0.4− | 0.8+ | 2006 11 16 | 703 | (0.1+ | 1.7−) |
| 2001 02 20 | 704 | 1.2− | 0.7− | 2006 10 16 | 703 | 0.9− | 0.1− | 2006 11 16 | 703 | 0.2− | 1.1− |
| 2001 03 18 | 699 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.0 | 2006 11 16 | 703 | 1.1+ | 0.5− |
| 2001 03 18 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.2− | | | | |
| 2001 03 18 | 699 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.1+ | | | | |

**2001 DT$_{35}$ = 2005 YZ$_{210}$ = 2006 WZ$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.40982 | | | (2000.0) | | |
| $n$ | 0.17197851 | $\omega$ | 304.20629 | | +0.00158031 | −0.97867282 |
| $a$ | 3.2024812 | $\Omega$ | 143.94890 | | +0.99324902 | −0.02229064 |
| $e$ | 0.1483188 | $i$ | 20.42931 | | +0.11599089 | +0.20421225 |
| $P$ | 5.73 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 31 | 704 | 1.4+ | 0.2+ | 2001 02 20 | 704 | 0.6− | 1.1− | 2006 10 27 | G96 | 0.3− | 0.5− |
| 2001 01 31 | 704 | 0.2− | 0.4− | 2001 02 20 | 704 | 0.8− | 1.0− | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2001 01 31 | 704 | 0.6− | 0.4+ | 2001 02 20 | 704 | 1.2+ | 0.4+ | 2006 10 27 | G96 | 0.5− | 0.4− |
| 2001 01 31 | 704 | 0.4− | 0.0 | 2001 02 20 | 704 | 0.2+ | 0.5− | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2001 01 31 | 704 | 0.5− | 0.8+ | 2005 12 25 | 699 | 0.4+ | 0.8− | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2001 02 16 | 699 | 0.9− | 0.9− | 2005 12 25 | 699 | 0.3− | 0.8+ | 2006 11 16 | 691 | 1.4+ | 0.2− |
| 2001 02 16 | 699 | 0.7+ | 0.6+ | 2005 12 25 | 699 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.6− | 0.3− |
| 2001 02 16 | 699 | 0.5− | 0.7− | 2005 12 25 | 699 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.6− | 0.1− |
| 2001 02 16 | 699 | 0.9+ | 1.0+ | 2006 01 06 | 703 | 1.0− | 0.4− | 2006 11 20 | G96 | 0.4− | 0.2+ |
| 2001 02 19 | 704 | 0.6− | 1.2+ | 2006 01 06 | 703 | (1.8− | 2.6−) | 2006 11 20 | G96 | 0.4− | 0.4− |
| 2001 02 19 | 704 | 0.7+ | 0.7+ | 2006 01 06 | 703 | 1.0+ | 0.5+ | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2001 02 19 | 704 | 0.5− | 0.2+ | 2006 01 06 | 703 | 0.3− | 0.3− | 2006 11 25 | 691 | 0.3− | 0.2+ |
| 2001 02 19 | 704 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 25 | 691 | 0.0 | 0.2+ |

**2001 DX$_{36}$ = 1995 SO$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 160.54679 | | | (2000.0) | | |
| $n$ | 0.27909319 | $\omega$ | 51.77315 | | −0.85529292 | +0.51736959 |
| $a$ | 2.3190132 | $\Omega$ | 159.33564 | | −0.49694159 | −0.80358357 |
| $e$ | 0.1653148 | $i$ | 4.60504 | | −0.14670747 | −0.29424847 |
| $P$ | 3.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 1.1− | 0.1+ | 2001 02 22 | 704 | 0.5+ | 0.4+ | 2005 06 05 | 704 | 0.0 | 1.1+ |
| 1995 09 20 | 691 | 0.9− | 0.5− | 2001 02 22 | 704 | 0.7− | 0.5+ | 2005 06 05 | 704 | 0.2+ | 0.2+ |
| 1995 09 20 | 691 | 1.1− | 0.1− | 2001 02 22 | 704 | 1.1+ | 0.9+ | 2005 06 05 | 704 | (0.8+ | 1.7−) |
| 1995 09 25 | 691 | 1.1+ | 0.4+ | 2001 02 22 | 704 | 0.5− | 0.4+ | 2005 06 11 | 691 | 0.2+ | 0.3+ |
| 1995 09 25 | 691 | 1.5+ | 0.2− | 2002 08 28 | 644 | 0.3− | 0.7− | 2005 06 11 | 691 | 0.1+ | 0.3+ |
| 1995 09 25 | 691 | 0.7+ | 0.8+ | 2002 08 28 | 644 | 0.5− | 0.5− | 2005 06 11 | 691 | 0.2+ | 0.3+ |
| 2001 02 16 | 106 | 0.4+ | 0.1+ | 2002 08 28 | 644 | 0.6− | 0.6− | 2005 07 05 | 644 | 0.1− | 0.2+ |
| 2001 02 16 | 106 | 0.0 | 0.2− | 2003 12 16 | 691 | 0.6+ | 0.2+ | 2005 07 05 | 644 | 0.2− | 0.2+ |
| 2001 02 16 | 106 | 0.7+ | 0.1− | 2003 12 16 | 691 | 0.3− | 0.1+ | 2005 07 05 | 644 | 0.4+ | 0.1+ |
| 2001 02 19 | 704 | 0.9+ | 0.1+ | 2003 12 16 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2001 02 19 | 704 | 0.1+ | 0.4+ | 2005 05 12 | 704 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2001 02 19 | 704 | 0.8− | 0.4+ | 2005 05 12 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2001 02 19 | 704 | 0.4− | 0.6+ | 2005 05 12 | 704 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.4− | 0.7+ |
| 2001 02 19 | 704 | 0.6− | 0.3+ | 2005 05 12 | 704 | 0.5− | 0.3− | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2001 02 20 | 704 | 0.4− | 0.9+ | 2005 05 27 | 599 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 2001 02 20 | 704 | 0.0 | 0.2− | 2005 05 27 | 599 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.0 |
| 2001 02 20 | 704 | 0.2− | 0.4+ | 2005 05 27 | 599 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2001 02 20 | 704 | 0.1+ | 0.9− | 2005 05 27 | 599 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 02 22 | 704 | 0.4+ | 0.3+ | 2005 06 05 | 704 | 0.4− | 0.4− | 2006 10 22 | G96 | 0.3− | 0.2− |

**2001 DK$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 194.20995 | | | (2000.0) | | |
| $n$ | 0.27046952 | $\omega$ | 185.43729 | | −0.85228916 | −0.52093902 |
| $a$ | 2.3680480 | $\Omega$ | 323.04349 | | +0.48281742 | −0.74879694 |
| $e$ | 0.1759211 | $i$ | 4.50070 | | +0.20122257 | −0.40978736 |
| $P$ | 3.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.5+ | 0.7+ | 2001 02 20 | 704 | 0.2− | 0.3+ | 2001 03 18 | 704 | 0.1− | 0.4− |
| 2001 01 21 | 704 | 0.2+ | 0.0 | 2001 02 20 | 704 | 0.5+ | 0.8+ | 2001 03 18 | 704 | 0.2+ | 0.5− |
| 2001 01 21 | 704 | 0.3+ | 0.4+ | 2001 02 20 | 704 | 0.1− | 0.5+ | 2001 03 18 | 704 | 0.4+ | 0.3− |
| 2001 01 21 | 704 | 0.1− | 0.2− | 2001 02 20 | 704 | 0.4+ | 0.9+ | 2003 10 03 | 691 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 29 | 704 | 0.0 | 0.4− | 2001 02 21 | 691 | 0.2− | 0.1+ | 2003 10 03 | 691 | 0.2+ | 0.3− |
| 2001 01 29 | 704 | 0.2− | 0.3+ | 2001 02 21 | 691 | 0.0 | 0.1+ | 2003 10 03 | 691 | 0.2+ | 0.0 |
| 2001 01 29 | 704 | 1.2+ | 1.2+ | 2001 02 21 | 691 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 2001 02 19 | 704 | 0.4+ | 0.5+ | 2001 02 22 | 704 | 0.0 | 1.0+ | 2006 08 19 | 691 | 0.3− | 0.1+ |
| 2001 02 19 | 704 | 0.4+ | 0.1− | 2001 02 22 | 704 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.4− | 0.5+ |
| 2001 02 19 | 704 | 0.2− | 0.5− | 2001 02 22 | 704 | 0.4− | 0.2+ | 2006 08 27 | 691 | 0.4+ | 0.4+ |
| 2001 02 19 | 704 | 0.2− | 0.1+ | 2001 02 22 | 704 | 0.6+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 2001 02 19 | 704 | 0.2− | 0.6− | 2001 02 22 | 704 | 0.3+ | 0.3− | 2006 08 27 | 691 | 0.2− | 0.5+ |

### 2001 DK$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.84099 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29621997 | $\omega$ | 353.39149 | | −0.74537781 | | −0.66384665 |
| $a$ | 2.2287422 | $\Omega$ | 144.76811 | | +0.61637008 | | −0.72113086 |
| $e$ | 0.1218768 | $i$ | 6.06861 | | +0.25396820 | | −0.19818653 |
| $P$ | 3.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 31 | 704 | 0.5+ | 0.8+ | 2001 02 20 | 704 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 01 31 | 704 | 0.5+ | 0.4+ | 2001 02 20 | 704 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2001 01 31 | 704 | 0.2+ | 1.2+ | 2001 02 22 | 691 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 01 31 | 704 | 0.2− | 0.9− | 2001 02 22 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2001 02 19 | 704 | 0.1+ | 1.1− | 2001 02 22 | 691 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.9+ |
| 2001 02 19 | 704 | 0.0 | 0.2− | 2001 02 23 | 691 | 1.2− | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.5+ |
| 2001 02 19 | 704 | 0.4+ | 0.1+ | 2001 02 23 | 691 | 0.2− | 0.2− | 2006 10 22 | 703 | 1.3− | 0.1− |
| 2001 02 19 | 704 | 0.1− | 0.3− | 2001 02 23 | 691 | 0.4− | 0.4− | 2006 11 13 | 703 | 0.1+ | 0.1+ |
| 2001 02 19 | 704 | (1.6+ | 1.5−) | 2001 03 19 | 704 | 0.6+ | 0.4+ | 2006 11 13 | 703 | 0.6+ | 1.0− |
| 2001 02 20 | 704 | 0.4− | 0.7− | 2001 03 19 | 704 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.7− | 0.2− |
| 2001 02 20 | 704 | 0.3− | 0.7+ | 2001 03 19 | 704 | 0.3+ | 0.7+ | 2006 11 13 | 703 | (2.0+ | 0.3+) |
| 2001 02 20 | 704 | 0.5+ | 0.0 | 2001 03 19 | 704 | 0.0 | 0.5+ | 2006 11 19 | 703 | (0.7− | 2.0−) |
| 2001 02 20 | 704 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.1+ | 2006 11 19 | 703 | (0.2− | 2.2−) |
| 2001 02 20 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.7+ | 0.0 |
| 2001 02 20 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.5+ | 0.0 |
| 2001 02 20 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.2+ | | | | |
| 2001 02 20 | 704 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− | | | | |

### 2001 DY$_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.60068 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22956613 | $\omega$ | 242.36777 | | +0.96568923 | | −0.25059907 |
| $a$ | 2.6415824 | $\Omega$ | 132.05917 | | +0.25863525 | | +0.90428096 |
| $e$ | 0.1345462 | $i$ | 5.26661 | | +0.02349723 | | +0.34565308 |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.4+ | 0.5+ | 2001 02 22 | 926 | 0.2+ | 0.1+ | 2003 09 18 | 699 | 1.1+ | 1.1+ |
| 1999 10 09 | 704 | 0.1− | 0.1+ | 2001 02 22 | 926 | 0.2− | 0.0 | 2003 09 18 | 699 | 0.4+ | 0.7− |
| 1999 10 09 | 704 | 0.1− | 0.4− | 2001 02 22 | 926 | 0.1− | 0.0 | 2003 09 24 | 644 | 0.8− | 0.8+ |
| 1999 10 09 | 704 | 0.8− | 0.4+ | 2001 02 27 | 926 | 0.7− | 0.5− | 2003 09 24 | 644 | 0.7− | 0.4+ |
| 2001 02 19 | 926 | 0.4+ | 0.0 | 2001 02 27 | 926 | 0.5− | 0.1+ | 2003 09 24 | 644 | 0.5− | 0.3+ |
| 2001 02 19 | 926 | 0.3+ | 0.9+ | 2001 02 27 | 926 | 0.5− | 0.3+ | 2004 12 20 | G96 | 0.0 | 0.1− |
| 2001 02 19 | 926 | 0.4− | 0.3+ | 2003 09 01 | 704 | 0.0 | 0.5+ | 2004 12 20 | G96 | 0.2− | 0.1+ |
| 2001 02 21 | 691 | 0.1+ | 0.2+ | 2003 09 01 | 704 | 0.6− | 0.1+ | 2004 12 20 | G96 | 0.1+ | 0.2+ |
| 2001 02 21 | 926 | 0.1− | 0.3+ | 2003 09 01 | 704 | 0.0 | 0.1− | 2004 12 20 | G96 | 0.3+ | 0.3+ |
| 2001 02 21 | 926 | 1.1+ | 0.1+ | 2003 09 01 | 704 | 0.7− | 0.9+ | 2006 03 25 | 291 | 0.2+ | 0.3+ |
| 2001 02 21 | 926 | 0.9+ | 0.3− | 2003 09 01 | 704 | 0.0 | 0.2+ | 2006 03 25 | 291 | 0.1+ | 0.3+ |
| 2001 02 21 | 691 | 0.0 | 0.1+ | 2003 09 18 | 699 | 0.2+ | 1.6+ | 2006 03 25 | 291 | 0.1− | 0.2+ |
| 2001 02 21 | 691 | 0.2+ | 0.2+ | 2003 09 18 | 699 | 0.3+ | 0.1− | | | | |

### 2001 DF$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.16977 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29691224 | $\omega$ | 190.41068 | | −0.98338829 | | −0.18076565 |
| $a$ | 2.2252765 | $\Omega$ | 339.15312 | | +0.16968591 | | −0.88329469 |
| $e$ | 0.1430132 | $i$ | 2.65259 | | +0.06445280 | | −0.43256706 |
| $P$ | 3.32 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 24 | 691 | 0.2− | 0.3− | 2001 02 22 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2001 01 24 | 691 | 0.2− | 0.2− | 2001 02 22 | 704 | (0.2+ | 1.6+) | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2001 01 24 | 691 | 0.1− | 0.1− | 2001 02 22 | 704 | 0.2+ | 1.1+ | 2006 10 23 | 691 | 0.2+ | 0.3+ |
| 2001 02 16 | 691 | 0.5+ | 0.3− | 2001 02 22 | 704 | 0.2− | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2001 02 16 | 691 | 0.2+ | 0.3+ | 2001 02 22 | 704 | 0.3+ | 1.0+ | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 2001 02 16 | 691 | 0.7− | 0.1− | 2001 02 27 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 02 22 | 691 | 0.1+ | 0.0 | 2001 02 27 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 02 22 | 691 | 0.0 | 0.0 | 2001 02 27 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 02 22 | 704 | 0.3+ | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.6− | | | | |

### 2001 DL$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.77163 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28308867 | $\omega$ | 240.94285 | | +0.94535020 | | −0.32317629 |
| $a$ | 2.2971414 | $\Omega$ | 137.87124 | | +0.31706530 | | +0.88022809 |
| $e$ | 0.2535623 | $i$ | 3.69625 | | +0.07604333 | | +0.34749907 |
| $P$ | 3.48 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 691 | 0.1+ | 0.4− | 2001 02 22 | 691 | 0.1+ | 0.3+ | 2003 12 01 | 704 | 0.6+ | 0.3− |
| 1997 01 10 | 691 | 0.1− | 0.5− | 2001 02 27 | 691 | 0.7+ | 0.4+ | 2003 12 17 | 699 | 0.9− | 0.1− |
| 1997 01 10 | 691 | 0.3+ | 0.1− | 2001 02 27 | 691 | 0.4+ | 0.3+ | 2003 12 17 | 699 | 0.4− | 1.8− |
| 1998 04 04 | 691 | 0.9− | 1.1− | 2001 02 27 | 691 | 0.2+ | 0.1+ | 2003 12 17 | 699 | 0.7+ | 0.9− |
| 1998 04 04 | 691 | 0.2+ | 1.0− | 2003 11 23 | 691 | 0.0 | 0.1− | 2003 12 17 | 699 | 0.2+ | 0.7+ |
| 1998 04 04 | 691 | 0.3− | 0.9− | 2003 11 23 | 691 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.9− | 0.3+ |
| 2001 02 16 | 691 | 0.3− | 0.3+ | 2003 11 23 | 691 | 0.1+ | 0.2− | 2003 12 22 | 704 | 0.4+ | 0.3+ |
| 2001 02 16 | 691 | 0.5− | 0.5+ | 2003 12 01 | 704 | 1.0+ | 0.5− | 2003 12 22 | 704 | 1.5− | 0.1− |
| 2001 02 16 | 691 | 0.1− | 0.2+ | 2003 12 01 | 704 | 0.6+ | 0.3− | 2003 12 22 | 704 | 0.6− | 0.1+ |
| 2001 02 22 | 691 | 0.0 | 0.2+ | 2003 12 01 | 704 | 0.3+ | 0.1+ | 2003 12 22 | 704 | 0.0 | 0.1− |
| 2001 02 22 | 691 | 0.1+ | 0.4+ | 2003 12 01 | 704 | 0.5+ | 0.1− | | | | |

### 2001 DL$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.37013 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27776693 | $\omega$ | 327.47905 | | +0.68100103 | | +0.73181347 |
| $a$ | 2.3263891 | $\Omega$ | 345.38551 | | −0.64769123 | | +0.58525212 |
| $e$ | 0.1599294 | $i$ | 5.96117 | | −0.34166309 | | +0.34918335 |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 691 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.6− |
| 2001 02 16 | 691 | 0.0 | 0.1− | 2002 08 29 | 644 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 02 16 | 691 | 0.0 | 0.0 | 2005 04 06 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 02 22 | 691 | 0.1+ | 0.1+ | 2005 04 06 | 691 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.7+ |
| 2001 02 22 | 691 | 0.3− | 0.2+ | 2005 04 06 | 691 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.4+ |
| 2001 02 22 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 10 27 | 703 | 1.1− | 0.4+ |
| 2001 03 31 | 691 | 0.8+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.7+ |
| 2001 03 31 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.5− | 0.0 |
| 2001 03 31 | 691 | 0.1− | 0.9+ | 2006 09 19 | 703 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2002 08 13 | 704 | 0.6− | 0.8+ | 2006 10 13 | 691 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2002 08 13 | 704 | 0.1+ | 1.0+ | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2002 08 13 | 704 | 0.3+ | 0.4+ | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2002 08 13 | 704 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.2+ | 0.5+ |
| 2002 08 13 | 704 | 0.3− | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.6+ |
| 2002 08 18 | 644 | 1.4− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.6+ | 0.2− |
| 2002 08 18 | 644 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.6− | 2006 11 14 | 703 | 0.5− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.7+ | 0.2− | 2006 11 14 | 703 | 1.0+ | 1.1+ | | |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.8− | 0.3+ | 2006 11 14 | 703 | 1.0− | 0.2− | | |

**2001 DM$_{61}$ = 2006 VE$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.20223 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30425382 | $\omega$ | 320.95422 | | −0.73654541 | | −0.67638602 |
| $a$ | 2.1893340 | $\Omega$ | 176.48253 | | +0.62721344 | | −0.68392196 |
| $e$ | 0.0680788 | $i$ | 1.56422 | | +0.25318799 | | −0.27340941 |
| $P$ | 3.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.9− | 0.4− | 2001 02 22 | 704 | 0.9− | 1.5+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2001 01 21 | 704 | 0.6+ | 0.1+ | 2001 02 22 | 704 | (1.5+ | 1.9+) | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2001 01 21 | 704 | 0.4+ | 0.7− | 2006 07 21 | G96 | 0.9+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.6− | | |
| 2001 01 21 | 704 | 0.3+ | 0.1+ | 2006 07 21 | G96 | 1.0− | 0.6− | 2006 11 18 | 704 | 0.1+ | 1.1+ | | |
| 2001 02 11 | 209 | 0.7+ | 0.7− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.8− | 0.7− | | |
| 2001 02 11 | 209 | 0.4− | 1.4− | 2006 07 21 | G96 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.7+ | | |
| 2001 02 11 | 209 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.5− | | |
| 2001 02 19 | 704 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.2+ | | |
| 2001 02 19 | 704 | 0.4+ | 1.3+ | 2006 10 31 | 691 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.6− | 0.3+ | | |
| 2001 02 19 | 704 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.2− | 0.4+ | | |
| 2001 02 19 | 704 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.0 | 1.3− | | |
| 2001 02 22 | 704 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.2− | 2006 11 27 | 703 | (0.3+ | 2.1−) | | |
| 2001 02 22 | 704 | 0.6+ | 1.2+ | 2006 11 13 | G96 | 0.2+ | 0.4− | | | | | | |

**2001 DY$_{61}$ = 2006 SC$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.42801 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28082694 | $\omega$ | 192.47544 | | −0.99646938 | | −0.08271042 |
| $a$ | 2.3094587 | $\Omega$ | 342.76050 | | +0.08060263 | | −0.89441069 |
| $e$ | 0.1080781 | $i$ | 2.78768 | | +0.02349440 | | −0.43953214 |
| $P$ | 3.51 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 13 | 704 | 0.2+ | 0.8− | 2001 02 22 | 704 | 0.1− | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.2+ | | |
| 2001 02 13 | 704 | 0.2− | 0.8+ | 2001 02 26 | 209 | 0.4+ | 0.4− | 2006 09 25 | 691 | 0.2+ | 0.3− | | |
| 2001 02 13 | 704 | 1.1+ | 0.2− | 2001 02 26 | 209 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2+ | | |
| 2001 02 13 | 704 | 0.6+ | 0.1− | 2001 02 26 | 209 | 0.2+ | 0.5− | 2006 09 26 | 291 | 0.0 | 0.1+ | | |
| 2001 02 19 | 704 | (1.7+ | 0.0 ) | 2005 02 13 | 809 | 0.0 | 1.3+ | 2006 09 26 | 291 | 0.3− | 0.2+ | | |
| 2001 02 19 | 704 | 0.8+ | 0.4+ | 2005 02 13 | 809 | 0.5+ | 1.0+ | 2006 09 26 | 291 | 0.0 | 0.1+ | | |
| 2001 02 19 | 704 | 1.1− | 0.8+ | 2005 02 13 | 809 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.4− | | |
| 2001 02 22 | 704 | 0.2+ | 1.1+ | 2005 02 13 | 809 | 0.1+ | 1.3+ | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2001 02 22 | 704 | 0.5− | 1.4+ | 2006 09 17 | 691 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.4− | 0.2− | | |
| 2001 02 22 | 704 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | |
| 2001 02 22 | 704 | 0.6− | 0.4− | 2006 09 17 | 691 | 0.2− | 0.2+ | | | | | | |

**2001 DA$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.17096 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17497945 | $\omega$ | 284.67772 | | −0.29383460 | | +0.94744047 |
| $a$ | 3.1657602 | $\Omega$ | 327.35932 | | −0.76160286 | | −0.31206878 |
| $e$ | 0.1434840 | $i$ | 13.57083 | | −0.57760048 | | −0.07049564 |
| $P$ | 5.63 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 699 | 0.7+ | 1.2+ | 2001 02 22 | 704 | 0.1− | 0.7− | 2003 09 18 | 644 | 0.4+ | 0.7+ | | |
| 2001 02 19 | 699 | 0.2+ | 1.2− | 2001 02 22 | 704 | 0.1+ | 0.9+ | 2003 09 18 | 644 | 0.3+ | 0.3+ | | |
| 2001 02 19 | 699 | 0.4+ | 1.0+ | 2001 02 22 | 704 | 0.1− | 0.6+ | 2003 09 18 | 644 | 0.3+ | 0.3+ | | |
| 2001 02 19 | 704 | 0.2− | 0.3+ | 2003 08 05 | 704 | 0.4− | 1.4+ | 2003 10 17 | 645 | 0.0 | 0.1− | | |
| 2001 02 19 | 699 | 0.1+ | 0.1+ | 2003 08 05 | 704 | 0.4+ | 0.1+ | 2003 10 17 | 645 | 0.1− | 0.0 | | |
| 2001 02 19 | 704 | 0.1+ | 0.3+ | 2003 08 05 | 704 | 0.1+ | 0.2− | 2003 10 22 | 645 | 0.0 | 0.0 | | |
| 2001 02 19 | 704 | 0.1− | 0.7+ | 2003 08 19 | 599 | 0.1+ | 0.6+ | 2003 10 22 | 645 | 0.1− | 0.1+ | | |
| 2001 02 19 | 704 | 1.2+ | 1.2+ | 2003 08 19 | 599 | 0.1+ | 0.7+ | 2003 10 24 | 645 | 0.0 | 0.0 | | |
| 2001 02 19 | 704 | 0.1− | 1.3+ | 2003 08 20 | 599 | 0.1− | 0.6+ | 2003 10 24 | 645 | 0.0 | 0.1− | | |
| 2001 02 21 | 691 | 0.2+ | 0.3− | 2003 08 20 | 599 | 0.1+ | 0.8+ | 2006 01 07 | 704 | 0.1− | 0.4− | | |
| 2001 02 21 | 691 | 0.1+ | 0.1+ | 2003 08 24 | 704 | 1.1+ | 0.7+ | 2006 01 07 | 704 | 0.2− | 0.6− | | |
| 2001 02 21 | 691 | 0.1+ | 0.1+ | 2003 08 24 | 704 | 0.8− | 0.1+ | 2006 01 07 | 704 | 0.3− | 0.5− | | |
| 2001 02 22 | 704 | 0.5− | 0.4− | 2003 08 24 | 704 | 1.1− | 0.2+ | | | | | | |

**2001 DW$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.96480 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26686825 | $\omega$ | 283.36877 | | +0.20134292 | | −0.97702361 |
| $a$ | 2.3893042 | $\Omega$ | 154.68816 | | +0.95003512 | | +0.17740703 |
| $e$ | 0.0902418 | $i$ | 9.40952 | | +0.23852525 | | +0.11811697 |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 699 | 0.7+ | 0.1+ | 2003 09 22 | 699 | 0.4− | 0.9+ | 2003 11 29 | 704 | 0.1− | 0.7− | | |
| 2001 02 19 | 699 | 0.5+ | 0.5+ | 2003 09 22 | 644 | 0.1+ | 0.7+ | 2003 11 29 | 704 | 0.7− | 0.6− | | |
| 2001 02 19 | 699 | 0.6+ | 0.1+ | 2003 09 22 | 644 | 0.0 | 0.7+ | 2003 11 29 | 704 | (0.1+ | 1.6−) | | |
| 2001 02 19 | 699 | 0.2+ | 0.9+ | 2003 09 22 | 644 | 0.2+ | 0.6+ | 2003 11 29 | 704 | 0.4+ | 0.9− | | |
| 2001 02 20 | 704 | 0.7+ | 0.8+ | 2003 10 20 | 704 | 1.3+ | 1.0+ | 2005 04 04 | 703 | (1.7− | 0.7−) | | |
| 2001 02 20 | 704 | 0.2+ | 0.4− | 2003 10 20 | 704 | 0.6− | 0.5+ | 2005 04 04 | 703 | 1.0− | 1.1− | | |
| 2001 02 20 | 704 | 0.3− | 0.6− | 2003 10 20 | 704 | (0.4+ | 1.5+) | 2005 04 04 | 703 | 1.2− | 1.2− | | |
| 2001 02 20 | 704 | (0.9− | 1.7+) | 2003 10 20 | 704 | 0.8+ | 0.9+ | 2005 04 04 | 703 | 0.6− | 0.7+ | | |
| 2001 02 20 | 704 | 0.8− | 0.8+ | 2003 10 27 | 683 | (0.5− | 1.6−) | 2005 04 09 | 699 | 1.2+ | 0.8+ | | |
| 2001 02 20 | 704 | 0.2− | 0.4− | 2003 10 27 | 683 | 1.3+ | 0.0 | 2005 04 09 | 699 | 0.5+ | 0.7+ | | |
| 2001 02 20 | 704 | 0.5− | 0.4− | 2003 10 27 | 683 | 0.7+ | 0.6+ | 2005 04 09 | 699 | 1.3+ | 1.1+ | | |
| 2001 02 20 | 704 | 0.8− | 0.3− | 2003 11 20 | 703 | 0.0 | 0.5+ | 2005 04 09 | 699 | (2.3+ | 0.1+) | | |
| 2001 02 22 | 704 | 0.3− | 0.5− | 2003 11 20 | 703 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.7+ | 0.1− | | |
| 2001 02 22 | 704 | 0.4− | 0.7+ | 2003 11 20 | 703 | 0.2− | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.1+ | | |
| 2001 02 22 | 704 | 0.2− | 0.7+ | 2003 11 20 | 703 | 0.7− | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.1− | | |
| 2001 02 22 | 704 | 0.3+ | 0.4− | 2003 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4+ | | |
| 2001 02 22 | 704 | 0.5+ | 0.2+ | 2003 11 24 | 644 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3+ | | |
| 2003 09 22 | 699 | 1.0− | 0.1+ | 2003 11 24 | 644 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2003 09 22 | 699 | 0.1+ | 0.8+ | 2003 11 28 | 645 | 0.0 | 0.2− | 2006 10 21 | G96 | 1.0− | 0.2+ | | |
| 2003 09 22 | 699 | (1.0− | 2.0+) | 2003 11 28 | 645 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− | | |

**2001 DW$_{83}$ = 2005 XV$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.73919 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15450601 | $\omega$ | 355.95100 | | −0.58592433 | | +0.79993239 |
| $a$ | 3.4395830 | $\Omega$ | 238.13099 | | −0.73914354 | | −0.59311780 |
| $e$ | 0.0558757 | $i$ | 8.77909 | | −0.33220400 | | −0.09121100 |
| $P$ | 6.38 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 23 | 807 | 0.1− | 0.3+ | 2002 05 11 | 704 | 1.2+ | 0.7− | 2002 06 06 | 291 | 0.2− | 0.3+ | | |
| 2001 02 23 | 807 | 0.3+ | 0.0 | 2002 05 11 | 704 | 0.8+ | 0.5− | 2005 12 01 | 691 | 0.0 | 0.1+ | | |
| 2001 02 23 | 807 | 0.1+ | 0.2− | 2002 05 11 | 704 | 0.8+ | 0.1+ | 2005 12 01 | 691 | 0.3− | 0.3+ | | |
| 2001 02 23 | 807 | 0.7− | 0.1− | 2002 05 18 | 644 | 0.0 | 0.4+ | 2005 12 01 | 691 | 0.3+ | 0.4+ | | |
| 2001 02 25 | 807 | 0.0 | 0.2− | 2002 05 18 | 644 | 0.1− | 0.5+ | 2005 12 07 | 691 | 0.2+ | 0.1− | | |
| 2001 02 25 | 807 | 0.4+ | 0.0 | 2002 05 18 | 644 | 0.0 | 0.4+ | 2005 12 07 | 691 | 0.2− | 0.1− | | |
| 2001 02 25 | 807 | 0.0 | 0.2− | 2002 06 06 | 291 | 0.0 | 0.3+ | 2005 12 07 | 691 | 0.0 | 0.1− | | |
| 2002 05 11 | 704 | 0.1+ | 0.4− | 2002 06 06 | 291 | 0.5− | 0.0 | | | | | | |

**2001 DQ$_{86}$ = 2006 RR$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.23190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27678553 | $\omega$ | 154.78876 | | −0.95959822 | | −0.28091681 |
| $a$ | 2.3318850 | $\Omega$ | 8.94109 | | +0.23751131 | | −0.83924178 |
| $e$ | 0.1615213 | $i$ | 5.92060 | | +0.15086298 | | −0.46557381 |
| $P$ | 3.56 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 27 | 461 | 0.9+ | 0.1+ | 2001 03 26 | 608 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.0 | | |
| 2001 02 27 | 461 | 0.1− | 0.2− | 2001 03 26 | 608 | 0.2+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1− | | |
| 2001 02 27 | 691 | 0.1+ | 0.1− | 2001 03 26 | 608 | 0.3+ | 1.1+ | 2006 09 19 | 691 | 0.2− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 27 | 691 | 0.1− | 0.4+ | 2002 08 18 | 644 | 0.1+ | 0.7+ | 2006 09 24 | 691 | 0.3− | 0.2+ | | |
| 2001 02 27 | 691 | 0.5+ | 0.3− | 2002 08 18 | 644 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.4+ | | |
| 2001 02 28 | 461 | 0.6+ | 0.1+ | 2002 08 19 | 644 | 0.1+ | 0.2− | 2006 09 24 | 691 | 0.3− | 0.5+ | | |
| 2001 02 28 | 461 | 0.2+ | 0.1− | 2002 08 30 | 644 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.3− | | |
| 2001 03 18 | 608 | 0.6− | 0.1− | 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.5− | | |
| 2001 03 18 | 608 | 0.2+ | 0.3− | 2002 09 15 | 644 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.1− | | |
| 2001 03 18 | 608 | 0.5+ | 0.3+ | 2006 09 14 | 691 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.0 | | |
| 2001 03 19 | 699 | 0.4+ | 0.7+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.2− | | |
| 2001 03 19 | 699 | 1.0− | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.4− | 2006 09 28 | 691 | 0.0 | 0.0 | | |
| 2001 03 19 | 699 | 1.4− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.4+ | 0.3+ | | |
| 2001 03 19 | 699 | (2.9− | 1.5+) | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.2+ | | |
| 2001 03 23 | 699 | 0.2+ | 1.1+ | 2006 09 15 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.5− | 0.6+ | | |
| 2001 03 23 | 699 | 0.5+ | 0.7+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.7+ | | |
| 2001 03 23 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.1− | | | | | | |
| 2001 03 23 | 699 | 0.5+ | 0.8+ | 2006 09 18 | 691 | 0.1+ | 0.2− | | | | | | |

### 2001 DD$_{91}$ = 2006 QT$_{163}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.00589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27757145 | $\omega$ | 300.74542 | | +0.00760927 | | −0.99790727 |
| $a$ | 2.3274812 | $\Omega$ | 148.62286 | | +0.95444840 | | −0.01190632 |
| $e$ | 0.0730727 | $i$ | 7.08409 | | +0.29827900 | | +0.06355565 |
| $P$ | 3.55 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 704 | 0.4+ | 1.0+ | 2001 03 16 | 691 | 0.3+ | 0.3− | 2006 08 22 | 947 | 0.4+ | 0.4+ | | |
| 2001 02 20 | 704 | 0.4− | 0.6+ | 2001 03 16 | 691 | 0.3− | 0.1+ | 2006 08 23 | 947 | 0.2− | 0.1+ | | |
| 2001 02 20 | 704 | 0.8− | 0.4+ | 2001 03 16 | 691 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 02 20 | 704 | 0.2+ | 0.8+ | 2005 05 13 | 691 | 0.2− | 0.0 | 2006 08 28 | 691 | 0.2− | 0.0 | | |
| 2001 02 23 | 691 | 0.1− | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.1− | 0.0 | | |
| 2001 02 23 | 691 | 0.4+ | 0.1+ | 2005 05 13 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.2− | | |
| 2001 02 23 | 691 | 0.2+ | 0.1− | 2006 08 13 | 644 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.4+ | 1.1− | | |
| 2001 02 26 | 209 | 0.5− | 0.3− | 2006 08 13 | 644 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.8− | 1.2+ | | |
| 2001 02 26 | 209 | 0.8− | 0.3− | 2006 08 13 | 644 | 0.2+ | 0.6+ | 2006 08 28 | 703 | (0.1+ | 1.8−) | | |
| 2001 02 26 | 209 | 0.0 | 0.1− | 2006 08 22 | 947 | 0.3− | 0.0 | | | | | | |

### 2001 DF$_{106}$ = 2000 AJ$_{250}$ = 2006 KG$_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.67240 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18382002 | $\omega$ | 277.32943 | | +0.09480070 | | +0.99549615 |
| $a$ | 3.0634268 | $\Omega$ | 358.11021 | | −0.90736548 | | +0.08620481 |
| $e$ | 0.1576369 | $i$ | 0.85450 | | −0.40951277 | | +0.03944801 |
| $P$ | 5.36 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 23 | 691 | 0.8− | 0.4+ | 2003 10 04 | 941 | 0.2− | 0.8+ | 2006 03 23 | G96 | 0.1+ | 0.2− | | |
| 1992 09 23 | 691 | 0.4− | 0.5+ | 2003 10 04 | 941 | 0.5− | 0.5+ | 2006 04 20 | G96 | 0.2− | 0.0 | | |
| 1992 09 23 | 691 | 0.4− | 0.3+ | 2003 10 04 | 941 | 0.6− | 0.6+ | 2006 04 20 | G96 | 0.0 | 0.1− | | |
| 1998 11 17 | 691 | 0.6+ | 0.1− | 2003 10 04 | 941 | 0.5− | 0.7+ | 2006 04 20 | G96 | 0.2− | 0.1+ | | |
| 1998 11 17 | 691 | 0.3+ | 0.3+ | 2003 10 04 | 941 | 0.7+ | 0.1+ | 2006 04 20 | G96 | 0.5− | 0.0 | | |
| 1998 11 27 | 691 | 0.3+ | 0.3− | 2003 10 28 | 704 | 0.1− | 0.2+ | 2006 05 03 | G96 | 0.3+ | 0.2+ | | |
| 1998 11 27 | 691 | 0.2+ | 0.3+ | 2003 10 28 | 704 | 0.2− | 0.4+ | 2006 05 03 | G96 | 0.3− | 0.1− | | |
| 1998 11 27 | 691 | 0.0 | 0.3− | 2003 10 28 | 704 | 0.2+ | 0.9+ | 2006 05 03 | G96 | 0.3− | 0.3− | | |
| 2000 01 05 | 691 | 0.3− | 0.2− | 2006 01 26 | G96 | 0.5− | 0.2− | 2006 05 03 | G96 | 0.3− | 0.0 | | |
| 2000 01 05 | 691 | 0.1− | 0.4− | 2006 01 26 | G96 | 0.5− | 0.0 | 2006 05 25 | G96 | 0.3− | 0.2− | | |
| 2000 01 05 | 691 | 0.5− | 0.4− | 2006 01 26 | G96 | 0.3− | 0.1− | 2006 05 25 | G96 | 0.6− | 0.3+ | | |
| 2000 01 12 | 691 | 0.4+ | 1.7+ | 2006 02 23 | G96 | 0.1+ | 0.2+ | 2006 05 25 | G96 | 0.4− | 0.0 | | |
| 2000 01 12 | 691 | 0.1+ | 0.4− | 2006 02 23 | G96 | 0.0 | 0.4+ | 2006 05 25 | G96 | 0.3+ | 0.2+ | | |
| 2000 01 12 | 691 | 0.1+ | 0.3− | 2006 02 23 | G96 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.1− | 0.2+ | | |
| 2001 02 20 | 691 | 0.6+ | 0.3+ | 2006 02 23 | G96 | 0.1− | 0.6+ | 2006 05 26 | G96 | 0.2− | 0.3+ | | |
| 2001 02 20 | 691 | 0.9+ | 0.3+ | 2006 03 05 | G96 | 0.1− | 0.4− | 2006 05 26 | G96 | 0.3− | 0.1+ | | |
| 2001 02 20 | 691 | 0.8+ | 0.3+ | 2006 03 05 | G96 | 1.1+ | 0.2+ | 2006 05 26 | G96 | 0.0 | 0.1− | | |
| 2001 02 26 | 209 | 0.7− | 0.5− | 2006 03 05 | G96 | 0.1− | 0.1− | 2006 05 28 | G96 | 0.4− | 0.1− | | |
| 2001 02 26 | 209 | 0.2+ | 1.0− | 2006 03 05 | 703 | 2.0− | 0.0 | 2006 05 28 | G96 | 0.2− | 0.0 | | |
| 2001 02 27 | 209 | 0.4− | 0.0 | 2006 03 05 | G96 | 0.7+ | 0.8− | 2006 05 28 | G96 | 0.3− | 0.1− | | |
| 2001 03 24 | 691 | 0.2+ | 0.6+ | 2006 03 05 | 703 | 0.5+ | 0.3+ | 2006 05 28 | G96 | 0.5− | 0.4+ | | |
| 2001 03 24 | 691 | 0.3+ | 0.3+ | 2006 03 05 | 703 | 2.5− | 0.6− | 2006 05 30 | G96 | 0.0 | 0.2− | | |
| 2001 03 24 | 691 | 0.4+ | 0.6+ | 2006 03 05 | 703 | 1.8− | 0.2+ | 2006 05 30 | G96 | 0.1− | 0.1+ | | |
| 2003 09 26 | 704 | 0.0 | 0.5+ | 2006 03 23 | G96 | 0.6− | 0.1+ | 2006 05 30 | G96 | 0.1+ | 0.2+ | | |
| 2003 09 26 | 704 | 0.7+ | 0.0 | 2006 03 23 | G96 | 0.5− | 0.1+ | 2006 05 30 | G96 | 1.1+ | 0.3+ | | |
| 2003 09 26 | 704 | 0.0 | 0.2+ | 2006 03 23 | G96 | 0.6− | 0.2− | | | | | | |

### 2001 DU$_{109}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.10713 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18542447 | $\omega$ | 127.05738 | | −0.96665340 | | +0.23207406 |
| $a$ | 3.0457296 | $\Omega$ | 66.58946 | | −0.25595225 | | −0.86176425 |
| $e$ | 0.0945909 | $i$ | 6.77578 | | −0.00834531 | | −0.45111418 |
| $P$ | 5.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.9+ | 0.4+ | 2002 04 05 | 699 | 0.5+ | 0.1− | 2002 05 08 | 704 | 0.1− | 0.3− | | |
| 2001 01 04 | 704 | 0.4+ | 0.6− | 2002 04 05 | 699 | 0.7+ | 0.6+ | 2002 05 08 | 704 | 0.4− | 0.3− | | |
| 2001 01 04 | 704 | 0.5− | 0.8− | 2002 04 05 | 699 | 0.7− | 0.1+ | 2002 05 08 | 704 | 0.4+ | 1.0− | | |
| 2001 01 19 | 704 | 0.1+ | 0.4− | 2002 04 05 | 699 | 0.2+ | 0.7− | 2002 05 08 | 704 | 0.9− | 1.1− | | |
| 2001 01 19 | 704 | 0.3+ | 0.4+ | 2002 04 14 | 644 | 0.7+ | 0.5+ | 2002 05 19 | 644 | 0.2− | 0.2+ | | |
| 2001 01 19 | 704 | 0.6− | 0.5+ | 2002 04 14 | 644 | 0.6+ | 0.6+ | 2002 05 19 | 644 | 0.3+ | 0.4+ | | |
| 2001 01 19 | 704 | 0.0 | 0.5− | 2002 04 14 | 644 | 1.0+ | 0.6+ | 2002 05 19 | 644 | 0.0 | 0.2+ | | |
| 2001 01 19 | 704 | 0.2− | 1.8+ | 2002 05 02 | 699 | 0.5+ | 0.7+ | 2004 10 05 | 699 | 0.7− | 0.5+ | | |
| 2001 02 21 | 645 | 0.0 | 0.0 | 2002 05 02 | 699 | 1.0− | 1.3+ | 2004 10 05 | 699 | 0.1+ | 1.6+ | | |
| 2001 02 21 | 645 | 0.0 | 0.0 | 2002 05 02 | 699 | 0.0 | 0.1− | 2004 10 05 | 699 | 0.0 | 1.5− | | |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2002 05 02 | 699 | 1.2− | 0.8− | 2004 10 05 | 699 | 0.3+ | 0.0 | | |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2002 05 08 | 704 | (2.9− | 1.3−) | | | | | | |

### 2001 DP$_{110}$ = 2006 KP$_{120}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.69521 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24382103 | $\omega$ | 354.96139 | | −0.21482805 | | −0.86378238 |
| $a$ | 2.5375929 | $\Omega$ | 106.84965 | | +0.91187547 | | −0.34452311 |
| $e$ | 0.0725780 | $i$ | 28.43865 | | +0.34975997 | | +0.36767354 |
| $P$ | 4.04 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 645 | 0.0 | 0.0 | 2004 12 21 | 703 | 0.6− | 0.8− | 2005 01 16 | 704 | 0.1− | 0.6+ | | |
| 2001 02 21 | 645 | 0.0 | 0.0 | 2004 12 21 | 703 | 0.8− | 0.1− | 2005 01 16 | 704 | 0.3− | 0.4+ | | |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2004 12 21 | 703 | 0.7− | 0.2− | 2006 05 31 | G96 | 0.3− | 0.1− | | |
| 2001 02 22 | 645 | 0.0 | 0.1+ | 2005 01 06 | 703 | 0.2− | 0.4+ | 2006 05 31 | G96 | 0.4− | 0.1− | | |
| 2001 04 15 | 645 | 0.1+ | 0.1− | 2005 01 06 | 703 | 0.8+ | 1.1− | 2006 05 31 | G96 | 0.2− | 0.3− | | |
| 2001 04 15 | 645 | 0.0 | 0.1− | 2005 01 06 | 703 | 1.1− | 0.4+ | 2006 05 31 | G96 | 0.7− | 0.1− | | |
| 2004 12 14 | 704 | 0.7+ | 0.5+ | 2005 01 06 | 703 | 0.1− | 0.2+ | 2006 06 04 | 691 | 0.4+ | 0.0 | | |
| 2004 12 14 | 704 | 1.3+ | 0.7+ | 2005 01 16 | 704 | 0.1+ | 0.1− | 2006 06 04 | 691 | 0.0 | 0.1+ | | |
| 2004 12 14 | 704 | 1.6+ | 0.1− | 2005 01 16 | 704 | 0.1+ | 0.0 | 2006 06 04 | 691 | 0.2+ | 0.2+ | | |
| 2004 12 21 | 703 | 0.8− | 0.7− | 2005 01 16 | 704 | 0.0 | 0.5+ | | | | | | |

### 2001 DD$_{111}$ = 2006 AW$_{6}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.48533 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18075690 | $\omega$ | 174.91267 | | −0.63568784 | | +0.75802640 |
| $a$ | 3.0979386 | $\Omega$ | 55.53057 | | −0.71434409 | | −0.50598922 |
| $e$ | 0.1613369 | $i$ | 10.19584 | | −0.29259785 | | −0.41154695 |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 03 | 704 | 1.0+ | 0.9− | 2001 03 23 | 699 | 0.6− | 0.1− | 2004 11 19 | 703 | 0.1− | 0.5− | | |
| 2001 02 03 | 704 | 0.5− | 0.6+ | 2004 10 15 | 691 | 0.0 | 0.1− | 2004 11 19 | 703 | 1.1− | 1.1+ | | |
| 2001 02 03 | 704 | 0.7+ | 0.3+ | 2004 10 15 | 691 | 0.3+ | 0.1− | 2004 11 19 | 703 | 0.4− | 1.0− | | |
| 2001 02 03 | 704 | 0.8− | 1.1+ | 2004 10 15 | 691 | 0.1+ | 0.2+ | 2006 01 05 | 703 | 0.6− | 0.6+ | | |
| 2001 02 16 | 704 | 1.3− | 0.1− | 2004 10 23 | 691 | 0.1− | 0.0 | 2006 01 05 | 703 | 1.0− | 0.2− | | |
| 2001 02 16 | 704 | 0.5− | 1.2− | 2004 10 23 | 691 | 0.3+ | 0.3− | 2006 01 05 | 703 | 0.9− | 1.1− | | |
| 2001 02 16 | 704 | 2.1+ | 0.5+ | 2004 10 23 | 691 | 0.1+ | 0.1+ | 2006 01 05 | 703 | 0.7− | 0.8− | | |
| 2001 02 19 | 699 | 0.9− | 0.5+ | 2004 11 04 | 691 | 0.0 | 0.1− | 2006 01 07 | 704 | 1.4+ | 0.6− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 699 | 0.3− | 0.4− | 2004 11 04 | 691 | 0.2− | 0.1− | 2006 01 07 | 704 | 1.4+ | 1.2− |
| 2001 02 19 | 699 | 0.1− | 1.5+ | 2004 11 04 | 691 | 0.0 | 0.2+ | 2006 01 07 | 704 | 0.4− | 0.4+ |
| 2001 02 19 | 699 | 0.9− | 0.2− | 2004 11 19 | 691 | 0.1+ | 0.2+ | 2006 01 07 | 704 | 0.2− | 1.1+ |
| 2001 03 23 | 699 | 0.5+ | 0.9+ | 2004 11 19 | 691 | 0.0 | 0.4+ | 2006 01 07 | 704 | 0.7+ | 0.1− |
| 2001 03 23 | 699 | 1.7+ | 0.3+ | 2004 11 19 | 691 | 0.0 | 0.2+ | | | | |
| 2001 03 23 | 699 | 0.6+ | 1.4− | 2004 11 19 | 703 | 0.9− | 0.8− | | | | |

**2001 EZ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.02845 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23100800 | $\omega$ | 165.05701 | | −0.65775537 | | +0.75157853 |
| $a$ | 2.6305791 | $\Omega$ | 63.78686 | | −0.69665351 | | −0.58183565 |
| $e$ | 0.0702212 | $i$ | 3.18689 | | −0.28641187 | | −0.31080057 |
| $P$ | 4.27 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 1.1+ | 0.6+ | 2001 03 18 | 608 | 0.2+ | 1.0+ | 2005 01 19 | 691 | 0.0 | 0.1+ |
| 1999 11 12 | 704 | 1.2− | 0.8+ | 2001 03 18 | 608 | 0.5− | 0.1+ | 2005 01 19 | 691 | 0.1− | 0.1+ |
| 1999 11 12 | 704 | 0.6− | 0.5+ | 2002 07 08 | 644 | 0.7− | 0.2− | 2005 01 19 | 691 | 0.1+ | 0.1− |
| 2001 03 02 | 699 | 0.9+ | 0.2− | 2002 07 08 | 644 | 0.1− | 1.8+ | 2005 02 01 | 644 | 0.1− | 0.0 |
| 2001 03 02 | 699 | 0.2− | 0.6+ | 2002 07 08 | 644 | 0.4− | 0.5− | 2005 02 01 | 644 | 0.1− | 0.3+ |
| 2001 03 02 | 699 | 0.1+ | 0.7+ | 2002 07 08 | 644 | 0.5+ | 1.9+ | 2005 02 01 | 644 | 0.4+ | 0.5+ |
| 2001 03 02 | 699 | 0.0 | 0.7+ | 2002 07 08 | 644 | 0.3− | 0.1− | 2005 02 14 | 704 | 0.5+ | 0.3− |
| 2001 03 03 | 704 | 0.1+ | 1.1− | 2002 07 08 | 644 | 0.0 | 1.6+ | 2005 02 14 | 704 | 0.2+ | 0.3+ |
| 2001 03 03 | 704 | 0.1+ | 0.2+ | 2002 08 09 | 807 | 0.1− | 0.1+ | 2005 02 14 | 704 | 0.1− | 0.9+ |
| 2001 03 03 | 704 | 0.2− | 0.5+ | 2002 08 09 | 807 | 0.2− | 0.3+ | 2005 02 14 | 704 | 0.2+ | 1.0+ |
| 2001 03 03 | 704 | 0.5+ | 0.1− | 2003 11 21 | 691 | 0.1+ | 0.2+ | 2005 03 04 | 691 | 0.2+ | 0.2− |
| 2001 03 03 | 704 | 0.8+ | 0.6+ | 2003 11 21 | 691 | 0.0 | 0.2+ | 2005 03 04 | 691 | 0.1− | 0.0 |
| 2001 03 18 | 608 | 0.1+ | 0.1+ | 2003 11 21 | 691 | 0.1− | 0.1+ | 2005 03 04 | 691 | 0.3− | 0.4− |

**2001 EO$_8$ = 2006 SC$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.51035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27750439 | $\omega$ | 100.12854 | | −0.99324741 | | +0.11166039 |
| $a$ | 2.3278562 | $\Omega$ | 86.28754 | | −0.11491191 | | −0.90952298 |
| $e$ | 0.1225715 | $i$ | 1.80826 | | −0.01596349 | | −0.40037471 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | 0.9+ | 0.2− | 2001 03 19 | 704 | 0.4+ | 1.0− | 2006 09 27 | G96 | 0.3+ | 0.6+ |
| 2001 03 02 | 699 | 0.6− | 0.1+ | 2001 03 19 | 704 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 1.4− | 0.2− |
| 2001 03 02 | 699 | 0.1− | 0.8+ | 2001 03 19 | 704 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 03 02 | 699 | 0.7− | 0.1− | 2001 03 27 | 608 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2001 03 03 | 704 | 1.2+ | 0.2− | 2001 03 27 | 608 | 0.0 | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2001 03 03 | 704 | 0.2+ | 0.5− | 2001 03 27 | 608 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.2+ | 0.4− |
| 2001 03 03 | 704 | 1.0− | 0.4− | 2006 09 17 | 691 | (10.8+ | 5.8+) | 2006 10 01 | 691 | 0.0 | 0.5+ |
| 2001 03 03 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 691 | (14.0+ | 7.1+) | | | | |
| 2001 03 19 | 704 | 1.0− | 0.7+ | 2006 09 17 | 691 | (16.7+ | 7.3+) | | | | |

**2001 EF$_9$ = 2006 SL$_{203}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.14928 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26713464 | $\omega$ | 194.74012 | | −0.95389804 | | +0.30011573 |
| $a$ | 2.3877155 | $\Omega$ | 2.72997 | | −0.26856598 | | −0.84905171 |
| $e$ | 0.1646217 | $i$ | 3.62695 | | −0.13398078 | | −0.43478931 |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2+ | 0.3+ | 2001 03 21 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 691 | 0.3− | 0.4+ |
| 1995 10 15 | 691 | 0.2+ | 0.1− | 2001 03 21 | 608 | (0.1+ | 1.6−) | 2006 09 16 | 691 | 0.4− | 0.5+ |
| 1995 10 15 | 691 | 0.4− | 0.3− | 2001 03 21 | 608 | 0.2+ | 1.4− | 2006 09 16 | 691 | 0.4− | 0.5+ |
| 2001 03 02 | 699 | 0.1+ | 0.8+ | 2001 03 21 | 608 | (0.1+ | 1.6−) | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2001 03 02 | 699 | 0.2+ | 0.7+ | 2001 03 29 | 699 | (0.4− | 1.8+) | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2001 03 02 | 699 | 0.2+ | 0.8+ | 2001 03 29 | 699 | 1.1+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2001 03 02 | 699 | 0.1− | 0.5+ | 2001 03 29 | 699 | 0.7− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2001 03 03 | 704 | 0.9+ | 1.0+ | 2001 03 29 | 699 | 1.1− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.5+ |
| 2001 03 03 | 704 | 0.4+ | 0.4+ | 2005 01 17 | 809 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2001 03 03 | 704 | 0.7+ | 0.1+ | 2005 01 17 | 809 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2001 03 03 | 704 | 0.5+ | 1.0+ | 2005 01 17 | 809 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2001 03 03 | 704 | 0.7+ | 0.2+ | 2005 05 19 | E12 | 0.3− | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.3+ |
| 2001 03 18 | 699 | 0.6+ | 0.1− | 2005 05 19 | E12 | 0.0 | 0.8+ | 2006 10 16 | G96 | 0.7− | 0.2− |
| 2001 03 18 | 699 | 1.3− | 0.9+ | 2005 05 19 | E12 | 0.4+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2001 03 18 | 699 | 0.3− | 0.3− | 2005 05 19 | E12 | 0.7+ | 0.6+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2001 03 18 | 699 | 0.5+ | 0.1+ | 2006 08 21 | 807 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.5+ |
| 2001 03 21 | 691 | 0.1+ | 0.0 | 2006 08 21 | 807 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 03 21 | 691 | 0.0 | 0.0 | 2006 08 22 | 807 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.5− | 0.3+ |

**2001 EY$_{20}$ = 2006 UC$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.51773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28819895 | $\omega$ | 263.47101 | | −0.96391971 | | −0.25802114 |
| $a$ | 2.2699056 | $\Omega$ | 261.56169 | | +0.26281206 | | −0.88339584 |
| $e$ | 0.1237975 | $i$ | 3.79390 | | +0.04229196 | | −0.39119929 |
| $P$ | 3.42 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.2+ | 0.4− | 2001 03 15 | 699 | 0.2− | 1.4+ | 2001 03 20 | 608 | 0.2− | 1.4− |
| 2001 03 03 | 704 | 1.3+ | 0.2− | 2001 03 18 | 704 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.2− |
| 2001 03 03 | 704 | 0.7− | 0.2+ | 2001 03 18 | 704 | 0.4+ | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2001 03 03 | 704 | 0.5− | 0.8− | 2001 03 18 | 704 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2001 03 15 | 699 | 0.4− | 0.6+ | 2001 03 18 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.3+ |
| 2001 03 15 | 699 | 0.2+ | 0.3+ | 2001 03 20 | 608 | 0.1+ | 1.4− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2001 03 15 | 699 | 0.3+ | 1.2+ | 2001 03 20 | 608 | 0.2+ | 1.8− | 2006 10 17 | 691 | 0.1− | 0.2+ |

**2001 EZ$_{22}$ = 2006 UK$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.71997 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26888279 | $\omega$ | 148.85165 | | −0.60445684 | | +0.79564763 |
| $a$ | 2.3773551 | $\Omega$ | 83.92907 | | −0.73887150 | | −0.54129420 |
| $e$ | 0.1435672 | $i$ | 2.28858 | | −0.29782686 | | −0.27192911 |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.1+ | 0.1− | 2001 03 26 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2001 03 15 | 691 | 0.4− | 0.0 | 2001 03 26 | 704 | 0.1− | 0.9+ | 2006 10 23 | 691 | 0.3+ | 0.3− |
| 2001 03 15 | 691 | 0.2+ | 0.1+ | 2001 03 26 | 704 | 0.4− | 1.2+ | 2006 10 23 | 691 | 0.7− | 0.7− |
| 2001 03 21 | 608 | 0.1+ | 1.1− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 03 21 | 608 | 0.1+ | 0.8− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2001 03 21 | 608 | 0.6+ | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.0 |

**2001 ES$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.62838 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27695058 | $\omega$ | 331.64107 | | −0.32910838 | | +0.94389608 |
| $a$ | 2.3309584 | $\Omega$ | 279.13334 | | −0.86105370 | | −0.31186072 |
| $e$ | 0.1873699 | $i$ | 1.58719 | | −0.38765216 | | −0.10864196 |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.1− | 0.0 | 2001 03 26 | 608 | 0.1− | 0.9− | 2006 11 16 | 691 | 0.3+ | 0.5+ |
| 1995 10 24 | 691 | 0.3+ | 0.0 | 2001 03 26 | 608 | 0.2+ | 0.7− | 2006 11 16 | 691 | 0.1+ | 0.4+ |
| 1995 10 24 | 691 | 0.0 | 0.6− | 2001 04 16 | 645 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2001 04 16 | 645 | 0.1− | 0.0 | 2006 11 18 | A13 | 0.2− | 0.2− |
| 2000 12 23 | 645 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 18 | A13 | 0.2− | 0.3− |
| 2001 03 15 | 608 | 0.3+ | 0.7− | 2006 10 21 | 691 | 0.4− | 0.3− | 2006 11 18 | A13 | 1.0− | 0.7− |
| 2001 03 15 | 608 | 1.1+ | 1.0− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 18 | A13 | 0.1− | 0.4− |
| 2001 03 15 | 608 | 1.2+ | 1.1− | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.4+ | 0.5− |
| 2001 03 18 | 704 | 0.5− | 0.8+ | 2006 11 09 | 691 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2001 03 18 | 704 | 0.4− | 0.3+ | 2006 11 09 | 691 | 0.3+ | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2001 03 18 | 704 | 0.3+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.4+ | 0.9+ | 2006 11 13 | 691 | 0.4− | 0.1− | |
| 2001 03 26 | 608 | 0.0 | 0.8− | 2006 11 13 | 691 | 0.3+ | 0.2− | |

**2001 EM$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.56144 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29125312 | $\omega$ | 6.63274 | | −0.99669937 | | +0.08113776 |
| $a$ | 2.2540091 | $\Omega$ | 178.01542 | | −0.07755783 | | −0.94205345 |
| $e$ | 0.1177647 | $i$ | 4.39300 | | −0.02398238 | | −0.32550264 |
| $P$ | 3.38 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | 0.6+ | 0.9− | 2001 03 18 | 699 | 0.3− | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.2− |
| 2001 03 02 | 699 | 0.6+ | 0.1+ | 2001 03 18 | 699 | 0.7− | 0.8+ | 2006 10 18 | 691 | 0.3+ | 0.1− |
| 2001 03 02 | 699 | 1.1− | 0.4− | 2001 03 27 | 608 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2001 03 02 | 699 | 0.1− | 0.2+ | 2001 03 27 | 608 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 03 18 | 704 | 0.8+ | 0.0 | 2001 03 27 | 608 | 0.6− | 0.5− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2001 03 18 | 704 | 0.6+ | 0.1− | 2001 04 15 | 699 | (1.6+ | 0.3+) | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 03 18 | 704 | (0.4+ | 1.6−) | 2001 04 15 | 699 | (2.4+ | 0.3+) | 2006 11 17 | G96 | 0.6+ | 0.3− |
| 2001 03 18 | 699 | 0.4+ | 0.3− | 2001 04 15 | 699 | (3.7+ | 1.8+) | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 03 18 | 704 | 0.6+ | 0.4− | 2001 04 15 | 699 | (1.8+ | 2.1+) | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2001 03 18 | 704 | 0.7+ | 0.0 | 2001 04 16 | 645 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.7+ | 0.2− |
| 2001 03 18 | 699 | 0.7− | 0.6+ | 2001 04 16 | 645 | 0.0 | 0.0 | | | | |

**2001 ES$_{27}$ = 2004 CH$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.02486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30227878 | $\omega$ | 297.39355 | | −0.62003884 | | −0.78447838 |
| $a$ | 2.1988601 | $\Omega$ | 190.95028 | | +0.74039621 | | −0.57997241 |
| $e$ | 0.0337322 | $i$ | 3.64088 | | +0.25954823 | | −0.21960347 |
| $P$ | 3.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.2− | 0.3+ | 2001 04 13 | 691 | 0.2+ | 0.3+ | 2002 08 27 | 644 | 0.2+ | 0.5+ |
| 1998 05 01 | 704 | 0.6+ | 0.5− | 2001 04 13 | 691 | 0.1− | 0.4+ | 2004 02 11 | 644 | 0.1− | 0.3+ |
| 1998 05 01 | 704 | 0.9− | 1.1− | 2001 04 13 | 691 | 0.2+ | 0.2+ | 2004 02 11 | 644 | 0.1− | 0.1+ |
| 1998 05 01 | 704 | (2.4− | 0.0 ) | 2002 08 17 | 644 | 0.5− | 1.0+ | 2004 02 11 | 644 | 0.2− | 0.2+ |
| 2001 03 02 | 699 | (0.4− | 1.8+) | 2002 08 17 | 644 | 0.6− | 1.2+ | 2004 02 17 | 704 | 0.4+ | 0.9+ |
| 2001 03 02 | 699 | (0.6+ | 2.7+) | 2002 08 17 | 644 | 0.6− | 1.1+ | 2004 02 17 | 704 | 0.1− | 1.0+ |
| 2001 03 02 | 699 | (0.2+ | 2.0+) | 2002 08 17 | 644 | (0.3+ | 1.8+) | 2004 02 17 | 704 | 0.5− | 0.3+ |
| 2001 03 02 | 699 | (1.0+ | 2.3+) | 2002 08 17 | 644 | (0.2+ | 1.7+) | 2004 02 17 | 704 | 0.1− | 0.2− |
| 2001 03 24 | 704 | 0.1− | 0.0 | 2002 08 17 | 644 | 0.1+ | 1.4+ | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2001 03 24 | 704 | 0.2+ | 0.4+ | 2002 08 27 | 644 | 0.1− | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2001 03 24 | 704 | 1.1+ | 0.0 | 2002 08 27 | 644 | 0.2− | 0.1+ | 2006 12 01 | 691 | 0.1+ | 0.1+ |

**2001 ET$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.64982 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20379359 | $\omega$ | 126.12561 | | −0.59236993 | | −0.80566609 |
| $a$ | 2.8598442 | $\Omega$ | 0.19996 | | +0.72406653 | | −0.53245842 |
| $e$ | 0.1844310 | $i$ | 2.56410 | | +0.35330657 | | −0.25959621 |
| $P$ | 4.84 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.5+ | 0.7+ | 2004 10 07 | 691 | 0.3+ | 0.0 | 2006 03 25 | 691 | 0.1+ | 0.3− |
| 1999 10 06 | 704 | 0.8− | 0.2+ | 2004 10 07 | 691 | 0.1+ | 0.3− | 2006 03 25 | 691 | 0.1+ | 0.3+ |
| 1999 10 06 | 704 | 0.6− | 1.1+ | 2004 10 07 | 691 | 0.1+ | 0.1− | 2006 03 25 | 691 | 0.3+ | 0.0 |
| 1999 10 06 | 704 | 0.1− | 0.1− | 2004 10 15 | 691 | 0.2− | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.0 |
| 2001 03 02 | 699 | 0.6− | 1.1+ | 2004 10 15 | 691 | 0.1− | 0.1− | 2006 03 25 | G96 | 0.2− | 0.0 |
| 2001 03 02 | 699 | 0.6+ | 0.3− | 2004 10 15 | 691 | 0.1− | 0.1− | 2006 03 25 | G96 | 0.2− | 0.1+ |
| 2001 03 02 | 699 | 0.2− | 0.7+ | 2006 01 27 | G96 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.1+ | 0.2− |
| 2001 03 02 | 699 | 0.4+ | 0.6+ | 2006 01 27 | G96 | 0.1+ | 0.2− | 2006 04 07 | 703 | 0.5− | 1.0− |
| 2001 03 18 | 704 | 2.0+ | 1.1+ | 2006 01 27 | G96 | 1.0− | 0.0 | 2006 04 07 | 703 | 0.3− | 0.1+ |
| 2001 03 18 | 704 | 1.3+ | 1.4+ | 2006 01 27 | G96 | 0.3− | 0.2− | 2006 04 07 | 703 | 0.8+ | 0.2− |
| 2001 03 18 | 704 | 0.0 | 0.7+ | 2006 02 24 | G96 | 0.2− | 0.2+ | 2006 04 07 | 703 | 1.1+ | 0.8+ |
| 2001 03 18 | 704 | 1.7+ | 1.9+ | 2006 02 24 | G96 | 0.4− | 0.6+ | 2006 04 19 | 691 | 0.2− | 0.1− |
| 2001 04 16 | 645 | 0.1− | 0.2− | 2006 02 24 | G96 | 0.7− | 0.3− | 2006 04 19 | 691 | 0.3+ | 0.4+ |
| 2001 04 16 | 645 | 0.2− | 0.3− | 2006 02 24 | G96 | 0.9− | 0.2+ | 2006 04 19 | 691 | 0.2+ | 0.4+ |

**2001 FA$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.72528 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27318748 | $\omega$ | 180.84104 | | −0.92771843 | | −0.37323223 |
| $a$ | 2.3523152 | $\Omega$ | 337.24097 | | +0.34256917 | | −0.84487525 |
| $e$ | 0.1335989 | $i$ | 0.89145 | | +0.14827301 | | −0.38325384 |
| $P$ | 3.61 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 691 | 0.3+ | 0.3+ | 2001 03 20 | 701 | 0.3− | 0.4+ | 2003 12 01 | 691 | 0.0 | 0.1− |
| 2001 02 20 | 691 | 0.1− | 0.3+ | 2001 03 26 | 695 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.9+ |
| 2001 02 20 | 691 | 0.2+ | 0.4+ | 2001 03 26 | 695 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2001 03 19 | 701 | 1.1+ | 1.1− | 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2001 03 19 | 701 | (0.8+ | 2.3−) | 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 09 26 | 291 | 0.3− | 0.2+ |
| 2001 03 20 | 701 | 0.4+ | 0.2+ | 2003 12 01 | 691 | 0.1+ | 0.1− | 2006 09 26 | 291 | 0.1− | 0.2+ |
| 2001 03 20 | 701 | (1.0− | 1.6+) | 2003 12 01 | 691 | 0.1− | 0.0 | 2006 09 26 | 291 | 0.3− | 0.3+ |

**2001 FU$_{19}$ = 2006 WJ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.33414 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27509809 | $\omega$ | 72.64415 | | +0.01141802 | | +0.99962546 |
| $a$ | 2.3414110 | $\Omega$ | 198.06470 | | −0.94518119 | | +0.00267179 |
| $e$ | 0.2132528 | $i$ | 4.60041 | | −0.32634667 | | +0.02723613 |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 15 | 691 | 0.3+ | 0.2+ | 2001 03 24 | 704 | 0.2+ | 0.5+ | 2001 04 01 | 704 | 0.7− | 0.7+ |
| 1991 09 15 | 691 | 0.4− | 0.5+ | 2001 03 24 | 704 | 0.5+ | 1.3+ | 2001 04 01 | 704 | 0.3+ | 0.7+ |
| 1991 09 15 | 691 | 0.5− | 0.9+ | 2001 03 24 | 704 | 1.0− | 0.5− | 2001 04 01 | 704 | 0.9+ | 0.6+ |
| 2001 03 19 | 699 | 0.1+ | 0.1+ | 2001 03 24 | 704 | 1.2+ | 0.5+ | 2002 10 04 | 599 | 0.2− | 0.7+ |
| 2001 03 19 | 699 | 0.0 | 0.3+ | 2001 03 24 | 704 | 0.1+ | 0.7+ | 2002 10 04 | 599 | 0.0 | 0.6+ |
| 2001 03 19 | 699 | 0.6+ | 0.3− | 2001 03 26 | 695 | 0.4− | 0.2+ | 2002 10 04 | 599 | 0.0 | 0.7+ |
| 2001 03 19 | 699 | 0.7+ | 0.3+ | 2001 03 26 | 695 | 0.9+ | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2001 03 21 | 608 | 0.3− | 0.5+ | 2001 03 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 03 21 | 608 | 0.1− | 0.7+ | 2001 03 28 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.4+ |
| 2001 03 21 | 608 | 0.2− | 0.4+ | 2001 03 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2001 03 23 | 699 | 0.2+ | 0.1− | 2001 03 29 | 699 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 03 23 | 699 | 0.0 | 0.2− | 2001 03 29 | 699 | 0.6+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2001 03 23 | 699 | 0.2+ | 0.2− | 2001 03 29 | 699 | 0.3− | 1.2+ | 2006 11 18 | 691 | 0.5− | 0.2+ |
| 2001 03 23 | 699 | 0.3+ | 0.4+ | 2001 03 29 | 699 | (2.7− | 0.9+) | | | | |

**2001 FR$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.55771 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26956881 | $\omega$ | 272.11994 | | −0.43260183 | | +0.90054816 |
| $a$ | 2.3733199 | $\Omega$ | 332.12004 | | −0.78608801 | | −0.40022898 |
| $e$ | 0.2803424 | $i$ | 5.30415 | | −0.44149891 | | −0.16979335 |
| $P$ | 3.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | 0.1+ | 0.1+ | 2001 03 18 | 699 | 0.2− | 0.4− | 2001 04 17 | 699 | 0.7+ | 0.1− |
| 2001 03 02 | 699 | 0.5− | 0.3+ | 2001 03 18 | 699 | 0.1+ | 0.6+ | 2001 04 17 | 699 | 0.2− | 0.0 |
| 2001 03 02 | 699 | 0.3− | 0.3− | 2001 03 18 | 699 | 0.1+ | 0.6+ | 2001 04 17 | 699 | 0.4− | 0.6+ |
| 2001 03 02 | 699 | 0.1+ | 0.1− | 2001 03 24 | 704 | 0.2− | 0.2+ | 2001 04 17 | 699 | 0.1− | 0.9+ |
| 2001 03 15 | 608 | 1.2+ | 1.4+ | 2001 03 24 | 704 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 03 15 | 608 | 1.1+ | 0.7+ | 2001 03 24 | 704 | 0.9− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.4− |
| 2001 03 15 | 608 | 1.0+ | 1.4+ | 2001 03 26 | 608 | 0.5− | 0.7− | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2001 03 18 | 704 | 0.3− | 0.3− | 2001 03 26 | 608 | 0.2− | 0.7− | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2001 03 18 | 704 | 0.1− | 0.1− | 2001 03 26 | 608 | 0.0 | 0.6− | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 03 18 | 704 | 0.5− | 0.6− | 2001 03 29 | 704 | 0.0 | 0.8− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 03 18 | 699 | 0.6− | 0.4+ | 2001 03 29 | 704 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.1+ | 0.8− | 2001 03 29 | 704 | 0.8+ | 0.6− | 2006 10 27 | 691 | 0.3+ | 0.1− | | |
| 2001 03 18 | 704 | 0.7− | 1.0− | 2001 03 29 | 704 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.2+ | | |

**2001 FL$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 177.90346 | | (2000.0) | | | |
| $n$ | 0.27121149 | $\omega$ | 216.16855 | | −0.98536717 | +0.16463506 |
| $a$ | 2.3637270 | $\Omega$ | 333.20599 | | −0.12414792 | −0.87062280 |
| $e$ | 0.2018366 | $i$ | 5.61712 | | −0.11678540 | −0.46358519 |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 704 | 0.0 | 0.8− | 2001 03 18 | 699 | 0.2+ | 0.0 | 2001 04 01 | 704 | 0.5− | 0.4− | | |
| 2001 02 22 | 704 | 0.6− | 0.5− | 2001 03 18 | 699 | 0.5+ | 0.4− | 2001 04 01 | 704 | 0.2+ | 0.4− | | |
| 2001 02 22 | 704 | 0.8− | 0.1− | 2001 03 18 | 699 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1− | | |
| 2001 02 22 | 704 | 0.9− | 0.7+ | 2001 03 18 | 608 | (1.2− | 2.8−) | 2006 09 18 | 691 | 0.0 | 0.2+ | | |
| 2001 02 22 | 704 | 1.2− | 0.3+ | 2001 03 18 | 608 | (1.0− | 2.2−) | 2006 09 18 | 691 | 0.2− | 0.2− | | |
| 2001 03 18 | 704 | 0.9+ | 0.7+ | 2001 03 18 | 608 | (1.2− | 2.3−) | 2006 09 30 | 691 | 0.0 | 0.5+ | | |
| 2001 03 18 | 704 | 0.4+ | 0.1+ | 2001 03 24 | 704 | 0.7+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.3+ | | |
| 2001 03 18 | 704 | 0.5+ | 0.2− | 2001 03 24 | 704 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.4+ | | |
| 2001 03 18 | 704 | 0.1+ | 0.6+ | 2001 03 24 | 704 | 1.2− | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.5− | | |
| 2001 03 18 | 704 | 0.5+ | 0.1+ | 2001 03 24 | 704 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.0 | 0.1− | | |
| 2001 03 18 | 704 | 0.3+ | 0.2+ | 2001 03 24 | 704 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.2− | | |
| 2001 03 18 | 699 | 0.1− | 0.1+ | 2001 03 27 | 608 | 0.3− | 0.7+ | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 2001 03 18 | 704 | 0.5+ | 0.3− | 2001 03 27 | 608 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.3− | 0.4− | | |
| 2001 03 18 | 704 | 0.6+ | 0.4+ | 2001 03 27 | 608 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2001 03 18 | 704 | 0.1− | 0.2+ | 2001 04 01 | 704 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2001 03 18 | 704 | 0.2+ | 0.4+ | 2001 04 01 | 704 | 0.5+ | 1.3− | 2006 10 31 | G96 | 0.2− | 0.6− | | |

**2001 FR$_{41}$ = 2006 UO$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.05927 | | (2000.0) | | | |
| $n$ | 0.27303739 | $\omega$ | 213.96279 | | −0.64855001 | +0.76105035 |
| $a$ | 2.3531772 | $\Omega$ | 15.61932 | | −0.68664783 | −0.57724259 |
| $e$ | 0.2068672 | $i$ | 2.89750 | | −0.32847775 | −0.29596174 |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.4− | 0.7− | 2001 03 22 | 209 | 0.3− | 0.1− | 2001 04 01 | 704 | 0.1+ | 0.9+ | | |
| 2001 03 18 | 704 | 0.3+ | 0.5+ | 2001 03 24 | 704 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1+ | | |
| 2001 03 18 | 704 | 0.1+ | 0.4+ | 2001 03 24 | 704 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | | |
| 2001 03 18 | 704 | 0.3− | 0.4+ | 2001 03 24 | 704 | 0.5+ | 0.7− | 2006 10 16 | 691 | 0.2+ | 0.1+ | | |
| 2001 03 18 | 704 | 0.4− | 0.4− | 2001 03 24 | 704 | 0.7+ | 0.8− | 2006 10 20 | 691 | 0.3− | 0.1− | | |
| 2001 03 20 | 691 | 0.1− | 0.0 | 2001 03 24 | 704 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1− | | |
| 2001 03 20 | 691 | 0.1+ | 0.1− | 2001 03 29 | 699 | 0.8+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ | | |
| 2001 03 20 | 691 | (1.9− | 0.8+) | 2001 03 29 | 699 | 0.3+ | 0.7+ | 2006 11 27 | G96 | 0.3+ | 0.7− | | |
| 2001 03 20 | 608 | (0.5− | 2.1−) | 2001 03 29 | 699 | 0.6+ | 0.0 | 2006 11 27 | G96 | 0.3− | 0.5− | | |
| 2001 03 20 | 608 | (0.6− | 2.0−) | 2001 03 29 | 699 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.1+ | | |
| 2001 03 20 | 608 | (0.6− | 1.9−) | 2001 04 01 | 704 | 1.4− | 0.4− | 2006 11 27 | G96 | 0.2− | 0.5− | | |
| 2001 03 22 | 209 | 0.2− | 0.1− | 2001 04 01 | 704 | 0.2− | 0.3+ | | | | | | |
| 2001 03 22 | 209 | 0.4− | 0.0 | 2001 04 01 | 704 | 1.1+ | 0.6+ | | | | | | |

**2001 FY$_{51}$ = 2006 SS$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 191.51616 | | (2000.0) | | | |
| $n$ | 0.26826399 | $\omega$ | 217.54168 | | −0.98961265 | −0.13038272 |
| $a$ | 2.3810095 | $\Omega$ | 314.84787 | | +0.14365218 | −0.88058578 |
| $e$ | 0.0550734 | $i$ | 4.89983 | | +0.00555387 | −0.45559744 |
| $P$ | 3.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | (2.1+ | 0.5−) | 2002 08 17 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.2+ | | |
| 2001 03 18 | 704 | 1.0+ | 0.5+ | 2002 08 17 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2+ | | |
| 2001 03 18 | 704 | 0.5+ | 1.2+ | 2002 08 17 | 644 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2001 03 18 | 704 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.2− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.4+ | | |
| 2001 03 21 | 608 | 1.3+ | 0.1− | 2004 01 22 | 704 | 0.4+ | 0.8+ | 2006 10 01 | 691 | 0.4− | 0.3+ | | |
| 2001 03 21 | 608 | 0.8+ | 0.5+ | 2004 01 22 | 704 | 0.6+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2001 03 21 | 608 | 0.8+ | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2001 03 24 | 704 | (0.2− | 1.7+) | 2005 05 11 | 644 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.5+ | | |
| 2001 03 24 | 704 | 0.0 | 0.3+ | 2005 05 11 | 644 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2001 03 24 | 704 | 1.5+ | 0.8+ | 2005 05 11 | 644 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.5+ | | |
| 2001 03 24 | 704 | 0.2− | 1.3+ | 2006 08 29 | 703 | (0.7+ | 1.7+) | 2006 10 12 | 644 | 0.3+ | 0.7+ | | |
| 2001 03 24 | 704 | (1.6+ | 1.3+) | 2006 08 29 | 703 | 0.7+ | 1.1− | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2001 03 24 | 704 | 0.4− | 0.7+ | 2006 08 29 | 703 | 1.3− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2001 03 26 | 704 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.5+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.5+ | | |
| 2001 03 26 | 704 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.0 | 1.0+ | | |
| 2001 03 26 | 704 | 0.8− | 0.9+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2001 03 26 | 704 | 0.3− | 0.9+ | 2006 09 06 | 644 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2001 03 29 | 699 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2001 03 29 | 699 | 0.1+ | 1.0+ | 2006 09 17 | 703 | (0.6− | 1.9−) | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2001 03 29 | 699 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.3− | 1.3+ | 2006 10 23 | G96 | 0.1− | 0.4− | | |
| 2001 03 29 | 699 | 0.4− | 1.3+ | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.5− | | |
| 2002 08 06 | 644 | 0.4− | 0.5− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2002 08 06 | 644 | 0.4+ | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.1− | | | | | | |
| 2002 08 06 | 644 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.2+ | | | | | | |

**2001 FF$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 134.46361 | | (2000.0) | | | |
| $n$ | 0.27957150 | $\omega$ | 113.40328 | | −0.20427059 | +0.97524579 |
| $a$ | 2.3163674 | $\Omega$ | 144.47655 | | −0.94291254 | −0.17277913 |
| $e$ | 0.0925332 | $i$ | 8.37921 | | −0.26303889 | −0.13799644 |
| $P$ | 3.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 1.1+ | 0.1+ | 2001 03 26 | 704 | 0.3− | 0.3+ | 2002 09 17 | 608 | 0.5− | 0.6+ | | |
| 2001 03 19 | 704 | 0.3− | 0.1+ | 2001 03 26 | 704 | 0.2− | 0.8− | 2002 09 17 | 608 | 0.6− | 0.1− | | |
| 2001 03 19 | 704 | 0.1− | 1.0− | 2001 03 26 | 704 | 0.9+ | 0.8− | 2002 09 17 | 608 | 0.7+ | 0.7− | | |
| 2001 03 19 | 704 | 1.7+ | 1.0− | 2001 03 26 | 704 | 0.3+ | 0.5− | 2002 10 09 | 699 | 0.9+ | 0.3− | | |
| 2001 03 20 | 608 | 1.0− | 1.5+ | 2002 09 11 | 608 | 0.0 | 0.2− | 2002 10 09 | 699 | 0.8− | 1.3+ | | |
| 2001 03 20 | 608 | 1.1− | 1.3+ | 2002 09 11 | 608 | 0.2+ | 0.1− | 2002 10 09 | 699 | 0.5+ | 1.1− | | |
| 2001 03 20 | 608 | 0.9− | 0.8+ | 2002 09 11 | 608 | 0.2+ | 0.8+ | 2002 10 09 | 699 | 0.5− | 0.1+ | | |

**2001 FG$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 161.29141 | | (2000.0) | | | |
| $n$ | 0.27222408 | $\omega$ | 150.70641 | | −0.59102007 | +0.80341979 |
| $a$ | 2.3578619 | $\Omega$ | 82.97274 | | −0.75352961 | −0.51793693 |
| $e$ | 0.1942351 | $i$ | 4.17138 | | −0.28790346 | −0.29369709 |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.0 | 0.1− | 2001 04 26 | 608 | (2.5− | 0.9+) | 2002 10 10 | 645 | 0.0 | 0.1+ | | |
| 1997 02 02 | 691 | 0.2− | 0.3− | 2001 05 11 | 608 | 1.1+ | 0.1+ | 2002 10 10 | 645 | 0.0 | 0.0 | | |
| 1997 02 02 | 691 | 0.1+ | 0.3− | 2001 05 11 | 608 | 0.7+ | 0.3− | 2002 10 15 | 644 | 0.5− | 0.4+ | | |
| 2001 03 19 | 704 | 0.7+ | 0.3+ | 2001 05 11 | 608 | 0.8+ | 0.3+ | 2002 10 15 | 644 | 0.3− | 0.8+ | | |
| 2001 03 19 | 704 | 1.0+ | 0.8+ | 2001 05 18 | 704 | 0.4+ | 0.1+ | 2002 10 15 | 644 | 0.0 | 0.7+ | | |
| 2001 03 19 | 704 | 1.0+ | 0.8+ | 2001 05 18 | 704 | 0.3− | 0.1− | 2006 10 16 | 621 | 0.1− | 0.0 | | |
| 2001 03 26 | 704 | 0.6+ | 0.4+ | 2001 05 18 | 704 | 0.2− | 0.8+ | 2006 10 16 | 621 | 0.6+ | 0.6− | | |
| 2001 03 26 | 704 | 1.0+ | 0.8+ | 2001 05 18 | 704 | (0.9+ | 1.7+) | 2006 10 16 | 621 | 0.6+ | 0.5− | | |
| 2001 03 26 | 704 | 0.8− | 0.2+ | 2001 05 18 | 704 | 0.2− | 0.6+ | 2006 10 17 | 621 | 0.1− | 0.3− | | |
| 2001 03 26 | 704 | 0.3− | 0.8+ | 2001 05 23 | 699 | 0.1+ | 0.9− | 2006 10 17 | 621 | 0.2+ | 0.4+ | | |
| 2001 03 26 | 704 | 1.3+ | 0.1+ | 2001 05 23 | 699 | 1.2− | 1.5+ | 2006 10 17 | 621 | 0.2− | 0.4+ | | |
| 2001 04 16 | 704 | 0.2+ | 0.1+ | 2001 05 23 | 699 | 0.1− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.1+ | | |
| 2001 04 16 | 704 | 0.2− | 0.1+ | 2001 05 23 | 699 | 0.5+ | 1.0+ | 2006 10 22 | 691 | 0.0 | 0.7+ | | |
| 2001 04 16 | 704 | 0.7+ | 0.6+ | 2001 05 24 | 645 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2001 04 16 | 704 | (2.6+ | 1.4+) | 2001 05 24 | 645 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.4− | 0.1− | | |
| 2001 04 16 | 704 | 0.1+ | 1.0+ | 2001 06 12 | 608 | 0.1+ | 1.0− | 2006 11 12 | G96 | 0.2+ | 0.0 | | |
| 2001 04 26 | 608 | (2.1− | 0.9+) | 2001 06 12 | 608 | 0.2+ | 0.9− | 2006 11 12 | G96 | 0.5− | 0.1− | | |
| 2001 04 26 | 608 | (2.1− | 0.9+) | 2001 06 12 | 608 | 0.2+ | 1.1− | 2006 11 12 | G96 | 0.6+ | 0.4+ | | |

**2001 FJ$_{84}$ = 2006 SX$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 179.34271 | | (2000.0) | | | |
| $n$ | 0.27352542 | $\omega$ | 27.86430 | | −0.97252560 | +0.23209309 |
| $a$ | 2.3503773 | $\Omega$ | 165.52196 | | −0.22476573 | −0.91592552 |
| $e$ | 0.1641193 | $i$ | 4.14622 | | −0.06061614 | −0.32743434 |
| $P$ | 3.60 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 691 | 0.2+ | 0.3− | 2001 03 26 | 691 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2001 02 21 | 691 | 0.0 | 0.2− | 2001 03 27 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 2001 02 21 | 691 | 0.2− | 0.2+ | 2001 03 27 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.5− | 0.5+ |
| 2001 03 18 | 704 | 0.2+ | 0.4+ | 2001 03 27 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2001 03 18 | 704 | (0.2+ | 1.7+) | 2001 03 28 | 691 | 0.5− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 03 18 | 704 | 0.5− | 0.1+ | 2001 03 28 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2001 03 18 | 704 | 0.8+ | 0.5+ | 2001 03 28 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2001 03 26 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.3− | | | | |
| 2001 03 26 | 691 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.2− | | | | |

**2001 FU$_{88}$ = 2006 SW$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.18673 | | (2000.0) | | | |
| $n$ | 0.27742755 | $\omega$ | 10.08478 | | −0.99594098 | −0.08937714 |
| $a$ | 2.3282860 | $\Omega$ | 164.77522 | | +0.07950117 | −0.92894935 |
| $e$ | 0.1508431 | $i$ | 2.32284 | | +0.04220332 | −0.35925594 |
| $P$ | 3.55 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 691 | 0.1+ | 0.2− | 2001 03 28 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.2+ |
| 2001 03 03 | 691 | 0.2+ | 0.2− | 2001 03 29 | 699 | 0.5+ | 1.2− | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2001 03 03 | 691 | 0.1− | 0.1− | 2001 03 29 | 699 | 0.9+ | 0.0 | 2006 10 03 | 691 | 0.1− | 0.3− |
| 2001 03 18 | 704 | 0.3+ | 1.0− | 2001 03 29 | 699 | 0.6+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 2001 03 18 | 704 | 0.3+ | 0.4− | 2001 03 29 | 699 | 0.9+ | 0.2+ | 2006 10 03 | 691 | 0.5+ | 0.1+ |
| 2001 03 18 | 704 | 0.6− | 0.5+ | 2001 03 30 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.6+ | 0.0 |
| 2001 03 18 | 704 | 0.1− | 1.2+ | 2001 03 30 | 691 | 0.3− | 0.9+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2001 03 26 | 691 | 0.3+ | 0.2+ | 2001 03 30 | 691 | 0.4− | 0.8+ | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 2001 03 26 | 691 | 0.2+ | 0.1+ | 2001 03 31 | 691 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2001 03 26 | 691 | 0.2+ | 0.6+ | 2001 03 31 | 691 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.7+ | 0.1+ |
| 2001 03 27 | 608 | 1.0+ | 0.8− | 2001 03 31 | 691 | 0.2− | 0.4− | 2006 10 31 | G96 | 0.5+ | 0.4+ |
| 2001 03 27 | 608 | 0.3+ | 1.0− | 2006 09 18 | 691 | 0.7− | 0.7+ | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2001 03 27 | 608 | 1.0+ | 0.3− | 2006 09 18 | 691 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.9+ | 0.5− |
| 2001 03 28 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.3+ | | | | |
| 2001 03 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.3+ | | | | |

**2001 FS$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 79.71981 | | (2000.0) | | | |
| $n$ | 0.23137254 | $\omega$ | 119.41584 | | −0.69501063 | +0.71142896 |
| $a$ | 2.6278153 | $\Omega$ | 106.16232 | | −0.69150249 | −0.62174989 |
| $e$ | 0.2357029 | $i$ | 6.21992 | | −0.19693791 | −0.32756054 |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 704 | 0.5− | 0.8+ | 2001 03 26 | 608 | 0.8+ | 0.0 | 2005 02 02 | 691 | 0.1+ | 0.1− |
| 2001 03 16 | 704 | 0.1+ | 0.2− | 2005 01 13 | 691 | 0.1+ | 0.1+ | 2005 02 09 | G96 | 0.2− | 0.3− |
| 2001 03 16 | 704 | 0.1− | 0.1+ | 2005 01 13 | 691 | 0.3+ | 0.1− | 2005 02 09 | G96 | 0.1− | 0.4− |
| 2001 03 16 | 704 | 1.0− | 1.1− | 2005 01 13 | 691 | 0.3− | 0.1− | 2005 02 09 | G96 | 0.2− | 0.4− |
| 2001 03 19 | 699 | (2.2− | 0.5+) | 2005 01 17 | 703 | 0.7− | 1.1+ | 2005 02 09 | G96 | 0.2− | 0.5− |
| 2001 03 19 | 699 | 0.9− | 0.0 | 2005 01 17 | 703 | 0.7+ | 1.4+ | 2005 03 13 | 704 | 0.1− | 0.7+ |
| 2001 03 19 | 699 | 0.5− | 0.3+ | 2005 01 17 | 703 | 0.9+ | 1.4− | 2005 03 13 | 704 | 0.8+ | 0.2+ |
| 2001 03 19 | 699 | 1.2+ | 0.7− | 2005 01 17 | 703 | 0.1− | 0.1+ | 2005 03 13 | 704 | 0.1+ | 0.3− |
| 2001 03 26 | 608 | 0.4+ | 0.5+ | 2005 02 02 | 691 | 0.3− | 0.0 | | | | |
| 2001 03 26 | 608 | 0.5+ | 0.3+ | 2005 02 02 | 691 | 0.0 | 0.1+ | | | | |

**2001 FQ$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.05801 | | (2000.0) | | | |
| $n$ | 0.27154495 | $\omega$ | 11.66018 | | +0.99732176 | +0.06935085 |
| $a$ | 2.3617916 | $\Omega$ | 344.30689 | | −0.07209133 | +0.87855202 |
| $e$ | 0.1300636 | $i$ | 4.92738 | | −0.01233454 | +0.47258524 |
| $P$ | 3.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.4+ | 0.8− | 2003 11 24 | 291 | 0.1− | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.2− |
| 1999 12 15 | 704 | 1.0+ | 1.6− | 2003 12 23 | 704 | 0.5− | 0.8+ | 2006 09 29 | 704 | 0.4− | 0.5+ |
| 1999 12 15 | 704 | 0.3+ | 1.0− | 2003 12 23 | 704 | 1.1− | 0.4+ | 2006 09 29 | 704 | 0.5− | 0.4+ |
| 2001 03 18 | 704 | 0.7+ | 0.7+ | 2003 12 23 | 704 | 0.3− | 0.2+ | 2006 09 29 | 704 | 1.2− | 0.6+ |
| 2001 03 18 | 704 | (1.7+ | 0.3−) | 2003 12 23 | 704 | 0.6+ | 1.1+ | 2006 09 29 | 704 | 0.1+ | 0.2+ |
| 2001 03 18 | 704 | (1.6+ | 1.4−) | 2004 02 15 | 704 | 0.2− | 0.8− | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2001 03 20 | 608 | 0.1+ | 0.8− | 2004 02 15 | 704 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2001 03 20 | 608 | 0.4+ | 0.5− | 2004 02 15 | 704 | 0.1− | 0.8− | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2001 03 20 | 608 | 0.4+ | 1.2− | 2004 02 15 | 704 | 1.0+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 03 23 | 699 | 0.2+ | 1.2+ | 2005 05 16 | 644 | 1.0− | 1.3+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2001 03 23 | 699 | (0.7− | 1.5+) | 2005 05 16 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2001 03 23 | 699 | 0.8+ | 0.1+ | 2005 05 16 | 644 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2001 03 23 | 699 | (1.6+ | 0.3+) | 2006 08 06 | 699 | 1.1+ | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2001 03 28 | 691 | 0.3+ | 0.2+ | 2006 08 06 | 699 | 0.8+ | 1.1+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2001 03 28 | 691 | 0.2+ | 0.1+ | 2006 08 06 | 699 | 0.7− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2001 03 28 | 691 | 0.5+ | 0.1+ | 2006 08 06 | 699 | (1.4− | 2.2+) | 2006 10 19 | 704 | 0.6+ | 0.5+ |
| 2002 07 28 | 608 | (0.4− | 1.7−) | 2006 08 30 | 699 | 1.3− | 0.4+ | 2006 10 19 | 704 | 0.5+ | 0.9+ |
| 2002 07 28 | 608 | 0.1+ | 1.3− | 2006 08 30 | 699 | 1.2− | 0.5+ | 2006 10 19 | 704 | 0.5+ | 0.1− |
| 2002 07 28 | 608 | 0.4+ | 0.8− | 2006 08 30 | 699 | 0.3− | 0.1+ | 2006 10 19 | 704 | 0.6− | 0.5+ |
| 2002 08 08 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.1+ | 1.1− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 08 13 | 704 | 0.8− | 0.7+ | 2006 09 18 | 704 | 0.7+ | 0.9− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 13 | 704 | 0.1− | 0.7+ | 2006 09 18 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 08 13 | 704 | 0.6− | 0.6+ | 2006 09 18 | 704 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 13 | 704 | 0.3− | 0.8+ | 2006 09 20 | 699 | 0.5+ | 0.6+ | 2006 10 26 | 704 | (2.0+ | 0.5+) |
| 2002 08 13 | 704 | 0.1− | 0.7+ | 2006 09 20 | 699 | 0.1− | 0.2− | 2006 10 26 | 704 | (1.8+ | 0.2−) |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 09 20 | 699 | 0.5− | 0.6− | 2006 10 26 | 704 | (1.8+ | 0.7−) |
| 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.0 | 2006 10 29 | 704 | (1.6+ | 4.0+) |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.6− | 0.6− | 2006 10 29 | 704 | (2.3+ | 3.7+) |
| 2002 08 29 | 644 | 0.1+ | 0.2− | 2006 09 22 | 704 | 0.9− | 0.4− | 2006 10 29 | 704 | (2.4+ | 4.0+) |
| 2002 08 29 | 644 | 0.1− | 0.3− | 2006 09 22 | 704 | 1.0− | 0.7− | 2006 10 29 | 704 | (2.4+ | 3.4+) |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.0 | 2006 10 29 | 704 | (1.4+ | 3.6+) |
| 2002 09 05 | 704 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.4+ | 0.3+ | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2002 09 05 | 704 | 1.1− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.5+ | 2006 11 06 | 644 | 0.3+ | 0.1+ |
| 2002 09 05 | 704 | 1.1− | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.3+ | 2006 11 06 | 644 | 0.3+ | 0.3+ |
| 2003 11 24 | 291 | 0.6− | 0.5+ | 2006 09 28 | 691 | 0.4− | 0.2+ | | | | |
| 2003 11 24 | 291 | 0.5− | 0.6+ | 2006 09 28 | 691 | 0.2+ | 0.1− | | | | |

**2001 FS$_{110}$ = 2006 WG$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 232.73053 | | (2000.0) | | | |
| $n$ | 0.29441341 | $\omega$ | 349.41566 | | −0.99944221 | +0.03191523 |
| $a$ | 2.2378501 | $\Omega$ | 192.42592 | | −0.02631757 | −0.93395541 |
| $e$ | 0.1049162 | $i$ | 2.61905 | | −0.02055837 | −0.35596167 |
| $P$ | 3.35 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 0.7+ | 1.2+ | 2005 06 18 | G96 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.3+ |
| 2001 03 18 | 704 | 0.3+ | 0.4+ | 2005 06 18 | G96 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.5− | 0.2+ |
| 2001 03 18 | 704 | 0.1+ | 1.1+ | 2005 06 18 | G96 | 0.5− | 0.4− | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2001 03 20 | 608 | 0.3− | 0.6− | 2005 06 18 | G96 | 0.1+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 03 20 | 608 | 0.2+ | 0.0 | 2005 07 08 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2001 03 20 | 608 | 0.5+ | 0.1+ | 2005 07 08 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 03 23 | 699 | 1.0+ | 0.1+ | 2005 07 08 | 691 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 03 23 | 699 | 0.6+ | 0.6− | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 23 | 691 | 0.5+ | 0.3+ |
| 2001 03 23 | 699 | 0.0 | 0.6+ | 2006 09 28 | G96 | 0.7− | 0.7− | 2006 11 27 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 23 | 699 | (2.8+ | 0.1+) | 2006 09 28 | G96 | 0.5− | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 03 26 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.8− | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2001 03 26 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.0 | | | | |
| 2001 03 26 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2− | | | | |

**2001 FR$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.80475 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18303106 | $\omega$ | 84.46396 | | −0.21106665 | | +0.97725879 |
| $a$ | 3.0722238 | $\Omega$ | 173.24713 | | −0.95139358 | | −0.20060245 |
| $e$ | 0.0752810 | $i$ | 9.99020 | | −0.22427913 | | −0.06873067 |
| $P$ | 5.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.3− | 0.2+ | 2001 03 24 | 704 | 0.0 | 0.8+ | 2004 12 19 | G96 | 0.2+ | 0.2− |
| 1996 03 27 | 691 | 0.4− | 0.1+ | 2001 03 24 | 704 | (0.4+ | 2.6+) | 2004 12 19 | G96 | 0.0 | 0.5− |
| 1996 03 27 | 691 | 0.1− | 0.0 | 2001 04 16 | 645 | 0.1+ | 0.0 | 2006 02 06 | 691 | 0.2− | 0.1− |
| 2001 03 16 | 691 | 0.0 | 0.1+ | 2001 04 16 | 645 | 0.2+ | 0.0 | 2006 02 06 | 691 | 0.1− | 0.0 |
| 2001 03 16 | 691 | 0.1+ | 0.1+ | 2003 09 19 | 599 | 0.3+ | 0.6+ | 2006 02 06 | 691 | 0.3− | 0.2+ |
| 2001 03 16 | 691 | 0.0 | 0.3+ | 2003 09 19 | 599 | 0.9+ | 0.0 | 2006 02 23 | 699 | 1.0− | 0.5+ |
| 2001 03 18 | 704 | 0.1+ | 1.3+ | 2003 09 19 | 599 | 0.2+ | 0.0 | 2006 02 23 | 699 | 0.5− | 0.2− |
| 2001 03 18 | 704 | 1.0+ | 0.7+ | 2003 09 26 | 645 | 0.1− | 0.1+ | 2006 02 23 | 699 | 0.2+ | 0.3+ |
| 2001 03 18 | 704 | 0.3+ | 0.1− | 2003 09 26 | 645 | 0.0 | 0.1+ | 2006 02 23 | 699 | 0.6+ | 1.1+ |
| 2001 03 20 | 608 | 0.1+ | 0.7− | 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 05 26 | G96 | 0.1− | 0.1+ |
| 2001 03 20 | 608 | 0.3− | 0.8− | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.5− | 0.4+ |
| 2001 03 20 | 608 | 0.1+ | 1.1− | 2004 12 19 | G96 | 0.2− | 0.0 | 2006 05 26 | G96 | 0.8− | 0.1+ |
| 2001 03 24 | 704 | 0.3+ | 0.1− | 2004 12 19 | G96 | 0.1− | 0.0 | 2006 05 26 | G96 | 0.1− | 0.0 |

**2001 FS$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.08847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22487283 | $\omega$ | 54.53514 | | −0.56595299 | | +0.82442836 |
| $a$ | 2.6782106 | $\Omega$ | 181.02061 | | −0.80928651 | | −0.55644497 |
| $e$ | 0.1380492 | $i$ | 12.59260 | | −0.15732944 | | −0.10337728 |
| $P$ | 4.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 691 | 0.1− | 0.0 | 2001 03 21 | 691 | 0.2− | 0.2+ | 2002 08 04 | 644 | 0.1− | 0.1− |
| 1998 09 25 | 691 | 0.1− | 0.5+ | 2001 03 23 | 699 | 0.5− | 1.1+ | 2002 08 04 | 644 | 0.0 | 0.7− |
| 1998 09 25 | 691 | 0.1+ | 0.5+ | 2001 03 23 | 699 | 0.1− | 1.0+ | 2002 08 04 | 644 | 0.1− | 0.1− |
| 2001 03 18 | 704 | 1.1+ | 1.2+ | 2001 03 23 | 699 | 0.6− | 0.6+ | 2002 08 12 | 704 | 0.9− | 0.5− |
| 2001 03 18 | 704 | 0.4+ | 1.5+ | 2001 03 23 | 699 | 0.0 | 0.6+ | 2002 08 12 | 704 | 0.1+ | 0.8− |
| 2001 03 18 | 704 | 0.7+ | 0.2+ | 2001 03 29 | 699 | 1.6+ | 1.5− | 2002 08 12 | 704 | 1.0+ | 2.0+ |
| 2001 03 20 | 608 | 0.2+ | 1.5− | 2001 03 29 | 699 | 0.1− | 0.9+ | 2002 08 15 | 644 | 0.1− | 0.2− |
| 2001 03 20 | 608 | 0.3− | 1.6− | 2001 03 29 | 699 | (2.6+ | 0.2+) | 2002 08 15 | 644 | 0.1− | 0.3+ |
| 2001 03 20 | 608 | 0.2− | 1.5− | 2001 03 29 | 699 | 0.7+ | 0.4− | 2002 08 15 | 644 | 0.2+ | 0.0 |
| 2001 03 21 | 691 | 0.2− | 0.1+ | 2001 04 16 | 645 | 0.1− | 0.0 | | | | |
| 2001 03 21 | 691 | 0.5+ | 0.2− | 2001 04 16 | 645 | 0.0 | 0.1+ | | | | |

**2001 FR$_{120}$ = 2006 ST$_{317}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.82220 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26435434 | $\omega$ | 174.51581 | | −0.79643078 | | +0.59841559 |
| $a$ | 2.4044279 | $\Omega$ | 42.64257 | | −0.55960522 | | −0.67467569 |
| $e$ | 0.1944515 | $i$ | 7.39237 | | −0.22921609 | | −0.43210124 |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 608 | 0.3− | 0.1+ | 2001 03 26 | 704 | 0.0 | 1.3+ | 2006 09 27 | 691 | 0.1− | 0.5− |
| 2001 03 18 | 608 | 0.4− | 0.1− | 2001 03 29 | 704 | 0.8− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2001 03 18 | 608 | 0.5− | 0.0 | 2001 03 29 | 704 | 0.7+ | 1.0− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 03 21 | 699 | 0.1+ | 0.7− | 2001 03 29 | 704 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.7− | 0.5+ |
| 2001 03 21 | 699 | 0.4− | 0.7− | 2001 03 29 | 704 | 0.4− | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2001 03 21 | 699 | 0.4+ | 0.9+ | 2001 04 14 | 608 | 0.4− | 1.0− | 2006 10 01 | 691 | 0.0 | 0.2− |
| 2001 03 21 | 699 | 1.0− | 0.2− | 2001 04 14 | 608 | 0.2− | 0.8− | 2006 10 21 | G96 | 0.2− | 0.6− |
| 2001 03 26 | 704 | 1.4+ | 0.2− | 2001 04 14 | 608 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 03 26 | 704 | 1.2+ | 1.2+ | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 03 26 | 704 | 0.5+ | 1.0− | 2006 09 17 | 691 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2001 03 26 | 704 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ | | | | |

**2001 FW$_{123}$ = 1981 EW$_{43}$ = 1998 SF$_{89}$**

Id. Minor Planet Center (*MPO* 13821; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.03327 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19834202 | $\omega$ | 135.72085 | | −0.70550389 | | −0.70869813 |
| $a$ | 2.9120102 | $\Omega$ | 359.12833 | | +0.57354854 | | −0.56817286 |
| $e$ | 0.0614190 | $i$ | 12.72669 | | +0.41630077 | | −0.41824223 |
| $P$ | 4.97 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 03 06 | 413 | (3.2− | 0.4−) | 2003 09 18 | 691 | 0.1+ | 0.3+ | 2003 10 18 | 645 | 0.0 | 0.1− |
| 1981 03 11 | 413 | 0.7− | 1.1− | 2003 09 22 | 699 | 0.6+ | 0.5− | 2003 10 24 | 691 | 0.1− | 0.6+ |
| 1981 03 11 | 413 | (1.9+ | 2.1−) | 2003 09 22 | 699 | 0.6− | 0.5+ | 2003 10 24 | 691 | 0.1+ | 0.5+ |
| 1981 03 15 | 413 | 0.0 | 0.9− | 2003 09 22 | 699 | 0.3− | 0.5+ | 2003 10 24 | 691 | 0.3− | 0.7+ |
| 1998 09 26 | 704 | 0.8− | 1.7− | 2003 09 22 | 699 | 0.7− | 0.0 | 2003 10 24 | 704 | 1.1− | 0.5− |
| 1998 09 26 | 704 | 1.0− | 0.2+ | 2003 09 26 | 704 | 0.2+ | 0.6+ | 2003 10 24 | 704 | 0.4+ | 0.2+ |
| 1998 09 26 | 704 | 0.8− | 0.1− | 2003 09 26 | 704 | 0.6+ | 0.2+ | 2003 10 24 | 704 | 0.2− | 0.8+ |
| 1998 09 26 | 704 | 1.2− | 0.2− | 2003 09 26 | 704 | 0.6+ | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 1998 09 27 | 704 | 0.5− | 0.2+ | 2003 09 26 | 704 | 0.0 | 0.0 | 2003 10 24 | 704 | 0.1− | 0.2− |
| 1998 09 27 | 704 | 0.0 | 0.1− | 2003 09 26 | 704 | 0.3− | 0.7+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 1998 09 27 | 704 | (0.8+ | 2.5−) | 2003 09 28 | 291 | 0.0 | 0.2+ | 2005 01 17 | 704 | 0.5− | 0.6+ |
| 2001 03 23 | 699 | 0.5− | 0.5− | 2003 09 28 | 291 | 0.3+ | 0.2+ | 2005 01 17 | 704 | 0.7+ | 0.2+ |
| 2001 03 23 | 699 | 0.9+ | 0.5+ | 2003 09 28 | 291 | 0.4+ | 0.1+ | 2005 01 17 | 704 | 0.4− | 0.6− |
| 2001 03 23 | 699 | 0.3+ | 0.6+ | 2003 09 29 | 704 | 0.1+ | 0.7+ | 2005 01 17 | 704 | 0.0 | 0.5+ |
| 2001 03 23 | 699 | 1.3+ | 0.3+ | 2003 09 29 | 704 | 0.6+ | 0.4+ | 2005 01 17 | 704 | 0.6+ | 0.3+ |
| 2001 03 29 | 699 | 1.7− | 0.0 | 2003 09 29 | 704 | (0.4+ | 7.0−) | 2005 01 17 | 704 | 0.1− | 1.2+ |
| 2001 03 29 | 699 | 0.3+ | 0.8+ | 2003 09 29 | 704 | 0.2+ | 0.3− | 2005 01 17 | 704 | 0.7− | 0.2− |
| 2001 03 29 | 699 | 0.2− | 0.5+ | 2003 09 29 | 704 | (1.6+ | 5.0−) | 2006 01 05 | G96 | 0.9− | 0.2− |
| 2001 03 29 | 699 | 0.8− | 1.0+ | 2003 09 29 | 704 | 0.3+ | 0.6+ | 2006 01 05 | G96 | 0.0 | 0.2− |
| 2001 04 24 | 699 | 1.0+ | 0.4+ | 2003 09 29 | 704 | 0.3− | 0.1− | 2006 01 05 | G96 | 0.8+ | 0.4+ |
| 2001 04 24 | 699 | 1.8+ | 0.1+ | 2003 09 29 | 704 | (0.4+ | 5.1−) | 2006 01 05 | G96 | 0.0 | 0.3+ |
| 2001 04 24 | 699 | 1.5+ | 0.4+ | 2003 09 29 | 704 | 0.3− | 0.2− | 2006 02 02 | G96 | 0.3− | 0.4− |
| 2001 04 24 | 699 | 1.1+ | 1.4+ | 2003 09 29 | 645 | 0.1+ | 0.0 | 2006 02 02 | G96 | 0.2− | 0.0 |
| 2003 09 18 | 691 | 0.2+ | 0.4+ | 2003 09 29 | 645 | 0.1+ | 0.1− | 2006 02 02 | G96 | 0.2− | 0.5+ |
| 2003 09 18 | 691 | 0.2+ | 0.3+ | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 02 02 | G96 | 0.2− | 1.0+ |

**2001 FS$_{125}$ = 2006 SD$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.09585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28584749 | $\omega$ | 0.90638 | | −0.91571315 | | −0.40181543 |
| $a$ | 2.2823371 | $\Omega$ | 155.40087 | | +0.36861805 | | −0.84366443 |
| $e$ | 0.1093671 | $i$ | 0.51098 | | +0.15996924 | | −0.35605434 |
| $P$ | 3.45 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 1.1− | 0.9− | 2006 09 25 | G96 | 0.3− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2001 03 18 | 704 | 0.8+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2001 03 18 | 704 | 0.7+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 03 24 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 03 24 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2001 03 24 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 03 30 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.3+ | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 03 30 | 691 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.5− | 0.3+ | 2006 10 31 | 691 | 0.4+ | 0.2− |
| 2001 03 30 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.6+ | 0.7− | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.4− | 0.2− |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.4− | 2006 11 10 | 691 | 0.8+ | 0.4+ |
| 2006 09 18 | 691 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 09 24 | 691 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.3− |

**2001 FK$_{132}$ = 2005 ET$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.92941 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22975716 | $\omega$ | 213.51471 | | +0.17148841 | | −0.98508875 |
| $a$ | 2.6401180 | $\Omega$ | 226.61516 | | +0.90802519 | | +0.16349626 |
| $e$ | 0.0307413 | $i$ | 1.09211 | | +0.38220674 | | +0.05356414 |
| $P$ | 4.29 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 06 | 691 | 0.0 | 0.2− | 2001 03 26 | 691 | 0.2− | 0.1+ | 2003 11 21 | 704 | 0.2− | 0.9+ |
| 1997 05 06 | 691 | 0.0 | 0.1+ | 2003 10 02 | 691 | 0.1− | 0.1− | 2003 11 21 | 704 | 0.4+ | 0.3− |
| 1997 05 06 | 691 | 0.1+ | 0.4+ | 2003 10 02 | 691 | 0.1− | 0.1− | 2003 11 21 | 704 | 0.0 | 0.6+ |
| 2001 03 20 | 608 | 0.3+ | 2.0− | 2003 10 02 | 691 | 0.2− | 0.1− | 2005 02 09 | 704 | 1.4+ | 0.3+ |
| 2001 03 20 | 608 | 0.5+ | 1.9− | 2003 10 21 | 691 | 0.2− | 0.1+ | 2005 02 09 | 704 | 0.5− | 0.1+ |
| 2001 03 20 | 608 | 0.2+ | 1.1− | 2003 10 21 | 691 | 0.3+ | 0.1− | 2005 02 09 | 704 | 0.2− | 0.1+ |
| 2001 03 23 | 699 | 0.3+ | 0.1+ | 2003 10 21 | 691 | 0.1− | 0.1+ | 2005 02 09 | 704 | 0.7+ | 1.0+ |
| 2001 03 23 | 699 | 1.1+ | 0.2+ | 2003 10 28 | 704 | 0.4+ | 0.2− | 2005 03 09 | G96 | 0.3− | 0.2− |
| 2001 03 23 | 699 | 0.9+ | 0.0 | 2003 10 28 | 704 | 0.4+ | 0.1+ | 2005 03 09 | G96 | 0.2− | 0.2− |
| 2001 03 23 | 699 | 1.4− | 2.0+ | 2003 10 28 | 704 | 0.2+ | 0.1− | 2005 03 09 | G96 | 0.1− | 0.0 |
| 2001 03 26 | 691 | 0.0 | 0.1− | 2003 10 28 | 704 | 0.1+ | 0.0 | 2005 03 09 | G96 | 0.3− | 0.1− |
| 2001 03 26 | 691 | 0.4− | 0.2+ | 2003 10 28 | 704 | 0.1− | 0.0 | | | | |

**2001 FV$_{140}$ = 2006 WD$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.91274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26564521 | $\omega$ | 236.77136 | | −0.10613293 | | +0.99286503 |
| $a$ | 2.3966322 | $\Omega$ | 27.29203 | | −0.86830582 | | −0.06590172 |
| $e$ | 0.1079268 | $i$ | 6.80845 | | −0.48454186 | | −0.09937805 |
| $P$ | 3.71 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 691 | 0.4− | 0.0 | 2001 04 29 | 691 | 0.5+ | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.7− |
| 2001 03 22 | 691 | 0.1− | 0.2+ | 2001 04 29 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2001 03 22 | 691 | 0.2− | 0.2+ | 2001 04 29 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.7− |
| 2001 03 26 | 807 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2001 03 26 | 807 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.4+ | 0.4− | 2006 11 19 | 291 | 0.1+ | 0.2+ |
| 2001 03 26 | 807 | 0.0 | 0.6− | 2006 09 30 | G96 | 0.6− | 0.4− | 2006 11 19 | 291 | 0.2− | 0.2+ |
| 2001 03 26 | 807 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 11 19 | 291 | 0.1+ | 0.3+ |

**2001 FQ$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.47143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28089447 | $\omega$ | 31.52332 | | −0.99942971 | | +0.01787817 |
| $a$ | 2.3090886 | $\Omega$ | 149.46160 | | −0.02683895 | | −0.93539150 |
| $e$ | 0.1422346 | $i$ | 3.23192 | | +0.02049189 | | −0.35316158 |
| $P$ | 3.51 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 27 | 691 | (2.4+ | 1.3+) | 2001 03 24 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2001 02 27 | 691 | 0.2+ | 0.1+ | 2001 03 24 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.5+ |
| 2001 02 27 | 691 | 0.0 | 0.0 | 2001 03 24 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.5− | 0.4+ |
| 2001 03 02 | 699 | 0.5+ | 0.0 | 2001 03 26 | 704 | 0.8+ | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2001 03 02 | 699 | 0.2− | 0.5− | 2001 03 26 | 704 | 0.5+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 03 02 | 699 | 0.6− | 0.2+ | 2001 03 26 | 704 | 1.2− | 0.0 | 2006 10 01 | 691 | 0.4+ | 0.3+ |
| 2001 03 02 | 699 | 0.5− | 0.2+ | 2001 03 26 | 704 | 0.3+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2001 03 15 | 701 | 0.5− | 0.3+ | 2001 03 26 | 704 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2001 03 15 | 701 | 0.2+ | 0.3− | 2001 03 30 | 608 | 0.6− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2001 03 15 | 701 | 0.9+ | 0.2+ | 2001 03 30 | 608 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2001 03 18 | 699 | 0.6− | 0.3− | 2001 03 30 | 608 | 0.4+ | 0.8+ | 2006 11 18 | G96 | 0.7+ | 0.0 |
| 2001 03 18 | 699 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.6− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2001 03 18 | 699 | 0.6+ | 0.0 | 2006 09 23 | 691 | 0.6− | 0.4− | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2001 03 18 | 699 | 0.8− | 0.4− | 2006 09 23 | 691 | 0.7+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.8− |

**2001 FR$_{145}$ = 2006 WS$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.50800 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28441903 | $\omega$ | 88.06141 | | −0.40726706 | | +0.91285166 |
| $a$ | 2.2899726 | $\Omega$ | 157.83578 | | −0.86545195 | | −0.37562337 |
| $e$ | 0.1125188 | $i$ | 4.39387 | | −0.29176439 | | −0.16002790 |
| $P$ | 3.47 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | (2.0+ | 1.3+) | 2001 03 26 | 704 | 0.6+ | 1.3+ | 2006 11 16 | 691 | 0.4− | 0.1+ |
| 2001 03 02 | 699 | (2.9+ | 0.4−) | 2001 03 26 | 704 | 0.5+ | 1.0− | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2001 03 02 | 699 | 0.4+ | 0.3+ | 2001 03 26 | 704 | 0.8− | 0.8+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 03 02 | 699 | (2.3+ | 0.8−) | 2001 03 26 | 704 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2001 03 02 | 691 | 0.4+ | 0.2+ | 2001 03 26 | 704 | 0.4+ | 0.9− | 2006 11 24 | 691 | 0.2− | 0.5+ |
| 2001 03 02 | 691 | 0.3+ | 0.4+ | 2002 09 05 | 645 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2001 03 02 | 691 | 0.4+ | 0.3+ | 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 11 24 | 691 | 0.3+ | 0.2− |
| 2001 03 23 | 209 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2001 03 23 | 209 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2001 03 23 | 209 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2001 03 24 | 691 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2001 03 24 | 691 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.3+ | 0.0 | | | | |
| 2001 03 24 | 691 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.6− | 0.3+ | | | | |

**2001 FB$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.39368 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25563993 | $\omega$ | 283.05605 | | −0.39651262 | | +0.91519662 |
| $a$ | 2.4587644 | $\Omega$ | 323.31812 | | −0.78860238 | | −0.37974585 |
| $e$ | 0.1379607 | $i$ | 6.92854 | | −0.46998302 | | −0.13493791 |
| $P$ | 3.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.7− | 1.3+ | 2002 08 28 | 644 | 0.0 | 0.1− | 2005 05 14 | 703 | 1.1− | 0.0 |
| 1998 08 17 | 704 | 0.6+ | 0.5− | 2002 08 28 | 644 | 0.0 | 0.2− | 2005 05 23 | 644 | 0.3+ | 0.2+ |
| 1998 08 17 | 704 | (0.7− | 2.1+) | 2002 09 14 | 644 | 0.1+ | 0.8− | 2005 05 23 | 644 | 0.7+ | 0.3+ |
| 1998 08 17 | 704 | (4.2− | 2.2−) | 2002 09 14 | 644 | 0.1+ | 0.7− | 2005 05 23 | 644 | 0.6+ | 0.2+ |
| 2001 03 18 | 608 | 1.0− | 0.4+ | 2002 09 14 | 644 | 0.0 | 0.8− | 2006 09 17 | 703 | 0.5− | 0.3− |
| 2001 03 18 | 608 | 0.8− | 0.3+ | 2002 10 04 | 704 | 0.5+ | 0.3− | 2006 09 17 | 703 | 1.4− | 0.4+ |
| 2001 03 18 | 608 | 0.9− | 0.1+ | 2002 10 04 | 704 | 0.0 | 0.4− | 2006 09 17 | 703 | 1.3− | 0.5+ |
| 2001 03 19 | 699 | (2.1+ | 0.7+) | 2002 10 04 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.4+ | 0.3− |
| 2001 03 19 | 699 | (0.8+ | 1.9+) | 2005 04 18 | E12 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.4+ | 0.4+ |
| 2001 03 19 | 699 | 0.9+ | 1.4+ | 2005 04 18 | E12 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.5+ |
| 2001 03 19 | 699 | (1.3+ | 2.0+) | 2005 04 18 | E12 | 0.7+ | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 2001 03 24 | 704 | 1.3+ | 0.7+ | 2005 04 18 | E12 | 0.0 | 0.5+ | 2006 10 01 | 703 | 0.5− | 0.9− |
| 2001 03 24 | 704 | 0.0 | 0.0 | 2005 05 01 | 644 | 0.5+ | 0.4+ | 2006 10 01 | 703 | 0.3− | 0.7− |
| 2001 03 24 | 704 | 0.6+ | 1.4− | 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 10 01 | 703 | 1.3− | 0.1− |
| 2001 03 27 | 608 | 0.3− | 0.7− | 2005 05 01 | 644 | 0.6+ | 0.2+ | 2006 10 01 | 703 | 0.5+ | 0.6− |
| 2001 03 27 | 608 | 0.1+ | 0.2− | 2005 05 14 | 703 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 03 27 | 608 | 0.2+ | 0.3− | 2005 05 14 | 703 | 0.9− | 1.0− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2005 05 14 | 703 | 1.1− | 0.9− | 2006 10 12 | 644 | 0.6+ | 0.1+ |

**2001 FA$_{152}$ = 2002 RN$_{259}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.55374 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26274892 | $\omega$ | 201.20265 | | −0.92011573 | | +0.39160937 |
| $a$ | 2.4142121 | $\Omega$ | 1.87802 | | −0.33144752 | | −0.77126972 |
| $e$ | 0.1384695 | $i$ | 9.48177 | | −0.20863745 | | −0.50178194 |
| $P$ | 3.75 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 0.2− | 1.5+ | 2001 05 17 | 649 | 0.1− | 1.2+ | 2006 09 24 | 691 | 0.3− | 0.1− |
| 2001 03 20 | 699 | 0.4+ | 0.7+ | 2001 05 17 | 649 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2001 03 20 | 699 | 0.2− | 0.6+ | 2001 05 17 | 649 | (1.7− | 0.8+) | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 03 20 | 699 | 1.3+ | 0.5+ | 2002 09 12 | 644 | 0.4− | 0.3− | 2006 09 28 | 691 | 0.2+ | 0.5+ |
| 2001 03 25 | 649 | 0.4+ | 0.7+ | 2002 09 12 | 644 | 0.2− | 0.2− | 2006 10 02 | H55 | 0.1− | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 649 | (0.9− | 2.5+) | 2002 09 12 | 644 | 0.0 | 0.3− | 2006 10 02 | H55 | 0.0 | 0.7− | | |
| 2001 03 25 | 649 | (0.4− | 2.3+) | 2002 09 15 | 644 | 0.1+ | 0.4− | 2006 10 02 | H55 | 0.5+ | 0.0 | | |
| 2001 03 26 | 704 | 0.1− | 0.5− | 2002 09 15 | 644 | 0.4+ | 0.2− | 2006 10 02 | H55 | 1.2+ | 0.4− | | |
| 2001 03 26 | 704 | 0.4+ | 0.4+ | 2002 09 15 | 644 | 1.0+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.5+ | | |
| 2001 03 26 | 704 | 0.2− | 0.4− | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2001 03 26 | 704 | 1.0+ | 0.8− | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.7− | | |
| 2001 03 26 | 704 | 0.8− | 1.0+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.4− | 0.3+ | | |
| 2001 04 24 | 608 | 0.2+ | 0.7− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.0 | | |
| 2001 04 24 | 608 | 0.3+ | 0.5− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.0 | | |
| 2001 04 24 | 608 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.1+ | | |
| 2001 05 16 | 649 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.3+ | | | | | | |
| 2001 05 16 | 649 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.2− | 0.1+ | | | | | | |

### 2001 FE$_{155}$ = 1988 KX

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.13185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30227037 | $\omega$ | 73.55971 | | −0.83550147 | +0.54883586 | |
| $a$ | 2.1989010 | $\Omega$ | 139.71672 | | −0.51862205 | −0.77153619 | |
| $e$ | 0.2620821 | $i$ | 2.37269 | | −0.18157221 | −0.32173140 | |
| $P$ | 3.26 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 05 23 | 809 | 0.1− | 0.1+ | 2001 04 16 | 704 | 0.7− | 0.3+ | 2004 01 26 | 699 | 0.1+ | 0.6− | | |
| 1988 05 23 | 809 | 0.1+ | 0.4− | 2001 04 16 | 704 | 0.1+ | 0.0 | 2004 01 26 | 699 | 0.0 | 0.4− | | |
| 1988 05 23 | 809 | 0.2− | 0.7− | 2001 04 16 | 704 | 0.6− | 0.3− | 2004 01 26 | 699 | 0.4− | 0.2− | | |
| 2001 03 19 | 704 | 0.0 | 0.0 | 2001 05 23 | 699 | 0.4+ | 0.1+ | 2004 01 26 | 699 | 0.1+ | 1.1− | | |
| 2001 03 19 | 704 | 0.6+ | 0.5− | 2001 05 23 | 699 | 0.4− | 0.1+ | 2004 01 30 | 704 | 0.8+ | 0.4+ | | |
| 2001 03 19 | 704 | 0.1+ | 0.4− | 2001 05 23 | 699 | 0.3+ | 0.5+ | 2004 01 30 | 704 | 0.1− | 0.2− | | |
| 2001 03 19 | 704 | 0.4+ | 1.1− | 2001 05 23 | 699 | 1.4+ | 0.1+ | 2004 01 30 | 704 | 0.4+ | 0.8− | | |
| 2001 03 19 | 704 | 0.8+ | 0.3+ | 2001 05 24 | 645 | 0.2− | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.6+ | | |
| 2001 03 19 | 704 | 0.7− | 0.2+ | 2001 05 24 | 645 | 0.3− | 0.0 | 2004 01 30 | 704 | 0.6− | 1.3+ | | |
| 2001 03 19 | 704 | 0.2+ | 0.2+ | 2003 12 29 | 691 | 0.2+ | 0.2− | 2004 02 11 | 699 | 1.1+ | 0.7− | | |
| 2001 03 19 | 704 | 0.9+ | 0.9+ | 2003 12 29 | 691 | 0.1+ | 0.2− | 2004 02 11 | 699 | 0.2+ | 1.4− | | |
| 2001 03 19 | 704 | 0.1− | 1.4+ | 2003 12 29 | 691 | 0.1− | 0.1− | 2004 02 11 | 699 | 0.5− | 0.1− | | |
| 2001 03 19 | 704 | 1.2− | 1.0+ | 2004 01 12 | 644 | 0.4− | 0.5− | 2004 02 11 | 699 | 0.1− | 0.3+ | | |
| 2001 03 20 | 699 | 0.1− | 0.3+ | 2004 01 12 | 644 | 0.6− | 0.2− | 2004 02 16 | 704 | 0.9− | 0.9+ | | |
| 2001 03 20 | 699 | 0.3− | 0.3+ | 2004 01 12 | 644 | 0.5− | 0.1− | 2004 02 16 | 704 | 0.2+ | 1.3+ | | |
| 2001 03 20 | 699 | 0.1− | 0.1− | 2004 01 19 | 699 | 0.6− | 0.3− | 2004 02 16 | 704 | 1.3+ | 1.0− | | |
| 2001 03 20 | 699 | 0.4− | 0.0 | 2004 01 19 | 699 | 0.6− | 0.6− | 2004 02 16 | 704 | 0.7+ | 0.8+ | | |
| 2001 03 26 | 704 | 0.1− | 0.1− | 2004 01 19 | 699 | 0.1+ | 0.6− | 2004 02 26 | 704 | 0.3− | 0.3+ | | |
| 2001 03 26 | 704 | 0.0 | 0.3+ | 2004 01 19 | 699 | 1.2− | 0.1− | 2004 02 26 | 704 | 0.2− | 0.0 | | |
| 2001 03 26 | 704 | 0.2+ | 0.8+ | 2004 01 19 | 691 | 0.2− | 0.2− | 2004 02 26 | 704 | 0.6− | 0.4+ | | |
| 2001 03 26 | 704 | 0.1− | 0.9+ | 2004 01 19 | 691 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.2− | 0.9+ | | |
| 2001 03 26 | 704 | 0.1+ | 0.8+ | 2004 01 19 | 691 | 0.2− | 0.2− | 2004 04 14 | 645 | 0.1− | 0.5− | | |
| 2001 03 28 | 704 | 1.3+ | 0.7− | 2004 01 21 | 704 | 0.5+ | 0.1+ | 2004 04 14 | 645 | 0.1− | 0.4− | | |
| 2001 03 28 | 704 | 0.2− | 0.2− | 2004 01 21 | 704 | 0.2+ | 0.2− | 2005 08 28 | 691 | 0.3− | 0.7+ | | |
| 2001 03 28 | 704 | 0.3− | 0.8− | 2004 01 21 | 704 | 0.3+ | 0.1+ | 2005 08 28 | 691 | 0.2− | 0.8+ | | |
| 2001 03 28 | 704 | 0.7+ | 0.0 | 2004 01 21 | 704 | 0.2− | 0.1+ | 2005 08 28 | 691 | 0.2− | 0.5+ | | |
| 2001 03 28 | 704 | 0.2+ | 0.7+ | 2004 01 21 | 704 | 0.2+ | 0.7+ | 2005 09 01 | 691 | 0.1− | 0.7+ | | |
| 2001 03 30 | 608 | 0.3− | 0.3− | 2004 01 24 | 704 | 0.4+ | 0.8+ | 2005 09 01 | 691 | 0.1− | 0.4+ | | |
| 2001 03 30 | 608 | 0.1− | 0.2− | 2004 01 24 | 704 | 0.3+ | 0.7+ | 2005 09 01 | 691 | 0.0 | 0.9+ | | |
| 2001 03 30 | 608 | 0.2− | 0.1+ | 2004 01 24 | 704 | 0.4+ | 0.5+ | 2005 09 11 | 691 | 0.6− | 0.7+ | | |
| 2001 04 16 | 704 | 0.4− | 0.2− | 2004 01 24 | 704 | 1.1+ | 0.4+ | 2005 09 11 | 691 | 0.7− | 0.5+ | | |
| 2001 04 16 | 704 | 0.5+ | 0.3− | 2004 01 24 | 704 | 0.3− | 1.5+ | 2005 09 11 | 691 | 0.1− | 0.5+ | | |

### 2001 FH$_{159}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.98500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27128924 | $\omega$ | 355.74866 | | −0.98248904 | +0.18385543 | |
| $a$ | 2.3632754 | $\Omega$ | 194.94893 | | −0.16730691 | −0.94190664 | |
| $e$ | 0.1640323 | $i$ | 6.72478 | | −0.08199803 | −0.28108552 | |
| $P$ | 3.63 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.7+ | 0.1+ | 2001 04 01 | 704 | 0.8+ | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 2001 03 19 | 699 | 0.4+ | 0.6− | 2001 04 01 | 704 | 0.1− | 1.2+ | 2006 09 25 | G96 | 0.1− | 0.1− | | |
| 2001 03 19 | 699 | 0.3− | 0.1+ | 2001 04 21 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− | | |
| 2001 03 19 | 699 | 0.9− | 0.3+ | 2001 04 21 | 691 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2− | | |
| 2001 03 29 | 699 | 0.2− | 0.1+ | 2001 04 21 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1− | | |
| 2001 03 29 | 699 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.3+ | | |
| 2001 03 29 | 699 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.5+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ | | |
| 2001 03 29 | 699 | 0.1− | 0.5− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.4− | 0.4+ | | |
| 2001 04 01 | 704 | 0.9+ | 0.2− | 2006 09 25 | G96 | 0.6+ | 0.3− | 2006 09 30 | 691 | 0.3− | 0.4+ | | |

### 2001 FM$_{170}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.56561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26883950 | $\omega$ | 35.16644 | | −0.73047532 | +0.68290409 | |
| $a$ | 2.3776102 | $\Omega$ | 187.91570 | | −0.63752536 | −0.68549604 | |
| $e$ | 0.1504408 | $i$ | 2.87798 | | −0.24488206 | −0.25246224 | |
| $P$ | 3.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 0.0 | 0.4+ | 2001 04 18 | 704 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2001 03 20 | 699 | 0.2− | 0.4− | 2001 04 27 | 704 | (0.6+ | 1.6−) | 2006 11 09 | 691 | 0.0 | 0.4+ | | |
| 2001 03 20 | 699 | 0.5− | 0.3+ | 2001 04 27 | 704 | 0.3+ | 0.4+ | 2006 11 09 | 691 | 0.4+ | 0.2− | | |
| 2001 03 20 | 699 | 0.0 | 0.4− | 2001 04 27 | 704 | 0.8− | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.3− | | |
| 2001 03 24 | 704 | 0.1− | 0.2+ | 2001 04 27 | 704 | 0.4+ | 0.5− | 2006 11 10 | 691 | 0.1− | 0.6+ | | |
| 2001 03 24 | 704 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 1.1+ | 0.4− | 2006 11 10 | 691 | 0.2− | 0.2+ | | |
| 2001 03 24 | 704 | 0.7+ | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.3− | 0.1+ | | |
| 2001 03 30 | 608 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.7+ | 0.5+ | | |
| 2001 03 30 | 608 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.5− | | |
| 2001 03 30 | 608 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.4− | | |
| 2001 04 18 | 704 | 0.7− | 0.4− | 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.3− | 0.2− | | |
| 2001 04 18 | 704 | 0.2+ | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.4− | 0.2+ | | |
| 2001 04 18 | 704 | 0.0 | 0.4− | 2006 10 22 | 691 | 0.5− | 0.3− | 2006 11 13 | 691 | 0.3+ | 0.1− | | |
| 2001 04 18 | 704 | 0.5+ | 0.9+ | 2006 10 22 | 691 | 0.4− | 0.0 | | | | | | |

### 2001 FC$_{186}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.06235 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27653077 | $\omega$ | 177.26180 | | −0.73200970 | +0.67322630 | |
| $a$ | 2.3333170 | $\Omega$ | 45.65219 | | −0.62782029 | −0.60697838 | |
| $e$ | 0.2365886 | $i$ | 8.40587 | | −0.26458172 | −0.42230748 | |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 03 | 691 | 0.1+ | 0.1− | 2001 03 31 | 704 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.6− | | |
| 1994 05 03 | 691 | 0.0 | 0.3− | 2001 03 31 | 704 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.9+ | | |
| 1994 05 03 | 691 | 0.3− | 0.0 | 2001 03 31 | 704 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4+ | | |
| 2001 03 04 | 704 | 1.0− | 0.2− | 2001 04 15 | 704 | 0.7− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2001 03 04 | 704 | 0.4+ | 0.1+ | 2001 04 15 | 704 | 0.6+ | 0.7+ | 2006 10 27 | G96 | 0.6+ | 0.1− | | |
| 2001 03 04 | 704 | 0.2− | 0.7− | 2001 04 15 | 704 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.4+ | 0.4+ | | |
| 2001 03 04 | 704 | 0.1+ | 0.7− | 2001 04 15 | 704 | 1.0+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.5+ | | |
| 2001 03 04 | 704 | 0.7− | 0.1+ | 2001 04 15 | 704 | 0.6− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2001 03 16 | 704 | 0.5− | 0.3− | 2001 04 23 | 699 | 0.5+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.2+ | | |
| 2001 03 16 | 704 | 0.7+ | 0.3+ | 2001 04 23 | 699 | 0.4− | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.8− | | |
| 2001 03 16 | 704 | 0.3− | 0.4+ | 2001 04 23 | 699 | 1.4− | 1.2− | 2006 11 12 | G96 | 1.0+ | 0.2− | | |
| 2001 03 16 | 704 | 0.8+ | 0.5+ | 2001 04 23 | 699 | (2.6+ | 2.7+) | 2006 11 12 | G96 | 0.4− | 0.0 | | |
| 2001 03 16 | 704 | 1.1− | 1.0+ | 2001 05 23 | 704 | 1.1+ | 0.6+ | 2006 11 12 | G96 | 0.3+ | 0.2− | | |
| 2001 03 19 | 699 | 0.4+ | 0.5− | 2001 05 23 | 704 | 1.0+ | 0.8+ | 2006 11 12 | G96 | 0.1− | 0.2− | | |
| 2001 03 19 | 699 | 0.0 | 0.0 | 2001 05 23 | 704 | 0.4+ | 0.7+ | 2006 11 12 | G96 | 0.2+ | 0.6− | | |
| 2001 03 19 | 699 | 0.0 | 0.1+ | 2001 05 23 | 704 | (1.8+ | 0.8+) | 2006 11 12 | G96 | 0.7− | 0.6− | | |
| 2001 03 19 | 699 | 0.0 | 0.6− | 2006 10 20 | 691 | 0.1− | 0.3− | | | | | | |
| 2001 03 31 | 704 | 0.3+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2+ | | | | | | |

**2001 FF$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.83821 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26344467 | $\omega$ | 186.82408 | −0.37121261 | | +0.92724068 | |
| $a$ | 2.4099596 | $\Omega$ | 61.39564 | −0.84925251 | | −0.31758570 | |
| $e$ | 0.1814997 | $i$ | 3.21604 | −0.37546155 | | −0.19840376 | |
| $P$ | 3.74 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.2− | 0.7+ | 2001 05 23 | 699 | 0.4− | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2001 03 19 | 704 | 0.1− | 0.4− | 2001 05 23 | 699 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 03 19 | 704 | 0.7+ | 1.1− | 2001 05 23 | 699 | (0.1− | 2.0+) | 2006 10 23 | 691 | 0.0 | 0.3− |
| 2001 03 19 | 704 | 1.1+ | 0.4+ | 2001 05 23 | 699 | 0.8+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2001 03 26 | 704 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 03 26 | 704 | 0.3− | 0.7− | 2006 09 26 | G96 | 0.4+ | 0.7− | 2006 10 27 | 691 | 0.4− | 0.3− |
| 2001 03 26 | 704 | 1.2− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2001 03 26 | 704 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2001 04 17 | 699 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.8+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2001 04 17 | 699 | 0.4− | 0.0 | 2006 10 11 | 691 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.4− |
| 2001 04 17 | 699 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 04 17 | 699 | 0.7− | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.6+ | | | | |

**2001 FL$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.09437 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26105464 | $\omega$ | 75.12228 | −0.52064888 | | +0.85355646 | |
| $a$ | 2.4246466 | $\Omega$ | 163.46017 | −0.80688814 | | −0.48461071 | |
| $e$ | 0.1542117 | $i$ | 3.85389 | −0.27902738 | | −0.19129513 | |
| $P$ | 3.78 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.2+ | 0.0 | 2005 04 01 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2001 02 20 | 645 | 0.2+ | 0.1+ | 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.3− |
| 2001 03 20 | 691 | 0.4− | 0.2+ | 2005 04 01 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2001 03 20 | 691 | 0.8− | 0.1+ | 2005 04 12 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2001 03 20 | 691 | 0.2− | 0.2+ | 2005 04 12 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2001 03 26 | 695 | 0.1− | 0.4+ | 2005 04 12 | 691 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2001 03 26 | 695 | 0.2+ | 0.4+ | 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 09 27 | 291 | 0.3+ | 0.4+ |
| 2005 03 17 | 691 | 0.3+ | 0.4+ | 2005 05 04 | 691 | 0.1+ | 0.2− | 2006 09 27 | 291 | 0.7− | 1.0+ |
| 2005 03 17 | 691 | 0.4+ | 0.3+ | 2005 05 04 | 691 | 0.3− | 0.0 | 2006 09 27 | 291 | 0.0 | 1.1+ |
| 2005 03 17 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.7+ | | | | |

**2001 FL$_{196}$ = 2002 RN$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.15683 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29270441 | $\omega$ | 23.79605 | −0.97964748 | | +0.19982637 | |
| $a$ | 2.2465523 | $\Omega$ | 167.68548 | −0.19547464 | | −0.92825781 | |
| $e$ | 0.1183378 | $i$ | 5.10564 | −0.04561238 | | −0.31369869 | |
| $P$ | 3.37 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 06 | 691 | 0.5+ | 0.6+ | 2001 03 29 | 699 | 0.1+ | 0.5+ | 2004 03 18 | 645 | 0.1+ | 0.0 |
| 1994 03 06 | 691 | 0.1− | 0.1− | 2001 03 29 | 699 | 0.2+ | 0.3− | 2004 04 14 | 645 | 0.0 | 0.0 |
| 1994 03 06 | 691 | 0.0 | 0.2− | 2001 03 29 | 699 | 0.7− | 0.3+ | 2004 04 14 | 645 | 0.1− | 0.0 |
| 2001 02 22 | 691 | 0.0 | 0.3− | 2001 03 29 | 699 | 1.0+ | 0.2− | 2005 07 10 | 691 | 0.1− | 0.6+ |
| 2001 02 22 | 691 | 0.0 | 0.1− | 2001 04 17 | 699 | 0.4− | 0.5+ | 2005 07 10 | 691 | 0.1+ | 0.2+ |
| 2001 02 22 | 691 | 0.1− | 0.1− | 2001 04 17 | 699 | 0.2− | 1.1+ | 2005 07 10 | 691 | 0.4+ | 0.2− |
| 2001 03 03 | 691 | 0.2− | 0.4+ | 2001 04 17 | 699 | 0.5+ | 0.4+ | 2005 07 27 | 644 | 0.2+ | 0.4+ |
| 2001 03 03 | 691 | 0.2− | 0.1+ | 2001 04 17 | 699 | 0.9+ | 0.4+ | 2005 07 27 | 644 | 0.3+ | 0.8+ |
| 2001 03 03 | 691 | 0.3− | 0.1+ | 2002 09 13 | 644 | 0.4− | 0.3+ | 2005 07 27 | 644 | 0.3+ | 0.9+ |
| 2001 03 16 | 691 | 0.1− | 0.2+ | 2002 09 13 | 644 | 0.6− | 0.4+ | 2006 11 16 | 691 | 0.3− | 0.3+ |
| 2001 03 16 | 691 | 0.3+ | 0.2− | 2002 09 13 | 644 | 0.5− | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 03 16 | 691 | 0.1− | 0.0 | 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2001 03 26 | 704 | 0.7− | 1.5+ | 2002 09 15 | 644 | 1.1− | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.4+ |
| 2001 03 26 | 704 | 1.2+ | 1.5+ | 2002 09 15 | 644 | 0.8− | 0.6+ | 2006 11 24 | 691 | 0.2− | 0.3+ |
| 2001 03 26 | 704 | (1.9+ | 0.5+) | 2004 03 18 | 645 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.1− | 0.2+ |

**2001 FM$_{196}$ = 2005 EJ$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.53109 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22359669 | $\omega$ | 183.50909 | −0.21213678 | | +0.95321272 | |
| $a$ | 2.6883912 | $\Omega$ | 74.33084 | −0.89106628 | | −0.09818662 | |
| $e$ | 0.1954512 | $i$ | 12.92532 | −0.40124665 | | −0.28591066 | |
| $P$ | 4.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 699 | 1.6+ | 0.5+ | 2001 04 25 | 699 | 0.3− | 0.6− | 2005 03 08 | 704 | 0.8+ | 0.7+ |
| 2001 03 25 | 699 | 1.9− | 1.1+ | 2001 05 23 | 699 | 2.3+ | 0.5− | 2005 03 08 | 704 | 1.1+ | 0.1− |
| 2001 03 25 | 699 | 0.2+ | 0.0 | 2001 05 23 | 699 | 0.2+ | 0.7+ | 2005 03 16 | 699 | 0.6− | 0.8+ |
| 2001 03 25 | 699 | 0.6− | 0.2+ | 2001 05 23 | 699 | 0.6+ | 0.5+ | 2005 03 16 | 699 | 0.6+ | 0.6+ |
| 2001 03 25 | 699 | 0.3+ | 0.5+ | 2001 05 23 | 699 | 1.2+ | 0.6+ | 2005 03 16 | 699 | (0.2− | 2.2+) |
| 2001 03 25 | 699 | 1.1− | 0.2+ | 2002 09 13 | 699 | 0.1− | 0.0 | 2005 03 16 | 699 | 0.5− | 0.9+ |
| 2001 03 25 | 699 | 0.3+ | 0.3+ | 2002 09 13 | 699 | 0.4− | 0.3+ | 2006 06 10 | 644 | 0.0 | 0.2+ |
| 2001 03 25 | 699 | 0.6− | 0.1− | 2002 09 13 | 699 | 0.7− | 0.3+ | 2006 06 10 | 644 | 0.0 | 0.5+ |
| 2001 04 15 | 704 | 0.3+ | 0.1− | 2002 09 13 | 699 | 0.3+ | 1.3+ | 2006 06 10 | 644 | 0.2+ | 0.1− |
| 2001 04 15 | 704 | 0.7− | 0.1− | 2005 03 08 | 703 | 0.2− | 0.4+ | 2006 07 20 | E12 | 0.5+ | 0.2+ |
| 2001 04 15 | 704 | 0.3+ | 1.4− | 2005 03 08 | 703 | 0.7− | 0.8− | 2006 07 20 | E12 | 0.2+ | 0.3− |
| 2001 04 15 | 704 | 0.5− | 0.5− | 2005 03 08 | 703 | (2.1− | 0.6−) | 2006 07 20 | E12 | 0.0 | 0.3− |
| 2001 04 25 | 699 | 0.0 | 0.0 | 2005 03 08 | 703 | 0.9− | 1.2− | 2006 07 29 | E12 | 0.0 | 0.3− |
| 2001 04 25 | 699 | 0.3− | 0.3− | 2005 03 08 | 704 | 0.3− | 0.2+ | 2006 07 29 | E12 | 0.3+ | 0.4− |
| 2001 04 25 | 699 | 0.4− | 0.0 | 2005 03 08 | 704 | 1.2+ | 0.6− | 2006 07 29 | E12 | 1.2− | 0.3− |

**2001 FN$_{196}$ = 1988 FN$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.56631 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23085691 | $\omega$ | 150.68750 | −0.82313369 | | +0.54410435 | |
| $a$ | 2.6317268 | $\Omega$ | 63.16883 | −0.54999005 | | −0.69271759 | |
| $e$ | 0.1491334 | $i$ | 10.49144 | −0.14128651 | | −0.47338441 | |
| $P$ | 4.27 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 03 17 | 033 | 0.1− | 0.3− | 2001 05 26 | 608 | 0.6+ | 1.3+ | 2005 03 17 | 704 | 0.4+ | 0.1− |
| 1988 03 18 | 033 | 0.4+ | 0.6+ | 2001 05 26 | 608 | 0.5+ | 1.2+ | 2005 03 17 | 704 | 0.6+ | 0.1− |
| 1994 11 11 | 413 | 0.9− | 1.3+ | 2001 05 26 | 608 | 0.3+ | 0.8+ | 2005 04 02 | 699 | 0.9+ | 0.8+ |
| 1994 11 11 | 413 | 0.7− | 1.2+ | 2003 11 23 | 704 | 0.4+ | 0.2+ | 2005 04 02 | 699 | 1.1+ | 0.1+ |
| 2001 03 26 | 608 | 0.0 | 0.1+ | 2003 11 23 | 704 | 0.2− | 1.2+ | 2005 04 02 | 699 | 0.2− | 0.1− |
| 2001 03 26 | 608 | 0.2− | 0.6− | 2003 11 23 | 704 | 0.7− | 0.6+ | 2005 04 02 | 699 | 2.1+ | 1.0− |
| 2001 03 26 | 608 | 0.6− | 0.1− | 2005 01 16 | 703 | 2.6− | 1.2+ | 2005 04 02 | 703 | 0.3+ | 0.9+ |
| 2001 04 15 | 704 | 0.1− | 0.6− | 2005 01 16 | 703 | 0.3+ | 0.2+ | 2005 04 02 | 703 | 1.1− | 0.8− |
| 2001 04 15 | 704 | 0.4+ | 0.1+ | 2005 01 16 | 703 | 0.8− | 0.2+ | 2005 04 02 | 703 | 1.3− | 0.1+ |
| 2001 04 15 | 704 | 0.5+ | 0.2− | 2005 01 16 | 703 | 0.2− | 0.2+ | 2005 04 02 | 703 | 0.4− | 0.8− |
| 2001 04 15 | 704 | 0.2+ | 0.1+ | 2005 03 17 | 704 | 0.5− | 0.3+ | 2005 04 12 | 704 | 0.6+ | 0.4+ |
| 2001 04 15 | 704 | 0.8− | 0.9+ | 2005 03 17 | 704 | 0.4− | 0.3− | 2005 04 12 | 704 | 0.2− | 0.2+ |
| 2001 05 18 | 704 | 0.6+ | 0.9+ | 2005 03 17 | 704 | 0.0 | 0.5+ | 2005 04 12 | 704 | 0.3− | 0.0 |
| 2001 05 18 | 704 | 0.2+ | 0.4+ | 2005 03 17 | 704 | 0.1+ | 0.6− | 2005 04 12 | 704 | 0.7+ | 1.1− |
| 2001 05 18 | 704 | 0.5− | 0.0 | 2005 03 17 | 704 | 0.1− | 0.3+ | | | | |
| 2001 05 18 | 704 | 0.6+ | 0.5− | 2005 03 17 | 704 | 0.3+ | 0.2− | | | | |

**2001 FO$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.97851 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22717039 | $\omega$ | 116.74433 | +0.00819967 | | +0.99852589 | |
| $a$ | 2.6601221 | $\Omega$ | 153.55947 | −0.95492786 | | +0.02374081 | |
| $e$ | 0.3041703 | $i$ | 6.92093 | −0.29672470 | | −0.04881015 | |
| $P$ | 4.34 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 691 | 0.0 | 0.8+ | 2001 05 22 | 699 | 0.1+ | 0.1− | 2005 03 16 | G96 | 0.1+ | 0.2+ |
| 1997 10 01 | 691 | 0.3− | 0.3+ | 2001 05 22 | 699 | 0.7+ | 0.3+ | 2005 03 16 | G96 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 691 | 0.2+ | 0.1+ | 2001 05 22 | 699 | 0.5− | 0.3− | 2005 03 16 | G96 | 0.2− | 0.1+ |
| 2001 03 20 | 691 | 0.0 | 0.4+ | 2001 05 24 | 645 | 0.1− | 0.0 | 2005 03 16 | G96 | 0.9− | 0.6+ |
| 2001 03 20 | 691 | 0.2− | 0.5+ | 2001 05 24 | 645 | 0.0 | 0.0 | 2005 04 10 | 691 | 0.0 | 0.8− |
| 2001 03 20 | 691 | 0.3+ | 0.3+ | 2001 06 15 | 645 | 0.0 | 0.1− | 2005 04 10 | 691 | 0.5+ | 0.6+ |
| 2001 05 22 | 699 | (0.0 | 2.6+) | 2001 06 15 | 645 | 0.0 | 0.1− | 2005 04 10 | 691 | 0.0 | 0.4+ |

**2001 GG$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.69733 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28747038 | $\omega$ | 69.90836 | | −0.01970898 | | −0.99961676 |
| $a$ | 2.2737392 | $\Omega$ | 21.24903 | | +0.89610170 | | −0.02628425 |
| $e$ | 0.1344382 | $i$ | 3.07465 | | +0.44341099 | | +0.00868707 |
| $P$ | 3.43 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 691 | 0.3+ | 0.5+ | 2003 12 28 | 704 | 0.3+ | 0.8− | 2006 09 26 | G96 | 0.0 | 0.7− |
| 2001 03 20 | 691 | 0.5+ | 0.3+ | 2003 12 28 | 704 | 0.3− | 0.5− | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2001 03 20 | 691 | 0.3+ | 0.3+ | 2003 12 28 | 704 | 0.5− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2001 04 14 | 691 | 0.1− | 0.6+ | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2001 04 14 | 691 | 0.2+ | 0.7− | 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 04 14 | 691 | 0.2− | 0.7+ | 2004 01 22 | 704 | 0.9+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 04 15 | 691 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 04 15 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2001 04 15 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2003 12 23 | 704 | (0.5− | 1.6−) | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.4− | 0.0 |
| 2003 12 23 | 704 | 0.4− | 0.6+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.5− | 0.2− |
| 2003 12 23 | 704 | 0.3+ | 0.6− | 2006 09 18 | 691 | 0.1− | 0.5+ | 2006 11 02 | G96 | 0.3− | 0.9+ |
| 2003 12 23 | 704 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.5+ | 2006 11 02 | G96 | (0.3− | 1.8+) |
| 2003 12 23 | 704 | 0.8− | 0.4− | 2006 09 25 | 691 | 0.4− | 0.3+ | 2006 11 02 | G96 | (1.4− | 1.5+) |
| 2003 12 28 | 704 | 0.1− | 0.4− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 02 | G96 | (0.3− | 1.6+) |

**2001 GH$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.37049 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28333640 | $\omega$ | 187.70334 | | +0.15266609 | | +0.91053961 |
| $a$ | 2.2958022 | $\Omega$ | 91.67534 | | −0.88499993 | | +0.29898192 |
| $e$ | 0.1983517 | $i$ | 22.60437 | | −0.43985019 | | −0.28553008 |
| $P$ | 3.48 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 28 | 699 | 0.4+ | 0.7+ | 2002 10 07 | 644 | 0.3− | 0.1− | 2003 12 29 | 704 | 0.1− | 0.3− |
| 2001 03 28 | 699 | 0.1+ | 0.7+ | 2002 10 07 | 644 | 0.1+ | 0.1− | 2004 01 16 | 644 | 0.5+ | 0.0 |
| 2001 03 28 | 699 | 0.2− | 0.2+ | 2002 12 05 | 644 | 0.4− | 0.4+ | 2004 01 16 | 644 | 0.3+ | 0.1+ |
| 2001 03 28 | 699 | 0.1− | 0.2+ | 2002 12 05 | 644 | 0.5− | 0.8+ | 2004 01 16 | 644 | 0.4+ | 0.2+ |
| 2001 04 13 | 704 | 0.0 | 1.2+ | 2002 12 05 | 644 | 0.2− | 0.2+ | 2004 02 11 | 704 | 1.5+ | 0.3+ |
| 2001 04 13 | 704 | 0.4+ | 0.7+ | 2003 12 17 | 699 | 0.1+ | 0.8+ | 2004 02 11 | 704 | 0.2+ | 0.5− |
| 2001 04 13 | 704 | 1.2− | 0.8+ | 2003 12 17 | 699 | 0.0 | 1.6− | 2004 02 11 | 704 | 0.3+ | 0.1− |
| 2001 04 13 | 704 | 0.4+ | 0.7+ | 2003 12 17 | 699 | 0.1− | 0.4− | 2006 11 20 | G96 | 0.7− | 0.3− |
| 2001 04 13 | 704 | 0.5+ | 0.7+ | 2003 12 17 | 699 | 0.0 | 0.5− | 2006 11 20 | G96 | 0.6− | 0.7− |
| 2001 04 15 | 704 | 0.7+ | 0.9+ | 2003 12 28 | 704 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.5− | 0.6− |
| 2001 04 15 | 704 | 0.0 | 0.2− | 2003 12 28 | 704 | (1.7+ | 0.0 ) | 2006 11 20 | G96 | 0.9− | 0.5− |
| 2001 04 15 | 704 | 0.1− | 0.6− | 2003 12 28 | 704 | 1.0− | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2001 04 15 | 704 | 0.8− | 0.7− | 2003 12 28 | 704 | (1.8+ | 0.0 ) | 2006 11 28 | 704 | 0.5+ | 0.8+ |
| 2002 09 01 | 704 | 0.4+ | 0.8− | 2003 12 29 | 704 | 0.5+ | 0.7− | 2006 11 28 | 704 | 0.1− | 1.0+ |
| 2002 09 01 | 704 | 0.2− | 0.9+ | 2003 12 29 | 704 | 0.5+ | 0.7− | 2006 11 28 | 704 | 1.0− | 1.8+ |
| 2002 09 01 | 704 | 0.2+ | 0.8+ | 2003 12 29 | 704 | 0.1+ | 0.5− | | | | |
| 2002 10 07 | 644 | 0.2− | 0.0 | 2003 12 29 | 704 | 0.5+ | 0.6− | | | | |

**2001 GQ$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.18380 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24088604 | $\omega$ | 185.89030 | | −0.18558934 | | +0.97730379 |
| $a$ | 2.5581635 | $\Omega$ | 73.44687 | | −0.89713712 | | −0.12611601 |
| $e$ | 0.1636960 | $i$ | 6.11721 | | −0.40087602 | | −0.17021177 |
| $P$ | 4.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | (0.2− | 2.6+) | 2005 03 10 | 703 | 0.1− | 0.9+ | 2005 04 16 | 703 | 1.0+ | 0.3+ |
| 2001 03 26 | 704 | 1.0+ | 1.4+ | 2005 03 10 | 703 | 0.1+ | 0.3+ | 2005 04 16 | 703 | 0.3− | 0.3+ |
| 2001 03 26 | 704 | 1.3+ | 0.3+ | 2005 03 30 | 703 | 0.6− | 1.9− | 2006 09 26 | 703 | 0.4+ | 0.8+ |
| 2001 03 26 | 704 | 0.4− | 0.5+ | 2005 03 30 | 703 | 0.7+ | 1.2− | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2001 04 15 | 684 | 0.3− | 0.1− | 2005 03 30 | 703 | (2.5− | 1.7−) | 2006 09 26 | 703 | 1.0− | 0.2− |
| 2001 04 15 | 684 | 0.5− | 0.6− | 2005 03 30 | 703 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.8+ | 0.6+ |
| 2001 04 15 | 684 | 0.5− | 0.5− | 2005 04 06 | 703 | 0.7− | 0.7+ | 2006 09 26 | 703 | 0.1− | 0.6− |
| 2001 04 16 | 684 | 0.1+ | 0.0 | 2005 04 06 | 703 | 0.2− | 1.4− | 2006 09 26 | 703 | 0.8− | 0.0 |
| 2001 04 16 | 684 | 0.0 | 0.0 | 2005 04 06 | 703 | 0.2− | 1.1+ | 2006 09 26 | 703 | 1.1+ | 0.7− |
| 2001 04 16 | 684 | 0.4− | 0.1− | 2005 04 06 | 703 | 0.8− | 1.0+ | 2006 09 26 | 703 | 0.3− | 0.3− |
| 2005 03 10 | 703 | 0.3− | 0.2− | 2005 04 16 | 703 | 1.1+ | 0.4+ | | | | |
| 2005 03 10 | 703 | 0.5− | 0.4− | 2005 04 16 | 703 | 0.7+ | 0.9− | | | | |

**2001 GV$_{11}$ = 2006 OT$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.52491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22514048 | $\omega$ | 181.27472 | | −0.66108701 | | +0.72640496 |
| $a$ | 2.6760876 | $\Omega$ | 47.38387 | | −0.68611632 | | −0.48392542 |
| $e$ | 0.1976858 | $i$ | 14.79181 | | −0.30365830 | | −0.48800822 |
| $P$ | 4.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.4− | 0.2+ | 2001 04 15 | 608 | 0.3+ | 0.1+ | 2005 03 08 | 703 | 0.2+ | 0.5− |
| 1994 11 28 | 691 | 0.1− | 0.0 | 2001 04 15 | 608 | 0.1+ | 0.6+ | 2005 03 08 | 703 | 0.1− | 0.8+ |
| 2001 03 21 | 699 | 1.1+ | 0.0 | 2001 04 24 | 608 | 0.4+ | 0.4− | 2006 07 26 | E12 | 0.2− | 0.3+ |
| 2001 03 21 | 699 | 0.6+ | 0.1+ | 2001 04 24 | 608 | 0.4+ | 0.5− | 2006 07 26 | E12 | 0.7− | 0.8+ |
| 2001 03 21 | 699 | 0.4+ | 1.0+ | 2001 04 24 | 608 | 0.1+ | 0.4− | 2006 07 26 | E12 | 0.2− | 0.0 |
| 2001 03 21 | 699 | 0.7− | 1.2+ | 2003 10 18 | 691 | 0.3+ | 0.1+ | 2006 07 29 | E12 | 0.1− | 0.3+ |
| 2001 04 15 | 704 | 0.8− | 0.6− | 2003 10 18 | 691 | 0.1− | 0.2+ | 2006 07 29 | E12 | 0.0 | 0.1+ |
| 2001 04 15 | 704 | 0.0 | 1.3+ | 2003 10 18 | 691 | 0.1− | 0.7+ | 2006 07 29 | E12 | 0.1+ | 0.7+ |
| 2001 04 15 | 704 | 0.6+ | 0.5+ | 2005 03 08 | 703 | 0.2− | 0.5− | 2006 07 29 | E12 | 0.1+ | 0.3+ |
| 2001 04 15 | 608 | 0.5+ | 0.0 | 2005 03 08 | 703 | 1.4− | 0.3+ | | | | |

**2001 HX$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.76004 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27035994 | $\omega$ | 84.76675 | | +0.18256777 | | +0.98307670 |
| $a$ | 2.3686878 | $\Omega$ | 195.77709 | | −0.92268334 | | +0.16599277 |
| $e$ | 0.3676170 | $i$ | 3.19203 | | −0.33959456 | | +0.07750229 |
| $P$ | 3.65 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 691 | 0.4− | 0.8− | 2001 04 30 | 691 | 0.1− | 1.4− | 2005 08 30 | 704 | 0.2+ | 0.1− |
| 2001 04 23 | 691 | 0.5− | 0.4− | 2001 05 01 | 691 | 0.3+ | 0.5− | 2005 09 05 | 703 | 1.0+ | 0.1+ |
| 2001 04 23 | 691 | 0.5− | 0.1+ | 2001 05 01 | 691 | 0.1+ | 0.5+ | 2005 09 05 | 703 | 0.2− | 1.2− |
| 2001 04 24 | 691 | 0.7− | 0.4− | 2001 05 01 | 691 | 1.6+ | 0.5− | 2005 09 05 | 703 | 0.3+ | 0.5− |
| 2001 04 24 | 691 | 0.2− | 0.3− | 2005 07 01 | 703 | 0.0 | 1.1− | 2005 09 05 | 703 | 1.9− | 0.0 |
| 2001 04 24 | 691 | 0.4− | 0.0 | 2005 07 01 | 703 | 0.3− | 0.9− | 2005 09 25 | 691 | 0.0 | 0.3+ |
| 2001 04 28 | 691 | 0.8+ | 0.5+ | 2005 07 01 | 703 | 1.1+ | 1.2+ | 2005 09 25 | 691 | 0.1+ | 0.4+ |
| 2001 04 28 | 691 | 0.8+ | 0.7+ | 2005 07 01 | 703 | 1.4− | 0.7+ | 2005 09 25 | 691 | 0.1+ | 0.3+ |
| 2001 04 28 | 691 | 0.0 | 1.3+ | 2005 08 27 | 699 | 1.2+ | 0.5+ | 2005 10 27 | G96 | 0.5− | 0.0 |
| 2001 04 29 | 691 | 0.4− | 0.5+ | 2005 08 27 | 699 | 0.1− | 0.2− | 2005 10 27 | G96 | 0.1+ | 0.2− |
| 2001 04 29 | 691 | 0.9+ | 0.3+ | 2005 08 27 | 699 | 0.2+ | 0.0 | 2005 10 27 | G96 | 0.2+ | 0.2+ |
| 2001 04 29 | 691 | 0.2+ | 0.9+ | 2005 08 27 | 699 | 0.1+ | 0.7− | 2005 10 27 | G96 | 0.4− | 0.2− |
| 2001 04 30 | 691 | 0.3− | 0.0 | 2005 08 30 | 704 | 0.1− | 0.6− | | | | |
| 2001 04 30 | 691 | 1.0− | 0.4− | 2005 08 30 | 704 | 0.6− | 0.0 | | | | |

**2001 HS$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.00855 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21704136 | $\omega$ | 27.79011 | | −0.01089718 | | +0.99049622 |
| $a$ | 2.7422543 | $\Omega$ | 241.87198 | | −0.94384687 | | −0.05546752 |
| $e$ | 0.3535437 | $i$ | 8.94400 | | −0.33020349 | | +0.12585944 |
| $P$ | 4.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.2− | 0.1+ | 2001 06 13 | 704 | 0.2+ | 0.4− | 2001 08 05 | 608 | 0.0 | 0.7− |
| 1997 10 21 | 691 | 0.1+ | 0.1− | 2001 06 13 | 704 | 0.5+ | 0.8+ | 2001 08 05 | 608 | 0.1+ | 0.5− |
| 1997 10 21 | 691 | 0.0 | 0.3+ | 2001 06 13 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 699 | 0.1− | 1.2+ |
| 2001 04 21 | 704 | 0.1+ | 0.9− | 2001 06 13 | 704 | 0.1− | 0.3+ | 2006 08 29 | 699 | 0.2− | 0.4− |
| 2001 04 21 | 704 | 1.1− | 0.0 | 2001 06 13 | 704 | 0.0 | 0.5+ | 2006 08 29 | 699 | 0.7− | 1.1− |
| 2001 04 21 | 704 | 0.0 | 0.6+ | 2001 06 15 | 608 | 0.5− | 0.0 | 2006 08 29 | 699 | (1.8− | 7.0−) |
| 2001 04 21 | 704 | 0.9− | 0.7+ | 2001 06 15 | 608 | 0.4− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.0 |
| 2001 04 29 | 704 | 0.1+ | 0.8+ | 2001 06 15 | 608 | 0.6− | 0.1− | 2006 09 06 | 644 | 0.3+ | 0.1− |
| 2001 04 29 | 704 | 0.7− | 0.3+ | 2001 06 16 | 704 | 0.3− | 0.4+ | 2006 09 06 | 644 | 0.2+ | 0.1− |
| 2001 04 29 | 704 | (2.6− | 1.8+) | 2001 06 16 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.6+ |
| 2001 04 29 | 704 | 0.8− | 1.2+ | 2001 06 16 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 703 | (3.0+ | 1.2−) |
| 2001 04 30 | 704 | 0.2− | 0.3+ | 2001 06 16 | 704 | 0.6+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 1.0+ |
| 2001 04 30 | 704 | 0.5+ | 0.7+ | 2001 06 16 | 704 | 0.1− | 0.7+ | 2006 09 16 | 703 | 0.0 | 0.5+ |
| 2001 04 30 | 704 | 0.8+ | 0.2+ | 2001 06 22 | 704 | 0.8+ | 0.0 | 2006 09 27 | 703 | 0.3− | 0.3− |
| 2001 04 30 | 704 | 0.4+ | 0.9+ | 2001 06 22 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.6− |
| 2001 05 17 | 704 | 0.0 | 0.2+ | 2001 06 22 | 704 | 0.0 | 0.4− | 2006 09 27 | 703 | 0.3+ | 0.8− |
| 2001 05 17 | 704 | 0.0 | 0.2+ | 2001 06 22 | 704 | 0.7+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 05 17 | 704 | 0.1+ | 0.0 | 2001 06 22 | 704 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 05 17 | 704 | 0.2− | 0.1− | 2001 06 29 | 608 | 0.2− | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2001 05 17 | 704 | 0.1− | 0.1+ | 2001 06 29 | 608 | 0.1+ | 1.1− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 05 24 | 704 | 0.1− | 0.6− | 2001 06 29 | 608 | 0.3− | 0.9− | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2001 05 24 | 704 | (1.8− | 1.0−) | 2001 06 29 | 608 | 0.1+ | 1.0− | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2001 05 24 | 704 | 0.8− | 0.0 | 2001 06 29 | 608 | 0.1+ | 1.2− | 2006 10 17 | 691 | 0.0 | 0.2− |
| 2001 05 24 | 704 | 0.0 | 0.3− | 2001 06 29 | 608 | 0.2+ | 1.2− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2001 05 24 | 704 | 0.1− | 0.4− | 2001 07 13 | 644 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2001 05 27 | 704 | 0.3+ | 0.2+ | 2001 07 13 | 644 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2001 05 27 | 704 | 0.3− | 0.3− | 2001 07 13 | 644 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 05 27 | 704 | 0.2− | 0.5+ | 2001 08 05 | 608 | 0.2+ | 0.8− | 2006 10 20 | 691 | 0.1− | 0.3+ |

**2001 HU$_{42}$ = 2006 WF$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.47384 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26786271 | $\omega$ | 214.82510 | | +0.26985804 | | +0.95794775 |
| $a$ | 2.3833869 | $\Omega$ | 71.00218 | | −0.85835686 | | +0.28522320 |
| $e$ | 0.2130491 | $i$ | 5.92070 | | −0.43634864 | | +0.03136623 |
| $P$ | 3.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.4+ | 0.1− | 2001 04 16 | 704 | 0.8+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 03 26 | 704 | 0.1+ | 0.7+ | 2001 04 17 | 699 | 0.5− | 1.0− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2001 03 26 | 704 | 1.3− | 0.8− | 2001 04 17 | 699 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 03 26 | 704 | 0.6+ | 0.1+ | 2001 04 17 | 699 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2001 03 26 | 704 | 0.1+ | 0.8+ | 2001 04 17 | 699 | 0.4+ | 0.9+ | 2006 11 27 | 691 | 0.4− | 0.0 |
| 2001 04 15 | 608 | 0.2+ | 0.8− | 2006 11 11 | 691 | 0.4+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 04 15 | 608 | 0.0 | 0.8− | 2006 11 11 | 691 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2001 04 15 | 608 | 0.6+ | 0.4− | 2006 11 11 | 691 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 0.2+ | 0.3+ |
| 2001 04 16 | 704 | 0.5− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2001 04 16 | 704 | 0.4− | 0.8+ | 2006 11 19 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.0 | 0.6− |

**2001 HL$_{52}$ = 2006 UV$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.59830 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26560127 | $\omega$ | 57.16828 | | −0.42459662 | | +0.90530601 |
| $a$ | 2.3968965 | $\Omega$ | 187.73405 | | −0.85718191 | | −0.40614626 |
| $e$ | 0.1272364 | $i$ | 5.02132 | | −0.29147363 | | −0.12436338 |
| $P$ | 3.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 699 | 0.1− | 0.1+ | 2001 04 24 | 608 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 04 16 | 699 | 0.1+ | 0.2+ | 2001 04 24 | 608 | 0.5+ | 0.4− | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2001 04 16 | 699 | 0.3+ | 0.3+ | 2001 04 24 | 608 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2001 04 16 | 699 | 0.3+ | 0.3− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2001 04 23 | 704 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2001 04 23 | 704 | 0.6− | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 04 23 | 704 | 0.4− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1− | | | | |

**2001 HQ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.47021 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23218783 | $\omega$ | 200.48742 | | −0.19522494 | | +0.98021785 |
| $a$ | 2.6216603 | $\Omega$ | 58.26746 | | −0.89441441 | | −0.16431869 |
| $e$ | 0.1616977 | $i$ | 2.19402 | | −0.40238052 | | −0.11032832 |
| $P$ | 4.24 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 704 | 1.0− | 0.3− | 2005 03 01 | 691 | 0.1+ | 0.1+ | 2005 04 04 | 704 | (0.5+ | 1.5+) |
| 2001 04 23 | 704 | 0.7+ | 0.4− | 2005 03 01 | 691 | 0.2− | 0.2− | 2006 08 28 | 691 | 0.2+ | 0.0 |
| 2001 04 23 | 704 | 1.1+ | 0.1+ | 2005 03 01 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.2+ | 0.0 |
| 2001 04 23 | 704 | 0.0 | 0.0 | 2005 03 11 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.3− | 0.0 |
| 2001 04 24 | 608 | 0.5+ | 0.6+ | 2005 03 11 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.5− | 1.1+ |
| 2001 04 24 | 608 | 0.8+ | 0.5+ | 2005 03 11 | 691 | 0.8+ | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.2− |
| 2001 04 24 | 608 | 0.7+ | 0.6+ | 2005 04 02 | 683 | 0.1− | 0.4− | 2006 09 14 | 703 | (1.7− | 1.0+) |
| 2001 05 04 | 644 | 0.5− | 0.7+ | 2005 04 02 | 683 | 1.0− | 1.0+ | 2006 09 14 | 703 | (1.7− | 0.0 ) |
| 2001 05 04 | 644 | 0.7− | 0.3+ | 2005 04 02 | 683 | (1.0− | 1.8−) | 2006 11 21 | G96 | 0.5− | 0.1− |
| 2001 05 04 | 644 | 0.8− | 0.6+ | 2005 04 04 | 704 | 0.3− | 0.7+ | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2002 10 30 | 645 | 0.1− | 0.2+ | 2005 04 04 | 704 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.1− | 1.1− |
| 2002 10 30 | 645 | 0.1− | 0.2+ | 2005 04 04 | 704 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.5− |

**2001 HG$_{53}$ = 2006 SR$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.54283 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26946339 | $\omega$ | 338.37892 | | −0.87819042 | | −0.47818765 |
| $a$ | 2.3739389 | $\Omega$ | 173.02441 | | +0.45091593 | | −0.83525891 |
| $e$ | 0.1643613 | $i$ | 5.13507 | | +0.15955064 | | −0.27143900 |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 18 | 691 | 0.1+ | 0.3+ | 2001 05 18 | 704 | 0.2− | 0.2− | 2006 09 20 | 734 | 0.6+ | 0.1− |
| 2001 04 18 | 691 | 0.1+ | 0.3+ | 2001 05 18 | 704 | 0.4− | 0.5− | 2006 09 20 | 734 | 0.6+ | 0.1− |
| 2001 04 18 | 691 | 0.2+ | 0.2+ | 2001 05 24 | 699 | (1.8+ | 0.4−) | 2006 09 20 | 734 | 0.3− | 0.0 |
| 2001 04 23 | 704 | 0.4+ | 0.2+ | 2001 05 24 | 699 | 0.4+ | 0.0 | 2006 09 20 | 734 | 0.2+ | 0.1+ |
| 2001 04 23 | 704 | 0.6+ | 0.4+ | 2001 05 24 | 699 | 0.6+ | 0.6− | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2001 04 23 | 704 | (1.8− | 0.3−) | 2001 05 24 | 699 | 1.4+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.7+ |
| 2001 04 25 | 699 | 0.8− | 0.6− | 2002 09 04 | 644 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 04 25 | 699 | 0.1− | 0.3− | 2002 09 04 | 644 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 04 25 | 699 | 0.3− | 0.4− | 2002 09 04 | 644 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 04 25 | 699 | 1.1− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2001 05 15 | 699 | 0.9− | 0.6− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2001 05 15 | 699 | 0.8+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.3− |
| 2001 05 15 | 699 | 0.3− | 0.4− | 2006 09 18 | 291 | 0.1+ | 0.4− | 2006 10 16 | 703 | (2.1− | 0.4+) |
| 2001 05 15 | 699 | 0.5− | 0.6+ | 2006 09 18 | 291 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1+ | 1.1+ |
| 2001 05 18 | 704 | 0.0 | 0.2− | 2006 09 18 | 291 | 0.2+ | 0.2− | 2006 10 16 | 703 | 1.0− | 0.1+ |
| 2001 05 18 | 704 | 0.8− | 0.9− | 2006 09 20 | 734 | 0.1+ | 0.3− | | | | |

**2001 HG$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.10815 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18240704 | $\omega$ | 196.73501 | +0.47172564 | | +0.84725097 | |
| $a$ | 3.0792266 | $\Omega$ | 101.99253 | −0.77769629 | | +0.53030624 | |
| $e$ | 0.1680476 | $i$ | 14.45760 | −0.41552786 | | −0.03067709 | |
| $P$ | 5.40 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 699 | 0.1− | 0.7+ | 2001 05 22 | 699 | 0.7− | 1.8− | 2002 09 10 | 644 | 0.5− | 0.2+ |
| 2001 04 24 | 699 | 0.3− | 0.3+ | 2001 05 22 | 699 | 1.1+ | 1.7− | 2002 09 10 | 644 | 0.3− | 0.1+ |
| 2001 04 24 | 699 | 0.7− | 0.4+ | 2002 08 13 | 704 | 0.7− | 1.1+ | 2002 09 10 | 644 | 0.4− | 0.2− |
| 2001 04 24 | 699 | 0.5− | 0.0 | 2002 08 13 | 704 | 1.0+ | 0.4+ | 2002 09 26 | 704 | 1.5+ | 0.5+ |
| 2001 04 26 | 644 | 0.5+ | 0.2+ | 2002 08 13 | 704 | 0.3+ | 1.5− | 2002 09 26 | 704 | 0.1− | 1.1+ |
| 2001 04 26 | 644 | 0.3+ | 0.0 | 2002 08 13 | 704 | 0.3+ | 1.5− | 2002 09 26 | 704 | 0.2+ | 0.9+ |
| 2001 04 26 | 644 | 0.4+ | 0.0 | 2002 09 01 | 644 | 0.5− | 0.4− | 2003 11 23 | 691 | 0.2+ | 0.1− |
| 2001 05 22 | 699 | 0.5− | 0.9+ | 2002 09 01 | 644 | 0.4− | 0.3− | 2003 11 23 | 691 | 0.1+ | 0.0 |
| 2001 05 22 | 699 | 0.5+ | 0.8+ | 2002 09 01 | 644 | 0.2− | 0.3− | 2003 11 23 | 691 | 0.2− | 0.0 |

**2001 HD$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.71546 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27461365 | $\omega$ | 138.37400 | −0.72238805 | | +0.67213292 | |
| $a$ | 2.3441639 | $\Omega$ | 84.63455 | −0.66970048 | | −0.62153346 | |
| $e$ | 0.1420757 | $i$ | 9.39116 | −0.17221142 | | −0.40240962 | |
| $P$ | 3.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.2− | 0.0 | 2001 04 25 | 699 | 1.2+ | 0.3+ | 2001 05 23 | 699 | 1.2+ | 1.3− |
| 2001 03 19 | 645 | 0.2− | 0.0 | 2001 04 26 | 704 | 1.6+ | 0.1− | 2003 12 22 | 704 | 0.5+ | 0.5− |
| 2001 04 15 | 704 | 1.0+ | 0.6+ | 2001 04 26 | 704 | 0.2+ | 0.0 | 2003 12 22 | 704 | 0.3− | 0.2+ |
| 2001 04 15 | 704 | 0.8− | 0.5− | 2001 04 26 | 704 | 0.4− | 0.4− | 2003 12 22 | 704 | 0.0 | 0.3− |
| 2001 04 15 | 704 | 1.3+ | 0.5− | 2001 04 26 | 704 | 0.3− | 0.2+ | 2003 12 22 | 704 | 0.5+ | 0.8+ |
| 2001 04 15 | 704 | 0.4+ | 0.4+ | 2001 04 26 | 704 | 0.5+ | 1.2+ | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2001 04 25 | 699 | 0.4+ | 0.2+ | 2001 05 23 | 699 | 0.4− | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2001 04 25 | 699 | 0.2+ | 0.1+ | 2001 05 23 | 699 | 0.7+ | 0.6+ | 2006 11 23 | G96 | 0.5− | 0.0 |
| 2001 04 25 | 699 | 1.1+ | 0.0 | 2001 05 23 | 699 | 0.6+ | 0.6− | 2006 11 23 | G96 | 0.2− | 0.1+ |

**2001 HW$_{63}$ = 2006 SQ$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.65434 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26300508 | $\omega$ | 5.79619 | −0.94182512 | | +0.33607797 | |
| $a$ | 2.4126443 | $\Omega$ | 193.84407 | −0.30905747 | | −0.87079804 | |
| $e$ | 0.1245960 | $i$ | 0.98825 | −0.13209434 | | −0.35883473 | |
| $P$ | 3.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 704 | 0.8− | 1.4+ | 2002 08 30 | 291 | 0.0 | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.2+ |
| 2001 04 27 | 704 | 0.8− | 0.9− | 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 10 03 | 691 | 0.2+ | 0.1+ |
| 2001 04 27 | 704 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.6− | 0.7− | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2001 04 27 | 704 | 0.6− | 0.0 | 2006 07 21 | G96 | 0.1− | 0.6+ | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2001 04 28 | 691 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.6− |
| 2001 04 28 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2001 04 28 | 691 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2001 05 02 | 608 | 0.0 | 0.5− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 05 02 | 608 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2001 05 02 | 608 | 0.5− | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 05 14 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 05 14 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2001 05 14 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.5− | 0.1− |
| 2002 08 30 | 291 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2002 08 30 | 291 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.6− |

**2001 HF$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.81194 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17265267 | $\omega$ | 89.92385 | −0.86653064 | | −0.28165487 | |
| $a$ | 3.1941392 | $\Omega$ | 73.70978 | +0.06284073 | | −0.88056533 | |
| $e$ | 0.3044380 | $i$ | 25.42296 | +0.49515219 | | −0.38114989 | |
| $P$ | 5.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3− | 0.2+ | 2001 05 23 | 704 | (0.1+ | 2.4−) | 2005 12 08 | 703 | 0.6− | 0.9+ |
| 1999 12 07 | 704 | 0.1− | 0.4− | 2001 05 23 | 704 | 0.3− | 0.8− | 2005 12 08 | 703 | 0.2+ | 0.1− |
| 1999 12 07 | 704 | 0.5+ | 0.1+ | 2001 05 23 | 704 | 0.1+ | 0.8− | 2005 12 08 | 703 | 0.4+ | 0.3− |
| 1999 12 07 | 704 | 0.0 | 0.1+ | 2001 05 23 | 704 | 1.6− | 0.6− | 2005 12 08 | 703 | 0.8+ | 0.1+ |
| 2001 04 27 | 704 | 0.5+ | 0.2− | 2001 05 23 | 704 | 0.5− | 0.3+ | 2005 12 08 | 703 | 0.5+ | 0.0 |
| 2001 04 27 | 704 | 0.2+ | 0.8+ | 2001 06 12 | 699 | 0.9+ | 0.4+ | 2005 12 08 | 703 | 0.8− | 0.6− |
| 2001 04 27 | 704 | 0.2− | 1.0+ | 2001 06 12 | 699 | 1.2− | 0.1+ | 2006 01 21 | 704 | 1.1+ | 0.5− |
| 2001 05 18 | 699 | 0.0 | 0.2+ | 2001 06 12 | 699 | 0.2+ | 0.1+ | 2006 01 21 | 704 | 0.3+ | 0.0 |
| 2001 05 18 | 699 | 0.3+ | 0.4+ | 2001 06 12 | 699 | 0.9+ | 0.1− | 2006 01 21 | 704 | 0.3− | 0.0 |
| 2001 05 18 | 699 | 0.0 | 0.1− | 2005 11 28 | 703 | 1.3+ | 0.7+ | 2006 02 03 | 703 | 0.0 | 0.8+ |
| 2001 05 18 | 699 | 0.2− | 0.1− | 2005 11 28 | 703 | 1.4− | 0.5− | 2006 02 03 | 703 | 0.3+ | 0.1− |
| 2001 05 18 | 699 | 0.1− | 0.5− | 2005 11 28 | 703 | 0.0 | 0.2+ | 2006 02 03 | 703 | 0.3− | 0.1+ |
| 2001 05 18 | 699 | 0.5+ | 0.4− | 2005 11 28 | 703 | 0.5− | 0.8− | 2006 02 03 | 703 | 0.0 | 0.3+ |
| 2001 05 18 | 699 | 0.4− | 0.5− | 2005 12 08 | 703 | 0.3− | 0.2+ | | | | |
| 2001 05 18 | 699 | 0.7+ | 0.7+ | 2005 12 08 | 703 | 1.1− | 0.4− | | | | |

**2001 JS**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.67068 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29227380 | $\omega$ | 354.98344 | −0.94226099 | | +0.33115285 | |
| $a$ | 2.2487584 | $\Omega$ | 204.53685 | −0.30292223 | | −0.90628096 | |
| $e$ | 0.1874079 | $i$ | 6.89023 | −0.14276677 | | −0.26266446 | |
| $P$ | 3.37 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 0.9+ | 0.5+ | 2001 05 10 | 557 | 0.6+ | 0.3+ | 2006 11 16 | 691 | 0.4− | 0.3+ |
| 2001 03 20 | 699 | 0.1− | 0.9+ | 2001 05 10 | 557 | 0.0 | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.4+ |
| 2001 03 20 | 699 | 0.1− | 1.0− | 2001 05 10 | 557 | 0.4+ | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2001 03 20 | 699 | 0.4+ | 0.1+ | 2001 05 11 | 557 | 0.6+ | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 04 15 | 608 | 0.0 | 0.6− | 2001 05 11 | 557 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.8− | 0.8− |
| 2001 04 15 | 608 | 0.0 | 0.6− | 2001 05 11 | 557 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 04 15 | 608 | 0.3− | 0.8− | 2001 05 12 | 557 | 0.6− | 0.5− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2001 04 16 | 699 | 0.6+ | 0.0 | 2001 05 12 | 557 | 0.8− | 0.1− | 2006 11 24 | G96 | 0.6+ | 1.1− |
| 2001 04 16 | 699 | 0.6− | 0.5+ | 2001 05 12 | 557 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2001 04 16 | 699 | 0.7− | 0.6− | 2001 05 12 | 557 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2001 04 16 | 699 | 0.7− | 0.6+ | 2006 11 16 | 691 | 0.2+ | 0.0 | | | | |

**2001 JH$_3$ = 2006 UR$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.68625 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27444807 | $\omega$ | 315.32320 | −0.97149773 | | +0.22554461 | |
| $a$ | 2.3451066 | $\Omega$ | 237.84342 | −0.18616475 | | −0.91644476 | |
| $e$ | 0.1642138 | $i$ | 4.94326 | −0.14674754 | | −0.33054294 | |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 699 | 0.7+ | 0.1− | 2001 05 21 | 704 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.3− |
| 2001 05 15 | 699 | 0.2− | 1.0+ | 2001 05 21 | 704 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.3− | 0.3− |
| 2001 05 15 | 699 | 0.3− | 0.8− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 05 15 | 699 | 0.5− | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2001 05 18 | 699 | 0.6+ | 0.5− | 2006 10 17 | 691 | 0.3+ | 0.5+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2001 05 18 | 699 | 0.1+ | 0.1− | 2006 10 17 | 691 | 1.2− | 0.4− | 2006 11 17 | 691 | 0.1+ | 0.3+ |
| 2001 05 18 | 699 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.9+ | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2001 05 18 | 699 | 0.1+ | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2001 05 21 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.2+ | 0.1− | | | | |

**2001 JC$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.95591 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21580939 | $\omega$ | 39.34144 | | −0.75072620 | | +0.66059862 |
| $a$ | 2.7526806 | $\Omega$ | 182.02062 | | −0.63337171 | | −0.72165889 |
| $e$ | 0.2172444 | $i$ | 7.22084 | | −0.18775106 | | −0.20692487 |
| $P$ | 4.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 17 | 691 | 0.1− | 0.1− | 2001 05 11 | 608 | 1.4+ | 0.6+ | 2001 05 24 | 645 | 0.1− | 0.2− |
| 1996 02 17 | 691 | 0.0 | 0.1− | 2001 05 11 | 608 | 1.4+ | 1.2+ | 2001 06 18 | 699 | 0.6+ | 0.4− |
| 1996 02 17 | 691 | 0.1− | 0.5− | 2001 05 11 | 608 | 1.2+ | 0.9+ | 2001 06 18 | 699 | 0.0 | 0.7+ |
| 2001 03 23 | 699 | 0.1− | 0.7+ | 2001 05 18 | 704 | 0.8+ | 0.3+ | 2001 06 18 | 699 | 0.1− | 0.3− |
| 2001 03 23 | 699 | 0.0 | 0.6+ | 2001 05 18 | 704 | 0.2+ | 0.2+ | 2001 06 18 | 699 | (2.3+ | 0.3+) |
| 2001 03 23 | 699 | 0.3+ | 0.2− | 2001 05 18 | 704 | 0.8+ | 0.5+ | 2005 02 02 | 703 | 0.6+ | 0.3− |
| 2001 03 23 | 699 | 0.1− | 0.0 | 2001 05 18 | 704 | 0.3+ | 0.6+ | 2005 02 02 | 704 | 0.1+ | 0.8+ |
| 2001 04 16 | 704 | 1.0− | 0.7− | 2001 05 18 | 704 | 0.4− | 0.9+ | 2005 02 02 | 703 | 1.1+ | 0.7+ |
| 2001 04 16 | 704 | 0.7+ | 0.5+ | 2001 05 23 | 699 | 0.2+ | 0.1− | 2005 02 02 | 703 | 0.6+ | 0.2− |
| 2001 04 16 | 704 | 0.4+ | 0.4− | 2001 05 23 | 699 | 0.1− | 0.0 | 2005 02 02 | 704 | 0.7− | 0.6− |
| 2001 04 27 | 608 | (1.6− | 0.2−) | 2001 05 23 | 699 | 0.1+ | 0.2+ | 2005 02 02 | 703 | 0.2− | 0.7+ |
| 2001 04 27 | 608 | 0.9− | 0.4+ | 2001 05 23 | 699 | 0.0 | 0.2+ | 2005 02 02 | 704 | 0.6− | 0.8+ |
| 2001 04 27 | 608 | 0.9− | 0.1+ | 2001 05 24 | 645 | 0.1− | 0.1− | 2005 02 02 | 704 | 0.5− | 0.7+ |

**2001 JJ$_8$ = 2006 ST$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.80096 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22521783 | $\omega$ | 85.00996 | | +0.61666741 | | +0.77016034 |
| $a$ | 2.6754748 | $\Omega$ | 224.47125 | | −0.78244947 | | +0.57687027 |
| $e$ | 0.2920266 | $i$ | 13.45593 | | −0.08656863 | | +0.27216490 |
| $P$ | 4.38 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 691 | 0.2+ | 0.1− | 2001 05 24 | 699 | 0.1− | 0.3+ | 2006 09 22 | 699 | 0.2+ | 0.4+ |
| 2001 04 24 | 691 | 0.3+ | 0.0 | 2001 05 24 | 699 | 0.6+ | 0.1− | 2006 09 22 | 699 | 0.3+ | 0.1+ |
| 2001 04 24 | 691 | 0.2+ | 0.1− | 2001 05 24 | 699 | 0.4− | 0.3− | 2006 10 04 | 703 | 0.5+ | 0.1+ |
| 2001 05 15 | 699 | 0.3− | 1.2+ | 2001 05 24 | 699 | 0.1− | 0.8+ | 2006 10 04 | 703 | 0.3− | 0.3− |
| 2001 05 15 | 699 | 0.6− | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.2− | 2006 10 04 | 703 | 0.1− | 0.9− |
| 2001 05 15 | 699 | 0.8+ | 1.1− | 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 10 04 | 703 | 0.1+ | 0.6− |
| 2001 05 15 | 699 | 0.5− | 0.2− | 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.4− | 1.0+ |
| 2001 05 17 | 704 | 0.6− | 0.2− | 2006 09 16 | 703 | 0.5− | 0.3− | 2006 10 17 | 703 | (1.8+ | 0.6+) |
| 2001 05 17 | 704 | 1.0− | 0.3− | 2006 09 22 | 699 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.7+ | 0.4+ |
| 2001 05 17 | 704 | 0.5− | 0.3+ | 2006 09 22 | 699 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.5+ |

**2001 JJ$_9$ = 2006 WL$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.59815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26138593 | $\omega$ | 132.20376 | | +0.30242200 | | +0.95311056 |
| $a$ | 2.4225974 | $\Omega$ | 155.39289 | | −0.88212617 | | +0.28423698 |
| $e$ | 0.1795317 | $i$ | 1.51505 | | −0.36110158 | | +0.10387305 |
| $P$ | 3.77 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 608 | 0.0 | 0.1− | 2001 05 28 | 691 | 0.6+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 05 15 | 608 | 0.0 | 0.3+ | 2001 05 28 | 691 | 0.8− | 0.3− | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2001 05 15 | 608 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2001 05 17 | 704 | 0.7+ | 0.0 | 2006 11 19 | 691 | 0.5+ | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.4+ |
| 2001 05 17 | 704 | 1.1− | 0.5+ | 2006 11 19 | 691 | 0.3+ | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.2+ |
| 2001 05 17 | 704 | 0.5+ | 0.0 | 2006 11 23 | 691 | 0.3− | 0.1− | 2006 12 01 | 691 | 0.5+ | 0.4− |
| 2001 05 17 | 704 | 0.6− | 0.0 | 2006 11 23 | 691 | 0.6− | 0.1+ | | | | |
| 2001 05 28 | 691 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.3− | | | | |

**2001 JD$_{11}$ = 1997 GG$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.66607 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25763937 | $\omega$ | 73.56121 | | −0.17052514 | | +0.98531768 |
| $a$ | 2.4460269 | $\Omega$ | 186.63740 | | −0.92945397 | | −0.16366960 |
| $e$ | 0.1538786 | $i$ | 4.15830 | | −0.32716433 | | −0.04859356 |
| $P$ | 3.83 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.0 | 0.5+ | 2001 05 25 | 691 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 1997 04 03 | 704 | 1.1+ | 0.4− | 2001 05 25 | 691 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.0 |
| 1997 04 07 | 704 | 0.8− | 0.5+ | 2001 05 25 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 1997 04 07 | 704 | 0.7+ | 0.1+ | 2004 01 28 | 291 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 04 25 | 699 | 0.0 | 1.1+ | 2004 01 28 | 291 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2001 04 25 | 699 | 0.3− | 0.0 | 2004 01 28 | 291 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.6+ |
| 2001 04 25 | 699 | 0.2− | 0.7− | 2005 07 12 | G96 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2001 04 25 | 699 | 0.1+ | 0.6+ | 2005 07 12 | G96 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.3+ |
| 2001 05 15 | 699 | (1.8+ | 0.7+) | 2005 07 12 | G96 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 05 15 | 699 | 0.8+ | 1.4+ | 2005 07 12 | G96 | (1.9− | 3.3+) | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2001 05 15 | 699 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.6+ | 0.3− | 2006 11 15 | G96 | 0.6+ | 0.4+ |
| 2001 05 15 | 699 | (2.3+ | 0.8+) | 2006 10 03 | G96 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.1+ |

**2001 JE$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.56987 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17552798 | $\omega$ | 145.62376 | | +0.67674364 | | +0.73423605 |
| $a$ | 3.1591613 | $\Omega$ | 166.68452 | | −0.71711415 | | +0.67400656 |
| $e$ | 0.2898154 | $i$ | 13.55878 | | −0.16662935 | | +0.08131781 |
| $P$ | 5.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 02 | 691 | 0.1− | 0.4− | 2001 07 08 | 644 | 0.3+ | 0.2+ | 2002 10 28 | 644 | 0.2− | 0.0 |
| 2001 05 02 | 691 | 0.1− | 0.2− | 2002 10 10 | 644 | 0.1+ | 0.4+ | 2002 10 28 | 644 | 0.0 | 0.1+ |
| 2001 05 02 | 691 | 0.3+ | 0.2− | 2002 10 10 | 644 | 0.3+ | 0.3+ | 2002 11 22 | 644 | 0.2− | 0.0 |
| 2001 06 20 | 699 | 0.1+ | 0.5− | 2002 10 10 | 645 | 0.0 | 0.1− | 2002 11 22 | 644 | 0.3− | 0.4+ |
| 2001 06 20 | 699 | 0.2− | 0.4+ | 2002 10 10 | 644 | 0.1+ | 0.3+ | 2002 11 22 | 644 | 0.4− | 0.1− |
| 2001 06 20 | 699 | 0.1+ | 0.6+ | 2002 10 10 | 645 | 0.1− | 0.0 | 2006 04 08 | G96 | 0.1+ | 0.0 |
| 2001 06 20 | 699 | 1.0− | 1.1+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 04 08 | G96 | 0.2− | 0.1+ |
| 2001 07 08 | 644 | 0.1+ | 0.4+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 04 08 | G96 | 0.1− | 0.2+ |
| 2001 07 08 | 644 | 0.2+ | 0.4+ | 2002 10 28 | 644 | 0.0 | 0.3+ | 2006 04 08 | G96 | 0.2+ | 0.1+ |

**2001 KQ = 2006 SN$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.74041 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22545838 | $\omega$ | 232.11216 | | +0.38513802 | | +0.91490254 |
| $a$ | 2.6735715 | $\Omega$ | 60.95252 | | −0.79733908 | | +0.39586069 |
| $e$ | 0.2914529 | $i$ | 7.95063 | | −0.46467095 | | +0.07904208 |
| $P$ | 4.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.5− | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.4− | 0.3− |
| 2001 05 17 | 704 | 1.0+ | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 09 29 | 699 | (0.8− | 2.2+) |
| 2001 05 17 | 704 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 09 29 | 699 | 1.1− | 0.4− |
| 2001 05 17 | 704 | 0.5− | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.4− | 2006 09 29 | 699 | (1.1+ | 2.1−) |
| 2001 05 18 | 704 | 0.5+ | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.5− | 2006 09 29 | 699 | 0.4+ | 0.5+ |
| 2001 05 18 | 704 | 0.3− | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.4+ |
| 2001 05 18 | 704 | (0.9− | 1.8−) | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2001 05 24 | 704 | 1.1+ | 0.0 | 2006 09 20 | 644 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 05 24 | 704 | 0.6+ | 0.9− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.6+ | 0.4+ |
| 2001 05 24 | 704 | 0.9− | 0.5+ | 2006 09 21 | 699 | 0.3+ | 0.7− | 2006 10 12 | 644 | 0.5+ | 0.1+ |
| 2001 05 24 | 704 | 0.8+ | 1.2+ | 2006 09 21 | 699 | 0.8− | 0.5− | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2001 05 24 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.6+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2001 05 28 | 608 | 0.5− | 1.2− | 2006 09 21 | 699 | (2.1− | 0.5+) | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 05 28 | 608 | 0.5− | 1.0− | 2006 09 26 | 703 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.5+ | 0.4+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 05 28 | 608 | 0.6− | 1.1− | 2006 09 26 | 703 | 0.5− | 0.7− | |
| 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ | |

**2001 KM$_3$ = 1997 ER$_{54}$ = 2006 SN$_{312}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.49539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26156444 | $\omega$ | 336.14309 | | −0.55018933 | +0.83472966 | |
| $a$ | 2.4214951 | $\Omega$ | 260.46962 | | −0.76237311 | −0.51324562 | |
| $e$ | 0.1678936 | $i$ | 1.32251 | | −0.34070359 | −0.19951270 | |
| $P$ | 3.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 08 | 809 | 1.4+ | 0.1+ | 2001 05 21 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 691 | 0.5− | 0.1− |
| 1997 03 08 | 809 | 0.4− | 1.0+ | 2001 05 21 | 704 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 1997 03 08 | 809 | 0.7− | 0.4− | 2003 12 21 | 691 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1997 03 09 | 809 | (0.1+ | 5.6+) | 2003 12 21 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 1997 03 09 | 809 | (0.6+ | 4.6+) | 2003 12 21 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1997 03 09 | 809 | (1.0+ | 3.6+) | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 05 03 | 608 | 0.8− | 0.6− | 2006 09 27 | G96 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 2001 05 03 | 608 | 1.3− | 0.5− | 2006 09 27 | G96 | 0.3− | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 05 03 | 608 | 0.8− | 0.6− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 05 15 | 608 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2001 05 15 | 608 | 0.8+ | 1.0− | 2006 10 03 | G96 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.1− |
| 2001 05 15 | 608 | 1.1+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 05 17 | 704 | 0.9+ | 0.3− | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2001 05 17 | 704 | (0.9+ | 2.0+) | 2006 10 03 | 291 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2001 05 17 | 704 | 0.0 | 0.2+ | 2006 10 03 | 291 | 1.2− | 0.7− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2001 05 21 | 704 | 0.5− | 0.0 | 2006 10 03 | 291 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.7+ | 0.4− |
| 2001 05 21 | 704 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.5+ | 0.2− |
| 2001 05 21 | 704 | 0.2− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.2− |

**2001 KU$_4$ = 2006 VS$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.13114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25331605 | $\omega$ | 218.09944 | | +0.23306286 | +0.96006277 | |
| $a$ | 2.4737791 | $\Omega$ | 65.85928 | | −0.84539957 | +0.27869539 | |
| $e$ | 0.0898519 | $i$ | 9.76625 | | −0.48060512 | −0.02466472 | |
| $P$ | 3.89 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.0 | 0.5− | 2001 05 24 | 704 | 0.8− | 0.5− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 05 17 | 704 | 0.3+ | 0.3+ | 2001 05 29 | 608 | 0.7+ | 0.8+ | 2006 11 13 | 703 | 0.3− | 0.9+ |
| 2001 05 17 | 704 | 1.2− | 0.7+ | 2001 05 29 | 608 | 1.1+ | 0.7+ | 2006 11 13 | 703 | 0.6+ | 0.3− |
| 2001 05 17 | 704 | 0.4− | 0.0 | 2001 05 29 | 608 | 0.7+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.2+ |
| 2001 05 21 | 704 | 0.9− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 1.0+ | 2006 11 13 | 703 | 0.9− | 0.6− |
| 2001 05 21 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.4− | 2006 11 17 | 704 | 1.4− | 0.6+ |
| 2001 05 21 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.6+ | 0.2− | 2006 11 17 | 704 | 0.9− | 0.3− |
| 2001 05 21 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 11 17 | 704 | 1.1− | 0.2− |
| 2001 05 21 | 704 | 0.6+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.7+ | 0.2− |
| 2001 05 24 | 704 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2001 05 24 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2001 05 24 | 704 | 0.0 | 0.5− | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2001 05 24 | 704 | 0.2+ | 1.0− | 2006 10 21 | G96 | 0.5+ | 0.0 | | | | |
| 2001 05 24 | 704 | 0.3− | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.2− | | | | |

**2001 KP$_5$ = 2006 VW$_{148}$ = 2006 WW$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.80590 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25863062 | $\omega$ | 55.41340 | | −0.00056615 | +0.99988349 | |
| $a$ | 2.4397730 | $\Omega$ | 214.56384 | | −0.92606208 | −0.00628056 | |
| $e$ | 0.1827478 | $i$ | 1.54071 | | −0.37737077 | +0.01391233 | |
| $P$ | 3.81 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.2− | 0.0 | 2001 05 21 | 704 | 0.8+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 1994 09 29 | 691 | 0.1− | 0.0 | 2001 06 08 | 644 | 0.2+ | 0.8+ | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 1994 09 29 | 691 | 0.3+ | 0.1− | 2001 06 08 | 644 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2001 05 17 | 704 | 0.6+ | 0.0 | 2001 06 08 | 644 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2001 05 17 | 704 | 0.2− | 1.1+ | 2001 06 15 | 608 | 0.5− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2001 05 17 | 704 | 0.4+ | 0.8+ | 2001 06 15 | 608 | 0.9− | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 05 17 | 704 | 0.3+ | 0.1+ | 2001 06 15 | 608 | 0.3− | 0.3− | 2006 11 24 | 291 | 0.4− | 0.4+ |
| 2001 05 17 | 704 | 0.5− | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 24 | 291 | 0.3− | 0.1+ |
| 2001 05 21 | 704 | 0.5+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.2+ | 2006 11 24 | 291 | (1.2+ | 1.7−) |
| 2001 05 21 | 704 | 0.2+ | 1.4+ | 2006 11 14 | 691 | 0.1− | 0.1+ | | | | |
| 2001 05 21 | 704 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1+ | | | | |

**2001 KS$_5$ = 2006 VZ$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.40187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25954911 | $\omega$ | 222.39508 | | +0.41761249 | +0.90716965 | |
| $a$ | 2.4340137 | $\Omega$ | 72.34789 | | −0.81850964 | +0.40015846 | |
| $e$ | 0.1881350 | $i$ | 3.09265 | | −0.39451460 | +0.13006316 | |
| $P$ | 3.80 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.7− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 05 17 | 704 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2001 05 17 | 704 | (0.6− | 1.7+) | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 05 17 | 704 | 0.7− | 0.3+ | 2006 11 11 | G96 | 0.5− | 0.6− | 2006 11 23 | 691 | 0.3− | 0.3+ |
| 2001 05 21 | 704 | 0.4− | 0.6− | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 05 21 | 704 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.6− | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2001 05 21 | 704 | 0.5+ | 0.6− | 2006 11 11 | G96 | 0.3− | 0.5− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2001 05 26 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2001 05 26 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.7− | 0.7− |
| 2001 05 26 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.3+ | 0.1+ |
| 2006 10 31 | G96 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.3− | 0.1− |

**2001 KC$_{22}$ = 2006 VH$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.00486 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25634599 | $\omega$ | 178.99907 | | +0.28667192 | +0.95733809 | |
| $a$ | 2.4542475 | $\Omega$ | 107.65902 | | −0.87923928 | +0.27798393 | |
| $e$ | 0.1664959 | $i$ | 2.18761 | | −0.38047010 | +0.07892228 | |
| $P$ | 3.84 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 608 | (0.6+ | 1.7−) | 2006 10 21 | G96 | 0.4− | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2001 05 15 | 608 | 0.4+ | 1.0− | 2006 10 21 | G96 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 05 15 | 608 | 0.2− | 1.0− | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2001 05 17 | 704 | 0.6+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 05 17 | 704 | 0.9+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 05 17 | 704 | 0.4+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 05 17 | 704 | 0.2− | 0.4− | 2006 11 12 | 703 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 05 17 | 704 | 1.2− | 0.4+ | 2006 11 12 | 703 | 0.6+ | 0.5− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2001 05 24 | 704 | 0.2− | 0.1+ | 2006 11 12 | 703 | 0.7+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 05 24 | 704 | 0.1+ | 0.7+ | 2006 11 12 | 703 | 0.9− | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2001 05 24 | 704 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2001 05 24 | 704 | 0.3− | 1.0+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2006 10 21 | G96 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.2− | | | | |

**2001 KX$_{29}$ = 2006 UH$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.57371 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25672663 | $\omega$ | 6.45940 | | −0.51393439 | +0.85746016 | |
| $a$ | 2.4518210 | $\Omega$ | 232.61734 | | −0.78845387 | −0.48372668 | |
| $e$ | 0.1685854 | $i$ | 1.81520 | | −0.33795256 | −0.17541542 | |
| $P$ | 3.84 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 704 | 0.9− | 0.3+ | 2001 06 01 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2001 05 21 | 704 | 0.5− | 0.1+ | 2001 06 01 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2001 05 21 | 704 | 0.7+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 05 21 | 704 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.5− | 0.1+ | 2006 10 29 | 691 | 0.7+ | 0.0 |
| 2001 05 23 | 807 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.7+ | 0.6+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 05 23 | 807 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.6+ |
| 2001 05 24 | 704 | 0.6+ | 1.0− | 2006 10 20 | 691 | 0.6− | 0.2− | 2006 11 22 | G96 | 0.4− | 0.8− |
| 2001 05 24 | 704 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.7+ | 0.5− |
| 2001 05 24 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2001 05 24 | 704 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.0 | | | | |
| 2001 06 01 | 691 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.0 | | | | |

### 2001 KY$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.42410 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25952463 | $\omega$ | 209.21068 | | −0.11488412 | +0.99061673 | |
| $a$ | 2.4341668 | $\Omega$ | 54.28756 | | −0.89279392 | −0.07028886 | |
| $e$ | 0.1645258 | $i$ | 5.23104 | | −0.43556936 | −0.11720905 | |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 691 | 0.2− | 0.1− | 2001 06 20 | 699 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 1998 09 24 | 691 | 0.3+ | 0.3+ | 2001 06 20 | 699 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 1998 09 24 | 691 | 0.2− | 0.0 | 2001 06 20 | 699 | 1.1− | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.4+ |
| 2001 05 21 | 704 | 0.3+ | 0.3− | 2001 06 20 | 699 | 0.8− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2001 05 21 | 704 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.0 | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 05 21 | 704 | 0.7+ | 0.8+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 05 21 | 704 | 0.8+ | 1.3+ | 2006 10 17 | G96 | 0.1+ | 0.9− | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2001 05 22 | 807 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.6+ | 0.7− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2001 05 22 | 807 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.6− |
| 2001 05 24 | 704 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.6− |
| 2001 05 24 | 704 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2001 05 24 | 704 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2001 05 24 | 704 | 0.3− | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2001 06 14 | 608 | 0.1+ | 1.0− | 2006 11 09 | 691 | 0.9− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2001 06 14 | 608 | 0.5+ | 1.3− | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2001 06 14 | 608 | 0.1+ | 0.8− | 2006 11 13 | 691 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.5+ | 0.3− |

### 2001 KS$_{32}$ = 2006 SU$_{288}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.93680 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23535125 | $\omega$ | 209.48057 | | +0.51514616 | +0.85054597 | |
| $a$ | 2.5981150 | $\Omega$ | 91.71160 | | −0.76419954 | +0.51169517 | |
| $e$ | 0.1395906 | $i$ | 6.07662 | | −0.38810242 | +0.12140681 | |
| $P$ | 4.19 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 691 | 0.0 | 0.4+ | 2004 01 17 | 644 | 0.5+ | 0.9+ | 2006 09 18 | 699 | 0.6+ | 0.9− |
| 2001 05 24 | 691 | 0.0 | 0.3+ | 2004 01 17 | 644 | 0.1− | 0.8+ | 2006 09 18 | 699 | 0.0 | 1.4+ |
| 2001 05 24 | 691 | 0.1+ | 0.1+ | 2004 01 17 | 644 | 0.6+ | 0.6+ | 2006 09 26 | 703 | 0.1− | 1.2+ |
| 2001 05 25 | 691 | 0.2+ | 0.0 | 2004 01 27 | 691 | 0.2− | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.6− |
| 2001 05 25 | 691 | 0.2− | 0.0 | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 1.1− | 0.5+ |
| 2001 05 25 | 691 | 0.1− | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 0.8− | 0.4− |
| 2001 06 11 | 691 | 0.1+ | 0.1+ | 2005 04 07 | 691 | 0.3+ | 0.3+ | 2006 09 28 | 699 | 0.6+ | 2.9+ |
| 2001 06 11 | 691 | 0.0 | 0.1+ | 2005 04 07 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 699 | 0.1− | 0.3+ |
| 2001 06 11 | 691 | 0.1+ | 0.1− | 2005 04 07 | 691 | 0.0 | 0.1+ | 2006 09 28 | 699 | 1.2+ | 0.1− |
| 2002 10 31 | 608 | 0.3+ | 0.6+ | 2005 04 12 | 699 | 0.3− | 1.2+ | 2006 09 28 | 699 | 0.3+ | 0.1− |
| 2002 10 31 | 608 | 0.2− | 0.3+ | 2005 04 12 | 699 | 1.2+ | 0.7+ | 2006 10 02 | 703 | 0.3− | 0.2− |
| 2002 10 31 | 608 | 0.2+ | 0.4+ | 2005 04 12 | 699 | 1.4− | 0.2− | 2006 10 02 | 703 | 0.4− | 0.8+ |
| 2002 11 06 | 699 | 0.6− | 0.4− | 2005 04 12 | 699 | 0.5+ | 0.3+ | 2006 10 02 | 703 | 0.4− | 0.8+ |
| 2002 11 06 | 699 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.4+ | 2006 10 02 | 703 | 0.6+ | 0.8+ |
| 2002 11 06 | 699 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.2− | 1.3+ |
| 2002 11 06 | 699 | 0.1+ | 0.8− | 2006 08 28 | 699 | 1.0+ | 0.2− | 2006 10 16 | 703 | 0.0 | 1.4− |
| 2003 12 21 | 691 | 0.5− | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 1.5+ |
| 2003 12 21 | 691 | 0.4+ | 0.3− | 2006 09 18 | 699 | 0.8− | 1.4− | 2006 10 16 | 703 | 2.6− | 0.1− |
| 2003 12 21 | 691 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.0 | 0.8+ | | | | |

### 2001 KF$_{33}$ = 2000 CV$_{142}$ = 2006 DB$_{5}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.06663 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17601309 | $\omega$ | 144.50624 | | −0.02511101 | +0.99876685 | |
| $a$ | 3.1533540 | $\Omega$ | 124.01801 | | −0.92871321 | −0.00745287 | |
| $e$ | 0.1014688 | $i$ | 2.96182 | | −0.36994758 | −0.04908390 | |
| $P$ | 5.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.5− | 0.0 | 2001 05 23 | 621 | 0.1+ | 0.1− | 2006 02 20 | 691 | 0.2+ | 0.2+ |
| 2000 02 04 | 691 | 0.0 | 0.3− | 2001 05 23 | 621 | 0.6− | 0.4+ | 2006 02 20 | 691 | 0.1+ | 0.3+ |
| 2000 02 04 | 691 | 0.2− | 0.2− | 2001 05 23 | 621 | 0.0 | 0.1− | 2006 02 21 | G96 | 0.8− | 0.4− |
| 2000 02 05 | 695 | 0.1+ | 0.2+ | 2001 05 23 | 621 | 0.5− | 0.1− | 2006 02 21 | G96 | 0.2− | 0.2− |
| 2000 02 05 | 695 | 0.6+ | 0.5+ | 2001 05 23 | 621 | 0.8− | 0.3+ | 2006 02 21 | G96 | 0.6− | 0.4− |
| 2001 05 22 | 621 | 0.1+ | 0.8+ | 2001 05 23 | 621 | 0.1+ | 0.1+ | 2006 02 21 | G96 | 0.4− | 0.0 |
| 2001 05 22 | 621 | 0.2+ | 0.4+ | 2001 05 24 | 621 | 0.1− | 0.5+ | 2006 03 02 | 691 | 0.4+ | 0.3+ |
| 2001 05 22 | 621 | 0.1− | 0.1− | 2001 05 24 | 621 | 1.3+ | 0.8− | 2006 03 02 | 691 | 0.5+ | 0.0 |
| 2001 05 22 | 621 | 0.1− | 0.2− | 2001 05 24 | 621 | 0.6+ | 0.9− | 2006 03 02 | 691 | 0.5+ | 0.1+ |
| 2001 05 22 | 621 | 0.4− | 0.0 | 2006 02 20 | 691 | 0.3+ | 0.1− | | | | |

### 2001 KJ$_{34}$ = 2006 VF$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.36930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24377567 | $\omega$ | 224.49458 | | +0.49933975 | +0.85736826 | |
| $a$ | 2.5379076 | $\Omega$ | 75.83637 | | −0.75470319 | +0.50118152 | |
| $e$ | 0.1965676 | $i$ | 7.39627 | | −0.42553837 | +0.11720392 | |
| $P$ | 4.04 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.0 | 0.1− | 2001 05 29 | 608 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.2− | 0.4+ |
| 2001 05 18 | 704 | 0.4+ | 0.2+ | 2001 05 29 | 691 | 1.0− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.4+ |
| 2001 05 18 | 704 | 0.3+ | 0.6+ | 2004 02 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.4+ |
| 2001 05 18 | 704 | 0.3+ | 0.1+ | 2004 02 18 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.4− | 0.0 |
| 2001 05 25 | 704 | 0.2+ | 0.1+ | 2004 02 18 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2001 05 25 | 704 | 0.8+ | 0.1+ | 2005 06 04 | 703 | 0.9+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.9+ |
| 2001 05 25 | 704 | 0.0 | 0.3+ | 2005 06 04 | 703 | 0.4− | 1.1− | 2006 11 11 | G96 | 0.0 | 0.4+ |
| 2001 05 25 | 704 | 0.6+ | 0.9+ | 2005 06 04 | 703 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2001 05 25 | 704 | 0.3− | 0.7+ | 2005 06 04 | 703 | 0.8− | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.4+ |
| 2001 05 29 | 691 | 0.2+ | 0.3+ | 2005 06 16 | G96 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2001 05 29 | 691 | 0.3+ | 0.2+ | 2005 06 16 | G96 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2001 05 29 | 608 | 0.7+ | 0.3− | 2005 06 16 | G96 | 0.4+ | 0.3− | | | | |
| 2001 05 29 | 608 | 0.8+ | 0.8− | 2005 06 16 | G96 | 0.4− | 0.2− | | | | |

### 2001 KR$_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.50303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29080709 | $\omega$ | 98.84933 | | +0.55407624 | +0.83121062 | |
| $a$ | 2.2563132 | $\Omega$ | 204.96669 | | −0.79999370 | +0.51647746 | |
| $e$ | 0.1430019 | $i$ | 6.21552 | | −0.23023814 | +0.20576670 | |
| $P$ | 3.39 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.6− | 0.5− | 2005 08 29 | 699 | 0.3− | 0.7− | 2005 10 22 | 703 | 0.4− | 1.0+ |
| 2001 05 18 | 704 | 0.4− | 0.7+ | 2005 08 29 | 699 | 0.4− | 0.5+ | 2005 10 22 | 703 | 1.7− | 0.7+ |
| 2001 05 18 | 704 | 0.2+ | 1.8+ | 2005 08 29 | 644 | 0.5+ | 0.1+ | 2005 10 22 | 703 | 0.1+ | 0.2− |
| 2001 05 18 | 704 | 0.6− | 0.9+ | 2005 08 29 | 699 | 1.1+ | 0.6+ | 2005 10 22 | 703 | 0.7+ | 1.5+ |
| 2001 05 24 | 684 | 0.8+ | 0.6− | 2005 08 29 | 699 | 1.4+ | 0.9− | 2005 10 30 | G96 | 0.4+ | 0.6− |
| 2001 05 24 | 684 | 0.6+ | 0.7− | 2005 10 01 | 703 | 0.0 | 0.9− | 2005 10 30 | G96 | 0.2+ | 0.1− |
| 2001 05 25 | 691 | 0.3− | 0.0 | 2005 10 01 | 703 | 0.5− | 0.3− | 2005 10 30 | G96 | 0.1+ | 0.3− |
| 2001 05 25 | 684 | 0.7+ | 1.2− | 2005 10 01 | 703 | 0.6− | 0.1− | 2005 10 30 | G96 | 0.5+ | 0.3− |
| 2001 05 25 | 691 | 0.4+ | 0.5+ | 2005 10 01 | 703 | 0.5+ | 0.4− | 2005 11 25 | G96 | 0.3+ | 0.5− |
| 2001 05 25 | 684 | 0.2+ | 1.7− | 2005 10 07 | 704 | 0.9− | 0.4− | 2005 11 25 | G96 | 0.5+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 684 | 0.5− | 0.3− | 2005 10 07 | 704 | 1.0+ | 1.9+ | 2005 11 25 | G96 | 0.2+ | 0.5− | | |
| 2001 05 25 | 691 | 0.2− | 0.0 | 2005 10 07 | 704 | 0.8− | 0.1− | 2005 11 25 | G96 | 0.6+ | 0.2− | | |
| 2005 08 29 | 644 | 0.4+ | 0.1− | 2005 10 07 | 704 | 1.1− | 0.1+ | | | | | | |
| 2005 08 29 | 644 | 0.1+ | 0.1− | 2005 10 07 | 704 | 1.2− | 0.5+ | | | | | | |

### 2001 KU$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.49210 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26728385 | $\omega$ | 288.83654 | | −0.86593513 | | +0.49468758 |
| $a$ | 2.3868268 | $\Omega$ | 280.87167 | | −0.42594982 | | −0.80669262 |
| $e$ | 0.2222533 | $i$ | 4.30744 | | −0.26215092 | | −0.32331287 |
| $P$ | 3.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.3+ | 0.2− | 2001 05 18 | 699 | 0.3+ | 0.2+ | 2005 06 04 | 704 | 0.0 | 1.2− |
| 2001 03 26 | 704 | 0.1+ | 0.2− | 2001 05 18 | 699 | 0.2+ | 1.0+ | 2005 06 04 | 704 | 0.5+ | 0.3− |
| 2001 03 26 | 704 | 0.2+ | 0.5− | 2001 05 18 | 699 | 0.3+ | 0.4− | 2005 06 04 | 704 | 0.7− | 0.4+ |
| 2001 03 26 | 704 | 0.4− | 0.2+ | 2001 05 18 | 699 | 0.2+ | 0.9+ | 2005 06 04 | 704 | 0.2− | 0.4− |
| 2001 04 16 | 704 | 0.5− | 0.6− | 2001 05 21 | 704 | 0.1+ | 0.4+ | 2005 06 04 | 704 | 0.5+ | 0.7+ |
| 2001 04 16 | 704 | 0.3+ | 0.4− | 2001 05 21 | 704 | 0.7+ | 0.5− | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 2001 04 16 | 704 | 0.4− | 0.2+ | 2001 05 21 | 704 | (0.7+ | 1.6+) | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2001 04 16 | 704 | 0.6+ | 0.1− | 2001 05 21 | 704 | 1.1+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2001 04 16 | 704 | 0.5+ | 0.8− | 2001 06 12 | 608 | 0.3− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 04 16 | 608 | 0.3+ | 1.4+ | 2001 06 12 | 608 | 0.2+ | 0.5− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 04 16 | 608 | 0.6+ | 1.3+ | 2001 06 12 | 608 | 0.2− | 0.9− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2001 04 16 | 608 | 0.1+ | 0.7+ | 2001 06 19 | 699 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.6− | 0.2− |
| 2001 04 26 | 608 | 1.3− | 0.6+ | 2001 06 19 | 699 | 0.8+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2001 04 26 | 608 | 1.1− | 0.6+ | 2001 06 19 | 699 | 0.1+ | 0.7− | 2006 11 25 | G96 | 0.4− | 0.1− |
| 2001 04 26 | 608 | 1.2− | 0.7+ | 2001 06 19 | 699 | 0.4+ | 0.1− | 2006 11 25 | G96 | 0.5− | 0.3− |

### 2001 KZ$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.39808 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25480524 | $\omega$ | 171.60923 | | −0.51955512 | | +0.85166695 |
| $a$ | 2.4641311 | $\Omega$ | 67.06321 | | −0.78819975 | | −0.44666455 |
| $e$ | 0.1416921 | $i$ | 4.28094 | | −0.32985395 | | −0.27414263 |
| $P$ | 3.87 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 30 | 704 | 0.2− | 0.5+ | 2001 05 29 | 608 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2001 04 30 | 704 | 0.3+ | 0.2− | 2001 06 01 | 691 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2001 04 30 | 704 | 0.0 | 0.3+ | 2001 06 01 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2001 05 21 | 704 | 0.2+ | 0.3− | 2001 06 01 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 05 21 | 704 | 0.5+ | 0.3+ | 2006 10 17 | G96 | 1.3+ | 1.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 05 21 | 704 | 1.0+ | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 05 29 | 608 | 0.2− | 0.4− | 2006 10 17 | G96 | 0.1− | 0.1− | | | | |
| 2001 05 29 | 608 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.2− | 0.2− | | | | |

### 2001 KC$_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.55600 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25901647 | $\omega$ | 293.40669 | | +0.98920417 | | −0.11771294 |
| $a$ | 2.4373494 | $\Omega$ | 73.44472 | | +0.14368880 | | +0.89610942 |
| $e$ | 0.1983995 | $i$ | 5.22462 | | −0.02878625 | | +0.42793874 |
| $P$ | 3.81 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.4− | 0.5− | 2005 10 22 | 691 | 0.0 | 0.1+ | 2005 11 25 | 291 | 0.3− | 0.1+ |
| 2001 05 22 | 807 | 0.7+ | 0.4− | 2005 10 30 | G96 | 0.2+ | 0.5− | 2005 12 01 | G96 | 0.0 | 0.2− |
| 2001 10 08 | 644 | 0.3+ | 0.1− | 2005 10 30 | G96 | 0.0 | 0.5− | 2005 12 01 | G96 | 0.2+ | 0.4− |
| 2001 10 08 | 644 | 0.4+ | 0.5− | 2005 10 30 | G96 | 0.2+ | 0.5− | 2005 12 01 | G96 | 0.0 | 0.4− |
| 2001 10 08 | 644 | 0.3+ | 0.7− | 2005 10 30 | G96 | 0.1− | 0.5− | 2005 12 01 | G96 | 0.1+ | 0.3− |
| 2001 10 16 | 644 | 0.7− | 0.7+ | 2005 11 10 | 691 | 0.0 | 0.0 | 2005 12 29 | G96 | 0.1− | 0.2− |
| 2001 10 16 | 644 | 0.4− | 1.2+ | 2005 11 10 | 691 | 0.1+ | 0.1− | 2005 12 29 | G96 | 0.1− | 0.3+ |
| 2001 10 16 | 644 | 0.5− | 0.7+ | 2005 11 10 | 691 | 0.1+ | 0.2− | 2005 12 29 | G96 | 0.0 | 0.1+ |
| 2005 10 22 | 691 | 0.1+ | 0.1+ | 2005 11 25 | 291 | 0.1+ | 0.2+ | 2005 12 29 | G96 | 0.2− | 0.3+ |
| 2005 10 22 | 691 | 0.0 | 0.1− | 2005 11 25 | 291 | 0.0 | 0.2+ | | | | |

### 2001 KD$_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.21092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24695177 | $\omega$ | 124.33576 | | +0.75639877 | | +0.65244080 |
| $a$ | 2.5161003 | $\Omega$ | 195.11795 | | −0.64342252 | | +0.72928289 |
| $e$ | 0.1530115 | $i$ | 10.31743 | | −0.11776401 | | +0.20607638 |
| $P$ | 3.99 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 704 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.2+ | 1.2− | 2005 06 29 | 644 | 0.0 | 0.0 |
| 2001 05 29 | 704 | 0.4+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.5− | 2005 06 30 | 703 | 0.3− | 0.2+ |
| 2001 05 29 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.7− | 0.2− | 2005 06 30 | 703 | 0.5− | 0.1− |
| 2001 05 29 | 704 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.5+ | 0.2− | 2005 06 30 | 703 | 0.1− | 0.1− |
| 2001 05 29 | 704 | 0.1+ | 0.4− | 2004 04 24 | 691 | 0.1+ | 0.1+ | 2005 06 30 | 703 | 0.7− | 0.1+ |
| 2001 08 26 | 608 | 0.6+ | 0.1− | 2004 04 24 | 691 | 0.0 | 0.1+ | 2005 08 21 | 608 | 0.4+ | 1.1− |
| 2001 08 26 | 608 | 0.2+ | 0.3− | 2004 04 24 | 691 | 0.2− | 0.5+ | 2005 08 21 | 608 | 0.9+ | 0.4− |
| 2001 08 26 | 608 | 0.7+ | 0.6− | 2005 06 03 | 703 | 1.6− | 0.6− | 2005 08 21 | 608 | 0.4+ | 1.2− |
| 2001 10 14 | 704 | 0.8− | 0.7+ | 2005 06 03 | 703 | 0.5− | 0.1+ | 2005 10 08 | 704 | 1.2+ | 0.3− |
| 2001 10 14 | 704 | 0.4− | 0.9+ | 2005 06 03 | 703 | 0.4− | 0.1+ | 2005 10 08 | 704 | 0.3− | 1.2+ |
| 2001 10 14 | 704 | 1.0− | 0.5+ | 2005 06 03 | 703 | 0.8+ | 0.4+ | 2005 10 08 | 704 | 1.3+ | 0.4+ |
| 2001 10 14 | 704 | 0.4− | 0.6+ | 2005 06 29 | 644 | 0.1− | 0.1− | 2005 10 08 | 704 | 0.0 | 0.7+ |
| 2004 03 20 | 704 | 0.1+ | 0.1+ | 2005 06 29 | 644 | 0.1− | 0.0 | | | | |

### 2001 LX$_{7}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.08932 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23276842 | $\omega$ | 65.84149 | | +0.83964400 | | +0.49236811 |
| $a$ | 2.6172990 | $\Omega$ | 263.93768 | | −0.54310218 | | +0.75632089 |
| $e$ | 0.2166463 | $i$ | 13.33089 | | −0.00616219 | | +0.43075788 |
| $P$ | 4.23 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 644 | 0.1+ | 1.0+ | 2001 06 29 | 608 | 0.2− | 1.0− | 2001 10 11 | 704 | (1.8− | 1.3+) |
| 2001 06 15 | 644 | 0.5+ | 0.8+ | 2001 07 21 | 608 | (0.1− | 1.6−) | 2001 10 11 | 704 | 0.1+ | 0.1− |
| 2001 06 15 | 644 | 0.3+ | 0.6+ | 2001 07 21 | 608 | (0.3− | 1.8−) | 2001 10 11 | 704 | 0.3− | 0.1+ |
| 2001 06 15 | 704 | 0.2− | 0.2+ | 2001 07 21 | 608 | (0.4− | 1.5−) | 2001 10 11 | 704 | 0.2− | 0.4− |
| 2001 06 15 | 704 | 0.7− | 0.4+ | 2001 07 27 | 608 | 0.6− | 0.6+ | 2001 10 11 | 704 | 0.3− | 0.4+ |
| 2001 06 15 | 704 | 0.9− | 0.4+ | 2001 07 27 | 608 | 0.5− | 0.6+ | 2006 11 15 | 704 | 0.9− | 0.6− |
| 2001 06 15 | 704 | 0.4− | 0.6+ | 2001 07 27 | 608 | 0.4− | 0.3+ | 2006 11 15 | 704 | 1.3− | 0.4+ |
| 2001 06 15 | 704 | 0.4− | 0.1+ | 2001 08 20 | 704 | 0.5+ | 0.2+ | 2006 11 15 | 704 | (0.8+ | 1.5−) |
| 2001 06 20 | 644 | (3.3− | 7.0−) | 2001 08 20 | 704 | 0.8+ | 0.2− | 2006 11 15 | 704 | 0.6− | 0.3− |
| 2001 06 20 | 644 | (3.3− | 7.1−) | 2001 08 20 | 704 | 0.7+ | 0.5+ | 2006 11 15 | 704 | 1.0− | 0.6− |
| 2001 06 20 | 644 | (3.4− | 7.2−) | 2001 08 20 | 704 | 0.4+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2001 06 21 | 704 | 1.1+ | 0.8− | 2001 08 20 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 691 | 0.4+ | 0.5+ |
| 2001 06 21 | 704 | 0.5− | 0.7− | 2001 09 12 | 704 | (1.6+ | 0.3−) | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2001 06 21 | 704 | 0.2− | 0.5+ | 2001 09 12 | 704 | 1.3+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2001 06 21 | 704 | 0.9− | 0.3+ | 2001 09 12 | 704 | 1.0+ | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.9+ |
| 2001 06 24 | 704 | 1.0− | 0.6− | 2001 09 12 | 704 | 0.5+ | 0.7− | 2006 11 22 | 704 | (2.9− | 1.6+) |
| 2001 06 24 | 704 | 0.5+ | 0.3+ | 2001 09 12 | 704 | 0.1+ | 0.8− | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2001 06 24 | 704 | 1.0+ | 0.6− | 2001 09 25 | 704 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2001 06 24 | 704 | 0.1+ | 0.1+ | 2001 09 25 | 704 | 0.3+ | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2001 06 29 | 608 | 0.4− | 1.1− | 2001 09 25 | 704 | 0.5− | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.3− |
| 2001 06 29 | 608 | 0.4− | 1.0− | 2001 09 25 | 704 | 0.6− | 0.2− | 2006 11 25 | 691 | 0.1+ | 0.3− |

### 2001 LJ$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.08609 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27457193 | $\omega$ | 29.37993 | | −0.36999541 | | +0.92597364 |
| $a$ | 2.3444013 | $\Omega$ | 219.04149 | | −0.87401149 | | −0.37442995 |
| $e$ | 0.1866053 | $i$ | 6.86962 | | −0.31497191 | | −0.04873425 |
| $P$ | 3.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 20 | 691 | 0.0 | 0.3− | 2004 02 13 | 699 | 0.5− | 0.5+ | 2005 09 23 | 644 | 0.5− | 0.4+ |
| 1995 12 20 | 691 | 0.3− | 0.0 | 2004 02 13 | 699 | 0.1+ | 0.4+ | 2005 09 23 | 644 | 0.5− | 0.3+ |
| 1995 12 20 | 691 | 0.3+ | 0.4− | 2004 03 15 | 704 | 0.8+ | 1.1+ | 2005 09 23 | 644 | 0.4− | 0.4+ |
| 2001 05 25 | 704 | 0.7+ | 0.6+ | 2004 03 15 | 704 | 0.8+ | 0.6+ | 2005 09 30 | 703 | 0.0 | 0.9− |
| 2001 05 25 | 704 | 0.3− | 0.0 | 2004 03 15 | 704 | 0.9+ | 1.1+ | 2005 09 30 | 703 | 0.2− | 1.0+ |
| 2001 05 25 | 704 | 0.2+ | 0.1+ | 2004 03 15 | 704 | (2.3+ | 2.0+) | 2005 09 30 | 703 | 0.3− | 1.0+ |
| 2001 05 25 | 704 | 0.5− | 0.5+ | 2004 03 15 | 704 | (0.5− | 1.6+) | 2005 09 30 | 703 | 0.5− | 0.5− |
| 2001 06 15 | 704 | 0.2− | 0.4+ | 2005 08 03 | 644 | 0.0 | 0.4+ | 2005 10 07 | 691 | 0.1+ | 0.2+ |
| 2001 06 15 | 704 | 0.5− | 0.0 | 2005 08 03 | 644 | 0.7− | 0.3+ | 2005 10 07 | 691 | 0.2− | 0.5+ |
| 2001 06 15 | 704 | 0.2− | 0.6+ | 2005 08 03 | 644 | 0.2− | 0.3+ | 2005 10 07 | 691 | 0.2+ | 0.2+ |
| 2001 06 15 | 704 | 0.1− | 0.7+ | 2005 08 27 | 699 | 0.5− | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2001 06 15 | 704 | 0.1+ | 0.6+ | 2005 08 27 | 699 | 0.5+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 2001 06 22 | 704 | 0.4+ | 0.3− | 2005 08 27 | 699 | 1.2+ | 0.5+ | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2001 06 22 | 704 | 0.3+ | 0.4+ | 2005 08 27 | 699 | 0.3− | 0.4+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2001 06 22 | 704 | 0.1− | 0.0 | 2005 09 14 | 703 | 0.2− | 1.2− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2001 06 22 | 704 | 0.2+ | 0.3+ | 2005 09 14 | 703 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2004 02 13 | 699 | 0.4− | 1.2+ | 2005 09 14 | 703 | (2.9− | 2.3−) | | | | |
| 2004 02 13 | 699 | 0.7+ | 0.9+ | 2005 09 14 | 703 | 0.3+ | 0.3− | | | | |

**2001 MQ**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.10232 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17868972 | $\omega$ | 83.27722 | | +0.75080729 | | +0.52563625 |
| $a$ | 3.1217851 | $\Omega$ | 244.27016 | | −0.62659665 | | +0.75837618 |
| $e$ | 0.1963545 | $i$ | 26.36050 | | +0.20896184 | | +0.38545052 |
| $P$ | 5.52 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 644 | 0.0 | 1.7+ | 2002 10 10 | 644 | 0.0 | 0.0 | 2003 12 15 | 644 | 0.2+ | 0.5+ |
| 2001 05 25 | 644 | 0.2− | 1.0+ | 2002 10 10 | 704 | 0.1+ | 1.2+ | 2003 12 15 | 644 | 0.1− | 0.4+ |
| 2001 05 25 | 644 | 0.2− | 1.6+ | 2002 10 10 | 704 | 0.3− | 0.1− | 2003 12 15 | 644 | 0.2+ | 0.7+ |
| 2001 06 17 | 644 | 0.6+ | 0.0 | 2002 10 10 | 704 | 0.7− | 0.4+ | 2003 12 20 | 704 | 0.6− | 0.6− |
| 2001 06 17 | 644 | 0.2− | 0.1+ | 2002 10 10 | 704 | 0.1− | 0.3+ | 2003 12 20 | 704 | 0.6+ | 0.2+ |
| 2001 06 17 | 644 | 0.2+ | 0.0 | 2002 10 10 | 704 | 0.0 | 0.6+ | 2003 12 20 | 704 | 0.9+ | 0.4+ |
| 2001 06 18 | 644 | 0.2− | 0.3+ | 2003 11 02 | 704 | 0.6− | 0.3+ | 2004 01 12 | 644 | 0.6+ | 0.4+ |
| 2001 06 18 | 644 | 0.2− | 0.1+ | 2003 11 02 | 704 | 0.5− | 0.1+ | 2004 01 12 | 644 | 0.5+ | 0.6+ |
| 2001 06 18 | 644 | 0.3− | 0.0 | 2003 11 02 | 704 | 0.1− | 0.3− | 2004 01 12 | 644 | 0.1+ | 0.5+ |
| 2002 07 28 | 644 | 0.0 | 0.4+ | 2003 12 01 | 704 | 0.3− | 0.5+ | 2006 04 25 | E12 | 1.1+ | 0.6+ |
| 2002 07 28 | 644 | 0.2+ | 0.2+ | 2003 12 01 | 704 | 0.0 | 0.1+ | 2006 04 25 | E12 | 0.4− | 0.2+ |
| 2002 07 28 | 644 | 0.1+ | 0.5+ | 2003 12 01 | 704 | 0.2+ | 0.1− | 2006 04 25 | E12 | 0.3+ | 0.3− |
| 2002 10 10 | 644 | 0.4− | 0.1− | 2003 12 01 | 704 | 0.1− | 0.3+ | 2006 04 25 | E12 | 0.8− | 0.4+ |
| 2002 10 10 | 644 | 0.2− | 0.2− | 2003 12 01 | 704 | 0.4+ | 0.6+ | | | | |

**2001 MX$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.28011 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21039760 | $\omega$ | 172.93094 | | +0.39818591 | | +0.90280976 |
| $a$ | 2.7996830 | $\Omega$ | 120.41529 | | −0.85056203 | | +0.42968658 |
| $e$ | 0.1995212 | $i$ | 10.85637 | | −0.34349994 | | −0.01743513 |
| $P$ | 4.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 18 | 097 | 0.2− | 0.6+ | 2001 08 19 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 703 | (0.3− | 1.7+) |
| 2001 06 19 | 097 | 0.1− | 0.6+ | 2001 08 19 | 704 | 0.1− | 0.3− | 2006 09 20 | 703 | 1.1− | 0.3− |
| 2001 06 19 | 097 | 0.1+ | 0.4+ | 2001 08 19 | 704 | 0.7+ | 1.1+ | 2006 09 20 | 703 | 1.0+ | 1.1− |
| 2001 06 19 | 097 | 0.2+ | 0.1− | 2006 08 16 | 644 | 0.4− | 0.1+ | 2006 09 20 | 703 | 0.1+ | 0.5− |
| 2001 06 20 | 097 | 0.3+ | 0.0 | 2006 08 16 | 644 | 0.2− | 0.7+ | 2006 09 26 | 703 | 0.7− | 0.2− |
| 2001 06 20 | 097 | 0.8+ | 0.3− | 2006 08 16 | 644 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.2− |
| 2001 08 06 | 608 | 0.5− | 0.8− | 2006 09 18 | 703 | 1.0+ | 0.5+ | 2006 09 26 | 703 | 0.6+ | 0.7+ |
| 2001 08 06 | 608 | 0.4− | 1.4− | 2006 09 18 | 703 | 1.1+ | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.5+ |
| 2001 08 06 | 608 | 0.9− | 1.1− | 2006 09 18 | 703 | 0.8− | 0.3− | | | | |
| 2001 08 19 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.0 | | | | |

**2001 MO$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.53648 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22333367 | $\omega$ | 178.50217 | | +0.99432689 | | −0.10152715 |
| $a$ | 2.6905016 | $\Omega$ | 187.54881 | | +0.09490760 | | +0.98148304 |
| $e$ | 0.1030896 | $i$ | 13.97320 | | +0.04802691 | | +0.16242929 |
| $P$ | 4.41 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 20 | 493 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 1.0− | 0.2+ |
| 2001 06 20 | 493 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 1.4− | 0.7− |
| 2001 06 21 | 493 | 0.2+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.4+ | 1.2+ |
| 2001 06 21 | 493 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.6− | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2001 06 22 | 493 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 06 22 | 493 | 0.0 | 0.3+ | 2006 09 30 | 703 | (0.7+ | 1.6−) | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 07 25 | 557 | 0.8− | 0.2− | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 07 25 | 557 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.0 | 1.0− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 07 25 | 557 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 07 26 | 557 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 10 22 | 703 | 1.3+ | 0.1+ |
| 2001 07 27 | 557 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.7+ |
| 2004 04 12 | 691 | 0.5− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.5− | 0.3− |
| 2004 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.1+ |
| 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2006 09 14 | 703 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2006 09 14 | 703 | (2.0+ | 0.5+) | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2006 09 14 | 703 | 0.4− | 0.9− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.4− | 0.3+ |
| 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.2+ |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 16 | 703 | 0.9+ | 0.2+ |
| 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | | | | |

**2001 MY$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.10059 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23309529 | $\omega$ | 269.63407 | | +0.77640380 | | +0.62741088 |
| $a$ | 2.6148516 | $\Omega$ | 51.50550 | | −0.54370069 | | +0.71462595 |
| $e$ | 0.1164323 | $i$ | 4.36764 | | −0.31872669 | | +0.30929814 |
| $P$ | 4.23 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 20 | 644 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 1.3+ | 1.5− |
| 2001 06 20 | 644 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2001 06 20 | 644 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (0.5− | 1.6−) |
| 2001 06 22 | 644 | 0.1+ | 1.5− | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2001 06 22 | 644 | 0.1− | 1.2− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 1.5− |
| 2001 06 22 | 644 | 0.2+ | 1.2− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2001 07 21 | 644 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 1.3− |
| 2001 07 21 | 644 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2001 07 21 | 644 | 0.0 | 0.6+ | 2006 11 12 | 703 | 0.6+ | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2001 07 26 | 644 | 0.4+ | 0.5+ | 2006 11 12 | 703 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2001 07 26 | 644 | 0.2+ | 0.2+ | 2006 11 12 | 703 | 0.0 | 1.0+ | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2001 07 26 | 644 | 0.2+ | 0.5+ | 2006 11 12 | 703 | 1.1− | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2001 07 31 | 644 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2001 07 31 | 644 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2001 07 31 | 644 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.4+ | 0.3+ |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.1+ |
| 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.7+ | 2006 12 01 | G96 | 0.3+ | 0.2+ |
| 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.6− | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.4− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.1− |

**2001 MS$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.59383 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18511878 | $\omega$ | 92.19630 | +0.43696538 | | +0.89226479 | |
| $a$ | 3.0490817 | $\Omega$ | 204.72096 | −0.89477630 | | +0.41828845 | |
| $e$ | 0.3067796 | $i$ | 15.77435 | −0.09185112 | | +0.16999506 | |
| $P$ | 5.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 704 | 0.2− | 0.3− | 2001 07 24 | 644 | 0.2+ | 0.5+ | 2006 04 24 | 699 | 0.2− | 0.5− |
| 2001 05 29 | 704 | 0.3− | 1.0− | 2001 07 24 | 644 | 0.5+ | 0.8+ | 2006 04 24 | 699 | 0.1+ | 0.1− |
| 2001 05 29 | 704 | 0.4+ | 0.1− | 2001 07 24 | 644 | 0.4+ | 0.5+ | 2006 04 24 | 699 | 0.9− | 0.0 |
| 2001 05 29 | 704 | 0.3− | 0.6+ | 2001 08 04 | 644 | 0.1− | 0.2+ | 2006 05 06 | G96 | 0.0 | 0.1− |
| 2001 06 23 | 644 | 0.3+ | 0.4− | 2001 08 04 | 644 | 0.5− | 0.1+ | 2006 05 06 | G96 | 0.1+ | 0.1− |
| 2001 06 23 | 644 | 0.3+ | 0.7− | 2001 08 04 | 644 | 0.0 | 0.2+ | 2006 05 06 | G96 | 0.2+ | 0.2+ |
| 2001 06 23 | 644 | 0.1− | 0.5− | 2006 04 09 | 691 | 0.0 | 0.1+ | 2006 05 06 | G96 | 0.2+ | 0.3+ |
| 2001 06 24 | 644 | 0.3− | 0.1+ | 2006 04 09 | 691 | 0.2− | 0.0 | 2006 05 21 | 644 | 0.1+ | 0.2− |
| 2001 06 24 | 644 | 0.0 | 0.1− | 2006 04 09 | 691 | 0.1− | 0.2+ | 2006 05 21 | 644 | 0.5+ | 0.1− |
| 2001 06 24 | 644 | 0.2− | 0.0 | 2006 04 24 | 699 | 0.5+ | 0.0 | 2006 05 21 | 644 | 0.5+ | 0.1+ |

**2001 MW$_8$ = 2001 PY$_{63}$ = 2006 ST$_{43}$**

Id. Minor Planet Center (d, *MPO* 24065)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.85914 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21611671 | $\omega$ | 5.70347 | +0.89345547 | | +0.44392425 | |
| $a$ | 2.7500704 | $\Omega$ | 327.66286 | −0.41697371 | | +0.76325016 | |
| $e$ | 0.2405579 | $i$ | 7.33890 | −0.16694387 | | +0.46944697 | |
| $P$ | 4.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 19 | 644 | 0.0 | 0.2+ | 2001 07 30 | 644 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.9+ | 0.5− |
| 2001 06 19 | 644 | 0.2− | 0.1− | 2001 08 06 | 644 | 0.3− | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.2− |
| 2001 06 19 | 644 | 0.2− | 0.3− | 2001 08 06 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 06 25 | 644 | 0.3+ | 0.1− | 2001 08 06 | 644 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 06 25 | 644 | 0.4+ | 0.5− | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 06 25 | 644 | 0.2+ | 0.2− | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.4− |
| 2001 07 11 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.5− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2001 07 11 | 644 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2001 07 11 | 644 | 0.4+ | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2001 07 30 | 644 | 0.1+ | 0.0 | 2006 09 20 | 699 | 1.3+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 07 30 | 644 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.7+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 07 30 | 644 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.6− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2001 07 30 | 644 | 0.4− | 0.0 | 2006 09 28 | 703 | 1.2− | 0.1+ | | | | |
| 2001 07 30 | 644 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.6+ | 0.1− | | | | |

**2001 MB$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.98726 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23687113 | $\omega$ | 217.13671 | +0.42996779 | | +0.88487612 | |
| $a$ | 2.5869893 | $\Omega$ | 78.96274 | −0.77829366 | | +0.46388762 | |
| $e$ | 0.1625170 | $i$ | 10.52145 | −0.45758790 | | +0.04245618 | |
| $P$ | 4.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 644 | 0.4+ | 0.2− | 2001 07 12 | 644 | 1.1+ | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 06 21 | 644 | 0.4+ | 0.3− | 2001 07 16 | 644 | 0.1+ | 0.7− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 06 21 | 644 | 0.1− | 0.3− | 2001 07 16 | 644 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2001 06 27 | 644 | (0.6− | 2.2−) | 2001 07 16 | 644 | 0.5− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2001 06 27 | 644 | 1.0− | 0.5+ | 2001 07 18 | 644 | 0.6− | 0.4− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2001 06 27 | 644 | (0.2− | 2.4−) | 2001 07 18 | 644 | 0.5− | 0.5− | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2001 06 27 | 644 | 0.9− | 1.2+ | 2001 07 18 | 644 | 0.6− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2001 06 27 | 644 | (0.5− | 2.1−) | 2001 07 25 | 644 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 06 30 | 644 | 0.4+ | 0.1+ | 2001 07 25 | 644 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2001 06 30 | 644 | 0.4+ | 0.2+ | 2001 07 25 | 644 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2001 06 30 | 644 | 0.1+ | 0.4+ | 2001 07 29 | 644 | 0.5− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 07 12 | 644 | 1.2+ | 0.3+ | 2001 07 29 | 644 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2001 07 12 | 644 | 1.2+ | 1.1+ | 2001 07 29 | 644 | 0.6− | 0.5− | 2006 11 27 | 691 | 0.2− | 0.3+ |

**2001 MZ$_{13}$ = 2001 QZ$_{332}$ = 2006 UO$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.20114 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22476998 | $\omega$ | 200.32883 | +0.90643997 | | +0.41154390 | |
| $a$ | 2.6790275 | $\Omega$ | 134.99201 | −0.36658287 | | +0.87821418 | |
| $e$ | 0.0785132 | $i$ | 7.70843 | −0.20972263 | | +0.24366262 | |
| $P$ | 4.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 24 | 691 | 0.0 | 0.5+ | 2002 11 25 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.2+ |
| 2001 06 24 | 691 | 0.1− | 0.3+ | 2002 11 25 | 644 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.2+ |
| 2001 06 24 | 691 | 0.4− | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.4+ | 1.2− |
| 2001 06 28 | 691 | 0.3+ | 0.4+ | 2004 02 16 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.0+ | 0.2+ |
| 2001 06 28 | 691 | 0.3+ | 0.4+ | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4+ | 1.4− |
| 2001 06 28 | 691 | 0.3+ | 0.0 | 2005 06 10 | 691 | 0.8+ | 0.5− | 2006 10 16 | 703 | 0.5− | 1.5− |
| 2001 08 25 | 691 | 1.4− | 0.5+ | 2005 06 10 | 691 | 0.9− | 0.2− | 2006 10 22 | 703 | 1.4− | 1.2+ |
| 2001 08 25 | 691 | 0.6+ | 0.7− | 2005 06 10 | 691 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2001 08 25 | 691 | 0.3+ | 1.2− | 2006 09 18 | 703 | 0.9− | 2.0+ | 2006 10 22 | 703 | 1.4+ | 0.0 |
| 2002 11 25 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 1.3− | 0.8+ |

**2001 MB$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.62769 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23385841 | $\omega$ | 23.62932 | +0.72600444 | | +0.65984034 | |
| $a$ | 2.6091601 | $\Omega$ | 293.61937 | −0.65984431 | | +0.58904724 | |
| $e$ | 0.1823098 | $i$ | 12.20644 | −0.19370866 | | +0.46651267 | |
| $P$ | 4.21 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 699 | 0.1− | 0.3+ | 2001 07 21 | 608 | 0.2− | 0.1+ | 2001 09 20 | 704 | 0.2− | 0.8− |
| 2001 06 16 | 699 | 0.4− | 0.3+ | 2001 07 22 | 704 | (2.3+ | 0.2+) | 2001 09 20 | 704 | 0.0 | 0.8+ |
| 2001 06 16 | 699 | 0.2− | 0.4+ | 2001 07 22 | 704 | (2.4+ | 0.6+) | 2001 10 14 | 704 | 0.1+ | 0.5+ |
| 2001 06 16 | 699 | 0.4− | 0.7+ | 2001 07 22 | 704 | 0.7+ | 0.6− | 2001 10 14 | 704 | 0.9− | 0.3+ |
| 2001 06 26 | 644 | 0.0 | 0.5+ | 2001 08 11 | 704 | 1.0− | 0.5− | 2001 10 14 | 704 | 0.7− | 0.6+ |
| 2001 06 26 | 644 | 0.0 | 0.1+ | 2001 08 11 | 704 | 0.3− | 0.3− | 2001 11 12 | 704 | 0.5+ | 1.1+ |
| 2001 06 26 | 644 | 0.1− | 0.3+ | 2001 08 11 | 704 | 0.8− | 0.2+ | 2001 11 12 | 704 | 0.7− | 0.3+ |
| 2001 06 30 | 608 | 0.2− | 0.5− | 2001 08 19 | 704 | 0.1+ | 0.0 | 2001 11 12 | 704 | 0.7− | 0.3+ |
| 2001 06 30 | 608 | 0.2− | 0.4− | 2001 08 19 | 704 | 0.3− | 1.0+ | 2001 11 12 | 704 | 1.2+ | 0.8− |
| 2001 06 30 | 608 | 0.0 | 0.3+ | 2001 08 19 | 704 | 0.0 | 1.1+ | 2004 02 14 | 644 | 0.2+ | 0.6+ |
| 2001 07 14 | 644 | 0.2+ | 1.1− | 2001 08 19 | 704 | 0.8− | 0.4+ | 2004 02 14 | 644 | 0.2+ | 0.6+ |
| 2001 07 14 | 644 | 0.1− | 0.8− | 2001 09 08 | 704 | 0.7+ | 1.2− | 2004 02 14 | 644 | 0.3+ | 0.4+ |
| 2001 07 14 | 644 | 0.1− | 0.9− | 2001 09 08 | 704 | 0.3+ | 0.9− | 2006 11 14 | 704 | 0.4+ | 0.5− |
| 2001 07 16 | 644 | 0.3+ | 0.7+ | 2001 09 08 | 704 | 0.5− | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.2− |
| 2001 07 16 | 644 | 0.3+ | 0.8+ | 2001 09 12 | 704 | 0.3− | 0.3− | 2006 11 14 | 704 | 0.9− | 0.7+ |
| 2001 07 16 | 644 | 0.4+ | 1.0+ | 2001 09 12 | 704 | 0.1− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 1.3+ |
| 2001 07 21 | 608 | 0.6+ | 0.2+ | 2001 09 12 | 704 | 0.1− | 0.3− | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2001 07 21 | 608 | 0.7+ | 0.1+ | 2001 09 12 | 704 | 0.6+ | 0.5− | 2006 11 22 | 703 | 0.5− | 0.1− |
| 2001 07 21 | 608 | 0.3+ | 0.0 | 2001 09 12 | 704 | 0.3− | 0.1+ | 2006 11 22 | 703 | 0.7+ | 0.3+ |
| 2001 07 21 | 608 | 0.4+ | 0.2+ | 2001 09 20 | 704 | 0.5− | 0.8− | | | | |
| 2001 07 21 | 608 | 0.2+ | 0.2+ | 2001 09 20 | 704 | 0.8+ | 0.2− | | | | |

**2001 MO$_{21}$ = 2006 SH$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.79885 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22007954 | $\omega$ | 268.51731 | +0.98356787 | | −0.02730230 | |
| $a$ | 2.7169581 | $\Omega$ | 93.02335 | +0.09495239 | | +0.91896961 | |
| $e$ | 0.1547736 | $i$ | 10.29470 | −0.15355223 | | +0.39338207 | |
| $P$ | 4.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | (2.0+ | 1.3−) | 2006 09 19 | 703 | 1.0− | 1.4+ | 2006 10 02 | 703 | 0.6− | 0.8+ |
| 2001 06 27 | 644 | (1.8+ | 1.0−) | 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.6+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | (1.9+ | 1.0−) | 2006 09 19 | 703 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | | |
| 2001 06 30 | 644 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.4− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2001 06 30 | 644 | 0.1+ | 0.3− | 2006 09 21 | 699 | 0.2+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2001 06 30 | 644 | 0.2+ | 0.0 | 2006 09 21 | 699 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.3+ | | |
| 2001 07 18 | 644 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.5+ | | |
| 2001 07 18 | 644 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.4+ | | |
| 2001 07 18 | 644 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.7− | 0.4− | | |
| 2001 07 27 | 644 | 0.4+ | 0.6− | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.2+ | | |
| 2001 07 27 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.1− | | |
| 2001 07 27 | 644 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.7− | 0.2+ | 2006 10 28 | 703 | (2.4− | 0.0 ) | | |
| 2004 03 29 | 291 | 0.4+ | 0.8+ | 2006 09 29 | 699 | 0.4+ | 0.6+ | 2006 11 17 | 703 | (0.8− | 3.1−) | | |
| 2004 03 29 | 291 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.7+ | 0.5− | 2006 11 17 | 703 | (1.0− | 2.2−) | | |
| 2004 03 29 | 291 | 0.3+ | 0.5+ | 2006 09 29 | 699 | 0.4− | 0.4− | 2006 11 17 | 703 | 0.1− | 0.6+ | | |
| 2005 07 04 | 691 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.1+ | | |
| 2005 07 04 | 691 | 0.1+ | 0.5+ | 2006 10 02 | 703 | 0.3− | 0.2+ | | | | | | |
| 2005 07 04 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 703 | 0.4− | 0.0 | | | | | | |

**2001 MF$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.62781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30963923 | $\omega$ | 253.43164 | | +0.37887622 | +0.92435254 | |
| $a$ | 2.1638745 | $\Omega$ | 38.92823 | | −0.81943628 | +0.35767762 | |
| $e$ | 0.2125808 | $i$ | 4.10704 | | −0.43008952 | +0.13281228 | |
| $P$ | 3.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 691 | 0.1− | 0.1+ | 2001 08 18 | 704 | 0.4+ | 0.5+ | 2001 09 19 | 704 | 0.2− | 0.5− |
| 1999 01 19 | 691 | 0.2+ | 0.1+ | 2001 08 19 | 704 | 0.0 | 0.4− | 2001 09 19 | 704 | 0.3− | 0.4+ |
| 1999 01 19 | 691 | 0.0 | 0.5− | 2001 08 19 | 704 | 0.1+ | 0.1+ | 2001 09 19 | 704 | 0.1+ | 0.9− |
| 2001 06 28 | 608 | 0.6− | 0.9− | 2001 08 19 | 704 | 0.7+ | 0.0 | 2001 09 19 | 704 | 0.1− | 0.2− |
| 2001 06 28 | 608 | 0.5− | 0.8− | 2001 08 19 | 704 | 0.0 | 0.2− | 2001 09 21 | 704 | 0.0 | 1.3− |
| 2001 06 28 | 608 | 0.8− | 0.7− | 2001 08 19 | 704 | 0.9+ | 0.4+ | 2001 09 21 | 704 | 0.0 | 0.5− |
| 2001 06 30 | 644 | 0.4+ | 0.2+ | 2001 08 25 | 608 | 0.5− | 0.3− | 2001 09 21 | 704 | 1.4− | 0.5− |
| 2001 06 30 | 644 | 0.1+ | 0.8+ | 2001 08 25 | 608 | 0.2− | 0.3− | 2001 09 21 | 704 | 0.6− | 0.3− |
| 2001 06 30 | 644 | 0.0 | 1.0+ | 2001 08 25 | 608 | 0.2− | 0.3+ | 2001 09 21 | 704 | 1.1− | 0.0 |
| 2001 08 13 | 608 | 0.2− | 0.5− | 2001 09 06 | 644 | 0.3+ | 0.1− | 2001 10 11 | 644 | 0.1− | 0.1+ |
| 2001 08 13 | 608 | 0.0 | 0.2− | 2001 09 06 | 644 | 0.2− | 0.6− | 2001 10 11 | 644 | 0.2− | 0.5+ |
| 2001 08 13 | 608 | 0.1− | 0.3− | 2001 09 06 | 644 | 0.3− | 0.1− | 2001 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 08 16 | 704 | 0.4− | 0.8+ | 2001 09 10 | 699 | 0.3+ | 0.4− | 2001 10 24 | 704 | 1.1− | 1.8+ |
| 2001 08 16 | 704 | 0.0 | 0.4− | 2001 09 10 | 699 | 0.1+ | 0.1− | 2001 10 24 | 704 | 1.0+ | 0.5− |
| 2001 08 16 | 704 | 0.7+ | 1.5+ | 2001 09 10 | 699 | 0.0 | 0.1+ | 2001 10 24 | 704 | 0.9+ | 0.7− |
| 2001 08 16 | 704 | 1.5− | 0.2+ | 2001 09 10 | 699 | 0.5+ | 0.2− | 2005 12 06 | 691 | 0.4− | 0.6+ |
| 2001 08 16 | 704 | 1.2− | 0.2− | 2001 09 11 | 704 | 0.3+ | 0.7+ | 2005 12 06 | 691 | 0.2+ | 0.2− |
| 2001 08 18 | 704 | 0.2+ | 1.1+ | 2001 09 11 | 704 | 0.3+ | 0.3− | 2005 12 06 | 691 | 0.2+ | 0.0 |
| 2001 08 18 | 704 | 0.5+ | 1.7+ | 2001 09 11 | 704 | 0.6+ | 0.1− | | | | |
| 2001 08 18 | 704 | 1.9+ | 0.5+ | 2001 09 11 | 704 | 0.4+ | 0.3+ | | | | |

**2001 MW$_{23}$ = 1978 RT$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.81872 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21428613 | $\omega$ | 30.01302 | | +0.98537115 | −0.16367509 | |
| $a$ | 2.7657102 | $\Omega$ | 339.24661 | | +0.11710190 | +0.85267722 | |
| $e$ | 0.3163188 | $i$ | 7.70008 | | +0.12381776 | +0.49613710 | |
| $P$ | 4.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 09 06 | 809 | 0.1+ | 0.2− | 2001 09 07 | 699 | 0.5+ | 0.4− | 2001 10 21 | 704 | 0.1+ | 0.2− |
| 2001 06 17 | 644 | 0.3− | 0.6− | 2001 09 07 | 699 | 0.3− | 0.6+ | 2001 10 21 | 704 | 0.3− | 0.4− |
| 2001 06 17 | 644 | 0.2− | 0.5− | 2001 09 07 | 699 | 0.3− | 0.6+ | 2001 10 21 | 704 | 0.4− | 0.9+ |
| 2001 06 17 | 644 | 0.3− | 0.8− | 2001 09 12 | 704 | 0.5− | 0.2+ | 2001 10 21 | 704 | 0.0 | 0.1+ |
| 2001 06 27 | 608 | 0.6+ | 0.2− | 2001 09 12 | 704 | 0.1− | 0.2+ | 2001 10 21 | 704 | 0.6+ | 0.6+ |
| 2001 06 27 | 608 | 0.2+ | 0.1+ | 2001 09 12 | 704 | 0.5+ | 0.0 | 2001 11 03 | 644 | 0.0 | 0.3− |
| 2001 06 27 | 608 | 0.3− | 0.1+ | 2001 09 12 | 704 | 0.2+ | 0.3− | 2001 11 03 | 644 | 0.1− | 0.2− |
| 2001 07 03 | 608 | 0.6− | 0.2− | 2001 09 12 | 704 | 0.5+ | 0.2+ | 2001 11 03 | 644 | 0.3− | 0.5+ |
| 2001 07 03 | 608 | 0.4− | 0.8− | 2001 09 20 | 704 | 0.8− | 1.1+ | 2001 11 10 | 644 | 0.0 | 0.1− |
| 2001 07 03 | 608 | 0.0 | 0.8− | 2001 09 20 | 644 | 0.2− | 0.0 | 2001 11 10 | 704 | 0.3+ | 0.2− |
| 2001 07 19 | 699 | 0.4− | 0.2+ | 2001 09 20 | 704 | 0.5+ | 0.6+ | 2001 11 10 | 644 | 0.1− | 0.3+ |
| 2001 07 19 | 699 | 0.4− | 0.5+ | 2001 09 20 | 704 | 0.5− | 0.4+ | 2001 11 10 | 644 | 0.2− | 0.2+ |
| 2001 07 19 | 699 | 0.3− | 0.0 | 2001 09 20 | 644 | 0.2− | 0.1+ | 2001 11 10 | 704 | 0.1− | 0.4+ |
| 2001 07 19 | 699 | 0.3− | 0.2− | 2001 09 20 | 704 | 1.1− | 0.4− | 2001 11 10 | 704 | 0.2+ | 0.1− |
| 2001 08 12 | 608 | 0.2− | 0.0 | 2001 09 20 | 644 | 0.2− | 0.1+ | 2001 11 10 | 704 | 0.2+ | 0.1− |
| 2001 08 12 | 608 | 0.7− | 0.0 | 2001 09 20 | 704 | 0.8− | 0.2+ | 2001 11 10 | 704 | 0.1− | 0.5− |
| 2001 08 12 | 608 | 0.5− | 0.1+ | 2001 09 22 | 704 | 0.1+ | 0.3+ | 2001 11 18 | 704 | 0.2+ | 0.2− |
| 2001 08 16 | 704 | 0.4+ | 0.5+ | 2001 09 22 | 704 | 0.0 | 0.3+ | 2001 11 18 | 704 | 0.3− | 0.4− |
| 2001 08 16 | 704 | 0.4+ | 0.2+ | 2001 09 22 | 704 | 0.3− | 0.6+ | 2001 11 18 | 704 | 1.0− | 0.2− |
| 2001 08 16 | 704 | 0.3− | 0.5+ | 2001 09 22 | 704 | 0.2− | 0.2+ | 2001 11 18 | 704 | 0.2− | 0.3+ |
| 2001 08 16 | 704 | 0.2+ | 0.4+ | 2001 09 22 | 704 | 0.1− | 0.1+ | 2001 11 18 | 704 | 0.1− | 0.4− |
| 2001 08 16 | 704 | 0.4+ | 0.6+ | 2001 09 23 | 704 | 0.0 | 1.5+ | 2001 11 20 | 699 | 0.2− | 1.1− |
| 2001 08 18 | 704 | 1.0− | 0.8+ | 2001 09 23 | 704 | 0.3− | 1.2+ | 2001 11 20 | 699 | 0.8+ | 0.1− |
| 2001 08 18 | 704 | 0.6− | 0.7+ | 2001 09 23 | 704 | 0.3− | 1.3+ | 2001 11 20 | 699 | 1.1+ | 0.0 |
| 2001 08 18 | 704 | 0.5− | 0.7+ | 2001 09 23 | 704 | 0.3− | 1.4+ | 2001 11 20 | 699 | 0.1+ | 0.5+ |
| 2001 08 18 | 704 | 0.9− | 1.0+ | 2001 10 06 | 704 | 0.1+ | 0.8− | 2001 11 20 | 608 | (1.1− | 2.6+) |
| 2001 08 18 | 704 | 0.6− | 0.8+ | 2001 10 06 | 704 | 0.5+ | 0.1− | 2001 11 20 | 608 | (0.7− | 2.8+) |
| 2001 08 19 | 704 | 0.1+ | 0.4+ | 2001 10 06 | 704 | 1.1+ | 0.1− | 2001 11 20 | 608 | (1.9− | 2.5+) |
| 2001 08 19 | 704 | 0.3+ | 0.6+ | 2001 10 06 | 704 | 0.7− | 0.9− | 2001 12 07 | 704 | 0.2+ | 0.4+ |
| 2001 08 19 | 704 | 0.3− | 0.1+ | 2001 10 11 | 644 | 0.2− | 1.3− | 2001 12 07 | 704 | 0.5+ | 0.7+ |
| 2001 08 19 | 704 | 0.2− | 0.5+ | 2001 10 11 | 644 | 0.5− | 1.3− | 2001 12 07 | 704 | 0.5+ | 1.3+ |
| 2001 08 19 | 704 | 0.1− | 0.4+ | 2001 10 11 | 644 | 0.4− | 1.4− | 2001 12 07 | 704 | 1.0+ | 0.3+ |
| 2001 08 23 | 699 | 0.0 | 0.2+ | 2001 10 11 | 704 | (2.1+ | 0.2−) | 2001 12 07 | 704 | 0.6+ | 0.3+ |
| 2001 08 23 | 699 | 0.0 | 0.5+ | 2001 10 11 | 704 | 1.4+ | 0.3− | 2001 12 10 | 645 | 0.1+ | 0.3− |
| 2001 08 23 | 699 | 0.3+ | 0.1+ | 2001 10 11 | 704 | (1.8+ | 0.0 ) | 2001 12 10 | 645 | 0.1+ | 0.3− |
| 2001 08 23 | 699 | 0.4− | 0.3+ | 2001 10 11 | 704 | 1.2+ | 0.4+ | 2003 02 07 | 644 | 0.7+ | 1.0+ |
| 2001 09 07 | 704 | 0.1− | 0.5− | 2001 10 11 | 704 | 0.7+ | 0.2+ | 2003 02 07 | 644 | 0.1+ | 1.1+ |
| 2001 09 07 | 704 | 0.2+ | 0.5− | 2001 10 13 | 704 | 1.1+ | 1.2+ | 2003 02 07 | 644 | 0.9+ | 0.8+ |
| 2001 09 07 | 704 | 0.1+ | 0.6− | 2001 10 13 | 704 | (1.6+ | 0.4+) | 2006 11 14 | 704 | 1.0− | 0.1+ |
| 2001 09 07 | 704 | 0.1+ | 0.3− | 2001 10 13 | 704 | (2.9+ | 0.8+) | 2006 11 14 | 704 | 0.2− | 0.3− |
| 2001 09 07 | 333 | 0.2− | 0.3− | 2001 10 13 | 699 | 0.5+ | 0.9− | 2006 11 14 | 704 | 0.1+ | 0.5− |
| 2001 09 07 | 333 | (1.6+ | 0.3+) | 2001 10 13 | 704 | (2.7+ | 1.3+) | 2006 11 21 | 951 | 0.4+ | 0.0 |
| 2001 09 07 | 704 | 0.2+ | 0.5− | 2001 10 13 | 699 | 0.1+ | 0.1+ | 2006 11 22 | 951 | 0.0 | 0.0 |
| 2001 09 07 | 333 | 0.5+ | 1.0− | 2001 10 13 | 699 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.4+ | 1.8+ |
| 2001 09 07 | 333 | 0.4+ | 0.3− | 2001 10 13 | 699 | 0.5+ | 0.1− | 2006 12 01 | 704 | 0.6+ | 0.8+ |
| 2001 09 07 | 333 | 0.2− | 1.0− | 2001 10 19 | 644 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.2+ | 1.6+ |
| 2001 09 07 | 333 | 0.2+ | 0.2+ | 2001 10 19 | 644 | 0.2− | 0.1− | 2006 12 01 | 704 | 1.6− | 2.6+ |
| 2001 09 07 | 699 | 0.0 | 0.2+ | 2001 10 19 | 644 | 0.3− | 0.2− | | | | |

**2001 MU$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.27589 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21260815 | $\omega$ | 44.56349 | | +0.67886744 | +0.72162696 | |
| $a$ | 2.7802431 | $\Omega$ | 268.69984 | | −0.70585074 | +0.59048954 | |
| $e$ | 0.2627556 | $i$ | 7.79665 | | −0.20227143 | +0.36135390 | |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 691 | 0.1− | 0.0 | 2001 06 21 | 704 | 0.0 | 0.3− | 2006 10 14 | H82 | 0.5− | 0.7− |
| 1997 11 29 | 691 | 0.1− | 0.0 | 2001 06 21 | 704 | 1.2− | 0.8+ | 2006 10 14 | H82 | 0.2− | 0.7− |
| 1997 11 29 | 691 | 0.1+ | 0.3+ | 2001 06 21 | 704 | 0.2− | 0.8+ | 2006 10 14 | H82 | (0.8− | 1.6−) |
| 2001 05 24 | 644 | 0.1+ | 1.2− | 2001 08 16 | 644 | 0.5− | 0.5+ | 2006 10 14 | H82 | 0.2− | 1.4− |
| 2001 05 24 | 644 | 0.0 | 1.1− | 2001 08 16 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.4− |
| 2001 05 24 | 644 | 0.2+ | 1.0− | 2001 08 16 | 644 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.2− | 1.2+ |
| 2001 06 16 | 699 | 0.6+ | 0.3+ | 2001 08 25 | 704 | 0.2+ | 0.4− | 2006 10 17 | 703 | 1.0+ | 1.0+ |
| 2001 06 16 | 699 | 1.2+ | 0.6+ | 2001 08 25 | 704 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.8+ | 0.5+ |
| 2001 06 16 | 699 | 0.2− | 0.3+ | 2001 08 25 | 704 | 0.1+ | 0.4− | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2001 06 16 | 699 | 0.1+ | 1.2+ | 2001 08 25 | 704 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.4− | 0.5− |
| 2001 06 21 | 704 | 0.4+ | 0.4+ | 2001 08 25 | 704 | 0.3− | 0.5− | 2006 10 23 | 644 | 0.2− | 0.0 |

**2001 MJ$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.01869 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18419953 | $\omega$ | 109.42527 | | +0.89683468 | +0.42599906 | |
| $a$ | 3.0592176 | $\Omega$ | 225.57170 | | −0.44191364 | +0.85058783 | |
| $e$ | 0.1303438 | $i$ | 9.60989 | | −0.01999720 | +0.30826147 | |
| $P$ | 5.35 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 06 16 | 699 | 0.2− | 1.1+ | 2001 10 14 | 704 | 0.9+ | 0.5− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2001 08 07 | 608 | 0.0 | 0.6− | 2001 10 14 | 704 | 1.4+ | 0.7+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 08 07 | 608 | 0.0 | 0.5− | 2002 11 06 | 704 | 0.9− | 0.2+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 08 07 | 608 | 0.2+ | 0.5− | 2002 11 06 | 704 | 0.9+ | 0.4+ |
| 2000 04 29 | 704 | 0.6+ | 0.4− | 2001 08 16 | 644 | 0.0 | 0.2+ | 2002 11 06 | 704 | 0.8+ | 0.0 |
| 2000 04 29 | 704 | 0.1− | 2.0+ | 2001 08 16 | 644 | 0.6− | 0.2− | 2002 11 23 | 644 | 0.4− | 0.5+ |
| 2000 04 29 | 704 | 0.4+ | 0.3− | 2001 08 16 | 644 | 0.1− | 0.2+ | 2002 11 23 | 644 | 0.3− | 0.8+ |
| 2000 04 29 | 704 | 0.7− | 0.1− | 2001 08 26 | 644 | 0.5+ | 0.6+ | 2002 11 23 | 644 | 0.8− | 1.1+ |
| 2001 06 16 | 699 | 0.5− | 0.8+ | 2001 08 26 | 644 | 0.3− | 0.6+ | 2004 02 18 | 704 | 0.8+ | 0.2+ |
| 2001 06 16 | 699 | 0.3− | 1.0+ | 2001 08 26 | 644 | 0.3− | 0.5+ | 2004 02 18 | 704 | 0.9+ | 0.1− |
| 2001 06 16 | 699 | 1.9− | 0.3+ | 2001 10 14 | 704 | 0.9+ | 0.6+ | 2004 02 18 | 704 | 1.2− | 0.1+ |

**2001 MK$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.89824 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24193372 | $\omega$ | 110.41082 | | −0.38872055 | +0.91396717 | |
| $a$ | 2.5507728 | $\Omega$ | 136.13867 | | −0.89553594 | −0.34508601 | |
| $e$ | 0.0797329 | $i$ | 9.67484 | | −0.21659112 | −0.21349395 | |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.8+ | 0.3− | 2001 06 30 | 644 | (0.4+ | 2.0−) | 2005 06 02 | 703 | (2.3− | 0.6+) |
| 1995 11 21 | 691 | (2.3+ | 3.8−) | 2001 06 30 | 644 | (0.4+ | 1.7−) | 2005 06 02 | 703 | 0.9− | 1.2+ |
| 1995 11 21 | 691 | 1.1− | 0.4− | 2001 07 18 | 644 | 0.8+ | 0.2+ | 2005 06 03 | E12 | 0.3− | 0.2− |
| 1995 12 26 | 691 | 0.4− | 0.2− | 2001 07 18 | 644 | 0.5+ | 0.2+ | 2005 06 03 | E12 | 0.3+ | 0.1+ |
| 1995 12 26 | 691 | 0.1− | 0.2− | 2001 07 18 | 644 | 0.7+ | 0.3+ | 2005 06 03 | E12 | 0.6− | 1.2− |
| 1995 12 26 | 691 | 0.2− | 0.2− | 2002 09 05 | 645 | 0.0 | 0.1− | 2005 06 03 | E12 | 0.6+ | 1.0− |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2002 09 05 | 645 | 0.0 | 0.0 | 2005 06 29 | 644 | 0.1+ | 0.3+ |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2004 01 27 | 691 | 0.3+ | 0.4+ | 2005 06 29 | 644 | 0.1+ | 0.0 |
| 2001 06 21 | 704 | 1.3+ | 0.5− | 2004 01 27 | 691 | 0.1+ | 0.3+ | 2005 06 29 | 644 | 0.0 | 0.3+ |
| 2001 06 21 | 704 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.8− | 0.6+ |
| 2001 06 21 | 704 | 0.4+ | 0.9+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 1.3− |
| 2001 06 24 | 691 | 0.2− | 0.4+ | 2005 05 11 | 691 | 0.2+ | 1.0− | 2006 10 28 | 703 | 0.9− | 1.1+ |
| 2001 06 24 | 691 | 0.0 | 0.1+ | 2005 05 11 | 691 | 0.1− | 0.0 | 2006 10 28 | 703 | (0.3+ | 1.6+) |
| 2001 06 24 | 691 | 0.1− | 0.0 | 2005 06 02 | 703 | 1.3− | 0.2− | | | | |
| 2001 06 30 | 644 | (0.7+ | 1.6−) | 2005 06 02 | 703 | 0.4− | 0.4+ | | | | |

**2001 NR$_2$ = 2006 UG$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.12787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23263282 | $\omega$ | 222.91208 | | +0.68665539 | +0.71879581 | |
| $a$ | 2.6183160 | $\Omega$ | 90.77327 | | −0.63405241 | +0.66534787 | |
| $e$ | 0.1573332 | $i$ | 6.24659 | | −0.35564297 | +0.20160555 | |
| $P$ | 4.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 23 | 644 | 0.2− | 0.1+ | 2001 07 18 | 608 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2001 06 23 | 644 | 0.5− | 0.6+ | 2001 07 18 | 608 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2001 06 23 | 644 | 0.3− | 0.2+ | 2001 07 18 | 608 | 0.5− | 0.7− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 07 13 | 644 | (0.4− | 2.6−) | 2001 07 21 | 644 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2001 07 13 | 644 | (0.4− | 2.8−) | 2001 07 21 | 644 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.7− |
| 2001 07 13 | 644 | (0.8− | 3.0−) | 2001 07 21 | 644 | 0.2+ | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2001 07 14 | 608 | 0.3+ | 0.6− | 2001 07 31 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2001 07 14 | 608 | 0.1+ | 1.0− | 2001 07 31 | 644 | 0.0 | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2001 07 14 | 608 | 0.1+ | 0.3− | 2001 07 31 | 644 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 07 16 | 699 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.3− |
| 2001 07 16 | 699 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.0− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2001 07 16 | 699 | 0.3− | 1.3− | 2006 10 16 | 703 | (0.0 | 1.9−) | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 07 16 | 699 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 1.1− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2001 07 18 | 608 | 0.1− | 0.9− | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.2+ |
| 2001 07 18 | 608 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 1.2− | 0.8+ |
| 2001 07 18 | 608 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.5− | 0.2− | 2006 11 28 | 704 | 0.3− | 1.1+ |

**2001 NN$_4$ = 2006 VQ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.35324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23719393 | $\omega$ | 9.82510 | | +0.83586957 | +0.54572245 | |
| $a$ | 2.5846416 | $\Omega$ | 316.92727 | | −0.50933627 | +0.73081196 | |
| $e$ | 0.0925113 | $i$ | 4.97612 | | −0.20469155 | +0.41000108 | |
| $P$ | 4.16 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2001 07 13 | 644 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.2− | 2006 11 16 | 704 | 1.1− | 0.9+ |
| 2001 07 13 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.8+ | 0.0 | 2006 11 16 | 704 | 0.9− | 0.0 |
| 2001 07 14 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.6− | 2006 11 16 | 704 | 1.5+ | 0.3+ |
| 2001 07 14 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | 1.4+ | 1.4− | 2006 11 16 | 704 | 0.2− | 0.3− |
| 2001 07 14 | 644 | 0.0 | 0.2− | 2006 11 14 | 703 | (0.6− | 1.6+) | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 07 19 | 644 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.1− | 1.1+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2001 07 19 | 644 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 07 19 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1− | | | | |

**2001 NF$_5$ = 2006 RX$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.93778 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21016356 | $\omega$ | 51.88073 | | +0.96313129 | −0.07000509 | |
| $a$ | 2.8017611 | $\Omega$ | 310.51268 | | −0.09682991 | +0.81064130 | |
| $e$ | 0.2741884 | $i$ | 19.97908 | | +0.25100218 | +0.58134325 | |
| $P$ | 4.69 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2001 08 19 | 704 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.6− | 0.0 |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2001 08 19 | 704 | 0.4+ | 0.2− | 2006 10 01 | 704 | 0.3− | 0.1− |
| 2001 07 13 | 644 | 0.1− | 0.2+ | 2006 08 10 | 644 | 0.0 | 1.4− | 2006 10 01 | 704 | 1.1+ | 0.2+ |
| 2001 07 13 | 644 | 0.5− | 0.5+ | 2006 08 10 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.2− | 0.1+ |
| 2001 07 13 | 644 | 0.5− | 0.3+ | 2006 08 10 | 644 | 0.1− | 0.2+ | 2006 10 18 | 106 | 0.3+ | 0.7+ |
| 2001 07 14 | 644 | 0.3+ | 0.8+ | 2006 09 15 | 703 | 0.2− | 0.3+ | 2006 10 18 | 106 | 0.5+ | 0.7+ |
| 2001 07 14 | 644 | 0.3+ | 0.9+ | 2006 09 15 | 703 | 0.2+ | 0.4− | 2006 10 18 | 106 | 0.0 | 0.1− |
| 2001 07 14 | 644 | (0.4− | 1.5+) | 2006 09 15 | 703 | 0.0 | 0.2− | 2006 10 18 | 106 | 0.4+ | 0.6− |
| 2001 07 20 | 644 | 0.6− | 0.2− | 2006 09 15 | 703 | 0.2− | 0.0 | 2006 10 20 | 703 | 0.3+ | 0.6+ |
| 2001 07 20 | 644 | 0.4− | 0.3− | 2006 09 16 | 703 | 0.2− | 0.5+ | 2006 10 20 | 703 | 0.0 | 0.8+ |
| 2001 07 20 | 644 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.7− | 0.2− | 2006 10 20 | 703 | 0.3− | 0.7+ |
| 2001 08 06 | 608 | (1.6+ | 0.2−) | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 10 20 | 703 | 0.4+ | 0.9+ |
| 2001 08 06 | 608 | 1.3+ | 0.3− | 2006 09 16 | 703 | 0.7− | 0.6− | 2006 10 21 | 704 | (1.5+ | 1.7+) |
| 2001 08 06 | 608 | 0.7+ | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.6− | 2006 10 21 | 704 | (0.6− | 2.5+) |
| 2001 08 11 | 608 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 21 | 704 | (1.4− | 2.5+) |
| 2001 08 11 | 608 | 0.7+ | 0.7− | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 21 | 704 | 0.6− | 1.4− |
| 2001 08 11 | 608 | 0.4+ | 0.5− | 2006 09 18 | 703 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.1− |
| 2001 08 16 | 704 | 0.2+ | 0.7− | 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 11 16 | 703 | 0.1− | 0.3− |
| 2001 08 16 | 704 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.7+ | 2006 11 16 | 703 | 0.4− | 0.5− |
| 2001 08 16 | 704 | 0.2+ | 0.4− | 2006 09 20 | 704 | 0.2+ | 0.9+ | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2001 08 16 | 704 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.7+ | 1.0+ | 2006 11 22 | 703 | 0.1− | 0.6− |
| 2001 08 16 | 704 | 0.1− | 0.6− | 2006 09 22 | 699 | (2.1+ | 0.2+) | 2006 11 22 | 703 | 0.8+ | 0.0 |
| 2001 08 19 | 704 | 0.3− | 0.3+ | 2006 09 22 | 699 | 0.1+ | 0.4+ | 2006 11 22 | 703 | (0.9− | 2.0−) |
| 2001 08 19 | 704 | 0.8− | 0.2− | 2006 09 22 | 699 | 0.5+ | 0.1+ | 2006 11 22 | 703 | 0.4+ | 0.8− |
| 2001 08 19 | 704 | 0.3− | 0.4+ | 2006 09 22 | 699 | 0.3+ | 0.3+ | | | | |

**2001 NS$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.76272 | | | (2000.0) | | |
| $n$ | 0.23302076 | $\omega$ | 245.30343 | | +0.92310648 | −0.32721347 |
| $a$ | 2.6154091 | $\Omega$ | 133.07616 | | +0.36703255 | +0.90643078 |
| $e$ | 0.1348739 | $i$ | 16.05436 | | −0.11472370 | +0.26704793 |
| $P$ | 4.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 27 | 691 | 1.4+ | 0.9− | 2001 08 23 | 691 | 0.6+ | 1.0− | 2006 10 20 | 703 | (1.6− | 0.2+) | |
| 1995 01 27 | 691 | 1.4− | 0.2− | 2001 08 23 | 691 | (0.2− | 5.3−) | 2006 10 20 | 703 | 0.4− | 0.5+ | |
| 2001 07 14 | 608 | 0.3+ | 0.8+ | 2001 09 07 | 704 | 1.1− | 0.8− | 2006 10 20 | 703 | 0.3− | 0.6− | |
| 2001 07 14 | 608 | 0.6+ | 0.5+ | 2001 09 07 | 704 | 0.8− | 0.5− | 2006 10 28 | 703 | 0.9+ | 0.1− | |
| 2001 07 14 | 608 | 0.6+ | 0.5+ | 2001 09 07 | 704 | 0.0 | 0.8− | 2006 10 28 | 703 | 0.4+ | 0.2− | |
| 2001 07 17 | 608 | 0.4− | 0.1+ | 2002 12 14 | 704 | (3.3+ | 0.6+) | 2006 10 28 | 703 | 1.0+ | 1.1− | |
| 2001 07 17 | 608 | 0.1− | 0.5− | 2002 12 14 | 704 | (3.8+ | 1.6+) | 2006 10 28 | 703 | 0.0 | 0.4− | |
| 2001 07 17 | 608 | 0.3+ | 0.5− | 2002 12 14 | 704 | (3.3+ | 0.3+) | 2006 11 07 | 644 | 0.2+ | 0.7− | |
| 2001 08 16 | 704 | 0.4− | 0.3+ | 2002 12 14 | 704 | (3.1+ | 0.4+) | 2006 11 07 | 644 | 0.2+ | 0.5− | |
| 2001 08 16 | 704 | 1.0− | 1.0− | 2006 09 19 | 703 | 0.1− | 1.1− | 2006 11 07 | 644 | 0.0 | 0.5− | |
| 2001 08 16 | 704 | 0.1− | 1.3+ | 2006 09 19 | 703 | 1.3− | 1.2− | 2006 11 17 | 703 | 0.9− | 0.3+ | |
| 2001 08 16 | 704 | 0.5− | 0.4− | 2006 09 19 | 703 | 0.3− | 1.3+ | 2006 11 17 | 703 | 0.7− | 0.3+ | |
| 2001 08 19 | 704 | 0.9− | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.1− | 0.5+ | |
| 2001 08 19 | 704 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.0 | |
| 2001 08 19 | 704 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.6+ | 2006 11 23 | 703 | 0.4+ | 1.3+ | |
| 2001 08 19 | 704 | 0.9− | 0.9+ | 2006 09 30 | 703 | 0.6+ | 0.1+ | 2006 11 23 | 703 | 0.6+ | 0.4+ | |
| 2001 08 19 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.7− | 2006 11 23 | 703 | 0.2+ | 1.0+ | |
| 2001 08 23 | 691 | 0.7+ | 0.3− | 2006 10 20 | 703 | 0.4+ | 0.2− | 2006 11 23 | 703 | 0.4+ | 0.5+ | |

**2001 NM$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.92540 | | | (2000.0) | | |
| $n$ | 0.22765120 | $\omega$ | 82.67395 | | +0.88568121 | −0.11704599 |
| $a$ | 2.6563752 | $\Omega$ | 283.23989 | | −0.11110007 | +0.88616224 |
| $e$ | 0.3399808 | $i$ | 27.48827 | | +0.45080546 | +0.44834888 |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 11 | 644 | 0.2+ | 0.1− | 2001 07 26 | 621 | 0.1− | 0.2− | 2006 11 03 | 473 | 0.2+ | 0.0 | |
| 2001 07 11 | 644 | 0.1+ | 0.3− | 2001 07 26 | 621 | 0.2+ | 0.0 | 2006 11 03 | 473 | 0.3+ | 0.3− | |
| 2001 07 11 | 644 | 0.1+ | 0.1− | 2001 07 27 | 621 | 0.8+ | 0.5− | 2006 11 03 | J95 | 0.4− | 0.3+ | |
| 2001 07 18 | 644 | 1.2− | 0.2+ | 2001 07 27 | 621 | 0.8+ | 0.2− | 2006 11 03 | J95 | 0.9+ | 0.2− | |
| 2001 07 18 | 644 | 0.6− | 0.0 | 2006 11 02 | G96 | 0.1− | 0.2+ | 2006 11 03 | G96 | 0.1− | 0.2− | |
| 2001 07 18 | 644 | 0.9− | 0.4+ | 2006 11 02 | G96 | 0.1− | 0.1− | 2006 11 03 | G96 | 0.3− | 0.0 | |
| 2001 07 18 | 644 | 0.5− | 0.1− | 2006 11 02 | G96 | 0.2− | 0.1+ | 2006 11 03 | G96 | 0.7− | 0.2− | |
| 2001 07 18 | 644 | 0.9− | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.2− | 2006 11 03 | G96 | 0.0 | 0.2+ | |
| 2001 07 18 | 644 | 0.6− | 0.1+ | 2006 11 02 | G96 | 0.5− | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.0 | |
| 2001 07 25 | 621 | 1.1+ | 0.1+ | 2006 11 02 | G96 | 0.4− | 0.4− | 2006 11 22 | G96 | 0.2− | 0.3+ | |
| 2001 07 25 | 621 | 0.5+ | 0.2+ | 2006 11 02 | G96 | 0.6− | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.3+ | |
| 2001 07 25 | 621 | 0.9+ | 0.5+ | 2006 11 02 | G96 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.1+ | |
| 2001 07 26 | 621 | 0.1− | 0.4− | 2006 11 03 | 473 | 0.3− | 0.6+ | | | | | |
| 2001 07 26 | 621 | 0.0 | 0.3+ | 2006 11 03 | 473 | 0.9+ | 0.3− | | | | | |

**2001 NX$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 300.45909 | | | (2000.0) | | |
| $n$ | 0.17171003 | $\omega$ | 109.01338 | | +0.98026183 | −0.00418028 |
| $a$ | 3.2058186 | $\Omega$ | 251.61466 | | −0.06227588 | +0.94235193 |
| $e$ | 0.2840128 | $i$ | 12.02224 | | +0.18763918 | +0.33459731 |
| $P$ | 5.74 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 644 | 0.2+ | 0.4+ | 2001 08 09 | 644 | 0.1− | 0.2+ | 2001 10 16 | 704 | 0.4+ | 0.2− | |
| 2001 05 25 | 644 | 0.1+ | 0.2+ | 2001 08 09 | 644 | 0.1− | 0.2+ | 2001 10 16 | 704 | 0.7+ | 1.0− | |
| 2001 05 25 | 644 | 0.2+ | 0.3+ | 2001 08 14 | 644 | 0.1+ | 0.0 | 2001 10 16 | 704 | 0.3− | 0.5− | |
| 2001 06 19 | 608 | 0.2− | 1.0− | 2001 08 14 | 644 | 0.2− | 0.0 | 2001 10 16 | 704 | 0.2− | 0.3− | |
| 2001 06 19 | 608 | 0.4+ | 1.3− | 2001 08 14 | 644 | 0.2− | 0.0 | 2001 11 18 | 704 | 0.1− | 0.7+ | |
| 2001 06 19 | 608 | 0.2+ | 1.2− | 2001 08 21 | 704 | 0.9− | 0.6− | 2001 11 18 | 704 | 0.0 | 0.5− | |
| 2001 07 13 | 644 | 0.3+ | 0.1+ | 2001 08 21 | 704 | 0.2+ | 0.4− | 2001 11 18 | 704 | 0.1− | 0.4+ | |
| 2001 07 13 | 644 | 0.4+ | 0.0 | 2001 08 21 | 704 | 0.1− | 0.2− | 2001 11 18 | 704 | 0.5+ | 0.7+ | |
| 2001 07 13 | 644 | 0.6+ | 0.1+ | 2001 08 21 | 704 | 0.1− | 0.3+ | 2001 11 18 | 704 | 0.5− | 0.1+ | |
| 2001 07 17 | 699 | 0.2+ | 1.4+ | 2001 09 08 | 699 | 0.3− | 0.7+ | 2006 05 25 | 568 | 0.0 | 0.1− | |
| 2001 07 17 | 699 | 0.4− | 1.1+ | 2001 09 08 | 699 | 0.3+ | 0.7− | 2006 05 25 | 568 | 0.1− | 0.1− | |
| 2001 07 17 | 699 | 0.3+ | 0.1− | 2001 09 08 | 699 | 0.1− | 0.5+ | 2006 05 25 | 568 | 0.1− | 0.1− | |
| 2001 07 17 | 699 | 0.4− | 0.3− | 2001 09 08 | 699 | 0.4− | 0.4+ | 2006 05 26 | 568 | 0.2+ | 0.7+ | |
| 2001 08 09 | 644 | 0.1+ | 0.2+ | 2001 10 16 | 704 | 0.0 | 0.0 | | | | | |

**2001 NZ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.07594 | | | (2000.0) | | |
| $n$ | 0.23245292 | $\omega$ | 97.34833 | | +0.87701457 | +0.43613094 |
| $a$ | 2.6196667 | $\Omega$ | 236.99446 | | −0.47755420 | +0.83737403 |
| $e$ | 0.1097298 | $i$ | 13.90861 | | +0.05279622 | +0.32953684 |
| $P$ | 4.24 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 644 | (0.5− | 3.4−) | 2006 10 17 | G96 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.0 | |
| 2001 06 16 | 644 | (0.5− | 3.2−) | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.2+ | |
| 2001 06 16 | 644 | (0.4− | 3.2−) | 2006 10 17 | G96 | (1.0− | 1.6−) | 2006 11 18 | 704 | 0.6+ | 0.4− | |
| 2001 07 12 | 644 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.8− | 2006 11 21 | 704 | 0.3+ | 0.2+ | |
| 2001 07 12 | 644 | 0.3− | 0.2− | 2006 10 28 | 704 | 0.5− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.1+ | |
| 2001 07 12 | 644 | 0.4− | 0.1− | 2006 10 28 | 704 | 0.8− | 0.8+ | 2006 11 21 | 704 | 0.4+ | 0.1− | |
| 2001 07 19 | 699 | 0.6+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.3− | 0.7− | |
| 2001 07 19 | 699 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.1+ | |
| 2001 07 19 | 699 | 0.5+ | 0.4+ | 2006 10 28 | 704 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | |
| 2001 07 19 | 699 | 0.0 | 0.5− | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.0 | |
| 2001 07 19 | 699 | 0.0 | 0.3− | 2006 10 28 | 704 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.0 | |
| 2001 07 19 | 699 | 0.0 | 1.3− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.0 | |
| 2001 07 19 | 699 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1− | |
| 2001 07 19 | 699 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.1+ | |
| 2001 07 27 | 644 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.5+ | 0.2− | |
| 2001 07 27 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.4+ | 0.2+ | |
| 2001 07 27 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.8− | |
| 2001 08 12 | 644 | 1.2+ | 0.4− | 2006 11 11 | 703 | 0.6− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.5− | |
| 2001 08 12 | 644 | (1.6+ | 0.4−) | 2006 11 11 | 703 | 1.2+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.2+ | |
| 2001 08 12 | 644 | (1.8+ | 0.4−) | 2006 11 14 | 691 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.8+ | |
| 2001 09 22 | 644 | 0.5− | 1.0+ | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.7− | 0.5+ | |
| 2001 09 22 | 644 | 0.6− | 1.0+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.6+ | |
| 2001 09 22 | 644 | 0.2− | 1.1+ | 2006 11 17 | 644 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.4+ | |
| 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 17 | 644 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.5+ | 0.0 | |
| 2006 10 16 | 703 | 0.5+ | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.3+ | |
| 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.5− | 0.0 | 2006 12 01 | 691 | 0.3− | 0.0 | |
| 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.1+ | | | | | |

**2001 ON**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.19310 | | | (2000.0) | | |
| $n$ | 0.22071755 | $\omega$ | 252.93625 | | +0.90810480 | −0.39537648 |
| $a$ | 2.7117198 | $\Omega$ | 130.12384 | | +0.41869378 | +0.86237827 |
| $e$ | 0.2589564 | $i$ | 10.39160 | | −0.00641731 | +0.31619796 |
| $P$ | 4.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.1+ | 0.2− | 2001 08 25 | 699 | 0.3− | 0.2− | 2001 09 25 | 704 | 0.1− | 1.1− | |
| 2001 07 16 | 608 | 0.4+ | 0.2+ | 2001 08 25 | 704 | 0.8+ | 0.1− | 2001 09 25 | 704 | 0.4+ | 1.1− | |
| 2001 07 16 | 608 | 0.5+ | 0.1− | 2001 08 25 | 699 | 0.3− | 0.2+ | 2006 11 15 | G92 | 0.1+ | 0.2− | |
| 2001 07 18 | 644 | 0.0 | 0.2− | 2001 08 25 | 704 | 0.4+ | 0.5+ | 2006 11 15 | G92 | 0.4+ | 0.0 | |
| 2001 07 18 | 644 | 0.1− | 0.1+ | 2001 08 25 | 699 | 0.2− | 0.1+ | 2006 11 15 | G92 | 0.5+ | 0.2+ | |
| 2001 07 18 | 644 | 0.1− | 0.1+ | 2001 08 25 | 704 | 0.2+ | 0.5+ | 2006 11 17 | G92 | 0.3− | 0.6− | |
| 2001 08 12 | 608 | 0.4+ | 0.3− | 2001 08 25 | 608 | 0.3+ | 0.7+ | 2006 11 17 | G92 | 0.0 | 0.3+ | |
| 2001 08 12 | 608 | 0.5+ | 0.1− | 2001 08 25 | 608 | 0.3+ | 0.1− | 2006 11 17 | G92 | 0.1− | 0.1+ | |
| 2001 08 12 | 608 | 0.5+ | 0.1− | 2001 08 25 | 608 | 0.1+ | 0.1− | 2006 11 18 | G92 | 0.4+ | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 704 | 1.1− | 0.7+ | 2001 09 10 | 699 | 0.3− | 0.3+ | 2006 11 18 | G92 | 0.5+ | 0.2+ | | |
| 2001 08 18 | 704 | 0.8− | 0.6− | 2001 09 10 | 699 | 0.5− | 0.5+ | 2006 11 18 | G92 | (4.6− | 0.2+) | | |
| 2001 08 18 | 704 | 0.3− | 0.9− | 2001 09 10 | 699 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.0 | | |
| 2001 08 19 | 704 | 0.2+ | 1.3+ | 2001 09 10 | 699 | 0.8+ | 0.4− | 2006 11 19 | G92 | 0.0 | 0.3+ | | |
| 2001 08 19 | 704 | (0.0 | 1.9+) | 2001 09 11 | 704 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.7+ | 0.1+ | | |
| 2001 08 19 | 704 | (0.1− | 2.3+) | 2001 09 11 | 704 | 0.2+ | 0.1+ | 2006 11 19 | G92 | 0.1+ | 0.1+ | | |
| 2001 08 19 | 704 | (0.2− | 2.0+) | 2001 09 11 | 704 | 0.8− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.3− | | |
| 2001 08 19 | 704 | (0.3+ | 2.2+) | 2001 09 11 | 704 | 0.5− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.0 | 0.1− | 2001 09 25 | 704 | 0.1+ | 0.4+ | 2006 11 19 | G92 | 0.7+ | 0.2− | | |
| 2001 08 25 | 699 | 0.5− | 0.7+ | 2001 09 25 | 704 | 0.1+ | 0.7− | | | | | | |
| 2001 08 25 | 704 | 0.3− | 0.2+ | 2001 09 25 | 704 | 0.4+ | 0.6− | | | | | | |

### 2001 OW$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.66416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21543464 | $\omega$ | 209.78865 | | +0.91642425 | −0.39878351 | |
| $a$ | 2.7558719 | $\Omega$ | 173.43760 | | +0.39997847 | +0.90978193 | |
| $e$ | 0.2814593 | $i$ | 17.17043 | | +0.01355764 | +0.11518923 | |
| $P$ | 4.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 699 | 1.4+ | 0.2+ | 2001 08 24 | 699 | 0.1− | 0.1+ | 2003 03 30 | 645 | 0.0 | 0.0 |
| 2001 07 17 | 699 | 0.4− | 0.1+ | 2001 08 25 | 704 | 0.8+ | 0.6− | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2001 07 17 | 699 | 0.2− | 0.6+ | 2001 08 25 | 704 | 0.6+ | 1.4− | 2006 09 19 | 703 | 0.6− | 0.2+ |
| 2001 07 17 | 699 | 0.3+ | 0.4− | 2001 08 25 | 704 | 0.0 | 1.0− | 2006 09 19 | 703 | 0.0 | 0.7− |
| 2001 07 20 | 699 | 0.3− | 0.0 | 2001 08 25 | 704 | 0.4+ | 0.8− | 2006 09 19 | 703 | 0.4+ | 0.6+ |
| 2001 07 20 | 699 | 1.0+ | 0.3− | 2001 09 08 | 704 | 0.4+ | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.0 |
| 2001 07 20 | 699 | 0.6+ | 0.9+ | 2001 09 08 | 704 | 0.3− | 0.3− | 2006 10 20 | 703 | 0.5+ | 0.2+ |
| 2001 07 20 | 699 | 0.1+ | 0.3+ | 2001 09 08 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 703 | 0.6− | 0.3− |
| 2001 07 29 | 704 | 1.4+ | 0.7+ | 2001 09 08 | 704 | 1.1− | 0.3+ | 2006 10 20 | 703 | 0.9− | 0.2− |
| 2001 07 29 | 704 | 0.1+ | 0.2− | 2001 09 08 | 704 | 0.6+ | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2001 07 29 | 704 | 0.3+ | 0.5+ | 2001 09 09 | 699 | 1.3− | 0.6− | 2006 11 07 | 644 | 0.2− | 0.5+ |
| 2001 08 20 | 704 | 0.1− | 0.0 | 2001 09 09 | 699 | 1.2− | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.4+ |
| 2001 08 20 | 704 | 0.0 | 0.7+ | 2001 09 09 | 699 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2001 08 20 | 704 | 0.4− | 0.3+ | 2001 09 09 | 699 | 0.3− | 0.6− | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2001 08 20 | 704 | 1.4− | 1.4+ | 2001 10 18 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.8+ | 1.2− |
| 2001 08 24 | 699 | 0.1− | 0.0 | 2001 10 18 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.8+ | 0.1− |
| 2001 08 24 | 699 | 0.2− | 0.3− | 2001 10 18 | 644 | 0.4+ | 0.1+ | 2006 11 23 | 703 | 0.4− | 0.4+ |
| 2001 08 24 | 699 | 0.6− | 1.2+ | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.3+ |

### 2001 OZ$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.93321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21356252 | $\omega$ | 107.30835 | | +0.95318841 | −0.25245179 | |
| $a$ | 2.7719540 | $\Omega$ | 267.56036 | | +0.17268882 | +0.90631331 | |
| $e$ | 0.3374246 | $i$ | 9.58927 | | +0.24821449 | +0.33891632 | |
| $P$ | 4.62 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 20 | 699 | 0.8− | 0.6+ | 2001 09 21 | 699 | 0.0 | 0.1+ | 2006 10 29 | 704 | (0.2− | 1.7+) |
| 2001 06 20 | 699 | 0.2− | 1.4+ | 2001 09 25 | 704 | 1.4+ | 0.4− | 2006 10 29 | 704 | 0.9+ | 0.2+ |
| 2001 06 20 | 699 | 0.2− | 0.1− | 2001 09 25 | 704 | (1.5+ | 0.3−) | 2006 10 29 | 704 | 0.1+ | 0.1− |
| 2001 06 20 | 699 | 1.1− | 0.9+ | 2001 09 25 | 704 | 1.1+ | 0.1− | 2006 10 29 | 704 | 0.1− | 0.4− |
| 2001 06 24 | 704 | 0.3− | 0.1− | 2001 09 25 | 704 | 1.2+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2001 06 24 | 704 | 0.8− | 0.3+ | 2001 09 25 | 704 | 0.1+ | 0.4− | 2006 11 13 | 691 | (0.3+ | 1.9−) |
| 2001 06 24 | 704 | 0.5+ | 0.9+ | 2001 10 16 | 704 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 07 17 | 699 | 0.0 | 0.4+ | 2001 10 16 | 704 | 0.2+ | 0.0 | 2006 11 15 | 704 | (2.3+ | 0.7−) |
| 2001 07 17 | 699 | 0.0 | 0.1+ | 2001 10 16 | 704 | 0.1− | 0.4+ | 2006 11 15 | 704 | 1.0+ | 0.2+ |
| 2001 07 17 | 699 | 0.1− | 0.2− | 2001 10 16 | 704 | 0.1+ | 0.4+ | 2006 11 15 | 704 | (1.6+ | 0.7+) |
| 2001 07 17 | 699 | 0.3+ | 0.4+ | 2001 10 16 | 704 | 0.0 | 0.3+ | 2006 11 15 | 704 | 1.3+ | 0.1− |
| 2001 07 20 | 699 | 0.0 | 0.0 | 2001 10 19 | 704 | 0.9− | 1.2− | 2006 11 16 | 704 | 0.1+ | 1.0+ |
| 2001 07 20 | 699 | 0.3− | 0.6+ | 2001 10 19 | 704 | (1.6− | 1.1−) | 2006 11 16 | 704 | 0.3− | 0.8+ |
| 2001 07 20 | 699 | 0.2+ | 0.1+ | 2001 10 19 | 704 | 0.8− | 1.1− | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2001 07 20 | 699 | 0.3− | 0.1+ | 2001 10 19 | 704 | 0.5− | 0.5− | 2006 11 16 | 704 | 0.2− | 0.7+ |
| 2001 07 28 | 683 | 0.2+ | 0.0 | 2001 10 19 | 704 | 0.3− | 0.8− | 2006 11 16 | 704 | 0.3− | 1.2+ |
| 2001 07 28 | 683 | 0.1− | 0.1+ | 2001 11 18 | 704 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 07 28 | 683 | (1.7+ | 3.5−) | 2001 11 18 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.4− |
| 2001 08 03 | 608 | 0.1− | 0.9− | 2001 11 18 | 704 | 0.7+ | 0.6+ | 2006 11 17 | 691 | (2.1+ | 0.1+) |
| 2001 08 03 | 608 | 0.2+ | 0.8− | 2001 11 18 | 704 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2001 08 03 | 608 | 0.1− | 0.7− | 2001 11 18 | 704 | 0.5− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.8+ |
| 2001 08 21 | 704 | 0.3− | 0.0 | 2001 12 07 | 704 | 0.6− | 0.8+ | 2006 11 19 | 704 | 0.2− | 0.9+ |
| 2001 08 21 | 704 | 0.2− | 0.1− | 2001 12 07 | 704 | 0.6− | 0.7+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2001 08 21 | 704 | 0.6+ | 0.8− | 2001 12 07 | 704 | 0.4− | 0.8+ | 2006 11 19 | 704 | 0.4− | 0.8+ |
| 2001 08 21 | 704 | 0.4+ | 0.9− | 2001 12 17 | 704 | 0.6+ | 0.9− | 2006 11 22 | 704 | 0.2− | 0.7− |
| 2001 08 23 | 699 | 0.2+ | 0.3− | 2001 12 17 | 704 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2001 08 23 | 699 | 0.1− | 0.3− | 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.5− |
| 2001 08 23 | 699 | 0.1+ | 0.3− | 2001 12 17 | 704 | 1.2+ | 0.5+ | 2006 11 22 | 704 | 0.3− | 0.4− |
| 2001 08 23 | 699 | 0.2+ | 0.1− | 2006 09 21 | 704 | (0.3+ | 1.7+) | 2006 11 22 | 704 | 0.1+ | 0.6− |
| 2001 08 24 | 628 | (1.8+ | 0.1+) | 2006 09 21 | 704 | 0.3− | 0.0 | 2006 11 27 | 704 | 0.0 | 0.4− |
| 2001 08 24 | 628 | (1.5+ | 0.1−) | 2006 09 21 | 704 | 0.8+ | 0.9− | 2006 11 27 | 704 | 0.3+ | 1.8− |
| 2001 08 25 | 628 | (1.7+ | 0.1+) | 2006 09 21 | 704 | 0.1+ | 0.3+ | 2006 11 27 | 704 | 0.5+ | 2.0− |
| 2001 08 30 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | (0.3− | 2.0+) | 2006 11 28 | 704 | 0.9+ | 0.4− |
| 2001 08 30 | 644 | 0.1− | 0.0 | 2006 09 25 | 704 | (0.6+ | 1.8+) | 2006 11 28 | 704 | 0.1− | 0.6+ |
| 2001 08 30 | 644 | 0.2− | 0.1+ | 2006 09 25 | 704 | (0.0 | 1.6+) | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2001 09 15 | 644 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.5− | 1.1+ | 2006 11 28 | 704 | 0.3+ | 0.4+ |
| 2001 09 15 | 644 | 0.1− | 0.0 | 2006 09 25 | 704 | (0.1− | 1.8+) | 2006 12 03 | 644 | 0.4− | 0.0 |
| 2001 09 15 | 644 | 0.2− | 0.1+ | 2006 10 02 | 704 | 0.3+ | 0.0 | 2006 12 03 | 644 | 0.3− | 0.1+ |
| 2001 09 21 | 699 | 0.1+ | 0.0 | 2006 10 02 | 704 | 0.1− | 0.3+ | 2006 12 03 | 644 | 0.2− | 0.1+ |
| 2001 09 21 | 699 | 0.1+ | 0.3+ | 2006 10 02 | 704 | (1.6+ | 1.5+) | | | | |
| 2001 09 21 | 699 | 0.1+ | 0.2+ | 2006 10 02 | 704 | 0.7+ | 0.4+ | | | | |

### 2001 OD$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.55848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21423714 | $\omega$ | 334.09262 | | +0.87225507 | −0.46639757 | |
| $a$ | 2.7661318 | $\Omega$ | 54.49194 | | +0.47421834 | +0.73309318 | |
| $e$ | 0.2025667 | $i$ | 10.41229 | | +0.11953267 | +0.49502293 | |
| $P$ | 4.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.7− | 1.4+ | 2001 10 23 | 644 | 0.6− | 0.6− | 2006 11 15 | 703 | 0.1− | 1.3+ |
| 2001 07 20 | 644 | 0.4− | 1.1+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2001 07 20 | 644 | 0.6− | 1.1+ | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.2− |
| 2001 07 22 | 644 | 0.0 | 1.1+ | 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.2− |
| 2001 07 22 | 644 | 0.0 | 1.2+ | 2006 10 19 | G96 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.3+ |
| 2001 07 22 | 644 | 0.1+ | 0.7+ | 2006 10 19 | G96 | 0.4+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2001 07 27 | 644 | 0.1− | 0.6− | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 07 27 | 644 | 0.0 | 0.8− | 2006 10 28 | 704 | 0.5− | 0.8− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2001 07 27 | 644 | 0.1− | 1.0− | 2006 10 28 | 704 | 0.9− | 0.6+ | 2006 11 19 | 704 | (1.9+ | 0.5−) |
| 2001 08 28 | 644 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.3+ | 0.1+ |
| 2001 08 28 | 644 | 0.6− | 0.6+ | 2006 10 28 | 704 | 0.7+ | 0.5+ | 2006 11 19 | 704 | 1.2+ | 0.2− |
| 2001 08 28 | 644 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 1.1+ | 0.3− |
| 2001 09 12 | 704 | 0.8+ | 1.0− | 2006 10 29 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 2001 09 12 | 704 | 0.9+ | 0.8− | 2006 10 29 | G96 | 0.4+ | 0.5− | 2006 11 22 | H07 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 1.0+ | 0.4− | 2006 10 29 | G96 | 0.1+ | 0.6− | 2006 11 22 | H07 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 1.4+ | 1.1− | 2006 11 01 | G96 | 0.2− | 0.5− | 2006 11 22 | H07 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.8+ | 1.2− | 2006 11 01 | G96 | 0.3− | 0.7− | 2006 11 22 | H07 | 0.0 | 0.2+ |
| 2001 10 15 | 644 | 0.2− | 0.8− | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2001 10 15 | 644 | 0.3− | 0.8− | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2001 10 15 | 644 | 0.4− | 0.7− | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2001 10 19 | 699 | 0.8+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2001 10 19 | 699 | 0.0 | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2001 10 19 | 699 | 0.4− | 0.8+ | 2006 11 14 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.5+ | 0.6− |
| 2001 10 19 | 699 | 1.4− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.6− | 1.4− |
| 2001 10 20 | 704 | 0.4− | 0.5+ | 2006 11 15 | 704 | 0.2+ | 0.8+ | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 0.7− | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.2+ | 2006 11 23 | H07 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.1− | 2006 11 15 | 704 | 1.2− | 0.2+ | 2006 11 23 | H07 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2006 11 15 | 704 | 0.0 | 0.5+ | 2006 11 23 | H07 | 0.0 | 0.4+ |
| 2001 10 20 | 704 | 1.1+ | 1.1+ | 2006 11 15 | G96 | 0.1− | 0.6− | 2006 11 23 | H07 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.3− | 2006 11 27 | 704 | 0.3− | 0.5− |
| 2001 10 20 | 704 | 1.2+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 11 27 | 704 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | 0.7+ | 0.0 | 2006 11 15 | 703 | 0.5− | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.6− |
| 2001 10 20 | 704 | 0.6− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.8− | 2006 11 28 | 704 | 0.8− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.7− | 0.3− | 2006 11 15 | 703 | 0.2+ | 0.0 | 2006 11 28 | 704 | 1.1− | 0.7− |
| 2001 10 23 | 644 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.8− | 0.2+ | 2006 11 28 | 704 | 1.0− | 0.5+ |

**2001 OG$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.79170 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27349354 | $\omega$ | 297.22130 | | +0.96177476 | | +0.25898103 |
| $a$ | 2.3505600 | $\Omega$ | 47.91432 | | −0.18900689 | | +0.86293336 |
| $e$ | 0.2719601 | $i$ | 6.88640 | | −0.19815575 | | +0.43390649 |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 644 | 0.4+ | 1.1+ | 2001 09 11 | 704 | 1.9+ | 0.2+ | 2001 10 16 | 644 | 0.8− | 0.1− |
| 2001 07 21 | 644 | 0.1+ | 1.2+ | 2001 09 11 | 704 | 1.5+ | 0.1+ | 2001 10 20 | 704 | 0.7+ | 0.6− |
| 2001 07 21 | 644 | 0.0 | 1.3+ | 2001 09 11 | 704 | 1.2+ | 0.3+ | 2001 10 20 | 704 | (2.1+ | 0.4+) |
| 2001 07 22 | 644 | 0.7− | 0.4+ | 2001 09 11 | 704 | 1.0+ | 0.1+ | 2001 10 20 | 704 | 1.4+ | 0.4+ |
| 2001 07 22 | 644 | 0.5− | 0.1+ | 2001 09 21 | 644 | 0.4− | 0.4− | 2001 10 20 | 704 | 1.8+ | 0.9− |
| 2001 07 22 | 644 | 0.9− | 0.3+ | 2001 09 21 | 644 | 0.2− | 0.4− | 2001 10 20 | 704 | 1.0+ | 0.3− |
| 2001 07 27 | 644 | 0.6− | 0.0 | 2001 09 21 | 644 | 0.4− | 0.4− | 2004 04 22 | 691 | 0.2+ | 0.3+ |
| 2001 07 27 | 644 | 0.6− | 0.2+ | 2001 09 25 | 704 | 1.4− | 0.1− | 2004 04 22 | 691 | 0.2+ | 0.6+ |
| 2001 07 27 | 644 | 0.3− | 0.3+ | 2001 09 25 | 704 | 1.3− | 0.1+ | 2004 04 22 | 691 | 0.1+ | 0.6+ |
| 2001 07 30 | 704 | 0.0 | 0.4+ | 2001 09 25 | 704 | 0.9− | 0.0 | 2005 11 28 | 691 | 0.2− | 0.3+ |
| 2001 07 30 | 704 | 0.6+ | 0.4+ | 2001 09 25 | 704 | 1.1− | 0.2− | 2005 11 28 | 691 | 0.0 | 1.6+ |
| 2001 07 30 | 704 | 0.7− | 0.3− | 2001 09 25 | 704 | 0.9− | 0.3+ | 2005 11 28 | 691 | 0.3− | 0.2+ |
| 2001 08 25 | 699 | 0.1− | 0.0 | 2001 10 10 | 644 | 0.6− | 0.4− | 2005 12 06 | 691 | 0.8+ | 0.7− |
| 2001 08 25 | 699 | 0.3− | 0.0 | 2001 10 10 | 644 | 0.6− | 0.0 | 2005 12 06 | 691 | 0.2− | 0.3+ |
| 2001 08 25 | 699 | 0.2+ | 0.5− | 2001 10 10 | 644 | 0.6− | 0.1− | 2005 12 06 | 691 | 0.2− | 0.3+ |
| 2001 08 25 | 699 | 0.5− | 0.2+ | 2001 10 16 | 644 | 0.7− | 0.1− | | | | |
| 2001 09 11 | 704 | 1.5+ | 0.6+ | 2001 10 16 | 644 | 0.5− | 0.2+ | | | | |

**2001 OG$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.84484 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21072367 | $\omega$ | 249.06328 | | +0.97106298 | | +0.11354772 |
| $a$ | 2.7967942 | $\Omega$ | 103.94235 | | −0.03619338 | | +0.93955185 |
| $e$ | 0.3011265 | $i$ | 12.50247 | | −0.23606511 | | +0.32303133 |
| $P$ | 4.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 28 | 608 | 0.2+ | 0.0 | 2001 09 22 | 644 | 0.1+ | 0.5+ | 2006 10 04 | 703 | 0.5+ | 0.9+ |
| 2001 06 28 | 608 | 0.4+ | 0.4+ | 2001 09 22 | 644 | 0.4+ | 0.2+ | 2006 10 04 | 703 | 0.1− | 0.2− |
| 2001 06 28 | 608 | 0.9+ | 0.4− | 2001 09 22 | 644 | 0.2+ | 0.8+ | 2006 10 04 | 703 | 0.0 | 0.1− |
| 2001 07 19 | 644 | 0.2− | 0.1+ | 2001 09 24 | 644 | 1.0+ | 0.2− | 2006 10 04 | 703 | 0.4− | 0.2+ |
| 2001 07 19 | 644 | 0.2− | 0.1+ | 2001 09 24 | 644 | 1.0+ | 0.4− | 2006 10 21 | 703 | 0.2+ | 0.4+ |
| 2001 07 19 | 644 | 0.1− | 0.0 | 2001 09 24 | 644 | 0.8+ | 0.2− | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2001 07 24 | 644 | 0.6− | 0.5− | 2001 11 07 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 2001 07 24 | 644 | 0.5− | 0.5− | 2001 11 07 | 704 | 1.4− | 1.1− | 2006 10 21 | 703 | 0.3+ | 0.2+ |
| 2001 07 24 | 644 | 0.5− | 0.6− | 2001 11 07 | 704 | 0.0 | 0.3+ | 2006 10 31 | 703 | 0.1− | 0.3− |
| 2001 07 31 | 644 | 0.6− | 0.2+ | 2001 11 07 | 704 | 0.5− | 0.9+ | 2006 10 31 | 703 | 0.1− | 0.0 |
| 2001 07 31 | 644 | 0.8− | 0.0 | 2001 11 07 | 704 | 0.3− | 0.4+ | 2006 10 31 | 703 | 0.2− | 0.2− |
| 2001 07 31 | 644 | 0.7− | 0.2+ | 2002 12 31 | 645 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.2− | 0.5+ |
| 2001 08 09 | 644 | 0.5+ | 0.4+ | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2001 08 09 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.4+ |
| 2001 08 09 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2001 08 21 | 644 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2001 08 21 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 11 23 | 703 | 0.3− | 1.9− |
| 2001 08 21 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.7+ | 0.1− |
| 2001 08 27 | 644 | 0.4− | 0.5− | 2006 09 26 | 703 | 0.1− | 0.1− | 2006 11 23 | 703 | 0.2+ | 0.1+ |
| 2001 08 27 | 644 | 0.3− | 0.6− | 2006 09 26 | 703 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.3− | 0.5− |
| 2001 08 27 | 644 | 0.5− | 0.6− | 2006 09 26 | 703 | 0.2− | 0.0 | | | | |

**2001 OX$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.34411 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23884486 | $\omega$ | 283.76682 | | −0.41938111 | | +0.81572011 |
| $a$ | 2.5727176 | $\Omega$ | 313.82720 | | −0.45862210 | | −0.56911100 |
| $e$ | 0.2133231 | $i$ | 33.52022 | | −0.78344448 | | −0.10350539 |
| $P$ | 4.13 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 23 | 644 | 0.1− | 0.1− | 2004 03 26 | 704 | 0.2− | 0.2− | 2005 08 28 | 699 | 0.4− | 0.7− |
| 2001 07 23 | 644 | 0.8− | 0.1− | 2004 03 26 | 704 | 0.0 | 0.2− | 2005 08 28 | 699 | 0.6− | 0.0 |
| 2001 07 23 | 644 | 0.2− | 0.1+ | 2004 03 30 | 704 | 0.2+ | 0.2+ | 2005 08 28 | 699 | 0.9+ | 0.1+ |
| 2001 07 24 | 644 | 1.0− | 0.0 | 2004 03 30 | 704 | 1.2+ | 0.0 | 2005 09 12 | 704 | 0.5+ | 0.2+ |
| 2001 07 24 | 644 | 0.9− | 0.1+ | 2004 03 30 | 704 | 0.9− | 0.5+ | 2005 09 12 | 704 | 0.4+ | 0.6− |
| 2001 07 24 | 644 | 0.8− | 0.2+ | 2004 03 30 | 704 | 0.6+ | 0.3+ | 2005 09 12 | 704 | 0.3+ | 0.3− |
| 2001 08 21 | 644 | 0.1− | 0.9+ | 2004 03 30 | 704 | 0.8− | 0.4− | 2005 09 12 | 704 | 0.9+ | 0.5+ |
| 2001 08 21 | 644 | 0.0 | 0.9+ | 2004 03 30 | 704 | 1.1+ | 0.3+ | 2005 09 29 | 703 | 0.6+ | 1.4− |
| 2001 08 21 | 644 | 0.1+ | 1.0+ | 2004 03 30 | 704 | 0.4− | 0.3+ | 2005 09 29 | 703 | 0.8− | 0.8− |
| 2004 03 16 | 644 | 0.1+ | 0.2− | 2004 03 30 | 704 | 0.8+ | 0.0 | 2005 09 29 | 703 | 0.9+ | 0.9+ |
| 2004 03 16 | 644 | 0.1+ | 0.3− | 2004 03 30 | 704 | 1.1− | 0.2− | 2005 09 29 | 703 | 0.7− | 0.7+ |
| 2004 03 16 | 644 | 0.2+ | 0.2− | 2004 03 30 | 704 | 0.3+ | 0.2+ | | | | |
| 2004 03 26 | 704 | 0.4− | 0.4+ | 2005 08 28 | 699 | 0.6+ | 0.5− | | | | |

**2001 OM$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.01160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27400341 | $\omega$ | 135.03678 | | +0.99165525 | | −0.12248047 |
| $a$ | 2.3476431 | $\Omega$ | 232.04046 | | +0.09921755 | | +0.92433228 |
| $e$ | 0.2098737 | $i$ | 2.92471 | | +0.08231488 | | +0.36139780 |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.4+ | 0.0 | 2001 09 20 | 333 | 0.6− | 0.6− | 2001 10 14 | 704 | 0.4− | 0.2+ |
| 1996 03 20 | 691 | (3.1− | 5.6−) | 2001 09 20 | 333 | 0.5+ | 0.5− | 2001 10 14 | 704 | 0.3− | 0.1− |
| 1996 03 20 | 691 | 0.4− | 0.1+ | 2001 09 20 | 704 | 0.2+ | 0.5+ | 2001 10 14 | 704 | 0.0 | 0.6+ |
| 2001 07 22 | 644 | (2.6− | 1.4+) | 2001 09 20 | 704 | 0.3+ | 0.2+ | 2001 10 14 | 704 | 0.3− | 0.1− |
| 2001 07 22 | 644 | (2.3− | 1.1+) | 2001 09 20 | 704 | 0.3+ | 0.1+ | 2001 10 14 | 704 | 0.1− | 0.2+ |
| 2001 07 22 | 644 | (2.1− | 1.4+) | 2001 09 20 | 704 | 0.1+ | 0.2+ | 2001 10 16 | 704 | 0.4− | 0.2+ |
| 2001 07 26 | 644 | 0.4− | 0.3+ | 2001 09 20 | 704 | 0.2+ | 0.5+ | 2001 10 16 | 704 | 0.3− | 0.1+ |
| 2001 07 26 | 644 | 0.1− | 0.3+ | 2001 09 21 | 333 | 0.2+ | 0.2− | 2001 10 16 | 704 | 0.4− | 0.2+ |
| 2001 07 26 | 644 | 0.8− | 0.4+ | 2001 09 21 | 333 | 0.2− | 0.6− | 2001 10 16 | 704 | 1.3− | 0.5− |
| 2001 09 10 | 644 | 0.3+ | 0.7+ | 2001 09 21 | 333 | 0.3− | 0.3− | 2001 10 16 | 704 | 0.3− | 0.2+ |
| 2001 09 10 | 644 | 0.3+ | 0.8+ | 2001 09 23 | 704 | 0.7+ | 0.2− | 2001 10 21 | 691 | 0.3+ | 0.1− |
| 2001 09 10 | 644 | 0.3+ | 0.9+ | 2001 09 23 | 704 | 0.4+ | 0.0 | 2001 10 21 | 704 | 0.7− | 1.2− |
| 2001 09 11 | 699 | 0.5+ | 0.8+ | 2001 09 23 | 704 | 0.2+ | 0.2+ | 2001 10 21 | 691 | 0.3+ | 0.2− |
| 2001 09 11 | 699 | 1.1+ | 0.1− | 2001 09 23 | 704 | 0.5+ | 0.0 | 2001 10 21 | 704 | 0.5− | 1.0− |
| 2001 09 11 | 699 | 0.2+ | 0.0 | 2001 09 23 | 704 | 0.5+ | 0.2+ | 2001 10 21 | 691 | 0.2+ | 0.1− |
| 2001 09 11 | 699 | 1.2+ | 0.4− | 2001 09 25 | 699 | 0.4− | 0.7+ | 2001 10 21 | 704 | 0.5− | 1.0− |
| 2001 09 17 | 644 | 0.0 | 0.3− | 2001 09 25 | 699 | 0.4− | 0.1− | 2001 10 21 | 704 | 1.0− | 0.8− |
| 2001 09 17 | 644 | 0.5− | 0.7− | 2001 09 25 | 699 | 0.5− | 0.3+ | 2001 10 21 | 704 | 0.7− | 0.9− |
| 2001 09 17 | 644 | 0.2− | 0.4− | 2001 09 25 | 699 | 0.3+ | 0.2+ | 2001 11 09 | 644 | 1.2+ | 0.7+ |
| 2001 09 17 | 704 | 0.3− | 0.4+ | 2001 09 28 | 644 | 0.5− | 0.4+ | 2001 11 09 | 644 | 0.2+ | 0.8+ |
| 2001 09 17 | 704 | 0.2− | 0.1+ | 2001 09 28 | 644 | 0.2− | 0.5+ | 2001 11 09 | 644 | 0.6+ | 0.5+ |
| 2001 09 17 | 704 | 0.5+ | 0.1+ | 2001 09 28 | 644 | 0.3− | 0.5+ | 2006 01 09 | 691 | 0.1− | 0.1− |
| 2001 09 17 | 704 | 0.4+ | 0.2− | 2001 10 06 | 644 | 0.1− | 0.2+ | 2006 01 09 | 691 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.6+ | 0.5+ | 2001 10 06 | 644 | 0.1+ | 0.1+ | 2006 01 09 | 691 | 0.0 | 0.2+ |
| 2001 09 18 | 699 | 0.2− | 0.8+ | 2001 10 06 | 644 | 0.1− | 0.3+ | 2006 01 31 | 691 | 0.0 | 0.2+ |
| 2001 09 18 | 699 | 0.9+ | 0.2+ | 2001 10 11 | 644 | 0.7− | 0.3− | 2006 01 31 | 691 | 0.0 | 0.1+ |
| 2001 09 18 | 699 | (1.9+ | 0.2+) | 2001 10 11 | 644 | 0.6− | 0.2− | 2006 01 31 | 691 | 0.2+ | 0.2+ |
| 2001 09 20 | 333 | 0.4− | 1.1− | 2001 10 11 | 644 | 0.7− | 0.5− | | | | |

**2001 OZ$_{45}$ = 2006 QJ$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.51165 | | | (2000.0) | | |
| $n$ | 0.21095276 | $\omega$ | 23.34273 | | +0.99749793 | −0.06759663 |
| $a$ | 2.7947689 | $\Omega$ | 340.49935 | | +0.05104332 | +0.89124199 |
| $e$ | 0.2091641 | $i$ | 3.55556 | | +0.04891281 | +0.44846228 |
| $P$ | 4.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 327 | 0.5+ | 0.6− | 2006 09 01 | 704 | (0.6− | 2.7+) | 2006 09 29 | 704 | 0.3− | 0.6+ |
| 1997 12 04 | 327 | 0.1− | 0.6− | 2006 09 01 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.6+ |
| 1997 12 04 | 327 | 0.1+ | 0.6− | 2006 09 01 | 704 | 1.3− | 0.7+ | 2006 10 01 | 704 | 0.4+ | 1.0+ |
| 2001 06 27 | 699 | 0.1+ | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.5+ | 1.2+ |
| 2001 06 27 | 699 | (2.6+ | 1.1+) | 2006 09 06 | 644 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.1+ | 0.4+ |
| 2001 06 27 | 699 | 0.2+ | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.1− | 0.1+ |
| 2001 06 27 | 699 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.1− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2001 07 16 | 699 | (1.6+ | 1.0+) | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.4− |
| 2001 07 16 | 699 | (2.0+ | 0.1+) | 2006 09 12 | 703 | 0.5− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.3− |
| 2001 07 16 | 699 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.4− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 07 16 | 699 | 0.3+ | 0.6+ | 2006 09 16 | 691 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.4− |
| 2001 07 19 | 608 | 0.5+ | 0.3+ | 2006 09 16 | 691 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3− |
| 2001 07 19 | 608 | 0.4− | 0.7− | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 1.4− | 0.4− |
| 2001 07 19 | 608 | 0.1− | 0.8− | 2006 09 17 | 704 | 0.8+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2001 08 07 | 608 | 0.1− | 0.7− | 2006 09 17 | 704 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.3− |
| 2001 08 07 | 608 | 0.3− | 0.6− | 2006 09 17 | 704 | 0.4+ | 0.4+ | 2006 10 14 | 958 | 0.3+ | 0.3+ |
| 2001 08 07 | 608 | 0.1− | 0.8− | 2006 09 17 | 704 | 0.7+ | 0.5+ | 2006 10 14 | 958 | 0.4− | 0.4+ |
| 2001 08 19 | 704 | 0.8+ | 0.4+ | 2006 09 17 | 704 | 0.5+ | 0.5+ | 2006 10 14 | 958 | 0.2− | 0.3+ |
| 2001 08 19 | 704 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.9− | 0.1− |
| 2001 08 19 | 704 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2001 08 19 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.6− | 0.5− |
| 2001 08 19 | 704 | 0.7+ | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.5− | 2006 10 17 | 703 | 0.3− | 1.0− |
| 2001 08 25 | 608 | 1.1− | 1.2− | 2006 09 25 | 704 | 0.9+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 08 25 | 608 | 0.3− | 0.1+ | 2006 09 25 | 704 | (1.5+ | 0.3+) | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 08 25 | 608 | 0.5+ | 0.6− | 2006 09 25 | 704 | 0.8+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.3− |
| 2006 08 19 | 691 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.4− | 1.4+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 08 19 | 691 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.1+ | 1.5+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 08 25 | 704 | 0.6+ | 0.4− | 2006 09 27 | 704 | 0.4− | 1.5+ | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2006 08 25 | 704 | 0.5+ | 0.8− | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2006 08 25 | 704 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2006 08 25 | 704 | 0.1− | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2006 08 25 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2006 08 28 | 703 | 0.6− | 0.1− | 2006 09 27 | 704 | 0.6+ | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 29 | 704 | 0.4− | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2006 08 28 | 703 | 0.7− | 0.4− | 2006 09 29 | 704 | 0.3− | 0.9+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 29 | 704 | 0.6− | 0.8+ | | | | |
| 2006 09 01 | 704 | 1.0+ | 0.5− | 2006 09 29 | 704 | 0.4− | 0.5+ | | | | |

**2001 OK$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.61472 | | | (2000.0) | | |
| $n$ | 0.21304080 | $\omega$ | 103.15676 | | +0.73734533 | +0.67136697 |
| $a$ | 2.7764778 | $\Omega$ | 214.75714 | | −0.65939138 | +0.69128954 |
| $e$ | 0.3705362 | $i$ | 7.53465 | | −0.14671358 | +0.26718001 |
| $P$ | 4.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.1− | 0.0 | 2001 09 18 | 699 | 0.2− | 0.6− | 2006 10 16 | 691 | 0.4− | 0.0 |
| 2001 07 16 | 608 | 0.1− | 1.1+ | 2001 09 18 | 699 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 07 16 | 608 | 0.1− | 0.4+ | 2001 09 18 | 699 | 0.9− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2− |
| 2001 07 20 | 699 | 0.2− | 0.2− | 2001 09 25 | 704 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2001 07 20 | 699 | 0.2+ | 0.8− | 2001 09 25 | 704 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2001 07 20 | 699 | 0.3+ | 0.1+ | 2001 09 25 | 704 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2001 07 20 | 699 | 0.3− | 0.3+ | 2001 09 25 | 704 | 0.9− | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2001 09 09 | 699 | 0.2+ | 0.4− | 2001 10 14 | 704 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 09 09 | 644 | 0.0 | 0.1− | 2001 10 14 | 704 | 0.5+ | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 09 09 | 699 | 0.8+ | 0.4− | 2001 10 14 | 704 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.0 |
| 2001 09 09 | 644 | 0.1+ | 0.2− | 2001 10 14 | 704 | 0.5+ | 0.5+ | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2001 09 09 | 699 | 0.5+ | 0.3− | 2001 10 14 | 704 | 0.2− | 0.9+ | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2001 09 09 | 644 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 1.0+ | 0.3− |
| 2001 09 09 | 699 | 0.4+ | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.3− | | | | |
| 2001 09 18 | 699 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.1− | | | | |

**2001 OV$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.22037 | | | (2000.0) | | |
| $n$ | 0.21516996 | $\omega$ | 241.88657 | | +0.94445787 | +0.28185811 |
| $a$ | 2.7581314 | $\Omega$ | 101.32902 | | −0.20685595 | +0.90942844 |
| $e$ | 0.1894024 | $i$ | 9.92397 | | −0.25536240 | +0.30577102 |
| $P$ | 4.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.3− | 0.3+ | 2001 09 12 | 704 | 0.1+ | 0.5− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2001 07 20 | 644 | 0.1+ | 0.5+ | 2001 10 14 | 644 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.5− |
| 2001 07 20 | 644 | 0.1+ | 0.5+ | 2001 10 14 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2001 07 27 | 644 | 0.1− | 0.5+ | 2001 10 14 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2001 07 27 | 644 | 0.5− | 0.4+ | 2001 10 15 | 644 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2001 07 27 | 644 | 0.0 | 0.6+ | 2001 10 15 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2001 08 01 | 644 | 0.1+ | 0.9− | 2001 10 15 | 644 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.9+ |
| 2001 08 01 | 644 | 0.1+ | 0.6− | 2006 11 19 | 703 | 0.5− | 0.4− | 2006 11 28 | 704 | 0.9− | 0.4+ |
| 2001 08 01 | 644 | 0.3+ | 0.9− | 2006 11 19 | 703 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.7− | 0.0 |
| 2001 09 12 | 704 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 2001 09 12 | 704 | 0.7+ | 0.9+ | 2006 11 19 | 703 | 0.3+ | 0.9− | 2006 11 28 | 704 | 0.8− | 1.0+ |
| 2001 09 12 | 704 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.4− | | | | |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.4− | | | | |

**2001 OZ$_{52}$ = 2006 WN$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.17928 | | | (2000.0) | | |
| $n$ | 0.22633824 | $\omega$ | 270.35412 | | +0.73994985 | +0.66621352 |
| $a$ | 2.6666382 | $\Omega$ | 47.87317 | | −0.55652296 | +0.68391402 |
| $e$ | 0.2112979 | $i$ | 7.19713 | | −0.37783120 | +0.29735697 |
| $P$ | 4.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 644 | 0.0 | 0.0 | 2001 09 11 | 704 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 07 21 | 644 | 0.2− | 0.3+ | 2001 09 11 | 704 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 07 21 | 644 | 0.1− | 0.5+ | 2001 09 11 | 704 | 0.4+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2001 07 27 | 644 | 0.1− | 0.1− | 2001 09 11 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.4− |
| 2001 07 27 | 644 | 0.0 | 0.1− | 2001 09 11 | 704 | 0.0 | 0.6+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2001 07 27 | 644 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.7− | 0.7+ |
| 2001 08 01 | 644 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2001 08 01 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 1.2− | 1.7+ | 2006 11 18 | 704 | 0.6− | 0.9− |
| 2001 08 01 | 644 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.9+ |
| 2001 09 10 | 699 | (0.8− | 1.9+) | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 2001 09 10 | 699 | 1.1− | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.7− | 2006 11 22 | 691 | 0.6+ | 0.0 |
| 2001 09 10 | 699 | 0.0 | 0.7− | 2006 10 28 | G96 | 0.4− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2001 09 10 | 699 | 0.9+ | 0.8− | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.0 |

**2001 OE$_{56}$ = 2006 OT$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.06960 | | | (2000.0) | | |
| $n$ | 0.19014923 | $\omega$ | 182.85686 | | −0.15702693 | +0.96375026 |
| $a$ | 2.9950656 | $\Omega$ | 78.17834 | | −0.90167491 | −0.05080139 |
| $e$ | 0.0961109 | $i$ | 12.73122 | | −0.40289565 | −0.26192491 |
| $P$ | 5.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.4+ | 0.2+ | 2005 03 18 | 703 | 0.2+ | 0.8− | 2005 04 16 | 703 | 0.5− | 0.8− |
| 2000 04 27 | 699 | 0.8− | 1.1− | 2005 03 18 | 703 | 0.2+ | 0.9+ | 2006 07 20 | E12 | 1.4+ | 0.4− |
| 2000 04 27 | 699 | 0.3+ | 0.0 | 2005 03 18 | 703 | 1.9+ | 0.2+ | 2006 07 20 | E12 | (0.8− | 2.2+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.2+ | 0.4− | 2005 03 18 | 703 | 0.2+ | 0.3+ | 2006 07 20 | E12 | 0.8− | 0.2+ |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2005 03 31 | 703 | 1.2+ | 0.4+ | 2006 07 20 | E12 | 0.2+ | 0.7+ |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2005 03 31 | 703 | 0.1− | 0.0 | 2006 07 29 | E12 | 0.3− | 0.2− |
| 2001 07 26 | 644 | 0.2+ | 0.1− | 2005 03 31 | 703 | 0.2− | 0.9+ | 2006 07 29 | E12 | 1.1+ | 0.2− |
| 2001 07 26 | 644 | 0.2+ | 0.2− | 2005 03 31 | 703 | 1.3− | 0.5− | 2006 07 29 | E12 | 0.1− | 0.3+ |
| 2001 07 26 | 644 | 0.4+ | 0.2+ | 2005 04 12 | 699 | 0.5+ | 0.2+ | 2006 07 29 | E12 | 0.5− | 0.8+ |
| 2001 07 27 | 644 | 0.1− | 0.2+ | 2005 04 12 | 699 | 0.4− | 0.8+ | 2006 08 26 | E12 | 0.8− | 0.2+ |
| 2001 07 27 | 644 | 0.2− | 0.3+ | 2005 04 12 | 699 | 0.3− | 0.6+ | 2006 08 26 | E12 | 0.4− | 1.1− |
| 2001 07 27 | 644 | 0.3− | 0.6+ | 2005 04 12 | 699 | 0.5+ | 0.8+ | 2006 08 26 | E12 | 0.4− | 0.6− |
| 2001 08 16 | 644 | 0.1− | 0.2+ | 2005 04 16 | 703 | 2.1+ | 0.7+ | 2006 08 26 | E12 | 0.1+ | 0.2+ |
| 2001 08 16 | 644 | 0.1+ | 0.0 | 2005 04 16 | 703 | 1.1− | 0.4+ | | | | |
| 2001 08 16 | 644 | 0.3− | 0.7+ | 2005 04 16 | 703 | 0.1+ | 0.7+ | | | | |

**2001 OJ$_{61}$ = 2006 SV$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.34733 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20290957 | $\omega$ | 259.28062 | | +0.97684841 | | +0.15790809 |
| $a$ | 2.8681445 | $\Omega$ | 91.52082 | | −0.09048536 | | +0.91631851 |
| $e$ | 0.3332224 | $i$ | 8.30164 | | −0.19385455 | | +0.36800194 |
| $P$ | 4.86 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 608 | 0.6− | 0.5+ | 2001 08 22 | 644 | 1.4+ | 1.1+ | 2006 08 30 | 699 | 0.8+ | 0.6− |
| 2001 07 21 | 608 | 0.5− | 0.5+ | 2001 08 28 | 644 | 0.3− | 0.6− | 2006 08 30 | 699 | 0.1− | 0.2+ |
| 2001 07 21 | 608 | 0.7− | 0.3+ | 2001 08 28 | 644 | 0.8− | 0.2+ | 2006 09 21 | 699 | 0.4+ | 0.2− |
| 2001 07 27 | 608 | 0.9+ | 0.6− | 2001 08 28 | 644 | 0.9− | 0.1− | 2006 09 21 | 699 | 0.2+ | 0.7− |
| 2001 07 27 | 608 | 0.6+ | 1.3− | 2001 09 10 | 699 | 0.4− | 0.1− | 2006 09 21 | 699 | 0.1− | 0.0 |
| 2001 07 27 | 608 | 0.2+ | 1.2− | 2001 09 10 | 699 | 0.0 | 0.6− | 2006 09 21 | 699 | 0.8− | 0.6− |
| 2001 08 10 | 644 | 0.6− | 0.1− | 2001 09 10 | 699 | 0.2− | 0.7+ | 2006 09 26 | 703 | 0.3− | 0.7− |
| 2001 08 10 | 644 | 0.4− | 0.2− | 2001 09 10 | 699 | 0.2− | 0.6− | 2006 09 26 | 703 | 0.3+ | 1.0+ |
| 2001 08 10 | 644 | 0.5− | 0.2− | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.5+ | 0.6+ |
| 2001 08 22 | 644 | 1.4+ | 1.3+ | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.3− | 0.8+ |
| 2001 08 22 | 644 | 1.3+ | 1.4+ | 2006 08 30 | 699 | 0.3− | 0.4− | | | | |

**2001 ON$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.05101 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21561336 | $\omega$ | 11.08719 | | +0.96813429 | | +0.24007140 |
| $a$ | 2.7543488 | $\Omega$ | 334.67532 | | −0.24062537 | | +0.81286582 |
| $e$ | 0.2642604 | $i$ | 9.59339 | | −0.06939329 | | +0.53067399 |
| $P$ | 4.57 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 608 | 0.2− | 0.7− | 2001 08 26 | 608 | 0.0 | 1.2− | 2001 10 18 | 644 | 0.4+ | 0.7+ |
| 2001 07 21 | 608 | 0.2− | 0.5− | 2001 08 26 | 608 | 0.2− | 1.0− | 2001 10 18 | 644 | 0.5+ | 0.6+ |
| 2001 07 21 | 608 | 0.2+ | 0.3− | 2001 08 26 | 608 | 0.4+ | 1.1− | 2005 06 27 | 644 | 0.4+ | 0.2+ |
| 2001 07 27 | 699 | 0.3+ | 0.3+ | 2001 08 26 | 608 | 0.2+ | 1.2− | 2005 06 27 | 644 | 0.4+ | 0.2− |
| 2001 07 27 | 699 | 0.1+ | 0.3− | 2001 08 26 | 608 | 0.1+ | 1.0− | 2005 06 27 | 644 | 0.5+ | 0.4+ |
| 2001 07 27 | 699 | 0.3+ | 0.0 | 2001 08 26 | 608 | 0.4+ | 1.4− | 2006 10 02 | 704 | 0.6− | 0.3+ |
| 2001 07 27 | 699 | 0.0 | 0.2+ | 2001 08 26 | 608 | (0.4− | 2.2−) | 2006 10 02 | 704 | 0.3+ | 0.4+ |
| 2001 07 27 | 608 | 0.7− | 0.1+ | 2001 08 26 | 608 | (0.1− | 1.9−) | 2006 10 02 | 704 | 0.6− | 1.1+ |
| 2001 07 27 | 608 | 0.9− | 0.2+ | 2001 09 04 | 644 | 0.1+ | 1.1+ | 2006 10 02 | 703 | 0.2+ | 0.1− |
| 2001 07 27 | 608 | 0.6− | 0.2+ | 2001 09 04 | 644 | 0.2− | 0.9+ | 2006 10 02 | 703 | 0.5+ | 0.6− |
| 2001 07 30 | 704 | 0.5+ | 0.3+ | 2001 09 04 | 644 | 0.1− | 0.8+ | 2006 10 02 | 703 | 0.5+ | 0.0 |
| 2001 07 30 | 704 | 0.1+ | 0.2+ | 2001 09 07 | 704 | 0.1− | 0.2+ | 2006 10 02 | 703 | 1.0− | 0.9+ |
| 2001 07 30 | 704 | 0.2+ | 0.7+ | 2001 09 07 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3− |
| 2001 07 30 | 704 | 0.4+ | 0.5+ | 2001 09 07 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 07 30 | 704 | 0.6+ | 0.6+ | 2001 09 07 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 08 14 | 608 | 0.4− | 1.1− | 2001 09 07 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.9+ | 0.8− |
| 2001 08 14 | 608 | 0.5− | 1.1− | 2001 09 08 | 699 | 0.2− | 0.4+ | 2006 10 23 | 703 | 0.4− | 0.4− |
| 2001 08 14 | 608 | 0.6− | 1.1− | 2001 09 08 | 699 | 0.2− | 0.4+ | 2006 10 23 | 703 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.1− | 0.3− | 2001 09 08 | 699 | 0.4− | 0.0 | 2006 10 23 | 703 | 0.5− | 0.2− |
| 2001 08 16 | 704 | 0.1+ | 0.4− | 2001 09 08 | 699 | 0.1+ | 0.6+ | 2006 10 29 | 703 | 0.4− | 0.5− |
| 2001 08 16 | 704 | 0.1− | 0.1− | 2001 09 19 | 704 | 0.2+ | 0.2+ | 2006 10 29 | 703 | 0.1+ | 0.6− |
| 2001 08 16 | 704 | 0.4− | 0.1− | 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 10 29 | 703 | 0.2− | 0.5− |
| 2001 08 16 | 704 | 0.2− | 0.3− | 2001 09 19 | 704 | 0.1− | 0.8+ | 2006 10 29 | 703 | 0.7+ | 0.2+ |
| 2001 08 19 | 704 | 0.2− | 0.4− | 2001 09 19 | 704 | 0.6+ | 0.8+ | 2006 11 15 | 704 | (0.5− | 2.2−) |
| 2001 08 19 | 704 | 0.5− | 0.5− | 2001 09 19 | 704 | 0.2+ | 1.0+ | 2006 11 15 | 704 | 0.1+ | 1.0− |
| 2001 08 19 | 704 | 0.0 | 0.6− | 2001 09 21 | 704 | 0.3− | 0.5+ | 2006 11 15 | 704 | 0.8− | 0.2+ |
| 2001 08 19 | 704 | 0.1− | 0.9− | 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 704 | 0.4− | 0.1+ |
| 2001 08 19 | 704 | 0.2+ | 1.1− | 2001 09 21 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 704 | 1.1+ | 0.9+ |
| 2001 08 25 | 704 | 0.1− | 0.3− | 2001 09 21 | 704 | 0.1+ | 1.1+ | 2006 11 21 | 703 | 0.6+ | 0.4+ |
| 2001 08 25 | 704 | 0.9− | 0.1− | 2001 10 13 | 699 | 0.9+ | 0.2+ | 2006 11 21 | 703 | 0.5− | 0.3− |
| 2001 08 25 | 704 | 0.5− | 1.3+ | 2001 10 13 | 699 | 0.8+ | 1.3+ | 2006 11 21 | 703 | 0.5− | 0.2− |
| 2001 08 25 | 704 | 0.4− | 0.2+ | 2001 10 13 | 699 | 0.1+ | 0.5+ | 2006 11 21 | 703 | 0.4+ | 0.1+ |
| 2001 08 25 | 704 | 0.2− | 0.6+ | 2001 10 13 | 699 | 1.0+ | 0.1+ | | | | |
| 2001 08 26 | 608 | 0.3+ | 0.8− | 2001 10 18 | 644 | 0.7+ | 0.4+ | | | | |

**2001 OS$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.44266 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22921753 | $\omega$ | 1.14071 | | +0.83732889 | | +0.53922198 |
| $a$ | 2.6442601 | $\Omega$ | 325.73356 | | −0.50284581 | | +0.69494635 |
| $e$ | 0.1367508 | $i$ | 9.20939 | | −0.21453767 | | +0.47569867 |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.3− | 0.5+ | 2001 08 24 | 704 | 0.2+ | 0.3− | 2004 03 13 | 644 | 0.6+ | 0.6+ |
| 2001 06 27 | 644 | 0.0 | 0.8+ | 2001 08 24 | 704 | 0.5+ | 0.7− | 2006 11 15 | 703 | (0.9+ | 2.9+) |
| 2001 06 27 | 644 | 0.3− | 0.9+ | 2001 08 25 | 608 | 0.7− | 0.8+ | 2006 11 15 | 703 | 0.1− | 1.4+ |
| 2001 07 16 | 699 | 0.1− | 1.0+ | 2001 08 25 | 608 | 0.5− | 1.1+ | 2006 11 15 | 703 | 0.2+ | 0.3+ |
| 2001 07 16 | 699 | 0.5+ | 0.4+ | 2001 08 25 | 608 | 0.4− | 0.9+ | 2006 11 15 | 703 | 0.9− | 0.1− |
| 2001 07 16 | 699 | 0.1+ | 0.0 | 2001 09 19 | 704 | (1.0− | 1.8−) | 2006 11 21 | 703 | 0.0 | 0.1+ |
| 2001 07 16 | 699 | 0.1+ | 0.6+ | 2001 09 19 | 704 | 0.5− | 0.1− | 2006 11 21 | 703 | 0.4+ | 0.0 |
| 2001 07 22 | 644 | 0.0 | 0.9− | 2001 09 19 | 704 | 0.9− | 0.1+ | 2006 11 21 | 703 | 0.3+ | 0.4− |
| 2001 07 22 | 644 | 0.1+ | 1.0− | 2001 09 19 | 704 | 0.8+ | 0.4− | 2006 11 21 | 703 | 0.3− | 0.3+ |
| 2001 07 22 | 644 | 0.2+ | 0.9− | 2004 03 13 | 644 | 0.2+ | 0.8+ | | | | |
| 2001 08 24 | 704 | 0.1+ | 0.6− | 2004 03 13 | 644 | 0.3+ | 0.8+ | | | | |

**2001 OS$_{75}$ = 2006 VE$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.25225 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23468318 | $\omega$ | 216.98507 | | +0.40005962 | | +0.90616587 |
| $a$ | 2.6030434 | $\Omega$ | 76.96236 | | −0.80356897 | | +0.41878938 |
| $e$ | 0.2008250 | $i$ | 8.09414 | | −0.44071444 | | +0.05898200 |
| $P$ | 4.20 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 24 | 644 | 0.3− | 0.5− | 2001 08 09 | 644 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 07 24 | 644 | 0.0 | 0.6− | 2006 10 22 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.2− |
| 2001 07 24 | 644 | 0.3− | 0.4− | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2001 07 30 | 644 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2001 07 30 | 644 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.4− |
| 2001 07 30 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.2− | 0.5+ |
| 2001 08 09 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.0 | | | | |
| 2001 08 09 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.4+ | | | | |

**2001 OY$_{75}$ = 2002 XM$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.88272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18129687 | $\omega$ | 229.10264 | | +0.91221057 | | +0.39680923 |
| $a$ | 3.0917842 | $\Omega$ | 107.29479 | | −0.33639491 | | +0.86754217 |
| $e$ | 0.2605171 | $i$ | 6.13566 | | −0.23390240 | | +0.29985499 |
| $P$ | 5.44 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.0 | 0.6− | 2001 08 16 | 704 | 0.1+ | 0.1− | 2006 05 06 | G96 | 0.1− | 0.1− |
| 1993 01 26 | 691 | 0.0 | 0.1+ | 2001 08 16 | 704 | 0.1+ | 0.1+ | 2006 05 06 | G96 | 0.3− | 0.0 |
| 1993 01 26 | 691 | 0.3− | 0.3− | 2001 08 16 | 704 | 0.8− | 0.1− | 2006 05 06 | G96 | 0.0 | 0.0 |
| 2001 07 19 | 644 | 0.1− | 0.1+ | 2001 08 16 | 704 | 0.3− | 0.1− | 2006 05 06 | G96 | 0.3− | 0.3− |
| 2001 07 19 | 644 | 0.0 | 0.0 | 2002 12 05 | 644 | 0.1− | 0.2+ | 2006 05 06 | G96 | 0.1+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.1+ | 0.1+ | 2002 12 05 | 644 | 0.2− | 0.4+ | 2006 05 06 | G96 | 0.3+ | 0.3+ |
| 2001 07 27 | 608 | 0.2− | 0.4− | 2002 12 10 | 644 | 0.2− | 0.3+ | 2006 05 06 | G96 | 0.1+ | 0.1+ |
| 2001 07 27 | 608 | 0.1− | 0.3− | 2002 12 10 | 644 | 0.1+ | 0.1− | 2006 05 26 | G96 | 0.0 | 0.1+ |
| 2001 07 27 | 608 | 0.2+ | 0.7− | 2002 12 12 | 644 | 0.3− | 0.2+ | 2006 05 26 | G96 | 0.2− | 0.1− |
| 2001 07 30 | 644 | 0.7+ | 0.3+ | 2002 12 12 | 644 | 0.2− | 0.2+ | 2006 05 26 | G96 | 0.2+ | 0.1− |
| 2001 07 30 | 644 | 0.8+ | 0.4+ | 2002 12 12 | 644 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.0 | 0.0 |
| 2001 07 30 | 644 | 0.7+ | 0.4+ | 2004 02 11 | 691 | 0.4+ | 0.1+ | 2006 05 28 | 704 | 0.2− | 0.1− |
| 2001 08 11 | 644 | 0.2− | 0.5+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 05 28 | 704 | 1.4+ | 0.5+ |
| 2001 08 11 | 644 | 0.1− | 0.5+ | 2004 02 11 | 691 | 0.2+ | 0.5+ | 2006 05 28 | 704 | 0.2− | 0.0 |
| 2001 08 11 | 644 | 0.1− | 0.2+ | 2006 05 06 | G96 | 0.3− | 0.1− | 2006 05 28 | 704 | 1.3− | 0.5+ |

### 2001 $OP_{82}$ = 2002 $VO_{140}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.09180 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17837599 | $\omega$ | 263.40771 | | +0.91669038 | | +0.39682589 |
| $a$ | 3.1254445 | $\Omega$ | 73.20412 | | −0.34448978 | | +0.84437675 |
| $e$ | 0.1774919 | $i$ | 2.81337 | | −0.20249825 | | +0.35994044 |
| $P$ | 5.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 644 | 0.0 | 1.3− | 2002 11 13 | 644 | 0.2+ | 0.4− | 2005 03 16 | 691 | 0.2− | 0.3+ |
| 2001 07 27 | 644 | 0.1− | 1.5− | 2002 11 16 | 644 | 0.1+ | 0.4− | 2005 03 16 | 691 | 0.1+ | 0.2+ |
| 2001 07 27 | 644 | (0.3− | 2.0−) | 2002 11 16 | 644 | 0.1+ | 0.2− | 2005 03 16 | 691 | 0.1+ | 0.1− |
| 2001 07 28 | 699 | 0.7+ | 0.2+ | 2002 11 16 | 644 | 0.4− | 0.9− | 2005 04 11 | G96 | 0.2− | 0.2− |
| 2001 07 28 | 699 | 0.5+ | 0.2+ | 2002 11 24 | 644 | 0.2− | 0.3+ | 2005 04 11 | G96 | 0.5− | 0.1+ |
| 2001 07 28 | 699 | 0.2− | 0.4− | 2002 11 24 | 644 | 0.4− | 0.8+ | 2005 04 11 | G96 | 0.2− | 0.4− |
| 2001 07 28 | 699 | 1.0+ | 0.3+ | 2002 11 24 | 644 | 0.2+ | 0.2+ | 2005 04 11 | G96 | 0.5− | 1.1− |
| 2001 08 01 | 644 | 0.7− | 0.9+ | 2002 11 25 | 644 | 0.1− | 0.1− | 2005 05 11 | G96 | 0.3− | 0.5− |
| 2001 08 01 | 644 | 0.4− | 1.0+ | 2002 11 25 | 644 | 0.0 | 0.3+ | 2005 05 11 | G96 | 0.0 | 0.2− |
| 2001 08 01 | 644 | 0.8− | 1.1+ | 2004 01 19 | 691 | 0.1+ | 0.2+ | 2005 05 11 | G96 | 0.1+ | 0.7− |
| 2001 08 11 | 644 | 0.1− | 0.0 | 2004 01 19 | 691 | 0.1+ | 0.1+ | 2005 05 11 | G96 | 0.5− | 0.2− |
| 2001 08 11 | 644 | 0.3+ | 0.2+ | 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 06 01 | G96 | 0.1− | 0.2+ |
| 2001 08 11 | 644 | 0.1− | 0.1+ | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 06 01 | G96 | 0.3+ | 0.2+ |
| 2002 11 13 | 644 | 0.2+ | 0.5− | 2004 01 30 | 691 | 0.3+ | 0.2− | 2006 06 01 | G96 | 0.0 | 0.2+ |
| 2002 11 13 | 644 | 0.1− | 0.3− | 2004 01 30 | 691 | 0.3+ | 0.1+ | 2006 06 01 | G96 | 0.2+ | 0.2+ |

### 2001 $OU_{82}$ = 2006 $SR_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.09351 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21331568 | $\omega$ | 313.75273 | | +0.69163586 | | +0.72224638 |
| $a$ | 2.7740920 | $\Omega$ | 0.00707 | | −0.61809966 | | +0.59191499 |
| $e$ | 0.3035842 | $i$ | 7.71139 | | −0.37362099 | | +0.35776642 |
| $P$ | 4.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.1+ | 0.2− | 2006 07 21 | G96 | 0.5+ | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.6− |
| 2001 07 14 | 644 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.6+ | 0.5− |
| 2001 07 14 | 644 | 0.1+ | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2001 07 27 | 644 | 0.5+ | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2001 07 27 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.4− | 0.4− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2001 07 27 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 1.2+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2001 08 01 | 644 | 0.3− | 0.2+ | 2006 09 20 | 699 | 1.1− | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2001 08 01 | 644 | 0.3− | 0.3− | 2006 09 20 | 699 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2001 08 01 | 644 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.5+ | 0.2+ |
| 2001 08 12 | 644 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2001 08 12 | 644 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.2− | 0.3+ |
| 2001 08 12 | 644 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.6+ | 2006 10 21 | 703 | 1.1− | 0.2− |
| 2001 09 11 | 704 | 1.3− | 1.1+ | 2006 10 17 | 703 | 0.9− | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.5− |
| 2001 09 11 | 704 | 0.5+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.7+ |
| 2001 09 11 | 704 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.4+ | | | | |

### 2001 $ON_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.84842 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22820772 | $\omega$ | 100.73118 | | +0.94754932 | | +0.31503326 |
| $a$ | 2.6520548 | $\Omega$ | 240.92469 | | −0.31201861 | | +0.87526787 |
| $e$ | 0.1768655 | $i$ | 3.53524 | | −0.06924360 | | +0.36696077 |
| $P$ | 4.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 691 | 0.1− | 0.1+ | 2001 07 27 | 699 | (1.7+ | 0.7+) | 2006 11 18 | 691 | 0.1+ | 0.5− |
| 2001 06 16 | 691 | 0.1− | 0.2+ | 2001 07 27 | 699 | 0.3+ | 0.5+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2001 06 16 | 691 | 0.0 | 0.0 | 2001 07 27 | 699 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2001 07 18 | 691 | 0.3− | 0.1+ | 2001 07 27 | 699 | 0.5+ | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2001 07 18 | 691 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 1.5+ |
| 2001 07 18 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 07 24 | 608 | 0.3− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2001 07 24 | 608 | 0.4− | 1.2− | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2001 07 24 | 608 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.1− | 0.1− | | | | |

### 2001 $OC_{86}$ = 2006 $WA_{71}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.33005 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22606220 | $\omega$ | 28.71402 | | +0.60708968 | | +0.79365659 |
| $a$ | 2.6688085 | $\Omega$ | 278.69254 | | −0.73646484 | | +0.54334307 |
| $e$ | 0.2982739 | $i$ | 2.28353 | | −0.29843200 | | +0.27365585 |
| $P$ | 4.36 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 950 | 0.0 | 0.2+ | 2001 07 22 | 704 | 0.1+ | 0.7+ | 2001 08 05 | 608 | 0.2+ | 0.7− |
| 1998 11 17 | 950 | 0.0 | 0.0 | 2001 07 26 | 608 | (1.6+ | 0.6−) | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 1998 11 17 | 950 | 0.1+ | 0.2+ | 2001 07 26 | 608 | 1.5+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2001 06 29 | 691 | 0.2− | 1.0+ | 2001 07 26 | 608 | 1.2+ | 0.9− | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2001 06 29 | 691 | 0.2− | 0.3− | 2001 08 05 | 644 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2001 06 29 | 691 | 0.0 | 0.3− | 2001 08 05 | 644 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 07 22 | 704 | 0.4− | 0.1− | 2001 08 05 | 644 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 07 22 | 704 | 0.2+ | 0.3+ | 2001 08 05 | 608 | 0.1− | 0.5− | | | | |
| 2001 07 22 | 704 | 0.5− | 0.1+ | 2001 08 05 | 608 | 0.4− | 0.4− | | | | |

### 2001 $OT_{86}$ = 1989 $SA_{15}$ = 1993 $RD_{8}$

Id. Minor Planet Center (*MPO* 15911; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.33321 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24320952 | $\omega$ | 112.52787 | | +0.60031462 | | +0.79954678 |
| $a$ | 2.5418446 | $\Omega$ | 194.41081 | | −0.75853301 | | +0.56182624 |
| $e$ | 0.2750581 | $i$ | 4.29441 | | −0.25347589 | | +0.21231161 |
| $P$ | 4.05 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 09 30 | 809 | (3.7− | 1.5−) | 2001 09 08 | 704 | 0.2− | 0.2+ | 2005 07 08 | 691 | 0.1+ | 0.0 |
| 1989 09 30 | 809 | (1.3− | 2.6+) | 2001 09 08 | 704 | 0.6+ | 0.9− | 2005 07 08 | 691 | 0.2+ | 0.5+ |
| 1989 09 30 | 809 | (1.0+ | 6.8+) | 2001 09 08 | 704 | 0.2+ | 0.7− | 2005 07 26 | 644 | 0.0 | 0.1− |
| 1993 09 14 | 809 | (0.9+ | 3.3−) | 2001 09 09 | 699 | 0.2− | 0.2+ | 2005 07 26 | 644 | 0.0 | 0.1+ |
| 1993 09 14 | 809 | (0.2− | 5.5−) | 2001 09 09 | 699 | 0.0 | 0.9+ | 2005 07 26 | 644 | 0.1+ | 0.1− |
| 1993 09 14 | 809 | (1.7− | 5.7−) | 2001 09 09 | 699 | 0.4− | 0.9+ | 2005 07 26 | 608 | 0.1+ | 0.2+ |
| 1993 09 19 | 809 | 1.5+ | 1.1− | 2001 09 09 | 699 | 0.8− | 1.3+ | 2005 07 26 | 608 | 0.0 | 0.3+ |
| 1993 09 19 | 809 | 0.5+ | 1.8− | 2001 09 12 | 704 | 0.6+ | 0.3+ | 2005 07 26 | 608 | 0.2+ | 0.3+ |
| 1993 09 19 | 809 | (2.2+ | 0.5+) | 2001 09 12 | 704 | 0.1+ | 0.3+ | 2005 07 30 | 644 | 0.1+ | 0.1− |
| 2001 07 28 | 608 | 1.0+ | 0.9+ | 2001 09 12 | 704 | 0.1+ | 0.6+ | 2005 07 30 | 644 | 0.1+ | 0.1− |
| 2001 07 28 | 608 | 0.4+ | 0.4+ | 2001 09 12 | 704 | 0.2+ | 0.6+ | 2005 07 30 | 644 | 0.0 | 0.1− |
| 2001 07 28 | 608 | 0.2− | 1.1+ | 2001 09 12 | 704 | 0.3− | 0.3+ | 2005 08 06 | 644 | 0.0 | 0.4− |
| 2001 07 29 | 704 | (2.9+ | 1.1−) | 2001 09 20 | 704 | 0.2− | 0.8+ | 2005 08 06 | 644 | 0.0 | 0.2− |
| 2001 07 29 | 704 | (2.1+ | 1.3+) | 2001 09 20 | 704 | 0.1− | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.0 |
| 2001 07 29 | 704 | (2.6+ | 0.9+) | 2001 09 20 | 704 | 0.2− | 0.0 | 2005 08 09 | 185 | 0.1− | 0.2+ |
| 2001 07 29 | 704 | 1.8+ | 0.7+ | 2001 09 20 | 704 | 0.0 | 1.0+ | 2005 08 09 | 185 | 0.4− | 0.2+ |
| 2001 08 03 | 608 | 0.9− | 0.8− | 2001 09 20 | 704 | 0.5− | 0.1− | 2005 08 09 | 185 | 0.3− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 03 | 608 | 0.9− | 0.7− | 2001 09 22 | 704 | 0.7+ | 0.8+ | 2005 08 09 | 185 | 0.1− | 0.3+ |
| 2001 08 03 | 608 | 1.0− | 0.5− | 2001 09 22 | 704 | 0.2− | 0.4− | 2005 08 21 | 608 | 0.3− | 0.9− |
| 2001 08 10 | 608 | 0.1− | 0.7− | 2001 09 22 | 704 | 0.5+ | 0.1− | 2005 08 21 | 608 | 0.5− | 1.0− |
| 2001 08 10 | 608 | 0.2− | 1.2− | 2005 05 22 | 644 | 0.1− | 0.1− | 2005 08 21 | 608 | 0.3− | 1.2− |
| 2001 08 10 | 608 | 0.3− | 0.9− | 2005 05 22 | 644 | 0.2+ | 0.1− | 2005 08 30 | 704 | 0.1− | 0.9+ |
| 2001 08 10 | 608 | 0.1− | 1.0− | 2005 05 22 | 644 | 0.2− | 0.1− | 2005 08 30 | 704 | 0.1+ | 0.7+ |
| 2001 08 10 | 608 | 0.2− | 0.9− | 2005 06 04 | 703 | 1.0+ | 1.4− | 2005 08 30 | 704 | 0.0 | 0.1+ |
| 2001 08 10 | 608 | 0.3+ | 2.0− | 2005 06 04 | 703 | (1.7− | 2.1−) | 2005 08 30 | 704 | 0.8+ | 0.4+ |
| 2001 08 15 | 608 | 0.2+ | 0.1+ | 2005 06 04 | 703 | 0.9− | 1.1+ | 2005 08 31 | 691 | 0.3+ | 0.1+ |
| 2001 08 15 | 608 | 0.1− | 0.1+ | 2005 06 14 | 699 | 0.6+ | 0.4− | 2005 08 31 | 691 | 0.3+ | 0.2+ |
| 2001 08 15 | 608 | 0.3− | 0.0 | 2005 06 14 | 699 | 0.4− | 0.8+ | 2005 08 31 | 691 | 0.3+ | 0.1+ |
| 2001 08 15 | 608 | 0.1− | 0.4− | 2005 06 14 | 699 | 0.2− | 0.9+ | 2005 09 14 | 691 | 0.4+ | 0.2+ |
| 2001 08 15 | 608 | 0.2− | 0.3− | 2005 06 14 | 699 | 0.5− | 0.7− | 2005 09 14 | 691 | 0.2+ | 0.0 |
| 2001 08 15 | 608 | 0.3− | 0.5− | 2005 06 21 | 644 | 0.0 | 0.0 | 2005 09 14 | 691 | 0.2+ | 0.2+ |
| 2001 08 24 | 699 | 0.3+ | 0.4+ | 2005 06 21 | 644 | 0.1− | 0.0 | 2005 10 27 | G96 | 0.0 | 0.1+ |
| 2001 08 24 | 699 | 0.4+ | 0.1+ | 2005 06 21 | 644 | 0.2+ | 0.1+ | 2005 10 27 | G96 | 0.6+ | 0.5− |
| 2001 08 24 | 699 | 0.1− | 0.6+ | 2005 07 04 | 691 | 0.0 | 0.2+ | 2005 10 27 | G96 | 0.5− | 0.1+ |
| 2001 08 24 | 699 | 0.0 | 0.2+ | 2005 07 04 | 691 | 0.1+ | 0.0 | 2005 10 27 | G96 | 0.4+ | 0.2+ |
| 2001 08 30 | 644 | 0.4− | 0.1+ | 2005 07 04 | 691 | 0.0 | 0.0 | 2005 11 30 | G96 | 0.1+ | 0.5+ |
| 2001 08 30 | 644 | 0.7− | 0.2+ | 2005 07 05 | 644 | 0.1+ | 0.1− | 2005 11 30 | G96 | 0.3− | 0.4+ |
| 2001 08 30 | 644 | 0.4− | 0.4+ | 2005 07 05 | 644 | 0.1+ | 0.1− | 2005 11 30 | G96 | 0.1− | 0.1− |
| 2001 09 08 | 704 | 0.2− | 0.3− | 2005 07 05 | 644 | 0.1+ | 0.2− | 2005 11 30 | G96 | 0.2+ | 0.0 |
| 2001 09 08 | 704 | 0.3− | 0.4+ | 2005 07 08 | 691 | 0.0 | 0.1+ | | | | |

**2001 OM$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.82333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23998958 | $\omega$ | 170.99078 | | +0.83405879 | | +0.55153252 |
| $a$ | 2.5645301 | $\Omega$ | 155.52408 | | −0.50802242 | | +0.77673992 |
| $e$ | 0.1211051 | $i$ | 1.73758 | | −0.21507942 | | +0.30411671 |
| $P$ | 4.11 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 691 | 0.7− | 0.6− | 2005 05 20 | G96 | 0.0 | 0.4− | 2005 07 15 | G96 | 0.1− | 0.1+ |
| 1993 09 14 | 691 | 0.3− | 0.3− | 2005 05 20 | G96 | 0.7− | 0.3− | 2005 07 30 | E12 | 0.6− | 0.2+ |
| 1993 09 14 | 691 | 1.2+ | 0.4− | 2005 05 20 | G96 | 0.5− | 0.3− | 2005 07 30 | E12 | 0.3− | 0.6+ |
| 2000 04 05 | 704 | 0.7+ | 0.8+ | 2005 05 20 | G96 | 0.2− | 0.2− | 2005 07 30 | E12 | 0.8+ | 0.2+ |
| 2000 04 05 | 704 | 0.9+ | 0.2+ | 2005 07 04 | 691 | 0.2+ | 0.3− | 2005 07 30 | E12 | (1.6+ | 0.7−) |
| 2000 04 05 | 704 | 0.1+ | 0.7+ | 2005 07 04 | 691 | 0.0 | 0.3− | 2005 08 01 | E12 | (1.8− | 1.9+) |
| 2000 04 05 | 704 | 0.7− | 0.2+ | 2005 07 04 | 691 | 0.0 | 0.3− | 2005 08 01 | E12 | (0.8+ | 2.3+) |
| 2001 07 21 | 608 | 0.3− | 0.8− | 2005 07 04 | G96 | 0.3− | 0.1+ | 2005 08 01 | E12 | 0.6− | 0.2+ |
| 2001 07 21 | 608 | 0.8− | 0.2+ | 2005 07 04 | G96 | 0.1+ | 0.0 | 2005 08 01 | E12 | 0.5+ | 0.2+ |
| 2001 07 21 | 608 | 0.3− | 0.4+ | 2005 07 04 | G96 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.3+ |
| 2001 08 27 | 691 | 0.0 | 1.0+ | 2005 07 04 | G96 | 0.3− | 0.2+ | 2006 11 25 | 691 | 0.2+ | 0.4+ |
| 2001 08 27 | 691 | 0.1+ | 0.7+ | 2005 07 15 | G96 | 0.1− | 0.0 | 2006 11 25 | 691 | 0.3− | 0.1+ |
| 2001 08 27 | 691 | 0.3+ | 0.5+ | 2005 07 15 | G96 | 0.1− | 0.3+ | | | | |

**2001 OX$_{91}$ = 2006 SP$_{352}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.11754 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20494263 | $\omega$ | 151.29949 | | +0.99157346 | | +0.00912444 |
| $a$ | 2.8491448 | $\Omega$ | 209.05753 | | −0.03122544 | | +0.98493955 |
| $e$ | 0.3212779 | $i$ | 15.43017 | | +0.12572605 | | +0.17265814 |
| $P$ | 4.81 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 31 | 644 | 0.6− | 0.8− | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 07 31 | 644 | 0.3− | 0.9− | 2006 09 30 | 703 | 0.5− | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 07 31 | 644 | 0.8− | 0.9− | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 08 04 | 644 | 0.4+ | 0.7+ | 2006 10 03 | 704 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 08 04 | 644 | 0.6+ | 0.3+ | 2006 10 03 | 704 | 0.4+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2001 08 04 | 644 | 0.1+ | 0.6+ | 2006 10 03 | 704 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2001 08 10 | 644 | 0.5+ | 0.5− | 2006 10 03 | 704 | 1.1+ | 0.1− | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2001 08 10 | 644 | 0.5+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 06 | 644 | 0.1− | 0.4+ |
| 2001 08 10 | 644 | 0.6+ | 0.4− | 2006 10 04 | G96 | 0.5+ | 0.8− | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2001 08 18 | 699 | 0.6− | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.6− | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2001 08 18 | 699 | 0.4− | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.7− | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2001 08 18 | 699 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.1− |
| 2001 08 18 | 699 | 0.3+ | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 09 17 | 644 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 09 17 | 644 | 0.1− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2001 09 17 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2006 08 29 | 699 | 0.8+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2006 08 29 | 699 | 0.3+ | 0.9+ | 2006 10 17 | 703 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2006 08 29 | 699 | 1.5− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2006 08 29 | 699 | 0.3− | 0.9+ | 2006 10 17 | 703 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.7− | 2006 11 21 | 704 | 1.3− | 0.1+ |

**2001 OR$_{95}$ = 2006 QZ$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.31571 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20880373 | $\omega$ | 68.39427 | | +0.71137368 | | +0.69106389 |
| $a$ | 2.8139122 | $\Omega$ | 247.63105 | | −0.68510211 | | +0.64123020 |
| $e$ | 0.1485675 | $i$ | 7.95474 | | −0.15678835 | | +0.33354838 |
| $P$ | 4.72 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 24 | 621 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.0 | 0.6− | 2006 09 19 | 699 | (0.1− | 1.7+) |
| 2001 07 24 | 621 | 0.4− | 0.5+ | 2006 08 30 | 699 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.8− |
| 2001 07 24 | 621 | 0.7+ | 0.1+ | 2006 08 30 | 699 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.1− | 0.6+ |
| 2001 07 25 | 621 | 0.3− | 0.3− | 2006 09 11 | 703 | 0.4− | 0.2− | 2006 09 20 | 691 | 0.0 | 0.0 |
| 2001 07 25 | 621 | 0.4− | 0.0 | 2006 09 11 | 703 | 0.4− | 0.2+ | 2006 09 20 | 691 | 0.0 | 0.1− |
| 2001 07 25 | 621 | 0.4+ | 0.1+ | 2006 09 11 | 703 | 0.2+ | 0.1− | 2006 09 20 | 691 | 0.2+ | 0.0 |
| 2001 07 29 | 621 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.3− | 0.3− | 2006 09 22 | 691 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.2− | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 22 | 691 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 22 | 691 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 1.0+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.2− |
| 2005 05 01 | 644 | 0.3− | 0.2+ | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | (0.5− | 1.5−) |
| 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.8− | 1.4− |
| 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.6− |
| 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.8+ | 2006 09 29 | 699 | 0.6+ | 1.2− |
| 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.0 | 0.5+ |
| 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 1.2− | 0.6+ |
| 2006 08 30 | 699 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.7− | 1.5+ | 2006 09 29 | 699 | 0.8− | 0.9− |

**2001 OV$_{99}$ = 2006 WV$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.63992 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23519687 | $\omega$ | 176.03840 | | +0.56379612 | | +0.82074969 |
| $a$ | 2.5992518 | $\Omega$ | 128.25429 | | −0.76095195 | | +0.55960777 |
| $e$ | 0.1252859 | $i$ | 6.74396 | | −0.32107018 | | +0.11493085 |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.4+ | 0.2− | 2001 08 16 | 704 | 0.2+ | 0.4− | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2001 07 27 | 699 | 0.4− | 0.5+ | 2001 08 23 | 699 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.1− | 0.1− |
| 2001 07 27 | 699 | 0.4− | 0.5+ | 2001 08 23 | 699 | 0.9− | 0.4− | 2006 11 15 | 703 | 1.3− | 0.2+ |
| 2001 07 27 | 699 | 0.1+ | 0.2+ | 2001 08 23 | 699 | 0.3− | 0.7− | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2001 08 02 | 608 | 0.3+ | 0.2− | 2001 08 23 | 699 | (2.2− | 1.3+) | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2001 08 02 | 608 | 0.1+ | 0.4− | 2001 08 25 | 608 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2001 08 02 | 608 | (0.6− | 1.7−) | 2001 08 25 | 608 | 0.6− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2001 08 10 | 428 | 0.7− | 0.8+ | 2001 08 25 | 608 | 0.5− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2001 08 10 | 428 | 0.0 | 0.7+ | 2002 12 13 | 644 | 0.1+ | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2001 08 10 | 428 | 0.3+ | 1.3+ | 2002 12 13 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2001 08 13 | 608 | (0.1+ | 2.7−) | 2002 12 13 | 644 | 0.5− | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 08 13 | 608 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 2001 08 13 | 608 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.9+ | 0.4+ |
| 2001 08 16 | 704 | 0.6+ | 0.7− | 2006 11 15 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.2− | 0.8+ |
| 2001 08 16 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.7− | | | | |
| 2001 08 16 | 704 | 1.1+ | 0.3− | 2006 11 15 | 703 | 0.4− | 0.7+ | | | | |

**2001 OG$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.37362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28422618 | $\omega$ | 130.92990 | | +0.90092279 | +0.43151918 | |
| $a$ | 2.2910083 | $\Omega$ | 203.61698 | | −0.42469665 | +0.85477967 | |
| $e$ | 0.2415561 | $i$ | 6.61417 | | −0.08927981 | +0.28834512 | |
| $P$ | 3.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 02 | 910 | 0.0 | 0.2+ | 2001 08 20 | 704 | 0.4+ | 1.5+ | 2001 09 24 | 704 | 0.7+ | 1.0+ |
| 1997 05 02 | 910 | 0.3+ | 0.2− | 2001 08 20 | 704 | (0.7− | 2.9+) | 2001 09 24 | 704 | 0.8− | 0.4− |
| 1997 05 03 | 910 | 0.3− | 0.1+ | 2001 08 25 | 704 | 0.3+ | 0.6+ | 2001 09 24 | 704 | 0.1− | 0.4− |
| 2001 06 28 | 699 | 0.1+ | 0.2− | 2001 08 25 | 704 | 0.5+ | 0.3+ | 2001 09 26 | 704 | 0.3− | 0.4+ |
| 2001 06 28 | 699 | 0.2− | 0.4+ | 2001 08 25 | 704 | 0.3+ | 0.2+ | 2001 09 26 | 704 | 0.4+ | 1.3− |
| 2001 06 28 | 699 | 0.1+ | 0.5− | 2001 08 25 | 704 | 0.1− | 0.8+ | 2001 09 26 | 704 | 1.5+ | 1.0− |
| 2001 06 28 | 699 | 0.6+ | 0.3− | 2001 08 25 | 704 | 0.2+ | 0.5+ | 2001 10 11 | 704 | 0.3+ | 0.3− |
| 2001 07 16 | 699 | 1.6− | 0.7− | 2001 09 20 | 704 | 0.1− | 0.4− | 2001 10 11 | 704 | 1.1− | 0.2+ |
| 2001 07 16 | 699 | 0.5− | 0.4+ | 2001 09 20 | 704 | 0.3− | 0.2− | 2001 10 11 | 704 | 0.1− | 0.2− |
| 2001 07 16 | 699 | 0.4+ | 0.6+ | 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 11 | 704 | 0.6+ | 0.8− |
| 2001 07 16 | 699 | 0.1+ | 0.7− | 2001 09 20 | 704 | 0.1− | 0.4+ | 2001 10 14 | 704 | 0.7+ | 0.7+ |
| 2001 07 27 | 608 | 0.0 | 0.8− | 2001 09 24 | 644 | 0.5− | 0.3− | 2001 10 14 | 704 | 1.1+ | 1.0+ |
| 2001 07 27 | 608 | 0.2+ | 1.3− | 2001 09 24 | 644 | 1.0− | 0.1− | 2001 10 14 | 704 | 0.3+ | 0.6+ |
| 2001 07 27 | 608 | 0.1+ | 0.8− | 2001 09 24 | 644 | 0.9− | 0.3− | 2001 10 18 | 644 | 0.8− | 0.7− |
| 2001 07 29 | 704 | 0.2+ | 0.1− | 2001 09 24 | 704 | 0.7+ | 0.3+ | 2001 10 18 | 644 | 0.8− | 0.9− |
| 2001 07 29 | 704 | 1.0+ | 0.5+ | 2001 09 24 | 704 | 0.2+ | 0.2+ | 2001 10 18 | 644 | 1.0− | 0.6− |
| 2001 07 29 | 704 | 0.5− | 0.3− | 2001 09 24 | 704 | 0.5− | 0.0 | 2004 04 22 | 691 | 0.1− | 0.1+ |
| 2001 08 18 | 644 | 0.1− | 0.2− | 2001 09 24 | 704 | 0.4+ | 0.4+ | 2004 04 22 | 691 | 0.1+ | 0.0 |
| 2001 08 18 | 644 | 0.3− | 0.3− | 2001 09 24 | 704 | 0.1− | 0.3− | 2004 04 22 | 691 | 0.0 | 0.0 |
| 2001 08 18 | 644 | 0.5− | 0.2− | 2001 09 24 | 704 | 1.0+ | 0.8+ | | | | |
| 2001 08 20 | 704 | 0.4− | 1.8+ | 2001 09 24 | 704 | 0.2+ | 0.2− | | | | |

**2001 OR$_{111}$ = 2006 SZ$_{356}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.68705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22155944 | $\omega$ | 294.30106 | | +0.89549046 | −0.44160952 | |
| $a$ | 2.7048460 | $\Omega$ | 91.94606 | | +0.42583123 | +0.81381784 | |
| $e$ | 0.1050091 | $i$ | 3.18215 | | +0.12947818 | +0.37773213 | |
| $P$ | 4.45 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 1.2+ | 0.9− | 2006 09 30 | 703 | 0.1+ | 0.0 | 2006 10 22 | 704 | 0.0 | 0.5− |
| 1997 10 30 | 704 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2− |
| 1997 10 30 | 704 | (3.2+ | 1.0−) | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 10 22 | 704 | 0.1+ | 0.8− |
| 1997 10 30 | 704 | 0.6− | 1.4− | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2001 07 27 | 699 | 0.8+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 07 27 | 699 | 0.0 | 0.8+ | 2006 10 16 | 703 | 1.0− | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.2+ |
| 2001 07 27 | 699 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 07 27 | 699 | (1.9+ | 0.7+) | 2006 10 16 | 703 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.2+ |
| 2001 08 10 | 608 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2001 08 10 | 608 | 0.6− | 0.8+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2001 08 10 | 608 | 0.5− | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2001 08 19 | 704 | 1.2− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.4+ |
| 2001 08 19 | 704 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.7− |
| 2001 08 19 | 704 | 1.4+ | 0.2+ | 2006 10 19 | 644 | 0.5+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.7+ |
| 2001 08 24 | 699 | 1.4− | 1.2+ | 2006 10 19 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.4+ |
| 2001 08 24 | 699 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2001 08 24 | 699 | (1.5− | 1.8−) | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 1.1+ |
| 2001 08 24 | 699 | (1.6− | 1.2−) | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2004 04 23 | 691 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2004 04 23 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.8+ |
| 2004 04 23 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 1.0+ |
| 2006 09 30 | 703 | 0.6− | 0.4+ | 2006 10 22 | 704 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.5− | 1.4+ |
| 2006 09 30 | 703 | 0.5− | 1.4+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2006 09 30 | 703 | 0.6+ | 0.3− | 2006 10 22 | 704 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.4+ |

**2001 OY$_{112}$ = 2004 CW$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.08753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21456455 | $\omega$ | 48.92806 | | +0.84046689 | +0.53376461 | |
| $a$ | 2.7633171 | $\Omega$ | 278.61502 | | −0.52115083 | +0.74909405 | |
| $e$ | 0.0414769 | $i$ | 5.41658 | | −0.14838199 | +0.39236901 | |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.2− | 0.2− | 2004 02 15 | 703 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.2− |
| 1999 01 13 | 691 | 0.4− | 0.2− | 2004 02 15 | 703 | 0.7− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1999 01 13 | 691 | 0.3− | 0.1− | 2004 02 19 | 704 | 0.6+ | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.2− |
| 2001 07 26 | 608 | 0.4− | 0.4− | 2004 02 19 | 704 | 0.2+ | 1.3+ | 2006 10 17 | 703 | 0.7+ | 0.2− |
| 2001 07 26 | 608 | 0.1− | 0.1− | 2004 02 19 | 704 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.9+ | 0.3− |
| 2001 07 26 | 608 | 0.4− | 0.3+ | 2004 02 19 | 704 | 1.4+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.8− |
| 2001 08 10 | 644 | 0.5− | 0.1+ | 2004 02 19 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 08 10 | 644 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.6+ | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 2001 08 10 | 644 | 0.5− | 0.3+ | 2006 08 29 | 703 | 0.4− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2001 08 10 | 691 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.7+ | 0.2− | 2006 10 21 | 691 | 0.0 | 0.2− |
| 2001 08 10 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.9+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2001 08 10 | 691 | 0.3+ | 0.4− | 2006 09 17 | 703 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 08 24 | 699 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.6− | 0.4− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 08 24 | 699 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.6− | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2001 08 24 | 699 | 0.0 | 1.0+ | 2006 09 17 | 703 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2001 08 24 | 699 | 0.0 | 0.1+ | 2006 09 22 | 246 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2001 09 08 | 704 | (1.7+ | 0.8+) | 2006 09 22 | 246 | 0.4− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 09 08 | 704 | 0.5+ | 1.0+ | 2006 09 22 | 246 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 09 08 | 704 | 0.0 | 0.8+ | 2006 09 22 | 246 | 0.6− | 0.8+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 11 07 | 695 | 0.7+ | 0.2+ | 2006 09 22 | 246 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2002 11 07 | 695 | 0.9+ | 0.1+ | 2006 09 22 | 246 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2002 12 27 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.6− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 12 27 | 644 | 0.6+ | 0.1+ | 2006 10 01 | 703 | 0.4− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 12 27 | 644 | 0.3+ | 0.4+ | 2006 10 01 | 703 | 0.5− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2004 02 15 | 703 | (2.4− | 0.6+) | 2006 10 01 | 703 | 0.3− | 0.6+ | | | | |
| 2004 02 15 | 703 | 0.1− | 1.4+ | 2006 10 11 | 644 | 0.0 | 0.3− | | | | |

**2001 OA$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.58465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18459952 | $\omega$ | 103.46319 | | +0.83979931 | +0.54060470 | |
| $a$ | 3.0547969 | $\Omega$ | 223.84046 | | −0.52177728 | +0.77836663 | |
| $e$ | 0.1987491 | $i$ | 4.12600 | | −0.14995195 | +0.31920516 | |
| $P$ | 5.34 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 699 | 0.2+ | 0.9− | 2001 08 14 | 608 | 1.4+ | 1.4+ | 2001 10 18 | 644 | 0.1− | 0.6+ |
| 2001 07 17 | 699 | 0.1+ | 0.0 | 2001 09 08 | 704 | 1.3− | 0.8− | 2001 10 18 | 644 | 0.1− | 1.0+ |
| 2001 07 17 | 699 | 0.5+ | 0.2+ | 2001 09 08 | 704 | 0.2− | 0.6− | 2001 10 18 | 644 | 0.1− | 0.7+ |
| 2001 07 17 | 699 | 0.3− | 0.6+ | 2001 09 08 | 704 | 0.3− | 1.5− | 2005 04 30 | 691 | 0.4+ | 0.2− |
| 2001 07 29 | 704 | 0.7− | 0.2− | 2001 09 08 | 704 | 1.6− | 1.0− | 2005 04 30 | 691 | 0.1− | 0.1− |
| 2001 07 29 | 704 | 0.1+ | 0.5− | 2001 09 20 | 704 | 0.5+ | 1.1+ | 2005 04 30 | 691 | 0.0 | 0.2+ |
| 2001 07 29 | 704 | 0.6− | 0.0 | 2001 09 20 | 704 | 0.5+ | 0.1− | 2005 05 12 | G96 | 0.4− | 0.1+ |
| 2001 07 29 | 704 | 0.8− | 1.0− | 2001 09 20 | 704 | 0.0 | 0.1+ | 2005 05 12 | G96 | 0.2− | 0.0 |
| 2001 08 14 | 608 | 1.6+ | 0.7+ | 2001 09 20 | 704 | 0.5+ | 0.3− | 2005 05 12 | G96 | 0.0 | 0.1+ |
| 2001 08 14 | 608 | 1.2+ | 1.6+ | 2001 09 20 | 704 | 0.7− | 0.3− | 2005 05 12 | G96 | 0.3− | 0.6+ |

**2001 OB$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.92758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23268123 | $\omega$ | 327.39567 | | +0.71593321 | −0.68250673 | |
| $a$ | 2.6179528 | $\Omega$ | 76.38761 | | +0.66860452 | +0.60959324 | |
| $e$ | 0.1998837 | $i$ | 8.70237 | | +0.20101649 | +0.40321290 | |
| $P$ | 4.24 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 644 | 0.7+ | 0.0 | 2002 12 31 | 704 | 0.8− | 0.8+ | 2003 02 08 | 699 | 0.1+ | 0.0 |
| 2001 07 22 | 644 | 0.2+ | 0.1− | 2002 12 31 | 704 | 0.3+ | 0.1+ | 2003 02 08 | 699 | 0.3− | 0.4− |
| 2001 07 22 | 644 | 0.6+ | 0.4− | 2002 12 31 | 704 | 0.4+ | 1.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 08 14 | 644 | 0.4− | 0.1+ | 2003 01 10 | 704 | 0.1+ | 1.3− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2001 08 14 | 644 | 0.1− | 0.2+ | 2003 01 10 | 704 | 0.3− | 0.7− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2001 08 14 | 644 | 0.2− | 0.4+ | 2003 01 10 | 704 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2001 08 27 | 644 | 0.4− | 0.2− | 2003 01 10 | 704 | 0.4− | 1.4− | 2006 11 22 | 704 | 0.9− | 0.0 |
| 2001 08 27 | 644 | 0.1− | 0.3− | 2003 01 29 | 644 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2001 08 27 | 644 | 0.3− | 0.3− | 2003 01 29 | 644 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2001 09 11 | 704 | 0.4+ | 0.5− | 2003 01 29 | 644 | 0.1+ | 0.6+ | 2006 11 22 | 704 | (0.1+ | 1.6+) |
| 2001 09 11 | 704 | 0.1+ | 0.1− | 2003 02 08 | 699 | 0.8+ | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.9+ |
| 2001 09 11 | 704 | 0.4− | 0.8+ | 2003 02 08 | 699 | 0.6− | 0.5+ | | | | |

**2001 OC$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.83455 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22019494 | $\omega$ | 244.55357 | | +0.93101432 | | −0.16536092 |
| $a$ | 2.7160087 | $\Omega$ | 123.32209 | | +0.22966000 | | +0.95828730 |
| $e$ | 0.0733160 | $i$ | 22.91664 | | −0.28366992 | | +0.23311204 |
| $P$ | 4.48 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 704 | 0.2+ | 0.3+ | 2001 08 27 | 644 | 0.2− | 0.2− | 2004 03 14 | 704 | 0.4+ | 0.0 |
| 2000 05 02 | 704 | 0.2− | 0.1− | 2001 08 27 | 644 | 0.1− | 0.0 | 2004 03 14 | 704 | 0.1− | 0.1− |
| 2000 05 02 | 704 | 0.7+ | 0.6+ | 2001 08 27 | 644 | 0.2− | 0.2+ | 2004 03 14 | 704 | 0.0 | 0.2+ |
| 2000 05 02 | 704 | 0.2+ | 1.4+ | 2001 09 11 | 704 | 0.3− | 0.4− | 2004 03 29 | 704 | 0.5+ | 0.7+ |
| 2001 07 28 | 699 | 0.2+ | 0.5+ | 2001 09 11 | 704 | 0.4− | 0.6− | 2004 03 29 | 704 | 0.5− | 1.1+ |
| 2001 07 28 | 699 | 0.7+ | 0.5+ | 2001 09 11 | 704 | 0.1− | 0.7− | 2004 03 29 | 704 | 0.2+ | 0.3+ |
| 2001 07 28 | 699 | 0.0 | 0.1+ | 2003 01 02 | 704 | 0.1− | 0.1+ | 2004 03 29 | 704 | 0.0 | 0.2+ |
| 2001 07 28 | 699 | 0.4+ | 0.0 | 2003 01 02 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.5− | 0.4+ |
| 2001 08 10 | 644 | 0.3− | 0.4+ | 2003 01 02 | 704 | 0.6− | 0.2− | 2006 09 27 | 703 | 0.1− | 0.7+ |
| 2001 08 10 | 644 | 0.0 | 0.7+ | 2003 01 02 | 704 | 0.3+ | 1.0+ | 2006 09 27 | 703 | 0.2− | 0.6+ |
| 2001 08 10 | 644 | 0.3− | 0.3+ | 2004 03 14 | 704 | 0.3− | 0.6− | 2006 09 27 | 703 | 0.3− | 0.9+ |

**2001 OD$_{113}$ = 2006 QE$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.79314 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22307748 | $\omega$ | 202.07214 | | +0.24063867 | | −0.94621655 |
| $a$ | 2.6925611 | $\Omega$ | 234.65026 | | +0.92544914 | | +0.29084860 |
| $e$ | 0.3161339 | $i$ | 15.37526 | | +0.29263785 | | −0.14170858 |
| $P$ | 4.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 691 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.9− | 2006 11 14 | 704 | 0.2+ | 0.2− |
| 1997 12 04 | 691 | 0.1− | 0.8− | 2006 08 30 | 704 | 0.3− | 0.5− | 2006 11 14 | 704 | 0.0 | 0.4+ |
| 1997 12 04 | 691 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.1− | 1.5− | 2006 11 14 | 704 | 0.2+ | 0.5+ |
| 2001 07 30 | 644 | 0.6+ | 1.1+ | 2006 09 18 | 704 | 0.4+ | 1.3+ | 2006 11 17 | 951 | 0.2− | 0.2+ |
| 2001 07 30 | 644 | 0.1− | 0.7+ | 2006 09 18 | 704 | 0.7− | 0.6− | 2006 11 17 | 951 | 0.0 | 0.1− |
| 2001 07 30 | 644 | 0.0 | 1.3+ | 2006 09 18 | 704 | 0.5+ | 0.6+ | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 2001 07 30 | 644 | 0.2− | 0.9+ | 2006 09 18 | 704 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.2+ |
| 2001 07 30 | 644 | 0.2+ | 1.4+ | 2006 09 18 | 704 | 0.0 | 0.8+ | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2001 07 30 | 644 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2001 09 09 | 699 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.7+ | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2001 09 09 | 699 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.7− |
| 2001 09 09 | 699 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.8− | 0.6+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2001 09 09 | 699 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.8− | 2006 11 17 | G96 | 0.4− | 0.6− |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.7− | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.3− | 1.2− | 2006 11 17 | G96 | 0.3− | 0.7− |
| 2003 01 12 | 644 | 0.3− | 0.9+ | 2006 09 25 | 704 | 1.2− | 1.5− | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2003 01 12 | 644 | 0.0 | 0.9+ | 2006 09 25 | 704 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2003 01 12 | 644 | 0.5+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2003 01 30 | 704 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2003 01 30 | 704 | 1.0− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2003 01 30 | 704 | 0.3− | 0.1+ | 2006 10 21 | 704 | 1.2− | 0.3− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2003 02 09 | 644 | 0.1− | 0.2+ | 2006 10 21 | 704 | 1.1− | 0.1+ | 2006 11 20 | 704 | 0.8− | 0.2− |
| 2003 02 09 | 644 | 0.6− | 0.1+ | 2006 10 21 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2003 02 09 | 644 | 0.3− | 0.0 | 2006 10 21 | 704 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.3− |
| 2003 03 11 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 704 | 0.0 | 0.7− | 2006 11 20 | 704 | 0.6− | 0.3− |
| 2003 03 11 | 704 | 0.2− | 0.3+ | 2006 10 23 | 704 | 0.6− | 1.2+ | 2006 11 20 | 704 | 0.3− | 0.1− |
| 2003 03 11 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 704 | 1.1+ | 0.6+ | 2006 11 25 | 704 | 1.0+ | 0.4+ |
| 2003 03 11 | 704 | 0.7+ | 0.2+ | 2006 10 23 | 704 | 0.0 | 0.0 | 2006 11 25 | 704 | 2.0+ | 0.8+ |
| 2003 03 29 | 699 | 0.7+ | 1.5− | 2006 10 23 | 704 | 0.4− | 0.2+ | 2006 11 25 | 704 | 2.2+ | 1.3+ |
| 2003 03 29 | 699 | 1.2+ | 0.8+ | 2006 10 28 | 704 | 0.5− | 0.0 | 2006 11 25 | 704 | 2.9+ | 1.6+ |
| 2003 03 29 | 699 | (0.2− | 1.9+) | 2006 10 28 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2003 03 29 | 699 | 0.4− | 0.1+ | 2006 10 28 | 704 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2006 08 24 | 704 | 0.1− | 0.4− | 2006 10 28 | 704 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2006 08 24 | 704 | 0.5+ | 0.3− | 2006 11 03 | 704 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2006 08 24 | 704 | 0.8− | 0.2+ | 2006 11 03 | 704 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2006 08 24 | 704 | 0.3+ | 0.9− | 2006 11 03 | 704 | 0.0 | 0.6− | | | | |
| 2006 08 24 | 704 | 0.2+ | 0.6− | 2006 11 14 | 704 | 0.8− | 0.6+ | | | | |

**2001 OE$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.42517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22745837 | $\omega$ | 304.04198 | | +0.82248060 | | +0.56250327 |
| $a$ | 2.6578763 | $\Omega$ | 22.09971 | | −0.41932850 | | +0.69984976 |
| $e$ | 0.2880766 | $i$ | 12.95684 | | −0.38430362 | | +0.44022764 |
| $P$ | 4.33 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 10 | 691 | 0.0 | 0.1+ | 2001 11 06 | 704 | 0.5− | 0.1− | 2005 05 18 | E12 | 0.2− | 0.6+ |
| 1997 10 10 | 691 | 0.0 | 0.1− | 2003 01 10 | 644 | 0.0 | 0.7+ | 2005 05 18 | E12 | 0.2+ | 0.4+ |
| 1997 10 10 | 691 | 0.1− | 0.4− | 2003 01 10 | 644 | 0.1− | 0.4+ | 2005 05 18 | E12 | 0.1− | 0.2+ |
| 1997 10 30 | 704 | 1.3− | 1.0+ | 2003 01 10 | 644 | 0.1+ | 1.0+ | 2005 05 30 | E12 | 0.3− | 0.4+ |
| 1997 10 30 | 704 | 1.2+ | 0.4+ | 2003 12 25 | 645 | 0.1+ | 0.0 | 2005 05 30 | E12 | 0.3− | 0.5+ |
| 1997 10 30 | 704 | 1.4− | 1.4+ | 2003 12 25 | 645 | 0.0 | 0.0 | 2005 05 30 | E12 | 0.2− | 1.0+ |
| 1997 10 30 | 704 | 0.1− | 0.9+ | 2005 04 11 | E12 | 1.0+ | 1.9+ | 2005 05 30 | E12 | 0.2− | 0.3+ |
| 2001 07 22 | 413 | 0.1− | 0.6+ | 2005 04 11 | E12 | 0.3+ | 1.2− | 2005 06 09 | E12 | 0.4+ | 0.1+ |
| 2001 07 22 | 413 | (2.2+ | 0.9+) | 2005 04 11 | E12 | 0.5+ | 0.1− | 2005 06 09 | E12 | 0.3− | 1.1− |
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2005 04 11 | E12 | 0.3+ | 0.3+ | 2005 06 09 | E12 | 0.4− | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2005 04 30 | E12 | 0.3− | 0.3− | 2005 06 09 | E12 | 0.3− | 0.1+ |
| 2001 10 20 | 704 | 0.3+ | 0.3− | 2005 04 30 | E12 | 0.3− | 0.3+ | 2005 07 27 | E12 | 0.1+ | 0.2+ |
| 2001 11 06 | 704 | 0.3+ | 0.7+ | 2005 04 30 | E12 | 0.0 | 0.0 | 2005 07 27 | E12 | 0.3+ | 0.0 |
| 2001 11 06 | 704 | 0.2+ | 0.6+ | 2005 04 30 | E12 | 1.5+ | 0.1− | 2005 07 27 | E12 | 0.4+ | 0.1+ |
| 2001 11 06 | 704 | 0.6+ | 0.6− | 2005 05 18 | E12 | 0.4− | 0.2+ | 2005 07 27 | E12 | 0.3− | 0.4+ |

**2001 OH$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.17079 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22405136 | $\omega$ | 246.26544 | | +0.30019192 | | +0.94100500 |
| $a$ | 2.6847530 | $\Omega$ | 42.21851 | | −0.76847856 | | +0.33558206 |
| $e$ | 0.2633701 | $i$ | 13.44048 | | −0.56508894 | | +0.04352319 |
| $P$ | 4.40 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 644 | 0.2− | 0.0 | 2001 08 26 | 644 | 0.6− | 0.7+ | 2001 10 15 | 644 | 0.1− | 0.0 |
| 2001 07 27 | 644 | 0.1+ | 0.8+ | 2001 09 11 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.7− | 0.1− |
| 2001 07 27 | 644 | 0.1+ | 0.3+ | 2001 09 11 | 704 | 0.7+ | 0.1− | 2006 11 19 | 691 | 0.4− | 0.1+ |
| 2001 08 14 | 608 | 0.5+ | 1.4− | 2001 09 11 | 704 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 08 14 | 608 | 0.1+ | 1.3− | 2001 09 11 | 704 | 0.0 | 0.1+ | 2006 11 22 | 691 | 1.5+ | 0.1− |
| 2001 08 14 | 608 | 0.0 | 0.5− | 2001 09 11 | 704 | 0.3+ | 0.4− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 08 26 | 644 | 0.2− | 0.6+ | 2001 10 15 | 644 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2001 08 26 | 644 | 0.7− | 0.7+ | 2001 10 15 | 644 | 0.1− | 0.2− | | | | |

**2001 PN$_1$ = 2006 VM$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.19876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21946255 | $\omega$ | 261.97217 | | +0.97130761 | −0.16680404 | |
| $a$ | 2.7220479 | $\Omega$ | 107.50665 | | +0.21675582 | +0.91421599 | |
| $e$ | 0.2132905 | $i$ | 10.23908 | | −0.09786949 | +0.36930412 | |
| $P$ | 4.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 03 | 608 | 0.3− | 0.3− | 2001 08 19 | 704 | 0.4− | 0.5+ | 2006 11 18 | 461 | 0.0 | 0.1+ | |
| 2001 08 03 | 608 | 0.5− | 0.0 | 2001 08 19 | 704 | 0.6+ | 0.0 | 2006 11 18 | 461 | 0.2+ | 0.6+ | |
| 2001 08 03 | 608 | 0.2− | 0.4− | 2006 11 13 | 703 | 0.4− | 0.0 | 2006 11 20 | 703 | 0.5+ | 0.3+ | |
| 2001 08 09 | 644 | 0.6− | 0.2− | 2006 11 13 | 703 | 0.0 | 0.0 | 2006 11 20 | 703 | 0.2− | 0.1− | |
| 2001 08 09 | 644 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.1+ | 0.4− | 2006 11 20 | 703 | 0.3+ | 0.2− | |
| 2001 08 09 | 644 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.5+ | 0.1+ | 2006 11 20 | 703 | 0.8− | 0.5− | |
| 2001 08 19 | 704 | 0.8+ | 0.9+ | 2006 11 18 | 461 | 0.0 | 0.1− | | | | | |

**2001 PD$_8$ = 2006 TZ$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.00190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21914873 | $\omega$ | 196.08966 | | +0.53031574 | −0.83566054 | |
| $a$ | 2.7246460 | $\Omega$ | 222.17148 | | +0.79942924 | +0.54904035 | |
| $e$ | 0.0962479 | $i$ | 12.29464 | | +0.28227310 | +0.01503871 | |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.4+ | 0.1+ | 2006 10 27 | 224 | (1.6+ | 0.5+) | 2006 11 18 | 704 | 0.4− | 0.4+ | |
| 2001 08 01 | 644 | 1.0+ | 0.4+ | 2006 10 27 | 224 | 0.6+ | 0.6+ | 2006 11 21 | 704 | 0.7− | 0.7+ | |
| 2001 08 01 | 644 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.2− | |
| 2001 08 11 | 644 | 0.4− | 0.7− | 2006 11 09 | 644 | 0.4+ | 0.3− | 2006 11 21 | 704 | 1.0+ | 1.1+ | |
| 2001 08 11 | 644 | 0.3− | 0.7− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.6+ | |
| 2001 08 11 | 644 | 0.7− | 0.6− | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.0+ | |
| 2001 08 12 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.5+ | 0.7− | |
| 2001 08 12 | 644 | 0.4− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.5− | |
| 2001 08 12 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.3− | |
| 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 11 11 | 703 | (2.6− | 1.1+) | 2006 11 22 | G96 | 0.3+ | 0.5− | |
| 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.6+ | 2006 11 23 | 691 | 0.2+ | 0.2− | |
| 2006 10 11 | 644 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.6− | 2006 11 23 | 691 | 0.0 | 0.0 | |
| 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1− | |
| 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.4− | 2006 11 25 | 703 | (0.2− | 3.8+) | |
| 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− | 2006 11 25 | 703 | (0.5+ | 2.1+) | |
| 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.6− | 2006 11 25 | 703 | 0.6+ | 0.2− | |
| 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.8+ | 2006 11 25 | 703 | 0.8− | 0.8+ | |
| 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 1.0+ | 0.5− | 2006 11 27 | 691 | 0.1− | 0.1− | |
| 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1+ | |
| 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.1− | |
| 2006 10 21 | 644 | 0.0 | 0.5+ | 2006 11 18 | 704 | (2.0− | 0.4+) | | | | | |
| 2006 10 27 | 224 | 0.7+ | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.3+ | | | | | |

**2001 PA$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.88593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21404201 | $\omega$ | 175.99362 | | +0.98159610 | −0.18754256 | |
| $a$ | 2.7678127 | $\Omega$ | 194.96268 | | +0.17110581 | +0.94746157 | |
| $e$ | 0.2316454 | $i$ | 8.01772 | | +0.08480501 | +0.25912229 | |
| $P$ | 4.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | (0.8+ | 1.8+) | 2001 09 12 | 704 | 0.6− | 0.2+ | 2006 10 22 | 704 | 1.0+ | 0.2+ | |
| 2001 07 20 | 699 | 0.1− | 1.2+ | 2001 09 12 | 704 | 0.3− | 0.5− | 2006 10 22 | 683 | 0.9+ | 0.9− | |
| 2001 07 20 | 699 | 0.9− | 1.0+ | 2001 09 18 | 699 | 0.4+ | 0.8− | 2006 10 22 | 683 | 1.0+ | 0.4+ | |
| 2001 07 20 | 699 | 0.8+ | 0.5+ | 2001 09 18 | 699 | 0.7− | 0.4+ | 2006 10 22 | 683 | 0.6− | 0.4+ | |
| 2001 08 13 | 049 | 0.4− | 0.2+ | 2001 09 18 | 699 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.3− | 0.1+ | |
| 2001 08 13 | 049 | 0.3− | 0.2− | 2001 09 18 | 699 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.3− | 0.0 | |
| 2001 08 13 | 049 | 0.3− | 0.0 | 2001 09 20 | 704 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.3− | 0.1+ | |
| 2001 08 15 | 049 | 0.2− | 0.5+ | 2001 09 20 | 704 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.1− | |
| 2001 08 15 | 049 | 0.5+ | 0.0 | 2001 09 20 | 704 | 0.2− | 0.6− | 2006 11 09 | 644 | 0.3− | 0.1+ | |
| 2001 08 16 | 049 | 0.2+ | 0.3+ | 2001 09 20 | 704 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1− | |
| 2001 08 20 | 704 | 0.1− | 0.5+ | 2001 09 20 | 704 | 0.4− | 1.0− | 2006 11 11 | 703 | 0.3− | 0.2− | |
| 2001 08 20 | 704 | 0.4− | 0.0 | 2001 10 14 | 704 | 0.5+ | 1.0− | 2006 11 11 | 703 | 0.0 | 0.2− | |
| 2001 08 20 | 704 | 0.4− | 0.4+ | 2001 10 14 | 704 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.5− | |
| 2001 08 20 | 704 | 0.1− | 0.3− | 2001 10 14 | 704 | 0.4− | 0.9− | 2006 11 11 | 644 | 0.1+ | 0.1− | |
| 2001 08 20 | 704 | 0.4− | 0.6+ | 2001 10 14 | 704 | 1.1+ | 1.1− | 2006 11 11 | 703 | 0.1+ | 0.4− | |
| 2001 08 23 | 699 | 0.3+ | 0.0 | 2001 10 18 | 644 | (0.7− | 1.9−) | 2006 11 11 | 644 | 0.2+ | 0.1− | |
| 2001 08 23 | 699 | 0.5− | 0.1+ | 2001 10 18 | 644 | (0.7− | 1.8−) | 2006 11 11 | 644 | 0.4− | 0.1− | |
| 2001 08 23 | 699 | 0.1+ | 0.1+ | 2001 10 18 | 644 | (0.7− | 2.0−) | 2006 11 14 | 704 | 0.1− | 0.3+ | |
| 2001 08 23 | 699 | 0.0 | 0.1− | 2001 10 18 | 644 | (2.3− | 0.9−) | 2006 11 14 | 704 | 0.0 | 0.3+ | |
| 2001 08 25 | 704 | 1.3+ | 0.1− | 2001 10 21 | 704 | 0.9− | 0.0 | 2006 11 14 | 704 | 0.5− | 0.1− | |
| 2001 08 25 | 704 | 1.3+ | 0.4+ | 2001 10 21 | 704 | 1.1− | 0.3− | 2006 11 14 | 704 | 0.3+ | 0.3+ | |
| 2001 08 25 | 704 | 1.4+ | 0.1+ | 2001 10 21 | 704 | 1.0− | 0.3+ | 2006 11 14 | 704 | 0.5− | 0.5+ | |
| 2001 08 25 | 704 | 1.1+ | 0.0 | 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 11 17 | 704 | (0.3+ | 1.7+) | |
| 2001 08 25 | 704 | 0.9+ | 0.4− | 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.7+ | 0.9− | |
| 2001 08 27 | 699 | 0.6+ | 0.0 | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.5+ | |
| 2001 08 27 | 699 | 0.4+ | 0.4− | 2006 07 22 | G96 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.4+ | 0.2+ | |
| 2001 08 27 | 699 | 0.7+ | 0.5+ | 2006 07 22 | G96 | 0.6+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.9− | |
| 2001 08 27 | 699 | 1.0+ | 0.2+ | 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.3− | |
| 2001 08 30 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.3− | |
| 2001 08 30 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.2− | |
| 2001 08 30 | 644 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.3− | 0.3− | |
| 2001 09 06 | 644 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.6+ | |
| 2001 09 06 | 644 | 0.7− | 0.4− | 2006 10 16 | 703 | (0.7+ | 1.9+) | 2006 11 19 | 704 | 0.6− | 0.3+ | |
| 2001 09 06 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 19 | 704 | 0.9− | 0.7+ | |
| 2001 09 07 | 699 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.4+ | |
| 2001 09 07 | 699 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.4+ | |
| 2001 09 07 | 699 | 0.2− | 1.3+ | 2006 10 20 | 683 | 0.2− | 0.9− | 2006 11 20 | 704 | 0.5− | 0.3+ | |
| 2001 09 07 | 699 | 0.7− | 0.3+ | 2006 10 20 | 683 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.6+ | |
| 2001 09 08 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 683 | 0.3+ | 0.9+ | 2006 11 20 | 704 | 0.0 | 0.0 | |
| 2001 09 08 | 704 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 1.5+ | 0.7− | 2006 11 20 | 704 | 0.0 | 0.4+ | |
| 2001 09 08 | 704 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.2+ | |
| 2001 09 08 | 704 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.3− | |
| 2001 09 08 | 704 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.3− | |
| 2001 09 12 | 704 | 0.4− | 0.1+ | 2006 10 22 | 704 | 0.7+ | 0.2− | 2006 11 23 | G96 | 0.0 | 0.3− | |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2006 10 22 | 704 | 0.5− | 1.0+ | 2006 11 23 | G96 | 0.3+ | 0.4− | |
| 2001 09 12 | 704 | 0.7− | 0.3− | 2006 10 22 | 704 | 0.1+ | 0.9+ | | | | | |

**2001 PL$_{16}$ = 2006 SJ$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.89228 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21866099 | $\omega$ | 327.76154 | | +0.98292286 | −0.16981645 | |
| $a$ | 2.7286962 | $\Omega$ | 42.20012 | | +0.18313175 | +0.86493339 | |
| $e$ | 0.1525986 | $i$ | 6.05776 | | +0.01803934 | +0.47228445 | |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.0 | |
| 2001 07 19 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.2− | 0.1+ | |
| 2001 07 19 | 644 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.0 | |
| 2001 08 09 | 644 | 0.5+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 07 | 644 | 0.4− | 0.1− | |
| 2001 08 09 | 644 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.5+ | |
| 2001 08 09 | 644 | 0.7+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.1+ | |
| 2001 08 14 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.6− | |
| 2001 08 14 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | (1.5− | 1.0+) | |
| 2001 08 14 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 13 | 704 | 0.0 | 0.4− | |
| 2001 08 27 | 644 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.8− | 2006 11 13 | 704 | 0.3+ | 0.4− | |
| 2001 08 27 | 644 | 0.4− | 0.6− | 2006 10 21 | 703 | 0.5+ | 0.0 | 2006 11 13 | 704 | 0.1− | 0.3+ | |
| 2001 08 27 | 644 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.1− | 2006 11 13 | 704 | 0.3− | 0.3− | |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.4− | 2006 11 13 | 704 | 0.3− | 0.4− | |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2− | |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− | |
| 2006 09 23 | 691 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.4− | 2006 11 16 | G96 | 0.3− | 0.3− | |
| 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.4− | |
| 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 26 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.6+ | | |
| 2006 09 26 | 704 | 1.0+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.0 | | |
| 2006 09 26 | 704 | 0.3− | 0.5− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.9+ | | |
| 2006 09 26 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.5+ | | |
| 2006 09 26 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.5+ | | |
| 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 23 | 704 | 0.8+ | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.1− | | |
| 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.1− | 0.6− | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.2− | | |
| 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 704 | 0.7+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2− | | |
| 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.9+ | | |
| 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.5+ | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.4− | | |
| 2006 10 17 | G96 | 0.0 | 0.6− | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 1.0+ | | |
| 2006 10 17 | G96 | 0.2− | 0.5− | 2006 10 28 | 691 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.3+ | | |
| 2006 10 17 | G96 | 0.4− | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.6− | | |
| 2006 10 17 | G96 | 0.5− | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.0 | | | | | | |

**2001 PJ$_{18}$ = 2005 PW$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.96852 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24165174 | $\omega$ | 308.74405 | | +0.61487149 | | +0.78861932 |
| $a$ | 2.5527567 | $\Omega$ | 359.17336 | | −0.62537287 | | +0.48483704 |
| $e$ | 0.2000454 | $i$ | 14.25510 | | −0.48046001 | | +0.37817009 |
| $P$ | 4.08 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 09 | 644 | 0.0 | 0.3+ | 2004 03 14 | 691 | 0.0 | 0.3− | 2005 08 07 | E12 | (0.0 | 3.1−) |
| 2001 08 09 | 644 | 0.4− | 0.1+ | 2004 03 14 | 691 | 0.1+ | 0.1− | 2005 08 07 | E12 | 0.2+ | 0.0 |
| 2001 08 09 | 644 | 0.1+ | 0.0 | 2004 03 14 | 691 | 0.1+ | 0.1− | 2005 08 08 | E12 | 0.3− | 0.0 |
| 2001 08 14 | 644 | 0.0 | 0.1+ | 2004 03 19 | 291 | 0.1− | 0.1+ | 2005 08 08 | E12 | 0.1+ | 0.0 |
| 2001 08 14 | 644 | 0.2− | 0.0 | 2004 03 19 | 291 | 0.2+ | 0.3+ | 2005 08 08 | E12 | 0.2+ | 0.2− |
| 2001 08 14 | 644 | 0.1− | 0.3+ | 2004 03 19 | 291 | 0.0 | 0.3+ | 2005 08 08 | E12 | 0.2− | 0.4+ |
| 2004 02 27 | 695 | 0.5− | 0.3− | 2005 08 07 | E12 | 0.2+ | 1.1− | | | | |
| 2004 02 27 | 695 | 0.5− | 0.2− | 2005 08 07 | E12 | 0.1+ | 0.0 | | | | |

**2001 PA$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.14663 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21396876 | $\omega$ | 28.15235 | | +0.99119725 | | −0.09700981 |
| $a$ | 2.7684443 | $\Omega$ | 336.88310 | | +0.02683684 | | +0.81360477 |
| $e$ | 0.3104583 | $i$ | 13.26634 | | +0.12964488 | | +0.57326816 |
| $P$ | 4.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.6− | 0.1+ | 2001 08 14 | 644 | 0.3− | 0.0 | 2001 08 26 | 608 | 0.1+ | 0.4− |
| 2001 07 19 | 644 | 0.0 | 0.0 | 2001 08 14 | 644 | 0.1+ | 0.0 | 2001 08 26 | 608 | 0.4+ | 0.5− |
| 2001 07 19 | 644 | 0.3− | 0.2− | 2001 08 14 | 644 | 0.0 | 0.1+ | 2001 08 26 | 608 | 0.4+ | 0.5− |
| 2001 07 28 | 699 | 0.1− | 0.5+ | 2001 08 19 | 704 | 1.3− | 0.4+ | 2001 09 21 | 704 | 0.9+ | 0.4− |
| 2001 07 28 | 699 | 0.1+ | 1.1+ | 2001 08 19 | 704 | 0.6+ | 0.9− | 2001 09 21 | 704 | 0.4+ | 1.0+ |
| 2001 07 28 | 699 | 0.2− | 0.6− | 2001 08 19 | 704 | 0.8+ | 0.0 | 2001 09 21 | 704 | 0.2− | 0.6+ |
| 2001 07 28 | 699 | 0.7+ | 0.4+ | 2001 08 23 | 699 | 1.0− | 0.8− | 2006 10 03 | 703 | 0.8− | 0.9+ |
| 2001 08 09 | 644 | 0.3− | 0.9+ | 2001 08 23 | 699 | 0.3− | 0.4+ | 2006 10 03 | 703 | 0.0 | 0.5− |
| 2001 08 09 | 644 | 0.0 | 0.8+ | 2001 08 23 | 699 | 0.2− | 0.3− | 2006 10 03 | 703 | 0.0 | 0.2+ |
| 2001 08 09 | 644 | 0.1+ | 1.0+ | 2001 08 23 | 699 | 0.3− | 0.2− | 2006 10 03 | 703 | 0.0 | 0.6+ |
| 2001 08 10 | 644 | 0.7− | 0.2− | 2001 08 25 | 644 | 0.6+ | 0.0 | 2006 11 20 | 703 | 0.7+ | 0.1+ |
| 2001 08 10 | 644 | 0.6− | 0.1− | 2001 08 25 | 644 | 0.9+ | 0.4− | 2006 11 20 | 703 | 0.0 | 0.8− |
| 2001 08 10 | 644 | 0.9− | 0.4− | 2001 08 25 | 644 | 1.1+ | 0.4− | 2006 11 20 | 703 | 0.1+ | 0.1+ |
| 2001 08 10 | 644 | 0.7− | 0.0 | 2001 08 26 | 608 | 0.9+ | 0.0 | 2006 11 20 | 703 | 0.0 | 0.1+ |
| 2001 08 10 | 644 | 0.7− | 0.1− | 2001 08 26 | 608 | 0.3+ | 0.4− | | | | |
| 2001 08 10 | 644 | 0.6− | 0.2+ | 2001 08 26 | 608 | 0.9+ | 0.9− | | | | |

**2001 PE$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.22491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22113843 | $\omega$ | 242.02104 | | +0.97565800 | | −0.04517277 |
| $a$ | 2.7082780 | $\Omega$ | 119.84269 | | +0.10421298 | | +0.95650720 |
| $e$ | 0.1127949 | $i$ | 14.32379 | | −0.19295367 | | +0.28818985 |
| $P$ | 4.46 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 23 | 608 | 0.4+ | 0.3+ | 2001 08 22 | 608 | 0.2+ | 0.4− | 2006 10 20 | 703 | 0.4+ | 0.1− |
| 2001 07 23 | 608 | 0.5+ | 0.4− | 2001 08 22 | 608 | 0.6+ | 0.3− | 2006 10 20 | 703 | 0.3− | 0.4− |
| 2001 07 23 | 608 | 0.1+ | 0.1− | 2001 08 22 | 608 | 0.2+ | 0.5− | 2006 10 20 | 703 | 0.6+ | 0.0 |
| 2001 08 10 | 644 | (0.2− | 1.7−) | 2001 09 11 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 703 | 0.8− | 0.2− |
| 2001 08 10 | 644 | 0.3− | 1.5− | 2001 09 11 | 704 | 1.3+ | 0.1− | 2006 10 31 | 703 | 1.4+ | 0.6+ |
| 2001 08 10 | 644 | (0.0 | 1.7−) | 2001 09 11 | 704 | 0.1− | 1.3− | 2006 10 31 | 703 | 0.2+ | 0.3+ |
| 2001 08 14 | 608 | 0.1− | 0.3− | 2001 09 11 | 704 | 1.4− | 0.9− | 2006 10 31 | 703 | 0.2− | 0.6+ |
| 2001 08 14 | 608 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.5− | 2006 10 31 | 703 | 0.2− | 0.9+ |
| 2001 08 14 | 608 | 0.1+ | 0.6− | 2006 09 19 | 703 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.5− | 0.2− |
| 2001 08 16 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.3− | 2006 11 19 | 703 | 0.5+ | 0.3− |
| 2001 08 16 | 704 | 0.6− | 1.2+ | 2006 09 26 | 703 | 0.6− | 0.6− | 2006 11 19 | 703 | 0.4+ | 0.5+ |
| 2001 08 16 | 704 | 0.5− | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.5− | 2006 11 19 | 703 | 0.7− | 1.2− |
| 2001 08 19 | 704 | 0.2− | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.2+ | 2006 11 23 | 703 | 0.6+ | 0.1− |
| 2001 08 19 | 704 | 0.8− | 0.8+ | 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.3+ | 0.0 |
| 2001 08 19 | 704 | 0.4− | 0.7+ | 2006 10 10 | 644 | 0.3− | 0.2+ | 2006 11 23 | 703 | 0.4+ | 0.4− |
| 2001 08 19 | 704 | 0.1+ | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 23 | 703 | 1.6− | 1.4+ |
| 2001 08 19 | 704 | 0.2− | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.1− | | | | |

**2001 PC$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.76698 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21722994 | $\omega$ | 30.45266 | | +0.73643213 | | +0.67535131 |
| $a$ | 2.7406670 | $\Omega$ | 287.01094 | | −0.62873751 | | +0.66164526 |
| $e$ | 0.1899978 | $i$ | 2.37353 | | −0.24971356 | | +0.32577012 |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 1.4− | 0.6− | 2001 09 20 | 704 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2001 08 11 | 608 | 1.3− | 0.1− | 2001 09 20 | 704 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 08 11 | 608 | 0.8− | 0.4− | 2001 09 20 | 704 | 0.6− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 08 14 | 608 | 0.5− | 0.4− | 2001 09 20 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 08 14 | 608 | 0.2− | 0.3− | 2001 09 20 | 704 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2001 08 14 | 608 | 0.1− | 0.5− | 2001 09 22 | 704 | (2.2+ | 0.5−) | 2006 11 10 | 644 | 0.2− | 0.2− |
| 2001 08 16 | 704 | 0.6+ | 0.1− | 2001 09 22 | 704 | 1.3+ | 0.8+ | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2001 08 16 | 704 | 0.9+ | 0.3− | 2001 09 22 | 704 | (0.4− | 2.1+) | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2001 08 16 | 704 | 1.3+ | 0.6− | 2001 09 22 | 704 | (1.6+ | 0.4−) | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 2001 08 16 | 704 | 1.1+ | 0.5− | 2001 10 11 | 644 | 0.0 | 1.4− | 2006 11 11 | 703 | 1.1+ | 0.2+ |
| 2001 08 20 | 704 | 0.9+ | 0.3− | 2001 10 11 | 644 | 0.0 | 1.2− | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2001 08 20 | 704 | 0.1+ | 0.5+ | 2001 10 11 | 644 | 0.2+ | 1.0− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 08 20 | 704 | 0.6− | 0.8+ | 2006 10 17 | 461 | 0.5+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.7+ |
| 2001 08 20 | 704 | 0.3+ | 0.0 | 2006 10 17 | 461 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2001 08 20 | 704 | 0.3+ | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2001 08 23 | 699 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | (0.2+ | 3.7+) |
| 2001 08 23 | 699 | 0.8+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 704 | (0.4+ | 1.6+) |
| 2001 08 23 | 699 | 1.4+ | 0.6+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2− | 1.3+ |
| 2001 08 23 | 699 | 1.0− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2001 09 07 | 704 | 1.0− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 1.1+ | 0.4+ |
| 2001 09 07 | 704 | 0.8− | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.1− | 0.7− |
| 2001 09 07 | 704 | 1.1− | 0.6+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 1.2− | 0.3− |
| 2001 09 07 | 704 | 0.8− | 1.1+ | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.8+ | 0.1− |
| 2001 09 07 | 704 | (1.0− | 1.7+) | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.7− | 0.0 |
| 2001 09 12 | 704 | 0.0 | 0.4− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.0+ | 1.4− |
| 2001 09 12 | 704 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2001 09 12 | 704 | 0.5+ | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.3− | 0.2+ | | | | |
| 2001 09 12 | 704 | 0.8+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | | | | |

**2001 PO$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.21971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23174189 | $\omega$ | 83.50614 | | +0.99593839 | +0.04924313 | |
| $a$ | 2.6250225 | $\Omega$ | 273.65279 | | −0.07549332 | +0.91293752 | |
| $e$ | 0.2923612 | $i$ | 4.33176 | | +0.04906616 | +0.40511751 | |
| $P$ | 4.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 25 | 691 | 0.0 | 0.4− | 2001 08 25 | 704 | 0.4− | 0.2− | 2001 09 20 | 704 | 0.0 | 0.1− |
| 1997 11 25 | 691 | 0.0 | 0.2+ | 2001 08 25 | 704 | 0.3− | 0.6+ | 2001 09 20 | 704 | 0.4− | 0.2+ |
| 1997 11 25 | 691 | 0.0 | 0.1− | 2001 08 25 | 704 | 0.1− | 0.8+ | 2001 09 20 | 704 | 0.1+ | 0.1− |
| 2001 07 19 | 699 | 0.6− | 0.2− | 2001 08 25 | 704 | 0.2− | 0.6+ | 2001 09 20 | 704 | 0.3− | 0.2+ |
| 2001 07 19 | 699 | 0.5− | 0.6+ | 2001 09 08 | 704 | 0.4+ | 0.3− | 2001 09 23 | 704 | 0.4+ | 0.1− |
| 2001 07 19 | 699 | 0.1− | 1.8+ | 2001 09 08 | 704 | 0.5+ | 0.2− | 2001 09 23 | 704 | 0.1+ | 0.9− |
| 2001 07 19 | 699 | 0.3+ | 1.0+ | 2001 09 08 | 704 | 1.0+ | 0.3− | 2001 09 23 | 704 | 0.4− | 0.7− |
| 2001 07 29 | 704 | 0.7+ | 0.6− | 2001 09 08 | 704 | 0.8+ | 0.3− | 2001 09 25 | 644 | 0.1+ | 0.2− |
| 2001 07 29 | 704 | 0.1+ | 0.2+ | 2001 09 08 | 704 | 0.4+ | 0.6− | 2001 09 25 | 644 | 0.4− | 0.0 |
| 2001 07 29 | 704 | 0.2− | 0.4+ | 2001 09 12 | 683 | 0.2− | 1.2− | 2001 09 25 | 644 | 0.4− | 0.1− |
| 2001 07 29 | 704 | 0.3− | 0.5+ | 2001 09 12 | 683 | (0.6− | 2.4−) | 2001 09 28 | 704 | 0.1+ | 0.4+ |
| 2001 08 13 | 012 | 0.1+ | 0.5− | 2001 09 12 | 683 | 0.3− | 1.3− | 2001 09 28 | 704 | 0.2− | 0.3+ |
| 2001 08 13 | 012 | 0.0 | 0.6− | 2001 09 16 | 644 | 0.4+ | 0.0 | 2001 09 28 | 704 | 0.0 | 0.0 |
| 2001 08 14 | 012 | 0.7+ | 0.7− | 2001 09 16 | 644 | 0.3+ | 0.1− | 2001 09 28 | 704 | 0.1− | 0.3− |
| 2001 08 14 | 012 | 0.3+ | 0.4− | 2001 09 16 | 644 | 0.3+ | 0.3− | 2001 10 14 | 704 | 1.2+ | 1.4+ |
| 2001 08 14 | 012 | 0.4+ | 0.5− | 2001 09 16 | 704 | 0.5+ | 0.2− | 2001 10 14 | 704 | 0.4+ | 0.8+ |
| 2001 08 14 | 608 | 0.6− | 0.7+ | 2001 09 16 | 704 | 0.3− | 0.6− | 2001 10 14 | 704 | 0.1+ | 0.2+ |
| 2001 08 14 | 608 | 0.2− | 0.8+ | 2001 09 16 | 704 | 0.3+ | 0.7− | 2001 10 14 | 704 | 0.2+ | 0.5− |
| 2001 08 14 | 608 | 0.6− | 0.7+ | 2001 09 16 | 704 | 0.2+ | 0.5− | 2001 10 21 | 704 | 0.1− | 0.1+ |
| 2001 08 14 | 012 | 0.3+ | 0.8− | 2001 09 16 | 704 | 0.2+ | 0.8− | 2001 10 21 | 704 | 0.4− | 0.4− |
| 2001 08 14 | 012 | 0.1+ | 0.3− | 2001 09 17 | 683 | 0.9− | 0.3+ | 2001 10 21 | 704 | 0.3− | 0.3− |
| 2001 08 14 | 012 | 0.3+ | 0.5− | 2001 09 17 | 683 | 0.5− | 1.0− | 2001 10 21 | 704 | 1.0− | 0.2+ |
| 2001 08 14 | 012 | 0.1+ | 0.3− | 2001 09 17 | 683 | 0.5− | 1.3− | 2001 11 10 | 704 | 1.6− | 1.3+ |
| 2001 08 17 | 704 | 0.3− | 0.5− | 2001 09 18 | 699 | 0.2− | 0.3+ | 2001 11 10 | 704 | 0.4− | 1.1+ |
| 2001 08 17 | 704 | 0.2− | 0.3− | 2001 09 18 | 699 | 0.1+ | 0.1− | 2001 11 10 | 704 | 1.3− | 1.2+ |
| 2001 08 17 | 704 | 0.0 | 0.2+ | 2001 09 18 | 683 | 1.2+ | 0.5+ | 2001 11 10 | 704 | 1.0− | 1.3+ |
| 2001 08 17 | 704 | 0.2+ | 0.0 | 2001 09 18 | 683 | 0.2− | 0.8+ | 2001 11 18 | 704 | 1.1+ | 0.5+ |
| 2001 08 21 | 704 | 0.4− | 0.8− | 2001 09 18 | 699 | 0.5− | 0.2+ | 2001 11 18 | 704 | 0.7+ | 0.3+ |
| 2001 08 21 | 704 | 0.0 | 0.5− | 2001 09 18 | 683 | 0.8+ | 1.1+ | 2001 11 18 | 704 | 0.5+ | 0.5+ |
| 2001 08 21 | 704 | 0.5+ | 0.2− | 2001 09 18 | 699 | 0.4+ | 0.2+ | 2001 11 18 | 704 | (2.2− | 0.3−) |
| 2001 08 23 | 699 | 0.2− | 0.1+ | 2001 09 19 | 683 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 08 23 | 699 | 0.7− | 0.6− | 2001 09 19 | 683 | 0.9+ | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | 0.5− | 0.4+ | 2001 09 19 | 683 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 08 23 | 699 | 0.5− | 0.1+ | 2001 09 20 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.6− | 0.5− |

**2001 PY$_{29}$ = 2006 UX$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.50188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21456369 | $\omega$ | 77.70698 | | +0.83071292 | +0.54767738 | |
| $a$ | 2.7633245 | $\Omega$ | 249.00713 | | −0.54324558 | +0.75830790 | |
| $e$ | 0.3215409 | $i$ | 6.13807 | | −0.12165647 | +0.35357971 | |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 704 | 0.0 | 0.7− | 2001 08 25 | 704 | 1.2− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2001 07 20 | 704 | 0.8+ | 0.9− | 2006 10 19 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | (1.4− | 2.2−) |
| 2001 07 20 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2001 07 20 | 704 | 0.4− | 1.1− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2001 08 10 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.6+ | 2006 11 16 | 704 | (0.2+ | 2.2+) |
| 2001 08 10 | 644 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.1− | 2006 11 16 | 704 | (0.5− | 1.8+) |
| 2001 08 10 | 644 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.5− | 0.7+ |
| 2001 08 17 | 644 | 0.3+ | 0.0 | 2006 10 19 | 703 | 1.4− | 1.2− | 2006 11 19 | 704 | 0.4− | 0.7+ |
| 2001 08 17 | 644 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.4− |
| 2001 08 17 | 644 | 0.6+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2001 08 24 | 699 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2001 08 24 | 699 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.4− |
| 2001 08 24 | 699 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.1− |
| 2001 08 24 | 699 | 0.6+ | 0.9− | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.6− |
| 2001 08 25 | 704 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.9− | 0.3+ |
| 2001 08 25 | 704 | 0.7− | 0.5+ | 2006 11 10 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2001 08 25 | 704 | 0.6− | 0.5+ | 2006 11 10 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.4− |
| 2001 08 25 | 704 | 0.9− | 0.6+ | 2006 11 10 | 644 | 0.3+ | 0.2+ | | | | |

**2001 PA$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.83171 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22075779 | $\omega$ | 60.01076 | | +0.33978881 | +0.92223328 | |
| $a$ | 2.7113902 | $\Omega$ | 231.02915 | | −0.92378750 | +0.29045383 | |
| $e$ | 0.3462352 | $i$ | 13.72555 | | −0.17652256 | +0.25519080 | |
| $P$ | 4.46 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 05 | 691 | 0.1+ | 0.2− | 2001 08 22 | 704 | 0.2− | 0.8+ | 2001 10 06 | 644 | 0.1+ | 0.2+ |
| 1997 12 05 | 691 | 0.3− | 0.0 | 2001 08 23 | 699 | 0.1+ | 0.9+ | 2001 10 06 | 644 | 0.4− | 0.6+ |
| 1997 12 05 | 691 | 0.2+ | 0.3+ | 2001 08 23 | 699 | 0.5− | 0.3+ | 2005 05 09 | 703 | 1.1− | 0.4+ |
| 2001 07 19 | 699 | 0.3− | 0.7− | 2001 08 23 | 699 | 1.1− | 0.1+ | 2005 05 09 | 703 | 0.5+ | 0.8− |
| 2001 07 19 | 699 | 0.3+ | 0.4− | 2001 08 23 | 699 | 0.3− | 0.4− | 2005 05 09 | 703 | 0.6+ | 0.2− |
| 2001 07 19 | 699 | 1.2− | 0.5+ | 2001 09 10 | 704 | 0.0 | 0.4+ | 2005 05 09 | 703 | 0.2− | 1.0− |
| 2001 07 19 | 699 | 0.5− | 0.3+ | 2001 09 10 | 704 | 0.2− | 0.7+ | 2006 10 13 | 691 | 0.3− | 0.1− |
| 2001 08 10 | 644 | (1.0− | 2.4−) | 2001 09 10 | 704 | 0.1− | 0.4− | 2006 10 13 | 691 | 0.3− | 0.6+ |
| 2001 08 10 | 644 | (0.8− | 2.5−) | 2001 09 10 | 704 | 0.1+ | 0.6− | 2006 10 13 | 691 | (5.8+ | 1.7+) |
| 2001 08 10 | 644 | (0.8− | 2.5−) | 2001 09 10 | 704 | 0.3− | 0.6− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 08 16 | 644 | 0.4+ | 1.0+ | 2001 09 11 | 704 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2001 08 16 | 644 | 0.5+ | 1.0+ | 2001 09 11 | 704 | 0.1− | 1.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 08 16 | 644 | 0.5+ | 0.9+ | 2001 09 11 | 704 | 0.5+ | 0.8+ | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2001 08 18 | 699 | 0.9− | 0.6− | 2001 09 11 | 704 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2001 08 18 | 699 | 0.6− | 0.7+ | 2001 09 12 | 704 | 0.5+ | 0.7+ | 2006 11 11 | G96 | 0.8+ | 0.2− |
| 2001 08 18 | 699 | 0.8+ | 0.0 | 2001 09 12 | 704 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2001 08 18 | 699 | 0.1− | 0.2− | 2001 09 12 | 704 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2001 08 21 | 644 | 0.5+ | 0.6+ | 2001 09 17 | 704 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2001 08 21 | 644 | 0.5+ | 0.4+ | 2001 09 17 | 704 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2001 08 21 | 644 | 0.3+ | 0.5+ | 2001 09 17 | 704 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.5− | 0.2− |
| 2001 08 22 | 704 | 0.6+ | 0.1− | 2001 09 18 | 645 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.6+ | 0.1− |
| 2001 08 22 | 704 | 0.1+ | 0.6+ | 2001 09 18 | 645 | 0.0 | 0.3− | | | | |
| 2001 08 22 | 704 | 0.2+ | 0.7+ | 2001 10 06 | 644 | 0.2+ | 0.6+ | | | | |

**2001 PP$_{31}$ = 2006 WA$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.61842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23073395 | $\omega$ | 55.15467 | | +0.66104503 | +0.72124683 | |
| $a$ | 2.6326617 | $\Omega$ | 257.62972 | | −0.73885318 | +0.57759162 | |
| $e$ | 0.2712010 | $i$ | 12.23105 | | −0.13082601 | +0.38234924 | |
| $P$ | 4.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 19 | 608 | 0.2− | 0.4− | 2001 08 18 | 699 | 0.6+ | 0.3− | 2001 09 30 | 644 | 0.1+ | 0.7+ |
| 2001 06 19 | 608 | 0.4− | 0.2− | 2001 08 18 | 699 | 0.3− | 0.3− | 2001 09 30 | 644 | 0.2− | 0.6+ |
| 2001 06 19 | 608 | 0.1+ | 1.1− | 2001 08 18 | 699 | 0.5− | 0.7− | 2001 09 30 | 644 | 0.3− | 0.5+ |
| 2001 07 13 | 644 | 0.8+ | 0.8+ | 2001 09 10 | 704 | 0.6+ | 0.4+ | 2001 10 06 | 644 | 0.2− | 1.1+ |
| 2001 07 13 | 644 | 0.9+ | 0.6+ | 2001 09 10 | 704 | 0.2+ | 0.3+ | 2001 10 06 | 644 | 0.1− | 1.1+ |
| 2001 07 13 | 644 | 0.7+ | 0.9+ | 2001 09 10 | 704 | (2.7+ | 1.3+) | 2001 10 06 | 644 | 0.1+ | 0.9+ |
| 2001 07 31 | 644 | 0.3− | 0.1− | 2001 09 10 | 704 | 0.0 | 0.6− | 2001 10 17 | 704 | 0.4− | 0.5+ |
| 2001 07 31 | 644 | 0.4− | 0.1− | 2001 09 17 | 704 | 0.1− | 0.0 | 2001 10 17 | 704 | 0.4+ | 0.6+ |
| 2001 07 31 | 644 | 0.3− | 0.2− | 2001 09 17 | 704 | 0.2+ | 0.1− | 2001 10 17 | 704 | 0.2+ | 1.0+ |
| 2001 08 10 | 644 | 0.5− | 0.0 | 2001 09 17 | 704 | 0.1− | 0.2+ | 2001 10 17 | 704 | 0.1− | 0.4+ |
| 2001 08 10 | 644 | 0.3− | 0.0 | 2001 09 18 | 645 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2001 08 10 | 644 | 0.5− | 0.0 | 2001 09 18 | 645 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2001 08 16 | 644 | 0.4+ | 0.3+ | 2001 09 21 | 699 | 1.3+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 08 16 | 644 | 0.2+ | 0.3+ | 2001 09 21 | 699 | 0.2− | 0.4− | 2006 11 24 | 691 | 0.3+ | 0.6− |
| 2001 08 16 | 644 | 0.4+ | 0.3+ | 2001 09 21 | 699 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.2− |
| 2001 08 18 | 699 | 0.5− | 0.0 | 2001 09 21 | 699 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.3+ | 0.3+ |

**2001 PP$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.41886 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21804560 | $\omega$ | 311.37808 | | +0.83967821 | | +0.53983374 |
| $a$ | 2.7338278 | $\Omega$ | 16.23563 | | −0.41303387 | | +0.70571472 |
| $e$ | 0.1247700 | $i$ | 12.25157 | | −0.35262377 | | +0.45885321 |
| $P$ | 4.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 08 10 | 644 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.2− |
| 2001 08 10 | 644 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.2− |
| 2001 08 16 | 644 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2001 08 16 | 644 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 14 | 703 | 1.4+ | 0.6+ |
| 2001 08 16 | 644 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.5− | 1.0− |
| 2001 08 27 | 644 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 2001 08 27 | 644 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.1+ | 1.0+ |
| 2001 08 27 | 644 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2001 09 11 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.8− |
| 2001 09 11 | 704 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2001 09 11 | 704 | 0.4− | 0.7− | 2006 10 21 | 644 | 0.2− | 0.1− | | | | |
| 2006 10 17 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 | | | | |

**2001 PU$_{33}$ = 2006 SM$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.76891 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21037598 | $\omega$ | 314.38393 | | +0.84231738 | | −0.50767549 |
| $a$ | 2.7998748 | $\Omega$ | 76.91773 | | +0.53208797 | | +0.72970012 |
| $e$ | 0.2295790 | $i$ | 10.71011 | | +0.08592913 | | +0.45804294 |
| $P$ | 4.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | 0.7− | 0.8− | 2006 09 29 | 699 | 1.0+ | 0.5+ | 2006 10 22 | 703 | 0.2+ | 0.9− |
| 2001 08 10 | 644 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 08 10 | 644 | 0.6− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2001 08 16 | 644 | 0.3− | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 08 16 | 644 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2001 08 16 | 644 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 08 27 | 644 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.5+ | 0.1− |
| 2001 08 27 | 644 | 1.0+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 1.3− | 1.4+ |
| 2001 08 27 | 644 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.7+ | 0.8+ |
| 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.4+ |
| 2006 09 19 | 703 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.0 | 0.3− | 2006 10 28 | 703 | (1.8+ | 0.5+) |
| 2006 09 19 | 703 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 10 | 704 | 1.2− | 0.7− |
| 2006 09 19 | 703 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3− | 2006 11 10 | 704 | 0.5− | 0.9− |
| 2006 09 25 | 699 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.8+ | 0.4− | 2006 11 10 | 704 | 0.1− | 1.1+ |
| 2006 09 25 | 699 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2006 09 25 | 699 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 16 | 703 | (1.7− | 0.6+) |
| 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.1+ | 2006 11 16 | 703 | 0.7+ | 0.5+ |
| 2006 09 26 | 703 | 0.6+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.4− | 2006 11 16 | 703 | 0.6+ | 0.3− |
| 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.9− | 0.1− |
| 2006 09 26 | 703 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.9− | 2006 11 16 | 703 | 0.3− | 0.3+ |
| 2006 09 26 | 703 | 0.8− | 1.3− | 2006 10 17 | 703 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.2+ | 0.1+ |
| 2006 09 29 | 699 | 0.3− | 0.6+ | 2006 10 22 | 703 | 0.4+ | 0.4− | 2006 11 16 | 703 | 0.0 | 0.4− |
| 2006 09 29 | 699 | 0.5+ | 1.2+ | 2006 10 22 | 703 | 0.1− | 0.7− | | | | |
| 2006 09 29 | 699 | 0.7− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.5+ | | | | |

**2001 PT$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.80077 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21229226 | $\omega$ | 140.17792 | | +0.79810440 | | +0.60223107 |
| $a$ | 2.7830005 | $\Omega$ | 182.98218 | | −0.60241472 | | +0.79700871 |
| $e$ | 0.2606898 | $i$ | 20.98396 | | −0.01121909 | | +0.04576967 |
| $P$ | 4.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.5− | 0.1− | 2001 09 14 | 644 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.1− | 0.2+ |
| 2001 08 01 | 644 | 0.5− | 0.1− | 2001 09 14 | 644 | 0.1− | 0.4+ | 2001 10 21 | 704 | 1.2− | 0.4+ |
| 2001 08 01 | 644 | 0.5− | 0.0 | 2001 09 14 | 644 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2001 08 11 | 644 | 0.1+ | 0.7+ | 2001 09 16 | 704 | 0.3+ | 0.4− | 2006 10 17 | 703 | 1.0− | 1.0− |
| 2001 08 11 | 644 | 0.2− | 0.1− | 2001 09 16 | 704 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2001 08 11 | 644 | 0.3+ | 0.7+ | 2001 09 16 | 704 | 0.6+ | 0.8− | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 2001 08 11 | 644 | 0.5− | 0.1− | 2001 09 16 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 703 | 0.1+ | 1.1+ |
| 2001 08 11 | 644 | 0.1+ | 0.6+ | 2001 09 16 | 704 | 0.6+ | 0.3− | 2006 10 20 | 703 | 0.2+ | 0.1− |
| 2001 08 11 | 644 | 0.6− | 0.2− | 2001 09 17 | 644 | 0.4− | 0.1+ | 2006 10 20 | 703 | 0.8− | 0.2+ |
| 2001 08 17 | 644 | 0.9+ | 0.4− | 2001 09 17 | 644 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.5+ | 1.1+ |
| 2001 08 17 | 644 | 0.8+ | 0.4− | 2001 09 17 | 644 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.4+ | 0.5− |
| 2001 08 17 | 644 | 1.3+ | 0.4− | 2001 09 25 | 644 | 0.5− | 0.1− | 2006 10 28 | 703 | 0.7+ | 0.2− |
| 2001 08 18 | 699 | 0.0 | 0.2+ | 2001 09 25 | 644 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.7− | 0.4− |
| 2001 08 18 | 699 | 0.2+ | 0.4+ | 2001 09 25 | 644 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.0 | 0.2− |
| 2001 08 18 | 699 | 0.7− | 0.2+ | 2001 10 11 | 704 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.5+ |
| 2001 08 18 | 699 | 0.7− | 0.2+ | 2001 10 11 | 704 | 0.6− | 0.7+ | 2006 10 28 | 703 | 0.7− | 0.4− |
| 2001 08 18 | 644 | 0.4− | 0.0 | 2001 10 11 | 704 | 0.1+ | 0.9+ | 2006 10 28 | 703 | 0.9+ | 0.8+ |
| 2001 08 18 | 704 | 0.9+ | 0.2− | 2001 10 18 | 699 | 0.2+ | 0.5− | 2006 10 28 | 703 | 0.1− | 0.9+ |
| 2001 08 18 | 644 | 0.5− | 0.2+ | 2001 10 18 | 699 | (2.6+ | 0.2−) | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 2001 08 18 | 704 | 0.3+ | 0.1− | 2001 10 18 | 699 | 0.7+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.3− |
| 2001 08 18 | 644 | 0.4− | 0.2+ | 2001 10 18 | 699 | 0.4+ | 1.0− | 2006 11 08 | 644 | 0.3+ | 0.3− |
| 2001 08 18 | 704 | 0.6+ | 0.5+ | 2001 10 19 | 644 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2001 08 18 | 704 | 0.3+ | 0.6− | 2001 10 19 | 644 | 0.3+ | 0.2− | 2006 11 17 | 703 | (0.3+ | 1.6−) |
| 2001 08 21 | 704 | (0.9+ | 1.6−) | 2001 10 19 | 644 | 0.4+ | 0.4− | 2006 11 17 | 703 | 1.3− | 1.1− |
| 2001 08 21 | 704 | (1.8+ | 1.3−) | 2001 10 21 | 704 | 0.3− | 0.6− | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2001 08 21 | 704 | 0.1+ | 1.2− | 2001 10 21 | 704 | 0.5− | 0.2− | | | | |
| 2001 08 21 | 704 | 0.2+ | 0.4− | 2001 10 21 | 704 | 0.1+ | 0.3+ | | | | |

**2001 PZ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.19853 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23771757 | $\omega$ | 235.84277 | | −0.11001111 | | +0.99068509 |
| $a$ | 2.5808447 | $\Omega$ | 28.16896 | | −0.84677528 | | −0.05113793 |
| $e$ | 0.2193902 | $i$ | 9.78793 | | −0.52045094 | | −0.12620601 |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.2− | 0.4+ | 2005 07 05 | E12 | 0.3− | 0.5+ | 2005 09 01 | E12 | 0.3+ | 0.4+ |
| 2001 08 11 | 644 | 0.5− | 0.3+ | 2005 07 05 | E12 | 0.1+ | 0.1− | 2005 09 01 | E12 | 0.6− | 0.4− |
| 2001 08 11 | 644 | 0.2+ | 0.2− | 2005 07 05 | E12 | 0.4− | 0.2+ | 2005 09 01 | E12 | 0.3− | 0.1+ |
| 2001 08 16 | 644 | 0.3− | 0.0 | 2005 08 07 | E12 | 0.3+ | 0.6+ | 2005 09 01 | E12 | 0.1+ | 0.6− |
| 2001 08 16 | 644 | 0.5− | 0.2− | 2005 08 07 | E12 | 0.3− | 0.3− | 2006 11 17 | 691 | 0.0 | 0.4− |
| 2001 08 16 | 644 | 0.0 | 0.3− | 2005 08 07 | E12 | 0.0 | 0.6− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 08 27 | 644 | 0.1+ | 0.5+ | 2005 08 24 | E12 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.4+ |
| 2001 08 27 | 644 | 0.0 | 0.6+ | 2005 08 24 | E12 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2001 08 27 | 644 | 0.3+ | 0.6+ | 2005 08 24 | E12 | 1.2+ | 0.8− | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2005 07 05 | E12 | 0.1− | 0.2+ | 2005 08 24 | E12 | 0.6+ | 1.1− | 2006 11 19 | 691 | 0.3− | 0.0 |

**2001 PN$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.59494 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21304643 | $\omega$ | 45.20004 | | +0.66371353 | | −0.74783136 |
| $a$ | 2.7764288 | $\Omega$ | 3.32702 | | +0.59042377 | | +0.51127562 |
| $e$ | 0.3036559 | $i$ | 15.23583 | | +0.45922121 | | +0.42349202 |
| $P$ | 4.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.3+ | 0.0 | 2001 10 10 | 644 | 0.4+ | 1.4− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 08 11 | 644 | 0.4+ | 0.3− | 2001 10 10 | 644 | 0.6+ | 1.5− | 2006 10 14 | 628 | 0.6− | 0.0 |
| 2001 08 11 | 644 | 0.2+ | 0.1+ | 2006 07 21 | G96 | 0.5− | 0.1− | 2006 10 14 | 628 | 0.5+ | 0.1+ |
| 2001 08 17 | 644 | 0.5− | 0.2− | 2006 07 21 | G96 | 0.5− | 0.2− | 2006 10 14 | 628 | 0.2+ | 0.0 |
| 2001 08 17 | 644 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.8− | 0.3− | 2006 10 17 | 704 | 0.4− | 0.3+ |
| 2001 08 17 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | (1.1+ | 1.9−) | 2006 10 17 | 704 | 0.7− | 0.4+ |
| 2001 08 25 | 699 | 0.6+ | 0.5+ | 2006 08 29 | 703 | 0.9− | 0.2− | 2006 10 17 | 704 | 0.7− | 0.4+ |
| 2001 08 25 | 699 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.1+ | 2006 10 29 | 703 | 0.6− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 699 | (0.4− | 2.1+) | 2006 08 29 | 703 | 0.2− | 0.1+ | 2006 10 29 | 703 | 0.5− | 0.3− |
| 2001 08 25 | 699 | 0.0 | 1.1+ | 2006 09 28 | 703 | 0.2− | 0.4+ | 2006 10 29 | 703 | 0.5− | 0.0 |
| 2001 08 25 | 608 | 0.5+ | 0.9− | 2006 09 28 | 703 | 0.3− | 0.2− | 2006 10 29 | 703 | 0.9+ | 0.0 |
| 2001 08 25 | 608 | 0.9+ | 0.9− | 2006 09 28 | 703 | 0.3− | 0.0 | 2006 11 13 | 704 | 0.2− | 0.0 |
| 2001 08 25 | 608 | (0.4+ | 1.9−) | 2006 09 28 | 703 | 0.2− | 0.4+ | 2006 11 13 | 704 | 0.1− | 0.2+ |
| 2001 09 10 | 699 | (0.8− | 1.9+) | 2006 09 28 | 703 | 0.3+ | 0.2+ | 2006 11 13 | 704 | 0.0 | 0.2− |
| 2001 09 10 | 699 | 0.7− | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.5+ | 2006 11 13 | 704 | 0.5+ | 0.3+ |
| 2001 09 10 | 699 | (0.2− | 2.0+) | 2006 09 28 | 703 | 0.1− | 0.2+ | 2006 11 20 | 703 | 0.1+ | 0.7− |
| 2001 09 10 | 699 | 0.8− | 0.5+ | 2006 10 02 | 704 | 0.4− | 0.7+ | 2006 11 20 | 703 | 0.5+ | 0.3− |
| 2001 09 11 | 704 | 0.3− | 0.4+ | 2006 10 02 | 704 | 1.4+ | 0.9+ | 2006 11 20 | 703 | 0.4+ | 0.6− |
| 2001 09 11 | 704 | 0.8− | 0.3+ | 2006 10 02 | 704 | 1.0+ | 0.1+ | 2006 11 20 | 703 | 0.5− | 0.7− |
| 2001 09 11 | 704 | 0.0 | 0.2+ | 2006 10 02 | 704 | 0.5+ | 0.3− | 2006 11 20 | 703 | 0.6+ | 0.1− |
| 2001 09 11 | 704 | 0.3− | 0.5+ | 2006 10 02 | 704 | 0.8+ | 0.4+ | 2006 11 20 | 703 | 0.7+ | 0.2− |
| 2001 09 11 | 704 | 0.5+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 20 | 703 | 0.0 | 0.2− |
| 2001 10 10 | 644 | 0.6+ | 1.2− | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 20 | 703 | 0.2− | 0.1− |

### 2001 PQ$_{37}$ = 2006 SS$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.72718 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20512179 | $\omega$ | 308.46291 | | +0.83475656 | | −0.51270412 |
| $a$ | 2.8474855 | $\Omega$ | 83.23645 | | +0.54682627 | | +0.72919376 |
| $e$ | 0.1760817 | $i$ | 11.66538 | | +0.06451755 | | +0.45322285 |
| $P$ | 4.80 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 0.7+ | 0.0 | 2006 09 26 | 703 | 0.6− | 0.3− |
| 2001 08 11 | 644 | 0.4− | 0.4+ | 2006 09 17 | 699 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2001 08 11 | 644 | 0.1+ | 0.8+ | 2006 09 17 | 699 | 1.0+ | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2001 08 17 | 644 | 0.3− | 0.4− | 2006 09 20 | 703 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2001 08 17 | 644 | 0.7− | 0.5− | 2006 09 20 | 703 | 1.0− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2001 08 17 | 644 | 0.5− | 1.1− | 2006 09 20 | 703 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2001 08 23 | 644 | 0.7+ | 0.0 | 2006 09 20 | 703 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 08 23 | 644 | 0.9+ | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 08 23 | 644 | 0.0 | 0.3+ | 2006 09 26 | 703 | (3.0− | 3.3−) | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2006 09 17 | 699 | 0.7+ | 0.5− | 2006 09 26 | 703 | (0.6− | 3.2−) | 2006 10 23 | 644 | 0.1− | 0.2+ |

### 2001 PR$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.60984 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20048413 | $\omega$ | 235.76135 | | +0.89578610 | | +0.40839769 |
| $a$ | 2.8912305 | $\Omega$ | 99.57760 | | −0.32632513 | | +0.87224920 |
| $e$ | 0.3196118 | $i$ | 10.24853 | | −0.30179327 | | +0.26905885 |
| $P$ | 4.92 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 03 | 608 | 1.0− | 0.0 | 2001 08 19 | 704 | 0.3+ | 0.0 | 2001 09 11 | 704 | 0.3− | 0.1+ |
| 2001 07 03 | 608 | 0.7− | 0.4− | 2001 08 19 | 704 | 0.6+ | 0.3− | 2001 09 11 | 704 | 0.0 | 0.0 |
| 2001 07 03 | 608 | 0.7− | 0.5− | 2001 08 19 | 704 | 0.2+ | 0.7+ | 2001 09 11 | 704 | 0.1+ | 0.1+ |
| 2001 07 19 | 699 | 0.2+ | 0.5+ | 2001 08 19 | 704 | 0.7− | 0.1− | 2001 09 11 | 704 | 0.2+ | 0.3− |
| 2001 07 19 | 699 | 0.2+ | 0.6+ | 2001 08 19 | 704 | 0.7− | 0.4+ | 2006 09 20 | 703 | 0.2− | 0.7+ |
| 2001 07 19 | 699 | 1.8+ | 0.3+ | 2001 08 25 | 699 | 0.4− | 0.2+ | 2006 09 20 | 703 | 0.3+ | 0.1− |
| 2001 07 19 | 699 | 1.9+ | 1.1− | 2001 08 25 | 699 | 0.5− | 0.1− | 2006 09 20 | 703 | 0.1− | 0.2− |
| 2001 08 11 | 644 | 0.1− | 0.4+ | 2001 08 25 | 699 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.0 |
| 2001 08 11 | 644 | 0.2− | 0.2+ | 2001 08 25 | 699 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.3− | 0.5+ |
| 2001 08 11 | 644 | 0.1+ | 0.3+ | 2001 08 29 | 644 | 0.2+ | 0.8− | 2006 09 26 | 703 | 0.5+ | 0.3− |
| 2001 08 17 | 644 | 0.4− | 0.4+ | 2001 08 29 | 644 | 0.6+ | 0.5− | 2006 09 26 | 703 | 0.2− | 0.2− |
| 2001 08 17 | 644 | 0.5− | 0.4+ | 2001 08 29 | 644 | 0.1+ | 0.9− | 2006 09 26 | 703 | 0.0 | 0.4− |
| 2001 08 17 | 644 | 0.4− | 0.3+ | 2001 09 11 | 704 | 0.0 | 0.1+ | | | | |

### 2001 PZ$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.69530 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20642303 | $\omega$ | 167.19703 | | +0.10038897 | | +0.96984970 |
| $a$ | 2.8355063 | $\Omega$ | 108.22871 | | −0.93221748 | | +0.16968456 |
| $e$ | 0.0215171 | $i$ | 13.52089 | | −0.34769617 | | −0.17492487 |
| $P$ | 4.77 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 26 | 699 | 1.0+ | 1.7+ | 2002 12 05 | 608 | 0.4− | 0.2+ | 2004 03 25 | 704 | 0.9+ | 0.1+ |
| 2000 05 26 | 699 | 0.8− | 1.9+ | 2002 12 05 | 608 | 0.7− | 0.1+ | 2004 03 25 | 704 | (1.6+ | 0.1+) |
| 2000 05 26 | 699 | 1.8+ | 0.6+ | 2002 12 05 | 608 | 0.6− | 0.2+ | 2004 03 25 | 704 | 0.4− | 0.6− |
| 2000 05 26 | 699 | 0.8+ | 1.3+ | 2002 12 10 | 644 | 0.1− | 0.8+ | 2004 03 25 | 704 | 0.5+ | 0.3+ |
| 2001 08 11 | 644 | 0.7− | 0.2− | 2002 12 10 | 644 | 0.0 | 0.9+ | 2004 03 25 | 704 | 0.2− | 1.1+ |
| 2001 08 11 | 644 | 0.5− | 0.2+ | 2002 12 10 | 644 | 0.0 | 1.0+ | 2005 06 03 | E12 | 0.3+ | 0.3− |
| 2001 08 11 | 644 | 0.9− | 0.2− | 2002 12 14 | 704 | (0.8− | 1.7−) | 2005 06 03 | E12 | 0.3− | 0.0 |
| 2001 08 17 | 644 | 0.1+ | 0.8+ | 2002 12 14 | 704 | 0.7+ | 0.7− | 2005 06 03 | E12 | 0.7− | 0.1− |
| 2001 08 17 | 644 | 0.3− | 0.6+ | 2002 12 14 | 704 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.1+ | 0.3− |
| 2001 08 17 | 644 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.8+ | 1.3+ | 2006 09 20 | 703 | 1.1− | 0.6− |
| 2001 09 11 | 704 | 0.7+ | 1.1+ | 2004 02 16 | 704 | (0.3− | 1.9+) | 2006 09 20 | 703 | (1.9− | 2.5−) |
| 2001 09 11 | 704 | 0.2+ | 0.8+ | 2004 02 16 | 704 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.0 | 0.1− |
| 2001 09 11 | 704 | 0.4+ | 0.5− | 2004 02 16 | 704 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.9+ |
| 2001 09 11 | 704 | 0.7− | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 703 | 0.5+ | 1.2+ |
| 2002 11 28 | 699 | 0.7− | 0.8+ | 2004 02 16 | 704 | 1.1− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.4− |
| 2002 11 28 | 699 | (1.7− | 0.1+) | 2004 03 09 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 1.0+ | 1.2+ |
| 2002 11 28 | 699 | 0.5− | 1.0+ | 2004 03 09 | 644 | 0.3+ | 0.4+ | | | | |
| 2002 11 28 | 699 | 0.4+ | 0.3− | 2004 03 09 | 644 | 0.5+ | 0.5+ | | | | |

### 2001 PS$_{38}$ = 2006 OA$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.85474 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18677390 | $\omega$ | 317.50747 | | +0.96868619 | | −0.18058390 |
| $a$ | 3.0310418 | $\Omega$ | 53.68015 | | +0.24314123 | | +0.82895263 |
| $e$ | 0.1631830 | $i$ | 12.20959 | | −0.05029319 | | +0.52936470 |
| $P$ | 5.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.3+ | 0.9− | 2001 08 23 | 644 | 0.6+ | 0.6+ | 2006 07 20 | E12 | 0.6− | 0.3− |
| 2001 08 11 | 644 | 0.1− | 0.1+ | 2005 04 16 | 691 | 0.0 | 0.2− | 2006 07 20 | E12 | 0.5− | 0.4+ |
| 2001 08 11 | 644 | 0.2+ | 0.2− | 2005 04 16 | 691 | 0.2− | 0.3+ | 2006 07 20 | E12 | 0.3− | 0.2− |
| 2001 08 17 | 644 | 0.5− | 0.0 | 2005 04 16 | 691 | 0.8+ | 0.8− | 2006 07 29 | E12 | 0.4+ | 0.2− |
| 2001 08 17 | 644 | 0.8− | 0.0 | 2005 05 04 | 691 | 0.2− | 0.3+ | 2006 07 29 | E12 | 0.4+ | 0.1+ |
| 2001 08 17 | 644 | 0.8− | 0.2− | 2005 05 04 | 691 | 0.3− | 0.3+ | 2006 07 29 | E12 | 0.5− | 0.0 |
| 2001 08 23 | 644 | 0.2+ | 0.4+ | 2005 05 04 | 691 | 0.0 | 0.3+ | 2006 07 29 | E12 | 0.1− | 0.2− |
| 2001 08 23 | 644 | 0.7+ | 0.5+ | 2006 07 20 | E12 | 1.3+ | 0.0 | | | | |

### 2001 PV$_{38}$ = 2006 VP$_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.84336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22190609 | $\omega$ | 283.96661 | | +0.96194028 | | −0.12950542 |
| $a$ | 2.7020283 | $\Omega$ | 83.88677 | | +0.22159749 | | +0.88494269 |
| $e$ | 0.1850631 | $i$ | 14.00454 | | −0.15989197 | | +0.44733073 |
| $P$ | 4.44 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2001 08 11 | 644 | 0.4− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2001 08 11 | 644 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2001 08 17 | 644 | 1.1+ | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2001 08 17 | 644 | 1.1+ | 0.6− | 2006 11 16 | 691 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.1− | 0.4+ |
| 2001 08 17 | 644 | 0.9+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.3− | 0.5− |
| 2001 08 23 | 644 | 0.6− | 0.9+ | 2006 11 17 | 704 | 1.0+ | 0.4+ | 2006 11 28 | 704 | 0.4− | 0.1− |
| 2001 08 23 | 644 | 0.9− | 0.6+ | 2006 11 17 | 704 | 0.1+ | 0.7+ | 2006 11 29 | 704 | 0.1+ | 0.1− |
| 2001 08 23 | 644 | 0.7− | 0.1+ | 2006 11 17 | 704 | (0.7− | 1.9−) | 2006 11 29 | 704 | 1.1− | 0.9+ |
| 2006 11 15 | 703 | 0.6+ | 1.1+ | 2006 11 20 | 691 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.2− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 11 15 | 703 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2006 11 15 | 703 | 0.4+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.2− | 2006 11 29 | 704 | 1.2− | 0.6− |
| 2006 11 15 | 703 | 0.5+ | 0.9+ | 2006 11 24 | 691 | 0.1− | 0.1+ | | | | |

**2001 $PN_{41}$ = 2006 $SH_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.26390 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20936579 | $\omega$ | 63.63015 | | +0.91320142 | | +0.33355103 |
| $a$ | 2.8088738 | $\Omega$ | 276.12900 | | −0.40379898 | | +0.81800153 |
| $e$ | 0.0757543 | $i$ | 13.61842 | | +0.05485932 | | +0.46863334 |
| $P$ | 4.71 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.1− | 0.5+ | 2001 08 26 | 699 | 0.5+ | 1.3+ | 2006 09 25 | 703 | 0.2+ | 0.0 |
| 2001 08 11 | 644 | 0.1+ | 0.7+ | 2001 09 23 | 644 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.9− | 0.3− |
| 2001 08 11 | 644 | 0.0 | 0.3+ | 2001 09 23 | 644 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.1− | 0.4+ |
| 2001 08 17 | 644 | 0.5− | 1.1− | 2001 09 23 | 644 | 0.2− | 0.1+ | 2006 10 02 | 703 | 0.1+ | 0.8− |
| 2001 08 17 | 644 | 0.5− | 1.4− | 2006 08 12 | 644 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.5− | 0.8+ |
| 2001 08 17 | 644 | 0.4− | 0.9− | 2006 08 12 | 644 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 2001 08 22 | 704 | 0.4+ | 0.3+ | 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.6− |
| 2001 08 22 | 704 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.5+ |
| 2001 08 22 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.7+ | 0.7+ | 2006 10 02 | 703 | 0.5+ | 0.5+ |
| 2001 08 22 | 704 | 0.3− | 0.7− | 2006 09 19 | 703 | 0.5+ | 0.5− | 2006 11 15 | 703 | 0.6− | 0.0 |
| 2001 08 22 | 704 | 0.0 | 1.0+ | 2006 09 19 | 703 | 0.2− | 0.8− | 2006 11 15 | 703 | 0.3+ | 0.9+ |
| 2001 08 26 | 699 | 0.1+ | 0.1− | 2006 09 25 | 703 | 0.8+ | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2001 08 26 | 699 | 0.2− | 0.1+ | 2006 09 25 | 703 | 1.0− | 0.1− | 2006 11 15 | 703 | 0.7+ | 0.1− |
| 2001 08 26 | 699 | 0.5+ | 0.3− | 2006 09 25 | 703 | 0.0 | 0.6− | | | | |

**2001 $PT_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.53680 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22342139 | $\omega$ | 235.44134 | | +0.78570163 | | +0.60968562 |
| $a$ | 2.6897973 | $\Omega$ | 86.76594 | | −0.52766002 | | +0.74884220 |
| $e$ | 0.1733090 | $i$ | 6.01793 | | −0.32287436 | | +0.25984379 |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 1.2− | 1.0− | 2001 08 20 | 704 | 0.5+ | 1.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 07 27 | 699 | 0.1+ | 0.3− | 2001 08 20 | 704 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 07 27 | 699 | 0.5+ | 0.7− | 2001 08 28 | 644 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2001 07 27 | 699 | 0.4− | 0.9− | 2001 08 28 | 644 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 08 14 | 608 | 1.2+ | 0.1− | 2001 08 28 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2001 08 14 | 608 | 1.0+ | 0.4− | 2001 09 11 | 704 | 0.6− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 08 14 | 608 | 0.7+ | 0.8− | 2001 09 11 | 704 | 0.4+ | 1.4+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2001 08 16 | 644 | 0.9− | 0.0 | 2001 09 11 | 704 | (0.0 | 3.2+) | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 08 16 | 644 | 0.5− | 0.2− | 2001 09 11 | 704 | (0.0 | 1.8+) | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 08 16 | 644 | 0.6− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.4+ | | | | |
| 2001 08 20 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.3+ | | | | |

**2001 $PB_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.92344 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20483129 | $\omega$ | 340.85097 | | +0.99602488 | | +0.01286614 |
| $a$ | 2.8501771 | $\Omega$ | 19.06759 | | +0.04444959 | | +0.78571742 |
| $e$ | 0.1499410 | $i$ | 15.65277 | | −0.07719245 | | +0.61845177 |
| $P$ | 4.81 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 644 | 0.1− | 0.3+ | 2006 09 17 | 699 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2001 08 12 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2001 08 12 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 2001 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 08 18 | 644 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 08 18 | 644 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 08 19 | 704 | 0.1− | 0.7+ | 2006 09 26 | 704 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.5− |
| 2001 08 19 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.5+ | 0.0 |
| 2001 08 19 | 704 | 0.1− | 1.0+ | 2006 09 26 | 704 | 0.5− | 0.3+ | 2006 10 22 | 704 | 0.4+ | 0.3− |
| 2001 08 19 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2001 08 23 | 644 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.0 | 2006 10 22 | 704 | 1.3− | 0.6− |
| 2001 08 23 | 644 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 10 22 | 704 | 1.1− | 1.4+ |
| 2001 08 23 | 644 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 10 22 | 704 | 0.1− | 0.7+ |
| 2001 08 29 | 644 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 08 29 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 08 29 | 644 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 09 11 | 704 | 0.1− | 1.5− | 2006 10 09 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2001 09 11 | 704 | 0.6+ | 1.4− | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.6− |
| 2001 09 11 | 704 | 0.0 | 1.2− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.0 | 1.3− |
| 2001 09 11 | 704 | 0.2+ | 0.9− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.4+ |
| 2001 09 11 | 704 | 0.2+ | 1.3− | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.7− | 0.2− |
| 2001 09 21 | 644 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 11 21 | 704 | 1.1+ | 0.6+ |
| 2001 09 21 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.1− |
| 2001 09 21 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | (1.6− | 0.0 ) | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2006 09 17 | 699 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.7+ |

**2001 $PT_{46}$ = 2006 $TK_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.47953 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22615213 | $\omega$ | 224.67732 | | −0.11431750 | | +0.98129150 |
| $a$ | 2.6681010 | $\Omega$ | 39.53393 | | −0.82977760 | | −0.00857179 |
| $e$ | 0.2520655 | $i$ | 14.08561 | | −0.54626060 | | −0.19233699 |
| $P$ | 4.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 644 | (2.4+ | 1.2−) | 2001 08 26 | 644 | (1.7− | 0.2+) | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 08 13 | 644 | 0.4+ | 0.8+ | 2001 09 11 | 704 | 0.9+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2001 08 13 | 644 | (2.2+ | 0.0 ) | 2001 09 11 | 704 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2001 08 13 | 644 | 0.8+ | 0.2+ | 2001 09 11 | 704 | 0.6+ | 0.6− | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2001 08 13 | 644 | (2.2+ | 0.4−) | 2006 10 11 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2001 08 13 | 644 | 0.5+ | 0.3+ | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2001 08 18 | 644 | 0.7− | 0.2− | 2006 10 11 | 691 | 0.7+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2001 08 18 | 644 | 0.7− | 0.3− | 2006 10 12 | 291 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 08 18 | 644 | 0.9− | 0.2− | 2006 10 12 | 291 | 0.0 | 0.1+ | 2006 11 15 | G96 | (1.3+ | 2.2+) |
| 2001 08 26 | 644 | 0.6− | 0.1− | 2006 10 12 | 291 | 0.1− | 0.3+ | | | | |
| 2001 08 26 | 644 | (1.7− | 0.4+) | 2006 10 28 | 691 | 0.2− | 0.0 | | | | |

**2001 $PU_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.35160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21042903 | $\omega$ | 320.72840 | | +0.98964635 | | −0.12034456 |
| $a$ | 2.7994042 | $\Omega$ | 46.37298 | | +0.14297673 | | +0.87430119 |
| $e$ | 0.1027863 | $i$ | 6.20304 | | −0.01256022 | | +0.47022826 |
| $P$ | 4.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.3− | 0.9− | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.9+ | 0.7− |
| 2001 08 14 | 608 | 0.4− | 1.0− | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2001 08 14 | 608 | 0.2+ | 0.5− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 08 25 | 644 | 0.2− | 1.0+ | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2001 08 25 | 644 | (0.1− | 1.8+) | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 08 25 | 644 | 0.3+ | 1.1+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2001 09 11 | 704 | 0.9− | 0.8− | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2001 09 11 | 704 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 09 11 | 704 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 09 17 | 699 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.5+ |
| 2001 09 17 | 699 | 0.9+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.3− | 0.4+ |
| 2001 09 17 | 699 | 0.6− | 1.0+ | 2006 10 15 | 703 | 0.9+ | 0.4+ | 2006 11 06 | 644 | 0.6+ | 0.6+ |
| 2001 09 17 | 699 | (1.1− | 1.6−) | 2006 10 15 | 703 | 0.7− | 0.0 | 2006 11 11 | 703 | 1.1− | 1.0− |
| 2001 09 26 | 649 | 0.2+ | 0.5− | 2006 10 15 | 703 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.5− |
| 2001 09 26 | 649 | 0.4+ | 0.1− | 2006 10 15 | 703 | 0.5− | 0.1+ | 2006 11 11 | 703 | (1.6− | 1.5−) |
| 2001 09 26 | 649 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.1+ |
| 2006 09 16 | 644 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2006 09 16 | 644 | 0.5− | 0.5+ | 2006 10 21 | 703 | 0.9+ | 0.8− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.7− | 0.7− | 2006 11 16 | G96 | 0.4+ | 0.1− |

**2001 PX$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.56260 | | (2000.0) | | | |
| $n$ | 0.17340701 | $\omega$ | 32.24275 | | +0.97276554 | −0.05223960 |
| $a$ | 3.1848693 | $\Omega$ | 328.28034 | | −0.12314075 | +0.70894360 |
| $e$ | 0.1393977 | $i$ | 25.43733 | | +0.19637605 | +0.70332781 |
| $P$ | 5.68 | $H$ | 14.7 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 644 | 0.6− | 1.4− | 2001 09 10 | 644 | 0.0 | 0.6+ | 2003 01 31 | 644 | 0.2− | 0.3+ |
| 2001 08 12 | 644 | 0.2− | 1.0− | 2001 09 10 | 704 | 0.5+ | 0.4+ | 2003 01 31 | 644 | 0.1+ | 0.2+ |
| 2001 08 12 | 644 | 0.2− | 1.1− | 2001 09 10 | 704 | 0.3+ | 0.4− | 2006 06 27 | E12 | 0.4− | 0.2− |
| 2001 08 26 | 699 | 0.5− | 0.8+ | 2001 09 10 | 644 | 0.1− | 0.6+ | 2006 06 27 | E12 | 0.2+ | 0.5+ |
| 2001 08 26 | 699 | 0.3+ | 0.5+ | 2001 09 10 | 704 | 0.7+ | 0.1− | 2006 06 27 | E12 | 0.1+ | 0.3+ |
| 2001 08 26 | 699 | 0.2− | 1.0+ | 2003 01 31 | 644 | 0.4− | 0.0 | 2006 06 27 | E12 | 0.0 | 0.2+ |
| 2001 08 26 | 699 | 0.0 | 0.5+ | 2003 01 31 | 644 | 0.1+ | 0.1− | 2006 07 18 | E12 | 0.1− | 0.5− |
| 2001 09 10 | 644 | 0.1+ | 0.3+ | 2003 01 31 | 644 | 0.4+ | 0.0 | 2006 07 18 | E12 | 0.3− | 0.4− |
| 2001 09 10 | 704 | 0.3− | 0.9− | 2003 01 31 | 644 | 0.1+ | 0.1+ | 2006 07 18 | E12 | 0.3+ | 0.5+ |

**2001 QN$_{32}$ = 1981 BA = 1999 CY$_{45}$**

Id. Minor Planet Center (*MPO* 17784; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.01665 | | (2000.0) | | | |
| $n$ | 0.22315809 | $\omega$ | 49.11438 | | +0.90158396 | −0.41496428 |
| $a$ | 2.6919127 | $\Omega$ | 334.66926 | | +0.25791162 | +0.74251491 |
| $e$ | 0.2265893 | $i$ | 16.60623 | | +0.34731535 | +0.52581009 |
| $P$ | 4.42 | $H$ | 14.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 01 26 | 675 | 0.0 | 1.0− | 2001 09 19 | 704 | 0.1− | 0.4+ | 2003 01 31 | 699 | 0.4− | 0.7+ |
| 1999 02 10 | 704 | 1.0+ | 0.9+ | 2001 09 19 | 704 | 0.5− | 0.3+ | 2003 01 31 | 699 | 0.4− | 0.7+ |
| 1999 02 10 | 704 | 1.9+ | 0.2− | 2001 09 19 | 704 | 0.7− | 0.6− | 2003 02 26 | 704 | 0.3+ | 1.2+ |
| 1999 02 10 | 704 | (3.0+ | 1.2−) | 2001 09 21 | 704 | 0.4+ | 0.7+ | 2003 02 26 | 704 | 0.4− | 0.4+ |
| 1999 02 10 | 704 | (0.0 | 2.3+) | 2001 09 21 | 704 | 0.5− | 0.7+ | 2003 02 26 | 704 | 0.8+ | 1.0+ |
| 1999 02 12 | 699 | 1.3+ | 0.3+ | 2001 09 21 | 704 | 0.4− | 0.2+ | 2003 02 26 | 704 | 0.4− | 0.1− |
| 1999 02 12 | 699 | 1.5+ | 1.3+ | 2001 09 21 | 704 | 0.1+ | 1.0+ | 2003 02 26 | 704 | 0.3+ | 0.6+ |
| 1999 02 12 | 699 | 1.4+ | 0.4− | 2001 09 21 | 704 | 1.0− | 0.8+ | 2003 03 05 | 704 | 0.0 | 0.0 |
| 1999 02 13 | 704 | 0.3− | 1.2− | 2002 10 31 | 704 | 0.8+ | 0.6− | 2003 03 05 | 704 | 0.5+ | 0.5+ |
| 1999 02 13 | 704 | 0.6− | 1.6+ | 2002 10 31 | 704 | 0.6+ | 1.0+ | 2003 03 05 | 704 | 0.1+ | 0.4− |
| 1999 02 13 | 704 | 0.6− | 0.7+ | 2002 10 31 | 704 | (1.6+ | 1.0−) | 2003 03 05 | 704 | 0.9+ | 0.5+ |
| 1999 02 13 | 704 | 1.2− | 0.1− | 2002 10 31 | 704 | 1.1+ | 1.5− | 2003 03 05 | 704 | 0.8+ | 1.1− |
| 1999 02 13 | 704 | 1.8− | 1.0− | 2002 10 31 | 704 | 1.0+ | 1.1− | 2003 03 05 | 704 | 1.3+ | 1.0+ |
| 2001 06 23 | 644 | 0.6− | 0.7+ | 2002 11 07 | 704 | 0.5+ | 0.3+ | 2003 03 07 | 644 | (0.0 | 1.9+) |
| 2001 06 23 | 644 | 0.5− | 0.7+ | 2002 11 07 | 704 | 1.0+ | 0.1+ | 2003 03 07 | 644 | (0.1− | 2.0+) |
| 2001 06 23 | 644 | 0.7− | 0.4+ | 2002 11 07 | 704 | 1.2+ | 0.5− | 2003 03 07 | 644 | (0.1− | 1.8+) |
| 2001 07 14 | 644 | 0.0 | 0.0 | 2002 12 07 | 704 | 1.3− | 0.1− | 2004 03 15 | 644 | 0.8+ | 0.6+ |
| 2001 07 14 | 644 | 0.0 | 0.1+ | 2002 12 07 | 704 | 0.5− | 0.2+ | 2004 03 15 | 644 | 0.9+ | 0.6+ |
| 2001 07 14 | 644 | 0.0 | 0.1+ | 2002 12 07 | 704 | 0.3− | 0.7+ | 2004 03 15 | 644 | 0.7+ | 0.4+ |
| 2001 07 27 | 644 | 0.6− | 0.4+ | 2002 12 07 | 704 | 0.5− | 0.5+ | 2006 09 18 | 704 | 0.7− | 0.1− |
| 2001 07 27 | 644 | 0.2− | 0.5+ | 2002 12 07 | 704 | 0.7− | 0.4+ | 2006 09 18 | 704 | 0.3− | 0.7+ |
| 2001 07 27 | 644 | 0.2− | 0.6+ | 2002 12 15 | 704 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.0 |
| 2001 08 06 | 644 | 0.5− | 1.1+ | 2002 12 15 | 704 | 0.1− | 0.4+ | 2006 10 03 | 704 | 1.4+ | 0.2− |
| 2001 08 06 | 644 | 0.4− | 0.5+ | 2002 12 15 | 704 | 0.4+ | 0.4+ | 2006 10 03 | 704 | (2.4+ | 0.9+) |
| 2001 08 06 | 644 | 0.4− | 0.7+ | 2002 12 15 | 704 | 0.6− | 0.5+ | 2006 10 03 | 704 | (2.2+ | 0.4+) |
| 2001 08 17 | 644 | 0.5− | 0.3+ | 2002 12 15 | 704 | 0.2− | 0.4+ | 2006 10 03 | 704 | (2.0+ | 0.2+) |
| 2001 08 17 | 644 | 0.3− | 0.3+ | 2003 01 10 | 704 | 0.6− | 0.3+ | 2006 10 16 | 704 | 0.3− | 0.7+ |
| 2001 08 17 | 644 | 0.5− | 0.4+ | 2003 01 10 | 704 | 0.5− | 0.9+ | 2006 10 16 | 704 | 0.1− | 0.1− |
| 2001 08 18 | 644 | 0.2− | 0.3− | 2003 01 10 | 704 | 0.5− | 0.3+ | 2006 10 16 | 704 | 0.0 | 0.4+ |
| 2001 08 18 | 644 | 0.5− | 0.1+ | 2003 01 10 | 704 | 0.5− | 0.0 | 2006 10 16 | 704 | 0.2+ | 0.1+ |
| 2001 08 18 | 644 | 0.5− | 0.0 | 2003 01 13 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 704 | 0.2− | 0.2− |
| 2001 09 11 | 704 | 0.1+ | 0.2+ | 2003 01 13 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 704 | 0.2+ | 0.1+ |
| 2001 09 11 | 704 | 1.0+ | 0.6− | 2003 01 13 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 704 | 0.5+ | 0.7+ |
| 2001 09 11 | 704 | 0.4+ | 0.6+ | 2003 01 13 | 704 | 0.0 | 0.3+ | 2006 11 13 | 704 | 0.0 | 0.1+ |
| 2001 09 11 | 704 | 0.1+ | 0.1+ | 2003 01 13 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 704 | 0.5+ | 0.2− |
| 2001 09 11 | 704 | 0.4+ | 0.1+ | 2003 01 31 | 699 | 0.3− | 0.2+ | | | | |
| 2001 09 19 | 704 | 0.8+ | 0.5+ | 2003 01 31 | 699 | 1.0− | 0.2+ | | | | |

**2001 QU$_{33}$ = 2006 UG$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.61809 | | (2000.0) | | | |
| $n$ | 0.22367780 | $\omega$ | 266.27961 | | +0.58517342 | −0.81033304 |
| $a$ | 2.6877413 | $\Omega$ | 147.84332 | | +0.76491060 | +0.53908658 |
| $e$ | 0.1488156 | $i$ | 3.28902 | | +0.26922826 | +0.22966503 |
| $P$ | 4.41 | $H$ | 16.7 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 735 | 0.9− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.7− |
| 2001 08 17 | 735 | 1.2+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 11 | 644 | 0.2− | 0.1+ |
| 2001 08 17 | 735 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.5− |
| 2001 08 19 | 735 | 1.4+ | 0.3+ | 2006 11 02 | 703 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.6+ | 1.2− |
| 2001 08 19 | 735 | 0.1+ | 0.3− | 2006 11 02 | 703 | 0.8− | 0.2+ | 2006 11 11 | 644 | 0.1+ | 0.2+ |
| 2001 08 19 | 735 | 0.3+ | 0.0 | 2006 11 02 | 703 | 1.3+ | 0.6− | 2006 11 14 | 704 | 0.8− | 0.5+ |
| 2001 08 23 | 735 | 1.1− | 1.3+ | 2006 11 02 | 703 | 0.9− | 0.3− | 2006 11 14 | 704 | 0.5− | 0.1− |
| 2001 08 23 | 735 | (3.7− | 0.8−) | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.5− | 0.0 |
| 2001 08 23 | 735 | 0.9− | 0.8− | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 14 | 704 | 1.4+ | 0.5− |
| 2001 08 23 | 735 | 0.5− | 0.9+ | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 14 | 704 | 0.4+ | 0.3− |
| 2001 08 23 | 735 | (3.0− | 0.8+) | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2002 12 31 | 645 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.6+ | 0.6− |
| 2003 01 13 | 644 | 1.1+ | 1.0+ | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2003 01 13 | 644 | 0.8+ | 1.3+ | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.0 | 0.4− |
| 2003 01 13 | 644 | 0.4+ | 0.9+ | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 11 20 | 704 | 0.0 | 1.4+ |
| 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.3− | 1.4+ |
| 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | (2.3+ | 0.4+) |
| 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.9+ | 2006 11 20 | 704 | 0.2− | 0.0 |

**2001 QC$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 156.16949 | | (2000.0) | | | |
| $n$ | 0.28721848 | $\omega$ | 32.68442 | | +0.97852098 | +0.19939875 |
| $a$ | 2.2750684 | $\Omega$ | 315.71718 | | −0.20155223 | +0.87210859 |
| $e$ | 0.2897482 | $i$ | 4.29708 | | −0.04328258 | +0.44684085 |
| $P$ | 3.43 | $H$ | 17.2 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 13 | 691 | 0.0 | 0.3+ | 2001 08 16 | 704 | 0.2− | 0.8+ | 2001 09 07 | 704 | 0.9+ | 1.4+ |
| 1991 12 13 | 691 | 0.3− | 0.1+ | 2001 08 16 | 704 | 0.3− | 0.1+ | 2001 09 07 | 704 | 0.9+ | 0.1− |
| 1991 12 13 | 691 | 0.3+ | 0.3− | 2001 08 16 | 704 | 0.4− | 0.2+ | 2001 09 07 | 704 | 0.7+ | 0.6− |
| 2001 06 27 | 699 | 0.5+ | 0.9+ | 2001 08 19 | 704 | 0.0 | 0.2− | 2001 09 07 | 704 | 0.1+ | 0.2− |
| 2001 06 27 | 699 | 0.5− | 0.3+ | 2001 08 19 | 704 | 0.8− | 0.0 | 2001 09 20 | 704 | 1.1+ | 0.9− |
| 2001 06 27 | 699 | (1.7+ | 1.5+) | 2001 08 19 | 704 | 0.2− | 0.5+ | 2001 09 20 | 704 | 1.4+ | 1.5− |
| 2001 06 27 | 699 | 0.7− | 0.5+ | 2001 08 19 | 704 | 0.6− | 0.6+ | 2001 09 20 | 704 | (1.2+ | 1.7−) |
| 2001 07 18 | 608 | 0.0 | 1.1+ | 2001 08 19 | 704 | 0.9− | 0.6+ | 2001 09 20 | 704 | 1.4+ | 0.7− |
| 2001 07 18 | 608 | 0.1+ | 0.4+ | 2001 08 23 | 691 | 0.2− | 0.0 | 2001 09 20 | 704 | 0.9+ | 0.9− |
| 2001 07 18 | 608 | 0.4+ | 0.1− | 2001 08 23 | 691 | 0.3− | 0.0 | 2001 09 22 | 704 | 0.5− | 0.7+ |
| 2001 07 30 | 704 | (3.0− | 1.2+) | 2001 08 23 | 691 | 0.1− | 0.1− | 2001 09 22 | 704 | 0.9− | 0.4+ |
| 2001 07 30 | 704 | (2.6− | 1.0−) | 2001 08 24 | 704 | 0.1+ | 0.5− | 2001 09 22 | 704 | (0.8− | 2.0+) |
| 2001 07 30 | 704 | (3.5− | 1.3+) | 2001 08 24 | 704 | 0.4+ | 0.6− | 2001 09 22 | 704 | (1.0− | 1.6+) |
| 2001 07 30 | 704 | (1.8− | 0.1+) | 2001 08 24 | 704 | 0.0 | 0.2− | 2005 12 26 | 691 | 0.0 | 0.2+ |
| 2001 08 07 | 608 | 0.7+ | 0.1− | 2001 08 24 | 704 | 0.1− | 0.8− | 2005 12 26 | 691 | 0.4+ | 0.8+ |
| 2001 08 07 | 608 | 0.7+ | 0.6+ | 2001 08 24 | 704 | 0.3+ | 0.4− | 2005 12 26 | 691 | 0.2− | 0.0 |
| 2001 08 07 | 608 | 0.8+ | 0.4+ | 2001 08 24 | 608 | 0.8− | 0.2+ | 2006 01 05 | 691 | 0.1− | 0.1− |
| 2001 08 16 | 704 | 0.2− | 0.1+ | 2001 08 24 | 608 | 0.7− | 0.0 | 2006 01 05 | 691 | 0.1+ | 0.0 |
| 2001 08 16 | 704 | 0.0 | 0.2+ | 2001 08 24 | 608 | 0.8− | 0.4+ | 2006 01 05 | 691 | 0.0 | 0.0 |

**2001 QC$_{37}$ = 2006 UY$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.17218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21312902 | $\omega$ | 355.29017 | | +0.71152607 | | +0.69764641 |
| $a$ | 2.7757115 | $\Omega$ | 320.03231 | | −0.64034257 | | +0.59470271 |
| $e$ | 0.2093576 | $i$ | 7.49479 | | −0.28929576 | | +0.39952243 |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.1− | 0.3− | 2001 08 24 | 704 | (1.2+ | 2.1−) | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 08 16 | 704 | 0.2+ | 0.6− | 2001 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 703 | (2.7+ | 0.2−) |
| 2001 08 16 | 704 | 0.3+ | 0.1+ | 2001 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2001 08 16 | 704 | 0.1+ | 0.2+ | 2001 09 20 | 704 | 0.3− | 0.4+ | 2006 10 17 | 703 | 1.3− | 0.2+ |
| 2001 08 16 | 704 | 0.5+ | 0.0 | 2001 09 20 | 704 | 0.8− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2001 08 19 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2001 08 19 | 704 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.4− |
| 2001 08 19 | 704 | 0.4− | 0.2− | 2006 09 28 | 703 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 08 19 | 704 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.1− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 08 24 | 704 | (1.4+ | 1.9−) | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2001 08 24 | 704 | (1.9+ | 1.8−) | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |

**2001 QU$_{39}$ = 2006 QA$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.74707 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21025716 | $\omega$ | 186.02334 | | +0.80453325 | | +0.58037895 |
| $a$ | 2.8009295 | $\Omega$ | 137.66249 | | −0.53679014 | | +0.80140556 |
| $e$ | 0.2168056 | $i$ | 10.78624 | | −0.25413105 | | +0.14460081 |
| $P$ | 4.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.1+ | 0.6+ | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 699 | 0.2+ | 0.5+ |
| 2001 08 16 | 704 | 0.2− | 0.8+ | 2006 08 27 | D35 | 0.1− | 0.2+ | 2006 09 17 | 699 | 1.6− | 0.1− |
| 2001 08 16 | 704 | 1.2− | 0.3+ | 2006 08 27 | D35 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.1+ | 0.1+ |
| 2001 08 19 | 704 | 0.3+ | 0.2+ | 2006 08 27 | D35 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.5− |
| 2001 08 19 | 704 | 0.3+ | 0.4− | 2006 08 30 | D35 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 1.0− | 0.9− |
| 2001 08 19 | 704 | 0.9+ | 0.3+ | 2006 08 30 | D35 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.5− |
| 2001 08 19 | 704 | 0.6+ | 0.2+ | 2006 08 30 | D35 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.7− |
| 2001 08 24 | 704 | 0.2− | 0.7− | 2006 09 17 | 699 | 0.0 | 0.7− | 2006 10 11 | 644 | 0.3+ | 0.4− |
| 2001 08 24 | 704 | 0.1− | 0.4− | 2006 09 17 | 699 | 0.2− | 1.3+ | 2006 10 11 | 644 | 0.3+ | 0.5− |
| 2001 08 24 | 704 | 0.5− | 0.5− | 2006 09 17 | 699 | 0.2− | 1.2+ | 2006 10 11 | 644 | 0.4+ | 0.7− |
| 2004 02 12 | 691 | 0.4− | 0.3+ | 2006 09 17 | 699 | 0.3− | 1.2+ | | | | |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 17 | 699 | 1.0+ | 0.5+ | | | | |

**2001 QY$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.93685 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22898441 | $\omega$ | 344.69457 | | +0.70461918 | | +0.70906997 |
| $a$ | 2.6460544 | $\Omega$ | 330.08857 | | −0.64520430 | | +0.62435782 |
| $e$ | 0.1628634 | $i$ | 3.10931 | | −0.29533576 | | +0.32771497 |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.0 | 0.1− | 2001 08 24 | 699 | 0.3− | 0.7− | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2001 07 27 | 699 | 0.1+ | 0.0 | 2001 08 26 | 608 | 1.2+ | 1.3+ | 2006 10 31 | 691 | 0.6+ | 0.2+ |
| 2001 07 27 | 699 | 0.3+ | 1.0+ | 2001 08 26 | 608 | 1.1+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2001 07 27 | 699 | 0.3− | 0.1+ | 2001 08 26 | 608 | 0.5+ | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2001 08 16 | 704 | 0.8− | 0.2+ | 2001 08 26 | 608 | 0.6+ | 0.5+ | 2006 11 02 | 691 | 0.2+ | 0.0 |
| 2001 08 16 | 704 | 0.8− | 0.0 | 2001 08 26 | 608 | 0.5+ | 0.2+ | 2006 11 02 | 691 | 0.1+ | 0.1− |
| 2001 08 16 | 704 | 0.1− | 0.4− | 2001 08 26 | 608 | 0.7+ | 0.1− | 2006 11 02 | 691 | 0.1+ | 0.0 |
| 2001 08 16 | 704 | 0.3− | 0.5+ | 2001 08 28 | 644 | 0.1− | 0.4− | 2006 11 17 | 711 | 0.4− | 0.1+ |
| 2001 08 19 | 704 | 0.1+ | 0.2+ | 2001 08 28 | 644 | 0.0 | 0.4− | 2006 11 17 | 711 | 0.2− | 0.0 |
| 2001 08 19 | 704 | 0.3− | 0.2+ | 2001 08 28 | 644 | 0.0 | 0.6− | 2006 11 17 | 711 | 0.2− | 0.0 |
| 2001 08 19 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2001 08 19 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2001 08 24 | 699 | 0.8− | 0.9− | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.5− |
| 2001 08 24 | 699 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2001 08 24 | 704 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 1.1− | 0.5+ |
| 2001 08 24 | 699 | 0.5− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.8− | 0.4− |
| 2001 08 24 | 704 | 0.4− | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.0 | | | | |
| 2001 08 24 | 704 | 0.7− | 1.4− | 2006 10 27 | 691 | 0.1+ | 0.1+ | | | | |

**2001 QT$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.82656 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28439523 | $\omega$ | 254.98811 | | +0.77217787 | | −0.58578831 |
| $a$ | 2.2901003 | $\Omega$ | 139.97873 | | +0.62119098 | | +0.77744003 |
| $e$ | 0.2642780 | $i$ | 22.50620 | | −0.13365296 | | +0.22899576 |
| $P$ | 3.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.4− | 0.1+ | 2001 08 22 | 608 | 0.5+ | 0.2− | 2001 09 10 | 699 | 0.1− | 0.4+ |
| 2001 07 20 | 699 | 0.1− | 0.3+ | 2001 08 22 | 608 | 0.4+ | 1.0− | 2001 09 10 | 699 | 0.7− | 0.4+ |
| 2001 07 20 | 699 | 0.3+ | 0.5+ | 2001 08 23 | 699 | 0.2− | 0.6− | 2001 09 10 | 699 | 0.1− | 0.5+ |
| 2001 07 20 | 699 | 0.5− | 0.2+ | 2001 08 23 | 699 | 0.0 | 0.1+ | 2001 09 11 | 704 | 0.1− | 0.6+ |
| 2001 08 14 | 608 | 0.2+ | 0.3+ | 2001 08 23 | 699 | 0.4+ | 0.3− | 2001 09 11 | 704 | 0.3− | 0.5− |
| 2001 08 14 | 608 | 0.3+ | 0.5+ | 2001 08 23 | 699 | 0.7− | 0.1+ | 2001 09 11 | 704 | 0.2− | 0.4+ |
| 2001 08 14 | 608 | 0.3+ | 0.3+ | 2001 08 25 | 704 | 0.0 | 0.8− | 2001 09 11 | 704 | 0.5+ | 1.3+ |
| 2001 08 16 | 704 | 0.4+ | 0.4+ | 2001 08 25 | 704 | 0.1+ | 0.4− | 2001 09 11 | 704 | 0.0 | 0.8+ |
| 2001 08 16 | 704 | 0.6+ | 0.2+ | 2001 08 25 | 704 | 0.1+ | 0.1− | 2001 09 24 | 644 | 0.7− | 0.3− |
| 2001 08 16 | 704 | 0.4+ | 0.3+ | 2001 08 25 | 704 | 0.7− | 0.2+ | 2001 09 24 | 644 | 0.8− | 0.2− |
| 2001 08 16 | 704 | 0.2− | 0.3+ | 2001 08 25 | 704 | 0.6− | 0.0 | 2001 09 24 | 644 | 0.8− | 0.1− |
| 2001 08 16 | 704 | 0.1− | 0.4+ | 2001 08 26 | 608 | 0.6+ | 0.7− | 2006 01 11 | 704 | 0.0 | 0.0 |
| 2001 08 19 | 704 | 0.2+ | 0.7+ | 2001 08 26 | 608 | 0.4+ | 1.0− | 2006 01 11 | 704 | 0.1− | 0.4+ |
| 2001 08 19 | 704 | 0.1− | 0.8+ | 2001 08 26 | 608 | 0.6+ | 1.0− | 2006 01 11 | 704 | 0.2− | 0.3− |
| 2001 08 19 | 704 | 0.1− | 0.5+ | 2001 08 26 | 608 | 0.3+ | 0.8− | 2006 01 12 | 644 | 0.2+ | 0.3+ |
| 2001 08 19 | 704 | 0.2+ | 1.1+ | 2001 08 26 | 608 | 0.3+ | 1.7− | 2006 01 12 | 644 | 0.1− | 0.1+ |
| 2001 08 19 | 704 | 0.4− | 0.9+ | 2001 08 26 | 608 | 0.2+ | 1.2− | 2006 01 12 | 644 | 0.0 | 0.0 |
| 2001 08 22 | 608 | 0.3+ | 0.8− | 2001 09 10 | 699 | 0.3− | 0.0 | | | | |

**2001 QQ$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.43536 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26212160 | $\omega$ | 211.72028 | | +0.83291019 | | +0.55149954 |
| $a$ | 2.4180624 | $\Omega$ | 114.74187 | | −0.49658087 | | +0.78143158 |
| $e$ | 0.2088139 | $i$ | 2.89834 | | −0.24427043 | | +0.29191258 |
| $P$ | 3.76 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.0 | 0.0 | 2001 08 19 | 704 | 0.2+ | 0.5+ | 2005 10 01 | 699 | 0.0 | 1.1+ |
| 2001 07 27 | 699 | 0.2+ | 0.0 | 2005 07 06 | 291 | 0.2− | 0.2+ | 2005 10 08 | 703 | 0.0 | 1.7+ |
| 2001 07 27 | 699 | 0.4+ | 0.6− | 2005 07 06 | 291 | 0.1+ | 0.1− | 2005 10 08 | 703 | (0.8+ | 3.1+) |
| 2001 07 27 | 699 | 0.3− | 0.2+ | 2005 07 06 | 291 | 0.1− | 0.0 | 2005 10 08 | 703 | 0.0 | 0.2+ |
| 2001 08 16 | 704 | 1.0− | 0.7− | 2005 09 24 | 644 | 0.1− | 0.5+ | 2005 10 08 | 703 | 1.3+ | 0.7− |
| 2001 08 16 | 704 | (1.0− | 2.5−) | 2005 09 24 | 644 | 0.1+ | 0.1− | 2005 11 30 | G96 | 0.3− | 0.8− |
| 2001 08 16 | 704 | 0.1+ | 1.4− | 2005 09 24 | 644 | 0.1+ | 0.1− | 2005 11 30 | G96 | 0.0 | 0.1− |
| 2001 08 19 | 704 | 1.1+ | 0.1+ | 2005 10 01 | 699 | 0.9+ | 0.6− | 2005 11 30 | G96 | 0.3− | 0.4− |
| 2001 08 19 | 704 | 0.0 | 0.7+ | 2005 10 01 | 699 | 0.1+ | 0.2− | 2005 11 30 | G96 | 0.0 | 0.3− |
| 2001 08 19 | 704 | 0.5− | 0.6+ | 2005 10 01 | 699 | 1.8− | 0.7− | | | | |

**2001 QN$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.58072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21091546 | $\omega$ | 49.58985 | | +0.99034823 | | −0.08679050 |
| $a$ | 2.7950984 | $\Omega$ | 315.07910 | | +0.02250341 | | +0.87001449 |
| $e$ | 0.1040903 | $i$ | 8.80295 | | +0.13676251 | | +0.48532689 |
| $P$ | 4.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 15 | 608 | 0.6− | 0.6− | 2001 09 20 | 704 | 0.5− | 0.1− | 2006 09 27 | 703 | 0.0 | 0.6− |
| 2001 08 15 | 608 | 1.0− | 0.9− | 2001 10 18 | 644 | 0.5− | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 15 | 608 | 0.4+ | 0.6− | 2001 10 18 | 644 | 0.2− | 0.6+ | 2006 09 27 | 703 | 0.1+ | 0.4+ |
| 2001 08 15 | 608 | 0.2+ | 0.8− | 2001 10 18 | 644 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.2− |
| 2001 08 15 | 608 | 0.1+ | 1.1− | 2006 08 29 | 703 | 0.4− | 0.7+ | 2006 09 27 | 703 | 0.4− | 0.1+ |
| 2001 08 15 | 608 | 0.3+ | 0.8− | 2006 08 29 | 703 | 0.3− | 0.4− | 2006 09 27 | 703 | 0.4+ | 0.2+ |
| 2001 08 16 | 704 | 0.5− | 0.8+ | 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 1.0− | 1.5− |
| 2001 08 16 | 704 | 0.9− | 0.7+ | 2006 08 29 | 703 | 1.2− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 08 16 | 704 | 0.2− | 0.5+ | 2006 08 29 | 699 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2001 08 16 | 704 | 0.0 | 0.6+ | 2006 08 29 | 699 | 0.7+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 699 | 1.2− | 0.3+ | 2006 10 16 | 683 | 0.5+ | 0.8− |
| 2001 08 19 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 10 16 | 683 | 0.8+ | 0.3− |
| 2001 08 19 | 704 | 0.6− | 0.1+ | 2006 09 14 | 644 | 0.4− | 0.3− | 2006 10 16 | 683 | (1.7+ | 0.1−) |
| 2001 08 19 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 17 | 683 | 1.3+ | 0.3+ |
| 2001 08 19 | 704 | 0.0 | 0.4+ | 2006 09 16 | 703 | 0.9+ | 0.8+ | 2006 10 17 | 683 | 1.5+ | 0.9− |
| 2001 08 19 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 703 | 0.8− | 1.0+ | 2006 10 17 | 683 | 0.0 | 0.7+ |
| 2001 08 24 | 699 | 0.3+ | 0.4− | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.8+ |
| 2001 08 24 | 699 | 0.3+ | 0.4− | 2006 09 16 | 703 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2001 08 24 | 699 | (1.7− | 0.9+) | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2001 08 24 | 699 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 1.2+ | 0.2− | 2006 10 17 | 703 | 0.5− | 0.5− |
| 2001 08 28 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.8− | 2006 10 19 | 683 | 0.1+ | 0.5− |
| 2001 08 28 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 10 19 | 683 | (1.5− | 0.7−) |
| 2001 08 28 | 644 | 0.4+ | 0.3+ | 2006 09 27 | 699 | 0.2+ | 0.1− | 2006 10 19 | 683 | 0.7− | 0.9− |
| 2001 09 12 | 704 | 0.0 | 0.7− | 2006 09 27 | 699 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.3+ | 0.5+ |
| 2001 09 12 | 704 | 0.4+ | 0.3− | 2006 09 27 | 699 | 0.5− | 0.0 | 2006 10 23 | 703 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.5− | 0.1+ | 2006 09 27 | 703 | 0.8+ | 1.1+ | 2006 10 23 | 703 | 0.1− | 0.5+ |
| 2001 09 20 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.1− | 2006 10 23 | 703 | 0.6− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.3− | 2006 09 27 | 703 | 0.1− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.3− | 0.6− | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.6+ | 0.1− | 2006 09 27 | 703 | 0.6+ | 0.8+ | 2006 10 24 | 644 | 0.1− | 0.3− |

### 2001 QV$_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.12979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21924208 | $\omega$ | 2.26605 | | +0.84642896 | +0.52013409 | |
| $a$ | 2.7238725 | $\Omega$ | 325.60888 | | −0.49168286 | +0.68112120 | |
| $e$ | 0.1683393 | $i$ | 11.65407 | | −0.20446512 | +0.51530034 | |
| $P$ | 4.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 15 | 608 | 1.3− | 0.2+ | 2001 08 24 | 691 | 0.4+ | 0.5+ | 2006 10 02 | 703 | 0.6+ | 0.9− |
| 2001 08 15 | 608 | 0.5− | 1.0− | 2001 08 24 | 691 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.4+ | 0.2− |
| 2001 08 15 | 608 | 1.2− | 0.4− | 2001 09 20 | 704 | 1.0+ | 0.0 | 2006 10 11 | 644 | 0.7+ | 0.2+ |
| 2001 08 16 | 704 | 0.9− | 0.1− | 2001 09 20 | 704 | 0.1+ | 0.9− | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 2001 08 16 | 704 | 1.1− | 0.3− | 2001 09 20 | 704 | 1.2+ | 1.0− | 2006 10 29 | 703 | 0.3+ | 0.4− |
| 2001 08 16 | 704 | 0.1− | 0.1+ | 2006 09 25 | 703 | 0.2+ | 0.4+ | 2006 10 29 | 703 | 0.2− | 0.4+ |
| 2001 08 16 | 704 | 0.8− | 0.4− | 2006 09 25 | 703 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.8− | 0.3− |
| 2001 08 16 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 703 | 0.4+ | 0.1− | 2006 10 29 | 703 | 0.6− | 0.6+ |
| 2001 08 19 | 704 | 1.5+ | 0.7− | 2006 09 25 | 703 | 0.2+ | 0.8+ | 2006 11 15 | 703 | 0.1+ | 0.6+ |
| 2001 08 19 | 704 | (0.2− | 1.8−) | 2006 10 02 | 703 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2001 08 19 | 704 | 0.0 | 1.4− | 2006 10 02 | 703 | 0.9− | 0.7− | 2006 11 15 | 703 | 0.2− | 0.4+ |
| 2001 08 24 | 691 | 0.6− | 0.2+ | 2006 10 02 | 703 | 0.6+ | 0.5− | 2006 11 15 | 703 | 0.7− | 0.0 |

### 2001 QC$_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.00841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22350056 | $\omega$ | 35.11844 | | +0.99891778 | +0.01837142 | |
| $a$ | 2.6891620 | $\Omega$ | 323.75642 | | −0.03566693 | +0.89220723 | |
| $e$ | 0.1646888 | $i$ | 4.14452 | | +0.02985192 | +0.45125242 | |
| $P$ | 4.41 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.4− | 0.5+ | 2001 08 24 | 699 | 0.9− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2001 08 16 | 704 | 0.3− | 0.6+ | 2001 08 24 | 699 | 0.8+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2001 08 16 | 704 | 0.2− | 0.3− | 2001 08 24 | 699 | 1.2− | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.2+ |
| 2001 08 16 | 704 | 0.5− | 0.4+ | 2001 08 24 | 699 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2001 08 19 | 704 | 0.4− | 1.0− | 2001 09 07 | 704 | 0.2− | 1.1− | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2001 08 19 | 704 | 0.6− | 0.2+ | 2001 09 07 | 704 | 0.7− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2001 08 19 | 704 | 0.4+ | 0.1+ | 2001 09 07 | 704 | 0.8− | 1.4− | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2001 08 21 | 691 | 0.1− | 0.0 | 2001 09 20 | 704 | 1.1+ | 1.0− | 2006 11 22 | 704 | 1.3− | 0.3− |
| 2001 08 21 | 691 | 0.2− | 0.1+ | 2001 09 20 | 704 | 0.7+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.4+ |
| 2001 08 21 | 691 | 0.1− | 0.1+ | 2001 09 20 | 704 | 0.6+ | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2001 08 22 | 691 | 0.1+ | 0.0 | 2001 09 20 | 704 | (0.9− | 1.6+) | 2006 11 22 | 704 | 0.0 | 0.5− |
| 2001 08 22 | 691 | 0.3+ | 0.1− | 2001 09 22 | 704 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2001 08 22 | 691 | 0.2+ | 0.0 | 2001 09 22 | 704 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.6+ | 0.2+ |
| 2001 08 23 | 691 | 0.3+ | 0.3+ | 2001 09 22 | 704 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.3+ |
| 2001 08 23 | 691 | 0.1− | 0.0 | 2001 09 22 | 704 | 0.5+ | 0.2+ | 2006 11 28 | 704 | 0.9− | 0.9− |
| 2001 08 23 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.1− |

### 2001 QZ$_{53}$ = 1997 SA$_{20}$

Id. Minor Planet Center; 1997 SA$_{20}$ = 1999 CF$_{130}$ (MPC 38461) is invalid.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.24826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24028124 | $\omega$ | 342.49501 | | +0.93259582 | +0.36090338 | |
| $a$ | 2.5624544 | $\Omega$ | 356.34297 | | −0.32378573 | +0.83204828 | |
| $e$ | 0.2695461 | $i$ | 3.33692 | | −0.15946107 | +0.42124151 | |
| $P$ | 4.10 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 691 | 0.3+ | 0.1− | 2000 04 05 | 691 | 0.2− | 0.3− | 2001 09 12 | 704 | 0.3+ | 0.4− |
| 1993 09 16 | 691 | 0.3+ | 0.0 | 2001 08 16 | 704 | 0.6− | 0.0 | 2001 09 12 | 704 | 0.1− | 0.2+ |
| 1993 09 16 | 691 | 0.5+ | 0.3+ | 2001 08 16 | 704 | 0.4+ | 0.2+ | 2001 09 19 | 704 | 0.0 | 0.2− |
| 1993 09 17 | 691 | 0.1+ | 0.0 | 2001 08 16 | 704 | 1.1+ | 0.2+ | 2001 09 19 | 704 | 0.3− | 0.0 |
| 1993 09 17 | 691 | 0.4+ | 0.2− | 2001 08 16 | 704 | 0.1+ | 0.4+ | 2001 09 19 | 704 | 0.1+ | 0.2− |
| 1993 09 17 | 691 | 0.1− | 0.3− | 2001 08 19 | 704 | 0.3− | 0.7+ | 2001 09 19 | 704 | 0.3+ | 0.0 |
| 1993 11 09 | 691 | 1.1− | 0.5+ | 2001 08 19 | 704 | 0.3− | 1.0+ | 2001 09 19 | 704 | 0.2− | 0.3− |
| 1993 11 09 | 691 | 0.4+ | 0.6+ | 2001 08 19 | 704 | 0.2− | 1.2− | 2001 09 21 | 704 | 0.7− | 0.3+ |
| 1993 11 09 | 691 | 0.2+ | 0.1− | 2001 08 23 | 699 | 0.7− | 0.1− | 2001 09 21 | 704 | 0.4− | 0.7+ |
| 1997 09 28 | 691 | 0.8− | 0.1− | 2001 08 23 | 699 | 0.7− | 0.3+ | 2001 09 21 | 704 | 0.3+ | 0.6+ |
| 1997 09 28 | 691 | 0.7− | 0.3− | 2001 08 23 | 699 | 0.3− | 0.1+ | 2001 09 21 | 704 | 0.6− | 0.3+ |
| 1997 09 28 | 691 | 0.5− | 0.2− | 2001 08 23 | 699 | 0.4− | 0.3+ | 2005 07 10 | E12 | 0.2− | 0.3+ |
| 1997 10 03 | 691 | 0.2+ | 0.4− | 2001 09 07 | 704 | 0.9+ | 1.0+ | 2005 07 10 | E12 | 0.2+ | 0.4− |
| 1997 10 03 | 691 | 0.0 | 0.4− | 2001 09 07 | 704 | 0.4+ | 0.9+ | 2005 07 10 | E12 | 0.4− | 0.2+ |
| 1997 10 03 | 691 | 0.2− | 0.5− | 2001 09 07 | 704 | 0.4+ | 0.5+ | 2005 08 06 | 704 | 0.2− | 0.7− |
| 1997 10 10 | 691 | 0.4+ | 0.2− | 2001 09 07 | 704 | 0.8+ | 0.7+ | 2005 08 06 | 704 | 0.0 | 0.0 |
| 1997 10 10 | 691 | 0.3+ | 0.4− | 2001 09 07 | 704 | 0.7+ | 0.6− | 2005 08 06 | 704 | 0.1+ | 0.0 |
| 1997 10 10 | 691 | 0.4+ | 0.2− | 2001 09 10 | 699 | 0.5+ | 1.0+ | 2005 08 06 | 704 | 0.0 | 0.9− |
| 1997 10 25 | 809 | 0.2+ | 0.9+ | 2001 09 10 | 699 | 0.2+ | 0.2+ | 2005 08 06 | 704 | 0.2+ | 0.7+ |
| 1997 10 25 | 809 | 0.9+ | 0.3+ | 2001 09 10 | 699 | 0.6− | 0.6− | 2005 10 25 | G96 | 0.6+ | 0.3− |
| 1997 10 27 | 809 | 0.5+ | 0.3+ | 2001 09 10 | 699 | 0.2+ | 0.6+ | 2005 10 25 | G96 | 0.4+ | 0.2− |
| 1997 10 27 | 809 | 0.1+ | 0.1− | 2001 09 12 | 704 | 0.1+ | 0.5− | 2005 10 25 | G96 | 0.3+ | 0.4− |
| 2000 04 05 | 691 | 0.3− | 0.4− | 2001 09 12 | 704 | 0.1− | 0.1− | 2005 10 25 | G96 | 0.5+ | 0.6− |
| 2000 04 05 | 691 | 0.1− | 0.4− | 2001 09 12 | 704 | 0.2+ | 0.0 | | | | |

### 2001 QY$_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.71467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21942438 | $\omega$ | 164.31985 | | +0.99861508 | −0.04619070 | |
| $a$ | 2.7223636 | $\Omega$ | 198.38325 | | +0.03543490 | +0.94436880 | |
| $e$ | 0.1241784 | $i$ | 4.58063 | | +0.03888821 | +0.32562861 | |
| $P$ | 4.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 28 | 691 | 0.1+ | 0.6− | 2001 09 08 | 704 | 0.8− | 0.9− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 1997 11 28 | 691 | 0.0 | 0.5− | 2001 09 08 | 704 | 0.1+ | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1997 11 28 | 691 | 0.2+ | 0.5− | 2001 09 16 | 704 | 0.4− | 0.2− | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2001 08 17 | 704 | 1.1− | 1.3+ | 2001 09 16 | 704 | 0.7+ | 0.4− | 2006 11 20 | 704 | 1.2− | 0.2+ |
| 2001 08 17 | 704 | (1.8+ | 0.2−) | 2001 09 16 | 704 | 0.0 | 0.7− | 2006 11 20 | 704 | 0.0 | 0.5− |
| 2001 08 17 | 704 | 0.4+ | 0.2− | 2001 09 20 | 704 | 0.0 | 1.5+ | 2006 11 20 | 704 | 0.7− | 0.4+ |
| 2001 08 17 | 704 | 0.9+ | 0.1+ | 2001 09 20 | 704 | 0.1+ | 1.2+ | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2001 08 19 | 704 | 1.1+ | 0.8− | 2001 09 20 | 704 | 0.0 | 1.3+ | 2006 11 20 | 704 | 0.5− | 0.7− |
| 2001 08 19 | 704 | 1.1+ | 0.3+ | 2001 09 20 | 704 | 0.3− | 1.5+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 08 19 | 704 | 0.6− | 0.9+ | 2001 09 20 | 704 | (0.2+ | 2.0+) | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 08 19 | 704 | 0.7− | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.2+ | 1.5− | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2001 08 23 | 699 | 1.1− | 0.8− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 23 | 699 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.8+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2001 08 23 | 699 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.6− | 1.1+ | | |
| 2001 09 08 | 704 | 0.3+ | 1.2− | 2006 11 12 | G96 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.2− | 1.9+ | | |
| 2001 09 08 | 704 | 0.1− | 0.9− | 2006 11 12 | G96 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1− | 1.3+ | | |

**2001 QQ$_{59}$ = 2006 UM$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.99680 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22034126 | $\omega$ | 290.07541 | | +0.67131819 | | +0.74076496 |
| $a$ | 2.7148062 | $\Omega$ | 22.15125 | | −0.65345050 | | +0.60712860 |
| $e$ | 0.2037170 | $i$ | 3.72215 | | −0.34976324 | | +0.28751022 |
| $P$ | 4.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.6− | 0.2− | 2001 08 19 | 704 | 0.8+ | 0.1− | 2001 08 25 | 699 | 0.4− | 0.3− | | |
| 2001 07 25 | 608 | 0.0 | 0.4− | 2001 08 19 | 704 | 1.0+ | 0.2+ | 2001 09 10 | 699 | 0.1− | 0.4− | | |
| 2001 07 25 | 608 | 0.3− | 0.5− | 2001 08 19 | 704 | 0.4+ | 0.3− | 2001 09 10 | 699 | 0.1+ | 1.2+ | | |
| 2001 08 11 | 608 | 0.7+ | 0.3− | 2001 08 23 | 608 | 0.4− | 0.1+ | 2001 09 10 | 699 | 0.8− | 0.7+ | | |
| 2001 08 11 | 608 | 0.3+ | 1.5− | 2001 08 23 | 608 | 0.5− | 1.1+ | 2001 09 10 | 699 | 1.8− | 0.3− | | |
| 2001 08 11 | 608 | 0.1+ | 0.5− | 2001 08 23 | 608 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 18 | 704 | (0.4+ | 2.2+) | 2001 08 25 | 704 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.1− | 0.2− | | |
| 2001 08 18 | 704 | 0.3− | 1.3+ | 2001 08 25 | 699 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | | |
| 2001 08 18 | 704 | 0.5+ | 0.7+ | 2001 08 25 | 704 | 1.3− | 0.7− | 2006 10 20 | 691 | 0.2+ | 0.1+ | | |
| 2001 08 18 | 704 | 0.4+ | 0.7+ | 2001 08 25 | 699 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2001 08 19 | 704 | 1.3+ | 0.0 | 2001 08 25 | 699 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2− | | |
| 2001 08 19 | 704 | 0.1+ | 0.1+ | 2001 08 25 | 704 | 0.2+ | 0.3− | | | | | | |

**2001 QB$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.92344 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23806762 | $\omega$ | 23.53677 | | +0.95313779 | | +0.29857506 |
| $a$ | 2.5783141 | $\Omega$ | 318.99115 | | −0.28804443 | | +0.84627407 |
| $e$ | 0.3426223 | $i$ | 4.26491 | | −0.09251358 | | +0.44121778 |
| $P$ | 4.14 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 691 | 0.2− | 0.4− | 2001 09 06 | 644 | 0.2+ | 0.0 | 2001 09 23 | 704 | 0.6+ | 0.6+ | | |
| 1999 02 10 | 691 | 0.1+ | 0.4+ | 2001 09 06 | 644 | 0.2+ | 0.1− | 2001 09 23 | 704 | 1.0− | 0.4+ | | |
| 1999 02 10 | 691 | 0.1+ | 0.1− | 2001 09 06 | 644 | 0.1+ | 0.0 | 2001 10 13 | 291 | 0.2− | 0.2+ | | |
| 2001 06 27 | 608 | 0.6− | 0.7+ | 2001 09 07 | 699 | 0.6+ | 0.1− | 2001 10 13 | 291 | 0.8− | 0.2+ | | |
| 2001 06 27 | 608 | 0.1− | 0.3+ | 2001 09 07 | 699 | 0.5+ | 0.1+ | 2001 10 13 | 291 | 1.4− | 0.1+ | | |
| 2001 06 27 | 608 | 0.6− | 0.0 | 2001 09 07 | 699 | 0.1+ | 0.0 | 2001 10 16 | 704 | 0.1− | 1.1− | | |
| 2001 07 20 | 704 | 0.6− | 0.1+ | 2001 09 07 | 699 | 0.1− | 0.2+ | 2001 10 16 | 704 | 0.1− | 0.4− | | |
| 2001 07 20 | 704 | 0.5− | 0.4+ | 2001 09 08 | 704 | 0.8+ | 0.3− | 2001 10 16 | 704 | 0.3− | 1.1− | | |
| 2001 07 20 | 704 | 0.2+ | 0.2− | 2001 09 08 | 704 | 0.3+ | 0.4− | 2001 10 16 | 704 | 0.0 | 0.8− | | |
| 2001 07 20 | 704 | 0.3− | 0.1+ | 2001 09 08 | 704 | 0.6+ | 0.3− | 2001 10 16 | 704 | 0.0 | 0.6− | | |
| 2001 07 20 | 704 | 0.4− | 0.5+ | 2001 09 08 | 704 | 0.6+ | 0.8− | 2001 10 21 | 704 | 0.7+ | 0.4− | | |
| 2001 08 16 | 704 | 0.1+ | 0.0 | 2001 09 08 | 704 | 0.5+ | 0.7− | 2001 10 21 | 704 | 0.3+ | 0.8− | | |
| 2001 08 16 | 704 | 0.2− | 0.0 | 2001 09 12 | 704 | 0.3+ | 0.4+ | 2001 10 21 | 704 | 0.7+ | 0.4− | | |
| 2001 08 16 | 704 | 0.5− | 0.3+ | 2001 09 12 | 704 | 0.1− | 1.2+ | 2001 10 21 | 644 | 0.3− | 0.9+ | | |
| 2001 08 16 | 704 | 0.1− | 0.0 | 2001 09 12 | 704 | 0.3− | 0.0 | 2001 10 21 | 704 | (0.8+ | 2.0−) | | |
| 2001 08 16 | 704 | 0.3− | 0.1− | 2001 09 12 | 704 | 0.2− | 0.0 | 2001 10 21 | 644 | 0.4− | 1.1+ | | |
| 2001 08 18 | 704 | (2.0+ | 0.4−) | 2001 09 12 | 704 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.7+ | 1.1− | | |
| 2001 08 18 | 704 | 1.4+ | 0.2+ | 2001 09 20 | 704 | 1.1+ | 0.1− | 2001 10 21 | 644 | 0.3− | 0.9+ | | |
| 2001 08 18 | 704 | (1.6+ | 0.5+) | 2001 09 20 | 704 | 0.4+ | 0.3+ | 2001 11 10 | 704 | 0.1+ | 1.0+ | | |
| 2001 08 18 | 704 | 0.1+ | 1.0− | 2001 09 20 | 704 | 0.7+ | 0.4+ | 2001 11 10 | 704 | 0.1− | 1.1+ | | |
| 2001 08 18 | 704 | 0.5− | 0.4− | 2001 09 20 | 704 | 0.6+ | 0.3+ | 2001 11 10 | 704 | (0.2+ | 2.0+) | | |
| 2001 08 20 | 704 | 0.1+ | 0.3+ | 2001 09 20 | 704 | 0.8− | 0.5− | 2001 11 10 | 704 | 0.1+ | 1.3+ | | |
| 2001 08 20 | 704 | 0.3+ | 0.2+ | 2001 09 22 | 704 | 1.3+ | 0.2− | 2001 11 10 | 704 | 0.7+ | 1.4+ | | |
| 2001 08 20 | 704 | 0.2− | 0.1+ | 2001 09 22 | 704 | 0.0 | 0.5+ | 2001 11 18 | 645 | 0.0 | 0.0 | | |
| 2001 08 20 | 704 | 0.3− | 0.0 | 2001 09 22 | 704 | 0.1+ | 1.1− | 2001 11 18 | 645 | 0.0 | 0.1− | | |
| 2001 08 23 | 699 | 0.0 | 0.0 | 2001 09 22 | 704 | 0.3+ | 0.2− | 2005 08 06 | 704 | 0.3+ | 0.5− | | |
| 2001 08 23 | 699 | 0.1− | 0.1+ | 2001 09 22 | 704 | (2.0− | 0.1+) | 2005 08 06 | 704 | 0.3+ | 0.6+ | | |
| 2001 08 23 | 699 | 0.3+ | 0.0 | 2001 09 23 | 704 | (2.1+ | 0.7−) | 2005 08 06 | 704 | 0.7− | 0.1− | | |
| 2001 08 23 | 699 | 0.1+ | 0.1− | 2001 09 23 | 704 | 0.6+ | 0.5− | 2005 08 06 | 704 | 0.1+ | 0.2− | | |

**2001 QQ$_{89}$ = 2006 VS$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.40410 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22393198 | $\omega$ | 354.10411 | | +0.69472877 | | −0.69935485 |
| $a$ | 2.6857070 | $\Omega$ | 51.74116 | | +0.66835741 | | +0.54131529 |
| $e$ | 0.1727047 | $i$ | 12.36090 | | +0.26580126 | | +0.46677677 |
| $P$ | 4.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.8− | 0.2− | 2006 11 17 | 691 | 0.0 | 0.1− | | |
| 2001 08 16 | 644 | 0.3+ | 0.9+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.1− | 0.1+ | | |
| 2001 08 16 | 644 | 0.1+ | 0.8+ | 2006 10 28 | G96 | 0.6− | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.0 | | |
| 2001 08 22 | 644 | 0.2− | 0.4− | 2006 11 11 | 703 | (2.1− | 0.9−) | 2006 11 19 | 704 | 0.2+ | 0.2+ | | |
| 2001 08 22 | 644 | 0.2+ | 0.3− | 2006 11 11 | 703 | (0.4− | 2.1−) | 2006 11 19 | 704 | (0.5− | 2.0+) | | |
| 2001 08 22 | 644 | 0.1+ | 0.7− | 2006 11 11 | 703 | 0.6− | 0.7− | 2006 11 19 | 704 | 0.4+ | 0.2+ | | |
| 2001 08 27 | 644 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.0 | | |
| 2001 08 27 | 644 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.1− | | |
| 2001 08 27 | 644 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2004 05 24 | 291 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.2− | | |
| 2004 05 24 | 291 | 0.4+ | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.4− | 0.8+ | | |
| 2004 05 24 | 291 | 0.1+ | 0.7+ | 2006 11 15 | 704 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.7− | 1.3+ | | |
| 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.5− | 0.5+ | | |
| 2006 09 16 | 703 | 0.9− | 0.6+ | 2006 11 15 | 704 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.8− | 0.2+ | | |
| 2006 09 16 | 703 | 0.3+ | 0.8+ | 2006 11 16 | 704 | 0.6− | 0.4− | 2006 11 22 | 704 | 0.5− | 0.3+ | | |
| 2006 09 16 | 703 | (2.4+ | 2.2−) | 2006 11 16 | 704 | 0.8+ | 1.0+ | 2006 11 27 | 704 | 0.1+ | 0.2− | | |
| 2006 09 28 | G96 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.4− | 1.5+ | 2006 11 27 | 704 | 0.2+ | 0.2+ | | |
| 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.7− | 0.5− | 2006 11 27 | 704 | 0.3+ | 0.7− | | |
| 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2+ | 1.2− | | |
| 2006 09 28 | G96 | 0.6− | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 1.0+ | 0.2− | | |
| 2006 10 19 | G96 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.1− | | |
| 2006 10 19 | G96 | 0.0 | 0.2+ | 2006 11 16 | 704 | 1.0− | 0.4− | 2006 11 28 | 704 | 0.8+ | 0.1− | | |
| 2006 10 19 | G96 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.1+ | 2006 11 28 | 704 | (3.2+ | 0.9+) | | |

**2001 QU$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.27832 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17283459 | $\omega$ | 112.04699 | | +0.91858102 | | +0.15718141 |
| $a$ | 3.1918975 | $\Omega$ | 240.62703 | | −0.23258502 | | +0.95680532 |
| $e$ | 0.2968703 | $i$ | 24.59041 | | +0.31955144 | | +0.24457634 |
| $P$ | 5.70 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | (3.7+ | 0.7−) | 2001 09 10 | 704 | 0.7− | 0.0 | 2003 01 02 | 704 | 0.1+ | 0.4+ | | |
| 2001 08 22 | 704 | (3.5+ | 0.8−) | 2001 09 11 | 704 | 0.3+ | 0.1+ | 2003 01 02 | 704 | 0.6+ | 0.4+ | | |
| 2001 08 22 | 704 | (2.9+ | 0.6−) | 2001 09 11 | 704 | 0.2+ | 0.2− | 2003 01 02 | 704 | 0.2+ | 0.1− | | |
| 2001 08 25 | 704 | 0.3+ | 0.2− | 2001 09 11 | 704 | 0.4+ | 0.0 | 2006 05 08 | G96 | 0.6+ | 0.0 | | |
| 2001 08 25 | 704 | 0.3+ | 0.4− | 2001 09 11 | 704 | 0.5+ | 0.1+ | 2006 05 08 | G96 | 0.1− | 0.3+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.2− | 2001 09 12 | 704 | 0.1+ | 0.3− | 2006 05 08 | G96 | 0.2− | 0.2+ | | |
| 2001 08 25 | 704 | 0.1+ | 0.2− | 2001 09 12 | 704 | 0.1+ | 0.3− | 2006 05 08 | G96 | 0.3− | 1.1+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.3− | 2001 09 12 | 704 | 0.4− | 0.2+ | 2006 05 21 | G96 | 0.0 | 0.3− | | |
| 2001 09 10 | 704 | 0.9− | 0.1+ | 2001 11 17 | 704 | 1.1+ | 0.7+ | 2006 05 21 | G96 | 0.2+ | 0.1+ | | |
| 2001 09 10 | 704 | 0.2− | 0.2+ | 2001 11 17 | 704 | 0.0 | 1.3+ | 2006 05 21 | G96 | 0.5− | 0.1− | | |
| 2001 09 10 | 704 | 0.6− | 0.2− | 2001 11 17 | 704 | 0.1− | 0.8+ | 2006 05 21 | G96 | 0.1− | 0.1− | | |
| 2001 09 10 | 704 | 0.3− | 0.1− | 2003 01 02 | 704 | 0.8− | 0.4− | | | | | | |

**2001 QY$_{109}$ = 2006 WU$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.43783 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23220518 | $\omega$ | 273.41025 | | +0.97137651 | | +0.22560423 |
| $a$ | 2.6215297 | $\Omega$ | 73.56143 | | −0.17526254 | | +0.89198383 |
| $e$ | 0.1313219 | $i$ | 4.44695 | | −0.16034562 | | +0.39174938 |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 30 | 691 | 0.0 | 0.3− | 2001 08 21 | 608 | 1.0− | 1.1+ | 2001 09 11 | 704 | 0.6− | 0.8− |
| 2000 04 30 | 691 | 0.1+ | 0.2+ | 2001 08 21 | 608 | 0.1− | 0.8+ | 2001 09 11 | 704 | 0.1+ | 0.7− |
| 2000 04 30 | 691 | 0.2− | 0.0 | 2001 08 21 | 608 | 0.2− | 1.0+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2001 08 19 | 704 | 0.0 | 0.3+ | 2001 08 25 | 608 | (1.9+ | 0.0 ) | 2006 11 16 | 691 | 0.0 | 0.3− |
| 2001 08 19 | 704 | 0.0 | 0.4− | 2001 08 25 | 608 | 1.4+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2001 08 19 | 704 | 0.0 | 0.4− | 2001 08 25 | 608 | 0.7+ | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.3+ |
| 2001 08 19 | 704 | 0.2− | 0.0 | 2001 09 11 | 704 | 0.5− | 0.5− | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2001 08 19 | 704 | 0.5− | 0.7− | 2001 09 11 | 704 | 0.7+ | 0.6− | 2006 11 20 | 691 | 0.1− | 0.0 |

**2001 QF**$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.29234 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20669895 | $\omega$ | 244.98410 | | +0.18140638 | −0.98192433 | |
| $a$ | 2.8329823 | $\Omega$ | 194.86751 | | +0.96099405 | +0.18866171 | |
| $e$ | 0.1080439 | $i$ | 12.14982 | | +0.20876343 | −0.01521070 | |
| $P$ | 4.77 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.5+ | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2001 08 25 | 704 | 0.7+ | 0.4− | 2004 03 27 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 704 | 1.4+ | 0.1+ |
| 2001 08 25 | 704 | 0.7+ | 0.7− | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.3− |
| 2001 08 25 | 704 | 0.2+ | 0.7+ | 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 09 25 | 699 | 0.8+ | 0.8+ |
| 2001 08 25 | 704 | (1.5+ | 1.9+) | 2004 04 24 | E12 | (0.7+ | 2.0−) | 2006 09 29 | 704 | (0.6− | 1.6+) |
| 2001 08 26 | 704 | 0.8+ | 0.1+ | 2004 04 24 | E12 | (0.9+ | 2.1−) | 2006 09 29 | 704 | 0.2+ | 0.3+ |
| 2001 08 26 | 704 | 0.3+ | 0.6− | 2004 04 24 | E12 | (0.4+ | 2.1−) | 2006 09 29 | 704 | 0.4+ | 0.6+ |
| 2001 08 26 | 704 | 0.5+ | 1.2+ | 2004 04 24 | E12 | 1.1+ | 1.0− | 2006 09 29 | 704 | 0.7+ | 0.0 |
| 2001 08 26 | 704 | 0.3+ | 0.1+ | 2006 08 18 | 699 | 0.4− | 0.3+ | 2006 10 01 | 703 | 0.7− | 0.7− |
| 2001 08 26 | 704 | 0.0 | 1.3+ | 2006 08 18 | 699 | 0.3− | 0.2+ | 2006 10 01 | 703 | 0.6− | 1.1− |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 08 18 | 699 | 0.9− | 0.0 | 2006 10 01 | 703 | 0.7+ | 0.3+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 08 18 | 699 | 0.6+ | 0.4+ | 2006 10 01 | 703 | 0.7− | 0.3− |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.3+ | 1.0+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 12 14 | 704 | 0.2− | 1.2+ | 2006 09 19 | 703 | 0.4+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 12 14 | 704 | 0.4+ | 0.4− | 2006 09 19 | 703 | 0.7− | 0.2+ | 2006 10 17 | 106 | 0.2+ | 0.6− |
| 2002 12 14 | 704 | 1.4− | 0.5+ | 2006 09 20 | 699 | 0.5− | 0.2+ | 2006 10 17 | 106 | 1.2+ | 0.6− |
| 2002 12 14 | 704 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.5− | 0.6+ | 2006 10 17 | 106 | 0.5− | 0.1− |
| 2003 01 26 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 704 | (1.4− | 2.0+) | 2006 10 17 | 106 | 0.9+ | 0.1+ |
| 2003 01 26 | 644 | 0.4+ | 0.2+ | 2006 09 20 | 704 | (2.1− | 0.4+) | 2006 10 22 | 644 | 0.2− | 0.6+ |
| 2003 01 26 | 644 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.4− | 1.0+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2003 02 04 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.2+ |
| 2003 02 04 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 704 | (1.7− | 2.0+) | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 02 04 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.8− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2004 03 14 | 644 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2004 03 14 | 644 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.1− | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2004 03 14 | 644 | 0.4+ | 0.3+ | 2006 09 20 | 703 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2004 03 20 | 699 | 1.1+ | 0.5+ | 2006 09 20 | 703 | 0.1− | 0.8− | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2004 03 20 | 699 | 1.3− | 0.2+ | 2006 09 22 | 703 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2004 03 20 | 699 | 0.2− | 1.3+ | 2006 09 22 | 703 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2004 03 20 | 699 | (0.2+ | 2.1+) | 2006 09 22 | 703 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2004 03 27 | 291 | 0.8− | 0.0 | 2006 09 22 | 703 | 0.5− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2004 03 27 | 291 | 0.1+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2004 03 27 | 291 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.7− | 1.1+ | | | | |
| 2004 03 27 | 704 | 0.4− | 0.6+ | 2006 09 25 | 704 | 0.8+ | 0.7− | | | | |

**2001 QA**$_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.01444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21346493 | $\omega$ | 136.37097 | | +0.76560636 | −0.63167099 | |
| $a$ | 2.7727988 | $\Omega$ | 263.20492 | | +0.55142366 | +0.74190539 | |
| $e$ | 0.1989087 | $i$ | 7.04655 | | +0.33132892 | +0.22487365 | |
| $P$ | 4.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.6+ | 0.1+ | 2001 10 13 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | (0.5− | 1.5+) |
| 2001 08 24 | 699 | 0.4+ | 0.0 | 2001 10 17 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2001 08 24 | 699 | (0.8− | 1.6+) | 2001 10 17 | 704 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.9− | 0.1− |
| 2001 08 24 | 699 | 0.5+ | 1.1− | 2001 10 17 | 704 | 0.6− | 0.4− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2001 08 25 | 704 | 0.1− | 1.3− | 2001 10 17 | 704 | 0.8− | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2001 08 25 | 704 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2001 08 25 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.5− | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2001 08 26 | 704 | 0.7− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2001 08 26 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.3− | 1.1− |
| 2001 08 26 | 704 | 0.4+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2001 08 26 | 704 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.5− | 2006 11 21 | G96 | 0.3− | 0.5− |
| 2001 08 26 | 704 | 0.9− | 0.6+ | 2006 11 13 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2001 09 15 | 644 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.4+ | 0.6− | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2001 09 15 | 644 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.5− | 2006 11 22 | 704 | 0.6+ | 0.7+ |
| 2001 09 15 | 644 | 0.6− | 0.6+ | 2006 11 15 | 704 | 0.5+ | 0.4− | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2001 09 23 | 608 | 0.4+ | 0.9+ | 2006 11 15 | 704 | 1.3− | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.3− |
| 2001 09 23 | 608 | 0.8+ | 0.9+ | 2006 11 16 | 704 | 0.4− | 0.4+ | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2001 09 23 | 608 | (1.0+ | 2.9+) | 2006 11 16 | 704 | 0.5− | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.5− | 0.7− | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2006 11 16 | 704 | 0.2− | 0.1+ | 2006 11 27 | 704 | 0.8− | 0.1− |
| 2001 09 25 | 704 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.1− | 0.4+ | 2006 11 27 | 704 | 0.3− | 0.4+ |
| 2001 09 25 | 704 | 0.7− | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.7− | 0.0 |
| 2001 09 26 | 704 | 0.2+ | 0.7− | 2006 11 17 | 691 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.4− | 0.3− |
| 2001 09 26 | 704 | (1.2+ | 2.1−) | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 1.5+ | 0.4+ |
| 2001 09 26 | 704 | (2.1+ | 1.2−) | 2006 11 17 | 644 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.1+ | 1.1+ |
| 2001 09 26 | 704 | (1.8+ | 2.1−) | 2006 11 17 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 1.2− | 0.3+ |
| 2001 10 13 | 644 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 1.9+ |
| 2001 10 13 | 644 | 0.3+ | 0.1− | 2006 11 19 | 704 | 1.1+ | 0.4− | | | | |

**2001 QR**$_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.06126 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20273625 | $\omega$ | 141.87909 | | +0.95175777 | −0.29415867 | |
| $a$ | 2.8697789 | $\Omega$ | 235.44715 | | +0.24900883 | +0.90672725 | |
| $e$ | 0.3378326 | $i$ | 6.08727 | | +0.17930911 | +0.30218599 | |
| $P$ | 4.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 704 | 0.1− | 0.8− | 2001 11 17 | 644 | 0.0 | 0.1− | 2006 10 31 | H07 | 0.7+ | 0.8− |
| 2001 08 17 | 704 | 0.1− | 0.3− | 2001 11 17 | 644 | 0.2− | 0.0 | 2006 10 31 | H07 | (1.7+ | 0.2−) |
| 2001 08 17 | 704 | 1.0− | 0.5− | 2001 11 19 | 704 | 0.2+ | 0.2− | 2006 10 31 | H07 | 0.9+ | 0.2+ |
| 2001 08 25 | 704 | 0.1+ | 1.3+ | 2001 11 19 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 2001 08 25 | 704 | 0.5+ | 0.0 | 2001 11 19 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.5+ |
| 2001 08 25 | 704 | 0.3− | 0.2+ | 2001 11 19 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2001 08 28 | 699 | 0.1+ | 0.4+ | 2001 11 19 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2001 08 28 | 699 | 1.1+ | 0.4+ | 2001 11 24 | 704 | 0.3− | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2001 08 28 | 699 | (1.6+ | 0.5+) | 2001 11 24 | 704 | 0.7− | 0.4− | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2001 08 28 | 699 | 1.2+ | 0.8− | 2001 11 24 | 704 | 1.1+ | 0.4− | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2001 09 17 | 704 | 0.4+ | 0.3+ | 2001 12 11 | 704 | 1.1− | 1.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2001 09 17 | 704 | 0.5− | 0.2− | 2001 12 11 | 704 | 0.2+ | 1.2+ | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2001 09 17 | 704 | 0.4− | 0.2− | 2001 12 11 | 704 | 0.4− | 0.5− | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 2001 09 17 | 704 | 1.1− | 0.3+ | 2001 12 11 | 704 | 0.6+ | 0.3+ | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 2001 09 19 | 699 | 0.0 | 0.5+ | 2001 12 15 | 704 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.2+ |
| 2001 09 19 | 699 | 0.3+ | 0.2+ | 2001 12 15 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 703 | 0.2− | 0.3− |
| 2001 09 19 | 699 | 0.7+ | 0.1+ | 2001 12 15 | 704 | 0.7− | 0.3− | 2006 11 16 | 703 | (2.5− | 0.2+) |
| 2001 09 19 | 699 | 0.6+ | 0.3+ | 2001 12 15 | 704 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.6− | 0.9+ |
| 2001 09 20 | 704 | 0.4− | 0.6+ | 2001 12 19 | 291 | (2.0− | 0.2+) | 2006 11 17 | 704 | 1.0− | 0.1− |
| 2001 09 20 | 704 | 0.5− | 0.3− | 2001 12 19 | 291 | (3.1− | 0.4+) | 2006 11 17 | 704 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2001 12 19 | 291 | (2.0− | 0.2−) | 2006 11 17 | 704 | 0.3− | 0.3+ |
| 2001 09 22 | 704 | 0.6+ | 0.4+ | 2001 12 20 | 291 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.7− |
| 2001 09 22 | 704 | 0.7+ | 0.0 | 2001 12 20 | 291 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.4+ |
| 2001 09 22 | 704 | 0.7+ | 0.3+ | 2001 12 20 | 291 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1− | 1.1+ |
| 2001 09 22 | 704 | 0.4+ | 0.0 | 2006 08 29 | 703 | 0.3+ | 1.3− | 2006 11 18 | 704 | (0.1− | 1.9+) |
| 2001 09 22 | 704 | 0.6+ | 0.2+ | 2006 08 29 | 703 | 0.5+ | 1.0− | 2006 11 18 | 704 | (0.4− | 1.7+) |
| 2001 09 23 | 704 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.5− | 0.1− | 2006 11 18 | 704 | (0.0 | 1.7+) |
| 2001 09 23 | 704 | 0.6− | 0.1− | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.5− | 1.1+ |
| 2001 09 23 | 704 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.6+ | 2006 11 21 | 704 | 1.2− | 1.3+ |
| 2001 09 23 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2001 09 25 | 644 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 11 21 | 704 | 1.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 644 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.3+ | | |
| 2001 09 25 | 644 | 0.1− | 0.4− | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.7+ | | |
| 2001 09 28 | 644 | 0.5− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.3− | 0.5+ | | |
| 2001 09 28 | 644 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.6− | 0.3+ | | |
| 2001 09 28 | 644 | 0.4− | 0.1+ | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.1+ | | |
| 2001 10 14 | 704 | 0.3− | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 26 | 704 | 1.1− | 0.7− | | |
| 2001 10 14 | 704 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 26 | 704 | 0.9+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.0 | 0.2+ | 2006 10 17 | 691 | 1.1− | 0.2+ | 2006 11 26 | 704 | 0.6+ | 1.0− | | |
| 2001 10 14 | 704 | 0.1− | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.5+ | 0.3− | | |
| 2001 10 17 | 704 | 0.3− | 1.0− | 2006 10 21 | 704 | 0.2− | 1.0− | 2006 11 27 | 703 | 0.1+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.6+ | 0.3− | 2006 10 21 | 704 | 0.4− | 0.4+ | 2006 11 27 | 703 | 0.2+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.4+ | 0.9− | 2006 10 21 | 704 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.4− | | |
| 2001 10 17 | 704 | 0.0 | 0.5− | 2006 10 21 | 704 | 0.6− | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.3− | | |
| 2001 10 17 | 704 | 0.6+ | 0.5− | 2006 10 23 | 704 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.0 | 0.1− | | |
| 2001 10 20 | 644 | 0.9− | 0.6+ | 2006 10 23 | 704 | (0.6+ | 1.7+) | 2006 11 29 | 704 | 0.3+ | 0.4− | | |
| 2001 10 20 | 644 | 1.0− | 0.6+ | 2006 10 23 | 704 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.4− | | |
| 2001 10 20 | 644 | 1.1− | 0.6+ | 2006 10 23 | 704 | 0.7+ | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.3− | | |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.3− | | |
| 2001 10 21 | 704 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.3− | 2006 12 01 | G96 | 0.1− | 0.4− | | |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.4− | | |
| 2001 10 21 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.0 | | | | | | |
| 2001 11 17 | 644 | 0.2+ | 0.0 | 2006 10 31 | H07 | 1.0+ | 0.5+ | | | | | | |

**2001 QZ$_{118}$ = 2001 SW$_{352}$**

Id. Minor Planet Center (d, *MPO* 102378)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.76745 | | | (2000.0) | | |
| $n$ | 0.21830200 | $\omega$ | 64.69300 | | +0.66008285 | +0.74487842 |
| $a$ | 2.7316868 | $\Omega$ | 246.96906 | | −0.72159489 | +0.59278323 |
| $e$ | 0.0818297 | $i$ | 6.06246 | | −0.20878564 | +0.30620938 |
| $P$ | 4.51 | $H$ | 16.0 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 08 | 910 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 30 | 408 | 0.4− | 0.2− | | |
| 1997 11 08 | 910 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.6+ | 0.2− | 2006 10 31 | 408 | 0.5− | 0.6+ | | |
| 1997 11 08 | 910 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 31 | 408 | 0.4− | 0.5+ | | |
| 2001 08 17 | 704 | 1.0− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.4− | | |
| 2001 08 17 | 704 | 0.4− | 1.4− | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.0 | | |
| 2001 08 17 | 704 | 0.2+ | 0.9− | 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.5− | | |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2001 08 25 | 704 | 1.0+ | 1.3+ | 2006 10 20 | 408 | 1.4− | 0.9− | 2006 11 01 | G96 | 0.3+ | 0.4− | | |
| 2001 08 25 | 704 | 0.3− | 0.5− | 2006 10 20 | 408 | (0.8− | 1.5−) | 2006 11 01 | G96 | 0.1− | 0.3− | | |
| 2001 08 25 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− | | |
| 2001 08 25 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− | | |
| 2001 09 15 | 644 | 0.4− | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2001 09 15 | 644 | 0.1+ | 0.7+ | 2006 10 21 | 408 | 0.8+ | 0.9− | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2001 09 15 | 644 | 0.0 | 0.0 | 2006 10 21 | 408 | 0.1− | 0.7− | 2006 11 08 | 644 | 0.0 | 0.6+ | | |
| 2001 09 16 | 704 | 0.3− | 0.1+ | 2006 10 27 | 703 | (2.8+ | 0.6−) | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2001 09 16 | 704 | 0.5+ | 0.4+ | 2006 10 27 | 703 | 0.7+ | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.1− | | |
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.5− | 1.4− | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2001 09 16 | 704 | 0.0 | 0.4− | 2006 10 27 | 703 | 0.7− | 0.3− | 2006 11 17 | G96 | 0.4− | 0.6− | | |
| 2001 09 16 | 704 | 0.6+ | 0.2+ | 2006 10 27 | 408 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.1+ | | |
| 2001 09 18 | 557 | 0.1+ | 0.4− | 2006 10 27 | 408 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.7+ | 0.1+ | | |
| 2001 09 18 | 557 | 0.7+ | 0.6+ | 2006 10 29 | 704 | (0.8− | 1.6+) | 2006 11 17 | G96 | 0.2− | 0.2+ | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.2+ | | |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.7+ | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 30 | 408 | 0.4− | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.2+ | | |

**2001 QD$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.62818 | | | (2000.0) | | |
| $n$ | 0.22676080 | $\omega$ | 207.39138 | | +0.98709049 | +0.06284401 |
| $a$ | 2.6633243 | $\Omega$ | 147.94188 | | −0.03790850 | +0.98534114 |
| $e$ | 0.1051571 | $i$ | 16.11421 | | −0.15561268 | +0.15859843 |
| $P$ | 4.35 | $H$ | 15.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 699 | 1.3+ | 0.2+ | 2001 08 27 | 699 | 0.0 | 0.2+ | 2001 09 17 | 704 | 1.1− | 0.7− | | |
| 2001 07 19 | 699 | 0.6− | 0.1+ | 2001 08 27 | 699 | 0.3− | 0.2+ | 2001 09 17 | 704 | 0.4− | 0.3+ | | |
| 2001 07 19 | 699 | 0.3+ | 0.9+ | 2001 08 27 | 699 | 1.1+ | 0.5+ | 2001 09 17 | 704 | 1.0+ | 1.2− | | |
| 2001 07 19 | 699 | 0.5− | 1.3+ | 2001 09 10 | 699 | 0.1+ | 0.1+ | 2004 03 28 | 703 | 0.9+ | 1.1+ | | |
| 2001 08 13 | 608 | 0.3− | 0.6− | 2001 09 10 | 699 | 0.3− | 0.4− | 2004 03 28 | 703 | 0.3− | 0.1− | | |
| 2001 08 13 | 608 | 0.4+ | 0.1− | 2001 09 10 | 699 | 0.1− | 0.0 | 2004 03 28 | 703 | 0.7+ | 0.9− | | |
| 2001 08 13 | 608 | 0.1+ | 0.4− | 2001 09 10 | 699 | 0.2− | 0.2− | 2004 03 28 | 703 | 1.0− | 0.5+ | | |
| 2001 08 19 | 704 | 0.4− | 0.4− | 2001 09 12 | 704 | 0.2+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 19 | 704 | 0.9− | 0.2− | 2001 09 12 | 704 | 0.7+ | 0.4− | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 08 19 | 704 | 0.7+ | 0.5+ | 2001 09 12 | 704 | 0.7+ | 1.0− | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 08 25 | 704 | 0.2− | 0.4− | 2001 09 12 | 704 | 0.5+ | 0.5+ | 2006 11 22 | 703 | 0.5− | 1.2+ | | |
| 2001 08 25 | 704 | 0.0 | 0.9+ | 2001 09 16 | 704 | 0.5− | 0.1− | 2006 11 22 | 703 | 0.4+ | 0.5+ | | |
| 2001 08 25 | 704 | 0.2− | 1.5+ | 2001 09 16 | 704 | 0.4− | 0.0 | 2006 11 22 | 703 | 0.2− | 0.4− | | |
| 2001 08 25 | 704 | 0.2− | 1.5+ | 2001 09 16 | 704 | 0.4− | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.4− | | |
| 2001 08 27 | 699 | 0.8+ | 1.0− | 2001 09 16 | 704 | 1.0− | 0.3− | | | | | | |

**2001 QO$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.81176 | | | (2000.0) | | |
| $n$ | 0.21296456 | $\omega$ | 225.17834 | | +0.98449042 | −0.10640218 |
| $a$ | 2.7771403 | $\Omega$ | 140.30374 | | +0.13718166 | +0.96250886 |
| $e$ | 0.1051988 | $i$ | 12.61444 | | −0.10936087 | +0.24951005 |
| $P$ | 4.63 | $H$ | 14.7 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.6+ | 0.6− | 2001 10 16 | 644 | 0.1− | 0.0 | 2006 10 20 | 703 | 0.0 | 0.3+ | | |
| 2001 08 19 | 704 | 1.0− | 0.7− | 2001 10 16 | 644 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.2+ | 0.7+ | | |
| 2001 08 19 | 704 | 1.1+ | 0.1− | 2001 10 16 | 644 | 0.0 | 0.0 | 2006 10 20 | 703 | 1.1− | 0.0 | | |
| 2001 08 25 | 704 | 0.8+ | 0.5+ | 2006 09 16 | 699 | 0.5− | 0.9+ | 2006 10 20 | 703 | 1.1− | 0.4+ | | |
| 2001 08 25 | 644 | 0.4− | 0.6+ | 2006 09 16 | 699 | 0.3− | 0.1+ | 2006 10 20 | 703 | 0.6+ | 0.5+ | | |
| 2001 08 25 | 704 | 0.3+ | 0.5− | 2006 09 16 | 699 | 0.1+ | 0.7− | 2006 10 20 | 703 | 0.1+ | 0.9+ | | |
| 2001 08 25 | 644 | 0.5− | 0.6+ | 2006 09 16 | 699 | 0.3+ | 0.9− | 2006 10 20 | 703 | 0.0 | 0.2+ | | |
| 2001 08 25 | 704 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.4− | 0.0 | 2006 10 28 | 703 | 0.1− | 1.0+ | | |
| 2001 08 25 | 644 | 0.3− | 0.4+ | 2006 09 26 | 703 | 1.0+ | 0.4− | 2006 10 28 | 703 | 0.7+ | 1.0+ | | |
| 2001 08 25 | 704 | 0.5− | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.6− | 2006 10 28 | 703 | 0.1− | 0.2+ | | |
| 2001 08 25 | 699 | 0.6+ | 1.0+ | 2006 09 26 | 703 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.1+ | | |
| 2001 08 25 | 699 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.9− | | |
| 2001 08 25 | 699 | 1.4+ | 1.3+ | 2006 09 30 | 704 | 1.3− | 0.8+ | 2006 11 17 | 703 | 0.4− | 0.1− | | |
| 2001 08 25 | 699 | 0.5− | 0.2− | 2006 09 30 | 704 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.8− | | |
| 2001 09 23 | 608 | 0.0 | 0.6− | 2006 09 30 | 704 | 0.5− | 0.8− | 2006 11 23 | 703 | 0.3+ | 0.7− | | |
| 2001 09 23 | 608 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.1− | 2006 11 23 | 703 | 0.3+ | 0.3+ | | |
| 2001 09 23 | 608 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.9+ | 0.9− | 2006 11 23 | 703 | 0.2+ | 0.2− | | |
| 2001 09 25 | 704 | 0.7− | 0.6− | 2006 10 17 | 703 | 0.5+ | 0.2− | 2006 11 23 | 703 | 0.1+ | 0.0 | | |
| 2001 09 25 | 704 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.3− | | | | | | |
| 2001 09 25 | 704 | 0.4− | 0.7− | 2006 10 20 | 703 | 0.8− | 0.2+ | | | | | | |

**2001 QR$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.73254 | | | (2000.0) | | |
| $n$ | 0.21198233 | $\omega$ | 97.37554 | | +0.98924428 | +0.08436304 |
| $a$ | 2.7857124 | $\Omega$ | 257.83917 | | −0.12332128 | +0.92033976 |
| $e$ | 0.3098443 | $i$ | 7.02118 | | +0.07866141 | +0.38191308 |
| $P$ | 4.65 | $H$ | 15.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.7− | 0.0 |
| 1992 09 24 | 691 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.1− | 0.2− |
| 1992 09 24 | 691 | 0.1+ | 0.3− | 2006 10 19 | 703 | 0.4− | 0.3+ | 2006 11 14 | 703 | 0.5− | 0.2− |
| 2001 07 20 | 704 | (1.6+ | 3.7−) | 2006 10 21 | 704 | 0.7− | 0.2+ | 2006 11 16 | 704 | 0.3+ | 1.3+ |
| 2001 07 20 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 704 | (0.3− | 1.7+) | 2006 11 16 | 704 | 0.1+ | 1.3+ |
| 2001 07 20 | 704 | 0.0 | 0.5− | 2006 10 21 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2001 07 20 | 704 | 0.9− | 1.2+ | 2006 10 21 | 704 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.7+ | 0.1+ |
| 2001 08 08 | 608 | 0.4+ | 0.0 | 2006 10 21 | 704 | 0.7+ | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2001 08 08 | 608 | 0.7+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2001 08 08 | 608 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2001 08 20 | 704 | 1.0− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2001 08 20 | 704 | 0.9− | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2001 08 20 | 704 | 0.8− | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2001 08 20 | 704 | 0.7− | 1.3+ | 2006 10 23 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.8− | 0.7+ |
| 2001 08 25 | 704 | 0.2+ | 0.3− | 2006 10 27 | 703 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2001 08 25 | 704 | 0.5+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 0.6+ | 0.3− | 2006 10 27 | 703 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2001 08 25 | 704 | 0.6+ | 0.3− | 2006 10 27 | 703 | (1.6+ | 5.4−) | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2001 08 25 | 704 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2001 10 11 | 704 | 0.4− | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.2− | 0.5− |
| 2001 10 11 | 704 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2001 10 11 | 704 | 0.4− | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.6− | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2001 10 11 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2001 10 14 | 704 | 0.2+ | 0.6− | 2006 11 14 | 703 | 1.1− | 0.5+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2001 10 14 | 704 | 1.4+ | 1.4− | 2006 11 14 | 703 | 0.6− | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2001 10 14 | 704 | 0.4− | 1.2− | 2006 11 14 | 703 | 0.4+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2006 10 19 | 703 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.9+ | | | | |

### 2001 QX$_{126}$ = 2006 WK$_{87}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.24695 | | (2000.0) | | +0.34848229 | +0.93574571 |
| $n$ | 0.23396176 | $\omega$ | 85.08071 | | −0.90211522 | +0.31912927 |
| $a$ | 2.6083916 | $\Omega$ | 205.52256 | | −0.25445672 | +0.15012155 |
| $e$ | 0.1817517 | $i$ | 7.22955 | | | |
| $P$ | 4.21 | $H$ | 16.2 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.3− | 0.5+ | 2001 08 25 | 704 | 0.8+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.5+ |
| 2001 08 18 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2001 08 18 | 644 | 0.4− | 0.4+ | 2006 10 22 | G96 | 0.7− | 0.0 | 2006 11 24 | 691 | 0.2− | 0.3+ |
| 2001 08 20 | 704 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.3− | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2001 08 20 | 704 | 0.5− | 0.6+ | 2006 10 22 | G96 | 0.5− | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2001 08 20 | 704 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2001 08 25 | 704 | 0.6− | 0.5− | 2006 11 18 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2001 08 25 | 704 | 0.4+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2001 08 25 | 704 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2001 08 25 | 704 | 0.4+ | 0.3− | 2006 11 20 | 691 | 0.3+ | 0.2− | | | | |

### 2001 QK$_{127}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.69115 | | (2000.0) | | +0.94856513 | −0.31492297 |
| $n$ | 0.22566754 | $\omega$ | 205.18470 | | +0.31622443 | +0.93766969 |
| $a$ | 2.6719192 | $\Omega$ | 172.93478 | | +0.01504349 | +0.14696627 |
| $e$ | 0.1810072 | $i$ | 15.25768 | | | |
| $P$ | 4.37 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2001 08 25 | 704 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.8+ | 0.0 |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2001 08 25 | 704 | 0.0 | 0.3+ | 2006 10 30 | 703 | 0.4− | 0.3− |
| 2001 08 16 | 691 | 0.2− | 0.3− | 2001 08 25 | 704 | 0.0 | 0.1− | 2006 10 30 | 703 | 0.2+ | 0.9− |
| 2001 08 16 | 691 | 0.2− | 0.3− | 2001 09 08 | 704 | 0.1+ | 0.6+ | 2006 10 30 | 703 | 0.4− | 0.5− |
| 2001 08 16 | 691 | 0.3− | 0.2− | 2001 09 08 | 704 | 0.5+ | 0.1− | 2006 10 30 | 703 | 0.3− | 0.4− |
| 2001 08 16 | 691 | 0.3− | 0.3− | 2001 09 08 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 703 | 1.3− | 0.7− |
| 2001 08 16 | 691 | 0.3− | 0.3− | 2001 09 08 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 1.3+ | 0.8+ |
| 2001 08 16 | 691 | 0.4− | 0.3− | 2001 09 08 | 704 | 0.6+ | 1.3+ | 2006 11 16 | 703 | 0.3− | 0.4+ |
| 2001 08 20 | 704 | 0.5+ | 0.9− | 2001 09 20 | 704 | 0.8− | 0.2− | 2006 11 16 | 703 | 0.8− | 0.3+ |
| 2001 08 20 | 704 | 1.1+ | 0.4+ | 2001 09 20 | 704 | 0.1− | 1.0− | 2006 11 22 | 704 | 1.3+ | 0.2− |
| 2001 08 20 | 704 | 1.2+ | 1.2+ | 2001 09 20 | 704 | 0.4+ | 1.3− | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2001 08 24 | 699 | 0.1− | 0.5+ | 2001 09 20 | 704 | 0.3− | 0.2+ | 2006 11 22 | 704 | 1.4+ | 0.5+ |
| 2001 08 24 | 699 | 0.4+ | 0.6+ | 2001 09 20 | 704 | 0.7− | 0.0 | 2006 11 22 | 704 | (1.8− | 0.9+) |
| 2001 08 24 | 699 | 0.3+ | 0.6+ | 2001 10 18 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.3+ | 0.1− |
| 2001 08 24 | 699 | 0.5+ | 0.7− | 2001 10 18 | 644 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.4− | 0.3− |
| 2001 08 24 | 691 | 0.2+ | 0.3+ | 2001 10 18 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.9− | 0.3+ |
| 2001 08 24 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.4− | 2006 11 22 | 703 | 0.9− | 0.3+ |
| 2001 08 24 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.6+ | | | | |
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.2− | | | | |

### 2001 QS$_{128}$ = 2006 RM$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.98007 | | (2000.0) | | +0.80710456 | +0.57833228 |
| $n$ | 0.20122849 | $\omega$ | 57.31738 | | −0.57367002 | +0.72060808 |
| $a$ | 2.8840962 | $\Omega$ | 267.07991 | | −0.13958843 | +0.38243401 |
| $e$ | 0.2036168 | $i$ | 6.83190 | | | |
| $P$ | 4.90 | $H$ | 16.0 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 704 | 1.0+ | 0.3− | 2001 09 10 | 704 | 0.6+ | 0.5− | 2006 09 18 | 703 | 0.7− | 0.3− |
| 2001 08 20 | 704 | 0.1− | 0.7− | 2001 09 10 | 704 | 0.7− | 0.6− | 2006 09 18 | 703 | 0.7− | 0.2+ |
| 2001 08 20 | 704 | 1.1+ | 0.9− | 2001 09 10 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 1.0− | 0.5− |
| 2001 08 24 | 699 | 0.9− | 0.0 | 2001 09 10 | 704 | 0.6− | 0.6+ | 2006 09 30 | 699 | 1.4+ | 0.5+ |
| 2001 08 24 | 699 | 0.0 | 0.1+ | 2001 09 10 | 704 | 0.3+ | 0.1− | 2006 09 30 | 699 | 1.4+ | 0.8+ |
| 2001 08 24 | 699 | 0.3− | 0.6+ | 2006 09 11 | 703 | 0.8+ | 1.2+ | 2006 09 30 | 699 | 0.7+ | 0.7− |
| 2001 08 24 | 699 | 0.1− | 0.0 | 2006 09 11 | 703 | 0.2− | 1.0− | 2006 10 01 | 703 | 0.5− | 0.0 |
| 2001 08 25 | 704 | 0.4+ | 0.6+ | 2006 09 11 | 703 | 1.0+ | 0.1− | 2006 10 01 | 703 | 0.7− | 0.6− |
| 2001 08 25 | 704 | 0.3+ | 0.3+ | 2006 09 11 | 703 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.7+ | 0.7− |
| 2001 08 25 | 704 | 0.9− | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 01 | 703 | 0.7− | 0.8+ |
| 2001 08 25 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 1.2− | 0.1− | | | | |

### 2001 QC$_{129}$ = 2006 UX$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.11555 | | (2000.0) | | +0.98301276 | −0.18320159 |
| $n$ | 0.21729613 | $\omega$ | 186.79162 | | +0.17525614 | +0.95489656 |
| $a$ | 2.7401103 | $\Omega$ | 183.81855 | | +0.05450879 | +0.23368727 |
| $e$ | 0.1852251 | $i$ | 9.59027 | | | |
| $P$ | 4.54 | $H$ | 15.5 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 704 | 0.3− | 0.1− | 2001 09 12 | 704 | 0.8+ | 0.4− | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2001 08 20 | 704 | 0.4− | 0.2− | 2001 09 20 | 704 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.6+ | 0.1+ |
| 2001 08 20 | 704 | 0.5+ | 0.0 | 2001 09 20 | 704 | 0.7− | 0.5− | 2006 11 11 | 703 | 0.4− | 1.5− |
| 2001 08 20 | 704 | 0.4− | 0.3− | 2001 09 20 | 704 | 0.1− | 0.7− | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2001 08 24 | 699 | (0.5− | 2.4+) | 2001 09 20 | 704 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2001 08 24 | 699 | 0.3− | 1.4+ | 2001 09 20 | 704 | 0.7− | 1.0− | 2006 11 11 | 703 | 0.0 | 0.8− |
| 2001 08 24 | 699 | 0.1− | 0.3+ | 2001 10 18 | 644 | 0.1− | 0.7+ | 2006 11 13 | 703 | 1.4+ | 1.0+ |
| 2001 08 24 | 699 | 0.5+ | 0.8− | 2001 10 18 | 644 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 1.4+ | 0.1+ |
| 2001 08 25 | 704 | 0.4+ | 0.0 | 2001 10 18 | 644 | 0.2+ | 0.6+ | 2006 11 13 | 703 | (0.3+ | 2.1+) |
| 2001 08 25 | 704 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1− | 0.8− | 2006 11 13 | 703 | 0.2+ | 0.7+ |
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.5+ | 0.4+ |
| 2001 08 25 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.9− | 0.0 | 2006 11 13 | 644 | 0.5+ | 0.2− |
| 2001 08 25 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.3+ |
| 2001 09 08 | 704 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2001 09 08 | 704 | 0.8− | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.0 | 2006 11 19 | 703 | 1.2+ | 1.2+ |
| 2001 09 08 | 704 | 0.7− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.3+ | 2006 11 19 | 703 | 1.0− | 0.0 |
| 2001 09 08 | 704 | 0.6− | 0.2+ | 2006 10 22 | 703 | 1.0− | 0.4+ | 2006 11 19 | 703 | 0.7+ | 0.3− |
| 2001 09 08 | 704 | 0.3− | 0.3− | 2006 11 01 | 703 | 0.2− | 0.6− | 2006 11 20 | 704 | 1.0− | 0.5+ |
| 2001 09 12 | 704 | 1.2+ | 0.2+ | 2006 11 01 | 703 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.3− | 0.5− |
| 2001 09 12 | 704 | 0.3+ | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 1.2− | 0.4+ |
| 2001 09 12 | 704 | 0.9+ | 0.6+ | 2006 11 01 | 703 | 0.6+ | 1.1− | 2006 11 20 | 704 | 0.8− | 0.5+ |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 1.1− | 0.3− |

**2001 QV$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.40355 | | (2000.0) | | | |
| $n$ | 0.21604476 | $\omega$ | 94.46142 | | +0.92725992 | −0.34958545 |
| $a$ | 2.7506810 | $\Omega$ | 286.04526 | | +0.26360623 | +0.86385248 |
| $e$ | 0.2227115 | $i$ | 8.02014 | | +0.26589622 | +0.36269671 |
| $P$ | 4.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.3− | 0.7+ | 2001 08 25 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.1+ | 0.0 |
| 2001 07 25 | 608 | 0.1+ | 0.3+ | 2001 08 25 | 704 | 0.5− | 0.2+ | 2006 11 02 | G96 | 0.5+ | 0.2− |
| 2001 07 25 | 608 | 0.6− | 1.0− | 2001 08 25 | 704 | 0.0 | 0.6+ | 2006 11 02 | G96 | 0.3+ | 0.5− |
| 2001 08 20 | 704 | 0.1− | 0.1− | 2001 09 25 | 704 | 0.3+ | 0.8+ | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 2001 08 20 | 704 | 0.4+ | 0.0 | 2001 09 25 | 704 | 0.4+ | 0.4− | 2006 11 02 | G96 | 0.4+ | 0.2− |
| 2001 08 20 | 704 | 0.5+ | 0.4+ | 2001 09 25 | 704 | 0.4− | 1.1− | 2006 11 13 | 644 | 0.4+ | 0.7+ |
| 2001 08 23 | 699 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.3− | 2006 11 13 | 644 | 0.1− | 0.7+ |
| 2001 08 23 | 699 | 0.1+ | 0.8− | 2006 10 19 | 703 | 0.6+ | 0.5− | 2006 11 13 | 644 | 0.3+ | 0.2+ |
| 2001 08 23 | 699 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.0 | 1.1+ | 2006 11 21 | 703 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | 0.0 | 0.8− | 2006 10 23 | 703 | 0.2− | 0.2− | 2006 11 21 | 703 | 1.2− | 0.2− |
| 2001 08 25 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 703 | 0.4− | 0.2− | 2006 11 21 | 703 | 0.5+ | 0.1+ |
| 2001 08 25 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 703 | 1.5− | 0.4+ | 2006 11 21 | 703 | 0.3− | 0.4− |

**2001 QN$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.94595 | | (2000.0) | | | |
| $n$ | 0.21297923 | $\omega$ | 77.91257 | | +0.94575981 | −0.30981879 |
| $a$ | 2.7770128 | $\Omega$ | 300.06590 | | +0.23639323 | +0.86266221 |
| $e$ | 0.2432119 | $i$ | 6.48374 | | +0.22283767 | +0.39978273 |
| $P$ | 4.63 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 704 | 0.0 | 1.3+ | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2001 08 20 | 704 | 0.3− | 0.6+ | 2001 11 18 | 645 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.3+ |
| 2001 08 20 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.4+ | 0.1− | 2006 11 19 | 718 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 11 19 | 718 | 0.4− | 0.4+ |
| 2001 08 25 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.3+ | 1.2− | 2006 11 19 | 718 | 0.5− | 0.1+ |
| 2001 08 25 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 20 | 718 | 0.1+ | 0.8− |
| 2001 08 25 | 704 | 1.1+ | 0.5+ | 2006 10 27 | 703 | (0.4+ | 2.1+) | 2006 11 20 | 718 | 0.8− | 0.5− |
| 2001 08 27 | 699 | 0.9− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.6+ | 2006 11 20 | 718 | 0.1+ | 0.2− |
| 2001 08 27 | 699 | 0.9− | 0.0 | 2006 10 27 | 703 | 0.4− | 1.0+ | 2006 11 20 | 718 | 1.1+ | 0.2− |
| 2001 08 27 | 699 | 0.5+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.2+ | 2006 11 20 | H36 | (1.9+ | 1.3+) |
| 2001 08 27 | 699 | 0.9+ | 0.0 | 2006 11 02 | G96 | 0.2− | 0.3− | 2006 11 20 | H36 | 0.8+ | 1.0+ |
| 2001 09 16 | 704 | 0.3− | 0.4+ | 2006 11 02 | G96 | 0.2+ | 0.0 | 2006 11 20 | H36 | 0.4− | 0.2+ |
| 2001 09 16 | 704 | 0.8− | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.3− | 2006 11 20 | H36 | (0.1+ | 2.1−) |
| 2001 09 16 | 704 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.2+ | 2006 11 20 | H36 | 0.3+ | 0.3+ |
| 2001 09 16 | 704 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.4− | 0.1+ | 2006 11 24 | 718 | (1.6− | 0.4+) |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1− | 0.5+ | 2006 11 24 | 718 | 0.1− | 0.7− |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.7+ | 2006 11 24 | 718 | 0.4− | 0.6− |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.2− | 0.0 | 2006 11 24 | 718 | 0.5− | 0.6− |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.6+ | | | | |

**2001 QB$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 52.90742 | | (2000.0) | | | |
| $n$ | 0.22192194 | $\omega$ | 74.11815 | | +0.88465157 | +0.45223602 |
| $a$ | 2.7018997 | $\Omega$ | 258.87884 | | −0.45967078 | +0.80519810 |
| $e$ | 0.2480977 | $i$ | 6.64031 | | −0.07806654 | +0.38358648 |
| $P$ | 4.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 704 | 1.3+ | 0.1+ | 2001 09 16 | 704 | 0.5− | 0.3+ | 2006 11 26 | H07 | 0.5+ | 1.2+ |
| 2001 08 21 | 704 | 0.0 | 1.0+ | 2001 09 16 | 704 | 0.4− | 0.7+ | 2006 11 27 | H07 | 0.3− | 0.3− |
| 2001 08 21 | 704 | 0.3− | 0.4− | 2001 09 16 | 704 | 0.3− | 0.2+ | 2006 11 27 | H07 | 0.2+ | 0.4− |
| 2001 08 24 | 699 | 0.0 | 0.1+ | 2001 10 14 | 704 | 0.5− | 0.4+ | 2006 11 27 | H07 | 0.6− | 0.3+ |
| 2001 08 24 | 699 | 0.4+ | 0.7+ | 2001 10 14 | 704 | 0.6− | 0.0 | 2006 11 28 | H07 | 0.2+ | 0.4− |
| 2001 08 24 | 699 | 0.5+ | 0.1+ | 2001 10 14 | 704 | 0.5− | 0.3+ | 2006 11 28 | H07 | 0.2+ | 0.6− |
| 2001 08 24 | 699 | 0.4− | 0.4+ | 2001 10 15 | 645 | 0.1− | 0.1− | 2006 11 28 | H07 | 0.0 | 0.7+ |
| 2001 08 25 | 704 | 0.2+ | 0.3+ | 2001 10 15 | 645 | 0.1− | 0.2− | 2006 11 28 | H07 | 0.7+ | 0.5− |
| 2001 08 25 | 704 | 0.7+ | 0.3− | 2001 11 18 | 645 | 0.1+ | 0.0 | 2006 11 30 | 691 | 0.3− | 0.2+ |
| 2001 08 25 | 704 | 0.2+ | 0.5+ | 2001 11 18 | 645 | 0.1+ | 0.0 | 2006 11 30 | 691 | 0.3− | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.3+ | 2006 11 26 | H07 | 0.8+ | 0.6+ | 2006 11 30 | 691 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2006 11 26 | H07 | 0.1+ | 0.4+ | | | | |

**2001 QF$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.85118 | | (2000.0) | | | |
| $n$ | 0.20412475 | $\omega$ | 114.93515 | | +0.75013636 | +0.66120564 |
| $a$ | 2.8567502 | $\Omega$ | 203.67708 | | −0.61544792 | +0.69245891 |
| $e$ | 0.0658175 | $i$ | 1.44490 | | −0.24190764 | +0.28863083 |
| $P$ | 4.83 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.0 | 0.0 | 2004 02 17 | 291 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 08 21 | 691 | 0.1− | 0.1− | 2004 02 17 | 291 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2001 08 21 | 691 | 0.5− | 0.1− | 2004 02 17 | 291 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2001 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2001 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.4+ | 0.2+ |
| 2001 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.4− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2001 09 20 | 691 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.5− | 0.2− |
| 2001 09 20 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2001 09 21 | 691 | 0.9+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.2− |
| 2001 09 21 | 691 | 0.3− | 0.3− | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 691 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.3− | 0.2+ | | | | |

**2001 QB$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 307.17047 | | (2000.0) | | | |
| $n$ | 0.19982172 | $\omega$ | 238.33634 | | +0.54991276 | −0.83522156 |
| $a$ | 2.8976166 | $\Omega$ | 178.30174 | | +0.77675917 | +0.51100162 |
| $e$ | 0.0754099 | $i$ | 1.83952 | | +0.30698720 | +0.20318045 |
| $P$ | 4.93 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.2+ | 0.2− | 2001 09 19 | 704 | 0.6− | 0.7+ | 2006 09 23 | 691 | 0.2− | 0.2− |
| 2001 08 21 | 691 | 0.2+ | 0.3− | 2001 09 19 | 704 | 0.6+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.3− |
| 2001 08 21 | 691 | 0.1+ | 0.4− | 2001 09 19 | 704 | 0.6+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 08 27 | 691 | 0.1− | 0.1− | 2001 09 20 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.7+ | 1.0− |
| 2001 08 27 | 691 | 0.0 | 0.0 | 2001 09 20 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 08 27 | 691 | 0.1+ | 0.3− | 2001 09 20 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2001 09 12 | 704 | 1.0− | 0.8− | 2001 09 21 | 704 | 1.4− | 0.8− | 2006 11 15 | G96 | 0.8− | 0.4− |
| 2001 09 12 | 704 | 0.5− | 0.7− | 2001 09 21 | 704 | 0.2− | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 1.3− | 0.1+ | 2001 09 21 | 704 | 0.5− | 1.3+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.9+ | 2006 08 28 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.7+ | 2006 08 28 | 691 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.6+ | 0.3+ |
| 2001 09 12 | 704 | 1.0− | 0.7+ | 2006 08 28 | 691 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.5− | 0.4+ |
| 2001 09 12 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.5+ |
| 2001 09 12 | 704 | 0.1+ | 1.0+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.6+ | 0.9+ | 2006 09 15 | 691 | 0.3+ | 0.2+ | | | | |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2006 09 23 | 691 | 0.3+ | 0.1− | | | | |

**2001 QR$_{146}$ = 2006 SH$_{290}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.52603 | | (2000.0) | | | |
| $n$ | 0.21842224 | $\omega$ | 280.65068 | | +0.56938615 | −0.81898400 |
| $a$ | 2.7306842 | $\Omega$ | 134.39816 | | +0.78780596 | +0.51887263 |
| $e$ | 0.1604398 | $i$ | 5.71634 | | +0.23486417 | +0.24502328 |
| $P$ | 4.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 15 | 608 | (0.4− | 1.6−) | 2006 10 10 | 644 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 08 15 | 608 | 0.7− | 1.4− | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 08 15 | 608 | 0.6− | 1.2− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2001 08 26 | 691 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 08 26 | 691 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2001 08 26 | 691 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.6− | 0.1− |
| 2001 08 27 | 691 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.8+ | 0.5+ | 2006 10 28 | 703 | 0.4− | 0.7− |
| 2001 08 27 | 691 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 10 28 | 703 | 0.4− | 0.3+ |
| 2001 08 27 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | (2.1− | 0.8−) | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 2006 09 30 | 703 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 13 | 703 | (0.5+ | 1.7+) |
| 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2006 09 30 | 703 | 0.4+ | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.5+ | 2006 11 13 | 703 | (1.7+ | 0.1−) |
| 2006 09 30 | 703 | 1.1+ | 0.6+ | 2006 10 19 | 644 | 0.8+ | 0.1+ | 2006 11 13 | 703 | 0.8+ | 0.1− |
| 2006 10 01 | 704 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 20 | 704 | 1.4+ | 0.2+ |
| 2006 10 01 | 704 | 0.6− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.4− | 0.8− |
| 2006 10 01 | 704 | (0.1+ | 1.6−) | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.4− | 0.2− |
| 2006 10 01 | 704 | 0.3− | 1.4− | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.5− | 1.4+ |

**2001 QG$_{148}$ = 2003 FR$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.95620 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23584012 | $\omega$ | 287.48032 | | +0.84119226 | | −0.47061543 |
| $a$ | 2.5945234 | $\Omega$ | 101.31522 | | +0.53852433 | | +0.77361290 |
| $e$ | 0.1524915 | $i$ | 15.75835 | | −0.04885817 | | +0.42431615 |
| $P$ | 4.18 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 1.0− | 0.3+ | 2001 12 19 | 704 | 0.2− | 0.2− | 2005 09 15 | 703 | 0.6− | 1.1+ |
| 2001 08 20 | 644 | 0.5− | 0.0 | 2001 12 19 | 704 | 0.1+ | 0.3+ | 2005 09 26 | 704 | 0.1+ | 0.4− |
| 2001 08 20 | 644 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.7+ | 0.6+ | 2005 09 26 | 704 | 0.5− | 1.4+ |
| 2001 08 26 | 644 | 0.3− | 0.1+ | 2003 03 22 | 644 | 0.4− | 0.6+ | 2005 09 26 | 704 | 0.6− | 1.3− |
| 2001 08 26 | 644 | 0.3− | 0.4+ | 2003 03 22 | 644 | 0.0 | 0.4+ | 2005 09 26 | 704 | 0.3+ | 1.1− |
| 2001 08 26 | 644 | 0.3− | 0.2+ | 2003 03 22 | 644 | 0.0 | 0.2+ | 2005 10 30 | 703 | 0.2+ | 0.8+ |
| 2001 10 11 | 704 | 0.1− | 0.9− | 2003 03 23 | 644 | 0.2+ | 0.5+ | 2005 10 30 | 703 | 0.1+ | 0.3− |
| 2001 10 11 | 704 | 0.3+ | 1.1− | 2003 03 23 | 644 | 0.1+ | 0.0 | 2005 10 30 | 703 | 1.2− | 0.1− |
| 2001 10 11 | 704 | 0.2+ | 1.1− | 2003 03 23 | 644 | 0.3+ | 0.1+ | 2005 10 30 | 703 | 1.2+ | 0.3− |
| 2001 10 11 | 704 | 0.4+ | 0.4− | 2005 08 25 | 644 | 0.4+ | 0.4+ | 2005 11 06 | 703 | 0.4− | 0.8− |
| 2001 11 13 | 608 | 0.3+ | 0.6+ | 2005 08 25 | 644 | 0.4+ | 0.2+ | 2005 11 06 | 703 | 0.9− | 0.8− |
| 2001 11 13 | 608 | 0.4+ | 0.7+ | 2005 08 25 | 644 | 0.3+ | 0.5+ | 2005 11 06 | 703 | 0.3+ | 0.0 |
| 2001 11 13 | 608 | 1.0+ | 0.5+ | 2005 09 15 | 703 | 1.5+ | 1.7+ | 2005 11 06 | 703 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.7− | 0.1+ | 2005 09 15 | 703 | 0.4− | 0.2− | | | | |
| 2001 12 19 | 704 | 0.3− | 0.0 | 2005 09 15 | 703 | 0.7− | 0.3+ | | | | |

**2001 QA$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.79114 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21099398 | $\omega$ | 74.09285 | | +0.83705790 | | +0.37149351 |
| $a$ | 2.7944050 | $\Omega$ | 262.65476 | | −0.50746349 | | +0.80156193 |
| $e$ | 0.1498821 | $i$ | 23.88976 | | +0.20448687 | | +0.46849872 |
| $P$ | 4.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 644 | 0.1+ | 0.6− | 2001 09 08 | 704 | 0.5+ | 0.7− | 2001 10 16 | 704 | 0.0 | 0.2− |
| 2001 07 29 | 644 | 0.4+ | 0.2− | 2001 09 08 | 704 | 0.4+ | 0.4− | 2001 10 16 | 704 | 0.8− | 0.0 |
| 2001 07 29 | 644 | 0.3+ | 0.1− | 2001 09 08 | 704 | 0.5− | 0.1− | 2001 10 16 | 704 | 0.1− | 0.8− |
| 2001 08 21 | 644 | (3.2− | 4.6−) | 2001 09 08 | 704 | 0.4− | 0.6+ | 2006 11 13 | 704 | 1.1+ | 0.9− |
| 2001 08 21 | 644 | (3.4− | 5.0−) | 2001 09 28 | 704 | 0.3+ | 0.6+ | 2006 11 13 | 704 | 0.2− | 0.2+ |
| 2001 08 21 | 644 | (3.1− | 4.8−) | 2001 09 28 | 704 | 0.8+ | 0.9+ | 2006 11 13 | 704 | 0.7− | 0.5− |
| 2001 08 23 | 704 | 0.3+ | 0.2− | 2001 09 28 | 704 | 0.6+ | 0.7+ | 2006 11 13 | 704 | 0.0 | 0.4− |
| 2001 08 23 | 704 | 0.7− | 0.2− | 2001 09 28 | 704 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.4+ |
| 2001 08 23 | 704 | 0.1− | 0.2+ | 2001 09 28 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.8+ |
| 2001 08 23 | 704 | 0.1− | 1.0− | 2001 10 15 | 704 | 0.3− | 0.4− | 2006 11 16 | 703 | 0.4+ | 0.2− |
| 2001 08 27 | 704 | 0.2+ | 0.5+ | 2001 10 15 | 704 | 0.9− | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.6− |
| 2001 08 27 | 704 | 0.0 | 0.3+ | 2001 10 15 | 704 | (1.7− | 0.1+) | 2006 11 21 | 703 | 0.7− | 0.3+ |
| 2001 08 27 | 704 | 0.0 | 0.0 | 2001 10 15 | 704 | 1.3− | 0.6+ | 2006 11 21 | 703 | 0.4+ | 0.3− |
| 2001 08 27 | 704 | 0.0 | 0.0 | 2001 10 16 | 704 | 0.2+ | 0.0 | 2006 11 21 | 703 | 0.6− | 0.6+ |
| 2001 08 27 | 704 | 0.1+ | 0.4+ | 2001 10 16 | 704 | 0.0 | 0.5− | 2006 11 21 | 703 | 0.1+ | 0.0 |

**2001 QA$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.96292 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20116840 | $\omega$ | 13.24301 | | +0.98746828 | | −0.15761693 |
| $a$ | 2.8846705 | $\Omega$ | 355.80111 | | +0.13308062 | | +0.85872748 |
| $e$ | 0.1193457 | $i$ | 6.23822 | | +0.08482893 | | +0.48759001 |
| $P$ | 4.90 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 691 | 0.5+ | 0.4+ | 2001 09 11 | 704 | 0.7− | 0.1− | 2001 10 17 | 644 | 0.4+ | 0.6+ |
| 1999 03 22 | 691 | 0.1+ | 0.7+ | 2001 09 11 | 704 | 0.2+ | 0.0 | 2001 10 17 | 644 | 0.3+ | 0.3+ |
| 1999 03 22 | 691 | 0.1+ | 0.2+ | 2001 09 12 | 704 | 0.2− | 0.0 | 2001 10 17 | 644 | 0.2+ | 0.7+ |
| 2001 08 24 | 704 | 0.2+ | 1.2− | 2001 09 12 | 704 | 0.1+ | 0.5− | 2006 08 19 | 691 | 0.3+ | 0.1+ |
| 2001 08 24 | 704 | 0.3+ | 0.7+ | 2001 09 12 | 704 | 0.4− | 1.0+ | 2006 08 19 | 691 | 0.2+ | 0.1+ |
| 2001 08 24 | 704 | 1.1− | 1.2− | 2001 09 12 | 704 | 0.2− | 0.6+ | 2006 08 19 | 691 | 0.3+ | 0.3+ |
| 2001 08 27 | 557 | 0.3− | 1.0− | 2001 09 12 | 704 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 2001 08 27 | 557 | (1.7+ | 0.1−) | 2001 09 19 | 704 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2001 08 27 | 557 | 0.4− | 0.3+ | 2001 09 19 | 704 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 08 27 | 557 | 1.1− | 0.2− | 2001 09 19 | 704 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 08 28 | 557 | (0.0 | 1.6−) | 2001 09 19 | 704 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2001 08 28 | 557 | 0.2+ | 0.1− | 2001 09 19 | 704 | 0.6+ | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2001 08 29 | 557 | 0.5+ | 0.2− | 2001 09 21 | 691 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.4− | 0.0 |
| 2001 08 31 | 557 | 0.9+ | 0.2− | 2001 09 21 | 691 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2001 08 31 | 557 | 0.5− | 0.2− | 2001 09 21 | 691 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 2001 08 31 | 557 | 0.1− | 0.3+ | 2001 09 21 | 704 | 0.7− | 0.3− | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 2001 08 31 | 557 | 0.1+ | 0.7+ | 2001 09 21 | 704 | 0.6− | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.2+ |
| 2001 09 11 | 704 | 0.9− | 0.4+ | 2001 09 21 | 704 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2001 09 11 | 704 | 0.9− | 0.3− | 2001 09 21 | 704 | 0.4+ | 0.5+ | | | | |
| 2001 09 11 | 704 | 0.2− | 0.2− | 2001 09 21 | 704 | (1.9− | 0.7+) | | | | |

**2001 QB$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.12575 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22520905 | $\omega$ | 161.13626 | | +0.69165249 | | +0.72144209 |
| $a$ | 2.6755444 | $\Omega$ | 152.59305 | | −0.67170262 | | +0.65972637 |
| $e$ | 0.2048670 | $i$ | 4.20305 | | −0.26539108 | | +0.21043390 |
| $P$ | 4.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 557 | 1.0+ | 0.7− | 2001 09 12 | 704 | 0.2− | 0.5− | 2001 09 21 | 704 | 0.2− | 1.3− |
| 2001 08 27 | 557 | 0.7+ | 0.6− | 2001 09 12 | 704 | 0.4− | 0.2+ | 2001 10 17 | 644 | 0.0 | 0.3+ |
| 2001 08 27 | 557 | 1.2− | 0.7− | 2001 09 12 | 704 | 0.0 | 0.1− | 2001 10 17 | 644 | 0.4− | 0.2+ |
| 2001 08 27 | 557 | 0.7− | 0.1− | 2001 09 12 | 704 | 0.1+ | 1.0+ | 2001 10 17 | 644 | 0.3+ | 0.3− |
| 2001 08 28 | 557 | (0.6− | 2.2+) | 2001 09 19 | 704 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 08 28 | 557 | 0.3+ | 0.7+ | 2001 09 19 | 704 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2001 08 28 | 557 | 0.1− | 0.7+ | 2001 09 19 | 704 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2001 08 28 | 557 | 0.4+ | 0.0 | 2001 09 19 | 704 | 0.7+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2001 08 30 | 557 | 0.0 | 0.3+ | 2001 09 19 | 704 | 0.6+ | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2001 08 30 | 557 | 0.8− | 1.0+ | 2001 09 21 | 704 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2001 08 30 | 557 | 0.1+ | 0.3− | 2001 09 21 | 704 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2001 08 30 | 557 | 0.2+ | 0.1− | 2001 09 21 | 704 | 0.6− | 0.4− | | | | |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2001 09 21 | 704 | 0.7− | 0.4− | | | | |

**2001 QC$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.14327 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21784288 | $\omega$ | 44.66789 | | +0.90475569 | | −0.42022620 |
| $a$ | 2.7355236 | $\Omega$ | 339.86328 | | +0.31203282 | | +0.76496760 |
| $e$ | 0.1822677 | $i$ | 11.64313 | | +0.28991837 | | +0.48809274 |
| $P$ | 4.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.1− | 0.2− | 2001 09 11 | 704 | 0.4− | 0.5+ | 2001 09 26 | 704 | 0.5+ | 0.3+ |
| 2001 08 16 | 704 | 0.6− | 0.1+ | 2001 09 11 | 704 | 0.4+ | 0.4+ | 2001 09 26 | 704 | 0.8− | 0.6− |
| 2001 08 16 | 704 | 1.0+ | 0.1+ | 2001 09 11 | 704 | 0.4+ | 0.5+ | 2001 10 11 | 644 | 0.4− | 0.2+ |
| 2001 08 16 | 704 | (0.1+ | 1.6−) | 2001 09 11 | 704 | 0.8+ | 0.5+ | 2001 10 11 | 644 | 0.3− | 0.3+ |
| 2001 08 23 | 699 | 0.2+ | 0.1+ | 2001 09 12 | 704 | 0.1− | 0.4+ | 2001 10 11 | 644 | 0.4− | 0.5+ |
| 2001 08 23 | 699 | 0.2− | 0.2− | 2001 09 12 | 704 | 0.1− | 0.3− | 2001 10 19 | 644 | 0.1− | 0.2+ |
| 2001 08 23 | 699 | 0.1− | 0.4− | 2001 09 12 | 704 | 0.3− | 0.1+ | 2001 10 19 | 644 | 0.4− | 0.1+ |
| 2001 08 23 | 699 | 1.2+ | 1.2+ | 2001 09 12 | 704 | 0.1+ | 0.1+ | 2001 10 19 | 644 | 0.2− | 0.1+ |
| 2001 08 27 | 699 | 1.5− | 0.1− | 2001 09 12 | 704 | 0.7− | 0.4− | 2001 10 21 | 704 | 0.7− | 0.3− |
| 2001 08 27 | 699 | 0.4+ | 0.2− | 2001 09 19 | 645 | 0.0 | 0.3− | 2001 10 21 | 704 | 0.6+ | 0.1+ |
| 2001 08 27 | 699 | 0.5+ | 0.3+ | 2001 09 19 | 645 | 0.0 | 0.3− | 2001 10 21 | 704 | 0.2+ | 0.4+ |
| 2001 08 27 | 699 | 0.1− | 0.6+ | 2001 09 20 | 704 | 0.6− | 0.8+ | 2001 10 21 | 704 | 0.8+ | 0.7+ |
| 2001 09 07 | 704 | 0.4− | 0.5+ | 2001 09 20 | 704 | 0.2+ | 0.1+ | 2001 10 21 | 704 | 1.0+ | 0.2− |
| 2001 09 07 | 704 | 1.1− | 1.4+ | 2001 09 20 | 704 | 0.4− | 0.1+ | 2006 10 23 | 703 | 0.1+ | 0.4+ |
| 2001 09 07 | 704 | (1.3− | 2.3+) | 2001 09 20 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 703 | 1.2+ | 0.4− |
| 2001 09 07 | 704 | 1.5− | 0.5+ | 2001 09 20 | 704 | 0.1− | 0.1− | 2006 10 23 | 703 | 1.0− | 0.5+ |
| 2001 09 07 | 704 | 0.1− | 0.4+ | 2001 09 22 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 0.2− | 0.1− |
| 2001 09 10 | 704 | 0.0 | 1.0+ | 2001 09 22 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 704 | 0.1− | 0.6− |
| 2001 09 10 | 704 | 0.2+ | 0.2− | 2001 09 22 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 704 | 0.5+ | 0.8− |
| 2001 09 10 | 704 | 1.0+ | 0.4− | 2001 09 22 | 704 | 0.8+ | 0.2+ | 2006 11 13 | 704 | 0.2+ | 0.6+ |
| 2001 09 10 | 704 | 1.3+ | 0.0 | 2001 09 26 | 704 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.5− | 0.4− |
| 2001 09 10 | 704 | 0.6+ | 0.3− | 2001 09 26 | 704 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.2+ |
| 2001 09 11 | 704 | 0.6− | 1.1+ | 2001 09 26 | 704 | 0.2+ | 0.8+ | 2006 11 16 | 704 | 0.3+ | 0.8+ |

**2001 QA$_{162}$ = 2006 VZ$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.29027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21952768 | $\omega$ | 292.82766 | | +0.50261240 | +0.86444115 | |
| $a$ | 2.7215096 | $\Omega$ | 7.37448 | | −0.75823733 | +0.44693426 | |
| $e$ | 0.0960936 | $i$ | 4.94212 | | −0.41527934 | +0.23019831 | |
| $P$ | 4.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 1.1− | 0.8+ | 2001 09 19 | 704 | 0.6− | 0.8+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2001 08 23 | 699 | 0.6− | 0.4+ | 2001 09 19 | 704 | 0.4+ | 1.0− | 2006 11 11 | 691 | 0.5+ | 0.4− |
| 2001 08 23 | 699 | 0.9− | 0.3+ | 2001 09 19 | 704 | 0.3+ | 1.0− | 2006 11 11 | 691 | 0.3− | 0.1− |
| 2001 08 23 | 699 | 0.5− | 0.7+ | 2001 09 21 | 704 | (1.8+ | 0.1−) | 2006 11 11 | 691 | 0.2− | 0.4− |
| 2001 08 24 | 608 | 0.3− | 1.2− | 2001 09 21 | 704 | 0.8+ | 1.0− | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2001 08 24 | 608 | 0.2− | 0.8− | 2001 09 21 | 704 | 1.0+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2001 08 24 | 608 | 0.1+ | 0.6− | 2001 09 21 | 704 | 1.2+ | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2001 08 27 | 699 | 0.6+ | 0.5+ | 2006 09 25 | 691 | 0.4− | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2001 08 27 | 699 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.4− | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.2− |
| 2001 08 27 | 644 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.5− | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2001 08 27 | 644 | 0.2− | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.4+ | 0.2− |
| 2001 08 27 | 699 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 08 27 | 644 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2001 08 27 | 699 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | | | | |
| 2001 09 19 | 704 | 0.6+ | 0.4− | 2006 10 29 | 691 | 0.0 | 0.0 | | | | |

**2001 QN$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.64953 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21974865 | $\omega$ | 210.82931 | | +0.99532423 | −0.08766775 | |
| $a$ | 2.7196848 | $\Omega$ | 154.10698 | | +0.09604786 | +0.94273214 | |
| $e$ | 0.1621478 | $i$ | 5.32757 | | −0.01022165 | +0.32182367 | |
| $P$ | 4.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.6− | 0.1− | 2001 08 27 | 699 | 0.4− | 0.6+ | 2006 11 01 | 703 | 0.9− | 0.8+ |
| 2001 08 16 | 704 | 0.2− | 0.2+ | 2001 09 19 | 704 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2001 08 16 | 704 | 0.3+ | 0.6+ | 2001 09 19 | 704 | 0.6− | 0.9− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2001 08 16 | 704 | 0.4+ | 0.3− | 2001 09 19 | 704 | 0.3+ | 0.5− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2001 08 23 | 699 | 1.4+ | 0.7+ | 2001 09 21 | 704 | 1.0+ | 1.1+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 08 23 | 699 | 0.1− | 0.6− | 2001 09 21 | 704 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.5+ |
| 2001 08 23 | 699 | 0.6+ | 0.2− | 2001 09 21 | 704 | 0.5− | 0.9− | 2006 11 20 | 704 | 1.1+ | 0.8+ |
| 2001 08 23 | 699 | 0.0 | 1.2+ | 2001 09 21 | 704 | 0.1− | 0.2− | 2006 11 20 | 704 | 1.3+ | 0.2− |
| 2001 08 27 | 699 | 1.2− | 0.3− | 2006 11 01 | 703 | 0.5+ | 0.5− | 2006 11 20 | 704 | 0.8− | 0.0 |
| 2001 08 27 | 699 | 0.3+ | 0.4+ | 2006 11 01 | 703 | (2.0− | 0.1+) | | | | |

**2001 QB$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.14395 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21399188 | $\omega$ | 177.77992 | | +0.92998069 | −0.36552836 | |
| $a$ | 2.7682450 | $\Omega$ | 203.77682 | | +0.33576404 | +0.88786199 | |
| $e$ | 0.0797999 | $i$ | 5.55822 | | +0.14966103 | +0.27944607 | |
| $P$ | 4.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 704 | 0.3+ | 0.9+ | 2001 09 22 | 704 | 1.1− | 1.3− | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 1997 12 04 | 704 | (3.0− | 0.8+) | 2001 09 22 | 704 | 0.1− | 0.3− | 2006 10 12 | 691 | 0.2− | 0.1+ |
| 1997 12 04 | 704 | 0.8+ | 0.0 | 2001 09 23 | 704 | 1.3− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 1997 12 04 | 704 | 1.1− | 0.6− | 2001 09 23 | 704 | 1.1− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2001 08 17 | 704 | 0.3+ | 0.4+ | 2001 09 23 | 704 | 1.2− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2001 08 17 | 704 | 0.1− | 0.2+ | 2001 09 23 | 704 | 1.3− | 0.2− | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2001 08 17 | 704 | 0.4+ | 0.1− | 2001 10 11 | 644 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 08 17 | 704 | 0.4+ | 0.1+ | 2001 10 11 | 644 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.5− | 0.0 |
| 2001 08 17 | 704 | 1.1+ | 0.7+ | 2001 10 11 | 644 | 0.2− | 0.1− | 2006 10 21 | H07 | 0.9− | 1.3− |
| 2001 08 31 | 644 | 0.1− | 0.5+ | 2001 10 13 | 704 | 0.4+ | 0.1+ | 2006 10 21 | H07 | 0.6+ | 0.7− |
| 2001 08 31 | 644 | 0.1− | 0.2+ | 2001 10 13 | 704 | 0.3+ | 0.1− | 2006 10 21 | H07 | 0.8+ | 1.4− |
| 2001 08 31 | 644 | 0.1− | 0.5+ | 2001 10 13 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 09 07 | 644 | 0.4+ | 0.5+ | 2001 10 19 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2001 09 07 | 644 | 0.2+ | 0.8+ | 2001 10 19 | 644 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 09 07 | 644 | 0.0 | 0.9+ | 2001 10 19 | 644 | 0.6− | 0.2+ | 2006 10 27 | 683 | 0.2+ | 0.1− |
| 2001 09 08 | 704 | 1.0− | 0.4+ | 2001 10 21 | 704 | 1.0− | 0.1− | 2006 10 27 | 683 | 0.2+ | 0.1+ |
| 2001 09 08 | 704 | 0.9− | 0.5+ | 2001 10 21 | 704 | 0.1− | 0.3− | 2006 10 27 | 683 | 0.3+ | 0.2− |
| 2001 09 08 | 704 | 0.7− | 0.9+ | 2001 10 21 | 704 | 0.8− | 0.4− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 09 08 | 704 | 0.7− | 1.1+ | 2001 10 21 | 704 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 09 11 | 699 | 0.0 | 0.0 | 2001 11 07 | 644 | 0.2− | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 699 | 0.2+ | 1.5− | 2001 11 07 | 644 | 0.1+ | 1.0+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 11 | 699 | 0.5+ | 0.6− | 2001 11 07 | 644 | 0.1− | 1.0+ | 2006 10 31 | 683 | 0.7+ | 0.4+ |
| 2001 09 11 | 699 | 0.3− | 0.2− | 2003 01 07 | 704 | 0.7− | 0.1+ | 2006 10 31 | 683 | 0.8+ | 1.3+ |
| 2001 09 16 | 704 | 1.1+ | 1.4− | 2003 01 07 | 704 | 0.1− | 0.8+ | 2006 10 31 | 683 | 1.1+ | 1.2+ |
| 2001 09 16 | 704 | 0.1+ | 1.4− | 2003 01 07 | 704 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2001 09 16 | 704 | (2.0+ | 0.1+) | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.4− | 1.2+ |
| 2001 09 16 | 704 | (0.4+ | 2.7−) | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2001 09 18 | 699 | 1.3+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.7+ | 1.1− |
| 2001 09 18 | 699 | 0.7+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 11 18 | 704 | 1.4− | 0.2− |
| 2001 09 18 | 699 | 1.3+ | 0.4− | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.6− | 1.0− |
| 2001 09 18 | 699 | 1.0+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2001 09 20 | 704 | 0.8+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2001 09 20 | 704 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.6+ | 0.2− | 2006 10 04 | 703 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.3− |
| 2001 09 20 | 704 | 0.7+ | 0.2− | 2006 10 04 | 703 | 0.6+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.4− |
| 2001 09 20 | 704 | 0.8+ | 0.4− | 2006 10 04 | 703 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2001 09 22 | 704 | 0.7− | 0.4− | 2006 10 04 | 703 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2001 09 22 | 704 | 0.8+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.2+ | | | | |

**2001 QT$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.06595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21065323 | $\omega$ | 345.07342 | | +0.90866776 | +0.41671275 | |
| $a$ | 2.7974176 | $\Omega$ | 350.17838 | | −0.36578951 | +0.76457998 | |
| $e$ | 0.2282572 | $i$ | 8.75014 | | −0.20129814 | +0.49169903 | |
| $P$ | 4.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 28 | 699 | 0.7− | 0.1− | 2006 08 19 | 699 | 0.4+ | 0.6+ | 2006 09 27 | 699 | 0.2− | 0.3− |
| 2001 07 28 | 699 | 0.5− | 0.4+ | 2006 08 19 | 699 | 0.4+ | 1.1+ | 2006 09 27 | 699 | 0.6+ | 0.0 |
| 2001 07 28 | 699 | 0.3+ | 0.8+ | 2006 08 19 | 699 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.7+ |
| 2001 07 28 | 699 | 0.3+ | 1.1+ | 2006 09 06 | 644 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 09 | 644 | 0.2− | 1.2+ | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.8+ | 0.2− |
| 2001 08 09 | 644 | 0.1+ | 1.4+ | 2006 09 06 | 644 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.4+ |
| 2001 08 09 | 644 | 0.1− | 1.4+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.4− | 0.3+ |
| 2001 08 19 | 704 | 0.0 | 0.4− | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2001 08 19 | 704 | 0.1+ | 0.5− | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 08 19 | 704 | 0.4+ | 0.8− | 2006 09 17 | 703 | 0.9− | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2001 08 19 | 704 | 0.1− | 0.4− | 2006 09 17 | 703 | (2.0− | 0.0 ) | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2001 08 19 | 704 | 0.0 | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.6+ | 0.7+ |
| 2001 08 26 | 608 | 0.2− | 0.6− | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.2+ | 0.4− |
| 2001 08 26 | 608 | 0.3+ | 0.9− | 2006 09 17 | 703 | 0.4− | 1.3− | 2006 10 03 | 704 | 1.2− | 0.3− |
| 2001 08 26 | 608 | 0.1− | 0.6− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 03 | 704 | 0.3− | 0.4+ |
| 2001 08 26 | 608 | 0.0 | 0.7− | 2006 09 17 | 703 | (1.6− | 1.4+) | 2006 10 17 | 703 | 0.2− | 1.3+ |
| 2001 08 26 | 608 | 0.0 | 0.9− | 2006 09 19 | 699 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2001 08 26 | 608 | 0.2− | 0.5− | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.6+ | 1.2+ |
| 2001 08 27 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2001 08 27 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2001 08 27 | 644 | 0.1− | 0.2+ | 2006 09 21 | 704 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.5+ | 0.4+ |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 21 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2004 02 16 | 691 | 0.4+ | 0.1+ | 2006 09 21 | 704 | 0.2− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2004 02 16 | 691 | 0.2− | 0.3+ | 2006 09 25 | 704 | 1.0− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 07 21 | G96 | 0.4− | 0.4− | 2006 09 25 | 704 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 07 21 | G96 | 0.4− | 0.1− | 2006 09 25 | 704 | 1.4+ | 0.8− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 07 21 | G96 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 08 19 | 699 | 0.1− | 1.0− | 2006 09 27 | 699 | 0.7+ | 0.6+ | | | | |

### 2001 QO$_{171}$ = 2006 WU$_{183}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 41.06050 | | | (2000.0) | | | **P** | | | **Q** | |
| $n$ | 0.22753963 | | $\omega$ | 146.16399 | | | +0.98991042 | | | +0.12162366 | |
| $a$ | 2.6572435 | | $\Omega$ | 207.12975 | | | −0.13663847 | | | +0.95520474 | |
| $e$ | 0.1802339 | | $i$ | 9.17344 | | | +0.03751376 | | | +0.26979918 | |
| $P$ | 4.33 | | $H$ | 15.9 | | $G$ | 0.15 | | $U$ | 5 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.1− | 0.1− | 2001 08 25 | 704 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.7+ | 0.1− |
| 2001 08 17 | 644 | 0.1− | 0.2+ | 2001 08 27 | 704 | 1.1+ | 0.7− | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 08 17 | 644 | 0.1+ | 0.0 | 2001 08 27 | 704 | 0.5− | 0.8+ | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2001 08 24 | 699 | 0.3− | 0.2− | 2001 08 27 | 704 | 0.3− | 0.5+ | 2006 11 26 | 291 | 0.2− | 0.1+ |
| 2001 08 24 | 699 | 0.4+ | 0.6− | 2001 08 27 | 704 | 0.7− | 0.1− | 2006 11 26 | 291 | 0.3− | 0.0 |
| 2001 08 24 | 699 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.6− | 0.1+ | 2006 11 26 | 291 | 0.2− | 0.0 |
| 2001 08 24 | 699 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.7+ | 0.5+ | 2006 11 27 | 291 | 0.1− | 0.0 |
| 2001 08 25 | 704 | 0.5+ | 0.0 | 2006 11 25 | G96 | 0.9+ | 0.1+ | 2006 11 27 | 291 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.6+ | 0.1− | 2006 11 27 | 291 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.1− | | | | |

### 2001 QE$_{173}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 43.21216 | | | (2000.0) | | | **P** | | | **Q** | |
| $n$ | 0.22083890 | | $\omega$ | 45.96675 | | | +0.96112939 | | | +0.24015315 | |
| $a$ | 2.7107263 | | $\Omega$ | 299.69631 | | | −0.27607995 | | | +0.84164116 | |
| $e$ | 0.1349401 | | $i$ | 9.02233 | | | +0.00318793 | | | +0.48370096 | |
| $P$ | 4.46 | | $H$ | 15.6 | | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 049 | 0.5+ | 0.8− | 2001 09 09 | 699 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.6+ | 0.5− |
| 2001 08 17 | 049 | 0.0 | 0.3− | 2001 09 09 | 699 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2001 08 17 | 049 | 0.6+ | 0.8− | 2001 09 09 | 699 | 0.0 | 0.6− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2001 08 24 | 699 | 0.8− | 0.3+ | 2001 09 09 | 699 | 0.1− | 0.5+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2001 08 24 | 699 | 0.2− | 0.4− | 2001 09 20 | 704 | 0.6+ | 0.2− | 2006 11 15 | 703 | 0.3− | 0.2+ |
| 2001 08 24 | 699 | 1.4− | 0.0 | 2001 09 20 | 704 | 0.0 | 0.8− | 2006 11 15 | 703 | 0.4+ | 0.2− |
| 2001 08 24 | 699 | 1.1− | 0.4− | 2001 09 20 | 704 | 0.3− | 0.5− | 2006 11 15 | 703 | (2.2− | 0.1+) |
| 2001 08 25 | 704 | 0.0 | 0.1+ | 2001 09 20 | 704 | 0.5+ | 0.1+ | 2006 11 21 | 703 | 0.0 | 0.2+ |
| 2001 08 25 | 704 | 0.3− | 0.2+ | 2001 09 20 | 704 | 0.0 | 0.1+ | 2006 11 21 | 703 | 0.8− | 0.1− |
| 2001 08 25 | 704 | 0.0 | 0.6+ | 2006 10 23 | 703 | 0.8− | 0.3− | 2006 11 21 | 703 | 0.1− | 0.0 |
| 2001 08 25 | 704 | 0.6− | 0.5+ | 2006 10 23 | 703 | (1.6+ | 0.6−) | 2006 11 21 | 703 | 0.4− | 0.5− |
| 2001 08 25 | 704 | 0.5− | 0.2+ | 2006 10 23 | 703 | 0.7− | 1.0+ | 2006 11 22 | 704 | (0.9+ | 1.8+) |
| 2001 08 27 | 704 | 1.5+ | 0.4+ | 2006 10 23 | 703 | (2.0− | 0.5+) | 2006 11 22 | 704 | 1.5− | 0.9+ |
| 2001 08 27 | 704 | 0.3+ | 0.9+ | 2006 10 29 | 703 | 0.6+ | 0.7+ | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2001 08 27 | 704 | 0.7+ | 0.3− | 2006 10 29 | 703 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.5+ |
| 2001 08 27 | 704 | 0.5+ | 0.4− | 2006 10 29 | 703 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2001 08 27 | 704 | 0.3− | 0.9+ | 2006 10 29 | 703 | 0.3+ | 0.5− | | | | |

### 2001 QN$_{173}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 168.39716 | | | (2000.0) | | | **P** | | | **Q** | |
| $n$ | 0.26528790 | | $\omega$ | 69.53729 | | | +0.29890157 | | | +0.95205753 | |
| $a$ | 2.3987837 | | $\Omega$ | 218.04869 | | | −0.91020428 | | | +0.26392060 | |
| $e$ | 0.1715400 | | $i$ | 6.06771 | | | −0.28668105 | | | +0.15470094 | |
| $P$ | 3.72 | | $H$ | 17.5 | | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.7+ | 0.1− | 2001 09 20 | 645 | 0.0 | 0.0 | 2005 10 25 | 691 | 0.0 | 0.3+ |
| 1996 01 15 | 691 | 0.6− | 0.3− | 2001 09 20 | 645 | 0.1+ | 0.0 | 2005 10 25 | 691 | 0.1+ | 0.1+ |
| 1996 01 15 | 691 | 0.2− | 0.4− | 2001 09 20 | 645 | 0.0 | 0.0 | 2005 11 06 | G96 | 0.0 | 0.3− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2001 09 20 | 645 | 0.0 | 0.2− | 2005 11 06 | G96 | 0.3+ | 0.1− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2005 09 26 | 691 | 0.2− | 0.1+ | 2005 11 06 | G96 | 0.3− | 0.1− |
| 2001 08 25 | 704 | 0.8− | 0.3+ | 2005 09 26 | 691 | 0.1+ | 0.4+ | 2005 11 06 | G96 | 0.4+ | 0.1− |
| 2001 08 25 | 704 | 1.2− | 0.0 | 2005 09 26 | 691 | 0.0 | 0.1+ | 2005 11 26 | G96 | 0.9− | 0.6+ |
| 2001 08 25 | 704 | 0.2− | 0.1+ | 2005 10 11 | 691 | 0.0 | 0.1− | 2005 11 26 | G96 | 0.3− | 0.6− |
| 2001 08 27 | 704 | 0.1+ | 0.5+ | 2005 10 11 | 691 | 0.1+ | 0.2+ | 2005 11 26 | G96 | 0.4− | 0.3− |
| 2001 08 27 | 704 | 0.1− | 0.1+ | 2005 10 11 | 691 | 0.0 | 0.2+ | 2005 11 26 | G96 | 0.1+ | 0.3− |
| 2001 08 27 | 704 | 0.1+ | 0.1+ | 2005 10 25 | 691 | 0.1− | 0.1− | | | | |

### 2001 QS$_{175}$ = 2006 SR$_{308}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 359.37252 | | | (2000.0) | | | **P** | | | **Q** | |
| $n$ | 0.21457762 | | $\omega$ | 67.66783 | | | +0.96641505 | | | −0.25407118 | |
| $a$ | 2.7632050 | | $\Omega$ | 307.02971 | | | +0.21439306 | | | +0.87990760 | |
| $e$ | 0.1109536 | | $i$ | 2.77125 | | | +0.14169534 | | | +0.40151021 | |
| $P$ | 4.59 | | $H$ | 17.5 | | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.4− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2001 08 21 | 807 | 0.0 | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 08 23 | 691 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2001 08 23 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 08 23 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2001 08 28 | 691 | 0.5+ | 0.3− | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2001 08 28 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2001 08 28 | 691 | 0.3− | 0.5− | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4− | 0.4− |

### 2001 QP$_{176}$ = 2006 SW$_{268}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 74.64069 | | | (2000.0) | | | **P** | | | **Q** | |
| $n$ | 0.21986175 | | $\omega$ | 329.80681 | | | +0.45185257 | | | +0.89090849 | |
| $a$ | 2.7187520 | | $\Omega$ | 326.99310 | | | −0.80067883 | | | +0.38230001 | |
| $e$ | 0.0929807 | | $i$ | 4.83868 | | | −0.39337346 | | | +0.24521168 | |
| $P$ | 4.48 | | $H$ | 17.2 | | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.2− | 0.1+ | 2001 08 28 | 691 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2001 08 23 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.5− |
| 2001 08 23 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.5− |
| 2001 08 24 | 699 | (2.5+ | 2.4−) | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.6− | 0.2+ |
| 2001 08 24 | 699 | (1.6+ | 1.2+) | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2001 08 24 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1− | 0.4+ |
| 2001 08 24 | 699 | 0.2+ | 0.8− | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.0 | 1.0+ |
| 2001 08 24 | 644 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.4− | 2006 10 29 | 691 | 0.4+ | 0.4+ |
| 2001 08 24 | 644 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.2− | 0.6− |
| 2001 08 24 | 699 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 691 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.6+ | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.5+ |
| 2001 08 28 | 691 | 0.5− | 1.1− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.5+ | 0.6− |

**2001 QU$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.18172 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20232517 | $\omega$ | 209.73343 | | +0.90710531 | −0.42089247 | |
| $a$ | 2.8736648 | $\Omega$ | 175.15444 | | +0.39300472 | +0.84433821 | |
| $e$ | 0.0806256 | $i$ | 2.08840 | | +0.15068920 | +0.33157582 | |
| $P$ | 4.87 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.1− | 0.2− | 2001 10 20 | 695 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.6− |
| 2001 08 20 | 807 | 0.2− | 0.3− | 2001 10 20 | 695 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2001 08 26 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.5− | 0.9− |
| 2001 08 26 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.6− |
| 2001 08 26 | 691 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2001 08 28 | 691 | 0.1− | 0.1+ | 2006 09 19 | 291 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2001 08 28 | 691 | 0.5+ | 0.3+ | 2006 09 19 | 291 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2001 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 291 | 0.1+ | 0.0 | | | | |

**2001 QW$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.40093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22447962 | $\omega$ | 247.16530 | | +0.51553773 | +0.84955423 | |
| $a$ | 2.6813372 | $\Omega$ | 54.34477 | | −0.72711750 | +0.50271340 | |
| $e$ | 0.2342991 | $i$ | 7.90199 | | −0.45334424 | +0.15980251 | |
| $P$ | 4.39 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 809 | 0.1− | 1.7− | 2001 09 25 | 704 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 1996 04 20 | 809 | 1.1− | 1.1− | 2001 09 25 | 704 | 0.9− | 0.4+ | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 1996 04 20 | 809 | 0.7− | 1.8− | 2001 10 10 | 644 | 1.1− | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2001 08 25 | 644 | 0.1+ | 0.1+ | 2001 10 10 | 644 | 0.8+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2001 08 25 | 644 | 0.1+ | 0.2+ | 2001 10 10 | 644 | 1.2− | 0.5+ | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2001 08 25 | 644 | 0.1− | 0.1+ | 2001 10 10 | 644 | 1.3+ | 0.2− | 2006 11 15 | 691 | 1.3− | 0.5− |
| 2001 08 31 | 644 | 0.4+ | 0.7− | 2001 10 10 | 644 | 1.1− | 0.7+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2001 08 31 | 644 | 0.3+ | 0.4− | 2001 10 10 | 644 | 1.0+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2001 08 31 | 644 | 0.4+ | 0.3− | 2001 10 24 | 644 | 0.0 | 1.3− | 2006 11 19 | 691 | 0.3+ | 0.3− |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2001 10 24 | 644 | 0.0 | 1.1− | | | | |
| 2001 09 25 | 704 | 0.9+ | 0.3− | 2001 10 24 | 644 | 0.2− | 1.0− | | | | |

**2001 QL$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.41189 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26678016 | $\omega$ | 218.71201 | | +0.93553715 | −0.35274637 | |
| $a$ | 2.3898301 | $\Omega$ | 161.91717 | | +0.33706558 | +0.87589589 | |
| $e$ | 0.2005892 | $i$ | 3.40694 | | +0.10562692 | +0.32920569 | |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 08 | 910 | 0.1+ | 0.3− | 2001 09 21 | 704 | 0.6+ | 1.4− | 2001 10 16 | 704 | 0.3+ | 0.5+ |
| 1997 07 08 | 910 | 0.2+ | 0.6− | 2001 09 21 | 704 | 0.1+ | 1.7− | 2001 10 16 | 704 | 0.7+ | 0.3− |
| 1997 07 08 | 910 | 0.0 | 0.5− | 2001 09 21 | 704 | 0.0 | 1.4− | 2001 10 20 | 704 | 1.6− | 0.0 |
| 2001 08 25 | 621 | 0.6− | 1.1+ | 2001 09 21 | 704 | 0.4+ | 1.2− | 2001 10 20 | 704 | 0.4− | 0.3− |
| 2001 08 25 | 621 | 0.2+ | 0.8+ | 2001 09 21 | 704 | 0.3+ | 1.1− | 2001 10 20 | 704 | 0.0 | 0.4+ |
| 2001 08 26 | 621 | 0.1− | 0.4+ | 2001 09 25 | 699 | 0.5− | 0.0 | 2001 10 20 | 704 | 0.3− | 0.1+ |
| 2001 08 26 | 621 | 0.1− | 0.3+ | 2001 09 25 | 699 | 0.1+ | 0.5+ | 2001 10 20 | 704 | 0.6− | 0.3− |
| 2001 08 28 | 621 | 0.4+ | 0.4− | 2001 09 25 | 699 | 0.8+ | 0.0 | 2001 10 22 | 704 | 0.5+ | 0.1+ |
| 2001 08 28 | 621 | 0.0 | 0.2− | 2001 09 25 | 699 | 0.5+ | 0.7− | 2001 10 22 | 704 | 0.2+ | 0.2− |
| 2001 08 28 | 621 | 0.2+ | 0.1+ | 2001 09 26 | 704 | 0.9− | 0.2+ | 2001 10 22 | 704 | 0.1+ | 0.4+ |
| 2001 08 28 | 621 | 0.1− | 0.1+ | 2001 09 26 | 704 | 0.2− | 0.8+ | 2001 10 22 | 704 | 0.5− | 0.3+ |
| 2001 08 29 | 621 | 0.3+ | 0.2− | 2001 09 26 | 704 | 0.2− | 0.1− | 2001 10 22 | 704 | 0.3+ | 0.0 |
| 2001 08 29 | 621 | 0.3+ | 0.1− | 2001 09 26 | 704 | 0.1+ | 0.6+ | 2001 10 22 | 704 | 0.5− | 0.6− |
| 2001 08 29 | 621 | 0.3+ | 0.0 | 2001 09 26 | 704 | 0.3+ | 0.6− | 2001 10 22 | 704 | 0.9+ | 0.1− |
| 2001 08 29 | 621 | 0.1+ | 0.2− | 2001 09 26 | 704 | 0.6− | 0.5+ | 2001 10 22 | 704 | 0.8− | 0.6+ |
| 2001 09 11 | 691 | 0.2+ | 0.1+ | 2001 09 26 | 704 | 0.4− | 0.4− | 2001 10 23 | 704 | 0.2+ | 1.2+ |
| 2001 09 11 | 691 | 0.3+ | 0.1− | 2001 09 26 | 704 | 0.7− | 0.3− | 2001 10 23 | 704 | 0.2+ | 0.2+ |
| 2001 09 11 | 699 | 0.4+ | 0.5+ | 2001 09 26 | 704 | 0.8− | 0.1− | 2001 10 23 | 704 | 0.8+ | 1.1+ |
| 2001 09 11 | 691 | 0.3+ | 0.0 | 2001 10 13 | 704 | 0.3− | 0.8− | 2001 10 23 | 704 | 0.2− | 0.1+ |
| 2001 09 11 | 699 | 0.0 | 0.8+ | 2001 10 13 | 704 | 0.2+ | 0.6+ | 2001 10 23 | 704 | 1.0+ | 0.8+ |
| 2001 09 11 | 699 | 0.1− | 0.0 | 2001 10 13 | 704 | 0.1− | 0.1+ | 2001 10 24 | 704 | 0.0 | 1.2+ |
| 2001 09 11 | 699 | 0.4− | 1.0− | 2001 10 13 | 704 | 0.2− | 1.3− | 2001 10 24 | 704 | 0.7+ | 1.0+ |
| 2001 09 15 | 644 | 0.3− | 0.1− | 2001 10 13 | 704 | 0.5− | 0.2− | 2001 10 24 | 704 | 0.6+ | 1.0+ |
| 2001 09 15 | 644 | 0.5− | 0.2− | 2001 10 14 | 608 | 0.1− | 0.3+ | 2001 10 24 | 704 | 0.2+ | 0.5+ |
| 2001 09 15 | 644 | 0.5− | 0.0 | 2001 10 14 | 608 | 0.5− | 0.3+ | 2001 11 09 | 621 | 0.4+ | 0.1− |
| 2001 09 16 | 704 | 0.2+ | 0.6− | 2001 10 14 | 608 | 0.1+ | 0.4+ | 2001 11 09 | 621 | 0.2+ | 0.4+ |
| 2001 09 16 | 704 | 0.0 | 0.1− | 2001 10 15 | 704 | 0.5− | 0.2+ | 2001 11 09 | 621 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.4+ | 0.9− | 2001 10 15 | 704 | 0.7− | 0.8− | 2001 11 09 | 621 | 0.2+ | 0.3+ |
| 2001 09 16 | 704 | 0.0 | 0.9− | 2001 10 15 | 704 | 0.5− | 0.0 | 2001 11 14 | 621 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2001 10 15 | 704 | 0.8− | 0.5+ | 2001 11 14 | 621 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2001 10 15 | 704 | 0.1− | 0.5+ | 2001 11 14 | 621 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2001 10 16 | 704 | 0.0 | 0.1− | 2005 12 05 | 691 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2001 10 16 | 704 | 1.0+ | 0.1+ | 2005 12 05 | 691 | 0.7+ | 0.4− |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2001 10 16 | 704 | 0.3+ | 0.1+ | 2005 12 05 | 691 | 0.3− | 0.6− |

**2001 QQ$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.98790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20334263 | $\omega$ | 297.82774 | | +0.84019419 | +0.54194079 | |
| $a$ | 2.8640708 | $\Omega$ | 29.36854 | | −0.48263774 | +0.76356086 | |
| $e$ | 0.0621339 | $i$ | 2.25968 | | −0.24725399 | +0.35110540 | |
| $P$ | 4.85 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 621 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2001 08 28 | 621 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 08 29 | 621 | 0.6− | 0.1− | 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2001 08 29 | 621 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 1.2+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2001 09 19 | 704 | 0.8+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.6+ | 0.2− |
| 2001 09 19 | 704 | (1.8+ | 0.9−) | 2006 09 25 | G96 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 291 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 1.0+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 291 | 0.4− | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 291 | 0.8+ | 0.1− | 2006 10 15 | 691 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.8+ | 0.9+ | 2006 10 15 | 691 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.7− | 0.0 |
| 2001 09 21 | 704 | 1.1− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.7− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.4− | 1.3+ |
| 2001 09 21 | 704 | 1.0− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2001 09 26 | 704 | (1.6− | 0.0 ) | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2001 09 26 | 704 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.5+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2001 09 26 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.1− |
| 2001 10 20 | 704 | 1.2− | 1.3− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | (0.1+ | 1.8+) | 2006 10 23 | 691 | 0.4− | 0.3− | 2006 11 20 | 691 | 0.1− | 0.1− |

**2001 QN$_{185}$ = 2006 VF$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.60029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22530035 | $\omega$ | 191.94506 | | +0.99927375 | +0.03666566 | |
| $a$ | 2.6748215 | $\Omega$ | 165.94125 | | −0.03049140 | +0.93268148 | |
| $e$ | 0.1206202 | $i$ | 2.44736 | | −0.02285262 | +0.35883267 | |
| $P$ | 4.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.1+ | 0.3− | 2001 09 19 | 691 | 0.2+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2001 08 21 | 691 | 0.3+ | 0.2− | 2001 09 19 | 691 | 0.1+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 08 21 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.4− | 0.5− | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2001 08 24 | 699 | 0.6− | 0.6− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2001 08 24 | 699 | 0.7− | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.2− | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.1+ | 0.7− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.2+ | | |
| 2001 08 24 | 699 | 0.8− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2001 09 12 | 695 | 0.2− | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 12 | 695 | 0.1− | 0.4− | 2006 11 12 | G96 | 0.4+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 19 | 691 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.3− | 0.3− | | | | | | |

**2001 QU$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 44.79055 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22043638 | $\omega$ | 77.94919 | | +0.97150894 | +0.08541996 |
| $a$ | 2.7140252 | $\Omega$ | 276.85131 | | −0.17245186 | +0.89464142 |
| $e$ | 0.2269450 | $i$ | 12.86557 | | +0.16257534 | +0.43854323 |
| $P$ | 4.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 608 | 0.4+ | 0.3− | 2001 09 21 | 699 | 0.8+ | 0.3+ | 2001 11 13 | 704 | 0.7− | 1.2+ | | |
| 2001 06 27 | 608 | 0.8+ | 1.0− | 2001 09 21 | 699 | 0.5+ | 0.4− | 2001 11 13 | 704 | 0.5+ | 0.0 | | |
| 2001 06 27 | 608 | 0.3− | 0.4− | 2001 09 21 | 699 | 1.2+ | 0.1− | 2001 11 13 | 704 | 0.1+ | 0.1− | | |
| 2001 08 12 | 644 | 0.6+ | 0.4+ | 2001 09 24 | 699 | 0.1− | 0.1− | 2001 11 20 | 049 | 0.3+ | 0.5− | | |
| 2001 08 12 | 644 | 0.2+ | 0.5+ | 2001 09 24 | 699 | 0.2− | 0.3− | 2001 11 20 | 049 | 0.1+ | 0.6− | | |
| 2001 08 12 | 644 | 0.1− | 0.4+ | 2001 09 24 | 699 | 0.3− | 0.0 | 2001 11 20 | 049 | 0.0 | 0.7− | | |
| 2001 08 21 | 608 | 0.9+ | 0.1− | 2001 09 24 | 699 | 0.2− | 0.3− | 2001 12 11 | 704 | 0.1+ | 0.5+ | | |
| 2001 08 21 | 608 | 0.5+ | 0.2+ | 2001 09 30 | 644 | 0.1− | 0.3+ | 2001 12 11 | 704 | 0.1− | 0.8− | | |
| 2001 08 21 | 608 | 0.1+ | 0.3+ | 2001 09 30 | 644 | 0.2− | 0.4+ | 2001 12 11 | 704 | 0.5+ | 0.2− | | |
| 2001 08 22 | 704 | 0.2+ | 1.5+ | 2001 09 30 | 644 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2001 08 22 | 704 | 0.8+ | 0.5− | 2001 10 18 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 691 | 0.7− | 0.2+ | | |
| 2001 08 22 | 704 | 0.6− | 0.1+ | 2001 10 18 | 704 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2001 08 22 | 704 | 0.3+ | 0.5+ | 2001 10 18 | 704 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.1+ | | |
| 2001 08 22 | 704 | 0.1+ | 0.2− | 2001 10 18 | 704 | 0.2− | 0.8+ | 2006 11 19 | 704 | 0.3+ | 0.1+ | | |
| 2001 09 09 | 704 | 0.2− | 1.0− | 2001 10 18 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.5+ | | |
| 2001 09 09 | 704 | 0.1− | 0.7− | 2001 10 23 | 699 | 0.5− | 1.1+ | 2006 11 19 | 704 | 0.5+ | 0.0 | | |
| 2001 09 09 | 704 | 0.1− | 0.7− | 2001 10 23 | 699 | 0.8− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.9+ | | |
| 2001 09 09 | 704 | 0.9− | 0.8− | 2001 10 23 | 699 | 0.7− | 0.6+ | 2006 11 22 | 691 | 0.3− | 0.1− | | |
| 2001 09 09 | 699 | 0.4− | 0.0 | 2001 10 23 | 699 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.2+ | | |
| 2001 09 09 | 704 | 0.5− | 1.2− | 2001 11 11 | 699 | 0.4+ | 0.8+ | 2006 11 22 | 691 | 0.3− | 0.2+ | | |
| 2001 09 09 | 699 | 0.4− | 0.2− | 2001 11 11 | 699 | 0.4− | 0.4+ | 2006 11 26 | 691 | 0.2− | 0.2+ | | |
| 2001 09 09 | 699 | 0.5− | 0.3− | 2001 11 11 | 699 | 0.1− | 0.8+ | 2006 11 26 | 691 | 0.1+ | 0.2− | | |
| 2001 09 09 | 699 | 0.5− | 0.3− | 2001 11 11 | 699 | (2.8+ | 0.7+) | 2006 11 26 | 691 | 0.7+ | 1.0− | | |
| 2001 09 21 | 699 | 0.6+ | 0.2+ | 2001 11 13 | 704 | (1.3+ | 1.6−) | | | | | | |

**2001 QK$_{188}$ = 1996 HK$_3$ = 2006 WQ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 74.93465 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22985589 | $\omega$ | 158.39905 | | +0.68408113 | +0.72865136 |
| $a$ | 2.6393620 | $\Omega$ | 154.72703 | | −0.68007925 | +0.65359851 |
| $e$ | 0.1453828 | $i$ | 4.45593 | | −0.26367636 | +0.20463671 |
| $P$ | 4.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 691 | 1.1+ | 0.5+ | 2001 08 24 | 699 | 1.0− | 1.4+ | 2006 11 22 | G96 | 0.1− | 0.1− | | |
| 1996 04 17 | 691 | 1.2+ | 0.4+ | 2001 08 24 | 699 | 1.3− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.2+ | | |
| 1996 04 21 | 691 | 0.6− | 0.3+ | 2001 08 24 | 699 | 0.4− | 1.5+ | 2006 11 22 | G96 | 0.2− | 0.0 | | |
| 1996 04 21 | 691 | 0.5− | 0.4+ | 2001 08 24 | 699 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.1− | | |
| 1996 04 21 | 691 | 0.6− | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2001 08 16 | 704 | 1.0− | 1.1− | 2006 10 23 | G96 | 0.4+ | 0.5− | 2006 11 23 | 691 | 0.3+ | 0.5+ | | |
| 2001 08 16 | 704 | 0.5− | 1.2+ | 2006 10 23 | G96 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.4+ | | |
| 2001 08 16 | 704 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2001 08 22 | 691 | 0.5+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.4+ | | |
| 2001 08 22 | 691 | 0.2+ | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.4− | 0.2+ | | |
| 2001 08 22 | 691 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.4− | 0.1+ | | | | | | |

**2001 QS$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 105.71643 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22109171 | $\omega$ | 1.54371 | | +0.12987215 | +0.96668369 |
| $a$ | 2.7086595 | $\Omega$ | 275.95706 | | −0.91207172 | +0.02921083 |
| $e$ | 0.1338077 | $i$ | 12.81351 | | −0.38891953 | +0.25430174 |
| $P$ | 4.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 699 | 0.9− | 0.1− | 2001 08 26 | 699 | 0.6+ | 0.8+ | 2006 11 15 | 703 | 0.7− | 1.1− | | |
| 2001 07 22 | 699 | 0.4+ | 0.1+ | 2001 08 26 | 699 | 0.9+ | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.0 | | |
| 2001 07 22 | 699 | 1.1+ | 1.1+ | 2001 08 26 | 699 | 1.1+ | 0.0 | 2006 11 15 | 703 | 0.7− | 1.1+ | | |
| 2001 07 22 | 699 | 0.1+ | 0.3+ | 2001 09 10 | 704 | 0.6− | 1.2+ | 2006 11 15 | 703 | 1.0− | 0.3+ | | |
| 2001 08 21 | 608 | 0.1+ | 0.5− | 2001 09 10 | 704 | 1.1− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.9+ | | |
| 2001 08 21 | 608 | 0.3+ | 0.3− | 2001 09 10 | 704 | 1.2− | 0.2+ | 2006 11 15 | 703 | 0.8+ | 0.0 | | |
| 2001 08 21 | 608 | 0.1+ | 0.5− | 2001 10 06 | 644 | 0.1+ | 0.6− | 2006 11 15 | 703 | 0.1+ | 0.1+ | | |
| 2001 08 22 | 704 | 0.6− | 0.4+ | 2001 10 06 | 644 | 0.3+ | 0.5− | 2006 11 15 | 703 | 0.9+ | 0.8− | | |
| 2001 08 22 | 704 | 1.0+ | 0.1+ | 2001 10 06 | 644 | 0.0 | 0.8− | 2006 11 15 | 703 | 0.8+ | 0.2− | | |
| 2001 08 22 | 704 | 0.6− | 0.1+ | 2005 06 03 | 691 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.2− | | |
| 2001 08 22 | 704 | 0.1− | 0.3− | 2005 06 03 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.1− | 0.3+ | | |
| 2001 08 22 | 704 | 0.2+ | 0.7− | 2005 06 03 | 691 | 0.0 | 0.0 | | | | | | |
| 2001 08 26 | 699 | 0.8− | 1.0− | 2006 11 15 | 703 | 0.2− | 0.5+ | | | | | | |

**2001 QD$_{192}$ = 2005 BU$_{48}$ = 2006 WT$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 78.77664 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22822816 | $\omega$ | 75.01361 | | +0.72523506 | +0.66408535 |
| $a$ | 2.6518964 | $\Omega$ | 243.00197 | | −0.68364168 | +0.66327401 |
| $e$ | 0.2797158 | $i$ | 11.76825 | | −0.08165881 | +0.34504817 |
| $P$ | 4.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 699 | 0.4+ | 0.5+ | 2001 09 09 | 704 | 0.3− | 0.7− | 2001 10 17 | 704 | 0.7+ | 0.5− | | |
| 2001 07 22 | 699 | 0.2− | 0.3+ | 2001 09 09 | 704 | 0.0 | 0.3− | 2001 10 17 | 704 | 0.6− | 0.2+ | | |
| 2001 07 22 | 699 | 0.4− | 0.2+ | 2001 09 09 | 699 | 0.4− | 0.0 | 2001 10 17 | 704 | 0.4− | 0.5+ | | |
| 2001 07 22 | 699 | 0.4− | 0.2+ | 2001 09 09 | 704 | 0.4− | 0.3+ | 2001 10 17 | 704 | 0.0 | 0.2+ | | |
| 2001 08 21 | 608 | 0.3− | 0.4− | 2001 09 09 | 699 | 0.6+ | 0.9+ | 2001 10 23 | 608 | 0.5+ | 0.7− | | |
| 2001 08 21 | 608 | 0.3− | 0.2− | 2001 09 09 | 699 | 0.3+ | 1.2+ | 2001 10 23 | 608 | 0.0 | 0.4− | | |
| 2001 08 21 | 608 | 0.2− | 0.4− | 2001 09 09 | 699 | 0.5− | 0.6+ | 2001 10 23 | 608 | 0.2− | 0.3− | | |
| 2001 08 22 | 704 | 0.6+ | 0.0 | 2001 09 21 | 699 | 0.4+ | 0.3+ | 2005 01 21 | 809 | 0.2+ | 0.3− | | |
| 2001 08 22 | 704 | 0.3+ | 0.0 | 2001 09 21 | 699 | 0.4− | 0.1− | 2005 01 21 | 809 | 0.4− | 0.4+ | | |
| 2001 08 22 | 704 | 0.1− | 0.0 | 2001 09 21 | 699 | 0.2+ | 0.0 | 2005 01 21 | 809 | 0.1+ | 0.2− | | |
| 2001 08 22 | 704 | 0.3+ | 0.4− | 2001 09 21 | 699 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.2+ | 0.2− | | |
| 2001 08 22 | 704 | 0.1+ | 0.0 | 2001 09 23 | 644 | 0.1+ | 0.9+ | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2001 08 26 | 699 | 0.3+ | 0.2− | 2001 09 23 | 644 | 0.2+ | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.1− | | |
| 2001 08 26 | 699 | 0.9+ | 1.8− | 2001 09 23 | 644 | 0.2− | 0.7+ | 2006 11 28 | 691 | 0.1− | 0.0 | | |
| 2001 08 26 | 699 | 0.5+ | 0.1− | 2001 09 29 | 644 | 0.3− | 0.2+ | 2006 11 28 | 691 | 0.0 | 0.2+ | | |
| 2001 08 26 | 699 | 0.1+ | 0.2− | 2001 09 29 | 644 | 0.2− | 0.2+ | 2006 11 28 | 691 | 0.1− | 0.0 | | |
| 2001 09 09 | 704 | 0.1+ | 0.0 | 2001 09 29 | 644 | 0.0 | 0.4+ | | | | | | |
| 2001 09 09 | 704 | 0.3− | 1.1− | 2001 10 17 | 704 | 0.7− | 1.2− | | | | | | |

**2001 QP$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 49.93204 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22407914 | $\omega$ | 83.90460 | | +0.98097500 | +0.01361278 |
| $a$ | 2.6845311 | $\Omega$ | 275.19975 | | −0.09283280 | +0.90898804 |
| $e$ | 0.2885197 | $i$ | 11.21297 | | +0.17049960 | +0.41659985 |
| $P$ | 4.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.4− | 0.8− | 2001 09 10 | 699 | 0.2+ | 0.1− | 2001 10 18 | 704 | 0.3+ | 0.3− | | |
| 2001 08 22 | 704 | 0.2− | 0.9− | 2001 09 10 | 699 | 0.6− | 0.0 | 2001 10 18 | 704 | 1.0− | 0.1+ | | |
| 2001 08 22 | 704 | 0.0 | 0.8− | 2001 09 10 | 699 | 1.1+ | 0.1+ | 2001 10 18 | 704 | 0.4+ | 0.0 | | |
| 2001 08 22 | 704 | 0.4− | 0.2− | 2001 09 10 | 699 | 1.5+ | 0.4+ | 2001 11 11 | 699 | 1.9− | 0.6+ | | |
| 2001 08 22 | 704 | 0.0 | 0.3− | 2001 09 21 | 699 | 0.6− | 0.7− | 2001 11 11 | 699 | 0.6+ | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 699 | 0.5+ | 0.3− | 2001 09 21 | 699 | 0.8− | 0.1+ | 2001 11 11 | 699 | 0.6− | 1.4+ |
| 2001 08 26 | 699 | 0.5+ | 0.0 | 2001 09 21 | 699 | (0.2+ | 2.2−) | 2001 11 11 | 699 | 1.1+ | 0.3− |
| 2001 08 26 | 699 | 1.0+ | 0.6− | 2001 09 21 | 699 | 0.5− | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2001 08 26 | 699 | 0.3+ | 0.2− | 2001 09 24 | 699 | 1.1− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.7− |
| 2001 09 07 | 644 | 1.0− | 1.8+ | 2001 09 24 | 699 | 0.6− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2001 09 07 | 644 | (1.3− | 2.4+) | 2001 09 24 | 699 | 0.6− | 0.2− | 2006 10 23 | G96 | 0.4+ | 0.1+ |
| 2001 09 07 | 644 | (0.7− | 2.1+) | 2001 09 24 | 699 | 0.2− | 0.8− | 2006 10 29 | G96 | 0.9− | 0.1− |
| 2001 09 09 | 704 | 0.3− | 0.1− | 2001 09 30 | 644 | 0.5+ | 1.0+ | 2006 10 29 | G96 | 0.6− | 0.4− |
| 2001 09 09 | 704 | 1.0+ | 1.1− | 2001 09 30 | 644 | 0.1− | 0.7+ | 2006 10 29 | G96 | 0.3− | 0.5− |
| 2001 09 09 | 704 | 0.1+ | 0.7+ | 2001 09 30 | 644 | 0.4+ | 0.4+ | 2006 10 29 | G96 | 0.5+ | 0.0 |
| 2001 09 09 | 704 | 0.1− | 0.4+ | 2001 10 18 | 704 | 0.1+ | 0.1+ | | | | |
| 2001 09 09 | 704 | 0.6+ | 0.0 | 2001 10 18 | 704 | 0.2+ | 0.1+ | | | | |

**2001 QY$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.71878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29984442 | $\omega$ | 85.51572 | | +0.86478954 | +0.49311594 | |
| $a$ | 2.2107454 | $\Omega$ | 244.91310 | | −0.49213720 | +0.79488736 | |
| $e$ | 0.2605267 | $i$ | 6.00461 | | −0.09969972 | +0.35354032 | |
| $P$ | 3.29 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 04 | 644 | 0.2− | 0.3+ | 2001 09 17 | 704 | 0.6− | 0.2+ | 2001 10 13 | 644 | 0.0 | 0.2+ |
| 2001 08 04 | 644 | 0.5− | 0.3+ | 2001 09 17 | 704 | 0.0 | 0.5+ | 2001 10 13 | 644 | 0.0 | 0.2+ |
| 2001 08 04 | 644 | 0.4− | 0.3+ | 2001 09 17 | 704 | 0.2− | 0.2+ | 2001 10 17 | 704 | 0.5+ | 0.4+ |
| 2001 08 22 | 704 | 0.1+ | 0.3+ | 2001 09 18 | 645 | 0.0 | 0.4− | 2001 10 17 | 704 | 0.5+ | 0.3+ |
| 2001 08 22 | 704 | 1.3+ | 0.4+ | 2001 09 18 | 645 | 0.0 | 0.4− | 2001 10 17 | 704 | 0.5+ | 0.3+ |
| 2001 08 22 | 704 | 0.2+ | 0.1− | 2001 09 21 | 699 | 0.2− | 1.0+ | 2001 10 17 | 704 | 0.9+ | 0.6+ |
| 2001 08 22 | 704 | 0.3+ | 1.6+ | 2001 09 21 | 699 | 0.4− | 0.4+ | 2001 10 17 | 704 | 0.3+ | 1.2+ |
| 2001 08 22 | 704 | 0.3− | 1.1+ | 2001 09 21 | 699 | 0.3− | 0.2− | 2001 10 23 | 699 | 0.6− | 0.3− |
| 2001 08 26 | 699 | 0.9+ | 0.1+ | 2001 09 21 | 699 | 0.5− | 0.0 | 2001 10 23 | 699 | 0.9+ | 1.2+ |
| 2001 08 26 | 699 | 0.3+ | 0.3− | 2001 09 25 | 704 | 0.4+ | 0.3+ | 2001 10 23 | 699 | 1.1+ | 0.2+ |
| 2001 08 26 | 699 | 0.2+ | 0.2+ | 2001 09 25 | 704 | 0.4+ | 0.2+ | 2001 10 23 | 699 | 0.6+ | 1.1+ |
| 2001 08 26 | 699 | 0.2+ | 0.2− | 2001 09 25 | 704 | 0.2+ | 0.4+ | 2001 10 23 | 704 | 0.1+ | 0.1+ |
| 2001 09 10 | 704 | 1.3− | 0.4+ | 2001 09 25 | 704 | 0.6+ | 0.1− | 2001 10 23 | 704 | 0.4− | 0.5− |
| 2001 09 10 | 704 | 1.1− | 0.6+ | 2001 09 25 | 704 | 0.8+ | 0.0 | 2001 10 23 | 704 | 0.4+ | 0.1− |
| 2001 09 10 | 704 | (1.5− | 0.8+) | 2001 09 29 | 644 | 0.1+ | 0.1− | 2001 10 23 | 704 | 0.0 | 0.3+ |
| 2001 09 10 | 699 | 0.1− | 0.3+ | 2001 09 29 | 644 | 0.1− | 0.1+ | 2004 07 14 | 704 | 0.3+ | 0.3− |
| 2001 09 10 | 704 | 1.4− | 0.5+ | 2001 09 29 | 644 | 0.0 | 0.1+ | 2004 07 14 | 704 | 0.2− | 0.2+ |
| 2001 09 10 | 704 | 1.1− | 0.7+ | 2001 10 05 | 644 | 0.0 | 0.5+ | 2004 07 14 | 704 | 0.1+ | 0.3− |
| 2001 09 10 | 699 | 0.3− | 0.4+ | 2001 10 05 | 644 | 0.2− | 0.0 | 2005 12 30 | 691 | 0.2+ | 0.2+ |
| 2001 09 10 | 699 | 1.1− | 0.9+ | 2001 10 05 | 644 | 0.2+ | 0.5+ | 2005 12 30 | 691 | 0.0 | 0.2− |
| 2001 09 10 | 699 | 0.6− | 0.1+ | 2001 10 13 | 644 | 0.2+ | 0.4+ | 2005 12 30 | 691 | 0.2− | 0.1− |

**2001 QB$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.69366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21911799 | $\omega$ | 135.83686 | | +0.72866932 | −0.67295678 | |
| $a$ | 2.7249008 | $\Omega$ | 266.91221 | | +0.58776493 | +0.70978748 | |
| $e$ | 0.2904464 | $i$ | 7.31631 | | +0.35153010 | +0.20816077 | |
| $P$ | 4.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.8− | 0.9− | 2001 10 18 | 704 | 0.1− | 0.4− | 2001 11 21 | 704 | 0.3− | 0.3+ |
| 2001 08 22 | 704 | 0.6− | 0.3− | 2001 10 18 | 704 | 0.3+ | 0.1− | 2001 11 21 | 704 | 0.5− | 0.4+ |
| 2001 08 22 | 704 | 0.5− | 0.4− | 2001 10 18 | 704 | 0.3+ | 0.1− | 2001 11 21 | 704 | 0.5− | 0.4+ |
| 2001 08 22 | 704 | 0.4− | 0.2+ | 2001 10 19 | 704 | 0.3+ | 0.1− | 2001 11 21 | 704 | 0.4+ | 0.1+ |
| 2001 08 22 | 704 | 0.6− | 1.1+ | 2001 10 19 | 704 | 0.2+ | 0.2− | 2001 11 21 | 704 | 0.2− | 0.3− |
| 2001 08 26 | 699 | 0.1+ | 0.2+ | 2001 10 19 | 704 | 0.2+ | 0.4− | 2001 11 24 | 704 | 0.1+ | 0.3+ |
| 2001 08 26 | 699 | 0.4+ | 0.4+ | 2001 10 19 | 704 | 0.1− | 0.2− | 2001 11 24 | 704 | 0.5+ | 0.8+ |
| 2001 08 26 | 699 | 0.4− | 0.4+ | 2001 10 28 | 704 | 0.5+ | 0.2+ | 2001 11 24 | 704 | 0.0 | 0.2+ |
| 2001 08 26 | 699 | 0.1+ | 0.2+ | 2001 10 28 | 704 | 0.4+ | 0.2+ | 2001 11 24 | 704 | 0.4− | 0.0 |
| 2001 08 31 | 644 | 0.0 | 0.2+ | 2001 10 28 | 704 | 0.5+ | 0.5+ | 2001 12 11 | 704 | 0.1− | 0.1+ |
| 2001 08 31 | 644 | 0.3− | 0.2− | 2001 11 10 | 704 | 0.6+ | 0.1+ | 2001 12 11 | 704 | 0.2+ | 0.4+ |
| 2001 08 31 | 644 | 0.2− | 0.2+ | 2001 11 10 | 704 | 0.9+ | 0.1− | 2001 12 11 | 704 | 0.2+ | 0.1+ |
| 2001 09 18 | 644 | 0.1− | 0.1− | 2001 11 10 | 704 | 0.2+ | 0.7+ | 2001 12 11 | 704 | 1.1− | 1.2+ |
| 2001 09 18 | 644 | 0.1− | 0.1− | 2001 11 10 | 704 | 1.8+ | 0.8− | 2001 12 11 | 704 | 0.3+ | 0.8+ |
| 2001 09 18 | 644 | 0.2− | 0.0 | 2001 11 11 | 644 | 0.0 | 0.0 | 2001 12 17 | 704 | 1.5+ | 1.2− |
| 2001 09 19 | 699 | 0.3− | 0.9− | 2001 11 11 | 644 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.6− | 0.0 |
| 2001 09 19 | 699 | 0.4+ | 1.3+ | 2001 11 11 | 644 | 0.0 | 0.2− | 2001 12 17 | 704 | 0.2+ | 0.5− |
| 2001 09 19 | 699 | 0.1+ | 0.6+ | 2001 11 12 | 704 | 0.2− | 0.1− | 2001 12 17 | 704 | 0.0 | 0.4− |
| 2001 09 19 | 699 | 0.0 | 0.2− | 2001 11 12 | 704 | 0.0 | 0.4− | 2005 07 11 | G96 | 0.1+ | 0.2− |
| 2001 09 25 | 704 | 0.5− | 0.3− | 2001 11 12 | 704 | 0.3− | 0.2− | 2005 07 11 | G96 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.4− | 0.3− | 2001 11 12 | 704 | 0.3− | 0.4− | 2005 07 11 | G96 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 0.3+ | 0.4− | 2001 11 12 | 704 | 0.3− | 0.5− | 2005 07 11 | G96 | 0.4+ | 0.1− |
| 2001 09 25 | 704 | 0.6− | 0.3+ | 2001 11 20 | 699 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.2+ | 0.6+ | 2001 11 20 | 699 | 0.4− | 0.3− | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2001 10 18 | 704 | 0.1+ | 0.1− | 2001 11 20 | 699 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2001 10 18 | 704 | 0.1+ | 0.2− | 2001 11 20 | 699 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.0 | 0.1+ |

**2001 QR$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.04825 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20251599 | $\omega$ | 40.81945 | | +0.73978113 | +0.63735008 | |
| $a$ | 2.8718594 | $\Omega$ | 278.23451 | | −0.65999345 | +0.62501399 | |
| $e$ | 0.2791197 | $i$ | 12.58604 | | −0.13089128 | +0.45071320 | |
| $P$ | 4.87 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.2+ | 0.4− | 2001 09 30 | 644 | 0.1− | 0.1+ | 2006 10 02 | 704 | 0.8+ | 0.5− |
| 2001 08 20 | 644 | 0.4+ | 0.0 | 2001 09 30 | 644 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.8+ | 0.0 |
| 2001 08 20 | 644 | 0.6+ | 0.5− | 2001 10 18 | 704 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.2+ | 0.8− |
| 2001 08 22 | 704 | 0.3+ | 1.1− | 2001 10 18 | 704 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.2− |
| 2001 08 22 | 704 | 0.2− | 0.3− | 2001 10 18 | 704 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.3+ | 0.2− |
| 2001 08 22 | 704 | 0.2+ | 0.2+ | 2001 10 18 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2001 08 26 | 699 | 0.1− | 1.3+ | 2001 10 18 | 704 | 0.6− | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2001 08 26 | 699 | 0.3− | 0.7− | 2001 10 23 | 699 | 0.9− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2001 08 26 | 699 | 0.2− | 0.2− | 2001 10 23 | 699 | 0.0 | 0.6+ | 2006 10 20 | 704 | 0.3+ | 0.3− |
| 2001 08 26 | 699 | 0.0 | 0.1− | 2001 10 23 | 699 | 0.6+ | 0.1+ | 2006 10 20 | 704 | 0.0 | 0.2+ |
| 2001 09 10 | 704 | 1.1− | 0.6− | 2001 10 23 | 699 | 0.3− | 0.2− | 2006 10 20 | 704 | 0.2− | 0.7+ |
| 2001 09 10 | 704 | 0.6− | 0.6+ | 2001 11 11 | 699 | 0.8+ | 0.1− | 2006 10 20 | 704 | 0.6+ | 0.3+ |
| 2001 09 10 | 704 | 0.8− | 0.5+ | 2001 11 11 | 699 | 0.5+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 09 10 | 704 | 0.7− | 1.0+ | 2001 11 11 | 699 | 0.8− | 1.1− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 644 | 0.5− | 0.1+ | 2001 11 11 | 699 | 0.6− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 09 21 | 644 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.5− | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2001 09 21 | 644 | 0.6− | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2001 09 23 | 699 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.3− | 2006 10 24 | 644 | 0.2− | 0.4+ |
| 2001 09 23 | 699 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.9+ |
| 2001 09 23 | 699 | 0.2+ | 0.0 | 2006 09 25 | 703 | 0.1− | 0.7− | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2001 09 23 | 699 | 1.0+ | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.8− | 2006 11 15 | 703 | 0.5− | 0.7+ |
| 2001 09 24 | 699 | 0.6+ | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.7− | 2006 11 15 | 703 | 0.4− | 0.3+ |
| 2001 09 24 | 699 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.3− | 0.8− | 2006 11 22 | 703 | 0.4+ | 0.2+ |
| 2001 09 24 | 699 | 0.7+ | 0.5+ | 2006 10 02 | 704 | 0.9− | 0.2− | 2006 11 22 | 703 | 0.3+ | 0.6+ |
| 2001 09 24 | 699 | 0.1− | 0.6+ | 2006 10 02 | 704 | 0.1− | 0.2+ | 2006 11 22 | 703 | (1.0− | 2.0+) |
| 2001 09 30 | 644 | 0.1− | 0.0 | 2006 10 02 | 704 | 0.2− | 0.0 | | | | |

**2001 QC$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.95895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19028485 | $\omega$ | 28.40725 | | +0.90764461 | +0.39811443 | |
| $a$ | 2.9936423 | $\Omega$ | 307.51409 | | −0.40981399 | +0.77203082 | |
| $e$ | 0.2115395 | $i$ | 9.65185 | | −0.09074004 | +0.49545263 | |
| $P$ | 5.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.6− | 0.0 | 2001 09 08 | 704 | 0.2+ | 0.1+ | 2001 11 18 | 645 | 0.0 | 0.1+ |
| 2001 08 23 | 699 | 0.2+ | 0.6+ | 2001 09 08 | 704 | 0.8− | 0.1− | 2001 11 18 | 645 | 0.0 | 0.1+ |
| 2001 08 23 | 699 | 1.0− | 0.6+ | 2001 09 16 | 704 | 0.3+ | 0.4− | 2006 07 21 | G96 | 0.2+ | 0.1+ |
| 2001 08 23 | 699 | 0.9+ | 0.7+ | 2001 09 16 | 704 | 0.9+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.1+ | 0.1− | 2001 09 16 | 704 | 0.1+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.2− |
| 2001 08 25 | 704 | 0.2+ | 0.5+ | 2001 09 20 | 645 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.2− | 0.1+ |
| 2001 08 25 | 704 | 0.2+ | 0.5+ | 2001 09 20 | 645 | 0.0 | 0.1− | 2006 11 19 | 291 | 0.4− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.3− | 0.4+ | 2001 09 20 | 645 | 0.1+ | 0.1− | 2006 11 19 | 291 | 0.2+ | 0.4+ | | |
| 2001 09 08 | 704 | 0.1− | 0.0 | 2001 09 20 | 645 | 0.1+ | 0.2− | 2006 11 19 | 291 | 0.2− | 0.4+ | | |

**2001 QK$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.67377 | | (2000.0) | | | |
| $n$ | 0.24436735 | $\omega$ | 345.48112 | | +0.82494414 | +0.56344381 |
| $a$ | 2.5338093 | $\Omega$ | 340.02712 | | −0.50464900 | +0.69862219 |
| $e$ | 0.2899181 | $i$ | 7.51982 | | −0.25455167 | +0.44097405 |
| $P$ | 4.03 | $H$ | 17.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.2− | 0.1− | 2001 09 12 | 704 | 0.1− | 0.1+ | 2005 10 01 | G96 | 0.0 | 0.1− | | |
| 2001 08 23 | 699 | 0.1+ | 0.1− | 2001 09 12 | 704 | 0.2+ | 0.0 | 2005 10 01 | G96 | 0.2− | 0.2− | | |
| 2001 08 23 | 699 | 0.0 | 1.4+ | 2005 07 03 | 644 | 0.2− | 0.2− | 2005 10 01 | G96 | 0.1+ | 0.3− | | |
| 2001 08 23 | 699 | 0.0 | 0.8+ | 2005 07 03 | 644 | 0.2− | 0.1− | 2005 10 27 | G96 | 0.7− | 0.9− | | |
| 2001 08 24 | 704 | 0.3+ | 0.2− | 2005 07 03 | 644 | 0.5− | 0.2− | 2005 10 27 | G96 | 0.1− | 0.5− | | |
| 2001 08 24 | 704 | 0.1+ | 0.7+ | 2005 08 04 | 644 | 0.2− | 0.3+ | 2005 10 27 | G96 | 0.1− | 0.6+ | | |
| 2001 08 24 | 704 | 0.2+ | 0.8− | 2005 08 04 | 644 | 0.4− | 0.2+ | 2005 10 27 | G96 | 0.2− | 0.0 | | |
| 2001 09 07 | 704 | 1.3− | 1.6− | 2005 08 04 | 644 | 0.2− | 0.2+ | 2005 10 30 | G96 | 0.4− | 0.2+ | | |
| 2001 09 07 | 704 | 0.5+ | 0.6− | 2005 08 29 | 704 | 0.1+ | 0.1− | 2005 10 30 | G96 | 1.0+ | 1.0+ | | |
| 2001 09 07 | 704 | 0.1− | 1.0+ | 2005 08 29 | 704 | 1.5+ | 0.4− | 2005 10 30 | G96 | 0.2+ | 0.0 | | |
| 2001 09 12 | 704 | 0.3− | 0.5+ | 2005 08 29 | 704 | 0.1− | 2.0− | 2005 10 30 | G96 | 0.1− | 0.6− | | |
| 2001 09 12 | 704 | 0.4− | 0.0 | 2005 08 29 | 704 | 1.1+ | 1.1+ | | | | | | |
| 2001 09 12 | 704 | 0.3− | 1.1+ | 2005 10 01 | G96 | 0.3+ | 0.4− | | | | | | |

**2001 QW$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.26358 | | (2000.0) | | | |
| $n$ | 0.27163305 | $\omega$ | 238.07417 | | +0.99729916 | −0.05903477 |
| $a$ | 2.3612808 | $\Omega$ | 125.27473 | | +0.07102055 | +0.92677229 |
| $e$ | 0.1560174 | $i$ | 3.06808 | | −0.01872071 | +0.37095554 |
| $P$ | 3.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 1.0− | 0.6+ | 2003 02 09 | 291 | 0.4+ | 0.5+ | 2005 11 26 | 703 | 1.0− | 0.4− | | |
| 2001 08 23 | 699 | 0.7− | 0.5+ | 2003 02 09 | 291 | 0.1+ | 0.1+ | 2005 11 26 | 703 | 1.3− | 0.6+ | | |
| 2001 08 23 | 699 | 0.2− | 0.2− | 2004 05 20 | 691 | 0.3+ | 0.1+ | 2005 11 26 | 703 | 0.5− | 1.2− | | |
| 2001 08 23 | 699 | 0.4− | 1.3+ | 2004 05 20 | 691 | 0.1+ | 0.5+ | 2005 11 26 | 703 | 0.2− | 0.8− | | |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2004 05 20 | 691 | 0.2− | 0.4+ | 2005 12 29 | G96 | 0.0 | 0.3+ | | |
| 2001 08 25 | 704 | 0.8+ | 0.8+ | 2005 11 03 | G96 | 0.6+ | 0.1+ | 2005 12 29 | G96 | 0.1+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.3+ | 0.1− | 2005 11 03 | G96 | 0.4+ | 0.0 | 2005 12 29 | G96 | 0.2+ | 0.4+ | | |
| 2001 08 25 | 704 | 0.1− | 0.9− | 2005 11 03 | G96 | 0.3+ | 0.0 | 2005 12 29 | G96 | 0.4+ | 0.5+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2005 11 03 | G96 | 0.6+ | 0.4+ | 2006 01 24 | G96 | 0.4− | 0.1− | | |
| 2001 09 12 | 704 | 0.3− | 0.3− | 2005 11 21 | 699 | 1.4− | 1.9+ | 2006 01 24 | G96 | 1.7− | 0.3+ | | |
| 2001 09 12 | 704 | 1.1− | 1.3+ | 2005 11 21 | 699 | 0.6+ | 0.1+ | 2006 01 24 | G96 | 0.5− | 0.4− | | |
| 2001 09 12 | 704 | 0.4+ | 1.1+ | 2005 11 21 | 699 | 1.5+ | 0.8+ | 2006 01 24 | G96 | 0.2+ | 0.3+ | | |
| 2003 02 09 | 291 | 0.1− | 0.7+ | 2005 11 21 | 699 | 0.9+ | 1.1− | | | | | | |

**2001 QH$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.49279 | | (2000.0) | | | |
| $n$ | 0.22271138 | $\omega$ | 70.34830 | | +0.79446217 | +0.45238415 |
| $a$ | 2.6955110 | $\Omega$ | 260.85950 | | −0.58353869 | +0.75347325 |
| $e$ | 0.0612410 | $i$ | 24.23001 | | +0.16826305 | +0.47710233 |
| $P$ | 4.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.2− | 0.8+ | 2001 08 28 | 699 | 0.5− | 0.5− | 2004 03 29 | E12 | 0.7− | 0.6− | | |
| 2001 06 27 | 644 | 0.1− | 0.5+ | 2001 08 28 | 699 | 0.2− | 0.2− | 2004 03 29 | E12 | 0.4− | 0.4+ | | |
| 2001 06 27 | 644 | 0.1+ | 0.8+ | 2001 08 28 | 699 | 0.2+ | 0.7+ | 2004 03 29 | E12 | (0.6− | 1.9+) | | |
| 2001 07 08 | 644 | 0.5− | 0.1− | 2001 08 28 | 699 | (1.6+ | 0.5−) | 2004 03 29 | E12 | 1.2+ | 1.1+ | | |
| 2001 07 08 | 644 | 0.5− | 0.1+ | 2001 09 24 | 704 | (2.1− | 0.4−) | 2006 10 23 | 703 | 0.7+ | 0.5− | | |
| 2001 07 08 | 644 | 0.6− | 0.1− | 2001 09 24 | 704 | 0.2− | 0.5+ | 2006 10 23 | 703 | 0.3− | 0.6+ | | |
| 2001 07 23 | 644 | 0.0 | 0.4+ | 2001 09 24 | 704 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.5− | 0.1+ | | |
| 2001 07 23 | 644 | 0.1+ | 0.3+ | 2001 09 24 | 704 | 0.8− | 0.5+ | 2006 10 23 | 703 | 0.6− | 0.1+ | | |
| 2001 07 23 | 644 | 0.1− | 0.2+ | 2001 09 24 | 704 | 0.4− | 1.1− | 2006 11 14 | 704 | 0.3− | 0.3+ | | |
| 2001 08 23 | 704 | 0.3+ | 0.3− | 2001 09 28 | 704 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.6− | 0.5+ | | |
| 2001 08 23 | 704 | 0.1− | 0.8− | 2001 09 28 | 704 | 0.4+ | 0.4+ | 2006 11 14 | 704 | 0.2− | 0.4− | | |
| 2001 08 23 | 704 | 0.6+ | 0.2− | 2001 09 28 | 704 | 1.0+ | 0.7− | 2006 11 21 | 703 | 0.2− | 0.0 | | |
| 2001 08 23 | 704 | 0.1+ | 0.8+ | 2001 09 28 | 704 | 0.1− | 0.4+ | 2006 11 21 | 703 | 0.3+ | 0.4+ | | |
| 2001 08 23 | 704 | 0.1+ | 0.6+ | 2001 09 28 | 704 | 0.3+ | 0.6− | 2006 11 21 | 703 | 1.1+ | 0.1+ | | |
| 2001 08 24 | 644 | 0.8+ | 0.4− | 2001 10 18 | 704 | 0.1− | 0.7− | 2006 11 21 | 703 | 0.6+ | 0.1− | | |
| 2001 08 24 | 644 | 0.9+ | 0.5− | 2001 10 18 | 704 | 0.4− | 0.3− | | | | | | |
| 2001 08 24 | 644 | 0.6+ | 0.4− | 2001 10 18 | 704 | 1.0− | 0.8+ | | | | | | |

**2001 QQ$_{208}$ = 2006 UF$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.39143 | | (2000.0) | | | |
| $n$ | 0.21738501 | $\omega$ | 289.63325 | | +0.97018146 | −0.23455590 |
| $a$ | 2.7393634 | $\Omega$ | 83.96939 | | +0.23896439 | +0.88347600 |
| $e$ | 0.0756123 | $i$ | 3.52165 | | +0.04054577 | +0.40552890 |
| $P$ | 4.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1− | | |
| 2001 08 23 | 699 | 0.1− | 0.8− | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2001 08 23 | 699 | 0.8+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2001 08 23 | 699 | 0.6− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.0 | | |
| 2001 08 25 | 704 | 0.2− | 0.7− | 2006 10 21 | 703 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2001 08 25 | 704 | 1.0− | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.1− | | |
| 2001 08 25 | 704 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2001 08 27 | 644 | 1.0+ | 1.1+ | 2006 10 21 | 703 | 0.8+ | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.0 | | |
| 2001 08 27 | 644 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1− | | |
| 2001 08 27 | 644 | 0.2+ | 0.9+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2001 09 16 | 704 | 0.0 | 1.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2+ | | |
| 2001 09 16 | 704 | (0.3+ | 2.9−) | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.0 | | |
| 2001 09 16 | 704 | (0.0 | 1.8−) | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.1+ | | |
| 2006 10 19 | 644 | 0.4− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ | | | | | | |

**2001 QH$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.16163 | | (2000.0) | | | |
| $n$ | 0.22220754 | $\omega$ | 356.28908 | | +0.79213163 | +0.60385190 |
| $a$ | 2.6995841 | $\Omega$ | 326.05291 | | −0.55581055 | +0.65353329 |
| $e$ | 0.1186836 | $i$ | 9.15278 | | −0.25219457 | +0.45635198 |
| $P$ | 4.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 03 | 645 | 0.1− | 0.0 | 2001 09 12 | 704 | 0.6− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.4+ | | |
| 2000 05 03 | 645 | 0.1− | 0.1+ | 2001 09 12 | 704 | 0.7+ | 0.7− | 2006 11 15 | 703 | 0.3+ | 0.3+ | | |
| 2001 07 18 | 644 | 0.1− | 0.7+ | 2001 09 12 | 704 | 0.7− | 0.6− | 2006 11 15 | 703 | 0.7− | 1.1+ | | |
| 2001 07 18 | 644 | 0.2− | 0.4+ | 2001 09 20 | 704 | 0.7− | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.0 | | |
| 2001 07 18 | 644 | 0.3− | 0.4+ | 2001 09 20 | 704 | 0.3− | 1.5+ | 2006 11 15 | 703 | 0.5− | 0.1+ | | |
| 2001 08 16 | 704 | 1.1+ | 0.7− | 2001 09 20 | 704 | 0.4− | 0.7+ | 2006 11 15 | 703 | 0.3− | 0.1− | | |
| 2001 08 16 | 704 | 0.2+ | 0.6+ | 2004 03 19 | 291 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.1− | 0.4+ | | |
| 2001 08 16 | 704 | 0.2+ | 0.2+ | 2004 03 19 | 291 | 0.8+ | 0.3+ | 2006 11 15 | 703 | 1.3− | 1.1+ | | |
| 2001 08 23 | 691 | 0.0 | 0.1+ | 2004 03 19 | 291 | 0.6+ | 0.3+ | 2006 11 21 | 703 | 0.6+ | 0.7+ | | |
| 2001 08 23 | 691 | 0.0 | 0.1+ | 2006 10 29 | 703 | (0.7+ | 3.1+) | 2006 11 21 | 703 | 0.5+ | 0.0 | | |
| 2001 08 23 | 691 | 0.0 | 0.0 | 2006 10 29 | 703 | 0.4+ | 0.0 | 2006 11 21 | 703 | 0.3+ | 0.5+ | | |
| 2001 08 27 | 699 | 0.4+ | 0.1− | 2006 10 29 | 703 | 0.9− | 0.2− | 2006 11 21 | 703 | 0.1+ | 0.2+ | | |
| 2001 08 27 | 699 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.8− | 1.0− | 2006 11 21 | 703 | 0.2+ | 0.5+ | | |
| 2001 08 27 | 699 | 0.9− | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.8− | 2006 11 21 | 703 | 0.2+ | 1.1− | | |
| 2001 08 27 | 699 | 0.2+ | 0.1− | 2006 11 15 | 703 | (2.4+ | 0.5−) | 2006 11 21 | 703 | 0.7− | 0.2+ | | |
| 2001 09 12 | 704 | 0.6+ | 0.0 | 2006 11 15 | 703 | (1.9− | 1.2−) | 2006 11 21 | 703 | 0.7− | 0.2+ | | |

**2001 QY$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.11665 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21354896 | $\omega$ | 83.07250 | | +0.99545525 | −0.09256891 | |
| $a$ | 2.7720714 | $\Omega$ | 282.23714 | | +0.07581792 | +0.91244156 | |
| $e$ | 0.2058345 | $i$ | 1.31088 | | +0.05762375 | +0.39859929 | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 14 | 691 | 0.3+ | 0.7+ | 2001 09 20 | 704 | 0.8− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 1999 03 14 | 691 | 0.4+ | 0.8+ | 2001 09 20 | 704 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.0− |
| 1999 03 14 | 691 | 0.4+ | 0.8+ | 2001 09 20 | 704 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2001 08 14 | 608 | 0.4− | 0.3− | 2001 09 20 | 704 | 0.9− | 0.0 | 2006 11 13 | 644 | 0.5− | 0.1− |
| 2001 08 14 | 608 | 0.2− | 0.3− | 2001 09 20 | 704 | 0.3− | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2001 08 14 | 608 | 0.0 | 0.5− | 2001 09 22 | 704 | 0.9− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2001 08 21 | 691 | 0.2+ | 0.0 | 2001 09 22 | 704 | 1.1− | 0.0 | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2001 08 21 | 691 | 0.3+ | 0.0 | 2001 09 22 | 704 | 0.9− | 0.9+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2001 08 21 | 691 | 0.4+ | 0.2+ | 2001 09 22 | 704 | 0.5− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 08 23 | 699 | 0.5+ | 0.2+ | 2001 09 22 | 704 | 1.3− | 0.2− | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2001 08 23 | 699 | 0.5− | 0.7+ | 2001 09 23 | 704 | (1.7− | 0.2−) | 2006 11 18 | 704 | 0.8+ | 0.3− |
| 2001 08 23 | 699 | 0.1+ | 0.2+ | 2001 09 23 | 704 | (1.9− | 0.2−) | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2001 08 23 | 699 | 0.5+ | 0.8+ | 2001 09 23 | 704 | 1.4− | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.9+ |
| 2001 08 24 | 704 | 0.3− | 0.1− | 2001 09 23 | 704 | (2.0− | 0.1−) | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2001 08 24 | 704 | 0.2− | 0.4+ | 2001 09 23 | 704 | 1.4− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.1+ |
| 2001 08 24 | 704 | 0.0 | 0.5+ | 2001 09 26 | 699 | 0.9+ | 0.5− | 2006 11 21 | 704 | 0.7+ | 0.1+ |
| 2001 08 31 | 644 | 0.1+ | 0.0 | 2001 09 26 | 699 | 0.9− | 0.5+ | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2001 08 31 | 644 | 0.3+ | 0.2+ | 2001 09 26 | 699 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2001 08 31 | 644 | 0.3+ | 0.1+ | 2001 09 26 | 699 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2001 09 07 | 704 | 0.6+ | 0.4+ | 2001 10 11 | 644 | 0.0 | 0.6+ | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2001 09 07 | 704 | 0.1+ | 0.2+ | 2001 10 11 | 644 | 0.1− | 0.9+ | 2006 11 24 | G96 | 0.4− | 0.4− |
| 2001 09 07 | 704 | 0.1− | 0.8+ | 2001 10 11 | 644 | 0.0 | 0.6+ | 2006 11 27 | 703 | 0.6− | 1.1+ |
| 2001 09 07 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.6− | 0.8− |
| 2001 09 07 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.5− | 2006 11 27 | 703 | 0.6− | 0.7− |
| 2001 09 11 | 699 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 1.1− | 0.2− |
| 2001 09 11 | 699 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.6+ | 0.2+ |
| 2001 09 11 | 699 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.1+ | 1.4+ |
| 2001 09 11 | 699 | 0.8+ | 0.2+ | 2006 10 31 | G96 | (0.4− | 1.8+) | 2006 11 29 | 704 | 0.2+ | 0.3− |
| 2001 09 12 | 704 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.3− |
| 2001 09 12 | 704 | 0.3+ | 0.3− | 2006 11 09 | 691 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 1.0+ |
| 2001 09 12 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2001 09 12 | 704 | 0.3+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2001 09 18 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2001 09 18 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2001 09 18 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ | | | | |

**2001 QA$_{214}$ = 2006 SR$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.71296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21071204 | $\omega$ | 142.70685 | | +0.96562476 | +0.25985725 | |
| $a$ | 2.7968970 | $\Omega$ | 202.23425 | | −0.24247339 | +0.89135905 | |
| $e$ | 0.0819237 | $i$ | 0.99325 | | −0.09367748 | +0.37142059 | |
| $P$ | 4.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 22 | 691 | 0.0 | 0.6+ | 2001 09 21 | 691 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.5+ | 0.0 |
| 1992 10 22 | 691 | 0.2− | 0.1− | 2001 09 21 | 704 | 0.6+ | 0.7+ | 2006 10 20 | 703 | (1.5− | 0.6+) |
| 1992 10 22 | 691 | 0.1− | 0.5+ | 2001 09 21 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 703 | 0.3+ | 0.3− |
| 2001 08 23 | 699 | 0.6− | 0.5+ | 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 703 | 0.4− | 0.5− |
| 2001 08 23 | 699 | 0.7− | 0.1− | 2001 09 21 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 703 | 0.8+ | 0.1+ |
| 2001 08 23 | 699 | 1.0+ | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.9+ | 0.3+ |
| 2001 08 23 | 699 | 0.4+ | 0.6− | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.4+ | 0.6− |
| 2001 08 27 | 691 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 21 | 703 | 1.0− | 1.3− |
| 2001 08 27 | 691 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | 1.4− | 0.7+ |
| 2001 08 27 | 691 | 0.4− | 0.2− | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.6− |
| 2001 09 07 | 704 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.5− | 0.0 |
| 2001 09 07 | 704 | 0.8− | 1.2+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.4− | 0.5− |
| 2001 09 07 | 704 | 1.2− | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2001 09 12 | 704 | 0.2+ | 0.9+ | 2006 09 24 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 09 12 | 704 | 0.3+ | 0.8+ | 2006 09 24 | 691 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2001 09 12 | 704 | 0.1+ | 0.8+ | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.3− | 1.0+ | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 09 18 | 291 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2001 09 18 | 291 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 09 18 | 291 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.7+ | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.3+ | 0.6+ | 2006 09 28 | 691 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.7+ | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2001 09 19 | 704 | 0.6+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.9+ | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2001 09 21 | 691 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | | | |
| 2001 09 21 | 691 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 | | | | |

**2001 QX$_{219}$ = 2003 BS$_{32}$ = 2006 QG$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.66671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18496366 | $\omega$ | 84.87547 | | +0.94339851 | −0.22791167 | |
| $a$ | 3.0507862 | $\Omega$ | 288.13552 | | +0.09681561 | +0.88408564 | |
| $e$ | 0.1078589 | $i$ | 14.68723 | | +0.31721600 | +0.40798143 | |
| $P$ | 5.33 | $H$ | 14.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 1.2+ | 0.0 | 2002 01 08 | 704 | 0.9− | 0.9+ | 2006 08 29 | 699 | 0.3− | 0.2+ |
| 2001 08 23 | 704 | 0.9+ | 0.5+ | 2002 01 08 | 704 | 1.5− | 0.2+ | 2006 08 29 | 699 | 0.5− | 0.1+ |
| 2001 08 23 | 704 | 0.9+ | 0.4+ | 2002 01 08 | 704 | 1.1− | 0.8+ | 2006 09 16 | 703 | 0.9− | 0.1− |
| 2001 08 23 | 704 | 1.3+ | 0.6− | 2002 01 08 | 704 | 0.8− | 0.6+ | 2006 09 16 | 703 | 0.4+ | 0.3+ |
| 2001 08 23 | 704 | 1.1+ | 0.1− | 2002 01 08 | 704 | 0.4− | 1.3+ | 2006 09 16 | 703 | 0.5− | 0.1− |
| 2001 08 24 | 644 | 0.1+ | 0.0 | 2003 01 27 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.0 |
| 2001 08 24 | 644 | 0.2+ | 0.1+ | 2003 01 27 | 644 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 1.0+ | 0.3+ |
| 2001 08 24 | 644 | 0.3+ | 0.2− | 2003 01 27 | 644 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.1+ |
| 2001 09 28 | 704 | 0.0 | 0.1− | 2003 01 28 | 704 | 0.1− | 0.2− | 2006 09 21 | 699 | 0.1+ | 0.0 |
| 2001 09 28 | 704 | 0.1− | 0.3+ | 2003 01 28 | 704 | 0.1− | 0.2− | 2006 09 21 | 699 | 0.4+ | 1.0+ |
| 2001 09 28 | 704 | 0.1+ | 0.0 | 2003 01 28 | 704 | 0.6+ | 0.3+ | 2006 09 28 | 703 | 0.4− | 0.1− |
| 2001 09 28 | 704 | 0.1+ | 0.4+ | 2003 01 28 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2001 09 28 | 704 | 0.6− | 0.4+ | 2004 03 26 | 704 | 0.2− | 0.9+ | 2006 09 28 | 703 | 1.1− | 0.5− |
| 2001 10 08 | 704 | 0.2+ | 0.0 | 2004 03 26 | 704 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.3− |
| 2001 10 08 | 704 | 0.2+ | 0.2− | 2004 03 26 | 704 | 1.2− | 0.0 | 2006 10 20 | 703 | 0.1− | 0.1+ |
| 2001 10 08 | 704 | 0.2− | 1.3+ | 2004 03 26 | 704 | 0.6− | 1.1+ | 2006 10 20 | 703 | 0.6+ | 0.2− |
| 2001 10 08 | 704 | 1.0− | 0.0 | 2004 04 12 | E12 | 0.3+ | 0.3+ | 2006 10 20 | 703 | 0.2+ | 0.2+ |
| 2001 10 08 | 704 | 0.1− | 0.4− | 2004 04 12 | E12 | 0.6+ | 1.0− | 2006 10 20 | 703 | 0.1− | 0.3− |
| 2001 10 25 | 704 | 0.3+ | 0.0 | 2004 04 12 | E12 | 0.6+ | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.5+ |
| 2001 10 25 | 704 | 0.4+ | 1.1− | 2004 04 12 | E12 | 0.4+ | 0.4− | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2001 10 25 | 704 | 0.1+ | 1.0− | 2006 08 10 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.4+ |
| 2001 10 25 | 704 | 0.4− | 1.1− | 2006 08 10 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.3+ |
| 2001 10 25 | 704 | 0.4− | 1.3− | 2006 08 10 | 644 | 0.2− | 0.2+ | 2006 11 25 | 703 | 1.2− | 0.1− |
| 2001 12 09 | 704 | 0.3+ | 0.0 | 2006 08 24 | 704 | 0.4+ | 0.4+ | 2006 11 25 | 703 | 0.2+ | 0.1− |
| 2001 12 09 | 704 | 0.2+ | 0.7− | 2006 08 24 | 704 | 0.1+ | 0.3+ | 2006 11 25 | 703 | 0.4+ | 0.6− |
| 2001 12 09 | 704 | 0.3− | 0.4− | 2006 08 24 | 704 | 0.5− | 0.0 | 2006 11 25 | 703 | 0.2+ | 1.1− |
| 2001 12 09 | 704 | 0.0 | 0.5− | 2006 08 29 | 699 | 1.3− | 0.7+ | | | | |
| 2001 12 09 | 704 | 0.1+ | 0.1− | 2006 08 29 | 699 | 0.3− | 1.2+ | | | | |

**2001 QW$_{220}$ = 2006 VJ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.77133 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23266118 | $\omega$ | 84.79427 | | +0.97272091 | +0.19313766 | |
| $a$ | 2.6181032 | $\Omega$ | 264.02561 | | −0.22827812 | +0.89548016 | |
| $e$ | 0.1291555 | $i$ | 7.42338 | | +0.04126898 | +0.40101512 | |
| $P$ | 4.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 08 | 608 | 1.3+ | 0.4− | 2001 08 25 | 704 | 0.0 | 0.7− | 2006 11 22 | 704 | 0.5− | 1.0+ |
| 2001 08 08 | 608 | 0.4+ | 1.3− | 2001 08 25 | 704 | 0.4+ | 0.3+ | 2006 11 22 | 704 | 0.5+ | 1.0+ |
| 2001 08 08 | 608 | 0.8+ | 0.7− | 2001 08 25 | 704 | 0.5+ | 0.9+ | 2006 11 22 | 704 | 0.5+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 1.2− | 0.6+ | 2006 11 10 | 691 | 0.9− | 0.8− | 2006 11 22 | 704 | 0.0 | 0.9+ | | |
| 2001 08 17 | 644 | 0.4− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1− | | |
| 2001 08 17 | 644 | 0.8− | 0.3− | 2006 11 10 | 691 | 0.3− | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.0 | | |
| 2001 08 24 | 699 | 0.7+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.4+ | 0.1− | | |
| 2001 08 24 | 699 | 0.1+ | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | H07 | 0.4− | 0.2+ | | |
| 2001 08 24 | 699 | 0.4− | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | H07 | 1.0+ | 0.7+ | | |
| 2001 08 24 | 699 | 0.7− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.3− | 2006 11 30 | 691 | 0.7− | 0.2+ | | |
| 2001 08 25 | 704 | 1.4− | 0.6+ | 2006 11 20 | 691 | 0.2+ | 0.1− | 2006 11 30 | 691 | 0.3+ | 0.2− | | |
| 2001 08 25 | 704 | 0.7+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.0 | 2006 11 30 | 691 | 0.1+ | 0.0 | | |

**2001 QY$_{221}$ = 2006 SH$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.93434 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21529669 | $\omega$ | 172.29231 | | +0.84866371 | −0.52229060 | |
| $a$ | 2.7570490 | $\Omega$ | 219.56099 | | +0.47801830 | +0.82496895 | |
| $e$ | 0.1276070 | $i$ | 7.53892 | | +0.22642529 | +0.21596009 | |
| $P$ | 4.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 23 | 683 | 0.8− | 0.4− | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 07 | 644 | 0.1− | 0.2+ | | |
| 2001 08 24 | 699 | 0.2− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.1− | 0.1− | | |
| 2001 08 24 | 699 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.2− | | |
| 2001 08 24 | 699 | 0.6− | 0.9+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1− | | |
| 2001 08 24 | 699 | 0.8− | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2− | | |
| 2001 08 25 | 704 | 0.1− | 0.2− | 2006 10 17 | 703 | (3.0− | 2.8+) | 2006 11 10 | 691 | 0.0 | 0.5− | | |
| 2001 08 25 | 704 | 1.0+ | 0.3+ | 2006 10 17 | 703 | (1.5+ | 6.2+) | 2006 11 11 | 703 | 0.3− | 0.5+ | | |
| 2001 08 25 | 704 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.0 | | |
| 2001 08 25 | 704 | 0.8− | 1.0+ | 2006 10 17 | 703 | 0.8+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.3+ | | |
| 2001 08 25 | 704 | 0.3+ | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.4+ | | |
| 2001 09 10 | 704 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.0 | | |
| 2001 09 10 | 704 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 10 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 10 | 704 | 0.6− | 0.9+ | 2006 10 20 | 644 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.6− | | |
| 2001 09 10 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.9− | 0.6− | | |
| 2003 01 05 | 704 | 0.3+ | 1.3+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.9− | | |
| 2003 01 05 | 704 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.5− | 0.1+ | | |
| 2003 01 05 | 704 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.3+ | 0.0 | | |
| 2006 09 25 | 704 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.4− | 2006 11 18 | 691 | 0.1− | 0.2+ | | |
| 2006 09 25 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 703 | 0.4+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ | | |
| 2006 09 25 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 703 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.0 | | |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.1− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.6− | | |
| 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.2+ | | |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1+ | 1.0+ | | |
| 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.2− | | |
| 2006 10 10 | 644 | 0.0 | 0.2− | 2006 10 23 | 683 | 1.0− | 0.2− | | | | | | |
| 2006 10 10 | 644 | 0.0 | 0.2− | 2006 10 23 | 683 | 0.4+ | 1.5− | | | | | | |

**2001 QS$_{222}$ = 2006 UK$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.48645 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20985589 | $\omega$ | 162.89950 | | +0.90202914 | +0.43040207 | |
| $a$ | 2.8044989 | $\Omega$ | 171.38224 | | −0.41739693 | +0.88919586 | |
| $e$ | 0.2143519 | $i$ | 12.77303 | | −0.11010556 | +0.15519273 | |
| $P$ | 4.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.4+ | 0.5+ | 2001 09 09 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.2− | | |
| 2001 08 24 | 699 | 0.2+ | 0.2+ | 2001 09 09 | 704 | 1.0+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.8+ | | |
| 2001 08 24 | 699 | 0.5+ | 0.6+ | 2001 09 09 | 704 | 0.0 | 1.2− | 2006 10 16 | 703 | (2.1− | 1.3+) | | |
| 2001 08 24 | 699 | 0.2− | 0.8+ | 2001 09 20 | 704 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2001 08 25 | 704 | 0.3− | 0.1+ | 2001 09 20 | 704 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2001 08 25 | 704 | 0.1− | 0.1+ | 2001 09 20 | 704 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.0 | 0.9− | 2001 09 20 | 704 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.8− | 0.6− | | |
| 2001 08 25 | 704 | 0.4− | 0.7− | 2001 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.4− | | |
| 2001 08 25 | 704 | 0.1+ | 0.2− | 2001 09 22 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.9− | | |
| 2001 09 08 | 704 | 0.4− | 0.2− | 2001 09 22 | 704 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.8+ | 0.3− | | |
| 2001 09 08 | 704 | 0.9+ | 0.2− | 2001 09 22 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.6+ | | |
| 2001 09 08 | 704 | (0.3+ | 2.2−) | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2001 09 08 | 704 | (0.1− | 2.3−) | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.1+ | | |
| 2001 09 09 | 704 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.4+ | 0.1+ | | | | | | |
| 2001 09 09 | 704 | 0.4− | 1.1+ | 2006 10 16 | 703 | (1.7− | 0.4−) | | | | | | |

**2001 QQ$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.62997 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19558380 | $\omega$ | 127.03514 | | +0.49139449 | −0.85817833 | |
| $a$ | 2.9393240 | $\Omega$ | 292.89762 | | +0.73909772 | +0.50111589 | |
| $e$ | 0.2520861 | $i$ | 9.27864 | | +0.46072337 | +0.11141283 | |
| $P$ | 5.04 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 05 | 691 | 0.1− | 0.2− | 2001 09 09 | 699 | 0.8+ | 0.6+ | 2006 08 27 | 699 | 0.8+ | 0.7− | | |
| 1997 12 05 | 691 | 0.1− | 0.2+ | 2001 09 18 | 699 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.0 | 0.3+ | | |
| 1997 12 05 | 691 | 0.1+ | 0.0 | 2001 09 18 | 699 | (1.9− | 0.4+) | 2006 08 27 | 699 | 0.1+ | 0.1− | | |
| 2001 08 17 | 644 | 0.2− | 0.1− | 2001 09 18 | 699 | 1.4− | 0.4− | 2006 09 20 | 699 | 1.2+ | 0.2− | | |
| 2001 08 17 | 644 | 0.2− | 0.4+ | 2001 09 18 | 699 | 0.1− | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.5+ | | |
| 2001 08 17 | 644 | 0.3− | 0.1+ | 2001 09 24 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 699 | 0.6+ | 0.8+ | | |
| 2001 08 24 | 699 | 0.1− | 0.4− | 2001 09 24 | 704 | (1.5− | 1.4+) | 2006 09 20 | 699 | 0.2+ | 0.5+ | | |
| 2001 08 24 | 699 | 0.6+ | 0.3+ | 2001 09 24 | 704 | 0.7− | 1.0+ | 2006 09 29 | 699 | 0.2+ | 0.2− | | |
| 2001 08 24 | 699 | 0.3− | 0.8− | 2001 09 25 | 704 | 0.4+ | 0.3− | 2006 09 29 | 699 | 0.1+ | 0.5+ | | |
| 2001 08 24 | 699 | 0.3+ | 0.0 | 2001 09 25 | 704 | 0.2− | 0.7− | 2006 09 29 | 699 | 0.6− | 0.9− | | |
| 2001 08 25 | 704 | 0.1− | 0.0 | 2001 09 25 | 704 | 0.7+ | 0.7− | 2006 09 29 | 699 | 1.1− | 0.2+ | | |
| 2001 08 25 | 704 | 0.1− | 0.3+ | 2001 09 25 | 704 | 0.3+ | 0.6− | 2006 10 01 | 703 | (0.5+ | 1.7−) | | |
| 2001 08 25 | 704 | 0.4− | 0.8+ | 2001 09 25 | 704 | 0.0 | 0.5+ | 2006 10 01 | 703 | 0.9− | 0.1− | | |
| 2001 08 25 | 704 | 0.1− | 0.2+ | 2001 10 13 | 644 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.1− | 0.4+ | | |
| 2001 09 09 | 699 | 0.3+ | 0.6− | 2001 10 13 | 644 | 0.3+ | 0.1+ | 2006 10 01 | 703 | 0.2+ | 1.0− | | |
| 2001 09 09 | 699 | 0.1+ | 0.7− | 2001 10 13 | 644 | 0.1+ | 0.1− | | | | | | |
| 2001 09 09 | 699 | 0.6− | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.7− | | | | | | |

**2001 QK$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.51146 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28461472 | $\omega$ | 123.69783 | | +0.84026529 | +0.53996229 | |
| $a$ | 2.2889228 | $\Omega$ | 203.73381 | | −0.52894010 | +0.79658436 | |
| $e$ | 0.1590416 | $i$ | 6.98387 | | −0.11906561 | +0.27183468 | |
| $P$ | 3.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 10 | 691 | 0.2+ | 0.6− | 2001 09 08 | 704 | 0.3+ | 0.3− | 2001 09 18 | 699 | 0.6+ | 0.2− | | |
| 1997 05 10 | 691 | 0.0 | 0.4+ | 2001 09 08 | 704 | 0.3− | 0.2− | 2001 09 20 | 704 | 0.2− | 0.4+ | | |
| 1997 05 10 | 691 | 0.2− | 0.1+ | 2001 09 09 | 699 | 0.5− | 0.9− | 2001 09 20 | 704 | 0.0 | 0.6+ | | |
| 2001 06 23 | 644 | 0.3+ | 0.5+ | 2001 09 09 | 699 | 0.4− | 0.9− | 2001 09 20 | 704 | 0.7− | 0.6+ | | |
| 2001 06 23 | 644 | 0.4+ | 0.4+ | 2001 09 09 | 699 | 0.4− | 0.3− | 2001 09 20 | 704 | 0.1+ | 0.1+ | | |
| 2001 06 23 | 644 | 0.7+ | 0.0 | 2001 09 09 | 699 | 0.5− | 0.5− | 2001 09 24 | 644 | 0.9+ | 1.1+ | | |
| 2001 07 22 | 699 | 1.0− | 0.2− | 2001 09 12 | 916 | (0.7− | 2.1−) | 2001 09 24 | 644 | 0.5+ | 1.5+ | | |
| 2001 07 22 | 699 | 0.0 | 0.1− | 2001 09 13 | 916 | 0.1− | 0.6− | 2001 09 24 | 644 | 0.5+ | 0.8+ | | |
| 2001 07 22 | 699 | 0.7− | 0.2+ | 2001 09 13 | 916 | 0.8− | 1.0− | 2001 10 05 | 644 | 0.2+ | 1.0+ | | |
| 2001 07 22 | 699 | 0.1− | 0.2+ | 2001 09 13 | 916 | 0.3− | 2.0− | 2001 10 05 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 24 | 699 | 0.4− | 0.4− | 2001 09 15 | 644 | 0.5+ | 0.5− | 2001 10 05 | 644 | 0.3+ | 0.8+ | | |
| 2001 08 24 | 699 | 0.8− | 0.5+ | 2001 09 15 | 644 | 0.2+ | 0.3− | 2001 10 21 | 704 | 0.1+ | 0.2− | | |
| 2001 08 24 | 699 | 0.8− | 0.7+ | 2001 09 15 | 644 | 0.3+ | 0.1− | 2001 10 21 | 704 | 0.5+ | 0.2+ | | |
| 2001 08 24 | 699 | 0.1− | 0.4+ | 2001 09 16 | 704 | 0.4+ | 0.3− | 2001 10 21 | 704 | 0.2+ | 0.9+ | | |
| 2001 08 25 | 704 | 0.8+ | 0.3+ | 2001 09 16 | 704 | 0.4+ | 0.2− | 2001 10 21 | 704 | 0.0 | 0.9+ | | |
| 2001 08 25 | 704 | 0.6− | 0.6− | 2001 09 16 | 704 | 0.2+ | 0.2+ | 2001 10 21 | 704 | 0.2− | 0.1− | | |
| 2001 08 25 | 704 | 0.0 | 0.6− | 2001 09 16 | 704 | 0.1+ | 0.0 | 2004 04 19 | 704 | 0.4− | 0.2+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.3− | 2001 09 16 | 704 | 0.8+ | 0.4− | 2004 04 19 | 704 | 0.2− | 0.5+ | | |
| 2001 09 08 | 704 | 0.6− | 0.3− | 2001 09 18 | 699 | 0.6− | 0.5+ | 2004 04 19 | 704 | 0.2+ | 0.9− | | |
| 2001 09 08 | 704 | 0.1− | 0.4− | 2001 09 18 | 699 | 0.5+ | 0.2+ | 2004 04 19 | 704 | 0.5+ | 1.4+ | | |
| 2001 09 08 | 704 | 0.2− | 0.2− | 2001 09 18 | 699 | 0.8+ | 0.2+ | | | | | | |

**2001 QW$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.85051 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18567390 | $\omega$ | 358.17603 | | −0.38749414 | +0.91431644 | |
| $a$ | 3.0430013 | $\Omega$ | 249.01054 | | −0.84419589 | −0.40326961 | |
| $e$ | 0.0990302 | $i$ | 7.24762 | | −0.37038032 | −0.03740404 | |
| $P$ | 5.31 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.3+ | 1.0+ | 2004 01 23 | 704 | 0.3− | 0.3+ | 2005 05 09 | 703 | 0.4− | 0.8− |
| 2001 08 24 | 699 | 0.6− | 1.0+ | 2004 01 23 | 704 | 0.7+ | 0.0 | 2005 05 09 | 703 | 0.1− | 0.2− |
| 2001 08 24 | 699 | 0.5+ | 0.6+ | 2004 01 23 | 704 | 1.6+ | 1.0+ | 2005 05 09 | 703 | 0.3+ | 2.1+ |
| 2001 08 24 | 699 | 0.1− | 0.8+ | 2005 04 06 | 699 | 0.5+ | 1.2+ | 2006 05 12 | G96 | 0.8+ | 0.2+ |
| 2001 08 25 | 704 | 0.2+ | 0.2− | 2005 04 06 | 699 | 0.3− | 0.9+ | 2006 05 12 | G96 | 0.1+ | 0.4+ |
| 2001 08 25 | 704 | 0.4− | 0.2− | 2005 04 06 | 699 | 0.6+ | 0.5+ | 2006 05 12 | G96 | 1.6− | 0.4+ |
| 2001 08 25 | 704 | 0.3+ | 0.4+ | 2005 04 06 | 699 | 1.3+ | 0.2− | 2006 05 12 | G96 | 0.8− | 0.8+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2005 04 18 | 703 | 1.9− | 0.2+ | 2006 06 21 | 699 | 1.3+ | 0.7+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.5− | 0.5− | 2006 06 21 | 699 | 0.2+ | 0.0 |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.8− | 0.1− | 2006 06 21 | 699 | 0.8− | 0.1+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.3+ | 0.4− | 2006 06 21 | 699 | 1.5− | 0.1+ |
| 2004 01 18 | 691 | 0.3− | 0.2+ | 2005 05 01 | 644 | 0.3+ | 0.1− | 2006 08 13 | 644 | 0.3+ | 0.2+ |
| 2004 01 18 | 691 | 0.0 | 0.2+ | 2005 05 01 | 644 | 0.5+ | 0.3− | 2006 08 13 | 644 | 0.1+ | 0.1+ |
| 2004 01 18 | 691 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.8+ | 0.3− | 2006 08 13 | 644 | 0.4+ | 0.1+ |
| 2004 01 23 | 704 | 1.0+ | 0.9+ | 2005 05 09 | 703 | 0.2+ | 0.6− | | | | |

**2001 QE$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.78203 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27535355 | $\omega$ | 188.99908 | | +0.99846953 | +0.05109342 | |
| $a$ | 2.3399627 | $\Omega$ | 168.01093 | | −0.04224764 | +0.95165390 | |
| $e$ | 0.1760407 | $i$ | 5.84867 | | −0.03568945 | +0.30289323 | |
| $P$ | 3.58 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.6− | 0.6+ | 2001 09 19 | 704 | 0.3+ | 0.1− | 2001 10 18 | 644 | 0.1− | 0.7+ |
| 2001 08 24 | 704 | 0.3− | 0.7+ | 2001 09 19 | 704 | 0.5+ | 0.7− | 2001 10 18 | 644 | 0.4− | 0.7+ |
| 2001 08 24 | 704 | 0.7− | 0.3+ | 2001 09 19 | 704 | 0.2+ | 0.8− | 2001 10 18 | 644 | 0.3− | 0.9+ |
| 2001 08 24 | 704 | 0.1− | 0.5+ | 2001 09 21 | 704 | 0.2+ | 0.8− | 2001 11 20 | 704 | 0.0 | 0.4− |
| 2001 08 25 | 691 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.2− | 1.1− | 2001 11 20 | 704 | 0.0 | 0.6− |
| 2001 08 25 | 691 | 0.1+ | 0.1+ | 2001 09 21 | 704 | 0.0 | 1.3− | 2001 11 20 | 704 | 0.3+ | 1.2− |
| 2001 08 25 | 691 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.1− | 1.4− | 2004 06 22 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 699 | 0.7− | 0.4− | 2001 09 21 | 704 | 0.1− | 1.5− | 2004 06 22 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 699 | 1.1− | 0.1− | 2001 09 25 | 704 | 0.6+ | 1.8+ | 2004 06 22 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 699 | 1.1− | 0.3− | 2001 09 25 | 704 | 0.3+ | 0.6+ | 2005 12 08 | G96 | 0.2− | 0.3+ |
| 2001 09 19 | 699 | 0.6− | 0.5+ | 2001 09 25 | 704 | 0.4+ | 1.4+ | 2005 12 08 | G96 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2001 09 25 | 704 | 0.9+ | 0.7+ | 2005 12 08 | G96 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2001 09 25 | 704 | 1.0+ | 0.8+ | 2005 12 08 | G96 | 0.1+ | 0.0 |

**2001 QS$_{239}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.91104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21028881 | $\omega$ | 30.66101 | | +0.94811415 | −0.31387249 | |
| $a$ | 2.8006485 | $\Omega$ | 347.32464 | | +0.22417346 | +0.77291495 | |
| $e$ | 0.2057387 | $i$ | 13.34108 | | +0.22544581 | +0.55144042 | |
| $P$ | 4.69 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 31 | 644 | (2.1+ | 0.0 ) | 2001 09 19 | 704 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2001 07 31 | 644 | (2.1+ | 0.2−) | 2001 09 19 | 704 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.5− | 1.2− |
| 2001 07 31 | 644 | (1.8+ | 0.2−) | 2001 09 20 | 691 | 0.1− | 0.2− | 2006 10 19 | 703 | (2.1+ | 2.4−) |
| 2001 08 21 | 807 | 0.7− | 0.3− | 2001 09 20 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.2− | 0.8− |
| 2001 08 21 | 807 | 0.7− | 0.2− | 2001 09 20 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.5− | 0.3− |
| 2001 08 24 | 704 | 0.1+ | 0.4− | 2001 09 21 | 704 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 08 24 | 704 | 0.1+ | 0.6− | 2001 09 21 | 704 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 08 24 | 704 | 0.2+ | 0.1+ | 2001 09 21 | 704 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 08 25 | 644 | 0.3− | 0.1− | 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2001 08 25 | 644 | 0.3− | 0.1+ | 2001 09 21 | 704 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 08 25 | 644 | 0.1− | 0.5+ | 2001 10 11 | 644 | 0.5− | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2001 09 07 | 704 | 0.5+ | 0.8+ | 2001 10 11 | 644 | 0.4− | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2001 09 07 | 704 | 0.5− | 0.6+ | 2001 10 11 | 644 | 0.2− | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2001 09 07 | 704 | 0.5+ | 0.3+ | 2001 10 19 | 644 | 0.5+ | 0.1− | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2001 09 07 | 704 | 0.3− | 0.0 | 2001 10 19 | 644 | 0.4+ | 0.0 | 2006 10 27 | 703 | 0.9+ | 0.1− |
| 2001 09 12 | 704 | 1.2+ | 0.6+ | 2001 10 19 | 644 | 0.6+ | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2001 09 12 | 704 | 0.6− | 0.1− | 2001 10 21 | 704 | 0.2+ | 0.5− | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2001 09 12 | 704 | 0.4+ | 0.4+ | 2001 10 21 | 704 | 0.8+ | 0.6− | 2006 10 27 | 703 | 0.4+ | 0.3− |
| 2001 09 12 | 704 | 0.0 | 0.3− | 2001 10 21 | 704 | 0.6+ | 0.2− | 2006 11 15 | 703 | 1.3− | 0.9+ |
| 2001 09 12 | 704 | 0.1+ | 0.4− | 2001 10 21 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2001 10 21 | 704 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.3− | 0.6+ |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2001 09 19 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.5+ | | | | |

**2001 QA$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.41145 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28603273 | $\omega$ | 16.18862 | | +0.99894494 | −0.03963711 | |
| $a$ | 2.2813516 | $\Omega$ | 346.02156 | | +0.02358840 | +0.87617197 | |
| $e$ | 0.1688672 | $i$ | 5.50963 | | +0.03940286 | +0.48036610 | |
| $P$ | 3.45 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.1+ | 0.2+ | 2001 09 20 | 704 | 1.0+ | 0.6− | 2001 09 28 | 644 | 0.7+ | 0.3+ |
| 1996 02 15 | 691 | 0.0 | 0.1− | 2001 09 20 | 704 | (0.2− | 3.0−) | 2001 10 13 | 699 | 0.2+ | 0.7− |
| 2001 08 16 | 704 | 0.2− | 0.2− | 2001 09 20 | 704 | (0.6− | 5.2−) | 2001 10 13 | 699 | 0.4+ | 0.1− |
| 2001 08 16 | 704 | 1.4− | 1.1− | 2001 09 20 | 704 | 0.0 | 0.4+ | 2001 10 13 | 699 | 0.5+ | 0.1+ |
| 2001 08 16 | 704 | 0.2− | 0.9+ | 2001 09 20 | 704 | 0.1− | 0.9− | 2001 10 13 | 699 | 0.2− | 0.4− |
| 2001 08 24 | 704 | 0.0 | 0.2− | 2001 09 20 | 704 | 0.1+ | 0.1+ | 2001 10 14 | 704 | 0.2+ | 0.1+ |
| 2001 08 24 | 704 | 0.1+ | 0.6+ | 2001 09 20 | 704 | (1.1− | 2.8−) | 2001 10 14 | 704 | 0.0 | 0.2+ |
| 2001 08 24 | 704 | 0.1+ | 0.4+ | 2001 09 22 | 704 | 0.8− | 0.7− | 2001 10 14 | 704 | 0.0 | 0.0 |
| 2001 08 24 | 704 | 0.4+ | 0.5+ | 2001 09 22 | 704 | 0.5+ | 0.3− | 2001 10 14 | 704 | 0.6+ | 0.1− |
| 2001 08 27 | 699 | 0.1− | 0.8− | 2001 09 22 | 704 | 0.3− | 0.6− | 2001 10 14 | 704 | 0.2+ | 0.3+ |
| 2001 08 27 | 699 | 1.0+ | 0.5+ | 2001 09 22 | 704 | 1.8+ | 0.4+ | 2001 10 17 | 704 | 0.1− | 0.2+ |
| 2001 08 27 | 699 | 0.0 | 0.8+ | 2001 09 23 | 704 | 0.1− | 0.2+ | 2001 10 17 | 704 | 0.0 | 0.1+ |
| 2001 08 27 | 699 | 0.1− | 0.9+ | 2001 09 23 | 704 | 0.2− | 0.3− | 2001 10 17 | 704 | 0.0 | 0.1+ |
| 2001 09 15 | 644 | 0.4− | 0.4− | 2001 09 23 | 704 | 0.4− | 0.6− | 2001 10 17 | 704 | 0.5+ | 0.7+ |
| 2001 09 15 | 644 | 0.2− | 0.1+ | 2001 09 25 | 691 | 0.1− | 0.1− | 2001 10 17 | 704 | 0.4− | 0.0 |
| 2001 09 15 | 644 | 0.0 | 0.2− | 2001 09 25 | 691 | 1.0− | 0.3+ | 2006 01 06 | 704 | 0.0 | 0.1− |
| 2001 09 17 | 704 | 0.2+ | 0.2− | 2001 09 25 | 691 | 0.2− | 0.2− | 2006 01 06 | 704 | 0.5− | 0.1− |
| 2001 09 17 | 704 | 0.4+ | 0.5+ | 2001 09 28 | 644 | 0.5+ | 0.2+ | 2006 01 06 | 704 | 0.8+ | 0.8+ |
| 2001 09 17 | 704 | 0.0 | 0.4+ | 2001 09 28 | 644 | 0.6+ | 0.2+ | 2006 01 06 | 704 | 0.2− | 0.6− |

**2001 QD$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.77469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20356049 | $\omega$ | 203.09894 | | +0.95174549 | +0.28348030 | |
| $a$ | 2.8620270 | $\Omega$ | 139.83834 | | −0.24536939 | +0.93298530 | |
| $e$ | 0.1725943 | $i$ | 10.50217 | | −0.18432143 | +0.22175968 | |
| $P$ | 4.84 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.5− | 0.6+ | 2001 09 10 | 699 | 0.1+ | 0.5− | 2006 09 17 | 699 | 0.3− | 1.2− |
| 2001 08 01 | 644 | 0.2− | 0.1+ | 2001 09 10 | 699 | 0.9+ | 0.5− | 2006 09 19 | 703 | 0.7+ | 0.7+ |
| 2001 08 01 | 644 | 0.1− | 0.0 | 2001 09 12 | 704 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.1− | 0.5+ |
| 2001 08 25 | 704 | 0.3− | 0.0 | 2001 09 12 | 704 | 0.7− | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.4+ |
| 2001 08 25 | 704 | 0.2+ | 0.5+ | 2001 09 12 | 704 | 0.0 | 1.0+ | 2006 09 19 | 703 | 0.4+ | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.8− | 2005 06 25 | 644 | 0.7+ | 0.1− | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 08 25 | 704 | 0.1− | 0.6− | 2005 06 25 | 644 | 0.2+ | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2001 08 25 | 704 | 0.7+ | 0.2− | 2005 06 25 | 644 | 0.8− | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2001 08 27 | 699 | 1.2+ | 1.3− | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 08 27 | 699 | 0.1− | 1.3− | 2006 08 22 | 644 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2001 08 27 | 699 | 0.3+ | 1.1+ | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2001 08 27 | 699 | 0.3− | 0.2+ | 2006 09 17 | 699 | 0.6+ | 0.2+ | 2006 10 23 | 644 | 0.3− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 699 | 0.5− | 1.1+ | 2006 09 17 | 699 | 0.7− | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.0 | |
| 2001 09 10 | 699 | 1.0− | 0.3+ | 2006 09 17 | 699 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.3− | |

**2001 QF$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 13.51944 | | | (2000.0) | | | **P** | | | **Q** | | |
| $n$ | 0.21667486 | | $\omega$ | 276.74319 | | | +0.94322016 | | | −0.32351257 | | |
| $a$ | 2.7453457 | | $\Omega$ | 102.15297 | | | +0.32700120 | | | +0.86450442 | | |
| $e$ | 0.2070098 | | $i$ | 4.41971 | | | +0.05836053 | | | +0.38467093 | | |
| $P$ | 4.55 | | $H$ | 16.0 | | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.0 | |
| 2001 08 01 | 644 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.0 | 0.2+ | |
| 2001 08 01 | 644 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.0 | |
| 2001 08 25 | 704 | 0.6− | 0.6− | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.5− | 0.6− | |
| 2001 08 25 | 704 | 0.9− | 0.8+ | 2006 10 23 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.2+ | |
| 2001 08 25 | 704 | 0.4+ | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.0 | 0.1+ | |
| 2001 08 25 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.2+ | |
| 2001 08 27 | 699 | 0.8− | 0.8− | 2006 11 14 | 704 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1− | |
| 2001 08 27 | 699 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.7− | 0.4− | 2006 11 20 | 704 | 0.1− | 0.1− | |
| 2001 08 27 | 699 | (0.3+ | 1.8+) | 2006 11 14 | 704 | 0.3− | 1.0+ | 2006 11 20 | 704 | 1.3+ | 0.5− | |
| 2001 08 27 | 699 | 0.7+ | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.2− | |
| 2001 09 10 | 699 | 0.5+ | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.1+ | |
| 2001 09 10 | 699 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.2+ | |
| 2001 09 10 | 699 | 0.7+ | 0.7− | 2006 11 16 | G96 | 0.2− | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.0 | |
| 2001 09 10 | 699 | 0.4+ | 0.9− | 2006 11 16 | G96 | 0.1− | 0.3− | 2006 11 24 | 691 | 0.0 | 0.1+ | |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.5− | 0.2+ | |
| 2001 09 12 | 704 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.2− | 0.5+ | |
| 2001 09 12 | 704 | 0.3+ | 0.6− | 2006 11 17 | 704 | (1.1− | 4.3−) | 2006 11 29 | 704 | 0.1− | 0.7+ | |
| 2001 09 12 | 704 | 0.8− | 0.1+ | 2006 11 17 | 704 | (0.2− | 1.7+) | 2006 11 29 | 704 | 0.8− | 0.0 | |
| 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 17 | 704 | (1.1− | 1.7−) | | | | | |
| 2006 10 04 | G96 | 0.4+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.5+ | | | | | |

**2001 QN$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 55.45929 | | | (2000.0) | | | **P** | | | **Q** | | |
| $n$ | 0.40313651 | | $\omega$ | 319.39881 | | | +0.74249919 | | | +0.66977149 | | |
| $a$ | 1.8148245 | | $\Omega$ | 358.43898 | | | −0.47815487 | | | +0.51944429 | | |
| $e$ | 0.0876840 | | $i$ | 21.65946 | | | −0.46910859 | | | +0.53064468 | | |
| $P$ | 2.44 | | $H$ | 17.2 | | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.1+ | 0.5+ | 2001 09 22 | 704 | 0.9− | 0.1− | 2001 09 28 | 644 | 0.3− | 0.9− | |
| 2001 08 25 | 704 | 1.0+ | 0.1+ | 2001 09 22 | 704 | 0.7− | 0.2− | 2001 09 28 | 644 | 0.5− | 0.7− | |
| 2001 08 25 | 704 | 0.1+ | 0.7− | 2001 09 22 | 704 | 0.6− | 0.1− | 2001 09 28 | 644 | 0.5− | 0.7− | |
| 2001 08 25 | 704 | 0.8− | 0.6− | 2001 09 23 | 704 | 0.2− | 0.1− | 2001 10 05 | 644 | 0.0 | 0.1− | |
| 2001 08 27 | 699 | 0.4+ | 0.3+ | 2001 09 23 | 704 | 0.3+ | 0.4− | 2001 10 05 | 644 | 0.1+ | 0.7− | |
| 2001 08 27 | 699 | 0.7+ | 0.3+ | 2001 09 23 | 704 | 0.3− | 0.2− | 2001 10 05 | 644 | 0.1− | 0.1− | |
| 2001 08 27 | 699 | 0.2− | 0.8+ | 2001 09 23 | 704 | 0.3+ | 0.3− | 2001 10 13 | 644 | 0.2+ | 0.1− | |
| 2001 08 27 | 699 | 0.0 | 1.1+ | 2001 09 23 | 704 | 0.1+ | 0.7− | 2001 10 13 | 644 | 0.1+ | 0.6+ | |
| 2001 09 11 | 699 | 0.1+ | 0.0 | 2001 09 24 | 704 | 0.7− | 0.6− | 2001 10 13 | 644 | 0.3+ | 0.1− | |
| 2001 09 11 | 699 | 0.6− | 0.6− | 2001 09 24 | 704 | 0.3− | 0.1+ | 2001 10 13 | 644 | 0.1+ | 0.5+ | |
| 2001 09 11 | 699 | 0.1− | 0.1+ | 2001 09 24 | 704 | 0.6− | 0.2− | 2001 10 13 | 644 | 0.2+ | 0.0 | |
| 2001 09 11 | 699 | 0.4+ | 0.4− | 2001 09 24 | 704 | 0.2− | 0.0 | 2001 10 13 | 644 | 0.4+ | 0.3+ | |
| 2001 09 16 | 704 | 0.6+ | 0.1+ | 2001 09 24 | 704 | 0.0 | 0.3+ | 2001 10 17 | 704 | 0.7+ | 0.3+ | |
| 2001 09 16 | 704 | 0.6+ | 0.0 | 2001 09 25 | 699 | 0.8− | 0.3− | 2001 10 17 | 704 | 0.1− | 0.4− | |
| 2001 09 16 | 704 | 0.4+ | 0.3+ | 2001 09 25 | 699 | 0.5− | 0.9+ | 2001 10 17 | 704 | 0.6− | 0.1− | |
| 2001 09 16 | 704 | 0.6+ | 0.1− | 2001 09 25 | 704 | 0.4+ | 0.3− | 2001 10 17 | 704 | 1.0+ | 0.3− | |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2001 09 25 | 704 | 0.2+ | 0.3+ | 2001 10 17 | 704 | 0.2− | 0.1+ | |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2001 09 25 | 699 | 0.4+ | 0.1+ | 2001 10 19 | 704 | 1.0+ | 1.7+ | |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2001 09 25 | 704 | 0.5+ | 0.1− | 2001 10 19 | 704 | 0.3+ | 0.1+ | |
| 2001 09 19 | 704 | 0.4− | 0.0 | 2001 09 25 | 704 | 0.3+ | 0.0 | 2001 10 19 | 704 | 0.1− | 0.2− | |
| 2001 09 19 | 704 | 0.6− | 0.3− | 2001 09 25 | 699 | 0.2− | 0.4− | 2001 10 19 | 704 | 0.0 | 0.4+ | |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2001 09 25 | 704 | 0.1+ | 0.4− | 2001 10 26 | 644 | 0.0 | 0.1+ | |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2001 09 25 | 704 | 0.6+ | 0.0 | 2001 10 26 | 644 | 0.1+ | 0.2+ | |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2001 09 25 | 704 | 0.2− | 0.1− | 2001 10 26 | 644 | 0.2+ | 0.3+ | |
| 2001 09 20 | 704 | 0.3+ | 0.8+ | 2001 09 25 | 704 | 0.1+ | 0.3+ | 2006 11 01 | 703 | 0.2− | 0.4+ | |
| 2001 09 20 | 704 | 0.6+ | 0.7+ | 2001 09 25 | 704 | (0.3− | 3.3−) | 2006 11 01 | 703 | 0.4+ | 0.2+ | |
| 2001 09 22 | 704 | 0.8− | 0.5− | 2001 09 25 | 704 | 0.4− | 0.1− | 2006 11 01 | 703 | 0.4− | 0.4− | |

**2001 QV$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 2.05798 | | | (2000.0) | | | **P** | | | **Q** | | |
| $n$ | 0.20221636 | | $\omega$ | 220.64533 | | | +0.92015454 | | | −0.38498782 | | |
| $a$ | 2.8746955 | | $\Omega$ | 161.61240 | | | +0.39145227 | | | +0.90029709 | | |
| $e$ | 0.2373704 | | $i$ | 13.08481 | | | +0.00898549 | | | +0.20309982 | | |
| $P$ | 4.87 | | $H$ | 15.7 | | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.3+ | 2001 10 13 | 704 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.1+ | |
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2001 10 13 | 704 | 0.4− | 1.1+ | 2006 10 17 | 703 | 0.6+ | 0.5− | |
| 2001 08 25 | 704 | 0.5− | 0.3+ | 2001 10 13 | 704 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.0 | |
| 2001 08 25 | 704 | 0.3+ | 0.3− | 2001 10 15 | 644 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.1− | |
| 2001 08 25 | 704 | 0.2+ | 0.6+ | 2001 10 15 | 644 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.1− | |
| 2001 08 27 | 699 | 0.5+ | 0.5+ | 2001 10 15 | 644 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.2+ | |
| 2001 08 27 | 699 | 0.3− | 0.2+ | 2001 10 23 | 644 | 0.4+ | 0.1− | 2006 10 28 | 703 | 0.2− | 0.8− | |
| 2001 08 27 | 699 | 0.2− | 0.7+ | 2001 10 23 | 644 | 0.3+ | 0.1− | 2006 10 28 | 703 | 0.2− | 0.0 | |
| 2001 08 27 | 699 | 0.7− | 0.6+ | 2001 10 23 | 644 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.1− | |
| 2001 08 31 | 644 | 0.2− | 0.2+ | 2001 11 07 | 644 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.1− | |
| 2001 08 31 | 644 | 0.5− | 0.1+ | 2001 11 07 | 644 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.1− | |
| 2001 08 31 | 644 | 0.6− | 0.1− | 2001 11 07 | 644 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.2− | |
| 2001 09 16 | 704 | 0.5+ | 0.2− | 2005 06 26 | G96 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.1− | |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2005 06 26 | G96 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 | |
| 2001 09 16 | 704 | 0.3+ | 0.3+ | 2005 06 26 | G96 | 0.1− | 0.4+ | 2006 11 10 | 704 | 1.1− | 0.1+ | |
| 2001 09 16 | 704 | 0.1+ | 0.1− | 2005 06 26 | G96 | 0.3− | 0.5+ | 2006 11 10 | 704 | 1.1− | 0.4+ | |
| 2001 09 25 | 704 | 0.0 | 0.3− | 2006 09 22 | 703 | 0.1− | 0.6− | 2006 11 10 | 704 | 1.1− | 0.3+ | |
| 2001 09 25 | 704 | 0.2− | 0.9− | 2006 09 22 | 703 | 0.3− | 0.5+ | 2006 11 10 | 704 | 0.9− | 0.2+ | |
| 2001 09 25 | 704 | 0.3− | 0.1− | 2006 09 22 | 703 | 0.2+ | 0.3− | 2006 11 10 | 704 | 0.5− | 0.3+ | |
| 2001 09 25 | 704 | 0.0 | 0.2− | 2006 09 22 | 703 | 0.6+ | 0.4− | 2006 11 17 | 703 | (0.1− | 1.6+) | |
| 2001 09 25 | 704 | 0.3− | 0.5− | 2006 09 30 | 699 | 0.5+ | 0.1− | 2006 11 17 | 703 | 1.1+ | 1.2+ | |
| 2001 10 11 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 699 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.7+ | 0.5+ | |
| 2001 10 11 | 704 | 0.0 | 0.4+ | 2006 09 30 | 699 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.9+ | |
| 2001 10 11 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 699 | 0.4− | 0.0 | 2006 11 23 | 703 | 0.1+ | 0.0 | |
| 2001 10 11 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 1.3− | 0.4+ | 2006 11 23 | 703 | 0.8+ | 0.1− | |
| 2001 10 11 | 704 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.5− | 0.7+ | |
| 2001 10 13 | 704 | 0.7− | 0.1+ | 2006 10 01 | 704 | 0.8+ | 0.2− | 2006 11 23 | 703 | 0.3− | 0.1− | |
| 2001 10 13 | 704 | 0.2− | 0.5+ | 2006 10 01 | 704 | (1.5− | 0.2+) | | | | | |

**2001 QV$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 35.61078 | | | (2000.0) | | | **P** | | | **Q** | | |
| $n$ | 0.22006116 | | $\omega$ | 194.44790 | | | +0.99618383 | | | −0.08561098 | | |
| $a$ | 2.7171094 | | $\Omega$ | 170.41489 | | | +0.08672144 | | | +0.94890413 | | |
| $e$ | 0.0724202 | | $i$ | 5.85504 | | | +0.00985726 | | | +0.30372966 | | |
| $P$ | 4.48 | | $H$ | 15.9 | | $G$ | 0.15 | | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.1− | 0.1+ | 2001 09 24 | 704 | 0.2+ | 1.0− | 2001 10 17 | 644 | 0.2− | 1.1+ | |
| 2001 08 25 | 691 | 0.1− | 0.0 | 2001 09 24 | 704 | 0.2− | 1.4+ | 2001 10 17 | 644 | 0.0 | 0.3+ | |
| 2001 08 25 | 691 | 0.2− | 0.1− | 2001 09 24 | 704 | 0.0 | 1.0− | 2001 10 17 | 644 | 0.0 | 0.7+ | |
| 2001 08 27 | 699 | 0.3+ | 1.1+ | 2001 09 24 | 704 | 0.9+ | 0.2− | 2001 10 19 | 644 | 0.1+ | 0.3− | |
| 2001 08 27 | 699 | 0.4+ | 0.2+ | 2001 09 24 | 704 | (0.7− | 2.1+) | 2001 10 19 | 644 | 0.1+ | 0.0 | |
| 2001 08 27 | 699 | 1.1+ | 0.9− | 2001 09 24 | 704 | 0.1+ | 0.6− | 2001 10 19 | 644 | 0.3+ | 0.4− | |
| 2001 08 27 | 699 | (2.0+ | 1.6+) | 2001 09 24 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.0 | |
| 2001 09 19 | 704 | 0.3− | 0.5− | 2001 09 24 | 704 | 0.6− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.5+ | |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2001 09 24 | 704 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.1− | |
| 2001 09 19 | 704 | 0.4+ | 0.1+ | 2001 09 25 | 704 | (0.2− | 1.6+) | 2006 11 20 | 704 | 0.1− | 0.5− | |
| 2001 09 19 | 704 | 0.4− | 0.8− | 2001 09 25 | 704 | (0.9− | 1.9+) | 2006 11 22 | G96 | 0.0 | 0.1− | |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2001 09 25 | 704 | (0.4− | 1.9+) | 2006 11 22 | G96 | 0.2+ | 0.1− | |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2001 09 25 | 704 | 0.5+ | 0.8+ | 2006 11 22 | G96 | 0.2+ | 0.4− | |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2001 09 25 | 704 | (0.0 | 2.0+) | 2006 11 22 | G96 | 0.5+ | 0.2− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.3− | 0.5− | 2001 09 25 | 704 | (0.7− | 2.3+) | 2006 11 28 | 704 | (0.3+ | 1.7+) |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2001 09 25 | 704 | (0.1− | 2.1+) | 2006 11 28 | 704 | 0.9+ | 0.8+ |
| 2001 09 24 | 704 | (0.9− | 1.7+) | 2001 09 25 | 704 | 0.3− | 1.4+ | 2006 11 28 | 704 | 0.5− | 0.9+ |
| 2001 09 24 | 704 | 0.1− | 1.4− | 2001 09 25 | 704 | (0.4+ | 1.8+) | 2006 11 28 | 704 | 0.8− | 0.9− |
| 2001 09 24 | 704 | (1.6− | 2.7+) | 2001 09 25 | 704 | 0.1− | 1.4+ | | | | |

**2001 QO$_{266}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.44433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20973554 | $\omega$ | 27.36604 | | +0.77716253 | +0.59280027 | |
| $a$ | 2.8055716 | $\Omega$ | 294.68909 | | −0.61149077 | +0.63209063 | |
| $e$ | 0.2607920 | $i$ | 13.44140 | | −0.14865207 | +0.49904836 | |
| $P$ | 4.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 644 | 1.0+ | 0.1+ | 2001 09 09 | 699 | 1.5− | 0.1+ | 2006 09 28 | 703 | 0.9+ | 0.2− |
| 2001 07 17 | 644 | 0.8+ | 0.4+ | 2001 09 09 | 699 | (1.0− | 1.7+) | 2006 09 28 | 703 | 0.2− | 0.0 |
| 2001 07 17 | 644 | 1.0+ | 0.2− | 2001 09 09 | 699 | 1.2− | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2001 08 20 | 704 | 0.1− | 0.5+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.1− |
| 2001 08 20 | 704 | 0.7+ | 0.6− | 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.5+ |
| 2001 08 20 | 704 | 1.1+ | 0.0 | 2006 09 17 | 703 | 0.6− | 1.0− | 2006 10 19 | 703 | 0.7+ | 0.2+ |
| 2001 08 24 | 699 | 0.5− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 08 24 | 699 | 0.8− | 0.5− | 2006 09 17 | 703 | 0.3− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 08 24 | 699 | 0.8− | 0.3+ | 2006 09 17 | 703 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 08 24 | 699 | 1.3− | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.1+ | | | | |
| 2001 09 09 | 699 | 0.2− | 0.1+ | 2006 09 28 | 703 | (1.6− | 1.9−) | | | | |

**2001 QJ$_{273}$ = 2006 SM$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.40167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21597342 | $\omega$ | 286.70197 | | +0.84808695 | +0.52578956 | |
| $a$ | 2.7512867 | $\Omega$ | 41.63930 | | −0.44077267 | +0.76871616 | |
| $e$ | 0.1223168 | $i$ | 5.65976 | | −0.29405438 | +0.36417139 | |
| $P$ | 4.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 07 | 910 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 1997 09 07 | 910 | 0.4− | 0.6− | 2006 09 30 | 703 | (2.7− | 0.4+) | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 1997 09 07 | 910 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2000 04 08 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | (2.4+ | 1.1+) | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2000 04 08 | 691 | 0.2− | 0.6+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2000 04 08 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2000 04 29 | 704 | 0.3− | 1.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2000 04 29 | 704 | 1.1+ | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 04 29 | 704 | 1.8+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 08 12 | 608 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.1− |
| 2001 08 12 | 608 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 08 12 | 608 | 0.2− | 0.4− | 2006 10 15 | 691 | 0.0 | 0.3− | 2006 11 07 | 644 | 0.1− | 0.6+ |
| 2001 08 19 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2001 08 19 | 704 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2001 08 19 | 704 | 0.8+ | 0.9− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.2− |
| 2001 08 19 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2001 08 25 | 699 | (0.2− | 2.1+) | 2006 10 19 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2001 08 25 | 699 | 0.4− | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2001 08 25 | 699 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.5+ | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2001 08 25 | 699 | 0.9− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | (1.8− | 0.4−) |
| 2004 03 19 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2004 03 19 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2004 03 19 | 644 | 0.0 | 0.4+ | 2006 10 21 | 703 | 1.3− | 1.0− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 1.0+ | 0.3− |
| 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.3− |
| 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.4− | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.7+ |
| 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | | | |

**2001 QD$_{275}$ = 2006 TE$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.50397 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21918158 | $\omega$ | 237.36295 | | +0.26562902 | +0.96116394 | |
| $a$ | 2.7243737 | $\Omega$ | 48.23000 | | −0.84749024 | +0.26981997 | |
| $e$ | 0.1351714 | $i$ | 5.76116 | | −0.45956666 | +0.05797471 | |
| $P$ | 4.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.1+ | 0.0 | 2001 08 25 | 699 | 1.1+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2001 08 13 | 608 | 0.4+ | 0.5− | 2001 08 25 | 699 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2001 08 13 | 608 | 0.5+ | 0.3− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 08 19 | 704 | 0.2− | 0.6+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2001 08 19 | 704 | 0.2+ | 0.7− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2001 08 19 | 704 | 1.0− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.5− | 0.1− |
| 2001 08 19 | 704 | (1.7− | 0.1+) | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2001 08 25 | 699 | 0.6− | 0.7− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2001 08 25 | 699 | 0.4− | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2− |

**2001 QG$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.47044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23847145 | $\omega$ | 317.13899 | | +0.99414580 | +0.08197268 | |
| $a$ | 2.5754026 | $\Omega$ | 38.32791 | | −0.03863880 | +0.87810894 | |
| $e$ | 0.1986936 | $i$ | 6.51717 | | −0.10090176 | +0.47138643 | |
| $P$ | 4.13 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.6+ | 0.7− | 2001 09 11 | 704 | 0.3+ | 0.2+ | 2005 07 29 | E12 | 0.3+ | 0.2+ |
| 2001 08 19 | 704 | 0.7+ | 0.2+ | 2001 09 11 | 704 | 0.7− | 1.7− | 2005 07 29 | E12 | 0.0 | 0.1− |
| 2001 08 19 | 704 | 0.5+ | 0.4+ | 2004 04 13 | 691 | 0.1− | 0.2− | 2005 08 10 | E12 | 0.0 | 0.3+ |
| 2001 08 19 | 704 | 0.1+ | 0.5+ | 2004 04 13 | 691 | 0.0 | 0.1+ | 2005 08 10 | E12 | 0.2− | 0.1+ |
| 2001 08 19 | 704 | 0.3+ | 0.7+ | 2004 04 13 | 691 | 0.1+ | 0.1− | 2005 08 10 | E12 | 0.0 | 0.1+ |
| 2001 08 25 | 699 | 0.9− | 0.3+ | 2005 07 10 | E12 | 0.1+ | 0.1+ | 2005 08 10 | E12 | 0.1+ | 0.1− |
| 2001 08 25 | 699 | 0.4− | 0.8− | 2005 07 10 | E12 | 0.2+ | 0.8+ | 2005 09 05 | E12 | 0.5− | 0.1+ |
| 2001 08 25 | 699 | 0.7− | 0.7+ | 2005 07 10 | E12 | 0.1− | 0.9− | 2005 09 05 | E12 | 1.0+ | 0.3− |
| 2001 08 25 | 699 | 0.2− | 0.1− | 2005 07 10 | E12 | 0.5− | 0.7+ | 2005 09 05 | E12 | 0.2+ | 0.1− |
| 2001 09 11 | 704 | 1.1+ | 0.0 | 2005 07 29 | E12 | 1.0− | 0.5− | 2005 09 05 | E12 | 0.2− | 0.4+ |
| 2001 09 11 | 704 | 0.4− | 0.3− | 2005 07 29 | E12 | 0.6+ | 0.4− | | | | |

**2001 QD$_{279}$ = 2004 HF$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.99585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23394109 | $\omega$ | 313.55379 | | +0.93131983 | −0.34559284 | |
| $a$ | 2.6085453 | $\Omega$ | 66.96760 | | +0.35966867 | +0.82309451 | |
| $e$ | 0.1292025 | $i$ | 7.17415 | | +0.05728712 | +0.45064511 | |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.1− | 0.6+ | 2003 01 09 | 704 | 0.3− | 0.8+ | 2005 07 29 | E12 | 0.6+ | 0.1+ |
| 2001 07 20 | 644 | 0.7− | 0.2+ | 2004 04 21 | 599 | 0.5− | 0.0 | 2005 07 29 | E12 | 0.3− | 0.8− |
| 2001 07 20 | 644 | 1.6− | 0.7− | 2004 04 21 | 599 | 0.5+ | 0.5+ | 2005 07 29 | E12 | 1.0− | 0.3+ |
| 2001 08 19 | 704 | 0.5+ | 0.5− | 2004 04 21 | 599 | 0.0 | 0.1+ | 2005 07 29 | E12 | 0.2+ | 0.3− |
| 2001 08 19 | 704 | 0.0 | 0.1− | 2004 04 21 | 599 | 0.2− | 0.0 | 2005 08 10 | E12 | 1.2− | 0.5+ |
| 2001 08 19 | 704 | 1.0+ | 0.3+ | 2004 04 22 | 599 | 0.0 | 0.4− | 2005 08 10 | E12 | 0.3+ | 0.1− |
| 2001 08 19 | 704 | 0.2− | 1.0+ | 2004 04 22 | 599 | 0.1− | 0.3− | 2005 08 10 | E12 | 0.3+ | 0.2+ |
| 2001 08 25 | 644 | 0.1− | 1.1− | 2004 04 22 | 599 | 0.5+ | 0.4+ | 2005 08 10 | E12 | 0.3+ | 0.3− |
| 2001 08 25 | 644 | 0.2+ | 0.3+ | 2005 07 10 | E12 | 0.3− | 0.1− | 2005 08 24 | E12 | 1.1− | 0.5+ |
| 2001 08 25 | 644 | 0.2+ | 0.6+ | 2005 07 10 | E12 | 0.7+ | 1.0+ | 2005 08 24 | E12 | 0.5− | 0.4− |
| 2003 01 09 | 704 | 0.3+ | 0.3− | 2005 07 10 | E12 | 0.2− | 0.1− | 2005 08 24 | E12 | 0.4+ | 0.4+ |
| 2003 01 09 | 704 | 0.2+ | 0.8+ | 2005 07 10 | E12 | 0.7+ | 0.2+ | 2005 08 24 | E12 | 0.9+ | 0.4− |

**2001 QZ$_{279}$ = 2006 TX$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.41519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21335834 | $\omega$ | 9.87182 | | +0.75450194 | | −0.64471336 |
| $a$ | 2.7737223 | $\Omega$ | 31.36563 | | +0.58491233 | | +0.57572488 |
| $e$ | 0.1992920 | $i$ | 13.64249 | | +0.29766488 | | +0.50287727 |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 608 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 08 11 | 608 | 0.3− | 0.5+ | 2006 10 21 | 704 | 1.1− | 1.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 08 11 | 608 | 0.5− | 0.4+ | 2006 10 21 | 704 | 0.6+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2001 08 19 | 704 | 0.5− | 0.2− | 2006 10 21 | 704 | (1.6− | 0.4−) | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2001 08 19 | 704 | 0.3+ | 1.5+ | 2006 10 21 | 704 | 1.5+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2001 08 19 | 704 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2001 08 19 | 704 | 0.7− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.9− | 0.2− |
| 2001 08 23 | 608 | 0.9+ | 0.6− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.3− |
| 2001 08 23 | 608 | 0.4+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.2− |
| 2001 08 23 | 608 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.4− |
| 2001 08 24 | 608 | 1.2+ | 0.4− | 2006 10 22 | 644 | 0.4+ | 0.2+ | 2006 11 16 | 704 | (2.1+ | 0.6+) |
| 2001 08 24 | 608 | 1.5+ | 0.4− | 2006 10 23 | 644 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.7+ |
| 2001 08 24 | 608 | 0.8+ | 1.0− | 2006 10 23 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.6+ |
| 2001 09 11 | 704 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.9+ |
| 2001 09 11 | 704 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.6+ |
| 2001 09 11 | 704 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.2+ | 0.2− |
| 2001 09 17 | 699 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.5− | 0.1+ | 2006 11 22 | 703 | (1.8− | 1.6−) |
| 2001 09 17 | 699 | 0.7− | 0.7− | 2006 10 27 | 703 | 0.9+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2001 09 17 | 699 | 0.9− | 1.0+ | 2006 10 29 | 704 | 0.2+ | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2001 09 17 | 699 | 1.4− | 0.0 | 2006 10 29 | 704 | (1.7+ | 0.1+) | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.5+ | 1.4+ | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 29 | 704 | (0.9+ | 1.7+) | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.4− |

**2001 QV$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.43087 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21619365 | $\omega$ | 311.63762 | | +0.83579936 | | +0.51488486 |
| $a$ | 2.7494179 | $\Omega$ | 19.92749 | | −0.16037336 | | +0.56098749 |
| $e$ | 0.1990136 | $i$ | 34.00449 | | −0.52509029 | | +0.64821803 |
| $P$ | 4.56 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 1.2+ | 0.2− | 2001 10 20 | 704 | 0.0 | 0.7− | 2001 11 20 | 704 | 0.1+ | 1.6+ |
| 2001 08 19 | 704 | 0.1− | 1.2− | 2001 10 20 | 704 | 1.0+ | 0.6− | 2001 11 20 | 704 | 0.4− | 0.4− |
| 2001 08 19 | 704 | 0.8+ | 1.2− | 2001 10 20 | 704 | 0.3+ | 0.7− | 2001 11 20 | 704 | 1.6+ | 0.9+ |
| 2001 08 19 | 704 | 0.6+ | 0.9− | 2001 10 23 | 644 | 0.6− | 0.1− | 2001 11 20 | 704 | 0.6+ | 0.4+ |
| 2001 08 24 | 608 | 1.0− | 0.9+ | 2001 10 23 | 644 | 0.6− | 0.2− | 2001 11 20 | 704 | 0.7− | 0.8+ |
| 2001 08 24 | 608 | 0.7− | 1.3+ | 2001 10 23 | 644 | 0.3− | 0.1− | 2004 03 28 | 704 | 0.7+ | 0.1− |
| 2001 08 24 | 608 | 0.7− | 0.8+ | 2001 11 17 | 699 | 0.8− | 0.2+ | 2004 03 28 | 704 | 0.5+ | 0.9− |
| 2001 09 11 | 704 | 0.1− | 0.2− | 2001 11 17 | 699 | 1.7− | 1.4+ | 2004 03 28 | 704 | 1.1− | 0.3− |
| 2001 09 11 | 704 | 0.0 | 0.1− | 2001 11 17 | 699 | 0.6− | 0.2− | 2004 03 28 | 704 | 0.2− | 0.3+ |
| 2001 09 11 | 704 | 0.2− | 0.6+ | 2001 11 17 | 699 | 0.6− | 0.3− | 2004 03 28 | 704 | 0.3+ | 1.0+ |
| 2001 09 11 | 704 | 0.8+ | 0.6+ | 2001 11 17 | 608 | 0.4+ | 0.9− | 2006 11 27 | 113 | 0.6+ | 0.5+ |
| 2001 09 11 | 704 | 0.4+ | 1.1+ | 2001 11 17 | 608 | 0.2+ | 1.2− | 2006 11 27 | 113 | 0.2− | 0.8− |
| 2001 10 20 | 704 | 0.2+ | 0.0 | 2001 11 17 | 608 | 0.1+ | 1.2− | | | | |

**2001 QW$_{282}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.23718 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21284259 | $\omega$ | 329.72784 | | +0.97482933 | | +0.20917314 |
| $a$ | 2.7782012 | $\Omega$ | 18.67537 | | −0.12319937 | | +0.79384359 |
| $e$ | 0.2094294 | $i$ | 13.94464 | | −0.18582165 | | +0.57101571 |
| $P$ | 4.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 608 | 0.8− | 1.2+ | 2001 09 25 | 704 | 0.1+ | 1.0+ | 2006 10 19 | 703 | 0.4− | 0.5− |
| 2001 08 19 | 608 | 0.7− | 0.7+ | 2001 09 25 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.5− |
| 2001 08 19 | 608 | 0.3+ | 0.0 | 2001 10 10 | 644 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.7− | 0.5− |
| 2001 08 25 | 699 | 1.2+ | 0.6− | 2001 10 10 | 644 | 0.9− | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.3− |
| 2001 08 25 | 699 | 0.8+ | 1.0− | 2001 10 10 | 644 | 0.9− | 0.3− | 2006 10 20 | A50 | 0.6+ | 0.0 |
| 2001 08 25 | 699 | 0.3− | 0.1+ | 2001 10 16 | 644 | 1.0− | 0.1+ | 2006 10 20 | A50 | 0.6− | 0.3+ |
| 2001 08 25 | 699 | (1.8− | 0.3−) | 2001 10 16 | 644 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.5+ | 0.5+ |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2001 10 16 | 644 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.4− | 1.3+ |
| 2001 09 12 | 704 | 0.2− | 0.7+ | 2001 10 24 | 644 | 0.2− | 1.4+ | 2006 10 27 | 703 | (2.1+ | 0.3−) |
| 2001 09 12 | 704 | 0.4− | 0.0 | 2001 10 24 | 644 | 0.3− | 1.0+ | 2006 10 27 | 703 | 0.7− | 0.3+ |
| 2001 09 12 | 704 | 0.2+ | 0.6+ | 2001 10 24 | 644 | 0.2− | 1.2+ | 2006 11 13 | 644 | 0.4+ | 0.3− |
| 2001 09 12 | 704 | 0.4+ | 0.4+ | 2004 03 18 | 691 | 0.6+ | 0.9+ | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 09 21 | 644 | 0.1− | 0.1− | 2004 03 18 | 691 | 0.4+ | 0.8+ | 2006 11 13 | 644 | 0.3+ | 0.6− |
| 2001 09 21 | 644 | 0.1+ | 0.3+ | 2004 03 18 | 691 | 0.6+ | 0.6+ | 2006 11 22 | 703 | 0.3− | 0.0 |
| 2001 09 21 | 644 | 0.1− | 0.2+ | 2006 07 22 | G96 | 0.0 | 0.7− | 2006 11 22 | 703 | 0.5+ | 1.0+ |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2006 07 22 | G96 | 0.4+ | 0.4− | 2006 11 22 | 703 | 0.1− | 0.2− |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2006 07 22 | G96 | 0.4− | 0.6− | 2006 11 22 | 703 | 0.1+ | 0.6+ |
| 2001 09 25 | 704 | 0.8− | 0.1+ | 2006 07 22 | G96 | 0.2+ | 0.5− | | | | |

**2001 QZ$_{282}$ = 2006 SH$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.60114 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20589260 | $\omega$ | 34.15521 | | +0.39692331 | | +0.88466393 |
| $a$ | 2.8403742 | $\Omega$ | 260.31561 | | −0.88776907 | | +0.30236877 |
| $e$ | 0.1231975 | $i$ | 14.36632 | | −0.23306214 | | +0.35488429 |
| $P$ | 4.79 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 31 | 644 | 0.2+ | 0.1− | 2001 08 21 | 644 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.5− | 0.1+ |
| 2001 07 31 | 644 | 0.2+ | 0.3+ | 2001 08 21 | 644 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.9− |
| 2001 07 31 | 644 | 0.3− | 0.1+ | 2001 08 21 | 644 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.4− | 0.3+ |
| 2001 08 10 | 644 | 0.9+ | 0.5− | 2006 08 10 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.3− |
| 2001 08 10 | 644 | 0.8+ | 0.7− | 2006 08 10 | 644 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.1− | 0.1− |
| 2001 08 10 | 644 | 0.6+ | 0.5− | 2006 08 10 | 644 | 0.3− | 0.1− | 2006 09 21 | 699 | 0.8+ | 0.5+ |
| 2001 08 18 | 699 | 0.5+ | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 21 | 699 | 0.6+ | 0.1− |
| 2001 08 18 | 699 | 0.3− | 1.0+ | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 21 | 699 | 1.5− | 0.3− |
| 2001 08 18 | 699 | 0.7− | 0.8+ | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.4+ |
| 2001 08 18 | 699 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.4+ | 2006 09 28 | 703 | 0.5+ | 1.2+ |
| 2001 08 21 | 644 | 0.5− | 0.3− | 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.5+ | 0.1+ |
| 2001 08 21 | 644 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.5− | 2006 09 28 | 703 | 0.1− | 0.3+ |
| 2001 08 21 | 644 | 0.4− | 0.1− | 2006 09 16 | 703 | 0.8+ | 1.8− | | | | |

**2001 QW$_{287}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.10597 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21789424 | $\omega$ | 154.74599 | | +0.99177408 | | −0.11991361 |
| $a$ | 2.7350938 | $\Omega$ | 212.23939 | | +0.09850471 | | +0.93839173 |
| $e$ | 0.1016125 | $i$ | 4.81483 | | +0.08173740 | | +0.32410135 |
| $P$ | 4.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 704 | 0.4+ | 1.3− | 2001 09 20 | 704 | 0.1− | 1.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 08 17 | 704 | 1.2− | 0.1+ | 2001 09 20 | 704 | 1.2+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 08 17 | 704 | 0.5− | 0.1− | 2001 09 20 | 704 | 0.6+ | 1.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 08 20 | 807 | 0.0 | 0.7− | 2001 09 21 | 704 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 08 20 | 807 | 0.1− | 0.9− | 2001 09 21 | 704 | 0.3− | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.4+ | 0.2+ | 2001 09 21 | 704 | 0.7+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2001 08 23 | 699 | 0.5− | 0.3− | 2001 09 21 | 704 | 0.0 | 1.2+ | 2006 11 10 | 644 | 0.2+ | 0.3− |
| 2001 08 23 | 699 | 0.2+ | 0.1− | 2001 09 22 | 704 | 0.3− | 0.7+ | 2006 11 10 | 644 | 0.4+ | 0.0 |
| 2001 08 23 | 699 | 0.4− | 0.2+ | 2001 09 22 | 704 | 0.0 | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2001 08 29 | 049 | 0.1+ | 1.0− | 2001 09 22 | 704 | 0.4+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.5+ |
| 2001 08 29 | 049 | 0.2− | 0.5− | 2001 09 22 | 704 | 0.4− | 0.3+ | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 08 30 | 049 | 0.3− | 0.5− | 2001 09 22 | 704 | 0.1+ | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2001 09 09 | 704 | 0.4+ | 0.0 | 2001 09 23 | 704 | 0.3− | 0.8− | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 2001 09 09 | 704 | 0.3− | 0.5− | 2001 09 23 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 1.0− | 0.3− |
| 2001 09 09 | 704 | 0.3− | 0.3− | 2001 09 23 | 704 | 1.4+ | 0.0 | 2006 11 17 | 703 | 1.1− | 0.4− |
| 2001 09 09 | 704 | 0.1+ | 0.1− | 2001 09 23 | 704 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.8− | 0.2− |
| 2001 09 11 | 699 | 0.4− | 0.3− | 2001 09 23 | 704 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.3− |
| 2001 09 11 | 699 | 0.7− | 0.0 | 2001 10 11 | 644 | 0.0 | 0.9+ | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2001 09 11 | 699 | 0.7− | 0.4− | 2001 10 11 | 644 | 0.1+ | 1.0+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2001 09 11 | 699 | 1.2− | 0.7− | 2001 10 11 | 644 | 0.1+ | 0.8+ | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2001 09 16 | 704 | 0.4+ | 0.1− | 2001 10 19 | 644 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.2+ | 0.3+ | 2001 10 19 | 644 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.3+ | 0.3+ | 2001 10 19 | 644 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2001 09 16 | 704 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2001 09 18 | 699 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.8+ |
| 2001 09 18 | 699 | 0.3+ | 0.9− | 2006 10 20 | 644 | 0.5+ | 0.5+ | 2006 11 20 | 704 | 0.5+ | 1.1+ |
| 2001 09 18 | 699 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2001 09 18 | 699 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.8+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2001 09 20 | 704 | 0.5+ | 1.3+ | 2006 10 28 | G96 | 0.5+ | 0.6− | | | | |

**2001 QJ$_{290}$ = 2006 UW$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.88034 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22047708 | $\omega$ | 23.43699 | | +0.69214735 | | +0.72169327 |
| $a$ | 2.7136911 | $\Omega$ | 290.36487 | | −0.66379669 | | +0.63132441 |
| $e$ | 0.1342053 | $i$ | 0.58259 | | −0.28338313 | | +0.28388080 |
| $P$ | 4.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.3− | 0.2+ | 2004 02 29 | 291 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2000 03 30 | 691 | 0.0 | 0.4+ | 2004 02 29 | 291 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2000 03 30 | 691 | 0.3− | 0.0 | 2004 02 29 | 291 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 08 16 | 704 | 0.1+ | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2001 08 16 | 704 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.3− | 0.3+ |
| 2001 08 16 | 704 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 11 13 | G96 | 0.9+ | 0.3− |
| 2001 08 16 | 704 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.4− | 0.0 |
| 2001 08 20 | 807 | 0.7− | 0.5− | 2006 10 20 | 691 | 0.6− | 0.0 | 2006 11 13 | G96 | 0.6− | 0.7− |
| 2001 08 20 | 807 | 0.5− | 0.4− | 2006 10 20 | 691 | (1.9− | 0.6−) | 2006 11 13 | G96 | 0.2− | 0.1+ |
| 2001 08 22 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 27 | 691 | 0.4+ | 0.1+ |
| 2001 08 22 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 08 22 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.2− |

**2001 QQ$_{292}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.76466 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22533003 | $\omega$ | 80.78258 | | +0.69854663 | | +0.69256385 |
| $a$ | 2.6745866 | $\Omega$ | 235.12925 | | −0.71186812 | | +0.64706979 |
| $e$ | 0.2371385 | $i$ | 12.67101 | | −0.07263873 | | +0.31883538 |
| $P$ | 4.37 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.5+ | 1.1+ | 2001 09 23 | 699 | 0.4+ | 0.1− | 2006 11 12 | D35 | 0.1+ | 0.0 |
| 2001 08 16 | 644 | 0.6+ | 0.9+ | 2001 09 23 | 699 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2001 08 16 | 644 | 1.1+ | 0.9+ | 2001 09 23 | 699 | 0.1+ | 0.5+ | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2001 08 22 | 704 | 0.5− | 0.4− | 2001 09 27 | 644 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 08 22 | 704 | 0.4− | 0.3− | 2001 09 27 | 644 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 08 22 | 704 | 0.7− | 0.4− | 2001 09 27 | 644 | 0.5+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2001 08 22 | 704 | 0.6− | 0.5− | 2001 10 06 | 644 | 0.5+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2001 08 22 | 704 | 0.8− | 0.4− | 2001 10 06 | 644 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.1− |
| 2001 09 10 | 704 | 0.3+ | 0.3− | 2001 10 06 | 644 | 0.8+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 09 10 | 704 | 0.1− | 0.5− | 2001 10 17 | 704 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2001 09 10 | 704 | 0.0 | 0.6− | 2001 10 17 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2001 09 10 | 704 | 0.4− | 1.0− | 2001 10 17 | 704 | (1.9+ | 0.1+) | 2006 11 29 | 704 | 0.9+ | 0.3− |
| 2001 09 10 | 704 | 0.4− | 0.6− | 2001 10 23 | 291 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.5− | 0.1− |
| 2001 09 21 | 644 | 0.6− | 0.3+ | 2001 10 23 | 291 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2001 09 21 | 644 | 0.5− | 0.2+ | 2001 10 23 | 291 | 0.4− | 0.1− | 2006 11 29 | 704 | 1.0− | 0.4+ |
| 2001 09 21 | 644 | 0.2− | 0.2+ | 2006 11 12 | D35 | 0.1+ | 0.4+ | 2006 11 29 | 704 | (0.2+ | 2.0−) |
| 2001 09 23 | 699 | 0.1+ | 0.2+ | 2006 11 12 | D35 | 0.0 | 0.7+ | | | | |

**2001 QS$_{294}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.43638 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20971755 | $\omega$ | 134.16138 | | +0.71566097 | | +0.69841999 |
| $a$ | 2.8057321 | $\Omega$ | 181.57814 | | −0.68786067 | | +0.70323587 |
| $e$ | 0.2014139 | $i$ | 13.08918 | | −0.12114899 | | +0.13292413 |
| $P$ | 4.70 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 688 | 0.3+ | 0.6+ | 2001 09 16 | 704 | 0.1− | 0.7+ | 2001 10 17 | 644 | 0.5− | 0.2− |
| 2000 05 02 | 688 | 0.3+ | 0.3+ | 2001 09 18 | 699 | 0.0 | 0.2− | 2001 10 17 | 644 | 0.3− | 0.0 |
| 2000 05 02 | 688 | 0.1− | 0.1− | 2001 09 18 | 699 | 0.1− | 0.1+ | 2005 05 02 | 691 | 0.3+ | 0.2+ |
| 2001 08 17 | 704 | 0.2+ | 0.5− | 2001 09 18 | 699 | 0.3− | 0.1− | 2005 05 02 | 691 | 0.1− | 0.1+ |
| 2001 08 17 | 704 | 0.0 | 0.7+ | 2001 09 18 | 699 | 0.8− | 0.5− | 2005 05 02 | 691 | 0.2− | 0.1− |
| 2001 08 17 | 704 | 0.0 | 0.3− | 2001 09 20 | 704 | 0.3+ | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.3− |
| 2001 08 24 | 699 | 0.5− | 0.9+ | 2001 09 20 | 704 | 0.0 | 0.5− | 2006 07 21 | G96 | 0.1+ | 0.2− |
| 2001 08 24 | 699 | 1.2+ | 0.4+ | 2001 09 20 | 704 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.1− | 0.6− |
| 2001 08 24 | 699 | 0.2+ | 0.8− | 2001 09 20 | 704 | 0.4+ | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.4− |
| 2001 08 24 | 699 | 0.0 | 1.2+ | 2001 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.8+ | 0.3+ |
| 2001 08 29 | 049 | 0.6+ | 1.2− | 2001 09 22 | 704 | (1.9− | 1.1+) | 2006 10 22 | 703 | (0.8+ | 1.5+) |
| 2001 08 29 | 049 | 0.5+ | 0.5− | 2001 09 22 | 704 | (2.0− | 1.8+) | 2006 10 22 | 703 | 1.5+ | 1.2+ |
| 2001 08 30 | 049 | 0.6− | 0.1+ | 2001 09 22 | 704 | 1.4− | 0.8+ | 2006 10 22 | 703 | 0.4+ | 0.6− |
| 2001 09 08 | 704 | 0.6+ | 0.0 | 2001 09 22 | 704 | (2.0− | 1.0+) | 2006 10 28 | 703 | 1.4+ | 0.3+ |
| 2001 09 08 | 704 | 0.1+ | 0.4+ | 2001 09 23 | 704 | (2.0+ | 0.4−) | 2006 10 28 | 703 | 0.3− | 0.5− |
| 2001 09 08 | 704 | 0.3+ | 0.2+ | 2001 09 23 | 704 | (1.7+ | 0.9−) | 2006 10 28 | 703 | 1.2+ | 0.4+ |
| 2001 09 11 | 699 | 1.0+ | 0.2− | 2001 09 23 | 704 | (0.8+ | 1.6−) | 2006 10 28 | 703 | (1.7+ | 1.3+) |
| 2001 09 11 | 699 | 1.5− | 0.5+ | 2001 09 23 | 704 | 1.4+ | 1.3− | 2006 11 16 | 703 | 1.8− | 0.7+ |
| 2001 09 11 | 699 | 0.2− | 0.8+ | 2001 09 23 | 704 | 1.1+ | 0.8− | 2006 11 16 | 703 | (0.0 | 4.1+) |
| 2001 09 11 | 699 | 0.5− | 0.1+ | 2001 10 11 | 644 | 0.2+ | 0.0 | 2006 11 16 | 703 | (3.6− | 2.2−) |
| 2001 09 16 | 704 | 0.0 | 0.4+ | 2001 10 11 | 644 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.2− | 1.1− |
| 2001 09 16 | 704 | 0.4− | 0.1− | 2001 10 11 | 644 | 0.2− | 0.3+ | | | | |
| 2001 09 16 | 704 | 0.5− | 0.0 | 2001 10 17 | 644 | 0.6− | 0.1− | | | | |

**2001 QC$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.04215 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28249695 | $\omega$ | 194.07527 | | +0.97451282 | | −0.22431326 |
| $a$ | 2.3003480 | $\Omega$ | 178.87508 | | +0.21740603 | | +0.94117838 |
| $e$ | 0.1561159 | $i$ | 8.44879 | | +0.05531164 | | +0.25271887 |
| $P$ | 3.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 03 | 691 | 0.5+ | 0.3+ | 2001 09 21 | 704 | 0.2+ | 0.4− | 2001 10 24 | 704 | 0.4+ | 0.7+ |
| 1995 01 03 | 691 | 0.4− | 0.3+ | 2001 09 21 | 704 | 0.9+ | 0.4− | 2001 10 24 | 704 | 0.0 | 0.9+ |
| 1995 01 03 | 691 | 0.3− | 0.2+ | 2001 09 21 | 704 | 0.4+ | 0.0 | 2001 10 24 | 644 | 0.1+ | 0.3− |
| 2001 08 24 | 704 | 0.4+ | 0.4+ | 2001 09 21 | 704 | 0.3− | 0.2− | 2001 10 24 | 644 | 0.2+ | 0.3− |
| 2001 08 24 | 704 | 0.7− | 0.1+ | 2001 09 21 | 704 | 0.5− | 0.6− | 2001 10 24 | 644 | 0.3+ | 0.2− |
| 2001 08 24 | 704 | 0.6− | 0.5− | 2001 09 21 | 704 | 0.1+ | 0.2− | 2001 11 15 | 644 | 0.1− | 1.3+ |
| 2001 08 28 | 699 | 1.0+ | 0.6− | 2001 09 21 | 704 | 0.3− | 0.4− | 2001 11 15 | 644 | 0.5− | 1.0+ |
| 2001 08 28 | 699 | 1.3+ | 1.0+ | 2001 09 21 | 704 | 0.0 | 0.5− | 2001 11 15 | 644 | 0.2− | 1.2+ |
| 2001 08 28 | 699 | (1.6+ | 0.5−) | 2001 09 28 | 704 | 0.1+ | 0.5+ | 2001 11 18 | 704 | 0.6− | 0.6+ |
| 2001 08 28 | 699 | 0.3+ | 1.2+ | 2001 09 28 | 704 | 1.3− | 1.3+ | 2001 11 18 | 704 | 0.9− | 0.4+ |
| 2001 09 17 | 704 | (1.1+ | 2.7−) | 2001 09 28 | 704 | (0.8− | 1.7+) | 2001 11 18 | 704 | 0.3− | 0.1+ |
| 2001 09 17 | 704 | 0.3+ | 1.4− | 2001 09 28 | 704 | 0.5+ | 0.7+ | 2001 11 18 | 704 | 0.5− | 0.0 |
| 2001 09 17 | 704 | 0.6+ | 0.9− | 2001 10 10 | 644 | 0.4− | 0.7+ | 2001 11 18 | 645 | 0.1+ | 0.2− |
| 2001 09 17 | 704 | (0.2+ | 2.4−) | 2001 10 10 | 644 | 0.4− | 0.4+ | 2001 11 18 | 645 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2001 10 10 | 644 | 0.7− | 0.2+ | 2001 11 18 | 704 | 0.0 | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.8+ | 0.7+ | 2001 10 16 | 704 | 0.9− | 0.4− | 2001 11 21 | 608 | 0.6− | 1.0+ |
| 2001 09 19 | 704 | 0.4− | 1.2+ | 2001 10 16 | 704 | 0.1+ | 0.6− | 2001 11 21 | 608 | (0.9− | 1.6+) |
| 2001 09 19 | 704 | 0.2+ | 1.1+ | 2001 10 16 | 704 | 0.7− | 0.2− | 2001 11 21 | 608 | (2.0− | 0.9+) |
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2001 10 16 | 704 | 0.7− | 0.1+ | 2001 12 18 | 645 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2001 10 16 | 704 | 0.6− | 0.3− | 2001 12 18 | 645 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.5− | 2001 10 16 | 644 | 0.5− | 0.4+ | 2006 01 31 | 703 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.5− | 2001 10 16 | 644 | 0.4− | 0.3+ | 2006 01 31 | 703 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.8− | 2001 10 16 | 644 | 0.4− | 0.2+ | 2006 01 31 | 703 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 1.1− | 2001 10 24 | 704 | 0.3+ | 0.6+ | 2006 01 31 | 703 | 0.4+ | 0.4+ |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2001 10 24 | 704 | (1.8+ | 0.1−) | | | | |
| 2001 09 21 | 704 | 0.0 | 0.4− | 2001 10 24 | 704 | 0.3− | 0.4+ | | | | |

**2001 QZ$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.38465 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23967276 | $\omega$ | 41.50664 | | −0.55675978 | | −0.82895623 |
| $a$ | 2.5667896 | $\Omega$ | 82.39117 | | +0.74722595 | | −0.52786837 |
| $e$ | 0.1679981 | $i$ | 3.08749 | | +0.36286625 | | −0.18489606 |
| $P$ | 4.11 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 699 | 0.4− | 0.4− | 2002 12 31 | 291 | 0.4+ | 0.3− | 2003 01 25 | 699 | 0.4+ | 0.5+ |
| 1999 02 12 | 699 | 0.5+ | 1.0+ | 2002 12 31 | 291 | 0.1− | 0.2− | 2003 01 25 | 699 | 0.4− | 1.2+ |
| 1999 02 12 | 699 | 0.1+ | 0.6+ | 2002 12 31 | 704 | 0.5+ | 1.2+ | 2003 02 01 | 704 | 0.1− | 0.6− |
| 2001 08 19 | 807 | 0.4− | 0.2+ | 2002 12 31 | 704 | 0.4− | 0.9+ | 2003 02 01 | 704 | 0.9+ | 0.6− |
| 2001 08 19 | 807 | 0.6− | 0.0 | 2002 12 31 | 704 | 0.8+ | 0.3+ | 2003 02 01 | 704 | 0.3+ | 0.6+ |
| 2001 08 20 | 807 | 0.6− | 0.3+ | 2002 12 31 | 704 | 1.0+ | 0.1− | 2003 02 01 | 704 | 0.1+ | 0.0 |
| 2001 08 20 | 807 | 0.0 | 0.4+ | 2003 01 09 | 704 | 0.4+ | 1.2− | 2003 02 01 | 704 | 0.4+ | 0.4+ |
| 2001 09 19 | 645 | 0.1+ | 0.0 | 2003 01 09 | 704 | 0.3− | 0.2− | 2005 09 30 | G96 | 0.5− | 0.0 |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2003 01 09 | 704 | 0.3− | 0.8− | 2005 09 30 | G96 | 0.2− | 0.3+ |
| 2002 12 31 | 291 | 0.4− | 0.2− | 2003 01 09 | 704 | 0.5− | 0.6+ | 2005 09 30 | G96 | 0.0 | 0.4− |
| 2002 12 31 | 291 | 0.2− | 0.1− | 2003 01 09 | 704 | 0.0 | 0.5+ | 2005 09 30 | G96 | 0.3+ | 0.1+ |
| 2002 12 31 | 291 | 0.3− | 0.2− | 2003 01 25 | 699 | 0.6+ | 0.9− | | | | |
| 2002 12 31 | 291 | 0.7− | 0.0 | 2003 01 25 | 699 | 1.4+ | 1.8+ | | | | |

**2001 QO$_{318}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.57024 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25945147 | $\omega$ | 318.16268 | | +0.55204446 | | +0.83374455 |
| $a$ | 2.4346244 | $\Omega$ | 345.33412 | | −0.75323050 | | +0.49308753 |
| $e$ | 0.1366793 | $i$ | 2.44802 | | −0.35761813 | | +0.24846471 |
| $P$ | 3.80 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.4+ | 0.3− | 2005 08 25 | 644 | 0.1− | 0.1+ | 2005 09 14 | 691 | 0.2− | 0.2+ |
| 2001 08 16 | 704 | 0.7+ | 0.1− | 2005 08 25 | 644 | 0.4− | 0.3+ | 2005 09 14 | 691 | 0.3+ | 0.1− |
| 2001 08 16 | 704 | 0.6+ | 0.8− | 2005 08 25 | 644 | 0.0 | 0.1+ | 2005 10 13 | 691 | 0.1+ | 0.2− |
| 2001 08 20 | 807 | 0.3− | 0.4+ | 2005 08 31 | 691 | 0.1+ | 0.1− | 2005 10 13 | 691 | 0.1− | 0.2− |
| 2001 08 20 | 807 | 0.4− | 0.2+ | 2005 08 31 | 691 | 0.0 | 0.0 | 2005 10 13 | 691 | 0.0 | 0.3+ |
| 2001 08 21 | 807 | 0.4− | 0.4+ | 2005 08 31 | 691 | 0.1+ | 0.1− | | | | |
| 2001 08 21 | 807 | 0.6− | 0.3+ | 2005 09 14 | 691 | 0.2− | 0.1− | | | | |

**2001 QQ$_{327}$ = 2001 TH$_{241}$**

Id. Minor Planet Center (d, *MPO* 35668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.77293 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17304670 | $\omega$ | 133.04422 | | +0.89873082 | | −0.41349954 |
| $a$ | 3.1892887 | $\Omega$ | 251.86582 | | +0.34426869 | | +0.87151392 |
| $e$ | 0.1726791 | $i$ | 8.83427 | | +0.27159158 | | +0.26359367 |
| $P$ | 5.70 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 28 | 691 | 0.2− | 0.1+ | 2001 09 13 | 644 | 0.1− | 0.7− | 2001 10 13 | 644 | 1.0+ | 1.4+ |
| 1995 06 28 | 691 | 0.3− | 0.5+ | 2001 09 13 | 644 | 0.6+ | 0.3− | 2001 10 13 | 644 | 1.3+ | 1.2+ |
| 1995 06 28 | 691 | 0.4+ | 0.4− | 2001 09 18 | 699 | 1.2− | 0.4− | 2001 10 13 | 644 | 0.8+ | 1.3+ |
| 2001 08 16 | 644 | 0.0 | 0.1− | 2001 09 18 | 699 | 0.5− | 0.4+ | 2001 10 15 | 608 | 1.0− | 0.4− |
| 2001 08 16 | 644 | 0.3+ | 0.1− | 2001 09 18 | 699 | 0.2− | 0.3− | 2001 10 15 | 608 | 0.6− | 0.5− |
| 2001 08 16 | 644 | 0.4+ | 0.1− | 2001 09 18 | 699 | 0.1+ | 0.1+ | 2001 10 15 | 608 | 0.6− | 0.4− |
| 2001 08 25 | 704 | 0.4+ | 0.3− | 2001 09 25 | 704 | 0.1− | 0.0 | 2004 03 27 | 691 | 0.3− | 0.2− |
| 2001 08 25 | 704 | 0.4− | 0.5− | 2001 09 25 | 704 | 0.2− | 0.5− | 2004 03 27 | 691 | 0.3+ | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.2+ | 2001 09 25 | 704 | 0.0 | 0.1− | 2004 03 27 | 691 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 0.3+ | 0.0 | 2001 09 25 | 704 | 0.4− | 0.0 | | | | |
| 2001 09 13 | 644 | 0.4+ | 0.2− | 2001 09 25 | 704 | 0.1+ | 0.2+ | | | | |

**2001 QR$_{327}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.36506 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24187070 | $\omega$ | 131.06142 | | +0.43527185 | | −0.88239588 |
| $a$ | 2.5512159 | $\Omega$ | 292.29749 | | +0.75722402 | | +0.46615364 |
| $e$ | 0.2499587 | $i$ | 11.13306 | | +0.48698069 | | +0.06386158 |
| $P$ | 4.07 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.6− | 0.3+ | 2001 09 18 | 645 | 0.1− | 0.2− | 2001 10 17 | 704 | 0.1− | 0.1− |
| 2001 08 17 | 644 | 0.4− | 0.5− | 2001 09 18 | 645 | 0.1− | 0.2− | 2001 10 17 | 704 | 0.1+ | 0.4+ |
| 2001 08 17 | 644 | 0.4− | 0.3− | 2001 09 21 | 644 | 0.4+ | 0.7+ | 2005 09 09 | 704 | 0.4− | 0.3+ |
| 2001 09 09 | 608 | 0.4+ | 0.5− | 2001 09 21 | 644 | 0.1+ | 0.4+ | 2005 09 09 | 704 | 1.2+ | 0.2+ |
| 2001 09 09 | 608 | 0.1+ | 0.5− | 2001 09 21 | 699 | 0.6+ | 1.0+ | 2005 09 09 | 704 | 0.5− | 0.5− |
| 2001 09 09 | 608 | 0.2+ | 0.2+ | 2001 09 21 | 644 | 0.1+ | 0.4+ | 2005 09 09 | 704 | 0.1− | 0.7+ |
| 2001 09 10 | 704 | 0.8+ | 0.3+ | 2001 09 21 | 699 | 0.5+ | 0.2+ | 2005 11 04 | G96 | 0.3− | 0.2+ |
| 2001 09 10 | 704 | 1.1− | 0.9+ | 2001 09 21 | 699 | 0.8+ | 0.4− | 2005 11 04 | G96 | 0.5− | 0.4+ |
| 2001 09 10 | 704 | 0.5+ | 1.2+ | 2001 09 21 | 699 | (0.7+ | 1.6+) | 2005 11 04 | G96 | 0.2− | 0.1+ |
| 2001 09 10 | 704 | 0.2+ | 1.0+ | 2001 10 17 | 704 | 0.7+ | 0.8+ | 2005 11 04 | G96 | 0.3− | 0.0 |

**2001 QA$_{328}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.28052 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21824043 | $\omega$ | 27.16316 | | +0.98674182 | | +0.15474637 |
| $a$ | 2.7322006 | $\Omega$ | 323.82990 | | −0.15985499 | | +0.87455937 |
| $e$ | 0.0707482 | $i$ | 4.75563 | | −0.02805273 | | +0.45956444 |
| $P$ | 4.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 691 | 0.1− | 0.1+ | 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1999 02 13 | 691 | 0.3+ | 0.2+ | 2001 09 20 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1999 02 13 | 691 | 0.0 | 0.0 | 2001 09 20 | 704 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 08 21 | 807 | 0.1− | 0.1+ | 2001 09 20 | 704 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 08 21 | 807 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.9+ |
| 2001 08 28 | 644 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 08 28 | 644 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.6+ |
| 2001 08 28 | 644 | 0.3− | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.2+ | 1.2+ | 2006 10 20 | G96 | 0.0 | 0.5− | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.7− | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | (1.0− | 2.2+) | 2006 10 20 | G96 | 0.4+ | 0.2− | | | | |
| 2001 09 19 | 645 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.4− | | | | |

**2001 QF$_{329}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.72018 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20900107 | $\omega$ | 222.08009 | | +0.86406294 | | −0.50318705 |
| $a$ | 2.8121407 | $\Omega$ | 168.10733 | | +0.47813653 | | +0.81166283 |
| $e$ | 0.1059123 | $i$ | 3.91552 | | +0.15741885 | | +0.29665846 |
| $P$ | 4.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 09 | 691 | 0.1+ | 0.3+ | 2001 09 21 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.3+ |
| 1999 03 09 | 691 | 0.1− | 0.1− | 2001 09 21 | 704 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.3− | 1.4+ |
| 1999 03 09 | 691 | 0.2− | 0.5− | 2001 09 21 | 704 | 0.6+ | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2001 08 19 | 807 | 0.1+ | 0.2− | 2001 09 21 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 08 19 | 807 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.7+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 691 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.2− | 0.9− | 2006 10 17 | G96 | 0.5+ | 0.5− | | |
| 2001 08 27 | 691 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.8+ | 0.4− | | |
| 2001 08 27 | 691 | 0.0 | 0.3− | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.4− | | |
| 2001 09 12 | 704 | 0.6− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.4− | | |
| 2001 09 12 | 704 | 0.0 | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3− | 0.3− | | |
| 2001 09 12 | 704 | 0.3+ | 1.3− | 2006 09 23 | 691 | 0.6− | 0.2+ | 2006 10 21 | G96 | 0.5− | 0.2+ | | |
| 2001 09 12 | 704 | 0.2− | 1.1+ | 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | 0.8− | 0.3− | 2006 09 30 | 703 | 1.1+ | 1.3+ | 2006 10 21 | G96 | 0.3− | 0.1− | | |
| 2001 09 19 | 704 | (2.1+ | 0.4+) | 2006 09 30 | 703 | 0.1+ | 0.6+ | 2006 11 18 | G96 | 0.5+ | 0.3− | | |
| 2001 09 19 | 704 | 0.6− | 0.3− | 2006 09 30 | 703 | (1.9+ | 0.8−) | 2006 11 18 | G96 | 0.4+ | 0.3− | | |
| 2001 09 19 | 704 | 0.5− | 0.4− | 2006 09 30 | 703 | 1.3− | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.7− | | |
| 2001 09 21 | 704 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.4− | | |

### 2001 QC$_{333}$ = 2004 HV$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 184.53878 | | (2000.0) | | | |
| $n$ | 0.29097834 | $\omega$ | 290.47250 | | +0.74375107 | +0.66748160 |
| $a$ | 2.2554278 | $\Omega$ | 27.69227 | | −0.58071126 | +0.67192143 |
| $e$ | 0.2635430 | $i$ | 4.45433 | | −0.33107216 | +0.32092041 |
| $P$ | 3.39 | $H$ | 18.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 644 | 0.0 | 0.1− | 2001 08 19 | 704 | 0.8+ | 0.3− | 2001 08 23 | 608 | 0.8+ | 0.2+ | | |
| 2001 07 27 | 644 | 0.5+ | 0.3+ | 2001 08 19 | 704 | 0.1+ | 0.9− | 2004 04 24 | 691 | 0.2+ | 0.2− | | |
| 2001 07 27 | 644 | 0.0 | 0.4+ | 2001 08 23 | 699 | (2.6+ | 3.3−) | 2004 04 24 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 09 | 644 | 0.6− | 0.3− | 2001 08 23 | 699 | 0.2+ | 0.0 | 2004 04 24 | 691 | 0.1− | 0.3− | | |
| 2001 08 09 | 644 | 0.1− | 0.2− | 2001 08 23 | 699 | 0.2− | 0.5− | 2004 04 25 | 291 | 0.2− | 0.1+ | | |
| 2001 08 09 | 644 | 0.4− | 0.1+ | 2001 08 23 | 699 | 1.4− | 0.4− | 2004 04 25 | 291 | 0.0 | 0.3+ | | |
| 2001 08 19 | 704 | 1.1− | 0.1+ | 2001 08 23 | 608 | 0.7+ | 0.8+ | 2004 04 25 | 291 | 0.1− | 0.1− | | |
| 2001 08 19 | 704 | 0.2+ | 0.0 | 2001 08 23 | 608 | 0.5+ | 0.9+ | | | | | | |

### 2001 QD$_{333}$ = 2002 XP$_{69}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.30449 | | (2000.0) | | | |
| $n$ | 0.16934003 | $\omega$ | 255.20733 | | +0.85117947 | +0.52266613 |
| $a$ | 3.2356607 | $\Omega$ | 73.26067 | | −0.46017987 | +0.78720061 |
| $e$ | 0.0910120 | $i$ | 2.87910 | | −0.25244406 | +0.32731533 |
| $P$ | 5.82 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.0 | 0.6+ | 2002 12 05 | 704 | 0.1+ | 0.4+ | 2005 04 01 | 691 | 0.0 | 0.1+ | | |
| 2001 08 19 | 807 | 0.2− | 0.5+ | 2002 12 05 | 704 | 0.2− | 0.8+ | 2005 04 11 | G96 | 0.3− | 0.2+ | | |
| 2001 08 25 | 704 | 0.6+ | 0.2− | 2002 12 05 | 704 | 1.1− | 0.4+ | 2005 04 11 | G96 | 0.1+ | 0.1− | | |
| 2001 08 25 | 704 | 0.5+ | 0.3+ | 2002 12 05 | 704 | 1.3+ | 0.1− | 2005 04 11 | G96 | 0.1+ | 0.1− | | |
| 2001 08 25 | 704 | 0.4− | 0.8+ | 2002 12 08 | 049 | 0.4− | 0.6+ | 2005 04 11 | G96 | 0.2+ | 0.1− | | |
| 2001 09 12 | 704 | 1.9− | 0.3− | 2002 12 08 | 049 | 0.5− | 0.8+ | 2005 05 04 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 12 | 704 | 1.4− | 2.3+ | 2002 12 08 | 049 | 0.5− | 0.4+ | 2005 05 04 | 691 | 0.2+ | 0.6+ | | |
| 2001 09 12 | 704 | 1.4+ | 1.5− | 2004 01 22 | 704 | 0.3− | 0.8+ | 2005 05 04 | 691 | 0.2+ | 0.7+ | | |
| 2001 09 12 | 704 | 0.8− | 1.6+ | 2004 01 22 | 704 | 0.2− | 0.1+ | 2005 05 11 | G96 | 0.1− | 0.1− | | |
| 2001 09 21 | 704 | 0.5− | 0.8+ | 2004 01 22 | 704 | 0.1− | 0.2+ | 2005 05 11 | G96 | 0.5+ | 0.1− | | |
| 2001 09 21 | 704 | 1.0+ | 0.7+ | 2004 02 26 | 695 | 0.4+ | 0.1− | 2005 05 11 | G96 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 1.3− | 0.7+ | 2004 02 26 | 695 | 0.5+ | 0.1− | 2005 05 11 | G96 | 0.4− | 0.2+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2005 04 01 | 691 | 0.2+ | 0.1+ | | | | | | |
| 2002 12 05 | 704 | 0.6+ | 0.6+ | 2005 04 01 | 691 | 0.1+ | 0.1+ | | | | | | |

### 2001 QE$_{333}$ = 2005 XY$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 144.96708 | | (2000.0) | | | |
| $n$ | 0.27786262 | $\omega$ | 71.08660 | | +0.99025884 | +0.10495886 |
| $a$ | 2.3258550 | $\Omega$ | 282.80826 | | −0.13373372 | +0.89988989 |
| $e$ | 0.1311964 | $i$ | 5.38388 | | +0.03876500 | +0.42329874 |
| $P$ | 3.55 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 704 | 0.5+ | 0.3+ | 2001 09 16 | 704 | 0.7− | 0.4− | 2005 12 01 | 691 | 0.1− | 0.0 | | |
| 2001 08 17 | 704 | 0.1− | 0.7+ | 2001 09 16 | 704 | 0.1+ | 0.0 | 2005 12 01 | 691 | 0.1− | 0.0 | | |
| 2001 08 17 | 704 | 1.6− | 0.7− | 2001 09 16 | 704 | 0.4− | 0.2+ | 2005 12 01 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 08 | 704 | 0.7+ | 0.5+ | 2001 09 16 | 704 | 0.3+ | 0.1+ | 2005 12 10 | 691 | 0.0 | 0.0 | | |
| 2001 09 08 | 704 | 0.8+ | 1.0+ | 2001 10 15 | 645 | 0.1− | 0.0 | 2005 12 10 | 691 | 0.1− | 0.2− | | |
| 2001 09 08 | 704 | 0.6+ | 0.9+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2005 12 10 | 691 | 0.2+ | 0.0 | | |
| 2001 09 08 | 704 | 0.7+ | 0.1− | 2003 01 28 | 645 | 0.1+ | 0.1+ | | | | | | |
| 2001 09 16 | 704 | 0.5− | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.0 | | | | | | |

### 2001 QF$_{333}$ = 2003 AT$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.70301 | | (2000.0) | | | |
| $n$ | 0.22306936 | $\omega$ | 70.63124 | | +0.83700789 | +0.48929907 |
| $a$ | 2.6926264 | $\Omega$ | 259.39626 | | −0.54685515 | +0.76367288 |
| $e$ | 0.0443615 | $i$ | 14.43096 | | +0.01916357 | +0.42117710 |
| $P$ | 4.42 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.1− | 0.1+ | 2003 01 07 | 704 | 0.3+ | 0.2− | 2006 11 15 | 704 | 0.3− | 1.6+ | | |
| 2001 08 22 | 704 | 0.1+ | 0.8+ | 2003 01 09 | 704 | 1.0− | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.6− | | |
| 2001 08 22 | 704 | 0.3− | 0.5+ | 2003 01 09 | 704 | 0.2− | 0.7+ | 2006 11 15 | 704 | 0.1+ | 0.1− | | |
| 2001 08 22 | 704 | 0.6− | 0.3+ | 2003 01 09 | 704 | 1.4+ | 0.6− | 2006 11 16 | 704 | 0.3+ | 0.2+ | | |
| 2001 08 22 | 704 | 0.7− | 0.7+ | 2003 01 09 | 704 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.8+ | 0.7+ | | |
| 2001 09 09 | 704 | 1.0+ | 0.3+ | 2003 01 09 | 704 | 0.5− | 0.8+ | 2006 11 16 | 704 | 0.7− | 0.6+ | | |
| 2001 09 09 | 704 | 0.2− | 0.3− | 2003 01 09 | 704 | 1.1+ | 1.2− | 2006 11 16 | 704 | 0.5+ | 0.4+ | | |
| 2001 09 09 | 704 | 0.0 | 0.9− | 2003 01 09 | 704 | 0.8− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.3− | | |
| 2001 09 09 | 704 | 0.1− | 0.5+ | 2003 01 09 | 704 | 0.6− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2001 09 23 | 644 | 0.8− | 0.0 | 2003 01 09 | 704 | 1.0− | 0.0 | 2006 11 17 | G96 | 0.3− | 0.3− | | |
| 2001 09 23 | 644 | 0.2− | 0.1− | 2004 04 16 | E12 | 0.4+ | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2001 09 23 | 644 | 0.6− | 0.1− | 2004 04 16 | E12 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.8+ | | |
| 2001 10 17 | 704 | 1.0− | 0.0 | 2004 04 16 | E12 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.4+ | | |
| 2001 10 17 | 704 | 0.9+ | 0.2+ | 2004 04 16 | E12 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.5+ | | |
| 2001 10 17 | 704 | 0.5+ | 0.6+ | 2005 06 21 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.9+ | | |
| 2001 10 17 | 704 | 1.3+ | 0.0 | 2005 06 21 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 1.1− | | |
| 2001 11 17 | 704 | 0.4+ | 1.1− | 2005 06 21 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.4− | 0.9− | | |
| 2001 11 17 | 704 | 1.1+ | 0.2− | 2006 10 19 | 703 | 0.7− | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.6− | | |
| 2001 11 17 | 704 | 0.7− | 0.9− | 2006 10 19 | 703 | 0.5+ | 0.9+ | 2006 11 22 | 704 | 0.1− | 0.7− | | |
| 2003 01 07 | 704 | 1.0+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.7+ | 2006 11 22 | 704 | 1.2− | 0.2− | | |
| 2003 01 07 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.3− | | | | | | |
| 2003 01 07 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 704 | 0.5+ | 1.0− | | | | | | |

### 2001 QG$_{333}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.45757 | | (2000.0) | | | |
| $n$ | 0.23471770 | $\omega$ | 301.47015 | | +0.66899085 | +0.74163645 |
| $a$ | 2.6027882 | $\Omega$ | 10.94787 | | −0.56302983 | +0.54891527 |
| $e$ | 0.2074440 | $i$ | 15.03338 | | −0.48523051 | +0.38557411 |
| $P$ | 4.20 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.3− | 0.1+ | 2005 06 09 | E12 | 0.4− | 0.2+ | 2005 07 27 | E12 | 0.3+ | 0.4− | | |
| 2001 08 19 | 704 | 0.4− | 0.0 | 2005 06 09 | E12 | 0.3− | 0.1+ | 2005 07 27 | E12 | 0.4+ | 0.6− | | |
| 2001 08 19 | 704 | 0.7− | 0.2− | 2005 06 09 | E12 | 0.3− | 0.4− | 2005 08 09 | E12 | 0.4− | 0.3− | | |
| 2001 08 23 | 608 | 1.3− | 0.5+ | 2005 06 09 | E12 | 0.4− | 0.6− | 2005 08 09 | E12 | 0.0 | 0.4+ | | |
| 2001 08 23 | 608 | 0.7− | 0.3+ | 2005 07 03 | E12 | 0.2+ | 0.2− | 2005 08 09 | E12 | 0.9− | 1.1− | | |
| 2001 08 23 | 608 | 0.7− | 0.2+ | 2005 07 03 | E12 | 0.5+ | 0.8+ | 2005 08 25 | E12 | 0.4+ | 0.1− | | |
| 2001 09 17 | 699 | 1.2+ | 1.1− | 2005 07 03 | E12 | 0.4+ | 0.4+ | 2005 08 25 | E12 | 0.2− | 0.4− | | |
| 2001 09 17 | 699 | 1.8+ | 0.1− | 2005 07 03 | E12 | 0.7+ | 1.2+ | 2005 08 25 | E12 | 0.2+ | 0.2+ | | |
| 2001 09 17 | 699 | 0.3+ | 0.6+ | 2005 07 27 | E12 | 0.1+ | 0.0 | 2005 08 25 | E12 | 0.7+ | 0.2− | | |
| 2001 09 17 | 699 | 0.0 | 0.6+ | 2005 07 27 | E12 | 0.8− | 0.0 | | | | | | |

**2001 QH$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.09406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24150615 | $\omega$ | 232.71436 | | +0.51225472 | +0.83188400 | |
| $a$ | 2.5537826 | $\Omega$ | 69.41787 | | −0.69802348 | +0.54807645 | |
| $e$ | 0.3019446 | $i$ | 13.18004 | | −0.50035820 | +0.08707016 | |
| $P$ | 4.08 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.3+ | 0.4+ | 2001 10 15 | 704 | 1.0+ | 0.1+ | 2005 08 27 | E12 | 0.2+ | 0.2+ |
| 2001 08 19 | 704 | 0.2+ | 0.3+ | 2001 10 15 | 704 | 0.2+ | 0.5− | 2005 08 27 | E12 | 0.1− | 0.2+ |
| 2001 08 19 | 704 | 0.3− | 0.0 | 2001 10 15 | 704 | 0.8− | 1.0− | 2005 08 27 | E12 | 0.3+ | 0.2− |
| 2001 08 19 | 704 | 0.1− | 0.9+ | 2001 10 26 | 608 | 0.4− | 1.5+ | 2005 09 14 | E12 | 0.4− | 0.0 |
| 2001 08 19 | 704 | 0.1+ | 0.1− | 2001 10 26 | 608 | 0.5− | 1.7+ | 2005 09 14 | E12 | 0.3+ | 0.4− |
| 2001 09 11 | 704 | 0.3+ | 0.4+ | 2001 10 26 | 608 | 0.6− | 0.9+ | 2005 09 14 | E12 | 0.4+ | 0.3+ |
| 2001 09 11 | 704 | 0.0 | 0.4− | 2001 11 07 | 644 | 0.2+ | 0.4+ | 2005 09 14 | E12 | 0.2+ | 0.0 |
| 2001 09 11 | 704 | 0.3+ | 0.3+ | 2001 11 07 | 644 | 0.3+ | 0.3+ | 2005 09 30 | E12 | 0.3− | 0.4− |
| 2001 09 11 | 704 | 0.3+ | 0.2+ | 2001 11 07 | 644 | 0.1− | 0.2+ | 2005 09 30 | E12 | 0.3+ | 0.2+ |
| 2001 09 29 | 608 | 0.1+ | 1.6− | 2005 08 08 | E12 | 0.3− | 0.4+ | 2005 09 30 | E12 | 0.9− | 0.0 |
| 2001 09 29 | 608 | 0.3+ | 1.3− | 2005 08 08 | E12 | 0.1+ | 0.3+ | 2005 09 30 | E12 | 0.0 | 0.3− |
| 2001 09 29 | 608 | 0.2− | 1.3− | 2005 08 08 | E12 | 0.5+ | 0.3+ | 2005 10 25 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.1+ | 0.6− | 2005 08 08 | E12 | 0.0 | 0.3− | 2005 10 25 | 644 | 0.3− | 0.2− |
| 2001 10 15 | 704 | 0.4− | 0.0 | 2005 08 27 | E12 | 0.5− | 0.1+ | 2005 10 25 | 644 | 0.1+ | 0.3− |

**2001 QJ$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.43349 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18247107 | $\omega$ | 255.90716 | | +0.93965095 | +0.21327798 | |
| $a$ | 3.0785062 | $\Omega$ | 91.25719 | | −0.10129877 | +0.92029419 | |
| $e$ | 0.2483448 | $i$ | 15.52076 | | −0.32679452 | +0.32798035 | |
| $P$ | 5.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.2+ | 0.1− | 2001 08 19 | 704 | 0.8+ | 0.1+ | 2001 09 26 | 699 | 0.5+ | 0.2+ |
| 1996 12 13 | 691 | 0.1+ | 0.5− | 2001 08 19 | 704 | 0.9+ | 0.1+ | 2001 09 26 | 699 | 0.2+ | 0.0 |
| 1996 12 13 | 691 | 0.2+ | 0.7− | 2001 08 19 | 704 | 0.2+ | 0.0 | 2001 10 15 | 704 | 0.0 | 0.2− |
| 2000 05 29 | 691 | 0.0 | 0.5− | 2001 08 19 | 704 | 0.8− | 0.3+ | 2001 10 15 | 704 | 0.2− | 0.0 |
| 2000 05 29 | 691 | 0.3− | 0.4+ | 2001 09 11 | 704 | 0.5− | 0.7+ | 2001 10 15 | 704 | 0.5+ | 0.7− |
| 2000 05 29 | 691 | 0.1− | 0.9− | 2001 09 11 | 704 | 1.0− | 0.1− | 2006 07 20 | E12 | 0.2+ | 0.8− |
| 2001 08 19 | 704 | 0.2− | 0.0 | 2001 09 11 | 704 | 0.3− | 0.2− | 2006 07 20 | E12 | 0.1− | 0.3− |
| 2001 08 19 | 704 | 0.2− | 0.1+ | 2001 09 11 | 704 | 0.7− | 0.4+ | 2006 07 20 | E12 | 0.3− | 0.3− |
| 2001 08 19 | 704 | 0.1+ | 0.3+ | 2001 09 26 | 699 | 0.1− | 0.1− | | | | |
| 2001 08 19 | 704 | 0.1− | 0.6− | 2001 09 26 | 699 | 0.6+ | 0.5+ | | | | |

**2001 QK$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.93416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24155481 | $\omega$ | 303.04806 | | +0.84374523 | +0.52497262 | |
| $a$ | 2.5534396 | $\Omega$ | 25.81970 | | −0.36557729 | +0.71457393 | |
| $e$ | 0.2280521 | $i$ | 14.87298 | | −0.39299775 | +0.46237198 | |
| $P$ | 4.08 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2001 09 23 | 608 | 0.5+ | 0.3+ | 2005 08 08 | E12 | 0.1+ | 0.2− |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2001 09 23 | 608 | 1.0+ | 0.9+ | 2005 08 08 | E12 | 0.2+ | 0.0 |
| 2001 08 20 | 644 | 0.1− | 0.3− | 2001 09 23 | 608 | 0.2+ | 0.4+ | 2005 08 08 | E12 | 0.3+ | 0.2+ |
| 2001 08 20 | 644 | 0.3− | 0.0 | 2001 10 15 | 644 | 0.0 | 0.2− | 2005 08 08 | E12 | 0.1− | 0.3+ |
| 2001 08 20 | 644 | 0.1− | 0.0 | 2001 10 15 | 644 | 0.3− | 0.1− | 2005 08 24 | E12 | 0.3− | 0.1− |
| 2001 09 11 | 704 | 0.6+ | 0.4+ | 2001 10 15 | 644 | 0.5− | 0.0 | 2005 08 24 | E12 | 0.1+ | 0.5+ |
| 2001 09 11 | 704 | 0.1+ | 0.3+ | 2005 07 27 | E12 | 0.3− | 0.0 | 2005 08 24 | E12 | 0.1+ | 0.1+ |
| 2001 09 11 | 704 | 0.1+ | 0.1− | 2005 07 27 | E12 | 0.3+ | 0.2− | 2005 08 24 | E12 | 0.7− | 0.2− |
| 2001 09 11 | 704 | 0.9− | 1.0− | 2005 07 27 | E12 | 0.1+ | 0.7− | | | | |
| 2001 09 11 | 704 | 0.5− | 0.3− | 2005 07 27 | E12 | 0.3+ | 0.3+ | | | | |

**2001 QL$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.10091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17916513 | $\omega$ | 334.32477 | | +0.66690428 | −0.68997571 | |
| $a$ | 3.1162603 | $\Omega$ | 72.41552 | | +0.72438217 | +0.51180751 | |
| $e$ | 0.1203436 | $i$ | 17.16761 | | +0.17466871 | +0.51184626 | |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.0 | 0.0 | 2001 11 20 | 699 | 0.9− | 1.4+ | 2003 01 13 | 704 | 0.4− | 0.7+ |
| 2001 08 20 | 644 | 0.1− | 0.4− | 2001 11 20 | 699 | 0.8+ | 0.5+ | 2003 01 13 | 704 | 0.2− | 0.9+ |
| 2001 08 20 | 644 | 0.3− | 0.0 | 2001 11 20 | 699 | 0.3+ | 1.1+ | 2006 07 28 | E12 | 0.4− | 0.1+ |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2001 11 20 | 699 | 0.8+ | 0.2− | 2006 07 28 | E12 | 0.4− | 1.2+ |
| 2001 09 19 | 645 | 0.1+ | 0.1− | 2001 11 22 | 608 | 0.0 | 0.1+ | 2006 07 28 | E12 | 0.5− | 0.3− |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2001 11 22 | 608 | 0.0 | 0.4+ | 2006 07 28 | E12 | 0.4− | 0.7− |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2001 11 22 | 608 | 0.2+ | 0.9+ | 2006 08 25 | E12 | 0.3+ | 0.3− |
| 2001 10 19 | 608 | 0.6− | 0.4+ | 2001 12 07 | 704 | 0.2− | 0.7+ | 2006 08 25 | E12 | 0.6− | 0.8+ |
| 2001 10 19 | 608 | 0.1− | 0.7+ | 2001 12 07 | 704 | 0.2+ | 0.7+ | 2006 08 25 | E12 | 0.1+ | 0.6+ |
| 2001 10 19 | 608 | 0.3− | 0.8+ | 2001 12 07 | 704 | 0.2− | 1.2+ | 2006 08 25 | E12 | 0.4− | 0.2+ |
| 2001 10 29 | 644 | 0.0 | 0.9+ | 2001 12 07 | 704 | 0.1− | 1.0+ | 2006 09 28 | E12 | 0.2+ | 1.1+ |
| 2001 10 29 | 644 | 0.1− | 1.4+ | 2001 12 07 | 704 | 0.2+ | 0.1− | 2006 09 28 | E12 | 0.5− | 0.8+ |
| 2001 10 29 | 644 | 0.2− | 1.1+ | 2003 01 13 | 704 | 0.6+ | 0.6+ | 2006 09 28 | E12 | 0.3− | 0.7+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2003 01 13 | 704 | 0.3+ | 0.4+ | 2006 09 28 | E12 | 0.3+ | 1.5+ |
| 2001 11 12 | 645 | 0.0 | 0.2− | 2003 01 13 | 704 | 0.1+ | 0.5+ | | | | |

**2001 QM$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.51595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23872885 | $\omega$ | 31.79587 | | +0.13418831 | −0.97257207 | |
| $a$ | 2.5735510 | $\Omega$ | 51.20810 | | +0.85042697 | +0.01460277 | |
| $e$ | 0.1438193 | $i$ | 14.10851 | | +0.50869192 | +0.23214289 | |
| $P$ | 4.13 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 21 | 809 | 1.6+ | 0.0 | 2001 10 23 | 644 | 0.6+ | 0.8− | 2003 03 03 | 644 | 0.2− | 0.0 |
| 1993 10 21 | 809 | 0.6− | 1.4+ | 2001 10 23 | 644 | 0.9+ | 0.2− | 2003 03 03 | 644 | 0.4− | 0.0 |
| 1993 10 21 | 809 | 1.7− | 0.3− | 2003 01 19 | 644 | 0.6− | 0.1− | 2003 03 03 | 644 | 0.2− | 0.1+ |
| 2001 08 20 | 608 | 0.2− | 0.1+ | 2003 01 19 | 644 | 0.5− | 0.2− | 2003 03 09 | 644 | 0.1+ | 0.2− |
| 2001 08 20 | 608 | 0.1− | 0.5− | 2003 01 19 | 644 | 0.4− | 0.4− | 2003 03 09 | 644 | 0.3+ | 0.3− |
| 2001 08 20 | 608 | 0.1− | 0.3+ | 2003 02 01 | 644 | 0.4− | 0.4+ | 2003 03 09 | 644 | 0.1+ | 0.3− |
| 2001 09 11 | 704 | 0.1+ | 0.4+ | 2003 02 01 | 644 | 0.4− | 0.3+ | 2003 04 05 | 704 | 0.2+ | 0.1− |
| 2001 09 11 | 704 | 0.4− | 0.2+ | 2003 02 01 | 644 | 0.3+ | 0.5+ | 2003 04 05 | 704 | 0.6+ | 0.7− |
| 2001 09 11 | 704 | 0.3− | 0.4− | 2003 02 19 | 644 | 0.3+ | 0.1− | 2003 04 05 | 704 | 0.5+ | 0.5+ |
| 2001 09 11 | 704 | 0.0 | 0.5− | 2003 02 19 | 644 | 0.2+ | 0.1− | 2003 04 05 | 704 | 0.4+ | 0.1+ |
| 2001 10 23 | 644 | 0.6+ | 0.5− | 2003 02 19 | 644 | 0.0 | 0.1− | | | | |

**2001 QN$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.44872 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22476268 | $\omega$ | 331.60086 | | +0.45839597 | −0.85155664 | |
| $a$ | 2.6790855 | $\Omega$ | 90.10194 | | +0.85594902 | +0.34595535 | |
| $e$ | 0.2403486 | $i$ | 14.73865 | | +0.23921622 | +0.39391139 | |
| $P$ | 4.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 608 | 0.7− | 0.7+ | 2001 10 15 | 704 | 0.8+ | 0.4− | 2003 04 01 | 699 | (1.6− | 0.6+) |
| 2001 08 20 | 608 | 0.8− | 0.7+ | 2001 10 15 | 704 | 1.2+ | 0.1− | 2004 06 22 | 691 | 0.3− | 0.0 |
| 2001 08 20 | 608 | 0.7− | 0.2+ | 2001 10 15 | 704 | 0.2+ | 0.4− | 2004 06 22 | 691 | 0.1+ | 0.3+ |
| 2001 09 11 | 704 | 1.0− | 0.5+ | 2001 11 07 | 644 | 0.3+ | 0.0 | 2004 06 22 | 691 | 0.1+ | 0.2− |
| 2001 09 11 | 704 | 1.0− | 0.4+ | 2001 11 07 | 644 | 0.2− | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2001 09 11 | 704 | 0.7− | 0.8+ | 2001 11 07 | 644 | 0.4+ | 0.6+ | 2006 10 03 | G96 | 0.3+ | 0.3+ |
| 2001 09 11 | 704 | 0.3− | 0.0 | 2003 03 09 | 644 | 0.6+ | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2001 09 11 | 704 | 0.5− | 0.2+ | 2003 03 09 | 644 | 0.7+ | 1.2+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2001 09 25 | 699 | 0.6+ | 0.3− | 2003 03 09 | 644 | 0.3+ | 1.2+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2001 09 25 | 699 | 0.3+ | 0.0 | 2003 04 01 | 699 | 0.5− | 0.7+ | 2006 10 23 | G96 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 699 | 0.1− | 0.3− | 2003 04 01 | 699 | 0.8+ | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2001 09 25 | 699 | 0.2+ | 0.1− | 2003 04 01 | 699 | (0.5+ | 2.1+) | 2006 10 23 | G96 | 0.3− | 0.1+ |

**2001 QO$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.65557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26746168 | $\omega$ | 166.55330 | | +0.21569089 | −0.96615897 | |
| $a$ | 2.3857687 | $\Omega$ | 270.85335 | | +0.88228987 | +0.25490998 | |
| $e$ | 0.1764961 | $i$ | 8.13394 | | +0.41838025 | −0.03946842 | |
| $P$ | 3.69 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 21 | 691 | 2.5− | 0.9− | 2001 11 18 | 645 | 0.0 | 0.0 | 2005 10 29 | 703 | 0.4− | 0.3+ |
| 1998 11 21 | 691 | 0.9+ | 0.2− | 2001 11 18 | 645 | 0.0 | 0.1− | 2005 11 03 | 704 | 0.1− | 0.8+ |
| 1998 11 21 | 691 | 1.2+ | 0.0 | 2005 10 10 | 703 | 0.4+ | 0.8+ | 2005 11 03 | 704 | 0.5− | 0.6− |
| 2001 08 25 | 704 | 0.1− | 0.8− | 2005 10 10 | 703 | 1.0− | 0.6− | 2005 11 03 | 704 | 0.4− | 0.1+ |
| 2001 08 25 | 704 | 0.4+ | 0.4− | 2005 10 10 | 703 | 0.1+ | 0.6+ | 2005 11 25 | 703 | 0.1− | 0.6+ |
| 2001 08 25 | 704 | 0.1+ | 0.1− | 2005 10 10 | 703 | 0.2+ | 0.3+ | 2005 11 25 | 703 | 0.6− | 1.1+ |
| 2001 08 25 | 704 | 0.5− | 0.4+ | 2005 10 29 | 703 | 0.5+ | 0.7+ | 2005 11 25 | 703 | 0.3+ | 0.8+ |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2005 10 29 | 703 | 0.2− | 0.7+ | 2005 11 25 | 703 | 0.8+ | 0.1− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 10 29 | 703 | 0.7− | 0.5+ | | | | |

**2001 QP$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.35353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17430967 | $\omega$ | 62.64895 | | +0.51563126 | −0.85621831 | |
| $a$ | 3.1738646 | $\Omega$ | 355.86932 | | +0.54240808 | +0.35497567 | |
| $e$ | 0.2439453 | $i$ | 26.24496 | | +0.66326305 | +0.37534316 | |
| $P$ | 5.65 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 809 | 0.6+ | 0.5− | 2001 10 25 | 704 | 0.3− | 0.6+ | 2003 03 23 | 644 | 0.5+ | 0.6+ |
| 2001 08 25 | 704 | 0.0 | 0.1+ | 2001 11 11 | 704 | 1.6− | 1.3− | 2003 03 23 | 644 | 0.5+ | 0.5+ |
| 2001 08 25 | 704 | 0.2− | 0.1+ | 2001 11 11 | 704 | 0.5+ | 1.2− | 2003 03 23 | 644 | 0.4+ | 0.6+ |
| 2001 08 25 | 704 | 0.4− | 0.8− | 2001 11 11 | 704 | 1.9+ | 1.5− | 2006 07 29 | E12 | 0.0 | 1.0+ |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2001 11 12 | 699 | 0.3+ | 0.1+ | 2006 07 29 | E12 | 0.0 | 0.1+ |
| 2001 09 19 | 644 | 0.4+ | 0.4− | 2001 11 12 | 699 | 0.4− | 0.2+ | 2006 07 29 | E12 | 1.2− | 0.9+ |
| 2001 09 19 | 644 | 0.5+ | 0.4− | 2001 11 12 | 699 | 0.1+ | 0.3− | 2006 07 29 | E12 | 0.2− | 0.1+ |
| 2001 09 19 | 644 | 0.4+ | 0.6− | 2001 11 12 | 699 | 0.2− | 0.2− | 2006 08 14 | E12 | 0.6− | 0.3+ |
| 2001 10 20 | 699 | 0.1− | 0.2+ | 2001 12 22 | 704 | 0.2+ | 1.8+ | 2006 08 14 | E12 | 1.6− | 0.9+ |
| 2001 10 20 | 699 | 0.6− | 0.1− | 2001 12 22 | 704 | 0.4+ | 1.5+ | 2006 08 14 | E12 | 0.1− | 0.1− |
| 2001 10 20 | 699 | 0.1− | 0.2+ | 2001 12 22 | 704 | 0.0 | 1.7+ | 2006 08 14 | E12 | 0.4− | 0.0 |
| 2001 10 20 | 699 | 0.2+ | 0.2+ | 2003 03 04 | 621 | 0.1− | 0.5+ | 2006 08 25 | E12 | 0.2− | 0.1− |
| 2001 10 25 | 704 | 0.5− | 0.3+ | 2003 03 04 | 621 | 0.5+ | 0.6+ | 2006 08 25 | E12 | 0.4+ | 0.9+ |
| 2001 10 25 | 704 | 0.5− | 0.3+ | 2003 03 04 | 621 | 0.3+ | 0.1+ | 2006 08 25 | E12 | 0.1− | 0.1+ |
| 2001 10 25 | 704 | 0.8− | 0.7+ | 2003 03 04 | 621 | 0.6+ | 0.3+ | 2006 08 25 | E12 | 0.0 | 0.0 |
| 2001 10 25 | 704 | 0.5− | 0.5+ | 2003 03 04 | 621 | 1.0+ | 0.6+ | | | | |

**2001 QQ$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.42764 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23993285 | $\omega$ | 182.66234 | | −0.25668854 | −0.95039922 | |
| $a$ | 2.5649343 | $\Omega$ | 282.25515 | | +0.89002906 | −0.16159600 | |
| $e$ | 0.1129736 | $i$ | 10.35487 | | +0.37677481 | −0.26575940 | |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 327 | 0.4+ | 0.1− | 2003 02 04 | 291 | 0.1+ | 0.4+ | 2005 10 03 | 683 | (2.5− | 1.8−) |
| 1997 11 23 | 327 | 0.1− | 0.3− | 2003 02 04 | 291 | 0.2+ | 0.5+ | 2005 10 03 | 683 | 0.7+ | 0.3+ |
| 1997 11 23 | 327 | 0.4+ | 0.9− | 2003 02 04 | 291 | 0.1+ | 0.5+ | 2005 10 05 | 683 | 1.0+ | 0.2+ |
| 2001 08 26 | 699 | 0.4− | 0.3+ | 2003 02 12 | 608 | 0.1+ | 0.3− | 2005 10 05 | 683 | (1.6+ | 0.5+) |
| 2001 08 26 | 699 | 0.1− | 0.5+ | 2003 02 12 | 608 | 0.2+ | 0.0 | 2005 10 05 | 683 | (1.0+ | 2.7+) |
| 2001 08 26 | 699 | 0.1+ | 0.2− | 2003 02 12 | 608 | 0.1− | 0.0 | 2005 10 06 | 703 | 0.3+ | 0.2+ |
| 2001 08 26 | 699 | 0.6− | 0.3− | 2005 09 12 | 704 | 1.1+ | 0.2+ | 2005 10 06 | 683 | 0.3− | 0.6− |
| 2001 09 29 | 644 | 0.8+ | 0.5+ | 2005 09 12 | 704 | 0.1− | 0.7+ | 2005 10 06 | 703 | 0.6− | 0.7+ |
| 2001 09 29 | 644 | 0.9+ | 0.6+ | 2005 09 12 | 704 | 0.7+ | 0.9+ | 2005 10 06 | 703 | 0.4+ | 0.3− |
| 2001 09 29 | 644 | 0.7+ | 0.5+ | 2005 09 12 | 704 | 0.4− | 0.5+ | 2005 10 06 | 683 | 1.0− | 1.4+ |
| 2001 10 12 | 608 | 0.3− | 0.8− | 2005 09 26 | 703 | 0.4− | 0.4+ | 2005 10 06 | 703 | 0.0 | 0.4− |
| 2001 10 12 | 608 | 0.8− | 0.8− | 2005 09 26 | 703 | 0.7+ | 0.3+ | 2006 10 27 | G96 | 0.5− | 0.5− |
| 2001 10 12 | 608 | 0.8− | 0.5− | 2005 09 26 | 703 | 0.8− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2001 10 26 | 644 | 0.6− | 0.5+ | 2005 09 26 | 703 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.6− | 0.7− |
| 2001 10 26 | 644 | 0.2− | 0.6+ | 2005 09 26 | 703 | 0.2− | 0.0 | 2006 10 27 | G96 | 1.0− | 0.3− |
| 2001 10 26 | 644 | 0.4− | 0.2+ | 2005 09 26 | 703 | 0.4− | 0.5− | 2006 11 22 | G96 | 0.6− | 0.3− |
| 2003 01 25 | 644 | 0.8+ | 0.1− | 2005 09 26 | 703 | 1.2− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2003 01 25 | 644 | 0.0 | 0.3− | 2005 09 26 | 703 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2003 01 25 | 644 | 0.5+ | 0.1− | 2005 10 03 | 683 | (0.0 | 1.6−) | 2006 11 22 | G96 | 0.3− | 0.2− |

**2001 QR$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.90931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23655478 | $\omega$ | 285.49244 | | +0.78606833 | −0.57663766 | |
| $a$ | 2.5892952 | $\Omega$ | 110.22565 | | +0.61785918 | +0.72210881 | |
| $e$ | 0.1932150 | $i$ | 13.72790 | | +0.01861788 | +0.38216210 | |
| $P$ | 4.17 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.2− | 0.4+ | 2001 12 14 | 699 | 0.9+ | 1.0− | 2005 11 06 | 703 | 0.8+ | 1.3− |
| 2001 08 26 | 644 | 0.0 | 0.2+ | 2001 12 14 | 699 | 0.6− | 1.1+ | 2005 11 06 | 703 | 0.3+ | 0.4− |
| 2001 08 26 | 644 | 0.2− | 0.1− | 2001 12 14 | 699 | 0.4+ | 0.0 | 2005 11 06 | 699 | 0.2− | 0.1+ |
| 2001 09 22 | 699 | 0.1− | 0.2+ | 2005 09 15 | 703 | 0.4+ | 0.8− | 2005 11 06 | 699 | 0.4− | 0.3− |
| 2001 09 22 | 699 | 0.2+ | 0.2+ | 2005 09 15 | 703 | 0.8− | 0.4− | 2005 11 06 | 699 | 0.3+ | 0.2− |
| 2001 09 22 | 699 | 0.2+ | 0.2+ | 2005 09 15 | 703 | 0.2+ | 0.9− | 2005 11 17 | 644 | 0.2− | 0.2+ |
| 2001 09 22 | 699 | 0.3+ | 0.1− | 2005 09 15 | 703 | 0.0 | 0.1− | 2005 11 17 | 644 | 0.1+ | 0.1+ |
| 2001 10 11 | 704 | 1.7− | 0.2− | 2005 09 27 | 704 | 0.1+ | 0.4+ | 2005 11 17 | 644 | 0.4− | 0.3− |
| 2001 10 11 | 704 | 0.2− | 1.3+ | 2005 09 27 | 704 | 0.1+ | 0.6+ | 2005 12 01 | 703 | 0.9− | 0.6+ |
| 2001 10 11 | 704 | 0.2− | 0.4+ | 2005 09 27 | 644 | 0.0 | 0.4+ | 2005 12 01 | 703 | 0.6− | 0.5− |
| 2001 10 11 | 704 | 0.6− | 0.1− | 2005 09 27 | 704 | 0.1− | 0.8+ | 2005 12 01 | 703 | 0.5+ | 0.6+ |
| 2001 12 07 | 704 | 0.1+ | 0.6− | 2005 09 27 | 644 | 0.1+ | 0.4+ | 2005 12 01 | 703 | 0.9− | 0.5+ |
| 2001 12 07 | 704 | 0.3+ | 0.0 | 2005 09 27 | 704 | 0.1+ | 0.3− | 2005 12 07 | 703 | (0.3− | 3.2−) |
| 2001 12 07 | 704 | 0.0 | 0.3+ | 2005 09 27 | 644 | 0.3− | 0.3+ | 2005 12 07 | 703 | 1.8+ | 1.0+ |
| 2001 12 07 | 704 | 0.2+ | 0.2+ | 2005 11 06 | 699 | 0.5− | 0.8+ | 2005 12 07 | 703 | 0.9+ | 0.9− |
| 2001 12 07 | 704 | 0.2+ | 0.1− | 2005 11 06 | 703 | 0.1+ | 0.2+ | 2005 12 07 | 703 | 0.1− | 0.7+ |
| 2001 12 14 | 699 | 0.1+ | 0.1+ | 2005 11 06 | 703 | 0.7+ | 0.8− | | | | |

**2001 QS$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.62033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18288744 | $\omega$ | 344.12854 | | +0.78571040 | +0.61018164 | |
| $a$ | 3.0738320 | $\Omega$ | 337.31363 | | −0.53500439 | +0.58778744 | |
| $e$ | 0.0793918 | $i$ | 15.28480 | | −0.31053094 | +0.53121021 | |
| $P$ | 5.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.0 | 1.1+ | 2001 10 15 | 644 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.7− |
| 2001 08 27 | 644 | 0.5+ | 1.3+ | 2001 10 15 | 644 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.6− | 0.4− |
| 2001 08 27 | 644 | 0.1− | 0.4+ | 2001 10 15 | 644 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.4+ |
| 2001 09 18 | 645 | 0.1+ | 0.1− | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.3+ |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.6+ |
| 2001 09 26 | 704 | 0.8− | 0.4+ | 2004 02 16 | 691 | 0.6+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.5+ |
| 2001 09 26 | 704 | 0.9− | 0.5+ | 2006 08 13 | 644 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.6+ |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2006 08 13 | 644 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.4+ |
| 2001 09 26 | 704 | 0.3+ | 0.1− | 2006 08 13 | 644 | 0.2− | 0.6+ | | | | |

**2001 QT$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.33951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28063765 | $\omega$ | 172.36545 | | +0.76842929 | +0.63337258 | |
| $a$ | 2.3104971 | $\Omega$ | 147.75386 | | −0.59581075 | +0.76023088 | |
| $e$ | 0.1633874 | $i$ | 9.86456 | | −0.23350798 | +0.14452743 | |
| $P$ | 3.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2001 09 25 | 704 | 0.7+ | 1.1+ | 2002 01 14 | 645 | 0.0 | 0.1− |
| 2000 02 12 | 645 | 0.1+ | 0.1− | 2001 09 25 | 704 | 0.5+ | 1.1+ | 2002 01 14 | 645 | 0.1− | 0.0 |
| 2001 08 27 | 644 | 0.1− | 0.2+ | 2001 10 15 | 644 | 0.0 | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.1+ |
| 2001 08 27 | 644 | 0.0 | 0.7+ | 2001 10 15 | 644 | 0.1− | 0.6+ | 2003 01 28 | 645 | 0.0 | 0.1+ |
| 2001 08 27 | 644 | 0.1− | 0.6+ | 2001 10 15 | 644 | 0.0 | 0.4+ | 2004 07 16 | 704 | 0.2− | 0.4+ |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2001 10 23 | 644 | 0.4− | 0.5+ | 2004 07 16 | 704 | 0.3+ | 0.2+ |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2001 10 23 | 644 | 0.3− | 0.5+ | 2004 07 16 | 704 | 0.2+ | 0.7+ |
| 2001 09 25 | 704 | (2.3+ | 1.5−) | 2001 10 23 | 644 | 0.4− | 0.5+ | 2004 07 16 | 704 | 0.2− | 1.0+ |

**2001 QU$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.84176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19260580 | $\omega$ | 81.46171 | | +0.72939622 | −0.67743931 | |
| $a$ | 2.9695443 | $\Omega$ | 321.09833 | | +0.55278148 | +0.66561439 | |
| $e$ | 0.0800582 | $i$ | 8.71656 | | +0.40300594 | +0.31310297 | |
| $P$ | 5.12 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.7− | 0.7+ | 2002 01 08 | 704 | 0.2− | 0.1+ | 2003 03 30 | 645 | 0.1− | 0.0 |
| 2001 08 27 | 644 | 0.1− | 0.5+ | 2002 01 08 | 704 | 0.9− | 0.7− | 2005 07 11 | 691 | 0.1− | 0.5+ |
| 2001 08 27 | 644 | 0.0 | 0.2+ | 2002 01 08 | 704 | 0.9− | 0.1− | 2005 07 11 | 691 | 0.3− | 0.2+ |
| 2001 10 19 | 704 | 0.0 | 0.2− | 2002 01 08 | 704 | 0.0 | 0.4− | 2005 07 11 | 691 | 0.1− | 0.5+ |
| 2001 10 19 | 704 | 0.0 | 0.6+ | 2002 01 08 | 704 | 1.4+ | 1.1− | 2006 10 19 | 703 | 0.2+ | 0.5+ |
| 2001 10 19 | 704 | 0.5− | 1.5+ | 2003 01 05 | 291 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.2− | 2003 01 05 | 291 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.2+ |
| 2001 11 11 | 704 | 0.2− | 0.4+ | 2003 01 05 | 291 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.8− | 0.5− |
| 2001 11 11 | 704 | 0.0 | 0.7+ | 2003 02 24 | 608 | 1.4+ | 1.4+ | 2006 11 15 | 703 | (0.4− | 2.2+) |
| 2001 11 11 | 704 | 0.7− | 0.7+ | 2003 02 24 | 608 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.8+ | 0.7+ | 2003 02 24 | 608 | 0.8+ | 1.1+ | 2006 11 15 | 703 | 0.3− | 0.3+ |
| 2001 12 09 | 704 | 1.3+ | 0.1− | 2003 03 06 | 644 | 1.2+ | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.9+ | 0.4+ | 2003 03 06 | 644 | 0.6+ | 0.2− | 2006 11 22 | 703 | 0.2+ | 0.4− |
| 2001 12 09 | 704 | 0.3+ | 1.1+ | 2003 03 06 | 644 | 1.1+ | 0.2+ | 2006 11 22 | 703 | 0.1− | 0.3− |
| 2001 12 18 | 699 | 1.4− | 1.1− | 2003 03 12 | 644 | 0.3+ | 0.1− | 2006 11 22 | 703 | 0.3− | 0.7− |
| 2001 12 18 | 699 | 0.6+ | 0.3+ | 2003 03 12 | 644 | 0.7+ | 0.5+ | 2006 11 22 | 703 | 1.4+ | 0.6− |
| 2001 12 18 | 699 | 0.6− | 0.4+ | 2003 03 12 | 644 | 0.5+ | 0.7+ | | | | |
| 2001 12 18 | 699 | 0.4− | 0.2+ | 2003 03 30 | 645 | 0.1− | 0.1− | | | | |

**2001 QW$_{333}$ = 5038 P-L**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.78990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28768076 | $\omega$ | 12.13093 | | +0.92125435 | −0.38727099 | |
| $a$ | 2.2726305 | $\Omega$ | 10.86736 | | +0.33888023 | +0.75344903 | |
| $e$ | 0.2256737 | $i$ | 11.07485 | | +0.19092045 | +0.53135274 | |
| $P$ | 3.43 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 10 22 | 675 | 0.1− | 0.1+ | 2001 08 26 | 608 | 0.1+ | 0.2− | 2001 10 10 | 644 | 0.4− | 0.0 |
| 1960 10 25 | 675 | 0.2+ | 0.4− | 2001 08 26 | 608 | 0.7+ | 0.2− | 2001 10 10 | 644 | 0.6− | 0.1− |
| 1960 10 26 | 675 | 0.4+ | 0.3− | 2001 08 26 | 608 | 0.2+ | 0.6− | 2001 10 10 | 644 | 0.8− | 0.0 |
| 2001 08 19 | 704 | (3.2+ | 0.2+) | 2001 09 11 | 704 | 1.5− | 0.7+ | 2001 10 23 | 704 | 0.6+ | 0.6+ |
| 2001 08 19 | 704 | 1.5+ | 0.7− | 2001 09 11 | 704 | 0.7− | 0.6− | 2001 10 23 | 704 | 0.6+ | 0.3− |
| 2001 08 19 | 704 | 1.5+ | 1.5+ | 2001 09 11 | 704 | 1.9− | 0.4+ | 2001 10 23 | 704 | 0.2+ | 0.2− |
| 2001 08 19 | 704 | 0.6+ | 0.2− | 2001 09 11 | 704 | (2.1− | 0.4+) | 2001 10 23 | 704 | 0.1− | 0.7+ |

**2001 QY$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.47264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18179260 | $\omega$ | 284.92570 | | +0.89077064 | −0.44421606 | |
| $a$ | 3.0861610 | $\Omega$ | 101.52503 | | +0.44544593 | +0.81163556 | |
| $e$ | 0.1798619 | $i$ | 5.61763 | | +0.09003105 | +0.37936764 | |
| $P$ | 5.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.3− | 0.0 | 2001 09 25 | 704 | 0.7+ | 1.5− | 2001 10 24 | 644 | 0.1− | 0.6+ |
| 2001 08 26 | 644 | 0.5− | 0.2− | 2001 09 25 | 704 | 1.7+ | 1.1− | 2002 12 31 | 645 | 0.0 | 0.1− |
| 2001 08 26 | 644 | 0.2− | 0.2+ | 2001 09 25 | 704 | 0.0 | 0.5− | 2002 12 31 | 645 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.3− | 1.1+ | 2001 10 16 | 644 | 0.4− | 0.3− | 2003 01 05 | 291 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.9− | 0.6+ | 2001 10 16 | 644 | 0.0 | 0.2− | 2003 01 05 | 291 | 0.1− | 0.7+ |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2001 10 16 | 644 | 0.3− | 0.2+ | 2003 01 05 | 291 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.6− | 1.5+ | 2001 10 24 | 644 | 0.2− | 0.4+ | | | | |
| 2001 09 25 | 704 | 1.7+ | 1.5− | 2001 10 24 | 644 | 0.5− | 0.5+ | | | | |

**2001 RX**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.37611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22386421 | $\omega$ | 195.23361 | | +0.91728171 | −0.39786639 | |
| $a$ | 2.6862490 | $\Omega$ | 188.27359 | | +0.37674499 | +0.88097721 | |
| $e$ | 0.3063362 | $i$ | 6.87369 | | +0.12906383 | +0.25608884 | |
| $P$ | 4.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 0.1+ | 1.1− | 2001 09 18 | 699 | 0.1− | 0.1− | 2001 10 20 | 704 | 0.2+ | 0.0 |
| 1999 04 17 | 691 | 0.4− | 0.7− | 2001 09 18 | 699 | 0.2+ | 0.2− | 2001 10 20 | 704 | 0.3+ | 0.1+ |
| 1999 04 17 | 691 | 0.4− | 0.5− | 2001 09 18 | 699 | 0.1+ | 0.0 | 2001 10 20 | 704 | 0.1− | 0.2− |
| 2001 07 22 | 699 | 0.2− | 0.6+ | 2001 09 20 | 704 | 0.3+ | 0.3− | 2001 10 20 | 704 | 0.1+ | 0.6− |
| 2001 07 22 | 699 | 0.1+ | 0.2+ | 2001 09 20 | 704 | 0.3+ | 0.2− | 2001 10 20 | 704 | 0.1+ | 0.7− |
| 2001 07 22 | 699 | 0.1+ | 0.6+ | 2001 09 20 | 704 | 0.1+ | 0.2− | 2001 10 23 | 704 | 0.1+ | 0.1− |
| 2001 07 22 | 699 | 0.6− | 0.5+ | 2001 09 20 | 704 | 0.4+ | 0.4− | 2001 10 23 | 704 | 0.5+ | 0.3− |
| 2001 08 24 | 699 | 0.0 | 0.2+ | 2001 09 20 | 704 | 0.1+ | 0.3− | 2001 10 23 | 704 | 0.2− | 0.4− |
| 2001 08 24 | 699 | 0.1− | 0.3+ | 2001 09 22 | 704 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.2− | 0.1+ |
| 2001 08 24 | 704 | 0.0 | 0.0 | 2001 09 22 | 704 | 0.4+ | 0.5+ | 2001 10 24 | 704 | 0.0 | 0.5− |
| 2001 08 24 | 704 | 0.6+ | 0.2− | 2001 09 22 | 704 | 1.9− | 1.5+ | 2001 10 24 | 704 | 0.7+ | 0.2− |
| 2001 08 24 | 699 | 0.4− | 0.4+ | 2001 09 22 | 704 | 0.3+ | 0.3+ | 2001 10 24 | 704 | 0.6+ | 0.9− |
| 2001 08 24 | 704 | 0.3+ | 0.5+ | 2001 09 23 | 704 | 0.1+ | 0.2+ | 2001 10 24 | 704 | 0.7+ | 0.6− |
| 2001 08 24 | 699 | 0.1+ | 0.1+ | 2001 09 23 | 704 | 0.0 | 0.2− | 2001 11 09 | 704 | 1.7− | 0.8+ |
| 2001 08 24 | 704 | 0.7− | 1.1− | 2001 09 23 | 704 | 0.1+ | 0.0 | 2001 11 09 | 704 | 1.5− | 0.0 |
| 2001 09 07 | 683 | 0.6+ | 0.3− | 2001 09 23 | 704 | 0.2+ | 0.4+ | 2001 11 09 | 704 | (2.2− | 0.4+) |
| 2001 09 07 | 683 | 0.4− | 0.1+ | 2001 09 23 | 704 | 0.3+ | 0.3− | 2001 11 09 | 704 | 1.5− | 1.5+ |
| 2001 09 07 | 683 | 0.3− | 0.6− | 2001 09 26 | 699 | 0.7+ | 0.2− | 2001 11 17 | 608 | 0.3+ | 0.3+ |
| 2001 09 08 | 683 | 0.4− | 1.7+ | 2001 09 26 | 699 | 0.6+ | 0.2+ | 2001 11 17 | 608 | 0.6+ | 0.4+ |
| 2001 09 08 | 683 | 0.0 | 1.5− | 2001 09 26 | 699 | 0.8+ | 0.1+ | 2001 11 17 | 608 | 0.6+ | 0.4+ |
| 2001 09 08 | 683 | 1.3− | 0.2− | 2001 09 26 | 699 | 0.4+ | 0.0 | 2001 11 18 | 704 | 0.1− | 0.7+ |
| 2001 09 09 | 644 | 0.4− | 0.0 | 2001 10 05 | 644 | 0.6+ | 0.0 | 2001 11 18 | 704 | 0.0 | 1.2+ |
| 2001 09 09 | 644 | 0.4− | 0.1+ | 2001 10 05 | 644 | 0.3+ | 0.1− | 2001 11 18 | 704 | 0.1+ | 0.2+ |
| 2001 09 09 | 683 | (0.4− | 2.4+) | 2001 10 05 | 644 | 0.2+ | 0.2− | 2001 11 18 | 704 | 0.6+ | 1.1+ |
| 2001 09 09 | 683 | 0.7− | 0.3+ | 2001 10 06 | 704 | 0.0 | 0.1− | 2001 11 18 | 704 | 0.6+ | 0.9+ |
| 2001 09 09 | 644 | 0.3− | 0.2+ | 2001 10 06 | 704 | 0.6+ | 0.2+ | 2001 11 20 | 704 | 0.4+ | 0.2− |
| 2001 09 09 | 683 | 1.7+ | 0.3+ | 2001 10 06 | 704 | 0.5+ | 0.5− | 2001 11 20 | 704 | 0.3− | 0.6+ |
| 2001 09 09 | 704 | 0.2− | 0.9− | 2001 10 06 | 704 | 0.0 | 0.8− | 2001 11 20 | 704 | 0.4− | 1.0− |
| 2001 09 09 | 704 | 0.4− | 0.6− | 2001 10 13 | 704 | 0.4− | 0.4+ | 2001 11 20 | 704 | 0.5+ | 0.3− |
| 2001 09 09 | 704 | 0.4− | 1.7− | 2001 10 13 | 704 | 0.2+ | 0.5− | 2001 11 20 | 704 | 0.6+ | 0.5− |
| 2001 09 10 | 333 | 0.4− | 1.9− | 2001 10 13 | 704 | 0.3− | 0.5− | 2001 11 22 | 608 | 0.1− | 0.3− |
| 2001 09 10 | 683 | 0.2− | 1.5+ | 2001 10 13 | 704 | 0.2+ | 0.6− | 2001 11 22 | 608 | 0.7− | 0.1− |
| 2001 09 10 | 333 | 0.6+ | 1.0− | 2001 10 13 | 704 | 0.6− | 0.6− | 2001 11 22 | 608 | 0.1− | 0.0 |
| 2001 09 10 | 683 | 0.7− | 0.1+ | 2001 10 16 | 704 | 0.6− | 0.0 | 2001 12 07 | 704 | 0.3− | 0.9+ |
| 2001 09 10 | 683 | 0.4+ | 0.6− | 2001 10 16 | 704 | 0.2− | 0.2− | 2001 12 07 | 704 | 0.2+ | 0.7+ |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2001 10 16 | 704 | 0.7− | 0.2+ | 2001 12 07 | 704 | 0.6− | 1.3+ |
| 2001 09 16 | 704 | 0.1+ | 0.2+ | 2001 10 16 | 704 | 0.3− | 0.7− | 2001 12 07 | 704 | 0.6+ | 0.4+ |
| 2001 09 16 | 704 | 0.0 | 0.0 | 2001 10 16 | 704 | 0.3− | 0.7− | 2001 12 07 | 704 | 0.3− | 0.5+ |
| 2001 09 16 | 704 | 0.0 | 0.3+ | 2001 10 17 | 644 | 0.1+ | 0.4+ | 2004 05 21 | 691 | 0.3+ | 0.5+ |
| 2001 09 16 | 704 | 0.2− | 0.0 | 2001 10 17 | 644 | 0.0 | 0.4+ | 2004 05 21 | 691 | 0.1+ | 0.3+ |
| 2001 09 18 | 699 | 0.8+ | 0.0 | 2001 10 17 | 644 | 0.1− | 0.3+ | 2004 05 21 | 691 | 0.1− | 0.5+ |

**2001 RL$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.66549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21384587 | $\omega$ | 328.99270 | | +0.74243410 | +0.66975397 | |
| $a$ | 2.7695049 | $\Omega$ | 348.92109 | | −0.59768792 | +0.65219247 | |
| $e$ | 0.1481847 | $i$ | 4.43935 | | −0.30259009 | +0.35506985 | |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.1+ | 1.0− | 2001 09 16 | 704 | (2.9+ | 0.6−) | 2006 10 17 | 691 | 0.3− | 0.1− |
| 2001 08 23 | 699 | 1.0− | 0.2+ | 2001 09 16 | 704 | (2.4+ | 0.8−) | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 08 23 | 699 | 0.2− | 0.4+ | 2001 09 16 | 704 | (2.0+ | 1.2−) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 08 23 | 699 | 0.6+ | 0.9+ | 2001 09 16 | 704 | (1.8+ | 0.8−) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 09 06 | 644 | 0.6− | 0.1− | 2001 09 16 | 704 | 1.2+ | 0.8− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 09 06 | 644 | 0.3− | 0.4+ | 2001 09 16 | 704 | (2.2+ | 0.5−) | 2006 10 21 | 691 | 0.5− | 0.3− |
| 2001 09 06 | 644 | 0.4− | 0.5+ | 2001 09 16 | 704 | 1.5+ | 0.9− | 2006 10 21 | 691 | 0.2+ | 0.2+ |
| 2001 09 07 | 704 | 0.7+ | 1.0+ | 2001 09 16 | 704 | (2.3+ | 1.0−) | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 09 07 | 704 | 0.4− | 0.1− | 2001 09 19 | 699 | 1.4+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 09 07 | 704 | 0.0 | 0.3+ | 2001 09 19 | 704 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 09 07 | 704 | 0.3− | 1.4+ | 2001 09 19 | 699 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 09 07 | 704 | 0.1− | 0.5− | 2001 09 19 | 704 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.1− |
| 2001 09 08 | 704 | 0.1+ | 0.2− | 2001 09 19 | 699 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 2001 09 08 | 704 | 0.4+ | 0.6− | 2001 09 19 | 704 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2001 09 08 | 704 | 0.1− | 0.7− | 2001 09 19 | 704 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2001 09 08 | 704 | 0.2− | 0.0 | 2001 09 19 | 699 | 0.2+ | 0.7− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 09 08 | 704 | 0.4− | 0.1+ | 2001 09 19 | 704 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2001 09 10 | 704 | 0.2− | 0.0 | 2001 09 21 | 704 | (1.6+ | 0.2−) | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2001 09 10 | 704 | 0.5+ | 0.3− | 2001 09 21 | 704 | (1.7+ | 0.9−) | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 09 10 | 704 | 0.3− | 0.2+ | 2001 09 21 | 704 | 1.1+ | 0.6+ | 2006 11 09 | 644 | 0.6− | 1.1− |
| 2001 09 10 | 704 | 0.1+ | 0.9− | 2001 09 21 | 704 | 0.6+ | 0.2− | 2006 11 09 | 644 | 0.6− | 0.2+ |
| 2001 09 10 | 704 | 0.2− | 1.3− | 2001 09 21 | 704 | 1.4+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 09 11 | 704 | 0.7− | 0.2− | 2001 09 26 | 699 | 0.8+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2001 09 11 | 704 | 0.2− | 0.0 | 2001 09 26 | 699 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2001 09 11 | 704 | 0.6− | 0.2− | 2001 09 26 | 699 | (0.4+ | 2.1−) | 2006 11 09 | 644 | 0.7− | 0.2+ |
| 2001 09 11 | 704 | 0.1− | 0.3+ | 2001 09 26 | 699 | (0.6+ | 2.0+) | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2001 09 11 | 704 | 1.0− | 0.5− | 2001 10 11 | 644 | 0.6− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.3+ | 0.3− | 2001 10 11 | 644 | 0.8− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.5− | 0.1+ | 2001 10 11 | 644 | 0.6− | 0.3− | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2001 09 12 | 704 | 0.6− | 0.2+ | 2001 10 17 | 644 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.4− |
| 2001 09 12 | 704 | 0.4− | 0.0 | 2001 10 17 | 644 | 0.5+ | 0.0 | 2006 11 25 | G96 | 0.3− | 0.5− |
| 2001 09 16 | 644 | 0.2− | 0.2+ | 2001 10 17 | 644 | 0.4+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2001 09 16 | 644 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2001 09 16 | 644 | 0.3− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.3− | | | | |

**2001 RD$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.49143 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21397742 | $\omega$ | 108.72524 | | +0.92170841 | −0.01012936 | |
| $a$ | 2.7683696 | $\Omega$ | 253.36324 | | −0.09773897 | +0.96133721 | |
| $e$ | 0.1705347 | $i$ | 23.87183 | | +0.37536741 | +0.27518751 | |
| $P$ | 4.61 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 24 | 644 | 1.3− | 0.5+ | 2001 09 24 | 704 | 0.7+ | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 07 24 | 644 | 1.2− | 0.8+ | 2001 09 24 | 704 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2001 07 24 | 644 | 0.6− | 0.5+ | 2001 10 15 | 704 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2001 09 08 | 704 | (0.3− | 1.6−) | 2001 10 15 | 704 | 1.0− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2001 09 08 | 704 | 0.6− | 1.3− | 2001 10 15 | 704 | 0.5+ | 1.0+ | 2006 11 22 | 704 | 0.8+ | 0.4+ |
| 2001 09 08 | 704 | 0.9+ | 1.4− | 2001 10 15 | 704 | 0.1+ | 0.9+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2001 09 08 | 704 | 0.1− | 0.6− | 2001 10 15 | 704 | 0.1− | 1.4+ | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2001 09 11 | 704 | 0.1+ | 0.1− | 2006 10 29 | 703 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2001 09 11 | 704 | 0.2− | 0.0 | 2006 10 29 | 703 | 0.6+ | 0.3− | 2006 11 27 | 704 | 0.4+ | 0.8+ |
| 2001 09 11 | 704 | 0.3+ | 0.1+ | 2006 10 29 | 703 | 0.5− | 0.0 | 2006 11 27 | 704 | 0.1+ | 1.7+ |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2006 10 29 | 703 | 1.2− | 0.7− | 2006 11 27 | 704 | 0.4+ | 0.3+ |
| 2001 09 12 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 704 | (2.2− | 0.4+) | 2006 11 28 | 704 | 0.6+ | 0.2+ |
| 2001 09 12 | 704 | 0.5+ | 0.0 | 2006 11 15 | 704 | 0.7+ | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.7− |
| 2001 09 12 | 704 | 0.5+ | 0.1+ | 2006 11 15 | 704 | (0.1− | 2.5−) | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2001 09 24 | 704 | 0.8+ | 0.0 | 2006 11 15 | 704 | 1.3− | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2001 09 24 | 704 | 0.6+ | 1.0− | 2006 11 15 | 704 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.3− |
| 2001 09 24 | 704 | 0.8− | 0.3− | 2006 11 21 | G96 | 0.2− | 0.4− | | | | |

**2001 RW$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.17013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22056417 | $\omega$ | 113.86545 | | +0.88214504 | +0.36805347 | |
| $a$ | 2.7129768 | $\Omega$ | 226.09287 | | −0.41219624 | +0.90517866 | |
| $e$ | 0.1898250 | $i$ | 24.07191 | | +0.22784730 | +0.21257524 | |
| $P$ | 4.47 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 644 | 0.6+ | 0.4+ | 2001 09 12 | 704 | 0.5− | 0.0 | 2006 11 02 | 703 | 0.2+ | 0.5+ |
| 2001 07 25 | 644 | 0.6+ | 0.7+ | 2001 09 12 | 704 | 0.4− | 0.5− | 2006 11 02 | 703 | 0.9+ | 0.2− |
| 2001 07 25 | 644 | 0.7+ | 0.8+ | 2001 09 22 | 699 | 0.0 | 0.0 | 2006 11 02 | 703 | 1.5− | 0.6− |
| 2001 08 11 | 644 | 0.4+ | 0.4− | 2001 09 22 | 699 | 0.4− | 0.7− | 2006 11 02 | 703 | 0.2− | 0.5+ |
| 2001 08 11 | 644 | 0.1+ | 0.6− | 2001 09 22 | 699 | 0.0 | 0.5− | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2001 08 11 | 644 | 0.1+ | 0.2− | 2001 09 22 | 699 | 0.9+ | 0.1− | 2006 11 15 | 703 | 0.5− | 0.7− |
| 2001 08 24 | 644 | 0.0 | 0.0 | 2001 10 17 | 704 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2001 08 24 | 644 | 0.5− | 0.2− | 2001 10 17 | 704 | 0.8− | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.1− |
| 2001 08 24 | 644 | 0.1+ | 0.1+ | 2001 10 17 | 704 | 0.5− | 0.9+ | 2006 11 19 | 703 | 0.2+ | 0.4+ |
| 2001 09 10 | 704 | 0.0 | 0.1− | 2005 07 29 | 644 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.4− | 0.5+ |
| 2001 09 10 | 704 | 0.7+ | 0.9− | 2005 07 29 | 644 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.0 | 1.3+ |
| 2001 09 10 | 704 | 0.8− | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.1− | 1.4+ |
| 2001 09 10 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2001 09 11 | 704 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2001 09 11 | 704 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.7+ | 0.4− |
| 2001 09 11 | 704 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.2− |
| 2001 09 11 | 704 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2001 09 11 | 704 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.6+ | 0.6− |
| 2001 09 12 | 704 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.2− | | | | |

**2001 RX$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.43143 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19979398 | $\omega$ | 299.00410 | | +0.59335599 | +0.80492453 | |
| $a$ | 2.8978848 | $\Omega$ | 7.39751 | | −0.72429890 | +0.53662083 | |
| $e$ | 0.0976806 | $i$ | 2.23333 | | −0.35116916 | +0.25324809 | |
| $P$ | 4.93 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.3− | 0.8+ | 2001 09 19 | 704 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.8+ |
| 2001 08 24 | 704 | 0.0 | 0.8+ | 2001 09 19 | 704 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.2− |
| 2001 08 24 | 704 | 0.2− | 0.1− | 2001 09 19 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | (2.2− | 0.1+) |
| 2001 08 24 | 704 | 0.5+ | 0.2− | 2001 09 19 | 644 | 0.4− | 0.6+ | 2006 09 27 | 704 | 0.1− | 0.3− |
| 2001 08 24 | 704 | (1.8+ | 0.5+) | 2001 09 19 | 644 | 0.2− | 0.8+ | 2006 09 27 | 704 | 0.2+ | 0.3+ |
| 2001 09 11 | 918 | (1.7− | 0.0 ) | 2001 09 19 | 644 | 0.2− | 0.6+ | 2006 09 27 | 704 | 0.4+ | 0.1+ |
| 2001 09 11 | 918 | 1.0− | 1.0− | 2001 09 21 | 704 | 0.2+ | 0.4− | 2006 09 27 | 704 | 0.4+ | 0.2+ |
| 2001 09 11 | 918 | 0.5− | 0.7− | 2001 09 21 | 704 | 0.7− | 0.3− | 2006 10 09 | 644 | 0.5− | 0.5+ |
| 2001 09 11 | 918 | 0.2+ | 0.6+ | 2001 09 21 | 704 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.5− | 0.1+ |
| 2001 09 12 | 918 | 0.4+ | 1.3− | 2001 09 21 | 704 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.3+ |
| 2001 09 12 | 918 | 0.5− | 1.1− | 2001 09 21 | 291 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2001 09 12 | 918 | 1.3− | 1.0− | 2001 09 21 | 704 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2001 09 12 | 918 | 0.1+ | 1.4− | 2001 09 21 | 291 | 0.6+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2001 09 21 | 291 | 0.4+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 0.5+ | 0.9+ | 2001 09 25 | 918 | 1.1+ | 0.4− | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.6+ | 1.1+ | 2001 09 25 | 918 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2001 09 12 | 704 | 0.2− | 1.0+ | 2001 09 25 | 918 | 1.1− | 1.2− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2001 09 19 | 918 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 11 21 | G96 | 0.7+ | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.9+ | 2006 11 21 | G96 | 0.5+ | 0.1+ |
| 2001 09 19 | 918 | 0.8− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2001 09 19 | 918 | 1.1− | 0.5− | 2006 09 20 | 704 | 0.9− | 0.1− | 2006 11 21 | G96 | 0.5− | 0.2+ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.9− |
| 2001 09 19 | 918 | 0.5+ | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.1+ |

**2001 RC$_{15}$ = 2006 UE$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.04301 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21305879 | $\omega$ | 91.94721 | | +0.91271628 | +0.39111781 | |
| $a$ | 2.7763215 | $\Omega$ | 245.04509 | | −0.40713676 | +0.84614862 | |
| $e$ | 0.1644767 | $i$ | 7.49230 | | −0.03447694 | +0.36202124 | |
| $P$ | 4.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.4− | 0.9+ | 2001 09 11 | 704 | 1.0+ | 0.1− | 2006 10 30 | 408 | 0.5− | 0.2+ | |
| 2001 08 16 | 644 | 0.5− | 0.5+ | 2001 09 11 | 704 | 0.3+ | 1.1− | 2006 10 30 | 408 | 0.2+ | 0.0 | |
| 2001 08 16 | 644 | 0.8− | 0.5+ | 2001 09 11 | 704 | 0.0 | 1.5− | 2006 10 31 | 408 | 0.8− | 0.6+ | |
| 2001 08 25 | 704 | 0.2− | 0.2+ | 2001 09 12 | 704 | 0.4+ | 0.8− | 2006 10 31 | 408 | (2.0− | 0.6+) | |
| 2001 08 25 | 704 | 1.4− | 0.1+ | 2001 09 12 | 704 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.3− | |
| 2001 08 25 | 704 | 0.4− | 0.5− | 2001 09 12 | 704 | 0.2− | 0.6− | 2006 11 01 | G96 | 0.2+ | 0.5− | |
| 2001 08 25 | 704 | 0.1+ | 0.1− | 2001 09 12 | 704 | 0.3+ | 0.6− | 2006 11 01 | G96 | 0.2+ | 0.4− | |
| 2001 09 10 | 704 | 1.2+ | 1.1+ | 2001 09 16 | 704 | 0.2− | 1.3+ | 2006 11 01 | G96 | 0.2+ | 0.4− | |
| 2001 09 10 | 704 | 0.5+ | 1.1+ | 2001 09 16 | 704 | 0.8− | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.1+ | |
| 2001 09 10 | 704 | 1.4+ | 0.5− | 2001 09 16 | 704 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.0 | |
| 2001 09 10 | 704 | 1.2+ | 0.3− | 2001 09 16 | 704 | 0.6− | 1.1+ | 2006 11 17 | G96 | 0.3− | 0.0 | |
| 2001 09 10 | 704 | 1.5+ | 0.0 | 2001 09 25 | 704 | 0.2− | 0.6− | 2006 11 17 | G96 | 0.1+ | 0.1+ | |
| 2001 09 11 | 699 | 0.7− | 0.7− | 2001 09 25 | 704 | 1.0− | 1.2− | 2006 11 17 | G96 | 0.1+ | 0.2+ | |
| 2001 09 11 | 699 | 0.2− | 0.6− | 2001 09 25 | 704 | 0.5− | 0.8+ | 2006 11 17 | G96 | 0.2+ | 0.3+ | |
| 2001 09 11 | 699 | 0.8+ | 0.1+ | 2001 09 25 | 704 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2+ | |
| 2001 09 11 | 699 | 0.7− | 0.3+ | 2006 10 27 | 408 | (1.0+ | 1.6+) | 2006 11 17 | G96 | 0.1+ | 0.2+ | |
| 2001 09 11 | 704 | 0.7+ | 0.2+ | 2006 10 27 | 408 | (1.0+ | 1.8+) | | | | | |

**2001 RM$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.49486 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21406890 | $\omega$ | 179.15969 | | +0.71793749 | −0.68056675 | |
| $a$ | 2.7675810 | $\Omega$ | 224.93737 | | +0.63745209 | +0.72718789 | |
| $e$ | 0.1696551 | $i$ | 11.95142 | | +0.27967944 | +0.08959164 | |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.7+ | 0.0 | 2002 02 07 | 695 | 0.7+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.2+ | |
| 2001 09 10 | 704 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.5− | 2006 11 11 | 691 | 0.3− | 0.1+ | |
| 2001 09 10 | 704 | 0.3+ | 0.5− | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 16 | 691 | 0.0 | 0.0 | |
| 2001 09 10 | 704 | 0.3+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.1+ | |
| 2001 09 11 | 704 | 1.1− | 0.3− | 2006 09 27 | G96 | 0.3− | 0.5− | 2006 11 16 | 691 | 0.2− | 0.1+ | |
| 2001 09 11 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.0 | 1.0+ | |
| 2001 09 11 | 704 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.7+ | |
| 2001 09 11 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.3− | 0.0 | |
| 2001 09 12 | 704 | 0.7+ | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.6− | 2006 11 17 | 704 | 0.4− | 0.4− | |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2006 10 19 | G96 | (1.0− | 1.6−) | 2006 11 17 | 704 | 0.2− | 0.8+ | |
| 2001 09 12 | 704 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.1+ | 1.3+ | 2006 11 20 | 704 | 0.6+ | 1.1+ | |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.9+ | 0.9− | |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.3+ | 1.0− | |
| 2001 09 25 | 704 | (0.1− | 1.5+) | 2006 10 21 | G96 | 0.2+ | 0.7− | 2006 11 20 | 704 | 1.4+ | 0.1+ | |
| 2001 09 25 | 704 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.1− | 0.2− | |
| 2001 09 25 | 704 | 0.9+ | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.1− | |
| 2001 10 17 | 704 | (1.6− | 0.7−) | 2006 11 02 | 703 | 0.8− | 0.5− | 2006 11 28 | 704 | 0.5− | 0.0 | |
| 2001 10 17 | 704 | 1.3− | 0.3+ | 2006 11 02 | 703 | 0.4− | 0.2+ | 2006 11 28 | 704 | 0.8+ | 0.1− | |
| 2001 10 17 | 704 | 0.4− | 0.2− | 2006 11 02 | 703 | 0.4+ | 0.5− | 2006 11 28 | 704 | 0.6+ | 0.4+ | |
| 2001 10 17 | 704 | (0.4+ | 2.1+) | 2006 11 02 | 703 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.6− | |
| 2002 02 07 | 695 | 0.4− | 0.5− | 2006 11 11 | 691 | 0.2− | 0.0 | | | | | |

**2001 RM$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.12562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19644908 | $\omega$ | 9.34411 | | +0.93822473 | −0.34597279 | |
| $a$ | 2.9306866 | $\Omega$ | 10.90300 | | +0.31535471 | +0.84767415 | |
| $e$ | 0.1197715 | $i$ | 1.84744 | | +0.14242809 | +0.40218324 | |
| $P$ | 5.02 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.0 | 0.2+ | 2001 10 14 | 704 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.4− | 0.1− | |
| 2001 08 27 | 699 | (2.2+ | 0.0 ) | 2001 10 14 | 704 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.3− | |
| 2001 08 27 | 644 | 0.1− | 0.0 | 2001 10 14 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.4− | 0.3− | |
| 2001 08 27 | 699 | 0.8− | 0.9+ | 2001 10 14 | 704 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.2− | |
| 2001 08 27 | 644 | 0.1+ | 0.2+ | 2001 10 14 | 645 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.2− | 0.4− | |
| 2001 08 27 | 699 | 0.5+ | 0.0 | 2001 10 14 | 645 | 0.0 | 0.3− | 2006 09 26 | 704 | (1.8− | 0.9+) | |
| 2001 08 27 | 699 | 0.8+ | 0.3+ | 2001 10 15 | 704 | 0.3− | 0.7+ | 2006 09 26 | 704 | (2.0− | 1.1+) | |
| 2001 09 09 | 644 | 0.5− | 0.3− | 2001 10 15 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 704 | (3.3− | 0.2+) | |
| 2001 09 09 | 644 | 0.6− | 0.3− | 2001 10 15 | 704 | 0.4+ | 0.0 | 2006 09 26 | 704 | (2.5− | 3.8+) | |
| 2001 09 09 | 644 | 0.5− | 0.1− | 2001 10 15 | 704 | 0.5+ | 0.4− | 2006 09 27 | 704 | 0.6− | 0.3+ | |
| 2001 09 11 | 699 | 0.8+ | 0.7+ | 2001 10 15 | 645 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.2− | 0.3− | |
| 2001 09 11 | 333 | 0.3+ | 0.3− | 2001 10 15 | 645 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.2− | 0.2− | |
| 2001 09 11 | 699 | 1.0+ | 0.5+ | 2001 10 17 | 644 | 0.2+ | 0.9+ | 2006 09 27 | 704 | 0.4− | 0.2+ | |
| 2001 09 11 | 699 | 0.9+ | 0.6+ | 2001 10 17 | 644 | 0.1− | 0.9+ | 2006 09 27 | 704 | 0.8− | 0.4− | |
| 2001 09 11 | 333 | 0.7+ | 0.1+ | 2001 10 17 | 644 | 0.1+ | 0.9+ | 2006 09 28 | 691 | 0.0 | 0.1− | |
| 2001 09 11 | 699 | 0.4+ | 0.8+ | 2001 10 18 | 644 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.4− | 0.1− | |
| 2001 09 12 | 333 | 0.0 | 0.0 | 2001 10 18 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.3− | 0.4+ | |
| 2001 09 12 | 333 | 0.3+ | 0.0 | 2001 10 18 | 644 | 0.1+ | 0.1− | 2006 09 28 | 704 | 1.1− | 1.2+ | |
| 2001 09 16 | 644 | 0.3+ | 0.2+ | 2001 10 20 | 704 | 0.3− | 0.4+ | 2006 09 28 | 704 | 1.0− | 0.6+ | |
| 2001 09 16 | 644 | 0.4+ | 0.2− | 2001 10 20 | 704 | 0.4− | 0.4+ | 2006 09 28 | 704 | (1.9− | 0.3+) | |
| 2001 09 16 | 644 | 0.3+ | 0.4− | 2001 10 20 | 704 | 0.2− | 0.6+ | 2006 09 29 | 704 | 0.9− | 0.0 | |
| 2001 09 16 | 704 | 0.6− | 0.8+ | 2001 10 20 | 704 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.1− | 0.3+ | |
| 2001 09 16 | 704 | 1.3− | 0.2+ | 2001 10 20 | 704 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.4− | |
| 2001 09 16 | 704 | 1.0− | 0.0 | 2001 10 24 | 704 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.2+ | 0.5+ | |
| 2001 09 16 | 704 | 0.9− | 0.0 | 2001 10 24 | 704 | 0.2− | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.4+ | |
| 2001 09 19 | 704 | 0.5− | 1.3+ | 2001 10 24 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 1.1− | 1.2+ | |
| 2001 09 19 | 704 | 1.0− | 1.1+ | 2001 10 24 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | (1.5+ | 1.7−) | |
| 2001 09 19 | 704 | 0.3− | 1.4+ | 2001 10 24 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.6+ | 0.1+ | |
| 2001 09 19 | 704 | (2.6− | 0.5+) | 2001 12 10 | 645 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.9+ | 0.7+ | |
| 2001 09 19 | 704 | 0.8− | 1.1+ | 2001 12 10 | 645 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.7+ | 0.2+ | |
| 2001 09 21 | 704 | (3.1− | 1.2+) | 2002 12 31 | 704 | 0.7+ | 0.9+ | 2006 10 01 | 704 | 0.7+ | 0.6+ | |
| 2001 09 21 | 704 | (2.7− | 1.4+) | 2002 12 31 | 704 | (0.1+ | 1.6+) | 2006 10 01 | 704 | 0.1+ | 0.3+ | |
| 2001 09 21 | 704 | (2.8− | 1.7+) | 2002 12 31 | 704 | 0.4− | 1.0+ | 2006 10 11 | 291 | 0.3+ | 0.5+ | |
| 2001 09 21 | 704 | (2.4− | 1.7+) | 2002 12 31 | 704 | 0.3+ | 0.9+ | 2006 10 11 | 291 | 0.6+ | 0.4+ | |
| 2001 09 21 | 704 | (2.4− | 1.6+) | 2003 01 09 | 704 | 0.4+ | 0.7+ | 2006 10 11 | 291 | 0.6+ | 0.3+ | |
| 2001 09 21 | 691 | 0.6+ | 0.1− | 2003 01 09 | 704 | 0.7+ | 0.8− | 2006 10 16 | G96 | 0.1+ | 0.2− | |
| 2001 09 21 | 691 | 0.6+ | 0.2− | 2003 01 09 | 704 | (1.7+ | 0.4+) | 2006 10 16 | G96 | 0.5− | 0.3− | |
| 2001 09 21 | 691 | 0.4+ | 0.2− | 2003 02 01 | 704 | 0.8− | 0.5+ | 2006 10 16 | G96 | 0.4− | 0.2− | |
| 2001 09 23 | 704 | 0.4+ | 0.3+ | 2003 02 01 | 704 | 0.3+ | 1.1+ | 2006 10 16 | G96 | 0.4− | 0.1− | |
| 2001 09 23 | 704 | 0.3− | 0.6+ | 2003 02 01 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.3+ | |
| 2001 09 23 | 704 | 1.2− | 1.2+ | 2003 02 01 | 704 | (0.0 | 2.3+) | 2006 10 17 | 703 | 0.2− | 0.0 | |
| 2001 09 23 | 704 | 0.0 | 0.3+ | 2004 03 31 | 291 | 0.2+ | 1.1+ | 2006 10 17 | 703 | 0.5+ | 0.1+ | |
| 2001 09 23 | 704 | 0.7− | 1.5+ | 2004 03 31 | 291 | 0.4+ | 0.9+ | 2006 10 17 | 703 | 0.1− | 0.2+ | |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2004 03 31 | 291 | 0.2+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.0 | |
| 2001 09 23 | 704 | 0.1+ | 0.6+ | 2004 04 14 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.5− | 0.2+ | |
| 2001 09 23 | 704 | 0.1+ | 0.1− | 2004 04 14 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.2+ | |
| 2001 09 23 | 704 | 0.1+ | 0.4+ | 2004 04 14 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.2+ | |
| 2001 09 23 | 704 | 0.2+ | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.2+ | |
| 2001 09 26 | 704 | 0.7− | 1.3+ | 2006 08 17 | 644 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2− | |
| 2001 09 26 | 704 | 0.7− | 0.4+ | 2006 08 17 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3− | |
| 2001 09 26 | 704 | 0.0 | 1.1+ | 2006 09 12 | 703 | (0.4+ | 2.0+) | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2001 09 26 | 704 | 0.8− | 1.2+ | 2006 09 12 | 703 | 0.8− | 1.4+ | 2006 10 21 | 644 | 0.3− | 0.1− | |
| 2001 09 26 | 704 | 0.1− | 0.7+ | 2006 09 12 | 703 | 0.2+ | 0.9+ | 2006 10 27 | G96 | 0.0 | 0.0 | |
| 2001 09 26 | 704 | 0.3− | 1.4+ | 2006 09 12 | 703 | (0.3− | 1.7+) | 2006 10 27 | G96 | 0.0 | 0.4− | |
| 2001 09 26 | 704 | 0.5− | 0.9+ | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.5− | |
| 2001 09 26 | 704 | 0.7− | 1.2+ | 2006 09 16 | 691 | 1.3+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.4− | |
| 2001 09 26 | 704 | 0.7− | 0.6+ | 2006 09 16 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.2− | |
| 2001 09 26 | 704 | 1.1− | 1.3+ | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.6− | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.9− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2001 10 11 | 644 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 10 11 | 644 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 10 13 | 704 | 0.9+ | 1.1− | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2001 10 13 | 704 | (1.6− | 1.0+) | 2006 09 18 | 699 | 0.8− | 0.9− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 10 13 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 1.1+ | 1.4+ | 2006 11 21 | G96 | 0.8− | 0.0 |
| 2001 10 13 | 704 | 0.6+ | 1.1+ | 2006 09 20 | 644 | 0.5− | 0.1− | | | | |
| 2001 10 13 | 704 | 0.4+ | 1.2+ | 2006 09 20 | 644 | 0.1− | 0.2− | | | | |

### 2001 RQ$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.47386 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21829077 | $\omega$ | 224.81277 | | +0.86092659 | | −0.50494511 |
| $a$ | 2.7317805 | $\Omega$ | 165.15770 | | +0.50756972 | | +0.84436021 |
| $e$ | 0.2111247 | $i$ | 13.99161 | | +0.03432768 | | +0.17912640 |
| $P$ | 4.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 608 | 0.5+ | 0.8− | 2001 09 20 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.2− |
| 2001 08 12 | 608 | 0.3− | 0.5− | 2001 09 20 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 1.4+ | 0.2+ |
| 2001 08 12 | 608 | 0.2− | 1.1− | 2001 09 20 | 704 | 0.7+ | 0.5− | 2006 09 30 | 703 | 0.0 | 0.6+ |
| 2001 08 23 | 699 | 0.6− | 0.4+ | 2001 09 20 | 704 | 0.5+ | 0.4− | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 2001 08 23 | 699 | 0.4+ | 0.1+ | 2001 09 20 | 704 | 0.2− | 0.8− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 08 23 | 699 | 0.1+ | 0.4+ | 2001 09 22 | 704 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2001 08 23 | 699 | 0.2+ | 0.2+ | 2001 09 22 | 704 | 0.9− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2001 09 07 | 704 | 0.2− | 0.0 | 2001 09 22 | 704 | 0.9− | 0.9+ | 2006 10 28 | G96 | 0.5− | 0.3+ |
| 2001 09 07 | 704 | 0.4− | 0.7+ | 2001 09 22 | 704 | 0.4+ | 0.8+ | 2006 11 02 | F84 | 0.3− | 0.2+ |
| 2001 09 07 | 704 | 0.7− | 0.7− | 2001 09 22 | 704 | 0.3− | 0.0 | 2006 11 02 | F84 | 0.9− | 0.1− |
| 2001 09 07 | 704 | 0.3− | 0.4+ | 2001 09 23 | 704 | 1.0+ | 0.1− | 2006 11 10 | 704 | 1.2+ | 1.0− |
| 2001 09 07 | 704 | 0.9− | 0.1− | 2001 09 23 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 704 | 1.0− | 0.5− |
| 2001 09 12 | 704 | 0.2+ | 0.1+ | 2001 09 23 | 704 | 1.0+ | 0.7− | 2006 11 10 | 704 | 0.6+ | 0.9− |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2001 10 23 | 704 | 0.2+ | 0.4− | 2006 11 10 | 704 | 0.7+ | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2001 10 23 | 704 | 0.4+ | 0.7− | 2006 11 22 | 704 | 0.6+ | 0.3− |
| 2001 09 12 | 704 | 0.2− | 0.4+ | 2001 10 23 | 704 | 0.9− | 0.3+ | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2001 09 12 | 704 | 0.3+ | 0.3− | 2003 02 02 | 704 | 0.0 | 0.9+ | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 1.2+ | 2003 02 02 | 704 | 1.0+ | 0.3− | 2006 11 22 | 704 | 1.1− | 0.8+ |
| 2001 09 19 | 704 | 0.3+ | 0.6+ | 2003 02 02 | 704 | 1.0− | 0.4− | | | | |
| 2001 09 19 | 704 | (2.0+ | 1.1+) | 2003 02 02 | 704 | 0.1+ | 0.2+ | | | | |

### 2001 RS$_{18}$ = 2006 SE$_{207}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.90160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21109648 | $\omega$ | 350.63162 | | +0.71469561 | | +0.69818129 |
| $a$ | 2.7935003 | $\Omega$ | 324.96626 | | −0.63690449 | | +0.62489238 |
| $e$ | 0.2350875 | $i$ | 4.18266 | | −0.28907242 | | +0.34935998 |
| $P$ | 4.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.5+ | 0.3+ | 2001 09 19 | 645 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.8− | 0.8+ |
| 2001 08 16 | 704 | 0.1− | 0.7+ | 2001 09 20 | 704 | 0.2+ | 1.0+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 08 16 | 704 | 0.5− | 0.3+ | 2001 09 20 | 704 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.7+ | 1.2+ |
| 2001 08 16 | 704 | 0.1+ | 0.0 | 2001 09 20 | 704 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2001 08 23 | 699 | 0.2− | 0.8+ | 2001 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.2− |
| 2001 08 23 | 699 | 0.9− | 0.2− | 2001 09 20 | 704 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2001 08 23 | 699 | 0.2+ | 0.6+ | 2001 09 22 | 704 | 0.0 | 0.7+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2001 08 23 | 699 | 0.6− | 0.5− | 2001 09 22 | 704 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.8+ |
| 2001 08 23 | 691 | 0.1+ | 0.0 | 2001 09 22 | 704 | 0.5− | 1.2+ | 2006 10 21 | 703 | (1.7− | 1.0+) |
| 2001 08 23 | 691 | 0.1+ | 0.2− | 2001 09 22 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 703 | 0.8− | 0.8− |
| 2001 08 23 | 691 | 0.0 | 0.0 | 2001 09 22 | 704 | 0.2− | 0.8+ | 2006 10 21 | 703 | 0.5− | 0.4+ |
| 2001 09 07 | 704 | 0.6− | 0.4− | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 09 07 | 704 | 0.8− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 09 07 | 704 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 09 07 | 704 | (1.4− | 1.5−) | 2006 09 28 | 691 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2001 09 12 | 704 | 0.5+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2001 09 12 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.4+ | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.3− | 0.7− | 2006 10 02 | 691 | 0.0 | 0.1− | | | | |
| 2001 09 19 | 645 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.0 | 0.0 | | | | |

### 2001 RV$_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.95729 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21699545 | $\omega$ | 27.23122 | | +0.86911956 | | +0.49374872 |
| $a$ | 2.7426410 | $\Omega$ | 303.15199 | | −0.45986845 | | +0.78507604 |
| $e$ | 0.1829837 | $i$ | 1.98784 | | −0.18207745 | | +0.37398905 |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.4+ | 0.8− | 2001 09 20 | 704 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.4− | 0.4− |
| 2001 08 01 | 644 | 0.3+ | 0.8− | 2001 09 20 | 704 | 0.5+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 08 01 | 644 | 0.4+ | 0.9− | 2001 09 22 | 704 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2001 08 16 | 704 | 0.5+ | 1.2+ | 2001 09 22 | 704 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2001 08 16 | 704 | 0.7− | 0.0 | 2001 09 22 | 704 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 08 16 | 704 | 0.7− | 1.1+ | 2001 09 22 | 704 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.4+ | 0.1− |
| 2001 09 07 | 704 | 0.3+ | 0.0 | 2001 09 22 | 704 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2001 09 07 | 704 | 0.4+ | 0.2− | 2001 09 23 | 704 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 09 07 | 704 | (1.7+ | 0.0 ) | 2001 09 23 | 704 | 0.7− | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2001 09 07 | 704 | 1.0+ | 0.1+ | 2001 09 23 | 704 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 09 12 | 704 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.5− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2001 09 12 | 704 | 0.8− | 0.7− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.6− |
| 2001 09 20 | 704 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.5− | | | | |

### 2001 RY$_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.15995 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23321235 | $\omega$ | 75.74288 | | +0.23865071 | | +0.97044560 |
| $a$ | 2.6139766 | $\Omega$ | 208.14182 | | −0.91766988 | | +0.21330750 |
| $e$ | 0.1701967 | $i$ | 4.35232 | | −0.31769142 | | +0.11285058 |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 0.4+ | 0.7+ | 2001 09 12 | 704 | 0.4− | 0.5+ | 2004 02 18 | 691 | 0.1− | 0.3+ |
| 2001 07 20 | 699 | 0.6+ | 0.6− | 2001 09 20 | 704 | 0.2− | 1.4+ | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 2001 07 20 | 699 | 0.3+ | 0.2+ | 2001 09 20 | 704 | 0.7− | 1.1+ | 2006 10 12 | 691 | 0.3− | 0.1+ |
| 2001 07 20 | 699 | 0.7+ | 0.6+ | 2001 09 20 | 704 | 0.5+ | 0.6+ | 2006 10 12 | 691 | 0.3− | 0.1+ |
| 2001 08 14 | 608 | 0.4+ | 0.8− | 2001 09 22 | 704 | 0.8− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2001 08 14 | 608 | 0.1+ | 0.6− | 2001 09 22 | 704 | 0.4− | 0.8+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2001 08 14 | 608 | 0.0 | 0.1− | 2001 09 22 | 704 | 0.3− | 0.7− | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2001 09 08 | 704 | 0.3− | 0.8+ | 2001 09 23 | 704 | 0.6− | 0.0 | 2006 11 17 | 703 | 1.2− | 0.2− |
| 2001 09 08 | 704 | 0.1− | 0.6+ | 2001 09 23 | 704 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.7− | 1.2− |
| 2001 09 08 | 704 | 0.4− | 0.2+ | 2001 09 23 | 704 | 1.2+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.8− |
| 2001 09 08 | 704 | 0.1− | 0.7− | 2001 09 23 | 704 | 0.2− | 0.7− | 2006 11 17 | 703 | 1.3+ | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2004 02 18 | 691 | 0.2+ | 0.3+ | | | | |
| 2001 09 12 | 704 | 0.8− | 0.4+ | 2004 02 18 | 691 | 0.3+ | 0.4+ | | | | |

### 2001 RT$_{38}$ = 2006 WH$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.23912 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21442953 | $\omega$ | 192.99357 | | +0.98145936 | | −0.19164671 |
| $a$ | 2.7644770 | $\Omega$ | 178.04774 | | +0.18281278 | | +0.93126641 |
| $e$ | 0.1891215 | $i$ | 5.07199 | | +0.05759358 | | +0.30986193 |
| $P$ | 4.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.1+ | 0.1− | 2001 09 20 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 1992 09 30 | 691 | 0.1+ | 0.1− | 2001 09 20 | 704 | 0.5− | 0.1− | 2006 11 11 | 703 | 1.3− | 0.7− |
| 1992 09 30 | 691 | 0.1− | 0.1− | 2001 09 22 | 704 | 0.5+ | 1.1− | 2006 11 11 | 703 | 0.0 | 1.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | (1.6− | 0.3+) | 2001 09 22 | 704 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.5+ | | |
| 2001 08 27 | 699 | 0.1+ | 0.2− | 2001 09 22 | 704 | 0.4− | 0.3+ | 2006 11 11 | 703 | 1.3+ | 0.1+ | | |
| 2001 08 27 | 699 | 1.1+ | 0.3− | 2001 09 22 | 704 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.8− | 0.6+ | | |
| 2001 08 27 | 699 | 0.2− | 0.0 | 2001 09 22 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 704 | 0.5+ | 0.1+ | | |
| 2001 09 09 | 704 | 0.7− | 0.9+ | 2001 09 24 | 704 | 0.1+ | 1.3− | 2006 11 17 | 704 | 0.0 | 0.3− | | |
| 2001 09 09 | 704 | 0.2− | 1.4+ | 2001 09 24 | 704 | 1.0− | 0.4− | 2006 11 17 | G96 | 0.3+ | 0.4− | | |
| 2001 09 09 | 704 | 0.4+ | 0.8+ | 2001 09 24 | 704 | 0.4− | 0.7+ | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2001 09 09 | 704 | 0.9+ | 0.5+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2001 09 12 | 704 | 1.0+ | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.1− | 0.3− | | |
| 2001 09 12 | 704 | 1.3+ | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.6− | 2006 11 20 | 704 | 0.2+ | 0.5− | | |
| 2001 09 12 | 704 | 0.3− | 0.3− | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.5− | 0.7+ | | |
| 2001 09 12 | 704 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.6− | 1.8+ | | |
| 2001 09 12 | 704 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.6− | 0.5+ | | |
| 2001 09 20 | 704 | 0.6− | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.8+ | | |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | | | | | | |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− | | | | | | |

### 2001 RM$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.47516 | | (2000.0) | | | |
| $n$ | 0.21041169 | $\omega$ | 59.30979 | | +0.74046893 | +0.64317077 |
| $a$ | 2.7995580 | $\Omega$ | 259.91229 | | −0.66425613 | +0.65616806 |
| $e$ | 0.1859963 | $i$ | 11.42549 | | −0.10232084 | +0.39468322 |
| $P$ | 4.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.7− | 0.5+ | 2001 09 12 | 704 | 0.1− | 0.2+ | 2001 10 17 | 704 | 0.2− | 0.6− | | |
| 2001 08 11 | 644 | 0.6− | 0.5+ | 2001 09 12 | 704 | 0.2+ | 0.6− | 2001 10 17 | 704 | 0.3− | 0.2+ | | |
| 2001 08 11 | 644 | 0.7− | 0.4+ | 2001 09 12 | 704 | 0.0 | 0.0 | 2001 10 17 | 704 | 0.4+ | 0.0 | | |
| 2001 08 22 | 704 | 0.1+ | 0.1− | 2001 09 12 | 704 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 22 | 704 | 0.5+ | 0.1− | 2001 09 12 | 704 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2001 08 22 | 704 | 0.3− | 0.1+ | 2001 09 12 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2001 08 22 | 704 | 0.0 | 0.4− | 2001 09 12 | 704 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.3+ | | |
| 2001 08 22 | 704 | 0.3+ | 0.0 | 2001 09 12 | 704 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2001 09 09 | 699 | 0.4+ | 0.6+ | 2001 09 12 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2− | | |
| 2001 09 09 | 699 | 0.3− | 0.1− | 2001 09 21 | 644 | 0.8− | 0.3− | 2006 10 27 | 703 | 1.3− | 1.3− | | |
| 2001 09 09 | 699 | (0.0 | 1.7+) | 2001 09 21 | 644 | 0.2− | 0.5− | 2006 10 27 | 703 | 0.6− | 0.6+ | | |
| 2001 09 09 | 699 | 0.6− | 0.7+ | 2001 09 21 | 699 | 0.7− | 0.3+ | 2006 10 27 | 703 | 0.7+ | 1.2+ | | |
| 2001 09 09 | 608 | 0.4+ | 0.2+ | 2001 09 21 | 644 | 0.5− | 0.4− | 2006 10 27 | 703 | 0.1− | 0.1+ | | |
| 2001 09 09 | 608 | 0.8+ | 0.7+ | 2001 09 21 | 699 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.1− | | |
| 2001 09 09 | 608 | 1.1+ | 0.3− | 2001 09 21 | 699 | 0.8− | 0.2+ | 2006 11 15 | 703 | 0.2− | 1.1− | | |
| 2001 09 10 | 704 | 0.8+ | 0.1− | 2001 09 21 | 699 | 0.6− | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.7− | | |
| 2001 09 10 | 704 | 0.5+ | 0.5+ | 2001 10 14 | 291 | 0.1+ | 0.2− | 2006 11 15 | 703 | 1.3− | 0.5− | | |
| 2001 09 10 | 704 | 0.4+ | 0.4+ | 2001 10 14 | 291 | 0.2+ | 0.3− | 2006 11 23 | 703 | 1.0+ | 0.1+ | | |
| 2001 09 10 | 704 | 0.0 | 0.1+ | 2001 10 14 | 291 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.5+ | 1.2+ | | |
| 2001 09 10 | 704 | 0.9+ | 0.6+ | 2001 10 17 | 704 | 0.2− | 0.2− | 2006 11 23 | 703 | 1.0+ | 0.8+ | | |
| 2001 09 12 | 704 | 0.0 | 0.1− | 2001 10 17 | 704 | 0.4− | 0.1− | 2006 11 23 | 703 | 0.5− | 0.3+ | | |

### 2001 RB$_{40}$ = 2006 TB$_{76}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.18257 | | (2000.0) | | | |
| $n$ | 0.21058488 | $\omega$ | 208.54070 | | +0.94774878 | −0.31885316 |
| $a$ | 2.7980229 | $\Omega$ | 170.03677 | | +0.30279163 | +0.88897068 |
| $e$ | 0.1173664 | $i$ | 3.39402 | | +0.10044643 | +0.32873057 |
| $P$ | 4.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 691 | 0.2− | 0.2− | 2001 09 12 | 704 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.8+ | 1.0− | | |
| 2001 08 27 | 691 | 0.0 | 0.1− | 2001 09 12 | 704 | 0.6− | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.4− | | |
| 2001 08 27 | 691 | 0.0 | 0.5− | 2001 09 19 | 704 | 0.4− | 0.9+ | 2006 10 17 | G96 | 0.1− | 0.8− | | |
| 2001 09 10 | 704 | 0.3− | 1.3+ | 2001 09 19 | 704 | 0.4− | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | | |
| 2001 09 10 | 704 | (1.2− | 2.2+) | 2001 09 19 | 704 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 10 | 704 | (1.3− | 1.6+) | 2001 09 19 | 704 | 0.0 | 1.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ | | |
| 2001 09 11 | 699 | 0.1− | 0.1− | 2001 09 19 | 704 | 0.5+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 2001 09 11 | 699 | 0.5− | 0.3− | 2001 09 21 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2001 09 11 | 699 | 0.5+ | 0.0 | 2001 09 21 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2001 09 11 | 699 | 0.3+ | 0.5− | 2001 09 21 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 | | |
| 2001 09 12 | 704 | 0.3− | 0.1+ | 2001 09 21 | 704 | 0.8+ | 0.8+ | 2006 10 22 | 691 | 0.4− | 0.1+ | | |
| 2001 09 12 | 704 | 0.6− | 0.9− | 2001 09 21 | 704 | (2.2+ | 0.7+) | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.5+ | 1.2+ | 2001 09 21 | 704 | (1.7+ | 0.9+) | 2006 11 16 | G96 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2001 09 21 | 704 | (1.7+ | 0.8+) | 2006 11 16 | G96 | 0.2+ | 0.1− | | |
| 2001 09 12 | 704 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.6+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.0 | | |
| 2001 09 12 | 704 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.5+ | 0.0 | 2006 11 17 | 703 | 0.8− | 0.4+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.4− | 0.5+ | 2006 11 17 | 703 | 0.4− | 1.1+ | | |
| 2001 09 12 | 704 | 0.3+ | 0.1− | 2006 10 16 | 621 | 0.2+ | 0.1− | 2006 11 17 | 703 | 1.0+ | 1.2− | | |
| 2001 09 12 | 704 | 0.0 | 0.1− | 2006 10 17 | 621 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3+ | 1.1− | | |
| 2001 09 12 | 704 | 0.5+ | 0.3+ | 2006 10 17 | 621 | 0.1+ | 0.1− | | | | | | |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.4− | | | | | | |

### 2001 RB$_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.39338 | | (2000.0) | | | |
| $n$ | 0.19844287 | $\omega$ | 153.55725 | | +0.99023309 | −0.08703959 |
| $a$ | 2.9110236 | $\Omega$ | 212.01864 | | +0.06014697 | +0.97145046 |
| $e$ | 0.1389600 | $i$ | 11.85437 | | +0.12578064 | +0.22069915 |
| $P$ | 4.97 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.6− | 0.2− | 2001 09 12 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.3− | | |
| 2001 08 16 | 644 | 0.4− | 0.4− | 2001 09 16 | 704 | 0.7− | 0.0 | 2006 09 14 | 703 | 0.1− | 1.1− | | |
| 2001 08 16 | 644 | 0.5− | 0.7− | 2001 09 16 | 704 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.1− | 0.4+ | | |
| 2001 09 11 | 704 | 0.7− | 0.1− | 2001 09 16 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.7− | | |
| 2001 09 11 | 704 | 0.3+ | 0.8+ | 2001 09 16 | 704 | 1.0+ | 1.5+ | 2006 09 20 | 699 | 0.7− | 1.2− | | |
| 2001 09 11 | 704 | (0.4+ | 2.2+) | 2001 09 25 | 704 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.9+ | | |
| 2001 09 11 | 704 | 0.8+ | 0.6+ | 2001 09 25 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 699 | (2.4+ | 0.6+) | | |
| 2001 09 12 | 704 | 0.3− | 0.4− | 2001 09 25 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 699 | 0.8+ | 0.3− | | |
| 2001 09 12 | 704 | 0.5− | 0.1− | 2001 11 18 | 645 | 0.0 | 0.0 | | | | | | |
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2001 11 18 | 645 | 0.0 | 0.0 | | | | | | |

### 2001 RV$_{41}$ = 1994 ER$_{9}$ = 2004 EZ$_{106}$ = 2006 RY$_{61}$ = 2006 SR$_{236}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.36172 | | (2000.0) | | | |
| $n$ | 0.19911136 | $\omega$ | 210.21965 | | +0.98288986 | −0.18363576 |
| $a$ | 2.9045043 | $\Omega$ | 160.34657 | | +0.17637724 | +0.91589460 |
| $e$ | 0.0906993 | $i$ | 2.44245 | | +0.05309044 | +0.35695237 |
| $P$ | 4.95 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.7− | 0.7+ | 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.1+ | 0.0 | | |
| 1994 03 05 | 691 | 0.6+ | 1.0− | 2001 09 21 | 704 | 0.6− | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.2+ | | |
| 1994 03 05 | 691 | 0.1+ | 0.1+ | 2001 09 21 | 704 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.4− | | |
| 2001 09 11 | 704 | 0.8+ | 0.3+ | 2004 03 15 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | 1.1− | 0.9+ | | |
| 2001 09 11 | 704 | 0.0 | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.3+ | | |
| 2001 09 11 | 704 | 0.6− | 0.8+ | 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.2+ | | |
| 2001 09 11 | 704 | 0.3− | 0.2+ | 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.0 | 1.1− | 2004 03 23 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | (0.2− | 1.7−) | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 | | |
| 2001 09 12 | 704 | 0.6+ | 0.5− | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2+ | | |
| 2001 09 19 | 704 | 0.4− | 0.1+ | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.3+ | | |
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2004 04 13 | 691 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.5− | 2006 09 12 | 703 | 0.6+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1− | | |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2006 09 12 | 703 | 0.2− | 0.7− | 2006 11 17 | G96 | 0.7− | 0.5+ | | |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2006 09 12 | 703 | 1.0− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.3+ | | |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.4+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.6+ | | |

**2001 RQ$_{42}$ = 2006 SL$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.76803 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20609745 | $\omega$ | 121.08943 | | +0.57418135 | | +0.81852102 |
| $a$ | 2.8384917 | $\Omega$ | 184.09767 | | −0.81115044 | | +0.56567000 |
| $e$ | 0.1529385 | $i$ | 14.93427 | | −0.11113388 | | +0.10020374 |
| $P$ | 4.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 704 | 0.2+ | 0.3+ | 2001 09 20 | 704 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 09 11 | 704 | 0.4+ | 0.3− | 2001 09 22 | 704 | 1.1− | 0.1− | 2006 09 30 | 291 | 0.2+ | 0.2+ |
| 2001 09 11 | 704 | (0.4+ | 1.9+) | 2001 09 22 | 704 | 0.1+ | 0.2− | 2006 09 30 | 291 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.8+ | 0.5+ | 2001 09 22 | 704 | 0.3− | 0.8− | 2006 09 30 | 291 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.3+ | 1.1+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.5+ | 0.2− |
| 2001 09 12 | 704 | 0.9− | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.9− | 0.0 | | | | |
| 2001 09 20 | 704 | 0.5+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.0 | | | | |

**2001 RL$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.96654 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17360668 | $\omega$ | 74.82224 | | +0.65883807 | | +0.74314352 |
| $a$ | 3.1824269 | $\Omega$ | 236.99393 | | −0.73260092 | | +0.59848280 |
| $e$ | 0.0705657 | $i$ | 8.01427 | | −0.17096284 | | +0.29925917 |
| $P$ | 5.68 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 28 | 691 | 0.2− | 0.3− | 2001 09 10 | 704 | 0.0 | 0.0 | 2001 09 16 | 704 | 1.1+ | 1.9+ |
| 1995 06 28 | 691 | 0.2+ | 0.3− | 2001 09 10 | 704 | 0.1+ | 0.3+ | 2001 09 16 | 704 | (0.6+ | 2.4+) |
| 1995 06 28 | 691 | 0.3+ | 0.4− | 2001 09 10 | 704 | 0.3+ | 0.2− | 2001 09 19 | 704 | 1.3+ | 0.3+ |
| 2001 08 16 | 644 | 0.1+ | 0.3+ | 2001 09 11 | 699 | 0.3− | 0.0 | 2001 09 19 | 704 | 0.1− | 0.4− |
| 2001 08 16 | 644 | 0.2− | 0.3+ | 2001 09 11 | 699 | 0.0 | 0.1− | 2001 09 19 | 704 | 0.3− | 1.0− |
| 2001 08 16 | 644 | 0.5− | 0.4+ | 2001 09 11 | 699 | 0.1+ | 0.1+ | 2001 11 18 | 645 | 0.1− | 0.0 |
| 2001 08 29 | 644 | 0.4− | 0.1− | 2001 09 11 | 699 | 0.2+ | 0.1+ | 2001 11 18 | 645 | 0.2− | 0.0 |
| 2001 08 29 | 644 | 0.5− | 0.5+ | 2001 09 16 | 704 | 0.3+ | 1.8+ | 2005 04 15 | 691 | 0.4+ | 0.6+ |
| 2001 08 29 | 644 | 0.5− | 0.7+ | 2001 09 16 | 704 | 0.6+ | 1.6+ | 2005 04 15 | 691 | 0.4− | 0.2+ |
| 2001 09 10 | 704 | 0.1− | 0.5− | 2001 09 16 | 704 | 0.5+ | 1.5+ | 2005 04 15 | 691 | 0.3+ | 0.3+ |

**2001 RP$_{52}$ = 2006 TD$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.92481 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22204820 | $\omega$ | 257.15520 | | +0.70324251 | | +0.70968346 |
| $a$ | 2.7008754 | $\Omega$ | 57.61636 | | −0.63125388 | | +0.65074579 |
| $e$ | 0.1503627 | $i$ | 2.87922 | | −0.32706041 | | +0.26996166 |
| $P$ | 4.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.7− | 0.3+ | 2006 10 12 | 691 | 0.6− | 0.6− | 2006 11 11 | 703 | 0.6+ | 0.1− |
| 2001 09 11 | 699 | 0.5− | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 12 | 703 | 0.7− | 0.4− |
| 2001 09 11 | 699 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 12 | 703 | 0.5− | 0.5+ |
| 2001 09 11 | 699 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 12 | 703 | 0.3+ | 0.4+ |
| 2001 09 12 | 704 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 12 | 703 | 0.1+ | 0.2+ |
| 2001 09 12 | 704 | 0.3+ | 0.7+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.3+ | 0.2− |
| 2001 09 12 | 704 | 0.3+ | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.3− | 0.4− | 2006 11 16 | 703 | 0.7− | 0.1+ |
| 2001 09 16 | 704 | (1.6− | 0.1+) | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.8− |
| 2001 09 16 | 704 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 16 | 703 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 0.9− | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.3+ | 0.1+ |
| 2001 09 16 | 704 | 0.5− | 1.2− | 2006 11 01 | 691 | 0.5− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.5+ | 0.4− |
| 2001 09 22 | 291 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 1.4+ | 0.3− |
| 2001 09 22 | 291 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.2− | 2006 12 01 | G96 | 0.3+ | 0.3− |
| 2001 09 22 | 291 | 0.5+ | 0.0 | 2006 11 11 | 703 | (0.2+ | 2.0−) | | | | |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.3− | 0.5+ | | | | |

**2001 RJ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.07550 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20962490 | $\omega$ | 271.19716 | | +0.81019360 | | −0.57326272 |
| $a$ | 2.8065588 | $\Omega$ | 123.79412 | | +0.57910087 | | +0.75053047 |
| $e$ | 0.2403440 | $i$ | 8.46234 | | +0.09071120 | | +0.32874590 |
| $P$ | 4.70 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 644 | 0.6− | 0.1− | 2001 09 17 | 699 | 0.2− | 0.7− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 07 29 | 644 | 0.1− | 0.0 | 2001 09 17 | 699 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.6+ | 1.3− |
| 2001 07 29 | 644 | 0.2− | 0.4− | 2001 09 25 | 704 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.7+ | 0.8+ |
| 2001 08 25 | 699 | 0.2− | 0.7+ | 2001 09 25 | 704 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.6+ |
| 2001 08 25 | 699 | 0.3+ | 1.1− | 2001 09 25 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | (1.7− | 0.7−) |
| 2001 08 25 | 699 | 0.8+ | 0.0 | 2001 09 25 | 704 | 0.2+ | 0.9− | 2006 10 22 | 703 | 0.5− | 0.9+ |
| 2001 08 25 | 699 | 0.5+ | 0.6+ | 2001 10 10 | 644 | 0.1− | 0.6− | 2006 10 22 | 703 | 0.3+ | 0.8+ |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2001 10 10 | 644 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2001 09 12 | 704 | 0.4− | 1.3+ | 2001 10 10 | 644 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2001 09 12 | 704 | 0.4− | 0.4+ | 2006 09 30 | 699 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | 1.1− | 0.9+ | 2006 09 30 | 699 | (1.5− | 1.7−) | 2006 11 13 | 703 | 0.9− | 0.5− |
| 2001 09 16 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.3− |
| 2001 09 16 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 699 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.2− | 0.7− |
| 2001 09 16 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 19 | 703 | 0.4+ | 0.1− |
| 2001 09 16 | 704 | 1.0+ | 0.4+ | 2006 09 30 | 699 | 0.1+ | 0.6− | 2006 11 19 | 703 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.4− | 2006 11 19 | 703 | 0.4− | 0.1− |
| 2001 09 17 | 699 | 0.4− | 1.1− | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.3+ | 0.1− |
| 2001 09 17 | 699 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.0 | | | | |

**2001 RS$_{61}$ = 2006 VC$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.53461 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21688115 | $\omega$ | 261.42412 | | +0.95163668 | | +0.29758997 |
| $a$ | 2.7436046 | $\Omega$ | 81.23654 | | −0.24264293 | | +0.88043236 |
| $e$ | 0.2031068 | $i$ | 4.43005 | | −0.18844636 | | +0.36915995 |
| $P$ | 4.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1+ | 0.3+ | 2001 09 19 | 704 | (1.9− | 1.2+) | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2001 09 12 | 704 | 0.5− | 0.0 | 2001 09 19 | 704 | 0.2− | 1.0− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.8− | 0.7+ | 2001 09 19 | 704 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.5+ | 0.1− | 2006 11 11 | G96 | 0.5− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | 0.4+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.7− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.0 | 2006 11 25 | 291 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 25 | 291 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 291 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.3+ | 1.4− | 2006 11 15 | 691 | 0.0 | 0.2− | | | | |

**2001 RE$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.13441 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21285406 | $\omega$ | 121.11932 | | +0.98444503 | | +0.13087273 |
| $a$ | 2.7781014 | $\Omega$ | 231.62381 | | −0.16133050 | | +0.93756251 |
| $e$ | 0.1706991 | $i$ | 8.59930 | | +0.06957333 | | +0.32225590 |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 04 | 644 | 0.0 | 0.3+ | 2001 10 17 | 704 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2001 08 04 | 644 | 0.3− | 0.5+ | 2001 10 17 | 704 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2001 08 04 | 644 | 0.3+ | 0.0 | 2001 10 17 | 704 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.3+ | 0.0 |
| 2001 09 10 | 704 | 0.1+ | 0.7− | 2001 10 17 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2001 09 10 | 704 | 0.2+ | 0.7− | 2001 10 17 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.1− | 0.4− | 2001 10 21 | 704 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.4+ | | |
| 2001 09 10 | 699 | 0.8− | 0.0 | 2001 10 21 | 704 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.5+ | | |
| 2001 09 10 | 704 | 0.3− | 0.1− | 2001 10 21 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.7− | | |
| 2001 09 10 | 699 | (1.7− | 2.5−) | 2001 10 21 | 704 | (1.8− | 1.0+) | 2006 11 14 | 691 | 0.1− | 0.1+ | | |
| 2001 09 10 | 699 | 0.2+ | 0.3+ | 2001 10 26 | 644 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2+ | | |
| 2001 09 10 | 699 | 0.3− | 0.2− | 2001 10 26 | 644 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1+ | | |
| 2001 09 17 | 704 | 0.3+ | 0.0 | 2001 10 26 | 644 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2001 09 17 | 704 | 0.5+ | 0.4+ | 2001 11 18 | 704 | 0.2− | 0.8− | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2001 09 17 | 704 | 0.8+ | 0.4+ | 2001 11 18 | 704 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.1− | | |
| 2001 09 23 | 644 | 0.2+ | 0.0 | 2001 11 18 | 704 | 0.3+ | 0.8− | 2006 11 18 | 704 | 0.2+ | 0.0 | | |
| 2001 09 23 | 644 | 0.2+ | 0.1− | 2001 11 18 | 704 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.0 | | |
| 2001 09 23 | 644 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.4+ | | |
| 2001 09 25 | 699 | 1.2− | 1.1+ | 2006 09 27 | G96 | 0.6− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2001 09 25 | 699 | 0.3+ | 0.8+ | 2006 09 27 | G96 | 0.8− | 0.1− | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2001 09 25 | 704 | 0.1− | 0.5− | 2006 09 27 | G96 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 2001 09 25 | 704 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.6− | 0.9+ | 2006 11 19 | 704 | 0.8+ | 0.7+ | | |
| 2001 09 25 | 699 | 0.1+ | 1.4+ | 2006 10 16 | 703 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.8+ | | |
| 2001 09 25 | 704 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.1− | | |
| 2001 09 25 | 699 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 25 | 704 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | 0.4− | 0.0 | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 1.3− | 0.8+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.3− | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.7+ | | |
| 2001 09 25 | 704 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.7− | 2006 11 21 | 704 | 0.1− | 0.9+ | | |
| 2001 09 26 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.0 | 0.1+ | | |
| 2001 09 26 | 704 | (1.7− | 0.5+) | 2006 10 21 | 691 | 0.6+ | 0.8− | 2006 11 27 | 703 | 0.3− | 0.6− | | |
| 2001 09 26 | 704 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.6+ | 0.5− | | |
| 2001 09 26 | 704 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.3− | | |
| 2001 09 26 | 704 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.8− | | |

### 2001 RH$_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.13915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19622979 | $\omega$ | 140.90849 | | +0.83225668 | −0.54734940 | |
| $a$ | 2.9328696 | $\Omega$ | 252.49371 | | +0.48266491 | +0.79353557 | |
| $e$ | 0.2431984 | $i$ | 5.29904 | | +0.27273322 | +0.26591340 | |
| $P$ | 5.02 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | (4.3− | 0.6−) | 2001 09 23 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 703 | 0.7− | 0.1+ | | |
| 2001 08 28 | 699 | 0.3− | 0.2+ | 2001 09 23 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.2− | | |
| 2001 08 28 | 699 | (2.0+ | 0.3+) | 2001 09 23 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 1.2+ | 0.2+ | | |
| 2001 08 28 | 699 | 0.6+ | 1.1+ | 2001 09 25 | 699 | 0.0 | 0.6− | 2006 09 19 | 699 | (0.3− | 1.8−) | | |
| 2001 09 10 | 704 | 0.1− | 0.0 | 2001 09 25 | 699 | (0.0 | 2.0+) | 2006 09 19 | 699 | 0.2− | 0.5− | | |
| 2001 09 10 | 704 | 0.4− | 0.3− | 2001 09 25 | 699 | 0.3− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.6+ | | |
| 2001 09 10 | 704 | 0.1− | 0.4− | 2001 09 25 | 699 | 0.1− | 0.2− | 2006 09 20 | 703 | 1.3+ | 1.0− | | |
| 2001 09 10 | 704 | 0.0 | 0.2− | 2001 09 28 | 644 | 0.2+ | 1.0+ | 2006 09 20 | 703 | 0.4− | 0.4− | | |
| 2001 09 10 | 699 | 0.5− | 0.4− | 2001 09 28 | 644 | 0.2+ | 0.9+ | 2006 09 20 | 703 | 0.3− | 0.4− | | |
| 2001 09 10 | 704 | 0.4− | 0.4+ | 2001 09 28 | 644 | 0.6+ | 0.2+ | 2006 09 20 | 703 | 0.2− | 0.4− | | |
| 2001 09 10 | 699 | 0.8− | 0.2+ | 2001 10 14 | 704 | 0.1+ | 0.4− | 2006 09 27 | 703 | 1.1− | 0.7− | | |
| 2001 09 10 | 699 | 1.1− | 0.3+ | 2001 10 14 | 704 | 0.3− | 0.3− | 2006 09 27 | 703 | 0.6− | 0.2+ | | |
| 2001 09 10 | 699 | 0.8− | 0.5+ | 2001 10 14 | 704 | 0.7− | 0.6− | 2006 09 27 | 703 | 0.5+ | 0.0 | | |
| 2001 09 17 | 704 | 0.1− | 0.3+ | 2001 10 14 | 704 | 0.6− | 1.1− | 2006 09 27 | 703 | 0.1− | 0.2− | | |
| 2001 09 17 | 704 | 0.1− | 0.4+ | 2001 10 14 | 704 | 0.1+ | 0.3− | 2006 10 03 | 703 | 0.2− | 0.5− | | |
| 2001 09 17 | 704 | 0.2+ | 0.5+ | 2001 10 15 | 704 | 0.1− | 0.1+ | 2006 10 03 | 703 | 0.1+ | 1.0+ | | |
| 2001 09 18 | 699 | 0.2− | 0.2− | 2001 10 15 | 704 | 0.1− | 0.1− | 2006 10 03 | 703 | 0.6− | 0.2+ | | |
| 2001 09 18 | 699 | 0.1+ | 0.3− | 2001 10 15 | 704 | 0.4+ | 0.2− | 2006 10 03 | 703 | 0.7+ | 1.1− | | |
| 2001 09 18 | 699 | 0.6− | 1.1+ | 2001 10 15 | 704 | 0.8+ | 0.0 | 2006 10 03 | 703 | 0.1− | 0.9− | | |
| 2001 09 18 | 699 | 0.1+ | 0.9+ | 2001 10 15 | 704 | 0.3+ | 0.2− | 2006 10 03 | 703 | 0.2+ | 1.1− | | |
| 2001 09 20 | 704 | 0.8− | 0.1+ | 2001 10 17 | 704 | 0.7− | 0.4+ | 2006 10 03 | 703 | 0.7− | 0.3+ | | |
| 2001 09 20 | 704 | 0.6+ | 0.5− | 2001 10 17 | 704 | 0.3− | 0.6+ | 2006 10 03 | 703 | 0.7+ | 0.7− | | |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2001 10 17 | 704 | 1.1− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.2− | 0.1+ | 2001 10 17 | 704 | 0.3+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.1− | | |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2001 10 17 | 704 | 0.3− | 1.2+ | 2006 10 09 | 644 | 0.4+ | 0.1− | | |
| 2001 09 22 | 704 | 0.7+ | 0.4− | 2006 09 13 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2001 09 22 | 704 | 0.3+ | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2001 09 22 | 704 | 0.7+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2001 09 22 | 704 | 0.5+ | 0.7− | 2006 09 15 | 704 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 22 | 704 | 0.7+ | 0.2− | 2006 09 15 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.6+ | 0.3+ | | |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2006 09 15 | 704 | 0.2+ | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 23 | 704 | 0.6+ | 0.4+ | 2006 09 15 | 704 | 0.1− | 0.8+ | | | | | | |

### 2001 RH$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.72951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29112382 | $\omega$ | 100.63143 | | +0.97087882 | −0.22908897 | |
| $a$ | 2.2546764 | $\Omega$ | 272.63875 | | +0.18306888 | +0.89815216 | |
| $e$ | 0.1785010 | $i$ | 4.02341 | | +0.15453185 | +0.37528780 | |
| $P$ | 3.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | 1.3+ | 1.3+ | 2001 09 22 | 704 | 0.3+ | 0.3+ | 2001 10 20 | 704 | (0.7+ | 9.4+) | | |
| 2001 08 28 | 699 | 0.1+ | 0.8+ | 2001 09 22 | 704 | 1.7+ | 0.1+ | 2001 10 20 | 704 | (0.2+ | 9.7+) | | |
| 2001 08 28 | 699 | 0.5− | 0.2− | 2001 09 23 | 704 | 0.3− | 0.2+ | 2001 10 20 | 704 | (0.7+ | 10.0+) | | |
| 2001 08 28 | 699 | 0.2+ | 0.2− | 2001 09 23 | 704 | 0.6− | 0.6+ | 2001 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 10 | 704 | 0.4− | 0.0 | 2001 09 23 | 704 | 0.3+ | 0.9+ | 2001 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 10 | 704 | 0.7+ | 0.5− | 2001 09 23 | 704 | 0.3− | 1.0+ | 2001 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 10 | 704 | 0.6+ | 0.6+ | 2001 09 28 | 644 | 0.1+ | 0.0 | 2001 10 21 | 704 | 0.1+ | 0.1− | | |
| 2001 09 10 | 704 | 0.4+ | 0.2− | 2001 09 28 | 644 | 0.1− | 0.2− | 2001 10 21 | 704 | 0.3− | 0.4− | | |
| 2001 09 10 | 704 | 0.1− | 0.7+ | 2001 09 28 | 644 | 0.0 | 0.0 | 2001 10 21 | 704 | 0.3− | 0.0 | | |
| 2001 09 17 | 704 | 0.3+ | 1.5− | 2001 10 12 | 699 | 1.2− | 0.4+ | 2001 10 21 | 704 | 0.1− | 0.0 | | |
| 2001 09 17 | 704 | 0.4− | 0.4− | 2001 10 12 | 699 | 0.0 | 0.0 | 2001 10 21 | 704 | 0.7− | 0.3− | | |
| 2001 09 17 | 704 | 0.1− | 1.0− | 2001 10 12 | 699 | 0.8− | 0.3+ | 2001 11 10 | 704 | 0.1− | 0.3+ | | |
| 2001 09 17 | 704 | 1.0− | 1.1− | 2001 10 12 | 699 | 0.3+ | 0.2+ | 2001 11 10 | 704 | 1.5+ | 0.9+ | | |
| 2001 09 19 | 699 | 0.3− | 1.0− | 2001 10 14 | 704 | 0.2+ | 0.4+ | 2001 11 10 | 704 | 1.3+ | 0.1− | | |
| 2001 09 19 | 699 | 0.3− | 0.4+ | 2001 10 14 | 704 | 0.1− | 0.3+ | 2001 11 10 | 704 | (2.8+ | 0.6−) | | |
| 2001 09 19 | 699 | 0.5+ | 0.8− | 2001 10 14 | 704 | 0.2+ | 0.1+ | 2006 01 08 | G96 | 0.2+ | 0.2− | | |
| 2001 09 19 | 699 | 0.4+ | 0.5+ | 2001 10 14 | 704 | 0.0 | 0.1− | 2006 01 08 | G96 | 0.3+ | 0.5− | | |
| 2001 09 20 | 704 | 0.0 | 0.3− | 2001 10 14 | 704 | 0.1− | 0.1+ | 2006 01 08 | G96 | 0.1− | 0.2+ | | |
| 2001 09 20 | 704 | 0.1+ | 1.2− | 2001 10 17 | 704 | 0.5− | 0.3− | 2006 01 08 | G96 | 0.0 | 0.2− | | |
| 2001 09 20 | 704 | 0.1+ | 1.2− | 2001 10 17 | 704 | 0.6− | 0.4+ | 2006 02 02 | G96 | 0.2− | 0.1− | | |
| 2001 09 20 | 704 | 0.3+ | 0.8− | 2001 10 17 | 704 | 0.5+ | 0.9+ | 2006 02 02 | G96 | 0.3− | 0.0 | | |
| 2001 09 20 | 704 | 0.6− | 0.7− | 2001 10 17 | 704 | 0.2− | 0.1+ | 2006 02 02 | G96 | 0.1− | 0.0 | | |
| 2001 09 22 | 704 | 0.7− | 0.7+ | 2001 10 17 | 704 | 0.9− | 0.5− | | | | | | |
| 2001 09 22 | 704 | 0.2+ | 0.1+ | 2001 10 20 | 704 | (0.3+ | 9.7+) | | | | | | |

### 2001 RS$_{73}$ = 2006 SW$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.68886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19642940 | $\omega$ | 1.03806 | | +0.71120402 | +0.69924949 | |
| $a$ | 2.9308823 | $\Omega$ | 314.30032 | | −0.64570336 | +0.60907057 | |
| $e$ | 0.2455516 | $i$ | 5.80451 | | −0.27794966 | +0.37427690 | |
| $P$ | 5.02 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 05 | 691 | 0.0 | 0.0 | 2001 10 14 | 704 | 0.0 | 0.1+ | 2006 09 23 | 106 | 0.2+ | 0.3+ | | |
| 1996 11 05 | 691 | 0.1− | 0.5− | 2001 10 14 | 704 | 0.3− | 0.3− | 2006 09 23 | 106 | 0.1+ | 0.1− | | |
| 1996 11 05 | 691 | 0.1+ | 0.5+ | 2001 10 14 | 704 | 0.2− | 0.5− | 2006 09 23 | 106 | 0.5+ | 0.3− | | |
| 2001 09 10 | 704 | 0.2− | 0.2+ | 2001 10 14 | 704 | 0.8− | 0.2− | 2006 09 25 | 704 | 0.7− | 0.6− | | |
| 2001 09 10 | 704 | 0.4− | 1.0+ | 2001 10 14 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 704 | (1.9− | 0.0 ) | | |
| 2001 09 10 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.7− | 0.2+ | 2006 09 25 | 704 | 0.9− | 1.1+ | | |
| 2001 09 17 | 704 | 1.2+ | 0.3+ | 2006 09 17 | 703 | 0.6− | 0.0 | 2006 10 09 | 644 | 0.6+ | 0.0 | | |
| 2001 09 17 | 704 | 1.0+ | 0.1− | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.7+ | 0.1− | | |
| 2001 09 17 | 704 | 0.4− | 0.8− | 2006 09 17 | 703 | 1.0− | 0.1+ | 2006 10 09 | 644 | 0.5+ | 0.1− | | |
| 2001 09 20 | 704 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.8− | 1.3− | | |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.3+ | | |
| 2001 09 20 | 704 | (0.6− | 1.6−) | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.8− | 0.8− | | |
| 2001 09 20 | 704 | 0.1− | 0.6− | 2006 09 19 | 699 | 0.2− | 0.9+ | 2006 10 17 | 703 | 0.6− | 0.3− | | |
| 2001 09 20 | 704 | 0.6− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.5− | 2006 10 23 | 703 | 0.7+ | 1.1+ | | |
| 2001 09 28 | 644 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 10 23 | 703 | 0.8+ | 0.3− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.0 | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 23 | 703 | 0.5− | 0.0 |
| 2001 09 28 | 644 | 0.1− | 0.6+ | 2006 09 23 | 106 | 0.0 | 0.2− | 2006 10 23 | 703 | 1.2+ | 0.7+ |

**2001 RT$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.50746 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21352233 | $\omega$ | 198.67220 | | +0.82140722 | −0.56902819 | |
| $a$ | 2.7723019 | $\Omega$ | 196.18856 | | +0.53936231 | +0.79705497 | |
| $e$ | 0.2300390 | $i$ | 7.97739 | | +0.18541437 | +0.20226292 | |
| $P$ | 4.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 29 | 644 | 1.4− | 0.2+ | 2001 09 26 | 699 | 0.3+ | 0.2− | 2006 11 13 | 703 | 1.1+ | 0.4+ |
| 2001 08 29 | 644 | 0.1− | 0.3− | 2001 09 26 | 699 | 0.6+ | 0.0 | 2006 11 13 | 703 | (0.2− | 1.6+) |
| 2001 08 29 | 644 | 0.0 | 0.1− | 2001 10 19 | 644 | 0.7− | 0.4− | 2006 11 13 | 703 | 0.5+ | 0.6+ |
| 2001 09 08 | 704 | 0.1+ | 0.6+ | 2001 10 19 | 644 | 0.1− | 1.1− | 2006 11 14 | 704 | 0.7− | 0.8− |
| 2001 09 08 | 704 | 0.2+ | 0.7+ | 2001 10 19 | 644 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.7− | 0.6− |
| 2001 09 08 | 704 | 0.3+ | 0.9+ | 2006 07 22 | G96 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.3− |
| 2001 09 08 | 704 | 0.9+ | 0.8+ | 2006 07 22 | G96 | 0.2− | 0.5− | 2006 11 14 | 704 | 0.1− | 0.2− |
| 2001 09 08 | 704 | 0.1+ | 0.7+ | 2006 07 22 | G96 | 0.0 | 0.4+ | 2006 11 14 | 704 | 0.0 | 1.4− |
| 2001 09 11 | 699 | 0.2+ | 0.1− | 2006 07 22 | G96 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 09 11 | 699 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2001 09 11 | 699 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2001 09 11 | 699 | 0.0 | 0.5− | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 0.6+ | 0.2− | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.6− | 0.1+ |
| 2001 09 16 | 704 | 0.9+ | 0.6− | 2006 10 04 | G96 | 0.4− | 0.2− | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.8+ | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.3+ | 0.3+ |
| 2001 09 16 | 704 | 0.4+ | 0.4− | 2006 10 04 | G96 | 0.6− | 0.5− | 2006 11 15 | 703 | 0.5+ | 0.3− |
| 2001 09 16 | 704 | 0.4− | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2001 09 18 | 699 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.0 | 1.5+ |
| 2001 09 18 | 699 | 0.3− | 1.1− | 2006 10 19 | 703 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2001 09 18 | 699 | 0.8− | 0.1− | 2006 10 19 | 703 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2001 09 18 | 699 | 1.0− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.4− | 0.5+ |
| 2001 09 20 | 704 | 1.5− | 0.3+ | 2006 10 22 | 703 | 0.7+ | 0.7+ | 2006 11 19 | 703 | 0.4+ | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 0.2− | 2006 10 22 | 703 | 0.7+ | 0.6+ | 2006 11 19 | 703 | 0.8− | 0.1− |
| 2001 09 20 | 704 | 0.2− | 1.4+ | 2006 10 22 | 703 | 0.4− | 0.0 | 2006 11 19 | 703 | 0.5− | 0.6+ |
| 2001 09 20 | 704 | (1.7− | 0.1+) | 2006 10 22 | 703 | 0.5− | 0.9+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 09 23 | 704 | 1.3+ | 0.2− | 2006 10 30 | 703 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2001 09 23 | 704 | 0.4+ | 0.3+ | 2006 10 30 | 703 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2001 09 23 | 704 | (1.6+ | 0.3−) | 2006 10 30 | 703 | 0.4+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2001 09 26 | 699 | 0.0 | 0.8− | 2006 10 30 | 703 | 0.1− | 0.3− | | | | |
| 2001 09 26 | 699 | (0.7+ | 1.7+) | 2006 11 13 | 703 | 0.3− | 0.4+ | | | | |

**2001 RX$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.16141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21247729 | $\omega$ | 15.34075 | | +0.77072428 | −0.63552830 | |
| $a$ | 2.7813846 | $\Omega$ | 24.30077 | | +0.57228471 | +0.65892895 | |
| $e$ | 0.2745379 | $i$ | 6.37489 | | +0.28013264 | +0.40238839 | |
| $P$ | 4.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 03 | 644 | 0.8− | 1.0+ | 2001 10 06 | 644 | 0.5− | 0.7+ | 2001 11 12 | 645 | 0.0 | 0.3− |
| 2001 08 03 | 644 | 0.8− | 0.6+ | 2001 10 13 | 704 | 0.8+ | 0.2− | 2001 11 14 | 291 | 1.2+ | 0.1− |
| 2001 08 03 | 644 | 0.8− | 1.1+ | 2001 10 13 | 704 | 0.4+ | 0.5− | 2001 11 14 | 291 | 1.1+ | 0.1+ |
| 2001 08 27 | 699 | 0.3+ | 0.6+ | 2001 10 13 | 704 | 0.4− | 0.1− | 2001 11 14 | 291 | 0.2+ | 0.1− |
| 2001 08 27 | 699 | 0.8+ | 0.8+ | 2001 10 13 | 704 | 0.2+ | 0.0 | 2001 11 18 | 704 | 0.8− | 0.7+ |
| 2001 08 27 | 699 | 0.7+ | 0.7+ | 2001 10 13 | 704 | 0.3+ | 0.4− | 2001 11 18 | 704 | 0.7− | 0.1− |
| 2001 08 27 | 699 | 0.9+ | 0.3+ | 2001 10 16 | 704 | 0.1− | 1.4− | 2001 11 18 | 704 | 0.2+ | 0.1− |
| 2001 09 11 | 699 | 0.2− | 0.3+ | 2001 10 16 | 704 | 0.0 | 0.6− | 2001 11 18 | 704 | 0.2− | 0.1+ |
| 2001 09 11 | 699 | 0.1+ | 0.4+ | 2001 10 16 | 704 | 0.4− | 0.7− | 2001 11 18 | 704 | 0.3+ | 0.4+ |
| 2001 09 11 | 699 | 0.5− | 0.1+ | 2001 10 16 | 704 | 0.5+ | 0.5− | 2001 11 20 | 704 | 0.3+ | 0.5+ |
| 2001 09 11 | 699 | 0.3− | 1.1+ | 2001 10 16 | 704 | 0.2− | 0.4− | 2001 11 20 | 704 | 0.3+ | 0.7+ |
| 2001 09 16 | 704 | 0.3− | 0.2+ | 2001 10 17 | 644 | 0.2+ | 0.2− | 2001 11 20 | 704 | 0.4+ | 0.4+ |
| 2001 09 16 | 704 | 0.9− | 0.2+ | 2001 10 17 | 644 | 0.1+ | 0.4− | 2001 11 20 | 704 | 0.3− | 0.8+ |
| 2001 09 16 | 704 | 1.1− | 0.1− | 2001 10 17 | 644 | 0.1+ | 0.3− | 2001 11 20 | 704 | 1.2− | 0.6+ |
| 2001 09 16 | 704 | 1.3− | 0.4− | 2001 10 19 | 699 | 0.7+ | 1.0+ | 2006 11 15 | 704 | 0.4+ | 0.0 |
| 2001 09 18 | 699 | 0.0 | 0.5+ | 2001 10 19 | 699 | 0.9+ | 0.3+ | 2006 11 15 | 704 | 0.4+ | 0.6+ |
| 2001 09 18 | 699 | 0.1+ | 0.2+ | 2001 10 19 | 699 | 0.2+ | 0.8+ | 2006 11 15 | 704 | 1.0− | 0.3+ |
| 2001 09 18 | 699 | 0.2− | 0.4− | 2001 10 19 | 699 | 0.9+ | 0.8+ | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2001 09 18 | 699 | 0.2+ | 0.3− | 2001 10 20 | 704 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 1.1− | 0.1+ | 2001 10 20 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | (0.9− | 2.2−) |
| 2001 09 19 | 704 | 0.9− | 0.1− | 2001 10 20 | 704 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 1.3− |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2001 10 20 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2001 09 19 | 704 | 1.1− | 0.2+ | 2001 10 20 | 704 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2001 10 23 | 704 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.6− | 2001 10 23 | 704 | 0.2+ | 0.7− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.9− | 2001 10 23 | 704 | 0.4+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.7− | 2001 10 23 | 704 | 0.6+ | 0.6− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.8− | 2001 10 23 | 704 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.4+ | 0.5− | 2001 10 24 | 704 | 0.4− | 0.6+ | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2001 10 06 | 704 | 0.1− | 0.3− | 2001 10 24 | 704 | 0.7− | 1.1+ | 2006 11 27 | 704 | 0.4+ | 0.8+ |
| 2001 10 06 | 704 | 0.9+ | 0.4− | 2001 10 24 | 704 | 0.5− | 0.7+ | 2006 11 27 | 704 | 0.4+ | 0.9+ |
| 2001 10 06 | 704 | (0.3− | 1.9−) | 2001 10 24 | 704 | 0.5− | 1.3+ | 2006 11 27 | 704 | 0.2+ | 0.5+ |
| 2001 10 06 | 644 | 0.5− | 1.0+ | 2001 10 24 | 704 | 0.9− | 0.7+ | | | | |
| 2001 10 06 | 644 | 0.7− | 0.9+ | 2001 11 12 | 645 | 0.0 | 0.2− | | | | |

**2001 RM$_{89}$ = 1976 UX$_{15}$ = 2005 QP$_{5}$**

Id. Minor Planet Center (*MPO* 84852; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.24709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23581869 | $\omega$ | 213.36880 | | +0.96214583 | −0.27146597 | |
| $a$ | 2.5946805 | $\Omega$ | 162.33500 | | +0.26419701 | +0.90732855 | |
| $e$ | 0.2478766 | $i$ | 4.55844 | | +0.06689803 | +0.32103135 | |
| $P$ | 4.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 10 22 | 381 | 0.1+ | 1.2− | 2001 09 19 | 704 | 0.1− | 0.6− | 2001 10 24 | 704 | 0.8+ | 0.4− |
| 1976 10 22 | 381 | 0.4+ | 0.6− | 2001 09 21 | 704 | 0.9− | 0.4− | 2001 10 24 | 704 | 0.3+ | 0.1− |
| 1997 11 06 | 704 | (0.4+ | 3.5+) | 2001 09 21 | 704 | 0.8− | 0.5− | 2001 10 24 | 704 | 0.2+ | 0.1+ |
| 1997 11 06 | 704 | 0.9− | 1.2+ | 2001 09 21 | 704 | 0.9− | 0.6− | 2005 08 22 | 644 | 0.2+ | 0.2− |
| 1997 11 06 | 704 | 1.6+ | 0.5+ | 2001 09 21 | 704 | 1.2− | 0.7− | 2005 08 22 | 644 | 0.1+ | 0.2− |
| 1997 11 06 | 704 | 1.2− | 0.1− | 2001 09 21 | 704 | 1.2− | 0.8− | 2005 08 22 | 644 | 0.3+ | 0.2− |
| 1997 11 06 | 704 | (3.9− | 1.7+) | 2001 09 25 | 644 | 0.3− | 0.8− | 2005 08 25 | 644 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.3+ | 0.8+ | 2001 09 25 | 644 | 0.4− | 0.7− | 2005 08 25 | 644 | 0.1+ | 0.0 |
| 2001 08 27 | 699 | 0.0 | 0.4+ | 2001 09 25 | 644 | 0.3− | 0.7− | 2005 08 25 | 644 | 0.0 | 0.0 |
| 2001 08 27 | 699 | 1.0+ | 0.6+ | 2001 09 26 | 704 | 0.2− | 0.2− | 2005 08 27 | 644 | 0.0 | 0.0 |
| 2001 08 27 | 699 | 0.2+ | 0.4+ | 2001 09 26 | 704 | 0.0 | 0.5+ | 2005 08 27 | 644 | 0.0 | 0.1− |
| 2001 09 11 | 699 | 0.9− | 0.4+ | 2001 09 26 | 704 | 0.2− | 0.1+ | 2005 08 27 | 644 | 0.1− | 0.1− |
| 2001 09 11 | 699 | 0.7− | 0.5− | 2001 09 26 | 704 | 0.0 | 0.0 | 2005 08 27 | E12 | 0.3− | 0.1− |
| 2001 09 11 | 699 | 1.0− | 0.5+ | 2001 09 26 | 704 | 0.1+ | 0.6+ | 2005 08 27 | E12 | 0.7− | 0.9+ |
| 2001 09 11 | 699 | 0.9− | 0.9+ | 2001 10 13 | 704 | 0.2− | 1.2+ | 2005 08 27 | E12 | 0.4+ | 1.2− |
| 2001 09 16 | 704 | 0.2− | 0.7− | 2001 10 13 | 704 | 0.8+ | 0.5+ | 2005 08 27 | E12 | 0.5+ | 0.1+ |
| 2001 09 16 | 704 | 0.1− | 0.1− | 2001 10 13 | 704 | 1.0+ | 0.1− | 2005 08 30 | 704 | 0.5− | 0.2+ |
| 2001 09 16 | 704 | 0.6− | 0.6− | 2001 10 19 | 699 | 0.6+ | 0.8+ | 2005 08 30 | 704 | 0.2+ | 1.2+ |
| 2001 09 16 | 704 | 0.6− | 0.3− | 2001 10 19 | 699 | 0.4+ | 0.1+ | 2005 08 30 | 704 | 1.1+ | 0.7+ |
| 2001 09 18 | 699 | 0.1− | 0.0 | 2001 10 19 | 699 | (2.6+ | 1.4−) | 2005 09 29 | G96 | 0.0 | 0.0 |
| 2001 09 18 | 699 | 0.1+ | 0.4+ | 2001 10 19 | 699 | 0.3− | 0.0 | 2005 09 29 | G96 | 0.4− | 0.5− |
| 2001 09 18 | 699 | 0.3− | 0.2+ | 2001 10 20 | 704 | 0.9+ | 0.1+ | 2005 09 29 | G96 | 0.3− | 0.3− |
| 2001 09 18 | 699 | 0.4− | 0.0 | 2001 10 20 | 704 | 0.2+ | 0.9+ | 2005 09 29 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.5+ | 0.5− | 2001 10 20 | 704 | 0.7+ | 1.6+ | 2005 10 04 | J95 | 0.4− | 0.0 |
| 2001 09 19 | 704 | 0.7+ | 1.0− | 2001 10 20 | 704 | 0.8+ | 0.2− | 2005 10 04 | J95 | 0.1− | 0.6+ |
| 2001 09 19 | 704 | 0.5+ | 0.7− | 2001 10 24 | 704 | 1.0+ | 1.1+ | 2005 10 04 | J95 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.7+ | 0.7− | 2001 10 24 | 704 | 1.4+ | 0.0 | | | | |

**2001 RS$_{96}$ = 2006 SV$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.10995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20356303 | $\omega$ | 143.08323 | | +0.96080726 | −0.27667692 | |
| $a$ | 2.8620031 | $\Omega$ | 232.98768 | | +0.24888507 | +0.88841318 | |
| $e$ | 0.0790783 | $i$ | 1.24142 | | +0.12208859 | +0.36629484 | |
| $P$ | 4.84 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.1− | 0.2+ | 2006 07 22 | G96 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.7+ |
| 2001 09 12 | 691 | 0.3− | 0.1+ | 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 691 | 0.4− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2001 09 17 | 291 | 0.4+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.6− |
| 2001 09 17 | 291 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.6− |
| 2001 09 17 | 291 | 0.7+ | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.8− |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.5− |
| 2001 09 20 | 704 | 0.7− | 0.5− | 2006 09 16 | 691 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 0.0 | 0.9− | 2006 09 25 | 699 | 0.7+ | 0.1− | 2006 10 23 | G96 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.4− | 0.7− | 2006 09 25 | 699 | 1.4− | 0.9+ | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2006 07 22 | G96 | 0.1+ | 0.8− | 2006 09 25 | 699 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 09 25 | 699 | 0.1− | 0.1+ | | | | |

**2001 RJ$_{97}$ = 2006 UN$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.60902 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21841328 | $\omega$ | 50.89885 | | +0.82909766 | −0.55837684 | |
| $a$ | 2.7307588 | $\Omega$ | 342.98418 | | +0.47819298 | +0.73460742 | |
| $e$ | 0.0511706 | $i$ | 5.58936 | | +0.28970422 | +0.38544422 | |
| $P$ | 4.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.6− | 0.2− | 2001 09 21 | 704 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2001 08 19 | 807 | 0.8− | 0.4− | 2001 09 21 | 704 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 09 12 | 691 | 0.4+ | 0.3+ | 2001 09 21 | 704 | 0.2− | 0.7+ | 2006 11 01 | G96 | 0.5− | 0.0 |
| 2001 09 12 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.0 |
| 2001 09 12 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 09 17 | 291 | 0.2+ | 0.4− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2001 09 17 | 291 | 0.8− | 0.4− | 2006 10 21 | 691 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2001 09 17 | 291 | 0.5+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.5− | 0.1+ |
| 2001 09 21 | 704 | 0.6− | 1.2+ | 2006 10 21 | 691 | 0.1− | 0.1− | | | | |

**2001 RQ$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.13688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22529174 | $\omega$ | 28.48925 | | +0.90180720 | −0.43207734 | |
| $a$ | 2.6748897 | $\Omega$ | 357.08105 | | +0.36440778 | +0.76940541 | |
| $e$ | 0.2336713 | $i$ | 8.21457 | | +0.23227299 | +0.47045137 | |
| $P$ | 4.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 566 | 0.0 | 0.1+ | 2001 09 10 | 699 | 1.0+ | 0.0 | 2001 09 21 | 704 | 1.0− | 0.9− |
| 1997 10 29 | 566 | 0.0 | 0.0 | 2001 09 10 | 699 | 0.4+ | 0.0 | 2001 09 21 | 704 | 0.4− | 0.7− |
| 1997 10 29 | 566 | 0.2− | 0.5+ | 2001 09 10 | 699 | 1.3+ | 0.1+ | 2001 09 21 | 704 | 0.4− | 0.2+ |
| 2001 08 12 | 608 | 0.2+ | 0.3− | 2001 09 10 | 699 | 0.4+ | 0.2+ | 2001 09 21 | 704 | 0.9− | 0.1− |
| 2001 08 12 | 608 | 0.8− | 0.6+ | 2001 09 12 | 704 | 0.2− | 0.4+ | 2001 10 23 | 704 | 0.2− | 0.2− |
| 2001 08 12 | 608 | 0.2− | 0.1− | 2001 09 12 | 704 | 0.2+ | 0.1+ | 2001 10 23 | 704 | 0.7+ | 0.7− |
| 2001 08 16 | 704 | 0.0 | 0.7− | 2001 09 12 | 704 | 0.2− | 0.1+ | 2001 10 23 | 704 | 0.7+ | 0.5+ |
| 2001 08 16 | 704 | 0.5+ | 1.2+ | 2001 09 12 | 704 | 0.1− | 0.4− | 2001 10 23 | 704 | 0.5− | 0.5+ |
| 2001 08 16 | 704 | 0.0 | 0.4+ | 2001 09 12 | 704 | 0.1+ | 0.1− | 2001 10 23 | 704 | 0.5+ | 0.6+ |
| 2001 08 16 | 704 | 0.6− | 0.2− | 2001 09 19 | 704 | 0.6− | 0.5− | 2006 10 27 | 703 | 0.7− | 0.6+ |
| 2001 08 25 | 704 | 0.7+ | 0.5+ | 2001 09 19 | 704 | 0.5− | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.3+ |
| 2001 08 25 | 704 | 0.2− | 0.6+ | 2001 09 19 | 704 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.7− | 1.1− |
| 2001 08 25 | 704 | 0.5+ | 0.2+ | 2001 09 19 | 704 | 0.5− | 0.8− | 2006 10 27 | 703 | 1.3+ | 0.4− |
| 2001 08 25 | 704 | 0.6− | 0.2− | 2001 09 19 | 704 | 1.2+ | 0.7− | | | | |
| 2001 08 25 | 704 | 0.9+ | 0.4− | 2001 09 21 | 704 | 1.1− | 0.8+ | | | | |

**2001 RH$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.45961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21968039 | $\omega$ | 183.88525 | | +0.71698086 | +0.68972469 | |
| $a$ | 2.7202481 | $\Omega$ | 131.95898 | | −0.63585049 | +0.70651334 | |
| $e$ | 0.1324250 | $i$ | 7.81278 | | −0.28571420 | +0.15848897 | |
| $P$ | 4.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.2− | 0.3+ | 2001 09 12 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2001 07 14 | 644 | 0.1− | 0.3+ | 2001 09 17 | 699 | 0.6− | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2001 07 14 | 644 | 0.3− | 0.2+ | 2001 09 17 | 699 | 0.6+ | 0.1− | 2006 10 16 | 703 | 1.4+ | 0.6− |
| 2001 08 14 | 608 | (2.4+ | 0.7+) | 2001 09 17 | 699 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2001 08 14 | 608 | (1.9+ | 0.4+) | 2001 09 17 | 699 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2001 08 14 | 608 | (1.6+ | 0.2+) | 2001 09 19 | 704 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2001 08 25 | 704 | 0.5+ | 0.6− | 2001 09 19 | 704 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 0.5− | 0.7+ |
| 2001 08 25 | 644 | 0.3− | 0.9− | 2001 09 19 | 704 | 1.1− | 0.4+ | 2006 11 01 | 703 | 0.7+ | 0.1− |
| 2001 08 25 | 704 | 0.4+ | 0.5+ | 2001 09 19 | 704 | 0.4+ | 0.3− | 2006 11 01 | 703 | 1.1− | 0.2+ |
| 2001 08 25 | 704 | 0.2+ | 0.3− | 2001 09 21 | 704 | 0.7− | 0.5+ | 2006 11 01 | 703 | 0.6− | 1.1− |
| 2001 08 25 | 644 | 0.5− | 0.5− | 2001 09 21 | 704 | 0.5− | 1.0+ | 2006 11 01 | 703 | 0.2− | 0.2+ |
| 2001 08 25 | 704 | 0.6+ | 0.1+ | 2001 09 21 | 704 | 0.6+ | 0.7+ | 2006 11 19 | 703 | 1.6+ | 0.8− |
| 2001 08 25 | 644 | 0.4− | 0.7− | 2001 09 21 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.7− | 0.2+ |
| 2001 08 25 | 704 | 0.2+ | 0.2− | 2001 10 10 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.2− | 1.2+ |
| 2001 09 12 | 704 | 0.3+ | 0.4− | 2001 10 10 | 644 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.2− |
| 2001 09 12 | 704 | 0.5+ | 0.2− | 2001 10 10 | 644 | 0.1− | 0.2+ | | | | |
| 2001 09 12 | 704 | 0.1+ | 1.2− | 2006 10 16 | 703 | 0.5− | 0.1+ | | | | |

**2001 RU$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.69066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21749809 | $\omega$ | 339.20240 | | +0.98795116 | +0.15292081 | |
| $a$ | 2.7384138 | $\Omega$ | 12.07514 | | −0.12097443 | +0.85905832 | |
| $e$ | 0.1563265 | $i$ | 6.54015 | | −0.09652821 | +0.48850182 | |
| $P$ | 4.53 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.1+ | 0.3+ | 2001 09 19 | 704 | 1.1+ | 1.0− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 08 16 | 644 | 0.0 | 0.2− | 2001 09 19 | 699 | (0.7+ | 2.3+) | 2006 11 22 | 703 | 0.5+ | 1.3− |
| 2001 08 16 | 644 | 0.2− | 0.3+ | 2001 09 19 | 704 | 0.1+ | 0.3− | 2006 11 22 | 703 | 1.4− | 0.7+ |
| 2001 09 11 | 699 | (1.8− | 0.6+) | 2001 09 19 | 704 | (1.8+ | 0.3−) | 2006 11 22 | 703 | 0.1+ | 0.2+ |
| 2001 09 11 | 699 | 0.6− | 1.1− | 2001 09 19 | 645 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.9− | 0.5− |
| 2001 09 11 | 699 | (0.6− | 1.9+) | 2001 09 19 | 645 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2001 09 11 | 699 | 0.7− | 1.0+ | 2001 10 17 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.7+ | 0.5− |
| 2001 09 12 | 704 | 0.3− | 0.8+ | 2001 10 17 | 644 | 1.0− | 0.6+ | 2006 11 22 | 703 | 0.7+ | 0.0 |
| 2001 09 12 | 704 | 1.0− | 0.2− | 2001 10 17 | 644 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.4+ | 0.6+ |
| 2001 09 12 | 704 | 0.6− | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.4+ | 0.2+ |
| 2001 09 19 | 699 | 1.4+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.3− | 2006 11 23 | 703 | 0.5− | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 1.0− | 2006 11 15 | G96 | 0.2− | 0.4− | 2006 11 23 | 703 | 0.0 | 1.3− |
| 2001 09 19 | 699 | (1.8+ | 1.4+) | 2006 11 15 | G96 | 0.0 | 0.1− | | | | |
| 2001 09 19 | 699 | 0.6+ | 0.8+ | 2006 11 15 | 691 | 0.0 | 0.3+ | | | | |

**2001 RK$_{103}$ = 2006 SC$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.52833 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20332086 | $\omega$ | 16.93835 | | +0.99623313 | +0.08629529 | |
| $a$ | 2.8642753 | $\Omega$ | 338.10577 | | −0.08197405 | +0.90514025 | |
| $e$ | 0.0778674 | $i$ | 1.30994 | | −0.02828076 | +0.41626224 | |
| $P$ | 4.85 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1+ | 1.1+ | 2001 09 24 | 704 | 1.0− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.3+ | 0.4− | 2001 09 24 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 1.1+ | 0.4+ |
| 2001 09 12 | 704 | 1.3+ | 0.8− | 2001 09 24 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.7− |
| 2001 09 19 | 704 | 0.6+ | 0.3+ | 2001 09 24 | 704 | 0.0 | 0.9+ | 2006 09 19 | 699 | 1.0− | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.2− | | |
| 2001 09 19 | 704 | 0.1− | 0.7− | 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 1.2− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.5− | 2006 09 23 | 691 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.7− | 2006 09 23 | 691 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1+ | | | | | | |
| 2001 09 21 | 704 | 0.4− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.1+ | | | | | | |

**2001 RX$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 158.96695 | | (2000.0) | | | |
| $n$ | 0.29281408 | $\omega$ | 343.59494 | | +0.96392629 | −0.26122129 |
| $a$ | 2.2459914 | $\Omega$ | 31.68941 | | +0.25382675 | +0.84437410 |
| $e$ | 0.1782142 | $i$ | 5.58049 | | +0.08011298 | +0.46775615 |
| $P$ | 3.37 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 691 | 0.0 | 0.4+ | 2001 09 19 | 704 | 1.5+ | 0.6− | 2001 10 17 | 644 | 0.5− | 0.4+ | | |
| 2000 04 13 | 691 | 0.2+ | 0.2+ | 2001 09 19 | 699 | 0.3− | 0.1+ | 2001 10 17 | 644 | 0.6− | 0.3+ | | |
| 2000 04 13 | 691 | 0.1+ | 0.1− | 2001 09 19 | 704 | 1.0+ | 0.3− | 2001 10 17 | 644 | 0.5− | 0.4+ | | |
| 2001 08 25 | 699 | 1.5− | 0.5− | 2001 09 19 | 699 | 0.5+ | 0.4− | 2001 10 24 | 704 | 0.8+ | 0.1− | | |
| 2001 08 25 | 699 | 1.0+ | 0.0 | 2001 09 19 | 704 | 1.0+ | 0.2+ | 2001 10 24 | 704 | 0.3+ | 0.1+ | | |
| 2001 08 25 | 699 | 0.8− | 0.5+ | 2001 09 19 | 699 | 0.1+ | 0.7− | 2001 10 24 | 704 | 0.6+ | 0.0 | | |
| 2001 08 25 | 699 | 0.2+ | 0.2− | 2001 09 19 | 704 | 0.8+ | 0.3− | 2001 10 24 | 704 | 1.3+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2001 09 19 | 704 | 0.4+ | 0.1− | 2001 10 24 | 704 | 0.3− | 0.5− | | |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2001 09 21 | 704 | 1.0− | 0.9+ | 2006 01 06 | 704 | 0.4+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.0 | 0.3+ | 2001 09 21 | 704 | 1.0− | 0.2+ | 2006 01 06 | 704 | 0.3+ | 1.3+ | | |
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2001 09 21 | 704 | 1.1− | 0.5+ | 2006 01 06 | 704 | 0.4− | 0.9+ | | |
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2001 09 21 | 704 | 0.2− | 0.3− | 2006 01 06 | 704 | 0.2+ | 0.7− | | |
| 2001 09 19 | 699 | 0.4− | 0.9+ | 2001 09 21 | 704 | 1.4− | 0.4+ | | | | | | |

**2001 RY$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.09758 | | (2000.0) | | | |
| $n$ | 0.27790200 | $\omega$ | 269.52496 | | +0.25387176 | +0.96613139 |
| $a$ | 2.3256352 | $\Omega$ | 15.42200 | | −0.80377651 | +0.23732674 |
| $e$ | 0.1455453 | $i$ | 10.01632 | | −0.53804502 | +0.10132202 |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2004 04 25 | 704 | 0.3+ | 0.1+ | 2005 10 30 | 704 | 0.0 | 0.4+ | | |
| 2001 09 12 | 704 | 0.5− | 0.7+ | 2004 04 25 | 704 | 0.9+ | 0.8+ | 2005 11 13 | 644 | 0.0 | 0.0 | | |
| 2001 09 12 | 704 | 0.2+ | 0.4+ | 2004 04 25 | 704 | 0.4− | 0.8+ | 2005 11 13 | 644 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2004 05 22 | 704 | 0.5+ | 0.0 | 2005 11 13 | 644 | 0.1− | 0.4− | | |
| 2001 09 19 | 704 | 1.3+ | 0.4− | 2004 05 22 | 704 | 0.2+ | 0.3+ | 2005 11 21 | 703 | 2.2− | 0.6− | | |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2004 05 22 | 704 | 0.8− | 0.2+ | 2005 11 21 | 703 | 0.1+ | 0.6− | | |
| 2001 09 19 | 704 | 0.5+ | 0.3− | 2004 05 22 | 704 | 0.3+ | 0.7− | 2005 11 21 | 703 | 0.4− | 0.6− | | |
| 2001 09 19 | 704 | 0.5+ | 0.1− | 2004 05 22 | 704 | 0.3+ | 0.2+ | 2005 11 21 | 703 | 0.9− | 0.1− | | |
| 2001 09 21 | 704 | 1.2− | 0.6− | 2004 06 05 | 644 | 0.7− | 0.0 | 2005 11 21 | 291 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.5− | 2004 06 05 | 644 | 0.3− | 0.5− | 2005 11 21 | 291 | 0.5+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2004 06 05 | 644 | 0.3− | 0.2− | 2005 11 21 | 291 | 0.5+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.8− | 0.2− | 2005 10 30 | 704 | 0.7− | 0.5+ | | | | | | |
| 2001 09 21 | 704 | 0.4− | 0.7− | 2005 10 30 | 704 | 0.2− | 1.2+ | | | | | | |

**2001 RF$_{105}$ = 2004 CV$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.37152 | | (2000.0) | | | |
| $n$ | 0.20482429 | $\omega$ | 122.96963 | | +0.05174627 | +0.99500299 |
| $a$ | 2.8502420 | $\Omega$ | 149.64682 | | −0.96336513 | +0.07226552 |
| $e$ | 0.0996663 | $i$ | 9.72841 | | −0.26315386 | −0.06889656 |
| $P$ | 4.81 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 734 | 0.9+ | 0.4+ | 2004 02 12 | 691 | 0.1+ | 0.6+ | 2005 06 29 | 644 | 0.1+ | 0.2+ | | |
| 2001 08 17 | 734 | 1.4+ | 0.4− | 2004 02 12 | 691 | 0.0 | 0.4+ | 2005 06 29 | 644 | 0.0 | 0.4+ | | |
| 2001 08 17 | 734 | 1.0+ | 1.4− | 2005 04 17 | 703 | 0.7− | 0.1+ | 2005 06 29 | 644 | 0.0 | 0.3+ | | |
| 2001 09 12 | 704 | 0.9− | 0.7+ | 2005 04 17 | 703 | 0.2− | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2005 04 17 | 703 | 0.9− | 0.1+ | 2006 08 29 | 691 | 0.2+ | 0.0 | | |
| 2001 09 12 | 704 | 0.0 | 1.3+ | 2005 04 17 | 703 | 0.9+ | 0.9+ | 2006 08 29 | 691 | 0.0 | 0.3+ | | |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2005 06 02 | 703 | 0.4− | 0.9− | 2006 09 14 | 703 | 0.8− | 0.8+ | | |
| 2001 09 19 | 704 | 1.2− | 0.3+ | 2005 06 02 | 703 | 0.5+ | 1.4+ | 2006 09 14 | 703 | 1.4− | 0.3− | | |
| 2001 09 19 | 704 | 1.0− | 0.4+ | 2005 06 02 | 703 | 0.2+ | 0.1− | 2006 09 14 | 703 | 1.1− | 0.4+ | | |
| 2004 02 11 | 644 | 0.3+ | 0.8+ | 2005 06 02 | 703 | 0.5− | 0.7− | 2006 09 14 | 703 | 0.7− | 0.1− | | |
| 2004 02 11 | 644 | 0.4+ | 0.8+ | 2005 06 16 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 291 | 0.0 | 0.4+ | | |
| 2004 02 11 | 644 | 0.2+ | 0.9+ | 2005 06 16 | 291 | 0.1+ | 0.4+ | 2006 10 11 | 291 | 0.1− | 0.4+ | | |
| 2004 02 12 | 691 | 0.1+ | 0.5+ | 2005 06 16 | 291 | 0.3+ | 0.2+ | 2006 10 11 | 291 | 0.4+ | 0.5+ | | |

**2001 RO$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 132.07240 | | (2000.0) | | | |
| $n$ | 0.27994901 | $\omega$ | 273.16513 | | +0.91841681 | −0.39394687 |
| $a$ | 2.3142846 | $\Omega$ | 110.03759 | | +0.37657941 | +0.84243775 |
| $e$ | 0.2571970 | $i$ | 2.21334 | | +0.12123745 | +0.36756564 |
| $P$ | 3.52 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 15 | 691 | 0.1− | 0.3− | 2001 09 19 | 704 | (2.4+ | 0.3+) | 2005 11 25 | G96 | 0.0 | 0.2− | | |
| 1999 01 15 | 691 | 0.1− | 0.6− | 2001 09 19 | 699 | 0.5− | 0.1− | 2005 11 25 | G96 | 0.0 | 0.2− | | |
| 1999 01 15 | 691 | 0.1− | 0.4− | 2001 09 19 | 704 | 0.2− | 0.3+ | 2005 12 05 | G96 | 0.5− | 0.2+ | | |
| 2001 08 25 | 704 | 0.9+ | 0.8− | 2001 09 19 | 704 | 0.0 | 0.0 | 2005 12 05 | G96 | 0.2+ | 0.2+ | | |
| 2001 08 25 | 704 | 0.1− | 0.1− | 2001 09 19 | 699 | 0.9+ | 0.4+ | 2005 12 05 | G96 | 0.2− | 0.3− | | |
| 2001 08 25 | 704 | 0.5− | 0.4− | 2001 09 19 | 704 | 0.1+ | 0.2− | 2005 12 05 | G96 | 0.1− | 0.3+ | | |
| 2001 09 12 | 704 | 0.0 | 1.0− | 2001 09 21 | 704 | 0.6+ | 0.9+ | 2005 12 24 | 691 | 0.3+ | 0.0 | | |
| 2001 09 12 | 704 | 0.9− | 0.1− | 2001 09 21 | 704 | 0.8− | 0.2+ | 2005 12 24 | 691 | 0.0 | 0.5+ | | |
| 2001 09 12 | 704 | 0.9+ | 1.0− | 2001 09 21 | 704 | 0.0 | 0.3+ | 2005 12 24 | 691 | 0.0 | 0.6+ | | |
| 2001 09 12 | 704 | 0.5+ | 0.4− | 2001 09 21 | 704 | 0.1+ | 0.2− | 2006 01 10 | G96 | 0.0 | 0.1+ | | |
| 2001 09 19 | 699 | 0.2− | 0.1− | 2001 09 21 | 704 | 0.3+ | 0.5+ | 2006 01 10 | G96 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2005 11 25 | G96 | 0.5− | 0.0 | 2006 01 10 | G96 | 0.3+ | 0.1− | | |
| 2001 09 19 | 699 | 0.4− | 0.2+ | 2005 11 25 | G96 | 0.5− | 0.0 | 2006 01 10 | G96 | 0.0 | 0.2− | | |

**2001 RA$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.25354 | | (2000.0) | | | |
| $n$ | 0.21799989 | $\omega$ | 208.95826 | | +0.96516810 | −0.25207288 |
| $a$ | 2.7342100 | $\Omega$ | 165.13711 | | +0.25972076 | +0.95542218 |
| $e$ | 0.1688140 | $i$ | 15.85297 | | −0.03155404 | +0.15371314 |
| $P$ | 4.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.1− | 1.0+ | 2001 09 12 | 704 | 0.5− | 0.3− | 2001 10 10 | 644 | 0.2+ | 0.6− | | |
| 2001 08 16 | 704 | 0.2+ | 0.0 | 2001 09 12 | 704 | 0.1− | 0.1− | 2001 10 10 | 644 | 0.2+ | 0.8− | | |
| 2001 08 16 | 704 | 0.8− | 0.1− | 2001 09 12 | 704 | 0.3− | 0.2+ | 2001 10 11 | 704 | 0.5− | 0.5− | | |
| 2001 08 16 | 704 | 1.1− | 0.3+ | 2001 09 12 | 704 | 1.0− | 0.0 | 2001 10 11 | 704 | 0.7− | 0.3+ | | |
| 2001 08 24 | 704 | (2.5− | 0.3+) | 2001 09 12 | 704 | 0.0 | 0.3− | 2001 10 11 | 704 | 0.4− | 0.1− | | |
| 2001 08 24 | 704 | (2.3− | 0.5+) | 2001 09 19 | 704 | 1.0+ | 0.5+ | 2001 10 11 | 704 | 0.1− | 0.3− | | |
| 2001 08 24 | 704 | (1.8− | 1.4+) | 2001 09 19 | 704 | 0.7+ | 0.4+ | 2001 10 11 | 704 | 1.0− | 0.8− | | |
| 2001 08 24 | 704 | (2.0− | 0.7+) | 2001 09 19 | 704 | 0.7+ | 0.4+ | 2001 10 16 | 644 | 0.0 | 0.3− | | |
| 2001 09 11 | 699 | 1.0− | 0.6+ | 2001 09 19 | 704 | 0.7+ | 0.2− | 2001 10 16 | 644 | 0.1− | 0.6− | | |
| 2001 09 11 | 699 | 1.1− | 1.0+ | 2001 09 19 | 704 | 0.7+ | 0.1+ | 2001 10 16 | 644 | 0.2− | 0.3− | | |
| 2001 09 11 | 699 | 1.1− | 0.1+ | 2001 09 21 | 704 | 1.3+ | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.8− | 0.6+ | 2001 09 21 | 704 | 0.6+ | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.2+ | | |
| 2001 09 12 | 704 | 0.4− | 0.0 | 2001 09 21 | 704 | 0.9+ | 0.2+ | 2004 03 29 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.7− | 0.0 | 2001 09 21 | 704 | 0.9+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.0 | | |
| 2001 09 12 | 704 | 0.3+ | 0.2+ | 2001 09 21 | 704 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2001 09 25 | 644 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.1− | | |
| 2001 09 12 | 704 | 1.5+ | 0.0 | 2001 09 25 | 644 | 0.4+ | 0.4+ | 2006 11 22 | 703 | 0.3− | 0.0 | | |
| 2001 09 12 | 704 | 0.6+ | 1.0− | 2001 09 25 | 644 | 0.3+ | 0.8+ | 2006 11 22 | 703 | 0.0 | 1.4+ | | |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2001 09 27 | 644 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.6+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.2+ | 0.2− | 2001 09 27 | 644 | 0.5− | 0.0 | 2006 11 22 | 703 | 0.4− | 0.6+ | | |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2001 09 27 | 644 | 0.2− | 0.0 | | | | | | |
| 2001 09 12 | 704 | 0.5− | 0.2+ | 2001 10 10 | 644 | 0.3+ | 0.3− | | | | | | |

**2001 RB$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.41595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25124348 | $\omega$ | 293.22913 | | +0.84186843 | +0.53945757 | |
| $a$ | 2.4873649 | $\Omega$ | 34.12996 | | −0.48443738 | +0.76810662 | |
| $e$ | 0.2244223 | $i$ | 1.59234 | | −0.23786124 | +0.34496051 | |
| $P$ | 3.92 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.4− | 0.4+ | 2001 09 21 | 704 | 0.3− | 0.2− | 2005 09 23 | 703 | 0.1− | 1.2+ |
| 2001 08 23 | 699 | 0.8− | 0.6− | 2001 09 21 | 704 | 0.0 | 0.2− | 2005 09 23 | 703 | 0.3− | 0.1− |
| 2001 08 23 | 699 | 0.1− | 0.0 | 2001 09 21 | 704 | 0.6− | 0.2+ | 2005 09 23 | 703 | 0.6+ | 0.1− |
| 2001 08 23 | 699 | 0.1+ | 0.2− | 2001 09 21 | 704 | 0.1+ | 0.4+ | 2005 09 23 | 703 | 0.1− | 1.0− |
| 2001 09 12 | 704 | 0.0 | 0.0 | 2005 08 27 | 644 | 0.2+ | 0.2− | 2005 09 23 | 703 | 0.8− | 0.9− |
| 2001 09 12 | 704 | 0.1+ | 0.0 | 2005 08 27 | 644 | 0.3+ | 0.3− | 2005 10 05 | 704 | 0.4− | 0.5+ |
| 2001 09 12 | 704 | 1.0+ | 0.3+ | 2005 08 27 | 644 | 0.1+ | 0.3− | 2005 10 05 | 704 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2005 09 13 | 691 | 0.1+ | 0.2− | 2005 10 05 | 704 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.8+ | 0.4− | 2005 09 13 | 691 | 0.1+ | 0.2− | 2005 10 28 | G96 | 0.4+ | 0.6− |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2005 09 13 | 691 | 0.2− | 0.0 | 2005 10 28 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2005 09 23 | 703 | 0.1− | 0.7+ | 2005 10 28 | G96 | 0.3− | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2005 09 23 | 703 | 0.7− | 1.6+ | 2005 10 28 | G96 | 0.0 | 0.5− |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2005 09 23 | 703 | 1.5+ | 1.6+ | | | | |

**2001 RP$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.84701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22928594 | $\omega$ | 33.23956 | | +0.81868908 | −0.57423636 | |
| $a$ | 2.6437340 | $\Omega$ | 1.80736 | | +0.52045945 | +0.74135774 | |
| $e$ | 0.2226169 | $i$ | 1.62911 | | +0.24263174 | +0.34733458 | |
| $P$ | 4.30 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.0 | 0.2+ | 2001 09 19 | 291 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 1.2− | 0.3+ |
| 2001 08 19 | 807 | 0.3+ | 0.1+ | 2001 09 19 | 291 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 08 20 | 807 | 0.2+ | 0.2− | 2001 09 21 | 704 | 0.3+ | 0.4− | 2006 10 31 | G96 | 1.1+ | 0.2+ |
| 2001 08 20 | 807 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.1− | 1.1− |
| 2001 09 12 | 704 | 0.1− | 0.7+ | 2001 09 21 | 704 | 0.4− | 1.4− | 2006 11 16 | G96 | 0.1+ | 1.1− |
| 2001 09 12 | 704 | 0.6− | 0.3+ | 2001 09 21 | 704 | 0.7+ | 0.6− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2001 09 25 | 691 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.2+ | 0.6+ | 2001 09 25 | 691 | 0.2− | 0.5− | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.2+ | 0.6+ | 2001 09 25 | 691 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.2+ | 0.9+ | 2005 07 07 | 691 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.5− | 0.3− |
| 2001 09 19 | 704 | 0.1+ | 0.4+ | 2005 07 07 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.3+ |
| 2001 09 19 | 291 | 0.0 | 0.3+ | 2005 07 07 | 691 | 0.1− | 0.2− | | | | |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− | | | | |

**2001 RU$_{112}$ = 2006 PX$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.04468 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18889771 | $\omega$ | 215.60774 | | +0.18560021 | +0.98258880 | |
| $a$ | 3.0082800 | $\Omega$ | 65.08973 | | −0.89936325 | +0.17334159 | |
| $e$ | 0.3063332 | $i$ | 0.53538 | | −0.39585137 | +0.06687265 | |
| $P$ | 5.22 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2001 09 25 | 691 | 0.1− | 0.3+ | 2006 08 20 | 644 | 0.3+ | 0.1− |
| 2000 05 05 | 645 | 0.1+ | 0.2+ | 2005 04 04 | G96 | 0.3+ | 1.1+ | 2006 08 20 | 644 | 0.3− | 0.4− |
| 2001 09 12 | 704 | 0.4+ | 0.9+ | 2005 04 04 | G96 | 0.1+ | 0.7− | 2006 08 20 | 644 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 0.2− | 0.3+ | 2005 04 04 | G96 | 0.6− | 0.3− | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 1.0+ | 0.4+ | 2005 04 04 | G96 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.5+ | 0.1− |
| 2001 09 12 | 704 | 1.0− | 1.2− | 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2005 05 10 | G96 | 0.3− | 0.9− | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2001 09 19 | 704 | 0.6− | 0.2− | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.7− |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2005 05 10 | G96 | 0.0 | 0.5− | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.6− |
| 2001 09 25 | 691 | 0.3− | 0.3+ | 2006 08 14 | 644 | 0.1− | 0.3− | | | | |
| 2001 09 25 | 691 | 0.1+ | 0.3+ | 2006 08 14 | 644 | 0.1+ | 0.1+ | | | | |

**2001 RA$_{114}$ = 2006 TK$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.72212 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20892106 | $\omega$ | 351.56491 | | +0.99737436 | −0.06995875 | |
| $a$ | 2.8128586 | $\Omega$ | 12.49279 | | +0.07046201 | +0.87782261 | |
| $e$ | 0.1860804 | $i$ | 4.96265 | | +0.01671822 | +0.47384938 | |
| $P$ | 4.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1+ | 0.6+ | 2001 09 21 | 704 | 0.2+ | 1.3+ | 2006 10 16 | 691 | 0.3− | 0.3− |
| 2001 09 12 | 704 | 0.2+ | 0.2− | 2001 09 21 | 704 | (0.1+ | 3.1+) | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 1.0+ | 0.8+ | 2001 09 21 | 704 | 0.2− | 0.5− | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.9+ | 0.7− | 2001 09 21 | 704 | 1.0− | 0.9+ | 2006 11 15 | 691 | 0.4+ | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 1.4− | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.7− | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.2− |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1+ |

**2001 RP$_{114}$ = 2006 UZ$_{227}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.71004 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21230972 | $\omega$ | 24.23178 | | +0.09281464 | −0.99487309 | |
| $a$ | 2.7828478 | $\Omega$ | 60.46457 | | +0.90582019 | +0.06762319 | |
| $e$ | 0.1878655 | $i$ | 2.64573 | | +0.41337056 | +0.07519727 | |
| $P$ | 4.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.9− | 0.7− | 2006 11 10 | 691 | 0.1+ | 0.4+ |
| 2001 09 12 | 704 | 0.8+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 09 12 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.4− | 1.3− | 2006 09 30 | 703 | (0.7+ | 2.2−) | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2006 09 30 | 703 | (0.2+ | 1.9−) | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2001 09 19 | 704 | 0.0 | 0.7− | 2006 10 01 | 683 | 1.0+ | 1.2− | 2006 11 17 | 703 | 0.6− | 0.2− |
| 2001 09 19 | 704 | 0.2+ | 0.8− | 2006 10 01 | 683 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2006 10 01 | 683 | 0.4+ | 1.1+ | 2006 11 17 | 703 | 0.2− | 0.7− |
| 2001 09 21 | 704 | 1.3− | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.6+ |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 1.1− | 0.8+ | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 22 | 691 | 0.5+ | 0.0 |
| 2001 09 21 | 704 | 1.0+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.3− | 0.3− |
| 2004 05 13 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 25 | 703 | 1.1− | 0.2− |
| 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 25 | 703 | 0.2+ | 0.1− |
| 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 25 | 703 | 0.1− | 1.2− |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3+ | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.1− | 0.4+ | | | | |

**2001 RB$_{115}$ = 2006 US$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.71590 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21345948 | $\omega$ | 238.98133 | | +0.98144772 | +0.18942092 | |
| $a$ | 2.7728460 | $\Omega$ | 110.08558 | | −0.16337860 | +0.90722301 | |
| $e$ | 0.0836503 | $i$ | 1.81013 | | −0.10033848 | +0.37558772 | |
| $P$ | 4.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.0 | 0.1− | 2001 09 21 | 704 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.4+ | 0.0 | 2001 09 21 | 704 | 0.1+ | 0.6− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.8+ | 0.1− | 2006 10 17 | G96 | 0.2− | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2001 09 12 | 704 | 0.1− | 0.6− | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.7− | 0.4+ | 2006 10 17 | G96 | 0.6+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2006 10 18 | 691 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 1.5− | 0.1− |
| 2001 09 19 | 704 | 0.9− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 1.0+ | 0.3+ |
| 2001 09 21 | 704 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.4+ |
| 2001 09 21 | 704 | 1.0+ | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.0 | | | | |

**2001 RZ$_{115}$ = 2006 VL$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.38187 | | $\omega$ | 21.99136 | +0.82292991 | −0.56775967 |
| $n$ | 0.21973476 | | $\Omega$ | 12.66702 | +0.50606232 | +0.71582239 |
| $a$ | 2.7197994 | | $i$ | 5.45979 | +0.25823882 | +0.40650616 |
| $e$ | 0.0800847 | | | | | |
| $P$ | 4.49 | | $H$ | 16.5 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.0 | 0.1+ | 2001 09 21 | 704 | 0.7− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 1992 09 24 | 691 | 0.2+ | 0.5− | 2001 09 24 | 704 | 0.6− | 1.4+ | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 1992 09 24 | 691 | 1.0+ | 0.2+ | 2001 09 24 | 704 | 0.5+ | 0.7+ | 2006 11 02 | 691 | 0.2+ | 0.5+ |
| 1997 12 03 | 691 | (2.3− | 3.6−) | 2001 09 24 | 704 | 0.6− | 1.2+ | 2006 11 02 | 691 | 0.0 | 0.2+ |
| 1997 12 03 | 691 | 0.6+ | 0.2+ | 2002 12 06 | 645 | 0.1+ | 0.0 | 2006 11 02 | 691 | 0.1+ | 0.3+ |
| 1997 12 03 | 691 | 0.3+ | 0.1− | 2002 12 06 | 645 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 0.5+ | 1.5+ | 2002 12 13 | 645 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2001 09 12 | 704 | 0.3+ | 0.4+ | 2002 12 13 | 645 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2004 04 12 | 644 | 0.1− | 0.9+ | 2006 11 15 | 704 | 0.1+ | 0.9+ |
| 2001 09 12 | 704 | 0.6+ | 0.1− | 2004 04 12 | 644 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.1+ | 1.2+ |
| 2001 09 12 | 704 | 0.0 | 1.1+ | 2004 04 12 | 644 | 0.4− | 0.4+ | 2006 11 15 | 704 | 1.5+ | 0.5− |
| 2001 09 19 | 704 | 0.8+ | 0.3+ | 2004 04 12 | 691 | 0.3− | 0.5+ | 2006 11 22 | 704 | 2.3− | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2004 04 12 | 691 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.7+ | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 11 22 | 704 | 1.5− | 1.4+ |
| 2001 09 19 | 704 | 0.1+ | 1.2+ | 2006 10 04 | G96 | 0.4− | 0.5− | 2006 11 22 | 704 | 0.7− | 1.2+ |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.9− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.7− |
| 2001 09 21 | 704 | 0.8− | 0.1− | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.3− | 2006 10 27 | 691 | 0.2− | 0.3+ | 2006 12 01 | G96 | 0.5− | 0.4− |

**2001 RL$_{117}$ = 2006 VM$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.02582 | | $\omega$ | 16.21894 | +0.97912405 | −0.20319401 |
| $n$ | 0.21119031 | | $\Omega$ | 355.49473 | +0.17815872 | +0.87049687 |
| $a$ | 2.7926728 | | $i$ | 3.88259 | +0.09785484 | +0.44827156 |
| $e$ | 0.2168058 | | | | | |
| $P$ | 4.67 | | $H$ | 16.7 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2+ | 0.7+ | 2001 10 11 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.8+ |
| 2001 09 12 | 704 | 0.4+ | 0.5− | 2001 10 11 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 1.1− |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.6− | 0.5+ |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 1.2− |
| 2001 09 19 | 704 | 0.6− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 14 | 703 | 1.4− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.8− | 2006 10 19 | G96 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 0.7− | 0.8− | 2006 10 19 | G96 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.8− | 0.5− |
| 2001 09 19 | 704 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.5− | 1.1− |
| 2001 09 21 | 704 | 0.4+ | 1.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.0 | 1.4+ |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.6− | 1.4− | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2001 09 21 | 704 | 0.7− | 1.2+ | 2006 10 27 | 703 | 0.3− | 1.3− | 2006 11 19 | 704 | (0.3+ | 1.5+) |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2006 10 27 | 703 | (1.3+ | 1.7−) | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 703 | (5.0+ | 3.4−) | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.7+ | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.5− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.8− | 2006 10 27 | 691 | 0.7+ | 0.1+ | 2006 11 22 | 704 | 0.9+ | 1.0+ |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.6+ | 2006 11 22 | 704 | (1.0+ | 1.5+) |
| 2001 10 11 | 644 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.4+ | 0.4+ | | | | |

**2001 RQ$_{117}$ = 2006 TR$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.18254 | | $\omega$ | 73.06521 | +0.25649814 | −0.96654280 |
| $n$ | 0.22030028 | | $\Omega$ | 2.07533 | +0.86529185 | +0.22873859 |
| $a$ | 2.7151428 | | $i$ | 3.05244 | +0.43067240 | +0.11607616 |
| $e$ | 0.0533114 | | | | | |
| $P$ | 4.47 | | $H$ | 16.1 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 07 26 | 608 | 0.1− | 0.5− | 2004 05 23 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | (1.9+ | 0.9+) |
| 1996 07 26 | 608 | 1.4− | 1.2− | 2004 05 23 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.5− |
| 1996 08 09 | 608 | 0.5+ | 0.0 | 2004 05 23 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 1996 08 09 | 608 | 0.3+ | 0.0 | 2005 07 11 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2001 09 12 | 704 | (1.7+ | 0.1−) | 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2005 07 11 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 1.0+ | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 09 12 | 704 | (0.2+ | 1.7+) | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.6+ | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.4− |
| 2001 09 19 | 704 | 0.5+ | 1.3+ | 2006 10 17 | 691 | 1.5− | 0.4− | 2006 11 16 | 704 | 0.4+ | 0.8+ |
| 2001 09 19 | 704 | 0.5− | 0.5− | 2006 10 17 | 691 | 0.6+ | 0.5− | 2006 11 16 | 704 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.7+ | 1.4+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.4− |
| 2001 09 19 | 704 | 0.6+ | 1.4+ | 2006 10 21 | G96 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2001 09 21 | 704 | 1.3− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.8− |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2001 09 21 | 704 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.7− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.7− | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.3− | 0.5− |
| 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.6+ | 2006 11 22 | 704 | 1.0+ | 1.3+ |
| 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 09 | 691 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.5− | 0.3− |
| 2004 05 13 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.4+ | 2006 11 22 | 704 | (1.1+ | 2.8+) |
| 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.1+ | | | | |
| 2004 05 13 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.0 | | | | |

**2001 RH$_{119}$ = 2004 FJ$_{89}$ = 2006 SP$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.94846 | | $\omega$ | 327.19462 | +0.90666856 | +0.42083261 |
| $n$ | 0.19696748 | | $\Omega$ | 8.08077 | −0.32826468 | +0.74730666 |
| $a$ | 2.9255422 | | $i$ | 11.98484 | −0.26494229 | +0.51423018 |
| $e$ | 0.0586658 | | | | | |
| $P$ | 5.00 | | $H$ | 15.1 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6+ | 0.3+ | 2004 03 20 | 704 | 1.0+ | 0.6+ | 2006 09 16 | 704 | 1.0+ | 0.8− |
| 2001 09 12 | 704 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 704 | 0.4+ | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 0.0 | 2004 03 20 | 704 | 0.4− | 0.0 | 2006 09 22 | 704 | 0.1− | 0.5+ |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.5− | 0.4+ | 2006 09 22 | 704 | 0.5− | 0.3− |
| 2001 09 12 | 704 | 0.4+ | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.2− |
| 2001 09 19 | 704 | 0.2− | 1.1− | 2004 03 23 | 704 | 0.6− | 0.9− | 2006 09 22 | 704 | 0.8− | 0.3+ |
| 2001 09 19 | 704 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.9− | 0.7+ |
| 2001 09 19 | 704 | 1.1− | 0.1− | 2006 09 14 | 703 | 0.8− | 0.1+ | 2006 09 30 | 703 | 1.8+ | 0.3+ |
| 2001 09 19 | 704 | (1.8− | 0.6−) | 2006 09 14 | 703 | 0.1− | 0.5− | 2006 09 30 | 703 | 1.4+ | 0.4− |
| 2001 10 17 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.6− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.2− |
| 2001 10 17 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.8+ | | | | |
| 2001 10 17 | 644 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.4+ | 0.5− | | | | |

**2001 RB$_{120}$ = 2006 SV$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.82710 | | $\omega$ | 256.62490 | +0.83594827 | −0.54456132 |
| $n$ | 0.21003361 | | $\Omega$ | 136.31655 | +0.53394158 | +0.77830498 |
| $a$ | 2.8029167 | | $i$ | 5.66211 | +0.12687351 | +0.31256092 |
| $e$ | 0.1262774 | | | | | |
| $P$ | 4.69 | | $H$ | 15.8 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2001 09 24 | 644 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2001 09 24 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2001 09 12 | 704 | 0.0 | 0.7+ | 2001 09 27 | 644 | 0.2− | 1.0+ | 2006 10 16 | 703 | 0.4+ | 0.7+ |
| 2001 09 12 | 704 | 0.3+ | 0.9+ | 2001 09 27 | 644 | 0.1+ | 1.2+ | 2006 10 22 | 703 | 0.1+ | 0.9− |
| 2001 09 19 | 699 | 0.2− | 0.2− | 2001 09 27 | 644 | 0.4− | 0.6+ | 2006 10 22 | 703 | 0.3+ | 0.4− |
| 2001 09 19 | 699 | 0.4+ | 0.5− | 2006 09 29 | 699 | 0.4− | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2001 09 19 | 699 | 0.2− | 0.4− | 2006 09 29 | 699 | 0.8+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.6+ |
| 2001 09 19 | 699 | 0.4+ | 1.3+ | 2006 09 29 | 699 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.8− | 2006 09 29 | 699 | 1.0+ | 0.0 | 2006 11 17 | 704 | 1.2− | 0.2− |
| 2001 09 19 | 704 | 0.8+ | 1.2− | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.1− | 1.2− | 2006 09 30 | 703 | 0.1− | 0.8− | 2006 11 19 | 703 | 0.0 | 1.3+ |
| 2001 09 19 | 704 | (0.6− | 1.6−) | 2006 09 30 | 703 | 0.5+ | 0.4− | 2006 11 19 | 703 | (0.3+ | 1.8+) |
| 2001 09 19 | 704 | 0.3+ | 0.9− | 2006 09 30 | 703 | (0.6+ | 2.0−) | 2006 11 19 | 703 | 0.9− | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 19 | 703 | 0.4+ | 1.4+ |
| 2001 09 21 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7− | 1.2− | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | (1.7− | 0.7−) | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2001 09 21 | 704 | 0.8− | 0.6− | 2006 09 30 | 703 | 1.1− | 0.8− | 2006 11 24 | G96 | 0.2− | 0.1+ |
| 2001 09 24 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.7− | 2006 11 24 | G96 | 0.5+ | 0.0 |

**2001 RW$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.48250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12507558 | $\omega$ | 320.37468 | | +0.98044540 | +0.19435369 | |
| $a$ | 3.9599317 | $\Omega$ | 28.46340 | | −0.16009146 | +0.87897167 | |
| $e$ | 0.2582119 | $i$ | 3.71473 | | −0.11444452 | +0.43547152 | |
| $P$ | 7.88 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1+ | 0.2+ | 2001 09 21 | 704 | 0.4− | 1.0+ | 2001 10 20 | 704 | 0.8+ | 0.2− |
| 2001 05 24 | 807 | 0.0 | 0.1− | 2001 09 24 | 644 | 0.2− | 0.1− | 2001 10 20 | 704 | 1.2+ | 0.5− |
| 2001 08 23 | 699 | 0.5− | 0.5− | 2001 09 24 | 644 | 0.2− | 0.1+ | 2001 10 20 | 704 | 0.7+ | 0.2+ |
| 2001 08 23 | 699 | 0.3+ | 0.9− | 2001 09 24 | 644 | 0.2− | 0.0 | 2001 10 20 | 704 | 0.3+ | 0.6+ |
| 2001 08 23 | 699 | 0.2− | 0.5− | 2001 09 26 | 699 | 1.1− | 0.7+ | 2001 10 23 | 704 | 0.8+ | 0.1+ |
| 2001 08 23 | 699 | 0.2− | 0.7− | 2001 09 26 | 699 | 0.6+ | 0.5+ | 2001 10 23 | 704 | 0.3+ | 0.1+ |
| 2001 09 12 | 704 | (3.2+ | 4.1+) | 2001 09 26 | 699 | 0.4− | 0.1− | 2001 10 23 | 704 | 0.7+ | 0.9+ |
| 2001 09 12 | 704 | (3.5+ | 2.7+) | 2001 09 26 | 699 | 1.2− | 0.3+ | 2001 10 23 | 704 | 0.7+ | 1.7+ |
| 2001 09 12 | 704 | (3.0+ | 3.4+) | 2001 10 11 | 704 | 0.8+ | 0.5− | 2001 10 24 | 704 | 0.3+ | 0.7− |
| 2001 09 12 | 704 | (3.5+ | 3.3+) | 2001 10 11 | 704 | 0.0 | 0.1− | 2001 10 24 | 704 | 0.1− | 0.5− |
| 2001 09 12 | 704 | (3.0+ | 3.2+) | 2001 10 11 | 704 | 0.2− | 0.0 | 2001 10 24 | 704 | 0.4+ | 0.8+ |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2001 10 11 | 704 | 1.8+ | 0.7+ | 2001 10 24 | 704 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2001 10 13 | 704 | 1.1− | 0.4− | 2001 10 24 | 704 | 0.7− | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2001 10 13 | 704 | 0.2+ | 0.7+ | 2005 03 16 | G96 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2001 10 13 | 704 | 0.1− | 0.5− | 2005 03 16 | G96 | 0.4− | 0.4+ |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2001 10 13 | 704 | 1.2− | 0.6+ | 2005 03 16 | G96 | 1.1+ | 0.3− |
| 2001 09 19 | 644 | 0.2+ | 0.3− | 2001 10 17 | 644 | 0.1+ | 0.4− | 2005 03 16 | G96 | 0.2− | 0.2+ |
| 2001 09 19 | 644 | 0.2− | 0.2− | 2001 10 17 | 644 | 0.0 | 0.4− | 2006 03 02 | G96 | 0.3− | 0.4+ |
| 2001 09 19 | 644 | 0.1− | 0.2− | 2001 10 17 | 644 | 0.0 | 0.4− | 2006 03 02 | G96 | 0.1− | 0.5+ |
| 2001 09 21 | 704 | 0.4− | 0.2− | 2001 10 17 | 644 | 0.0 | 0.2− | 2006 03 02 | G96 | 1.1+ | 0.6+ |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2001 10 17 | 644 | 0.3− | 0.2− | 2006 03 02 | G96 | 0.3+ | 0.4+ |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2001 10 17 | 644 | 0.2− | 0.0 | | | | |
| 2001 09 21 | 704 | 0.6− | 0.3+ | 2001 10 20 | 704 | 0.5+ | 0.2+ | | | | |

**2001 RJ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.48167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20445609 | $\omega$ | 313.19061 | | +0.67419025 | +0.73854851 | |
| $a$ | 2.8536629 | $\Omega$ | 359.17355 | | −0.58144919 | +0.52768670 | |
| $e$ | 0.1435976 | $i$ | 14.82347 | | −0.45539473 | +0.41963419 | |
| $P$ | 4.82 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | 0.3+ | 0.5+ | 2001 09 28 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.3− |
| 2001 08 25 | 644 | 0.1+ | 0.6+ | 2001 09 28 | 704 | 0.6− | 0.7− | 2006 09 25 | 704 | 0.1+ | 0.3+ |
| 2001 08 25 | 644 | 0.3+ | 0.6+ | 2001 09 28 | 704 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.2+ | 0.2− | 2001 09 28 | 704 | 0.0 | 0.7+ | 2006 09 25 | 704 | 1.3+ | 0.3− |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2001 10 11 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 704 | 0.5+ | 0.0 |
| 2001 09 12 | 704 | 0.6+ | 0.0 | 2001 10 11 | 704 | 0.5+ | 1.1+ | 2006 09 29 | 704 | 0.4− | 0.3+ |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2001 10 11 | 644 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.3− | 2001 10 11 | 704 | 0.8− | 0.1+ | 2006 09 29 | 704 | 0.6+ | 0.7+ |
| 2001 09 19 | 699 | 0.5− | 0.2− | 2001 10 11 | 644 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 699 | (2.3− | 0.1−) | 2001 10 11 | 644 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2001 09 19 | 699 | 1.3− | 0.5+ | 2001 10 21 | 704 | 0.7+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 699 | 0.8− | 0.5− | 2001 10 21 | 704 | 0.8+ | 0.8− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 1.2− | 0.4− | 2001 10 21 | 704 | 0.6+ | 0.9− | 2006 10 03 | 704 | 0.9+ | 0.4+ |
| 2001 09 19 | 704 | 1.3− | 0.3− | 2001 10 21 | 704 | 1.3+ | 0.8− | 2006 10 03 | 704 | 0.4− | 0.4+ |
| 2001 09 19 | 704 | 1.4− | 0.1+ | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.8− | 0.1− |
| 2001 09 19 | 704 | 1.2− | 0.3− | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.5+ | 0.1+ |
| 2001 09 19 | 704 | (1.6− | 0.1+) | 2006 09 16 | 644 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.4− | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 0.4− | 2006 09 16 | 644 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.3+ | 0.4− | 2006 09 16 | 644 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2001 09 21 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.7− | 0.1− |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.9− | 0.9− |
| 2001 09 24 | 644 | 0.4+ | 0.0 | 2006 09 18 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 1.0+ | 0.1− |
| 2001 09 24 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 09 24 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 1.0− | 0.2− | 2006 10 21 | 644 | 0.4− | 0.5+ |
| 2001 09 26 | 699 | (1.5+ | 1.5−) | 2006 09 18 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 09 26 | 699 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 09 26 | 699 | 0.5+ | 0.0 | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2001 09 26 | 699 | 0.3+ | 0.4− | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.2+ |

**2001 RL$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.53181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26750131 | $\omega$ | 32.17040 | | −0.99517419 | −0.09178614 | |
| $a$ | 2.3855330 | $\Omega$ | 142.51502 | | +0.07353701 | −0.93173120 | |
| $e$ | 0.1218353 | $i$ | 3.26819 | | +0.06496646 | −0.35135777 | |
| $P$ | 3.68 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 06 | 704 | 0.2+ | 0.5+ | 2001 09 21 | 704 | 0.7− | 0.2+ | 2005 10 08 | 691 | 0.2+ | 0.2− |
| 2000 05 06 | 704 | 0.9+ | 0.3+ | 2001 09 21 | 704 | 1.5− | 0.9+ | 2005 10 08 | 691 | 0.2+ | 0.2+ |
| 2000 05 06 | 704 | 0.4− | 0.5+ | 2002 12 31 | 645 | 0.2− | 0.1+ | 2005 10 22 | 703 | 0.7− | 0.5+ |
| 2000 05 06 | 704 | 0.3− | 0.6+ | 2002 12 31 | 645 | 0.1+ | 0.1+ | 2005 10 22 | 703 | 1.9+ | 0.5+ |
| 2001 09 12 | 704 | 0.7+ | 0.6− | 2003 01 08 | 704 | 1.0+ | 0.1− | 2005 10 22 | 703 | 0.2+ | 0.7+ |
| 2001 09 12 | 704 | 0.2− | 1.0+ | 2003 01 08 | 704 | 0.3+ | 0.1− | 2005 10 22 | 703 | 2.8+ | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.2+ | 0.4+ | 2005 10 24 | 691 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 0.4+ | 1.0+ | 2003 01 08 | 704 | 0.7+ | 0.3+ | 2005 10 24 | 691 | 0.0 | 0.6− |
| 2001 09 19 | 704 | 0.1− | 1.0+ | 2003 01 08 | 704 | 1.0+ | 0.5− | 2005 10 24 | 691 | 0.2− | 0.5− |
| 2001 09 19 | 704 | 0.2+ | 0.8+ | 2003 01 31 | 704 | 0.6+ | 0.1− | 2005 11 01 | 691 | 0.4− | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2003 01 31 | 704 | 0.1+ | 0.6− | 2005 11 01 | 691 | 0.3− | 0.4− |
| 2001 09 19 | 704 | 0.4+ | 1.1+ | 2003 01 31 | 704 | 0.5− | 0.2+ | 2005 11 01 | 691 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 1.5− | 0.8+ | 2005 10 08 | 691 | 0.1+ | 0.1+ | | | | |

**2001 RW$_{123}$ = 2006 RT$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.86094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20563712 | $\omega$ | 298.58520 | | +0.50109642 | +0.86538373 | |
| $a$ | 2.8427262 | $\Omega$ | 1.50227 | | −0.73725689 | +0.42911065 | |
| $e$ | 0.1884518 | $i$ | 8.01938 | | −0.45316074 | +0.25879537 | |
| $P$ | 4.79 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5− | 1.4− | 2001 09 19 | 644 | 0.8− | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.6− | 1.0− | 2001 09 19 | 644 | 0.3− | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 0.2− | 0.9− | 2001 09 19 | 644 | 0.5− | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.8− | 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | (0.3+ | 1.6−) | 2001 09 21 | 704 | 0.5− | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 699 | 0.1− | 0.9− | 2001 09 21 | 704 | 0.7+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 09 19 | 699 | 0.8+ | 0.3− | 2001 09 21 | 291 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 699 | (0.1− | 1.7−) | 2001 09 21 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 699 | 0.2+ | 0.1− | 2001 09 21 | 291 | 0.5+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.9− | 0.5+ | 2001 09 21 | 291 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2001 09 19 | 704 | 0.3− | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2006 09 15 | 691 | 0.4− | 0.3− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.8− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.1− | | | | |
| 2001 09 19 | 704 | 1.2− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | | | |

**2001 RJ$_{125}$ = 2006 WM$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.90260 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21840344 | $\omega$ | 222.18416 | | +0.99613127 | | −0.05359928 |
| $a$ | 2.7308409 | $\Omega$ | 140.72499 | | +0.07305411 | | +0.94553002 |
| $e$ | 0.1330658 | $i$ | 6.31571 | | −0.04884249 | | +0.32109205 |
| $P$ | 4.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | (0.8+ | 1.9+) | 2001 09 19 | 704 | 0.4− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 0.4+ | 1.2+ | 2001 09 19 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2001 08 25 | 704 | (0.4+ | 2.9+) | 2001 09 21 | 704 | 0.7− | 0.6− | 2006 10 30 | 703 | 0.4− | 0.1+ |
| 2001 08 25 | 704 | (1.6+ | 2.0+) | 2001 09 21 | 704 | 0.5− | 0.6− | 2006 10 30 | 703 | 0.1+ | 0.6− |
| 2001 09 07 | 699 | 0.7− | 0.4+ | 2001 09 21 | 704 | (1.2− | 1.9−) | 2006 10 30 | 703 | 0.5− | 0.2− |
| 2001 09 07 | 699 | (1.6− | 0.2+) | 2001 09 21 | 704 | 0.7+ | 1.0− | 2006 10 30 | 703 | 0.5− | 0.1− |
| 2001 09 07 | 699 | 0.5+ | 0.6+ | 2001 09 21 | 704 | 0.3− | 1.1− | 2006 11 15 | 703 | 0.9+ | 0.8+ |
| 2001 09 07 | 699 | 0.4− | 0.5+ | 2001 09 24 | 644 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.6− | 0.8+ |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2001 09 24 | 644 | 0.3− | 0.2+ | 2006 11 15 | 703 | (1.6− | 2.8+) |
| 2001 09 12 | 704 | 0.1+ | 0.5+ | 2001 09 24 | 644 | 0.1+ | 0.2− | 2006 11 15 | 703 | (1.3+ | 2.2+) |
| 2001 09 12 | 704 | (1.9+ | 1.0−) | 2001 10 10 | 644 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 1.0+ | 2001 10 10 | 644 | 0.2+ | 0.8− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.8+ | 0.9+ | 2001 10 10 | 644 | 0.1+ | 0.6− | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2001 09 19 | 699 | 0.0 | 0.5− | 2001 10 16 | 644 | 0.5+ | 0.7+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 09 19 | 699 | 0.1− | 0.0 | 2001 10 16 | 644 | 0.5+ | 0.7+ | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2001 09 19 | 699 | 1.0+ | 0.4+ | 2001 10 16 | 644 | 0.2+ | 1.0+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2001 09 19 | 699 | 0.8+ | 0.2+ | 2001 10 24 | 644 | 0.4− | 0.2− | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.9− | 2001 10 24 | 644 | 0.6− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.6− | 0.4− | 2001 10 24 | 644 | 0.4− | 0.2− | | | | |
| 2001 09 19 | 704 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.4+ | | | | |

**2001 RL$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.27821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21335790 | $\omega$ | 251.77663 | | +0.74043747 | | +0.66832178 |
| $a$ | 2.7737260 | $\Omega$ | 66.21847 | | −0.58342124 | | +0.69182841 |
| $e$ | 0.1311968 | $i$ | 4.47523 | | −0.33372444 | | +0.27334857 |
| $P$ | 4.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | 1.0+ | 0.3+ | 2001 10 16 | 644 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 08 25 | 644 | 0.7+ | 0.1− | 2001 10 16 | 644 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 08 25 | 644 | 0.5+ | 0.2+ | 2001 10 16 | 644 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2001 09 12 | 704 | 0.6+ | 0.6+ | 2001 10 24 | 644 | 0.0 | 0.9+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.2− | 0.3− | 2001 10 24 | 644 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2001 09 12 | 704 | 0.5+ | 0.0 | 2001 10 24 | 644 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.6+ | 0.3+ |
| 2001 09 12 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 0.5− | 2006 10 16 | 703 | 1.0− | 0.9− | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.7+ | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.6− | 0.4− | 2006 11 11 | 703 | 0.5− | 0.7+ |
| 2001 09 19 | 704 | (1.2− | 1.7−) | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | 0.5− | 0.6− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | 0.5+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 10 10 | 644 | 0.6− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2001 10 10 | 644 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2001 10 10 | 644 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.8+ | 1.0+ |

**2001 RS$_{128}$ = 2006 VX**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.10927 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22171679 | $\omega$ | 233.79870 | | +0.79437354 | | +0.60462856 |
| $a$ | 2.7035661 | $\Omega$ | 88.92695 | | −0.53692714 | | +0.74379010 |
| $e$ | 0.0867969 | $i$ | 3.34090 | | −0.28404210 | | +0.28495719 |
| $P$ | 4.45 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.4+ | 0.5− | 2001 09 26 | 699 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 1.0− |
| 2001 09 12 | 704 | 0.2+ | 0.1− | 2001 09 26 | 699 | (1.9− | 1.1+) | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.1+ | 0.2− | 2001 09 26 | 699 | 0.9+ | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.2− | 0.6− | 2001 09 26 | 699 | (2.3− | 1.6−) | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.7+ | 0.2− | 2005 07 07 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 1.5− | 1.9+ |
| 2001 09 18 | 699 | 0.2+ | 1.2+ | 2005 07 07 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2001 09 18 | 699 | 0.4− | 0.9+ | 2005 07 07 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2001 09 18 | 699 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.7+ | 2006 11 18 | 704 | 1.0+ | 0.4+ |
| 2001 09 18 | 699 | 1.1− | 0.7+ | 2006 10 20 | 644 | 0.6+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 699 | (0.6+ | 1.6−) | 2006 10 20 | 644 | 0.7+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 699 | 0.6+ | 0.3− | 2006 11 01 | G96 | 0.5+ | 0.9− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2001 09 19 | 699 | 0.7+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2001 09 19 | 699 | 0.1− | 0.7− | 2006 11 01 | G96 | 0.0 | 0.7− | 2006 11 21 | 704 | 0.2+ | 0.7− |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2006 11 02 | 703 | 0.8− | 0.9− | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2001 09 19 | 704 | 0.4− | 0.7− | 2006 11 02 | 703 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.9+ | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.5+ | 1.5− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2006 11 02 | 703 | (0.1+ | 1.8−) | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.7− | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 25 | 291 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.4+ | 2006 11 11 | 691 | 0.4− | 0.0 | 2006 11 25 | 291 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.6− | 2006 11 25 | 291 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.9− | | | | |
| 2001 09 21 | 704 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.8− | | | | |

**2001 RF$_{129}$ = 1960 SK = 4811 P-L**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.51329 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21591087 | $\omega$ | 101.43890 | | −0.34507784 | | −0.93821454 |
| $a$ | 2.7518181 | $\Omega$ | 8.87942 | | +0.78211177 | | −0.30274250 |
| $e$ | 0.1443381 | $i$ | 9.68825 | | +0.51886651 | | −0.16763189 |
| $P$ | 4.56 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.1+ | 0.8− | 2001 10 24 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 1960 09 24 | 675 | 0.5− | 1.2− | 2001 10 24 | 704 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− |
| 1960 09 26 | 675 | 0.3− | 1.4− | 2001 10 24 | 704 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− |
| 1960 09 27 | 675 | 0.6− | 0.4+ | 2001 10 24 | 704 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.0 | 0.4− |
| 1960 09 27 | 675 | 0.3+ | 0.7+ | 2002 11 06 | 704 | 0.4+ | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.1− |
| 1960 09 28 | 675 | 0.8− | 0.5− | 2002 11 06 | 704 | 0.6+ | 0.8+ | 2006 10 13 | 691 | 0.2+ | 0.1− |
| 1960 09 28 | 675 | 0.2− | 0.6− | 2002 11 06 | 704 | 0.3+ | 0.0 | 2006 10 13 | 691 | 0.0 | 0.1− |
| 1992 09 30 | 691 | 0.8+ | 0.2+ | 2002 11 06 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 703 | 0.1− | 0.1− |
| 1992 09 30 | 691 | 1.3+ | 0.3+ | 2002 11 16 | 699 | 0.7− | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.4− |
| 1992 09 30 | 691 | 1.3+ | 0.0 | 2002 11 16 | 699 | 0.6+ | 0.1− | 2006 10 19 | 703 | 0.0 | 0.5+ |
| 1999 04 07 | 699 | (2.6+ | 0.1−) | 2002 11 16 | 699 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.1+ |
| 1999 04 07 | 699 | 0.5+ | 0.9+ | 2002 11 16 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 1999 04 07 | 699 | 0.7+ | 0.2− | 2002 12 15 | 704 | 1.0+ | 1.0− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.5+ | 2002 12 15 | 704 | 0.8− | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 0.7+ | 2002 12 15 | 704 | 0.4+ | 1.4− | 2006 10 21 | 704 | 0.5− | 0.7− |
| 2001 09 12 | 704 | 0.1+ | 0.6+ | 2002 12 15 | 704 | (0.3− | 1.7−) | 2006 10 21 | 704 | 1.3− | 0.4− |
| 2001 09 12 | 704 | 0.1− | 1.0+ | 2003 01 07 | 704 | 0.9− | 0.9+ | 2006 10 21 | 704 | 1.0− | 1.4+ |
| 2001 09 12 | 704 | 0.1− | 0.8+ | 2003 01 07 | 704 | 0.3− | 0.4+ | 2006 10 21 | 704 | 0.5− | 0.4+ |
| 2001 09 19 | 704 | 1.2− | 1.0+ | 2003 01 07 | 704 | 0.6− | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 1.5− | 0.8+ | 2003 01 07 | 704 | 0.6− | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 1.0− | 0.6+ | 2003 01 07 | 704 | 0.1− | 1.2+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 1.5− | 0.9+ | 2003 01 10 | 704 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 1.1− | 1.4+ | 2003 01 10 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.2− | 2003 01 10 | 704 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.3− | 0.0 | 2003 01 10 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.7− | 2003 01 10 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.6− | 1.1− |
| 2001 09 21 | 704 | 0.8− | 0.4− | 2003 01 13 | 704 | 0.5+ | 0.0 | 2006 10 27 | 703 | 0.5− | 0.6− |
| 2001 09 21 | 704 | 0.3− | 0.5− | 2003 01 13 | 704 | 0.8+ | 0.3− | 2006 10 27 | 703 | 0.8− | 0.4− |
| 2001 09 24 | 704 | 0.8− | 0.4+ | 2003 01 13 | 704 | 0.1+ | 0.4+ | 2006 10 29 | 704 | 0.2+ | 0.3− |
| 2001 09 24 | 704 | 0.2+ | 0.0 | 2003 02 26 | 704 | 0.6− | 1.2+ | 2006 10 29 | 704 | 0.6− | 0.3+ |
| 2001 09 24 | 704 | 0.1− | 0.3+ | 2003 02 26 | 704 | 0.4+ | 0.7+ | 2006 10 29 | 704 | 0.9− | 0.0 |
| 2001 09 24 | 704 | 0.5− | 0.4+ | 2003 02 26 | 704 | 0.7− | 0.5+ | 2006 10 29 | 704 | 0.1− | 0.5+ |
| 2001 09 24 | 704 | 0.6− | 0.6+ | 2003 02 26 | 704 | 0.1+ | 0.4− | 2006 10 29 | 704 | 0.4+ | 1.0+ |
| 2001 09 24 | 704 | 0.9− | 0.7+ | 2003 02 26 | 704 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2001 09 24 | 704 | 0.6− | 0.1+ | 2003 02 26 | 704 | 0.5+ | 0.9+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2001 09 24 | 704 | 0.8− | 0.5+ | 2003 02 26 | 704 | 0.6− | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2001 09 24 | 704 | 0.6− | 0.3+ | 2003 02 26 | 704 | 0.9+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2001 09 24 | 704 | 0.2+ | 0.3+ | 2003 02 26 | 704 | 1.2− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 1.1− | 0.3+ | 2003 02 26 | 704 | 1.2+ | 0.6− | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2001 09 24 | 644 | 0.3− | 0.4+ | 2003 03 07 | 644 | 0.5+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.3− |
| 2001 09 24 | 704 | 0.3− | 0.4+ | 2003 03 07 | 644 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.8+ | 0.1+ |
| 2001 09 24 | 704 | 0.3+ | 0.2− | 2003 03 07 | 644 | 0.7+ | 0.4+ | 2006 11 15 | 703 | 0.6+ | 0.8− |
| 2001 09 24 | 704 | 0.0 | 0.1+ | 2003 03 25 | 704 | 0.4− | 0.0 | 2006 11 15 | 703 | 0.5+ | 0.2+ |
| 2001 09 24 | 644 | 0.2− | 0.5+ | 2003 03 25 | 704 | 0.3− | 0.4− | 2006 11 15 | 703 | (0.8+ | 1.9−) |
| 2001 09 24 | 704 | 0.1− | 0.6+ | 2003 03 25 | 704 | 0.3− | 0.5+ | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2001 09 24 | 644 | 0.0 | 0.4+ | 2003 04 01 | 704 | 0.2− | 0.3− | 2006 11 17 | 644 | 0.0 | 0.2− |
| 2001 10 11 | 704 | 0.7+ | 0.5− | 2003 04 01 | 704 | 0.0 | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.2− |
| 2001 10 11 | 704 | 0.1+ | 0.6+ | 2003 04 01 | 704 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.8+ | 0.3− |
| 2001 10 11 | 704 | 0.3− | 0.1− | 2003 05 01 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 2001 10 17 | 644 | 0.1+ | 0.6+ | 2003 05 01 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.0 | 1.0+ |
| 2001 10 17 | 644 | 0.1− | 0.9+ | 2003 05 01 | 704 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.2− | 0.2− |
| 2001 10 17 | 644 | 0.1− | 1.3+ | 2003 05 01 | 704 | 0.6− | 1.1+ | 2006 11 23 | 703 | 0.1− | 0.7− |
| 2001 10 23 | 704 | 0.0 | 1.0− | 2003 05 01 | 704 | 0.8+ | 0.8+ | 2006 11 23 | 703 | 0.4− | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 0.6− | 2004 04 14 | 644 | 0.2+ | 0.6+ | 2006 11 23 | 703 | 0.3− | 0.2− |
| 2001 10 23 | 704 | 0.4− | 1.4− | 2004 04 14 | 644 | 0.1+ | 0.7+ | | | | |
| 2001 10 24 | 704 | 0.1− | 0.7− | 2004 04 14 | 644 | 0.1+ | 0.5+ | | | | |

### 2001 RP$_{129}$ = 2006 VK$_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.17985 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21014258 | $\omega$ | 353.53839 | | +0.99486064 | −0.09648292 |
| $a$ | 2.8019476 | $\Omega$ | 12.12741 | | +0.09820831 | +0.84563875 |
| $e$ | 0.2357593 | $i$ | 8.40661 | | +0.02464613 | +0.52496300 |
| $P$ | 4.69 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.4+ | 0.0 | 2001 09 26 | 704 | 1.0− | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.3− |
| 2001 09 12 | 704 | 0.5+ | 0.3− | 2001 09 26 | 704 | 0.2+ | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.3− | 2001 09 26 | 704 | 1.0− | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 2001 09 12 | 704 | 0.3+ | 0.0 | 2001 09 26 | 704 | 0.3− | 0.6− | 2006 10 27 | 703 | 1.2+ | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.3− | 2001 09 27 | 704 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.9+ | 2001 09 27 | 704 | (1.7− | 0.1+) | 2006 10 27 | 703 | 0.2− | 0.9− |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2001 09 27 | 704 | 0.9− | 0.3− | 2006 11 02 | 703 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.8+ | 0.1+ | 2001 09 27 | 704 | 0.0 | 0.7+ | 2006 11 02 | 703 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2001 09 27 | 704 | 0.6− | 0.9+ | 2006 11 02 | 703 | 0.8− | 0.1+ |
| 2001 09 21 | 704 | 1.0+ | 0.4− | 2001 10 11 | 704 | 1.1− | 0.4− | 2006 11 02 | 703 | 0.5− | 0.1− |
| 2001 09 21 | 704 | 1.4+ | 0.2+ | 2001 10 11 | 704 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.8+ | 0.1+ | 2001 10 11 | 704 | 0.4− | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.8+ | 0.2− | 2001 10 11 | 704 | 0.6− | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 1.0+ | 0.3− | 2001 10 20 | 704 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2001 09 24 | 704 | 0.1− | 0.6− | 2001 10 20 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2001 09 24 | 704 | 0.4+ | 0.3+ | 2001 10 20 | 704 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2001 09 24 | 704 | 0.2+ | 0.4− | 2001 10 20 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | 0.1− | 0.2+ | 2001 10 20 | 704 | 0.2− | 0.9− | 2006 11 14 | 703 | 0.8+ | 0.2− |
| 2001 09 24 | 704 | 0.4+ | 0.3+ | 2001 10 24 | 704 | 0.0 | 0.5− | 2006 11 14 | 703 | 0.5+ | 0.7+ |
| 2001 09 24 | 644 | 0.1− | 0.2− | 2001 10 24 | 704 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.1− | 0.6− |
| 2001 09 24 | 644 | 0.2− | 0.5− | 2001 10 24 | 704 | 1.0− | 0.8+ | 2006 11 14 | 703 | 0.9− | 0.4+ |
| 2001 09 24 | 644 | 0.0 | 0.4− | 2001 10 24 | 704 | 1.1− | 0.7+ | 2006 11 22 | 703 | 0.7− | 0.4+ |
| 2001 09 26 | 699 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.5+ | 0.0 | 2006 11 22 | 703 | 0.4− | 0.2− |
| 2001 09 26 | 699 | 0.8− | 0.7+ | 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 11 22 | 703 | 0.9+ | 0.2− |
| 2001 09 26 | 699 | 0.7− | 0.1− | 2001 11 20 | 704 | 0.3+ | 0.4− | 2006 11 22 | 703 | 1.1− | 0.2− |
| 2001 09 26 | 699 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.7− | | | | |

### 2001 RT$_{130}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.45034 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21038916 | $\omega$ | 331.84135 | | +0.99827383 | +0.04721750 |
| $a$ | 2.7997579 | $\Omega$ | 25.52398 | | −0.02567280 | +0.88568365 |
| $e$ | 0.0811698 | $i$ | 4.64934 | | −0.05282305 | +0.46188201 |
| $P$ | 4.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.7+ | 1.2+ | 2001 09 27 | 704 | 0.9− | 0.3− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.7+ | 1.2− | 2001 09 27 | 704 | 1.4− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.8+ | 0.0 | 2001 10 20 | 704 | 1.1− | 1.1+ | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.9− | 0.5− | 2001 10 20 | 704 | 0.8+ | 0.7− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.6+ | 0.2+ | 2001 10 20 | 704 | 0.6+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 0.1+ | 2001 10 20 | 704 | 0.2− | 1.2− | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.8+ |
| 2001 09 19 | 704 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.8− |
| 2001 09 19 | 704 | 1.4+ | 1.2− | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.8+ |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.2− | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.9+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.5+ |
| 2001 09 21 | 704 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2001 09 24 | 704 | 0.2+ | 1.4+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.3− | 0.4− |
| 2001 09 24 | 704 | 0.6− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 09 26 | 704 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.6− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2001 09 26 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2001 09 27 | 704 | 0.4− | 0.5− | 2006 10 27 | G96 | 0.1− | 0.5− | | | | |
| 2001 09 27 | 704 | (1.7− | 0.4+) | 2006 10 27 | G96 | 0.1− | 0.5− | | | | |

### 2001 RV$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.15088 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23226564 | $\omega$ | 51.89202 | | +0.54550933 | −0.83785158 |
| $a$ | 2.6210747 | $\Omega$ | 5.17658 | | +0.67961971 | +0.42783793 |
| $e$ | 0.2005641 | $i$ | 13.19700 | | +0.49044533 | +0.33905669 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6− | 1.0+ | 2001 09 19 | 704 | 0.0 | 1.3− | 2001 10 19 | 644 | 0.1+ | 0.8+ |
| 2001 09 12 | 704 | 0.1+ | 1.7+ | 2001 09 21 | 704 | 0.0 | 0.1− | 2001 10 21 | 704 | 0.4− | 0.6+ |
| 2001 09 12 | 704 | 0.8− | 0.2− | 2001 09 21 | 704 | 0.2+ | 0.2− | 2001 10 21 | 704 | 1.1+ | 0.6− |
| 2001 09 12 | 704 | 1.0+ | 0.3+ | 2001 09 21 | 704 | 0.0 | 0.3− | 2001 10 21 | 704 | 1.0− | 1.5+ |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2001 09 21 | 704 | 0.0 | 0.4− | 2001 10 21 | 704 | 0.3− | 1.3− |
| 2001 09 18 | 699 | 0.2− | 0.1+ | 2001 09 21 | 704 | 0.2+ | 0.3− | 2001 11 18 | 645 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.2− | 1.1+ | 2001 09 26 | 704 | 0.3+ | 1.5− | 2001 11 18 | 645 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.6+ | 0.0 | 2001 09 26 | 704 | 1.3− | 0.4+ | 2003 03 10 | 644 | 0.7+ | 0.6+ |
| 2001 09 18 | 699 | 0.8− | 0.4+ | 2001 09 26 | 704 | 0.6− | 0.5− | 2003 03 10 | 644 | 0.6+ | 0.5+ |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2001 09 26 | 704 | 0.3− | 0.2− | 2003 03 10 | 644 | 0.8+ | 0.4+ |
| 2001 09 19 | 704 | 0.1+ | 0.2− | 2001 09 26 | 704 | 0.6− | 1.2+ | 2003 03 30 | 645 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2001 10 19 | 644 | 0.0 | 0.8+ | 2003 03 30 | 645 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.3− | 1.0− | 2001 10 19 | 644 | 0.0 | 0.6+ | | | | |

### 2001 RN$_{132}$ = 2006 UW$_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.02618 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.20346005 | $\omega$ | 222.13872 | | +0.72556706 | +0.68556893 |
| $a$ | 2.8629688 | $\Omega$ | 94.47690 | | −0.61434996 | +0.68431847 |
| $e$ | 0.2017227 | $i$ | 3.42516 | | −0.31004284 | +0.24840184 |
| $P$ | 4.84 | $H$ | 16.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.9+ | 0.7− | 2001 09 19 | 704 | 0.3− | 1.2− | 2006 10 16 | 703 | (1.6− | 1.5+) |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2001 09 21 | 704 | (2.0− | 0.2+) | 2006 10 16 | 703 | 0.2+ | 1.0− |
| 2001 09 12 | 704 | 0.3+ | 0.6+ | 2001 09 21 | 704 | 0.8− | 0.4− | 2006 10 16 | 703 | 0.6− | 0.8+ |
| 2001 09 12 | 704 | 0.3+ | 0.1+ | 2001 09 21 | 704 | (1.7− | 2.4+) | 2006 10 16 | 703 | 1.4− | 0.0 |
| 2001 09 12 | 704 | 0.9− | 0.5− | 2001 09 21 | 704 | 0.7− | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.8+ |
| 2001 09 18 | 699 | 0.2+ | 1.0− | 2001 09 25 | 644 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2001 09 18 | 699 | 0.2− | 0.2− | 2001 09 25 | 644 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.8+ | 0.7+ |
| 2001 09 18 | 699 | 0.5+ | 0.7+ | 2001 09 25 | 644 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2001 09 18 | 699 | 1.3+ | 0.5+ | 2001 10 16 | 644 | 0.3− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.4− |
| 2001 09 19 | 704 | 0.6− | 0.7+ | 2001 10 16 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.8− |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2001 10 16 | 644 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.1− |

**2001 RJ$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.75514 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21104675 | $\omega$ | 343.38933 | | +0.39709089 | −0.91568541 | |
| $a$ | 2.7939391 | $\Omega$ | 83.17969 | | +0.84898274 | +0.34084169 | |
| $e$ | 0.2198161 | $i$ | 3.57768 | | +0.34863610 | +0.21294876 | |
| $P$ | 4.67 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.1+ | 0.0 | 2003 02 21 | 644 | 0.2+ | 1.0+ | 2006 11 16 | H07 | 0.2+ | 0.8− |
| 1992 11 26 | 691 | 0.3− | 0.0 | 2003 02 21 | 644 | 0.7+ | 1.3+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 1992 11 26 | 691 | 0.2+ | 0.0 | 2003 02 21 | 644 | 0.5+ | 1.2+ | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2001 09 11 | 699 | 1.1− | 1.5+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.7+ | 0.3+ |
| 2001 09 11 | 699 | 1.2− | 0.8+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.3+ | 0.2+ |
| 2001 09 11 | 699 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.0 | 0.9− |
| 2001 09 11 | 699 | 0.3− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2001 09 12 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.5+ | 1.1− |
| 2001 09 12 | 704 | 0.5+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.4− |
| 2001 09 12 | 704 | 0.1− | 0.6− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1− | 1.0+ |
| 2001 09 12 | 704 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.1− | 0.3− |
| 2001 09 12 | 704 | 0.7− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 1.1+ |
| 2001 09 18 | 699 | 0.7− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 1.0− | 0.5+ |
| 2001 09 18 | 699 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1− | 1.4− |
| 2001 09 18 | 699 | 1.0+ | 0.6+ | 2006 10 28 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2001 09 18 | 699 | 1.0+ | 0.9− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.6− |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 1.3− | 0.8− |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 1.0− | 0.6+ |
| 2001 09 19 | 704 | (2.0+ | 0.0 ) | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 1.3+ |
| 2001 09 19 | 704 | 0.5+ | 0.8− | 2006 11 02 | 703 | 0.6− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2006 11 02 | 703 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.4− |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2006 11 02 | 703 | 0.6− | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 1.1+ | 0.7− | 2006 11 02 | 703 | 0.5− | 0.9+ | 2006 11 21 | 704 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.5+ | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2001 10 08 | 644 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 27 | 224 | 0.3− | 0.6+ |
| 2001 10 08 | 644 | 0.7− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 224 | 0.4+ | 0.2+ |
| 2001 10 08 | 644 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− | 2006 11 27 | 224 | 0.9+ | 0.6+ |
| 2001 10 16 | 644 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2001 10 16 | 644 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.9+ | 1.3− |
| 2001 10 16 | 644 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.9+ | 0.1− |
| 2001 10 17 | 644 | 0.2+ | 1.1+ | 2006 11 16 | H07 | 0.5− | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.3+ |
| 2001 10 17 | 644 | 0.2+ | 1.2+ | 2006 11 16 | H07 | 0.6+ | 0.0 | | | | |
| 2001 10 17 | 644 | 0.2+ | 1.4+ | 2006 11 16 | H07 | 0.7+ | 0.2− | | | | |

**2001 RM$_{134}$ = 2006 RK$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.46359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20236311 | $\omega$ | 331.15485 | | +0.95939848 | +0.27723934 | |
| $a$ | 2.8733056 | $\Omega$ | 13.06473 | | −0.19394091 | +0.78201080 | |
| $e$ | 0.1860661 | $i$ | 13.27138 | | −0.20479620 | +0.55820915 | |
| $P$ | 4.87 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.8+ | 1.0+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.5− | 0.1+ |
| 2001 08 26 | 644 | 1.0+ | 1.2+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2001 08 26 | 644 | 0.8+ | 1.2+ | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 10 17 | 703 | (0.8+ | 2.0−) |
| 2001 09 12 | 704 | 0.9+ | 0.3+ | 2006 09 18 | 699 | 1.0+ | 0.3+ | 2006 10 17 | 703 | 1.1+ | 0.1+ |
| 2001 09 12 | 704 | 1.0+ | 0.5− | 2006 09 18 | 699 | (0.3− | 1.8−) | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2001 09 12 | 704 | 0.2+ | 1.2− | 2006 09 18 | 699 | 1.1− | 0.6− | 2006 10 19 | 644 | 0.1− | 0.8+ |
| 2001 09 12 | 704 | 0.6+ | 0.4− | 2006 09 18 | 699 | 0.2+ | 0.5− | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2001 09 12 | 704 | 0.3+ | 1.0+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 1.4− | 0.6− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2001 09 18 | 699 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 09 18 | 699 | 1.2− | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 17 | 644 | 1.3− | 0.7− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2001 10 17 | 644 | 1.2− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 10 17 | 644 | 1.3− | 0.2− | 2006 09 27 | 704 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.4+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.7− | 0.2− | 2006 09 27 | 704 | 0.6− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 10 20 | 704 | 0.1− | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.6+ | 0.7+ | 2006 10 03 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1− |

**2001 RL$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.31425 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21836112 | $\omega$ | 276.02807 | | +0.92168206 | +0.37761554 | |
| $a$ | 2.7311938 | $\Omega$ | 61.81509 | | −0.30391168 | +0.84528371 | |
| $e$ | 0.1665772 | $i$ | 5.79065 | | −0.24112210 | +0.37802374 | |
| $P$ | 4.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 644 | 0.8− | 0.4− | 2001 09 21 | 704 | 0.4+ | 0.4− | 2006 10 19 | G96 | 0.2− | 1.3− |
| 2001 08 28 | 644 | 0.8− | 0.1+ | 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2001 08 28 | 644 | 0.7− | 0.0 | 2001 09 21 | 704 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 09 11 | 699 | 0.3− | 0.1− | 2001 09 21 | 704 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2001 09 11 | 699 | 0.8− | 0.4− | 2001 09 21 | 704 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2001 09 11 | 699 | 0.2+ | 1.1− | 2001 10 16 | 644 | 0.0 | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2001 09 11 | 699 | 0.0 | 0.4− | 2001 10 16 | 644 | 0.2− | 0.6+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2001 10 16 | 644 | 0.2− | 0.9+ | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.1+ | 0.3− | 2001 10 24 | 644 | 0.0 | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.7+ | 0.6+ | 2001 10 24 | 644 | 0.0 | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 09 12 | 704 | 0.4+ | 0.1+ | 2001 10 24 | 644 | 0.1+ | 0.9+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2004 04 21 | 691 | 0.2+ | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 09 18 | 699 | 1.1+ | 0.4+ | 2004 04 21 | 691 | 0.4+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 18 | 699 | 0.1− | 0.5+ | 2004 04 21 | 691 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 09 18 | 699 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.6− | 0.3− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2001 09 18 | 699 | 0.2− | 0.7+ | 2006 09 28 | G96 | 0.5− | 0.6− | 2006 12 01 | 691 | 0.1− | 0.6+ |
| 2001 09 19 | 704 | 1.3− | 0.4− | 2006 09 28 | G96 | 0.4− | 0.5− | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 1.4− | 0.0 | 2006 09 28 | G96 | 0.4− | 0.5− | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2001 09 19 | 704 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.7+ | 0.6− | | | | |
| 2001 09 19 | 704 | 0.4− | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | | | |

**2001 RN$_{138}$ = 2006 SD$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.27334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20311871 | $\omega$ | 238.09016 | | +0.91045584 | −0.41276913 | |
| $a$ | 2.8661754 | $\Omega$ | 146.26803 | | +0.39367265 | +0.84531860 | |
| $e$ | 0.1093043 | $i$ | 2.71484 | | +0.12685429 | +0.33920217 | |
| $P$ | 4.85 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.4+ | 1.5+ | 2001 09 21 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.4+ |
| 2001 09 12 | 704 | 0.1− | 0.0 | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3− | 0.7− |
| 2001 09 12 | 704 | 0.7− | 0.6+ | 2002 11 07 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.5+ | 1.0− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 0.5− | 2004 04 14 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.5+ |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2004 04 14 | 691 | 0.1− | 0.6+ | 2006 09 19 | 703 | 0.5+ | 0.8− |
| 2001 09 19 | 704 | 0.7+ | 0.9+ | 2004 04 14 | 691 | 0.4+ | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 2001 09 19 | 704 | 0.5− | 0.3− | 2006 08 28 | 703 | 0.0 | 0.7+ | 2006 09 19 | 703 | 0.3+ | 0.2− |
| 2001 09 19 | 704 | 1.1− | 0.3− | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.2+ | 1.2+ | 2006 08 28 | 703 | 0.3+ | 1.0− | 2006 09 20 | 644 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.9+ | 2006 08 28 | 703 | (1.5− | 2.0−) | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.6+ | 2006 09 18 | 703 | 0.6− | 0.7+ | | | | |

**2001 RV$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.84956 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.40104882 | $\omega$ | 76.64766 | | +0.24700477 | −0.96899730 | |
| $a$ | 1.8211171 | $\Omega$ | 358.99647 | | +0.71293513 | +0.18573384 | |
| $e$ | 0.1610518 | $i$ | 19.11055 | | +0.65628664 | +0.16293304 | |
| $P$ | 2.46 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1− | 0.5− | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.3+ | 1.2+ |
| 2001 09 12 | 704 | 0.8− | 0.7− | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.3+ | 0.4− | 2006 09 24 | 152 | 1.3+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.4+ | 1.2+ | 2006 09 24 | 152 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2006 09 24 | 152 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2006 09 24 | 152 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.8− |
| 2001 09 21 | 704 | 0.4+ | 0.0 | 2006 09 24 | 152 | 0.6+ | 0.4+ | 2006 10 19 | 703 | 1.0− | 0.7− |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2006 09 27 | 703 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.7+ |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.9− | | | | |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 09 27 | 703 | 1.0− | 0.7+ | | | | |

**2001 RG$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.55336 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.39276424 | $\omega$ | 329.80593 | | +0.83199953 | +0.55428701 | |
| $a$ | 1.8466365 | $\Omega$ | 356.27500 | | −0.40961936 | +0.58544558 | |
| $e$ | 0.0882349 | $i$ | 21.01284 | | −0.37415072 | +0.59162436 | |
| $P$ | 2.51 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.7+ | 0.3+ | 2001 09 26 | 704 | 0.4− | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.2− |
| 2001 09 10 | 704 | 0.3+ | 0.3+ | 2001 09 26 | 704 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.1+ |
| 2001 09 10 | 704 | 0.4− | 0.7+ | 2001 09 26 | 704 | 0.7− | 0.3− | 2006 09 06 | 644 | 0.1− | 0.3+ |
| 2001 09 10 | 704 | 0.8+ | 0.4+ | 2001 09 26 | 704 | 0.6− | 0.8+ | 2006 09 16 | 703 | 0.6+ | 0.4− |
| 2001 09 10 | 704 | 0.2− | 0.1− | 2001 09 26 | 704 | 0.1− | 0.6− | 2006 09 16 | 703 | 0.6− | 0.0 |
| 2001 09 19 | 699 | 0.3+ | 1.4− | 2001 09 26 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 703 | 0.7+ | 0.0 |
| 2001 09 19 | 699 | (1.7+ | 1.3+) | 2001 09 29 | 644 | 0.4− | 0.1− | 2006 09 16 | 703 | 0.0 | 0.2− |
| 2001 09 19 | 699 | 0.2+ | 1.0− | 2001 09 29 | 644 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.1− |
| 2001 09 19 | 699 | 0.8+ | 0.4+ | 2001 09 29 | 644 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.7− | 0.2− |
| 2001 09 25 | 704 | 0.9− | 0.7+ | 2001 10 18 | 704 | 0.4− | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.3− |
| 2001 09 25 | 704 | 0.5− | 0.0 | 2001 10 18 | 704 | 0.2− | 0.5− | 2006 09 18 | 699 | 0.6+ | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2001 10 18 | 704 | 0.7− | 1.2− | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 2001 09 25 | 704 | 0.0 | 0.9+ | 2001 10 18 | 704 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 09 25 | 704 | 0.3+ | 1.2+ | 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 09 26 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 09 26 | 704 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.8− | 1.2− | 2006 10 12 | 644 | 0.5+ | 0.1− |
| 2001 09 26 | 704 | 0.6+ | 0.3− | 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.5+ | 0.0 |

**2001 RZ$_{144}$ = 2006 UT$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.19113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21151919 | $\omega$ | 119.60208 | | +0.98333695 | −0.12517312 | |
| $a$ | 2.7897773 | $\Omega$ | 247.85777 | | +0.07295279 | +0.93594422 | |
| $e$ | 0.1623018 | $i$ | 8.18272 | | +0.16651227 | +0.32915059 | |
| $P$ | 4.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 644 | 0.2− | 0.6− | 2006 10 19 | 703 | (1.6+ | 0.5+) | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2001 09 07 | 644 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 09 07 | 644 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 09 09 | 699 | 1.2+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.4+ |
| 2001 09 09 | 699 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.7− | 1.2+ |
| 2001 09 09 | 699 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 1.5− | 0.1+ |
| 2001 09 09 | 699 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.5− | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | (0.2+ | 1.5+) |
| 2001 09 16 | 704 | 0.9− | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.8− | 0.7+ |
| 2001 09 16 | 704 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.5+ | 2006 11 16 | 704 | 0.7+ | 0.5+ |
| 2001 09 16 | 704 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2001 09 25 | 704 | 0.0 | 1.2+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2001 09 25 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2001 09 25 | 704 | 0.4+ | 1.2+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 10 23 | 400 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.8+ | 0.7− |
| 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 23 | 400 | 0.7− | 1.1− | 2006 11 19 | 704 | 1.1+ | 0.9+ |
| 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 23 | 400 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.4− |
| 2006 10 13 | 691 | 0.2− | 0.0 | 2006 10 24 | 400 | 0.2− | 0.6− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2006 10 13 | 691 | 0.3− | 0.1− | 2006 10 24 | 400 | 0.4+ | 0.6− | 2006 11 22 | 704 | 0.4− | 0.3− |
| 2006 10 13 | 691 | 0.1− | 0.1− | 2006 10 24 | 400 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.0+ | 0.0 |
| 2006 10 16 | 400 | 0.5+ | 0.6− | 2006 10 26 | 400 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.8+ | 0.1+ |
| 2006 10 16 | 400 | 0.1+ | 0.7− | 2006 10 26 | 400 | 0.3+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2006 10 16 | 400 | 0.6− | 0.7− | 2006 10 26 | 400 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.2− | 0.3− |
| 2006 10 17 | 400 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.5− | 0.7+ |
| 2006 10 17 | 400 | 0.5+ | 1.0+ | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.7− | 0.0 |
| 2006 10 17 | 400 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2006 10 19 | 703 | 0.6+ | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.1+ | | | | |

**2001 RY$_{145}$ = 2006 TU$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.10240 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21091695 | $\omega$ | 173.10655 | | +0.87779629 | −0.47291946 | |
| $a$ | 2.7950853 | $\Omega$ | 215.44334 | | +0.43298507 | +0.85142251 | |
| $e$ | 0.2286976 | $i$ | 7.56007 | | +0.20493316 | +0.22677500 | |
| $P$ | 4.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 1.1+ | 0.7+ | 2006 10 13 | 291 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2001 08 25 | 704 | 0.3− | 0.4+ | 2006 10 13 | 291 | 0.4− | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2001 08 25 | 704 | 0.7− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2001 09 08 | 704 | 0.4+ | 0.6− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2001 09 08 | 704 | 0.7− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.6+ | 0.2− |
| 2001 09 08 | 704 | 1.0+ | 0.9+ | 2006 10 28 | G96 | 0.4+ | 0.5− | 2006 11 18 | 704 | 0.7− | 0.9− |
| 2001 09 11 | 699 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.6− | 2006 11 18 | 704 | 0.3− | 0.3− |
| 2001 09 11 | 699 | 0.3− | 1.1− | 2006 10 28 | G96 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2001 09 11 | 699 | 0.8+ | 0.1+ | 2006 10 28 | G96 | 0.6+ | 0.6− | 2006 11 18 | 704 | 0.1− | 1.1− |
| 2001 09 11 | 699 | 0.5− | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.5− |
| 2001 09 16 | 704 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 1.4+ | 0.1− |
| 2001 09 16 | 704 | 0.6+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.4− | 0.4+ |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2006 11 02 | 703 | 0.0 | 0.1− | 2006 11 20 | 704 | (1.8+ | 0.3+) |
| 2001 09 16 | 704 | 1.1− | 0.5− | 2006 11 02 | 703 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.1− |
| 2001 09 16 | 704 | 0.0 | 0.6− | 2006 11 02 | 703 | 0.9+ | 1.2− | 2006 11 20 | 704 | 1.3+ | 0.4+ |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 02 | 703 | 1.1− | 0.3− | 2006 11 28 | 704 | 1.0− | 0.5+ |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.3+ | 1.0+ |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.6− | 1.0+ |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.6− | 1.0+ |
| 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | (1.0+ | 1.7−) | | | | |
| 2006 10 13 | 291 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.6+ | | | | |

**2001 RF$_{146}$ = 2001 RQ$_{153}$**

Id. Minor Planet Center (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.16944 | | (2000.0) | | | |
| $n$ | 0.18180049 | $\omega$ | 110.91275 | | +0.75764313 | +0.64075101 |
| $a$ | 3.0860717 | $\Omega$ | 209.65977 | | −0.65209915 | +0.73521084 |
| $e$ | 0.2542385 | $i$ | 14.53075 | | −0.02726880 | +0.22114061 |
| $P$ | 5.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 691 | 0.3− | 0.4− | 2001 09 09 | 699 | 0.7+ | 0.1+ | 2001 09 25 | 704 | 1.1+ | 0.5+ |
| 2000 04 13 | 691 | 0.0 | 0.1− | 2001 09 14 | 644 | 0.2− | 0.1− | 2001 10 16 | 704 | 0.6− | 0.5− |
| 2000 04 13 | 691 | 0.2+ | 0.0 | 2001 09 14 | 644 | 0.5− | 0.1+ | 2001 10 16 | 704 | (1.8− | 0.5+) |
| 2001 08 17 | 644 | 0.1+ | 1.2+ | 2001 09 14 | 644 | 0.4− | 0.2− | 2001 10 16 | 704 | (1.6− | 0.8+) |
| 2001 08 17 | 644 | 0.2+ | 1.1+ | 2001 09 16 | 704 | 0.1− | 0.3+ | 2001 11 18 | 645 | 0.0 | 0.1− |
| 2001 08 17 | 644 | 0.2+ | 0.9+ | 2001 09 16 | 704 | 0.2+ | 0.5+ | 2001 11 18 | 645 | 0.1− | 0.2− |
| 2001 09 08 | 699 | 0.8− | 0.2+ | 2001 09 16 | 704 | 0.1+ | 0.6+ | 2001 12 10 | 645 | 0.0 | 0.1− |
| 2001 09 08 | 699 | 0.4− | 0.5+ | 2001 09 16 | 704 | 0.4+ | 0.2+ | 2001 12 10 | 645 | 0.1− | 0.2− |
| 2001 09 08 | 699 | 0.6− | 0.6+ | 2001 09 16 | 704 | 0.6+ | 0.6+ | 2006 06 19 | 704 | 0.1+ | 0.1− |
| 2001 09 08 | 699 | 0.6+ | 0.9+ | 2001 09 25 | 704 | 0.3+ | 0.3− | 2006 06 19 | 704 | 0.6+ | 1.0− |
| 2001 09 09 | 699 | 0.3− | 1.2+ | 2001 09 25 | 704 | 0.6+ | 0.1− | 2006 06 19 | 704 | 0.4− | 1.1− |
| 2001 09 09 | 699 | 0.1+ | 0.5− | 2001 09 25 | 704 | 1.0+ | 1.2− | | | | |
| 2001 09 09 | 699 | 0.3+ | 0.3+ | 2001 09 25 | 704 | 0.5− | 0.0 | | | | |

**2001 RG$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 149.13679 | | (2000.0) | | | |
| $n$ | 0.25513023 | $\omega$ | 39.94200 | | +0.19180146 | +0.96639671 |
| $a$ | 2.4620381 | $\Omega$ | 241.74575 | | −0.94276303 | +0.13295365 |
| $e$ | 0.2529814 | $i$ | 11.20329 | | −0.27278209 | +0.22000166 |
| $P$ | 3.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 608 | 0.4+ | 0.6− | 2001 09 08 | 699 | 0.8− | 0.2+ | 2005 09 01 | 644 | 0.4+ | 0.3+ |
| 2001 08 26 | 608 | 0.3+ | 0.6− | 2001 09 10 | 704 | (2.5+ | 0.1−) | 2005 09 01 | 644 | 0.4+ | 0.3+ |
| 2001 08 26 | 608 | 0.2+ | 0.6− | 2001 09 10 | 704 | (2.5+ | 0.3−) | 2005 09 01 | 644 | 0.4+ | 0.4+ |
| 2001 08 26 | 608 | 0.0 | 0.4− | 2001 09 10 | 704 | (3.4+ | 0.0 ) | 2005 09 25 | 644 | 0.3− | 0.2− |
| 2001 08 26 | 608 | 0.1− | 0.5− | 2001 09 10 | 704 | (3.3+ | 0.3+) | 2005 09 25 | 644 | 0.0 | 0.1+ |
| 2001 08 26 | 608 | 0.1+ | 0.2− | 2001 09 10 | 704 | (3.9+ | 0.9−) | 2005 09 25 | 644 | 0.4− | 0.1− |
| 2001 08 26 | 608 | 0.3+ | 0.7− | 2001 09 15 | 644 | 0.6− | 0.3− | 2005 10 05 | 703 | 0.5+ | 0.4− |
| 2001 08 26 | 608 | 0.0 | 0.4− | 2001 09 15 | 644 | 0.4− | 0.6+ | 2005 10 05 | 703 | 0.0 | 0.4− |
| 2001 08 26 | 608 | 0.2+ | 0.6− | 2001 09 15 | 644 | 0.1− | 0.8+ | 2005 10 05 | 703 | 0.9− | 0.6− |
| 2001 09 08 | 699 | 0.5− | 0.7+ | 2001 09 25 | 644 | 0.4+ | 0.0 | 2005 10 29 | 644 | 0.5+ | 0.2− |
| 2001 09 08 | 699 | 0.4+ | 0.9+ | 2001 09 25 | 644 | 0.1− | 0.5+ | 2005 10 29 | 644 | 0.1+ | 0.1− |
| 2001 09 08 | 699 | 0.3− | 1.1+ | 2001 09 25 | 644 | 0.3+ | 0.8+ | 2005 10 29 | 644 | 0.1− | 0.1− |

**2001 RB$_{147}$ = 2001 SB$_{344}$**

Id. Minor Planet Center (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 44.78625 | | (2000.0) | | | |
| $n$ | 0.21712808 | $\omega$ | 88.00113 | | +0.91991429 | +0.33866539 |
| $a$ | 2.7415240 | $\Omega$ | 252.15922 | | −0.38780129 | +0.86035888 |
| $e$ | 0.2160387 | $i$ | 11.98346 | | +0.05803330 | +0.38090465 |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | 0.1+ | 0.1+ | 2001 09 10 | 704 | 0.2+ | 0.4− | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 08 10 | 644 | 0.2− | 0.2+ | 2001 09 10 | 704 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.6+ | 0.8+ |
| 2001 08 10 | 644 | 0.0 | 0.1+ | 2001 09 10 | 704 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.7− | 0.3+ |
| 2001 08 22 | 704 | 1.0+ | 0.4− | 2001 09 10 | 704 | 0.5+ | 0.5− | 2006 11 16 | 704 | 1.3+ | 1.4+ |
| 2001 08 22 | 704 | 0.8+ | 0.6− | 2001 09 10 | 704 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 08 22 | 704 | 0.3+ | 0.2− | 2001 09 23 | 699 | 0.9− | 0.1+ | 2006 11 17 | 691 | 0.4− | 0.2+ |
| 2001 08 22 | 704 | 1.2+ | 0.5− | 2001 09 23 | 699 | 0.3− | 0.4− | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 2001 08 22 | 704 | 0.0 | 0.2+ | 2001 09 23 | 699 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2001 09 09 | 699 | 0.8− | 0.9+ | 2001 09 23 | 699 | 0.5− | 0.7− | 2006 11 22 | 691 | 0.2− | 0.2− |
| 2001 09 09 | 699 | 0.4+ | 0.5+ | 2001 09 27 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1+ | 1.3+ |
| 2001 09 09 | 699 | 0.5+ | 1.1+ | 2001 09 27 | 644 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2001 09 09 | 699 | 0.5+ | 0.3− | 2001 09 27 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.0 |
| 2001 09 09 | 699 | 0.2− | 0.3− | 2001 10 17 | 704 | 0.9+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.9− |
| 2001 09 09 | 699 | 0.3− | 0.3+ | 2001 10 17 | 704 | 0.6+ | 0.2− | 2006 11 22 | 704 | 0.7+ | 1.1+ |
| 2001 09 09 | 699 | 1.3− | 0.4+ | 2001 10 17 | 704 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2001 09 09 | 699 | 0.1− | 0.5+ | 2001 10 17 | 704 | 0.7+ | 0.9− | 2006 11 25 | 691 | 0.2− | 0.3− |
| 2001 09 09 | 608 | 0.4− | 0.2− | 2001 10 17 | 704 | 0.7− | 0.7+ | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2001 09 09 | 608 | 0.5− | 0.3− | 2006 11 13 | 691 | 0.0 | 0.2− | 2006 11 25 | 691 | 0.4+ | 0.1− |
| 2001 09 09 | 608 | 0.7− | 0.1− | 2006 11 13 | 691 | 0.2− | 0.2− | | | | |

**2001 RE$_{152}$ = 2001 UC$_{206}$**

Id. Minor Planet Center (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 200.06127 | | (2000.0) | | | |
| $n$ | 0.29635484 | $\omega$ | 217.56130 | | +0.87698760 | +0.46936451 |
| $a$ | 2.2280659 | $\Omega$ | 114.14581 | | −0.40898041 | +0.84153778 |
| $e$ | 0.1762468 | $i$ | 6.47520 | | −0.25224547 | +0.26741564 |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 704 | 0.0 | 0.1− | 2001 09 25 | 704 | 0.0 | 0.5− | 2001 10 23 | 644 | 0.0 | 1.1+ |
| 2001 08 18 | 704 | 0.6− | 0.7+ | 2001 09 25 | 704 | 0.2+ | 0.1− | 2005 10 11 | 691 | 0.1− | 0.8− |
| 2001 08 18 | 704 | 0.5+ | 0.5− | 2001 09 25 | 704 | 0.1+ | 0.0 | 2005 10 11 | 691 | 0.2− | 0.6− |
| 2001 09 11 | 699 | 0.7− | 0.1− | 2001 09 25 | 704 | 0.2− | 0.1− | 2005 10 11 | 691 | 0.3+ | 0.3+ |
| 2001 09 11 | 699 | 0.4− | 0.1+ | 2001 09 25 | 644 | 0.2− | 0.1− | 2005 11 30 | G96 | 0.7− | 0.1− |
| 2001 09 11 | 699 | 0.6− | 0.2− | 2001 09 25 | 644 | 0.3− | 0.3− | 2005 11 30 | G96 | 0.3− | 0.0 |
| 2001 09 11 | 699 | 0.5− | 0.1+ | 2001 09 25 | 644 | 0.3− | 0.2− | 2005 11 30 | G96 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.3− | 0.4− | 2001 10 11 | 644 | 0.4− | 0.1+ | 2005 11 30 | G96 | 0.9− | 1.0− |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2001 10 11 | 644 | 0.6− | 0.2+ | 2006 01 09 | 691 | 0.2− | 0.0 |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2001 10 11 | 644 | 0.5− | 0.2+ | 2006 01 09 | 691 | 1.0+ | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.3+ | 2001 10 20 | 704 | 0.3+ | 0.7+ | 2006 01 09 | 691 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2001 10 20 | 704 | 0.1− | 0.7+ | 2006 03 26 | G96 | 0.2− | 0.2+ |
| 2001 09 18 | 699 | 1.1+ | 0.1+ | 2001 10 20 | 704 | 0.0 | 0.0 | 2006 03 26 | G96 | 0.1− | 0.3+ |
| 2001 09 18 | 699 | 1.0+ | 0.9− | 2001 10 20 | 704 | 0.6+ | 0.2− | 2006 03 26 | G96 | 0.5− | 0.1+ |
| 2001 09 18 | 699 | 0.9+ | 0.3− | 2001 10 20 | 704 | 0.8+ | 0.3+ | 2006 03 26 | G96 | 0.4− | 0.5+ |
| 2001 09 18 | 699 | 0.9+ | 0.3− | 2001 10 23 | 644 | 0.7− | 1.0+ | | | | |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2001 10 23 | 644 | 0.2− | 0.9+ | | | | |

**2001 RR$_{155}$ = 2005 OC$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.48400 | | (2000.0) | | | |
| $n$ | 0.23710531 | $\omega$ | 105.39245 | | +0.46174409 | −0.87183773 |
| $a$ | 2.5852856 | $\Omega$ | 315.89001 | | +0.69686948 | +0.47050997 |
| $e$ | 0.1851936 | $i$ | 13.57519 | | +0.54878531 | +0.13608580 |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.9− | 0.2− | 2001 09 17 | 644 | 0.1+ | 0.2+ | 2005 07 31 | 644 | 0.1− | 0.5+ |
| 2001 08 25 | 704 | 0.7− | 0.9+ | 2001 09 29 | 644 | 1.0− | 0.4+ | 2005 07 31 | 644 | 0.0 | 0.2− |
| 2001 08 25 | 704 | 0.2+ | 0.3+ | 2001 09 29 | 644 | 0.5− | 0.3+ | 2006 11 27 | G96 | 0.4+ | 0.0 |
| 2001 09 10 | 704 | 0.7+ | 1.1− | 2001 09 29 | 644 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2001 09 10 | 704 | 0.8+ | 0.5− | 2005 07 30 | 644 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2001 09 10 | 704 | 1.0+ | 0.6− | 2005 07 30 | 644 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.5− | 0.3+ |
| 2001 09 17 | 644 | 0.1+ | 0.2+ | 2005 07 30 | 644 | 0.1+ | 0.0 | | | | |
| 2001 09 17 | 644 | 0.2+ | 0.1− | 2005 07 31 | 644 | 0.1+ | 0.1− | | | | |

**2001 RS$_{155}$ = 1993 VY$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.63659 | | (2000.0) | | | |
| $n$ | 0.23012905 | $\omega$ | 343.67190 | | +0.87181734 | +0.48941231 |
| $a$ | 2.6372730 | $\Omega$ | 346.96866 | | −0.43877001 | +0.76189044 |
| $e$ | 0.1988805 | $i$ | 5.15284 | | −0.21775079 | +0.42426236 |
| $P$ | 4.28 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 08 | 691 | 0.3− | 0.2+ | 2001 08 19 | 704 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 1993 11 08 | 691 | 0.3+ | 0.1− | 2001 08 19 | 704 | 0.6+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.2− |
| 1993 11 08 | 691 | 0.6+ | 0.1+ | 2001 09 11 | 704 | 0.4+ | 0.4− | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 1993 11 19 | 691 | 0.5− | 0.7+ | 2001 09 11 | 704 | 0.5+ | 0.4− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 1993 11 19 | 691 | 0.1− | 0.3+ | 2001 09 11 | 704 | 0.7− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.2− |
| 1993 11 19 | 691 | 0.9− | 1.0+ | 2001 09 21 | 704 | 1.3− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2001 07 14 | 644 | 0.8+ | 0.6− | 2001 09 21 | 704 | 0.7− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.4− |
| 2001 07 14 | 644 | 0.3+ | 0.6− | 2001 09 21 | 704 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 07 14 | 644 | 0.6+ | 0.4− | 2006 11 17 | 691 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2001 08 19 | 704 | 0.6+ | 0.6− | 2006 11 17 | 691 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.2− | 1.0− |
| 2001 08 19 | 704 | 0.2+ | 0.2− | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2001 08 19 | 704 | 0.5− | 0.0 | 2006 11 21 | 691 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.1− | 0.4+ |

**2001 RT$_{155}$ = 1999 BX$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.35839 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26875558 | $\omega$ | 272.43319 | | +0.87064088 | | −0.48475595 |
| $a$ | 2.3781052 | $\Omega$ | 116.57419 | | +0.48027805 | | +0.80088756 |
| $e$ | 0.1633685 | $i$ | 5.36632 | | +0.10638349 | | +0.35155482 |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 19 | 691 | 0.7+ | 0.2+ | 2001 09 12 | 704 | 0.5+ | 0.1+ | 2005 11 10 | 691 | 0.1− | 0.3− |
| 1999 01 19 | 691 | 0.3+ | 0.1+ | 2001 09 12 | 704 | 0.9+ | 0.1+ | 2005 11 10 | 691 | 0.3− | 0.4− |
| 1999 01 22 | 691 | 0.1− | 0.4− | 2001 09 25 | 704 | 0.1+ | 0.9− | 2005 11 10 | 691 | 0.2− | 0.1− |
| 1999 01 22 | 691 | 0.7− | 0.2− | 2001 09 25 | 704 | 0.7− | 1.0+ | 2005 11 30 | 704 | 0.4+ | 0.1− |
| 1999 01 22 | 691 | 0.2− | 0.0 | 2001 09 25 | 704 | 0.6− | 0.5+ | 2005 11 30 | 704 | 1.0+ | 0.6+ |
| 2001 09 12 | 704 | 0.4+ | 0.1− | 2001 09 25 | 704 | 0.2− | 0.3− | 2005 11 30 | 704 | 0.2+ | 1.1+ |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2001 10 10 | 644 | 0.4− | 0.1− | 2005 11 30 | 704 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2001 10 10 | 644 | 0.5− | 0.1+ | 2005 11 30 | 704 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.3− | 2001 10 10 | 644 | 0.0 | 0.1− | 2006 01 04 | 699 | 0.9− | 0.5+ |
| 2001 09 12 | 704 | 0.1+ | 0.0 | 2001 10 24 | 644 | 0.3+ | 0.2+ | 2006 01 04 | 699 | 0.4+ | 1.1− |
| 2001 09 12 | 704 | 0.1+ | 0.1− | 2001 10 24 | 644 | 0.3+ | 0.1+ | 2006 01 04 | 699 | 0.1− | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2001 10 24 | 644 | 0.3+ | 0.2+ | 2006 01 04 | 699 | 0.9+ | 2.9+ |

**2001 RU$_{155}$ = 1999 FD$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.89453 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22930388 | $\omega$ | 297.51018 | | −0.04573267 | | −0.99388840 |
| $a$ | 2.6435962 | $\Omega$ | 154.50628 | | +0.97897604 | | −0.06460450 |
| $e$ | 0.2229050 | $i$ | 13.49904 | | +0.19878239 | | +0.08951038 |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 10 13 | 704 | 1.4− | 0.3− | 2003 04 10 | 691 | 0.0 | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 10 13 | 704 | 0.9− | 0.0 | 2005 09 01 | 691 | 0.0 | 0.1+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2001 10 13 | 704 | 0.4+ | 0.0 | 2005 09 01 | 691 | 0.3− | 0.1− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 10 13 | 704 | 0.9− | 0.7− | 2005 09 01 | 691 | 0.2+ | 0.3+ |
| 2001 09 12 | 704 | 0.9− | 0.8+ | 2001 10 23 | 644 | 0.6+ | 1.0+ | 2005 11 25 | G96 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.6+ | 0.3+ | 2001 10 23 | 644 | 0.6+ | 0.4+ | 2005 11 25 | G96 | 0.5+ | 0.6+ |
| 2001 09 12 | 704 | 0.1+ | 0.1+ | 2001 10 23 | 644 | 0.4+ | 0.9+ | 2005 11 25 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.4− | 2003 03 26 | 691 | 0.2− | 0.1− | 2005 11 25 | G96 | 0.3− | 0.4− |
| 2001 09 21 | 704 | 0.7+ | 0.5− | 2003 03 26 | 691 | 0.1− | 0.2− | 2006 12 01 | 703 | 1.1+ | 0.4− |
| 2001 09 21 | 704 | 0.0 | 0.5− | 2003 03 26 | 691 | 0.3− | 0.1− | 2006 12 01 | 703 | 1.8− | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2003 04 10 | 691 | 0.1+ | 0.4+ | 2006 12 01 | 703 | 2.5+ | 0.7+ |
| 2001 09 21 | 704 | 0.3+ | 0.4− | 2003 04 10 | 691 | 0.1− | 0.3+ | 2006 12 01 | 703 | 0.1− | 0.1+ |

**2001 RV$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.08346 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27768148 | $\omega$ | 165.33639 | | −0.25160272 | | −0.96765311 |
| $a$ | 2.3268664 | $\Omega$ | 299.23303 | | +0.88581478 | | −0.22252396 |
| $e$ | 0.0761409 | $i$ | 1.21704 | | +0.38990800 | | −0.11887200 |
| $P$ | 3.55 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.1− | 0.6+ | 2003 03 06 | 699 | 0.5+ | 0.4+ | 2005 11 29 | 704 | (3.0+ | 2.5−) |
| 2001 09 12 | 691 | 0.3+ | 0.3+ | 2003 04 05 | 691 | 0.6+ | 1.2+ | 2005 12 02 | 704 | 0.1− | 0.5+ |
| 2001 09 12 | 691 | 0.1+ | 0.4+ | 2003 04 05 | 691 | 0.7+ | 0.4+ | 2005 12 02 | 704 | 0.7+ | 0.0 |
| 2001 09 20 | 704 | 1.5− | 0.7+ | 2003 04 05 | 691 | 0.1+ | 0.5+ | 2005 12 02 | 704 | 1.3+ | 1.9− |
| 2001 09 20 | 704 | 1.1− | 0.9+ | 2005 10 28 | G96 | 0.2+ | 0.6− | 2005 12 27 | G96 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | 0.4− | 1.1+ | 2005 10 28 | G96 | 0.5+ | 0.5− | 2005 12 27 | G96 | 0.2− | 0.6− |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2005 10 28 | G96 | 0.2− | 0.4− | 2005 12 27 | G96 | 0.3+ | 0.6− |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2005 10 28 | G96 | 0.2+ | 0.5− | 2005 12 27 | G96 | 0.4+ | 0.2− |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2005 11 29 | 691 | 1.1− | 0.2− | 2006 01 23 | G96 | 0.0 | 0.1− |
| 2001 11 18 | 645 | 0.1− | 0.1+ | 2005 11 29 | 691 | 0.4+ | 0.4+ | 2006 01 23 | G96 | 0.3+ | 0.1+ |
| 2003 03 06 | 699 | 0.0 | 1.3+ | 2005 11 29 | 691 | 0.3+ | 0.2− | 2006 01 23 | G96 | 0.1+ | 0.1− |
| 2003 03 06 | 699 | 0.1− | 1.2+ | 2005 11 29 | 704 | 0.9− | 1.1+ | 2006 01 23 | G96 | 0.3+ | 0.3+ |
| 2003 03 06 | 699 | 0.9− | 0.8+ | 2005 11 29 | 704 | 0.4− | 0.6+ | | | | |

**2001 RW$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.92919 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25527930 | $\omega$ | 241.64849 | | +0.98742044 | | +0.04254735 |
| $a$ | 2.4610795 | $\Omega$ | 115.56038 | | +0.00941633 | | +0.94558264 |
| $e$ | 0.2072324 | $i$ | 9.71837 | | −0.15783600 | | +0.32258826 |
| $P$ | 3.86 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3+ | 0.2− | 2005 11 01 | 703 | 0.1+ | 0.2+ | 2005 11 22 | 703 | 0.6− | 1.1− |
| 2001 09 12 | 704 | 0.8− | 0.3− | 2005 11 01 | 703 | 0.7− | 0.3+ | 2005 11 22 | 703 | 0.5− | 1.5+ |
| 2001 09 12 | 704 | 0.9− | 1.0− | 2005 11 01 | 703 | 0.5− | 0.2+ | 2005 11 29 | 703 | 1.0− | 0.1− |
| 2001 09 12 | 704 | 0.2− | 0.7− | 2005 11 01 | 703 | 0.4+ | 0.6− | 2005 11 29 | 703 | 0.4− | 0.2− |
| 2001 09 17 | 699 | 0.0 | 1.2+ | 2005 11 12 | 703 | 0.9+ | 0.0 | 2005 11 29 | 703 | 2.9− | 0.4+ |
| 2001 09 17 | 699 | 0.3− | 0.3+ | 2005 11 12 | 703 | 1.0− | 0.6+ | 2005 11 29 | 703 | 0.4− | 0.8+ |
| 2001 09 17 | 699 | 0.7+ | 0.3− | 2005 11 12 | 703 | 0.3− | 1.1+ | 2005 12 01 | H06 | 1.6+ | 1.0+ |
| 2001 09 17 | 699 | 0.0 | 0.4+ | 2005 11 12 | 703 | 1.0+ | 0.7− | 2005 12 01 | H06 | 0.1− | 0.4+ |
| 2001 10 11 | 704 | 0.2+ | 0.1− | 2005 11 13 | 703 | 0.7− | 0.8+ | 2005 12 01 | H06 | 0.3− | 0.6− |
| 2001 10 11 | 704 | 0.3+ | 0.2+ | 2005 11 13 | 703 | 2.4+ | 0.8− | 2005 12 05 | 703 | 0.1+ | 0.4− |
| 2001 10 11 | 704 | 0.3+ | 0.6+ | 2005 11 13 | 703 | 0.6− | 0.7− | 2005 12 05 | 703 | 0.1− | 0.6− |
| 2004 06 16 | 691 | 0.0 | 0.0 | 2005 11 13 | 703 | 0.2+ | 1.3− | 2005 12 05 | 703 | 0.3+ | 0.7+ |
| 2004 06 16 | 691 | 0.1+ | 0.2+ | 2005 11 22 | 703 | 0.2+ | 1.2− | 2005 12 05 | 703 | 0.6+ | 0.5+ |
| 2004 06 16 | 691 | 0.0 | 0.0 | 2005 11 22 | 703 | 1.9+ | 0.5+ | | | | |

**2001 SE$_2$ = 2006 UG$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.78879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20417790 | $\omega$ | 159.72084 | | +0.94319440 | | −0.33025702 |
| $a$ | 2.8562544 | $\Omega$ | 219.62228 | | +0.29645044 | | +0.88583341 |
| $e$ | 0.2625864 | $i$ | 3.25930 | | +0.15000485 | | +0.32592862 |
| $P$ | 4.83 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 333 | 0.6+ | 0.0 | 2001 10 09 | 333 | 0.1+ | 0.8− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 09 17 | 333 | 0.6+ | 1.2− | 2001 10 09 | 333 | 0.2+ | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 09 18 | 333 | 1.0+ | 0.1+ | 2001 10 11 | 644 | 0.3− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 09 18 | 333 | 0.9+ | 0.6− | 2001 10 11 | 644 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.1+ | 0.0 | 2001 10 11 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.1+ | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2001 10 18 | 644 | 0.4+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.6− | 2001 10 18 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.5− |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2001 10 18 | 644 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.7+ | 0.9+ | 2001 10 21 | 704 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.5− | 0.3− | 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2001 09 23 | 704 | 0.2− | 0.4− | 2001 10 21 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2001 09 23 | 704 | 0.2− | 0.8− | 2001 10 21 | 704 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 1.0− |
| 2001 09 23 | 704 | 0.4− | 0.3− | 2001 10 21 | 704 | 0.3− | 1.3+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2001 09 24 | 704 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2001 09 24 | 704 | 0.1− | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2001 09 24 | 704 | 0.7− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2001 09 24 | 704 | 0.0 | 1.0− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2001 09 24 | 704 | 0.3− | 1.4+ | 2006 10 20 | 691 | 0.3+ | 0.7− | 2006 11 18 | 704 | 0.1+ | 0.3− |
| 2001 09 24 | 704 | 0.6− | 0.7− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.0 |
| 2001 09 24 | 704 | 0.8− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.4− | 0.6+ |
| 2001 09 24 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.2− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 10 06 | 644 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.8− | 0.6− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2001 10 06 | 644 | 0.5− | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 10 06 | 644 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 10 09 | 333 | 0.1+ | 0.8− | 2006 10 28 | 691 | 0.0 | 0.1+ | | | | |

**2001 ST$_5$ = 2006 SU$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.09155 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38911770 | $\omega$ | 6.55984 | | +0.97894159 | | −0.20119182 |
| $a$ | 1.8581555 | $\Omega$ | 5.42739 | | +0.16672532 | | +0.69024730 |
| $e$ | 0.0555195 | $i$ | 21.43928 | | +0.11779659 | | +0.69503994 |
| $P$ | 2.53 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 1.1+ | 1.4+ | 2001 09 23 | 704 | 0.3+ | 0.0 | 2006 08 16 | 644 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | (1.1+ | 2.3+) | 2001 09 23 | 704 | 0.5+ | 0.1− | 2006 09 20 | 703 | 0.2− | 0.6− |
| 2001 09 16 | 704 | 0.9+ | 0.0 | 2001 09 23 | 704 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.3− |
| 2001 09 16 | 704 | 0.8+ | 0.7+ | 2001 09 23 | 704 | 0.3− | 0.2− | 2006 09 20 | 703 | 0.5+ | 0.9− |
| 2001 09 18 | 699 | 0.1− | 0.9+ | 2001 09 25 | 699 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.6+ | 0.1− |
| 2001 09 18 | 699 | 0.2+ | 0.2+ | 2001 09 25 | 699 | 0.6− | 0.2+ | 2006 09 26 | 703 | (2.4− | 1.9+) |
| 2001 09 18 | 699 | (1.8+ | 0.6+) | 2001 09 25 | 699 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2001 09 18 | 699 | 0.2+ | 0.1− | 2001 09 25 | 699 | 0.4+ | 1.1+ | 2006 09 26 | 703 | 1.2− | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.9− | 2001 09 26 | 704 | 1.1− | 0.4− | 2006 09 26 | 703 | 0.3+ | 0.4− |
| 2001 09 19 | 704 | 0.6− | 0.8− | 2001 09 26 | 704 | 0.5+ | 0.2− | 2006 09 26 | 703 | (2.4− | 1.5+) |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2001 09 26 | 704 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2001 09 19 | 704 | 0.6− | 0.4− | 2001 09 26 | 704 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.7+ |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2001 09 26 | 704 | 0.7− | 0.6− | 2006 09 30 | 703 | 0.8+ | 0.5− |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2001 09 26 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.7+ | 1.1+ | 2001 09 26 | 704 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.4− | 1.1− |
| 2001 09 21 | 704 | 0.7+ | 1.0+ | 2001 09 26 | 704 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2001 09 26 | 704 | 0.4+ | 0.5− | 2006 10 20 | G96 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 0.2+ | 1.1+ | 2001 09 26 | 704 | 0.1− | 1.0− | 2006 10 20 | G96 | 0.1− | 0.7+ |
| 2001 09 23 | 704 | 0.4+ | 0.5− | 2001 10 14 | 704 | 0.1+ | 0.7− | 2006 10 20 | G96 | 0.4+ | 0.3+ |
| 2001 09 23 | 704 | 0.4− | 0.5− | 2001 10 14 | 704 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 09 23 | 704 | 0.2− | 0.3− | 2001 10 14 | 704 | (0.6− | 1.7−) | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 0.1− | 0.4− | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3+ |
| 2001 09 23 | 704 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.4+ |

**2001 SZ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.13889 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28490155 | $\omega$ | 90.33598 | | −0.33567413 | | +0.94145889 |
| $a$ | 2.2873863 | $\Omega$ | 159.96347 | | −0.89648869 | | −0.30909541 |
| $e$ | 0.1545691 | $i$ | 5.23711 | | −0.28919009 | | −0.13459264 |
| $P$ | 3.46 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 1.2− | 0.1− | 2001 09 19 | 645 | 0.1+ | 0.1− | 2004 05 23 | 704 | 0.8− | 0.5+ |
| 2001 08 24 | 704 | 0.4− | 1.0− | 2001 09 19 | 645 | 0.2+ | 0.3− | 2004 05 23 | 704 | 0.0 | 0.7+ |
| 2001 08 24 | 704 | 0.4− | 0.8− | 2001 09 19 | 291 | 0.5+ | 0.3+ | 2004 05 23 | 704 | 0.2+ | 0.3− |
| 2001 09 18 | 291 | 0.1+ | 0.5+ | 2004 04 29 | 704 | 1.1− | 0.8− | 2004 05 23 | 704 | 0.7− | 0.6− |
| 2001 09 18 | 291 | 0.2− | 0.2+ | 2004 04 29 | 704 | 1.0+ | 0.2+ | 2004 06 22 | 691 | 0.2+ | 0.1− |
| 2001 09 18 | 291 | 0.4+ | 0.3+ | 2004 04 29 | 704 | 0.4− | 0.6+ | 2004 06 22 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 0.7+ | 2004 04 29 | 704 | 0.3+ | 0.2+ | 2004 06 22 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 291 | 1.0− | 0.1+ | 2004 05 15 | 704 | 0.7+ | 0.3− | 2005 11 04 | G96 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.9+ | 0.4+ | 2004 05 15 | 704 | 0.2+ | 0.1− | 2005 11 04 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 291 | 1.2− | 0.5+ | 2004 05 15 | 704 | 0.2+ | 0.4− | 2005 11 04 | G96 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.7+ | 1.0+ | 2004 05 15 | 704 | 0.5+ | 0.2+ | 2005 11 04 | G96 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2004 05 23 | 704 | 0.7− | 0.7+ | | | | |

**2001 SW$_{10}$ = 2006 RN$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.20135 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19772924 | $\omega$ | 180.40961 | | +0.90197775 | | −0.41581605 |
| $a$ | 2.9180235 | $\Omega$ | 205.18649 | | +0.39692602 | | +0.90455334 |
| $e$ | 0.2611108 | $i$ | 15.86422 | | +0.16995847 | | +0.09423514 |
| $P$ | 4.98 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.4− | 0.3− | 2001 09 16 | 704 | 0.6+ | 0.4− | 2006 09 15 | 704 | 0.3+ | 0.3+ |
| 2001 08 01 | 644 | 0.7− | 0.1− | 2001 09 16 | 704 | 0.2+ | 0.1− | 2006 09 15 | 704 | 0.1− | 0.9+ |
| 2001 08 01 | 644 | 0.6− | 0.4− | 2001 09 16 | 704 | 0.1− | 0.4− | 2006 09 15 | 704 | 0.1+ | 0.1+ |
| 2001 08 17 | 644 | 0.1− | 0.1+ | 2001 09 16 | 704 | 0.2+ | 0.3+ | 2006 09 18 | G92 | 0.5+ | 0.5− |
| 2001 08 17 | 644 | 0.0 | 0.1+ | 2001 09 16 | 704 | 0.3+ | 0.1− | 2006 09 18 | G92 | 0.5+ | 0.2+ |
| 2001 08 17 | 644 | 0.1+ | 0.0 | 2001 09 19 | 704 | 0.5− | 0.6+ | 2006 09 18 | G92 | 0.2+ | 0.0 |
| 2001 08 24 | 699 | 0.1− | 0.2− | 2001 09 19 | 704 | 0.5− | 0.6+ | 2006 09 19 | G92 | 0.2+ | 0.4− |
| 2001 08 24 | 699 | 0.0 | 0.1− | 2001 09 19 | 704 | 0.8+ | 0.1+ | 2006 09 19 | G92 | 0.1+ | 0.2− |
| 2001 08 24 | 699 | 0.8+ | 0.4+ | 2001 09 19 | 704 | 0.6+ | 0.1− | 2006 09 19 | G92 | 0.0 | 0.0 |
| 2001 08 24 | 699 | 0.7+ | 0.8+ | 2006 08 13 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | (3.9− | 4.7−) |
| 2001 09 09 | 699 | 0.4+ | 0.7+ | 2006 08 13 | 644 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.7− |
| 2001 09 09 | 699 | 0.9− | 0.1+ | 2006 08 13 | 644 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.7+ | 0.1− |
| 2001 09 09 | 699 | 0.7− | 0.6+ | 2006 09 11 | 703 | 0.9− | 0.8− | 2006 10 16 | 703 | 0.4− | 0.8+ |
| 2001 09 09 | 699 | 0.7− | 0.5+ | 2006 09 11 | 703 | 0.4+ | 0.9− | 2006 10 22 | 703 | (0.7− | 1.6−) |
| 2001 09 14 | 644 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.5− | 0.6− | 2006 10 22 | 703 | (1.8+ | 0.0 ) |
| 2001 09 14 | 644 | 0.2− | 0.0 | 2006 09 11 | 703 | 0.4+ | 0.6− | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2001 09 14 | 644 | 0.0 | 0.0 | 2006 09 15 | 704 | (2.1+ | 0.5−) | 2006 10 22 | 703 | 0.1− | 0.1− |

**2001 SG$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.76926 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21508434 | $\omega$ | 174.46680 | | +0.88119531 | | −0.46887019 |
| $a$ | 2.7588634 | $\Omega$ | 213.70768 | | +0.42945608 | | +0.84738618 |
| $e$ | 0.1799477 | $i$ | 6.25467 | | +0.19764185 | | +0.24919351 |
| $P$ | 4.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.4− | 0.2+ |
| 2001 09 16 | 704 | 0.4− | 0.7+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.3+ | 1.0+ | 2001 10 19 | 644 | 0.4− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | 0.1− | 0.4+ | 2001 10 19 | 644 | 0.2− | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2001 10 19 | 644 | 0.5− | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.1− |
| 2001 09 18 | 699 | 1.1+ | 1.5+ | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2001 09 18 | 699 | 0.1− | 0.7− | 2001 12 10 | 645 | 0.0 | 0.1− | 2006 11 18 | 704 | (2.3+ | 1.9+) |
| 2001 09 18 | 699 | 0.1+ | 0.6− | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2001 09 18 | 699 | (1.6− | 0.8−) | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.8+ | 1.3+ |
| 2001 09 19 | 704 | 0.5− | 1.3+ | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | (3.1+ | 3.1+) |
| 2001 09 19 | 704 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 09 28 | 644 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2001 09 28 | 644 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.5− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2001 09 28 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 | | | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1− | 0.1− | | | | |

### 2001 SW$_{11}$ = 2006 UJ$_{103}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.90150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21259219 | $\omega$ | 185.33133 | | +0.99491599 | −0.10070772 | |
| $a$ | 2.7803823 | $\Omega$ | 180.44907 | | +0.09400590 | +0.92997188 | |
| $e$ | 0.1957303 | $i$ | 2.62089 | | +0.03612567 | +0.35356791 | |
| $P$ | 4.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.7+ | 0.9− | 2006 10 18 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.8− | 0.8+ |
| 2001 09 16 | 704 | 0.9+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.5+ | 0.3+ |
| 2001 09 16 | 704 | 0.5+ | 0.5− | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.2− | 1.1− |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.7− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.5− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.7− |
| 2001 09 20 | 291 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.3+ |
| 2001 09 20 | 291 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.9− |
| 2001 09 20 | 291 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2006 10 18 | 691 | 0.5+ | 0.2− | 2006 11 11 | 703 | (1.7− | 0.1+) | | | | |

### 2001 SY$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.81247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20267549 | $\omega$ | 9.37906 | | +0.99425985 | −0.10656322 | |
| $a$ | 2.8703525 | $\Omega$ | 356.69272 | | +0.08422081 | +0.83468867 | |
| $e$ | 0.1495588 | $i$ | 9.55105 | | +0.06598642 | +0.54031390 | |
| $P$ | 4.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.2+ | 0.1− | 2001 09 21 | 704 | 0.3− | 0.6− | 2006 09 15 | 691 | 0.3+ | 0.2+ |
| 2001 08 24 | 704 | 0.1− | 1.4+ | 2001 09 21 | 704 | 0.7+ | 0.8− | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2001 08 24 | 704 | 0.3+ | 0.7+ | 2001 09 21 | 704 | 0.2− | 0.7− | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 0.6− | 0.4+ | 2001 09 21 | 704 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.2+ | 0.8+ |
| 2001 09 16 | 704 | 0.2− | 0.3− | 2001 09 21 | 704 | 0.3− | 0.8− | 2006 09 17 | 703 | 1.4− | 1.0− |
| 2001 09 16 | 704 | 0.8− | 0.6− | 2001 09 23 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 703 | (0.9− | 1.5−) |
| 2001 09 16 | 704 | (1.7− | 0.5+) | 2001 09 23 | 691 | 0.3+ | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.1− |
| 2001 09 18 | 699 | 0.6− | 1.2+ | 2001 09 23 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2001 09 18 | 699 | (0.3+ | 2.7+) | 2001 10 19 | 644 | 0.5+ | 1.5+ | 2006 09 19 | 691 | 0.0 | 0.4− |
| 2001 09 18 | 699 | (1.5− | 3.3+) | 2001 10 19 | 644 | (1.0+ | 1.7+) | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 09 18 | 699 | (0.2− | 2.1+) | 2001 10 19 | 644 | 0.5+ | 1.5+ | 2006 09 25 | 691 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.5− | 0.8− | 2001 10 21 | 704 | 0.7− | 1.4+ | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.4− | 1.0− | 2001 10 21 | 704 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.3+ | 0.8− | 2001 10 21 | 704 | 0.1− | 1.3+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.9− | 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 1.1− | 2001 11 12 | 645 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 09 19 | 644 | 0.4− | 0.6− | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 09 19 | 644 | 0.0 | 0.2− | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 09 19 | 644 | 0.1− | 0.4− | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |

### 2001 SF$_{13}$ = 2006 WW$_{7}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.94120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21650402 | $\omega$ | 274.29779 | | +0.15667479 | −0.98741137 | |
| $a$ | 2.7467896 | $\Omega$ | 166.62912 | | +0.93932437 | +0.14217747 | |
| $e$ | 0.1686996 | $i$ | 5.38956 | | +0.30516018 | +0.06931347 | |
| $P$ | 4.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 1.1− | 0.4− | 2003 02 03 | 699 | 0.5+ | 0.5− | 2006 11 14 | 704 | (1.8− | 2.3−) |
| 2001 09 16 | 704 | (2.5− | 0.7−) | 2003 02 03 | 699 | 1.0− | 0.8+ | 2006 11 16 | 704 | 0.7+ | 1.3− |
| 2001 09 16 | 704 | 1.4− | 0.7+ | 2003 02 22 | 644 | 0.4+ | 1.0+ | 2006 11 16 | 704 | 1.1− | 0.6+ |
| 2001 09 16 | 704 | (1.8− | 0.5−) | 2003 02 22 | 644 | 0.7+ | 1.1+ | 2006 11 16 | 704 | 1.2− | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2003 02 22 | 644 | 0.6+ | 1.1+ | 2006 11 16 | 704 | 0.4+ | 0.8+ |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.6− | 2006 09 19 | 699 | 0.3− | 1.5− | 2006 11 17 | 704 | 0.3+ | 0.3+ |
| 2001 09 19 | 704 | 0.1+ | 0.7− | 2006 09 19 | 699 | 0.9+ | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.8+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.6− |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.7+ | 0.5+ |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2001 09 21 | 704 | 0.4− | 0.8+ | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2001 09 24 | 704 | 0.8− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 19 | 703 | 0.6− | 0.4+ |
| 2001 09 24 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.9− | 0.8+ |
| 2001 09 24 | 704 | 0.4+ | 0.8+ | 2006 10 30 | 703 | 0.2+ | 0.5− | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2001 09 24 | 704 | 0.4− | 0.1+ | 2006 10 30 | 703 | 0.5− | 1.2− | 2006 11 19 | 703 | 0.7− | 0.3− |
| 2001 09 24 | 704 | 1.0− | 0.1+ | 2006 10 30 | 703 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2001 09 24 | 704 | 0.2+ | 1.1+ | 2006 10 30 | 703 | 0.0 | 0.3− | 2006 11 19 | 703 | 0.5− | 0.6− |
| 2001 09 24 | 704 | 0.4+ | 1.1+ | 2006 11 09 | 644 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.2− |
| 2001 09 24 | 704 | 1.0+ | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.6− | 2006 11 20 | 704 | 0.5+ | 0.8− |
| 2001 09 25 | 704 | 0.4+ | 0.7− | 2006 11 09 | 644 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.2+ |
| 2001 09 25 | 704 | 1.2+ | 0.3− | 2006 11 14 | 704 | 0.4− | 1.0+ | 2006 11 20 | 704 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.3− | 1.0+ | 2006 11 14 | 704 | 0.2+ | 1.2+ | 2006 11 20 | 704 | 1.0+ | 0.1− |
| 2003 02 03 | 699 | (1.0+ | 2.0+) | 2006 11 14 | 704 | 1.4− | 0.7− | | | | |
| 2003 02 03 | 699 | 0.4− | 0.1− | 2006 11 14 | 704 | 0.2+ | 0.4+ | | | | |

### 2001 SR$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.99838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19678759 | $\omega$ | 213.82920 | | +0.82099919 | −0.57091748 | |
| $a$ | 2.9273248 | $\Omega$ | 181.00762 | | +0.55914899 | +0.80534550 | |
| $e$ | 0.0659639 | $i$ | 12.08508 | | +0.11538079 | +0.15959905 | |
| $P$ | 5.01 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.5− | 0.2+ | 2001 09 24 | 704 | (0.3− | 2.6−) | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2001 08 24 | 704 | 0.3+ | 0.1+ | 2001 09 24 | 704 | (0.1+ | 1.9−) | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2001 08 24 | 704 | 0.3− | 0.2+ | 2001 09 26 | 704 | 0.7− | 0.6+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2001 08 24 | 704 | 0.9+ | 0.2+ | 2001 09 26 | 704 | (0.4+ | 2.0+) | 2006 09 27 | 704 | 0.9+ | 0.1− |
| 2001 09 11 | 699 | 0.2+ | 0.4+ | 2001 09 26 | 704 | (1.7− | 0.1+) | 2006 09 27 | 704 | 0.0 | 0.5+ |
| 2001 09 11 | 699 | 0.7− | 0.4+ | 2001 09 26 | 704 | 0.3− | 1.0+ | 2006 09 27 | 704 | 0.1− | 0.3+ |
| 2001 09 11 | 699 | 0.3− | 0.6− | 2001 09 26 | 704 | (0.5+ | 2.1+) | 2006 09 27 | 704 | 0.2+ | 0.3− |
| 2001 09 11 | 699 | 0.2+ | 0.2− | 2001 09 26 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.7− | 0.1+ |
| 2001 09 16 | 704 | 0.6+ | 0.3− | 2001 09 26 | 704 | 0.0 | 0.7+ | 2006 09 29 | 704 | 0.3− | 0.5− |
| 2001 09 16 | 704 | 0.5− | 0.7+ | 2001 09 26 | 704 | 0.6+ | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.2− |
| 2001 09 16 | 704 | 0.3+ | 1.1+ | 2001 09 26 | 704 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.7+ |
| 2001 09 16 | 704 | (1.0+ | 1.7+) | 2001 09 26 | 704 | 0.5− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2001 10 13 | 704 | (0.4− | 1.6+) | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2001 10 13 | 704 | 0.3+ | 1.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.3− | 2001 10 13 | 704 | (1.1+ | 1.8+) | 2006 10 01 | 703 | 0.4− | 1.1− |
| 2001 09 19 | 704 | 0.1− | 0.4− | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 10 01 | 703 | 0.4− | 1.3− |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2006 08 28 | 703 | (2.1− | 1.4−) | 2006 10 01 | 703 | (0.4+ | 2.2−) |
| 2001 09 20 | 704 | 0.8+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.3− | 2006 10 01 | 703 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.9+ | 0.0 | 2006 08 28 | 703 | 0.5− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.6− | 2006 09 17 | 704 | 0.8− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.6+ | 0.6− | 2006 09 17 | 704 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.0 | 2006 09 19 | 699 | 1.5− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.7+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | (0.2− | 1.5−) | 2006 09 20 | 704 | 0.2+ | 0.9+ | 2006 10 24 | 644 | 0.2+ | 0.5+ |
| 2001 09 23 | 704 | 0.7− | 0.6− | 2006 09 20 | 704 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2001 09 23 | 704 | 0.0 | 1.4− | 2006 09 20 | 704 | 0.3− | 0.5− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.7− | 1.1− | 2006 09 20 | 704 | 1.0+ | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 09 24 | 704 | (0.5+ | 1.6−) | 2006 09 22 | A50 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2001 09 24 | 704 | 0.1− | 1.3− | 2006 09 22 | A50 | 0.1+ | 0.7− | | | | |
| 2001 09 24 | 704 | (0.1− | 1.8−) | 2006 09 25 | G96 | 0.0 | 0.4− | | | | |

**2001 SH$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.79791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20073173 | $\omega$ | 319.21882 | | +0.81101304 | +0.58471056 | |
| $a$ | 2.8888525 | $\Omega$ | 5.11136 | | −0.46466147 | +0.66381652 | |
| $e$ | 0.1054385 | $i$ | 12.49270 | | −0.35545403 | +0.46632734 | |
| $P$ | 4.91 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.4+ | 0.5+ | 2001 09 26 | 704 | 0.1+ | 0.7− | 2006 09 25 | 691 | 0.1+ | 0.0 | |
| 2001 08 27 | 699 | 0.1+ | 0.8− | 2001 09 26 | 704 | 0.9+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.0 | |
| 2001 08 27 | 699 | 0.5− | 0.8− | 2001 09 26 | 704 | (2.0+ | 0.2−) | 2006 10 01 | 704 | 0.2+ | 0.9− | |
| 2001 08 27 | 699 | 0.7− | 0.7+ | 2001 09 26 | 704 | 0.6+ | 0.1+ | 2006 10 01 | 704 | 0.6+ | 0.1+ | |
| 2001 09 11 | 699 | 0.1+ | 0.7− | 2001 10 17 | 644 | 0.4+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.1− | |
| 2001 09 11 | 699 | 0.2− | 1.2− | 2001 10 17 | 644 | 0.4+ | 0.1− | 2006 10 01 | 704 | 0.9+ | 0.1+ | |
| 2001 09 11 | 699 | 0.0 | 0.8+ | 2001 10 17 | 644 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2− | |
| 2001 09 11 | 699 | 0.4− | 0.3− | 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2− | |
| 2001 09 16 | 704 | 0.7− | 1.0− | 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.3− | |
| 2001 09 16 | 704 | 0.7− | 1.1− | 2006 08 28 | 703 | 0.6− | 1.1+ | 2006 10 09 | 644 | 0.1− | 0.0 | |
| 2001 09 16 | 704 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 10 09 | 644 | 0.1+ | 0.5+ | |
| 2001 09 19 | 704 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.2− | 1.1+ | 2006 10 09 | 644 | 0.2− | 0.1+ | |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 1.2− | 0.7− | 2006 10 17 | 703 | 0.2− | 1.0+ | |
| 2001 09 19 | 704 | 0.4− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.4+ | |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.2+ | |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.9+ | |
| 2001 09 21 | 704 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.4− | |
| 2001 09 21 | 704 | 0.5− | 0.5− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1+ | |
| 2001 09 21 | 704 | 0.2− | 0.5− | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.1− | |
| 2001 09 26 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2− | |
| 2001 09 26 | 704 | 0.6+ | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.1− | |
| 2001 09 26 | 704 | 0.7+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2+ | |
| 2001 09 26 | 704 | 0.7+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.2− | |

**2001 SZ$_{15}$ = 3308 T-3**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.16102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20403811 | $\omega$ | 212.05747 | | +0.97047698 | −0.24085918 | |
| $a$ | 2.8575589 | $\Omega$ | 161.86681 | | +0.22901222 | +0.90366256 | |
| $e$ | 0.0915832 | $i$ | 2.33866 | | +0.07568245 | +0.35409156 | |
| $P$ | 4.83 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 1.5− | 1.7+ | 2001 10 14 | 704 | (0.3+ | 1.6−) | 2006 09 25 | 691 | 0.1+ | 0.1− | |
| 1977 10 11 | 675 | 0.7− | 1.5+ | 2001 10 14 | 704 | 0.1− | 0.9− | 2006 09 25 | 691 | 0.1+ | 0.2+ | |
| 1977 10 12 | 675 | 0.5+ | 1.5− | 2001 10 14 | 704 | 0.5+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.1− | |
| 1977 10 12 | 675 | (2.9+ | 2.4−) | 2001 10 17 | 644 | 0.2− | 0.8− | 2006 09 29 | 691 | 0.4− | 0.3+ | |
| 1977 10 16 | 675 | 1.4+ | 1.6− | 2001 10 17 | 644 | 0.3− | 0.8− | 2006 09 29 | 691 | 0.2− | 0.2+ | |
| 1977 10 16 | 675 | 1.4+ | 0.9− | 2001 10 17 | 644 | 0.1− | 0.5− | 2006 09 29 | 691 | 0.3− | 0.1+ | |
| 1977 10 17 | 675 | 1.1+ | 0.5− | 2001 10 20 | 704 | 0.0 | 1.0− | 2006 10 03 | 691 | 0.0 | 0.0 | |
| 1994 03 04 | 691 | 0.9− | 1.1− | 2001 10 20 | 704 | 0.4+ | 0.2− | 2006 10 03 | 691 | 0.0 | 0.1+ | |
| 1994 03 04 | 691 | 0.5− | 0.6+ | 2001 10 20 | 704 | 0.3− | 0.4− | 2006 10 03 | 691 | 0.0 | 0.2+ | |
| 1994 03 04 | 691 | 0.1− | 0.3+ | 2001 10 20 | 704 | 0.8− | 0.6− | 2006 10 19 | 644 | 0.0 | 0.0 | |
| 1999 03 13 | 691 | 0.2+ | 0.4− | 2003 01 08 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.4+ | |
| 1999 03 13 | 691 | 0.1+ | 0.2− | 2003 01 08 | 704 | 0.3− | 1.3+ | 2006 10 19 | 644 | 0.0 | 0.3+ | |
| 1999 03 13 | 691 | 0.5+ | 0.3− | 2003 01 08 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ | |
| 2001 09 16 | 704 | 0.5− | 0.5− | 2004 03 27 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.6+ | |
| 2001 09 16 | 704 | 1.1− | 0.3− | 2004 03 27 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.1+ | |
| 2001 09 16 | 704 | 0.6+ | 0.4− | 2004 03 27 | 704 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.1− | |
| 2001 09 16 | 704 | 0.4− | 0.2+ | 2004 03 27 | 704 | 0.7+ | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.2− | |
| 2001 09 19 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.4− | 0.8− | 2006 10 22 | G96 | 0.1+ | 0.2− | |
| 2001 09 19 | 704 | 0.3+ | 0.5+ | 2004 04 23 | 691 | 0.5+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.2− | |
| 2001 09 19 | 704 | 0.4− | 1.4+ | 2004 04 23 | 691 | 0.2+ | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.1− | |
| 2001 09 21 | 704 | 0.7− | 0.4+ | 2004 04 23 | 691 | 0.1+ | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.1− | |
| 2001 09 21 | 704 | 0.3+ | 0.7+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ | |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.1+ | |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.5+ | |
| 2001 09 21 | 704 | 0.4+ | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.1− | |
| 2001 09 26 | 704 | 0.2− | 0.2− | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.3− | |
| 2001 09 26 | 704 | 0.3− | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.7+ | |
| 2001 09 26 | 704 | 0.4− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.7− | |
| 2001 09 26 | 704 | 0.5− | 0.3− | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.0 | |
| 2001 09 26 | 704 | 0.3− | 0.7− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.0 | |
| 2001 10 14 | 704 | 0.3− | 1.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.0 | |

**2001 SB$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.45291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20580566 | $\omega$ | 261.99703 | | +0.99303745 | +0.11772154 | |
| $a$ | 2.8411740 | $\Omega$ | 91.24227 | | −0.10632540 | +0.91133899 | |
| $e$ | 0.1765468 | $i$ | 0.24485 | | −0.05071019 | +0.39446532 | |
| $P$ | 4.79 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.7+ | 0.4+ | 2001 09 26 | 704 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.3− | |
| 2001 09 11 | 699 | 0.1− | 0.5− | 2001 09 26 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | |
| 2001 09 11 | 699 | (1.6+ | 0.5+) | 2001 09 26 | 704 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.9+ | 0.6− | |
| 2001 09 11 | 699 | 0.6+ | 0.7− | 2001 09 26 | 704 | 0.3− | 0.9+ | 2006 10 21 | 703 | 0.2+ | 0.4+ | |
| 2001 09 16 | 704 | 0.5+ | 0.6+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.0 | 0.3− | |
| 2001 09 16 | 704 | 0.2+ | 0.1+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.9+ | 0.1+ | |
| 2001 09 16 | 704 | 0.4− | 0.5+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2001 09 16 | 704 | 0.7− | 0.1+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ | |
| 2001 09 16 | 704 | 1.0+ | 1.0− | 2001 10 17 | 644 | 0.2− | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.6+ | |
| 2001 09 19 | 704 | (1.5− | 0.1+) | 2001 10 17 | 644 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.0 | |
| 2001 09 19 | 704 | (2.3− | 0.2+) | 2001 10 17 | 644 | 0.2− | 0.9+ | 2006 10 27 | G96 | 0.4− | 0.1− | |
| 2001 09 19 | 704 | (1.6− | 0.3−) | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− | |
| 2001 09 19 | 704 | (1.7− | 0.0 ) | 2006 07 21 | G96 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− | |
| 2001 09 19 | 704 | 1.4− | 0.4+ | 2006 07 21 | G96 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.4− | |
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.6− | |
| 2001 09 21 | 704 | 0.7+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.2− | |
| 2001 09 21 | 704 | 0.8+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− | |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.2− | |
| 2001 09 21 | 704 | 0.7+ | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.3+ | |
| 2001 09 23 | 704 | 1.4− | 0.5− | 2006 09 30 | 703 | 0.4− | 0.6− | 2006 11 15 | 691 | 0.0 | 0.0 | |
| 2001 09 23 | 704 | 0.9− | 0.7+ | 2006 09 30 | 703 | (0.7+ | 1.9+) | 2006 11 17 | 691 | 0.0 | 0.3+ | |
| 2001 09 23 | 704 | 0.4− | 0.9+ | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1+ | |
| 2001 09 23 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 11 17 | 691 | 0.0 | 0.3+ | |
| 2001 09 23 | 704 | 0.5+ | 1.2+ | 2006 10 04 | G96 | 0.6+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.0 | |
| 2001 09 24 | 704 | 0.4− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.2− | |
| 2001 09 24 | 704 | 0.8− | 0.5+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.3− | 0.1− | |
| 2001 09 24 | 704 | 0.1− | 1.3+ | 2006 10 04 | G96 | 0.1− | 0.1+ | | | | | |
| 2001 09 24 | 704 | 0.5+ | 0.9− | 2006 10 11 | 644 | 0.2+ | 0.0 | | | | | |

**2001 SN$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.28346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27039265 | $\omega$ | 292.69597 | | +0.67635164 | +0.73653009 | |
| $a$ | 2.3684967 | $\Omega$ | 19.87082 | | −0.66631370 | +0.61669786 | |
| $e$ | 0.1950168 | $i$ | 1.42941 | | −0.31396579 | +0.27786180 | |
| $P$ | 3.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 02 | 691 | 0.2+ | 0.5− | 2001 09 19 | 704 | (0.1+ | 3.3−) | 2001 11 20 | 291 | 0.4+ | 0.3+ | |
| 2000 04 02 | 691 | 0.0 | 0.4− | 2001 09 19 | 704 | (0.2+ | 4.2−) | 2001 11 20 | 291 | 0.1+ | 0.4+ | |
| 2000 04 02 | 691 | 0.3− | 0.5+ | 2001 09 19 | 704 | (0.3− | 4.0−) | 2001 11 20 | 291 | 0.0 | 0.4+ | |
| 2001 08 27 | 644 | 0.2+ | 0.5− | 2001 09 19 | 704 | (0.0 | 4.4−) | 2004 04 22 | 691 | 0.1+ | 0.2+ | |
| 2001 08 27 | 644 | 0.2+ | 0.4− | 2001 09 26 | 704 | 0.0 | 0.1+ | 2004 04 22 | 691 | 0.2+ | 0.0 | |
| 2001 08 27 | 644 | 0.2+ | 0.2− | 2001 09 26 | 704 | 0.6− | 0.3+ | 2004 04 22 | 691 | 0.3− | 0.1+ | |
| 2001 09 11 | 333 | 1.1+ | 0.3+ | 2001 09 26 | 704 | 0.2+ | 0.6− | 2005 10 27 | G96 | 0.3+ | 0.4− | |
| 2001 09 11 | 333 | 0.7+ | 0.8+ | 2001 09 26 | 704 | 0.5+ | 0.5+ | 2005 10 27 | G96 | 0.1− | 0.1− | |
| 2001 09 16 | 704 | 0.3− | 0.1− | 2001 10 17 | 644 | (0.5+ | 1.7+) | 2005 10 27 | G96 | 0.1− | 0.1− | |
| 2001 09 16 | 704 | 0.3− | 1.1− | 2001 10 17 | 644 | (0.6+ | 1.7+) | 2005 10 27 | G96 | 0.2− | 0.5+ | |
| 2001 09 16 | 704 | 0.4− | 0.4− | 2001 10 17 | 644 | 0.4+ | 1.3+ | 2005 12 05 | G96 | 0.3− | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.5− | 0.1− | 2001 10 24 | 704 | 0.3+ | 0.4+ | 2005 12 05 | G96 | 0.4+ | 0.1− |
| 2001 09 17 | 291 | 0.0 | 0.1− | 2001 10 24 | 704 | 0.2+ | 0.9− | 2005 12 05 | G96 | 0.0 | 0.1+ |
| 2001 09 17 | 291 | 0.0 | 0.1+ | 2001 10 24 | 704 | (1.1− | 2.0−) | 2005 12 05 | G96 | 0.1+ | 0.2+ |
| 2001 09 17 | 291 | 0.0 | 0.1+ | 2001 11 18 | 645 | 0.1− | 0.1− | | | | |
| 2001 09 19 | 704 | (0.4+ | 3.4−) | 2001 11 18 | 645 | 0.1− | 0.1− | | | | |

**2001 SX$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 334.98302 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.19190866 | $\omega$ | 9.85272 | +0.87466530 | −0.48275044 |
| $a$ | 2.9767316 | $\Omega$ | 19.20091 | +0.43518716 | +0.74233496 |
| $e$ | 0.1964038 | $i$ | 7.64164 | +0.21347774 | +0.46464054 |
| $P$ | 5.14 | $H$ | 16.2 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.6+ | 0.7+ | 2001 09 26 | 704 | 0.2− | 0.4− | 2001 10 24 | 704 | 0.6− | 1.5+ |
| 2001 09 16 | 704 | 0.1+ | 0.4+ | 2001 09 26 | 704 | 0.3− | 0.3+ | 2001 10 24 | 704 | (1.7+ | 0.4+) |
| 2001 09 16 | 704 | 0.1− | 0.8+ | 2001 09 26 | 704 | 0.4− | 0.4+ | 2001 10 24 | 704 | 0.2+ | 0.4− |
| 2001 09 16 | 704 | 0.1+ | 0.7+ | 2001 09 26 | 704 | 1.0− | 0.2+ | 2001 10 24 | 704 | 0.7+ | 1.1− |
| 2001 09 17 | 291 | 0.0 | 0.3− | 2001 10 06 | 644 | 0.4+ | 0.5− | 2006 08 30 | 699 | 0.2− | 0.1+ |
| 2001 09 17 | 291 | 0.1− | 0.4− | 2001 10 06 | 644 | 0.2− | 0.2− | 2006 08 30 | 699 | 0.6− | 0.2+ |
| 2001 09 17 | 291 | 0.0 | 0.4− | 2001 10 06 | 644 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.1+ | 0.8+ |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2001 10 11 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.6− | 0.1− |
| 2001 09 19 | 704 | 0.3− | 0.2− | 2001 10 11 | 644 | 0.4− | 0.6+ | 2006 09 14 | 703 | 0.4+ | 0.2− |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2001 10 11 | 644 | 0.1+ | 0.9+ | 2006 09 14 | 703 | 1.4+ | 0.6− |
| 2001 09 19 | 704 | 0.4− | 0.9+ | 2001 10 15 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2001 10 15 | 704 | 1.5+ | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.6− |
| 2001 09 21 | 704 | 0.7+ | 0.5− | 2001 10 15 | 704 | 0.4− | 0.6− | 2006 11 17 | G96 | (2.6− | 1.9−) |
| 2001 09 21 | 704 | (1.8+ | 0.6−) | 2001 10 15 | 704 | 0.2+ | 0.1− | 2006 11 17 | G96 | (2.2− | 1.9−) |
| 2001 09 21 | 704 | 0.6+ | 0.8+ | 2001 10 20 | 704 | 1.1− | 0.2− | 2006 11 17 | G96 | (1.8− | 1.8−) |
| 2001 09 21 | 704 | (1.8+ | 0.4+) | 2001 10 20 | 704 | 0.2− | 0.6− | 2006 11 17 | G96 | (2.5− | 1.9−) |
| 2001 09 21 | 704 | 0.7+ | 0.2+ | 2001 10 20 | 704 | 0.2+ | 0.5+ | | | | |
| 2001 09 26 | 704 | 0.1− | 0.5− | 2001 10 20 | 704 | 0.1+ | 0.4+ | | | | |

**2001 SL$_{28}$ = 2006 RC$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 30.18355 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.19778360 | $\omega$ | 313.77273 | +0.86641371 | +0.49643979 |
| $a$ | 2.9174888 | $\Omega$ | 16.69279 | −0.38750101 | +0.73621146 |
| $e$ | 0.1215050 | $i$ | 10.75816 | −0.31491310 | +0.45993501 |
| $P$ | 4.98 | $H$ | 16.1 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.7+ | 0.7+ | 2001 10 16 | 704 | (0.0 | 2.2+) | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.2− | 0.7+ | 2001 10 16 | 704 | 0.8− | 0.8+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.1+ | 0.1+ | 2001 10 17 | 644 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2001 09 16 | 704 | 0.6− | 0.4+ | 2001 10 17 | 644 | 0.2+ | 0.4+ | 2006 10 17 | 703 | (0.1− | 1.6−) |
| 2001 09 19 | 704 | 0.3+ | 0.7+ | 2001 10 17 | 644 | 0.1− | 0.8+ | 2006 10 17 | 703 | (1.7− | 0.7−) |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2001 10 17 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | (1.6− | 1.3+) |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2001 10 17 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.8+ |
| 2001 09 19 | 704 | 0.0 | 0.1− | 2001 10 17 | 644 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2001 10 18 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 0.6− | 2001 10 18 | 691 | 0.3+ | 1.1− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2001 10 18 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.8− | 2006 09 12 | 703 | 0.5+ | 1.0− | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 2001 09 21 | 704 | 0.0 | 0.5− | 2006 09 12 | 703 | (0.8− | 2.1−) | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 2001 09 26 | 704 | 0.5+ | 0.5+ | 2006 09 12 | 703 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 09 26 | 704 | 0.7− | 0.1+ | 2006 09 12 | 703 | 0.9+ | 0.8− | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 1.3− | 1.0+ | 2006 09 18 | 699 | (2.0+ | 1.4−) | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 09 26 | 704 | 0.9− | 0.4− | 2006 09 18 | 699 | 0.7+ | 1.3− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 10 13 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | (1.6− | 0.6−) | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2001 10 13 | 704 | 0.3− | 0.8+ | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2001 10 13 | 704 | 0.1+ | 0.8− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2001 10 13 | 704 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2001 10 16 | 704 | 0.1− | 0.9+ | 2006 09 25 | 691 | 0.0 | 0.1− | | | | |
| 2001 10 16 | 704 | (0.3+ | 1.6+) | 2006 09 26 | 691 | 0.1− | 0.0 | | | | |

**2001 SC$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 24.54838 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.21109354 | $\omega$ | 345.78918 | +0.98732645 | −0.14738842 |
| $a$ | 2.7935263 | $\Omega$ | 22.93746 | +0.15632424 | +0.83924290 |
| $e$ | 0.2351637 | $i$ | 8.68486 | +0.02737193 | +0.52340043 |
| $P$ | 4.67 | $H$ | 15.5 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.4+ | 0.3+ | 2001 10 11 | 644 | 0.7− | 0.3+ | 2001 10 24 | 704 | 0.9+ | 0.0 |
| 2001 08 27 | 699 | 0.1+ | 0.8+ | 2001 10 11 | 644 | 0.6− | 0.2+ | 2001 10 24 | 704 | 0.2+ | 0.4+ |
| 2001 08 27 | 699 | 0.2+ | 0.2+ | 2001 10 11 | 644 | 0.7− | 0.4+ | 2001 11 09 | 704 | 0.1+ | 0.2+ |
| 2001 08 27 | 699 | 0.4− | 0.6+ | 2001 10 13 | 704 | 0.5− | 0.1− | 2001 11 09 | 704 | 0.5+ | 0.4+ |
| 2001 08 27 | 699 | 0.1− | 0.6+ | 2001 10 13 | 704 | 0.2− | 0.0 | 2001 11 09 | 704 | 0.4− | 0.6+ |
| 2001 09 11 | 699 | 0.6− | 0.5+ | 2001 10 13 | 699 | 0.1+ | 0.3− | 2001 11 09 | 704 | 1.0− | 0.6+ |
| 2001 09 11 | 699 | 0.5− | 0.5+ | 2001 10 13 | 704 | 0.4− | 0.1+ | 2001 11 18 | 704 | 0.1− | 0.1− |
| 2001 09 11 | 699 | 0.3− | 0.3+ | 2001 10 13 | 704 | 0.3− | 0.2+ | 2001 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 09 11 | 699 | 0.6− | 0.2+ | 2001 10 13 | 699 | 0.1+ | 0.2− | 2001 11 18 | 704 | 1.2− | 0.6− |
| 2001 09 16 | 704 | 0.5+ | 0.2+ | 2001 10 13 | 704 | 0.5− | 0.2+ | 2001 11 18 | 704 | 0.2+ | 0.1− |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2001 10 13 | 699 | 0.1− | 0.4− | 2001 11 18 | 704 | 0.2− | 0.2+ |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2001 10 13 | 699 | 0.1+ | 0.8− | 2001 11 21 | 704 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.3+ | 0.6+ | 2001 10 15 | 608 | 0.5+ | 0.9+ | 2001 11 21 | 704 | 0.6+ | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.0 | 2001 10 15 | 608 | 0.5+ | 0.6+ | 2001 11 21 | 704 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2001 10 15 | 608 | 0.3+ | 0.4+ | 2001 11 21 | 704 | 0.6+ | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.4− | 2001 10 16 | 704 | 0.5+ | 0.7− | 2001 11 21 | 704 | 0.1+ | 0.8+ |
| 2001 09 19 | 704 | 0.1− | 0.6− | 2001 10 16 | 704 | 0.0 | 0.3− | 2001 12 07 | 704 | 0.7− | 0.4+ |
| 2001 09 19 | 704 | 0.4+ | 0.5− | 2001 10 16 | 704 | 0.3+ | 0.3− | 2001 12 07 | 704 | (1.8− | 0.2+) |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2001 10 16 | 704 | 0.5+ | 0.1− | 2001 12 07 | 704 | 0.4− | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2001 10 17 | 691 | 0.4+ | 0.6− | 2001 12 07 | 704 | 1.0− | 0.3+ |
| 2001 09 21 | 704 | 0.5− | 0.2− | 2001 10 17 | 691 | 0.1+ | 0.0 | 2004 04 13 | 691 | 0.4+ | 0.5+ |
| 2001 09 21 | 704 | 0.4− | 0.1− | 2001 10 17 | 691 | 0.0 | 0.1+ | 2004 04 13 | 691 | 0.1+ | 0.7+ |
| 2001 09 21 | 704 | 0.5− | 0.3− | 2001 10 17 | 644 | 0.4− | 0.2+ | 2004 04 13 | 691 | 0.4+ | 0.3+ |
| 2001 09 25 | 699 | 0.2+ | 0.4− | 2001 10 17 | 644 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.2+ |
| 2001 09 25 | 699 | 0.1+ | 0.4− | 2001 10 17 | 644 | 0.5− | 0.0 | 2006 09 18 | 703 | (1.8− | 0.4−) |
| 2001 09 25 | 699 | 1.0− | 0.3− | 2001 10 17 | 644 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.2+ |
| 2001 09 25 | 699 | 0.4− | 0.1+ | 2001 10 17 | 644 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.9− |
| 2001 09 26 | 704 | 0.0 | 0.5− | 2001 10 17 | 644 | 0.2− | 0.2+ | 2006 11 15 | 704 | 1.3+ | 0.5− |
| 2001 09 26 | 704 | 0.2− | 0.5− | 2001 10 20 | 704 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.2− | 1.6+ |
| 2001 09 26 | 704 | 0.1+ | 0.7− | 2001 10 20 | 704 | 0.2− | 0.0 | 2006 11 15 | 704 | (0.5− | 1.8−) |
| 2001 09 26 | 704 | 0.4− | 0.2− | 2001 10 20 | 704 | 0.2− | 0.4− | 2006 11 15 | 704 | 0.3− | 1.6+ |
| 2001 09 26 | 704 | 0.8− | 0.1− | 2001 10 20 | 704 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.2− | 1.4+ |
| 2001 10 06 | 704 | 0.5+ | 0.2− | 2001 10 20 | 704 | 0.2− | 0.2− | 2006 11 22 | 703 | (1.3− | 1.6−) |
| 2001 10 06 | 704 | 0.5+ | 0.4+ | 2001 10 23 | 704 | 0.1− | 0.9+ | 2006 11 22 | 703 | 0.1− | 1.3− |
| 2001 10 06 | 704 | 0.1+ | 0.2− | 2001 10 23 | 704 | 1.0+ | 0.5+ | 2006 11 22 | 703 | 0.5+ | 1.3− |
| 2001 10 06 | 644 | 0.3+ | 0.5+ | 2001 10 23 | 704 | 0.2+ | 0.9+ | 2006 11 22 | 703 | 0.6− | 0.5− |
| 2001 10 06 | 644 | 0.2+ | 0.4+ | 2001 10 24 | 704 | 0.5+ | 0.1− | | | | |
| 2001 10 06 | 644 | 0.3+ | 1.3+ | 2001 10 24 | 704 | 0.9+ | 0.3+ | | | | |

**2001 ST$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 2.79079 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.19036142 | $\omega$ | 339.09130 | +0.98670527 | +0.15785156 |
| $a$ | 2.9928394 | $\Omega$ | 12.02273 | −0.10979810 | +0.82290756 |
| $e$ | 0.1055423 | $i$ | 10.69965 | −0.11982110 | +0.54580769 |
| $P$ | 5.18 | $H$ | 15.7 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.3− | 1.4+ | 2001 09 26 | 333 | 0.5+ | 0.7− | 2006 09 20 | 644 | 0.3− | 0.1− |
| 2001 09 16 | 704 | 1.2− | 0.2+ | 2001 09 26 | 333 | 1.2− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2001 09 16 | 704 | 0.7− | 0.6+ | 2001 10 15 | 291 | (0.7+ | 2.1−) | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2001 10 15 | 291 | (0.9+ | 2.1−) | 2006 09 25 | 699 | 0.9− | 0.6− |
| 2001 09 19 | 704 | 0.7− | 0.1− | 2001 10 15 | 291 | (1.0+ | 2.0−) | 2006 09 25 | 699 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2001 10 16 | 704 | 0.8+ | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2001 10 16 | 704 | 0.8− | 1.0+ | 2006 09 25 | 699 | 0.8− | 0.3− |
| 2001 09 19 | 704 | 0.6− | 0.2+ | 2001 10 16 | 704 | 1.3− | 0.8− | 2006 09 30 | 703 | 1.2+ | 0.2− |
| 2001 09 19 | 704 | 1.1− | 0.5− | 2001 10 16 | 704 | (0.3+ | 2.7+) | 2006 09 30 | 703 | 0.0 | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 291 | 0.2+ | 0.3− | 2001 10 16 | 704 | (1.1− | 2.6−) | 2006 09 30 | 703 | 0.4+ | 0.3− | | |
| 2001 09 20 | 291 | 0.4+ | 0.1− | 2001 10 18 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.0 | | |
| 2001 09 20 | 291 | 0.9+ | 0.2− | 2001 10 18 | 644 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.4− | 0.5+ | | |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2001 10 18 | 644 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2001 10 21 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.4+ | 2001 10 21 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.6+ | 0.5− | 2001 10 21 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2001 10 21 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.4− | 0.5+ | 2001 10 21 | 704 | 0.7− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2001 09 25 | 704 | 0.7+ | 0.1+ | 2001 10 21 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.5+ | | |
| 2001 09 25 | 704 | 0.7− | 0.7+ | 2001 10 21 | 704 | 1.0− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2001 09 25 | 333 | 0.6− | 0.6− | 2001 11 15 | 621 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 1.2+ | | |
| 2001 09 25 | 333 | 0.3− | 0.1− | 2001 11 15 | 621 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.7− | 1.0− | | |
| 2001 09 25 | 704 | (1.9+ | 0.8+) | 2004 03 17 | 691 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.9+ | 0.2+ | | |
| 2001 09 25 | 333 | 0.2− | 0.4− | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 1.1− | 0.6+ | | |
| 2001 09 25 | 333 | 1.0+ | 0.6− | 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2001 09 25 | 704 | 1.0+ | 0.1− | 2006 08 22 | 644 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.0 | | |
| 2001 09 25 | 333 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.6− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 2001 09 25 | 333 | 0.9+ | 0.3− | 2006 08 22 | 644 | 0.6− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.1+ | | |
| 2001 09 26 | 704 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2001 09 26 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 1.0+ | 0.6− | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2001 09 26 | 704 | 0.6+ | 0.2− | 2006 09 14 | 703 | 1.2− | 0.7− | 2006 11 15 | G96 | 0.5+ | 0.0 | | |
| 2001 09 26 | 333 | 0.7− | 0.9− | 2006 09 14 | 703 | 1.0+ | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.0 | | |

**2001 SO$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.74406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19833655 | $\omega$ | 272.78010 | | +0.73207206 | −0.68000329 | |
| $a$ | 2.9120638 | $\Omega$ | 130.06792 | | +0.64429042 | +0.67167295 | |
| $e$ | 0.0712870 | $i$ | 3.05736 | | +0.22126986 | +0.29402546 | |
| $P$ | 4.97 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 04 | 691 | 0.0 | 0.2+ | 2001 10 16 | 704 | 0.5+ | 1.5+ | 2006 09 18 | 699 | 0.6+ | 0.1+ | | |
| 1991 10 04 | 691 | 0.2− | 0.1+ | 2001 10 16 | 704 | 0.5− | 0.9+ | 2006 09 18 | 699 | 0.6+ | 1.4+ | | |
| 1991 10 04 | 691 | 0.1+ | 0.1− | 2001 10 16 | 704 | 0.9+ | 1.0+ | 2006 09 18 | 699 | 0.7+ | 0.2− | | |
| 2001 09 11 | 691 | 0.2− | 0.0 | 2001 10 22 | 704 | 0.8+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2001 09 11 | 691 | 0.2− | 0.1+ | 2001 10 22 | 704 | 0.4+ | 1.3+ | 2006 09 27 | 691 | 0.2− | 0.2− | | |
| 2001 09 11 | 691 | 0.5− | 0.0 | 2001 10 22 | 704 | 0.3− | 0.4− | 2006 09 27 | 691 | 0.2− | 0.3− | | |
| 2001 09 16 | 704 | 0.1+ | 0.3− | 2001 10 23 | 704 | 0.2+ | 0.8− | 2006 10 01 | 691 | 0.2− | 0.4+ | | |
| 2001 09 16 | 704 | 0.0 | 0.1− | 2001 10 23 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.3+ | | |
| 2001 09 16 | 704 | (1.7+ | 0.7+) | 2001 10 23 | 704 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.0 | | |
| 2001 09 16 | 704 | 0.7− | 0.2+ | 2001 10 23 | 704 | 1.1+ | 0.4+ | 2006 10 15 | 703 | 0.4+ | 0.1− | | |
| 2001 09 19 | 704 | 0.6− | 0.2− | 2001 10 24 | 704 | 0.6+ | 0.0 | 2006 10 15 | 703 | 0.3− | 0.3− | | |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2001 10 24 | 704 | 0.3+ | 0.1− | 2006 10 15 | 703 | 0.6− | 1.0− | | |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2001 10 24 | 704 | 0.7+ | 0.8+ | 2006 10 15 | 703 | 1.3− | 0.2− | | |
| 2001 09 19 | 704 | 0.0 | 1.0+ | 2001 10 24 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2001 11 18 | 645 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 09 21 | 704 | 0.1− | 0.8+ | 2001 11 18 | 645 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2003 01 08 | 704 | 1.2+ | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.3+ | 0.5− | 2003 01 08 | 704 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.1+ | 0.2− | 2003 01 08 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 09 26 | 704 | 0.9− | 0.2− | 2003 01 08 | 704 | 0.6− | 0.7+ | 2006 10 22 | 703 | 0.4+ | 0.4+ | | |
| 2001 09 26 | 704 | 0.8− | 0.7− | 2003 01 08 | 704 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.8+ | | |
| 2001 09 26 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.7+ | | |
| 2001 09 26 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.6+ | 0.7+ | 2006 10 22 | 703 | 0.9− | 0.7+ | | |
| 2001 09 26 | 704 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.5− | | |
| 2001 10 12 | 699 | 0.2+ | 0.5− | 2006 09 14 | 703 | 1.0+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− | | |
| 2001 10 12 | 699 | (1.8− | 1.5+) | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− | | |
| 2001 10 12 | 699 | (1.6− | 1.3+) | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.5− | | |
| 2001 10 12 | 699 | 0.9− | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.0 | | | | | | |
| 2001 10 16 | 704 | 0.1− | 0.5+ | 2006 09 18 | 699 | 1.5+ | 0.7− | | | | | | |

**2001 SQ$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.99613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20508571 | $\omega$ | 338.23462 | | +0.99672138 | −0.02669072 | |
| $a$ | 2.8478194 | $\Omega$ | 23.68496 | | +0.06446199 | +0.83248986 | |
| $e$ | 0.1440352 | $i$ | 10.96105 | | −0.04889932 | +0.55339701 | |
| $P$ | 4.81 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.3− | 0.0 | 2001 10 17 | 704 | 0.2− | 0.1− | 2002 11 28 | 695 | 0.3+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2001 10 17 | 704 | 0.5− | 0.5− | 2002 11 28 | 695 | 0.4− | 0.3+ | | |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2001 10 17 | 704 | 0.5− | 0.0 | 2002 11 28 | 695 | 0.1− | 0.7+ | | |
| 2001 09 16 | 704 | 0.3− | 0.9+ | 2001 10 17 | 704 | 0.3− | 0.2− | 2006 10 13 | 691 | 0.2+ | 0.1− | | |
| 2001 09 17 | 699 | 1.4− | 0.4− | 2001 10 17 | 704 | 0.6− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 17 | 333 | 0.4+ | 0.0 | 2001 10 18 | 644 | 0.2− | 0.6+ | 2006 10 13 | 691 | 1.1+ | 0.0 | | |
| 2001 09 17 | 333 | 0.4− | 0.1+ | 2001 10 18 | 644 | 0.3− | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.1− | | |
| 2001 09 17 | 699 | 0.2+ | 0.7+ | 2001 10 18 | 644 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.1− | | |
| 2001 09 17 | 333 | 0.7+ | 0.0 | 2001 10 19 | 644 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1− | | |
| 2001 09 17 | 699 | 1.4− | 0.8− | 2001 10 19 | 644 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.8− | | |
| 2001 09 17 | 699 | 0.9− | 0.3+ | 2001 10 19 | 644 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.6− | 0.1− | | |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2001 10 21 | 704 | 0.3+ | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.5− | | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2001 10 21 | 704 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.3− | | |
| 2001 09 19 | 704 | 0.7+ | 1.2+ | 2001 10 21 | 704 | (2.4+ | 0.5−) | 2006 10 27 | 703 | 0.2+ | 0.8− | | |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.3+ | 1.1− | | |
| 2001 09 21 | 704 | 0.4− | 0.8− | 2001 10 25 | 644 | 0.6+ | 1.3+ | 2006 10 27 | 703 | 0.2+ | 0.5− | | |
| 2001 09 21 | 704 | 0.7− | 0.6− | 2001 10 25 | 644 | 0.1+ | 1.1+ | 2006 10 27 | 703 | 0.8− | 0.6− | | |
| 2001 09 21 | 704 | 0.2− | 0.6− | 2001 10 25 | 644 | 0.0 | 1.3+ | 2006 10 29 | 704 | 0.5+ | 0.9+ | | |
| 2001 09 21 | 704 | 0.8− | 0.9− | 2001 10 26 | 644 | 0.6− | 0.3+ | 2006 10 29 | 704 | 1.2+ | 1.1− | | |
| 2001 09 21 | 704 | 0.2− | 0.9− | 2001 10 26 | 644 | 0.6− | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.9+ | | |
| 2001 09 26 | 704 | 1.2+ | 0.3+ | 2001 10 26 | 644 | 0.4− | 0.5+ | 2006 10 29 | 704 | 1.2− | 1.4+ | | |
| 2001 09 26 | 704 | 0.9+ | 0.2+ | 2001 11 09 | 704 | 1.0+ | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 26 | 704 | 0.8+ | 0.2+ | 2001 11 09 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2001 09 26 | 704 | 1.1+ | 0.2− | 2001 11 09 | 704 | 0.6− | 1.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | | |
| 2001 09 26 | 704 | 1.1+ | 0.1+ | 2001 11 19 | 704 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.4− | 0.7− | | |
| 2001 10 12 | 699 | 0.7− | 1.0+ | 2001 11 19 | 704 | 0.7− | 0.2+ | 2006 11 14 | 703 | (0.3− | 2.4+) | | |
| 2001 10 12 | 699 | 0.6+ | 0.2− | 2001 11 19 | 704 | 0.4− | 0.3− | 2006 11 14 | 703 | 0.6− | 0.5− | | |
| 2001 10 12 | 699 | 0.1− | 0.9− | 2001 11 19 | 704 | 0.3+ | 0.0 | 2006 11 14 | 703 | 1.0− | 0.3+ | | |
| 2001 10 12 | 699 | 0.9− | 0.9+ | 2001 11 20 | 608 | 0.4+ | 0.5− | 2006 11 22 | 704 | 1.1− | 0.7+ | | |
| 2001 10 13 | 704 | 0.0 | 0.3− | 2001 11 20 | 608 | 0.2+ | 0.9− | 2006 11 22 | 704 | 0.4− | 1.0+ | | |
| 2001 10 13 | 704 | 0.9− | 0.4+ | 2001 11 20 | 608 | 0.0 | 0.5− | 2006 11 22 | 704 | 1.1− | 0.2+ | | |
| 2001 10 13 | 704 | 0.9− | 0.7− | 2001 11 21 | 704 | 0.2− | 0.4− | 2006 11 22 | 703 | 0.6− | 0.5− | | |
| 2001 10 13 | 704 | 0.6− | 0.2− | 2001 11 21 | 704 | 0.2− | 0.7− | 2006 11 22 | 703 | 0.3+ | 0.3− | | |
| 2001 10 13 | 704 | 0.7− | 0.2− | 2001 11 21 | 704 | 0.4− | 0.4− | 2006 11 22 | 703 | 0.3− | 0.4− | | |
| 2001 10 14 | 699 | 0.5+ | 0.6+ | 2001 11 21 | 704 | 0.5− | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.5− | | |
| 2001 10 14 | 699 | 0.8− | 0.6− | 2001 11 21 | 704 | 0.7− | 0.4+ | 2006 11 25 | G96 | 0.3+ | 0.2− | | |
| 2001 10 14 | 699 | 0.1+ | 0.9− | 2001 12 11 | 704 | 0.7+ | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.3− | | |
| 2001 10 14 | 699 | 0.3− | 0.1− | 2001 12 11 | 704 | 0.4− | 0.1− | 2006 11 25 | G96 | 0.5+ | 0.0 | | |
| 2001 10 14 | 291 | 0.3+ | 0.1− | 2001 12 11 | 704 | 0.8− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2001 10 14 | 291 | 0.7+ | 0.0 | 2001 12 11 | 704 | 0.3− | 1.0+ | | | | | | |
| 2001 10 14 | 291 | 1.0+ | 0.2− | 2002 11 28 | 695 | 0.8+ | 0.0 | | | | | | |

**2001 SN$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.70735 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19308195 | $\omega$ | 277.55926 | | +0.95934755 | −0.27493588 | |
| $a$ | 2.9646602 | $\Omega$ | 98.41504 | | +0.27762697 | +0.87871878 | |
| $e$ | 0.1680151 | $i$ | 3.69422 | | +0.05074972 | +0.39020964 | |
| $P$ | 5.10 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.6− | 0.0 | 2001 10 16 | 704 | 0.6− | 0.2− | 2006 09 28 | 704 | 0.3− | 0.5− | | |
| 2001 09 16 | 704 | 0.4+ | 0.1+ | 2001 10 22 | 704 | 0.4− | 1.4+ | 2006 09 28 | 704 | 0.0 | 0.2− | | |
| 2001 09 16 | 704 | 0.3− | 0.1+ | 2001 10 22 | 704 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.2− | | |
| 2001 09 19 | 704 | 0.7+ | 0.1+ | 2001 10 22 | 704 | (0.5+ | 2.1−) | 2006 09 28 | 704 | 0.3− | 0.1+ | | |
| 2001 09 19 | 704 | 1.2− | 0.5+ | 2001 10 24 | 644 | 0.2+ | 0.7+ | 2006 09 30 | 703 | (0.1+ | 2.8+) | | |
| 2001 09 19 | 704 | 0.0 | 0.7− | 2001 10 24 | 644 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.6+ | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1+ | 0.7+ | 2001 10 24 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.5− | | |
| 2001 09 19 | 704 | (1.6− | 0.4−) | 2001 11 18 | 704 | 0.8+ | 0.3− | 2006 09 30 | 703 | 0.0 | 0.4+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.2− | 2001 11 18 | 704 | 0.1+ | 0.2− | 2006 09 30 | 704 | 1.1+ | 1.0+ | | |
| 2001 09 21 | 704 | 0.2− | 0.1− | 2001 11 18 | 704 | 0.0 | 0.6− | 2006 09 30 | 704 | 1.2+ | 0.2− | | |
| 2001 09 21 | 704 | 0.3− | 0.7− | 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.6+ | 0.5− | | |
| 2001 09 21 | 704 | 0.7+ | 0.2− | 2001 11 20 | 704 | 0.0 | 0.2+ | 2006 09 30 | 704 | 1.2+ | 0.7− | | |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2001 11 20 | 704 | 0.4− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.1+ | | |
| 2001 09 27 | 644 | 0.0 | 0.5+ | 2001 11 20 | 704 | (2.4+ | 0.1+) | 2006 10 02 | G96 | 0.1− | 0.1− | | |
| 2001 09 27 | 644 | 0.5− | 0.5+ | 2006 09 12 | 703 | (1.5− | 1.8−) | 2006 10 02 | G96 | 0.0 | 0.1+ | | |
| 2001 09 27 | 644 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.4− | 0.2+ | | |
| 2001 10 10 | 644 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2001 10 10 | 644 | 0.5− | 0.2+ | 2006 09 12 | 703 | 0.0 | 0.6− | 2006 10 09 | 644 | 0.2− | 0.0 | | |
| 2001 10 10 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.9+ | 2006 10 09 | 644 | 0.2− | 0.3− | | |
| 2001 10 11 | 683 | (2.0+ | 0.7+) | 2006 09 18 | 703 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.2− | 0.7− | | |
| 2001 10 11 | 683 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.3+ | | |
| 2001 10 11 | 683 | (4.1+ | 0.2−) | 2006 09 18 | 703 | 0.2+ | 1.0+ | 2006 10 16 | 703 | 0.8+ | 0.6− | | |
| 2001 10 12 | 699 | 0.5− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2001 10 12 | 699 | 0.4+ | 0.5− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 10 17 | 106 | 0.8− | 1.0− | | |
| 2001 10 12 | 699 | 0.8− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.6+ | 2006 10 17 | 106 | 0.0 | 0.4+ | | |
| 2001 10 12 | 699 | 0.4− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.2− | 2006 10 18 | 106 | 1.3+ | 0.6− | | |
| 2001 10 13 | 704 | 0.4− | 0.5− | 2006 09 19 | 703 | 0.4+ | 0.2+ | 2006 10 18 | 106 | 0.4+ | 0.2+ | | |
| 2001 10 13 | 683 | (0.7+ | 1.7+) | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 10 13 | 704 | 0.4+ | 0.7− | 2006 09 19 | 703 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2001 10 13 | 683 | 1.1+ | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2001 10 13 | 683 | (1.8− | 2.1−) | 2006 09 22 | 704 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.5− | | |
| 2001 10 13 | 704 | 0.5+ | 0.9− | 2006 09 22 | 704 | 0.6− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.1− | | |
| 2001 10 14 | 683 | 0.0 | 0.9+ | 2006 09 22 | 704 | 0.4− | 0.9− | 2006 10 22 | 703 | 0.3+ | 0.2+ | | |
| 2001 10 14 | 683 | 1.1− | 0.1− | 2006 09 26 | 704 | 0.8− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.3− | | |
| 2001 10 14 | 683 | (2.5+ | 2.5+) | 2006 09 26 | 704 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1+ | | |
| 2001 10 16 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2001 10 16 | 704 | 0.3+ | 0.4− | 2006 09 26 | 704 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.0 | | |
| 2001 10 16 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.7− | 2006 11 23 | G96 | 0.3− | 0.1− | | |
| 2001 10 16 | 704 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.7− | 0.2− | | | | | | |

**2001 SQ$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.05426 | | (2000.0) | | | |
| $n$ | 0.18671602 | $\omega$ | 228.15430 | | +0.62847325 | −0.77773079 |
| $a$ | 3.0316681 | $\Omega$ | 182.99141 | | +0.76558596 | +0.62133925 |
| $e$ | 0.2020017 | $i$ | 13.85602 | | +0.13747550 | +0.09524891 |
| $P$ | 5.28 | $H$ | 16.1 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.0 | 1.0+ | 2001 09 26 | 704 | 0.1− | 0.1+ | 2006 08 29 | 703 | 1.1− | 0.9+ | | |
| 2001 09 16 | 704 | (0.1− | 1.6+) | 2001 09 26 | 704 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.2+ | 0.0 | | |
| 2001 09 16 | 704 | (0.8+ | 1.9+) | 2001 10 06 | 644 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.0 | | |
| 2001 09 19 | 704 | 1.4+ | 0.9− | 2001 10 06 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | (2.6− | 0.2−) | | |
| 2001 09 19 | 704 | 0.2− | 0.6+ | 2001 10 06 | 644 | 0.1+ | 0.2− | 2006 08 29 | 703 | 0.4− | 0.1+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2001 10 17 | 644 | 0.4− | 1.0+ | 2006 09 17 | 691 | 0.0 | 0.3− | | |
| 2001 09 19 | 704 | 0.3+ | 0.8− | 2001 10 17 | 644 | 0.1− | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.6− | | |
| 2001 09 19 | 704 | 0.3− | 0.8− | 2001 10 17 | 644 | 0.7− | 0.8+ | 2006 09 17 | 691 | 0.7− | 0.3+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.4+ | 0.5− | | |
| 2001 09 21 | 704 | 0.6+ | 0.8− | 2004 04 14 | 691 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.4− | | |
| 2001 09 21 | 704 | 0.2+ | 0.7− | 2004 04 14 | 691 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.1+ | 1.1+ | | |
| 2001 09 21 | 704 | 0.1− | 1.4− | 2006 08 29 | 703 | (1.6+ | 0.3+) | 2006 11 17 | 291 | 0.3+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.4− | 0.6− | 2006 08 29 | 703 | 0.0 | 0.3+ | 2006 11 17 | 291 | 0.2+ | 0.3+ | | |
| 2001 09 26 | 704 | 0.9− | 0.6+ | 2006 08 29 | 703 | 0.5− | 0.3− | 2006 11 17 | 291 | 0.0 | 0.0 | | |

**2001 SO$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.08906 | | (2000.0) | | | |
| $n$ | 0.17446243 | $\omega$ | 257.17697 | | −0.03859931 | +0.99544496 |
| $a$ | 3.1720117 | $\Omega$ | 11.71053 | | −0.66581218 | +0.03943154 |
| $e$ | 0.2955180 | $i$ | 25.43591 | | −0.74512028 | −0.08680141 |
| $P$ | 5.65 | $H$ | 14.8 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.6+ | 0.2+ | 2001 09 23 | 704 | 1.4+ | 1.2− | 2001 10 24 | 704 | 0.4+ | 1.1+ | | |
| 2001 08 27 | 699 | 0.4− | 0.9+ | 2001 09 23 | 704 | (3.7+ | 0.9−) | 2001 10 24 | 704 | 1.4+ | 1.1+ | | |
| 2001 08 27 | 699 | 1.4− | 1.6+ | 2001 09 23 | 704 | (2.1+ | 0.0 ) | 2001 10 24 | 704 | 1.3+ | 0.7+ | | |
| 2001 08 27 | 699 | 0.5+ | 0.5− | 2001 09 26 | 704 | 0.1+ | 0.7− | 2001 10 24 | 704 | 2.0+ | 0.5+ | | |
| 2001 09 16 | 704 | 0.5− | 0.4+ | 2001 09 26 | 704 | 0.1− | 1.0− | 2005 04 01 | 703 | 0.7+ | 0.1− | | |
| 2001 09 16 | 704 | 0.2− | 0.1− | 2001 09 26 | 704 | 0.1− | 0.9− | 2005 04 01 | 703 | 0.6− | 1.4− | | |
| 2001 09 16 | 704 | 0.9− | 0.0 | 2001 09 26 | 704 | 0.0 | 0.6− | 2005 04 01 | 703 | 0.9+ | 1.0+ | | |
| 2001 09 16 | 704 | 0.7− | 0.4− | 2001 10 16 | 291 | 0.5− | 0.3+ | 2005 04 01 | 703 | 1.0− | 0.6+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.5− | 2001 10 16 | 291 | 1.2− | 0.3+ | 2006 08 02 | E12 | 0.3+ | 0.2− | | |
| 2001 09 19 | 704 | 0.2+ | 0.2− | 2001 10 16 | 291 | 0.7− | 0.2+ | 2006 08 02 | E12 | 0.1− | 0.8+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2001 10 17 | 644 | 0.0 | 0.1+ | 2006 08 13 | E12 | 0.6+ | 0.1− | | |
| 2001 09 19 | 704 | 0.3− | 1.7− | 2001 10 17 | 644 | 0.0 | 0.5+ | 2006 08 13 | E12 | 0.3− | 0.2+ | | |
| 2001 09 19 | 704 | 0.4+ | 0.3− | 2001 10 17 | 644 | 0.3− | 0.2+ | 2006 08 13 | E12 | 0.3− | 0.1− | | |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2001 10 20 | 704 | 0.7+ | 0.5− | 2006 08 13 | E12 | 0.2− | 0.2− | | |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2001 10 20 | 704 | 0.8+ | 0.5− | 2006 09 15 | E12 | 0.4− | 0.3+ | | |
| 2001 09 21 | 704 | 0.8− | 0.0 | 2001 10 20 | 704 | 0.4+ | 1.1− | 2006 09 15 | E12 | 0.0 | 0.5− | | |
| 2001 09 21 | 704 | 0.6+ | 0.2+ | 2001 10 20 | 704 | 0.2+ | 0.7− | 2006 09 15 | E12 | 0.3− | 0.4− | | |
| 2001 09 21 | 704 | 0.7+ | 0.3+ | 2001 10 20 | 704 | 0.3− | 0.2+ | 2006 09 15 | E12 | 0.8+ | 0.1+ | | |
| 2001 09 23 | 704 | 2.0+ | 0.9+ | 2001 10 24 | 704 | 0.9+ | 0.5− | | | | | | |

**2001 SV$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.88209 | | (2000.0) | | | |
| $n$ | 0.21323953 | $\omega$ | 165.07531 | | +0.90634620 | +0.42031396 |
| $a$ | 2.7747524 | $\Omega$ | 169.74408 | | −0.40829152 | +0.89755511 |
| $e$ | 0.1665240 | $i$ | 14.06701 | | −0.10878692 | +0.13315779 |
| $P$ | 4.62 | $H$ | 15.6 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.0 | 0.4− | 2001 10 11 | 704 | 0.2− | 1.3+ | 2001 10 16 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 16 | 704 | 0.1− | 1.2+ | 2001 10 11 | 704 | 0.5− | 2.2+ | 2001 10 16 | 644 | 0.3+ | 0.0 | | |
| 2001 08 16 | 704 | 0.8+ | 0.2− | 2001 10 11 | 644 | 0.3+ | 0.0 | 2001 10 19 | 699 | 0.5− | 0.7− | | |
| 2001 09 16 | 704 | 0.6− | 0.2+ | 2001 10 11 | 644 | 0.1+ | 0.0 | 2001 10 19 | 699 | 2.4− | 0.5− | | |
| 2001 09 16 | 704 | 0.6+ | 0.7− | 2001 10 11 | 644 | 0.5+ | 0.2+ | 2001 10 19 | 699 | 0.5− | 0.4+ | | |
| 2001 09 16 | 704 | 0.1− | 0.1− | 2001 10 13 | 704 | 0.6+ | 0.3+ | 2001 10 19 | 699 | 0.3− | 0.3− | | |
| 2001 09 16 | 704 | 1.1− | 0.2− | 2001 10 13 | 704 | 0.2+ | 0.2− | 2001 10 23 | 644 | 0.6− | 0.5− | | |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2001 10 13 | 704 | 0.5+ | 0.8− | 2001 10 23 | 644 | 0.5− | 0.2− | | |
| 2001 09 19 | 704 | 0.2− | 0.9+ | 2001 10 13 | 704 | 0.7+ | 0.2+ | 2001 10 23 | 644 | 0.3− | 0.5− | | |
| 2001 09 19 | 704 | 0.3+ | 0.4− | 2001 10 13 | 704 | 1.0+ | 0.6− | 2002 11 13 | 645 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.2− | 2001 10 13 | 704 | 0.2− | 1.4+ | 2002 11 13 | 645 | 0.0 | 0.0 | | |
| 2001 09 21 | 704 | 0.3+ | 0.9− | 2001 10 13 | 704 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.2+ | 1.2− | | |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2001 10 13 | 704 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.5− | 0.1+ | | |
| 2001 09 21 | 704 | 1.2+ | 0.4+ | 2001 10 14 | 608 | 0.2+ | 0.6− | 2006 11 19 | 703 | 0.0 | 0.4− | | |
| 2001 09 21 | 704 | 0.2− | 0.3− | 2001 10 14 | 608 | 0.2+ | 0.8− | 2006 11 19 | 703 | 0.9+ | 2.1− | | |
| 2001 10 11 | 704 | 0.2− | 1.3+ | 2001 10 14 | 608 | 0.3+ | 0.2− | | | | | | |
| 2001 10 11 | 704 | 0.6− | 1.3+ | 2001 10 16 | 644 | 0.4+ | 0.2− | | | | | | |

**2001 SU$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.72003 | | (2000.0) | | | |
| $n$ | 0.35735478 | $\omega$ | 49.97546 | | +0.40962559 | −0.90706928 |
| $a$ | 1.9666919 | $\Omega$ | 16.65613 | | +0.69919599 | +0.24379236 |
| $e$ | 0.1244094 | $i$ | 19.80597 | | +0.58594526 | +0.34320637 |
| $P$ | 2.76 | $H$ | 16.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.1+ | 0.2− | 2001 10 15 | 333 | 0.4− | 0.5− | 2001 10 22 | 704 | 0.3+ | 0.2− | | |
| 2001 09 17 | 704 | 0.8+ | 0.4+ | 2001 10 15 | 333 | 0.3+ | 0.1− | 2001 10 28 | 704 | 1.1+ | 1.1+ | | |
| 2001 09 17 | 704 | 0.1+ | 0.0 | 2001 10 15 | 333 | 0.8+ | 0.3− | 2001 10 28 | 704 | (2.1+ | 0.9+) | | |
| 2001 09 19 | 704 | 1.0− | 0.1+ | 2001 10 16 | 333 | 0.0 | 0.3+ | 2001 10 28 | 704 | 1.8+ | 1.2+ | | |
| 2001 09 19 | 704 | 1.1− | 0.4− | 2001 10 16 | 333 | 0.3− | 0.8+ | 2001 10 28 | 704 | 1.6+ | 1.2+ | | |
| 2001 09 19 | 704 | 1.1− | 0.0 | 2001 10 16 | 333 | 0.0 | 0.5+ | 2001 11 12 | 704 | 0.2+ | 0.7+ | | |
| 2001 09 19 | 704 | 1.0− | 0.2+ | 2001 10 18 | 704 | 0.5+ | 1.2− | 2001 11 12 | 704 | 0.2− | 0.7+ | | |
| 2001 09 19 | 704 | 1.0− | 0.2− | 2001 10 18 | 704 | 0.0 | 0.3− | 2001 11 12 | 704 | 0.4+ | 0.4+ | | |
| 2001 09 20 | 704 | (2.9+ | 1.8−) | 2001 10 18 | 704 | 0.3− | 0.4+ | 2001 11 12 | 704 | 0.0 | 0.8+ | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (2.4+ | 0.5+) | 2001 10 18 | 704 | 0.0 | 0.4− | 2001 11 12 | 704 | 0.3+ | 0.6+ | | | |
| 2001 09 20 | 704 | 2.0+ | 0.3− | 2001 10 18 | 704 | 0.2+ | 0.6+ | 2001 11 19 | 644 | 0.1+ | 1.1+ | | | |
| 2001 09 20 | 704 | 1.8+ | 0.3− | 2001 10 19 | 704 | 0.5− | 0.3+ | 2001 11 19 | 644 | 0.1− | 1.1+ | | | |
| 2001 09 24 | 704 | 0.4− | 0.8− | 2001 10 19 | 704 | 0.4+ | 0.4+ | 2001 11 19 | 644 | 0.0 | 1.0+ | | | |
| 2001 09 24 | 704 | 0.0 | 0.7− | 2001 10 19 | 704 | 0.2− | 0.5− | 2001 12 10 | 704 | 0.6+ | 0.7− | | | |
| 2001 09 24 | 704 | 0.2+ | 0.1− | 2001 10 20 | 644 | 0.4− | 0.0 | 2001 12 10 | 704 | 0.4− | 1.5− | | | |
| 2001 09 24 | 704 | 0.0 | 0.4− | 2001 10 20 | 644 | 0.3− | 0.1+ | 2001 12 10 | 704 | 0.1− | 1.6− | | | |
| 2001 10 13 | 699 | 0.8+ | 0.0 | 2001 10 20 | 644 | 0.3− | 0.1+ | 2001 12 10 | 704 | 0.7+ | 1.4− | | | |
| 2001 10 13 | 699 | 0.6− | 0.2− | 2001 10 21 | 704 | 0.3− | 1.2− | 2004 12 04 | 699 | 1.2− | 0.0 | | | |
| 2001 10 13 | 699 | 1.0− | 0.3+ | 2001 10 21 | 704 | 0.1+ | 0.9− | 2004 12 04 | 699 | 0.4+ | 1.0− | | | |
| 2001 10 13 | 699 | 0.5− | 0.2+ | 2001 10 21 | 704 | 0.8− | 1.1− | 2004 12 04 | 699 | 0.4− | 0.6− | | | |
| 2001 10 14 | 704 | 0.5− | 0.3+ | 2001 10 21 | 704 | 0.5− | 1.2− | 2004 12 04 | 699 | 0.2+ | 0.9+ | | | |
| 2001 10 14 | 704 | 0.2− | 0.8+ | 2001 10 21 | 704 | 0.2− | 1.3− | 2005 02 28 | 704 | 0.3+ | 1.0+ | | | |
| 2001 10 14 | 704 | 0.3− | 0.7+ | 2001 10 22 | 704 | 0.3+ | 0.6− | 2005 02 28 | 704 | 0.6+ | 0.3+ | | | |
| 2001 10 14 | 704 | 0.0 | 1.2+ | 2001 10 22 | 704 | 1.1− | 0.1− | 2005 02 28 | 704 | 0.2− | 0.2+ | | | |
| 2001 10 14 | 704 | 0.1− | 1.1+ | 2001 10 22 | 704 | 0.3− | 0.8− | | | | | | | |

**2001 SH$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.65699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18515172 | $\omega$ | 178.82992 | | +0.95484577 | −0.28956943 | |
| $a$ | 3.0487201 | $\Omega$ | 198.42584 | | +0.27084887 | +0.94036319 | |
| $e$ | 0.1110970 | $i$ | 12.14093 | | +0.12210835 | +0.17851226 | |
| $P$ | 5.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.1− | 0.7+ | 2006 09 17 | 703 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2001 09 17 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.9− |
| 2001 09 17 | 704 | 1.0− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.6+ | 0.8− |
| 2001 09 17 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2001 09 17 | 704 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.1− | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.6− | 2006 09 19 | 699 | 0.7+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 10 27 | 691 | 0.1+ | 0.2− | 2006 09 21 | 185 | 0.3+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2001 10 27 | 691 | 0.2− | 0.2− | 2006 09 22 | 185 | 0.1− | 0.9− | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2001 10 27 | 691 | 0.1+ | 0.4− | 2006 09 22 | 185 | 0.2+ | 0.3− | 2006 10 17 | 703 | 1.0− | 0.9+ |
| 2001 10 27 | 704 | 0.8− | 0.9− | 2006 09 22 | 185 | 0.2− | 0.0 | 2006 10 17 | 703 | 1.0+ | 0.2− |
| 2001 10 27 | 704 | 0.1− | 0.4− | 2006 09 25 | 704 | 0.4− | 0.6+ | 2006 10 17 | 703 | 1.0+ | 0.4− |
| 2001 10 27 | 704 | 0.7− | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.7− | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2001 10 27 | 704 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2001 11 20 | 360 | 0.4+ | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.8− |
| 2001 11 20 | 360 | 0.2+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 11 20 | 360 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 11 21 | 360 | 0.4+ | 0.4+ | 2006 09 27 | 699 | 0.4+ | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 11 21 | 360 | 0.5+ | 0.5+ | 2006 09 27 | 699 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 21 | 360 | 0.3+ | 0.6+ | 2006 09 27 | 699 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2006 09 17 | 703 | 0.9− | 0.6− | 2006 09 27 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 17 | 703 | 0.6− | 0.5− | 2006 09 29 | 704 | (1.5+ | 0.5−) | | | | |

**2001 SM$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.83841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38116093 | $\omega$ | 174.06131 | | +0.98620935 | −0.13416536 | |
| $a$ | 1.8839258 | $\Omega$ | 194.75241 | | +0.13182384 | +0.99081292 | |
| $e$ | 0.0815808 | $i$ | 22.36817 | | +0.10006790 | +0.01701216 | |
| $P$ | 2.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.2+ | 2001 10 16 | 704 | 0.7+ | 0.5− | 2006 09 21 | 699 | 0.4+ | 0.1− |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2001 10 16 | 704 | 0.6− | 0.8+ | 2006 09 27 | 703 | 0.6− | 0.4+ |
| 2001 08 24 | 704 | 0.8+ | 0.1+ | 2001 10 16 | 704 | 0.3− | 0.7+ | 2006 09 27 | 703 | 0.0 | 0.4+ |
| 2001 08 24 | 704 | 0.1− | 0.3− | 2001 10 19 | 608 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.6− | 0.4+ |
| 2001 08 24 | 704 | 0.2− | 0.1− | 2001 10 19 | 608 | 0.6+ | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.2+ |
| 2001 08 24 | 704 | 0.5+ | 0.2+ | 2001 10 19 | 608 | 0.6+ | 0.3− | 2006 09 29 | 699 | 0.2+ | 0.6+ |
| 2001 08 24 | 704 | 0.7+ | 0.3− | 2001 11 13 | 608 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.6+ |
| 2001 09 17 | 704 | 0.8+ | 0.1+ | 2001 11 13 | 608 | 0.4+ | 0.1− | 2006 09 29 | 699 | 0.6+ | 0.3− |
| 2001 09 17 | 704 | 0.0 | 0.1− | 2001 11 13 | 608 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.1+ |
| 2001 09 17 | 704 | 0.3+ | 0.5+ | 2001 11 17 | 699 | 1.3− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2001 09 17 | 704 | 0.1− | 0.2− | 2001 11 17 | 699 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 09 17 | 704 | 0.3− | 0.3+ | 2001 11 17 | 699 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.6+ | 2001 11 17 | 699 | 0.4+ | 0.2− | 2006 10 16 | 703 | 1.1− | 0.3− |
| 2001 09 19 | 704 | 0.5+ | 0.1− | 2001 11 19 | 608 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.5+ | 2001 11 19 | 608 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.4− | 0.5+ | 2001 11 19 | 608 | 0.4− | 0.5− | 2006 10 20 | 691 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.7− | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.4− | 0.1− | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.5− | 0.8+ | 2006 09 16 | 703 | 0.9− | 0.1+ | 2006 10 22 | 703 | 1.0− | 0.8+ |
| 2001 09 21 | 704 | 0.3+ | 1.2+ | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2001 09 21 | 704 | 1.0− | 0.1+ | 2006 09 21 | 699 | 1.1+ | 0.7+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2001 10 16 | 704 | (0.8+ | 1.6−) | 2006 09 21 | 699 | 0.7+ | 0.2+ | | | | |
| 2001 10 16 | 704 | (0.6+ | 1.6−) | 2006 09 21 | 699 | 0.3+ | 0.3+ | | | | |

**2001 SW$_{75}$ = 2006 UQ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.79248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21415191 | $\omega$ | 90.43982 | | +0.69074507 | +0.70826707 | |
| $a$ | 2.7668657 | $\Omega$ | 224.47563 | | −0.71812278 | +0.64832485 | |
| $e$ | 0.2081336 | $i$ | 12.00315 | | −0.08468127 | +0.27934325 | |
| $P$ | 4.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 699 | 0.7− | 1.0+ | 2001 10 17 | 704 | 1.3− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2001 09 19 | 699 | 0.9− | 0.4− | 2001 10 17 | 704 | 0.1+ | 0.4− | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2001 09 19 | 699 | 0.3− | 0.3− | 2001 10 17 | 704 | 0.1+ | 0.6− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 699 | 0.2+ | 0.0 | 2001 10 17 | 704 | 0.5+ | 0.9− | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2001 09 21 | 699 | 0.5+ | 0.4+ | 2001 10 17 | 704 | 0.5+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 699 | 0.1− | 0.3+ | 2001 10 21 | 704 | 0.7− | 0.8− | 2006 11 20 | 704 | 0.4+ | 0.1− |
| 2001 09 21 | 699 | 0.6+ | 0.1− | 2001 10 21 | 704 | 0.5+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2001 09 21 | 699 | 0.3+ | 0.4− | 2001 10 21 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2001 09 25 | 704 | 0.2+ | 0.5− | 2001 10 21 | 704 | 0.6+ | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2001 09 25 | 704 | 0.1− | 0.2− | 2001 11 10 | 704 | 1.3+ | 0.3− | 2006 11 20 | 704 | 0.9− | 0.0 |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2001 11 10 | 704 | 0.5+ | 1.2+ | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2001 09 25 | 704 | 0.1− | 0.1− | 2001 11 10 | 704 | 0.3− | 0.6+ | 2006 11 27 | 691 | 0.3+ | 0.2− |
| 2001 09 25 | 704 | 0.1+ | 0.8− | 2001 11 10 | 704 | 0.2− | 0.6+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2001 09 29 | 644 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.2− |
| 2001 09 29 | 644 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.4− | 0.6+ |
| 2001 09 29 | 644 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.6− | 1.0+ |
| 2001 10 13 | 644 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.2+ | 0.7+ |
| 2001 10 13 | 644 | 0.5− | 0.8+ | 2006 10 19 | G96 | 0.3− | 0.2− | | | | |
| 2001 10 13 | 644 | 0.1− | 0.5+ | 2006 10 19 | G96 | 0.3− | 0.1− | | | | |

**2001 SL$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.35633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26384963 | $\omega$ | 195.34397 | | +0.87079558 | −0.49080332 | |
| $a$ | 2.4074932 | $\Omega$ | 194.15709 | | +0.46254856 | +0.83768271 | |
| $e$ | 0.2031540 | $i$ | 6.75303 | | +0.16662496 | +0.23958252 | |
| $P$ | 3.74 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.0 | 0.6+ | 2001 09 22 | 704 | 0.3+ | 0.9+ | 2005 11 10 | 703 | 0.9− | 1.2− |
| 2000 04 10 | 695 | 0.1+ | 0.2+ | 2001 09 22 | 704 | 0.6− | 0.2+ | 2005 11 10 | 703 | 0.7+ | 0.8− |
| 2001 08 25 | 704 | 0.6+ | 0.1− | 2001 09 22 | 704 | 1.0+ | 0.6+ | 2005 11 10 | 703 | 0.2+ | 1.2− |
| 2001 08 25 | 704 | 0.7+ | 1.4− | 2005 10 05 | 704 | 0.2+ | 0.2− | 2005 11 10 | 703 | 0.3− | 1.1− |
| 2001 08 25 | 704 | 0.2− | 0.6− | 2005 10 05 | 704 | 0.6− | 0.4− | 2005 12 05 | 699 | 0.1+ | 2.5+ |
| 2001 09 16 | 704 | 0.9− | 0.9+ | 2005 10 05 | 704 | 0.7− | 0.4− | 2005 12 05 | 699 | 0.4+ | 0.1+ |
| 2001 09 16 | 704 | 0.4− | 0.1− | 2005 10 31 | 704 | 0.6+ | 0.4+ | 2005 12 05 | 699 | 0.3− | 1.1+ |
| 2001 09 16 | 704 | 0.7− | 0.5+ | 2005 10 31 | 704 | 0.8+ | 0.9+ | 2005 12 05 | 699 | 0.2− | 0.5+ |
| 2001 09 16 | 704 | 0.1− | 0.3+ | 2005 10 31 | 704 | 0.1− | 0.1− | | | | |

### 2001 SW$_{76}$ = 2006 RW$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.47760 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19557092 | $\omega$ | 52.81903 | | +0.91922737 | −0.38868662 | |
| $a$ | 2.9394531 | $\Omega$ | 329.90548 | | +0.30975274 | +0.81237670 | |
| $e$ | 0.2162421 | $i$ | 7.19467 | | +0.24305202 | +0.43470313 | |
| $P$ | 5.04 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2001 09 23 | 704 | 1.1− | 0.0 | 2006 09 19 | 703 | (1.8+ | 0.6−) | |
| 2001 09 16 | 704 | 0.0 | 0.7− | 2001 10 14 | 704 | 0.6+ | 0.5− | 2006 09 19 | 703 | 0.2+ | 0.5− | |
| 2001 09 16 | 704 | 0.2− | 0.6− | 2001 10 14 | 704 | 0.0 | 1.0− | 2006 09 19 | 699 | 0.1+ | 0.7− | |
| 2001 09 16 | 704 | 0.4− | 0.3+ | 2001 10 14 | 704 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.7− | 0.3− | |
| 2001 09 16 | 704 | 0.7− | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.2− | 2006 09 20 | 691 | 0.4+ | 0.1+ | |
| 2001 09 16 | 704 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 09 20 | 691 | 0.3+ | 0.2+ | |
| 2001 09 18 | 699 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.1− | 0.4− | 2006 09 20 | 691 | 0.5+ | 0.0 | |
| 2001 09 18 | 699 | 0.6+ | 1.4+ | 2006 08 28 | 703 | 1.0− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.2− | |
| 2001 09 18 | 699 | 0.4− | 1.2+ | 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.2+ | |
| 2001 09 18 | 699 | 0.7− | 0.8+ | 2006 09 12 | 703 | 0.1+ | 0.8− | 2006 10 10 | 644 | 0.4+ | 0.0 | |
| 2001 09 22 | 704 | 1.2+ | 0.1+ | 2006 09 12 | 703 | 0.9− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1− | |
| 2001 09 22 | 704 | 0.2+ | 0.4− | 2006 09 12 | 703 | (0.4− | 1.5+) | 2006 10 20 | 691 | 0.1+ | 0.2+ | |
| 2001 09 22 | 704 | 1.0+ | 0.3+ | 2006 09 19 | 699 | 0.9− | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.1+ | |
| 2001 09 23 | 704 | 0.2− | 0.8− | 2006 09 19 | 703 | 0.2+ | 0.1+ | | | | | |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.3− | | | | | |

### 2001 SE$_{78}$ = 2004 FY$_{76}$ = 2006 UX$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.34032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21205553 | $\omega$ | 302.38692 | | +0.61909511 | +0.78528625 | |
| $a$ | 2.7850713 | $\Omega$ | 5.87724 | | −0.69622763 | +0.55286980 | |
| $e$ | 0.0847985 | $i$ | 3.82819 | | −0.36330197 | +0.27867630 | |
| $P$ | 4.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.1+ | 0.0 | 2001 09 23 | 704 | 0.3− | 1.5+ | 2006 10 23 | 691 | 0.8− | 0.2+ | |
| 2001 09 19 | 704 | (1.8− | 0.9+) | 2001 10 17 | 644 | 0.1− | 1.0+ | 2006 10 23 | 691 | 0.9− | 0.1+ | |
| 2001 09 19 | 704 | (1.6+ | 1.4−) | 2001 10 17 | 644 | 0.2− | 1.1+ | 2006 10 23 | 691 | 0.8− | 0.0 | |
| 2001 09 19 | 704 | 0.3− | 0.6− | 2001 10 17 | 644 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.3− | |
| 2001 09 19 | 704 | 0.1− | 1.0− | 2004 03 18 | 704 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2− | |
| 2001 09 19 | 704 | 1.0+ | 1.3+ | 2004 03 18 | 704 | 1.0+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.2− | |
| 2001 09 19 | 704 | (0.6+ | 1.7−) | 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.4+ | |
| 2001 09 19 | 704 | 0.4+ | 0.1− | 2004 03 18 | 704 | 1.2+ | 0.7+ | 2006 10 31 | 691 | 0.6+ | 0.3− | |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 10 31 | 691 | 0.7+ | 1.1− | |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2004 03 23 | 691 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.3+ | 0.2− | |
| 2001 09 21 | 704 | 0.0 | 0.6− | 2004 03 23 | 691 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.3− | |
| 2001 09 21 | 704 | 0.6− | 0.9− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.0 | |
| 2001 09 21 | 704 | 0.1− | 0.9− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.1− | |
| 2001 09 22 | 704 | 0.2− | 0.8+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.0 | |
| 2001 09 22 | 691 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.8+ | 0.4− | |
| 2001 09 22 | 704 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.4− | 0.1− | |
| 2001 09 22 | 691 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.4− | |
| 2001 09 22 | 704 | 0.0 | 1.2+ | 2006 10 17 | 691 | 0.3− | 0.0 | 2006 11 21 | 691 | 0.4+ | 0.2− | |
| 2001 09 22 | 704 | 0.4− | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.2+ | 0.1− | |
| 2001 09 22 | 691 | 0.6− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 691 | 0.2+ | 1.0+ | |
| 2001 09 22 | 704 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.5+ | |
| 2001 09 23 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 691 | 0.5− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.0 | |
| 2001 09 23 | 704 | 0.2+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.4− | 0.2+ | |
| 2001 09 23 | 704 | (1.0− | 1.6+) | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1− | |

### 2001 SN$_{78}$ = 2006 RN$_{73}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.76445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20040915 | $\omega$ | 258.48580 | | +0.49304570 | −0.86991999 | |
| $a$ | 2.8919516 | $\Omega$ | 161.95811 | | +0.81260813 | +0.45552820 | |
| $e$ | 0.0579930 | $i$ | 2.22936 | | +0.31076352 | +0.18903245 | |
| $P$ | 4.92 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4+ | 0.7− | 2001 09 23 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | |
| 2001 09 19 | 704 | 0.0 | 0.9− | 2001 09 23 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.5− | |
| 2001 09 19 | 704 | (0.7+ | 2.3−) | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.5− | 0.6− | |
| 2001 09 21 | 704 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ | |
| 2001 09 21 | 704 | 0.6+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.5− | |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.5− | |
| 2001 09 21 | 704 | 0.5+ | 0.1− | 2006 09 19 | 691 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.2− | |
| 2001 09 22 | 704 | 0.3− | 0.5+ | 2006 09 23 | 691 | 0.6− | 0.4− | 2006 10 21 | G96 | 0.2− | 0.1− | |
| 2001 09 22 | 704 | 0.0 | 0.8+ | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 27 | 291 | 0.3+ | 0.1− | |
| 2001 09 22 | 704 | 0.2− | 0.7+ | 2006 09 23 | 691 | 0.3− | 0.7+ | 2006 10 27 | 291 | 0.3− | 0.4+ | |
| 2001 09 22 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 27 | 291 | 0.1+ | 0.1+ | |
| 2001 09 23 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.6− | | | | | |

### 2001 ST$_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.63141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24698637 | $\omega$ | 210.65347 | | +0.93313925 | −0.35939633 | |
| $a$ | 2.5158654 | $\Omega$ | 170.39613 | | +0.34006434 | +0.87402049 | |
| $e$ | 0.0879232 | $i$ | 3.17576 | | +0.11665073 | +0.32699000 | |
| $P$ | 3.99 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.9+ | 0.3+ | 2001 09 23 | 704 | 0.1− | 0.4+ | 2005 10 13 | 691 | 0.2− | 0.2− | |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2001 09 23 | 704 | 0.3+ | 0.3+ | 2005 10 13 | 691 | 0.1− | 0.0 | |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2005 09 14 | 691 | 0.1+ | 0.1− | 2005 10 13 | 691 | 0.9− | 0.2+ | |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2005 09 14 | 691 | 0.1− | 0.2− | 2005 10 28 | G96 | 0.5+ | 0.6− | |
| 2001 09 22 | 704 | 0.4− | 1.2+ | 2005 09 14 | 691 | 0.4+ | 0.0 | 2005 10 28 | G96 | 0.9+ | 0.2+ | |
| 2001 09 22 | 704 | 0.3− | 0.9− | 2005 09 29 | G96 | 0.6+ | 0.4− | 2005 10 28 | G96 | 0.2+ | 0.0 | |
| 2001 09 22 | 704 | 0.6− | 0.9+ | 2005 09 29 | G96 | 0.3+ | 0.3− | 2005 10 28 | G96 | 0.6+ | 0.5+ | |
| 2001 09 22 | 704 | 0.3− | 0.4− | 2005 09 29 | G96 | 0.4+ | 0.2− | | | | | |
| 2001 09 23 | 704 | 0.9− | 0.0 | 2005 09 29 | G96 | 0.6+ | 0.2− | | | | | |

### 2001 SN$_{83}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.39433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21500844 | $\omega$ | 136.12681 | | +0.41383217 | −0.90822863 | |
| $a$ | 2.7595125 | $\Omega$ | 289.33796 | | +0.81602089 | +0.40035212 | |
| $e$ | 0.1068145 | $i$ | 3.77710 | | +0.40355029 | +0.12181514 | |
| $P$ | 4.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 1.1+ | 0.4+ | 2006 09 28 | 703 | 1.0− | 0.6+ | |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.4+ | |
| 2001 05 24 | 807 | 0.3+ | 0.6+ | 2002 12 31 | 704 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.0 | |
| 2001 05 24 | 807 | 0.1+ | 0.5+ | 2003 01 08 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | (2.8− | 0.8−) | |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2003 01 08 | 704 | 0.6+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.3+ | |
| 2001 09 20 | 704 | 0.8− | 0.6+ | 2003 01 08 | 704 | 1.2+ | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.2+ | |
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2003 01 08 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.1− | |
| 2001 09 20 | 704 | 0.1− | 1.0+ | 2003 01 09 | 621 | (1.6+ | 0.2+) | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2001 09 20 | 704 | 0.1+ | 0.7+ | 2003 01 09 | 621 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.5+ | 0.1+ | |
| 2001 09 22 | 704 | 0.0 | 0.4+ | 2003 01 09 | 621 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 2001 09 22 | 704 | 0.6+ | 0.7+ | 2003 01 09 | 621 | 0.6+ | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.1+ | |
| 2001 09 22 | 704 | 0.5+ | 0.7− | 2003 01 09 | 621 | 0.7− | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.1+ | |
| 2001 09 22 | 704 | 0.9− | 0.5− | 2003 01 25 | 291 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− | |
| 2001 09 23 | 704 | 1.4− | 0.1− | 2003 01 25 | 291 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 1.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.2− | 0.4+ | 2003 01 25 | 291 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.7− |
| 2001 09 23 | 704 | 0.3− | 0.7+ | 2006 09 28 | 703 | 0.7− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2002 12 06 | 645 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 1.7− | 0.3− |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.6+ | 0.9− | | | | |

**2001 SQ$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.96741 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20507651 | $\omega$ | 333.48184 | | +0.73344365 | +0.67240597 | |
| $a$ | 2.8479046 | $\Omega$ | 343.03771 | | −0.54709539 | +0.49692709 | |
| $e$ | 0.1661117 | $i$ | 19.97299 | | −0.40341920 | +0.54857422 | |
| $P$ | 4.81 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.3− | 0.3+ | 2001 09 11 | 699 | 0.4+ | 0.8+ | 2001 11 18 | 645 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | 0.7− | 0.0 | 2001 09 20 | 704 | 0.9+ | 0.5− | 2006 09 16 | 703 | 0.5− | 0.7+ |
| 2001 08 23 | 699 | 0.5− | 0.0 | 2001 09 20 | 704 | 1.0+ | 0.9− | 2006 09 16 | 703 | 0.5− | 0.3+ |
| 2001 08 23 | 699 | 0.3+ | 0.1− | 2001 09 20 | 704 | 1.1+ | 0.7− | 2006 09 16 | 703 | 0.5+ | 0.1− |
| 2001 09 07 | 704 | 0.5− | 0.7+ | 2001 09 22 | 704 | 0.5+ | 1.3− | 2006 09 16 | 703 | 0.5− | 0.6− |
| 2001 09 07 | 704 | 1.1− | 0.7− | 2001 09 22 | 704 | 0.5− | 0.8+ | 2006 09 27 | 703 | 0.0 | 0.8+ |
| 2001 09 07 | 704 | 1.0− | 0.4+ | 2001 09 22 | 704 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.2+ | 1.0+ |
| 2001 09 11 | 699 | 0.6+ | 0.3+ | 2001 09 22 | 704 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.5− | 0.1− |
| 2001 09 11 | 699 | 0.3+ | 0.5+ | 2001 09 22 | 704 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.3− | 0.1− |
| 2001 09 11 | 699 | 0.9− | 1.0− | 2001 11 18 | 645 | 0.1+ | 0.0 | | | | |

**2001 SC$_{84}$ = 2006 ST$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.72920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21211443 | $\omega$ | 345.57144 | | +0.01445770 | +0.99834952 | |
| $a$ | 2.7845557 | $\Omega$ | 285.23407 | | −0.91158212 | −0.00968048 | |
| $e$ | 0.0243835 | $i$ | 3.30235 | | −0.41086373 | +0.05660853 | |
| $P$ | 4.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.8+ | 1.1− | 2006 09 17 | 291 | 0.1+ | 0.3+ | 2006 09 21 | 682 | 0.5− | 1.0− |
| 2001 09 08 | 704 | 0.8+ | 0.7− | 2006 09 17 | 291 | 0.2+ | 0.3+ | 2006 09 21 | 682 | 0.1− | 0.7− |
| 2001 09 08 | 704 | 0.5+ | 0.1− | 2006 09 17 | 291 | (1.8− | 2.5+) | 2006 09 30 | 682 | 0.4− | 0.3− |
| 2001 09 08 | 704 | 0.1− | 0.9− | 2006 09 18 | 703 | 0.4− | 0.4− | 2006 09 30 | 682 | 0.3− | 0.2− |
| 2001 09 08 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 09 30 | 682 | 0.3− | 0.2+ |
| 2001 09 11 | 699 | 0.4− | 1.0+ | 2006 09 18 | 703 | 0.0 | 1.3+ | 2006 10 12 | 682 | 0.6+ | 0.5− |
| 2001 09 11 | 699 | (1.7− | 0.2+) | 2006 09 18 | 703 | 1.1− | 1.4− | 2006 10 12 | 682 | 0.1+ | 0.2− |
| 2001 09 11 | 699 | 0.3+ | 0.2+ | 2006 09 18 | 682 | 1.0− | 1.2+ | 2006 10 12 | 682 | 0.4− | 0.1− |
| 2001 09 11 | 699 | 0.7− | 0.3− | 2006 09 18 | 682 | 0.4+ | 0.2− | 2006 10 16 | 683 | 0.9− | 0.6− |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2006 09 18 | 682 | 1.2− | 0.3− | 2006 10 16 | 683 | (2.8+ | 0.3−) |
| 2001 09 20 | 704 | 0.7− | 0.7+ | 2006 09 19 | 703 | 0.1+ | 0.8− | 2006 10 16 | 683 | 1.2+ | 0.4− |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2006 09 19 | 703 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.9+ | 0.5+ |
| 2001 09 20 | 704 | 0.1− | 0.0 | 2006 09 19 | 682 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.7+ |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.9− | 0.6− |
| 2001 09 22 | 704 | 0.0 | 1.3− | 2006 09 19 | 703 | 0.7+ | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.7− |
| 2001 09 22 | 704 | 0.3− | 0.3+ | 2006 09 19 | 682 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2001 09 22 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 682 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.1+ | 0.0 | 2006 09 19 | 291 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 19 | 291 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 09 19 | 291 | 0.1− | 0.1+ | | | | |
| 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 09 21 | 682 | 0.3+ | 0.7− | | | | |

**2001 SX$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.64080 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20235490 | $\omega$ | 122.53301 | | +0.57843220 | −0.81509558 | |
| $a$ | 2.8733833 | $\Omega$ | 292.09354 | | +0.73628971 | +0.53867426 | |
| $e$ | 0.3412594 | $i$ | 1.99013 | | +0.35113195 | +0.21318828 | |
| $P$ | 4.87 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 1.3− | 0.7− | 2001 10 19 | 644 | 0.9− | 0.2+ | 2006 09 27 | 699 | 0.2+ | 0.1+ |
| 2001 09 11 | 699 | 0.9− | 0.0 | 2006 08 24 | 644 | 0.2+ | 0.1− | 2006 09 27 | 699 | 0.1− | 0.1− |
| 2001 09 11 | 699 | 1.0− | 1.1− | 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 09 27 | 699 | 1.3− | 0.3− |
| 2001 09 11 | 699 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.3+ | 0.1− | 2006 10 15 | 106 | 0.4+ | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 15 | 106 | 0.1− | 0.6+ |
| 2001 09 12 | 704 | 0.2− | 0.5+ | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 10 15 | 106 | 0.7+ | 0.3+ |
| 2001 09 12 | 704 | 0.3+ | 0.9− | 2006 09 06 | 644 | 0.4+ | 0.2+ | 2006 10 15 | 106 | 0.4+ | 0.6+ |
| 2001 09 12 | 704 | 0.3− | 1.1− | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 1.2+ | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.8+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 09 20 | 704 | 0.6+ | 0.6− | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 09 22 | 704 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 09 22 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.9+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.2+ |
| 2001 09 23 | 704 | 0.2+ | 1.1+ | 2006 09 25 | 704 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.3+ | 1.1+ | 2006 09 25 | 704 | 0.7− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2001 09 23 | 704 | 0.7+ | 1.2+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.2− | 0.6+ | 2006 09 25 | 704 | 0.6+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2001 10 11 | 644 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2001 10 11 | 644 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.4− | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2001 10 19 | 644 | 1.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− | | | | |
| 2001 10 19 | 644 | 0.8− | 0.2+ | 2006 09 27 | 699 | 0.4+ | 0.3− | | | | |

**2001 SG$_{87}$ = 2006 UN$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.45661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21331201 | $\omega$ | 40.32614 | | +0.99721073 | −0.06771771 | |
| $a$ | 2.7741239 | $\Omega$ | 323.52047 | | +0.04729511 | +0.89862201 | |
| $e$ | 0.1113651 | $i$ | 3.02607 | | +0.05774017 | +0.43346601 | |
| $P$ | 4.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.1+ | 0.0 | 2001 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2001 08 24 | 691 | 0.1+ | 0.1+ | 2001 09 20 | 704 | 0.2− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2001 08 24 | 691 | 0.1− | 0.0 | 2001 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.1+ | 0.2+ | 2001 09 22 | 704 | 1.5+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.2+ |
| 2001 09 12 | 704 | 0.2− | 0.4− | 2001 09 22 | 704 | 0.1+ | 0.7− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.2− | 2001 09 22 | 704 | 0.6− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.9− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2006 10 17 | 691 | 0.0 | 0.1− | | | | |

**2001 SC$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.40930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21136599 | $\omega$ | 125.79829 | | +0.96594275 | +0.25630206 | |
| $a$ | 2.7911252 | $\Omega$ | 219.38551 | | −0.25179001 | +0.89936113 | |
| $e$ | 0.1083964 | $i$ | 3.21175 | | −0.05963544 | +0.35420165 | |
| $P$ | 4.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | (2.7− | 1.3+) | 2001 09 23 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.9+ |
| 2001 09 18 | 699 | 0.7+ | 0.0 | 2001 09 23 | 704 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2001 09 18 | 699 | 0.4− | 0.6+ | 2001 09 23 | 704 | 0.8− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2001 09 18 | 699 | (2.5− | 0.3+) | 2001 10 19 | 644 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2001 09 20 | 704 | 0.0 | 0.5− | 2001 10 19 | 644 | 0.6− | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2001 09 20 | 704 | 0.1+ | 0.5− | 2001 10 19 | 644 | 0.9+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.9− | 2006 10 16 | 691 | 0.2+ | 0.4− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 1.1− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.2− | 0.3− |
| 2001 09 22 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.4− | 0.1+ |
| 2001 09 22 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.4+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 704 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 703 | (2.0+ | 1.3−) | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2001 09 23 | 704 | 0.3+ | 0.2− | 2006 10 21 | 703 | (1.6+ | 1.7+) | 2006 11 23 | 691 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 0.5− | 0.1+ | 2006 10 21 | 703 | 0.7+ | 0.6+ | | | | |

**2001 SK$_{89}$ = 2006 TG$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.13706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21649014 | $\omega$ | 79.36579 | | +0.46259868 | | +0.88513717 |
| $a$ | 2.7469070 | $\Omega$ | 218.31925 | | −0.84185155 | | +0.42075047 |
| $e$ | 0.0550376 | $i$ | 4.65735 | | −0.27800796 | | +0.19874916 |
| $P$ | 4.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5+ | 0.4− | 2001 09 23 | 704 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2001 09 23 | 704 | 0.0 | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.7+ | 0.4− | 2001 09 23 | 704 | 0.6− | 0.5+ | 2006 10 20 | 691 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.8+ | 0.9− | 2001 09 23 | 704 | 0.5− | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 1.4+ | 0.5+ | 2001 09 23 | 704 | 0.5− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 1.2− | 0.7+ | 2003 01 03 | 291 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.5+ | 0.1+ | 2003 01 03 | 291 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2003 01 03 | 291 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2001 09 21 | 704 | 1.0− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2001 09 22 | 704 | 0.3− | 0.5− | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 09 22 | 704 | 0.6− | 0.2− | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2001 09 22 | 704 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.5− | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2001 09 22 | 704 | 0.4− | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.5+ | 0.3− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2001 09 23 | 704 | (0.3− | 2.1+) | 2006 10 12 | 691 | 0.5− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.4− | | | | |
| 2001 09 23 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.4− | | | | |

**2001 SE$_{90}$ = 2006 QQ$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.64862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19448875 | $\omega$ | 38.13025 | | +0.85898845 | | +0.51181553 |
| $a$ | 2.9503467 | $\Omega$ | 291.07975 | | −0.47324185 | | +0.78358972 |
| $e$ | 0.1017568 | $i$ | 0.83232 | | −0.19539959 | | +0.35218180 |
| $P$ | 5.07 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.2+ | 2002 12 04 | 695 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.2− | 0.1+ | 2004 02 29 | 291 | 0.2+ | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2004 02 29 | 291 | 0.5+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.9+ | 0.1+ | 2004 02 29 | 291 | 0.8+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1− |
| 2001 09 22 | 704 | 0.9− | 0.2+ | 2004 03 23 | 291 | 0.0 | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.2− |
| 2001 09 22 | 704 | 0.3− | 0.8− | 2004 03 23 | 291 | 0.2− | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.2+ |
| 2001 09 22 | 704 | 0.5− | 0.5+ | 2004 03 23 | 291 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.3+ |
| 2001 09 23 | 704 | 0.6+ | 0.4+ | 2006 07 25 | G96 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2001 09 23 | 704 | 0.5− | 1.1+ | 2006 07 25 | G96 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.7+ | 0.3+ |
| 2001 09 23 | 704 | 0.2+ | 0.5+ | 2006 07 25 | G96 | 0.3− | 0.2− | | | | |
| 2002 12 04 | 695 | 0.0 | 0.3− | 2006 08 19 | 691 | 0.1− | 0.2+ | | | | |

**2001 SL$_{90}$ = 2006 RL$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.80160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19722856 | $\omega$ | 342.84781 | | +0.86692365 | | +0.49739942 |
| $a$ | 2.9229598 | $\Omega$ | 347.17575 | | −0.43860126 | | +0.73055627 |
| $e$ | 0.2740240 | $i$ | 8.34286 | | −0.23679597 | | +0.46784758 |
| $P$ | 5.00 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.6− | 0.0 | 2001 09 23 | 704 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 1996 09 06 | 691 | 0.5+ | 0.3− | 2001 09 23 | 704 | 0.8+ | 0.4+ | 2006 09 19 | 703 | 0.5+ | 0.2− |
| 2001 09 20 | 704 | (0.3− | 1.6+) | 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.5− | 0.3+ |
| 2001 09 20 | 704 | 0.3+ | 1.3+ | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.6+ | 1.1+ |
| 2001 09 20 | 704 | (0.4− | 1.6+) | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.7+ | 1.1− |
| 2001 09 20 | 704 | (0.1+ | 1.7+) | 2006 08 18 | 691 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.7+ |
| 2001 09 22 | 704 | 0.9+ | 0.4+ | 2006 08 18 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.9− | 0.3− |
| 2001 09 22 | 704 | 0.5+ | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.5+ | 0.1+ |
| 2001 09 22 | 704 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2001 09 22 | 704 | 0.0 | 0.8+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.6− | 0.5− |
| 2001 09 23 | 704 | 0.4+ | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.2− | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 0.5− | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.0 | | | | |

**2001 SC$_{91}$ = 2006 UL$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.72201 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21391467 | $\omega$ | 176.57499 | | +0.96626056 | | −0.25555722 |
| $a$ | 2.7689110 | $\Omega$ | 198.32887 | | +0.23381992 | | +0.92261621 |
| $e$ | 0.0475912 | $i$ | 5.86051 | | +0.10802207 | | +0.28891146 |
| $P$ | 4.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.0 | 0.0 | 2001 09 23 | 704 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.3− |
| 2001 08 20 | 807 | 0.1+ | 0.1+ | 2001 09 23 | 704 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.6− | 0.1− | 2001 09 23 | 704 | 0.6− | 0.7− | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.6− | 0.5− | 2001 09 23 | 704 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 09 20 | 704 | 0.8− | 0.2− | 2006 10 16 | 683 | 1.1− | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2006 10 16 | 683 | 0.8+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2001 09 22 | 704 | 0.8+ | 1.0+ | 2006 10 16 | 683 | 1.2− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.5+ | 2006 10 17 | G96 | 0.5+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2001 09 22 | 704 | 0.1− | 1.2+ | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 1.1+ | 1.2− | 2006 10 17 | G96 | 0.1+ | 0.6− | | | | |

**2001 SF$_{91}$ = 2006 UQ$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.48349 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21534583 | $\omega$ | 210.26717 | | +0.70931078 | | −0.70442367 |
| $a$ | 2.7566296 | $\Omega$ | 194.60813 | | +0.66550504 | | +0.68128742 |
| $e$ | 0.0089595 | $i$ | 5.87089 | | +0.23233869 | | +0.19908476 |
| $P$ | 4.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 01 | 691 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 1997 11 01 | 691 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 1997 11 01 | 691 | 0.3− | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.6− | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 0.5− | 2006 09 26 | G96 | 0.8+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2001 09 22 | 704 | 1.0+ | 1.2+ | 2006 09 26 | G96 | 0.5+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 0.7+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.7+ |
| 2001 09 22 | 704 | 0.8− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.4+ |
| 2001 09 23 | 704 | 0.9− | 0.9+ | 2006 10 13 | D35 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.2− |
| 2001 09 23 | 704 | 0.2− | 0.3+ | 2006 10 13 | D35 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 1.0+ | 0.3− |
| 2001 09 23 | 704 | 0.2− | 0.7+ | 2006 10 13 | D35 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.7+ | 1.1− |
| 2001 09 23 | 704 | 0.5− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (1.8− | 0.0 ) |
| 2001 09 23 | 704 | 0.7+ | 0.5+ | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.7− |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.5+ | 1.4− |
| 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 1.0+ | 1.0− |
| 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.2+ | | | | |

**2001 SK$_{91}$ = 2006 UU$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.30496 | | (2000.0) | | | |
| $n$ | 0.21081147 | $\omega$ | 111.74513 | | +0.86924419 | −0.49099701 |
| $a$ | 2.7960175 | $\Omega$ | 277.70206 | | +0.42932369 | +0.80761901 |
| $e$ | 0.0809269 | $i$ | 3.34155 | | +0.24514425 | +0.32660904 |
| $P$ | 4.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.9− | 0.4− | 2001 09 23 | 704 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2001 09 23 | 704 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.8− | 0.5− | 2001 09 23 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2001 09 23 | 704 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2001 09 23 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 09 22 | 704 | 0.9+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2001 09 22 | 704 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | 1.0+ | 0.3+ | 2006 09 26 | 691 | 0.3+ | 0.6+ | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2001 09 22 | 704 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.2− | | | | |

**2001 SU$_{92}$ = 2006 TG$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.86138 | | (2000.0) | | | |
| $n$ | 0.21343472 | $\omega$ | 75.09674 | | +0.89839769 | +0.43888413 |
| $a$ | 2.7730604 | $\Omega$ | 258.86836 | | −0.40902169 | +0.82269979 |
| $e$ | 0.1672239 | $i$ | 0.94581 | | −0.15994639 | +0.36131119 |
| $P$ | 4.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.3+ | 0.2− | 2001 09 23 | 704 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2001 08 25 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.3− |
| 2001 08 25 | 691 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.9− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2001 09 20 | 704 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.2− | 0.5− |
| 2001 09 20 | 704 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 0.0 | 0.9+ | 2006 10 16 | 691 | 0.4− | 0.3− | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.3− | 1.0+ | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2001 09 22 | 704 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 1.2+ | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.1− |
| 2001 09 22 | 704 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2001 09 23 | 704 | 0.2− | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2001 09 23 | 704 | 0.5− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.5− |
| 2001 09 23 | 704 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.3− |

**2001 SZ$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.06178 | | (2000.0) | | | |
| $n$ | 0.19277484 | $\omega$ | 145.86349 | | +0.85828595 | −0.51292847 |
| $a$ | 2.9678081 | $\Omega$ | 245.00321 | | +0.46684919 | +0.79322339 |
| $e$ | 0.0741709 | $i$ | 0.99882 | | +0.21306586 | +0.32817837 |
| $P$ | 5.11 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.0 | 0.6+ | 2001 09 22 | 704 | 0.5+ | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2001 08 20 | 807 | 0.4+ | 0.2+ | 2001 09 22 | 704 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.1− |
| 2001 08 25 | 691 | 0.0 | 0.2− | 2001 09 23 | 704 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.4− |
| 2001 08 25 | 691 | 0.0 | 0.4− | 2001 09 23 | 704 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2001 08 25 | 691 | 0.1− | 0.4− | 2001 09 23 | 704 | 0.0 | 0.0 | 2006 11 16 | G96 | (2.6− | 1.3−) |
| 2001 09 20 | 704 | 0.4− | 0.6+ | 2001 09 23 | 704 | 0.5+ | 0.1− | 2006 11 16 | G96 | (2.0− | 1.4−) |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2001 09 23 | 704 | 0.6+ | 0.3+ | 2006 11 16 | G96 | (2.0− | 1.2−) |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | (2.0− | 1.1−) |
| 2001 09 20 | 704 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | (2.2− | 1.4−) |
| 2001 09 20 | 704 | 0.4− | 0.7+ | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | (2.4− | 1.3−) |
| 2001 09 22 | 704 | 0.1+ | 0.5− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | (2.1− | 1.7−) |
| 2001 09 22 | 704 | 0.1+ | 0.3− | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | (2.4− | 1.8−) |
| 2001 09 22 | 704 | 0.5− | 0.1− | 2006 08 27 | 691 | 0.0 | 0.1− | | | | |

**2001 SZ$_{97}$ = 2006 WH$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.21807 | | (2000.0) | | | |
| $n$ | 0.22196663 | $\omega$ | 149.41639 | | +0.99579654 | −0.08929343 |
| $a$ | 2.7015370 | $\Omega$ | 215.72421 | | +0.07536868 | +0.92536150 |
| $e$ | 0.1339136 | $i$ | 2.00167 | | +0.05204616 | +0.36841930 |
| $P$ | 4.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2001 09 23 | 704 | 0.3− | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.8− | 0.6+ | 2001 09 23 | 704 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.6+ | 0.1− | 2001 09 23 | 704 | 0.4+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.7− | 0.3− | 2001 09 23 | 704 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.8− | 0.4+ | 2001 09 25 | 704 | 0.2+ | 0.5+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2001 09 22 | 704 | 0.4− | 0.4+ | 2001 09 25 | 704 | 0.9+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 0.1+ | 0.3+ | 2001 09 25 | 704 | 0.7+ | 1.0− | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2001 09 22 | 704 | 0.1+ | 0.1+ | 2001 09 25 | 704 | 0.2− | 1.2+ | 2006 12 01 | 691 | 0.2+ | 0.4+ |
| 2001 09 22 | 704 | 1.0+ | 0.4− | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 0.1− | 0.6+ | 2001 10 14 | 645 | 0.0 | 0.1− | | | | |

**2001 SC$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.09766 | | (2000.0) | | | |
| $n$ | 0.21580124 | $\omega$ | 69.38541 | | +0.94993884 | +0.30986752 |
| $a$ | 2.7527499 | $\Omega$ | 272.54637 | | −0.29948612 | +0.86662301 |
| $e$ | 0.1537372 | $i$ | 2.29350 | | −0.08901829 | +0.39108397 |
| $P$ | 4.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.8− | 0.6− | 2001 09 23 | 704 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.6− | 0.4+ | 2001 09 23 | 704 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.7− | 1.1− | 2001 09 24 | 704 | 0.8+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2001 09 24 | 704 | (0.6+ | 2.7−) | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | (1.3− | 1.8−) | 2001 09 24 | 704 | 0.1+ | 0.9+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.2+ | 2001 09 24 | 704 | (1.6+ | 0.0 ) | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2001 09 20 | 704 | 1.1− | 1.4− | 2001 09 24 | 704 | 0.2− | 0.4− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 09 22 | 704 | 0.1− | 0.8+ | 2001 10 11 | 644 | 0.6+ | 0.6+ | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2001 09 22 | 704 | 0.1+ | 0.8+ | 2001 10 11 | 644 | 0.9+ | 0.5+ | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2001 09 22 | 704 | 0.6− | 0.2+ | 2001 10 11 | 644 | 0.4+ | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.8− | 0.8− | 2001 11 18 | 645 | 0.0 | 0.1− | | | | |
| 2001 09 23 | 704 | 0.7+ | 0.4+ | 2001 11 18 | 645 | 0.0 | 0.1− | | | | |

**2001 SJ$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 291.94287 | | (2000.0) | | | |
| $n$ | 0.19760646 | $\omega$ | 255.28558 | | +0.14458763 | −0.98927082 |
| $a$ | 2.9192321 | $\Omega$ | 186.51003 | | +0.96394338 | +0.14559632 |
| $e$ | 0.1159384 | $i$ | 10.63319 | | +0.22340003 | +0.01203989 |
| $P$ | 4.99 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.1− | 0.0 | 2001 09 23 | 704 | 0.3− | 0.8+ | 2006 08 21 | 691 | 0.4− | 0.2− |
| 2001 09 12 | 691 | 0.2+ | 0.1+ | 2001 09 23 | 704 | 0.3+ | 0.4+ | 2006 08 21 | 691 | 0.1+ | 0.0 |
| 2001 09 12 | 691 | 0.1− | 0.2− | 2001 09 23 | 704 | 0.1+ | 1.1+ | 2006 09 16 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.2+ | 2001 10 11 | 644 | 0.8− | 0.3− | 2006 09 16 | 691 | 0.2+ | 0.8− |
| 2001 09 20 | 704 | 0.4+ | 0.0 | 2001 10 11 | 644 | 0.5− | 0.0 | 2006 09 16 | 691 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.4− | 0.1− | 2001 10 11 | 644 | 1.0− | 0.1− | 2006 09 17 | 703 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2001 10 14 | 645 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.3+ | 1.3+ |
| 2001 09 20 | 704 | 0.3− | 0.7+ | 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.3− | 0.0 |
| 2001 09 22 | 704 | 1.2− | 0.3− | 2004 04 23 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2001 09 22 | 704 | 0.7− | 0.3+ | 2004 04 23 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2001 09 22 | 704 | 0.8− | 0.3+ | 2004 04 23 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2001 09 22 | 704 | 0.6− | 0.4+ | 2006 08 21 | 691 | 0.3+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.4− |

**2001 SV$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 149.33660 | | (2000.0) | | | |
| $n$ | 0.30055308 | $\omega$ | 56.41980 | | +0.66272846 | −0.74868566 |
| $a$ | 2.2072690 | $\Omega$ | 352.01187 | | +0.64279149 | +0.57979082 |
| $e$ | 0.1006086 | $i$ | 6.67296 | | +0.38420058 | +0.32142245 |
| $P$ | 3.28 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.1− | 0.1+ | 2001 09 22 | 704 | 0.3+ | 0.1+ | 2006 01 23 | 691 | 0.2+ | 0.0 |
| 2001 09 12 | 691 | 0.2− | 0.3+ | 2001 09 22 | 704 | 0.0 | 0.8− | 2006 01 23 | 691 | 0.2− | 0.4+ |
| 2001 09 12 | 691 | 0.1+ | 0.3+ | 2001 09 23 | 704 | 0.4− | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.2− | 0.1+ | 2001 09 23 | 704 | 0.3− | 0.6+ | 2006 02 01 | 691 | 1.0+ | 0.5− |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2001 09 23 | 704 | 0.3− | 0.1− | 2006 02 01 | 691 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.6− | 2001 09 23 | 704 | 0.0 | 0.3+ | 2006 02 01 | 691 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 1.1+ | 0.2+ | 2001 09 25 | 699 | 0.1− | 0.2− | 2006 02 24 | 691 | 0.3− | 0.2+ |
| 2001 09 20 | 704 | 0.3+ | 1.3+ | 2001 09 25 | 699 | 1.6+ | 1.0+ | 2006 02 24 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.7+ | 0.4− | 2001 09 25 | 699 | 0.8− | 1.0+ | 2006 02 24 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 0.7− | 2001 09 25 | 699 | 1.0− | 1.1− | 2006 03 05 | 691 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2003 04 05 | 691 | 0.2+ | 0.3+ | 2006 03 05 | 691 | 0.1+ | 0.5− |
| 2001 09 22 | 704 | 1.2− | 0.6− | 2003 04 05 | 691 | 0.0 | 0.2+ | 2006 03 05 | 691 | 0.1+ | 0.2− |
| 2001 09 22 | 704 | 0.3− | 1.4− | 2003 04 05 | 691 | 0.2+ | 0.2+ | | | | |

**2001 SV$_{103}$ = 2006 US$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.82374 | | (2000.0) | | | |
| $n$ | 0.20966079 | $\omega$ | 186.56716 | | +0.96813520 | −0.25013358 |
| $a$ | 2.8062384 | $\Omega$ | 187.94965 | | +0.23357247 | +0.91939775 |
| $e$ | 0.1784592 | $i$ | 5.03661 | | +0.09032240 | +0.30354730 |
| $P$ | 4.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.3+ | 0.3+ | 2001 09 22 | 704 | 0.0 | 0.2+ | 2001 10 17 | 644 | 0.0 | 0.8+ |
| 2001 09 12 | 691 | 0.2+ | 0.5+ | 2001 09 23 | 704 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 691 | 0.1+ | 0.4+ | 2001 09 23 | 704 | 0.2− | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2001 09 23 | 704 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.3− | 2001 09 23 | 704 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.8− | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 0.7− | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 0.0 | 0.3+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2001 10 17 | 644 | 0.3− | 1.4+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 0.1− | 0.1+ | 2001 10 17 | 644 | 0.3+ | 1.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |

**2001 SL$_{104}$ = 2006 SZ$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.07276 | | (2000.0) | | | |
| $n$ | 0.19823522 | $\omega$ | 58.63751 | | +0.84475226 | −0.53263397 |
| $a$ | 2.9130561 | $\Omega$ | 333.43962 | | +0.44306791 | +0.75049159 |
| $e$ | 0.0874419 | $i$ | 6.66671 | | +0.30014071 | +0.39123321 |
| $P$ | 4.97 | $H$ | 16.1 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.2− | 2001 09 24 | 704 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | (1.8+ | 0.7+) | 2006 09 17 | 703 | 0.2− | 0.8+ | 2006 09 28 | 204 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.8+ | 0.0 | 2006 09 17 | 703 | 0.8+ | 0.1+ | 2006 09 28 | 204 | 0.4− | 0.3+ |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.8− | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2001 09 22 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2001 09 22 | 704 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2001 09 22 | 704 | 1.1− | 0.8− | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 23 | G96 | (3.1+ | 1.1+) |
| 2001 09 22 | 704 | 0.9+ | 1.0+ | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 23 | G96 | (2.3+ | 0.9+) |
| 2001 09 24 | 704 | 0.7− | 0.5− | 2006 09 27 | 691 | 0.6+ | 0.2− | 2006 10 23 | G96 | (3.0+ | 1.0+) |
| 2001 09 24 | 704 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.8− | 2006 10 23 | G96 | (3.0+ | 1.0+) |

**2001 SX$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.57888 | | (2000.0) | | | |
| $n$ | 0.20982628 | $\omega$ | 65.93595 | | +0.95863628 | −0.27104169 |
| $a$ | 2.8047628 | $\Omega$ | 309.67089 | | +0.20240622 | +0.86381464 |
| $e$ | 0.2497732 | $i$ | 6.48292 | | +0.20012047 | +0.42468892 |
| $P$ | 4.70 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.1− | 0.2− | 2001 10 15 | 704 | 0.8− | 0.0 | 2001 12 17 | 704 | 0.0 | 0.4− |
| 1996 10 07 | 691 | 0.2+ | 0.0 | 2001 10 19 | 704 | 0.4+ | 0.5− | 2001 12 17 | 704 | 0.5+ | 0.2− |
| 1996 10 07 | 691 | 0.2+ | 0.2− | 2001 10 19 | 704 | 0.3+ | 0.8− | 2001 12 17 | 704 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 1.4− | 2001 10 19 | 704 | 0.0 | 1.1− | 2001 12 17 | 704 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2001 10 19 | 704 | 0.6− | 0.8+ | 2002 01 06 | 644 | 1.5+ | 0.9+ |
| 2001 09 20 | 704 | 0.0 | 0.3− | 2001 10 27 | 704 | 0.8+ | 0.1− | 2002 01 06 | 644 | 1.3+ | 0.9+ |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2001 10 27 | 704 | 0.6+ | 0.1+ | 2002 01 06 | 644 | 0.3+ | 1.0+ |
| 2001 09 22 | 704 | 0.4− | 0.1− | 2001 10 27 | 704 | 0.4+ | 0.0 | 2002 01 08 | 704 | (2.1+ | 1.8−) |
| 2001 09 22 | 704 | 0.2− | 0.4+ | 2001 10 27 | 704 | 0.0 | 0.3+ | 2002 01 08 | 704 | (2.5+ | 1.4−) |
| 2001 09 22 | 704 | 0.6+ | 0.5+ | 2001 10 27 | 704 | 0.1+ | 0.1− | 2002 01 08 | 704 | (2.5+ | 2.4−) |
| 2001 09 23 | 704 | 0.1− | 0.7+ | 2001 11 11 | 704 | 0.0 | 0.0 | 2002 01 08 | 704 | (2.7+ | 2.2−) |
| 2001 09 23 | 704 | 0.4− | 0.7+ | 2001 11 11 | 704 | 0.1− | 0.1+ | 2002 01 08 | 704 | (3.0+ | 2.3−) |
| 2001 09 23 | 704 | 1.1+ | 0.1− | 2001 11 11 | 704 | 0.2− | 0.1+ | 2002 01 12 | 704 | 0.4− | 0.3+ |
| 2001 09 24 | 704 | 0.2+ | 0.2+ | 2001 11 11 | 704 | 0.5− | 0.2+ | 2002 01 12 | 704 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | (2.1− | 0.5+) | 2001 11 11 | 704 | 0.4− | 0.3+ | 2002 01 12 | 704 | 0.3− | 0.7− |
| 2001 09 24 | 704 | 0.6+ | 0.1− | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2002 01 12 | 704 | 0.1− | 1.1− |
| 2001 09 24 | 704 | 0.2+ | 0.8+ | 2001 11 21 | 704 | 0.2− | 0.3+ | 2002 02 06 | 704 | 1.6+ | 1.2+ |
| 2001 10 14 | 704 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.5− | 0.5+ | 2002 02 06 | 704 | 0.0 | 0.6− |
| 2001 10 14 | 704 | 0.5− | 0.6+ | 2001 11 21 | 704 | 0.2− | 0.3+ | 2002 02 06 | 704 | 0.9− | 0.5+ |
| 2001 10 14 | 704 | 0.4+ | 0.7+ | 2001 11 21 | 704 | 0.4+ | 0.2+ | 2002 02 06 | 704 | 1.0− | 1.3− |
| 2001 10 14 | 704 | 0.2− | 1.2+ | 2001 12 09 | 704 | 0.1+ | 0.6− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2001 10 14 | 704 | 0.2+ | 1.5+ | 2001 12 09 | 704 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2001 10 15 | 704 | 0.2+ | 0.2+ | 2001 12 09 | 704 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2001 10 15 | 704 | 0.5− | 0.5− | 2001 12 09 | 704 | 0.8− | 1.2− | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2001 10 15 | 704 | 1.0− | 0.9− | 2001 12 09 | 704 | 0.6− | 0.9− | | | | |
| 2001 10 15 | 704 | 1.0− | 0.2− | 2001 12 17 | 704 | 0.2− | 0.1− | | | | |

**2001 SU$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.68840 | | (2000.0) | | | |
| $n$ | 0.39555632 | $\omega$ | 149.69352 | | +0.92826277 | +0.36737362 |
| $a$ | 1.8379365 | $\Omega$ | 189.32292 | | −0.37013243 | +0.92777835 |
| $e$ | 0.0948839 | $i$ | 20.98191 | | +0.03647217 | +0.06529901 |
| $P$ | 2.49 | $H$ | 18.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.0 | 0.3+ | 2001 09 24 | 704 | 0.1− | 1.3− | 2001 10 16 | 644 | 0.3+ | 1.4+ |
| 2001 08 25 | 704 | 0.6− | 0.8− | 2001 09 25 | 704 | 0.2− | 0.1− | 2001 10 16 | 644 | (0.4+ | 1.5+) |
| 2001 08 25 | 704 | 0.8+ | 0.1+ | 2001 09 25 | 704 | 0.1+ | 0.9+ | 2001 10 16 | 644 | 0.4+ | 1.3+ |
| 2001 09 17 | 704 | 1.1+ | 0.3+ | 2001 09 25 | 704 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2001 09 17 | 704 | 0.5− | 0.4+ | 2001 09 25 | 704 | 1.2− | 0.9+ | 2006 10 16 | 703 | 0.4− | 1.3− |
| 2001 09 17 | 704 | 0.2+ | 0.1+ | 2001 09 25 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.0 | 1.1− |
| 2001 09 20 | 333 | 0.1− | 1.4+ | 2001 09 25 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2001 09 20 | 333 | 0.5− | 0.0 | 2001 09 25 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2001 09 20 | 333 | 0.2− | 0.6+ | 2001 09 26 | 704 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 09 21 | 333 | 0.1+ | 0.3− | 2001 09 26 | 704 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 09 21 | 333 | 0.6− | 0.5− | 2001 09 26 | 704 | 0.1− | 0.5− | 2006 10 28 | 703 | 0.3+ | 0.9+ |
| 2001 09 21 | 333 | 0.9+ | 0.4− | 2001 09 26 | 704 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2001 09 24 | 704 | 0.2+ | 1.3− | 2001 09 26 | 704 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.7− | 0.5− |
| 2001 09 24 | 704 | 1.3− | 0.3+ | 2001 10 06 | 644 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2001 09 24 | 704 | (0.1− | 2.0−) | 2001 10 06 | 644 | 0.5+ | 0.2− | | | | |
| 2001 09 24 | 704 | (0.5− | 1.7−) | 2001 10 06 | 644 | 0.6+ | 0.0 | | | | |

**2001 SB$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.09664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19017583 | $\omega$ | 46.06686 | | +0.66741653 | −0.74463765 | |
| $a$ | 2.9947863 | $\Omega$ | 2.11825 | | +0.60186099 | +0.53276447 | |
| $e$ | 0.1773862 | $i$ | 13.07748 | | +0.43854135 | +0.40209052 | |
| $P$ | 5.18 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.3− | 1.0+ | 2001 10 13 | 699 | 0.2− | 0.4+ | 2006 09 25 | 699 | (1.6+ | 2.1+) |
| 2001 09 17 | 704 | 0.1− | 1.2+ | 2001 10 13 | 699 | 0.5+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2001 09 17 | 704 | 0.7− | 0.1− | 2001 10 14 | 704 | 1.0+ | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.8− |
| 2001 09 20 | 333 | 0.0 | 0.7− | 2001 10 14 | 704 | 0.4+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2001 09 20 | 333 | 0.6+ | 0.7− | 2001 10 14 | 704 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2001 10 14 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 703 | 0.0 | 0.9− |
| 2001 09 20 | 333 | 0.4+ | 0.6− | 2001 10 17 | 704 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.6+ | 2001 10 17 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2001 10 17 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.7+ |
| 2001 09 20 | 704 | 0.1− | 0.7+ | 2001 10 17 | 704 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.7+ |
| 2001 09 20 | 704 | 0.3− | 0.5+ | 2001 10 17 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2001 09 21 | 333 | 0.3+ | 0.5− | 2001 10 18 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2001 09 21 | 333 | 0.0 | 0.5− | 2001 10 18 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | (1.6+ | 1.8+) |
| 2001 09 21 | 333 | 0.8+ | 0.3+ | 2001 10 18 | 644 | 0.5− | 0.4+ | 2006 10 19 | 695 | 0.3+ | 0.0 |
| 2001 09 23 | 704 | 0.7− | 0.7− | 2003 01 29 | 644 | 0.1− | 0.4+ | 2006 10 19 | 695 | 0.3+ | 0.0 |
| 2001 09 23 | 704 | 0.8− | 0.0 | 2003 01 29 | 644 | 0.4− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 09 23 | 704 | 1.0− | 0.2+ | 2003 01 29 | 644 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2001 09 23 | 704 | 0.8− | 0.2− | 2006 09 14 | 703 | 0.8+ | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2001 09 24 | 704 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.6− | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2001 09 24 | 704 | 0.4+ | 0.4+ | 2006 09 14 | 703 | (1.7− | 0.4−) | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2001 09 24 | 704 | 0.0 | 1.1− | 2006 09 14 | 703 | 0.8+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2001 09 24 | 704 | 0.9+ | 0.0 | 2006 09 16 | 704 | 1.2− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 09 24 | 704 | 0.6+ | 0.6− | 2006 09 16 | 704 | 0.4− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2001 10 06 | 644 | 0.7− | 0.2+ | 2006 09 16 | 704 | 0.6+ | 1.2− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2001 10 06 | 644 | 0.2− | 0.0 | 2006 09 16 | 704 | 0.4− | 0.8− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2001 10 06 | 644 | 0.8+ | 0.2− | 2006 09 25 | 699 | (0.0 | 1.6+) | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2001 10 13 | 699 | 1.4− | 0.1− | 2006 09 25 | 699 | (2.9+ | 0.4+) | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2001 10 13 | 699 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.0 | 1.3+ | | | | |

**2001 SE$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.38647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20908211 | $\omega$ | 75.35066 | | +0.92818754 | −0.36035971 | |
| $a$ | 2.8114140 | $\Omega$ | 305.68906 | | +0.28203571 | +0.84393679 | |
| $e$ | 0.1107797 | $i$ | 6.55967 | | +0.24274213 | +0.39738088 | |
| $P$ | 4.71 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.5+ | 0.7− | 2001 09 16 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2001 08 25 | 704 | 0.9− | 0.2− | 2001 09 20 | 704 | 0.8− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2001 08 25 | 704 | 0.3− | 0.5− | 2001 09 20 | 704 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 09 08 | 704 | 0.3+ | 0.3− | 2001 09 20 | 704 | 0.0 | 0.3− | 2006 10 26 | 561 | (2.1+ | 1.6+) |
| 2001 09 08 | 704 | 1.3− | 1.1+ | 2001 09 20 | 704 | 0.4+ | 0.4+ | 2006 10 26 | 561 | (2.3− | 1.5+) |
| 2001 09 08 | 704 | 0.4− | 1.2+ | 2001 09 28 | 644 | 0.4+ | 0.7− | 2006 10 26 | 561 | 0.1− | 0.8+ |
| 2001 09 11 | 699 | 1.3+ | 0.0 | 2001 09 28 | 644 | 0.2− | 0.8− | 2006 10 27 | 703 | 0.6+ | 0.4− |
| 2001 09 11 | 699 | 0.4+ | 0.6+ | 2001 09 28 | 644 | 0.1− | 0.6− | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2001 09 11 | 699 | 1.3+ | 0.4− | 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.4− |
| 2001 09 11 | 699 | (1.8+ | 0.8−) | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 1.0− | 0.3+ |
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 11 15 | 703 | 0.8− | 0.7− |
| 2001 09 16 | 704 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.5− | 1.1− |
| 2001 09 16 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 15 | 703 | 1.2+ | 1.0− |
| 2001 09 16 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.2+ |

**2001 SP$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.96950 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22016602 | $\omega$ | 33.34527 | | +0.74554962 | +0.66334923 | |
| $a$ | 2.7162466 | $\Omega$ | 284.96213 | | −0.62506990 | +0.66258129 | |
| $e$ | 0.1537788 | $i$ | 3.81118 | | −0.23117826 | +0.34778418 | |
| $P$ | 4.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 704 | 0.1+ | 1.3− | 2001 09 23 | 704 | 0.1− | 1.4+ | 2001 10 19 | 644 | 0.2− | 1.1+ |
| 2001 08 17 | 704 | 0.3− | 0.1+ | 2001 09 23 | 704 | 0.7+ | 0.8+ | 2001 10 19 | 644 | 0.1− | 1.2+ |
| 2001 08 17 | 704 | 0.0 | 0.3− | 2001 09 23 | 704 | 0.9− | 0.7+ | 2001 10 19 | 644 | 0.1− | 1.2+ |
| 2001 09 11 | 691 | 0.3+ | 0.1+ | 2001 09 23 | 704 | 0.2− | 0.7+ | 2006 11 20 | G96 | 0.1− | 0.0 |
| 2001 09 11 | 691 | 0.1+ | 0.0 | 2001 09 23 | 704 | 0.6+ | 1.2+ | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2001 09 11 | 691 | 0.2+ | 0.4+ | 2001 09 24 | 704 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2001 09 16 | 704 | 0.1+ | 0.5− | 2001 09 24 | 704 | 0.5+ | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2001 09 16 | 704 | 0.3+ | 0.7− | 2001 09 24 | 704 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.6− |
| 2001 09 16 | 704 | 0.2− | 0.1+ | 2001 09 24 | 704 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.7− |
| 2001 09 16 | 704 | (0.3+ | 1.5−) | 2001 09 24 | 704 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2001 09 16 | 704 | 0.1+ | 1.3− | 2001 09 28 | 644 | 0.3− | 0.3+ | 2006 11 24 | 291 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | (1.6− | 0.5+) | 2001 09 28 | 644 | 0.8− | 0.3+ | 2006 11 24 | 291 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.8− | 0.5+ | 2001 09 28 | 644 | 0.5− | 0.4+ | 2006 11 24 | 291 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.7− | 2001 10 14 | 645 | 0.0 | 0.2− | | | | |
| 2001 09 20 | 704 | 0.9− | 0.4− | 2001 10 14 | 645 | 0.0 | 0.2− | | | | |

**2001 SH$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.91023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21361367 | $\omega$ | 52.09900 | | +0.89095070 | +0.44281129 | |
| $a$ | 2.7715116 | $\Omega$ | 281.41415 | | −0.44216720 | +0.79550719 | |
| $e$ | 0.0965461 | $i$ | 5.89198 | | −0.10341671 | +0.41362601 | |
| $P$ | 4.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.2+ | 0.1− | 2001 09 18 | 699 | 0.6+ | 0.1− | 2006 10 19 | 703 | (1.2− | 1.9+) |
| 2001 08 25 | 704 | 0.1+ | 0.1− | 2001 09 18 | 699 | 0.6+ | 0.9+ | 2006 10 19 | 703 | 0.9− | 0.1− |
| 2001 08 25 | 704 | 0.2+ | 0.4+ | 2001 09 18 | 699 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2001 08 25 | 704 | 0.3+ | 0.4+ | 2001 09 20 | 704 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2001 09 09 | 644 | 0.2− | 0.4− | 2001 09 20 | 704 | 0.7+ | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2001 09 09 | 644 | 0.8− | 0.2+ | 2001 09 20 | 704 | 0.2− | 0.8− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2001 09 09 | 644 | 0.6− | 0.4− | 2001 09 20 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2001 09 16 | 704 | 0.8+ | 0.4− | 2001 10 14 | 704 | (0.5− | 3.4+) | 2006 11 01 | G96 | 0.4+ | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 1.3− | 2001 10 14 | 704 | 1.4− | 1.3+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2001 09 16 | 704 | (0.3+ | 1.7−) | 2001 10 14 | 704 | 0.5+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 0.5− | 0.9− | 2001 10 14 | 704 | 0.6+ | 0.0 | | | | |
| 2001 09 18 | 699 | 0.1− | 0.2+ | 2006 10 19 | 703 | (0.6− | 1.7+) | | | | |

**2001 SQ$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.76585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21364106 | $\omega$ | 18.73494 | | +0.63499611 | +0.76905886 | |
| $a$ | 2.7712746 | $\Omega$ | 290.75276 | | −0.71836877 | +0.55309347 | |
| $e$ | 0.1770450 | $i$ | 4.47710 | | −0.28412364 | +0.32036867 | |
| $P$ | 4.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 704 | 0.5+ | 0.6+ | 2001 09 20 | 704 | 0.6− | 1.3+ | 2001 09 26 | 704 | 0.9+ | 0.5+ |
| 2001 08 17 | 704 | 0.3+ | 0.0 | 2001 09 20 | 704 | 0.1− | 0.3+ | 2001 09 26 | 704 | 0.3+ | 0.3+ |
| 2001 08 17 | 704 | 0.1− | 0.2− | 2001 09 20 | 704 | 0.4+ | 0.1+ | 2001 09 26 | 704 | 0.6+ | 0.8+ |
| 2001 09 08 | 704 | 0.6− | 1.2+ | 2001 09 21 | 704 | (1.8− | 1.0+) | 2001 09 26 | 704 | 0.1− | 0.4+ |
| 2001 09 08 | 704 | (2.0+ | 0.2−) | 2001 09 21 | 704 | 0.2− | 1.0+ | 2001 09 26 | 704 | 0.6+ | 0.4+ |
| 2001 09 08 | 704 | (1.7+ | 0.4+) | 2001 09 21 | 704 | (2.0− | 1.1−) | 2001 09 28 | 644 | 0.1− | 0.4+ |
| 2001 09 10 | 699 | 0.8+ | 0.1− | 2001 09 21 | 704 | (0.1− | 3.3+) | 2001 09 28 | 644 | 0.2− | 0.3+ |
| 2001 09 10 | 699 | 0.1+ | 0.3− | 2001 09 21 | 704 | 0.1+ | 0.2+ | 2001 09 28 | 644 | 0.0 | 0.4+ |
| 2001 09 10 | 699 | 0.9− | 0.1− | 2001 09 21 | 704 | 0.5+ | 0.9+ | 2001 10 14 | 704 | 0.0 | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 699 | 0.9− | 0.6+ | 2001 09 22 | 704 | 0.6+ | 1.2− | 2001 10 14 | 704 | 0.2+ | 0.9+ | | |
| 2001 09 15 | 644 | 0.3− | 0.8− | 2001 09 22 | 704 | 0.0 | 0.8− | 2001 10 14 | 704 | 0.7− | 0.1− | | |
| 2001 09 15 | 644 | 0.4− | 0.2− | 2001 09 22 | 704 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2001 09 15 | 644 | 0.0 | 0.2− | 2001 09 22 | 704 | 0.8− | 1.0− | 2006 11 18 | G96 | 0.2− | 0.4− | | |
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2001 09 23 | 608 | 0.3− | 0.6− | 2006 11 18 | G96 | 0.2− | 0.3− | | |
| 2001 09 16 | 704 | 0.0 | 0.3− | 2001 09 23 | 608 | 0.1+ | 0.9− | 2006 11 19 | 704 | 0.8+ | 0.4+ | | |
| 2001 09 16 | 704 | 0.1− | 0.8− | 2001 09 23 | 608 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.1+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.3− | 0.6− | 2001 09 25 | 704 | 0.3+ | 0.9− | 2006 11 19 | 704 | 0.5+ | 0.8+ | | |
| 2001 09 16 | 704 | 0.0 | 0.5− | 2001 09 25 | 704 | 0.1+ | 0.7− | 2006 11 25 | G96 | 0.3+ | 0.2+ | | |
| 2001 09 18 | 699 | 0.9+ | 0.2+ | 2001 09 25 | 704 | 0.1− | 0.6− | 2006 11 25 | G96 | 0.4− | 0.3− | | |
| 2001 09 18 | 699 | 0.3− | 0.5− | 2001 09 25 | 704 | 0.2− | 0.6+ | 2006 11 25 | G96 | 0.4− | 0.4− | | |
| 2001 09 18 | 699 | 0.0 | 0.4− | 2001 09 25 | 704 | 0.8+ | 0.0 | 2006 11 25 | G96 | 0.2− | 0.2− | | |
| 2001 09 18 | 699 | 0.1+ | 0.7− | 2001 09 25 | 704 | (0.4− | 1.6+) | | | | | | |
| 2001 09 20 | 704 | 0.1+ | 0.0 | 2001 09 25 | 704 | 0.2− | 1.2+ | | | | | | |

### 2001 SV$_{119}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.68924 | | (2000.0) | | | |
| $n$ | 0.21041636 | $\omega$ | 332.31930 | | +0.40554675 | +0.91091180 |
| $a$ | 2.7995166 | $\Omega$ | 321.47077 | | −0.81449792 | +0.32239464 |
| $e$ | 0.1218181 | $i$ | 7.00524 | | −0.41487946 | +0.25749057 |
| $P$ | 4.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.3+ | 0.1+ | 2001 09 18 | 699 | 0.3− | 1.2− | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2001 08 22 | 691 | 0.2+ | 0.0 | 2001 09 20 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.7+ |
| 2001 08 22 | 691 | 0.5− | 0.1− | 2001 09 20 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2001 09 16 | 704 | 1.3− | 0.6+ | 2001 09 20 | 704 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.8− | 0.3+ |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2001 09 20 | 704 | (0.5− | 1.9+) | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2001 09 16 | 704 | (0.0 | 2.6+) | 2001 09 26 | 704 | 0.7+ | 1.0− | 2006 10 27 | 703 | 0.5+ | 0.2− |
| 2001 09 16 | 704 | (1.3− | 1.6+) | 2001 09 26 | 704 | 0.5+ | 0.6− | 2006 10 27 | 703 | 0.1− | 0.8+ |
| 2001 09 18 | 699 | 0.5+ | 0.5+ | 2001 09 26 | 704 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.4+ | 0.4− |
| 2001 09 18 | 699 | 1.0− | 0.4+ | 2001 09 26 | 704 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.5− | 0.9− |
| 2001 09 18 | 699 | (1.6− | 0.2−) | 2006 10 19 | 703 | 0.1+ | 0.6− | | | | |

### 2001 SK$_{120}$ = 2006 VA$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.21521 | | (2000.0) | | | |
| $n$ | 0.21396557 | $\omega$ | 141.30523 | | +0.98342504 | −0.17755002 |
| $a$ | 2.7684719 | $\Omega$ | 228.96259 | | +0.15186928 | +0.91735995 |
| $e$ | 0.1725741 | $i$ | 2.79331 | | +0.09905006 | +0.35626776 |
| $P$ | 4.61 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1− | 0.4+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2001 09 16 | 704 | 1.4− | 0.0 | 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | (2.9− | 1.2+) | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2001 09 20 | 704 | (2.2− | 0.6+) | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | (2.5− | 1.2+) | 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | (3.3− | 1.7+) | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | 0.8+ | 1.1+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 21 | 691 | 0.3− | 0.1+ |
| 2001 09 24 | 704 | 0.9+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2001 09 24 | 704 | (0.4− | 1.7+) | 2006 10 27 | G96 | 0.3− | 0.6− | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2001 09 24 | 704 | 0.1− | 1.1+ | 2006 10 27 | G96 | 0.3+ | 0.6− | | | | |

### 2001 SK$_{121}$ = 2006 TV$_{7}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.70723 | | (2000.0) | | | |
| $n$ | 0.20305045 | $\omega$ | 49.17404 | | +0.80184544 | +0.59330931 |
| $a$ | 2.8668177 | $\Omega$ | 274.31621 | | −0.56740091 | +0.71882481 |
| $e$ | 0.2546504 | $i$ | 4.07773 | | −0.18735021 | +0.36231885 |
| $P$ | 4.85 | $H$ | 17.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.5+ | 0.0 | 2001 09 28 | 644 | 0.1− | 0.3− | 2006 10 13 | 448 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.5− | 2001 09 28 | 644 | 0.0 | 0.3− | 2006 10 13 | 448 | 0.5+ | 0.1− |
| 2001 09 16 | 704 | 0.6− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2+ | 2006 10 16 | 448 | 0.4+ | 0.3− |
| 2001 09 16 | 704 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 10 16 | 448 | 0.1+ | 0.5− |
| 2001 09 16 | 704 | 0.7− | 0.3+ | 2006 10 04 | G96 | 0.6− | 0.1+ | 2006 10 16 | 448 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.4− | 1.2+ | 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 10 31 | 448 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.7+ | 0.4− | 2006 10 12 | 448 | 0.2− | 0.6+ | 2006 10 31 | 448 | 0.3− | 0.4+ |
| 2001 09 20 | 704 | 0.7+ | 0.3− | 2006 10 12 | 448 | 0.1− | 0.6+ | 2006 10 31 | 448 | 0.1+ | 0.8− |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2006 10 12 | 448 | 0.1+ | 0.3+ | | | | |
| 2001 09 28 | 644 | 0.2− | 0.2− | 2006 10 13 | 448 | 0.2− | 0.3+ | | | | |

### 2001 SX$_{121}$ = 2006 UZ$_{238}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.78454 | | (2000.0) | | | |
| $n$ | 0.21130416 | $\omega$ | 67.59256 | | +0.71092173 | +0.69842305 |
| $a$ | 2.7916696 | $\Omega$ | 247.99465 | | −0.67351308 | +0.64240990 |
| $e$ | 0.1254545 | $i$ | 5.10104 | | −0.20241152 | +0.31545960 |
| $P$ | 4.66 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.7+ | 0.2+ | 2001 09 23 | 704 | 0.4− | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2001 08 27 | 699 | 0.2− | 0.4− | 2001 09 23 | 704 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 08 27 | 699 | 1.4+ | 0.5− | 2001 09 23 | 704 | 0.7+ | 0.7− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 08 27 | 699 | 0.4− | 0.6+ | 2001 09 23 | 704 | 0.9− | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2001 09 16 | 704 | 0.9− | 0.1+ | 2001 09 23 | 704 | 0.5− | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2001 09 16 | 704 | 0.6− | 0.3+ | 2001 10 14 | 704 | (0.2+ | 1.7−) | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 09 16 | 704 | 0.6− | 0.2+ | 2001 10 14 | 704 | 0.5+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 0.7− | 0.1+ | 2001 10 14 | 704 | 1.5+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.6− | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2001 09 18 | 699 | 0.8− | 0.3− | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.6− | 0.1+ |
| 2001 09 18 | 699 | 0.7+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 09 18 | 699 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 09 18 | 699 | 0.7− | 0.5− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.7+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.7+ | 1.3+ |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2001 09 20 | 704 | 0.9+ | 0.6+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 11 | 703 | (2.0+ | 0.3+) |
| 2001 09 20 | 704 | 0.5+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.8+ |

### 2001 SF$_{122}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.60278 | | (2000.0) | | | |
| $n$ | 0.21321287 | $\omega$ | 126.89309 | | +0.99427761 | −0.07780778 |
| $a$ | 2.7749837 | $\Omega$ | 237.67907 | | +0.04705563 | +0.93413963 |
| $e$ | 0.0765939 | $i$ | 4.96909 | | +0.09590519 | +0.34832328 |
| $P$ | 4.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 10 19 | 644 | 0.2− | 1.3+ | 2006 11 11 | 703 | 0.8− | 0.5− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2001 10 21 | 704 | 1.3− | 0.0 | 2006 11 11 | 703 | (0.5+ | 2.4−) |
| 2001 08 27 | 699 | 0.0 | 0.6− | 2001 10 21 | 704 | (1.7− | 0.3+) | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 2001 08 27 | 699 | 0.3+ | 0.8+ | 2001 10 21 | 704 | (1.9− | 0.4+) | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2001 08 27 | 699 | 1.2− | 0.7− | 2001 10 21 | 704 | (2.0− | 0.2+) | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 08 27 | 699 | 1.1− | 0.1+ | 2001 10 21 | 704 | 1.1− | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 09 08 | 704 | 0.0 | 0.2+ | 2001 10 25 | 644 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2001 09 08 | 704 | 0.0 | 0.3− | 2001 10 25 | 644 | 0.4− | 0.8+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 09 08 | 704 | (0.1+ | 1.7−) | 2001 10 25 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.5− | 1.4+ |
| 2001 09 16 | 704 | 0.7+ | 0.5− | 2006 10 02 | G96 | 0.1− | 0.7− | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2001 09 16 | 704 | 0.6+ | 0.7− | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2001 09 16 | 704 | 1.3+ | 0.7− | 2006 10 02 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2001 09 16 | 704 | 0.9+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2001 09 20 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.5+ |
| 2001 09 20 | 704 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.7− | 0.0 |
| 2001 09 20 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (1.9− | 1.4−) |
| 2001 09 20 | 704 | 1.0+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4+ | 1.0+ |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.3+ | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.2+ | 0.4− |
| 2001 09 23 | 704 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2001 09 23 | 704 | 0.1+ | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2001 09 23 | 704 | 0.8+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2001 10 14 | 704 | 1.2− | 0.7− | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.6+ | 2.0+ |
| 2001 10 14 | 704 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.5− | 0.7+ |
| 2001 10 14 | 704 | 0.8− | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.1+ | 2006 11 27 | 703 | 1.0+ | 0.7− |
| 2001 10 19 | 644 | 0.2− | 1.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.5+ | 0.7− |
| 2001 10 19 | 644 | 0.4+ | 1.0+ | 2006 11 10 | 644 | 0.0 | 0.1+ | | | | |

**2001 SU$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.20908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21343569 | $\omega$ | 144.53618 | | +0.99920309 | +0.00626413 | |
| $a$ | 2.7730521 | $\Omega$ | 215.16793 | | −0.01951283 | +0.93821108 | |
| $e$ | 0.1289681 | $i$ | 3.92444 | | +0.03482016 | +0.34600683 | |
| $P$ | 4.62 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | (1.7− | 1.1−) | 2001 09 22 | 704 | 0.8+ | 0.5− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.4− | 2001 09 22 | 704 | (0.4+ | 1.6+) | 2006 10 28 | 691 | 0.4+ | 0.4+ |
| 2001 09 12 | 704 | 1.1+ | 0.0 | 2001 09 22 | 704 | 1.4+ | 0.9+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2001 09 16 | 704 | 0.3− | 0.7+ | 2001 10 11 | 644 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.5− | 0.2+ | 2001 10 11 | 644 | 0.8− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.4+ | 0.0 | 2001 10 11 | 644 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 1.4+ | 2001 10 14 | 645 | 0.0 | 0.3− | 2006 11 13 | G96 | 1.1− | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 1.2+ | 2001 10 14 | 645 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2001 09 20 | 704 | 0.7− | 0.9+ | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | 0.8+ | 1.1+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.5− | 0.7− |
| 2001 09 20 | 704 | 0.2− | 1.3+ | 2006 10 28 | G96 | 0.1+ | 0.7− | | | | |
| 2001 09 22 | 704 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.6− | | | | |

**2001 SQ$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.56521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24298908 | $\omega$ | 161.83718 | | +0.92937096 | +0.36871463 | |
| $a$ | 2.5433817 | $\Omega$ | 176.37546 | | −0.36394133 | +0.92328990 | |
| $e$ | 0.2034891 | $i$ | 16.41489 | | −0.06177650 | +0.10763495 | |
| $P$ | 4.06 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.4− | 1.7+ | 2001 09 22 | 704 | 0.3− | 0.0 | 2005 09 06 | 704 | 0.2+ | 0.0 |
| 2001 09 08 | 704 | (0.1− | 2.4+) | 2001 09 22 | 704 | 0.5− | 0.1− | 2005 09 06 | 704 | 0.7+ | 0.6+ |
| 2001 09 08 | 704 | 0.7+ | 1.6+ | 2001 09 22 | 704 | 0.2− | 0.0 | 2005 09 06 | 704 | 0.8− | 1.6− |
| 2001 09 16 | 704 | 0.0 | 1.0+ | 2001 09 23 | 704 | 0.0 | 0.5− | 2005 09 23 | 703 | 0.6− | 0.5− |
| 2001 09 16 | 704 | 0.1− | 0.4− | 2001 09 23 | 704 | 0.3+ | 0.4− | 2005 09 23 | 703 | 0.2+ | 0.2+ |
| 2001 09 16 | 704 | 0.4+ | 0.0 | 2001 09 23 | 704 | 0.0 | 0.3− | 2005 09 23 | 703 | 0.0 | 0.7− |
| 2001 09 20 | 704 | 0.5− | 0.6− | 2001 09 23 | 704 | 0.4− | 0.6− | 2005 09 23 | 703 | 0.8− | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.7− | 2001 09 23 | 704 | 0.5− | 0.2− | 2005 10 06 | 691 | 0.2+ | 0.4+ |
| 2001 09 20 | 704 | 0.4− | 0.7− | 2005 08 26 | 644 | 0.1+ | 0.1− | 2005 10 06 | 691 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.7+ | 0.1+ | 2005 08 26 | 644 | 0.1+ | 0.2− | 2005 10 06 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 1.0− | 0.8− | 2005 08 26 | 644 | 0.1+ | 0.2− | 2005 10 29 | G96 | 0.7+ | 0.2+ |
| 2001 09 20 | 704 | 1.6+ | 0.7+ | 2005 08 30 | 644 | 0.2− | 0.2− | 2005 10 29 | G96 | 0.3− | 0.5− |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2005 08 30 | 644 | 0.1+ | 0.1− | 2005 10 29 | G96 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 1.1+ | 0.0 | 2005 08 30 | 644 | 0.1− | 0.1+ | 2005 10 29 | G96 | 0.3+ | 0.3− |

**2001 SP$_{131}$ = 2006 UG$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.17188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20912176 | $\omega$ | 110.20495 | | +0.90669009 | +0.42150015 | |
| $a$ | 2.8110586 | $\Omega$ | 224.86960 | | −0.39488673 | +0.83505162 | |
| $e$ | 0.1716279 | $i$ | 1.28599 | | −0.14824825 | +0.35359073 | |
| $P$ | 4.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | (0.0 | 3.7+) | 2001 10 11 | 644 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | (0.7− | 3.4+) | 2001 10 11 | 644 | 0.7+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 09 16 | 704 | (0.6− | 2.3+) | 2001 10 11 | 644 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | (1.1+ | 1.7+) | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8− | 0.3+ |
| 2001 09 20 | 704 | 0.5− | 0.6+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2001 09 20 | 704 | 0.7− | 0.5+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 09 20 | 704 | 0.9− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (2.3+ | 1.8+) |
| 2001 09 22 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2001 09 22 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2001 09 22 | 704 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2001 09 23 | 704 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 09 23 | 704 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.4− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 09 23 | 704 | 0.6+ | 0.7+ | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 09 24 | 704 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.4− |
| 2001 09 24 | 704 | 0.6+ | 0.3− | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 09 24 | 704 | 0.5+ | 1.1− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 09 24 | 704 | 0.5+ | 0.8+ | 2006 10 28 | 691 | 0.1− | 0.5+ | | | | |

**2001 SZ$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.10673 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21522633 | $\omega$ | 175.49054 | | +0.97953553 | −0.20053439 | |
| $a$ | 2.7576498 | $\Omega$ | 196.10881 | | +0.18266903 | +0.92164650 | |
| $e$ | 0.1059434 | $i$ | 3.55569 | | +0.08451141 | +0.33219526 | |
| $P$ | 4.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2− | 0.2+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.4+ | 0.1+ |
| 2001 09 16 | 704 | 0.3+ | 1.1+ | 2001 10 20 | 704 | 0.7+ | 0.6+ | 2006 11 11 | 691 | 0.5+ | 0.1+ |
| 2001 09 16 | 704 | 0.7+ | 0.2− | 2001 10 20 | 704 | 0.5+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.3− |
| 2001 09 20 | 704 | 0.5− | 0.1− | 2001 10 20 | 704 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 23 | 691 | 0.4+ | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 0.8− | 2006 10 19 | G96 | 0.1− | 0.6− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.4− | 0.3− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2001 09 25 | 704 | 1.1+ | 1.1+ | 2006 10 23 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.4− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.7+ | 2006 10 23 | G96 | 0.2− | 0.5− | | | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.1+ | | | | |

**2001 SK$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.48400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20839718 | $\omega$ | 15.40043 | | +0.97164297 | −0.23641748 | |
| $a$ | 2.8175707 | $\Omega$ | 358.25906 | | +0.20023881 | +0.83190100 | |
| $e$ | 0.0954917 | $i$ | 7.73175 | | +0.12575511 | +0.50204333 | |
| $P$ | 4.73 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 691 | 0.1− | 0.2+ | 2001 10 13 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 1999 03 13 | 691 | 0.0 | 0.2+ | 2001 10 13 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 1999 03 13 | 691 | 0.1+ | 0.3− | 2001 10 13 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 08 24 | 704 | (1.2+ | 1.9−) | 2001 10 13 | 704 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.4+ |
| 2001 08 24 | 704 | 0.8+ | 0.5− | 2001 10 13 | 704 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2001 08 24 | 704 | 0.7− | 1.0+ | 2001 10 18 | 644 | 0.3− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2001 08 27 | 699 | 0.6− | 0.7− | 2001 10 18 | 644 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 08 27 | 644 | 0.2− | 0.2+ | 2001 10 18 | 644 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 08 27 | 644 | 0.4− | 0.6+ | 2001 10 21 | 704 | (1.5+ | 1.0+) | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 08 27 | 699 | 0.5+ | 0.1− | 2001 10 21 | 704 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 08 27 | 644 | 0.3− | 0.4+ | 2001 10 21 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 08 27 | 699 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.2+ | 0.5− | 2001 10 21 | 704 | 0.7+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 09 16 | 704 | 0.4− | 1.3+ | 2001 10 21 | 704 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.3− | 2001 10 21 | 704 | 0.9+ | 0.6− | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2001 09 16 | 704 | 0.4− | 0.4− | 2001 10 21 | 704 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.2+ | | |
| 2001 09 16 | 704 | 0.1+ | 0.3− | 2001 10 21 | 704 | 1.4+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 09 18 | 699 | 1.0− | 0.6− | 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.3− | | |
| 2001 09 18 | 699 | 0.0 | 0.8+ | 2001 10 25 | 644 | 0.6− | 0.0 | 2006 10 27 | 703 | 0.9− | 0.5− | | |
| 2001 09 18 | 699 | 0.3+ | 0.9+ | 2001 10 25 | 644 | 0.6− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.9− | | |
| 2001 09 18 | 699 | 0.7− | 0.1− | 2001 10 25 | 644 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.0 | | |
| 2001 09 20 | 704 | 0.3+ | 0.5− | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.5+ | | |
| 2001 09 20 | 704 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.0 | 0.9− | 2006 11 01 | G96 | 0.3+ | 0.5− | | |
| 2001 09 20 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.5− | 0.4− | 2006 11 01 | G96 | 0.0 | 0.4− | | |
| 2001 09 20 | 704 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.0 | 0.5− | | |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.6+ | 1.3− | | |
| 2001 09 24 | 704 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 14 | 703 | (1.7+ | 1.4−) | | |
| 2001 09 24 | 704 | 0.7+ | 0.2− | 2006 10 04 | G96 | 0.5+ | 0.2− | 2006 11 14 | 703 | (1.7− | 0.9+) | | |
| 2001 09 24 | 704 | 0.3+ | 0.7− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.6− | 1.3− | | |
| 2001 09 24 | 704 | 0.2+ | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.2− | | |
| 2001 09 24 | 704 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.3− | 0.4− | | |
| 2001 09 25 | 699 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 17 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 25 | 699 | 0.4− | 0.8+ | 2006 10 12 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 644 | 0.5+ | 0.2− | | |
| 2001 09 25 | 699 | 0.0 | 1.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 23 | 703 | 0.3+ | 0.7+ | | |
| 2001 09 25 | 699 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.2− | | |
| 2001 10 11 | 644 | 0.1+ | 1.1− | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 23 | 703 | 0.7− | 0.0 | | |
| 2001 10 11 | 644 | 0.3− | 1.2− | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.2+ | | |
| 2001 10 11 | 644 | 0.1− | 1.1− | 2006 10 17 | 691 | 0.1− | 0.2+ | | | | | | |

**2001 SU$_{137}$ = 2006 WA$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.34040 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18610930 | $\omega$ | 42.23302 | | +0.68013577 | −0.73300044 |
| $a$ | 3.0382534 | $\Omega$ | 4.95113 | | +0.63307380 | +0.57956716 |
| $e$ | 0.1058279 | $i$ | 7.46405 | | +0.36963888 | +0.35610710 |
| $P$ | 5.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.6+ | 0.3+ | 2001 09 24 | 704 | 0.2− | 0.0 | 2001 10 13 | 699 | 0.2− | 0.7+ | | |
| 2001 09 16 | 704 | 0.5− | 0.2− | 2001 09 24 | 704 | 0.4+ | 0.5− | 2001 10 13 | 699 | 0.6+ | 0.4− | | |
| 2001 09 16 | 704 | 0.1+ | 1.2+ | 2001 09 24 | 704 | 0.2+ | 0.8+ | 2001 10 13 | 699 | 1.5− | 0.9− | | |
| 2001 09 16 | 704 | 0.3+ | 0.8+ | 2001 09 24 | 704 | 0.6+ | 0.3− | 2001 10 18 | 644 | 0.3− | 0.4+ | | |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2001 09 24 | 704 | 0.3+ | 0.6+ | 2001 10 18 | 644 | 0.0 | 0.4+ | | |
| 2001 09 20 | 704 | 0.6− | 0.6− | 2001 09 26 | 704 | 0.4+ | 1.0+ | 2001 10 18 | 644 | 0.2− | 0.2+ | | |
| 2001 09 20 | 704 | 0.6− | 0.3− | 2001 09 26 | 704 | 1.0+ | 0.0 | 2001 10 21 | 704 | 1.1+ | 0.6− | | |
| 2001 09 20 | 704 | 0.3− | 0.9− | 2001 09 26 | 704 | 0.1+ | 1.4+ | 2001 10 21 | 704 | 0.8+ | 0.4+ | | |
| 2001 09 22 | 291 | 0.1− | 0.2− | 2001 09 28 | 704 | 0.3+ | 0.7+ | 2001 10 21 | 704 | 0.2− | 0.6− | | |
| 2001 09 22 | 291 | 0.7− | 0.5− | 2001 09 28 | 704 | 1.0+ | 0.6+ | 2001 10 21 | 704 | 0.5+ | 0.4+ | | |
| 2001 09 22 | 291 | 0.4− | 0.4− | 2001 09 28 | 704 | 0.1+ | 1.0+ | 2001 10 21 | 704 | 0.4+ | 0.2− | | |
| 2001 09 23 | 557 | 1.2+ | 0.3− | 2001 09 28 | 704 | 0.1+ | 0.8+ | 2006 11 16 | G96 | 0.8+ | 0.5− | | |
| 2001 09 23 | 557 | 0.3+ | 0.9− | 2001 10 06 | 644 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.2+ | | |
| 2001 09 23 | 557 | 0.5+ | 0.8− | 2001 10 06 | 644 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.7+ | | |
| 2001 09 23 | 704 | 0.0 | 0.3− | 2001 10 06 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1− | | |
| 2001 09 23 | 704 | 0.3− | 0.1+ | 2001 10 11 | 644 | 0.2+ | 0.5+ | 2006 11 23 | G96 | 0.6− | 0.1− | | |
| 2001 09 23 | 704 | 0.0 | 0.1+ | 2001 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1− | | |
| 2001 09 23 | 704 | 0.4+ | 0.0 | 2001 10 11 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2001 09 23 | 704 | 0.4− | 0.2− | 2001 10 13 | 699 | 0.9− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.2+ | | |

**2001 SC$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.72823 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.20300973 | $\omega$ | 10.78518 | | +0.99982704 | −0.01802911 |
| $a$ | 2.8672011 | $\Omega$ | 350.24441 | | +0.01441945 | +0.90648560 |
| $e$ | 0.0812944 | $i$ | 1.54361 | | +0.01174578 | +0.42185165 |
| $P$ | 4.85 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | (0.6+ | 3.1−) | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.5+ | | |
| 2001 09 16 | 704 | (0.0 | 2.1−) | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.2+ | | |
| 2001 09 16 | 704 | (0.2− | 2.6−) | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.3+ | | |
| 2001 09 16 | 704 | (1.0+ | 3.7−) | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2001 09 20 | 704 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− | | |
| 2001 09 20 | 704 | 0.0 | 1.1+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2001 09 20 | 704 | 0.5− | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.2− | | |
| 2001 09 23 | 691 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 2001 09 23 | 691 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2− | | |
| 2001 09 23 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2001 09 24 | 704 | 0.5+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.1+ | | |
| 2001 09 24 | 704 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.8+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 1.3− | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2001 09 24 | 704 | 0.9− | 0.4− | 2006 10 17 | 703 | 0.5+ | 0.4+ | 2006 11 16 | 691 | 0.3− | 0.0 | | |
| 2001 10 14 | 691 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.7− | 2006 11 16 | 691 | 0.2+ | 0.2− | | |
| 2001 10 14 | 691 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.3− | 1.3− | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2001 10 14 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | (0.7− | 1.8−) | | |
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1− | | |
| 2001 10 21 | 704 | (0.2+ | 1.8+) | 2006 10 19 | 691 | 0.3+ | 0.6− | 2006 11 17 | 703 | (1.8− | 1.8−) | | |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.9− | 1.0+ | | |
| 2001 10 21 | 704 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.4− | | |
| 2006 09 18 | 699 | (1.5+ | 1.5−) | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.3+ | | |
| 2006 09 18 | 699 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.0 | | |
| 2006 09 18 | 699 | 0.5+ | 0.8− | 2006 10 23 | 691 | 0.2− | 0.1+ | | | | | | |
| 2006 09 18 | 699 | 0.7+ | 0.5− | 2006 10 23 | 691 | 0.1− | 0.2− | | | | | | |

**2001 SM$_{138}$ = 2006 RZ$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.14084 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.20078449 | $\omega$ | 169.68471 | | +0.99940613 | −0.00298612 |
| $a$ | 2.8883464 | $\Omega$ | 190.66739 | | −0.00477064 | +0.97465407 |
| $e$ | 0.1378676 | $i$ | 10.68762 | | +0.03412674 | +0.22369740 |
| $P$ | 4.91 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 1.1− | 0.3+ | 2001 10 15 | 704 | 0.4− | 0.8+ | 2006 09 20 | 644 | 0.5− | 0.1+ | | |
| 2001 09 16 | 704 | 0.7− | 0.0 | 2001 10 15 | 704 | 0.8− | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.2+ | | |
| 2001 09 16 | 704 | 1.4− | 0.5+ | 2001 10 16 | 704 | 0.1− | 1.5+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 20 | 704 | 0.2+ | 0.2− | 2001 10 16 | 704 | 0.9+ | 1.1+ | 2006 09 25 | 691 | 0.2+ | 0.0 | | |
| 2001 09 20 | 704 | 0.1− | 1.1+ | 2001 10 16 | 704 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 16 | 704 | 0.9− | 0.5− | 2006 10 03 | 691 | 0.0 | 0.2− | | |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2001 10 20 | 704 | 0.7+ | 0.7+ | 2006 10 03 | 691 | 0.3− | 0.1− | | |
| 2001 09 20 | 704 | 0.4− | 0.9+ | 2001 10 20 | 704 | 0.1− | 0.7− | 2006 10 03 | 691 | 0.2+ | 0.0 | | |
| 2001 09 24 | 704 | 0.7+ | 0.4+ | 2001 10 20 | 704 | 0.7+ | 0.5+ | 2006 10 15 | 703 | 0.7− | 0.4+ | | |
| 2001 09 24 | 704 | 0.3− | 0.2− | 2001 10 20 | 704 | 0.2+ | 1.3+ | 2006 10 15 | 703 | 0.8− | 0.2+ | | |
| 2001 09 24 | 704 | 0.9+ | 0.1− | 2002 12 14 | 645 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.3+ | 0.0 | | |
| 2001 09 24 | 704 | 0.4+ | 1.1− | 2002 12 14 | 645 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.5+ | | |
| 2001 09 24 | 704 | 0.5− | 0.3+ | 2004 03 30 | 291 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.4+ | | |
| 2001 10 11 | 644 | 0.3− | 0.9+ | 2004 03 30 | 291 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.5− | | |
| 2001 10 11 | 644 | 0.0 | 0.9+ | 2004 03 30 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.8− | | |
| 2001 10 11 | 644 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1− | 0.7− | | |
| 2001 10 13 | 704 | 1.2+ | 1.0− | 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.4− | | |
| 2001 10 13 | 704 | 0.5+ | 0.6− | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.5− | | |
| 2001 10 13 | 704 | (0.3+ | 2.1−) | 2006 09 20 | 704 | (0.3+ | 2.3−) | 2006 10 22 | G96 | 0.1− | 0.4− | | |
| 2001 10 13 | 704 | (1.1− | 1.9−) | 2006 09 20 | 704 | 0.9+ | 1.5− | 2006 10 22 | G96 | 0.3− | 0.4− | | |
| 2001 10 15 | 704 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.7+ | 1.2− | | | | | | |
| 2001 10 15 | 704 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.5− | 0.1+ | | | | | | |

**2001 SP$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.32692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19020547 | $\omega$ | 44.56007 | | +0.96071483 | −0.27730350 | |
| $a$ | 2.9944752 | $\Omega$ | 331.53347 | | +0.24749957 | +0.87458814 | |
| $e$ | 0.1136790 | $i$ | 1.36954 | | +0.12558254 | +0.39774157 | |
| $P$ | 5.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.3− | 0.3+ | 2001 09 24 | 704 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2001 09 16 | 704 | 0.1+ | 0.9+ | 2001 09 24 | 704 | 0.5− | 0.8− | 2006 09 19 | 703 | 0.6+ | 0.1− |
| 2001 09 16 | 704 | 0.8− | 0.1− | 2001 10 11 | 644 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.0 | 1.3+ |
| 2001 09 16 | 704 | 0.3− | 0.6+ | 2001 10 11 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.8+ | 0.2− | 2001 10 11 | 644 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.1− | 2001 10 21 | 704 | 0.0 | 1.2+ | 2006 09 19 | 699 | (0.5+ | 2.5+) |
| 2001 09 20 | 704 | 0.5+ | 0.7− | 2001 10 21 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 1.5− | 0.6+ |
| 2001 09 20 | 704 | 0.2+ | 0.4− | 2001 10 21 | 704 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.5+ | 0.6− |
| 2001 09 20 | 704 | 1.2+ | 0.1− | 2001 10 21 | 704 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2001 09 22 | 691 | 0.2− | 0.3− | 2001 10 21 | 704 | 0.7+ | 1.1+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 691 | 0.4− | 0.2− | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.6− |
| 2001 09 22 | 691 | 0.4− | 0.3− | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.6− |
| 2001 09 23 | 704 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.8− |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.5− |
| 2001 09 23 | 704 | 0.5− | 0.1− | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2001 09 23 | 704 | 0.5− | 0.2+ | 2006 09 12 | 703 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.7+ | 0.5− |
| 2001 09 23 | 704 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.7− | 0.7− | 2006 11 11 | G96 | 0.2+ | 0.7− |
| 2001 09 24 | 704 | 0.9+ | 0.5− | 2006 09 12 | 703 | (1.6− | 0.3−) | 2006 11 11 | G96 | 0.4+ | 0.8− |
| 2001 09 24 | 704 | 0.0 | 0.4+ | 2006 09 12 | 703 | 1.2− | 0.9+ | 2006 11 11 | G96 | 0.0 | 0.9− |
| 2001 09 24 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 1.1+ | 1.3+ | | | | |

**2001 SX$_{143}$ = 2006 WJ$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.22218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21995246 | $\omega$ | 29.16681 | | +0.99826711 | +0.03825964 | |
| $a$ | 2.7180045 | $\Omega$ | 328.54447 | | −0.05465174 | +0.88447773 | |
| $e$ | 0.0775783 | $i$ | 4.91501 | | +0.02181649 | +0.46501112 | |
| $P$ | 4.48 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.4− | 0.6− | 2001 09 22 | 704 | 0.4− | 0.9− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2001 09 16 | 704 | 0.6− | 1.4− | 2001 09 22 | 704 | (0.4+ | 1.8−) | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 1.0+ | 0.1+ | 2001 09 22 | 704 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2001 09 23 | 704 | 0.3− | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2001 09 23 | 704 | 0.2+ | 1.0+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2001 09 23 | 704 | 0.3− | 0.6+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2001 09 23 | 704 | 0.3− | 0.6+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 0.2− | 0.1+ | 2002 12 13 | 645 | 0.0 | 0.0 | | | | |
| 2001 09 22 | 704 | 1.2+ | 0.4− | 2002 12 13 | 645 | 0.0 | 0.1+ | | | | |

**2001 SJ$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.24679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19147082 | $\omega$ | 218.50681 | | +0.31025079 | −0.95024212 | |
| $a$ | 2.9812678 | $\Omega$ | 213.44556 | | +0.88431041 | +0.29928633 | |
| $e$ | 0.1498213 | $i$ | 2.91276 | | +0.34891196 | +0.08641535 | |
| $P$ | 5.15 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.1+ | 0.1+ | 2001 09 23 | 704 | 0.6+ | 0.1− | 2004 04 14 | 291 | 0.1+ | 0.5+ |
| 2001 09 12 | 691 | 0.1+ | 0.1+ | 2001 09 24 | 704 | 0.2+ | 1.1+ | 2004 04 14 | 291 | 0.0 | 0.5+ |
| 2001 09 12 | 691 | 0.0 | 0.2+ | 2001 09 24 | 704 | 0.3− | 0.2+ | 2006 08 28 | 703 | (1.8− | 0.9+) |
| 2001 09 16 | 704 | 0.3− | 0.3− | 2001 09 24 | 704 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.6− |
| 2001 09 16 | 704 | 0.6− | 0.2− | 2001 09 24 | 704 | 1.3− | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.2− |
| 2001 09 16 | 704 | 0.1− | 0.1− | 2001 12 10 | 645 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.5+ | 0.8− |
| 2001 09 20 | 704 | 0.3− | 1.2+ | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 1.4− | 0.9+ | 2003 01 07 | 704 | 0.0 | 0.5− | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | (1.8− | 0.0 ) | 2003 01 07 | 704 | 0.6− | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.7+ | 2003 01 07 | 704 | (0.3+ | 1.6+) | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.9+ | 2003 01 27 | 704 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.5− |
| 2001 09 22 | 704 | 0.7+ | 0.1+ | 2003 01 27 | 704 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2001 09 22 | 704 | 0.4+ | 1.1+ | 2003 01 27 | 704 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.5− |
| 2001 09 22 | 704 | 0.0 | 0.5− | 2003 01 27 | 704 | 0.5+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.8− |
| 2001 09 22 | 704 | 0.2+ | 0.2+ | 2003 01 27 | 704 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 09 22 | 704 | 0.3+ | 0.7+ | 2003 02 01 | 608 | 0.3+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 09 23 | 704 | 0.1− | 0.3− | 2003 02 01 | 608 | 0.4− | 0.9+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 09 23 | 704 | 0.9− | 0.4− | 2003 02 01 | 608 | 0.2+ | 1.1+ | | | | |
| 2001 09 23 | 704 | 0.6− | 1.0− | 2004 04 14 | 291 | 0.3+ | 0.3+ | | | | |

**2001 SK$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.61525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18923561 | $\omega$ | 246.18709 | | +0.29269125 | −0.95603256 | |
| $a$ | 3.0046979 | $\Omega$ | 186.87062 | | +0.92345245 | +0.28757003 | |
| $e$ | 0.1080438 | $i$ | 8.78185 | | +0.24812778 | +0.05749101 | |
| $P$ | 5.21 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.2− | 0.2+ | 2001 09 23 | 704 | 0.2+ | 0.5+ | 2004 04 13 | 691 | 0.2+ | 0.2+ |
| 2001 09 12 | 691 | 0.1− | 0.0 | 2001 09 23 | 704 | 0.2− | 0.5− | 2006 08 29 | 703 | 0.3− | 1.2+ |
| 2001 09 12 | 691 | 0.3− | 0.3+ | 2001 10 11 | 644 | 0.3+ | 0.3+ | 2006 08 29 | 703 | 1.4− | 0.5− |
| 2001 09 16 | 704 | (2.4+ | 1.5−) | 2001 10 11 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.2+ | 1.0− |
| 2001 09 16 | 704 | (1.5+ | 1.7−) | 2001 10 11 | 644 | 0.2− | 0.1+ | 2006 08 29 | 703 | 1.2+ | 0.7− |
| 2001 09 16 | 704 | (1.0+ | 1.7−) | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.5+ | 0.3+ |
| 2001 09 20 | 704 | 0.3− | 0.5− | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.0 | 0.4− |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2001 10 20 | 704 | 0.3+ | 0.7+ | 2006 08 29 | 703 | 0.6− | 0.4− |
| 2001 09 20 | 704 | 0.4− | 0.8+ | 2001 10 20 | 704 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.4+ | 0.3+ |
| 2001 09 20 | 704 | 0.2+ | 0.9+ | 2001 10 20 | 704 | 1.0+ | 1.4+ | 2006 09 17 | 703 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.3− | 0.9+ | 2001 10 20 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.5− |
| 2001 09 23 | 704 | 0.5+ | 0.4− | 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.8− | 0.8+ |
| 2001 09 23 | 704 | 0.0 | 0.4− | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 09 17 | 703 | 1.5+ | 0.9− |

**2001 SQ$_{144}$ = 2006 VK$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.46796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21292754 | $\omega$ | 240.28508 | | +0.26054459 | −0.96491868 | |
| $a$ | 2.7774622 | $\Omega$ | 194.71929 | | +0.92397998 | +0.25893504 | |
| $e$ | 0.2135740 | $i$ | 7.32155 | | +0.27995983 | +0.04341174 | |
| $P$ | 4.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.4+ | 0.2+ | 2001 10 11 | 644 | 0.6− | 0.1+ | 2006 11 14 | 704 | (3.2− | 1.4+) |
| 2001 09 16 | 704 | 0.3+ | 0.3+ | 2001 10 11 | 644 | 0.1− | 0.8+ | 2006 11 14 | 704 | 0.7− | 1.2+ |
| 2001 09 16 | 704 | 0.1+ | 0.7+ | 2001 10 15 | 645 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.9+ |
| 2001 09 20 | 704 | 0.4+ | 0.8+ | 2001 10 15 | 645 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2001 09 20 | 704 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 16 | 704 | 1.3+ | 0.1− |
| 2001 09 20 | 704 | 0.6+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 16 | 704 | 1.0+ | 0.1− |
| 2001 09 21 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2001 09 21 | 644 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2001 09 21 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 703 | 0.4− | 0.8− | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2001 09 22 | 704 | 0.7+ | 0.0 | 2006 10 20 | 703 | 0.6− | 0.3+ | 2006 11 19 | 703 | 0.7− | 0.2+ |
| 2001 09 22 | 704 | 1.0+ | 0.1+ | 2006 10 20 | 703 | 0.2+ | 0.6+ | 2006 11 19 | 703 | 0.1− | 0.5+ |
| 2001 09 22 | 704 | 0.8+ | 0.3− | 2006 10 20 | 703 | 0.6− | 0.2+ | 2006 11 19 | 703 | 0.4+ | 0.1+ |
| 2001 09 22 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.8− |
| 2001 09 22 | 704 | 1.4+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.8− | 0.3− |
| 2001 09 24 | 704 | 1.2+ | 1.0+ | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 25 | 704 | 0.4− | 0.8+ |
| 2001 09 24 | 704 | 0.7− | 1.4+ | 2006 10 30 | 703 | 0.0 | 0.2− | 2006 11 25 | 704 | 0.2− | 0.5+ |
| 2001 09 24 | 704 | 0.2− | 0.0 | 2006 10 30 | 703 | 0.8− | 0.1− | 2006 11 25 | 704 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | (1.7− | 0.0 ) | 2006 10 30 | 703 | 0.3− | 1.0+ | 2006 11 25 | 704 | 0.2+ | 0.1+ |
| 2001 09 24 | 704 | 0.7− | 0.5+ | 2006 10 30 | 703 | 0.2+ | 0.1+ | 2006 11 26 | 958 | 0.2− | 0.8− |
| 2001 09 24 | 704 | 0.9− | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 26 | 958 | 0.0 | 0.4− |
| 2001 09 24 | 704 | (0.8+ | 1.6+) | 2006 11 09 | 644 | 0.3+ | 0.4− | 2006 11 26 | 958 | (3.1− | 0.4−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 24 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.7+ |
| 2001 09 24 | 704 | 0.2− | 0.5− | 2006 11 13 | 703 | 0.2− | 0.5− | 2006 11 28 | 704 | 0.4− | 0.5− |
| 2001 09 26 | 699 | 0.4− | 0.2− | 2006 11 13 | 703 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2001 09 26 | 699 | 0.7+ | 0.2− | 2006 11 13 | 703 | 0.6+ | 1.5− | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2001 09 26 | 699 | 1.0− | 0.1− | 2006 11 13 | 703 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.5− | 0.8+ |
| 2001 09 26 | 699 | 0.7− | 0.7+ | 2006 11 14 | 704 | (2.0+ | 0.2+) | | | | |
| 2001 10 11 | 644 | 0.4− | 1.0+ | 2006 11 14 | 704 | (0.1− | 1.8+) | | | | |

**2001 ST$_{144}$ = 2006 US$_{285}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.46546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21344975 | $\omega$ | 119.65894 | | +0.98609544 | +0.16205016 | |
| $a$ | 2.7729303 | $\Omega$ | 231.04020 | | −0.16408654 | +0.91441985 | |
| $e$ | 0.1079394 | $i$ | 2.71389 | | −0.02629442 | +0.37091251 | |
| $P$ | 4.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2001 09 23 | 704 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.3− |
| 2001 09 16 | 704 | 0.6+ | 1.3+ | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2001 09 16 | 704 | 0.2+ | 0.8+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 09 20 | 704 | 0.6− | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2001 09 20 | 704 | 1.0− | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 12 | 703 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.6− | 0.5− | 2006 10 20 | 691 | 0.0 | 0.4+ | 2006 11 12 | 703 | 0.7+ | 0.2+ |
| 2001 09 20 | 704 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 12 | 703 | 0.1+ | 0.6− |
| 2001 09 22 | 704 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 12 | 703 | (1.1− | 1.8−) |
| 2001 09 22 | 704 | 0.5+ | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.3− | 0.0 |
| 2001 09 22 | 704 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.4− | 0.4− |
| 2001 09 23 | 704 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.3− | 0.2+ |
| 2001 09 23 | 704 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 09 23 | 704 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2001 09 23 | 704 | 0.6+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.2− |

**2001 SW$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.71841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20475385 | $\omega$ | 59.59694 | | +0.58991994 | −0.80703321 | |
| $a$ | 2.8508957 | $\Omega$ | 354.04404 | | +0.62619138 | +0.47780964 | |
| $e$ | 0.1457610 | $i$ | 14.68416 | | +0.50978312 | +0.34698032 | |
| $P$ | 4.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.1− | 0.1+ | 2001 09 23 | 704 | 0.5+ | 0.9− | 2006 09 28 | 703 | 0.5+ | 0.7− |
| 2001 09 12 | 691 | 0.2− | 0.1− | 2001 09 23 | 704 | 0.1− | 0.3− | 2006 09 28 | 703 | 0.3+ | 0.5+ |
| 2001 09 12 | 691 | 0.2− | 0.1+ | 2001 09 23 | 704 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.1− |
| 2001 09 16 | 704 | 0.2− | 0.1+ | 2001 09 23 | 704 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2001 09 16 | 704 | 0.7+ | 0.7+ | 2001 09 23 | 704 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2001 09 16 | 704 | 0.0 | 0.4+ | 2001 09 23 | 704 | 0.4− | 0.1− | 2006 10 19 | 703 | 0.4− | 0.7+ |
| 2001 09 18 | 699 | 0.8− | 0.3+ | 2001 09 23 | 704 | 0.4+ | 1.4− | 2006 10 19 | 703 | 0.5+ | 0.7+ |
| 2001 09 18 | 699 | (2.3+ | 1.9+) | 2001 09 23 | 704 | 0.7− | 0.4− | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 2001 09 18 | 699 | 1.2+ | 1.2+ | 2001 09 24 | 704 | (0.1− | 1.7−) | 2006 10 19 | 703 | 0.7+ | 0.4− |
| 2001 09 18 | 699 | 0.6+ | 0.4+ | 2001 09 24 | 704 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.3− | 0.3− | 2001 09 24 | 704 | (1.9+ | 0.1−) | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2001 09 20 | 704 | 0.4− | 0.3− | 2001 09 24 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2001 09 20 | 704 | 0.4− | 0.8− | 2001 09 24 | 704 | 0.1+ | 0.8− | 2006 10 27 | 703 | 0.4− | 0.8+ |
| 2001 09 20 | 704 | 0.2+ | 1.3− | 2001 10 19 | 644 | 0.2− | 0.9+ | 2006 10 27 | 703 | 0.3+ | 0.2+ |
| 2001 09 20 | 704 | 0.6− | 1.2− | 2001 10 19 | 644 | 0.4− | 0.7+ | 2006 10 27 | 703 | 0.8+ | 0.4+ |
| 2001 09 22 | 704 | 1.1+ | 0.9+ | 2001 10 19 | 644 | 0.3− | 0.7+ | 2006 10 27 | 703 | (2.1− | 0.7−) |
| 2001 09 22 | 704 | (1.5+ | 0.1−) | 2006 09 20 | 699 | 0.0 | 1.0+ | 2006 11 15 | 703 | 0.3− | 0.4+ |
| 2001 09 22 | 704 | 0.6+ | 1.1+ | 2006 09 20 | 699 | 0.1− | 0.7− | 2006 11 15 | 703 | 0.7− | 1.1− |
| 2001 09 22 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.0 | 2006 11 15 | 703 | 1.2− | 0.6− |
| 2001 09 22 | 704 | 0.4− | 0.3+ | 2006 09 20 | 699 | (1.3− | 2.0+) | 2006 11 15 | 703 | 0.1− | 1.3− |
| 2001 09 22 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 703 | 0.3+ | 0.6− | | | | |
| 2001 09 22 | 704 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.0 | | | | |

**2001 SU$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.85785 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19810103 | $\omega$ | 243.13843 | | −0.37198167 | +0.92807358 | |
| $a$ | 2.9143713 | $\Omega$ | 5.11995 | | −0.76633336 | −0.29635688 | |
| $e$ | 0.1365441 | $i$ | 11.36159 | | −0.52379654 | −0.22550396 | |
| $P$ | 4.98 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.0 | 0.5+ | 2001 10 13 | 691 | 0.1+ | 0.3− | 2006 09 24 | 691 | 0.2− | 0.3+ |
| 2001 09 16 | 704 | 1.0− | 0.0 | 2001 10 18 | 644 | 0.4− | 0.6+ | 2006 09 24 | 691 | 0.2− | 0.1− |
| 2001 09 16 | 704 | 0.5− | 0.6− | 2001 10 18 | 644 | 0.3− | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2001 10 18 | 644 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2001 10 21 | 704 | 0.6− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.6+ | 0.9− | 2001 10 21 | 704 | 0.7+ | 1.0+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2001 10 21 | 704 | 0.7− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 0.2+ | 0.2− | 2001 10 21 | 704 | 0.7− | 0.4− | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2001 09 24 | 704 | 0.5− | 0.2+ | 2001 10 21 | 704 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2001 09 24 | 704 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 2001 10 11 | 644 | 0.6+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2001 10 11 | 644 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 10 11 | 644 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.6− | 0.2− |
| 2001 10 13 | 691 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2001 10 13 | 691 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− |

**2001 SZ$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.30806 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19120830 | $\omega$ | 204.81378 | | +0.64005442 | −0.76470325 | |
| $a$ | 2.9839959 | $\Omega$ | 205.59295 | | +0.73060248 | +0.63578871 | |
| $e$ | 0.3419390 | $i$ | 9.93926 | | +0.23780320 | +0.10488878 | |
| $P$ | 5.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 644 | 0.2+ | 0.3+ | 2001 09 25 | 704 | 0.4− | 0.8− | 2001 11 18 | 704 | 0.3+ | 0.1+ |
| 2001 07 25 | 644 | 0.2− | 0.2+ | 2001 09 25 | 704 | 0.2+ | 1.1− | 2001 11 18 | 704 | 1.4− | 1.1+ |
| 2001 07 25 | 644 | 0.3+ | 0.6+ | 2001 09 25 | 704 | 0.8− | 1.1− | 2001 11 18 | 645 | 0.0 | 0.3− |
| 2001 09 10 | 699 | 0.1− | 0.1+ | 2001 09 28 | 644 | 0.1+ | 0.0 | 2001 11 18 | 645 | 0.1− | 0.3− |
| 2001 09 10 | 699 | 0.2− | 0.4− | 2001 09 28 | 644 | 0.2+ | 0.1+ | 2001 11 18 | 704 | 0.1+ | 0.0 |
| 2001 09 10 | 699 | 0.4− | 0.1− | 2001 09 28 | 644 | 0.2+ | 0.1+ | 2001 11 20 | 291 | 0.3+ | 0.1+ |
| 2001 09 10 | 699 | 0.2− | 1.0+ | 2001 10 05 | 644 | 0.5− | 0.1+ | 2001 11 20 | 704 | 0.5+ | 0.1− |
| 2001 09 17 | 704 | 0.2+ | 0.1+ | 2001 10 05 | 644 | 0.4− | 0.3− | 2001 11 20 | 704 | 0.1− | 0.5+ |
| 2001 09 17 | 704 | 0.2+ | 0.1− | 2001 10 05 | 644 | 0.7− | 0.1− | 2001 11 20 | 704 | 1.3− | 0.3+ |
| 2001 09 17 | 704 | 0.6+ | 0.2− | 2001 10 13 | 699 | 0.2+ | 0.3− | 2001 11 20 | 704 | 0.3− | 0.1+ |
| 2001 09 18 | 699 | 0.3+ | 0.2+ | 2001 10 13 | 699 | 1.4+ | 0.4− | 2001 11 20 | 291 | 0.6+ | 0.2+ |
| 2001 09 18 | 699 | 0.6+ | 0.1+ | 2001 10 13 | 699 | 0.6+ | 0.2− | 2001 11 20 | 291 | 0.9+ | 0.1+ |
| 2001 09 18 | 699 | 0.8+ | 0.2+ | 2001 10 13 | 699 | 0.6+ | 0.1− | 2001 12 07 | 704 | 1.2− | 0.2+ |
| 2001 09 18 | 699 | 0.7+ | 0.9+ | 2001 10 14 | 704 | 0.1+ | 0.1− | 2001 12 07 | 704 | 0.6− | 0.1+ |
| 2001 09 20 | 704 | 0.7+ | 0.1− | 2001 10 14 | 704 | 0.0 | 0.1+ | 2001 12 07 | 704 | 0.0 | 0.7+ |
| 2001 09 20 | 704 | 0.9+ | 0.1+ | 2001 10 14 | 704 | 0.0 | 0.1+ | 2006 09 11 | 703 | 0.5+ | 1.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.1+ | 2001 10 14 | 704 | 0.0 | 0.5+ | 2006 09 11 | 703 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2001 10 16 | 704 | (1.6+ | 0.5+) | 2006 09 11 | 703 | 0.6− | 0.4− |
| 2001 09 20 | 704 | 0.7+ | 0.5− | 2001 10 16 | 704 | (1.6+ | 0.5+) | 2006 09 11 | 703 | 0.6+ | 0.2− |
| 2001 09 22 | 704 | 0.2− | 0.3+ | 2001 10 16 | 704 | (1.6+ | 0.6+) | 2006 09 18 | 703 | 0.1+ | 1.3− |
| 2001 09 22 | 704 | 0.8− | 0.7+ | 2001 10 16 | 704 | (1.9+ | 0.2−) | 2006 09 18 | 703 | 0.4− | 0.6− |
| 2001 09 22 | 704 | 0.1− | 0.8+ | 2001 10 16 | 704 | (1.8+ | 0.3−) | 2006 09 18 | 703 | 0.9− | 0.9− |
| 2001 09 22 | 704 | 0.2+ | 0.4+ | 2001 10 18 | 644 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.7− |
| 2001 09 22 | 704 | 0.5− | 0.8+ | 2001 10 18 | 644 | 0.1− | 0.5− | 2006 09 20 | 850 | 1.2+ | 0.6− |
| 2001 09 23 | 704 | 0.5− | 0.8+ | 2001 10 18 | 644 | 0.2− | 0.2− | 2006 09 20 | 850 | 0.3− | 0.4+ |
| 2001 09 23 | 704 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.6− | 0.6− | 2006 09 20 | 850 | 0.2+ | 0.5− |
| 2001 09 23 | 704 | 0.6− | 0.6+ | 2001 10 21 | 704 | 0.3− | 0.4− | 2006 09 21 | 850 | 0.2+ | 0.4+ |
| 2001 09 23 | 704 | 0.2− | 0.5+ | 2001 10 21 | 704 | 0.3− | 0.8− | 2006 09 21 | 850 | 0.5− | 0.7+ |
| 2001 09 23 | 704 | 0.4− | 1.1+ | 2001 10 21 | 704 | 0.5− | 1.1− | 2006 09 26 | 703 | 0.2+ | 0.6+ |
| 2001 09 24 | 704 | 0.3+ | 0.5+ | 2001 10 21 | 704 | 0.7− | 0.9− | 2006 09 26 | 703 | 0.0 | 0.6− |
| 2001 09 24 | 704 | 0.1− | 1.2+ | 2001 11 09 | 704 | 0.6+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2001 09 24 | 704 | 0.3+ | 0.5+ | 2001 11 09 | 704 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 24 | 704 | 0.0 | 0.5+ | 2001 11 09 | 704 | 0.5− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 24 | 704 | 0.1+ | 0.7+ | 2001 11 09 | 704 | 0.1− | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.6+ |
| 2001 09 25 | 699 | 0.6− | 0.3− | 2001 11 09 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 25 | 699 | 0.1− | 0.7− | 2001 11 18 | 291 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 09 25 | 704 | 0.1− | 0.9− | 2001 11 18 | 291 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2001 09 25 | 699 | 0.9− | 0.2− | 2001 11 18 | 291 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.1− | 0.8− | 2001 11 18 | 704 | 0.5+ | 0.2− | | | | |
| 2001 09 25 | 699 | 0.0 | 0.2+ | 2001 11 18 | 704 | 0.3− | 0.9+ | | | | |

**2001 SN$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.10766 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17616314 | $\omega$ | 258.84160 | | −0.04273833 | | −0.99656873 |
| $a$ | 3.1515632 | $\Omega$ | 194.19688 | | +0.99174162 | | −0.03373045 |
| $e$ | 0.2038322 | $i$ | 16.79884 | | +0.12092144 | | −0.07558456 |
| $P$ | 5.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.4− | 0.3+ | 2001 10 15 | 704 | 1.2+ | 0.6− | 2001 10 25 | 691 | 0.5− | 0.3+ |
| 2001 09 17 | 704 | 0.0 | 0.5+ | 2001 10 15 | 704 | 0.4+ | 0.4− | 2001 10 25 | 691 | 0.6− | 0.3+ |
| 2001 09 17 | 704 | 0.4− | 0.8− | 2001 10 15 | 704 | 0.9+ | 0.3− | 2001 10 25 | 691 | 0.4+ | 0.3+ |
| 2001 09 17 | 704 | 0.2+ | 0.4+ | 2001 10 16 | 704 | 0.6− | 0.0 | 2001 10 25 | 691 | 0.4+ | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.3− | 2001 10 16 | 704 | 0.5+ | 1.0− | 2001 10 25 | 691 | 0.4+ | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.6− | 2001 10 16 | 704 | 0.7+ | 0.0 | 2001 11 12 | 645 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.0 | 1.0− | 2001 10 16 | 704 | 0.3+ | 0.1+ | 2001 11 12 | 645 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.2− | 1.4− | 2001 10 16 | 704 | 1.2+ | 0.2+ | 2001 11 18 | 645 | 0.2+ | 0.1− |
| 2001 09 24 | 691 | 0.1− | 0.5− | 2001 10 16 | 691 | 0.3− | 0.2+ | 2001 11 18 | 645 | 0.2+ | 0.0 |
| 2001 09 24 | 691 | 0.1− | 0.4− | 2001 10 16 | 691 | 0.4− | 0.0 | 2001 11 20 | 704 | 0.0 | 1.3− |
| 2001 09 24 | 691 | 0.1− | 0.3− | 2001 10 16 | 691 | 0.2− | 0.2+ | 2001 11 20 | 704 | 0.1− | 1.4− |
| 2001 09 26 | 704 | 0.4− | 0.1+ | 2001 10 18 | 644 | 0.1− | 0.7+ | 2001 11 20 | 704 | 0.9− | 1.8− |
| 2001 09 26 | 704 | 0.4+ | 0.3+ | 2001 10 18 | 644 | 0.4− | 0.2+ | 2001 12 10 | 645 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.8+ | 0.2+ | 2001 10 18 | 644 | 0.3− | 0.6+ | 2001 12 10 | 645 | 0.0 | 0.1− |
| 2001 09 26 | 704 | 0.1+ | 0.2+ | 2001 10 20 | 704 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.4− |
| 2001 10 12 | 699 | 0.0 | 0.7+ | 2001 10 20 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2001 10 12 | 699 | 0.0 | 1.8+ | 2001 10 20 | 704 | 0.0 | 0.9+ | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2001 10 12 | 699 | 0.6+ | 0.2+ | 2001 10 20 | 704 | 0.0 | 0.3+ | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 2001 10 12 | 699 | 0.6+ | 0.7− | 2001 10 20 | 704 | 0.6+ | 1.5+ | 2006 09 20 | 691 | 0.1+ | 0.2+ |
| 2001 10 13 | 704 | 1.0− | 1.1+ | 2001 10 23 | 704 | 1.1− | 0.1− | 2006 09 20 | 691 | 0.2− | 0.3+ |
| 2001 10 13 | 704 | 1.2− | 0.2+ | 2001 10 23 | 704 | 0.5− | 0.8− | 2006 09 23 | 691 | 0.2− | 0.1− |
| 2001 10 13 | 704 | 0.9− | 0.2+ | 2001 10 23 | 704 | 0.2− | 0.6− | 2006 09 23 | 691 | 0.1− | 0.2− |
| 2001 10 14 | 699 | 1.1− | 0.7+ | 2001 10 24 | 704 | 1.2− | 0.6+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 699 | 0.4+ | 0.4− | 2001 10 24 | 704 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2001 10 14 | 699 | 0.8− | 0.0 | 2001 10 24 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 699 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.6− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 704 | 0.4+ | 0.4− | 2001 10 25 | 691 | 0.5− | 0.3+ | | | | |

**2001 SR$_{157}$ = 2006 UN$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.25911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20177232 | $\omega$ | 127.04483 | | +0.99736540 | | −0.00231324 |
| $a$ | 2.8789115 | $\Omega$ | 233.20125 | | −0.02300541 | | +0.93781181 |
| $e$ | 0.0791894 | $i$ | 5.19504 | | +0.06879684 | | +0.34713636 |
| $P$ | 4.88 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.8− | 0.0 | 2001 10 18 | 644 | 0.1− | 0.0 | 2006 10 17 | 683 | 0.3+ | 0.3+ |
| 2001 09 17 | 704 | 0.6− | 0.2+ | 2001 10 21 | 704 | 0.2+ | 0.5− | 2006 10 17 | 683 | 1.4− | 0.2+ |
| 2001 09 17 | 704 | 0.7+ | 0.3+ | 2001 10 21 | 704 | 0.5− | 0.2+ | 2006 10 17 | 683 | 0.1− | 0.7− |
| 2001 09 20 | 704 | 0.4+ | 0.2− | 2001 10 21 | 704 | 0.1+ | 0.3− | 2006 11 17 | G96 | (0.7+ | 5.9−) |
| 2001 09 20 | 704 | 0.6+ | 0.0 | 2001 10 21 | 704 | 0.7+ | 0.9+ | 2006 11 17 | G96 | (0.3+ | 5.9−) |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2001 10 21 | 704 | 0.0 | 0.4− | 2006 11 17 | G96 | (0.3− | 5.8−) |
| 2001 09 20 | 704 | 0.3− | 0.5− | 2006 10 16 | 683 | 0.3+ | 0.0 | 2006 11 17 | G96 | (0.3+ | 5.9−) |
| 2001 10 18 | 644 | 0.2− | 0.5+ | 2006 10 16 | 683 | 0.8+ | 0.4+ | | | | |
| 2001 10 18 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 683 | 0.3+ | 0.5− | | | | |

**2001 SJ$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.54098 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21790009 | $\omega$ | 147.97023 | | +0.97454499 | | +0.20945810 |
| $a$ | 2.7350448 | $\Omega$ | 200.40020 | | −0.22117314 | | +0.95655095 |
| $e$ | 0.0901684 | $i$ | 13.25673 | | +0.03666739 | | +0.20282401 |
| $P$ | 4.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.7− | 0.0 | 2001 09 24 | 704 | 1.0+ | 0.1− | 2001 10 21 | 704 | 0.2+ | 0.3+ |
| 2001 09 17 | 704 | 1.3− | 0.4+ | 2001 09 24 | 704 | 0.3+ | 0.5− | 2001 10 21 | 704 | 0.0 | 0.9+ |
| 2001 09 17 | 704 | 1.4− | 0.4+ | 2001 09 24 | 704 | 0.0 | 0.1+ | 2001 10 21 | 704 | 0.2+ | 0.3− |
| 2001 09 20 | 704 | 0.1− | 0.4− | 2001 09 24 | 704 | 0.7− | 0.1− | 2001 10 21 | 704 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.8− | 2001 10 06 | 644 | 0.4− | 0.7+ | 2001 11 18 | 645 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.7+ | 0.5− | 2001 10 06 | 644 | 0.7− | 0.9+ | 2001 11 18 | 645 | 0.0 | 0.1− |
| 2001 09 21 | 333 | 0.7+ | 0.5+ | 2001 10 06 | 644 | 0.2− | 0.9+ | 2004 05 24 | 691 | 0.3+ | 0.4+ |
| 2001 09 21 | 333 | 0.9− | 0.8+ | 2001 10 09 | 333 | 0.4− | 0.1− | 2004 05 24 | 691 | 0.2− | 0.2− |
| 2001 09 21 | 333 | 0.6− | 0.1− | 2001 10 09 | 333 | 0.3+ | 1.0− | 2004 05 24 | 691 | 0.1− | 0.4+ |
| 2001 09 23 | 704 | 0.9+ | 0.3− | 2001 10 09 | 333 | 0.2− | 0.4− | 2006 11 27 | A13 | 0.5− | 0.4+ |
| 2001 09 23 | 704 | 1.0+ | 0.1+ | 2001 10 18 | 644 | 0.1+ | 0.1+ | 2006 11 27 | A13 | 0.3+ | 0.3+ |
| 2001 09 23 | 704 | 0.4+ | 0.6+ | 2001 10 18 | 644 | 0.2+ | 0.4+ | 2006 11 27 | A13 | 0.2+ | 0.8+ |
| 2001 09 23 | 704 | 0.7+ | 0.1− | 2001 10 18 | 644 | 0.3+ | 0.7+ | | | | |
| 2001 09 24 | 704 | 0.3− | 0.7+ | 2001 10 21 | 704 | 0.5+ | 0.2+ | | | | |

**2001 SW$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.37452 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17982444 | $\omega$ | 62.90377 | | +0.60316581 | | −0.79740130 |
| $a$ | 3.1086386 | $\Omega$ | 349.93644 | | +0.68918470 | | +0.53270354 |
| $e$ | 0.1404217 | $i$ | 6.07679 | | +0.40151646 | | +0.28351034 |
| $P$ | 5.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.3+ | 0.6− | 2001 09 24 | 704 | 0.7− | 0.4− | 2001 10 18 | 644 | 0.1− | 0.6+ |
| 2001 09 17 | 704 | 0.1+ | 0.5− | 2001 09 24 | 704 | 0.2+ | 0.8+ | 2001 10 21 | 704 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | 0.6+ | 0.2+ | 2001 09 24 | 704 | 0.1− | 0.4+ | 2001 10 21 | 704 | 0.1− | 0.3− |
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2001 10 11 | 691 | 0.1− | 0.3+ | 2001 10 21 | 704 | 0.1+ | 0.8+ |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2001 10 11 | 691 | 0.0 | 0.0 | 2001 10 21 | 704 | 0.0 | 0.5+ |
| 2001 09 20 | 704 | 0.3+ | 0.5+ | 2001 10 11 | 691 | 0.1+ | 0.2− | 2001 10 21 | 704 | 0.1+ | 1.0− |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2001 10 11 | 644 | 0.0 | 0.3− | 2006 08 18 | 644 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2001 10 11 | 644 | 0.1+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.0 |
| 2001 09 23 | 704 | 0.0 | 0.2− | 2001 10 11 | 644 | 0.0 | 0.4− | 2006 08 18 | 644 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.2− | 0.0 | 2001 10 15 | 608 | 0.4− | 1.1− | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 2001 09 23 | 704 | 0.0 | 0.0 | 2001 10 15 | 608 | 0.4− | 1.1− | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 0.3− | 2001 10 15 | 608 | 0.3− | 1.1− | 2006 08 27 | 691 | 0.1− | 0.2− |
| 2001 09 24 | 704 | 0.1− | 0.5− | 2001 10 18 | 644 | 0.2− | 0.7+ | | | | |
| 2001 09 24 | 704 | 0.6+ | 0.5+ | 2001 10 18 | 644 | 0.1− | 0.9+ | | | | |

**2001 SG$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.86993 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22169628 | $\omega$ | 177.81756 | | +0.92693596 | | −0.36979876 |
| $a$ | 2.7037328 | $\Omega$ | 204.19148 | | +0.34186543 | | +0.90214537 |
| $e$ | 0.1439590 | $i$ | 8.92147 | | +0.15465367 | | +0.22222199 |
| $P$ | 4.45 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 16 | 691 | 0.1+ | 0.3+ | 2001 09 25 | 691 | 0.5− | 0.1− | 2001 10 16 | 704 | 0.2− | 0.4− |
| 1996 06 16 | 691 | 0.3− | 0.1+ | 2001 09 26 | 704 | 0.4− | 0.1− | 2001 10 16 | 704 | 0.4+ | 0.3+ |
| 1996 06 16 | 691 | 0.0 | 0.7+ | 2001 09 26 | 704 | 0.2− | 0.2− | 2001 10 16 | 704 | 0.4+ | 0.1+ |
| 2001 09 17 | 704 | 0.2− | 0.2+ | 2001 09 26 | 704 | 0.4− | 0.6− | 2001 10 21 | 691 | 0.4+ | 0.3+ |
| 2001 09 17 | 704 | 0.2+ | 1.1+ | 2001 09 26 | 704 | 0.0 | 0.0 | 2001 10 21 | 691 | 0.2+ | 0.1− |
| 2001 09 17 | 704 | 0.6− | 0.2− | 2001 09 26 | 704 | 0.4− | 0.3− | 2001 10 21 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.9+ | 0.4+ | 2001 09 26 | 704 | 0.7+ | 0.8− | 2001 10 21 | 704 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.5+ | 1.1+ | 2001 09 26 | 704 | 0.3+ | 1.1− | 2001 10 21 | 691 | 0.8+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.2− | 2001 09 26 | 704 | 0.8+ | 0.6− | 2001 10 21 | 691 | 0.6+ | 0.3+ | | |
| 2001 09 20 | 704 | 1.1+ | 0.6− | 2001 10 11 | 644 | 0.9+ | 1.0+ | 2001 10 21 | 704 | 0.1− | 0.4− | | |
| 2001 09 23 | 704 | 0.3+ | 1.0+ | 2001 10 11 | 644 | 1.0+ | 1.0+ | 2001 10 21 | 691 | 0.7+ | 0.2+ | | |
| 2001 09 23 | 704 | 0.3+ | 0.5+ | 2001 10 11 | 644 | 1.3+ | 1.0+ | 2001 10 21 | 704 | 0.4− | 0.2− | | |
| 2001 09 23 | 704 | 0.2− | 0.2+ | 2001 10 13 | 704 | 0.7+ | 0.1− | 2001 10 21 | 704 | 0.2− | 0.3− | | |
| 2001 09 23 | 704 | 0.0 | 0.5+ | 2001 10 13 | 704 | 0.7− | 0.1− | 2001 11 18 | 704 | 0.1− | 1.1+ | | |
| 2001 09 24 | 704 | 0.6− | 0.3+ | 2001 10 13 | 704 | 0.2− | 0.4+ | 2001 11 18 | 704 | 0.3− | 0.1+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.8− | 2001 10 13 | 704 | 0.9− | 0.1+ | 2001 11 18 | 704 | 0.0 | 0.7+ | | |
| 2001 09 24 | 704 | 0.8− | 0.2− | 2001 10 15 | 291 | 0.1+ | 0.2− | 2005 06 27 | 691 | 0.1+ | 0.3− | | |
| 2001 09 24 | 704 | 0.4− | 0.2− | 2001 10 15 | 291 | 0.3− | 0.1− | 2005 06 27 | 691 | 0.2+ | 0.2− | | |
| 2001 09 24 | 704 | 0.7− | 0.3− | 2001 10 15 | 291 | 1.4− | 0.0 | 2005 06 27 | 691 | 0.0 | 0.5− | | |
| 2001 09 25 | 691 | 0.4− | 0.1− | 2001 10 16 | 704 | 0.0 | 0.3− | | | | | | |
| 2001 09 25 | 691 | 0.6− | 0.1− | 2001 10 16 | 704 | 0.4+ | 1.2− | | | | | | |

**2001 SJ**$_{166}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.47699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21178515 | $\omega$ | 113.07403 | | +0.46241110 | | +0.88665826 |
| $a$ | 2.7874412 | $\Omega$ | 184.47377 | | −0.82954248 | | +0.43117480 |
| $e$ | 0.1652806 | $i$ | 2.66048 | | −0.31310582 | | +0.16710902 |
| $P$ | 4.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.6− | 0.6− | 2001 09 20 | 704 | 0.6+ | 0.9− | 2006 10 12 | 691 | 0.4+ | 0.6+ | | |
| 2001 08 24 | 704 | 0.1+ | 0.4− | 2001 09 22 | 704 | 0.7+ | 0.7− | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 2001 08 24 | 704 | 0.7+ | 0.3− | 2001 09 22 | 704 | 0.4+ | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 18 | 291 | 0.2− | 0.1+ | 2001 09 22 | 704 | 0.2− | 1.0− | 2006 10 16 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 18 | 291 | 0.2+ | 0.3+ | 2001 09 23 | 704 | 0.9+ | 0.4− | 2006 10 17 | G96 | 0.1− | 0.3− | | |
| 2001 09 18 | 699 | 0.3− | 0.8− | 2001 09 23 | 704 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.5− | 0.5− | | |
| 2001 09 18 | 291 | 0.8+ | 0.2+ | 2001 09 23 | 704 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.8− | 0.5− | | |
| 2001 09 18 | 699 | 0.8− | 0.1+ | 2001 09 23 | 704 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.8− | 0.6− | | |
| 2001 09 18 | 699 | (1.0− | 1.9+) | 2001 09 24 | 704 | 0.8− | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 18 | 699 | 1.3− | 0.0 | 2001 09 24 | 704 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.2+ | | |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2001 09 24 | 704 | 0.2− | 0.7+ | 2006 10 20 | 691 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.8− | 0.1+ | 2001 09 24 | 704 | 0.3+ | 0.6+ | 2006 10 29 | 691 | 0.3− | 0.1+ | | |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2001 09 26 | 704 | 0.5− | 0.7+ | 2006 10 29 | 691 | 0.1+ | 0.0 | | |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2001 09 26 | 704 | 0.7− | 0.7+ | 2006 10 29 | 691 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2001 09 26 | 704 | 0.5− | 0.6+ | 2006 10 31 | G96 | 0.4+ | 0.4− | | |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2001 09 26 | 704 | 0.1+ | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.3− | 0.4− | | |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.4− | | |

**2001 SL**$_{166}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.23158 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21553709 | $\omega$ | 31.93264 | | +0.87172309 | | −0.48998478 |
| $a$ | 2.7549985 | $\Omega$ | 357.39847 | | +0.43060819 | | +0.76965764 |
| $e$ | 0.0894303 | $i$ | 4.68996 | | +0.23382780 | | +0.40931899 |
| $P$ | 4.57 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3+ | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2001 09 19 | 704 | 0.2+ | 1.1+ | 2006 10 23 | 691 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2001 09 19 | 704 | 0.6− | 1.3+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2001 09 20 | 704 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.5+ | 0.1− | | |
| 2001 09 20 | 704 | 1.0+ | 0.9− | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2001 09 20 | 704 | 0.4− | 0.8− | 2006 10 27 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.1− | 1.4− | 2006 11 14 | G96 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.7+ | 0.2− | | |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.3− | 2006 12 01 | G96 | 0.4− | 0.3− | | |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.3− | 0.5− | | |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.8+ | 0.1+ | | |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.4− | | | | | | |

**2001 SJ**$_{172}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.35046 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20199122 | $\omega$ | 163.23871 | | +0.68759850 | | +0.72595960 |
| $a$ | 2.8768312 | $\Omega$ | 150.19723 | | −0.66932435 | | +0.64110340 |
| $e$ | 0.1278285 | $i$ | 1.59322 | | −0.28144843 | | +0.24893591 |
| $P$ | 4.88 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | (2.0− | 1.3+) | 2001 09 26 | 704 | 0.6− | 0.3− | 2006 07 21 | G96 | 0.4− | 0.0 | | |
| 2001 09 16 | 704 | (2.5− | 1.5+) | 2001 09 26 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 16 | 704 | (1.2− | 2.2+) | 2001 09 26 | 704 | 1.2+ | 0.6− | 2006 09 14 | 691 | 0.6− | 0.4+ | | |
| 2001 09 17 | 291 | 0.6+ | 0.1+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.4− | 0.2+ | | |
| 2001 09 17 | 291 | 1.0+ | 0.0 | 2001 10 14 | 645 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.0 | 0.4+ | | |
| 2001 09 17 | 291 | 0.7+ | 0.2+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.4+ | | |
| 2001 09 18 | 699 | 1.0− | 0.2+ | 2001 10 15 | 645 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2+ | | |
| 2001 09 18 | 699 | 0.2− | 0.1+ | 2001 10 24 | 704 | 0.0 | 1.5+ | 2006 10 22 | G96 | 0.0 | 0.1+ | | |
| 2001 09 18 | 699 | 0.5− | 0.5+ | 2001 10 24 | 704 | 0.6+ | 0.5+ | 2006 10 22 | G96 | 0.4+ | 0.1− | | |
| 2001 09 18 | 699 | (1.0− | 2.0+) | 2001 10 24 | 704 | 0.6+ | 1.4+ | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2001 09 21 | 704 | 1.4− | 0.8− | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.7+ | 0.2− | | |
| 2001 09 21 | 704 | 1.2− | 1.1− | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2001 09 21 | 704 | 1.3− | 1.2− | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.3− | | |
| 2001 09 21 | 704 | (1.3− | 1.6−) | 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− | | |
| 2001 09 26 | 704 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |

**2001 SG**$_{178}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.45519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20443880 | $\omega$ | 47.72259 | | +0.50848593 | | −0.85927743 |
| $a$ | 2.8538239 | $\Omega$ | 12.08301 | | +0.69112866 | | +0.36881029 |
| $e$ | 0.1392052 | $i$ | 15.38538 | | +0.51359832 | | +0.35443090 |
| $P$ | 4.82 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.5+ | 0.2+ | 2001 10 17 | 704 | 0.2− | 0.3+ | 2001 11 17 | 704 | 1.1− | 0.6− | | |
| 2001 09 17 | 704 | 0.4+ | 0.3− | 2001 10 17 | 704 | 0.3+ | 0.4+ | 2001 11 17 | 704 | (0.4− | 1.9+) | | |
| 2001 09 17 | 704 | 0.5+ | 1.0− | 2001 10 17 | 704 | 0.3+ | 0.6+ | 2001 11 17 | 704 | 1.2− | 0.1+ | | |
| 2001 09 21 | 704 | 0.6− | 0.5+ | 2001 10 17 | 704 | 0.0 | 0.3− | 2003 03 08 | 644 | 0.3+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2001 10 17 | 704 | 0.3− | 0.5− | 2003 03 08 | 644 | 0.4+ | 0.5+ | | |
| 2001 09 21 | 704 | 0.2+ | 0.6− | 2001 10 17 | 704 | 0.7− | 0.6+ | 2003 03 08 | 644 | 0.5+ | 0.7+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2001 10 17 | 704 | 0.2− | 0.1+ | 2006 10 23 | 703 | 1.0+ | 0.5+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2001 10 17 | 704 | 0.3− | 0.0 | 2006 10 23 | 703 | 1.1+ | 1.3− | | |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2001 10 17 | 704 | 0.1− | 0.6− | 2006 10 23 | 703 | 0.4− | 0.4− | | |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2001 10 17 | 704 | 0.3− | 0.7+ | 2006 10 23 | 703 | 1.2− | 1.2− | | |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2001 10 20 | 644 | 0.4− | 0.4+ | 2006 10 29 | 703 | 0.8+ | 1.1− | | |
| 2001 09 23 | 704 | 0.1− | 0.1− | 2001 10 20 | 644 | 0.4− | 0.3+ | 2006 10 29 | 703 | 0.2− | 0.0 | | |
| 2001 09 23 | 704 | 0.3− | 0.1− | 2001 10 20 | 644 | 0.4− | 0.4− | 2006 10 29 | 703 | 0.1− | 0.7− | | |
| 2001 09 23 | 704 | 0.8− | 0.4+ | 2001 10 20 | 152 | 0.5− | 0.2+ | 2006 10 29 | 703 | (0.4+ | 1.6−) | | |
| 2001 09 24 | 704 | 0.2+ | 0.6+ | 2001 10 20 | 152 | (2.6− | 1.0+) | 2006 11 15 | 703 | 0.4+ | 0.8− | | |
| 2001 09 24 | 704 | 0.2− | 0.3+ | 2001 10 20 | 152 | 0.0 | 0.7+ | 2006 11 15 | 703 | 0.2− | 1.2+ | | |
| 2001 09 24 | 704 | 0.1− | 0.5+ | 2001 10 21 | 704 | 0.2− | 0.6+ | 2006 11 15 | 703 | (0.7+ | 2.2+) | | |
| 2001 09 24 | 704 | 0.6− | 0.0 | 2001 10 21 | 704 | 1.3+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.2− | | |
| 2001 10 07 | 644 | 0.2− | 0.6− | 2001 10 21 | 704 | 0.4− | 0.6+ | 2006 11 17 | 644 | 0.1− | 0.0 | | |
| 2001 10 07 | 644 | 0.3− | 0.5− | 2001 10 21 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.3− | | |
| 2001 10 07 | 644 | 0.3− | 0.6− | 2001 11 11 | 699 | 0.7+ | 0.7− | 2006 11 17 | 644 | 0.2− | 0.3+ | | |
| 2001 10 14 | 704 | 1.4+ | 0.6+ | 2001 11 11 | 699 | 0.5− | 0.1− | 2006 11 21 | 703 | 1.5+ | 1.0− | | |
| 2001 10 14 | 704 | 0.5+ | 0.1+ | 2001 11 11 | 699 | 0.8− | 0.3+ | 2006 11 21 | 703 | 0.1+ | 0.5+ | | |
| 2001 10 14 | 704 | 0.3+ | 0.3+ | 2001 11 11 | 699 | 0.9− | 0.8+ | 2006 11 21 | 703 | 0.4− | 0.6− | | |
| 2001 10 14 | 704 | 0.6+ | 1.0+ | 2001 11 17 | 704 | 0.3+ | 0.3+ | 2006 11 21 | 703 | 0.5+ | 0.0 | | |
| 2001 10 14 | 704 | 1.1+ | 0.5− | 2001 11 17 | 704 | 1.4− | 1.0+ | | | | | | |

**2001 SS$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.51434 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22184256 | $\omega$ | 338.70610 | | +0.66414504 | | +0.73911777 |
| $a$ | 2.7025442 | $\Omega$ | 332.52546 | | −0.64593057 | | +0.49166293 |
| $e$ | 0.2414153 | $i$ | 14.09096 | | −0.37641077 | | +0.46040469 |
| $P$ | 4.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 608 | 0.2− | 0.2− | 2001 08 21 | 608 | 0.2− | 1.1− | 2001 09 21 | 704 | 0.4− | 0.9− | |
| 2001 07 21 | 608 | 0.5− | 0.5− | 2001 08 21 | 608 | 0.8− | 1.8+ | 2001 09 21 | 704 | 1.2− | 0.1− | |
| 2001 07 21 | 608 | 0.2+ | 0.0 | 2001 08 21 | 608 | 0.4− | 0.8− | 2001 09 21 | 704 | 0.1− | 1.7− | |
| 2001 07 21 | 608 | 0.1+ | 0.5− | 2001 08 23 | 699 | 0.0 | 0.2− | 2001 09 21 | 704 | 1.0+ | 0.9− | |
| 2001 07 21 | 608 | 0.3− | 0.3− | 2001 08 23 | 699 | 0.8− | 0.8+ | 2001 09 21 | 704 | 0.3− | 0.2− | |
| 2001 07 21 | 608 | 0.1− | 0.8− | 2001 08 23 | 699 | 0.4+ | 0.1− | 2006 11 21 | 703 | 0.2− | 0.8+ | |
| 2001 08 13 | 608 | 0.2+ | 1.5+ | 2001 08 23 | 699 | 0.8+ | 0.6− | 2006 11 21 | 703 | 0.1+ | 0.2+ | |
| 2001 08 13 | 608 | 0.1− | 1.7+ | 2001 09 07 | 704 | 1.2+ | 0.9− | 2006 11 21 | 703 | 1.3+ | 1.5− | |
| 2001 08 13 | 608 | 0.5+ | 1.2+ | 2001 09 07 | 704 | 1.4+ | 0.0 | 2006 11 21 | 703 | 0.2− | 0.6+ | |
| 2001 08 21 | 608 | 0.1+ | 0.7− | 2001 09 07 | 704 | 1.2+ | 0.1+ | 2006 11 22 | 703 | 0.3+ | 0.1+ | |
| 2001 08 21 | 608 | 0.1− | 0.2− | 2001 09 19 | 704 | 0.4+ | 1.3+ | 2006 11 22 | 703 | 1.6− | 1.0+ | |
| 2001 08 21 | 608 | 1.7− | 0.9− | 2001 09 19 | 704 | 0.5+ | 1.0+ | 2006 11 22 | 703 | 0.1+ | 0.1+ | |
| 2001 08 21 | 608 | 1.1− | 1.4+ | 2001 09 19 | 704 | 0.6+ | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.5− | |
| 2001 08 21 | 608 | 0.2− | 0.8− | 2001 09 19 | 704 | 0.7+ | 0.1+ | | | | | |
| 2001 08 21 | 608 | 1.4− | 1.9+ | 2001 09 19 | 704 | 1.5+ | 1.3− | | | | | |

**2001 SK$_{181}$ = 2006 SZ$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.99674 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21693798 | $\omega$ | 12.89201 | | +0.99065669 | | +0.10393557 |
| $a$ | 2.7431253 | $\Omega$ | 340.47488 | | −0.13628163 | | +0.77894968 |
| $e$ | 0.0706510 | $i$ | 15.31908 | | +0.00516170 | | +0.61841312 |
| $P$ | 4.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3+ | 0.5+ | 2001 09 24 | 704 | 0.2+ | 0.5− | 2006 09 28 | 703 | 0.6+ | 0.8+ | |
| 2001 09 19 | 704 | 0.6− | 0.4− | 2006 09 17 | 703 | 0.1− | 0.7− | 2006 09 28 | 703 | 0.2+ | 0.5− | |
| 2001 09 19 | 704 | 0.5− | 1.2+ | 2006 09 17 | 703 | 0.6− | 0.9− | 2006 10 11 | 644 | 0.3− | 0.2+ | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1− | |
| 2001 09 19 | 704 | 0.7− | 0.0 | 2006 09 17 | 703 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2006 09 22 | 104 | 0.6− | 1.4+ | 2006 10 19 | 703 | 0.0 | 0.5− | |
| 2001 09 21 | 704 | 0.3+ | 0.0 | 2006 09 22 | 104 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.1− | 0.2− | |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2006 09 22 | 104 | 0.8+ | 0.9+ | 2006 10 19 | 703 | 0.2− | 0.2− | |
| 2001 09 24 | 704 | 0.6+ | 0.5− | 2006 09 28 | 703 | 0.4− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.3+ | |
| 2001 09 24 | 704 | 0.2− | 0.2− | 2006 09 28 | 703 | (2.5− | 0.6+) | | | | | |

**2001 SX$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.90151 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25962200 | $\omega$ | 162.74413 | | +0.99122753 | | +0.13213239 |
| $a$ | 2.4335581 | $\Omega$ | 189.66452 | | −0.12327359 | | +0.91609852 |
| $e$ | 0.1908246 | $i$ | 1.02508 | | −0.04766143 | | +0.37855584 |
| $P$ | 3.80 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.0 | 0.1+ | 2001 09 21 | 704 | 1.0+ | 0.6+ | 2005 10 10 | 291 | 0.5+ | 0.1+ | |
| 2001 08 27 | 699 | 0.2+ | 0.0 | 2001 09 21 | 704 | 0.1− | 0.4+ | 2005 10 10 | 291 | 0.4+ | 0.1− | |
| 2001 08 27 | 699 | 0.5− | 0.3+ | 2001 09 21 | 704 | 0.2− | 0.1+ | 2005 10 25 | 691 | 0.1+ | 0.2+ | |
| 2001 08 27 | 699 | 0.0 | 0.4+ | 2005 09 29 | G96 | 0.0 | 0.7− | 2005 10 25 | 691 | 0.0 | 0.1+ | |
| 2001 09 19 | 704 | 0.4+ | 0.5− | 2005 09 29 | G96 | 0.3+ | 0.7− | 2005 10 25 | 691 | 0.2− | 0.2+ | |
| 2001 09 19 | 704 | 0.2+ | 1.0+ | 2005 09 29 | G96 | 0.0 | 0.9− | 2005 12 02 | G96 | 0.3− | 0.2− | |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2005 09 29 | G96 | 0.1+ | 0.6− | 2005 12 02 | G96 | 0.3+ | 0.2− | |
| 2001 09 19 | 704 | 0.3− | 0.9− | 2005 10 10 | 691 | 0.4− | 0.1− | 2005 12 02 | G96 | 0.0 | 0.1− | |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2005 10 10 | 691 | 0.9− | 0.1− | 2005 12 02 | G96 | 0.0 | 0.1+ | |
| 2001 09 21 | 704 | 1.2− | 0.9− | 2005 10 10 | 691 | 0.0 | 0.3+ | | | | | |
| 2001 09 21 | 704 | 0.4+ | 0.6− | 2005 10 10 | 291 | 0.3+ | 0.0 | | | | | |

**2001 SY$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.20860 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27291793 | $\omega$ | 26.04727 | | +0.88986653 | | −0.45622040 |
| $a$ | 2.3538638 | $\Omega$ | 1.09698 | | +0.41181757 | | +0.80258511 |
| $e$ | 0.2205002 | $i$ | 2.12914 | | +0.19632588 | | +0.38434371 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 0.2− | 2005 12 02 | 704 | 1.2+ | 0.5+ | 2005 12 28 | G96 | 0.2− | 0.1+ | |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2005 12 02 | 704 | 0.3− | 1.6− | 2005 12 28 | G96 | 0.1− | 0.0 | |
| 2001 09 19 | 704 | 0.2− | 1.0+ | 2005 12 02 | 704 | 1.1− | 1.7− | 2005 12 28 | G96 | 0.4− | 0.1+ | |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2005 12 06 | 691 | 0.1− | 0.1+ | 2005 12 28 | G96 | 0.1+ | 0.1+ | |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2005 12 06 | 691 | 0.5+ | 0.0 | 2006 01 27 | G96 | 0.1− | 0.0 | |
| 2001 09 21 | 704 | 0.7− | 0.7− | 2005 12 06 | 691 | 0.1− | 0.2+ | 2006 01 27 | G96 | 0.0 | 0.1− | |
| 2001 09 21 | 704 | 0.1+ | 0.8− | 2005 12 27 | 703 | 0.6+ | 0.1− | 2006 01 27 | G96 | 0.4+ | 0.1− | |
| 2001 09 21 | 704 | 0.1+ | 0.6− | 2005 12 27 | 703 | 1.3− | 0.6+ | 2006 01 27 | G96 | 0.2+ | 0.0 | |
| 2001 09 25 | 734 | 0.6+ | 0.9− | 2005 12 27 | 703 | 0.4− | 1.1+ | | | | | |
| 2001 09 25 | 734 | 0.5+ | 0.5+ | 2005 12 27 | 703 | (1.4− | 2.9−) | | | | | |

**2001 SA$_{185}$ = 2006 TX$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.17200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21378459 | $\omega$ | 353.25287 | | +0.99275950 | | −0.12003857 |
| $a$ | 2.7700341 | $\Omega$ | 13.64381 | | +0.11105960 | | +0.90332870 |
| $e$ | 0.0872586 | $i$ | 1.06773 | | +0.04576401 | | +0.41181064 |
| $P$ | 4.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 21 | 703 | (1.7+ | 1.5+) | |
| 2001 05 22 | 807 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.1− | |
| 2001 08 19 | 807 | 0.1− | 0.2+ | 2006 10 13 | 958 | 0.4− | 0.5− | 2006 10 28 | G96 | 0.3+ | 0.2− | |
| 2001 08 19 | 807 | 0.2− | 0.1+ | 2006 10 13 | 958 | 1.3+ | 0.5− | 2006 10 28 | G96 | 0.0 | 0.6− | |
| 2001 09 19 | 704 | 0.2+ | 1.2+ | 2006 10 14 | 958 | 0.8+ | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.2− | |
| 2001 09 19 | 704 | 0.8− | 1.0+ | 2006 10 14 | 958 | 0.4− | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.4− | |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2006 10 15 | 958 | 0.6+ | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.5− | |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2006 10 15 | 958 | 0.7+ | 0.6− | 2006 11 13 | G96 | 0.0 | 0.6− | |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.5− | 0.5− | |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2+ | |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.5− | 0.3+ | |
| 2001 09 21 | 704 | 0.4+ | 1.0− | 2006 10 20 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.3+ | |
| 2004 04 19 | 691 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.2− | 0.0 | |
| 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.2− | |
| 2004 04 19 | 691 | 0.5+ | 0.8+ | 2006 10 21 | 703 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.1+ | |
| 2006 09 26 | G96 | 0.5− | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ | |
| 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 21 | 703 | (2.8+ | 1.0−) | 2006 11 23 | 691 | 0.2+ | 0.1+ | |

**2001 SM$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.25628 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22739559 | $\omega$ | 332.94618 | | +0.90436479 | | +0.42675906 |
| $a$ | 2.6583655 | $\Omega$ | 1.79271 | | −0.38540100 | | +0.81774417 |
| $e$ | 0.1312036 | $i$ | 1.87096 | | −0.18327685 | | +0.38622685 |
| $P$ | 4.33 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.9+ | 0.6+ | 2001 09 19 | 704 | 0.3− | 1.0− | 2006 11 18 | 691 | 0.3+ | 0.3− | |
| 2001 08 16 | 704 | 0.1− | 1.0− | 2001 09 19 | 704 | 0.3− | 0.4− | 2006 11 18 | 691 | 0.0 | 0.2− | |
| 2001 08 16 | 704 | 0.7− | 0.0 | 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 11 18 | 691 | 0.6− | 0.6+ | |
| 2001 08 23 | 699 | 0.3+ | 0.4+ | 2001 09 21 | 704 | 0.4− | 1.3+ | 2006 11 22 | 691 | 0.1+ | 0.1+ | |
| 2001 08 23 | 699 | 0.1− | 1.2+ | 2001 09 21 | 704 | 0.6+ | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.1− | |
| 2001 08 23 | 699 | 0.8− | 0.4+ | 2001 09 21 | 704 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1− | |
| 2001 08 23 | 699 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.5+ | 0.3+ | 2006 11 25 | H07 | 0.4− | 0.6+ | |
| 2001 09 19 | 704 | 0.0 | 1.5− | 2006 11 14 | 691 | 0.0 | 0.3− | 2006 11 25 | H07 | 1.1− | 0.2− | |
| 2001 09 19 | 704 | 1.0+ | 0.9− | 2006 11 14 | 691 | 0.1+ | 0.1− | | | | | |

**2001 SU$_{189}$ = 2006 TL$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.42313 | | (2000.0) | | +0.90300821 | −0.42934794 |
| $n$ | 0.21273421 | $\omega$ | 236.04265 | | +0.40346229 | +0.83517735 |
| $a$ | 2.7791447 | $\Omega$ | 149.37531 | | +0.14762910 | +0.34371374 |
| $e$ | 0.2057279 | $i$ | 1.73001 | | | |
| $P$ | 4.63 | $H$ | 16.7 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 07 | 704 | 0.6+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2001 09 07 | 704 | (0.1+ | 1.7+) | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.4− | 0.3− |
| 2001 09 07 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2001 09 19 | 704 | 0.8− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.6− |
| 2001 09 19 | 704 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.3− | 0.2+ |
| 2001 09 19 | 704 | (1.8− | 0.6−) | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.6− | 2006 11 02 | 703 | 0.3+ | 0.8− | 2006 11 27 | 703 | 0.7+ | 0.5− |
| 2001 09 21 | 704 | 0.7+ | 0.2+ | 2006 11 02 | 703 | 0.8+ | 0.6+ | 2006 11 27 | 703 | 1.3− | 0.1− |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2006 11 02 | 703 | 0.7+ | 0.3+ | 2006 11 27 | 703 | 0.4+ | 0.3+ |
| 2001 09 21 | 704 | 0.4+ | 0.4− | 2006 11 02 | 703 | 0.9− | 0.1+ | 2006 11 27 | 703 | 0.5+ | 0.0 |
| 2006 10 12 | 691 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.8− | 2006 11 28 | 704 | 0.8+ | 0.5+ |
| 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.6− | 2006 11 28 | 704 | 1.4+ | 0.9+ |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.4− | 2006 11 28 | 704 | 1.1− | 0.4+ |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | (0.4− | 2.8−) | 2006 11 28 | 704 | 0.4+ | 0.9+ |

**2001 SG$_{194}$ = 2006 UW$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.42303 | | (2000.0) | | +0.78244834 | −0.62268459 |
| $n$ | 0.21399664 | $\omega$ | 204.26988 | | +0.57537354 | +0.72673793 |
| $a$ | 2.7682039 | $\Omega$ | 194.24778 | | +0.23815937 | +0.29002739 |
| $e$ | 0.1598464 | $i$ | 1.44476 | | | |
| $P$ | 4.61 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.2+ | 0.1+ | 2003 01 31 | 644 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2001 08 25 | 691 | 0.2+ | 0.0 | 2004 04 22 | 691 | 0.4+ | 0.4+ | 2006 11 14 | 691 | 0.3− | 0.1+ |
| 2001 08 25 | 691 | 0.1− | 0.1− | 2004 04 22 | 691 | 0.2+ | 1.3+ | 2006 11 14 | 691 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.8− | 0.1− | 2006 09 28 | G96 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.9+ |
| 2001 09 19 | 704 | 0.8− | 0.8+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2001 09 19 | 644 | 0.2− | 0.9+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | (1.5+ | 1.3+) |
| 2001 09 19 | 644 | 0.0 | 1.0+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (1.4− | 2.6+) |
| 2001 09 19 | 644 | 0.3− | 1.3+ | 2006 10 12 | 691 | 0.6+ | 0.1+ | 2006 11 18 | 704 | (0.5+ | 2.1+) |
| 2001 09 21 | 704 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.5+ | 2006 11 18 | 704 | (1.0− | 2.4+) |
| 2001 09 21 | 704 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.3− | 2006 11 18 | 704 | (0.1− | 2.7+) |
| 2001 09 21 | 704 | 0.9− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 1.5+ | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | (1.9+ | 0.7−) |
| 2001 09 21 | 704 | 0.4− | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.3− |
| 2001 09 23 | 691 | 0.5+ | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.4− |
| 2001 09 23 | 691 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2001 09 23 | 691 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2001 09 24 | 644 | 0.2− | 1.0+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2001 09 24 | 644 | 0.4− | 0.9+ | 2006 11 01 | 691 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 09 24 | 644 | 0.4− | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.6− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2003 01 31 | 644 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2003 01 31 | 644 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 0.7+ | 0.9− | 2006 12 01 | G96 | 0.3+ | 0.1− |

**2001 SJ$_{194}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.45424 | | (2000.0) | | +0.88063703 | +0.47373658 |
| $n$ | 0.19777510 | $\omega$ | 153.79150 | | −0.46180813 | +0.86166780 |
| $a$ | 2.9175724 | $\Omega$ | 177.88970 | | −0.10588518 | +0.18194025 |
| $e$ | 0.0968685 | $i$ | 11.30152 | | | |
| $P$ | 4.98 | $H$ | 16.3 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.2− | 0.4− | 2001 09 24 | 704 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2001 08 23 | 691 | 0.2− | 0.3− | 2001 09 24 | 704 | 0.2− | 0.5+ | 2006 09 16 | 699 | 0.8− | 1.1+ |
| 2001 08 23 | 691 | 0.0 | 0.1− | 2001 09 24 | 704 | 0.4− | 1.2+ | 2006 09 16 | 699 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2001 09 24 | 704 | 0.3− | 0.6− | 2006 09 16 | 699 | (1.6− | 0.4−) |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 09 25 | 704 | 0.5− | 0.4+ | 2006 09 16 | 699 | 1.4+ | 0.3+ |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2001 09 25 | 704 | 0.9+ | 1.3+ | 2006 09 19 | 699 | 0.2− | 0.8+ |
| 2001 09 19 | 704 | 0.7− | 0.5+ | 2001 09 25 | 704 | 0.8+ | 0.9+ | 2006 09 19 | 699 | 1.4− | 0.9+ |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2005 05 09 | 691 | 0.3− | 1.1+ | 2006 09 19 | 699 | (1.6− | 1.6−) |
| 2001 09 19 | 644 | 0.2− | 0.7+ | 2005 05 09 | 691 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.1+ |
| 2001 09 19 | 644 | 0.3− | 0.5+ | 2005 05 09 | 691 | 0.0 | 1.0− | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 644 | 0.3− | 0.4+ | 2006 08 27 | 699 | (0.7− | 1.7+) | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2006 08 27 | 699 | 0.3+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 0.8+ | 2006 08 27 | 699 | 0.3− | 1.2− | 2006 09 25 | 699 | 1.1− | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2006 08 27 | 699 | (2.9+ | 1.9−) | 2006 09 25 | 699 | 0.3− | 1.4− |
| 2001 09 21 | 704 | 0.7+ | 0.0 | 2006 09 12 | 703 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.9+ | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.3− | 2006 09 12 | 703 | (1.2− | 2.7+) | 2006 09 25 | 699 | 0.3− | 1.1+ |
| 2001 09 23 | 691 | 0.3+ | 0.4− | 2006 09 12 | 703 | 0.2+ | 1.3− | 2006 10 20 | G96 | 0.6− | 0.9− |
| 2001 09 23 | 691 | 0.3+ | 0.3− | 2006 09 12 | 703 | 0.6+ | 0.9− | 2006 10 20 | G96 | 0.3− | 1.1− |
| 2001 09 23 | 691 | 0.5+ | 0.6− | 2006 09 15 | 691 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.6− | 0.9− |
| 2001 09 24 | 704 | 1.0− | 0.8+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.1− | 1.0− |

**2001 SF$_{197}$ = 2006 SH$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.32003 | | (2000.0) | | +0.96832317 | +0.24968846 |
| $n$ | 0.20081322 | $\omega$ | 350.44700 | | −0.22717757 | +0.87689583 |
| $a$ | 2.8880709 | $\Omega$ | 355.09190 | | −0.10363686 | +0.41074248 |
| $e$ | 0.1291518 | $i$ | 1.62937 | | | |
| $P$ | 4.91 | $H$ | 16.9 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.3+ | 0.3− | 2001 12 10 | 645 | 0.6+ | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2001 05 23 | 807 | 0.0 | 0.1+ | 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2004 03 23 | 691 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 0.4− | 2004 03 23 | 691 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.2+ | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.4− | 2006 07 21 | G96 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.4− | 2006 10 22 | G96 | 0.1− | 1.3− |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.9+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2006 09 17 | 691 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 10 11 | 644 | 0.8− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 2001 10 11 | 644 | 0.5− | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.3− | 0.3+ |
| 2001 10 11 | 644 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | | | | |
| 2001 12 10 | 645 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.0 | | | | |

**2001 SG$_{197}$ = 2001 QA$_{332}$ = 2006 VE$_{121}$**

Id. Minor Planet Center (d, *MPO* 50814; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 314.32324 | | (2000.0) | | +0.01034356 | −0.99988501 |
| $n$ | 0.21500015 | $\omega$ | 96.05042 | | +0.87554581 | +0.01441312 |
| $a$ | 2.7595835 | $\Omega$ | 353.32671 | | +0.48302437 | −0.00471399 |
| $e$ | 0.1145371 | $i$ | 5.47582 | | | |
| $P$ | 4.58 | $H$ | 16.3 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2001 08 25 | 691 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.9− | 0.8− |
| 2001 08 25 | 691 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.6+ | 1.0+ |
| 2001 09 19 | 704 | 0.7− | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.9− | 0.6− |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.8− | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.3+ |
| 2001 09 21 | 691 | 1.4+ | 0.3− | 2006 10 19 | 703 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.8− |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2006 10 19 | 703 | 0.8+ | 0.5− | 2006 11 19 | 704 | 0.1+ | 1.3+ |
| 2001 09 21 | 691 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.7− | 0.1+ | 2006 11 19 | 704 | (0.5− | 2.0+) |
| 2001 09 21 | 704 | 0.7− | 0.1− | 2006 10 19 | 703 | 0.9+ | 0.9− | 2006 11 25 | G96 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 0.7− | 0.0 | 2006 10 27 | 703 | 0.8+ | 0.5− | 2006 11 25 | G96 | 0.2− | 0.4+ |
| 2001 09 21 | 691 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 25 | G96 | 0.1− | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.2− | 2006 11 25 | G96 | 0.3− | 0.3+ |
| 2001 09 21 | 704 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.5+ | 1.1− | | | | |

**2001 ST$_{197}$ = 2006 TT$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.04380 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20459812 | $\omega$ | 180.31649 | | +0.98991904 | | +0.13801968 |
| $a$ | 2.8523421 | $\Omega$ | 171.54886 | | −0.12946703 | | +0.97281216 |
| $e$ | 0.1259358 | $i$ | 12.49393 | | −0.05743328 | | +0.18597598 |
| $P$ | 4.82 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.1− | 0.2− | 2001 09 21 | 704 | 0.5+ | 0.7− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 08 25 | 691 | 0.0 | 0.1− | 2001 09 21 | 704 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.2+ |
| 2001 08 25 | 691 | 0.1+ | 0.2+ | 2001 09 21 | 704 | 0.7+ | 0.7− | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.3+ | 1.2+ | 2001 09 21 | 704 | 0.2− | 0.7− | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2001 09 21 | 704 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.4− | 0.1− |
| 2001 09 19 | 704 | 0.6− | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 1.4− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1+ | | | | |

**2001 SG$_{200}$ = 2006 UK$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.50980 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21332300 | $\omega$ | 42.10621 | | +0.67264426 | | −0.73991239 |
| $a$ | 2.7740286 | $\Omega$ | 5.64329 | | +0.65245411 | | +0.58737227 |
| $e$ | 0.1284503 | $i$ | 5.19733 | | +0.34907497 | | +0.32790771 |
| $P$ | 4.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 10 27 | 703 | 1.5− | 0.3− |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.8− | 2006 10 19 | 703 | 0.5− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 1.2+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.5+ |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.8− | 2006 11 14 | 703 | 0.2− | 0.8− |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.7− |
| 2001 09 23 | 691 | 0.0 | 0.0 | 2006 10 25 | D35 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2001 09 23 | 691 | 0.1+ | 0.1− | 2006 10 25 | D35 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.9− |
| 2001 09 23 | 691 | 0.1− | 0.1− | 2006 10 25 | D35 | 0.4+ | 1.0+ | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2006 10 04 | G96 | 0.3− | 0.3− | 2006 10 27 | 703 | 0.9− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.4− |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.1+ |

**2001 SY$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.25473 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23116632 | $\omega$ | 245.48288 | | +0.41639745 | | −0.90918268 |
| $a$ | 2.6293779 | $\Omega$ | 179.90949 | | +0.85986371 | | +0.39376573 |
| $e$ | 0.1167618 | $i$ | 4.47764 | | +0.29537698 | | +0.13540827 |
| $P$ | 4.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 09 | 691 | 0.1− | 0.0 | 2001 09 21 | 691 | 0.0 | 0.2− | 2003 02 07 | 644 | 0.0 | 0.3+ |
| 1999 03 09 | 691 | 0.1+ | 0.1− | 2001 09 21 | 704 | 0.0 | 0.3+ | 2003 02 07 | 644 | 0.0 | 0.3+ |
| 1999 03 09 | 691 | 0.1− | 0.2+ | 2001 09 21 | 704 | 0.1+ | 0.1− | 2003 02 07 | 644 | 0.1− | 0.4+ |
| 2001 09 19 | 704 | 0.8− | 0.6+ | 2001 09 21 | 691 | 0.0 | 0.2− | 2003 02 22 | 644 | 0.4+ | 0.6− |
| 2001 09 19 | 704 | 0.4− | 1.6+ | 2001 09 21 | 704 | 0.3− | 0.5+ | 2003 02 22 | 644 | 0.1− | 0.4− |
| 2001 09 19 | 704 | 0.7+ | 0.2+ | 2001 09 21 | 704 | 0.6+ | 0.5+ | 2003 02 22 | 644 | 0.3− | 0.6− |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2002 12 07 | 645 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.0 | 2002 12 07 | 645 | 0.1− | 0.1− | 2005 10 01 | G96 | 0.3+ | 0.2− |
| 2001 09 21 | 691 | 0.1+ | 0.2− | 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 10 01 | G96 | 0.3+ | 0.3− |
| 2001 09 21 | 704 | 0.2− | 0.2− | 2003 01 28 | 645 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.1− | 0.4− |

**2001 SE$_{202}$ = 2006 RT$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.42717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19683026 | $\omega$ | 310.77425 | | +0.44194927 | | +0.89701910 |
| $a$ | 2.9269017 | $\Omega$ | 345.45045 | | −0.81549242 | | +0.39891633 |
| $e$ | 0.0614993 | $i$ | 1.39834 | | −0.37370169 | | +0.19032211 |
| $P$ | 5.01 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 15 | 691 | 0.2− | 0.6+ | 2001 09 26 | 699 | 0.6+ | 0.7+ | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 1991 09 15 | 691 | 0.3+ | 0.1− | 2001 09 26 | 704 | 1.1+ | 0.2− | 2006 09 25 | 699 | 0.4− | 0.7+ |
| 1991 09 15 | 691 | 0.3− | 0.2− | 2001 09 26 | 704 | 0.8+ | 0.7− | 2006 09 25 | 699 | 0.0 | 0.9+ |
| 2001 09 18 | 699 | 1.2− | 0.4+ | 2001 09 26 | 699 | (0.3+ | 1.7+) | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 2001 09 18 | 699 | 1.3− | 0.1+ | 2001 09 26 | 704 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.6− |
| 2001 09 18 | 699 | 0.1− | 0.7+ | 2001 09 26 | 699 | (0.5− | 1.6+) | 2006 09 25 | G96 | 0.2− | 0.3+ |
| 2001 09 18 | 699 | 0.2− | 0.2+ | 2001 09 26 | 704 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.9+ | 0.5+ |
| 2001 09 19 | 704 | 0.1− | 0.3− | 2001 09 26 | 704 | 0.7+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2001 10 11 | 644 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.1+ | 1.3+ |
| 2001 09 19 | 704 | 0.2− | 0.5− | 2001 10 11 | 644 | 0.1+ | 1.0+ | 2006 09 29 | 704 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.5− | 0.3− | 2001 10 11 | 644 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.3− |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2001 10 14 | 645 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | (2.2+ | 1.0−) | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | (3.3+ | 1.1−) | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | (2.7+ | 1.4−) | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2006 08 25 | 704 | 0.5− | 0.2+ | 2006 10 01 | 703 | (0.1+ | 1.8+) |
| 2001 09 21 | 704 | 0.4+ | 0.9+ | 2006 08 25 | 704 | 0.2+ | 0.7− | 2006 10 01 | 703 | (1.9+ | 1.0+) |
| 2001 09 23 | 704 | 0.4+ | 0.8− | 2006 08 25 | 704 | 0.2+ | 0.1− | 2006 10 01 | 703 | (2.0+ | 1.4+) |
| 2001 09 23 | 704 | 0.9− | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.2− | 0.5+ |
| 2001 09 23 | 704 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2001 09 23 | 704 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2001 09 24 | 704 | 0.3+ | 0.6− | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2001 09 24 | 704 | 0.3− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2001 09 24 | 704 | (0.2+ | 1.7−) | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 09 24 | 704 | 0.5+ | 0.9− | 2006 09 20 | 704 | 0.8− | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2001 09 24 | 704 | 0.5+ | 1.4− | 2006 09 20 | 704 | 0.5+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2001 09 25 | 644 | 0.3+ | 1.2+ | 2006 09 20 | 704 | 0.0 | 1.3− | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2001 09 25 | 644 | 0.7+ | 1.4+ | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2001 09 25 | 644 | 0.5+ | 1.3+ | 2006 09 20 | 704 | 0.4+ | 0.2− | | | | |
| 2001 09 26 | 699 | 0.7+ | 0.7− | 2006 09 22 | A50 | 0.3+ | 0.2+ | | | | |

**2001 SS$_{202}$ = 2006 UO$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 26.42821 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21576049 | $\omega$ | 359.34025 | | +0.99234937 | | −0.12256060 | |
| $a$ | 2.7530965 | $\Omega$ | 7.74726 | | +0.11377344 | | +0.86098589 | |
| $e$ | 0.0600616 | $i$ | 6.34035 | | +0.04794085 | | +0.49364177 | |
| $P$ | 4.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 28 | 327 | 0.3− | 1.7− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | (0.2− | 1.7−) |
| 1997 11 28 | 327 | 0.6+ | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.4− | 0.5− |
| 1997 11 28 | 327 | (4.5− | 0.2−) | 2006 10 04 | G96 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.6+ | 0.2+ | 2006 10 19 | G96 | 0.7+ | 0.1− | 2006 11 14 | 703 | 1.2− | 1.3− |
| 2001 09 19 | 704 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.1− | 2006 11 14 | 703 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 1.0+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.5− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.4− | 1.1− |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.6− | 0.7− | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | (1.9− | 1.4−) |
| 2001 09 23 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2001 09 23 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2001 09 23 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 1.3+ | 0.7+ |
| 2001 10 15 | 704 | 0.9− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.7+ | 0.3+ |
| 2001 10 15 | 704 | 0.3− | 0.8− | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 1.1+ | 0.6− |
| 2001 10 15 | 704 | 0.3− | 1.1− | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | (3.2+ | 0.5−) |
| 2001 10 17 | 644 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.2− | 0.5+ | 2006 11 22 | 703 | 0.4+ | 0.9− |
| 2001 10 17 | 644 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.5+ | 2006 11 22 | 703 | 0.9+ | 0.7− |
| 2001 10 17 | 644 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.2− | 0.4+ |
| 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 22 | 703 | 0.7− | 1.4+ |

**2001 SD$_{203}$ = 2006 RZ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 312.72665 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19510581 | $\omega$ | 259.20162 | | +0.63306006 | | −0.77385085 | |
| $a$ | 2.9441228 | $\Omega$ | 151.49242 | | +0.72541012 | | +0.58414313 | |
| $e$ | 0.0960400 | $i$ | 2.37091 | | +0.27021312 | | +0.24480945 | |
| $P$ | 5.05 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 691 | 0.4− | 0.3− | 2001 09 26 | 704 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.3+ |
| 1991 10 06 | 691 | 0.1+ | 0.4− | 2001 10 17 | 644 | 0.9− | 0.3+ | 2006 09 19 | 703 | (0.3− | 2.4+) |
| 1991 10 06 | 691 | 0.3+ | 0.3+ | 2001 10 17 | 644 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.8− |
| 2001 09 19 | 704 | 0.0 | 0.9+ | 2001 10 17 | 644 | 0.3− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.7− | 0.4+ | 2004 04 20 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2004 04 20 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2004 04 20 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.6− | 0.0 | 2006 09 12 | 703 | 0.7+ | 0.9− | 2006 09 26 | G96 | 0.3+ | 0.5− |
| 2001 09 21 | 704 | 0.7+ | 0.2+ | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2006 09 12 | 703 | 1.4− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.5− |
| 2001 09 21 | 704 | 1.0+ | 0.3+ | 2006 09 12 | 703 | 0.7− | 1.3+ | 2006 10 20 | G96 | 0.0 | 0.6− |
| 2001 09 21 | 704 | 0.3+ | 0.2− | 2006 09 19 | 699 | (1.1+ | 2.3+) | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2001 09 21 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 703 | 1.1+ | 0.8− | 2006 10 20 | G96 | 0.1− | 0.6− |
| 2001 09 26 | 704 | 0.4− | 0.7+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.6+ | 0.4− |
| 2001 09 26 | 704 | 0.0 | 0.8+ | 2006 09 19 | 703 | 0.5− | 0.3− | | | | |
| 2001 09 26 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.8+ | | | | |

**2001 SZ$_{203}$ = 2006 SL$_{312}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 51.31473 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21479766 | $\omega$ | 311.87598 | | +0.91257740 | | +0.40738412 | |
| $a$ | 2.7613175 | $\Omega$ | 24.14701 | | −0.34501994 | | +0.81337331 | |
| $e$ | 0.0706500 | $i$ | 4.93947 | | −0.21946235 | | +0.41528548 | |
| $P$ | 4.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.3+ | 0.2+ | 2001 09 26 | 704 | 0.3− | 0.3− | 2006 10 03 | 291 | 0.3− | 0.1+ |
| 2001 09 18 | 699 | 0.3− | 1.0− | 2001 09 27 | 704 | 0.2+ | 0.7+ | 2006 10 03 | 291 | 0.3− | 0.1+ |
| 2001 09 18 | 699 | 0.3+ | 0.1+ | 2001 09 27 | 704 | 0.2+ | 0.1+ | 2006 10 03 | 291 | 0.1− | 0.0 |
| 2001 09 18 | 699 | 0.6− | 0.6+ | 2001 09 27 | 704 | 1.1− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2001 10 20 | 695 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 0.2− | 2001 10 20 | 695 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.9+ | 1.0− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.3− | 0.3+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 1.3+ | 1.3+ | 2004 04 14 | 691 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.9− | 2006 10 20 | 691 | 0.2+ | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.6− | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 09 26 | 704 | 1.1− | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 1.4− | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 1.2− | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.3− | | | | |

**2001 SF$_{205}$ = 2000 JL$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 5.52751 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27370036 | $\omega$ | 331.35137 | | −0.74687732 | | −0.66447682 | |
| $a$ | 2.3493757 | $\Omega$ | 166.91027 | | +0.62947668 | | −0.71881315 | |
| $e$ | 0.0483007 | $i$ | 6.43772 | | +0.21432074 | | −0.20439719 | |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 13 | 691 | 0.1− | 0.0 | 2001 09 26 | 704 | 0.3+ | 0.2+ | 2003 02 22 | 699 | 0.8+ | 0.6− |
| 2000 05 13 | 691 | 0.1− | 0.1+ | 2002 11 13 | 645 | 0.2− | 0.1− | 2003 02 22 | 644 | 0.4+ | 1.1+ |
| 2000 05 13 | 691 | 0.1− | 0.1+ | 2002 11 13 | 645 | 0.2− | 0.1− | 2003 02 22 | 699 | 1.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.1+ | 0.9+ | 2003 01 28 | 704 | 1.7+ | 2.0+ | 2003 02 22 | 644 | 0.6+ | 1.0+ |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2003 01 28 | 704 | 1.3+ | 1.3+ | 2003 03 12 | 644 | 0.5+ | 0.3+ |
| 2001 09 19 | 704 | 0.9− | 1.2+ | 2003 01 28 | 704 | 1.7+ | 2.1+ | 2003 03 12 | 644 | 0.5+ | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.7− | 2003 02 03 | 699 | 0.9− | 2.3− | 2003 03 12 | 644 | 0.4+ | 0.5+ |
| 2001 09 19 | 704 | 0.3+ | 0.7+ | 2003 02 03 | 699 | 1.5− | 0.7− | 2005 11 10 | 703 | 0.6− | 0.4− |
| 2001 09 21 | 704 | 0.1− | 0.1+ | 2003 02 03 | 699 | 0.9− | 0.9− | 2005 11 10 | 703 | 0.2+ | 0.5+ |
| 2001 09 21 | 704 | 0.3+ | 0.8+ | 2003 02 03 | 699 | 0.8− | 0.5+ | 2005 11 10 | 703 | 0.0 | 0.9− |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2003 02 07 | 644 | 0.1+ | 0.2+ | 2005 11 10 | 703 | 0.8− | 2.5− |
| 2001 09 21 | 704 | 0.0 | 0.0 | 2003 02 07 | 644 | 0.3+ | 0.3+ | 2005 11 26 | 703 | 1.9+ | 1.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.8+ | 2003 02 07 | 644 | 0.0 | 0.2+ | 2005 11 26 | 703 | 1.0− | 0.1+ |
| 2001 09 26 | 704 | 0.5+ | 0.0 | 2003 02 22 | 644 | 0.3+ | 1.1+ | 2005 11 26 | 703 | 0.2+ | 0.6+ |
| 2001 09 26 | 704 | 0.6− | 0.4+ | 2003 02 22 | 699 | 0.8+ | 0.1+ | 2005 11 26 | 703 | 0.1− | 0.5− |
| 2001 09 26 | 704 | 0.0 | 0.9+ | 2003 02 22 | 699 | 0.4− | 0.4+ | | | | |

**2001 SJ$_{206}$ = 2005 YS$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 353.67214 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28503865 | $\omega$ | 168.81797 | | −0.98178346 | | −0.19000267 | |
| $a$ | 2.2866527 | $\Omega$ | 0.23073 | | +0.16385228 | | −0.84793066 | |
| $e$ | 0.0668390 | $i$ | 6.83563 | | +0.09619602 | | −0.49488644 | |
| $P$ | 3.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 09 | 704 | 0.5− | 1.0− | 2001 09 24 | 704 | 0.9− | 0.3+ | 2003 03 06 | 704 | 0.7− | 0.2− |
| 2000 05 09 | 704 | 0.2− | 0.4− | 2001 09 24 | 704 | 0.6− | 1.2+ | 2003 03 06 | 704 | 0.6+ | 0.6+ |
| 2000 05 09 | 704 | 0.7+ | 1.0+ | 2001 09 26 | 704 | 0.6− | 0.5+ | 2005 12 22 | 703 | 0.2+ | 1.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 09 | 704 | 0.0 | 1.5+ | 2001 09 26 | 704 | 0.0 | 1.4+ | 2005 12 22 | 703 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.6− | 0.3+ | 2001 09 26 | 704 | 0.6− | 0.4− | 2005 12 22 | 703 | 0.4+ | 0.6− |
| 2001 09 19 | 704 | 0.1− | 1.3+ | 2001 09 26 | 704 | 0.4+ | 0.4+ | 2005 12 22 | 703 | 0.7− | 0.7− |
| 2001 09 19 | 704 | 0.9− | 0.3+ | 2003 01 27 | 704 | 1.5+ | 2.4+ | 2005 12 24 | 704 | 0.4+ | 1.1− |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2003 01 27 | 704 | 1.0+ | 1.8+ | 2005 12 24 | 704 | 1.2+ | 0.6− |
| 2001 09 19 | 704 | 0.7− | 1.1+ | 2003 01 27 | 704 | 0.9+ | 0.2+ | 2005 12 24 | 704 | 0.0 | 1.4− |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2003 01 27 | 704 | 0.2+ | 0.6+ | 2005 12 24 | 704 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2003 02 09 | 644 | 0.2− | 0.5+ | 2005 12 31 | 703 | 0.8− | 0.6− |
| 2001 09 21 | 704 | 0.7+ | 0.4− | 2003 02 09 | 644 | 0.0 | 0.7+ | 2005 12 31 | 703 | 0.6+ | 0.4− |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2003 02 09 | 644 | 0.1+ | 0.7+ | 2005 12 31 | 703 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.4+ | 0.9+ | 2003 03 06 | 704 | 0.2+ | 0.1+ | 2005 12 31 | 703 | 0.3− | 1.0− |
| 2001 09 24 | 704 | 0.6− | 1.2+ | 2003 03 06 | 704 | 0.2− | 0.5+ | | | | |
| 2001 09 24 | 704 | 0.3− | 0.1+ | 2003 03 06 | 704 | 1.4+ | 0.8+ | | | | |

**2001 SS$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.22533 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21238342 | $\omega$ | 344.29043 | | +0.99809476 | −0.05426095 | |
| $a$ | 2.7822041 | $\Omega$ | 18.89375 | | +0.06169962 | +0.87789068 | |
| $e$ | 0.1685174 | $i$ | 5.20387 | | −0.00001670 | +0.47577694 | |
| $P$ | 4.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.7− | 2001 09 26 | 704 | 1.0− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2001 10 20 | 704 | (0.3+ | 1.6+) | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.8− | 0.1+ | 2001 10 20 | 704 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2001 10 20 | 704 | 0.7− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.8+ | 0.2+ | 2001 11 18 | 645 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 1.0− | 0.5− | 2001 11 18 | 645 | 0.1+ | 0.1− | 2006 11 02 | 691 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.2+ | 0.1− | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 11 02 | 691 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.7− | 1.1+ | 2001 12 10 | 645 | 0.0 | 0.0 | 2006 11 02 | 691 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.3− | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.6+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.5+ |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.3− | | | | |
| 2001 09 26 | 704 | 0.9+ | 0.5+ | 2006 10 19 | 691 | 0.3+ | 0.3+ | | | | |

**2001 SC$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.48620 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18158837 | $\omega$ | 356.75289 | | +0.97928850 | −0.19967189 | |
| $a$ | 3.0884746 | $\Omega$ | 14.89325 | | +0.18857909 | +0.83919211 | |
| $e$ | 0.1318062 | $i$ | 7.49904 | | +0.07370178 | +0.50585348 | |
| $P$ | 5.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 09 | 691 | 0.4− | 0.2+ | 2001 09 21 | 704 | 0.8− | 0.4− | 2001 11 14 | 291 | 0.3− | 0.5+ |
| 1996 12 09 | 691 | 0.4+ | 0.1− | 2001 09 21 | 704 | 0.1− | 0.0 | 2001 11 14 | 291 | 0.4− | 0.3+ |
| 1996 12 09 | 691 | 0.0 | 0.1− | 2001 09 26 | 704 | (2.1− | 0.7+) | 2001 11 18 | 645 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 1.4+ | 0.1− | 2001 09 26 | 704 | (2.1− | 0.2+) | 2001 11 18 | 645 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.2+ | 1.7+ | 2001 09 26 | 704 | (2.1− | 0.9+) | 2001 12 10 | 645 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.7+ | 0.5+ | 2001 10 14 | 645 | 0.0 | 0.0 | 2001 12 10 | 645 | 0.2+ | 0.2− |
| 2001 09 19 | 704 | 1.2+ | 0.5+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2004 03 15 | 691 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.6+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2004 03 15 | 691 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2004 03 15 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 1.0+ | 2001 11 14 | 291 | 0.7− | 0.5+ | | | | |

**2001 SC$_{211}$ = 2006 SX$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.93387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20532362 | $\omega$ | 317.35829 | | +0.95518663 | −0.29572169 | |
| $a$ | 2.8456191 | $\Omega$ | 59.84679 | | +0.27544887 | +0.87201327 | |
| $e$ | 0.0601929 | $i$ | 0.85681 | | +0.10838093 | +0.39005325 | |
| $P$ | 4.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 07 | 691 | 0.2− | 0.2− | 2001 09 27 | 704 | (1.2+ | 1.7+) | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1996 09 07 | 691 | 0.1− | 0.2+ | 2001 09 27 | 704 | (0.1− | 1.8+) | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 1996 09 07 | 691 | 0.5+ | 0.2− | 2001 09 27 | 704 | (0.2− | 1.9+) | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2001 09 19 | 704 | 0.7+ | 0.1− | 2006 09 24 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2001 09 19 | 704 | 1.2+ | 0.8− | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2001 09 19 | 704 | (0.4+ | 1.7−) | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 0.5− | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.5− | 0.6− |
| 2001 09 19 | 691 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 691 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2001 09 19 | 691 | 0.6− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.6+ | 0.3− | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.5+ | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2006 10 15 | 691 | 0.9+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 09 24 | 704 | (0.3+ | 1.7+) | 2006 10 21 | 703 | 0.7+ | 0.9− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 09 24 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.9+ | 1.5− | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 2001 09 24 | 704 | (0.2− | 2.4+) | 2006 10 21 | 703 | 0.5− | 1.0− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2001 09 24 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.8− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 09 27 | 704 | (0.0 | 1.8+) | 2006 10 21 | 644 | 0.6+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.2− |

**2001 SA$_{212}$ = 2006 RX$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.93713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19812103 | $\omega$ | 166.15304 | | +0.95899867 | +0.28321290 | |
| $a$ | 2.9141752 | $\Omega$ | 177.32439 | | −0.27679702 | +0.94398658 | |
| $e$ | 0.2713580 | $i$ | 13.10335 | | −0.06086834 | +0.16935109 | |
| $P$ | 4.97 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 13 | 691 | 0.1− | 0.5− | 2001 09 21 | 704 | 0.3− | 1.1+ | 2006 09 19 | 691 | 0.3+ | 0.1− |
| 1991 09 13 | 691 | 0.0 | 0.5− | 2001 09 21 | 704 | 0.8+ | 1.3+ | 2006 09 20 | 644 | 0.4+ | 0.0 |
| 1991 09 13 | 691 | 0.3+ | 0.6− | 2001 09 26 | 704 | 0.4− | 0.8− | 2006 09 20 | 644 | 0.5+ | 0.6+ |
| 2001 08 24 | 704 | 0.6− | 0.3+ | 2001 09 26 | 704 | 0.6− | 0.3− | 2006 09 20 | 644 | 0.4+ | 0.2+ |
| 2001 08 24 | 704 | 0.1− | 0.4− | 2001 09 26 | 704 | 0.8− | 0.4− | 2006 09 26 | 704 | 0.4− | 0.1− |
| 2001 08 24 | 704 | 1.2+ | 0.6+ | 2001 09 26 | 704 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.0 | 0.2+ |
| 2001 09 11 | 699 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.8+ | 2006 09 26 | 704 | (1.0− | 1.6−) |
| 2001 09 11 | 333 | 0.0 | 0.6− | 2006 08 28 | 703 | 0.9+ | 0.7+ | 2006 09 26 | 704 | 0.3− | 0.9− |
| 2001 09 11 | 699 | 0.8+ | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.8− | 1.0− |
| 2001 09 11 | 699 | 1.2+ | 0.9+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.4− |
| 2001 09 11 | 333 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.4− |
| 2001 09 11 | 699 | 0.1+ | 1.4+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.3− |
| 2001 09 19 | 704 | 0.6− | 1.0+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.6− | 0.3− |
| 2001 09 19 | 704 | 0.1− | 1.2+ | 2006 09 18 | 699 | 1.2+ | 1.1− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2006 09 18 | 699 | 0.8+ | 0.6− | 2006 10 12 | 644 | 0.3− | 0.5− |
| 2001 09 19 | 704 | 0.8− | 0.9+ | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 10 20 | 682 | (2.2− | 1.0−) |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2006 09 18 | 699 | (1.0+ | 1.6+) | 2006 10 20 | 682 | 0.6− | 1.0− |
| 2001 09 21 | 704 | 0.2− | 1.2+ | 2006 09 19 | 691 | 0.4+ | 0.2+ | | | | |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.0 | | | | |

**2001 SP$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.68001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24454473 | $\omega$ | 316.67805 | | +0.91450814 | +0.40340280 | |
| $a$ | 2.5325839 | $\Omega$ | 19.59490 | | −0.34172656 | +0.81082312 | |
| $e$ | 0.2690707 | $i$ | 5.24824 | | −0.21655906 | +0.42406609 | |
| $P$ | 4.03 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2001 10 20 | 704 | 1.0+ | 0.4+ | 2005 09 23 | 703 | 0.0 | 0.8− |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2001 10 20 | 704 | 0.4− | 0.1− | 2005 09 23 | 703 | 0.1+ | 1.2− |
| 2001 09 19 | 704 | 0.2+ | 0.5+ | 2001 10 20 | 704 | (0.2+ | 2.4+) | 2005 09 23 | 703 | 0.6+ | 0.4+ |
| 2001 09 19 | 704 | 0.3+ | 0.8+ | 2001 10 20 | 704 | 0.4− | 0.9+ | 2005 10 01 | 704 | 1.7+ | 0.7+ |
| 2001 09 21 | 704 | 0.5+ | 0.8− | 2001 11 17 | 291 | 0.4− | 0.0 | 2005 10 01 | 704 | 0.3+ | 0.3+ |
| 2001 09 21 | 704 | 0.6+ | 0.4− | 2001 11 17 | 291 | 0.7− | 0.2− | 2005 10 01 | 704 | 0.8+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1− | 0.8− | 2001 11 17 | 291 | 0.2+ | 0.4+ | 2005 10 01 | 704 | 1.4− | 0.0 |
| 2001 09 21 | 704 | 1.2+ | 0.6− | 2005 09 06 | 699 | 1.9− | 0.8+ | 2005 10 06 | G96 | 1.0+ | 0.3− |
| 2001 09 26 | 704 | 0.2+ | 1.2− | 2005 09 06 | 699 | 1.1− | 1.0− | 2005 10 06 | G96 | 0.6+ | 0.1− |
| 2001 09 26 | 704 | 0.1+ | 0.4− | 2005 09 06 | 699 | 0.6+ | 1.1+ | 2005 10 06 | G96 | 0.6+ | 0.3− |
| 2001 09 26 | 704 | 0.2− | 0.1+ | 2005 09 06 | 699 | 1.8− | 0.7+ | 2005 10 06 | G96 | 0.8+ | 0.2− |
| 2001 09 26 | 704 | 0.2+ | 0.5− | 2005 09 13 | 691 | 0.4+ | 0.2− | 2005 10 25 | G96 | 0.6+ | 0.2− |
| 2001 10 11 | 644 | 0.3− | 0.6+ | 2005 09 13 | 691 | 0.3+ | 0.2− | 2005 10 25 | G96 | 0.3+ | 0.1− |
| 2001 10 11 | 644 | 0.3− | 0.1+ | 2005 09 13 | 691 | 1.2− | 0.4+ | 2005 10 25 | G96 | 0.6+ | 0.1− |
| 2001 10 11 | 644 | 0.4− | 0.2+ | 2005 09 23 | 703 | 0.5− | 0.2+ | 2005 10 25 | G96 | 0.5+ | 0.3− |

**2001 SF$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.91576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21706360 | $\omega$ | 232.37763 | | +0.86613976 | | −0.49578722 |
| $a$ | 2.7420669 | $\Omega$ | 157.13572 | | +0.49431646 | | +0.83106349 |
| $e$ | 0.2053899 | $i$ | 9.36432 | | +0.07384551 | | +0.25204864 |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.6+ | 1.9+ | 2001 09 21 | 704 | 0.6− | 0.3− | 2001 10 20 | 704 | 0.5− | 1.3− |
| 2001 07 19 | 644 | 0.2− | 1.8+ | 2001 09 21 | 704 | 0.4− | 0.4+ | 2001 10 20 | 704 | 0.1− | 0.9− |
| 2001 07 19 | 644 | 0.2+ | 2.0+ | 2001 09 21 | 704 | 0.4− | 0.8+ | 2001 10 20 | 704 | 0.8+ | 0.5− |
| 2001 09 18 | 699 | 0.0 | 0.1− | 2001 09 27 | 644 | 0.3− | 0.9+ | 2001 10 24 | 644 | 0.7+ | 0.3− |
| 2001 09 18 | 699 | 0.4− | 0.7+ | 2001 09 27 | 644 | 0.2− | 1.0+ | 2001 10 24 | 644 | 0.7+ | 0.1+ |
| 2001 09 18 | 699 | 0.7− | 0.4− | 2001 09 27 | 644 | 0.2− | 0.9+ | 2001 10 24 | 644 | 0.9+ | 0.2− |
| 2001 09 18 | 699 | 0.1− | 1.0− | 2001 10 11 | 704 | 0.0 | 1.0− | 2003 03 09 | 291 | 0.4+ | 0.3+ |
| 2001 09 19 | 704 | 0.6+ | 0.1− | 2001 10 11 | 704 | 0.1− | 0.2+ | 2003 03 09 | 291 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2001 10 11 | 704 | 0.3+ | 0.3− | 2003 03 09 | 291 | 0.2+ | 0.8+ |
| 2001 09 19 | 704 | 0.5+ | 0.6− | 2001 10 11 | 704 | 0.1− | 0.2− | 2006 11 17 | G92 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.4− | 0.1− | 2001 10 11 | 704 | 0.4+ | 0.2+ | 2006 11 17 | G92 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.3− | 2001 10 16 | 644 | 0.4− | 0.3+ | 2006 11 17 | G92 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.4− | 1.3+ | 2001 10 16 | 644 | 0.7− | 0.2+ | | | | |
| 2001 09 21 | 704 | 0.6+ | 0.1+ | 2001 10 16 | 644 | 0.5− | 0.2+ | | | | |

**2001 SH$_{215}$ = 2006 VE$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.25534 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21034983 | $\omega$ | 204.88912 | | +0.98106104 | | +0.17935414 |
| $a$ | 2.8001069 | $\Omega$ | 144.53403 | | −0.14981042 | | +0.94197774 |
| $e$ | 0.2316583 | $i$ | 7.24300 | | −0.12278467 | | +0.28374288 |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 01 | 691 | 0.3− | 0.3− | 2001 09 21 | 704 | 0.6− | 0.2− | 2001 10 24 | 644 | 0.1− | 0.2+ |
| 1992 12 01 | 691 | 0.1− | 0.1− | 2001 09 27 | 644 | 0.9− | 0.2+ | 2006 11 13 | 703 | 0.5− | 0.4− |
| 1992 12 01 | 691 | 0.5+ | 0.2− | 2001 09 27 | 644 | 0.6− | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.8+ |
| 2001 08 27 | 699 | 0.5− | 0.3− | 2001 09 27 | 644 | 0.8− | 0.1− | 2006 11 13 | 703 | 0.7− | 0.0 |
| 2001 08 27 | 699 | 0.8+ | 0.5+ | 2001 10 08 | 644 | 0.3+ | 0.3− | 2006 11 13 | 703 | 1.2− | 0.1+ |
| 2001 08 27 | 699 | 0.6+ | 0.8− | 2001 10 08 | 644 | 0.1− | 0.2− | 2006 11 15 | 224 | 1.0− | 0.6+ |
| 2001 08 27 | 699 | 0.6− | 0.2+ | 2001 10 08 | 644 | 0.3+ | 0.1− | 2006 11 16 | 224 | 0.6+ | 0.3− |
| 2001 09 18 | 699 | 0.3+ | 0.2+ | 2001 10 11 | 704 | 0.4+ | 0.6− | 2006 11 16 | 224 | 0.1− | 0.3+ |
| 2001 09 18 | 699 | 0.6− | 0.3+ | 2001 10 11 | 704 | 0.3+ | 0.0 | 2006 11 19 | 224 | 0.2+ | 0.0 |
| 2001 09 18 | 699 | 0.8− | 1.0− | 2001 10 11 | 704 | 0.1− | 0.4− | 2006 11 19 | 224 | 0.3− | 0.3− |
| 2001 09 18 | 699 | 0.7− | 0.4− | 2001 10 11 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 224 | 0.3− | 0.5− |
| 2001 09 19 | 704 | 0.2− | 0.3− | 2001 10 19 | 699 | (1.9− | 0.7+) | 2006 11 19 | 703 | 1.2− | 0.3+ |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2001 10 19 | 699 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 1.8+ | 0.4+ |
| 2001 09 19 | 704 | 1.4+ | 0.5+ | 2001 10 19 | 699 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.7+ | 1.0+ |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2001 10 19 | 699 | 0.3+ | 0.9+ | 2006 11 19 | 703 | 1.6+ | 0.3+ |
| 2001 09 21 | 704 | 0.3+ | 0.8− | 2001 10 24 | 644 | 0.1+ | 0.3+ | | | | |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2001 10 24 | 644 | 0.5+ | 0.4+ | | | | |

**2001 SL$_{216}$ = 2006 SW$_{358}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.25071 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20710256 | $\omega$ | 230.18423 | | +0.84602541 | | −0.53197018 |
| $a$ | 2.8293004 | $\Omega$ | 161.86728 | | +0.51725149 | | +0.80294138 |
| $e$ | 0.0794481 | $i$ | 6.51971 | | +0.12919715 | | +0.26887333 |
| $P$ | 4.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.2+ | 0.8+ | 2001 09 21 | 704 | 0.3− | 1.0− | 2001 09 27 | 704 | 0.3+ | 0.2+ |
| 2001 08 24 | 704 | 0.5− | 0.4− | 2001 09 21 | 704 | 0.5− | 0.4− | 2001 09 27 | 704 | 0.3− | 1.2+ |
| 2001 08 24 | 704 | 0.1+ | 0.2+ | 2001 09 21 | 704 | 0.0 | 0.6− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.7+ | 0.7+ | 2001 09 21 | 704 | 0.0 | 0.6− | 2006 09 30 | 703 | 0.7− | 0.1− |
| 2001 09 19 | 704 | 0.3− | 1.3− | 2001 09 21 | 704 | 0.1− | 0.4− | 2006 09 30 | 703 | 0.8− | 0.6+ |
| 2001 09 19 | 704 | 0.4+ | 0.1+ | 2001 09 26 | 704 | 0.4− | 1.5+ | 2006 09 30 | 703 | 0.8− | 0.6− |
| 2001 09 19 | 704 | 1.0− | 1.7− | 2001 09 26 | 704 | 1.9+ | 0.2+ | 2006 10 02 | G96 | 0.8+ | 0.2+ |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2001 09 26 | 704 | 0.8+ | 0.5+ | 2006 10 02 | G96 | 0.7+ | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2001 09 26 | 704 | 0.3+ | 0.9+ | 2006 10 02 | G96 | 0.8+ | 0.0 |
| 2001 09 19 | 704 | 0.4+ | 0.8+ | 2001 09 27 | 704 | 1.4− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.1− |

**2001 SX$_{216}$ = 2006 RL$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.72503 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19866558 | $\omega$ | 97.04425 | | +0.07837339 | | +0.99688506 |
| $a$ | 2.9088476 | $\Omega$ | 177.40142 | | −0.97413935 | | +0.07845973 |
| $e$ | 0.0653549 | $i$ | 11.21702 | | −0.21192014 | | +0.00801503 |
| $P$ | 4.96 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5+ | 0.9− | 2001 09 26 | 704 | (0.3+ | 1.9+) | 2006 09 23 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.5− | 2001 09 26 | 704 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2001 09 26 | 704 | 0.5+ | 1.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 1.3+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.8− | 0.4− | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2001 09 21 | 704 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.5− | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.9− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 30 | G92 | 0.4+ | 1.1− |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 09 30 | G92 | 1.1− | 0.1+ |
| 2001 09 26 | 704 | 0.2+ | 0.8+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G92 | 0.1+ | 0.3+ |

**2001 SM$_{218}$ = 2006 RX$_{28}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.77038 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18007752 | $\omega$ | 273.52808 | | −0.00792723 | | −0.99986927 |
| $a$ | 3.1057253 | $\Omega$ | 176.82198 | | +0.98835412 | | −0.00997608 |
| $e$ | 0.2053039 | $i$ | 14.72628 | | +0.15196478 | | +0.01272473 |
| $P$ | 5.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2001 09 23 | 704 | 0.3− | 0.6+ | 2006 09 15 | 691 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.8+ | 0.6− | 2001 09 23 | 704 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.3− | 0.4− |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2001 09 23 | 704 | 0.7− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 1.1+ | 0.3+ | 2001 09 26 | 704 | 0.1− | 0.8− | 2006 09 17 | 691 | 0.5− | 0.4− |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2001 09 26 | 704 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.5− | 2001 09 26 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 691 | 0.4+ | 0.3+ |
| 2001 09 21 | 704 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.4+ | 0.2− |
| 2001 09 23 | 704 | 1.0− | 0.1− | 2006 09 15 | 691 | 0.5+ | 0.4+ | | | | |

**2001 SG$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.97027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27117749 | $\omega$ | 175.28470 | | +0.94192073 | +0.33575650 | |
| $a$ | 2.3639246 | $\Omega$ | 165.09052 | | −0.30903982 | +0.87504109 | |
| $e$ | 0.2043856 | $i$ | 1.61989 | | −0.13145234 | +0.34866985 | |
| $P$ | 3.63 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.5− | 2001 09 26 | 704 | 0.4+ | 0.5− | 2005 11 30 | G96 | 0.2+ | 0.5+ |
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2001 09 26 | 704 | 0.8+ | 0.5+ | 2005 11 30 | G96 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 1.0− | 0.2+ | 2001 09 26 | 704 | 0.7− | 0.0 | 2005 11 30 | G96 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.1− | 0.0 | 2001 11 14 | 291 | 0.1− | 0.6+ | 2005 11 30 | G96 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.2+ | 0.0 | 2001 11 14 | 291 | 0.0 | 0.3+ | 2005 12 29 | G96 | 0.8− | 0.6+ |
| 2001 09 21 | 704 | 0.0 | 0.0 | 2001 11 14 | 291 | 0.1+ | 0.4+ | 2005 12 29 | G96 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 1.0+ | 2001 11 18 | 645 | 0.0 | 0.2− | 2005 12 29 | G96 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2001 11 18 | 645 | 0.0 | 0.2− | 2005 12 29 | G96 | 0.5+ | 0.2+ |

**2001 SU$_{220}$ = 2006 RB$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.57133 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19158239 | $\omega$ | 209.53900 | | +0.91755282 | −0.39700436 | |
| $a$ | 2.9801102 | $\Omega$ | 173.73041 | | +0.39275234 | +0.89631565 | |
| $e$ | 0.1626977 | $i$ | 11.62624 | | +0.06198718 | +0.19749887 | |
| $P$ | 5.14 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 333 | 0.4− | 0.8− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 19 | 699 | (2.0− | 1.3−) |
| 2001 09 12 | 333 | 0.6+ | 0.6− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 2001 09 12 | 695 | 0.6+ | 0.0 | 2006 08 19 | 691 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.5− | 0.9+ |
| 2001 09 12 | 695 | (1.6+ | 1.1+) | 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.3+ |
| 2001 09 19 | 704 | 0.5+ | 0.6+ | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 09 19 | 699 | 1.0+ | 1.0+ |
| 2001 09 19 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 1.5+ |
| 2001 09 19 | 704 | (1.2+ | 2.8+) | 2006 08 28 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 1.4+ | 0.4+ | 2006 08 28 | 691 | 0.7− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.8− |
| 2001 09 21 | 704 | 0.6− | 0.4− | 2006 09 12 | 703 | (1.6+ | 1.6+) | 2006 09 25 | G96 | 0.4+ | 0.6− |
| 2001 09 21 | 704 | 0.7− | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.7+ | 2006 09 25 | G96 | 0.3− | 0.7− |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2006 09 12 | 703 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.5− |
| 2001 09 23 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | (1.1− | 2.0+) | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2001 09 23 | 704 | 1.1− | 0.4− | 2006 09 19 | 699 | (1.8− | 1.3−) | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 09 23 | 704 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.7+ | 2006 10 20 | G96 | 0.2+ | 0.5− |
| 2001 09 23 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 703 | (1.0+ | 1.6−) | 2006 10 20 | G96 | 0.2+ | 1.0− |
| 2001 09 23 | 704 | 0.5− | 0.4+ | 2006 09 19 | 699 | (1.2+ | 2.8+) | | | | |

**2001 SW$_{220}$ = 2006 SD$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.59265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19555011 | $\omega$ | 64.45919 | | +0.35372792 | −0.93497503 | |
| $a$ | 2.9396616 | $\Omega$ | 5.04955 | | +0.71363933 | +0.25151230 | |
| $e$ | 0.1307340 | $i$ | 17.47078 | | +0.60464491 | +0.25012649 | |
| $P$ | 5.04 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.8− | 0.3+ | 2001 11 17 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.7− |
| 2001 09 19 | 704 | 0.8− | 0.9− | 2001 11 17 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 0.6− | 0.1− | 2001 11 17 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2001 09 19 | 704 | 0.7− | 1.3− | 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 09 28 | 691 | 0.4+ | 0.2− |
| 2001 09 21 | 704 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.4+ | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | (2.0+ | 1.6+) | 2006 09 23 | 691 | 0.3− | 0.3+ | 2006 10 23 | G96 | 0.7− | 0.5− |
| 2001 10 11 | 644 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.7− |
| 2001 10 11 | 644 | 0.2+ | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2001 10 11 | 644 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.7− | 2006 10 23 | G96 | 0.2− | 0.6− |

**2001 SD$_{221}$ = 2006 RQ$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.14243 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18992605 | $\omega$ | 305.20912 | | +0.70014087 | +0.71335208 | |
| $a$ | 2.9974114 | $\Omega$ | 9.41778 | | −0.57936780 | +0.59258224 | |
| $e$ | 0.0986303 | $i$ | 10.75014 | | −0.41729572 | +0.37413246 | |
| $P$ | 5.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.1− | 0.1+ | 2001 10 11 | 644 | 0.6− | 0.4+ | 2001 10 21 | 704 | 1.3+ | 0.9+ |
| 1996 10 04 | 691 | 0.2− | 0.2− | 2001 10 11 | 644 | 0.6− | 0.3+ | 2001 10 21 | 704 | 0.0 | 1.0+ |
| 1996 10 04 | 691 | 0.0 | 0.4+ | 2001 10 14 | 691 | 0.2+ | 0.2− | 2006 09 14 | 703 | 1.3− | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 1.0− | 2001 10 14 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2001 09 19 | 704 | 0.6− | 0.6− | 2001 10 14 | 691 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.2− | 0.7+ |
| 2001 09 19 | 704 | 1.4− | 0.4− | 2001 10 15 | 691 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 0.2− | 2001 10 15 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.2− |
| 2001 09 21 | 704 | 0.3+ | 0.8− | 2001 10 15 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | (1.8+ | 2.5+) |
| 2001 09 21 | 704 | 1.3+ | 0.6− | 2001 10 21 | 704 | 0.6− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.4+ | 2001 10 21 | 704 | 1.0− | 0.4− | 2006 09 19 | 699 | (2.2+ | 1.9+) |
| 2001 10 11 | 644 | 0.3− | 0.3+ | 2001 10 21 | 704 | 0.4+ | 0.0 | | | | |

**2001 SA$_{222}$ = 2006 WB$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.62323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21241314 | $\omega$ | 212.22899 | | +0.98911619 | −0.14301350 | |
| $a$ | 2.7819445 | $\Omega$ | 155.92136 | | +0.14644825 | +0.93419027 | |
| $e$ | 0.2171588 | $i$ | 4.86313 | | +0.01421549 | +0.32685728 | |
| $P$ | 4.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.0 | 0.4− | 2001 09 21 | 704 | (0.8− | 2.0+) | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 695 | 0.3+ | 0.1+ | 2001 09 21 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.0 | 0.1− | 2001 09 23 | 704 | 0.2+ | 0.4− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2001 09 23 | 704 | 0.2− | 0.8− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2001 09 19 | 704 | 0.2− | 0.7+ | 2001 09 23 | 704 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2001 09 23 | 704 | 0.1+ | 0.6− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2001 09 23 | 704 | 0.5+ | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.5− |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.5− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.3+ | 2006 11 24 | 691 | 0.2− | 0.4+ |

**2001 SR$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.37480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21071410 | $\omega$ | 311.12167 | | +0.81336516 | +0.58136093 | |
| $a$ | 2.7968788 | $\Omega$ | 13.37779 | | −0.50224400 | +0.72026267 | |
| $e$ | 0.0415889 | $i$ | 5.29903 | | −0.29357806 | +0.37847214 | |
| $P$ | 4.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2001 10 13 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.7− | 0.6− | 2001 10 13 | 691 | 0.4+ | 0.0 | 2006 10 27 | 703 | 0.7+ | 1.0− |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 10 13 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.7+ | 0.2− |
| 2001 09 19 | 704 | 0.2+ | 0.3− | 2001 10 21 | 704 | 0.1− | 0.6− | 2006 10 27 | 703 | (0.2− | 3.0−) |
| 2001 09 21 | 704 | 0.0 | 0.6− | 2001 10 21 | 704 | 0.4+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 1.0− |
| 2001 09 21 | 704 | 0.0 | 0.5+ | 2001 10 21 | 704 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2001 10 21 | 704 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.4+ | 0.4+ |
| 2001 09 21 | 704 | 0.2+ | 0.6− | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.8+ | 0.8+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2001 09 26 | 704 | 0.7− | 0.5− | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 1.1− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.4− | 0.1+ |
| 2001 09 26 | 704 | 0.2− | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.4− | 0.0 |
| 2001 10 11 | 644 | 0.4− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2001 10 11 | 644 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.0 | | | | |
| 2001 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 691 | 0.5− | 0.1− | | | | |

**2001 SD$_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.17032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19359640 | $\omega$ | 208.88018 | | +0.83517604 | −0.54994463 | |
| $a$ | 2.9594059 | $\Omega$ | 184.49910 | | +0.51912412 | +0.79214755 | |
| $e$ | 0.0577624 | $i$ | 4.73269 | | +0.18163461 | +0.26469445 | |
| $P$ | 5.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5+ | 0.5+ | 2001 10 13 | 704 | 0.4+ | 1.4− | 2006 10 02 | 691 | 0.0 | 0.1+ | |
| 2001 09 19 | 704 | 0.9+ | 0.1+ | 2001 10 13 | 704 | (0.2+ | 1.9−) | 2006 10 02 | 691 | 0.2− | 0.5+ | |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2001 10 16 | 691 | 0.5+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.3+ | |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2001 10 16 | 691 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.1− | |
| 2001 09 20 | 691 | 0.3− | 0.1− | 2001 10 16 | 691 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.2− | 0.0 | |
| 2001 09 20 | 691 | 0.2− | 0.2− | 2001 10 20 | 704 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.8+ | 0.1− | |
| 2001 09 20 | 691 | 0.7− | 0.1− | 2001 10 20 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.8+ | |
| 2001 09 21 | 704 | 1.4+ | 1.0+ | 2001 10 20 | 704 | (2.3+ | 1.2+) | 2006 10 17 | G96 | 0.3+ | 0.1+ | |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2001 10 20 | 704 | 0.8− | 1.2+ | 2006 10 17 | G96 | 0.3− | 0.9+ | |
| 2001 09 21 | 704 | 0.9+ | 0.9+ | 2001 10 20 | 704 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.5− | |
| 2001 09 21 | 704 | 0.8+ | 0.4− | 2001 10 23 | 291 | 0.3+ | 0.1− | 2006 10 17 | G96 | (1.8+ | 0.4+) | |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2001 10 23 | 291 | 0.5− | 0.2− | 2006 10 17 | 701 | 0.3+ | 0.1− | |
| 2001 10 11 | 644 | 0.2+ | 0.2+ | 2001 10 23 | 291 | 0.6− | 0.0 | 2006 10 17 | 701 | 0.5+ | 0.1+ | |
| 2001 10 11 | 644 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.5− | 2006 10 17 | 701 | 0.5− | 0.2+ | |
| 2001 10 11 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.2− | 2006 10 17 | 701 | 0.8+ | 0.0 | |
| 2001 10 12 | 699 | 0.7− | 0.9− | 2006 09 17 | 691 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.0 | |
| 2001 10 12 | 699 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 | |
| 2001 10 12 | 699 | 1.1− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.6+ | 0.0 | |
| 2001 10 12 | 699 | (1.8− | 0.6+) | 2006 09 25 | G96 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.6+ | 0.2− | |
| 2001 10 13 | 704 | 0.5+ | 0.8+ | 2006 09 25 | G96 | 0.4+ | 0.2− | | | | | |

**2001 SW$_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.85258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21003351 | $\omega$ | 260.69846 | | +0.87851624 | +0.47589189 | |
| $a$ | 2.8029175 | $\Omega$ | 70.87443 | | −0.41915824 | +0.80973783 | |
| $e$ | 0.2075592 | $i$ | 2.52762 | | −0.22916277 | +0.34329515 | |
| $P$ | 4.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 1.0− | 0.3+ | 2001 09 26 | 704 | 0.2+ | 1.1+ | 2006 11 10 | 691 | 0.5− | 0.0 | |
| 2001 09 11 | 699 | (0.2− | 1.9+) | 2001 10 15 | 704 | 0.9− | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.2+ | |
| 2001 09 11 | 691 | 0.4+ | 1.3− | 2001 10 15 | 704 | 0.9− | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.0 | |
| 2001 09 11 | 699 | 0.4− | 0.9− | 2001 10 15 | 704 | 0.1− | 0.5+ | 2006 11 14 | 691 | 0.4− | 0.0 | |
| 2001 09 11 | 691 | 0.0 | 0.1− | 2001 10 15 | 704 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.0 | |
| 2001 09 11 | 699 | (0.3+ | 1.6+) | 2001 10 15 | 704 | 0.3− | 0.5− | 2006 11 14 | 691 | 0.1+ | 0.1− | |
| 2001 09 11 | 691 | 0.1− | 0.2− | 2001 10 17 | 644 | 0.5− | 0.5+ | 2006 11 14 | 691 | 0.1− | 0.0 | |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2001 10 17 | 644 | 0.9− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1− | |
| 2001 09 19 | 704 | 0.7+ | 0.1+ | 2001 10 17 | 644 | 0.4− | 0.4+ | 2006 11 17 | 703 | (3.5+ | 0.2+) | |
| 2001 09 19 | 704 | 0.3− | 0.6− | 2001 10 20 | 704 | 0.2+ | 0.7+ | 2006 11 17 | 703 | 1.3− | 0.7− | |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2001 10 20 | 704 | 0.8+ | 1.0+ | 2006 11 17 | 703 | 0.2+ | 0.1− | |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2001 10 20 | 704 | 1.0+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 1.4+ | |
| 2001 09 21 | 691 | 0.1− | 0.0 | 2001 10 20 | 704 | 0.3− | 0.9+ | 2006 11 21 | 691 | 0.2+ | 0.0 | |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2001 10 20 | 704 | 1.4+ | 0.9+ | 2006 11 21 | 691 | 0.2+ | 0.0 | |
| 2001 09 21 | 691 | 0.2− | 0.1− | 2001 10 23 | 704 | 0.3+ | 1.1− | 2006 11 21 | 691 | 0.2+ | 0.2+ | |
| 2001 09 21 | 704 | 0.7− | 0.9+ | 2001 10 23 | 704 | (0.3− | 1.8−) | 2006 11 21 | 704 | 0.9+ | 0.3+ | |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2001 10 23 | 704 | 0.8+ | 0.7− | 2006 11 21 | 704 | 0.2− | 1.3+ | |
| 2001 09 21 | 691 | 0.2− | 0.1− | 2001 10 23 | 704 | 0.6− | 1.3− | 2006 11 21 | 704 | 1.0+ | 0.4− | |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4− | 0.2+ | |
| 2001 09 21 | 704 | 0.0 | 0.9+ | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.5− | |
| 2001 09 26 | 704 | 1.5+ | 0.6− | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1− | 0.1− | |
| 2001 09 26 | 704 | 0.2+ | 0.8+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.2− | |
| 2001 09 26 | 704 | 0.4− | 1.4+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.5− | |
| 2001 09 26 | 704 | 1.1+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.1− | |

**2001 SH$_{229}$ = 2006 SM$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.41310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20026706 | $\omega$ | 224.46012 | | +0.99327788 | −0.11195730 | |
| $a$ | 2.8933194 | $\Omega$ | 141.93916 | | +0.11497200 | +0.92472003 | |
| $e$ | 0.1361833 | $i$ | 2.73382 | | +0.01343499 | +0.36381099 | |
| $P$ | 4.92 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.4− | 0.9− | |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.5− | |
| 2001 09 19 | 704 | 0.5− | 0.8+ | 2006 10 01 | 691 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.4− | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.4− | |
| 2001 09 19 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.1+ | 1.3+ | |
| 2001 09 21 | 704 | 1.2+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 1.1+ | 0.9+ | |
| 2001 09 21 | 704 | 0.6+ | 0.6− | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.2− | 1.2− | |
| 2001 09 21 | 704 | 0.7+ | 0.6− | 2006 10 21 | 703 | 1.3+ | 0.9+ | 2006 11 13 | 703 | 1.4− | 0.0 | |
| 2001 09 21 | 704 | (1.7+ | 1.3−) | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.3− | |
| 2001 09 26 | 704 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2− | |
| 2001 09 26 | 704 | 1.3− | 0.2− | 2006 10 21 | 703 | 0.7+ | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.1− | |
| 2001 09 26 | 704 | 0.8− | 0.7− | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.3− | |
| 2001 09 26 | 704 | 0.4− | 1.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.6+ | 0.3− | |
| 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.4− | |
| 2006 09 23 | 691 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.4− | |
| 2006 09 23 | 691 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.3− | 0.3+ | |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.0 | 0.4+ | |
| 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.2− | 0.1+ | |
| 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1+ | | | | | |

**2001 SP$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.42491 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19911566 | $\omega$ | 220.53212 | | +0.39203639 | +0.91842172 | |
| $a$ | 2.9044625 | $\Omega$ | 72.60878 | | −0.82903037 | +0.37767724 | |
| $e$ | 0.0452018 | $i$ | 3.18379 | | −0.39876824 | +0.11773464 | |
| $P$ | 4.95 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5− | 0.2− | 2001 10 24 | 704 | 0.7− | 0.8+ | 2004 04 23 | 691 | 0.0 | 0.3+ | |
| 2001 09 19 | 704 | 0.5+ | 0.0 | 2001 10 24 | 704 | 0.6− | 0.7+ | 2006 09 18 | 699 | 0.6+ | 0.5+ | |
| 2001 09 19 | 704 | 0.3+ | 0.2− | 2001 10 25 | 644 | 1.1− | 0.1+ | 2006 09 18 | 699 | 0.8+ | 0.5+ | |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2001 10 25 | 644 | 0.6− | 0.2− | 2006 09 18 | 699 | 0.7+ | 0.1− | |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2001 10 25 | 644 | 1.0− | 0.1− | 2006 09 18 | 699 | (0.8+ | 2.4+) | |
| 2001 09 21 | 704 | 0.2− | 0.8+ | 2001 10 25 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ | |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2001 10 25 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2+ | |
| 2001 09 21 | 704 | (0.4− | 1.6+) | 2001 10 25 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.1+ | |
| 2001 09 21 | 704 | 0.4− | 1.2+ | 2001 11 20 | 704 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.2+ | |
| 2001 09 25 | 333 | 0.1+ | 0.6− | 2001 11 20 | 704 | 0.6+ | 0.5− | 2006 09 23 | 691 | 0.3− | 0.1+ | |
| 2001 09 25 | 333 | 0.8+ | 0.8+ | 2001 11 20 | 704 | 0.5+ | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.3+ | |
| 2001 09 25 | 333 | 1.1+ | 0.3− | 2001 11 20 | 704 | 0.7+ | 0.9+ | 2006 09 27 | 691 | 0.2− | 0.3+ | |
| 2001 09 26 | 333 | 0.3− | 0.3+ | 2003 01 08 | 704 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1+ | |
| 2001 09 26 | 333 | 0.3+ | 0.2+ | 2003 01 08 | 704 | 0.6− | 0.4− | 2006 09 27 | 691 | 0.1− | 0.2+ | |
| 2001 09 26 | 333 | 0.1+ | 0.2− | 2003 01 08 | 704 | 0.5+ | 1.1− | 2006 09 30 | 703 | 0.7− | 0.8− | |
| 2001 10 13 | 704 | (2.3− | 3.5+) | 2003 01 08 | 704 | 0.6+ | 0.9− | 2006 09 30 | 703 | (1.8− | 0.2−) | |
| 2001 10 13 | 704 | 1.0+ | 0.2+ | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.4+ | |
| 2001 10 13 | 704 | 1.2+ | 0.1− | 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.3− | |
| 2001 10 13 | 704 | (0.3+ | 1.6+) | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.1+ | |
| 2001 10 15 | 704 | (2.4− | 0.1−) | 2004 03 19 | 704 | 0.0 | 1.1+ | 2006 10 21 | 703 | 1.5+ | 0.3+ | |
| 2001 10 15 | 704 | (1.6− | 0.1−) | 2004 03 19 | 704 | 1.2− | 0.6+ | 2006 10 21 | 703 | 1.1+ | 0.3+ | |
| 2001 10 15 | 704 | (2.1− | 0.1−) | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.8− | |
| 2001 10 15 | 704 | (2.3− | 0.2−) | 2004 03 19 | 704 | 0.3+ | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2001 10 16 | 704 | 0.7− | 0.8+ | 2004 03 22 | 704 | (0.1− | 1.9+) | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2001 10 16 | 704 | 0.5− | 0.6+ | 2004 03 22 | 704 | (1.9+ | 0.9+) | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2001 10 16 | 704 | 0.4− | 0.2+ | 2004 03 22 | 704 | 1.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2− | |
| 2001 10 16 | 704 | 1.4− | 0.0 | 2004 03 22 | 704 | 0.5+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2001 10 17 | 704 | 0.5− | 0.4+ | 2004 03 24 | 699 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.1− | 0.6+ | 2004 03 24 | 699 | 0.8+ | 0.0 | 2006 10 22 | 691 | 0.3− | 1.4+ | | |
| 2001 10 17 | 704 | 0.7− | 0.1+ | 2004 03 24 | 699 | 0.9− | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.2− | | |
| 2001 10 17 | 704 | 1.3− | 0.2+ | 2004 03 24 | 699 | 0.8− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.2− | | |
| 2001 10 17 | 704 | 0.5+ | 0.6− | 2004 03 28 | 704 | 0.2+ | 1.1+ | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2001 10 20 | 704 | 0.4+ | 0.1− | 2004 03 28 | 704 | 1.0+ | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2001 10 20 | 704 | 0.9+ | 0.3− | 2004 03 28 | 704 | 0.6+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2001 10 20 | 704 | 0.8+ | 0.1+ | 2004 03 28 | 704 | 0.4+ | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2001 10 20 | 704 | 0.4+ | 0.1+ | 2004 03 28 | 704 | (1.0+ | 1.9+) | 2006 11 11 | 703 | 0.9− | 0.8− | | |
| 2001 10 20 | 704 | 0.8+ | 0.2+ | 2004 04 12 | 699 | 1.2− | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.9− | | |
| 2001 10 23 | 704 | 1.1− | 0.2− | 2004 04 12 | 699 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 1.0+ | 0.7+ | | |
| 2001 10 23 | 704 | 0.5− | 0.1+ | 2004 04 12 | 699 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.6− | | |
| 2001 10 23 | 704 | 0.7+ | 0.5− | 2004 04 12 | 699 | (0.4− | 1.7+) | 2006 11 16 | G96 | 0.0 | 0.5− | | |
| 2001 10 23 | 704 | 0.9− | 0.3+ | 2004 04 19 | 704 | 1.0+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2001 10 23 | 704 | 1.0+ | 0.1+ | 2004 04 19 | 704 | 0.8+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.5− | | |
| 2001 10 24 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 704 | 0.9+ | 0.4− | 2006 11 16 | G96 | 0.3− | 0.4− | | |
| 2001 10 24 | 704 | 0.7− | 0.6+ | 2004 04 23 | 691 | 0.0 | 0.1+ | | | | | | |
| 2001 10 24 | 704 | 0.9+ | 0.6+ | 2004 04 23 | 691 | 0.1− | 0.5+ | | | | | | |

**2001 SK$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.24407 | | (2000.0) | | | |
| $n$ | 0.18464659 | $\omega$ | 308.95118 | | +0.61988740 | −0.78268892 |
| $a$ | 3.0542777 | $\Omega$ | 102.64947 | | +0.73653239 | +0.55573622 |
| $e$ | 0.1027017 | $i$ | 3.29106 | | +0.27066519 | +0.28027718 |
| $P$ | 5.34 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 691 | 0.3− | 0.4− | 2001 10 16 | 704 | 0.1− | 0.1+ | 2001 10 24 | 704 | 0.1+ | 0.5− | | |
| 1993 03 20 | 691 | 0.0 | 0.4− | 2001 10 16 | 704 | 0.3+ | 0.4− | 2001 10 24 | 704 | 0.2− | 0.4− | | |
| 1993 03 20 | 691 | 0.1− | 0.1− | 2001 10 16 | 704 | (1.6+ | 0.4−) | 2001 10 24 | 704 | 0.4+ | 0.7− | | |
| 2001 09 16 | 704 | 0.2− | 1.0+ | 2001 10 16 | 704 | 1.0+ | 0.8+ | 2001 10 24 | 704 | (1.7+ | 0.5−) | | |
| 2001 09 16 | 704 | 0.4+ | 0.2+ | 2001 10 20 | 704 | 0.3+ | 0.2− | 2001 10 24 | 704 | 0.4− | 0.1− | | |
| 2001 09 16 | 704 | 0.1− | 0.1− | 2001 10 20 | 704 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.2− | 0.5+ | | |
| 2001 09 16 | 704 | (1.3− | 2.8−) | 2001 10 20 | 704 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.2+ | 0.1− | | |
| 2001 09 19 | 704 | 0.1+ | 0.3− | 2001 10 20 | 704 | 0.1− | 0.3+ | 2001 11 20 | 704 | (1.2+ | 1.8+) | | |
| 2001 09 19 | 704 | 0.6− | 1.3− | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.7− | 0.4+ | | |
| 2001 09 19 | 704 | 0.0 | 1.2− | 2001 10 22 | 704 | 0.5+ | 0.0 | 2003 01 27 | 608 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2001 10 22 | 704 | 0.4+ | 0.1+ | 2003 01 27 | 608 | 0.1+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.2− | 0.9− | 2001 10 22 | 704 | 0.3− | 0.6+ | 2003 01 27 | 608 | 0.0 | 0.3+ | | |
| 2001 09 21 | 704 | 1.1− | 0.3+ | 2001 10 23 | 704 | 0.3+ | 1.2+ | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2001 09 21 | 704 | 0.5− | 0.6− | 2001 10 23 | 704 | 1.2+ | 1.0− | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2001 09 21 | 704 | 0.7− | 0.2+ | 2001 10 23 | 704 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.4− | 0.2− | | |
| 2001 10 16 | 704 | (0.2− | 1.9−) | 2001 10 23 | 704 | 0.8+ | 0.3− | 2006 11 25 | G96 | 0.9+ | 0.5− | | |

**2001 SM$_{236}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.60452 | | (2000.0) | | | |
| $n$ | 0.23752111 | $\omega$ | 208.34329 | | +0.88336401 | −0.46868731 |
| $a$ | 2.5822675 | $\Omega$ | 179.60490 | | +0.44196241 | +0.83265605 |
| $e$ | 0.1577565 | $i$ | 3.94611 | | +0.15600402 | +0.29498492 |
| $P$ | 4.15 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.2+ | 0.8+ | 2001 09 26 | 344 | 0.2− | 1.3− | 2005 08 29 | 291 | 0.1− | 0.1− | | |
| 2001 09 19 | 704 | 0.3− | 1.9+ | 2001 09 26 | 344 | 0.9+ | 0.3− | 2005 08 29 | 291 | 0.0 | 0.0 | | |
| 2001 09 19 | 704 | (1.3− | 2.2+) | 2001 09 26 | 344 | 0.2− | 1.1− | 2005 08 29 | 291 | 0.1− | 0.0 | | |
| 2001 09 21 | 704 | 0.8− | 0.6+ | 2001 09 26 | 344 | 1.1+ | 0.2− | 2005 09 13 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.2+ | 1.2+ | 2001 09 27 | 344 | 0.3− | 0.0 | 2005 09 13 | 691 | 0.3− | 0.2− | | |
| 2001 09 21 | 704 | 1.3− | 0.5+ | 2001 09 27 | 344 | 0.6− | 0.2− | 2005 09 13 | 691 | 0.2+ | 0.3− | | |
| 2001 09 21 | 704 | 0.1− | 1.3+ | 2001 10 14 | 645 | 0.0 | 0.0 | 2005 09 30 | G96 | 0.1+ | 0.2− | | |
| 2001 09 25 | 704 | 0.5+ | 1.1− | 2001 10 14 | 645 | 0.2+ | 0.0 | 2005 09 30 | G96 | 0.0 | 0.1+ | | |
| 2001 09 25 | 704 | 1.7− | 0.9− | 2005 07 12 | 291 | 0.5+ | 0.1+ | 2005 09 30 | G96 | 0.2− | 0.2− | | |
| 2001 09 25 | 704 | 0.2− | 0.5− | 2005 07 12 | 291 | 0.2+ | 0.4+ | 2005 09 30 | G96 | 0.1+ | 0.1− | | |
| 2001 09 25 | 704 | 0.8− | 0.7− | 2005 07 12 | 291 | 0.6− | 0.0 | | | | | | |

**2001 SQ$_{236}$ = 2006 SV$_{306}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.14090 | | (2000.0) | | | |
| $n$ | 0.20869843 | $\omega$ | 200.45725 | | +0.95734356 | −0.28886208 |
| $a$ | 2.8148586 | $\Omega$ | 176.30986 | | +0.27824078 | +0.91483532 |
| $e$ | 0.0479614 | $i$ | 6.43392 | | +0.07794474 | +0.28219680 |
| $P$ | 4.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.1+ | 0.1− | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1− | 0.4− | | |
| 2001 09 12 | 695 | 0.2+ | 0.1− | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.5− | 0.1− | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.5− | 0.2− | | |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.3− | | |
| 2001 09 19 | 704 | 0.1+ | 0.5− | 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.2− | | |
| 2001 09 21 | 704 | 0.9− | 0.9+ | 2004 04 20 | 691 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.3− | 0.0 | | |
| 2001 09 21 | 704 | 0.9− | 0.0 | 2004 04 20 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | | |
| 2001 09 21 | 704 | 0.1− | 0.9− | 2004 04 20 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2+ | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | | |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.2+ | | |

**2001 SN$_{237}$ = 2006 UF$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.22755 | | (2000.0) | | | |
| $n$ | 0.21138801 | $\omega$ | 231.03026 | | +0.99685629 | −0.07041365 |
| $a$ | 2.7909313 | $\Omega$ | 132.97489 | | +0.07883696 | +0.92717627 |
| $e$ | 0.1104794 | $i$ | 2.84573 | | −0.00789097 | +0.36794849 |
| $P$ | 4.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.9− | 0.5+ | 2001 09 26 | 704 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.6− | | |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2001 09 26 | 704 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.5+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.4+ | 0.3+ | | |
| 2001 09 21 | 704 | (0.5− | 1.7+) | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | (0.2− | 1.5+) | 2001 10 15 | 645 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2001 09 21 | 704 | (0.3− | 2.4+) | 2001 10 15 | 645 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2001 09 21 | 704 | (0.5− | 1.7+) | 2006 10 17 | G96 | 0.4− | 0.5− | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2001 09 21 | 704 | (0.3− | 2.3+) | 2006 10 17 | G96 | 0.2− | 0.7− | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2001 09 26 | 704 | 0.0 | 0.9− | 2006 10 17 | G96 | 0.0 | 0.7− | | | | | | |

**2001 SX$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.37598 | | (2000.0) | | | |
| $n$ | 0.24362840 | $\omega$ | 269.41446 | | +0.34741614 | −0.93732512 |
| $a$ | 2.5389303 | $\Omega$ | 160.19083 | | +0.88881871 | +0.32002398 |
| $e$ | 0.2104249 | $i$ | 4.55285 | | +0.29883661 | +0.13786321 |
| $P$ | 4.05 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.5− | 0.5− | 2001 10 14 | 645 | 0.1+ | 0.0 | 2005 09 13 | 691 | 0.0 | 0.1+ | | |
| 2001 09 19 | 704 | 0.4− | 0.6+ | 2001 10 15 | 645 | 0.1+ | 0.0 | 2005 09 23 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.3+ | 2001 10 15 | 645 | 0.1+ | 0.1− | 2005 09 23 | 691 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | 0.5+ | 0.9+ | 2005 08 30 | 691 | 0.3+ | 0.1− | 2005 09 23 | 691 | 0.3− | 0.5− | | |
| 2001 09 21 | 704 | 1.6− | 0.5+ | 2005 08 30 | 691 | 0.3+ | 0.0 | 2005 10 09 | 691 | 0.3− | 0.2+ | | |
| 2001 09 21 | 704 | 1.1− | 0.4+ | 2005 08 30 | 691 | 0.1+ | 0.1+ | 2005 10 09 | 691 | 0.1− | 0.3+ | | |
| 2001 09 21 | 704 | 0.9− | 0.1− | 2005 09 13 | 691 | 0.0 | 0.1+ | 2005 10 09 | 691 | 0.1− | 0.1+ | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 09 13 | 691 | 0.1+ | 0.2− | | | | | | |

**2001 SY$_{243}$ = 2006 QH$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.53272 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19254194 | $\omega$ | 243.46989 | | +0.56251115 | +0.82577421 | |
| $a$ | 2.9702009 | $\Omega$ | 60.81939 | | −0.74088785 | +0.52543978 | |
| $e$ | 0.1226296 | $i$ | 2.68931 | | −0.36696920 | +0.20496339 | |
| $P$ | 5.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 691 | 0.3− | 0.1− | 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.2− | 1.4− |
| 2001 09 18 | 691 | 0.1+ | 0.1− | 2006 08 18 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.9+ | 0.6− |
| 2001 09 18 | 691 | 0.2− | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | (2.4− | 0.9+) |
| 2001 09 19 | 704 | 0.3+ | 0.3− | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.4+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.8− | 0.2− |
| 2001 09 19 | 704 | 0.9− | 0.4− | 2006 09 18 | 703 | (0.2+ | 1.7+) | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 703 | 0.8+ | 0.9− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 1.3− | 0.4− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | (1.5+ | 0.5+) | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2001 10 17 | 644 | 0.6+ | 0.6+ | 2006 09 18 | 703 | 0.7+ | 0.3+ | 2006 10 20 | G96 | 0.6+ | 0.0 |
| 2001 10 17 | 644 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2001 10 17 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.8+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2006 08 18 | 691 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2006 08 18 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2006 08 18 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.2− | 0.3+ | | | | |

**2001 SG$_{249}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.33651 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18803573 | $\omega$ | 170.06504 | | +0.99959614 | +0.02480461 | |
| $a$ | 3.0174665 | $\Omega$ | 188.55020 | | −0.02789072 | +0.94986280 | |
| $e$ | 0.1864270 | $i$ | 5.35176 | | +0.00544710 | +0.31168157 | |
| $P$ | 5.24 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.9− | 1.3+ | 2001 10 24 | 704 | 0.4− | 0.4− | 2006 09 25 | 699 | (0.2+ | 2.0+) |
| 2001 09 19 | 704 | 0.5+ | 0.4+ | 2001 10 24 | 704 | 0.6− | 0.5− | 2006 09 25 | 699 | 0.7+ | 0.1− |
| 2001 09 19 | 704 | 0.5+ | 0.3+ | 2001 10 24 | 704 | 0.3− | 0.9− | 2006 09 25 | 699 | 0.4+ | 0.5− |
| 2001 09 19 | 704 | 0.6+ | 0.7+ | 2001 11 20 | 704 | (1.1− | 1.7+) | 2006 09 25 | 699 | 0.2+ | 0.9+ |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2001 11 20 | 704 | 1.1− | 0.2+ | 2006 10 01 | 703 | 0.2+ | 0.7+ |
| 2001 09 21 | 704 | 0.5+ | 0.2− | 2001 11 20 | 704 | 0.1+ | 1.1− | 2006 10 01 | 703 | 0.5− | 0.4+ |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2001 11 21 | 704 | (1.6+ | 1.2+) | 2006 10 01 | 703 | 0.6− | 0.6− |
| 2001 09 21 | 704 | 0.8+ | 0.5+ | 2001 11 21 | 704 | 0.0 | 0.6− | 2006 10 01 | 703 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 1.1− | 0.5− | 2001 11 21 | 704 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.5− | 0.5− |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 10 17 | 704 | 0.4− | 0.6+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 10 17 | 704 | 0.4+ | 0.0 | 2006 09 12 | 703 | (2.1− | 0.9−) | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 0.8+ | 0.4− | 2006 09 12 | 703 | 0.7− | 0.8− | 2006 11 11 | G96 | 0.3− | 0.8− |
| 2001 10 17 | 704 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.8+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 10 23 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.8− |
| 2001 10 23 | 704 | 0.4− | 0.8+ | 2006 09 16 | 699 | (1.6− | 0.5+) | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2001 10 23 | 704 | 0.2− | 0.6+ | 2006 09 16 | 699 | 1.1+ | 0.1+ | 2006 11 21 | G96 | 0.5+ | 0.3− |
| 2001 10 23 | 704 | 0.5− | 0.1+ | 2006 09 16 | 699 | 0.1− | 1.1− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 0.4+ | 0.8− | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 0.1+ | 0.5− | 2006 09 23 | 691 | 0.0 | 0.0 | | | | |

**2001 SR$_{249}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.51809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17883492 | $\omega$ | 231.00605 | | +0.48749572 | −0.87269555 | |
| $a$ | 3.1200951 | $\Omega$ | 189.92946 | | +0.84214002 | +0.47824799 | |
| $e$ | 0.2217428 | $i$ | 9.14081 | | +0.23053872 | +0.09839378 | |
| $P$ | 5.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.2+ | 0.6− | 2001 10 14 | 699 | 0.2+ | 0.0 | 2006 08 29 | 691 | 0.4− | 0.1+ |
| 2001 08 16 | 704 | 0.8+ | 0.8− | 2001 10 14 | 699 | 0.1− | 0.5− | 2006 08 29 | 691 | 0.1− | 0.3− |
| 2001 08 16 | 704 | 0.0 | 0.1+ | 2001 10 14 | 699 | 0.3+ | 0.5+ | 2006 08 29 | 691 | 0.4− | 0.2− |
| 2001 09 19 | 704 | 0.7− | 0.9+ | 2001 10 17 | 704 | 0.5+ | 1.7+ | 2006 08 29 | 703 | 1.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2001 10 17 | 704 | 0.1− | 1.5+ | 2006 08 29 | 703 | 0.0 | 1.2+ |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2001 10 17 | 704 | 0.3− | 1.4+ | 2006 08 29 | 703 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.1+ | 2001 10 17 | 704 | 0.3− | 1.7+ | 2006 08 29 | 703 | 1.2+ | 1.3+ |
| 2001 09 19 | 704 | 0.3− | 0.4+ | 2001 10 17 | 704 | 0.7− | 1.4+ | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 1.0+ | 2001 10 20 | 704 | 0.4− | 0.5+ | 2006 09 14 | 691 | 1.0+ | 0.5+ |
| 2001 09 21 | 704 | 0.2+ | 0.9+ | 2001 10 20 | 704 | 0.2+ | 0.3− | 2006 09 14 | 691 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.8+ | 1.1+ | 2001 10 20 | 704 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | (1.3+ | 2.1+) | 2001 10 20 | 704 | 0.1+ | 0.4− | 2006 09 17 | 291 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 1.3+ | 2001 10 20 | 704 | 0.2− | 0.6− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.1− | 0.1− | 2001 10 23 | 704 | 0.1+ | 0.0 | 2006 09 17 | 291 | 0.3− | 0.1− |
| 2001 09 23 | 704 | 0.3− | 0.3− | 2001 10 23 | 704 | 0.3+ | 0.6− | 2006 09 17 | 691 | 0.2+ | 0.1− |
| 2001 09 23 | 704 | 0.1− | 0.3− | 2001 10 23 | 704 | 0.5− | 1.0− | 2006 09 17 | 291 | 0.2− | 0.2− |
| 2001 09 24 | 704 | 1.1+ | 1.0− | 2001 10 23 | 704 | 0.3+ | 0.7− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2001 09 24 | 704 | 0.9+ | 0.6− | 2001 10 24 | 704 | 0.1− | 0.9− | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2001 09 24 | 704 | 0.8+ | 0.8− | 2001 10 24 | 704 | 0.1− | 0.7− | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2001 09 26 | 704 | 0.3− | 0.6− | 2001 10 24 | 704 | 0.3− | 0.8− | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 2001 09 26 | 704 | 0.9− | 0.0 | 2001 10 24 | 704 | 0.4− | 1.0− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 09 26 | 704 | 0.2+ | 0.9+ | 2001 10 24 | 704 | 0.4− | 0.5− | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.1− | 0.5+ | 2001 11 21 | 608 | (0.4− | 2.6−) | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2001 09 26 | 704 | 0.8+ | 1.0− | 2001 11 21 | 608 | 0.1− | 1.3− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 10 14 | 699 | 0.0 | 0.8+ | 2001 11 21 | 608 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.1− | 0.1− |

**2001 SA$_{250}$ = 2006 SU$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.55734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19664829 | $\omega$ | 160.73444 | | +0.97613896 | +0.21569354 | |
| $a$ | 2.9287070 | $\Omega$ | 186.95475 | | −0.21628885 | +0.95551808 | |
| $e$ | 0.0679982 | $i$ | 11.95426 | | −0.01928384 | +0.20115043 | |
| $P$ | 5.01 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1− | 0.6− | 2001 10 16 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 1.1+ | 2001 10 24 | 644 | 0.2+ | 0.4− | 2006 10 16 | 703 | (2.0+ | 0.7−) |
| 2001 09 19 | 704 | 0.1+ | 0.3− | 2001 10 24 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.6− |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2001 10 24 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.3− |
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.7− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.5− | 0.1− | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2001 09 21 | 704 | 0.0 | 1.3+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.7+ | 0.3− | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 2001 10 10 | 644 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.3+ |
| 2001 10 10 | 644 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2001 10 10 | 644 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 10 16 | 704 | 0.5− | 0.7+ | 2006 09 30 | 703 | (2.4+ | 0.5+) | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 10 16 | 704 | 0.9− | 0.4− | 2006 09 30 | 703 | 0.7+ | 0.7− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2001 10 16 | 704 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.5− | 0.2− | | | | |
| 2001 10 16 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | (1.6− | 1.2+) | | | | |

**2001 SB$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.58825 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19606687 | $\omega$ | 247.81334 | | +0.99282035 | +0.10697945 | |
| $a$ | 2.9344940 | $\Omega$ | 106.01300 | | −0.07852748 | +0.92037491 | |
| $e$ | 0.0793203 | $i$ | 3.19121 | | −0.09022853 | +0.37611888 | |
| $P$ | 5.03 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 21 | 691 | 0.4+ | 0.1− | 2001 10 23 | 704 | 0.8− | 1.1− | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 1993 01 21 | 691 | 0.2− | 0.1− | 2001 10 23 | 704 | 0.3− | 1.1− | 2006 09 30 | 703 | 1.1− | 1.1− |
| 1993 01 21 | 691 | 0.2− | 0.1− | 2001 10 24 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.2− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.7+ | 0.1+ | 2001 10 24 | 704 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.5+ | | |
| 2001 09 19 | 704 | 0.0 | 0.7− | 2001 10 24 | 704 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.1+ | 0.7− | 2001 10 24 | 704 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 704 | 0.9+ | 0.1+ | 2001 10 24 | 704 | 0.7− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− | | |
| 2001 09 19 | 704 | 0.2− | 0.5− | 2001 10 25 | 704 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.4− | | |
| 2001 09 21 | 704 | 0.5− | 0.0 | 2001 10 25 | 704 | 0.1− | 1.1+ | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2001 09 21 | 704 | 0.3− | 0.6+ | 2001 10 25 | 704 | 0.8− | 1.3+ | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2001 09 21 | 704 | 1.1+ | 0.2− | 2001 10 25 | 704 | 0.3+ | 1.4+ | 2006 10 22 | 691 | 0.4− | 0.2− | | |
| 2001 09 21 | 704 | 0.6+ | 0.8− | 2001 11 20 | 704 | 1.2− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.5− | | |
| 2001 09 26 | 704 | 0.6+ | 0.8+ | 2001 11 20 | 704 | (1.5− | 0.5+) | 2006 10 31 | G96 | 0.4+ | 0.6− | | |
| 2001 09 26 | 704 | (1.2+ | 1.8+) | 2001 11 20 | 704 | 0.9− | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 2001 09 26 | 704 | 0.7+ | 1.4+ | 2001 11 20 | 704 | 1.2− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2001 10 18 | 644 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2001 10 18 | 644 | 0.8+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.4− | 0.2+ | | |
| 2001 10 18 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.1+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2001 10 23 | 704 | 0.1− | 1.0− | 2006 09 23 | 691 | 0.2+ | 0.1− | | | | | | |
| 2001 10 23 | 704 | 0.8− | 0.8− | 2006 09 23 | 691 | 0.5+ | 0.0 | | | | | | |

**2001 SS$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.72006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18496577 | $\omega$ | 158.24368 | | +0.99607698 | +0.03182884 | |
| $a$ | 3.0507630 | $\Omega$ | 200.45896 | | −0.04658424 | +0.98192281 | |
| $e$ | 0.1083887 | $i$ | 13.66374 | | +0.07523668 | +0.18658648 | |
| $P$ | 5.33 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | (0.0 | 1.6+) | 2001 10 21 | 704 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.3+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2001 10 21 | 704 | 0.2− | 0.4− | 2006 09 16 | 644 | 0.4+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2001 10 21 | 704 | 0.1− | 0.5+ | 2006 09 16 | 644 | 0.3+ | 0.1− | | |
| 2001 09 19 | 704 | 0.2− | 0.2− | 2001 10 22 | 704 | 0.6− | 0.7− | 2006 09 17 | 703 | 0.3− | 0.5− | | |
| 2001 09 19 | 704 | 0.8− | 0.6+ | 2001 10 22 | 704 | 0.3− | 0.9− | 2006 09 17 | 703 | 0.9− | 0.0 | | |
| 2001 09 21 | 704 | 1.1+ | 0.0 | 2001 10 22 | 704 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.2− | | |
| 2001 09 21 | 704 | 0.5+ | 0.9+ | 2001 10 23 | 704 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.3− | 0.3− | | |
| 2001 09 21 | 704 | 1.3+ | 0.7+ | 2001 10 23 | 704 | 0.1− | 0.4− | 2006 09 20 | 699 | 0.8− | 0.0 | | |
| 2001 09 21 | 704 | 0.8+ | 0.6+ | 2001 10 23 | 704 | 0.4+ | 0.5− | 2006 09 20 | 699 | 0.0 | 0.1+ | | |
| 2001 09 21 | 704 | 0.6+ | 0.4+ | 2001 10 23 | 704 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.1+ | 0.3+ | | |
| 2001 09 26 | 704 | 0.2+ | 0.8+ | 2001 10 23 | 704 | 0.1+ | 0.5− | 2006 09 24 | 106 | 0.3+ | 0.2− | | |
| 2001 09 26 | 704 | 0.6− | 0.0 | 2001 10 24 | 704 | 0.3− | 0.7− | 2006 09 24 | 106 | 0.1− | 0.3− | | |
| 2001 09 26 | 704 | 0.0 | 0.2− | 2001 10 24 | 704 | 0.1+ | 0.7− | 2006 09 24 | 106 | 0.3+ | 0.5− | | |
| 2001 09 26 | 704 | (1.5− | 0.0 ) | 2001 10 24 | 704 | 0.2+ | 0.3− | 2006 09 24 | 106 | 0.0 | 0.9− | | |
| 2001 10 14 | 699 | 0.3+ | 0.4+ | 2001 10 24 | 704 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.1− | 0.1+ | | |
| 2001 10 14 | 699 | 0.0 | 0.8+ | 2001 10 24 | 704 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.1+ | | |
| 2001 10 14 | 699 | 0.1+ | 0.5+ | 2001 10 25 | 704 | 0.6− | 0.3− | 2006 09 29 | 699 | 0.2+ | 0.3+ | | |
| 2001 10 14 | 699 | 0.3+ | 0.3− | 2001 10 25 | 704 | 0.1+ | 0.2− | 2006 09 29 | 699 | 0.1− | 0.1− | | |
| 2001 10 17 | 704 | 0.1− | 0.3− | 2001 10 25 | 704 | 0.5− | 0.7+ | 2006 10 01 | 703 | 0.6− | 0.6− | | |
| 2001 10 17 | 704 | 0.7− | 0.1+ | 2001 10 25 | 704 | (1.8+ | 2.2+) | 2006 10 01 | 703 | 0.5− | 0.2+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.4+ | 2001 10 25 | 704 | 0.6− | 0.4+ | 2006 10 01 | 703 | 0.3− | 0.2− | | |
| 2001 10 17 | 704 | 0.2+ | 0.1− | 2001 11 18 | 704 | 0.8+ | 0.8+ | 2006 10 01 | 703 | 0.8− | 0.3− | | |
| 2001 10 17 | 704 | 0.1− | 0.1− | 2001 11 18 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 1.0− | 0.1+ | | |
| 2001 10 18 | 644 | 0.4− | 0.0 | 2001 11 18 | 704 | 0.3+ | 1.2+ | 2006 10 16 | 703 | 0.8+ | 0.5− | | |
| 2001 10 18 | 644 | 0.3− | 0.0 | 2005 05 29 | 599 | 0.2− | 0.8+ | 2006 10 16 | 703 | 1.0− | 0.5− | | |
| 2001 10 18 | 644 | 0.4− | 0.0 | 2005 05 29 | 599 | (2.0− | 1.7−) | 2006 10 16 | 703 | 0.2− | 0.4− | | |
| 2001 10 20 | 704 | 0.0 | 0.0 | 2005 05 29 | 599 | 0.8− | 0.4+ | 2006 10 21 | 291 | 0.2+ | 0.1− | | |
| 2001 10 20 | 704 | 0.3− | 0.3+ | 2005 05 29 | 599 | 1.0+ | 0.7+ | 2006 10 21 | 291 | 0.2+ | 0.1+ | | |
| 2001 10 20 | 704 | 0.6− | 0.1+ | 2006 09 15 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 291 | 0.2+ | 0.1− | | |
| 2001 10 20 | 704 | 0.5− | 0.6− | 2006 09 15 | 704 | 0.1+ | 0.9+ | 2006 11 14 | G96 | 0.4+ | 0.3− | | |
| 2001 10 20 | 704 | 0.4+ | 0.4− | 2006 09 15 | 704 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.5− | | |
| 2001 10 21 | 704 | 0.2+ | 0.9+ | 2006 09 15 | 704 | 0.4+ | 0.9+ | 2006 11 14 | G96 | 0.2− | 0.6− | | |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2006 09 15 | 704 | 1.0+ | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.6− | | |

**2001 SH$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.74359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19595944 | $\omega$ | 5.74298 | | +0.47091194 | −0.88082821 | |
| $a$ | 2.9355665 | $\Omega$ | 56.17285 | | +0.80702723 | +0.40778262 | |
| $e$ | 0.0893464 | $i$ | 3.36927 | | +0.35629903 | +0.24053067 | |
| $P$ | 5.03 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.9− | 0.8+ | 2001 10 20 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.3+ | | |
| 2001 09 19 | 704 | 0.6− | 0.5+ | 2001 10 24 | 704 | (1.9− | 1.3+) | 2006 10 16 | 691 | 0.5− | 0.1+ | | |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2001 10 24 | 704 | 1.2− | 0.1− | 2006 10 21 | 703 | 0.6− | 0.4+ | | |
| 2001 09 19 | 704 | 0.1− | 0.5− | 2001 10 24 | 704 | 1.4− | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.6− | | |
| 2001 09 21 | 704 | 0.5+ | 0.7− | 2001 10 24 | 704 | 0.2+ | 0.1− | 2006 10 21 | 703 | (2.9+ | 0.8−) | | |
| 2001 09 21 | 704 | 0.4− | 1.2− | 2001 10 24 | 704 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.2− | 0.3+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.5+ | 0.5− | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 2001 09 21 | 704 | 0.6+ | 0.9+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 09 21 | 704 | (0.0 | 1.9−) | 2006 09 30 | 703 | 0.6+ | 0.1+ | 2006 11 01 | 691 | 0.6+ | 0.4− | | |
| 2001 09 21 | 704 | 0.5+ | 0.7− | 2006 09 30 | 703 | 1.2− | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.2− | | |
| 2001 10 17 | 704 | (1.8+ | 0.1−) | 2006 09 30 | 703 | 0.1− | 1.1− | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2001 10 17 | 704 | 0.8+ | 1.2+ | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.1− | | |
| 2001 10 17 | 704 | 1.2+ | 1.3+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.8− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2− | 0.1+ | | |
| 2001 10 20 | 704 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.5+ | 0.2+ | | | | | | |
| 2001 10 20 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.4− | | | | | | |

**2001 SH$_{262}$ = 2006 RK$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.86409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20685833 | $\omega$ | 297.37036 | | +0.06945275 | −0.99704929 | |
| $a$ | 2.8315270 | $\Omega$ | 148.59471 | | +0.93600230 | +0.05379311 | |
| $e$ | 0.5079592 | $i$ | 3.59741 | | +0.34507393 | +0.05476317 | |
| $P$ | 4.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.7+ | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.1+ | 2006 11 03 | 130 | 0.1+ | 0.6− | | |
| 1993 03 19 | 691 | 0.6+ | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.5+ | 2006 11 03 | 130 | 0.2+ | 0.4− | | |
| 1993 03 19 | 691 | 1.3− | 0.4− | 2006 09 29 | 699 | 0.4+ | 1.0+ | 2006 11 03 | 130 | 0.9+ | 0.5− | | |
| 2001 09 19 | 704 | 0.6+ | 0.3− | 2006 09 29 | 699 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2001 09 20 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2001 09 20 | 291 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.0 | | |
| 2001 09 20 | 291 | 0.0 | 0.1− | 2006 10 21 | H45 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 2001 09 20 | 291 | 0.2+ | 0.0 | 2006 10 21 | H45 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2001 09 20 | 649 | 0.4− | 0.1+ | 2006 10 21 | H45 | 0.1+ | 0.4− | 2006 11 09 | H45 | 0.1− | 0.2− | | |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 21 | H45 | 0.1+ | 0.4− | 2006 11 09 | H45 | 0.0 | 0.1− | | |
| 2001 09 20 | 704 | 0.6− | 0.8− | 2006 10 21 | H45 | 0.1− | 0.3− | 2006 11 09 | H45 | 0.1− | 0.1− | | |
| 2001 09 20 | 649 | 0.3− | 0.4− | 2006 10 22 | 704 | 0.1+ | 1.1+ | 2006 11 09 | H45 | 0.0 | 0.2− | | |
| 2001 09 20 | 649 | 0.5+ | 0.8− | 2006 10 22 | 704 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.0 | | |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 10 22 | 704 | 0.1− | 0.5− | 2006 11 09 | H45 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.3− | 0.6+ | 2006 10 22 | 704 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | | |
| 2001 09 21 | 704 | 0.9− | 0.5+ | 2006 10 22 | 704 | 0.3− | 0.2− | 2006 11 09 | 203 | 0.3+ | 0.2+ | | |
| 2001 09 21 | 704 | 1.1− | 1.3+ | 2006 10 22 | 703 | 0.5− | 0.5− | 2006 11 09 | 203 | 0.3+ | 0.3− | | |
| 2001 09 22 | 046 | (1.8− | 2.2−) | 2006 10 22 | 703 | 0.2− | 0.4− | 2006 11 13 | 703 | 0.1− | 0.3− | | |
| 2001 09 22 | 046 | 0.9+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.5− | 2006 11 13 | 703 | 0.2− | 0.4− | | |
| 2001 09 23 | 658 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.3− | 2006 11 13 | 703 | 0.4− | 0.2+ | | |
| 2001 09 23 | 658 | 0.7− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.0 | 0.1− | | |
| 2001 09 23 | 658 | 0.3− | 0.4− | 2006 10 22 | 644 | 0.1− | 0.3− | 2006 11 14 | 644 | 0.0 | 0.1+ | | |
| 2001 09 24 | 644 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 14 | 644 | 0.1− | 0.2+ | | |
| 2001 09 24 | 644 | 0.6+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.2− | 2006 11 14 | 644 | 0.1− | 0.1+ | | |
| 2001 09 25 | 649 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 18 | H45 | 0.1+ | 0.1+ | | |
| 2001 09 25 | 649 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 18 | H45 | 0.1+ | 0.1− | | |
| 2001 09 25 | 649 | 0.0 | 0.3− | 2006 10 26 | A41 | 0.0 | 0.3+ | 2006 11 18 | H45 | 0.0 | 0.1− | | |
| 2001 09 26 | 711 | 0.6− | 1.0− | 2006 10 27 | A41 | 0.1− | 0.1+ | 2006 11 18 | H45 | 0.0 | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 711 | 0.2+ | 1.3+ | 2006 10 27 | A41 | 0.0 | 0.1+ | 2006 11 18 | H45 | 0.1+ | 0.1− |
| 2001 09 26 | 711 | 0.6+ | 0.1− | 2006 10 27 | 704 | 0.7+ | 0.0 | 2006 11 19 | H45 | 0.2+ | 0.3− |
| 2006 09 14 | 703 | 1.1+ | 0.0 | 2006 10 27 | 704 | 0.4+ | 0.1+ | 2006 11 19 | H45 | 0.2+ | 0.0 |
| 2006 09 14 | 703 | 0.1+ | 0.8− | 2006 10 27 | 704 | 0.7+ | 0.2− | 2006 11 19 | H45 | 0.3+ | 0.2− |
| 2006 09 14 | 703 | 0.2+ | 0.1+ | 2006 10 27 | 704 | 0.1+ | 0.1− | 2006 11 19 | H45 | 0.2+ | 0.2− |
| 2006 09 14 | 703 | 0.2− | 0.7− | 2006 10 27 | 704 | 0.3+ | 0.5− | 2006 11 19 | H45 | 0.2+ | 0.1+ |
| 2006 09 20 | 699 | 0.8+ | 0.2+ | 2006 10 30 | 203 | 0.0 | 0.4− | 2006 11 23 | 726 | 0.8+ | 1.1+ |
| 2006 09 20 | 699 | 0.3− | 0.0 | 2006 10 30 | 203 | 0.0 | 0.2− | 2006 11 23 | 726 | 0.9− | 1.2+ |
| 2006 09 20 | 699 | 0.7+ | 0.1+ | 2006 10 31 | 704 | 0.1+ | 0.1− | 2006 11 23 | 726 | 0.5− | 0.1− |
| 2006 09 26 | 704 | 0.0 | 0.6+ | 2006 10 31 | 704 | 0.4+ | 0.2+ | 2006 11 23 | 726 | (1.6− | 0.3+) |
| 2006 09 26 | 704 | 0.7− | 0.4+ | 2006 10 31 | 704 | 0.6+ | 0.6+ | 2006 11 23 | 726 | 0.3+ | 0.6+ |
| 2006 09 26 | 704 | 0.2− | 0.6+ | 2006 10 31 | 704 | 0.3− | 0.5+ | 2006 11 23 | 726 | 0.4+ | 0.2+ |
| 2006 09 26 | 704 | 1.0+ | 1.4+ | 2006 10 31 | 704 | 0.3− | 0.3− | 2006 11 29 | A53 | 0.4− | 0.5+ |
| 2006 09 26 | 704 | 0.1+ | 0.2+ | 2006 11 03 | 130 | 0.2+ | 0.4− | 2006 11 29 | A53 | 0.5− | 0.1− |

**2001 SJ$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.60522 | | (2000.0) | | | |
| $n$ | 0.19469769 | $\omega$ | 164.91269 | | +0.96187040 | −0.25651224 |
| $a$ | 2.9482356 | $\Omega$ | 210.46406 | | +0.22754157 | +0.94303502 |
| $e$ | 0.5743061 | $i$ | 10.78876 | | +0.15175692 | +0.21186417 |
| $P$ | 5.06 | $H$ | 20.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.2− | 0.0 | 2001 09 26 | 587 | 0.8− | 0.5− | 2001 10 15 | 608 | 0.7+ | 0.8+ |
| 2001 08 20 | 644 | 0.4− | 0.2+ | 2001 09 28 | 118 | 0.1− | 1.1− | 2001 10 15 | 608 | 0.9+ | 0.7+ |
| 2001 08 20 | 644 | 0.3− | 0.2− | 2001 09 28 | 118 | 0.1+ | 0.7− | 2001 10 17 | 704 | 0.2+ | 0.6+ |
| 2001 09 21 | 644 | 0.4+ | 1.1+ | 2001 09 28 | 118 | 0.5+ | 1.1− | 2001 10 17 | 704 | 0.1− | 0.2+ |
| 2001 09 21 | 644 | 0.3+ | 1.1+ | 2001 09 29 | 644 | 0.4− | 0.1− | 2001 10 17 | 704 | 0.1− | 0.7+ |
| 2001 09 21 | 644 | 0.3+ | 1.3+ | 2001 09 29 | 644 | 0.6− | 0.2− | 2001 10 17 | 704 | 0.2− | 0.2+ |
| 2001 09 21 | 046 | 0.0 | 0.2+ | 2001 09 29 | 644 | 0.6− | 0.2− | 2001 10 17 | 704 | 0.4+ | 0.5− |
| 2001 09 21 | 046 | 0.3+ | 0.2+ | 2001 10 02 | 540 | (2.4− | 0.0 ) | 2001 10 19 | 644 | 0.6− | 0.1+ |
| 2001 09 21 | 046 | 0.6− | 0.0 | 2001 10 02 | 540 | (4.4− | 3.3−) | 2001 10 19 | 644 | 0.4− | 0.0 |
| 2001 09 21 | 046 | 1.3− | 0.8− | 2001 10 05 | 118 | 0.3− | 0.7+ | 2001 10 19 | 644 | 0.3− | 0.0 |
| 2001 09 21 | 595 | 1.2+ | 0.7+ | 2001 10 05 | 118 | 1.6− | 0.5− | 2001 10 21 | 704 | 0.2+ | 0.2− |
| 2001 09 22 | 595 | 1.0+ | 0.6+ | 2001 10 09 | 046 | 1.4+ | 1.2+ | 2001 10 21 | 704 | 0.1+ | 0.5− |
| 2001 09 22 | 595 | 0.5+ | 0.0 | 2001 10 09 | 046 | 0.7+ | 0.5+ | 2001 10 21 | 704 | 0.2− | 0.2− |
| 2001 09 22 | 644 | 0.3+ | 0.3− | 2001 10 09 | 046 | 1.4+ | 0.1+ | 2001 10 21 | 704 | 0.3+ | 0.2− |
| 2001 09 22 | 644 | 0.2+ | 0.2− | 2001 10 09 | 046 | 0.5+ | 0.3+ | 2001 10 21 | 704 | 0.2− | 0.2− |
| 2001 09 22 | 644 | 0.2+ | 0.3− | 2001 10 09 | 046 | 0.9+ | 0.8+ | 2001 10 23 | 691 | 0.2− | 0.2− |
| 2001 09 22 | 644 | 0.2+ | 0.3+ | 2001 10 11 | 587 | 0.9+ | 0.8+ | 2001 10 23 | 691 | 0.1− | 0.3− |
| 2001 09 22 | 644 | 0.2+ | 0.5+ | 2001 10 11 | 587 | 0.5+ | 1.2+ | 2001 10 23 | 670 | 1.3+ | 1.3+ |
| 2001 09 22 | 644 | 0.1+ | 0.5+ | 2001 10 12 | 360 | 0.3− | 0.3− | 2001 10 23 | 691 | 0.1− | 0.2− |
| 2001 09 22 | 611 | 0.1− | 0.8− | 2001 10 12 | 360 | 0.3− | 0.4− | 2001 10 23 | 670 | 0.4− | 0.7− |
| 2001 09 22 | 611 | 0.3− | 0.3− | 2001 10 12 | 360 | 0.3− | 0.6− | 2001 10 23 | 402 | 0.1− | 0.0 |
| 2001 09 23 | 642 | (1.9+ | 4.0+) | 2001 10 13 | 699 | 0.6+ | 0.1− | 2001 10 23 | 402 | 0.6− | 0.2+ |
| 2001 09 23 | 642 | 0.4+ | 0.5+ | 2001 10 13 | 699 | 0.2+ | 0.3+ | 2001 10 23 | 402 | 0.1− | 0.1+ |
| 2001 09 23 | 644 | 0.5− | 0.3+ | 2001 10 13 | 699 | 0.0 | 0.6− | 2001 10 26 | 644 | 0.0 | 0.1− |
| 2001 09 23 | 644 | 0.2− | 0.3+ | 2001 10 13 | 699 | 1.0+ | 0.3+ | 2001 10 26 | 644 | 0.2+ | 0.0 |
| 2001 09 23 | 644 | 0.4− | 0.3+ | 2001 10 13 | 215 | 0.2+ | 0.3+ | 2001 10 26 | 644 | 0.0 | 0.0 |
| 2001 09 23 | 402 | 0.1+ | 0.1− | 2001 10 13 | 215 | 0.1− | 0.2− | 2001 11 18 | 715 | 1.3− | 0.7+ |
| 2001 09 23 | 402 | 0.3− | 0.2− | 2001 10 13 | 215 | 0.0 | 0.0 | 2001 11 18 | 715 | 1.0− | 0.1+ |
| 2001 09 23 | 402 | 0.0 | 0.3− | 2001 10 14 | 540 | 0.4− | 0.1− | 2001 11 18 | 715 | 0.1− | 0.1+ |
| 2001 09 23 | 402 | 0.2+ | 0.1− | 2001 10 14 | 540 | 0.0 | 0.2− | 2001 11 18 | 645 | 0.0 | 0.2− |
| 2001 09 24 | 699 | 1.2− | 0.5+ | 2001 10 14 | 540 | 0.3− | 0.1− | 2001 11 18 | 645 | 0.1− | 0.1− |
| 2001 09 24 | 699 | 0.4+ | 1.0+ | 2001 10 14 | 540 | 0.2− | 0.4− | 2001 11 22 | 608 | 1.6+ | 0.6+ |
| 2001 09 24 | 699 | 0.4+ | 0.6+ | 2001 10 14 | 540 | 0.0 | 0.2+ | 2001 12 18 | 645 | 0.0 | 0.0 |
| 2001 09 24 | 699 | 0.6+ | 0.3+ | 2001 10 14 | 046 | 0.3− | 0.4− | 2001 12 18 | 645 | 0.2− | 0.0 |
| 2001 09 24 | 938 | 0.2− | 0.6− | 2001 10 14 | 046 | 0.5− | 0.4− | 2002 01 08 | 291 | (1.2− | 2.1+) |
| 2001 09 24 | 938 | 0.3− | 0.0 | 2001 10 14 | 046 | 1.2− | 0.2− | 2002 01 08 | 291 | 1.7+ | 1.9+ |
| 2001 09 25 | 344 | 0.3+ | 0.0 | 2001 10 14 | 046 | 1.1− | 0.4− | 2006 09 28 | 291 | 1.1+ | 1.0+ |
| 2001 09 25 | 344 | 0.1+ | 0.1+ | 2001 10 14 | 046 | 0.6− | 0.5− | 2006 09 28 | 291 | 0.1− | 0.4+ |
| 2001 09 26 | 587 | 0.8− | 0.7− | 2001 10 14 | 046 | 0.6− | 0.3− | 2006 09 28 | 291 | 0.9− | 1.7− |
| 2001 09 26 | 587 | 1.3+ | 0.1+ | 2001 10 15 | 608 | 1.0+ | 0.7+ | | | | |

**2001 SW$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 180.37379 | | (2000.0) | | | |
| $n$ | 0.82900511 | $\omega$ | 29.39161 | | −0.76690947 | +0.63660444 |
| $a$ | 1.1222714 | $\Omega$ | 191.29623 | | −0.63934271 | −0.76884784 |
| $e$ | 0.5541281 | $i$ | 24.47270 | | −0.05559472 | +0.06006480 |
| $P$ | 1.19 | $H$ | 19.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7− | 0.1− | 2001 09 27 | 649 | 0.0 | 0.5− | 2001 10 23 | 644 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.7− | 0.2− | 2001 09 27 | 649 | 0.2+ | 0.4− | 2001 10 23 | 644 | 0.6+ | 0.0 |
| 2001 09 21 | 704 | (1.3− | 2.0−) | 2001 09 27 | 649 | 1.0− | 0.5− | 2006 10 13 | 291 | 0.5+ | 0.1− |
| 2001 09 21 | 704 | 0.8+ | 0.5+ | 2001 10 10 | 644 | 0.4− | 0.2− | 2006 10 13 | 291 | 0.2− | 0.8− |
| 2001 09 24 | 658 | 0.9+ | 1.0+ | 2001 10 10 | 644 | 0.6− | 0.2− | 2006 10 13 | 291 | 0.2+ | 0.5+ |
| 2001 09 24 | 658 | 1.2+ | 1.1+ | 2001 10 10 | 644 | 0.1− | 0.1− | 2006 10 16 | 291 | 0.4+ | 1.2+ |
| 2001 09 24 | 658 | 0.6+ | 0.8+ | 2001 10 12 | 649 | 1.0+ | 0.4+ | 2006 10 16 | 291 | 1.4− | 0.3− |
| 2001 09 25 | 344 | 0.4+ | 0.3+ | 2001 10 12 | 649 | 0.3− | 0.3− | 2006 10 16 | 291 | 0.5+ | 0.6− |
| 2001 09 25 | 344 | 1.1− | 1.5− | 2001 10 12 | 649 | 0.0 | 0.2+ | | | | |
| 2001 09 25 | 344 | 0.9− | 0.8− | 2001 10 23 | 644 | 0.6+ | 0.5+ | | | | |

**2001 SB$_{271}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.53649 | | (2000.0) | | | |
| $n$ | 0.19183336 | $\omega$ | 190.61751 | | +0.52093214 | −0.85205278 |
| $a$ | 2.9775104 | $\Omega$ | 228.00964 | | +0.78813640 | +0.50321048 |
| $e$ | 0.1755368 | $i$ | 3.96080 | | +0.32782729 | +0.14417097 |
| $P$ | 5.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2001 10 14 | 704 | (0.7+ | 1.7−) | 2006 08 21 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 0.4+ | 2001 10 14 | 704 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.9+ | 0.1+ |
| 2001 09 20 | 704 | 0.6− | 0.1+ | 2001 10 14 | 704 | 0.7− | 0.4− | 2006 09 19 | 703 | 0.7+ | 0.7+ |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2001 10 14 | 704 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.6− | 0.3− |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2001 10 17 | 704 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.9+ | 0.4+ |
| 2001 09 23 | 704 | 0.5− | 0.6− | 2001 10 17 | 704 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 0.3− | 0.8− | 2001 10 17 | 704 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.7− | 0.5− |
| 2001 09 23 | 704 | 0.6− | 0.5− | 2001 10 17 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.4− |
| 2001 09 23 | 704 | 0.4+ | 0.8− | 2001 10 17 | 704 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.3− | 0.3− |
| 2001 09 24 | 704 | 0.2+ | 0.4− | 2001 10 21 | 704 | 0.3− | 0.2− | 2006 09 24 | 106 | 0.1− | 0.7− |
| 2001 09 24 | 704 | 0.2+ | 1.1+ | 2001 10 21 | 704 | 0.2+ | 0.8+ | 2006 09 24 | 106 | 0.5+ | 0.2+ |
| 2001 09 24 | 704 | 0.2− | 0.6− | 2001 10 21 | 704 | 0.3− | 0.1+ | 2006 09 24 | 106 | 1.3+ | 0.2+ |
| 2001 09 27 | 704 | 0.7+ | 0.7+ | 2001 10 21 | 704 | 0.2− | 0.1+ | 2006 09 24 | 106 | 0.4+ | 0.0 |
| 2001 09 27 | 704 | 0.3+ | 0.2+ | 2001 10 21 | 704 | 0.5− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2001 09 27 | 704 | 0.3− | 0.1+ | 2001 10 25 | 644 | (2.0+ | 1.5+) | 2006 10 11 | 691 | 0.4− | 0.4+ |
| 2001 09 27 | 704 | 0.5− | 0.1− | 2001 10 25 | 644 | 1.4+ | 1.4+ | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 2001 09 28 | 644 | 0.5− | 0.3− | 2001 10 25 | 644 | (1.5+ | 1.6+) | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2001 09 28 | 644 | 0.3+ | 0.1− | 2002 12 07 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 09 28 | 644 | 0.5+ | 0.1− | 2002 12 07 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 10 11 | 644 | 0.2− | 0.1− | 2003 02 22 | 644 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2001 10 11 | 644 | 0.3− | 0.3+ | 2003 02 22 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.9+ | 0.3− |
| 2001 10 11 | 644 | 0.4− | 0.2+ | 2003 02 22 | 644 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2001 10 14 | 699 | 0.2+ | 0.4− | 2004 04 24 | 691 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.4+ |
| 2001 10 14 | 699 | 0.1− | 0.9+ | 2004 04 24 | 691 | 0.1+ | 0.7+ | 2006 10 24 | 644 | 0.6− | 0.3+ |
| 2001 10 14 | 699 | 0.1− | 0.5+ | 2004 04 24 | 691 | 0.3+ | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2001 10 14 | 699 | 0.1− | 0.8+ | 2006 08 21 | 691 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.5− | 0.2− |
| 2001 10 14 | 704 | 0.8+ | 0.2− | 2006 08 21 | 691 | 0.2− | 0.1+ | | | | |

**2001 SP$_{273}$ = 2006 WG$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.68270 | | (2000.0) | | | |
| $n$ | 0.21494854 | $\omega$ | 358.96317 | | +0.47219357 | +0.88134512 |
| $a$ | 2.7600252 | $\Omega$ | 299.21344 | | −0.80862169 | +0.42574506 |
| $e$ | 0.2320528 | $i$ | 1.06670 | | −0.35094757 | +0.20487050 |
| $P$ | 4.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 1.2− | 1.3+ | 2001 09 24 | 704 | 1.1− | 0.7− | 2001 10 24 | 691 | 0.1+ | 0.2− |
| 2001 09 18 | 699 | 0.0 | 0.1+ | 2001 09 24 | 704 | 1.3− | 0.9+ | 2004 02 12 | 291 | 0.1− | 0.3+ |
| 2001 09 18 | 699 | 0.1− | 0.4+ | 2001 09 24 | 704 | 0.5+ | 0.4− | 2004 02 12 | 291 | 0.3− | 0.3+ |
| 2001 09 18 | 699 | 0.9+ | 0.1+ | 2001 09 24 | 704 | 0.2− | 0.4+ | 2004 02 12 | 291 | 0.8+ | 0.2+ |
| 2001 09 19 | 691 | 0.9− | 0.2+ | 2001 10 08 | 644 | 0.5− | 0.6− | 2006 10 31 | G96 | 0.3− | 0.6− |
| 2001 09 19 | 691 | 0.6− | 0.2+ | 2001 10 08 | 644 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 09 19 | 691 | 0.9− | 0.2− | 2001 10 08 | 644 | 0.2+ | 0.5− | 2006 10 31 | G96 | 0.4− | 0.4− |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2001 10 11 | 644 | 0.6− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.7− |
| 2001 09 20 | 704 | 0.1+ | 0.1+ | 2001 10 11 | 644 | 0.6− | 0.5+ | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2001 10 11 | 644 | 0.2− | 0.4+ | 2006 11 09 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 0.6+ | 2001 10 18 | 644 | 0.3− | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 1.2+ | 0.0 | 2001 10 18 | 644 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.3+ | 0.3+ |
| 2001 09 21 | 691 | 1.0+ | 0.3− | 2001 10 18 | 644 | 0.4− | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2001 09 21 | 691 | 0.8+ | 0.3− | 2001 10 21 | 704 | 0.1− | 1.0+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 691 | 1.2+ | 0.2− | 2001 10 21 | 704 | 0.7− | 0.3+ | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2001 09 23 | 704 | (1.4− | 1.7+) | 2001 10 21 | 704 | 0.1+ | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.6− |
| 2001 09 23 | 704 | 0.8+ | 0.5+ | 2001 10 21 | 704 | 0.6− | 0.8+ | 2006 11 24 | G96 | 0.0 | 0.6− |
| 2001 09 23 | 704 | (0.7+ | 1.7+) | 2001 10 21 | 704 | 0.3− | 0.7+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2001 09 23 | 704 | (0.9+ | 3.4−) | 2001 10 24 | 691 | 0.1− | 0.0 | | | | |
| 2001 09 24 | 704 | 0.7+ | 0.1+ | 2001 10 24 | 691 | 0.2− | 0.1− | | | | |

### 2001 $SM_{274}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.30396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21447035 | $\omega$ | 310.20136 | | +0.73535331 | | +0.67755908 |
| $a$ | 2.7641262 | $\Omega$ | 7.17957 | | −0.58584968 | | +0.64523518 |
| $e$ | 0.1207884 | $i$ | 5.97411 | | −0.34064009 | | +0.35296636 |
| $P$ | 4.60 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 1.0+ | 2001 10 11 | 644 | 0.7− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.6+ | 0.8+ | 2001 10 24 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2001 10 24 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2001 09 20 | 291 | 0.1+ | 0.0 | 2001 10 24 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 291 | 0.2− | 0.1+ | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 291 | 0.6− | 0.2+ | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 09 21 | 691 | 0.2− | 0.1− | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2001 09 21 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.7− | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2001 09 21 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2001 10 11 | 644 | 0.6− | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 10 11 | 644 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.6+ | 1.1+ | 2006 11 22 | 691 | 0.1+ | 0.4− |

### 2001 $SN_{274}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.31003 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19686467 | $\omega$ | 114.79046 | | +0.58517385 | | +0.80991202 |
| $a$ | 2.9265606 | $\Omega$ | 191.29248 | | −0.79819176 | | +0.56655063 |
| $e$ | 0.0246313 | $i$ | 11.83941 | | −0.14304364 | | +0.15186477 |
| $P$ | 5.01 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.2+ | 0.1− | 2001 10 11 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2001 09 12 | 695 | 0.3+ | 0.1− | 2001 10 17 | 644 | 0.3− | 1.0− | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.5+ | 0.3+ | 2001 10 17 | 644 | 0.5− | 1.0− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2001 09 20 | 704 | 0.5− | 1.2+ | 2001 10 17 | 644 | 0.5− | 1.0− | 2006 09 25 | G96 | 0.2+ | 0.5− |
| 2001 09 20 | 704 | 0.4+ | 0.5+ | 2001 10 20 | 704 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2001 09 20 | 704 | 0.5+ | 0.5− | 2001 10 20 | 704 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.1− | 0.8− | 2001 10 20 | 704 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 09 20 | 291 | 0.1+ | 0.2+ | 2001 10 20 | 704 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 09 20 | 291 | 0.1+ | 0.2+ | 2001 10 20 | 704 | 1.2+ | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2001 09 20 | 291 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.9− | 0.9− |
| 2001 09 21 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.7+ | 0.4+ |
| 2001 09 21 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | (2.3+ | 2.0−) |
| 2001 09 21 | 691 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5− | 1.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.5− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.3+ | 2006 09 18 | J75 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 0.5− | 2006 09 18 | J75 | 0.8− | 0.8− | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2001 09 26 | 704 | 0.4− | 0.2− | 2006 09 18 | J75 | 0.9− | 0.9− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 0.2− | 0.4+ | 2006 09 18 | J75 | 0.9+ | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 09 26 | 704 | 0.3+ | 0.7+ | 2006 09 19 | J75 | 0.8+ | 0.2− | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2001 10 11 | 644 | 0.1+ | 0.0 | 2006 09 19 | J75 | 0.6+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |

### 2001 $SY_{274}$ = 2006 $SL_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.29431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20166286 | $\omega$ | 143.89342 | | +0.99303319 | | −0.11687634 |
| $a$ | 2.8799532 | $\Omega$ | 222.82616 | | +0.10227874 | | +0.91813874 |
| $e$ | 0.0855073 | $i$ | 1.26440 | | +0.05851616 | | +0.37863065 |
| $P$ | 4.89 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2001 09 18 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2001 09 18 | 691 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2001 09 22 | 691 | 0.7+ | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 09 22 | 691 | 0.7+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 09 22 | 691 | 0.7+ | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 10 11 | 644 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2001 10 11 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2001 10 11 | 644 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 10 15 | 291 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2001 10 15 | 291 | 1.2− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2001 10 15 | 291 | 1.3− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.4+ | 0.2− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.4+ | 1.1− | 2006 10 19 | 691 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.8+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1− | | | | |

### 2001 $SR_{284}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.57755 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24218474 | $\omega$ | 107.03083 | | +0.99214238 | | +0.12347754 |
| $a$ | 2.5490100 | $\Omega$ | 245.88010 | | −0.12154572 | | +0.91301607 |
| $e$ | 0.1841194 | $i$ | 1.26624 | | −0.02966693 | | +0.38878651 |
| $P$ | 4.07 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.6− | 0.5+ | 2001 09 23 | 704 | 0.3− | 0.9− | 2005 09 13 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2001 09 23 | 704 | 0.2+ | 0.7− | 2005 09 13 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 1.2− | 1.2+ | 2001 09 23 | 704 | 0.6+ | 1.1− | 2005 09 30 | G96 | 0.0 | 0.5− |
| 2001 09 20 | 704 | 1.1− | 0.3− | 2005 07 05 | 291 | 0.1− | 0.3+ | 2005 09 30 | G96 | 0.1− | 0.1− |
| 2001 09 22 | 291 | 0.1+ | 0.2+ | 2005 07 05 | 291 | 0.0 | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.2− |
| 2001 09 22 | 291 | 0.3+ | 0.3+ | 2005 07 05 | 291 | 0.0 | 0.2+ | 2005 09 30 | G96 | 0.0 | 0.3− |
| 2001 09 22 | 291 | 0.1− | 0.3+ | 2005 08 31 | 691 | 0.0 | 0.1− | 2005 11 01 | G96 | 0.5+ | 0.5− |
| 2001 09 23 | 291 | 0.1+ | 0.2+ | 2005 08 31 | 691 | 0.1+ | 0.3− | 2005 11 01 | G96 | 0.3+ | 0.4− |
| 2001 09 23 | 291 | 0.1+ | 0.0 | 2005 08 31 | 691 | 0.0 | 0.2− | 2005 11 01 | G96 | 0.2+ | 0.0 |
| 2001 09 23 | 291 | 0.2− | 0.1+ | 2005 09 13 | 691 | 0.1+ | 0.0 | 2005 11 01 | G96 | 0.6− | 0.7+ |

### 2001 $SG_{292}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.68685 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21634642 | $\omega$ | 189.99138 | | +0.84035896 | | −0.53482073 |
| $a$ | 2.7481234 | $\Omega$ | 203.01459 | | +0.51156103 | | +0.83630472 |
| $e$ | 0.1626231 | $i$ | 13.02455 | | +0.17917066 | | +0.12066979 |
| $P$ | 4.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.1− | 0.9+ | 2001 09 23 | 704 | 0.5− | 1.1+ | 2006 11 13 | 703 | 0.2− | 0.3+ |
| 2001 08 25 | 704 | 0.9− | 0.1− | 2001 09 23 | 704 | 0.9+ | 0.5+ | 2006 11 13 | 703 | 0.6− | 0.2− |
| 2001 08 25 | 704 | 0.0 | 0.2− | 2001 09 23 | 704 | 1.2+ | 0.5+ | 2006 11 19 | 703 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | 0.8+ | 0.3− | 2001 09 25 | 704 | 1.2− | 0.5− | 2006 11 19 | 703 | 0.2+ | 0.1− |
| 2001 09 16 | 704 | 0.4+ | 0.4− | 2001 09 25 | 704 | 0.2− | 0.3− | 2006 11 19 | 703 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.3+ | 0.9− | 2001 09 25 | 704 | 1.2− | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.1− |
| 2001 09 16 | 704 | 0.7+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.1+ | | | | |
| 2001 09 16 | 704 | 0.3− | 0.8− | 2006 11 13 | 703 | 0.8+ | 0.1− | | | | |

**2001 SV$_{292}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.77106 | | (2000.0) | | | |
| $n$ | 0.21363862 | $\omega$ | 27.41842 | | +0.95497766 | −0.29639911 |
| $a$ | 2.7712958 | $\Omega$ | 349.79817 | | +0.25717001 | +0.84863203 |
| $e$ | 0.0864230 | $i$ | 4.16200 | | +0.14792315 | +0.43814523 |
| $P$ | 4.61 | $H$ | 16.5 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.2− | 0.8+ | 2001 09 23 | 704 | 1.3+ | 0.8− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2001 08 27 | 644 | 0.0 | 0.5+ | 2001 09 23 | 691 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2001 08 27 | 644 | 0.3+ | 0.9+ | 2001 09 23 | 704 | 0.8+ | 0.6− | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2001 09 16 | 704 | (1.7− | 0.2+) | 2001 09 23 | 704 | 0.8+ | 0.6− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 1.4− | 0.9− | 2001 10 11 | 644 | 0.5+ | 1.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 0.4− | 0.2+ | 2001 10 11 | 644 | 0.1+ | 0.8+ | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.3− | 1.1− | 2001 10 11 | 644 | 0.2+ | 0.9+ | 2006 11 17 | 691 | 0.3− | 0.1− |
| 2001 09 20 | 704 | (1.9+ | 2.1+) | 2001 10 21 | 704 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.2− | 1.2+ | 2001 10 21 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.4− | 1.1+ |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2001 10 21 | 704 | 0.2− | 0.9+ | 2006 11 22 | 704 | 0.3− | 1.3+ |
| 2001 09 20 | 704 | (1.0− | 2.3+) | 2001 10 21 | 704 | 0.4− | 0.4− | 2006 11 22 | 704 | (0.2− | 2.0−) |
| 2001 09 23 | 691 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.0 | 0.2− | | | | |
| 2001 09 23 | 691 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1+ | | | | |

**2001 SS$_{293}$ = 2006 RZ$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.80231 | | (2000.0) | | | |
| $n$ | 0.19266998 | $\omega$ | 245.03851 | | +0.37581298 | −0.92667680 |
| $a$ | 2.9688848 | $\Omega$ | 182.90617 | | +0.88662091 | +0.36140326 |
| $e$ | 0.1344271 | $i$ | 6.67323 | | +0.26956995 | +0.10323659 |
| $P$ | 5.12 | $H$ | 15.7 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5− | 0.1+ | 2001 09 26 | 704 | 1.3+ | 1.0+ | 2006 09 12 | 703 | 0.4+ | 1.0+ |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2001 10 17 | 644 | 0.3− | 0.6− | 2006 09 12 | 703 | 0.7− | 0.1− |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2001 10 17 | 644 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | 0.0 | 0.4+ | 2001 10 17 | 644 | 0.4− | 0.5− | 2006 09 19 | 703 | 0.5+ | 1.1− |
| 2001 09 23 | 704 | 0.0 | 0.2− | 2001 10 17 | 644 | 0.0 | 0.5+ | 2006 09 19 | 699 | (2.1+ | 0.5+) |
| 2001 09 23 | 704 | 0.3+ | 0.5− | 2001 10 17 | 644 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.3− |
| 2001 09 23 | 704 | 0.1− | 0.3− | 2001 10 17 | 644 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.2+ |
| 2001 09 23 | 704 | 0.1− | 0.4− | 2004 04 19 | 691 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.6+ | 0.2+ |
| 2001 09 26 | 704 | 0.5− | 0.4− | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 1.2− | 1.7− |
| 2001 09 26 | 704 | 0.2− | 0.4+ | 2004 04 19 | 691 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.7+ |
| 2001 09 26 | 704 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.2− | 0.6+ | | | | |
| 2001 09 26 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.9+ | 0.5− | | | | |

**2001 SX$_{293}$ = 2006 UX$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.97194 | | (2000.0) | | | |
| $n$ | 0.21309515 | $\omega$ | 200.28377 | | +0.78091627 | +0.62426675 |
| $a$ | 2.7760056 | $\Omega$ | 121.06933 | | −0.56958067 | +0.72577355 |
| $e$ | 0.0650861 | $i$ | 1.43609 | | −0.25641303 | +0.28903942 |
| $P$ | 4.63 | $H$ | 16.2 | $G$ 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 291 | 0.5+ | 0.0 | 2001 09 23 | 704 | 0.6− | 0.7− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 09 18 | 291 | 0.1+ | 0.2− | 2001 10 17 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.1+ | 0.8− |
| 2001 09 18 | 291 | 0.2− | 0.1− | 2001 10 17 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 2001 09 19 | 704 | 0.7+ | 1.1+ | 2001 10 17 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | (2.0− | 0.3−) |
| 2001 09 19 | 704 | 0.8− | 1.2+ | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | (2.0+ | 0.7−) |
| 2001 09 19 | 704 | 0.7− | 0.4− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.5− | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2001 09 23 | 704 | 0.4+ | 0.4− | 2006 10 23 | 691 | 0.6− | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2001 09 23 | 704 | 0.2− | 0.8− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.8− |

**2001 SC$_{294}$ = 2006 RH$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.51531 | | (2000.0) | | | |
| $n$ | 0.20166070 | $\omega$ | 39.58304 | | +0.03113869 | −0.99915383 |
| $a$ | 2.8799738 | $\Omega$ | 48.65013 | | +0.90772590 | +0.01701525 |
| $e$ | 0.1788134 | $i$ | 2.05129 | | +0.41840659 | +0.03744480 |
| $P$ | 4.89 | $H$ | 16.2 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5− | 0.7+ | 2003 01 27 | 704 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2006 09 14 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2001 09 23 | 704 | 0.2− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2001 09 23 | 704 | 0.4− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2001 09 26 | 704 | 1.1− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 09 26 | 704 | 0.1+ | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2001 09 26 | 704 | 0.3+ | 1.2+ | 2006 09 26 | G96 | 0.6+ | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2001 09 26 | 704 | 0.1+ | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2003 01 27 | 704 | 0.7− | 0.5− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2003 01 27 | 704 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.6+ | 0.0 |
| 2003 01 27 | 704 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− | | | | |
| 2003 01 27 | 704 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | | | |

**2001 SM$_{294}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.91807 | | (2000.0) | | | |
| $n$ | 0.21767423 | $\omega$ | 52.04797 | | +0.86440510 | +0.49802643 |
| $a$ | 2.7369364 | $\Omega$ | 277.98441 | | −0.48041967 | +0.77756362 |
| $e$ | 0.1555569 | $i$ | 4.00060 | | −0.14832658 | +0.38388084 |
| $P$ | 4.53 | $H$ | 15.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 25 | 644 | 0.7+ | 0.4+ | 2001 09 20 | 704 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 06 25 | 644 | 0.1+ | 0.2− | 2001 09 20 | 704 | 0.1− | 0.3+ | 2006 10 25 | 540 | 0.0 | 0.1− |
| 2001 06 25 | 644 | 0.2− | 0.2+ | 2001 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 25 | 540 | 0.0 | 0.2− |
| 2001 07 19 | 699 | 0.3− | 0.7+ | 2001 09 23 | 704 | 0.8− | 0.0 | 2006 10 25 | 540 | 0.2+ | 0.3− |
| 2001 07 19 | 699 | 0.5− | 0.7− | 2001 09 23 | 704 | 0.5− | 0.6− | 2006 10 25 | 540 | 0.3− | 0.5− |
| 2001 07 19 | 699 | 0.2− | 0.7− | 2001 09 23 | 704 | 0.4+ | 1.4+ | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 2001 07 19 | 699 | 0.3+ | 0.5− | 2002 12 06 | 695 | 0.1+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 08 20 | 704 | 1.2+ | 0.5+ | 2002 12 06 | 695 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 08 20 | 704 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2001 08 20 | 704 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.7− | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 2001 08 20 | 704 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2001 09 08 | 704 | 0.1+ | 0.5− | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2001 09 08 | 704 | 0.7− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2001 09 08 | 704 | 0.2− | 0.5− | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2001 09 18 | 699 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 09 18 | 699 | 0.1− | 0.6− | 2006 10 19 | 703 | 0.6− | 1.0− | 2006 11 14 | G96 | 0.5+ | 0.1+ |
| 2001 09 18 | 699 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.6− | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2001 09 18 | 699 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.7− | 0.4− | 2006 11 19 | 704 | 1.0+ | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 2001 09 20 | 704 | 0.4− | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.3− |

**2001 SN$_{294}$ = 2006 RT$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.40641 | | (2000.0) | | | |
| $n$ | 0.21155828 | $\omega$ | 185.30478 | | +0.95345792 | −0.30112187 |
| $a$ | 2.7894336 | $\Omega$ | 192.25460 | | +0.27927874 | +0.90143966 |
| $e$ | 0.0880873 | $i$ | 4.21698 | | +0.11367224 | +0.31101793 |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.8− | 0.4+ | 2006 09 14 | 703 | 0.1+ | 1.2+ | 2006 10 15 | 703 | 0.1− | 0.6− |
| 2001 08 23 | 699 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.7− | 0.5− | 2006 10 15 | 703 | 1.3+ | 0.9+ |
| 2001 08 23 | 699 | 0.5− | 0.9− | 2006 09 14 | 703 | 0.1− | 1.4− | 2006 10 15 | 703 | 0.5− | 0.0 |
| 2001 08 23 | 699 | (0.7+ | 1.9−) | 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2001 09 12 | 704 | 0.0 | 0.8− | 2006 09 14 | 691 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.3+ |
| 2001 09 12 | 704 | 0.7+ | 0.1− | 2006 09 14 | 691 | 0.2− | 0.2− | 2006 10 16 | 291 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.7− | 0.8− | 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.3− | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 16 | 291 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 16 | 291 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.9+ | 0.9+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.5+ | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 0.7− | 0.8+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 09 23 | 704 | 0.1+ | 0.8+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2004 03 26 | 691 | 0.3− | 0.9+ | 2006 09 29 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2004 03 26 | 691 | 0.3+ | 0.1− | 2006 09 29 | 691 | 0.0 | 0.2+ | | | | |
| 2006 09 14 | 703 | 0.5+ | 0.8+ | 2006 10 15 | 703 | 1.1− | 0.3+ | | | | |

**2001 SW$_{294}$ = 2006 VY$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.76816 | | (2000.0) | | | |
| $n$ | 0.22082083 | $\omega$ | 94.35612 | | +0.99237244 | −0.11273229 |
| $a$ | 2.7108742 | $\Omega$ | 272.12218 | | +0.08367559 | +0.91313503 |
| $e$ | 0.1379958 | $i$ | 2.86127 | | +0.09052813 | +0.39175994 |
| $P$ | 4.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | (1.8− | 1.0+) | 2001 09 23 | 704 | 0.0 | 1.0− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2001 09 08 | 704 | 0.1− | 0.2+ | 2001 09 23 | 704 | 0.9+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2001 09 08 | 704 | 0.1− | 0.8− | 2001 09 23 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.1+ |
| 2001 09 08 | 704 | 0.5+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.6− | 2006 11 11 | 703 | (1.2− | 3.5−) |
| 2001 09 08 | 704 | 0.3+ | 0.6− | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2001 09 18 | 699 | 0.8− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.5− | 0.6− |
| 2001 09 18 | 699 | 0.9− | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 1.1− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.7− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.2− | 0.9− | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.7+ | 2006 10 20 | G96 | 0.0 | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2006 11 01 | G96 | 0.5− | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2006 11 01 | G96 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.4− | 0.4− |
| 2001 09 23 | 704 | 0.8+ | 0.5− | 2006 11 01 | G96 | 0.4− | 0.6− | 2006 11 21 | 704 | 0.2+ | 0.5− |
| 2001 09 23 | 704 | 0.7+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.5+ |

**2001 SN$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 294.74688 | | (2000.0) | | | |
| $n$ | 0.21609077 | $\omega$ | 115.23768 | | −0.08798212 | −0.99577887 |
| $a$ | 2.7502905 | $\Omega$ | 339.75838 | | +0.88457943 | −0.06603485 |
| $e$ | 0.0375809 | $i$ | 4.33392 | | +0.45801569 | −0.06374819 |
| $P$ | 4.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 29 | 691 | 0.0 | 0.4+ | 2001 09 11 | 699 | 0.3− | 0.5− | 2001 09 23 | 704 | 0.1+ | 1.4+ |
| 1992 09 29 | 691 | 0.0 | 0.2+ | 2001 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 1992 09 29 | 691 | 0.2− | 0.2− | 2001 09 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.5+ | 0.3+ |
| 2001 08 19 | 807 | 0.0 | 0.1+ | 2001 09 19 | 691 | 0.1+ | 0.2− | 2006 10 17 | 691 | (0.5− | 2.0−) |
| 2001 08 19 | 807 | 0.2− | 0.2+ | 2001 09 20 | 704 | 0.3+ | 1.3− | 2006 10 21 | 691 | 0.7− | 0.0 |
| 2001 08 27 | 691 | 0.0 | 0.0 | 2001 09 20 | 704 | 0.2+ | 0.6− | 2006 10 21 | 691 | 0.0 | 0.3− |
| 2001 08 27 | 691 | 0.3− | 0.1− | 2001 09 20 | 704 | 0.1+ | 0.6− | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2001 08 27 | 691 | 0.2− | 0.1+ | 2001 09 20 | 704 | 0.5+ | 1.0− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 09 11 | 699 | 1.1+ | 0.3− | 2001 09 23 | 704 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2001 09 11 | 699 | (0.3− | 1.6+) | 2001 09 23 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2001 09 11 | 699 | 0.6− | 0.7+ | 2001 09 23 | 704 | 0.2− | 0.1− | | | | |

**2001 ST$_{299}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.34200 | | (2000.0) | | | |
| $n$ | 0.21273188 | $\omega$ | 119.47147 | | +0.94548115 | +0.32401281 |
| $a$ | 2.7791650 | $\Omega$ | 221.64701 | | −0.31331191 | +0.87738191 |
| $e$ | 0.1027668 | $i$ | 2.83602 | | −0.08888778 | +0.35385969 |
| $P$ | 4.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 691 | 0.2+ | 0.1+ | 2001 09 25 | 704 | 0.9− | 0.8+ | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2001 09 11 | 691 | 0.3+ | 0.1− | 2001 09 25 | 704 | 0.7− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2001 09 11 | 691 | 0.5− | 0.3+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.6+ | 0.9+ | 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.4− | 0.7− |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.5− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2001 11 12 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2001 09 20 | 704 | 0.1− | 1.2+ | 2001 11 12 | 645 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2001 09 23 | 704 | 0.3+ | 1.3+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2001 09 23 | 704 | 0.0 | 0.9+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.6− | 0.4− |
| 2001 09 23 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 691 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2001 09 23 | 704 | 0.7+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.6− |
| 2001 09 25 | 704 | (0.3− | 2.0+) | 2006 10 16 | 691 | 0.0 | 0.2+ | | | | |

**2001 SO$_{301}$ = 2006 SM$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.99288 | | (2000.0) | | | |
| $n$ | 0.19699385 | $\omega$ | 94.68539 | | +0.54265533 | −0.83973019 |
| $a$ | 2.9252811 | $\Omega$ | 322.42893 | | +0.75744407 | +0.49922715 |
| $e$ | 0.0738891 | $i$ | 1.82819 | | +0.36304776 | +0.21360115 |
| $P$ | 5.00 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.0 | 0.1+ | 2006 07 22 | G96 | 0.4+ | 0.6− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 691 | 0.2+ | 0.1+ | 2006 07 22 | G96 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 691 | 0.1− | 0.3+ | 2006 07 22 | G96 | 0.3+ | 0.8− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.7− | 0.0 | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.8− | 0.8− |
| 2001 09 20 | 704 | 0.3− | 0.4− | 2006 09 16 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.6− |
| 2001 09 20 | 704 | 0.1+ | 1.0− | 2006 09 16 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2001 09 20 | 704 | 0.5− | 0.8− | 2006 09 16 | 691 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.5− | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.0 |
| 2001 09 23 | 704 | 0.7+ | 0.1− | 2006 09 20 | 704 | 0.2− | 0.8− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2001 09 23 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | (0.9− | 1.6−) | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2001 09 23 | 704 | 0.6+ | 0.2− | 2006 09 20 | 704 | 0.3− | 0.5− | | | | |
| 2001 09 23 | 704 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2+ | | | | |

**2001 SW$_{302}$ = 2006 UW$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.55688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21148827 | $\omega$ | 353.99708 | | +0.44425620 | +0.89446626 | |
| $a$ | 2.7900492 | $\Omega$ | 302.36851 | | −0.81945669 | +0.38284360 | |
| $e$ | 0.0412361 | $i$ | 3.43870 | | −0.36211484 | +0.23099973 | |
| $P$ | 4.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 07 | 691 | 0.5− | 0.1− | 2001 11 18 | 645 | 0.2+ | 0.1− | 2006 10 28 | 291 | 0.2+ | 0.4+ |
| 1994 01 07 | 691 | 0.2+ | 1.0− | 2004 03 15 | 291 | 0.1+ | 0.5+ | 2006 10 28 | 291 | 0.4− | 0.4+ |
| 1994 01 07 | 691 | 0.2− | 0.3− | 2004 03 15 | 291 | 0.2+ | 0.4+ | 2006 10 28 | 291 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 0.1+ | 1.2+ | 2004 03 15 | 291 | 0.3+ | 0.7+ | 2006 10 28 | 291 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.5− | 1.1− | 2004 03 15 | 291 | 0.4+ | 0.4+ | 2006 10 28 | 291 | 0.1+ | 0.4+ |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2004 03 15 | 291 | 0.2+ | 0.4+ | 2006 10 29 | 291 | 0.3− | 0.0 |
| 2001 09 12 | 704 | 1.5− | 0.6+ | 2004 03 15 | 291 | 0.3+ | 0.4+ | 2006 10 29 | 291 | 0.2− | 0.4+ |
| 2001 09 20 | 704 | 0.1− | 1.2+ | 2004 03 28 | 691 | 0.4+ | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2004 03 28 | 691 | 0.3+ | 0.0 | 2006 10 29 | 291 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 1.2− | 0.3+ | 2004 03 28 | 691 | 0.3− | 0.6+ | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 29 | 691 | 0.4+ | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.8+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2001 09 23 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 691 | 0.6− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.6− |
| 2001 09 23 | 704 | 1.0− | 0.0 | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.3− | 0.4− | 2006 10 17 | 691 | 0.4− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2001 09 23 | 704 | 0.5− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.2+ | | | | |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2006 10 28 | 291 | 0.3+ | 0.3+ | | | | |

**2001 SV$_{306}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.04195 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21748803 | $\omega$ | 312.17133 | | +0.81776427 | +0.57545714 | |
| $a$ | 2.7384983 | $\Omega$ | 12.70885 | | −0.51295966 | +0.73699730 | |
| $e$ | 0.0945774 | $i$ | 2.74098 | | −0.26102489 | +0.35451947 | |
| $P$ | 4.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.2− | 0.4+ | 2001 09 23 | 704 | 0.4− | 0.1+ | 2006 11 14 | 691 | 0.5+ | 0.3− |
| 2001 09 20 | 704 | 0.4− | 0.9+ | 2001 09 23 | 704 | 0.7− | 1.4+ | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.9+ | 2001 10 16 | 691 | 0.3+ | 0.5− | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2001 09 20 | 691 | 0.4+ | 0.2− | 2001 10 16 | 691 | 0.1+ | 0.6− | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2001 09 20 | 691 | 0.2+ | 0.3− | 2001 10 16 | 691 | 0.5− | 0.5− | 2006 11 18 | 691 | 0.4− | 0.2− |
| 2001 09 20 | 691 | 0.2+ | 0.1− | 2001 10 21 | 704 | 0.4+ | 1.4+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2001 09 23 | 704 | 0.8− | 0.4− | 2001 10 21 | 704 | 0.4+ | 2.0+ | | | | |
| 2001 09 23 | 704 | 1.2− | 0.9+ | 2001 10 21 | 704 | 0.8+ | 1.1+ | | | | |

**2001 SC$_{307}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.74833 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21377839 | $\omega$ | 311.61395 | | +0.88842837 | −0.45891787 | |
| $a$ | 2.7700877 | $\Omega$ | 75.70533 | | +0.42398697 | +0.81256390 | |
| $e$ | 0.0830031 | $i$ | 0.55909 | | +0.17586947 | +0.35935260 | |
| $P$ | 4.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7− | 1.4+ | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.9+ | 1.4+ | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 1.2+ | 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 09 21 | 704 | (0.5− | 1.5+) | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 1.0+ | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 0.6+ | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2001 09 22 | 704 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 09 22 | 704 | (0.2+ | 2.6−) | 2006 10 16 | 691 | 0.7− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2001 09 23 | 704 | 0.8− | 0.8+ | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2001 09 23 | 704 | 0.4− | 1.4+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.2− | 0.7+ |
| 2001 09 23 | 704 | 1.3− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.4− |
| 2001 09 23 | 704 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 17 | 703 | 1.3− | 0.4− |
| 2001 10 17 | 644 | 0.0 | 0.7− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2001 10 17 | 644 | 0.4− | 1.0− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.7− |
| 2001 10 17 | 644 | 0.1+ | 0.8− | 2006 10 20 | 691 | 0.4+ | 0.8+ | 2006 11 17 | 703 | 1.1− | 0.5− |
| 2002 12 31 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 12 31 | 645 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2003 01 03 | 291 | 0.8− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2003 01 03 | 291 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2003 01 03 | 291 | 1.0− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2003 01 08 | 704 | (0.4+ | 1.8−) | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.9+ |
| 2003 01 08 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2003 01 08 | 704 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 1.0+ |
| 2003 01 08 | 704 | (0.0 | 1.6+) | 2006 11 01 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2003 01 08 | 704 | 1.1+ | 0.9+ | 2006 11 01 | 691 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.9− | 0.1+ |
| 2003 01 25 | 291 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.5− |
| 2003 01 25 | 291 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.6+ |
| 2003 01 25 | 291 | 0.8+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.8+ | 0.5− |

**2001 SY$_{311}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.02734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20100621 | $\omega$ | 72.32948 | | +0.60382369 | −0.79413728 | |
| $a$ | 2.8862220 | $\Omega$ | 340.04392 | | +0.63327107 | +0.53038614 | |
| $e$ | 0.1315470 | $i$ | 11.64131 | | +0.48411227 | +0.29670949 | |
| $P$ | 4.90 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 14 | 691 | 0.6− | 0.9+ | 2001 10 21 | 704 | 0.0 | 0.6+ | 2006 09 28 | 703 | 0.7+ | 0.5+ |
| 1991 09 14 | 691 | 0.4− | 0.4+ | 2001 10 21 | 704 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.4− | 1.0− |
| 1991 09 14 | 691 | 0.4− | 0.0 | 2001 10 21 | 704 | 0.9+ | 0.2+ | 2006 09 28 | 703 | (1.6− | 3.3−) |
| 2001 09 20 | 704 | 0.4+ | 0.7+ | 2001 10 21 | 704 | 1.1+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2003 01 31 | 644 | 0.5+ | 1.1+ | 2006 10 10 | 644 | 0.3+ | 0.2− |
| 2001 09 20 | 704 | 0.9+ | 0.1+ | 2003 01 31 | 644 | 0.7+ | 1.1+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.7− | 0.5− | 2003 01 31 | 644 | 0.8+ | 1.0+ | 2006 10 19 | 703 | 1.3+ | 0.4+ |
| 2001 09 25 | 704 | 0.6+ | 0.9+ | 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.5+ | 0.3− |
| 2001 09 25 | 704 | 0.6− | 1.3− | 2006 09 16 | 703 | 0.8− | 0.8− | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.7− | 2006 10 19 | 703 | 1.0+ | 0.5+ |
| 2001 09 25 | 704 | 0.1− | 0.6− | 2006 09 16 | 703 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.7+ | 0.6− |
| 2001 09 25 | 704 | 0.4+ | 1.1+ | 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.7− | 0.8− |
| 2001 09 25 | 704 | 0.2− | 1.0− | 2006 09 18 | 703 | 0.5+ | 0.7− | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2001 09 29 | 644 | 0.4+ | 0.0 | 2006 09 18 | 703 | 1.3− | 0.7− | 2006 10 27 | 703 | 1.2− | 0.3+ |
| 2001 09 29 | 644 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.1− | | | | |
| 2001 09 29 | 644 | 0.8+ | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.7− | | | | |

**2001 SC$_{313}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.61389 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20909049 | $\omega$ | 304.00149 | | +0.97162603 | +0.21180279 | |
| $a$ | 2.8113388 | $\Omega$ | 44.03324 | | −0.13395804 | +0.85960291 | |
| $e$ | 0.2429889 | $i$ | 8.71130 | | −0.19493102 | +0.46499722 | |
| $P$ | 4.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | (0.7− | 2.4−) | 2001 10 11 | 704 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 09 12 | 704 | 0.3− | 1.0− | 2001 10 11 | 704 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.4− |
| 2001 09 12 | 704 | 0.2− | 1.0− | 2001 10 11 | 704 | 0.7− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.5− |
| 2001 09 18 | 699 | 0.1− | 0.7− | 2001 10 11 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.8+ | 1.3− |
| 2001 09 18 | 699 | 0.5− | 0.0 | 2001 10 16 | 644 | (1.5− | 0.0 ) | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2001 09 18 | 699 | 0.1− | 0.8+ | 2001 10 16 | 644 | 1.4− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.7+ |
| 2001 09 18 | 699 | 0.8+ | 0.8− | 2001 10 16 | 644 | 1.2− | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.4− |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2001 10 24 | 644 | 0.0 | 0.9+ | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.2− | 2001 10 24 | 644 | 0.1− | 0.8+ | 2006 11 13 | 691 | 0.1− | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.1− | 2001 10 24 | 644 | 0.2+ | 0.8+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2001 11 20 | 704 | 0.7− | 1.1− | 2006 11 18 | 691 | 1.3− | 1.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.3− | 2001 11 20 | 704 | 0.4+ | 0.9− | 2006 11 18 | 691 | 0.8+ | 0.7+ |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2001 11 20 | 704 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1+ | 0.5− | 2006 10 16 | 703 | 1.4+ | 0.9− | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.5+ | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2001 09 21 | 704 | 0.5+ | 0.5− | 2006 10 16 | 703 | 0.7+ | 1.2− | 2006 11 18 | 704 | (0.4+ | 1.9+) |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.7− | 2006 11 18 | 704 | 1.4+ | 0.7+ |
| 2001 09 25 | 704 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.7− | 0.4+ |
| 2001 09 25 | 704 | 0.2+ | 1.4+ | 2006 10 17 | G96 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.5+ | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.7− |
| 2001 09 25 | 704 | 0.7+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.5− |
| 2001 10 08 | 644 | 0.1− | 0.6− | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.2− | 0.0 |
| 2001 10 08 | 644 | 0.2+ | 0.7− | 2006 10 31 | G96 | 0.2− | 0.1+ | 2006 11 22 | 704 | 1.1+ | 1.2− |
| 2001 10 08 | 644 | 0.2+ | 0.6− | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.1− | 1.0− |
| 2001 10 11 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.3− | | | | |

**2001 SH$_{318}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.90062 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21330703 | $\omega$ | 192.71629 | | +0.67584949 | −0.73633405 | |
| $a$ | 2.7741670 | $\Omega$ | 214.77916 | | +0.68107372 | +0.64065351 | |
| $e$ | 0.0974708 | $i$ | 3.24043 | | +0.28171980 | +0.21765854 | |
| $P$ | 4.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 24 | 291 | 0.2+ | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 1.1+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.6− |
| 2001 09 20 | 704 | 0.4+ | 1.0− | 2006 11 11 | 703 | (0.5− | 2.9+) | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2001 09 20 | 704 | 0.1+ | 0.4− | 2006 11 11 | 703 | 1.0− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2001 09 26 | 704 | 0.5− | 0.4+ | 2006 11 11 | 703 | 1.5− | 0.3− | 2006 11 24 | G96 | 0.5+ | 0.5− |
| 2001 09 26 | 704 | 0.4+ | 0.8− | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 25 | 291 | 0.2− | 0.0 |
| 2001 09 26 | 704 | 0.6− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.7− | 2006 11 25 | 291 | 0.1− | 0.0 |
| 2001 10 18 | 644 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 25 | 291 | 0.1− | 0.1+ |
| 2001 10 18 | 644 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2001 10 18 | 644 | 0.5− | 0.6− | 2006 11 15 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.7+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.9+ | 0.9+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2001 10 21 | 704 | (1.5+ | 1.9+) | 2006 11 21 | 704 | 0.7− | 0.3− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.4+ | 1.4+ | 2006 11 21 | 704 | 0.4− | 0.7+ | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2001 10 21 | 704 | (1.1+ | 2.2+) | 2006 11 21 | 704 | 1.1+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.1− | 2006 11 27 | 703 | 1.3+ | 0.1− |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.4− |
| 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.3− |
| 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.3+ | 0.9− |
| 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 24 | 291 | 0.2+ | 0.1+ | | | | |
| 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 24 | 291 | 0.1+ | 0.1+ | | | | |

**2001 SA$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.81566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21089396 | $\omega$ | 297.05351 | | +0.94367447 | −0.32706500 | |
| $a$ | 2.7952884 | $\Omega$ | 82.07214 | | +0.31865733 | +0.85761965 | |
| $e$ | 0.1021987 | $i$ | 2.89770 | | +0.08908419 | +0.39688414 | |
| $P$ | 4.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.3− | 1.0+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 1.0− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2001 09 21 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 704 | 1.0+ | 1.0− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.2+ |
| 2001 09 21 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (2.2+ | 0.6+) |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2001 09 26 | 704 | 0.6− | 0.7+ | 2006 11 01 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | (1.8+ | 0.4+) |
| 2001 09 26 | 704 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2001 09 26 | 704 | 0.1− | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | (1.6+ | 1.1+) |
| 2001 09 26 | 704 | 0.3− | 1.0+ | 2006 11 09 | 644 | 0.3+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.1− |
| 2001 09 26 | 704 | 0.3− | 0.8+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.5− |
| 2001 10 24 | 704 | 0.4+ | 1.1− | 2006 11 09 | 644 | 0.0 | 0.5+ | 2006 11 27 | 703 | 0.2− | 1.0− |
| 2001 10 24 | 704 | 0.0 | 0.8− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.2− | 0.9− |
| 2001 10 24 | 704 | 1.0− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.7+ | 0.2+ |
| 2001 10 24 | 704 | 0.6− | 1.2− | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.4− | 1.1+ |
| 2001 10 24 | 704 | 0.1+ | 0.8− | 2006 11 11 | 703 | 1.0− | 0.2+ | 2006 11 29 | 704 | 1.6− | 0.9+ |
| 2001 12 10 | 645 | 0.1+ | 0.2− | 2006 11 11 | 703 | (1.0− | 4.1−) | | | | |
| 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 11 11 | 703 | (3.7+ | 3.4−) | | | | |

**2001 SC$_{319}$ = 2006 TF$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.84205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21222101 | $\omega$ | 256.57566 | | +0.98889114 | +0.14857130 | |
| $a$ | 2.7836233 | $\Omega$ | 94.88006 | | −0.13454038 | +0.90772250 | |
| $e$ | 0.0831427 | $i$ | 0.26273 | | −0.06319171 | +0.39238556 | |
| $P$ | 4.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.5− | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 0.5− | 1.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.7− | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2001 09 26 | 704 | 0.8− | 1.1+ | 2006 10 27 | G96 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2001 09 26 | 704 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2001 09 26 | 704 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2001 09 26 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.9− | 0.1− |
| 2006 10 12 | 691 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.5− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.1− | | | | |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.3− | | | | |

**2001 SP$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.42278 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29929104 | $\omega$ | 292.39076 | | +0.57463183 | +0.81831500 | |
| $a$ | 2.2134697 | $\Omega$ | 12.70649 | | −0.72823125 | +0.51827942 | |
| $e$ | 0.1808810 | $i$ | 3.28456 | | −0.37346688 | +0.24848944 | |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 04 | 691 | 0.5− | 0.1+ | 2001 09 21 | 704 | (0.9− | 2.8−) | 2001 10 13 | 704 | (1.6− | 0.5+) |
| 1991 09 04 | 691 | 0.3+ | 0.7+ | 2001 09 22 | 291 | 0.9+ | 0.4+ | 2001 10 13 | 704 | 0.1− | 1.0+ |
| 1991 09 04 | 691 | 0.1− | 0.0 | 2001 09 22 | 291 | 0.7− | 0.4− | 2001 10 16 | 291 | 0.8+ | 0.4− |
| 2001 08 27 | 699 | 0.6− | 0.0 | 2001 09 22 | 291 | 0.5− | 0.5− | 2001 10 16 | 291 | 0.4+ | 0.5− |
| 2001 08 27 | 699 | 0.0 | 0.6− | 2001 09 25 | 699 | 0.1− | 0.7+ | 2001 10 16 | 291 | 0.0 | 0.5− |
| 2001 08 27 | 699 | 0.6− | 0.5− | 2001 09 25 | 699 | 0.2+ | 0.1− | 2001 10 17 | 644 | 0.5− | 0.2+ |
| 2001 08 27 | 699 | 0.7− | 0.9− | 2001 09 25 | 699 | 0.3+ | 0.6+ | 2001 10 17 | 644 | 0.5− | 0.2+ |
| 2001 09 11 | 699 | (2.0− | 0.5+) | 2001 09 25 | 699 | 0.4+ | 0.2+ | 2001 10 17 | 644 | 0.5− | 0.0 |
| 2001 09 11 | 699 | 0.5− | 1.4+ | 2001 09 26 | 704 | 0.6+ | 0.1+ | 2001 11 16 | 291 | 0.4− | 0.2− |
| 2001 09 11 | 699 | 0.5+ | 1.4− | 2001 09 26 | 704 | 1.1+ | 0.2+ | 2001 11 16 | 291 | 0.2− | 0.2− |
| 2001 09 11 | 699 | 0.8− | 0.9− | 2001 09 26 | 704 | 0.8+ | 0.7+ | 2001 11 16 | 291 | 0.3− | 0.1− |
| 2001 09 16 | 704 | (0.9− | 3.1−) | 2001 09 26 | 704 | (1.7+ | 0.7+) | 2004 07 16 | E12 | 0.2− | 0.3− |
| 2001 09 16 | 704 | (1.2− | 3.0−) | 2001 09 26 | 704 | (1.7+ | 1.4+) | 2004 07 16 | E12 | 0.3+ | 0.6− |
| 2001 09 16 | 704 | (1.1− | 3.1−) | 2001 10 06 | 644 | 0.7+ | 1.3+ | 2004 07 16 | E12 | (0.5− | 2.1−) |
| 2001 09 16 | 704 | (1.3− | 2.0−) | 2001 10 06 | 644 | 0.5+ | 1.1+ | 2006 01 02 | G96 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | (0.3+ | 2.9−) | 2001 10 06 | 644 | 0.3+ | 0.7+ | 2006 01 02 | G96 | 0.5+ | 0.1+ |
| 2001 09 21 | 704 | (0.8− | 2.7−) | 2001 10 13 | 704 | 0.1− | 1.4+ | 2006 01 02 | G96 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | (1.5− | 2.6−) | 2001 10 13 | 704 | 0.1− | 0.7+ | 2006 01 02 | G96 | 0.1− | 0.2+ |

**2001 SA$_{321}$ = 2006 SJ$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.63012 | | | (2000.0) | | |
| $n$ | 0.20092868 | $\omega$ | 320.74991 | | +0.83332541 | −0.55262959 |
| $a$ | 2.8869644 | $\Omega$ | 72.80241 | | +0.51053468 | +0.76039734 |
| $e$ | 0.2129136 | $i$ | 0.78045 | | +0.21195071 | +0.34116921 |
| $P$ | 4.91 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 291 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.8+ | 1.4− |
| 2001 09 18 | 291 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2001 09 18 | 291 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2001 09 23 | 704 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.5− | 0.1+ |
| 2001 09 23 | 704 | 0.3− | 1.0+ | 2006 09 25 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2001 09 26 | 704 | 0.1+ | 1.2− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 09 26 | 704 | (0.8+ | 1.7−) | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 09 26 | 704 | 0.0 | 0.5− | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.5+ |
| 2001 09 26 | 704 | 0.8+ | 1.0− | 2006 10 27 | G96 | 0.7− | 0.1− | 2006 11 14 | G96 | 0.4− | 0.2+ |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.0 | | | | |

**2001 SR$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.83241 | | | (2000.0) | | |
| $n$ | 0.21791344 | $\omega$ | 53.40548 | | +0.69566327 | +0.70387093 |
| $a$ | 2.7349331 | $\Omega$ | 261.34979 | | −0.69673362 | +0.61241111 |
| $e$ | 0.1719632 | $i$ | 8.35135 | | −0.17497107 | +0.35988658 |
| $P$ | 4.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.3− | 0.0 | 2001 09 26 | 704 | 0.5+ | 0.6− | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2001 08 16 | 644 | 1.0− | 0.1+ | 2001 09 26 | 704 | 0.2− | 0.7− | 2006 11 17 | 691 | 0.3− | 0.3− |
| 2001 08 16 | 644 | 0.1− | 0.1+ | 2001 09 29 | 644 | 0.1+ | 0.7− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 08 26 | 699 | 0.6+ | 0.1+ | 2001 09 29 | 644 | 0.0 | 0.5− | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2001 08 26 | 699 | 0.5+ | 0.3+ | 2001 09 29 | 644 | 0.3+ | 0.7− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2001 08 26 | 699 | 0.1+ | 0.2− | 2001 10 13 | 699 | 0.5− | 1.4− | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2001 08 26 | 699 | 0.7− | 0.0 | 2001 10 13 | 699 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 09 23 | 644 | 0.1+ | 0.0 | 2001 10 13 | 699 | 0.9− | 0.2+ | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2001 09 23 | 644 | 0.1− | 0.3+ | 2001 10 13 | 699 | (1.8− | 0.9−) | 2006 11 22 | 691 | 0.4+ | 0.2+ |
| 2001 09 23 | 644 | 0.2+ | 0.0 | 2001 10 13 | 644 | 0.4− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2001 09 25 | 704 | 0.9+ | 0.9+ | 2001 10 13 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.8+ | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.8+ | 2001 10 13 | 644 | 0.8− | 0.2+ | 2006 11 22 | 704 | (1.2+ | 1.7+) |
| 2001 09 25 | 704 | 1.2+ | 1.2+ | 2001 10 17 | 704 | 1.1− | 0.5− | 2006 11 22 | 704 | 1.4− | 0.6+ |
| 2001 09 25 | 704 | 0.4+ | 0.8+ | 2001 10 17 | 704 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 1.0+ |
| 2001 09 26 | 704 | 0.6+ | 0.1+ | 2001 10 17 | 704 | 0.5+ | 0.7+ | 2006 11 22 | 704 | 1.1+ | 0.4+ |
| 2001 09 26 | 704 | 0.1+ | 0.5− | 2006 11 13 | 691 | 0.3− | 0.1− | | | | |
| 2001 09 26 | 704 | 0.3+ | 0.3− | 2006 11 13 | 691 | 0.2− | 0.0 | | | | |

**2001 SQ$_{325}$ = 2006 SG$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.31690 | | | (2000.0) | | |
| $n$ | 0.21314651 | $\omega$ | 178.95105 | | +0.99289977 | +0.11850520 |
| $a$ | 2.7755596 | $\Omega$ | 174.21254 | | −0.10987006 | +0.94687846 |
| $e$ | 0.0477445 | $i$ | 5.87580 | | −0.04559186 | +0.29896105 |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.4+ | 1.0− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.7+ |
| 2001 08 14 | 608 | 0.6+ | 0.6− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | (2.1− | 0.1−) |
| 2001 08 14 | 608 | 0.3+ | 0.8− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.5− |
| 2001 09 11 | 699 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2001 09 11 | 699 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2001 09 11 | 699 | 1.2+ | 1.0+ | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2001 09 11 | 699 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 09 17 | 291 | 0.7− | 0.0 | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 09 17 | 291 | 0.5− | 0.2+ | 2006 10 02 | 291 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 09 17 | 291 | 0.3− | 0.1+ | 2006 10 02 | 291 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 1.1+ | 0.3− | 2006 10 02 | 291 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 1.2+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 1.3+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2004 04 15 | 691 | 0.4− | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2004 04 15 | 691 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 11 16 | 703 | 0.2+ | 0.7+ |
| 2004 04 15 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.9+ | 0.6− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.1− | 0.4− |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.5− | 1.0− |

**2001 SD$_{327}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.94967 | | | (2000.0) | | |
| $n$ | 0.21047835 | $\omega$ | 152.33898 | | +0.99655436 | +0.00060342 |
| $a$ | 2.7989669 | $\Omega$ | 208.00118 | | −0.02126093 | +0.96842104 |
| $e$ | 0.1419556 | $i$ | 10.17527 | | +0.08017095 | +0.24931972 |
| $P$ | 4.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | (0.7− | 1.6−) | 2001 10 21 | 704 | 1.2+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2001 09 18 | 699 | 0.6− | 0.3− | 2001 10 21 | 704 | 0.4+ | 0.0 | 2006 11 02 | 703 | (2.2− | 1.4−) |
| 2001 09 18 | 699 | 0.2− | 0.8+ | 2001 10 21 | 704 | 0.9+ | 0.0 | 2006 11 02 | 703 | 0.8− | 0.8+ |
| 2001 09 18 | 699 | 0.4− | 0.0 | 2001 10 21 | 704 | 0.6+ | 0.0 | 2006 11 02 | 703 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.9+ | 2001 11 18 | 704 | 0.5− | 0.3− | 2006 11 02 | 703 | 0.7+ | 1.2+ |
| 2001 09 20 | 704 | 0.2− | 0.4− | 2001 11 18 | 704 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2001 11 18 | 704 | 0.2− | 0.7− | 2006 11 09 | 644 | 0.4+ | 0.2− |
| 2001 09 20 | 704 | 1.1− | 0.3− | 2001 11 18 | 704 | 1.0− | 0.7− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 09 20 | 704 | 0.4− | 0.5− | 2006 10 15 | D35 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 09 28 | 644 | 0.4− | 0.5− | 2006 10 15 | D35 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2001 09 28 | 644 | 0.2− | 0.5− | 2006 10 15 | D35 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2001 09 28 | 644 | 0.5− | 0.3− | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2001 10 18 | 644 | 0.7+ | 0.7+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2001 10 18 | 644 | 0.6+ | 0.9+ | 2006 10 18 | 691 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2001 10 18 | 644 | 0.7+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 1.1+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1− |

**2001 SO$_{327}$ = 2006 SA$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.10586 | | | (2000.0) | | |
| $n$ | 0.20275361 | $\omega$ | 262.32317 | | +0.91233068 | +0.40616760 |
| $a$ | 2.8696151 | $\Omega$ | 73.70081 | | −0.35118640 | +0.84123412 |
| $e$ | 0.0700875 | $i$ | 3.09218 | | −0.21052516 | +0.35686558 |
| $P$ | 4.86 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 1.1− | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2001 09 12 | 704 | 0.7− | 0.5+ | 2006 09 30 | 703 | (0.9+ | 1.8+) | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.6− | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.9+ | 0.5+ |
| 2001 09 18 | 699 | 0.9− | 0.2− | 2006 09 30 | 703 | 1.4− | 0.9+ | 2006 10 22 | 703 | (1.7− | 0.2−) |
| 2001 09 18 | 699 | 0.6− | 0.9− | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.7− |
| 2001 09 18 | 699 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 1.1− | 0.5+ |
| 2001 09 18 | 699 | 0.2+ | 1.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3+ |
| 2001 09 21 | 704 | 0.2+ | 0.5− | 2006 10 16 | 703 | (1.5+ | 3.4−) | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2001 09 21 | 704 | 0.5+ | 0.5− | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.9+ | 0.2+ |
| 2001 09 21 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.2+ | 2006 11 16 | G96 | 0.6− | 0.5− |
| 2001 09 21 | 704 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.4− | 0.7− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2001 09 21 | 704 | 0.7+ | 0.4+ | 2006 10 19 | 644 | 0.4+ | 1.1+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 0.6+ | 0.2− |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1− | | | | |

**2001 SS$_{327}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.82728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20613210 | $\omega$ | 319.31643 | | +0.79708655 | −0.60146806 | |
| $a$ | 2.8381736 | $\Omega$ | 77.73919 | | +0.56732098 | +0.71538161 | |
| $e$ | 0.1721835 | $i$ | 3.15320 | | +0.20688144 | +0.35561963 | |
| $P$ | 4.78 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 691 | 0.6+ | 0.3− | 2001 11 20 | 704 | (2.9− | 3.2+) | 2006 10 22 | 691 | 0.2− | 0.1− | |
| 1997 12 04 | 691 | 0.5+ | 0.5− | 2001 11 20 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2− | |
| 1997 12 04 | 691 | 1.1− | 1.2+ | 2001 11 20 | 704 | 0.6− | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.4− | |
| 2001 08 27 | 699 | 0.0 | 0.4+ | 2001 11 20 | 704 | 1.0+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.3− | |
| 2001 08 27 | 699 | 0.1+ | 0.6− | 2001 11 20 | 704 | 1.0+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.3− | |
| 2001 08 27 | 699 | 1.2+ | 0.7+ | 2001 11 20 | 704 | 0.9− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2− | |
| 2001 08 27 | 699 | 0.2− | 0.2− | 2001 11 20 | 704 | 1.1− | 0.6+ | 2006 11 16 | G96 | 0.4+ | 0.5− | |
| 2001 09 18 | 699 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.8− | 2006 11 16 | G96 | 0.2− | 0.5− | |
| 2001 09 18 | 699 | 1.1+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3− | |
| 2001 09 18 | 699 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 1.4− | 2006 11 16 | G96 | 0.1+ | 0.2− | |
| 2001 09 18 | 699 | 0.8+ | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.8+ | 0.9− | |
| 2001 09 21 | 704 | 0.8− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.0 | 0.1+ | |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.4− | 0.2− | |
| 2001 09 21 | 704 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.6− | 0.6− | |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.3− | 1.3+ | |
| 2001 09 25 | 644 | 0.7− | 0.2− | 2006 10 16 | 703 | (1.5+ | 0.9−) | 2006 11 18 | 704 | (0.3− | 1.6+) | |
| 2001 09 25 | 644 | 0.7− | 0.0 | 2006 10 16 | 703 | (0.9+ | 2.0+) | 2006 11 18 | 704 | 0.1+ | 0.2+ | |
| 2001 09 25 | 644 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.2− | 1.3+ | 2006 11 18 | 704 | 0.9− | 0.2− | |
| 2001 10 24 | 704 | 0.9− | 1.2+ | 2006 10 16 | 703 | 0.8+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.9+ | |
| 2001 10 24 | 704 | 0.2− | 0.7+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 1.5+ | 0.1− | |
| 2001 10 24 | 704 | 0.6+ | 1.0− | 2006 10 18 | 691 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.1− | |
| 2001 10 24 | 704 | 0.3− | 0.8− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.7+ | |
| 2001 10 24 | 704 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.4+ | |

**2001 SL$_{329}$ = 2006 SS$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.53272 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18995178 | $\omega$ | 232.27920 | | +0.76348193 | −0.64473932 | |
| $a$ | 2.9971407 | $\Omega$ | 167.71434 | | +0.63402225 | +0.73720594 | |
| $e$ | 0.1128857 | $i$ | 10.15155 | | +0.12292736 | +0.20208566 | |
| $P$ | 5.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2004 03 16 | 599 | 0.4− | 1.1+ | 2006 08 16 | D35 | 0.6− | 0.1− | |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2004 03 16 | 599 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.2− | |
| 2001 09 19 | 704 | 0.1− | 0.2− | 2004 03 16 | 599 | 0.2+ | 1.1+ | 2006 09 27 | G96 | 0.0 | 0.5− | |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2005 06 01 | G96 | 0.9+ | 0.8− | 2006 09 27 | G96 | 0.2− | 0.3− | |
| 2001 09 19 | 704 | 0.4− | 0.6+ | 2005 06 01 | G96 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.3− | 0.5− | |
| 2001 09 21 | 704 | 0.9+ | 0.9− | 2005 06 01 | G96 | 0.2+ | 0.3− | 2006 09 28 | G96 | 0.2− | 0.2+ | |
| 2001 09 21 | 704 | (0.3+ | 1.7+) | 2005 06 01 | G96 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.0 | |
| 2001 09 21 | 704 | 0.3+ | 1.1+ | 2006 08 16 | D35 | 0.1+ | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.0 | |
| 2004 03 16 | 599 | 1.4+ | 3.0− | 2006 08 16 | D35 | 0.1+ | 0.5+ | 2006 09 28 | G96 | 0.5− | 0.3+ | |

**2001 SK$_{332}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.95200 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26616890 | $\omega$ | 322.94931 | | +0.98832989 | +0.14137987 | |
| $a$ | 2.3934876 | $\Omega$ | 29.07631 | | −0.09601527 | +0.86719348 | |
| $e$ | 0.1657721 | $i$ | 6.70104 | | −0.11825861 | +0.47748006 | |
| $P$ | 3.70 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 1.2+ | 0.0 | 2001 09 12 | 704 | 0.1+ | 0.4+ | 2005 10 29 | 703 | 0.7+ | 0.4− | |
| 2000 04 26 | 691 | 0.3+ | 0.2+ | 2001 09 19 | 644 | 0.3− | 0.3− | 2005 10 29 | 703 | 0.2− | 0.1− | |
| 2000 04 26 | 691 | 0.8+ | 0.3+ | 2001 09 19 | 644 | 0.1+ | 0.1− | 2005 10 29 | 703 | (2.6− | 0.9+) | |
| 2000 05 02 | 691 | (1.3− | 2.8+) | 2001 09 19 | 644 | 0.0 | 0.2− | 2005 10 29 | 703 | 0.2− | 0.6− | |
| 2000 05 02 | 691 | 0.5− | 0.5+ | 2001 09 21 | 704 | 1.2+ | 1.2+ | 2005 11 12 | 691 | 0.0 | 0.1+ | |
| 2000 05 02 | 691 | 0.9− | 0.4+ | 2001 09 21 | 704 | 0.5− | 0.1+ | 2005 11 12 | 691 | 0.2− | 0.1+ | |
| 2001 09 12 | 704 | 0.5+ | 0.1− | 2001 09 21 | 704 | 0.6− | 0.2+ | 2005 11 12 | 691 | 0.4− | 0.1+ | |
| 2001 09 12 | 704 | 0.5− | 0.1+ | 2005 10 24 | 691 | 0.0 | 0.0 | 2005 12 02 | 704 | 0.0 | 1.4+ | |
| 2001 09 12 | 704 | 1.1− | 0.4+ | 2005 10 24 | 691 | 0.1− | 0.1+ | 2005 12 02 | 704 | 0.1− | 0.7+ | |
| 2001 09 12 | 704 | 0.4− | 0.8+ | 2005 10 24 | 691 | 0.1+ | 0.1+ | 2005 12 02 | 704 | 0.8+ | 0.4+ | |

**2001 SZ$_{332}$ = 2006 UK$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.55817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20894314 | $\omega$ | 233.30466 | | +0.52372904 | −0.85186601 | |
| $a$ | 2.8126604 | $\Omega$ | 185.12235 | | +0.80045786 | +0.49438037 | |
| $e$ | 0.0897036 | $i$ | 3.64342 | | +0.29150491 | +0.17295185 | |
| $P$ | 4.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6+ | 1.1+ | 2001 10 20 | 704 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.1− | |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2001 10 20 | 704 | 0.4− | 0.7− | 2006 10 17 | G96 | 0.2+ | 0.5− | |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2001 10 20 | 704 | 0.4− | 0.6− | 2006 10 18 | 691 | 0.3− | 0.5+ | |
| 2001 09 21 | 691 | 0.1+ | 0.1− | 2001 10 20 | 704 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1+ | |
| 2001 09 21 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 10 18 | 691 | 0.0 | 0.3− | |
| 2001 09 21 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− | | | | | |

**2001 SV$_{334}$ = 2005 JD$_{42}$ = 2006 PJ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.71216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19261073 | $\omega$ | 214.23120 | | +0.98259819 | +0.18477213 | |
| $a$ | 2.9694936 | $\Omega$ | 135.10865 | | −0.16383477 | +0.91029561 | |
| $e$ | 0.1427639 | $i$ | 1.54063 | | −0.08751548 | +0.37043375 | |
| $P$ | 5.12 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 12 | 691 | 0.1− | 0.3+ | 2001 09 20 | 691 | 0.1− | 0.1− | 2006 08 13 | 644 | 0.2− | 0.9+ | |
| 1996 09 12 | 691 | 0.1− | 0.1+ | 2001 09 21 | 704 | 0.2− | 0.4+ | 2006 08 13 | 644 | 0.5− | 0.1+ | |
| 1996 09 12 | 691 | 0.1− | 0.1− | 2001 09 21 | 704 | 1.0+ | 0.3+ | 2006 08 13 | 644 | 0.6− | 0.3+ | |
| 2001 09 12 | 704 | 0.5+ | 1.1+ | 2001 09 21 | 704 | 0.3+ | 0.2− | 2006 08 19 | 699 | 0.5+ | 0.4+ | |
| 2001 09 12 | 704 | 0.5− | 0.2+ | 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 08 19 | 699 | 1.4+ | 0.6+ | |
| 2001 09 12 | 704 | 0.8+ | 0.4− | 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 08 19 | 699 | 0.8− | 0.7− | |
| 2001 09 12 | 704 | 0.7− | 0.8+ | 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 08 19 | 699 | 1.1− | 0.0 | |
| 2001 09 12 | 704 | 0.2+ | 0.1− | 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.2+ | 0.5− | |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2005 05 09 | G96 | 0.4− | 0.2− | 2006 08 27 | 691 | 0.3+ | 0.5− | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 05 09 | G96 | 0.7− | 0.2− | 2006 08 27 | 691 | 0.1− | 0.2− | |
| 2001 09 20 | 691 | 0.2+ | 0.0 | 2005 05 09 | G96 | 0.5− | 0.0 | | | | | |
| 2001 09 20 | 691 | 0.0 | 0.1− | 2005 05 09 | G96 | 0.5− | 0.1− | | | | | |

**2001 SQ$_{336}$ = 2006 QA$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.92144 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18325844 | $\omega$ | 112.80481 | | −0.25082178 | −0.96753348 | |
| $a$ | 3.0696821 | $\Omega$ | 351.53997 | | +0.79244663 | −0.18676682 | |
| $e$ | 0.1170044 | $i$ | 12.20517 | | +0.55598271 | −0.17028539 | |
| $P$ | 5.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.6− | 0.3− | 2001 09 21 | 691 | 0.3+ | 0.1+ | 2006 08 20 | 568 | 0.3+ | 0.1+ | |
| 2001 08 25 | 691 | 0.1− | 0.3− | 2001 09 21 | 691 | 0.3+ | 0.3+ | 2006 08 20 | 568 | 0.3+ | 0.1+ | |
| 2001 08 25 | 691 | 0.2− | 0.3− | 2001 09 21 | 691 | 0.2+ | 0.1+ | 2006 08 23 | 568 | 0.2− | 0.0 | |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2001 12 10 | 645 | 0.1+ | 0.1+ | 2006 08 23 | 568 | 0.4− | 0.0 | |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2001 12 10 | 645 | 0.1− | 0.1− | 2006 08 23 | 568 | 0.4− | 0.1− | |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2006 08 20 | 568 | 0.3+ | 0.1+ | 2006 08 23 | 568 | 0.3− | 0.0 | |
| 2001 09 20 | 704 | 0.3+ | 0.4+ | 2006 08 20 | 568 | 0.3+ | 0.1+ | 2006 08 23 | 568 | 0.3− | 0.1− | |
| 2001 09 20 | 704 | 0.1+ | 0.2− | 2006 08 20 | 568 | 0.3+ | 0.1+ | | | | | |

**2001 SF$_{338}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.59437 | | | (2000.0) | | |
| $n$ | 0.21429458 | $\omega$ | 35.10050 | | +0.84401090 | −0.53631357 |
| $a$ | 2.7656375 | $\Omega$ | 357.32459 | | +0.47243429 | +0.74667198 |
| $e$ | 0.1223228 | $i$ | 4.48853 | | +0.25387287 | +0.39350821 |
| $P$ | 4.60 | $H$ | 17.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2001 10 14 | 691 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 1.1+ | 0.5+ | 2001 10 14 | 691 | 0.4+ | 0.3− | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.8− | 0.9+ | 2001 10 21 | 704 | 0.4− | 0.5− | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.8− | 0.4+ | 2001 10 21 | 704 | 0.8+ | 0.8+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2001 09 23 | 691 | 0.3− | 0.0 | 2001 10 21 | 704 | 0.5+ | 0.1+ | 2006 11 21 | G96 | 0.5+ | 0.6− |
| 2001 09 23 | 691 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.2+ | 0.8+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2001 09 23 | 691 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.4− | 0.0 | | | | |
| 2001 10 14 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.2− | 0.0 | | | | |

**2001 SB$_{339}$ = 2001 RA$_{154}$**

Id. M. E. Sansaturio (d, *MPO* 35668)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.08614 | | | (2000.0) | | |
| $n$ | 0.21328616 | $\omega$ | 106.03739 | | +0.94946523 | +0.29397207 |
| $a$ | 2.7743480 | $\Omega$ | 236.98662 | | −0.31386947 | +0.89072515 |
| $e$ | 0.3066844 | $i$ | 7.53658 | | +0.00131293 | +0.34668304 |
| $P$ | 4.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.1− | 0.5+ | 2001 09 16 | 704 | 0.1− | 0.3+ | 2005 05 10 | G96 | 0.0 | 0.1− |
| 2001 08 24 | 699 | 0.7+ | 0.3− | 2001 09 16 | 704 | 0.1− | 0.4− | 2005 05 10 | G96 | 0.2+ | 0.0 |
| 2001 08 24 | 699 | 0.3− | 0.0 | 2001 09 21 | 699 | 0.3− | 0.8+ | 2005 05 10 | G96 | 0.3− | 0.0 |
| 2001 08 24 | 699 | 0.2+ | 0.0 | 2001 09 21 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2001 09 08 | 699 | 0.4− | 0.1+ | 2001 09 21 | 699 | 0.6− | 1.2+ | 2006 10 17 | 691 | 0.1− | 0.2− |
| 2001 09 08 | 699 | 0.1+ | 0.9− | 2001 09 21 | 699 | 0.7+ | 0.6+ | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 2001 09 08 | 699 | 1.0+ | 1.0+ | 2001 09 25 | 704 | 0.6− | 0.0 | 2006 10 29 | G96 | 0.4− | 0.1− |
| 2001 09 08 | 699 | 0.8− | 0.1− | 2001 09 25 | 704 | 0.0 | 0.2− | 2006 10 29 | G96 | 0.3− | 0.2− |
| 2001 09 15 | 644 | 0.0 | 0.1− | 2001 09 25 | 704 | 0.2− | 0.6+ | 2006 10 29 | G96 | 0.0 | 0.3− |
| 2001 09 15 | 644 | 0.0 | 0.0 | 2001 09 25 | 704 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.3+ | 0.3− |
| 2001 09 15 | 644 | 0.2− | 0.3− | 2001 09 25 | 704 | 0.0 | 0.5+ | 2006 11 21 | 704 | 1.0− | 1.0+ |
| 2001 09 16 | 704 | 0.1+ | 0.1+ | 2001 11 18 | 645 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2001 09 16 | 704 | 0.3− | 0.2+ | 2001 11 18 | 645 | 0.0 | 0.2− | 2006 11 21 | 704 | (1.8− | 0.7+) |
| 2001 09 16 | 704 | 0.1− | 0.2− | 2005 05 10 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 1.1+ |

**2001 SL$_{341}$ = 2006 QP$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.11665 | | | (2000.0) | | |
| $n$ | 0.17628947 | $\omega$ | 124.56074 | | +0.48024940 | +0.87695985 |
| $a$ | 3.1500573 | $\Omega$ | 174.06192 | | −0.84970408 | +0.47005595 |
| $e$ | 0.0306549 | $i$ | 9.66927 | | −0.21763155 | +0.09994406 |
| $P$ | 5.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.3− | 0.1+ | 2001 09 21 | 704 | 0.2− | 0.1− | 2006 08 31 | 568 | 0.0 | 0.2+ |
| 2001 08 24 | 691 | 0.3+ | 0.2− | 2001 09 23 | 691 | 0.0 | 0.1+ | 2006 08 31 | 568 | 0.0 | 0.1+ |
| 2001 08 24 | 691 | 0.0 | 0.1+ | 2001 09 23 | 691 | 0.1+ | 0.2− | 2006 09 01 | 568 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.2− | 1.4+ | 2001 09 23 | 691 | 0.1+ | 0.2− | 2006 09 01 | 568 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2006 08 31 | 568 | 0.1+ | 0.1+ | 2006 09 01 | 568 | 0.0 | 0.2− |

**2001 SY$_{341}$ = 2006 TP$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.64822 | | | (2000.0) | | |
| $n$ | 0.21206977 | $\omega$ | 79.63198 | | +0.82064395 | +0.55755315 |
| $a$ | 2.7849466 | $\Omega$ | 246.37442 | | −0.56304603 | +0.75152163 |
| $e$ | 0.1719885 | $i$ | 7.85500 | | −0.09758415 | +0.35263256 |
| $P$ | 4.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.4+ | 0.5− | 2001 09 21 | 644 | 0.3+ | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2001 08 25 | 704 | 0.1− | 0.3+ | 2001 09 21 | 644 | 0.3+ | 0.8+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2001 08 25 | 704 | 0.5+ | 0.2− | 2001 09 25 | 704 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | 0.2− | 0.8− | 2001 09 25 | 704 | 1.1+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2001 08 25 | 704 | 0.4− | 0.1− | 2001 09 25 | 704 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.1+ |
| 2001 08 25 | 704 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.0 |
| 2001 09 10 | 704 | 0.0 | 0.2+ | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2001 09 10 | 704 | 0.4− | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 2001 09 10 | 704 | 1.3− | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.1+ |
| 2001 09 18 | 699 | 0.2− | 1.0− | 2006 10 17 | 691 | 0.2− | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | 0.6+ | 1.1− | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.1− | 1.1+ |
| 2001 09 18 | 699 | 1.1− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2001 09 18 | 699 | 0.1− | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 1.5− | 0.6− |
| 2001 09 21 | 644 | 0.6+ | 0.8+ | 2006 10 21 | 691 | 0.2− | 0.0 | | | | |

**2001 SV$_{342}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.12992 | | | (2000.0) | | |
| $n$ | 0.23126269 | $\omega$ | 296.49851 | | −0.53096848 | −0.84708895 |
| $a$ | 2.6286474 | $\Omega$ | 185.72999 | | +0.83557392 | −0.51892930 |
| $e$ | 0.2170074 | $i$ | 13.10930 | | +0.14102728 | −0.11468520 |
| $P$ | 4.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 291 | 0.1+ | 0.3+ | 2003 03 07 | 704 | 0.0 | 0.3− | 2003 03 07 | 704 | 0.2+ | 0.1− |
| 2001 09 21 | 291 | 0.2− | 0.1− | 2003 03 07 | 699 | 0.5− | 0.5− | 2003 03 25 | 699 | 0.7+ | 0.8+ |
| 2001 09 21 | 291 | 0.1− | 0.1+ | 2003 03 07 | 699 | 1.4− | 0.0 | 2003 03 25 | 699 | 0.4− | 0.8+ |
| 2001 09 22 | 291 | 1.0− | 0.5+ | 2003 03 07 | 704 | 0.1+ | 0.7− | 2003 03 25 | 699 | (0.1+ | 2.4+) |
| 2001 09 22 | 291 | 0.2− | 0.1− | 2003 03 07 | 699 | 0.7+ | 0.3+ | 2003 03 25 | 699 | 0.1− | 0.7− |
| 2001 09 22 | 291 | 0.0 | 0.1+ | 2003 03 07 | 699 | 0.4+ | 0.1+ | 2003 03 30 | 644 | 0.1+ | 0.8+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2003 03 07 | 699 | 1.1− | 0.1− | 2003 03 30 | 644 | 0.2+ | 1.0+ |
| 2001 10 15 | 645 | 0.2+ | 0.0 | 2003 03 07 | 699 | 0.7+ | 0.4− | 2003 03 30 | 644 | 0.4+ | 0.6+ |
| 2003 03 07 | 699 | 0.5− | 0.5+ | 2003 03 07 | 704 | 1.0+ | 0.7− | | | | |
| 2003 03 07 | 699 | 0.4+ | 0.3+ | 2003 03 07 | 704 | 0.3− | 0.2+ | | | | |

**2001 SH$_{345}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 92.03784 | | | (2000.0) | | |
| $n$ | 0.22075359 | $\omega$ | 233.73299 | | +0.60964481 | +0.74958725 |
| $a$ | 2.7114246 | $\Omega$ | 75.89296 | | −0.61493562 | +0.65244741 |
| $e$ | 0.2002100 | $i$ | 15.41444 | | −0.50018734 | +0.11149588 |
| $P$ | 4.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 699 | 0.6+ | 0.3+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2005 08 25 | E12 | 0.2− | 0.1+ |
| 2000 04 28 | 699 | 1.0+ | 0.0 | 2002 11 07 | 645 | 0.0 | 0.1+ | 2005 08 25 | E12 | 0.2− | 0.0 |
| 2000 04 28 | 699 | 0.5− | 0.8+ | 2004 01 28 | 645 | 0.1+ | 0.2+ | 2005 08 25 | E12 | 0.3+ | 0.1− |
| 2000 04 28 | 699 | 1.8− | 0.4+ | 2004 01 28 | 645 | 0.1+ | 0.2+ | 2005 08 25 | E12 | 0.3+ | 0.8− |
| 2000 05 27 | 704 | 0.1+ | 0.4+ | 2005 06 03 | E12 | 0.4− | 0.4+ | 2005 09 22 | E12 | 0.6+ | 0.6+ |
| 2000 05 27 | 704 | 0.9+ | 0.8− | 2005 06 03 | E12 | 0.4+ | 0.7+ | 2005 09 22 | E12 | 0.4+ | 0.2+ |
| 2000 05 27 | 704 | 1.0+ | 0.2+ | 2005 06 03 | E12 | 0.3− | 0.1− | 2005 09 22 | E12 | 0.1− | 0.5+ |
| 2000 05 27 | 704 | 0.4− | 0.1− | 2005 06 03 | E12 | 0.6− | 0.4+ | 2005 09 22 | E12 | 0.1+ | 0.5+ |
| 2000 05 27 | 704 | 0.5+ | 0.0 | 2005 07 05 | E12 | 0.2− | 0.6+ | 2005 10 02 | E12 | 1.0+ | 0.3− |
| 2001 09 23 | 699 | 0.6+ | 0.6− | 2005 07 05 | E12 | 0.6− | 0.4+ | 2005 10 02 | E12 | 0.1+ | 0.7+ |
| 2001 09 23 | 699 | 0.4− | 0.3− | 2005 07 05 | E12 | 0.3+ | 0.3− | 2005 10 02 | E12 | 0.3− | 0.1+ |
| 2001 09 23 | 699 | 0.6− | 0.7− | 2005 08 06 | E12 | 0.5− | 0.2+ | 2005 10 02 | E12 | 0.0 | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 699 | 0.4+ | 0.0 | 2005 08 06 | E12 | 0.5− | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | 0.2− | 1.1+ | 2005 08 06 | E12 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2001 09 25 | 704 | 0.1− | 0.3+ | 2005 08 06 | E12 | 0.4− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.6− | 0.6+ | 2005 08 13 | E12 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.6+ | 0.2+ | 2005 08 13 | E12 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 10 22 | 644 | 0.6− | 0.5+ | 2005 08 13 | E12 | 0.3+ | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2001 10 22 | 644 | 0.4− | 0.8+ | 2005 08 13 | E12 | 0.1− | 0.5+ | | | | |
| 2001 10 22 | 644 | 0.5− | 0.2+ | 2005 08 13 | E12 | 0.2− | 0.0 | | | | |

**2001 SQ$_{345}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 50.77312 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.21200646 | $\omega$ | 70.50289 | | +0.81441578 | +0.57117405 |
| $a$ | 2.7855010 | $\Omega$ | 254.53777 | | −0.56424863 | +0.73828643 |
| $e$ | 0.1688056 | $i$ | 6.09933 | | −0.13546372 | +0.35873856 |
| $P$ | 4.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2001 09 25 | 704 | 0.2− | 0.6− | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2001 08 25 | 704 | 0.2− | 1.0+ | 2001 09 25 | 704 | 1.1− | 0.0 | 2006 11 01 | G96 | 0.5+ | 0.3− |
| 2001 08 25 | 704 | 0.5+ | 0.4+ | 2001 09 25 | 704 | 0.5− | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 09 18 | 699 | 0.3− | 1.2+ | 2001 10 14 | 704 | 0.3− | 1.0− | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2001 09 18 | 699 | 0.1+ | 0.2− | 2001 10 14 | 704 | 0.3+ | 0.6− | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2001 09 18 | 699 | (1.6+ | 1.0−) | 2001 10 14 | 704 | (1.9+ | 0.1−) | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2001 09 18 | 699 | (3.4+ | 1.1+) | 2001 10 14 | 704 | 0.8+ | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 644 | 0.5+ | 0.4+ | 2006 10 13 | 691 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 644 | 0.6+ | 0.4+ | 2006 10 13 | 691 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 644 | 0.5+ | 0.2+ | 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2001 09 23 | 608 | 0.2− | 1.0− | 2006 10 17 | 691 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 09 23 | 608 | (0.3− | 1.7−) | 2006 10 17 | 691 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 09 23 | 608 | 0.2− | 0.9− | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.4+ | | | | |
| 2001 09 25 | 704 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.2+ | | | | |

**2001 SY$_{346}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 337.56797 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.17676016 | $\omega$ | 127.79890 | | +0.93744404 | +0.31649204 |
| $a$ | 3.1444628 | $\Omega$ | 214.44867 | | −0.34034474 | +0.92079855 |
| $e$ | 0.0846612 | $i$ | 14.85500 | | +0.07324023 | +0.22795357 |
| $P$ | 5.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 1.2+ | 0.6+ | 2001 09 25 | 704 | 0.5+ | 0.7− | 2005 04 16 | 691 | 0.1+ | 0.1− |
| 2001 09 10 | 704 | 0.1+ | 0.5− | 2001 09 29 | 644 | 0.5− | 0.3+ | 2005 04 16 | 691 | 0.2+ | 0.1+ |
| 2001 09 10 | 704 | 0.9− | 0.5− | 2001 09 29 | 644 | 0.4− | 0.1+ | 2005 04 30 | 691 | 0.3+ | 0.3+ |
| 2001 09 10 | 704 | 0.4− | 0.5+ | 2001 09 29 | 644 | 0.4− | 0.4+ | 2005 04 30 | 691 | 0.1− | 0.1− |
| 2001 09 10 | 704 | 0.3− | 0.7+ | 2005 04 02 | G96 | 0.5− | 0.2+ | 2005 04 30 | 691 | 0.0 | 0.2+ |
| 2001 09 10 | 704 | 0.4− | 0.1+ | 2005 04 02 | G96 | 0.6− | 0.1− | 2005 05 17 | G96 | 0.2− | 0.1− |
| 2001 09 10 | 704 | 0.4+ | 0.9− | 2005 04 02 | G96 | 0.5− | 0.2− | 2005 05 17 | G96 | 0.4− | 0.5− |
| 2001 09 25 | 704 | 0.8+ | 0.3+ | 2005 04 02 | G96 | 0.2− | 0.1− | 2005 05 17 | G96 | 0.5− | 0.4− |
| 2001 09 25 | 704 | 0.3+ | 0.3− | 2005 04 16 | 691 | 0.2+ | 0.1− | | | | |

**2001 SE$_{348}$ = 2006 SQ$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 318.11693 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.18121349 | $\omega$ | 143.98887 | | +0.89974252 | −0.40993047 |
| $a$ | 3.0927326 | $\Omega$ | 240.87027 | | +0.34949692 | +0.88227972 |
| $e$ | 0.0611058 | $i$ | 9.87011 | | +0.26137196 | +0.23138607 |
| $P$ | 5.44 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 1.5+ | 0.5+ | 2004 03 28 | 691 | 0.0 | 0.3− | 2006 09 23 | 691 | 0.4− | 0.3− |
| 2001 09 26 | 704 | 0.2+ | 0.3− | 2004 03 28 | 691 | 0.0 | 0.5+ | 2006 09 23 | 691 | 0.4+ | 0.4+ |
| 2001 09 26 | 704 | 0.1− | 0.6+ | 2006 08 30 | 699 | 0.1+ | 0.9− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2001 09 29 | 644 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.7− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2001 09 29 | 644 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 09 29 | 644 | 0.4− | 0.2+ | 2006 08 30 | 699 | 1.2+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2001 10 15 | 608 | 0.5− | 0.9− | 2006 09 20 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.2− |
| 2001 10 15 | 608 | 0.0 | 0.2− | 2006 09 20 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2001 10 15 | 608 | 0.6− | 0.8− | 2006 09 20 | 691 | 0.1− | 0.0 | | | | |
| 2004 03 28 | 691 | 0.1− | 0.3− | 2006 09 23 | 691 | 0.2− | 0.0 | | | | |

**2001 SB$_{353}$ = 2004 GF$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 288.63231 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.18518413 | $\omega$ | 57.77248 | | +0.33642823 | −0.94080900 |
| $a$ | 3.0483643 | $\Omega$ | 12.76706 | | +0.78914012 | +0.25779987 |
| $e$ | 0.1125704 | $i$ | 10.73534 | | +0.51388123 | +0.22004011 |
| $P$ | 5.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 19 | 691 | 0.1− | 0.2+ | 2001 10 11 | 644 | 0.6− | 0.7+ | 2004 04 13 | 691 | 0.1+ | 0.1+ |
| 1996 11 19 | 691 | 0.1+ | 0.6− | 2001 10 11 | 644 | 1.1− | 0.5+ | 2004 04 13 | 691 | 0.2+ | 0.1+ |
| 1996 11 19 | 691 | 0.3+ | 0.2− | 2001 10 24 | 691 | 0.1− | 0.5+ | 2004 04 13 | 691 | 0.4+ | 0.1+ |
| 2001 09 20 | 704 | 1.3− | 0.2− | 2001 10 24 | 691 | 0.1− | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.1+ | 0.6− | 2001 10 24 | 691 | 0.0 | 0.4+ | 2004 04 19 | 691 | 0.0 | 0.5+ |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2004 04 19 | 691 | 0.1+ | 0.4+ |
| 2001 10 11 | 644 | 0.6− | 0.6+ | 2002 11 07 | 645 | 0.1+ | 0.1+ | | | | |

**2001 SC$_{353}$ = 2000 KE$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 117.43302 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23360057 | $\omega$ | 199.79531 | | +0.78894704 | +0.57607451 |
| $a$ | 2.6110796 | $\Omega$ | 123.17740 | | −0.52373590 | +0.81239623 |
| $e$ | 0.1914081 | $i$ | 14.79818 | | −0.32134603 | +0.09028028 |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 699 | 0.1− | 0.8+ | 2002 01 08 | 645 | 0.1+ | 0.0 | 2005 09 27 | 704 | 1.0− | 1.6+ |
| 2000 05 27 | 699 | 0.0 | 0.1+ | 2002 01 14 | 645 | 0.1+ | 0.1+ | 2005 09 27 | 704 | 0.1+ | 0.3+ |
| 2000 05 27 | 699 | 1.5− | 0.3+ | 2002 01 14 | 645 | 0.1+ | 0.0 | 2005 09 27 | 704 | 0.6+ | 1.5+ |
| 2000 05 27 | 699 | 0.0 | 0.3− | 2004 05 13 | 704 | 1.1+ | 0.5+ | 2005 09 27 | 704 | 0.5− | 0.1− |
| 2000 06 04 | 699 | 0.7+ | 0.0 | 2004 05 13 | 704 | 0.1− | 1.2+ | 2005 10 04 | 644 | 0.2+ | 0.1− |
| 2000 06 04 | 699 | 0.1− | 0.9− | 2004 05 13 | 704 | 0.6− | 1.2+ | 2005 10 04 | 644 | 0.0 | 0.1+ |
| 2000 06 04 | 699 | 0.1+ | 0.8− | 2005 08 05 | E12 | 0.6+ | 0.2+ | 2005 10 04 | 644 | 0.3+ | 0.3− |
| 2000 06 04 | 699 | 0.9+ | 0.6− | 2005 08 05 | E12 | 0.3+ | 0.8+ | 2005 10 30 | 703 | 0.1− | 0.9− |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2005 08 05 | E12 | 0.2+ | 0.3− | 2005 10 30 | 703 | 0.3− | 0.0 |
| 2001 09 19 | 645 | 0.1− | 0.2− | 2005 08 05 | E12 | 0.5− | 0.5+ | 2005 10 30 | 703 | 0.8− | 0.0 |
| 2001 11 17 | 699 | 1.0− | 0.4+ | 2005 09 13 | 703 | 0.2− | 0.4+ | 2005 10 30 | 703 | 0.5− | 0.3− |
| 2001 11 17 | 699 | 0.8− | 0.3− | 2005 09 13 | 703 | 0.0 | 0.0 | 2005 11 06 | 703 | 0.8+ | 1.1+ |
| 2001 11 17 | 699 | 0.3+ | 0.0 | 2005 09 13 | 703 | 0.9− | 0.8− | 2005 11 06 | 703 | 0.5+ | 0.2+ |
| 2001 11 17 | 699 | 0.3− | 0.2+ | 2005 09 13 | 703 | 1.3+ | 0.0 | 2005 11 06 | 703 | 1.1− | 1.0− |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2005 09 27 | 704 | 0.0 | 0.5+ | 2005 11 06 | 703 | 0.3+ | 0.2+ |

**2001 SD$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 117.44840 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.24378857 | $\omega$ | 306.23300 | | +0.77119369 | +0.63538337 |
| $a$ | 2.5378181 | $\Omega$ | 14.45531 | | −0.52172559 | +0.66624023 |
| $e$ | 0.1709541 | $i$ | 9.06928 | | −0.36477761 | +0.39039971 |
| $P$ | 4.04 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 291 | 0.5+ | 0.0 | 2001 10 18 | 691 | 0.3+ | 0.2− | 2005 10 06 | G96 | 0.6+ | 0.0 |
| 2001 09 17 | 291 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.0 | 0.0 | 2005 10 06 | G96 | 0.0 | 0.0 |
| 2001 09 17 | 291 | 0.5+ | 0.1+ | 2005 09 11 | 691 | 0.0 | 0.3+ | 2005 10 06 | G96 | 0.4+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2005 09 11 | 691 | 0.5− | 0.3− | 2005 10 25 | G96 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 1.3− | 0.3+ | 2005 09 30 | G96 | 0.2+ | 0.4+ | 2005 10 25 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.9− | 1.0− | 2005 09 30 | G96 | 0.3+ | 0.1+ | 2005 10 25 | G96 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.5− | 0.8− | 2005 09 30 | G96 | 0.2− | 0.1− | 2005 10 25 | G96 | 0.1− | 0.3+ |
| 2001 10 18 | 691 | 0.3− | 0.4+ | 2005 09 30 | G96 | 0.6+ | 0.4− | | | | |
| 2001 10 18 | 691 | 0.2− | 0.1− | 2005 10 06 | G96 | 0.0 | 0.0 | | | | |

**2001 SE$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.01929 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23132957 | $\omega$ | 281.18896 | +0.91455308 | | +0.37433681 | |
| $a$ | 2.6281407 | $\Omega$ | 56.99676 | −0.26141333 | | +0.83605427 | |
| $e$ | 0.1070725 | $i$ | 10.52444 | −0.30863528 | | +0.40110498 | |
| $P$ | 4.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 01 | 691 | 0.1− | 0.4+ | 2001 10 15 | 644 | 0.1− | 0.1+ | 2005 07 27 | 644 | 0.4+ | 0.3+ |
| 2000 06 01 | 691 | 0.4− | 0.5− | 2001 10 15 | 644 | 0.3− | 0.2+ | 2005 07 27 | 644 | 0.3+ | 0.3+ |
| 2000 06 01 | 691 | 0.1− | 0.4− | 2001 10 15 | 644 | 0.0 | 0.2+ | 2005 07 27 | 644 | 0.2+ | 0.1− |
| 2001 09 18 | 699 | 0.2+ | 0.6+ | 2001 10 23 | 644 | 0.2− | 0.2+ | 2005 08 08 | E12 | 0.2− | 0.4+ |
| 2001 09 18 | 699 | 0.6− | 1.0− | 2001 10 23 | 644 | 0.3− | 0.3+ | 2005 08 08 | E12 | 0.6+ | 0.4+ |
| 2001 09 18 | 699 | 0.4+ | 0.4+ | 2001 10 23 | 644 | 0.2− | 0.0 | 2005 08 08 | E12 | 0.7− | 0.1− |
| 2001 09 18 | 699 | 1.2− | 0.3+ | 2003 01 10 | 704 | 0.4− | 0.5+ | 2005 08 08 | E12 | 0.5− | 0.5+ |
| 2001 09 25 | 704 | 0.4+ | 0.3− | 2003 01 10 | 704 | 0.2+ | 1.2+ | 2005 08 28 | E12 | 0.1+ | 0.2− |
| 2001 09 25 | 704 | 0.7+ | 0.2+ | 2003 01 10 | 704 | 0.0 | 0.6+ | 2005 08 28 | E12 | 0.4− | 0.3+ |
| 2001 09 25 | 704 | 0.4+ | 0.5− | 2004 03 15 | 691 | 0.4+ | 0.3+ | 2005 08 28 | E12 | 0.3− | 0.3+ |
| 2001 09 25 | 704 | 1.1+ | 0.7+ | 2004 03 15 | 691 | 0.4+ | 0.5+ | 2005 08 28 | E12 | 0.0 | 0.5+ |
| 2001 09 25 | 644 | 0.3+ | 0.2+ | 2004 03 15 | 691 | 0.4+ | 0.5+ | 2005 09 24 | E12 | 0.4− | 0.3+ |
| 2001 09 25 | 704 | 0.4+ | 0.2− | 2005 07 04 | 644 | 0.1+ | 0.0 | 2005 09 24 | E12 | 0.6− | 0.0 |
| 2001 09 25 | 644 | 0.0 | 0.2+ | 2005 07 04 | 644 | 0.1− | 0.1+ | 2005 09 24 | E12 | 1.4− | 1.6+ |
| 2001 09 25 | 644 | 0.5− | 0.1+ | 2005 07 04 | 644 | 0.0 | 0.3+ | 2005 09 24 | E12 | 0.1+ | 0.8− |

**2001 SF$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.24583 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17915904 | $\omega$ | 31.18520 | −0.28989764 | | −0.93545695 | |
| $a$ | 3.1163309 | $\Omega$ | 76.32711 | +0.82964142 | | −0.35095187 | |
| $e$ | 0.0582416 | $i$ | 12.01010 | +0.47713150 | | +0.04186989 | |
| $P$ | 5.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 691 | 0.4− | 0.1− | 2001 10 23 | 644 | 0.2+ | 1.0+ | 2002 12 13 | 645 | 0.0 | 0.1+ |
| 1993 03 22 | 691 | 0.1+ | 0.3− | 2001 10 25 | 645 | 0.1− | 0.0 | 2002 12 13 | 645 | 0.0 | 0.1+ |
| 1993 03 22 | 691 | 0.2− | 0.1− | 2001 10 25 | 645 | 0.1− | 0.0 | 2004 04 10 | 644 | 0.7+ | 0.2+ |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2001 11 12 | 645 | 0.0 | 0.1− | 2004 04 10 | 644 | 0.5+ | 0.4+ |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2001 11 12 | 645 | 0.1+ | 0.1+ | 2004 04 10 | 644 | 0.7+ | 0.1+ |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2001 11 21 | 645 | 0.1− | 0.1− | 2006 09 26 | 703 | 1.8− | 1.0+ |
| 2001 09 21 | 645 | 0.1+ | 0.0 | 2001 11 21 | 645 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2001 10 23 | 644 | 0.2− | 1.0+ | 2001 12 18 | 645 | 0.1+ | 0.0 | 2006 09 26 | 703 | 1.0− | 1.4+ |
| 2001 10 23 | 644 | 0.1− | 1.1+ | 2001 12 18 | 645 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.0 | 1.2+ |

**2001 SG$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.96595 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25257394 | $\omega$ | 180.79697 | −0.88975431 | | +0.45322230 | |
| $a$ | 2.4786223 | $\Omega$ | 26.36641 | −0.41809843 | | −0.76171876 | |
| $e$ | 0.0817935 | $i$ | 6.99696 | −0.18311464 | | −0.46300549 | |
| $P$ | 3.90 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 691 | 0.1+ | 0.2− | 2002 12 31 | 645 | 0.0 | 0.0 | 2005 10 06 | 703 | 1.3+ | 1.3− |
| 2001 09 18 | 691 | 0.3− | 0.1− | 2002 12 31 | 645 | 0.0 | 0.0 | 2005 10 10 | 691 | 0.2− | 0.4− |
| 2001 09 18 | 691 | 0.0 | 0.1+ | 2003 01 10 | 704 | 0.4+ | 0.0 | 2005 10 10 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2003 01 10 | 704 | 0.5− | 0.7+ | 2005 10 10 | 691 | 0.4− | 0.3− |
| 2001 09 21 | 704 | 0.9+ | 0.7+ | 2003 01 10 | 704 | 0.3− | 1.1+ | 2005 10 27 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | 0.6− | 0.1− | 2005 09 26 | 691 | 0.3+ | 0.1+ | 2005 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 1.1− | 0.7− | 2005 09 26 | 691 | 0.3+ | 0.1+ | 2005 10 27 | 691 | 0.3− | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.9+ | 2005 09 26 | 691 | 0.2+ | 0.1+ | 2005 11 26 | G96 | 0.1+ | 0.3− |
| 2001 10 20 | 704 | 0.5+ | 0.2+ | 2005 10 06 | 703 | 0.7− | 0.8− | 2005 11 26 | G96 | 0.2+ | 0.0 |
| 2001 10 20 | 704 | 0.9+ | 0.6+ | 2005 10 06 | 703 | 1.3− | 0.3+ | 2005 11 26 | G96 | 0.2− | 0.1− |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2005 10 06 | 703 | 0.8+ | 0.8+ | 2005 11 26 | G96 | 0.4+ | 0.3− |

**2001 SH$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.80466 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22946097 | $\omega$ | 126.09306 | +0.47448713 | | +0.88018635 | |
| $a$ | 2.6423895 | $\Omega$ | 172.20688 | −0.83257676 | | +0.45301302 | |
| $e$ | 0.0551185 | $i$ | 4.89627 | −0.28579345 | | +0.14160221 | |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4+ | 1.5+ | 2001 10 21 | 704 | 0.4+ | 0.3− | 2005 10 01 | G96 | 0.0 | 0.4− |
| 2001 09 19 | 704 | 0.5− | 0.1+ | 2001 10 21 | 704 | 0.4+ | 0.8− | 2005 10 01 | 704 | 0.5− | 0.7+ |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2001 10 21 | 704 | 0.1− | 0.3− | 2005 10 01 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | 0.4− | 0.9+ | 2001 10 21 | 704 | 0.7+ | 1.4− | 2005 10 01 | 704 | 0.5− | 0.2− |
| 2001 10 20 | 704 | 0.5− | 0.1+ | 2001 10 21 | 704 | 0.3− | 0.4− | 2005 10 01 | 703 | 0.8− | 0.0 |
| 2001 10 20 | 704 | 0.5− | 0.3− | 2001 10 21 | 704 | 0.1− | 1.0+ | 2005 10 01 | 704 | 0.3+ | 0.2+ |
| 2001 10 20 | 704 | 0.3− | 0.5− | 2001 10 21 | 704 | 0.6+ | 0.2− | 2005 10 01 | 703 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.8− | 0.5− | 2001 10 21 | 704 | (2.1+ | 0.3+) | 2005 10 01 | 704 | 0.4− | 0.5+ |
| 2001 10 20 | 704 | 0.5− | 0.1− | 2003 01 27 | 644 | 0.3+ | 0.2+ | 2005 10 01 | 703 | 1.1+ | 1.0− |
| 2001 10 21 | 704 | 0.1− | 0.3− | 2003 01 27 | 644 | 0.0 | 0.4+ | 2005 10 01 | 703 | 0.6+ | 0.1− |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2003 01 27 | 644 | 0.1− | 0.1− | 2005 10 11 | 691 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.2+ | 0.0 | 2005 08 30 | 691 | 0.0 | 0.3+ | 2005 10 11 | 691 | 0.2+ | 0.2+ |
| 2001 10 21 | 704 | 0.2− | 0.2+ | 2005 08 30 | 691 | 0.0 | 0.1+ | 2005 10 11 | 691 | 0.0 | 0.3+ |
| 2001 10 21 | 704 | 0.7− | 0.6+ | 2005 08 30 | 691 | 0.2+ | 0.2+ | 2005 12 01 | G96 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.2+ | 0.5+ | 2005 09 13 | 691 | 0.2− | 0.3− | 2005 12 01 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.4+ | 0.1− | 2005 09 13 | 691 | 0.1− | 0.3− | 2005 12 01 | G96 | 0.0 | 0.6− |
| 2001 10 21 | 704 | 0.3+ | 0.3− | 2005 09 13 | 691 | 0.0 | 0.2− | 2005 12 01 | G96 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.5+ | 0.4− | 2005 10 01 | G96 | 0.1+ | 0.3− | | | | |
| 2001 10 21 | 704 | 1.4+ | 1.7+ | 2005 10 01 | G96 | 0.1+ | 0.4− | | | | |

**2001 SJ$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.14366 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21259742 | $\omega$ | 242.85099 | +0.01392404 | | −0.99947408 | |
| $a$ | 2.7803367 | $\Omega$ | 206.40043 | +0.93912880 | | +0.02312754 | |
| $e$ | 0.0279206 | $i$ | 3.77651 | +0.34328301 | | −0.02273058 | |
| $P$ | 4.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.1− | 0.3− | 2004 04 21 | 704 | 0.3+ | 1.0− | 2006 10 15 | 691 | 0.7− | 0.1− |
| 1994 02 10 | 691 | 0.0 | 0.1+ | 2004 04 21 | 704 | (2.7+ | 1.9+) | 2006 10 15 | 691 | 0.2− | 0.3+ |
| 1994 02 10 | 691 | 0.3+ | 0.1− | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 691 | 0.5− | 0.6+ |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2004 04 22 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.5− | 0.1+ |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2004 04 22 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.7+ | 2004 05 13 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2004 05 13 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.7+ |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2004 05 13 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.9+ |
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2004 05 23 | 691 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 1.1+ | 0.9+ | 2004 05 23 | 691 | 0.1+ | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.5+ |
| 2001 10 11 | 644 | 0.6− | 1.0+ | 2004 05 23 | 691 | 0.0 | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2001 10 11 | 644 | 0.8− | 0.8+ | 2005 07 12 | G96 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.0 | 0.3− |
| 2001 10 11 | 644 | 0.7− | 0.6+ | 2005 07 12 | G96 | 1.0− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.5+ |
| 2001 12 10 | 645 | 0.0 | 0.5− | 2005 07 12 | G96 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.5+ |
| 2001 12 10 | 645 | 0.2+ | 0.1+ | 2005 07 12 | G96 | 0.6− | 0.2− | 2006 11 09 | 644 | 0.4− | 0.5+ |
| 2004 03 23 | 291 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2004 03 23 | 291 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2004 03 23 | 291 | 0.7+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2004 04 21 | 704 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 1.4+ | 0.7+ |
| 2004 04 21 | 704 | (0.5+ | 1.7−) | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | (2.1+ | 0.8+) |

**2001 SK$_{353}$ = 2006 SQ$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.70270 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18103459 | $\omega$ | 331.72432 | | +0.59641859 | | −0.77813581 |
| $a$ | 3.0947698 | $\Omega$ | 80.98814 | | +0.76889667 | | +0.48342594 |
| $e$ | 0.0767193 | $i$ | 11.50258 | | +0.23039701 | | +0.40100377 |
| $P$ | 5.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 645 | 0.1− | 0.0 | 2001 10 23 | 644 | 0.1+ | 0.6+ | 2004 05 12 | 644 | 0.1− | 0.3− |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2001 12 18 | 645 | 0.0 | 0.1− | 2006 08 28 | E12 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 1.4− | 0.5− | 2001 12 18 | 645 | 0.0 | 0.1− | 2006 08 28 | E12 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2003 01 10 | 704 | 0.2+ | 0.3+ | 2006 08 28 | E12 | 0.9+ | 1.0+ |
| 2001 09 25 | 704 | 0.8+ | 1.3+ | 2003 01 10 | 704 | 0.4− | 0.4+ | 2006 08 28 | E12 | 0.1− | 0.5+ |
| 2001 09 25 | 704 | 1.2− | 1.0+ | 2003 01 10 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 703 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 1.6+ | 2003 01 10 | 704 | 0.1− | 0.7+ | 2006 09 20 | 703 | 0.3+ | 0.4− |
| 2001 10 14 | 699 | 1.4+ | 1.6− | 2003 01 10 | 704 | 0.6+ | 0.5− | 2006 09 20 | 703 | 0.1− | 0.3+ |
| 2001 10 14 | 699 | 1.2− | 0.1+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.0 | 0.7− |
| 2001 10 14 | 699 | 0.2− | 1.3+ | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2001 10 14 | 699 | (0.3− | 2.4+) | 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.7+ |
| 2001 10 23 | 644 | 0.1− | 0.5+ | 2004 05 12 | 644 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.5− |
| 2001 10 23 | 644 | 0.1− | 0.3+ | 2004 05 12 | 644 | 0.2+ | 0.9+ | 2006 09 26 | 703 | 0.7− | 0.8− |

**2001 SL$_{353}$ = 2006 SU$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.93498 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17577370 | $\omega$ | 116.52155 | | +0.66257049 | | +0.74717286 |
| $a$ | 3.1562165 | $\Omega$ | 195.33291 | | −0.73811905 | | +0.63949922 |
| $e$ | 0.0524728 | $i$ | 11.40282 | | −0.12720308 | | +0.18103443 |
| $P$ | 5.61 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.2− | 0.1+ | 2004 03 16 | 691 | 0.2− | 0.6+ | 2005 06 11 | 691 | 0.2+ | 0.2− |
| 1995 10 20 | 691 | 0.5− | 0.2+ | 2004 03 16 | 691 | 0.1− | 0.3+ | 2005 06 11 | 691 | 0.3+ | 0.2− |
| 1995 10 20 | 691 | 0.1− | 0.5+ | 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.5− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.2− | 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.4− | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.3− | 2005 04 30 | 691 | 0.0 | 0.5+ | 2006 08 22 | 644 | 0.2− | 0.0 |
| 2001 09 21 | 704 | 0.6+ | 0.2+ | 2005 05 09 | 691 | 0.1− | 0.2+ | 2006 09 16 | 691 | 0.0 | 0.1− |
| 2001 10 18 | 644 | 0.5+ | 0.9− | 2005 05 09 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 691 | 0.1− | 0.1− |
| 2001 10 18 | 644 | 0.6+ | 0.1+ | 2005 05 09 | 691 | 0.3+ | 0.2+ | 2006 09 16 | 691 | 0.2− | 0.1− |
| 2001 10 18 | 644 | 0.2+ | 0.2+ | 2005 05 28 | 599 | 0.2+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2− |
| 2001 10 24 | 691 | 0.5+ | 0.6+ | 2005 05 28 | 599 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 691 | 0.1+ | 0.3+ | 2005 05 28 | 599 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.1+ |
| 2001 10 24 | 691 | 0.1+ | 0.5+ | 2005 05 28 | 599 | 0.5+ | 0.3− | | | | |
| 2004 03 16 | 691 | 0.3− | 0.5+ | 2005 06 11 | 691 | 0.2+ | 0.2+ | | | | |

**2001 SM$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.44697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24118817 | $\omega$ | 348.94547 | | +0.79670677 | | +0.58645815 |
| $a$ | 2.5560267 | $\Omega$ | 333.42805 | | −0.52661360 | | +0.55508153 |
| $e$ | 0.3189400 | $i$ | 19.05390 | | −0.29654078 | | +0.58987399 |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | 0.1− | 0.3+ | 2001 11 11 | 704 | 0.3+ | 0.4− | 2005 09 26 | 703 | 0.1+ | 0.6− |
| 2001 09 22 | 699 | 0.3− | 0.1− | 2005 09 01 | 704 | 0.8+ | 0.4− | 2005 09 26 | 703 | 0.5− | 0.9− |
| 2001 09 22 | 699 | 0.1+ | 0.7− | 2005 09 01 | 704 | 0.0 | 0.1+ | 2005 10 02 | 644 | 0.1− | 0.0 |
| 2001 09 22 | 699 | 0.2− | 1.7+ | 2005 09 01 | 704 | 0.3+ | 0.3− | 2005 10 02 | 644 | 0.2− | 0.1− |
| 2001 09 28 | 704 | 0.5− | 0.4− | 2005 09 01 | 704 | 0.1+ | 0.1+ | 2005 10 02 | 644 | 0.1− | 0.1+ |
| 2001 09 28 | 704 | 0.7− | 0.9− | 2005 09 01 | 704 | 0.2− | 0.2+ | 2005 10 13 | 704 | 0.6− | 1.8+ |
| 2001 09 28 | 704 | 0.0 | 0.4− | 2005 09 12 | 704 | 0.2+ | 0.1+ | 2005 10 13 | 704 | 0.8+ | 1.1+ |
| 2001 10 25 | 704 | 1.2+ | 0.3− | 2005 09 12 | 704 | 0.8+ | 0.4+ | 2005 10 13 | 704 | 0.7− | 0.5+ |
| 2001 10 25 | 704 | 0.5− | 0.0 | 2005 09 12 | 704 | 0.1+ | 0.9+ | 2005 10 13 | 704 | 0.8− | 1.0+ |
| 2001 10 25 | 704 | 0.1+ | 0.7− | 2005 09 12 | 704 | 0.3+ | 0.5− | 2005 10 23 | 703 | 0.4− | 0.6− |
| 2001 11 11 | 704 | 0.3+ | 0.0 | 2005 09 12 | 704 | 0.3+ | 0.7+ | 2005 10 23 | 703 | 0.5− | 0.7− |
| 2001 11 11 | 704 | 0.5+ | 0.5+ | 2005 09 26 | 703 | 0.0 | 0.6− | 2005 10 23 | 703 | 0.2+ | 0.5− |
| 2001 11 11 | 704 | 0.2+ | 1.1+ | 2005 09 26 | 703 | 0.6− | 0.8− | 2005 10 23 | 703 | 0.1+ | 0.7− |

**2001 SN$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.14384 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23736512 | $\omega$ | 211.02087 | | +0.93440557 | | +0.28596006 |
| $a$ | 2.5833988 | $\Omega$ | 130.79821 | | −0.24116482 | | +0.94668580 |
| $e$ | 0.1555587 | $i$ | 16.29443 | | −0.26215599 | | +0.14836725 |
| $P$ | 4.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 644 | 0.3+ | 0.8+ | 2001 10 23 | 699 | 0.3− | 1.6+ | 2004 04 15 | 644 | 0.7+ | 0.4+ |
| 2001 09 22 | 644 | 0.1+ | 1.1+ | 2001 11 17 | 608 | 0.3− | 0.1− | 2005 10 30 | 703 | 1.0+ | 0.5− |
| 2001 09 22 | 644 | 0.3+ | 0.8+ | 2001 11 17 | 608 | 0.0 | 0.8+ | 2005 10 30 | 703 | 0.2− | 0.7− |
| 2001 10 12 | 608 | 0.4− | 0.2+ | 2001 11 17 | 608 | 0.4− | 0.4+ | 2005 10 30 | 703 | 0.2+ | 0.5− |
| 2001 10 12 | 608 | 1.5− | 0.4+ | 2004 01 29 | 291 | 0.1− | 0.6+ | 2005 10 30 | 703 | 1.1− | 0.2+ |
| 2001 10 12 | 608 | 0.4− | 0.1+ | 2004 01 29 | 291 | 0.3− | 0.6+ | 2006 11 24 | G96 | 0.5+ | 0.4− |
| 2001 10 23 | 699 | 0.0 | 0.3+ | 2004 01 29 | 291 | 0.3+ | 0.5+ | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2001 10 23 | 699 | 0.5− | 0.7− | 2004 04 15 | 644 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2001 10 23 | 699 | 0.9+ | 0.8+ | 2004 04 15 | 644 | 0.6+ | 0.6+ | 2006 11 24 | G96 | 0.3+ | 0.1+ |

**2001 SO$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.64104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23829315 | $\omega$ | 280.98131 | | +0.71169599 | | −0.67079230 |
| $a$ | 2.5766870 | $\Omega$ | 121.52964 | | +0.70122351 | | +0.66055391 |
| $e$ | 0.1956146 | $i$ | 14.16793 | | +0.04212368 | | +0.33720355 |
| $P$ | 4.14 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | 1.0+ | 0.8− | 2005 09 13 | 703 | 0.1+ | 0.4− | 2005 10 04 | 644 | 0.1+ | 0.0 |
| 2001 09 22 | 699 | 0.9+ | 0.4− | 2005 09 13 | 703 | 0.4+ | 0.6+ | 2005 10 30 | 703 | 0.2− | 0.4− |
| 2001 09 22 | 699 | 0.6− | 0.0 | 2005 09 13 | 703 | 0.0 | 0.4+ | 2005 10 30 | 703 | 0.2− | 1.4+ |
| 2001 09 22 | 699 | 0.8− | 0.0 | 2005 09 27 | 704 | 0.4− | 0.5+ | 2005 10 30 | 703 | 0.4+ | 0.8+ |
| 2002 01 09 | 645 | 0.0 | 0.1− | 2005 09 27 | 704 | 0.3− | 0.3− | 2005 10 30 | 703 | 0.6− | 0.5+ |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2005 09 27 | 704 | 0.4− | 0.3− | 2005 12 01 | 703 | 0.9+ | 0.7− |
| 2002 01 13 | 645 | 0.1+ | 0.1+ | 2005 09 27 | 704 | 0.4+ | 0.2+ | 2005 12 01 | 703 | 0.5+ | 0.3− |
| 2002 01 13 | 645 | 0.1− | 0.1+ | 2005 10 04 | 644 | 0.1− | 0.0 | 2005 12 01 | 703 | 0.3− | 0.2− |
| 2005 09 13 | 703 | 0.1− | 0.9− | 2005 10 04 | 644 | 0.2− | 0.2− | 2005 12 01 | 703 | (1.0+ | 2.5+) |

**2001 SP$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.63117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27393946 | $\omega$ | 209.26232 | | −0.76448569 | | +0.64460847 |
| $a$ | 2.3480084 | $\Omega$ | 10.88121 | | −0.58460851 | | −0.68904449 |
| $e$ | 0.1449043 | $i$ | 1.95687 | | −0.27165147 | | −0.33120631 |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 07 | 704 | 0.3− | 0.2− | 2001 11 16 | 691 | 0.1− | 0.2− | 2005 11 12 | 691 | 0.3− | 0.1+ |
| 2000 06 07 | 704 | 0.7+ | 0.2− | 2003 02 09 | 608 | 0.3− | 0.2− | 2005 11 12 | 691 | 0.2+ | 0.1+ |
| 2000 06 07 | 704 | 0.6− | 0.3− | 2003 02 09 | 608 | 0.2+ | 0.2− | 2005 11 12 | 691 | 0.3− | 0.1− |
| 2001 09 23 | 291 | 0.0 | 0.5+ | 2003 02 09 | 608 | 0.2+ | 0.1+ | 2005 11 25 | 691 | 0.4+ | 0.0 |
| 2001 09 23 | 291 | 0.1− | 0.4+ | 2004 08 21 | E12 | 0.1+ | 0.4+ | 2005 11 25 | 691 | 0.3+ | 0.0 |
| 2001 09 23 | 291 | 0.0 | 0.1+ | 2004 08 21 | E12 | 0.1+ | 0.2+ | 2005 11 25 | 691 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2004 08 21 | E12 | 0.2+ | 0.2+ | 2006 01 07 | G96 | 0.5− | 0.2+ |
| 2001 10 21 | 704 | 0.8+ | 1.0− | 2004 08 21 | E12 | 0.2− | 0.8− | 2006 01 07 | G96 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 1.2− | 1.4− | 2005 10 28 | G96 | 0.2+ | 0.1− | 2006 01 07 | G96 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.1+ | 1.2− | 2005 10 28 | G96 | 0.0 | 0.1+ | 2006 01 07 | G96 | 0.7− | 0.1− |
| 2001 11 16 | 691 | 0.1+ | 0.2+ | 2005 10 28 | G96 | 0.3− | 0.3− | | | | |
| 2001 11 16 | 691 | 0.2+ | 0.0 | 2005 10 28 | G96 | 0.1− | 0.1− | | | | |

**2001 SQ$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.99777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23976314 | $\omega$ | 325.00255 | | −0.95825108 | +0.23409631 | |
| $a$ | 2.5661445 | $\Omega$ | 229.40453 | | −0.18705049 | −0.94751448 | |
| $e$ | 0.0829346 | $i$ | 12.48675 | | −0.21625674 | −0.21775040 | |
| $P$ | 4.11 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.0 | 0.2+ | 2002 12 14 | 704 | 1.3+ | 0.6+ | 2005 09 26 | 703 | 0.2+ | 0.7− |
| 1993 10 12 | 691 | 0.0 | 0.1− | 2003 01 02 | 704 | 0.5− | 0.2+ | 2005 09 26 | 703 | 0.4+ | 0.5− |
| 1993 10 12 | 691 | 0.2− | 0.1+ | 2003 01 02 | 704 | 0.4+ | 0.4+ | 2005 09 26 | 703 | 1.0+ | 0.4− |
| 2001 09 25 | 704 | 0.1− | 0.5− | 2003 01 02 | 704 | 0.3+ | 0.5+ | 2005 09 26 | 703 | 0.1+ | 0.9− |
| 2001 09 25 | 704 | 0.4+ | 0.1+ | 2003 01 02 | 704 | 0.1+ | 0.9+ | 2005 10 01 | 703 | 0.9− | 0.8+ |
| 2001 09 25 | 704 | 0.9− | 0.2+ | 2003 01 28 | 704 | 0.3+ | 0.6− | 2005 10 01 | 703 | 0.3+ | 0.3− |
| 2001 09 25 | 704 | 0.2− | 0.6+ | 2003 01 28 | 704 | 0.1+ | 0.4− | 2005 10 01 | 703 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.0 | 0.3− | 2003 01 28 | 704 | 0.2+ | 0.8+ | 2005 10 01 | 703 | 0.9+ | 0.1− |
| 2001 09 29 | 644 | 0.3− | 0.7+ | 2004 05 18 | 704 | 0.1− | 1.1+ | 2005 10 07 | 703 | 2.6− | 2.4+ |
| 2001 09 29 | 644 | 0.3− | 0.5+ | 2004 05 18 | 704 | 0.5− | 0.6+ | 2005 10 07 | 703 | 0.0 | 0.2+ |
| 2001 09 29 | 644 | 0.3− | 0.3+ | 2004 05 18 | 704 | 0.6+ | 1.1+ | 2005 10 07 | 703 | 0.5− | 0.1+ |
| 2001 10 12 | 608 | 1.0+ | 1.0+ | 2004 05 18 | 704 | 0.4+ | 0.7+ | 2005 10 07 | 703 | 0.2− | 0.6+ |
| 2001 10 12 | 608 | 0.0 | 0.2+ | 2004 06 24 | 599 | 0.5− | 0.4+ | 2005 10 09 | 683 | 1.7− | 1.0− |
| 2001 10 12 | 608 | 0.0 | 0.2− | 2004 06 24 | 599 | 0.2− | 0.6+ | 2005 10 09 | 683 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.5+ | 0.0 | 2005 09 12 | 704 | 0.3+ | 0.3− | 2005 10 09 | 683 | 0.5+ | 0.1+ |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2005 09 12 | 704 | 0.4+ | 0.3− | 2005 10 28 | 703 | 0.1+ | 0.6− |
| 2001 10 21 | 704 | 0.6+ | 0.4+ | 2005 09 12 | 704 | 0.6− | 0.7+ | 2005 10 28 | 703 | 0.3− | 0.9− |
| 2002 12 14 | 704 | 0.8− | 1.2+ | 2005 09 12 | 704 | 0.1+ | 0.5− | 2005 10 28 | 703 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | 0.5− | 0.3+ | 2005 09 12 | 704 | 0.1− | 0.7+ | 2005 10 28 | 703 | 1.9+ | 0.0 |

**2001 SR$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.68030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26714689 | $\omega$ | 38.29632 | | +0.74348120 | +0.65384933 | |
| $a$ | 2.3876425 | $\Omega$ | 280.26999 | | −0.64336196 | +0.64199356 | |
| $e$ | 0.2250642 | $i$ | 8.20427 | | −0.18254065 | +0.40040644 | |
| $P$ | 3.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.2− | 0.2− | 2001 11 12 | 704 | 0.5− | 0.2+ | 2005 12 28 | G96 | 0.2− | 0.2− |
| 2001 09 25 | 704 | 0.8− | 0.3+ | 2001 11 12 | 704 | 0.7− | 0.6+ | 2005 12 28 | G96 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 1.1− | 1.0− | 2001 11 12 | 704 | 0.0 | 0.2+ | 2006 01 05 | 691 | 0.4− | 0.1+ |
| 2001 10 15 | 704 | 0.3+ | 0.3− | 2001 11 12 | 704 | 0.3+ | 0.5+ | 2006 01 05 | 691 | 0.3+ | 0.2+ |
| 2001 10 15 | 704 | 1.1+ | 0.7+ | 2005 12 10 | 691 | 0.3+ | 0.2− | 2006 01 05 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 704 | 0.3+ | 0.1− | 2005 12 10 | 691 | 0.0 | 0.1− | 2006 01 25 | G96 | 0.3+ | 0.2+ |
| 2001 10 15 | 704 | 0.6+ | 0.4− | 2005 12 10 | 691 | 0.2+ | 0.0 | 2006 01 25 | G96 | 0.6− | 0.5− |
| 2001 10 15 | 704 | 1.1+ | 0.2− | 2005 12 28 | G96 | 0.0 | 0.3− | 2006 01 25 | G96 | 0.4− | 0.1− |
| 2001 11 12 | 704 | 0.8− | 0.2− | 2005 12 28 | G96 | 0.7− | 0.6− | 2006 01 25 | G96 | 0.2− | 0.1+ |

**2001 SS$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.55404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20168033 | $\omega$ | 127.95568 | | −0.24488065 | −0.96535262 | |
| $a$ | 2.8797869 | $\Omega$ | 335.75279 | | +0.80640366 | −0.15116740 | |
| $e$ | 0.2109781 | $i$ | 12.68127 | | +0.53828115 | −0.21270340 | |
| $P$ | 4.89 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4+ | 0.4− | 2001 12 23 | 704 | 0.2− | 1.2− | 2002 01 23 | 704 | 0.0 | 0.3− |
| 2001 09 25 | 704 | 0.4+ | 0.3− | 2001 12 23 | 704 | 0.3− | 1.8− | 2005 07 29 | 644 | 0.2− | 0.1− |
| 2001 09 25 | 704 | 0.1+ | 0.5− | 2001 12 23 | 704 | (0.4− | 2.3−) | 2005 07 29 | 644 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | 0.4+ | 0.5− | 2002 01 07 | 704 | 0.5− | 0.3+ | 2005 07 29 | 644 | 0.0 | 0.3+ |
| 2001 12 08 | 704 | 0.2+ | 0.4+ | 2002 01 07 | 704 | 0.2− | 0.0 | 2005 08 25 | 644 | 0.1− | 0.1− |
| 2001 12 08 | 704 | 0.2− | 0.5+ | 2002 01 07 | 704 | 0.5− | 0.2+ | 2005 08 25 | 644 | 0.3− | 0.2− |
| 2001 12 08 | 704 | 0.0 | 0.9+ | 2002 01 07 | 704 | 0.1− | 0.1+ | 2005 08 25 | 644 | 0.4+ | 0.2− |
| 2001 12 08 | 704 | 0.2− | 1.2+ | 2002 01 23 | 704 | 0.2+ | 0.4+ | 2005 09 23 | 691 | 0.1− | 0.2+ |
| 2001 12 08 | 704 | 0.1− | 1.4+ | 2002 01 23 | 704 | 0.1+ | 0.1− | 2005 09 23 | 691 | 0.3+ | 0.1− |
| 2001 12 23 | 704 | 0.3+ | 1.5− | 2002 01 23 | 704 | 0.7+ | 0.7+ | 2005 09 23 | 691 | 0.2− | 0.0 |

**2001 ST$_{353}$ = 2006 SX$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.12364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17535668 | $\omega$ | 54.18660 | | +0.28990562 | −0.94411334 | |
| $a$ | 3.1612185 | $\Omega$ | 20.73232 | | +0.67091391 | +0.08359888 | |
| $e$ | 0.2044123 | $i$ | 26.30192 | | +0.68251685 | +0.31884357 | |
| $P$ | 5.62 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.3− | 0.6− | 2001 12 09 | 704 | 0.7− | 0.4+ | 2003 04 09 | 644 | 0.3+ | 0.2+ |
| 2001 09 25 | 704 | 0.9− | 0.1− | 2003 02 04 | 699 | 0.6− | 1.2− | 2003 04 09 | 644 | 0.4+ | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2003 02 04 | 699 | 0.4+ | 0.1+ | 2003 04 09 | 644 | 0.6+ | 0.2+ |
| 2001 09 25 | 704 | 0.1− | 0.5− | 2003 02 04 | 699 | 0.1− | 0.4+ | 2006 09 26 | 703 | 1.0− | 1.3+ |
| 2001 10 09 | 704 | 0.3+ | 0.4− | 2003 02 04 | 699 | 0.8− | 0.1+ | 2006 09 26 | 703 | (0.7+ | 2.2+) |
| 2001 10 09 | 704 | 0.1+ | 0.6− | 2003 03 08 | 699 | (1.8+ | 0.1−) | 2006 09 26 | 703 | 1.1− | 0.5+ |
| 2001 10 09 | 704 | 0.4+ | 0.3− | 2003 03 08 | 699 | 0.2− | 0.1+ | 2006 09 26 | 703 | (0.2+ | 1.7+) |
| 2001 10 09 | 704 | 1.0+ | 0.1+ | 2003 03 08 | 699 | 0.5+ | 1.0+ | 2006 09 28 | E12 | 0.5− | 0.0 |
| 2001 10 09 | 704 | 1.2+ | 0.7− | 2003 03 08 | 699 | 0.6+ | 0.4+ | 2006 09 28 | E12 | 1.1− | 0.1− |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2003 03 08 | 704 | 0.2+ | 0.3+ | 2006 09 28 | E12 | 0.7− | 0.7+ |
| 2001 11 11 | 704 | 0.9+ | 0.2+ | 2003 03 08 | 704 | 0.6+ | 0.1+ | 2006 09 28 | E12 | 0.8− | 0.4+ |
| 2001 11 11 | 704 | 0.0 | 0.6+ | 2003 03 08 | 704 | 0.1+ | 0.7+ | 2006 10 11 | F84 | 0.4− | 0.3+ |
| 2001 11 11 | 704 | 0.2+ | 0.6+ | 2003 03 08 | 704 | 1.3+ | 0.4+ | 2006 10 11 | F84 | 0.4+ | 0.1+ |
| 2001 11 11 | 704 | 0.2+ | 0.4+ | 2003 03 26 | 704 | 0.7− | 1.2+ | 2006 10 12 | E12 | 1.0− | 1.1+ |
| 2001 12 09 | 704 | 0.5− | 0.1+ | 2003 03 26 | 704 | 0.1+ | 0.2− | 2006 10 12 | E12 | 0.7− | 0.5+ |
| 2001 12 09 | 704 | 0.7− | 0.1+ | 2003 03 26 | 704 | 1.2+ | 0.0 | 2006 10 12 | E12 | 0.6+ | 0.2+ |
| 2001 12 09 | 704 | 0.5− | 0.0 | 2003 03 26 | 704 | 0.6+ | 0.5+ | 2006 10 12 | E12 | 1.1+ | 0.4+ |
| 2001 12 09 | 704 | 0.6− | 0.2− | 2003 03 26 | 704 | 0.0 | 0.2+ | | | | |

**2001 SU$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.26963 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23664741 | $\omega$ | 36.56123 | | +0.91658828 | +0.39801207 | |
| $a$ | 2.5886194 | $\Omega$ | 299.94275 | | −0.37647158 | +0.82700409 | |
| $e$ | 0.1532327 | $i$ | 2.52064 | | −0.13466651 | +0.39705242 | |
| $P$ | 4.16 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.6− | 1.4+ | 2004 04 25 | 691 | 0.3− | 0.1+ | 2005 09 13 | 691 | 0.1+ | 0.2− |
| 2001 09 28 | 644 | 0.0 | 1.2+ | 2004 04 25 | 691 | 0.4− | 0.4+ | 2005 09 25 | 691 | 0.1+ | 0.1+ |
| 2001 09 28 | 644 | 0.1+ | 1.1+ | 2005 07 30 | 644 | 0.1− | 0.2+ | 2005 09 25 | 691 | 0.1+ | 0.4+ |
| 2001 10 14 | 704 | 0.8− | 1.3− | 2005 07 30 | 644 | 0.2− | 0.1+ | 2005 09 25 | 691 | 0.1+ | 0.3+ |
| 2001 10 14 | 704 | 0.2+ | 0.8+ | 2005 07 30 | 644 | 0.1− | 0.2− | 2005 10 30 | G96 | 0.0 | 0.8− |
| 2001 10 14 | 704 | (2.3+ | 1.1+) | 2005 08 29 | 691 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.4− | 0.2+ |
| 2001 10 18 | 644 | 0.0 | 0.7− | 2005 08 29 | 691 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.3− | 0.1− |
| 2001 10 18 | 644 | 0.3+ | 0.3− | 2005 08 29 | 691 | 0.0 | 0.0 | 2005 10 30 | G96 | 0.1− | 0.1− |
| 2001 10 18 | 644 | 0.0 | 0.3− | 2005 09 13 | 691 | 0.1+ | 0.1− | | | | |
| 2004 04 25 | 691 | 0.8+ | 0.2− | 2005 09 13 | 691 | 0.1− | 0.3− | | | | |

**2001 SW$_{353}$ = 2006 SL$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.96517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19135097 | $\omega$ | 81.11630 | | +0.79422231 | −0.58291637 | |
| $a$ | 2.9825125 | $\Omega$ | 314.31277 | | +0.41919008 | +0.72998464 | |
| $e$ | 0.3303948 | $i$ | 13.86939 | | +0.43987566 | +0.35683461 | |
| $P$ | 5.15 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.3− | 0.3− | 2002 01 07 | 704 | 0.1− | 0.9+ | 2006 10 02 | 704 | 0.5− | 0.4+ |
| 2001 09 26 | 704 | 0.3− | 0.0 | 2006 08 23 | 704 | 0.1− | 0.8+ | 2006 10 23 | 703 | 0.2− | 0.2− |
| 2001 09 26 | 704 | 0.5− | 0.2− | 2006 08 23 | 704 | (2.5+ | 0.6−) | 2006 10 23 | 703 | 0.1− | 0.1− |
| 2001 10 25 | 704 | 0.1− | 0.9− | 2006 08 23 | 704 | 0.7+ | 1.1− | 2006 10 23 | 703 | 0.0 | 0.0 |
| 2001 10 25 | 704 | 0.2+ | 0.7− | 2006 08 23 | 704 | 0.6+ | 0.3− | 2006 10 23 | 703 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.2− | 1.3− | 2006 09 19 | 703 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.1+ | 0.1− |
| 2001 10 25 | 704 | 0.6− | 0.9− | 2006 09 19 | 703 | 0.3+ | 0.4− | 2006 10 29 | 703 | 0.2+ | 0.3− |
| 2001 12 08 | 704 | (2.0+ | 0.6+) | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 10 29 | 703 | 0.1+ | 0.1− |
| 2001 12 08 | 704 | (0.9+ | 2.1−) | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 11 16 | 703 | 0.2+ | 0.1− |
| 2001 12 08 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 704 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.3− |
| 2001 12 08 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 704 | 0.7+ | 0.2− | 2006 11 16 | 703 | 0.2+ | 0.1+ |
| 2001 12 08 | 704 | 0.6+ | 0.4− | 2006 09 19 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.1+ | 0.1− |
| 2001 12 23 | 704 | 0.1− | 0.6− | 2006 09 19 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.1+ |
| 2001 12 23 | 704 | 0.3− | 0.5− | 2006 09 25 | 703 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.4+ | 0.0 |
| 2001 12 23 | 704 | 0.5− | 0.0 | 2006 09 25 | 703 | 0.6− | 0.1+ | 2006 11 26 | 151 | 0.3+ | 0.4+ |
| 2001 12 23 | 704 | 0.4− | 0.3− | 2006 09 25 | 703 | 0.4− | 0.2+ | 2006 11 26 | 151 | 0.4+ | 0.1+ |
| 2001 12 23 | 704 | 0.5− | 0.4+ | 2006 09 25 | 703 | 0.2+ | 0.7+ | 2006 11 29 | 704 | (1.3− | 1.9−) |
| 2002 01 07 | 704 | 0.2+ | 0.8+ | 2006 10 02 | 704 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.3− |
| 2002 01 07 | 704 | 0.1+ | 0.2+ | 2006 10 02 | 704 | 0.6− | 0.8+ | 2006 11 29 | 704 | 0.6− | 0.8+ |
| 2002 01 07 | 704 | 0.5+ | 0.3+ | 2006 10 02 | 704 | 0.7− | 0.5+ | 2006 11 29 | 704 | (0.8− | 2.7−) |
| 2002 01 07 | 704 | 0.1+ | 1.0+ | 2006 10 02 | 704 | 1.1− | 0.0 | | | | |

**2001 TJ$_1$ = 2006 QW$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.80171 | | (2000.0) | | | |
| $n$ | 0.17535978 | $\omega$ | 135.93988 | | +0.94410611 | +0.32185956 |
| $a$ | 3.1611812 | $\Omega$ | 205.54195 | | −0.32917450 | +0.90901508 |
| $e$ | 0.1251959 | $i$ | 9.50547 | | −0.01754413 | +0.26476030 |
| $P$ | 5.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.3+ | 0.2− | 2001 10 21 | 691 | 0.5− | 0.2− | 2005 05 16 | G96 | 0.2− | 0.4+ |
| 1995 10 18 | 691 | 0.1+ | 0.2− | 2001 11 20 | 704 | 0.2+ | 0.5+ | 2005 05 16 | G96 | 0.7− | 0.2+ |
| 1995 10 18 | 691 | 0.0 | 0.4− | 2001 11 20 | 704 | 1.2− | 0.2− | 2006 08 22 | 644 | 0.2+ | 0.2+ |
| 2001 10 10 | 691 | 0.1− | 0.1+ | 2001 11 20 | 704 | 0.4− | 0.5− | 2006 08 22 | 644 | 0.2+ | 0.2+ |
| 2001 10 10 | 691 | 0.4− | 0.4+ | 2001 11 20 | 704 | 0.5− | 0.9− | 2006 08 22 | 644 | 0.1+ | 0.6+ |
| 2001 10 10 | 691 | 0.2− | 0.0 | 2001 11 20 | 704 | 1.5− | 0.8− | 2006 08 29 | 703 | 1.0− | 0.4+ |
| 2001 10 11 | 691 | 0.8+ | 0.4+ | 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.5− | 1.2+ |
| 2001 10 11 | 691 | 0.5+ | 0.4+ | 2004 03 16 | 691 | 0.4+ | 0.0 | 2006 08 29 | 703 | 1.5+ | 0.7+ |
| 2001 10 11 | 691 | 0.4+ | 0.4+ | 2004 03 16 | 691 | 0.5+ | 0.7+ | 2006 08 29 | 703 | 0.2− | 0.8+ |
| 2001 10 21 | 691 | 0.2− | 0.0 | 2005 05 16 | G96 | 0.4− | 0.4+ | | | | |
| 2001 10 21 | 691 | 0.1− | 0.0 | 2005 05 16 | G96 | 0.7− | 0.1+ | | | | |

**2001 TV$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.52751 | | (2000.0) | | | |
| $n$ | 0.18629494 | $\omega$ | 190.95147 | | +0.83257564 | −0.54990754 |
| $a$ | 3.0362347 | $\Omega$ | 202.79703 | | +0.52028870 | +0.81756309 |
| $e$ | 0.2062260 | $i$ | 9.87934 | | +0.19004598 | +0.17085751 |
| $P$ | 5.29 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.9− | 0.9− | 2001 10 13 | 704 | (1.6+ | 0.8−) | 2006 09 17 | 691 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2001 10 13 | 704 | (1.7+ | 0.6+) | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.9− | 0.2+ | 2001 10 13 | 704 | 1.0+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 333 | 0.0 | 0.8− | 2001 10 18 | 644 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.3− |
| 2001 09 21 | 333 | 0.4+ | 1.0− | 2001 10 18 | 644 | 0.1+ | 0.4− | 2006 09 19 | 691 | 0.4− | 0.2− |
| 2001 09 21 | 333 | 0.3+ | 0.4+ | 2001 10 18 | 644 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.5− | 0.6− | 2001 10 21 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 691 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.5− | 0.3− | 2001 10 21 | 704 | 0.8+ | 0.4+ | 2006 09 22 | 691 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 1.1− | 0.3+ | 2001 10 21 | 704 | 0.4− | 0.0 | 2006 09 22 | 691 | 0.2+ | 0.1+ |
| 2001 09 23 | 704 | 0.2− | 0.4+ | 2001 10 21 | 704 | 0.4+ | 0.3− | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2001 10 06 | 644 | 0.1+ | 0.2+ | 2001 10 21 | 704 | 1.1+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 10 06 | 644 | 0.3− | 0.4− | 2001 10 24 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 2001 10 06 | 644 | 0.3+ | 0.6− | 2001 10 24 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2001 10 11 | 644 | 0.2− | 0.1+ | 2001 10 24 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 11 | 644 | 0.3− | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2001 10 11 | 644 | 0.4− | 0.1+ | 2006 08 17 | 644 | 0.3+ | 0.2− | | | | |
| 2001 10 13 | 704 | 0.7+ | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | | | | |

**2001 TT$_4$ = 2006 UK$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.11635 | | (2000.0) | | | |
| $n$ | 0.20826276 | $\omega$ | 177.01032 | | +0.99425321 | −0.10666449 |
| $a$ | 2.8187830 | $\Omega$ | 189.12787 | | +0.09698837 | +0.93357045 |
| $e$ | 0.1111587 | $i$ | 3.29700 | | +0.04531897 | +0.34215334 |
| $P$ | 4.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 691 | 0.1− | 0.1− | 2001 10 14 | 691 | 0.4+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 09 23 | 691 | 0.1− | 0.2− | 2001 10 17 | 644 | 0.0 | 1.3− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 09 23 | 691 | 0.2− | 0.5− | 2001 10 17 | 644 | 0.3− | 0.9− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 10 08 | 644 | 0.0 | 0.1+ | 2001 10 17 | 644 | 0.4− | 1.0− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 10 08 | 644 | 0.9− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2001 10 08 | 644 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.4− | 0.7+ |
| 2001 10 11 | 644 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.7− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2001 10 11 | 644 | 0.6− | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2001 10 11 | 644 | 0.0 | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2001 10 14 | 691 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 10 14 | 691 | 0.4+ | 0.4+ | 2006 10 18 | 691 | 0.7+ | 0.3− | | | | |

**2001 TY$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.94486 | | (2000.0) | | | |
| $n$ | 0.20299025 | $\omega$ | 168.44435 | | +0.91652799 | −0.38692294 |
| $a$ | 2.8673845 | $\Omega$ | 214.87091 | | +0.35139533 | +0.89995526 |
| $e$ | 0.1351076 | $i$ | 10.20835 | | +0.19104387 | +0.20092575 |
| $P$ | 4.86 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2001 10 21 | 704 | 0.9− | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2001 09 20 | 704 | 0.8+ | 0.3+ | 2001 10 26 | 704 | 0.0 | 0.8+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2001 09 20 | 704 | 1.3+ | 0.1+ | 2001 10 26 | 704 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 2001 10 11 | 644 | 0.4− | 0.5− | 2001 10 26 | 704 | 0.1+ | 1.2+ | 2006 10 12 | 691 | 0.1+ | 0.1− |
| 2001 10 11 | 644 | 0.0 | 0.8− | 2001 10 26 | 704 | 0.6− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.0 | 0.5− | 2001 10 26 | 704 | 1.0− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 704 | 0.5+ | 1.2− | 2001 11 09 | 704 | 0.3− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2001 10 13 | 704 | 1.2− | 0.1− | 2001 11 09 | 704 | 0.7− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 10 13 | 704 | 0.8− | 1.0− | 2001 11 09 | 704 | 0.8− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2001 10 13 | 704 | 0.3− | 0.4+ | 2001 11 09 | 704 | 0.4− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.4− |
| 2001 10 14 | 704 | 0.1− | 0.3+ | 2001 11 11 | 699 | 0.3+ | 1.1+ | 2006 10 20 | 691 | 0.4− | 0.2− |
| 2001 10 14 | 704 | 0.2− | 0.4− | 2001 11 11 | 699 | 0.1− | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.2+ | 2001 11 11 | 699 | 0.8+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | 0.3+ | 0.3− | 2001 11 11 | 699 | 0.2− | 0.9− | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2001 10 14 | 704 | 0.4+ | 0.3− | 2001 11 20 | 704 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.6+ | 0.3+ |
| 2001 10 15 | 704 | 0.3+ | 0.4+ | 2001 11 20 | 704 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.0 |
| 2001 10 15 | 704 | 0.0 | 0.8+ | 2001 11 20 | 704 | 0.4+ | 0.8+ | 2006 11 14 | 704 | 0.1− | 0.0 |
| 2001 10 15 | 704 | (1.5+ | 0.5+) | 2001 11 20 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.7+ |
| 2001 10 15 | 704 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.5+ | 0.0 | 2006 11 14 | 704 | (0.5+ | 1.8+) |
| 2001 10 15 | 704 | 0.5− | 0.1+ | 2001 11 21 | 704 | 1.1+ | 0.7+ | 2006 11 14 | 704 | 0.8+ | 0.2− |
| 2001 10 15 | 704 | 0.9− | 0.3− | 2001 11 21 | 704 | 0.7+ | 0.2− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2001 10 15 | 704 | 0.4− | 0.8− | 2001 11 21 | 704 | 0.4+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2001 10 15 | 704 | 0.9− | 0.1+ | 2001 11 21 | 704 | 1.4+ | 0.6+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2001 10 15 | 704 | 0.0 | 0.9− | 2001 12 17 | 704 | 0.2+ | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2001 10 15 | 704 | 0.7− | 0.1− | 2001 12 17 | 704 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2001 10 19 | 644 | 0.0 | 0.6+ | 2001 12 17 | 704 | 1.0+ | 0.6− | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2001 10 19 | 644 | 0.2− | 0.4+ | 2001 12 17 | 704 | 0.8+ | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2001 10 19 | 644 | 0.1− | 0.7+ | 2004 04 22 | 691 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.7− | 0.7+ |
| 2001 10 21 | 704 | 1.3− | 0.6+ | 2004 04 22 | 691 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.5+ | 0.2− |
| 2001 10 21 | 704 | 0.0 | 0.2− | 2004 04 22 | 691 | 0.3+ | 0.5+ | | | | |
| 2001 10 21 | 704 | 0.1+ | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.4− | | | | |

**2001 TH$_{11}$ = 1983 RX$_{8}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.18940 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22227692 | $\omega$ | 324.49390 | | +0.88313963 | +0.46902692 | |
| $a$ | 2.6990222 | $\Omega$ | 7.55067 | | −0.41336213 | +0.78696106 | |
| $e$ | 0.2246592 | $i$ | 3.85756 | | −0.22180204 | +0.40088158 | |
| $P$ | 4.43 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 09 11 | 095 | 0.6− | 1.3+ | 2001 10 23 | 704 | 0.0 | 0.1+ | 2001 11 24 | 704 | 0.9+ | 0.5+ |
| 2001 08 16 | 704 | 0.1− | 0.4− | 2001 10 23 | 704 | 0.5+ | 0.5− | 2001 11 24 | 704 | 0.2− | 0.2+ |
| 2001 08 16 | 704 | 0.4+ | 0.1+ | 2001 10 23 | 704 | 0.4+ | 0.9− | 2001 11 24 | 704 | 1.1− | 0.1+ |
| 2001 08 16 | 704 | 0.6− | 0.2− | 2001 10 23 | 704 | 0.5+ | 0.6− | 2001 11 24 | 704 | 0.9− | 0.2− |
| 2001 08 16 | 704 | 0.0 | 0.1+ | 2001 10 23 | 704 | 0.2+ | 0.5− | 2004 03 29 | 691 | 0.2+ | 0.7+ |
| 2001 08 24 | 704 | 0.1− | 0.2− | 2001 10 24 | 333 | 0.2+ | 0.1− | 2004 03 29 | 691 | 0.2+ | 0.7+ |
| 2001 08 24 | 704 | 0.2− | 0.2− | 2001 10 24 | 333 | 0.2− | 0.6− | 2004 03 29 | 691 | 0.0 | 0.6+ |
| 2001 08 24 | 704 | 0.8− | 1.2+ | 2001 10 24 | 333 | 0.5− | 0.6− | 2004 04 14 | 691 | 0.7+ | 1.2+ |
| 2001 09 20 | 704 | 0.1+ | 0.3− | 2001 10 24 | 333 | 0.4− | 0.5− | 2004 04 14 | 691 | 0.4+ | 0.8+ |
| 2001 09 20 | 704 | 0.6− | 0.1− | 2001 10 24 | 333 | 0.7− | 1.0− | 2004 04 14 | 691 | 0.7+ | 1.0+ |
| 2001 09 20 | 704 | 0.8− | 0.1− | 2001 10 24 | 333 | 0.1+ | 0.4− | 2004 04 23 | 691 | 0.4+ | 0.3+ |
| 2001 09 20 | 704 | 1.7− | 1.1+ | 2001 10 25 | 333 | 0.1+ | 0.5− | 2004 04 23 | 691 | 0.3+ | 0.5+ |
| 2001 09 24 | 704 | 1.6− | 1.1− | 2001 10 25 | 333 | 0.6− | 0.3− | 2004 04 23 | 691 | 0.1+ | 0.7+ |
| 2001 09 24 | 704 | 0.3− | 1.2+ | 2001 10 25 | 333 | 0.0 | 0.5− | 2005 06 09 | 703 | 0.6− | 0.1+ |
| 2001 09 24 | 704 | 1.2− | 0.2− | 2001 10 26 | 333 | 0.8− | 0.1− | 2005 06 09 | 703 | 0.9− | 1.1− |
| 2001 09 24 | 704 | (0.8− | 2.0+) | 2001 10 26 | 333 | 0.2− | 0.2+ | 2005 06 09 | 703 | 0.7+ | 0.8− |
| 2001 09 24 | 704 | 0.4− | 0.2− | 2001 10 26 | 333 | 0.1− | 0.1+ | 2005 06 09 | 703 | 1.2+ | 1.0− |
| 2001 10 13 | 704 | 0.6+ | 0.9+ | 2001 10 26 | 333 | 0.0 | 0.7− | 2005 07 11 | 699 | 0.2− | 1.3+ |
| 2001 10 13 | 704 | 0.1+ | 0.4− | 2001 10 26 | 333 | 0.0 | 0.9− | 2005 07 11 | 699 | 0.8+ | 0.2− |
| 2001 10 13 | 704 | 0.7− | 0.0 | 2001 10 26 | 333 | 0.8− | 0.6− | 2005 07 11 | 699 | 0.4+ | 0.2+ |
| 2001 10 13 | 704 | 0.2− | 0.3+ | 2001 10 26 | 644 | 0.2+ | 0.0 | 2005 07 11 | 699 | 0.9+ | 0.1+ |
| 2001 10 13 | 704 | 0.7+ | 0.0 | 2001 10 26 | 644 | 0.3+ | 0.1+ | 2005 07 31 | E12 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.6+ | 0.2+ | 2001 10 26 | 644 | 0.2+ | 0.1+ | 2005 07 31 | E12 | 0.1+ | 0.1− |
| 2001 10 14 | 704 | 0.5+ | 0.7+ | 2001 11 10 | 704 | 0.8+ | 0.6+ | 2005 07 31 | E12 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.9+ | 0.9+ | 2001 11 10 | 704 | 1.1+ | 0.6+ | 2005 07 31 | E12 | 0.2+ | 0.5+ |
| 2001 10 14 | 704 | 0.5+ | 0.9+ | 2001 11 10 | 704 | 1.1+ | 0.2+ | 2005 08 27 | 699 | 0.5− | 0.5− |
| 2001 10 14 | 704 | 0.6+ | 0.5+ | 2001 11 10 | 704 | 1.3+ | 0.2− | 2005 08 27 | 699 | 1.5− | 0.5+ |
| 2001 10 16 | 333 | 0.1+ | 0.0 | 2001 11 10 | 704 | 1.2+ | 0.4+ | 2005 08 27 | 699 | 0.1− | 0.3+ |
| 2001 10 16 | 333 | 1.1− | 1.0− | 2001 11 11 | 699 | 0.3+ | 0.2− | 2005 08 27 | 699 | 0.6− | 0.3− |
| 2001 10 16 | 333 | 0.3+ | 0.0 | 2001 11 11 | 699 | 0.1+ | 0.2− | 2005 08 27 | E12 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.6+ | 2001 11 11 | 699 | 0.1− | 0.2+ | 2005 08 27 | E12 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 0.0 | 0.8+ | 2001 11 11 | 699 | 0.9+ | 0.7+ | 2005 08 27 | E12 | 0.3+ | 0.3+ |
| 2001 10 17 | 704 | 0.4+ | 1.2+ | 2001 11 17 | 704 | 0.1+ | 0.3− | 2005 08 27 | E12 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 0.1+ | 1.2+ | 2001 11 17 | 704 | 0.1+ | 0.1− | 2005 08 31 | 699 | 0.2+ | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 1.6+ | 2001 11 17 | 704 | 0.2+ | 0.8− | 2005 08 31 | 699 | 0.2− | 0.4+ |
| 2001 10 19 | 644 | 0.2− | 0.6+ | 2001 11 17 | 704 | 0.4− | 0.3− | 2005 08 31 | 699 | 0.3− | 1.2+ |
| 2001 10 19 | 644 | 0.2− | 0.7+ | 2001 11 17 | 704 | 0.1− | 0.3− | 2005 08 31 | 699 | 0.7+ | 0.1+ |
| 2001 10 19 | 644 | 0.2− | 0.6+ | 2001 11 19 | 704 | 0.0 | 0.2− | 2005 10 05 | 704 | 0.6+ | 0.8− |
| 2001 10 21 | 704 | 0.0 | 0.1+ | 2001 11 19 | 704 | 0.0 | 0.2− | 2005 10 05 | 704 | 0.8− | 1.0− |
| 2001 10 21 | 704 | 0.1− | 0.4+ | 2001 11 19 | 704 | 0.0 | 0.3− | 2005 10 05 | 704 | 0.3− | 0.5− |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2001 11 19 | 704 | 0.6− | 0.4− | 2005 10 05 | 704 | 0.6− | 0.0 |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2001 11 19 | 704 | 0.4− | 0.0 | | | | |
| 2001 10 21 | 704 | 0.4+ | 0.1+ | 2001 11 24 | 704 | 0.6− | 0.5+ | | | | |

**2001 TY$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.76275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17207130 | $\omega$ | 261.79170 | | +0.87039852 | +0.21762005 | |
| $a$ | 3.2013298 | $\Omega$ | 84.77185 | | −0.03000797 | +0.91879332 | |
| $e$ | 0.3038161 | $i$ | 26.32660 | | −0.49143254 | +0.32933319 | |
| $P$ | 5.73 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 608 | 0.0 | 0.4− | 2001 10 15 | 704 | 0.4− | 0.9− | 2001 11 07 | 704 | 0.1− | 0.5+ |
| 2001 08 25 | 608 | 0.1+ | 0.8− | 2001 10 17 | 704 | 0.5− | 0.9− | 2001 11 19 | 704 | 0.7− | 0.4− |
| 2001 08 25 | 608 | 0.4+ | 1.1− | 2001 10 17 | 704 | 0.4− | 0.8− | 2001 11 19 | 704 | 0.1− | 0.8− |
| 2001 09 18 | 644 | 0.7− | 1.1+ | 2001 10 17 | 704 | 0.3− | 0.8− | 2001 11 19 | 704 | 0.4− | 0.6+ |
| 2001 09 18 | 644 | 0.7− | 0.8+ | 2001 10 17 | 704 | 0.2+ | 0.1+ | 2001 11 19 | 704 | (0.8− | 2.5+) |
| 2001 09 18 | 644 | 0.6− | 0.7+ | 2001 10 17 | 704 | 0.3− | 0.6− | 2001 12 14 | 644 | 0.1− | 1.1+ |
| 2001 10 11 | 704 | 0.4+ | 0.0 | 2001 10 23 | 608 | 0.5− | 0.3+ | 2001 12 14 | 644 | 0.5− | 1.1+ |
| 2001 10 11 | 704 | 0.4+ | 0.1+ | 2001 10 23 | 608 | 1.3− | 0.4+ | 2001 12 14 | 644 | 0.0 | 1.2+ |
| 2001 10 11 | 704 | 0.2+ | 0.1− | 2001 10 23 | 608 | 1.1− | 0.7+ | 2002 01 08 | 645 | 0.2+ | 0.0 |
| 2001 10 11 | 704 | 0.1+ | 0.3+ | 2001 10 24 | 699 | 0.8+ | 0.3+ | 2002 01 08 | 645 | 0.1+ | 0.1− |
| 2001 10 11 | 704 | 0.4+ | 0.5− | 2001 10 24 | 699 | 0.7+ | 0.8+ | 2004 03 16 | 645 | 0.0 | 0.1+ |
| 2001 10 15 | 704 | 0.0 | 0.9− | 2001 10 24 | 699 | 0.3+ | 0.3+ | 2004 03 16 | 645 | 0.0 | 0.0 |
| 2001 10 15 | 704 | 0.1− | 0.6− | 2001 10 24 | 699 | 0.6− | 0.5+ | 2006 10 31 | F84 | 0.3− | 0.1+ |
| 2001 10 15 | 704 | 0.3+ | 0.2− | 2001 11 07 | 704 | 0.2+ | 0.4+ | 2006 10 31 | F84 | 0.4+ | 0.2− |
| 2001 10 15 | 704 | 0.7− | 0.2− | 2001 11 07 | 704 | 0.9+ | 1.1+ | | | | |

**2001 TF$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.51974 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38243844 | $\omega$ | 318.04114 | | +0.95933321 | +0.20419271 | |
| $a$ | 1.8797281 | $\Omega$ | 31.79846 | | −0.02650646 | +0.75256477 | |
| $e$ | 0.0862698 | $i$ | 21.70772 | | −0.28102884 | +0.62606039 | |
| $P$ | 2.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2− | 0.1− | 2001 10 16 | 644 | 0.0 | 0.1+ | 2001 10 25 | 644 | 0.3− | 0.3+ |
| 2001 09 12 | 704 | 0.6− | 0.3− | 2001 10 17 | 704 | 0.2− | 0.6+ | 2001 10 27 | 704 | 0.0 | 0.6− |
| 2001 09 12 | 704 | 0.1+ | 0.3− | 2001 10 17 | 704 | 0.1− | 0.4+ | 2001 10 27 | 704 | 0.5+ | 0.2+ |
| 2001 09 12 | 704 | 1.0− | 0.2+ | 2001 10 17 | 704 | 0.4+ | 0.2+ | 2001 10 27 | 704 | 0.1+ | 0.7− |
| 2001 09 25 | 704 | 1.2− | 0.1+ | 2001 10 17 | 704 | 0.0 | 0.2+ | 2001 10 27 | 704 | 0.3− | 0.8− |
| 2001 09 25 | 704 | 0.3+ | 0.8+ | 2001 10 17 | 704 | 0.2− | 0.5+ | 2001 11 09 | 704 | 0.2− | 0.6+ |
| 2001 09 25 | 704 | 0.0 | 0.6+ | 2001 10 18 | 644 | 0.9− | 0.4+ | 2001 11 09 | 704 | 0.7+ | 0.4+ |
| 2001 09 25 | 704 | 0.2− | 0.1+ | 2001 10 18 | 644 | 0.7− | 0.2+ | 2001 11 09 | 704 | 0.1+ | 1.2+ |
| 2001 09 27 | 644 | 0.3+ | 0.7+ | 2001 10 18 | 644 | 0.6− | 0.4+ | 2001 11 09 | 704 | (2.3+ | 0.2−) |
| 2001 09 27 | 644 | 0.2− | 1.1+ | 2001 10 22 | 704 | (0.0 | 1.8−) | 2001 11 19 | 704 | 0.3− | 0.3− |
| 2001 09 27 | 644 | 0.5+ | 0.7+ | 2001 10 22 | 704 | 0.5− | 0.7− | 2001 11 19 | 704 | 0.7+ | 0.3− |
| 2001 10 13 | 704 | 0.2− | 0.9− | 2001 10 22 | 704 | (0.1− | 2.0−) | 2001 11 19 | 704 | 0.3+ | 0.4− |
| 2001 10 13 | 704 | (1.0− | 2.4−) | 2001 10 23 | 704 | 0.2− | 0.1+ | 2001 11 20 | 699 | 0.1− | 1.3+ |
| 2001 10 13 | 704 | 0.1+ | 1.3− | 2001 10 23 | 704 | 0.2− | 0.2− | 2001 11 20 | 699 | 0.7− | 0.0 |
| 2001 10 13 | 704 | 0.2+ | 1.3− | 2001 10 23 | 704 | 0.2− | 0.8− | 2001 11 20 | 699 | (1.8+ | 0.2+) |
| 2001 10 15 | 704 | 0.4+ | 0.1− | 2001 10 23 | 704 | 0.2+ | 0.3− | 2001 11 20 | 699 | 0.6+ | 1.1+ |
| 2001 10 15 | 704 | 0.2− | 0.1− | 2001 10 23 | 704 | 0.1− | 0.0 | 2006 07 29 | E12 | 0.2+ | 0.6+ |
| 2001 10 15 | 704 | 0.2− | 0.6− | 2001 10 24 | 691 | 0.3+ | 0.3− | 2006 07 29 | E12 | 0.0 | 0.1+ |
| 2001 10 15 | 704 | 0.3− | 0.4− | 2001 10 24 | 704 | 0.1+ | 0.3+ | 2006 07 29 | E12 | 0.2− | 0.4− |
| 2001 10 15 | 704 | 0.1− | 0.1+ | 2001 10 24 | 691 | 0.4+ | 0.3− | 2006 07 29 | E12 | 0.1+ | 0.0 |
| 2001 10 16 | 704 | 0.1− | 0.0 | 2001 10 24 | 704 | 0.0 | 0.3+ | 2006 08 23 | E12 | 0.5+ | 0.1+ |
| 2001 10 16 | 704 | 0.0 | 0.2− | 2001 10 24 | 691 | 0.4+ | 0.3− | 2006 08 23 | E12 | 0.1− | 0.4+ |
| 2001 10 16 | 704 | 0.1− | 0.0 | 2001 10 24 | 704 | 0.2+ | 0.6+ | 2006 08 23 | E12 | 0.5+ | 0.3− |
| 2001 10 16 | 704 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.4+ | 0.4+ | 2006 08 23 | E12 | 0.2+ | 0.6− |
| 2001 10 16 | 704 | 0.3− | 0.3+ | 2001 10 24 | 704 | 0.2− | 0.7+ | 2006 08 31 | E12 | 0.4− | 0.0 |
| 2001 10 16 | 644 | 0.1− | 0.0 | 2001 10 25 | 644 | 0.2− | 0.0 | 2006 08 31 | E12 | 0.2+ | 0.0 |
| 2001 10 16 | 644 | 0.1− | 0.1− | 2001 10 25 | 644 | 0.1− | 0.2+ | 2006 08 31 | E12 | 0.4− | 0.6− |

**2001 TZ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.15274 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18905855 | $\omega$ | 293.52216 | | +0.85835318 | −0.49846328 | |
| $a$ | 3.0065735 | $\Omega$ | 96.57317 | | +0.50394946 | +0.77469560 | |
| $e$ | 0.2249561 | $i$ | 7.02555 | | +0.09625368 | +0.38907722 | |
| $P$ | 5.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.7+ | 0.2− | 2001 10 12 | 557 | 0.6+ | 0.2+ | 2001 11 10 | 557 | 0.5+ | 0.8+ |
| 2001 08 13 | 608 | 0.0 | 0.1+ | 2001 10 12 | 557 | 0.3+ | 0.4+ | 2001 11 14 | 557 | 0.3+ | 0.2+ |
| 2001 08 13 | 608 | 0.5+ | 0.2− | 2001 10 13 | 704 | 0.0 | 0.5+ | 2001 11 14 | 557 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.1− | 1.1− | 2001 10 13 | 704 | 0.5− | 0.4− | 2006 08 16 | 644 | 0.3− | 0.1+ |
| 2001 09 16 | 704 | 0.0 | 0.9+ | 2001 10 13 | 704 | 0.0 | 0.3− | 2006 08 16 | 644 | 0.5+ | 0.0 |
| 2001 09 16 | 704 | 0.7− | 0.2− | 2001 10 13 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2001 10 13 | 704 | 0.0 | 0.7− | 2006 08 30 | 699 | 0.3+ | 0.3− |
| 2001 09 25 | 704 | 0.8− | 0.1− | 2001 10 13 | 704 | 0.1− | 0.6− | 2006 08 30 | 699 | (0.8+ | 2.0+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.9− | 0.0 | 2001 10 13 | 704 | 0.3− | 0.2− | 2006 08 30 | 699 | (1.3+ | 2.0+) | | |
| 2001 09 25 | 704 | 1.0− | 0.1− | 2001 10 13 | 557 | 0.1+ | 0.4− | 2006 08 30 | 699 | 0.0 | 0.2− | | |
| 2001 09 25 | 704 | 0.7− | 0.4+ | 2001 10 19 | 699 | 0.4− | 0.4− | 2006 09 20 | 703 | 0.3+ | 0.5+ | | |
| 2001 10 10 | 644 | 0.3+ | 0.2+ | 2001 10 19 | 699 | 0.3− | 0.6+ | 2006 09 20 | 703 | 0.4− | 0.7+ | | |
| 2001 10 10 | 644 | 0.2+ | 0.3+ | 2001 10 19 | 699 | (1.9+ | 0.5+) | 2006 09 20 | 703 | 0.1− | 0.5− | | |
| 2001 10 10 | 644 | 0.4+ | 0.2+ | 2001 10 19 | 699 | 0.5− | 1.1+ | 2006 09 20 | 703 | 0.2+ | 0.3+ | | |
| 2001 10 11 | 704 | 0.7− | 0.9− | 2001 10 20 | 704 | 0.4+ | 0.1− | 2006 09 21 | 699 | 1.1− | 0.4− | | |
| 2001 10 11 | 704 | 0.0 | 0.6− | 2001 10 20 | 704 | 1.0+ | 0.9+ | 2006 09 21 | 699 | 0.4− | 0.7− | | |
| 2001 10 11 | 704 | 0.0 | 0.3− | 2001 10 20 | 704 | 0.3− | 1.3− | 2006 09 21 | 699 | 0.5+ | 0.8+ | | |
| 2001 10 11 | 704 | 0.5+ | 0.5− | 2001 10 20 | 704 | 0.7+ | 0.5+ | 2006 09 21 | 699 | 0.2+ | 0.7− | | |
| 2001 10 11 | 704 | 1.1+ | 0.5− | 2001 10 24 | 644 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.2− | | |
| 2001 10 12 | 557 | 0.2+ | 0.0 | 2001 10 24 | 644 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 0.4+ | 0.7+ | | |
| 2001 10 12 | 557 | 0.2+ | 0.2− | 2001 10 24 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.2+ | | |
| 2001 10 12 | 557 | 0.2− | 0.1+ | 2001 11 10 | 557 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.1+ | | |
| 2001 10 12 | 557 | 0.2− | 0.1− | 2001 11 10 | 557 | 1.4− | 0.6+ | | | | | | |

**2001 TD$_{14}$ = 2006 WM$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.07541 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21396482 | $\omega$ | 32.30965 | | +0.66897041 | −0.74301821 | |
| $a$ | 2.7684784 | $\Omega$ | 15.73331 | | +0.66525757 | +0.58648359 | |
| $e$ | 0.0668197 | $i$ | 4.24316 | | +0.33152821 | +0.32242973 | |
| $P$ | 4.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 691 | 0.1+ | 0.1− | 2001 10 13 | 557 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2001 09 19 | 691 | 0.2− | 0.0 | 2001 10 13 | 557 | 0.2+ | 0.9+ | 2006 10 20 | G96 | 0.0 | 0.6− |
| 2001 09 19 | 691 | 0.0 | 0.0 | 2001 10 13 | 557 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.7− | 0.2+ | 2001 10 15 | 291 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.4− | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2001 10 15 | 291 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2001 10 15 | 291 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 09 26 | 704 | 0.1− | 0.8− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 09 26 | 704 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.4+ | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2001 09 26 | 704 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2001 10 12 | 557 | 0.3+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2001 10 12 | 557 | 0.5− | 0.4− | 2006 10 20 | G96 | 0.5− | 0.2− | 2006 11 25 | 691 | 0.1+ | 0.3− |
| 2001 10 12 | 557 | 0.5− | 0.5− | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.4+ |

**2001 TD$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.65074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21656009 | $\omega$ | 328.01282 | | +0.64608265 | −0.74233524 | |
| $a$ | 2.7463155 | $\Omega$ | 81.09777 | | +0.73268063 | +0.53800034 | |
| $e$ | 0.1588825 | $i$ | 10.35176 | | +0.21390721 | +0.39936704 | |
| $P$ | 4.55 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.2− | 0.1− | 2001 10 11 | 704 | 0.2− | 0.5+ | 2001 10 23 | 644 | 0.4− | 0.3+ |
| 2001 08 20 | 644 | 0.1− | 0.3− | 2001 10 13 | 704 | 0.4+ | 0.3+ | 2001 10 23 | 644 | 0.3− | 0.3+ |
| 2001 08 20 | 644 | 0.1− | 0.0 | 2001 10 13 | 704 | 0.4+ | 0.4+ | 2003 03 08 | 644 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2001 10 13 | 704 | 0.1+ | 0.3− | 2003 03 08 | 644 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.0 | 2001 10 13 | 704 | 0.0 | 0.1− | 2003 03 08 | 644 | 0.0 | 0.4+ |
| 2001 09 12 | 704 | 0.6− | 0.1− | 2001 10 15 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2001 10 11 | 704 | 0.6+ | 0.6− | 2001 10 15 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.1+ | 0.6+ |
| 2001 10 11 | 704 | 0.1+ | 0.3+ | 2001 10 15 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.1− |
| 2001 10 11 | 704 | 0.6+ | 0.1− | 2001 10 23 | 644 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.4− | 1.5− |

**2001 TX$_{21}$ = 2006 SB$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.22738 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19288996 | $\omega$ | 282.86330 | | +0.59593331 | −0.79285296 | |
| $a$ | 2.9666272 | $\Omega$ | 129.81311 | | +0.78601483 | +0.54340210 | |
| $e$ | 0.2076121 | $i$ | 9.55198 | | +0.16445115 | +0.27585928 | |
| $P$ | 5.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.6+ | 0.3+ | 2001 11 20 | 704 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.3− |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2001 11 20 | 704 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.9+ | 2001 11 20 | 704 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.4− |
| 2001 10 11 | 704 | 0.1+ | 0.5+ | 2001 11 20 | 704 | 0.3− | 0.8+ | 2006 10 21 | 703 | (1.1+ | 1.8+) |
| 2001 10 11 | 704 | 0.2+ | 0.2− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | (2.7+ | 1.6+) |
| 2001 10 11 | 704 | 0.4+ | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.6+ |
| 2001 10 11 | 704 | 0.8− | 0.0 | 2006 08 28 | 699 | (2.4+ | 0.2+) | 2006 10 21 | 703 | (0.5− | 1.7+) |
| 2001 10 11 | 704 | 0.0 | 0.5− | 2006 08 28 | 699 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.6− |
| 2001 10 15 | 704 | 0.5+ | 0.2− | 2006 08 28 | 699 | 0.6− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2001 10 15 | 704 | 0.7+ | 0.3− | 2006 09 19 | 703 | 0.4− | 0.6− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 10 15 | 644 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 10 15 | 644 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.5+ | 0.4− | 2006 10 28 | 703 | 0.4− | 1.2− |
| 2001 10 23 | 644 | 0.4− | 0.2+ | 2006 09 25 | 703 | 0.1− | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.4+ |
| 2001 10 23 | 644 | 0.7− | 0.1− | 2006 09 25 | 703 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.9+ |
| 2001 10 23 | 644 | 0.4− | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.3+ | 0.4+ |
| 2001 11 20 | 704 | 0.3− | 0.3− | 2006 09 25 | 703 | 0.1− | 0.1− | | | | |

**2001 TE$_{22}$ = 2006 RM$_{99}$ = 2006 SJ$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.03936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18034366 | $\omega$ | 121.08153 | | +0.64884531 | +0.75913970 | |
| $a$ | 3.1026691 | $\Omega$ | 189.89517 | | −0.75948737 | +0.64191380 | |
| $e$ | 0.0855018 | $i$ | 17.62261 | | −0.04667657 | +0.10795179 | |
| $P$ | 5.47 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 333 | 0.2− | 1.3− | 2001 10 13 | 704 | 0.4− | 0.4+ | 2001 10 23 | 704 | 0.5− | 0.3+ |
| 2001 09 17 | 333 | 0.8− | 0.1+ | 2001 10 13 | 704 | 0.4− | 0.3+ | 2001 10 23 | 704 | 0.2+ | 0.5+ |
| 2001 09 17 | 333 | 0.6− | 0.4+ | 2001 10 13 | 704 | 0.7+ | 0.9+ | 2001 11 12 | 645 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.6+ | 0.6− | 2001 10 15 | 704 | 1.1− | 0.1− | 2001 11 12 | 645 | 0.1+ | 0.1− |
| 2001 09 19 | 704 | 0.8+ | 0.1+ | 2001 10 15 | 704 | 0.2− | 0.8− | 2005 04 16 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 1.2+ | 0.3+ | 2001 10 15 | 704 | 0.4+ | 0.3− | 2005 04 16 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.8+ | 1.0+ | 2001 10 15 | 704 | 0.3+ | 0.1− | 2005 04 16 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 1.6− | 2001 10 16 | 704 | 0.8− | 0.8+ | 2006 09 11 | 703 | 1.0− | 0.7− |
| 2001 09 21 | 704 | 0.0 | 0.2− | 2001 10 16 | 704 | 0.4+ | 0.9+ | 2006 09 11 | 703 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2001 10 16 | 704 | 0.9− | 1.6+ | 2006 09 11 | 703 | 0.6− | 0.3− |
| 2001 09 21 | 704 | 0.4+ | 0.5− | 2001 10 16 | 704 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.4− | 0.9− |
| 2001 09 21 | 704 | 0.6− | 0.4− | 2001 10 16 | 704 | 0.5+ | 1.1+ | 2006 09 20 | 703 | 0.3+ | 0.0 |
| 2001 09 25 | 699 | 1.2− | 0.0 | 2001 10 17 | 644 | 0.3− | 0.5+ | 2006 09 20 | 703 | 1.0+ | 0.1− |
| 2001 09 25 | 699 | 0.9+ | 0.1− | 2001 10 17 | 644 | 0.0 | 1.1+ | 2006 09 20 | 703 | 1.2+ | 0.3+ |
| 2001 09 25 | 699 | 0.3− | 1.1+ | 2001 10 17 | 644 | 0.3− | 0.2+ | 2006 09 20 | 703 | 0.7− | 0.1− |
| 2001 09 25 | 699 | (2.4+ | 0.1+) | 2001 10 20 | 704 | 0.2+ | 0.1− | 2006 09 24 | G92 | 0.0 | 0.5− |
| 2001 09 26 | 704 | 0.7− | 0.6− | 2001 10 20 | 704 | 0.8− | 0.3− | 2006 09 24 | G92 | 0.4+ | 0.2+ |
| 2001 09 26 | 704 | 0.4+ | 0.2+ | 2001 10 20 | 704 | 0.2+ | 0.3+ | 2006 09 24 | G92 | 0.4+ | 0.4− |
| 2001 09 26 | 704 | 0.7− | 0.4+ | 2001 10 20 | 704 | 0.6− | 0.1− | | | | |
| 2001 10 13 | 704 | 1.2+ | 1.2+ | 2001 10 23 | 704 | 1.3− | 0.8+ | | | | |

**2001 TH$_{22}$ = 2006 UD$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.05119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21190476 | $\omega$ | 326.73579 | | +0.70242194 | +0.71172327 | |
| $a$ | 2.7863922 | $\Omega$ | 347.88024 | | −0.64519859 | +0.63236420 | |
| $e$ | 0.2460594 | $i$ | 1.99469 | | −0.30053652 | +0.30588480 | |
| $P$ | 4.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.2− | 1.2− | 2001 10 13 | 704 | 0.7− | 1.0+ | 2001 10 24 | 704 | 0.5+ | 0.1− |
| 2001 09 11 | 699 | 1.1+ | 0.4+ | 2001 10 13 | 704 | 0.3− | 0.3+ | 2001 10 24 | 704 | 0.0 | 0.6− |
| 2001 09 11 | 699 | 0.2− | 0.3+ | 2001 10 13 | 704 | 0.1− | 0.4+ | 2001 10 24 | 704 | 0.4+ | 0.8+ |
| 2001 09 11 | 699 | 1.4− | 0.3+ | 2001 10 13 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2001 09 17 | 704 | 0.9− | 0.8+ | 2001 10 13 | 704 | 0.6− | 0.5+ | 2006 10 19 | 691 | 0.5+ | 0.4− |
| 2001 09 17 | 704 | 0.3− | 0.5+ | 2001 10 14 | 699 | 0.5+ | 0.8+ | 2006 10 19 | 691 | 0.3− | 0.2− |
| 2001 09 17 | 704 | 1.0+ | 0.6+ | 2001 10 14 | 699 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.7− | 0.8+ | 2001 10 14 | 699 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.7− | 0.3+ | 2001 10 14 | 699 | 0.5− | 0.8− | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.6− | 0.4+ | 2001 10 15 | 704 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2001 09 23 | 704 | 0.2+ | 1.0+ | 2001 10 15 | 704 | 0.5− | 0.9− | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2001 09 24 | 704 | 1.1+ | 0.5− | 2001 10 15 | 704 | 0.6− | 0.9− | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2001 09 24 | 704 | 0.3+ | 0.6− | 2001 10 15 | 704 | 0.2− | 1.3− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2001 09 24 | 704 | (1.2+ | 2.0−) | 2001 10 15 | 704 | 0.0 | 0.9− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 09 24 | 704 | (0.0 | 2.2−) | 2001 10 17 | 704 | 0.3+ | 1.4+ | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2001 09 24 | 704 | 0.5+ | 0.7− | 2001 10 17 | 704 | 0.7+ | 0.1− | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2001 09 25 | 691 | 0.1− | 0.2+ | 2001 10 17 | 704 | 0.4− | 0.6+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 09 25 | 691 | 0.1+ | 0.2+ | 2001 10 17 | 704 | 0.7− | 0.0 | 2006 11 14 | 691 | (2.6+ | 0.5+) |
| 2001 09 25 | 691 | 0.0 | 0.1+ | 2001 10 17 | 704 | 0.9+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 09 28 | 704 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.2− | 0.6+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2001 09 28 | 704 | 0.1+ | 0.9− | 2001 10 21 | 704 | 0.4− | 0.6+ | 2006 11 18 | 691 | 0.4− | 0.6+ |
| 2001 09 28 | 704 | 0.1+ | 1.4− | 2001 10 21 | 704 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.8+ | 1.4+ |
| 2001 09 28 | 704 | 0.9+ | 1.1− | 2001 10 21 | 704 | 0.5− | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2001 10 11 | 644 | 0.3+ | 0.3− | 2001 10 21 | 704 | 0.6− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2001 10 11 | 644 | 0.2+ | 0.3− | 2001 10 23 | 704 | 0.0 | 0.2+ | 2006 11 24 | 703 | 0.7+ | 0.2+ |
| 2001 10 11 | 644 | 0.4+ | 0.2− | 2001 10 23 | 704 | 0.1− | 0.2+ | 2006 11 24 | 703 | 0.3− | 0.1− |
| 2001 10 12 | 699 | 0.5+ | 0.3+ | 2001 10 23 | 704 | 0.4+ | 0.1+ | 2006 11 24 | 703 | 0.1− | 0.6+ |
| 2001 10 12 | 699 | (2.0+ | 0.0 ) | 2001 10 23 | 704 | 0.0 | 0.1+ | 2006 11 24 | 703 | 0.1− | 0.8− |
| 2001 10 12 | 699 | 0.9+ | 0.3− | 2001 10 24 | 704 | 0.8+ | 1.4− | | | | |
| 2001 10 12 | 699 | (1.5+ | 0.1+) | 2001 10 24 | 704 | 0.1− | 0.2− | | | | |

### 2001 TP$_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.54891 | | (2000.0) | | | |
| $n$ | 0.23313827 | $\omega$ | 196.68972 | | +0.50732586 | −0.86070390 |
| $a$ | 2.6145303 | $\Omega$ | 222.84983 | | +0.79761728 | +0.48768095 |
| $e$ | 0.3125613 | $i$ | 3.58590 | | +0.32623173 | +0.14613719 |
| $P$ | 4.23 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 12 | 699 | 1.1+ | 0.9− | 2001 10 21 | 704 | 0.2+ | 0.3+ | 2001 11 16 | 691 | 0.2+ | 0.4− |
| 2001 10 12 | 699 | 0.1+ | 0.4+ | 2001 10 21 | 704 | 0.0 | 0.8+ | 2001 11 16 | 691 | 0.3+ | 0.1− |
| 2001 10 12 | 699 | 0.5− | 0.3+ | 2001 10 21 | 704 | 0.0 | 0.0 | 2001 11 16 | 691 | 0.3+ | 0.2− |
| 2001 10 12 | 699 | 0.4+ | 0.5+ | 2001 10 21 | 704 | 0.3− | 0.3+ | 2001 11 21 | 704 | 0.3− | 0.0 |
| 2001 10 13 | 704 | 0.4+ | 0.2+ | 2001 10 23 | 704 | 1.4− | 0.0 | 2001 11 21 | 704 | 0.9− | 1.2+ |
| 2001 10 13 | 704 | 0.5− | 0.6+ | 2001 10 23 | 704 | 0.0 | 0.7− | 2001 11 21 | 704 | 0.1− | 0.1+ |
| 2001 10 13 | 704 | 0.5+ | 0.3− | 2001 10 23 | 704 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.5+ | 0.7+ |
| 2001 10 13 | 704 | 0.5+ | 0.1+ | 2001 10 23 | 704 | 0.3− | 0.9+ | 2001 11 21 | 704 | 0.4− | 0.1+ |
| 2001 10 15 | 704 | 0.7+ | 0.8− | 2001 10 25 | 704 | 0.5− | 0.0 | 2001 12 11 | 704 | 0.3+ | 2.0− |
| 2001 10 15 | 704 | 0.8+ | 0.0 | 2001 10 25 | 704 | 0.7− | 0.3− | 2001 12 11 | 704 | 0.1+ | 0.7− |
| 2001 10 15 | 704 | 1.2+ | 0.4− | 2001 10 25 | 704 | 0.4− | 0.5+ | 2001 12 11 | 704 | 0.4− | 0.9+ |
| 2001 10 15 | 704 | 0.9+ | 0.0 | 2001 10 25 | 704 | 0.6− | 0.4+ | 2005 11 01 | G96 | 0.2− | 0.2− |
| 2001 10 17 | 704 | 0.5− | 0.2− | 2001 10 25 | 704 | 0.5− | 0.6+ | 2005 11 01 | G96 | 0.2− | 0.7− |
| 2001 10 17 | 704 | 0.4− | 0.4− | 2001 11 09 | 704 | 0.3− | 0.4+ | 2005 11 01 | G96 | 0.3+ | 0.5− |
| 2001 10 17 | 704 | 0.4− | 0.4+ | 2001 11 09 | 704 | 0.4− | 0.6+ | 2005 11 01 | G96 | 0.3− | 0.7− |
| 2001 10 17 | 704 | 0.5− | 0.8+ | 2001 11 09 | 704 | 0.2+ | 0.1− | 2005 11 30 | G96 | 0.7+ | 0.5+ |
| 2001 10 17 | 704 | 0.3+ | 0.3+ | 2001 11 09 | 704 | 0.2− | 0.6− | 2005 11 30 | G96 | 0.3+ | 0.3+ |
| 2001 10 19 | 644 | 0.1− | 0.4+ | 2001 11 09 | 704 | 0.7− | 0.5− | 2005 11 30 | G96 | 0.1− | 0.1− |
| 2001 10 19 | 644 | 0.1− | 0.1+ | 2001 11 15 | 608 | 0.5− | 0.4− | 2005 11 30 | G96 | 0.2+ | 0.7− |
| 2001 10 19 | 644 | 0.1− | 0.2+ | 2001 11 15 | 608 | 0.4− | 0.7− | | | | |
| 2001 10 21 | 704 | 0.9+ | 0.4+ | 2001 11 15 | 608 | 0.4− | 0.3− | | | | |

### 2001 TL$_{23}$ = 2006 TH$_{105}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.57508 | | (2000.0) | | | |
| $n$ | 0.20311822 | $\omega$ | 240.38061 | | +0.05980753 | −0.99641147 |
| $a$ | 2.8661800 | $\Omega$ | 206.39286 | | +0.95610456 | +0.07442415 |
| $e$ | 0.2396560 | $i$ | 7.74338 | | +0.28685733 | −0.04031401 |
| $P$ | 4.85 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.6+ | 0.1− | 2001 10 21 | 704 | 0.7− | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 0.8+ | 2001 10 21 | 704 | 1.0+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.4+ | 2001 10 21 | 704 | 0.1+ | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.9− | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2001 10 14 | 704 | 0.1+ | 1.1− | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.3− | 0.6− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2001 10 15 | 704 | 0.3− | 0.8− | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 10 15 | 704 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 10 15 | 704 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 10 15 | 704 | 0.0 | 0.9− | 2006 10 23 | 691 | 0.6− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2− | | | | |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.1− | | | | |

### 2001 TR$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.23096 | | (2000.0) | | | |
| $n$ | 0.22453610 | $\omega$ | 151.06644 | | −0.84435628 | −0.53559542 |
| $a$ | 2.6808876 | $\Omega$ | 356.45196 | | +0.43701031 | −0.67318686 |
| $e$ | 0.0983740 | $i$ | 13.21079 | | +0.30997495 | −0.50985978 |
| $P$ | 4.39 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2− | 0.2− | 2003 01 28 | 644 | 0.2+ | 0.4− | 2005 08 29 | 691 | 0.2− | 0.3+ |
| 2001 10 14 | 704 | 0.5− | 0.2− | 2003 01 28 | 644 | 0.2+ | 0.2− | 2005 08 29 | 691 | 0.1+ | 0.3+ |
| 2001 10 14 | 704 | 0.1− | 0.4− | 2003 02 02 | 644 | 0.4+ | 0.2− | 2005 08 29 | 691 | 0.3− | 0.4+ |
| 2001 10 14 | 704 | 0.4− | 0.1− | 2003 02 02 | 644 | 0.4+ | 0.3− | 2005 09 12 | 691 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.7− | 0.0 | 2003 02 02 | 644 | 0.6+ | 0.4− | 2005 09 12 | 691 | 0.5− | 0.0 |
| 2001 10 15 | 704 | 0.8− | 1.0− | 2003 02 26 | 704 | 0.9− | 0.7+ | 2005 09 12 | 691 | 0.0 | 0.1− |
| 2001 10 15 | 704 | 0.7+ | 0.2− | 2003 02 26 | 704 | 0.9− | 0.1− | 2005 11 30 | G96 | 0.9+ | 0.3− |
| 2001 10 15 | 704 | 1.8+ | 0.7− | 2003 02 26 | 704 | 0.6− | 0.5+ | 2005 11 30 | G96 | 0.6+ | 0.4+ |
| 2001 10 20 | 644 | 0.3+ | 0.7+ | 2003 02 26 | 704 | 1.0− | 0.6+ | 2005 11 30 | G96 | 0.2+ | 0.4+ |
| 2001 10 20 | 644 | 0.1+ | 0.8+ | 2003 03 07 | 644 | 1.1+ | 0.6+ | 2005 11 30 | G96 | 0.6+ | 0.0 |
| 2001 10 20 | 644 | 0.5+ | 0.5+ | 2003 03 07 | 644 | 1.0+ | 0.7+ | | | | |
| 2003 01 28 | 644 | 0.3+ | 0.3− | 2003 03 07 | 644 | 0.5+ | 1.2+ | | | | |

### 2001 TS$_{24}$ = 2006 QE$_{164}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.77184 | | (2000.0) | | | |
| $n$ | 0.18496157 | $\omega$ | 338.61690 | | +0.94781143 | +0.31851722 |
| $a$ | 3.0508092 | $\Omega$ | 2.92254 | | −0.23713919 | +0.73393426 |
| $e$ | 0.0738962 | $i$ | 16.11508 | | −0.21311618 | +0.59990606 |
| $P$ | 5.33 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.3+ | 0.5+ | 2004 03 16 | 599 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2001 09 28 | 644 | 0.4+ | 0.6+ | 2006 08 30 | 699 | 0.7− | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 09 28 | 644 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.9+ | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 10 14 | 704 | 0.8+ | 0.2+ | 2006 08 30 | 699 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.2+ |
| 2001 10 14 | 704 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.7+ | 0.8− |
| 2001 10 14 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.8− |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.9− | 2006 10 16 | 703 | 1.1+ | 0.3− |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.9− | 1.2− | 2006 10 16 | 703 | (0.7+ | 1.5+) |
| 2001 10 15 | 704 | (1.6+ | 0.4−) | 2006 09 14 | 703 | 0.6+ | 1.0− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 15 | 704 | 0.1+ | 0.1− | 2006 09 16 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2001 10 15 | 704 | 0.3− | 0.1− | 2006 09 16 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 10 15 | 704 | 0.5− | 0.0 | 2006 09 16 | 704 | 1.1− | 0.3− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2001 10 17 | 704 | 0.3+ | 0.2− | 2006 09 16 | 704 | 0.9− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2001 10 17 | 704 | 0.5+ | 0.5− | 2006 09 25 | 699 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.3− | 0.7− | 2006 09 25 | 699 | (1.7− | 0.4+) | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2001 10 20 | 644 | 0.8− | 0.4+ | 2006 09 25 | 699 | 0.3+ | 1.2+ | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2001 10 20 | 644 | 0.6− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.3− | 2006 11 21 | G96 | 0.6+ | 0.3+ |
| 2001 10 20 | 644 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.4+ |
| 2004 03 16 | 599 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.3+ | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2004 03 16 | 599 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.1− | 0.7− | | | | |
| 2004 03 16 | 599 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 1.2+ | 0.1− | | | | |

**2001 TX$_{29}$ = 2006 QS$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.39467 | | | (2000.0) | | |
| $n$ | 0.18545350 | $\omega$ | 70.02524 | | +0.81518109 | +0.57194085 |
| $a$ | 3.0454118 | $\Omega$ | 254.98548 | | −0.56049947 | +0.73915451 |
| $e$ | 0.1583042 | $i$ | 5.43316 | | −0.14601416 | +0.35571656 |
| $P$ | 5.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 15 | 691 | 0.2− | 0.3− | 2001 11 12 | 691 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.0 |
| 1996 12 15 | 691 | 0.2+ | 0.2− | 2001 11 12 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.1− | 0.7+ |
| 1996 12 15 | 691 | 0.6+ | 0.3+ | 2001 11 17 | 704 | 0.4+ | 0.3− | 2006 09 12 | 703 | 0.5− | 0.1+ |
| 2001 10 07 | 644 | 0.6− | 1.4+ | 2001 11 17 | 704 | 0.8− | 0.3− | 2006 09 12 | 703 | 0.4− | 0.7+ |
| 2001 10 07 | 644 | 0.4− | 1.5+ | 2001 11 17 | 704 | 1.0+ | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.0 |
| 2001 10 07 | 644 | (0.1− | 1.6+) | 2004 03 27 | 691 | 0.0 | 0.6+ | 2006 09 16 | 644 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.4+ | 0.0 | 2004 03 27 | 691 | 0.1+ | 0.9+ | 2006 09 16 | 644 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.5− | 0.3+ | 2004 03 27 | 691 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.0 | 0.3− | 2005 05 16 | 644 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.2+ |
| 2001 10 14 | 704 | 0.0 | 0.7+ | 2005 05 16 | 644 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.5− | 0.4− |
| 2001 10 15 | 704 | (5.2+ | 3.7−) | 2005 05 16 | 644 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.4+ | 1.0+ |
| 2001 10 15 | 333 | 0.7+ | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.5+ | 0.0 |
| 2001 10 15 | 704 | (5.5+ | 2.7−) | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.3− | 1.0− |
| 2001 10 15 | 704 | (5.5+ | 3.5−) | 2006 08 18 | 644 | 0.4+ | 0.0 | 2006 09 25 | 704 | 1.5+ | 0.8− |
| 2001 10 15 | 333 | 1.4− | 0.3− | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.3+ |
| 2001 10 15 | 333 | 0.7− | 0.7− | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 704 | (1.6+ | 0.9+) |
| 2001 10 15 | 704 | (5.5+ | 2.9−) | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.6− | 0.1+ |
| 2001 10 17 | 704 | 0.9+ | 0.9− | 2006 08 24 | 704 | 1.0− | 0.6+ | 2006 09 25 | 699 | 0.0 | 1.1− |
| 2001 10 17 | 704 | 0.9− | 0.4+ | 2006 08 24 | 704 | (0.3− | 1.7+) | 2006 10 16 | 703 | 0.2+ | 1.2+ |
| 2001 10 17 | 704 | 1.3− | 0.4+ | 2006 08 24 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.7+ | 1.3+ |
| 2001 10 18 | 333 | 0.1− | 0.6− | 2006 08 24 | 704 | 0.8− | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.4− |
| 2001 10 18 | 333 | 0.0 | 0.9− | 2006 08 24 | 704 | (0.5+ | 1.6−) | 2006 10 16 | 703 | 0.1− | 1.5− |
| 2001 10 18 | 333 | 0.3− | 0.9− | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.4− | 0.7− | 2006 08 30 | 704 | 0.4+ | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 1.1− | 0.3+ | 2006 08 30 | 704 | 1.0+ | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.2− | 0.3+ | | | | |
| 2001 11 12 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 1.0+ | 0.1− | | | | |

**2001 TO$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.31186 | | | (2000.0) | | |
| $n$ | 0.18785605 | $\omega$ | 89.54708 | | +0.97582338 | −0.17128581 |
| $a$ | 3.0193903 | $\Omega$ | 280.31118 | | +0.10062687 | +0.90348851 |
| $e$ | 0.1066472 | $i$ | 7.93128 | | +0.19401795 | +0.39289907 |
| $P$ | 5.25 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 22 | 691 | 0.1− | 0.3− | 2001 11 18 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.8− | 0.7− |
| 1998 03 22 | 691 | 0.2− | 0.3+ | 2001 11 18 | 704 | 0.5− | 0.4+ | 2006 09 28 | 703 | 1.0+ | 0.8+ |
| 1998 03 22 | 691 | 0.2+ | 0.1− | 2001 11 18 | 704 | 0.0 | 0.9+ | 2006 09 28 | 703 | 0.4+ | 0.8+ |
| 2001 10 14 | 704 | 0.0 | 0.6+ | 2001 11 24 | 704 | 0.4− | 0.4− | 2006 09 28 | 703 | 0.3+ | 1.1+ |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2001 11 24 | 704 | 0.5− | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | 0.6− | 0.2+ | 2001 11 24 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.5− | 0.9+ | 2001 11 24 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.7− |
| 2001 10 15 | 704 | 0.1− | 0.6+ | 2006 09 17 | 703 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2001 10 15 | 704 | 1.1+ | 0.6− | 2006 09 17 | 703 | 0.9− | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.6+ | 0.4+ |
| 2001 11 12 | 704 | 0.3− | 0.6− | 2006 09 17 | 703 | 0.9− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2001 11 12 | 704 | 0.1− | 0.5− | 2006 09 17 | 703 | 0.0 | 1.1− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.0 | 0.6− | 2006 09 17 | 703 | 0.3− | 0.9− | 2006 10 27 | 703 | 1.1+ | 1.0− |
| 2001 11 12 | 704 | 0.1− | 0.8− | 2006 09 17 | 703 | (1.9− | 0.8+) | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2001 11 17 | 704 | 0.4− | 0.6− | 2006 09 17 | 703 | (2.8− | 0.5−) | 2006 10 27 | 703 | 0.7− | 0.6− |
| 2001 11 17 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.6− | 2006 10 27 | 703 | 0.8+ | 0.9− |
| 2001 11 17 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 703 | 0.2+ | 0.7+ | | | | |
| 2001 11 18 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.7+ | | | | |

**2001 TX$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 307.70949 | | | (2000.0) | | |
| $n$ | 0.39714483 | $\omega$ | 224.49521 | | −0.04108467 | −0.94919122 |
| $a$ | 1.8330322 | $\Omega$ | 230.51069 | | +0.99178224 | −0.00087512 |
| $e$ | 0.0728610 | $i$ | 23.84652 | | +0.12116124 | −0.31469868 |
| $P$ | 2.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.1− | 0.0 | 2001 11 12 | 704 | 0.3− | 0.2+ | 2001 11 20 | 608 | 0.2+ | 1.0− |
| 2001 10 14 | 704 | 0.0 | 0.6+ | 2001 11 12 | 704 | 0.0 | 0.0 | 2001 11 20 | 608 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.7− | 1.1+ | 2001 11 12 | 704 | 0.5+ | 0.3− | 2001 11 20 | 608 | 0.2+ | 0.5− |
| 2001 10 14 | 704 | 0.3− | 0.2+ | 2001 11 17 | 704 | 0.0 | 0.3+ | 2001 12 07 | 704 | 0.3− | 0.5+ |
| 2001 10 14 | 704 | 0.5− | 0.1− | 2001 11 17 | 704 | 0.1− | 0.1+ | 2001 12 07 | 704 | 0.3+ | 0.3+ |
| 2001 10 15 | 704 | 0.2− | 1.7− | 2001 11 17 | 704 | 0.2− | 0.1+ | 2001 12 07 | 704 | 1.0− | 0.0 |
| 2001 10 15 | 704 | 1.1+ | 0.8− | 2001 11 17 | 704 | 0.1+ | 0.2− | 2001 12 07 | 704 | 0.0 | 0.2− |
| 2001 10 15 | 704 | 0.5+ | 0.4− | 2001 11 17 | 704 | 0.0 | 0.2− | 2001 12 07 | 704 | 0.1− | 0.2+ |
| 2001 10 15 | 704 | 0.9+ | 0.6− | 2001 11 18 | 704 | 0.3+ | 0.0 | 2001 12 17 | 704 | 0.1− | 1.0− |
| 2001 10 26 | 644 | 0.2+ | 0.4+ | 2001 11 18 | 704 | 0.0 | 0.3− | 2001 12 17 | 704 | 0.4+ | 0.4+ |
| 2001 10 26 | 644 | 0.8+ | 0.6+ | 2001 11 18 | 704 | 0.6+ | 0.0 | 2001 12 17 | 704 | 0.1+ | 0.7− |
| 2001 10 26 | 644 | 0.8+ | 0.7+ | 2001 11 18 | 704 | 0.2− | 0.0 | 2001 12 17 | 704 | 0.6− | 0.4+ |
| 2001 11 09 | 704 | 1.0+ | 0.8+ | 2001 11 18 | 704 | 0.4+ | 0.1+ | 2001 12 17 | 704 | 0.4+ | 0.2+ |
| 2001 11 09 | 704 | 0.2− | 0.8+ | 2001 11 18 | 704 | 0.1+ | 0.1− | 2001 12 17 | 704 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.0 | 0.6− | 2001 11 18 | 704 | 0.8+ | 0.6− | 2001 12 17 | 704 | 0.1+ | 0.5− |
| 2001 11 09 | 704 | 0.3− | 0.4+ | 2001 11 18 | 704 | 0.7− | 0.1− | 2001 12 17 | 704 | 0.0 | 0.4+ |
| 2001 11 09 | 704 | 0.7− | 1.0+ | 2001 11 18 | 704 | 0.1+ | 0.5− | 2001 12 17 | 704 | 0.8+ | 0.1+ |
| 2001 11 09 | 049 | 0.2+ | 0.2− | 2001 11 18 | 704 | 0.3+ | 0.7− | 2006 11 14 | 704 | 0.3+ | 0.3+ |
| 2001 11 09 | 049 | 0.0 | 0.4− | 2001 11 19 | 699 | 0.4− | 0.8− | 2006 11 14 | 704 | 0.2+ | 1.1− |
| 2001 11 09 | 049 | 0.1− | 0.4− | 2001 11 19 | 699 | 0.2− | 0.3− | 2006 11 14 | 704 | 0.8+ | 0.2− |
| 2001 11 12 | 704 | 0.3+ | 0.4+ | 2001 11 19 | 699 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.9− | 0.4+ |
| 2001 11 12 | 704 | 0.0 | 0.0 | 2001 11 19 | 699 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.9+ | 0.3− |
| 2001 11 12 | 704 | 0.3− | 0.1+ | 2001 11 20 | 704 | 0.2− | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2001 11 12 | 704 | 0.6− | 0.7− | 2001 11 20 | 704 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.5− | 0.4+ |
| 2001 11 12 | 704 | 0.3− | 0.1+ | 2001 11 20 | 704 | 1.3− | 0.0 | 2006 11 17 | 704 | 1.4− | 0.8+ |
| 2001 11 12 | 704 | 0.3− | 0.6+ | 2001 11 20 | 704 | 0.6− | 0.1+ | 2006 11 17 | 704 | 1.5+ | 0.8+ |
| 2001 11 12 | 704 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.5− | 0.0 |

**2001 TZ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.24272 | | | (2000.0) | | |
| $n$ | 0.18785865 | $\omega$ | 111.72232 | | +0.61084805 | −0.78478000 |
| $a$ | 3.0193624 | $\Omega$ | 300.19678 | | +0.67421280 | +0.58499170 |
| $e$ | 0.1453125 | $i$ | 6.96509 | | +0.41509246 | +0.20470726 |
| $P$ | 5.25 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2+ | 0.0 | 2001 12 20 | 644 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.2− |
| 2001 10 14 | 704 | 0.6− | 0.5− | 2002 01 08 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.6+ |
| 2001 10 14 | 704 | 0.3+ | 0.1− | 2002 01 08 | 704 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.3+ | 1.0+ | 2002 01 08 | 704 | 0.4+ | 0.4− | 2006 10 22 | 644 | 0.8− | 0.2+ |
| 2001 10 15 | 704 | 0.5+ | 0.7− | 2002 01 08 | 704 | 0.7− | 1.5− | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2001 10 15 | 704 | 0.1+ | 0.3− | 2006 09 28 | 703 | 0.4− | 0.5− | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2001 10 15 | 704 | 1.2+ | 0.4+ | 2006 09 28 | 703 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2001 10 15 | 704 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2001 11 10 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.7− |
| 2001 11 10 | 704 | 0.0 | 0.7+ | 2006 10 17 | A50 | 0.7+ | 0.7− | 2006 10 27 | 703 | 0.4+ | 0.0 |
| 2001 11 10 | 704 | 0.3− | 0.1+ | 2006 10 17 | A50 | 0.7+ | 0.5− | 2006 10 27 | 703 | 0.7+ | 0.6− |
| 2001 11 11 | 704 | 1.1− | 1.1+ | 2006 10 17 | A50 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2001 11 11 | 704 | 0.5− | 0.5+ | 2006 10 17 | A50 | 0.1− | 0.1− | 2006 11 09 | 104 | (2.3− | 0.1+) |
| 2001 11 11 | 704 | 0.3− | 0.3− | 2006 10 17 | A50 | 0.6+ | 0.1+ | 2006 11 09 | 104 | 0.3+ | 1.1− |
| 2001 11 11 | 704 | 0.3− | 0.4− | 2006 10 18 | A50 | 0.8− | 0.2+ | 2006 11 09 | 104 | 0.7− | 0.9+ |
| 2001 11 11 | 704 | 0.0 | 0.5+ | 2006 10 18 | A50 | 0.7− | 0.2+ | 2006 11 13 | 104 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.7− | 2006 11 13 | 104 | (0.6− | 1.8+) |
| 2001 11 24 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.1+ | 2006 11 13 | 104 | 0.5+ | 0.2+ |
| 2001 11 24 | 704 | 0.2+ | 0.7− | 2006 10 19 | 703 | 0.6− | 0.2− | 2006 11 14 | 703 | 0.2− | 0.7− |
| 2001 11 24 | 704 | 0.8+ | 0.6+ | 2006 10 19 | 703 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 644 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 14 | 703 | 1.1+ | 1.1+ |
| 2001 12 20 | 644 | 0.2− | 0.4− | 2006 10 19 | 703 | 0.9− | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.0 |

**2001 TJ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.30120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17732949 | $\omega$ | 20.92181 | | +0.75086798 | −0.65670582 | |
| $a$ | 3.1377288 | $\Omega$ | 20.63123 | | +0.57410339 | +0.59641385 | |
| $e$ | 0.1062374 | $i$ | 11.50002 | | +0.32650049 | +0.46154956 | |
| $P$ | 5.56 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | (1.0+ | 1.8−) | 2001 12 18 | 699 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.1− | 0.6− | 2001 12 18 | 699 | 1.0− | 0.0 | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2001 10 14 | 704 | 0.3− | 0.5+ | 2001 12 22 | 704 | 0.1+ | 0.4− | 2006 09 28 | 704 | 0.2− | 0.7+ |
| 2001 10 14 | 704 | 0.6+ | 0.6+ | 2001 12 22 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | (1.7+ | 0.2+) |
| 2001 10 14 | 704 | 0.7− | 0.3− | 2001 12 22 | 704 | 1.2+ | 0.4+ | 2006 09 30 | 703 | 1.4+ | 0.2+ |
| 2001 10 15 | 704 | (1.7+ | 1.1−) | 2001 12 22 | 704 | 1.1+ | 1.3+ | 2006 09 30 | 703 | 0.6+ | 0.4− |
| 2001 10 15 | 704 | 1.1+ | 0.5− | 2006 08 22 | 644 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.3+ | 0.2+ |
| 2001 10 15 | 704 | 0.7+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 0.2+ | 0.8+ | 2006 08 22 | 644 | 0.1+ | 0.6− | 2006 09 30 | 704 | 0.2− | 1.2+ |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2006 09 12 | 703 | 1.3− | 0.4+ | 2006 09 30 | 704 | 0.5− | 0.4+ |
| 2001 10 21 | 704 | 1.0− | 0.1+ | 2006 09 12 | 703 | (1.7− | 0.1−) | 2006 09 30 | 704 | 0.4+ | 0.5− |
| 2001 10 27 | 704 | 1.1+ | 0.6+ | 2006 09 12 | 703 | 0.6− | 1.2− | 2006 10 11 | 104 | 0.3− | 1.1+ |
| 2001 10 27 | 704 | 0.9+ | 0.8+ | 2006 09 12 | 703 | 1.0− | 0.8+ | 2006 10 11 | 104 | (2.5+ | 0.2+) |
| 2001 10 27 | 704 | 0.7+ | 0.0 | 2006 09 16 | 704 | 0.2− | 0.4− | 2006 10 11 | 104 | 0.1+ | 0.4− |
| 2001 11 11 | 704 | 0.1+ | 0.8− | 2006 09 16 | 704 | 0.0 | 0.5+ | 2006 10 11 | 104 | (1.9− | 1.3−) |
| 2001 11 11 | 704 | 0.1− | 0.8− | 2006 09 16 | 704 | 0.2+ | 0.9+ | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2001 11 11 | 704 | 0.3+ | 0.5− | 2006 09 16 | 704 | (4.2+ | 0.6+) | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2001 11 11 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | (0.5− | 1.7−) | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 2001 12 09 | 704 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.4+ | 1.3− | 2006 10 16 | 703 | 0.4+ | 0.9+ |
| 2001 12 09 | 704 | 0.7− | 0.1+ | 2006 09 19 | 703 | 0.8+ | 0.5− | 2006 10 17 | 104 | 0.7− | 0.6+ |
| 2001 12 09 | 704 | 0.9− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 104 | 0.2− | 0.8− |
| 2001 12 09 | 704 | 0.5− | 0.4+ | 2006 09 26 | 704 | 0.2+ | 0.1− | 2006 10 17 | 104 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.1+ | 1.3+ | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.5+ | 1.1+ | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2001 12 14 | 704 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.7+ | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2001 12 14 | 704 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2001 12 18 | 699 | 0.4− | 0.0 | 2006 09 28 | 691 | 0.2− | 1.0− | | | | |
| 2001 12 18 | 699 | 0.8− | 0.5− | 2006 09 28 | 704 | 0.4− | 0.3− | | | | |

**2001 TW$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.70274 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38012976 | $\omega$ | 217.20169 | | −0.08530933 | −0.95757996 | |
| $a$ | 1.8873313 | $\Omega$ | 239.26790 | | +0.97372675 | −0.02158593 | |
| $e$ | 0.0616876 | $i$ | 18.67626 | | +0.21113627 | −0.28735808 | |
| $P$ | 2.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.9+ | 0.1+ | 2001 11 16 | 691 | 0.3− | 0.6+ | 2001 12 17 | 704 | 0.5+ | 0.4− |
| 2001 10 14 | 704 | 1.2+ | 0.1− | 2001 11 16 | 691 | 0.1+ | 0.2− | 2001 12 17 | 704 | 0.7+ | 0.3− |
| 2001 10 14 | 704 | 1.2+ | 0.7+ | 2001 11 16 | 691 | 0.0 | 0.3− | 2001 12 17 | 704 | (0.8− | 1.5+) |
| 2001 10 14 | 704 | 0.4+ | 0.3− | 2001 11 20 | 704 | (1.8− | 2.0−) | 2001 12 18 | 644 | 0.1+ | 0.2+ |
| 2001 10 15 | 704 | 0.1+ | 0.6− | 2001 11 20 | 704 | (1.7− | 1.9−) | 2001 12 18 | 644 | 0.1+ | 0.3− |
| 2001 10 15 | 704 | 1.3+ | 0.4− | 2001 11 20 | 704 | (1.9− | 1.9−) | 2001 12 18 | 644 | 0.0 | 0.2− |
| 2001 10 15 | 704 | (2.0+ | 0.4+) | 2001 11 21 | 704 | 0.3+ | 0.8+ | 2001 12 18 | 704 | 0.3− | 0.0 |
| 2001 11 09 | 704 | 0.5+ | 0.0 | 2001 11 21 | 704 | 0.1− | 0.1+ | 2001 12 18 | 704 | 0.2+ | 0.1− |
| 2001 11 09 | 704 | 0.6+ | 0.1+ | 2001 11 21 | 704 | 0.4+ | 0.2− | 2001 12 18 | 704 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 0.8+ | 0.2− | 2001 11 21 | 704 | 0.1− | 0.5+ | 2001 12 18 | 704 | 0.2− | 0.5+ |
| 2001 11 09 | 704 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.4− | 0.2− | 2001 12 18 | 704 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.4− | 0.0 | 2001 11 21 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 703 | 0.1+ | 0.4+ |
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.6− | 0.7+ | 2006 09 25 | 703 | 0.3− | 1.4− |
| 2001 11 12 | 704 | 0.5− | 0.2− | 2001 11 21 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 703 | 0.6+ | 0.2+ |
| 2001 11 12 | 704 | 0.4+ | 0.1− | 2001 11 21 | 704 | 0.4+ | 1.0+ | 2006 09 25 | 703 | 0.2+ | 0.9+ |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2001 11 21 | 704 | 0.6+ | 1.1+ | 2006 10 02 | 703 | 0.5− | 0.4− |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2001 12 11 | 704 | 0.5+ | 0.5− | 2006 10 02 | 703 | 0.6− | 0.6− |
| 2001 11 12 | 691 | 0.3− | 0.0 | 2001 12 11 | 704 | 0.6+ | 0.7− | 2006 10 02 | 703 | 0.1− | 0.2− |
| 2001 11 12 | 691 | 0.3− | 0.0 | 2001 12 11 | 704 | 0.7+ | 0.6− | 2006 10 02 | 703 | 0.7− | 0.7− |
| 2001 11 12 | 691 | 0.5− | 0.0 | 2001 12 11 | 704 | 0.7+ | 0.6− | 2006 11 25 | 703 | 0.7+ | 0.2− |
| 2001 11 15 | 691 | 0.4− | 0.1− | 2001 12 11 | 704 | 0.4+ | 0.7− | 2006 11 25 | 703 | 0.3− | 1.2+ |
| 2001 11 15 | 691 | 0.4− | 0.0 | 2001 12 17 | 704 | 0.8+ | 0.1+ | 2006 11 25 | 703 | 0.2− | 0.1+ |
| 2001 11 15 | 691 | 0.4− | 0.2− | 2001 12 17 | 704 | 0.9− | 0.3− | 2006 11 25 | 703 | 1.4+ | 0.9+ |

**2001 TT$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.72104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20218687 | $\omega$ | 11.73272 | | +0.75856637 | −0.63812337 | |
| $a$ | 2.8749751 | $\Omega$ | 29.25215 | | +0.57388579 | +0.55847652 | |
| $e$ | 0.3109236 | $i$ | 15.64966 | | +0.30859709 | +0.53000239 | |
| $P$ | 4.87 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.7+ | 0.0 | 2001 10 19 | 704 | 0.1+ | 0.5+ | 2001 12 08 | 704 | 0.6+ | 0.3− |
| 2001 08 16 | 704 | 0.1+ | 0.1− | 2001 10 19 | 704 | 0.0 | 0.2− | 2001 12 22 | 704 | (1.0− | 2.2−) |
| 2001 08 16 | 704 | 0.0 | 0.5+ | 2001 10 19 | 704 | 0.3+ | 0.4+ | 2001 12 22 | 704 | 0.1− | 0.2+ |
| 2001 08 16 | 704 | 0.6+ | 0.4− | 2001 10 19 | 704 | 0.6− | 0.7− | 2001 12 22 | 704 | 0.6− | 0.4− |
| 2001 08 28 | 644 | 0.4+ | 0.1− | 2001 10 21 | 704 | 0.0 | 0.2+ | 2001 12 22 | 704 | 2.0− | 0.5+ |
| 2001 08 28 | 644 | 0.4− | 0.2− | 2001 10 21 | 704 | 0.3+ | 0.2− | 2001 12 23 | 704 | 0.9− | 0.0 |
| 2001 08 28 | 644 | 0.2+ | 0.4− | 2001 10 21 | 704 | (2.3+ | 0.5−) | 2001 12 23 | 704 | 1.2− | 0.4+ |
| 2001 09 20 | 704 | 0.4+ | 0.6− | 2001 10 21 | 704 | 1.4+ | 0.6+ | 2001 12 23 | 704 | 0.8− | 0.4+ |
| 2001 09 20 | 704 | 0.5− | 0.2− | 2001 10 25 | 704 | 0.4− | 0.4− | 2001 12 23 | 704 | 0.5− | 1.0+ |
| 2001 09 20 | 704 | 0.3+ | 0.9− | 2001 10 25 | 704 | 0.2− | 0.3− | 2001 12 23 | 704 | 0.7− | 1.1+ |
| 2001 09 20 | 704 | 0.6− | 0.1− | 2001 10 25 | 704 | 0.2− | 0.1− | 2002 01 23 | 704 | 0.1− | 0.1− |
| 2001 09 24 | 704 | 0.3− | 0.5+ | 2001 10 25 | 704 | 0.6− | 0.0 | 2002 01 23 | 704 | 0.8+ | 0.3+ |
| 2001 09 24 | 704 | 0.3+ | 0.7+ | 2001 10 25 | 704 | 0.1− | 0.3− | 2002 01 23 | 704 | 0.1+ | 0.3− |
| 2001 09 24 | 704 | 1.1+ | 0.0 | 2001 11 10 | 704 | 0.9+ | 0.0 | 2002 01 23 | 704 | 1.0+ | 0.2+ |
| 2001 09 24 | 704 | 0.2+ | 1.5+ | 2001 11 10 | 704 | 0.1− | 0.2+ | 2002 01 23 | 704 | 1.0+ | 0.2− |
| 2001 09 24 | 704 | 0.3+ | 0.8+ | 2001 11 10 | 704 | 0.1− | 0.3+ | 2006 11 13 | 704 | 0.3− | 0.8− |
| 2001 10 14 | 704 | 0.6− | 0.6− | 2001 11 10 | 704 | 0.4− | 0.9− | 2006 11 13 | 704 | 0.1+ | 0.6− |
| 2001 10 14 | 704 | 0.4− | 0.7− | 2001 11 11 | 704 | 0.2− | 0.8+ | 2006 11 13 | 704 | 0.1− | 0.6− |
| 2001 10 14 | 704 | 0.7− | 0.2− | 2001 11 11 | 704 | 0.0 | 0.3+ | 2006 11 13 | 704 | 0.4+ | 0.3+ |
| 2001 10 14 | 704 | 0.1− | 0.2− | 2001 11 11 | 704 | 0.1− | 0.0 | 2006 11 13 | 704 | 0.7− | 1.6− |
| 2001 10 14 | 704 | 1.2+ | 1.0+ | 2001 11 11 | 704 | 0.0 | 0.0 | 2006 11 20 | 703 | 0.5+ | 0.4− |
| 2001 10 15 | 704 | 0.2− | 0.5− | 2001 11 11 | 704 | 0.0 | 0.5+ | 2006 11 20 | 703 | 0.3− | 0.1+ |
| 2001 10 15 | 704 | 0.1− | 0.0 | 2001 12 08 | 704 | 0.3+ | 0.3+ | 2006 11 20 | 703 | 0.3− | 0.8− |
| 2001 10 15 | 704 | 0.1− | 0.5− | 2001 12 08 | 704 | 0.5+ | 0.4+ | 2006 11 20 | 703 | 0.1+ | 0.2− |
| 2001 10 15 | 704 | 0.2− | 0.0 | 2001 12 08 | 704 | 0.3+ | 0.1+ | | | | |
| 2001 10 15 | 704 | 0.1+ | 0.1+ | 2001 12 08 | 704 | 0.5+ | 0.6− | | | | |

**2001 TZ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.88276 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17870854 | $\omega$ | 203.35804 | | −0.10686341 | −0.91654706 | |
| $a$ | 3.1215659 | $\Omega$ | 254.61622 | | +0.96360388 | +0.00005740 | |
| $e$ | 0.2594537 | $i$ | 23.55982 | | +0.24504648 | −0.39992684 | |
| $P$ | 5.52 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.3+ | 0.7+ | 2001 12 10 | 704 | 0.3+ | 0.4+ | 2002 02 11 | 704 | 0.5+ | 0.2− |
| 2001 09 25 | 704 | 0.4− | 0.4− | 2001 12 10 | 704 | 0.1+ | 0.4+ | 2002 02 11 | 704 | 1.0+ | 0.5− |
| 2001 09 25 | 704 | 0.1+ | 0.3+ | 2001 12 10 | 704 | 0.1+ | 0.0 | 2002 02 11 | 704 | 0.7+ | 0.2+ |
| 2001 09 25 | 704 | 0.7+ | 0.3− | 2001 12 10 | 704 | 0.1+ | 0.1− | 2002 02 11 | 704 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.7+ | 0.8+ | 2001 12 12 | 644 | 0.1− | 0.0 | 2002 02 14 | 608 | 1.2+ | 0.1− |
| 2001 09 28 | 704 | 0.2− | 0.2+ | 2001 12 12 | 644 | 0.0 | 0.1+ | 2002 02 14 | 608 | 0.4+ | 0.4− |
| 2001 09 28 | 704 | (0.3+ | 1.6+) | 2001 12 12 | 644 | 0.2+ | 0.0 | 2002 02 14 | 608 | 0.4+ | 0.3− |
| 2001 09 28 | 704 | 0.1− | 0.2+ | 2001 12 14 | 704 | 0.1+ | 0.3+ | 2002 02 16 | 704 | 0.5− | 1.4+ |
| 2001 09 28 | 704 | 0.6− | 0.2− | 2001 12 14 | 704 | 0.0 | 0.3+ | 2002 02 16 | 704 | 0.2− | 1.0− |
| 2001 10 14 | 704 | 0.3− | 0.5+ | 2001 12 14 | 704 | 0.1+ | 0.5+ | 2002 02 16 | 704 | 0.3+ | 0.6+ |
| 2001 10 14 | 704 | 0.3− | 0.2+ | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2002 02 16 | 704 | (1.9+ | 0.1−) |
| 2001 10 14 | 704 | 0.6− | 0.1− | 2001 12 14 | 704 | 0.7+ | 0.3+ | 2006 09 24 | 113 | 0.5+ | 0.7+ |
| 2001 10 14 | 704 | 0.7− | 0.1− | 2001 12 17 | 704 | 0.2+ | 0.3− | 2006 09 24 | 113 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.6− | 0.2+ | 2001 12 17 | 704 | 0.0 | 0.3− | 2006 09 24 | 113 | 0.1− | 0.0 |
| 2001 10 15 | 704 | 0.1− | 0.7+ | 2001 12 17 | 704 | 0.1+ | 0.5− | 2006 09 25 | 703 | 0.3− | 0.6− |
| 2001 10 15 | 704 | 0.3+ | 0.3+ | 2001 12 17 | 704 | 0.4− | 0.7− | 2006 09 25 | 703 | 0.4+ | 0.0 |
| 2001 10 15 | 704 | 0.3+ | 0.1− | 2001 12 17 | 704 | 0.3− | 0.9− | 2006 09 25 | 703 | 0.3+ | 0.0 |
| 2001 10 15 | 704 | 0.6+ | 0.7+ | 2001 12 20 | 704 | 0.5+ | 0.0 | 2006 09 25 | 703 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.3+ | 1.1− | 2001 12 20 | 704 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.1+ | 0.6− |
| 2001 10 21 | 704 | 0.2− | 0.6− | 2001 12 20 | 704 | 0.4+ | 0.1+ | 2006 10 02 | 703 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 1.2− | 0.3− | 2001 12 20 | 704 | 0.4+ | 0.1− | 2006 10 02 | 703 | 1.0− | 0.4− |
| 2001 10 21 | 704 | 1.0− | 0.9− | 2002 01 07 | 106 | 0.3− | 0.4− | 2006 10 02 | 703 | 0.4+ | 0.5+ |
| 2001 10 27 | 704 | 0.5− | 0.3− | 2002 01 07 | 106 | 0.5− | 0.0 | 2006 10 02 | 703 | 0.3+ | 0.4− |
| 2001 10 27 | 704 | 0.2− | 0.4− | 2002 01 09 | 704 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.7− | 0.1+ |
| 2001 10 27 | 704 | 0.7− | 0.7− | 2002 01 09 | 704 | 0.5− | 0.0 | 2006 10 02 | 703 | 0.1+ | 0.5+ |
| 2001 10 27 | 704 | 0.2− | 0.3− | 2002 01 09 | 704 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.9− | 0.6− |
| 2001 10 27 | 704 | 0.0 | 0.5− | 2002 01 09 | 704 | 0.2− | 0.2− | 2006 10 27 | 703 | 0.1− | 0.5− |
| 2001 11 11 | 704 | 0.3+ | 0.1+ | 2002 01 09 | 704 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 1.1− | 1.0+ |
| 2001 11 11 | 704 | 0.3+ | 0.0 | 2002 01 14 | 704 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.6+ | 0.3+ |
| 2001 11 11 | 704 | 0.7+ | 0.5+ | 2002 01 14 | 704 | 0.5− | 0.6+ | 2006 10 27 | 703 | 0.5+ | 0.2− |
| 2001 11 11 | 704 | 0.4+ | 0.8+ | 2002 01 14 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 1.1+ | 0.5− |
| 2001 11 11 | 704 | 0.6+ | 1.0+ | 2002 01 14 | 704 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.7+ | 0.5+ |
| 2001 11 19 | 704 | 0.2− | 0.5− | 2002 01 14 | 704 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 0.3− | 1.0− | 2002 01 14 | 608 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.5− | 0.7− | 2002 01 14 | 608 | 0.3+ | 0.6+ | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2001 11 19 | 704 | 0.4− | 0.7− | 2002 01 14 | 608 | 0.1+ | 0.8+ | 2006 11 16 | 703 | 0.0 | 0.7+ |
| 2001 11 19 | 704 | 0.2− | 0.8− | 2002 02 02 | 608 | (0.4− | 1.6−) | 2006 11 16 | 703 | 0.9− | 0.1− |
| 2001 11 24 | 704 | 0.1− | 0.1− | 2002 02 02 | 608 | (0.3+ | 2.0−) | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2002 02 02 | 608 | 0.1− | 1.4− | 2006 11 22 | 703 | 0.6− | 0.3− |
| 2001 11 24 | 704 | 0.1− | 0.1+ | 2002 02 08 | 704 | 0.4− | 0.0 | 2006 11 22 | 703 | 0.7− | 0.5+ |
| 2001 11 24 | 704 | 0.0 | 0.0 | 2002 02 08 | 704 | 0.2− | 0.3− | 2006 11 22 | 703 | 0.4+ | 0.3− |
| 2001 11 24 | 704 | 0.2+ | 0.3+ | 2002 02 08 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.0 | 1.2+ |
| 2001 12 10 | 704 | 0.1+ | 0.3+ | 2002 02 08 | 704 | 0.0 | 0.4+ | | | | |

**2001 TG$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.97962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17736385 | $\omega$ | 144.52638 | | +0.79220838 | −0.44777810 | |
| $a$ | 3.1373235 | $\Omega$ | 247.33747 | | +0.40249720 | +0.89407480 | |
| $e$ | 0.1600379 | $i$ | 26.69874 | | +0.45869585 | −0.01118178 | |
| $P$ | 5.56 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2− | 0.7− | 2001 11 19 | 704 | 0.7− | 0.2− | 2001 12 20 | 704 | 0.2− | 0.5+ |
| 2001 10 14 | 704 | 0.9− | 0.5− | 2001 12 10 | 704 | 0.1+ | 0.2− | 2001 12 20 | 704 | 0.4+ | 1.0+ |
| 2001 10 14 | 704 | 0.3− | 0.4− | 2001 12 10 | 704 | 0.2+ | 0.0 | 2001 12 20 | 704 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.9− | 1.0− | 2001 12 10 | 704 | 0.3+ | 0.4+ | 2001 12 20 | 704 | 1.0+ | 1.8+ |
| 2001 10 15 | 704 | 0.1− | 1.3+ | 2001 12 10 | 704 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.4− | 0.1+ |
| 2001 10 15 | 704 | 0.2− | 1.1+ | 2001 12 10 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.6− | 0.3+ |
| 2001 10 15 | 704 | 0.6− | 1.6+ | 2001 12 14 | 704 | 0.4+ | 0.4− | 2006 09 20 | 704 | 0.3− | 0.5− |
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.6− | 0.8− |
| 2001 11 12 | 704 | 0.0 | 1.0− | 2001 12 14 | 704 | 0.3+ | 0.4− | 2006 09 20 | 704 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.2+ | 0.2+ | 2001 12 14 | 704 | 0.6+ | 0.7− | 2006 09 22 | 699 | 0.7+ | 0.8+ |
| 2001 11 12 | 704 | 0.5+ | 0.1− | 2001 12 14 | 704 | 0.3− | 0.7− | 2006 09 22 | 699 | 0.8− | 0.5+ |
| 2001 11 19 | 704 | 0.1+ | 0.4− | 2001 12 17 | 704 | 0.4+ | 0.4− | 2006 09 22 | 699 | 1.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.5− | 0.6− | 2001 12 17 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 699 | 0.5+ | 0.1− |
| 2001 11 19 | 704 | 0.5− | 0.5− | 2001 12 17 | 704 | 0.4− | 0.3− | | | | |
| 2001 11 19 | 704 | 0.0 | 0.4− | 2001 12 17 | 704 | 0.4− | 0.2− | | | | |

**2001 TD$_{48}$ = 2006 SZ$_{302}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.03102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18105551 | $\omega$ | 239.00595 | | +0.11259409 | −0.99289955 | |
| $a$ | 3.0945313 | $\Omega$ | 204.61676 | | +0.94018117 | +0.11895574 | |
| $e$ | 0.1177821 | $i$ | 5.28671 | | +0.32153062 | −0.00014098 | |
| $P$ | 5.44 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 09 | 691 | 0.7− | 0.1− | 2001 12 10 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2001 10 09 | 691 | 0.8− | 0.1− | 2001 12 10 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.4− |
| 2001 10 09 | 691 | 0.1− | 0.1− | 2001 12 10 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.4− | 0.1− |
| 2001 10 13 | 691 | 0.5+ | 0.3− | 2006 09 17 | 691 | 0.4+ | 0.1− | 2006 10 01 | 691 | 0.4− | 0.5+ |
| 2001 10 13 | 691 | 0.8+ | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.5− | 0.3+ |
| 2001 10 13 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.3− |

**2001 TF$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.62281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18972009 | $\omega$ | 319.56036 | | +0.84770528 | −0.52835727 | |
| $a$ | 2.9995803 | $\Omega$ | 72.39443 | | +0.49859428 | +0.76317883 | |
| $e$ | 0.1068487 | $i$ | 2.84257 | | +0.18110635 | +0.37201703 | |
| $P$ | 5.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 09 | 691 | 0.7− | 0.3− | 2001 11 17 | 704 | (0.1− | 1.6+) | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 09 | 691 | 1.0− | 0.3− | 2001 11 17 | 704 | 0.3− | 0.8+ | 2006 09 30 | 703 | 1.3− | 0.0 |
| 2001 10 09 | 691 | 0.7− | 0.2− | 2001 11 17 | 704 | 0.6+ | 0.9+ | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 2001 10 13 | 691 | 0.5+ | 0.1− | 2001 11 19 | 608 | 1.2− | 1.4+ | 2006 09 30 | 703 | 0.3− | 0.5+ |
| 2001 10 13 | 691 | 0.1+ | 0.1+ | 2001 11 19 | 608 | 0.4− | 1.0+ | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 2001 10 13 | 691 | 0.6+ | 0.0 | 2001 11 19 | 608 | 1.4− | 1.2+ | 2006 09 30 | 703 | 0.8+ | 0.3− |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2001 11 20 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.8+ |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2001 11 20 | 704 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.6+ |
| 2001 10 18 | 644 | 0.4− | 0.2+ | 2001 11 20 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 1.1+ |
| 2001 10 22 | 704 | 0.5+ | 0.1+ | 2001 11 20 | 704 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 10 22 | 704 | 0.6+ | 0.1+ | 2001 11 20 | 704 | 1.5− | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 10 22 | 704 | (0.3− | 1.6−) | 2001 11 21 | 704 | 0.3+ | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2001 10 22 | 704 | (1.0− | 2.0−) | 2001 11 21 | 704 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.3− | 0.3− |
| 2001 10 22 | 704 | 1.2+ | 0.8− | 2001 11 21 | 704 | 0.5+ | 1.2+ | 2006 10 15 | 703 | 0.3− | 0.4− |
| 2001 10 23 | 704 | 0.4+ | 0.2− | 2001 11 21 | 704 | 0.5+ | 1.1+ | 2006 10 15 | 703 | 0.4− | 0.9− |
| 2001 10 23 | 704 | 0.1− | 0.1− | 2001 11 21 | 704 | (1.6+ | 1.5+) | 2006 10 15 | 703 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 0.5− | 2001 12 14 | 704 | 0.2+ | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 2001 10 23 | 704 | 0.0 | 0.9− | 2001 12 14 | 704 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.7− | 0.2+ | 2001 12 14 | 704 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 1.0− | 0.5+ | 2001 12 14 | 704 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 0.7− | 0.7+ | 2001 12 14 | 704 | 0.9+ | 0.9− | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2001 12 17 | 704 | 1.2+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2001 10 25 | 644 | 0.2− | 0.6+ | 2001 12 17 | 704 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.4− |
| 2001 10 25 | 644 | 0.3− | 0.5+ | 2001 12 17 | 704 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.0 |
| 2001 11 09 | 704 | 0.3+ | 0.2− | 2001 12 17 | 704 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.6− | 0.7− | 2001 12 17 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.5− | 0.2− | 2004 05 21 | 691 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.4− |
| 2001 11 09 | 704 | 0.7− | 0.3− | 2004 05 21 | 691 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2001 11 11 | 691 | 0.3− | 1.0− | 2004 05 21 | 691 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 11 11 | 691 | 0.8+ | 0.8− | 2006 09 18 | 699 | 0.9− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2001 11 11 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 11 15 | 291 | 0.7+ | 0.7+ | 2006 09 18 | 699 | 0.9− | 1.1+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 11 15 | 291 | 0.7+ | 0.6+ | 2006 09 18 | 699 | 1.0− | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2001 11 15 | 291 | 1.0+ | 0.6+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 11 17 | 691 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2001 11 17 | 691 | 0.2− | 0.6− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.5− | 0.2− |
| 2001 11 17 | 691 | 0.6− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.1− | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.2− |

**2001 TM$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.13202 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19198175 | $\omega$ | 289.99053 | | +0.94057375 | −0.33676951 | |
| $a$ | 2.9759760 | $\Omega$ | 89.70950 | | +0.32560898 | +0.85784171 | |
| $e$ | 0.0979299 | $i$ | 2.50309 | | +0.09643548 | +0.38819311 | |
| $P$ | 5.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 02 | 691 | 0.2− | 0.1− | 2001 11 18 | 704 | 0.1+ | 0.7+ | 2001 12 09 | 691 | 0.3+ | 0.6+ |
| 1998 02 02 | 691 | 0.1− | 0.1+ | 2001 11 18 | 704 | 0.2+ | 0.5+ | 2001 12 09 | 691 | 0.5+ | 0.1− |
| 1998 02 02 | 691 | 0.1+ | 0.2− | 2001 11 18 | 704 | 0.5− | 1.1+ | 2004 05 21 | 691 | 0.1+ | 0.4+ |
| 2001 10 09 | 691 | 0.9− | 0.6− | 2001 11 18 | 704 | 0.9+ | 1.1+ | 2004 05 21 | 691 | 0.0 | 0.6+ |
| 2001 10 09 | 691 | 0.5− | 0.3− | 2001 11 18 | 704 | 0.1− | 1.1+ | 2004 05 21 | 691 | 0.3+ | 0.0 |
| 2001 10 09 | 691 | 0.9− | 0.1− | 2001 11 19 | 608 | 0.5− | 0.2+ | 2006 09 30 | 703 | (7.3+ | 1.9+) |
| 2001 10 13 | 691 | 0.3+ | 0.3+ | 2001 11 19 | 608 | 0.3− | 0.1+ | 2006 09 30 | 703 | (8.5+ | 3.6+) |
| 2001 10 13 | 691 | 0.6+ | 0.1+ | 2001 11 19 | 608 | 0.6− | 0.8− | 2006 09 30 | 703 | (9.6+ | 1.4+) |
| 2001 10 13 | 691 | 0.3+ | 0.2+ | 2001 11 20 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | (7.0+ | 1.6+) |
| 2001 10 20 | 704 | 0.4− | 0.1+ | 2001 11 20 | 704 | 0.3+ | 0.5− | 2006 10 02 | G96 | (7.9+ | 2.8+) |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2001 11 20 | 704 | 0.7+ | 0.0 | 2006 10 02 | G96 | (8.1+ | 2.8+) |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2001 11 20 | 704 | 0.1+ | 0.4− | 2006 10 02 | G96 | (8.1+ | 2.7+) |
| 2001 10 24 | 704 | 0.5− | 0.1− | 2001 11 21 | 704 | 0.2− | 0.4− | 2006 10 02 | G96 | (8.1+ | 2.6+) |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2001 11 21 | 704 | 0.2− | 0.2− | 2006 10 20 | 644 | (8.5+ | 2.9+) |
| 2001 10 24 | 704 | 0.6+ | 0.4− | 2001 11 21 | 704 | 0.2− | 0.2− | 2006 10 20 | 644 | (8.4+ | 2.9+) |
| 2001 10 24 | 704 | 1.3− | 0.6− | 2001 11 21 | 704 | 0.5− | 0.3− | 2006 10 20 | 644 | (8.5+ | 2.9+) |
| 2001 10 24 | 704 | 0.0 | 1.0− | 2001 11 21 | 704 | 0.4− | 0.5+ | 2006 11 17 | 703 | (8.0+ | 2.9+) |
| 2001 11 09 | 704 | 0.0 | 1.2+ | 2001 12 09 | 699 | 0.3+ | 1.3− | 2006 11 17 | 703 | (8.0+ | 3.6+) |
| 2001 11 09 | 704 | 0.0 | 0.9+ | 2001 12 09 | 699 | 1.2+ | 1.3− | 2006 11 17 | 703 | (6.2+ | 2.3+) |
| 2001 11 09 | 704 | (0.6− | 1.9+) | 2001 12 09 | 699 | 0.4− | 0.0 | 2006 11 17 | 703 | (7.7+ | 3.6+) |
| 2001 11 09 | 704 | 0.4− | 0.8+ | 2001 12 09 | 699 | 0.6+ | 0.8+ | | | | |
| 2001 11 09 | 704 | 0.0 | 1.3+ | 2001 12 09 | 691 | 0.4+ | 0.2+ | | | | |

**2001 TY$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.99744 | | (2000.0) | | | |
| $n$ | 0.37772721 | $\omega$ | 209.56511 | | +0.17954465 | −0.94927705 |
| $a$ | 1.8953258 | $\Omega$ | 231.35068 | | +0.95495640 | +0.23120380 |
| $e$ | 0.0865607 | $i$ | 19.30116 | | +0.23626679 | −0.21311473 |
| $P$ | 2.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 0.6+ | 0.1+ | 2001 10 20 | 699 | 0.1+ | 0.0 | 2001 11 17 | 644 | 0.1− | 0.7− |
| 2001 09 28 | 704 | 0.1+ | 0.2+ | 2001 10 20 | 699 | 0.4+ | 0.1− | 2001 11 17 | 644 | 0.0 | 0.8− |
| 2001 09 28 | 704 | 0.1+ | 0.2+ | 2001 10 20 | 699 | 0.4− | 0.2+ | 2001 12 17 | 704 | 0.9− | 0.4+ |
| 2001 09 28 | 704 | 0.9+ | 0.6− | 2001 10 20 | 699 | 0.1+ | 0.1+ | 2001 12 17 | 704 | 0.2− | 0.1− |
| 2001 09 28 | 704 | 0.2+ | 0.3− | 2001 10 27 | 704 | (3.8− | 0.9+) | 2001 12 17 | 704 | 0.6− | 0.4+ |
| 2001 10 15 | 704 | 0.2− | 0.4+ | 2001 10 27 | 704 | (1.5− | 1.7+) | 2001 12 17 | 704 | 0.2− | 0.7− |
| 2001 10 15 | 704 | 0.5− | 0.1− | 2001 10 27 | 704 | (1.8− | 1.5+) | 2001 12 17 | 704 | 0.4+ | 0.4+ |
| 2001 10 15 | 704 | 0.5− | 0.0 | 2001 10 27 | 704 | 1.0− | 0.2− | 2006 08 14 | 644 | 0.2+ | 0.2+ |
| 2001 10 15 | 704 | 0.4− | 0.1+ | 2001 11 10 | 704 | 0.2+ | 0.7+ | 2006 08 14 | 644 | 0.1− | 0.4+ |
| 2001 10 15 | 704 | 0.6− | 0.1+ | 2001 11 10 | 704 | 1.0− | 0.7+ | 2006 08 14 | 644 | 0.2− | 0.4+ |
| 2001 10 18 | 704 | 0.2+ | 0.3− | 2001 11 10 | 704 | 0.7− | 0.1+ | 2006 09 22 | 113 | 0.2+ | 0.3− |
| 2001 10 18 | 704 | 0.6+ | 0.1+ | 2001 11 10 | 704 | 0.4− | 0.3− | 2006 09 22 | 113 | 0.8+ | 0.2+ |
| 2001 10 18 | 704 | 1.0+ | 0.0 | 2001 11 10 | 704 | 1.1− | 0.1+ | 2006 09 22 | 113 | 1.1− | 0.3− |
| 2001 10 18 | 704 | 0.7+ | 0.6+ | 2001 11 17 | 704 | 0.9+ | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.7− |
| 2001 10 18 | 704 | 0.8+ | 0.9+ | 2001 11 17 | 704 | 0.7+ | 0.4− | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2001 10 20 | 704 | 0.0 | 0.5+ | 2001 11 17 | 704 | 0.4+ | 0.3− | 2006 10 22 | 703 | 0.9+ | 0.1+ |
| 2001 10 20 | 704 | 0.1+ | 0.0 | 2001 11 17 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.4− | 0.8− |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2001 11 17 | 704 | 0.4+ | 0.1+ | | | | |
| 2001 10 20 | 704 | 0.4− | 0.2+ | 2001 11 17 | 644 | 0.3+ | 0.8− | | | | |

**2001 TU$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.48505 | | (2000.0) | | | |
| $n$ | 0.26907077 | $\omega$ | 270.85056 | | +0.70043688 | −0.71351882 |
| $a$ | 2.3762476 | $\Omega$ | 134.67162 | | +0.66380864 | +0.64268223 |
| $e$ | 0.2075862 | $i$ | 1.34607 | | +0.26219510 | +0.27901693 |
| $P$ | 3.66 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1− | 0.1− | 2001 10 18 | 644 | 0.3− | 0.0 | 2001 10 24 | 704 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2001 10 18 | 644 | 0.2− | 0.0 | 2001 10 24 | 704 | 0.4− | 0.4+ |
| 2001 09 21 | 704 | 0.7− | 0.4− | 2001 10 20 | 704 | 0.5+ | 0.1+ | 2001 10 24 | 704 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.7− | 0.5− | 2001 10 20 | 704 | 0.7+ | 0.2− | 2001 10 24 | 704 | 0.4− | 0.3+ |
| 2001 09 26 | 704 | 1.4+ | 0.2− | 2001 10 20 | 704 | 0.4+ | 1.1− | 2001 10 24 | 704 | 0.4− | 0.9− |
| 2001 09 26 | 704 | 0.4+ | 0.2+ | 2001 10 20 | 704 | 0.9− | 1.1− | 2005 12 04 | G96 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.4+ | 1.2− | 2001 10 21 | 691 | 0.1− | 0.3+ | 2005 12 04 | G96 | 0.1− | 0.0 |
| 2001 10 12 | 699 | 0.1+ | 0.5+ | 2001 10 21 | 691 | 0.3− | 0.3+ | 2005 12 04 | G96 | 0.0 | 0.0 |
| 2001 10 12 | 699 | 0.0 | 0.2+ | 2001 10 21 | 691 | 0.3− | 0.3+ | 2005 12 04 | G96 | 0.0 | 0.3− |
| 2001 10 12 | 699 | 0.5+ | 0.1− | 2001 10 22 | 704 | 0.4− | 0.3− | 2005 12 25 | 691 | 0.2+ | 0.6+ |
| 2001 10 12 | 699 | 0.2+ | 0.3− | 2001 10 22 | 704 | 0.5+ | 0.9− | 2005 12 25 | 691 | 0.1+ | 0.5+ |
| 2001 10 13 | 704 | 0.4− | 0.5+ | 2001 10 22 | 704 | 0.8− | 0.6− | 2005 12 25 | 691 | 0.1+ | 0.3+ |
| 2001 10 13 | 704 | 0.9+ | 0.8+ | 2001 10 22 | 704 | 2.0− | 0.8− | 2005 12 25 | G96 | 0.3+ | 1.1− |
| 2001 10 13 | 704 | 0.8+ | 0.5+ | 2001 10 23 | 704 | 0.7− | 0.7+ | 2005 12 25 | G96 | 0.4− | 0.1+ |
| 2001 10 13 | 704 | 1.6+ | 0.1+ | 2001 10 23 | 704 | 0.6− | 0.4+ | 2005 12 25 | G96 | 0.1− | 0.0 |
| 2001 10 16 | 704 | 0.1− | 0.1− | 2001 10 23 | 691 | 0.6+ | 0.0 | 2006 01 06 | 691 | 0.0 | 0.1+ |
| 2001 10 16 | 704 | 0.3− | 0.3+ | 2001 10 23 | 704 | 1.0− | 0.4− | 2006 01 06 | 691 | 0.2− | 0.5− |
| 2001 10 16 | 704 | 0.3− | 0.0 | 2001 10 23 | 691 | 0.6+ | 0.2− | 2006 01 06 | 691 | 0.0 | 0.7− |
| 2001 10 16 | 704 | 0.6− | 1.2+ | 2001 10 23 | 704 | 1.4− | 0.0 | | | | |
| 2001 10 18 | 644 | 0.3− | 0.1+ | 2001 10 23 | 691 | 0.7+ | 0.1− | | | | |

**2001 TB$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.25717 | | (2000.0) | | | |
| $n$ | 0.18749175 | $\omega$ | 195.26379 | | +0.82346958 | −0.56529056 |
| $a$ | 3.0233002 | $\Omega$ | 199.39680 | | +0.53461808 | +0.80168849 |
| $e$ | 0.2587792 | $i$ | 8.38326 | | +0.18995097 | +0.19427339 |
| $P$ | 5.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (0.2− | 1.8+) | 2001 10 13 | 704 | 0.6− | 0.2− | 2001 10 23 | 704 | 0.3+ | 1.0+ |
| 2001 09 20 | 704 | 0.8+ | 0.8− | 2001 10 13 | 704 | (1.5+ | 1.6+) | 2001 10 24 | 704 | 0.9− | 0.5− |
| 2001 09 20 | 704 | 0.5− | 0.5− | 2001 10 13 | 704 | 0.5+ | 0.6+ | 2001 10 24 | 704 | 0.9− | 0.6+ |
| 2001 09 20 | 704 | 0.1+ | 0.9− | 2001 10 14 | 699 | 0.5+ | 0.2− | 2001 10 24 | 704 | (0.4+ | 2.1+) |
| 2001 09 20 | 704 | 0.7− | 0.5− | 2001 10 14 | 699 | 0.6− | 0.4+ | 2001 10 24 | 704 | 0.5− | 0.9+ |
| 2001 09 24 | 704 | 0.7+ | 0.1+ | 2001 10 14 | 699 | 1.3− | 0.6+ | 2001 10 24 | 704 | 0.0 | 1.1+ |
| 2001 09 24 | 704 | 0.6− | 0.0 | 2001 10 14 | 699 | 0.3− | 0.1+ | 2001 12 19 | 209 | 0.0 | 0.4− |
| 2001 09 24 | 704 | 0.4− | 0.2− | 2001 10 16 | 704 | 0.1− | 0.6+ | 2001 12 19 | 209 | 0.4+ | 0.0 |
| 2001 09 24 | 704 | 0.2− | 1.3− | 2001 10 16 | 704 | 0.7+ | 1.2− | 2001 12 19 | 209 | 0.1− | 0.5+ |
| 2001 09 24 | 704 | 0.4− | 0.1− | 2001 10 16 | 704 | 0.4+ | 0.2− | 2006 08 27 | 699 | (0.1+ | 2.2+) |
| 2001 10 11 | 644 | 0.5+ | 0.2+ | 2001 10 16 | 704 | 0.8+ | 0.3− | 2006 08 27 | 699 | 1.3− | 0.2+ |
| 2001 10 11 | 644 | 0.3− | 0.2+ | 2001 10 16 | 704 | (1.7+ | 1.1−) | 2006 08 27 | 699 | 1.1+ | 0.4− |
| 2001 10 11 | 644 | 0.6+ | 0.1+ | 2001 10 18 | 644 | 0.1+ | 1.0− | 2006 08 27 | 699 | 1.1+ | 1.4+ |
| 2001 10 11 | 644 | 0.3− | 0.3+ | 2001 10 18 | 644 | 0.1+ | 0.9− | 2006 08 29 | 703 | 0.1+ | 0.6− |
| 2001 10 11 | 644 | 0.4+ | 0.3+ | 2001 10 18 | 644 | 0.2+ | 1.1− | 2006 08 29 | 703 | 0.2+ | 1.2− |
| 2001 10 11 | 644 | 0.2− | 0.3+ | 2001 10 20 | 704 | 0.8+ | 0.4− | 2006 08 29 | 703 | 1.2− | 0.7+ |
| 2001 10 12 | 699 | 0.5+ | 0.4− | 2001 10 20 | 704 | 0.5+ | 0.2− | 2006 08 29 | 703 | 0.5+ | 1.6+ |
| 2001 10 12 | 699 | 0.5+ | 0.4+ | 2001 10 20 | 704 | 1.0+ | 0.0 | 2006 10 02 | G96 | 0.8− | 0.3− |
| 2001 10 12 | 699 | 0.3− | 0.9+ | 2001 10 20 | 704 | 0.8+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2001 10 12 | 699 | 0.1− | 0.8+ | 2001 10 23 | 704 | 0.6− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2001 10 13 | 704 | 0.6− | 0.6+ | 2001 10 23 | 704 | 0.6− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− |

**2001 TR$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.08054 | | (2000.0) | | | |
| $n$ | 0.19934934 | $\omega$ | 278.69303 | | +0.98924106 | +0.10139059 |
| $a$ | 2.9021923 | $\Omega$ | 75.53785 | | −0.04805275 | +0.90608120 |
| $e$ | 0.1560828 | $i$ | 6.25262 | | −0.13817765 | +0.41077586 |
| $P$ | 4.94 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.1− | 0.4− | 2001 11 18 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2001 10 10 | 644 | 0.2− | 0.3− | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2001 10 10 | 644 | 0.1+ | 0.1− | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2001 10 12 | 699 | 0.3+ | 0.2+ | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2001 10 12 | 699 | 0.4− | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.5+ | 0.3+ |
| 2001 10 12 | 699 | 0.0 | 0.2+ | 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.4+ |
| 2001 10 12 | 699 | 0.2+ | 0.2− | 2006 09 29 | 699 | 0.0 | 0.9+ | 2006 11 13 | 703 | 0.6+ | 0.2− |
| 2001 10 13 | 704 | 0.1+ | 0.9+ | 2006 09 29 | 699 | 0.6− | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.1− |
| 2001 10 13 | 704 | 0.8− | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.3+ | 2006 11 13 | 703 | 1.5− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.1− | 1.5+ | 2006 11 14 | 704 | 0.3+ | 0.7+ | | |
| 2001 10 16 | 704 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.3+ | | |
| 2001 10 16 | 704 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.7− | 1.2− | 2006 11 14 | 704 | 0.4− | 0.3+ | | |
| 2001 10 16 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.5+ | 0.3+ | 2006 11 14 | 704 | 1.0− | 0.0 | | |
| 2001 10 16 | 704 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.6− | 2006 11 20 | 704 | 0.1− | 0.8− | | |
| 2001 10 24 | 644 | 0.0 | 0.5− | 2006 10 03 | G96 | 0.6+ | 0.6− | 2006 11 20 | 704 | 0.7+ | 0.6+ | | |
| 2001 10 24 | 644 | 0.1− | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 1.2+ | 0.7+ | | |
| 2001 10 24 | 644 | 0.1+ | 0.2− | 2006 10 03 | G96 | 0.8+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.4− | | |
| 2001 11 18 | 704 | 0.3+ | 0.9+ | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.3− | | |
| 2001 11 18 | 704 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.7− | 0.7− | 2006 11 22 | G96 | 0.0 | 0.3− | | |
| 2001 11 18 | 704 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.6− | 2006 11 22 | G96 | 0.3+ | 0.4− | | |

**2001 TJ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 262.70562 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.34748572 | $\omega$ | 177.13343 | | +0.83240190 | | −0.51036927 | |
| $a$ | 2.0037556 | $\Omega$ | 216.30887 | | +0.50091331 | | +0.85961214 | |
| $e$ | 0.1066830 | $i$ | 21.38785 | | +0.23705050 | | −0.02429364 | |
| $P$ | 2.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4+ | 1.5+ | 2001 10 18 | 704 | 0.1+ | 0.1+ | 2001 11 09 | 704 | 1.6− | 1.1− | | |
| 2001 09 25 | 704 | 0.8− | 0.2+ | 2001 10 18 | 704 | 0.2+ | 0.0 | 2001 11 09 | 704 | 0.4+ | 1.2+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.4− | 2001 10 19 | 644 | 0.5+ | 1.0+ | 2001 11 09 | 704 | 0.6+ | 0.7+ | | |
| 2001 09 25 | 704 | 0.6− | 0.0 | 2001 10 19 | 644 | 0.6+ | 0.6+ | 2001 11 09 | 704 | 0.9+ | 1.1+ | | |
| 2001 10 13 | 699 | 0.5− | 0.2+ | 2001 10 19 | 644 | 0.6+ | 0.1− | 2001 11 09 | 704 | 0.2+ | 1.9+ | | |
| 2001 10 13 | 699 | 0.2+ | 0.6+ | 2001 10 21 | 704 | 0.1+ | 0.0 | 2001 11 11 | 291 | 0.0 | 0.1+ | | |
| 2001 10 13 | 699 | 0.5− | 0.6− | 2001 10 21 | 704 | 0.1+ | 0.6− | 2001 11 11 | 291 | 0.0 | 0.0 | | |
| 2001 10 13 | 699 | 0.8− | 0.0 | 2001 10 21 | 704 | 0.8− | 0.2+ | 2001 11 11 | 291 | 0.0 | 0.0 | | |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2001 10 21 | 704 | 0.3− | 0.9− | 2001 11 18 | 704 | 0.2+ | 1.0+ | | |
| 2001 10 14 | 704 | 0.4− | 0.3− | 2001 10 21 | 704 | 0.2− | 0.7− | 2001 11 18 | 704 | 0.4− | 0.1+ | | |
| 2001 10 14 | 704 | 0.3− | 0.5− | 2001 10 23 | 704 | 0.5− | 0.5+ | 2001 11 18 | 704 | 0.1− | 0.4+ | | |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2001 10 23 | 704 | 0.1+ | 0.2− | 2001 11 18 | 704 | 0.7− | 1.0+ | | |
| 2001 10 14 | 704 | 0.6− | 0.1+ | 2001 10 23 | 704 | 0.7− | 0.3− | 2001 11 18 | 704 | 0.1− | 1.8+ | | |
| 2001 10 16 | 704 | 0.8+ | 0.1+ | 2001 10 23 | 704 | 0.2+ | 0.6− | 2002 01 14 | 645 | 0.3+ | 0.2+ | | |
| 2001 10 16 | 704 | 0.6+ | 0.0 | 2001 10 23 | 704 | 0.2+ | 0.7− | 2002 01 14 | 645 | 0.2+ | 0.1+ | | |
| 2001 10 16 | 704 | 0.4+ | 0.3+ | 2001 10 23 | 704 | 0.4− | 0.4− | 2003 05 27 | 691 | 0.2− | 1.3+ | | |
| 2001 10 16 | 704 | 0.3+ | 1.3+ | 2001 10 23 | 704 | 0.1+ | 0.8− | 2003 05 27 | 691 | 0.2+ | 1.5+ | | |
| 2001 10 16 | 704 | 0.5+ | 0.4− | 2001 10 23 | 704 | 0.5− | 0.4− | 2003 05 27 | 691 | 0.1− | 1.4+ | | |
| 2001 10 18 | 704 | 0.1− | 0.1− | 2001 10 26 | 644 | 0.7− | 0.7+ | 2006 06 05 | 691 | 0.2+ | 0.1− | | |
| 2001 10 18 | 704 | 0.2− | 0.0 | 2001 10 26 | 644 | 0.6− | 0.6+ | 2006 06 05 | 691 | 0.2− | 0.0 | | |
| 2001 10 18 | 704 | 0.1+ | 0.3− | 2001 10 26 | 644 | 0.6− | 0.5+ | 2006 06 05 | 691 | 0.0 | 0.3− | | |

**2001 TZ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 22.19695 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21004887 | $\omega$ | 301.52681 | | +0.95089729 | | −0.29951578 | |
| $a$ | 2.8027809 | $\Omega$ | 76.00035 | | +0.30417738 | | +0.85779036 | |
| $e$ | 0.1067235 | $i$ | 4.61110 | | +0.05718804 | | +0.41771520 | |
| $P$ | 4.69 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.5+ | 0.9+ | 2001 11 20 | 704 | 0.9− | 0.4− | 2006 11 15 | 691 | 0.1− | 0.2+ | | |
| 2001 10 10 | 644 | 0.3+ | 1.0+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.5+ | | |
| 2001 10 10 | 644 | 0.4+ | 0.9+ | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 18 | 704 | (0.0 | 1.8+) | | |
| 2001 10 11 | 683 | 0.4− | 0.4− | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.4− | | |
| 2001 10 11 | 683 | 1.1− | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.9+ | | |
| 2001 10 11 | 683 | (0.9+ | 1.7−) | 2006 10 19 | 695 | 0.1+ | 0.0 | 2006 11 18 | 704 | (0.5− | 1.7+) | | |
| 2001 10 12 | 699 | 0.7+ | 1.0+ | 2006 10 19 | 695 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.4+ | | |
| 2001 10 12 | 699 | 0.3− | 0.3− | 2006 10 20 | 695 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2001 10 12 | 699 | 0.3+ | 0.9− | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.1− | 0.1+ | | |
| 2001 10 12 | 699 | 0.5− | 1.2− | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.6− | 0.0 | | |
| 2001 10 15 | 704 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2001 10 15 | 704 | 0.4+ | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.5+ | | |
| 2001 10 15 | 704 | 0.2− | 1.0− | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 27 | 691 | 0.2− | 0.1+ | | |
| 2001 10 15 | 704 | 1.0+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 27 | 691 | 0.2− | 0.1+ | | |
| 2001 10 15 | 704 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2001 10 16 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.4− | 2006 11 27 | 703 | 0.3+ | 0.8− | | |
| 2001 10 16 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.5− | 1.1− | | |
| 2001 10 16 | 704 | 0.3− | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.2− | 0.7− | | |
| 2001 10 16 | 704 | 0.7− | 0.7− | 2006 11 11 | 703 | 0.5− | 0.4− | 2006 11 27 | 703 | 0.2+ | 1.6− | | |
| 2001 10 16 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.3+ | 2006 12 01 | 691 | 0.0 | 0.2+ | | |
| 2001 10 16 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.6− | 2006 12 01 | 691 | 0.5− | 0.1− | | |
| 2001 10 16 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.9+ | 2006 12 01 | 691 | 0.1− | 0.4+ | | |
| 2001 11 20 | 704 | 0.4− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.0 | | | | | | |
| 2001 11 20 | 704 | 0.2− | 0.9+ | 2006 11 15 | 691 | 0.1− | 0.0 | | | | | | |

**2001 TF$_{57}$ = 2006 UC$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 71.26571 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21040098 | $\omega$ | 104.82534 | | +0.57084008 | | +0.81998131 | |
| $a$ | 2.7996530 | $\Omega$ | 200.15779 | | −0.79245202 | | +0.53680801 | |
| $e$ | 0.2154509 | $i$ | 7.01696 | | −0.21485206 | | +0.19866509 | |
| $P$ | 4.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.9− | 0.3+ | 2001 10 15 | 691 | 0.0 | 0.2− | 2001 10 23 | 704 | 0.6− | 0.5− | | |
| 2001 09 11 | 699 | 0.4+ | 0.1+ | 2001 10 15 | 691 | 0.1− | 0.2− | 2001 10 23 | 704 | 0.3+ | 0.2− | | |
| 2001 09 11 | 699 | 0.6+ | 0.7+ | 2001 10 15 | 691 | 0.1− | 0.3− | 2001 10 23 | 704 | 0.3+ | 0.5+ | | |
| 2001 09 11 | 699 | 0.8+ | 0.1+ | 2001 10 17 | 704 | 0.5+ | 0.7− | 2001 10 23 | 704 | 0.3+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2001 10 17 | 704 | 0.2+ | 0.3− | 2001 10 24 | 704 | 0.8+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.6+ | 0.2− | 2001 10 17 | 704 | 0.8+ | 0.6− | 2001 10 24 | 704 | 0.4+ | 0.3− | | |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2001 10 17 | 704 | 0.4+ | 0.4− | 2001 10 24 | 704 | 0.6+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.6+ | 0.5− | 2001 10 17 | 704 | 0.1− | 0.2− | 2001 10 24 | 704 | 1.0− | 0.7+ | | |
| 2001 09 24 | 704 | 0.7− | 0.7− | 2001 10 18 | 644 | 0.3− | 0.7+ | 2001 10 24 | 704 | 0.2− | 1.1+ | | |
| 2001 09 24 | 704 | 0.2− | 0.5− | 2001 10 18 | 644 | 0.1− | 0.5+ | 2001 10 26 | 644 | 0.1+ | 0.3− | | |
| 2001 09 24 | 704 | 0.3− | 0.3− | 2001 10 18 | 644 | 0.3− | 0.8+ | 2001 10 26 | 644 | 0.3− | 0.2− | | |
| 2001 09 24 | 704 | 1.2− | 0.5− | 2001 10 19 | 644 | 0.0 | 0.1+ | 2001 10 26 | 644 | 0.1− | 0.1− | | |
| 2001 10 11 | 644 | 0.3+ | 0.8+ | 2001 10 19 | 644 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.6− | | |
| 2001 10 11 | 644 | 0.4+ | 1.0+ | 2001 10 19 | 644 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.2− | | |
| 2001 10 11 | 644 | 0.3+ | 0.8+ | 2001 10 19 | 695 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1+ | | |
| 2001 10 13 | 704 | 1.3− | 0.2+ | 2001 10 19 | 695 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.8+ | 0.5− | | |
| 2001 10 13 | 704 | 0.5− | 0.3+ | 2001 10 20 | 704 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.0 | | |
| 2001 10 13 | 704 | (0.2− | 2.4+) | 2001 10 20 | 704 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ | | |
| 2001 10 13 | 704 | 0.8− | 0.0 | 2001 10 20 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2001 10 13 | 704 | 0.2+ | 0.3+ | 2001 10 20 | 704 | 0.2+ | 1.0− | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2001 10 14 | 699 | 0.4− | 0.7+ | 2001 10 20 | 704 | 0.4+ | 1.0− | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2001 10 14 | 699 | 0.4− | 0.4+ | 2001 10 22 | 704 | 1.3+ | 0.4− | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2001 10 14 | 699 | 0.8− | 0.2− | 2001 10 22 | 704 | 0.5+ | 1.1+ | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2001 10 14 | 699 | 0.5− | 0.1+ | 2001 10 22 | 704 | 0.4+ | 0.5− | | | | | | |

**2001 TW$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 45.65863 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21294426 | $\omega$ | 359.18447 | | +0.97966300 | | +0.20052460 | |
| $a$ | 2.7773168 | $\Omega$ | 349.24001 | | −0.18387701 | | +0.88306142 | |
| $e$ | 0.1965891 | $i$ | 2.17711 | | −0.08030977 | | +0.42425514 | |
| $P$ | 4.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (0.1+ | 2.2+) | 2001 10 17 | 291 | 0.8− | 0.3+ | 2001 10 21 | 704 | 0.2+ | 0.5+ | | |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2001 10 17 | 704 | 0.5− | 0.7− | 2001 10 21 | 704 | 0.1+ | 0.6+ | | |
| 2001 09 20 | 704 | 0.3+ | 0.3+ | 2001 10 17 | 291 | 0.1− | 0.4+ | 2001 10 23 | 691 | 0.1+ | 0.1− | | |
| 2001 09 23 | 704 | (1.6− | 0.3+) | 2001 10 17 | 704 | 0.4− | 0.2+ | 2001 10 23 | 691 | 0.3+ | 0.3− | | |
| 2001 09 23 | 704 | 1.3− | 0.3+ | 2001 10 17 | 704 | 0.4− | 0.5− | 2001 10 23 | 691 | 0.1+ | 0.3− | | |
| 2001 09 23 | 704 | 0.9− | 1.0+ | 2001 10 18 | 704 | (0.1− | 1.7−) | 2001 10 26 | 644 | 0.2+ | 0.3− | | |
| 2001 10 12 | 699 | 0.1+ | 0.2+ | 2001 10 18 | 704 | 0.0 | 0.1− | 2001 10 26 | 644 | 0.4+ | 0.3− | | |
| 2001 10 12 | 699 | 0.1+ | 0.8− | 2001 10 18 | 704 | 0.9− | 1.2− | 2001 10 26 | 644 | 0.5+ | 0.4− | | |
| 2001 10 12 | 699 | 0.8+ | 0.7− | 2001 10 18 | 704 | 0.4+ | 1.1− | 2006 11 16 | 691 | 0.1− | 0.3− | | |
| 2001 10 12 | 699 | (1.6+ | 1.3+) | 2001 10 18 | 704 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.4− | | |
| 2001 10 13 | 704 | 0.5+ | 0.5+ | 2001 10 18 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.3− | | |
| 2001 10 13 | 704 | 0.3+ | 0.1+ | 2001 10 18 | 704 | 0.3− | 0.6− | 2006 11 20 | 691 | 0.2+ | 0.3− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.7+ | 0.7+ | 2001 10 19 | 644 | 0.4+ | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2001 10 13 | 704 | 0.9+ | 1.3+ | 2001 10 19 | 644 | 0.5+ | 0.1− | 2006 11 20 | 691 | 0.7+ | 1.2+ |
| 2001 10 13 | 704 | 0.6+ | 0.3− | 2001 10 19 | 644 | 0.4+ | 0.1+ | 2006 11 30 | 691 | 0.5− | 0.0 |
| 2001 10 17 | 291 | 0.1+ | 0.3+ | 2001 10 21 | 704 | 0.4− | 0.1+ | 2006 11 30 | 691 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 0.7− | 2001 10 21 | 704 | 0.3− | 0.2+ | 2006 11 30 | 691 | 0.6− | 0.6+ |
| 2001 10 17 | 704 | 0.3− | 1.4− | 2001 10 21 | 704 | 0.8− | 0.5+ | | | | |

### 2001 TZ$_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.47066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18951397 | $\omega$ | 20.55926 | | +0.83050559 | −0.55679417 | |
| $a$ | 3.0017549 | $\Omega$ | 13.30893 | | +0.50117067 | +0.73480290 | |
| $e$ | 0.2588884 | $i$ | 3.86451 | | +0.24308111 | +0.38735637 | |
| $P$ | 5.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 24 | 704 | 0.1− | 0.5− | 2001 10 23 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 699 | 0.5+ | 0.1+ |
| 2001 09 24 | 704 | 0.8− | 1.2− | 2001 10 25 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 1.3+ | 0.1+ |
| 2001 09 24 | 704 | 0.8+ | 0.7+ | 2001 10 25 | 704 | 0.3+ | 0.5− | 2006 09 17 | 704 | 0.4− | 0.6+ |
| 2001 09 24 | 704 | 1.1+ | 0.5+ | 2001 10 25 | 704 | 0.4− | 0.4− | 2006 09 17 | 704 | 0.8− | 0.1+ |
| 2001 10 11 | 644 | 0.3+ | 0.1+ | 2001 10 25 | 704 | 0.4+ | 0.1− | 2006 09 19 | 699 | 1.0− | 0.4+ |
| 2001 10 11 | 644 | 0.3+ | 0.1+ | 2001 10 26 | 644 | 1.0+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.1+ |
| 2001 10 11 | 644 | 0.5+ | 0.3+ | 2001 10 26 | 644 | 1.0+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.3+ |
| 2001 10 12 | 699 | 0.1+ | 0.5− | 2001 10 26 | 644 | 0.9+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.1− |
| 2001 10 12 | 699 | 0.5− | 0.1+ | 2001 11 11 | 699 | 1.2− | 0.2+ | 2006 09 20 | 704 | 1.2− | 0.4− |
| 2001 10 12 | 699 | 1.0− | 0.3− | 2001 11 11 | 699 | 0.9− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.0 |
| 2001 10 12 | 699 | 0.5+ | 0.1− | 2001 11 11 | 699 | (1.6+ | 0.3−) | 2006 09 20 | 704 | 0.7+ | 0.7− |
| 2001 10 13 | 704 | 0.1− | 0.1+ | 2001 11 11 | 699 | 0.9− | 0.6− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2001 10 13 | 704 | 0.7+ | 0.2− | 2001 11 17 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.1+ | 0.1− |
| 2001 10 13 | 704 | 0.2+ | 1.1− | 2001 11 17 | 704 | 0.8− | 0.9+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2001 10 13 | 704 | (0.8+ | 2.2−) | 2001 11 17 | 704 | (0.2− | 1.9+) | 2006 09 30 | 703 | 0.2+ | 1.4+ |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2001 11 17 | 704 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2001 10 17 | 704 | 0.1+ | 0.1− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2001 10 17 | 704 | 0.5+ | 0.1− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.7− | 1.3+ |
| 2001 10 19 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.6+ | 0.9+ | 2006 09 30 | 703 | 0.0 | 0.0 |
| 2001 10 19 | 644 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.9− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 10 19 | 644 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.9− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.9− | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.2+ | 2006 10 20 | G96 | 0.9+ | 0.1− |
| 2001 10 21 | 704 | 0.7− | 0.2− | 2006 09 12 | 703 | 0.4− | 0.4− | 2006 10 20 | G96 | 0.6+ | 0.4− |
| 2001 10 21 | 704 | 1.0− | 1.1− | 2006 09 12 | 703 | 0.3+ | 0.8− | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.8− | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 1.1− | 0.1− | 2006 09 12 | 703 | 0.2+ | 0.5− | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2001 10 23 | 704 | 0.6+ | 0.9+ | 2006 09 16 | 699 | 0.4+ | 0.9+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 0.5− | 0.5− | 2006 09 16 | 699 | 0.1+ | 0.4+ | | | | |
| 2001 10 23 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.8− | 0.0 | | | | |

### 2001 TY$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.38897 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21458449 | $\omega$ | 4.18272 | | +0.86399449 | −0.50341257 | |
| $a$ | 2.7631460 | $\Omega$ | 26.05003 | | +0.46132679 | +0.78396518 | |
| $e$ | 0.3016800 | $i$ | 1.23306 | | +0.20172037 | +0.36328279 | |
| $P$ | 4.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | 0.3− | 0.9− | 2001 10 17 | 704 | 0.9− | 0.4− | 2001 11 19 | 704 | 0.8− | 0.0 |
| 2001 09 17 | 699 | 0.1+ | 0.1+ | 2001 10 17 | 704 | 0.6− | 0.7− | 2001 11 19 | 704 | 1.4− | 0.6− |
| 2001 09 17 | 699 | 0.5− | 0.3− | 2001 10 17 | 704 | 0.9− | 0.2− | 2001 12 11 | 704 | 0.1− | 0.7+ |
| 2001 09 17 | 699 | 0.6− | 0.0 | 2001 10 17 | 704 | 0.8− | 0.3− | 2001 12 11 | 704 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.3+ | 1.2+ | 2001 10 17 | 704 | 1.0− | 0.5− | 2001 12 11 | 704 | 0.1+ | 0.8+ |
| 2001 09 21 | 704 | 0.3+ | 0.7+ | 2001 10 17 | 644 | 0.7+ | 1.1− | 2001 12 11 | 704 | 0.9+ | 0.9+ |
| 2001 09 21 | 704 | (2.2− | 1.4+) | 2001 10 17 | 644 | 0.7+ | 1.0− | 2001 12 11 | 704 | 0.4− | 0.8+ |
| 2001 09 26 | 704 | 0.1+ | 0.4− | 2001 10 17 | 644 | 0.7+ | 1.1− | 2001 12 15 | 704 | 0.6− | 0.8− |
| 2001 09 26 | 704 | 0.2+ | 0.3+ | 2001 10 22 | 704 | (3.2− | 0.3−) | 2001 12 15 | 704 | 0.9+ | 0.2− |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2001 10 22 | 704 | (2.9− | 0.2−) | 2001 12 15 | 704 | 0.0 | 1.2− |
| 2001 09 26 | 704 | 0.3+ | 0.0 | 2001 10 22 | 704 | (3.1− | 0.2+) | 2001 12 15 | 704 | 1.0− | 0.5− |
| 2001 09 26 | 704 | 0.2− | 0.5+ | 2001 10 26 | 644 | 0.4+ | 0.4+ | 2001 12 18 | 704 | 0.7+ | 1.8+ |
| 2001 10 07 | 644 | 0.5+ | 0.3+ | 2001 10 26 | 644 | 0.1+ | 0.4+ | 2001 12 18 | 704 | 0.9+ | 1.0+ |
| 2001 10 07 | 644 | 0.0 | 0.4− | 2001 10 26 | 644 | 0.2+ | 0.4+ | 2001 12 18 | 704 | 0.4− | 1.2+ |
| 2001 10 07 | 644 | 0.1+ | 0.2− | 2001 11 10 | 704 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2001 10 12 | 699 | 1.3+ | 0.4+ | 2001 11 10 | 704 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 10 12 | 699 | 0.0 | 0.4+ | 2001 11 10 | 704 | 1.0+ | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2001 10 12 | 699 | 0.6+ | 0.0 | 2001 11 10 | 704 | 0.9+ | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2001 10 12 | 699 | 0.1+ | 0.4+ | 2001 11 10 | 704 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.3− | 0.2− |
| 2001 10 13 | 704 | 0.4+ | 0.3+ | 2001 11 15 | 691 | 0.3− | 0.2− | 2006 10 29 | G96 | 0.5+ | 0.1+ |
| 2001 10 13 | 704 | 0.3+ | 0.1+ | 2001 11 15 | 691 | 0.2− | 0.3− | 2006 10 29 | G96 | 0.8− | 0.2+ |
| 2001 10 13 | 704 | 0.1+ | 0.7+ | 2001 11 15 | 691 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.3− | 0.1− |
| 2001 10 13 | 704 | 1.0+ | 0.6+ | 2001 11 19 | 704 | 1.2− | 0.1− | | | | |
| 2001 10 13 | 704 | 0.5+ | 0.5+ | 2001 11 19 | 704 | 0.7− | 0.0 | | | | |

### 2001 TJ$_{69}$ = 2006 WK$_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.18084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21726038 | $\omega$ | 149.73075 | | −0.99531973 | −0.07631692 | |
| $a$ | 2.7404109 | $\Omega$ | 26.09152 | | +0.03602226 | −0.86224265 | |
| $e$ | 0.1026347 | $i$ | 7.74655 | | +0.08967178 | −0.50071283 | |
| $P$ | 4.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 23 | 691 | 0.3+ | 0.1+ | 2001 10 17 | 704 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.1− |
| 1992 10 23 | 691 | 0.2+ | 0.2+ | 2001 10 17 | 704 | 0.9− | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 1992 10 23 | 691 | 0.7− | 0.1+ | 2001 10 17 | 704 | 0.0 | 0.8+ | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 2001 10 07 | 644 | 0.4− | 0.3− | 2001 10 17 | 704 | (0.4− | 1.5+) | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2001 10 07 | 644 | 0.7− | 0.4− | 2001 10 17 | 704 | 0.3+ | 0.9+ | 2006 10 20 | G96 | 0.6− | 0.2+ |
| 2001 10 07 | 644 | 0.2− | 0.9+ | 2001 10 17 | 704 | 0.7− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 10 13 | 704 | (1.8− | 2.9−) | 2001 10 24 | 704 | 0.9− | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2001 10 13 | 704 | (1.0− | 1.6−) | 2001 10 24 | 704 | 1.0− | 1.1− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 10 13 | 704 | 1.2− | 0.7− | 2001 10 24 | 704 | 0.5− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 291 | 0.8+ | 0.1− | 2001 10 24 | 704 | 0.5− | 0.2− | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 291 | 0.4+ | 0.2− | 2001 10 25 | 644 | 0.5− | 1.0+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2001 10 14 | 291 | 1.1+ | 0.6− | 2001 10 25 | 644 | 0.3− | 1.1+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 0.4− | 0.4+ | 2001 10 25 | 644 | 0.1− | 1.0+ | 2006 11 22 | 704 | 0.3+ | 0.6− |
| 2001 10 17 | 704 | 0.6− | 0.6− | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 22 | 704 | 1.5+ | 0.1− |
| 2001 10 17 | 704 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.2+ |

### 2001 TB$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.68823 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18972377 | $\omega$ | 197.91582 | | +0.73298871 | −0.67933982 | |
| $a$ | 2.9995416 | $\Omega$ | 204.98427 | | +0.63381001 | +0.70073587 | |
| $e$ | 0.2112397 | $i$ | 4.75324 | | +0.24700693 | +0.21786843 | |
| $P$ | 5.19 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.4− | 0.3+ | 2001 10 19 | 644 | 0.1+ | 0.6+ | 2001 11 21 | 704 | 0.2+ | 0.5− |
| 2001 10 13 | 704 | 0.3+ | 1.7− | 2001 10 19 | 644 | 0.5− | 0.0 | 2006 09 13 | 644 | 0.5+ | 0.4+ |
| 2001 10 13 | 704 | 0.8− | 0.1− | 2001 10 20 | 704 | 1.1− | 0.5+ | 2006 09 13 | 644 | 0.5+ | 0.1+ |
| 2001 10 13 | 704 | 0.9− | 1.5− | 2001 10 20 | 704 | 0.9− | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2001 10 17 | I03 | 0.1− | 0.1− | 2001 10 20 | 704 | 0.7− | 0.1+ | 2006 09 16 | 699 | 1.0− | 1.0+ |
| 2001 10 17 | 704 | 0.1+ | 0.4+ | 2001 10 20 | 704 | 0.4− | 0.5+ | 2006 09 16 | 699 | 0.5+ | 1.1− |
| 2001 10 17 | 704 | 0.3+ | 0.2− | 2001 10 20 | 704 | 0.3− | 0.5+ | 2006 09 16 | 699 | 0.9− | 0.6+ |
| 2001 10 17 | 704 | 0.1+ | 0.9+ | 2001 10 21 | 704 | 1.3+ | 0.5+ | 2006 09 16 | 699 | 0.0 | 0.5+ |
| 2001 10 17 | 704 | 0.2− | 1.9+ | 2001 10 21 | 704 | 1.3+ | 0.4− | 2006 09 19 | 699 | 0.7+ | 0.0 |
| 2001 10 17 | I03 | 0.6− | 0.1+ | 2001 10 21 | 704 | 0.4+ | 0.1− | 2006 09 19 | 699 | 1.1+ | 0.5− |
| 2001 10 17 | 704 | 0.2− | 0.1− | 2001 10 21 | 704 | 1.0+ | 0.7− | 2006 09 19 | 703 | 1.0− | 0.3+ |
| 2001 10 18 | 704 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.0 |
| 2001 10 18 | 704 | 0.9− | 0.6− | 2001 11 20 | 704 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.8− |
| 2001 10 18 | 704 | 1.3+ | 1.1− | 2001 11 20 | 704 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.6+ |
| 2001 10 18 | 704 | 1.8+ | 1.6− | 2001 11 20 | 704 | 0.0 | 0.5+ | 2006 09 19 | 703 | 1.1− | 1.7− |
| 2001 10 18 | 644 | 0.3− | 0.6+ | 2001 11 20 | 704 | 0.5− | 0.3− | 2006 09 19 | 699 | 0.0 | 0.8− |
| 2001 10 18 | 644 | 0.3− | 0.7+ | 2001 11 21 | 704 | 0.9+ | 1.0+ | 2006 09 20 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.0 | 0.6+ | 2001 11 21 | 704 | 0.2− | 0.2− | 2006 09 20 | 691 | 0.3+ | 0.3+ | | |
| 2001 10 19 | 644 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.0 | 1.2− | 2006 09 20 | 691 | 0.0 | 0.2+ | | |

**2001 TB$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.85498 | | (2000.0) | | | |
| $n$ | 0.21270494 | $\omega$ | 344.03767 | | +0.63465864 | −0.75841922 |
| $a$ | 2.7793996 | $\Omega$ | 66.32059 | | +0.72556472 | +0.51870853 |
| $e$ | 0.2200390 | $i$ | 9.32253 | | +0.26601551 | +0.39464128 |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | 0.5− | 0.3+ | 2001 10 24 | 704 | 0.9+ | 0.6− | 2001 12 11 | 704 | 0.0 | 0.6+ | | |
| 2001 08 25 | 644 | 0.3− | 0.5+ | 2001 10 24 | 644 | 0.7− | 0.3− | 2001 12 11 | 704 | 0.1+ | 0.6+ | | |
| 2001 08 25 | 644 | 0.4− | 0.3+ | 2001 10 24 | 644 | 0.8− | 0.0 | 2001 12 14 | 704 | 0.1− | 0.2+ | | |
| 2001 09 17 | 699 | 0.4+ | 0.8+ | 2001 10 24 | 644 | 1.0− | 0.6− | 2001 12 14 | 704 | 0.4− | 0.1+ | | |
| 2001 09 17 | 699 | 0.0 | 0.0 | 2001 11 09 | 704 | 0.5+ | 0.2− | 2001 12 14 | 704 | 0.2+ | 0.6+ | | |
| 2001 09 17 | 699 | 0.4− | 0.4− | 2001 11 09 | 704 | 0.1− | 0.5+ | 2001 12 14 | 704 | 0.2+ | 0.3+ | | |
| 2001 09 17 | 699 | 1.0+ | 0.6+ | 2001 11 09 | 704 | 0.5− | 0.6+ | 2001 12 14 | 704 | 1.2+ | 1.0+ | | |
| 2001 10 10 | 644 | 0.1+ | 0.5− | 2001 11 09 | 704 | 1.0− | 0.7+ | 2001 12 17 | 704 | 0.6− | 0.1+ | | |
| 2001 10 10 | 644 | 0.0 | 0.3− | 2001 11 09 | 704 | (0.6− | 1.8−) | 2001 12 17 | 704 | 0.2− | 0.0 | | |
| 2001 10 10 | 644 | 0.2+ | 0.2− | 2001 11 15 | 644 | 0.0 | 0.3+ | 2001 12 17 | 704 | 0.6− | 0.2+ | | |
| 2001 10 13 | 704 | 0.5− | 0.2− | 2001 11 15 | 644 | 0.2+ | 0.1+ | 2001 12 17 | 704 | 0.1− | 0.2+ | | |
| 2001 10 13 | 704 | (1.7− | 0.2−) | 2001 11 15 | 644 | 0.3+ | 0.0 | 2001 12 17 | 704 | 1.2− | 0.4+ | | |
| 2001 10 13 | 704 | 1.0− | 0.6− | 2001 11 17 | 704 | 0.2+ | 0.8− | 2001 12 20 | 704 | 1.4+ | 0.3− | | |
| 2001 10 13 | 704 | 0.2+ | 0.4− | 2001 11 17 | 704 | (0.2− | 1.8−) | 2001 12 20 | 704 | 1.1+ | 0.5− | | |
| 2001 10 14 | 699 | 0.0 | 0.3− | 2001 11 17 | 704 | 0.1+ | 0.1− | 2001 12 20 | 704 | 0.4+ | 0.7− | | |
| 2001 10 14 | 699 | 0.2− | 0.1− | 2001 11 18 | 608 | 0.4− | 0.7− | 2001 12 20 | 704 | 0.9+ | 0.8− | | |
| 2001 10 14 | 699 | 0.4+ | 0.2+ | 2001 11 18 | 608 | 0.4− | 0.5− | 2004 05 19 | 599 | 0.6+ | 0.2+ | | |
| 2001 10 14 | 699 | 0.5− | 0.3− | 2001 11 18 | 608 | 0.2− | 0.7− | 2004 05 20 | 599 | 0.5+ | 1.0+ | | |
| 2001 10 17 | 704 | 0.3− | 0.6− | 2001 11 20 | 704 | 0.7− | 0.4+ | 2004 05 20 | 599 | 0.3− | 0.4+ | | |
| 2001 10 17 | 704 | 0.2− | 0.1− | 2001 11 20 | 704 | 0.7− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2001 11 20 | 704 | 0.8− | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2001 10 17 | 704 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.9− | 0.5+ | 2006 09 30 | 691 | 0.4+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.6+ | 0.3+ | 2001 11 20 | 704 | 0.7− | 0.3+ | 2006 10 29 | G96 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 0.5+ | 0.8− | 2001 11 24 | 704 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.2+ | 0.0 | | |
| 2001 10 21 | 704 | 0.1+ | 0.5− | 2001 11 24 | 704 | (1.3+ | 1.8+) | 2006 10 29 | G96 | 0.1− | 0.0 | | |
| 2001 10 21 | 704 | 0.4− | 0.2− | 2001 11 24 | 704 | (1.7+ | 0.5−) | 2006 10 29 | G96 | 0.0 | 0.1− | | |
| 2001 10 22 | 704 | 0.3+ | 0.4− | 2001 11 24 | 704 | 1.1+ | 1.1− | 2006 11 02 | G96 | 0.2− | 0.0 | | |
| 2001 10 22 | 704 | 0.1− | 0.3+ | 2001 12 09 | 699 | 1.1− | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.2− | | |
| 2001 10 22 | 704 | 0.8+ | 0.9+ | 2001 12 09 | 699 | (1.8− | 0.6+) | 2006 11 02 | G96 | 0.1+ | 0.3− | | |
| 2001 10 22 | 704 | 0.8+ | 0.2− | 2001 12 09 | 699 | 0.2+ | 0.4− | 2006 11 02 | G96 | 0.1− | 0.5− | | |
| 2001 10 24 | 704 | 1.3+ | 0.8− | 2001 12 09 | 699 | 0.5− | 0.3+ | 2006 11 17 | 644 | 0.5− | 0.3+ | | |
| 2001 10 24 | 704 | 0.1− | 0.9+ | 2001 12 11 | 704 | 0.0 | 0.5+ | 2006 11 17 | 644 | 0.4− | 0.2+ | | |
| 2001 10 24 | 704 | 0.3+ | 0.1+ | 2001 12 11 | 704 | 0.7+ | 0.3+ | 2006 11 17 | 644 | 0.4− | 0.1− | | |
| 2001 10 24 | 704 | 1.4+ | 1.0+ | 2001 12 11 | 704 | 0.7+ | 0.9+ | | | | | | |

**2001 TV$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.94325 | | (2000.0) | | | |
| $n$ | 0.22136562 | $\omega$ | 132.80369 | | +0.89327328 | +0.44565361 |
| $a$ | 2.7064246 | $\Omega$ | 200.94262 | | −0.44528229 | +0.85936272 |
| $e$ | 0.1993290 | $i$ | 9.46618 | | −0.06153482 | +0.25077596 |
| $P$ | 4.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 11 | 691 | 0.0 | 0.1+ | 2001 10 22 | 704 | 0.1+ | 0.5+ | 2005 07 29 | 699 | 1.1+ | 1.4+ | | |
| 2000 06 11 | 691 | 0.1− | 0.2+ | 2001 10 22 | 704 | 0.5+ | 0.6− | 2005 07 29 | 699 | 1.2+ | 0.5− | | |
| 2000 06 11 | 691 | 0.1+ | 0.0 | 2001 10 22 | 704 | 0.0 | 0.3− | 2005 07 29 | 699 | 0.4+ | 1.1+ | | |
| 2001 10 13 | 704 | 0.6+ | 1.0− | 2001 10 22 | 704 | 0.6− | 0.4− | 2005 07 29 | 699 | 0.2+ | 0.0 | | |
| 2001 10 13 | 704 | 1.0+ | 0.8+ | 2001 10 22 | 704 | 0.5+ | 0.0 | 2005 08 13 | 608 | 0.1− | 0.4− | | |
| 2001 10 13 | 704 | 0.8− | 0.1− | 2001 10 23 | 704 | 0.2+ | 0.6+ | 2005 08 13 | 608 | 0.2+ | 0.5− | | |
| 2001 10 13 | 704 | 0.3+ | 0.4− | 2001 10 23 | 704 | 0.3− | 0.0 | 2005 08 13 | 608 | 0.0 | 0.7− | | |
| 2001 10 16 | 691 | 0.0 | 0.0 | 2001 10 23 | 704 | 0.0 | 0.5− | 2005 08 31 | 704 | 0.3− | 0.1− | | |
| 2001 10 16 | 691 | 0.3− | 0.2− | 2001 10 23 | 704 | 0.2− | 0.1+ | 2005 08 31 | 704 | 0.2− | 0.5+ | | |
| 2001 10 16 | 691 | 0.3− | 0.1+ | 2001 10 24 | 704 | 0.2− | 0.0 | 2005 08 31 | 704 | 0.1+ | 0.4+ | | |
| 2001 10 17 | 704 | 1.1+ | 0.0 | 2001 10 24 | 704 | 0.3+ | 0.1− | 2005 08 31 | 704 | 0.1− | 1.4+ | | |
| 2001 10 17 | 704 | 0.7− | 0.0 | 2001 10 24 | 704 | 0.3+ | 0.1+ | 2005 08 31 | 704 | 0.6− | 0.5+ | | |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2001 10 24 | 704 | 0.3− | 0.8+ | 2005 10 03 | 703 | 1.4− | 0.2− | | |
| 2001 10 17 | 704 | 0.2+ | 0.2− | 2001 10 24 | 704 | 0.5+ | 0.7+ | 2005 10 03 | 703 | 0.3+ | 2.5− | | |
| 2001 10 17 | 704 | 0.5+ | 1.2+ | 2005 07 11 | 703 | 0.5+ | 0.6− | 2005 10 03 | 703 | 0.2+ | 1.1− | | |
| 2001 10 18 | 644 | 0.1− | 0.4+ | 2005 07 11 | 703 | 0.6− | 0.3+ | 2005 10 03 | 703 | 0.4− | 0.3+ | | |
| 2001 10 18 | 644 | 0.3− | 0.1+ | 2005 07 11 | 703 | 0.6− | 0.2+ | | | | | | |
| 2001 10 18 | 644 | 0.3− | 0.4+ | 2005 07 11 | 703 | 0.1− | 0.6− | | | | | | |

**2001 TO$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.98888 | | (2000.0) | | | |
| $n$ | 0.18924169 | $\omega$ | 358.69179 | | +0.70505431 | −0.69780539 |
| $a$ | 3.0046335 | $\Omega$ | 46.45380 | | +0.65220836 | +0.56810489 |
| $e$ | 0.1193678 | $i$ | 10.03960 | | +0.27842893 | +0.43626193 |
| $P$ | 5.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.3+ | 0.9− | 2001 11 09 | 704 | 1.4+ | 1.1− | 2001 12 18 | 704 | 1.3+ | 0.5− | | |
| 2001 10 13 | 704 | 0.2+ | 0.2− | 2001 11 09 | 704 | 0.4+ | 0.2+ | 2001 12 18 | 704 | 0.1− | 0.4+ | | |
| 2001 10 13 | 704 | (0.4+ | 1.6+) | 2001 11 09 | 704 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.5+ | | |
| 2001 10 17 | 704 | 1.2+ | 1.0+ | 2001 11 09 | 704 | 0.6− | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.5+ | | |
| 2001 10 17 | 704 | 0.7+ | 0.9− | 2001 11 12 | 704 | (2.4− | 0.2+) | 2006 09 25 | 699 | 0.3− | 0.1+ | | |
| 2001 10 17 | 704 | 0.1+ | 1.4− | 2001 11 12 | 704 | (2.2− | 0.1−) | 2006 09 25 | 699 | 0.9+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.9− | 1.2− | 2001 11 12 | 704 | (2.3− | 0.2−) | 2006 09 26 | 703 | 0.8+ | 0.1+ | | |
| 2001 10 18 | 644 | 0.2− | 0.1+ | 2001 11 12 | 704 | (2.5− | 0.2+) | 2006 09 26 | 703 | 0.1+ | 0.1− | | |
| 2001 10 18 | 644 | 0.3− | 0.1− | 2001 11 12 | 704 | (2.0− | 0.2−) | 2006 09 26 | 703 | (2.0+ | 0.6−) | | |
| 2001 10 18 | 644 | 0.1+ | 0.2− | 2001 11 20 | 704 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.1+ | | |
| 2001 10 20 | 704 | 0.3− | 0.1− | 2001 11 20 | 704 | 0.2− | 0.1+ | 2006 09 30 | 703 | (1.6+ | 0.6+) | | |
| 2001 10 20 | 704 | 0.2− | 0.6− | 2001 11 20 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.4− | 0.7− | 2001 11 20 | 704 | 0.5− | 0.5+ | 2006 09 30 | 703 | (0.4− | 2.3+) | | |
| 2001 10 22 | 704 | 0.1− | 0.1− | 2001 11 20 | 704 | 1.0− | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.0 | | |
| 2001 10 22 | 704 | 0.1+ | 0.1− | 2001 11 21 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.4− | | |
| 2001 10 22 | 704 | 0.5+ | 0.4− | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.7− | | |
| 2001 10 22 | 704 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.6+ | | |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 2001 10 23 | 704 | 0.4+ | 0.2+ | 2001 11 21 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 703 | 1.0− | 0.0 | | |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2001 12 11 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 1.1− | 0.2+ | | |
| 2001 10 23 | 704 | 0.0 | 0.5+ | 2001 12 11 | 704 | 0.5+ | 0.5− | 2006 10 22 | 703 | 0.9− | 0.4− | | |
| 2001 10 23 | 704 | 0.3+ | 0.1− | 2001 12 11 | 704 | 0.6− | 0.9− | 2006 10 22 | 703 | 0.3− | 0.4− | | |
| 2001 10 24 | 704 | 0.2− | 0.5+ | 2001 12 11 | 704 | 0.5− | 0.3− | 2006 11 10 | 644 | 0.8+ | 0.2− | | |
| 2001 10 24 | 704 | 0.7+ | 1.4+ | 2001 12 11 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 24 | 704 | 0.4− | 0.5+ | 2001 12 18 | 704 | 0.6− | 1.1− | 2006 11 10 | 644 | 0.5+ | 0.0 | | |
| 2001 10 24 | 704 | 0.0 | 1.1+ | 2001 12 18 | 704 | 0.0 | 0.7− | | | | | | |

**2001 TM$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 211.18287 | | (2000.0) | | | |
| $n$ | 0.30635341 | $\omega$ | 139.04278 | | +0.98396159 | +0.17464694 |
| $a$ | 2.1793195 | $\Omega$ | 210.95548 | | −0.17646370 | +0.92325929 |
| $e$ | 0.2389710 | $i$ | 4.04735 | | −0.02607981 | +0.34218522 |
| $P$ | 3.22 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 699 | 0.3− | 0.4− | 2001 10 12 | 699 | 0.8− | 0.4+ | 2001 10 23 | 704 | 0.3− | 1.0− | | |
| 2001 08 28 | 699 | 0.0 | 0.1− | 2001 10 12 | 699 | 0.6− | 1.1+ | 2001 10 23 | 704 | 0.8+ | 0.5− | | |
| 2001 08 28 | 699 | 0.1− | 0.8− | 2001 10 12 | 699 | 0.1+ | 1.3+ | 2001 10 23 | 704 | 0.5+ | 1.4− | | |
| 2001 08 28 | 699 | 0.2− | 0.2− | 2001 10 12 | 699 | 0.5− | 0.8+ | 2001 10 26 | 644 | 1.0+ | 0.8− | | |
| 2001 09 11 | 699 | 0.4− | 0.8− | 2001 10 13 | 704 | 1.2− | 0.3+ | 2001 10 26 | 644 | 1.5+ | 0.5− | | |
| 2001 09 11 | 699 | 0.0 | 1.3+ | 2001 10 13 | 704 | 1.4− | 0.4+ | 2001 10 26 | 644 | 1.5+ | 0.8− | | |
| 2001 09 11 | 699 | 1.2− | 1.1+ | 2001 10 13 | 704 | 1.3− | 0.1− | 2001 11 20 | 704 | 1.2− | 0.3+ | | |
| 2001 09 11 | 699 | 0.7− | 0.2+ | 2001 10 14 | 699 | 0.2+ | 0.6+ | 2001 11 20 | 704 | 1.0− | 0.2− | | |
| 2001 09 20 | 704 | 0.1+ | 0.3+ | 2001 10 14 | 699 | 0.6+ | 0.7+ | 2001 11 20 | 704 | 1.5− | 0.5− | | |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2001 10 14 | 699 | 0.6+ | 0.5+ | 2001 11 20 | 704 | 1.0− | 0.3+ | | |
| 2001 09 20 | 704 | 1.1+ | 0.4+ | 2001 10 14 | 699 | 0.1− | 0.1+ | 2001 11 20 | 704 | 0.3− | 0.4− | | |
| 2001 09 20 | 704 | 0.0 | 0.7− | 2001 10 17 | 704 | 0.3+ | 0.0 | 2001 11 21 | 704 | 0.2− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.4+ | 0.2+ | 2001 10 17 | 704 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.9− | 0.3− | | |
| 2001 09 23 | 704 | 0.2+ | 0.4+ | 2001 10 17 | 704 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.4− | 0.3− | | |
| 2001 09 23 | 704 | 0.4+ | 0.6+ | 2001 10 17 | 704 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.3− | 0.4− | | |
| 2001 09 24 | 704 | 0.4+ | 1.1+ | 2001 10 17 | 704 | 0.0 | 0.9− | 2001 11 21 | 704 | 0.0 | 0.5+ | | |
| 2001 09 24 | 704 | 0.3+ | 0.3− | 2001 10 21 | 704 | 0.1+ | 0.3+ | 2004 07 16 | 704 | 0.3− | 0.2+ | | |
| 2001 09 24 | 704 | 0.1+ | 0.3+ | 2001 10 21 | 704 | 0.3− | 0.2+ | 2004 07 16 | 704 | 0.4− | 0.0 | | |
| 2001 09 24 | 704 | 0.1+ | 0.5+ | 2001 10 21 | 704 | 0.1− | 0.6+ | 2004 07 16 | 704 | 1.0+ | 0.7+ | | |
| 2001 09 24 | 704 | 0.3+ | 0.3+ | 2001 10 21 | 704 | 0.1+ | 0.4+ | 2004 07 16 | 704 | 0.9− | 0.7+ | | |
| 2001 09 25 | 691 | 0.1+ | 0.1− | 2001 10 21 | 704 | 0.2+ | 0.2− | 2006 02 02 | 691 | 0.1− | 0.2+ | | |
| 2001 09 25 | 691 | 0.1+ | 0.2− | 2001 10 23 | 704 | 1.2+ | 1.2− | 2006 02 02 | 691 | 0.6+ | 0.4+ | | |
| 2001 09 25 | 691 | 0.2+ | 0.0 | 2001 10 23 | 704 | 0.2+ | 1.0− | 2006 02 02 | 691 | 0.1− | 0.4+ | | |

**2001 TR$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.77407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17847253 | $\omega$ | 330.11359 | | +0.88461771 | −0.35342898 | |
| $a$ | 3.1243173 | $\Omega$ | 53.78126 | | +0.46630964 | +0.67411004 | |
| $e$ | 0.1966975 | $i$ | 22.15195 | | −0.00261257 | +0.64858585 | |
| $P$ | 5.52 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.3+ | 1.3− | 2001 11 16 | 644 | 0.3− | 0.5+ | 2001 12 15 | 704 | 0.1− | 0.4− | | |
| 2001 09 17 | 704 | 0.6− | 0.2− | 2001 11 17 | 704 | 0.0 | 0.0 | 2001 12 15 | 704 | 0.1+ | 0.3− | | |
| 2001 09 17 | 704 | 0.6+ | 0.7− | 2001 11 17 | 704 | 0.3+ | 0.1+ | 2001 12 15 | 704 | 0.2− | 0.2− | | |
| 2001 09 17 | 704 | 0.6− | 0.6+ | 2001 11 17 | 704 | 0.2+ | 0.1− | 2001 12 15 | 704 | 0.1+ | 0.3− | | |
| 2001 10 13 | 704 | 0.4− | 0.4+ | 2001 11 19 | 699 | 0.6− | 0.6+ | 2001 12 18 | 704 | 0.2+ | 0.4+ | | |
| 2001 10 13 | 704 | 0.2+ | 1.0− | 2001 11 19 | 699 | 0.6− | 0.2+ | 2001 12 18 | 704 | 0.4+ | 0.3+ | | |
| 2001 10 13 | 704 | 0.5− | 0.5− | 2001 11 19 | 699 | 1.0− | 0.3− | 2001 12 18 | 704 | 0.1− | 0.5+ | | |
| 2001 10 17 | 704 | 0.1+ | 0.6− | 2001 11 19 | 699 | 0.1+ | 0.4+ | 2001 12 18 | 704 | 0.5+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.7− | 0.3+ | 2001 11 19 | 608 | 0.0 | 0.8− | 2001 12 18 | 704 | 0.8+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.8− | 0.4− | 2001 11 19 | 608 | 0.2+ | 0.6− | 2001 12 19 | 704 | 0.5+ | 0.7+ | | |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2001 11 19 | 608 | 0.1− | 0.7− | 2001 12 19 | 704 | 0.1+ | 0.5+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.5+ | 2001 11 20 | 704 | (3.1+ | 2.1−) | 2001 12 19 | 644 | 0.0 | 0.7+ | | |
| 2001 10 19 | 608 | 0.6− | 0.3− | 2001 11 20 | 704 | (2.6+ | 2.1−) | 2001 12 19 | 704 | 0.2+ | 0.6+ | | |
| 2001 10 19 | 608 | 0.7− | 0.3− | 2001 11 20 | 704 | (3.1+ | 1.9−) | 2001 12 19 | 644 | 0.1− | 0.7+ | | |
| 2001 10 19 | 608 | 0.4− | 0.2− | 2001 11 20 | 704 | (2.6+ | 2.3−) | 2001 12 19 | 644 | 0.1− | 0.8+ | | |
| 2001 10 25 | 644 | 0.0 | 0.2− | 2001 11 20 | 704 | (2.7+ | 2.4−) | 2001 12 19 | 704 | 0.1+ | 0.7+ | | |
| 2001 10 25 | 644 | 0.0 | 0.3− | 2001 11 21 | 704 | 1.4+ | 0.0 | 2003 03 06 | 645 | 0.0 | 0.0 | | |
| 2001 10 25 | 644 | 0.3+ | 0.2− | 2001 11 21 | 704 | 1.3+ | 0.5− | 2003 03 06 | 645 | 0.0 | 0.1+ | | |
| 2001 11 09 | 704 | 0.1− | 0.6− | 2001 11 21 | 704 | 1.4+ | 0.0 | 2006 08 14 | E12 | 0.5− | 1.1+ | | |
| 2001 11 09 | 704 | 0.7− | 0.4− | 2001 11 21 | 704 | 1.4+ | 0.3− | 2006 08 14 | E12 | 0.2− | 0.0 | | |
| 2001 11 09 | 704 | 1.3− | 0.2+ | 2001 11 21 | 704 | 1.4+ | 0.2− | 2006 08 14 | E12 | 0.2− | 0.2+ | | |
| 2001 11 09 | 704 | 0.3− | 0.0 | 2001 11 22 | 644 | 0.1+ | 0.3+ | 2006 08 14 | E12 | 0.6− | 0.6+ | | |
| 2001 11 09 | 704 | 0.1− | 0.8− | 2001 11 22 | 644 | 0.1− | 0.5+ | 2006 11 11 | F84 | 0.1+ | 0.2+ | | |
| 2001 11 16 | 644 | 0.4− | 0.6+ | 2001 11 22 | 644 | 0.1+ | 0.5+ | 2006 11 11 | F84 | 0.0 | 0.0 | | |
| 2001 11 16 | 644 | 0.5− | 0.4+ | 2001 12 15 | 704 | 0.2− | 0.3+ | | | | | | |

**2001 TK$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.89919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22000892 | $\omega$ | 175.42044 | | +0.84025635 | −0.52618782 | |
| $a$ | 2.7175395 | $\Omega$ | 217.29171 | | +0.49034379 | +0.84038971 | |
| $e$ | 0.1136420 | $i$ | 12.46274 | | +0.23137034 | +0.12989039 | |
| $P$ | 4.48 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.4− | 0.4− | 2001 10 14 | 704 | 0.3− | 0.8− | 2001 11 11 | 691 | 0.1+ | 0.5+ | | |
| 1994 02 10 | 691 | 1.6+ | 0.8+ | 2001 10 14 | 704 | 0.1− | 0.1− | 2001 11 17 | 691 | 0.1+ | 0.3+ | | |
| 1994 02 10 | 691 | 1.0− | 0.1− | 2001 10 14 | 704 | 0.2− | 0.0 | 2001 11 17 | 691 | 0.0 | 0.0 | | |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2001 10 17 | 704 | 0.4+ | 0.9− | 2001 11 17 | 691 | 0.0 | 0.0 | | |
| 2001 09 25 | 704 | 0.3+ | 0.1− | 2001 10 17 | 704 | (0.6− | 1.8−) | 2004 05 14 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2001 10 17 | 704 | 0.7− | 1.5− | 2004 05 14 | 691 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | 0.4− | 0.4+ | 2001 10 17 | 704 | 0.8− | 1.3− | 2004 05 14 | 691 | 0.2+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.7+ | 2001 11 09 | 691 | 0.2− | 0.2+ | 2006 11 27 | 012 | 0.3− | 0.4+ | | |
| 2001 09 29 | 644 | 0.3+ | 0.2+ | 2001 11 09 | 691 | 0.1− | 0.0 | 2006 11 27 | 012 | 0.9+ | 0.1− | | |
| 2001 09 29 | 644 | 0.0 | 0.2+ | 2001 11 09 | 691 | 0.0 | 0.1+ | 2006 11 28 | 012 | 0.8− | 0.2+ | | |
| 2001 09 29 | 644 | 0.1− | 0.2+ | 2001 11 11 | 691 | 0.2+ | 0.5+ | 2006 11 28 | 012 | 0.3+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.5− | 1.2− | 2001 11 11 | 691 | 0.1+ | 0.7+ | | | | | | |

**2001 TP$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.24590 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17998186 | $\omega$ | 216.17822 | | +0.00011509 | −0.99473174 | |
| $a$ | 3.1068257 | $\Omega$ | 234.03564 | | +0.94465373 | +0.03373923 | |
| $e$ | 0.0608671 | $i$ | 7.27633 | | +0.32806906 | −0.09680096 | |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.8− | 0.4+ | 2001 10 17 | 704 | 0.1+ | 1.2− | 2006 09 14 | 691 | 0.1+ | 0.1− | | |
| 2001 09 17 | 704 | 0.5− | 0.7− | 2001 10 17 | 704 | 0.1− | 1.1− | 2006 09 14 | 691 | 0.0 | 0.1− | | |
| 2001 09 17 | 704 | 0.1− | 0.3− | 2001 10 18 | 704 | 1.4− | 0.4− | 2006 09 14 | 691 | 0.0 | 0.1− | | |
| 2001 09 26 | 704 | 0.6− | 0.4− | 2001 10 18 | 704 | 1.1+ | 0.2− | 2006 09 17 | 691 | 0.0 | 0.0 | | |
| 2001 09 26 | 704 | 0.7+ | 0.3+ | 2001 10 18 | 704 | 0.8+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.4+ | | |
| 2001 09 26 | 704 | 0.8+ | 0.7+ | 2001 10 18 | 704 | 0.8+ | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | | |
| 2001 09 26 | 704 | 0.1− | 0.5+ | 2001 10 18 | 704 | 1.1+ | 0.7+ | 2006 09 22 | 691 | 0.3+ | 0.2− | | |
| 2001 09 26 | 704 | 0.5− | 0.2+ | 2004 04 16 | 644 | 0.1− | 0.3− | 2006 09 22 | 691 | 0.2− | 0.3+ | | |
| 2001 10 14 | 704 | 0.9− | 0.1+ | 2004 04 16 | 644 | 0.4− | 0.7+ | 2006 09 22 | 691 | 0.1− | 0.4+ | | |
| 2001 10 14 | 704 | 0.2− | 0.6+ | 2004 04 16 | 644 | 0.5+ | 0.4− | 2006 09 25 | 691 | 0.1+ | 0.3− | | |
| 2001 10 14 | 704 | 0.1− | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2− | | |
| 2001 10 14 | 704 | 0.5− | 1.0+ | 2006 08 22 | 644 | 0.2− | 0.6− | 2006 09 25 | 691 | 0.2− | 0.1− | | |
| 2001 10 17 | 704 | 0.1+ | 1.1− | 2006 08 22 | 644 | 0.4− | 0.1− | | | | | | |

**2001 TS$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.05138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21095930 | $\omega$ | 187.26321 | | +0.88613805 | −0.46238895 | |
| $a$ | 2.7947112 | $\Omega$ | 200.36640 | | +0.42952336 | +0.84453547 | |
| $e$ | 0.1764710 | $i$ | 5.09653 | | +0.17397998 | +0.27010422 | |
| $P$ | 4.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.8− | 0.3+ | 2001 10 18 | 644 | 0.0 | 0.8− | 2001 11 20 | 704 | 0.7− | 0.7+ | | |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 10 18 | 644 | 0.1+ | 0.8− | 2001 11 20 | 704 | 0.5+ | 0.3+ | | |
| 2001 09 20 | 704 | 0.3− | 0.4− | 2001 10 22 | 704 | 0.9+ | 0.2+ | 2001 11 21 | 704 | 0.4− | 0.1− | | |
| 2001 09 24 | 704 | 0.8− | 0.5+ | 2001 10 22 | 704 | 1.1+ | 0.7+ | 2001 11 21 | 704 | 0.2− | 0.1+ | | |
| 2001 09 24 | 704 | 0.6+ | 0.5+ | 2001 10 22 | 704 | 0.6+ | 0.4− | 2001 11 21 | 704 | 0.9− | 0.8− | | |
| 2001 09 24 | 704 | 0.7+ | 1.0+ | 2001 10 23 | 704 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2001 09 24 | 704 | 0.5− | 0.7+ | 2001 10 23 | 704 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2001 10 07 | 644 | 0.5+ | 0.7+ | 2001 10 23 | 704 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.4− | | |
| 2001 10 07 | 644 | 0.2+ | 1.0+ | 2001 10 23 | 704 | 0.4+ | 0.6− | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2001 10 07 | 644 | 0.2+ | 0.6+ | 2001 10 23 | 704 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.8− | 0.1+ | 2001 10 24 | 704 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.4+ | 0.5− | 2001 10 24 | 704 | 0.4+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2001 10 24 | 704 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.3+ | | |
| 2001 10 14 | 704 | 0.1− | 0.3+ | 2001 10 24 | 704 | 0.3+ | 0.4− | 2006 11 22 | 691 | 0.1− | 0.1+ | | |
| 2001 10 14 | 704 | 0.2− | 0.3− | 2001 10 24 | 704 | 0.5+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.1+ | 0.1− | 2001 11 14 | 691 | 0.2− | 0.4− | 2006 12 01 | G96 | 0.6− | 0.7− | | |
| 2001 10 17 | 704 | (1.5− | 0.9+) | 2001 11 14 | 691 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.3− | 0.0 | | |
| 2001 10 17 | 704 | 0.4+ | 0.4+ | 2001 11 14 | 691 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.3− | | |
| 2001 10 17 | 704 | 0.4+ | 0.1+ | 2001 11 20 | 704 | 0.0 | 0.6+ | 2006 12 01 | G96 | 0.2− | 0.2− | | |
| 2001 10 17 | 704 | 0.3− | 0.3+ | 2001 11 20 | 704 | 1.1+ | 0.4− | | | | | | |
| 2001 10 18 | 644 | 0.1+ | 0.8− | 2001 11 20 | 704 | 0.2+ | 0.4+ | | | | | | |

**2001 TT$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.29191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18025634 | $\omega$ | 263.48938 | | −0.25616023 | −0.96499681 | |
| $a$ | 3.1036711 | $\Omega$ | 201.60754 | | +0.93623367 | −0.23320674 | |
| $e$ | 0.1027387 | $i$ | 8.78501 | | +0.24051704 | −0.11998236 | |
| $P$ | 5.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2001 10 18 | 644 | 1.1− | 0.0 | 2004 04 21 | 704 | 0.5− | 1.1+ |
| 2001 09 20 | 704 | 0.6+ | 0.3+ | 2001 10 23 | 704 | 1.1+ | 0.0 | 2006 11 11 | 291 | 0.1− | 0.5+ |
| 2001 09 20 | 704 | 0.7+ | 0.2+ | 2001 10 23 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 291 | 0.2+ | 0.2+ |
| 2001 10 14 | 704 | 0.7− | 0.3− | 2001 10 23 | 704 | 0.8+ | 0.0 | 2006 11 11 | 291 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | 0.6− | 0.1+ | 2001 10 23 | 704 | 0.8+ | 0.3+ | 2006 11 14 | 291 | 0.3+ | 0.1− |
| 2001 10 14 | 704 | 0.9− | 0.4+ | 2001 11 20 | 704 | 0.2− | 0.3+ | 2006 11 14 | 291 | 0.4+ | 0.4− |
| 2001 10 14 | 704 | 0.1+ | 1.0+ | 2001 11 20 | 704 | 0.5− | 0.4+ | 2006 11 14 | 291 | 0.1+ | 1.0− |
| 2001 10 17 | 704 | 0.9+ | 1.5+ | 2001 11 20 | 704 | 1.4− | 0.3− | 2006 11 21 | 291 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.5+ | 0.0 | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 21 | 291 | 0.3− | 0.0 |
| 2001 10 17 | 704 | 0.9+ | 0.0 | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 21 | 291 | 0.5− | 0.1− |
| 2001 10 18 | 644 | 1.2− | 0.2− | 2004 04 21 | 704 | 0.6+ | 1.3+ | | | | |
| 2001 10 18 | 644 | 1.2− | 0.3+ | 2004 04 21 | 704 | 0.4+ | 0.5+ | | | | |

**2001 TH$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.02871 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21246564 | $\omega$ | 94.23518 | | +0.96023745 | | +0.27320568 |
| $a$ | 2.7814862 | $\Omega$ | 249.91744 | | −0.27422668 | | +0.88436482 |
| $e$ | 0.1266669 | $i$ | 3.50809 | | −0.05238104 | | +0.37849376 |
| $P$ | 4.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1+ | 1.2+ | 2001 10 17 | 704 | 0.4− | 0.4− | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2001 10 17 | 704 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | (1.9+ | 0.8+) | 2001 10 18 | 644 | 1.1+ | 1.1+ | 2006 10 29 | G96 | 0.8+ | 0.0 |
| 2001 09 23 | 704 | 0.5+ | 0.7− | 2001 10 18 | 644 | 0.9+ | 1.0+ | 2006 10 29 | G96 | 0.3+ | 0.0 |
| 2001 09 23 | 704 | 0.4+ | 0.3+ | 2001 10 18 | 644 | 0.6+ | 1.2+ | 2006 11 18 | 691 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 1.0− | 0.2− | 2001 10 21 | 704 | 0.3− | 0.5+ | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2001 09 25 | 691 | 0.1− | 0.3− | 2001 10 21 | 704 | 0.3+ | 0.5− | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2001 09 25 | 691 | 0.2− | 0.1− | 2001 10 21 | 704 | 0.6− | 1.0− | 2006 11 18 | 704 | 0.1+ | 1.2+ |
| 2001 09 25 | 691 | 0.1− | 0.3− | 2001 10 21 | 704 | 0.6− | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.2+ |
| 2001 10 14 | 704 | 0.1+ | 0.2− | 2001 10 21 | 704 | 0.2− | 0.2+ | 2006 11 18 | 704 | 1.3+ | 0.7+ |
| 2001 10 14 | 704 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.1− | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.6− |
| 2001 10 14 | 704 | 0.7+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2001 10 14 | 704 | 1.0+ | 0.3− | 2006 10 17 | G96 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.9− | 0.4− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 1.0− | 1.3+ |
| 2001 10 17 | 704 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.0 |
| 2001 10 17 | 704 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.1− | | | | |

**2001 TN$_{88}$ = 2006 RV$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.93270 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18692037 | $\omega$ | 168.64260 | | +0.91645557 | | −0.39050302 |
| $a$ | 3.0294582 | $\Omega$ | 214.75388 | | +0.35408185 | | +0.89303905 |
| $e$ | 0.0871115 | $i$ | 8.80642 | | +0.18637392 | | +0.22358142 |
| $P$ | 5.27 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 15 | 691 | 0.5− | 0.2+ | 2001 10 14 | 704 | 0.0 | 0.2− | 2006 09 12 | 703 | 0.8− | 0.7+ |
| 1994 05 15 | 691 | 0.1+ | 0.0 | 2001 10 17 | 704 | 0.8+ | 0.2− | 2006 09 12 | 703 | 1.4− | 0.5+ |
| 1994 05 15 | 691 | 0.4+ | 0.1− | 2001 10 17 | 704 | 0.1+ | 0.7+ | 2006 09 12 | 703 | 0.5− | 0.1− |
| 2001 09 23 | 704 | 0.2− | 0.4+ | 2001 10 17 | 704 | 1.0+ | 1.0+ | 2006 09 16 | 644 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.5+ | 0.3− | 2001 10 19 | 644 | 0.1− | 0.4− | 2006 09 16 | 644 | 0.2− | 0.3+ |
| 2001 09 23 | 704 | 1.0+ | 0.6− | 2001 10 19 | 644 | 0.0 | 0.5− | 2006 09 16 | 644 | 0.2− | 0.4+ |
| 2001 09 23 | 704 | 0.3+ | 0.4+ | 2001 10 19 | 644 | 0.4− | 0.5− | 2006 09 18 | 703 | 1.4+ | 0.5− |
| 2001 09 23 | 704 | 0.3+ | 0.7− | 2001 10 25 | 644 | 0.5− | 0.0 | 2006 09 18 | 703 | 0.7+ | 1.1− |
| 2001 09 24 | 704 | 1.3+ | 0.1+ | 2001 10 25 | 644 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.2− |
| 2001 09 24 | 704 | 0.0 | 0.8+ | 2001 10 25 | 644 | 0.1− | 0.2− | 2006 09 18 | 703 | (1.6− | 0.8+) |
| 2001 09 24 | 704 | 0.0 | 1.1+ | 2001 11 21 | 704 | 1.2− | 0.7− | 2006 09 20 | 699 | 0.1+ | 1.1+ |
| 2001 09 24 | 704 | 0.9− | 1.3+ | 2001 11 21 | 704 | 0.8− | 0.1− | 2006 09 20 | 699 | 0.9+ | 0.7− |
| 2001 09 24 | 704 | 0.7+ | 0.1+ | 2001 11 21 | 704 | 0.5− | 0.2− | 2006 09 20 | 699 | 0.9+ | 0.0 |
| 2001 10 12 | 699 | 0.3− | 0.0 | 2001 11 21 | 704 | (0.1− | 2.2−) | 2006 09 20 | 699 | 0.2− | 0.3− |
| 2001 10 12 | 699 | 0.6+ | 0.8+ | 2004 03 14 | 644 | 0.4+ | 0.8+ | 2006 09 30 | 699 | 0.4− | 0.2− |
| 2001 10 12 | 699 | 0.4− | 0.6− | 2004 03 14 | 644 | 0.3+ | 1.0+ | 2006 09 30 | 699 | 0.6− | 0.8− |
| 2001 10 12 | 699 | 1.2− | 0.2− | 2004 03 14 | 644 | 0.0 | 1.0+ | 2006 09 30 | 699 | 0.6− | 0.2+ |
| 2001 10 14 | 704 | 0.1− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.5+ | 0.4− |
| 2001 10 14 | 704 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.7− | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.5+ |

**2001 TR$_{88}$ = 2006 SZ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.08495 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19747072 | $\omega$ | 122.56621 | | +0.93234592 | | +0.35554586 |
| $a$ | 2.9205697 | $\Omega$ | 216.72634 | | −0.35750390 | | +0.87934251 |
| $e$ | 0.2472519 | $i$ | 6.30894 | | −0.05405595 | | +0.31677104 |
| $P$ | 4.99 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 11 | 691 | 0.8+ | 0.3− | 2001 10 20 | 291 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.1+ | 1.4+ |
| 1991 10 11 | 691 | (4.6+ | 0.1+) | 2001 10 20 | 291 | 0.8− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | (1.8+ | 0.2+) | 2001 10 20 | 291 | (2.2− | 1.0−) | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | (2.6+ | 0.8+) | 2001 10 21 | 704 | 1.0− | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | (1.9+ | 0.1−) | 2001 10 21 | 704 | 0.2− | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | (2.0+ | 0.3+) | 2001 10 21 | 704 | 0.0 | 1.0+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | (2.4+ | 0.5+) | 2001 10 21 | 704 | 0.1− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 09 24 | 704 | 0.9+ | 0.9− | 2001 10 21 | 704 | 0.2+ | 1.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | 0.3+ | 1.2+ | 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2001 09 24 | 704 | 1.4+ | 0.8− | 2005 05 08 | G96 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 09 24 | 704 | 0.6+ | 1.0− | 2005 05 08 | G96 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 09 28 | 644 | 0.6− | 1.0+ | 2005 05 08 | G96 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 09 28 | 644 | 0.6− | 0.8+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2001 09 28 | 644 | 0.6− | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2001 10 11 | 644 | 0.8− | 0.4+ | 2006 09 17 | 691 | 0.5− | 0.7− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2001 10 11 | 644 | 0.6− | 0.3+ | 2006 09 18 | 699 | 1.1+ | 0.4− | 2006 10 17 | 703 | 1.0+ | 0.3− |
| 2001 10 11 | 644 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.4− | 2006 10 17 | 703 | 0.5+ | 1.0− |
| 2001 10 12 | 699 | (1.9− | 0.4−) | 2006 09 18 | 699 | 0.4+ | 1.4− | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2001 10 12 | 699 | (0.4− | 1.6+) | 2006 09 18 | 699 | 1.5+ | 0.4− | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 10 12 | 699 | 1.0− | 0.9− | 2006 09 22 | 683 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2001 10 12 | 699 | 0.4− | 0.7+ | 2006 09 22 | 683 | 0.1+ | 1.2− | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2001 10 14 | 704 | 0.1− | 0.4+ | 2006 09 22 | 683 | (2.5− | 2.7−) | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2001 10 14 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.7+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | 0.8− | 0.3− | 2006 09 25 | 704 | 0.4− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 10 14 | 704 | 0.2+ | 0.3− | 2006 09 25 | 704 | (0.5+ | 1.6+) | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2001 10 14 | 704 | 1.2+ | 1.4− | 2006 09 25 | 704 | 1.1− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.5− | 0.5− | 2006 09 25 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2001 10 17 | 704 | 0.6− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 0.3− | 0.7− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2001 10 19 | 644 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2001 10 19 | 644 | 0.3− | 0.2+ | 2006 09 29 | 704 | 1.0+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2001 10 19 | 644 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.9+ | 2006 11 27 | G96 | 0.3+ | 0.5− |

**2001 TH$_{89}$ = 2006 QP$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.39756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17899826 | $\omega$ | 110.60516 | | +0.99760241 | | −0.01372932 |
| $a$ | 3.1181967 | $\Omega$ | 250.23086 | | −0.01269467 | | +0.92719043 |
| $e$ | 0.1349579 | $i$ | 4.13336 | | +0.06803140 | | +0.37433863 |
| $P$ | 5.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.0 | 1.2+ | 2001 10 17 | 704 | 0.8− | 0.5+ | 2006 08 31 | 941 | 0.6− | 0.5− |
| 2001 09 10 | 704 | 0.3+ | 0.1+ | 2001 10 19 | 644 | 0.1+ | 1.1− | 2006 08 31 | 941 | 0.4− | 0.3− |
| 2001 09 10 | 704 | 0.0 | 0.4+ | 2001 10 19 | 644 | 0.2+ | 1.0− | 2006 08 31 | 941 | 0.4− | 0.2− |
| 2001 09 28 | 644 | 0.2+ | 0.1+ | 2001 10 19 | 644 | 0.2+ | 0.8− | 2006 08 31 | 941 | 0.2+ | 0.1− |
| 2001 09 28 | 644 | 0.1− | 0.2− | 2001 10 21 | 704 | 1.2− | 0.3− | 2006 08 31 | 941 | 0.2+ | 0.2− |
| 2001 09 28 | 644 | 0.0 | 0.0 | 2001 10 21 | 704 | 1.0+ | 0.5− | 2006 09 03 | 941 | 0.4+ | 0.3− |
| 2001 10 14 | 704 | 1.0+ | 0.4+ | 2001 10 21 | 704 | (1.9− | 0.1−) | 2006 09 03 | 941 | 0.7+ | 0.0 |
| 2001 10 14 | 704 | 0.1− | 0.4+ | 2001 10 21 | 704 | 1.0− | 0.7− | 2006 09 03 | 941 | 0.5+ | 0.2+ |
| 2001 10 14 | 704 | 1.0+ | 0.1− | 2001 10 21 | 704 | 0.8− | 0.1− | 2006 09 03 | 941 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.5+ | 0.3+ | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 03 | 941 | 0.3+ | 0.1− |
| 2001 10 14 | 704 | 0.7+ | 0.7+ | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 03 | 941 | 0.6+ | 0.6− |
| 2001 10 17 | 704 | 0.3+ | 0.8+ | 2006 08 18 | 644 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2001 10 17 | 704 | 1.0− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.2− | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.3+ |
| 2001 10 17 | 704 | 0.7− | 1.0+ | 2006 08 31 | 941 | 0.4− | 0.4− | 2006 11 18 | G96 | 0.2− | 0.5− |

**2001 TA$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.54706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29630251 | $\omega$ | 67.54173 | | +0.94342747 | −0.32807363 | |
| $a$ | 2.2283282 | $\Omega$ | 311.57432 | | +0.27566648 | +0.85664110 | |
| $e$ | 0.1011961 | $i$ | 3.68543 | | +0.18426234 | +0.39816293 | |
| $P$ | 3.33 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.0 | 0.4+ | 2001 10 21 | 704 | 0.3− | 1.7− | 2006 02 01 | 691 | 0.1− | 0.3+ |
| 2001 09 28 | 644 | 0.2+ | 0.4+ | 2001 10 21 | 704 | 0.5+ | 0.1− | 2006 02 01 | 691 | 0.4− | 0.2+ |
| 2001 09 28 | 644 | 0.4+ | 0.4+ | 2001 10 21 | 704 | 0.6+ | 0.0 | 2006 02 01 | 691 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.6− | 0.4− | 2001 10 24 | 704 | 0.0 | 0.0 | 2006 02 05 | G96 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.1+ | 0.2+ | 2001 10 24 | 704 | 0.9+ | 0.2+ | 2006 02 05 | G96 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2001 10 24 | 704 | 0.3+ | 0.3+ | 2006 02 05 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.4+ | 0.1− | 2001 10 24 | 704 | 0.1+ | 0.9+ | 2006 02 24 | G96 | 0.5+ | 0.1− |
| 2001 10 14 | 704 | 0.1− | 0.4− | 2001 10 24 | 704 | 0.2+ | 0.6+ | 2006 02 24 | G96 | 0.9+ | 0.1− |
| 2001 10 17 | 704 | 1.3− | 0.3+ | 2006 01 05 | G96 | 0.3− | 0.9− | 2006 02 24 | G96 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 1.0− | 0.0 | 2006 01 05 | G96 | 0.3− | 0.1+ | 2006 02 24 | G96 | 0.4+ | 0.0 |
| 2001 10 17 | 704 | 0.3− | 0.4− | 2006 01 05 | G96 | 0.4+ | 0.3+ | | | | |
| 2001 10 21 | 704 | 0.0 | 0.7− | 2006 01 05 | G96 | 0.2− | 0.0 | | | | |

**2001 TY$_{90}$ = 2006 WZ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.72136 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20912400 | $\omega$ | 89.67568 | | +0.62884511 | −0.77651658 | |
| $a$ | 2.8110385 | $\Omega$ | 321.26641 | | +0.68575568 | +0.57795959 | |
| $e$ | 0.1086612 | $i$ | 3.63749 | | +0.36646006 | +0.25096756 | |
| $P$ | 4.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 691 | 0.1+ | 0.1+ | 2001 10 17 | 704 | 0.3+ | 0.8+ | 2001 10 23 | 704 | 0.8− | 0.4− |
| 1998 01 07 | 691 | 0.2− | 0.1− | 2001 10 19 | 644 | 0.4− | 0.2− | 2001 10 23 | 704 | 0.0 | 0.0 |
| 1998 01 07 | 691 | 0.1+ | 0.1+ | 2001 10 19 | 644 | 0.2− | 0.2− | 2001 10 26 | 644 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 1.1+ | 0.0 | 2001 10 19 | 644 | 0.5− | 0.2− | 2001 10 26 | 644 | 0.1+ | 0.1− |
| 2001 10 14 | 704 | 0.3+ | 0.0 | 2001 10 20 | 644 | 0.6+ | 0.4− | 2001 10 26 | 644 | 0.6+ | 0.2+ |
| 2001 10 14 | 704 | 0.8+ | 0.5+ | 2001 10 20 | 644 | 0.5+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 1.0− | 0.1+ | 2001 10 20 | 644 | 0.3+ | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.5+ | 0.7+ | 2001 10 21 | 704 | 0.6− | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2001 10 17 | 704 | 0.8− | 0.5+ | 2001 10 21 | 704 | 1.0+ | 0.6+ | 2006 11 23 | 703 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.7− | 0.9− | 2001 10 21 | 704 | 0.3+ | 0.6− | 2006 11 23 | 703 | 0.2− | 0.7+ |
| 2001 10 17 | 704 | 0.8− | 0.3+ | 2001 10 21 | 704 | 0.7− | 0.5− | 2006 11 23 | 703 | 0.4− | 0.3+ |
| 2001 10 17 | 704 | 0.3− | 0.0 | 2001 10 23 | 704 | 0.2+ | 0.3+ | 2006 11 23 | 703 | 0.0 | 0.7+ |

**2001 TP$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.30888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18825240 | $\omega$ | 245.81065 | | −0.15261716 | −0.98520451 | |
| $a$ | 3.0151508 | $\Omega$ | 213.26271 | | +0.95047874 | −0.12470720 | |
| $e$ | 0.2065705 | $i$ | 8.17318 | | +0.27073634 | −0.11755931 | |
| $P$ | 5.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 1.3+ | 0.1− | 2001 10 19 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.5− | 0.2+ |
| 2001 10 14 | 704 | 0.4+ | 0.4− | 2001 10 23 | 691 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | 0.3+ | 0.3− | 2001 10 23 | 691 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.4+ | 0.1− |
| 2001 10 14 | 704 | 0.1− | 0.6− | 2001 10 23 | 691 | 0.3− | 0.5+ | 2006 10 21 | 691 | 0.1+ | 0.3+ |
| 2001 10 14 | 704 | 0.4− | 0.6+ | 2001 11 21 | 704 | 0.1− | 0.4− | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | (0.8− | 1.7+) | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.3+ | 0.1− |
| 2001 10 17 | 704 | 1.4− | 0.1− | 2001 11 21 | 704 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.4+ |
| 2001 10 17 | 704 | 1.2+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.6− | 2006 10 28 | G96 | 0.5+ | 0.9− |
| 2001 10 17 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2001 10 17 | 704 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.6− |
| 2001 10 19 | 644 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.8− |
| 2001 10 19 | 644 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.1− | | | | |

**2001 TY$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.59415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27205312 | $\omega$ | 110.24177 | | +0.99407932 | −0.08457632 | |
| $a$ | 2.3588495 | $\Omega$ | 254.65795 | | +0.05253556 | +0.92365374 | |
| $e$ | 0.1606343 | $i$ | 4.05619 | | +0.09511215 | +0.37377884 | |
| $P$ | 3.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 07 | 910 | 0.1− | 0.3+ | 2001 10 21 | 704 | 0.9− | 0.4− | 2001 11 15 | 691 | 0.5+ | 0.3+ |
| 1997 09 07 | 910 | 0.0 | 0.6+ | 2001 10 21 | 704 | 1.2− | 0.4− | 2001 11 17 | 704 | (3.0+ | 0.8−) |
| 1997 09 07 | 910 | 0.1− | 0.2+ | 2001 10 21 | 704 | 1.2− | 0.5− | 2001 11 17 | 704 | 0.8+ | 0.3− |
| 2001 08 28 | 644 | 0.8+ | 0.3+ | 2001 10 23 | 333 | 0.7− | 0.3− | 2001 11 17 | 704 | 0.4+ | 0.6− |
| 2001 08 28 | 644 | 0.4+ | 0.4+ | 2001 10 23 | 333 | 1.4− | 0.6− | 2001 11 17 | 704 | 0.2+ | 0.7− |
| 2001 08 28 | 644 | 0.4+ | 0.3+ | 2001 10 23 | 333 | 1.3− | 0.3− | 2001 11 17 | 704 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.7− | 0.6+ | 2001 10 23 | 333 | 0.0 | 0.6− | 2001 11 19 | 704 | 0.2+ | 0.4− |
| 2001 10 14 | 704 | 0.8− | 0.4+ | 2001 10 23 | 333 | 0.7− | 0.0 | 2001 11 19 | 704 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.9− | 0.2+ | 2001 10 23 | 333 | 0.4+ | 1.1− | 2001 11 19 | 704 | 0.4− | 0.5− |
| 2001 10 14 | 704 | 0.6− | 0.6+ | 2001 10 26 | 644 | 0.3+ | 1.2+ | 2001 11 19 | 704 | 1.0− | 0.6− |
| 2001 10 14 | 704 | 0.6− | 0.6+ | 2001 10 26 | 644 | 0.3+ | 0.8+ | 2001 11 19 | 704 | 0.8− | 0.9− |
| 2001 10 15 | 333 | 1.0− | 0.0 | 2001 10 26 | 644 | 0.7+ | 0.9+ | 2001 12 15 | 704 | 0.1+ | 1.7+ |
| 2001 10 15 | 333 | 1.0− | 0.0 | 2001 11 10 | 704 | 1.2+ | 0.5− | 2001 12 15 | 704 | 0.3− | 1.1+ |
| 2001 10 15 | 333 | 0.6− | 0.9− | 2001 11 10 | 704 | 0.8+ | 0.6− | 2001 12 15 | 704 | 0.6− | 1.0+ |
| 2001 10 17 | 704 | 0.5+ | 0.5+ | 2001 11 10 | 704 | 1.3+ | 1.0− | 2001 12 15 | 704 | 0.5− | 1.0+ |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2001 11 10 | 704 | 0.9+ | 1.4− | 2001 12 18 | 704 | 1.3− | 0.7− |
| 2001 10 17 | 704 | 0.6+ | 0.2− | 2001 11 10 | 704 | (2.5+ | 0.2+) | 2001 12 18 | 704 | 0.3− | 0.6− |
| 2001 10 17 | 704 | 0.0 | 0.3− | 2001 11 11 | 699 | 1.4+ | 0.2− | 2001 12 18 | 704 | 0.1+ | 0.5− |
| 2001 10 17 | 704 | 0.9− | 0.4− | 2001 11 11 | 699 | 0.9+ | 0.2− | 2001 12 18 | 704 | 0.3− | 0.9− |
| 2001 10 19 | 644 | 0.4+ | 0.4− | 2001 11 11 | 699 | 0.8+ | 0.8+ | 2001 12 18 | 704 | 0.2− | 0.3− |
| 2001 10 19 | 644 | 0.4+ | 0.4− | 2001 11 11 | 699 | 0.9+ | 0.1+ | 2006 01 24 | 691 | 0.5− | 0.8+ |
| 2001 10 19 | 644 | 0.3+ | 0.5− | 2001 11 12 | 691 | 0.1+ | 0.4+ | 2006 01 24 | 691 | 0.3− | 1.1− |
| 2001 10 20 | 644 | 0.5− | 0.3+ | 2001 11 12 | 691 | 0.1+ | 0.2+ | 2006 01 24 | 691 | 0.5+ | 0.2+ |
| 2001 10 20 | 644 | 0.4− | 0.1+ | 2001 11 12 | 691 | 0.2+ | 0.2+ | 2006 02 02 | 691 | 0.0 | 0.1+ |
| 2001 10 20 | 644 | 0.4− | 0.0 | 2001 11 15 | 691 | 0.4+ | 0.2+ | 2006 02 02 | 691 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 1.2− | 0.7− | 2001 11 15 | 691 | 0.5+ | 0.4+ | 2006 02 02 | 691 | 0.2+ | 0.1+ |

**2001 TP$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.81206 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19935124 | $\omega$ | 359.08945 | | +0.94121964 | +0.33559425 | |
| $a$ | 2.9021739 | $\Omega$ | 341.16174 | | −0.30916250 | +0.80990603 | |
| $e$ | 0.0967623 | $i$ | 6.84746 | | −0.13610343 | +0.48107040 | |
| $P$ | 4.94 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.1+ | 0.1+ | 2001 10 17 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 1996 11 17 | 691 | 0.2+ | 0.4− | 2001 10 17 | 704 | 0.5+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 1996 11 17 | 691 | 0.1− | 0.1+ | 2001 10 17 | 704 | 0.8+ | 0.7+ | 2006 10 27 | 703 | 0.6− | 0.5+ |
| 2001 09 26 | 704 | (4.7− | 0.4+) | 2001 11 10 | 704 | 0.5− | 0.7− | 2006 10 27 | 703 | 0.8− | 0.0 |
| 2001 09 26 | 704 | (5.4− | 0.3−) | 2001 11 10 | 704 | 1.2− | 0.4+ | 2006 10 27 | 703 | 0.7− | 1.1+ |
| 2001 09 26 | 704 | (5.5− | 0.2−) | 2001 11 10 | 704 | 0.7− | 1.4− | 2006 10 27 | 703 | 1.0+ | 0.3+ |
| 2001 10 14 | 704 | 0.5+ | 0.4− | 2001 11 10 | 704 | 0.3− | 1.0− | 2006 11 15 | 703 | 0.1+ | 0.9− |
| 2001 10 14 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.8+ | 2006 11 15 | 703 | 0.2− | 0.5− |
| 2001 10 14 | 704 | 0.2− | 0.9− | 2006 10 19 | 703 | 0.9+ | 0.8+ | 2006 11 15 | 703 | 0.9− | 0.3+ |
| 2001 10 14 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.4+ | 2006 11 15 | 703 | 0.7− | 0.7− |
| 2001 10 14 | 704 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.3+ | | | | |
| 2001 10 17 | 704 | 0.3− | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.1− | | | | |

**2001 TR$_{97}$ = 2006 UU$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.60562 | | | (2000.0) | | |
| $n$ | 0.19727848 | $\omega$ | 8.58102 | | +0.98391087 | −0.17858981 |
| $a$ | 2.9224667 | $\Omega$ | 1.73069 | | +0.15249700 | +0.82489355 |
| $e$ | 0.1177750 | $i$ | 9.54435 | | +0.09308095 | +0.53633600 |
| $P$ | 5.00 | $H$ | 15.6 | $G$ 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.4− | 0.4− | 2001 11 10 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 10 14 | 704 | 0.6− | 1.2− | 2001 11 10 | 704 | 0.9− | 1.0− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.4+ | 0.8− | 2006 10 04 | G96 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 1.0+ | 0.6− | 2006 10 04 | G96 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.9+ | 0.4− |
| 2001 10 17 | 704 | 0.6+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.4+ | 2006 10 27 | 703 | 0.5− | 0.4− |
| 2001 10 17 | 704 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.9+ |
| 2001 10 17 | 704 | 0.8+ | 0.2− | 2006 10 19 | A50 | 0.6+ | 0.2− | 2006 10 27 | 703 | 0.0 | 0.0 |
| 2001 11 10 | 704 | 0.3− | 1.4+ | 2006 10 19 | A50 | 0.4− | 0.3+ | | | | |

**2001 TO$_{101}$ = 2006 US$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.37795 | | | (2000.0) | | |
| $n$ | 0.19051290 | $\omega$ | 142.36219 | | +0.98394145 | +0.16046237 |
| $a$ | 2.9912528 | $\Omega$ | 208.69841 | | −0.17555549 | +0.94911527 |
| $e$ | 0.0897770 | $i$ | 9.36907 | | +0.03224118 | +0.27098345 |
| $P$ | 5.17 | $H$ | 15.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.6− | 0.1− | 2001 10 21 | 704 | 1.0+ | 0.7+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2001 09 28 | 644 | 0.2− | 0.2− | 2001 10 21 | 704 | 1.2+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2001 09 28 | 644 | 0.6− | 0.0 | 2001 10 21 | 704 | 1.0+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2001 10 11 | 644 | 0.2− | 0.3− | 2001 10 21 | 704 | 0.9+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.3− |
| 2001 10 11 | 644 | 0.4− | 0.3− | 2001 10 21 | 704 | 1.0+ | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2001 10 11 | 644 | 0.5− | 0.7− | 2001 10 23 | 704 | (0.2− | 2.3−) | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 10 15 | 704 | 0.4+ | 0.5− | 2001 10 23 | 704 | 0.7+ | 1.0− | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2001 10 15 | 704 | 0.5− | 0.5− | 2001 10 23 | 704 | (0.5+ | 1.7−) | 2006 10 28 | G96 | 0.2+ | 0.6− |
| 2001 10 15 | 704 | 0.3− | 0.6+ | 2001 10 23 | 704 | (1.1+ | 1.9−) | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2001 10 15 | 704 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2001 10 17 | 704 | 0.3− | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.6− | 0.4+ |
| 2001 10 17 | 704 | 1.2− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1− | | | | |
| 2001 10 17 | 704 | 0.9− | 0.9+ | 2006 10 21 | 691 | 0.3− | 0.1− | | | | |

**2001 TQ$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 158.15091 | | | (2000.0) | | |
| $n$ | 0.28240274 | $\omega$ | 262.46830 | | +0.98817528 | +0.10182144 |
| $a$ | 2.3008596 | $\Omega$ | 91.63784 | | −0.04915837 | +0.91858894 |
| $e$ | 0.3161414 | $i$ | 6.58548 | | −0.14523452 | +0.38187269 |
| $P$ | 3.49 | $H$ | 17.7 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 29 | 644 | 0.5− | 1.0+ | 2001 09 12 | 704 | 0.3− | 0.1− | 2001 10 23 | 644 | 0.2+ | 0.3+ |
| 2001 07 29 | 644 | 0.1+ | 0.7+ | 2001 09 12 | 704 | 0.4+ | 1.0− | 2001 10 23 | 644 | 0.3+ | 0.4+ |
| 2001 07 29 | 644 | 0.2+ | 0.8+ | 2001 10 07 | 644 | 0.2− | 1.0+ | 2001 10 23 | 644 | 0.3+ | 0.3+ |
| 2001 08 12 | 644 | 0.1− | 0.4− | 2001 10 07 | 644 | 0.2− | 0.6+ | 2005 12 26 | 691 | 0.2− | 0.0 |
| 2001 08 12 | 644 | 0.1− | 0.5− | 2001 10 07 | 644 | 0.2− | 0.8+ | 2005 12 26 | 691 | 0.1+ | 0.1− |
| 2001 08 12 | 644 | 0.1− | 0.8− | 2001 10 19 | 699 | 0.5+ | 1.1− | 2005 12 26 | 691 | 0.1+ | 0.6+ |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2001 10 19 | 699 | 0.3− | 0.0 | 2005 12 30 | 691 | 0.4− | 0.3− |
| 2001 09 12 | 704 | 0.2+ | 0.2+ | 2001 10 19 | 699 | 0.1− | 0.3− | 2005 12 30 | 691 | 0.0 | 0.2− |
| 2001 09 12 | 704 | 0.4+ | 0.6− | 2001 10 19 | 699 | 0.5− | 1.0− | 2005 12 30 | 691 | 0.4+ | 0.2+ |

**2001 TJ$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.84854 | | | (2000.0) | | |
| $n$ | 0.17485136 | $\omega$ | 356.51060 | | +0.51231139 | −0.82040462 |
| $a$ | 3.1673061 | $\Omega$ | 62.52067 | | +0.79470041 | +0.34079670 |
| $e$ | 0.2668863 | $i$ | 16.63098 | | +0.32555844 | +0.45912294 |
| $P$ | 5.64 | $H$ | 14.6 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.2− | 0.3+ | 2001 11 12 | 704 | 0.7+ | 0.4− | 2002 01 08 | 704 | 0.3− | 1.2+ |
| 2001 09 17 | 704 | 0.5− | 0.4− | 2001 11 19 | 704 | 0.6− | 0.1− | 2002 02 08 | 704 | 0.3+ | 0.1+ |
| 2001 09 17 | 704 | 0.7+ | 0.0 | 2001 11 19 | 704 | 0.2− | 0.6− | 2002 02 08 | 704 | 0.2− | 0.1− |
| 2001 09 17 | 704 | 0.4− | 1.0+ | 2001 11 19 | 704 | 0.4− | 0.5− | 2002 02 08 | 704 | 0.4− | 0.2+ |
| 2001 09 26 | 704 | 1.3+ | 1.3+ | 2001 11 19 | 704 | 0.3− | 0.3− | 2002 02 08 | 704 | 0.5− | 0.3− |
| 2001 09 26 | 704 | 0.7+ | 0.2− | 2001 11 19 | 704 | 0.6− | 0.4− | 2002 03 05 | 704 | 1.2− | 0.5− |
| 2001 09 26 | 704 | 1.1+ | 0.6− | 2001 11 24 | 704 | 0.1+ | 0.2− | 2002 03 05 | 704 | 0.9− | 0.4+ |
| 2001 09 26 | 704 | 1.4+ | 0.6− | 2001 11 24 | 704 | 0.2+ | 0.2− | 2002 03 05 | 704 | 0.1− | 0.3+ |
| 2001 09 26 | 704 | 0.0 | 0.4− | 2001 11 24 | 704 | 0.4+ | 0.0 | 2002 03 05 | 704 | 0.8+ | 1.3+ |
| 2001 10 13 | 704 | 0.3+ | 0.1+ | 2001 11 24 | 704 | 0.4+ | 0.3+ | 2002 03 05 | 704 | 0.2− | 1.2+ |
| 2001 10 13 | 704 | 0.1+ | 0.6− | 2001 11 24 | 704 | 0.4+ | 0.6+ | 2003 04 09 | 644 | 0.3− | 0.2− |
| 2001 10 13 | 704 | 1.0+ | 0.4− | 2001 12 09 | 704 | 1.1− | 0.1+ | 2003 04 09 | 644 | 0.1+ | 0.6+ |
| 2001 10 13 | 704 | 1.1− | 0.7− | 2001 12 09 | 704 | 1.0− | 0.5− | 2003 04 09 | 644 | 0.4+ | 0.6+ |
| 2001 10 13 | 704 | 1.1+ | 0.7+ | 2001 12 09 | 704 | 0.8− | 0.2− | 2006 08 17 | 644 | 0.4− | 0.1+ |
| 2001 10 18 | 704 | 0.4− | 0.7− | 2001 12 09 | 704 | 0.9− | 0.4− | 2006 08 17 | 644 | 0.3− | 0.7+ |
| 2001 10 18 | 704 | 0.6+ | 1.1− | 2001 12 09 | 704 | 0.8− | 0.4− | 2006 08 17 | 644 | 0.6− | 0.3+ |
| 2001 10 18 | 704 | 0.7+ | 0.8− | 2001 12 17 | 704 | (2.4− | 2.2+) | 2006 08 17 | 644 | 0.4− | 0.3+ |
| 2001 10 18 | 704 | 0.1+ | 0.7− | 2001 12 17 | 704 | (2.7− | 2.3+) | 2006 08 17 | 644 | 0.4− | 0.5+ |
| 2001 10 26 | 704 | 0.4+ | 0.1− | 2001 12 17 | 704 | (2.7− | 2.2+) | 2006 08 17 | 644 | 0.3− | 0.5+ |
| 2001 10 26 | 704 | 0.4+ | 0.2+ | 2001 12 17 | 704 | (2.4− | 2.2+) | 2006 09 28 | E12 | 0.2− | 0.3+ |
| 2001 10 26 | 704 | 0.5+ | 0.2+ | 2001 12 17 | 704 | (2.7− | 2.1+) | 2006 09 28 | E12 | 0.2+ | 0.1+ |
| 2001 10 27 | 704 | 0.2− | 0.1− | 2001 12 21 | 735 | 0.3− | 0.2+ | 2006 09 28 | E12 | 0.2+ | 0.1− |
| 2001 10 27 | 704 | 0.6− | 0.2− | 2001 12 21 | 735 | 0.1+ | 0.1− | 2006 09 28 | E12 | 0.4− | 0.1− |
| 2001 10 27 | 704 | 0.3− | 0.1+ | 2001 12 21 | 735 | 0.5− | 0.3− | 2006 10 09 | E12 | 0.1+ | 0.5+ |
| 2001 11 09 | 704 | 0.1− | 0.1+ | 2001 12 22 | 704 | 0.5− | 0.0 | 2006 10 09 | E12 | (0.1+ | 1.9+) |
| 2001 11 09 | 704 | 0.5+ | 0.1− | 2001 12 22 | 704 | 0.7− | 0.1− | 2006 10 09 | E12 | 0.2− | 0.2− |
| 2001 11 09 | 704 | 0.1− | 0.0 | 2001 12 22 | 704 | 0.9− | 0.1− | 2006 10 09 | E12 | 0.2+ | 0.7+ |
| 2001 11 09 | 704 | 0.2+ | 0.0 | 2001 12 22 | 704 | 0.8− | 0.2− | 2006 10 28 | E12 | 0.6+ | 0.2− |
| 2001 11 09 | 704 | 0.3+ | 0.2− | 2001 12 22 | 704 | 0.5− | 0.4− | 2006 10 28 | E12 | 0.7+ | 0.3− |
| 2001 11 12 | 704 | 0.9+ | 0.1+ | 2002 01 08 | 704 | 0.0 | 1.4+ | 2006 10 28 | E12 | 1.0− | 0.6+ |
| 2001 11 12 | 704 | 1.2+ | 0.2− | 2002 01 08 | 704 | 0.3− | 1.5+ | 2006 10 28 | E12 | 0.4− | 1.0+ |
| 2001 11 12 | 704 | 1.1+ | 0.2+ | 2002 01 08 | 704 | 0.2− | 1.2+ | | | | |
| 2001 11 12 | 704 | 1.5+ | 0.5− | 2002 01 08 | 704 | 0.2+ | 1.4+ | | | | |

**2001 TL$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.24480 | | | (2000.0) | | |
| $n$ | 0.19852345 | $\omega$ | 82.46662 | | +0.96375942 | −0.25561102 |
| $a$ | 2.9102358 | $\Omega$ | 292.31865 | | +0.20040968 | +0.88264284 |
| $e$ | 0.1420955 | $i$ | 4.73476 | | +0.17607877 | +0.39446753 |
| $P$ | 4.96 | $H$ | 16.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.2+ | 0.6− | 2001 10 14 | 704 | 1.8− | 0.1+ | 2001 12 18 | 695 | 0.1+ | 0.3− |
| 2001 09 28 | 644 | 0.7+ | 0.8− | 2001 10 14 | 704 | 1.2− | 0.6+ | 2001 12 18 | 695 | 0.1− | 0.1+ |
| 2001 09 28 | 644 | 0.4+ | 0.5− | 2001 10 14 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 10 12 | 599 | 0.2− | 0.2+ | 2001 10 14 | 704 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3− |
| 2001 10 12 | 599 | 0.2− | 0.3+ | 2001 10 18 | 704 | 0.5+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.6− |
| 2001 10 12 | 599 | 0.1+ | 0.4+ | 2001 10 18 | 704 | 1.0+ | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2001 10 12 | 599 | 0.2− | 0.3+ | 2001 10 18 | 704 | 0.9+ | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 10 13 | 599 | 0.2− | 0.1− | 2001 10 18 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 10 13 | 599 | 0.2− | 0.2− | 2001 12 18 | 695 | 0.1+ | 0.2+ | | | | |
| 2001 10 13 | 599 | 0.1+ | 0.6− | 2001 12 18 | 695 | 0.1− | 0.3− | | | | |

**2001 TC$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.21742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18249399 | $\omega$ | 53.87375 | | +0.55299997 | −0.83311109 | |
| $a$ | 3.0782484 | $\Omega$ | 2.62508 | | +0.66827331 | +0.43575829 | |
| $e$ | 0.0528844 | $i$ | 13.65712 | | +0.49759604 | +0.34064735 | |
| $P$ | 5.40 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 699 | 0.8+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 1.2− | 0.2+ |
| 2001 10 13 | 699 | 0.9− | 1.0− | 2006 08 27 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 10 13 | 699 | 0.8− | 0.4− | 2006 09 16 | 699 | 0.7+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2001 10 13 | 699 | 0.4− | 0.6− | 2006 09 16 | 699 | 1.0+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2001 10 14 | 704 | 0.7+ | 0.6+ | 2006 09 16 | 699 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.4− | 0.0 | 2006 09 16 | 699 | 0.3− | 0.8+ | 2006 10 16 | 703 | 0.1− | 1.0+ |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2006 09 19 | 699 | (0.3− | 1.5−) | 2006 10 16 | 703 | 0.5+ | 0.9− |
| 2001 10 18 | 704 | 0.2+ | 0.2− | 2006 09 19 | 703 | (1.8+ | 0.8−) | 2006 10 16 | 703 | (0.8− | 2.0+) |
| 2001 10 18 | 704 | 0.5+ | 0.0 | 2006 09 19 | 699 | 1.3− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.8+ |
| 2001 10 18 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 703 | 0.3+ | 0.7+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.6− | 0.1− | 2006 09 19 | 703 | 0.7− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.6− |
| 2001 10 21 | 704 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.7− |
| 2001 10 21 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.6+ | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2001 10 21 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 11 11 | 699 | 0.1+ | 0.9+ | 2006 09 20 | 704 | (2.0− | 2.0+) | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2001 11 11 | 699 | 0.5+ | 0.5− | 2006 09 20 | 644 | 0.8− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2001 11 11 | 699 | 0.1− | 0.3+ | 2006 09 20 | 704 | 1.3− | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2001 11 11 | 699 | 0.9− | 1.0+ | 2006 09 20 | 704 | (2.4− | 0.9+) | 2006 10 23 | 644 | 0.4+ | 0.0 |
| 2001 11 11 | 644 | 0.4+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 11 11 | 644 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2001 11 11 | 644 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.6− | 0.6− |
| 2004 03 31 | 704 | 0.8+ | 0.8+ | 2006 09 22 | 704 | 0.5− | 0.5+ | 2006 10 24 | 644 | 0.7+ | 0.2− |
| 2004 03 31 | 704 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.9+ | 0.2− | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2004 03 31 | 704 | 0.1− | 1.1+ | 2006 09 22 | 704 | 0.2− | 0.4− | 2006 10 24 | 644 | 0.0 | 0.5− |
| 2004 03 31 | 704 | 0.3+ | 1.0+ | 2006 09 25 | 699 | 0.8+ | 0.2− | 2006 10 24 | 644 | 0.1− | 0.5+ |
| 2004 03 31 | 704 | 0.4+ | 0.5− | 2006 09 25 | 699 | (1.4+ | 2.0+) | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2006 08 22 | 644 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.6− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 08 22 | 644 | 0.6+ | 0.2− | 2006 09 25 | 699 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2006 08 22 | 644 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.7− | 0.1+ | | | | |

**2001 TH$_{109}$ = 2006 QN$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.50403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17913332 | $\omega$ | 64.16700 | | +0.56718682 | +0.80745265 | |
| $a$ | 3.1166291 | $\Omega$ | 241.34002 | | −0.80623661 | +0.50413538 | |
| $e$ | 0.0483353 | $i$ | 10.65437 | | −0.16817146 | +0.30637842 | |
| $P$ | 5.50 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 699 | 0.4+ | 0.2− | 2001 11 24 | 704 | 0.7+ | 0.5+ | 2006 09 15 | 704 | 0.9− | 0.1− |
| 2001 10 13 | 699 | (2.3− | 0.6−) | 2001 11 24 | 704 | 0.3+ | 0.3− | 2006 09 15 | 704 | 0.2+ | 0.1− |
| 2001 10 13 | 699 | 0.8+ | 0.3− | 2004 03 17 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.3+ | 0.2− |
| 2001 10 13 | 699 | 1.0+ | 0.6+ | 2004 03 17 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 644 | 0.3+ | 0.5− |
| 2001 10 14 | 704 | 0.9− | 0.3+ | 2004 03 17 | 704 | 0.4− | 0.1− | 2006 09 16 | 644 | 0.1+ | 0.3− |
| 2001 10 14 | 704 | 0.3+ | 0.0 | 2004 03 17 | 704 | 0.0 | 0.6− | 2006 09 27 | 703 | 0.4− | 0.1+ |
| 2001 10 14 | 704 | 0.4+ | 0.2+ | 2004 03 17 | 704 | (2.2+ | 0.7+) | 2006 09 27 | 703 | 0.6− | 0.6− |
| 2001 10 14 | 704 | 0.6− | 1.2+ | 2005 01 26 | 809 | 0.1− | 0.1+ | 2006 09 27 | 703 | 1.4− | 0.4− |
| 2001 10 18 | 704 | 0.2− | 0.9− | 2005 01 26 | 809 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.6− | 0.6− |
| 2001 10 18 | 704 | 0.4+ | 1.0− | 2005 01 26 | 809 | 0.0 | 0.1+ | 2006 10 01 | 703 | 1.3+ | 0.9+ |
| 2001 10 18 | 704 | 0.2− | 0.1+ | 2006 08 29 | 699 | 0.4+ | 0.3− | 2006 10 01 | 703 | 0.9+ | 0.5− |
| 2001 10 21 | 704 | 0.5− | 0.6+ | 2006 08 29 | 699 | 0.5+ | 0.2− | 2006 10 01 | 703 | 0.4− | 1.1+ |
| 2001 10 21 | 704 | 0.5− | 0.8− | 2006 08 29 | 699 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.2+ | 0.8+ |
| 2001 10 21 | 704 | 1.3− | 0.6+ | 2006 08 29 | 699 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.4− | 0.1+ | 2006 08 31 | 704 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.3− |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2006 08 31 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.5+ | 0.0 |
| 2001 11 10 | 704 | 0.5+ | 0.2+ | 2006 08 31 | 704 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 11 10 | 704 | 0.6+ | 0.4− | 2006 08 31 | 704 | 0.2+ | 1.2− | 2006 10 11 | 644 | 0.7+ | 0.0 |
| 2001 11 10 | 644 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2001 11 10 | 644 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.7+ |
| 2001 11 10 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.8+ | 0.0 |
| 2001 11 10 | 644 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.4− | 2006 10 17 | 703 | 1.5− | 0.9+ |
| 2001 11 10 | 704 | 0.2− | 0.8− | 2006 09 15 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.2− | 0.1+ |
| 2001 11 24 | 704 | 0.8+ | 0.3+ | 2006 09 15 | 704 | (0.2+ | 1.6−) | | | | |
| 2001 11 24 | 704 | (1.1+ | 1.6+) | 2006 09 15 | 704 | 0.2+ | 0.4+ | | | | |

**2001 TM$_{109}$ = 2006 WQ$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.08540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21174472 | $\omega$ | 76.45691 | | +0.83191191 | +0.54482464 | |
| $a$ | 2.7877960 | $\Omega$ | 250.43591 | | −0.54248137 | +0.75856986 | |
| $e$ | 0.2223028 | $i$ | 6.41647 | | −0.11677555 | +0.35740435 | |
| $P$ | 4.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | 1.3+ | 0.7+ | 2001 10 23 | 704 | 0.4+ | 0.5+ | 2001 11 17 | 704 | 0.1+ | 1.0+ |
| 2001 09 22 | 699 | 0.2+ | 0.0 | 2001 10 23 | 704 | 0.3+ | 0.2+ | 2001 11 17 | 704 | 0.2+ | 0.3+ |
| 2001 09 22 | 699 | (1.8+ | 0.3+) | 2001 10 23 | 704 | 0.1+ | 0.1+ | 2001 11 17 | 704 | 0.6+ | 1.0+ |
| 2001 09 22 | 699 | 0.3− | 0.6− | 2001 10 23 | 704 | 0.2+ | 0.2− | 2001 11 17 | 704 | 0.7+ | 0.9+ |
| 2001 10 13 | 699 | (1.8− | 1.5−) | 2001 10 23 | 704 | 0.8+ | 0.3+ | 2001 11 17 | 704 | (1.3+ | 1.8+) |
| 2001 10 13 | 699 | 0.9− | 0.1+ | 2001 10 23 | 704 | 0.1− | 0.2− | 2001 11 19 | 704 | 0.5− | 0.0 |
| 2001 10 13 | 699 | 0.4− | 0.1− | 2001 10 24 | 704 | 0.2+ | 0.0 | 2001 11 19 | 704 | 0.4− | 0.4+ |
| 2001 10 13 | 699 | 0.0 | 0.6− | 2001 10 24 | 704 | 0.5− | 0.3+ | 2001 11 19 | 704 | 0.9− | 0.7+ |
| 2001 10 14 | 704 | 0.1+ | 0.1− | 2001 10 24 | 704 | 0.2− | 0.3− | 2004 03 16 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.1− | 0.5− | 2001 10 24 | 704 | 0.1− | 0.1− | 2004 03 16 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.2+ | 0.2− | 2001 10 24 | 704 | 0.3− | 0.3− | 2004 03 16 | 691 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 0.1− | 0.2− | 2001 10 25 | 333 | 0.5− | 0.4− | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2001 10 14 | 704 | 0.7− | 0.3− | 2001 10 25 | 333 | 0.6− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 10 18 | 704 | 0.3+ | 0.1+ | 2001 10 25 | 333 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 10 18 | 704 | 0.5+ | 0.3+ | 2001 11 10 | 704 | 0.1+ | 0.7− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2001 10 18 | 704 | 0.3+ | 0.7+ | 2001 11 10 | 704 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.5− | 0.4− | 2001 11 10 | 704 | 0.5+ | 0.4− | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2001 11 10 | 704 | 0.5− | 0.8− | 2006 12 01 | 691 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 0.0 | 0.4− | 2001 11 11 | 699 | 0.4− | 0.3− | 2006 12 01 | 691 | 0.4+ | 0.3− |
| 2001 10 23 | 704 | 0.2+ | 0.7− | 2001 11 11 | 699 | 0.1− | 0.4+ | 2006 12 01 | 691 | 0.3− | 0.6+ |
| 2001 10 23 | 704 | 0.0 | 1.0+ | 2001 11 11 | 699 | 0.5+ | 0.4+ | | | | |
| 2001 10 23 | 704 | 0.0 | 0.2− | 2001 11 11 | 699 | 0.1− | 0.8+ | | | | |

**2001 TZ$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.73115 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22530671 | $\omega$ | 81.91883 | | +0.99891376 | +0.00687123 | |
| $a$ | 2.6747711 | $\Omega$ | 277.67884 | | −0.02488872 | +0.91484034 | |
| $e$ | 0.1204632 | $i$ | 2.66549 | | +0.03939357 | +0.40375727 | |
| $P$ | 4.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 16 | 691 | 1.9+ | 0.4− | 2001 10 23 | 704 | 0.1− | 0.3+ | 2005 07 30 | 644 | 0.1+ | 0.3+ |
| 1994 01 16 | 691 | 0.5− | 0.8+ | 2001 10 23 | 704 | 0.6− | 0.3+ | 2005 07 30 | 644 | 0.1+ | 0.3+ |
| 1994 01 16 | 691 | 0.5− | 0.9− | 2001 10 23 | 704 | 1.0− | 0.8− | 2005 09 13 | 691 | 0.1+ | 0.2+ |
| 1999 03 20 | 645 | 0.1− | 0.2+ | 2001 10 23 | 704 | 0.1+ | 0.1+ | 2005 09 13 | 691 | 0.1− | 0.2+ |
| 1999 03 20 | 645 | 0.1− | 0.1+ | 2001 10 23 | 704 | 0.0 | 0.6+ | 2005 09 13 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.1+ | 0.7+ | 2001 10 23 | 704 | 0.4+ | 0.2+ | 2005 09 25 | 691 | 0.1− | 0.4+ |
| 2001 10 14 | 704 | 0.7+ | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 1.2+ | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 09 25 | 691 | 0.0 | 0.3+ |
| 2001 10 18 | 704 | (0.5+ | 2.3−) | 2003 01 28 | 645 | 0.1+ | 0.1+ | 2005 10 06 | 691 | 0.2− | 0.3+ |
| 2001 10 18 | 704 | (0.2+ | 2.3−) | 2003 01 28 | 645 | 0.1+ | 0.1+ | 2005 10 06 | 691 | 0.1− | 0.5+ |
| 2001 10 18 | 704 | 0.5− | 1.5− | 2004 05 09 | 691 | 0.3+ | 0.1+ | 2005 10 06 | 691 | 0.5− | 0.0 |
| 2001 10 21 | 704 | 0.2− | 0.1+ | 2004 05 09 | 691 | 0.2+ | 0.2+ | 2005 11 01 | G96 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2004 05 09 | 691 | 0.0 | 0.0 | 2005 11 01 | G96 | 0.5− | 0.2+ |
| 2001 10 21 | 704 | 0.4− | 0.3− | 2005 07 30 | 644 | 0.5+ | 0.4+ | 2005 11 01 | G96 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.4− | 0.1− | 2005 07 30 | 644 | 0.1+ | 0.4+ | 2005 11 01 | G96 | 0.0 | 0.3− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.9− | 0.5− | 2005 07 30 | 644 | 0.2+ | 0.2+ | |
| 2001 10 23 | 704 | 0.7− | 1.0− | 2005 07 30 | 644 | 0.3+ | 0.3+ | |

**2001 TA$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.42776 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21221891 | $\omega$ | 97.90602 | | +0.98348622 | +0.14277274 | |
| $a$ | 2.7836417 | $\Omega$ | 253.93707 | | −0.17408872 | +0.91429816 | |
| $e$ | 0.3129835 | $i$ | 6.64648 | | +0.04947697 | +0.37904462 | |
| $P$ | 4.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 31 | 691 | 0.4− | 0.5− | 2001 10 27 | 704 | 0.8+ | 0.2+ | 2001 12 10 | 704 | 0.2− | 0.8+ |
| 1998 01 31 | 691 | (4.3+ | 1.7−) | 2001 10 27 | 704 | 0.6+ | 0.2− | 2001 12 10 | 704 | 0.5+ | 0.8+ |
| 1998 01 31 | 691 | 0.2+ | 0.0 | 2001 11 10 | 704 | 0.2+ | 0.1+ | 2001 12 10 | 704 | 0.2+ | 0.7+ |
| 2001 08 25 | 704 | 0.9− | 0.7− | 2001 11 10 | 704 | 0.3− | 0.3− | 2001 12 10 | 704 | 0.1+ | 0.7+ |
| 2001 08 25 | 704 | 0.6− | 0.1− | 2001 11 10 | 704 | 0.3− | 0.0 | 2001 12 10 | 704 | 0.1− | 0.2+ |
| 2001 08 25 | 704 | 0.7− | 0.2− | 2001 11 10 | 704 | 0.4+ | 0.3− | 2001 12 15 | 704 | 0.2− | 1.2− |
| 2001 09 21 | 644 | 0.3− | 0.2− | 2001 11 10 | 704 | 1.7− | 0.8− | 2001 12 15 | 704 | 0.4− | 1.6− |
| 2001 09 21 | 644 | 0.3+ | 0.1− | 2001 11 12 | 704 | 0.3− | 0.3+ | 2001 12 15 | 704 | 0.5− | 1.7− |
| 2001 09 21 | 644 | 0.1+ | 0.0 | 2001 11 12 | 704 | 0.5− | 0.0 | 2001 12 15 | 704 | 0.3− | 0.9− |
| 2001 10 12 | 699 | 0.5+ | 0.1+ | 2001 11 12 | 704 | 0.1− | 0.1+ | 2001 12 15 | 704 | (0.8− | 2.2−) |
| 2001 10 12 | 699 | 0.3+ | 0.9− | 2001 11 12 | 704 | 0.2− | 0.2+ | 2001 12 18 | 704 | 0.3− | 0.4+ |
| 2001 10 12 | 699 | 1.1+ | 0.4− | 2001 11 12 | 704 | 0.6− | 0.6+ | 2001 12 18 | 704 | 1.5− | 0.9+ |
| 2001 10 12 | 699 | 0.4+ | 0.2− | 2001 11 17 | 644 | 0.1− | 0.3− | 2001 12 18 | 704 | 1.3+ | 0.1− |
| 2001 10 14 | 704 | 0.7+ | 1.0− | 2001 11 17 | 644 | 0.3− | 0.1+ | 2001 12 18 | 704 | 0.2− | 0.1− |
| 2001 10 14 | 704 | 0.7+ | 0.8− | 2001 11 17 | 644 | 0.2− | 0.1− | 2001 12 18 | 704 | 1.3+ | 1.4− |
| 2001 10 14 | 704 | 0.3+ | 0.6− | 2001 11 19 | 704 | 0.1− | 0.7+ | 2001 12 19 | 704 | 0.5− | 0.3+ |
| 2001 10 14 | 704 | 0.7+ | 0.6− | 2001 11 19 | 704 | 0.2− | 0.7+ | 2001 12 19 | 704 | 0.4+ | 0.3− |
| 2001 10 14 | 704 | 0.9+ | 0.6− | 2001 11 19 | 704 | 0.2− | 0.7+ | 2001 12 19 | 704 | 1.2− | 1.3− |
| 2001 10 18 | 704 | 0.1− | 0.7+ | 2001 11 19 | 704 | 0.2− | 0.5+ | 2001 12 19 | 644 | 0.3+ | 1.0+ |
| 2001 10 18 | 704 | 0.1+ | 0.3+ | 2001 11 19 | 704 | 0.3− | 0.7+ | 2001 12 19 | 704 | 1.1+ | 0.1+ |
| 2001 10 18 | 704 | 0.0 | 0.2+ | 2001 11 24 | 704 | 0.1+ | 0.0 | 2001 12 19 | 644 | 0.0 | 1.1+ |
| 2001 10 21 | 704 | 0.1+ | 0.2− | 2001 11 24 | 704 | 0.1+ | 0.2− | 2001 12 19 | 644 | 0.1− | 0.8+ |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2001 11 24 | 704 | 0.1+ | 0.2+ | 2001 12 19 | 704 | 1.2+ | 0.0 |
| 2001 10 21 | 704 | 0.2− | 0.5− | 2001 11 24 | 704 | 0.4+ | 0.2+ | 2002 01 06 | 644 | 0.3− | 0.5+ |
| 2001 10 21 | 704 | 0.1− | 0.3− | 2001 11 24 | 704 | 0.2+ | 0.7+ | 2002 01 06 | 644 | 0.1− | 0.4+ |
| 2001 10 21 | 704 | 0.2− | 0.2− | 2001 12 08 | 699 | 0.0 | 0.1− | 2002 01 06 | 644 | 0.0 | 0.7+ |
| 2001 10 27 | 704 | 0.7− | 0.6+ | 2001 12 08 | 699 | 0.8− | 0.1− | 2005 06 25 | 644 | 0.1− | 0.1− |
| 2001 10 27 | 704 | 0.3+ | 0.6+ | 2001 12 08 | 699 | 0.4− | 0.9− | 2005 06 25 | 644 | 0.0 | 0.1− |
| 2001 10 27 | 704 | 0.6+ | 0.4+ | 2001 12 08 | 699 | 0.6− | 0.8+ | 2005 06 25 | 644 | 0.1+ | 0.2− |

**2001 TZ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.79663 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19100066 | $\omega$ | 12.72648 | | +0.80441305 | −0.58424771 | |
| $a$ | 2.9861581 | $\Omega$ | 24.02626 | | +0.51927167 | +0.60353488 | |
| $e$ | 0.2469231 | $i$ | 15.32136 | | +0.28857680 | +0.54258663 | |
| $P$ | 5.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 10 20 | H07 | 0.2− | 0.1− |
| 2001 10 14 | 704 | 0.0 | 0.3+ | 2006 09 23 | 691 | 1.4− | 0.2+ | 2006 10 20 | H07 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.1− | 0.7+ | 2006 09 23 | 691 | 0.9− | 0.0 | 2006 10 20 | H07 | 0.4− | 0.3+ |
| 2001 10 14 | 704 | 0.8− | 0.9+ | 2006 09 23 | 691 | 0.8− | 0.0 | 2006 10 20 | H07 | 0.0 | 0.2+ |
| 2001 10 18 | 704 | 0.1− | 0.8+ | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.2− |
| 2001 10 18 | 704 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.6− |
| 2001 10 18 | 704 | 1.0− | 0.6− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.6− |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.6+ | 0.8+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 11 10 | 704 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2001 11 10 | 704 | 0.5− | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2001 11 10 | 704 | 0.4− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 27 | 683 | 0.7+ | 0.7− |
| 2001 11 10 | 704 | 0.4− | 0.9+ | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 27 | 683 | 0.4+ | 0.7+ |
| 2001 11 11 | 704 | 0.1− | 0.6− | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 10 27 | 683 | 0.4+ | 0.6+ |
| 2001 11 11 | 699 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.4+ | 0.0 |
| 2001 11 11 | 704 | 0.4− | 0.8− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2001 11 11 | 704 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.0 | 0.9+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 11 11 | 699 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2001 11 11 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 1.2+ | 0.5− | 2006 11 14 | 703 | 0.2− | 0.6+ |
| 2001 11 11 | 699 | 1.2+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2001 11 11 | 704 | 0.1− | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.7+ | 0.3− |
| 2001 11 11 | 699 | 0.9+ | 0.6− | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 1.1+ | 0.5+ |
| 2001 12 09 | 704 | 0.8− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2001 12 09 | 704 | 0.5+ | 0.8+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.1+ |
| 2001 12 09 | 704 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | 0.8− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.5− | 0.4+ |
| 2006 09 19 | 691 | 0.4− | 1.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2006 09 20 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.1− | | | | |
| 2006 09 20 | 704 | 1.1+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 | | | | |

**2001 TJ$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.68899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17903907 | $\omega$ | 163.61860 | | +0.78854961 | −0.57507033 | |
| $a$ | 3.1177229 | $\Omega$ | 233.53357 | | +0.52945412 | +0.81509965 | |
| $e$ | 0.2360888 | $i$ | 15.72140 | | +0.31283839 | +0.07004772 | |
| $P$ | 5.50 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2001 11 09 | 704 | 0.5− | 1.2− | 2001 12 18 | 644 | 0.2+ | 1.3+ |
| 2001 09 20 | 704 | 0.5+ | 0.9+ | 2001 11 11 | 691 | 0.1+ | 0.1− | 2001 12 20 | 704 | 0.4+ | 0.4+ |
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2001 11 11 | 691 | 0.0 | 0.0 | 2001 12 20 | 704 | 0.5+ | 0.1− |
| 2001 09 20 | 704 | 0.5− | 0.3+ | 2001 11 11 | 691 | 0.1− | 0.0 | 2001 12 20 | 704 | 0.4+ | 1.0+ |
| 2001 10 12 | 699 | 0.3+ | 0.3+ | 2001 11 12 | 704 | 0.1+ | 0.1+ | 2001 12 20 | 704 | 0.3+ | 0.6+ |
| 2001 10 12 | 699 | 0.3− | 0.0 | 2001 11 12 | 704 | 0.0 | 0.2+ | 2001 12 20 | 704 | 0.2+ | 0.9+ |
| 2001 10 12 | 699 | 0.6+ | 0.4+ | 2001 11 12 | 704 | 0.1− | 0.3+ | 2002 01 09 | 704 | 0.8− | 0.4− |
| 2001 10 12 | 699 | 0.4− | 0.3− | 2001 11 12 | 704 | 0.0 | 0.4+ | 2002 01 09 | 704 | 1.4− | 0.2+ |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2001 11 16 | 644 | 0.3+ | 0.2+ | 2002 01 09 | 704 | (1.9− | 0.7−) |
| 2001 10 14 | 704 | 0.1+ | 0.7+ | 2001 11 16 | 644 | 0.0 | 0.2+ | 2002 01 09 | 704 | 1.0− | 0.7− |
| 2001 10 14 | 704 | 0.9+ | 0.5+ | 2001 11 16 | 644 | 0.0 | 0.3+ | 2006 06 21 | 703 | 1.1+ | 0.3+ |
| 2001 10 14 | 704 | 0.2+ | 0.3− | 2001 11 20 | 704 | 0.6+ | 0.3+ | 2006 06 21 | 703 | 0.2− | 0.8− |
| 2001 10 14 | 704 | 0.7− | 0.7+ | 2001 11 20 | 704 | 0.1− | 0.4− | 2006 06 21 | 703 | 0.5− | 0.5+ |
| 2001 10 18 | 704 | 0.1+ | 0.2− | 2001 11 20 | 704 | 0.3+ | 0.3− | 2006 06 21 | 703 | 1.3− | 0.3− |
| 2001 10 18 | 704 | 0.3− | 0.1+ | 2001 11 20 | 704 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.7+ | 0.1+ |
| 2001 10 18 | 704 | 0.6+ | 0.5− | 2001 11 20 | 704 | 0.2+ | 0.3− | 2006 08 25 | 704 | 0.1− | 0.6+ |
| 2001 10 18 | 704 | 0.7− | 1.0− | 2001 11 20 | 608 | 0.4− | 0.3− | 2006 08 25 | 704 | (0.2+ | 1.7+) |
| 2001 10 18 | 704 | 0.2+ | 0.4− | 2001 11 20 | 608 | 0.1− | 0.2− | 2006 09 01 | 704 | 0.9− | 0.6+ |
| 2001 10 21 | 704 | 0.3+ | 0.2+ | 2001 11 20 | 608 | 0.1− | 0.2+ | 2006 09 01 | 704 | 0.3− | 0.1+ |
| 2001 10 21 | 704 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.3− | 0.1− | 2006 09 01 | 704 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.5− | 0.1− | 2006 09 01 | 704 | 0.9− | 0.1+ |
| 2001 10 21 | 704 | 0.1+ | 0.3− | 2001 11 21 | 704 | 0.3− | 0.0 | 2006 09 01 | 704 | 0.6− | 0.3− |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2001 11 21 | 704 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.1+ | 1.4+ |
| 2001 10 23 | 704 | 0.2− | 0.2+ | 2001 11 21 | 704 | 0.5− | 0.1− | 2006 09 11 | 703 | (1.6+ | 2.2+) |
| 2001 10 23 | 704 | 0.4− | 0.2− | 2001 12 09 | 691 | 0.3+ | 0.0 | 2006 09 11 | 703 | 0.5+ | 0.7+ |
| 2001 10 23 | 704 | 0.2+ | 0.3− | 2001 12 09 | 691 | 1.1− | 1.2− | 2006 09 11 | 703 | 1.4+ | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2001 12 09 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.9+ | 0.9− |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2001 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 703 | 1.1+ | 0.9− |
| 2001 10 25 | 704 | 0.4− | 0.3+ | 2001 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 703 | 0.3+ | 0.6− |
| 2001 10 25 | 704 | 0.5− | 0.1+ | 2001 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 703 | (0.4+ | 2.3−) |
| 2001 10 25 | 704 | 0.2− | 0.0 | 2001 12 11 | 704 | 0.6+ | 0.4+ | 2006 09 27 | 703 | 0.6− | 0.1− |
| 2001 10 25 | 704 | 0.2− | 0.2+ | 2001 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 703 | 0.5+ | 0.4− |
| 2001 10 25 | 704 | 0.2− | 0.1+ | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 2001 10 27 | 699 | 0.4+ | 0.9− | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.5− |
| 2001 10 27 | 699 | 0.3− | 0.2− | 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 10 23 | 703 | 0.6− | 0.4+ |
| 2001 10 27 | 699 | 0.1− | 0.3+ | 2001 12 14 | 704 | 0.5+ | 0.7+ | 2006 10 23 | 703 | 0.3+ | 0.1+ |
| 2001 10 27 | 699 | 0.8− | 1.4− | 2001 12 14 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 703 | 0.4− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 704 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.9+ | 0.7− | 2006 10 23 | 703 | 0.1+ | 0.7+ |
| 2001 10 28 | 704 | 1.0− | 0.9− | 2001 12 17 | 704 | 1.3+ | 0.9− | 2006 11 13 | 703 | (0.7+ | 1.9−) |
| 2001 10 28 | 704 | 1.1− | 0.2− | 2001 12 17 | 704 | 1.2+ | 0.1− | 2006 11 13 | 703 | 0.8− | 0.2− |
| 2001 11 09 | 704 | 0.1− | 0.4− | 2001 12 17 | 704 | 1.2+ | 0.4− | 2006 11 13 | 703 | 0.0 | 0.3− |
| 2001 11 09 | 704 | 0.2+ | 0.0 | 2001 12 17 | 704 | 1.1+ | 0.3− | 2006 11 13 | 703 | 0.3− | 0.2+ |
| 2001 11 09 | 704 | 0.2+ | 0.1+ | 2001 12 18 | 644 | 0.2+ | 1.1+ | | | | |
| 2001 11 09 | 704 | 0.0 | 0.2− | 2001 12 18 | 644 | 0.2+ | 1.1+ | | | | |

**2001 TW$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.39600 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21824856 | $\omega$ | 70.48224 | | +0.92887453 | +0.27107144 | |
| $a$ | 2.7321327 | $\Omega$ | 273.14373 | | −0.35496192 | +0.84612921 | |
| $e$ | 0.2324740 | $i$ | 14.64288 | | +0.10580236 | +0.45889611 | |
| $P$ | 4.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.1+ | 0.5+ | 2001 10 15 | 704 | 0.3− | 0.3− | 2001 10 27 | 704 | 0.5+ | 0.0 |
| 2001 08 14 | 644 | 0.2+ | 0.4+ | 2001 10 15 | 704 | 0.3− | 0.7− | 2001 10 27 | 704 | 0.3+ | 1.2− |
| 2001 08 14 | 644 | 0.1− | 0.4+ | 2001 10 15 | 704 | 0.1− | 0.5− | 2001 11 11 | 699 | 0.0 | 0.6+ |
| 2001 08 23 | 704 | 1.2+ | 0.6− | 2001 10 15 | 704 | 0.5− | 0.9− | 2001 11 11 | 699 | 0.3− | 0.9+ |
| 2001 08 23 | 704 | 0.1+ | 0.3− | 2001 10 15 | 704 | 0.3+ | 0.3− | 2001 11 11 | 699 | 0.5+ | 0.1+ |
| 2001 08 23 | 704 | 0.4+ | 0.7+ | 2001 10 18 | 704 | 0.5− | 0.4+ | 2001 11 11 | 699 | 0.1+ | 0.6+ |
| 2001 09 22 | 699 | 0.5+ | 0.4+ | 2001 10 18 | 704 | 0.2− | 0.2+ | 2001 11 12 | 704 | 0.5− | 0.2− |
| 2001 09 22 | 699 | 0.4+ | 0.1− | 2001 10 18 | 704 | 0.4− | 0.5+ | 2001 11 12 | 704 | 0.2+ | 0.3− |
| 2001 09 22 | 699 | 0.5+ | 0.2− | 2001 10 18 | 704 | 0.6− | 0.0 | 2001 11 12 | 704 | 0.8− | 0.1− |
| 2001 09 22 | 699 | 0.1+ | 0.0 | 2001 10 18 | 704 | 0.1− | 0.2+ | 2001 11 12 | 704 | 0.5+ | 0.4+ |
| 2001 09 24 | 704 | 0.1− | 0.1− | 2001 10 18 | 704 | 0.3− | 0.3+ | 2001 11 12 | 704 | 0.7− | 0.2+ |
| 2001 09 24 | 704 | 0.4+ | 0.1+ | 2001 10 18 | 704 | 0.4− | 0.1− | 2001 12 10 | 704 | 0.8+ | 0.4− |
| 2001 09 24 | 704 | 0.1+ | 0.4+ | 2001 10 18 | 704 | 0.2− | 0.2+ | 2001 12 10 | 704 | 0.3+ | 0.2+ |
| 2001 09 24 | 704 | 0.9− | 0.2+ | 2001 10 18 | 704 | 0.8− | 0.1+ | 2001 12 10 | 704 | 0.6+ | 0.5− |
| 2001 09 24 | 704 | 0.1− | 0.5+ | 2001 10 18 | 704 | 0.5− | 0.2+ | 2002 12 07 | 291 | 0.1+ | 0.1+ |
| 2001 10 15 | 704 | 0.6− | 0.5− | 2001 10 20 | 699 | 0.2+ | 0.2− | 2002 12 07 | 291 | 0.1+ | 0.3+ |
| 2001 10 15 | 704 | 0.1+ | 0.4− | 2001 10 20 | 699 | 0.1− | 0.1− | 2002 12 07 | 291 | 0.2− | 0.4− |
| 2001 10 15 | 704 | 0.0 | 0.5− | 2001 10 20 | 699 | 0.7− | 0.0 | 2006 11 26 | 691 | 0.1− | 0.1− |
| 2001 10 15 | 704 | 0.1− | 0.4− | 2001 10 20 | 699 | 0.7+ | 0.1+ | 2006 11 26 | 691 | 0.1− | 0.3+ |
| 2001 10 15 | 704 | 0.2+ | 0.3− | 2001 10 27 | 704 | 1.7+ | 0.6+ | 2006 11 26 | 691 | 0.2+ | 0.2− |

**2001 TL$_{120}$ = 2006 UV$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.13725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19601604 | $\omega$ | 123.35582 | | +0.48015300 | −0.86255857 | |
| $a$ | 2.9350014 | $\Omega$ | 297.15925 | | +0.73341875 | +0.49452266 | |
| $e$ | 0.2862406 | $i$ | 10.32813 | | +0.48119645 | +0.10695818 | |
| $P$ | 5.03 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.9− | 1.4+ | 2001 10 27 | 644 | 0.7− | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.8− |
| 2001 10 15 | 704 | 0.5+ | 0.8− | 2006 10 19 | 703 | 0.1+ | 1.4+ | 2006 11 15 | 703 | 1.4− | 0.1+ |
| 2001 10 15 | 704 | 0.7− | 0.4− | 2006 10 19 | 703 | 1.2+ | 0.9− | 2006 11 22 | 703 | 1.2+ | 0.2+ |
| 2001 10 15 | 704 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.2+ | 1.0+ | 2006 11 22 | 703 | 0.3− | 0.7− |
| 2001 10 18 | 704 | 0.2+ | 0.8− | 2006 10 19 | 703 | 0.6− | 0.6+ | 2006 11 22 | 703 | 0.2+ | 0.7+ |
| 2001 10 18 | 704 | 0.9+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.7− | 2006 11 22 | 703 | 0.3+ | 0.2− |
| 2001 10 18 | 704 | 1.3+ | 0.7− | 2006 10 23 | 644 | 0.4− | 0.6− | 2006 11 22 | 703 | 0.8− | 0.0 |
| 2001 10 18 | 704 | 0.8+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.1− | 0.1+ |
| 2001 10 27 | 644 | 0.7− | 0.1+ | 2006 11 15 | 703 | (1.7− | 0.1−) | 2006 11 22 | 703 | 0.5+ | 0.3+ |
| 2001 10 27 | 644 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.9− | 0.8− | 2006 11 22 | 703 | 0.8+ | 0.7+ |

**2001 TJ$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.56756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21569506 | $\omega$ | 59.24295 | | +0.53115134 | +0.80371463 | |
| $a$ | 2.7536532 | $\Omega$ | 245.22622 | | −0.84262387 | +0.46794867 | |
| $e$ | 0.3115991 | $i$ | 17.17934 | | −0.08867510 | +0.36751440 | |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 10 18 | 704 | (0.7− | 1.7+) | 2006 11 11 | 691 | 0.1− | 0.3− |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2001 11 10 | 704 | (1.2− | 2.8+) | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2001 08 24 | 644 | 0.7− | 0.3+ | 2001 11 10 | 704 | (0.1+ | 2.4+) | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2001 08 24 | 644 | 0.4− | 0.1+ | 2001 11 10 | 704 | (1.0+ | 2.2+) | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 08 24 | 644 | 0.2− | 0.3+ | 2001 11 10 | 704 | 0.3+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 644 | 0.1− | 0.4− | 2001 11 10 | 704 | 0.2+ | 0.6− | 2006 11 19 | 691 | 0.3− | 0.1− |
| 2001 09 19 | 644 | 0.3+ | 0.1− | 2001 11 11 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.7− | 1.2+ |
| 2001 10 13 | 644 | 0.2+ | 0.3− | 2001 11 11 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 1.7− | 1.2+ |
| 2001 10 13 | 644 | 0.7+ | 1.1− | 2001 11 11 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.9+ |
| 2001 10 13 | 644 | 0.5+ | 0.7− | 2001 11 12 | 704 | 0.8− | 0.7+ | 2006 11 21 | 704 | 0.8+ | 2.7+ |
| 2001 10 15 | 704 | 0.2− | 0.2+ | 2001 11 12 | 704 | 0.3+ | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | 0.7− | 0.1+ | 2001 11 12 | 704 | 0.3− | 0.9+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 10 15 | 704 | 0.1+ | 0.6+ | 2001 11 12 | 704 | 1.2− | 1.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.2+ | 0.6+ | 2001 12 05 | 644 | 0.4+ | 0.8− | 2006 11 24 | G96 | 0.0 | 0.6− |
| 2001 10 15 | 704 | 0.1+ | 0.8+ | 2001 12 05 | 644 | (0.4+ | 2.5−) | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2001 10 18 | 704 | (0.1− | 2.5+) | 2005 07 02 | 703 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.6− |
| 2001 10 18 | 704 | (1.0+ | 2.4+) | 2005 07 02 | 703 | 0.2− | 0.9+ | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2001 10 18 | 704 | (1.0+ | 1.9+) | 2005 07 02 | 703 | 0.3− | 0.8+ | | | | |
| 2001 10 18 | 704 | 0.6+ | 0.6+ | 2005 07 02 | 703 | 0.1+ | 0.7+ | | | | |

**2001 TW$_{121}$ = 2006 VW$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.46995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20508100 | $\omega$ | 136.01124 | | +0.80524171 | −0.54220945 | |
| $a$ | 2.8478630 | $\Omega$ | 258.30053 | | +0.45341454 | +0.82388186 | |
| $e$ | 0.1448976 | $i$ | 14.18660 | | +0.38210083 | +0.16500787 | |
| $P$ | 4.81 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.1− | 1.2− | 2001 11 11 | 699 | 0.1− | 0.6+ | 2006 10 27 | 703 | (2.3− | 0.6+) |
| 2001 10 15 | 704 | (0.6+ | 1.8−) | 2001 11 11 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 1.3− | 0.1+ |
| 2001 10 15 | 704 | 0.2+ | 1.3− | 2001 11 11 | 699 | 0.9− | 0.6− | 2006 10 27 | 703 | 1.2− | 1.0+ |
| 2001 10 15 | 704 | (0.4+ | 1.7−) | 2001 11 11 | 704 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.3− | 0.5− |
| 2001 10 18 | 704 | 0.1− | 0.1− | 2001 11 11 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.0 |
| 2001 10 18 | 704 | 0.5+ | 0.2− | 2001 11 11 | 699 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.0 | 0.6− |
| 2001 10 18 | 704 | 0.2− | 0.0 | 2001 11 11 | 704 | 0.8+ | 0.8+ | 2006 11 15 | 704 | 0.5+ | 0.7− |
| 2001 10 18 | 704 | 0.5− | 0.8− | 2001 11 11 | 704 | 0.1− | 1.0+ | 2006 11 15 | 704 | 0.8+ | 0.8− |
| 2001 10 18 | 704 | 0.1+ | 0.0 | 2001 11 12 | 704 | 0.8− | 0.0 | 2006 11 15 | 704 | 0.5− | 0.7+ |
| 2001 10 20 | 699 | (2.3+ | 1.0+) | 2001 11 12 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 704 | 0.0 | 0.1+ |
| 2001 10 20 | 699 | 0.1− | 0.3− | 2001 11 12 | 704 | 0.4− | 0.2+ | 2006 11 22 | 691 | 0.3− | 0.5− |
| 2001 10 20 | 699 | 0.1+ | 0.3− | 2001 11 12 | 704 | 0.7+ | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2001 10 20 | 699 | 0.6− | 0.5+ | 2001 11 12 | 704 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2001 10 27 | 644 | 0.7− | 0.3+ | 2001 11 20 | 699 | 0.0 | 1.2+ | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2001 10 27 | 644 | 0.6− | 0.1+ | 2001 11 20 | 699 | 0.7− | 0.8+ | 2006 11 22 | 704 | 0.8+ | 0.5+ |
| 2001 10 27 | 704 | 0.1− | 0.2− | 2001 11 20 | 699 | 0.1− | 0.7+ | 2006 11 22 | 704 | 1.2+ | 0.8+ |
| 2001 10 27 | 644 | 0.6− | 0.2+ | 2001 11 20 | 699 | 0.7− | 0.6+ | 2006 11 22 | 704 | 0.6+ | 0.2+ |
| 2001 10 27 | 704 | 0.1+ | 0.2− | 2001 12 10 | 704 | 0.6+ | 0.4+ | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2001 10 27 | 704 | 0.2− | 1.4− | 2001 12 10 | 704 | 0.3+ | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2001 10 27 | 704 | 0.5+ | 0.8− | 2001 12 10 | 704 | 1.1+ | 0.8+ | 2006 11 28 | 704 | 0.8+ | 0.2− |
| 2001 10 27 | 704 | 0.6+ | 0.5− | 2001 12 10 | 704 | 1.2+ | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.6− |
| 2001 11 11 | 699 | 0.9− | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.7+ | 2006 11 28 | 704 | 0.5− | 0.7+ |

**2001 TL$_{124}$ = 2006 QO$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.37599 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18955577 | $\omega$ | 152.24680 | | +0.91941580 | −0.36700675 | |
| $a$ | 3.0013136 | $\Omega$ | 230.00312 | | +0.31793944 | +0.90515907 | |
| $e$ | 0.2800671 | $i$ | 10.63284 | | +0.23149321 | +0.21446004 | |
| $P$ | 5.20 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 699 | 1.4+ | 0.3− | 2001 10 13 | 699 | (2.9+ | 0.4−) | 2006 08 27 | 735 | 0.6− | 0.2+ |
| 2001 09 19 | 699 | 0.5− | 0.3+ | 2001 10 13 | 644 | 0.4− | 0.3− | 2006 08 27 | 735 | 0.1+ | 0.1+ |
| 2001 09 19 | 699 | 0.5− | 0.2+ | 2001 10 13 | 644 | 0.2− | 0.4− | 2006 08 31 | 735 | 0.1− | 0.7+ |
| 2001 09 19 | 699 | 1.0− | 0.2− | 2001 10 13 | 644 | 0.1− | 0.4− | 2006 08 31 | 735 | 0.2+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2001 10 17 | 704 | 0.5+ | 0.4+ | 2006 08 31 | 735 | 0.1− | 0.5+ |
| 2001 09 25 | 704 | 0.0 | 0.2+ | 2001 10 17 | 704 | 0.7+ | 0.6− | 2006 09 14 | 735 | 0.1+ | 0.4− |
| 2001 09 25 | 704 | 0.6+ | 0.5+ | 2001 10 17 | 704 | 0.7− | 0.0 | 2006 09 14 | 735 | 0.7− | 0.4− |
| 2001 09 25 | 704 | 0.3− | 0.3+ | 2001 10 20 | 644 | 0.3− | 0.0 | 2006 09 14 | 735 | 0.3− | 0.5− |
| 2001 09 25 | 704 | 0.8+ | 0.7− | 2001 10 20 | 644 | 0.2− | 0.1− | 2006 09 14 | 735 | 0.1− | 0.1− |
| 2001 09 29 | 644 | 0.2+ | 0.0 | 2001 10 20 | 644 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2001 09 29 | 644 | 0.2+ | 0.2+ | 2006 08 16 | 735 | 1.1+ | 1.3+ | 2006 09 19 | 703 | 0.5− | 0.7+ |
| 2001 09 29 | 644 | 0.1+ | 0.1+ | 2006 08 16 | 735 | 0.9+ | 0.7− | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 2001 10 12 | 608 | 0.3+ | 0.2− | 2006 08 16 | 735 | 0.0 | 0.6− | 2006 09 19 | 703 | 0.1+ | 0.5+ |
| 2001 10 12 | 608 | 0.1+ | 0.2+ | 2006 08 18 | 735 | 0.7− | 1.2− | 2006 09 20 | 735 | 0.3− | 1.4− |
| 2001 10 12 | 608 | 0.1+ | 0.2− | 2006 08 18 | 735 | 0.6− | 0.6− | 2006 09 20 | 735 | 1.0+ | 0.6− |
| 2001 10 13 | 699 | 0.5− | 0.2+ | 2006 08 18 | 735 | 0.2+ | 0.4+ | 2006 09 20 | 735 | 0.6+ | 0.4− |
| 2001 10 13 | 699 | 0.1− | 1.6+ | 2006 08 27 | 735 | 0.5− | 0.8+ | | | | |
| 2001 10 13 | 699 | 0.1+ | 0.5− | 2006 08 27 | 735 | 0.1+ | 0.1− | | | | |

**2001 TM$_{126}$ = 2006 VH$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.84154 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21760024 | $\omega$ | 241.41548 | | +0.18245226 | | −0.98319623 |
| $a$ | 2.7375567 | $\Omega$ | 198.07489 | | +0.90873348 | | +0.17096895 |
| $e$ | 0.0534186 | $i$ | 1.11344 | | +0.37538599 | | +0.06399057 |
| $P$ | 4.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 0.1− | 1.4− | 2004 04 25 | 691 | 0.3+ | 0.6+ | 2006 11 15 | 691 | 0.3− | 0.3− |
| 1999 04 17 | 691 | 0.4− | 0.4− | 2004 04 25 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 1999 04 17 | 691 | 0.2− | 0.1− | 2004 04 25 | 691 | 0.1+ | 0.6+ | 2006 11 15 | 691 | 0.3− | 0.3+ |
| 2001 09 23 | 691 | 0.2+ | 0.2− | 2005 07 05 | G96 | 0.8+ | 0.2+ | 2006 11 21 | 704 | 1.4− | 0.2+ |
| 2001 09 23 | 691 | 0.1+ | 0.5− | 2005 07 05 | G96 | 0.7+ | 0.1− | 2006 11 21 | 704 | 1.1+ | 0.3− |
| 2001 09 23 | 704 | 1.4+ | 0.3− | 2005 07 05 | G96 | 0.5− | 0.1− | 2006 11 21 | 704 | (0.2− | 2.0−) |
| 2001 09 23 | 691 | 0.1+ | 0.4− | 2005 07 05 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 1.1− |
| 2001 09 23 | 704 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.7− | 1.3− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2001 10 13 | 691 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2001 10 13 | 691 | 0.6− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 10 13 | 691 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2001 10 14 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.8+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2001 10 14 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 691 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.3− | 0.9− | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.6+ | 1.1+ | 2006 11 11 | G96 | 0.1+ | 0.5− | | | | |

**2001 TQ$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.84683 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26974672 | $\omega$ | 17.12770 | | +0.95885803 | | −0.28388596 |
| $a$ | 2.3722763 | $\Omega$ | 359.36445 | | +0.25817363 | | +0.87232124 |
| $e$ | 0.2006885 | $i$ | 1.09352 | | +0.11805787 | | +0.39807589 |
| $P$ | 3.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 691 | 0.4− | 0.3− | 2001 10 11 | 644 | 0.2− | 0.1+ | 2001 10 16 | 704 | 1.0− | 0.1+ |
| 1999 01 18 | 691 | 0.2+ | 0.2− | 2001 10 11 | 644 | 0.1− | 0.3+ | 2001 10 21 | 704 | 0.6+ | 0.3− |
| 1999 01 18 | 691 | 0.1− | 0.0 | 2001 10 11 | 644 | 0.4− | 0.0 | 2001 10 21 | 704 | 0.9+ | 0.1+ |
| 2001 09 10 | 333 | 0.2− | 0.5− | 2001 10 12 | 699 | 0.2− | 0.2+ | 2001 10 21 | 704 | 0.7+ | 0.3+ |
| 2001 09 10 | 333 | 0.4+ | 0.3+ | 2001 10 12 | 699 | 0.1− | 0.8− | 2001 10 21 | 704 | 0.8+ | 0.4+ |
| 2001 09 15 | 644 | 0.3− | 0.0 | 2001 10 12 | 699 | 1.4− | 0.6− | 2001 10 21 | 704 | 0.3+ | 0.8+ |
| 2001 09 15 | 644 | 0.5− | 0.0 | 2001 10 12 | 699 | 0.1− | 0.2− | 2001 12 18 | 291 | 0.6− | 0.0 |
| 2001 09 15 | 644 | 0.0 | 0.3− | 2001 10 13 | 704 | 0.9− | 0.1− | 2001 12 18 | 291 | 0.1− | 0.5+ |
| 2001 09 19 | 691 | 0.1− | 0.3− | 2001 10 13 | 704 | 0.5− | 0.1− | 2001 12 18 | 291 | 0.1+ | 0.3+ |
| 2001 09 19 | 691 | 0.1+ | 0.2− | 2001 10 13 | 704 | 0.3− | 0.4− | 2001 12 20 | 291 | 0.2+ | 0.1+ |
| 2001 09 19 | 691 | 0.1+ | 0.2− | 2001 10 13 | 704 | 0.7− | 0.5+ | 2001 12 20 | 291 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.6− | 0.4+ | 2001 10 14 | 699 | 0.2− | 0.7+ | 2001 12 20 | 291 | 0.0 | 0.1+ |
| 2001 09 23 | 704 | 0.7− | 1.3+ | 2001 10 14 | 699 | 0.0 | 1.1+ | 2003 04 01 | 695 | 0.7+ | 0.7+ |
| 2001 09 23 | 704 | 0.1− | 0.1− | 2001 10 14 | 699 | 0.4− | 0.8+ | 2003 04 01 | 695 | 0.3+ | 0.7+ |
| 2001 09 24 | 691 | 0.1+ | 0.2− | 2001 10 14 | 699 | 0.1− | 0.4+ | 2006 01 27 | G96 | 0.4− | 0.2− |
| 2001 09 24 | 691 | 0.2+ | 0.3− | 2001 10 15 | 291 | 0.2+ | 0.0 | 2006 01 27 | G96 | 0.6+ | 0.3− |
| 2001 09 24 | 704 | 0.0 | 0.7− | 2001 10 15 | 291 | 0.2+ | 0.0 | 2006 01 27 | G96 | 0.2− | 0.2− |
| 2001 09 24 | 704 | 0.3+ | 0.0 | 2001 10 15 | 291 | 0.3+ | 0.0 | 2006 01 27 | G96 | 0.2− | 0.8− |
| 2001 09 24 | 691 | 0.0 | 0.1− | 2001 10 16 | 704 | 1.3+ | 0.5+ | | | | |
| 2001 09 24 | 704 | 0.4+ | 0.8− | 2001 10 16 | 704 | 0.2− | 0.2− | | | | |

**2001 TU$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.10332 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38118272 | $\omega$ | 236.82879 | | −0.34514589 | | −0.89684087 |
| $a$ | 1.8838540 | $\Omega$ | 235.81637 | | +0.93326160 | | −0.29670245 |
| $e$ | 0.1244387 | $i$ | 19.53963 | | +0.09948422 | | −0.32809161 |
| $P$ | 2.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.8− | 0.6+ | 2001 11 11 | 704 | 0.3+ | 0.0 | 2001 12 11 | 704 | 0.1− | 0.3+ |
| 2001 08 24 | 644 | 0.2− | 0.9+ | 2001 11 11 | 704 | 0.4+ | 0.3− | 2001 12 11 | 704 | 0.0 | 0.4− |
| 2001 08 24 | 644 | 0.1− | 0.2+ | 2001 11 11 | 704 | 0.4+ | 0.2− | 2001 12 11 | 704 | 0.7− | 0.3+ |
| 2001 09 28 | 704 | 0.1− | 1.0− | 2001 11 11 | 704 | 0.4+ | 0.1− | 2001 12 11 | 704 | 0.4+ | 0.1+ |
| 2001 09 28 | 704 | 1.9− | 0.5− | 2001 11 11 | 644 | 0.8+ | 0.3− | 2001 12 11 | 704 | 0.5− | 0.9+ |
| 2001 09 28 | 704 | 0.1+ | 0.6+ | 2001 11 11 | 644 | 0.5+ | 0.1+ | 2001 12 15 | 704 | 0.6+ | 1.4+ |
| 2001 09 28 | 704 | 1.1+ | 0.1+ | 2001 11 11 | 644 | 0.4+ | 0.2− | 2001 12 15 | 704 | (2.2+ | 1.2+) |
| 2001 10 15 | 704 | 0.3− | 0.2− | 2001 11 12 | 704 | 0.6+ | 0.7− | 2001 12 15 | 704 | 0.9+ | 1.3+ |
| 2001 10 15 | 704 | 0.9− | 0.7− | 2001 11 12 | 704 | 0.7+ | 0.6− | 2001 12 15 | 704 | 0.7+ | 0.5+ |
| 2001 10 15 | 704 | 0.8− | 0.1+ | 2001 11 12 | 704 | 0.6+ | 0.2− | 2001 12 20 | 704 | 0.7+ | 0.1+ |
| 2001 10 15 | 704 | 0.8− | 0.2+ | 2001 11 12 | 704 | 0.7+ | 0.1− | 2001 12 20 | 704 | 0.3+ | 0.2+ |
| 2001 10 27 | 704 | 0.6+ | 0.7+ | 2001 11 12 | 704 | 0.4+ | 0.0 | 2001 12 20 | 704 | 0.7− | 0.0 |
| 2001 10 27 | 704 | 0.4− | 0.0 | 2001 11 21 | 704 | (2.8+ | 1.4−) | 2005 04 03 | 704 | 0.8− | 0.9− |
| 2001 10 27 | 704 | 0.3− | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.4− | 2005 04 03 | 704 | 0.0 | 0.2− |
| 2001 10 27 | 704 | 0.6− | 0.6+ | 2001 11 21 | 704 | 0.2+ | 0.3− | 2005 04 03 | 704 | 0.2+ | 0.1+ |
| 2001 10 27 | 704 | 0.2− | 0.3+ | 2001 11 21 | 704 | 0.1− | 0.0 | 2005 04 03 | 704 | 0.1+ | 0.3− |
| 2001 11 10 | 704 | 0.3+ | 0.2+ | 2001 11 24 | 704 | 0.1− | 0.3− | 2006 10 10 | H82 | 0.4+ | 0.2+ |
| 2001 11 10 | 704 | 0.2− | 0.2− | 2001 11 24 | 704 | 0.8− | 0.2+ | 2006 10 10 | H82 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.5− | 0.0 | 2001 11 24 | 704 | 0.1+ | 0.8− | 2006 10 10 | H82 | 0.7− | 0.6− |
| 2001 11 10 | 704 | 0.0 | 0.2+ | 2001 11 24 | 704 | 0.7− | 0.6− | 2006 10 10 | H82 | 0.7+ | 0.8− |
| 2001 11 11 | 704 | 0.1+ | 0.1+ | 2001 11 24 | 704 | 0.6− | 0.6− | | | | |

**2001 TV$_{128}$ = 2006 SG$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.85517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19681549 | $\omega$ | 49.69653 | | +0.49453749 | | −0.86831553 |
| $a$ | 2.9270482 | $\Omega$ | 10.86095 | | +0.72317030 | | +0.38668206 |
| $e$ | 0.1118695 | $i$ | 11.70316 | | +0.48213835 | | +0.31065274 |
| $P$ | 5.01 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.1+ | 0.2− | 2001 10 14 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.4− |
| 1991 10 08 | 691 | 0.2− | 0.3+ | 2001 10 14 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.2− | 2001 10 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2001 09 21 | 704 | 0.5− | 0.4− | 2001 10 15 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.7+ | 0.5− |
| 2001 09 21 | 704 | 0.1+ | 0.6− | 2001 10 15 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2001 10 15 | 691 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 09 22 | 291 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2001 09 22 | 291 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.9+ |
| 2001 09 22 | 291 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.3+ | | | | |

**2001 TE$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.48801 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22660109 | $\omega$ | 117.38070 | | +0.93486694 | | +0.35495167 |
| $a$ | 2.6645756 | $\Omega$ | 221.82952 | | −0.32867604 | | +0.85931045 |
| $e$ | 0.1506922 | $i$ | 0.49432 | | −0.13414864 | | +0.36823208 |
| $P$ | 4.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.4− | 0.2− | 2005 06 17 | G96 | 0.3+ | 0.1− | 2005 09 29 | G96 | 0.1+ | 0.3− |
| 2001 10 14 | 691 | 0.5− | 0.1+ | 2005 08 27 | 699 | 1.7− | 0.5+ | 2005 09 29 | G96 | 0.0 | 0.3− |
| 2001 10 14 | 691 | 0.7− | 0.2− | 2005 08 27 | 699 | 0.8− | 0.1− | 2005 09 29 | G96 | 0.4+ | 0.0 |
| 2001 10 15 | 691 | 0.5+ | 0.1+ | 2005 08 27 | 699 | 1.2− | 0.3+ | 2005 10 25 | G96 | 0.0 | 0.0 |
| 2001 10 15 | 691 | 0.4+ | 0.2+ | 2005 08 27 | 699 | 0.4− | 0.9+ | 2005 10 25 | G96 | 0.2+ | 0.0 |
| 2001 10 15 | 691 | 0.4+ | 0.1+ | 2005 09 11 | 691 | 0.0 | 0.0 | 2005 10 25 | G96 | 0.3+ | 0.4− |
| 2001 11 19 | 704 | 0.4+ | 0.7+ | 2005 09 11 | 691 | 0.1+ | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.6− |
| 2001 11 19 | 704 | 0.2+ | 0.3+ | 2005 09 11 | 691 | 0.0 | 0.1+ | 2005 11 25 | G96 | 0.8+ | 0.7− |
| 2001 11 19 | 704 | 0.5+ | 0.0 | 2005 09 22 | 644 | 0.3+ | 0.2− | 2005 11 25 | G96 | 0.2− | 0.3− |
| 2005 06 17 | G96 | 0.7+ | 0.0 | 2005 09 22 | 644 | 0.4+ | 0.2− | 2005 11 25 | G96 | 0.7+ | 0.1+ |
| 2005 06 17 | G96 | 0.2+ | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.3+ | 0.1+ |
| 2005 06 17 | G96 | 0.8+ | 0.4− | 2005 09 29 | G96 | 0.1+ | 0.3− | | | | |

**2001 TN$_{129}$ = 2006 SK$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.14646 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19417468 | $\omega$ | 108.44492 | +0.93511498 | | +0.35406517 | |
| $a$ | 2.9535273 | $\Omega$ | 230.82139 | −0.33156761 | | +0.86031566 | |
| $e$ | 0.1011071 | $i$ | 1.03966 | −0.12499161 | | +0.36673535 | |
| $P$ | 5.08 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 691 | 0.1− | 0.0 | 2001 10 21 | 704 | 0.8− | 1.5+ | 2006 09 26 | 701 | 0.2+ | 0.2+ |
| 1996 10 10 | 691 | 0.5− | 0.4− | 2001 10 24 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2001 09 19 | 691 | 0.5− | 0.1+ | 2001 10 24 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 09 19 | 691 | 0.4− | 0.1+ | 2001 10 24 | 691 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 09 19 | 691 | 0.4− | 0.1+ | 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 701 | 0.7− | 0.4+ |
| 2001 09 23 | 704 | 0.3− | 0.9+ | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 09 23 | 704 | 0.3+ | 0.0 | 2004 03 23 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 701 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.5− | 0.3+ | 2006 07 22 | G96 | 1.1+ | 0.0 | 2006 09 26 | 701 | 0.1− | 1.0+ |
| 2001 10 15 | 291 | 1.3+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2001 10 15 | 291 | 1.3+ | 0.0 | 2006 07 22 | G96 | 1.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2001 10 15 | 291 | 1.3+ | 0.0 | 2006 07 22 | G96 | 0.8+ | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2001 10 16 | 691 | 0.0 | 0.5− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 10 16 | 691 | 0.2+ | 0.5− | 2006 09 25 | 691 | 0.9− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2001 10 16 | 691 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 1.1− | 0.9+ | 2006 09 26 | 291 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 1.3− | 0.2+ | 2006 09 26 | 291 | 0.1− | 0.3+ | | | | |
| 2001 10 21 | 704 | (0.2− | 1.8+) | 2006 09 26 | 291 | 0.4− | 0.4+ | | | | |

**2001 TD$_{130}$ = 2006 SW$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.74850 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19093603 | $\omega$ | 141.39872 | +0.98269838 | | +0.16373660 | |
| $a$ | 2.9868320 | $\Omega$ | 209.52509 | −0.18058091 | | +0.95090137 | |
| $e$ | 0.1110283 | $i$ | 10.11743 | +0.04116344 | | +0.26263455 | |
| $P$ | 5.16 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 691 | 0.7− | 0.0 | 2001 10 25 | 644 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.6+ |
| 2001 10 15 | 691 | 0.4− | 0.1− | 2001 10 25 | 644 | 0.4− | 0.2− | 2006 09 18 | 703 | (1.7− | 0.0 ) |
| 2001 10 15 | 691 | 0.2− | 0.0 | 2001 11 20 | 704 | 1.0+ | 1.0+ | 2006 09 19 | 699 | (1.6− | 0.2−) |
| 2001 10 16 | 691 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.4+ | 1.4+ |
| 2001 10 16 | 691 | 0.1− | 0.0 | 2001 11 20 | 704 | 1.4+ | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.4+ |
| 2001 10 16 | 691 | 0.0 | 0.3− | 2001 11 20 | 704 | 0.1− | 0.5+ | 2006 09 19 | 699 | 0.8− | 0.5− |
| 2001 10 18 | 644 | 0.2− | 0.4+ | 2001 11 20 | 704 | 0.8+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 1.1+ |
| 2001 10 18 | 644 | 0.0 | 0.3+ | 2001 11 21 | 704 | 0.5+ | 1.1+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2001 10 18 | 644 | 0.4− | 0.4+ | 2001 11 21 | 704 | 1.1+ | 0.1− | 2006 10 17 | 703 | 0.5− | 1.2− |
| 2001 10 23 | 704 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.2+ |
| 2001 10 23 | 704 | 0.5+ | 0.9− | 2006 09 16 | 703 | 0.3+ | 1.2− | 2006 10 20 | 644 | 0.4− | 0.6+ |
| 2001 10 23 | 704 | 0.7− | 0.1− | 2006 09 16 | 703 | 0.6− | 0.8− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 10 23 | 704 | 0.1+ | 0.3− | 2006 09 16 | 703 | 0.3− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.6+ | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | 0.3+ | 0.7− | 2006 09 17 | 703 | (1.4+ | 1.7+) | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2001 10 24 | 704 | 0.4− | 0.3− | 2006 09 17 | 703 | (1.6+ | 0.1+) | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2001 10 24 | 704 | 0.7+ | 0.6− | 2006 09 17 | 703 | 0.2+ | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2001 10 24 | 704 | 0.2+ | 0.6− | 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2001 10 25 | 644 | 0.7− | 0.2− | 2006 09 18 | 703 | 0.7+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |

**2001 TV$_{132}$ = 2006 UO$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.12059 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20085098 | $\omega$ | 109.73258 | +0.79986146 | | −0.57529138 | |
| $a$ | 2.8877089 | $\Omega$ | 285.75068 | +0.46228709 | | +0.77230071 | |
| $e$ | 0.1762390 | $i$ | 10.23776 | +0.38276924 | | +0.26942801 | |
| $P$ | 4.91 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 644 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.7− | 2006 10 19 | 703 | 0.4− | 0.3− |
| 2001 09 29 | 644 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.8− | 0.1− | 2006 10 19 | 703 | 0.4− | 0.2+ |
| 2001 09 29 | 644 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.6− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 10 12 | 608 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.5+ | 0.1+ |
| 2001 10 12 | 608 | 0.4+ | 0.2− | 2006 09 28 | 703 | 1.2− | 1.3+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 10 12 | 608 | 0.7+ | 0.3− | 2006 09 28 | 703 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.0 | 0.7− |
| 2001 10 15 | 608 | 0.1− | 0.4− | 2006 09 28 | 703 | 1.4+ | 1.0+ | 2006 11 22 | 703 | 0.7− | 0.1− |
| 2001 10 15 | 608 | 0.2+ | 0.6− | 2006 09 28 | 703 | 0.7+ | 0.5+ | 2006 11 22 | 703 | 0.2+ | 0.3− |
| 2001 10 15 | 608 | 0.4+ | 0.4− | 2006 10 19 | 703 | 0.4− | 0.5+ | 2006 11 22 | 703 | 0.4+ | 0.2− |

**2001 TA$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.51945 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26641672 | $\omega$ | 232.99836 | +0.97270559 | | +0.19094619 | |
| $a$ | 2.3920031 | $\Omega$ | 115.65289 | −0.13749034 | | +0.93198720 | |
| $e$ | 0.2685325 | $i$ | 8.41041 | −0.18692310 | | +0.30812239 | |
| $P$ | 3.70 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 15 | 691 | 0.5− | 0.1+ | 2001 10 11 | 704 | 0.2+ | 1.0− | 2001 10 21 | 644 | 1.0− | 0.4− |
| 1999 01 15 | 691 | 0.0 | 0.2+ | 2001 10 11 | 704 | 0.6+ | 0.4− | 2001 10 21 | 644 | 0.8− | 0.3− |
| 1999 01 15 | 691 | 0.5+ | 0.6+ | 2001 10 11 | 704 | 0.3+ | 0.4− | 2001 10 21 | 644 | 0.5− | 0.2− |
| 2001 08 29 | 644 | 0.1− | 0.1− | 2001 10 14 | 644 | 0.3− | 0.2+ | 2002 01 08 | 645 | 0.0 | 0.0 |
| 2001 08 29 | 644 | 0.3+ | 0.1+ | 2001 10 14 | 644 | 0.6− | 0.2+ | 2002 01 08 | 645 | 0.0 | 0.1− |
| 2001 08 29 | 644 | 0.1+ | 0.2− | 2001 10 14 | 644 | 0.3− | 0.0 | 2002 01 14 | 645 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.4− | 0.6+ | 2001 10 15 | 644 | 0.5− | 0.7+ | 2002 01 14 | 645 | 0.1+ | 0.2− |
| 2001 09 12 | 704 | 0.8− | 0.6+ | 2001 10 15 | 644 | 0.4− | 0.8+ | 2006 01 31 | G96 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.1− | 2001 10 15 | 644 | 0.2− | 0.8+ | 2006 01 31 | G96 | 0.2− | 0.0 |
| 2001 09 18 | 699 | 0.4+ | 0.8+ | 2001 10 19 | 699 | 0.1− | 1.7+ | 2006 01 31 | G96 | 0.2− | 0.2+ |
| 2001 09 18 | 699 | 0.5− | 0.5+ | 2001 10 19 | 699 | 0.9+ | 0.0 | 2006 01 31 | G96 | 0.4+ | 0.2+ |
| 2001 09 18 | 699 | 0.4+ | 0.1+ | 2001 10 19 | 699 | 0.3+ | 0.6− | | | | |
| 2001 09 18 | 699 | 0.5+ | 0.3− | 2001 10 19 | 699 | 0.7+ | 0.1− | | | | |

**2001 TP$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.68862 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23097205 | $\omega$ | 286.71522 | +0.13358451 | | −0.98562864 | |
| $a$ | 2.6308521 | $\Omega$ | 154.89896 | +0.97653186 | | +0.11312525 | |
| $e$ | 0.1681868 | $i$ | 14.10748 | +0.16893997 | | +0.12545464 | |
| $P$ | 4.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.2− | 0.1− | 2001 10 15 | 644 | 0.2+ | 0.4+ | 2005 08 26 | 644 | 0.0 | 0.1− |
| 2001 10 11 | 704 | 0.1+ | 0.3− | 2003 03 31 | 645 | 0.0 | 0.0 | 2005 09 14 | 691 | 0.2− | 0.1+ |
| 2001 10 11 | 704 | 0.1+ | 0.3− | 2003 03 31 | 645 | 0.0 | 0.0 | 2005 09 14 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 644 | 0.6− | 0.0 | 2005 07 30 | 644 | 0.1− | 0.2+ | 2005 09 14 | 691 | 0.1− | 0.1− |
| 2001 10 14 | 644 | 0.3− | 0.0 | 2005 07 30 | 644 | 0.2− | 0.1− | 2005 09 22 | 644 | 0.5+ | 0.4− |
| 2001 10 14 | 644 | 0.6− | 0.0 | 2005 07 30 | 644 | 0.1+ | 0.2− | 2005 09 22 | 644 | 0.6+ | 0.3+ |
| 2001 10 15 | 644 | 0.6+ | 0.0 | 2005 08 26 | 644 | 0.2+ | 0.2− | 2005 09 22 | 644 | 0.1+ | 0.1+ |
| 2001 10 15 | 644 | 0.7+ | 0.2+ | 2005 08 26 | 644 | 0.1− | 0.3− | | | | |

**2001 TL$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.59396 | | (2000.0) | | | |
| $n$ | 0.23903314 | $\omega$ | 162.15926 | | +0.43165635 | +0.89978005 |
| $a$ | 2.5713665 | $\Omega$ | 133.35892 | | −0.83792787 | +0.42615606 |
| $e$ | 0.1363004 | $i$ | 5.03307 | | −0.33399053 | +0.09373836 |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 1.6− | 0.8+ | 2001 10 16 | 644 | 0.1− | 0.5+ | 2005 09 23 | 703 | 1.1+ | 0.8− |
| 2001 09 12 | 704 | 0.5+ | 0.5+ | 2005 08 30 | 691 | 0.2− | 0.1− | 2005 09 23 | 703 | 0.6+ | 1.4− |
| 2001 09 12 | 704 | 1.2+ | 0.5+ | 2005 08 30 | 691 | 0.0 | 0.1− | 2005 09 23 | 703 | 0.2+ | 1.4+ |
| 2001 10 10 | 644 | 0.2+ | 0.4− | 2005 08 30 | 691 | 0.2− | 0.0 | 2005 10 13 | 691 | 0.1− | 0.1− |
| 2001 10 10 | 644 | 0.2+ | 1.3− | 2005 09 13 | 691 | 0.1+ | 0.0 | 2005 10 13 | 691 | 0.2− | 0.1+ |
| 2001 10 10 | 644 | 0.2− | 1.2− | 2005 09 13 | 691 | 0.1+ | 0.0 | 2005 10 13 | 691 | 0.0 | 0.3+ |
| 2001 10 16 | 644 | 0.0 | 0.3+ | 2005 09 13 | 691 | 0.2+ | 0.0 | | | | |
| 2001 10 16 | 644 | 0.1− | 0.3+ | 2005 09 23 | 703 | 1.2− | 0.1− | | | | |

**2001 TX$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 62.52261 | | (2000.0) | | | |
| $n$ | 0.21308119 | $\omega$ | 264.94136 | | +0.78272122 | +0.61016674 |
| $a$ | 2.7761269 | $\Omega$ | 57.39982 | | −0.49760905 | +0.73190738 |
| $e$ | 0.1733430 | $i$ | 8.37157 | | −0.37380840 | +0.30332844 |
| $P$ | 4.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | (2.0− | 0.8−) | 2004 03 18 | 691 | 0.5+ | 0.6− | 2006 11 18 | 691 | 1.1− | 0.3+ |
| 2001 09 25 | 704 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 18 | 691 | 0.2− | 0.4+ |
| 2001 09 25 | 704 | 0.6− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 18 | 691 | 0.3+ | 0.4+ |
| 2001 10 10 | 644 | 0.8+ | 0.8+ | 2006 10 17 | G96 | 1.0+ | 0.4− | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2001 10 10 | 644 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.7− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2001 10 10 | 644 | 0.9+ | 0.9+ | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2001 10 16 | 644 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.6− | 2006 11 24 | G96 | 1.2− | 0.5− |
| 2001 10 16 | 644 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2001 10 16 | 644 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.6− | 0.6− |
| 2001 10 24 | 644 | 0.6− | 0.1+ | 2006 10 27 | G96 | (1.7+ | 0.5−) | 2006 11 24 | G96 | 0.8− | 0.5− |
| 2001 10 24 | 644 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2001 10 24 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.4− | 0.6− |
| 2004 03 18 | 691 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.3+ | | | | |
| 2004 03 18 | 691 | 0.1− | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | | | | |

**2001 TU$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.69147 | | (2000.0) | | | |
| $n$ | 0.21487905 | $\omega$ | 9.24671 | | +0.41319055 | −0.90164257 |
| $a$ | 2.7606202 | $\Omega$ | 56.44737 | | +0.82539826 | +0.31155711 |
| $e$ | 0.2087207 | $i$ | 8.81615 | | +0.38469635 | +0.29995473 |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4+ | 0.6+ | 2001 10 12 | 649 | 0.1− | 0.6+ | 2001 10 24 | 644 | 0.8− | 0.7+ |
| 2001 09 25 | 704 | 0.8− | 0.4− | 2001 10 16 | 644 | 0.3− | 0.6+ | 2001 12 10 | 645 | 0.2+ | 0.0 |
| 2001 09 25 | 704 | 2.0− | 0.1− | 2001 10 16 | 644 | 0.5− | 0.6+ | 2001 12 10 | 645 | 0.2+ | 0.1+ |
| 2001 09 25 | 704 | 0.0 | 0.7− | 2001 10 16 | 644 | 0.3− | 0.7+ | 2003 04 04 | 691 | 0.1+ | 0.7+ |
| 2001 10 10 | 644 | 0.7− | 1.0+ | 2001 10 24 | 644 | 0.5− | 0.2− | 2003 04 04 | 691 | 0.6+ | 0.8+ |
| 2001 10 10 | 644 | 0.6− | 1.0+ | 2001 10 24 | 644 | 0.8− | 0.6+ | 2003 04 04 | 691 | 0.4+ | 0.7+ |
| 2001 10 10 | 644 | 0.5− | 0.9+ | 2001 10 24 | 644 | 0.8− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.7− |
| 2001 10 12 | 649 | 0.5− | 0.3+ | 2001 10 24 | 644 | 0.8− | 0.5+ | 2006 11 19 | 704 | 0.2− | 1.1− |
| 2001 10 12 | 649 | 0.3− | 0.4+ | 2001 10 24 | 644 | 0.7− | 0.1− | 2006 11 19 | 704 | 0.2+ | 1.4− |

**2001 TA$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.99932 | | (2000.0) | | | |
| $n$ | 0.19265759 | $\omega$ | 293.84390 | | +0.98882414 | −0.10895791 |
| $a$ | 2.9690121 | $\Omega$ | 72.53819 | | +0.14223398 | +0.89400772 |
| $e$ | 0.2578349 | $i$ | 6.12370 | | −0.04468018 | +0.43460139 |
| $P$ | 5.12 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | 1.3+ | 0.1+ | 2001 10 16 | 704 | 0.7− | 0.7+ | 2006 09 17 | 699 | 0.4+ | 0.3− |
| 2001 09 17 | 699 | 0.5− | 0.7− | 2001 10 16 | 704 | 0.1− | 1.2+ | 2006 09 17 | 699 | 0.1− | 0.7+ |
| 2001 09 17 | 699 | 1.2+ | 0.6− | 2001 10 16 | 704 | 0.0 | 1.2+ | 2006 09 17 | 699 | 0.2− | 0.3+ |
| 2001 09 17 | 699 | (0.1− | 2.5−) | 2001 10 16 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | (0.6+ | 1.8−) | 2001 10 16 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.0 | 1.0− | 2001 10 16 | 644 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.8− |
| 2001 09 21 | 704 | 0.4− | 0.4− | 2001 10 16 | 644 | 0.5− | 0.2− | 2006 09 19 | 703 | 0.3+ | 0.6+ |
| 2001 09 21 | 704 | (0.5− | 1.9−) | 2001 10 16 | 644 | 0.6− | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2001 09 21 | 704 | 0.2+ | 0.5− | 2001 10 24 | 644 | 0.4+ | 0.8− | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2001 09 27 | 644 | 0.2+ | 0.1+ | 2001 10 24 | 644 | 0.4+ | 0.6− | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2001 09 27 | 644 | 0.0 | 0.6− | 2001 10 24 | 644 | 0.4+ | 0.9− | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2001 09 27 | 644 | 0.2− | 0.3− | 2006 08 30 | D35 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2001 10 10 | 644 | 0.3− | 0.3+ | 2006 08 30 | D35 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.7− |
| 2001 10 10 | 644 | 0.2− | 0.2+ | 2006 08 30 | D35 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2001 10 10 | 644 | 0.3− | 0.2+ | 2006 09 17 | 699 | 0.0 | 0.0 | | | | |

**2001 TZ$_{149}$ = 2006 UO$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.24114 | | (2000.0) | | | |
| $n$ | 0.20150596 | $\omega$ | 305.71030 | | +0.97049412 | −0.19509427 |
| $a$ | 2.8814480 | $\Omega$ | 65.91744 | | +0.23873570 | +0.85996846 |
| $e$ | 0.2445042 | $i$ | 8.92907 | | −0.03385885 | +0.47158507 |
| $P$ | 4.89 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.5+ | 0.1− | 2001 10 20 | 704 | 0.2+ | 1.4− | 2006 11 10 | 224 | 0.3− | 0.8+ |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2001 10 24 | 644 | 0.2− | 0.1+ | 2006 11 14 | 704 | (1.8+ | 0.4+) |
| 2001 09 25 | 704 | 0.5+ | 0.2+ | 2001 10 24 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 1.4+ | 1.1+ |
| 2001 09 25 | 704 | 0.3+ | 0.8+ | 2001 10 24 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 704 | (1.8+ | 0.3+) |
| 2001 09 25 | 704 | 0.8− | 0.3+ | 2001 11 18 | 704 | 0.7− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 10 10 | 644 | 0.7− | 0.2+ | 2001 11 18 | 704 | 0.6+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 10 10 | 644 | 0.9− | 0.0 | 2001 11 18 | 704 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.6+ | 0.2− |
| 2001 10 10 | 644 | 0.9− | 0.4+ | 2001 11 18 | 704 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 10 14 | 699 | 1.3− | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 17 | 704 | 0.6− | 0.2+ |
| 2001 10 14 | 699 | 1.4+ | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.9− | 2006 11 17 | 704 | 1.3− | 0.8− |
| 2001 10 14 | 699 | 1.0− | 0.2− | 2006 10 16 | 703 | 1.1− | 0.9+ | 2006 11 17 | 704 | 0.4− | 0.1− |
| 2001 10 14 | 699 | 0.0 | 0.5− | 2006 10 16 | 703 | (0.2− | 1.7−) | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2001 10 16 | 704 | 0.6+ | 0.3+ | 2006 10 28 | 224 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.8− | 0.4+ |
| 2001 10 16 | 704 | 0.2+ | 0.7− | 2006 10 28 | 224 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.3− |
| 2001 10 16 | 704 | 0.1− | 0.7− | 2006 10 28 | 224 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2001 10 16 | 704 | 0.3+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.3− |
| 2001 10 16 | 704 | 0.6+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2001 10 16 | 644 | 0.1− | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.1+ |
| 2001 10 16 | 644 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 22 | 683 | 0.5− | 0.4− |
| 2001 10 16 | 644 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 22 | 683 | 1.1− | 0.1− |
| 2001 10 20 | 704 | 0.4+ | 1.0− | 2006 11 09 | 644 | 0.0 | 0.2− | | | | |
| 2001 10 20 | 704 | 0.6+ | 0.4− | 2006 11 10 | 224 | 0.7+ | 0.2+ | | | | |

**2001 TD$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.82566 | | (2000.0) | | | |
| $n$ | 0.19128997 | $\omega$ | 316.64676 | | +0.93782148 | −0.29921191 |
| $a$ | 2.9831465 | $\Omega$ | 61.54192 | | +0.34711718 | +0.80731606 |
| $e$ | 0.0953220 | $i$ | 11.54562 | | +0.00073545 | +0.50863839 |
| $P$ | 5.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.5− | 0.0 | 2001 10 24 | 644 | 0.3+ | 1.0+ | 2004 04 14 | 691 | 0.4+ | 0.6+ |
| 2001 10 10 | 644 | 0.4− | 0.2− | 2001 10 24 | 644 | 0.4+ | 0.3+ | 2004 04 14 | 691 | 0.4+ | 0.8+ |
| 2001 10 10 | 644 | 0.3− | 0.2− | 2001 11 18 | 704 | 0.4− | 0.9+ | 2004 04 14 | 691 | 0.4+ | 0.8+ |
| 2001 10 16 | 704 | (2.9− | 1.2+) | 2001 11 18 | 704 | 0.6− | 0.5+ | 2006 09 29 | 699 | 1.1− | 0.6+ |
| 2001 10 16 | 704 | 0.2− | 0.8+ | 2001 11 18 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.6− |
| 2001 10 16 | 704 | 0.3− | 0.6+ | 2001 11 18 | 704 | (1.8− | 0.5+) | 2006 09 29 | 699 | 0.1+ | 1.1+ |
| 2001 10 16 | 704 | 0.4− | 0.6+ | 2001 12 14 | 704 | 0.1+ | 1.4− | 2006 09 29 | 699 | 0.3+ | 0.5+ |
| 2001 10 16 | 644 | 0.1+ | 0.3+ | 2001 12 14 | 704 | 0.3+ | 0.5− | 2006 10 02 | 703 | 0.7− | 0.8+ |
| 2001 10 16 | 644 | 0.1+ | 0.3+ | 2001 12 14 | 704 | 0.9− | 0.9− | 2006 10 02 | 703 | 0.7− | 0.4− |
| 2001 10 16 | 644 | 0.2− | 0.6+ | 2001 12 14 | 704 | 0.0 | 0.3− | 2006 10 02 | 703 | 0.2+ | 0.4− |
| 2001 10 20 | 704 | 1.0− | 0.6− | 2001 12 17 | 704 | 0.7+ | 0.0 | 2006 10 02 | 703 | 0.3+ | 0.7− |
| 2001 10 20 | 704 | 1.3− | 1.2+ | 2001 12 17 | 704 | 0.5+ | 0.1− | 2006 10 17 | 703 | 1.0− | 0.1− |
| 2001 10 20 | 704 | (2.8− | 1.4+) | 2001 12 17 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2001 10 20 | 704 | 0.4+ | 0.5+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.7+ | 1.5+ |
| 2001 10 24 | 644 | 0.3+ | 0.8+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 0.4+ |

**2001 TS$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.06246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18996207 | $\omega$ | 339.55276 | | +0.51030482 | −0.84947211 | |
| $a$ | 2.9970325 | $\Omega$ | 79.54903 | | +0.80676785 | +0.41885455 | |
| $e$ | 0.3327777 | $i$ | 7.83812 | | +0.29785000 | +0.32087067 | |
| $P$ | 5.19 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.3+ | 0.3+ | 2001 11 17 | 608 | 0.4+ | 0.3− | 2001 12 17 | 704 | 0.3− | 0.6+ |
| 2001 10 10 | 644 | 0.0 | 0.3+ | 2001 11 17 | 608 | 0.3+ | 0.4− | 2001 12 17 | 704 | 0.4− | 0.5+ |
| 2001 10 10 | 644 | 0.1+ | 0.1+ | 2001 11 18 | 704 | 0.2− | 0.2− | 2006 09 17 | 699 | 0.1+ | 0.9+ |
| 2001 10 14 | 699 | 0.8− | 0.6− | 2001 11 18 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 699 | 1.3− | 0.1+ |
| 2001 10 14 | 699 | 1.2− | 0.8− | 2001 11 18 | 704 | 0.1− | 0.0 | 2006 09 17 | 699 | 0.1− | 1.1+ |
| 2001 10 14 | 699 | 0.0 | 0.1+ | 2001 11 18 | 704 | 0.1− | 0.1+ | 2006 09 17 | 699 | 0.5− | 0.6+ |
| 2001 10 14 | 699 | (1.5− | 0.0 ) | 2001 11 18 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2001 10 16 | 704 | 0.3− | 0.6+ | 2001 11 20 | 704 | 0.2− | 0.7− | 2006 09 19 | 703 | 0.6+ | 1.0− |
| 2001 10 16 | 704 | 0.5− | 0.8+ | 2001 11 20 | 704 | 0.5− | 1.4− | 2006 09 19 | 703 | 0.3+ | 0.7− |
| 2001 10 16 | 704 | 0.7− | 0.3− | 2001 11 20 | 704 | 0.4− | 1.1− | 2006 09 19 | 703 | 0.1+ | 0.8− |
| 2001 10 16 | 704 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.4+ | 0.3− | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 10 16 | 704 | 0.3− | 0.9+ | 2001 11 20 | 704 | (0.4− | 1.5−) | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2001 10 16 | 644 | 0.6+ | 0.2− | 2001 12 07 | 704 | 0.4− | 0.8+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2001 10 16 | 644 | 0.6+ | 0.1− | 2001 12 07 | 704 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2001 10 16 | 644 | 0.7+ | 0.0 | 2001 12 07 | 704 | 0.4− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 10 20 | 704 | 0.7+ | 0.3+ | 2001 12 07 | 704 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.6+ | 0.0 | 2001 12 07 | 704 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.3+ | 0.4+ |
| 2001 10 20 | 704 | 0.4+ | 0.1− | 2001 12 09 | 699 | 0.7− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 0.1− | 2001 12 09 | 699 | 0.8+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.1+ | 0.5+ | 2001 12 09 | 699 | 0.3+ | 0.6+ | 2006 10 24 | 644 | 0.4+ | 0.1+ |
| 2001 11 15 | 644 | 0.3+ | 0.1+ | 2001 12 09 | 699 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.4+ | 0.0 |
| 2001 11 15 | 644 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 10 24 | 644 | 0.3+ | 0.7− |
| 2001 11 15 | 644 | 0.1− | 0.4+ | 2001 12 17 | 704 | 0.3+ | 0.6+ | | | | |
| 2001 11 17 | 608 | 0.4+ | 0.3− | 2001 12 17 | 704 | 0.1− | 0.2+ | | | | |

**2001 TR$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.55560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17308977 | $\omega$ | 62.21350 | | +0.77108812 | +0.61323604 | |
| $a$ | 3.1887597 | $\Omega$ | 259.45196 | | −0.62813563 | +0.68855139 | |
| $e$ | 0.1487643 | $i$ | 10.03831 | | −0.10425324 | +0.38708984 | |
| $P$ | 5.69 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 644 | 0.3− | 0.2+ | 2001 10 13 | 644 | 0.1− | 0.0 | 2001 11 18 | 704 | 1.0− | 1.0− |
| 2001 09 18 | 644 | 0.2− | 0.3+ | 2001 10 16 | 644 | 0.4− | 0.1+ | 2001 11 18 | 704 | 0.4− | 0.3− |
| 2001 09 18 | 644 | 0.1− | 0.2+ | 2001 10 16 | 644 | 0.4− | 0.0 | 2001 11 18 | 704 | 0.3− | 0.1− |
| 2001 09 25 | 704 | 1.3+ | 1.5+ | 2001 10 16 | 644 | 0.4− | 0.0 | 2001 11 18 | 704 | 0.6− | 0.2− |
| 2001 09 25 | 704 | (0.9+ | 2.5+) | 2001 10 16 | 644 | 0.2− | 0.2+ | 2005 05 12 | 644 | 0.3+ | 0.3− |
| 2001 09 25 | 704 | 1.5+ | 0.3+ | 2001 10 16 | 644 | 0.3− | 0.1− | 2005 05 12 | 644 | 0.1+ | 0.2− |
| 2001 09 25 | 704 | 0.8+ | 1.3+ | 2001 10 16 | 644 | 0.5− | 0.1+ | 2005 05 12 | 644 | 0.5− | 0.0 |
| 2001 09 26 | 704 | 0.3− | 1.1− | 2001 10 20 | 699 | 0.1+ | 0.7+ | 2006 05 30 | G96 | 0.1+ | 0.0 |
| 2001 09 26 | 704 | 0.2+ | 0.1+ | 2001 10 20 | 699 | 0.4+ | 0.8− | 2006 05 30 | G96 | 0.2+ | 0.0 |
| 2001 09 26 | 704 | 1.7+ | 1.1− | 2001 10 20 | 699 | 0.1+ | 0.4− | 2006 05 30 | G96 | 0.3− | 0.1+ |
| 2001 10 13 | 644 | 0.2− | 0.2− | 2001 10 20 | 699 | 0.4+ | 0.3+ | 2006 05 30 | G96 | 0.1− | 0.2− |
| 2001 10 13 | 644 | 0.5− | 0.1+ | 2001 11 18 | 704 | 0.5− | 0.5− | | | | |

**2001 TJ$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.50549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23256986 | $\omega$ | 152.43102 | | +0.99444829 | −0.10122999 | |
| $a$ | 2.6187885 | $\Omega$ | 213.41725 | | +0.08436684 | +0.93017382 | |
| $e$ | 0.2044441 | $i$ | 2.98971 | | +0.06288749 | +0.35288689 | |
| $P$ | 4.24 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 291 | 0.2+ | 0.2+ | 2001 11 20 | 704 | (0.1− | 2.6+) | 2005 09 22 | 644 | 0.2− | 0.1− |
| 2001 10 13 | 291 | 0.6+ | 0.0 | 2001 11 20 | 704 | 0.6+ | 0.0 | 2005 09 22 | 644 | 0.0 | 0.1− |
| 2001 10 13 | 291 | 1.3+ | 0.1− | 2001 11 20 | 704 | 1.2+ | 0.6+ | 2005 09 22 | 644 | 0.0 | 0.1+ |
| 2001 10 17 | 691 | 0.7− | 0.1− | 2001 11 20 | 704 | 0.3− | 0.3+ | 2005 09 22 | 644 | 0.3+ | 0.2− |
| 2001 10 17 | 691 | 0.6− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.2− | 2005 10 11 | 691 | 0.1− | 0.3+ |
| 2001 10 17 | 691 | 0.5− | 0.2− | 2001 11 21 | 704 | (2.6+ | 1.0+) | 2005 10 11 | 691 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 0.4+ | 0.2+ | 2001 11 21 | 704 | 0.3+ | 0.0 | 2005 10 11 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.7+ | 1.6− | 2005 10 27 | G96 | 0.3− | 0.2− |
| 2001 10 23 | 704 | 0.6− | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.2+ | 2005 10 27 | G96 | 0.2− | 0.7− |
| 2001 10 23 | 704 | 0.8− | 0.2+ | 2001 11 22 | 644 | 0.2− | 0.5+ | 2005 10 27 | G96 | 0.1− | 0.4− |
| 2001 10 24 | 704 | 0.1+ | 0.9− | 2001 11 22 | 644 | 0.2− | 0.4+ | 2005 10 27 | G96 | 0.1− | 0.3− |
| 2001 10 24 | 704 | 0.5− | 0.2− | 2001 11 22 | 644 | 0.3− | 0.4+ | 2005 11 25 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 0.7+ | 0.1+ | 2005 09 14 | 691 | 0.1+ | 0.0 | 2005 11 25 | G96 | 0.0 | 0.5− |
| 2001 10 24 | 704 | 0.6− | 0.3+ | 2005 09 14 | 691 | 0.0 | 0.3+ | 2005 11 25 | G96 | 0.0 | 0.0 |
| 2001 10 25 | 644 | 0.8− | 0.3+ | 2005 09 14 | 691 | 0.0 | 0.2+ | 2005 11 25 | G96 | 0.4+ | 0.2− |
| 2001 10 25 | 644 | 0.3− | 0.4+ | 2005 09 22 | 644 | 0.2− | 0.0 | | | | |
| 2001 10 25 | 644 | 0.9− | 0.4+ | 2005 09 22 | 644 | 0.1− | 0.1+ | | | | |

**2001 TY$_{155}$ = 2006 UO$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.76943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20066904 | $\omega$ | 180.72781 | | +0.97709619 | −0.21188351 | |
| $a$ | 2.8894541 | $\Omega$ | 191.56189 | | +0.19573190 | +0.93121158 | |
| $e$ | 0.1366584 | $i$ | 5.64303 | | +0.08349881 | +0.29656427 | |
| $P$ | 4.91 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 691 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 29 | 291 | 0.0 | 0.2+ |
| 2001 09 23 | 691 | 0.3− | 0.2− | 2006 09 14 | 691 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 2001 09 23 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.6− |
| 2001 10 14 | 691 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2001 10 14 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 10 14 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.6+ | 0.1− |
| 2001 10 17 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2001 10 17 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 2001 10 17 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 291 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 29 | 291 | 0.2+ | 0.2+ | | | | |

**2001 TS$_{156}$ = 2006 RA$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.47561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19803704 | $\omega$ | 332.36234 | | −0.18177974 | −0.98330336 | |
| $a$ | 2.9149991 | $\Omega$ | 128.10988 | | +0.90415547 | −0.17049566 | |
| $e$ | 0.0712333 | $i$ | 0.61196 | | +0.38659928 | −0.06360601 | |
| $P$ | 4.98 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 19 | 691 | 0.2− | 0.2+ | 2005 07 15 | G96 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 1999 04 19 | 691 | (2.9+ | 0.9+) | 2005 07 15 | G96 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 19 | 691 | 0.2+ | 0.1− | 2006 09 14 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.5+ | 0.2− |
| 2001 10 14 | 291 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 291 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.3− |
| 2001 10 14 | 291 | 0.4+ | 0.2− | 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2001 10 17 | 691 | 0.1− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.5− | 0.1+ |
| 2001 10 17 | 691 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.5− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2001 10 17 | 691 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 10 18 | 644 | 0.6− | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2001 10 18 | 644 | 0.7− | 1.5+ | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 10 18 | 644 | 0.7− | 1.3+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2001 10 20 | 704 | 0.6− | 1.2+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2001 10 20 | 704 | 0.5+ | 1.3+ | 2006 10 16 | 691 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.4+ | 0.2− |
| 2001 10 20 | 704 | (0.5+ | 1.8+) | 2006 10 16 | 691 | 0.6+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2005 07 15 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− | | | | |
| 2005 07 15 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.6+ | 0.3+ | | | | |

**2001 TE$_{157}$ = 2006 SG$_{298}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.17131 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19729574 | $\omega$ | 234.01893 | | +0.32681632 | | −0.94318997 |
| $a$ | 2.9222962 | $\Omega$ | 197.20544 | | +0.91912746 | | +0.33194530 |
| $e$ | 0.0387910 | $i$ | 11.67635 | | +0.21999045 | | +0.01431808 |
| $P$ | 5.00 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.1+ | 0.6− | 2001 10 18 | 644 | 0.4+ | 0.4+ | 2006 10 13 | D35 | 0.7+ | 0.9− |
| 2001 09 20 | 704 | 0.5+ | 0.7+ | 2001 10 24 | 704 | 1.4− | 0.5− | 2006 10 13 | D35 | 0.6+ | 0.0 |
| 2001 09 20 | 704 | 0.8− | 0.5− | 2001 10 24 | 704 | 0.5− | 0.4+ | 2006 10 13 | D35 | 0.5+ | 0.2+ |
| 2001 10 14 | 291 | 0.1+ | 0.0 | 2001 10 24 | 704 | 1.1− | 0.7+ | 2006 10 20 | 644 | 0.7− | 0.5+ |
| 2001 10 14 | 291 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 10 14 | 291 | 0.5− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2001 10 17 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2001 10 17 | 691 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.5+ | 0.6− |
| 2001 10 17 | 691 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2001 10 18 | 644 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2001 10 18 | 644 | 0.3+ | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.3− | | | | |

**2001 TQ$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.79616 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18935854 | $\omega$ | 229.69339 | | +0.99413608 | | −0.10375840 |
| $a$ | 3.0033973 | $\Omega$ | 136.23725 | | +0.10766563 | | +0.92348629 |
| $e$ | 0.0899990 | $i$ | 2.52380 | | +0.01007824 | | +0.36933354 |
| $P$ | 5.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.3− | 0.2− | 2001 12 14 | 691 | 0.6+ | 0.2− | 2006 10 21 | 703 | 0.5− | 0.4− |
| 2001 10 14 | 691 | 0.4− | 0.1− | 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 10 14 | 691 | 0.7− | 0.2− | 2004 04 14 | 691 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.6− |
| 2001 10 17 | 691 | 0.4+ | 0.1+ | 2004 04 14 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 10 17 | 691 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 10 17 | 691 | 0.9+ | 0.3− | 2006 09 19 | 691 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.2+ | 0.7− | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | (0.3+ | 1.5−) | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | (0.8− | 2.0−) | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.9− | 1.0+ | 2006 10 01 | 691 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 704 | (2.2− | 0.4−) | 2006 10 20 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2001 11 21 | 704 | 1.4− | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2001 11 21 | 704 | 0.7+ | 0.6− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2001 12 10 | 691 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2001 12 10 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.7+ | 0.0 | 2006 11 21 | 691 | 0.3+ | 0.1− |
| 2001 12 10 | 691 | 1.0− | 1.1+ | 2006 10 21 | 703 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2001 12 14 | 691 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.6− | | | | |
| 2001 12 14 | 691 | 0.7+ | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.3− | | | | |

**2001 TL$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.65128 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23545009 | $\omega$ | 128.67881 | | +0.81774515 | | +0.57555684 |
| $a$ | 2.5973879 | $\Omega$ | 196.18469 | | −0.53372430 | | +0.75485590 |
| $e$ | 0.2121935 | $i$ | 1.07199 | | −0.21547910 | | +0.31452646 |
| $P$ | 4.19 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.2− | 0.6+ | 2001 10 23 | 704 | 1.0− | 0.5+ | 2005 09 23 | 703 | 0.1+ | 0.4− |
| 2001 10 11 | 644 | 0.1− | 1.0+ | 2001 11 20 | 691 | 0.2+ | 0.0 | 2005 09 23 | 703 | 0.1− | 1.6− |
| 2001 10 11 | 644 | 0.4+ | 0.2+ | 2001 11 20 | 704 | 0.3+ | 1.0− | 2005 09 23 | 703 | 0.5− | 1.0+ |
| 2001 10 17 | 644 | 0.0 | 0.0 | 2001 11 20 | 691 | 0.2+ | 0.1− | 2005 09 28 | 644 | 0.1− | 0.7− |
| 2001 10 17 | 644 | 0.2− | 0.1− | 2001 11 20 | 704 | 0.6− | 0.1− | 2005 09 28 | 644 | 0.0 | 0.1+ |
| 2001 10 17 | 644 | 0.6+ | 0.2− | 2001 11 20 | 691 | 0.1+ | 0.0 | 2005 09 28 | 644 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.3+ | 0.5+ | 2001 11 20 | 704 | 0.5− | 0.1+ | 2005 11 25 | G96 | 0.6+ | 0.2− |
| 2001 10 20 | 704 | 0.1+ | 0.3− | 2005 08 27 | 644 | 0.1+ | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.3− |
| 2001 10 20 | 704 | 0.2− | 0.0 | 2005 08 27 | 644 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.3+ | 0.2− |
| 2001 10 20 | 704 | 0.1+ | 0.2− | 2005 08 27 | 644 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.6− |
| 2001 10 20 | 704 | 0.1− | 0.5+ | 2005 09 13 | 691 | 0.1+ | 0.1+ | 2005 12 02 | G96 | 0.5+ | 1.4− |
| 2001 10 23 | 704 | 0.2− | 0.2+ | 2005 09 13 | 691 | 0.1+ | 0.0 | 2005 12 02 | G96 | 0.3+ | 0.4− |
| 2001 10 23 | 704 | 0.5− | 0.1+ | 2005 09 13 | 691 | 0.1+ | 0.1+ | 2005 12 02 | G96 | 0.4− | 0.3− |
| 2001 10 23 | 704 | 0.5− | 0.6+ | 2005 09 23 | 703 | 0.1− | 0.2− | 2005 12 02 | G96 | 0.4+ | 0.2+ |

**2001 TR$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.81824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20178177 | $\omega$ | 168.95836 | | +0.82036765 | | −0.56414890 |
| $a$ | 2.8788217 | $\Omega$ | 225.80248 | | +0.51421933 | | +0.79928038 |
| $e$ | 0.0321740 | $i$ | 7.48957 | | +0.25015074 | | +0.20709149 |
| $P$ | 4.88 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 291 | 0.1− | 0.0 | 2001 11 19 | 704 | 0.7− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2001 10 15 | 291 | 0.1− | 0.2+ | 2001 11 19 | 704 | (1.6− | 0.8−) | 2006 11 14 | 691 | 0.0 | 0.3− |
| 2001 10 15 | 291 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.4− |
| 2001 10 18 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2001 10 18 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2001 10 18 | 691 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2001 10 23 | 291 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 291 | 0.9+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2− | 1.0+ |
| 2001 10 23 | 291 | 0.7+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2001 11 19 | 704 | (2.0− | 0.3−) | 2006 11 12 | G96 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2001 11 19 | 704 | 1.3− | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.2+ | | | | |

**2001 TY$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.13544 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24133405 | $\omega$ | 102.40355 | | +0.67997651 | | +0.73230355 |
| $a$ | 2.5549965 | $\Omega$ | 210.54086 | | −0.69780031 | | +0.63082987 |
| $e$ | 0.1997477 | $i$ | 4.16708 | | −0.22518143 | | +0.25648625 |
| $P$ | 4.08 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2001 10 18 | 644 | 0.1+ | 0.1+ | 2005 09 22 | 644 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.3+ | 0.2+ | 2001 10 18 | 644 | 0.3+ | 0.1+ | 2005 09 22 | 644 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2001 10 18 | 644 | 0.1+ | 0.1− | 2005 09 22 | 644 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.8− | 0.7− | 2001 10 21 | 704 | 0.6− | 0.4− | 2005 10 01 | 703 | (1.9− | 2.7−) |
| 2001 09 23 | 704 | 0.8− | 1.4+ | 2001 10 21 | 704 | 0.7+ | 0.8− | 2005 10 01 | 703 | 0.5− | 1.1− |
| 2001 09 23 | 704 | 0.7− | 0.6+ | 2001 10 21 | 704 | 0.2+ | 1.1− | 2005 10 01 | 703 | 0.1+ | 0.3− |
| 2001 09 23 | 704 | 0.5− | 1.8+ | 2001 10 21 | 704 | 0.0 | 1.0− | 2005 10 01 | 703 | 0.6− | 1.2− |
| 2001 10 11 | 644 | 0.1+ | 0.2+ | 2005 08 29 | 691 | 0.2+ | 0.1− | 2005 10 11 | 691 | 0.2+ | 0.1+ |
| 2001 10 11 | 644 | 0.6+ | 0.1+ | 2005 08 29 | 691 | 0.2+ | 0.1− | 2005 10 11 | 691 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.3+ | 0.0 | 2005 08 29 | 691 | 0.0 | 0.1+ | 2005 10 11 | 691 | 0.3− | 0.0 |

**2001 TV$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.23487 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19751577 | $\omega$ | 152.67974 | +0.99264094 | | +0.11926019 | |
| $a$ | 2.9201256 | $\Omega$ | 200.50315 | −0.11914146 | | +0.93081017 | |
| $e$ | 0.0931631 | $i$ | 3.43715 | −0.02166280 | | +0.34549882 | |
| $P$ | 4.99 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (2.1− | 0.7+) | 2001 10 18 | 644 | 0.1− | 0.3+ | 2006 10 03 | 691 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 1.4− | 0.6− | 2001 10 24 | 704 | 0.6+ | 0.3− | 2006 10 13 | A50 | 0.9+ | 0.5+ |
| 2001 09 20 | 704 | 0.2− | 1.2− | 2001 10 24 | 704 | (1.6+ | 0.4+) | 2006 10 15 | 703 | 0.0 | 0.4+ |
| 2001 10 11 | 644 | 0.3+ | 1.2+ | 2001 10 24 | 704 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.2− | 0.3+ |
| 2001 10 11 | 644 | 0.1+ | 1.1+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.0 | 0.9− |
| 2001 10 11 | 644 | 0.1+ | 1.3+ | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 10 15 | 703 | 0.4− | 0.0 |
| 2001 10 14 | 699 | (2.2+ | 1.0−) | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2001 10 14 | 699 | 0.8− | 0.7− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2001 10 14 | 699 | 0.0 | 0.7− | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 2001 10 14 | 699 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.7− |
| 2001 10 15 | 691 | 0.0 | 0.0 | 2006 09 29 | 691 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.4+ | 0.0 |
| 2001 10 15 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.3+ | 0.3+ |
| 2001 10 15 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 691 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.4− | 0.2− |
| 2001 10 18 | 644 | 0.4− | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.0 | | | | |
| 2001 10 18 | 644 | 0.7− | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.1− | | | | |

**2001 TL$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.65471 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21518801 | $\omega$ | 160.42430 | +0.02919684 | | −0.99169623 | |
| $a$ | 2.7579772 | $\Omega$ | 287.74375 | +0.89867382 | | +0.08090201 | |
| $e$ | 0.1703557 | $i$ | 7.55627 | +0.43764473 | | −0.09996722 | |
| $P$ | 4.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 02 | 691 | 0.0 | 0.1+ | 2001 11 11 | 644 | 0.1+ | 0.3+ | 2001 12 20 | 644 | 0.0 | 0.3+ |
| 2000 07 02 | 691 | 0.2− | 0.0 | 2001 11 11 | 699 | 1.0+ | 0.1− | 2001 12 20 | 644 | 0.4− | 0.5+ |
| 2000 07 02 | 691 | 0.2+ | 0.3− | 2001 11 11 | 644 | 0.3+ | 0.2− | 2005 07 31 | 644 | 0.2+ | 0.2− |
| 2001 10 15 | 704 | 0.2− | 0.2− | 2001 11 11 | 644 | 0.2+ | 0.1+ | 2005 07 31 | 644 | 0.0 | 0.0 |
| 2001 10 15 | 704 | 0.5+ | 0.7− | 2001 11 12 | 704 | 0.6− | 0.4− | 2005 07 31 | 644 | 0.1− | 0.0 |
| 2001 10 15 | 704 | 0.1− | 1.0+ | 2001 11 12 | 704 | 0.6− | 0.1− | 2006 11 02 | G96 | 0.2− | 0.2− |
| 2001 10 15 | 704 | 0.1+ | 0.4+ | 2001 11 12 | 704 | 0.1+ | 0.4− | 2006 11 02 | G96 | 0.2− | 0.2+ |
| 2001 10 15 | 704 | 0.4+ | 0.4+ | 2001 11 12 | 704 | 0.7− | 0.2− | 2006 11 02 | G96 | 0.5− | 0.2+ |
| 2001 10 19 | 704 | 0.3+ | 0.2+ | 2001 11 12 | 704 | 0.8− | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.2+ |
| 2001 10 19 | 704 | 0.3+ | 0.4+ | 2001 12 10 | 704 | 0.8− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2001 10 19 | 704 | 0.1+ | 0.1− | 2001 12 10 | 704 | 0.8+ | 0.7− | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2001 10 19 | 704 | 0.1+ | 0.2+ | 2001 12 10 | 704 | 0.2− | 0.6− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2001 11 11 | 699 | 0.1− | 0.1+ | 2001 12 10 | 704 | 0.0 | 0.8− | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2001 11 11 | 699 | 0.1− | 0.6+ | 2001 12 10 | 704 | 0.1+ | 0.8− | | | | |
| 2001 11 11 | 699 | 0.1+ | 0.3+ | 2001 12 20 | 644 | 0.1+ | 0.6+ | | | | |

**2001 TJ$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.30721 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20650073 | $\omega$ | 0.64426 | +0.96488160 | | −0.25364931 | |
| $a$ | 2.8347950 | $\Omega$ | 14.60829 | +0.23978141 | | +0.74426595 | |
| $e$ | 0.1408243 | $i$ | 15.71338 | +0.10727708 | | +0.61784320 | |
| $P$ | 4.77 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 566 | 0.7− | 0.2+ | 2001 10 19 | 704 | 0.1− | 0.5+ | 2001 12 22 | 704 | 1.3+ | 0.7+ |
| 1996 10 11 | 566 | 0.8− | 0.4+ | 2001 10 19 | 704 | 0.3− | 0.4+ | 2001 12 22 | 704 | 1.7+ | 0.8+ |
| 1996 10 11 | 566 | 0.8+ | 0.3+ | 2001 10 19 | 704 | 0.3− | 0.4+ | 2001 12 22 | 704 | (0.8+ | 2.3+) |
| 2001 09 21 | 704 | 0.4− | 0.2− | 2001 10 19 | 704 | 0.1− | 1.8+ | 2001 12 22 | 704 | 1.6+ | 0.9+ |
| 2001 09 21 | 704 | 0.3− | 0.5− | 2001 11 11 | 704 | 0.6− | 0.2− | 2002 01 14 | 644 | 0.5− | 0.3− |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2001 11 11 | 704 | 0.3− | 1.0− | 2002 01 14 | 644 | 0.4− | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2001 11 11 | 704 | 0.3− | 0.3− | 2002 01 14 | 644 | 0.6− | 0.1− |
| 2001 10 15 | 704 | 0.2− | 0.3− | 2001 11 11 | 704 | 0.0 | 0.8− | 2005 08 05 | E12 | 0.2− | 0.2− |
| 2001 10 15 | 704 | 0.3− | 0.1− | 2001 11 11 | 704 | 0.4− | 0.4− | 2005 08 05 | E12 | 1.0+ | 0.0 |
| 2001 10 15 | 704 | 1.2+ | 0.4− | 2001 12 09 | 704 | 0.4− | 0.5− | 2005 08 05 | E12 | 0.1+ | 0.2− |
| 2001 10 15 | 704 | 0.4+ | 0.1− | 2001 12 09 | 704 | 0.8− | 0.4− | 2005 08 05 | E12 | 0.6− | 0.0 |
| 2001 10 15 | 704 | 0.7+ | 0.5− | 2001 12 09 | 704 | 0.1+ | 0.7+ | | | | |

**2001 TK$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.37935 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18716376 | $\omega$ | 165.36590 | +0.87041888 | | −0.45638593 | |
| $a$ | 3.0268313 | $\Omega$ | 223.37471 | +0.42035336 | | +0.88416270 | |
| $e$ | 0.1062091 | $i$ | 15.59396 | +0.25626945 | | +0.09984087 | |
| $P$ | 5.27 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.1− | 1.0− | 2001 10 20 | 644 | 0.7− | 0.4+ | 2006 09 16 | 703 | 0.8− | 0.3− |
| 1996 11 07 | 691 | 0.2− | 0.2− | 2001 10 20 | 644 | 0.6− | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.3− |
| 1996 11 07 | 691 | 0.2+ | 0.2− | 2001 10 20 | 644 | 0.5− | 0.4+ | 2006 09 16 | 703 | 1.0+ | 0.4− |
| 2001 09 19 | 699 | 0.8+ | 0.1+ | 2001 10 21 | 704 | 0.6+ | 1.4− | 2006 09 22 | 703 | 0.2+ | 0.0 |
| 2001 09 19 | 699 | 0.9− | 0.5+ | 2001 10 21 | 704 | 0.2− | 0.9− | 2006 09 22 | 703 | 0.8− | 0.3+ |
| 2001 09 19 | 699 | 0.8− | 0.1− | 2001 10 21 | 704 | 1.4− | 0.0 | 2006 09 22 | 703 | 0.3+ | 0.4+ |
| 2001 09 19 | 699 | 0.1+ | 0.5− | 2001 10 21 | 704 | 0.7+ | 0.7− | 2006 09 22 | 703 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2001 10 21 | 704 | 0.6− | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.9− |
| 2001 09 25 | 704 | 0.4+ | 0.4+ | 2001 10 21 | 704 | 0.3− | 0.2+ | 2006 09 27 | 683 | 0.4− | 1.1− |
| 2001 09 25 | 704 | 0.5+ | 0.1− | 2001 10 21 | 704 | 0.2+ | 0.6− | 2006 09 27 | 703 | 0.7+ | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.4+ | 2001 10 21 | 704 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.4− |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2001 10 21 | 704 | 0.4+ | 0.5− | 2006 09 27 | 703 | 0.5− | 0.1− |
| 2001 10 12 | 699 | 0.1+ | 1.1+ | 2001 11 10 | 704 | 0.4+ | 0.8− | 2006 09 27 | 683 | 0.5− | 1.3− |
| 2001 10 12 | 699 | 0.9− | 0.0 | 2001 11 10 | 704 | 0.3− | 0.5+ | 2006 09 27 | 683 | 0.8− | 0.9− |
| 2001 10 12 | 699 | 0.1+ | 0.3+ | 2001 11 10 | 704 | 0.1− | 0.6+ | 2006 09 28 | 683 | (0.3− | 1.8−) |
| 2001 10 12 | 699 | 0.0 | 0.1− | 2001 11 10 | 704 | 0.1+ | 0.9+ | 2006 09 28 | 683 | (0.7+ | 2.2−) |
| 2001 10 13 | 644 | 0.0 | 0.2− | 2001 11 10 | 704 | 0.6− | 0.8+ | 2006 09 28 | 683 | (0.8+ | 2.5−) |
| 2001 10 13 | 644 | 0.2− | 0.0 | 2001 11 17 | 704 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.6+ | 0.2+ |
| 2001 10 13 | 644 | 0.3+ | 0.2+ | 2001 11 17 | 704 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 2001 10 17 | 704 | 0.2− | 0.4+ | 2001 11 17 | 704 | 1.0+ | 1.1+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.4+ | 2001 11 17 | 704 | 0.2− | 0.5+ | 2006 10 29 | 703 | 1.1− | 0.7− |
| 2001 10 17 | 704 | 0.3− | 0.0 | 2001 11 17 | 704 | 0.3+ | 1.0+ | 2006 10 29 | 703 | 0.2− | 0.5+ |
| 2001 10 17 | 704 | 0.4+ | 0.0 | 2001 11 18 | 704 | 0.6+ | 0.8+ | 2006 10 29 | 703 | 0.1+ | 0.7+ |
| 2001 10 17 | 704 | 0.3+ | 0.4+ | 2001 11 18 | 704 | 0.7+ | 1.0+ | 2006 10 29 | 703 | 0.6− | 0.1− |
| 2001 10 20 | 704 | 0.3− | 1.0+ | 2001 11 18 | 704 | 0.1− | 0.1− | 2006 11 19 | 703 | 1.3+ | 0.7+ |
| 2001 10 20 | 704 | 0.2− | 0.1− | 2001 11 18 | 704 | 0.2− | 0.1+ | 2006 11 19 | 703 | 1.6− | 0.9+ |
| 2001 10 20 | 704 | 0.0 | 0.4+ | 2001 11 18 | 704 | 0.0 | 0.1− | 2006 11 19 | 703 | (3.1+ | 0.5−) |
| 2001 10 20 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 1.0+ | 0.6− | 2006 11 19 | 703 | 0.3+ | 0.4− |

**2001 TH$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.34106 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19839781 | $\omega$ | 301.11697 | +0.90703664 | | −0.41797693 | |
| $a$ | 2.9114643 | $\Omega$ | 83.63230 | +0.40162015 | | +0.82263537 | |
| $e$ | 0.1369053 | $i$ | 2.92950 | +0.12643490 | | +0.38544304 | |
| $P$ | 4.97 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.2+ | 0.3+ | 2001 10 23 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 1993 01 22 | 691 | 0.3+ | 0.1+ | 2001 10 23 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− |
| 1993 01 22 | 691 | 0.5− | 0.2− | 2001 10 23 | 704 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2001 10 23 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 0.3− | 0.2− | 2001 10 24 | 704 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.0 | 2001 10 24 | 704 | 0.5+ | 0.1+ | 2006 10 21 | G96 | (1.9− | 1.4−) |
| 2001 09 21 | 704 | 0.1+ | 1.2+ | 2001 10 24 | 704 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.0 | 0.6− |
| 2001 10 13 | 704 | 0.9+ | 0.1− | 2001 10 24 | 704 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.6− |
| 2001 10 13 | 704 | 0.2+ | 0.0 | 2001 10 24 | 704 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.5− |
| 2001 10 13 | 704 | 0.5+ | 0.2+ | 2001 11 20 | 704 | 0.1+ | 1.2+ | 2006 10 31 | G96 | 0.1− | 0.6− |
| 2001 10 18 | 644 | 0.7− | 0.5+ | 2001 11 20 | 704 | 0.4− | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.2− |
| 2001 10 18 | 644 | 0.5− | 0.5+ | 2001 11 20 | 704 | 0.2− | 0.5+ | 2006 11 07 | 644 | 0.0 | 0.6− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.7− | 0.3+ | 2001 11 20 | 704 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.5− | 0.4− |
| 2001 10 20 | 704 | 0.7+ | 0.4+ | 2001 11 20 | 704 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.4+ | 1.4+ |
| 2001 10 20 | 704 | 0.5+ | 0.2+ | 2001 12 17 | 704 | 1.2− | 0.6+ | 2006 11 11 | 703 | 0.4− | 1.0− |
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2001 12 17 | 704 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2001 10 20 | 704 | 0.3+ | 0.1− | 2001 12 17 | 704 | 0.7+ | 0.6+ | 2006 11 11 | 703 | 1.3+ | 1.1− |
| 2001 10 20 | 704 | 0.4+ | 0.7− | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 1.0− |
| 2001 10 23 | 704 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.0 | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.9+ |
| 2001 10 23 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.5− |

**2001 TK$_{172}$ = 2006 TT$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.59391 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21068226 | $\omega$ | 256.58029 | | +0.63937157 | | +0.74227351 |
| $a$ | 2.7971606 | $\Omega$ | 54.99698 | | −0.57600020 | | +0.63519326 |
| $e$ | 0.0528157 | $i$ | 14.17457 | | −0.50934052 | | +0.21344687 |
| $P$ | 4.68 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.4− | 0.9+ | 2006 10 15 | D35 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2001 10 11 | 704 | (2.5− | 0.1−) | 2006 10 15 | D35 | 0.5− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2001 10 11 | 704 | 0.8+ | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2001 10 11 | 704 | 0.5+ | 1.4+ | 2006 10 18 | 691 | 0.6+ | 0.2− | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2001 10 13 | 704 | 0.0 | 1.4+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2001 10 13 | 704 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.6− | 2006 11 17 | 703 | 1.4− | 0.1− |
| 2001 10 13 | 704 | 1.1− | 0.3− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.7− |
| 2001 10 15 | 644 | 0.1− | 1.0− | 2006 11 08 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.7+ | 0.2+ |
| 2001 10 15 | 644 | 0.2− | 1.0− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.0− | 0.1+ |
| 2001 10 15 | 644 | 0.2− | 0.7− | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.4− |
| 2001 10 20 | 704 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2001 10 20 | 704 | 0.8+ | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.9− |
| 2001 10 20 | 704 | (1.7+ | 0.9−) | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.5− | 0.5− |
| 2001 10 20 | 704 | 0.3− | 0.9− | 2006 11 10 | 644 | 0.1− | 0.5+ | 2006 11 27 | 703 | 0.8+ | 1.6+ |
| 2001 10 23 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.9− | 0.5+) | 2006 11 27 | 703 | 1.3− | 0.4− |
| 2001 10 23 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.5− | 2006 11 27 | 703 | 0.3+ | 0.5− |
| 2001 10 23 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.8+ | | | | |
| 2006 10 15 | D35 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2− | | | | |

**2001 TH$_{174}$ = 2004 NT$_5$ = 3154 T-2**

Id. Minor Planet Center (*MPO* 65080; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.73577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28327886 | $\omega$ | 241.02249 | | +0.36572793 | | +0.92953985 |
| $a$ | 2.2961131 | $\Omega$ | 50.50671 | | −0.83138249 | | +0.34892525 |
| $e$ | 0.1558688 | $i$ | 3.48361 | | −0.41838527 | | +0.11919241 |
| $P$ | 3.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 25 | 675 | (2.9− | 5.6−) | 2001 10 20 | 704 | 0.3+ | 0.1+ | 2004 07 15 | E12 | 0.2− | 0.1− |
| 1973 09 25 | 675 | (3.4− | 4.9−) | 2001 10 20 | 704 | 0.9+ | 0.3− | 2004 07 15 | E12 | 0.1+ | 0.1+ |
| 1973 09 29 | 675 | 1.2+ | 1.5− | 2001 10 20 | 704 | 0.6+ | 0.3− | 2004 07 16 | 428 | 0.0 | 0.2− |
| 1973 09 29 | 675 | 0.5+ | 1.8− | 2001 10 20 | 704 | 0.9+ | 0.0 | 2004 07 16 | 428 | 0.0 | 0.2+ |
| 1973 09 30 | 675 | (1.2− | 3.1−) | 2001 10 24 | 704 | (2.1− | 0.1−) | 2004 07 19 | 428 | (2.5− | 1.3−) |
| 1973 09 30 | 675 | (0.9− | 3.2−) | 2001 10 24 | 704 | 0.7− | 0.3− | 2004 07 19 | 428 | 0.8+ | 0.1+ |
| 2000 05 05 | 645 | 0.1+ | 0.1+ | 2001 10 24 | 704 | 0.5+ | 0.5− | 2004 07 20 | 428 | (3.3− | 0.8+) |
| 2000 05 05 | 645 | 0.1+ | 0.2+ | 2001 10 24 | 704 | 0.4+ | 0.6− | 2004 07 20 | 428 | 0.3− | 0.2+ |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2004 06 15 | 704 | 1.0+ | 0.7− | 2005 12 21 | 691 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 1.1− | 0.8+ | 2004 06 15 | 704 | 0.2+ | 1.1− | 2005 12 21 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.1+ | 2004 06 15 | 704 | 0.6− | 1.3− | 2005 12 21 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 1.1+ | 2004 06 15 | 704 | 0.3− | 0.9− | 2006 01 31 | G96 | 0.3− | 0.2− |
| 2001 09 19 | 704 | 1.3− | 0.7+ | 2004 07 11 | 704 | 0.0 | 1.6+ | 2006 01 31 | G96 | 0.4− | 0.0 |
| 2001 10 14 | 704 | 0.9− | 0.7+ | 2004 07 11 | 704 | 0.3− | 0.5+ | 2006 01 31 | G96 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 1.1− | 0.7+ | 2004 07 11 | 704 | 0.3+ | 0.6+ | 2006 01 31 | G96 | 0.4+ | 0.3− |
| 2001 10 14 | 704 | 0.3+ | 0.1+ | 2004 07 11 | 704 | 0.4− | 0.8+ | | | | |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2004 07 15 | E12 | 0.3− | 0.4+ | | | | |

**2001 TB$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.62345 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23877619 | $\omega$ | 108.55967 | | +0.99747192 | | +0.04466414 |
| $a$ | 2.5732108 | $\Omega$ | 248.91032 | | −0.06228884 | | +0.92390340 |
| $e$ | 0.1959031 | $i$ | 3.39613 | | +0.03420341 | | +0.38001002 |
| $P$ | 4.13 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.3− | 0.7+ | 2001 10 21 | 704 | 0.4− | 0.8− | 2005 09 23 | 703 | 0.5− | 0.1− |
| 2001 09 17 | 704 | 0.2+ | 0.5+ | 2001 10 21 | 704 | 0.2+ | 0.1+ | 2005 09 23 | 703 | 1.9+ | 1.1+ |
| 2001 09 17 | 704 | 0.3− | 1.1+ | 2001 10 21 | 704 | 0.0 | 0.1+ | 2005 09 23 | 703 | 0.3+ | 0.8+ |
| 2001 10 14 | 704 | 0.2− | 0.9+ | 2005 08 30 | 691 | 0.2− | 0.4− | 2005 10 07 | 691 | 0.1+ | 0.5− |
| 2001 10 14 | 704 | 0.8+ | 1.7+ | 2005 08 30 | 691 | 0.0 | 0.4− | 2005 10 07 | 691 | 0.2+ | 0.1− |
| 2001 10 14 | 704 | (2.5+ | 2.9+) | 2005 08 30 | 691 | 0.1+ | 0.3− | 2005 10 07 | 691 | 0.1− | 0.1+ |
| 2001 10 18 | 644 | 0.1− | 0.4− | 2005 09 12 | 691 | 0.7+ | 0.7+ | 2005 11 01 | G96 | 0.2+ | 0.7− |
| 2001 10 18 | 644 | 0.0 | 1.3− | 2005 09 12 | 691 | 0.0 | 0.3− | 2005 11 01 | G96 | 0.2− | 0.1+ |
| 2001 10 18 | 644 | 0.0 | 0.8− | 2005 09 12 | 691 | 1.0− | 0.8+ | 2005 11 01 | G96 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.3− | 0.5− | 2005 09 23 | 703 | 0.7+ | 1.0− | 2005 11 01 | G96 | 0.0 | 0.4− |

**2001 TO$_{176}$ = 2006 SQ$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.71398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20278841 | $\omega$ | 267.60057 | | −0.42303113 | | −0.89842431 |
| $a$ | 2.8692868 | $\Omega$ | 208.36655 | | +0.89821359 | | −0.39865057 |
| $e$ | 0.1119868 | $i$ | 14.35661 | | +0.11940273 | | −0.18415071 |
| $P$ | 4.86 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.5+ | 0.6+ | 2001 11 20 | 704 | 0.1− | 1.5+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 10 11 | 644 | 0.3+ | 0.7+ | 2001 11 20 | 704 | 0.7− | 1.5+ | 2006 10 15 | 691 | 0.3+ | 0.1− |
| 2001 10 11 | 644 | 0.4+ | 0.4+ | 2001 11 20 | 704 | 0.5− | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 1.2+ | 0.4+ | 2001 11 20 | 704 | 1.0− | 0.7+ | 2006 10 15 | 691 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | 0.7+ | 0.0 | 2001 11 21 | 704 | 0.2− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.3− | 0.5− | 2001 11 21 | 704 | 0.9− | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.8+ | 0.1− | 2001 11 21 | 704 | 0.8− | 0.6+ | 2006 10 19 | 691 | 0.5− | 0.4− |
| 2001 10 21 | 704 | 0.2+ | 0.8+ | 2001 11 21 | 704 | 0.6− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.5+ | 0.2+ | 2004 06 14 | 691 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 10 21 | 704 | 0.5+ | 0.6+ | 2004 06 14 | 691 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.1− | 0.2+ | 2004 06 14 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.7+ | 0.5− |
| 2001 10 23 | 704 | (0.5+ | 2.1−) | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2001 10 23 | 704 | (0.7+ | 1.7−) | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.5− |
| 2001 10 23 | 704 | (0.4+ | 2.6−) | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2001 10 23 | 704 | (0.4+ | 1.9−) | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 19 | 703 | 1.1− | 0.1+ |
| 2001 10 23 | 704 | (1.9+ | 1.8−) | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 19 | 703 | 0.3+ | 0.1+ |
| 2001 10 24 | 704 | (0.3+ | 2.0−) | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.7+ | 0.9+ |
| 2001 10 24 | 704 | (0.5+ | 2.1−) | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 19 | 703 | 1.5− | 0.7− |
| 2001 10 24 | 704 | (0.4− | 1.7−) | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 23 | G96 | 0.5+ | 0.5− |
| 2001 10 24 | 704 | (0.4+ | 1.9−) | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2001 10 24 | 704 | 0.4+ | 0.8− | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.6+ | 0.7− |
| 2001 11 20 | 704 | 1.3− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.8− |

**2001 TS$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.69954 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22580492 | $\omega$ | 20.56843 | | +0.92957053 | | −0.36863937 |
| $a$ | 2.6708354 | $\Omega$ | 1.06896 | | +0.32230399 | | +0.81019347 |
| $e$ | 0.0949794 | $i$ | 5.87598 | | +0.17893789 | | +0.45573188 |
| $P$ | 4.36 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 25 | 691 | 0.0 | 0.1− | 2001 10 19 | 644 | 0.5− | 2.0+ | 2005 07 28 | 644 | 0.3− | 0.5+ |
| 1992 09 25 | 691 | 1.2+ | 1.6− | 2001 10 19 | 644 | 0.2− | 1.7+ | 2005 08 04 | 644 | 0.2− | 0.9+ |
| 1992 09 25 | 691 | 0.1− | 0.3− | 2001 10 19 | 644 | 0.3− | 1.6+ | 2005 08 04 | 644 | 0.1− | 0.6+ |
| 1999 03 19 | 691 | 0.0 | 0.3+ | 2001 10 21 | 704 | 0.1+ | 0.4− | 2005 08 04 | 644 | 0.3− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.2+ | 0.2+ | 2001 10 21 | 704 | 0.4− | 0.2+ | 2005 08 30 | 699 | 0.4+ | 0.4+ | | |
| 1999 03 19 | 691 | 0.1+ | 0.0 | 2001 10 21 | 704 | 0.6+ | 0.5− | 2005 08 30 | 699 | 0.4+ | 0.2− | | |
| 2001 10 14 | 704 | 0.7+ | 0.8+ | 2001 10 21 | 704 | 0.1− | 0.6− | 2005 08 30 | 699 | 1.5− | 1.3+ | | |
| 2001 10 14 | 704 | 1.3− | 0.3− | 2001 10 21 | 704 | 0.1− | 0.2− | 2005 08 30 | 699 | 0.5− | 0.2+ | | |
| 2001 10 14 | 704 | 0.7− | 0.5− | 2001 10 21 | 704 | 0.4+ | 0.1+ | 2005 10 06 | G96 | 0.1− | 0.0 | | |
| 2001 10 14 | 704 | 0.3− | 0.7+ | 2001 10 21 | 704 | 0.5+ | 0.1+ | 2005 10 06 | G96 | 0.4− | 0.2+ | | |
| 2001 10 17 | 704 | (0.4− | 3.0+) | 2001 10 21 | 704 | 0.1+ | 0.6− | 2005 10 06 | G96 | 0.2− | 0.4+ | | |
| 2001 10 17 | 704 | (3.8− | 3.0+) | 2001 10 21 | 704 | 0.4− | 0.1+ | 2005 10 06 | G96 | 0.0 | 0.6+ | | |
| 2001 10 17 | 704 | (0.1+ | 3.1+) | 2005 07 28 | 644 | 0.0 | 0.8+ | | | | | | |
| 2001 10 17 | 704 | (0.3+ | 2.2+) | 2005 07 28 | 644 | 0.5− | 0.4+ | | | | | | |

**2001 TG$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.50164 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18176318 | $\omega$ | 146.70955 | | +0.98185730 | | −0.14123672 |
| $a$ | 3.0864940 | $\Omega$ | 221.99434 | | +0.10430534 | | +0.95951013 |
| $e$ | 0.1328704 | $i$ | 10.90076 | | +0.15835602 | | +0.24370575 |
| $P$ | 5.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.5− | 1.0− | 2001 10 21 | 704 | 0.2+ | 0.1− | 2001 12 18 | 291 | 0.8− | 0.3− | | |
| 2001 09 26 | 704 | 0.0 | 0.5− | 2001 10 21 | 704 | 1.1+ | 0.2− | 2001 12 18 | 291 | 1.0− | 0.5− | | |
| 2001 09 26 | 704 | 0.5+ | 0.2+ | 2001 10 21 | 704 | 1.3+ | 0.1− | 2001 12 18 | 291 | 0.7− | 0.3− | | |
| 2001 09 26 | 704 | 0.8− | 0.3− | 2001 10 21 | 704 | 1.4+ | 0.6− | 2001 12 19 | 291 | 1.0+ | 0.6+ | | |
| 2001 10 14 | 704 | 0.2+ | 0.0 | 2001 10 26 | 691 | 0.1− | 0.4− | 2001 12 19 | 291 | 1.2+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2001 10 26 | 691 | 0.3− | 0.4− | 2001 12 19 | 291 | 0.9+ | 0.6+ | | |
| 2001 10 14 | 704 | 0.7− | 0.4+ | 2001 10 26 | 691 | 0.3− | 0.4− | 2006 08 16 | 735 | 0.3+ | 0.0 | | |
| 2001 10 14 | 704 | 0.7− | 1.2− | 2001 10 26 | 644 | 0.9+ | 0.3− | 2006 08 16 | 735 | 0.0 | 0.1− | | |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2001 10 26 | 644 | 0.3+ | 0.0 | 2006 08 16 | 735 | 1.2+ | 0.3− | | |
| 2001 10 20 | 644 | 0.4− | 0.2+ | 2001 10 26 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.1− | | |
| 2001 10 20 | 644 | 0.1− | 0.0 | 2001 11 15 | 291 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.5− | 1.0+ | | |
| 2001 10 20 | 644 | 0.3+ | 0.4+ | 2001 11 15 | 291 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.1− | | |
| 2001 10 21 | 704 | 0.7+ | 0.3+ | 2001 11 15 | 291 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.8+ | | |

**2001 TY$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.63396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19119453 | $\omega$ | 35.11822 | | +0.85602797 | | −0.51679547 |
| $a$ | 2.9841391 | $\Omega$ | 355.94532 | | +0.42796985 | | +0.72129981 |
| $e$ | 0.0925208 | $i$ | 9.58286 | | +0.28992745 | | +0.46113883 |
| $P$ | 5.15 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.4+ | 0.8− | 2001 10 21 | 704 | 1.0+ | 0.3− | 2006 09 26 | 691 | 0.4+ | 0.0 | | |
| 2001 09 26 | 704 | 0.3+ | 0.4− | 2001 10 21 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 691 | 0.4− | 0.1+ | | |
| 2001 09 26 | 704 | 1.0+ | 0.2− | 2001 10 21 | 704 | 0.4− | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.3+ | | |
| 2001 09 26 | 704 | 0.0 | 0.9− | 2001 11 17 | 704 | 0.7− | 0.4− | 2006 09 30 | 691 | 0.2− | 0.2+ | | |
| 2001 10 12 | 608 | 0.4− | 0.9− | 2001 11 17 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | | |
| 2001 10 12 | 608 | 0.6− | 1.0− | 2001 11 17 | 704 | 0.6+ | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.1+ | | |
| 2001 10 12 | 608 | 0.6− | 0.8− | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1+ | | |
| 2001 10 12 | 599 | 0.2− | 0.5+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.1− | | |
| 2001 10 12 | 599 | 0.4+ | 0.8− | 2006 09 16 | 644 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2001 10 12 | 599 | 0.4− | 0.4+ | 2006 09 16 | 644 | 0.1− | 0.3− | 2006 10 17 | 703 | 1.2+ | 1.0− | | |
| 2001 10 14 | 704 | 0.2− | 0.2+ | 2006 09 16 | 644 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.9+ | 0.9− | | |
| 2001 10 14 | 704 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2001 10 14 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.5+ | | |
| 2001 10 14 | 704 | 0.3− | 0.4− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2001 10 14 | 704 | 0.6− | 0.2+ | 2006 09 19 | 699 | (0.1+ | 1.6−) | 2006 10 23 | G96 | 1.1− | 0.9− | | |
| 2001 10 20 | 644 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.3− | 0.4− | 2006 10 23 | G96 | 1.5+ | 0.5− | | |
| 2001 10 20 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | (1.6+ | 0.5+) | 2006 10 23 | G96 | 0.3+ | 0.2− | | |
| 2001 10 20 | 644 | 0.3− | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.5− | 2006 10 23 | G96 | 0.3+ | 0.3− | | |
| 2001 10 21 | 704 | 0.2+ | 1.1+ | 2006 09 26 | 691 | 0.1− | 0.8+ | | | | | | |
| 2001 10 21 | 704 | 0.1+ | 1.3+ | 2006 09 26 | 691 | 0.3+ | 0.0 | | | | | | |

**2001 TD$_{179}$ = 2006 TP$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.63383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18606920 | $\omega$ | 46.23153 | | +0.39184458 | | +0.91160692 |
| $a$ | 3.0386899 | $\Omega$ | 247.21639 | | −0.87808108 | | +0.33024797 |
| $e$ | 0.0989827 | $i$ | 7.74317 | | −0.27464786 | | +0.24476335 |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.5+ | 0.6+ | 2006 09 16 | 703 | 0.6− | 0.5+ | 2006 10 17 | 703 | (0.3− | 1.6−) | | |
| 2001 10 14 | 704 | 0.7+ | 0.4− | 2006 09 16 | 703 | 0.5− | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.5+ | | |
| 2001 10 14 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.7+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.8+ | | |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.2− | 0.7− | | |
| 2001 10 20 | 644 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | | |
| 2001 10 20 | 644 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.1− | | |
| 2001 10 20 | 644 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 24 | 644 | 0.1− | 0.2− | | |
| 2001 10 21 | 704 | 1.2− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 24 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.2− | | |
| 2001 10 21 | 704 | 0.6− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.0 | | | | | | |
| 2006 09 16 | 703 | 0.2− | 1.1− | 2006 10 17 | 691 | 0.3− | 0.4+ | | | | | | |

**2001 TN$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.04614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18291849 | $\omega$ | 182.90255 | | +0.42124186 | | −0.89671050 |
| $a$ | 3.0734841 | $\Omega$ | 242.21801 | | +0.83517197 | | +0.44194373 |
| $e$ | 0.0909134 | $i$ | 8.83521 | | +0.35361430 | | +0.02441357 |
| $P$ | 5.39 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2+ | 0.3− | 2001 11 17 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 703 | (1.9− | 1.3+) | | |
| 2001 10 14 | 704 | 0.4+ | 0.6+ | 2001 11 17 | 704 | 0.1− | 0.6− | 2006 10 23 | 703 | 1.4− | 0.3+ | | |
| 2001 10 14 | 704 | 0.5+ | 0.0 | 2001 11 17 | 704 | 0.2− | 0.4− | 2006 10 23 | 703 | (3.0− | 0.3+) | | |
| 2001 10 14 | 704 | 0.0 | 0.2+ | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 23 | 703 | 1.4− | 1.2− | | |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2003 03 30 | 645 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.4− | 0.6− | | |
| 2001 10 21 | 704 | 0.6− | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.9− | 2006 11 11 | G96 | 0.3− | 0.7− | | |
| 2001 10 21 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.8+ | 0.4+ | 2006 11 11 | G96 | 0.6− | 0.7− | | |
| 2001 10 21 | 704 | 0.5− | 0.5− | 2006 09 20 | 699 | 1.0+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.5− | | |
| 2001 10 21 | 704 | 0.5+ | 0.7+ | 2006 09 20 | 699 | 0.1+ | 1.2+ | 2006 11 11 | 291 | 0.2− | 0.3+ | | |
| 2001 11 10 | 704 | 0.7− | 0.3+ | 2006 09 22 | 703 | (1.7− | 2.5−) | 2006 11 11 | 291 | 0.9+ | 0.6+ | | |
| 2001 11 10 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 703 | 0.7− | 0.2+ | 2006 11 11 | 291 | 1.0+ | 0.7+ | | |
| 2001 11 10 | 644 | 0.2− | 0.2− | 2006 09 22 | 703 | 0.2− | 0.3− | 2006 11 17 | 291 | 0.1− | 0.2− | | |
| 2001 11 10 | 644 | 0.3− | 0.2− | 2006 09 22 | 703 | 0.2+ | 0.9− | 2006 11 17 | 291 | 0.1− | 0.1− | | |
| 2001 11 10 | 704 | (2.4+ | 0.5−) | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 17 | 291 | 0.3− | 0.0 | | |
| 2001 11 10 | 644 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.5− | | | | | | |
| 2001 11 10 | 704 | (1.8+ | 0.8+) | 2006 10 18 | 691 | 0.1− | 0.5− | | | | | | |

**2001 TY$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.60908 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18664585 | $\omega$ | 358.84525 | | +0.99139063 | | −0.12950315 |
| $a$ | 3.0324279 | $\Omega$ | 8.66753 | | +0.12113748 | | +0.85111212 |
| $e$ | 0.0358426 | $i$ | 7.36857 | | +0.04970244 | | +0.50876035 |
| $P$ | 5.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.0 | 0.8+ | 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.2− | | |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.6− | | |
| 2001 09 20 | 704 | 1.0− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.5− | | |
| 2001 10 14 | 704 | 0.1− | 1.2+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.6− | | |
| 2001 10 14 | 704 | 0.8+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.5− | | |
| 2001 10 14 | 704 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.1+ | 1.2+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.4+ | 0.4+ | 2006 09 23 | 691 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.4− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.1+ | 0.8− | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.6− |
| 2001 10 19 | 644 | 0.1+ | 0.8− | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.6− |
| 2001 10 19 | 644 | 0.1− | 1.0− | 2006 09 24 | 291 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.3− | 0.6+ | 2006 09 24 | 291 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.7− |
| 2001 10 21 | 704 | 0.8− | 0.5+ | 2006 09 24 | 291 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 10 23 | 333 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 10 23 | 333 | 0.5− | 0.1+ | 2006 09 25 | G96 | (3.0− | 2.4−) | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 10 23 | 333 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2001 10 26 | 644 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2001 10 26 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.7− | 1.0+ | 2006 10 22 | G96 | 0.0 | 0.6− |
| 2001 10 26 | 644 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.5+ | 0.3− |
| 2004 04 20 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.4+ | 1.1− | 2006 10 22 | G96 | 0.3+ | 0.6− |
| 2004 04 20 | 691 | 0.6+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.3+ | | | | |

**2001 TG$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.84141 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18484330 | $\omega$ | 120.26798 | | +0.97174331 | | +0.21044529 |
| $a$ | 3.0521105 | $\Omega$ | 227.81248 | | −0.23349305 | | +0.92337739 |
| $e$ | 0.0353485 | $i$ | 8.29528 | | +0.03458231 | | +0.32107162 |
| $P$ | 5.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.0 | 0.2− | 2001 10 21 | 704 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2001 10 14 | 704 | 0.3− | 0.5+ | 2001 11 17 | 691 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.5+ | 0.1+ |
| 2001 10 14 | 704 | 0.4− | 0.0 | 2001 11 17 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2001 10 14 | 704 | 0.4− | 0.3+ | 2001 11 17 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | 0.6− | 0.2− | 2001 11 20 | 691 | 0.7+ | 0.0 | 2006 10 24 | 644 | 0.6− | 0.1− |
| 2001 10 21 | 704 | 0.5− | 0.3+ | 2001 11 20 | 691 | 0.5+ | 0.1+ | 2006 10 24 | 644 | 0.5− | 0.1+ |
| 2001 10 21 | 704 | 0.8− | 0.3− | 2001 11 20 | 691 | 0.4+ | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.8− | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.1− | | | | |
| 2001 10 21 | 704 | 1.0− | 0.7− | 2006 10 11 | 644 | 0.2+ | 0.2− | | | | |

**2001 TQ$_{181}$ = 2006 SL$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.74991 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19002543 | $\omega$ | 111.76564 | | +0.98034003 | | +0.13800380 |
| $a$ | 2.9963663 | $\Omega$ | 240.54854 | | −0.17700334 | | +0.93091972 |
| $e$ | 0.1126556 | $i$ | 9.32040 | | +0.08719655 | | +0.33814704 |
| $P$ | 5.19 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 699 | 0.5− | 0.0 | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 13 | 699 | 0.7+ | 1.0+ | 2006 09 16 | 703 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 10 13 | 699 | 0.4− | 0.5+ | 2006 09 16 | 703 | 0.7− | 0.0 | 2006 10 16 | 012 | (1.0− | 1.9−) |
| 2001 10 13 | 699 | 1.1− | 0.8− | 2006 09 16 | 703 | 0.6− | 0.2+ | 2006 10 16 | 012 | 0.8+ | 0.3+ |
| 2001 10 14 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.3+ | 2006 10 16 | 012 | 0.4− | 0.1+ |
| 2001 10 14 | 704 | 0.6− | 0.2− | 2006 09 27 | 703 | 0.0 | 0.2− | 2006 10 16 | 012 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.4− | 0.6− | 2006 09 27 | 703 | 0.2− | 0.5− | 2006 10 16 | 012 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 0.6− | 0.2+ | 2006 09 27 | 703 | 0.3+ | 0.4− | 2006 10 16 | 012 | 0.8+ | 0.6+ |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.2+ | 0.1+ | 2006 10 17 | 012 | 0.2+ | 0.5− |
| 2001 10 21 | 704 | 0.8+ | 0.8− | 2006 10 03 | 704 | 0.5− | 0.5+ | 2006 10 17 | 703 | 0.5+ | 1.1− |
| 2001 10 21 | 704 | 1.3+ | 0.2− | 2006 10 03 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 2001 10 21 | 704 | 0.5+ | 0.3− | 2006 10 09 | 644 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.6+ |
| 2001 10 21 | 704 | 1.2+ | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.7− |
| 2001 11 17 | 704 | 1.0− | 0.3− | 2006 10 09 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 1.0− | 0.8+ | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 17 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | | | |
| 2001 11 17 | 704 | 0.5+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2+ | | | | |

**2001 TV$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.71645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18423675 | $\omega$ | 125.47651 | | +0.59372887 | | −0.79866802 |
| $a$ | 3.0588055 | $\Omega$ | 287.80728 | | +0.70088196 | | +0.57316110 |
| $e$ | 0.2614231 | $i$ | 5.91152 | | +0.39528535 | | +0.18334600 |
| $P$ | 5.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2001 11 10 | 704 | 0.5− | 0.1+ | 2001 12 20 | 644 | 0.2− | 0.3− |
| 2001 10 14 | 704 | 0.0 | 0.3− | 2001 11 10 | 704 | 0.5− | 0.3+ | 2006 08 29 | 703 | 0.1− | 1.0− |
| 2001 10 14 | 704 | 0.1− | 0.0 | 2001 11 12 | 704 | 0.4+ | 0.3− | 2006 08 29 | 703 | 0.6+ | 0.4+ |
| 2001 10 14 | 704 | 0.0 | 0.1− | 2001 11 12 | 704 | 1.1+ | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.1+ | 0.2+ | 2001 11 12 | 704 | 0.0 | 0.5− | 2006 08 29 | 703 | 0.1+ | 0.2− |
| 2001 10 21 | 704 | 0.1− | 0.3+ | 2001 11 12 | 704 | 0.3+ | 0.3− | 2006 09 13 | 644 | 0.5+ | 0.2+ |
| 2001 10 21 | 704 | 0.6+ | 0.3+ | 2001 11 12 | 704 | 0.1− | 0.5− | 2006 09 13 | 644 | 0.2+ | 0.4+ |
| 2001 10 21 | 704 | (1.6− | 0.7−) | 2001 11 24 | 704 | 0.3+ | 0.4+ | 2006 09 13 | 644 | 0.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.7− | 0.1− | 2001 11 24 | 704 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.5+ | 0.0 |
| 2001 11 10 | 704 | 0.2− | 0.4− | 2001 11 24 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 1.0− | 0.5− |
| 2001 11 10 | 704 | 0.2− | 0.3− | 2001 12 20 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.6− | 0.2− |
| 2001 11 10 | 704 | 0.3− | 0.1+ | 2001 12 20 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.4− | 0.4+ |

**2001 TS$_{183}$ = 2006 TC$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.80845 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19718522 | $\omega$ | 153.65203 | | +0.99219162 | | −0.02013901 |
| $a$ | 2.9233881 | $\Omega$ | 208.33593 | | −0.00169361 | | +0.98461113 |
| $e$ | 0.2424387 | $i$ | 15.03002 | | +0.12471133 | | +0.17359536 |
| $P$ | 5.00 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 1.0+ | 0.5− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2001 10 14 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.5− |
| 2001 10 14 | 704 | 0.3+ | 0.9+ | 2006 10 03 | 691 | 0.1+ | 0.5− | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2001 10 16 | 691 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 10 24 | A44 | 0.4+ | 0.0 |
| 2001 10 16 | 691 | 0.4− | 0.0 | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2001 10 16 | 691 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.5+ | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.9+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.2− | 1.1+ | 2006 10 15 | 691 | 0.3− | 0.2− | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2001 10 21 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | (0.5+ | 1.9+) | 2006 10 19 | 691 | 0.4+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.5+ |
| 2001 10 23 | 704 | (0.4+ | 2.7−) | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2001 10 23 | 704 | (0.6+ | 2.1−) | 2006 10 21 | 703 | 0.8− | 1.0+ | 2006 11 16 | G96 | 0.4+ | 1.1− |
| 2001 10 23 | 704 | (0.1+ | 1.8−) | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 16 | G96 | (2.3+ | 1.9+) |
| 2001 10 23 | 704 | (0.3− | 2.5−) | 2006 10 21 | 703 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 1.1− | 0.1+ | | | | |

**2001 TG$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.80554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19011157 | $\omega$ | 154.35490 | | +0.99392304 | | −0.01018717 |
| $a$ | 2.9954611 | $\Omega$ | 206.92439 | | −0.01065908 | | +0.98212226 |
| $e$ | 0.0677488 | $i$ | 14.00770 | | +0.10955988 | | +0.18796830 |
| $P$ | 5.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | (2.0+ | 0.4+) | 2001 10 21 | 704 | 0.3+ | 0.4− | 2006 10 01 | 703 | 0.5− | 0.7− |
| 2001 09 10 | 704 | 0.2+ | 0.5− | 2001 10 21 | 704 | 0.5− | 0.3− | 2006 10 01 | 703 | 0.1+ | 0.1+ |
| 2001 09 10 | 704 | 0.6+ | 0.1+ | 2001 10 21 | 704 | (0.1− | 2.0−) | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2001 09 10 | 704 | 0.1− | 0.3− | 2001 10 23 | 704 | 0.2− | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 09 10 | 704 | 0.0 | 0.3− | 2001 10 23 | 704 | 0.5− | 0.8+ | 2006 10 10 | 644 | 0.6+ | 0.1− |
| 2001 09 24 | 704 | 0.5+ | 1.1+ | 2001 10 23 | 704 | 0.6− | 0.6− | 2006 10 10 | 644 | 0.4+ | 0.1− |
| 2001 09 24 | 704 | 0.1+ | 0.3+ | 2001 11 20 | 704 | (0.9− | 1.8+) | 2006 10 10 | 644 | 0.2− | 0.3− |
| 2001 09 24 | 704 | (1.6+ | 0.5+) | 2001 11 20 | 704 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2001 09 24 | 704 | 0.1− | 0.8+ | 2001 11 20 | 704 | 0.9− | 1.4− | 2006 10 12 | 644 | 0.4+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 24 | 704 | 0.2− | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2001 10 11 | 644 | 0.1− | 0.6+ | 2006 09 17 | 703 | 0.7− | 0.5+ | 2006 10 12 | 644 | 0.6+ | 0.3+ |
| 2001 10 11 | 644 | 0.0 | 0.9+ | 2006 09 17 | 703 | 0.4+ | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2001 10 11 | 644 | 0.2− | 0.9+ | 2006 09 17 | 703 | 1.4− | 0.4− | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 2001 10 14 | 704 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.7− | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2001 10 14 | 704 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.4− | 1.0− | 2006 10 19 | 691 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 1.1− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.1− | 0.8− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 10 19 | 644 | 1.2− | 0.3− | 2006 09 27 | 703 | 0.1+ | 1.1− | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 2001 10 19 | 644 | 1.4− | 0.2− | 2006 09 27 | 703 | 0.1− | 0.4− | 2006 10 21 | 691 | 0.0 | 0.5+ |
| 2001 10 19 | 644 | (1.5− | 0.2−) | 2006 09 27 | 703 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 10 20 | 291 | 0.7+ | 0.1− | 2006 09 27 | 703 | 0.9− | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.0 |
| 2001 10 20 | 291 | 0.6+ | 0.4− | 2006 10 01 | 703 | 0.6− | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2001 10 20 | 291 | (0.9− | 1.8−) | 2006 10 01 | 703 | (1.7− | 1.3+) | 2006 10 23 | 691 | 0.1+ | 0.3+ |

### 2001 TW$_{186}$ = 2006 UF$_{85}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.25322 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20081539 | $\omega$ | 149.07936 | | +0.90732806 | −0.41451217 | |
| $a$ | 2.8880501 | $\Omega$ | 235.57123 | | +0.36622608 | +0.86131789 | |
| $e$ | 0.2498835 | $i$ | 4.88594 | | +0.20648062 | +0.29378760 | |
| $P$ | 4.91 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.4− |
| 2001 10 14 | 704 | 0.8+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.1− | 0.5+ |
| 2001 10 14 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2001 10 19 | 644 | 0.7+ | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.4− | 2006 11 10 | 644 | 0.2+ | 0.5+ |
| 2001 10 19 | 644 | 0.6+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.3+ | 0.3+ |
| 2001 10 19 | 644 | 0.9+ | 0.1+ | 2006 11 08 | 644 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 2001 10 21 | 704 | 0.8− | 0.5− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2001 10 21 | 704 | 1.4− | 0.6− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.3+ |
| 2001 10 21 | 704 | 1.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 1.5− | 0.7− | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 704 | 0.8+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2001 11 21 | 704 | 0.1+ | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.0 | | | | |
| 2006 10 17 | 691 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.6+ | | | | |

### 2001 TN$_{188}$ = 2006 RS$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.21336 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18686199 | $\omega$ | 338.23214 | | +0.99614627 | +0.08222329 | |
| $a$ | 3.0300891 | $\Omega$ | 17.13614 | | −0.05705361 | +0.87182934 | |
| $e$ | 0.2865708 | $i$ | 5.94701 | | −0.06661448 | +0.48285912 | |
| $P$ | 5.27 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.5+ | 0.7+ | 2006 08 30 | 699 | 1.4− | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.5+ |
| 2001 10 14 | 704 | 0.5+ | 0.2+ | 2006 08 30 | 699 | 0.6+ | 0.0 | 2006 09 28 | 704 | 0.8− | 0.8+ |
| 2001 10 14 | 704 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.4+ | 1.2+ | 2006 09 28 | 704 | 0.4+ | 0.4+ |
| 2001 10 14 | 704 | 0.9+ | 0.4− | 2006 08 30 | 699 | 0.8− | 0.5− | 2006 09 28 | 704 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.5− | 2006 09 28 | 704 | 0.4− | 0.1+ |
| 2001 10 19 | 691 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.8− | 2006 10 02 | G96 | 0.3+ | 0.5− |
| 2001 10 19 | 691 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.4+ | 1.2− | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2001 10 19 | 691 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2001 10 19 | 644 | 0.1− | 0.8+ | 2006 09 16 | 704 | 0.2+ | 1.4+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2001 10 19 | 644 | 0.1− | 0.4+ | 2006 09 16 | 704 | 0.6− | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 2001 10 19 | 644 | 0.2− | 0.5+ | 2006 09 16 | 704 | 0.5− | 1.0+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 0.4+ | 0.0 | 2006 09 19 | 704 | 0.4+ | 0.7− | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 0.6+ | 0.7− | 2006 09 19 | 699 | 0.9+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 10 21 | 704 | 1.4+ | 1.1− | 2006 09 19 | 704 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.8+ | 0.8− | 2006 09 19 | 699 | 0.1+ | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 10 26 | 644 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.7− | 1.1− | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2001 10 26 | 644 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2001 10 26 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.3− | 0.8− | 2006 09 25 | 699 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.9− | 0.8+ | 2006 09 25 | 699 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.6− |
| 2001 11 21 | 704 | 0.0 | 0.8+ | 2006 09 26 | 704 | 0.5− | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 1.1+ | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.5+ | | | | |
| 2001 11 21 | 704 | 0.5− | 0.2− | 2006 09 26 | 704 | 0.6+ | 1.1+ | | | | |

### 2001 TF$_{194}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.90181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17470381 | $\omega$ | 110.84419 | | +0.83463963 | −0.53506098 | |
| $a$ | 3.1690892 | $\Omega$ | 281.71560 | | +0.44258542 | +0.79277003 | |
| $e$ | 0.0899142 | $i$ | 7.67167 | | +0.32786404 | +0.29193395 | |
| $P$ | 5.64 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.8+ | 1.1+ | 2001 11 12 | 704 | 0.3+ | 0.5− | 2002 01 09 | 704 | 0.7+ | 0.1+ |
| 2001 10 15 | 704 | 1.1− | 0.1+ | 2001 11 12 | 704 | 0.5+ | 0.1+ | 2002 01 09 | 704 | 0.8+ | 0.2− |
| 2001 10 15 | 704 | 0.2− | 0.0 | 2001 11 12 | 704 | 0.8+ | 0.1− | 2002 01 09 | 704 | 0.4+ | 0.5+ |
| 2001 10 15 | 704 | 0.3− | 0.6− | 2001 11 12 | 704 | 1.0+ | 0.1− | 2003 01 27 | 644 | 0.5− | 0.1+ |
| 2001 10 15 | 704 | 0.5− | 0.2+ | 2001 11 12 | 704 | 0.8+ | 0.7+ | 2003 01 27 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 0.5− | 2001 11 24 | 704 | 0.2+ | 0.9+ | 2003 01 27 | 644 | 0.8+ | 0.5+ |
| 2001 10 21 | 704 | 0.9− | 0.4− | 2001 11 24 | 704 | 0.4+ | 0.8+ | 2006 09 12 | 703 | 0.9− | 0.4+ |
| 2001 10 21 | 704 | 0.0 | 0.4+ | 2001 11 24 | 704 | 1.4+ | 0.1− | 2006 09 12 | 703 | 0.3− | 0.6+ |
| 2001 10 21 | 704 | 1.1− | 0.4− | 2001 11 24 | 704 | 0.9+ | 1.0− | 2006 09 12 | 703 | 1.0+ | 0.4+ |
| 2001 10 21 | 704 | 0.3+ | 1.2− | 2001 11 24 | 704 | 0.9+ | 0.1− | 2006 09 12 | 703 | 0.0 | 1.3− |
| 2001 10 22 | 704 | 0.9− | 0.3− | 2001 12 08 | 699 | 0.7− | 0.8+ | 2006 09 16 | 644 | 0.4+ | 0.1− |
| 2001 10 22 | 704 | 1.0− | 0.3− | 2001 12 08 | 699 | 1.0− | 0.8+ | 2006 09 16 | 644 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 0.5− | 0.2− | 2001 12 08 | 699 | 0.5− | 1.4− | 2006 09 16 | 644 | 0.6+ | 0.1+ |
| 2001 10 22 | 704 | 0.8− | 0.5+ | 2001 12 08 | 699 | 1.4− | 0.8+ | 2006 09 18 | 703 | 0.1− | 1.1− |
| 2001 11 10 | 704 | 0.0 | 1.0− | 2001 12 17 | 704 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.0 | 0.3− |
| 2001 11 10 | 704 | 0.6+ | 0.3− | 2001 12 17 | 704 | 0.1+ | 0.4− | 2006 09 18 | 703 | 0.2+ | 0.2+ |
| 2001 11 10 | 704 | 0.4+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.9+ |
| 2001 11 10 | 704 | 1.2+ | 0.3+ | 2001 12 17 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 703 | 0.3− | 0.4+ |
| 2001 11 11 | 699 | 0.7− | 0.8− | 2001 12 17 | 704 | 0.0 | 0.2− | 2006 10 01 | 703 | (3.0− | 3.0+) |
| 2001 11 11 | 699 | 0.1+ | 0.8− | 2001 12 20 | 644 | 0.5− | 0.5+ | 2006 10 01 | 703 | 0.6− | 0.0 |
| 2001 11 11 | 699 | 1.1− | 0.6− | 2001 12 20 | 644 | 0.3− | 0.9+ | 2006 10 01 | 703 | 0.4− | 0.8+ |
| 2001 11 11 | 699 | 0.5+ | 0.2+ | 2001 12 20 | 644 | 0.5− | 0.8+ | | | | |

### 2001 TR$_{194}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.26025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18064097 | $\omega$ | 169.86315 | | +0.07105533 | −0.98802515 | |
| $a$ | 3.0992638 | $\Omega$ | 275.96645 | | +0.90525237 | +0.12153671 | |
| $e$ | 0.1774192 | $i$ | 7.91500 | | +0.41889055 | −0.09505333 | |
| $P$ | 5.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.4+ | 0.0 | 2001 11 24 | 704 | 0.6− | 0.4+ | 2006 09 19 | 699 | 0.5+ | 0.1+ |
| 2001 10 15 | 704 | 0.7− | 0.7− | 2001 11 24 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.5− | 1.2− |
| 2001 10 15 | 704 | 1.0+ | 0.1+ | 2001 12 17 | 704 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.6− | 0.6− |
| 2001 10 15 | 704 | 0.0 | 0.1+ | 2001 12 17 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.2+ | 0.5+ | 2001 12 17 | 704 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.4+ | 0.0 |
| 2001 10 21 | 704 | 0.9− | 0.3+ | 2001 12 17 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 691 | 0.6+ | 0.1+ |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2001 12 20 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 691 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 0.7+ | 0.7− | 2001 12 20 | 644 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 1.3+ | 0.6+ | 2001 12 20 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 2001 11 10 | 704 | (2.2+ | 0.9+) | 2002 01 06 | 644 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2001 11 10 | 704 | (1.6+ | 0.8−) | 2002 01 06 | 644 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 1.2− | 0.7− | 2002 01 06 | 644 | 0.2+ | 0.5− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 1.2− | 0.6− | 2006 09 06 | 644 | 0.5+ | 0.0 | 2006 10 23 | 691 | 1.0− | 0.9+ |
| 2001 11 12 | 704 | 0.4− | 1.2− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | (2.3− | 1.2−) | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2001 11 24 | 704 | 0.2+ | 1.0+ | 2006 09 19 | 699 | 0.2+ | 0.7− | | | | | | |

**2001 TP$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.44009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28662197 | $\omega$ | 179.55243 | | +0.47391509 | +0.86626938 | |
| $a$ | 2.2782239 | $\Omega$ | 118.72901 | | −0.80846671 | +0.49917785 | |
| $e$ | 0.1491793 | $i$ | 10.38397 | | −0.34897860 | +0.01997104 | |
| $P$ | 3.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.2− | 1.6+ | 2001 10 22 | 644 | 0.3− | 0.3+ | 2004 07 16 | 704 | 0.1+ | 0.1− | | |
| 2000 04 04 | 699 | 2.2+ | 0.9− | 2001 10 22 | 644 | 0.4− | 0.6+ | 2004 07 16 | 704 | 0.2+ | 1.2+ | | |
| 2000 04 04 | 699 | 0.2− | 1.6+ | 2003 02 09 | 644 | 0.1+ | 0.4+ | 2004 07 16 | 704 | 0.3+ | 0.7+ | | |
| 2000 04 04 | 699 | 1.7+ | 0.7+ | 2003 02 09 | 644 | 0.1+ | 0.3+ | 2004 08 11 | 704 | 0.2+ | 0.1+ | | |
| 2000 04 28 | 699 | 0.3+ | 0.7+ | 2003 02 09 | 644 | 0.8+ | 0.2+ | 2004 08 11 | 704 | 0.5+ | 0.1+ | | |
| 2000 04 28 | 699 | 0.7− | 0.1+ | 2004 06 27 | 703 | 0.6− | 0.9+ | 2004 08 11 | 704 | 0.3+ | 0.3− | | |
| 2000 04 28 | 699 | 0.2− | 1.8+ | 2004 06 27 | 703 | 0.3+ | 0.4+ | 2004 08 11 | 704 | 0.3+ | 0.0 | | |
| 2000 04 28 | 699 | 0.8− | 1.4+ | 2004 06 27 | 703 | 0.1− | 0.1− | 2004 08 11 | 704 | 0.1− | 0.5− | | |
| 2001 09 19 | 645 | 0.0 | 0.2+ | 2004 06 27 | 703 | 0.7− | 0.2+ | 2004 08 22 | E12 | 0.5+ | 0.4− | | |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2004 07 10 | 703 | 0.3− | 2.5− | 2004 08 22 | E12 | 0.1+ | 0.1− | | |
| 2001 10 15 | 644 | 0.4− | 0.3+ | 2004 07 10 | 703 | 0.6− | 1.1+ | 2004 08 22 | E12 | 0.0 | 0.0 | | |
| 2001 10 15 | 644 | 0.8− | 0.2+ | 2004 07 10 | 703 | 0.5− | 0.5− | 2004 08 22 | E12 | 0.1+ | 0.6+ | | |
| 2001 10 15 | 644 | 0.3− | 0.0 | 2004 07 10 | 703 | 0.8− | 0.6+ | | | | | | |
| 2001 10 22 | 644 | 0.1− | 0.7+ | 2004 07 16 | 704 | 0.1+ | 0.1+ | | | | | | |

**2001 TD$_{197}$ = 2000 QR$_{236}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.08152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22315386 | $\omega$ | 329.29664 | | +0.23492804 | +0.97073944 | |
| $a$ | 2.6919466 | $\Omega$ | 314.23872 | | −0.87711123 | +0.18966100 | |
| $e$ | 0.0151847 | $i$ | 3.98081 | | −0.41890895 | +0.14728765 | |
| $P$ | 4.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 807 | 0.0 | 0.3+ | 2003 01 27 | 291 | 0.3+ | 0.2− | 2005 09 23 | 703 | (1.4− | 3.5−) | | |
| 2000 08 27 | 807 | 0.0 | 0.3+ | 2003 01 27 | 291 | 0.3+ | 0.2− | 2005 09 23 | 703 | 0.6− | 0.2− | | |
| 2000 08 27 | 807 | 0.3− | 0.4+ | 2003 02 22 | 644 | 0.5+ | 1.0+ | 2005 09 23 | 703 | 0.8+ | 0.8+ | | |
| 2000 08 27 | 807 | 0.5− | 0.5+ | 2003 02 22 | 644 | 0.7+ | 1.3+ | 2005 10 01 | 703 | 0.2− | 1.1− | | |
| 2001 10 14 | 704 | 0.5+ | 0.1− | 2003 02 22 | 699 | 0.7+ | 0.1− | 2005 10 01 | 703 | 0.5− | 1.1− | | |
| 2001 10 14 | 704 | 0.5+ | 0.2− | 2003 02 22 | 699 | 0.1− | 0.9+ | 2005 10 01 | 703 | 0.7− | 0.2+ | | |
| 2001 10 14 | 704 | 0.5− | 0.6+ | 2003 02 22 | 699 | 0.7+ | 0.6+ | 2005 10 01 | 703 | 1.0− | 0.2− | | |
| 2001 10 14 | 704 | 1.4+ | 0.6+ | 2003 02 22 | 644 | 0.2+ | 1.2+ | 2005 10 07 | 703 | 0.9+ | 0.3+ | | |
| 2001 11 12 | 704 | 0.1+ | 0.0 | 2003 02 22 | 699 | 0.3+ | 0.8+ | 2005 10 07 | 703 | 0.6− | 0.7+ | | |
| 2001 11 12 | 704 | 1.2− | 0.7+ | 2003 03 06 | 644 | 0.7+ | 0.6+ | 2005 10 07 | 703 | (1.7+ | 1.4+) | | |
| 2001 11 12 | 704 | 0.9− | 0.5+ | 2003 03 06 | 644 | 0.4+ | 0.8+ | 2005 10 07 | 703 | 0.3+ | 0.5+ | | |
| 2001 11 12 | 704 | 0.1− | 0.7+ | 2003 03 06 | 644 | 0.5+ | 0.8+ | 2005 11 03 | G96 | 0.1+ | 0.0 | | |
| 2001 11 12 | 704 | 0.7− | 0.0 | 2005 08 29 | 644 | 0.2− | 0.0 | 2005 11 03 | G96 | 0.2+ | 0.0 | | |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2005 08 29 | 644 | 0.2+ | 0.2+ | 2005 11 03 | G96 | 0.2+ | 0.1− | | |
| 2002 12 14 | 645 | 0.1− | 0.2− | 2005 08 29 | 644 | 0.0 | 0.2+ | 2005 11 03 | G96 | 0.3+ | 0.1− | | |
| 2003 01 05 | 291 | 0.4− | 0.3+ | 2005 09 09 | 704 | 1.0+ | 0.8+ | 2006 11 02 | G96 | 0.5− | 1.4− | | |
| 2003 01 05 | 291 | 0.1− | 0.5+ | 2005 09 09 | 704 | 0.5− | 0.5+ | 2006 11 02 | G96 | 0.8− | 0.9− | | |
| 2003 01 05 | 291 | 0.0 | 0.3+ | 2005 09 09 | 704 | 0.6− | 0.7+ | 2006 11 02 | G96 | 0.1− | 0.7− | | |
| 2003 01 27 | 291 | 0.0 | 0.1− | 2005 09 23 | 703 | 0.5+ | 0.3+ | 2006 11 02 | G96 | 0.4− | 0.6− | | |

**2001 TG$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.41549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21074173 | $\omega$ | 287.23833 | | +0.41316164 | −0.90452311 | |
| $a$ | 2.7966344 | $\Omega$ | 137.85534 | | +0.88381512 | +0.37035512 | |
| $e$ | 0.2603265 | $i$ | 9.04809 | | +0.21947278 | +0.21136470 | |
| $P$ | 4.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.4− | 0.3+ | 2001 10 11 | 704 | 1.0− | 0.2− | 2006 11 15 | 703 | 0.0 | 0.3− | | |
| 2001 09 18 | 699 | 0.1− | 1.2− | 2001 10 11 | 704 | 0.4− | 0.1+ | 2006 11 15 | 703 | 1.1− | 0.5− | | |
| 2001 09 18 | 699 | 0.7+ | 0.7+ | 2001 10 11 | 704 | 0.3− | 0.5− | 2006 11 15 | 703 | 0.8− | 0.9− | | |
| 2001 09 18 | 699 | 0.8+ | 0.0 | 2001 10 15 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.7+ | 0.6− | | |
| 2001 09 25 | 704 | 0.2− | 0.0 | 2001 10 15 | 644 | 0.4− | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.2− | 0.7+ | 2001 10 15 | 644 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.5+ | 0.1− | | |
| 2001 09 25 | 704 | 0.1+ | 0.1− | 2001 10 19 | 699 | 0.1− | 1.2+ | 2006 11 19 | 703 | 0.8+ | 0.3+ | | |
| 2001 09 25 | 704 | 0.0 | 0.5+ | 2001 10 19 | 699 | 0.5+ | 1.1− | 2006 11 19 | 703 | 0.7+ | 0.6+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.3− | 2001 10 19 | 699 | 0.9+ | 0.2− | 2006 12 01 | 703 | (2.2+ | 3.4+) | | |
| 2001 09 25 | 644 | 0.1+ | 0.0 | 2001 10 19 | 699 | 0.8+ | 0.3− | 2006 12 01 | 703 | 0.2+ | 0.0 | | |
| 2001 09 25 | 644 | 0.1− | 0.3+ | 2001 10 23 | 644 | (0.4+ | 2.0+) | 2006 12 01 | 703 | 0.2− | 0.9+ | | |
| 2001 09 25 | 644 | 0.2+ | 0.1+ | 2001 10 23 | 644 | (0.4+ | 2.2+) | 2006 12 01 | 703 | 1.0− | 0.0 | | |
| 2001 10 11 | 704 | 0.4− | 0.3+ | 2001 10 23 | 644 | (0.6+ | 1.7+) | | | | | | |

**2001 TZ$_{199}$ = 2006 WO$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.69607 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21384653 | $\omega$ | 319.68006 | | +0.46027227 | −0.87546802 | |
| $a$ | 2.7694992 | $\Omega$ | 102.44749 | | +0.84841297 | +0.38489613 | |
| $e$ | 0.1556993 | $i$ | 8.67754 | | +0.26142852 | +0.29225112 | |
| $P$ | 4.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.3− | 0.9+ | 2005 07 02 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2− | | |
| 2001 09 25 | 704 | 0.1+ | 0.3+ | 2005 07 02 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2001 09 25 | 704 | 0.2− | 0.1− | 2005 07 02 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.2− | | |
| 2001 09 25 | 704 | 0.3+ | 0.2+ | 2006 10 01 | 703 | 0.1− | 1.5− | 2006 11 23 | G96 | 0.3− | 0.0 | | |
| 2001 09 25 | 704 | 0.7+ | 0.2+ | 2006 10 01 | 703 | 1.2+ | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.1− | | |
| 2001 10 11 | 704 | 1.4− | 0.6− | 2006 10 01 | 703 | 0.3− | 0.6− | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2001 10 11 | 704 | 0.0 | 0.7− | 2006 10 01 | 703 | 0.6− | 0.6+ | 2006 11 28 | 704 | 0.3− | 0.9+ | | |
| 2001 10 11 | 704 | 0.1+ | 0.5− | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.1+ | | |
| 2001 10 11 | 704 | 0.7+ | 0.8− | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.1− | | |
| 2001 10 11 | 704 | (0.0 | 1.6−) | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 15 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.8+ | 0.8+ | 2006 11 28 | 704 | 0.4+ | 0.4+ | | |
| 2001 10 15 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.4− | 0.2+ | | |
| 2001 10 15 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.6+ | 2006 11 29 | 704 | 0.5− | 0.0 | | |
| 2001 10 23 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 1.0− | 0.6+ | 2006 11 29 | 704 | 0.2− | 0.3− | | |
| 2001 10 23 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.0 | | |
| 2001 10 23 | 644 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.2− | | | | | | |

**2001 TJ$_{201}$ = 2006 QP$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.98935 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18537139 | $\omega$ | 245.88002 | | +0.63593222 | −0.76798520 | |
| $a$ | 3.0463111 | $\Omega$ | 163.90568 | | +0.76936699 | +0.62315089 | |
| $e$ | 0.3292901 | $i$ | 15.92972 | | +0.06053628 | +0.14792465 | |
| $P$ | 5.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.0 | 1.6+ | 2001 10 15 | 644 | 0.0 | 0.2− | 2006 08 29 | 703 | 0.2− | 1.4+ | | |
| 2001 09 25 | 704 | 0.4+ | 1.4+ | 2001 10 23 | 644 | 0.3− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.8− | | |
| 2001 09 25 | 704 | 0.1+ | 0.0 | 2001 10 23 | 644 | 0.5− | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.4+ | | |
| 2001 09 25 | 704 | 0.0 | 1.0+ | 2001 10 23 | 644 | 0.7+ | 0.5− | 2006 08 29 | 703 | 0.0 | 0.5+ | | |
| 2001 10 11 | 704 | 0.2− | 0.2− | 2003 04 01 | 695 | 0.1+ | 1.2+ | 2006 09 27 | G96 | 0.4+ | 0.0 | | |
| 2001 10 11 | 704 | 0.6− | 1.3− | 2003 04 01 | 695 | 0.2+ | 1.3+ | 2006 09 27 | G96 | 0.1− | 0.3− | | |
| 2001 10 11 | 704 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.0 | 0.2− | | |
| 2001 10 15 | 644 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.4+ | | |
| 2001 10 15 | 644 | 0.1+ | 0.2− | 2006 08 22 | 644 | 0.2+ | 0.2− | | | | | | |

**2001 TN$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.98269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22214467 | $\omega$ | 241.70811 | | +0.77074293 | +0.62884436 | |
| $a$ | 2.7000934 | $\Omega$ | 79.13933 | | −0.54189182 | +0.73160577 | |
| $e$ | 0.0750441 | $i$ | 5.99194 | | −0.33512474 | +0.26326367 | |
| $P$ | 4.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 07 | 691 | 0.1− | 0.4+ | 2001 10 16 | 644 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 1995 04 07 | 691 | 0.3+ | 0.3+ | 2001 10 16 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 1995 04 07 | 691 | 0.1+ | 0.1− | 2001 10 16 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.3− |
| 2001 09 16 | 704 | 0.3+ | 0.2+ | 2005 07 03 | 644 | 0.4− | 0.3− | 2006 11 15 | 691 | 0.4− | 0.0 |
| 2001 09 16 | 704 | 0.2+ | 0.1− | 2005 07 03 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | (1.7+ | 0.0 ) | 2005 07 03 | 644 | 0.3− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 10 08 | 644 | 0.3− | 0.0 | 2005 07 26 | 644 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2001 10 08 | 644 | 0.3− | 0.3+ | 2005 07 26 | 644 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2001 10 08 | 644 | 0.3− | 0.3+ | 2005 07 26 | 644 | 0.3+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 10 11 | 704 | (1.8− | 1.1−) | 2005 08 04 | 644 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2001 10 11 | 704 | 0.7− | 0.2+ | 2005 08 04 | 644 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.1− | 0.3− |
| 2001 10 11 | 704 | 0.6− | 0.7+ | 2005 08 04 | 644 | 0.3− | 0.2+ | 2006 12 01 | 691 | 0.5− | 0.2+ |

**2001 TS$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.42698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18873807 | $\omega$ | 15.74632 | | +0.70371235 | −0.70865524 | |
| $a$ | 3.0099760 | $\Omega$ | 29.58574 | | +0.64020912 | +0.60137187 | |
| $e$ | 0.1442901 | $i$ | 5.92407 | | +0.30809285 | +0.36899813 | |
| $P$ | 5.22 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.7− | 0.1+ | 2001 11 19 | 704 | 0.0 | 0.9+ | 2006 09 18 | 703 | 1.3− | 1.5+ |
| 2001 10 11 | 644 | 0.2− | 0.1+ | 2001 11 19 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2001 10 11 | 644 | 0.5− | 0.4+ | 2001 11 19 | 704 | 0.9− | 1.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 691 | 0.4− | 0.4− | 2001 11 19 | 704 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2001 10 14 | 691 | 0.9− | 0.3− | 2001 11 19 | 704 | 0.4+ | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 691 | 1.0− | 0.2− | 2001 11 21 | 704 | 1.1+ | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2001 11 21 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.9+ | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2001 10 21 | 704 | 0.7+ | 1.1+ | 2001 11 21 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 2001 10 21 | 704 | (0.9+ | 1.6+) | 2001 11 21 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.0+ | 0.1− |
| 2001 10 23 | 049 | 1.1− | 0.9− | 2004 03 23 | 291 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.0 | 1.2− |
| 2001 10 23 | 049 | 0.7− | 1.0− | 2004 03 23 | 291 | 0.6+ | 0.5+ | 2006 11 14 | G96 | 0.5− | 0.7− |
| 2001 10 23 | 049 | 1.0− | 1.0− | 2004 03 23 | 291 | 0.1− | 0.6+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2001 11 15 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.2− | 2006 11 14 | G96 | 0.3− | 0.3+ |
| 2001 11 15 | 691 | 0.7+ | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.9− |
| 2001 11 15 | 691 | 0.7+ | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.1+ | | | | |

**2001 TT$_{213}$ = 2006 QE$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.53701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18367314 | $\omega$ | 122.07017 | | +0.83406084 | −0.53253320 | |
| $a$ | 3.0650598 | $\Omega$ | 270.48227 | | +0.44504434 | +0.80381304 | |
| $e$ | 0.0867222 | $i$ | 8.28267 | | +0.32600313 | +0.26512826 | |
| $P$ | 5.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 27 | 691 | 0.3− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.8− |
| 1998 01 27 | 691 | 0.2− | 0.1− | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 09 18 | 703 | 1.0+ | 0.1+ |
| 1998 01 27 | 691 | 0.5+ | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 2001 10 13 | 644 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.5− | 0.2+ | 2006 09 18 | 703 | 1.2+ | 0.7+ |
| 2001 10 13 | 644 | 0.5− | 0.1− | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.6− |
| 2001 10 13 | 644 | 0.5− | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 09 30 | 699 | 0.2− | 0.2+ |
| 2001 10 18 | 704 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.5+ | 0.1− | 2006 09 30 | 699 | 1.2+ | 0.5− |
| 2001 10 18 | 704 | 0.5+ | 0.2+ | 2006 08 30 | 699 | 0.9+ | 0.1+ | 2006 09 30 | 699 | 1.0− | 0.0 |
| 2001 10 18 | 704 | 0.6+ | 0.5− | 2006 08 30 | 699 | 0.3+ | 0.7− | 2006 09 30 | 699 | 1.5− | 0.8+ |

**2001 TV$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.81513 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18762048 | $\omega$ | 46.55018 | | +0.99364271 | −0.00829795 | |
| $a$ | 3.0219171 | $\Omega$ | 313.58034 | | −0.04821467 | +0.86982586 | |
| $e$ | 0.1277197 | $i$ | 8.91600 | | +0.10173256 | +0.49328908 | |
| $P$ | 5.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.8+ | 0.1− | 2001 10 26 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 1.1+ | 0.6+ |
| 2001 09 25 | 704 | 1.0− | 0.2+ | 2006 07 21 | D35 | 0.2+ | 0.1− | 2006 09 19 | 703 | 1.0− | 0.2− |
| 2001 09 25 | 704 | 0.1− | 0.5− | 2006 07 21 | D35 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.4− | 0.1− |
| 2001 10 13 | 644 | 0.8+ | 0.0 | 2006 07 21 | D35 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.4− | 0.0 |
| 2001 10 13 | 644 | 0.5+ | 0.3+ | 2006 08 29 | 703 | 0.8+ | 1.3+ | 2006 09 20 | 699 | 0.7+ | 0.0 |
| 2001 10 13 | 644 | 0.6+ | 0.3+ | 2006 08 29 | 703 | 0.4+ | 0.4+ | 2006 09 20 | 699 | 1.1+ | 1.0− |
| 2001 10 18 | 704 | 0.9+ | 1.2− | 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.7+ | 0.2− |
| 2001 10 18 | 704 | 0.4− | 1.1+ | 2006 08 29 | 703 | 1.3− | 0.9− | 2006 09 29 | 699 | 1.0− | 0.6+ |
| 2001 10 18 | 704 | 0.1− | 0.6− | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | (2.1+ | 0.3−) |
| 2001 10 18 | 704 | 1.1− | 0.5+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.9− | 0.4− |
| 2001 10 26 | 644 | 0.6− | 0.1− | 2006 09 16 | 644 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.0 |
| 2001 10 26 | 644 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.5− | 0.1+ | | | | |

**2001 TJ$_{215}$ = 2006 QE$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.59811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19541183 | $\omega$ | 350.37220 | | +0.96004780 | +0.27891724 | |
| $a$ | 2.9410483 | $\Omega$ | 353.30147 | | −0.24208570 | +0.78719421 | |
| $e$ | 0.3436420 | $i$ | 11.20083 | | −0.14036643 | +0.55002767 | |
| $P$ | 5.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | 0.4+ | 1.3− | 2006 08 18 | 644 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.4+ | 0.3+ |
| 2001 09 22 | 699 | 0.6+ | 0.4− | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.3− | 0.2+ |
| 2001 09 22 | 699 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.3− | 2006 10 04 | 703 | 0.3− | 1.1− |
| 2001 09 22 | 699 | 0.1− | 0.6+ | 2006 08 30 | 704 | 1.2− | 0.4− | 2006 10 04 | 703 | 0.4− | 0.3− |
| 2001 09 25 | 704 | 0.7− | 0.3+ | 2006 08 30 | 704 | (1.6+ | 0.5−) | 2006 10 04 | 703 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.7− | 0.7+ | 2006 08 30 | 704 | 0.0 | 0.6+ | 2006 10 04 | 703 | 0.5− | 0.6+ |
| 2001 09 25 | 704 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.6+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.6+ |
| 2001 09 25 | 704 | 0.1− | 0.4+ | 2006 08 30 | 699 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2006 08 30 | 699 | 0.8+ | 1.4− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 10 13 | 644 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.2+ | 1.0+ | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 2001 10 13 | 644 | 0.2− | 0.2− | 2006 08 30 | 699 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 13 | 644 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 10 18 | 704 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.7+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2001 10 18 | 704 | 0.5+ | 0.2− | 2006 09 16 | 703 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2001 10 18 | 704 | 1.2− | 0.7+ | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2001 10 18 | 704 | 0.3+ | 0.3− | 2006 09 20 | 699 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2001 10 18 | 704 | 0.9+ | 0.6+ | 2006 09 20 | 699 | 0.8− | 0.3− | 2006 10 31 | 703 | 0.4− | 0.0 |
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 1.0+ | 1.3− |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.1+ | 0.6+ | 2006 10 31 | 703 | 0.2− | 1.2+ |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2006 09 28 | 703 | (4.5+ | 1.7+) | 2006 10 31 | 703 | 0.2− | 1.3− |

**2001 TY$_{215}$ = 2006 VU$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.23965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19199023 | $\omega$ | 5.05876 | | +0.63176650 | +0.76035991 | |
| $a$ | 2.9758883 | $\Omega$ | 304.21217 | | −0.71743505 | +0.49991864 | |
| $e$ | 0.1292120 | $i$ | 10.50301 | | −0.29352690 | +0.41464944 | |
| $P$ | 5.13 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.3+ | 0.7− | 2004 03 26 | 699 | 1.0+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2001 10 13 | 644 | 0.1+ | 0.8− | 2004 03 26 | 699 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2001 10 13 | 644 | 0.3+ | 0.9− | 2004 03 26 | 699 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.4+ | 0.0 |
| 2001 10 15 | 704 | 0.1− | 0.8+ | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 11 22 | G92 | 0.0 | 0.3+ |
| 2001 10 15 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.7− | 0.7− | 2006 11 22 | G92 | 0.7+ | 0.3+ |
| 2001 10 15 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.0 | 2006 11 22 | G92 | 0.3+ | 0.6+ |
| 2001 10 15 | 704 | 0.6− | 0.5+ | 2006 09 28 | 703 | 0.5+ | 0.1+ | 2006 11 22 | 703 | 1.0− | 0.4− |
| 2001 10 15 | 704 | 0.3− | 0.5+ | 2006 09 28 | 703 | 0.2+ | 0.5+ | 2006 11 22 | 703 | 0.6− | 1.0+ |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.5− | 0.5+ | 2006 11 22 | 703 | (0.2− | 1.7−) |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.5− | 0.4− |
| 2004 03 26 | 699 | 0.1+ | 0.7+ | 2006 11 15 | 703 | 0.4+ | 0.8+ | | | | |

**2001 TR$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.95305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27299499 | $\omega$ | 146.76870 | | −0.05755414 | | −0.99743001 |
| $a$ | 2.3534208 | $\Omega$ | 306.49509 | | +0.90400128 | | −0.03393024 |
| $e$ | 0.1737530 | $i$ | 3.04273 | | +0.42363806 | | −0.06310397 |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.1− | 0.1+ | 2001 10 18 | 644 | 0.5+ | 0.5+ | 2005 12 10 | 691 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 0.4+ | 0.3− | 2005 11 28 | 704 | 0.3− | 0.2+ | 2006 01 07 | 691 | 0.3+ | 0.2+ |
| 2001 10 14 | 704 | 0.3− | 0.1− | 2005 11 28 | 704 | 0.1+ | 0.0 | 2006 01 07 | 691 | 0.1+ | 0.1− |
| 2001 10 14 | 704 | 0.3+ | 0.4− | 2005 11 28 | 704 | 0.5+ | 0.2+ | 2006 01 07 | 691 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 0.2− | 2005 12 02 | 691 | 0.0 | 0.1− | 2006 01 27 | G96 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.8− | 0.2− | 2005 12 02 | 691 | 0.4− | 0.1− | 2006 01 27 | G96 | 0.4− | 0.2+ |
| 2001 10 17 | 704 | (2.6+ | 0.1+) | 2005 12 02 | 691 | 0.5+ | 1.2+ | 2006 01 27 | G96 | 0.1− | 0.0 |
| 2001 10 18 | 644 | 0.3+ | 0.6+ | 2005 12 10 | 691 | 0.2− | 1.3− | 2006 01 27 | G96 | 0.5− | 0.0 |
| 2001 10 18 | 644 | 0.4+ | 0.2+ | 2005 12 10 | 691 | 0.1− | 0.1+ | | | | |

**2001 TD$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.62526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21235183 | $\omega$ | 82.47720 | | +0.70880990 | | +0.68759677 |
| $a$ | 2.7824799 | $\Omega$ | 233.92239 | | −0.69929016 | | +0.65561882 |
| $e$ | 0.1880383 | $i$ | 11.23567 | | −0.09263799 | | +0.31204910 |
| $P$ | 4.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3− | 0.9− | 2001 11 10 | 704 | 0.4+ | 0.5+ | 2005 06 27 | 644 | 0.1+ | 0.1− |
| 2001 10 14 | 704 | 0.3− | 0.6− | 2001 11 15 | 291 | 0.2+ | 0.2− | 2005 06 27 | 644 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 1.0− | 0.7− | 2001 11 15 | 291 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2001 10 14 | 704 | 0.1+ | 0.4− | 2001 11 15 | 291 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2001 10 19 | 644 | 0.7− | 0.2− | 2001 11 19 | 704 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 10 19 | 644 | 0.4− | 0.0 | 2001 11 19 | 704 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 10 19 | 644 | 0.5− | 0.3− | 2001 11 19 | 704 | 0.7+ | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2001 10 26 | 644 | 1.4+ | 0.4− | 2001 11 19 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 10 26 | 644 | (1.7+ | 0.8−) | 2001 11 19 | 704 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 2001 10 26 | 644 | (1.6+ | 0.8−) | 2001 12 19 | 704 | (0.4+ | 1.7+) | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2001 11 10 | 704 | 0.5− | 1.0+ | 2001 12 19 | 704 | 0.5− | 0.8+ | 2006 11 22 | 691 | 0.5+ | 0.1+ |
| 2001 11 10 | 704 | 0.1− | 0.5+ | 2001 12 19 | 704 | 0.3− | 1.6+ | 2006 11 22 | 691 | 0.5− | 1.0− |
| 2001 11 10 | 704 | 0.4− | 0.5+ | 2001 12 19 | 704 | 0.5− | 1.1+ | | | | |
| 2001 11 10 | 704 | 0.3+ | 0.6+ | 2005 06 27 | 644 | 0.0 | 0.2− | | | | |

**2001 TR$_{222}$ = 2006 SF$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.54019 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18116788 | $\omega$ | 104.54413 | | +0.92975129 | | +0.34918419 |
| $a$ | 3.0932516 | $\Omega$ | 235.14660 | | −0.36806650 | | +0.87331807 |
| $e$ | 0.0979893 | $i$ | 8.18000 | | −0.00946560 | | +0.33968508 |
| $P$ | 5.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | (0.8+ | 2.4+) | 2004 03 27 | 691 | 0.1− | 0.2+ | 2006 09 22 | 691 | 0.2+ | 0.1− |
| 2001 09 28 | 644 | (0.6+ | 2.2+) | 2004 03 27 | 691 | 0.2+ | 0.4+ | 2006 09 22 | 691 | 0.0 | 0.2+ |
| 2001 09 28 | 644 | (1.3+ | 2.7+) | 2004 03 27 | 691 | 0.2+ | 0.3+ | 2006 09 22 | 691 | 0.1− | 0.2− |
| 2001 10 12 | 599 | 0.7+ | 0.3+ | 2005 05 13 | G96 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 10 12 | 599 | 0.1− | 0.6+ | 2005 05 13 | G96 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2001 10 12 | 599 | 0.2− | 0.2+ | 2005 05 13 | G96 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2001 10 12 | 599 | 0.4− | 0.1− | 2005 05 13 | G96 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.3+ | 0.2− | 2005 06 06 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2001 10 14 | 704 | 0.6− | 0.6+ | 2005 06 06 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 0.8− | 0.6− | 2005 06 06 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2001 10 20 | 644 | 0.0 | 0.8+ | 2005 06 14 | 291 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2001 10 20 | 644 | 0.2+ | 1.4+ | 2005 06 14 | 291 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2001 10 20 | 644 | 0.1− | 1.2+ | 2005 06 14 | 291 | 0.2+ | 0.4+ | | | | |

**2001 TW$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.53881 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18739677 | $\omega$ | 65.77398 | | +0.57750818 | | +0.80298039 |
| $a$ | 3.0243216 | $\Omega$ | 240.31100 | | −0.79697500 | | +0.51540204 |
| $e$ | 0.0946901 | $i$ | 9.76431 | | −0.17696087 | | +0.29930457 |
| $P$ | 5.26 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 01 | 691 | 0.2− | 0.3+ | 2001 10 26 | 644 | 0.7+ | 1.3+ | 2006 09 16 | 703 | 0.3− | 1.3− |
| 2000 06 01 | 691 | 0.1+ | 0.0 | 2001 10 26 | 644 | 0.6+ | 1.2+ | 2006 09 16 | 703 | 0.3+ | 1.1+ |
| 2000 06 01 | 691 | 0.1+ | 0.3− | 2001 11 19 | 704 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.6+ | 0.7+ |
| 2001 10 14 | 704 | 0.7− | 0.4− | 2001 11 19 | 704 | 0.3− | 0.6+ | 2006 09 20 | 699 | 0.8+ | 0.0 |
| 2001 10 14 | 704 | 0.6− | 0.1− | 2001 11 19 | 704 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 1.2− | 0.3− | 2001 11 19 | 704 | 0.5+ | 0.0 | 2006 09 20 | 699 | 1.4+ | 0.0 |
| 2001 10 18 | 691 | 0.1− | 0.3− | 2001 11 19 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.6− | 0.5− |
| 2001 10 18 | 691 | 0.1− | 0.1− | 2001 12 15 | 704 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.9− | 1.1+ |
| 2001 10 18 | 691 | 0.1− | 0.3− | 2001 12 15 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 703 | (0.2− | 3.2−) |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2001 12 15 | 704 | (1.6+ | 1.1+) | 2006 09 30 | 703 | 0.1− | 0.8− |
| 2001 10 21 | 704 | 1.0+ | 0.1+ | 2001 12 18 | 691 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.2− | 0.3− | 2001 12 18 | 691 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.9+ | 2001 12 18 | 691 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 1.0+ | 0.4+ | 2006 09 16 | 703 | 0.1− | 0.1+ | | | | |
| 2001 10 26 | 644 | (0.9+ | 1.6+) | 2006 09 16 | 703 | 0.4− | 0.2− | | | | |

**2001 TQ$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.94995 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19638519 | $\omega$ | 77.16539 | | −0.26258847 | | −0.96089998 |
| $a$ | 2.9313223 | $\Omega$ | 28.53068 | | +0.79852056 | | −0.26751879 |
| $e$ | 0.0467800 | $i$ | 10.59933 | | +0.54167537 | | −0.07144871 |
| $P$ | 5.02 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.5− | 1.0+ | 2001 11 24 | 704 | 0.6− | 0.7− | 2006 11 11 | 703 | 0.5+ | 1.0+ |
| 2001 10 14 | 704 | 0.5+ | 0.9+ | 2001 11 24 | 704 | 0.2− | 1.3− | 2006 11 11 | 703 | 0.8− | 0.8+ |
| 2001 10 14 | 704 | 0.0 | 1.2+ | 2001 11 24 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 1.2+ | 0.8+ |
| 2001 10 19 | 644 | 0.3+ | 0.8− | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.7− | 0.2−) |
| 2001 10 19 | 644 | 0.4− | 1.1− | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2001 10 19 | 644 | 0.6− | 1.5− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 10 21 | 704 | (1.7− | 0.2−) | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | (0.2− | 1.7−) |
| 2001 10 21 | 704 | 0.5+ | 0.8− | 2006 10 27 | 703 | 0.5− | 0.7− | 2006 11 19 | 704 | 1.2− | 0.0 |
| 2001 10 26 | 644 | 0.3− | 0.7− | 2006 10 27 | 703 | 0.5− | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.6− |
| 2001 10 26 | 644 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.6− | 0.8+ | 2006 11 19 | 704 | 1.1− | 0.7+ |
| 2001 10 26 | 644 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.1− | 2006 11 19 | 704 | 1.2− | 1.1− |
| 2001 11 12 | 704 | 1.2+ | 0.4− | 2006 10 29 | 704 | 1.0− | 0.5+ | 2006 11 22 | 704 | 0.7− | 0.5+ |
| 2001 11 12 | 704 | 0.2+ | 1.2+ | 2006 10 29 | 704 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.6− |
| 2001 11 12 | 704 | 0.1+ | 1.0+ | 2006 10 29 | 704 | 0.6+ | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2001 11 12 | 704 | 0.1+ | 1.2+ | 2006 10 29 | 704 | 0.9+ | 0.9+ | 2006 11 22 | 704 | 0.1− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.0+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5− | 0.5− | | |
| 2001 11 24 | 704 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.1− | | | | | | |
| 2001 11 24 | 704 | 0.4− | 0.8− | 2006 11 08 | 644 | 0.0 | 0.1+ | | | | | | |

**2001 TW$_{226}$ = 2006 UW$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.57130 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18557829 | $\omega$ | 219.32885 | | +0.36898539 | −0.92570484 | |
| $a$ | 3.0440465 | $\Omega$ | 209.29612 | | +0.88984956 | +0.37769512 | |
| $e$ | 0.1420052 | $i$ | 9.78824 | | +0.26836084 | +0.02041923 | |
| $P$ | 5.31 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.8− | 0.6+ | 2001 10 23 | 704 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.9+ | | |
| 1993 04 21 | 691 | 0.6+ | 0.3+ | 2001 10 26 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.4+ | | |
| 1993 04 21 | 691 | 0.5+ | 0.6+ | 2001 10 26 | 691 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 14 | 691 | 0.5− | 0.2− | 2001 10 26 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 10 14 | 691 | 0.6− | 0.1− | 2001 11 10 | 704 | 0.6+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.7+ | | |
| 2001 10 14 | 691 | 0.4− | 0.2− | 2001 11 10 | 704 | 1.0+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2001 10 17 | 691 | 0.1+ | 0.0 | 2001 11 10 | 704 | (0.3+ | 2.3+) | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2001 10 17 | 691 | 0.2+ | 0.1− | 2001 11 10 | 704 | 0.5− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2001 10 17 | 691 | 0.3+ | 0.1− | 2001 11 10 | 704 | 0.6+ | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 10 18 | 644 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.8− | 0.7− | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2001 10 18 | 644 | 0.5+ | 0.1+ | 2001 11 20 | 704 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2001 10 18 | 644 | 0.4+ | 0.3+ | 2001 11 20 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.4+ | | |
| 2001 10 22 | 704 | 0.1+ | 0.4+ | 2001 11 20 | 704 | 0.2− | 0.7− | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 2001 10 22 | 704 | (1.7+ | 1.0+) | 2001 11 20 | 704 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.2− | 0.7+ | | |
| 2001 10 22 | 704 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.8+ | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.3+ | | |
| 2001 10 22 | 704 | 0.8− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2001 10 23 | 704 | 0.3− | 0.7+ | 2006 09 19 | 699 | 0.9− | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.0 | | |
| 2001 10 23 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.7− | | |
| 2001 10 23 | 704 | 0.1− | 1.0+ | 2006 10 17 | 703 | 0.9+ | 0.3+ | 2006 11 15 | G96 | 1.7− | 0.2− | | |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 1.0+ | 0.7− | | | | | | |

**2001 TG$_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.24353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21383009 | $\omega$ | 113.24022 | | +0.88095597 | +0.47183594 | |
| $a$ | 2.7696412 | $\Omega$ | 218.63270 | | −0.45244470 | +0.81768434 | |
| $e$ | 0.0963576 | $i$ | 3.29467 | | −0.13860147 | +0.32979262 | |
| $P$ | 4.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 291 | 0.2− | 0.2+ | 2001 10 21 | 704 | 0.9− | 0.5+ | 2006 11 11 | G96 | 0.2− | 0.6− | | |
| 2001 09 19 | 291 | 0.9+ | 0.3+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4− | 0.5− | | |
| 2001 09 19 | 291 | 1.2+ | 0.2+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2001 09 20 | 704 | (0.6− | 1.6−) | 2006 10 17 | G96 | 0.1+ | 0.7− | 2006 11 15 | 691 | 0.1+ | 0.2− | | |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.0 | | |
| 2001 09 20 | 704 | 0.5− | 1.0− | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2001 10 15 | 691 | 0.7− | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2001 10 15 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 10 15 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.2− | | |
| 2001 10 21 | 704 | 0.7− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1− | 1.2+ | | |
| 2001 10 21 | 704 | (1.9− | 0.7+) | 2006 11 11 | G96 | 0.2+ | 0.8− | 2006 11 27 | 691 | 0.1+ | 0.2− | | |
| 2001 10 21 | 704 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.4− | | | | | | |

**2001 TV$_{228}$ = 2006 SJ$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.63900 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19982313 | $\omega$ | 117.58092 | | +0.74937536 | +0.65765860 | |
| $a$ | 2.8976029 | $\Omega$ | 201.58352 | | −0.65695683 | +0.72394461 | |
| $e$ | 0.1300922 | $i$ | 12.07500 | | −0.08273021 | +0.20830113 | |
| $P$ | 4.93 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1+ | 0.8− | 2001 10 21 | 704 | 0.9+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.3− | | |
| 2001 09 20 | 704 | 0.2+ | 0.8− | 2001 10 21 | 704 | (1.8+ | 0.1−) | 2006 10 16 | 691 | 0.1− | 0.1+ | | |
| 2001 09 20 | 704 | 0.1− | 0.1+ | 2001 10 21 | 704 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.4− | | |
| 2001 10 11 | 644 | 0.3− | 0.5+ | 2001 10 21 | 704 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.5− | 0.0 | | |
| 2001 10 11 | 644 | 0.5− | 0.8+ | 2006 09 26 | 691 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.2− | 0.1− | | |
| 2001 10 11 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 2001 10 15 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | | |
| 2001 10 15 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.4+ | 0.2+ | | |
| 2001 10 15 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.1+ | | |
| 2001 10 21 | 704 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2+ | | | | | | |

**2001 TJ$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.32424 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23740500 | $\omega$ | 61.22659 | | −0.25765648 | −0.95371388 | |
| $a$ | 2.5831094 | $\Omega$ | 44.60728 | | +0.79155241 | −0.30037130 | |
| $e$ | 0.1369696 | $i$ | 12.75624 | | +0.55412807 | −0.01438464 | |
| $P$ | 4.15 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.2− | 0.2− | 2003 02 01 | 644 | 0.1+ | 0.4+ | 2005 08 31 | 644 | 0.1− | 0.1+ | | |
| 2001 09 25 | 704 | 0.1− | 0.1− | 2003 02 01 | 644 | 0.1− | 0.3+ | 2005 08 31 | 644 | 0.0 | 0.0 | | |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2003 02 21 | 644 | 0.0 | 0.3− | 2005 08 31 | 644 | 0.1+ | 0.2− | | |
| 2001 09 25 | 704 | 0.1− | 0.1+ | 2003 02 21 | 644 | 0.2− | 0.4− | 2005 10 10 | 703 | 1.2− | 0.9− | | |
| 2001 10 15 | 644 | 0.5− | 0.4+ | 2003 02 21 | 644 | 0.0 | 0.3− | 2005 10 10 | 703 | 0.2− | 0.8+ | | |
| 2001 10 15 | 644 | 0.2+ | 0.4+ | 2003 02 26 | 704 | 0.3+ | 0.8+ | 2005 10 10 | 703 | 0.4+ | 0.0 | | |
| 2001 10 15 | 644 | 0.2− | 0.5+ | 2003 02 26 | 704 | 0.4− | 0.1+ | 2005 10 10 | 703 | 0.8− | 1.3+ | | |
| 2001 10 19 | 699 | 0.5+ | 0.2+ | 2003 02 26 | 704 | 1.1+ | 0.1− | 2006 10 21 | 703 | (1.5+ | 2.2+) | | |
| 2001 10 19 | 699 | 0.2+ | 0.1+ | 2003 02 26 | 704 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.7− | | |
| 2001 10 19 | 699 | 0.7− | 0.9+ | 2003 03 08 | 699 | 0.7− | 0.4+ | 2006 10 21 | 703 | 1.1+ | 0.0 | | |
| 2001 10 19 | 699 | 0.3− | 0.4+ | 2003 03 08 | 699 | 0.2− | 0.4+ | 2006 10 21 | 703 | (1.3+ | 2.0−) | | |
| 2003 01 26 | 699 | 0.6+ | 0.4+ | 2003 03 08 | 699 | 0.9− | 1.1+ | 2006 11 21 | 703 | 1.4− | 1.3− | | |
| 2003 01 26 | 699 | 1.5+ | 0.0 | 2003 03 08 | 699 | 0.7+ | 0.6+ | 2006 11 21 | 703 | 0.3− | 1.8− | | |
| 2003 01 26 | 699 | 1.5+ | 1.0+ | 2003 04 05 | 704 | 0.7− | 1.0− | 2006 11 21 | 703 | 0.2+ | 0.7− | | |
| 2003 01 26 | 699 | 0.8+ | 0.9+ | 2003 04 05 | 704 | 0.4− | 0.4+ | 2006 11 21 | 703 | 0.4+ | 0.8− | | |
| 2003 02 01 | 644 | 0.3− | 0.5+ | 2003 04 05 | 704 | 0.1+ | 0.5+ | | | | | | |

**2001 TN$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.59082 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18245327 | $\omega$ | 213.38866 | | +0.43035243 | −0.90260215 | |
| $a$ | 3.0787065 | $\Omega$ | 211.12500 | | +0.83247728 | +0.40127849 | |
| $e$ | 0.1636221 | $i$ | 1.14210 | | +0.34896758 | +0.15583626 | |
| $P$ | 5.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.2− | 0.4− | 2001 10 11 | 644 | 0.6+ | 0.6+ | 2006 08 19 | 691 | 0.1− | 0.3+ | | |
| 2001 09 12 | 691 | 0.2+ | 0.3− | 2001 10 15 | 291 | 0.1− | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 12 | 691 | 0.1+ | 0.6− | 2001 10 15 | 291 | 1.0− | 0.2+ | 2006 08 19 | 691 | 0.2+ | 0.0 | | |
| 2001 09 18 | 691 | 0.3+ | 0.0 | 2001 10 15 | 291 | 0.3− | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.0 | | |
| 2001 09 18 | 691 | 0.2+ | 0.1+ | 2001 10 21 | 704 | 0.2+ | 1.0+ | 2006 08 27 | 691 | 0.1− | 0.2− | | |
| 2001 09 18 | 691 | 0.2+ | 0.1− | 2001 10 21 | 704 | 0.5− | 0.3− | 2006 08 27 | 691 | 0.2+ | 0.1− | | |
| 2001 09 20 | 704 | 0.3− | 0.3+ | 2001 10 21 | 704 | 0.3+ | 0.9+ | 2006 09 27 | G96 | 0.1+ | 0.3− | | |
| 2001 09 20 | 704 | 1.1+ | 0.7+ | 2001 10 21 | 704 | 0.7− | 0.5+ | 2006 09 27 | G96 | 0.4− | 0.7− | | |
| 2001 09 20 | 704 | 0.4− | 0.7− | 2001 10 21 | 704 | 0.7+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− | | |
| 2001 09 20 | 704 | 1.0− | 0.7+ | 2004 05 23 | 291 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.9− | | |
| 2001 10 11 | 644 | 0.4+ | 0.3+ | 2004 05 23 | 291 | 0.1− | 0.2+ | | | | | | |
| 2001 10 11 | 644 | 0.5+ | 0.1+ | 2004 05 23 | 291 | 0.0 | 0.0 | | | | | | |

**2001 TC$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.31118 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28879469 | $\omega$ | 173.39297 | +0.62896297 | | +0.77176905 | |
| $a$ | 2.2667828 | $\Omega$ | 135.52733 | −0.71926400 | | +0.62339972 | |
| $e$ | 0.2861803 | $i$ | 7.68556 | −0.29506759 | | +0.12548034 | |
| $P$ | 3.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.4+ | 0.8+ | 2001 09 25 | 704 | 1.2− | 0.1+ | 2001 10 19 | 699 | 0.7− | 1.0+ |
| 2000 02 06 | 695 | 0.1+ | 0.8+ | 2001 09 25 | 644 | 0.3+ | 0.4− | 2001 10 19 | 699 | 1.0+ | 1.5+ |
| 2001 07 19 | 644 | 0.2− | 0.1+ | 2001 09 25 | 644 | 0.2+ | 0.4− | 2001 10 19 | 699 | 0.1+ | 0.6+ |
| 2001 07 19 | 644 | 0.2− | 0.0 | 2001 09 25 | 644 | 0.5+ | 0.6− | 2001 10 23 | 644 | 0.5− | 0.6+ |
| 2001 07 19 | 644 | 0.1− | 0.1− | 2001 10 11 | 704 | (2.7+ | 0.2−) | 2001 10 23 | 644 | 0.4− | 0.4+ |
| 2001 08 27 | 699 | 0.1+ | 0.5+ | 2001 10 11 | 704 | 0.6− | 0.6+ | 2001 10 23 | 644 | 1.0− | 0.3+ |
| 2001 08 27 | 699 | 0.2+ | 0.6+ | 2001 10 11 | 704 | 1.0+ | 0.1+ | 2004 05 24 | 704 | 0.9+ | 0.2+ |
| 2001 08 27 | 699 | 0.1− | 0.4+ | 2001 10 11 | 704 | 0.2− | 0.2+ | 2004 05 24 | 704 | 0.4− | 0.5− |
| 2001 08 27 | 699 | 0.1− | 0.6− | 2001 10 11 | 704 | 0.6+ | 0.4− | 2004 05 24 | 704 | 0.9+ | 0.3− |
| 2001 09 25 | 704 | 0.9− | 0.1− | 2001 10 15 | 644 | 1.0+ | 0.5− | 2004 05 24 | 704 | 0.1+ | 1.1+ |
| 2001 09 25 | 704 | 0.7− | 1.5− | 2001 10 15 | 644 | 1.1+ | 0.5− | 2004 05 24 | 704 | 1.0− | 1.0+ |
| 2001 09 25 | 704 | (2.2− | 1.1+) | 2001 10 15 | 644 | 1.2+ | 0.4− | | | | |
| 2001 09 25 | 704 | 1.8− | 0.1+ | 2001 10 19 | 699 | 0.5+ | 0.5+ | | | | |

**2001 TP$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.60358 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22670824 | $\omega$ | 357.94581 | −0.02998471 | | +0.97305538 | |
| $a$ | 2.6637360 | $\Omega$ | 270.28152 | −0.91377905 | | −0.11938057 | |
| $e$ | 0.0563964 | $i$ | 13.21562 | −0.40510340 | | +0.19725997 | |
| $P$ | 4.35 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2004 04 25 | 704 | 0.4+ | 1.0− | 2005 09 26 | 703 | 0.7− | 0.6+ |
| 1999 03 22 | 645 | 0.1+ | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.1− | 2005 09 26 | 703 | 0.8− | 0.4+ |
| 2001 09 29 | 644 | 0.1+ | 1.3+ | 2005 07 11 | 703 | 1.2− | 0.3− | 2005 09 26 | 703 | 0.1+ | 0.4− |
| 2001 09 29 | 644 | 0.8+ | 0.7+ | 2005 07 11 | 703 | 0.0 | 0.7− | 2005 09 26 | 703 | (1.5− | 0.1+) |
| 2001 09 29 | 644 | 0.8+ | 1.2+ | 2005 07 11 | 703 | 0.9− | 1.0+ | 2005 10 02 | 699 | 0.8+ | 0.0 |
| 2001 10 15 | 608 | 0.0 | 0.7− | 2005 07 11 | 703 | 0.7− | 0.8+ | 2005 10 02 | 699 | (2.3+ | 0.9−) |
| 2001 10 15 | 608 | 0.1+ | 0.6− | 2005 08 29 | 644 | 0.0 | 0.1+ | 2005 10 02 | 699 | 1.3+ | 0.4+ |
| 2001 10 15 | 608 | 0.0 | 0.5− | 2005 08 29 | 644 | 0.0 | 0.2− | 2005 10 02 | 699 | (1.7+ | 1.8+) |
| 2001 10 18 | 704 | (0.1+ | 1.8+) | 2005 08 29 | 644 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 10 18 | 704 | 0.8− | 0.2+ | 2005 09 11 | 704 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2001 10 18 | 704 | 0.0 | 0.1− | 2005 09 11 | 704 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2001 10 18 | 704 | 0.7− | 1.3+ | 2005 09 11 | 704 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2004 04 25 | 704 | 0.0 | 0.1+ | 2005 09 11 | 704 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2004 04 25 | 704 | 0.7+ | 1.1+ | 2005 09 11 | 704 | 0.3− | 0.7+ | 2006 11 21 | 691 | 0.1− | 0.1− |

**2001 TS$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.41612 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22017918 | $\omega$ | 262.00108 | +0.98284532 | | +0.07232330 | |
| $a$ | 2.7161383 | $\Omega$ | 93.73534 | −0.00209957 | | +0.92423298 | |
| $e$ | 0.2033319 | $i$ | 9.78904 | −0.18441983 | | +0.37491696 | |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.5− | 0.2+ | 2001 10 11 | 704 | 0.1− | 0.9+ | 2001 10 19 | 699 | 0.1+ | 0.2− |
| 2001 08 20 | 644 | 0.4− | 0.2− | 2001 10 11 | 704 | 0.6− | 0.4+ | 2004 03 29 | 691 | 0.1+ | 0.1+ |
| 2001 08 20 | 644 | 0.6− | 0.2+ | 2001 10 15 | 644 | 0.3+ | 0.5+ | 2004 03 29 | 691 | 0.1+ | 0.1− |
| 2001 09 22 | 644 | 0.5− | 0.1+ | 2001 10 15 | 644 | 0.4+ | 0.3+ | 2004 03 29 | 691 | 0.0 | 0.4+ |
| 2001 09 22 | 644 | 0.3− | 0.3+ | 2001 10 15 | 644 | 0.3+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2001 09 22 | 644 | 0.4− | 0.2+ | 2001 10 19 | 699 | 1.0+ | 0.9− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2001 10 11 | 704 | 0.4− | 0.2+ | 2001 10 19 | 699 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 10 11 | 704 | 0.0 | 0.3− | 2001 10 19 | 699 | 1.0+ | 0.9− | | | | |

**2001 TE$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.27507 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18237888 | $\omega$ | 278.03442 | +0.18258794 | | −0.98146473 | |
| $a$ | 3.0795436 | $\Omega$ | 161.13995 | +0.95802788 | | +0.16429411 | |
| $e$ | 0.2749253 | $i$ | 10.37436 | +0.22100731 | | +0.09866320 | |
| $P$ | 5.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.2+ | 0.6− | 2001 11 20 | 699 | 0.3+ | 0.3+ | 2006 08 18 | 691 | 0.0 | 0.3+ |
| 2001 10 15 | 644 | 0.1+ | 0.6− | 2001 11 20 | 699 | 0.7+ | 0.4− | 2006 08 18 | 691 | 0.2− | 0.5+ |
| 2001 10 15 | 644 | 0.3+ | 1.0− | 2001 11 20 | 699 | 1.0− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2001 10 16 | 209 | 0.2− | 0.3+ | 2002 01 08 | 645 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2001 10 16 | 209 | 0.1+ | 0.4+ | 2002 01 08 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2001 10 17 | 209 | 0.1− | 0.4+ | 2003 03 23 | 691 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.2+ | 0.5+ | 2003 03 23 | 691 | 0.7+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.9− | 0.3+ | 2003 03 23 | 691 | 1.2+ | 0.8+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 0.1− | 0.1+ | 2003 04 01 | 645 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.4− | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 0.3+ | 2003 04 01 | 645 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.2− | 0.3+ | 2006 07 25 | G96 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.6− | 0.6+ |
| 2001 10 23 | 644 | 0.4− | 0.6+ | 2006 07 25 | G96 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2001 10 23 | 644 | 0.3− | 0.6+ | 2006 07 25 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2001 10 23 | 644 | (0.4+ | 1.7+) | 2006 07 25 | G96 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2001 11 20 | 699 | (2.0+ | 0.1+) | 2006 08 18 | 691 | 0.4+ | 0.0 | | | | |

**2001 TJ$_{238}$ = 2006 VT$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.25646 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21801205 | $\omega$ | 275.30953 | +0.95909983 | | +0.23537567 | |
| $a$ | 2.7341083 | $\Omega$ | 71.14846 | −0.14492285 | | +0.88547728 | |
| $e$ | 0.1905724 | $i$ | 9.56447 | −0.24315610 | | +0.40065981 | |
| $P$ | 4.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2001 10 15 | 644 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.8+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.6− |
| 2001 10 15 | 644 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.5− |
| 2001 10 19 | 699 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2001 10 19 | 699 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2001 10 19 | 699 | 1.4− | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 10 19 | 699 | 0.5+ | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2001 10 23 | 644 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 644 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2001 10 23 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.7+ | 2006 11 27 | 691 | 0.8− | 0.3− |
| 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.2− | 0.2+ |
| 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.4− |
| 2006 10 21 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.5+ | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 1.2+ | 0.3+ |
| 2006 10 31 | G96 | 0.6− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.3+ | 2006 12 01 | 704 | 0.4+ | 0.3+ |
| 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.2+ |

**2001 TC$_{241}$ = 2006 RG$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.04569 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18171274 | $\omega$ | 326.63471 | +0.95983563 | | +0.27556153 | |
| $a$ | 3.0870652 | $\Omega$ | 17.60040 | −0.20374282 | | +0.81383194 | |
| $e$ | 0.1545216 | $i$ | 10.04461 | −0.19288447 | | +0.51160865 | |
| $P$ | 5.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 10 16 | 106 | 0.6+ | 0.9− |
| 2001 10 15 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 10 16 | 106 | 0.2+ | 0.9− |
| 2001 10 15 | 704 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.9+ | 1.3+ | 2006 10 16 | 106 | 0.3+ | 0.1− |
| 2001 10 15 | 704 | 0.9+ | 0.2+ | 2006 09 20 | 704 | 0.9− | 1.0+ | 2006 10 16 | 106 | 0.0 | 0.8− |
| 2001 11 11 | 704 | 0.6− | 1.1− | 2006 09 20 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.7+ | 0.7− | 2006 09 20 | 704 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.5+ | 0.8− |
| 2001 11 11 | 704 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.8+ |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2001 11 11 | 704 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.5+ | 0.8− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2001 11 19 | 699 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2001 11 19 | 699 | 0.4− | 0.9+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 11 19 | 699 | 1.0− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.2+ | 0.2− | 2006 09 27 | 704 | (2.0+ | 0.3−) | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 11 24 | 704 | 1.0+ | 0.4− | 2006 09 27 | 704 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.7− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 704 | 0.6− | 0.9+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.4− | 0.1− | 2006 09 28 | 704 | 0.2+ | 1.0+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2001 12 09 | 704 | 1.2− | 0.5+ | 2006 09 28 | 704 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.7− | 0.3+ | 2006 09 28 | 704 | 0.7+ | 1.3+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2004 04 23 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.5+ | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.5+ |
| 2004 04 23 | 691 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.6− | 0.4+ | 2006 11 02 | G96 | 0.3− | 1.0+ |
| 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.3+ | 2006 11 02 | G96 | 0.8− | 0.8+ |
| 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 10 01 | 704 | 0.9+ | 0.1+ | 2006 11 02 | G96 | (1.6− | 1.2−) |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.8+ | 0.2− | 2006 11 02 | G96 | 0.1− | 0.3+ |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 02 | 291 | 0.0 | 0.2− | 2006 11 02 | G96 | 0.2− | 0.1− |
| 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.1− | 0.2− | 2006 11 02 | G96 | 0.3+ | 0.0 |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 02 | 291 | 0.1+ | 0.1− | 2006 11 02 | G96 | 0.2− | 0.0 |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 02 | 291 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.8− | 0.7− |
| 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 02 | 291 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2006 09 16 | 644 | 0.2− | 0.6− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.0 | 0.9+ |
| 2006 09 17 | 704 | 0.9+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2006 09 17 | 704 | (1.7+ | 0.4−) | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.5− | 0.0 |
| 2006 09 17 | 704 | 0.1+ | 0.7+ | 2006 10 16 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 704 | (2.3+ | 0.4−) | 2006 10 16 | G96 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 09 18 | 699 | 0.8+ | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.1− | | | | |
| 2006 09 18 | 699 | 0.3− | 0.6− | 2006 10 16 | G96 | 0.1+ | 0.1− | | | | |

### 2001 $TS_{241}$ = 2006 $SN_{294}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.61730 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19036774 | $\omega$ | 176.67766 | | +0.80522522 | | −0.59244474 |
| $a$ | 2.9927732 | $\Omega$ | 219.68760 | | +0.54313457 | | +0.75377149 |
| $e$ | 0.2476937 | $i$ | 2.23742 | | +0.23794366 | | +0.28431982 |
| $P$ | 5.18 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.0 | 0.2− | 2001 11 20 | 704 | 0.1− | 0.7− | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2001 10 13 | 691 | 0.1+ | 0.2− | 2001 11 20 | 704 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 691 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.4− | 0.9+ | 2006 10 12 | 644 | 0.3− | 0.2− |
| 2001 10 20 | 704 | 0.5− | 0.6+ | 2001 11 21 | 704 | 0.9− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 1.3+ | 2001 11 21 | 704 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2001 10 20 | 704 | 0.2− | 1.3+ | 2001 11 21 | 704 | 0.6− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2001 10 26 | 644 | 0.0 | 0.1− | 2001 11 21 | 704 | 1.2− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2001 10 26 | 644 | 0.1+ | 0.6− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.1− |
| 2001 10 26 | 644 | 0.3− | 0.7− | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.3+ |
| 2001 11 16 | 691 | 0.4+ | 0.1− | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2001 11 16 | 691 | 0.4+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.4− |
| 2001 11 16 | 691 | 0.4+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.5− |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 0.8+ | 2006 10 02 | 691 | 0.1+ | 0.0 | | | | |

### 2001 $TZ_{241}$ = 2006 $PT_{30}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.46921 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17682044 | $\omega$ | 250.40051 | | +0.97975892 | | +0.08001984 |
| $a$ | 3.1437480 | $\Omega$ | 104.67109 | | −0.01171803 | | +0.93798379 |
| $e$ | 0.2271898 | $i$ | 10.93389 | | −0.19983780 | | +0.33731772 |
| $P$ | 5.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 699 | 0.1− | 1.2− | 2001 10 23 | 644 | 0.6− | 0.5− | 2006 08 14 | 644 | 0.1+ | 0.0 |
| 2001 10 14 | 699 | 0.3− | 0.1− | 2001 10 23 | 644 | 0.5− | 0.3− | 2006 08 14 | 644 | 0.3+ | 0.4+ |
| 2001 10 14 | 699 | 0.4− | 0.0 | 2001 11 20 | 699 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.3+ | 0.4+ |
| 2001 10 14 | 699 | 0.2+ | 1.5+ | 2001 11 20 | 699 | 0.5+ | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.3+ |
| 2001 10 16 | 704 | 0.1+ | 0.8+ | 2001 11 20 | 699 | 0.3− | 0.4− | 2006 08 24 | 644 | 0.2+ | 0.3+ |
| 2001 10 16 | 704 | 0.7+ | 0.3+ | 2001 11 20 | 699 | 0.3− | 0.8+ | 2006 08 28 | E12 | 0.0 | 0.1− |
| 2001 10 16 | 704 | 0.6+ | 0.2+ | 2006 08 12 | 644 | 0.2+ | 0.2− | 2006 08 28 | E12 | 0.5− | 0.2− |
| 2001 10 16 | 704 | 0.3+ | 0.2− | 2006 08 12 | 644 | 0.2+ | 0.2− | 2006 08 28 | E12 | 0.5− | 0.3− |
| 2001 10 16 | 704 | 0.8+ | 0.2+ | 2006 08 12 | 644 | 0.4+ | 0.1− | 2006 08 28 | E12 | 0.9− | 0.2− |
| 2001 10 23 | 644 | 0.4− | 0.6− | 2006 08 14 | 644 | 0.1+ | 0.1− | | | | |

### 2001 $TM_{245}$ = 2000 $DS_{89}$ = 2000 $EY_{143}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.30396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27251272 | $\omega$ | 287.87149 | | −0.04436769 | | +0.99896093 |
| $a$ | 2.3561966 | $\Omega$ | 339.57710 | | −0.90490327 | | −0.04460510 |
| $e$ | 0.1929419 | $i$ | 1.71109 | | −0.42329846 | | −0.00935108 |
| $P$ | 3.62 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 26 | 691 | 0.1− | 0.0 | 2001 09 23 | 704 | 0.1+ | 0.3− | 2004 05 13 | 691 | 0.3+ | 0.1− |
| 2000 02 26 | 691 | 0.1− | 0.0 | 2001 10 14 | 645 | 0.1+ | 0.1− | 2004 05 13 | 691 | 0.3+ | 0.1− |
| 2000 02 26 | 691 | 0.2+ | 0.1+ | 2001 10 14 | 645 | 0.0 | 0.0 | 2004 06 08 | 691 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.5− | 1.0+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2004 06 08 | 691 | 0.3− | 0.1+ |
| 2000 03 03 | 704 | 0.4+ | 0.6− | 2001 10 15 | 645 | 0.0 | 0.1− | 2004 06 08 | 691 | 0.2+ | 0.5+ |
| 2000 03 03 | 704 | 0.4+ | 0.3− | 2004 04 28 | 691 | 0.1− | 0.0 | 2005 11 01 | 691 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 0.3− | 0.8+ | 2004 04 28 | 691 | 0.0 | 0.1− | 2005 11 01 | 691 | 0.2− | 0.1+ |
| 2001 09 23 | 704 | 0.1− | 1.1+ | 2004 04 28 | 691 | 0.1− | 0.2− | 2005 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 09 23 | 704 | 1.0− | 1.1+ | 2004 05 13 | 691 | 0.1+ | 0.1− | | | | |

### 2001 $TO_{245}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.85681 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21238617 | $\omega$ | 281.97086 | | −0.36467596 | | −0.93079226 |
| $a$ | 2.7821801 | $\Omega$ | 189.53330 | | +0.90258447 | | −0.34670274 |
| $e$ | 0.2587385 | $i$ | 8.76694 | | +0.22880716 | | −0.11585760 |
| $P$ | 4.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (0.6− | 1.8+) | 2003 03 26 | 644 | 0.3− | 0.3+ | 2006 10 29 | 400 | (1.8− | 1.5−) |
| 2001 09 20 | 704 | 0.9− | 0.5+ | 2003 03 26 | 644 | 0.1− | 0.1+ | 2006 10 30 | 400 | 0.3− | 0.7+ |
| 2001 09 20 | 704 | 0.5− | 1.1+ | 2003 03 26 | 644 | 0.1− | 0.4+ | 2006 10 30 | 400 | 0.4− | 0.5+ |
| 2001 09 20 | 704 | (0.1+ | 1.8+) | 2003 03 26 | 644 | 0.0 | 0.1+ | 2006 11 01 | 703 | 0.4− | 0.3− |
| 2001 10 14 | 645 | 0.0 | 0.2+ | 2003 03 26 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 703 | 0.7+ | 0.7− |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2003 03 26 | 699 | (1.7− | 1.0−) | 2006 11 01 | 703 | 1.3+ | 1.2− |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2003 03 26 | 699 | 0.8+ | 1.0− | 2006 11 01 | 703 | 0.3− | 0.6+ |
| 2001 10 15 | 645 | 0.1− | 0.1+ | 2003 03 26 | 699 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.2− |
| 2003 03 07 | 699 | 0.3− | 0.8+ | 2003 03 26 | 699 | 0.2+ | 0.6+ | 2006 11 08 | 644 | 0.5+ | 0.2− |
| 2003 03 07 | 699 | 0.3− | 0.6+ | 2003 03 31 | 704 | 0.6− | 0.5− | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2003 03 07 | 704 | 1.3+ | 0.2+ | 2003 03 31 | 704 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2003 03 07 | 699 | 0.3− | 0.3+ | 2003 03 31 | 704 | 0.3+ | 1.0+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2003 03 07 | 699 | 0.8− | 0.3+ | 2003 04 09 | 691 | 0.5+ | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2003 03 07 | 704 | 0.1+ | 0.5− | 2003 04 09 | 691 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2003 03 07 | 704 | 1.3+ | 0.2+ | 2003 04 09 | 691 | 0.1+ | 0.5+ | | | | |
| 2003 03 26 | 644 | 0.2− | 0.2+ | 2006 10 29 | 400 | 0.5− | 1.0− | | | | |

### 2001 $TZ_{247}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.55229 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26932852 | $\omega$ | 328.53644 | | −0.10227521 | | −0.99442936 |
| $a$ | 2.3747313 | $\Omega$ | 127.32147 | | +0.91919818 | | −0.10427379 |
| $e$ | 0.1583155 | $i$ | 1.83723 | | +0.38028211 | | −0.01540223 |
| $P$ | 3.66 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.4+ | 0.2+ | 2005 12 01 | G96 | 0.2− | 0.0 | 2006 01 06 | G96 | 0.2+ | 0.6− |
| 2001 09 12 | 695 | 0.2+ | 0.0 | 2005 12 01 | G96 | 0.1− | 0.0 | 2006 01 06 | G96 | 0.6− | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2005 12 29 | G96 | 0.1− | 0.3+ | 2006 01 25 | G96 | 0.3− | 0.2− |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2005 12 29 | G96 | 0.0 | 0.0 | 2006 01 25 | G96 | 0.3− | 0.2− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 12 29 | G96 | 0.4+ | 0.2− | 2006 01 25 | G96 | 0.0 | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2005 12 29 | G96 | 0.1+ | 0.5+ | 2006 01 25 | G96 | 0.4+ | 0.5− |
| 2005 12 01 | G96 | 0.1+ | 0.0 | 2006 01 06 | G96 | 1.0+ | 0.4+ | | | | |
| 2005 12 01 | G96 | 0.3− | 0.1− | 2006 01 06 | G96 | 0.2− | 0.5+ | | | | |

**2001 TA$_{250}$ = 2006 RM$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.99296 | | (2000.0) | | | |
| $n$ | 0.19308128 | $\omega$ | 273.65145 | | +0.60706774 | +0.78969142 |
| $a$ | 2.9646671 | $\Omega$ | 34.23364 | | −0.65211822 | +0.55881250 |
| $e$ | 0.1244333 | $i$ | 9.06498 | | −0.45410416 | +0.25321146 |
| $P$ | 5.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2+ | 0.5− | 2001 10 20 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.8− |
| 2001 09 16 | 704 | 0.3+ | 0.1+ | 2001 10 20 | 704 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2001 09 16 | 704 | 1.1+ | 0.4− | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1+ | 1.1+ |
| 2001 09 16 | 704 | 0.3− | 0.2+ | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 2001 09 25 | 644 | 0.6− | 0.7+ | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.7+ |
| 2001 09 25 | 644 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.0 | 1.0− | 2006 10 16 | 703 | 1.1+ | 0.3− |
| 2001 09 25 | 644 | 0.6− | 0.3+ | 2006 09 14 | 703 | 1.3+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2006 09 17 | 699 | (0.3+ | 2.2+) | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.7− | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 17 | 699 | 1.4− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2006 09 17 | 699 | (1.9− | 0.2+) | 2006 11 25 | G96 | 0.2− | 0.5+ |
| 2001 10 20 | 704 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.1− | 2006 11 25 | G96 | 0.4− | 0.0 |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2006 09 30 | 703 | 1.0+ | 0.1− | 2006 11 25 | G96 | 0.3− | 0.4+ |

**2001 TH$_{252}$ = 2006 ST$_{365}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.74651 | | (2000.0) | | | |
| $n$ | 0.20645374 | $\omega$ | 356.19171 | | +0.84519173 | −0.51845292 |
| $a$ | 2.8352252 | $\Omega$ | 36.01232 | | +0.49600990 | +0.67040669 |
| $e$ | 0.0758894 | $i$ | 12.75753 | | +0.19906060 | +0.53081205 |
| $P$ | 4.77 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.9− | 0.7+ | 2004 04 22 | 691 | 0.6+ | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.1+ |
| 2001 10 10 | 644 | 0.5− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2001 10 10 | 644 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.7− | 2006 10 20 | 691 | 0.3− | 0.4+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.4− |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.6− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 10 24 | 644 | (0.3+ | 1.8+) | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 644 | (0.4+ | 1.8+) | 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2001 10 24 | 644 | (0.2+ | 1.8+) | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 10 25 | 645 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2001 10 25 | 645 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2− |

**2001 TU$_{252}$ = 2006 SK$_{328}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.86280 | | (2000.0) | | | |
| $n$ | 0.20076148 | $\omega$ | 353.04961 | | +0.19762049 | −0.97803030 |
| $a$ | 2.8885671 | $\Omega$ | 85.53691 | | +0.90256135 | +0.15512166 |
| $e$ | 0.1299329 | $i$ | 3.81620 | | +0.38252994 | +0.13926233 |
| $P$ | 4.91 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.1− | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.5+ | 2006 11 18 | G96 | 0.4− | 0.3− |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.1− | 0.2− |

**2001 TP$_{256}$ = 2004 CX$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.88884 | | (2000.0) | | | |
| $n$ | 0.17751863 | $\omega$ | 258.00529 | | +0.43395987 | +0.89475811 |
| $a$ | 3.1354996 | $\Omega$ | 38.27595 | | −0.74625298 | +0.42247034 |
| $e$ | 0.0701031 | $i$ | 9.78663 | | −0.50476263 | +0.14466078 |
| $P$ | 5.55 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.5+ | 0.3− | 2001 10 24 | 644 | 0.3− | 0.6+ | 2005 03 10 | G96 | 0.4− | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 0.6+ | 2001 10 24 | 644 | 0.6− | 0.5+ | 2005 03 10 | G96 | 0.4− | 0.2− |
| 2001 09 21 | 704 | 0.7− | 0.7+ | 2001 10 24 | 644 | 0.4− | 0.6+ | 2005 03 10 | G96 | 0.2− | 0.4+ |
| 2001 09 21 | 704 | 0.8+ | 1.1− | 2004 02 15 | 704 | 0.1+ | 0.1+ | 2005 04 17 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2004 02 15 | 704 | 1.1+ | 1.6+ | 2005 04 17 | 691 | 0.2+ | 0.0 |
| 2001 10 08 | 644 | 0.0 | 0.4+ | 2004 02 15 | 704 | 0.1+ | 0.3+ | 2005 04 17 | 691 | 0.1+ | 0.1+ |
| 2001 10 08 | 644 | 0.3+ | 0.3+ | 2004 02 15 | 704 | 0.5+ | 0.1+ | 2006 07 18 | E12 | 0.5+ | 0.4+ |
| 2001 10 08 | 644 | 0.0 | 0.3+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 07 18 | E12 | 0.1− | 0.7+ |
| 2001 10 16 | 644 | 0.2− | 0.5− | 2004 02 16 | 691 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.1− | 0.1− |
| 2001 10 16 | 644 | 0.2− | 0.3− | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 07 18 | E12 | 0.9− | 0.8+ |
| 2001 10 16 | 644 | 0.1− | 0.3− | 2005 03 10 | G96 | 0.6− | 0.1− | | | | |

**2001 TQ$_{256}$ = 2000 HV$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.03125 | | (2000.0) | | | |
| $n$ | 0.21662201 | $\omega$ | 269.30586 | | +0.84392758 | +0.52823796 |
| $a$ | 2.7457922 | $\Omega$ | 58.80347 | | −0.43835795 | +0.77955675 |
| $e$ | 0.2124122 | $i$ | 6.27843 | | −0.30923865 | +0.33653518 |
| $P$ | 4.55 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 25 | 691 | 0.1− | 0.6+ | 2001 10 10 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2000 04 25 | 691 | 0.5+ | 0.6+ | 2001 10 10 | 644 | 1.3+ | 1.1− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2000 04 25 | 691 | 0.2+ | 0.4+ | 2001 10 16 | 644 | 0.1− | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2000 05 05 | 691 | 0.1− | 0.5+ | 2001 10 16 | 644 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2000 05 05 | 691 | 0.2+ | 0.0 | 2001 10 16 | 644 | 0.2+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2000 05 05 | 691 | 0.3− | 1.2− | 2001 10 24 | 644 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2001 08 26 | 644 | 0.7− | 0.3+ | 2001 10 24 | 644 | 0.5+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2001 08 26 | 644 | 0.2− | 0.2− | 2001 10 24 | 644 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.2− | 1.2+ |
| 2001 08 26 | 644 | 0.5− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.0− | 0.9+ |
| 2001 09 12 | 704 | 1.1− | 0.3− | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.6− | 1.0+ |
| 2001 09 12 | 704 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.4− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2001 10 10 | 644 | 0.5− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 24 | G96 | 0.6+ | 0.3− |
| 2001 10 10 | 644 | 1.4+ | 0.9− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 10 10 | 644 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.0 | 0.4− | | | | |
| 2001 10 10 | 644 | (1.8+ | 0.9−) | 2006 10 19 | G96 | 0.4+ | 0.3− | | | | |

**2001 TR$_{256}$ = 2004 JH$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.09320 | | (2000.0) | | | |
| $n$ | 0.22668709 | $\omega$ | 2.59111 | | +0.83096343 | −0.54443662 |
| $a$ | 2.6639017 | $\Omega$ | 31.27044 | | +0.50637481 | +0.65501980 |
| $e$ | 0.1763760 | $i$ | 12.73256 | | +0.23040037 | +0.52396357 |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.7− | 0.5+ | 2001 10 24 | 644 | 0.8− | 1.2+ | 2004 05 14 | 691 | 0.2+ | 0.5+ |
| 2001 08 26 | 644 | 0.6− | 0.2+ | 2001 10 24 | 644 | 0.9− | 1.3+ | 2004 05 23 | 691 | 0.2− | 0.3+ |
| 2001 08 26 | 644 | 0.5− | 0.7+ | 2003 02 01 | 644 | 0.5+ | 0.9+ | 2004 05 23 | 691 | 0.0 | 0.3+ |
| 2001 09 12 | 704 | 0.1+ | 0.7+ | 2003 02 01 | 644 | 0.4+ | 0.8+ | 2004 05 23 | 691 | 0.3− | 0.2+ |
| 2001 09 12 | 704 | 0.9− | 0.3+ | 2003 02 01 | 644 | 0.2+ | 0.9+ | 2005 08 08 | E12 | 0.2− | 0.6+ |
| 2001 09 12 | 704 | 1.1− | 0.4+ | 2003 02 01 | 644 | 0.4+ | 0.7+ | 2005 08 08 | E12 | 0.5+ | 0.8− |
| 2001 09 12 | 704 | 0.4− | 0.5+ | 2003 02 01 | 644 | 0.4+ | 0.9+ | 2005 08 08 | E12 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.3− | 0.8+ | 2003 02 01 | 644 | 0.3+ | 0.8+ | 2005 08 08 | E12 | 0.4+ | 0.7− |
| 2001 09 25 | 704 | 0.0 | 0.8+ | 2003 03 08 | 644 | 1.0+ | 0.9+ | 2005 08 24 | E12 | 0.4− | 0.7− |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2003 03 08 | 644 | 0.4+ | 1.0+ | 2005 08 24 | E12 | 0.2+ | 0.8+ |
| 2001 09 25 | 704 | 0.7+ | 0.5+ | 2003 03 08 | 644 | 0.4+ | 0.6+ | 2005 08 24 | E12 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.4+ | 0.6+ | 2004 05 14 | 691 | 0.3+ | 0.4+ | 2005 08 24 | E12 | 0.1− | 0.6− |
| 2001 10 11 | 644 | 0.4− | 0.4+ | 2004 05 14 | 691 | 0.6+ | 0.2+ | 2006 11 20 | 703 | 0.3+ | 0.4− |
| 2001 10 11 | 644 | 0.6− | 0.3+ | 2004 05 14 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.0 | 0.5+ |
| 2001 10 11 | 644 | 0.5− | 0.4+ | 2004 05 14 | 691 | 0.3+ | 0.2+ | 2006 11 20 | 703 | 0.1+ | 0.4+ |
| 2001 10 24 | 644 | 0.7− | 1.2+ | 2004 05 14 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.1− | 0.4+ |

**2001 TS$_{256}$ = 1995 CG$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 72.86664 | | (2000.0) | | | |
| $n$ | 0.25767364 | $\omega$ | 91.44675 | | +0.36370174 | −0.93070885 |
| $a$ | 2.4458100 | $\Omega$ | 337.10649 | | +0.81013323 | +0.33657168 |
| $e$ | 0.0818528 | $i$ | 5.71767 | | +0.45978821 | +0.14318010 |
| $P$ | 3.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 04 | 691 | 0.1+ | 0.1+ | 2001 10 13 | 699 | 0.1− | 0.2− | 2001 11 11 | 699 | 0.0 | 0.2− |
| 1995 02 04 | 691 | 0.1+ | 0.1+ | 2001 10 13 | 699 | 1.0− | 0.0 | 2001 11 11 | 699 | 0.7+ | 0.0 |
| 1995 02 04 | 691 | 0.1+ | 0.1− | 2001 10 14 | 704 | 0.9+ | 0.8+ | 2001 11 11 | 699 | 0.0 | 0.5− |
| 1995 02 05 | 691 | 0.3− | 0.1+ | 2001 10 14 | 704 | 0.3+ | 0.3+ | 2001 11 24 | 704 | 0.1− | 1.0+ |
| 1995 02 05 | 691 | 0.3− | 0.2− | 2001 10 14 | 704 | 0.0 | 0.1+ | 2001 11 24 | 704 | 0.5+ | 0.4+ |
| 1995 02 05 | 691 | 0.3+ | 0.0 | 2001 10 14 | 704 | 0.5+ | 0.0 | 2001 11 24 | 704 | 0.2− | 0.5− |
| 2001 10 13 | 699 | 0.0 | 0.7+ | 2001 10 14 | 704 | 1.5− | 0.9− | 2001 11 24 | 704 | 1.3− | 0.2+ |
| 2001 10 13 | 699 | 0.1− | 0.8− | 2001 11 11 | 699 | 1.5+ | 0.3− | | | | |

**2001 TT$_{256}$ = 1996 SF$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.79009 | | (2000.0) | | | |
| $n$ | 0.20679185 | $\omega$ | 129.19800 | | +0.83327597 | −0.55258028 |
| $a$ | 2.8321339 | $\Omega$ | 264.35289 | | +0.50166209 | +0.76903681 |
| $e$ | 0.0971064 | $i$ | 1.00753 | | +0.23234953 | +0.32130581 |
| $P$ | 4.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 691 | 0.4− | 0.2− | 2001 11 21 | 704 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 1996 09 17 | 691 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1996 09 17 | 691 | 0.3− | 0.2− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.4− | 0.1+ |
| 1996 09 20 | 691 | 0.4+ | 0.3− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2− | 0.0 |
| 1996 09 20 | 691 | 0.1+ | 0.1− | 2005 07 30 | E12 | 0.6− | 0.9+ | 2006 11 21 | 704 | 0.6+ | 1.1+ |
| 1996 09 20 | 691 | 0.3+ | 0.3− | 2005 07 30 | E12 | (0.8+ | 1.7+) | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2001 10 13 | 691 | 0.8+ | 0.1+ | 2005 07 30 | E12 | 0.0 | 0.4+ | 2006 11 21 | 704 | (0.3+ | 2.2+) |
| 2001 10 13 | 691 | 0.2+ | 0.4+ | 2005 07 30 | E12 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.2+ |
| 2001 10 13 | 691 | 0.5+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.5+ | 1.1+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.4− | 0.2− |
| 2001 10 21 | 704 | 0.9− | 0.8+ | 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.6− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 12 01 | 691 | 0.5− | 1.2− |
| 2001 10 21 | 704 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.1− | 1.2+ | 2006 12 01 | 691 | 0.6+ | 0.2+ |
| 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.5− |

**2001 TU$_{256}$ = 1997 SQ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.51378 | | (2000.0) | | | |
| $n$ | 0.25682156 | $\omega$ | 12.98242 | | +0.86731585 | −0.49671178 |
| $a$ | 2.4512168 | $\Omega$ | 16.91573 | | +0.44620477 | +0.74713018 |
| $e$ | 0.1254845 | $i$ | 6.36538 | | +0.22060038 | +0.44167172 |
| $P$ | 3.84 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.1+ | 0.0 | 2001 10 21 | 704 | 0.5+ | 0.7− | 2001 11 24 | 704 | 0.0 | 0.7− |
| 1997 09 28 | 691 | 0.2+ | 0.2− | 2001 10 21 | 704 | 0.4+ | 0.3− | 2001 11 24 | 704 | 0.1− | 0.7+ |
| 1997 09 28 | 691 | 0.1+ | 0.0 | 2001 10 21 | 704 | 0.1− | 0.0 | 2001 11 24 | 704 | 1.2− | 0.6+ |
| 1997 10 03 | 691 | 0.2− | 0.4− | 2001 10 21 | 704 | 0.5+ | 1.0+ | 2003 03 24 | 691 | 0.1− | 0.2− |
| 1997 10 03 | 691 | 0.2+ | 0.1− | 2001 11 12 | 704 | 0.7− | 1.2+ | 2003 03 24 | 691 | 0.2− | 0.3− |
| 1997 10 03 | 691 | 0.3− | 0.6+ | 2001 11 12 | 704 | 0.2− | 0.7− | 2003 03 24 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.1− | 0.2+ | 2001 11 12 | 704 | 0.1− | 0.1− | 2003 04 29 | 691 | 0.4+ | 0.1+ |
| 2001 10 14 | 704 | 0.6+ | 0.5+ | 2001 11 12 | 704 | 0.2− | 0.3− | 2003 04 29 | 691 | 0.3+ | 0.1− |
| 2001 10 14 | 704 | 0.4− | 0.5+ | 2001 11 12 | 704 | 0.3− | 0.2− | 2003 04 29 | 691 | 0.2− | 0.4+ |
| 2001 10 21 | 704 | 0.4+ | 0.5− | 2001 11 24 | 704 | 1.2+ | 0.6− | | | | |

**2001 TV$_{256}$ = 2005 YE$_{194}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 145.92716 | | (2000.0) | | | |
| $n$ | 0.27413967 | $\omega$ | 254.55915 | | +0.95697590 | −0.27147024 |
| $a$ | 2.3468651 | $\Omega$ | 121.09511 | | +0.29016740 | +0.89521740 |
| $e$ | 0.1348459 | $i$ | 6.87304 | | +0.00007802 | +0.35339738 |
| $P$ | 3.60 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.6− | 0.4+ | 2001 11 04 | 209 | 0.6+ | 0.4+ | 2005 12 31 | 691 | 0.3− | 0.0 |
| 2001 10 15 | 644 | 0.5− | 0.8+ | 2001 11 04 | 209 | 0.6+ | 0.4+ | 2005 12 31 | 691 | 0.1− | 0.1− |
| 2001 10 15 | 644 | 0.4− | 0.8+ | 2001 11 11 | 645 | 0.1− | 0.1− | 2006 01 04 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 644 | 0.7+ | 0.1− | 2001 11 11 | 645 | 0.0 | 0.1− | 2006 01 04 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 644 | 0.5+ | 0.0 | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 01 04 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 644 | 0.8+ | 0.4− | 2003 03 31 | 645 | 0.0 | 0.1− | | | | |
| 2001 11 04 | 209 | 0.5+ | 0.3+ | 2005 12 31 | 691 | 0.2+ | 0.0 | | | | |

**2001 TW$_{256}$ = 2004 JZ$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 262.74576 | | (2000.0) | | | |
| $n$ | 0.17775777 | $\omega$ | 354.98750 | | −0.29470256 | −0.90771216 |
| $a$ | 3.1326869 | $\Omega$ | 111.89366 | | +0.88754344 | −0.37583875 |
| $e$ | 0.1690092 | $i$ | 18.77754 | | +0.35414269 | +0.18655792 |
| $P$ | 5.54 | $H$ | 14.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 27 | 691 | 0.3− | 0.3− | 2003 01 10 | 704 | 0.5+ | 0.0 | 2003 03 08 | 699 | 0.6+ | 0.8+ |
| 1993 05 27 | 691 | 0.1+ | 0.3− | 2003 01 10 | 704 | 0.0 | 0.3− | 2003 03 08 | 644 | 0.2+ | 0.0 |
| 1993 05 27 | 691 | 0.1− | 0.3− | 2003 01 10 | 704 | 0.1+ | 0.6− | 2003 03 08 | 644 | 0.3+ | 0.0 |
| 2001 10 14 | 608 | 0.4− | 1.0+ | 2003 02 04 | 699 | 0.0 | 0.2+ | 2003 03 08 | 644 | 0.1+ | 0.1− |
| 2001 10 14 | 608 | 0.0 | 0.7+ | 2003 02 04 | 699 | 0.5− | 0.8+ | 2004 05 14 | 704 | 0.1+ | 0.3− |
| 2001 10 14 | 608 | 0.4+ | 0.7+ | 2003 02 04 | 699 | 0.0 | 0.3+ | 2004 05 14 | 704 | 0.1− | 1.4+ |
| 2001 10 23 | 699 | 0.4+ | 0.0 | 2003 02 04 | 699 | 0.2− | 0.7+ | 2004 05 14 | 699 | 0.1− | 0.8+ |
| 2001 10 23 | 699 | 1.0− | 0.2+ | 2003 02 26 | 704 | 0.4+ | 0.2− | 2004 05 14 | 704 | 0.2− | 0.3+ |
| 2001 10 23 | 699 | 1.2− | 0.6+ | 2003 02 26 | 704 | 0.0 | 0.3+ | 2004 05 14 | 699 | 0.2+ | 1.0+ |
| 2001 10 23 | 699 | 0.9− | 1.2+ | 2003 02 26 | 704 | 0.6+ | 0.1− | 2004 05 14 | 699 | 0.5+ | 0.5+ |
| 2001 11 18 | 608 | 0.3− | 0.9+ | 2003 02 26 | 704 | 0.0 | 0.6− | 2004 05 14 | 699 | 1.4− | 0.8+ |
| 2001 11 18 | 608 | 0.3− | 0.6+ | 2003 02 26 | 704 | 0.2− | 0.4− | 2004 05 20 | 691 | 0.2+ | 0.4+ |
| 2001 11 18 | 608 | 0.0 | 0.7+ | 2003 03 03 | 644 | 0.3− | 1.0+ | 2004 05 20 | 691 | 0.3+ | 0.4+ |
| 2002 12 31 | 704 | 0.3+ | 0.0 | 2003 03 03 | 644 | 0.3− | 1.0+ | 2004 05 20 | 691 | 0.3+ | 0.3+ |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2003 03 03 | 644 | 0.3− | 1.0+ | 2005 06 14 | G96 | 0.5+ | 0.5+ |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2003 03 08 | 699 | 0.2− | 0.1+ | 2005 06 14 | G96 | 0.1+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.6+ | 0.5− | 2003 03 08 | 699 | 0.1+ | 0.4− | 2005 06 14 | G96 | 0.5+ | 0.9+ |
| 2003 01 10 | 704 | 0.0 | 0.1+ | 2003 03 08 | 699 | 0.1+ | 0.1+ | | | | |

**2001 TX$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.41599 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18861725 | $\omega$ | 77.79108 | | −0.16976481 | −0.98371111 | |
| $a$ | 3.0112614 | $\Omega$ | 22.24688 | | +0.83257861 | −0.17524943 | |
| $e$ | 0.0785527 | $i$ | 8.98014 | | +0.52725019 | −0.04000113 | |
| $P$ | 5.23 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2+ | 0.2− | 2003 03 23 | 644 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.0 |
| 2001 10 14 | 704 | 1.1+ | 0.7− | 2003 03 23 | 644 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.2+ | 0.1− | 2005 08 04 | 644 | 0.4− | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 0.1+ | 0.1− | 2005 08 04 | 644 | 0.3− | 0.7+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 11 24 | 704 | 0.2+ | 0.3− | 2005 08 04 | 644 | 0.4− | 0.8+ | 2006 11 09 | 644 | 0.6− | 0.0 |
| 2001 11 24 | 704 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.3− |
| 2001 11 24 | 704 | 1.4− | 0.9+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2001 12 20 | 644 | 0.1− | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.3+ |
| 2001 12 20 | 644 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.3+ |
| 2001 12 20 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.5+ |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.3− |
| 2003 02 21 | 644 | 0.7+ | 1.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 11 15 | 691 | 1.0+ | 0.2+ |
| 2003 02 21 | 644 | (0.4+ | 1.7+) | 2006 10 12 | 644 | 0.4− | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2003 02 21 | 644 | 0.5+ | 1.4+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2003 03 07 | 699 | (1.9+ | 1.4−) | 2006 10 19 | 644 | 0.7− | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2003 03 07 | 699 | (0.2− | 1.7+) | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2003 03 07 | 699 | 0.5+ | 0.2− | 2006 10 19 | 644 | 0.4− | 0.5− | 2006 11 21 | 691 | 0.1− | 0.3− |
| 2003 03 07 | 699 | 0.1− | 1.1+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.3− |
| 2003 03 23 | 644 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.2+ | | | | |

**2001 TY$_{256}$ = 1999 JD$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.60962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16804056 | $\omega$ | 288.42146 | | +0.83867836 | −0.52175612 | |
| $a$ | 3.2523203 | $\Omega$ | 103.29672 | | +0.54032524 | +0.76114381 | |
| $e$ | 0.0237167 | $i$ | 9.23431 | | +0.06831718 | +0.38526700 | |
| $P$ | 5.87 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 15 | 691 | 0.0 | 0.1+ | 2001 10 25 | 645 | 0.1− | 0.1+ | 2005 05 21 | G96 | 0.6− | 0.4+ |
| 1999 05 15 | 691 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.0 | 0.4+ | 2005 05 21 | G96 | 0.4− | 0.2+ |
| 1999 05 20 | 691 | 0.2− | 0.7− | 2004 03 18 | 691 | 0.2+ | 0.4+ | 2005 05 21 | G96 | 0.1− | 0.5− |
| 1999 05 20 | 691 | 0.2− | 0.1− | 2004 03 18 | 691 | 0.4+ | 0.4+ | 2005 05 21 | G96 | 0.4− | 0.5+ |
| 1999 05 20 | 691 | 0.2+ | 0.0 | 2005 05 21 | G96 | 0.0 | 0.3+ | 2005 06 10 | 691 | 0.1− | 0.3+ |
| 2001 10 14 | 209 | 0.1+ | 0.4+ | 2005 05 21 | G96 | 0.4+ | 0.5− | 2005 06 10 | 691 | 0.3+ | 0.6+ |
| 2001 10 15 | 209 | 0.0 | 0.4+ | 2005 05 21 | G96 | 0.3− | 0.2+ | 2005 06 10 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 209 | 0.0 | 0.1+ | 2005 05 21 | G96 | 0.2+ | 0.1− | 2005 06 28 | 691 | 0.1+ | 0.0 |
| 2001 10 23 | 644 | 0.4− | 0.5+ | 2005 05 21 | G96 | 0.2− | 0.0 | 2005 06 28 | 691 | 0.2+ | 0.1− |
| 2001 10 23 | 644 | 0.5− | 0.6+ | 2005 05 21 | G96 | 0.2− | 0.1+ | 2005 06 28 | 691 | 0.3+ | 0.3+ |
| 2001 10 23 | 644 | 0.3− | 0.5+ | 2005 05 21 | G96 | 0.3+ | 0.4+ | | | | |
| 2001 10 25 | 645 | 0.0 | 0.1+ | 2005 05 21 | G96 | 0.6+ | 0.3+ | | | | |

**2001 TZ$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.16135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24060886 | $\omega$ | 50.92821 | | +0.97001185 | +0.18464712 | |
| $a$ | 2.5601277 | $\Omega$ | 297.90716 | | −0.23826125 | +0.85091145 | |
| $e$ | 0.2707975 | $i$ | 10.30327 | | +0.04804781 | +0.49178771 | |
| $P$ | 4.10 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 1.2+ | 0.2− | 2001 11 11 | 704 | 0.3+ | 1.1− | 2005 09 25 | 644 | 0.3+ | 0.0 |
| 2001 10 15 | 704 | 0.3+ | 0.2+ | 2001 11 11 | 704 | 0.3− | 0.4+ | 2005 10 02 | 699 | 0.2− | 0.6− |
| 2001 10 15 | 704 | 0.9+ | 0.1− | 2001 11 11 | 704 | 0.2+ | 1.3+ | 2005 10 02 | 699 | 0.0 | 0.7+ |
| 2001 10 20 | 699 | 0.7− | 1.2+ | 2005 09 01 | 644 | 0.2− | 0.1+ | 2005 10 02 | 699 | 0.2− | 1.5− |
| 2001 10 20 | 699 | 0.1+ | 0.5− | 2005 09 01 | 644 | 0.2− | 0.2+ | 2005 10 02 | 699 | 0.2+ | 1.1+ |
| 2001 10 20 | 699 | 1.8− | 0.2− | 2005 09 01 | 644 | 0.1− | 0.1+ | 2005 11 06 | 704 | 0.2− | 0.4− |
| 2001 10 20 | 699 | 0.6− | 0.1+ | 2005 09 25 | 644 | 0.1+ | 0.2+ | 2005 11 06 | 704 | 0.2+ | 0.2+ |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2005 09 25 | 644 | 0.2+ | 0.1− | 2005 11 06 | 704 | 0.6+ | 0.8− |

**2001 TA$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.73603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21667026 | $\omega$ | 303.55533 | | −0.14406407 | −0.98856947 | |
| $a$ | 2.7453846 | $\Omega$ | 154.61626 | | +0.93881639 | −0.15073849 | |
| $e$ | 0.0027542 | $i$ | 5.95195 | | +0.31284074 | −0.00288190 | |
| $P$ | 4.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2001 11 21 | 691 | 0.2− | 0.0 | 2005 08 27 | 644 | 0.2− | 0.3+ |
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2003 01 26 | 644 | 0.0 | 1.2+ | 2005 08 27 | 644 | 0.1− | 0.4+ |
| 2001 10 24 | 644 | (0.0 | 1.5+) | 2003 01 26 | 644 | 0.2+ | 0.9+ | 2005 08 27 | 644 | 0.0 | 0.2+ |
| 2001 10 24 | 644 | 0.1− | 1.4+ | 2003 01 26 | 644 | 0.2+ | 1.3+ | 2005 09 29 | G96 | 0.6+ | 1.0+ |
| 2001 10 24 | 644 | 0.4+ | 1.0+ | 2005 07 29 | 644 | 0.1+ | 0.1+ | 2005 09 29 | G96 | 0.1− | 0.7+ |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2005 07 29 | 644 | 0.1− | 0.1− | 2005 09 29 | G96 | 0.3− | 0.8+ |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2005 07 29 | 644 | 0.2− | 0.2+ | 2005 09 29 | G96 | 0.0 | 0.3+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2005 07 29 | 644 | 0.1+ | 0.1− | 2006 11 22 | G96 | (13.2− | 2.6−) |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2005 07 29 | 644 | 0.2− | 0.1+ | 2006 11 22 | G96 | (13.7− | 2.7−) |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2005 07 29 | 644 | 0.4− | 0.2+ | 2006 11 22 | G96 | (13.8− | 2.7−) |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2005 08 06 | 644 | 0.1− | 0.3+ | 2006 11 22 | G96 | (13.7− | 2.9−) |
| 2001 11 21 | 691 | 0.1+ | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | | | | |
| 2001 11 21 | 691 | 0.6− | 0.6+ | 2005 08 06 | 644 | 0.1− | 0.2+ | | | | |

**2001 TB$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.48700 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22864714 | $\omega$ | 137.12444 | | +0.93819039 | +0.34603508 | |
| $a$ | 2.6486558 | $\Omega$ | 202.63397 | | −0.32269616 | +0.86649240 | |
| $e$ | 0.0757225 | $i$ | 1.13904 | | −0.12516384 | +0.35979250 | |
| $P$ | 4.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 691 | 0.3− | 0.1+ | 2004 04 21 | 691 | 0.1+ | 0.0 | 2005 09 30 | G96 | 0.0 | 0.4− |
| 2001 10 15 | 691 | 0.2− | 0.1+ | 2004 05 21 | 691 | 0.0 | 0.2+ | 2005 10 01 | 703 | (0.3+ | 6.2+) |
| 2001 10 15 | 691 | 0.2− | 0.1− | 2004 05 21 | 691 | 0.2+ | 0.0 | 2005 10 01 | 703 | 0.4− | 0.3− |
| 2001 10 21 | 704 | 1.8+ | 0.4− | 2004 05 21 | 691 | 0.2+ | 0.1− | 2005 10 01 | 703 | 0.5+ | 0.8− |
| 2001 10 21 | 704 | 0.3− | 0.1+ | 2004 06 13 | 691 | 0.1+ | 0.2+ | 2005 10 01 | 703 | 0.7− | 0.6− |
| 2001 10 21 | 704 | 1.1− | 0.9+ | 2004 06 13 | 691 | 0.1+ | 0.3+ | 2005 10 11 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | (0.9− | 2.9+) | 2004 06 13 | 691 | 0.2− | 0.1+ | 2005 10 11 | 691 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.0 | 1.4+ | 2005 08 30 | 691 | 0.1− | 0.0 | 2005 10 11 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 1.0+ | 0.8+ | 2005 08 30 | 691 | 0.1+ | 0.1− | 2005 11 25 | G96 | 0.4+ | 0.1+ |
| 2001 10 23 | 704 | 0.5+ | 0.6− | 2005 08 30 | 691 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.9+ | 0.4− |
| 2001 11 19 | 704 | 0.9− | 1.1+ | 2005 09 13 | 691 | 0.1− | 0.3− | 2005 11 25 | G96 | 0.5+ | 1.3− |
| 2001 11 19 | 704 | 0.1+ | 0.6+ | 2005 09 13 | 691 | 0.1+ | 0.3− | 2005 11 25 | G96 | 0.3− | 0.3− |
| 2001 11 19 | 704 | 0.9− | 0.1− | 2005 09 13 | 691 | 0.2+ | 0.3− | 2005 12 02 | G96 | 0.7+ | 0.3− |
| 2001 11 19 | 704 | 1.0+ | 0.8+ | 2005 09 30 | G96 | 0.4− | 0.5− | 2005 12 02 | G96 | 0.6+ | 1.0− |
| 2004 04 21 | 691 | 0.4− | 0.1+ | 2005 09 30 | G96 | 0.4− | 0.5− | 2005 12 02 | G96 | 0.3− | 0.2− |
| 2004 04 21 | 691 | 0.1+ | 0.0 | 2005 09 30 | G96 | 0.1+ | 0.5− | 2005 12 02 | G96 | 0.5− | 0.5− |

**2001 TC$_{257}$ = 2006 TB$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.40314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18473913 | $\omega$ | 307.84160 | | +0.94514102 | +0.30780292 | |
| $a$ | 3.0532576 | $\Omega$ | 34.62377 | | −0.20479024 | +0.81920553 | |
| $e$ | 0.0814161 | $i$ | 11.10002 | | −0.25449835 | +0.48390046 | |
| $P$ | 5.34 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3+ | 0.2− | 2003 03 08 | 644 | 0.1+ | 0.9+ | 2006 10 03 | 704 | (1.6+ | 1.1−) |
| 2001 10 14 | 704 | 0.9− | 0.6+ | 2003 03 08 | 644 | 0.4+ | 0.8+ | 2006 10 03 | 704 | 1.2+ | 0.3+ |
| 2001 10 14 | 704 | 0.6− | 0.6+ | 2004 04 21 | 704 | 0.0 | 1.3+ | 2006 10 03 | 704 | 0.0 | 0.7− |
| 2001 10 14 | 704 | 0.4− | 1.3+ | 2004 04 21 | 704 | (0.9+ | 1.8+) | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2001 10 14 | 704 | 1.1− | 0.4+ | 2004 04 21 | 704 | 0.8+ | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.2− |
| 2001 11 11 | 704 | 0.9+ | 0.7+ | 2005 06 08 | E12 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.7+ | 0.1− |
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2005 06 08 | E12 | 1.0+ | 0.6+ | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 2001 11 11 | 704 | 0.7+ | 0.5− | 2005 06 08 | E12 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.6+ | 0.3+ |
| 2001 11 11 | 704 | 0.7+ | 1.1− | 2005 06 08 | E12 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 2001 11 11 | 704 | 0.3− | 0.3+ | 2005 07 05 | E12 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.2+ |
| 2001 11 24 | 704 | 0.3− | 0.4− | 2005 07 05 | E12 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | 0.3+ | 0.1− | 2005 07 05 | E12 | 0.8+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2001 11 24 | 704 | 0.1+ | 0.6− | 2005 07 05 | E12 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 0.6− | 0.2+ | 2005 07 25 | E12 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2001 11 24 | 704 | 0.3+ | 0.6+ | 2005 07 25 | E12 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2005 07 25 | E12 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 11 24 | 704 | 0.2+ | 0.1− | 2005 07 25 | E12 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2001 11 24 | 704 | 0.2− | 0.5+ | 2005 08 06 | E12 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.9− |
| 2001 11 24 | 704 | 0.7+ | 0.3+ | 2005 08 06 | E12 | 1.3− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2001 11 24 | 704 | 0.3+ | 0.3+ | 2005 08 06 | E12 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2001 12 09 | 704 | 0.6+ | 0.2+ | 2005 08 06 | E12 | 0.1+ | 0.4+ | 2006 11 13 | 644 | 0.3+ | 0.1+ |
| 2001 12 09 | 704 | 0.2+ | 0.3− | 2005 08 24 | E12 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.4+ | 0.1+ |
| 2001 12 09 | 704 | 0.3+ | 0.1− | 2005 08 24 | E12 | 0.5− | 0.3+ | 2006 11 13 | 644 | 0.5+ | 0.4+ |
| 2001 12 09 | 704 | 0.6+ | 0.1+ | 2005 08 24 | E12 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2001 12 09 | 704 | 0.7+ | 0.6+ | 2005 08 24 | E12 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.2+ |
| 2001 12 22 | 704 | 1.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | (3.9− | 0.3+) |
| 2001 12 22 | 704 | (2.1− | 0.0 ) | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | (3.6− | 1.1−) |
| 2001 12 22 | 704 | 1.3− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | (3.9− | 1.9−) |
| 2001 12 22 | 704 | 1.0− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− | | | | |
| 2003 03 08 | 644 | 0.4+ | 1.1+ | 2006 10 03 | 704 | 0.1− | 0.6− | | | | |

**2001 UJ**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.77898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37118067 | $\omega$ | 5.05418 | | +0.71259855 | −0.65391036 | |
| $a$ | 1.9175461 | $\Omega$ | 39.87581 | | +0.62898872 | +0.43499153 | |
| $e$ | 0.0983564 | $i$ | 23.35643 | | +0.31076758 | +0.61901826 | |
| $P$ | 2.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 699 | 0.0 | 0.7− | 2001 10 20 | 704 | 0.1+ | 0.2− | 2001 11 17 | 704 | 0.2+ | 0.4+ |
| 2001 09 23 | 699 | 0.6− | 0.6− | 2001 10 20 | 704 | 0.2− | 0.2− | 2001 11 17 | 704 | 0.4+ | 0.4+ |
| 2001 09 23 | 699 | 0.5+ | 0.6− | 2001 10 22 | 704 | 0.7+ | 0.9+ | 2001 11 17 | 704 | 0.2+ | 0.0 |
| 2001 09 23 | 699 | 0.2+ | 0.2− | 2001 10 22 | 704 | 0.6− | 0.7+ | 2001 11 19 | 704 | 0.2− | 0.9+ |
| 2001 10 12 | 608 | 0.6− | 0.9+ | 2001 10 22 | 704 | 0.9− | 0.2+ | 2001 11 19 | 704 | 1.2− | 1.0+ |
| 2001 10 12 | 608 | 1.0− | 0.8+ | 2001 10 22 | 704 | 0.8− | 0.2+ | 2001 11 19 | 704 | 0.4− | 0.5+ |
| 2001 10 12 | 608 | 0.7− | 0.6+ | 2001 10 24 | 704 | 0.2+ | 0.5− | 2001 11 19 | 704 | 0.9− | 0.8+ |
| 2001 10 14 | 699 | 0.8− | 1.2− | 2001 10 24 | 704 | 0.2+ | 0.4− | 2001 11 19 | 704 | 0.5− | 1.0+ |
| 2001 10 14 | 699 | 0.8+ | 0.4+ | 2001 10 24 | 704 | 0.4+ | 0.8− | 2001 11 21 | 608 | 0.2+ | 0.7− |
| 2001 10 14 | 699 | 0.6− | 0.2+ | 2001 10 24 | 704 | 0.7+ | 0.3− | 2001 11 21 | 608 | 0.6+ | 0.8− |
| 2001 10 14 | 699 | 0.3+ | 0.2− | 2001 10 24 | 704 | 0.1− | 0.1+ | 2001 11 21 | 608 | 0.4+ | 1.0− |
| 2001 10 16 | 704 | 0.1+ | 0.1+ | 2001 10 24 | 644 | 0.3+ | 0.8+ | 2001 11 24 | 704 | 0.4+ | 0.3+ |
| 2001 10 16 | 704 | 0.8− | 0.4− | 2001 10 24 | 644 | 0.3+ | 0.6+ | 2001 11 24 | 704 | 0.9+ | 0.5+ |
| 2001 10 16 | 704 | 0.2− | 1.1− | 2001 10 24 | 644 | 0.2+ | 0.5+ | 2001 11 24 | 704 | 1.4+ | 0.7+ |
| 2001 10 16 | 704 | 0.9− | 1.1− | 2001 10 26 | 704 | 0.0 | 0.1− | 2001 11 24 | 704 | 0.7+ | 0.8+ |
| 2001 10 16 | 704 | 0.3− | 1.4− | 2001 10 26 | 704 | 0.3− | 0.4− | 2001 11 24 | 704 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2001 10 26 | 704 | 0.4− | 0.7− | 2002 01 08 | 704 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.9− | 0.7− | 2001 10 26 | 704 | 0.3− | 0.4− | 2002 01 08 | 704 | 0.1− | 0.0 |
| 2001 10 17 | 704 | 0.3+ | 0.5+ | 2001 10 26 | 704 | 0.3− | 1.0− | 2002 01 08 | 704 | 0.7− | 0.4− |
| 2001 10 17 | 704 | 0.2+ | 0.2− | 2001 11 09 | 704 | 0.6+ | 0.2+ | 2002 01 08 | 704 | 0.7− | 0.5− |
| 2001 10 17 | 704 | 0.1− | 0.3− | 2001 11 09 | 704 | 0.4+ | 0.1+ | 2005 01 29 | 704 | 0.6− | 1.0+ |
| 2001 10 18 | 704 | 0.2− | 0.3+ | 2001 11 09 | 704 | 0.1+ | 0.1+ | 2005 01 29 | 704 | 0.1+ | 0.1− |
| 2001 10 18 | 704 | 0.3+ | 0.0 | 2001 11 09 | 704 | 0.4+ | 0.2+ | 2005 01 29 | 704 | 0.3+ | 0.0 |
| 2001 10 18 | 704 | 0.0 | 0.7− | 2001 11 09 | 704 | 0.3+ | 0.7+ | 2006 08 20 | E12 | 0.1− | 0.9+ |
| 2001 10 18 | 704 | 0.4+ | 0.2− | 2001 11 16 | 644 | 0.5+ | 0.7+ | 2006 08 20 | E12 | 0.3+ | 0.5+ |
| 2001 10 18 | 704 | 0.3+ | 0.3+ | 2001 11 16 | 644 | 0.5+ | 0.8+ | 2006 08 20 | E12 | 0.3− | 0.3− |
| 2001 10 20 | 704 | 0.1− | 0.1− | 2001 11 16 | 644 | 0.2+ | 0.7+ | 2006 08 20 | E12 | 0.1+ | 0.4+ |
| 2001 10 20 | 704 | 0.5− | 0.3− | 2001 11 17 | 704 | 0.5+ | 0.4+ | | | | |
| 2001 10 20 | 704 | 0.1+ | 0.2− | 2001 11 17 | 704 | 0.8+ | 0.0 | | | | |

**2001 UZ$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.95553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18896224 | $\omega$ | 256.09793 | | −0.08351540 | −0.99507794 | |
| $a$ | 3.0075950 | $\Omega$ | 198.93907 | | +0.96594178 | −0.06768266 | |
| $e$ | 0.0810286 | $i$ | 9.45899 | | +0.24491151 | −0.07238053 | |
| $P$ | 5.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 291 | 0.1− | 0.1+ | 2001 10 18 | 704 | 1.4+ | 0.5− | 2001 10 24 | 704 | 0.7− | 0.1+ |
| 2001 10 14 | 291 | 0.1+ | 0.0 | 2001 10 18 | I03 | 0.0 | 0.3− | 2001 10 24 | 704 | 0.6− | 0.0 |
| 2001 10 14 | 291 | 0.1− | 0.6+ | 2001 10 18 | 644 | 0.3+ | 0.8− | 2001 11 20 | 704 | 0.4+ | 1.0− |
| 2001 10 17 | 704 | 0.2+ | 0.1− | 2001 10 18 | 704 | 0.3+ | 0.5− | 2001 11 20 | 704 | 0.7− | 1.0+ |
| 2001 10 17 | 704 | 0.2− | 1.2− | 2001 10 18 | 644 | 0.2+ | 0.7− | 2001 11 20 | 704 | 0.2+ | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.5+ | 2001 10 18 | 644 | 0.3+ | 0.8− | 2001 11 20 | 704 | 0.2+ | 0.6+ |
| 2001 10 17 | 704 | 0.0 | 0.1− | 2001 10 23 | 704 | 0.9− | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.2− |
| 2001 10 17 | 704 | 0.1+ | 0.3+ | 2001 10 23 | 704 | 0.9− | 0.9+ | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2001 10 18 | I03 | 0.2+ | 0.3+ | 2001 10 23 | 704 | 0.6− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2001 10 18 | I03 | 0.3+ | 0.0 | 2001 10 23 | 704 | 0.8+ | 1.2− | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2001 10 18 | 704 | 0.2+ | 0.4+ | 2001 10 24 | 704 | 0.4+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2001 10 18 | 704 | 0.0 | 0.4+ | 2001 10 24 | 704 | 0.5− | 0.2− | 2006 10 02 | 691 | 0.2− | 0.0 |

**2001 UO$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.04562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17982275 | $\omega$ | 318.91594 | | +0.99246364 | −0.07476813 | |
| $a$ | 3.1086581 | $\Omega$ | 45.65872 | | +0.11256290 | +0.86938452 | |
| $e$ | 0.1676399 | $i$ | 7.80190 | | −0.04843064 | +0.48844681 | |
| $P$ | 5.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1+ | 0.2+ | 2001 10 18 | 644 | 0.5− | 0.1+ | 2001 10 26 | 704 | 0.3+ | 0.8+ |
| 2001 09 21 | 704 | 0.1− | 0.2+ | 2001 10 18 | 644 | 0.4− | 0.3+ | 2001 10 26 | 704 | 0.7+ | 0.8+ |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2001 10 23 | 704 | 0.5− | 0.4+ | 2001 11 20 | 704 | 0.0 | 0.8+ |
| 2001 09 21 | 704 | 0.9− | 0.2+ | 2001 10 23 | 704 | 0.6+ | 0.7− | 2001 11 20 | 704 | 0.7− | 0.3+ |
| 2001 09 21 | 704 | 0.6− | 0.8+ | 2001 10 23 | 704 | 0.3+ | 0.3− | 2001 11 20 | 704 | 0.1+ | 1.2+ |
| 2001 09 26 | 704 | 0.0 | 0.5− | 2001 10 23 | 704 | 0.4+ | 1.2+ | 2001 11 20 | 704 | 0.4+ | 0.5+ |
| 2001 09 26 | 704 | 0.9− | 0.0 | 2001 10 23 | 704 | 0.9− | 0.9− | 2001 11 20 | 704 | 0.3+ | 0.7+ |
| 2001 09 26 | 704 | 0.4− | 0.0 | 2001 10 24 | 704 | 1.6− | 0.8− | 2001 11 21 | 704 | 0.1+ | 0.9− |
| 2001 09 26 | 704 | 1.3+ | 0.6− | 2001 10 24 | 704 | 0.8− | 1.3− | 2001 11 21 | 704 | 0.5− | 1.2− |
| 2001 10 17 | 704 | 0.3− | 0.9+ | 2001 10 24 | 704 | 0.5− | 1.2− | 2001 11 21 | 704 | 0.2− | 1.2− |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2001 10 24 | 704 | 0.2− | 0.8− | 2001 11 21 | 704 | 0.4+ | 1.2− |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2001 10 24 | 704 | 0.0 | 1.0− | 2001 12 18 | 704 | 0.2− | 0.1− |
| 2001 10 17 | 704 | 0.6− | 1.4+ | 2001 10 25 | 644 | 0.1− | 0.2+ | 2001 12 18 | 704 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.8+ | 0.6+ | 2001 10 25 | 644 | 0.3+ | 0.2+ | 2001 12 18 | 704 | 1.6+ | 0.7+ |
| 2001 10 18 | 704 | 1.1+ | 0.1+ | 2001 10 25 | 644 | 0.2+ | 0.1+ | 2006 08 16 | E12 | 0.6− | 0.4+ |
| 2001 10 18 | 704 | 0.4− | 0.4+ | 2001 10 25 | 691 | 0.3+ | 0.3− | 2006 08 16 | E12 | 0.2− | 0.2+ |
| 2001 10 18 | 704 | 0.3− | 0.3+ | 2001 10 25 | 691 | 0.1+ | 0.1− | 2006 08 16 | E12 | 0.7+ | 0.1− |
| 2001 10 18 | 704 | 0.8+ | 0.5+ | 2001 10 25 | 691 | 0.1− | 0.2− | 2006 08 16 | E12 | 0.1+ | 0.7− |
| 2001 10 18 | 704 | 0.2+ | 0.8− | 2001 10 26 | 704 | 0.4+ | 0.7+ | 2006 09 21 | F84 | 0.0 | 0.2− |
| 2001 10 18 | 644 | 0.1− | 0.3+ | 2001 10 26 | 704 | 0.6+ | 0.0 | 2006 09 21 | F84 | 0.2+ | 0.2− |

**2001 UJ$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.52952 | | (2000.0) | | | |
| $n$ | 0.18760259 | $\omega$ | 294.51627 | | +0.36267642 | −0.93141853 |
| $a$ | 3.0221093 | $\Omega$ | 134.18296 | | +0.86963384 | +0.32652518 |
| $e$ | 0.3167345 | $i$ | 2.43114 | | +0.33496685 | +0.16075080 |
| $P$ | 5.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.1− | 0.1+ | 2001 10 23 | 704 | 0.3− | 0.1− | 2001 11 20 | 704 | 0.5+ | 0.4+ |
| 2001 10 17 | 704 | 0.2− | 0.7+ | 2001 10 24 | 704 | 0.8+ | 0.2− | 2001 11 20 | 704 | 0.4+ | 0.3+ |
| 2001 10 17 | 704 | 0.8− | 0.9+ | 2001 10 24 | 704 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.9+ | 0.0 |
| 2001 10 17 | 704 | 0.8+ | 0.3+ | 2001 10 24 | 704 | 0.5+ | 0.1+ | 2001 12 17 | 704 | 0.3+ | 0.5+ |
| 2001 10 17 | 704 | 0.4+ | 0.7+ | 2001 10 24 | 704 | 0.8− | 0.2− | 2001 12 17 | 704 | 0.3− | 0.9− |
| 2001 10 18 | 704 | 0.1− | 0.7− | 2001 10 24 | 704 | 0.2− | 0.4− | 2001 12 17 | 704 | 0.1+ | 1.4− |
| 2001 10 18 | 704 | 0.1− | 0.1− | 2001 10 24 | 691 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.1+ | 0.3+ |
| 2001 10 18 | 704 | 0.3− | 0.6− | 2001 10 24 | 691 | 0.4− | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.1− |
| 2001 10 18 | 644 | 0.4+ | 0.7+ | 2001 10 24 | 691 | 0.3− | 0.1− | 2006 08 27 | 691 | 0.2+ | 0.3− |
| 2001 10 18 | 644 | 0.5+ | 0.1− | 2001 10 25 | 644 | 0.5+ | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.2− |
| 2001 10 18 | 644 | 0.3+ | 0.1+ | 2001 10 25 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2001 10 22 | 704 | (1.8+ | 0.0 ) | 2001 10 25 | 644 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.8− | 0.9− |
| 2001 10 22 | 704 | 1.1+ | 0.3− | 2001 11 09 | 704 | (1.0+ | 1.9−) | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 2001 10 22 | 704 | (1.9+ | 0.8−) | 2001 11 09 | 704 | (2.0+ | 0.8−) | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.2− | 0.5+ | 2001 11 09 | 704 | (2.5+ | 0.5−) | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.0 | 0.1+ | 2001 11 09 | 704 | (1.3+ | 2.7−) | 2006 09 26 | 691 | 0.3+ | 0.6+ |
| 2001 10 23 | 704 | 0.5− | 0.0 | 2001 11 09 | 704 | (0.9+ | 1.8−) | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.5− | 0.4− | 2001 11 20 | 704 | 0.4+ | 0.9+ | | | | |

**2001 UO$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.21499 | | (2000.0) | | | |
| $n$ | 0.17795574 | $\omega$ | 278.01626 | | +0.92055535 | +0.12322817 |
| $a$ | 3.1303631 | $\Omega$ | 75.49885 | | +0.06451795 | +0.88793262 |
| $e$ | 0.1102413 | $i$ | 22.51108 | | −0.38524704 | +0.44315966 |
| $P$ | 5.54 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 333 | 0.3+ | 0.6+ | 2001 12 17 | 704 | 0.8+ | 0.4− | 2004 05 12 | 644 | 0.5+ | 0.5+ |
| 2001 10 21 | 333 | 1.1− | 0.3− | 2001 12 17 | 704 | 0.6+ | 0.1− | 2004 05 12 | 644 | 0.2+ | 0.7+ |
| 2001 10 21 | 333 | 0.1+ | 0.2+ | 2001 12 17 | 704 | 0.7+ | 0.2− | 2004 05 12 | 644 | 0.6+ | 0.7+ |
| 2001 10 23 | 333 | 0.5+ | 0.4− | 2001 12 17 | 704 | 0.7+ | 0.4− | 2006 10 31 | 703 | 1.3− | 1.0+ |
| 2001 10 23 | 333 | 0.7+ | 0.5+ | 2001 12 17 | 704 | 0.5+ | 0.3− | 2006 10 31 | 703 | 0.1− | 0.7− |
| 2001 10 23 | 333 | 0.3− | 0.1− | 2001 12 18 | 691 | 0.3− | 0.1+ | 2006 10 31 | 703 | 0.4− | 0.5+ |
| 2001 10 23 | 333 | 0.4+ | 0.2+ | 2001 12 18 | 691 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.9− | 0.8+ |
| 2001 10 23 | 333 | 0.2+ | 0.2+ | 2001 12 18 | 691 | 0.3− | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.6+ |
| 2001 10 23 | 333 | 1.3+ | 0.1+ | 2001 12 23 | 291 | 0.5− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2001 11 09 | 704 | 0.7+ | 0.9− | 2001 12 23 | 291 | 0.3− | 0.1− | 2006 11 06 | 644 | 0.4− | 0.3+ |
| 2001 11 09 | 704 | 0.1+ | 1.0− | 2001 12 23 | 291 | 0.4− | 0.0 | 2006 11 18 | 703 | 0.7+ | 0.4+ |
| 2001 11 09 | 704 | (0.3+ | 1.7−) | 2002 01 08 | 704 | 0.6+ | 1.1+ | 2006 11 18 | 703 | (1.7− | 0.5−) |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2002 01 08 | 704 | 0.1− | 0.4+ | 2006 11 18 | 703 | 0.6+ | 0.9− |
| 2001 11 20 | 704 | 0.8− | 1.1+ | 2002 01 08 | 704 | 0.4+ | 0.0 | 2006 11 18 | 703 | 0.1+ | 0.4+ |
| 2001 11 20 | 704 | 0.5+ | 0.0 | 2002 01 08 | 704 | 0.2+ | 0.5+ | 2006 11 24 | 703 | 0.7+ | 0.5− |
| 2001 11 20 | 704 | 0.4+ | 0.6− | 2002 01 14 | 704 | 0.8+ | 0.4+ | 2006 11 24 | 703 | 0.0 | 0.2− |
| 2001 12 14 | 704 | 0.4− | 1.1− | 2002 01 14 | 704 | 0.7+ | 0.7+ | 2006 11 24 | 703 | 0.1− | 0.1− |
| 2001 12 14 | 704 | 0.6− | 0.9− | 2002 01 14 | 704 | 0.7+ | 0.6+ | 2006 11 24 | 703 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 0.8− | 0.9− | 2002 01 14 | 704 | 0.5+ | 0.3+ | | | | |
| 2001 12 14 | 704 | 0.9− | 0.2+ | 2002 01 14 | 704 | 0.8+ | 0.4+ | | | | |

**2001 UX$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.21639 | | (2000.0) | | | |
| $n$ | 0.18536172 | $\omega$ | 218.83710 | | +0.47399711 | −0.87951104 |
| $a$ | 3.0464170 | $\Omega$ | 202.96252 | | +0.83248788 | +0.46326158 |
| $e$ | 0.1736235 | $i$ | 6.22070 | | +0.28686351 | +0.10885329 |
| $P$ | 5.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.2+ | 0.1− | 2001 12 18 | 704 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 1995 10 19 | 691 | 0.0 | 0.1− | 2001 12 18 | 704 | 1.0+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1995 10 19 | 691 | 0.1− | 0.1− | 2001 12 18 | 704 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2001 10 22 | 333 | 0.4+ | 1.0− | 2001 12 18 | 704 | 0.1− | 0.9− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2001 10 22 | 333 | 0.5− | 0.7− | 2002 01 06 | 699 | 0.6− | 0.4− | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2001 10 22 | 333 | 0.4− | 0.6+ | 2002 01 06 | 699 | (0.9+ | 2.4−) | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 10 22 | 333 | 0.3+ | 0.3− | 2002 01 06 | 699 | 1.3− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 10 22 | 333 | 0.3+ | 0.7− | 2002 01 06 | 699 | 1.1+ | 0.2− | 2006 10 28 | 704 | (1.9− | 0.7−) |
| 2001 10 22 | 333 | 0.2− | 0.2+ | 2003 03 07 | 699 | 0.6+ | 1.1+ | 2006 10 28 | 704 | 0.5+ | 0.9− |
| 2001 10 23 | 333 | 0.7− | 1.0− | 2003 03 07 | 699 | 0.4+ | 1.0+ | 2006 10 28 | 704 | 0.6− | 0.3− |
| 2001 10 23 | 333 | 1.0+ | 0.1− | 2003 03 07 | 699 | (0.4+ | 1.7+) | 2006 10 28 | 704 | 0.4+ | 0.0 |
| 2001 10 23 | 333 | 0.6− | 0.3− | 2003 03 07 | 699 | 0.0 | 1.3+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 10 23 | 333 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2001 10 23 | 333 | 0.7+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2001 10 23 | 333 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.9− |
| 2001 11 17 | 704 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.9− | 1.3− |
| 2001 11 17 | 704 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2001 11 17 | 704 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2001 11 17 | 704 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 11 17 | 704 | 0.2− | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 11 18 | 704 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2001 11 18 | 704 | 0.7− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 11 18 | 704 | 1.3+ | 0.4− | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2001 11 18 | 704 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.6− | 0.1+ | 2006 11 17 | 703 | 1.5+ | 0.9+ |
| 2001 11 18 | 704 | 0.3+ | 0.8− | 2006 10 15 | 691 | (0.3+ | 1.6+) | 2006 11 17 | 703 | 0.4+ | 0.7+ |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 1.4+ | 1.4+ |
| 2001 11 20 | 704 | 0.9− | 0.9− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (1.6− | 0.0 ) |
| 2001 11 20 | 704 | 1.0− | 0.4+ | 2006 10 19 | 691 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.6+ | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.9− | 0.8+ |
| 2001 12 11 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.0− | 1.2+ |
| 2001 12 11 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2001 12 11 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.6+ | 2006 11 21 | 704 | (0.4+ | 1.5+) |
| 2001 12 11 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.0+ | 0.7+ |
| 2001 12 11 | 704 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.2− |

**2001 UQ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.64306 | | (2000.0) | | | |
| $n$ | 0.18567199 | $\omega$ | 239.19712 | | +0.98091848 | −0.18947848 |
| $a$ | 3.0430222 | $\Omega$ | 131.68725 | | +0.19227976 | +0.91232455 |
| $e$ | 0.2415481 | $i$ | 3.34340 | | +0.02876496 | +0.36299013 |
| $P$ | 5.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.8+ | 0.0 | 2001 11 20 | 608 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.3+ |
| 2001 10 23 | 704 | (0.2− | 1.6+) | 2001 11 20 | 608 | 0.3− | 0.6− | 2006 09 21 | 113 | 0.6+ | 0.1− |
| 2001 10 23 | 704 | 0.6+ | 0.7+ | 2001 11 20 | 608 | 0.3− | 0.7− | 2006 09 21 | 113 | 0.4+ | 0.0 |
| 2001 10 23 | 704 | 0.1− | 0.9+ | 2001 12 14 | 704 | 1.0+ | 0.1+ | 2006 09 21 | 113 | 0.5+ | 0.2+ |
| 2001 10 24 | 843 | 1.3− | 0.7− | 2001 12 14 | 704 | 0.1− | 0.5+ | 2006 09 21 | 113 | 0.5+ | 0.4+ |
| 2001 10 24 | 843 | (0.5+ | 2.4−) | 2001 12 14 | 704 | 0.3− | 0.1− | 2006 09 21 | 113 | 0.9+ | 0.1− |
| 2001 10 26 | 843 | 0.2− | 0.0 | 2001 12 14 | 704 | 0.2+ | 0.3− | 2006 09 22 | 704 | 0.5− | 0.6− |
| 2001 10 26 | 843 | 0.9+ | 0.1+ | 2001 12 14 | 704 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 0.2+ | 0.2+ |
| 2001 10 27 | 843 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.0 | 0.7+ | 2006 09 22 | 704 | 0.5− | 0.1+ |
| 2001 10 27 | 843 | 0.3− | 0.5− | 2001 12 17 | 704 | 0.3+ | 0.7+ | 2006 09 22 | 704 | 0.7− | 0.7− |
| 2001 10 29 | 843 | (2.7+ | 1.8+) | 2001 12 17 | 704 | 0.4+ | 0.3− | 2006 09 22 | 704 | 1.0− | 0.4+ |
| 2001 10 29 | 843 | 0.2+ | 0.1− | 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.2+ |
| 2001 10 30 | 843 | 1.1− | 0.1+ | 2001 12 17 | 704 | 1.0− | 1.2+ | 2006 09 26 | 704 | 0.9+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 30 | 843 | 0.4+ | 0.3− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 2001 11 10 | 843 | 0.6− | 0.0 | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.2− | 0.3− |
| 2001 11 10 | 843 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.3− |
| 2001 11 17 | 704 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.8− | 0.5+ | 2006 09 28 | 704 | 0.3+ | 0.5− |
| 2001 11 17 | 704 | 0.6− | 0.2+ | 2006 09 12 | 703 | 1.3− | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.1− |
| 2001 11 17 | 704 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 0.3+ | 0.7+ | 2006 09 28 | 704 | 0.0 | 0.7− |
| 2001 11 17 | 704 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.6+ | 2006 09 28 | 704 | 0.2− | 0.5− |
| 2001 11 18 | 704 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2001 11 18 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.2− |
| 2001 11 18 | 704 | 0.2+ | 0.8− | 2006 09 18 | 703 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.7+ |
| 2001 11 18 | 704 | (4.2− | 0.6+) | 2006 09 18 | 699 | 0.0 | 0.9− | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2001 11 19 | 699 | 0.3− | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 11 19 | 699 | 0.6+ | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.4+ | 0.5− | 2006 09 19 | 704 | 0.7− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.2+ | 1.2− | 2006 09 19 | 704 | 0.2− | 1.0+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.7+ | 1.1− | 2006 11 23 | G96 | 0.4− | 0.5− |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 704 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.7− |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.9− | 0.4+ | | | | |
| 2001 11 20 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.2+ | 0.9+ | | | | |

**2001 UT$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.80434 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.39637320 | $\omega$ | 342.08344 | | +0.83152509 | −0.40742776 | |
| $a$ | 1.8354104 | $\Omega$ | 48.25143 | | +0.55115238 | +0.52037871 | |
| $e$ | 0.2529165 | $i$ | 30.40392 | | +0.06926098 | +0.75047226 | |
| $P$ | 2.49 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 608 | 0.2+ | 0.6− | 2001 11 20 | 704 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 10 26 | 608 | 0.2− | 0.4− | 2001 11 20 | 704 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.4− | 0.7− |
| 2001 10 26 | 608 | 0.2+ | 0.6− | 2001 11 20 | 704 | 0.5− | 0.3− | 2006 10 22 | G96 | 0.5+ | 0.0 |
| 2001 10 27 | 711 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.3− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2001 10 27 | 704 | 0.7+ | 0.4− | 2001 11 20 | 608 | 0.2+ | 0.4− | 2006 10 22 | 448 | 0.2+ | 0.0 |
| 2001 10 27 | 711 | 0.3+ | 0.1− | 2001 11 20 | 608 | 0.3+ | 0.9+ | 2006 10 22 | 448 | 0.2+ | 0.4+ |
| 2001 10 27 | 711 | 0.3+ | 0.2− | 2001 11 20 | 608 | 0.8+ | 0.1− | 2006 10 22 | 448 | 0.2+ | 0.1+ |
| 2001 10 27 | 704 | 0.1+ | 0.2+ | 2001 11 21 | 704 | 0.6+ | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.1− |
| 2001 10 27 | 644 | 0.2− | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.2+ |
| 2001 10 27 | 704 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.2+ | 0.6− | 2006 10 28 | 703 | 0.4+ | 0.3+ |
| 2001 10 27 | 644 | 0.1− | 0.8+ | 2001 11 21 | 704 | 0.2+ | 0.5− | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 2001 10 27 | 644 | 0.2− | 0.6+ | 2001 11 21 | 704 | 0.8+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 10 27 | 704 | 0.5− | 1.0− | 2001 12 10 | 704 | 0.6+ | 1.1+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 10 27 | 649 | 0.5+ | 0.1− | 2001 12 10 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 10 27 | 649 | 0.2− | 0.3− | 2001 12 10 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.9+ | 0.2+ |
| 2001 10 27 | 649 | 0.2+ | 0.2− | 2001 12 10 | 704 | 1.0+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.5+ |
| 2001 10 28 | 649 | 0.1+ | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.4+ |
| 2001 10 28 | 649 | 0.3+ | 0.8− | 2006 10 21 | 703 | 0.1− | 0.6+ | 2006 11 18 | 704 | 0.1+ | 0.5− |
| 2001 10 28 | 649 | 1.0+ | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2001 10 28 | 711 | 0.1+ | 1.1+ | 2006 10 21 | 703 | 1.1− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.9+ |
| 2001 10 28 | 711 | 0.4+ | 0.9− | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2+ | 1.4+ |
| 2001 10 28 | 644 | 0.2− | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2001 10 28 | 644 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2001 10 28 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2001 11 07 | 704 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2001 11 07 | 704 | 0.4− | 0.6− | 2006 10 21 | 474 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4− | 0.7+ |
| 2001 11 07 | 704 | 1.1− | 1.0− | 2006 10 21 | 474 | 0.6− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.4− |
| 2001 11 18 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 474 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2001 11 18 | 704 | 0.5− | 0.3− | 2006 10 21 | F84 | 0.7+ | 0.2+ | 2006 11 23 | 703 | 1.0− | 0.0 |
| 2001 11 18 | 704 | 0.0 | 0.5− | 2006 10 21 | F84 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.6− | 0.3− |
| 2001 11 18 | 704 | 0.5+ | 0.1− | 2006 10 22 | J95 | 0.4+ | 0.5− | 2006 11 23 | 703 | 0.8− | 0.4− |
| 2001 11 18 | 704 | 0.1− | 0.4− | 2006 10 22 | J95 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.0 | 0.7− |
| 2001 11 20 | 704 | 0.0 | 0.3− | 2006 10 22 | J95 | 0.8− | 0.4+ | | | | |

**2001 UF$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.69577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.80844747 | $\omega$ | 202.51275 | | −0.40585988 | +0.83403072 | |
| $a$ | 1.1412169 | $\Omega$ | 46.03074 | | −0.73934961 | −0.05924361 | |
| $e$ | 0.6095431 | $i$ | 31.28331 | | −0.53725219 | −0.54852799 | |
| $P$ | 1.22 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 608 | 0.8+ | 0.3− | 2006 10 22 | G96 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2+ |
| 2001 10 26 | 608 | 0.9+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.1+ |
| 2001 10 26 | 608 | 0.7+ | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.5− | 0.3+ |
| 2001 10 27 | 711 | 0.2− | 0.9+ | 2006 10 22 | G96 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 10 27 | 711 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.2+ |
| 2001 10 27 | 711 | 0.5− | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.0 | 0.4+ |
| 2001 10 28 | 711 | 1.1− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.5− | 0.1− |
| 2001 10 28 | 711 | (0.7+ | 1.8+) | 2006 10 23 | G96 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2001 11 12 | 715 | 0.8− | 1.0− | 2006 11 01 | 448 | 0.7− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.2+ |
| 2001 11 12 | 715 | 0.5− | 1.0− | 2006 11 01 | 448 | 0.5+ | 0.0 | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2001 11 12 | 715 | 0.7− | 1.3− | 2006 11 01 | 448 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2− | 0.3+ |
| 2001 11 20 | 696 | 0.1− | 0.4+ | 2006 11 12 | F84 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2001 11 20 | 696 | 0.1+ | 0.9+ | 2006 11 12 | F84 | 1.0+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.7− | 2.0− |
| 2006 10 22 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.3+ | | | | |

**2001 UM$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.54441 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22841947 | $\omega$ | 233.66603 | | +0.58626113 | −0.81012201 | |
| $a$ | 2.6504155 | $\Omega$ | 180.44266 | | +0.76148416 | +0.55126211 | |
| $e$ | 0.1752662 | $i$ | 3.50418 | | +0.27647742 | +0.19953050 | |
| $P$ | 4.31 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | 0.0 | 0.2− | 2001 10 23 | 691 | 0.2− | 0.5− | 2005 09 13 | 691 | 0.2+ | 0.1− |
| 1994 02 16 | 691 | 0.5+ | 0.4+ | 2001 10 23 | 691 | 0.0 | 0.6− | 2005 09 13 | 691 | 0.0 | 0.1+ |
| 1994 02 16 | 691 | 0.6− | 0.3− | 2001 10 23 | 691 | 0.1− | 0.4− | 2005 10 01 | G96 | 0.3+ | 0.3− |
| 2001 10 16 | 691 | 0.4+ | 0.1− | 2001 10 24 | 704 | 0.6− | 0.4− | 2005 10 01 | G96 | 0.4+ | 0.0 |
| 2001 10 16 | 691 | 0.2+ | 0.2+ | 2001 10 24 | 704 | 0.2+ | 0.4+ | 2005 10 01 | G96 | 0.6+ | 0.1− |
| 2001 10 16 | 691 | 0.8+ | 0.6+ | 2001 10 24 | 704 | 0.9+ | 1.1+ | 2005 10 01 | G96 | 0.1+ | 0.0 |
| 2001 10 17 | 291 | 0.2− | 0.2+ | 2001 10 25 | 644 | 0.3− | 0.1− | 2005 10 01 | G96 | 0.2− | 0.0 |
| 2001 10 17 | 291 | 0.0 | 0.2+ | 2001 10 25 | 644 | 0.3− | 0.1− | 2005 10 01 | G96 | 0.0 | 0.0 |
| 2001 10 17 | 291 | 0.4− | 0.6+ | 2001 10 25 | 644 | 0.5− | 0.2− | 2005 10 01 | G96 | 0.3− | 0.2+ |
| 2001 10 23 | 704 | 0.6− | 0.0 | 2005 08 31 | 691 | 0.1− | 0.2+ | 2005 10 01 | G96 | 0.4+ | 0.0 |
| 2001 10 23 | 704 | 0.5− | 0.2− | 2005 08 31 | 691 | 0.1+ | 0.0 | 2005 10 20 | 701 | 1.1− | 1.7− |
| 2001 10 23 | 704 | 0.3− | 0.3− | 2005 08 31 | 691 | 0.1− | 0.1− | 2005 10 20 | 701 | 0.2− | 0.4− |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2005 09 13 | 691 | 0.1+ | 0.1+ | 2005 10 20 | 701 | 0.4− | 0.5− |

**2001 UD$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.03290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22004038 | $\omega$ | 69.73025 | | +0.91991003 | +0.37175140 | |
| $a$ | 2.7172804 | $\Omega$ | 268.27883 | | −0.38993428 | +0.83360248 | |
| $e$ | 0.1872202 | $i$ | 7.17047 | | −0.04143418 | +0.40854352 | |
| $P$ | 4.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.5+ | 0.3− | 2001 09 29 | 644 | 0.0 | 0.3− | 2001 10 23 | 704 | 0.2− | 0.3− |
| 2001 08 25 | 704 | 0.4+ | 0.0 | 2001 10 13 | 699 | 0.1− | 0.6+ | 2001 10 23 | 704 | 1.2− | 0.3− |
| 2001 08 25 | 704 | 1.4+ | 1.1+ | 2001 10 13 | 699 | 0.5+ | 0.2+ | 2001 10 23 | 704 | 0.1− | 0.7+ |
| 2001 08 25 | 704 | (1.5+ | 1.6+) | 2001 10 13 | 699 | 0.2+ | 0.0 | 2001 11 17 | 704 | 1.4− | 1.1+ |
| 2001 09 09 | 704 | (1.3− | 1.8+) | 2001 10 13 | 699 | 0.4+ | 0.0 | 2001 11 17 | 704 | (2.6− | 0.5+) |
| 2001 09 09 | 704 | (0.3+ | 1.5+) | 2001 10 13 | 644 | 0.5− | 0.1− | 2001 11 17 | 704 | 0.5+ | 0.3+ |
| 2001 09 09 | 704 | 1.1− | 0.5− | 2001 10 13 | 644 | 0.7− | 0.1− | 2001 11 17 | 704 | 0.7− | 1.2− |
| 2001 09 19 | 699 | 0.3− | 0.4+ | 2001 10 13 | 644 | 0.5− | 0.2− | 2001 12 11 | 704 | 0.4+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 699 | 0.7+ | 0.2+ | 2001 10 17 | 704 | 0.3+ | 0.3+ | 2001 12 11 | 704 | 0.0 | 0.4− |
| 2001 09 19 | 699 | 0.5+ | 0.1− | 2001 10 17 | 704 | 0.2− | 0.2+ | 2001 12 11 | 704 | 0.2+ | 0.2+ |
| 2001 09 19 | 699 | 0.6+ | 0.0 | 2001 10 17 | 704 | 0.1+ | 0.5+ | 2001 12 11 | 704 | 1.0+ | 0.2+ |
| 2001 09 24 | 644 | 0.2− | 1.3− | 2001 10 17 | 704 | 0.3+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.4+ |
| 2001 09 24 | 644 | 0.1+ | 0.9− | 2001 10 17 | 704 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.5− | 0.4− |
| 2001 09 24 | 644 | 0.3+ | 1.1− | 2001 10 19 | 704 | 0.8+ | 0.8+ | 2004 03 18 | 704 | 0.8+ | 0.5+ |
| 2001 09 25 | 704 | 0.1− | 0.1+ | 2001 10 19 | 704 | 1.0+ | 0.7+ | 2004 03 18 | 704 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.3− | 0.2− | 2001 10 19 | 704 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.8− | 0.4+ |
| 2001 09 25 | 704 | 0.5− | 0.1− | 2001 10 19 | 704 | (0.2+ | 1.5−) | 2006 11 21 | 704 | 1.3+ | 2.3+ |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2001 10 22 | 704 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.1− | 1.4+ |
| 2001 09 25 | 704 | 0.2− | 0.0 | 2001 10 22 | 704 | 0.7− | 0.6+ | 2006 11 24 | 691 | 1.2− | 1.5− |
| 2001 09 29 | 644 | 0.1+ | 0.3− | 2001 10 22 | 704 | 0.3− | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.9+ |
| 2001 09 29 | 644 | 0.1+ | 0.4− | 2001 10 22 | 704 | 0.4− | 0.1+ | 2006 11 24 | 691 | 1.0+ | 0.6− |

**2001 UX$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.29231 | | (2000.0) | | | |
| $n$ | 0.20929064 | $\omega$ | 49.60677 | | +0.99431570 | +0.00535496 |
| $a$ | 2.8095462 | $\Omega$ | 309.81180 | | −0.05555653 | +0.87808565 |
| $e$ | 0.1674226 | $i$ | 7.95716 | | +0.09082817 | +0.47847353 |
| $P$ | 4.71 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.5− | 0.4+ | 2001 10 13 | 644 | 0.5+ | 0.5+ | 2001 11 10 | 704 | 1.0+ | 0.2+ |
| 2001 08 22 | 704 | 0.9+ | 0.7− | 2001 10 18 | 704 | 0.0 | 0.2− | 2001 11 11 | 644 | 0.1+ | 0.1+ |
| 2001 08 22 | 704 | 0.8+ | 1.0− | 2001 10 18 | 704 | 0.4− | 0.1− | 2001 11 11 | 644 | 0.3+ | 0.4+ |
| 2001 09 25 | 704 | 0.3+ | 1.0− | 2001 10 18 | 704 | 0.2− | 0.3+ | 2001 11 11 | 644 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.5− | 0.5− | 2001 10 18 | 704 | 0.9− | 0.3− | 2003 01 29 | 291 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.2+ | 2001 10 18 | 704 | 0.6− | 0.2− | 2003 01 29 | 291 | 0.1− | 0.1− |
| 2001 09 25 | 704 | 0.7+ | 0.1− | 2001 10 19 | 704 | 1.0− | 0.0 | 2003 01 29 | 291 | 0.2− | 0.1− |
| 2001 09 25 | 704 | 0.7+ | 0.0 | 2001 10 19 | 704 | 0.8− | 0.7+ | 2006 11 22 | 703 | 0.4+ | 0.0 |
| 2001 10 13 | 699 | 0.2− | 0.1− | 2001 10 19 | 704 | 0.0 | 0.3− | 2006 11 22 | 703 | 0.1− | 0.0 |
| 2001 10 13 | 699 | 0.7+ | 0.1+ | 2001 10 19 | 704 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2001 10 13 | 699 | 0.3− | 0.5− | 2001 10 19 | 704 | 1.3+ | 0.4+ | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2001 10 13 | 699 | 0.1− | 0.3+ | 2001 11 10 | 704 | 0.4− | 0.2− | 2006 11 23 | 644 | 0.2+ | 0.4+ |
| 2001 10 13 | 644 | 0.0 | 0.5+ | 2001 11 10 | 704 | 0.1+ | 0.3− | 2006 11 23 | 644 | 0.0 | 0.2+ |
| 2001 10 13 | 644 | 0.2+ | 0.6+ | 2001 11 10 | 704 | 0.1− | 0.4− | 2006 11 23 | 644 | 0.1− | 0.3+ |

**2001 UC$_{23}$ = 2006 UV$_{294}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.18522 | | (2000.0) | | | |
| $n$ | 0.17817853 | $\omega$ | 79.43849 | | +0.43356614 | −0.89853706 |
| $a$ | 3.1277531 | $\Omega$ | 344.31942 | | +0.69614121 | +0.38204024 |
| $e$ | 0.2290283 | $i$ | 14.61633 | | +0.57219562 | +0.21604725 |
| $P$ | 5.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 699 | 0.6+ | 0.3+ | 2001 10 18 | 704 | 0.9− | 0.3− | 2001 10 25 | 704 | 0.1− | 0.3− |
| 2001 09 19 | 699 | 0.3+ | 0.4− | 2001 10 18 | 704 | 0.5− | 0.8− | 2001 10 25 | 704 | 0.1+ | 0.4+ |
| 2001 09 19 | 699 | (0.4+ | 2.1+) | 2001 10 19 | 704 | 0.6− | 0.4− | 2006 10 19 | 695 | 0.2− | 0.1+ |
| 2001 09 19 | 699 | 0.8+ | 1.2+ | 2001 10 19 | 704 | 0.6− | 0.5− | 2006 10 20 | 695 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.2− | 2001 10 19 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 695 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2001 10 20 | 699 | 0.9+ | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2001 09 25 | 704 | 0.9− | 0.1+ | 2001 10 20 | 699 | 1.1+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.8+ | 0.3+ | 2001 10 20 | 699 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 0.8− | 2001 10 20 | 699 | 0.2+ | 0.8− | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2001 10 18 | 704 | 0.4− | 0.4+ | 2001 10 25 | 704 | 0.2− | 0.3+ | | | | |
| 2001 10 18 | 704 | 1.4− | 0.2+ | 2001 10 25 | 704 | 0.5+ | 0.0 | | | | |

**2001 UE$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.25415 | | (2000.0) | | | |
| $n$ | 0.22032471 | $\omega$ | 122.03059 | | +0.96533592 | +0.17727807 |
| $a$ | 2.7149422 | $\Omega$ | 228.52622 | | −0.21962959 | +0.94827799 |
| $e$ | 0.2951050 | $i$ | 14.81384 | | +0.14102982 | +0.26332745 |
| $P$ | 4.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 02 | 691 | 0.2− | 0.4− | 2001 10 18 | 704 | 0.1+ | 0.0 | 2001 11 19 | 704 | 0.0 | 0.1+ |
| 2000 06 02 | 691 | 0.0 | 0.7− | 2001 10 18 | 704 | 1.0− | 1.9− | 2001 11 19 | 704 | 0.5− | 0.3+ |
| 2000 06 02 | 691 | 0.1+ | 0.8− | 2001 10 19 | 704 | 0.2− | 0.6− | 2001 11 19 | 704 | 0.3+ | 0.1+ |
| 2001 07 30 | 704 | 2.4− | 2.2+ | 2001 10 19 | 704 | 0.7− | 1.2− | 2001 11 19 | 704 | 0.2+ | 0.0 |
| 2001 07 30 | 704 | 1.0− | 0.5− | 2001 10 19 | 704 | 0.3− | 0.6− | 2001 11 19 | 704 | 0.2− | 0.0 |
| 2001 07 30 | 704 | 1.1+ | 0.9+ | 2001 10 19 | 704 | 0.3− | 0.9− | 2001 11 20 | 699 | 0.3− | 0.1+ |
| 2001 08 22 | 704 | 0.8− | 0.3+ | 2001 10 21 | 704 | 0.3− | 0.0 | 2001 11 20 | 699 | 0.2− | 0.9+ |
| 2001 08 22 | 704 | 0.6+ | 0.1− | 2001 10 21 | 704 | 0.3− | 0.2− | 2001 11 20 | 699 | 0.2− | 0.3+ |
| 2001 08 22 | 704 | 0.4− | 0.4− | 2001 10 21 | 704 | 0.2− | 0.0 | 2001 11 20 | 699 | 0.4+ | 0.5+ |
| 2001 08 22 | 704 | 0.6− | 0.3− | 2001 10 21 | 704 | 0.4− | 0.2− | 2001 11 21 | 608 | 0.1− | 0.7− |
| 2001 08 22 | 704 | 0.0 | 0.9− | 2001 10 21 | 704 | 0.4− | 0.1− | 2001 11 21 | 608 | 0.7− | 0.3+ |
| 2001 09 10 | 704 | 0.6− | 0.1− | 2001 10 23 | 333 | 0.9+ | 0.3− | 2001 11 21 | 608 | 0.3− | 0.2− |
| 2001 09 10 | 704 | 0.1+ | 0.6+ | 2001 10 23 | 333 | 0.3+ | 0.1− | 2001 12 11 | 704 | 0.5− | 0.5+ |
| 2001 09 10 | 704 | 0.7+ | 0.6+ | 2001 10 23 | 333 | 0.6+ | 1.6− | 2001 12 11 | 704 | 0.7− | 0.5+ |
| 2001 09 10 | 704 | 0.2+ | 0.4− | 2001 10 23 | 333 | 0.5+ | 0.5− | 2001 12 11 | 704 | 0.1+ | 0.3+ |
| 2001 09 10 | 704 | 2.3+ | 0.3+ | 2001 10 23 | 333 | 0.4+ | 0.2− | 2001 12 11 | 704 | 0.1− | 0.5+ |
| 2001 09 18 | 644 | 0.1− | 0.2+ | 2001 10 23 | 333 | 0.3+ | 0.3− | 2001 12 11 | 704 | 0.2+ | 0.7+ |
| 2001 09 18 | 644 | 0.3− | 0.4+ | 2001 10 28 | 704 | 0.3+ | 0.2− | 2001 12 14 | 704 | 0.7− | 0.1− |
| 2001 09 18 | 644 | 0.3− | 0.2+ | 2001 10 28 | 704 | 0.1+ | 0.6− | 2001 12 14 | 704 | 0.3− | 1.2− |
| 2001 09 25 | 704 | 0.2− | 0.3+ | 2001 10 28 | 704 | 0.1+ | 0.7− | 2001 12 14 | 704 | 0.2+ | 0.6+ |
| 2001 09 25 | 704 | 0.5− | 0.2− | 2001 10 28 | 704 | 0.1− | 0.4− | 2001 12 14 | 704 | 0.5+ | 0.0 |
| 2001 09 25 | 704 | 0.0 | 0.1− | 2001 11 10 | 704 | 0.4+ | 0.5+ | 2001 12 14 | 704 | 0.4+ | 0.1+ |
| 2001 09 25 | 704 | 0.2+ | 0.5− | 2001 11 10 | 704 | 0.5+ | 0.5+ | 2001 12 17 | 704 | 1.0+ | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.5− | 2001 11 10 | 704 | 0.6+ | 0.5+ | 2001 12 17 | 704 | 0.4− | 0.2+ |
| 2001 10 13 | 644 | 0.3+ | 0.1− | 2001 11 10 | 704 | 1.2+ | 0.5+ | 2001 12 17 | 704 | 0.1+ | 0.1− |
| 2001 10 13 | 644 | 0.7+ | 0.0 | 2001 11 17 | 704 | 0.3− | 0.9+ | 2001 12 17 | 704 | 0.7− | 0.3+ |
| 2001 10 13 | 644 | 0.5+ | 0.2+ | 2001 11 17 | 704 | 0.1− | 0.7− | 2001 12 17 | 704 | 0.4− | 0.6+ |
| 2001 10 18 | 704 | 0.3+ | 0.5+ | 2001 11 17 | 704 | 0.1− | 0.7− | 2005 07 28 | 704 | 0.2− | 0.8+ |
| 2001 10 18 | 704 | 0.3+ | 0.0 | 2001 11 17 | 704 | 0.3+ | 0.4− | 2005 07 28 | 704 | 0.4− | 0.6+ |
| 2001 10 18 | 704 | 0.7− | 0.1+ | 2001 11 17 | 704 | 0.5+ | 1.3− | 2005 07 28 | 704 | 0.1+ | 0.6+ |

**2001 UJ$_{27}$ = 2006 UZ$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.31020 | | (2000.0) | | | |
| $n$ | 0.21180410 | $\omega$ | 137.31615 | | +0.26089026 | −0.96381114 |
| $a$ | 2.7872749 | $\Omega$ | 297.49274 | | +0.86821081 | +0.25907930 |
| $e$ | 0.0309939 | $i$ | 3.54256 | | +0.42207376 | +0.06281720 |
| $P$ | 4.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2001 10 18 | 644 | 0.1+ | 0.9+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.3− | 1.0− |
| 2001 10 18 | 644 | 0.0 | 0.7+ | 2006 10 19 | 691 | 1.1+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2001 10 20 | 644 | 0.3− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 10 20 | 644 | 0.5− | 0.4− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 10 20 | 644 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 10 21 | 704 | 0.5− | 0.3− | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.3− | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 01 11 | 291 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2003 01 11 | 291 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | (1.9− | 0.3+) |
| 2003 01 11 | 291 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2006 11 14 | 703 | (0.9− | 2.3−) | 2006 11 19 | 704 | 0.1− | 1.2+ |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.8− | 0.8− | 2006 11 19 | 704 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.9+ | | |
| 2006 10 04 | G96 | 0.5− | 0.4− | 2006 11 14 | 703 | 0.3− | 0.2+ | | | | | | |

**2001 UL$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.29510 | | (2000.0) | | | |
| $n$ | 0.21128085 | $\omega$ | 280.13007 | | +0.97514797 | +0.21039927 |
| $a$ | 2.7918750 | $\Omega$ | 67.75104 | | −0.16228557 | +0.89161589 |
| $e$ | 0.1040113 | $i$ | 4.30122 | | −0.15083045 | +0.40094046 |
| $P$ | 4.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.9− | 0.0 | | |
| 2001 09 16 | 704 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.1+ | | |
| 2001 09 16 | 704 | 0.1− | 0.7+ | 2006 11 10 | 691 | 0.8+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.4− | | |
| 2001 09 21 | 704 | 0.9− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.8+ | | |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2001 09 21 | 704 | 0.4− | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2001 09 21 | 704 | 0.5− | 0.3− | 2006 11 10 | 644 | 0.4+ | 0.5− | 2006 11 18 | G96 | 1.2− | 0.7+ | | |
| 2001 10 16 | 704 | 0.3+ | 1.2− | 2006 11 10 | 644 | 0.5+ | 0.7− | 2006 11 18 | G96 | 0.3+ | 0.0 | | |
| 2001 10 16 | 704 | 0.4− | 0.2+ | 2006 11 10 | 644 | 0.7− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.1− | | |
| 2001 10 16 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.0 | | |
| 2001 10 16 | 704 | 1.1− | 1.0− | 2006 11 11 | 703 | 0.0 | 1.1+ | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2001 10 16 | 704 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.5+ | 2006 11 19 | 704 | (0.5+ | 1.8+) | | |
| 2001 10 18 | 644 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.7− | 1.1− | | |
| 2001 10 18 | 644 | 0.6− | 0.8+ | 2006 11 14 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.5+ | | |
| 2001 10 18 | 644 | 0.6− | 0.7+ | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.8− | | |
| 2001 10 19 | 699 | 1.0+ | 0.9+ | 2006 11 14 | 691 | 0.7− | 0.6− | 2006 11 27 | G96 | 0.1− | 0.0 | | |
| 2001 10 19 | 699 | 0.4+ | 1.2+ | 2006 11 17 | 703 | (2.3+ | 0.1+) | 2006 11 27 | G96 | 0.3+ | 0.0 | | |
| 2001 10 19 | 699 | 0.4+ | 1.4+ | 2006 11 17 | 703 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.7+ | 0.3+ | | |
| 2001 10 19 | 699 | 0.6+ | 0.5+ | 2006 11 17 | 703 | (2.2− | 2.6+) | 2006 11 27 | G96 | 0.4+ | 0.1+ | | |
| 2001 10 20 | 644 | 0.5− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.9+ | 2006 11 27 | G96 | 0.1+ | 0.1+ | | |
| 2001 10 20 | 644 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.7− | 0.4+ | 2006 11 27 | 703 | 0.7+ | 0.4+ | | |
| 2001 10 20 | 644 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.5+ | 0.4+ | | |
| 2001 11 18 | 645 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.5+ | 2006 11 27 | 703 | 0.6− | 0.4− | | |
| 2001 11 18 | 645 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.1+ | | | | | | |

**2001 UX$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.67431 | | (2000.0) | | | |
| $n$ | 0.25998300 | $\omega$ | 161.12287 | | +0.99509743 | +0.09540681 |
| $a$ | 2.4313049 | $\Omega$ | 193.48191 | | −0.09883934 | +0.95018747 |
| $e$ | 0.1349923 | $i$ | 6.41562 | | −0.00344830 | +0.29671757 |
| $P$ | 3.79 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.3+ | 0.6+ | 2001 10 16 | 704 | 0.9− | 1.0+ | 2001 10 23 | 691 | 0.2− | 0.1− | | |
| 1996 04 13 | 691 | 0.4+ | 0.2+ | 2001 10 16 | 704 | 0.1+ | 1.0+ | 2001 10 24 | 704 | 1.4+ | 0.5+ | | |
| 1996 04 13 | 691 | 0.2− | 0.9+ | 2001 10 18 | 644 | 0.1+ | 0.0 | 2001 10 24 | 704 | 0.4− | 0.1+ | | |
| 2001 09 19 | 704 | 1.3− | 0.3+ | 2001 10 18 | 644 | 0.0 | 0.1− | 2001 10 24 | 704 | 0.1− | 0.4+ | | |
| 2001 09 19 | 704 | 1.0− | 0.1+ | 2001 10 18 | 644 | 0.1− | 0.1− | 2001 10 24 | 704 | 0.0 | 0.8+ | | |
| 2001 09 19 | 704 | 1.1− | 0.0 | 2001 10 20 | 704 | 0.6+ | 0.4+ | 2001 10 24 | 704 | 0.7+ | 0.3− | | |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2001 10 20 | 704 | 0.2+ | 0.1− | 2001 11 18 | 704 | 0.8+ | 0.6+ | | |
| 2001 09 24 | 704 | 0.8+ | 0.6+ | 2001 10 20 | 704 | 0.4− | 0.6− | 2001 11 18 | 704 | 0.4− | 0.1+ | | |
| 2001 09 24 | 704 | 1.3+ | 0.9+ | 2001 10 20 | 704 | 0.4+ | 0.1− | 2001 11 18 | 704 | 0.5− | 1.4+ | | |
| 2001 09 24 | 704 | 0.2+ | 0.4− | 2001 10 22 | 704 | 0.9+ | 0.1+ | 2005 10 25 | 703 | 0.4− | 1.1+ | | |
| 2001 10 07 | 644 | 0.3+ | 0.5+ | 2001 10 22 | 704 | 0.5+ | 0.4− | 2005 10 25 | 703 | 0.6+ | 0.4+ | | |
| 2001 10 07 | 644 | 0.2+ | 0.4+ | 2001 10 22 | 704 | 0.3+ | 0.4+ | 2005 10 25 | 703 | 1.6− | 1.1− | | |
| 2001 10 07 | 644 | 0.3− | 0.5+ | 2001 10 22 | 704 | 1.3+ | 0.1− | 2005 10 25 | 703 | 1.4+ | 0.3+ | | |
| 2001 10 14 | 699 | 0.2− | 0.2− | 2001 10 23 | 704 | 0.5+ | 0.0 | 2005 11 26 | 703 | 0.3− | 0.5− | | |
| 2001 10 14 | 699 | 0.4+ | 0.5− | 2001 10 23 | 704 | 1.4− | 0.8− | 2005 11 26 | 703 | 0.5+ | 0.5+ | | |
| 2001 10 14 | 699 | 0.9− | 0.4+ | 2001 10 23 | 691 | 0.4− | 0.2− | 2005 11 26 | 703 | 0.2+ | 0.2− | | |
| 2001 10 14 | 699 | 0.2− | 0.4+ | 2001 10 23 | 704 | 0.5+ | 0.1− | 2005 11 26 | 703 | 0.5− | 0.2+ | | |
| 2001 10 16 | 704 | 0.4− | 0.4+ | 2001 10 23 | 691 | 0.2− | 0.2− | | | | | | |
| 2001 10 16 | 704 | 0.4− | 0.0 | 2001 10 23 | 704 | 0.6+ | 0.8+ | | | | | | |

**2001 UG$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.83632 | | (2000.0) | | | |
| $n$ | 0.19697428 | $\omega$ | 205.16980 | | +0.92807686 | −0.37218111 |
| $a$ | 2.9254748 | $\Omega$ | 176.60664 | | +0.36721752 | +0.90913454 |
| $e$ | 0.0707904 | $i$ | 12.12467 | | +0.06184361 | +0.18696420 |
| $P$ | 5.00 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.4− | 0.3+ | 2002 01 08 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.7+ | 1.0− | | |
| 2001 10 10 | 644 | 0.6− | 0.5+ | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.1− | 0.7+ | | |
| 2001 10 10 | 644 | 0.0 | 0.4+ | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.5− | 0.4+ | | |
| 2001 10 16 | 704 | 0.5+ | 0.6− | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 10 22 | 703 | 0.9− | 0.0 | | |
| 2001 10 16 | 704 | 0.6+ | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.3− | 2006 10 22 | 703 | 0.2− | 0.3− | | |
| 2001 10 16 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2001 10 16 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.7− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ | | |
| 2001 10 20 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.5− | | |
| 2001 10 20 | 704 | 0.2− | 1.1− | 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 11 16 | 703 | (1.1− | 1.5−) | | |
| 2001 10 20 | 704 | 0.6+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 11 16 | 703 | (0.3− | 2.2+) | | |
| 2001 10 24 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.9+ | 0.3+ | | |
| 2001 10 24 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 16 | 703 | (0.4+ | 2.4+) | | |
| 2001 10 24 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.0 | | | | | | |
| 2002 01 08 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.6+ | | | | | | |

**2001 UY$_{30}$ = 2006 WG$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.67295 | | (2000.0) | | | |
| $n$ | 0.21049771 | $\omega$ | 19.40485 | | +0.60923348 | −0.78697141 |
| $a$ | 2.7987953 | $\Omega$ | 33.27051 | | +0.70204074 | +0.47807821 |
| $e$ | 0.1226938 | $i$ | 10.23977 | | +0.36874567 | +0.39002208 |
| $P$ | 4.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | (0.9+ | 2.3+) | 2001 10 25 | 644 | 0.7− | 0.1+ | 2006 10 27 | 703 | 0.9− | 1.3− | | |
| 2001 10 16 | 704 | (0.2+ | 2.2+) | 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.7− | 1.1− | | |
| 2001 10 16 | 704 | (0.3+ | 1.8+) | 2001 11 20 | 704 | 0.3− | 0.4− | 2006 10 27 | 703 | 0.5− | 1.3+ | | |
| 2001 10 20 | 704 | 0.2+ | 0.8− | 2001 11 20 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.8− | 0.4− | | |
| 2001 10 20 | 704 | 0.0 | 0.5− | 2001 11 20 | 704 | 0.4− | 0.7+ | 2006 11 15 | 704 | 1.0− | 0.3+ | | |
| 2001 10 20 | 704 | 0.0 | 0.6− | 2001 11 20 | 704 | 0.0 | 0.6− | 2006 11 15 | 704 | 0.7− | 0.4− | | |
| 2001 10 20 | 704 | 0.5+ | 0.6− | 2001 11 21 | 704 | 0.8+ | 0.3+ | 2006 11 15 | 704 | 0.9− | 0.2− | | |
| 2001 10 20 | 704 | 0.6+ | 0.2− | 2001 11 21 | 704 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.9+ | 1.7+ | | |
| 2001 10 23 | 704 | 1.1− | 0.4+ | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.5+ | 0.6+ | | |
| 2001 10 23 | 704 | 1.3+ | 1.0+ | 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.1− | | |
| 2001 10 23 | 704 | 1.2− | 0.4+ | 2001 11 21 | 704 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.5+ | | |
| 2001 10 23 | 704 | 1.4+ | 0.8− | 2006 08 29 | 703 | 0.4− | 1.4+ | 2006 11 16 | 704 | 0.1+ | 0.8+ | | |
| 2001 10 24 | 704 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.6+ | 2006 11 16 | 704 | 0.3+ | 0.1− | | |
| 2001 10 24 | 704 | 0.6− | 0.3+ | 2006 08 29 | 703 | 1.2+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.6− | | |
| 2001 10 24 | 704 | 0.2+ | 0.7− | 2006 08 29 | 703 | 0.9− | 0.7+ | 2006 11 17 | G96 | 0.5− | 0.7− | | |
| 2001 10 24 | 704 | 0.9− | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.7− | | |
| 2001 10 24 | 704 | 0.2+ | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.3− | 0.8− | | |
| 2001 10 25 | 691 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.7+ | 0.2− | | |
| 2001 10 25 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.3− | 0.5− | 2006 11 19 | 704 | 1.0+ | 1.0+ | | |
| 2001 10 25 | 691 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.2− | 0.6− | 2006 11 19 | 704 | 0.9+ | 0.0 | | |
| 2001 10 25 | 644 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.5− | 2006 11 19 | 704 | 1.0+ | 1.4+ | | |
| 2001 10 25 | 644 | 0.7− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.4− | | | | | | |

**2001 UV$_{31}$ = 2005 GA$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.46004 | | (2000.0) | | | |
| $n$ | 0.17189151 | $\omega$ | 216.88160 | | −0.37807549 | +0.89106671 |
| $a$ | 3.2035618 | $\Omega$ | 33.15442 | | −0.70126203 | −0.09856509 |
| $e$ | 0.1404777 | $i$ | 27.33318 | | −0.60439266 | −0.44304067 |
| $P$ | 5.73 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 704 | (2.6+ | 0.3−) | 2001 10 23 | 704 | 1.4− | 0.4+ | 2005 04 11 | E12 | 0.0 | 0.1+ |
| 1999 04 12 | 704 | 1.6+ | 1.2+ | 2001 10 23 | 704 | 0.6− | 0.6+ | 2005 04 11 | E12 | 0.7+ | 0.3+ |
| 1999 04 12 | 704 | (2.4+ | 0.0 ) | 2001 10 23 | 691 | 0.2− | 0.3+ | 2005 04 28 | E12 | 0.4+ | 0.4+ |
| 1999 04 12 | 704 | 0.5− | 1.2− | 2001 10 23 | 704 | 0.5− | 1.3+ | 2005 04 28 | E12 | 0.4− | 0.1+ |
| 1999 04 12 | 704 | (4.1− | 0.1−) | 2001 10 23 | 691 | 0.2− | 0.2− | 2005 04 28 | E12 | 0.3+ | 0.4− |
| 1999 05 08 | 703 | 0.3+ | 0.1+ | 2001 10 23 | 704 | 0.2+ | 0.9+ | 2005 04 28 | E12 | 0.0 | 0.1+ |
| 1999 05 08 | 703 | 0.5+ | 0.1+ | 2001 10 23 | 691 | 0.1− | 0.3+ | 2005 05 13 | E12 | 0.1+ | 0.3+ |
| 1999 05 08 | 703 | 0.4+ | 0.8− | 2001 10 24 | 704 | 0.7+ | 1.3− | 2005 05 13 | E12 | 0.1+ | 0.7+ |
| 1999 05 08 | 703 | 0.2+ | 0.6+ | 2001 10 24 | 704 | 0.6− | 0.3− | 2005 05 13 | E12 | 0.2+ | 0.2+ |
| 1999 05 12 | 704 | 0.2+ | 1.5+ | 2001 10 24 | 704 | 0.1+ | 1.6− | 2005 05 13 | E12 | 0.7− | 0.1+ |
| 1999 05 12 | 704 | 1.2+ | 1.0+ | 2001 11 20 | 704 | 0.5− | 0.1− | 2005 06 05 | E12 | 0.1+ | 0.0 |
| 1999 05 12 | 704 | 1.0+ | 0.4+ | 2001 11 20 | 704 | 0.3− | 0.1+ | 2005 06 05 | E12 | 0.2− | 0.1− |
| 1999 05 12 | 704 | 1.2− | 0.0 | 2001 11 20 | 704 | 0.2+ | 0.4− | 2005 06 05 | E12 | 0.1+ | 0.5− |
| 1999 05 12 | 704 | (4.7− | 1.7+) | 2001 11 20 | 704 | 0.3+ | 1.1+ | 2005 06 05 | E12 | 0.0 | 0.5+ |
| 2001 10 16 | 704 | 0.0 | 0.1− | 2001 11 20 | 704 | 0.5− | 0.6− | 2006 07 28 | E12 | 0.3+ | 0.3− |
| 2001 10 16 | 704 | 0.9+ | 1.6+ | 2001 11 21 | 704 | 0.6− | 0.0 | 2006 07 28 | E12 | 0.2+ | 0.1− |
| 2001 10 16 | 704 | 0.5− | 0.5+ | 2001 11 21 | 704 | 0.7− | 0.3+ | 2006 07 28 | E12 | 0.6− | 0.7+ |
| 2001 10 16 | 704 | 0.0 | 0.9+ | 2001 11 21 | 704 | 0.8− | 0.6− | 2006 07 28 | E12 | 0.1+ | 0.3+ |
| 2001 10 20 | 704 | 0.5+ | 0.6+ | 2001 11 21 | 704 | 0.4− | 1.5− | 2006 08 23 | E12 | 0.5− | 0.3− |
| 2001 10 20 | 704 | 0.4+ | 0.2+ | 2001 11 21 | 704 | 0.6− | 0.2+ | 2006 08 23 | E12 | 1.6+ | 0.2− |
| 2001 10 20 | 704 | 0.3+ | 0.3− | 2005 04 11 | E12 | 0.1+ | 0.6− | 2006 08 23 | E12 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 1.3+ | 0.3+ | 2005 04 11 | E12 | 0.0 | 0.1− | 2006 08 23 | E12 | 0.1+ | 0.5− |

**2001 US$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.09854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21385911 | $\omega$ | 128.51009 | | +0.97104609 | −0.21571647 | |
| $a$ | 2.7693906 | $\Omega$ | 244.16211 | | +0.16781427 | +0.92175522 | |
| $e$ | 0.2900772 | $i$ | 6.54858 | | +0.17002311 | +0.32223239 | |
| $P$ | 4.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 26 | 644 | 0.2− | 0.1− | 2001 09 25 | 704 | 0.2− | 1.4− | 2001 10 20 | 704 | 0.6+ | 0.2+ |
| 2001 07 26 | 644 | 0.1− | 0.5+ | 2001 09 25 | 704 | 0.3+ | 1.3− | 2001 10 20 | 704 | 0.3+ | 0.3− |
| 2001 07 26 | 644 | 0.2+ | 1.2+ | 2001 09 26 | 704 | 0.2− | 0.9+ | 2001 10 20 | 704 | 0.4+ | 0.3− |
| 2001 09 10 | 704 | 1.0− | 1.2− | 2001 09 26 | 704 | 0.4+ | 0.3+ | 2001 10 20 | 704 | 0.2+ | 0.2− |
| 2001 09 10 | 704 | 0.2− | 0.1+ | 2001 09 26 | 704 | 0.3− | 0.6+ | 2001 10 20 | 704 | 0.3+ | 0.8− |
| 2001 09 10 | 704 | 0.3− | 0.2+ | 2001 09 26 | 704 | 0.2− | 0.5+ | 2001 10 21 | 704 | 0.2− | 0.1+ |
| 2001 09 10 | 704 | 0.1+ | 0.1+ | 2001 09 26 | 704 | 0.2+ | 0.9+ | 2001 10 21 | 704 | 0.1− | 0.1− |
| 2001 09 10 | 704 | 1.0+ | 0.4− | 2001 09 29 | 644 | 0.5− | 0.3+ | 2001 10 21 | 704 | 0.7+ | 0.0 |
| 2001 09 19 | 699 | 0.4− | 0.4− | 2001 09 29 | 644 | 0.4− | 0.3+ | 2001 10 21 | 704 | 0.5+ | 0.2− |
| 2001 09 19 | 699 | 0.2− | 0.8+ | 2001 09 29 | 644 | 0.3− | 0.4+ | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2001 09 19 | 699 | 0.2+ | 0.0 | 2001 10 17 | 704 | 0.9− | 0.6+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 699 | 0.4− | 0.4− | 2001 10 17 | 704 | 0.3− | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.3− | 0.0 | 2001 10 17 | 704 | 0.6+ | 1.3+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.7+ | 1.4− | 2001 10 17 | 704 | 0.4− | 0.9− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2001 09 25 | 704 | 0.7+ | 0.9− | 2001 10 17 | 704 | 0.4− | 0.7+ | 2006 11 22 | 691 | 0.2− | 0.2− |

**2001 UN$_{38}$ = 1998 DY$_{22}$ = 2006 SM$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.19228 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19335904 | $\omega$ | 280.06577 | | +0.62992112 | −0.77665288 | |
| $a$ | 2.9618273 | $\Omega$ | 130.88946 | | +0.71417407 | +0.57766169 | |
| $e$ | 0.0922760 | $i$ | 0.23596 | | +0.30521270 | +0.25123153 | |
| $P$ | 5.10 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 24 | 691 | 0.1+ | 0.1− | 2001 10 20 | 704 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4− |
| 1998 02 24 | 691 | 0.5+ | 0.1+ | 2001 10 20 | 704 | 0.4− | 0.6− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 1998 02 24 | 691 | 0.6+ | 0.2+ | 2001 10 20 | 704 | 1.1− | 0.2− | 2006 10 16 | G96 | 0.1− | 0.0 |
| 1998 03 01 | 691 | 0.8− | 0.1+ | 2001 10 20 | 704 | 0.5− | 0.6− | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 1998 03 01 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 1998 03 01 | 691 | 0.5− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.5− | 0.4− | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.7+ |
| 2001 10 17 | 704 | 0.6+ | 0.2− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.2+ |
| 2001 10 17 | 704 | 0.3− | 1.0+ | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.8+ | 0.1+ |
| 2001 10 18 | 644 | 0.7+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.7− |
| 2001 10 18 | 644 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2001 10 18 | 644 | 0.4+ | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.6− | 0.7− |

**2001 UQ$_{38}$ = 2005 NP$_{17}$ = 2006 WQ$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.92786 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21373078 | $\omega$ | 236.09143 | | +0.95507814 | −0.29622009 | |
| $a$ | 2.7704990 | $\Omega$ | 141.13717 | | +0.27637255 | +0.87942635 | |
| $e$ | 0.0872859 | $i$ | 0.81368 | | +0.10697640 | +0.37264320 | |
| $P$ | 4.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | (2.0− | 2.3+) | 2001 10 18 | 644 | 0.7− | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | (1.0− | 3.2+) | 2001 10 18 | 644 | 0.4− | 0.3+ | 2006 11 19 | 691 | 0.3+ | 0.2− |
| 2001 09 21 | 704 | (2.4− | 1.8+) | 2001 10 20 | 704 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | (1.8− | 2.7+) | 2001 10 20 | 704 | 0.4+ | 1.1+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 09 21 | 704 | (1.6− | 1.6+) | 2001 10 20 | 704 | 0.4+ | 0.6+ | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2001 10 14 | 291 | 0.2− | 0.2− | 2005 07 03 | G96 | 0.6+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 10 14 | 291 | 0.2− | 0.1− | 2005 07 03 | G96 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 1.0+ | 0.1− |
| 2001 10 14 | 291 | 0.5+ | 0.1− | 2005 07 03 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 0.4− | 2005 07 03 | G96 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.4− | 0.4− |
| 2001 10 17 | 704 | 0.5+ | 1.0− | 2005 07 07 | 691 | 0.5− | 0.1− | 2006 12 01 | 691 | 0.6− | 0.1+ |
| 2001 10 17 | 704 | (2.4+ | 0.9−) | 2005 07 07 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.1+ | 0.4+ |
| 2001 10 18 | 644 | 0.6− | 0.3+ | 2005 07 07 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.0 |

**2001 UY$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.77662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18838280 | $\omega$ | 55.54016 | | −0.02454958 | −0.99571163 | |
| $a$ | 3.0137592 | $\Omega$ | 36.18681 | | +0.86051076 | −0.06646042 | |
| $e$ | 0.3333619 | $i$ | 8.68892 | | +0.50884039 | +0.06435339 | |
| $P$ | 5.23 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.2+ | 0.1+ | 2001 10 23 | 704 | 0.1− | 0.5+ | 2001 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.7− | 2001 10 23 | 704 | 0.3− | 0.3− | 2001 11 19 | 704 | 0.0 | 1.3+ |
| 2001 09 21 | 704 | 0.4+ | 0.6− | 2001 10 23 | 704 | 0.3+ | 0.5− | 2001 11 19 | 704 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2001 10 23 | 704 | 0.5− | 0.2+ | 2001 11 21 | 704 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.7+ | 0.2− | 2001 10 23 | 704 | 0.6− | 0.4+ | 2001 11 21 | 704 | 0.3− | 0.3− |
| 2001 09 23 | 704 | 0.4+ | 0.2− | 2001 10 23 | 704 | 0.8+ | 0.3− | 2001 11 21 | 704 | 0.1− | 0.5− |
| 2001 09 23 | 704 | 0.2− | 0.5− | 2001 10 23 | 704 | 0.7− | 0.3+ | 2001 11 21 | 704 | 0.3− | 0.5− |
| 2001 09 23 | 704 | 0.4− | 0.7− | 2001 10 23 | 704 | 0.4+ | 1.0− | 2001 11 21 | 704 | 0.1− | 0.4+ |
| 2001 09 23 | 704 | 1.2− | 0.0 | 2001 10 24 | 704 | 0.1− | 0.5+ | 2001 12 11 | 704 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.3− | 0.1− | 2001 10 24 | 704 | 0.3+ | 0.6+ | 2001 12 11 | 704 | 0.6− | 0.4− |
| 2001 09 26 | 704 | 0.0 | 0.3− | 2001 10 24 | 704 | 0.0 | 0.6+ | 2001 12 11 | 704 | 0.2+ | 0.2− |
| 2001 09 26 | 704 | 0.3+ | 0.1+ | 2001 10 24 | 704 | 0.2− | 0.5+ | 2001 12 11 | 704 | 0.9− | 0.3− |
| 2001 09 26 | 704 | 0.4+ | 0.4+ | 2001 10 24 | 704 | 0.3+ | 0.9+ | 2001 12 11 | 704 | 0.4+ | 0.2+ |
| 2001 10 17 | 704 | 0.1− | 0.2+ | 2001 10 26 | 704 | 0.7+ | 0.2− | 2001 12 15 | 704 | 0.8− | 0.6− |
| 2001 10 17 | 704 | 0.4+ | 0.7+ | 2001 10 26 | 704 | 0.1− | 0.7+ | 2001 12 15 | 704 | 0.5+ | 1.1+ |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2001 10 26 | 704 | 1.2− | 0.7+ | 2001 12 15 | 704 | (2.1+ | 0.0 ) |
| 2001 10 17 | 704 | 0.1+ | 0.1− | 2001 10 26 | 704 | 0.5− | 0.1− | 2001 12 15 | 704 | 1.0+ | 0.1− |
| 2001 10 17 | 704 | 0.6+ | 0.3− | 2001 11 09 | 704 | 0.8+ | 0.4+ | 2001 12 18 | 704 | 0.5+ | 0.0 |
| 2001 10 18 | 644 | 0.4− | 0.6+ | 2001 11 09 | 704 | 1.2+ | 0.1+ | 2001 12 18 | 704 | 0.4− | 0.6− |
| 2001 10 18 | 644 | 0.5− | 0.6+ | 2001 11 09 | 644 | 0.6− | 0.1− | 2001 12 18 | 704 | 0.2+ | 0.1− |
| 2001 10 18 | 644 | 0.4− | 0.6+ | 2001 11 09 | 704 | 0.6+ | 0.1+ | 2001 12 18 | 704 | 0.8− | 0.5− |
| 2001 10 20 | 704 | 0.2− | 0.1+ | 2001 11 09 | 644 | 0.6− | 0.2+ | 2001 12 18 | 704 | 1.0+ | 0.6− |
| 2001 10 20 | 704 | 0.3− | 0.0 | 2001 11 09 | 704 | 0.5+ | 0.6− | 2003 04 24 | 691 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.3− | 0.0 | 2001 11 09 | 704 | 0.5+ | 0.9− | 2003 04 24 | 691 | 0.2+ | 0.3+ |
| 2001 10 20 | 704 | 0.4− | 0.4− | 2001 11 09 | 644 | 0.4− | 0.0 | 2003 04 24 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.7− | 1.3− | 2001 11 11 | 699 | 1.0+ | 0.6+ | 2006 09 30 | 703 | 1.2+ | 0.1− |
| 2001 10 23 | 704 | 0.2+ | 0.8+ | 2001 11 11 | 699 | 0.8+ | 0.0 | 2006 09 30 | 703 | 1.2− | 0.1+ |
| 2001 10 23 | 704 | 0.1+ | 0.0 | 2001 11 11 | 699 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.9+ |
| 2001 10 23 | 704 | 0.2+ | 0.7− | 2001 11 11 | 699 | 0.8+ | 0.2+ | 2006 09 30 | 703 | (2.3− | 1.0−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.5+ | 0.6− | 2001 11 16 | 644 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.3− | 0.0 |
| 2001 10 23 | 704 | 0.0 | 0.4+ | 2001 11 16 | 644 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.4+ |
| 2001 10 23 | 704 | 0.2− | 0.2− | 2001 11 16 | 644 | 0.2− | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.5+ | 0.9− | 2001 11 19 | 704 | 1.1− | 0.7+ | 2006 11 25 | G96 | 0.5− | 0.2+ |

### 2001 $UX_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.41379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18763745 | $\omega$ | 0.49582 | | +0.40083646 | −0.91442977 | |
| $a$ | 3.0217350 | $\Omega$ | 65.87464 | | +0.84033908 | +0.34258272 | |
| $e$ | 0.3597767 | $i$ | 3.52477 | | +0.36491145 | +0.21553488 | |
| $P$ | 5.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 13 | 644 | 0.2+ | 0.0 | 2001 10 24 | 704 | 0.7+ | 0.1− | 2001 12 11 | 704 | 0.3+ | 1.0+ |
| 2001 09 13 | 644 | 1.0+ | 0.0 | 2001 10 24 | 704 | 0.6+ | 0.4− | 2001 12 11 | 704 | 0.4− | 1.2− |
| 2001 09 13 | 644 | 0.1+ | 0.8+ | 2001 10 24 | 704 | 0.3+ | 0.5− | 2001 12 11 | 704 | (1.5+ | 1.7−) |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2001 10 24 | 704 | 0.1+ | 0.4− | 2001 12 11 | 704 | 0.7+ | 0.1− |
| 2001 10 17 | 704 | 0.2− | 0.2+ | 2001 10 25 | 644 | 0.1+ | 0.4+ | 2001 12 14 | 704 | 0.6− | 0.3+ |
| 2001 10 17 | 704 | 0.3− | 0.1+ | 2001 10 25 | 644 | 0.1+ | 0.5+ | 2001 12 14 | 704 | 0.1− | 0.3+ |
| 2001 10 17 | 704 | 0.3− | 0.4+ | 2001 10 25 | 644 | 0.2+ | 0.5+ | 2001 12 14 | 704 | 0.1+ | 1.0+ |
| 2001 10 17 | 704 | 0.7− | 0.0 | 2001 10 26 | 691 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.4+ | 0.8+ |
| 2001 10 18 | 644 | 0.3− | 0.4+ | 2001 10 26 | 691 | 0.1+ | 0.2+ | 2001 12 17 | 704 | 0.7− | 0.2+ |
| 2001 10 18 | 644 | 0.4− | 0.3+ | 2001 10 26 | 691 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.8− | 0.3+ |
| 2001 10 18 | 644 | 0.3− | 0.4+ | 2001 11 09 | 704 | 0.5− | 0.2+ | 2001 12 17 | 704 | 0.4+ | 0.2+ |
| 2001 10 20 | 704 | 0.3− | 0.1− | 2001 11 09 | 704 | 0.4+ | 0.7+ | 2001 12 17 | 704 | 0.2+ | 0.1− |
| 2001 10 20 | 704 | 0.4− | 0.6− | 2001 11 09 | 704 | 0.3+ | 0.6− | 2001 12 17 | 704 | 0.2− | 1.0+ |
| 2001 10 20 | 704 | 0.2+ | 0.3+ | 2001 11 09 | 704 | (1.1+ | 1.9+) | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 0.6+ | 2001 11 15 | 644 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 0.3+ | 2001 11 15 | 644 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.4− |
| 2001 10 20 | 704 | 0.2+ | 0.1+ | 2001 11 15 | 644 | 0.6+ | 0.7− | 2006 09 14 | 703 | 0.6− | 0.6− |
| 2001 10 20 | 704 | 0.1+ | 0.0 | 2001 11 20 | 704 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.3+ | 0.0 | 2001 11 20 | 704 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.7− | 0.4− |
| 2001 10 20 | 704 | 0.0 | 0.3− | 2001 11 20 | 704 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.7+ | 1.2− |
| 2001 10 20 | 704 | 0.1+ | 0.1+ | 2001 11 20 | 704 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 1.1− | 2001 11 20 | 704 | 0.2− | 0.8− | 2006 09 20 | 644 | 0.4− | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 1.0− | 2001 11 21 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.9− | 1.2− | 2001 11 21 | 704 | 0.1+ | 0.7− | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 1.2− | 2001 11 21 | 704 | (0.2− | 2.3−) | 2006 09 30 | 703 | 0.6− | 0.7+ |
| 2001 10 23 | 704 | 0.2+ | 1.1− | 2001 11 21 | 704 | 1.0− | 0.3− | 2006 09 30 | 703 | 0.9+ | 0.6+ |
| 2001 10 24 | 704 | 0.3+ | 0.3− | 2001 11 21 | 704 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.7+ | 0.4+ |

### 2001 $UA_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.59077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26475618 | $\omega$ | 355.04837 | | +0.66346310 | −0.74649456 | |
| $a$ | 2.4019943 | $\Omega$ | 53.37654 | | +0.68861577 | +0.58276029 | |
| $e$ | 0.1831295 | $i$ | 3.61631 | | +0.29261756 | +0.32114844 | |
| $P$ | 3.72 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.4+ | 0.3+ | 2001 10 25 | 704 | 0.6− | 0.3− | 2001 11 21 | 704 | (0.5− | 1.8+) |
| 2001 10 17 | 704 | 0.2+ | 0.3+ | 2001 10 25 | 704 | 0.1+ | 1.2+ | 2001 11 21 | 704 | (0.5− | 2.1+) |
| 2001 10 17 | 704 | 0.2− | 0.4− | 2001 10 25 | 704 | 0.2+ | 0.5+ | 2001 11 21 | 704 | (0.5− | 1.9+) |
| 2001 10 17 | 704 | 1.3+ | 1.1− | 2001 10 25 | 704 | 0.6+ | 1.2+ | 2001 12 18 | 704 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.2− | 0.3+ | 2001 10 25 | 704 | 0.3− | 0.9+ | 2001 12 18 | 704 | 1.0− | 0.3+ |
| 2001 10 18 | 644 | 0.3− | 0.6− | 2001 10 26 | 704 | 0.3− | 0.3+ | 2001 12 18 | 704 | 0.4+ | 0.2+ |
| 2001 10 18 | 644 | 0.3− | 0.5− | 2001 10 26 | 704 | 0.1− | 0.9+ | 2001 12 18 | 704 | 0.5+ | 0.5+ |
| 2001 10 18 | 644 | 0.2− | 0.4− | 2001 10 26 | 704 | 0.6− | 0.2− | 2001 12 18 | 704 | 0.7+ | 1.1+ |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2001 10 26 | 704 | 0.5− | 0.2+ | 2001 12 19 | 704 | 0.3+ | 0.4+ |
| 2001 10 20 | 704 | 0.4+ | 1.1− | 2001 10 26 | 704 | 1.4− | 0.2− | 2001 12 19 | 704 | 0.0 | 0.0 |
| 2001 10 20 | 704 | 0.2+ | 0.5− | 2001 11 09 | 704 | 0.8− | 0.1+ | 2001 12 19 | 704 | 0.1− | 0.7+ |
| 2001 10 20 | 704 | 0.2+ | 1.0− | 2001 11 09 | 704 | 0.3+ | 0.2− | 2001 12 19 | 704 | 0.4+ | 0.4+ |
| 2001 10 22 | 704 | 0.6− | 0.1+ | 2001 11 09 | 704 | 0.5− | 0.6− | 2001 12 19 | 704 | 0.2− | 1.1+ |
| 2001 10 22 | 704 | 0.9− | 0.2+ | 2001 11 09 | 704 | 0.2+ | 0.9− | 2003 04 09 | 691 | 0.7+ | 1.5+ |
| 2001 10 22 | 704 | 0.5− | 0.4− | 2001 11 09 | 704 | 0.7− | 0.3− | 2003 04 09 | 691 | 0.7+ | 1.3+ |
| 2001 10 23 | 704 | 0.6+ | 0.0 | 2001 11 17 | 704 | 0.5− | 0.1− | 2003 04 09 | 691 | (0.7+ | 1.8+) |
| 2001 10 23 | 704 | 0.2+ | 0.9+ | 2001 11 17 | 704 | 0.1− | 0.6− | 2005 12 29 | 704 | 0.3− | 0.1+ |
| 2001 10 23 | 704 | 0.1− | 0.7+ | 2001 11 17 | 704 | 0.5− | 0.2− | 2005 12 29 | 704 | 0.0 | 0.4− |
| 2001 10 23 | 704 | 0.9+ | 1.1+ | 2001 11 20 | 704 | 0.6− | 0.7+ | 2005 12 29 | 704 | 0.1+ | 0.6+ |
| 2001 10 23 | 704 | 0.1+ | 1.1+ | 2001 11 20 | 704 | 0.7− | 1.0+ | 2005 12 29 | 704 | 0.7− | 0.2+ |
| 2001 10 24 | 704 | 0.3+ | 1.2+ | 2001 11 20 | 704 | 0.4− | 0.8+ | 2005 12 29 | 704 | 0.1+ | 0.8− |
| 2001 10 24 | 704 | 0.8+ | 0.6+ | 2001 11 20 | 704 | 0.3− | 0.6+ | 2006 01 10 | 691 | 0.1− | 0.4− |
| 2001 10 24 | 704 | (1.9+ | 0.9−) | 2001 11 20 | 704 | 0.7− | 0.6+ | 2006 01 10 | 691 | 0.0 | 0.7− |
| 2001 10 24 | 704 | 0.0 | 1.4+ | 2001 11 21 | 704 | (0.5− | 2.4+) | 2006 01 10 | 691 | 0.4+ | 0.4− |
| 2001 10 24 | 704 | (0.5+ | 1.8+) | 2001 11 21 | 704 | (0.6− | 1.9+) | | | | |

### 2001 $UX_{42}$ = 2006 $WF_{176}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.62055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21490966 | $\omega$ | 217.82731 | | +0.70673567 | −0.70743007 | |
| $a$ | 2.7603581 | $\Omega$ | 187.21609 | | +0.66399841 | +0.66726233 | |
| $e$ | 0.0998677 | $i$ | 3.74709 | | +0.24419420 | +0.23303151 | |
| $P$ | 4.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.1− | 0.1− | 2001 10 23 | 704 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | (1.8+ | 0.5+) | 2001 10 23 | 704 | 0.2+ | 0.7+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2001 10 23 | 704 | 0.5+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.7+ | 0.3− | 2001 10 23 | 704 | 1.2− | 1.4− | 2006 11 27 | 691 | 0.2− | 0.3− |
| 2001 10 18 | 644 | 0.2+ | 0.1+ | 2001 10 23 | 704 | 0.3− | 1.2+ | 2006 11 27 | 691 | 0.1− | 0.3− |
| 2001 10 18 | 644 | 0.1− | 0.1+ | 2001 10 26 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 10 18 | 644 | 0.1− | 0.2+ | 2001 10 26 | 691 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2001 10 20 | 704 | 0.2+ | 0.7+ | 2001 10 26 | 691 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.3+ | 0.3+ |
| 2001 10 20 | 704 | 0.2+ | 0.3− | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2001 10 20 | 704 | 0.3− | 0.0 | 2005 08 06 | 644 | 0.1− | 0.5− | | | | |
| 2001 10 20 | 704 | 0.4+ | 0.1+ | 2005 08 06 | 644 | 0.0 | 0.3+ | | | | |

### 2001 $UB_{43}$ = 1996 $WT_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.78661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19337058 | $\omega$ | 343.12636 | | +0.72517571 | −0.68557299 | |
| $a$ | 2.9617094 | $\Omega$ | 60.33295 | | +0.63995792 | +0.63669770 | |
| $e$ | 0.1034119 | $i$ | 4.23110 | | +0.25411423 | +0.35299536 | |
| $P$ | 5.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 816 | 0.5+ | 0.0 | 2001 10 23 | 704 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 1996 11 17 | 816 | 0.0 | 0.1− | 2001 10 23 | 704 | 1.0+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2001 10 23 | 704 | (2.3+ | 1.6+) | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 2001 09 21 | 704 | 0.6+ | 0.3+ | 2001 10 24 | 704 | 1.1+ | 0.1− | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 2001 09 21 | 704 | 0.3+ | 0.9+ | 2001 10 24 | 704 | 0.6+ | 0.2− | 2006 10 15 | 703 | 0.5− | 1.0− |
| 2001 10 17 | 704 | 0.1− | 0.8+ | 2001 10 24 | 704 | 0.6− | 0.9+ | 2006 10 15 | 703 | 0.1+ | 0.8− |
| 2001 10 17 | 704 | 0.7− | 0.1+ | 2001 10 25 | 704 | 0.2− | 0.3− | 2006 10 15 | 703 | 0.0 | 0.9− |
| 2001 10 17 | 704 | 1.0− | 1.4− | 2001 10 25 | 704 | 1.2+ | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.8+ |
| 2001 10 18 | 644 | 0.0 | 0.2+ | 2001 10 25 | 704 | 1.1+ | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2001 10 18 | 644 | 0.1+ | 0.5+ | 2001 10 26 | 691 | 0.5− | 0.1− | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2001 10 18 | 644 | 0.2− | 0.2+ | 2001 10 26 | 691 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2001 10 20 | 704 | 0.0 | 0.1+ | 2001 10 26 | 691 | 0.5− | 0.2− | 2006 10 22 | G96 | 0.5− | 0.3− |
| 2001 10 20 | 704 | 0.1− | 0.6+ | 2001 11 20 | 704 | 1.0+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2001 10 20 | 704 | 0.4− | 0.2+ | 2001 11 20 | 704 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.6+ | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.1− | 2001 11 20 | 704 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.7+ | 0.1+ |
| 2001 10 23 | 704 | 0.7− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.6+ | | | | |

**2001 UK$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.20843 | | (2000.0) | | | |
| $n$ | 0.20043717 | $\omega$ | 238.86323 | | +0.11883158 | −0.99056698 |
| $a$ | 2.8916821 | $\Omega$ | 204.59022 | | +0.95766380 | +0.13249084 |
| $e$ | 0.2093101 | $i$ | 9.43790 | | +0.26221957 | −0.03497466 |
| $P$ | 4.92 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.9+ | 0.3+ | 2001 10 24 | 691 | 0.2+ | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.1− | 0.1− | 2001 10 24 | 691 | 0.1+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2001 10 17 | 704 | 0.1− | 0.3− | 2001 10 24 | 691 | 0.0 | 0.3− | 2006 10 18 | 691 | 0.3− | 0.1+ |
| 2001 10 17 | 704 | 0.5− | 0.4− | 2001 10 24 | 704 | 0.1+ | 1.2− | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2001 10 17 | 704 | 0.2+ | 0.3− | 2001 10 25 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.3+ | 0.2+ | 2001 10 25 | 704 | 0.2+ | 0.8− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 10 18 | 644 | 0.3+ | 0.2− | 2001 10 25 | 704 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2001 10 18 | 644 | 0.4+ | 0.2− | 2001 10 25 | 704 | (1.5+ | 0.8−) | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2001 10 20 | 704 | 0.4+ | 0.4− | 2001 10 25 | 291 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.2− |
| 2001 10 20 | 704 | 0.6+ | 0.3− | 2001 10 25 | 291 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.5+ | 0.3− | 2001 10 25 | 704 | 1.4+ | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | 0.5+ | 0.1+ | 2001 10 25 | 291 | 0.4− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.2− |
| 2001 10 22 | 704 | (1.9+ | 0.2−) | 2001 10 26 | 291 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2001 10 22 | 704 | 0.4− | 0.7+ | 2001 10 26 | 291 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 10 22 | 704 | 0.3− | 0.2+ | 2001 10 26 | 291 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | 0.0 | 1.2+ | 2001 10 27 | 691 | 0.5− | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.2− | 0.5+ | 2001 10 27 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 0.5− | 0.1+ | 2001 10 27 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.5− | 0.1− |
| 2001 10 23 | 704 | 0.2+ | 0.1+ | 2001 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | (1.7− | 0.8−) |
| 2001 10 23 | 704 | 0.0 | 1.2− | 2001 10 27 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.1− |
| 2001 10 23 | 704 | (2.2− | 0.5+) | 2001 10 27 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.8+ | 1.4+ |
| 2001 10 23 | 691 | 0.5− | 0.2− | 2001 11 20 | 704 | 1.0+ | 1.3− | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2001 10 23 | 691 | 0.3− | 0.2− | 2001 11 20 | 704 | (0.2+ | 1.8+) | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2001 10 23 | 691 | 0.3− | 0.3− | 2001 11 20 | 704 | (0.0 | 3.3+) | 2006 11 17 | 704 | 0.1− | 0.4− |
| 2001 10 24 | 291 | 0.2+ | 0.5− | 2006 10 15 | D35 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2001 10 24 | 291 | 0.0 | 0.4− | 2006 10 15 | D35 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2001 10 24 | 291 | 0.2+ | 0.4− | 2006 10 15 | D35 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.8− |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.9− | 2006 11 18 | G96 | 0.1+ | 0.6− |
| 2001 10 24 | 704 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.7− |
| 2001 10 24 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 1.5+ | 0.5− | 2006 11 18 | G96 | 0.3− | 0.7− |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.7+ | | | | |

**2001 UP$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.50905 | | (2000.0) | | | |
| $n$ | 0.18927463 | $\omega$ | 117.66314 | | +0.79859578 | +0.59577896 |
| $a$ | 3.0042849 | $\Omega$ | 206.04586 | | −0.59762249 | +0.76811891 |
| $e$ | 0.1385488 | $i$ | 11.21436 | | −0.07135926 | +0.23460768 |
| $P$ | 5.21 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3+ | 0.8+ | 2001 10 23 | 704 | 0.9+ | 0.5− | 2006 09 18 | 699 | 0.7+ | 0.0 |
| 2001 09 19 | 704 | 0.1− | 0.2+ | 2001 10 23 | 691 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.5− | 0.0 |
| 2001 09 19 | 704 | 0.7+ | 0.1− | 2001 10 23 | 691 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.7+ | 0.8+ |
| 2001 09 19 | 704 | 0.1− | 0.1+ | 2001 10 23 | 691 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2001 09 26 | 704 | 0.2− | 1.0− | 2001 10 24 | 704 | 0.4+ | 1.2+ | 2006 10 17 | 703 | (1.7+ | 0.9+) |
| 2001 09 26 | 704 | (0.6− | 2.2−) | 2001 10 24 | 704 | 0.7+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.6+ |
| 2001 09 26 | 704 | 0.8+ | 0.8− | 2001 10 24 | 704 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.0 |
| 2001 09 26 | 704 | (0.4− | 1.6−) | 2001 10 24 | 704 | 0.3+ | 0.5− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2001 10 17 | 704 | 0.2− | 0.9+ | 2001 10 25 | 644 | 0.6− | 0.9− | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.3+ | 0.8+ | 2001 10 25 | 644 | 0.6− | 0.2− | 2006 10 19 | G96 | 0.5− | 0.0 |
| 2001 10 17 | 704 | 0.3− | 0.8+ | 2001 10 25 | 644 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.7− | 0.9+ | 2001 11 20 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2001 10 17 | 704 | 1.2− | 0.7+ | 2001 11 20 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2001 10 18 | 644 | 0.4− | 0.4+ | 2001 11 20 | 704 | 0.3+ | 0.6+ | 2006 10 27 | G98 | 0.2+ | 0.2+ |
| 2001 10 18 | 644 | 0.4− | 0.5+ | 2001 11 20 | 704 | 1.3+ | 0.1− | 2006 10 27 | G98 | 0.3+ | 0.1+ |
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2001 11 20 | 704 | 0.4+ | 0.0 | 2006 10 27 | G98 | 0.2+ | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.0 | 2006 09 17 | 683 | 0.4− | 0.8+ | 2006 10 27 | G98 | 0.2− | 0.1− |
| 2001 10 20 | 704 | 0.8− | 0.1− | 2006 09 17 | 683 | (0.0 | 2.1+) | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2001 10 20 | 704 | 0.0 | 0.2− | 2006 09 17 | 683 | (1.5− | 2.1+) | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2001 10 23 | 704 | (0.4+ | 1.8+) | 2006 09 18 | 699 | 1.3− | 0.9− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2006 09 18 | 699 | 1.4+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.4− |

**2001 UB$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 314.54999 | | (2000.0) | | | |
| $n$ | 0.17880323 | $\omega$ | 191.89783 | | +0.61010176 | −0.76381364 |
| $a$ | 3.1204637 | $\Omega$ | 221.02109 | | +0.75072116 | +0.64227545 |
| $e$ | 0.1587391 | $i$ | 18.71833 | | +0.25336453 | −0.06380420 |
| $P$ | 5.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 24 | 704 | 0.4+ | 1.5+ | 2001 10 22 | 704 | 0.2+ | 1.0− | 2001 11 19 | 699 | 0.9− | 0.2− |
| 2001 09 24 | 704 | 0.4− | 0.3+ | 2001 10 23 | 704 | 0.1− | 0.3− | 2001 11 19 | 699 | 2.0− | 1.3+ |
| 2001 09 24 | 704 | 1.2− | 0.6+ | 2001 10 23 | 704 | 0.1− | 0.2− | 2001 11 20 | 704 | 0.5− | 0.6+ |
| 2001 10 12 | 699 | 0.9+ | 1.1+ | 2001 10 23 | 704 | 0.1+ | 0.3− | 2001 11 20 | 704 | 0.4− | 0.3+ |
| 2001 10 12 | 699 | 0.5+ | 0.6+ | 2001 10 23 | 704 | 0.1− | 0.2− | 2001 11 20 | 704 | 0.1− | 0.7+ |
| 2001 10 12 | 699 | 0.2− | 0.7− | 2001 10 23 | 704 | 0.4+ | 0.4− | 2001 11 20 | 704 | 0.1− | 0.2+ |
| 2001 10 12 | 699 | 1.2+ | 0.0 | 2001 10 24 | 704 | 0.4− | 0.5− | 2001 11 24 | 704 | 0.6+ | 1.2+ |
| 2001 10 13 | 704 | 1.0+ | 0.7− | 2001 10 24 | 704 | 0.1+ | 0.2− | 2001 11 24 | 704 | 0.9+ | 0.1+ |
| 2001 10 13 | 704 | 0.4− | 0.6+ | 2001 10 24 | 704 | 0.1+ | 0.1− | 2001 11 24 | 704 | 0.4+ | 0.4− |
| 2001 10 13 | 704 | 0.5− | 0.2− | 2001 10 24 | 704 | 0.5− | 0.2+ | 2001 12 09 | 699 | 1.3+ | 0.8+ |
| 2001 10 13 | 704 | 0.2− | 1.0+ | 2001 10 24 | 704 | 0.5+ | 0.3+ | 2001 12 09 | 699 | 0.9− | 0.5+ |
| 2001 10 17 | 704 | 0.0 | 0.9+ | 2001 10 25 | 644 | 0.2+ | 0.8+ | 2001 12 09 | 699 | 0.7+ | 0.9+ |
| 2001 10 17 | 704 | 0.2− | 0.5− | 2001 10 25 | 644 | 0.3+ | 0.9+ | 2001 12 09 | 699 | 1.4− | 1.6− |
| 2001 10 17 | 704 | 0.4− | 0.9+ | 2001 10 25 | 644 | 0.3+ | 1.0+ | 2001 12 11 | 704 | 1.0− | 0.3+ |
| 2001 10 17 | 704 | 0.7+ | 0.4− | 2001 10 26 | 704 | 0.4+ | 0.4− | 2001 12 11 | 704 | 0.3− | 1.0+ |
| 2001 10 17 | 704 | 0.4+ | 0.6− | 2001 10 26 | 704 | 0.1− | 1.0− | 2001 12 11 | 704 | 0.3+ | 0.6+ |
| 2001 10 18 | 333 | 0.3− | 0.2− | 2001 10 26 | 704 | 0.5− | 0.1− | 2001 12 11 | 704 | 1.0− | 0.4+ |
| 2001 10 18 | 333 | 0.4+ | 1.0− | 2001 11 09 | 704 | 0.1+ | 0.5− | 2001 12 11 | 704 | 1.4− | 0.3+ |
| 2001 10 18 | 333 | 0.4+ | 1.0− | 2001 11 09 | 704 | 0.5+ | 0.3− | 2004 04 24 | 691 | 0.1+ | 0.6+ |
| 2001 10 20 | 704 | 0.1− | 0.2− | 2001 11 09 | 704 | 0.7+ | 0.1+ | 2004 04 24 | 691 | 0.0 | 0.7+ |
| 2001 10 20 | 704 | 0.1+ | 0.1− | 2001 11 09 | 704 | 0.4+ | 0.7− | 2004 04 24 | 691 | 0.1− | 0.7+ |
| 2001 10 20 | 704 | 0.2+ | 0.1− | 2001 11 09 | 704 | 0.1+ | 0.5− | 2006 09 16 | 703 | 0.3+ | 0.1+ |
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2001 11 17 | 704 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.1+ | 1.0+ |
| 2001 10 22 | 704 | 0.9+ | 0.0 | 2001 11 17 | 704 | 0.5− | 0.6− | 2006 09 16 | 703 | 0.6− | 0.9+ |
| 2001 10 22 | 704 | 0.3− | 0.1+ | 2001 11 17 | 704 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.0 |
| 2001 10 22 | 704 | 0.4− | 0.7+ | 2001 11 19 | 699 | 0.2− | 0.5− | | | | |
| 2001 10 22 | 704 | 0.3+ | 1.0+ | 2001 11 19 | 699 | 0.6+ | 0.4+ | | | | |

**2001 UT$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.70318 | | (2000.0) | | | |
| $n$ | 0.21464636 | $\omega$ | 302.15295 | | +0.98599921 | −0.10936671 |
| $a$ | 2.7626150 | $\Omega$ | 64.39674 | | +0.15494498 | +0.87988069 |
| $e$ | 0.2723890 | $i$ | 8.02357 | | −0.06162470 | +0.46243799 |
| $P$ | 4.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.3− | 0.1− | 2001 11 09 | 704 | 0.8− | 0.2+ | 2001 12 14 | 704 | 0.6+ | 2.0− |
| 2001 10 17 | 704 | 0.5− | 0.7+ | 2001 11 15 | 644 | 0.1− | 0.6− | 2001 12 14 | 704 | 0.2+ | 2.1− |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2001 11 15 | 644 | 0.1+ | 0.4− | 2001 12 14 | 704 | 0.6+ | 2.2− |
| 2001 10 18 | 644 | 0.9− | 0.6+ | 2001 11 15 | 644 | 0.6− | 1.2− | 2001 12 14 | 704 | 0.6+ | 1.6− |
| 2001 10 18 | 644 | 0.6− | 0.7+ | 2001 11 17 | 704 | 0.1+ | 0.4+ | 2001 12 17 | 704 | 1.2+ | 1.8+ |
| 2001 10 18 | 644 | 0.4− | 0.7+ | 2001 11 17 | 704 | 0.2− | 0.2+ | 2001 12 17 | 704 | 1.2+ | 1.1+ |
| 2001 10 19 | 608 | 0.7− | 0.3− | 2001 11 17 | 704 | 0.1+ | 0.7+ | 2001 12 17 | 704 | (2.1+ | 3.1+) |
| 2001 10 19 | 608 | 0.7− | 0.4− | 2001 11 18 | 704 | 0.1− | 0.2+ | 2001 12 17 | 704 | 2.9+ | 2.3+ |
| 2001 10 19 | 608 | 0.6− | 0.4− | 2001 11 18 | 704 | 0.4+ | 0.9− | 2001 12 17 | 704 | 0.3+ | 1.5+ |
| 2001 10 20 | 704 | 0.3− | 0.6+ | 2001 11 18 | 704 | 0.5+ | 0.0 | 2001 12 19 | 704 | 0.9− | 0.5− |
| 2001 10 20 | 704 | 0.3− | 0.8+ | 2001 11 18 | 704 | 0.6+ | 1.3− | 2001 12 19 | 704 | 0.5− | 0.2− |
| 2001 10 20 | 704 | 0.0 | 0.9+ | 2001 11 18 | 704 | 0.6+ | 0.3− | 2001 12 19 | 704 | 0.7− | 0.5− |
| 2001 10 20 | 704 | 0.5− | 0.3− | 2001 11 19 | 699 | 0.8− | 0.5− | 2001 12 19 | 704 | 1.0− | 0.2− |
| 2001 10 22 | 704 | 0.5+ | 0.4+ | 2001 11 19 | 699 | 0.2− | 0.1− | 2001 12 19 | 704 | 1.4− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.2+ | 0.0 | 2001 11 19 | 699 | 1.0− | 0.3− | 2001 12 19 | 644 | 0.5− | 0.3+ | | |
| 2001 10 22 | 704 | 0.1− | 0.3+ | 2001 11 19 | 699 | 0.1+ | 0.4+ | 2001 12 19 | 704 | 0.8− | 0.0 | | |
| 2001 10 22 | 704 | 0.1+ | 0.6− | 2001 11 20 | 704 | 0.1− | 0.2+ | 2001 12 19 | 644 | 0.2− | 0.0 | | |
| 2001 10 22 | 704 | 0.4− | 0.1+ | 2001 11 20 | 704 | 0.1− | 0.1− | 2001 12 19 | 704 | 1.0− | 0.2+ | | |
| 2001 10 24 | 704 | 0.5+ | 0.7+ | 2001 11 20 | 704 | 0.2+ | 0.1+ | 2001 12 19 | 644 | 0.5− | 0.4+ | | |
| 2001 10 24 | 704 | 0.8− | 0.2+ | 2001 11 20 | 704 | 0.1− | 0.1− | 2001 12 19 | 704 | 0.8− | 0.0 | | |
| 2001 10 24 | 704 | 0.1− | 0.9− | 2001 11 20 | 704 | 0.1+ | 0.2− | 2001 12 19 | 704 | 0.7− | 0.6+ | | |
| 2001 10 24 | 704 | 1.5− | 0.4− | 2001 11 21 | 704 | 0.1− | 0.9+ | 2001 12 19 | 704 | 1.3− | 0.7+ | | |
| 2001 10 24 | 704 | 0.4− | 0.2− | 2001 11 21 | 704 | 0.1− | 0.6+ | 2004 04 14 | 691 | 0.0 | 0.4+ | | |
| 2001 10 25 | 644 | 0.8+ | 0.7− | 2001 11 21 | 704 | 0.1+ | 0.6+ | 2004 04 14 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 25 | 644 | 0.5+ | 0.6− | 2001 11 21 | 704 | 0.4+ | 0.7+ | 2004 04 14 | 691 | 0.1+ | 0.0 | | |
| 2001 10 25 | 644 | 1.1+ | 0.9− | 2001 11 21 | 704 | 0.6+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2001 11 09 | 704 | 0.7+ | 0.3+ | 2001 12 14 | 291 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.0 | | |
| 2001 11 09 | 704 | 1.1+ | 1.5+ | 2001 12 14 | 291 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2001 11 09 | 704 | 0.8− | 0.5+ | 2001 12 14 | 291 | 0.4+ | 0.1− | | | | | | |
| 2001 11 09 | 704 | 0.6− | 0.9+ | 2001 12 14 | 704 | 0.1+ | 2.7− | | | | | | |

**2001 UK$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.18286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18278481 | $\omega$ | 202.20481 | | +0.73759314 | −0.67003230 | |
| $a$ | 3.0749825 | $\Omega$ | 200.59178 | | +0.64979387 | +0.73804067 | |
| $e$ | 0.1914599 | $i$ | 13.77486 | | +0.18364174 | +0.07970373 | |
| $P$ | 5.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | (1.6− | 1.0+) | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 09 27 | 699 | 0.2− | 0.0 | | |
| 2001 10 17 | 704 | 0.6+ | 0.7− | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 09 27 | 699 | 0.5+ | 0.5− | | |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.8+ | 0.1− | 2006 09 27 | 699 | 0.1+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.2− | 0.9+ | 2006 09 18 | 691 | 0.5+ | 0.3+ | 2006 09 27 | 699 | 0.0 | 0.9+ | | |
| 2001 10 17 | 704 | 0.4− | 0.0 | 2006 09 18 | 703 | 1.3+ | 0.2− | 2006 10 17 | 703 | 0.9+ | 0.5+ | | |
| 2001 10 20 | 704 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.8− | | |
| 2001 10 20 | 704 | 1.0− | 1.2− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.1+ | | |
| 2001 10 20 | 704 | (0.9− | 1.7−) | 2006 09 18 | 703 | 0.1− | 0.7− | 2006 10 17 | 703 | 0.4− | 0.7+ | | |
| 2001 11 13 | 608 | 1.2+ | 0.1+ | 2006 09 18 | 291 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− | | |
| 2001 11 13 | 608 | 1.2+ | 0.2+ | 2006 09 18 | 291 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2− | | |
| 2001 11 13 | 608 | 0.8+ | 1.0+ | 2006 09 18 | 291 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2001 12 07 | 704 | 0.0 | 0.6− | 2006 09 18 | 704 | (1.8− | 0.6+) | 2006 10 19 | G96 | 0.5− | 0.5− | | |
| 2001 12 07 | 704 | 0.6− | 0.8+ | 2006 09 18 | 704 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2001 12 07 | 704 | 0.0 | 0.1+ | 2006 09 18 | 704 | (1.6− | 0.6−) | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2001 12 07 | 704 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.2− | | |
| 2001 12 19 | 704 | 1.0− | 0.9+ | 2006 09 19 | 703 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2001 12 19 | 704 | 0.6− | 0.6− | 2006 09 19 | 699 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.3− | 0.2− | | |
| 2001 12 19 | 704 | 0.2+ | 0.5− | 2006 09 19 | 703 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.2− | | |
| 2006 09 06 | 644 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.3− | | |
| 2006 09 06 | 644 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.0 | | |
| 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.4− | 0.5− | | |
| 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.1− | | |
| 2006 09 16 | 644 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.0 | | |
| 2006 09 17 | 703 | 0.3+ | 0.8− | 2006 09 26 | 691 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.4− | 0.2− | | |
| 2006 09 17 | 703 | 0.6− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.1− | | |
| 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.2− | 0.4− | | | | | | |

**2001 UG$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.60459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20205955 | $\omega$ | 225.11336 | | +0.56320123 | −0.82596371 | |
| $a$ | 2.8761826 | $\Omega$ | 190.68739 | | +0.79021208 | +0.54694130 | |
| $e$ | 0.2081459 | $i$ | 7.51540 | | +0.24159727 | +0.13652536 | |
| $P$ | 4.88 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 691 | 0.1− | 0.0 | 2001 10 20 | 704 | 0.7+ | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.6− | | |
| 1991 10 06 | 691 | 0.4+ | 0.2+ | 2001 10 22 | 704 | 0.3+ | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.4− | | |
| 1991 10 06 | 691 | 0.2− | 0.4− | 2001 10 22 | 704 | 0.3+ | 0.4− | 2006 10 03 | G96 | 0.2+ | 0.5− | | |
| 2001 09 19 | 704 | 0.3− | 1.2+ | 2001 10 22 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2001 09 19 | 704 | 0.9+ | 0.1− | 2001 10 22 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2001 10 23 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 09 19 | 704 | 1.1+ | 0.6− | 2001 10 23 | 704 | 0.4+ | 1.2− | 2006 10 22 | 703 | 0.4+ | 0.8+ | | |
| 2001 09 19 | 704 | 0.4− | 0.7− | 2001 10 23 | 704 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.8+ | 0.7+ | | |
| 2001 09 19 | 704 | 0.2− | 1.2− | 2001 10 23 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.4+ | | |
| 2001 09 19 | 704 | 0.2+ | 0.5+ | 2001 10 24 | 704 | 0.4+ | 0.2− | 2006 10 22 | 703 | 0.7+ | 0.0 | | |
| 2001 09 19 | 704 | 0.1− | 0.9− | 2001 10 24 | 704 | 0.1+ | 0.1+ | 2006 11 15 | 703 | (2.1− | 0.6−) | | |
| 2001 09 19 | 704 | 0.7− | 0.5− | 2001 10 24 | 704 | 0.1− | 0.4+ | 2006 11 15 | 703 | 1.2− | 0.0 | | |
| 2001 09 19 | 704 | 0.6+ | 0.1+ | 2001 10 24 | 704 | 0.1− | 0.7+ | 2006 11 15 | 703 | 1.0+ | 0.9+ | | |
| 2001 09 26 | 704 | 0.5− | 0.3− | 2001 10 24 | 704 | 0.6− | 0.4+ | 2006 11 19 | 704 | 0.6− | 0.2− | | |
| 2001 09 26 | 704 | 0.7− | 0.0 | 2001 10 24 | 691 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.1+ | | |
| 2001 09 26 | 704 | 0.3− | 0.2+ | 2001 10 24 | 691 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.6− | | |
| 2001 09 26 | 704 | 0.4+ | 0.0 | 2001 10 24 | 691 | 0.6− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.7+ | | |
| 2001 09 27 | 644 | 0.1+ | 1.3+ | 2001 10 25 | 704 | 0.8+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2001 09 27 | 644 | 0.1− | 1.3+ | 2001 10 25 | 704 | 1.0− | 0.1− | 2006 11 19 | 703 | 0.6− | 0.3+ | | |
| 2001 09 27 | 644 | 0.2+ | 1.1+ | 2001 10 25 | 704 | (0.4− | 1.6−) | 2006 11 19 | 703 | (2.1− | 0.5−) | | |
| 2001 10 14 | 699 | 0.7+ | 1.4+ | 2001 10 25 | 704 | 0.3+ | 0.3− | 2006 11 19 | 703 | 0.2− | 0.1− | | |
| 2001 10 14 | 699 | 0.2+ | 0.4+ | 2001 10 25 | 644 | 0.4+ | 0.2− | 2006 11 19 | 703 | 1.1+ | 0.8+ | | |
| 2001 10 14 | 699 | 0.8+ | 1.0− | 2001 10 25 | 644 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.2− | | |
| 2001 10 14 | 699 | 0.3+ | 0.6+ | 2001 10 25 | 644 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2001 10 17 | 704 | (0.7+ | 1.7+) | 2001 11 12 | 608 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2001 10 17 | 704 | 0.4− | 1.0+ | 2001 11 12 | 608 | 0.1+ | 0.4− | 2006 11 23 | G96 | 0.6+ | 0.3− | | |
| 2001 10 17 | 704 | 0.5+ | 1.2+ | 2001 11 12 | 608 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.5− | | |
| 2001 10 17 | 704 | 0.1− | 1.4+ | 2001 11 18 | 608 | 0.0 | 1.3− | 2006 11 23 | G96 | 0.3+ | 0.6− | | |
| 2001 10 18 | 644 | 0.6+ | 0.1+ | 2001 11 18 | 608 | 0.0 | 0.8− | 2006 11 23 | G96 | 0.3+ | 0.4− | | |
| 2001 10 18 | 644 | 0.5+ | 0.8+ | 2001 11 18 | 608 | 0.2− | 1.0− | 2006 11 23 | G96 | 0.3+ | 0.6− | | |
| 2001 10 18 | 644 | 0.5+ | 0.0 | 2001 11 20 | 704 | 0.1− | 0.8− | 2006 11 28 | 704 | 0.1+ | 0.2− | | |
| 2001 10 20 | 704 | 0.7+ | 0.4+ | 2001 11 20 | 704 | 0.7+ | 0.1− | 2006 11 28 | 704 | 0.8− | 0.4+ | | |
| 2001 10 20 | 704 | 0.5+ | 0.0 | 2001 11 20 | 704 | (0.7+ | 1.9−) | 2006 11 28 | 704 | 0.2+ | 1.2+ | | |
| 2001 10 20 | 704 | 0.7+ | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 28 | 704 | 2.5− | 0.6+ | | |

**2001 UM$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.03788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19885750 | $\omega$ | 27.28107 | | +0.37676302 | −0.89980647 | |
| $a$ | 2.9069757 | $\Omega$ | 41.64410 | | +0.77802958 | +0.17850766 | |
| $e$ | 0.4527117 | $i$ | 19.33362 | | +0.50271225 | +0.39809964 | |
| $P$ | 4.96 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 644 | 0.3− | 0.2+ | 2001 10 24 | 704 | 0.3+ | 0.0 | 2001 12 22 | 704 | 0.7+ | 0.4+ | | |
| 2001 09 26 | 644 | 0.1+ | 0.1+ | 2001 10 24 | 704 | 0.3+ | 0.5+ | 2001 12 22 | 704 | 0.3− | 1.3+ | | |
| 2001 10 17 | 704 | 0.3− | 0.2− | 2001 10 25 | 644 | 0.1+ | 0.1− | 2001 12 22 | 704 | 0.9− | 1.1+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2001 10 25 | 644 | 0.3+ | 0.3− | 2001 12 22 | 704 | 0.3+ | 1.1+ | | |
| 2001 10 17 | 704 | 0.1− | 0.2− | 2001 10 25 | 644 | 0.1+ | 0.1− | 2006 09 29 | 461 | 0.2+ | 0.4+ | | |
| 2001 10 17 | 704 | 0.1− | 0.1− | 2001 11 10 | 704 | 0.6− | 0.7+ | 2006 09 29 | 461 | 0.2+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.0 | 1.2− | 2001 11 10 | 704 | 1.0− | 0.4+ | 2006 09 29 | 461 | 0.0 | 0.8− | | |
| 2001 10 20 | 704 | 0.0 | 1.0− | 2001 11 10 | 704 | 0.5− | 0.2+ | 2006 09 29 | 461 | 1.0+ | 0.4− | | |
| 2001 10 20 | 704 | 0.1+ | 0.7− | 2001 11 12 | 704 | 0.4− | 0.9+ | 2006 09 29 | 461 | 0.4+ | 0.4+ | | |
| 2001 10 20 | 704 | 0.0 | 0.4− | 2001 11 12 | 704 | 0.1+ | 1.0+ | 2006 09 29 | 461 | 0.0 | 0.7+ | | |
| 2001 10 22 | 704 | 0.8− | 0.7+ | 2001 11 12 | 704 | 0.2− | 1.0+ | 2006 10 02 | G96 | 0.4+ | 0.2− | | |
| 2001 10 22 | 704 | 0.2+ | 0.7+ | 2001 11 12 | 704 | 0.6− | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.3− | | |
| 2001 10 22 | 704 | 0.4+ | 1.4+ | 2001 11 12 | 704 | 0.4− | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.1− | | |
| 2001 10 22 | 704 | 0.0 | 1.2+ | 2001 11 17 | 644 | 1.3+ | 0.7− | 2006 10 02 | G96 | 0.2− | 0.3− | | |
| 2001 10 23 | 704 | 0.1− | 0.1+ | 2001 11 17 | 644 | 0.3− | 0.9− | 2006 10 27 | 703 | 0.3− | 0.5+ | | |
| 2001 10 23 | 704 | 0.0 | 0.6− | 2001 11 17 | 644 | 0.4− | 0.9− | 2006 10 27 | 703 | 0.3+ | 0.0 | | |
| 2001 10 23 | 704 | 0.2+ | 0.2− | 2001 11 21 | 704 | 0.9− | 1.0− | 2006 10 27 | 703 | 0.1− | 0.1+ | | |
| 2001 10 23 | 704 | 0.6+ | 0.4− | 2001 11 21 | 704 | 0.3− | 0.8− | 2006 10 27 | 703 | 0.5− | 0.5− | | |
| 2001 10 23 | 704 | 0.5− | 0.0 | 2001 11 21 | 704 | 0.3+ | 1.2− | 2006 11 21 | G96 | 0.2+ | 0.8− | | |
| 2001 10 24 | 704 | 0.5+ | 0.6+ | 2001 11 21 | 704 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.8− | | |
| 2001 10 24 | 704 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.2+ | 0.8− | 2006 11 21 | G96 | 0.0 | 0.7− | | |
| 2001 10 24 | 704 | 0.0 | 0.2+ | 2001 12 22 | 704 | 0.3− | 0.6− | 2006 11 21 | G96 | 0.4+ | 0.7− | | |

**2001 UN$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.57961 | | (2000.0) | | | |
| $n$ | 0.17562927 | $\omega$ | 199.21957 | | +0.69887845 | −0.70070487 |
| $a$ | 3.1579467 | $\Omega$ | 207.05250 | | +0.69057239 | +0.71328506 |
| $e$ | 0.1728781 | $i$ | 18.38720 | | +0.18622214 | −0.01539794 |
| $P$ | 5.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.3+ | 1.0− | 2001 11 18 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.3− | 0.5− |
| 2001 09 17 | 704 | 0.3− | 0.5− | 2001 11 18 | 704 | 0.1+ | 0.6− | 2006 09 21 | 699 | 0.2+ | 0.1+ |
| 2001 09 17 | 704 | 0.8+ | 0.4− | 2001 11 20 | 699 | 0.1− | 0.7+ | 2006 09 21 | 699 | 0.9+ | 0.1− |
| 2001 09 17 | 704 | 0.0 | 0.5− | 2001 11 20 | 699 | 0.6+ | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.7+ |
| 2001 10 17 | 704 | 0.6+ | 1.3+ | 2001 11 20 | 699 | 0.7− | 0.2− | 2006 09 27 | 703 | 0.2+ | 0.1− |
| 2001 10 17 | 704 | 1.4+ | 0.4+ | 2001 11 20 | 699 | 1.1+ | 0.9+ | 2006 09 27 | 703 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | 0.6− | 0.1+ | 2001 12 07 | 704 | 0.6+ | 0.6+ | 2006 09 27 | 703 | 0.3− | 0.8+ |
| 2001 10 17 | 704 | 0.6− | 0.6+ | 2001 12 07 | 704 | 0.1+ | 0.4− | 2006 09 29 | 699 | 0.7− | 0.9− |
| 2001 10 20 | 704 | 1.1− | 0.2+ | 2001 12 07 | 704 | 0.6+ | 0.8− | 2006 09 29 | 699 | 0.3+ | 0.4+ |
| 2001 10 20 | 704 | 1.5− | 0.5+ | 2001 12 07 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 1.1− | 1.2+ |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2001 12 08 | 704 | 0.3− | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.6+ |
| 2001 10 20 | 704 | 0.6− | 0.5+ | 2001 12 08 | 704 | 0.9+ | 0.6− | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2001 11 13 | 608 | 0.2− | 0.3+ | 2001 12 08 | 704 | 0.6− | 0.4− | 2006 10 03 | G96 | 0.2− | 0.1− |
| 2001 11 13 | 608 | 0.4− | 0.4+ | 2006 08 29 | 699 | 0.1+ | 1.3+ | 2006 10 03 | G96 | 0.3+ | 0.1+ |
| 2001 11 13 | 608 | 0.3− | 0.1+ | 2006 08 29 | 699 | 0.3+ | 0.3− | 2006 10 03 | G96 | 0.3− | 0.3− |
| 2001 11 15 | 704 | (0.4− | 1.8−) | 2006 08 29 | 699 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.5− |
| 2001 11 15 | 704 | 0.6− | 0.4− | 2006 08 29 | 699 | 0.1− | 0.6− | 2006 10 17 | 703 | 0.6+ | 0.8+ |
| 2001 11 15 | 704 | 0.0 | 1.4− | 2006 09 14 | 703 | 0.1− | 0.5− | 2006 10 17 | 703 | 0.4+ | 1.1− |
| 2001 11 15 | 704 | 0.5− | 0.5− | 2006 09 14 | 703 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.2+ | 0.9− |
| 2001 11 15 | 704 | 0.4− | 0.9− | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2001 11 18 | 704 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2001 11 18 | 704 | 0.3+ | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1− |

**2001 UP$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 324.28315 | | (2000.0) | | | |
| $n$ | 0.18533034 | $\omega$ | 283.89907 | | +0.64830584 | −0.76059286 |
| $a$ | 3.0467609 | $\Omega$ | 125.63305 | | +0.71396598 | +0.59151299 |
| $e$ | 0.1875749 | $i$ | 2.44076 | | +0.26448464 | +0.26760209 |
| $P$ | 5.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.6− | 0.5+ | 2001 10 24 | 704 | 0.0 | 0.8+ | 2001 11 21 | 704 | 0.3− | 0.5+ |
| 2001 10 17 | 704 | 0.2+ | 0.8+ | 2001 10 24 | 704 | 0.6+ | 0.2+ | 2001 11 21 | 704 | 0.1− | 0.3+ |
| 2001 10 17 | 704 | 0.4+ | 0.0 | 2001 10 24 | 704 | 0.4− | 0.9− | 2001 11 21 | 704 | 0.1− | 0.3+ |
| 2001 10 18 | 644 | 0.3− | 0.3+ | 2001 10 24 | 704 | 0.2− | 0.2+ | 2001 11 21 | 704 | 0.3+ | 0.6+ |
| 2001 10 18 | 644 | 0.3− | 0.3+ | 2001 10 24 | 704 | 0.5+ | 1.1+ | 2006 08 21 | 807 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.0 | 0.1+ | 2001 10 25 | 644 | 0.0 | 0.6+ | 2006 08 21 | 807 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.1− | 0.2+ | 2001 10 25 | 644 | 0.2− | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.7+ | 0.5− | 2001 10 25 | 644 | 0.1− | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2001 10 20 | 704 | 0.4− | 0.4− | 2001 11 18 | 608 | 0.6+ | 0.7− | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | (2.0+ | 0.3−) | 2001 11 18 | 608 | 0.6+ | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.0 |
| 2001 10 22 | 704 | 0.3+ | 0.3+ | 2001 11 18 | 608 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.4− | 0.6− |
| 2001 10 22 | 704 | 0.2+ | 0.2+ | 2001 11 20 | 704 | 0.4− | 0.1+ | 2006 09 19 | 703 | 1.0+ | 1.3− |
| 2001 10 22 | 704 | 0.3− | 0.8+ | 2001 11 20 | 704 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2001 10 22 | 704 | 0.2− | 0.5+ | 2001 11 20 | 704 | 0.3− | 0.1− | 2006 10 16 | 703 | (1.4+ | 1.7−) |
| 2001 10 22 | 704 | 0.4+ | 0.4+ | 2001 11 20 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | (1.7− | 1.1−) |
| 2001 10 23 | 704 | 0.8− | 0.5− | 2001 11 20 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.9− |
| 2001 10 23 | 704 | 1.1− | 0.4+ | 2001 11 21 | 704 | 0.5+ | 0.4− | 2006 11 17 | G96 | 0.5+ | 0.6− |
| 2001 10 23 | 704 | 0.8− | 0.2− | 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2001 10 23 | 691 | 0.3+ | 0.2− | 2001 11 21 | 704 | 0.6− | 0.7− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2001 10 23 | 691 | 0.1+ | 0.2− | 2001 11 21 | 704 | 0.3+ | 1.2− | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2001 10 23 | 691 | 0.1+ | 0.1− | 2001 11 21 | 704 | (0.0 | 1.6+) | | | | |

**2001 UJ$_{56}$ = 2006 SE**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 309.71100 | | (2000.0) | | | |
| $n$ | 0.19296787 | $\omega$ | 82.09318 | | +0.37992533 | −0.92415013 |
| $a$ | 2.9658286 | $\Omega$ | 345.38151 | | +0.77384211 | +0.34125145 |
| $e$ | 0.1038027 | $i$ | 9.12868 | | +0.50677918 | +0.17173812 |
| $P$ | 5.11 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.3− | 0.8+ | 2006 09 17 | 941 | 0.8+ | 0.5− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.2− | 0.1− | 2006 09 17 | 941 | 0.8+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 10 17 | 704 | 1.1− | 0.4+ | 2006 09 17 | 941 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.1− | 1.2− | 2006 09 17 | 941 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 10 17 | 704 | 0.0 | 0.9− | 2006 09 17 | 941 | 0.4+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 10 20 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 941 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 10 20 | 644 | 0.4+ | 0.3+ | 2006 09 17 | 941 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 10 20 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 1.1− | 0.8+ |
| 2001 10 21 | 704 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.1+ | 0.5+ |
| 2001 10 21 | 704 | 0.6+ | 1.1+ | 2006 09 18 | 691 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.4− | 1.3− |
| 2001 10 21 | 704 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.7− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 2001 10 21 | 704 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 09 16 | 941 | 1.2+ | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2006 09 16 | 941 | 0.8+ | 0.0 | 2006 09 29 | 704 | (0.3− | 1.8+) | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2006 09 16 | 941 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2006 09 16 | 941 | 0.7− | 0.1− | 2006 09 29 | 704 | 0.6− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2006 09 16 | 941 | (1.7− | 0.2−) | 2006 09 30 | 691 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2006 09 17 | 941 | 0.9+ | 0.5− | 2006 09 30 | 691 | 0.2+ | 0.4+ | | | | |

**2001 UR$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.27044 | | (2000.0) | | | |
| $n$ | 0.20385557 | $\omega$ | 38.53288 | | +0.58723343 | −0.80906879 |
| $a$ | 2.8592644 | $\Omega$ | 15.55269 | | +0.71893685 | +0.50787789 |
| $e$ | 0.1181390 | $i$ | 5.08419 | | +0.37186921 | +0.29574945 |
| $P$ | 4.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.0+ | 0.3− | 2001 10 21 | 704 | 0.4+ | 1.5+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.9+ | 0.4+ | 2001 10 21 | 704 | 1.0+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2001 10 21 | 704 | 0.4− | 0.3− | 2006 11 01 | G96 | 0.5+ | 0.2− |
| 2001 10 17 | 704 | 0.4− | 0.9+ | 2001 10 21 | 704 | 0.3+ | 0.6+ | 2006 11 01 | G96 | 0.6+ | 0.4− |
| 2001 10 17 | 704 | 0.4− | 0.7− | 2001 10 24 | 704 | 0.4− | 0.9− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 10 17 | 704 | 0.1− | 0.0 | 2001 10 24 | 704 | 0.1− | 1.1− | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2001 10 17 | 704 | 0.8− | 0.3− | 2001 10 24 | 704 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.4+ |
| 2001 10 17 | 704 | 0.4− | 0.6− | 2001 10 24 | 704 | 0.6− | 0.6− | 2006 11 17 | G96 | 0.4+ | 0.3+ |
| 2001 10 19 | 644 | 0.6− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.6+ | 0.1+ |
| 2001 10 19 | 644 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2+ |
| 2001 10 19 | 644 | 0.3− | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.1+ | | | | |
| 2001 10 21 | 704 | 1.0+ | 0.5− | 2006 10 21 | 691 | 0.1− | 0.2− | | | | |

**2001 UC$_{57}$ = 2006 TC$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.57361 | | (2000.0) | | | |
| $n$ | 0.20289247 | $\omega$ | 157.65507 | | +0.98705025 | −0.13315349 |
| $a$ | 2.8683056 | $\Omega$ | 210.42283 | | +0.10693938 | +0.96186312 |
| $e$ | 0.1243532 | $i$ | 10.17493 | | +0.11956493 | +0.23893408 |
| $P$ | 4.86 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.8+ | 1.1− | 2001 10 21 | 704 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.2− |
| 2001 09 20 | 704 | 1.2+ | 0.3− | 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 10 23 | 691 | (3.0+ | 0.9−) |
| 2001 09 20 | 704 | 0.1+ | 0.0 | 2001 10 24 | 704 | 0.6− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2001 10 07 | 644 | 0.3+ | 0.1− | 2001 10 24 | 704 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2001 10 07 | 644 | 0.4+ | 0.3+ | 2001 10 24 | 704 | 0.2− | 0.7− | 2006 10 27 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 07 | 644 | 0.2− | 0.2+ | 2001 10 24 | 704 | 0.4− | 0.8+ | 2006 10 27 | 691 | 0.4− | 0.0 |
| 2001 10 17 | 704 | 1.4− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2001 10 17 | 704 | 0.6− | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.6− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 10 19 | 644 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 10 19 | 644 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2001 10 19 | 644 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2001 10 21 | 704 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.5− |

**2001 UJ$_{60}$ = 2006 UZ$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.52875 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20936789 | $\omega$ | 24.60560 | | +0.30266164 | | +0.95139549 |
| $a$ | 2.8088551 | $\Omega$ | 263.05286 | | −0.88367661 | | +0.25773091 |
| $e$ | 0.1882918 | $i$ | 3.28855 | | −0.35708764 | | +0.16858648 |
| $P$ | 4.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 691 | 0.3+ | 0.2− | 2001 10 21 | 704 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2001 10 11 | 691 | 0.1+ | 0.2− | 2001 10 21 | 704 | 0.9− | 1.2+ | 2006 10 28 | 691 | 0.2− | 0.6+ |
| 2001 10 11 | 691 | 0.0 | 0.2− | 2001 10 21 | 704 | (0.9+ | 1.7−) | 2006 11 01 | 691 | 0.4− | 0.6− |
| 2001 10 17 | 704 | 0.8− | 0.5− | 2006 10 19 | 691 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.4− | 1.2+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2001 10 18 | 644 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2001 10 18 | 644 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.8+ | 0.3− |
| 2001 10 18 | 644 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2001 10 21 | 704 | 0.7+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | | | |

**2001 UM$_{60}$ = 2006 UR$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.26614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21223267 | $\omega$ | 24.96873 | | +0.13406049 | | +0.98944827 |
| $a$ | 2.7835213 | $\Omega$ | 252.77419 | | −0.91858767 | | +0.10327193 |
| $e$ | 0.0263454 | $i$ | 3.29830 | | −0.37178553 | | +0.10162202 |
| $P$ | 4.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.0+ | 0.2− | 2001 10 21 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 461 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 461 | 1.1− | 0.1+ | 2006 10 19 | 461 | 0.2− | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 0.3+ | 2006 10 17 | 461 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.1− | 0.0 | 2006 10 17 | 461 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.5+ | 0.0 |
| 2001 10 18 | 644 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.4− | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2001 10 18 | 644 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.4+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.3− | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2001 10 21 | 704 | 0.0 | 0.3− | 2006 10 18 | 461 | 0.0 | 0.0 | 2006 11 11 | 703 | (0.1− | 1.9−) |
| 2001 10 21 | 704 | 0.7− | 0.4− | 2006 10 18 | 461 | 0.1− | 0.1+ | 2006 11 11 | 703 | (0.1− | 1.7+) |
| 2001 10 21 | 704 | 0.3− | 0.0 | 2006 10 18 | 461 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.0 | 0.2+ |

**2001 UT$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.95914 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20292873 | $\omega$ | 101.69693 | | +0.99367755 | | +0.11090577 |
| $a$ | 2.8679640 | $\Omega$ | 251.93742 | | −0.10883048 | | +0.91329661 |
| $e$ | 0.0798261 | $i$ | 1.05226 | | −0.02758341 | | +0.39190459 |
| $P$ | 4.86 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (2.6+ | 0.7−) | 2001 10 23 | 704 | 0.5+ | 0.8− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.6+ | 2001 10 23 | 704 | 0.8+ | 1.1− | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2001 09 20 | 704 | 0.2+ | 1.0+ | 2001 10 23 | 704 | 0.2− | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2001 09 20 | 704 | 0.5− | 0.6+ | 2001 10 23 | 704 | 0.8+ | 1.1− | 2006 11 11 | 703 | 0.7+ | 0.7− |
| 2001 10 11 | 644 | 0.9− | 0.8− | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2001 10 11 | 644 | 0.8− | 0.4− | 2006 10 16 | 691 | 0.5− | 0.3+ | 2006 11 11 | 703 | (2.3+ | 0.5+) |
| 2001 10 11 | 644 | 1.1− | 0.8− | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2001 10 17 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2001 10 17 | 704 | 1.0+ | 1.4+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2001 10 17 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.6− | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 0.8+ | 0.4− | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.5− | 0.0 |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.7+ | 0.0 | | | | |
| 2001 10 23 | 704 | 0.1+ | 0.8− | 2006 10 27 | G96 | 0.4+ | 0.1− | | | | |

**2001 UB$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.98697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20360265 | $\omega$ | 90.02798 | | +0.96925357 | | +0.08005213 |
| $a$ | 2.8616319 | $\Omega$ | 265.38123 | | −0.16424852 | | +0.91458291 |
| $e$ | 0.1703112 | $i$ | 13.49947 | | +0.18322103 | | +0.39639596 |
| $P$ | 4.84 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 05 | 327 | 0.3+ | 0.0 | 2001 10 18 | 704 | 0.5+ | 0.2+ | 2006 10 02 | 703 | 1.5− | 0.4− |
| 1998 01 05 | 327 | 0.4+ | 0.2+ | 2001 10 20 | 699 | 1.0− | 0.2+ | 2006 10 02 | 703 | 0.0 | 0.1− |
| 1998 01 05 | 327 | 0.5− | 0.2+ | 2001 10 20 | 699 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2001 08 20 | 644 | 0.3− | 0.4− | 2001 10 20 | 699 | 0.5− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 08 20 | 644 | 0.0 | 0.3− | 2001 10 20 | 699 | 0.8− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 08 20 | 644 | 0.2− | 0.4+ | 2001 10 21 | 704 | 1.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 09 19 | 644 | 0.1− | 0.1+ | 2001 10 21 | 704 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 09 19 | 644 | 0.2+ | 0.0 | 2001 10 21 | 704 | 0.8− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2001 09 19 | 644 | 0.1− | 0.3− | 2001 10 21 | 704 | 0.3− | 1.1− | 2006 10 23 | 703 | 0.6+ | 0.9− |
| 2001 09 22 | 699 | 0.2+ | 0.7− | 2001 10 21 | 704 | 0.5+ | 0.9− | 2006 10 23 | 703 | 0.2− | 0.6− |
| 2001 09 22 | 699 | 1.3+ | 1.1+ | 2001 11 12 | 704 | 0.7+ | 0.8+ | 2006 10 23 | 703 | 0.4+ | 0.9− |
| 2001 09 22 | 699 | 0.7+ | 0.0 | 2001 11 12 | 704 | 0.3+ | 0.6+ | 2006 10 23 | 703 | 0.8− | 1.0+ |
| 2001 09 22 | 699 | 0.4− | 0.4+ | 2001 11 12 | 704 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.5+ | 0.7− |
| 2001 09 29 | 644 | 0.0 | 0.5+ | 2001 11 12 | 704 | 0.6− | 0.1− | 2006 11 15 | 703 | 0.0 | 0.4+ |
| 2001 09 29 | 644 | 0.0 | 0.4+ | 2001 11 12 | 704 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2001 09 29 | 644 | 0.2− | 0.5+ | 2001 12 10 | 704 | 0.8− | 1.0+ | 2006 11 15 | 703 | 0.5+ | 0.1+ |
| 2001 10 18 | 704 | 0.1+ | 0.2+ | 2001 12 10 | 704 | (0.3+ | 1.6+) | 2006 11 22 | 703 | 0.3− | 0.5+ |
| 2001 10 18 | 704 | 0.5+ | 0.2− | 2001 12 10 | 704 | 0.1+ | 1.1+ | 2006 11 22 | 703 | 0.7+ | 0.1− |
| 2001 10 18 | 704 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.1− | 0.5− | 2006 11 22 | 703 | 0.6+ | 0.1− |
| 2001 10 18 | 704 | 0.4+ | 0.3− | 2006 10 02 | 703 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.4− |

**2001 UV$_{67}$ = 2004 LZ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.87329 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23156796 | $\omega$ | 189.96256 | | +0.92076801 | | +0.38869474 |
| $a$ | 2.6263367 | $\Omega$ | 147.10189 | | −0.35358059 | | +0.86748241 |
| $e$ | 0.0476940 | $i$ | 3.50510 | | −0.16482428 | | +0.31046845 |
| $P$ | 4.26 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2001 10 21 | 704 | 0.2− | 0.4− | 2005 08 28 | 691 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 0.7− | 0.2− | 2001 10 21 | 704 | 0.2+ | 0.0 | 2005 08 28 | 691 | (2.1+ | 3.2−) |
| 2001 10 20 | 704 | 0.0 | 0.4− | 2001 10 21 | 704 | 0.2− | 0.2+ | 2005 09 01 | 691 | 0.0 | 0.1+ |
| 2001 10 20 | 704 | 0.8− | 0.8− | 2001 10 21 | 704 | 0.1− | 1.0+ | 2005 09 01 | 691 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 1.1+ | 0.5+ | 2001 10 21 | 704 | 0.8+ | 1.3− | 2005 09 01 | 691 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.5+ | 0.3− | 2001 10 21 | 704 | 0.2− | 0.8+ | 2005 09 11 | 691 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.7− | 0.4+ | 2004 06 09 | 691 | 0.1+ | 0.1+ | 2005 09 11 | 691 | 0.2− | 0.2− |
| 2001 10 21 | 704 | 0.7− | 0.1+ | 2004 06 09 | 691 | 0.1− | 0.3− | 2005 09 11 | 691 | 0.6+ | 0.6− |
| 2001 10 21 | 704 | 0.5+ | 0.4− | 2004 06 09 | 691 | 0.4+ | 0.1− | 2005 09 22 | 644 | 0.2− | 0.3+ |
| 2001 10 21 | 704 | 0.7+ | 0.5+ | 2004 06 16 | 691 | 0.5− | 0.2+ | 2005 09 22 | 644 | 0.4− | 0.1+ |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2004 06 16 | 691 | 0.2+ | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.7+ | 0.4+ | 2004 06 16 | 691 | 0.0 | 0.0 | | | | |
| 2001 10 21 | 704 | 0.7− | 0.4+ | 2005 08 28 | 691 | 0.0 | 0.2+ | | | | |

**2001 UT$_{71}$ = 2006 UE$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.19844 | | | (2000.0) | | |
| $n$ | 0.20316812 | $\omega$ | 168.85699 | | +0.89119443 | −0.44859411 |
| $a$ | 2.8657107 | $\Omega$ | 218.02901 | | +0.40733403 | +0.85672542 |
| $e$ | 0.2824422 | $i$ | 6.27619 | | +0.19962835 | +0.25452873 |
| $P$ | 4.85 | $H$ | 18.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.1+ | 0.7+ | 2001 10 20 | 691 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | |
| 2001 09 28 | 644 | 0.2+ | 0.5+ | 2001 10 20 | 691 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.7− | 0.0 | |
| 2001 09 28 | 644 | 0.2− | 0.6+ | 2001 10 21 | 691 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.3− | |
| 2001 10 11 | 691 | 0.0 | 0.5+ | 2001 10 21 | 691 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.2− | |
| 2001 10 11 | 691 | 0.4+ | 0.2+ | 2001 10 21 | 691 | 1.0+ | 0.7− | 2006 10 27 | G96 | 0.4+ | 0.2− | |
| 2001 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.5− | 0.0 | |
| 2001 10 18 | 644 | 0.1+ | 1.3+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.4− | 0.2− | |
| 2001 10 18 | 644 | (0.3+ | 1.8+) | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.4− | |
| 2001 10 18 | 644 | (0.1+ | 1.8+) | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.2− | |
| 2001 10 20 | 691 | 0.5− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | | | | | |

**2001 UM$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.75781 | | | (2000.0) | | |
| $n$ | 0.19842696 | $\omega$ | 300.29090 | | +0.96467231 | +0.21218919 |
| $a$ | 2.9111792 | $\Omega$ | 47.94901 | | −0.10290200 | +0.84910114 |
| $e$ | 0.1414313 | $i$ | 12.13936 | | −0.24252528 | +0.48373856 |
| $P$ | 4.97 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.5− | 1.1+ | 2001 11 09 | 704 | 0.9− | 0.9− | 2006 10 28 | G96 | 0.2+ | 0.5− | |
| 2001 09 26 | 704 | 0.8− | 0.7+ | 2001 11 09 | 704 | (0.2− | 1.5−) | 2006 11 01 | 691 | 0.1+ | 0.3+ | |
| 2001 09 26 | 704 | 0.3− | 0.6− | 2001 11 09 | 704 | (0.9− | 2.4−) | 2006 11 01 | 691 | 0.3+ | 0.2+ | |
| 2001 10 13 | 704 | 0.1+ | 1.0+ | 2001 11 09 | 704 | (0.3− | 1.6−) | 2006 11 01 | 691 | 0.2+ | 0.3+ | |
| 2001 10 13 | 704 | 0.6+ | 0.2− | 2001 11 09 | 704 | (0.8− | 1.5−) | 2006 11 11 | 703 | 0.1+ | 0.6− | |
| 2001 10 13 | 704 | 0.0 | 0.1+ | 2001 11 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.3− | |
| 2001 10 13 | 704 | 1.1+ | 0.1+ | 2001 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.3− | |
| 2001 10 17 | 704 | 0.1+ | 0.2+ | 2001 11 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− | |
| 2001 10 17 | 704 | 0.6+ | 0.4− | 2001 11 17 | 704 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.3− | |
| 2001 10 17 | 704 | 0.1+ | 0.3− | 2001 11 17 | 704 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.1− | |
| 2001 10 17 | 704 | 0.8+ | 0.0 | 2001 11 17 | 704 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.4+ | |
| 2001 10 17 | 704 | 0.9+ | 0.1+ | 2001 11 20 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.3− | |
| 2001 10 18 | 644 | 0.2+ | 0.4+ | 2001 11 20 | 704 | 0.0 | 0.6− | 2006 11 13 | 644 | 0.2+ | 0.1+ | |
| 2001 10 18 | 644 | 0.2+ | 0.3+ | 2001 11 20 | 704 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1+ | |
| 2001 10 18 | 644 | 0.0 | 0.4+ | 2001 11 20 | 704 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.0 | |
| 2001 10 21 | 691 | 0.6− | 0.0 | 2001 11 20 | 704 | 0.5+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.2+ | |
| 2001 10 21 | 691 | 0.6− | 0.2− | 2001 11 21 | 704 | 0.6+ | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.1+ | |
| 2001 10 21 | 691 | 0.8− | 0.2− | 2001 11 21 | 704 | 1.3+ | 0.4− | 2006 11 13 | 644 | 0.0 | 0.1+ | |
| 2001 10 22 | 704 | 0.4+ | 0.6+ | 2001 11 21 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.1− | |
| 2001 10 22 | 704 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.5+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.7− | |
| 2001 10 22 | 704 | 1.2+ | 0.4+ | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.3+ | |
| 2001 10 22 | 704 | 1.0+ | 1.2+ | 2001 12 09 | 699 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.6− | 0.0 | |
| 2001 10 23 | 704 | 0.3+ | 0.3+ | 2001 12 09 | 699 | 0.7− | 0.6+ | 2006 11 18 | 704 | 0.1+ | 0.3− | |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2001 12 09 | 699 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.2− | 0.7+ | |
| 2001 10 23 | 704 | 0.9+ | 0.6+ | 2001 12 09 | 699 | 1.1− | 1.0+ | 2006 11 18 | 704 | 1.0− | 0.1− | |
| 2001 10 23 | 704 | 0.6+ | 0.4+ | 2001 12 15 | 704 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.1− | |
| 2001 10 23 | 704 | 0.6+ | 0.5+ | 2001 12 15 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 704 | (0.3− | 1.5+) | |
| 2001 10 24 | 704 | 0.0 | 0.4+ | 2001 12 15 | 704 | 0.2− | 0.6− | 2006 11 27 | G96 | 0.4+ | 0.2− | |
| 2001 10 24 | 691 | 0.2− | 0.4− | 2001 12 15 | 704 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.1− | |
| 2001 10 24 | 691 | 0.3− | 0.7− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.2− | |
| 2001 10 24 | 704 | 0.3+ | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.1− | |
| 2001 10 24 | 691 | 0.3− | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.7− | 1.2− | |
| 2001 10 24 | 704 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.2+ | |
| 2001 10 24 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 27 | 703 | 1.0+ | 0.7− | |
| 2001 10 24 | 704 | 0.5+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.8− | 0.2+ | |
| 2001 10 25 | 291 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.3− | 0.4+ | |
| 2001 10 25 | 291 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.2− | 0.0 | |
| 2001 10 25 | 291 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.4+ | |
| 2001 10 25 | 644 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 2.0− | 0.7− | |
| 2001 10 25 | 644 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− | | | | | |
| 2001 10 25 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.5− | | | | | |

**2001 UQ$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.92101 | | | (2000.0) | | |
| $n$ | 0.28702393 | $\omega$ | 26.57518 | | +0.25109446 | −0.96674179 |
| $a$ | 2.2760964 | $\Omega$ | 48.92406 | | +0.87622149 | +0.20567454 |
| $e$ | 0.1461432 | $i$ | 3.69636 | | +0.41132404 | +0.15201410 |
| $P$ | 3.43 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.2+ | 0.4+ | 2001 10 24 | 704 | 0.5− | 0.1+ | 2001 11 18 | 691 | 0.2− | 0.1− | |
| 2001 10 16 | 291 | 0.1+ | 0.4+ | 2001 10 24 | 704 | 0.1− | 0.1+ | 2001 11 19 | 704 | 0.5− | 0.2+ | |
| 2001 10 16 | 291 | 0.2+ | 0.4+ | 2001 10 24 | 704 | 0.6− | 0.4− | 2001 11 19 | 704 | 1.2− | 0.6+ | |
| 2001 10 17 | 704 | 0.3− | 0.3+ | 2001 10 24 | 704 | 0.9− | 0.2+ | 2001 11 19 | 704 | 0.2− | 0.4− | |
| 2001 10 17 | 704 | 0.6+ | 0.7+ | 2001 10 25 | 644 | 0.4+ | 0.5+ | 2001 11 19 | 704 | 0.0 | 0.3+ | |
| 2001 10 17 | 704 | 0.4+ | 1.0+ | 2001 10 25 | 644 | 0.3+ | 0.6+ | 2001 11 20 | 691 | 0.5+ | 0.1− | |
| 2001 10 18 | 644 | 0.2+ | 0.8− | 2001 10 25 | 644 | 0.1+ | 0.4+ | 2001 11 20 | 691 | 0.4+ | 0.1+ | |
| 2001 10 18 | 644 | 0.3+ | 0.7− | 2001 11 09 | 704 | 0.4− | 1.3− | 2001 11 20 | 691 | 0.6+ | 0.5+ | |
| 2001 10 18 | 644 | 0.2+ | 0.4− | 2001 11 09 | 704 | 1.2− | 1.3+ | 2001 12 18 | 704 | 1.4+ | 0.5+ | |
| 2001 10 22 | 704 | 0.0 | 0.2− | 2001 11 09 | 704 | 0.4− | 0.1+ | 2001 12 18 | 704 | 1.3+ | 0.5− | |
| 2001 10 22 | 704 | 1.0− | 0.1− | 2001 11 09 | 704 | 0.0 | 0.0 | 2001 12 18 | 704 | 0.8+ | 0.5+ | |
| 2001 10 22 | 704 | 0.5+ | 0.1+ | 2001 11 17 | 704 | 0.5− | 0.1− | 2003 04 25 | 691 | 0.0 | 0.8+ | |
| 2001 10 23 | 704 | 0.7− | 0.0 | 2001 11 17 | 704 | 0.1− | 0.4+ | 2003 04 25 | 691 | 0.5+ | 0.6+ | |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2001 11 17 | 704 | 1.1− | 0.5− | 2003 04 25 | 691 | 0.5+ | 0.9+ | |
| 2001 10 23 | 704 | 0.5− | 0.5+ | 2001 11 17 | 704 | 0.5− | 0.9− | 2006 01 23 | 691 | 0.1+ | 0.2− | |
| 2001 10 23 | 704 | 0.1− | 0.1+ | 2001 11 17 | 704 | 1.7− | 1.5− | 2006 01 23 | 691 | 0.3− | 0.1+ | |
| 2001 10 23 | 704 | 0.6− | 0.4+ | 2001 11 18 | 691 | 0.3− | 0.2+ | 2006 01 23 | 691 | 0.1+ | 0.1+ | |
| 2001 10 24 | 704 | 0.4− | 0.4− | 2001 11 18 | 691 | 0.2− | 0.1− | | | | | |

**2001 UR$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 298.84212 | | | (2000.0) | | |
| $n$ | 0.17559178 | $\omega$ | 224.80841 | | +0.54421130 | −0.83833018 |
| $a$ | 3.1583961 | $\Omega$ | 192.33814 | | +0.80576770 | +0.53298872 |
| $e$ | 0.1708472 | $i$ | 8.66595 | | +0.23360754 | +0.11456677 |
| $P$ | 5.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.7− | 0.4− | 2001 10 20 | 704 | 0.0 | 1.3+ | 2006 08 16 | 644 | 0.3− | 0.1+ | |
| 2001 09 19 | 704 | 0.5− | 0.9+ | 2001 10 22 | 704 | 0.3+ | 0.8− | 2006 08 16 | 644 | 0.2− | 0.0 | |
| 2001 09 19 | 704 | 0.7+ | 0.3− | 2001 10 22 | 704 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.2− | |
| 2001 09 19 | 704 | 1.2− | 0.1− | 2001 10 22 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.2− | |
| 2001 09 19 | 704 | 0.6− | 1.1− | 2001 10 22 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.2+ | |
| 2001 09 26 | 704 | 0.1− | 0.6− | 2001 10 23 | 704 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.0 | |
| 2001 09 26 | 704 | 0.4+ | 0.7− | 2001 10 23 | 704 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.2+ | |
| 2001 09 26 | 704 | 1.0− | 0.8− | 2001 10 23 | 704 | 0.7+ | 0.2− | 2006 09 19 | 691 | 0.3+ | 0.2− | |
| 2001 10 17 | 704 | (2.3− | 2.6−) | 2001 10 23 | 704 | 0.5− | 1.0− | 2006 09 25 | 691 | 0.1+ | 0.1+ | |
| 2001 10 17 | 704 | (0.6− | 1.9−) | 2001 10 23 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | |
| 2001 10 17 | 704 | (0.2− | 1.8−) | 2001 10 24 | 704 | (2.3− | 0.6−) | 2006 09 25 | 691 | 0.2− | 0.1+ | |
| 2001 10 17 | 704 | 0.8+ | 1.4− | 2001 10 24 | 704 | 0.7− | 0.3− | 2006 09 30 | 691 | 0.4+ | 0.1− | |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2001 10 24 | 704 | 0.7− | 0.7+ | 2006 09 30 | 691 | 0.3− | 0.1− | |
| 2001 10 20 | 704 | 0.4+ | 1.3+ | 2001 10 24 | 704 | 0.9− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | |
| 2001 10 20 | 704 | 1.5+ | 1.0+ | 2001 10 24 | 704 | 0.1+ | 0.6− | | | | | |
| 2001 10 20 | 704 | 0.4+ | 1.2+ | 2006 08 16 | 644 | 0.3− | 0.3+ | | | | | |

**2001 UV$_{78}$ = 2006 TD$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.33670 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18648557 | $\omega$ | 142.91183 | | +0.90478473 | +0.42433919 | |
| $a$ | 3.0341652 | $\Omega$ | 192.13655 | | −0.42017469 | +0.87567569 | |
| $e$ | 0.1049728 | $i$ | 9.87803 | | −0.06941061 | +0.23049587 | |
| $P$ | 5.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.5− | 0.0 |
| 2001 10 20 | 704 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.7+ | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 10 20 | 704 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.2− | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2001 10 20 | 704 | 0.1− | 0.4+ | 2006 09 17 | 703 | 1.2+ | 0.5− | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2001 10 22 | 704 | 0.7− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.5− | 0.0 |
| 2001 10 22 | 704 | 0.1− | 1.2− | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 10 22 | 704 | 0.5− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 10 22 | 704 | 1.4− | 0.3− | 2006 10 02 | 691 | 1.0+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2001 10 23 | 704 | 0.7+ | 0.4+ | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 10 23 | 704 | 1.2+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2001 10 23 | 704 | 0.1+ | 1.3+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.9− | 0.1− |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3− | | | | |
| 2006 09 17 | 703 | 1.1− | 0.7+ | 2006 10 09 | 644 | 0.5− | 0.1− | | | | |

**2001 UJ$_{79}$ = 2006 UO$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.03024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19212739 | $\omega$ | 311.66534 | | +0.97981984 | +0.14009474 | |
| $a$ | 2.9744718 | $\Omega$ | 40.88545 | | −0.04178232 | +0.84106938 | |
| $e$ | 0.1399981 | $i$ | 12.58079 | | −0.19546695 | +0.52247082 | |
| $P$ | 5.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.1+ | 0.3+ | 2001 10 25 | 644 | 1.0+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 10 16 | 291 | 0.1+ | 0.4+ | 2001 10 25 | 644 | 0.5+ | 1.2+ | 2006 10 20 | 644 | 0.5+ | 0.2+ |
| 2001 10 16 | 291 | 0.1− | 0.3+ | 2001 10 25 | 644 | 0.5+ | 1.4+ | 2006 10 21 | 703 | 0.8− | 0.0 |
| 2001 10 20 | 704 | 0.4+ | 0.9− | 2001 11 16 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 1.0− | 0.8− |
| 2001 10 20 | 704 | 0.9+ | 0.1− | 2001 11 16 | 691 | 0.4+ | 0.0 | 2006 10 21 | 703 | 1.0− | 0.3− |
| 2001 10 20 | 704 | 1.1+ | 1.1− | 2001 11 16 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.8− |
| 2001 10 22 | 704 | 0.1− | 1.2− | 2001 11 19 | 704 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 10 22 | 704 | 1.2− | 1.3− | 2001 11 19 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 10 22 | 704 | 0.7− | 1.3− | 2001 11 19 | 704 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 10 23 | 704 | 0.0 | 1.0− | 2001 11 19 | 704 | 0.7− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.5− | 0.5− | 2001 11 19 | 704 | 1.2− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.5+ |
| 2001 10 23 | 704 | 0.7− | 1.1− | 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 0.5− | 0.4− | 2001 11 21 | 704 | 0.4− | 0.3+ | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2001 10 24 | 704 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.9− | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.7− | 0.8+ | 2001 11 21 | 704 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | 0.6− | 0.2− | 2001 11 21 | 704 | 0.6− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.6+ | | | | |

**2001 UT$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.19531 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28159641 | $\omega$ | 346.61825 | | +0.82015829 | −0.57086707 | |
| $a$ | 2.3052497 | $\Omega$ | 48.25855 | | +0.52951323 | +0.73215556 | |
| $e$ | 0.2055547 | $i$ | 2.92643 | | +0.21669360 | +0.37156295 | |
| $P$ | 3.50 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 29 | 691 | 0.6+ | 0.7− | 2001 10 23 | 704 | 0.6− | 0.1+ | 2001 11 18 | 704 | 0.5− | 0.1+ |
| 1994 11 29 | 691 | 0.6− | 0.7+ | 2001 10 23 | 704 | 0.5+ | 0.2+ | 2001 11 18 | 704 | 0.2+ | 0.1− |
| 1994 11 29 | 691 | 0.3+ | 0.7− | 2001 10 23 | 704 | 0.1+ | 0.5+ | 2001 11 19 | 704 | 1.1+ | 0.2+ |
| 2001 09 19 | 704 | 1.2− | 0.7+ | 2001 10 23 | 704 | 0.2− | 1.0+ | 2001 11 19 | 704 | 1.2+ | 0.5+ |
| 2001 09 19 | 704 | 0.5− | 1.2+ | 2001 10 24 | 704 | 0.3+ | 0.6− | 2001 11 19 | 704 | 1.1+ | 0.7+ |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2001 10 24 | 704 | 0.3− | 0.0 | 2001 11 19 | 704 | 0.6+ | 0.2+ |
| 2001 09 19 | 704 | 0.4+ | 0.2+ | 2001 10 24 | 704 | 0.1+ | 0.2+ | 2001 11 19 | 704 | 0.8+ | 1.1+ |
| 2001 09 30 | 049 | 0.1− | 0.3+ | 2001 10 24 | 704 | 1.6+ | 0.2− | 2001 11 21 | 704 | 0.4− | 0.2− |
| 2001 09 30 | 049 | 0.1+ | 0.7+ | 2001 10 25 | 644 | 0.6− | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.7+ |
| 2001 09 30 | 049 | 0.1− | 0.1− | 2001 10 25 | 644 | 0.2− | 0.2− | 2001 11 21 | 704 | 0.8+ | 0.4+ |
| 2001 10 10 | 691 | 0.2− | 0.0 | 2001 10 25 | 644 | 0.3− | 0.2− | 2001 11 21 | 704 | 0.0 | 0.4+ |
| 2001 10 10 | 691 | 0.3− | 0.1− | 2001 10 26 | 704 | 0.5+ | 0.4− | 2001 11 21 | 704 | 0.1+ | 0.3+ |
| 2001 10 10 | 691 | 0.2− | 0.1+ | 2001 10 26 | 704 | 0.6+ | 1.2+ | 2001 12 15 | 704 | 0.5− | 0.9− |
| 2001 10 14 | 699 | 0.2+ | 0.4+ | 2001 10 26 | 704 | 1.2− | 0.4+ | 2001 12 15 | 704 | 0.1+ | 1.3− |
| 2001 10 14 | 699 | 0.4+ | 0.4− | 2001 10 26 | 704 | 0.4− | 0.2− | 2001 12 15 | 704 | 0.4+ | 0.8− |
| 2001 10 14 | 699 | 1.1− | 1.6+ | 2001 11 09 | 704 | 0.2− | 0.8+ | 2001 12 15 | 704 | 0.8− | 0.4+ |
| 2001 10 14 | 699 | (2.2− | 0.3−) | 2001 11 09 | 704 | 0.2+ | 0.1+ | 2001 12 18 | 704 | 0.1− | 0.4− |
| 2001 10 17 | 704 | 0.4+ | 0.9− | 2001 11 09 | 704 | 0.1− | 0.1+ | 2001 12 18 | 704 | 0.1− | 1.0− |
| 2001 10 17 | 704 | 0.4− | 0.5− | 2001 11 09 | 704 | 0.2− | 0.3− | 2001 12 18 | 704 | 0.4− | 1.8− |
| 2001 10 17 | 704 | 0.2+ | 1.4+ | 2001 11 09 | 704 | 0.5− | 0.2+ | 2001 12 18 | 704 | 1.1+ | 0.9− |
| 2001 10 17 | 704 | 1.3+ | 0.2− | 2001 11 15 | 691 | 0.1+ | 0.1− | 2001 12 18 | 704 | 0.0 | 1.1− |
| 2001 10 17 | 704 | 0.7+ | 0.6− | 2001 11 15 | 691 | 0.2+ | 0.3− | 2001 12 19 | 704 | 0.7+ | 0.1− |
| 2001 10 20 | 704 | 0.4− | 0.1+ | 2001 11 15 | 691 | 0.0 | 0.1+ | 2001 12 19 | 704 | 0.8+ | 0.4+ |
| 2001 10 20 | 704 | 0.1+ | 0.8+ | 2001 11 17 | 704 | 0.3+ | 1.1+ | 2001 12 19 | 704 | 0.3+ | 0.2− |
| 2001 10 20 | 704 | 0.4− | 0.2− | 2001 11 17 | 704 | 0.3+ | 0.6+ | 2001 12 19 | 704 | 0.4+ | 0.5+ |
| 2001 10 20 | 704 | 0.2+ | 0.0 | 2001 11 17 | 704 | 0.1+ | 0.7+ | 2006 01 23 | 691 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 0.4− | 0.5− | 2001 11 17 | 704 | 0.1− | 0.1+ | 2006 01 23 | 691 | 0.1+ | 0.1+ |
| 2001 10 22 | 704 | 1.6− | 1.2− | 2001 11 17 | 704 | 0.1− | 1.0− | 2006 01 23 | 691 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 1.6− | 0.9− | 2001 11 18 | 704 | 0.3+ | 0.4+ | 2006 02 01 | 691 | 0.2+ | 0.1+ |
| 2001 10 22 | 704 | 1.3− | 0.7− | 2001 11 18 | 704 | 0.9+ | 0.4+ | 2006 02 01 | 691 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | 0.9− | 0.1− | 2001 11 18 | 704 | 0.6− | 0.1+ | 2006 02 01 | 691 | 0.2+ | 0.4+ |

**2001 UL$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.23791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22496697 | $\omega$ | 21.95822 | | +0.34941872 | −0.93514240 | |
| $a$ | 2.6774634 | $\Omega$ | 47.64293 | | +0.84745878 | +0.28881987 | |
| $e$ | 0.0647370 | $i$ | 4.53593 | | +0.39965006 | +0.20516279 | |
| $P$ | 4.38 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.3− | 0.7+ | 2001 10 24 | 704 | 0.8− | 0.4− | 2001 11 21 | 704 | 0.1− | 0.5+ |
| 2001 10 18 | 644 | 0.7− | 0.6+ | 2001 11 09 | 704 | 0.7− | 0.5− | 2001 11 21 | 704 | 0.3+ | 0.5+ |
| 2001 10 18 | 644 | 0.6− | 0.5+ | 2001 11 09 | 704 | 0.2− | 0.6− | 2001 11 21 | 704 | 0.4− | 0.1− |
| 2001 10 20 | 704 | 0.1+ | 0.1− | 2001 11 09 | 704 | 0.5+ | 0.6− | 2001 11 21 | 704 | 0.6− | 0.4+ |
| 2001 10 20 | 704 | 0.5− | 1.0− | 2001 11 15 | 691 | 0.1+ | 0.1+ | 2005 08 30 | 691 | 0.3+ | 0.2+ |
| 2001 10 20 | 704 | 0.4− | 0.2− | 2001 11 15 | 691 | 0.2+ | 0.1+ | 2005 08 30 | 691 | 0.2+ | 0.0 |
| 2001 10 20 | 704 | 0.8+ | 0.0 | 2001 11 15 | 691 | 0.0 | 0.1+ | 2005 08 30 | 691 | (0.8+ | 3.1−) |
| 2001 10 22 | 704 | 0.2+ | 0.3− | 2001 11 18 | 704 | 1.2+ | 0.8− | 2005 09 13 | 691 | 0.1+ | 0.0 |
| 2001 10 22 | 704 | 0.3− | 0.2+ | 2001 11 18 | 704 | 1.1+ | 0.7− | 2005 09 13 | 691 | 0.1+ | 0.1− |
| 2001 10 22 | 704 | 0.1+ | 0.2− | 2001 11 18 | 704 | 0.1− | 0.4− | 2005 09 13 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.1− | 0.4− | 2001 11 18 | 704 | 0.6+ | 0.9− | 2005 09 23 | 703 | 0.5− | 0.8+ |
| 2001 10 23 | 704 | 0.7+ | 0.2+ | 2001 11 18 | 704 | 0.3− | 0.1+ | 2005 09 23 | 703 | (0.0 | 2.4+) |
| 2001 10 23 | 704 | 0.3− | 0.9+ | 2001 11 19 | 704 | 0.6+ | 0.3+ | 2005 09 23 | 703 | 0.1− | 1.2− |
| 2001 10 23 | 704 | 0.9+ | 0.4− | 2001 11 19 | 704 | 0.1+ | 0.4+ | 2005 09 23 | 703 | 1.3− | 0.4− |
| 2001 10 24 | 704 | 0.5− | 0.3+ | 2001 11 19 | 704 | 0.1− | 0.1− | 2005 10 12 | 691 | 0.1+ | 0.4− |
| 2001 10 24 | 704 | 0.2− | 0.1− | 2001 11 19 | 704 | 0.0 | 0.2+ | 2005 10 12 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.9− | 0.2+ | 2001 11 19 | 704 | 0.1− | 0.4− | 2005 10 12 | 691 | 0.6− | 0.3+ |
| 2001 10 24 | 704 | 0.8− | 0.2+ | 2001 11 21 | 704 | 0.7+ | 0.6+ | | | | |

**2001 UA$_{81}$ = 2006 UP$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.89505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19706295 | $\omega$ | 306.38755 | | +0.98806233 | +0.12547572 | |
| $a$ | 2.9245972 | $\Omega$ | 46.59327 | | −0.06886593 | +0.87873233 | |
| $e$ | 0.2349502 | $i$ | 7.06691 | | −0.13780534 | +0.46052724 | |
| $P$ | 5.00 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.2− | 1.0+ | 2001 11 19 | 704 | 1.0+ | 0.7− | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2001 10 18 | 644 | 0.2− | 1.1+ | 2001 11 19 | 704 | 0.6+ | 0.6− | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2001 10 18 | 644 | 0.2− | 1.2+ | 2001 11 19 | 704 | 0.7+ | 0.9− | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2001 10 20 | 704 | 0.5+ | 0.6+ | 2001 11 19 | 704 | 1.0+ | 1.3− | 2006 10 27 | 691 | 0.3− | 0.3− |
| 2001 10 20 | 704 | 0.8− | 1.2+ | 2001 11 19 | 704 | 0.5+ | 1.0− | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2001 10 20 | 704 | (0.2− | 3.0+) | 2001 11 21 | 704 | 1.5− | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.4− |
| 2001 10 22 | 704 | 0.4+ | 0.5− | 2001 11 21 | 704 | 1.4− | 0.2+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2001 10 22 | 704 | 0.3+ | 0.2+ | 2001 11 21 | 704 | 1.1− | 0.3+ | 2006 10 31 | 691 | 0.6+ | 0.0 |
| 2001 10 22 | 704 | 1.5+ | 1.2+ | 2001 11 21 | 704 | 1.3− | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 1.3+ | 2001 11 21 | 704 | 0.8− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.6+ | 0.0 |
| 2001 10 23 | 704 | 0.6− | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 0.9+ | 0.6+ | 2006 08 28 | 703 | 0.9− | 1.4− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2001 10 24 | 704 | 0.4− | 1.1− | 2006 08 28 | 703 | 0.6+ | 0.5+ | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2001 10 24 | 704 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.8− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2001 10 24 | 704 | 0.2− | 0.9− | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2001 10 24 | 704 | 0.6− | 0.1− | 2006 09 30 | G96 | 0.4+ | 1.1− | 2006 11 17 | 703 | 0.5+ | 1.1+ |
| 2001 11 09 | 704 | 0.7− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 11 17 | 703 | 0.7− | 1.1+ |
| 2001 11 09 | 704 | 0.2− | 0.9− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.9+ | 1.4+ |
| 2001 11 09 | 704 | 0.8− | 0.8− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | (1.7− | 0.2+) | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2001 11 12 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.6− |
| 2001 11 12 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2001 11 12 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.5− |

**2001 UC$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.48873 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19151971 | $\omega$ | 119.95080 | | +0.89175893 | | +0.42904192 |
| $a$ | 2.9807604 | $\Omega$ | 215.21823 | | −0.45072778 | | +0.87036718 |
| $e$ | 0.1035932 | $i$ | 14.44302 | | +0.04013075 | | +0.24162782 |
| $P$ | 5.15 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2001 11 17 | 704 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.2− |
| 2001 09 20 | 704 | 0.4− | 0.1+ | 2001 11 17 | 704 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2001 11 17 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.3− | 2001 11 17 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 10 13 | 704 | (0.8+ | 1.5−) | 2001 11 17 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 10 13 | 704 | 0.4+ | 0.2+ | 2001 11 17 | 691 | 0.2− | 0.1− | 2006 10 27 | 683 | (0.1− | 2.3−) |
| 2001 10 13 | 704 | 0.7− | 0.1− | 2001 11 17 | 691 | 0.3− | 0.0 | 2006 10 27 | 683 | 0.7− | 0.6− |
| 2001 10 13 | 704 | 0.7+ | 0.6− | 2001 11 18 | 608 | 0.1− | 0.9− | 2006 10 27 | 683 | 1.1− | 0.3+ |
| 2001 10 13 | 704 | 0.6+ | 0.1− | 2001 11 18 | 608 | 0.1+ | 0.7− | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2001 10 18 | 644 | 0.7− | 0.1+ | 2001 11 18 | 608 | 0.0 | 0.8− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 10 18 | 644 | 0.3− | 0.2+ | 2001 11 20 | 704 | (3.5+ | 0.6+) | 2006 10 28 | 691 | 0.4+ | 0.1− |
| 2001 10 18 | 644 | 0.6− | 0.2+ | 2001 11 20 | 704 | (4.4+ | 0.6−) | 2006 10 28 | 683 | (1.9− | 0.7−) |
| 2001 10 20 | 704 | 0.1− | 0.3+ | 2001 11 20 | 704 | (2.9+ | 4.8−) | 2006 10 28 | 683 | (3.0− | 2.0−) |
| 2001 10 20 | 704 | 0.3− | 0.8+ | 2001 11 20 | 704 | (1.5+ | 1.6+) | 2006 11 07 | 644 | 0.3+ | 0.5+ |
| 2001 10 20 | 704 | 0.2+ | 0.4+ | 2001 12 11 | 704 | 0.7− | 0.2+ | 2006 11 07 | 644 | 0.4+ | 0.2− |
| 2001 10 20 | 704 | 0.8+ | 0.7+ | 2001 12 11 | 704 | 0.4+ | 0.3− | 2006 11 07 | 644 | 0.7+ | 0.3+ |
| 2001 10 22 | 704 | 1.4+ | 0.6− | 2001 12 11 | 704 | 0.4+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | 0.2+ | 1.2+ | 2001 12 11 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2001 10 22 | 704 | (2.7+ | 0.4−) | 2001 12 11 | 704 | 0.5+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2001 10 22 | 704 | 0.4+ | 0.7− | 2001 12 14 | 704 | 0.5+ | 1.1+ | 2006 11 11 | 703 | 0.5+ | 1.0+ |
| 2001 10 22 | 704 | 0.1+ | 0.1− | 2001 12 14 | 704 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2001 10 23 | 704 | 0.4+ | 0.1+ | 2001 12 14 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 1.0+ | 0.7+ |
| 2001 10 23 | 704 | 0.4− | 0.2+ | 2001 12 14 | 704 | 0.6− | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.0 | 0.5− | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2001 10 23 | 704 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2001 10 24 | 704 | 0.7+ | 0.4− | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.6+ | 0.3− | 2006 09 29 | 691 | 0.4− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2001 10 24 | 704 | 1.2+ | 0.2− | 2006 09 29 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | (0.0 | 2.3−) |
| 2001 10 24 | 704 | 1.0+ | 0.0 | 2006 09 29 | 691 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.6− | 0.8+ |
| 2001 10 24 | 704 | 0.6+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.5− |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2001 10 25 | 644 | 0.3− | 0.6+ | 2006 10 03 | 691 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.3+ |
| 2001 10 25 | 644 | 0.1− | 0.5+ | 2006 10 15 | 104 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2001 11 09 | 704 | 1.1− | 0.3− | 2006 10 15 | 104 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2001 11 09 | 704 | (0.9− | 1.9+) | 2006 10 15 | 104 | (1.9+ | 3.0−) | 2006 11 18 | 704 | 0.2− | 0.6− |
| 2001 11 09 | 704 | (1.6− | 2.0+) | 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2001 11 09 | 704 | 1.4− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.2− |
| 2001 11 10 | 704 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.3− |
| 2001 11 10 | 704 | 0.4− | 0.2+ | 2006 10 17 | 104 | 0.8− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 11 10 | 704 | 0.6− | 0.4+ | 2006 10 17 | 104 | 0.4+ | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2001 11 10 | 704 | 1.0+ | 0.1+ | 2006 10 17 | 104 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2− | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.1− | 0.6− |
| 2001 11 12 | 704 | 0.9− | 0.6− | 2006 10 21 | 703 | 0.8− | 0.0 | 2006 11 27 | 703 | 1.4− | 0.7+ |
| 2001 11 12 | 704 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.3− | 0.3− | 2006 11 27 | 703 | 1.2− | 0.8+ |

**2001 UL$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.70351 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18820062 | $\omega$ | 54.85819 | | +0.36560468 | | −0.92980865 |
| $a$ | 3.0157038 | $\Omega$ | 13.88599 | | +0.78633702 | | +0.28423816 |
| $e$ | 0.1347924 | $i$ | 10.15122 | | +0.49800331 | | +0.23380448 |
| $P$ | 5.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 809 | 0.2+ | 0.3+ | 2001 11 12 | 704 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2001 09 24 | 704 | 0.6+ | 0.1+ | 2001 11 12 | 704 | 0.7− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2001 09 24 | 704 | 0.3+ | 0.4− | 2001 11 17 | 644 | 0.6− | 0.4− | 2006 09 30 | 691 | (1.0+ | 1.7−) |
| 2001 09 24 | 704 | 0.1+ | 0.0 | 2001 11 17 | 644 | 0.5− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2001 11 17 | 644 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2001 10 14 | 704 | 0.9− | 0.1+ | 2001 11 24 | 704 | 0.7− | 1.2− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2001 10 14 | 704 | 0.3− | 0.6− | 2001 11 24 | 704 | 0.6− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.3− | 0.1− | 2001 11 24 | 704 | 0.9− | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2001 10 14 | 704 | 0.2− | 0.1− | 2001 12 10 | 704 | (0.2− | 2.3−) | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2001 12 10 | 704 | (0.4+ | 2.9−) | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 1.2+ | 0.3− | 2001 12 10 | 704 | (1.2− | 2.9−) | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 1.0+ | 0.3+ | 2001 12 10 | 704 | (1.8− | 2.7−) | 2006 10 17 | 703 | 0.1+ | 0.8− |
| 2001 10 21 | 704 | 0.2+ | 1.2+ | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2001 10 22 | 704 | 1.0+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2001 10 22 | 704 | 1.5+ | 0.3+ | 2006 09 14 | 703 | 0.7+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2001 10 22 | 704 | 0.8+ | 0.4− | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.8− |
| 2001 10 23 | 704 | 0.0 | 1.1− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.8− |
| 2001 10 23 | 704 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.4+ | 0.6− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.7− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.9+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 10 23 | 704 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 11 10 | 704 | 0.2− | 1.0− | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 11 10 | 704 | (0.6− | 2.4−) | 2006 09 18 | 699 | 1.1− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 11 10 | 704 | (0.0 | 2.0−) | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 11 10 | 704 | 0.0 | 1.5− | 2006 09 18 | 699 | 0.8+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 11 10 | 644 | 0.3+ | 0.8+ | 2006 09 18 | 699 | 1.1− | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.5− |
| 2001 11 10 | 644 | 0.4+ | 0.9+ | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 11 11 | 703 | 0.1+ | 1.0+ |
| 2001 11 10 | 644 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2001 11 12 | 704 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | (0.9+ | 1.5+) |
| 2001 11 12 | 704 | 0.9− | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.4− | | | | |
| 2001 11 12 | 704 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | | | | |

**2001 UE$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.04558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26591991 | $\omega$ | 264.96614 | | −0.65684183 | | −0.75332243 |
| $a$ | 2.3949814 | $\Omega$ | 226.14921 | | +0.70849517 | | −0.60179352 |
| $e$ | 0.0769278 | $i$ | 2.59266 | | +0.25805699 | | −0.26523552 |
| $P$ | 3.71 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 691 | 0.6− | 0.2− | 2001 11 21 | 704 | 0.9+ | 0.0 | 2004 08 13 | 807 | 0.2− | 0.6+ |
| 2001 10 18 | 691 | 0.5− | 0.0 | 2003 04 01 | 695 | 0.7+ | 0.1+ | 2004 08 13 | 807 | 0.1− | 0.6+ |
| 2001 10 18 | 691 | 0.7− | 0.1− | 2003 04 01 | 695 | 0.5+ | 0.1+ | 2005 12 04 | 691 | 0.1+ | 0.2+ |
| 2001 10 23 | 291 | 0.3+ | 0.6+ | 2003 04 09 | 644 | 0.1− | 2.0+ | 2005 12 04 | 691 | 0.2− | 0.4+ |
| 2001 10 23 | 291 | 0.4+ | 0.0 | 2003 04 09 | 644 | 0.4+ | 1.4+ | 2005 12 04 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 291 | 0.4+ | 0.1+ | 2003 04 09 | 644 | 0.1− | 1.6+ | 2005 12 28 | 691 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.6+ | 2003 04 26 | 691 | 0.3+ | 0.2+ | 2005 12 28 | 691 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.7+ | 1.3− | 2003 04 26 | 691 | 0.1+ | 0.5− | 2005 12 28 | 691 | 0.2+ | 0.4− |
| 2001 11 21 | 704 | 1.0+ | 0.6+ | 2003 04 26 | 691 | 0.4− | 0.5− | | | | |

**2001 UQ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.45937 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21102189 | $\omega$ | 234.96439 | | −0.60156685 | | −0.79655225 |
| $a$ | 2.7941585 | $\Omega$ | 252.12975 | | +0.75195897 | | −0.53924140 |
| $e$ | 0.0734131 | $i$ | 3.62537 | | +0.26958309 | | −0.27335548 |
| $P$ | 4.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.6− | 1.2+ | 2001 10 23 | 691 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.3− | 0.8+ | 2001 10 23 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.7− | 0.7+ | 2006 10 17 | 691 | 0.4+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2001 10 19 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2001 10 19 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2001 10 19 | 644 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2001 10 21 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2001 10 21 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.3− | 0.6− |
| 2001 10 21 | 691 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.7+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.1− | 0.3− | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2001 10 21 | 704 | 0.5− | 1.2− | 2006 11 09 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.6− | 0.7− |
| 2001 10 21 | 704 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.1− | 0.3+ | | | | |
| 2001 10 23 | 691 | 0.3+ | 0.3− | 2006 11 11 | 703 | (0.4− | 1.9+) | | | | |

**2001 UN$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.37091 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18979089 | $\omega$ | 180.73729 | | +0.78117589 | | −0.60280927 |
| $a$ | 2.9988343 | $\Omega$ | 217.92014 | | +0.57413853 | | +0.79584787 |
| $e$ | 0.2432904 | $i$ | 15.32598 | | +0.24521252 | | +0.05698382 |
| $P$ | 5.19 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5+ | 0.3− | 2001 10 26 | 704 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.5− | 2001 11 09 | 704 | 0.2− | 0.4− | 2001 12 11 | 704 | 0.8− | 0.2+ |
| 2001 09 20 | 704 | 1.1+ | 0.5+ | 2001 11 09 | 704 | 0.1− | 0.5+ | 2001 12 11 | 704 | 1.0− | 0.1− |
| 2001 09 20 | 704 | 0.6+ | 0.5− | 2001 11 09 | 704 | 0.8+ | 0.8+ | 2001 12 11 | 704 | 0.6+ | 0.2+ |
| 2001 10 21 | 704 | 0.2+ | 0.6+ | 2001 11 09 | 704 | 0.1− | 0.4+ | 2001 12 11 | 704 | 0.0 | 0.6− |
| 2001 10 21 | 704 | 0.1+ | 0.6+ | 2001 11 09 | 704 | 0.7+ | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 1.1− | 1.0+ | 2001 11 10 | 704 | 0.1− | 0.6− | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 1.2− | 0.2+ | 2001 11 10 | 704 | 0.5+ | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.7− | 0.2+ | 2001 11 10 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.5+ | 0.3+ |
| 2001 10 21 | 691 | 0.2+ | 0.1− | 2001 11 17 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 10 21 | 691 | 0.2+ | 0.3− | 2001 11 17 | 704 | 0.6+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 10 21 | 691 | 0.1+ | 0.0 | 2001 11 17 | 704 | 0.1+ | 0.4− | 2006 11 20 | G96 | 0.0 | 0.8− |
| 2001 10 23 | 291 | 0.8− | 0.2+ | 2001 11 17 | 704 | 0.6+ | 0.7+ | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2001 10 23 | 291 | (2.1− | 0.4+) | 2001 11 20 | 704 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.3− | 0.3− |
| 2001 10 23 | 291 | (2.9− | 0.5+) | 2001 11 20 | 704 | 0.4− | 0.3− | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2001 10 26 | 704 | 0.1− | 0.1+ | 2001 11 20 | 704 | 0.4+ | 0.7− | | | | |
| 2001 10 26 | 704 | 0.2− | 0.6− | 2001 11 20 | 704 | 0.1− | 0.3+ | | | | |

**2001 UA$_{93}$ = 2006 QC$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.97737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17975300 | $\omega$ | 76.76462 | | +0.64592559 | | +0.76036284 |
| $a$ | 3.1094622 | $\Omega$ | 233.68104 | | −0.72902931 | | +0.58794948 |
| $e$ | 0.1469783 | $i$ | 4.84361 | | −0.22648707 | | +0.27597784 |
| $P$ | 5.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.0 | 0.0 | 2001 10 26 | 691 | 0.0 | 0.4− | 2006 08 29 | 691 | 0.3− | 0.1+ |
| 2001 10 19 | 644 | 0.2− | 0.3+ | 2005 04 17 | 691 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2001 10 19 | 644 | 0.2− | 0.3+ | 2005 04 17 | 691 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.4− | 0.3− |
| 2001 10 20 | 644 | 0.9− | 0.8+ | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.8− |
| 2001 10 20 | 644 | 1.0− | 0.8+ | 2006 08 24 | 704 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.0 |
| 2001 10 20 | 644 | 0.3− | 1.2+ | 2006 08 24 | 704 | (0.2+ | 1.5−) | 2006 08 30 | 704 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 0.2+ | 0.7+ | 2006 08 24 | 704 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.0 |
| 2001 10 21 | 704 | 1.0+ | 0.3− | 2006 08 24 | 704 | 1.1+ | 0.8− | 2006 09 14 | 691 | 0.2− | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 703 | (2.1− | 0.1+) | 2006 09 14 | 691 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.5− | 2006 08 28 | 703 | 0.2+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.8+ | 1.0− | 2006 08 28 | 703 | 1.4− | 0.3− | 2006 09 17 | 291 | 0.4+ | 0.2+ |
| 2001 10 26 | 691 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 17 | 291 | 0.2+ | 0.1+ |
| 2001 10 26 | 691 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 17 | 291 | 0.4+ | 0.1+ |

**2001 UN$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.34284 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26538122 | $\omega$ | 253.25086 | | +0.94016069 | | −0.32640327 |
| $a$ | 2.3982213 | $\Omega$ | 125.69661 | | +0.34003491 | | +0.88044808 |
| $e$ | 0.1366132 | $i$ | 6.91448 | | +0.02177459 | | +0.34390708 |
| $P$ | 3.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.1− | 0.4− | 2001 10 19 | 608 | 0.8− | 0.6− | 2001 11 18 | 704 | 0.2+ | 0.4+ |
| 2001 09 17 | 704 | 0.1− | 0.3− | 2001 10 23 | 644 | 0.5+ | 0.6+ | 2001 11 19 | 608 | 0.4− | 0.3− |
| 2001 09 17 | 704 | 0.1+ | 0.6− | 2001 10 23 | 644 | 0.5+ | 0.9+ | 2001 11 19 | 608 | 0.7− | 0.3− |
| 2001 09 17 | 704 | 0.4+ | 0.1+ | 2001 10 23 | 644 | 0.5+ | 0.6+ | 2001 11 19 | 608 | 0.8− | 0.4− |
| 2001 09 17 | 704 | 0.1+ | 0.3+ | 2001 10 29 | 644 | 0.6+ | 0.9+ | 2006 01 09 | 691 | 0.2− | 0.1+ |
| 2001 10 16 | 704 | 0.2− | 0.5− | 2001 10 29 | 644 | 0.3+ | 0.8+ | 2006 01 09 | 691 | 0.1+ | 0.2+ |
| 2001 10 16 | 704 | 0.2− | 0.3− | 2001 10 29 | 644 | 0.6+ | 0.7+ | 2006 01 09 | 691 | 0.3− | 0.1+ |
| 2001 10 16 | 704 | 0.1− | 0.6− | 2001 11 18 | 704 | 0.0 | 0.1− | 2006 02 05 | 691 | 0.4+ | 0.1− |
| 2001 10 19 | 608 | 0.5− | 0.7− | 2001 11 18 | 704 | 0.4− | 0.3− | 2006 02 05 | 691 | 0.0 | 0.0 |
| 2001 10 19 | 608 | 0.5− | 0.5− | 2001 11 18 | 704 | 1.1+ | 0.0 | 2006 02 05 | 691 | 0.1+ | 0.4− |

**2001 UB$_{95}$ = 2006 QJ$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.32385 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18483963 | $\omega$ | 323.25252 | | +0.93995375 | | +0.33782613 |
| $a$ | 3.0521508 | $\Omega$ | 17.19890 | | −0.26076490 | | +0.80268138 |
| $e$ | 0.2335263 | $i$ | 9.45711 | | −0.22020132 | | +0.49150391 |
| $P$ | 5.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.6− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 10 14 | 704 | 1.1+ | 0.7+ | 2006 09 20 | 644 | 0.3− | 0.5− | 2006 10 12 | 644 | 0.4− | 0.2− |
| 2001 10 14 | 704 | 0.9+ | 0.9+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 10 14 | 704 | 0.3+ | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 10 18 | 691 | 0.1− | 0.3− | 2006 09 25 | 699 | 1.5+ | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 10 18 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.4− |
| 2001 10 18 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 2001 10 19 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2001 10 19 | 644 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.5+ |
| 2001 10 19 | 644 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2001 10 22 | 644 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 10 22 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 1.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 10 22 | 644 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 1.2+ | 1.2+ | 2006 09 28 | 704 | 0.3− | 0.6− | 2006 10 23 | 644 | 0.5− | 0.1+ | | |
| 2001 11 10 | 704 | 1.4− | 1.0− | 2006 09 28 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2001 11 10 | 704 | 0.1+ | 0.4− | 2006 09 28 | 704 | 0.9+ | 0.6− | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2001 11 10 | 704 | 0.6− | 0.7+ | 2006 09 29 | 704 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2− | | |
| 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 1.0+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2006 08 17 | 644 | 0.0 | 0.4− | 2006 09 29 | 704 | 0.8+ | 0.6− | 2006 10 24 | 644 | 0.1− | 0.2+ | | |
| 2006 08 30 | 699 | 0.4+ | 0.7− | 2006 09 30 | 704 | 0.2− | 0.5− | 2006 10 24 | 644 | 0.2+ | 0.0 | | |
| 2006 08 30 | 699 | 0.5− | 0.9+ | 2006 09 30 | 703 | 0.8− | 0.2− | 2006 10 24 | 644 | 0.2− | 0.1+ | | |
| 2006 08 30 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.6+ | 0.5+ | 2006 10 24 | 644 | 0.1+ | 0.3+ | | |
| 2006 08 30 | 699 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.6− | 2006 10 24 | 644 | 0.2− | 0.1− | | |
| 2006 09 14 | 703 | 0.5− | 0.1− | 2006 09 30 | 704 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.1− | | |
| 2006 09 14 | 703 | 0.3− | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.8− | 2006 11 15 | G96 | 0.4+ | 0.1− | | |
| 2006 09 14 | 703 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− | | |
| 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2006 09 19 | 699 | 1.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ | | | | | | |
| 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | | | | | | |

**2001 UL$_{97}$ = 2006 RB$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 0.89568 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18838241 | $\omega$ | 293.98464 | | +0.99826596 | | +0.04644353 | | |
| $a$ | 3.0137634 | $\Omega$ | 63.37045 | | −0.02732643 | | +0.90982586 | | |
| $e$ | 0.1892083 | $i$ | 2.31876 | | −0.05213769 | | +0.41238321 | | |
| $P$ | 5.23 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.0 | 0.1− | 2001 10 25 | 644 | (0.4+ | 1.8+) | 2006 09 19 | 703 | 0.9− | 0.1− | | |
| 1996 12 12 | 691 | 0.1+ | 0.1− | 2001 10 25 | 644 | (0.1− | 1.8+) | 2006 09 19 | 703 | 0.6− | 0.1+ | | |
| 1996 12 12 | 691 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.1+ | 0.2− | 2006 09 22 | 704 | (0.4+ | 1.7+) | | |
| 2001 09 21 | 704 | (2.0+ | 0.4−) | 2006 08 18 | 691 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.4+ | 1.0− | | |
| 2001 09 21 | 704 | 0.5− | 0.4− | 2006 08 18 | 691 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.9− | 0.2− | | |
| 2001 09 21 | 704 | 1.3+ | 0.6− | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 22 | 704 | 1.4+ | 0.8+ | | |
| 2001 09 21 | 704 | 1.2− | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 22 | 704 | 1.2− | 0.1+ | | |
| 2001 09 21 | 704 | 0.9+ | 1.2− | 2006 08 27 | 691 | 0.3− | 0.4+ | 2006 09 22 | 704 | 1.0+ | 1.3− | | |
| 2001 09 21 | 704 | 0.2− | 1.2− | 2006 09 12 | 703 | (1.1− | 1.7+) | 2006 09 22 | 704 | (2.5− | 0.4−) | | |
| 2001 10 17 | 704 | 0.7− | 0.8+ | 2006 09 12 | 703 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.8+ | 0.6+ | | |
| 2001 10 17 | 704 | 0.4− | 0.9+ | 2006 09 12 | 703 | 1.0+ | 0.5+ | 2006 09 22 | 704 | (1.8− | 2.7−) | | |
| 2001 10 17 | 704 | 0.4+ | 1.3+ | 2006 09 12 | 703 | 0.3+ | 0.9+ | 2006 09 25 | 699 | 0.3− | 1.4− | | |
| 2001 10 17 | 704 | 0.7+ | 0.6+ | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.6+ | | |
| 2001 10 18 | 644 | 0.6− | 0.3− | 2006 09 14 | 644 | 0.4+ | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.6− | | |
| 2001 10 18 | 644 | 0.1+ | 0.4− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.3− | 0.0 | | |
| 2001 10 18 | 644 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2001 10 23 | 704 | 1.3+ | 0.1− | 2006 09 18 | 703 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2001 10 23 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.5+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.4− | 1.0+ | 2006 10 20 | G96 | 0.1− | 0.0 | | |
| 2001 10 23 | 704 | 1.0− | 1.2− | 2006 09 18 | 703 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3− | | |
| 2001 10 23 | 704 | 0.4+ | 1.2− | 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.3− | | |
| 2001 10 24 | 704 | 1.3− | 1.2+ | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.7− | | |
| 2001 10 24 | 704 | 0.1− | 1.4+ | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 11 17 | G96 | (2.2− | 1.6+) | | |
| 2001 10 24 | 704 | (0.6− | 1.9+) | 2006 09 18 | 699 | 1.0− | 0.2− | 2006 11 17 | G96 | 0.4− | 0.4− | | |
| 2001 10 24 | 704 | (1.5− | 2.6+) | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.1− | | |
| 2001 10 24 | 704 | (1.9− | 0.6+) | 2006 09 18 | 699 | 0.5+ | 0.4− | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2001 10 25 | 644 | 0.1− | 1.5+ | 2006 09 18 | 699 | 0.7− | 0.4+ | | | | | | |

**2001 UG$_{99}$ = 2006 UQ$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 316.32477 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18917450 | $\omega$ | 217.27582 | | +0.45348675 | | −0.88802029 | | |
| $a$ | 3.0053449 | $\Omega$ | 206.01432 | | +0.85375834 | | +0.45728631 | | |
| $e$ | 0.0954863 | $i$ | 9.97312 | | +0.25582507 | | +0.04805409 | | |
| $P$ | 5.21 | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.1+ | 1.1− | 2001 11 20 | 704 | 0.6− | 0.6− | 2006 09 26 | 691 | 0.9+ | 0.7+ | | |
| 2001 10 17 | 704 | 0.9+ | 0.2− | 2001 11 20 | 704 | 0.8− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1− | | |
| 2001 10 17 | 704 | 0.4+ | 0.0 | 2001 11 20 | 704 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2001 10 17 | 704 | 1.1+ | 0.3+ | 2004 04 20 | 291 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2001 10 23 | 704 | 0.3+ | 0.5+ | 2004 04 20 | 291 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.1− | | |
| 2001 10 23 | 704 | 0.2− | 0.6+ | 2004 04 20 | 291 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.2− | | |
| 2001 10 23 | 704 | 1.1− | 0.2+ | 2006 09 17 | 703 | (2.0+ | 0.0 ) | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2001 10 23 | 704 | 0.6− | 0.2− | 2006 09 17 | 703 | (1.5− | 1.7+) | 2006 10 19 | G96 | 0.3− | 0.3− | | |
| 2001 10 23 | 704 | 1.0− | 0.3+ | 2006 09 17 | 703 | 1.5+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3− | | |
| 2001 10 24 | 704 | 0.0 | 1.1+ | 2006 09 17 | 703 | 0.6+ | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2001 10 24 | 704 | 0.3− | 0.2+ | 2006 09 26 | 461 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2001 10 24 | 704 | 0.4− | 0.2+ | 2006 09 26 | 461 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.5− | 0.0 | | |
| 2001 10 24 | 704 | 0.1− | 0.3− | 2006 09 26 | 461 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.5− | 0.1+ | | |
| 2001 10 25 | 644 | 0.0 | 0.2+ | 2006 09 26 | 461 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.7− | 0.2+ | | |
| 2001 10 25 | 644 | 0.5+ | 0.0 | 2006 09 26 | 461 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2001 10 25 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 461 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 10 26 | 704 | 0.9+ | 0.3+ | 2006 09 26 | 461 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2001 10 26 | 704 | 0.4− | 1.3+ | 2006 09 26 | 461 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.2− | | |
| 2001 10 26 | 704 | 0.7+ | 1.0+ | 2006 09 26 | 461 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.4− | | |
| 2001 11 20 | 704 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.4− | 0.3− | | |
| 2001 11 20 | 704 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.2− | 0.3− | | | | | | |

**2001 UB$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 314.42223 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18346998 | $\omega$ | 225.14588 | | +0.14437817 | | −0.98134269 | | |
| $a$ | 3.0673220 | $\Omega$ | 217.10711 | | +0.95683675 | | +0.17116212 | | |
| $e$ | 0.3128267 | $i$ | 12.14915 | | +0.25222683 | | −0.08757889 | | |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.2− | 0.0 | 2001 11 17 | 704 | 0.3+ | 0.5− | 2006 09 24 | 106 | 0.5− | 0.9− | | |
| 2001 09 26 | 704 | 0.6− | 0.1+ | 2001 11 20 | 704 | 0.4− | 1.4− | 2006 09 24 | 106 | 0.2+ | 0.3− | | |
| 2001 09 26 | 704 | 1.1− | 0.4+ | 2001 11 20 | 704 | 0.5− | 0.2− | 2006 09 24 | 106 | 0.2+ | 1.2− | | |
| 2001 10 17 | 704 | 0.4− | 1.4+ | 2001 11 20 | 704 | 0.5− | 0.3+ | 2006 09 24 | 106 | 1.0+ | 0.3+ | | |
| 2001 10 17 | 704 | 0.3− | 0.6+ | 2001 11 20 | 704 | 0.6− | 0.3+ | 2006 09 26 | 683 | 0.4+ | 0.1− | | |
| 2001 10 17 | 704 | 0.7− | 0.1+ | 2001 11 20 | 704 | 0.3− | 0.1− | 2006 09 26 | 683 | 1.2− | 0.2− | | |
| 2001 10 23 | 704 | 0.9+ | 0.2+ | 2001 11 21 | 608 | (1.4+ | 1.8+) | 2006 09 26 | 683 | (1.0+ | 1.8−) | | |
| 2001 10 23 | 704 | 1.1+ | 0.3+ | 2001 11 21 | 608 | (1.0+ | 1.5+) | 2006 09 27 | 699 | 1.2+ | 0.4− | | |
| 2001 10 23 | 704 | 1.3+ | 0.2− | 2001 11 21 | 608 | (1.3+ | 2.2+) | 2006 09 27 | 699 | 0.2+ | 0.0 | | |
| 2001 10 23 | 704 | 1.2+ | 0.3− | 2001 12 11 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 699 | (1.7+ | 0.8+) | | |
| 2001 10 23 | 704 | 1.1+ | 0.3− | 2001 12 11 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 699 | 0.5− | 0.4− | | |
| 2001 10 24 | 704 | 0.6− | 0.3+ | 2001 12 11 | 704 | 0.8+ | 0.2+ | 2006 09 27 | 703 | 0.5+ | 0.6+ | | |
| 2001 10 24 | 704 | 0.0 | 0.2+ | 2001 12 11 | 704 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.0 | 0.1+ | | |
| 2001 10 24 | 704 | 1.0− | 0.3− | 2001 12 15 | 704 | 0.6− | 0.3+ | 2006 09 27 | 703 | 1.0+ | 0.2− | | |
| 2001 10 24 | 704 | 0.2− | 0.5− | 2001 12 15 | 704 | 0.9− | 1.0+ | 2006 09 27 | 703 | 0.3− | 0.2− | | |
| 2001 10 24 | 704 | 0.5− | 0.5+ | 2001 12 15 | 704 | 1.0− | 1.4+ | 2006 10 17 | 703 | 0.8+ | 1.1+ | | |
| 2001 11 09 | 704 | 0.6+ | 0.9− | 2006 09 16 | 703 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.5− | | |
| 2001 11 09 | 704 | (0.0 | 1.9−) | 2006 09 16 | 703 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.6− | | |
| 2001 11 09 | 704 | 1.2− | 0.3− | 2006 09 16 | 703 | 0.4− | 0.6+ | 2006 10 17 | 703 | 1.0− | 1.3+ | | |
| 2001 11 09 | 704 | 1.3+ | 1.1− | 2006 09 16 | 703 | 0.7− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.6+ | | |
| 2001 11 17 | 704 | 0.7+ | 0.5− | 2006 09 19 | 699 | 0.6+ | 1.4+ | 2006 10 23 | 644 | 0.1− | 0.6+ | | |
| 2001 11 17 | 704 | 0.4+ | 0.6− | 2006 09 19 | 699 | 0.7− | 0.2− | 2006 10 23 | 644 | 0.5− | 0.9+ | | |
| 2001 11 17 | 704 | 0.0 | 0.5− | 2006 09 19 | 699 | 0.7− | 1.4− | | | | | | |
| 2001 11 17 | 704 | 0.5+ | 0.5− | 2006 09 19 | 699 | 0.1+ | 0.9− | | | | | | |

**2001 UM$_{102}$ = 2006 SB$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 21.19215 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19307851 | $\omega$ | 205.28184 | | +0.97008744 | | +0.23957796 | | |
| $a$ | 2.9646954 | $\Omega$ | 140.79177 | | −0.21087693 | | +0.91155520 | | |
| $e$ | 0.0833798 | $i$ | 3.55077 | | −0.12025504 | | +0.33416988 | | |
| $P$ | 5.10 | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.0 | 0.1− | 2001 10 24 | 704 | (1.2+ | 1.7−) | 2006 10 12 | 644 | 0.3− | 0.6+ |
| 2001 09 19 | 704 | 0.5− | 0.5+ | 2001 10 24 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 0.4− | 2001 10 24 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2001 09 19 | 704 | 0.3+ | 0.0 | 2001 10 24 | 704 | 1.2+ | 1.2− | 2006 10 16 | 703 | 0.7+ | 0.6− |
| 2001 10 20 | 704 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.4− |
| 2001 10 20 | 704 | 0.7+ | 0.6− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2001 10 20 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.9− | 0.1+ |
| 2001 10 20 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2001 10 20 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 1.0− | 2006 10 22 | 703 | (0.7− | 1.9+) |
| 2001 10 23 | 704 | 0.4− | 0.8+ | 2006 09 30 | 703 | 1.5+ | 0.4− | 2006 10 22 | 703 | (0.3− | 1.7+) |
| 2001 10 23 | 704 | 0.6− | 0.6+ | 2006 09 30 | 703 | 1.3+ | 0.3+ | 2006 11 17 | G96 | (1.7− | 0.6−) |
| 2001 10 23 | 704 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | (1.9− | 0.6−) |
| 2001 10 24 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | (1.9− | 0.6−) |
| 2001 10 24 | 704 | 0.1+ | 1.4− | 2006 10 02 | 691 | 0.0 | 0.3− | 2006 11 17 | G96 | (2.1− | 0.4−) |
| 2001 10 24 | 691 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ | | | | |

**2001 UU$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.20373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23436198 | $\omega$ | 297.25888 | | +0.93360346 | −0.35491331 | |
| $a$ | 2.6054212 | $\Omega$ | 83.56347 | | +0.34376034 | +0.84847950 | |
| $e$ | 0.1120092 | $i$ | 2.83828 | | +0.10106142 | +0.39258003 | |
| $P$ | 4.21 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.3+ | 0.1− | 2001 10 24 | 704 | 0.7− | 0.1+ | 2005 09 13 | 691 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.1− | 1.0− | 2001 10 24 | 704 | 0.5− | 1.5+ | 2005 09 13 | 691 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.5+ | 0.7− | 2001 10 24 | 704 | 0.5− | 0.3− | 2005 09 23 | 703 | 1.2+ | 0.3+ |
| 2001 10 20 | 704 | 0.3+ | 0.0 | 2001 10 24 | 704 | 1.1− | 0.5+ | 2005 09 23 | 703 | 0.5− | 0.9+ |
| 2001 10 20 | 704 | 0.1− | 0.6− | 2003 01 28 | 645 | 0.0 | 0.0 | 2005 09 23 | 703 | 1.8− | 1.5− |
| 2001 10 23 | 704 | 0.7+ | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2005 09 23 | 703 | 0.5− | 0.1− |
| 2001 10 23 | 704 | 1.1+ | 0.7− | 2005 08 30 | 691 | 0.4− | 0.3+ | 2005 10 12 | 691 | 0.6+ | 0.4+ |
| 2001 10 23 | 704 | 0.3− | 0.4+ | 2005 08 30 | 691 | 0.3− | 0.4+ | 2005 10 12 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.9+ | 0.1− | 2005 08 30 | 691 | 0.2− | 0.3+ | 2005 10 12 | 691 | 0.2+ | 0.5− |
| 2001 10 24 | 704 | 0.4− | 0.5+ | 2005 09 13 | 691 | 0.1− | 0.0 | | | | |

**2001 US$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.33926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30770419 | $\omega$ | 86.07131 | | −0.82616067 | −0.55786372 | |
| $a$ | 2.1729369 | $\Omega$ | 60.00341 | | +0.47393206 | −0.76391378 | |
| $e$ | 0.0521415 | $i$ | 5.23605 | | +0.30470797 | −0.32438218 | |
| $P$ | 3.20 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.0 | 0.6− | 2003 05 01 | 704 | 0.5+ | 1.4+ | 2006 02 21 | 703 | 1.2+ | 0.7+ |
| 2001 10 20 | 704 | 0.0 | 0.1+ | 2003 05 01 | 704 | 0.6+ | 2.4+ | 2006 02 21 | 703 | 0.5− | 1.9+ |
| 2001 10 20 | 704 | 0.2+ | 0.4− | 2003 05 01 | 704 | 1.6+ | 1.2+ | 2006 03 04 | 683 | 0.5+ | 0.1+ |
| 2001 10 20 | 704 | 0.4+ | 0.4− | 2003 05 01 | 704 | 0.6+ | 2.9+ | 2006 03 04 | 683 | 1.0+ | 1.9+ |
| 2001 10 23 | 704 | 0.4− | 0.7+ | 2004 09 17 | 291 | 0.1− | 0.4+ | 2006 03 04 | 683 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.8− | 1.4+ | 2004 09 17 | 291 | 0.2− | 0.5+ | 2006 03 24 | 699 | 0.2+ | 0.3+ |
| 2001 10 23 | 704 | 0.4− | 0.6+ | 2004 09 17 | 291 | 0.3− | 0.3+ | 2006 03 24 | 699 | 0.7− | 1.0+ |
| 2001 10 23 | 704 | 0.2+ | 0.5+ | 2004 09 21 | 704 | 0.6− | 0.3+ | 2006 03 24 | 699 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.9− | 0.8+ | 2004 09 21 | 704 | 0.1− | 1.2+ | 2006 03 24 | 699 | 0.4− | 0.2− |
| 2001 11 20 | 704 | 0.3− | 1.5+ | 2004 09 21 | 704 | 0.5− | 0.3+ | 2006 04 02 | 703 | 1.2− | 0.3− |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2004 09 21 | 704 | 0.3− | 0.4− | 2006 04 02 | 703 | 0.6− | 0.4+ |
| 2001 11 20 | 704 | 0.1− | 1.2+ | 2006 02 21 | 703 | 1.3+ | 1.2− | 2006 04 02 | 703 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2006 02 21 | 703 | 1.3+ | 1.0− | 2006 04 02 | 703 | 0.2+ | 0.4− |

**2001 UL$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.50641 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19287948 | $\omega$ | 12.21481 | | −0.08483722 | −0.99555706 | |
| $a$ | 2.9667346 | $\Omega$ | 82.66209 | | +0.91067300 | −0.09410995 | |
| $e$ | 0.0285264 | $i$ | 2.36057 | | +0.40432330 | +0.00307451 | |
| $P$ | 5.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.2+ | 0.6− | 2001 11 21 | 704 | 0.8− | 1.5+ | 2006 10 17 | G96 | 0.5− | 0.3− |
| 2001 10 20 | 704 | 0.2+ | 0.9− | 2001 11 21 | 704 | (0.3+ | 1.6+) | 2006 10 17 | G96 | 0.5− | 0.4− |
| 2001 10 20 | 704 | 0.2− | 0.6− | 2006 09 17 | 691 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 10 23 | 704 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2001 10 23 | 704 | 1.1+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 1.1− | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.6+ | 0.2+ |
| 2001 10 23 | 704 | 1.2+ | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2001 10 24 | 704 | 0.9+ | 0.3+ | 2006 09 29 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 10 24 | 704 | 1.3+ | 0.1+ | 2006 09 29 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2001 11 11 | 291 | 0.3− | 0.1− | 2006 10 03 | 691 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2001 11 11 | 291 | 0.4− | 0.3+ | 2006 10 03 | 691 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.1− | 1.0− |
| 2001 11 11 | 291 | 0.3− | 0.4− | 2006 10 03 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.8+ | 0.6− |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.8− | | | | |
| 2001 11 21 | 704 | 0.0 | 0.7+ | 2006 10 17 | G96 | 0.4+ | 0.4− | | | | |

**2001 UP$_{106}$ = 1998 BQ$_3$ = 2006 SQ$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.67727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19157471 | $\omega$ | 188.76476 | | +0.74279272 | +0.66843141 | |
| $a$ | 2.9801899 | $\Omega$ | 129.21739 | | −0.61124754 | +0.70031216 | |
| $e$ | 0.0647780 | $i$ | 2.82539 | | −0.27319486 | +0.25052412 | |
| $P$ | 5.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 18 | 691 | 0.1− | 0.3− | 2001 10 23 | 704 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1998 01 18 | 691 | 0.0 | 0.1+ | 2004 03 16 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.6− |
| 1998 01 18 | 691 | 0.4+ | 0.0 | 2004 03 16 | 691 | 0.0 | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 1998 01 22 | 691 | 1.1− | 0.1− | 2004 03 16 | 691 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 1998 01 22 | 691 | 0.5+ | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 1998 01 22 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.3− | 0.8+ | 2006 09 19 | 691 | 0.8− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2001 10 18 | 644 | 0.7− | 0.9+ | 2006 09 20 | 699 | 2.2− | 2.7+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 10 18 | 644 | 0.1+ | 1.0+ | 2006 09 20 | 699 | 0.8− | 1.4+ | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2001 10 20 | 704 | 0.3+ | 0.2− | 2006 09 20 | 699 | 0.2− | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2001 10 20 | 704 | 1.0− | 0.7+ | 2006 09 20 | 699 | 1.1+ | 1.6− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2001 10 20 | 704 | 0.8− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.7− |
| 2001 10 23 | 704 | 0.7+ | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2001 10 23 | 704 | 0.5+ | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | | | |

**2001 UV$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.52373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19306996 | $\omega$ | 10.63111 | | +0.58523656 | −0.80241364 | |
| $a$ | 2.9647829 | $\Omega$ | 43.67866 | | +0.73099568 | +0.45978419 | |
| $e$ | 0.1144465 | $i$ | 9.73273 | | +0.35091805 | +0.38043509 | |
| $P$ | 5.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.5+ | 0.7+ | 2001 11 12 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2001 10 18 | 644 | 0.6+ | 0.3+ | 2001 11 12 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2001 10 18 | 644 | 0.2+ | 0.6+ | 2001 11 12 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.4− |
| 2001 10 20 | 704 | 0.5− | 0.5+ | 2001 11 17 | 704 | 0.0 | 0.8− | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | 1.1+ | 1.1+ | 2001 11 17 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.8+ | 1.1+ | 2001 11 17 | 704 | 1.3− | 0.6− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 10 23 | 704 | 0.6+ | 0.0 | 2001 11 19 | 704 | 1.3+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.4− | 1.4− | 2001 11 19 | 704 | (1.9+ | 0.8+) | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2001 10 23 | 704 | 0.2− | 0.3− | 2001 11 19 | 704 | 1.2+ | 1.4+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.4− | 0.7− | 2001 11 19 | 704 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | 0.3− | 1.2− | 2001 11 21 | 704 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2001 10 24 | 704 | 0.5− | 0.7− | 2001 11 21 | 704 | 0.1+ | 0.6− | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2001 10 24 | 704 | 0.3− | 0.9− | 2001 11 21 | 704 | 0.0 | 0.6− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | (0.2+ | 2.3−) | 2006 10 21 | 703 | 0.3+ | 1.5+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2001 10 24 | 704 | 0.0 | 1.0− | 2006 10 21 | 703 | 0.5+ | 1.3+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 11 09 | 704 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.9− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.3+ |
| 2001 11 09 | 704 | 0.3− | 0.7− | 2006 10 21 | 703 | (0.1− | 2.2+) | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2001 11 09 | 704 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2001 11 09 | 704 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.4− | | | | |

## 2001 UX$_{106}$ = 2006 SH$_{165}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.33450 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18039561 | $\omega$ | 159.28776 | | +0.99606039 | | −0.08731282 |
| $a$ | 3.1020734 | $\Omega$ | 205.73616 | | +0.07551060 | | +0.92674386 |
| $e$ | 0.1840043 | $i$ | 2.04531 | | +0.04649572 | | +0.36540702 |
| $P$ | 5.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.2− | 0.6− | 2001 11 17 | 704 | 1.0+ | 1.1− | 2006 08 28 | 703 | 1.0+ | 0.1+ |
| 2001 10 18 | 644 | 0.1− | 0.8− | 2001 11 17 | 704 | 0.6+ | 1.4+ | 2006 08 28 | 703 | 0.1+ | 0.9+ |
| 2001 10 18 | 644 | 0.3− | 0.3− | 2001 11 20 | 704 | 0.0 | 0.3− | 2006 08 28 | 699 | 0.9− | 0.8− |
| 2001 10 20 | 704 | (1.3− | 1.7+) | 2001 11 20 | 704 | 0.0 | 0.7− | 2006 08 28 | 699 | 0.5− | 0.7− |
| 2001 10 20 | 704 | (2.2− | 2.4+) | 2001 11 20 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.8+ |
| 2001 10 20 | 704 | (3.1− | 1.9+) | 2001 11 20 | 704 | 1.0− | 0.1− | 2006 09 14 | 703 | 1.0− | 0.6+ |
| 2001 10 23 | 704 | 0.2+ | 0.6− | 2001 11 20 | 704 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.5+ | 0.0 | 2001 11 21 | 704 | 0.3− | 0.5− | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.5+ | 1.4+ | 2001 11 21 | 704 | 0.1− | 1.2− | 2006 09 25 | 699 | (0.3− | 2.2−) |
| 2001 10 24 | 704 | 0.4+ | 0.5+ | 2001 11 21 | 704 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.0 |
| 2001 10 24 | 704 | 0.3+ | 0.6+ | 2001 11 21 | 704 | 0.6− | 0.7− | 2006 09 25 | 699 | 0.7− | 0.5+ |
| 2001 10 24 | 704 | 0.4+ | 0.3− | 2005 02 16 | 809 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.9− | 0.9− |
| 2001 10 24 | 704 | 0.3+ | 0.1+ | 2005 02 16 | 809 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.1− |
| 2001 10 24 | 704 | 0.2+ | 0.7+ | 2005 02 16 | 809 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.1− |
| 2001 11 15 | 691 | 0.0 | 0.4+ | 2006 08 28 | 699 | 1.2+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2001 11 15 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.6− | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2001 11 15 | 691 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.3− | | | | |
| 2001 11 17 | 704 | (1.6+ | 0.0 ) | 2006 08 28 | 699 | 0.7+ | 0.1− | | | | |

## 2001 UY$_{106}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.14092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23909676 | $\omega$ | 336.51760 | | +0.89940240 | | −0.43155976 |
| $a$ | 2.5709103 | $\Omega$ | 49.23533 | | +0.41419156 | | +0.79055328 |
| $e$ | 0.2038376 | $i$ | 5.26563 | | +0.13971638 | | +0.43449015 |
| $P$ | 4.12 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 691 | 0.0 | 0.3− | 2001 10 24 | 704 | 0.3+ | 0.8+ | 2005 10 30 | G96 | 0.2+ | 0.6− |
| 2001 10 10 | 691 | 0.5− | 0.1− | 2001 10 24 | 704 | 0.3− | 0.9+ | 2005 10 30 | G96 | 0.1+ | 0.3− |
| 2001 10 10 | 691 | 0.1− | 0.2− | 2001 10 24 | 704 | 0.1+ | 0.5+ | 2005 10 30 | G96 | 0.0 | 0.3− |
| 2001 10 18 | 644 | 0.3− | 0.1− | 2001 10 24 | 704 | 0.1+ | 0.6+ | 2005 10 30 | G96 | 0.0 | 0.4− |
| 2001 10 18 | 644 | 0.2− | 0.3− | 2001 11 12 | 691 | 0.2+ | 0.1+ | 2005 11 30 | G96 | 0.2+ | 0.1+ |
| 2001 10 18 | 644 | 0.4+ | 0.2+ | 2001 11 12 | 691 | 0.0 | 0.1− | 2005 11 30 | G96 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 1.2+ | 0.9− | 2001 11 12 | 691 | 0.2+ | 0.1− | 2005 11 30 | G96 | 0.2− | 0.2+ |
| 2001 10 20 | 704 | 0.4+ | 1.8+ | 2001 11 20 | 704 | (0.4+ | 2.4−) | 2005 11 30 | G96 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | (0.5− | 2.7+) | 2001 11 20 | 704 | (1.1+ | 2.5−) | 2005 12 01 | 695 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 0.5+ | 1.7+ | 2001 11 20 | 704 | (1.3+ | 2.7−) | 2005 12 01 | 695 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | 0.5− | 0.7+ | 2001 11 20 | 704 | (1.2+ | 2.9−) | 2005 12 02 | 695 | 0.4+ | 0.4+ |
| 2001 10 23 | 704 | 0.6− | 0.1+ | 2001 11 20 | 704 | (0.2+ | 2.3−) | 2005 12 04 | G96 | 0.1− | 0.5− |
| 2001 10 23 | 704 | 0.1+ | 0.2− | 2001 11 21 | 704 | 0.3− | 1.6− | 2005 12 04 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 1.3− | 0.2− | 2001 11 21 | 704 | 0.3+ | 1.0− | 2005 12 04 | G96 | 0.4+ | 0.5− |
| 2001 10 24 | 704 | 0.7+ | 0.4+ | 2001 11 21 | 704 | 0.2− | 0.5+ | 2005 12 04 | G96 | 0.0 | 0.1− |

## 2001 UC$_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.89967 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19148478 | $\omega$ | 346.92179 | | +0.71510376 | | −0.67898186 |
| $a$ | 2.9811229 | $\Omega$ | 57.11771 | | +0.65782944 | | +0.57328517 |
| $e$ | 0.1157238 | $i$ | 11.41205 | | +0.23640441 | | +0.45861503 |
| $P$ | 5.15 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.2+ | 0.2+ | 2001 11 09 | 704 | (1.7− | 2.8+) | 2001 12 19 | 644 | 0.4− | 0.0 |
| 2001 10 18 | 644 | 0.5+ | 0.4+ | 2001 11 09 | 704 | 0.7+ | 1.3+ | 2001 12 19 | 644 | 0.3− | 0.3+ |
| 2001 10 18 | 644 | 0.3+ | 0.3+ | 2001 11 09 | 704 | 0.4+ | 0.9− | 2006 10 05 | 118 | 1.3+ | 0.2− |
| 2001 10 19 | 691 | 0.2+ | 0.1+ | 2001 11 16 | 644 | 0.5+ | 0.5+ | 2006 10 05 | 118 | (1.9+ | 0.1+) |
| 2001 10 19 | 691 | 0.4+ | 0.1− | 2001 11 16 | 644 | 0.7+ | 0.4+ | 2006 10 05 | 118 | 0.4+ | 0.2− |
| 2001 10 19 | 691 | 0.2+ | 0.3− | 2001 11 16 | 644 | 0.4+ | 0.0 | 2006 10 05 | 118 | 0.8+ | 0.3− |
| 2001 10 20 | 704 | 0.2+ | 0.1+ | 2001 11 20 | 704 | 1.4− | 0.2− | 2006 10 05 | 118 | 0.4− | 0.3− |
| 2001 10 20 | 704 | 0.6+ | 1.0− | 2001 11 20 | 704 | 1.4− | 0.8− | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 2001 10 20 | 704 | 0.5+ | 0.7− | 2001 11 20 | 704 | 0.7+ | 1.3− | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 10 23 | 704 | 0.9− | 0.5+ | 2001 11 21 | 704 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 10 23 | 704 | 0.1+ | 0.4− | 2001 11 21 | 704 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2001 10 23 | 704 | 0.0 | 0.7+ | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.5− | 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2001 10 24 | 704 | 0.3+ | 0.8− | 2001 11 21 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | (2.8+ | 0.2+) | 2001 12 14 | 704 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.9+ |
| 2001 10 24 | 704 | (1.8− | 1.7+) | 2001 12 14 | 704 | 0.4− | 0.8− | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | 0.4+ | 1.4+ | 2001 12 14 | 704 | 0.5− | 0.0 | 2006 10 22 | 703 | (0.0 | 2.0+) |
| 2001 10 24 | 704 | (0.1+ | 1.7+) | 2001 12 18 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.3− | 1.3+ |
| 2001 10 25 | 644 | 0.4− | 0.0 | 2001 12 18 | 704 | 1.1− | 0.4− | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2001 10 25 | 644 | 0.3− | 0.1− | 2001 12 18 | 704 | 0.3+ | 0.4− | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2001 10 25 | 644 | 0.3− | 0.0 | 2001 12 18 | 704 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.1− | 0.1+ |
| 2001 11 09 | 704 | (0.6+ | 2.8+) | 2001 12 19 | 644 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.0 |

## 2001 UR$_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.17257 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17586974 | $\omega$ | 160.89376 | | +0.88692136 | | −0.43462025 |
| $a$ | 3.1550674 | $\Omega$ | 225.90871 | | +0.39036423 | | +0.88630116 |
| $e$ | 0.1378737 | $i$ | 12.58118 | | +0.24695398 | | +0.15992337 |
| $P$ | 5.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.6− | 0.6+ | 2001 11 18 | 704 | 0.4+ | 0.4− | 2001 12 11 | 704 | (1.8+ | 1.3−) |
| 2001 10 13 | 704 | 0.6− | 0.2+ | 2001 11 18 | 704 | 0.4+ | 1.0− | 2001 12 11 | 704 | 0.1− | 0.8− |
| 2001 10 13 | 704 | 1.4− | 0.2+ | 2001 11 18 | 704 | 0.3− | 0.3+ | 2001 12 11 | 704 | 1.2+ | 1.1− |
| 2001 10 14 | 333 | 0.0 | 0.3− | 2001 11 18 | 704 | 0.2− | 0.9− | 2001 12 11 | 704 | (0.7+ | 2.4−) |
| 2001 10 14 | 333 | 0.1− | 0.2+ | 2001 11 18 | 704 | 0.7− | 0.3+ | 2001 12 14 | 704 | 0.2+ | 0.4+ |
| 2001 10 14 | 333 | 0.5− | 0.3+ | 2001 11 18 | 704 | 0.1− | 1.1− | 2001 12 14 | 704 | 0.2+ | 0.7+ |
| 2001 10 14 | 333 | 0.7+ | 0.8+ | 2001 11 18 | 704 | 0.3− | 0.4− | 2001 12 14 | 704 | 0.6+ | 0.6+ |
| 2001 10 14 | 333 | 0.3− | 0.4+ | 2001 11 18 | 704 | 1.0− | 0.9+ | 2001 12 14 | 704 | 1.4+ | 0.0 |
| 2001 10 14 | 333 | 0.2+ | 0.4+ | 2001 11 18 | 704 | 1.1− | 0.3+ | 2001 12 14 | 704 | 0.2− | 0.6+ |
| 2001 10 20 | 704 | 0.2+ | 0.7+ | 2001 11 18 | 704 | 0.5+ | 0.2+ | 2001 12 17 | 704 | 0.6+ | 0.3− |
| 2001 10 20 | 704 | 0.3− | 0.1+ | 2001 11 18 | 704 | 0.3+ | 0.3− | 2001 12 17 | 704 | 0.5+ | 0.0 |
| 2001 10 20 | 704 | 0.3+ | 0.9+ | 2001 11 18 | 704 | 0.2+ | 0.5+ | 2001 12 17 | 704 | 1.0+ | 0.1+ |
| 2001 10 23 | 704 | 0.4+ | 0.6+ | 2001 11 18 | 704 | (0.3− | 1.6−) | 2001 12 17 | 704 | 0.1− | 0.5− |
| 2001 10 23 | 704 | 0.7+ | 1.1− | 2001 11 18 | 704 | 0.2+ | 0.2+ | 2001 12 17 | 704 | 0.7+ | 0.6+ |
| 2001 10 23 | 704 | 0.1+ | 0.6− | 2001 11 18 | 704 | 1.0− | 0.6− | 2001 12 20 | 704 | 0.7+ | 0.1− |
| 2001 10 23 | 704 | 0.7+ | 0.5− | 2001 11 18 | 704 | 0.2− | 0.7+ | 2001 12 20 | 704 | 0.2+ | 0.7+ |
| 2001 10 23 | 704 | 0.4− | 0.5− | 2001 11 18 | 704 | 0.1+ | 0.9+ | 2001 12 20 | 704 | 1.0+ | 0.4− |
| 2001 10 24 | 704 | 0.1− | 1.4− | 2001 11 18 | 704 | 0.3− | 0.0 | 2006 09 15 | 704 | 0.2− | 0.6+ |
| 2001 10 24 | 704 | 0.5+ | 0.7− | 2001 11 18 | 704 | 1.1− | 0.7+ | 2006 09 15 | 704 | 0.6+ | 1.3+ |
| 2001 10 24 | 704 | 0.3+ | 1.4− | 2001 11 18 | 704 | 1.2+ | 0.9+ | 2006 09 15 | 704 | 0.6+ | 0.9+ |
| 2001 10 24 | 704 | 0.4+ | 1.1− | 2001 11 18 | 704 | 0.1+ | 0.9+ | 2006 09 15 | 704 | 0.7+ | 0.3− |
| 2001 10 26 | 704 | 0.3+ | 0.6− | 2001 11 18 | 704 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 704 | 0.1+ | 0.2+ | 2001 11 18 | 704 | 0.1− | 1.0+ | 2006 09 20 | 699 | 0.5− | 0.7− |
| 2001 10 26 | 704 | 0.4+ | 0.7− | 2001 11 18 | 704 | 0.9− | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.5+ |
| 2001 10 26 | 704 | 0.8+ | 0.7− | 2001 11 18 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 699 | 0.5− | 0.3+ |
| 2001 11 09 | 704 | 0.7− | 0.5− | 2001 11 18 | 704 | 0.3− | 0.4− | 2006 09 27 | 703 | 0.4− | 1.0− |
| 2001 11 09 | 704 | 1.2− | 0.1− | 2001 11 20 | 704 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.4− | 1.1− |
| 2001 11 09 | 704 | 1.0− | 0.3+ | 2001 11 20 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.5− | 1.2− |
| 2001 11 09 | 704 | 1.1− | 0.1+ | 2001 11 20 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.7− |
| 2001 11 16 | 644 | 0.3− | 0.1− | 2001 11 20 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 703 | 0.1− | 1.2+ |
| 2001 11 16 | 644 | 0.4− | 0.3+ | 2001 11 20 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 703 | (1.8+ | 1.7+) |
| 2001 11 16 | 644 | 0.6− | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.6+ | 2006 10 01 | 703 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.5− | 0.2− | 2001 11 21 | 704 | 0.1− | 0.4+ | 2006 10 01 | 703 | 0.1+ | 0.6+ |
| 2001 11 17 | 704 | 0.6− | 0.4− | 2001 11 21 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.8− | 1.4+ |
| 2001 11 17 | 704 | 0.5− | 0.2− | 2001 11 21 | 704 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.8+ | 1.0− |
| 2001 11 17 | 704 | 0.4− | 0.2− | 2001 11 21 | 704 | 0.3+ | 0.6+ | 2006 11 13 | 703 | (0.4− | 2.3−) |
| 2001 11 17 | 704 | 0.8− | 0.4− | 2001 12 10 | 691 | 0.3+ | 0.2− | 2006 11 13 | 703 | (0.0 | 2.6−) |
| 2001 11 18 | 704 | 0.1+ | 0.8− | 2001 12 10 | 691 | 0.0 | 0.0 | | | | |
| 2001 11 18 | 704 | 0.1+ | 0.9− | 2001 12 10 | 691 | 0.0 | 0.0 | | | | |

**2001 UN$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.54016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18317306 | $\omega$ | 195.65172 | | +0.69772581 | −0.70412656 | |
| $a$ | 3.0706358 | $\Omega$ | 210.47851 | | +0.68199144 | +0.70922784 | |
| $e$ | 0.1065831 | $i$ | 15.06705 | | +0.21924042 | +0.03466496 | |
| $P$ | 5.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 691 | 0.4− | 0.2+ | 2001 10 23 | 704 | 0.7+ | 0.1+ | 2001 11 20 | 704 | 0.4− | 0.2− |
| 2001 10 15 | 691 | 0.4− | 0.1+ | 2001 10 23 | 704 | 0.4+ | 0.3+ | 2006 09 20 | G92 | 0.1+ | 0.2+ |
| 2001 10 15 | 691 | 0.3− | 0.1+ | 2001 10 24 | 704 | 0.6− | 0.6+ | 2006 09 20 | G92 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.3+ | 0.6− | 2001 10 24 | 704 | 0.2− | 0.4+ | 2006 09 20 | G92 | 0.2− | 0.7− |
| 2001 10 21 | 704 | 0.9+ | 0.5− | 2001 10 24 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.2+ |
| 2001 10 21 | 704 | 0.8+ | 0.9− | 2001 10 24 | 704 | 0.4+ | 0.6− | 2006 09 27 | 703 | 1.5− | 1.1+ |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2001 10 24 | 704 | 0.6+ | 0.1− | 2006 09 27 | 703 | 0.9+ | 0.4− |
| 2001 10 23 | 704 | 0.4+ | 0.5+ | 2001 11 20 | 704 | 1.2+ | 0.7+ | 2006 09 27 | 703 | 0.8+ | 0.0 |
| 2001 10 23 | 704 | 0.3− | 1.1− | 2001 11 20 | 704 | 0.1+ | 0.0 | | | | |

**2001 UB$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.13169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17703955 | $\omega$ | 88.85326 | | +0.57966795 | +0.76137143 | |
| $a$ | 3.1411537 | $\Omega$ | 221.44270 | | −0.80454241 | +0.59127156 | |
| $e$ | 0.0718164 | $i$ | 26.01899 | | +0.12921521 | +0.26591631 | |
| $P$ | 5.57 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.0 | 1.9− | 2001 10 23 | 704 | 0.2+ | 0.3+ | 2001 11 20 | 691 | 0.3− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.9− | 2001 10 23 | 704 | 0.5+ | 0.9+ | 2001 11 20 | 691 | 0.5− | 0.3− |
| 2001 09 20 | 704 | 0.3+ | 1.5− | 2001 10 23 | 704 | 0.9+ | 0.0 | 2001 11 21 | 704 | 0.5+ | 0.3+ |
| 2001 09 20 | 704 | 0.2− | 0.5− | 2001 10 23 | 704 | 0.6+ | 0.4− | 2001 11 21 | 704 | 0.3+ | 0.4+ |
| 2001 10 15 | 291 | 1.1+ | 0.7+ | 2001 10 24 | 704 | 0.2+ | 1.1+ | 2001 11 21 | 704 | 0.1− | 0.3− |
| 2001 10 15 | 291 | 0.9+ | 0.4+ | 2001 10 24 | 704 | 0.4− | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.2− |
| 2001 10 15 | 291 | 0.7+ | 0.5+ | 2001 10 24 | 704 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.4+ | 0.4+ |
| 2001 10 18 | 691 | 0.6− | 0.1− | 2001 10 24 | 704 | 0.6+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.0 |
| 2001 10 18 | 691 | 1.0− | 0.4− | 2001 11 20 | 704 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.9+ | 0.2− |
| 2001 10 18 | 691 | 0.8− | 0.1+ | 2001 11 20 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.2− | 0.8− |
| 2001 10 21 | 704 | 0.6+ | 0.5+ | 2001 11 20 | 704 | 0.0 | 0.1− | 2006 09 28 | 703 | 1.1− | 0.0 |
| 2001 10 21 | 704 | 0.5+ | 0.0 | 2001 11 20 | 704 | 0.6+ | 0.5− | 2006 09 28 | 703 | 1.1+ | 0.1+ |
| 2001 10 21 | 704 | 1.2− | 0.1− | 2001 11 20 | 691 | 0.5− | 0.1− | 2006 09 28 | 703 | 0.5+ | 0.8+ |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.3− | 0.6− | 2006 09 28 | 703 | 1.3− | 0.4− |

**2001 UD$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.20685 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19204139 | $\omega$ | 273.84002 | | +0.70892445 | +0.68667750 | |
| $a$ | 2.9753598 | $\Omega$ | 42.89409 | | −0.51597079 | +0.66051774 | |
| $e$ | 0.1243712 | $i$ | 13.67682 | | −0.48083290 | +0.30362859 | |
| $P$ | 5.13 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4+ | 0.4− | 2001 11 17 | 704 | 0.4+ | 1.2+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.4+ | 0.5− | 2001 11 17 | 704 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.3− |
| 2001 09 19 | 704 | 0.4− | 0.6− | 2001 11 17 | 704 | (0.9+ | 1.7−) | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2001 10 11 | 691 | 0.2+ | 0.1+ | 2001 11 18 | 704 | 0.8+ | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2001 10 11 | 691 | 0.4+ | 0.2+ | 2001 11 18 | 704 | 1.1+ | 1.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 10 11 | 691 | 0.2− | 0.1+ | 2001 11 18 | 704 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2001 10 18 | 644 | 0.6+ | 0.5− | 2001 11 18 | 704 | 0.8+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2001 10 18 | 644 | 0.5+ | 0.4− | 2001 11 19 | 704 | 1.0+ | 0.6+ | 2006 10 20 | 644 | 0.6− | 0.2− |
| 2001 10 18 | 644 | 0.5+ | 0.3− | 2001 11 19 | 704 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 10 22 | 704 | 0.3− | 0.5+ | 2001 11 19 | 704 | 1.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.6− |
| 2001 10 22 | 704 | 0.1− | 0.4+ | 2001 11 19 | 704 | 0.8+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2001 10 22 | 704 | 0.3+ | 0.4− | 2001 11 19 | 704 | 1.0+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 0.4− | 0.4− | 2001 11 21 | 704 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 0.4− | 0.3+ | 2001 11 21 | 704 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 1.3− | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | (1.6− | 0.1+) | 2006 09 30 | 703 | 0.8− | 0.6− | 2006 10 21 | 644 | 0.7+ | 0.3+ |
| 2001 10 24 | 704 | 0.9− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.8+ |
| 2001 10 24 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.3− | 0.6+ | 2006 09 30 | 703 | (1.4− | 1.9−) | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 1.0− | 0.3− | 2006 09 30 | 703 | 0.6+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2001 11 12 | 691 | 0.4− | 0.2− | 2006 09 30 | 703 | (1.6+ | 0.3+) | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2001 11 12 | 691 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.7+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2001 11 12 | 691 | 0.6− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.6+ | 2006 11 20 | 691 | 0.0 | 0.1+ |

**2001 UR$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.88621 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18227406 | $\omega$ | 196.81234 | | +0.65259325 | −0.75605564 | |
| $a$ | 3.0807241 | $\Omega$ | 212.50126 | | +0.70545508 | +0.63035349 | |
| $e$ | 0.1425417 | $i$ | 5.34142 | | +0.27650530 | +0.17616566 | |
| $P$ | 5.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.9− | 0.7+ | 2001 11 09 | 704 | 0.6+ | 0.8+ | 2006 09 19 | 703 | 0.1− | 1.0− |
| 2001 10 22 | 704 | 0.0 | 0.6− | 2001 11 09 | 704 | 0.3− | 0.4− | 2006 09 19 | 703 | 0.0 | 0.9− |
| 2001 10 22 | 704 | 0.1− | 0.4+ | 2001 11 09 | 704 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.1+ |
| 2001 10 22 | 704 | 1.2+ | 0.7+ | 2001 11 17 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 1.1+ | 0.2− |
| 2001 10 23 | 704 | 0.2+ | 1.0− | 2001 11 17 | 704 | 0.2− | 0.1+ | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 2001 10 23 | 704 | 0.6+ | 1.4− | 2001 11 17 | 704 | 0.8+ | 0.2− | 2006 09 20 | 691 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.5+ | 0.6− | 2001 11 18 | 691 | 0.4+ | 0.1+ | 2006 09 20 | 691 | 0.2+ | 0.3+ |
| 2001 10 23 | 704 | 0.6+ | 0.9− | 2001 11 18 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.9+ |
| 2001 10 24 | 704 | 0.8− | 0.8− | 2001 11 18 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2001 10 24 | 704 | 0.6− | 0.4− | 2001 11 20 | 704 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.1+ | 0.0 | 2001 11 20 | 704 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2001 10 24 | 704 | 0.4− | 0.2− | 2001 11 20 | 704 | 0.7− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2001 10 24 | 704 | 0.3− | 0.4− | 2001 11 20 | 704 | 0.3− | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2001 10 25 | 644 | 0.0 | 1.0+ | 2001 11 20 | 704 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2001 10 25 | 644 | 0.2− | 0.8+ | 2001 11 21 | 704 | 0.3− | 0.5+ | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2001 10 25 | 644 | 0.0 | 0.8+ | 2001 11 21 | 704 | 1.0− | 0.5− | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.5− | 0.2+ | 2001 11 21 | 704 | 0.4+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 11 09 | 704 | (0.9+ | 1.8+) | 2001 11 21 | 704 | 0.5− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.7− |

**2001 UG$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.67726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18951381 | $\omega$ | 241.71591 | | +0.09478502 | −0.99337041 | |
| $a$ | 3.0017566 | $\Omega$ | 203.12005 | | +0.96151882 | +0.10827975 | |
| $e$ | 0.0773199 | $i$ | 9.53536 | | +0.25787082 | −0.03860997 | |
| $P$ | 5.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 691 | 0.1− | 0.4− | 2001 11 10 | 704 | 1.2− | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.6− |
| 2001 10 11 | 691 | 0.5− | 0.4− | 2001 11 10 | 704 | 1.3+ | 0.7+ | 2006 10 21 | 703 | (1.5− | 0.3−) |
| 2001 10 11 | 691 | 0.2− | 0.2− | 2001 11 11 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 10 22 | 704 | 0.5+ | 0.9+ | 2001 11 11 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 0.7− | 1.2+ | 2001 11 11 | 704 | 0.8− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 10 22 | 704 | 0.1+ | 0.7+ | 2001 11 11 | 704 | 0.7− | 0.8− | 2006 10 28 | 691 | 0.5− | 0.1+ |
| 2001 10 23 | 704 | 0.4+ | 0.9+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.6− |
| 2001 10 23 | 704 | 0.1+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | 0.8+ | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2001 10 23 | 704 | 1.1− | 1.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.4+ | 0.3− |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.3+ | 0.5− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.8+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.1− |
| 2001 10 24 | 704 | 0.4+ | 0.3+ | 2006 10 20 | H07 | (1.7− | 0.8+) | 2006 11 11 | 703 | 0.1− | 0.8+ |
| 2001 10 25 | 644 | 0.0 | 0.1+ | 2006 10 20 | H07 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2001 10 25 | 644 | 0.7+ | 0.2− | 2006 10 20 | H07 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.9− | 1.1− |
| 2001 10 25 | 644 | 0.4+ | 0.3+ | 2006 10 20 | H07 | 0.9− | 0.3− | 2006 11 19 | 691 | 0.4+ | 0.5+ |
| 2001 11 10 | 704 | 0.5+ | 0.8− | 2006 10 20 | 703 | (5.0− | 1.8+) | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 11 10 | 704 | 0.0 | 0.7− | 2006 10 20 | 703 | (0.4− | 4.1+) | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.1+ | 0.6− | 2006 10 20 | 703 | (2.5− | 0.8−) | 2006 11 20 | G96 | 0.4+ | 0.3− |
| 2001 11 10 | 704 | 0.3− | 1.3+ | 2006 10 20 | 703 | 1.0− | 0.6+ | 2006 11 20 | G96 | 0.1+ | 0.8− |
| 2001 11 10 | 704 | 0.2+ | 1.0− | 2006 10 21 | 703 | 0.3− | 1.2− | 2006 11 20 | G96 | 0.4+ | 0.5− |
| 2001 11 10 | 704 | 0.7+ | 0.5− | 2006 10 21 | 703 | (0.9− | 1.5−) | 2006 11 20 | G96 | 0.8+ | 0.1− |

**2001 UM$_{116}$ = 2001 VE$_{82}$ = 2006 SK$_{306}$**

Id. Minor Planet Center (d, *MPO* 21170; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.83938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19360725 | $\omega$ | 280.72025 | | +0.96390869 | −0.26017363 | |
| $a$ | 2.9592953 | $\Omega$ | 94.37778 | | +0.26100535 | +0.88164181 | |
| $e$ | 0.1512977 | $i$ | 3.24713 | | +0.05249991 | +0.39372249 | |
| $P$ | 5.09 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 691 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.8+ | 0.1+ |
| 2001 10 17 | 691 | 0.0 | 0.1+ | 2001 11 20 | 704 | (1.0+ | 1.5+) | 2006 10 16 | 703 | 0.4− | 0.9− |
| 2001 10 17 | 691 | 0.3− | 0.2− | 2001 11 20 | 704 | 1.0+ | 1.3+ | 2006 10 16 | 703 | 0.7+ | 0.7+ |
| 2001 10 18 | 644 | 0.2+ | 0.3− | 2001 11 21 | 704 | 0.4+ | 0.8− | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.3+ | 0.7− | 2001 11 21 | 704 | 0.0 | 1.2− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2001 10 18 | 644 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.2− | 1.3− | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 0.2− | 0.2− | 2001 11 21 | 704 | 0.3+ | 1.2− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 10 22 | 704 | 0.6− | 0.9− | 2001 11 21 | 704 | 0.3− | 1.1− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 10 22 | 704 | 0.3− | 0.8− | 2001 12 10 | 691 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 10 22 | 704 | (2.1− | 0.1−) | 2001 12 10 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 10 22 | 704 | 0.1− | 0.2+ | 2001 12 10 | 691 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2001 10 23 | 704 | 0.6− | 0.5− | 2001 12 11 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2001 12 11 | 704 | 0.9+ | 0.9− | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.7− | 0.7− | 2001 12 11 | 704 | 1.2+ | 1.0+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 1.0− | 0.4− | 2001 12 11 | 704 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.7− | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2004 04 14 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.3+ | 2004 04 14 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.7− | 0.2− | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2001 10 24 | 704 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 11 01 | G96 | 0.3− | 0.1− |
| 2001 10 24 | 704 | 0.7− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.8− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 11 09 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | 1.1− | 0.9− | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 1.4− | 0.8− | 2006 09 30 | 703 | 0.9− | 0.9− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 1.1− | 0.7+ | 2006 09 30 | 703 | 0.8+ | 1.2− | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 11 12 | 704 | 1.0− | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 11 17 | 704 | 0.2+ | 0.6− | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 11 17 | 704 | 0.6+ | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 11 17 | 704 | 0.4+ | 0.3− | 2006 10 16 | 703 | (1.8+ | 0.2+) | 2006 11 17 | 703 | 0.3+ | 1.1− |
| 2001 11 19 | 608 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2001 11 19 | 608 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.5+ | 1.3+ | 2006 11 17 | 703 | (0.2+ | 1.9−) |
| 2001 11 19 | 608 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.5+ | 0.6+ |
| 2001 11 20 | 704 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.7+ | | | | |

**2001 UC$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.89731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17559107 | $\omega$ | 197.76164 | | +0.58437551 | −0.79363054 | |
| $a$ | 3.1584046 | $\Omega$ | 217.00112 | | +0.77447900 | +0.60773324 | |
| $e$ | 0.1360854 | $i$ | 16.33635 | | +0.24225511 | −0.02847567 | |
| $P$ | 5.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 333 | 1.4+ | 0.2+ | 2001 10 25 | 644 | 0.5+ | 0.5− | 2006 08 29 | 699 | 1.0− | 0.0 |
| 2001 09 18 | 333 | 1.1− | 0.3− | 2001 10 25 | 644 | 0.7+ | 0.5− | 2006 08 29 | 699 | 0.7+ | 0.7− |
| 2001 09 18 | 333 | 0.1+ | 0.1+ | 2001 11 17 | 704 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.2− | 0.1+ |
| 2001 10 18 | 644 | 0.3− | 0.3+ | 2001 11 17 | 704 | 0.2− | 0.5+ | 2006 09 06 | 644 | 0.2− | 0.3+ |
| 2001 10 18 | 644 | 0.4− | 0.3+ | 2001 11 17 | 704 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.0 | 0.0 |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2001 11 19 | 699 | 0.6− | 0.2+ | 2006 09 21 | 699 | 1.0+ | 0.6− |
| 2001 10 22 | 704 | 0.0 | 0.4+ | 2001 11 19 | 699 | 0.6− | 0.0 | 2006 09 21 | 699 | 0.7− | 0.3+ |
| 2001 10 22 | 704 | 0.3− | 0.5+ | 2001 11 19 | 699 | 0.3+ | 0.6− | 2006 09 21 | 699 | (2.5− | 1.0−) |
| 2001 10 22 | 704 | 0.3− | 0.2+ | 2001 11 19 | 699 | (1.8− | 0.0 ) | 2006 09 21 | 699 | 0.1+ | 0.4+ |
| 2001 10 22 | 704 | 0.4− | 0.1− | 2001 11 19 | 608 | 1.5+ | 0.1− | 2006 09 27 | 703 | 0.1− | 0.3+ |
| 2001 10 22 | 704 | 0.5− | 0.2− | 2001 11 19 | 608 | 1.4+ | 0.2− | 2006 09 27 | 703 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.5− | 0.0 | 2001 11 19 | 608 | 1.3+ | 0.3+ | 2006 09 27 | 703 | 0.7− | 0.1− |
| 2001 10 23 | 704 | 0.5− | 0.2− | 2001 11 24 | 704 | 1.1+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.2− |
| 2001 10 23 | 704 | 0.0 | 0.4− | 2001 11 24 | 704 | 1.3+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.6− | 0.1− | 2001 11 24 | 704 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.5− | 0.1− | 2001 11 24 | 704 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.0 | 2001 12 11 | 704 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.5+ |
| 2001 10 24 | 704 | 0.5− | 0.4− | 2001 12 11 | 704 | 0.5+ | 0.6− | 2006 10 17 | 703 | 0.7+ | 0.4+ |
| 2001 10 24 | 704 | 1.0− | 0.3− | 2001 12 11 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 1.0+ | 0.9− |
| 2001 10 24 | 704 | 0.6− | 0.2+ | 2001 12 11 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.3− |
| 2001 10 24 | 704 | 0.7− | 0.4+ | 2006 08 29 | 699 | 0.9+ | 0.1+ | | | | |
| 2001 10 25 | 644 | 0.4+ | 0.8− | 2006 08 29 | 699 | 0.7− | 0.1− | | | | |

**2001 UP$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.63664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18193797 | $\omega$ | 255.13708 | | −0.42497663 | −0.85512513 | |
| $a$ | 3.0845169 | $\Omega$ | 224.15113 | | +0.90338353 | −0.42145155 | |
| $e$ | 0.2057982 | $i$ | 25.23024 | | −0.05738515 | −0.30189337 | |
| $P$ | 5.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.0 | 0.8+ | 2001 10 26 | 704 | 0.4+ | 0.5+ | 2001 12 18 | 704 | 0.9− | 0.4− |
| 2001 10 13 | 704 | 0.7+ | 0.1+ | 2001 10 26 | 704 | 1.2− | 0.0 | 2001 12 18 | 704 | 0.8− | 0.3+ |
| 2001 10 13 | 704 | 0.4+ | 0.6− | 2001 10 26 | 704 | 0.6+ | 1.5− | 2001 12 18 | 704 | 0.5− | 0.3− |
| 2001 10 18 | 333 | 0.1+ | 0.3+ | 2001 10 27 | 699 | 0.7− | 0.4− | 2001 12 19 | 704 | 0.6− | 0.4+ |
| 2001 10 18 | 333 | 0.9+ | 0.7− | 2001 10 27 | 699 | 0.7− | 0.1− | 2001 12 19 | 704 | 0.3− | 1.2+ |
| 2001 10 18 | 333 | 0.2− | 0.4+ | 2001 10 27 | 699 | 0.2− | 0.7+ | 2001 12 19 | 704 | 0.4+ | 0.1+ |
| 2001 10 18 | 333 | 0.0 | 0.4− | 2001 10 27 | 699 | 0.4− | 0.1+ | 2001 12 19 | 704 | 0.1+ | 0.8− |
| 2001 10 18 | 333 | 0.5− | 0.7+ | 2001 11 15 | 644 | 0.8+ | 0.3+ | 2001 12 19 | 704 | 1.0− | 0.0 |
| 2001 10 18 | 333 | 0.8+ | 0.6− | 2001 11 15 | 644 | 1.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.5+ | 1.4+ | 2001 11 15 | 644 | 1.3+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.2+ | 0.7+ | 2001 11 17 | 704 | (2.1+ | 0.1−) | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2001 10 18 | 644 | 0.7+ | 0.9+ | 2001 11 17 | 704 | (2.4+ | 0.1−) | 2006 10 19 | 703 | 0.2− | 0.6+ | | |
| 2001 10 22 | 704 | 0.1+ | 0.8+ | 2001 11 17 | 704 | (1.6+ | 0.8−) | 2006 10 19 | 703 | 0.0 | 0.4− | | |
| 2001 10 22 | 704 | 0.3− | 0.3+ | 2001 11 19 | 608 | 0.1− | 0.9− | 2006 10 19 | 703 | 0.2+ | 0.3+ | | |
| 2001 10 22 | 704 | (2.7+ | 0.6+) | 2001 11 19 | 608 | 0.4+ | 1.1− | 2006 10 19 | 703 | 0.6− | 0.5− | | |
| 2001 10 22 | 704 | 0.3+ | 1.4− | 2001 11 19 | 608 | 0.3+ | 0.8− | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2001 10 23 | 704 | 0.9− | 0.2+ | 2001 11 20 | 704 | 0.4− | 1.4+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2001 10 23 | 704 | (1.6− | 0.2+) | 2001 11 20 | 704 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.3− | | |
| 2001 10 23 | 704 | 1.1− | 0.3− | 2001 11 20 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2001 10 23 | 704 | 0.7− | 0.9− | 2001 11 20 | 704 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2001 10 24 | 704 | 0.2+ | 0.1− | 2001 11 20 | 704 | 0.6− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2001 10 24 | 704 | 0.1+ | 0.3− | 2001 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.2− | | |
| 2001 10 24 | 704 | 0.6− | 0.3+ | 2001 12 11 | 704 | 1.1+ | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.1− | | |
| 2001 10 24 | 704 | 0.4− | 0.3− | 2001 12 11 | 704 | 1.2+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2001 10 24 | 704 | 0.8− | 0.4− | 2001 12 11 | 704 | 0.5+ | 0.2− | | | | | | |
| 2001 10 26 | 704 | (1.6+ | 0.4+) | 2001 12 11 | 704 | 0.9+ | 0.3− | | | | | | |

**2001 UQ$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.95552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26637179 | $\omega$ | 193.02909 | | +0.99413382 | +0.10724938 | |
| $a$ | 2.3922720 | $\Omega$ | 160.79744 | | −0.09502942 | +0.92787321 | |
| $e$ | 0.1908377 | $i$ | 2.43648 | | −0.05164639 | +0.35713986 | |
| $P$ | 3.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.3− | 0.2+ | 2001 10 24 | 704 | 0.2− | 0.6+ | 2001 12 09 | 699 | 1.3+ | 1.1+ | | |
| 1997 08 11 | 691 | 0.1− | 0.2+ | 2001 10 24 | 704 | 0.2− | 0.8+ | 2001 12 09 | 699 | 1.2+ | 0.9− | | |
| 1997 08 11 | 691 | 0.0 | 0.6+ | 2001 11 15 | 644 | 0.1+ | 0.6+ | 2001 12 09 | 699 | 0.2+ | 0.2+ | | |
| 2001 09 26 | 704 | 0.8− | 1.0+ | 2001 11 15 | 644 | 0.0 | 0.5+ | 2001 12 09 | 699 | 1.8+ | 0.8+ | | |
| 2001 09 26 | 704 | 0.4− | 0.2− | 2001 11 15 | 644 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.2− | 0.4+ | | |
| 2001 09 26 | 704 | 0.8+ | 0.6− | 2001 11 17 | 704 | 0.5− | 0.1+ | 2001 12 11 | 704 | 0.5− | 0.3+ | | |
| 2001 10 13 | 704 | 0.7+ | 0.3+ | 2001 11 17 | 704 | 0.3− | 0.3− | 2001 12 11 | 704 | 0.2− | 0.3− | | |
| 2001 10 13 | 704 | 0.5+ | 0.7+ | 2001 11 17 | 704 | 0.4− | 0.1+ | 2001 12 11 | 704 | 0.6− | 0.2− | | |
| 2001 10 13 | 704 | 0.1+ | 0.6+ | 2001 11 19 | 699 | 0.6+ | 0.3− | 2001 12 11 | 704 | 0.7− | 0.1+ | | |
| 2001 10 13 | 704 | 0.9+ | 1.3+ | 2001 11 19 | 699 | 0.2− | 0.3+ | 2001 12 14 | 704 | 0.1− | 0.2− | | |
| 2001 10 17 | 704 | 0.3− | 0.2+ | 2001 11 19 | 699 | 0.2+ | 0.1+ | 2001 12 14 | 704 | 0.3− | 0.0 | | |
| 2001 10 17 | 704 | 0.5− | 0.3− | 2001 11 19 | 699 | 0.4+ | 0.3− | 2001 12 14 | 704 | 0.7− | 0.6− | | |
| 2001 10 17 | 704 | 1.3− | 0.2+ | 2001 11 20 | 704 | 0.1+ | 1.0− | 2001 12 14 | 704 | 0.4− | 0.1+ | | |
| 2001 10 17 | 704 | 1.6− | 0.4+ | 2001 11 20 | 704 | 0.3+ | 1.1− | 2001 12 14 | 704 | 0.6− | 0.4− | | |
| 2001 10 22 | 704 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.4+ | 1.2− | 2001 12 17 | 704 | 1.3+ | 0.0 | | |
| 2001 10 22 | 704 | 0.4− | 0.9+ | 2001 11 20 | 704 | 0.5+ | 1.4− | 2001 12 17 | 704 | 0.2+ | 0.8+ | | |
| 2001 10 22 | 704 | 0.3+ | 0.1+ | 2001 11 20 | 704 | 0.4+ | 1.1− | 2001 12 17 | 704 | 0.1+ | 1.4+ | | |
| 2001 10 22 | 704 | 0.2− | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.9− | 2001 12 17 | 704 | 0.0 | 0.2+ | | |
| 2001 10 23 | 704 | 0.1− | 0.1− | 2001 11 21 | 704 | 0.1− | 0.4+ | 2001 12 17 | 704 | 0.3+ | 0.3+ | | |
| 2001 10 23 | 704 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.9− | 2001 12 19 | 704 | 0.2+ | 0.6− | | |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2001 11 21 | 704 | 0.7+ | 1.9+ | 2001 12 19 | 704 | 0.4− | 0.1− | | |
| 2001 10 23 | 704 | 0.3− | 0.4+ | 2001 11 21 | 704 | 0.1+ | 1.1− | 2001 12 19 | 704 | 0.5− | 1.0− | | |
| 2001 10 23 | 704 | 0.0 | 0.8− | 2001 11 21 | 704 | 0.7+ | 0.4+ | 2001 12 19 | 704 | 1.0− | 0.2− | | |
| 2001 10 24 | 704 | 0.5− | 0.7+ | 2001 11 21 | 704 | 0.1− | 1.0− | 2003 04 05 | 291 | 0.3+ | 0.9+ | | |
| 2001 10 24 | 704 | 0.2− | 0.6+ | 2001 11 21 | 704 | 0.3− | 0.8+ | 2003 04 05 | 291 | 0.1+ | 0.8+ | | |
| 2001 10 24 | 704 | 0.1+ | 0.3+ | 2001 11 21 | 704 | 0.1− | 1.2− | 2003 04 05 | 291 | 0.4+ | 0.4+ | | |

**2001 US$_{118}$ = 2006 SO$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.80611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18053278 | $\omega$ | 162.15749 | | +0.99048664 | −0.11586122 | |
| $a$ | 3.1005019 | $\Omega$ | 204.85881 | | +0.09455605 | +0.96502849 | |
| $e$ | 0.1418280 | $i$ | 10.17259 | | +0.09997688 | +0.23515140 | |
| $P$ | 5.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 1.0− | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2+ | | |
| 2001 10 22 | 704 | 1.2+ | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.2+ | | |
| 2001 10 22 | 704 | 0.6+ | 0.4− | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1− | | |
| 2001 10 22 | 704 | 0.4− | 0.2− | 2006 09 17 | 703 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2001 10 23 | 704 | 0.4− | 0.4+ | 2006 09 17 | 703 | 0.5− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2001 10 23 | 704 | 0.6− | 0.1− | 2006 09 17 | 703 | 0.0 | 0.5− | 2006 10 21 | 691 | 0.0 | 0.1− | | |
| 2001 10 23 | 704 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.9− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 2001 10 23 | 704 | 0.4+ | 0.4− | 2006 09 25 | 704 | 0.8− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.0 | | |
| 2001 10 23 | 704 | 1.0− | 0.6+ | 2006 09 25 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2001 10 24 | 704 | 0.7− | 0.3+ | 2006 09 25 | 704 | 0.5+ | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.0 | | |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2001 10 24 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.6− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2001 10 24 | 704 | 0.5− | 0.4+ | 2006 09 29 | 699 | 0.6− | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.3+ | | |
| 2001 10 24 | 704 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 | | |
| 2001 11 20 | 608 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.0 | 1.0+ | 2006 10 23 | 691 | 0.1− | 0.3− | | |
| 2001 11 20 | 608 | 0.5+ | 0.7− | 2006 09 29 | 699 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2001 11 20 | 608 | 0.5+ | 0.0 | 2006 10 01 | 703 | 0.1+ | 0.0 | 2006 10 24 | 644 | 0.2− | 0.0 | | |
| 2001 12 11 | 704 | 0.9+ | 0.5+ | 2006 10 01 | 703 | 0.5− | 0.6+ | 2006 10 24 | 644 | 0.0 | 0.3+ | | |
| 2001 12 11 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 703 | 0.6− | 0.6− | 2006 10 24 | 644 | 0.0 | 0.2+ | | |
| 2001 12 11 | 704 | 0.7− | 0.7+ | 2006 10 01 | 703 | 0.4+ | 1.0+ | 2006 10 27 | 691 | 0.6+ | 0.2+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.4− | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.3+ | | |
| 2004 04 20 | 691 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− | | |
| 2004 04 20 | 691 | 0.2+ | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.4− | 0.6− | | |
| 2006 08 30 | 704 | 0.7+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2006 08 30 | 704 | (0.9+ | 2.0+) | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.0 | | |
| 2006 08 30 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.0 | | | | | | |
| 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | | | | | | |

**2001 UL$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.00219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17792551 | $\omega$ | 321.50093 | | +0.92325863 | −0.34529899 | |
| $a$ | 3.1307176 | $\Omega$ | 59.49525 | | +0.38273193 | +0.78868462 | |
| $e$ | 0.0856275 | $i$ | 11.27192 | | +0.03331333 | +0.50867000 | |
| $P$ | 5.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.6+ | 0.3+ | 2001 11 18 | 704 | 0.5− | 0.6+ | 2001 12 17 | 691 | 0.4+ | 0.1+ | | |
| 2001 10 22 | 704 | 0.9+ | 0.3− | 2001 11 18 | 704 | 0.2− | 0.2− | 2001 12 17 | 704 | 0.7− | 0.7+ | | |
| 2001 10 22 | 704 | 0.5+ | 0.2− | 2001 11 18 | 704 | 0.7− | 1.1− | 2001 12 17 | 691 | 0.5+ | 0.4− | | |
| 2001 10 23 | 704 | 0.3− | 1.0+ | 2001 11 19 | 608 | 0.3− | 0.2+ | 2001 12 17 | 704 | 1.2− | 0.2− | | |
| 2001 10 23 | 704 | 0.5+ | 0.5+ | 2001 11 19 | 608 | 0.5− | 0.3+ | 2001 12 17 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 23 | 704 | 0.0 | 0.4+ | 2001 11 19 | 608 | 0.6− | 0.2+ | 2001 12 17 | 691 | 0.6+ | 0.3− | | |
| 2001 10 23 | 704 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.3+ | 0.1+ | 2002 02 13 | 291 | 0.1+ | 0.1+ | | |
| 2001 10 24 | 704 | 0.4+ | 0.7+ | 2001 11 20 | 704 | 0.2+ | 0.1− | 2002 02 13 | 291 | 0.6− | 0.5+ | | |
| 2001 10 24 | 704 | 0.5+ | 0.1+ | 2001 11 20 | 704 | 0.1+ | 0.1− | 2002 02 13 | 291 | 0.3− | 0.1+ | | |
| 2001 10 24 | 704 | 0.0 | 0.7+ | 2001 11 20 | 704 | 0.1− | 0.2− | 2003 02 01 | 645 | 0.0 | 0.0 | | |
| 2001 10 24 | 704 | 0.7+ | 0.9+ | 2001 11 20 | 704 | 0.2+ | 0.6− | 2003 02 01 | 645 | 0.0 | 0.0 | | |
| 2001 10 24 | 704 | 0.2+ | 0.5+ | 2001 11 21 | 704 | 0.1− | 0.3− | 2006 09 18 | 703 | 0.5+ | 0.6− | | |
| 2001 11 09 | 704 | 0.3− | 0.0 | 2001 11 21 | 704 | 0.6− | 0.4− | 2006 09 18 | 703 | 0.2− | 0.8− | | |
| 2001 11 09 | 704 | 1.1− | 0.9− | 2001 11 21 | 704 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.5− | 0.2− | | |
| 2001 11 09 | 704 | 0.1− | 1.1+ | 2001 12 11 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.1− | 1.0− | | |
| 2001 11 09 | 704 | 0.5− | 0.4− | 2001 12 11 | 704 | 0.5+ | 0.6− | 2006 09 20 | 703 | 1.2+ | 0.3+ | | |
| 2001 11 09 | 704 | 0.4− | 0.5− | 2001 12 11 | 704 | 0.1− | 0.3+ | 2006 09 20 | 703 | 0.5+ | 1.2+ | | |
| 2001 11 17 | 704 | 0.3+ | 0.5+ | 2001 12 14 | 704 | 0.1− | 0.2− | 2006 09 20 | 703 | 1.2+ | 0.6− | | |
| 2001 11 17 | 704 | 0.4+ | 0.1+ | 2001 12 14 | 704 | 0.4− | 0.8− | 2006 09 20 | 703 | 0.0 | 0.1+ | | |
| 2001 11 17 | 704 | 0.0 | 0.2− | 2001 12 14 | 704 | 0.4+ | 0.3− | 2006 09 26 | 703 | 0.4− | 0.2− | | |
| 2001 11 17 | 704 | 0.5+ | 0.1− | 2001 12 14 | 704 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.8− | 0.9+ | | |
| 2001 11 18 | 704 | 1.1− | 0.1− | 2001 12 14 | 704 | 0.3+ | 0.6− | 2006 09 26 | 703 | 0.7− | 0.1− | | |
| 2001 11 18 | 704 | 0.5− | 0.4+ | 2001 12 17 | 704 | 0.6− | 0.1+ | 2006 09 26 | 703 | (1.6− | 0.1−) | | |

**2001 UK$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.18410 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38220324 | $\omega$ | 132.99281 | | +0.96639780 | −0.00368238 | |
| $a$ | 1.8804991 | $\Omega$ | 228.98173 | | −0.04115838 | +0.98477999 | |
| $e$ | 0.1252832 | $i$ | 19.91682 | | +0.25373466 | +0.17376655 | |
| $P$ | 2.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.8− | 0.0 | 2001 12 07 | 704 | 0.7− | 0.1− | 2006 10 27 | 703 | 1.3+ | 0.3− |
| 2001 10 13 | 704 | 1.2− | 0.4− | 2001 12 07 | 704 | 0.5− | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 2001 10 13 | 704 | 0.8− | 0.3+ | 2001 12 07 | 704 | 0.1+ | 0.6− | 2006 10 27 | 703 | 0.4+ | 0.6− |
| 2001 10 22 | 704 | 0.5+ | 0.3+ | 2003 07 07 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2001 10 22 | 704 | 0.2+ | 0.2+ | 2003 07 07 | 691 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.3+ | 0.0 |
| 2001 10 22 | 704 | 0.8+ | 0.0 | 2003 07 07 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.9+ | 0.1− |
| 2001 10 22 | 704 | 1.3+ | 0.5+ | 2006 09 24 | 699 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.1− |
| 2001 10 23 | 704 | (0.1+ | 2.8+) | 2006 09 24 | 699 | 0.2− | 0.6+ | 2006 11 18 | 704 | 0.1− | 1.3+ |
| 2001 10 23 | 704 | (0.1+ | 1.6+) | 2006 09 24 | 699 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2001 10 23 | 704 | (0.1+ | 1.6+) | 2006 09 24 | 699 | 0.0 | 0.2+ | 2006 11 18 | 704 | (1.2− | 2.3+) |
| 2001 10 23 | 704 | (0.1− | 2.3+) | 2006 09 25 | 703 | 0.6− | 0.9− | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2001 10 24 | 704 | 0.4+ | 0.8− | 2006 09 25 | 703 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.6− | 0.1+ |
| 2001 10 24 | 704 | 0.8+ | 1.0− | 2006 09 25 | 703 | 0.7+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2001 10 24 | 704 | 1.2+ | 0.6− | 2006 09 25 | 703 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2001 10 24 | 704 | 0.9+ | 0.2− | 2006 10 02 | 704 | 0.7− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2001 11 09 | 704 | 0.1− | 0.6+ | 2006 10 02 | 704 | 0.1− | 1.1+ | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2001 11 09 | 704 | 1.4+ | 0.2+ | 2006 10 02 | 703 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 1.3+ | 0.3+ | 2006 10 02 | 703 | 0.1− | 0.2− | 2006 11 22 | 683 | 0.5+ | 0.0 |
| 2001 11 17 | 704 | 0.7− | 0.2− | 2006 10 02 | 704 | 0.5− | 0.4− | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2001 11 17 | 704 | 0.4− | 0.3− | 2006 10 02 | 704 | 0.9− | 0.5+ | 2006 11 22 | 683 | 0.1+ | 0.8+ |
| 2001 11 17 | 704 | 0.4− | 0.0 | 2006 10 02 | 703 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2001 11 17 | 704 | 0.8− | 0.2− | 2006 10 02 | 704 | 0.6− | 0.2+ | 2006 11 22 | 683 | 1.1− | 1.3+ |
| 2001 11 18 | 704 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.2− | 1.3− | 2006 11 22 | 704 | 0.6− | 0.3+ |
| 2001 11 18 | 704 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2001 11 18 | 704 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.0 | 0.3− | 2006 11 22 | 704 | (1.7− | 0.4−) |
| 2001 11 18 | 704 | 0.7− | 0.9+ | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.3+ | 0.2+ |
| 2001 11 18 | 704 | 0.5− | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.9− | 0.4+ |
| 2001 11 18 | 704 | 0.7− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.1− | 2006 11 28 | 704 | 1.1− | 2.3− |
| 2001 11 18 | 704 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2− | 2006 11 28 | 704 | 1.1− | 1.8− |
| 2001 11 18 | 704 | 0.2− | 1.0− | 2006 10 24 | 644 | 0.2+ | 0.3− | 2006 11 28 | 704 | 1.2+ | 0.4− |
| 2001 12 07 | 704 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.3+ | 0.0 | | | | |
| 2001 12 07 | 704 | 0.2− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.3− | | | | |

**2001 UQ$_{124}$ = 2006 SX$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.16507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18746576 | $\omega$ | 274.45324 | | +0.94581394 | −0.24117034 | |
| $a$ | 3.0235796 | $\Omega$ | 99.61367 | | +0.30669102 | +0.88345107 | |
| $e$ | 0.1511545 | $i$ | 12.73959 | | −0.10666120 | +0.40168529 | |
| $P$ | 5.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.0 | 0.4+ | 2001 10 22 | 644 | 0.1+ | 0.5− | 2006 09 20 | 703 | 0.9− | 1.0− |
| 2001 10 11 | 704 | 0.1+ | 1.1− | 2001 10 28 | 644 | 0.1− | 0.0 | 2006 09 20 | 703 | 0.8+ | 1.4+ |
| 2001 10 11 | 704 | 0.2+ | 0.5+ | 2001 10 28 | 644 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2001 10 11 | 704 | 0.2− | 0.3+ | 2001 10 28 | 644 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2001 10 22 | 644 | 0.2+ | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.4− | 2006 09 26 | 703 | 0.1− | 0.4+ |
| 2001 10 22 | 644 | 0.2+ | 0.2− | 2006 09 20 | 703 | 0.7+ | 0.3− | 2006 09 26 | 703 | 0.2− | 0.5− |

**2001 US$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.61898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23121196 | $\omega$ | 247.21292 | | +0.94873409 | +0.20250477 | |
| $a$ | 2.6290319 | $\Omega$ | 100.41360 | | −0.11083838 | +0.93219893 | |
| $e$ | 0.2049591 | $i$ | 14.28517 | | −0.29600418 | +0.29999496 | |
| $P$ | 4.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 12 | 608 | 0.3− | 0.5+ | 2001 10 23 | 699 | 1.3− | 0.7+ | 2005 07 28 | 644 | 0.1+ | 0.7− |
| 2001 10 12 | 608 | 0.3− | 0.3+ | 2001 10 23 | 699 | 0.7− | 0.7+ | 2005 07 28 | 644 | 0.4+ | 0.7− |
| 2001 10 12 | 608 | 0.2− | 0.2+ | 2001 10 28 | 644 | 0.4+ | 0.0 | 2006 11 21 G96 | | 0.1+ | 0.5+ |
| 2001 10 22 | 644 | 1.3− | 1.2+ | 2001 10 28 | 644 | 0.1+ | 0.2− | 2006 11 21 G96 | | 0.1+ | 0.3+ |
| 2001 10 22 | 644 | 0.8− | 1.0+ | 2001 10 28 | 644 | 0.2+ | 0.4− | 2006 11 21 G96 | | 0.4− | 0.3+ |
| 2001 10 22 | 644 | 0.5− | 1.3+ | 2002 01 08 | 645 | 0.2+ | 0.1− | 2006 11 21 G96 | | 0.3+ | 0.0 |
| 2001 10 23 | 699 | (0.6− | 2.7−) | 2002 01 08 | 645 | 0.3+ | 0.2− | | | | |
| 2001 10 23 | 699 | 1.8− | 0.5− | 2005 07 28 | 644 | 0.2+ | 0.9− | | | | |

**2001 UK$_{126}$ = 2006 SG$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.45333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18277665 | $\omega$ | 287.08764 | | +0.26605589 | −0.95855130 | |
| $a$ | 3.0750741 | $\Omega$ | 146.93594 | | +0.94014791 | +0.23466806 | |
| $e$ | 0.2779558 | $i$ | 10.76990 | | +0.21292290 | +0.16158681 | |
| $P$ | 5.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.1+ | 0.1− | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | (2.0− | 0.5+) |
| 2001 10 23 | 644 | 0.1− | 0.2− | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.2− |
| 2001 10 23 | 644 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.7− | 1.4+ | 2006 09 27 | 703 | 0.3+ | 1.1+ |
| 2001 10 28 | 644 | 0.8+ | 1.1+ | 2006 09 14 | 703 | 0.1− | 0.6− | 2006 09 27 | 703 | (0.5− | 1.9−) |
| 2001 10 28 | 644 | 0.2+ | 1.2+ | 2006 09 14 | 703 | 0.4+ | 1.1− | 2006 09 27 | 703 | 0.3− | 0.9− |
| 2001 10 28 | 644 | 0.3+ | 1.2+ | 2006 09 14 | 703 | 0.1− | 1.3+ | 2006 09 27 | 703 | 1.1− | 0.4+ |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.8+ | 1.0− | | | | |
| 2001 11 11 | 645 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.7− | | | | |

**2001 UQ$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.65986 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23820106 | $\omega$ | 354.76378 | | +0.69672695 | −0.69672742 | |
| $a$ | 2.5773511 | $\Omega$ | 50.93256 | | +0.66586763 | +0.53963804 | |
| $e$ | 0.2429043 | $i$ | 12.70166 | | +0.26681801 | +0.47261155 | |
| $P$ | 4.14 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 1.0+ | 0.3+ | 2001 11 12 | 704 | 0.7+ | 0.1+ | 2001 11 21 | 704 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.5− | 0.8+ | 2001 11 12 | 704 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2001 11 12 | 704 | 0.4+ | 0.2+ | 2001 11 21 | 704 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.9− | 0.1+ | 2001 11 16 | 691 | 0.1− | 0.1+ | 2001 12 19 | 704 | 0.2+ | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 0.3− | 2001 11 16 | 691 | 0.3− | 0.2− | 2001 12 19 | 704 | 0.1+ | 0.5+ |
| 2001 10 24 | 704 | 0.2+ | 0.3− | 2001 11 16 | 691 | 0.3− | 0.1− | 2001 12 19 | 704 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 0.1+ | 2001 11 17 | 704 | 0.4− | 0.3+ | 2001 12 19 | 704 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.3+ | 0.0 | 2001 11 17 | 704 | 0.7+ | 0.0 | 2001 12 19 | 704 | 0.2+ | 0.4+ |
| 2001 10 24 | 704 | 0.3+ | 0.5− | 2001 11 17 | 704 | 0.1− | 0.5+ | 2005 10 03 | 703 | 0.1+ | 0.3+ |
| 2001 11 09 | 704 | 0.6+ | 0.5+ | 2001 11 20 | 704 | 0.1− | 0.1− | 2005 10 03 | 703 | 0.3+ | 0.2+ |
| 2001 11 09 | 704 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.1− | 0.1+ | 2005 10 03 | 703 | 0.0 | 0.6− |
| 2001 11 09 | 704 | 0.8− | 0.6− | 2001 11 20 | 704 | 0.0 | 0.6− | 2005 10 03 | 703 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 0.4− | 0.6− | 2001 11 20 | 704 | 0.3− | 0.7− | 2005 10 08 | 699 | 0.1+ | 0.7+ |
| 2001 11 09 | 704 | 0.9+ | 0.1+ | 2001 11 20 | 704 | 0.8− | 0.1− | 2005 10 08 | 699 | 0.3+ | 0.6− |
| 2001 11 12 | 704 | 0.7+ | 0.4+ | 2001 11 21 | 704 | 0.1+ | 0.0 | 2005 10 08 | 699 | 0.5+ | 1.1+ |
| 2001 11 12 | 704 | 0.4+ | 0.0 | 2001 11 21 | 704 | 0.1− | 0.0 | 2005 10 08 | 699 | 1.2− | 1.1− |

**2001 UD$_{128}$ = 2006 QN$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.98517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19187149 | $\omega$ | 340.89421 | | +0.82652045 | +0.56103250 | |
| $a$ | 2.9771159 | $\Omega$ | 344.71483 | | −0.49113639 | +0.67889960 | |
| $e$ | 0.2587680 | $i$ | 10.02620 | | −0.27504361 | +0.47364318 | |
| $P$ | 5.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 11 | 691 | 0.5+ | 0.3− | 2006 07 21 G96 | | 0.5− | 0.0 | 2006 09 18 | 704 | 0.5− | 0.4+ |
| 1999 03 11 | 691 | 0.0 | 0.1+ | 2006 07 21 G96 | | 0.3+ | 0.2− | 2006 09 18 | 704 | 0.1+ | 0.2+ |
| 1999 03 11 | 691 | 0.7+ | 0.5− | 2006 07 21 G96 | | 0.5− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 2001 08 22 | 704 | 0.5− | 0.5− | 2006 07 21 G96 | | 0.3− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.1+ |
| 2001 08 22 | 704 | 0.4+ | 0.6+ | 2006 07 21 | 703 | (0.5+ | 1.9+) | 2006 09 19 | 699 | 0.0 | 0.3+ |
| 2001 08 22 | 704 | 1.2− | 0.6+ | 2006 07 21 | 703 | 0.6− | 1.5+ | 2006 09 19 | 699 | 0.1+ | 0.3+ |
| 2001 08 22 | 704 | 0.1− | 0.2+ | 2006 07 21 | 703 | 0.4− | 0.3+ | 2006 09 25 | 704 | 0.1− | 0.5+ |
| 2001 10 13 | 644 | 0.5− | 0.5− | 2006 07 21 | 703 | 1.4− | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.2+ |
| 2001 10 13 | 644 | 0.2− | 0.2− | 2006 08 18 | 699 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.2− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.2− | 0.1+ | 2006 08 18 | 699 | 0.3− | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.1+ |
| 2001 10 18 | 704 | 0.2− | 0.8+ | 2006 08 18 | 699 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.0 |
| 2001 10 18 | 704 | 0.2+ | 0.8+ | 2006 08 18 | 699 | 0.2− | 0.2− | 2006 09 27 | 699 | 0.3− | 0.1− |
| 2001 10 18 | 704 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 0.8+ | 0.8+ | 2006 09 27 | 699 | 0.1− | 0.4+ |
| 2001 10 18 | 704 | 0.4− | 0.5+ | 2006 08 31 | 704 | (3.1+ | 0.1−) | 2006 09 27 | 699 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.1+ | 0.9+ | 2006 08 31 | 704 | (1.6+ | 1.2−) | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2006 08 31 | 704 | (2.1+ | 0.7−) | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.1+ | 0.8− | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.8− | 0.8− | 2006 09 17 | 703 | 0.6− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.3+ | 0.4− | 2006 09 17 | 703 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2001 10 24 | 704 | 0.4− | 0.6− | 2006 09 17 | 703 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2004 03 23 | 291 | 0.0 | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.9− |
| 2004 03 23 | 291 | 0.2− | 1.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.2− |
| 2004 03 23 | 291 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.9− | 0.0 |
| 2005 05 12 | 644 | 0.0 | 1.3+ | 2006 09 18 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.0 |
| 2005 05 12 | 644 | 0.3+ | 1.5+ | 2006 09 18 | 704 | 0.6+ | 0.1+ | | | | |
| 2005 05 12 | 644 | 0.1+ | 1.2+ | 2006 09 18 | 704 | 0.2+ | 0.5+ | | | | |

**2001 UD$_{130}$ = 2006 SL$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.44598 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18247076 | $\omega$ | 1.33295 | | +0.74548283 | | −0.65420156 |
| $a$ | 3.0785097 | $\Omega$ | 40.49176 | | +0.60969221 | | +0.59197093 |
| $e$ | 0.0579578 | $i$ | 11.33066 | | +0.26931535 | | +0.47073425 |
| $P$ | 5.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.5+ | 1.1+ | 2001 11 14 | 691 | 0.1− | 0.1− | 2006 09 26 | 703 | 1.3− | 0.9+ |
| 2001 10 20 | 704 | 0.1+ | 0.2+ | 2001 11 14 | 691 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.4− |
| 2001 10 20 | 704 | 0.2− | 0.4− | 2002 11 07 | 645 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 1.4+ | 1.5+ |
| 2001 10 23 | 704 | 0.6+ | 0.1+ | 2004 03 26 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.1+ | 1.0+ |
| 2001 10 23 | 704 | (0.9+ | 2.2+) | 2004 03 26 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 703 | (1.7+ | 0.1+) |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2004 03 26 | 691 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 1.2− | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2006 09 20 | 703 | 1.2− | 1.0− | 2006 09 26 | 703 | 0.7− | 0.6+ |
| 2001 10 24 | 704 | 0.2− | 1.1+ | 2006 09 20 | 703 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.6+ | 1.2+ |
| 2001 10 24 | 704 | 0.9+ | 0.5+ | 2006 09 20 | 703 | 1.3+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.6+ |
| 2001 10 24 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.8− | 1.2− | 2006 09 26 | 703 | 0.8+ | 0.5+ |
| 2001 11 14 | 691 | 0.2− | 0.1− | 2006 09 26 | 703 | 1.1− | 0.4− | | | | |

**2001 UG$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.54305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18258158 | $\omega$ | 322.22710 | | +0.91030117 | | −0.37532994 |
| $a$ | 3.0772639 | $\Omega$ | 60.68303 | | +0.41152171 | | +0.77496146 |
| $e$ | 0.2598664 | $i$ | 11.55025 | | +0.04473993 | | +0.50849009 |
| $P$ | 5.40 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 1.2+ | 0.3+ | 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 09 20 | 703 | 0.9− | 0.6− |
| 2001 10 20 | 704 | (1.7+ | 0.6+) | 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 09 20 | 703 | 0.3+ | 0.3− |
| 2001 10 20 | 704 | (1.8+ | 1.5+) | 2001 11 21 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2001 10 20 | 704 | (2.0+ | 1.5+) | 2001 11 21 | 704 | 0.1− | 1.1+ | 2006 09 26 | 703 | 0.4− | 0.4+ |
| 2001 10 24 | 704 | 0.6− | 0.5− | 2001 12 10 | 704 | 0.3− | 1.1− | 2006 09 26 | 703 | 0.5− | 0.2− |
| 2001 10 24 | 704 | 0.8− | 0.6− | 2001 12 10 | 704 | 0.2+ | 1.2− | 2006 09 26 | 703 | 0.1+ | 0.5+ |
| 2001 10 24 | 704 | 0.2− | 0.1+ | 2001 12 10 | 704 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.4+ | 0.0 |
| 2001 10 24 | 704 | 1.0− | 0.1+ | 2001 12 10 | 704 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2001 10 26 | 704 | 1.2− | 0.1− | 2001 12 10 | 704 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2001 10 26 | 704 | 0.3+ | 0.3− | 2001 12 14 | 644 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 10 26 | 704 | 0.5− | 0.2+ | 2001 12 14 | 644 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 10 26 | 704 | 0.6− | 1.0+ | 2001 12 14 | 644 | 0.1+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2001 10 26 | 704 | 0.5− | 0.2+ | 2001 12 15 | 704 | 0.2+ | 1.2+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 1.4+ | 0.4− | 2001 12 15 | 704 | 0.2+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 11 09 | 704 | 0.9+ | 1.3− | 2001 12 15 | 704 | (0.3+ | 1.5+) | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2001 11 09 | 704 | 0.8+ | 0.2− | 2001 12 15 | 704 | 0.4+ | 1.3+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 11 09 | 704 | 0.7+ | 0.9− | 2001 12 18 | 704 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 11 09 | 704 | 0.7+ | 0.6− | 2001 12 18 | 704 | 0.1− | 0.5− | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2001 11 12 | 704 | 0.5+ | 0.2+ | 2001 12 18 | 704 | 0.5− | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.8+ |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2001 12 18 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.7− |
| 2001 11 12 | 704 | 0.5+ | 0.5+ | 2001 12 18 | 704 | 0.1− | 0.5+ | 2006 11 19 | 703 | 0.8− | 1.4+ |
| 2001 11 12 | 704 | 0.6+ | 0.4+ | 2001 12 19 | 704 | 0.6− | 0.4− | 2006 11 19 | 703 | 0.8+ | 0.4+ |
| 2001 11 12 | 704 | 0.0 | 0.4+ | 2001 12 19 | 704 | 0.7− | 0.6− | 2006 11 23 | 703 | 0.6+ | 0.5− |
| 2001 11 19 | 704 | 0.4+ | 0.2− | 2001 12 19 | 704 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.6+ | 1.1− |
| 2001 11 19 | 704 | 0.3+ | 0.3− | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 11 23 | 703 | 0.7− | 0.7− |
| 2001 11 19 | 704 | 0.2+ | 0.0 | 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 11 23 | 703 | 1.3+ | 1.3− |
| 2001 11 19 | 704 | 0.1+ | 0.2− | 2006 09 20 | 703 | 0.2− | 0.0 | | | | |
| 2001 11 21 | 704 | 0.7− | 0.4+ | 2006 09 20 | 703 | 0.8− | 0.3− | | | | |

**2001 UY$_{133}$ = 2006 TQ$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.46547 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20029775 | $\omega$ | 248.58286 | | +0.12561272 | | +0.99193640 |
| $a$ | 2.8930237 | $\Omega$ | 28.64919 | | −0.89671265 | | +0.12078376 |
| $e$ | 0.0625976 | $i$ | 2.01303 | | −0.42441474 | | +0.03838583 |
| $P$ | 4.92 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 16 | 691 | 0.3− | 0.2− | 2005 07 07 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 1996 10 16 | 691 | 0.5+ | 0.3− | 2005 07 07 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2001 10 16 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2001 10 16 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2001 10 16 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2001 10 21 | 704 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.8+ | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 10 21 | 704 | 1.3− | 0.9− | 2006 10 04 | G96 | 0.6+ | 0.6− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.9+ | 0.2+ | 2006 10 04 | G96 | 0.5+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 1.0− | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2001 10 24 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.4− | 1.2+ | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2005 07 07 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2005 07 07 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2005 07 07 | 691 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | | | | |
| 2005 07 07 | 691 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.1− | | | | |

**2001 UG$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.58044 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18928536 | $\omega$ | 264.62217 | | +0.99301015 | | −0.09850281 |
| $a$ | 3.0041713 | $\Omega$ | 101.01916 | | +0.11604029 | | +0.91547203 |
| $e$ | 0.1075871 | $i$ | 3.79832 | | −0.02157526 | | +0.39013864 |
| $P$ | 5.21 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 333 | 0.9− | 0.1− | 2001 11 20 | 704 | 0.8− | 0.5+ | 2006 09 30 | 703 | (2.2− | 2.3+) |
| 2001 09 25 | 333 | 0.9+ | 0.4− | 2001 11 20 | 704 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.6+ |
| 2001 09 25 | 333 | 0.1− | 0.1− | 2001 12 11 | 704 | (0.4− | 2.5−) | 2006 09 30 | 703 | 0.1+ | 0.4+ |
| 2001 10 22 | 704 | 0.2− | 0.7+ | 2001 12 11 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | (1.0+ | 2.7+) |
| 2001 10 22 | 704 | 0.5− | 0.1+ | 2001 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2001 10 22 | 704 | 0.2+ | 0.1+ | 2001 12 14 | 704 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.7+ | 0.0 | 2001 12 14 | 704 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2001 10 24 | 704 | 0.5+ | 0.4− | 2001 12 14 | 704 | 0.4− | 1.2− | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.6+ | 0.8+ | 2001 12 14 | 704 | 0.7− | 0.7− | 2006 10 21 | 703 | 0.5+ | 0.5+ |
| 2001 10 24 | 704 | 0.8+ | 0.1− | 2006 09 14 | 703 | 1.4− | 0.4− | 2006 10 21 | 703 | (0.4+ | 1.6−) |
| 2001 11 10 | 704 | 0.7− | 0.1− | 2006 09 14 | 703 | (0.1+ | 1.7−) | 2006 10 21 | 703 | 1.4+ | 0.6− |
| 2001 11 10 | 704 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.6− | 0.3− | 2006 10 21 | 703 | 0.8− | 0.1+ |
| 2001 11 10 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | (1.2− | 2.5−) | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2001 11 10 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.1− | 0.9+ | 2006 10 22 | G96 | 0.3+ | 0.6− |
| 2001 11 20 | 704 | 0.0 | 0.6+ | 2006 09 18 | 699 | 0.0 | 1.2+ | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 1.0+ | 1.3− | | | | |

**2001 UO$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.69972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18216591 | $\omega$ | 359.08468 | | +0.50711926 | −0.84467021 | |
| $a$ | 3.0819432 | $\Omega$ | 60.42508 | | +0.79200236 | +0.37828583 | |
| $e$ | 0.1145439 | $i$ | 11.36301 | | +0.33994458 | +0.37872426 | |
| $P$ | 5.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 691 | 0.0 | 0.1− | 2001 11 19 | 699 | 0.7+ | 0.7+ | 2001 12 17 | 704 | 0.2+ | 0.9− |
| 2001 10 19 | 691 | 0.4− | 0.1− | 2001 11 19 | 699 | 0.9+ | 0.7+ | 2001 12 17 | 704 | 0.8+ | 0.3+ |
| 2001 10 19 | 691 | 0.4− | 0.2− | 2001 11 19 | 608 | 0.0 | 1.4− | 2002 01 09 | 291 | 0.0 | 0.1− |
| 2001 10 19 | 691 | 0.2− | 0.1+ | 2001 11 19 | 608 | 0.3− | 1.0− | 2002 01 09 | 291 | 0.5+ | 0.0 |
| 2001 10 22 | 704 | 0.7+ | 0.7− | 2001 11 19 | 608 | (0.1+ | 1.6−) | 2002 01 09 | 291 | 0.8+ | 0.6− |
| 2001 10 22 | 704 | 0.9− | 1.4− | 2001 11 20 | 704 | (0.1+ | 1.7+) | 2003 03 08 | 644 | 0.3+ | 0.8+ |
| 2001 10 22 | 704 | 0.4− | 0.1− | 2001 11 20 | 704 | 0.2+ | 1.3+ | 2003 03 08 | 644 | 0.0 | 0.3+ |
| 2001 10 22 | 704 | 0.4− | 0.1+ | 2001 11 20 | 704 | 0.3+ | 0.9+ | 2003 03 08 | 644 | 0.2+ | 0.5+ |
| 2001 10 24 | 704 | 0.4− | 1.1− | 2001 11 20 | 704 | 0.3− | 0.8+ | 2006 09 17 | 699 | 0.9+ | 0.4− |
| 2001 10 24 | 704 | 0.1+ | 0.6+ | 2001 11 20 | 704 | 0.2+ | 1.4+ | 2006 09 17 | 699 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.6+ | 0.1+ | 2001 11 21 | 704 | 0.5+ | 0.6− | 2006 09 17 | 699 | 0.1− | 0.7− |
| 2001 10 24 | 704 | 0.1+ | 0.4− | 2001 11 21 | 704 | 0.9+ | 0.9+ | 2006 09 17 | 699 | 0.0 | 0.9+ |
| 2001 10 24 | 704 | 1.4+ | 0.7+ | 2001 11 21 | 704 | 0.1− | 0.9+ | 2006 09 19 | 703 | 0.5− | 0.4− |
| 2001 11 18 | 704 | 0.3− | 0.3− | 2001 11 21 | 704 | 0.0 | 1.0+ | 2006 09 19 | 703 | 0.7− | 0.0 |
| 2001 11 18 | 704 | 0.2+ | 0.6− | 2001 11 21 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 703 | (2.0− | 0.7−) |
| 2001 11 18 | 704 | 0.9− | 0.3+ | 2001 12 14 | 291 | 0.5− | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.5− |
| 2001 11 18 | 704 | 0.4+ | 0.2− | 2001 12 14 | 291 | 0.4− | 0.1− | 2006 09 25 | 703 | 0.2− | 0.5+ |
| 2001 11 19 | 699 | (1.1+ | 2.1−) | 2001 12 14 | 291 | 0.5− | 0.0 | 2006 09 25 | 703 | 0.2− | 1.3+ |
| 2001 11 19 | 699 | 0.8+ | 0.1− | 2001 12 17 | 704 | (0.4+ | 2.3−) | 2006 09 25 | 703 | 0.7+ | 0.3+ |

**2001 UL$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.71565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18526470 | $\omega$ | 25.91781 | | +0.12304470 | −0.98290783 | |
| $a$ | 3.0474805 | $\Omega$ | 57.29731 | | +0.87987541 | +0.04422856 | |
| $e$ | 0.2382561 | $i$ | 9.36565 | | +0.45899811 | +0.17870657 | |
| $P$ | 5.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.2− | 0.1− | 2001 11 21 | 704 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.1− | 0.6− |
| 2001 10 22 | 704 | 0.2− | 1.0− | 2001 11 21 | 704 | 0.3+ | 0.4− | 2006 09 29 | 699 | (0.3+ | 1.7−) |
| 2001 10 22 | 704 | 1.1+ | 0.8+ | 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.4+ |
| 2001 10 24 | 291 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.1− | 0.3− |
| 2001 10 24 | 291 | 0.3− | 0.2− | 2001 12 15 | 704 | 0.2+ | 0.6− | 2006 10 03 | 704 | 0.6+ | 0.4+ |
| 2001 10 24 | 291 | 0.2− | 0.2− | 2001 12 15 | 704 | 0.2+ | 0.6− | 2006 10 03 | 704 | 0.3+ | 0.4− |
| 2001 10 24 | 704 | 0.8− | 0.4− | 2001 12 15 | 704 | 0.3− | 0.6− | 2006 10 04 | G96 | 0.4− | 0.1− |
| 2001 10 24 | 704 | 0.1+ | 0.2+ | 2001 12 15 | 704 | 0.2+ | 1.4− | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2001 12 18 | 704 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.4− | 0.3+ | 2001 12 18 | 704 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.4− | 0.3− |
| 2001 11 09 | 704 | (1.2+ | 2.0+) | 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 11 09 | 704 | (2.3+ | 1.1+) | 2001 12 18 | 704 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2001 11 09 | 704 | (2.1+ | 0.3+) | 2001 12 18 | 704 | 1.1+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 1.1+ | 1.0+ | 2001 12 19 | 704 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.8+ |
| 2001 11 12 | 704 | 1.1+ | 1.2+ | 2001 12 19 | 704 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2001 11 12 | 704 | 0.4+ | 1.3+ | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.6− |
| 2001 11 12 | 704 | 0.1+ | 0.5+ | 2001 12 19 | 704 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2001 11 19 | 704 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.4− | 0.7+ | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 2001 11 19 | 704 | (0.7− | 1.9−) | 2006 09 21 | 699 | 1.1+ | 0.7+ | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.7+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2001 11 19 | 704 | 0.2+ | 0.3+ | 2006 09 21 | 699 | (0.4− | 2.6−) | 2006 10 22 | 703 | 1.0− | 0.1+ |
| 2001 11 19 | 704 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.2+ | 1.0− | | | | |
| 2001 11 21 | 704 | 0.3− | 0.8− | 2006 09 29 | 699 | 0.1+ | 0.5− | | | | |

**2001 UE$_{138}$ = 1998 EG$_{22}$ = 2006 TX$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.04089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20157118 | $\omega$ | 309.49443 | | +0.04840373 | −0.99836960 | |
| $a$ | 2.8808264 | $\Omega$ | 137.70104 | | +0.92965220 | +0.03395523 | |
| $e$ | 0.1212919 | $i$ | 2.57642 | | +0.36524495 | +0.04588223 | |
| $P$ | 4.89 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.0 | 0.1+ | 2001 10 24 | 704 | 0.8− | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 1998 03 02 | 691 | 0.0 | 0.0 | 2001 10 24 | 704 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 1998 03 02 | 691 | 0.0 | 0.2− | 2001 10 24 | 704 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2001 10 18 | 644 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.6+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2001 10 18 | 644 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2001 10 23 | 704 | 0.5− | 1.0− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7− | 1.0− |
| 2001 10 23 | 704 | 0.3+ | 0.6− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2001 10 23 | 704 | 0.5+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2001 10 24 | 704 | 0.9+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.4− |

**2001 UD$_{140}$ = 2001 WA$_{103}$**

Id. Minor Planet Center (d, *MPO* 66525)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.57087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19506858 | $\omega$ | 347.00279 | | +0.51777077 | −0.85384013 | |
| $a$ | 2.9444973 | $\Omega$ | 71.79159 | | +0.78988311 | +0.45305255 | |
| $e$ | 0.1020055 | $i$ | 3.23324 | | +0.32863063 | +0.25632092 | |
| $P$ | 5.05 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 11 | 691 | 0.4+ | 0.2− | 2001 11 20 | 704 | 0.4− | 1.3+ | 2006 10 21 | 703 | 0.2+ | 0.6− |
| 1994 05 11 | 691 | 0.2− | 0.4+ | 2001 11 20 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.2− | 0.8− |
| 1994 05 11 | 691 | 0.1− | 0.5+ | 2001 11 20 | 704 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.3− |
| 1999 05 21 | 691 | 0.0 | 0.3+ | 2001 11 20 | 704 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 1999 05 21 | 691 | 0.6+ | 0.3− | 2001 11 20 | 704 | 1.1+ | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.6− |
| 1999 05 21 | 691 | 0.4− | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2001 10 18 | 644 | 1.3− | 0.9+ | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 2001 10 18 | 644 | 1.0− | 1.1+ | 2006 09 23 | 691 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2001 10 18 | 644 | 1.0− | 1.2+ | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2001 10 23 | 704 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.8+ | 0.6+ | 2006 09 30 | 703 | (1.5+ | 0.7+) | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.4+ | 0.2− | 2006 09 30 | 703 | (2.0+ | 1.4+) | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.4+ | 1.3+ | 2006 10 22 | 691 | 0.1− | 0.4− |
| 2001 10 24 | 704 | 0.5− | 0.8+ | 2006 09 30 | 703 | 0.1− | 1.2+ | 2006 10 31 | G96 | 0.8− | 0.7+ |
| 2001 10 24 | 704 | 0.2− | 1.4+ | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.6− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.9− | 0.5+ | 2006 10 01 | 691 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 0.1+ | 1.2+ | 2006 10 15 | 703 | 0.7+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 10 25 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 10 25 | 691 | 0.0 | 0.2− | 2006 10 15 | 703 | (0.2+ | 3.9+) | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 10 25 | 691 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4− |

**2001 UL$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.25298 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20902411 | $\omega$ | 13.86447 | | +0.61090377 | −0.79029012 | |
| $a$ | 2.8119340 | $\Omega$ | 38.51186 | | +0.71894103 | +0.52874181 | |
| $e$ | 0.1003838 | $i$ | 4.35733 | | +0.33154244 | +0.30963467 | |
| $P$ | 4.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.5− | 0.3− | 2001 11 16 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2001 10 14 | 691 | 0.3− | 0.4− | 2001 11 16 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2001 10 14 | 691 | 0.5− | 0.3− | 2001 11 18 | 704 | 0.6− | 0.7+ | 2006 11 19 | 704 | 1.0+ | 1.5+ |
| 2001 10 18 | 644 | 0.3− | 0.6+ | 2001 11 18 | 704 | (2.0− | 0.2+) | 2006 11 19 | 704 | 0.5+ | 1.2+ |
| 2001 10 18 | 644 | 0.0 | 0.7+ | 2001 11 18 | 704 | (1.8− | 0.7+) | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2001 10 18 | 644 | 0.3− | 1.1+ | 2001 11 18 | 704 | 0.5− | 1.2+ | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.4+ | 0.6+ | 2001 11 19 | 704 | 0.6− | 0.7− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.3+ | 0.1+ | 2001 11 19 | 704 | 1.0− | 0.5− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2001 10 23 | 704 | 1.2+ | 0.7+ | 2001 11 19 | 704 | 0.6− | 1.2− | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2001 10 23 | 704 | 0.8+ | 0.2+ | 2001 11 19 | 704 | 0.3+ | 1.2− | 2006 11 22 | 704 | 0.2+ | 1.0− |
| 2001 10 23 | 704 | 0.4+ | 0.3+ | 2001 11 21 | 704 | 0.6+ | 0.4− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 0.7+ | 0.2+ | 2001 11 21 | 704 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.6− | 0.1+ |
| 2001 10 24 | 704 | 0.8+ | 0.6+ | 2001 11 21 | 704 | 1.2+ | 0.5− | 2006 11 23 | 703 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | (1.8+ | 0.7+) | 2001 11 21 | 704 | 0.3+ | 0.1− | 2006 11 23 | 703 | 0.1+ | 0.8+ |
| 2001 10 24 | 704 | 0.6+ | 0.4+ | 2001 11 21 | 704 | 0.4+ | 0.3− | 2006 11 23 | 703 | 0.8+ | 0.7− |
| 2001 10 25 | 644 | 0.4+ | 0.7+ | 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.3− | 0.2− |
| 2001 10 25 | 644 | 0.2+ | 1.2+ | 2004 05 21 | 691 | 0.3+ | 0.2+ | 2006 11 30 | 691 | 0.3− | 0.1+ |
| 2001 10 25 | 644 | 0.4+ | 1.2+ | 2004 05 21 | 691 | 0.2− | 0.0 | 2006 11 30 | 691 | 0.1− | 0.2+ |
| 2001 11 16 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.3− | 2006 11 30 | 691 | 0.4− | 0.5+ |

### 2001 UF$_{142}$ = 2006 WW$_{152}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.07633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20910244 | $\omega$ | 2.91094 | | +0.41019491 | −0.90891390 | |
| $a$ | 2.8112317 | $\Omega$ | 62.88206 | | +0.83503175 | +0.34126942 | |
| $e$ | 0.0888817 | $i$ | 4.82962 | | +0.36669075 | +0.23960530 | |
| $P$ | 4.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 291 | 0.2+ | 0.5− | 2001 10 25 | 644 | 0.2+ | 0.0 | 2001 11 21 | 704 | 0.0 | 0.2− |
| 2001 10 17 | 291 | 0.4− | 0.1+ | 2001 10 25 | 644 | 0.2− | 0.5− | 2001 11 21 | 704 | 0.6+ | 0.1+ |
| 2001 10 17 | 291 | 0.6− | 0.1+ | 2001 10 25 | 644 | 0.0 | 0.2− | 2003 01 28 | 645 | 0.1− | 0.0 |
| 2001 10 18 | 644 | 0.2+ | 0.5− | 2001 11 18 | 704 | 0.4+ | 0.5+ | 2003 01 28 | 645 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.0 | 0.4− | 2001 11 18 | 704 | 0.4− | 0.6+ | 2006 11 21 | 704 | 1.5− | 0.4+ |
| 2001 10 18 | 644 | 0.1+ | 0.3− | 2001 11 18 | 704 | 0.5+ | 0.1+ | 2006 11 21 | 704 | 1.1− | 0.2+ |
| 2001 10 23 | 704 | 0.5− | 0.1+ | 2001 11 18 | 704 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2001 10 23 | 704 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.2+ | 1.1+ | 2006 11 24 | 703 | 0.0 | 1.1− |
| 2001 10 23 | 704 | 0.2+ | 1.1+ | 2001 11 20 | 704 | 0.7+ | 1.3+ | 2006 11 24 | 703 | 0.2+ | 1.4− |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.1+ | 0.9+ | 2006 11 24 | 703 | 0.4+ | 0.6− |
| 2001 10 23 | 704 | 0.8− | 0.4+ | 2001 11 20 | 704 | 0.1− | 1.2+ | 2006 11 24 | 703 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | 0.3+ | 0.3+ | 2001 11 20 | 704 | 0.2+ | 0.7+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.7+ | 0.1− | 2001 11 21 | 704 | 0.6− | 0.5+ | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | (0.6− | 1.6−) | 2001 11 21 | 704 | 0.5− | 0.7− | 2006 11 24 | 691 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.0 | 0.6− | 2001 11 21 | 704 | 0.1+ | 0.1− | | | | |

### 2001 UH$_{142}$ = 2006 SE$_{218}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.15264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18463307 | $\omega$ | 249.82644 | | +0.32151756 | −0.94690082 | |
| $a$ | 3.0544268 | $\Omega$ | 181.42490 | | +0.89965997 | +0.30623340 | |
| $e$ | 0.1739472 | $i$ | 5.31051 | | +0.29536146 | +0.09797930 | |
| $P$ | 5.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.3− | 0.5− | 2001 11 18 | 704 | 0.2+ | 1.3+ | 2006 09 27 | J75 | 1.0+ | 0.9+ |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2001 11 18 | 704 | (2.1− | 2.5+) | 2006 09 27 | J75 | 0.1− | 0.3− |
| 2001 10 23 | 704 | 0.0 | 0.8− | 2001 11 20 | 704 | 1.1+ | 0.9+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.3+ | 0.5− | 2001 11 20 | 704 | 0.9+ | 0.3− | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 1.0− | 0.8− | 2001 11 20 | 704 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 1.0− | 0.8− | 2001 11 20 | 704 | 1.1+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.4− | 0.1+ | 2001 11 20 | 704 | 1.2+ | 0.1+ | 2006 10 16 | G96 | 0.4− | 0.1− |
| 2001 10 24 | 704 | (1.6− | 0.1+) | 2006 08 28 | 691 | 0.6+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2001 10 24 | 704 | 1.0− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.0 | 0.4− | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2001 10 25 | 644 | 0.2− | 0.4+ | 2006 09 16 | 691 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2001 10 25 | 644 | 0.1− | 0.7+ | 2006 09 16 | 691 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2001 10 25 | 644 | 0.1− | 0.4+ | 2006 09 16 | 691 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2001 11 18 | 704 | 0.7+ | 0.2− | 2006 09 26 | J75 | 1.1− | 0.1− | | | | |
| 2001 11 18 | 704 | 1.2− | 0.0 | 2006 09 26 | J75 | 0.5− | 1.1+ | | | | |

### 2001 UF$_{144}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.75945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18259916 | $\omega$ | 204.71628 | | +0.78583931 | −0.61791619 | |
| $a$ | 3.0770664 | $\Omega$ | 193.53811 | | +0.58381180 | +0.75468591 | |
| $e$ | 0.1425280 | $i$ | 6.18533 | | +0.20401069 | +0.22051930 | |
| $P$ | 5.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 691 | 0.0 | 0.0 | 2001 11 20 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.8+ |
| 2001 10 11 | 691 | 0.4− | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.9+ | 0.6+ |
| 2001 10 11 | 691 | 0.2− | 0.0 | 2001 11 20 | 704 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.8+ | 0.9+ |
| 2001 10 23 | 704 | 0.3− | 0.3− | 2001 11 20 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 1.2+ | 0.1− |
| 2001 10 23 | 704 | 0.0 | 0.5− | 2001 11 20 | 704 | 0.3− | 0.8− | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2001 10 23 | 704 | 0.5+ | 0.2− | 2004 04 16 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2001 10 23 | 704 | 0.4− | 0.2+ | 2004 04 16 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2001 10 23 | 704 | 0.3+ | 0.7− | 2004 04 16 | 691 | 0.5+ | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.3− | 0.8+ | 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.1− | 0.5+ |
| 2001 10 24 | 704 | 0.3− | 0.5+ | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 10 01 | 703 | 0.5− | 0.3+ |
| 2001 10 24 | 704 | 0.1− | 0.4− | 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 10 01 | 703 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.3− | 0.7+ | 2006 08 28 | 703 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.2− | 0.5+ | 2006 08 28 | 703 | 1.0− | 0.7− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2001 11 11 | 704 | (0.4+ | 1.7+) | 2006 08 28 | 703 | 0.9+ | 1.1− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | (0.1+ | 2.4+) | 2006 08 28 | 703 | 0.4− | 0.5+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2001 11 11 | 704 | (0.2+ | 2.9+) | 2006 09 19 | 699 | (0.8+ | 1.8−) | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2001 11 11 | 704 | (0.3− | 2.4+) | 2006 09 19 | 699 | 0.8− | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2001 11 12 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 1.0− | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.8− |
| 2001 11 12 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 0.3+ | 1.0+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.9+ | 0.1− | 2006 09 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 11 12 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 691 | 0.2− | 0.1+ | | | | |
| 2001 11 12 | 704 | 0.0 | 0.8+ | 2006 09 20 | 691 | 0.2− | 0.2+ | | | | |

### 2001 US$_{144}$ = 2006 SX$_{351}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.93552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18663848 | $\omega$ | 265.28360 | | +0.63127243 | +0.76211390 | |
| $a$ | 3.0325078 | $\Omega$ | 44.95777 | | −0.60612345 | +0.60047501 | |
| $e$ | 0.1383092 | $i$ | 11.74226 | | −0.48384862 | +0.24209949 | |
| $P$ | 5.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 11 12 | 291 | 0.5− | 0.2− | 2006 10 01 | 704 | 0.3− | 0.0 |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 11 12 | 291 | 0.5− | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2001 10 21 | 691 | 0.3+ | 0.2− | 2001 11 19 | 704 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.0 |
| 2001 10 21 | 691 | 0.4+ | 0.5+ | 2001 11 19 | 704 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.5+ | 0.3− |
| 2001 10 21 | 691 | 0.4+ | 0.0 | 2001 11 19 | 704 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2001 10 23 | 704 | 0.1− | 1.3− | 2001 11 19 | 704 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.7− | 2001 11 19 | 704 | 0.6− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.3+ | 0.1+ | 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2001 10 24 | 704 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.3+ |
| 2001 10 24 | 704 | 0.2− | 0.2− | 2001 11 21 | 704 | 0.1− | 1.1+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.4+ | 0.2− | 2001 11 21 | 704 | 0.8− | 0.8+ | 2006 10 16 | 703 | 0.9+ | 0.3− |
| 2001 10 25 | 644 | 0.4− | 1.3+ | 2001 12 18 | 691 | 0.7+ | 0.2− | 2006 10 16 | 703 | (1.6− | 1.6−) |
| 2001 10 25 | 644 | 0.1− | 1.1+ | 2001 12 18 | 691 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 10 25 | 644 | (0.1− | 1.7+) | 2001 12 18 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.6− | 0.2− | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.7− | 0.3+ | 2004 03 30 | 691 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.3− |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2001 11 09 | 704 | 0.7+ | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.8− | 2006 10 22 | 703 | 0.7+ | 0.4+ |
| 2001 11 12 | 704 | 0.7− | 0.1− | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2001 11 12 | 704 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.4− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.7− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.4− | 0.3− | 2006 10 01 | 704 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2001 11 12 | 291 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.7− | 1.2+ | | | | |

**2001 UU$_{145}$ = 2001 WA$_{50}$**

Id. Minor Planet Center (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.34457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20180925 | $\omega$ | 275.39750 | | +0.99713073 | +0.00845120 | |
| $a$ | 2.8785603 | $\Omega$ | 84.13362 | | +0.02270647 | +0.91459656 | |
| $e$ | 0.0705010 | $i$ | 4.33694 | | −0.07221300 | +0.40427924 | |
| $P$ | 4.88 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 16 | 691 | 0.1− | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.9− | 2006 11 11 | 703 | 0.2− | 0.4− |
| 1991 10 16 | 691 | 0.3+ | 0.3− | 2001 12 10 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.5+ | 0.6− |
| 1991 10 16 | 691 | 0.3− | 0.4+ | 2001 12 10 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.7− |
| 2001 10 23 | 704 | 0.7+ | 0.6+ | 2001 12 10 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.7− |
| 2001 10 23 | 704 | 0.1− | 0.8+ | 2001 12 11 | 704 | 0.7+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2001 10 23 | 704 | 0.1− | 0.3− | 2001 12 11 | 704 | 0.6+ | 0.5+ | 2006 11 18 | 704 | 0.4+ | 0.4− |
| 2001 10 24 | 704 | 0.1+ | 0.4+ | 2001 12 11 | 704 | 1.2+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2001 10 24 | 704 | 0.4− | 0.3− | 2001 12 11 | 704 | 0.7+ | 0.5+ | 2006 11 18 | 704 | 0.9− | 0.4− |
| 2001 10 24 | 704 | 0.5− | 0.3− | 2001 12 11 | 704 | (1.7+ | 1.7+) | 2006 11 18 | 704 | 0.5− | 1.2+ |
| 2001 10 24 | 704 | 0.3− | 0.2− | 2001 12 14 | 704 | (2.2− | 1.0+) | 2006 11 21 | 704 | 1.0+ | 0.7+ |
| 2001 10 24 | 704 | 0.8− | 0.3+ | 2001 12 14 | 704 | (2.0− | 1.1+) | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2001 11 17 | 704 | 0.7+ | 0.0 | 2001 12 14 | 704 | (1.5− | 1.8+) | 2006 11 21 | 704 | 1.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.5− | 0.2− | 2001 12 14 | 704 | (1.7− | 2.3+) | 2006 11 21 | 704 | 0.7− | 0.3+ |
| 2001 11 17 | 704 | 0.5+ | 0.4− | 2005 07 26 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2001 11 18 | 704 | 0.1− | 0.1+ | 2005 07 26 | 644 | 0.4− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2001 11 18 | 704 | 0.1− | 0.4+ | 2005 07 26 | 644 | 0.4+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 11 18 | 704 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2001 11 18 | 704 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 1.2− | 0.4− |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2001 11 20 | 704 | 0.6− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.0 | 0.4− |
| 2001 11 21 | 704 | 0.6+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.6− | 0.7− |
| 2001 11 21 | 704 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.5+ | 2006 12 01 | 691 | 0.2− | 0.7− |
| 2001 11 21 | 704 | 0.7+ | 0.7− | 2006 11 11 | 703 | 0.3+ | 1.3− | 2006 12 01 | 691 | 0.3+ | 0.5+ |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.3− | 2.0− | 2006 12 01 | 691 | 0.3+ | 0.1+ |

**2001 UV$_{145}$ = 2006 UL$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.80535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19964502 | $\omega$ | 333.98303 | | +0.86449880 | −0.50234108 | |
| $a$ | 2.8993261 | $\Omega$ | 56.18256 | | +0.46469199 | +0.78574228 | |
| $e$ | 0.1373744 | $i$ | 1.18509 | | +0.19158071 | +0.36091899 | |
| $P$ | 4.94 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.1− | 0.1− | 2001 11 21 | 704 | 0.4− | 0.3− | 2006 11 13 | 691 | 0.3− | 0.1+ |
| 1996 10 06 | 691 | 0.2+ | 0.1− | 2001 11 21 | 704 | 0.1− | 0.8− | 2006 11 13 | 691 | 0.4− | 0.1+ |
| 1996 10 06 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | 0.7− | 0.7− | 2006 09 27 | G96 | 0.1+ | 0.8− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 10 23 | 704 | (1.0+ | 1.8−) | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 1.0+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2001 10 24 | 704 | 0.1− | 0.6+ | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | (2.0+ | 0.5+) |
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 0.5+ | 1.4+ | 2006 10 27 | G96 | 0.0 | 0.8− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | 1.1+ | 0.9+ | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2001 11 09 | 704 | 1.1− | 1.5+ | 2006 10 27 | G96 | 0.2− | 0.6− | 2006 11 20 | 704 | 0.4+ | 1.1+ |
| 2001 11 09 | 704 | 0.5− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 1.5+ | 1.3+ |
| 2001 11 09 | 704 | 0.4− | 1.1+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.4+ | 1.0+ |
| 2001 11 20 | 704 | 0.3+ | 1.4− | 2006 11 09 | 691 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.4+ | 1.2+ |
| 2001 11 20 | 704 | 0.3− | 1.0− | 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.3− | 0.6− |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2001 11 20 | 704 | 1.1+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.6− | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2001 11 21 | 704 | 0.6− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2001 11 21 | 704 | 0.8− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.0 | | | | |

**2001 UW$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.11065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18271987 | $\omega$ | 309.95617 | | +0.94277524 | −0.31557799 | |
| $a$ | 3.0757110 | $\Omega$ | 68.68165 | | +0.33015538 | +0.83841720 | |
| $e$ | 0.1633187 | $i$ | 6.63485 | | +0.04660764 | +0.44437274 | |
| $P$ | 5.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.2+ | 0.2− | 2001 11 19 | 699 | 0.2− | 1.4− | 2001 12 17 | 704 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 1.3+ | 1.3− | 2001 11 19 | 608 | 0.7− | 1.0− | 2001 12 17 | 704 | 0.3− | 0.4− |
| 2001 10 23 | 704 | 0.1+ | 0.1− | 2001 11 19 | 608 | 0.3− | 0.3− | 2006 08 28 | 699 | 0.6+ | 0.3+ |
| 2001 10 23 | 704 | 0.7− | 0.4+ | 2001 11 19 | 608 | 0.6− | 0.5− | 2006 08 28 | 699 | 0.4− | 0.4− |
| 2001 10 24 | 704 | 0.3+ | 0.1+ | 2001 11 20 | 704 | 0.1+ | 0.7+ | 2006 08 28 | 699 | 0.5− | 0.9+ |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2001 11 20 | 704 | 0.9+ | 0.2− | 2006 08 28 | 699 | 1.2− | 0.3+ |
| 2001 10 24 | 704 | 0.5+ | 0.5+ | 2001 11 20 | 704 | 0.7+ | 0.1− | 2006 09 17 | 699 | 0.2− | 0.6− |
| 2001 10 24 | 704 | 0.0 | 0.5− | 2001 11 20 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 699 | 0.1+ | 0.4− |
| 2001 10 24 | 704 | 0.1+ | 0.1− | 2001 11 20 | 704 | 0.1− | 0.2− | 2006 09 17 | 699 | 0.5+ | 0.6+ |
| 2001 10 25 | 644 | 0.3− | 0.1+ | 2001 11 21 | 704 | 1.2− | 0.3− | 2006 09 17 | 699 | 0.5+ | 0.1− |
| 2001 10 25 | 644 | 0.3− | 0.0 | 2001 11 21 | 704 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.5− | 0.3− |
| 2001 10 25 | 644 | 0.2− | 0.0 | 2001 11 21 | 704 | (0.6− | 1.7+) | 2006 09 25 | 703 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.4+ | 0.5+ | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.3+ | 0.6+ |
| 2001 11 09 | 704 | 0.3+ | 0.2+ | 2001 11 21 | 704 | 0.3− | 0.2+ | 2006 09 25 | 703 | 0.8+ | 0.1− |
| 2001 11 09 | 704 | 0.4− | 1.0+ | 2001 11 21 | 704 | 0.9+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2001 11 09 | 704 | 0.6+ | 0.4− | 2001 11 21 | 704 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.2+ | 0.4− |
| 2001 11 09 | 704 | 0.0 | 0.7− | 2001 11 21 | 704 | 0.6+ | 1.2+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2001 11 15 | 644 | 0.3− | 0.3− | 2001 11 21 | 704 | 0.6− | 0.9+ | 2006 10 21 | 703 | 0.2− | 0.9− |
| 2001 11 15 | 644 | 0.0 | 0.1+ | 2001 12 14 | 704 | 0.8+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.3+ |
| 2001 11 15 | 644 | 0.0 | 0.7+ | 2001 12 14 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 1.2− | 0.2− |
| 2001 11 17 | 704 | 0.0 | 0.4− | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.3+ |
| 2001 11 17 | 704 | 0.2− | 0.2+ | 2001 12 14 | 704 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2001 11 17 | 704 | 0.1− | 0.4− | 2001 12 14 | 704 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 11 19 | 699 | 0.2− | 1.0+ | 2001 12 17 | 704 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.7+ | 0.1+ |
| 2001 11 19 | 699 | 0.6− | 0.6+ | 2001 12 17 | 704 | 0.6− | 1.0− | | | | |
| 2001 11 19 | 699 | 0.1− | 0.5− | 2001 12 17 | 704 | 0.1− | 0.4+ | | | | |

**2001 UF$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.97811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19033958 | $\omega$ | 1.65317 | | +0.62729163 | −0.77796606 | |
| $a$ | 2.9930684 | $\Omega$ | 49.49802 | | +0.71398100 | +0.55618564 | |
| $e$ | 0.2196283 | $i$ | 2.69053 | | +0.31102467 | +0.29227785 | |
| $P$ | 5.18 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.0 | 0.2− | 2001 10 24 | 704 | 0.0 | 1.1− | 2001 11 21 | 704 | 0.5− | 0.4− |
| 2001 10 18 | 644 | 0.1− | 0.8− | 2001 11 19 | 704 | 0.8+ | 0.5− | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2001 10 18 | 644 | 0.1+ | 0.1− | 2001 11 19 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 1.5+ | 0.4+ | 2001 11 19 | 704 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2001 10 23 | 704 | 1.0− | 1.7+ | 2001 11 19 | 704 | 1.1− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 0.3− | 0.8+ | 2001 11 21 | 704 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | 0.7+ | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.7− | 0.6− | 2001 11 21 | 704 | 0.2+ | 0.4+ | | | | |

**2001 UP$_{148}$ = 2006 SN$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.95891 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18970943 | $\omega$ | 121.75046 | | +0.94255435 | | +0.31518373 |
| $a$ | 2.9996928 | $\Omega$ | 220.18122 | | −0.33374681 | | +0.90267829 |
| $e$ | 0.1058306 | $i$ | 9.87766 | | +0.01429573 | | +0.29296950 |
| $P$ | 5.20 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 04 | 691 | 0.6− | 0.0 | 2001 12 14 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 691 | 0.0 | 0.4+ |
| 1994 05 04 | 691 | 0.1− | 0.2+ | 2001 12 14 | 691 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1994 05 04 | 691 | 0.8+ | 0.0 | 2001 12 14 | 704 | 0.7+ | 1.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 10 23 | 704 | 0.6− | 1.4− | 2001 12 14 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 704 | 0.4+ | 0.8− | 2001 12 14 | 704 | 0.4+ | 0.8− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.1+ | 1.1− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2001 10 24 | 704 | 0.8+ | 0.3− | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.4+ | 0.8− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | (0.6+ | 1.7−) | 2006 09 27 | 291 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 1.2+ | 0.1− | 2006 09 27 | 291 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 0.2− | 0.6− | 2006 09 27 | 291 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 1.4+ | 2006 10 03 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.4− | 1.1+ | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.5− |
| 2001 11 20 | 704 | 1.1− | 0.8+ | 2006 10 03 | 691 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.7− | 0.8+ | 2006 10 19 | 644 | 0.5− | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2001 11 21 | 704 | (0.5− | 1.7+) | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.3− |
| 2001 11 21 | 704 | (0.1− | 1.6+) | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | (1.3− | 1.6+) | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2001 12 14 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.3− |

**2001 UZ$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.05867 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18409222 | $\omega$ | 235.01117 | | +0.60428568 | | −0.79676534 |
| $a$ | 3.0604063 | $\Omega$ | 177.80844 | | +0.74663651 | | +0.56540875 |
| $e$ | 0.2280051 | $i$ | 2.92378 | | +0.27815955 | | +0.21325558 |
| $P$ | 5.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.4+ | 0.1+ | 2001 12 11 | 704 | 0.1+ | 1.1− | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 2001 10 23 | 704 | 0.2− | 0.4− | 2001 12 11 | 704 | 0.3− | 0.6− | 2006 09 24 | 291 | 0.3− | 0.8− |
| 2001 10 23 | 704 | 0.1+ | 0.6+ | 2001 12 11 | 704 | 0.2− | 1.0− | 2006 09 24 | 291 | 0.8+ | 0.0 |
| 2001 10 23 | 704 | 0.6− | 0.7+ | 2001 12 11 | 704 | 0.0 | 0.5− | 2006 09 24 | 291 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 0.7+ | 2001 12 11 | 704 | (2.0+ | 0.5+) | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.4− | 0.3+ | 2001 12 13 | 644 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2001 10 24 | 704 | 0.0 | 0.8+ | 2001 12 13 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.4+ | 0.3− | 2001 12 13 | 644 | 0.6− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2001 10 24 | 704 | 0.1+ | 0.7+ | 2001 12 14 | 704 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2001 11 09 | 704 | 0.3− | 1.0+ | 2001 12 14 | 704 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.8+ | 0.2− | 2001 12 14 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.6+ | 0.0 | 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 704 | (0.2− | 2.0−) |
| 2001 11 09 | 704 | 0.1+ | 0.8− | 2001 12 14 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 704 | 1.0+ | 0.4− |
| 2001 11 09 | 704 | 0.3− | 0.9− | 2001 12 17 | 704 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.3− | 0.3+ |
| 2001 11 17 | 704 | 0.3− | 0.9+ | 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.7− |
| 2001 11 17 | 704 | 0.8− | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.3− | 1.1+ |
| 2001 11 17 | 704 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.8+ | 0.3+ |
| 2001 11 19 | 699 | 0.0 | 0.5+ | 2006 09 13 | 644 | 0.5− | 0.2+ | 2006 10 01 | 704 | 0.8− | 0.1+ |
| 2001 11 19 | 699 | 0.5+ | 0.4− | 2006 09 13 | 644 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.6− |
| 2001 11 19 | 699 | 0.4− | 0.3− | 2006 09 13 | 644 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 11 19 | 699 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.9+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2001 11 20 | 704 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.9− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.2+ | 0.5− | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.2+ | 0.4− | 2006 09 23 | 691 | 0.2− | 0.2+ | | | | |
| 2001 11 20 | 704 | 0.5+ | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.2− | | | | |

**2001 UZ$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.18885 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18845965 | $\omega$ | 211.52541 | | +0.22113218 | | −0.96556809 |
| $a$ | 3.0129399 | $\Omega$ | 226.10270 | | +0.92965938 | | +0.25116206 |
| $e$ | 0.1463139 | $i$ | 10.96290 | | +0.29467610 | | −0.06779302 |
| $P$ | 5.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.6+ | 0.0 | 2001 11 20 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 1995 08 25 | 691 | 0.4− | 0.2− | 2001 11 20 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 1995 08 25 | 691 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.4+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2001 09 26 | 704 | 0.7− | 0.8+ | 2001 11 20 | 704 | 0.8+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 09 26 | 704 | 0.1− | 1.0+ | 2001 11 20 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 09 26 | 704 | 0.6− | 0.1− | 2001 11 20 | 704 | 0.7+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.6− | 0.9+ | 2001 11 20 | 704 | 0.6+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.2− |
| 2001 10 23 | 704 | 0.3+ | 0.7+ | 2001 11 20 | 704 | (0.1− | 2.0+) | 2006 10 17 | 691 | 0.1− | 0.4− |
| 2001 10 23 | 704 | 0.2+ | 1.3+ | 2001 11 20 | 704 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.2− |
| 2001 10 23 | 704 | 0.1+ | 0.6+ | 2001 11 21 | 691 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2001 11 21 | 704 | (3.8− | 0.9+) | 2006 10 21 | 691 | 0.2− | 0.5− |
| 2001 10 24 | 704 | 0.4+ | 0.1+ | 2001 11 21 | 691 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.3− | 0.6− |
| 2001 10 24 | 704 | 0.4+ | 0.0 | 2001 11 21 | 704 | 0.7− | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 10 24 | 704 | 0.8+ | 0.5+ | 2001 11 21 | 704 | 0.1+ | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | (2.0+ | 0.6+) | 2001 11 21 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2001 11 09 | 704 | (2.1+ | 1.5−) | 2001 11 21 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2001 11 09 | 704 | 1.0+ | 0.1− | 2001 12 11 | 704 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2001 11 09 | 704 | 1.2+ | 0.8− | 2001 12 11 | 704 | 0.6− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2001 11 11 | 704 | 0.4− | 0.2+ | 2001 12 11 | 704 | 0.5− | 0.3+ | 2006 11 10 | 644 | 0.6− | 0.1− |
| 2001 11 11 | 704 | 0.1+ | 0.9− | 2001 12 11 | 704 | 0.7+ | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.4− |
| 2001 11 11 | 704 | 0.3+ | 0.8− | 2001 12 11 | 704 | 0.2− | 0.8+ | 2006 11 10 | 644 | 0.2− | 0.5− |
| 2001 11 11 | 704 | 0.2+ | 0.4− | 2001 12 14 | 704 | 0.4− | 0.4− | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.5− | 0.3− | 2001 12 14 | 704 | 0.3− | 0.4− | 2006 11 10 | 644 | 0.2− | 0.5− |
| 2001 11 12 | 704 | (5.1+ | 1.7+) | 2001 12 14 | 704 | 1.2− | 0.4− | 2006 11 10 | 644 | 0.0 | 0.3− |
| 2001 11 12 | 704 | (5.3+ | 2.6+) | 2001 12 14 | 704 | 0.5− | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2001 11 12 | 704 | (5.4+ | 1.0+) | 2001 12 14 | 704 | 0.1+ | 0.6− | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2001 11 12 | 704 | (4.2+ | 0.5−) | 2001 12 17 | 704 | 0.5− | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2001 11 14 | 691 | 0.2− | 0.0 | 2001 12 17 | 704 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.9+ |
| 2001 11 14 | 691 | 0.3− | 0.3− | 2001 12 17 | 704 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2001 11 14 | 691 | 0.3− | 0.7+ | 2001 12 17 | 704 | 0.6− | 0.3+ | 2006 11 17 | 703 | (0.1+ | 2.0+) |
| 2001 11 17 | 704 | 0.0 | 0.1− | 2001 12 17 | 704 | 1.2− | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.6+ |
| 2001 11 17 | 704 | 0.0 | 0.0 | 2001 12 18 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 1.0− | 0.5+ |
| 2001 11 17 | 704 | 0.6+ | 0.5+ | 2001 12 18 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 1.4+ | 1.1+ |
| 2001 11 17 | 704 | 0.2− | 0.2+ | 2001 12 18 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2001 11 17 | 704 | 0.3− | 0.0 | 2001 12 18 | 704 | 0.3+ | 0.6+ | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2001 11 18 | 704 | 0.2− | 0.2− | 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.2+ |
| 2001 11 18 | 704 | 0.2− | 0.5− | 2001 12 18 | 704 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2001 11 18 | 704 | 0.5+ | 0.3− | 2001 12 18 | 704 | 0.9+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 11 18 | 704 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.4− |
| 2001 11 18 | 704 | 0.4− | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.2+ | | | | |
| 2001 11 20 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.3+ | | | | |

**2001 UH$_{157}$ = 2006 TV$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.39110 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19038746 | $\omega$ | 230.82098 | | +0.58030072 | | −0.81440143 |
| $a$ | 2.9925666 | $\Omega$ | 183.70791 | | +0.75269506 | | +0.53688222 |
| $e$ | 0.1817828 | $i$ | 1.04202 | | +0.31096819 | | +0.22024486 |
| $P$ | 5.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.0 | 0.1− | 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 10 16 | 683 | 0.7− | 0.1+ |
| 2001 10 23 | 704 | 0.5− | 0.6+ | 2001 12 17 | 704 | 0.5+ | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | 0.0 | 0.6+ | 2001 12 17 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.4+ |
| 2001 10 23 | 704 | 0.2− | 0.3+ | 2003 04 01 | 695 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.3− | 2003 04 01 | 695 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 1.3− |
| 2001 10 24 | 704 | 0.9− | 0.2− | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 10 24 | 704 | 0.3+ | 0.3− | 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | (0.9+ | 1.7−) |
| 2001 11 20 | 704 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.6+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.9− | 0.2− | 2006 09 25 | G96 | 0.5− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2001 12 14 | 704 | 1.0+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 1.4+ | 1.1+ |
| 2001 12 14 | 704 | 1.0+ | 0.4− | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.3− |
| 2001 12 14 | 704 | 0.8+ | 0.6− | 2006 10 15 | 691 | 0.7+ | 0.4+ | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 683 | 0.1− | 0.9− | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 2001 12 17 | 704 | 0.1− | 1.3− | 2006 10 16 | 683 | (0.6+ | 1.7+) | | | | |

**2001 US**$_{157}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.91675 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17430103 | $\omega$ | 273.20666 | | +0.89558061 | | +0.40566061 |
| $a$ | 3.1739695 | $\Omega$ | 62.92721 | | −0.28086160 | | +0.83396917 |
| $e$ | 0.1042870 | $i$ | 11.83935 | | −0.34503932 | | +0.37407871 |
| $P$ | 5.65 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 19 | 691 | 1.0+ | 0.4+ | 2001 11 19 | 699 | 0.2− | 1.1+ | 2001 12 19 | 644 | 0.1− | 0.1+ |
| 1999 05 19 | 691 | 0.1− | 0.1+ | 2001 11 20 | 704 | 0.7− | 0.4− | 2001 12 19 | 704 | (2.3− | 0.4+) |
| 1999 05 19 | 691 | 0.5− | 0.3+ | 2001 11 20 | 704 | 0.7− | 0.8+ | 2001 12 19 | 644 | 0.4− | 0.3+ |
| 2001 10 23 | 704 | 0.1+ | 0.9+ | 2001 11 20 | 704 | 1.0− | 0.1− | 2001 12 19 | 644 | 0.2− | 0.4+ |
| 2001 10 23 | 704 | 0.4− | 0.2+ | 2001 11 20 | 704 | 1.2− | 0.6+ | 2001 12 19 | 704 | 0.1+ | 0.5− |
| 2001 10 23 | 704 | 1.3− | 0.1+ | 2001 11 20 | 704 | 1.0− | 0.1+ | 2001 12 19 | 704 | 0.3− | 1.5+ |
| 2001 10 24 | 704 | 0.1+ | 0.2+ | 2001 11 21 | 704 | 0.5+ | 0.0 | 2002 01 09 | 691 | 0.3+ | 0.1+ |
| 2001 10 24 | 704 | 0.5− | 0.5+ | 2001 11 21 | 704 | 0.6+ | 0.7− | 2002 01 09 | 691 | 0.4+ | 0.1− |
| 2001 10 24 | 704 | 0.3+ | 0.7+ | 2001 11 21 | 704 | 0.5+ | 0.5− | 2002 01 09 | 691 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | 0.9+ | 0.5+ | 2001 11 21 | 704 | 0.7+ | 0.8− | 2005 01 22 | 809 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.5− | 0.7+ | 2001 11 21 | 704 | 0.6+ | 1.4− | 2005 01 22 | 809 | 0.1+ | 0.3− |
| 2001 10 25 | 644 | 0.4− | 0.5+ | 2001 12 13 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.1− |
| 2001 10 25 | 644 | 0.3− | 0.5+ | 2001 12 13 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2001 10 25 | 644 | 0.4− | 0.6+ | 2001 12 13 | 644 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.7+ |
| 2001 11 09 | 704 | 0.1+ | 0.4+ | 2001 12 14 | 704 | 0.5− | 0.2+ | 2006 09 20 | 703 | (0.7+ | 1.9+) |
| 2001 11 09 | 704 | 0.3− | 0.3− | 2001 12 14 | 704 | 0.4− | 0.7+ | 2006 09 20 | 703 | 0.4− | 0.3+ |
| 2001 11 09 | 704 | 0.1+ | 0.5− | 2001 12 14 | 704 | 0.2− | 1.3+ | 2006 09 20 | 703 | 0.5+ | 0.7− |
| 2001 11 09 | 704 | 0.2+ | 0.6− | 2001 12 14 | 704 | 0.4− | 1.0+ | 2006 09 20 | 703 | 0.4+ | 0.2− |
| 2001 11 14 | 691 | 0.1− | 0.2− | 2001 12 14 | 704 | 0.6− | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2001 11 14 | 691 | 0.1− | 0.1− | 2001 12 18 | 691 | 0.1+ | 0.3− | 2006 09 26 | 703 | (2.1+ | 0.6−) |
| 2001 11 14 | 691 | 0.1− | 0.3− | 2001 12 18 | 691 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.5− |
| 2001 11 19 | 699 | 0.6+ | 0.2+ | 2001 12 18 | 691 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.5− | 0.1+ |
| 2001 11 19 | 699 | (1.7+ | 0.4−) | 2001 12 19 | 704 | 1.1− | 0.8+ | | | | |
| 2001 11 19 | 699 | (0.2− | 2.1+) | 2001 12 19 | 704 | (1.5+ | 1.9+) | | | | |

**2001 UT**$_{158}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.95078 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18881703 | $\omega$ | 278.58625 | | +0.99397276 | | +0.01989260 |
| $a$ | 3.0091368 | $\Omega$ | 80.32450 | | +0.02648792 | | +0.91068340 |
| $e$ | 0.0839246 | $i$ | 6.27860 | | −0.10637922 | | +0.41262577 |
| $P$ | 5.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.4+ | 0.0 | 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.6− | 0.9− | 2001 11 21 | 704 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 2001 10 23 | 704 | 0.7+ | 0.1− | 2001 11 21 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2001 10 23 | 704 | (1.7− | 1.5−) | 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.5+ | 0.7− | 2001 12 14 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.3+ | 1.0− | 2001 12 14 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2001 10 24 | 704 | 0.4+ | 0.0 | 2001 12 14 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.1− | 0.5+ | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2001 11 12 | 704 | 0.8− | 0.6+ | 2001 12 14 | 691 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 12 | 704 | 0.1+ | 0.5− | 2001 12 14 | 691 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2001 11 17 | 704 | 0.0 | 0.1− | 2001 12 17 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.6+ |
| 2001 11 17 | 704 | 0.3− | 1.0− | 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2001 11 17 | 704 | 0.3− | 0.3+ | 2001 12 17 | 704 | 0.8− | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.6+ |
| 2001 11 18 | 691 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.8− | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2001 11 18 | 691 | 0.4− | 0.1− | 2001 12 17 | 704 | 1.0− | 0.1− | 2006 11 13 | 644 | 0.4+ | 0.2− |
| 2001 11 18 | 691 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.6+ | 0.4− | 2006 11 13 | 644 | 0.5+ | 0.4− |
| 2001 11 19 | 699 | 0.7+ | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.4− | 1.1− |
| 2001 11 19 | 699 | 0.5− | 0.3+ | 2006 09 29 | 699 | 0.8− | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.5− |
| 2001 11 19 | 699 | 0.6− | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.0 | 2006 11 13 | 703 | (0.1+ | 1.5−) |
| 2001 11 19 | 699 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.4+ | 0.6− | 2006 11 13 | 703 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.2− | 2006 11 17 | 704 | 0.3− | 1.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 1.2− | 2006 11 17 | 704 | 0.9+ | 1.1+ |
| 2001 11 20 | 704 | 0.7+ | 0.0 | 2006 09 30 | 703 | (1.8− | 1.4+) | 2006 11 17 | 704 | 0.5− | 0.2+ |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 1.2− | 0.4+ | 2006 11 20 | 704 | 0.6− | 0.7− |
| 2001 11 21 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 1.3− | 0.7− | 2006 11 20 | 704 | 0.9+ | 0.8− |
| 2001 11 21 | 704 | 0.1+ | 1.0+ | 2006 10 16 | 703 | 0.2− | 1.1+ | 2006 11 20 | 704 | 0.3+ | 0.4− |

**2001 UK**$_{159}$ **= 2006 UZ**$_{230}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.14000 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19044877 | $\omega$ | 192.14358 | | +0.49037317 | | −0.85525209 |
| $a$ | 2.9919243 | $\Omega$ | 228.75249 | | +0.81708808 | | +0.51805233 |
| $e$ | 0.1596599 | $i$ | 12.87735 | | +0.30315214 | | −0.01287047 |
| $P$ | 5.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.4+ | 0.3− | 2001 11 20 | 704 | (0.6+ | 1.6+) | 2006 10 21 | 691 | 0.4− | 0.0 |
| 2001 10 23 | 704 | 0.2+ | 0.0 | 2001 11 20 | 704 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.3− | 0.2− | 2001 11 20 | 704 | 0.1+ | 0.9+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.9− | 1.0− | 2001 11 20 | 704 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 1.0− | 0.8− | 2001 11 20 | 704 | 0.2− | 1.1+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 10 24 | 704 | (2.3− | 0.4−) | 2001 11 20 | 704 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 10 24 | 704 | 0.1+ | 0.1+ | 2001 11 20 | 704 | (0.1− | 1.6+) | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.5− | 1.0− | 2001 11 20 | 704 | 0.0 | 0.2− | 2006 11 08 | 198 | 0.8− | 1.3− |
| 2001 10 24 | 704 | 0.3− | 1.0− | 2001 11 21 | 691 | 0.2+ | 0.1− | 2006 11 08 | 198 | (1.4− | 2.4−) |
| 2001 11 09 | 704 | 0.1− | 0.3− | 2001 11 21 | 691 | 0.5+ | 0.4− | 2006 11 08 | 198 | 0.4− | 0.4− |
| 2001 11 09 | 704 | 0.3+ | 0.4− | 2001 11 21 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.5− |
| 2001 11 09 | 704 | 0.3+ | 0.0 | 2001 11 24 | 704 | (0.3+ | 2.8−) | 2006 11 09 | 644 | 0.2+ | 0.3− |
| 2001 11 09 | 704 | 0.0 | 0.3+ | 2001 11 24 | 704 | (0.8− | 2.3−) | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2001 11 11 | 704 | 0.6+ | 0.4+ | 2001 11 24 | 704 | 0.3− | 1.2− | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 1.0− | 0.1− | 2001 11 24 | 704 | (0.4− | 2.4−) | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2001 11 11 | 704 | 0.6− | 1.2+ | 2001 12 11 | 704 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.9+ | 1.0+ | 2001 12 11 | 704 | 0.9− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2001 11 11 | 704 | 0.2− | 0.4+ | 2001 12 11 | 704 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.4+ | 0.6− |
| 2001 11 12 | 704 | 1.0− | 0.5− | 2001 12 11 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2001 11 12 | 704 | 1.0− | 0.2− | 2001 12 11 | 704 | 0.4− | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 1.3− | 0.4− | 2001 12 18 | 644 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.6− |
| 2001 11 14 | 691 | 0.3+ | 0.1− | 2001 12 18 | 644 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2001 11 14 | 691 | 0.1+ | 0.1− | 2001 12 18 | 644 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.7− |
| 2001 11 14 | 691 | 0.2+ | 0.1− | 2001 12 18 | 704 | 0.1− | 0.9− | 2006 11 15 | G96 | 0.4+ | 0.7− |
| 2001 11 17 | 704 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.9− | 0.0 |
| 2001 11 17 | 704 | 0.1− | 0.2+ | 2001 12 18 | 704 | 0.7+ | 0.7+ | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2001 11 17 | 704 | 0.2− | 0.2+ | 2001 12 18 | 704 | 0.8+ | 1.1− | 2006 11 17 | 703 | 0.6+ | 0.8+ |
| 2001 11 17 | 704 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.6+ | 0.5− | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2001 11 17 | 704 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.6+ | 0.6− | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2001 11 18 | 704 | 0.1− | 0.7+ | 2006 10 04 | G96 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.9− | 0.3+ |
| 2001 11 18 | 704 | 0.4− | 0.6+ | 2006 10 04 | G96 | 0.5+ | 0.5− | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 2001 11 18 | 704 | 0.0 | 1.0+ | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.7+ | 0.2− |
| 2001 11 18 | 704 | 0.1− | 1.3+ | 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.2− | 1.2+ |
| 2001 11 18 | 704 | 0.1+ | 0.9+ | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 1.0+ | 1.2+ |
| 2001 11 20 | 704 | 0.6+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | (2.4+ | 1.5−) |
| 2001 11 20 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.9− | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.3+ |

**2001 UP$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.64009 | | | (2000.0) | | |
| $n$ | 0.17917192 | $\omega$ | 5.85161 | | +0.45123325 | −0.88764805 |
| $a$ | 3.1161815 | $\Omega$ | 57.35857 | | +0.81427049 | +0.36733074 |
| $e$ | 0.1377392 | $i$ | 6.27444 | | +0.36517409 | +0.27775721 |
| $P$ | 5.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.7+ | 0.2+ | 2001 11 19 | 704 | 0.3+ | 0.3+ | 2002 01 07 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 1.0+ | 0.6+ | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | (1.6+ | 1.9−) |
| 2001 10 23 | 704 | (1.8+ | 1.5+) | 2001 11 21 | 704 | 0.6+ | 0.5− | 2006 09 18 | 703 | 0.3− | 0.2+ |
| 2001 10 23 | 704 | 0.0 | 1.1+ | 2001 11 21 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | (0.5+ | 2.4−) |
| 2001 10 24 | 704 | 0.8+ | 0.1+ | 2001 11 21 | 704 | 0.0 | 1.0− | 2006 09 18 | 703 | (1.2+ | 1.7−) |
| 2001 10 24 | 704 | 0.7− | 0.1+ | 2001 11 21 | 704 | 0.8+ | 0.5− | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 2001 10 24 | 704 | 0.2+ | 0.2+ | 2001 12 10 | 704 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | 0.4+ | 0.8− | 2001 12 10 | 704 | 0.4− | 1.0− | 2006 09 26 | 703 | 1.0+ | 0.1− |
| 2001 11 09 | 704 | 0.1− | 0.3− | 2001 12 10 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.5− |
| 2001 11 09 | 704 | 0.3+ | 0.2− | 2001 12 10 | 704 | 0.9+ | 0.5− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 11 09 | 704 | 0.9+ | 0.5− | 2001 12 15 | 704 | (1.8− | 0.8+) | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2001 11 11 | 704 | (2.6− | 0.5+) | 2001 12 15 | 704 | (2.0− | 0.6+) | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2001 11 11 | 704 | 0.7− | 0.0 | 2001 12 15 | 704 | (1.5− | 0.5+) | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 11 11 | 704 | 0.7− | 0.8+ | 2001 12 15 | 704 | 1.3− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 2001 11 11 | 704 | 0.1− | 0.0 | 2001 12 15 | 704 | 1.1− | 0.2− | 2006 10 16 | 703 | 1.1− | 0.8+ |
| 2001 11 15 | 691 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 1.0+ | 1.0+ |
| 2001 11 15 | 691 | 0.3+ | 0.2− | 2001 12 18 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.6− |
| 2001 11 15 | 691 | 0.1+ | 0.1− | 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.5− |
| 2001 11 19 | 699 | 0.2+ | 0.2+ | 2001 12 18 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 11 19 | 699 | 0.1− | 0.0 | 2001 12 18 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 11 19 | 699 | 1.2− | 0.1+ | 2001 12 19 | 704 | 0.6− | 0.5− | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2001 11 19 | 699 | 0.4− | 0.1+ | 2001 12 19 | 704 | (1.6− | 0.7−) | 2006 10 22 | 703 | 1.4− | 0.3+ |
| 2001 11 19 | 704 | 0.3+ | 0.4+ | 2001 12 19 | 704 | 0.7− | 0.5+ | 2006 10 22 | 703 | 0.5+ | 0.6+ |
| 2001 11 19 | 704 | 0.3+ | 0.4+ | 2001 12 19 | 704 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.9− |
| 2001 11 19 | 704 | 0.2+ | 0.1+ | 2002 01 07 | 691 | 0.0 | 0.1− | | | | |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2002 01 07 | 691 | 0.0 | 0.1+ | | | | |

**2001 UY$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 338.19642 | | | (2000.0) | | |
| $n$ | 0.18525075 | $\omega$ | 335.70831 | | +0.64427234 | −0.74008775 |
| $a$ | 3.0476335 | $\Omega$ | 73.57432 | | +0.73046909 | +0.52078494 |
| $e$ | 0.1759470 | $i$ | 11.59746 | | +0.22655696 | +0.42550343 |
| $P$ | 5.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.5− | 0.3− | 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 0.0 | 0.4− | 2001 12 17 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | 1.3− | 1.3− | 2001 12 17 | 704 | 0.2+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.4− | 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.0 | 0.3− | 2002 01 07 | 691 | 0.2− | 0.7− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2002 01 07 | 691 | 0.1+ | 0.7− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 0.1+ | 0.3+ | 2002 01 07 | 691 | 0.4− | 0.7− | 2006 10 16 | 703 | 0.2− | 0.7+ |
| 2001 11 09 | 704 | 0.1+ | 1.0− | 2002 01 14 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2001 11 09 | 704 | 0.1+ | 0.8− | 2002 01 14 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2001 11 09 | 704 | 0.5+ | 1.4− | 2002 01 14 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 1.2+ |
| 2001 11 09 | 704 | 0.1− | 0.9− | 2002 01 14 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | (0.4− | 1.6+) |
| 2001 11 09 | 704 | 0.0 | 0.4− | 2002 01 14 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 703 | (0.5+ | 2.1+) |
| 2001 11 20 | 704 | 0.2+ | 1.5+ | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 22 | 703 | (2.1+ | 1.5+) |
| 2001 11 20 | 704 | 1.1+ | 1.4+ | 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2001 11 20 | 704 | (1.6− | 1.2+) | 2006 09 18 | 703 | 1.0− | 0.1− | 2006 10 28 | 703 | 0.3− | 0.4+ |
| 2001 11 20 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 703 | (1.8− | 0.3+) | 2006 10 28 | 703 | 0.8+ | 0.5+ |
| 2001 11 21 | 704 | 0.5+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.8− | 2006 10 28 | 703 | 0.6− | 0.5+ |
| 2001 11 21 | 704 | 0.9+ | 0.7+ | 2006 09 25 | 699 | 0.6− | 0.7+ | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.8+ | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2001 12 09 | 644 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.8+ | 0.5− | 2006 11 07 | 644 | 0.2+ | 0.1− |
| 2001 12 09 | 644 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.3+ | 1.0− | 2006 11 07 | 644 | 0.5+ | 0.1− |
| 2001 12 09 | 644 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.9− | 0.0 | 2006 11 10 | 704 | 0.3+ | 0.5+ |
| 2001 12 10 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 699 | (1.6− | 0.2−) | 2006 11 10 | 704 | 1.3− | 0.8− |
| 2001 12 10 | 704 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.9+ | 0.2+ | 2006 11 10 | 704 | (1.6− | 1.1+) |
| 2001 12 10 | 704 | 0.2− | 0.8+ | 2006 09 30 | 704 | 0.3+ | 0.2− | 2006 11 10 | 704 | 0.2− | 0.3+ |
| 2001 12 14 | 704 | 0.1− | 1.2+ | 2006 09 30 | 704 | 0.3− | 0.7− | 2006 11 16 | 703 | 0.2+ | 1.2− |
| 2001 12 14 | 704 | (0.8+ | 2.2+) | 2006 09 30 | 704 | 0.3− | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.1− |
| 2001 12 14 | 704 | 1.1− | 0.5+ | 2006 09 30 | 704 | 0.6− | 0.4+ | 2006 11 16 | 703 | 0.0 | 0.7− |
| 2001 12 14 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.1− | 2006 11 16 | 703 | 1.2+ | 0.6+ |
| 2001 12 14 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 704 | (0.1+ | 1.6+) | | | | |
| 2001 12 17 | 704 | 0.4− | 0.5+ | 2006 09 30 | 704 | 0.6+ | 0.0 | | | | |

**2001 UE$_{164}$ = 2006 SE$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 349.03260 | | | (2000.0) | | |
| $n$ | 0.19486104 | $\omega$ | 205.39900 | | +0.81752266 | −0.57513832 |
| $a$ | 2.9465878 | $\Omega$ | 189.87270 | | +0.55340115 | +0.79875117 |
| $e$ | 0.1107802 | $i$ | 9.92073 | | +0.15938593 | +0.17667053 |
| $P$ | 5.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.4+ | 0.8+ | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3− | 0.6− |
| 2001 10 17 | 704 | 0.1+ | 1.1+ | 2004 04 12 | 621 | 0.5+ | 0.9+ | 2006 10 21 | 703 | (8.4− | 0.1−) |
| 2001 10 17 | 704 | 0.5− | 0.3+ | 2004 04 12 | 621 | 0.1− | 1.0+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2001 10 18 | 644 | 0.3− | 1.1+ | 2004 04 12 | 621 | (0.1+ | 1.6+) | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 10 18 | 644 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.3− |
| 2001 10 18 | 644 | 0.4− | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 644 | 0.3+ | 1.5+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 10 24 | 644 | 0.5+ | 1.2+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2001 10 24 | 644 | 0.8+ | 1.1+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2001 10 26 | 644 | 0.4− | 0.3+ | 2006 09 23 | 691 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.7− | 0.3− |
| 2001 10 26 | 644 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.7+ | 0.5− |
| 2001 10 26 | 644 | 0.4− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2001 11 18 | 704 | 1.2− | 0.9− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 1.1− |
| 2001 11 18 | 704 | 0.3− | 0.8− | 2006 10 01 | 691 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2001 11 18 | 704 | 0.7− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2001 11 18 | 704 | 0.9+ | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.6− |
| 2001 11 18 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 0.9− | | | | |

**2001 UY$_{169}$ = 2006 ST$_{342}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.78911 | | | (2000.0) | | |
| $n$ | 0.19319035 | $\omega$ | 103.30438 | | +0.89373582 | +0.43287611 |
| $a$ | 2.9635512 | $\Omega$ | 231.17613 | | −0.44732695 | +0.84028184 |
| $e$ | 0.0165454 | $i$ | 8.68970 | | −0.03368803 | +0.32641186 |
| $P$ | 5.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | (2.1+ | 0.2−) |
| 2001 10 21 | 704 | 0.2+ | 0.9+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 1.2− | 0.8+ |
| 2001 10 21 | 704 | 0.8− | 0.3− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2001 10 25 | 704 | 0.9+ | 0.9− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 1.3+ | 0.6− |
| 2001 10 25 | 704 | 0.7+ | 0.5− | 2006 10 02 | 691 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 10 25 | 704 | 0.1− | 0.5+ | 2006 10 02 | 691 | 0.1− | 0.4− | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2001 10 26 | 644 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.4+ | 0.1− |
| 2001 10 26 | 644 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | | | | |
| 2001 10 26 | 644 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.3− | | | | |

**2001 UD$_{171}$ = 2006 TO$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.47715 | | | (2000.0) | | |
| $n$ | 0.19841231 | $\omega$ | 29.22094 | | +0.56404611 | −0.82001501 |
| $a$ | 2.9113224 | $\Omega$ | 26.80055 | | +0.70962361 | +0.42123862 |
| $e$ | 0.0991985 | $i$ | 12.43558 | | +0.42223963 | +0.38747052 |
| $P$ | 4.97 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 10 25 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | (1.7− | 0.9−) | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 10 25 | 704 | 0.6− | 0.1− | 2006 10 19 | G96 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 10 25 | 704 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 10 25 | 704 | (0.2− | 1.9+) | 2006 10 19 | 703 | 0.4− | 1.0− | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2001 10 25 | 704 | 0.2− | 0.8+ | 2006 10 19 | 703 | (1.7− | 0.2−) | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 11 10 | 704 | 1.3+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 11 10 | 704 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 11 10 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.3+ | 0.2+ |
| 2001 11 10 | 704 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.7− | 2006 11 19 | 704 | 0.8− | 0.2− |
| 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.3− | 2006 11 22 | 703 | 0.5− | 0.7+ |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 22 | 703 | 0.6− | 0.5− |
| 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3− | 2006 11 22 | 703 | 1.3− | 0.0 |
| 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.5+ | 1.0+ |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.2− | | | | |

**2001 UO$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.19214 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18407487 | $\omega$ | 307.11957 | | +0.29600997 | −0.95481226 | |
| $a$ | 3.0605987 | $\Omega$ | 125.64137 | | +0.88644749 | +0.26419827 | |
| $e$ | 0.2436458 | $i$ | 1.88111 | | +0.35579340 | +0.13613532 | |
| $P$ | 5.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.4− | 0.1+ | 2001 10 25 | 644 | 0.4− | 0.1+ | 2003 04 01 | 645 | 0.0 | 0.1+ |
| 2001 10 18 | 644 | 0.6− | 0.1+ | 2001 10 25 | 644 | 0.5− | 0.4+ | 2003 04 01 | 645 | 0.0 | 0.0 |
| 2001 10 18 | 644 | 0.1− | 0.0 | 2001 11 14 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2001 10 20 | 704 | 0.5+ | 0.4− | 2001 11 14 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2001 10 20 | 704 | 0.2− | 0.6− | 2001 11 14 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 10 20 | 704 | 1.0+ | 0.5− | 2001 11 20 | 704 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.0 | 0.4+ |
| 2001 10 20 | 704 | 0.0 | 1.5− | 2001 11 20 | 704 | 0.0 | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.6+ | 0.4− | 2001 11 20 | 704 | 1.3+ | 0.7+ | 2006 09 30 | G96 | 0.6+ | 0.2− |
| 2001 10 25 | 644 | 0.6− | 0.5+ | 2001 11 20 | 704 | 0.3+ | 1.1+ | 2006 09 30 | G96 | 0.1− | 0.2+ |

**2001 UR$_{172}$ = 2001 UK$_{180}$ = 2006 UU$_{159}$**

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Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.22310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19467762 | $\omega$ | 297.74710 | | +0.96522184 | +0.23347768 | |
| $a$ | 2.9484382 | $\Omega$ | 49.00384 | | −0.14890234 | +0.86077699 | |
| $e$ | 0.0944515 | $i$ | 8.96562 | | −0.21488346 | +0.45227332 | |
| $P$ | 5.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.6+ | 0.1+ | 2001 10 25 | 644 | 0.4+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.3+ |
| 2001 10 18 | 644 | 0.2+ | 0.2− | 2001 11 20 | 704 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.4+ |
| 2001 10 18 | 644 | 0.1+ | 0.2+ | 2001 11 20 | 704 | 1.2− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 0.7− | 0.5− | 2001 11 20 | 704 | 0.0 | 1.1− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.5+ | 0.8− | 2001 11 21 | 704 | 0.4− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.4+ | 0.1+ | 2001 11 21 | 704 | 1.1− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2001 10 23 | 704 | 1.0+ | 0.3− | 2001 11 21 | 704 | 0.2+ | 1.1+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2001 10 23 | 704 | 0.4− | 0.3− | 2001 11 21 | 704 | (1.8− | 1.1−) | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2001 10 25 | 644 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.6+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2001 10 25 | 644 | 0.6+ | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.1+ | | | | |

**2001 UF$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.15912 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26304311 | $\omega$ | 219.58267 | | +0.35412125 | +0.93343545 | |
| $a$ | 2.4124117 | $\Omega$ | 71.22497 | | −0.84192600 | +0.34492807 | |
| $e$ | 0.1761566 | $i$ | 3.47661 | | −0.40713480 | +0.09860471 | |
| $P$ | 3.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.5+ | 0.3+ | 2001 10 25 | 644 | 0.6− | 0.5+ | 2005 11 04 | 691 | 0.2− | 0.4− |
| 2000 05 07 | 704 | 1.3+ | 0.5+ | 2001 10 25 | 644 | 0.5− | 0.1+ | 2005 11 04 | 691 | 0.1+ | 0.2− |
| 2000 05 07 | 704 | 0.7− | 0.5+ | 2001 10 25 | 644 | 0.6− | 0.0 | 2005 11 04 | 691 | 0.0 | 0.3− |
| 2000 05 07 | 704 | 0.5− | 0.3+ | 2001 11 20 | 704 | 0.2+ | 1.8+ | 2005 11 22 | 691 | 0.2− | 0.8+ |
| 2001 10 18 | 644 | 0.1− | 0.7+ | 2001 11 20 | 704 | 0.2− | 1.7+ | 2005 11 22 | 691 | 0.2+ | 0.2+ |
| 2001 10 18 | 644 | 0.4− | 0.2+ | 2001 11 20 | 704 | 0.5+ | 0.2+ | 2005 11 22 | 691 | 0.2− | 0.1+ |
| 2001 10 18 | 644 | 0.2− | 0.6+ | 2001 11 20 | 704 | 0.8+ | 0.7+ | 2005 12 02 | G96 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.2+ | 0.4− | 2005 10 25 | G96 | 0.1− | 0.2− | 2005 12 02 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 0.3+ | 0.3− | 2005 10 25 | G96 | 0.3+ | 0.1− | 2005 12 02 | G96 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.2+ | 1.1− | 2005 10 25 | G96 | 0.4+ | 0.3− | | | | |
| 2001 10 24 | 704 | 0.6− | 1.5− | 2005 10 25 | G96 | 0.0 | 0.3− | | | | |

**2001 UW$_{173}$ = 2006 RM$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.73061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17699998 | $\omega$ | 149.47194 | | +0.98206420 | −0.15284584 | |
| $a$ | 3.1416218 | $\Omega$ | 219.79930 | | +0.11833096 | +0.95549320 | |
| $e$ | 0.1921379 | $i$ | 9.93159 | | +0.14679134 | +0.25233094 | |
| $P$ | 5.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.5+ | 0.2− | 2001 11 12 | 704 | 1.1− | 0.1− | 2006 09 16 | 691 | 0.2+ | 0.2+ |
| 2001 10 18 | 644 | 0.4− | 0.6− | 2001 11 22 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.6− | 0.4− |
| 2001 10 18 | 644 | 0.2+ | 0.8− | 2001 11 22 | 644 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.6− |
| 2001 10 25 | 644 | 0.4+ | 0.6+ | 2001 11 22 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.6− | 1.5− |
| 2001 10 25 | 644 | 0.2+ | 0.8+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2001 10 25 | 644 | 0.6+ | 1.0+ | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 703 | 0.7− | 0.4+ |
| 2001 11 12 | 704 | 0.2+ | 1.5− | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.3+ | 0.4− |
| 2001 11 12 | 704 | 1.1− | 0.2+ | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.5− | 1.2− |
| 2001 11 12 | 704 | 0.7+ | 0.2+ | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.1+ |

**2001 UQ$_{176}$ = 2006 SY$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.14190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19523904 | $\omega$ | 248.93585 | | +0.67364438 | −0.73893706 | |
| $a$ | 2.9427832 | $\Omega$ | 158.69772 | | +0.69087932 | +0.62326918 | |
| $e$ | 0.1175765 | $i$ | 2.08845 | | +0.26246717 | +0.25594445 | |
| $P$ | 5.05 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.0 | 0.6− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.2− |
| 1991 11 06 | 691 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | (2.2− | 0.6+) |
| 1991 11 06 | 691 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 10 18 | 644 | 0.3+ | 0.4+ | 2006 09 23 | 691 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 18 | 644 | 0.0 | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 10 18 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 10 25 | 691 | 0.6− | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2001 10 25 | 691 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 10 25 | 691 | 0.2− | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.8− |
| 2001 10 26 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 10 26 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2001 10 26 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | (0.1+ | 1.6+) | | | | |

**2001 UY$_{178}$ = 2006 US$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.37279 | | (2000.0) | | | |
| $n$ | 0.20423261 | $\omega$ | 275.84347 | | +0.90891130 | +0.37529984 |
| $a$ | 2.8557444 | $\Omega$ | 62.23237 | | −0.25222581 | +0.84188276 |
| $e$ | 0.1335626 | $i$ | 11.85260 | | −0.33205780 | +0.38779305 |
| $P$ | 4.83 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 13 | G96 | 0.4− | 0.1+ |
| 2001 10 16 | 704 | 1.3+ | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2001 10 16 | 704 | 1.4+ | 1.3+ | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2001 10 20 | 704 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 18 | 704 | 0.9+ | 0.1− |
| 2001 10 20 | 704 | 0.5− | 0.4− | 2006 10 18 | 691 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.1− |
| 2001 10 20 | 704 | (2.9− | 0.5−) | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 2001 10 24 | 644 | 0.2− | 0.5− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2001 10 24 | 644 | 0.0 | 0.7− | 2006 11 11 | 703 | 0.3− | 0.5− | 2006 11 18 | 704 | 0.6− | 0.5− |
| 2001 10 24 | 644 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.3− | 0.8+ | 2006 11 21 | 704 | 1.2+ | 0.1+ |
| 2001 10 26 | 644 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.5− | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2001 10 26 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | (1.2− | 2.2+) | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2001 10 26 | 644 | 0.5− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.2− |

**2001 UL$_{179}$ = 2006 TM$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.65163 | | (2000.0) | | | |
| $n$ | 0.19840979 | $\omega$ | 322.23034 | | +0.96053615 | +0.27173383 |
| $a$ | 2.9113471 | $\Omega$ | 22.22314 | | −0.20116558 | +0.82617439 |
| $e$ | 0.2010763 | $i$ | 9.03937 | | −0.19210078 | +0.49355507 |
| $P$ | 4.97 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2− | 0.2+ | 2001 11 24 | 704 | 1.0− | 0.3+ | 2006 11 01 | G96 | 0.7+ | 0.2− |
| 2001 10 14 | 704 | 0.3− | 0.1− | 2001 11 24 | 704 | 0.7− | 0.9+ | 2006 11 01 | G96 | 0.4+ | 0.2− |
| 2001 10 14 | 704 | 0.7− | 0.3+ | 2001 11 24 | 704 | 0.8+ | 0.5− | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2001 10 14 | 704 | 0.1− | 0.7+ | 2001 11 24 | 704 | (1.7− | 1.0+) | 2006 11 01 | G96 | 0.6+ | 0.3− |
| 2001 10 14 | 704 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 2001 10 19 | 644 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.9− | 0.3+ |
| 2001 10 19 | 644 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.2− | 0.3+ |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.7+ | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.3− |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.1− | 1.0− |
| 2001 10 21 | 704 | 0.2+ | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.4− | 0.5+ |
| 2001 10 21 | 704 | 0.2+ | 1.2+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.2− |
| 2001 10 26 | 644 | 0.1− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.5+ | 0.1+ |
| 2001 10 26 | 644 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 10 26 | 644 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2001 10 28 | 644 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2001 10 28 | 644 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2001 10 28 | 644 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2001 11 10 | 704 | 0.4+ | 0.5− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2001 11 10 | 704 | 0.6+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 11 10 | 704 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2001 11 10 | 704 | 0.6+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.3− |
| 2001 11 10 | 704 | 0.4+ | 0.0 | 2006 10 27 | 703 | 0.4− | 1.1− | 2006 11 22 | 704 | 0.8− | 0.3− |
| 2001 11 10 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.7− | 2006 11 22 | 704 | 0.7− | 0.4+ |
| 2001 11 10 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 22 | 704 | 1.4− | 0.4− |
| 2001 11 10 | 644 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.6− | 2006 11 22 | 704 | 0.0 | 0.9+ |

**2001 US$_{183}$ = 2006 WE$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.99845 | | (2000.0) | | | |
| $n$ | 0.21957307 | $\omega$ | 305.47182 | | +0.98348170 | +0.13497239 |
| $a$ | 2.7211344 | $\Omega$ | 47.10644 | | −0.05824361 | +0.86685068 |
| $e$ | 0.1392047 | $i$ | 9.47547 | | −0.17138097 | +0.47995036 |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4+ | 0.1− | 2001 10 16 | 644 | 0.7− | 0.6+ | 2003 01 25 | 645 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.4+ | 0.1− | 2001 10 16 | 644 | 0.7− | 0.7+ | 2003 01 25 | 645 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.5+ | 0.1+ | 2001 10 19 | 699 | 0.1+ | 0.4+ | 2003 01 25 | 645 | 0.0 | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 0.2− | 2001 10 19 | 699 | 0.4− | 0.9− | 2003 01 25 | 645 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.9+ | 0.3+ | 2001 10 19 | 699 | 0.4+ | 0.7− | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 10 13 | 704 | 0.3− | 0.2− | 2001 10 19 | 699 | 1.1− | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 10 13 | 704 | 0.7+ | 0.3− | 2001 11 20 | 704 | 0.4+ | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2001 10 13 | 704 | 0.4− | 0.3− | 2001 11 20 | 704 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.5− | 0.2+ |
| 2001 10 13 | 704 | 0.5+ | 0.4− | 2001 11 20 | 704 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2001 10 13 | 704 | 1.0− | 0.3+ | 2001 11 20 | 704 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.1+ |
| 2001 10 16 | 644 | 0.7− | 0.7+ | 2001 11 20 | 704 | 0.4+ | 0.6− | | | | |

**2001 UM$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.58579 | | (2000.0) | | | |
| $n$ | 0.21018857 | $\omega$ | 58.44996 | | +0.16932078 | −0.98495671 |
| $a$ | 2.8015388 | $\Omega$ | 21.88101 | | +0.86994508 | +0.13291171 |
| $e$ | 0.1576969 | $i$ | 5.31275 | | +0.46316955 | +0.11042986 |
| $P$ | 4.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 691 | 0.1+ | 0.6− | 2001 10 17 | 644 | 0.2+ | 0.4− | 2006 11 14 | 703 | 0.2+ | 0.9+ |
| 2001 09 11 | 691 | 0.3+ | 0.7− | 2001 10 17 | 644 | 0.3− | 0.1+ | 2006 11 14 | 703 | 1.2+ | 0.2+ |
| 2001 09 11 | 691 | 0.1− | 1.1+ | 2001 10 20 | 704 | 1.1+ | 0.5+ | 2006 11 14 | 703 | 0.1− | 1.3− |
| 2001 09 21 | 704 | 1.1− | 0.4+ | 2001 10 20 | 704 | 0.6− | 0.8+ | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.4− | 1.2+ | 2001 10 20 | 704 | 1.0+ | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2001 10 20 | 704 | 0.6+ | 1.0+ | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.6+ | 0.5− | 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2001 10 14 | 691 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.7+ | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2001 10 14 | 691 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2001 10 14 | 691 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | (1.0− | 2.2+) |
| 2001 10 17 | 644 | 0.9− | 0.0 | 2006 11 14 | 703 | 0.6+ | 0.4+ | | | | |

**2001 UT$_{188}$ = 2006 VV$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 121.62980 | | (2000.0) | | | |
| $n$ | 0.20646380 | $\omega$ | 197.99000 | | +0.20582208 | +0.97705749 |
| $a$ | 2.8351330 | $\Omega$ | 83.91489 | | −0.89094022 | +0.21023082 |
| $e$ | 0.0398687 | $i$ | 3.15546 | | −0.40479971 | +0.03408331 |
| $P$ | 4.77 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.5− |
| 2000 07 29 | 807 | 0.1− | 0.3− | 2006 10 19 | G96 | (2.4− | 0.8+) | 2006 11 21 | 704 | (0.8+ | 1.6+) |
| 2001 10 17 | 291 | 0.2− | 0.8+ | 2006 10 23 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.7− | 1.3− |
| 2001 10 17 | 291 | 0.3− | 0.9+ | 2006 10 23 | G96 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2001 10 17 | 291 | 0.3− | 1.2+ | 2006 10 23 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 10 18 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 10 18 | 644 | 0.6+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.6+ | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 24 | 291 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.8− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 24 | 291 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 1.0− | 0.6+ | 2006 11 11 | G96 | 0.5− | 0.0 | 2006 11 24 | 291 | 0.2− | 0.2+ |
| 2001 10 24 | 704 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2004 05 14 | 691 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2004 05 14 | 691 | 0.1+ | 0.7+ | 2006 11 11 | G96 | 0.7+ | 0.2− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2004 05 14 | 691 | 0.4+ | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.4− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.4− | | |
| 2004 05 23 | 691 | 0.1+ | 0.7+ | 2006 11 15 | 691 | 0.2+ | 1.3+ | 2006 11 27 | 691 | 0.3− | 0.4− | | |
| 2004 05 23 | 691 | 0.5+ | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.4− | 0.4+ | | |
| 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ | | | | | | |
| 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.1+ | | | | | | |

**2001 UL$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.95076 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21217974 | $\omega$ | 19.42974 | | +0.67263601 | | +0.71725007 |
| $a$ | 2.7839842 | $\Omega$ | 293.31187 | | −0.70243251 | | +0.54157060 |
| $e$ | 0.1402448 | $i$ | 11.42856 | | −0.23270018 | | +0.43846735 |
| $P$ | 4.65 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 699 | 0.4− | 0.4+ | 2001 10 18 | 704 | 0.5+ | 0.0 | 2006 10 29 | 703 | 0.1+ | 0.1− | | |
| 2001 08 26 | 699 | 0.3+ | 0.4+ | 2001 10 18 | 704 | 0.5− | 0.4− | 2006 10 29 | 703 | 0.3+ | 0.3+ | | |
| 2001 08 26 | 699 | 0.1− | 0.4− | 2001 10 18 | 704 | 0.0 | 0.2− | 2006 10 29 | 703 | 0.4− | 0.3+ | | |
| 2001 08 26 | 699 | 0.0 | 0.1+ | 2001 10 18 | 704 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.2− | 0.5+ | | |
| 2001 09 18 | 644 | 0.3+ | 0.7− | 2001 10 18 | 704 | 0.6+ | 0.9− | 2006 11 15 | 703 | 0.1+ | 0.2+ | | |
| 2001 09 18 | 644 | 0.2+ | 0.5− | 2001 10 20 | 699 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.1− | | |
| 2001 09 18 | 644 | 0.2+ | 0.5− | 2001 10 20 | 699 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.0 | 0.3+ | | |
| 2001 09 29 | 644 | 0.7− | 0.8+ | 2001 10 20 | 699 | 0.0 | 0.4− | 2006 11 21 | 703 | 0.5− | 0.0 | | |
| 2001 09 29 | 644 | 0.2+ | 0.0 | 2001 10 20 | 699 | 0.2+ | 0.1+ | 2006 11 21 | 703 | 0.6+ | 1.0− | | |
| 2001 09 29 | 644 | 0.6− | 0.8+ | 2004 04 12 | 644 | 0.1+ | 0.0 | 2006 11 21 | 703 | 0.2+ | 0.0 | | |
| 2001 09 29 | 644 | 0.4+ | 0.2− | 2004 04 12 | 644 | 0.1− | 0.2+ | 2006 11 21 | 703 | 0.5− | 0.4+ | | |
| 2001 09 29 | 644 | 0.9− | 0.9+ | 2004 04 12 | 644 | 0.0 | 0.1− | | | | | | |
| 2001 09 29 | 644 | 0.4+ | 0.1+ | 2006 10 29 | 703 | 0.7+ | 0.7− | | | | | | |

**2001 UN$_{190}$ = 2006 UW$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.84979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21000361 | $\omega$ | 78.52060 | | +0.48504027 | | +0.87235636 |
| $a$ | 2.8031836 | $\Omega$ | 220.67881 | | −0.83442168 | | +0.44078572 |
| $e$ | 0.0964970 | $i$ | 5.37659 | | −0.26167995 | | +0.21142927 |
| $P$ | 4.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− | | |
| 2001 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.1− | | |
| 2001 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.0 | | |
| 2001 10 18 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.4+ | | |
| 2001 10 18 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.2+ | | |
| 2001 10 18 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.5+ | 0.1− | | |
| 2001 10 20 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.1− | | |
| 2001 10 20 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 2001 10 20 | 691 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.0 | | |

**2001 UZ$_{192}$ = 2006 TY$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.18718 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18969714 | $\omega$ | 108.80877 | | +0.98312056 | | +0.11368630 |
| $a$ | 2.9998223 | $\Omega$ | 244.87567 | | −0.15589270 | | +0.93063524 |
| $e$ | 0.0988355 | $i$ | 9.11000 | | +0.09576758 | | +0.34784117 |
| $P$ | 5.20 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.8− | 0.2+ | 2001 10 20 | 644 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.2− | | |
| 2001 09 25 | 704 | 0.6+ | 0.4+ | 2001 10 20 | 644 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2001 09 25 | 704 | 0.9+ | 1.1− | 2001 10 20 | 644 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2001 10 12 | 599 | 0.0 | 0.7+ | 2001 11 11 | 699 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2001 10 12 | 599 | 0.2+ | 1.0− | 2001 11 11 | 699 | 0.7+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2001 10 12 | 599 | 1.1+ | 0.7+ | 2001 11 11 | 699 | 0.1− | 0.7− | 2006 10 23 | 703 | 0.3− | 0.9+ | | |
| 2001 10 18 | 704 | 0.0 | 0.1+ | 2001 11 11 | 699 | 0.6− | 0.7− | 2006 10 23 | 703 | 0.7− | 0.1+ | | |
| 2001 10 18 | 704 | 0.7− | 0.8− | 2006 10 09 | 644 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2001 10 18 | 704 | 0.3− | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.3− | 2006 10 23 | 703 | 0.5+ | 0.1+ | | |
| 2001 10 18 | 704 | 0.5− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 703 | (0.6+ | 1.7−) | | |

**2001 UQ$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.58470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17114345 | $\omega$ | 106.75236 | | +0.47322511 | | −0.87965512 |
| $a$ | 3.2128900 | $\Omega$ | 314.90406 | | +0.78049690 | | +0.44370732 |
| $e$ | 0.1903340 | $i$ | 3.85265 | | +0.40851266 | | +0.17126203 |
| $P$ | 5.76 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2001 10 21 | 704 | 0.9+ | 0.1− | 2003 01 26 | 608 | 0.4− | 0.8− | | |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2001 10 21 | 704 | 0.5+ | 1.6− | 2003 01 26 | 608 | 0.2− | 0.1− | | |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2001 10 21 | 704 | 1.5− | 0.3+ | 2003 02 01 | 645 | 0.1− | 0.0 | | |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2001 10 21 | 704 | 0.3− | 1.0− | 2003 02 01 | 645 | 0.0 | 0.1− | | |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2003 01 08 | 704 | 0.5− | 0.1− | 2003 02 10 | 291 | 0.2+ | 0.3+ | | |
| 2001 10 19 | 644 | 0.2− | 0.5+ | 2003 01 08 | 704 | 0.6− | 0.1+ | 2003 02 10 | 291 | 0.6+ | 0.4+ | | |
| 2001 10 19 | 644 | 0.3− | 0.3+ | 2003 01 08 | 704 | 0.9+ | 0.0 | 2003 02 10 | 291 | 0.1− | 0.2+ | | |
| 2001 10 19 | 644 | 0.3+ | 0.2+ | 2003 01 26 | 608 | 0.3− | 0.4− | | | | | | |

**2001 UT$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.46286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21238817 | $\omega$ | 73.79351 | | +0.34543272 | | −0.93843077 |
| $a$ | 2.7821625 | $\Omega$ | 355.98824 | | +0.83209844 | | +0.30869353 |
| $e$ | 0.0507319 | $i$ | 4.00847 | | +0.43392214 | | +0.15509992 |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 1994 02 16 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.1− | | |
| 1994 02 16 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2001 09 19 | 291 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.3− | | |
| 2001 09 19 | 291 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 09 19 | 291 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.2− | 2006 11 19 | 704 | (2.1+ | 1.4+) | | |
| 2001 10 11 | 644 | 0.7+ | 1.0+ | 2006 10 31 | 691 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.4− | 1.1+ | | |
| 2001 10 11 | 644 | 0.5+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.0 | | |
| 2001 10 11 | 644 | 0.3+ | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5− | 0.7+ | | |
| 2001 10 19 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.8+ | 0.0 | | |
| 2001 10 19 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 19 | 644 | 0.1+ | 0.0 | 2006 11 11 | 644 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1+ | | |
| 2001 10 21 | 704 | 0.4− | 0.6+ | 2006 11 11 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.8− | 0.0 | | |
| 2001 10 21 | 704 | 0.6− | 0.2− | 2006 11 11 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.5+ | 0.6+ | | |
| 2001 10 21 | 704 | 1.3− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 1.1+ | 0.7+ | | |
| 2001 10 21 | 704 | 0.6− | 0.3− | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.3+ | | |
| 2001 10 21 | 704 | 0.6− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.5+ | | |
| 2003 01 27 | 608 | 0.4− | 0.5− | 2006 11 16 | 704 | 1.3− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.6− | | |
| 2003 01 27 | 608 | 0.2− | 0.7− | 2006 11 16 | 704 | 0.5+ | 0.6+ | 2006 12 01 | G96 | 0.0 | 0.1− | | |
| 2003 01 27 | 608 | 0.0 | 0.7− | 2006 11 16 | 704 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.5+ | 0.9− | | |
| 2006 10 23 | 691 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1− | 0.1− | | |

**2001 UY$_{197}$ = 2006 VW$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.20989 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20870750 | $\omega$ | 38.38710 | | +0.94526094 | | −0.32573869 |
| $a$ | 2.8147771 | $\Omega$ | 340.59633 | | +0.28311761 | | +0.84822651 |
| $e$ | 0.1129550 | $i$ | 3.34633 | | +0.16225341 | | +0.41761956 |
| $P$ | 4.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.9+ | 0.5+ | 2001 10 21 | 704 | 1.6+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.1− | | |
| 2001 10 11 | 644 | 0.5+ | 0.4+ | 2001 10 21 | 704 | (2.3+ | 0.4+) | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2001 10 11 | 644 | 0.5+ | 0.7+ | 2006 10 23 | 691 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2001 10 19 | 644 | 0.5+ | 0.2+ | 2006 10 23 | 691 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.7+ | 0.4+ | 2006 10 23 | 691 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.2− | 0.3+ | | |
| 2001 10 19 | 644 | 0.8+ | 0.8− | 2006 11 14 | G96 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 20 | 291 | 0.6− | 0.2− | 2006 11 14 | G96 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− | | |
| 2001 10 20 | 291 | 1.2− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.5− | 0.1− | | |
| 2001 10 20 | 291 | (3.0− | 0.5−) | 2006 11 14 | G96 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2001 10 21 | 704 | 1.4+ | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.4− | 0.1+ | | |

**2001 UA$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.18881 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19336813 | $\omega$ | 310.95538 | | +0.89557466 | | −0.41902783 |
| $a$ | 2.9617345 | $\Omega$ | 74.30211 | | +0.44041633 | | +0.78729532 |
| $e$ | 0.1594624 | $i$ | 8.93605 | | +0.06308323 | | +0.45230714 |
| $P$ | 5.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | 0.2+ | 0.3− | 2001 10 20 | 704 | 0.1+ | 0.6− | 2006 09 19 | 703 | 0.4+ | 0.4+ | | |
| 2001 09 17 | 699 | 0.3− | 0.7+ | 2001 10 20 | 704 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.0 | | |
| 2001 09 17 | 699 | 0.7+ | 0.2− | 2001 10 24 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.6− | | |
| 2001 09 17 | 699 | 0.3− | 0.2+ | 2001 10 24 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.5− | | |
| 2001 09 25 | 704 | 0.4+ | 0.1+ | 2001 10 24 | 644 | 0.4− | 0.6+ | 2006 09 25 | 703 | 0.2− | 0.5− | | |
| 2001 09 25 | 704 | 0.0 | 0.5− | 2006 08 29 | D35 | 0.5− | 0.5+ | 2006 09 25 | 703 | 0.4− | 0.8− | | |
| 2001 09 25 | 704 | 0.5− | 0.3+ | 2006 08 29 | D35 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.3+ | 1.3− | | |
| 2001 10 19 | 699 | 0.4+ | 0.6− | 2006 08 29 | D35 | 0.1− | 0.7+ | 2006 09 25 | 703 | 0.2+ | 0.2+ | | |
| 2001 10 19 | 699 | (2.3− | 0.7+) | 2006 09 17 | 699 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.5+ | | |
| 2001 10 19 | 699 | 0.3− | 0.5+ | 2006 09 17 | 699 | 0.5+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.9− | | |
| 2001 10 19 | 699 | 0.7− | 0.0 | 2006 09 17 | 699 | 0.2+ | 0.9+ | 2006 10 21 | 703 | 0.1+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 699 | 0.7− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.2− | | |

**2001 UD$_{199}$ = 2006 TW$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.85612 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20042163 | $\omega$ | 46.30712 | | +0.81044748 | | −0.58580788 |
| $a$ | 2.8918315 | $\Omega$ | 349.55242 | | +0.53424148 | | +0.74050232 |
| $e$ | 0.1711590 | $i$ | 0.63347 | | +0.24033503 | | +0.32937129 |
| $P$ | 4.92 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 291 | 0.3+ | 0.3− | 2006 10 15 | 958 | 0.3− | 0.9+ | 2006 10 27 | G96 | 0.5− | 0.1− | | |
| 2001 10 14 | 291 | 1.1− | 0.6− | 2006 10 15 | 958 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.0 | | |
| 2001 10 14 | 291 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.1+ | | |
| 2001 10 19 | 644 | 1.0+ | 0.5+ | 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2001 10 19 | 644 | 0.9+ | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2001 10 19 | 644 | 1.0+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− | | |
| 2001 10 21 | 704 | 0.7+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.0 | | |
| 2001 10 21 | 704 | (0.9+ | 2.0+) | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.4− | 0.2− | | |
| 2001 10 21 | 704 | 0.0 | 0.9+ | 2006 10 21 | 703 | 1.0− | 0.1− | 2006 11 13 | G96 | 0.9− | 0.3− | | |
| 2001 10 21 | 704 | 0.6+ | 0.9+ | 2006 10 21 | 703 | 1.4− | 0.2− | 2006 11 13 | G96 | 0.3− | 0.4− | | |
| 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.5+ | 0.7+ | 2006 11 13 | G96 | 0.3− | 0.2− | | |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | 703 | 1.1+ | 0.7+ | 2006 11 13 | G96 | 0.3− | 0.5− | | |
| 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.6+ | 0.2+ | | |
| 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2006 10 13 | 958 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.3− | 0.1− | | |
| 2006 10 13 | 958 | 0.6+ | 0.3+ | 2006 10 24 | 224 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1− | | |
| 2006 10 14 | 958 | 0.5+ | 0.2− | 2006 10 24 | 224 | 0.6+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.0 | | |
| 2006 10 14 | 958 | 0.6+ | 0.6+ | 2006 10 24 | 224 | (1.6+ | 0.4+) | 2006 11 21 | 691 | 0.1− | 0.4− | | |

**2001 UL$_{199}$ = 2006 UF$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.76002 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18456433 | $\omega$ | 47.31473 | | −0.04782537 | | +0.99593515 |
| $a$ | 3.0551852 | $\Omega$ | 220.13524 | | −0.94756979 | | −0.06940814 |
| $e$ | 0.0295071 | $i$ | 6.80047 | | −0.31594973 | | +0.05740815 |
| $P$ | 5.34 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2− | 0.2− | 2001 10 19 | 644 | 0.4− | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 14 | 704 | 0.7− | 0.5− | 2001 10 23 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.3− | | |
| 2001 10 14 | 704 | 0.6− | 0.6+ | 2001 10 23 | 691 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.3+ | | |
| 2001 10 19 | 644 | 0.2− | 0.2+ | 2001 10 23 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2001 10 19 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2− | | |

**2001 UZ$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.54001 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18799653 | $\omega$ | 82.37930 | | +0.47897007 | | +0.87069056 |
| $a$ | 3.0178859 | $\Omega$ | 216.91933 | | −0.86076936 | | +0.44086574 |
| $e$ | 0.0691548 | $i$ | 10.72048 | | −0.17223174 | | +0.21802602 |
| $P$ | 5.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.7− | 2004 03 16 | 703 | 1.3− | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.6+ | | |
| 2001 09 20 | 704 | 0.7− | 0.6− | 2004 03 16 | 703 | (1.2+ | 2.2+) | 2006 09 19 | 699 | 0.8− | 0.1− | | |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2004 03 16 | 703 | (0.8+ | 1.9+) | 2006 09 19 | 699 | 0.3+ | 0.0 | | |
| 2001 10 11 | 644 | 0.5+ | 0.3+ | 2004 03 16 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.7+ | 0.1+ | | |
| 2001 10 11 | 644 | 0.4+ | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.6+ | | |
| 2001 10 11 | 644 | 0.3+ | 0.2+ | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | | |
| 2001 10 19 | 644 | 0.1− | 0.3− | 2004 03 26 | 699 | 0.0 | 0.7+ | 2006 10 23 | G96 | 0.4− | 0.0 | | |
| 2001 10 19 | 644 | 0.6− | 0.3− | 2004 03 26 | 699 | 0.9− | 0.7− | 2006 10 23 | G96 | 0.4− | 0.0 | | |
| 2001 10 19 | 644 | 0.3− | 0.1+ | 2004 03 26 | 699 | 0.5− | 1.1− | 2006 10 23 | G96 | 0.1− | 0.1− | | |
| 2001 10 21 | 704 | 0.2+ | 0.7+ | 2004 03 26 | 699 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.1− | 0.0 | | |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 0.1+ | 0.3− | 2006 09 16 | 703 | 0.3+ | 0.9− | 2006 10 23 | G96 | 0.2− | 0.1+ | | |
| 2001 10 21 | 704 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.1− | 0.5− | 2006 10 23 | G96 | 0.3− | 0.1+ | | |
| 2001 10 21 | 704 | 0.4+ | 0.3− | 2006 09 16 | 703 | 0.9− | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 16 | 703 | 1.3+ | 1.2+ | 2006 09 19 | 699 | 0.8+ | 0.1− | | | | | | |

**2001 UX$_{203}$ = 2001 WL$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.54712 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21229613 | $\omega$ | 186.29505 | | −0.02304319 | | −0.99891041 |
| $a$ | 2.7829666 | $\Omega$ | 265.03055 | | +0.91900603 | | −0.00518420 |
| $e$ | 0.0597541 | $i$ | 2.33467 | | +0.39356947 | | −0.04638006 |
| $P$ | 4.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.6+ | 0.8− | 2001 11 19 | 704 | 0.0 | 1.0+ | 2003 03 06 | 644 | 0.6+ | 0.3+ | | |
| 2001 10 19 | 644 | 0.5+ | 0.8− | 2001 11 19 | 704 | 0.7− | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.2− | | |
| 2001 10 19 | 644 | 0.6+ | 0.7− | 2003 01 31 | 704 | (1.3− | 2.6+) | 2006 11 10 | 691 | 0.2+ | 0.1− | | |
| 2001 10 21 | 704 | 0.4− | 0.0 | 2003 01 31 | 704 | 0.7− | 0.8− | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 21 | 704 | (0.8+ | 1.8+) | 2003 01 31 | 704 | 0.3− | 0.3− | 2006 11 21 | 704 | 1.3− | 0.2− | | |
| 2001 10 21 | 704 | 0.7− | 1.2+ | 2003 01 31 | 704 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.4+ | | |
| 2001 10 21 | 704 | 0.3− | 0.4+ | 2003 02 22 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.1− | | |
| 2001 10 26 | 644 | 0.0 | 0.4− | 2003 02 22 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.9− | 0.8+ | | |
| 2001 10 26 | 644 | 0.1+ | 0.3− | 2003 02 22 | 644 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.1− | | |
| 2001 10 26 | 644 | 0.1+ | 0.2− | 2003 03 06 | 644 | 0.5+ | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.1− | | |
| 2001 11 19 | 704 | 0.2− | 0.9+ | 2003 03 06 | 644 | 0.2+ | 0.5+ | 2006 11 24 | 691 | 0.1+ | 0.0 | | |

**2001 US$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.33803 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18383226 | $\omega$ | 39.57265 | | +0.38282989 | | −0.92060847 |
| $a$ | 3.0632909 | $\Omega$ | 28.16752 | | +0.80090662 | | +0.28922788 |
| $e$ | 0.1359359 | $i$ | 9.38179 | | +0.46042357 | | +0.26234955 |
| $P$ | 5.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.2+ | 0.4− | 2001 11 19 | 704 | 0.1− | 0.8− | 2006 09 18 | 703 | 0.0 | 0.8+ | | |
| 2001 10 19 | 644 | 0.0 | 0.3− | 2001 11 19 | 704 | 0.6− | 0.7− | 2006 09 20 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 19 | 644 | 0.2+ | 0.3− | 2001 11 19 | 704 | 0.3− | 0.7− | 2006 09 20 | 691 | 0.1− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.0 | 0.7+ | 2001 11 24 | 704 | (2.0− | 2.1+) | 2006 09 20 | 691 | 0.1− | 0.1+ | | |
| 2001 10 21 | 704 | 0.2− | 0.2+ | 2001 11 24 | 704 | 0.2+ | 0.4− | 2006 09 30 | 703 | (1.1− | 2.0−) | | |
| 2001 10 21 | 704 | 0.4− | 0.5+ | 2001 11 24 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.7+ | 1.0− | | |
| 2001 10 21 | 704 | 0.3− | 0.3− | 2001 11 24 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | (2.3− | 2.3−) | | |
| 2001 10 21 | 704 | 0.9− | 0.8+ | 2001 12 20 | 644 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.7− | | |
| 2001 11 10 | 704 | (1.5+ | 0.6+) | 2001 12 20 | 644 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1+ | | |
| 2001 11 10 | 704 | 0.4+ | 0.8+ | 2001 12 20 | 644 | 0.3+ | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.0 | | |
| 2001 11 10 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | (2.1+ | 0.5+) | 2006 11 16 | G96 | 0.4− | 0.3− | | |
| 2001 11 19 | 704 | 0.1+ | 0.5− | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 11 16 | G96 | 0.7+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.1+ | 0.7− | 2006 09 18 | 703 | 0.3+ | 0.6+ | | | | | | |

**2001 UD$_{206}$ = 2001 RJ$_{152}$**

Id. Minor Planet Center (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.56672 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21181778 | $\omega$ | 249.23738 | | +0.78080707 | +0.60798299 | |
| $a$ | 2.7871549 | $\Omega$ | 73.03993 | | −0.50256302 | +0.74799934 | |
| $e$ | 0.2262976 | $i$ | 8.65045 | | −0.37117480 | +0.26618353 | |
| $P$ | 4.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.1+ | 0.7+ | 2001 10 19 | 699 | 0.9− | 0.3− | 2006 11 02 | 703 | (0.0 | 2.6−) | | |
| 2001 07 19 | 644 | 0.1− | 0.6+ | 2001 10 19 | 699 | (3.3− | 1.0+) | 2006 11 02 | 703 | 1.1+ | 0.4− | | |
| 2001 07 19 | 644 | 0.1+ | 1.0+ | 2001 10 19 | 699 | 0.2+ | 0.2− | 2006 11 02 | 703 | (2.6− | 0.5−) | | |
| 2001 09 11 | 699 | 0.0 | 0.2+ | 2001 10 20 | 704 | 0.0 | 1.0+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 2001 09 11 | 699 | 0.3− | 0.4+ | 2001 10 20 | 704 | 1.0+ | 1.1+ | 2006 11 08 | 644 | 0.4+ | 0.4+ | | |
| 2001 09 11 | 699 | 0.3+ | 0.5− | 2001 10 20 | 704 | 0.6− | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.2+ | | |
| 2001 09 11 | 699 | 0.7− | 0.5− | 2001 10 20 | 704 | (0.0 | 1.7+) | 2006 11 17 | G96 | 0.2+ | 0.1+ | | |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2001 10 23 | 644 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.2+ | | |
| 2001 09 12 | 704 | 0.8− | 0.9− | 2001 10 23 | 644 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.0 | | |
| 2001 09 12 | 704 | 0.0 | 0.0 | 2001 10 23 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.2− | | |
| 2001 09 12 | 704 | 0.1− | 0.6+ | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2001 10 15 | 644 | 1.3+ | 1.0− | 2005 05 19 | G96 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (2.6− | 0.5−) | | |
| 2001 10 15 | 644 | 1.3+ | 0.9− | 2005 05 19 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 1.3− | 0.4+ | | |
| 2001 10 15 | 644 | 0.6+ | 0.8− | 2005 05 19 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.5− | 0.6+ | | |
| 2001 10 19 | 699 | 0.1+ | 1.1− | 2006 11 02 | 703 | 1.2− | 0.7− | | | | | | |

**2001 UM$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.16998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26848943 | $\omega$ | 117.64824 | | +0.17160023 | −0.98499702 | |
| $a$ | 2.3796765 | $\Omega$ | 322.45676 | | +0.89297244 | +0.16335294 | |
| $e$ | 0.1863929 | $i$ | 1.71924 | | +0.41611727 | +0.05564787 | |
| $P$ | 3.67 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.4− | 1.0− | 2001 10 20 | 691 | 0.1+ | 0.7+ | 2005 12 07 | 691 | 0.2− | 0.1+ | | |
| 2001 09 23 | 704 | 0.2+ | 0.4+ | 2001 10 21 | 704 | 0.5+ | 0.9− | 2005 12 07 | 691 | 0.9+ | 2.2− | | |
| 2001 09 23 | 704 | 0.1+ | 0.4− | 2001 10 21 | 704 | 0.4+ | 0.7− | 2005 12 21 | 691 | 0.1+ | 0.4+ | | |
| 2001 09 23 | 704 | 0.6+ | 0.8− | 2001 10 21 | 704 | 0.7+ | 0.0 | 2005 12 21 | 691 | 0.0 | 0.4+ | | |
| 2001 10 18 | 644 | 0.2− | 0.5+ | 2001 10 21 | 704 | 0.3− | 0.6− | 2005 12 21 | 691 | 0.1+ | 0.5+ | | |
| 2001 10 18 | 644 | 0.1− | 0.6+ | 2005 11 29 | 691 | 0.3+ | 0.2+ | 2006 01 06 | 704 | 0.5− | 0.4+ | | |
| 2001 10 18 | 644 | 0.4− | 0.7+ | 2005 11 29 | 691 | 1.3− | 0.9− | 2006 01 06 | 704 | 0.4− | 0.7+ | | |
| 2001 10 20 | 691 | 0.1− | 0.2+ | 2005 11 29 | 691 | 0.3+ | 0.3+ | 2006 01 06 | 704 | 0.1+ | 0.7+ | | |
| 2001 10 20 | 691 | 0.4− | 0.1− | 2005 12 07 | 691 | 0.1− | 0.4+ | | | | | | |

**2001 UR$_{206}$ = 2006 WS$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.93125 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21205035 | $\omega$ | 284.25133 | | +0.96162930 | +0.23435027 | |
| $a$ | 2.7851166 | $\Omega$ | 62.36301 | | −0.14493874 | +0.87542267 | |
| $e$ | 0.3189193 | $i$ | 9.26622 | | −0.23294172 | +0.42274708 | |
| $P$ | 4.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.4− | 0.5+ | 2001 10 20 | 704 | 0.0 | 0.9+ | 2006 11 10 | 691 | 0.4− | 0.0 | | |
| 2001 10 11 | 704 | 0.7− | 0.3+ | 2001 10 20 | 704 | 0.2− | 0.6− | 2006 11 10 | 691 | 0.1+ | 0.5− | | |
| 2001 10 11 | 704 | 0.7− | 0.2+ | 2001 10 23 | 644 | 0.0 | 0.8+ | 2006 11 10 | 691 | 0.4− | 0.5+ | | |
| 2001 10 11 | 704 | 0.6− | 0.1+ | 2001 10 23 | 644 | 0.1+ | 0.9+ | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2001 10 19 | 699 | 0.5− | 0.1− | 2001 10 23 | 644 | 1.0+ | 1.0+ | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2001 10 19 | 699 | 0.0 | 0.3+ | 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.2− | 0.2+ | | |
| 2001 10 19 | 699 | 0.1+ | 1.2− | 2001 12 10 | 645 | 0.3+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ | | |
| 2001 10 19 | 699 | 0.6− | 0.2− | 2005 05 07 | G96 | 1.0− | 0.5− | 2006 11 24 | 691 | 0.5+ | 0.2+ | | |
| 2001 10 20 | 704 | 0.9− | 0.2+ | 2005 05 07 | G96 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.0 | 0.2+ | | |
| 2001 10 20 | 704 | 0.1− | 0.2+ | 2005 05 07 | G96 | 0.5+ | 0.6− | | | | | | |
| 2001 10 20 | 704 | 0.5− | 0.1− | 2005 05 07 | G96 | 0.1+ | 0.3+ | | | | | | |

**2001 UW$_{210}$ = 2006 QH$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.50504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17761911 | $\omega$ | 86.73016 | | +0.08110697 | −0.99670322 | |
| $a$ | 3.1343170 | $\Omega$ | 358.61249 | | +0.87687624 | +0.07234969 | |
| $e$ | 0.1472545 | $i$ | 4.93723 | | +0.47382456 | +0.03671792 | |
| $P$ | 5.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2+ | 1.3+ | 2001 11 17 | 691 | 0.1− | 0.3− | 2006 08 21 | 691 | 0.2+ | 0.0 | | |
| 2001 10 21 | 704 | 0.6− | 1.0+ | 2001 11 17 | 691 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1+ | | |
| 2001 10 21 | 704 | 0.6+ | 1.0+ | 2001 11 17 | 691 | 0.2− | 0.2− | 2006 08 28 | 691 | 0.1− | 0.0 | | |
| 2001 10 21 | 704 | 0.3− | 1.2+ | 2003 02 07 | 644 | 0.2− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.0 | | |
| 2001 10 21 | 704 | 0.5+ | 1.5+ | 2003 02 07 | 644 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.5− | 0.2− | | |
| 2001 10 25 | 691 | 0.0 | 0.3− | 2003 02 07 | 644 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2001 10 25 | 691 | 0.2+ | 0.3− | 2006 08 21 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.4− | | |
| 2001 10 25 | 691 | 0.0 | 0.3− | 2006 08 21 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.6− | 0.2− | | |

**2001 UO$_{212}$ = 2006 SM$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.51822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18706417 | $\omega$ | 339.28580 | | +0.76872761 | −0.63668863 | |
| $a$ | 3.0279054 | $\Omega$ | 60.40715 | | +0.59618494 | +0.67897275 | |
| $e$ | 0.1085130 | $i$ | 4.00335 | | +0.23156289 | +0.36554561 | |
| $P$ | 5.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− | | |
| 2000 07 30 | 807 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.4− | | |
| 2001 10 11 | 691 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.7− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2001 10 11 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 11 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ | | |
| 2001 10 21 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 21 | 691 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2001 10 21 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.3+ | | |
| 2001 10 25 | 644 | 1.1− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.1− | 0.1− | | |
| 2001 10 25 | 644 | (1.6− | 0.5−) | 2006 09 26 | G96 | 0.1− | 0.4− | | | | | | |
| 2001 10 25 | 644 | 1.2− | 0.5− | 2006 09 26 | G96 | 0.1− | 0.4− | | | | | | |

**2001 UW$_{213}$ = 2006 RW$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.71802 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18179404 | $\omega$ | 214.54393 | | −0.13377225 | +0.98739966 | |
| $a$ | 3.0861447 | $\Omega$ | 47.92675 | | −0.88161476 | −0.07961042 | |
| $e$ | 0.1263106 | $i$ | 6.53961 | | −0.45261507 | −0.13676292 | |
| $P$ | 5.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.1+ | 0.5− | 2006 08 29 | 691 | 0.3+ | 0.1− | 2006 09 25 | 699 | (0.2+ | 1.7−) | | |
| 1996 12 12 | 691 | 0.3+ | 0.3− | 2006 08 29 | 691 | 0.0 | 0.3− | 2006 09 25 | 699 | (2.8− | 0.4+) | | |
| 1996 12 12 | 691 | 0.1+ | 0.0 | 2006 08 29 | 691 | 0.2+ | 0.1− | 2006 09 25 | 699 | 1.4− | 0.9+ | | |
| 2001 10 18 | 644 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 03 | G96 | 0.6+ | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 703 | (1.9− | 0.7+) | 2006 10 03 | G96 | 0.2− | 0.6− |
| 2001 10 18 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.2+ | 1.0− | 2006 10 03 | G96 | 0.3+ | 0.7− |
| 2001 10 23 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.7− |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2001 10 23 | 704 | 0.1− | 1.1+ | 2006 09 18 | 703 | 0.0 | 1.4+ | 2006 11 23 | G96 | 1.0+ | 0.2− |
| 2001 10 26 | 691 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.7+ | 0.2+ |
| 2001 10 26 | 691 | 0.3− | 0.2+ | 2006 09 18 | 703 | (2.3+ | 1.4−) | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 10 26 | 691 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.2− | | | | |

**2001 UP$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.11626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21413758 | $\omega$ | 178.67496 | | +0.97125390 | +0.23764659 | |
| $a$ | 2.7669892 | $\Omega$ | 167.55134 | | −0.21898678 | +0.91469231 | |
| $e$ | 0.1011275 | $i$ | 3.66588 | | −0.09333090 | +0.32689766 | |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.1− | 0.3− | 2001 10 24 | 691 | 0.5− | 0.8− | 2005 07 12 | 703 | 0.1− | 0.7− |
| 1999 03 10 | 691 | 0.1− | 0.3− | 2001 10 24 | 691 | 0.7− | 0.2− | 2005 07 18 | 644 | 0.1− | 0.3+ |
| 1999 03 10 | 691 | 0.2+ | 0.4− | 2001 10 24 | 691 | 0.2− | 0.2− | 2005 07 18 | 644 | 0.0 | 0.5+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 11 20 | 704 | 1.1− | 2.6+ | 2005 07 18 | 644 | 0.0 | 0.6+ |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2001 11 20 | 704 | 0.8+ | 1.9+ | 2005 08 06 | 704 | 0.4− | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.1− | 1.4+ | 2005 08 06 | 704 | 0.5− | 0.8+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 11 20 | 704 | 0.7− | 0.9+ | 2005 08 06 | 704 | 1.1− | 0.5+ |
| 2001 10 23 | 704 | 0.6+ | 1.0+ | 2004 05 13 | 691 | 0.2+ | 0.6+ | 2005 08 06 | 704 | 0.7− | 0.4− |
| 2001 10 23 | 704 | 1.6+ | 1.5+ | 2004 05 13 | 691 | 0.1+ | 0.7+ | 2005 08 06 | 644 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.4+ | 0.9+ | 2004 05 13 | 691 | 0.6+ | 0.8+ | 2005 08 06 | 644 | 0.1+ | 0.3+ |
| 2001 10 23 | 704 | 1.0+ | 1.3+ | 2004 07 16 | 807 | 0.1− | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.0 | 1.9+ | 2004 07 17 | 807 | 0.2− | 0.2+ | 2005 08 25 | 644 | 0.2+ | 0.3+ |
| 2001 10 24 | 704 | (2.4+ | 1.0+) | 2005 07 12 | 703 | 0.2+ | 0.9+ | 2005 08 25 | 644 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.1− | 1.2+ | 2005 07 12 | 703 | 1.2+ | 1.3− | 2005 08 25 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.1+ | 0.8+ | 2005 07 12 | 703 | 0.6+ | 0.6− | | | | |

**2001 UG$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.25857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20420299 | $\omega$ | 340.53542 | | +0.48471768 | −0.87043942 | |
| $a$ | 2.8560205 | $\Omega$ | 80.38868 | | +0.81360427 | +0.41263087 | |
| $e$ | 0.0914892 | $i$ | 4.99987 | | +0.32108699 | +0.26846040 | |
| $P$ | 4.83 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 1.1− | 0.3+ | 2003 01 29 | 644 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2001 10 16 | 644 | 1.2− | 0.1+ | 2004 03 31 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 2001 10 16 | 644 | 0.7− | 0.5+ | 2004 03 31 | 691 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.2+ |
| 2001 10 24 | 644 | (1.7− | 0.2+) | 2004 03 31 | 691 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2001 10 24 | 644 | 0.9− | 0.7+ | 2004 04 21 | 599 | 0.7+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 644 | 1.3− | 0.4+ | 2004 04 21 | 599 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2001 10 26 | 291 | 0.2+ | 0.0 | 2004 04 21 | 599 | 0.5+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2001 10 26 | 291 | 0.3+ | 0.3+ | 2004 04 21 | 599 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.6+ |
| 2001 10 26 | 291 | 0.3+ | 0.2+ | 2004 05 24 | 291 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2003 01 09 | 704 | 0.0 | 0.5+ | 2004 05 24 | 291 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.7+ |
| 2003 01 09 | 704 | 0.2− | 1.4+ | 2004 05 24 | 291 | (0.4− | 1.7+) | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2003 01 09 | 704 | 1.1+ | 1.2+ | 2006 09 20 | 699 | 0.2− | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2003 01 09 | 704 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.6− | 1.2− | 2006 10 21 | 703 | 0.4− | 0.0 |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.9+ | 0.7+ | 2006 10 21 | 703 | 1.2− | 1.1− |
| 2003 01 29 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 1.3− | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2003 01 29 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.4− | | | | |

**2001 UQ$_{216}$ = 2006 UD$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.10055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19966527 | $\omega$ | 247.44073 | | +0.34033471 | +0.93479695 | |
| $a$ | 2.8991301 | $\Omega$ | 42.88648 | | −0.79853240 | +0.34439433 | |
| $e$ | 0.0341281 | $i$ | 8.58771 | | −0.49650609 | +0.08687470 | |
| $P$ | 4.94 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.6− | 0.5+ | 2001 10 25 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2001 10 18 | 644 | 0.5− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 10 18 | 644 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.6+ | 0.1− |
| 2001 10 24 | 704 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2001 10 24 | 704 | 0.5+ | 0.4− | 2006 10 21 | G96 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.2+ |
| 2001 10 24 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2001 10 25 | 691 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2001 10 25 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 | | | | |

**2001 UX$_{217}$ = 2006 UE$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.65486 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19856373 | $\omega$ | 230.14185 | | +0.96490483 | −0.26112327 | |
| $a$ | 2.9098421 | $\Omega$ | 144.96924 | | +0.25329503 | +0.89754238 | |
| $e$ | 0.0970434 | $i$ | 2.77679 | | +0.06928410 | +0.35529188 | |
| $P$ | 4.96 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.3+ | 0.4− | 2001 11 20 | 704 | (2.0− | 3.0−) | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2001 10 23 | 704 | 0.8− | 1.3− | 2001 11 20 | 704 | (1.8− | 4.0−) | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 10 23 | 704 | 0.6− | 0.3− | 2006 10 17 | G96 | 0.7+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 10 24 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 1.4− | 0.9− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 10 24 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2001 10 27 | 649 | 0.9− | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 10 27 | 649 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | (2.1− | 3.0−) | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | (1.3− | 2.4−) | 2006 10 22 | 691 | 0.2− | 0.2+ | | | | |
| 2001 11 20 | 704 | (0.9− | 2.6−) | 2006 10 22 | 691 | 0.1− | 0.2+ | | | | |

**2001 UZ$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.98270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19073774 | $\omega$ | 208.37480 | | +0.55535166 | −0.82829904 | |
| $a$ | 2.9889016 | $\Omega$ | 208.08271 | | +0.78968665 | +0.55322096 | |
| $e$ | 0.1086066 | $i$ | 9.06858 | | +0.26072886 | +0.08869767 | |
| $P$ | 5.17 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.3+ | 0.0 | 2001 11 20 | 704 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2001 10 16 | 291 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.1− | 0.3+ |
| 2001 10 16 | 291 | 0.1+ | 0.2+ | 2001 11 20 | 704 | 0.7+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2001 10 24 | 691 | 0.7− | 0.6− | 2001 11 21 | 704 | 0.7− | 0.6− | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2001 10 24 | 691 | 0.8− | 0.5− | 2001 11 21 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2001 10 24 | 691 | 1.0− | 0.2− | 2001 11 21 | 704 | 0.1− | 1.0+ | 2006 10 19 | G96 | 0.7− | 0.3+ |
| 2001 10 25 | 644 | 0.2+ | 1.1+ | 2006 09 17 | 691 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.5− | 0.3+ |
| 2001 10 25 | 644 | 0.3+ | 0.8+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.2+ |
| 2001 10 25 | 644 | 0.2+ | 0.9+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.3+ |
| 2001 11 14 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 1.2+ | 0.2− | 2006 11 13 | G96 | (1.5− | 0.6+) |
| 2001 11 14 | 691 | 0.6+ | 0.2− | 2006 09 27 | 691 | 0.2− | 0.3− | 2006 11 13 | G96 | (1.6− | 0.2−) |
| 2001 11 14 | 691 | 0.7+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | (1.9− | 0.6−) |
| 2001 11 20 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | (2.3− | 0.3−) |
| 2001 11 20 | 704 | 0.8+ | 1.0+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | | | | |

**2001 UM$_{219}$ = 2006 UY$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 63.44179 | | (2000.0) | | | |
| $n$ | 0.18084029 | $\omega$ | 79.22973 | | +0.33776102 | +0.93150567 |
| $a$ | 3.0969860 | $\Omega$ | 211.57247 | | −0.93245154 | +0.31161262 |
| $e$ | 0.0369222 | $i$ | 14.93772 | | −0.12826386 | +0.18760265 |
| $P$ | 5.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.6− | 0.1− | 2001 11 14 | 691 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2001 10 16 | 291 | 0.1+ | 0.2+ | 2001 11 20 | 704 | 0.6+ | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2001 10 16 | 291 | 0.3− | 0.0 | 2001 11 20 | 704 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2001 10 24 | 704 | 0.8− | 0.1− | 2001 11 20 | 704 | 0.4− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3− |
| 2001 10 24 | 704 | 0.3− | 0.1+ | 2001 11 21 | 704 | 0.9− | 1.0− | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2001 11 14 | 691 | 0.4+ | 0.2− | 2001 11 21 | 704 | 1.1− | 1.1+ | 2006 10 21 | 691 | 0.2+ | 0.3− |
| 2001 11 14 | 691 | 0.6+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.2+ | 0.3− |

**2001 UN$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 313.82221 | | (2000.0) | | | |
| $n$ | 0.17787010 | $\omega$ | 48.35445 | | +0.57816335 | −0.81591931 |
| $a$ | 3.1313678 | $\Omega$ | 6.32475 | | +0.74399519 | +0.52635165 |
| $e$ | 0.1885321 | $i$ | 0.87224 | | +0.33496014 | +0.23922713 |
| $P$ | 5.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.4+ | 0.4+ | 2001 11 19 | 704 | 0.6− | 0.2+ | 2001 11 21 | 704 | (0.6− | 2.5−) |
| 2001 10 16 | 291 | 0.0 | 0.1+ | 2001 11 19 | 704 | 0.9− | 0.9+ | 2006 08 27 | 691 | 0.1+ | 0.2− |
| 2001 10 16 | 291 | 0.2− | 0.3+ | 2001 11 19 | 704 | 0.6+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.8− | 0.1− | 2001 11 19 | 704 | 0.5+ | 1.2+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 1.5− | 1.1− | 2001 11 20 | 691 | 0.5+ | 0.2− | 2006 10 16 | G96 | 0.7+ | 0.1+ |
| 2001 10 21 | 704 | 1.5− | 0.9− | 2001 11 20 | 691 | 0.4+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | (2.2− | 0.2−) | 2001 11 20 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.0 |
| 2001 11 11 | 691 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.6− | 0.5+ | 2006 10 16 | G96 | 0.5− | 0.2+ |
| 2001 11 11 | 691 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.5+ | 0.1+ | | | | |
| 2001 11 11 | 691 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.6− | 1.0− | | | | |

**2001 UA$_{221}$ = 2006 UC$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.78088 | | (2000.0) | | | |
| $n$ | 0.18743024 | $\omega$ | 155.49069 | | +0.83130411 | −0.53438143 |
| $a$ | 3.0239617 | $\Omega$ | 237.67541 | | +0.47543078 | +0.82612472 |
| $e$ | 0.1262166 | $i$ | 10.42260 | | +0.28792193 | +0.17875804 |
| $P$ | 5.26 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.4+ | 2001 11 19 | 704 | 1.3+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 1.3+ | 1.0+ | 2001 11 21 | 704 | 1.0− | 0.9− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.4+ | 0.9+ | 2001 11 21 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 10 26 | 644 | 0.7− | 0.6− | 2001 11 21 | 704 | 0.8+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 10 26 | 644 | 0.7− | 0.5− | 2001 11 21 | 704 | 1.1+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.5− |
| 2001 10 26 | 644 | 0.6− | 1.0− | 2001 11 21 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.3− |
| 2001 11 17 | 201 | 0.3− | 1.2− | 2006 10 11 | 644 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 17 | 201 | 0.4+ | 1.0− | 2006 10 11 | 644 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2001 11 17 | 201 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 17 | 201 | 1.0− | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.2+ | 2006 11 25 | G96 | 0.4− | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.9+ | 1.0+ | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.5+ | 0.1+ |
| 2001 11 19 | 704 | 0.4− | 1.2+ | 2006 10 17 | 703 | 0.7− | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.2+ |

**2001 UU$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.26095 | | (2000.0) | | | |
| $n$ | 0.18409825 | $\omega$ | 18.18941 | | +0.24797110 | −0.96840192 |
| $a$ | 3.0603395 | $\Omega$ | 57.46086 | | +0.88486144 | +0.21522699 |
| $e$ | 0.1573777 | $i$ | 1.80880 | | +0.39437364 | +0.12599632 |
| $P$ | 5.35 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 12 | 691 | 0.1− | 0.1+ | 2001 11 19 | 704 | 1.0− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 1990 10 12 | 691 | 0.0 | 0.2− | 2001 11 19 | 704 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 1990 10 12 | 691 | 0.0 | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2000 08 25 | 807 | 0.1+ | 0.1− | 2001 11 21 | 704 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2000 08 25 | 807 | 0.0 | 0.3− | 2001 11 21 | 704 | 0.0 | 0.9− | 2006 09 26 | G96 | 0.4− | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.6+ | 1.1− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2001 10 24 | 704 | 0.2+ | 0.6+ | 2001 12 08 | 691 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.4− | 0.6− | 2001 12 08 | 691 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2001 11 14 | 291 | 0.1+ | 0.0 | 2001 12 08 | 691 | (0.4− | 2.0+) | 2006 10 19 | 695 | 0.0 | 0.1− |
| 2001 11 14 | 291 | 0.0 | 0.1+ | 2002 01 13 | 291 | 0.3+ | 0.4− | 2006 10 19 | 695 | 0.1− | 0.1− |
| 2001 11 14 | 291 | 0.1+ | 0.2+ | 2002 01 13 | 291 | 0.3+ | 0.5− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 704 | 0.3+ | 0.5+ | 2002 01 13 | 291 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2001 11 19 | 704 | 1.0+ | 0.8+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.6− | 0.1− |
| 2001 11 19 | 704 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.4− |

**2001 UZ$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.20651 | | (2000.0) | | | |
| $n$ | 0.21128538 | $\omega$ | 91.31080 | | +0.94149959 | −0.31324136 |
| $a$ | 2.7918350 | $\Omega$ | 286.95508 | | +0.23360423 | +0.87248694 |
| $e$ | 0.2212855 | $i$ | 7.46853 | | +0.24291479 | +0.37502853 |
| $P$ | 4.66 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 699 | 0.9+ | 0.2+ | 2001 09 25 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.4+ |
| 2001 08 26 | 699 | (0.6− | 1.6+) | 2001 09 25 | 704 | 0.9+ | 1.2+ | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2001 08 26 | 699 | (3.3+ | 1.2+) | 2001 09 25 | 704 | 0.0 | 0.9+ | 2006 11 17 | 644 | 0.2− | 0.3+ |
| 2001 08 26 | 699 | 0.9+ | 0.4− | 2001 09 25 | 704 | 0.7+ | 1.0+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2001 09 10 | 704 | 0.9− | 0.3− | 2001 09 29 | 644 | 0.5− | 0.9− | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2001 09 10 | 704 | 1.3− | 0.4+ | 2001 09 29 | 644 | 0.6− | 0.8− | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2001 09 10 | 704 | 0.8+ | 1.0− | 2001 09 29 | 644 | 0.7− | 0.6− | 2006 11 21 | G96 | 0.6− | 0.0 |
| 2001 09 10 | 704 | 0.1+ | 0.5+ | 2001 10 17 | 704 | 0.3− | 0.6− | 2006 11 22 | 704 | 0.9+ | 1.0− |
| 2001 09 25 | 704 | 0.5+ | 0.5+ | 2001 10 17 | 704 | 0.6− | 0.4− | 2006 11 22 | 704 | 0.7+ | 0.7− |
| 2001 09 25 | 704 | 0.6+ | 0.6+ | 2001 10 17 | 704 | 0.3+ | 1.4− | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.7+ | 2001 10 17 | 704 | 1.0− | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.2− |
| 2001 09 25 | 704 | 0.5− | 0.6+ | 2003 01 28 | 645 | 0.0 | 0.1+ | | | | |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.0 | | | | |

**2001 UR$_{224}$ = 1997 QY$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 203.99854 | | (2000.0) | | | |
| $n$ | 0.27545534 | $\omega$ | 49.88962 | | +0.62979183 | +0.77394340 |
| $a$ | 2.3393862 | $\Omega$ | 259.27097 | | −0.73157787 | +0.56238569 |
| $e$ | 0.1722483 | $i$ | 3.85961 | | −0.26106718 | +0.29109096 |
| $P$ | 3.58 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 30 | 910 | 0.1+ | 0.2+ | 2001 10 21 | 704 | 0.7− | 0.1+ | 2001 11 19 | 704 | 0.5− | 0.7− |
| 1997 08 30 | 910 | 0.0 | 0.0 | 2001 10 21 | 704 | 0.5− | 0.2+ | 2001 11 19 | 704 | 0.7− | 0.6+ |
| 1997 08 30 | 910 | 0.4+ | 0.1− | 2001 10 26 | 644 | 0.2+ | 0.6+ | 2001 11 19 | 704 | 0.2− | 1.1− |
| 1997 08 31 | 910 | 0.0 | 0.3− | 2001 10 26 | 644 | 0.0 | 0.6+ | 2005 12 28 | 691 | 0.2+ | 0.3+ |
| 1997 08 31 | 910 | 0.0 | 0.3− | 2001 10 26 | 644 | 0.1+ | 0.6+ | 2005 12 28 | 691 | 0.2− | 0.1− |
| 1997 08 31 | 910 | 0.3− | 0.3− | 2001 11 11 | 704 | 0.5+ | 0.3− | 2005 12 28 | 691 | 0.0 | 0.5− |
| 2001 10 21 | 704 | 1.8+ | 0.3+ | 2001 11 11 | 704 | 0.6− | 0.1− | | | | |
| 2001 10 21 | 704 | 0.3+ | 0.5− | 2001 11 11 | 704 | 0.0 | 0.4+ | | | | |

**2001 UT$_{224}$ = 1999 CB$_{132}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 184.43680 | | (2000.0) | | | |
| $n$ | 0.26957916 | $\omega$ | 22.55340 | | +0.91434851 | +0.38683190 |
| $a$ | 2.3732592 | $\Omega$ | 314.11128 | | −0.39228791 | +0.77293686 |
| $e$ | 0.1326531 | $i$ | 9.59684 | | −0.10038429 | +0.50292116 |
| $P$ | 3.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.6+ | 0.1+ | 2001 10 25 | 704 | 0.2+ | 0.5− | 2001 12 09 | 704 | 0.5+ | 0.0 |
| 1999 02 08 | 691 | 0.8+ | 0.2+ | 2001 10 25 | 704 | 0.6− | 0.5+ | 2001 12 22 | 704 | 0.5− | 0.3+ |
| 1999 02 08 | 691 | 0.9+ | 0.1− | 2001 11 17 | 704 | 0.5− | 0.0 | 2001 12 22 | 704 | 0.6− | 0.0 |
| 1999 02 10 | 691 | 0.7− | 0.2− | 2001 11 17 | 704 | 0.1− | 0.9+ | 2001 12 22 | 704 | 0.2+ | 0.4+ |
| 1999 02 10 | 691 | 0.8− | 0.2+ | 2001 11 17 | 704 | 0.8+ | 0.6+ | 2001 12 22 | 704 | 1.3− | 1.0− |
| 1999 02 10 | 691 | 0.6− | 0.0 | 2001 12 09 | 704 | 1.2+ | 1.0− | | | | |
| 2001 10 25 | 704 | 0.2+ | 0.2+ | 2001 12 09 | 704 | 0.5+ | 0.7− | | | | |

**2001 UU$_{224}$ = 2005 JE$_{144}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.05411 | | (2000.0) | | | |
| $n$ | 0.18028723 | $\omega$ | 122.29072 | | +0.92614307 | +0.02812308 |
| $a$ | 3.1033165 | $\Omega$ | 238.76605 | | −0.08999428 | +0.98489095 |
| $e$ | 0.1624956 | $i$ | 26.09622 | | +0.36627864 | +0.17087688 |
| $P$ | 5.47 | $H$ | 15.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 291 | 0.0 | 0.3− | 2001 11 24 | 704 | 0.3+ | 0.6+ | 2005 05 15 | G96 | 1.0+ | 1.1− |
| 2001 10 26 | 291 | 0.1+ | 0.3− | 2001 11 24 | 704 | 0.6− | 0.5+ | 2005 05 15 | G96 | 0.2− | 0.2− |
| 2001 10 26 | 291 | 0.1+ | 0.3− | 2001 11 24 | 704 | 0.7− | 0.4− | 2005 05 15 | G96 | 0.5+ | 0.0 |
| 2001 11 12 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.2+ | 0.4− | 2005 05 19 | G96 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.4+ | 0.1− | 2001 12 19 | 704 | 0.2+ | 0.4− | 2005 05 19 | G96 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.9+ | 0.5+ | 2005 05 19 | G96 | 0.1+ | 0.5+ |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2005 05 15 | G96 | 0.6− | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.5+ |

**2001 UV$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 109.90005 | | (2000.0) | | | |
| $n$ | 0.17643717 | $\omega$ | 193.18407 | | −0.71279545 | +0.68480967 |
| $a$ | 3.1482992 | $\Omega$ | 31.76664 | | −0.61456010 | −0.50571392 |
| $e$ | 0.0552445 | $i$ | 16.72683 | | −0.33799192 | −0.52468004 |
| $P$ | 5.59 | $H$ | 15.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.4+ | 0.1− | 2004 02 16 | 704 | 0.7+ | 0.7− | 2004 03 15 | 704 | 0.7+ | 1.0− |
| 2001 10 18 | 644 | 0.2+ | 0.3+ | 2004 02 16 | 704 | 0.2+ | 0.5− | 2004 03 17 | 704 | 1.8+ | 0.6+ |
| 2001 10 18 | 644 | 0.5− | 0.4+ | 2004 03 10 | 703 | 1.3− | 0.6+ | 2004 03 17 | 704 | 1.4− | 0.5+ |
| 2001 10 25 | 691 | 0.2− | 0.1+ | 2004 03 10 | 703 | 0.4− | 0.9+ | 2004 03 17 | 704 | 0.2− | 0.3+ |
| 2001 10 25 | 691 | 0.1+ | 0.3− | 2004 03 10 | 703 | 0.4− | 0.3+ | 2004 03 17 | 704 | 0.2+ | 1.0+ |
| 2001 10 25 | 691 | 0.2− | 0.2+ | 2004 03 10 | 703 | (2.0+ | 6.2+) | 2004 03 25 | 704 | 0.8+ | 0.9+ |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2004 03 15 | 704 | 0.8+ | 0.4+ | 2004 03 25 | 704 | 0.4− | 0.2− |
| 2001 11 20 | 704 | 0.5+ | 0.1+ | 2004 03 15 | 704 | 0.2− | 0.8− | 2004 03 25 | 704 | 0.4+ | 0.6+ |
| 2001 11 20 | 704 | 0.1+ | 0.4− | 2004 03 15 | 704 | 0.9− | 0.6− | | | | |
| 2004 02 16 | 704 | 0.2− | 0.9− | 2004 03 15 | 704 | 0.0 | 1.0− | | | | |

**2001 UW$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.83694 | | (2000.0) | | | |
| $n$ | 0.18227709 | $\omega$ | 75.98478 | | −0.81325490 | −0.50978687 |
| $a$ | 3.0806899 | $\Omega$ | 72.68304 | | +0.35195283 | −0.81491825 |
| $e$ | 0.1864026 | $i$ | 17.09266 | | +0.46340659 | −0.27572739 |
| $P$ | 5.41 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 291 | 0.1+ | 0.4− | 2001 12 13 | 644 | 0.2− | 0.1+ | 2003 03 22 | 644 | 0.1+ | 0.0 |
| 2001 10 19 | 291 | 0.5+ | 0.2+ | 2003 02 04 | 699 | (0.2− | 2.4−) | 2003 03 22 | 644 | 0.2+ | 0.1+ |
| 2001 10 19 | 291 | 1.1− | 0.0 | 2003 02 04 | 699 | (0.4− | 2.8−) | 2003 03 22 | 644 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.8+ | 0.1+ | 2003 02 04 | 699 | 0.1+ | 0.1− | 2003 04 01 | 699 | 0.3− | 0.8− |
| 2001 11 17 | 704 | 0.9+ | 0.1+ | 2003 02 04 | 699 | 0.6− | 0.6− | 2003 04 01 | 699 | 1.7− | 0.1+ |
| 2001 11 17 | 704 | 1.2+ | 0.7+ | 2003 03 09 | 644 | 0.7+ | 0.7+ | 2003 04 01 | 699 | 0.6+ | 0.7− |
| 2001 12 13 | 644 | 0.4− | 0.1− | 2003 03 09 | 644 | 0.9+ | 0.5+ | 2003 04 01 | 699 | 0.7− | 0.0 |
| 2001 12 13 | 644 | 0.4− | 0.1− | 2003 03 09 | 644 | 0.6+ | 0.6+ | | | | |

**2001 UX$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 259.23259 | | (2000.0) | | | |
| $n$ | 0.21719603 | $\omega$ | 213.02196 | | −0.99936472 | −0.02962669 |
| $a$ | 2.7409522 | $\Omega$ | 325.26376 | | +0.03523166 | −0.90509404 |
| $e$ | 0.0738286 | $i$ | 1.99235 | | −0.00537535 | −0.42417806 |
| $P$ | 4.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.4− | 0.3− | 2003 01 31 | 704 | 0.7+ | 1.1+ | 2005 08 31 | 691 | 0.1− | 0.3+ |
| 2000 07 29 | 807 | (2.7+ | 5.6−) | 2003 01 31 | 704 | 0.8+ | 1.4+ | 2005 08 31 | 691 | 0.1+ | 0.4+ |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2003 02 22 | 644 | 0.4− | 0.7+ | 2005 08 31 | 691 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 1.2− | 0.1− | 2003 02 22 | 644 | 0.3− | 0.5+ | 2005 09 14 | 691 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.1+ | 0.9+ | 2003 02 22 | 699 | 0.0 | 0.8+ | 2005 09 14 | 691 | 0.2− | 0.1+ |
| 2001 11 11 | 691 | 0.1+ | 0.1+ | 2003 02 22 | 699 | 0.0 | 0.5+ | 2005 09 14 | 691 | 0.0 | 0.1− |
| 2001 11 11 | 691 | 0.5+ | 0.2− | 2003 02 22 | 699 | 1.1− | 0.4+ | 2005 09 22 | 644 | 0.2− | 0.5+ |
| 2001 11 11 | 691 | 0.3− | 0.3+ | 2003 02 22 | 699 | 0.8+ | 0.2+ | 2005 09 22 | 644 | 0.1+ | 0.2+ |
| 2001 11 19 | 704 | 0.7+ | 0.2− | 2003 02 22 | 644 | 0.1− | 0.2+ | 2005 09 22 | 644 | 0.3+ | 0.2− |
| 2001 11 19 | 704 | 0.2− | 0.1+ | 2003 03 06 | 644 | 0.4+ | 1.0+ | 2005 10 27 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 704 | 0.9+ | 1.2− | 2003 03 06 | 644 | 0.2+ | 0.5+ | 2005 10 27 | G96 | 0.2+ | 0.1− |
| 2001 11 19 | 704 | 1.2− | 1.1− | 2003 03 06 | 644 | 0.5+ | 0.5+ | 2005 10 27 | G96 | 0.3+ | 0.2− |
| 2003 01 28 | 645 | 0.1− | 0.3− | 2003 03 12 | 644 | 0.3− | 1.0+ | 2005 10 27 | G96 | 0.0 | 0.1+ |
| 2003 01 28 | 645 | 0.1− | 0.4− | 2003 03 12 | 644 | 0.2+ | 0.7+ | | | | |
| 2003 01 31 | 704 | 0.2+ | 0.1+ | 2003 03 12 | 644 | 0.1+ | 0.9+ | | | | |

**2001 UY$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 176.11204 | | (2000.0) | | | |
| $n$ | 0.25978243 | $\omega$ | 258.14069 | | +0.70003491 | +0.70984250 |
| $a$ | 2.4325561 | $\Omega$ | 56.57621 | | −0.61344073 | +0.65363205 |
| $e$ | 0.0826132 | $i$ | 5.35836 | | −0.36557023 | +0.26246669 |
| $P$ | 3.79 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.5+ | 0.4+ | 2005 10 24 | 691 | 0.0 | 0.3− | 2005 12 05 | G96 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 0.0 | 0.3+ | 2005 10 24 | 691 | 0.2+ | 0.4− | 2005 12 05 | G96 | 0.0 | 0.5− |
| 2001 10 23 | 704 | 0.1− | 0.4+ | 2005 10 24 | 691 | 0.2− | 0.4+ | 2005 12 05 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | (3.3− | 1.0−) | 2005 11 12 | 691 | 0.2− | 0.2+ | 2005 12 05 | G96 | 0.2− | 0.1− |
| 2001 10 24 | 704 | (2.2− | 2.4−) | 2005 11 12 | 691 | 0.0 | 0.1+ | 2006 01 25 | G96 | 0.2+ | 0.2− |
| 2001 10 24 | 704 | 1.4− | 1.2+ | 2005 11 12 | 691 | 0.1− | 0.5+ | 2006 01 25 | G96 | 0.3+ | 0.4+ |
| 2001 10 24 | 704 | 0.5− | 1.3− | 2005 11 26 | G96 | 0.3+ | 0.1− | 2006 01 25 | G96 | 0.1− | 0.0 |
| 2001 11 14 | 691 | 0.0 | 0.3− | 2005 11 26 | G96 | 0.1− | 0.0 | 2006 01 25 | G96 | 0.1+ | 0.6− |
| 2001 11 14 | 691 | 0.5+ | 0.2− | 2005 11 26 | G96 | 0.1− | 0.1− | | | | |
| 2001 11 14 | 691 | 0.0 | 0.0 | 2005 11 26 | G96 | 0.2+ | 0.1− | | | | |

**2001 UZ$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 121.36217 | | (2000.0) | | | |
| $n$ | 0.23862936 | $\omega$ | 176.62759 | | +0.90717487 | +0.41505400 |
| $a$ | 2.5742662 | $\Omega$ | 158.43789 | | −0.39029558 | +0.89138300 |
| $e$ | 0.0886434 | $i$ | 10.82490 | | −0.15717225 | +0.18211679 |
| $P$ | 4.13 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.3+ | 0.6− | 2002 01 13 | 645 | 0.0 | 0.0 | 2005 09 26 | 703 | 1.0+ | 0.6− |
| 1995 03 23 | 691 | 0.1− | 0.3+ | 2004 06 14 | 691 | 0.1− | 0.0 | 2005 09 26 | 703 | 0.7− | 0.2− |
| 1995 03 23 | 691 | 0.1− | 0.0 | 2004 06 14 | 691 | 0.1+ | 0.2+ | 2005 09 26 | 703 | 0.1− | 0.2+ |
| 2001 10 23 | 644 | 0.2+ | 0.1+ | 2004 06 14 | 691 | 0.1− | 0.1+ | 2005 09 26 | 703 | 0.2− | 0.8− |
| 2001 10 23 | 644 | 0.3+ | 0.0 | 2005 09 03 | 644 | 0.2− | 0.1+ | 2005 10 05 | 703 | 1.1− | 0.1+ |
| 2001 10 23 | 644 | 0.2+ | 0.4+ | 2005 09 03 | 644 | 0.2− | 0.0 | 2005 10 05 | 703 | 0.1− | 0.6+ |
| 2002 01 08 | 645 | 0.0 | 0.0 | 2005 09 03 | 644 | 0.2− | 0.1− | 2005 10 05 | 703 | 0.3+ | 0.3− |
| 2002 01 08 | 645 | 0.0 | 0.2− | 2005 09 25 | 703 | 1.3+ | 2.7− | 2005 10 05 | 703 | 0.2+ | 0.4− |
| 2002 01 09 | 645 | 0.0 | 0.1+ | 2005 09 25 | 703 | 0.6+ | 0.3− | 2005 10 12 | 291 | 0.2− | 0.3+ |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2005 09 25 | 703 | 0.5+ | 0.3− | 2005 10 12 | 291 | 0.0 | 0.4+ |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2005 09 25 | 703 | 1.9+ | 0.7− | 2005 10 12 | 291 | 0.2− | 0.4+ |

**2001 UA$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.15276 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23424210 | $\omega$ | 197.67568 | | +0.18756639 | +0.97189759 | |
| $a$ | 2.6063100 | $\Omega$ | 83.31652 | | −0.88301741 | +0.23026981 | |
| $e$ | 0.2533441 | $i$ | 8.23418 | | −0.43023144 | −0.04889678 | |
| $P$ | 4.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.5− | 0.8+ | 2001 11 11 | 645 | 0.1+ | 0.1+ | 2005 09 27 | 704 | 0.6+ | 0.0 |
| 2000 04 04 | 699 | 0.5+ | 0.5+ | 2004 03 23 | 704 | 0.8− | 0.5+ | 2005 09 27 | 704 | 0.7− | 0.4+ |
| 2000 04 04 | 699 | 0.7+ | 0.8+ | 2004 03 23 | 704 | 0.9+ | 0.4− | 2005 10 05 | 703 | 0.5+ | 0.4+ |
| 2000 04 04 | 699 | 0.6+ | 1.2+ | 2004 03 23 | 704 | 0.1+ | 0.7− | 2005 10 05 | 703 | 0.4− | 0.3+ |
| 2001 10 24 | 644 | 0.9− | 1.0+ | 2005 09 13 | 703 | 0.2+ | 0.1+ | 2005 10 05 | 703 | 0.3− | 0.1+ |
| 2001 10 24 | 644 | 0.2− | 0.5+ | 2005 09 13 | 703 | 0.1− | 0.7− | 2005 10 05 | 703 | 0.6− | 0.3− |
| 2001 10 24 | 644 | 0.8− | 0.6+ | 2005 09 13 | 703 | 0.3− | 0.1− | 2005 10 05 | 703 | 0.3+ | 0.1+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2005 09 13 | 703 | 0.0 | 0.1− | 2005 10 05 | 703 | 0.0 | 0.3+ |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2005 09 27 | 704 | 0.5− | 0.3+ | 2005 10 05 | 703 | 0.7+ | 0.5− |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2005 09 27 | 704 | 0.1+ | 0.3+ | 2005 10 05 | 703 | 0.2− | 0.5+ |

**2001 UB$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.34624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22208485 | $\omega$ | 347.00496 | | −0.13951560 | −0.98364725 | |
| $a$ | 2.7005782 | $\Omega$ | 110.92417 | | +0.91906797 | −0.17144607 | |
| $e$ | 0.0651867 | $i$ | 7.00424 | | +0.36857762 | +0.05517549 | |
| $P$ | 4.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.2− | 0.3− | 2003 01 27 | 704 | 0.2− | 0.5− | 2003 02 09 | 644 | 0.1+ | 0.4+ |
| 1993 11 20 | 691 | 0.2+ | 0.3− | 2003 01 27 | 704 | 1.1− | 0.3− | 2003 02 09 | 644 | 0.3+ | 0.5+ |
| 1993 11 20 | 691 | 0.2− | 0.1− | 2003 01 27 | 704 | 0.6+ | 0.1− | 2003 03 07 | 644 | 0.1− | 0.6+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | (4.1+ | 3.7−) | 2003 03 07 | 644 | 0.5− | 0.8+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 02 01 | 704 | 0.5+ | 0.6+ | 2003 03 07 | 644 | 0.4+ | 0.7+ |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2003 02 01 | 704 | 0.4+ | 1.0+ | 2004 06 22 | 599 | 0.4+ | 0.0 |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2003 02 01 | 704 | 0.5+ | 0.5+ | 2004 06 22 | 599 | 0.3+ | 0.8+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 0.1+ | 0.3+ | 2004 06 22 | 599 | 0.3+ | 0.9+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 2.2− | 0.1− | 2004 06 22 | 599 | 0.4− | 0.7+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 0.1− | 1.9+ | 2005 07 29 | 644 | 0.4− | 0.1+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.2− | 1.4+ | 2005 07 29 | 644 | 0.4− | 0.4+ |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 0.3+ | 0.1− | 2005 07 29 | 644 | 0.3− | 0.7+ |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 02 04 | 704 | 1.3− | 0.6+ | 2005 08 27 | 644 | 0.2− | 0.4+ |
| 2003 01 27 | 704 | 0.3+ | 0.1− | 2003 02 04 | 704 | 0.1− | 0.3+ | 2005 08 27 | 644 | 0.1+ | 0.5+ |
| 2003 01 27 | 704 | 0.1+ | 0.9+ | 2003 02 09 | 644 | 0.2− | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.4+ |

**2001 UC$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.08868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23951930 | $\omega$ | 77.15296 | | +0.39498586 | −0.91796861 | |
| $a$ | 2.5678858 | $\Omega$ | 349.36225 | | +0.74796744 | +0.34429469 | |
| $e$ | 0.1060781 | $i$ | 11.34991 | | +0.53341437 | +0.19696395 | |
| $P$ | 4.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.8− | 1.2− | 2001 12 22 | 704 | 1.7+ | 0.1+ | 2005 10 25 | 703 | 0.3+ | 0.2− |
| 2001 10 25 | 704 | 0.3− | 0.1− | 2001 12 22 | 704 | 1.4+ | 0.2+ | 2005 11 03 | 704 | 0.8− | 1.7+ |
| 2001 10 25 | 704 | 0.4− | 1.3+ | 2003 04 01 | 644 | 0.3+ | 0.3+ | 2005 11 03 | 704 | 0.6− | 0.0 |
| 2001 10 25 | 704 | 0.3− | 0.2+ | 2003 04 01 | 644 | 0.5+ | 0.5+ | 2005 11 03 | 704 | 0.1− | 0.4+ |
| 2001 11 11 | 704 | 0.4+ | 0.2+ | 2003 04 01 | 644 | 0.2+ | 0.6+ | 2005 11 03 | 704 | 0.7− | 1.1+ |
| 2001 11 11 | 704 | 0.2+ | 0.1+ | 2005 08 30 | 291 | 0.4− | 0.3+ | 2005 11 03 | 704 | 0.3+ | 0.3− |
| 2001 11 11 | 704 | 0.7− | 0.2+ | 2005 08 30 | 291 | 0.0 | 0.2+ | 2005 11 09 | 704 | 0.3+ | 0.1− |
| 2001 11 11 | 704 | 0.5− | 0.8+ | 2005 08 30 | 291 | 0.4+ | 0.1+ | 2005 11 09 | 704 | 0.8+ | 0.1− |
| 2001 11 11 | 704 | 1.7− | 0.1− | 2005 09 11 | 699 | 0.3+ | 0.7− | 2005 11 09 | 704 | 0.4+ | 0.4− |
| 2001 12 09 | 704 | 0.4− | 0.2+ | 2005 09 11 | 699 | 0.2− | 0.3− | 2005 11 09 | 704 | 0.4− | 0.4− |
| 2001 12 09 | 704 | 0.0 | 0.3− | 2005 09 11 | 699 | 0.3− | 0.4+ | 2005 11 21 | 644 | 0.2− | 0.7− |
| 2001 12 09 | 704 | 0.2− | 0.4− | 2005 09 11 | 699 | 0.3+ | 0.3+ | 2005 11 21 | 644 | 0.1− | 0.4− |
| 2001 12 09 | 704 | 0.2+ | 0.7− | 2005 10 25 | 703 | 0.1+ | 0.3− | 2005 11 21 | 644 | 0.3+ | 0.4− |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2005 10 25 | 703 | 0.3− | 0.2− | | | | |
| 2001 12 22 | 704 | 1.7+ | 0.1− | 2005 10 25 | 703 | 0.3+ | 0.0 | | | | |

**2001 UD$_{225}$ = 2006 RP$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.51331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17475664 | $\omega$ | 35.82181 | | +0.46383499 | −0.87832713 | |
| $a$ | 3.1684505 | $\Omega$ | 27.10767 | | +0.74215012 | +0.31387791 | |
| $e$ | 0.2864049 | $i$ | 14.71608 | | +0.48380811 | +0.36058579 | |
| $P$ | 5.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.6− | 0.4− | 2003 04 09 | 691 | 0.0 | 0.3+ | 2006 10 04 | 703 | 0.5− | 0.3+ |
| 2001 10 25 | 704 | (0.4+ | 1.7+) | 2003 04 09 | 691 | 0.0 | 0.6+ | 2006 10 04 | 703 | 0.7− | 0.9+ |
| 2001 10 25 | 704 | 0.9+ | 0.4+ | 2003 04 30 | 691 | 0.5+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2001 10 25 | 704 | (0.2− | 1.8+) | 2003 04 30 | 691 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2001 12 23 | 704 | 0.0 | 0.6+ | 2003 04 30 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2001 12 23 | 704 | 0.2− | 0.4+ | 2006 08 19 | 644 | 0.1− | 0.2− | 2006 10 19 | 703 | 1.3− | 0.2− |
| 2001 12 23 | 704 | 0.3+ | 0.5+ | 2006 08 19 | 644 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2001 12 23 | 704 | 0.3+ | 0.8+ | 2006 08 19 | 644 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.7+ |
| 2001 12 23 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.1+ |
| 2002 01 06 | 704 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 01 06 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 01 06 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 699 | (1.8+ | 0.2+) | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 01 06 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 699 | 0.6− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 01 06 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 699 | (1.5+ | 0.9+) | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2002 01 25 | 704 | 1.2− | 0.2+ | 2006 09 17 | 699 | 0.4+ | 1.5+ | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2002 01 25 | 704 | 0.7− | 1.0− | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 01 25 | 704 | 1.1− | 0.3− | 2006 09 19 | 703 | 0.7+ | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 01 25 | 704 | 1.0+ | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2002 01 25 | 704 | (1.9− | 0.8−) | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 24 | 644 | 0.3− | 0.3+ |
| 2002 01 25 | 704 | 1.4+ | 0.1− | 2006 09 25 | 703 | 0.5+ | 0.4− | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 01 25 | 704 | 1.4− | 0.3− | 2006 09 25 | 703 | 0.3− | 0.2+ | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2002 02 12 | 644 | 0.1− | 0.6− | 2006 09 25 | 703 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.7+ | 0.5+ |
| 2002 02 12 | 644 | 0.2− | 0.4− | 2006 09 25 | 703 | 0.9− | 0.2− | 2006 11 23 | G96 | 0.6+ | 0.2+ |
| 2002 02 12 | 644 | 0.2− | 0.4− | 2006 10 04 | 703 | 0.3+ | 0.8− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2003 04 09 | 691 | 0.2+ | 0.5+ | 2006 10 04 | 703 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.0 |

**2001 UE$_{225}$ = 2006 RG$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.14951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17818994 | $\omega$ | 36.35841 | | +0.40607261 | −0.90403065 | |
| $a$ | 3.1276196 | $\Omega$ | 30.34935 | | +0.76369063 | +0.25545328 | |
| $e$ | 0.2271837 | $i$ | 15.32530 | | +0.50187814 | +0.34274219 | |
| $P$ | 5.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.2− | 0.3+ | 2006 09 28 | 704 | 0.5+ | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 10 25 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 704 | 1.5+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 10 25 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2001 12 23 | 704 | 0.5+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 12 23 | 704 | 0.6+ | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 12 23 | 704 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.3− | 2006 10 28 | 704 | (1.6− | 1.5+) |
| 2001 12 23 | 704 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2002 01 06 | 704 | 0.4− | 0.6− | 2006 10 02 | 691 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.6+ | 0.5+ |
| 2002 01 06 | 704 | 0.7− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.2− | 2006 10 28 | 704 | 0.8− | 0.0 |
| 2002 01 06 | 704 | 0.6− | 1.1− | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 01 06 | 704 | 0.8− | 0.8− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.7− | 0.2− |
| 2002 01 06 | 704 | 0.6− | 1.2− | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2002 01 21 | 699 | 1.3+ | 0.0 | 2006 10 15 | 691 | 0.3− | 0.0 | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2002 01 21 | 699 | 0.5− | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2002 01 21 | 699 | 0.9+ | 0.1+ | 2006 10 15 | 185 | 0.6+ | 0.8− | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2002 01 21 | 699 | 0.4− | 0.2+ | 2006 10 15 | 185 | 0.0 | 0.5− | 2006 11 11 | 703 | 1.5− | 0.1− |
| 2002 01 25 | 704 | 0.1− | 0.0 | 2006 10 15 | 185 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 01 25 | 704 | 0.2+ | 0.6− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | (1.3− | 2.2−) |
| 2002 01 25 | 704 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 14 | 683 | 0.6+ | 0.6+ |
| 2003 03 26 | 644 | 0.1+ | 1.0+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 14 | 683 | 0.3+ | 1.3+ |
| 2003 03 26 | 644 | (0.6− | 1.7+) | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 14 | 683 | (1.8− | 1.6+) |
| 2003 03 26 | 644 | 0.2+ | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 15 | 683 | 0.2+ | 0.7+ |
| 2003 04 09 | 691 | 0.6+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 15 | 683 | 1.6+ | 0.5+ |
| 2003 04 09 | 691 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 15 | 683 | 0.2+ | 1.3+ |
| 2003 04 09 | 691 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2006 09 15 | 644 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2006 09 15 | 644 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2006 09 15 | 644 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2006 09 16 | 699 | (3.1+ | 1.0+) | 2006 10 20 | 644 | 0.2− | 0.5+ | 2006 11 19 | 704 | 1.1+ | 0.5− |
| 2006 09 16 | 699 | (1.7+ | 2.0−) | 2006 10 21 | 703 | 0.8+ | 0.9− | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2006 09 16 | 699 | (1.0+ | 1.5−) | 2006 10 21 | 703 | 0.2+ | 0.8− | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2006 09 16 | 699 | (1.0+ | 2.1−) | 2006 10 21 | 703 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.8+ | 0.4+ |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.8+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.4+ |
| 2006 09 28 | 704 | 1.2− | 0.8+ | 2006 10 23 | 691 | 0.5− | 0.1+ | | | | |

**2001 VW$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.21987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17884641 | $\omega$ | 235.24784 | | −0.72615987 | −0.62800362 | |
| $a$ | 3.1199615 | $\Omega$ | 264.14263 | | +0.68601744 | −0.63489139 | |
| $e$ | 0.1472195 | $i$ | 16.33756 | | +0.04551829 | −0.45002708 | |
| $P$ | 5.51 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 734 | 0.2− | 0.1− | 2001 12 07 | 734 | 0.0 | 0.5− | 2002 01 09 | 704 | 0.5− | 1.0+ |
| 2001 11 09 | 734 | (0.1+ | 1.6+) | 2001 12 07 | 734 | 0.2+ | 0.8− | 2002 01 09 | 704 | 0.9− | 0.8+ |
| 2001 11 09 | 704 | 0.5− | 0.1− | 2001 12 07 | 734 | 0.4+ | 0.1− | 2002 01 09 | 704 | 0.5− | 0.3+ |
| 2001 11 09 | 704 | 0.3+ | 1.0+ | 2001 12 14 | 704 | 0.1− | 0.3− | 2002 01 09 | 704 | 1.0− | 0.3+ |
| 2001 11 09 | 704 | 0.4+ | 1.4+ | 2001 12 14 | 704 | 0.2− | 0.4− | 2002 01 14 | 704 | 0.4+ | 1.0+ |
| 2001 11 09 | 704 | 1.1+ | 1.4+ | 2001 12 14 | 704 | 0.0 | 0.0 | 2002 01 14 | 704 | 0.4− | 1.3+ |
| 2001 11 10 | 734 | 0.0 | 0.5− | 2001 12 14 | 704 | 0.0 | 0.1− | 2002 01 14 | 704 | 1.1− | 0.7+ |
| 2001 11 10 | 734 | 0.4+ | 0.5+ | 2001 12 15 | 734 | 0.1− | 0.4− | 2002 01 14 | 704 | 0.5+ | 0.6+ |
| 2001 11 10 | 734 | 0.1+ | 0.2+ | 2001 12 15 | 734 | 1.1+ | 0.4− | 2002 01 14 | 704 | 0.9+ | 0.3− |
| 2001 11 11 | 734 | 0.4+ | 0.1+ | 2001 12 15 | 734 | (2.1+ | 0.8+) | 2002 02 02 | 734 | 0.2− | 1.0− |
| 2001 11 11 | 734 | 0.1− | 0.8− | 2001 12 17 | 704 | (2.5− | 0.9+) | 2002 02 02 | 734 | 0.5+ | 0.1+ |
| 2001 11 12 | 704 | 0.0 | 0.5− | 2001 12 17 | 704 | (2.4− | 1.3+) | 2006 10 29 | 703 | 0.4+ | 0.4− |
| 2001 11 12 | 704 | 0.6− | 0.7− | 2001 12 17 | 704 | (2.1− | 1.9+) | 2006 10 29 | 703 | 0.5− | 0.2− |
| 2001 11 12 | 704 | 0.3+ | 0.3− | 2001 12 20 | 704 | 0.0 | 0.1− | 2006 10 29 | 703 | 0.3− | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.7+ | 2001 12 20 | 704 | 0.2− | 0.1− | 2006 10 29 | 703 | 0.2+ | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2001 12 20 | 704 | 0.8− | 0.6+ | 2006 11 15 | 703 | 0.7+ | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.6+ | 2001 12 20 | 704 | 0.2− | 1.1− | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2001 12 20 | 704 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.5+ | 0.6+ |
| 2001 11 20 | 704 | 0.7− | 0.4− | 2001 12 21 | 704 | 0.9+ | 1.2− | 2006 11 15 | 703 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2001 12 21 | 704 | 1.3+ | 0.7− | 2006 11 21 | 703 | 0.5− | 0.3− |
| 2001 11 21 | 704 | 0.7− | 0.6+ | 2001 12 21 | 704 | 1.0+ | 1.1− | 2006 11 21 | 703 | 0.4+ | 0.5+ |
| 2001 11 21 | 704 | 0.7− | 0.1+ | 2002 01 03 | 734 | 0.2− | 0.9− | 2006 11 21 | 703 | 0.6− | 0.1− |
| 2001 12 07 | 734 | 0.4+ | 0.0 | 2002 01 03 | 734 | 0.3+ | 0.6− | 2006 11 21 | 703 | 0.7− | 0.3− |
| 2001 12 07 | 734 | 0.3+ | 0.2− | 2002 01 09 | 704 | 0.8− | 0.8+ | | | | |

**2001 VK$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.37427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17620792 | $\omega$ | 1.20664 | | +0.59650994 | −0.76054333 | |
| $a$ | 3.1510293 | $\Omega$ | 52.23724 | | +0.73363273 | +0.38710109 | |
| $e$ | 0.1703119 | $i$ | 18.92629 | | +0.32551331 | +0.52127401 | |
| $P$ | 5.59 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.8− | 0.9+ | 2001 11 16 | 644 | 0.2+ | 0.3− | 2001 12 13 | 918 | 1.4+ | 0.2+ |
| 2001 09 17 | 704 | 0.5− | 0.5+ | 2001 11 16 | 644 | 0.1− | 0.3− | 2001 12 13 | 918 | 0.5+ | 0.0 |
| 2001 09 17 | 704 | (2.4− | 1.0+) | 2001 11 16 | 644 | 0.1− | 0.2− | 2001 12 17 | 704 | (1.7− | 1.7−) |
| 2001 09 26 | 704 | 0.0 | 0.1− | 2001 11 17 | 918 | 0.3− | 0.5− | 2001 12 17 | 704 | 1.0− | 1.4− |
| 2001 09 26 | 704 | (1.6+ | 0.3−) | 2001 11 17 | 918 | 0.5− | 0.0 | 2001 12 17 | 704 | (1.3− | 1.5−) |
| 2001 09 26 | 704 | 0.4+ | 0.4− | 2001 11 17 | 918 | 0.3+ | 0.2− | 2001 12 17 | 704 | 1.3− | 0.9− |
| 2001 09 26 | 704 | 1.1+ | 0.2+ | 2001 11 19 | 704 | 0.5+ | 0.0 | 2001 12 17 | 704 | 0.7− | 1.4− |
| 2001 09 26 | 704 | 0.4+ | 0.1+ | 2001 11 19 | 704 | 0.4+ | 0.9+ | 2003 03 09 | 644 | 0.2− | 0.1+ |
| 2001 10 26 | 704 | 0.2− | 1.4+ | 2001 11 19 | 704 | (1.6+ | 1.5+) | 2003 03 09 | 644 | 0.1+ | 0.1− |
| 2001 10 26 | 704 | 0.3+ | 0.4− | 2001 11 19 | 704 | 0.2+ | 0.7+ | 2003 03 09 | 644 | 0.1+ | 0.2− |
| 2001 10 26 | 704 | 0.2− | 0.3+ | 2001 11 19 | 704 | 0.3+ | 0.4+ | 2006 07 30 | E12 | 0.1− | 0.1− |
| 2001 10 26 | 704 | 0.3+ | 0.3+ | 2001 11 24 | 704 | 0.1+ | 0.6+ | 2006 07 30 | E12 | 0.6− | 0.7− |
| 2001 10 26 | 704 | 1.3− | 0.5+ | 2001 11 24 | 704 | 0.3+ | 0.6+ | 2006 07 30 | E12 | 0.1+ | 0.7+ |
| 2001 11 09 | 704 | 0.7+ | 0.4− | 2001 11 24 | 704 | 0.0 | 0.5+ | 2006 07 30 | E12 | 0.9− | 0.5− |
| 2001 11 09 | 704 | 0.4+ | 0.5− | 2001 11 24 | 704 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.8+ | 0.5− |
| 2001 11 09 | 704 | 0.3+ | 0.5+ | 2001 11 24 | 704 | 0.5− | 0.5+ | 2006 08 14 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.6+ | 0.4+ | 2001 12 04 | 918 | 0.5− | 1.5− | 2006 08 14 | 644 | 0.1− | 0.5− |
| 2001 11 10 | 918 | 0.1+ | 0.0 | 2001 12 04 | 918 | 0.4+ | 0.0 | 2006 09 16 | E12 | (0.8+ | 1.9−) |
| 2001 11 10 | 918 | 0.7− | 0.8− | 2001 12 04 | 918 | 0.7− | 0.0 | 2006 09 16 | E12 | 0.2− | 0.4− |
| 2001 11 10 | 918 | 0.6+ | 0.2− | 2001 12 08 | 918 | 1.0− | 0.3+ | 2006 09 16 | E12 | 0.4+ | 0.0 |
| 2001 11 11 | 918 | 0.7+ | 0.2− | 2001 12 08 | 918 | 0.3− | 0.2+ | 2006 09 16 | E12 | 0.9+ | 0.0 |
| 2001 11 11 | 918 | 0.2+ | 0.6− | 2001 12 08 | 918 | 0.3+ | 0.3− | 2006 10 12 | E12 | 0.7− | 0.8+ |
| 2001 11 11 | 918 | 0.1− | 0.8− | 2001 12 10 | 704 | 0.9+ | 0.3− | 2006 10 12 | E12 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2001 12 10 | 704 | 0.3− | 0.6+ | 2006 10 12 | E12 | 0.3+ | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.4− | 2001 12 10 | 704 | 0.6− | 1.3+ | 2006 10 12 | E12 | 0.2− | 0.6+ |
| 2001 11 12 | 704 | 0.4+ | 0.2− | 2001 12 10 | 704 | (1.6− | 1.0+) | 2006 10 22 | 291 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2001 12 10 | 704 | 0.6− | 0.0 | 2006 10 22 | 291 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.4+ | 0.2− | 2001 12 13 | 918 | 0.9− | 0.1+ | 2006 10 22 | 291 | 0.0 | 0.1+ |

**2001 VX$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.15424 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36519623 | $\omega$ | 12.55533 | | +0.52182177 | −0.80168294 | |
| $a$ | 1.9384378 | $\Omega$ | 46.87322 | | +0.74405321 | +0.26056656 | |
| $e$ | 0.0759445 | $i$ | 23.54577 | | +0.41723717 | +0.53796796 | |
| $P$ | 2.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.2− | 0.5+ | 2001 10 26 | 704 | 0.5+ | 0.4+ | 2001 12 09 | 704 | 1.3+ | 0.0 |
| 2001 09 17 | 704 | 0.1− | 1.2− | 2001 11 10 | 704 | 0.1− | 0.2+ | 2001 12 09 | 704 | 1.4+ | 0.1− |
| 2001 09 17 | 704 | 0.2+ | 0.6− | 2001 11 10 | 704 | 0.1− | 0.2− | 2001 12 22 | 704 | 0.5− | 0.1+ |
| 2001 10 13 | 704 | 0.9− | 0.4+ | 2001 11 10 | 704 | 0.0 | 0.1− | 2001 12 22 | 704 | 1.2− | 0.3+ |
| 2001 10 13 | 704 | 0.7+ | 0.2+ | 2001 11 10 | 704 | 0.5+ | 0.8− | 2001 12 22 | 704 | 1.5− | 0.9+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 704 | 0.5+ | 0.3+ | 2001 11 11 | 704 | 1.3− | 0.0 | 2001 12 22 | 704 | 0.5+ | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 0.4− | 2001 11 11 | 704 | 0.3− | 0.1+ | 2004 12 19 | 704 | 0.9+ | 0.5− |
| 2001 10 20 | 704 | 0.9− | 0.9− | 2001 11 11 | 704 | 0.5+ | 0.1+ | 2004 12 19 | 704 | 0.3− | 0.5− |
| 2001 10 20 | 704 | 1.0− | 0.9− | 2001 11 11 | 704 | 0.4− | 0.4+ | 2004 12 19 | 704 | 1.1− | 0.9+ |
| 2001 10 26 | 704 | 0.2− | 0.1+ | 2001 11 11 | 704 | 0.5− | 0.5+ | 2006 08 15 | E12 | 0.5− | 0.3+ |
| 2001 10 26 | 704 | 0.7+ | 0.2+ | 2001 12 09 | 704 | 0.7+ | 0.2− | 2006 08 15 | E12 | 0.1− | 0.1− |
| 2001 10 26 | 704 | 0.5+ | 0.5+ | 2001 12 09 | 704 | (2.1+ | 0.6−) | 2006 08 15 | E12 | 0.3+ | 0.5− |
| 2001 10 26 | 704 | 0.5− | 0.3+ | 2001 12 09 | 704 | 1.6+ | 0.0 | 2006 08 15 | E12 | 0.4+ | 0.4+ |

**2001 VY$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.70919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20097185 | $\omega$ | 249.88911 | | −0.02207408 | −0.99929698 | |
| $a$ | 2.8865510 | $\Omega$ | 201.44345 | | +0.94543588 | −0.01100995 | |
| $e$ | 0.1576974 | $i$ | 4.75472 | | +0.32505959 | −0.03583763 | |
| $P$ | 4.90 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.4− | 0.2+ | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 11 14 | 704 | 1.3+ | 0.4+ |
| 2001 10 18 | 644 | 0.0 | 0.2+ | 2001 12 14 | 704 | 0.8+ | 0.9− | 2006 11 14 | 704 | (1.6+ | 0.2−) |
| 2001 10 18 | 644 | 0.0 | 0.2− | 2001 12 14 | 704 | 0.0 | 1.1+ | 2006 11 14 | 704 | 0.9− | 0.2− |
| 2001 10 23 | 704 | 0.7+ | 0.7− | 2001 12 14 | 704 | 0.7− | 1.1+ | 2006 11 14 | 704 | 1.1− | 0.2− |
| 2001 10 23 | 704 | 0.9− | 1.4+ | 2005 08 06 | 644 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 704 | 0.2− | 0.4+ | 2005 08 06 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2001 10 23 | 704 | 0.5+ | 1.3+ | 2005 08 06 | 644 | 0.4− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.5− | 1.2− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2001 10 24 | 704 | (0.1+ | 1.8−) | 2006 09 28 | G96 | 0.2+ | 0.6− | 2006 11 17 | 704 | 0.4− | 0.2+ |
| 2001 10 24 | 704 | (0.2− | 1.6+) | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2001 10 24 | 704 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.2+ | 0.2+ |
| 2001 10 25 | 644 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.6− | 0.4− | 2006 11 17 | 704 | 1.1+ | 0.1+ |
| 2001 10 25 | 644 | 0.4− | 0.5+ | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.1− |
| 2001 10 25 | 644 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2001 11 09 | 704 | 0.7+ | 0.0 | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.7+ | 0.9+ | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.5− | 0.0 |
| 2001 11 09 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.6− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2001 11 09 | 704 | (1.6+ | 0.1+) | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 11 10 | 704 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2001 11 10 | 704 | 0.8+ | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.3− | 2006 11 27 | 691 | 0.4+ | 0.4+ |
| 2001 11 10 | 704 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 11 10 | 704 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.6+ | 0.3− | 2006 11 28 | 704 | 0.3− | 0.2− |
| 2001 11 17 | 704 | 0.3− | 0.5− | 2006 11 09 | 644 | 0.5+ | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.4− |
| 2001 11 17 | 704 | 0.5− | 1.2− | 2006 11 09 | 644 | 0.4+ | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.2− |
| 2001 11 17 | 704 | 0.5− | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.5− | 2006 12 01 | 691 | 0.8− | 0.2+ |
| 2001 11 22 | 644 | 0.5− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.3− | 0.5+ |
| 2001 11 22 | 644 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.4− | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2001 11 22 | 644 | (2.7+ | 0.1−) | 2006 11 12 | G96 | 0.3+ | 0.5− | | | | |

**2001 VZ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.91156 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27601986 | $\omega$ | 61.66765 | | −0.24787410 | −0.96816857 | |
| $a$ | 2.3361954 | $\Omega$ | 42.73048 | | +0.86995202 | −0.23822901 | |
| $e$ | 0.1756806 | $i$ | 2.93612 | | +0.42631198 | −0.07678908 | |
| $P$ | 3.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.4− | 0.1− | 2001 11 11 | 704 | 0.4− | 0.7− | 2001 12 15 | 704 | 0.4− | 0.5+ |
| 2001 10 18 | 644 | 0.2− | 0.1− | 2001 11 11 | 704 | 0.6+ | 0.8− | 2001 12 15 | 704 | 1.6− | 0.7+ |
| 2001 10 18 | 644 | 1.0− | 0.4− | 2001 11 11 | 704 | 0.3− | 0.9+ | 2006 01 23 | 691 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 1.3+ | 0.8− | 2001 11 11 | 704 | 0.4− | 0.7− | 2006 01 23 | 691 | 0.1− | 0.2− |
| 2001 10 21 | 704 | (2.8+ | 1.7−) | 2001 11 11 | 704 | 0.6− | 0.3− | 2006 01 23 | 691 | 0.0 | 0.2− |
| 2001 10 21 | 704 | (2.4+ | 0.8+) | 2001 11 11 | 704 | 0.5+ | 0.2− | 2006 02 01 | 691 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 1.8+ | 0.5− | 2001 11 12 | 704 | 0.1+ | 0.1− | 2006 02 01 | 691 | 0.0 | 0.0 |
| 2001 10 25 | 644 | 0.0 | 0.3− | 2001 11 12 | 704 | 0.1+ | 0.6− | 2006 02 01 | 691 | 0.1− | 0.2− |
| 2001 10 25 | 644 | 0.2+ | 0.1+ | 2001 11 12 | 704 | 0.1+ | 0.3− | 2006 02 04 | 704 | 1.8− | 0.5+ |
| 2001 10 25 | 644 | 0.5+ | 0.3− | 2001 11 12 | 704 | 0.3+ | 0.2+ | 2006 02 04 | 704 | 0.3+ | 0.1− |
| 2001 10 26 | 644 | 0.1− | 0.3− | 2001 11 12 | 704 | 0.4+ | 0.3− | 2006 02 04 | 704 | 0.4+ | 0.0 |
| 2001 10 26 | 644 | 0.2+ | 0.4− | 2001 11 19 | 704 | 0.2− | 0.4+ | 2006 02 04 | 704 | 0.4− | 0.4− |
| 2001 10 26 | 644 | 0.3− | 0.4− | 2001 11 19 | 704 | 0.1− | 0.4+ | 2006 02 04 | 704 | 0.6+ | 0.4− |
| 2001 11 09 | 704 | 0.7+ | 1.9+ | 2001 11 19 | 704 | 0.3+ | 0.2+ | 2006 02 22 | 703 | 0.5− | 0.2+ |
| 2001 11 09 | 704 | 0.9− | 1.1+ | 2001 11 19 | 704 | 0.1− | 0.4+ | 2006 02 22 | 703 | 0.2+ | 1.1+ |
| 2001 11 09 | 704 | (0.1+ | 3.4+) | 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 02 22 | 703 | 0.5+ | 1.2+ |
| 2001 11 09 | 704 | 0.2+ | 1.8+ | 2001 11 21 | 704 | 0.5− | 0.2+ | 2006 02 22 | 699 | 0.3+ | 0.3+ |
| 2001 11 11 | 704 | 0.7− | 0.0 | 2001 11 21 | 704 | 0.2− | 0.0 | 2006 02 22 | 703 | 0.3+ | 0.0 |
| 2001 11 11 | 704 | 0.0 | 0.8− | 2001 11 21 | 704 | 0.5+ | 0.4+ | 2006 02 22 | 699 | 0.5+ | 0.0 |
| 2001 11 11 | 704 | 0.5− | 0.0 | 2001 11 21 | 704 | 0.3− | 0.1+ | 2006 02 22 | 699 | 0.7− | 0.1− |
| 2001 11 11 | 704 | 0.2+ | 0.8− | 2001 12 15 | 704 | 1.1+ | 0.4− | 2006 02 22 | 699 | 1.0+ | 0.3+ |

**2001 VE$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.03637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18556786 | $\omega$ | 172.74954 | | +0.78036329 | −0.57344827 | |
| $a$ | 3.0441604 | $\Omega$ | 225.43240 | | +0.55471921 | +0.81890645 | |
| $e$ | 0.0605190 | $i$ | 20.49003 | | +0.28865158 | −0.02343710 | |
| $P$ | 5.31 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.6+ | 0.1− | 2001 11 12 | 704 | 1.2+ | 1.0+ | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2001 10 19 | 644 | 0.3+ | 0.8− | 2001 11 12 | 704 | 0.8+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 10 19 | 644 | 0.3+ | 0.4− | 2001 11 12 | 704 | 0.6+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.3− | 0.9+ | 2001 11 12 | 704 | 1.0+ | 0.6+ | 2006 10 17 | 703 | (1.6− | 0.9+) |
| 2001 10 21 | 704 | 0.7+ | 0.4+ | 2001 11 17 | 704 | 0.2− | 1.0− | 2006 10 17 | 703 | (2.9− | 1.4−) |
| 2001 10 21 | 704 | 1.2− | 0.5− | 2001 11 17 | 704 | 0.0 | 1.4− | 2006 10 17 | 703 | 0.8− | 0.0 |
| 2001 10 21 | 704 | (0.8− | 1.9−) | 2001 11 17 | 704 | 0.0 | 1.3− | 2006 10 17 | 703 | (1.4+ | 1.7+) |
| 2001 11 09 | 704 | 0.2− | 0.8+ | 2001 11 20 | 704 | 0.5− | 0.4− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.1− | 1.0+ | 2001 11 20 | 704 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2001 11 09 | 704 | 0.5+ | 0.4− | 2001 11 20 | 704 | 0.8− | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2001 11 09 | 704 | 0.3− | 0.1− | 2001 11 20 | 704 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.5+ | 0.1+ |
| 2001 11 09 | 704 | 0.3+ | 0.2+ | 2001 11 20 | 704 | 0.5− | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.1+ | 0.7− | 2001 11 21 | 704 | 1.5− | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2001 11 11 | 704 | 0.6+ | 0.7− | 2001 11 21 | 704 | 1.3− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2001 11 21 | 704 | 0.7− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.2− | 0.2− | 2001 11 21 | 704 | 0.8− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 11 11 | 704 | 0.5+ | 0.1− | 2001 12 14 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 11 11 | 704 | 0.5+ | 0.3− | 2001 12 14 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.1+ | 0.1− | 2001 12 14 | 704 | 0.5+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 11 11 | 704 | 0.4+ | 0.5− | 2001 12 14 | 704 | 0.5− | 0.6− | 2006 11 14 | 703 | 0.6+ | 0.3+ |
| 2001 11 11 | 704 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.5− | 1.0− |
| 2001 11 11 | 704 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.6+ |
| 2001 11 12 | 704 | 0.6+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.6− |

**2001 VM$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.45524 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18532954 | $\omega$ | 208.25500 | | +0.27867901 | −0.94363696 | |
| $a$ | 3.0467696 | $\Omega$ | 226.19639 | | +0.92114911 | +0.31523610 | |
| $e$ | 0.1795603 | $i$ | 14.32514 | | +0.27170265 | −0.10087366 | |
| $P$ | 5.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.1− | 0.3− | 2001 11 12 | 704 | 1.0− | 0.8+ | 2001 12 11 | 704 | 0.1− | 0.1+ |
| 2001 10 19 | 644 | 0.3− | 0.3− | 2001 11 12 | 704 | 1.1− | 0.5+ | 2001 12 11 | 704 | 0.2+ | 0.6− |
| 2001 10 19 | 644 | 0.3− | 0.3− | 2001 11 17 | 704 | 0.0 | 0.1− | 2001 12 11 | 704 | 0.9+ | 0.6− |
| 2001 10 21 | 704 | (4.3− | 6.5+) | 2001 11 17 | 704 | 0.3+ | 0.7− | 2001 12 14 | 704 | 0.4+ | 0.4− |
| 2001 10 21 | 704 | (3.6− | 7.4+) | 2001 11 17 | 704 | 0.8+ | 0.4− | 2001 12 14 | 704 | 0.0 | 0.3− |
| 2001 10 21 | 704 | (3.5− | 6.0+) | 2001 11 17 | 704 | 0.2+ | 0.1+ | 2001 12 14 | 704 | 0.1+ | 0.7− |
| 2001 10 21 | 704 | (3.5− | 7.2+) | 2001 11 20 | 704 | 0.3− | 0.9− | 2001 12 17 | 704 | 0.6+ | 0.7− |
| 2001 10 24 | 291 | 0.0 | 0.1− | 2001 11 20 | 704 | 0.1+ | 1.1− | 2001 12 17 | 704 | 0.8+ | 0.4− |
| 2001 10 24 | 291 | 0.1− | 0.2− | 2001 11 20 | 704 | 0.0 | 0.6− | 2001 12 17 | 704 | 0.3+ | 0.5− |
| 2001 10 24 | 291 | 1.1+ | 0.1+ | 2001 11 20 | 704 | (2.8− | 2.4−) | 2001 12 17 | 704 | 0.1− | 1.1− |
| 2001 10 26 | 644 | 0.2+ | 0.3+ | 2001 11 21 | 704 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.1+ | 0.8− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.1− | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 10 26 | 644 | 0.2+ | 0.3+ | 2001 11 21 | 704 | 0.5− | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2001 11 21 | 704 | 0.5− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.2+ | 0.7+ | 2001 11 21 | 704 | 0.0 | 0.5− | 2006 10 17 | 703 | 0.8+ | 0.2+ |
| 2001 11 09 | 704 | 0.3− | 0.0 | 2001 11 22 | 644 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 2001 11 09 | 704 | 0.1− | 0.3+ | 2001 11 22 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | (1.9+ | 0.0 ) |
| 2001 11 09 | 704 | 0.1+ | 0.4+ | 2001 11 22 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.8+ |
| 2001 11 11 | 704 | 0.1− | 0.1+ | 2001 12 09 | 691 | 0.4− | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2001 12 09 | 691 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2001 11 11 | 704 | 0.5− | 0.0 | 2001 12 09 | 691 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 11 11 | 704 | 0.1− | 0.1+ | 2001 12 10 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.3− |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2001 12 10 | 691 | 0.4+ | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.3− | 0.1+ | 2001 12 10 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2001 11 12 | 704 | 0.3− | 0.2+ | 2001 12 11 | 704 | 0.9− | 0.4− | | | | |
| 2001 11 12 | 704 | 0.7− | 0.2− | 2001 12 11 | 704 | 0.2+ | 0.3− | | | | |

### 2001 VP$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.58815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26868068 | $\omega$ | 116.43993 | | −0.97408894 | | −0.22451728 |
| $a$ | 2.3785471 | $\Omega$ | 50.59816 | | +0.19290797 | | −0.88769610 |
| $e$ | 0.1181197 | $i$ | 2.02119 | | +0.11805611 | | −0.40197964 |
| $P$ | 3.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.0+ | 0.6+ | 2001 11 12 | 291 | 0.1+ | 0.0 | 2003 04 29 | 704 | 0.2+ | 1.2+ |
| 2001 11 09 | 704 | 0.9− | 0.5+ | 2001 11 12 | 291 | 0.2+ | 0.1+ | 2003 04 29 | 704 | 0.6+ | 0.5− |
| 2001 11 09 | 704 | 0.3+ | 0.5− | 2001 11 21 | 704 | 0.6− | 0.2+ | 2003 04 29 | 704 | 0.8+ | 1.2+ |
| 2001 11 09 | 704 | 0.8− | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.6− | 2003 05 10 | 291 | 0.1− | 0.4− |
| 2001 11 11 | 704 | 1.0− | 0.7+ | 2001 11 21 | 704 | 0.6− | 0.7− | 2003 05 10 | 291 | 0.3− | 0.1− |
| 2001 11 11 | 704 | 0.0 | 0.7− | 2001 11 21 | 704 | 0.9+ | 0.4− | 2003 05 10 | 291 | 0.4− | 0.0 |
| 2001 11 11 | 704 | 0.4− | 0.9+ | 2003 04 01 | 695 | 0.0 | 0.5− | 2003 05 26 | 291 | 0.1+ | 0.2+ |
| 2001 11 11 | 704 | 0.3− | 1.1+ | 2003 04 01 | 695 | 0.0 | 0.5− | 2003 05 26 | 291 | 0.2+ | 0.3+ |
| 2001 11 12 | 291 | 0.1+ | 0.1+ | 2003 04 29 | 704 | 0.0 | 0.5+ | 2003 05 26 | 291 | 0.3+ | 0.1+ |

### 2001 VG$_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.95008 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20260233 | $\omega$ | 13.76577 | | +0.43838197 | | −0.88413146 |
| $a$ | 2.8710434 | $\Omega$ | 50.49303 | | +0.80352111 | | +0.30493623 |
| $e$ | 0.1095465 | $i$ | 12.09437 | | +0.40270966 | | +0.35401335 |
| $P$ | 4.86 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 704 | 0.6+ | 0.7+ | 2001 11 12 | 704 | 0.7+ | 1.0− | 2006 10 17 | G96 | 0.7+ | 0.8+ |
| 2001 10 22 | 704 | 0.5− | 0.2+ | 2001 11 12 | 704 | 0.8+ | 0.9− | 2006 10 17 | G96 | 0.9+ | 0.4+ |
| 2001 10 22 | 704 | 0.1+ | 1.2+ | 2001 11 20 | 704 | 0.3+ | 0.9− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 10 25 | 644 | 0.4− | 0.0 | 2001 11 20 | 704 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2001 10 25 | 644 | 0.6− | 0.2− | 2001 11 20 | 704 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2001 10 25 | 644 | 0.2− | 0.3+ | 2001 11 20 | 704 | 0.4− | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 2001 11 09 | 704 | 1.0− | 0.6+ | 2001 11 20 | 704 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 0.4− | 0.7+ | 2001 11 21 | 704 | (1.9+ | 1.4−) | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2001 11 09 | 704 | 1.2− | 0.9+ | 2001 11 21 | 704 | 0.1+ | 1.1− | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2001 11 11 | 704 | 0.9+ | 0.5− | 2001 11 21 | 704 | 0.4− | 1.1− | 2006 11 01 | G96 | 0.2− | 0.4− |
| 2001 11 11 | 704 | 0.6− | 0.2+ | 2001 11 21 | 704 | 0.2− | 1.0− | 2006 11 13 | 691 | 0.4+ | 0.2− |
| 2001 11 11 | 704 | 0.7+ | 0.6− | 2001 11 21 | 704 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 11 11 | 704 | 0.8− | 0.5+ | 2001 11 22 | 644 | 0.2− | 1.2− | 2006 11 13 | 691 | 0.3+ | 0.1+ |
| 2001 11 11 | 704 | 1.1+ | 0.1− | 2001 11 22 | 644 | 0.1+ | 0.9− | 2006 11 17 | 691 | 0.3+ | 0.3+ |
| 2001 11 11 | 704 | 0.3− | 0.8− | 2001 11 22 | 644 | 0.3− | 0.8− | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 1.3+ | 0.7+ | 2001 12 15 | 704 | 0.4+ | 1.1− | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 11 11 | 704 | 0.3− | 0.0 | 2001 12 15 | 704 | 0.0 | 0.5− | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2001 11 11 | 704 | 0.3+ | 0.1− | 2001 12 15 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2001 11 11 | 704 | 0.3+ | 0.4+ | 2001 12 18 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2001 11 11 | 691 | 0.3+ | 0.1+ | 2001 12 18 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 1.4− | 0.9+ |
| 2001 11 11 | 691 | 0.1+ | 0.1+ | 2001 12 18 | 691 | 0.1− | 0.5+ | 2006 11 22 | 704 | 1.4− | 0.8+ |
| 2001 11 11 | 691 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.4− | 0.0 | 2006 11 22 | 704 | (2.5− | 0.0 ) |
| 2001 11 12 | 704 | 0.6− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.1+ | | | | |

### 2001 VU$_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.78958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18011847 | $\omega$ | 184.32725 | | +0.32771778 | | −0.91165569 |
| $a$ | 3.1052546 | $\Omega$ | 246.69843 | | +0.87471632 | | +0.39196204 |
| $e$ | 0.1111387 | $i$ | 15.66323 | | +0.35703279 | | −0.12348953 |
| $P$ | 5.47 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2− | 0.5+ | 2001 12 08 | 699 | 0.3− | 0.3+ | 2001 12 20 | 704 | 0.7+ | 0.2+ |
| 2001 10 21 | 704 | 0.2− | 0.5+ | 2001 12 08 | 699 | 1.1− | 1.2+ | 2001 12 23 | 704 | 0.4+ | 0.2+ |
| 2001 10 21 | 704 | 0.5− | 0.7+ | 2001 12 08 | 699 | 0.7− | 0.8+ | 2001 12 23 | 704 | 0.1+ | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.5+ | 2001 12 10 | 704 | 0.6+ | 0.3− | 2001 12 23 | 704 | 0.6+ | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 0.6+ | 2001 12 10 | 704 | 0.6+ | 0.1+ | 2001 12 23 | 704 | 0.7+ | 0.8− |
| 2001 11 09 | 704 | 0.7+ | 0.9+ | 2001 12 10 | 704 | 1.0+ | 0.3− | 2001 12 23 | 704 | 0.3+ | 0.5− |
| 2001 11 09 | 704 | 0.6+ | 0.8+ | 2001 12 14 | 704 | 0.4− | 0.9− | 2002 01 15 | 704 | (2.0− | 0.4+) |
| 2001 11 11 | 704 | 0.6+ | 0.6− | 2001 12 14 | 704 | 0.5− | 0.8− | 2002 01 15 | 704 | 1.3− | 0.4+ |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2001 12 14 | 704 | 0.4− | 0.9− | 2002 01 15 | 704 | (1.7− | 0.5+) |
| 2001 11 11 | 704 | 0.7+ | 1.4+ | 2001 12 14 | 704 | 0.4− | 1.2− | 2002 01 15 | 704 | 1.2− | 0.3− |
| 2001 11 12 | 704 | 0.5+ | 0.1− | 2001 12 14 | 704 | 0.4− | 0.8− | 2003 04 25 | 291 | 0.2+ | 0.1− |
| 2001 11 12 | 704 | 0.2+ | 0.1− | 2001 12 17 | 704 | 0.2+ | 0.1− | 2003 04 25 | 291 | 0.4− | 0.1− |
| 2001 11 12 | 704 | 0.6+ | 0.2+ | 2001 12 17 | 704 | 0.6− | 0.0 | 2003 04 25 | 291 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.8+ | 0.3+ | 2001 12 17 | 704 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2001 12 17 | 704 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.5+ | 1.0+ |
| 2001 11 21 | 704 | 0.1− | 0.1+ | 2001 12 17 | 704 | 0.4− | 0.3− | 2006 09 17 | 703 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2001 12 19 | 704 | 0.7− | 0.5+ | 2006 09 17 | 703 | 0.9− | 0.5+ |
| 2001 11 21 | 704 | 0.1− | 0.2− | 2001 12 19 | 704 | 0.6− | 0.3− | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2001 12 19 | 704 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 11 24 | 704 | 0.3+ | 0.7− | 2001 12 19 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 11 24 | 704 | 0.1+ | 0.7− | 2001 12 19 | 704 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.4− | 0.7− |
| 2001 11 24 | 704 | 0.8− | 1.1− | 2001 12 19 | 704 | (0.2+ | 1.6+) | 2006 10 19 | 703 | 1.9+ | 2.8− |
| 2001 12 07 | 644 | 0.0 | 0.4+ | 2001 12 19 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.4− |
| 2001 12 07 | 644 | 0.2+ | 0.4+ | 2001 12 20 | 704 | 0.7− | 0.1+ | 2006 10 19 | 703 | 0.0 | 1.2− |
| 2001 12 07 | 644 | 0.1+ | 0.1− | 2001 12 20 | 704 | (1.6+ | 0.5−) | | | | |
| 2001 12 08 | 699 | 0.4+ | 0.6+ | 2001 12 20 | 704 | 0.4+ | 1.1+ | | | | |

### 2001 VO$_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.98851 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18584659 | $\omega$ | 3.66119 | | +0.90898737 | | −0.40237744 |
| $a$ | 3.0411160 | $\Omega$ | 21.12020 | | +0.37435026 | | +0.67329131 |
| $e$ | 0.1998674 | $i$ | 17.57234 | | +0.18331349 | | +0.62029930 |
| $P$ | 5.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.6+ | 0.4− | 2006 09 12 | 703 | 0.9+ | 1.1+ | 2006 09 28 | 704 | 0.7+ | 0.7+ |
| 2001 10 14 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.6− | 0.9− | 2006 09 30 | 703 | 0.2+ | 0.7− |
| 2001 10 14 | 704 | 1.1+ | 0.6− | 2006 09 12 | 703 | 0.0 | 1.0− | 2006 09 30 | 703 | 0.7− | 0.7− |
| 2001 10 14 | 704 | 0.5+ | 0.2− | 2006 09 18 | 703 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.3− | 1.0− |
| 2001 10 19 | 704 | 0.5− | 0.6+ | 2006 09 18 | 703 | 1.0+ | 0.5− | 2006 09 30 | 703 | (2.7+ | 1.5−) |
| 2001 10 19 | 704 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.7− | 2006 09 30 | 704 | 0.5+ | 0.6+ |
| 2001 10 19 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.9− | 2006 09 30 | 704 | 0.9− | 0.6+ |
| 2001 10 19 | 704 | 0.6+ | 0.4− | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 09 30 | 704 | 0.3− | 0.7+ |
| 2001 11 10 | 704 | 0.8− | 0.7+ | 2006 09 18 | 699 | 1.0+ | 0.1− | 2006 09 30 | 704 | 0.4+ | 0.3+ |
| 2001 11 10 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.7+ | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 2001 11 10 | 704 | 0.8− | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2001 11 10 | 704 | 0.2− | 1.0− | 2006 09 22 | 704 | 0.9− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.7− |
| 2001 11 11 | 704 | 0.1− | 0.3− | 2006 09 22 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.5+ |
| 2001 11 11 | 699 | 0.6+ | 0.0 | 2006 09 22 | 704 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2001 11 11 | 704 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.5− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.2− | 2006 09 22 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 11 11 | 699 | 0.6− | 0.1− | 2006 09 22 | 704 | 0.8− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.9+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 11 11 | 699 | 1.0+ | 0.4+ | 2006 09 22 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 11 | 699 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2002 01 08 | 704 | 0.8− | 0.2+ | 2006 09 26 | 704 | 0.9+ | 0.7+ | 2006 10 22 | 703 | 1.0− | 1.1− |
| 2002 01 08 | 704 | (1.6− | 0.4−) | 2006 09 26 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | (2.4− | 0.6−) | 2006 09 26 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2006 08 28 | 699 | 0.5+ | 0.4− | 2006 09 26 | 704 | 0.5+ | 1.0+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2006 08 28 | 699 | 0.5+ | 0.5− | 2006 09 26 | 704 | (2.1+ | 0.1−) | 2006 11 21 | 704 | 0.1− | 1.0− |
| 2006 08 28 | 699 | 0.4+ | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2006 08 28 | 699 | 0.4− | 0.1− | 2006 09 28 | 704 | 0.6− | 0.6− | | | | |
| 2006 09 12 | 703 | 0.2− | 0.4− | 2006 09 28 | 704 | 0.3+ | 0.3− | | | | |

**2001 VU$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.40257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37235556 | $\omega$ | 337.49782 | | +0.90245579 | −0.33435593 | |
| $a$ | 1.9135104 | $\Omega$ | 45.10716 | | +0.42996817 | +0.66037422 | |
| $e$ | 0.0893359 | $i$ | 22.54557 | | +0.02647494 | +0.67239274 | |
| $P$ | 2.65 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | (1.0+ | 3.2+) | 2001 11 10 | 704 | 0.4− | 0.6+ | 2001 11 12 | 704 | 0.3+ | 1.5− |
| 2001 09 26 | 704 | (0.3+ | 2.5+) | 2001 11 10 | 704 | 0.8− | 0.9+ | 2001 12 08 | 704 | 0.3− | 0.0 |
| 2001 09 26 | 704 | (0.6+ | 2.8+) | 2001 11 10 | 704 | 0.5+ | 0.0 | 2001 12 08 | 704 | 1.4− | 0.5+ |
| 2001 10 09 | 691 | 0.0 | 0.1+ | 2001 11 11 | 704 | 0.1− | 0.2− | 2001 12 08 | 704 | 0.1− | 0.4− |
| 2001 10 09 | 691 | 0.2− | 0.2+ | 2001 11 11 | 704 | 0.3+ | 0.2+ | 2001 12 08 | 704 | 0.5− | 0.4− |
| 2001 10 09 | 691 | 0.1− | 0.4+ | 2001 11 11 | 704 | 0.0 | 0.6+ | 2006 09 29 | E12 | 0.3+ | 0.1+ |
| 2001 10 21 | 704 | 1.2+ | 1.5− | 2001 11 11 | 704 | 0.3− | 1.3+ | 2006 09 29 | E12 | 0.4+ | 0.1+ |
| 2001 10 21 | 704 | 1.9+ | 0.6− | 2001 11 12 | 704 | 0.8+ | 0.7+ | 2006 09 29 | E12 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | (2.2+ | 2.4−) | 2001 11 12 | 704 | 0.2− | 0.3− | 2006 09 29 | E12 | 1.0− | 0.2+ |
| 2001 10 21 | 704 | 1.1+ | 1.6− | 2001 11 12 | 704 | 0.6− | 1.3− | | | | |

**2001 VG$_{21}$ = 2006 RD$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.42927 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17720916 | $\omega$ | 151.58392 | | +0.90423829 | −0.40534932 | |
| $a$ | 3.1391491 | $\Omega$ | 232.95822 | | +0.35298242 | +0.88653765 | |
| $e$ | 0.2415492 | $i$ | 9.68866 | | +0.24032588 | +0.22303120 | |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.1+ | 2001 11 19 | 699 | 0.0 | 0.7+ | 2001 12 14 | 291 | 0.3+ | 0.2− |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2001 11 19 | 704 | 0.0 | 0.8− | 2001 12 14 | 704 | 0.6− | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2001 11 19 | 704 | 0.0 | 1.1− | 2001 12 14 | 704 | 0.2+ | 0.8+ |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2001 11 19 | 704 | 0.5+ | 1.1− | 2001 12 14 | 704 | 0.2− | 0.6+ |
| 2001 10 21 | 704 | 0.3+ | 0.3+ | 2001 11 20 | 704 | 0.4+ | 0.9+ | 2001 12 14 | 704 | 0.0 | 0.6+ |
| 2001 10 23 | 333 | 0.2+ | 0.1− | 2001 11 20 | 704 | 0.5+ | 0.5+ | 2001 12 14 | 704 | 0.0 | 0.5+ |
| 2001 10 23 | 333 | 0.6+ | 0.3− | 2001 11 20 | 704 | 0.6+ | 0.1+ | 2001 12 17 | 704 | 1.3+ | 0.2− |
| 2001 10 23 | 333 | 0.0 | 1.4− | 2001 11 20 | 704 | 0.7+ | 0.2+ | 2001 12 17 | 704 | 0.5+ | 1.1− |
| 2001 10 26 | 704 | 1.3− | 0.3− | 2001 11 20 | 704 | 0.6+ | 0.2+ | 2001 12 17 | 704 | 1.1+ | 1.7− |
| 2001 10 26 | 704 | 1.1− | 0.5− | 2001 11 20 | 608 | 0.8− | 1.0− | 2001 12 17 | 704 | 0.2+ | 0.8− |
| 2001 10 26 | 704 | 0.9− | 0.1− | 2001 11 20 | 608 | 0.4− | 0.5− | 2006 09 11 | 703 | 0.3+ | 0.1+ |
| 2001 10 26 | 704 | 1.0− | 0.0 | 2001 11 20 | 608 | 0.3− | 0.2− | 2006 09 11 | 703 | 0.6− | 0.2− |
| 2001 10 26 | 644 | 0.0 | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.4+ | 2006 09 11 | 703 | 0.5− | 0.1+ |
| 2001 10 26 | 644 | 0.6− | 0.1+ | 2001 11 21 | 704 | 0.4+ | 0.1− | 2006 09 11 | 703 | 0.3− | 0.6− |
| 2001 10 26 | 644 | 0.3+ | 0.7+ | 2001 11 21 | 704 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.5− |
| 2001 11 09 | 704 | 1.2+ | 0.4− | 2001 11 21 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.3− | 0.2− | 2006 09 19 | 703 | 1.4− | 0.1− |
| 2001 11 09 | 704 | 0.1+ | 1.1− | 2001 12 08 | 699 | 0.4− | 0.6+ | 2006 09 19 | 703 | 0.9+ | 0.6− |
| 2001 11 09 | 704 | 0.3+ | 0.3− | 2001 12 08 | 699 | 0.3− | 0.6− | 2006 09 20 | 703 | 0.4+ | 1.3+ |
| 2001 11 12 | 704 | 0.0 | 0.5− | 2001 12 08 | 699 | 0.2− | 0.1− | 2006 09 20 | 703 | 0.9+ | 0.0 |
| 2001 11 12 | 704 | 1.3− | 0.2+ | 2001 12 08 | 699 | 0.1− | 0.4+ | 2006 09 20 | 703 | 0.1− | 0.9+ |
| 2001 11 12 | 704 | 0.6− | 0.8+ | 2001 12 11 | 291 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.4+ | 0.9+ |
| 2001 11 12 | 704 | 0.7− | 0.4+ | 2001 12 11 | 291 | 0.7− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.3− |
| 2001 11 16 | 644 | 0.1− | 0.2+ | 2001 12 11 | 291 | 0.8− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 2001 11 16 | 644 | 0.3− | 0.4+ | 2001 12 11 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 703 | 0.5− | 0.5− |
| 2001 11 16 | 644 | 0.0 | 0.2+ | 2001 12 11 | 704 | 0.1+ | 0.9+ | 2006 09 26 | 703 | 0.8+ | 0.3+ |
| 2001 11 19 | 699 | 0.6+ | 0.5+ | 2001 12 11 | 704 | 0.2+ | 1.7+ | 2006 10 16 | 703 | 0.6+ | 0.0 |
| 2001 11 19 | 699 | 0.0 | 0.2− | 2001 12 11 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 1.2− | 0.1− |
| 2001 11 19 | 699 | 0.1− | 0.3− | 2001 12 11 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 2001 11 19 | 704 | 0.1+ | 0.4− | 2001 12 14 | 291 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 1.1− |
| 2001 11 19 | 704 | 0.0 | 0.7− | 2001 12 14 | 291 | 0.4+ | 0.2− | | | | |

**2001 VQ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.89618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20120231 | $\omega$ | 214.33328 | | +0.12735087 | −0.98374840 | |
| $a$ | 2.8843463 | $\Omega$ | 228.69994 | | +0.94362423 | +0.15947817 | |
| $e$ | 0.1026259 | $i$ | 9.69950 | | +0.30554062 | −0.08249722 | |
| $P$ | 4.90 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 1.0− | 2001 11 21 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 0.6+ | 0.6+ | 2001 11 21 | 704 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.4+ | 1.2− |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2001 11 21 | 704 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.4− |
| 2001 10 21 | 704 | 0.2+ | 0.1+ | 2001 11 21 | 704 | 0.4+ | 0.0 | 2006 11 18 | H07 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.2+ | 0.4+ | 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 11 18 | H07 | 0.4+ | 1.2+ |
| 2001 11 09 | 704 | (1.5+ | 1.6+) | 2001 12 14 | 704 | 0.2− | 0.8+ | 2006 11 18 | H07 | 0.2+ | 0.4+ |
| 2001 11 09 | 704 | 1.0+ | 1.3+ | 2001 12 14 | 704 | 0.2+ | 0.8+ | 2006 11 18 | H07 | 0.1− | 0.7+ |
| 2001 11 09 | 704 | (1.0+ | 1.7+) | 2001 12 14 | 704 | 0.2− | 0.1+ | 2006 11 18 | H07 | 0.1+ | 0.0 |
| 2001 11 09 | 644 | 0.0 | 0.2− | 2001 12 14 | 704 | 0.1+ | 0.1− | 2006 11 18 | H07 | 0.0 | 0.0 |
| 2001 11 09 | 704 | (2.5+ | 1.4+) | 2001 12 17 | 704 | 0.2− | 0.4− | 2006 11 18 | H07 | 0.3− | 0.1− |
| 2001 11 09 | 644 | 0.4− | 0.1− | 2001 12 17 | 704 | 0.0 | 0.7− | 2006 11 18 | H07 | 0.0 | 0.1+ |
| 2001 11 09 | 644 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.2− | 0.0 | 2006 11 19 | H07 | 0.6+ | 0.2− |
| 2001 11 12 | 704 | 0.2− | 0.2+ | 2001 12 17 | 704 | 0.0 | 0.7− | 2006 11 19 | H07 | 0.6+ | 0.5− |
| 2001 11 12 | 704 | 1.0− | 0.6+ | 2001 12 17 | 704 | 0.2+ | 1.2− | 2006 11 19 | H07 | 0.0 | 0.2+ |
| 2001 11 12 | 704 | 0.7+ | 0.7+ | 2005 08 29 | 644 | 0.0 | 0.1+ | 2006 11 19 | H07 | 0.1− | 0.3− |
| 2001 11 12 | 704 | (2.0− | 0.5+) | 2005 08 29 | 644 | 0.1+ | 0.2− | 2006 11 19 | H07 | 0.3− | 0.7+ |
| 2001 11 12 | 704 | 0.3− | 0.8+ | 2005 08 29 | 644 | 0.1− | 0.2+ | 2006 11 19 | H07 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 19 | H07 | 0.7− | 0.9+ |
| 2001 11 12 | 704 | 0.1+ | 1.3+ | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 20 | 704 | 1.1− | 0.7+ |
| 2001 11 12 | 704 | 0.8− | 0.9+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.5− | 1.3+ |
| 2001 11 12 | 704 | (2.0− | 0.2+) | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.6+ | 1.4+ |
| 2001 11 19 | 699 | 1.2− | 0.4− | 2006 10 19 | 695 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.3− | 0.2− |
| 2001 11 19 | 699 | (1.1+ | 1.8−) | 2006 10 20 | 695 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.4− | 1.5+ |
| 2001 11 19 | 699 | 0.6+ | 0.0 | 2006 10 20 | 695 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2001 11 19 | 699 | 0.0 | 0.7− | 2006 10 21 | G96 | 0.5+ | 0.4− | 2006 11 29 | 704 | 0.1− | 0.8− |
| 2001 11 20 | 704 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.4− | 0.4+ |
| 2001 11 20 | 704 | 0.4+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2001 11 20 | 704 | 0.2+ | 1.3− | 2006 10 21 | G96 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.1− | 1.2− | 2006 11 14 | 704 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2001 11 20 | 704 | 0.2+ | 1.3− | 2006 11 14 | 704 | 0.4+ | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.5− | | | | |

**2001 VM$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.00114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20371470 | $\omega$ | 353.38572 | | +0.71498211 | −0.68069605 | |
| $a$ | 2.8605824 | $\Omega$ | 50.81566 | | +0.65051265 | +0.56407864 | |
| $e$ | 0.1481568 | $i$ | 11.87802 | | +0.25619110 | +0.46740579 | |
| $P$ | 4.84 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.2+ | 2001 11 21 | 704 | 0.2− | 0.3− | 2001 12 19 | 704 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.1+ | 2001 11 21 | 704 | 0.2+ | 0.1− | 2001 12 19 | 704 | 0.2+ | 0.5− |
| 2001 10 21 | 704 | 0.3− | 0.0 | 2001 11 21 | 704 | 0.1− | 0.4− | 2001 12 19 | 704 | 0.2− | 0.1− |
| 2001 11 09 | 704 | 0.7+ | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.3− | 2001 12 19 | 704 | 1.0− | 0.4− |
| 2001 11 09 | 704 | 0.7− | 0.6− | 2001 11 21 | 704 | 0.1+ | 0.3− | 2001 12 19 | 704 | 0.9− | 0.1− |
| 2001 11 09 | 704 | 0.1− | 0.8− | 2001 11 21 | 608 | 0.8− | 0.9+ | 2001 12 20 | 644 | 0.8+ | 0.1+ |
| 2001 11 09 | 704 | 0.5+ | 0.1− | 2001 11 21 | 608 | 0.4− | 0.2+ | 2001 12 20 | 644 | 0.3− | 0.1+ |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2001 11 21 | 608 | 0.5− | 0.5− | 2001 12 20 | 644 | 0.3+ | 0.1+ |
| 2001 11 12 | 704 | 0.9+ | 0.4+ | 2001 12 10 | 704 | 0.4− | 0.2− | 2006 11 13 | 691 | 0.3− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.4+ | 0.5+ | 2001 12 10 | 704 | 0.6− | 0.2− | 2006 11 13 | 691 | 0.6+ | 0.2− |
| 2001 11 12 | 704 | 0.4+ | 0.4+ | 2001 12 10 | 704 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.4+ | 1.4+ | 2001 12 10 | 704 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.2− | 0.2+ | 2001 12 15 | 704 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2001 11 19 | 704 | 0.6− | 0.1− | 2001 12 15 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2001 11 19 | 704 | 0.3+ | 0.1+ | 2001 12 15 | 704 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2001 11 19 | 704 | 0.2+ | 0.0 | 2001 12 15 | 704 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2001 11 19 | 704 | 0.6+ | 0.5− | 2001 12 15 | 704 | 0.2+ | 0.7+ | 2006 11 22 | 704 | 0.3− | 0.6− |

**2001 VR$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.42157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18012959 | $\omega$ | 351.56968 | | +0.75673754 | | −0.61989661 |
| $a$ | 3.1051268 | $\Omega$ | 48.87683 | | +0.61469668 | | +0.56670093 |
| $e$ | 0.1199594 | $i$ | 15.99302 | | +0.22247760 | | +0.54275063 |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1− | 0.5+ | 2001 11 24 | 704 | 0.3+ | 0.5− | 2006 09 25 | 703 | 0.3+ | 0.7− |
| 2001 10 21 | 704 | 0.5− | 0.6+ | 2001 11 24 | 704 | 0.5− | 1.1− | 2006 10 10 | 644 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 1.2− | 0.2− | 2001 11 24 | 704 | 0.6+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.7− | 1.1+ | 2001 11 24 | 704 | 0.1− | 0.8− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2001 11 09 | 704 | 0.2+ | 0.5− | 2001 12 17 | 704 | 0.9− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.7+ | 0.6− | 2001 12 17 | 704 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 11 09 | 704 | 0.1+ | 0.3− | 2001 12 17 | 704 | 0.6+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 11 09 | 704 | 0.3+ | 0.3+ | 2001 12 17 | 704 | (1.9− | 0.8+) | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 2001 11 09 | 704 | 0.7+ | 0.1+ | 2001 12 20 | 644 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.3− |
| 2001 11 09 | 644 | 0.2− | 0.3+ | 2001 12 20 | 644 | 0.3− | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.9− |
| 2001 11 09 | 644 | 0.4+ | 0.7+ | 2001 12 20 | 644 | 0.4− | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2001 11 09 | 644 | 0.5+ | 0.7+ | 2006 09 20 | 703 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.7+ | 0.2+ | 2006 09 20 | 703 | 0.8− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.4+ | 0.5− | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2001 11 12 | 704 | 0.7+ | 1.4− | 2006 09 20 | 703 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 1.1+ | 0.4− | 2006 09 24 | 699 | 0.5+ | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2001 11 19 | 704 | 0.2− | 0.1− | 2006 09 24 | 699 | 1.1+ | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2001 11 19 | 704 | 0.3− | 0.3+ | 2006 09 24 | 699 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2001 11 19 | 704 | 0.2− | 0.2+ | 2006 09 24 | 699 | 0.1+ | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.9+ |
| 2001 11 19 | 704 | 0.6− | 0.3− | 2006 09 25 | 703 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.5+ | 0.2+ |
| 2001 11 19 | 704 | 0.6− | 0.1− | 2006 09 25 | 703 | 0.8− | 1.1− | 2006 10 28 | 703 | (1.6+ | 0.1−) |
| 2001 11 24 | 704 | 0.4+ | 0.2− | 2006 09 25 | 703 | (0.1+ | 1.7−) | | | | |

**2001 VA$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.20241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17372458 | $\omega$ | 138.05307 | | +0.91233469 | | −0.33949009 |
| $a$ | 3.1809868 | $\Omega$ | 243.15152 | | +0.27290904 | | +0.92094935 |
| $e$ | 0.0799349 | $i$ | 14.86530 | | +0.30523118 | | +0.19130804 |
| $P$ | 5.67 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.6+ | 0.4− | 2001 11 21 | 704 | 0.5− | 0.1− | 2006 09 06 | 644 | 0.3− | 0.3+ |
| 2001 10 21 | 704 | 1.0+ | 0.2+ | 2001 11 21 | 704 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.4+ | 0.1− |
| 2001 10 21 | 704 | (1.5− | 0.9−) | 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.8+ |
| 2001 10 21 | 704 | 0.5− | 0.6− | 2001 11 21 | 704 | 0.2− | 0.8+ | 2006 09 16 | 703 | 0.1− | 0.5− |
| 2001 10 21 | 704 | 0.7− | 0.3− | 2001 11 21 | 704 | 0.1+ | 0.8− | 2006 09 16 | 703 | 0.0 | 0.6+ |
| 2001 11 09 | 704 | 0.0 | 0.1− | 2001 12 07 | 691 | 0.1− | 0.4− | 2006 09 21 | 699 | (1.7+ | 1.8+) |
| 2001 11 09 | 704 | 0.4+ | 0.3+ | 2001 12 07 | 691 | 0.0 | 0.4− | 2006 09 21 | 699 | 1.0+ | 0.5+ |
| 2001 11 09 | 704 | 0.3− | 0.0 | 2001 12 07 | 691 | 0.0 | 0.5− | 2006 09 21 | 699 | 1.0+ | 0.3− |
| 2001 11 09 | 704 | 0.6− | 1.1+ | 2001 12 10 | 704 | 0.3− | 0.8+ | 2006 09 21 | 699 | 1.2+ | 0.0 |
| 2001 11 09 | 704 | 0.2− | 1.1+ | 2001 12 10 | 704 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.3− |
| 2001 11 12 | 704 | 0.4+ | 0.6− | 2001 12 10 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.3+ | 0.7− |
| 2001 11 12 | 704 | 0.2+ | 1.2− | 2001 12 10 | 704 | 0.3+ | 0.7+ | 2006 09 28 | 703 | 0.7− | 0.4− |
| 2001 11 12 | 704 | 0.6+ | 0.1+ | 2001 12 10 | 704 | 0.0 | 1.3+ | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2001 11 12 | 704 | 0.6+ | 0.4+ | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.3+ | 0.4+ |
| 2001 11 12 | 704 | 0.8+ | 0.1+ | 2001 12 14 | 704 | 0.0 | 0.4+ | 2006 10 23 | 703 | 0.9− | 0.0 |
| 2001 11 16 | 644 | 0.1+ | 0.0 | 2001 12 14 | 704 | 0.7− | 0.1+ | 2006 10 23 | 703 | 0.4− | 0.5− |
| 2001 11 16 | 644 | 0.2+ | 0.2+ | 2001 12 17 | 704 | 0.5− | 0.5− | 2006 10 23 | 703 | 0.6− | 0.1− |
| 2001 11 16 | 644 | 0.1+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.1− | 2006 10 26 | 703 | 0.5− | 0.2+ |
| 2001 11 19 | 699 | 0.8− | 0.6− | 2001 12 17 | 691 | 0.2+ | 0.2− | 2006 10 26 | 703 | 0.2+ | 0.1− |
| 2001 11 19 | 699 | 0.1− | 0.6+ | 2001 12 17 | 704 | 0.5− | 0.0 | 2006 10 26 | 703 | 0.8− | 0.0 |
| 2001 11 19 | 699 | 0.2− | 0.3− | 2001 12 17 | 704 | 0.7− | 0.4+ | 2006 10 26 | 703 | 0.1− | 1.1+ |
| 2001 11 19 | 699 | 0.7− | 0.4+ | 2001 12 17 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | (1.9+ | 0.3−) |
| 2001 11 19 | 704 | 0.4+ | 0.2+ | 2001 12 17 | 704 | 0.7− | 0.5+ | 2006 11 14 | 703 | 0.9+ | 0.9− |
| 2001 11 19 | 704 | 0.6+ | 0.1+ | 2001 12 17 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.5− |
| 2001 11 19 | 704 | 0.5+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.6+ | 2006 11 14 | 703 | 0.4− | 0.0 |
| 2001 11 19 | 704 | 0.9+ | 0.3− | 2006 09 06 | 644 | 0.0 | 0.4+ | | | | |

**2001 VM$_{25}$ = 2006 TS$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.87508 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19041571 | $\omega$ | 297.22672 | | +0.96825461 | | +0.22632665 |
| $a$ | 2.9922706 | $\Omega$ | 49.89135 | | −0.15039104 | | +0.86652671 |
| $e$ | 0.1384006 | $i$ | 7.97478 | | −0.19966356 | | +0.44486820 |
| $P$ | 5.18 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.2+ | 0.4− | 2001 12 19 | 704 | 0.1− | 0.7− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 1.3− | 0.4+ | 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 0.6− | 0.7+ | 2001 12 19 | 704 | 0.2− | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.3+ | 0.1+ | 2001 12 19 | 704 | 0.4− | 0.8+ | 2006 11 10 | 644 | 0.4+ | 0.4+ |
| 2001 11 12 | 691 | 0.5+ | 0.3− | 2001 12 19 | 704 | 1.3− | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.1− | 0.1+ | 2004 05 24 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2001 11 12 | 691 | 0.0 | 0.0 | 2004 05 24 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (0.1+ | 1.7−) |
| 2001 11 12 | 704 | 0.3+ | 1.0− | 2004 05 24 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2001 11 12 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 1.0+ | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2001 11 24 | 704 | 0.8+ | 0.8− | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 13 | G96 | 0.4+ | 0.6− |
| 2001 11 24 | 704 | 1.3− | 0.7− | 2006 10 02 | G96 | 0.5+ | 0.5− | 2006 11 13 | G96 | 0.2− | 0.9+ |
| 2001 11 24 | 704 | 0.6− | 1.0− | 2006 10 03 | 291 | 0.8− | 0.5+ | 2006 11 13 | G96 | 0.2+ | 0.7− |
| 2001 11 24 | 704 | 0.0 | 0.5+ | 2006 10 03 | 291 | 0.9− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2001 12 10 | 704 | 0.0 | 0.1+ | 2006 10 03 | 291 | 0.8− | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2001 12 10 | 704 | 0.4+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.5− | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2001 12 10 | 704 | 0.7− | 1.3− | 2006 10 03 | G96 | 1.0+ | 0.7− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | 0.2+ | 1.0− | 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 12 15 | 704 | 0.9− | 1.5+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.8+ | 0.9+ |
| 2001 12 15 | 704 | 0.5− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 1.0+ |
| 2001 12 15 | 704 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.7+ | 0.2− | 2006 11 21 | 704 | 1.0+ | 0.5+ |
| 2001 12 15 | 704 | 0.6− | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 1.1+ | 0.7+ |
| 2001 12 15 | 704 | 0.1− | 1.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 1.4− | 1.1− |
| 2001 12 18 | 704 | 0.7+ | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.8+ | 0.5− |
| 2001 12 18 | 704 | 0.7+ | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.2− | 0.5− |
| 2001 12 18 | 704 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.5+ | 0.8− |

**2001 VO$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.59638 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20069880 | $\omega$ | 313.81211 | | +0.89453640 | | −0.44036632 |
| $a$ | 2.8891685 | $\Omega$ | 72.45172 | | +0.42972664 | | +0.79999499 |
| $e$ | 0.3494037 | $i$ | 4.61377 | | +0.12304325 | | +0.40753592 |
| $P$ | 4.91 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 691 | 0.2− | 0.2− | 2001 11 20 | 704 | 0.4− | 0.1− | 2001 12 19 | 704 | 0.0 | 0.5− |
| 1997 02 10 | 691 | (2.1+ | 3.1−) | 2001 11 21 | 704 | 0.3− | 1.2− | 2001 12 19 | 704 | 0.4− | 0.8− |
| 1997 02 10 | 691 | 0.3+ | 0.3− | 2001 11 21 | 704 | 0.5− | 1.2− | 2001 12 21 | 704 | 0.0 | 0.1− |
| 2001 09 14 | 644 | 0.0 | 0.3− | 2001 11 21 | 704 | 1.1− | 0.9− | 2001 12 21 | 704 | 0.7+ | 0.7+ |
| 2001 09 14 | 644 | 0.0 | 0.3− | 2001 11 21 | 704 | 0.1− | 0.0 | 2001 12 21 | 704 | 0.3+ | 0.3− |
| 2001 09 14 | 644 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.3− | 0.2− | 2001 12 21 | 704 | 1.0+ | 0.6− |
| 2001 09 17 | 704 | 1.1− | 0.3+ | 2001 11 21 | 704 | 0.1− | 0.0 | 2001 12 21 | 704 | 0.9+ | 0.4− |
| 2001 09 17 | 704 | 0.2− | 0.6− | 2001 11 21 | 704 | 0.5− | 0.2− | 2001 12 23 | 608 | 0.0 | 0.3+ |
| 2001 09 17 | 704 | 1.1− | 0.1+ | 2001 11 21 | 704 | 0.1− | 0.2− | 2001 12 23 | 608 | 0.2+ | 0.3+ |
| 2001 09 17 | 704 | (2.9− | 1.0+) | 2001 11 21 | 704 | 0.4− | 0.9− | 2001 12 23 | 608 | 0.1− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.1− | 0.5+ | 2001 11 21 | 704 | 0.2− | 0.1+ | 2002 01 07 | 691 | 1.3− | 0.2− |
| 2001 09 26 | 704 | 0.2− | 0.5+ | 2001 12 07 | 644 | 0.1+ | 0.3+ | 2002 01 07 | 691 | 0.0 | 0.4− |
| 2001 09 26 | 704 | 0.3− | 1.0+ | 2001 12 07 | 644 | 0.1+ | 0.4+ | 2002 01 07 | 691 | 0.3− | 0.4− |
| 2001 10 24 | 704 | 0.7+ | 0.8− | 2001 12 07 | 644 | 0.1+ | 0.3+ | 2002 01 09 | 704 | (1.7+ | 0.9−) |
| 2001 10 24 | 704 | 0.4+ | 0.5− | 2001 12 08 | 699 | 0.7− | 0.4+ | 2002 01 09 | 704 | 0.5+ | 1.1− |
| 2001 10 24 | 704 | 0.8+ | 0.5+ | 2001 12 08 | 699 | 0.2− | 0.3+ | 2002 01 09 | 704 | 1.0+ | 0.9− |
| 2001 10 24 | 704 | 1.1+ | 0.4+ | 2001 12 08 | 699 | 0.1+ | 0.3+ | 2002 01 09 | 704 | (1.6+ | 0.4−) |
| 2001 10 24 | 704 | 0.3− | 0.7+ | 2001 12 08 | 699 | 0.4− | 0.4+ | 2002 01 09 | 704 | 1.3+ | 0.4+ |
| 2001 11 09 | 704 | 0.6+ | 0.8+ | 2001 12 10 | 704 | 0.5+ | 0.7− | 2002 01 14 | 704 | 0.3+ | 0.3+ |
| 2001 11 09 | 704 | 0.2+ | 1.2+ | 2001 12 10 | 704 | 0.8+ | 0.3− | 2002 01 14 | 704 | 0.5+ | 0.1+ |
| 2001 11 09 | 704 | 0.3+ | 0.9+ | 2001 12 10 | 704 | 0.7+ | 0.1− | 2002 01 14 | 704 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 1.4+ | 1.0+ | 2001 12 10 | 704 | 0.9+ | 0.1− | 2002 01 14 | 704 | 0.9+ | 0.2− |
| 2001 11 09 | 704 | 0.1− | 1.3+ | 2001 12 10 | 704 | 1.3+ | 0.4+ | 2002 01 14 | 704 | 0.9+ | 0.2− |
| 2001 11 12 | 704 | 0.6− | 0.2+ | 2001 12 14 | 704 | 0.2− | 0.7+ | 2002 01 21 | 704 | 0.2− | 0.0 |
| 2001 11 12 | 704 | 0.5− | 0.3+ | 2001 12 14 | 704 | 0.0 | 0.5+ | 2002 01 21 | 704 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.5− | 0.1− | 2001 12 14 | 704 | 0.1− | 0.8+ | 2002 01 21 | 704 | 0.6− | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2001 12 14 | 704 | 0.2+ | 0.4+ | 2003 03 31 | 645 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.4− | 0.3+ | 2001 12 14 | 704 | 1.2+ | 0.8+ | 2003 03 31 | 645 | 0.0 | 0.1+ |
| 2001 11 19 | 699 | 0.2− | 0.0 | 2001 12 17 | 704 | 0.3− | 1.0+ | 2006 11 10 | 691 | 0.5− | 0.1− |
| 2001 11 19 | 699 | 0.2− | 0.0 | 2001 12 17 | 704 | 0.1− | 1.1+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 11 19 | 699 | 0.5− | 0.6− | 2001 12 17 | 704 | 0.0 | 1.1+ | 2006 11 10 | 691 | 0.3+ | 0.2− |
| 2001 11 19 | 699 | 1.0+ | 0.1− | 2001 12 17 | 704 | 0.1− | 1.1+ | 2006 11 18 | 704 | 0.1− | 0.5− |
| 2001 11 20 | 704 | 0.3− | 0.1− | 2001 12 17 | 704 | 0.1− | 1.2+ | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.4− | 0.1− | 2001 12 19 | 704 | 0.9+ | 0.6− | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2001 12 19 | 704 | 0.4− | 0.5− | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.4− | 0.0 | 2001 12 19 | 704 | 0.0 | 0.6− | 2006 11 18 | 704 | 0.4+ | 0.1− |

**2001 VP$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.04038 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27205204 | $\omega$ | 328.20484 | | +0.99962218 | | +0.01319754 |
| $a$ | 2.3588558 | $\Omega$ | 31.06642 | | −0.00142440 | | +0.90088185 |
| $e$ | 0.2585574 | $i$ | 2.67803 | | −0.02744948 | | +0.43386372 |
| $P$ | 3.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.4− | 0.5− | 2001 11 21 | 704 | 0.5+ | 0.2− | 2001 12 19 | 704 | 0.1− | 0.2+ |
| 2001 11 09 | 704 | 0.5− | 0.9− | 2001 11 21 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.2− | 0.4+ |
| 2001 11 09 | 704 | 0.9− | 0.3− | 2001 11 21 | 704 | 0.6+ | 0.8− | 2001 12 19 | 704 | 0.0 | 0.7+ |
| 2001 11 09 | 704 | 0.3− | 0.2+ | 2001 12 11 | 704 | 0.2+ | 1.5+ | 2005 12 30 | G96 | 0.2− | 0.3− |
| 2001 11 12 | 704 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.1− | 1.5+ | 2005 12 30 | G96 | 0.6− | 0.2− |
| 2001 11 12 | 704 | 0.3− | 0.5− | 2001 12 11 | 704 | 0.6+ | 1.0+ | 2005 12 30 | G96 | 0.4− | 0.7− |
| 2001 11 12 | 704 | 0.4− | 0.9+ | 2001 12 15 | 704 | 0.2− | 0.0 | 2005 12 30 | G96 | 0.0 | 0.8− |
| 2001 11 12 | 704 | 0.0 | 0.7− | 2001 12 15 | 704 | 0.3− | 0.1− | 2006 01 28 | G96 | 0.2− | 0.4− |
| 2001 11 12 | 704 | 0.2+ | 0.5+ | 2001 12 15 | 704 | 0.4− | 0.2− | 2006 01 28 | G96 | 0.7+ | 0.8− |
| 2001 11 19 | 704 | 0.7+ | 0.3+ | 2001 12 15 | 704 | 0.4− | 0.2+ | 2006 01 28 | G96 | 0.2− | 0.4− |
| 2001 11 19 | 704 | 0.8+ | 0.4− | 2001 12 18 | 704 | 0.1− | 0.3− | 2006 02 06 | 691 | 0.0 | 0.1− |
| 2001 11 19 | 704 | (0.7+ | 2.3−) | 2001 12 18 | 704 | 0.4− | 0.2− | 2006 02 06 | 691 | 0.0 | 0.2− |
| 2001 11 19 | 704 | 0.4+ | 0.1− | 2001 12 18 | 704 | 0.3− | 0.1+ | 2006 02 06 | 691 | 0.1− | 0.2+ |
| 2001 11 19 | 704 | 0.9+ | 0.3− | 2001 12 18 | 704 | 0.8− | 0.1+ | 2006 02 20 | 691 | 0.0 | 0.6− |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2001 12 19 | 704 | 0.1+ | 0.4− | 2006 02 20 | 691 | 0.1− | 0.5+ |
| 2001 11 21 | 704 | 0.4+ | 0.2− | 2001 12 19 | 704 | 0.1− | 0.3− | 2006 02 20 | 691 | 0.3+ | 0.8+ |

**2001 VQ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.01663 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18572677 | $\omega$ | 331.95328 | | +0.85672990 | | −0.48048627 |
| $a$ | 3.0424238 | $\Omega$ | 57.98111 | | +0.50484695 | | +0.70683679 |
| $e$ | 0.2339848 | $i$ | 12.77435 | | +0.10556249 | | +0.51914804 |
| $P$ | 5.31 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.7− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 09 26 | 704 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2001 09 26 | 704 | 1.1+ | 0.8+ | 2006 09 26 | 703 | 0.2+ | 0.8− | 2006 10 28 | 703 | 0.2− | 0.8− |
| 2001 09 26 | 704 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.5+ | 0.4+ | 2006 10 28 | 703 | (0.6+ | 1.6+) |
| 2001 10 26 | 704 | 0.7+ | 1.4− | 2006 10 01 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.4− |
| 2001 10 26 | 704 | 0.4+ | 0.5− | 2006 10 01 | 704 | 0.6+ | 0.4+ | 2006 11 07 | 644 | 1.1+ | 0.0 |
| 2001 10 26 | 704 | (0.1+ | 1.8+) | 2006 10 01 | 704 | 0.8+ | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.5+ | 0.5+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.6− | 0.5− | 2006 10 02 | 704 | 1.1− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.9− |
| 2001 11 09 | 704 | 0.0 | 0.2− | 2006 10 02 | 704 | 0.8− | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.7− |
| 2001 11 09 | 704 | 0.3− | 0.3− | 2006 10 02 | 704 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.3− | 1.2− |
| 2001 11 09 | 704 | 0.1− | 0.0 | 2006 10 02 | 704 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.5− |
| 2001 11 12 | 704 | 0.6− | 0.4+ | 2006 10 02 | 704 | 0.4− | 0.7+ | 2006 11 14 | 704 | 0.5+ | 1.1+ |
| 2001 11 12 | 704 | 0.1− | 0.8+ | 2006 10 03 | 704 | 0.3+ | 0.6+ | 2006 11 14 | 704 | 0.6− | 0.7+ |
| 2001 11 12 | 704 | 0.9− | 0.9+ | 2006 10 03 | 704 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.5− | 0.8+ | 2006 10 03 | 704 | (1.8− | 0.6+) | 2006 11 14 | 704 | 0.3− | 0.8+ |
| 2001 11 12 | 704 | 0.4− | 1.0+ | 2006 10 03 | 704 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.6− | 1.0+ |
| 2001 11 19 | 704 | 0.9− | 0.4− | 2006 10 03 | 704 | (2.3− | 1.0−) | 2006 11 17 | 704 | 0.9+ | 0.2− |
| 2001 11 19 | 704 | 1.1− | 0.4− | 2006 10 03 | 704 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.7− | 0.2+ | 2006 10 03 | 704 | (2.9− | 0.0 ) | 2006 11 17 | 704 | 0.8+ | 0.5+ |
| 2001 11 19 | 704 | 0.4− | 0.9− | 2006 10 03 | 704 | 0.1− | 0.7− | 2006 11 17 | 704 | 0.1− | 0.7+ |
| 2001 11 24 | 704 | 1.0+ | 0.0 | 2006 10 03 | 704 | (1.7− | 0.2−) | 2006 11 17 | 704 | 0.3+ | 0.5+ |
| 2001 11 24 | 704 | 0.3+ | 0.6− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.9− | 0.8+ |
| 2001 11 24 | 704 | 0.0 | 0.6− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.8+ |
| 2001 11 24 | 704 | 0.8+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.9− | 0.6+ |
| 2001 11 24 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.2− | 1.5+ |
| 2001 12 10 | 704 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 2.6+ | 1.5+ |
| 2001 12 10 | 704 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 1.0− | 0.4− |
| 2001 12 10 | 704 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.9+ |
| 2001 12 10 | 704 | 1.2− | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.5− | 0.6− |
| 2001 12 10 | 704 | 0.7− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 1.3− | 1.3− |
| 2001 12 17 | 704 | 0.8+ | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.5+ | 0.5− |
| 2001 12 17 | 704 | 0.8+ | 0.5− | 2006 10 22 | 703 | 1.1− | 0.7− | 2006 11 23 | G96 | 0.1+ | 0.6− |
| 2001 12 17 | 704 | 0.8+ | 0.7− | 2006 10 22 | 703 | 0.2− | 0.9− | 2006 11 23 | G96 | 0.2+ | 0.6− |
| 2001 12 17 | 704 | 0.4+ | 0.3− | 2006 10 22 | 703 | 0.7+ | 1.0− | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2001 12 17 | 704 | 0.6+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2002 01 08 | 704 | 1.3+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2002 01 08 | 704 | 1.2+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.7− |
| 2002 01 08 | 704 | 0.9− | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2006 09 26 | 703 | 0.6− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.1− | | | | |

**2001 VW$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.51122 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17595892 | $\omega$ | 176.77181 | | +0.35667649 | | −0.92903756 |
| $a$ | 3.1540012 | $\Omega$ | 252.31439 | | +0.85480868 | | +0.36701421 |
| $e$ | 0.2255520 | $i$ | 5.92463 | | +0.37694032 | | +0.04679499 |
| $P$ | 5.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.3+ | 0.3− | 2001 12 18 | 691 | 0.2− | 0.1− |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.6+ | 0.5− | 2001 12 20 | 704 | 0.4+ | 1.0+ |
| 2001 11 09 | 704 | 0.2+ | 1.0+ | 2001 11 21 | 704 | 0.4+ | 0.4− | 2001 12 20 | 704 | 0.4+ | 0.7+ |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2001 12 10 | 704 | 1.0+ | 0.4+ | 2001 12 20 | 704 | 0.7+ | 1.0+ |
| 2001 11 09 | 704 | 0.0 | 0.1+ | 2001 12 10 | 704 | 0.5− | 0.5− | 2001 12 20 | 704 | 0.7+ | 0.3+ |
| 2001 11 09 | 704 | 0.1− | 0.0 | 2001 12 10 | 704 | 0.7+ | 0.4+ | 2001 12 23 | 691 | 0.3+ | 0.1− |
| 2001 11 09 | 704 | 0.7− | 0.4− | 2001 12 10 | 704 | 0.7+ | 0.6+ | 2001 12 23 | 691 | 0.3+ | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2001 12 10 | 704 | 0.2+ | 0.5+ | 2001 12 23 | 691 | 0.4+ | 0.0 |
| 2001 11 12 | 704 | 0.4+ | 0.3+ | 2001 12 10 | 704 | 0.2− | 0.2− | 2006 09 16 | 644 | 0.5− | 0.4− |
| 2001 11 12 | 704 | 0.8− | 0.0 | 2001 12 14 | 704 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.5− | 0.4+ | 2001 12 14 | 704 | 0.0 | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 291 | 0.1− | 0.4− | 2001 12 14 | 704 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.5+ |
| 2001 11 17 | 291 | 0.2− | 0.4− | 2001 12 17 | 704 | 0.7− | 0.2− | 2006 09 17 | 703 | 0.3− | 0.6+ |
| 2001 11 17 | 291 | 0.3− | 0.4− | 2001 12 17 | 704 | 0.7− | 0.4− | 2006 09 17 | 703 | 0.9− | 0.4+ |
| 2001 11 19 | 704 | 0.3− | 0.1+ | 2001 12 17 | 704 | 0.6− | 0.3− | 2006 09 17 | 703 | 0.1+ | 0.1+ |
| 2001 11 19 | 704 | 0.7− | 0.7− | 2001 12 17 | 704 | 0.7− | 0.2+ | 2006 09 29 | 699 | 0.0 | 0.7+ |
| 2001 11 19 | 704 | 0.3− | 0.1− | 2001 12 17 | 704 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.4+ | 0.4− | 2001 12 18 | 691 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.1+ | 1.0+ |
| 2001 11 21 | 704 | 0.4+ | 0.6− | 2001 12 18 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.2− | 1.0+ |

**2001 VT$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 318.09722 | | | (2000.0) | | |
| $n$ | 0.17859326 | $\omega$ | 5.33283 | | +0.35056225 | −0.93592980 |
| $a$ | 3.1229091 | $\Omega$ | 64.14907 | | +0.85786420 | +0.30643050 |
| $e$ | 0.1927067 | $i$ | 2.15157 | | +0.37573278 | +0.17359652 |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.6− | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2001 11 09 | 704 | 0.0 | 0.3+ | 2001 12 19 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2001 11 09 | 704 | 0.2− | 0.4+ | 2002 01 14 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 1.1+ | 0.5+ | 2002 01 14 | 704 | 0.9+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.7+ | 0.8+ | 2002 01 14 | 704 | 0.8+ | 0.5− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2001 11 12 | 704 | 0.1− | 0.4+ | 2002 01 14 | 704 | 0.5− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2001 11 19 | 704 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.7− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2001 11 19 | 704 | 0.7− | 1.0− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2001 11 19 | 704 | 1.0− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 12 18 | 704 | 0.8− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ | | | | |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1− | | | | |

**2001 VE$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 271.59560 | | | (2000.0) | | |
| $n$ | 0.17725587 | $\omega$ | 231.28765 | | −0.34823330 | −0.85137161 |
| $a$ | 3.1385976 | $\Omega$ | 243.47856 | | +0.93681701 | −0.30121589 |
| $e$ | 0.1136986 | $i$ | 26.00432 | | +0.03327853 | −0.42945938 |
| $P$ | 5.56 | $H$ | 14.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.9+ | 0.7+ | 2001 11 21 | 704 | 0.6+ | 0.3− | 2001 12 17 | 704 | 0.1+ | 0.1+ |
| 2001 10 14 | 704 | 0.0 | 0.8− | 2001 11 21 | 704 | 0.1+ | 0.5− | 2001 12 20 | 704 | 0.5− | 1.0+ |
| 2001 10 14 | 704 | 1.1− | 0.3− | 2001 11 21 | 704 | 0.8+ | 0.0 | 2001 12 20 | 704 | 0.5− | 0.7+ |
| 2001 10 14 | 704 | 0.4− | 0.7+ | 2001 11 21 | 704 | 0.1+ | 1.0− | 2001 12 20 | 704 | 1.1− | 0.0 |
| 2001 11 09 | 704 | 1.5+ | 1.1+ | 2001 11 21 | 704 | 1.1+ | 0.3− | 2001 12 20 | 704 | 0.7− | 0.7+ |
| 2001 11 09 | 704 | 1.6+ | 0.4+ | 2001 12 07 | 644 | 0.9− | 0.3− | 2001 12 20 | 704 | 1.1− | 0.9+ |
| 2001 11 09 | 704 | 1.1+ | 1.1+ | 2001 12 07 | 644 | 0.9− | 0.3− | 2002 01 08 | 644 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 1.2− | 0.9− | 2001 12 07 | 644 | 0.7− | 0.4− | 2002 01 08 | 644 | 0.6+ | 0.2− |
| 2001 11 12 | 704 | 0.9− | 0.2+ | 2001 12 14 | 704 | 0.3+ | 0.5− | 2002 01 08 | 644 | 0.5+ | 0.4− |
| 2001 11 12 | 704 | (2.7− | 0.7−) | 2001 12 14 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.8− | 0.4+ | 2001 12 14 | 704 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.6− | 2001 12 14 | 704 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.4− | 2001 12 14 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 0.5− | 2001 12 17 | 704 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.4+ | 0.3− | 2001 12 17 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 1.0+ | 0.4− |
| 2001 11 20 | 704 | 0.4+ | 0.7− | 2001 12 17 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.7− | 0.2+ |

**2001 VQ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.75779 | | | (2000.0) | | |
| $n$ | 0.19851269 | $\omega$ | 317.10703 | | +0.99141222 | −0.10156436 |
| $a$ | 2.9103410 | $\Omega$ | 48.91279 | | +0.12826921 | +0.87792384 |
| $e$ | 0.1576320 | $i$ | 6.27494 | | −0.02547199 | +0.46790428 |
| $P$ | 4.96 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.3+ | 1.0− | 2001 12 11 | 704 | 0.7+ | 0.2+ | 2001 12 19 | 704 | 0.6− | 0.9+ |
| 2001 11 09 | 704 | 0.6− | 0.7+ | 2001 12 11 | 704 | 0.5+ | 0.2− | 2006 11 16 | 691 | 0.4+ | 0.0 |
| 2001 11 09 | 704 | (0.4− | 1.5+) | 2001 12 11 | 704 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 0.8+ | 0.7+ | 2001 12 11 | 704 | 1.0+ | 0.7− | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.1+ | 0.5+ | 2001 12 11 | 704 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2001 11 12 | 704 | 1.3− | 0.1− | 2001 12 11 | 704 | 0.2+ | 0.4− | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 2001 11 12 | 704 | 0.1− | 0.0 | 2001 12 15 | 704 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2001 12 15 | 704 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2001 11 12 | 704 | 0.2+ | 0.4+ | 2001 12 15 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.6− |
| 2001 11 19 | 704 | 0.5− | 1.4− | 2001 12 18 | 704 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.0 | 1.4+ |
| 2001 11 19 | 704 | 0.6− | 0.9− | 2001 12 18 | 704 | 1.5+ | 0.3+ | 2006 11 23 | 703 | 0.4+ | 0.2− |
| 2001 11 19 | 704 | 0.6− | 1.4− | 2001 12 18 | 704 | 0.0 | 0.7+ | 2006 11 23 | 703 | 0.5− | 0.4− |
| 2001 11 19 | 704 | 1.1− | 0.8− | 2001 12 18 | 704 | (1.7+ | 0.0 ) | 2006 11 23 | 703 | 0.5− | 0.0 |
| 2001 11 19 | 704 | 0.7− | 1.3− | 2001 12 19 | 704 | 0.3+ | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.3+ |
| 2001 11 21 | 704 | 0.1− | 0.8+ | 2001 12 19 | 704 | 0.7+ | 1.0− | 2006 11 24 | 691 | 0.3− | 0.6+ |
| 2001 11 21 | 704 | 0.1+ | 0.5+ | 2001 12 19 | 704 | (1.7+ | 0.5−) | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2001 12 19 | 704 | 0.9− | 0.8− | 2006 11 24 | 691 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.0 | 0.9+ | 2001 12 19 | 704 | 0.6− | 0.6+ | 2006 11 30 | 691 | 0.4− | 0.6− |
| 2001 11 21 | 704 | 0.4− | 0.5+ | 2001 12 19 | 704 | 0.5− | 0.5+ | 2006 11 30 | 691 | 0.3+ | 0.1− |
| 2001 12 11 | 704 | 0.4+ | 0.1+ | 2001 12 19 | 704 | 0.3− | 0.8+ | 2006 11 30 | 691 | 0.7− | 0.2− |
| 2001 12 11 | 704 | 1.1+ | 0.5− | 2001 12 19 | 704 | 0.4− | 1.0+ | | | | |

**2001 VS$_{39}$ = 2001 XW$_{255}$**

Id. M. E. Sansaturio (d, *MPO* 27870)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.86223 | | | (2000.0) | | |
| $n$ | 0.19134808 | $\omega$ | 306.17063 | | +0.96709582 | −0.13695891 |
| $a$ | 2.9825425 | $\Omega$ | 62.59932 | | +0.22752131 | +0.84268508 |
| $e$ | 0.2290391 | $i$ | 13.97477 | | −0.11384079 | +0.52069580 |
| $P$ | 5.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.0− | 0.3− | 2001 12 19 | 704 | 0.7− | 0.6+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2001 11 09 | 704 | 0.1− | 0.5− | 2001 12 19 | 704 | 0.6− | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.9− |
| 2001 11 09 | 704 | 0.4+ | 0.0 | 2002 01 08 | 704 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2001 11 09 | 704 | 0.7+ | 0.9+ | 2002 01 08 | 704 | 0.5+ | 1.1+ | 2006 11 14 | 704 | (1.1− | 1.9+) |
| 2001 11 12 | 704 | 0.5+ | 0.2− | 2002 01 08 | 704 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.9+ |
| 2001 11 12 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.2+ | 2006 11 14 | 704 | 0.0 | 1.2+ |
| 2001 11 21 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 14 | 704 | (1.1− | 1.7+) |
| 2001 11 21 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | (1.4− | 3.2+) | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2001 11 21 | 704 | 0.8− | 0.4+ | 2006 10 22 | 703 | 1.2− | 0.1− | 2006 11 17 | 704 | 0.2+ | 1.3+ |
| 2001 11 21 | 704 | 0.7− | 0.5− | 2006 10 22 | 703 | 0.1+ | 0.5+ | 2006 11 17 | 704 | (0.2+ | 2.0+) |
| 2001 11 21 | 704 | 1.0− | 1.4+ | 2006 10 22 | 703 | 0.7− | 0.7+ | 2006 11 17 | 704 | 0.2− | 1.3+ |
| 2001 12 11 | 704 | 0.7+ | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2001 12 11 | 704 | 0.7+ | 0.2− | 2006 11 01 | 703 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 1.0+ | 0.2− | 2006 11 01 | 703 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.2+ | 1.4+ |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2001 12 11 | 704 | 0.4+ | 0.4− | 2006 11 01 | 703 | 0.7− | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.8− |
| 2001 12 14 | 644 | 0.1− | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2001 12 14 | 644 | 0.4+ | 0.5− | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.8+ | 0.8− |
| 2001 12 14 | 644 | 0.4+ | 0.9+ | 2006 11 08 | 644 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.4− |
| 2001 12 15 | 704 | 0.0 | 0.4− | 2006 11 10 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2001 12 15 | 704 | 0.1+ | 0.7− | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2001 12 15 | 704 | 0.3+ | 0.4− | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2001 12 15 | 704 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2001 12 19 | 704 | (1.6+ | 0.4+) | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2001 12 19 | 704 | (1.9+ | 0.4+) | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.3− | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.7− | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.6+ | 0.5+ |
| 2001 12 19 | 704 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2001 12 19 | 704 | 0.7− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.3− | 0.0 |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.3− | | | | |

**2001 VC$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.40768 | | | (2000.0) | | |
| $n$ | 0.15352540 | $\omega$ | 180.83914 | | +0.25118066 | −0.96447873 |
| $a$ | 3.4542138 | $\Omega$ | 254.61649 | | +0.88856121 | +0.26326806 |
| $e$ | 0.0824993 | $i$ | 4.86601 | | +0.38388441 | +0.02169564 |
| $P$ | 6.42 | $H$ | 14.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.1+ | 0.1− | 2001 11 21 | 704 | (2.1− | 1.2+) | 2002 01 09 | 704 | 0.5+ | 0.1+ |
| 2001 11 09 | 704 | 0.1− | 0.7− | 2001 11 21 | 704 | (2.8− | 2.4+) | 2002 01 09 | 704 | 0.6− | 0.0 |
| 2001 11 09 | 704 | 0.2− | 0.3− | 2001 12 15 | 704 | 0.5+ | 0.1+ | 2002 01 09 | 704 | 0.5− | 0.6+ |
| 2001 11 12 | 704 | 0.1− | 0.2− | 2001 12 15 | 704 | 0.3+ | 0.6− | 2002 01 09 | 704 | 0.2− | 1.3+ |
| 2001 11 12 | 704 | 0.3− | 0.3− | 2001 12 15 | 704 | 0.2− | 0.2− | 2002 01 13 | 704 | 1.1+ | 0.7− |
| 2001 11 12 | 704 | 0.7− | 0.2+ | 2001 12 15 | 704 | 0.2− | 0.2− | 2002 01 13 | 704 | 0.0 | 0.3− |
| 2001 11 12 | 704 | 0.7− | 1.2+ | 2001 12 18 | 704 | 0.3+ | 0.3+ | 2002 01 13 | 704 | 0.2− | 0.2− |
| 2001 11 17 | 291 | 0.2+ | 0.2− | 2001 12 18 | 704 | 0.0 | 0.4+ | 2002 01 13 | 704 | 0.3+ | 1.2− |
| 2001 11 17 | 291 | 0.1+ | 0.1− | 2001 12 18 | 704 | 0.2− | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.3− |
| 2001 11 17 | 291 | 0.1+ | 0.2− | 2001 12 18 | 704 | 0.3− | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.8+ | 0.2− | 2001 12 18 | 704 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2001 11 19 | 704 | 0.2+ | 0.0 | 2001 12 23 | 291 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.5+ | 0.3− |
| 2001 11 19 | 704 | 0.9+ | 0.1+ | 2001 12 23 | 291 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.8− | 1.6+ | 2001 12 23 | 291 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.4− | 0.4+ |

## 2001 $VZ_{40}$ = 2006 $SW_{213}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.41624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17074070 | $\omega$ | 142.50425 | | +0.75364205 | −0.63615206 | |
| $a$ | 3.2179405 | $\Omega$ | 257.83598 | | +0.55465377 | +0.75048416 | |
| $e$ | 0.1182176 | $i$ | 9.73711 | | +0.35267955 | +0.17912032 | |
| $P$ | 5.77 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.0 | 0.3+ | 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 699 | 0.3+ | 0.3+ |
| 1995 11 24 | 691 | 0.1− | 0.4+ | 2001 12 19 | 704 | 0.6+ | 0.0 | 2006 09 21 | 699 | (3.6+ | 1.1+) |
| 1995 11 24 | 691 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 09 26 | 683 | (0.1− | 2.0−) |
| 2001 11 09 | 704 | 0.5+ | 0.6+ | 2001 12 19 | 704 | 1.0+ | 0.7− | 2006 09 26 | 683 | 1.1+ | 0.0 |
| 2001 11 09 | 704 | 0.5− | 0.4− | 2001 12 19 | 704 | 0.1− | 0.0 | 2006 09 26 | 683 | (0.6+ | 1.7−) |
| 2001 11 09 | 704 | 0.5+ | 0.2+ | 2001 12 19 | 704 | 0.4+ | 0.1− | 2006 09 27 | 683 | 1.4− | 0.8− |
| 2001 11 09 | 704 | 0.4+ | 0.7− | 2001 12 19 | 704 | 0.2+ | 0.6− | 2006 09 27 | 703 | (1.6− | 0.2+) |
| 2001 11 12 | 704 | 1.1− | 0.4− | 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 09 27 | 683 | 1.2− | 0.4+ |
| 2001 11 12 | 704 | 0.0 | 0.3− | 2001 12 19 | 704 | 0.5− | 0.2− | 2006 09 27 | 703 | 0.6− | 0.5+ |
| 2001 11 12 | 704 | (1.6− | 1.5+) | 2001 12 19 | 704 | 0.2− | 0.0 | 2006 09 27 | 683 | (2.3− | 1.7+) |
| 2001 11 12 | 704 | 0.4− | 0.6− | 2001 12 19 | 704 | 0.5− | 0.4− | 2006 09 27 | 703 | 0.6− | 0.3+ |
| 2001 11 21 | 704 | 0.6+ | 0.3− | 2006 08 29 | 699 | 0.6+ | 1.2+ | 2006 09 27 | 703 | 0.5− | 0.6− |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 699 | 0.3− | 0.6+ | 2006 09 29 | 699 | 1.0− | 1.1+ |
| 2001 11 21 | 704 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.2+ | 0.1− | 2006 09 29 | 699 | 1.1+ | 0.7+ |
| 2001 11 21 | 704 | (0.5− | 2.0−) | 2006 08 29 | 699 | 0.2− | 0.6− | 2006 09 29 | 699 | 0.4− | 1.0− |
| 2001 11 21 | 704 | 0.9− | 0.7− | 2006 09 06 | 644 | 0.2+ | 0.3− | 2006 09 29 | 699 | 0.1− | 0.2+ |
| 2001 12 10 | 704 | (4.3+ | 1.2−) | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 03 | 703 | 0.8− | 1.2− |
| 2001 12 10 | 704 | (3.6+ | 2.0−) | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 03 | 703 | 1.4− | 0.3+ |
| 2001 12 10 | 704 | (2.8+ | 2.8−) | 2006 09 16 | 703 | 0.6+ | 0.1+ | 2006 10 03 | 703 | 0.6+ | 0.9− |
| 2001 12 17 | 704 | 0.6− | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 10 03 | 703 | 0.9+ | 0.2+ |
| 2001 12 17 | 704 | 0.5− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.4+ | 2006 10 23 | 703 | 0.9+ | 0.4− |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.5− | 0.5− | 2006 10 23 | 703 | 0.5+ | 0.6+ |
| 2001 12 17 | 704 | 0.0 | 0.5+ | 2006 09 16 | 703 | 1.0+ | 0.3− | 2006 10 23 | 703 | 1.4+ | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.4+ | 0.9− | 2006 10 23 | 703 | 0.5− | 0.1+ |
| 2001 12 19 | 704 | 0.0 | 0.4− | 2006 09 16 | 703 | 1.0+ | 0.3− | 2006 10 26 | 703 | 0.8+ | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.9+ | 0.4− | 2006 10 26 | 703 | 1.2− | 0.1− |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2006 09 21 | 699 | (2.1− | 0.2−) | 2006 10 26 | 703 | 0.2− | 0.9− |
| 2001 12 19 | 704 | 0.7+ | 0.0 | 2006 09 21 | 699 | 0.2− | 1.1+ | 2006 10 26 | 703 | 0.3+ | 0.3− |

## 2001 $VA_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.98280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17457349 | $\omega$ | 331.76745 | | +0.84851548 | −0.50699835 | |
| $a$ | 3.1706662 | $\Omega$ | 59.48689 | | +0.51256796 | +0.71627005 | |
| $e$ | 0.0812509 | $i$ | 10.13321 | | +0.13151260 | +0.47948920 | |
| $P$ | 5.65 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.0 | 0.3+ | 2001 12 19 | 704 | 0.4− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.5− |
| 2001 11 09 | 704 | 1.1− | 0.8+ | 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.4− |
| 2001 11 09 | 704 | 0.5− | 0.7+ | 2001 12 19 | 704 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.7+ | 0.5+ |
| 2001 11 12 | 704 | 1.0+ | 1.2+ | 2001 12 19 | 704 | 0.0 | 0.6− | 2006 09 26 | 703 | 0.4+ | 0.0 |
| 2001 11 12 | 704 | 0.7+ | 0.1+ | 2002 01 14 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.8+ | 0.1+ | 2002 01 14 | 704 | 0.5− | 0.6+ | 2006 09 26 | 703 | 0.5+ | 0.3− |
| 2001 11 21 | 704 | 0.3+ | 1.1− | 2002 01 14 | 704 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.3− |
| 2001 11 21 | 704 | 0.4+ | 0.4− | 2002 01 14 | 704 | 0.2− | 0.4+ | 2006 09 29 | 699 | (2.1+ | 0.3−) |
| 2001 11 21 | 704 | 0.4+ | 0.9− | 2006 09 18 | 703 | 0.8+ | 0.9+ | 2006 09 29 | 699 | 0.9− | 0.3− |
| 2001 12 15 | 704 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 09 29 | 699 | 0.6− | 0.3+ |
| 2001 12 15 | 704 | 0.7+ | 0.5− | 2006 09 18 | 703 | 0.3− | 1.3+ | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2001 12 15 | 704 | (0.6+ | 1.6−) | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.2− | 2006 09 21 | 699 | 0.4− | 1.0− | 2006 10 16 | 703 | 0.9− | 0.2− |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2006 09 21 | 699 | 0.1− | 0.1− | 2006 10 16 | 703 | (1.3− | 2.8−) |
| 2001 12 18 | 704 | 0.6− | 0.0 | 2006 09 21 | 699 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.6+ | 1.0+ |
| 2001 12 18 | 704 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.4+ | 1.2− |
| 2001 12 18 | 704 | 0.7− | 0.3− | 2006 09 25 | 699 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.7− |
| 2001 12 19 | 704 | 0.3− | 0.4− | 2006 09 25 | 699 | (2.2− | 1.3−) | 2006 10 22 | 703 | 0.3− | 0.5+ |

## 2001 $VX_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.06324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17936803 | $\omega$ | 301.31788 | | +0.77873449 | −0.41924843 | |
| $a$ | 3.1139098 | $\Omega$ | 87.32833 | | +0.60283769 | +0.70600577 | |
| $e$ | 0.2115090 | $i$ | 27.85282 | | −0.17366438 | +0.57077720 | |
| $P$ | 5.49 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | (1.6+ | 0.3−) | 2001 12 13 | 704 | 0.3− | 1.0+ | 2002 01 04 | 644 | 0.1− | 0.1+ |
| 2001 11 09 | 704 | 0.5+ | 0.3− | 2001 12 13 | 704 | 0.3+ | 0.4− | 2002 01 04 | 644 | 0.2+ | 0.1+ |
| 2001 11 09 | 704 | 0.6+ | 0.1+ | 2001 12 17 | 704 | 0.3+ | 0.3+ | 2002 01 21 | 704 | 0.1+ | 0.7− |
| 2001 11 12 | 704 | 0.2+ | 0.3− | 2001 12 17 | 704 | 0.5− | 0.6+ | 2002 01 21 | 704 | 0.1+ | 0.7− |
| 2001 11 12 | 704 | 0.6− | 0.1− | 2001 12 17 | 704 | 0.5− | 0.6+ | 2002 01 21 | 704 | 0.7+ | 0.5− |
| 2001 11 12 | 704 | 0.2+ | 1.1− | 2001 12 17 | 704 | 0.6+ | 1.1+ | 2006 10 09 | 644 | 0.4+ | 0.5+ |
| 2001 11 12 | 704 | (0.4− | 1.9−) | 2001 12 17 | 704 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.6+ |
| 2001 11 19 | 704 | 0.4+ | 0.7− | 2001 12 19 | 644 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 0.3− | 0.0 | 2001 12 19 | 644 | 0.2− | 0.1− | 2006 11 01 | 703 | 0.0 | 0.1+ |
| 2001 11 19 | 704 | 0.2+ | 0.4− | 2001 12 19 | 644 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.1− | 0.4− |
| 2001 11 19 | 704 | 0.3+ | 0.2− | 2001 12 21 | 704 | 0.1− | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.7− |
| 2001 11 24 | 704 | (1.9+ | 1.3+) | 2001 12 21 | 704 | 0.1+ | 0.5+ | 2006 11 01 | 703 | 0.3− | 0.2+ |
| 2001 11 24 | 704 | 0.6− | 0.2+ | 2001 12 21 | 704 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.9− | 0.2+ |
| 2001 11 24 | 704 | 0.6− | 0.1− | 2001 12 21 | 704 | 0.0 | 0.8+ | 2006 11 17 | 703 | 0.2+ | 0.6+ |
| 2001 12 09 | 704 | 0.4+ | 0.3+ | 2001 12 22 | 704 | 0.7− | 0.0 | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 2001 12 09 | 704 | 0.5+ | 1.1+ | 2001 12 22 | 704 | 0.6+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2001 12 09 | 704 | 1.0− | 0.4− | 2001 12 22 | 704 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 0.2+ | 0.1− |
| 2001 12 13 | 704 | 0.2+ | 0.5+ | 2001 12 22 | 704 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.1− | 0.0 |
| 2001 12 13 | 704 | 0.6+ | 0.8− | 2001 12 22 | 704 | 0.9− | 0.7− | 2006 11 23 | 703 | 0.3− | 0.3− |
| 2001 12 13 | 704 | (1.9− | 0.8+) | 2002 01 04 | 644 | (0.3+ | 1.9−) | 2006 11 23 | 703 | 0.4− | 0.1− |

## 2001 $VN_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.94748 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19656029 | $\omega$ | 333.34329 | | +0.97256287 | +0.22711114 | |
| $a$ | 2.9295811 | $\Omega$ | 13.81260 | | −0.15725386 | +0.80149449 | |
| $e$ | 0.0636263 | $i$ | 12.19141 | | −0.17144295 | +0.55319717 | |
| $P$ | 5.01 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2001 11 17 | 704 | 0.4− | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2001 11 17 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.6− | 0.3+ | 2001 11 24 | 704 | 0.2− | 1.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2001 11 24 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2001 10 15 | 704 | 0.3+ | 1.0+ | 2001 11 24 | 704 | 1.0+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 10 15 | 704 | 1.1+ | 0.5+ | 2001 11 24 | 704 | 1.3− | 0.9− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 10 15 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 703 | (2.1+ | 0.5+) | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 15 | 704 | 0.4+ | 0.8+ | 2006 10 19 | 703 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.3+ | 0.6− |
| 2001 11 10 | 704 | 0.5− | 0.0 | 2006 10 19 | 703 | 0.5− | 0.3+ | 2006 10 27 | 703 | 1.5+ | 1.3+ |
| 2001 11 10 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.3+ | 1.2− | 2006 10 27 | 703 | (0.5+ | 1.8+) |
| 2001 11 10 | 704 | 0.6− | 0.7− | 2006 10 19 | 703 | 0.8− | 0.1− | 2006 10 27 | 703 | 1.0− | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.5+ | 0.8− | 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 10 29 | 104 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.3− | 2006 10 29 | 104 | 0.3− | 0.3+ |
| 2001 11 12 | 704 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.9− | 0.7− | 2006 11 23 | 703 | 1.8+ | 1.6+ |
| 2001 11 12 | 704 | 0.3− | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 23 | 703 | 0.6+ | 0.1+ |
| 2001 11 12 | 704 | 0.2− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 23 | 703 | 0.0 | 1.3+ |
| 2001 11 17 | 704 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.0 | 2006 11 23 | 703 | 1.8− | 0.7+ |

**2001 VG$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.77930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17953192 | $\omega$ | 101.79604 | | +0.97737462 | −0.16024864 | |
| $a$ | 3.1120144 | $\Omega$ | 267.53904 | | +0.09538776 | +0.91649081 | |
| $e$ | 0.0922489 | $i$ | 7.94270 | | +0.18878568 | +0.36655828 | |
| $P$ | 5.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 25 | 691 | 0.0 | 0.0 | 2001 11 12 | 704 | 0.5− | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.3− |
| 2000 06 25 | 691 | 0.1− | 0.0 | 2001 11 12 | 704 | 0.0 | 0.9− | 2006 09 20 | 699 | 0.1+ | 0.3+ |
| 2000 06 25 | 691 | 0.0 | 0.1+ | 2001 11 24 | 704 | 1.0+ | 0.2− | 2006 09 20 | 699 | 0.2+ | 0.1+ |
| 2001 10 14 | 704 | 0.4+ | 0.1− | 2001 11 24 | 704 | 0.8+ | 0.7+ | 2006 09 20 | 699 | 0.5+ | 0.2− |
| 2001 10 14 | 704 | 0.2+ | 0.3+ | 2001 11 24 | 704 | 1.1− | 0.1− | 2006 09 20 | 699 | 0.3− | 0.5− |
| 2001 10 14 | 704 | 0.5− | 0.2− | 2001 11 24 | 704 | 0.0 | 0.7+ | 2006 09 22 | 703 | (0.7+ | 1.9+) |
| 2001 10 14 | 704 | 0.2− | 0.0 | 2001 12 10 | 704 | 0.7+ | 0.9− | 2006 09 22 | 703 | 0.1+ | 0.4+ |
| 2001 11 10 | 704 | 0.4+ | 0.6− | 2001 12 10 | 704 | 0.1− | 0.4− | 2006 09 22 | 703 | 0.6− | 1.0+ |
| 2001 11 10 | 704 | 0.4+ | 0.4− | 2001 12 10 | 704 | 0.6− | 0.9+ | 2006 09 22 | 703 | 1.2− | 0.3+ |
| 2001 11 10 | 704 | 0.4+ | 0.1− | 2001 12 10 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2001 11 10 | 704 | (1.7+ | 0.3−) | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 11 10 | 644 | 0.0 | 1.1+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 11 10 | 644 | 0.1+ | 1.1+ | 2006 09 06 | 644 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.3+ | 0.0 |
| 2001 11 10 | 644 | 0.3− | 0.9+ | 2006 09 15 | 704 | 0.6− | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.1− |
| 2001 11 12 | 704 | 0.5− | 0.3− | 2006 09 15 | 704 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.1− |
| 2001 11 12 | 704 | 1.0− | 0.5− | 2006 09 15 | 704 | 0.4+ | 0.5− | | | | |
| 2001 11 12 | 704 | 0.3− | 0.2− | 2006 09 15 | 704 | 0.2+ | 0.2− | | | | |

**2001 VY$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.33980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18877405 | $\omega$ | 52.01597 | | +0.39022708 | −0.91951019 | |
| $a$ | 3.0095935 | $\Omega$ | 15.22462 | | +0.77840063 | +0.30212044 | |
| $e$ | 0.0974818 | $i$ | 10.34511 | | +0.49174717 | +0.25144433 | |
| $P$ | 5.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 1.3− | 0.4− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.0− | 0.2− |
| 2001 10 14 | 704 | 1.0− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.6+ |
| 2001 10 14 | 704 | 0.7− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 10 14 | 704 | 0.5− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 10 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 10 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.4+ | 0.5+ |
| 2001 11 10 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2001 11 10 | 704 | 0.9+ | 0.4− | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2001 11 10 | 704 | 0.8+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.0 | 1.0+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.4− | 0.5− | 2006 10 11 | 691 | 0.3− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2001 11 12 | 704 | 0.3− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.9− | 0.8− |
| 2001 11 12 | 704 | 0.8+ | 0.7− | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2001 11 24 | 704 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.8+ |
| 2001 11 24 | 704 | 0.9+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 1.4+ | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2001 11 24 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2001 11 24 | 704 | 0.5− | 1.3+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4− | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.3+ | | | | |

**2001 VG$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.14695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18431213 | $\omega$ | 133.13259 | | +0.92342824 | −0.33471415 | |
| $a$ | 3.0579715 | $\Omega$ | 247.22755 | | +0.26553328 | +0.91044908 | |
| $e$ | 0.1811581 | $i$ | 11.74831 | | +0.27707827 | +0.24299980 | |
| $P$ | 5.35 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.4− | 0.8− | 2001 11 12 | 704 | (2.5+ | 0.1−) | 2001 12 19 | 704 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.7− | 0.3− | 2001 11 12 | 704 | 0.5+ | 0.6+ | 2001 12 19 | 704 | 0.6+ | 0.5+ |
| 2001 10 14 | 704 | 0.1− | 0.3− | 2001 11 12 | 704 | (1.7+ | 0.2+) | 2006 09 16 | 703 | 0.3− | 0.6+ |
| 2001 10 14 | 704 | 0.8− | 0.1+ | 2001 12 10 | 704 | 0.0 | 0.5+ | 2006 09 16 | 703 | 0.3+ | 0.2− |
| 2001 10 21 | 704 | 0.4+ | 0.3+ | 2001 12 10 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.5− | 0.2+ | 2001 12 10 | 704 | 0.5+ | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.2− | 0.2+ | 2001 12 15 | 704 | 1.2− | 1.1+ | 2006 09 29 | 699 | 1.0− | 0.9+ |
| 2001 10 21 | 704 | 0.1− | 0.8+ | 2001 12 15 | 704 | 0.9− | 0.8+ | 2006 09 29 | 699 | 0.4− | 0.0 |
| 2001 10 21 | 704 | 0.6+ | 0.4+ | 2001 12 15 | 704 | 1.0− | 0.9− | 2006 09 29 | 699 | 0.9+ | 0.9+ |
| 2001 11 10 | 704 | 0.4− | 0.6− | 2001 12 18 | 704 | 0.5+ | 0.2− | 2006 09 29 | 699 | 0.9+ | 0.5− |
| 2001 11 10 | 704 | 0.4+ | 0.2− | 2001 12 18 | 704 | 0.3+ | 0.0 | 2006 10 03 | 703 | (2.3− | 0.4−) |
| 2001 11 10 | 704 | 0.1− | 0.3− | 2001 12 18 | 704 | 0.4+ | 0.3+ | 2006 10 03 | 703 | 0.4− | 0.1+ |
| 2001 11 10 | 704 | 0.4− | 0.8− | 2001 12 18 | 704 | 1.5+ | 0.5+ | 2006 10 03 | 703 | 0.3− | 0.9− |
| 2001 11 10 | 704 | 0.3− | 0.5− | 2001 12 19 | 704 | 0.2− | 0.0 | 2006 10 03 | 703 | (2.0− | 2.0−) |
| 2001 11 12 | 704 | (2.1+ | 1.2−) | 2001 12 19 | 704 | 0.2− | 0.1− | | | | |
| 2001 11 12 | 704 | 1.5+ | 0.5− | 2001 12 19 | 704 | 0.2+ | 0.7− | | | | |

**2001 VN$_{58}$ = 2006 RH$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.22710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17879974 | $\omega$ | 44.22332 | | +0.53964523 | −0.84094872 | |
| $a$ | 3.1205044 | $\Omega$ | 13.28236 | | +0.71627983 | +0.43373832 | |
| $e$ | 0.0862275 | $i$ | 9.98924 | | +0.44240957 | +0.32353720 | |
| $P$ | 5.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.8− | 1.0− | 2006 08 27 | 691 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.8− | 0.1− |
| 2001 10 21 | 704 | 0.8− | 1.0− | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.6+ |
| 2001 10 21 | 704 | 0.5− | 1.5− | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.8+ |
| 2001 11 10 | 704 | 0.0 | 1.2+ | 2006 09 14 | 644 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.2− |
| 2001 11 10 | 704 | 0.7− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.0 | 1.0+ |
| 2001 11 10 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2001 11 12 | 704 | 1.1+ | 0.7+ | 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.3− |
| 2001 11 12 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.6+ |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.5+ | 0.1+ |
| 2001 11 12 | 704 | 0.4− | 0.8+ | 2006 09 19 | 703 | 1.4− | 0.3− | 2006 10 20 | G96 | 0.8+ | 1.3− |
| 2001 11 12 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.5+ | 0.2+ |
| 2006 08 27 | 691 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.1+ |

**2001 VZ$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.20182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17729269 | $\omega$ | 92.00720 | | +0.92872719 | +0.33229329 | |
| $a$ | 3.1381629 | $\Omega$ | 248.61592 | | −0.36935865 | +0.86778923 | |
| $e$ | 0.0888100 | $i$ | 10.17286 | | +0.03224888 | +0.36949023 | |
| $P$ | 5.56 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3− | 0.2+ | 2001 11 24 | 704 | 0.8+ | 0.7− | 2006 09 06 | 644 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 0.6− | 0.5− | 2001 12 10 | 704 | 0.8− | 0.6− | 2006 09 06 | 644 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 0.5− | 0.4− | 2001 12 10 | 704 | 0.6− | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.4− | 0.1+ | 2001 12 10 | 704 | 0.2− | 0.3− | 2006 09 06 | 644 | 0.3− | 0.3+ |
| 2001 11 10 | 704 | 0.4− | 1.0− | 2001 12 10 | 704 | 0.4+ | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.2− |
| 2001 11 10 | 704 | 0.1− | 0.5+ | 2001 12 10 | 704 | 0.3+ | 0.4+ | 2006 09 22 | 703 | 1.1+ | 0.1+ |
| 2001 11 10 | 644 | 0.1− | 0.1− | 2001 12 18 | 704 | 0.6+ | 1.1− | 2006 09 22 | 703 | 0.1− | 0.9+ |
| 2001 11 10 | 704 | 0.5− | 0.4+ | 2001 12 18 | 704 | 0.4+ | 0.5− | 2006 09 22 | 703 | (0.7+ | 1.6+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 644 | 0.1+ | 0.1− | 2001 12 18 | 704 | 0.4+ | 1.0− | 2006 09 22 | 703 | 1.0+ | 0.0 |
| 2001 11 10 | 644 | 0.3− | 0.1− | 2001 12 18 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.7− | 0.4+ |
| 2001 11 12 | 704 | 0.5+ | 0.3− | 2001 12 19 | 704 | 0.8+ | 0.4+ | 2006 09 27 | 703 | 0.9+ | 0.7+ |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2001 12 19 | 704 | (1.6+ | 0.0 ) | 2006 09 27 | 703 | 0.0 | 0.4+ |
| 2001 11 12 | 704 | 0.3+ | 0.9+ | 2001 12 19 | 704 | (1.9+ | 0.4+) | 2006 09 27 | 703 | 0.5+ | 0.4+ |
| 2001 11 12 | 704 | 0.4+ | 0.0 | 2001 12 19 | 704 | 0.9+ | 0.4− | 2006 09 29 | 699 | 0.7− | 0.5− |
| 2001 11 19 | 704 | 0.6− | 0.2+ | 2002 02 13 | 291 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.8+ |
| 2001 11 19 | 704 | 0.3− | 1.1+ | 2002 02 13 | 291 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.7− | 1.2− |
| 2001 11 19 | 704 | 0.2− | 0.3+ | 2002 02 13 | 291 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.1+ | 0.5− |
| 2001 11 19 | 704 | 0.5− | 0.6+ | 2006 08 29 | 699 | 0.1+ | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 11 19 | 704 | 0.3− | 0.1+ | 2006 08 29 | 699 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 11 24 | 704 | 0.5+ | 0.2− | 2006 08 29 | 699 | 0.3− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.5+ | 0.9− | 2006 08 29 | 699 | 0.1− | 0.5− | | | | |
| 2001 11 24 | 704 | (0.7− | 1.8−) | 2006 09 06 | 644 | 0.2− | 0.1− | | | | |

**2001 VS$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.81266 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22654094 | $\omega$ | 147.23869 | | +0.76220250 | | −0.62065098 |
| $a$ | 2.6650473 | $\Omega$ | 252.23575 | | +0.54454773 | | +0.76839329 |
| $e$ | 0.1436700 | $i$ | 11.13760 | | +0.35002160 | | +0.15609011 |
| $P$ | 4.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.0 | 0.1+ | 2001 11 21 | 704 | 0.6+ | 0.2− | 2001 12 18 | 704 | 0.5+ | 0.0 |
| 2001 10 14 | 704 | 0.3+ | 0.4+ | 2001 11 21 | 704 | 0.5− | 0.1+ | 2001 12 18 | 704 | 0.1+ | 0.3− |
| 2001 10 14 | 704 | 1.4+ | 1.3− | 2001 11 24 | 704 | 0.2− | 0.1+ | 2001 12 18 | 704 | 0.0 | 0.3− |
| 2001 10 14 | 704 | 0.1− | 1.0− | 2001 11 24 | 704 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.2+ | 0.4− |
| 2001 11 10 | 704 | 0.4− | 0.2− | 2001 11 24 | 704 | 0.8− | 1.0− | 2001 12 19 | 704 | 0.2+ | 0.0 |
| 2001 11 10 | 704 | 0.6+ | 1.0− | 2001 11 24 | 704 | 0.2− | 0.4− | 2001 12 19 | 704 | 0.2− | 0.8− |
| 2001 11 10 | 704 | 0.3+ | 0.5+ | 2001 11 24 | 704 | 0.9− | 0.0 | 2001 12 19 | 704 | 0.0 | 0.5− |
| 2001 11 10 | 704 | 0.1+ | 0.7− | 2001 12 08 | 699 | 0.3− | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.3+ |
| 2001 11 12 | 704 | 0.4− | 0.1+ | 2001 12 08 | 699 | 1.1− | 0.4+ | 2001 12 19 | 644 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.9− | 0.9+ | 2001 12 08 | 699 | 0.1+ | 0.1− | 2001 12 19 | 644 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.1+ | 0.0 | 2001 12 08 | 699 | 0.3+ | 0.4+ | 2001 12 19 | 644 | 0.0 | 0.5+ |
| 2001 11 12 | 704 | 0.1− | 1.1+ | 2001 12 10 | 704 | 0.4− | 0.5+ | 2002 01 12 | 291 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.6+ | 2001 12 10 | 704 | 0.3− | 0.2− | 2002 01 12 | 291 | 0.0 | 0.0 |
| 2001 11 17 | 644 | 0.6− | 0.7− | 2001 12 10 | 704 | 0.0 | 0.5+ | 2002 01 12 | 291 | 0.1+ | 0.1+ |
| 2001 11 17 | 644 | 0.1+ | 0.2+ | 2001 12 10 | 704 | 0.3− | 1.3− | 2005 09 26 | 703 | 1.0+ | 0.1− |
| 2001 11 17 | 644 | 0.1− | 0.3+ | 2001 12 15 | 704 | 0.2− | 0.2− | 2005 09 26 | 703 | 0.8+ | 0.6− |
| 2001 11 19 | 704 | 0.2+ | 0.3+ | 2001 12 15 | 704 | 0.0 | 0.8+ | 2005 09 26 | 703 | 0.7+ | 0.6+ |
| 2001 11 19 | 704 | 0.4+ | 0.3+ | 2001 12 15 | 704 | 0.0 | 0.3+ | 2005 09 26 | 703 | 1.5− | 0.6+ |
| 2001 11 19 | 704 | 0.5+ | 0.4+ | 2001 12 15 | 704 | 0.1− | 0.4+ | 2005 10 06 | 703 | 0.5+ | 0.7+ |
| 2001 11 19 | 704 | 0.5+ | 0.4+ | 2001 12 15 | 704 | 0.2+ | 0.3− | 2005 10 06 | 703 | 0.1− | 0.8− |
| 2001 11 21 | 704 | 0.1− | 0.0 | 2001 12 18 | 704 | 0.2+ | 0.2− | 2005 10 06 | 703 | 0.7− | 0.6+ |
| 2001 11 21 | 704 | 0.6+ | 0.7+ | 2001 12 18 | 704 | 0.6+ | 0.4− | 2005 10 06 | 703 | 0.7− | 1.0− |

**2001 VD$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.45299 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18199787 | $\omega$ | 103.70812 | | +0.97364613 | | +0.16232358 |
| $a$ | 3.0838400 | $\Omega$ | 247.14312 | | −0.20779012 | | +0.92091249 |
| $e$ | 0.0855417 | $i$ | 10.01186 | | +0.09400260 | | +0.35436032 |
| $P$ | 5.42 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2− | 0.0 | 2001 11 19 | 704 | 0.3+ | 0.5− | 2001 12 19 | 704 | 0.9− | 0.2− |
| 2001 10 14 | 704 | 0.6− | 0.3+ | 2001 11 19 | 704 | 0.0 | 0.4− | 2001 12 19 | 704 | 0.9− | 0.6+ |
| 2001 10 14 | 704 | 0.7− | 0.8+ | 2001 11 19 | 704 | 0.0 | 0.0 | 2001 12 19 | 704 | 1.1− | 0.4+ |
| 2001 10 14 | 704 | 0.5− | 1.4+ | 2001 11 19 | 704 | 0.7+ | 0.1+ | 2001 12 19 | 704 | 1.0− | 0.4+ |
| 2001 10 21 | 704 | 0.2+ | 0.6− | 2001 11 19 | 704 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.5− |
| 2001 10 21 | 704 | 0.9+ | 0.7− | 2001 11 24 | 704 | 0.7+ | 0.2− | 2006 09 06 | 644 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.4+ | 0.7− | 2001 11 24 | 704 | 0.7− | 1.3+ | 2006 09 06 | 644 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 1.3+ | 0.3− | 2001 11 24 | 704 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 1.2+ | 0.5+ | 2001 11 24 | 704 | 1.2− | 0.8− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 11 10 | 704 | 0.5− | 1.0+ | 2001 12 15 | 704 | 0.9+ | 1.1− | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2001 11 10 | 704 | (0.3+ | 1.6+) | 2001 12 15 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.2+ | 1.2− |
| 2001 11 10 | 704 | 0.2+ | 0.1+ | 2001 12 15 | 704 | 1.3+ | 0.3− | 2006 10 19 | 703 | 0.2+ | 0.8+ |
| 2001 11 12 | 704 | 0.3+ | 1.1− | 2001 12 15 | 704 | 1.0+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.4− |
| 2001 11 12 | 704 | 0.7− | 1.0+ | 2001 12 15 | 704 | 1.0+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.4− |
| 2001 11 12 | 704 | 0.3− | 0.5− | 2001 12 18 | 704 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.4− | 1.2+ |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2001 12 18 | 704 | 0.1− | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.7− | 0.9− | 2001 12 18 | 704 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2+ |

**2001 VH$_{62}$ = 2001 VJ$_{123}$**

Id. Minor Planet Center (d, *MPO* 24067)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.44883 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20080864 | $\omega$ | 35.16673 | | +0.22521317 | | −0.96081728 |
| $a$ | 2.8881148 | $\Omega$ | 42.48134 | | +0.83011048 | | +0.10239758 |
| $e$ | 0.1600581 | $i$ | 13.84279 | | +0.51009374 | | +0.25757501 |
| $P$ | 4.91 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.3+ | 0.4+ | 2001 11 24 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.4− |
| 2001 10 21 | 704 | 0.1− | 0.5+ | 2001 12 10 | 704 | 1.5− | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.5+ | 2001 12 10 | 704 | 1.2− | 0.1+ | 2006 11 10 | 644 | 0.9− | 0.1− |
| 2001 10 21 | 704 | 0.1+ | 0.6+ | 2001 12 10 | 704 | 1.2− | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.3+ |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2001 12 10 | 704 | (1.2− | 2.1+) | 2006 11 15 | 704 | 0.0 | 0.1+ |
| 2001 10 26 | 704 | (0.6− | 1.6+) | 2001 12 10 | 704 | (2.0− | 0.3+) | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2001 10 26 | 704 | 0.2− | 0.2+ | 2001 12 17 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 704 | 0.2+ | 0.2+ |
| 2001 10 26 | 704 | 0.1− | 0.6− | 2001 12 17 | 704 | 0.2− | 0.5− | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 2001 10 26 | 704 | (2.4− | 0.7−) | 2001 12 17 | 704 | 0.3− | 1.0− | 2006 11 15 | 704 | 0.2+ | 0.4+ |
| 2001 10 26 | 644 | 0.1+ | 0.4+ | 2001 12 17 | 704 | 0.4− | 1.0− | 2006 11 15 | 704 | 0.0 | 0.6+ |
| 2001 10 26 | 644 | 0.1− | 0.6+ | 2001 12 20 | 644 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.4+ | 0.7− |
| 2001 10 26 | 644 | 0.0 | 0.3+ | 2001 12 20 | 644 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2001 11 09 | 644 | 0.1+ | 0.2+ | 2001 12 20 | 644 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.2− |
| 2001 11 09 | 644 | 0.2− | 0.1+ | 2002 01 08 | 704 | 1.0− | 1.1+ | 2006 11 16 | 704 | 0.3+ | 0.8− |
| 2001 11 09 | 644 | 0.0 | 0.1+ | 2002 01 08 | 704 | 0.8− | 1.4+ | 2006 11 16 | 704 | 0.1+ | 0.6− |
| 2001 11 10 | 704 | 0.2− | 0.5− | 2002 01 08 | 704 | 0.2+ | 0.7− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2001 11 10 | 704 | 0.6− | 0.0 | 2003 03 13 | 608 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 0.8+ | 0.4− |
| 2001 11 10 | 704 | 0.7− | 0.6− | 2003 03 13 | 608 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.5− |
| 2001 11 10 | 704 | 0.3− | 1.0− | 2003 03 13 | 608 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.3− | 0.5− |
| 2001 11 10 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 703 | (1.6− | 1.2+) | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2001 11 10 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2001 11 10 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.8+ |
| 2001 11 12 | 704 | 1.5− | 1.1+ | 2006 09 18 | 703 | 0.5+ | 1.4− | 2006 11 19 | 704 | 0.6+ | 1.0+ |
| 2001 11 12 | 704 | 1.4− | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.6+ | 1.2+ |
| 2001 11 12 | 704 | 0.7− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.5− |
| 2001 11 12 | 704 | (1.7− | 0.4+) | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2001 11 19 | 704 | 0.7+ | 0.7+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.9− |
| 2001 11 19 | 704 | 0.9+ | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.7− |
| 2001 11 19 | 704 | 1.2+ | 0.6+ | 2006 10 20 | G96 | 0.4− | 0.4− | 2006 11 22 | 704 | 1.2+ | 0.5− |
| 2001 11 19 | 704 | 1.2+ | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.6− |
| 2001 11 19 | 704 | (1.5+ | 0.5+) | 2006 10 20 | G96 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.2− | 0.8− |
| 2001 11 24 | 704 | 0.5+ | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.5− | 2006 11 23 | 644 | 0.4+ | 0.3− |
| 2001 11 24 | 704 | 0.9+ | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.3+ | 2006 11 23 | 644 | 0.3− | 0.3− |
| 2001 11 24 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.7− | 0.7− | 2006 11 23 | 644 | 0.2+ | 0.5− |
| 2001 11 24 | 704 | 0.2+ | 1.0+ | 2006 10 27 | 703 | 0.9− | 0.3+ | | | | |

**2001 VA$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.51961 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18313143 | $\omega$ | 7.23560 | | +0.83666724 | | −0.54191024 |
| $a$ | 3.0711012 | $\Omega$ | 26.06998 | | +0.49301668 | | +0.68190793 |
| $e$ | 0.1385957 | $i$ | 10.42301 | | +0.23858432 | | +0.49125845 |
| $P$ | 5.38 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.1− | 0.8− | 2001 12 20 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 106 | 0.1+ | 0.7− |
| 2001 10 14 | 704 | 0.2+ | 0.1− | 2006 09 16 | 704 | 0.3+ | 0.1− | 2006 10 15 | 106 | 0.4+ | 0.4+ |
| 2001 10 14 | 704 | (1.6+ | 0.5−) | 2006 09 16 | 704 | 0.0 | 1.1− | 2006 10 15 | 106 | 0.1+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.3− | 0.5− | 2006 09 16 | 704 | 0.4+ | 0.8− | 2006 10 16 | 703 | 0.7+ | 1.0− |
| 2001 10 25 | 704 | 0.1− | 1.1+ | 2006 09 16 | 704 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.1− | 1.3− |
| 2001 10 25 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 1.1− | 0.6− | 2006 10 16 | 703 | 1.4− | 1.3+ |
| 2001 10 25 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2001 10 25 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.4− | 0.1− |
| 2001 11 10 | 704 | 0.1− | 0.6− | 2006 09 18 | 703 | 0.9− | 0.9− | 2006 10 19 | 644 | 0.3− | 0.5− |
| 2001 11 10 | 704 | 0.8− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.9− | 2006 10 19 | 644 | 0.7− | 0.3− |
| 2001 11 10 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.3− |
| 2001 11 10 | 644 | 0.5− | 0.7+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2001 11 10 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 1.3− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2001 11 10 | 644 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2001 11 10 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 11 | 699 | 0.5− | 0.6− | 2006 09 26 | 704 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 2001 11 11 | 699 | 0.1− | 0.7− | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 21 | 703 | 1.0+ | 1.1+ |
| 2001 11 11 | 699 | 1.3− | 1.1− | 2006 09 26 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2001 11 11 | 699 | 0.3− | 0.5− | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.2+ | 1.2+ |
| 2001 11 12 | 704 | (0.1− | 3.2−) | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | (2.1+ | 0.5+) |
| 2001 11 12 | 704 | (0.3+ | 2.4−) | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 06 | 644 | 0.2− | 0.2− |
| 2001 11 12 | 704 | (0.1− | 2.2−) | 2006 09 28 | 704 | 0.3− | 0.4− | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2001 11 12 | 704 | (0.9+ | 2.9−) | 2006 09 28 | 704 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2001 11 12 | 704 | (0.6− | 2.2−) | 2006 09 28 | 704 | 0.7+ | 0.1− | 2006 11 06 | 644 | 0.3− | 0.2+ |
| 2001 11 21 | 704 | (1.1+ | 2.8−) | 2006 09 28 | 704 | 0.7− | 0.5− | 2006 11 06 | 644 | 0.4+ | 0.2− |
| 2001 11 21 | 704 | (1.3+ | 2.3−) | 2006 09 28 | 704 | 0.1+ | 0.4+ | 2006 11 06 | 644 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 1.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1− | 1.1+ |
| 2001 11 21 | 704 | 0.2− | 0.9− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2001 11 24 | 704 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | (1.6+ | 0.4+) |
| 2001 11 24 | 704 | 0.5+ | 0.5− | 2006 10 01 | 704 | 0.4− | 1.1+ | 2006 11 11 | 703 | 0.8+ | 0.8+ |
| 2001 11 24 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.4+ | 1.2+ | 2006 11 14 | G96 | 0.1− | 0.8− |
| 2001 11 24 | 704 | 0.5+ | 0.5+ | 2006 10 01 | 704 | (0.4− | 1.8+) | 2006 11 14 | G96 | 0.0 | 0.7− |
| 2001 11 24 | 704 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.1− | 1.3+ | 2006 11 14 | G96 | 0.1+ | 0.8− |
| 2001 12 20 | 644 | 0.3+ | 0.4+ | 2006 10 01 | 704 | (0.0 | 1.6+) | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2001 12 20 | 644 | 0.2− | 0.5+ | 2006 10 15 | 106 | 0.2+ | 0.5− | | | | |

### 2001 VN$_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 155.89082 | | (2000.0) | | | |
| $n$ | 0.27859173 | $\omega$ | 89.68693 | | +0.95634303 | −0.29078327 |
| $a$ | 2.3217952 | $\Omega$ | 287.21778 | | +0.25449612 | +0.87777022 |
| $e$ | 0.2433803 | $i$ | 1.75227 | | +0.14366534 | +0.38074207 |
| $P$ | 3.54 | $H$ | 17.8 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.1+ | 0.6− | 2001 11 19 | 704 | 0.3+ | 0.2+ | 2002 01 08 | 691 | 0.2+ | 0.3− |
| 2001 10 26 | 644 | 0.2+ | 0.2− | 2001 11 19 | 704 | 0.4+ | 0.4+ | 2002 01 08 | 691 | 0.1+ | 0.3+ |
| 2001 10 26 | 644 | 0.1+ | 0.1+ | 2001 11 19 | 704 | 0.4+ | 0.7+ | 2002 01 08 | 691 | 0.1+ | 0.0 |
| 2001 11 10 | 704 | 0.8− | 0.6− | 2001 11 19 | 704 | 0.1− | 0.1+ | 2006 01 22 | G96 | 0.3− | 0.2+ |
| 2001 11 10 | 704 | 0.1− | 1.3− | 2001 11 20 | 704 | 1.3+ | 0.2+ | 2006 01 22 | G96 | 0.3+ | 0.6− |
| 2001 11 10 | 704 | 0.0 | 0.4+ | 2001 11 20 | 704 | 0.2+ | 0.1+ | 2006 01 22 | G96 | 0.2+ | 0.1− |
| 2001 11 10 | 704 | 0.6− | 0.3+ | 2001 11 20 | 704 | 0.2+ | 0.8− | 2006 01 22 | G96 | 0.6+ | 0.7− |
| 2001 11 12 | 704 | 0.8+ | 0.2+ | 2001 11 20 | 704 | 0.6− | 1.9− | 2006 02 24 | G96 | 0.2− | 0.6+ |
| 2001 11 12 | 704 | 0.1− | 0.4+ | 2001 12 15 | 704 | 0.4+ | 0.1− | 2006 02 24 | G96 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2001 12 15 | 704 | 1.0− | 0.3+ | 2006 02 24 | G96 | 0.3− | 0.1+ |
| 2001 11 12 | 704 | 0.2+ | 0.3− | 2001 12 15 | 704 | 0.8− | 0.6+ | 2006 02 24 | G96 | 0.6− | 0.2− |
| 2001 11 12 | 704 | 0.1+ | 0.4+ | 2001 12 15 | 704 | 1.2− | 1.2+ | | | | |
| 2001 11 19 | 704 | 0.1− | 0.3+ | 2001 12 15 | 704 | 0.8− | 0.2+ | | | | |

### 2001 VA$_{68}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.65158 | | (2000.0) | | | |
| $n$ | 0.22845578 | $\omega$ | 69.12147 | | +0.98611642 | −0.05943425 |
| $a$ | 2.6501347 | $\Omega$ | 294.01474 | | −0.01795595 | +0.89011277 |
| $e$ | 0.3690374 | $i$ | 9.77317 | | +0.16508177 | +0.45184824 |
| $P$ | 4.31 | $H$ | 15.7 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 06 | 691 | 0.2− | 0.1− | 2001 10 15 | 704 | 0.2+ | 0.0 | 2001 11 19 | 644 | 0.3+ | 0.6+ |
| 1994 02 06 | 691 | 0.1− | 0.5− | 2001 10 15 | 704 | 0.0 | 0.1− | 2001 11 19 | 644 | 0.3+ | 0.5+ |
| 1994 02 06 | 691 | 0.2− | 0.6− | 2001 10 20 | 699 | 0.4+ | 0.6− | 2001 12 10 | 704 | 0.1− | 0.4− |
| 2001 08 04 | 644 | 0.8− | 0.6− | 2001 10 20 | 699 | 0.1+ | 0.6− | 2001 12 10 | 704 | 0.1− | 0.3− |
| 2001 08 04 | 644 | 0.6− | 0.6− | 2001 10 20 | 699 | 0.0 | 0.4− | 2001 12 10 | 704 | 0.2− | 0.0 |
| 2001 08 04 | 644 | 0.6− | 0.5− | 2001 10 20 | 699 | 0.1+ | 0.2− | 2001 12 10 | 704 | 0.2− | 0.1− |
| 2001 08 22 | 704 | 0.1+ | 0.1+ | 2001 11 11 | 704 | 0.3+ | 0.1− | 2001 12 10 | 704 | 0.2+ | 0.5− |
| 2001 08 22 | 704 | 0.0 | 0.4− | 2001 11 11 | 704 | 0.4+ | 0.2− | 2001 12 14 | 704 | 0.9− | 0.6+ |
| 2001 08 22 | 704 | 0.1+ | 0.0 | 2001 11 11 | 704 | 0.3+ | 0.3− | 2001 12 14 | 704 | 1.4− | 1.4+ |
| 2001 08 22 | 704 | 0.3+ | 0.1− | 2001 11 11 | 704 | 0.4+ | 0.2+ | 2001 12 14 | 704 | 1.3− | 1.1+ |
| 2001 08 22 | 704 | 0.0 | 0.1− | 2001 11 11 | 704 | 0.5+ | 0.5+ | 2001 12 14 | 704 | 1.2− | 0.5+ |
| 2001 09 08 | 704 | 0.6+ | 0.1− | 2001 11 12 | 704 | 0.2+ | 0.4− | 2002 01 08 | 704 | 0.1− | 0.7+ |
| 2001 09 08 | 704 | 0.2− | 1.5+ | 2001 11 12 | 704 | 0.3− | 0.6− | 2002 01 08 | 704 | 0.7+ | 0.7+ |
| 2001 09 08 | 704 | 0.4− | 0.6− | 2001 11 12 | 704 | 0.6− | 0.6− | 2002 01 08 | 704 | 0.1− | 0.8+ |
| 2001 09 08 | 704 | 0.3+ | 0.2− | 2001 11 12 | 704 | 0.1+ | 0.2− | 2002 01 08 | 704 | 0.0 | 0.5+ |
| 2001 09 08 | 704 | 0.6− | 0.1+ | 2001 11 12 | 704 | 0.0 | 0.1− | 2002 01 08 | 704 | 0.2+ | 0.8+ |
| 2001 10 10 | 238 | 0.1− | 0.3− | 2001 11 12 | 699 | 0.8+ | 0.3− | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2001 10 10 | 238 | 0.8− | 0.0 | 2001 11 12 | 699 | 0.5+ | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2001 10 15 | 704 | 0.5+ | 0.5− | 2001 11 12 | 699 | 0.6+ | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2001 10 15 | 704 | 0.4+ | 0.0 | 2001 11 12 | 699 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.6+ |
| 2001 10 15 | 704 | 0.2+ | 0.2− | 2001 11 19 | 644 | 0.3+ | 0.9+ | | | | |

### 2001 VV$_{68}$ = 2006 RD$_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.56152 | | (2000.0) | | | |
| $n$ | 0.19248330 | $\omega$ | 33.01806 | | +0.65955546 | −0.74693782 |
| $a$ | 2.9708041 | $\Omega$ | 16.25091 | | +0.60794322 | +0.46431654 |
| $e$ | 0.1275424 | $i$ | 17.48614 | | +0.44203126 | +0.47591391 |
| $P$ | 5.12 | $H$ | 16.1 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 1.4+ | 1.1− | 2006 09 14 | 703 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2001 10 25 | 704 | 0.7+ | 0.8− | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 10 25 | 704 | (1.8+ | 0.7−) | 2006 09 18 | 691 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | (1.6− | 0.2+) | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 15 | 691 | 0.0 | 0.3− |
| 2001 11 11 | 704 | (2.7− | 1.6+) | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 2001 11 11 | 704 | 1.1− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.5− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2006 09 14 | 703 | 0.6+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.2− | | | | |
| 2006 09 14 | 703 | 0.4− | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.1+ | | | | |

### 2001 VW$_{70}$ = 2006 VV$_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.46176 | | (2000.0) | | | |
| $n$ | 0.19040658 | $\omega$ | 300.30223 | | +0.72322148 | −0.68313920 |
| $a$ | 2.9923663 | $\Omega$ | 102.99679 | | +0.66396963 | +0.64741822 |
| $e$ | 0.2353037 | $i$ | 5.97031 | | +0.18998688 | +0.33789124 |
| $P$ | 5.18 | $H$ | 16.0 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1− | 0.3− | 2001 12 14 | 704 | 0.5− | 1.0− | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2001 11 11 | 704 | 0.1− | 1.3− | 2001 12 14 | 704 | 0.7− | 0.4− | 2006 10 16 | 703 | 0.7+ | 0.4+ |
| 2001 11 11 | 704 | 0.5− | 0.5− | 2001 12 14 | 704 | 0.9− | 0.8− | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2001 11 11 | 704 | 0.6+ | 0.9− | 2001 12 14 | 704 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2001 11 11 | 704 | 0.9+ | 0.5− | 2001 12 17 | 704 | 0.1− | 1.2− | 2006 10 22 | 703 | 0.2+ | 0.3+ |
| 2001 11 12 | 704 | 0.9+ | 0.1+ | 2001 12 17 | 704 | 0.2− | 1.0− | 2006 10 22 | 703 | 0.6+ | 0.7− |
| 2001 11 12 | 704 | 0.4+ | 0.5− | 2001 12 17 | 704 | (0.2− | 1.5−) | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.1+ | 0.3− | 2001 12 17 | 704 | 0.1+ | 1.4− | 2006 11 09 | 644 | 0.6− | 0.4+ |
| 2001 11 12 | 704 | 0.9− | 0.8+ | 2001 12 18 | 644 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 11 12 | 704 | 1.1+ | 0.0 | 2001 12 18 | 644 | 0.2+ | 0.0 | 2006 11 14 | 704 | 1.4+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.2− | 0.4+ | 2001 12 18 | 644 | 0.5+ | 0.2+ | 2006 11 14 | 704 | 1.4+ | 0.4+ |
| 2001 11 17 | 704 | 0.6+ | 0.9+ | 2001 12 20 | 704 | 0.7+ | 0.8+ | 2006 11 14 | 704 | 0.2+ | 0.3− |
| 2001 11 17 | 704 | 0.7− | 1.2+ | 2001 12 20 | 704 | 0.8− | 1.2+ | 2006 11 14 | 704 | 1.0+ | 0.3+ |
| 2001 12 11 | 704 | 0.1− | 0.2+ | 2001 12 20 | 704 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.7− | 0.2− |
| 2001 12 11 | 704 | 0.5+ | 1.1+ | 2001 12 20 | 704 | 0.0 | 1.0+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2001 12 11 | 704 | 0.0 | 0.9+ | 2001 12 20 | 704 | 0.3− | 0.7+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2001 12 11 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.4− | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2001 12 14 | 704 | 0.3− | 0.8− | 2006 10 16 | 703 | 0.8− | 0.5+ | | | | |

**2001 VX$_{70}$ = 2006 BX$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.16716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27689367 | $\omega$ | 92.20889 | | −0.05773724 | | −0.99833074 |
| $a$ | 2.3312778 | $\Omega$ | 1.10425 | | +0.88306646 | | −0.05175574 |
| $e$ | 0.0798749 | $i$ | 4.36144 | | +0.46568233 | | −0.02563359 |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.0 | 0.0 | 2004 10 04 | 691 | 0.4− | 0.6+ | 2006 01 31 | 691 | 0.2+ | 0.7+ |
| 2001 11 11 | 704 | 0.0 | 0.9− | 2004 10 04 | 691 | 0.1− | 0.4+ | 2006 02 04 | 691 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.6+ | 0.9− | 2004 10 04 | 691 | 0.2− | 0.5+ | 2006 02 04 | 691 | 0.2+ | 0.3− |
| 2001 11 11 | 704 | 0.1+ | 0.8+ | 2006 01 26 | 703 | (0.7+ | 2.1−) | 2006 02 04 | 691 | 0.6+ | 0.2+ |
| 2001 11 12 | 704 | (0.3− | 2.1+) | 2006 01 26 | 703 | 1.6− | 0.4+ | 2006 02 04 | 704 | 0.7− | 1.0+ |
| 2001 11 12 | 704 | 0.2− | 0.5+ | 2006 01 26 | 703 | 1.0− | 0.4− | 2006 02 04 | 704 | 1.0− | 0.9+ |
| 2001 11 12 | 704 | 0.7+ | 0.1+ | 2006 01 26 | 703 | 0.7− | 0.7+ | 2006 02 04 | 704 | (0.1+ | 2.1+) |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2006 01 27 | 699 | 1.2+ | 0.3− | 2006 02 04 | 704 | 0.1− | 1.1+ |
| 2001 11 24 | 704 | 0.6− | 0.6− | 2006 01 27 | 699 | 0.7− | 0.7− | 2006 02 04 | 704 | 0.5− | 0.4+ |
| 2001 11 24 | 704 | 0.2− | 0.4− | 2006 01 27 | 699 | 0.3+ | 0.3+ | 2006 05 25 | G96 | 0.1− | 0.4− |
| 2001 11 24 | 704 | 0.1+ | 0.7− | 2006 01 27 | 699 | 0.5+ | 0.5+ | 2006 05 25 | G96 | 0.7− | 0.2− |
| 2001 11 24 | 704 | 0.6+ | 1.4− | 2006 01 31 | 691 | 0.3+ | 0.1− | 2006 05 25 | G96 | 0.2+ | 0.8+ |
| 2001 11 24 | 704 | 0.5− | 0.4+ | 2006 01 31 | 691 | 0.3+ | 0.1− | 2006 05 25 | G96 | 0.1+ | 0.1− |

**2001 VW$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.69505 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18142746 | $\omega$ | 191.22469 | | +0.59053880 | | −0.80622182 |
| $a$ | 3.0903005 | $\Omega$ | 222.59304 | | +0.74443443 | | +0.56126894 |
| $e$ | 0.2115013 | $i$ | 3.01873 | | +0.31157873 | | +0.18703890 |
| $P$ | 5.43 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 691 | 0.0 | 0.3− | 2001 11 15 | 691 | 0.2+ | 0.5− | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2001 10 15 | 691 | 0.0 | 0.3− | 2001 11 15 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2001 10 15 | 691 | 0.0 | 0.2− | 2001 11 15 | 691 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.1+ | 0.9+ | 2006 08 29 | 691 | 0.2− | 0.2+ | 2006 09 30 | 291 | 0.1+ | 0.4+ |
| 2001 10 21 | 704 | 0.3− | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 30 | 291 | 0.1− | 0.4+ |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.3+ | 0.2− | 2006 09 30 | 291 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 0.1+ | 0.5− | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 09 30 | G96 | 0.5− | 0.4− |
| 2001 10 21 | 704 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 09 30 | G96 | 0.4+ | 0.4− |
| 2001 11 12 | 691 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.4− | 0.4− |
| 2001 11 12 | 691 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.6+ | 0.4− | 2006 09 30 | G96 | 0.6− | 0.6− |
| 2001 11 12 | 691 | 0.1− | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.1− | | | | |

**2001 VZ$_{72}$ = 2006 UZ$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.03504 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18056841 | $\omega$ | 98.43692 | | +0.77615463 | | +0.61755496 |
| $a$ | 3.1000941 | $\Omega$ | 223.55199 | | −0.62637859 | | +0.73198058 |
| $e$ | 0.0530732 | $i$ | 10.64849 | | −0.07234538 | | +0.28780255 |
| $P$ | 5.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 1.1+ | 0.2− | 2001 11 15 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1− | 0.4+ |
| 2001 10 21 | 704 | 0.1+ | 0.7+ | 2001 11 15 | 691 | 0.6+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.7+ | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2001 11 12 | 691 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2001 11 12 | 691 | 0.5− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2001 11 12 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 11 15 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.3− | 0.2+ |

**2001 VH$_{73}$ = 2006 SK$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.84535 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18118753 | $\omega$ | 90.25270 | | −0.77140473 | | −0.63587112 |
| $a$ | 3.0930280 | $\Omega$ | 50.26281 | | +0.57040121 | | −0.70805229 |
| $e$ | 0.1198572 | $i$ | 1.82943 | | +0.28209432 | | −0.30713170 |
| $P$ | 5.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 691 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 11 12 | 691 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2001 11 12 | 691 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 11 15 | 691 | 0.5+ | 0.2+ | 2006 09 18 | 291 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.7− | 0.3− |
| 2001 11 15 | 691 | 0.8+ | 0.2− | 2006 09 18 | 291 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2001 11 15 | 691 | 0.1− | 0.1+ | 2006 09 18 | 291 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.5− | 1.5− | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 1.2− | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.0 | | | | |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.2+ | | | | |

**2001 VN$_{73}$ = 2006 SM$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.00427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18531131 | $\omega$ | 96.28555 | | +0.97463257 | | +0.21683275 |
| $a$ | 3.0469695 | $\Omega$ | 251.20182 | | −0.22143259 | | +0.89818571 |
| $e$ | 0.2376188 | $i$ | 3.35810 | | −0.03254180 | | +0.38242121 |
| $P$ | 5.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 691 | 0.7− | 0.2+ | 2006 09 17 | 291 | 0.0 | 0.3+ | 2006 10 17 | 703 | 1.1− | 0.5− |
| 2001 11 12 | 691 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2001 11 12 | 691 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2001 11 15 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 1.2− | 2006 10 17 | 703 | 0.3− | 0.4+ |
| 2001 11 15 | 691 | 0.5+ | 1.0− | 2006 09 18 | 703 | 0.3− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 11 15 | 691 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.7+ | 2006 09 19 | 703 | 0.7− | 0.7− | 2006 10 20 | 644 | 0.5+ | 0.4+ |
| 2001 11 21 | 704 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2006 09 17 | 291 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2006 09 17 | 291 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | | | |

**2001 VD$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.22781 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18215290 | $\omega$ | 250.23810 | | −0.35353240 | | −0.89010669 |
| $a$ | 3.0820900 | $\Omega$ | 224.09797 | | +0.93523973 | | −0.34241443 |
| $e$ | 0.3052897 | $i$ | 24.41313 | | −0.01847931 | | −0.30076975 |
| $P$ | 5.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 12 | 566 | 0.1+ | 0.3− | 2001 11 10 | 704 | 0.1− | 0.4− | 2001 11 17 | 644 | 0.4+ | 0.3+ |
| 1997 01 12 | 566 | 0.1− | 0.3− | 2001 11 10 | 704 | 0.0 | 0.6− | 2001 11 19 | 704 | 0.4− | 0.4+ |
| 1997 01 12 | 566 | 0.3− | 0.4− | 2001 11 10 | 704 | 0.1+ | 0.3− | 2001 11 19 | 704 | 0.7− | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.0 | 2001 11 10 | 644 | 0.5− | 0.0 | 2001 11 19 | 704 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.3+ | 0.8+ | 2001 11 10 | 644 | 0.3− | 0.1+ | 2001 11 19 | 704 | 0.2+ | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.9− | 2001 11 10 | 704 | 0.6− | 0.9− | 2001 11 19 | 704 | 0.5− | 0.6+ |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2001 11 10 | 644 | 0.5− | 0.5+ | 2001 12 11 | 704 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2001 11 10 | 704 | 1.1− | 0.9− | 2001 12 11 | 704 | 0.4− | 1.0+ | | |
| 2001 10 13 | 699 | 0.6+ | 0.4+ | 2001 11 11 | 699 | 0.4− | 0.2+ | 2001 12 11 | 704 | 0.9+ | 0.4+ | | |
| 2001 10 13 | 699 | 0.8− | 0.8+ | 2001 11 11 | 699 | 0.5− | 0.9+ | 2001 12 11 | 704 | 0.2− | 0.0 | | |
| 2001 10 13 | 699 | 0.5+ | 0.1− | 2001 11 11 | 699 | 0.6− | 0.7+ | 2001 12 11 | 704 | 0.7− | 0.0 | | |
| 2001 10 13 | 699 | 0.9+ | 0.5− | 2001 11 11 | 699 | 1.4− | 1.5+ | 2001 12 15 | 704 | 1.0+ | 1.3+ | | |
| 2001 10 13 | 644 | 0.2− | 0.0 | 2001 11 15 | 608 | 0.2+ | 0.8− | 2001 12 15 | 704 | 1.1+ | 1.5+ | | |
| 2001 10 13 | 644 | 0.3− | 0.3− | 2001 11 15 | 608 | 0.3+ | 0.9− | 2001 12 15 | 704 | 0.3+ | 0.3− | | |
| 2001 10 13 | 644 | 0.1− | 0.0 | 2001 11 15 | 608 | 0.4− | 0.4− | 2001 12 18 | 704 | 0.0 | 0.5+ | | |
| 2001 10 18 | 704 | 2.0+ | 0.1− | 2001 11 17 | 704 | 0.0 | 0.1+ | 2001 12 18 | 704 | 1.0− | 1.1− | | |
| 2001 10 18 | 704 | 0.1− | 0.2− | 2001 11 17 | 704 | 0.5+ | 0.2− | 2001 12 18 | 704 | 0.6+ | 0.2− | | |
| 2001 10 18 | 704 | 0.6− | 0.7− | 2001 11 17 | 704 | 0.3+ | 0.4− | 2001 12 18 | 704 | 0.9+ | 0.7− | | |
| 2001 10 18 | 704 | 0.1− | 0.9− | 2001 11 17 | 704 | 0.1+ | 0.9+ | 2003 03 30 | 699 | 0.4− | 1.4+ | | |
| 2001 10 23 | 333 | 0.1+ | 0.5− | 2001 11 17 | 704 | 0.2+ | 0.5+ | 2003 03 30 | 699 | 0.7+ | 0.3− | | |
| 2001 10 23 | 333 | 0.5+ | 0.4+ | 2001 11 17 | 644 | 0.2− | 0.2+ | 2003 03 30 | 699 | 0.3+ | 0.4+ | | |
| 2001 10 23 | 333 | 0.6+ | 0.3− | 2001 11 17 | 644 | 0.6+ | 0.0 | 2003 03 30 | 699 | 0.5− | 0.0 | | |

**2001 VP$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.69441 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19101559 | $\omega$ | 324.77934 | | +0.64200720 | −0.75759008 | |
| $a$ | 2.9860025 | $\Omega$ | 84.97693 | | +0.72777779 | +0.55383212 | |
| $e$ | 0.2061766 | $i$ | 6.79312 | | +0.24117679 | +0.34543777 | |
| $P$ | 5.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 699 | 0.1+ | 0.7− | 2001 11 20 | 704 | 0.1+ | 0.7− | 2006 09 21 | 699 | 1.3+ | 0.7− | | |
| 2001 10 14 | 699 | (1.6− | 0.3−) | 2001 12 09 | 699 | 0.2− | 0.6− | 2006 09 21 | 699 | 0.4+ | 0.5+ | | |
| 2001 10 14 | 699 | 0.2− | 0.0 | 2001 12 09 | 699 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.0 | | |
| 2001 10 14 | 699 | 0.1− | 0.0 | 2001 12 09 | 699 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.2+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.2+ | 2001 12 09 | 699 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.4+ | | |
| 2001 10 17 | 704 | 0.3+ | 0.4− | 2001 12 11 | 704 | 0.5− | 0.4+ | 2006 09 25 | 699 | 0.8− | 0.6+ | | |
| 2001 10 17 | 704 | 0.1+ | 0.1+ | 2001 12 11 | 704 | 1.1− | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.1− | | |
| 2001 10 17 | 704 | 0.6+ | 0.4+ | 2001 12 11 | 704 | 1.1− | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.1+ | | |
| 2001 10 17 | 704 | 0.2+ | 0.1+ | 2001 12 11 | 704 | 0.8− | 0.9+ | 2006 09 26 | 703 | 0.2− | 1.0+ | | |
| 2001 10 24 | 644 | 0.0 | 0.2+ | 2001 12 11 | 704 | 1.2− | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.2− | | |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2001 12 14 | 704 | 0.2− | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.4+ | | |
| 2001 10 24 | 644 | 0.1− | 0.1+ | 2001 12 14 | 704 | 0.7− | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.1+ | | |
| 2001 11 09 | 704 | (1.0− | 1.9−) | 2001 12 14 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.1+ | 0.5+ | | |
| 2001 11 09 | 704 | 0.3− | 0.2− | 2001 12 14 | 704 | 0.6− | 0.3− | 2006 09 29 | 699 | 0.6+ | 0.0 | | |
| 2001 11 09 | 704 | 0.5− | 0.1+ | 2001 12 14 | 704 | 1.0− | 0.6+ | 2006 09 30 | 704 | 0.5+ | 0.8+ | | |
| 2001 11 09 | 704 | (0.7− | 1.5−) | 2001 12 17 | 704 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.1+ | 0.1+ | | |
| 2001 11 09 | 704 | (1.3+ | 1.5−) | 2001 12 17 | 704 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.7− | 0.4+ | | |
| 2001 11 12 | 608 | 0.2+ | 0.4− | 2001 12 17 | 704 | 0.8+ | 0.0 | 2006 09 30 | 704 | 0.4− | 0.4+ | | |
| 2001 11 12 | 608 | 0.4− | 0.6+ | 2001 12 17 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2− | | |
| 2001 11 12 | 608 | 0.4+ | 0.4+ | 2001 12 17 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.4+ | | |
| 2001 11 15 | 644 | 0.3− | 0.1− | 2001 12 20 | 704 | 0.8+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.3+ | | |
| 2001 11 15 | 644 | 0.2− | 0.2+ | 2001 12 20 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.1− | | |
| 2001 11 15 | 644 | 0.9− | 0.3− | 2001 12 20 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 11 17 | 704 | 0.3+ | 0.8− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2001 11 17 | 704 | 0.5− | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 11 17 | 704 | 0.1− | 0.4− | 2003 03 08 | 704 | 0.1+ | 0.9+ | 2006 10 22 | 703 | 0.1+ | 0.2+ | | |
| 2001 11 17 | 704 | 0.1+ | 0.4− | 2003 03 08 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.2− | | |
| 2001 11 18 | 608 | 1.5+ | 0.6− | 2003 03 08 | 704 | (2.1+ | 1.6+) | 2006 10 22 | 703 | 0.7− | 0.7− | | |
| 2001 11 18 | 608 | 1.0+ | 0.3− | 2003 03 08 | 704 | 0.1− | 1.3+ | 2006 10 22 | 703 | 0.9− | 0.3− | | |
| 2001 11 18 | 608 | 0.8+ | 0.3− | 2003 03 08 | 704 | 0.8− | 0.2− | 2006 10 28 | 703 | 1.0+ | 0.4− | | |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.9− | 2006 10 28 | 703 | 0.1− | 1.2− | | |
| 2001 11 20 | 699 | 0.4+ | 0.6− | 2006 09 18 | 703 | 0.1+ | 1.1− | 2006 10 28 | 703 | 0.2− | 0.9− | | |
| 2001 11 20 | 704 | 0.1+ | 0.5− | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 28 | 703 | 0.7− | 0.9− | | |
| 2001 11 20 | 699 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.2− | | |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.2− | 0.1− | | |
| 2001 11 20 | 699 | 0.5+ | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2− | | |
| 2001 11 20 | 704 | 0.7− | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.3+ | | | | | | |
| 2001 11 20 | 699 | 0.6+ | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.7+ | | | | | | |

**2001 VU$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.07723 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.39520918 | $\omega$ | 181.54182 | | +0.34963031 | −0.88317242 | |
| $a$ | 1.8390126 | $\Omega$ | 248.08277 | | +0.86314464 | +0.43342581 | |
| $e$ | 0.0584165 | $i$ | 19.69625 | | +0.36433499 | −0.17930016 | |
| $P$ | 2.49 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.9− | 0.0 | 2001 12 14 | 704 | 0.6− | 0.3+ | 2006 11 21 | 704 | 1.3+ | 0.7− | | |
| 2001 11 11 | 704 | 0.3+ | 0.1+ | 2001 12 14 | 704 | 0.1− | 0.5+ | 2006 11 21 | 704 | 1.0+ | 0.0 | | |
| 2001 11 11 | 704 | 0.2+ | 0.6− | 2001 12 14 | 704 | 0.5− | 1.0+ | 2006 11 21 | 704 | 0.8+ | 0.9+ | | |
| 2001 11 11 | 704 | 0.4+ | 0.3+ | 2001 12 14 | 704 | 0.3− | 1.5+ | 2006 11 22 | 704 | 0.5+ | 0.2− | | |
| 2001 11 11 | 704 | 0.2− | 0.6+ | 2001 12 14 | 704 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.9+ | 0.3+ | | |
| 2001 11 19 | 704 | 0.0 | 0.7− | 2001 12 17 | 704 | 0.1− | 1.3+ | 2006 11 22 | 704 | 0.6+ | 0.2+ | | |
| 2001 11 19 | 704 | 0.5+ | 0.4+ | 2001 12 17 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.5− | | |
| 2001 11 19 | 704 | 0.3− | 0.7− | 2001 12 17 | 704 | 1.2+ | 0.1− | 2006 11 24 | 691 | 0.0 | 0.4+ | | |
| 2001 11 19 | 704 | 0.7+ | 0.1+ | 2001 12 17 | 704 | 0.7+ | 0.4− | 2006 11 24 | 691 | 0.0 | 0.0 | | |
| 2001 11 24 | 704 | 0.0 | 0.5+ | 2001 12 17 | 704 | 1.0+ | 0.6− | 2006 11 24 | 691 | 0.0 | 0.3− | | |
| 2001 11 24 | 704 | 0.1+ | 0.2+ | 2001 12 23 | 608 | 0.1− | 0.2− | 2006 11 26 | H07 | 0.4+ | 0.3+ | | |
| 2001 11 24 | 704 | 0.1− | 0.4+ | 2001 12 23 | 608 | 0.5+ | 0.9− | 2006 11 26 | H07 | 0.5+ | 0.4+ | | |
| 2001 11 24 | 704 | 0.1− | 0.0 | 2001 12 23 | 608 | 0.4+ | 0.6− | 2006 11 26 | H07 | 0.3− | 0.4− | | |
| 2001 11 24 | 704 | 0.8+ | 0.3+ | 2006 11 16 | 704 | 0.8− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.2− | | |
| 2001 12 07 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.1− | 2006 11 27 | 691 | 0.2− | 0.1− | | |
| 2001 12 07 | 644 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2001 12 07 | 644 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.6− | 0.1− | 2006 11 27 | H07 | (1.0− | 3.9−) | | |
| 2001 12 11 | 704 | 1.2− | 0.9− | 2006 11 20 | 691 | 0.1− | 0.3+ | 2006 11 27 | H07 | 0.4+ | 0.6+ | | |
| 2001 12 11 | 704 | 0.6− | 0.3− | 2006 11 20 | 691 | 0.7− | 0.2− | 2006 12 01 | 691 | 0.1− | 0.4− | | |
| 2001 12 11 | 704 | 1.1− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 0.1+ | 0.2− | | |
| 2001 12 11 | 704 | 0.0 | 0.9+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | 2006 12 01 | 691 | 0.2+ | 0.4− | | |

**2001 VL$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.46975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19476725 | $\omega$ | 104.14660 | | +0.80083743 | −0.59501672 | |
| $a$ | 2.9475336 | $\Omega$ | 292.41078 | | +0.51721850 | +0.74435202 | |
| $e$ | 0.1569832 | $i$ | 4.21388 | | +0.30190137 | +0.30314216 | |
| $P$ | 5.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 699 | 0.2− | 0.5− | 2001 11 17 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 10 13 | 699 | 0.3− | 1.3+ | 2001 11 17 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 10 13 | 699 | 0.4− | 0.7− | 2001 11 17 | 644 | 0.5+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.4+ | | |
| 2001 10 13 | 699 | 0.2− | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 14 | 704 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 14 | 704 | 0.1− | 0.9− | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.3− | 0.7− | | |
| 2001 10 14 | 704 | 0.5+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | (2.0− | 0.2−) | | |
| 2001 10 14 | 704 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | (1.2− | 2.9+) | | |
| 2001 10 14 | 704 | 0.6+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 1.3− | 0.2− | | |
| 2001 10 28 | 644 | 0.3+ | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.5− | | |
| 2001 10 28 | 644 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.4+ | | |
| 2001 10 28 | 644 | 0.3− | 0.7+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.7+ | | |
| 2001 11 10 | 704 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.2+ | | |
| 2001 11 10 | 704 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.4+ | | |
| 2001 11 10 | 704 | 0.6− | 0.7− | 2006 10 20 | 644 | 0.3− | 0.4− | 2006 11 25 | G96 | 0.1− | 0.3− | | |
| 2001 11 10 | 704 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.5− | | |
| 2001 11 10 | 644 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.3− | 0.2− | | |
| 2001 11 10 | 644 | 0.5− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.4− | | |
| 2001 11 10 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | | | | | |

**2001 VL$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.32883 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19630143 | $\omega$ | 91.86539 | | +0.87293489 | | +0.45799135 |
| $a$ | 2.9321560 | $\Omega$ | 240.91124 | | −0.48783240 | | +0.81807105 |
| $e$ | 0.1381465 | $i$ | 11.08497 | | −0.00205564 | | +0.34785584 |
| $P$ | 5.02 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 05 | 691 | 0.2+ | 0.0 | 2001 12 17 | 695 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.2− | 1.2+ |
| 1996 11 05 | 691 | 0.1− | 0.1− | 2001 12 18 | 695 | 0.1− | 0.5+ | 2006 10 04 | 703 | 0.6− | 0.4− |
| 1996 11 05 | 691 | 0.3− | 0.2− | 2001 12 18 | 695 | 0.1+ | 0.5+ | 2006 10 04 | 703 | 0.3+ | 1.2− |
| 2001 09 25 | 704 | (2.2+ | 0.7+) | 2001 12 18 | 695 | 0.1+ | 0.3+ | 2006 10 04 | 703 | 1.2+ | 0.7− |
| 2001 09 25 | 704 | 0.9+ | 0.2+ | 2001 12 18 | 695 | 0.2+ | 0.3+ | 2006 10 04 | 703 | 0.5− | 0.4− |
| 2001 09 25 | 704 | (1.6+ | 0.7+) | 2005 07 12 | G96 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 10 20 | 644 | 0.1− | 0.3+ | 2005 07 12 | G96 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 10 20 | 644 | 0.1− | 0.2+ | 2005 07 12 | G96 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 10 20 | 644 | 0.1+ | 0.6+ | 2005 07 12 | G96 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2001 11 10 | 704 | 0.7+ | 0.6− | 2006 09 14 | 644 | 0.6− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 1.0+ |
| 2001 11 10 | 704 | 0.8+ | 0.7+ | 2006 09 14 | 644 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2001 11 10 | 704 | 0.1− | 0.6+ | 2006 09 14 | 644 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.6− |
| 2001 11 10 | 704 | 0.3− | 0.4+ | 2006 09 16 | 703 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 11 17 | 704 | 0.7− | 0.4− | 2006 09 16 | 703 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 0.7+ | 0.5− | 2006 09 16 | 703 | 0.1+ | 0.8− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 11 17 | 704 | 0.4− | 1.4− | 2006 09 16 | 703 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.6+ |
| 2001 11 17 | 704 | 0.2+ | 0.6− | 2006 09 28 | 703 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.4− | 1.1− |
| 2001 12 17 | 695 | 0.2− | 0.5+ | 2006 09 28 | 703 | 1.0− | 0.7− | 2006 11 14 | 703 | 0.3− | 0.1+ |
| 2001 12 17 | 695 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.4+ | 2006 11 14 | 703 | 0.8+ | 0.9− |

**2001 VT$_{82}$ = 2006 TD$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.54409 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19634598 | $\omega$ | 341.66917 | | +0.77443787 | | −0.55765994 |
| $a$ | 2.9317125 | $\Omega$ | 55.96120 | | +0.61615030 | | +0.55768858 |
| $e$ | 0.1620097 | $i$ | 21.13350 | | +0.14354372 | | +0.61481610 |
| $P$ | 5.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 1.0− | 0.9− | 2001 12 15 | 704 | 1.0− | 0.3+ | 2006 11 10 | 644 | 0.5− | 0.0 |
| 2001 11 10 | 704 | 0.7− | 0.6− | 2001 12 15 | 704 | 0.9− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2001 11 10 | 704 | 0.5− | 0.7− | 2006 10 12 | 644 | 0.7+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2001 11 10 | 704 | 1.1− | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.8− | 0.6− |
| 2001 11 10 | 704 | 1.1− | 0.9− | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.2− | 1.1− |
| 2001 11 17 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2001 11 17 | 704 | 0.1− | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2001 11 17 | 704 | 1.0+ | 1.1+ | 2006 10 16 | 703 | 0.1+ | 0.6+ | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.2+ | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.4+ | 0.2− | 2006 10 22 | 703 | 1.0− | 0.4− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 11 20 | 704 | 0.2+ | 0.5− | 2006 10 22 | 703 | 0.8− | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 11 20 | 704 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.9− | 0.6− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 11 21 | 704 | 0.6+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 11 21 | 704 | 0.7+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.7− | 1.0+ |
| 2001 11 21 | 704 | 0.9+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.5− | 2006 11 17 | 704 | 0.8+ | 1.1+ |
| 2001 11 21 | 704 | 0.9+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.5− | 0.4+ |
| 2001 11 21 | 704 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.1+ |
| 2001 11 22 | 644 | 1.4+ | 0.9+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 224 | 0.2+ | 0.4+ |
| 2001 11 22 | 644 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 18 | 224 | 0.3− | 1.0+ |
| 2001 11 22 | 644 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 224 | 0.2+ | 0.1+ |
| 2001 12 15 | 704 | 0.3− | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.1+ | | | | |

**2001 VA$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.80173 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22613422 | $\omega$ | 213.70926 | | +0.19855610 | | −0.94396512 |
| $a$ | 2.6682419 | $\Omega$ | 226.44485 | | +0.96023759 | | +0.24123031 |
| $e$ | 0.0606689 | $i$ | 21.33279 | | +0.19626320 | | −0.22525052 |
| $P$ | 4.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 25 | 691 | 0.1− | 0.0 | 2001 11 10 | 704 | 0.1+ | 0.1− | 2001 12 11 | 704 | 0.5− | 0.2+ |
| 1995 05 25 | 691 | 0.1+ | 0.7+ | 2001 11 10 | 704 | 0.2− | 0.2− | 2001 12 11 | 704 | 1.3− | 0.2− |
| 1995 05 25 | 691 | 0.0 | 0.0 | 2001 11 10 | 704 | 0.4+ | 0.1+ | 2001 12 11 | 704 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.9− | 0.4+ | 2001 11 17 | 704 | 0.3+ | 0.4+ | 2001 12 11 | 704 | 0.8− | 0.6+ |
| 2001 09 25 | 704 | 0.0 | 0.7+ | 2001 11 17 | 704 | 0.3− | 0.2− | 2001 12 15 | 704 | (3.2+ | 0.6+) |
| 2001 09 25 | 704 | (0.0 | 2.2+) | 2001 11 17 | 704 | 0.5− | 0.3+ | 2001 12 15 | 704 | 1.4+ | 0.2− |
| 2001 10 14 | 704 | 0.6+ | 0.9+ | 2001 11 17 | 704 | 0.5+ | 0.6− | 2001 12 15 | 704 | 0.7+ | 0.5+ |
| 2001 10 14 | 704 | 0.1− | 0.3+ | 2001 11 17 | 704 | 0.5− | 0.6− | 2005 09 30 | 703 | 0.0 | 0.5− |
| 2001 10 14 | 704 | 0.3− | 0.7+ | 2001 11 19 | 704 | 0.2+ | 0.4− | 2005 09 30 | 703 | 0.8+ | 0.3+ |
| 2001 10 23 | 333 | 0.2+ | 0.2− | 2001 11 19 | 704 | 0.3+ | 0.2− | 2005 09 30 | 703 | 0.4− | 0.5− |
| 2001 10 23 | 333 | 0.2− | 0.9+ | 2001 11 19 | 704 | 0.5+ | 0.2+ | 2005 09 30 | 703 | 0.1− | 0.8− |
| 2001 10 23 | 333 | 0.4+ | 0.0 | 2001 12 11 | 704 | 0.2+ | 0.6+ | | | | |

**2001 VA$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.03986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17581324 | $\omega$ | 102.76008 | | +0.85326385 | | −0.47243767 |
| $a$ | 3.1557433 | $\Omega$ | 285.80181 | | +0.34313818 | | +0.82745658 |
| $e$ | 0.2397183 | $i$ | 13.26471 | | +0.39267925 | | +0.30350989 |
| $P$ | 5.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.7+ | 0.1+ | 2001 11 17 | 704 | 0.2+ | 0.9− | 2001 12 14 | 704 | 0.1− | 0.8− |
| 2001 10 25 | 704 | (0.0 | 2.7−) | 2001 11 17 | 704 | 0.0 | 0.3− | 2001 12 14 | 704 | 1.7+ | 0.9− |
| 2001 10 25 | 704 | 0.1− | 0.8− | 2001 11 17 | 704 | 1.1+ | 0.2+ | 2001 12 14 | 704 | (2.6+ | 2.0−) |
| 2001 10 25 | 704 | (1.2− | 2.4−) | 2001 11 17 | 704 | 0.5+ | 0.9+ | 2002 01 08 | 704 | 0.7− | 0.7− |
| 2001 10 25 | 704 | 0.3+ | 0.3− | 2001 11 18 | 704 | 0.4− | 0.2+ | 2002 01 08 | 704 | 0.3+ | 0.3+ |
| 2001 10 25 | 704 | (1.0− | 2.6−) | 2001 11 18 | 704 | 0.2− | 0.7− | 2002 01 08 | 704 | 0.6+ | 0.2− |
| 2001 10 25 | 704 | 0.6+ | 0.2+ | 2001 11 18 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 1.1+ | 0.2+ |
| 2001 10 25 | 704 | (1.9− | 3.8−) | 2001 11 18 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 1.1− | 0.7+ |
| 2001 10 25 | 704 | 1.1+ | 0.2+ | 2001 11 18 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2001 11 11 | 704 | 0.7− | 0.5− | 2001 12 09 | 704 | 1.3− | 0.7+ | 2006 09 19 | 703 | 0.5+ | 0.6+ |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2001 12 09 | 704 | 1.1− | 1.4+ | 2006 09 29 | 699 | 0.3− | 0.7− |
| 2001 11 11 | 704 | 1.1− | 0.4+ | 2001 12 09 | 704 | 0.7− | 0.7+ | 2006 09 29 | 699 | 1.4+ | 0.9− |
| 2001 11 11 | 704 | 1.1− | 0.3− | 2001 12 09 | 704 | 1.0− | 1.5+ | 2006 09 29 | 699 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.5− | 0.4− | 2001 12 14 | 704 | 1.1+ | 1.5− | 2006 09 29 | 699 | 1.3− | 0.1+ |

**2001 VA$_{85}$ = 2006 UR$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.97005 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19922274 | $\omega$ | 14.64213 | | +0.35134018 | | −0.92424752 |
| $a$ | 2.9034216 | $\Omega$ | 55.00101 | | +0.83960718 | | +0.24041827 |
| $e$ | 0.0767289 | $i$ | 10.50999 | | +0.41427027 | | +0.29658991 |
| $P$ | 4.95 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.8+ | 0.1− | 2001 11 21 | 704 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2001 10 24 | 704 | 0.2+ | 0.4+ | 2001 11 21 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (0.0 | 1.6+) |
| 2001 10 24 | 704 | 0.0 | 0.1− | 2001 11 22 | 644 | 0.5− | 1.0+ | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 1.5+ | 0.8− | 2001 11 22 | 644 | 0.7− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.6+ |
| 2001 11 12 | 704 | 0.4− | 0.4+ | 2001 11 22 | 644 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2001 11 12 | 704 | 0.7− | 0.9+ | 2006 09 30 | G96 | 0.5+ | 0.5− | 2006 11 11 | G96 | 0.4− | 0.1+ |
| 2001 11 12 | 704 | 0.9− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2001 11 17 | 704 | 0.5+ | 1.1− | 2006 09 30 | G96 | 0.2+ | 1.2+ | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2001 11 17 | 704 | 0.6+ | 1.3− | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2001 11 17 | 704 | (0.3+ | 1.6−) | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.6− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 0.9+ | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.5− | 0.1− |
| 2001 11 20 | 704 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 704 | 0.5− | 0.3− | 2006 11 01 | 691 | 1.0+ | 1.3− | 2006 12 01 | G96 | 0.0 | 0.1− |

**2001 VE$_{85}$ = 2006 TH$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.12803 | | | (2000.0) | | |
| $n$ | 0.19291325 | $\omega$ | 135.62859 | | +0.99110319 | +0.02081066 |
| $a$ | 2.9663883 | $\Omega$ | 223.69602 | | −0.05527131 | +0.96286115 |
| $e$ | 0.0808699 | $i$ | 10.96973 | | +0.12107665 | +0.26919384 |
| $P$ | 5.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.2+ | 0.8+ | 2001 11 20 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2001 11 12 | 704 | 0.9+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 1.0+ | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2001 11 17 | 704 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 11 17 | 704 | 0.6− | 0.7− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.1+ |
| 2001 11 17 | 704 | 0.6− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.0 | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 1.2+ | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.6− | 2006 10 20 | 691 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.5+ | 1.0+ |
| 2001 11 20 | 704 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | | | | |
| 2001 11 20 | 704 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.7− | | | | |

**2001 VM$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.32241 | | | (2000.0) | | |
| $n$ | 0.18789654 | $\omega$ | 298.17600 | | +0.89484179 | −0.40127957 |
| $a$ | 3.0189565 | $\Omega$ | 86.05497 | | +0.44635307 | +0.79925962 |
| $e$ | 0.2430870 | $i$ | 11.30295 | | +0.00520740 | +0.44739106 |
| $P$ | 5.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.2+ | 0.7− | 2001 12 17 | 704 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.1+ | 0.6− | 2001 12 17 | 704 | 0.4− | 0.5+ | 2006 09 30 | 704 | 0.3+ | 0.1+ |
| 2001 11 12 | 704 | 0.0 | 1.2− | 2001 12 17 | 704 | 0.5− | 0.5+ | 2006 09 30 | 704 | 0.4− | 0.1− |
| 2001 11 12 | 704 | 0.5+ | 0.8− | 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.8− | 0.1− |
| 2001 11 12 | 704 | 0.3+ | 0.5− | 2001 12 18 | 644 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.2− | 0.2+ |
| 2001 11 17 | 704 | 0.3− | 0.4− | 2001 12 18 | 644 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 0.8− | 0.0 | 2001 12 18 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.2− | 0.1− | 2001 12 20 | 704 | 0.8+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 11 17 | 704 | 0.4− | 0.5+ | 2001 12 20 | 704 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2001 11 24 | 704 | 0.7+ | 0.4+ | 2001 12 20 | 704 | 0.6+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 11 24 | 704 | 0.5− | 0.2− | 2001 12 20 | 704 | 0.3− | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 11 24 | 704 | 0.4− | 0.1− | 2002 01 13 | 704 | 0.8− | 0.8− | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2002 01 13 | 704 | 0.7− | 0.5− | 2006 10 17 | 703 | 0.1+ | 1.3+ |
| 2001 12 11 | 704 | 0.1+ | 0.9+ | 2002 01 13 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.5+ | 0.4+ | 2002 01 13 | 704 | 0.1+ | 0.7− | 2006 10 17 | 703 | 0.5− | 0.7− |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2002 01 15 | 704 | 0.7− | 0.7− | 2006 10 28 | 703 | 0.5+ | 0.4− |
| 2001 12 14 | 644 | 0.2+ | 0.6+ | 2002 01 15 | 704 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.1− | 0.5− |
| 2001 12 14 | 704 | 0.6+ | 0.1− | 2002 01 15 | 704 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.3− | 0.5− |
| 2001 12 14 | 704 | 0.2+ | 0.4− | 2006 09 26 | 703 | 0.9+ | 0.1− | 2006 10 28 | 703 | 0.5+ | 0.2− |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.7+ | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.8+ |
| 2001 12 14 | 644 | 0.2+ | 0.9+ | 2006 09 26 | 703 | 0.5− | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.2− |
| 2001 12 14 | 704 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.6− | 0.1+ |
| 2001 12 14 | 704 | 0.4+ | 0.3− | 2006 09 29 | 699 | 0.1+ | 0.5− | 2006 11 16 | 703 | 0.0 | 0.6+ |
| 2001 12 14 | 644 | 0.1+ | 0.8+ | 2006 09 29 | 699 | 0.3+ | 0.2+ | | | | |
| 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.3+ | | | | |

**2001 VX$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.02459 | | | (2000.0) | | |
| $n$ | 0.21829504 | $\omega$ | 326.21926 | | +0.00679860 | −0.98391002 |
| $a$ | 2.7317448 | $\Omega$ | 122.78030 | | +0.95800901 | −0.04477222 |
| $e$ | 0.1183586 | $i$ | 12.26020 | | +0.28665748 | +0.17296394 |
| $P$ | 4.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 29 | 950 | 0.0 | 0.1+ | 2001 11 15 | 704 | 0.6− | 0.3− | 2001 12 09 | 699 | 0.1− | 1.3+ |
| 2000 06 29 | 950 | 0.1− | 0.1+ | 2001 11 15 | 704 | 0.4+ | 0.2− | 2001 12 09 | 699 | 0.1− | 0.0 |
| 2000 06 29 | 950 | 0.0 | 0.2+ | 2001 11 15 | 704 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.5− |
| 2001 10 28 | 644 | 0.5− | 0.1+ | 2001 11 15 | 704 | 0.4− | 0.1− | 2001 12 19 | 704 | 0.4+ | 0.1+ |
| 2001 10 28 | 644 | 0.1− | 0.3+ | 2001 11 17 | 704 | 1.0+ | 1.2− | 2001 12 19 | 704 | 0.6+ | 0.2− |
| 2001 10 28 | 644 | 0.7− | 0.0 | 2001 11 17 | 704 | (1.3+ | 2.1−) | 2001 12 19 | 704 | 1.2+ | 0.0 |
| 2001 11 12 | 699 | 1.3− | 0.5+ | 2001 11 17 | 704 | 1.3+ | 1.4− | 2001 12 19 | 704 | 0.9+ | 0.2− |
| 2001 11 12 | 699 | 0.5+ | 0.5+ | 2001 12 07 | 704 | 0.1+ | 0.1− | 2002 01 02 | 608 | 0.5− | 0.2+ |
| 2001 11 12 | 699 | 0.6− | 0.4+ | 2001 12 07 | 704 | 0.0 | 0.9+ | 2002 01 02 | 608 | 0.3− | 0.2− |
| 2001 11 12 | 699 | 0.2+ | 0.3− | 2001 12 07 | 704 | 0.4− | 0.4+ | 2002 01 02 | 608 | 0.1− | 0.3+ |
| 2001 11 12 | 608 | 0.2− | 0.2+ | 2001 12 07 | 704 | 0.1− | 0.5+ | 2005 08 27 | 644 | 0.1+ | 0.3− |
| 2001 11 12 | 608 | 0.0 | 0.1+ | 2001 12 07 | 704 | 0.8− | 0.7+ | 2005 08 27 | 644 | 0.0 | 0.1− |
| 2001 11 12 | 608 | 0.3− | 0.4− | 2001 12 09 | 699 | 0.2+ | 0.2− | 2005 08 27 | 644 | 0.0 | 0.1+ |
| 2001 11 15 | 704 | 0.5+ | 0.5− | 2001 12 09 | 699 | 0.3− | 0.3− | | | | |

**2001 VV$_{90}$ = 2006 SZ$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.44791 | | | (2000.0) | | |
| $n$ | 0.18508780 | $\omega$ | 168.14885 | | +0.94009578 | +0.33973758 |
| $a$ | 3.0494219 | $\Omega$ | 171.82121 | | −0.32675692 | +0.92159880 |
| $e$ | 0.1607814 | $i$ | 11.45547 | | −0.09721030 | +0.18770731 |
| $P$ | 5.33 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.6− | 1.1− | 2005 06 09 | 703 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 1995 07 25 | 691 | 0.3− | 1.0− | 2005 07 02 | 703 | 0.6+ | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 1995 07 25 | 691 | 0.0 | 0.9− | 2005 07 02 | 703 | 0.9− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1995 09 17 | 327 | (2.3+ | 0.3+) | 2005 07 02 | 703 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 1995 09 17 | 327 | 1.8+ | 0.6+ | 2005 07 02 | 703 | (0.2+ | 2.5−) | 2006 10 11 | 644 | 0.3− | 0.0 |
| 1995 09 17 | 327 | 1.9+ | 0.4+ | 2005 07 04 | 644 | 0.0 | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1995 09 17 | 327 | (2.9+ | 0.6+) | 2005 07 04 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 09 17 | 704 | (2.0+ | 0.6+) | 2005 07 04 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2001 09 17 | 704 | 0.5+ | 0.1− | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 2001 09 17 | 704 | 1.2+ | 0.2− | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 2001 09 17 | 704 | 0.9+ | 0.4− | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2001 09 17 | 704 | 0.8+ | 1.2− | 2006 09 21 | 699 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.5+ | 0.9+ |
| 2001 11 15 | 704 | 0.8+ | 0.2+ | 2006 09 21 | 699 | 0.7− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2001 11 15 | 704 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 2001 11 15 | 704 | 1.3− | 0.5− | 2006 09 21 | 699 | 0.6− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2001 11 18 | 704 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 11 18 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 1.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 11 18 | 704 | (1.7− | 0.5−) | 2006 09 22 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2001 11 18 | 704 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 11 20 | 699 | 0.4+ | 0.8+ | 2006 09 22 | 704 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 11 20 | 699 | 1.4+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 11 20 | 699 | 0.2+ | 0.5− | 2006 09 28 | 691 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 11 20 | 699 | (1.8+ | 0.5+) | 2006 09 28 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 13 | 645 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 13 | 645 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.3− | 0.6− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2003 01 28 | 645 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.6− |
| 2004 04 21 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2004 04 21 | 691 | 0.4+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2004 04 21 | 691 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2005 06 09 | 703 | 0.6+ | 0.5− | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.3− | 0.3− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 09 | 703 | (0.1+ | 2.1+) | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.0 | 0.4− | | | |
| 2005 06 09 | 703 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.0 | | | | | | | |

**2001 VX$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.09882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19764581 | $\omega$ | 328.57645 | | +0.53011276 | −0.81258300 | |
| $a$ | 2.9188446 | $\Omega$ | 88.35446 | | +0.81953330 | +0.41768792 | |
| $e$ | 0.1995888 | $i$ | 14.02580 | | +0.21759050 | +0.40650421 | |
| $P$ | 4.99 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 644 | 0.5+ | 0.7+ | 2001 12 09 | 699 | 0.9+ | 0.4− | 2002 01 08 | 644 | 0.0 | 0.4− | | | |
| 2001 08 22 | 644 | 0.5+ | 0.2+ | 2001 12 11 | 704 | 0.1− | 0.4− | 2002 01 08 | 644 | 0.0 | 0.3− | | | |
| 2001 08 22 | 644 | 0.1+ | 0.2− | 2001 12 11 | 704 | 0.1+ | 0.3− | 2002 01 08 | 644 | 0.1− | 0.4− | | | |
| 2001 09 25 | 704 | 1.0+ | 0.2+ | 2001 12 11 | 704 | 0.3+ | 0.3− | 2002 01 09 | 704 | 0.9+ | 0.2− | | | |
| 2001 09 25 | 704 | 0.4− | 0.5+ | 2001 12 11 | 704 | 0.2+ | 0.1− | 2002 01 09 | 704 | 0.9+ | 0.3+ | | | |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2001 12 11 | 704 | 0.2+ | 0.1− | 2002 01 09 | 704 | 0.9+ | 0.3− | | | |
| 2001 10 13 | 699 | 0.3− | 0.1− | 2001 12 14 | 704 | (0.8+ | 1.5+) | 2002 01 09 | 704 | 0.5+ | 0.2+ | | | |
| 2001 10 13 | 699 | 0.7− | 0.8+ | 2001 12 14 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.8− | | | |
| 2001 10 13 | 699 | 0.3+ | 0.5+ | 2001 12 14 | 704 | 1.1+ | 1.3+ | 2006 09 18 | 703 | 0.6+ | 0.5− | | | |
| 2001 10 13 | 699 | 0.1− | 0.4+ | 2001 12 14 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.1− | 0.1+ | | | |
| 2001 10 16 | 704 | 1.0− | 0.4+ | 2001 12 14 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.1− | | | |
| 2001 10 16 | 704 | 0.2− | 0.1+ | 2001 12 14 | 704 | 0.2− | 0.2− | 2006 10 30 | 703 | 0.0 | 0.1− | | | |
| 2001 10 16 | 704 | 0.5− | 0.6+ | 2001 12 14 | 704 | (0.6+ | 1.6+) | 2006 10 30 | 703 | 1.1+ | 0.5− | | | |
| 2001 10 16 | 704 | 0.0 | 0.4+ | 2001 12 14 | 704 | 0.1− | 0.3− | 2006 10 30 | 703 | 0.7− | 0.1− | | | |
| 2001 10 16 | 704 | 1.0− | 0.5+ | 2001 12 14 | 704 | 0.4− | 1.5+ | 2006 10 30 | 703 | 0.4+ | 0.2+ | | | |
| 2001 10 20 | 608 | 0.2− | 0.9− | 2001 12 14 | 704 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.3+ | 1.1− | | | |
| 2001 10 20 | 608 | 0.2− | 0.7− | 2001 12 15 | 704 | 0.9− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.5− | | | |
| 2001 10 20 | 608 | 0.1+ | 0.8− | 2001 12 15 | 704 | 0.5− | 0.5− | 2006 11 13 | 703 | 0.2+ | 0.7− | | | |
| 2001 11 15 | 704 | 0.0 | 0.2+ | 2001 12 15 | 704 | 0.5− | 0.2− | 2006 11 13 | 703 | 0.6+ | 0.5+ | | | |
| 2001 11 15 | 704 | 0.3+ | 0.3+ | 2001 12 15 | 704 | 1.3− | 0.1+ | 2006 11 13 | 703 | 0.5+ | 0.8− | | | |
| 2001 11 15 | 704 | 0.4+ | 1.2+ | 2001 12 15 | 704 | 0.8− | 0.4− | 2006 11 13 | 703 | 0.3− | 0.1− | | | |
| 2001 11 15 | 704 | 0.5+ | 0.9+ | 2001 12 15 | 704 | 0.2− | 0.9+ | 2006 11 13 | 703 | 0.2+ | 1.0− | | | |
| 2001 11 15 | 704 | 0.5+ | 0.7+ | 2001 12 15 | 704 | 0.8− | 0.3+ | 2006 11 13 | 703 | (1.7+ | 0.2−) | | | |
| 2001 11 18 | 704 | 0.1+ | 0.1+ | 2001 12 15 | 704 | 0.3− | 0.6+ | 2006 11 19 | 703 | 0.3− | 0.1− | | | |
| 2001 11 18 | 704 | 0.0 | 0.2− | 2001 12 15 | 704 | 1.2− | 0.6+ | 2006 11 19 | 703 | 0.3+ | 0.1+ | | | |
| 2001 11 18 | 704 | 0.1+ | 0.1− | 2001 12 15 | 704 | 0.5− | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.4− | | | |
| 2001 11 18 | 704 | 0.1+ | 0.3− | 2001 12 15 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 703 | 0.6+ | 0.5− | | | |
| 2001 11 18 | 704 | 0.4+ | 0.4+ | 2001 12 15 | 704 | 0.5+ | 0.0 | 2006 11 20 | 703 | 0.5+ | 0.2+ | | | |
| 2001 11 20 | 608 | 0.2− | 0.5− | 2001 12 15 | 704 | 0.9+ | 0.5+ | 2006 11 20 | 703 | 0.5+ | 0.5+ | | | |
| 2001 11 20 | 608 | 0.3− | 1.1− | 2001 12 15 | 704 | 1.0− | 0.7+ | 2006 11 20 | 703 | 0.4+ | 0.1+ | | | |
| 2001 11 20 | 608 | (0.4− | 1.7−) | 2001 12 18 | 644 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.3+ | 1.2+ | | | |
| 2001 12 07 | 704 | 0.1− | 0.2+ | 2001 12 18 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | (0.1− | 1.9−) | | | |
| 2001 12 07 | 704 | 0.2− | 0.2+ | 2001 12 18 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 1.3− | 1.4− | | | |
| 2001 12 07 | 704 | 0.8− | 0.2− | 2001 12 18 | 704 | (3.6− | 0.4+) | 2006 11 20 | 704 | (1.0− | 2.4−) | | | |
| 2001 12 09 | 699 | 0.8− | 0.3+ | 2001 12 18 | 704 | (3.0− | 0.7+) | 2006 11 20 | 704 | 1.5− | 0.8− | | | |
| 2001 12 09 | 699 | 0.9+ | 0.3− | 2001 12 18 | 704 | (4.1− | 1.3+) | | | | | | | |
| 2001 12 09 | 699 | 0.1+ | 0.4− | 2001 12 18 | 704 | (3.6− | 1.0+) | | | | | | | |

**2001 VE$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.81305 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18105822 | $\omega$ | 228.26196 | | +0.86182530 | +0.45257819 | |
| $a$ | 3.0945004 | $\Omega$ | 103.65218 | | −0.36655442 | +0.86778117 | |
| $e$ | 0.2332336 | $i$ | 13.62898 | | −0.35056384 | +0.20525308 | |
| $P$ | 5.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.6+ | 1.4− | 2005 05 15 | 644 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.5− | | | |
| 2001 11 15 | 704 | 0.7− | 0.9− | 2005 05 15 | 644 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.6+ | | | |
| 2001 11 15 | 704 | 0.7+ | 1.3− | 2005 05 15 | 644 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.4− | | | |
| 2001 11 15 | 704 | 0.1− | 1.2− | 2005 05 15 | 644 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.1− | | | |
| 2001 11 18 | 704 | 0.1− | 0.5+ | 2005 05 15 | 644 | 0.1− | 0.1+ | 2006 10 03 | E12 | 0.6+ | 0.5+ | | | |
| 2001 11 18 | 704 | 0.2− | 0.8+ | 2005 05 31 | 699 | (2.3+ | 1.6−) | 2006 10 03 | E12 | 0.2+ | 0.2− | | | |
| 2001 11 18 | 704 | 0.1− | 0.3− | 2005 05 31 | 699 | 0.8+ | 0.5+ | 2006 10 03 | E12 | 0.4+ | 0.3+ | | | |
| 2001 11 18 | 704 | 0.1− | 1.1+ | 2005 05 31 | 699 | 1.0+ | 0.8− | 2006 10 03 | E12 | 0.2+ | 0.2+ | | | |
| 2001 12 15 | 704 | 0.7− | 1.0+ | 2005 05 31 | 699 | 0.3+ | 0.4− | 2006 10 12 | E12 | 0.5− | 0.4+ | | | |
| 2001 12 15 | 704 | 0.0 | 1.3+ | 2005 06 29 | 644 | 0.1+ | 0.3+ | 2006 10 12 | E12 | 0.2+ | 0.4+ | | | |
| 2001 12 15 | 704 | 0.9+ | 0.3+ | 2005 06 29 | 644 | 0.0 | 0.4+ | 2006 10 12 | E12 | 1.8− | 0.6+ | | | |
| 2005 05 11 | 703 | 0.9+ | 0.5− | 2005 06 29 | 644 | 0.1− | 0.3+ | 2006 10 12 | E12 | 0.1− | 0.4+ | | | |
| 2005 05 11 | 703 | 1.3− | 1.0− | 2006 07 31 | E12 | 0.4+ | 0.6− | 2006 10 12 | E12 | 1.6− | 2.7− | | | |
| 2005 05 11 | 703 | 0.4+ | 0.1− | 2006 07 31 | E12 | (2.4− | 0.5+) | 2006 10 12 | E12 | 0.6+ | 0.2+ | | | |
| 2005 05 11 | 703 | 0.8− | 0.8− | 2006 07 31 | E12 | 0.9+ | 0.1+ | 2006 10 12 | E12 | 0.9+ | 0.4+ | | | |
| 2005 05 15 | 644 | 0.3− | 0.4+ | 2006 07 31 | E12 | 0.1+ | 0.4+ | 2006 10 12 | E12 | 0.4− | 0.1+ | | | |

**2001 VJ$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.66178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18834716 | $\omega$ | 312.63430 | | +0.36818125 | −0.90733813 | |
| $a$ | 3.0141394 | $\Omega$ | 114.71759 | | +0.90497456 | +0.29967445 | |
| $e$ | 0.1915824 | $i$ | 12.90860 | | +0.21322199 | +0.29484359 | |
| $P$ | 5.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.1+ | 0.8+ | 2001 11 19 | 699 | 0.5− | 0.5+ | 2001 12 19 | 704 | 0.1− | 0.6+ | | | |
| 2001 10 28 | 644 | 0.2+ | 1.2+ | 2001 11 19 | 699 | (0.3+ | 1.6+) | 2001 12 19 | 704 | 0.1− | 0.4+ | | | |
| 2001 10 28 | 644 | 0.5+ | 0.7+ | 2001 11 19 | 699 | 0.1− | 1.1+ | 2001 12 19 | 704 | (2.1+ | 1.4+) | | | |
| 2001 11 11 | 645 | 0.1− | 0.1− | 2001 11 20 | 699 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ | | | |
| 2001 11 11 | 645 | 0.1− | 0.1− | 2001 11 20 | 699 | 0.2− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | | |
| 2001 11 15 | 704 | (2.0− | 1.1−) | 2001 11 20 | 699 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 | | | |
| 2001 11 15 | 704 | 1.3− | 0.8+ | 2001 11 20 | 699 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.2+ | | | |
| 2001 11 15 | 704 | 0.8+ | 0.8+ | 2001 11 21 | 645 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1+ | | | |
| 2001 11 15 | 704 | 0.6+ | 0.2− | 2001 11 21 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1− | | | |
| 2001 11 18 | 704 | 0.5+ | 0.3− | 2001 12 07 | 704 | (0.9+ | 1.6−) | 2006 10 21 | 703 | 0.6+ | 0.5− | | | |
| 2001 11 18 | 704 | 0.8+ | 0.3+ | 2001 12 07 | 704 | (1.0+ | 1.6−) | 2006 10 21 | 703 | 0.2+ | 0.9+ | | | |
| 2001 11 18 | 704 | 0.6− | 0.4− | 2001 12 07 | 704 | (2.7+ | 1.3−) | 2006 10 21 | 703 | 0.1− | 0.5− | | | |
| 2001 11 18 | 704 | 0.7+ | 0.4+ | 2001 12 07 | 704 | 0.3+ | 1.2− | 2006 10 21 | 703 | 0.7+ | 1.0− | | | |
| 2001 11 19 | 699 | 0.3+ | 0.4+ | 2001 12 19 | 704 | 0.5− | 0.3+ | | | | | | | |

**2001 VM$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.69978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18346836 | $\omega$ | 307.87320 | | +0.61357469 | −0.74673560 | |
| $a$ | 3.0673401 | $\Omega$ | 102.28464 | | +0.78154149 | +0.52785465 | |
| $e$ | 0.2082708 | $i$ | 15.23328 | | +0.11277853 | +0.40466704 | |
| $P$ | 5.37 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 644 | 0.0 | 0.2+ | 2001 11 18 | 704 | 0.1− | 0.4+ | 2001 12 22 | 608 | (0.3+ | 1.7+) | | | |
| 2001 08 22 | 644 | 0.4+ | 0.7+ | 2001 11 18 | 704 | 0.2− | 0.0 | 2002 01 06 | 608 | 0.4+ | 0.8− | | | |
| 2001 08 22 | 644 | 0.2+ | 0.0 | 2001 11 18 | 704 | 0.1+ | 0.8+ | 2002 01 06 | 608 | 0.2+ | 0.6− | | | |
| 2001 09 14 | 644 | 0.2+ | 0.5+ | 2001 11 18 | 704 | 0.2+ | 0.7+ | 2002 01 06 | 608 | 0.6+ | 0.6− | | | |
| 2001 09 14 | 644 | 0.7+ | 0.8+ | 2001 11 18 | 704 | 0.2− | 0.2+ | 2002 01 14 | 704 | 0.0 | 0.2− | | | |
| 2001 09 14 | 644 | 0.6+ | 0.4+ | 2001 11 20 | 699 | 0.2+ | 0.4+ | 2002 01 14 | 704 | 0.1+ | 0.7+ | | | |
| 2001 09 23 | 699 | 0.3+ | 0.2+ | 2001 11 20 | 699 | 0.9+ | 0.1+ | 2002 01 14 | 704 | 0.5+ | 0.0 | | | |
| 2001 09 23 | 699 | 0.4+ | 0.7+ | 2001 11 20 | 699 | 0.0 | 0.3+ | 2002 01 14 | 704 | 0.1+ | 0.1+ | | | |
| 2001 09 23 | 699 | 0.5− | 0.2− | 2001 11 20 | 699 | 0.5+ | 0.1+ | 2006 07 31 | E12 | (2.1+ | 0.5−) | | | |
| 2001 09 23 | 699 | 1.0+ | 0.9+ | 2001 12 07 | 704 | 0.5+ | 0.5+ | 2006 07 31 | E12 | 0.4− | 0.9− | | | |
| 2001 10 14 | 699 | 1.4− | 0.2− | 2001 12 07 | 704 | 0.9+ | 1.0+ | 2006 07 31 | E12 | 0.3− | 0.1+ | | | |
| 2001 10 14 | 699 | 0.7− | 0.8− | 2001 12 07 | 704 | 0.1+ | 1.0+ | 2006 07 31 | E12 | 0.7+ | 0.3+ | | | |
| 2001 10 14 | 699 | 0.3− | 0.3− | 2001 12 07 | 704 | 1.0+ | 1.2+ | 2006 09 27 | 703 | 0.2+ | 0.1− | | | |
| 2001 10 14 | 699 | 1.4− | 1.1− | 2001 12 07 | 704 | (0.6+ | 2.0+) | 2006 09 27 | 703 | 0.1− | 0.3+ | | | |
| 2001 10 16 | 704 | 0.2− | 0.0 | 2001 12 14 | 699 | 0.9+ | 0.1− | 2006 09 27 | 703 | 0.4− | 0.0 | | | |
| 2001 10 16 | 704 | 0.2+ | 0.6− | 2001 12 14 | 699 | 0.3− | 0.4− | 2006 09 27 | 703 | 0.2− | 0.4+ | | | |
| 2001 10 16 | 704 | 0.2− | 0.5− | 2001 12 14 | 699 | 0.1− | 0.4− | 2006 10 03 | E12 | 0.5+ | 0.2− | | | |
| 2001 10 16 | 704 | 1.1− | 0.3− | 2001 12 14 | 699 | 0.6− | 0.3− | 2006 10 03 | E12 | 0.7− | 0.8+ | | | |
| 2001 10 16 | 704 | 0.7− | 1.2− | 2001 12 18 | 704 | 0.5− | 0.4+ | 2006 10 03 | E12 | 0.4+ | 0.5− | | | |
| 2001 10 19 | 608 | 0.8− | 1.2− | 2001 12 18 | 704 | 0.6− | 0.3+ | 2006 10 03 | E12 | 0.8+ | 0.7− | | | |
| 2001 10 19 | 608 | 0.6− | 0.8− | 2001 12 18 | 704 | 0.5− | 0.4+ | 2006 10 12 | E12 | 0.3− | 0.0 | | | |
| 2001 10 19 | 608 | 0.7− | 1.0− | 2001 12 18 | 704 | 0.9− | 0.5+ | 2006 10 12 | E12 | 0.3+ | 0.1+ | | | |
| 2001 10 28 | 644 | 0.7− | 0.0 | 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 10 12 | E12 | 0.0 | 0.2+ | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.5− | 0.0 | 2001 12 19 | 704 | 1.1+ | 0.6− | 2006 10 12 | E12 | 0.0 | 0.4+ |
| 2001 10 28 | 644 | 0.4− | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.3− | 2006 11 09 | E12 | 0.5+ | 0.2+ |
| 2001 11 15 | 704 | 0.4+ | 0.0 | 2001 12 19 | 704 | 0.6+ | 0.5− | 2006 11 09 | E12 | 0.3+ | 0.9− |
| 2001 11 15 | 704 | 0.1− | 0.1− | 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 11 09 | E12 | 1.0− | 0.3+ |
| 2001 11 15 | 704 | 0.3− | 0.5− | 2001 12 19 | 704 | 0.7+ | 0.2+ | 2006 11 09 | E12 | 0.2− | 0.1− |
| 2001 11 15 | 704 | 0.2− | 0.0 | 2001 12 22 | 608 | 0.2+ | 1.2+ | | | | |
| 2001 11 15 | 704 | 0.3+ | 0.4− | 2001 12 22 | 608 | (0.5− | 1.6+) | | | | |

**2001 VF$_{92}$ = 2006 TW$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.76968 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19185831 | $\omega$ | 197.29960 | | +0.85708977 | | −0.51223986 |
| $a$ | 2.9772523 | $\Omega$ | 193.91791 | | +0.49551425 | | +0.84883093 |
| $e$ | 0.2098217 | $i$ | 13.17911 | | +0.14093525 | | +0.13075309 |
| $P$ | 5.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.0 | 0.0 | 2001 12 09 | 699 | 0.0 | 0.6− | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2001 11 15 | 704 | 0.1− | 0.3+ | 2001 12 19 | 704 | (2.0− | 1.3+) | 2006 10 22 | 703 | 0.2− | 1.0− |
| 2001 11 15 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.7+ | 0.2− |
| 2001 11 15 | 704 | 1.2− | 0.7− | 2001 12 19 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 2001 11 15 | 704 | 0.9+ | 0.9+ | 2001 12 19 | 704 | 0.6− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 11 18 | 704 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2001 11 18 | 704 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.2− |
| 2001 11 18 | 704 | 1.0+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.5+ | 0.0 |
| 2001 11 18 | 704 | 1.0+ | 0.1− | 2006 10 15 | D35 | 0.8+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.4− |
| 2001 11 21 | 608 | 0.0 | 0.1+ | 2006 10 15 | D35 | 0.4+ | 0.3+ | 2006 11 13 | 703 | 0.6− | 0.8+ |
| 2001 11 21 | 608 | 0.5− | 0.2+ | 2006 10 15 | D35 | 0.2+ | 0.7+ | 2006 11 13 | 703 | 0.8+ | 0.8− |
| 2001 11 21 | 608 | 0.1− | 0.9− | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.1− | 0.0 |
| 2001 12 09 | 699 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.6+ | 2006 11 19 | 703 | 0.5+ | 0.0 |
| 2001 12 09 | 699 | 0.7+ | 0.3− | 2006 10 16 | 703 | 0.7− | 0.1+ | 2006 11 19 | 703 | 1.2+ | 1.1+ |
| 2001 12 09 | 699 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.8− | 0.8− | 2006 11 19 | 703 | 0.3− | 0.8+ |

**2001 VM$_{92}$ = 2006 SM$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.55974 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18911596 | $\omega$ | 262.61389 | | +0.74588397 | | −0.65666132 |
| $a$ | 3.0059651 | $\Omega$ | 138.33977 | | +0.65793992 | | +0.70025324 |
| $e$ | 0.2743405 | $i$ | 9.66469 | | +0.10378905 | | +0.28007377 |
| $P$ | 5.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 13 | 608 | 0.1− | 0.3− | 2001 12 19 | 704 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 11 13 | 608 | 0.3+ | 0.2− | 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 11 13 | 608 | 0.0 | 0.5− | 2006 09 21 | 699 | 0.6+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 11 15 | 704 | 0.3− | 0.1− | 2006 09 21 | 699 | 0.9− | 0.8− | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2001 11 15 | 704 | 0.7− | 0.9+ | 2006 09 21 | 699 | 0.0 | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.5− |
| 2001 11 15 | 704 | 0.2+ | 0.3+ | 2006 09 21 | 699 | (1.6− | 0.1+) | 2006 10 17 | 703 | 0.6+ | 0.4+ |
| 2001 11 15 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 1.4− | 0.2− |
| 2001 11 15 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.5+ | 1.0+ | 2006 10 17 | 703 | 0.5− | 0.9+ |
| 2001 11 18 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.2+ | 2006 10 17 | 703 | (1.2+ | 1.6+) |
| 2001 11 18 | 704 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 2001 11 18 | 704 | 0.1− | 0.6+ | 2006 09 29 | 699 | 1.1− | 0.4− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2001 11 18 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 0.6− | 0.9+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2001 11 18 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.5+ | 2006 10 17 | 703 | (1.2+ | 2.5−) |
| 2001 11 21 | 608 | 0.2− | 0.8− | 2006 09 29 | 699 | 0.3− | 0.5− | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2001 11 21 | 608 | 0.0 | 0.4− | 2006 09 30 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2001 11 21 | 608 | 0.2− | 0.6− | 2006 09 30 | 704 | (0.1+ | 1.9+) | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 12 07 | 704 | (0.9− | 2.6+) | 2006 09 30 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.4− |
| 2001 12 07 | 704 | (0.6− | 2.6+) | 2006 09 30 | 704 | 1.3+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2001 12 07 | 704 | (0.2+ | 2.8+) | 2006 09 30 | 704 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 12 07 | 704 | (0.7− | 2.6+) | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.4− | 0.8+ |
| 2001 12 19 | 704 | 0.8+ | 0.9− | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.8− |
| 2001 12 19 | 704 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.5− | 2006 10 28 | 703 | 0.0 | 1.1− |

**2001 VW$_{92}$ = 2006 SK$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.05646 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18079116 | $\omega$ | 289.71288 | | +0.85291847 | | −0.42337462 |
| $a$ | 3.0975471 | $\Omega$ | 96.36532 | | +0.51376898 | | +0.78450424 |
| $e$ | 0.2264630 | $i$ | 17.89773 | | −0.09258254 | | +0.45310819 |
| $P$ | 5.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.0 | 0.5− | 2001 12 08 | 699 | 0.3− | 0.2+ | 2006 09 16 | E12 | 0.2− | 0.6+ |
| 2001 11 15 | 704 | 0.6+ | 0.1− | 2001 12 08 | 699 | 0.9+ | 0.6− | 2006 09 16 | E12 | 0.2+ | 0.2− |
| 2001 11 15 | 704 | 0.2− | 0.1+ | 2001 12 15 | 704 | 0.6+ | 0.3− | 2006 09 16 | E12 | 0.4− | 0.0 |
| 2001 11 15 | 704 | 0.2− | 0.3+ | 2001 12 15 | 704 | 0.3− | 0.0 | 2006 10 02 | E12 | 0.7− | 0.4− |
| 2001 11 15 | 704 | 0.2+ | 0.1− | 2001 12 15 | 704 | 0.1+ | 0.0 | 2006 10 02 | E12 | 0.1+ | 0.7− |
| 2001 11 18 | 704 | 0.1− | 0.2+ | 2002 01 07 | 608 | 1.0− | 0.8− | 2006 10 02 | E12 | (0.0 | 2.4+) |
| 2001 11 18 | 704 | 0.1− | 1.0− | 2002 01 07 | 608 | 0.4− | 0.5+ | 2006 10 02 | E12 | 0.5+ | 0.4− |
| 2001 11 18 | 704 | 0.3+ | 0.6+ | 2002 01 07 | 608 | 0.9− | 0.4+ | 2006 10 13 | E12 | 0.3+ | 0.2− |
| 2001 11 18 | 704 | 0.9− | 0.6− | 2002 01 08 | 644 | 0.1− | 0.1− | 2006 10 13 | E12 | 0.0 | 0.3+ |
| 2001 12 07 | 704 | 0.1+ | 0.3+ | 2002 01 08 | 644 | 0.2+ | 0.1− | 2006 10 13 | E12 | 0.5+ | 0.4+ |
| 2001 12 07 | 704 | 0.3+ | 0.4− | 2002 01 08 | 644 | 0.9+ | 0.2+ | 2006 10 13 | E12 | 0.3− | 0.1+ |
| 2001 12 07 | 704 | 0.3+ | 0.6+ | 2002 01 09 | 704 | 0.1+ | 0.8− | 2006 10 28 | E12 | 0.0 | 0.3− |
| 2001 12 07 | 704 | 0.3− | 0.2+ | 2002 01 09 | 704 | 0.2− | 0.4+ | 2006 10 28 | E12 | 0.1− | 0.0 |
| 2001 12 08 | 699 | 0.0 | 0.6+ | 2002 01 09 | 704 | (2.0− | 0.2+) | 2006 10 28 | E12 | 0.3+ | 0.1+ |
| 2001 12 08 | 699 | 0.3+ | 0.7+ | 2006 09 16 | E12 | 0.3+ | 0.2+ | 2006 10 28 | E12 | 0.6− | 0.6+ |

**2001 VW$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.44580 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19215869 | $\omega$ | 327.74000 | | +0.05397179 | | −0.98010418 |
| $a$ | 2.9741489 | $\Omega$ | 118.52239 | | +0.95609404 | | −0.00445596 |
| $e$ | 0.0840800 | $i$ | 12.55574 | | +0.28804729 | | +0.19843372 |
| $P$ | 5.13 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.1− | 1.2− | 2001 11 20 | 699 | 0.9+ | 0.6+ | 2001 12 19 | 704 | 1.4+ | 0.1+ |
| 2001 11 15 | 704 | 1.0+ | 0.3− | 2001 11 20 | 699 | 0.5+ | 0.3+ | 2001 12 19 | 704 | 0.2− | 0.7+ |
| 2001 11 15 | 704 | 0.8+ | 0.3− | 2001 11 20 | 699 | 0.6− | 1.3+ | 2006 10 28 | 703 | 0.4− | 0.5+ |
| 2001 11 15 | 704 | 0.3+ | 0.8+ | 2001 11 20 | 699 | 1.1+ | 1.0− | 2006 10 28 | 703 | 0.8+ | 0.5+ |
| 2001 11 18 | 704 | 0.7− | 1.0+ | 2001 12 10 | 704 | 0.2− | 0.6− | 2006 10 28 | 703 | 0.2− | 0.6+ |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2001 12 10 | 704 | 0.8− | 1.4− | 2006 10 28 | 703 | 0.1− | 1.8− |
| 2001 11 18 | 704 | 0.3− | 0.1+ | 2001 12 10 | 704 | 1.2− | 0.2− | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2001 11 19 | 699 | 0.8− | 0.0 | 2001 12 10 | 704 | 0.5− | 1.1− | 2006 11 16 | 703 | 0.5+ | 0.7+ |
| 2001 11 19 | 699 | 0.9− | 0.4+ | 2001 12 10 | 704 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.0 | 0.6+ |
| 2001 11 19 | 699 | 0.9− | 0.2+ | 2001 12 19 | 704 | 0.0 | 0.7+ | 2006 11 16 | 703 | 0.3− | 1.0− |
| 2001 11 19 | 699 | 1.0+ | 0.0 | 2001 12 19 | 704 | 0.5+ | 0.2+ | | | | |

**2001 VP$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.87517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18415017 | $\omega$ | 40.40417 | | −0.89082758 | | −0.27059548 |
| $a$ | 3.0597642 | $\Omega$ | 120.19629 | | +0.22384671 | | −0.96043337 |
| $e$ | 0.3855387 | $i$ | 24.97803 | | +0.39537182 | | −0.06592293 |
| $P$ | 5.35 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.8+ | 0.5− | 2002 02 02 | 636 | 0.1− | 0.4− | 2002 02 12 | 704 | 0.3− | 1.4− |
| 2001 11 15 | 704 | 0.4+ | 1.1− | 2002 02 02 | 636 | 0.3− | 0.8+ | 2002 02 12 | 704 | 0.6− | 1.3− |
| 2001 11 15 | 704 | 0.4+ | 1.2− | 2002 02 03 | 608 | 0.5− | 0.1+ | 2002 02 12 | 704 | 0.7− | 1.1− |
| 2001 11 15 | 704 | (1.5+ | 2.1−) | 2002 02 03 | 608 | 0.3− | 0.1− | 2002 02 12 | 704 | 0.7− | 1.7− |
| 2001 11 18 | 704 | 0.4− | 0.2+ | 2002 02 03 | 608 | 1.2+ | 0.3+ | 2002 02 14 | 636 | 0.5− | 0.1+ |
| 2001 11 18 | 704 | 0.5+ | 0.7+ | 2002 02 03 | 106 | 0.2+ | 1.0+ | 2002 02 14 | 636 | 0.6− | 0.7+ |
| 2001 11 18 | 704 | 0.4+ | 0.0 | 2002 02 03 | 106 | 0.0 | 0.6+ | 2002 02 14 | 636 | 0.3− | 0.0 |
| 2002 01 05 | 608 | (2.4+ | 2.3+) | 2002 02 03 | 106 | 0.1+ | 0.8+ | 2002 02 20 | 704 | 1.5+ | 0.1− |
| 2002 01 05 | 608 | 1.9+ | 1.5+ | 2002 02 04 | 644 | 0.1− | 0.4+ | 2002 02 20 | 704 | 1.9+ | 0.9− |
| 2002 01 05 | 608 | (2.1+ | 1.2+) | 2002 02 04 | 644 | 0.2− | 0.3+ | 2002 02 20 | 704 | 1.9+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.2+ | 0.0 | 2002 02 04 | 644 | 0.2− | 0.3+ | 2002 02 20 | 704 | 1.3+ | 1.0− |
| 2002 01 09 | 704 | 0.3+ | 0.2− | 2002 02 05 | 644 | 0.0 | 0.2+ | 2002 02 20 | 704 | 1.1+ | 0.8− |
| 2002 01 09 | 704 | 0.2+ | 0.8− | 2002 02 05 | 644 | 0.2− | 0.1+ | 2002 03 17 | 704 | 0.1− | 0.5+ |
| 2002 01 09 | 704 | 0.6+ | 0.0 | 2002 02 05 | 644 | 0.1− | 0.2+ | 2002 03 17 | 704 | 0.2− | 0.1+ |
| 2002 01 09 | 704 | 0.5+ | 0.3− | 2002 02 07 | 704 | 0.4− | 0.7− | 2002 03 17 | 704 | 0.1+ | 1.6+ |
| 2002 01 14 | 704 | 0.9− | 0.3− | 2002 02 07 | 704 | 0.9− | 0.2− | 2002 03 17 | 704 | 0.7− | 0.3+ |
| 2002 01 14 | 704 | 1.0− | 0.1− | 2002 02 07 | 704 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.9− |
| 2002 01 14 | 704 | 0.1− | 0.2+ | 2002 02 07 | 704 | 0.7− | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.2− |
| 2002 01 14 | 704 | 1.2− | 0.1− | 2002 02 07 | 704 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.5− |
| 2002 01 14 | 704 | 1.2− | 0.2+ | 2002 02 10 | 704 | 0.6+ | 0.9+ | 2006 11 17 | 703 | 0.0 | 0.7+ |
| 2002 01 15 | 608 | 0.1− | 0.1+ | 2002 02 10 | 704 | 0.7+ | 1.0+ | 2006 11 23 | 703 | 0.5− | 0.5+ |
| 2002 01 15 | 608 | 0.0 | 0.2+ | 2002 02 10 | 704 | 0.7+ | 1.2+ | 2006 11 23 | 703 | 0.2+ | 0.2+ |
| 2002 01 15 | 608 | 0.3− | 0.3+ | 2002 02 10 | 704 | 0.6+ | 1.2+ | 2006 11 23 | 703 | 0.3− | 0.1+ |
| 2002 02 02 | 636 | 1.2− | 0.0 | 2002 02 12 | 704 | 0.5− | 1.3− | 2006 11 23 | 703 | 0.8− | 1.0+ |

**2001 VA$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.50782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18188291 | $\omega$ | 235.42565 | | +0.48685754 | −0.87311230 | |
| $a$ | 3.0851393 | $\Omega$ | 185.62078 | | +0.86201221 | +0.48495683 | |
| $e$ | 0.3203337 | $i$ | 15.02432 | | +0.14108395 | +0.04991778 | |
| $P$ | 5.42 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.8+ | 0.1+ | 2006 09 18 | H07 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.5+ | 0.1− |
| 2001 10 16 | 704 | 0.3+ | 0.4+ | 2006 09 18 | H07 | 0.3− | 0.3− | 2006 09 28 | 704 | 0.7+ | 0.6+ |
| 2001 10 16 | 704 | 0.0 | 0.1+ | 2006 09 18 | H07 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.5+ | 0.5+ |
| 2001 11 15 | 704 | 0.2+ | 0.8− | 2006 09 18 | H07 | 0.0 | 0.1− | 2006 09 29 | 704 | 1.3− | 0.1− |
| 2001 11 15 | 704 | 0.2+ | 0.4− | 2006 09 18 | H07 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.6− | 0.4+ |
| 2001 11 15 | 704 | 0.1+ | 0.8− | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.4+ |
| 2001 11 15 | 704 | 0.5+ | 0.7− | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.5+ |
| 2001 11 15 | 704 | 0.0 | 0.7− | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.1− | 0.8+ |
| 2001 11 18 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 2001 11 18 | 704 | 0.9− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.1+ |
| 2001 11 18 | 704 | 1.0− | 0.5− | 2006 09 19 | 703 | 0.5− | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.5− |
| 2001 12 07 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 10 01 | 704 | 0.3+ | 0.9+ |
| 2001 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.7+ | 0.6+ |
| 2001 12 07 | 704 | 0.3+ | 0.5+ | 2006 09 20 | H07 | 0.4− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2001 12 07 | 704 | 0.2+ | 0.1+ | 2006 09 20 | H07 | 0.3− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2001 12 07 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 1.2+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2002 01 12 | 704 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.0 | 1.0+ | 2006 10 11 | 291 | 0.3− | 0.3− |
| 2002 01 12 | 704 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.8+ | 0.4− | 2006 10 11 | 291 | 0.3− | 0.1− |
| 2002 01 12 | 704 | 0.7− | 0.2+ | 2006 09 20 | H07 | 0.0 | 0.5− | 2006 10 11 | 291 | 0.2− | 0.2− |
| 2002 01 12 | 704 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.6+ | 2006 10 17 | 703 | (1.7+ | 0.1+) |
| 2002 01 12 | 704 | 0.3− | 1.2+ | 2006 09 20 | H07 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.4+ | 0.4+ |
| 2003 04 04 | 691 | 0.1− | 1.2+ | 2006 09 20 | H07 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.9+ |
| 2003 04 04 | 691 | 0.5+ | 0.9+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 17 | 703 | 1.3+ | 0.3+ |
| 2003 04 04 | 691 | 0.1+ | 0.7+ | 2006 09 20 | H07 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 20 | H07 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2006 09 15 | 704 | 0.2− | 0.2+ | 2006 09 20 | H07 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2006 09 15 | 704 | 0.5− | 0.4+ | 2006 09 21 | A50 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2006 09 15 | 704 | 0.2+ | 0.4+ | 2006 09 21 | A50 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 09 15 | 704 | 0.7+ | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2006 09 17 | H07 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2006 09 17 | 704 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 22 | 704 | 0.1+ | 0.0 |
| 2006 09 17 | 704 | 0.6− | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 22 | 704 | 0.1− | 0.5+ |
| 2006 09 17 | 704 | 0.5− | 0.7+ | 2006 09 27 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 704 | 0.7− | 0.4+ |
| 2006 09 17 | 704 | 0.5+ | 0.5− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 704 | 0.3− | 0.5+ |
| 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.3+ | 2006 10 22 | 704 | 0.4− | 0.4+ |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 05 | 644 | 0.0 | 0.2+ |
| 2006 09 17 | H07 | 0.4+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.4+ | 2006 11 05 | 644 | 0.1+ | 0.5− |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 05 | 644 | 0.4+ | 0.2− |
| 2006 09 17 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.5+ | 0.4− |
| 2006 09 17 | H07 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.3+ | 0.7− |
| 2006 09 17 | H07 | 1.3− | 0.5+ | 2006 09 28 | 704 | 0.6+ | 0.7+ | 2006 11 07 | 644 | 0.2+ | 0.5− |
| 2006 09 18 | H07 | 0.0 | 0.7+ | 2006 09 28 | 704 | 0.3+ | 0.5+ | | | | |

**2001 VO$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.26911 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18538611 | $\omega$ | 223.79617 | | +0.69188507 | −0.72197366 | |
| $a$ | 3.0461498 | $\Omega$ | 182.45597 | | +0.69925177 | +0.67246388 | |
| $e$ | 0.1512551 | $i$ | 9.40927 | | +0.17983883 | +0.16293056 | |
| $P$ | 5.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 699 | 0.4+ | 0.4− | 2001 11 24 | 704 | 0.5− | 0.3− | 2006 10 01 | 704 | 0.6− | 0.7+ |
| 2001 11 12 | 699 | 0.3+ | 0.0 | 2001 11 24 | 704 | 0.3− | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2001 11 12 | 699 | 0.5− | 0.0 | 2001 11 24 | 704 | 0.6− | 0.7+ | 2006 10 01 | 704 | 0.6− | 0.1− |
| 2001 11 12 | 699 | 0.6+ | 0.4− | 2001 12 19 | 704 | 0.3− | 0.8− | 2006 10 15 | 703 | 0.2− | 0.6− |
| 2001 11 16 | 644 | 0.1− | 0.1− | 2001 12 19 | 704 | 0.8+ | 1.4− | 2006 10 15 | 703 | 0.3− | 0.1+ |
| 2001 11 16 | 644 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.2− | 0.6− | 2006 10 15 | 703 | 0.3− | 0.1− |
| 2001 11 16 | 644 | 0.3+ | 0.3− | 2001 12 19 | 704 | 0.6− | 1.3− | 2006 10 15 | 703 | 1.1− | 0.1− |
| 2001 11 19 | 699 | 0.4− | 0.3+ | 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 1.1+ | 1.2+ |
| 2001 11 19 | 699 | 0.6+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.5+ | 1.1+ |
| 2001 11 19 | 699 | 0.5+ | 0.4− | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2001 11 19 | 699 | 0.6+ | 0.9+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 1.1+ | 0.8+ |
| 2001 11 21 | 608 | 0.3− | 0.6+ | 2006 09 20 | 704 | 0.8− | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 11 21 | 608 | 0.0 | 1.0+ | 2006 09 20 | 704 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.5− |
| 2001 11 21 | 608 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.9− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2001 11 24 | 704 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2001 11 24 | 704 | 0.8− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2001 11 24 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2001 11 24 | 704 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.0 | 0.5− | 2006 10 22 | G96 | 0.4+ | 0.4− |

**2001 VQ$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.10472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20550821 | $\omega$ | 59.29607 | | +0.89581001 | −0.44369022 | |
| $a$ | 2.8439149 | $\Omega$ | 327.02360 | | +0.38986603 | +0.81231907 | |
| $e$ | 0.2903608 | $i$ | 2.71234 | | +0.21337504 | +0.37851911 | |
| $P$ | 4.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2001 11 12 | 704 | 0.4+ | 0.4+ | 2001 12 11 | 704 | 1.4+ | 0.7+ |
| 2001 10 21 | 704 | 0.5+ | 0.2+ | 2001 11 12 | 704 | 1.0+ | 0.3+ | 2001 12 11 | 704 | 0.2+ | 0.9− |
| 2001 10 21 | 704 | 0.1+ | 0.5− | 2001 11 19 | 704 | 0.4− | 0.3− | 2001 12 11 | 704 | 0.6− | 0.4− |
| 2001 10 21 | 704 | 0.7− | 0.5+ | 2001 11 19 | 704 | 0.1− | 0.2− | 2001 12 11 | 704 | 0.3− | 0.4− |
| 2001 10 21 | 704 | 0.3+ | 0.1+ | 2001 11 19 | 704 | 0.0 | 0.2− | 2001 12 11 | 704 | 0.4− | 0.5− |
| 2001 10 26 | 644 | 0.1+ | 0.2+ | 2001 11 19 | 704 | 0.1+ | 0.1− | 2001 12 15 | 704 | 1.1+ | 0.8− |
| 2001 10 26 | 644 | 0.2+ | 0.1− | 2001 11 24 | 704 | (0.6− | 2.4+) | 2001 12 15 | 704 | 0.4+ | 0.9− |
| 2001 10 26 | 644 | 0.1+ | 0.1− | 2001 11 24 | 704 | 0.4− | 0.9+ | 2001 12 15 | 704 | 1.0+ | 0.4− |
| 2001 11 10 | 704 | 0.2− | 0.8− | 2001 11 24 | 704 | 0.8− | 0.5+ | 2001 12 15 | 704 | 0.1− | 0.4− |
| 2001 11 10 | 704 | 0.3− | 0.1+ | 2001 11 24 | 704 | 0.4− | 0.1+ | 2001 12 15 | 704 | 0.1− | 0.9− |
| 2001 11 10 | 704 | 0.3− | 0.4− | 2001 11 24 | 704 | 0.1+ | 0.6+ | 2002 01 06 | 644 | 0.5+ | 0.3+ |
| 2001 11 10 | 704 | 0.1+ | 0.3− | 2001 12 08 | 699 | 1.0− | 0.5+ | 2002 01 06 | 644 | 0.2+ | 0.3+ |
| 2001 11 10 | 644 | 0.5+ | 0.4+ | 2001 12 08 | 699 | 0.2− | 0.3+ | 2002 01 06 | 644 | 0.4+ | 0.6+ |
| 2001 11 10 | 704 | 1.9− | 0.0 | 2001 12 08 | 699 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.2− | 0.3− |
| 2001 11 10 | 644 | 0.7+ | 0.4+ | 2001 12 08 | 699 | 1.4− | 0.1− | 2006 11 19 | 691 | 0.8− | 0.3− |
| 2001 11 10 | 644 | 0.3+ | 0.1− | 2001 12 10 | 704 | 0.8− | 0.5+ | 2006 11 19 | 691 | 0.3− | 0.2− |
| 2001 11 12 | 704 | 1.1+ | 0.1− | 2001 12 10 | 704 | 0.8− | 0.8+ | 2006 11 21 | 291 | 0.5+ | 0.5+ |
| 2001 11 12 | 704 | 1.0+ | 0.4− | 2001 12 10 | 704 | 0.8− | 0.3− | 2006 11 21 | 291 | 0.6+ | 0.3+ |
| 2001 11 12 | 704 | 1.0+ | 0.4+ | 2001 12 10 | 704 | 0.6− | 0.1− | 2006 11 21 | 291 | 0.2+ | 0.0 |

**2001 VY$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.81253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17351574 | $\omega$ | 186.84121 | | +0.11680338 | −0.98245645 | |
| $a$ | 3.1835387 | $\Omega$ | 256.52624 | | +0.91813904 | +0.16262882 | |
| $e$ | 0.0901205 | $i$ | 8.59783 | | +0.37865245 | −0.09127534 | |
| $P$ | 5.68 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.4− | 0.4− | 2001 12 10 | 704 | 0.3+ | 0.1− | 2002 01 07 | 691 | 0.2+ | 0.0 | |
| 2001 11 12 | 704 | 0.4− | 1.1+ | 2001 12 10 | 704 | 0.1+ | 0.3+ | 2002 01 07 | 691 | 0.0 | 0.0 | |
| 2001 11 12 | 704 | 0.0 | 0.8+ | 2001 12 10 | 704 | 0.6− | 0.1− | 2006 10 18 | 691 | 0.2− | 0.1+ | |
| 2001 11 12 | 704 | 0.0 | 0.0 | 2001 12 10 | 704 | 0.2− | 1.1+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2001 12 15 | 704 | 1.0− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | |
| 2001 11 19 | 704 | 0.3+ | 0.5− | 2001 12 15 | 704 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.0 | |
| 2001 11 19 | 704 | 0.1+ | 1.0− | 2001 12 15 | 704 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.1+ | |
| 2001 11 19 | 704 | 0.3− | 0.5− | 2001 12 15 | 704 | 0.6− | 0.9− | 2006 10 20 | 691 | 0.1+ | 0.0 | |
| 2001 11 19 | 704 | 0.2− | 1.2− | 2001 12 18 | 704 | 0.6− | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.3− | |
| 2001 11 24 | 704 | 1.1+ | 0.3− | 2001 12 18 | 704 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.2− | |
| 2001 11 24 | 704 | 0.7+ | 0.2+ | 2001 12 18 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.0 | |
| 2001 11 24 | 704 | (0.9− | 2.3+) | 2001 12 18 | 704 | 0.3− | 0.3+ | | | | | |
| 2001 11 24 | 704 | 1.2+ | 0.1− | 2002 01 07 | 691 | 0.1+ | 0.1+ | | | | | |

**2001 VM$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.48388 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17947728 | $\omega$ | 95.12072 | | +0.95573806 | +0.25403249 | |
| $a$ | 3.1126459 | $\Omega$ | 250.22529 | | −0.29072797 | +0.89289078 | |
| $e$ | 0.0390556 | $i$ | 9.07541 | | +0.04518858 | +0.37177083 | |
| $P$ | 5.49 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.2+ | 0.3+ | 2001 11 24 | 704 | 0.9− | 0.0 | 2006 09 27 | 703 | 1.1− | 1.3− | |
| 2001 10 26 | 644 | 0.7+ | 0.5+ | 2001 11 24 | 704 | 0.2+ | 0.1− | 2006 09 27 | 703 | 0.8+ | 0.5+ | |
| 2001 10 26 | 644 | 0.4+ | 0.4+ | 2001 11 24 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 703 | 0.3+ | 0.3− | |
| 2001 10 26 | 644 | 0.7+ | 0.2+ | 2001 12 15 | 704 | 0.5+ | 0.3− | 2006 09 27 | 703 | 1.3+ | 0.2− | |
| 2001 10 26 | 644 | 0.1+ | 0.4+ | 2001 12 15 | 704 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.8− | 0.2+ | |
| 2001 10 26 | 644 | 0.5+ | 0.5+ | 2001 12 15 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.0 | 1.1+ | |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2001 12 15 | 704 | 0.6− | 0.0 | 2006 09 27 | 703 | 1.1− | 0.5− | |
| 2001 11 12 | 704 | 0.4− | 0.3+ | 2001 12 18 | 704 | 0.5− | 1.5+ | 2006 09 27 | 703 | (0.4+ | 2.3−) | |
| 2001 11 12 | 704 | 0.8− | 0.2+ | 2001 12 18 | 704 | 0.3+ | 1.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− | |
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2001 12 18 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2002 01 09 | 691 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2001 11 19 | 704 | 0.5+ | 0.8− | 2002 01 09 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2001 11 19 | 704 | 0.1− | 1.2− | 2002 01 09 | 691 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2001 11 19 | 704 | 0.2− | 1.0− | 2006 09 16 | 703 | 1.2− | 0.7− | 2006 10 21 | 644 | 0.0 | 0.2− | |
| 2001 11 19 | 704 | 0.1+ | 1.2− | 2006 09 16 | 703 | 1.0+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.4+ | |
| 2001 11 19 | 704 | 0.7− | 0.8− | 2006 09 16 | 703 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.4+ | |
| 2001 11 24 | 704 | 0.2− | 0.6− | 2006 09 16 | 703 | 1.1+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.0 | |

**2001 VP$_{102}$ = 2006 WP$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.33775 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20994417 | $\omega$ | 302.42056 | | +0.88654721 | +0.46071886 | |
| $a$ | 2.8037127 | $\Omega$ | 30.20698 | | −0.39139144 | +0.79542312 | |
| $e$ | 0.0901246 | $i$ | 4.79963 | | −0.24667140 | +0.39375143 | |
| $P$ | 4.69 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.0+ | 0.8+ | 2001 12 15 | 704 | 0.9− | 0.0 | 2005 09 05 | 703 | (1.9− | 0.3−) | |
| 2001 11 12 | 704 | 0.8− | 0.5+ | 2001 12 15 | 704 | 0.8− | 0.3+ | 2005 09 05 | 703 | 0.6− | 0.5− | |
| 2001 11 12 | 704 | 0.0 | 1.1+ | 2004 04 22 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.4+ | 0.0 | |
| 2001 11 12 | 704 | 0.3− | 0.3+ | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.0 | |
| 2001 11 12 | 704 | 0.2− | 0.7+ | 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 | |
| 2001 11 19 | 704 | 0.1− | 0.8+ | 2005 08 31 | 644 | 0.3− | 0.1− | 2006 11 26 | 691 | 0.1− | 0.4− | |
| 2001 11 19 | 704 | 0.4− | 0.9+ | 2005 08 31 | 644 | 0.0 | 0.1− | 2006 11 26 | 691 | 0.0 | 0.4− | |
| 2001 11 19 | 704 | 0.8+ | 0.3+ | 2005 08 31 | 644 | 0.5+ | 0.5+ | 2006 11 26 | 691 | 0.2− | 0.1− | |
| 2001 12 15 | 704 | 0.3− | 1.3− | 2005 09 05 | 703 | (1.3+ | 3.2−) | | | | | |
| 2001 12 15 | 704 | 0.1+ | 0.3+ | 2005 09 05 | 703 | 1.0+ | 1.2− | | | | | |

**2001 VW$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.54635 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19072445 | $\omega$ | 70.34172 | | +0.97934363 | +0.19766129 | |
| $a$ | 2.9890406 | $\Omega$ | 278.24000 | | −0.19787884 | +0.89352017 | |
| $e$ | 0.1837964 | $i$ | 2.46792 | | −0.04159362 | +0.40317704 | |
| $P$ | 5.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.5− | 0.2− | 2001 12 15 | 704 | 0.8− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.3− | |
| 2001 11 12 | 704 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.1− | |
| 2001 11 12 | 704 | 1.1− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 | |
| 2001 11 19 | 704 | 0.7+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ | |
| 2001 11 19 | 704 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.3+ | |
| 2001 11 19 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.3+ | |
| 2001 11 19 | 704 | 0.9+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | |
| 2001 11 19 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.2− | 0.1− | |
| 2001 11 21 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.1− | 0.2− | |
| 2001 11 21 | 704 | 0.6+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.0 | |
| 2001 11 21 | 704 | 1.0+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.2− | |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.2− | |
| 2001 11 21 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.0 | |
| 2001 12 15 | 704 | 0.5− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.0 | | | | | |
| 2001 12 15 | 704 | 0.2− | 0.4− | 2006 10 31 | 691 | 0.1− | 0.1+ | | | | | |

**2001 VS$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.16697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19031864 | $\omega$ | 56.61889 | | +0.92846226 | −0.37093873 | |
| $a$ | 2.9932879 | $\Omega$ | 325.14387 | | +0.32875859 | +0.84457160 | |
| $e$ | 0.1593787 | $i$ | 1.90855 | | +0.17284567 | +0.38613894 | |
| $P$ | 5.18 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.3+ | 0.5− | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2− | |
| 2001 10 21 | 704 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3− | |
| 2001 10 21 | 704 | 0.5+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.4− | 0.2− | |
| 2001 10 21 | 704 | 0.3− | 0.6− | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− | |
| 2001 11 12 | 704 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1− | |
| 2001 11 12 | 704 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.0 | |
| 2001 11 12 | 704 | 0.2− | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | |
| 2001 11 12 | 704 | 0.6− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 | |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.2− | |
| 2001 11 16 | 644 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.3− | |
| 2001 11 16 | 644 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.8− | |
| 2001 11 16 | 644 | 0.5− | 0.3+ | 2006 10 19 | 704 | (2.7+ | 1.8−) | 2006 11 11 | 703 | 0.1+ | 0.2− | |
| 2001 11 19 | 704 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.1− | |
| 2001 11 19 | 704 | 0.2− | 0.6− | 2006 10 19 | 704 | (2.0+ | 1.1+) | 2006 11 13 | 691 | 0.1− | 0.0 | |
| 2001 11 19 | 704 | 0.2− | 0.3+ | 2006 10 19 | 704 | 0.8+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.1− | |
| 2001 11 19 | 704 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.0 | |
| 2001 11 21 | 704 | 0.1− | 0.1− | 2006 10 19 | 704 | (2.1+ | 0.8+) | 2006 11 16 | 704 | 0.5− | 0.1+ | |
| 2001 11 21 | 704 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.3+ | |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.9+ | |
| 2001 11 21 | 704 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.6+ | 1.3− | |
| 2001 11 21 | 704 | 0.2+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.1− | |
| 2001 12 08 | 699 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.7+ | |
| 2001 12 08 | 699 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 19 | 704 | 1.0+ | 0.1+ | |
| 2001 12 08 | 699 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.9+ | 0.0 | |
| 2001 12 08 | 699 | 0.9− | 1.2+ | 2006 10 21 | 691 | 0.6− | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.1− | |
| 2001 12 10 | 704 | (1.6− | 0.6−) | 2006 10 21 | 691 | 0.6− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.2− | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.3− |
| 2001 12 10 | 704 | 1.2− | 1.5+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 21 | 691 | (0.5− | 1.6+) |
| 2001 12 15 | 704 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2001 12 15 | 704 | 0.7+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2001 12 15 | 704 | 1.2+ | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2001 12 15 | 704 | 1.4+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.9− |
| 2001 12 15 | 704 | 1.1+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.6− |
| 2001 12 18 | 704 | 0.6+ | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 1.3+ |
| 2001 12 18 | 704 | 1.4− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.6+ |
| 2001 12 18 | 704 | 0.3− | 0.4+ | 2006 10 29 | 704 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2001 12 18 | 704 | 0.9− | 0.2− | 2006 10 29 | 704 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.1− |

**2001 VQ$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.27834 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22607977 | $\omega$ | 159.05721 | | +0.66246984 | | −0.74456401 |
| $a$ | 2.6686703 | $\Omega$ | 249.35530 | | +0.67418088 | | +0.64045856 |
| $e$ | 0.2426286 | $i$ | 5.03989 | | +0.32651777 | | +0.18824791 |
| $P$ | 4.36 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.3− | 0.2+ | 2001 11 19 | 704 | 0.5+ | 0.4− | 2001 12 15 | 704 | 0.4− | 0.4+ |
| 1998 02 23 | 691 | 0.0 | 0.6− | 2001 11 19 | 704 | 1.1+ | 0.8− | 2001 12 15 | 704 | 0.0 | 0.2− |
| 1998 02 23 | 691 | 0.1+ | 0.3− | 2001 11 19 | 704 | 0.5+ | 0.9− | 2001 12 15 | 704 | 0.5− | 0.7− |
| 2001 10 26 | 644 | 0.6− | 0.4− | 2001 11 19 | 704 | 0.4+ | 0.4− | 2001 12 18 | 704 | 1.0− | 0.1− |
| 2001 10 26 | 644 | 0.5− | 0.0 | 2001 11 19 | 704 | 1.0+ | 0.3− | 2001 12 18 | 704 | 0.6− | 0.8− |
| 2001 10 26 | 644 | 0.4− | 0.1+ | 2001 11 21 | 704 | 0.3+ | 0.6+ | 2001 12 18 | 704 | 1.2− | 0.5− |
| 2001 11 09 | 644 | 0.7+ | 0.8+ | 2001 11 21 | 704 | 0.6+ | 0.0 | 2001 12 18 | 704 | 0.7− | 0.5− |
| 2001 11 09 | 644 | 0.3+ | 1.3+ | 2001 11 21 | 704 | 0.5+ | 0.3+ | 2001 12 18 | 704 | 0.6− | 0.5− |
| 2001 11 09 | 644 | 0.1+ | 1.9+ | 2001 11 21 | 704 | 0.4+ | 0.1+ | 2002 01 13 | 291 | 0.2+ | 0.5+ |
| 2001 11 12 | 704 | 0.7− | 0.6− | 2001 11 21 | 704 | 0.2+ | 0.4+ | 2002 01 13 | 291 | 0.2+ | 0.4+ |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2001 11 24 | 704 | 0.1− | 1.6− | 2002 01 13 | 291 | 0.2+ | 0.6+ |
| 2001 11 12 | 704 | 0.2− | 0.1− | 2001 11 24 | 704 | 0.1+ | 1.0− | 2005 08 26 | 644 | 0.1+ | 0.4− |
| 2001 11 19 | 699 | (2.5+ | 1.0+) | 2001 11 24 | 704 | 1.2+ | 1.2− | 2005 08 26 | 644 | 0.1+ | 0.4− |
| 2001 11 19 | 699 | 0.2− | 0.2+ | 2001 11 24 | 704 | 0.2− | 1.0− | 2005 08 26 | 644 | 0.2+ | 0.4− |
| 2001 11 19 | 699 | 0.2− | 0.7+ | 2001 12 15 | 704 | 1.8− | 0.8+ | | | | |
| 2001 11 19 | 699 | 0.5+ | 0.4+ | 2001 12 15 | 704 | 0.7− | 0.1− | | | | |

**2001 VJ$_{111}$ = 2006 VY$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.20958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19276274 | $\omega$ | 331.46794 | | +0.91226139 | | −0.37990585 |
| $a$ | 2.9679323 | $\Omega$ | 51.68350 | | +0.40302882 | | +0.76577651 |
| $e$ | 0.1118040 | $i$ | 11.25512 | | +0.07312273 | | +0.51890065 |
| $P$ | 5.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.4+ | 0.4− | 2004 05 09 | 691 | 0.5+ | 0.3+ | 2006 11 12 | 703 | 0.5− | 0.5+ |
| 2001 11 12 | 704 | 0.4− | 0.5− | 2004 05 09 | 691 | 0.1− | 0.4+ | 2006 11 12 | 703 | 0.6− | 0.1− |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 13 | 644 | 0.1− | 0.6+ |
| 2001 11 12 | 704 | 0.9− | 0.7− | 2006 09 30 | G96 | 0.0 | 0.8− | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 704 | (0.2− | 1.6−) | 2006 09 30 | G96 | 0.3− | 0.5− | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 11 19 | 704 | 0.6− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.8− | 2006 11 16 | 703 | 0.5− | 0.1− |
| 2001 11 19 | 704 | 0.6− | 0.7− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.1+ | 0.9− |
| 2001 11 24 | 704 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.8− | 0.3+ |
| 2001 11 24 | 704 | 0.2+ | 0.5− | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.4− |
| 2001 11 24 | 704 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 1.0+ | 0.6+ |
| 2001 12 07 | 644 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 1.0+ | 0.1+ |
| 2001 12 07 | 644 | 0.5+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2001 12 07 | 644 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.1+ |
| 2001 12 14 | 644 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2001 12 14 | 644 | 0.5− | 0.2− | 2006 11 01 | 691 | 0.6− | 0.5+ | 2006 11 18 | 704 | 0.3+ | 1.3+ |
| 2001 12 14 | 644 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.5+ | 2006 11 18 | 704 | (0.4− | 2.6+) |
| 2001 12 17 | 704 | 0.0 | 0.8− | 2006 11 09 | 644 | 0.4+ | 0.2− | 2006 11 27 | 703 | 1.7− | 0.7+ |
| 2001 12 17 | 704 | 1.1+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.6+ | 0.0 |
| 2001 12 17 | 704 | (2.6+ | 0.2−) | 2006 11 11 | 703 | (1.7− | 0.3+) | 2006 11 27 | 703 | 0.6+ | 0.0 |
| 2001 12 18 | 704 | 1.0+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.8− | 2006 11 27 | 703 | 0.4+ | 0.8+ |
| 2001 12 18 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.7− | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2001 12 18 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 703 | (0.3− | 1.6+) | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2001 12 18 | 704 | 0.4− | 0.2+ | 2006 11 12 | 703 | 0.5+ | 0.5+ | 2006 12 01 | G96 | 0.4− | 0.1− |
| 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 11 12 | 703 | 0.7− | 0.0 | 2006 12 01 | G96 | 0.6+ | 0.7+ |

**2001 VN$_{111}$ = 2006 SL$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.40074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18459512 | $\omega$ | 5.11772 | | +0.99641119 | | −0.08464479 |
| $a$ | 3.0548455 | $\Omega$ | 359.73783 | | +0.07695919 | | +0.90637224 |
| $e$ | 0.3127599 | $i$ | 1.10595 | | +0.03524246 | | +0.41391378 |
| $P$ | 5.34 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.3+ | 0.4− | 2006 09 16 | 699 | 0.7− | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.1+ | 0.6− | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.2− | 0.5− | 2006 09 16 | 699 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.3− | 0.3− |
| 2001 10 21 | 704 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.8+ | 2006 10 01 | 703 | 0.2− | 0.3− |
| 2001 11 12 | 691 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.5− | 0.8+ | 2006 10 01 | 703 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.8+ | 1.3+ | 2006 10 01 | 703 | 0.6− | 0.1+ |
| 2001 11 12 | 691 | 0.2− | 0.8+ | 2006 09 17 | 704 | 0.4+ | 1.0+ | 2006 10 09 | 644 | 0.6− | 0.1+ |
| 2001 11 12 | 704 | (0.8− | 1.8−) | 2006 09 19 | 699 | 0.3+ | 1.3+ | 2006 10 09 | 644 | 0.6− | 0.3+ |
| 2001 11 12 | 704 | 1.0− | 0.4− | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2001 11 12 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.3+ | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2001 11 12 | 704 | 0.2+ | 0.5− | 2006 09 19 | 699 | 0.0 | 0.6+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 11 12 | 704 | 1.0− | 0.6− | 2006 09 20 | 704 | 0.7+ | 0.3− | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2001 11 19 | 704 | 0.7+ | 0.2− | 2006 09 20 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.5+ |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.9− | 0.3− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 11 19 | 704 | (2.0− | 0.4+) | 2006 09 20 | 704 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.7+ | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2006 09 24 | 106 | 1.0+ | 0.5− | 2006 10 16 | G96 | 0.4+ | 0.0 |
| 2001 11 21 | 704 | 0.9+ | 0.5+ | 2006 09 24 | 106 | 0.6+ | 0.7− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.8+ | 0.8+ | 2006 09 24 | 106 | 0.2− | 0.4− | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 2001 11 21 | 704 | 0.4+ | 0.9+ | 2006 09 24 | 106 | 0.5− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2001 12 10 | 704 | 0.7− | 0.4− | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2001 12 10 | 704 | 1.0− | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2001 12 10 | 704 | (0.5− | 1.7+) | 2006 09 25 | G96 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.4− |
| 2001 12 10 | 704 | 1.1− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.0+ |
| 2001 12 15 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 704 | (0.0 | 1.9−) | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2001 12 15 | 704 | 0.6− | 0.9+ | 2006 09 26 | 704 | 0.1− | 0.6− | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2001 12 15 | 704 | 0.7− | 0.1+ | 2006 09 26 | 704 | 0.6− | 1.3− | 2006 11 13 | G96 | 1.2+ | 0.6− |
| 2001 12 18 | 704 | 1.4+ | 0.3− | 2006 09 26 | 704 | 0.6+ | 0.6− | 2006 11 13 | G96 | 0.4+ | 1.2− |
| 2001 12 18 | 704 | 0.5− | 0.7+ | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.4− | 1.1− |
| 2001 12 18 | 704 | 1.0+ | 0.4− | 2006 09 27 | 704 | 0.9− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 2001 12 18 | 704 | 0.5+ | 0.8− | 2006 09 27 | 704 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2001 12 19 | 704 | (1.6+ | 0.2+) | 2006 09 27 | 704 | 0.8− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.8+ | 0.2+ | 2006 09 27 | 704 | 0.6− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 1.3− | 1.3− | 2006 09 28 | 704 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2006 09 16 | 699 | 0.1− | 0.7+ | 2006 09 28 | 704 | 0.1− | 0.2− | | | | |

**2001 VO$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.73900 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18229516 | $\omega$ | 93.83749 | | +0.94896630 | | +0.27440368 |
| $a$ | 3.0804863 | $\Omega$ | 250.28756 | | −0.31226562 | | +0.88660194 |
| $e$ | 0.1558847 | $i$ | 9.50478 | | +0.04419430 | | +0.37234341 |
| $P$ | 5.41 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.5− | 0.1+ | 2001 12 10 | 704 | 1.2+ | 0.3+ | 2006 08 12 | 644 | 0.1+ | 0.1+ |
| 2000 08 02 | 704 | 0.5+ | 0.0 | 2001 12 10 | 704 | (0.4+ | 1.5−) | 2006 08 12 | 644 | 0.1+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.3− | 0.9+ | 2001 12 15 | 704 | 0.1− | 0.2+ | 2006 08 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.2+ | 0.2− | 2001 12 15 | 704 | 0.4− | 0.1+ | 2006 09 16 | 703 | (2.0+ | 0.7+) |
| 2001 10 21 | 704 | 0.2+ | 0.8+ | 2001 12 15 | 704 | 0.4− | 0.9+ | 2006 09 16 | 703 | 0.5− | 0.6+ |
| 2001 10 21 | 704 | 0.0 | 0.1− | 2001 12 15 | 704 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.2+ |
| 2001 10 21 | 704 | 0.7+ | 0.6+ | 2001 12 18 | 704 | 0.4− | 1.3+ | 2006 09 16 | 703 | 0.4− | 0.9− |
| 2001 11 12 | 704 | 0.1+ | 1.0+ | 2001 12 18 | 704 | 0.6− | 1.3+ | 2006 09 28 | 703 | 0.7+ | 0.2− |
| 2001 11 12 | 704 | (0.0 | 1.9−) | 2001 12 18 | 704 | 0.8− | 1.1+ | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2001 11 12 | 704 | 0.8− | 0.8− | 2001 12 18 | 704 | (1.6− | 1.0+) | 2006 09 28 | 703 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2001 12 18 | 704 | (1.8− | 2.0+) | 2006 09 28 | 703 | 0.3+ | 0.7− |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2001 12 19 | 704 | (3.0− | 1.5+) | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2001 11 19 | 704 | 1.3− | 1.3− | 2001 12 19 | 704 | 0.4− | 0.6− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 1.3− | 1.2− | 2001 12 19 | 704 | (3.6− | 1.0+) | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2001 11 19 | 704 | (1.2− | 1.8−) | 2001 12 19 | 704 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2001 11 19 | 704 | (1.4− | 1.8−) | 2001 12 19 | 704 | (4.0− | 0.3−) | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2001 11 19 | 704 | (1.0− | 1.8−) | 2001 12 19 | 704 | (3.6− | 0.2−) | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | (1.9+ | 0.2+) | 2001 12 19 | 704 | 0.6− | 0.4− | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2001 11 21 | 704 | 1.2+ | 0.0 | 2001 12 19 | 704 | (3.9− | 0.7+) | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | (2.1+ | 0.3+) | 2001 12 19 | 704 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.8+ | 0.8+ |
| 2001 11 21 | 704 | (2.1+ | 0.1+) | 2002 01 17 | 691 | 0.1+ | 0.4− | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2001 11 21 | 704 | (2.1+ | 0.2−) | 2002 01 17 | 691 | 0.4+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.4− |
| 2001 12 10 | 704 | 0.7+ | 0.1+ | 2002 01 17 | 691 | 0.5+ | 0.0 | | | | |

### 2001 VZ$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.19978 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18025329 | $\omega$ | 344.64238 | | +0.84479381 | | −0.51370803 |
| $a$ | 3.1037060 | $\Omega$ | 47.26756 | | +0.50990998 | | +0.68801808 |
| $e$ | 0.2467668 | $i$ | 11.76410 | | +0.16221969 | | +0.51257700 |
| $P$ | 5.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.8+ | 0.1− | 2001 12 10 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 0.7− | 2001 12 10 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.6+ |
| 2001 10 21 | 704 | 0.0 | 0.5− | 2001 12 10 | 704 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 2001 10 21 | 704 | 0.7+ | 0.7− | 2001 12 10 | 704 | 0.7+ | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.7+ | 0.8+ | 2001 12 10 | 704 | 0.5− | 0.6+ | 2006 09 26 | 703 | 0.2+ | 0.4− |
| 2001 11 12 | 704 | 0.9+ | 0.3+ | 2001 12 10 | 704 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.3− |
| 2001 11 12 | 704 | 0.2+ | 1.1+ | 2001 12 17 | 704 | 0.6− | 0.5− | 2006 10 02 | 703 | 0.4+ | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.8+ | 2001 12 17 | 704 | 0.9+ | 0.4− | 2006 10 02 | 703 | 0.2− | 0.0 |
| 2001 11 12 | 704 | 0.8+ | 1.2+ | 2001 12 17 | 704 | 0.8+ | 0.3− | 2006 10 02 | 703 | 0.8− | 0.7− |
| 2001 11 19 | 704 | 0.4+ | 0.5− | 2001 12 17 | 704 | 0.0 | 0.3+ | 2006 10 02 | 703 | (0.6+ | 3.1−) |
| 2001 11 19 | 704 | 0.1+ | 0.3− | 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2001 11 19 | 704 | 0.3− | 0.3− | 2001 12 18 | 704 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2001 11 19 | 704 | 0.1− | 0.2− | 2001 12 18 | 704 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2001 11 24 | 704 | 1.0− | 0.0 | 2001 12 18 | 704 | (0.6+ | 1.6+) | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2001 11 24 | 704 | 1.1− | 0.5− | 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2001 11 24 | 704 | 0.8− | 0.2+ | 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2001 11 24 | 704 | 0.7− | 0.1+ | 2006 08 19 | 644 | 0.1− | 0.6+ | 2006 10 28 | 703 | 0.2− | 1.3+ |
| 2001 11 24 | 704 | 0.8− | 0.5− | 2006 08 19 | 644 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 0.3− | 0.5− |
| 2001 12 10 | 704 | 0.6− | 0.2− | 2006 08 19 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 1.0− | 0.0 |
| 2001 12 10 | 704 | 1.0− | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 10 28 | 703 | 0.4+ | 0.6+ |
| 2001 12 10 | 704 | 0.0 | 0.6− | 2006 09 18 | 703 | 0.5+ | 0.1− | | | | |

### 2001 VG$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.36841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17887663 | $\omega$ | 125.37608 | | +0.89649411 | | −0.35977787 |
| $a$ | 3.1196101 | $\Omega$ | 256.95801 | | +0.26862020 | | +0.90547941 |
| $e$ | 0.2185377 | $i$ | 15.39167 | | +0.35233719 | | +0.22509313 |
| $P$ | 5.51 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.6+ | 0.6+ | 2001 12 18 | 704 | 0.8+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.1− |
| 2001 11 12 | 704 | 0.8+ | 0.7− | 2001 12 18 | 704 | 0.5− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.2− | 0.7+ | 2001 12 18 | 704 | 1.4+ | 0.9− | 2006 09 16 | 703 | 0.1+ | 0.4− |
| 2001 11 12 | 704 | 1.1+ | 0.3+ | 2001 12 18 | 704 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.3+ | 0.1+ |
| 2001 11 12 | 704 | 0.3+ | 0.2+ | 2001 12 19 | 704 | 0.5− | 0.7+ | 2006 09 17 | 703 | 0.4− | 0.6− |
| 2001 11 19 | 704 | 0.5+ | 0.7− | 2001 12 19 | 704 | 0.5− | 0.0 | 2006 09 17 | 703 | 0.0 | 0.6− |
| 2001 11 19 | 704 | 0.2+ | 0.7− | 2001 12 19 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.4− | 0.4− | 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 09 17 | 703 | (1.3− | 3.6+) |
| 2001 11 24 | 704 | 0.6+ | 0.4+ | 2001 12 19 | 704 | 0.4+ | 0.0 | 2006 09 22 | 699 | 1.0+ | 0.4+ |
| 2001 11 24 | 704 | 0.3+ | 0.3+ | 2002 01 09 | 704 | 0.8− | 0.2− | 2006 09 22 | 699 | 0.7+ | 0.2− |
| 2001 11 24 | 704 | 0.2− | 0.8+ | 2002 01 09 | 704 | 0.9− | 0.4− | 2006 09 22 | 699 | 0.5+ | 0.1− |
| 2001 11 24 | 704 | 0.4+ | 0.3− | 2002 01 09 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 1.3− | 0.4+ |
| 2001 11 24 | 704 | 0.0 | 0.1+ | 2002 01 09 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.6+ |
| 2001 12 10 | 704 | 0.0 | 0.3+ | 2002 01 13 | 704 | 0.1− | 0.4− | 2006 09 28 | 703 | (0.9+ | 2.9+) |
| 2001 12 10 | 704 | 0.2+ | 0.0 | 2002 01 13 | 704 | 0.4− | 0.9+ | 2006 09 28 | 703 | 0.5− | 0.2+ |
| 2001 12 10 | 704 | 0.7+ | 0.2+ | 2002 01 13 | 704 | 0.5+ | 0.6− | 2006 10 20 | 703 | 0.8− | 1.8− |
| 2001 12 15 | 704 | 0.6− | 0.4− | 2002 01 13 | 704 | 0.2− | 0.2+ | 2006 10 20 | 703 | 0.3+ | 2.0+ |
| 2001 12 15 | 704 | 0.9− | 0.2− | 2002 01 13 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 703 | 0.5+ | 0.1+ |
| 2001 12 15 | 704 | 1.4− | 0.3− | 2002 01 15 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.1− | 0.1+ |
| 2001 12 15 | 704 | 1.0− | 0.5− | 2002 01 15 | 704 | 0.4+ | 0.1− | | | | |
| 2001 12 18 | 704 | 0.6− | 0.2+ | 2002 01 15 | 704 | 0.9− | 1.1− | | | | |

### 2001 VO$_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.20355 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19558656 | $\omega$ | 306.34923 | | +0.99914809 | | −0.01274038 |
| $a$ | 2.9392963 | $\Omega$ | 54.41295 | | +0.02816958 | | +0.90565224 |
| $e$ | 0.1168634 | $i$ | 2.76660 | | −0.03015910 | | +0.42382979 |
| $P$ | 5.04 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.2+ | 0.7− | 2001 12 18 | 291 | 0.4+ | 0.1− | 2006 11 15 | 703 | 1.1+ | 0.3− |
| 2001 11 12 | 704 | 1.2+ | 0.1+ | 2001 12 18 | 291 | 0.3+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.2+ |
| 2001 11 12 | 704 | 0.4+ | 0.5− | 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.5− | 0.3− |
| 2001 11 12 | 704 | 1.1+ | 0.9+ | 2001 12 19 | 704 | 0.5− | 0.2+ | 2006 11 15 | 703 | 0.9+ | 0.1− |
| 2001 11 17 | 291 | (1.1+ | 2.7−) | 2001 12 19 | 704 | 0.4− | 0.6+ | 2006 11 15 | 691 | 0.9− | 0.3− |
| 2001 11 17 | 291 | 0.1− | 0.1− | 2001 12 19 | 704 | 0.2− | 0.7+ | 2006 11 15 | 691 | 0.6− | 0.4+ |
| 2001 11 17 | 291 | 1.4− | 1.2+ | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2001 11 19 | 704 | 0.5+ | 1.1+ | 2005 11 06 | G96 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2001 11 19 | 704 | 0.2+ | 0.6− | 2005 11 06 | G96 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2001 11 19 | 704 | 0.5+ | 0.7− | 2005 11 06 | G96 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.4− |
| 2001 11 19 | 704 | 0.8+ | 0.1− | 2005 11 06 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.1+ | 0.5− |
| 2001 11 21 | 704 | 0.2+ | 1.0− | 2006 10 19 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2001 11 21 | 704 | (0.4+ | 2.1−) | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 1.4+ | 0.8− |
| 2001 11 21 | 704 | (0.5− | 1.6−) | 2006 10 19 | G96 | 0.5+ | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2001 11 21 | 704 | 1.4− | 0.6− | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 12 09 | 644 | 0.4− | 0.5+ | 2006 10 29 | G96 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2001 12 09 | 644 | 0.2− | 0.8+ | 2006 10 29 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2001 12 09 | 644 | 0.1− | 0.7+ | 2006 10 29 | G96 | 0.5+ | 0.6− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2001 12 17 | 291 | 0.4+ | 0.3− | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 291 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2001 12 17 | 291 | 0.3− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.4+ | 0.1+ |
| 2001 12 18 | 704 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.6− | 1.3+ |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 12 01 | 704 | 1.1+ | 0.8− |
| 2001 12 18 | 291 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.3− | 2006 12 01 | 704 | 0.7+ | 0.6+ |
| 2001 12 18 | 704 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.5− | 2006 12 01 | 704 | 0.6+ | 0.3− |
| 2001 12 18 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.3+ | 2006 12 01 | 704 | 0.6+ | 0.4+ |

### 2001 VA$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.38811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17870051 | $\omega$ | 124.16533 | | +0.89017879 | | −0.41868738 |
| $a$ | 3.1216594 | $\Omega$ | 261.17143 | | +0.33472268 | | +0.86852716 |
| $e$ | 0.1767472 | $i$ | 10.47625 | | +0.30909940 | | +0.26525734 |
| $P$ | 5.52 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.0 | 0.0 | 2001 12 18 | 704 | 1.0− | 0.3− | 2006 09 16 | 703 | 0.5− | 0.3+ |
| 2001 11 12 | 704 | (0.3− | 2.3+) | 2001 12 18 | 704 | 0.9− | 0.0 | 2006 09 16 | 703 | 0.8− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.1− | 0.2− | 2001 12 19 | 704 | 0.4− | 0.2− | 2006 09 16 | 703 | 0.0 | 0.2− |
| 2001 11 12 | 704 | (0.2+ | 1.8+) | 2001 12 19 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.6− | 0.1− | 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 09 22 | 699 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | (0.1− | 1.9+) | 2001 12 19 | 704 | 0.5− | 0.2− | 2006 09 22 | 699 | 0.4+ | 0.9+ |
| 2001 11 12 | 704 | 1.3− | 0.5+ | 2001 12 19 | 704 | 0.7− | 0.6+ | 2006 09 22 | 699 | 1.0− | 0.4+ |
| 2001 11 12 | 704 | (0.4+ | 3.0+) | 2001 12 24 | 291 | 0.5+ | 0.3− | 2006 09 22 | 699 | 0.2+ | 0.0 |
| 2001 11 12 | 704 | 1.3− | 0.0 | 2001 12 24 | 291 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.5− | 0.1+ |
| 2001 11 12 | 704 | (0.3+ | 2.8+) | 2001 12 24 | 291 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.1− | 2002 01 13 | 704 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.4+ | 0.4− |
| 2001 11 19 | 704 | 0.6+ | 0.2− | 2002 01 13 | 704 | 0.9+ | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.6+ |
| 2001 11 19 | 704 | 0.2+ | 0.2+ | 2002 01 13 | 704 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 0.7− | 0.1+ | 2002 01 13 | 704 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.0 | 0.1+ |
| 2001 11 24 | 704 | 1.4− | 0.2+ | 2002 01 15 | 704 | (0.3+ | 2.5+) | 2006 09 28 | 703 | 0.4− | 0.0 |
| 2001 11 24 | 704 | 0.8− | 0.2+ | 2002 01 15 | 704 | 0.2+ | 1.4+ | 2006 09 28 | 703 | 0.1+ | 0.3+ |
| 2001 11 24 | 704 | 0.2− | 0.6− | 2002 01 15 | 704 | 0.3+ | 0.9+ | 2006 10 04 | 703 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 1.3− | 0.4+ | 2006 08 29 | 699 | 0.3− | 0.4+ | 2006 10 04 | 703 | 0.4− | 0.1+ |
| 2001 12 15 | 704 | 1.4+ | 0.0 | 2006 08 29 | 699 | 0.3+ | 0.2+ | 2006 10 04 | 703 | 0.5+ | 0.7− |
| 2001 12 15 | 704 | 0.8+ | 0.1+ | 2006 08 29 | 699 | 0.3− | 0.1− | 2006 10 04 | 703 | 0.4− | 0.2− |
| 2001 12 15 | 704 | 0.9+ | 0.8− | 2006 08 29 | 699 | 0.4− | 0.4− | 2006 10 18 | 106 | 0.4+ | 0.1+ |
| 2001 12 17 | 691 | 0.9+ | 0.2− | 2006 09 06 | 644 | 0.3+ | 0.5+ | 2006 10 18 | 106 | 0.2− | 0.2− |
| 2001 12 17 | 691 | 0.4+ | 0.1− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 18 | 106 | 0.9+ | 1.2− |
| 2001 12 17 | 691 | 0.2+ | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 10 18 | 106 | 0.6+ | 1.3− |
| 2001 12 18 | 704 | 0.8− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.4+ |
| 2001 12 18 | 704 | 0.8− | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.8− | 0.1− | 2006 09 14 | 644 | 0.4+ | 0.1− | 2006 10 24 | 644 | 0.1− | 0.2+ |

**2001 VW$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.96200 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18203313 | $\omega$ | 97.45262 | | +0.98656948 | −0.08801772 | |
| $a$ | 3.0834419 | $\Omega$ | 267.66798 | | +0.02792383 | +0.92087949 | |
| $e$ | 0.1025177 | $i$ | 7.91554 | | +0.16093764 | +0.37978131 | |
| $P$ | 5.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.0 | 0.8− | 2001 12 18 | 704 | 0.7+ | 0.3− | 2006 10 17 | 703 | (1.7− | 0.6+) |
| 2001 11 12 | 704 | 0.7− | 0.5− | 2001 12 18 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2001 11 12 | 704 | 0.3− | 1.4+ | 2001 12 18 | 704 | 0.3+ | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.6+ | 0.5− |
| 2001 11 19 | 704 | 0.5− | 0.3+ | 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 11 19 | 704 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2001 11 19 | 704 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2001 12 15 | 704 | 0.2− | 0.6− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 31 | 703 | 0.1+ | 0.3− |
| 2001 12 15 | 704 | 0.0 | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 703 | (0.5+ | 1.9−) |
| 2001 12 15 | 704 | 0.6+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.6+ | 2006 10 31 | 703 | 1.0− | 0.0 |
| 2001 12 15 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 10 31 | 703 | 0.6+ | 1.3− |

**2001 VD$_{120}$ = 2001 YU$_{156}$**

Id. Minor Planet Center (d, *MPO* 34060)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.10819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19212113 | $\omega$ | 9.10050 | | +0.85668175 | −0.51481106 | |
| $a$ | 2.9745365 | $\Omega$ | 21.97854 | | +0.46762099 | +0.74831640 | |
| $e$ | 0.0970080 | $i$ | 5.00465 | | +0.21777741 | +0.41832062 | |
| $P$ | 5.13 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | (0.3+ | 2.5−) | 2001 12 14 | 644 | 0.4− | 0.3+ | 2006 11 15 | 704 | 0.4+ | 0.5+ |
| 2001 10 21 | 704 | (0.5− | 2.1−) | 2001 12 14 | 644 | 0.4− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | (0.3− | 1.9−) | 2001 12 18 | 704 | 0.2+ | 0.7− | 2006 11 16 | 691 | 0.1+ | 0.4− |
| 2001 11 12 | 704 | 0.1− | 0.0 | 2001 12 18 | 704 | 0.2+ | 0.7− | 2006 11 16 | 691 | 0.2+ | 0.4− |
| 2001 11 12 | 704 | 0.3− | 0.2+ | 2001 12 18 | 704 | 0.8+ | 0.7− | 2006 11 16 | 704 | (0.9− | 1.8+) |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2001 12 18 | 704 | 0.5+ | 0.2− | 2006 11 16 | 704 | 0.8− | 1.3+ |
| 2001 11 19 | 704 | 0.1+ | 0.3− | 2001 12 18 | 704 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.3− |
| 2001 11 19 | 704 | 0.5+ | 0.1− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 0.4− | 0.3− | 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.9+ |
| 2001 11 19 | 704 | 0.2+ | 0.6− | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.1− | 0.5− |
| 2001 11 24 | 704 | 0.1− | 0.8+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2001 11 24 | 704 | 0.3− | 1.0− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 11 24 | 704 | 1.3+ | 1.2+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2001 11 24 | 704 | (1.5− | 1.6+) | 2006 11 11 | 703 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.5+ | 1.1+ |
| 2001 11 24 | 704 | 0.7+ | 1.2+ | 2006 11 11 | 703 | 1.0+ | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.4− |
| 2001 12 14 | 644 | 1.0− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.4− | 2006 11 22 | 704 | 1.2− | 0.4+ |
| 2001 12 14 | 644 | 0.6− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.3− | 0.7+ |
| 2001 12 14 | 644 | 0.3− | 0.3+ | 2006 11 15 | 704 | (1.7+ | 0.3−) | 2006 11 22 | 704 | 0.8− | 0.1− |
| 2001 12 14 | 644 | 0.5− | 0.3+ | 2006 11 15 | 704 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.5+ |

**2001 VS$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.17438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36868076 | $\omega$ | 109.96765 | | +0.90153756 | −0.28264271 | |
| $a$ | 1.9262045 | $\Omega$ | 267.58061 | | +0.15604230 | +0.91859841 | |
| $e$ | 0.0939180 | $i$ | 19.14287 | | +0.40358497 | +0.27620654 | |
| $P$ | 2.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 1.0+ | 0.3+ | 2001 12 14 | 704 | (1.7− | 0.0 ) | 2006 09 12 | A74 | 0.1− | 0.3+ |
| 2001 10 15 | 704 | 0.2− | 0.9+ | 2001 12 14 | 704 | (1.9− | 0.4+) | 2006 09 12 | A74 | 0.3− | 0.3+ |
| 2001 10 15 | 704 | 0.2+ | 1.4+ | 2001 12 17 | 704 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | (0.7+ | 1.9+) | 2001 12 17 | 704 | 0.3+ | 0.1− | 2006 09 18 | 704 | 0.5+ | 0.2− |
| 2001 11 12 | 704 | 0.5+ | 0.6+ | 2001 12 17 | 704 | 0.1+ | 0.1− | 2006 09 18 | 704 | 0.7− | 0.2− |
| 2001 11 12 | 704 | 1.1+ | 0.6− | 2001 12 17 | 704 | 0.1− | 0.4− | 2006 09 18 | 704 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.9+ | 0.4+ | 2001 12 17 | 704 | 0.1− | 0.3− | 2006 09 29 | 703 | 1.2+ | 0.8+ |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2001 12 17 | 704 | 0.5− | 0.0 | 2006 09 29 | 703 | 0.1− | 0.9+ |
| 2001 11 19 | 704 | 0.5− | 0.2− | 2001 12 17 | 704 | 0.1− | 0.1+ | 2006 09 29 | 703 | 0.0 | 0.9+ |
| 2001 11 19 | 704 | 0.5− | 0.4− | 2001 12 17 | 704 | 0.1− | 0.7− | 2006 09 29 | 703 | 0.2+ | 0.3+ |
| 2001 11 19 | 704 | 0.1− | 0.5− | 2001 12 19 | 704 | 0.6− | 0.5+ | 2006 10 03 | 704 | 0.9+ | 0.2+ |
| 2001 11 19 | 704 | 0.2− | 0.3+ | 2001 12 19 | 704 | 0.7− | 0.5+ | 2006 10 03 | 704 | 0.3+ | 0.8− |
| 2001 11 19 | 704 | 0.2− | 0.4+ | 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 10 03 | 704 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.1+ | 0.2+ | 2001 12 19 | 704 | 0.8− | 0.1− | 2006 10 03 | 704 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.2− | 0.3− | 2002 01 09 | 704 | 0.5− | 0.1+ | 2006 10 23 | 703 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2002 01 09 | 704 | 0.1+ | 0.3− | 2006 10 23 | 703 | 0.6+ | 0.6− |
| 2001 11 21 | 704 | 0.1+ | 0.5− | 2002 01 09 | 704 | 0.7− | 0.1+ | 2006 10 23 | 703 | (0.6+ | 1.6+) |
| 2001 11 21 | 704 | 0.8− | 0.3− | 2002 01 09 | 704 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.2− | 0.7− |
| 2001 12 10 | 704 | 0.6− | 1.1+ | 2002 01 09 | 704 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2001 12 10 | 704 | 0.3+ | 0.6+ | 2005 03 02 | 704 | 0.6− | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.3− |
| 2001 12 10 | 704 | 0.3+ | 0.9− | 2005 03 02 | 704 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.2− | 0.3− |
| 2001 12 11 | 704 | 0.5+ | 0.8− | 2005 03 02 | 704 | 0.1− | 1.0+ | 2006 11 16 | 703 | 0.4− | 0.1+ |
| 2001 12 11 | 704 | 0.8+ | 0.3− | 2005 03 02 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 703 | 1.3− | 0.3+ |
| 2001 12 11 | 704 | 1.2+ | 0.4− | 2005 03 02 | 704 | 0.8+ | 0.1+ | 2006 11 22 | 703 | 1.0− | 0.1+ |
| 2001 12 11 | 704 | 1.2+ | 0.6− | 2006 09 12 | A74 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.1− | 0.0 |
| 2001 12 14 | 704 | (1.5− | 0.3−) | 2006 09 12 | A74 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.3− | 0.5+ |

**2001 VW$_{122}$ = 2006 VM$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.78550 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17525339 | $\omega$ | 26.25111 | | +0.17581142 | −0.90311704 | |
| $a$ | 3.1624604 | $\Omega$ | 56.14223 | | +0.79966991 | −0.10106824 | |
| $e$ | 0.1430054 | $i$ | 28.14798 | | +0.57412401 | +0.41733060 | |
| $P$ | 5.62 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 1.0− | 0.4− | 2001 12 16 | 699 | 0.6+ | 1.1− | 2006 10 28 | 703 | 0.4+ | 0.1+ |
| 2001 10 25 | 704 | 0.5− | 0.1+ | 2001 12 16 | 699 | 0.6+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2001 10 25 | 704 | 0.4+ | 0.1+ | 2001 12 16 | 699 | 0.7− | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.4+ |
| 2001 11 08 | 704 | 0.5− | 0.6− | 2001 12 16 | 699 | 0.5− | 0.3− | 2006 11 13 | 703 | 0.3− | 0.4− |
| 2001 11 08 | 704 | 0.2− | 0.2− | 2001 12 23 | 704 | 0.5− | 0.3− | 2006 11 13 | 703 | 0.4+ | 0.5+ |
| 2001 11 08 | 704 | (0.9− | 1.7−) | 2001 12 23 | 704 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.7+ | 0.8− |
| 2001 11 08 | 704 | 0.1− | 0.5− | 2001 12 23 | 704 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.5− |
| 2001 11 11 | 699 | 0.5− | 0.1+ | 2001 12 23 | 704 | 0.4− | 1.0+ | 2006 11 14 | 644 | 0.0 | 0.7+ |
| 2001 11 11 | 699 | 0.8+ | 0.9− | 2001 12 23 | 704 | 0.0 | 0.1+ | 2006 11 14 | 644 | 0.1− | 0.5+ |
| 2001 11 11 | 699 | (1.7− | 0.3+) | 2003 04 09 | 644 | 0.2+ | 0.4+ | 2006 11 14 | 644 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 699 | 0.1+ | 0.3− | 2003 04 09 | 644 | 0.7+ | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 699 | 1.1+ | 0.7− | 2003 04 09 | 644 | 0.5+ | 0.7+ | 2006 11 17 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.1− | 2006 11 17 | 644 | 0.1− | 0.4+ |
| 2001 11 17 | 699 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2001 11 17 | 699 | 0.6− | 1.0+ | 2006 10 17 | 703 | 0.7− | 0.2− | 2006 11 19 | 703 | 0.3− | 0.8+ |
| 2001 11 25 | 446 | 1.0+ | 1.0− | 2006 10 17 | 703 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.2+ |
| 2001 11 25 | 446 | 0.9+ | 0.9+ | 2006 10 28 | 703 | 0.8− | 0.1+ | 2006 11 19 | 703 | 0.9− | 0.6− |

**2001 VZ$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.95195 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18618960 | $\omega$ | 15.16358 | | +0.85870779 | −0.51167551 | |
| $a$ | 3.0373798 | $\Omega$ | 15.70841 | | +0.45856971 | +0.74243497 | |
| $e$ | 0.1636324 | $i$ | 6.03079 | | +0.22876790 | +0.43241009 | |
| $P$ | 5.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 644 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 11 10 | 644 | 0.4− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.5+ |
| 2001 11 10 | 644 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.4+ | 0.0 | 2006 09 14 | 703 | (0.5+ | 1.8−) | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.5+ | 0.2− | 2006 09 14 | 703 | 0.6− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.5− |
| 2001 11 12 | 704 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.4− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.7− | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2001 11 12 | 704 | 0.4+ | 0.7− | 2006 09 14 | 703 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2001 11 24 | 704 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.6− | 0.0 |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2001 11 24 | 704 | (1.7+ | 0.7−) | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.7− | 0.1− |
| 2001 11 24 | 704 | 1.0+ | 0.6+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2001 12 10 | 704 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.9+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 12 10 | 704 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 12 10 | 704 | 0.8− | 0.1− | 2006 09 18 | 699 | 1.0+ | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2001 12 10 | 704 | 1.0− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.7− | 0.3− |
| 2001 12 20 | 644 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2001 12 20 | 644 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2001 12 20 | 644 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.2+ |
| 2006 09 14 | 703 | 0.8− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 11 15 | G96 | 0.6+ | 0.1+ |

**2001 VT$_{124}$ = 2006 VQ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.67625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18780799 | $\omega$ | 263.51336 | | +0.93118645 | +0.31705863 | |
| $a$ | 3.0199054 | $\Omega$ | 77.88754 | | −0.21663719 | +0.87820495 | |
| $e$ | 0.2224600 | $i$ | 10.60288 | | −0.29318958 | +0.35809202 | |
| $P$ | 5.25 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.1− | 0.0 | 2001 12 12 | 644 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3− |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2001 12 12 | 644 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.3+ | 0.3− |
| 2001 11 09 | 704 | 0.8− | 0.3+ | 2001 12 12 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2001 11 18 | 691 | 0.4+ | 0.1+ | 2001 12 18 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2001 11 18 | 691 | 0.4+ | 0.4− | 2001 12 18 | 691 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.5− | 1.1− |
| 2001 11 18 | 691 | 0.7+ | 0.0 | 2001 12 18 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2001 11 20 | 704 | 0.9− | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.1+ |
| 2001 11 20 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.9− | 0.1− | 2006 11 14 | 704 | 0.5+ | 0.8+ |
| 2001 11 20 | 704 | 0.7− | 1.3+ | 2006 10 16 | 703 | 0.1− | 0.7+ | 2006 11 14 | 704 | 1.0+ | 1.0+ |
| 2001 11 20 | 704 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.3− | 1.1+ |
| 2001 11 21 | 704 | 0.0 | 0.4− | 2006 11 01 | 703 | 0.9+ | 0.2− | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.4− | 0.3+ | 2006 11 01 | 703 | 0.4− | 0.7− | 2006 11 20 | 704 | 0.1+ | 1.0+ |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2006 11 01 | 703 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.5+ | 0.7+ | 2006 11 01 | 703 | 1.1− | 0.6− | 2006 11 20 | 704 | 0.6+ | 0.4+ |
| 2001 11 21 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.3+ | 0.3− |

**2001 VA$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.05559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18120660 | $\omega$ | 84.82428 | | +0.92201662 | −0.36794859 | |
| $a$ | 3.0928109 | $\Omega$ | 296.71957 | | +0.27975642 | +0.84820678 | |
| $e$ | 0.1655990 | $i$ | 7.74749 | | +0.26762230 | +0.38099749 | |
| $P$ | 5.44 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2+ | 0.0 | 2001 11 25 | 941 | 0.8+ | 0.1− | 2002 01 14 | 704 | 0.2+ | 0.6+ |
| 2001 11 11 | 704 | 0.6− | 0.4+ | 2001 12 09 | 704 | 0.6+ | 0.1− | 2002 01 14 | 704 | 0.8+ | 0.4+ |
| 2001 11 11 | 704 | 0.3+ | 0.9+ | 2001 12 09 | 704 | 0.8+ | 0.4− | 2002 01 14 | 704 | 1.3+ | 0.2− |
| 2001 11 11 | 704 | 0.3+ | 1.0+ | 2001 12 09 | 704 | 0.6− | 1.0− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2001 11 11 | 704 | 1.1+ | 0.7+ | 2001 12 09 | 704 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 11 24 | 704 | 1.0− | 0.0 | 2001 12 09 | 704 | 0.4− | 0.6− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2001 11 24 | 704 | 0.8− | 0.6− | 2001 12 17 | 704 | 0.5+ | 0.9+ | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2001 11 24 | 704 | 1.1+ | 0.5− | 2001 12 17 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.4+ |
| 2001 11 24 | 704 | 0.4− | 0.9− | 2001 12 17 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2001 11 24 | 704 | 0.6− | 0.8− | 2001 12 17 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.9− | 0.3− |
| 2001 11 25 | 941 | (2.0− | 0.3+) | 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.7− |
| 2001 11 25 | 941 | 1.0− | 0.5− | 2001 12 22 | 704 | 0.6− | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2001 11 25 | 941 | 0.8− | 0.7− | 2001 12 22 | 704 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.4− | 0.3+ |
| 2001 11 25 | 941 | 0.7− | 0.6− | 2001 12 22 | 704 | (3.4− | 0.3−) | 2006 10 31 | 703 | 0.2+ | 0.4− |
| 2001 11 25 | 941 | 1.1− | 0.7+ | 2001 12 22 | 704 | 0.4− | 0.0 | 2006 10 31 | 703 | 0.4+ | 0.2+ |
| 2001 11 25 | 941 | 1.0+ | 0.6+ | 2001 12 22 | 704 | 0.8− | 0.3− | 2006 10 31 | 703 | 0.7+ | 0.3− |
| 2001 11 25 | 941 | 0.4− | 0.5− | 2002 01 14 | 704 | 0.8+ | 0.6+ | 2006 10 31 | 703 | 0.3+ | 0.1− |

**2001 VF$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.08653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19272029 | $\omega$ | 291.58568 | | −0.98620074 | +0.07650066 | |
| $a$ | 2.9683681 | $\Omega$ | 253.04144 | | −0.02018865 | −0.93578720 | |
| $e$ | 0.0334465 | $i$ | 8.82942 | | −0.16431836 | −0.34416562 | |
| $P$ | 5.11 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.6+ | 0.2− | 2001 12 12 | 644 | 0.4+ | 0.4+ | 2001 12 18 | 691 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2001 12 12 | 644 | 0.0 | 0.5+ | 2001 12 18 | 691 | 0.1− | 1.8− |
| 2001 11 12 | 704 | 0.0 | 0.0 | 2001 12 17 | 704 | (2.3+ | 0.2+) | 2006 11 14 | 691 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.4+ | 1.3+ | 2001 12 17 | 704 | 0.1+ | 1.2+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.1+ | 0.5+ | 2001 12 17 | 704 | 0.4+ | 1.0+ | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2001 11 17 | 291 | 0.1− | 0.3− | 2001 12 17 | 704 | 0.3− | 1.3+ | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2001 11 17 | 291 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.1− | 1.1+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2001 11 17 | 291 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.5− | 1.8+ | 2006 11 18 | 691 | 0.3+ | 0.1− |
| 2001 12 12 | 644 | 0.1+ | 0.3+ | 2001 12 18 | 691 | 0.1− | 0.0 | | | | |

**2001 VG$_{125}$ = 2006 UQ$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.72919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18286884 | $\omega$ | 331.02218 | | +0.78493674 | −0.60244162 | |
| $a$ | 3.0740404 | $\Omega$ | 66.74631 | | +0.59447377 | +0.66650255 | |
| $e$ | 0.2872588 | $i$ | 9.06153 | | +0.17457160 | +0.43913373 | |
| $P$ | 5.39 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.1− | 0.8− | 2002 01 08 | 704 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2001 11 12 | 704 | 0.5− | 0.3− | 2002 01 08 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2001 11 12 | 704 | 0.5+ | 0.0 | 2003 03 23 | 645 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2001 11 12 | 704 | 0.1− | 0.6− | 2003 03 23 | 645 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.6− | 0.6+ |
| 2001 11 24 | 704 | 0.1− | 0.3− | 2006 09 29 | 699 | 1.1− | 0.3− | 2006 11 13 | 703 | 0.3− | 0.1− |
| 2001 11 24 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 699 | 1.1+ | 0.2− | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2001 11 24 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.8− | 0.4+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2001 11 24 | 704 | 0.3+ | 0.5+ | 2006 09 29 | 699 | 0.9+ | 0.8− | 2006 11 13 | 703 | 0.4− | 0.8+ |
| 2001 12 13 | 704 | 0.2− | 1.1− | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 14 | 704 | (0.2+ | 1.8+) |
| 2001 12 13 | 704 | (0.1− | 1.8−) | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 14 | 704 | 0.1− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 704 | 0.4− | 1.1− | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.9+ | 1.0+ |
| 2001 12 13 | 704 | (1.2− | 1.9−) | 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 17 | 704 | 0.5− | 0.5+ |
| 2001 12 18 | 644 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.5+ | 1.3+ |
| 2001 12 18 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.4− | 0.6+ |
| 2001 12 18 | 644 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2001 12 22 | 704 | (1.6− | 0.3+) | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.0 | 0.7+ |
| 2001 12 22 | 704 | 0.0 | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2001 12 22 | 704 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.1− |
| 2001 12 22 | 704 | 0.8+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.5+ | 0.9+ |
| 2002 01 08 | 704 | 0.6− | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.5− | | | | |
| 2002 01 08 | 704 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.2− | | | | |

### 2001 VP$_{125}$ = 2006 TS$_{105}$ = 2006 UQ$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.10656 | | (2000.0) | | | |
| $n$ | 0.17637275 | $\omega$ | 132.87148 | | +0.97078786 | −0.18586955 |
| $a$ | 3.1490658 | $\Omega$ | 238.38149 | | +0.13273464 | +0.94282885 |
| $e$ | 0.0769451 | $i$ | 10.26406 | | +0.19988106 | +0.27663381 |
| $P$ | 5.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 691 | 0.2− | 0.3− | 2001 11 19 | 704 | (1.7+ | 1.1+) | 2006 10 18 | 691 | 0.1− | 0.2− |
| 2001 11 11 | 691 | 0.7− | 0.1+ | 2001 11 19 | 704 | (1.7+ | 1.1+) | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2001 11 11 | 691 | 0.1− | 0.2+ | 2001 12 08 | 691 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2001 11 13 | 049 | 0.2− | 0.4− | 2001 12 08 | 691 | 0.8+ | 0.1+ | 2006 10 20 | 691 | 0.5+ | 0.5+ |
| 2001 11 13 | 049 | 0.3− | 0.3− | 2001 12 08 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2− |
| 2001 11 13 | 049 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.6+ | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 1.5+ | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2001 11 19 | 704 | 1.2+ | 0.8+ | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 10 22 | 691 | 0.0 | 0.1− |

### 2001 VZ$_{125}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.64295 | | (2000.0) | | | |
| $n$ | 0.17768487 | $\omega$ | 168.15409 | | +0.81648140 | −0.57483141 |
| $a$ | 3.1335436 | $\Omega$ | 227.07101 | | +0.52351191 | +0.77657768 |
| $e$ | 0.1493222 | $i$ | 4.23740 | | +0.24350237 | +0.25786809 |
| $P$ | 5.55 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 14 | 291 | 0.2− | 0.0 | 2001 12 10 | 291 | 0.1− | 0.4+ | 2006 09 16 | 699 | (1.9− | 0.8+) |
| 2001 11 14 | 291 | 0.5− | 0.1− | 2001 12 14 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 699 | 0.4− | 0.6+ |
| 2001 11 14 | 291 | 0.4− | 0.2− | 2001 12 14 | 704 | 0.5+ | 0.5− | 2006 09 16 | 699 | 0.8+ | 0.4− |
| 2001 11 19 | 699 | 0.0 | 1.4− | 2001 12 14 | 704 | 0.5+ | 0.4− | 2006 09 16 | 699 | 0.9+ | 0.1− |
| 2001 11 19 | 699 | 0.5+ | 0.1− | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.3+ |
| 2001 11 19 | 699 | 0.9− | 0.3− | 2006 08 20 | 691 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.6− | 0.1+ |
| 2001 11 19 | 699 | 0.1− | 0.1+ | 2006 08 20 | 691 | 0.0 | 0.2− | 2006 09 19 | 703 | 1.0+ | 0.4− |
| 2001 11 20 | 704 | 0.8+ | 0.4+ | 2006 08 20 | 691 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.6− | 0.4+ |
| 2001 11 20 | 704 | 0.2− | 0.2− | 2006 08 27 | 699 | 1.4+ | 0.6+ | 2006 10 02 | 291 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.6+ | 1.1+ | 2006 08 27 | 699 | 0.5− | 0.4− | 2006 10 02 | 291 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 1.0+ | 0.9− | 2006 08 27 | 699 | 0.2− | 0.8+ | 2006 10 02 | 291 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.4− | 2006 08 27 | 699 | (3.2− | 0.3−) | 2006 10 03 | 291 | 0.5− | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.6− | 0.7− | 2006 10 03 | 291 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 0.4− | 2006 08 29 | 703 | 0.4+ | 0.3+ | 2006 10 03 | 291 | 0.2− | 0.5+ |
| 2001 11 21 | 704 | 0.3+ | 0.5− | 2006 08 29 | 703 | 0.9+ | 1.1+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.4+ | 0.3− | 2006 08 29 | 703 | 1.4+ | 1.1− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.4+ | 0.8− | 2006 08 29 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.9+ | 0.6− |
| 2001 12 10 | 291 | 0.1+ | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.7− |
| 2001 12 10 | 291 | 0.1− | 0.7+ | 2006 08 29 | 691 | 0.0 | 0.0 | | | | |

### 2001 VD$_{126}$ = 2006 TT$_{100}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.57534 | | (2000.0) | | | |
| $n$ | 0.19023267 | $\omega$ | 156.99367 | | +0.90727905 | −0.40221796 |
| $a$ | 2.9941897 | $\Omega$ | 227.31902 | | +0.35519766 | +0.88920801 |
| $e$ | 0.1186623 | $i$ | 9.61130 | | +0.22512072 | +0.21801336 |
| $P$ | 5.18 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 14 | 691 | 0.2− | 0.0 | 2001 12 14 | 704 | 1.3− | 0.0 | 2006 10 24 | 198 | 0.1− | 0.1+ |
| 2001 11 14 | 691 | 0.1+ | 0.0 | 2001 12 14 | 704 | 0.6− | 0.2+ | 2006 10 24 | 198 | 0.0 | 0.2+ |
| 2001 11 14 | 691 | 0.0 | 0.1+ | 2001 12 14 | 704 | (2.2− | 0.9+) | 2006 10 24 | 198 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.9+ | 0.7− | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | 1.1+ | 0.6+ | 2006 10 15 | 691 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | (0.4− | 1.6−) | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.5− | 0.1− | 2006 10 24 | 198 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 704 | 0.3+ | 0.3− | 2006 10 24 | 198 | 0.1− | 0.1+ | | | | |

### 2001 VM$_{126}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.80950 | | (2000.0) | | | |
| $n$ | 0.18446551 | $\omega$ | 277.83755 | | +0.85562543 | −0.51598247 |
| $a$ | 3.0562762 | $\Omega$ | 113.23388 | | +0.49067419 | +0.78348440 |
| $e$ | 0.2004237 | $i$ | 2.54678 | | +0.16475423 | +0.34628641 |
| $P$ | 5.34 | $H$ | 16.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 14 | 691 | 0.4+ | 0.0 | 2001 12 10 | 691 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2001 11 14 | 691 | 0.1+ | 0.0 | 2001 12 10 | 691 | 0.8− | 0.4− | 2006 10 16 | 703 | 0.1+ | 1.3+ |
| 2001 11 14 | 691 | 0.3+ | 0.2+ | 2001 12 17 | 704 | 1.4+ | 0.0 | 2006 10 16 | 703 | 1.6+ | 0.9+ |
| 2001 11 20 | 704 | 0.6− | 0.1+ | 2001 12 17 | 704 | 0.3+ | 0.5− | 2006 10 22 | 703 | 0.4− | 0.8− |
| 2001 11 20 | 704 | 0.0 | 1.1− | 2001 12 17 | 704 | 1.5+ | 1.2− | 2006 10 22 | 703 | 1.3− | 1.4− |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2001 12 17 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2001 12 17 | 704 | 1.1+ | 0.4− | 2006 10 22 | 703 | 0.2− | 1.3− |
| 2001 12 10 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.8+ | 1.9+ | | | | |

### 2001 VR$_{128}$ = 2006 UE$_{181}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.07753 | | (2000.0) | | | |
| $n$ | 0.19896495 | $\omega$ | 259.08519 | | +0.81167436 | −0.57552543 |
| $a$ | 2.9059290 | $\Omega$ | 135.95583 | | +0.57613579 | +0.76069731 |
| $e$ | 0.1799527 | $i$ | 8.25149 | | +0.09618881 | +0.30018342 |
| $P$ | 4.95 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.7− | 0.3− | 2001 11 11 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.7− | 0.6− |
| 2001 10 15 | 644 | 1.1− | 0.0 | 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.8− |
| 2001 10 15 | 644 | 0.3− | 0.3− | 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.8+ |
| 2001 10 23 | 644 | 0.1+ | 1.4+ | 2003 01 28 | 645 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 2001 10 23 | 644 | 0.2+ | 1.2+ | 2003 01 28 | 645 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.7− |
| 2001 10 23 | 644 | 0.3+ | 1.2+ | 2006 10 16 | 703 | 0.9+ | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.3− |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4− | 0.1+ | | | | |

### 2001 VD$_{129}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 112.63219 | | (2000.0) | | | |
| $n$ | 0.22411485 | $\omega$ | 124.41154 | | +0.59382982 | +0.80453768 |
| $a$ | 2.6842459 | $\Omega$ | 182.08765 | | −0.79601227 | +0.58578837 |
| $e$ | 0.1798711 | $i$ | 14.68397 | | −0.11717774 | +0.09783200 |
| $P$ | 4.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 645 | 0.1− | 0.1+ | 2004 04 26 | 691 | 0.3+ | 0.4+ | 2005 09 12 | 691 | 0.1+ | 0.0 |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2004 04 26 | 691 | 0.1+ | 0.1+ | 2005 09 12 | 691 | 0.1+ | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2005 08 29 | 691 | 0.2− | 0.4+ | 2005 09 27 | 691 | 0.2+ | 0.0 |
| 2001 11 12 | 645 | 0.1+ | 0.0 | 2005 08 29 | 691 | 0.2− | 0.3+ | 2005 09 27 | 691 | 0.3+ | 0.1− |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2005 08 29 | 691 | 0.0 | 0.3+ | 2005 09 27 | 691 | 0.2+ | 0.0 |
| 2001 11 21 | 645 | 0.1− | 0.0 | 2005 09 06 | 699 | 1.6− | 1.0− | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2004 03 16 | 691 | 0.2− | 0.0 | 2005 09 06 | 699 | 0.1+ | 0.9+ | 2005 10 27 | G96 | 0.1+ | 0.8− |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2005 09 06 | 699 | 0.2− | 1.0− | 2005 10 27 | G96 | 0.1+ | 0.4− |
| 2004 03 16 | 691 | 0.2− | 0.3− | 2005 09 06 | 699 | 0.2− | 0.5+ | 2005 10 27 | G96 | 0.1+ | 0.5− |
| 2004 04 26 | 691 | 0.0 | 0.3+ | 2005 09 12 | 691 | 0.1− | 0.1− | | | | |

### 2001 VV$_{132}$ = 1995 SE$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.06598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18584260 | $\omega$ | 208.34127 | | +0.90095290 | −0.43383678 | |
| $a$ | 3.0411596 | $\Omega$ | 177.32797 | | +0.42418783 | +0.87654357 | |
| $e$ | 0.0957359 | $i$ | 10.30247 | | +0.09137042 | +0.20846348 | |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.3− | 0.2+ | 2001 11 21 | 608 | 0.0 | 0.6+ | 2006 09 16 | 699 | 0.4− | 0.3− |
| 1995 09 18 | 691 | 0.4− | 0.1+ | 2001 11 21 | 608 | 0.4− | 0.1− | 2006 09 16 | 699 | 1.2+ | 0.9+ |
| 1995 09 18 | 691 | 0.2− | 0.2+ | 2001 12 08 | 699 | (2.2+ | 0.2−) | 2006 09 16 | 699 | (1.6+ | 0.2−) |
| 1995 09 23 | 691 | 0.2+ | 0.2+ | 2001 12 08 | 699 | 0.0 | 0.5− | 2006 09 16 | 699 | 0.1− | 1.0+ |
| 1995 09 23 | 691 | 0.2+ | 0.4+ | 2001 12 08 | 699 | 0.1+ | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.3− |
| 1995 09 23 | 691 | 0.3+ | 0.3+ | 2001 12 08 | 699 | 0.6+ | 0.8+ | 2006 10 12 | 644 | 0.4+ | 0.3− |
| 2000 08 21 | 699 | 0.7− | 0.2+ | 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.4− |
| 2000 08 21 | 699 | 0.9− | 1.1+ | 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2000 08 21 | 699 | 0.5− | 0.2+ | 2001 12 19 | 704 | 0.7+ | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.7− |
| 2000 08 21 | 699 | 0.8− | 0.1+ | 2001 12 19 | 704 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.1+ | 1.0− |
| 2000 09 03 | 645 | 0.1+ | 0.0 | 2001 12 19 | 704 | 0.1+ | 0.8− | 2006 10 16 | 703 | 0.2− | 1.3− |
| 2000 09 03 | 645 | 0.1+ | 0.0 | 2003 02 02 | 699 | 0.9+ | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2001 10 17 | 704 | (1.8+ | 1.8+) | 2003 02 02 | 699 | 0.3− | 1.2+ | 2006 10 21 | 644 | 0.7+ | 0.1− |
| 2001 10 17 | 704 | (0.3+ | 2.2+) | 2003 02 02 | 699 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.5− |
| 2001 10 17 | 704 | 0.1− | 0.9+ | 2003 02 02 | 699 | (0.4− | 2.0+) | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.9− | 2003 03 07 | 704 | 1.2+ | 1.3+ | 2006 11 13 | 703 | 0.9− | 1.1+ |
| 2001 11 13 | 608 | 0.6− | 0.5− | 2003 03 07 | 704 | 0.5− | 1.0+ | 2006 11 13 | 703 | 0.7− | 1.4− |
| 2001 11 13 | 608 | 0.5− | 0.9− | 2003 03 07 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 703 | 0.1+ | 0.9+ |
| 2001 11 13 | 608 | 0.6− | 1.0− | 2003 03 07 | 704 | 0.2− | 0.5− | | | | |
| 2001 11 21 | 608 | 0.0 | 0.2+ | 2003 03 07 | 704 | 0.1− | 0.7+ | | | | |

### 2001 VW$_{132}$ = 2000 QG$_{157}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.05378 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17866901 | $\omega$ | 77.60824 | | +0.99063740 | +0.00389218 | |
| $a$ | 3.1220263 | $\Omega$ | 282.05111 | | −0.06149755 | +0.90515250 | |
| $e$ | 0.0654762 | $i$ | 8.02118 | | +0.12188351 | +0.42506918 | |
| $P$ | 5.52 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.0 | 0.1+ | 2001 12 07 | 644 | 0.3+ | 0.9+ | 2006 09 20 | 699 | 0.4− | 0.7+ |
| 2000 08 31 | 704 | 0.8− | 0.6− | 2001 12 18 | 704 | 0.5+ | 1.0− | 2006 09 28 | 703 | 0.4+ | 0.7− |
| 2000 08 31 | 704 | 0.8− | 0.0 | 2001 12 18 | 704 | 0.6+ | 1.3− | 2006 09 28 | 703 | 0.1+ | 0.5− |
| 2000 08 31 | 704 | 0.7+ | 1.5+ | 2001 12 18 | 704 | 0.5+ | 1.4− | 2006 09 28 | 703 | (0.0 | 2.2−) |
| 2000 09 03 | 704 | 0.1+ | 0.6+ | 2001 12 18 | 704 | 0.9+ | 1.2− | 2006 09 28 | 703 | (2.2+ | 2.6−) |
| 2000 09 03 | 704 | 1.2− | 0.4+ | 2001 12 18 | 704 | 0.4− | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2000 09 03 | 704 | 0.2− | 0.6+ | 2001 12 18 | 704 | 0.3− | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2000 09 03 | 704 | 1.1+ | 0.2− | 2001 12 18 | 704 | 0.1− | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2001 12 18 | 704 | 1.3− | 1.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.0 | 1.3− | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.4− | 1.0− | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | (0.4+ | 1.7+) | 2003 02 22 | 644 | 0.2+ | 0.7+ | 2006 10 31 | 703 | 0.2+ | 0.0 |
| 2001 11 24 | 704 | 0.2− | 1.4+ | 2003 02 22 | 644 | 0.5+ | 0.7+ | 2006 10 31 | 703 | 0.1− | 0.6+ |
| 2001 11 24 | 704 | (0.2+ | 1.9+) | 2003 02 22 | 644 | 0.7+ | 0.7+ | 2006 10 31 | 703 | 1.3− | 0.2+ |
| 2001 11 24 | 704 | (1.0+ | 2.4+) | 2006 09 20 | 699 | 0.7+ | 0.7− | 2006 10 31 | 703 | 0.4− | 0.0 |
| 2001 12 07 | 644 | 0.4− | 1.3+ | 2006 09 20 | 699 | (2.0− | 0.2+) | | | | |
| 2001 12 07 | 644 | 0.0 | 1.1+ | 2006 09 20 | 699 | 0.4+ | 0.8+ | | | | |

### 2001 VX$_{132}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.19263 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23899883 | $\omega$ | 94.91023 | | +0.39252686 | −0.91473782 | |
| $a$ | 2.5716125 | $\Omega$ | 331.37601 | | +0.74455579 | +0.37718252 | |
| $e$ | 0.2410920 | $i$ | 11.53534 | | +0.53996236 | +0.14487256 | |
| $P$ | 4.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 08 | 704 | 0.6− | 0.6+ | 2001 12 23 | 704 | 1.1+ | 0.4− | 2005 11 23 | 704 | 0.1− | 0.5+ |
| 2001 11 08 | 704 | 0.2− | 0.1− | 2001 12 23 | 704 | 0.6+ | 0.8− | 2005 11 23 | 704 | 0.1+ | 0.3+ |
| 2001 11 08 | 704 | 0.3+ | 0.1+ | 2002 01 14 | 704 | 0.3− | 0.2− | 2005 11 23 | 704 | 0.8− | 0.5− |
| 2001 11 08 | 704 | 0.9+ | 0.5+ | 2002 01 14 | 704 | 0.1+ | 0.7− | 2005 11 23 | 704 | 0.6− | 0.0 |
| 2001 12 08 | 704 | 0.7− | 0.5+ | 2002 01 14 | 704 | 0.8− | 1.0− | 2005 12 08 | 703 | 0.3+ | 0.2+ |
| 2001 12 08 | 704 | 0.5− | 0.8+ | 2002 01 14 | 704 | 0.2− | 0.6− | 2005 12 08 | 703 | 0.1+ | 1.0− |
| 2001 12 08 | 704 | 0.4− | 0.9+ | 2002 01 23 | 704 | 0.9− | 0.7+ | 2005 12 08 | 703 | 0.7+ | 0.2− |
| 2001 12 23 | 704 | 0.8+ | 0.7+ | 2002 01 23 | 704 | 0.2− | 0.4+ | 2005 12 08 | 703 | 1.0+ | 1.0− |
| 2001 12 23 | 704 | 1.3+ | 0.5+ | 2002 01 23 | 704 | 0.1+ | 0.1+ | | | | |

### 2001 VZ$_{132}$ = 2006 SP$_{109}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.45152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17575893 | $\omega$ | 95.63459 | | +0.96963956 | +0.08683095 | |
| $a$ | 3.1563933 | $\Omega$ | 259.53620 | | −0.16472027 | +0.92285601 | |
| $e$ | 0.1099973 | $i$ | 13.44250 | | +0.18073839 | +0.37522950 | |
| $P$ | 5.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.0 | 0.0 | 2001 12 07 | 644 | 0.0 | 0.3− | 2006 09 19 | 291 | 0.0 | 0.0 |
| 2000 10 02 | 691 | 0.1+ | 0.3− | 2001 12 07 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 291 | 0.3− | 0.0 |
| 2000 10 02 | 691 | 0.2− | 0.2+ | 2001 12 07 | 644 | 0.0 | 0.3− | 2006 09 22 | 699 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2001 12 18 | 704 | 1.1− | 0.6+ | 2006 09 22 | 699 | 0.3+ | 0.9− |
| 2001 11 12 | 704 | 0.5− | 0.5− | 2001 12 18 | 704 | 0.9+ | 0.8+ | 2006 09 22 | 699 | 0.3+ | 0.1+ |
| 2001 11 12 | 704 | 0.4− | 0.2− | 2001 12 18 | 704 | 0.4− | 0.5+ | 2006 09 22 | 699 | 0.3+ | 0.1+ |
| 2001 11 12 | 704 | (0.6− | 2.2+) | 2001 12 18 | 704 | 0.1− | 0.3+ | 2006 10 20 | 703 | 0.2− | 1.4+ |
| 2001 11 12 | 704 | 0.6− | 0.2+ | 2001 12 18 | 704 | 1.1+ | 0.4+ | 2006 10 20 | 703 | 0.6− | 0.2+ |
| 2001 11 24 | 704 | 0.0 | 0.2− | 2002 01 06 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 703 | 0.8+ | 0.0 |
| 2001 11 24 | 704 | 0.9− | 0.4+ | 2002 01 06 | 691 | 0.2+ | 0.2− | 2006 10 20 | 703 | 0.4+ | 1.1− |
| 2001 11 24 | 704 | 1.0− | 0.9− | 2002 01 06 | 691 | 0.4+ | 0.2− | | | | |
| 2001 11 24 | 704 | 0.1+ | 0.3− | 2006 09 19 | 291 | 0.0 | 0.0 | | | | |

### 2001 WH

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.73541 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19292801 | $\omega$ | 217.70250 | | +0.49582420 | −0.86722699 | |
| $a$ | 2.9662370 | $\Omega$ | 202.68231 | | +0.82274094 | +0.48588668 | |
| $e$ | 0.2395937 | $i$ | 6.78518 | | +0.27794910 | +0.10877267 | |
| $P$ | 5.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 644 | 0.4+ | 0.2+ | 2006 09 28 | G96 | 0.6− | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2001 10 25 | 644 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2001 10 25 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2001 11 16 | 107 | 1.3− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2001 11 16 | 107 | (1.1+ | 1.6+) | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2− |
| 2001 11 16 | 107 | 1.1+ | 1.5+ | 2006 10 11 | 644 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2001 11 17 | 107 | 0.4+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2001 11 17 | 107 | 0.5− | 0.8− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.1− | 1.2+ | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 14 | 704 | (1.8+ | 0.5−) |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.3− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 23 | 107 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 704 | (1.9− | 0.6+) |
| 2001 11 23 | 107 | 0.5+ | 1.1+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.4− | 0.7+ |
| 2001 11 24 | 107 | 0.4− | 1.3+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2001 12 11 | 704 | 0.6+ | 0.8− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2001 12 11 | 704 | 0.2− | 0.8− | 2006 10 16 | 703 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.6− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2001 12 11 | 704 | 0.4+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.8+ | 0.0 |
| 2001 12 11 | 704 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 17 | 704 | (2.4+ | 0.2−) |
| 2001 12 18 | 644 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.8+ |
| 2001 12 18 | 644 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.6− |
| 2001 12 18 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.3− |
| 2002 01 08 | 644 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.9− | 1.1− |
| 2002 01 08 | 644 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 1.0− | 0.8− |
| 2002 01 08 | 644 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.4+ |
| 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 27 | 683 | 1.3+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.3+ |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 27 | 683 | 1.4− | 0.6+ | 2006 11 20 | 704 | 0.0 | 1.0− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 27 | 683 | 0.9− | 0.1− | 2006 11 20 | 704 | 1.0+ | 0.1+ |
| 2006 09 28 | G96 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.1− | 0.6− | 2006 11 20 | 704 | (2.3− | 0.5−) |
| 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.2− | 1.3− |
| 2006 09 28 | G96 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− | | | | |

**2001 WQ = 2006 RA$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.36364 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16918786 | $\omega$ | 261.02553 | | +0.58449286 | | +0.81123783 |
| $a$ | 3.2376004 | $\Omega$ | 44.75459 | | −0.73513279 | | +0.53788123 |
| $e$ | 0.1147673 | $i$ | 1.31550 | | −0.34343540 | | +0.22929666 |
| $P$ | 5.83 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 291 | 0.3− | 0.1− | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | (2.8+ | 1.6+) |
| 2001 11 16 | 291 | 0.3− | 0.1+ | 2006 08 17 | 644 | 1.0− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2001 11 16 | 291 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 11 17 | 291 | 0.6+ | 0.2− | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.5+ |
| 2001 11 17 | 291 | 0.4+ | 0.2− | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 11 17 | 291 | 0.8+ | 0.2− | 2006 09 19 | 699 | (2.3− | 0.4−) | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 12 07 | 691 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.8+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 12 07 | 691 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.5+ | 0.7− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 12 07 | 691 | 0.5− | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.7+ | 0.2− |
| 2004 03 18 | 704 | 1.0+ | 0.5+ | 2006 09 19 | 703 | (1.6− | 0.3−) | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2004 03 18 | 704 | 1.4+ | 1.1+ | 2006 09 19 | 699 | 0.7+ | 1.0+ | 2006 10 20 | G96 | 0.6− | 0.1− |
| 2004 03 18 | 704 | 0.8+ | 0.4− | 2006 09 19 | 703 | 0.5− | 0.3− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2004 04 25 | 691 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.1− | 1.2+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2004 04 25 | 691 | 0.0 | 0.9+ | 2006 09 25 | 699 | 0.0 | 1.2+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2004 04 25 | 691 | 0.1− | 0.8+ | 2006 09 25 | 699 | 1.0− | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.3− |
| 2006 08 17 | 644 | 0.8− | 0.0 | 2006 09 25 | 699 | 0.1+ | 1.1+ | 2006 11 15 | G96 | 0.1− | 0.2− |

**2001 WD$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.57449 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37204908 | $\omega$ | 289.19053 | | +0.90127353 | | +0.11568993 |
| $a$ | 1.9145611 | $\Omega$ | 66.07633 | | +0.13468280 | | +0.84112714 |
| $e$ | 0.0768019 | $i$ | 27.17827 | | −0.41178461 | | +0.52831900 |
| $P$ | 2.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 1.2− | 0.4+ | 2001 11 24 | 644 | 0.3+ | 0.5+ | 2001 12 19 | 704 | 0.4+ | 0.8− |
| 2001 10 16 | 704 | 0.2+ | 0.1− | 2001 11 24 | 644 | 0.2+ | 1.5+ | 2001 12 19 | 704 | 0.5− | 0.9− |
| 2001 10 16 | 704 | 1.5− | 1.0− | 2001 11 25 | 704 | 0.8+ | 0.6− | 2001 12 19 | 704 | (1.6+ | 0.1−) |
| 2001 10 16 | 704 | 1.1− | 0.2− | 2001 11 25 | 704 | 0.2− | 0.9− | 2001 12 19 | 704 | 0.5− | 0.2− |
| 2001 11 16 | 644 | 0.3+ | 0.8+ | 2001 11 25 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | 1.2+ | 0.7− |
| 2001 11 16 | 644 | 0.2+ | 0.8+ | 2001 11 25 | 704 | 0.4− | 0.9− | 2001 12 19 | 704 | 0.2− | 1.0− |
| 2001 11 16 | 644 | 0.1+ | 1.0+ | 2001 11 27 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | 1.3+ | 0.4− |
| 2001 11 17 | 704 | 0.6+ | 0.5− | 2001 11 27 | 704 | 0.2+ | 0.3+ | 2001 12 19 | 704 | 0.2− | 0.5− |
| 2001 11 17 | 704 | 0.3+ | 0.8− | 2001 11 27 | 704 | 0.1− | 0.3− | 2001 12 19 | 704 | 1.3+ | 0.2− |
| 2001 11 17 | 704 | 0.1+ | 0.7− | 2001 12 06 | 704 | 0.7+ | 0.2+ | 2001 12 19 | 704 | 1.3+ | 0.0 |
| 2001 11 17 | 704 | 0.4+ | 1.2− | 2001 12 06 | 704 | 0.6+ | 0.2+ | 2001 12 20 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.2+ | 1.1− | 2001 12 06 | 704 | 0.2+ | 0.4+ | 2001 12 20 | 644 | 0.2+ | 0.1− |
| 2001 11 18 | 704 | 0.2− | 0.3− | 2001 12 08 | 699 | 0.1− | 0.2+ | 2001 12 20 | 644 | 0.3+ | 0.1+ |
| 2001 11 18 | 704 | 0.3− | 0.6− | 2001 12 08 | 699 | 0.2− | 0.1+ | 2002 01 08 | 704 | 0.5− | 0.9− |
| 2001 11 18 | 704 | 0.2− | 0.5+ | 2001 12 08 | 699 | 0.2+ | 0.5+ | 2002 01 08 | 704 | 0.6− | 0.4+ |
| 2001 11 18 | 704 | 0.4− | 0.9− | 2001 12 08 | 699 | 0.2+ | 0.3+ | 2002 01 08 | 704 | 0.1− | 0.2+ |
| 2001 11 18 | 704 | (0.2− | 1.5+) | 2001 12 10 | 704 | 0.2− | 0.1− | 2003 05 31 | 704 | 0.4+ | 0.1+ |
| 2001 11 18 | 704 | 0.5− | 0.0 | 2001 12 10 | 704 | 0.3− | 0.2+ | 2003 05 31 | 704 | 0.3+ | 0.2+ |
| 2001 11 18 | 704 | 0.6− | 0.0 | 2001 12 10 | 704 | 0.2− | 0.4+ | 2003 05 31 | 704 | 0.7+ | 0.3+ |
| 2001 11 18 | 704 | 0.0 | 0.4− | 2001 12 10 | 704 | 0.1+ | 0.2+ | 2003 05 31 | 704 | 0.1+ | 1.2+ |
| 2001 11 18 | 704 | 0.5− | 0.5− | 2001 12 10 | 704 | 0.3− | 1.4+ | 2006 08 20 | E12 | 0.1+ | 0.1− |
| 2001 11 19 | 699 | 0.7− | 0.4+ | 2001 12 15 | 704 | 0.2− | 1.1+ | 2006 08 20 | E12 | 0.6− | 0.0 |
| 2001 11 19 | 699 | 0.4+ | 0.4+ | 2001 12 15 | 704 | 0.1− | 0.8+ | 2006 08 20 | E12 | 0.2+ | 0.3− |
| 2001 11 19 | 699 | 0.0 | 0.2− | 2001 12 15 | 704 | 0.4+ | 0.5+ | 2006 08 20 | E12 | 0.3− | 0.3− |
| 2001 11 19 | 699 | (1.5− | 0.1−) | 2001 12 15 | 704 | 0.3+ | 0.3+ | 2006 09 15 | E12 | 0.4− | 0.6+ |
| 2001 11 20 | 704 | 0.6− | 1.1+ | 2001 12 15 | 704 | 0.3+ | 0.1+ | 2006 09 15 | E12 | 0.5+ | 0.2− |
| 2001 11 20 | 704 | 0.2− | 1.2+ | 2001 12 18 | 704 | 1.0− | 0.3− | 2006 09 15 | E12 | 0.2+ | 1.2− |
| 2001 11 20 | 704 | 1.2− | 1.2+ | 2001 12 18 | 704 | 0.6+ | 0.4+ | 2006 09 15 | E12 | 0.6+ | 0.1+ |
| 2001 11 20 | 704 | 0.6− | 1.1+ | 2001 12 18 | 704 | 0.0 | 0.3− | 2006 09 30 | E12 | 0.0 | 0.0 |
| 2001 11 24 | 704 | (1.6− | 0.7−) | 2001 12 18 | 704 | 0.3− | 0.1+ | 2006 09 30 | E12 | 0.2− | 0.2+ |
| 2001 11 24 | 704 | 0.5− | 0.7− | 2001 12 18 | 704 | 0.1− | 0.2+ | 2006 09 30 | E12 | 0.1+ | 0.1+ |
| 2001 11 24 | 704 | 0.6− | 0.3+ | 2001 12 19 | 704 | (1.5− | 2.0−) | 2006 09 30 | E12 | 0.5+ | 0.3− |
| 2001 11 24 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.8+ | 0.6− | | | | |
| 2001 11 24 | 644 | 0.7+ | 0.7+ | 2001 12 19 | 704 | (1.9+ | 1.8−) | | | | |

**2001 WC$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.17259 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19716458 | $\omega$ | 175.11638 | | +0.72575807 | | −0.68577631 |
| $a$ | 2.9235921 | $\Omega$ | 228.33748 | | +0.62867898 | | +0.69338850 |
| $e$ | 0.2941433 | $i$ | 4.19467 | | +0.27935278 | | +0.22118597 |
| $P$ | 5.00 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.6− | 0.0 | 2001 11 21 | 704 | 0.6+ | 0.8+ | 2001 12 17 | 704 | 0.6+ | 0.7− |
| 2001 11 09 | 704 | 0.4− | 0.2+ | 2001 11 21 | 704 | 0.9+ | 0.1− | 2001 12 20 | 704 | 0.0 | 0.5− |
| 2001 11 09 | 704 | (0.7− | 2.7+) | 2001 12 11 | 704 | 0.3+ | 0.3+ | 2001 12 20 | 704 | 0.1+ | 0.2− |
| 2001 11 17 | 691 | 0.7− | 0.1− | 2001 12 11 | 704 | 0.3− | 0.1+ | 2001 12 20 | 704 | 0.5+ | 0.2+ |
| 2001 11 17 | 691 | 0.3− | 0.5− | 2001 12 11 | 704 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2001 11 17 | 691 | 0.6− | 0.3− | 2001 12 11 | 704 | 0.1− | 0.1− | 2006 11 18 | 704 | 1.2+ | 0.3+ |
| 2001 11 18 | 691 | 0.4+ | 0.1− | 2001 12 11 | 704 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2001 11 18 | 691 | 0.5+ | 0.0 | 2001 12 14 | 704 | 0.7− | 0.3+ | 2006 11 18 | 704 | 0.1− | 1.2+ |
| 2001 11 18 | 691 | 0.5+ | 0.0 | 2001 12 14 | 704 | 0.4− | 0.4− | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.4− | 2001 12 14 | 704 | 0.9− | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2001 12 14 | 704 | 1.0− | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2001 12 17 | 704 | 0.7+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.3− | 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2001 12 17 | 704 | 0.4+ | 0.4− | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2001 11 21 | 704 | 0.4+ | 0.1+ | 2001 12 17 | 704 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.0 | 0.1− |

**2001 WX$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.97268 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19107939 | $\omega$ | 6.54196 | | +0.12355370 | | −0.98654285 |
| $a$ | 2.9853379 | $\Omega$ | 76.39973 | | +0.90538627 | | +0.06789450 |
| $e$ | 0.2944289 | $i$ | 6.32550 | | +0.40621446 | | +0.14873984 |
| $P$ | 5.16 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.0 | 0.1+ | 2001 12 09 | 691 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2001 11 17 | 704 | 0.6− | 1.4− | 2001 12 09 | 691 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2001 11 17 | 704 | 0.6+ | 0.1+ | 2001 12 09 | 691 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 11 17 | 704 | 0.1+ | 0.2− | 2001 12 14 | 704 | 0.6− | 1.0+ | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2001 11 17 | 704 | 0.2− | 0.2+ | 2001 12 14 | 704 | 0.0 | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 11 18 | 704 | 0.7+ | 0.1+ | 2001 12 14 | 704 | 0.3+ | 1.3+ | 2006 10 21 | 644 | 0.6+ | 0.5+ |
| 2001 11 18 | 704 | 0.6+ | 0.1+ | 2001 12 14 | 704 | 0.5− | 1.3+ | 2006 10 21 | 644 | 0.4+ | 0.4+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.3+ | 1.0+ | 2001 12 14 | 704 | (0.7− | 1.7+) | 2006 10 22 | 703 | 0.2+ | 0.7+ | 2001 11 17 | 704 | 0.9− | 0.0 |
| 2001 11 18 | 704 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.9− | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.7+ | 2001 11 18 | 704 | 0.3+ | 0.3+ |
| 2001 11 18 | 704 | 0.1+ | 0.3+ | 2001 12 17 | 704 | 1.4− | 0.9+ | 2006 10 22 | 703 | 0.6− | 0.6− | 2001 11 18 | 704 | 0.3+ | 0.2+ |
| 2001 11 19 | 699 | 0.3+ | 1.0+ | 2001 12 17 | 704 | 0.1− | 1.0+ | 2006 10 22 | 703 | 0.4+ | 0.5− | 2001 11 18 | 704 | 0.7+ | 0.6+ |
| 2001 11 19 | 699 | 0.1− | 0.7− | 2002 01 09 | 291 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.3− | 2001 11 18 | 704 | 0.2+ | 0.1+ |
| 2001 11 19 | 699 | 0.7− | 0.3− | 2002 01 09 | 291 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.5− | 2001 11 18 | 704 | 0.1+ | 0.3+ |
| 2001 11 19 | 699 | 0.4− | 0.5+ | 2002 01 09 | 291 | 0.5+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.2− | 2001 11 19 | 699 | 0.2− | 0.9+ |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2002 01 13 | 291 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.5− | 2001 11 19 | 699 | 0.1− | 0.7+ |
| 2001 11 20 | 704 | 0.8+ | 0.2+ | 2002 01 13 | 291 | 0.4− | 0.0 | | | | | 2001 11 19 | 699 | 0.7+ | 0.2+ |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2002 01 13 | 291 | 0.2− | 0.2− | | | | | 2001 11 19 | 699 | 0.4− | 0.4+ |

**2001 WQ$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 236.14164 | | | (2000.0) | | | **P** | | **Q** | | | | | |
| $n$ | 0.22775465 | $\omega$ | 157.08280 | | −0.61989333 | | +0.75522679 | | | | | | | |
| $a$ | 2.6555708 | $\Omega$ | 73.92600 | | −0.74990008 | | −0.49025014 | | | | | | | |
| $e$ | 0.1714650 | $i$ | 12.80630 | | −0.23104572 | | −0.43507159 | | | | | | | |
| $P$ | 4.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 | | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.4− | 0.1− | 2003 02 01 | 644 | 0.0 | 0.2+ | 2004 08 09 | E12 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.5+ | 0.7+ |
| 2001 11 17 | 704 | 0.1− | 0.2− | 2003 02 21 | 644 | 0.0 | 0.1− | 2004 08 09 | E12 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.7+ | 0.7+ |
| 2001 11 17 | 704 | 1.0− | 0.9− | 2003 02 21 | 644 | 0.2+ | 0.1− | 2004 08 09 | E12 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 1.3− | 1.0+ |
| 2001 11 17 | 704 | 0.5− | 0.2− | 2003 02 21 | 644 | 0.3− | 0.0 | 2004 08 09 | E12 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.3+ |
| 2001 11 17 | 704 | 0.6− | 0.1+ | 2003 02 26 | 704 | 1.3− | 0.0 | 2004 08 09 | E12 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.6− |
| 2001 11 18 | 704 | 0.3+ | 0.4+ | 2003 02 26 | 704 | 0.2+ | 0.1+ | 2004 08 09 | E12 | 0.0 | 0.6+ | 2006 09 25 | 704 | (0.2+ | 1.6−) |
| 2001 11 18 | 704 | 1.2+ | 0.2− | 2003 02 26 | 704 | 0.2− | 0.6+ | 2004 08 20 | E12 | 0.7− | 0.0 | 2006 09 25 | 704 | 0.4− | 0.3+ |
| 2001 11 18 | 704 | 0.4+ | 0.2− | 2003 02 26 | 704 | 0.1− | 0.4+ | 2004 08 20 | E12 | 0.2+ | 0.3− | 2006 09 25 | 704 | 0.1+ | 1.2+ |
| 2001 11 20 | 704 | 0.5+ | 0.8+ | 2004 07 13 | E12 | 1.2+ | 0.3+ | 2004 08 20 | E12 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.1+ | 0.6− |
| 2001 11 20 | 704 | 0.2+ | 0.7+ | 2004 07 13 | E12 | 1.0− | 1.1+ | 2004 08 20 | E12 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2004 07 13 | E12 | 0.2+ | 0.3− | 2004 09 10 | E12 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2004 07 13 | E12 | 0.6− | 0.4+ | 2004 09 10 | E12 | 0.5+ | 0.7− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2003 01 26 | 699 | 1.1+ | 0.4+ | 2004 07 29 | E12 | 0.2− | 0.4+ | 2004 09 10 | E12 | 0.6+ | 1.2− | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2003 01 26 | 699 | 0.7+ | 1.1+ | 2004 07 29 | E12 | 0.0 | 0.3+ | 2004 09 10 | E12 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2003 01 26 | 699 | 0.7+ | 0.5− | 2004 07 29 | E12 | 0.6− | 0.1+ | 2005 11 03 | 703 | 0.1+ | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2003 01 26 | 699 | 0.4− | 1.1+ | 2004 07 29 | E12 | 0.1+ | 0.6− | 2005 11 03 | 703 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2003 02 01 | 644 | 0.1+ | 0.2+ | 2004 08 09 | E12 | 0.1− | 0.3+ | 2005 11 03 | 703 | 0.6− | 0.4+ | 2006 10 10 | 644 | 0.4− | 0.2+ |
| 2003 02 01 | 644 | 0.6+ | 0.2+ | 2004 08 09 | E12 | 0.3− | 0.0 | 2005 11 03 | 703 | 0.1− | 0.1+ | | | | |

**2001 WK$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 301.65541 | | | (2000.0) | | | **P** | | **Q** | | | | | |
| $n$ | 0.17839811 | $\omega$ | 227.32020 | | +0.08074367 | | −0.99226840 | | | | | | | |
| $a$ | 3.1251861 | $\Omega$ | 218.35271 | | +0.95314878 | | +0.10452483 | | | | | | | |
| $e$ | 0.2432218 | $i$ | 8.73708 | | +0.29152678 | | −0.06691779 | | | | | | | |
| $P$ | 5.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 | | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.2− | 0.1+ | 2001 12 08 | 699 | 0.0 | 0.2− | 2006 10 01 | 703 | 0.5− | 0.2+ | 2001 12 09 | 644 | 0.1+ | 0.8+ |
| 2001 10 23 | 704 | 0.1+ | 0.5− | 2001 12 08 | 699 | 1.0− | 0.2+ | 2006 10 01 | 703 | 1.3− | 0.6− | 2001 12 09 | 644 | 0.7+ | 0.5+ |
| 2001 10 23 | 704 | 0.2− | 0.2− | 2001 12 08 | 699 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2− | 2001 12 18 | 704 | (5.2− | 0.7+) |
| 2001 10 23 | 704 | 0.5+ | 0.1− | 2001 12 08 | 699 | 1.1+ | 0.2+ | 2006 10 10 | 644 | 0.4+ | 0.0 | 2001 12 18 | 704 | (5.7− | 4.2−) |
| 2001 10 24 | 704 | 0.7− | 0.4+ | 2001 12 11 | 704 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.0 | 2001 12 18 | 704 | 0.7− | 0.7− |
| 2001 10 24 | 704 | 0.4+ | 0.1+ | 2001 12 11 | 704 | 0.2+ | 1.0− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2001 12 18 | 704 | 0.8− | 0.6− |
| 2001 10 24 | 704 | 0.2− | 0.1− | 2001 12 11 | 704 | 0.2+ | 0.5− | 2006 10 11 | 691 | 0.3+ | 0.1− | 2001 12 18 | 704 | 1.3− | 0.5− |
| 2001 10 24 | 704 | 0.3+ | 0.0 | 2001 12 11 | 704 | 0.3+ | 0.5− | 2006 10 11 | 691 | 0.4+ | 0.0 | 2001 12 18 | 704 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | 0.3+ | 0.4+ | 2001 12 11 | 704 | 0.6+ | 1.1− | 2006 10 12 | 644 | 0.1− | 0.5+ | 2001 12 19 | 704 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 0.1− | 0.6− | 2001 12 14 | 644 | 0.3− | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2001 12 19 | 704 | 0.0 | 0.3+ |
| 2001 11 09 | 704 | 1.0− | 0.2− | 2001 12 14 | 644 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.5+ | 0.2− | 2001 12 19 | 704 | 0.4− | 0.1+ |
| 2001 11 09 | 704 | 1.0+ | 0.5− | 2001 12 14 | 644 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.4− | 0.4− | 2002 01 14 | 704 | 0.0 | 0.9− |
| 2001 11 09 | 704 | 0.6+ | 0.1− | 2001 12 18 | 704 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2002 01 14 | 704 | 1.0− | 0.1− |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2001 12 18 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.2− | 1.0− | 2002 01 14 | 704 | 0.7− | 0.3− |
| 2001 11 17 | 704 | (1.5− | 1.1−) | 2001 12 18 | 704 | 0.4− | 0.8− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2002 01 14 | 704 | 0.6− | 0.5− |
| 2001 11 17 | 704 | (2.5− | 0.5−) | 2001 12 18 | 704 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.5− | 0.1+ |
| 2001 11 17 | 704 | 1.3− | 0.2− | 2001 12 18 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.4+ |
| 2001 11 17 | 704 | 0.7− | 0.3+ | 2006 08 25 | D35 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 2001 11 17 | 704 | 0.9− | 0.0 | 2006 08 25 | D35 | 0.7+ | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 1.4− | 1.1+ |
| 2001 11 18 | 704 | 0.3+ | 0.3+ | 2006 08 25 | D35 | 0.3+ | 0.5+ | 2006 10 19 | 691 | 0.4+ | 0.1+ | 2006 10 01 | 703 | (0.1+ | 1.6−) |
| 2001 11 18 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.9− | 0.5− | 2006 10 21 | 691 | 0.6− | 0.3+ | | | | |
| 2001 11 18 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 0.6− | 2006 10 21 | 691 | 0.3+ | 0.2+ | | | | |
| 2001 11 18 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.2+ | | | | |
| 2001 11 18 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.9− | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.2− | | | | |
| 2001 11 19 | 699 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.2+ | 0.5− | 2006 10 24 | 644 | 0.3+ | 0.1− | | | | |
| 2001 11 19 | 699 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.0 | 0.2− | 2006 10 24 | 644 | 0.2− | 0.3− | | | | |
| 2001 11 19 | 699 | 0.7+ | 0.2+ | 2006 10 01 | 703 | 1.4− | 1.1+ | | | | | | | | |
| 2001 11 19 | 699 | 0.4− | 0.4+ | 2006 10 01 | 703 | (0.1+ | 1.6−) | | | | | | | | |

**2001 WH$_{10}$ = 2006 SZ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 336.92079 | | | (2000.0) | | | **P** | | **Q** | | | | | |
| $n$ | 0.18030466 | $\omega$ | 51.88263 | | +0.79758145 | | −0.60137263 | | | | | | | |
| $a$ | 3.1031165 | $\Omega$ | 344.89619 | | +0.48133885 | | +0.68152111 | | | | | | | |
| $e$ | 0.1348045 | $i$ | 10.40535 | | +0.36356120 | | +0.41698913 | | | | | | | |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 | | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.3− | 0.8+ | 2006 09 19 | 699 | 0.5+ | 0.7+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2001 12 09 | 644 | 0.1+ | 0.1+ |
| 2001 11 17 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2001 12 09 | 644 | 0.4+ | 0.1+ |
| 2001 11 17 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | 1.3− | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2001 12 18 | 704 | 0.2+ | 0.3+ |
| 2001 11 18 | 704 | 0.7+ | 0.8− | 2006 09 19 | 699 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2001 12 18 | 704 | 0.1+ | 0.2+ |
| 2001 11 18 | 704 | 0.3− | 0.5− | 2006 09 25 | 704 | 0.3+ | 0.6− | 2006 10 17 | 703 | (1.6− | 1.9+) | 2001 12 18 | 704 | 0.1− | 0.2− |
| 2001 11 18 | 704 | 0.1− | 0.2− | 2006 09 25 | 704 | (0.2+ | 1.6−) | 2006 10 17 | 703 | (1.0− | 3.4+) | 2001 12 18 | 704 | 0.1− | 0.2− |
| 2001 12 09 | 704 | 0.7− | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.3+ | 2006 10 17 | 703 | 1.1+ | 0.2+ | 2001 12 18 | 704 | 0.2− | 0.3+ |
| 2001 12 09 | 704 | 0.6− | 0.3− | 2006 09 25 | 704 | 0.1+ | 1.2+ | 2006 10 17 | 703 | 0.8− | 0.2− | 2001 12 19 | 704 | 0.2− | 0.2+ |
| 2001 12 09 | 704 | 1.1+ | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.6− | 2006 10 22 | 644 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.2− | 0.2+ |
| 2001 12 09 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3+ | 2001 12 19 | 704 | 0.0 | 0.3+ |
| 2006 09 17 | 703 | 0.8+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.4+ | 2001 12 19 | 704 | 0.4− | 0.2+ |
| 2006 09 17 | 703 | 1.0− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.4− | 2001 12 19 | 704 | 0.0 | 0.3+ |
| 2006 09 17 | 703 | 1.4+ | 0.6− | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.3− | 0.2− | 2001 12 19 | 704 | 0.4− | 0.1+ |
| 2006 09 17 | 703 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.4+ | 0.3− | 2002 01 14 | 704 | 0.0 | 0.9− |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 10 23 | G96 | 0.3+ | 0.1− | 2002 01 14 | 704 | 1.0− | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.3− | 0.0 | | | | | 2002 01 14 | 704 | 0.7− | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.4− | 0.2+ | | | | | 2002 01 14 | 704 | 0.5− | 0.1+ |

**2001 WJ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 354.70161 | | | (2000.0) | | | **P** | | **Q** | | | | | |
| $n$ | 0.18772951 | $\omega$ | 328.71812 | | +0.79846531 | | −0.57199340 | | | | | | | |
| $a$ | 3.0207470 | $\Omega$ | 67.33267 | | +0.58582443 | | +0.66626012 | | | | | | | |
| $e$ | 0.1243357 | $i$ | 11.74422 | | +0.13879082 | | +0.47845690 | | | | | | | |
| $P$ | 5.25 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 | | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.3+ | 0.1+ | 2001 12 09 | 644 | 0.1+ | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.1+ | 2001 11 16 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.4− | 0.1+ | 2001 12 09 | 644 | 0.7+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.4+ | 2001 11 16 | 691 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 1.0− | 0.6− | 2001 12 18 | 704 | (5.2− | 0.7+) | 2006 10 23 | 644 | 0.1+ | 0.0 | 2001 11 16 | 691 | 0.0 | 0.1− |
| 2001 11 16 | 691 | 0.1+ | 0.1− | 2001 12 18 | 704 | (5.7− | 4.2−) | 2006 10 23 | 644 | 0.2+ | 0.0 | 2001 11 17 | 704 | 0.4− | 0.3− |
| 2001 11 16 | 691 | 0.1+ | 0.0 | 2001 12 18 | 704 | 0.7− | 0.7− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2001 11 17 | 704 | 0.0 | 0.8+ |
| 2001 11 16 | 691 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.8− | 0.6− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2001 11 17 | 704 | 0.4+ | 0.2− |
| 2001 11 17 | 704 | 0.4− | 0.3− | 2001 12 18 | 704 | 1.3− | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2001 11 17 | 704 | 0.1+ | 0.6+ |
| 2001 11 17 | 704 | 0.0 | 0.8+ | 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2001 11 18 | 704 | 0.4+ | 0.4+ |
| 2001 11 17 | 704 | 0.4+ | 0.2− | 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.4+ | 0.0 | 2001 11 18 | 704 | 0.0 | 0.4+ |
| 2001 11 17 | 704 | 0.1+ | 0.6+ | 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.5+ | 0.2+ | 2001 11 18 | 704 | 1.1+ | 0.1+ |
| 2001 11 18 | 704 | 0.4+ | 0.4+ | 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.1+ | 0.4+ | 2001 11 18 | 704 | 0.2+ | 0.3− |
| 2001 11 18 | 704 | 0.0 | 0.4+ | 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.6+ | 0.0 | 2001 11 18 | 704 | 0.1+ | 0.3+ |
| 2001 11 18 | 704 | 1.1+ | 0.1+ | 2002 01 14 | 704 | 0.0 | 0.9− | 2006 11 13 | 703 | 0.1− | 0.0 | 2001 11 19 | 699 | 0.2− | 0.9+ |
| 2001 11 18 | 704 | 0.2+ | 0.3− | 2002 01 14 | 704 | 1.0− | 0.1− | 2006 11 13 | 703 | 0.3+ | 0.2− | 2001 11 19 | 699 | 0.1− | 0.7+ |
| 2001 11 20 | 704 | 0.5+ | 0.1+ | 2002 01 14 | 704 | 0.7− | 0.3− | 2006 11 14 | 704 | (1.6+ | 1.5+) | 2001 11 19 | 699 | 0.7+ | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.3− | 2002 01 14 | 704 | 0.6− | 0.5− | 2006 11 14 | 704 | (0.4+ | 1.7+) | 2001 11 19 | 699 | 0.4− | 0.4+ |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2002 01 14 | 704 | 0.5− | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.8+ | | | | |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.4+ | 2006 11 17 | 704 | 1.5− | 0.6+ | | | | |
| 2001 11 21 | 704 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.9− | 0.1+ | 2006 11 17 | 704 | (1.7− | 1.1+) | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.8+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 17 | 704 | (1.6− | 0.3+) |
| 2001 11 21 | 704 | 0.8+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.8+ |
| 2001 11 21 | 704 | 0.4+ | 0.7− | 2006 10 16 | 703 | 0.8+ | 0.6− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2001 12 08 | 699 | (2.9− | 0.6+) | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2001 12 08 | 699 | (2.4− | 0.8+) | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2001 12 08 | 699 | (1.7− | 0.1+) | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2001 12 08 | 699 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.0 | | | | |
| 2001 12 09 | 644 | 0.3− | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1− | | | | |

### 2001 $WT_{10}$ = 2006 $ST_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.51765 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17514994 | $\omega$ | 130.11409 | | +0.96740804 | +0.08165976 | |
| $a$ | 3.1637055 | $\Omega$ | 226.70438 | | −0.12426164 | +0.97785827 | |
| $e$ | 0.0910178 | $i$ | 19.22808 | | +0.22063709 | +0.19267821 | |
| $P$ | 5.63 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 049 | 0.2− | 0.1− | 2001 11 18 | 704 | 1.0− | 0.3+ | 2006 09 06 | 644 | 0.0 | 0.2+ |
| 2001 10 23 | 049 | 0.1− | 0.2+ | 2001 11 18 | 704 | 0.5+ | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.1+ |
| 2001 10 24 | 049 | 0.6− | 0.5+ | 2001 11 18 | 704 | 0.8− | 0.3+ | 2006 09 06 | 644 | 0.3+ | 0.3+ |
| 2001 11 09 | 704 | 0.2+ | 1.3− | 2001 11 19 | 699 | 0.8+ | 1.5− | 2006 09 06 | 644 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 0.3+ | 0.4− | 2001 11 19 | 699 | 1.3+ | 1.1+ | 2006 09 06 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | (2.0− | 2.4−) | 2001 11 19 | 699 | 0.8+ | 0.8− | 2006 09 16 | 703 | 0.1− | 0.5+ |
| 2001 11 09 | 704 | 0.1− | 0.1− | 2001 11 19 | 699 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 0.4− | 2001 11 20 | 704 | 0.6+ | 0.5+ | 2006 09 16 | 703 | 0.0 | 0.3− |
| 2001 11 17 | 704 | 0.1+ | 0.0 | 2001 11 20 | 704 | 0.8− | 0.3− | 2006 09 16 | 703 | 0.9+ | 0.6− |
| 2001 11 17 | 704 | 0.3− | 1.1+ | 2001 11 20 | 704 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.6− | 0.1+ |
| 2001 11 17 | 704 | 0.0 | 0.4+ | 2001 11 20 | 704 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.6− | 0.1+ |
| 2001 11 18 | 704 | 0.7− | 0.9+ | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.5− | 0.6− |

### 2001 $WF_{11}$ = 2006 $WX_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.49368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20305398 | $\omega$ | 320.46620 | | −0.38266449 | −0.92332883 | |
| $a$ | 2.8667845 | $\Omega$ | 151.98922 | | +0.86402606 | −0.36996534 | |
| $e$ | 0.2158046 | $i$ | 3.92183 | | +0.32714958 | −0.10290540 | |
| $P$ | 4.85 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.5− | 0.5+ | 2001 12 08 | 699 | 0.3+ | 1.3− | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2001 11 17 | 704 | 0.5− | 0.7+ | 2001 12 11 | 704 | 1.2− | 0.4− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.2− | 1.4+ | 2001 12 11 | 704 | 0.3+ | 1.0− | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2001 11 18 | 704 | 0.2+ | 0.4− | 2001 12 11 | 704 | (0.4− | 1.5+) | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 11 18 | 704 | 0.0 | 0.7− | 2001 12 11 | 704 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2001 11 18 | 704 | 0.1− | 0.4− | 2005 10 01 | G96 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 11 18 | 704 | 0.3+ | 0.4+ | 2005 10 01 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.4− | 0.6+ |
| 2001 12 08 | 699 | (1.8+ | 0.8−) | 2005 10 01 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 1.2− | 0.1+ |
| 2001 12 08 | 699 | 0.7+ | 1.0+ | 2005 10 01 | G96 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.7+ | 0.1+ |
| 2001 12 08 | 699 | 0.6+ | 1.2+ | 2006 11 17 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.8+ | 0.5+ |

### 2001 $WN_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.44562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18711994 | $\omega$ | 311.35408 | | +0.75285439 | −0.60024408 | |
| $a$ | 3.0273038 | $\Omega$ | 87.31465 | | +0.65517629 | +0.64423983 | |
| $e$ | 0.1467275 | $i$ | 15.68384 | | +0.06288323 | +0.47398532 | |
| $P$ | 5.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.7+ | 0.6+ | 2002 01 13 | 704 | (1.8− | 0.2−) | 2006 10 28 | 703 | 0.7+ | 1.0+ |
| 2001 11 17 | 704 | 0.8+ | 0.0 | 2002 01 15 | 704 | 0.6+ | 0.6− | 2006 10 28 | 703 | 1.3+ | 0.1+ |
| 2001 11 17 | 704 | 1.2+ | 0.4+ | 2002 01 15 | 704 | 0.6− | 0.0 | 2006 10 28 | 703 | 0.9+ | 0.0 |
| 2001 11 17 | 704 | 0.5+ | 0.0 | 2002 01 15 | 704 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.7− | 0.2− |
| 2001 11 18 | 704 | 0.1− | 0.4− | 2002 01 15 | 704 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.6− | 0.4− |
| 2001 11 18 | 704 | 0.1− | 0.6− | 2002 01 15 | 704 | 0.9− | 0.2− | 2006 10 28 | 703 | 0.1+ | 0.5+ |
| 2001 11 18 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2001 11 18 | 704 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 12 11 | 704 | 0.3− | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2001 12 11 | 704 | 0.1+ | 0.8− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 12 11 | 704 | 0.3− | 1.0− | 2006 10 11 | 644 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 12 11 | 704 | (0.6− | 2.1−) | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 01 08 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 01 08 | 644 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.4+ | 0.1− |
| 2002 01 08 | 644 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.6− | 1.1− | 2006 11 16 | 703 | 0.1− | 0.7− |
| 2002 01 13 | 704 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.1− | 2006 11 16 | 703 | 0.5− | 0.8+ |
| 2002 01 13 | 704 | 0.5− | 0.4+ | 2006 10 28 | 703 | 0.5+ | 0.7+ | 2006 11 16 | 703 | 0.8− | 0.6+ |

### 2001 $WQ_{12}$ = 2006 $TN_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.13518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19136335 | $\omega$ | 197.22835 | | +0.65308486 | −0.75007033 | |
| $a$ | 2.9823839 | $\Omega$ | 212.22737 | | +0.71579838 | +0.65637871 | |
| $e$ | 0.2991095 | $i$ | 11.27671 | | +0.24721014 | +0.08100300 | |
| $P$ | 5.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 1.0− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.0+ | 0.3+ |
| 2001 11 17 | 704 | 0.6+ | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.2− | 0.8+ |
| 2001 11 17 | 704 | 0.6+ | 0.7− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2001 11 18 | 704 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 11 18 | 704 | 0.8− | 0.7− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 11 18 | 704 | 0.6+ | 0.4− | 2006 10 28 | 704 | (0.5+ | 1.8+) | 2006 11 17 | 703 | 0.6+ | 0.9− |
| 2001 11 18 | 704 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.6− | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.9− |
| 2001 12 11 | 704 | 0.3− | 0.5+ | 2006 10 28 | 704 | 0.4+ | 0.9+ | 2006 11 17 | 703 | 1.3+ | 0.4− |
| 2001 12 11 | 704 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.6− | 1.4− |
| 2001 12 11 | 704 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.3− | 0.8+ | 2006 11 20 | 704 | 0.9− | 0.3+ |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.4− | 1.1+ |
| 2001 12 11 | 704 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 1.2+ | 0.5− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.6+ | 0.2+ |
| 2006 10 12 | 691 | 0.3+ | 0.4− | 2006 11 11 | 703 | 1.1− | 1.0− | | | | |

### 2001 $WH_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.01269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17612530 | $\omega$ | 139.87543 | | +0.98436679 | −0.10780903 | |
| $a$ | 3.1520146 | $\Omega$ | 226.90472 | | +0.06683888 | +0.96028077 | |
| $e$ | 0.0755992 | $i$ | 10.99592 | | +0.16295581 | +0.25736753 | |
| $P$ | 5.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 18 | 691 | 1.1− | 1.8+ | 2001 11 21 | 704 | 0.5− | 0.2− | 2006 09 15 | 704 | 1.2+ | 0.8− |
| 1999 06 18 | 691 | 1.8+ | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.8− | 2006 09 20 | 699 | 0.7− | 0.7− |
| 1999 06 18 | 691 | 0.6− | 0.8+ | 2001 11 21 | 704 | 0.3− | 0.6− | 2006 09 20 | 699 | (0.6+ | 2.3+) |
| 2001 10 26 | 644 | 0.6− | 0.2+ | 2001 11 21 | 704 | 0.1+ | 0.6− | 2006 09 20 | 699 | 0.9+ | 0.4+ |
| 2001 10 26 | 644 | 0.4+ | 0.3+ | 2001 11 24 | 704 | 0.6+ | 0.0 | 2006 09 20 | 699 | 0.4− | 0.8+ |
| 2001 10 26 | 644 | 0.1− | 0.1+ | 2001 11 24 | 704 | 0.0 | 0.2− | 2006 09 22 | 703 | 0.4− | 1.3+ |
| 2001 11 09 | 704 | 0.9+ | 0.1− | 2001 11 24 | 704 | 1.3+ | 0.5+ | 2006 09 22 | 703 | 0.9− | 0.8− |
| 2001 11 09 | 704 | 1.1− | 1.0+ | 2001 11 24 | 704 | 1.1+ | 1.3+ | 2006 09 22 | 703 | 1.0+ | 0.6+ |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2001 11 24 | 704 | 0.4+ | 0.6+ | 2006 09 22 | 703 | 0.4− | 0.9− |
| 2001 11 17 | 704 | 0.3− | 0.4+ | 2001 12 09 | 691 | 0.2− | 0.2+ | 2006 09 27 | 703 | 0.3− | 1.1− |
| 2001 11 17 | 704 | 0.3− | 0.1− | 2001 12 09 | 691 | 0.2− | 0.5+ | 2006 09 27 | 703 | 0.8+ | 0.4+ |
| 2001 11 17 | 704 | 0.4+ | 0.1− | 2001 12 09 | 691 | 0.5+ | 0.7+ | 2006 09 27 | 703 | 0.2+ | 1.1− |
| 2001 11 18 | 704 | 0.4− | 0.5+ | 2001 12 14 | 704 | 0.1− | 0.8+ | 2006 09 27 | 703 | 0.4− | 0.5− |
| 2001 11 18 | 704 | 0.0 | 0.8+ | 2001 12 14 | 704 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 11 18 | 704 | 0.1− | 1.0+ | 2001 12 14 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.6+ | 0.4− |
| 2001 11 18 | 704 | 0.4+ | 1.3+ | 2001 12 14 | 704 | 0.4− | 0.9+ | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 2001 11 18 | 704 | (0.6+ | 1.8+) | 2002 11 13 | 645 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.3+ | 0.0 |
| 2001 11 18 | 704 | 0.1+ | 0.9+ | 2002 11 13 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3+ | 0.1− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | (0.2+ | 2.5+) | 2006 09 14 | G92 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.1− |
| 2001 11 18 | 704 | (0.9+ | 1.6+) | 2006 09 14 | G92 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2001 11 19 | 608 | 0.8− | 1.0− | 2006 09 14 | G92 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2001 11 19 | 608 | 0.5− | 0.8− | 2006 09 14 | 703 | 1.1− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2001 11 19 | 608 | 0.5− | 1.4− | 2006 09 14 | 703 | 0.1− | 1.0+ | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2001 11 20 | 704 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 11 17 | 291 | 0.3− | 0.3+ |
| 2001 11 20 | 704 | (1.3+ | 1.6−) | 2006 09 15 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 291 | 0.2− | 0.3+ |
| 2001 11 20 | 704 | 1.0− | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 291 | 0.4− | 0.1+ |
| 2001 11 20 | 704 | (0.3− | 1.9+) | 2006 09 15 | 704 | (2.0+ | 1.7−) | | | | |

### 2001 WP$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.09865 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.59690044 | $\omega$ | 349.20689 | | +0.58560097 | −0.74157902 | |
| $a$ | 1.3970162 | $\Omega$ | 64.12743 | | +0.76817669 | +0.37878460 | |
| $e$ | 0.1858638 | $i$ | 21.33206 | | +0.25879737 | +0.55369919 | |
| $P$ | 1.65 | $H$ | 21.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 608 | 0.3− | 0.5+ | 2001 11 25 | 557 | 0.2+ | 0.4− | 2001 12 20 | 715 | (0.3+ | 2.0−) |
| 2001 11 12 | 608 | 0.3+ | 0.7+ | 2001 11 25 | 118 | 0.5+ | 0.2− | 2001 12 20 | 715 | (0.6+ | 1.9−) |
| 2001 11 12 | 608 | 0.1+ | 0.8− | 2001 11 25 | 118 | 0.3− | 1.0+ | 2001 12 20 | 649 | 0.2+ | 1.2+ |
| 2001 11 24 | 644 | 0.3+ | 0.3+ | 2001 11 25 | 118 | (0.7+ | 1.7+) | 2001 12 20 | 649 | 0.3+ | 1.3− |
| 2001 11 24 | 644 | 0.2+ | 0.2+ | 2001 11 25 | 966 | 0.4+ | 0.8+ | 2001 12 20 | 649 | 0.4+ | 1.7− |
| 2001 11 24 | 644 | 0.4+ | 0.5+ | 2001 11 26 | 966 | 0.2+ | 1.4+ | 2002 02 16 | 568 | 0.1− | 0.1+ |
| 2001 11 25 | 608 | 0.2− | 0.5− | 2001 11 26 | 658 | 0.7+ | 0.4− | 2002 02 16 | 568 | 0.1+ | 0.0 |
| 2001 11 25 | 608 | 0.3− | 0.9− | 2001 11 26 | 658 | 0.2− | 0.4+ | 2006 10 30 | G96 | 0.1+ | 0.2− |
| 2001 11 25 | 608 | 0.7− | 0.6− | 2001 11 26 | 658 | 0.4− | 0.2− | 2006 10 30 | G96 | 0.0 | 0.1+ |
| 2001 11 25 | 608 | 1.1− | 0.3− | 2001 12 04 | 413 | 0.9+ | 0.5− | 2006 10 30 | G96 | 0.5+ | 0.2+ |
| 2001 11 25 | 608 | 0.4− | 0.4− | 2001 12 05 | 966 | 0.0 | 0.1+ | 2006 10 30 | G96 | 0.0 | 0.0 |
| 2001 11 25 | 608 | 0.6− | 0.6− | 2001 12 05 | 966 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 11 25 | 557 | (1.7+ | 0.8+) | 2001 12 06 | 649 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2001 11 25 | 557 | 0.8+ | 0.1+ | 2001 12 06 | 649 | 0.7− | 0.3+ | 2006 10 31 | G96 | 0.9+ | 1.2− |
| 2001 11 25 | 557 | 0.1+ | 0.6+ | 2001 12 06 | 649 | 0.8− | 0.6+ | | | | |

### 2001 WB$_{16}$ = 2006 UH$_{224}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.59083 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18579502 | $\omega$ | 206.17198 | | +0.22895631 | −0.96277067 | |
| $a$ | 3.0416787 | $\Omega$ | 230.94038 | | +0.92243525 | +0.26174155 | |
| $e$ | 0.2698389 | $i$ | 10.66534 | | +0.31095371 | −0.06755737 | |
| $P$ | 5.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 23 | 012 | 0.3+ | 1.0− | 2001 12 09 | 012 | 0.6+ | 0.1+ | 2001 12 18 | 704 | 1.1+ | 0.2+ |
| 2001 11 23 | 012 | 0.7− | 0.5− | 2001 12 10 | 012 | (1.7− | 0.3−) | 2001 12 18 | 704 | 0.5− | 1.1+ |
| 2001 11 23 | 012 | 0.5− | 0.1+ | 2001 12 10 | 012 | 0.1− | 0.2− | 2001 12 18 | 704 | 0.1+ | 0.5+ |
| 2001 11 23 | 012 | (1.6− | 1.0−) | 2001 12 10 | 012 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 11 26 | 012 | 0.7+ | 0.5+ | 2001 12 10 | 012 | 0.1− | 0.7− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 11 26 | 012 | 0.2− | 0.4+ | 2001 12 10 | 012 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2001 11 26 | 012 | 0.2− | 0.3+ | 2001 12 10 | 012 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2001 11 26 | 012 | 0.6− | 0.4+ | 2001 12 11 | 704 | 1.0+ | 0.4− | 2006 10 21 | 644 | 0.5− | 0.7+ |
| 2001 12 08 | 012 | 0.3+ | 0.9+ | 2001 12 11 | 704 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2001 12 08 | 012 | 0.4− | 0.4+ | 2001 12 11 | 704 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 12 08 | 012 | 0.7− | 1.4− | 2001 12 11 | 704 | 0.0 | 1.0+ | 2006 11 21 | 012 | 0.8+ | 0.1− |
| 2001 12 08 | 012 | 0.0 | 1.1− | 2001 12 11 | 704 | 1.0+ | 0.7− | 2006 11 21 | 012 | 0.4− | 1.2− |
| 2001 12 09 | 012 | 0.9+ | 0.1+ | 2001 12 18 | 704 | 1.3− | 0.7− | 2006 11 21 | 012 | 0.5− | 1.2+ |

### 2001 WG$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.63613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18635088 | $\omega$ | 100.04233 | | +0.99826883 | −0.00958917 | |
| $a$ | 3.0356271 | $\Omega$ | 260.52416 | | −0.01371466 | +0.92147234 | |
| $e$ | 0.1041077 | $i$ | 3.37277 | | +0.05719490 | +0.38832560 | |
| $P$ | 5.29 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.2− | 0.3− | 2001 11 24 | 704 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.4+ |
| 2001 10 19 | 644 | 0.2− | 0.0 | 2001 11 24 | 704 | 1.0+ | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.8− |
| 2001 10 19 | 644 | 0.2− | 0.7− | 2001 11 24 | 704 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 0.5+ | 0.1− | 2001 11 24 | 704 | 0.6+ | 0.6− | 2006 09 19 | 703 | 0.3− | 0.3− |
| 2001 10 21 | 704 | 0.7+ | 0.4+ | 2001 12 07 | 704 | (0.2− | 1.7+) | 2006 09 19 | 703 | 0.6+ | 0.4+ |
| 2001 10 21 | 704 | 1.2+ | 0.9− | 2001 12 07 | 704 | 0.9− | 0.4− | 2006 09 19 | 703 | 0.1+ | 0.9− |
| 2001 10 21 | 704 | 1.2+ | 0.4+ | 2001 12 07 | 704 | 0.6− | 0.6− | 2006 09 25 | 704 | 0.2+ | 1.2+ |
| 2001 10 26 | 644 | 0.3− | 0.3− | 2001 12 07 | 704 | (1.1− | 1.9+) | 2006 09 25 | 704 | (1.7+ | 0.7+) |
| 2001 10 26 | 644 | 0.2− | 0.2− | 2001 12 07 | 704 | 0.2− | 0.2+ | 2006 09 25 | 704 | (2.3+ | 1.1+) |
| 2001 10 26 | 644 | 0.3− | 0.1− | 2001 12 07 | 704 | 0.8− | 0.7+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2001 11 16 | 049 | 0.1+ | 0.2+ | 2001 12 07 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2001 11 16 | 049 | 0.5+ | 0.4+ | 2001 12 07 | 704 | 0.7− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2001 11 16 | 049 | 0.0 | 0.4− | 2001 12 07 | 704 | 0.5− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2001 11 17 | 704 | 0.8− | 0.8+ | 2001 12 18 | 704 | 0.4− | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2001 11 17 | 704 | 0.5− | 0.5− | 2001 12 18 | 704 | 0.1+ | 1.2+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.2− | 0.0 | 2001 12 18 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2001 11 17 | 704 | 0.3− | 0.3+ | 2001 12 18 | 704 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 11 17 | 704 | 0.6− | 0.1− | 2001 12 18 | 704 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.0 | 0.1− | 2001 12 19 | 704 | 1.1− | 0.5− | 2006 10 17 | 703 | 0.1− | 1.0− |
| 2001 11 19 | 704 | 0.0 | 0.5+ | 2001 12 19 | 704 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2001 11 19 | 704 | 0.3+ | 0.2+ | 2001 12 19 | 704 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.5+ | 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2001 11 19 | 704 | 0.1+ | 0.2+ | 2001 12 19 | 704 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 11 19 | 608 | 0.2+ | 0.0 | 2004 05 09 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2001 11 19 | 608 | 0.2+ | 0.2− | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 11 19 | 608 | 0.4− | 0.3− | 2004 05 09 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 20 | 291 | 0.4+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 20 | 291 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 11 20 | 291 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.6− |
| 2001 11 21 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 703 | 1.0− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.7+ | 0.3− | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2001 11 21 | 704 | 1.0− | 1.4+ | 2006 09 18 | 703 | 0.4− | 0.8− | 2006 11 18 | G96 | 0.7− | 1.2− |
| 2001 11 21 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.6− | | | | |
| 2001 11 21 | 704 | 1.2+ | 1.0− | 2006 09 18 | 699 | 0.2+ | 0.2− | | | | |

### 2001 WH$_{16}$ = 2006 SX$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.21361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18122297 | $\omega$ | 296.81446 | | +0.92765582 | +0.34869980 | |
| $a$ | 3.0926247 | $\Omega$ | 43.14101 | | −0.23355489 | +0.82100963 | |
| $e$ | 0.2155549 | $i$ | 11.27144 | | −0.29138769 | +0.45205268 | |
| $P$ | 5.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1− | 0.3− | 2001 11 19 | 704 | 0.4+ | 0.1− | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2001 10 21 | 704 | 0.2+ | 0.3+ | 2001 11 19 | 704 | 0.9+ | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.3− |
| 2001 10 21 | 704 | 0.6− | 0.3+ | 2001 11 19 | 704 | 0.4+ | 0.2− | 2006 10 02 | 703 | 0.4− | 0.2− |
| 2001 10 21 | 704 | 0.5− | 0.2+ | 2001 11 19 | 704 | 0.6+ | 1.4+ | 2006 10 02 | 703 | 0.6+ | 0.3− |
| 2001 10 21 | 704 | 0.2− | 0.7+ | 2001 11 21 | 704 | 0.5+ | 0.1− | 2006 10 02 | 703 | 0.9− | 0.5+ |
| 2001 11 11 | 691 | 0.0 | 0.4− | 2001 11 21 | 704 | 0.1− | 0.8+ | 2006 10 02 | 703 | 0.3+ | 0.3− |
| 2001 11 11 | 691 | 0.1+ | 0.3− | 2001 11 21 | 704 | 1.1+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 691 | 0.2− | 0.4− | 2001 11 21 | 704 | 1.3+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2001 11 13 | 049 | 0.9− | 0.2− | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 11 13 | 049 | 0.8− | 0.7− | 2006 09 18 | 703 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2001 11 13 | 049 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.7− | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2001 11 17 | 704 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2001 11 17 | 704 | 0.4− | 0.6+ | 2006 09 20 | 703 | 0.4− | 1.3− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.4− | 0.9+ | 2006 09 20 | 703 | 0.6+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2001 11 17 | 704 | 0.7− | 0.1− | 2006 09 20 | 703 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2001 11 17 | 704 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.4+ | | | | |
| 2001 11 19 | 704 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.7+ | 0.6− | | | | |

**2001 WT$_{16}$ = 2006 SK$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.71024 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19298095 | $\omega$ | 4.02335 | +0.88060525 | | −0.47189530 | |
| $a$ | 2.9656945 | $\Omega$ | 24.28032 | +0.43177862 | | +0.76172365 | |
| $e$ | 0.2356023 | $i$ | 6.00285 | +0.19519637 | | +0.44395034 | |
| $P$ | 5.11 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 333 | 0.6+ | 1.0− | 2001 11 17 | 704 | (0.2− | 1.9−) | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2001 09 25 | 333 | 0.0 | 0.9− | 2001 11 17 | 704 | 0.1+ | 0.9− | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2001 09 25 | 333 | 0.7+ | 1.1− | 2001 11 17 | 704 | 0.3− | 1.0− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 10 11 | 644 | 0.8− | 0.0 | 2001 11 17 | 704 | 0.2− | 0.7− | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2001 10 11 | 644 | 0.7− | 0.1+ | 2001 11 17 | 704 | (0.2− | 1.6−) | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2001 10 11 | 644 | 0.5− | 0.1+ | 2001 11 17 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2001 10 13 | 704 | (0.8+ | 1.6−) | 2001 11 17 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2001 10 13 | 704 | 0.2− | 0.2− | 2001 11 17 | 644 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 10 13 | 704 | 0.4+ | 0.7− | 2001 11 19 | 704 | 0.1− | 0.6− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2001 10 13 | 704 | 0.3− | 0.6− | 2001 11 19 | 704 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 10 13 | 704 | 0.4− | 1.0− | 2001 11 19 | 704 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2001 10 14 | 691 | 0.5− | 0.7+ | 2001 11 19 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 10 14 | 691 | 0.3+ | 0.7+ | 2001 11 19 | 704 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2001 10 14 | 691 | 0.6+ | 0.7+ | 2001 11 20 | 699 | 0.5+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 10 21 | 704 | 1.1+ | 0.7− | 2001 11 20 | 699 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 1.4+ | 0.9− | 2001 11 20 | 699 | 0.9− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 1.4+ | 0.8− | 2001 11 20 | 699 | 0.9− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 1.1+ | 0.8− | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 1.1+ | 0.9− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2001 10 23 | 049 | 0.2− | 0.4− | 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 11 02 | G96 | 0.1− | 0.5+ |
| 2001 10 23 | 049 | 0.0 | 0.3− | 2006 09 06 | 644 | 0.2+ | 0.3− | 2006 11 02 | G96 | 0.1− | 0.6+ |
| 2001 10 23 | 049 | 0.3− | 0.6− | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.9+ |
| 2001 10 26 | 704 | 1.0− | 0.1− | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 11 02 | G96 | 0.3+ | 0.9+ |
| 2001 10 26 | 704 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.3+ | 0.0 |
| 2001 10 26 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.5− | 0.1+ |
| 2001 10 26 | 704 | 0.4− | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.5+ | 0.8− |
| 2001 11 09 | 704 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.9− | 0.4− |
| 2001 11 09 | 704 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 11 09 | 704 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.2− | 2006 11 11 | 703 | (0.3+ | 2.1+) |
| 2001 11 09 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2001 11 09 | 704 | 1.0− | 0.5− | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2001 11 09 | 049 | 0.1− | 1.2− | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 11 09 | 049 | 0.1− | 0.8− | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 11 09 | 049 | 0.5+ | 1.1− | 2006 09 27 | 704 | 0.1+ | 0.3− | 2006 11 11 | 703 | 1.0+ | 1.5+ |
| 2001 11 11 | 699 | 0.1+ | 0.9+ | 2006 09 27 | 704 | 0.5− | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2001 11 11 | 699 | 0.0 | 0.9+ | 2006 09 27 | 704 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2001 11 11 | 699 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.4− |
| 2001 11 11 | 699 | 0.9− | 0.5+ | 2006 10 17 | 703 | 0.7− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.2− |

**2001 WQ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.63193 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18816258 | $\omega$ | 143.88319 | +0.95126109 | | −0.28636285 | |
| $a$ | 3.0161102 | $\Omega$ | 233.15494 | +0.23863149 | | +0.91860036 | |
| $e$ | 0.1462891 | $i$ | 8.22236 | +0.19533906 | | +0.27234115 | |
| $P$ | 5.24 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3+ | 0.1− | 2001 11 19 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 0.7− | 1.0− |
| 2001 10 14 | 704 | 0.2− | 0.3− | 2001 11 19 | 704 | 0.4− | 1.1+ | 2006 09 27 | 703 | 0.2+ | 0.3− |
| 2001 10 14 | 704 | 0.1− | 0.0 | 2001 11 19 | 704 | 0.5− | 0.6+ | 2006 09 27 | 703 | 0.6− | 0.1+ |
| 2001 10 21 | 704 | 0.4− | 0.3− | 2001 11 21 | 704 | 1.3+ | 0.6+ | 2006 09 30 | 683 | 0.7− | 0.7+ |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 09 30 | 683 | 0.6− | 0.4+ |
| 2001 10 21 | 704 | 0.6− | 0.3+ | 2001 11 21 | 704 | 0.2− | 0.9− | 2006 09 30 | 683 | 0.5+ | 1.2− |
| 2001 10 21 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2001 11 09 | 704 | 0.8− | 0.1− | 2006 09 14 | 644 | 0.6+ | 0.0 | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 11 09 | 704 | 1.0− | 1.2− | 2006 09 16 | 703 | 0.2+ | 1.0+ | 2006 10 23 | 644 | 0.3− | 0.5+ |
| 2001 11 09 | 704 | 0.4− | 0.4− | 2006 09 16 | 703 | 1.3− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.4+ | 1.1− | 2006 09 16 | 703 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2001 11 17 | 704 | 0.9+ | 0.6+ | 2006 09 27 | 699 | (1.3+ | 2.4−) | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2001 11 17 | 704 | 0.8+ | 0.7+ | 2006 09 27 | 699 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2001 11 17 | 704 | 0.6+ | 0.3− | 2006 09 27 | 699 | (0.1− | 1.9+) | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.2+ | 0.3− | 2006 09 27 | 699 | (2.1+ | 1.1−) | | | | |
| 2001 11 19 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.5+ | 0.4− | | | | |

**2001 WC$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.00072 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18736809 | $\omega$ | 185.01711 | +0.57247329 | | −0.80967737 | |
| $a$ | 3.0246303 | $\Omega$ | 230.12694 | +0.75800066 | | +0.58270641 | |
| $e$ | 0.1721721 | $i$ | 9.69291 | +0.31258492 | | +0.06982686 | |
| $P$ | 5.26 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 25 | 691 | 0.3− | 1.6+ | 2001 11 09 | 704 | 0.0 | 0.4− | 2006 08 29 | 699 | 1.0+ | 0.4+ |
| 1995 06 25 | 691 | 0.1+ | 0.2− | 2001 11 09 | 704 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.1− | 0.1− |
| 1995 06 25 | 691 | 0.2− | 0.1− | 2001 11 09 | 704 | 0.5− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2001 08 22 | 704 | 1.3− | 0.6− | 2001 11 09 | 704 | 0.1− | 0.4− | 2006 09 14 | 644 | 0.3+ | 0.1− |
| 2001 08 22 | 704 | 0.4− | 1.3− | 2001 11 09 | 704 | 0.0 | 0.4− | 2006 09 19 | 699 | 0.6+ | 0.4− |
| 2001 08 22 | 704 | 0.3− | 0.1− | 2001 11 16 | 644 | 0.1− | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.3− |
| 2001 09 21 | 699 | 0.8+ | 0.7− | 2001 11 16 | 644 | 0.3− | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2001 09 21 | 699 | (1.8− | 1.4+) | 2001 11 16 | 644 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.7+ | 0.8− |
| 2001 09 21 | 699 | 0.8− | 0.2− | 2001 11 17 | 704 | 0.2− | 0.3+ | 2006 09 27 | 699 | 0.1− | 1.1− |
| 2001 09 21 | 699 | 0.7− | 0.5+ | 2001 11 17 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 699 | (2.7+ | 2.5−) |
| 2001 09 26 | 704 | 0.4+ | 0.5+ | 2001 11 17 | 704 | 0.5+ | 1.0+ | 2006 09 27 | 699 | 0.8+ | 0.7− |
| 2001 09 26 | 704 | 0.2+ | 0.0 | 2001 11 17 | 704 | 0.0 | 0.3− | 2006 09 27 | 699 | 0.6+ | 0.4− |
| 2001 09 26 | 704 | 0.8+ | 0.3− | 2001 11 19 | 704 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 0.5+ | 0.4− |
| 2001 09 26 | 704 | 0.1+ | 0.1+ | 2001 11 19 | 704 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.6+ | 0.3− |
| 2001 09 26 | 704 | 1.0− | 0.6− | 2001 11 19 | 704 | 0.2− | 0.0 | 2006 10 03 | 704 | 1.1+ | 0.4− |
| 2001 10 14 | 704 | 0.1+ | 0.9+ | 2001 11 19 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2001 10 14 | 704 | 0.5− | 0.6− | 2001 11 19 | 704 | 0.1+ | 0.2− | 2006 10 17 | 703 | (0.8− | 1.7−) |
| 2001 10 14 | 704 | 0.8+ | 0.2− | 2001 11 21 | 704 | 0.7+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2001 10 14 | 333 | 0.2− | 0.4− | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 0.3+ | 0.5− | 2001 11 21 | 704 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 10 14 | 704 | 0.4+ | 0.1− | 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 10 14 | 333 | 0.2− | 0.1+ | 2001 11 21 | 704 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2001 10 14 | 333 | 0.1+ | 0.4+ | 2001 12 09 | 699 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 10 19 | 644 | 0.1− | 0.2− | 2001 12 09 | 699 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2001 10 19 | 644 | 0.2− | 0.2− | 2001 12 09 | 699 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 10 19 | 644 | 0.4− | 0.3− | 2001 12 09 | 699 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2001 12 11 | 704 | 0.5− | 0.4+ | 2006 10 23 | 703 | 0.3− | 0.6− |
| 2001 10 21 | 704 | 0.0 | 0.6+ | 2001 12 11 | 704 | 0.7+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.1+ | 0.5+ | 2001 12 11 | 704 | 0.9+ | 0.6+ | 2006 10 23 | 703 | 0.2+ | 1.4− |
| 2001 10 21 | 704 | 0.3+ | 0.6+ | 2001 12 11 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 703 | 0.2+ | 0.4− |
| 2001 10 21 | 704 | 0.7− | 0.6+ | 2001 12 11 | 704 | 0.6− | 0.3− | 2006 10 23 | 703 | 3.0− | 0.2+ |
| 2001 10 26 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 699 | (2.2+ | 2.4+) | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2001 10 26 | 644 | 0.0 | 0.5+ | 2006 08 29 | 699 | 0.9− | 0.8+ | | | | |
| 2001 10 26 | 644 | 0.1+ | 0.6+ | 2006 08 29 | 699 | 1.6+ | 1.2+ | | | | |

**2001 WM$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.49451 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20961287 | $\omega$ | 273.39431 | +0.60302754 | | +0.79348373 | |
| $a$ | 2.8066661 | $\Omega$ | 34.12707 | −0.66140409 | | +0.55486847 | |
| $e$ | 0.0853207 | $i$ | 8.41537 | −0.44598478 | | +0.25000912 | |
| $P$ | 4.70 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 19 | 691 | 0.2+ | 0.1− | 2001 11 19 | 704 | 0.8− | 0.6− | 2005 09 25 | 703 | 0.2− | 0.5+ |
| 1996 11 19 | 691 | 0.0 | 0.1− | 2001 11 24 | 704 | 0.7+ | 0.8+ | 2005 09 25 | 703 | 0.7+ | 0.8+ |
| 1996 11 19 | 691 | 0.2+ | 0.3− | 2001 11 24 | 704 | 0.1− | 0.1− | 2005 10 03 | 703 | 0.5+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.1− | 0.7− | 2001 11 24 | 704 | 0.9+ | 0.0 | 2005 10 03 | 703 | 0.8− | 0.4+ | | |
| 2001 11 17 | 704 | 0.0 | 0.2+ | 2001 11 24 | 704 | 1.0+ | 1.3+ | 2005 10 03 | 703 | 0.1+ | 0.0 | | |
| 2001 11 17 | 704 | 0.4− | 0.9− | 2005 08 27 | 644 | 0.2− | 0.3− | 2005 10 03 | 703 | 0.8− | 0.3+ | | |
| 2001 11 19 | 704 | 0.5− | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.3− | 2005 10 10 | 703 | 0.6− | 0.9+ | | |
| 2001 11 19 | 704 | 0.9− | 0.1+ | 2005 08 27 | 644 | 0.0 | 0.3− | 2005 10 10 | 703 | 0.6+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.0 | 0.7+ | 2005 09 25 | 703 | 0.9+ | 0.6+ | 2005 10 10 | 703 | 0.4+ | 0.8− | | |
| 2001 11 19 | 704 | 0.5− | 0.1+ | 2005 09 25 | 703 | 1.3− | 1.1− | 2005 10 10 | 703 | 0.6+ | 0.6+ | | |

### 2001 $WH_{21}$ = 2006 $VY_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.62685 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19244238 | $\omega$ | 158.74561 | | +0.75939580 | −0.63776515 | |
| $a$ | 2.9712252 | $\Omega$ | 241.53995 | | +0.57383453 | +0.74977806 | |
| $e$ | 0.0779359 | $i$ | 8.42041 | | +0.30664630 | +0.17631922 | |
| $P$ | 5.12 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 13 | 049 | 0.2− | 1.1+ | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.5− | | |
| 2001 11 13 | 049 | 0.7− | 0.1− | 2006 10 13 | 691 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 2001 11 13 | 049 | 0.0 | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1− | 0.0 | | |
| 2001 11 18 | 704 | 0.2− | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2001 11 18 | 704 | 0.7+ | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.6− | | |
| 2001 11 18 | 704 | 0.0 | 0.9+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.2− | | |
| 2001 11 19 | 704 | 0.0 | 0.6− | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.3+ | | |
| 2001 11 19 | 704 | 0.1− | 1.0− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.5− | | |
| 2001 11 19 | 704 | 0.2− | 1.4− | 2006 10 21 | 691 | 0.2− | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2001 11 19 | 704 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.5− | 0.6+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.4+ | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.8+ | | |
| 2001 11 21 | 704 | 0.4+ | 0.6− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.1− | | |
| 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 11 13 | 691 | 0.3+ | 0.2− | 2006 11 27 | 691 | 0.3− | 0.2+ | | |
| 2001 11 21 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2− | | |

### 2001 $WM_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.84036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17831240 | $\omega$ | 159.89062 | | +0.96553764 | −0.25031457 | |
| $a$ | 3.1261875 | $\Omega$ | 214.85360 | | +0.21846805 | +0.92833534 | |
| $e$ | 0.1146249 | $i$ | 7.16425 | | +0.14145237 | +0.27483834 | |
| $P$ | 5.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.3+ | 0.3+ | 2001 10 21 | 704 | 0.2− | 0.5+ | 2001 11 20 | 691 | 0.2+ | 0.1− | | |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2001 10 21 | 704 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 2001 09 21 | 704 | 0.7− | 1.6− | 2001 10 21 | 704 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.2+ | | |
| 2001 10 19 | 644 | 0.3− | 0.1+ | 2001 11 16 | 691 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 19 | 644 | 0.1− | 0.1− | 2001 11 16 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 19 | 644 | 0.2− | 0.2− | 2001 11 16 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.3− | 0.1− | | |
| 2001 10 21 | 704 | 0.9− | 0.1− | 2001 11 20 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.3− | | |
| 2001 10 21 | 704 | 0.3− | 0.2+ | 2001 11 20 | 691 | 0.2+ | 0.1− | | | | | | |

### 2001 $WQ_{23}$ = 2006 $RH_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.31123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18385144 | $\omega$ | 6.77138 | | +0.70487834 | −0.70920674 | |
| $a$ | 3.0630778 | $\Omega$ | 38.41022 | | +0.64980092 | +0.63819277 | |
| $e$ | 0.0963687 | $i$ | 1.21070 | | +0.28443855 | +0.29955932 | |
| $P$ | 5.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.0 | 0.8+ | 2001 12 15 | 704 | 1.3− | 0.2+ | 2006 10 03 | 691 | 0.2− | 0.0 | | |
| 1995 09 17 | 691 | 0.5− | 0.2+ | 2001 12 15 | 704 | 0.9− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 1995 09 17 | 691 | 0.1− | 0.1+ | 2001 12 15 | 704 | 0.7− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.5+ | | |
| 2001 11 17 | 291 | 0.4− | 0.2− | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2001 11 17 | 291 | 0.7− | 0.1+ | 2006 09 14 | 691 | 0.5+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2001 11 17 | 291 | 0.5− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.5− | 0.4− | | |
| 2001 11 19 | 704 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.5− | | |
| 2001 11 19 | 704 | 0.5− | 1.1+ | 2006 09 18 | 691 | 0.4+ | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− | | |
| 2001 11 19 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.7+ | 0.2− | | |
| 2001 11 20 | 691 | 1.2+ | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.1− | | |
| 2001 11 20 | 691 | 0.9+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.0 | | |
| 2001 11 20 | 691 | 0.7+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 11 22 | G96 | 0.0 | 0.1+ | | |
| 2001 11 21 | 704 | 0.5− | 0.2+ | 2006 09 26 | G96 | 1.1+ | 1.0− | 2006 11 22 | G96 | 0.2+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.8− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.1− | 0.3+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.5+ | | |
| 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 10 03 | 691 | 0.5− | 0.1+ | | | | | | |
| 2001 12 15 | 704 | 1.4− | 1.3− | 2006 10 03 | 691 | 0.0 | 0.0 | | | | | | |

### 2001 $WB_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.17516 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19546950 | $\omega$ | 309.11395 | | +0.99666753 | −0.07140024 | |
| $a$ | 2.9404698 | $\Omega$ | 55.01489 | | +0.08139030 | +0.90263473 | |
| $e$ | 0.1144875 | $i$ | 2.75949 | | −0.00542690 | +0.42444382 | |
| $P$ | 5.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 691 | 0.0 | 0.1− | 2001 12 18 | 291 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.5− | | |
| 2001 11 17 | 691 | 0.4− | 0.1+ | 2001 12 18 | 291 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.2− | 0.6+ | | |
| 2001 11 17 | 691 | 0.1− | 0.0 | 2001 12 18 | 291 | 0.0 | 0.2+ | 2006 11 12 | 703 | (0.2+ | 2.1+) | | |
| 2001 11 19 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 12 | 703 | 0.4− | 0.0 | | |
| 2001 11 19 | 704 | 0.1− | 1.3+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 12 | 703 | 0.7+ | 0.9− | | |
| 2001 11 19 | 704 | 0.3+ | 1.2+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.3+ | | |
| 2001 11 20 | 691 | 0.4− | 0.4− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.1− | | |
| 2001 11 20 | 691 | 0.4− | 0.4− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.4− | | |
| 2001 11 20 | 691 | 0.4− | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 11 16 | 703 | 1.0− | 0.3+ | | |
| 2001 11 21 | 704 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 16 | 703 | (1.1− | 1.8+) | | |
| 2001 11 21 | 704 | 1.5+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.1− | 1.3+ | | |
| 2001 11 21 | 704 | 0.8+ | 0.8− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.2− | 0.4+ | | |
| 2001 11 21 | 704 | 1.0+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 27 | G96 | 0.1+ | 0.6− | | |
| 2001 12 07 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 27 | G96 | 0.1+ | 0.5− | | |
| 2001 12 07 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.8− | 2006 11 27 | G96 | 0.2− | 0.5− | | |
| 2001 12 07 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.2− | 0.1+ | | |
| 2001 12 14 | 291 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.5+ | | |
| 2001 12 14 | 291 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.5− | 2006 12 01 | G96 | 0.9+ | 0.4− | | |
| 2001 12 14 | 291 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.1+ | 0.6− | | |

### 2001 $WK_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.21496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19217556 | $\omega$ | 329.12151 | | +0.75425409 | −0.64273782 | |
| $a$ | 2.9739747 | $\Omega$ | 71.48946 | | +0.62758445 | +0.64570328 | |
| $e$ | 0.1560542 | $i$ | 8.13117 | | +0.19297285 | +0.41225643 | |
| $P$ | 5.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.7+ | 0.8− | 2001 12 14 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.6− | | |
| 2001 11 17 | 704 | 1.0+ | 0.6− | 2001 12 14 | 704 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.2− | | |
| 2001 11 17 | 704 | 0.6+ | 0.5− | 2001 12 14 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.9− | | |
| 2001 11 17 | 704 | 1.2+ | 0.3+ | 2001 12 17 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.8− | | |
| 2001 11 20 | 704 | 0.3+ | 0.8+ | 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.7+ | 0.0 | | |
| 2001 11 20 | 704 | 0.5+ | 0.5+ | 2001 12 17 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.4− | | |
| 2001 11 20 | 704 | 0.4− | 0.8+ | 2001 12 17 | 704 | 0.4− | 0.9+ | 2006 10 22 | 703 | 0.7− | 0.8− | | |
| 2001 11 20 | 704 | 0.7+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 1.3+ | | |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.2+ | 1.2+ | | |
| 2001 12 09 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.2+ | 1.1+ | | |
| 2001 12 09 | 691 | 1.3− | 1.3− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.7+ | | |
| 2001 12 09 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.1+ | | | | | | |
| 2001 12 14 | 704 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.1− | | | | | | |

**2001 WL$_{26}$ = 2001 UE$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.77596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18354755 | $\omega$ | 281.95657 | | +0.99678038 | −0.07130436 | |
| $a$ | 3.0664578 | $\Omega$ | 82.14042 | | +0.08003831 | +0.91206926 | |
| $e$ | 0.2114429 | $i$ | 2.12135 | | −0.00476907 | +0.40378874 | |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 333 | 0.1+ | 0.5− | 2001 12 14 | 704 | 0.1+ | 0.9− | 2006 09 19 | H06 | 0.5+ | 0.8− |
| 2001 10 17 | 333 | 0.1+ | 0.3− | 2001 12 14 | 704 | 0.2− | 0.6− | 2006 09 19 | H06 | 0.1− | 0.2+ |
| 2001 10 17 | 333 | 0.2− | 1.0− | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 19 | H06 | 0.5+ | 0.8+ |
| 2001 10 23 | 704 | 0.5− | 0.5− | 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.2− | 0.3+ |
| 2001 10 23 | 704 | 0.3− | 1.0+ | 2006 08 18 | 691 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.1− |
| 2001 10 23 | 704 | (0.1+ | 1.6+) | 2006 08 28 | 699 | 0.8+ | 1.2− | 2006 09 26 | 704 | 0.8+ | 0.3+ |
| 2001 10 23 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 699 | (0.3+ | 2.0+) | 2006 09 26 | 704 | (2.2+ | 1.5+) |
| 2001 10 24 | 704 | (2.0− | 0.8+) | 2006 08 28 | 699 | (1.7− | 0.7+) | 2006 09 26 | 704 | (0.6− | 1.6+) |
| 2001 10 24 | 704 | 0.5− | 0.8+ | 2006 08 28 | 699 | 0.5+ | 0.3+ | 2006 09 28 | 704 | 0.8− | 0.2− |
| 2001 10 24 | 704 | 1.1− | 0.3+ | 2006 09 12 | 703 | 1.1− | 0.3+ | 2006 09 28 | 704 | 0.3+ | 0.5+ |
| 2001 10 24 | 704 | 1.2− | 1.1+ | 2006 09 12 | 703 | 0.3+ | 0.9+ | 2006 09 28 | 704 | 1.2+ | 1.1+ |
| 2001 11 17 | 704 | 0.2− | 0.2+ | 2006 09 12 | 703 | (1.7+ | 0.8+) | 2006 09 28 | 704 | 0.8+ | 0.2+ |
| 2001 11 17 | 704 | 0.0 | 0.0 | 2006 09 12 | 703 | (0.9+ | 1.9+) | 2006 09 30 | 703 | 0.1− | 0.6− |
| 2001 11 17 | 704 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.7− | 0.8+ | 2006 09 30 | 703 | 0.0 | 1.0− |
| 2001 11 17 | 704 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.4− |
| 2001 11 20 | 704 | 0.8+ | 0.5+ | 2006 09 16 | 704 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.8− | 0.8+ |
| 2001 11 20 | 704 | 1.1+ | 0.1+ | 2006 09 16 | 704 | 0.9+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.7+ | 0.2− | 2006 09 18 | 703 | (1.4− | 1.7+) | 2006 10 09 | 644 | 0.1− | 0.7+ |
| 2001 11 20 | 704 | 1.0+ | 0.3− | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.4− |
| 2001 11 21 | 704 | 0.8+ | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 16 | 703 | 1.3− | 0.8− |
| 2001 11 21 | 704 | 0.5− | 0.2+ | 2006 09 18 | 699 | 1.0− | 1.0− | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2001 11 21 | 704 | 0.9+ | 0.3+ | 2006 09 18 | 699 | (1.6+ | 0.5−) | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2001 12 11 | 291 | 0.4− | 0.3− | 2006 09 18 | 699 | 0.8+ | 0.6+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2001 12 11 | 291 | 0.4− | 0.2− | 2006 09 18 | 699 | 0.5+ | 1.3+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 291 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.8− | 0.5− | 2006 11 17 | G96 | 0.5+ | 0.1+ |
| 2001 12 14 | 704 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2001 12 14 | 704 | 0.5+ | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2001 12 14 | 704 | 0.8+ | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.3− | 2006 11 17 | G96 | 0.5+ | 0.4− |

**2001 WT$_{26}$ = 2006 SO$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.00014 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17429047 | $\omega$ | 259.25463 | | +0.82953540 | +0.53795581 | |
| $a$ | 3.1740976 | $\Omega$ | 68.04610 | | −0.42805187 | +0.78490575 | |
| $e$ | 0.1408857 | $i$ | 9.30188 | | −0.35866784 | +0.30745162 | |
| $P$ | 5.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.7+ | 0.7+ | 2001 12 14 | 291 | 0.3− | 0.2− | 2006 09 20 | 703 | 0.3+ | 0.6+ |
| 2001 10 24 | 704 | 0.3+ | 0.1− | 2001 12 14 | 291 | 0.7− | 0.2+ | 2006 09 20 | 703 | 0.4+ | 0.2− |
| 2001 10 24 | 704 | 0.4− | 0.5+ | 2001 12 14 | 291 | 0.2− | 0.2+ | 2006 09 21 | 699 | 0.2− | 0.1− |
| 2001 10 24 | 704 | 0.1− | 0.8+ | 2001 12 14 | 704 | 0.5− | 0.4+ | 2006 09 21 | 699 | 0.4− | 0.1− |
| 2001 11 17 | 704 | 0.3− | 0.1+ | 2001 12 14 | 704 | 0.2− | 0.1− | 2006 09 21 | 699 | 1.5− | 0.7+ |
| 2001 11 17 | 704 | 0.0 | 0.1+ | 2001 12 14 | 704 | 0.3+ | 0.8+ | 2006 09 21 | 699 | 1.2− | 1.0+ |
| 2001 11 17 | 704 | 0.8− | 0.3− | 2001 12 14 | 704 | 0.2− | 1.2+ | 2006 09 26 | 703 | 0.3+ | 0.4− |
| 2001 11 17 | 704 | 0.1+ | 0.3+ | 2001 12 14 | 704 | 0.5− | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.7+ |
| 2001 11 19 | 699 | 0.3− | 0.9− | 2004 03 18 | 691 | 0.5+ | 0.6+ | 2006 09 26 | 703 | 0.6+ | 0.6+ |
| 2001 11 19 | 699 | 0.4+ | 0.4− | 2004 03 18 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.7+ | 0.2− | 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.1+ |
| 2001 11 19 | 699 | 0.5+ | 0.0 | 2005 06 14 | G96 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.3− |
| 2001 11 20 | 704 | 0.2+ | 1.6− | 2005 06 14 | G96 | 0.1+ | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | (0.7− | 1.6−) | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.6− |
| 2001 11 20 | 704 | 1.0+ | 0.3+ | 2005 06 14 | G96 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.6+ | 0.4+ |
| 2001 11 20 | 704 | 0.9+ | 0.8+ | 2006 09 18 | D35 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.7+ | 0.4+ | 2006 09 18 | D35 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.5+ |
| 2001 11 21 | 704 | 0.9+ | 1.4− | 2006 09 18 | D35 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.5+ | 0.6+ |
| 2001 11 21 | 704 | 0.2+ | 0.3− | 2006 09 20 | 703 | 0.4− | 0.3+ | | | | |
| 2001 11 21 | 704 | (0.5− | 1.7−) | 2006 09 20 | 703 | (0.2+ | 1.8+) | | | | |

**2001 WV$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.69132 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20522538 | $\omega$ | 286.12726 | | +0.95909478 | −0.20302006 | |
| $a$ | 2.8465272 | $\Omega$ | 85.90682 | | +0.26811050 | +0.87510627 | |
| $e$ | 0.2455336 | $i$ | 11.40753 | | −0.09085136 | +0.43928564 | |
| $P$ | 4.80 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.5− | 0.7− | 2001 12 11 | 704 | 0.0 | 0.0 | 2001 12 23 | 608 | 0.3− | 0.2− |
| 2001 09 17 | 704 | 1.0+ | 0.2− | 2001 12 11 | 704 | 0.2+ | 0.2− | 2002 01 11 | 699 | (1.8− | 0.8−) |
| 2001 09 17 | 704 | 0.3+ | 0.5− | 2001 12 11 | 704 | 0.4− | 0.4− | 2002 01 11 | 699 | 0.4+ | 1.3− |
| 2001 09 17 | 704 | 0.4+ | 0.5+ | 2001 12 14 | 644 | 0.2− | 0.9+ | 2002 01 11 | 699 | 1.1− | 0.2+ |
| 2001 09 17 | 704 | 0.3+ | 0.0 | 2001 12 14 | 704 | 0.6+ | 0.5− | 2002 01 11 | 699 | (1.6+ | 0.9+) |
| 2001 10 17 | 704 | 0.3+ | 0.8+ | 2001 12 14 | 704 | 0.4+ | 0.4− | 2002 01 13 | 704 | 0.7+ | 0.1+ |
| 2001 10 17 | 704 | 0.7− | 0.6+ | 2001 12 14 | 644 | 0.0 | 0.9+ | 2002 01 13 | 704 | 0.3+ | 0.1+ |
| 2001 10 17 | 704 | (1.8− | 1.4−) | 2001 12 14 | 704 | 0.9+ | 0.2− | 2002 01 13 | 704 | 0.4+ | 0.5+ |
| 2001 11 17 | 704 | 0.2− | 0.6+ | 2001 12 14 | 704 | 0.3+ | 0.0 | 2002 01 13 | 704 | 0.5+ | 0.3+ |
| 2001 11 17 | 704 | 0.4− | 0.1− | 2001 12 14 | 704 | 0.9+ | 0.1+ | 2002 01 13 | 704 | 0.4+ | 0.9+ |
| 2001 11 17 | 704 | 0.3+ | 0.4+ | 2001 12 14 | 644 | 0.1+ | 1.0+ | 2002 01 15 | 704 | 0.2− | 0.2+ |
| 2001 11 17 | 704 | 0.5− | 0.4+ | 2001 12 17 | 704 | 0.1+ | 0.0 | 2002 01 15 | 704 | 0.7− | 0.2+ |
| 2001 11 17 | 704 | 0.4− | 0.1+ | 2001 12 17 | 704 | 0.4+ | 0.4+ | 2002 01 15 | 704 | 0.3+ | 0.4+ |
| 2001 11 20 | 704 | 0.3+ | 0.2− | 2001 12 17 | 704 | 0.1+ | 0.1− | 2002 01 15 | 704 | 0.3+ | 0.4+ |
| 2001 11 20 | 704 | 0.1+ | 0.4+ | 2001 12 17 | 704 | 0.0 | 0.6+ | 2002 01 15 | 704 | 0.1− | 0.5+ |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2001 12 17 | 704 | 0.1− | 1.0+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.5− | 0.1+ | 2001 12 18 | 644 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2001 12 18 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2001 11 24 | 704 | 0.0 | 0.3− | 2001 12 18 | 644 | 0.3+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.0 | 0.5− | 2001 12 20 | 704 | 0.8− | 1.3− | 2006 11 22 | 691 | 0.9+ | 0.6+ |
| 2001 11 24 | 704 | (1.6− | 0.4−) | 2001 12 20 | 704 | 0.3− | 1.2− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 11 24 | 704 | 0.2+ | 1.1− | 2001 12 20 | 704 | 0.6− | 1.0− | 2006 11 26 | 691 | 0.1+ | 0.1+ |
| 2001 11 24 | 704 | 0.7− | 0.7− | 2001 12 20 | 704 | 0.0 | 1.0− | 2006 11 26 | 691 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 0.6− | 0.2− | 2001 12 23 | 608 | 0.6− | 0.1+ | 2006 11 26 | 691 | 0.2− | 0.1− |
| 2001 12 11 | 704 | 0.1− | 0.3− | 2001 12 23 | 608 | 0.3− | 0.2+ | | | | |

**2001 WK$_{32}$ = 2006 TZ$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.15690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18453062 | $\omega$ | 158.44623 | | +0.90883479 | −0.38909611 | |
| $a$ | 3.0555572 | $\Omega$ | 225.38504 | | +0.34517087 | +0.90389752 | |
| $e$ | 0.0554417 | $i$ | 12.19845 | | +0.23425710 | +0.17768933 | |
| $P$ | 5.34 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 049 | 0.2− | 0.3+ | 2001 11 20 | 704 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.8+ |
| 2001 10 24 | 049 | 0.1− | 0.3− | 2001 11 20 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2001 10 24 | 049 | 0.4− | 0.5− | 2001 11 20 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.1− |
| 2001 10 24 | 049 | 0.6− | 0.2+ | 2001 12 13 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2001 10 24 | 049 | 0.3− | 0.3− | 2001 12 13 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2001 11 17 | 704 | 0.9− | 0.3+ | 2001 12 13 | 644 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.8+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2001 11 17 | 704 | (1.5− | 0.8−) | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 0.7− | 1.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.9+ | 0.3− | 2006 10 12 | 644 | 0.5+ | 0.0 | | | | |

**2001 WZ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.79977 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17989931 | $\omega$ | 311.68230 | +0.80059560 | | −0.57255505 | |
| $a$ | 3.1077760 | $\Omega$ | 83.98512 | +0.58889546 | | +0.69735583 | |
| $e$ | 0.1576376 | $i$ | 10.23530 | +0.11067440 | | +0.43113287 | |
| $P$ | 5.48 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.3+ | 1.0+ | 2001 11 19 | 699 | 0.3− | 0.1− | 2001 12 18 | 644 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 0.7+ | 1.0+ | 2001 11 19 | 699 | 0.3− | 0.1− | 2001 12 20 | 704 | 1.3+ | 1.0+ |
| 2001 10 17 | 704 | 0.8− | 0.3− | 2001 11 20 | 704 | 0.0 | 0.2+ | 2001 12 20 | 704 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.3+ | 0.2− | 2001 11 20 | 704 | 0.4+ | 0.9− | 2001 12 20 | 704 | (0.7+ | 1.5+) |
| 2001 10 19 | 291 | 0.5+ | 0.0 | 2001 11 20 | 704 | 0.0 | 0.9+ | 2001 12 20 | 704 | 0.5− | 0.7+ |
| 2001 10 19 | 291 | 0.4− | 0.1− | 2001 12 11 | 704 | 0.2− | 0.1+ | 2006 09 20 | 703 | 0.0 | 0.2+ |
| 2001 10 19 | 291 | 0.2− | 0.3− | 2001 12 11 | 704 | 0.5− | 0.8− | 2006 09 20 | 703 | 0.8− | 0.7+ |
| 2001 11 09 | 704 | 0.6+ | 0.8+ | 2001 12 11 | 704 | 0.2− | 0.7− | 2006 09 20 | 703 | 0.4+ | 0.2+ |
| 2001 11 09 | 704 | 0.1+ | 0.8+ | 2001 12 11 | 704 | 0.2− | 0.4− | 2006 09 20 | 703 | 1.1+ | 1.0− |
| 2001 11 09 | 704 | 0.1+ | 0.4+ | 2001 12 11 | 704 | 0.0 | 0.7− | 2006 09 26 | 703 | 0.1+ | 0.6− |
| 2001 11 09 | 704 | (1.7+ | 0.0 ) | 2001 12 17 | 704 | 0.0 | 0.9− | 2006 09 26 | 703 | 0.5+ | 0.1− |
| 2001 11 09 | 704 | 0.9+ | 0.0 | 2001 12 17 | 704 | 0.2− | 0.4− | 2006 09 26 | 703 | 0.2+ | 0.2− |
| 2001 11 17 | 704 | (1.5+ | 1.7−) | 2001 12 17 | 704 | (1.8− | 0.0 ) | 2006 09 26 | 703 | 0.4− | 0.5+ |
| 2001 11 17 | 704 | (1.4+ | 2.0−) | 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 1.0− | 0.1+ |
| 2001 11 17 | 704 | (1.2+ | 1.8−) | 2001 12 17 | 704 | (1.7+ | 0.3+) | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 11 19 | 699 | 0.9− | 0.0 | 2001 12 18 | 644 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 11 19 | 699 | 0.4− | 0.3− | 2001 12 18 | 644 | 0.2+ | 0.0 | | | | |

**2001 WB$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.72136 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18627146 | $\omega$ | 330.66621 | +0.56853007 | | −0.79904709 | |
| $a$ | 3.0364898 | $\Omega$ | 84.01991 | +0.78792265 | | +0.46049232 | |
| $e$ | 0.0939578 | $i$ | 11.34801 | +0.23654060 | | +0.38661424 | |
| $P$ | 5.29 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.6− | 0.5− | 2001 12 11 | 704 | 0.5− | 0.1− | 2006 09 29 | 699 | (0.2+ | 2.2−) |
| 2001 09 21 | 704 | 1.2+ | 0.7− | 2001 12 11 | 704 | 0.4− | 1.1+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2001 09 21 | 704 | 0.9+ | 1.4− | 2001 12 11 | 704 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 2001 11 17 | 704 | 0.9− | 1.3− | 2001 12 11 | 704 | 0.5− | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.7− |
| 2001 11 17 | 704 | 1.3+ | 1.0− | 2002 01 13 | 704 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2001 11 17 | 704 | (0.4+ | 1.7−) | 2002 01 13 | 704 | 0.9+ | 0.5− | 2006 10 22 | 703 | 0.5+ | 0.5+ |
| 2001 11 20 | 704 | (1.0+ | 1.6+) | 2002 01 13 | 704 | 0.9− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2001 11 20 | 704 | 0.1− | 1.4+ | 2002 01 13 | 704 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.9+ | 0.5+ |
| 2001 11 20 | 704 | 0.3+ | 1.4+ | 2006 09 29 | 699 | 1.2− | 0.2− | 2006 10 22 | 703 | 1.2+ | 0.5− |
| 2001 11 20 | 704 | 0.9+ | 0.7+ | 2006 09 29 | 699 | 0.9− | 0.1+ | | | | |
| 2001 12 11 | 704 | 0.6− | 0.2− | 2006 09 29 | 699 | 0.2+ | 0.3− | | | | |

**2001 WE$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.35192 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18600013 | $\omega$ | 10.20593 | −0.17472503 | | −0.98079680 | |
| $a$ | 3.0394422 | $\Omega$ | 89.89551 | +0.89715144 | | −0.19484813 | |
| $e$ | 0.1870429 | $i$ | 4.97111 | +0.40569750 | | +0.00847559 | |
| $P$ | 5.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.6+ | 0.6− | 2001 12 11 | 704 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.5− | 0.3+ |
| 2001 10 23 | 704 | 0.1− | 0.6− | 2001 12 11 | 704 | 1.2− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.1− | 0.4− | 2001 12 11 | 704 | 1.0− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | 0.2+ | 0.5− | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2001 11 16 | 644 | 0.1+ | 0.0 | 2001 12 14 | 704 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2001 11 16 | 644 | 0.1+ | 0.3+ | 2001 12 14 | 704 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 11 16 | 644 | 0.2+ | 0.0 | 2001 12 14 | 704 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 11 17 | 704 | 1.0+ | 0.4+ | 2001 12 14 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.9+ | 1.1− | 2001 12 17 | 704 | (1.9+ | 0.8+) | 2006 10 16 | 703 | 0.6+ | 0.8− |
| 2001 11 17 | 704 | 0.1+ | 0.3− | 2001 12 17 | 704 | 0.8+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2001 11 18 | 691 | 0.5+ | 0.2− | 2001 12 17 | 704 | 1.2+ | 0.4− | 2006 10 16 | 703 | (3.0+ | 2.8−) |
| 2001 11 18 | 691 | 0.1+ | 0.2− | 2003 04 10 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.9− | 0.6− |
| 2001 11 18 | 691 | 0.3+ | 0.1− | 2003 04 10 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2003 04 10 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.3− |
| 2001 11 20 | 704 | 0.2− | 0.2− | 2006 09 30 | 703 | 1.4− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 1.2+ | 2006 11 23 | G96 | 0.6+ | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2001 12 10 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2001 12 10 | 691 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.0 | | | | |
| 2001 12 10 | 691 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.1− | | | | |

**2001 WU$_{36}$ = 2006 UD$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.11646 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18627759 | $\omega$ | 184.50874 | +0.66636747 | | −0.73416707 | |
| $a$ | 3.0364233 | $\Omega$ | 223.77857 | +0.68984619 | | +0.67331540 | |
| $e$ | 0.1002746 | $i$ | 10.84722 | +0.28296048 | | +0.08743620 | |
| $P$ | 5.29 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.1− | 0.4+ | 2001 11 21 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | 1.4− | 0.7+ |
| 2001 10 18 | 644 | 0.2− | 0.3− | 2001 11 21 | 704 | 0.4− | 1.4+ | 2006 09 30 | 703 | 0.9− | 0.5− |
| 2001 10 18 | 644 | 0.4− | 0.0 | 2001 11 21 | 704 | 0.2+ | 1.4+ | 2006 09 30 | 703 | 1.2+ | 0.8+ |
| 2001 10 21 | 704 | 0.8− | 0.2+ | 2001 11 21 | 704 | (0.9− | 1.9+) | 2006 10 11 | 644 | 0.1− | 0.7+ |
| 2001 10 21 | 704 | 0.2− | 0.6− | 2001 11 21 | 704 | (1.5− | 2.4+) | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.5− | 0.7− | 2001 12 14 | 704 | 1.2+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 1.0− | 0.3+ | 2001 12 14 | 704 | (1.7+ | 0.2+) | 2006 10 17 | 703 | 0.5+ | 0.3+ |
| 2001 11 09 | 704 | 1.0+ | 0.0 | 2001 12 14 | 704 | 1.3+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 0.2− | 0.7− | 2001 12 14 | 704 | (1.9+ | 0.5+) | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2001 11 09 | 704 | 0.7+ | 0.0 | 2001 12 14 | 704 | 0.9+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.9− |
| 2001 11 17 | 704 | 0.2− | 0.6+ | 2004 05 14 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 11 17 | 704 | 0.4− | 0.1+ | 2004 05 14 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2001 11 17 | 704 | 0.5− | 0.3+ | 2004 05 14 | 691 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.7− | 0.1+ |
| 2001 11 20 | 704 | (0.3+ | 1.9+) | 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.3− |
| 2001 11 20 | 704 | (0.4+ | 1.8+) | 2006 09 20 | 699 | 0.2− | 1.0− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2001 11 20 | 704 | (0.4− | 1.7+) | 2006 09 20 | 699 | 0.8+ | 0.9+ | 2006 11 18 | G96 | 0.3− | 0.3− |
| 2001 11 20 | 704 | (0.4− | 2.2+) | 2006 09 20 | 699 | 0.7+ | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2001 11 20 | 704 | 0.5− | 1.2+ | 2006 09 30 | 703 | 0.7+ | 0.1− | | | | |

**2001 WK$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.30030 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17977794 | $\omega$ | 330.27097 | +0.83045797 | | −0.38181883 | |
| $a$ | 3.1091747 | $\Omega$ | 57.87218 | +0.55680644 | | +0.59177915 | |
| $e$ | 0.1443084 | $i$ | 28.62048 | −0.01749724 | | +0.70993789 | |
| $P$ | 5.48 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.5+ | 1.0− | 2001 11 20 | 704 | 0.3+ | 0.6+ | 2001 12 19 | 704 | 0.5+ | 0.2+ |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2001 11 20 | 704 | 0.1+ | 0.5+ | 2001 12 19 | 704 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.7+ | 0.8+ | 2001 11 20 | 704 | 0.4+ | 0.5+ | 2001 12 19 | 704 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.1+ | 0.7+ | 2001 11 20 | 704 | 0.2+ | 0.3+ | 2001 12 19 | 704 | 0.5+ | 0.4+ |
| 2001 10 17 | 704 | 0.7− | 0.3+ | 2001 11 20 | 704 | 0.5+ | 0.5+ | 2001 12 19 | 704 | 0.0 | 0.2+ |
| 2001 10 17 | 704 | 0.6− | 0.1− | 2001 12 11 | 704 | (1.9+ | 4.1−) | 2006 09 19 | E12 | 0.5− | 0.4− |
| 2001 10 17 | 704 | 1.1− | 0.3− | 2001 12 11 | 704 | (2.4+ | 4.3−) | 2006 09 19 | E12 | 0.7+ | 0.2+ |
| 2001 10 17 | 704 | 1.1− | 0.4− | 2001 12 11 | 704 | (2.7+ | 3.8−) | 2006 09 19 | E12 | 0.4− | 0.3+ |
| 2001 11 09 | 704 | 0.9− | 0.2− | 2001 12 15 | 704 | 0.4− | 0.3+ | 2006 09 19 | E12 | 0.5− | 0.2− |
| 2001 11 09 | 704 | 0.2+ | 1.4− | 2001 12 15 | 704 | 0.8− | 0.6− | 2006 09 30 | E12 | 0.1+ | 0.4+ |
| 2001 11 09 | 704 | 1.1− | 1.0− | 2001 12 15 | 704 | 0.1− | 0.4− | 2006 09 30 | E12 | 0.1− | 0.2− |
| 2001 11 17 | 704 | 0.3+ | 0.4− | 2001 12 15 | 704 | 0.1+ | 0.2+ | 2006 09 30 | E12 | 0.4+ | 0.4+ |
| 2001 11 17 | 704 | 0.2+ | 0.0 | 2001 12 15 | 704 | 0.1− | 0.4− | 2006 09 30 | E12 | 0.2+ | 0.6+ |
| 2001 11 17 | 704 | 0.5+ | 0.4+ | 2001 12 18 | 704 | 0.5+ | 0.2+ | 2006 10 13 | E12 | 0.6− | 0.6− |
| 2001 11 19 | 699 | 1.1− | 0.1− | 2001 12 18 | 704 | 0.4+ | 0.3+ | 2006 10 13 | E12 | 0.2− | 0.9+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.5− | 0.3+ | 2001 12 18 | 704 | 1.5+ | 0.6+ | 2006 10 13 | E12 | 0.1+ | 0.3− |
| 2001 11 19 | 699 | 0.2+ | 0.5− | 2001 12 18 | 704 | 0.8+ | 0.2+ | 2006 10 13 | E12 | 0.8+ | 1.0− |
| 2001 11 19 | 699 | 0.1− | 0.2+ | 2001 12 18 | 704 | 0.1− | 0.3− | | | | |

**2001 WP$_{42}$ = 2006 SC$_{345}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.17493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18843116 | $\omega$ | 160.86289 | | +0.94493934 | −0.31244243 | |
| $a$ | 3.0132436 | $\Omega$ | 217.78729 | | +0.27570774 | +0.92029174 | |
| $e$ | 0.0967222 | $i$ | 9.13809 | | +0.17628070 | +0.23546303 | |
| $P$ | 5.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.0 | 0.5− | 2001 11 21 | 704 | 0.9+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.7− |
| 2001 10 24 | 704 | 1.1− | 0.7+ | 2001 11 21 | 704 | 0.8+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.8+ |
| 2001 10 24 | 704 | 0.1+ | 0.9− | 2001 11 21 | 704 | 0.7+ | 0.1− | 2006 10 17 | 703 | 1.1+ | 0.2− |
| 2001 10 24 | 704 | 0.6+ | 0.0 | 2001 11 21 | 704 | 1.2+ | 0.9+ | 2006 10 17 | 703 | 0.1+ | 0.5+ |
| 2001 11 18 | 704 | 0.2− | 0.3+ | 2001 12 20 | 691 | 0.3− | 0.4− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2001 11 18 | 704 | 0.3+ | 1.0+ | 2001 12 20 | 691 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.3− | 0.2− |
| 2001 11 18 | 704 | (0.1+ | 1.7+) | 2001 12 20 | 691 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2001 11 18 | 704 | 0.6− | 0.8+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.5− | 0.0 |
| 2001 11 20 | 704 | 0.9+ | 0.5+ | 2006 09 28 | 691 | 0.6− | 0.3+ | 2006 11 10 | 691 | 0.6− | 0.5− |
| 2001 11 20 | 704 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3− |
| 2001 11 20 | 704 | 0.7− | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.0 | 1.3+ | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.0 | 0.8− | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.4+ | 0.1+ |

**2001 WV$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.60254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18785361 | $\omega$ | 312.21235 | | +0.65002747 | −0.75077963 | |
| $a$ | 3.0194165 | $\Omega$ | 96.85353 | | +0.72740634 | +0.57002715 | |
| $e$ | 0.1886977 | $i$ | 6.79366 | | +0.21987339 | +0.33376489 | |
| $P$ | 5.25 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.8− | 0.3− | 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 11 18 | 704 | 0.7− | 0.0 | 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 11 18 | 704 | 0.0 | 0.2+ | 2002 01 13 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2001 11 20 | 704 | 0.1+ | 0.6+ | 2002 01 13 | 704 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.4− | 0.5− |
| 2001 11 20 | 704 | 0.5+ | 0.4+ | 2002 01 13 | 704 | (1.7− | 0.1−) | 2006 11 13 | 703 | 0.6− | 0.1− |
| 2001 11 20 | 704 | 0.6+ | 0.4− | 2002 01 13 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.2− |
| 2001 11 20 | 704 | 0.6+ | 0.7− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.7+ | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.5+ |
| 2001 12 14 | 704 | 0.6− | 0.2− | 2006 10 16 | 703 | 1.0− | 0.0 | 2006 11 19 | 703 | 0.4+ | 0.6+ |
| 2001 12 14 | 704 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.5+ | 0.1+ | 2006 11 19 | 703 | 0.8− | 0.2− |
| 2001 12 14 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 24 | G96 | 0.7+ | 0.3− |
| 2001 12 14 | 704 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.5+ | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.6+ | 2006 11 24 | G96 | 0.5+ | 0.2− |
| 2001 12 17 | 704 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.0 | | | | |

**2001 WV$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.73136 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18634443 | $\omega$ | 132.81695 | | +0.98884389 | −0.05107117 | |
| $a$ | 3.0356971 | $\Omega$ | 230.60865 | | +0.00905138 | +0.95825174 | |
| $e$ | 0.1267748 | $i$ | 10.43138 | | +0.14868031 | +0.28132781 | |
| $P$ | 5.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.6+ | 0.4+ | 2001 11 19 | 704 | 0.8− | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.2+ | 0.5− | 2001 11 19 | 704 | 0.2− | 0.0 | 2006 09 27 | 699 | 1.3+ | 0.9+ |
| 2001 10 21 | 704 | 0.4+ | 0.2− | 2001 11 19 | 704 | 0.6− | 0.1− | 2006 09 27 | 699 | (0.9− | 2.2+) |
| 2001 10 21 | 704 | 0.3+ | 1.1+ | 2001 11 21 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 699 | 0.6− | 0.3+ |
| 2001 10 21 | 704 | 0.4+ | 0.4+ | 2001 11 21 | 704 | 1.1+ | 0.8− | 2006 09 27 | 699 | 0.6− | 0.2+ |
| 2001 10 24 | 291 | 0.0 | 0.1− | 2001 11 21 | 704 | 0.1− | 0.8− | 2006 09 27 | 703 | 0.1+ | 0.3− |
| 2001 10 24 | 291 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.0 |
| 2001 10 24 | 291 | 0.4− | 0.3− | 2001 11 21 | 704 | 0.1+ | 0.0 | 2006 09 27 | 703 | (0.9− | 2.2−) |
| 2001 11 19 | 704 | 0.0 | 0.6+ | 2006 09 20 | 644 | 0.2+ | 0.5− | 2006 09 27 | 703 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 0.3+ | 0.2− | 2006 09 20 | 644 | 0.3+ | 0.2− | | | | |

**2001 WP$_{56}$ = 2006 SP$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.92709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18193464 | $\omega$ | 246.63919 | | +0.26599646 | +0.96178623 | |
| $a$ | 3.0845545 | $\Omega$ | 38.97032 | | −0.84245849 | +0.26466461 | |
| $e$ | 0.0852256 | $i$ | 5.92386 | | −0.46851849 | +0.07014192 | |
| $P$ | 5.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2− | 1.2− | 2001 11 21 | 704 | 0.4+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 10 21 | 704 | 0.4+ | 0.2+ | 2001 11 21 | 704 | 0.7+ | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2001 10 21 | 704 | 0.3− | 0.1− | 2001 11 21 | 704 | 0.3+ | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 11 11 | 691 | 0.2− | 0.3− | 2004 04 10 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2001 11 11 | 691 | 0.1− | 0.4− | 2004 04 10 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 11 11 | 691 | 0.1− | 0.3− | 2004 04 10 | 644 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.7+ | 0.8+ | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2001 11 19 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.2+ |
| 2001 11 19 | 704 | 0.3− | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.6− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.0 | | | | |

**2001 WW$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.70023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18492763 | $\omega$ | 109.96972 | | +0.99619046 | −0.08669492 | |
| $a$ | 3.0511825 | $\Omega$ | 255.00467 | | +0.07592383 | +0.91534602 | |
| $e$ | 0.1844763 | $i$ | 0.55819 | | +0.04289679 | +0.39322470 | |
| $P$ | 5.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.6+ | 0.0 | 2005 06 17 | G96 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2001 10 21 | 704 | 0.4+ | 0.6+ | 2005 06 17 | G96 | 0.7− | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2001 10 21 | 291 | 0.1− | 0.0 | 2005 06 17 | G96 | 0.3− | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2001 10 21 | 704 | 0.3− | 0.3− | 2005 06 17 | G96 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2001 10 21 | 291 | 1.2− | 0.1− | 2005 06 17 | G96 | 0.6+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.4− | 0.5− | 2005 06 17 | G96 | 0.7+ | 0.7+ | 2006 09 27 | 704 | 0.2+ | 1.0+ |
| 2001 10 21 | 291 | (3.3− | 2.1+) | 2005 06 17 | G96 | 0.6+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2001 11 09 | 704 | 0.6+ | 0.5− | 2005 06 17 | G96 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.8+ | 0.3+ |
| 2001 11 09 | 704 | 0.4− | 0.6+ | 2005 06 17 | G96 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2001 11 09 | 704 | 1.4+ | 1.4+ | 2006 07 22 | G96 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 2001 11 09 | 704 | 0.4+ | 0.1− | 2006 07 22 | G96 | 0.5+ | 0.2− | 2006 09 27 | 704 | 0.5+ | 0.9+ |
| 2001 11 19 | 704 | 0.2− | 0.2− | 2006 07 22 | G96 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.8+ |
| 2001 11 19 | 699 | 0.9− | 0.4+ | 2006 07 22 | G96 | 0.5− | 0.1+ | 2006 09 29 | 704 | 1.1− | 0.6+ |
| 2001 11 19 | 704 | 0.5+ | 0.0 | 2006 09 12 | 703 | 0.8− | 0.9− | 2006 09 29 | 704 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.2+ | 0.9+ | 2006 09 12 | 703 | 0.2− | 1.5− | 2006 09 29 | 704 | 0.3− | 0.4+ |
| 2001 11 19 | 699 | 0.0 | 0.5− | 2006 09 12 | 703 | 0.2− | 0.3− | 2006 10 17 | 104 | 0.4− | 0.6+ |
| 2001 11 19 | 704 | (0.3+ | 1.6+) | 2006 09 12 | 703 | 0.3+ | 0.0 | 2006 10 17 | 104 | 0.2+ | 0.5+ |
| 2001 11 19 | 699 | 0.6+ | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 17 | 104 | 0.5− | 0.0 |
| 2001 11 19 | 704 | 0.5+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2001 11 19 | 699 | 1.4− | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.0 | 1.4− | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.5− |
| 2001 11 21 | 704 | 0.4+ | 0.5− | 2006 09 17 | 704 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 12 10 | 291 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 12 10 | 291 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.3− | 0.4− |
| 2001 12 10 | 291 | 0.3+ | 0.3− | 2006 09 20 | 704 | 0.6+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.3− | | |
| 2001 12 15 | 704 | 0.4− | 1.3+ | 2006 09 20 | 704 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.4− | | |
| 2001 12 15 | 704 | 0.0 | 1.4+ | 2006 09 20 | 704 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.0 | 0.5− | | |
| 2005 06 17 | G96 | 0.5− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2005 06 17 | G96 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2005 06 17 | G96 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.2+ | | | | | | |

### 2001 WE$_{57}$ = 2006 UX$_{238}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 17.08632 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.19225083 | $\omega$ | 134.17679 | | +0.98206756 | | −0.13478233 | | |
| $a$ | 2.9731984 | $\Omega$ | 234.00512 | | +0.08925897 | | +0.94828650 | | |
| $e$ | 0.0829074 | $i$ | 9.37703 | | +0.16606068 | | +0.28737856 | | |
| $P$ | 5.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2001 12 11 | 291 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2− | | |
| 2001 10 21 | 704 | 1.1− | 0.6− | 2001 12 14 | 291 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ | | |
| 2001 10 21 | 704 | 0.4− | 0.5− | 2001 12 14 | 291 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 2001 11 19 | 704 | 1.2+ | 0.6+ | 2001 12 14 | 291 | 0.5+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2001 11 19 | 704 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2001 11 19 | 704 | 0.4+ | 0.4− | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1− | | |
| 2001 11 19 | 704 | 0.8+ | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 13 | 691 | 0.5+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.4+ | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.1− | | |
| 2001 11 21 | 704 | 0.2− | 0.2− | 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2006 10 13 | 691 | 0.4− | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 21 | 704 | 1.0− | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.0 | | |
| 2001 11 21 | 704 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 22 | 691 | 0.4− | 0.1− | | |
| 2001 12 11 | 291 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.5− | 0.1− | | | | | | |
| 2001 12 11 | 291 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2− | | | | | | |

### 2001 WJ$_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 12.30721 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.20648083 | $\omega$ | 24.35940 | | +0.77143392 | | −0.63625824 | | |
| $a$ | 2.8349771 | $\Omega$ | 15.16240 | | +0.57862219 | | +0.69616192 | | |
| $e$ | 0.0666145 | $i$ | 1.76856 | | +0.26473774 | | +0.33246660 | | |
| $P$ | 4.77 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 291 | 0.1− | 0.2+ | 2001 11 21 | 704 | 0.3− | 0.5− | 2006 11 01 | G96 | 0.3− | 0.4− | | |
| 2001 10 15 | 291 | 0.1+ | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2− | 0.0 | | |
| 2001 10 15 | 291 | 0.3+ | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2+ | | |
| 2001 10 21 | 704 | (0.7+ | 2.4+) | 2004 05 13 | 691 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.2− | | |
| 2001 10 21 | 704 | 1.1− | 0.3+ | 2004 05 13 | 691 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.1− | | |
| 2001 10 21 | 704 | 0.1− | 0.8+ | 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 21 | 704 | 0.2+ | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2001 11 19 | 704 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 28 | H07 | 0.3+ | 0.0 | | |
| 2001 11 19 | 704 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 28 | H07 | 0.8− | 0.4− | | |
| 2001 11 19 | 704 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 28 | H07 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 704 | (1.9− | 0.1+) | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 28 | H07 | 0.7+ | 0.2− | | |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2006 11 01 | G96 | 0.4− | 0.5− | 2006 11 28 | H07 | 0.3+ | 0.5+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 28 | H07 | 0.3+ | 0.2+ | | |

### 2001 WU$_{60}$ = 2006 UD$_{171}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 50.19638 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18983237 | $\omega$ | 276.55424 | | +0.84324159 | | +0.50976376 | | |
| $a$ | 2.9983975 | $\Omega$ | 52.93772 | | −0.36862024 | | +0.77930213 | | |
| $e$ | 0.0987981 | $i$ | 12.34025 | | −0.39123233 | | +0.36445726 | | |
| $P$ | 5.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 691 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.2+ | 0.9+ | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2001 11 11 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.5− | 2006 11 01 | G96 | 0.4+ | 0.2− | | |
| 2001 11 11 | 691 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.6+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 19 | 704 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.6− | 2006 11 09 | 644 | 0.4+ | 0.5+ | | |
| 2001 11 19 | 704 | 0.7− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.6− | 2006 11 09 | 644 | 0.1+ | 0.5+ | | |
| 2001 11 19 | 704 | 0.4− | 1.2− | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1− | | |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.3− | 0.2− | | |
| 2001 11 21 | 704 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.6− | | | | | | |

### 2001 WY$_{60}$ = 2006 SO$_{187}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 5.38335 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.17124473 | $\omega$ | 287.73795 | | +0.90503599 | | +0.38504303 | | |
| $a$ | 3.2116231 | $\Omega$ | 50.02375 | | −0.24206033 | | +0.81559714 | | |
| $e$ | 0.1320219 | $i$ | 13.63892 | | −0.34973799 | | +0.43190643 | | |
| $P$ | 5.76 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.7− | 0.1+ | 2001 11 19 | 704 | 0.6− | 0.9+ | 2001 12 15 | 704 | 0.1+ | 0.3+ | | |
| 2001 10 24 | 704 | 0.7+ | 0.2− | 2001 11 19 | 704 | 0.8− | 0.8+ | 2006 08 28 | E12 | 0.3+ | 0.3+ | | |
| 2001 10 24 | 704 | 0.2− | 0.3+ | 2001 11 19 | 704 | 1.1− | 1.5+ | 2006 08 28 | E12 | 0.0 | 0.3− | | |
| 2001 10 24 | 704 | 0.5+ | 0.1− | 2001 11 21 | 704 | 0.3+ | 0.0 | 2006 08 28 | E12 | 0.2+ | 0.2+ | | |
| 2001 11 09 | 704 | 0.4− | 0.7− | 2001 11 21 | 704 | 0.8+ | 1.1− | 2006 08 28 | E12 | 1.0+ | 0.3+ | | |
| 2001 11 09 | 704 | 0.8− | 0.2− | 2001 11 21 | 704 | 0.7+ | 1.0− | 2006 09 26 | 703 | 0.7− | 0.5+ | | |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2001 11 24 | 704 | 0.4+ | 0.9− | 2006 09 26 | 703 | 0.9− | 0.3− | | |
| 2001 11 09 | 704 | 0.5+ | 0.1− | 2001 11 24 | 704 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.4− | | |
| 2001 11 19 | 699 | 0.9+ | 0.4+ | 2001 11 24 | 704 | 0.5+ | 1.0+ | 2006 09 26 | 703 | 0.9− | 0.3− | | |
| 2001 11 19 | 699 | 0.5+ | 1.0− | 2001 12 15 | 704 | 0.3− | 0.1− | 2006 09 27 | E12 | 0.3− | 0.5+ | | |
| 2001 11 19 | 699 | 0.7− | 0.7− | 2001 12 15 | 704 | 0.2+ | 1.2− | 2006 09 27 | E12 | 1.1+ | 0.3− | | |
| 2001 11 19 | 699 | 0.6− | 0.5+ | 2001 12 15 | 704 | 0.0 | 0.6+ | 2006 09 27 | E12 | 0.1− | 0.3+ | | |
| 2001 11 19 | 704 | 0.3− | 0.6+ | 2001 12 15 | 704 | 0.4+ | 0.3+ | 2006 09 27 | E12 | 0.5+ | 0.3− | | |

### 2001 WP$_{61}$ = 2006 SC$_{279}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 77.70067 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.17945763 | $\omega$ | 44.39642 | | +0.32751164 | | +0.93589300 | | |
| $a$ | 3.1128732 | $\Omega$ | 245.11768 | | −0.90181317 | | +0.26865422 | | |
| $e$ | 0.0685592 | $i$ | 8.22434 | | −0.28190269 | | +0.22787980 | | |
| $P$ | 5.49 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.2− | 0.5− | 2001 12 07 | 691 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.9− | 0.8+ | | |
| 2001 11 19 | 704 | 0.6+ | 0.7− | 2001 12 07 | 691 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.9+ | | |
| 2001 11 19 | 704 | 0.1− | 0.4− | 2001 12 14 | 291 | 0.3+ | 0.1− | 2006 09 28 | 703 | 0.1− | 0.3− | | |
| 2001 11 19 | 704 | 0.8+ | 0.5+ | 2001 12 14 | 291 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.6− | | |
| 2001 11 19 | 704 | 0.4− | 1.0− | 2001 12 14 | 291 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.4+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2001 12 15 | 704 | (0.3+ | 2.5+) | 2006 09 30 | 703 | 0.7+ | 0.2− | | |
| 2001 11 21 | 704 | 0.7− | 0.0 | 2001 12 15 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | (2.1+ | 0.4−) | | |
| 2001 11 21 | 704 | 0.3+ | 0.4+ | 2001 12 15 | 704 | 0.9− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2001 11 21 | 704 | 0.6− | 0.8+ | 2001 12 15 | 704 | 1.4− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2001 12 07 | 691 | 0.2− | 0.2+ | 2006 09 28 | 703 | 1.3− | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |

### 2001 WO$_{63}$ = 2006 SA$_{178}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 355.34556 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18032273 | $\omega$ | 352.37080 | | +0.98930037 | | −0.14576479 | | |
| $a$ | 3.1029092 | $\Omega$ | 16.01466 | | +0.13499768 | | +0.89871900 | | |
| $e$ | 0.1910367 | $i$ | 1.27023 | | +0.05532092 | | +0.41359011 | | |
| $P$ | 5.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 413(16.1− | 6.4−) | | 2006 08 22 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.9− | | |
| 1995 10 21 | 413(16.0− | 6.4−) | | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.3− | 0.1+ | | |
| 1995 10 21 | 413(15.9− | 6.4−) | | 2006 08 22 | 644 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.1+ | | |
| 1995 10 21 | 413(16.0− | 6.4−) | | 2006 09 12 | 703 | 0.0 | 1.2+ | 2006 09 28 | 691 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 413 | (16.7− | 8.9−) | 2006 09 12 | 703 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.4+ | 0.4− | | |
| 2001 11 12 | 691 | 0.1+ | 0.3− | 2006 09 12 | 703 | (2.2+ | 1.3+) | 2006 10 16 | G96 | 0.1+ | 0.3− | | |
| 2001 11 12 | 691 | 0.2+ | 0.2− | 2006 09 12 | 703 | (0.2+ | 2.0+) | 2006 10 16 | G96 | 0.5+ | 0.4− | | |
| 2001 11 12 | 691 | 0.1+ | 0.3− | 2006 09 16 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.5− | | |
| 2001 11 19 | 704 | 0.1− | 0.2− | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.7− | 0.0 | | |
| 2001 11 19 | 704 | 0.0 | 0.1− | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2001 11 19 | 704 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2001 11 19 | 704 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.1− | | |
| 2001 11 21 | 704 | 0.1+ | 1.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2001 11 21 | 704 | 0.7− | 0.8+ | 2006 09 25 | G96 | 0.3− | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 2001 11 21 | 704 | 0.6− | 1.1+ | 2006 09 27 | 704 | 0.8+ | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.3− | 1.2+ | 2006 09 27 | 704 | 0.5+ | 0.1− | | | | | | |

**2001 WW$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.74380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24594803 | $\omega$ | 46.05804 | | −0.03291215 | −0.97970002 | |
| $a$ | 2.5229413 | $\Omega$ | 46.95383 | | +0.82189051 | −0.13911039 | |
| $e$ | 0.0882760 | $i$ | 15.69944 | | +0.56869392 | +0.14434739 | |
| $P$ | 4.01 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.6− | 0.6+ | 2001 11 21 | 704 | 0.4+ | 0.4− | 2005 11 09 | 703 | 0.2+ | 0.4+ |
| 2001 10 14 | 704 | 1.1− | 0.5− | 2003 04 05 | 699 | 0.0 | 1.1− | 2005 11 09 | 703 | 0.4+ | 0.7+ |
| 2001 10 14 | 704 | 0.4− | 0.1− | 2003 04 05 | 699 | 1.2+ | 0.0 | 2005 11 09 | 703 | 1.6− | 1.3+ |
| 2001 10 14 | 704 | 0.2− | 0.3+ | 2003 04 05 | 699 | 0.4+ | 0.2+ | 2005 11 09 | 703 | 1.2+ | 1.5+ |
| 2001 11 20 | 704 | 1.1+ | 0.2+ | 2003 04 05 | 699 | 1.2− | 1.5+ | 2005 12 04 | G96 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.9+ | 0.9− | 2005 10 28 | 703 | 1.3− | 0.9− | 2005 12 04 | G96 | 0.3− | 0.3− |
| 2001 11 20 | 704 | 0.0 | 0.1+ | 2005 10 28 | 703 | 0.4− | 0.1− | 2005 12 04 | G96 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.2− | 0.8− | 2005 10 28 | 703 | 0.1− | 0.7− | 2005 12 04 | G96 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.6− | 2005 10 28 | 703 | 0.5− | 0.1− | 2006 01 04 | G96 | 0.1+ | 0.5+ |
| 2001 11 21 | 704 | 0.9+ | 0.4+ | 2005 11 03 | 703 | 1.2+ | 0.3+ | 2006 01 04 | G96 | 0.4+ | 0.7+ |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2005 11 03 | 703 | 0.2− | 0.3− | 2006 01 04 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.8− | 2005 11 03 | 703 | 0.7− | 0.2− | 2006 01 04 | G96 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 1.4+ | 0.4+ | 2005 11 03 | 703 | 0.5− | 0.7+ | | | | |

**2001 WD$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.52505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24641671 | $\omega$ | 21.18234 | | +0.27117623 | −0.94967134 | |
| $a$ | 2.5197412 | $\Omega$ | 53.41563 | | +0.85265985 | +0.16142883 | |
| $e$ | 0.1283482 | $i$ | 11.26101 | | +0.44658105 | +0.26844940 | |
| $P$ | 4.00 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 644 | 0.1+ | 0.5− | 2001 11 21 | 704 | 0.0 | 0.5− | 2005 11 09 | 703 | (2.6+ | 0.7−) |
| 2001 10 24 | 644 | 0.3+ | 0.4− | 2005 10 23 | 703 | 0.2+ | 0.2+ | 2005 11 09 | 703 | 0.2+ | 0.9+ |
| 2001 10 24 | 644 | 0.3+ | 0.3− | 2005 10 23 | 703 | 0.5+ | 0.0 | 2005 11 09 | 703 | 0.2− | 0.3+ |
| 2001 11 20 | 704 | 0.5+ | 0.1+ | 2005 10 23 | 703 | 0.9− | 0.2− | 2005 11 09 | 703 | 0.1− | 0.4+ |
| 2001 11 20 | 704 | 0.2+ | 1.0− | 2005 10 23 | 703 | 0.0 | 0.2− | 2005 12 01 | G96 | 0.3− | 0.2+ |
| 2001 11 20 | 704 | 0.3+ | 0.7− | 2005 10 29 | 703 | 1.6− | 1.4+ | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.0 | 0.4− | 2005 10 29 | 703 | 1.1+ | 0.7− | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.2+ | 0.7− | 2005 10 29 | 703 | 0.3− | 0.4− | 2005 12 01 | G96 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 0.2+ | 0.1+ | 2005 10 29 | 703 | 0.5+ | 0.3− | 2005 12 28 | G96 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 0.4− | 0.2− | 2005 10 31 | 704 | 0.8− | 1.9+ | 2005 12 28 | G96 | 0.1+ | 0.5+ |
| 2001 11 21 | 704 | 0.4+ | 0.3− | 2005 10 31 | 704 | 0.5− | 0.1+ | 2005 12 28 | G96 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.7+ | 0.2+ | 2005 10 31 | 704 | (2.1− | 0.2−) | 2005 12 28 | G96 | 0.1− | 0.3+ |

**2001 WJ$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.47069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17903694 | $\omega$ | 248.06386 | | −0.19054952 | −0.97067149 | |
| $a$ | 3.1177476 | $\Omega$ | 213.98218 | | +0.96934615 | −0.16245273 | |
| $e$ | 0.0277586 | $i$ | 15.20427 | | +0.15510939 | −0.17721728 | |
| $P$ | 5.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.8− | 0.5− | 2001 10 26 | 644 | 0.6+ | 0.6− | 2006 09 22 | 703 | 0.0 | 0.7− |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2001 11 20 | 704 | 0.0 | 0.5+ | 2006 09 22 | 703 | 0.6− | 0.8+ |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2001 11 20 | 704 | 0.1− | 0.0 | 2006 09 22 | 703 | 0.0 | 0.6+ |
| 2001 09 20 | 704 | 0.9− | 0.1− | 2001 11 20 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 0.2+ | 0.2+ |
| 2001 10 21 | 704 | 0.4− | 0.7+ | 2001 11 20 | 704 | 0.8+ | 1.0+ | 2006 09 27 | 703 | 0.6− | 0.6− |
| 2001 10 21 | 704 | 0.7− | 0.5− | 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 09 27 | 703 | 1.3+ | 0.3+ |
| 2001 10 21 | 704 | 0.7− | 0.1− | 2001 11 21 | 704 | 0.1− | 0.8− | 2006 09 27 | 703 | 0.1+ | 0.6− |
| 2001 10 21 | 704 | 0.2− | 0.5+ | 2001 11 21 | 704 | 0.5− | 0.7− | 2006 10 17 | 703 | 0.3− | 1.0+ |
| 2001 10 21 | 704 | 0.1− | 0.7+ | 2001 11 21 | 704 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 10 26 | 644 | 0.0 | 0.2− | 2001 11 21 | 704 | 1.4+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2001 10 26 | 644 | 0.9+ | 0.2− | 2006 09 22 | 703 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.1− | 1.2− |

**2001 WL$_{67}$ = 2006 SJ$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.26668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18556380 | $\omega$ | 184.95124 | | +0.89402351 | −0.44796132 | |
| $a$ | 3.0442049 | $\Omega$ | 201.66627 | | +0.41172197 | +0.82786741 | |
| $e$ | 0.1276405 | $i$ | 1.12584 | | +0.17665499 | +0.33758881 | |
| $P$ | 5.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 291 | 0.1+ | 0.1− | 2001 11 21 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.3− |
| 2001 10 23 | 291 | 0.1− | 0.1− | 2001 11 21 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 10 23 | 291 | (2.1− | 0.0 ) | 2006 07 22 | G96 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2001 11 09 | 704 | 0.1− | 0.2− | 2006 07 22 | G96 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2001 11 09 | 704 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.1− | 0.3− | 2006 10 16 | 703 | 1.1− | 0.3− |
| 2001 11 09 | 704 | 1.0− | 1.2− | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4+ | 1.0+ |
| 2001 11 09 | 704 | 0.9− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2001 11 20 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 0.5− | 1.0− | 2006 10 16 | G96 | 0.1+ | 0.7− |
| 2001 11 20 | 704 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 2001 11 20 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.7− |
| 2001 11 20 | 704 | 0.2− | 1.3+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | | | |

**2001 WZ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.81822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18653407 | $\omega$ | 319.34823 | | −0.24722070 | −0.96885674 | |
| $a$ | 3.0336393 | $\Omega$ | 144.95822 | | +0.89524096 | −0.23395153 | |
| $e$ | 0.2007860 | $i$ | 1.40620 | | +0.37070952 | −0.08113751 | |
| $P$ | 5.28 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 09 | 691 | 0.0 | 0.6− | 2001 11 11 | 291 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2001 10 09 | 691 | 0.0 | 0.1− | 2001 11 20 | 704 | 0.5+ | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2001 10 09 | 691 | 0.2+ | 1.0− | 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2001 10 18 | 644 | 0.6+ | 0.5− | 2001 11 20 | 704 | 0.5+ | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2001 10 18 | 644 | 0.0 | 0.4+ | 2001 11 20 | 704 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 2001 10 18 | 644 | 0.5+ | 0.5− | 2001 11 20 | 704 | 0.1− | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 11 10 | 649 | 0.1− | 0.0 | 2001 11 21 | 704 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 11 10 | 649 | 0.1+ | 0.1+ | 2001 11 21 | 704 | 0.9+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2001 11 10 | 649 | 0.1− | 0.2− | 2001 11 21 | 704 | 0.6+ | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.3+ |
| 2001 11 11 | 691 | 0.3− | 0.0 | 2001 11 21 | 704 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2001 11 11 | 691 | 0.3− | 0.1− | 2001 11 21 | 704 | 0.6− | 1.0− | 2006 11 14 | G96 | 0.5− | 1.1− |
| 2001 11 11 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.1− | 0.9+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 11 11 | 291 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.6− | | | | |
| 2001 11 11 | 291 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.4+ | | | | |

**2001 WK$_{69}$ = 2005 LB$_{34}$ = 2006 RV$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.75260 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17022089 | $\omega$ | 108.57718 | | +0.80043201 | | +0.59771311 |
| $a$ | 3.2244884 | $\Omega$ | 214.75748 | | −0.57553871 | | +0.74524714 |
| $e$ | 0.1354894 | $i$ | 4.55252 | | −0.16752250 | | +0.29554312 |
| $P$ | 5.79 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 23 | 691 | 0.2+ | 0.1+ | 2005 04 07 | G96 | 0.7− | 0.1+ | 2006 08 21 | 704 | 0.0 | 0.6− |
| 1995 11 23 | 691 | 0.2− | 0.2− | 2005 04 07 | G96 | 0.6− | 0.4+ | 2006 08 21 | 704 | 0.4+ | 0.1− |
| 1995 11 23 | 691 | 0.3+ | 0.3− | 2005 04 07 | G96 | 0.4− | 0.3− | 2006 09 14 | 703 | (1.3+ | 3.3+) |
| 1999 04 19 | 691 | 0.4− | 0.1− | 2005 04 07 | G96 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.0 | 0.3− |
| 1999 04 19 | 691 | 0.1+ | 0.0 | 2005 06 10 | 691 | 0.3+ | 0.1− | 2006 09 14 | 703 | 1.2− | 0.9− |
| 1999 04 19 | 691 | 0.0 | 0.0 | 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.8− | 0.7− |
| 2001 10 24 | 704 | 0.4− | 1.1− | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.4+ |
| 2001 10 24 | 704 | 0.1− | 0.7− | 2005 06 14 | 691 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.2+ | 0.6− | 2005 06 14 | 691 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | (0.2+ | 1.6+) | 2005 06 14 | 691 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.1+ | 1.5+ | 2005 06 16 | G96 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | (1.8+ | 0.7+) | 2005 06 16 | G96 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.8+ | 2005 06 16 | G96 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2005 06 16 | G96 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2006 08 21 | 704 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.5− | 0.2+ |
| 2001 11 21 | 704 | 0.8− | 0.3− | 2006 08 21 | 704 | 0.3− | 0.7− | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 704 | 0.4+ | 0.6− | 2006 08 21 | 704 | 0.5− | 0.7+ | 2006 09 28 | G96 | 0.4− | 0.5− |

**2001 WC$_{70}$ = 2006 UP$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.71659 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19083310 | $\omega$ | 297.35702 | | +0.97314089 | | +0.13640760 |
| $a$ | 2.9879059 | $\Omega$ | 55.36526 | | −0.02468322 | | +0.86272658 |
| $e$ | 0.1659991 | $i$ | 13.02551 | | −0.22888326 | | +0.48692486 |
| $P$ | 5.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 691 | 0.2+ | 0.0 | 2001 11 20 | 704 | 1.1− | 0.7+ | 2006 10 22 | 703 | 0.6+ | 0.4+ |
| 2001 10 19 | 691 | 0.1+ | 0.1− | 2001 11 21 | 704 | 1.0+ | 0.4− | 2006 10 22 | 703 | 1.2− | 0.6+ |
| 2001 10 19 | 691 | 0.2+ | 0.2+ | 2001 11 21 | 704 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2001 10 24 | 704 | 0.4− | 0.6+ | 2001 11 21 | 704 | 1.1− | 1.1+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.8+ | 0.3+ | 2001 11 21 | 704 | 0.3+ | 1.2+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | (0.6+ | 1.6+) | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.0 | 0.9− |
| 2001 10 25 | 644 | 0.3− | 0.3− | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.1+ |
| 2001 10 25 | 644 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.0 | 1.5− | 2006 10 28 | 703 | 0.1+ | 0.1− |
| 2001 10 25 | 644 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.3− | 0.5+ | 2006 10 28 | 703 | 0.3+ | 0.8+ |
| 2001 11 20 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 1.0− |
| 2001 11 20 | 704 | 1.0− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.5+ | 1.0− |
| 2001 11 20 | 704 | 0.6+ | 1.0+ | 2006 10 22 | 703 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.0 | 1.1− |
| 2001 11 20 | 704 | 1.5− | 0.2− | 2006 10 22 | 703 | 1.4+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.8− |

**2001 WP$_{71}$ = 2006 SO$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.73354 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17972343 | $\omega$ | 116.14652 | | +0.91771491 | | +0.38521237 |
| $a$ | 3.1098033 | $\Omega$ | 221.39218 | | −0.39623445 | | +0.87031497 |
| $e$ | 0.1704636 | $i$ | 8.43659 | | −0.02824202 | | +0.30686037 |
| $P$ | 5.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.3+ | 0.1− | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.9− | 0.4+ |
| 2001 10 24 | 704 | 0.1− | 0.4− | 2005 05 15 | G96 | 0.3− | 0.7+ | 2006 09 22 | 703 | 0.0 | 0.4− |
| 2001 10 24 | 704 | 0.1− | 0.0 | 2005 05 15 | G96 | 0.1+ | 0.5+ | 2006 09 22 | 703 | 1.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.2+ | 1.3+ | 2005 05 15 | G96 | 0.1− | 0.1+ | 2006 09 22 | 703 | 0.8− | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.8+ | 2005 05 15 | G96 | 0.2+ | 0.2+ | 2006 09 22 | 703 | 0.5− | 0.9− |
| 2001 11 20 | 704 | 0.5+ | 1.5+ | 2005 06 01 | 691 | 0.0 | 0.6+ | 2006 09 29 | 699 | 1.2+ | 0.1+ |
| 2001 11 20 | 704 | (1.5+ | 2.6+) | 2005 06 01 | 691 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.0 | 1.2+ |
| 2001 11 21 | 704 | 0.6− | 0.9+ | 2005 06 01 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.7− | 0.1− |
| 2001 11 21 | 704 | 1.3− | 0.6+ | 2006 09 06 | 644 | 0.6− | 0.2+ | 2006 09 29 | 699 | 0.3− | 0.7+ |
| 2001 11 21 | 704 | 0.8− | 1.5+ | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.5+ | 0.0 |
| 2001 11 21 | 704 | 0.7− | 1.2+ | 2006 09 06 | 644 | 0.3− | 0.4+ | 2006 10 01 | 703 | 0.1+ | 0.6+ |
| 2001 11 21 | 704 | 0.7− | 1.4+ | 2006 09 16 | 644 | 0.1− | 0.1− | 2006 10 01 | 703 | 0.2+ | 1.2− |
| 2001 12 10 | 691 | 0.4+ | 0.6− | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.7− | 0.9+ |
| 2001 12 10 | 691 | 0.2− | 0.5+ | 2006 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2001 12 10 | 691 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.7+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.8+ | 0.0 | 2006 10 23 | 644 | 0.4− | 0.3− |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.5− | | | | |

**2001 WY$_{72}$ = 2006 PR$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.89039 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16796000 | $\omega$ | 267.16979 | | +0.99284958 | | +0.09004556 |
| $a$ | 3.2533601 | $\Omega$ | 87.65524 | | −0.05147814 | | +0.91528851 |
| $e$ | 0.1448064 | $i$ | 4.49853 | | −0.10770199 | | +0.39260506 |
| $P$ | 5.87 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 11 | 691 | 0.6− | 0.6+ | 2001 11 20 | 704 | 1.2− | 0.1− | 2005 05 08 | G96 | 0.1+ | 0.5+ |
| 1996 12 11 | 691 | 0.7+ | 0.7− | 2001 11 20 | 704 | 0.5− | 0.2− | 2005 05 08 | G96 | 0.1+ | 0.0 |
| 1996 12 11 | 691 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.3+ | 1.0− | 2005 05 08 | G96 | 0.0 | 0.1+ |
| 2001 10 24 | 704 | 0.4+ | 0.4+ | 2001 11 21 | 704 | 0.1+ | 0.8− | 2005 05 08 | G96 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.6+ | 1.0+ | 2001 11 21 | 704 | 0.2− | 1.0− | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2001 10 24 | 704 | 0.9− | 0.9+ | 2001 11 21 | 704 | 0.7+ | 0.5− | 2006 08 14 | 644 | 0.0 | 0.4− |
| 2001 10 24 | 704 | 0.0 | 0.6+ | 2001 11 21 | 704 | 0.2+ | 0.3− | 2006 08 14 | 644 | 0.3− | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.5− | 2001 12 10 | 691 | 0.1+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.8− | 0.7− | 2001 12 10 | 691 | 0.2+ | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 0.4− | 0.1+ | 2001 12 10 | 691 | 0.2+ | 0.2+ | 2006 08 17 | 644 | 0.3+ | 0.2+ |

**2001 WR$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.19437 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18824736 | $\omega$ | 250.80604 | | +0.76159066 | | +0.64320033 |
| $a$ | 3.0152046 | $\Omega$ | 69.08028 | | −0.55817203 | | +0.71313709 |
| $e$ | 0.1003775 | $i$ | 4.86404 | | −0.32927746 | | +0.27879888 |
| $P$ | 5.24 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | (0.7− | 1.7+) | 2001 11 21 | 704 | 1.3+ | 0.4− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 10 23 | 704 | 0.4− | 0.5+ | 2001 12 10 | 291 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | (1.8− | 1.1+) | 2001 12 10 | 291 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 10 23 | 704 | 0.6+ | 0.2− | 2001 12 10 | 291 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | 0.8− | 1.5+ | 2006 10 11 | 644 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.9+ | 0.5+ |
| 2001 10 24 | 704 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2001 10 24 | 704 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.5+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 10 24 | 704 | 0.6+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2001 11 20 | 704 | 0.8+ | 0.1− | 2006 10 12 | 644 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2001 11 20 | 704 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.7− | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.9+ | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2001 11 20 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 1.1− | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.5+ |
| 2001 11 21 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 17 | 703 | 1.0+ | 0.6+ |
| 2001 11 21 | 704 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.9− | 0.0 |
| 2001 11 21 | 704 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 1.2− | 0.3− |

**2001 WF$_{77}$ = 2006 VV$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.87878 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19615441 | $\omega$ | 308.03162 | | +0.97827436 | | −0.07403622 |
| $a$ | 2.9336210 | $\Omega$ | 57.01667 | | +0.16369005 | | +0.84903703 |
| $e$ | 0.0493969 | $i$ | 13.34713 | | −0.12721965 | | +0.52312022 |
| $P$ | 5.02 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.1+ | 0.4− | 2006 09 30 | G96 | 0.5− | 0.3− | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 1996 12 07 | 691 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.0 | 0.0 |
| 1996 12 07 | 691 | 0.3+ | 0.7− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.4− |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.3− | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 1.0− | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 16 | 703 | 0.5+ | 0.6− |
| 2001 11 20 | 704 | 0.0 | 1.5− | 2006 10 28 | G96 | 0.1+ | 0.6− | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 1.5− | 0.5+ | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.5− |
| 2001 11 21 | 704 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.6− | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2001 11 21 | 704 | 0.5− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2001 11 21 | 704 | 1.0− | 0.5+ | 2006 10 28 | 691 | 0.4+ | 0.4+ | 2006 12 01 | G96 | 0.2+ | 0.8− |
| 2001 11 21 | 704 | 0.9− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2001 12 07 | 691 | 0.1+ | 0.9+ | 2006 11 12 | G96 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.6− | 0.3− |
| 2001 12 07 | 691 | 0.1− | 0.9+ | 2006 11 12 | G96 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2001 12 07 | 691 | 0.2− | 1.2+ | 2006 11 12 | G96 | 0.4− | 0.2− | | | | |
| 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.1− | | | | |

**2001 WN$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.72243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18518699 | $\omega$ | 321.56698 | | +0.89731343 | | −0.40853775 |
| $a$ | 3.0483330 | $\Omega$ | 63.32362 | | +0.43691489 | | +0.76829439 |
| $e$ | 0.1011184 | $i$ | 10.77868 | | +0.06272148 | | +0.49276833 |
| $P$ | 5.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | (1.8+ | 1.2+) | 2001 11 21 | 704 | 0.0 | 0.5− | 2002 01 09 | 691 | 0.3− | 0.1− |
| 2001 11 09 | 704 | 0.6+ | 0.2+ | 2001 11 21 | 704 | 0.2− | 0.8− | 2004 04 20 | 691 | 0.0 | 0.2+ |
| 2001 11 09 | 704 | 0.2+ | 0.4− | 2001 11 21 | 704 | 0.5− | 0.7− | 2004 04 20 | 691 | 0.0 | 0.0 |
| 2001 11 09 | 704 | 1.0− | 0.2− | 2001 11 21 | 704 | 0.4+ | 0.2− | 2004 04 20 | 691 | 0.0 | 0.1− |
| 2001 11 19 | 699 | 0.7+ | 0.2− | 2001 11 21 | 704 | 1.0+ | 0.1+ | 2006 09 26 | 703 | 1.0+ | 1.3+ |
| 2001 11 19 | 699 | (0.9− | 2.1+) | 2001 12 18 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2001 11 19 | 699 | 0.8− | 0.6+ | 2001 12 18 | 704 | 1.0+ | 0.7− | 2006 09 26 | 703 | (1.8− | 0.2+) |
| 2001 11 19 | 699 | (2.8− | 1.6+) | 2001 12 18 | 704 | (0.9+ | 1.8−) | 2006 09 26 | 703 | 0.8+ | 0.5+ |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2001 12 19 | 704 | 0.5− | 0.9+ | 2006 10 16 | 703 | (1.1+ | 1.6−) |
| 2001 11 20 | 704 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.8− | 0.9− |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2001 12 19 | 704 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.0− | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.9+ | 2002 01 09 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | (1.8− | 0.5−) |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2002 01 09 | 691 | 0.2− | 0.1+ | | | | |

**2001 WQ$_{77}$ = 2006 SV$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.29684 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18191760 | $\omega$ | 274.91550 | | +0.16630454 | | −0.98604100 |
| $a$ | 3.0847471 | $\Omega$ | 165.50385 | | +0.91707597 | | +0.15163623 |
| $e$ | 0.1304047 | $i$ | 1.85901 | | +0.36237337 | | +0.06877203 |
| $P$ | 5.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 01 | 291 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.5+ | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 291 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.5+ | 0.0 | 2006 10 01 | 291 | 0.5− | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 02 | 291 | 0.5− | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 02 | 291 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.9− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.2+ | 2006 10 02 | 291 | 0.1+ | 0.3+ |
| 2001 11 21 | 704 | 0.0 | 0.7− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.5− | 0.8− | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2001 12 14 | 704 | 0.6− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.3+ | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.7+ | 2006 09 30 | 291 | 0.3− | 0.0 | 2006 10 02 | 291 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 1.1− | 0.2− | 2006 09 30 | 291 | 0.1− | 0.2+ | 2006 10 02 | 291 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 0.2− | 0.1− | 2006 09 30 | 291 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.8+ | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 01 | 291 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.6+ | 0.3− |
| 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 291 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.6− |
| 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 10 01 | 291 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.3− |

**2001 WA$_{78}$ = 2006 UM$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.79460 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18656406 | $\omega$ | 112.94675 | | +0.93655188 | | +0.33746430 |
| $a$ | 3.0333142 | $\Omega$ | 227.47604 | | −0.34980333 | | +0.88238434 |
| $e$ | 0.1164837 | $i$ | 7.39103 | | −0.02254326 | | +0.32789592 |
| $P$ | 5.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.1− | 2001 12 14 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.5− | 0.6+ |
| 2001 11 20 | 704 | 0.6+ | 0.7− | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.5− |
| 2001 11 21 | 704 | 0.4− | 0.6− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.4+ | 0.0 |
| 2001 11 21 | 704 | 0.6− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2001 12 13 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2001 12 13 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 12 13 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.5− | 2006 11 27 | 703 | 0.0 | 1.1+ |
| 2001 12 14 | 704 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.5− | 0.3− |
| 2001 12 14 | 704 | 0.7− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | (2.0− | 0.6+) |
| 2001 12 14 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.2+ | 1.0+ |
| 2001 12 14 | 704 | 0.0 | 1.0− | 2006 10 28 | 691 | 0.1+ | 0.1− | | | | |
| 2001 12 14 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.0 | | | | |

**2001 WF$_{78}$ = 2006 SL$_{338}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.21140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18502714 | $\omega$ | 293.76643 | | +0.95734723 | | −0.27782155 |
| $a$ | 3.0500884 | $\Omega$ | 82.44034 | | +0.28558000 | | +0.86802867 |
| $e$ | 0.1524185 | $i$ | 4.59304 | | +0.04393577 | | +0.41151113 |
| $P$ | 5.33 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.6+ | 1.0− | 2001 12 14 | 691 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.7− |
| 2001 11 20 | 704 | 0.7+ | 0.1+ | 2004 04 14 | 691 | 0.4+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 1.2− |
| 2001 11 20 | 704 | 0.0 | 0.8+ | 2004 04 14 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.6− |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2004 04 14 | 691 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.5+ | 0.5− |
| 2001 11 21 | 704 | 1.1− | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.9+ |
| 2001 11 21 | 704 | 0.1+ | 0.8− | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 1.6− | 0.8− |
| 2001 11 21 | 704 | 1.0− | 0.3− | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 1.1− | 0.3− |
| 2001 11 21 | 704 | 0.9− | 0.3+ | 2006 10 02 | 691 | 0.5− | 0.3+ | 2006 10 16 | 703 | 1.7+ | 0.0 |
| 2001 12 14 | 691 | 0.1+ | 0.5+ | 2006 10 02 | 691 | 0.3+ | 0.1+ | | | | |
| 2001 12 14 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.0 | | | | |

**2001 WY$_{78}$ = 2006 UG$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.74933 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18377611 | $\omega$ | 101.76763 | | +0.89552209 | | +0.42773499 |
| $a$ | 3.0639147 | $\Omega$ | 233.03115 | | −0.44410207 | | +0.84128694 |
| $e$ | 0.0652520 | $i$ | 8.84229 | | −0.02852271 | | +0.33057384 |
| $P$ | 5.36 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.6− | 0.1+ | 2001 12 14 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 1.1+ | 2001 12 14 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | (0.0 | 1.8+) | 2001 12 14 | 704 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 11 20 | 704 | 0.5+ | 0.7+ | 2001 12 14 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.2− | 1.0+ |
| 2001 11 20 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 1.3− | 0.4− | 2006 10 21 | 703 | 0.2− | 0.7+ |
| 2001 11 21 | 704 | 0.2+ | 1.1− | 2006 10 17 | 703 | 0.1+ | 0.4− | 2006 10 21 | 703 | 1.1− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | (0.4− | 1.5−) | 2006 10 17 | 703 | 0.3+ | 0.6− | 2006 10 21 | 703 | 1.0+ | 0.4+ | | |
| 2001 11 21 | 704 | 0.3+ | 0.8− | 2006 10 17 | 703 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2001 11 21 | 704 | 0.6− | 0.9− | 2006 10 19 | G96 | 0.3+ | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.3− | | |
| 2001 12 13 | 644 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2001 12 13 | 644 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.2− | | | | | | |
| 2001 12 13 | 644 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.1− | 0.3− | | | | | | |

**2001 WU$_{81}$ = 2005 QQ$_{39}$ = 2006 TD$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.22809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18910569 | $\omega$ | 0.45371 | | −0.56612626 | +0.81667737 | |
| $a$ | 3.0060738 | $\Omega$ | 235.06998 | | −0.75672705 | −0.56876004 | |
| $e$ | 0.0461506 | $i$ | 7.85020 | | −0.32690249 | −0.09772457 | |
| $P$ | 5.21 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.5− | 0.6+ | 2005 08 27 | 699 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2001 11 20 | 704 | 0.0 | 0.4− | 2005 08 27 | 699 | 0.9− | 0.6− | 2006 11 12 | G96 | 0.4+ | 0.4− | | |
| 2001 11 20 | 704 | 0.4+ | 0.5+ | 2005 08 27 | 699 | 1.1+ | 0.2+ | 2006 11 12 | G96 | 0.6+ | 0.5− | | |
| 2001 11 20 | 704 | 0.3− | 1.2− | 2006 10 13 | 691 | 0.2− | 0.4+ | 2006 11 12 | G96 | 0.3+ | 0.5− | | |
| 2001 11 20 | 704 | 0.0 | 1.1− | 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 1.0− | 0.5− | | |
| 2001 11 21 | 704 | 0.9+ | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 691 | 0.4+ | 0.0 | | |
| 2001 11 21 | 704 | 0.7+ | 0.1− | 2006 10 17 | 691 | 0.5+ | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.9+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.3− | | |
| 2001 12 14 | 704 | 0.1− | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.6+ | 0.6− | | |
| 2001 12 14 | 704 | 1.2− | 1.0+ | 2006 10 31 | G96 | 0.4+ | 0.6− | 2006 11 21 | G96 | 0.2+ | 0.3− | | |
| 2001 12 14 | 704 | 0.4− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.4− | | |
| 2001 12 14 | 704 | 0.5− | 1.2+ | 2006 10 31 | G96 | 0.5+ | 0.4− | 2006 11 27 | 703 | 0.5− | 0.5− | | |
| 2001 12 14 | 704 | (1.3+ | 2.1+) | 2006 10 31 | G96 | 0.3− | 0.5− | 2006 11 27 | 703 | 0.4− | 0.1+ | | |
| 2005 08 26 | 644 | 0.5− | 0.0 | 2006 11 12 | 703 | 0.4+ | 0.0 | 2006 11 27 | 703 | 0.4− | 0.1+ | | |
| 2005 08 26 | 644 | 0.1− | 0.1+ | 2006 11 12 | 703 | 0.2− | 0.7+ | 2006 11 27 | 703 | 0.9− | 1.2− | | |
| 2005 08 26 | 644 | 0.2− | 0.1− | 2006 11 12 | 703 | 0.6− | 0.3− | | | | | | |
| 2005 08 27 | 699 | 0.6+ | 1.1+ | 2006 11 12 | 703 | 0.5− | 0.1+ | | | | | | |

**2001 WR$_{82}$ = 2004 FE$_{80}$ = 2006 RR$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.51426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18120327 | $\omega$ | 112.24526 | | +0.75698607 | +0.65257900 | |
| $a$ | 3.0928488 | $\Omega$ | 207.05347 | | −0.62326985 | +0.70577269 | |
| $e$ | 0.1553202 | $i$ | 4.20599 | | −0.19623147 | +0.27572733 | |
| $P$ | 5.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 16 | 691 | 0.6+ | 0.9+ | 2006 09 18 | 699 | 1.4− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 1999 05 16 | 691 | 0.0 | 1.6+ | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 1999 05 16 | 691 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.6− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.0 | | |
| 2001 10 23 | 704 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2001 10 23 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2001 10 23 | 704 | 1.0− | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2− | | |
| 2001 11 20 | 704 | 0.2− | 1.3+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 11 20 | 704 | 0.1− | 0.7+ | 2006 09 21 | 621 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 20 | 704 | 0.7− | 1.3+ | 2006 09 21 | 621 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.2− | 0.8+ | 2006 09 21 | 621 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2001 11 21 | 704 | 1.3+ | 0.9− | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2001 11 21 | 704 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.1+ | 1.2+ | 2006 11 02 | G96 | 0.1+ | 0.3+ | | |
| 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.4+ | 0.1− | 2006 11 02 | G96 | 0.2+ | 0.5+ | | |
| 2001 12 14 | 704 | 0.7− | 0.1− | 2006 09 27 | 704 | 1.2+ | 0.5− | 2006 11 02 | G96 | 0.1− | 0.2+ | | |
| 2001 12 14 | 704 | 0.8− | 0.6+ | 2006 09 27 | 704 | 0.7− | 0.5+ | 2006 11 02 | G96 | 0.0 | 0.9+ | | |
| 2001 12 14 | 704 | 0.4− | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.3− | | |
| 2004 03 21 | 291 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.4+ | 2006 11 02 | G96 | 0.3− | 0.2− | | |
| 2004 03 21 | 291 | 0.2− | 0.2− | 2006 09 30 | 691 | 1.5− | 0.1+ | 2006 11 02 | G96 | 0.3− | 0.0 | | |
| 2004 03 21 | 291 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.4+ | 0.5− | | |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.3+ | 0.0 | | |
| 2004 03 23 | 691 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.5− | 0.3+ | 2006 11 02 | G96 | 0.8+ | 0.2+ | | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.6+ | 0.3+ | | |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 02 | G96 | 0.3+ | 0.6− | | |
| 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.7− | | |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 15 | 106 | (1.6− | 1.2+) | 2006 11 11 | 703 | 0.0 | 0.0 | | |
| 2006 09 17 | 703 | 0.4+ | 0.1+ | 2006 10 15 | 106 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.1− | | |
| 2006 09 17 | 703 | 0.2+ | 0.9− | 2006 10 15 | 106 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.2+ | | |
| 2006 09 17 | 703 | 0.9+ | 0.4− | 2006 10 16 | 106 | (1.6+ | 0.6+) | | | | | | |
| 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.2− | | | | | | |

**2001 WC$_{84}$ = 2006 VV$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.59372 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19785672 | $\omega$ | 138.48793 | | +0.95272380 | −0.25762894 | |
| $a$ | 2.9167700 | $\Omega$ | 237.13481 | | +0.20264748 | +0.93378673 | |
| $e$ | 0.0724936 | $i$ | 11.05585 | | +0.22638762 | +0.24833380 | |
| $P$ | 4.98 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | (2.5− | 2.6+) | 2006 10 19 | G96 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | (0.1+ | 1.9+) | 2006 10 19 | G96 | 0.4− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 20 | 704 | (0.1− | 1.8+) | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2001 11 21 | 704 | 0.3+ | 0.4+ | 2006 10 29 | G96 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2001 11 21 | 704 | 0.2+ | 0.3− | 2006 10 29 | G96 | 0.5+ | 0.4− | 2006 11 24 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.0 | 0.6− | 2006 11 24 | 691 | 0.0 | 0.3− | | |
| 2001 11 21 | 704 | 0.2+ | 1.0+ | 2006 10 29 | G96 | 0.4+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ | | |
| 2001 12 17 | 704 | (0.1+ | 2.0+) | 2006 11 11 | 691 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.2− | 0.1− | | |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.3− | 0.2− | | |
| 2001 12 17 | 704 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.4− | 0.5+ | 2006 11 24 | 691 | 0.2+ | 0.2− | | |
| 2001 12 17 | 704 | 0.3− | 0.8+ | 2006 11 15 | 691 | 0.4− | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.0 | | |
| 2004 04 28 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.2− | | |
| 2004 04 28 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2004 04 28 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2006 10 19 | G96 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.4− | | | | | | |

**2001 WV$_{84}$ = 2006 SR$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.90714 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17718753 | $\omega$ | 7.24260 | | −0.23551963 | −0.97089182 | |
| $a$ | 3.1394046 | $\Omega$ | 96.38676 | | +0.88945917 | −0.23340409 | |
| $e$ | 0.1711028 | $i$ | 2.51359 | | +0.39165404 | −0.05377365 | |
| $P$ | 5.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3+ | 0.1− | 2001 12 07 | 644 | 0.3− | 0.3− | 2006 09 26 | 691 | 0.5+ | 0.2− | | |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2001 12 07 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | 1.1+ | 0.0 | 2001 12 07 | 644 | 0.3+ | 0.5− | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2001 11 21 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.0 | | |
| 2001 11 21 | 704 | 0.9− | 0.1− | 2006 09 18 | 691 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.0 | | |
| 2001 11 21 | 704 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.3− | 0.2+ | | | | | | |
| 2001 11 21 | 704 | 0.6− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | | | | | |

**2001 WL$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.26681 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22027022 | $\omega$ | 172.36381 | | +0.74751195 | −0.66021757 | |
| $a$ | 2.7153899 | $\Omega$ | 229.22036 | | +0.60422209 | +0.72152990 | |
| $e$ | 0.0422806 | $i$ | 5.53717 | | +0.27593758 | +0.20858420 | |
| $P$ | 4.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 691 | 0.3− | 0.3− | 2001 11 21 | 704 | 0.7+ | 1.2+ | 2005 10 03 | 691 | 0.0 | 0.1− | | |
| 2000 09 02 | 691 | 0.7+ | 0.1+ | 2001 11 21 | 704 | 0.0 | 0.5− | 2005 10 13 | 691 | 0.1+ | 0.1− | | |
| 2000 09 02 | 691 | 0.3− | 0.1+ | 2001 12 14 | 704 | 0.5+ | 0.2+ | 2005 10 13 | 691 | 0.1− | 0.1+ | | |
| 2001 11 20 | 704 | 0.3− | 0.2− | 2001 12 14 | 704 | 0.5+ | 0.4+ | 2005 10 13 | 691 | 0.2+ | 0.2− | | |
| 2001 11 20 | 704 | 1.0− | 0.2+ | 2001 12 14 | 704 | 0.0 | 0.1+ | 2005 11 06 | G96 | 0.1+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.6− | 0.7− | 2005 09 24 | 691 | 0.1+ | 0.1+ | 2005 11 06 | G96 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 0.6− | 2005 09 24 | 691 | 0.0 | 0.1+ | 2005 11 06 | G96 | 0.3+ | 0.2− |
| 2001 11 20 | 704 | 0.1− | 0.5− | 2005 09 24 | 691 | 0.0 | 0.2+ | 2005 11 06 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.2+ | 0.2− | 2005 10 03 | 691 | 0.0 | 0.1+ | | | | |
| 2001 11 21 | 704 | 0.0 | 0.5+ | 2005 10 03 | 691 | 0.2− | 0.1+ | | | | |

**2001 WN$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.50110 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19097968 | $\omega$ | 78.10573 | | −0.96199584 | | −0.19312639 |
| $a$ | 2.9863769 | $\Omega$ | 90.53249 | | +0.10576080 | | −0.91529625 |
| $e$ | 0.0490049 | $i$ | 11.13100 | | +0.25175116 | | −0.35346142 |
| $P$ | 5.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.4− | 0.1− | 2001 12 19 | 691 | 0.2+ | 0.4− | 2002 01 12 | 291 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | 0.6+ | 0.0 | 2001 12 19 | 691 | 0.2+ | 0.6− | 2006 11 12 | D35 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2001 12 20 | 704 | 0.1− | 0.3− | 2006 11 12 | D35 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.5+ | 0.0 | 2001 12 20 | 704 | (0.4+ | 1.9−) | 2006 11 12 | D35 | 0.3+ | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.3+ | 2001 12 20 | 704 | (2.3+ | 0.4+) | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.6+ | 0.7+ | 2001 12 20 | 704 | 0.9− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 1.2− | 0.2− | 2001 12 20 | 704 | 0.8+ | 0.6+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.5− | 0.6+ | 2001 12 20 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.1+ | 2001 12 20 | 704 | (0.8+ | 1.6+) | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 1.0− | 1.4+ | 2001 12 20 | 704 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 0.5+ | 2002 01 12 | 291 | 0.2+ | 0.1+ | | | | |
| 2001 12 19 | 691 | 0.1+ | 0.3− | 2002 01 12 | 291 | 0.5− | 0.1+ | | | | |

**2001 WC$_{90}$ = 2006 SS$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.28189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18610584 | $\omega$ | 344.27017 | | +0.97320281 | | −0.20132308 |
| $a$ | 3.0382911 | $\Omega$ | 28.09377 | | +0.22809053 | | +0.78386934 |
| $e$ | 0.1751973 | $i$ | 13.64723 | | +0.02917183 | | +0.58738222 |
| $P$ | 5.30 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2001 11 10 | 644 | 0.9+ | 1.1+ | 2006 09 18 | 703 | 0.7− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 11 10 | 644 | 0.8+ | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.3− | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2001 11 12 | 704 | 0.1− | 0.4− | 2006 09 21 | 699 | (1.7− | 0.2−) | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.3− | 0.5− | 2006 09 21 | 699 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.7− | 2006 09 21 | 699 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.4− | 0.6+ | 2006 09 22 | 704 | 0.1+ | 1.1− | 2006 10 19 | 644 | 0.5+ | 0.4− |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 1.0− | 1.2+ | 2006 09 22 | 704 | 0.9+ | 0.6− | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.3− | 1.2− | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2001 11 24 | 704 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2001 11 24 | 704 | 0.7+ | 0.4− | 2006 09 26 | 704 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 11 24 | 704 | 0.1+ | 0.4− | 2006 09 26 | 704 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 11 24 | 704 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 11 24 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.9+ |
| 2001 12 18 | 699 | 0.6+ | 0.7+ | 2006 09 30 | 704 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.9+ |
| 2001 12 18 | 699 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2001 12 18 | 699 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.6+ | 1.0+ | 2006 10 22 | 703 | 0.2+ | 1.0+ |
| 2001 12 18 | 699 | 0.5− | 1.4− | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 1.1− | 0.2− | 2006 11 06 | 644 | 0.4+ | 0.1+ |
| 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.6− | 0.2− | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2− | | | | |
| 2006 09 18 | 703 | 0.1− | 1.5+ | 2006 10 10 | 644 | 0.2+ | 0.2− | | | | |

**2001 WP$_{90}$ = 2006 ST$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.43173 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18136398 | $\omega$ | 70.29717 | | +0.23118858 | | −0.97281078 |
| $a$ | 3.0910214 | $\Omega$ | 6.38358 | | +0.83959227 | | +0.19231123 |
| $e$ | 0.1542633 | $i$ | 7.14090 | | +0.49156552 | | +0.12905650 |
| $P$ | 5.43 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.6+ | 0.1+ | 2001 12 09 | 704 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2001 10 14 | 704 | 0.6− | 0.3− | 2001 12 09 | 704 | 0.5+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 2001 10 14 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2001 10 14 | 704 | 0.9− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.8+ |
| 2001 11 21 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2001 11 21 | 704 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 2001 11 21 | 704 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2001 11 24 | 704 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2001 11 24 | 704 | 0.1− | 1.0− | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 11 24 | 704 | 1.0+ | 0.5− | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 11 24 | 704 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2001 11 24 | 704 | 0.5− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 12 09 | 704 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2001 12 09 | 704 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.1− | | | | |

**2001 WR$_{96}$ = 2001 XJ$_{260}$ = 2006 UY$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.01695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17695368 | $\omega$ | 192.46056 | | +0.37090869 | | −0.91372453 |
| $a$ | 3.1421698 | $\Omega$ | 235.99094 | | +0.86829591 | | +0.40458818 |
| $e$ | 0.0611466 | $i$ | 11.54716 | | +0.32937661 | | −0.03762834 |
| $P$ | 5.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.1+ | 0.2− | 2001 12 10 | 291 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.8+ |
| 2001 11 17 | 291 | 0.2− | 0.1− | 2001 12 10 | 291 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.6+ |
| 2001 11 17 | 291 | 0.0 | 0.2− | 2001 12 14 | 704 | 0.4+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2001 11 21 | 704 | 0.9− | 0.2− | 2001 12 14 | 704 | 0.3+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.1+ | 0.7+ | 2001 12 14 | 704 | 0.0 | 0.5− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.9− | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 1.1− | 0.4+ | 2006 09 16 | 703 | 0.7+ | 1.0− | 2006 10 23 | 691 | 0.2+ | 0.4− |
| 2001 11 21 | 704 | 0.8+ | 1.2+ | 2006 09 16 | 703 | 1.1+ | 1.3− | 2006 10 23 | 691 | 0.4+ | 0.5− |
| 2001 12 10 | 291 | 0.1− | 0.1+ | 2006 09 16 | 703 | 1.1− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2− |

**2001 WL$_{100}$ = 2006 SQ$_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.91666 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19103683 | $\omega$ | 150.71746 | | +0.79043173 | | −0.60544243 |
| $a$ | 2.9857812 | $\Omega$ | 246.84019 | | +0.54047661 | | +0.76082027 |
| $e$ | 0.2416640 | $i$ | 5.80824 | | +0.28827541 | | +0.23364929 |
| $P$ | 5.16 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 291 | 0.7− | 0.4+ | 2001 12 07 | 691 | 0.2− | 0.4− | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 2001 11 16 | 291 | 0.4+ | 0.1+ | 2001 12 14 | 291 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.3− |
| 2001 11 16 | 291 | 0.2+ | 0.4+ | 2001 12 14 | 291 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.3− |
| 2001 11 19 | 704 | 1.3− | 0.3+ | 2001 12 14 | 291 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.1+ |
| 2001 11 19 | 704 | 0.6+ | 0.4− | 2002 01 13 | 291 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 2001 11 19 | 704 | 0.1+ | 0.3+ | 2002 01 13 | 291 | 0.4− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.3+ | 0.8− | 2002 01 13 | 291 | 0.7+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2001 11 21 | 704 | 0.2+ | 0.7− | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.4− | 0.3− |
| 2001 12 07 | 691 | 0.0 | 0.6− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.3− |
| 2001 12 07 | 691 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.1− |

**2001 WT$_{101}$ = 2006 UB$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.19855 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17527973 | $\omega$ | 286.16694 | | −0.74422631 | | −0.66531581 |
| $a$ | 3.1621435 | $\Omega$ | 212.19650 | | +0.64730174 | | −0.69663870 |
| $e$ | 0.0880113 | $i$ | 6.35842 | | +0.16470477 | | −0.26842017 |
| $P$ | 5.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 691 | 0.3+ | 0.1+ | 2001 11 21 | 704 | 0.4+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2001 11 18 | 691 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 2001 11 18 | 691 | 0.0 | 0.0 | 2001 11 21 | 704 | 0.1− | 1.1+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.8− | 0.5− | 2001 11 21 | 704 | 0.2+ | 1.0− | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.7− | 0.3− | 2001 12 10 | 691 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.4− | 0.5+ |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2001 12 10 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.5− |
| 2001 11 20 | 704 | 0.8− | 0.2− | 2001 12 10 | 691 | 0.0 | 0.2+ | | | | |

**2001 WN$_{103}$ = 2003 DM$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.19478 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17546203 | $\omega$ | 343.25324 | | +0.10191553 | | −0.97878599 |
| $a$ | 3.1599530 | $\Omega$ | 100.62828 | | +0.93217922 | | +0.03157763 |
| $e$ | 0.0713395 | $i$ | 10.41878 | | +0.34735448 | | +0.20243724 |
| $P$ | 5.62 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.3+ | 1.0+ | 2001 12 11 | 704 | 0.4+ | 0.2+ | 2004 03 18 | 291 | 1.0+ | 0.1+ |
| 2001 11 19 | 699 | 1.0+ | 0.4+ | 2001 12 11 | 704 | 1.2− | 0.6− | 2004 03 21 | 291 | 0.2− | 0.8− |
| 2001 11 19 | 699 | 0.1+ | 1.9+ | 2003 02 24 | 599 | 0.5+ | 0.3− | 2004 03 21 | 291 | 0.1− | 0.5+ |
| 2001 11 19 | 699 | 1.5− | 1.5− | 2003 02 24 | 599 | 0.3− | 0.5− | 2004 03 21 | 291 | 1.8− | 1.5+ |
| 2001 11 24 | 704 | 0.0 | 0.0 | 2003 02 25 | 599 | 0.0 | 0.0 | 2004 05 19 | 599 | 0.6+ | 0.3+ |
| 2001 11 24 | 704 | 0.0 | 0.7+ | 2003 02 25 | 599 | 0.1+ | 0.1− | 2004 05 19 | 599 | 0.6+ | 0.0 |
| 2001 11 24 | 704 | 0.2− | 0.4+ | 2003 02 25 | 599 | 0.0 | 0.1− | 2004 05 19 | 599 | 0.9+ | 0.2+ |
| 2001 11 24 | 704 | 0.4− | 0.7+ | 2003 02 25 | 599 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.9− | 1.0+ |
| 2001 11 24 | 704 | 0.3− | 0.1+ | 2003 02 25 | 599 | 0.1+ | 0.1− | 2006 09 25 | 703 | 0.7+ | 0.1− |
| 2001 11 24 | 704 | 0.3+ | 0.4− | 2003 02 25 | 599 | 0.0 | 0.3+ | 2006 09 25 | 703 | 0.9− | 0.2+ |
| 2001 11 24 | 704 | 0.1− | 0.9+ | 2004 03 18 | 291 | 0.5+ | 0.1+ | 2006 09 25 | 703 | 0.3+ | 1.0+ |
| 2001 12 11 | 704 | 0.2− | 0.6+ | 2004 03 18 | 291 | 0.7+ | 0.3+ | | | | |

**2001 WO$_{103}$ = 1998 DC$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.95052 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24062643 | $\omega$ | 285.64025 | | −0.42098194 | | −0.90648859 |
| $a$ | 2.5600031 | $\Omega$ | 189.45336 | | +0.88938015 | | −0.40547879 |
| $e$ | 0.2512949 | $i$ | 11.39300 | | +0.17826148 | | −0.11775139 |
| $P$ | 4.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 18 | 691 | 0.0 | 0.1− | 2001 11 18 | 704 | 0.7− | 0.2− | 2002 03 12 | 704 | 0.4+ | 0.6+ |
| 1994 03 18 | 691 | 0.1+ | 0.2− | 2001 12 24 | 644 | 0.3+ | 0.5+ | 2002 03 12 | 704 | 0.3− | 0.4+ |
| 1994 03 18 | 691 | 0.0 | 0.1+ | 2001 12 24 | 644 | 0.0 | 0.1+ | 2004 08 20 | 691 | 0.2− | 0.1− |
| 1998 02 22 | 566 | 0.1− | 0.6− | 2001 12 24 | 644 | 0.1+ | 0.3+ | 2004 08 20 | 691 | 0.2− | 0.2+ |
| 1998 02 22 | 566 | 0.1+ | 0.7− | 2002 01 10 | 644 | 0.5+ | 0.3+ | 2004 08 20 | 691 | 0.0 | 0.1+ |
| 1998 02 22 | 566 | 0.3− | 0.5− | 2002 01 10 | 644 | 0.3+ | 0.1− | 2005 12 06 | 704 | 0.4+ | 0.4− |
| 1998 02 23 | 566 | 0.6− | 0.0 | 2002 01 10 | 644 | 0.0 | 2.4− | 2005 12 06 | 704 | 0.3+ | 0.2− |
| 1998 02 23 | 566 | 0.2− | 0.2− | 2002 01 12 | 704 | 0.1+ | 0.8+ | 2005 12 06 | 704 | 0.5− | 0.8− |
| 1998 02 23 | 566 | 0.3− | 0.1− | 2002 01 12 | 704 | 0.5+ | 0.4+ | 2005 12 06 | 704 | 0.4+ | 1.0− |
| 2000 09 26 | 691 | 0.2+ | 0.1+ | 2002 01 12 | 704 | 0.1+ | 0.0 | 2005 12 06 | 704 | 0.7− | 0.9− |
| 2000 09 26 | 691 | 0.0 | 0.1− | 2002 01 12 | 704 | 0.1+ | 0.2+ | 2006 01 11 | 704 | 0.5+ | 0.3+ |
| 2000 09 26 | 691 | 0.2+ | 0.1− | 2002 02 16 | 704 | 0.1+ | 0.4+ | 2006 01 11 | 704 | 0.2+ | 0.4+ |
| 2001 11 18 | 704 | 0.4− | 0.8+ | 2002 02 16 | 704 | 0.5+ | 0.6+ | 2006 01 11 | 704 | 0.1+ | 1.4+ |
| 2001 11 18 | 704 | 0.6− | 0.5+ | 2002 02 16 | 704 | 0.5− | 0.4+ | | | | |
| 2001 11 18 | 704 | 1.1− | 0.0 | 2002 03 12 | 704 | 0.1− | 0.3+ | | | | |

**2001 WP$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.61795 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28117610 | $\omega$ | 358.23139 | | −0.92735589 | | +0.37119317 |
| $a$ | 2.3075464 | $\Omega$ | 203.72916 | | −0.34184826 | | −0.89174098 |
| $e$ | 0.0522190 | $i$ | 6.73408 | | −0.15215392 | | −0.25886994 |
| $P$ | 3.51 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 10 | 691 | 0.1− | 0.2+ | 2001 12 11 | 704 | 0.9− | 0.9+ | 2003 04 25 | 691 | 0.3+ | 0.1+ |
| 1997 10 10 | 691 | 0.1− | 0.2+ | 2001 12 11 | 704 | 1.1− | 0.6+ | 2003 05 05 | 704 | 0.5+ | 0.8− |
| 1997 10 10 | 691 | 0.0 | 0.1+ | 2001 12 11 | 704 | 0.6− | 0.3+ | 2003 05 05 | 704 | 0.4+ | 0.6− |
| 2000 06 05 | 691 | 0.6− | 0.2− | 2001 12 18 | 644 | 0.1− | 0.5+ | 2003 05 05 | 704 | 0.1+ | 0.8− |
| 2000 06 05 | 691 | 0.2+ | 0.4+ | 2001 12 18 | 644 | 0.4− | 0.4+ | 2003 05 11 | 691 | 0.1− | 0.4+ |
| 2000 06 05 | 691 | 0.2+ | 0.4+ | 2001 12 18 | 644 | 0.2− | 0.1+ | 2003 05 11 | 691 | 0.3− | 0.2+ |
| 2001 11 17 | 704 | 1.5+ | 0.5− | 2003 03 25 | 291 | 0.1− | 0.3+ | 2003 05 11 | 691 | 0.2+ | 0.1− |
| 2001 11 17 | 704 | 0.8+ | 0.9+ | 2003 03 25 | 291 | 0.0 | 0.4+ | 2003 05 25 | 691 | 0.1− | 0.0 |
| 2001 11 17 | 704 | 1.8+ | 0.1− | 2003 03 25 | 291 | 0.1− | 0.4+ | 2003 05 25 | 691 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.4− | 1.0+ | 2003 04 25 | 691 | 0.1+ | 0.0 | 2003 05 25 | 691 | 0.1+ | 0.2+ |
| 2001 12 11 | 704 | 1.0− | 0.4+ | 2003 04 25 | 691 | 0.2+ | 0.2− | | | | |

**2001 WQ$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.57877 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22391331 | $\omega$ | 50.50421 | | −0.93187236 | | −0.26281170 |
| $a$ | 2.6858563 | $\Omega$ | 112.94745 | | +0.18833347 | | −0.93963713 |
| $e$ | 0.0392469 | $i$ | 15.75830 | | +0.31007162 | | −0.21911659 |
| $P$ | 4.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 1.4+ | 0.7− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2+ |
| 2001 11 18 | 704 | 0.2+ | 0.2+ | 2003 03 10 | 644 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2001 11 18 | 704 | 0.8+ | 0.4+ | 2003 03 10 | 644 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 12 09 | 699 | (1.7+ | 0.6+) | 2003 03 10 | 644 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.8− |
| 2001 12 09 | 699 | 0.6− | 1.5+ | 2003 03 26 | 704 | 0.2− | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2001 12 09 | 699 | 0.2+ | 0.0 | 2003 03 26 | 704 | 0.1+ | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 12 09 | 699 | 0.3− | 0.7− | 2003 03 26 | 704 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2003 03 26 | 704 | 1.0+ | 0.8+ | 2006 11 16 | G96 | 0.6− | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.7+ | 2003 04 08 | 644 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 1.1− | 0.3+ | 2003 04 08 | 644 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.5− | 0.1− |
| 2001 12 19 | 704 | 1.3− | 0.8− | 2003 04 08 | 644 | 0.1+ | 0.9− | 2006 11 16 | G96 | 0.2+ | 0.3+ |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.0 | | | | |

**2001 WR$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.81266 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21047119 | $\omega$ | 66.84269 | | −0.75674536 | | −0.62712283 |
| $a$ | 2.7990303 | $\Omega$ | 73.79951 | | +0.50716453 | | −0.74133441 |
| $e$ | 0.1484300 | $i$ | 11.07924 | | +0.41245677 | | −0.23904027 |
| $P$ | 4.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.2+ | 0.5− | 2002 02 03 | 644 | 1.1− | 0.2− |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2002 01 08 | 704 | 1.3− | 0.2+ | 2002 02 03 | 644 | 0.2− | 0.7+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.6− | 0.1+ | 2003 05 25 | 926 | 0.0 | 0.1− |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.7− | 0.0 | 2003 05 25 | 926 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | 0.7+ | 0.1− | 2002 01 21 | 704 | 0.2+ | 1.1+ | 2003 05 25 | 926 | 0.2+ | 0.3+ |
| 2001 12 22 | 704 | 0.9+ | 0.1+ | 2002 01 21 | 704 | 1.2− | 1.5+ | 2005 10 28 | 703 | 1.1+ | 0.2+ |
| 2001 12 22 | 704 | 1.1+ | 0.7− | 2002 01 21 | 704 | 0.2+ | 1.0+ | 2005 10 28 | 703 | 1.1− | 0.1+ |
| 2001 12 22 | 704 | 0.7+ | 1.3− | 2002 01 21 | 704 | 0.9+ | 0.6+ | 2005 10 28 | 703 | 0.5− | 0.8+ |
| 2001 12 22 | 704 | 0.9+ | 1.5− | 2002 02 03 | 644 | 0.2− | 0.3+ | 2005 10 28 | 703 | 0.0 | 0.1+ |

**2001 XP$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.14998 | | (2000.0) | | | |
| $n$ | 0.20006414 | $\omega$ | 246.20043 | | −0.69759595 | −0.33593328 |
| $a$ | 2.8952754 | $\Omega$ | 268.51819 | | +0.61732602 | −0.73015050 |
| $e$ | 0.7504025 | $i$ | 39.27693 | | −0.36368733 | −0.59500343 |
| $P$ | 4.93 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 704 | 0.1+ | 1.2+ | 2001 12 17 | 715 | 1.3− | 0.1− | 2002 02 09 | 413 | 0.6− | 0.4− |
| 2001 12 08 | 704 | (0.5+ | 1.6+) | 2001 12 17 | 715 | 1.2− | 0.0 | 2002 03 05 | 413 | 0.1+ | 0.7− |
| 2001 12 08 | 704 | 1.0+ | 0.7+ | 2001 12 17 | 715 | 1.4− | 0.0 | 2002 03 05 | 413 | (0.4− | 1.6−) |
| 2001 12 09 | 734 | (1.4+ | 5.1+) | 2001 12 18 | 568 | 0.1+ | 0.1− | 2002 03 11 | 422 | (1.0+ | 3.3+) |
| 2001 12 09 | 734 | (0.3− | 2.0−) | 2001 12 18 | 568 | 0.1+ | 0.1+ | 2002 04 03 | 413 | 0.4+ | 0.5− |
| 2001 12 09 | 557 | (2.8+ | 0.6+) | 2001 12 20 | 568 | 0.1+ | 0.1− | 2002 04 03 | 413 | 0.2+ | 0.8− |
| 2001 12 09 | 557 | (3.2+ | 0.1−) | 2001 12 20 | 568 | 0.2+ | 0.0 | 2002 04 03 | 413 | 0.2+ | 0.7+ |
| 2001 12 09 | 557 | (2.4+ | 1.4+) | 2001 12 27 | 715 | (1.7− | 0.2+) | 2002 04 23 | 413 | 0.4− | 0.2− |
| 2001 12 09 | 557 | (1.7+ | 0.1−) | 2001 12 27 | 715 | 0.9− | 0.3− | 2002 04 23 | 413 | 0.5− | 0.2− |
| 2001 12 09 | 046 | 0.0 | 1.4+ | 2001 12 27 | 715 | (2.4− | 0.1−) | 2002 04 23 | 413 | 0.6− | 0.2− |
| 2001 12 09 | 046 | 0.5+ | 0.0 | 2002 01 04 | 649 | 0.4− | 0.4+ | 2002 05 23 | 807 | 0.2− | 0.3− |
| 2001 12 09 | 046 | 0.8+ | 0.8− | 2002 01 04 | 649 | 0.0 | 0.3+ | 2002 05 29 | 474 | 0.9− | 1.0+ |
| 2001 12 09 | 046 | 0.3+ | 0.9− | 2002 01 04 | 649 | 0.7− | 0.5+ | 2002 05 29 | 474 | (4.7− | 0.6+) |
| 2001 12 09 | 046 | 0.6+ | 0.3+ | 2002 01 04 | 104 | (1.7− | 3.0+) | 2002 05 29 | 474 | (1.7− | 0.3−) |
| 2001 12 09 | 611 | 0.5− | 0.9− | 2002 01 04 | 104 | 0.5− | 0.2+ | 2006 09 26 | 734 | 0.0 | 1.2+ |
| 2001 12 09 | 611 | (1.7+ | 0.0 ) | 2002 01 04 | 104 | (0.4+ | 2.9−) | 2006 09 26 | 734 | 0.4+ | 0.0 |
| 2001 12 09 | 611 | 0.9− | 0.9− | 2002 01 04 | 104 | 0.2− | 0.1+ | 2006 09 26 | 734 | 0.2− | 1.0+ |
| 2001 12 10 | 704 | 0.8− | 0.1− | 2002 01 04 | 104 | (0.0 | 2.8+) | 2006 09 26 | 734 | 1.0− | 0.6+ |
| 2001 12 10 | 704 | 0.4− | 0.3+ | 2002 01 08 | 704 | 0.3− | 0.1− | 2006 09 26 | 734 | 0.1+ | 0.0 |
| 2001 12 10 | 704 | 0.5+ | 0.1− | 2002 01 08 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 734 | 0.4− | 1.2+ |
| 2001 12 10 | 704 | 0.4+ | 0.3+ | 2002 01 08 | 704 | 0.5− | 0.1+ | 2006 09 28 | H36 | 0.3− | 0.1+ |
| 2001 12 10 | 649 | 0.2+ | 0.1+ | 2002 01 08 | 704 | 0.3− | 0.3+ | 2006 09 28 | H36 | 0.4− | 0.2− |
| 2001 12 10 | 649 | 0.4+ | 0.2− | 2002 01 31 | 413 | (1.1− | 1.6+) | 2006 11 16 | B15 | 0.4+ | 0.1+ |
| 2001 12 10 | 649 | 0.5+ | 0.7+ | 2002 01 31 | 413 | 1.1− | 1.0+ | 2006 11 16 | B15 | 0.2+ | 0.1+ |
| 2001 12 14 | 046 | 0.4+ | 0.1− | 2002 01 31 | 413 | 1.1− | 1.2+ | 2006 11 16 | B15 | 0.2+ | 0.0 |
| 2001 12 14 | 046 | 0.2+ | 0.1− | 2002 02 09 | 413 | 0.1− | 0.7+ | 2006 11 16 | B15 | 0.2+ | 0.0 |
| 2001 12 14 | 046 | 0.5+ | 0.2+ | 2002 02 09 | 413 | 0.1+ | 0.1− | 2006 11 16 | B15 | 0.2+ | 0.1+ |

**2001 XM$_2$ = 2006 SS$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.23907 | | (2000.0) | | | |
| $n$ | 0.18234679 | $\omega$ | 82.37157 | | +0.55468357 | −0.81601394 |
| $a$ | 3.0799049 | $\Omega$ | 331.93633 | | +0.55938973 | +0.51040695 |
| $e$ | 0.2110540 | $i$ | 20.22337 | | +0.61596207 | +0.27130424 |
| $P$ | 5.41 | $H$ | 14.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 704 | 0.7+ | 0.3+ | 2001 12 23 | 704 | 0.4+ | 0.2− | 2006 09 21 | 106 | 0.1+ | 0.2− |
| 2001 12 08 | 704 | 0.3+ | 0.3− | 2001 12 23 | 704 | 0.1+ | 0.0 | 2006 09 21 | 106 | 0.3− | 0.2− |
| 2001 12 08 | 704 | 1.0+ | 0.0 | 2006 08 29 | 699 | 0.5+ | 0.0 | 2006 10 20 | 703 | 0.0 | 0.1− |
| 2001 12 08 | 704 | 0.6− | 1.0+ | 2006 08 29 | 699 | 0.7− | 0.2+ | 2006 10 20 | 703 | 0.4− | 0.3+ |
| 2001 12 10 | 704 | 0.5− | 0.3+ | 2006 08 29 | 699 | 0.3+ | 0.3− | 2006 10 20 | 703 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | 0.1− | 0.0 | 2006 08 29 | 699 | 0.4+ | 0.2+ | 2006 10 20 | 703 | 0.3− | 0.3+ |
| 2001 12 10 | 704 | 0.9− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.3+ | 2006 10 21 | 704 | 1.4+ | 0.3− |
| 2001 12 10 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.2+ | 2006 10 21 | 704 | 0.3− | 1.2+ |
| 2001 12 11 | 704 | 0.1+ | 0.3− | 2006 09 16 | 703 | 0.5− | 0.1+ | 2006 10 21 | 704 | 0.4− | 0.2+ |
| 2001 12 11 | 704 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 10 21 | 704 | 0.9− | 0.2+ |
| 2001 12 11 | 704 | 0.5− | 0.3− | 2006 09 20 | 106 | 0.1+ | 0.2− | 2006 10 31 | 703 | 0.5+ | 0.0 |
| 2001 12 11 | 704 | 0.1+ | 0.1− | 2006 09 21 | 106 | 0.2+ | 0.2− | 2006 10 31 | 703 | 0.3+ | 0.1− |
| 2001 12 11 | 704 | 0.2− | 0.4− | 2006 09 21 | 106 | 0.2+ | 0.6− | 2006 10 31 | 703 | 0.5+ | 0.3− |
| 2001 12 23 | 704 | 0.2− | 0.3− | 2006 09 21 | 106 | 0.1− | 0.4− | 2006 10 31 | 703 | 0.2+ | 0.8− |
| 2001 12 23 | 704 | 0.3+ | 0.4+ | 2006 09 21 | 106 | 0.2+ | 0.1+ | | | | |
| 2001 12 23 | 704 | 0.1− | 0.3− | 2006 09 21 | 106 | 0.3− | 0.3+ | | | | |

**2001 XH$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.56442 | | (2000.0) | | | |
| $n$ | 0.22659696 | $\omega$ | 308.51527 | | +0.77412577 | −0.58329600 |
| $a$ | 2.6646080 | $\Omega$ | 88.52902 | | +0.62986365 | +0.67091090 |
| $e$ | 0.2576939 | $i$ | 14.24322 | | +0.06325403 | +0.45786935 |
| $P$ | 4.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.5− | 0.7+ | 2001 12 15 | 012 | 1.4+ | 0.4+ | 2002 01 13 | 704 | 0.4+ | 0.4+ |
| 2001 11 17 | 704 | 0.6− | 1.0+ | 2001 12 15 | 012 | 0.6− | 0.7+ | 2002 01 13 | 704 | 0.7+ | 0.3+ |
| 2001 11 17 | 704 | 1.2− | 0.4+ | 2001 12 17 | 644 | 0.2+ | 1.0− | 2002 01 15 | 704 | 0.1− | 0.2− |
| 2001 11 17 | 704 | 1.2− | 1.6+ | 2001 12 17 | 704 | 0.8+ | 0.5− | 2002 01 15 | 704 | 0.2− | 0.1− |
| 2001 11 17 | 704 | 1.2− | 1.6+ | 2001 12 17 | 644 | 0.2+ | 0.6− | 2002 01 15 | 704 | 0.3− | 0.2− |
| 2001 12 08 | 012 | 0.0 | 0.6− | 2001 12 17 | 704 | 0.6+ | 0.7− | 2002 01 15 | 704 | 0.4+ | 0.1+ |
| 2001 12 08 | 012 | 0.2+ | 0.3− | 2001 12 17 | 704 | 0.3+ | 0.7− | 2005 09 08 | E12 | 0.2+ | 0.1− |
| 2001 12 08 | 012 | 0.2− | 0.4− | 2001 12 17 | 704 | 0.6+ | 0.6− | 2005 09 08 | E12 | 1.2+ | 0.1+ |
| 2001 12 09 | 012 | 0.8− | 0.6− | 2001 12 17 | 704 | 0.2− | 0.8− | 2005 09 08 | E12 | 0.4− | 1.1− |
| 2001 12 09 | 012 | 0.5− | 0.2+ | 2001 12 17 | 644 | 0.1+ | 1.0− | 2005 09 08 | E12 | 0.6+ | 0.4− |
| 2001 12 09 | 012 | 0.7− | 0.1+ | 2001 12 20 | 704 | 0.6+ | 0.2+ | 2005 10 02 | E12 | 0.4− | 0.2− |
| 2001 12 09 | 012 | 0.2− | 0.7− | 2001 12 20 | 704 | 0.5+ | 0.2− | 2005 10 02 | E12 | 0.1− | 0.8− |
| 2001 12 09 | 012 | 0.7− | 0.4− | 2001 12 20 | 704 | 0.1+ | 0.2+ | 2005 10 02 | E12 | 0.3− | 0.1+ |
| 2001 12 11 | 704 | 0.0 | 0.1− | 2001 12 20 | 704 | 0.1+ | 0.1− | 2005 10 02 | E12 | 0.1+ | 0.4+ |
| 2001 12 11 | 704 | 0.1+ | 0.1+ | 2002 01 09 | 704 | 0.4+ | 0.3+ | 2005 10 25 | G96 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.2+ | 0.3+ | 2002 01 09 | 704 | 0.0 | 0.5+ | 2005 10 25 | G96 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 0.4− | 0.0 | 2002 01 09 | 704 | 0.8+ | 0.3+ | 2005 10 25 | G96 | 0.1− | 0.1− |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2002 01 09 | 704 | 0.6+ | 1.5+ | 2005 10 25 | G96 | 0.3− | 0.0 |
| 2001 12 13 | 012 | 0.3+ | 0.1− | 2002 01 09 | 704 | 0.3− | 0.5+ | 2005 10 31 | 703 | 1.1+ | 0.2− |
| 2001 12 13 | 012 | 0.1+ | 0.2− | 2002 01 13 | 704 | 0.8− | 0.3− | 2005 10 31 | 703 | 1.2− | 0.0 |
| 2001 12 13 | 012 | 0.2+ | 1.2− | 2002 01 13 | 704 | 0.5+ | 0.0 | 2005 10 31 | 703 | 0.5+ | 0.1+ |
| 2001 12 15 | 012 | 0.0 | 0.2+ | 2002 01 13 | 704 | 0.3+ | 0.8+ | 2005 10 31 | 703 | 0.4− | 1.5+ |

**2001 XY$_3$ = 2006 VK$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.78330 | | (2000.0) | | | |
| $n$ | 0.38581424 | $\omega$ | 318.67152 | | +0.82092351 | −0.42890311 |
| $a$ | 1.8687472 | $\Omega$ | 70.53542 | | +0.56957457 | +0.66224762 |
| $e$ | 0.0348068 | $i$ | 23.56876 | | −0.04085828 | +0.61438604 |
| $P$ | 2.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.0 | 0.5+ | 2005 04 11 | 703 | 0.5+ | 0.5+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2001 12 09 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.9− | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.4− | 2006 11 19 | 703 | 0.8− | 0.4− |
| 2001 12 09 | 704 | 0.3+ | 0.1− | 2006 10 17 | 703 | 1.4− | 0.4+ | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2001 12 10 | 704 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.5− | 2006 11 19 | 703 | 0.2+ | 0.4+ |
| 2001 12 10 | 704 | 0.4+ | 1.1+ | 2006 10 28 | 703 | 0.3+ | 0.8− | 2006 11 19 | 703 | 0.1− | 0.1+ |
| 2001 12 10 | 704 | 0.8+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.2− | 2006 11 20 | 703 | 0.2+ | 0.2+ |
| 2001 12 11 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 1.5+ | 0.1− | 2006 11 20 | 703 | 0.5− | 0.3+ |
| 2001 12 11 | 704 | 1.2− | 0.1− | 2006 10 28 | 703 | 0.4− | 0.7+ | 2006 11 20 | 703 | (0.6+ | 1.8+) |
| 2001 12 11 | 704 | 1.0− | 0.1− | 2006 11 13 | 703 | 1.2− | 0.2+ | 2006 11 20 | 703 | 1.1+ | 1.0+ |
| 2001 12 11 | 704 | 1.4− | 0.4− | 2006 11 13 | 703 | 1.1+ | 0.5− | 2006 11 20 | 704 | (2.1+ | 2.5−) |
| 2001 12 22 | 704 | 1.0+ | 0.6+ | 2006 11 13 | 703 | 0.6+ | 0.6− | 2006 11 20 | 704 | (0.1+ | 1.9−) |
| 2001 12 22 | 704 | 0.2+ | 0.8− | 2006 11 13 | 703 | 0.1+ | 0.5+ | 2006 11 20 | 704 | (2.1+ | 0.2−) |
| 2001 12 22 | 704 | 0.0 | 0.6− | 2006 11 19 | 703 | 0.7+ | 1.1+ | 2006 11 20 | 704 | (2.9+ | 1.4−) |
| 2001 12 22 | 704 | 0.4+ | 1.4− | 2006 11 19 | 703 | 1.0− | 0.4− | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2001 12 22 | 704 | 0.2+ | 0.7− | 2006 11 19 | 703 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2005 04 11 | 703 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2005 04 11 | 703 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2005 04 11 | 703 | (1.5− | 2.3+) | 2006 11 19 | 703 | 0.1− | 0.0 | | | | |

**2001 XM$_5$ = 2006 UY$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.56683 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18401160 | $\omega$ | 143.08577 | | +0.92537204 | −0.31171770 | |
| $a$ | 3.0613002 | $\Omega$ | 236.45139 | | +0.25536865 | +0.93315267 | |
| $e$ | 0.1686029 | $i$ | 14.99841 | | +0.28013112 | +0.17904796 | |
| $P$ | 5.36 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.1+ | 0.1− | 2001 12 07 | 644 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.0 | |
| 2001 11 09 | 704 | 0.4− | 0.1+ | 2001 12 07 | 644 | 0.6− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1+ | |
| 2001 11 09 | 704 | (0.6+ | 1.7+) | 2001 12 07 | 644 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− | |
| 2001 11 09 | 704 | 0.2+ | 0.3+ | 2001 12 11 | 704 | (1.9+ | 1.8+) | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2001 11 20 | 704 | 0.2+ | 0.2− | 2001 12 11 | 704 | (1.8+ | 1.3+) | 2006 10 24 | 644 | 0.1− | 0.2+ | |
| 2001 11 20 | 704 | 0.4+ | 0.2− | 2001 12 11 | 704 | (1.8+ | 1.8+) | 2006 10 24 | 644 | 0.1− | 0.0 | |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2001 12 11 | 704 | (3.1+ | 0.9+) | 2006 10 24 | 644 | 0.5− | 0.4− | |
| 2001 11 20 | 704 | 0.2+ | 0.2− | 2001 12 18 | 644 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.2− | 0.4− | |
| 2001 11 20 | 704 | 0.3− | 0.3+ | 2001 12 18 | 644 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.1− | |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2001 12 18 | 644 | 0.5− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.2+ | |
| 2001 11 21 | 704 | 0.3+ | 1.0+ | 2006 10 19 | 703 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.4− | |
| 2001 11 21 | 704 | (1.6− | 0.8−) | 2006 10 19 | 703 | 0.0 | 0.5− | 2006 10 31 | 703 | 0.3− | 0.0 | |
| 2001 11 21 | 704 | 0.3+ | 0.9− | 2006 10 19 | 703 | 0.4− | 0.3− | 2006 10 31 | 703 | 0.4− | 0.1− | |
| 2001 12 05 | 608 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.1+ | 2006 10 31 | 703 | 0.2+ | 0.7+ | |
| 2001 12 05 | 608 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 10 31 | 703 | 0.7+ | 1.4+ | |
| 2001 12 05 | 608 | (0.1+ | 1.8−) | 2006 10 22 | 644 | 0.0 | 0.1− | | | | | |

**2001 XF$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.38447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17613698 | $\omega$ | 327.60713 | | +0.36646877 | −0.92946681 | |
| $a$ | 3.1518752 | $\Omega$ | 100.86475 | | +0.86257594 | +0.32233452 | |
| $e$ | 0.1983403 | $i$ | 2.47054 | | +0.34880279 | +0.17942104 | |
| $P$ | 5.60 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 08 | 566 | 0.3− | 0.3− | 2001 12 21 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.7+ | 0.1+ | |
| 1997 02 08 | 566 | 0.4− | 0.3− | 2001 12 21 | 704 | 0.4− | 0.6+ | 2006 09 20 | 691 | 0.0 | 0.2+ | |
| 1997 02 08 | 566 | 0.0 | 0.3− | 2001 12 23 | 644 | 0.1− | 0.3+ | 2006 09 20 | 691 | 0.0 | 0.2+ | |
| 2001 11 20 | 704 | 0.4− | 0.5+ | 2001 12 23 | 644 | 0.1− | 0.3+ | 2006 09 20 | 691 | 0.1− | 0.1+ | |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2001 12 23 | 644 | 0.2− | 1.0+ | 2006 09 26 | 704 | 0.4− | 0.9+ | |
| 2001 11 20 | 704 | 0.5− | 0.5+ | 2002 01 04 | 106 | (0.4+ | 1.7−) | 2006 09 26 | 704 | 0.2− | 0.5+ | |
| 2001 11 20 | 704 | 0.4− | 0.4+ | 2002 01 04 | 106 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.5− | 0.4+ | |
| 2001 11 20 | 704 | 0.5− | 0.7+ | 2002 01 04 | 106 | 0.7− | 0.1+ | 2006 09 26 | 704 | (0.2− | 2.0+) | |
| 2001 11 21 | 704 | 1.3+ | 0.7+ | 2002 01 06 | 106 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.1+ | |
| 2001 11 21 | 704 | 0.4+ | 1.0+ | 2002 01 06 | 106 | 0.1+ | 1.0+ | 2006 09 30 | 704 | 0.8− | 0.8− | |
| 2001 11 21 | 704 | 0.3− | 0.6+ | 2002 01 06 | 106 | 0.8+ | 0.2− | 2006 09 30 | 704 | 0.3− | 0.6+ | |
| 2001 11 21 | 704 | 0.6+ | 0.9+ | 2002 01 09 | 704 | 0.8− | 0.5− | 2006 09 30 | 704 | 0.5− | 1.2− | |
| 2001 11 21 | 704 | 0.2− | 0.7− | 2002 01 09 | 704 | 0.5− | 0.5− | 2006 09 30 | 704 | 0.5+ | 0.0 | |
| 2001 11 21 | 704 | 1.3+ | 1.0+ | 2002 01 09 | 704 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.1− | 0.7+ | |
| 2001 11 21 | 704 | (0.0 | 2.0+) | 2002 01 09 | 704 | 0.1+ | 0.4− | 2006 10 09 | 644 | 0.2− | 0.4+ | |
| 2001 12 08 | 704 | 0.7+ | 0.3− | 2002 01 09 | 704 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.3− | 0.3+ | |
| 2001 12 08 | 704 | 1.2+ | 0.1+ | 2002 01 13 | 704 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.5+ | |
| 2001 12 08 | 704 | 1.1+ | 0.0 | 2002 01 13 | 704 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.3− | 0.3+ | |
| 2001 12 10 | 704 | 0.3− | 0.9− | 2002 01 13 | 704 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.3− | 0.4+ | |
| 2001 12 10 | 704 | 0.8− | 0.4− | 2002 01 13 | 704 | 1.1− | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.3+ | |
| 2001 12 10 | 704 | 0.0 | 0.4− | 2002 01 19 | 704 | 0.8+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2001 12 10 | 704 | 0.2− | 0.4− | 2002 01 19 | 704 | 0.8+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2001 12 10 | 704 | 0.3− | 0.1+ | 2002 01 19 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 2001 12 14 | 704 | 0.6− | 0.6− | 2002 01 19 | 704 | 0.3+ | 1.0− | 2006 10 12 | 644 | 0.1− | 0.5+ | |
| 2001 12 14 | 704 | 0.3+ | 0.3− | 2002 01 19 | 704 | 0.9− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | |
| 2001 12 14 | 704 | 0.2+ | 0.1− | 2003 03 10 | 599 | 1.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ | |
| 2001 12 14 | 704 | 0.2+ | 0.4− | 2003 03 10 | 599 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.0 | |
| 2001 12 17 | 704 | 0.2− | 0.5− | 2003 03 10 | 599 | 0.7+ | 1.1+ | 2006 10 19 | 644 | 0.1+ | 0.5+ | |
| 2001 12 17 | 704 | 0.5− | 0.2− | 2003 03 10 | 599 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.1− | |
| 2001 12 17 | 704 | 0.0 | 0.5− | 2003 05 01 | 691 | 0.7+ | 1.0+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | |
| 2001 12 17 | 704 | 0.2− | 0.4− | 2003 05 01 | 691 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.1− | |
| 2001 12 17 | 704 | 0.3+ | 0.6− | 2003 05 01 | 691 | 0.5+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ | |
| 2001 12 20 | 704 | 0.1− | 0.0 | 2006 09 12 | 703 | (1.7+ | 2.2+) | 2006 10 20 | 644 | 0.0 | 0.4+ | |
| 2001 12 20 | 704 | 0.1+ | 0.4− | 2006 09 12 | 703 | (0.8+ | 3.2+) | 2006 10 20 | 644 | 0.0 | 0.3+ | |
| 2001 12 20 | 704 | 0.7+ | 0.8− | 2006 09 12 | 703 | (0.6+ | 2.9+) | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 2001 12 20 | 704 | 0.6+ | 0.6− | 2006 09 12 | 703 | (0.4+ | 2.9+) | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2001 12 21 | 704 | 0.7− | 0.2+ | 2006 09 18 | 699 | 1.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2001 12 21 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2001 12 21 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 1.1− | 0.3− | | | | | |

**2001 XK$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.26535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17223491 | $\omega$ | 174.54763 | | +0.08078917 | −0.95448917 | |
| $a$ | 3.1993022 | $\Omega$ | 270.58846 | | +0.90328876 | +0.19187687 | |
| $e$ | 0.1275804 | $i$ | 16.68502 | | +0.42135794 | −0.22832804 | |
| $P$ | 5.72 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | (1.7+ | 0.8−) | 2001 12 11 | 704 | 0.3+ | 0.1− | 2003 03 09 | 699 | (0.6+ | 2.4−) | |
| 2001 10 25 | 704 | 0.9+ | 0.6+ | 2001 12 11 | 704 | 0.2− | 0.7+ | 2003 03 09 | 699 | 0.6− | 0.4− | |
| 2001 10 25 | 704 | 0.8+ | 0.6− | 2001 12 11 | 704 | 0.6+ | 0.6− | 2003 03 09 | 699 | 0.8+ | 0.4+ | |
| 2001 10 25 | 704 | (1.6+ | 0.2−) | 2001 12 11 | 704 | 0.4+ | 1.2− | 2006 09 16 | 703 | 0.3− | 0.3+ | |
| 2001 11 11 | 704 | 0.5− | 0.1− | 2001 12 11 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | 1.1− | 0.5+ | |
| 2001 11 11 | 704 | 0.2− | 0.2+ | 2001 12 11 | 704 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.2− | 0.1− | |
| 2001 11 11 | 704 | 0.0 | 0.5− | 2001 12 11 | 704 | 0.1− | 0.6− | 2006 09 16 | 703 | 0.0 | 0.0 | |
| 2001 11 11 | 704 | 0.2+ | 0.5+ | 2001 12 11 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 012 | 0.3− | 0.1+ | |
| 2001 12 09 | 704 | 0.4− | 0.4− | 2001 12 11 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 012 | 0.2+ | 0.1+ | |
| 2001 12 09 | 704 | 0.8− | 0.5− | 2001 12 11 | 704 | 0.3+ | 0.2− | 2006 09 18 | 012 | 0.3− | 0.1+ | |
| 2001 12 09 | 704 | 0.8− | 0.4− | 2001 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 012 | 0.7− | 0.1− | |
| 2001 12 09 | 704 | 0.6− | 0.4− | 2001 12 11 | 704 | 0.2+ | 0.1− | 2006 09 19 | 012 | 0.2− | 0.3+ | |
| 2001 12 09 | 704 | 0.8− | 0.6+ | 2001 12 11 | 704 | 0.2+ | 0.3− | 2006 09 19 | 012 | 0.4+ | 0.1− | |
| 2001 12 10 | 704 | 0.1− | 0.2− | 2001 12 11 | 704 | 0.0 | 0.6+ | 2006 09 19 | 012 | 0.3+ | 0.0 | |
| 2001 12 10 | 704 | 0.1− | 0.1− | 2002 01 06 | 644 | 0.4− | 0.8+ | 2006 09 28 | 703 | 0.1+ | 0.2+ | |
| 2001 12 10 | 704 | 0.7− | 0.1− | 2002 01 06 | 644 | 0.9− | 0.2+ | 2006 09 28 | 703 | 0.9+ | 0.3− | |
| 2001 12 10 | 704 | 0.1+ | 0.3+ | 2002 01 06 | 644 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.3− | 0.4+ | |
| 2001 12 10 | 704 | 0.5− | 0.1− | 2002 01 08 | 704 | 0.7+ | 0.4− | 2006 09 28 | 703 | 0.5+ | 0.5− | |
| 2001 12 10 | 704 | 0.3+ | 0.3+ | 2002 01 08 | 704 | 0.8+ | 1.1+ | 2006 10 20 | 703 | 0.3− | 0.3+ | |
| 2001 12 10 | 704 | 0.3− | 1.2+ | 2002 01 08 | 704 | 0.2+ | 0.3− | 2006 10 20 | 703 | 1.1+ | 0.3− | |
| 2001 12 10 | 704 | 0.4+ | 0.5+ | 2002 01 08 | 704 | 0.9+ | 0.1− | 2006 10 20 | 703 | 0.1+ | 0.1− | |
| 2001 12 11 | 704 | 0.2+ | 0.6− | 2003 03 09 | 699 | 0.2− | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.3− | |

**2001 XL$_{10}$ = 2006 SH$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.78263 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18199753 | $\omega$ | 352.28809 | | +0.96552060 | −0.25791374 | |
| $a$ | 3.0838439 | $\Omega$ | 22.75344 | | +0.24346004 | +0.84649570 | |
| $e$ | 0.1783294 | $i$ | 5.24588 | | +0.09218017 | +0.46575265 | |
| $P$ | 5.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 26 | 224 | 0.4− | 0.7+ | |
| 1995 10 01 | 691 | 0.1+ | 0.1− | 2006 09 27 | 683 | 0.2+ | 0.2+ | 2006 10 26 | 224 | 0.9− | 0.3+ | |
| 1995 10 01 | 691 | 0.0 | 0.2− | 2006 09 27 | 683 | 1.2− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.0 | |
| 2001 12 09 | 704 | 0.2+ | 0.0 | 2006 09 27 | 683 | (1.6+ | 0.3+) | 2006 10 27 | 691 | 0.1− | 0.0 | |
| 2001 12 09 | 704 | 0.1+ | 0.5+ | 2006 09 28 | 683 | 0.4− | 1.5− | 2006 10 27 | 691 | 0.0 | 0.1+ | |
| 2001 12 09 | 704 | 0.4− | 0.3+ | 2006 09 28 | 683 | 1.2− | 0.3− | 2006 10 28 | G96 | 0.2− | 0.4− | |
| 2001 12 09 | 704 | 0.9− | 0.1− | 2006 09 28 | 683 | 0.3+ | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.3− | |
| 2001 12 10 | 704 | 0.0 | 0.5− | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.4− | |
| 2001 12 10 | 704 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− | |
| 2001 12 10 | 704 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.3− | |
| 2001 12 10 | 704 | 0.6+ | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 | |
| 2001 12 10 | 704 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1− | |
| 2001 12 13 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.4+ | 0.3+ | 2006 11 07 | 644 | 0.9− | 0.2+ | |
| 2001 12 13 | 644 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.2− | 0.3+ | |
| 2001 12 13 | 644 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.2− | |
| 2004 03 23 | 291 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 07 | 644 | 0.6− | 0.5+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 291 | 0.3+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2004 03 23 | 291 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2004 04 22 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2004 04 22 | 691 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2004 04 22 | 691 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 11 | 691 | 1.1+ | 0.2+ |
| 2006 09 18 | 699 | 1.2+ | 0.1+ | 2006 10 21 | 703 | 0.4− | 1.3− | 2006 11 11 | 691 | 0.4− | 0.3+ |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2006 09 18 | 699 | 1.0+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.1− | 2006 11 11 | 703 | (0.5+ | 1.6+) |
| 2006 09 18 | 699 | (0.6− | 1.9+) | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.0+ |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.3+ |
| 2006 09 22 | 683 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2006 09 22 | 683 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.4− |
| 2006 09 22 | 683 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.5− | 0.3− |
| 2006 09 24 | 691 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.8− | 0.4− |
| 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 26 | 224 | 0.5+ | 1.1+ | | | | |

### 2001 $XR_{10}$ = 2006 $TE_{95}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.13022 | | (2000.0) | | +0.99482469 | −0.09823446 |
| $n$ | 0.18914435 | $\omega$ | 307.37305 | | +0.10017442 | +0.90551788 |
| $a$ | 3.0056642 | $\Omega$ | 58.27830 | | +0.01699776 | +0.41278004 |
| $e$ | 0.1395551 | $i$ | 1.74877 | | | |
| $P$ | 5.21 | $H$ | 16.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.7− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 704 | 0.1+ | 0.9+ | 2006 10 13 | D35 | 0.7− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 1.0− | 1.0+ | 2006 10 13 | D35 | 1.3− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2006 10 13 | D35 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.7+ | 0.1+ | 2006 10 15 | 703 | 0.3+ | 1.0+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.2+ | 0.2− | 2006 10 15 | 703 | 1.3− | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.4− |
| 2001 11 20 | 704 | 0.6+ | 0.0 | 2006 10 15 | 703 | 1.3− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2001 11 21 | 704 | (0.1− | 1.6−) | 2006 10 15 | 703 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2001 11 21 | 704 | 0.8+ | 0.8− | 2006 10 21 | 703 | 0.5− | 0.8− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2001 11 21 | 704 | 0.8+ | 0.4− | 2006 10 21 | 703 | 0.0 | 1.2+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2001 11 21 | 704 | 0.8+ | 0.4− | 2006 10 21 | 703 | 1.0+ | 0.5− | 2006 11 19 | 691 | 0.3+ | 0.3+ |
| 2001 12 10 | 291 | 0.1− | 0.8− | 2006 10 21 | 703 | 0.4+ | 0.5+ | 2006 11 19 | 691 | 0.2+ | 0.4+ |
| 2001 12 10 | 291 | 0.1− | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 12 10 | 291 | 0.7− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2001 12 11 | 291 | 0.5− | 0.6+ | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.8+ | 1.2− |
| 2001 12 11 | 291 | 0.5+ | 1.0+ | 2006 10 29 | G96 | 0.2− | 0.5− | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2001 12 11 | 291 | 0.2+ | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.5− | 2006 11 20 | G96 | 0.3− | 0.6− |
| 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.5− | | | | |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 29 | G96 | 0.1− | 0.6− | | | | |

### 2001 $XL_{11}$ = 2006 $QT_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.78723 | | (2000.0) | | +0.96700361 | −0.12802825 |
| $n$ | 0.18094528 | $\omega$ | 69.06160 | | +0.00336545 | +0.87089851 |
| $a$ | 3.0957880 | $\Omega$ | 297.71968 | | +0.25474046 | +0.47449400 |
| $e$ | 0.2498017 | $i$ | 14.40718 | | | |
| $P$ | 5.45 | $H$ | 15.3 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 0.6+ | 0.1+ | 2006 07 01 | 703 | (1.4+ | 1.5+) | 2006 09 21 | 699 | 1.1+ | 0.1+ |
| 2001 09 28 | 704 | 1.2+ | 0.2− | 2006 07 01 | 703 | 0.3− | 0.4− | 2006 09 21 | 699 | 0.8− | 0.7+ |
| 2001 09 28 | 704 | 0.3+ | 0.1− | 2006 07 01 | 703 | 0.2+ | 0.1− | 2006 09 21 | 699 | 1.3− | 0.5− |
| 2001 12 09 | 704 | 0.2− | 0.4+ | 2006 07 01 | 703 | 0.4− | 1.4+ | 2006 09 27 | 703 | 0.1− | 0.2+ |
| 2001 12 09 | 704 | 0.5− | 0.3+ | 2006 08 17 | 683 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.1− |
| 2001 12 09 | 704 | 0.5− | 0.3+ | 2006 08 17 | 683 | 0.0 | 0.6− | 2006 09 27 | 703 | 0.1− | 0.2+ |
| 2001 12 09 | 704 | 0.6− | 0.0 | 2006 08 17 | 683 | 0.1+ | 0.7+ | 2006 09 27 | 703 | 0.1+ | 0.2− |
| 2001 12 09 | 704 | 0.1+ | 0.0 | 2006 08 21 | 683 | 0.4+ | 0.2− | 2006 09 29 | 699 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2006 08 21 | 683 | 0.4+ | 1.4− | 2006 09 29 | 699 | 0.1+ | 0.2− |
| 2001 12 11 | 704 | 0.0 | 0.4− | 2006 08 21 | 683 | 0.3+ | 1.3− | 2006 09 29 | 699 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 0.2+ | 0.1+ | 2006 08 31 | 704 | 0.6+ | 0.3− | 2006 09 29 | 699 | 1.0− | 1.1− |
| 2001 12 11 | 704 | 0.8+ | 0.6− | 2006 08 31 | 704 | 0.6− | 0.1− | 2006 10 03 | 704 | (0.6− | 1.9+) |
| 2001 12 11 | 704 | 0.0 | 0.1+ | 2006 08 31 | 704 | 0.4− | 0.2− | 2006 10 03 | 704 | (0.3− | 2.3+) |
| 2001 12 22 | 704 | (1.0− | 1.6−) | 2006 08 31 | 704 | 0.5+ | 0.2+ | 2006 10 03 | 704 | (1.7− | 0.7+) |
| 2001 12 22 | 704 | (1.7− | 1.7−) | 2006 08 31 | 704 | 0.6+ | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.4+ |
| 2001 12 22 | 704 | 1.3− | 0.6− | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.2+ |
| 2002 12 07 | 645 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.1− | 0.5− |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.2+ |
| 2006 05 02 | G96 | 0.3− | 0.1+ | 2006 09 11 | 703 | 0.3+ | 1.1+ | 2006 11 25 | 703 | 1.1− | 0.1− |
| 2006 05 02 | G96 | 0.1− | 0.6+ | 2006 09 11 | 703 | 0.2+ | 0.3+ | 2006 11 25 | 703 | 0.1+ | 0.8+ |
| 2006 05 02 | G96 | 0.9− | 0.9+ | 2006 09 11 | 703 | 0.4− | 0.5+ | 2006 11 25 | 703 | 0.2− | 0.9+ |
| 2006 05 02 | G96 | 0.1− | 0.4+ | 2006 09 11 | 703 | 0.3+ | 0.0 | 2006 11 25 | 703 | 0.6+ | 0.1− |

### 2001 $XB_{13}$ = 2006 $TD_{72}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.95920 | | (2000.0) | | +0.49035345 | −0.86769126 |
| $n$ | 0.18246285 | $\omega$ | 89.59221 | | +0.71878111 | +0.45561151 |
| $a$ | 3.0785987 | $\Omega$ | 330.59363 | | +0.49285617 | +0.19882162 |
| $e$ | 0.2195634 | $i$ | 9.57138 | | | |
| $P$ | 5.40 | $H$ | 15.8 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.7− | 0.2+ | 2001 12 23 | 704 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 12 09 | 704 | 0.4− | 0.3+ | 2001 12 23 | 704 | 0.8+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 12 09 | 704 | 0.5+ | 0.9− | 2001 12 23 | 704 | 0.3− | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.4− |
| 2001 12 09 | 704 | 0.2− | 0.1− | 2002 01 07 | 704 | 0.1+ | 0.9− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.3+ | 0.7+ | 2002 01 07 | 704 | 0.6+ | 0.2+ | 2006 10 27 | 703 | 0.8+ | 0.4+ |
| 2001 12 11 | 704 | 0.5− | 0.0 | 2002 01 07 | 704 | 0.7+ | 1.0+ | 2006 10 27 | 703 | 1.1+ | 0.6+ |
| 2001 12 11 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.4− | 2006 10 27 | 703 | 0.6+ | 1.3+ |
| 2001 12 11 | 704 | 1.0− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.5+ |
| 2001 12 11 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.7+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.4− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.7− | 0.2− | 2006 11 15 | 703 | 0.2− | 0.5− |
| 2001 12 14 | 704 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.5− | 0.1+ | 2006 11 15 | 703 | 0.5+ | 0.1− |
| 2001 12 14 | 704 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.7+ | 2006 11 15 | 703 | (0.2− | 2.1−) |
| 2001 12 19 | 644 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.9− | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.7− |
| 2001 12 19 | 644 | 0.2− | 0.8− | 2006 10 22 | 644 | 0.0 | 0.2− | | | | |
| 2001 12 19 | 644 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.1+ | | | | |

### 2001 $XC_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.78104 | | (2000.0) | | +0.70700023 | −0.69195779 |
| $n$ | 0.19305410 | $\omega$ | 5.42396 | | +0.63995516 | +0.53803293 |
| $a$ | 2.9649454 | $\Omega$ | 39.71416 | | +0.30101174 | +0.48136781 |
| $e$ | 0.1375196 | $i$ | 13.21778 | | | |
| $P$ | 5.11 | $H$ | 15.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1− | 0.7− | 2001 12 22 | 704 | 1.1+ | 0.5− | 2006 11 13 | 691 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.2− | 0.3− | 2001 12 22 | 704 | 1.4+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.6− | 0.2− | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.5+ | 0.6+ | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.1− |
| 2001 11 11 | 704 | 0.5+ | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.5− | 0.3− |
| 2001 11 11 | 704 | 0.1− | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.6− | 0.5− |
| 2001 11 11 | 704 | 0.2− | 1.3+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.5+ | 0.3+ |
| 2001 11 11 | 704 | 0.6+ | 0.9+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 12 10 | 704 | 0.6− | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2001 12 10 | 704 | 1.3− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2001 12 10 | 704 | 0.5− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2001 12 10 | 704 | 0.7− | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.1+ |
| 2001 12 11 | 704 | 0.6− | 0.2− | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.2+ |
| 2001 12 11 | 704 | 1.0− | 0.8− | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2001 12 11 | 704 | 1.1− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | (1.3− | 1.6−) |
| 2001 12 11 | 704 | 0.8+ | 0.9− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.9− | 0.2+ |
| 2001 12 11 | 704 | 0.6+ | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.7+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.7+ | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 1.4− | 0.1− | 2006 11 11 | 703 | 0.2− | 1.5+ | 2006 11 22 | 704 | 0.2+ | 1.0+ |
| 2001 12 22 | 704 | 0.9+ | 0.6− | 2006 11 11 | 703 | 0.2− | 0.2+ | | | | |
| 2001 12 22 | 704 | 1.0+ | 0.4− | 2006 11 11 | 703 | 0.8− | 0.5− | | | | |

### 2001 $XE_{15}$ = 2006 $TV_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.53482 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18578741 | $\omega$ | 243.27349 | +0.96587756 | | −0.11056456 | |
| $a$ | 3.0417617 | $\Omega$ | 122.21776 | +0.16907755 | | +0.95419841 | |
| $e$ | 0.2479860 | $i$ | 16.07164 | −0.19619713 | | +0.27799438 | |
| $P$ | 5.31 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.4+ | 0.4− | 2001 12 11 | 704 | 0.6− | 1.0+ | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 2001 11 18 | 704 | 0.8+ | 0.4− | 2001 12 11 | 704 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2001 11 18 | 704 | 0.1− | 0.6− | 2001 12 11 | 704 | 0.8− | 0.4− | 2006 10 09 | 644 | 0.5+ | 0.2+ |
| 2001 11 18 | 704 | 0.7+ | 0.4− | 2001 12 11 | 704 | 0.4− | 0.1− | 2006 11 01 | 703 | 0.4− | 0.3− |
| 2001 11 18 | 704 | 0.6+ | 0.1− | 2001 12 17 | 209 | 0.4+ | 0.4− | 2006 11 01 | 703 | 0.8+ | 0.1− |
| 2001 11 18 | 704 | 0.8+ | 0.7− | 2001 12 17 | 209 | 0.0 | 0.1− | 2006 11 01 | 703 | (2.1+ | 0.0 ) |
| 2001 11 18 | 704 | 0.8− | 0.5+ | 2001 12 17 | 209 | 0.7− | 0.1− | 2006 11 01 | 703 | 0.7+ | 0.7− |
| 2001 11 18 | 704 | 0.0 | 0.8− | 2001 12 18 | 209 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2001 11 18 | 704 | 0.5+ | 0.2− | 2001 12 18 | 209 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.4+ | 0.3+ |
| 2001 12 09 | 699 | 0.2+ | 0.1− | 2001 12 18 | 209 | 0.3− | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2001 12 09 | 699 | 0.8+ | 0.4+ | 2001 12 19 | 704 | 0.3− | 1.0− | 2006 11 18 | 703 | 0.3− | 0.2+ |
| 2001 12 09 | 699 | 0.1− | 1.1+ | 2001 12 19 | 704 | 0.5+ | 0.6− | 2006 11 18 | 703 | 0.1+ | 0.4+ |
| 2001 12 09 | 699 | 0.1+ | 0.1+ | 2001 12 19 | 704 | 0.0 | 1.0− | 2006 11 18 | 703 | 0.2− | 1.0+ |
| 2001 12 10 | 704 | (0.3+ | 1.7+) | 2001 12 19 | 704 | 0.1− | 0.4− | 2006 11 18 | 703 | 0.3− | 0.0 |
| 2001 12 10 | 704 | 0.3− | 0.9+ | 2001 12 19 | 704 | 0.1+ | 1.0− | 2006 11 24 | 703 | 0.2− | 0.5− |
| 2001 12 10 | 704 | 0.0 | 1.2+ | 2006 10 04 | 703 | 0.3+ | 0.2− | 2006 11 24 | 703 | 0.2− | 0.6− |
| 2001 12 10 | 704 | 0.4+ | 0.2+ | 2006 10 04 | 703 | 0.9− | 0.1+ | 2006 11 24 | 703 | 0.6− | 0.7+ |
| 2001 12 10 | 704 | 0.4− | 0.8+ | 2006 10 04 | 703 | 0.6+ | 0.6− | 2006 11 24 | 703 | 1.2− | 0.6+ |
| 2001 12 11 | 704 | 0.5− | 0.4+ | 2006 10 04 | 703 | 0.1− | 0.0 | | | | |

### 2001 $XK_{15}$ = 2006 $UP_{127}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.73465 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19077721 | $\omega$ | 148.17963 | +0.92498745 | | −0.37168331 | |
| $a$ | 2.9884894 | $\Omega$ | 233.84343 | +0.32487333 | | +0.88141982 | |
| $e$ | 0.2245873 | $i$ | 5.61897 | +0.19711806 | | +0.29146289 | |
| $P$ | 5.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1+ | 0.5− | 2001 12 07 | 644 | 1.0− | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2001 10 21 | 704 | 0.1− | 0.6− | 2001 12 10 | 704 | 0.5− | 1.1+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.3+ | 1.2− | 2001 12 10 | 704 | 0.3− | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2001 10 21 | 704 | 0.8− | 1.0− | 2001 12 10 | 704 | 0.0 | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.5− | 0.9+ | 2001 12 11 | 691 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2001 11 09 | 704 | 0.0 | 1.1+ | 2001 12 11 | 691 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2001 11 09 | 704 | 0.0 | 0.5− | 2001 12 11 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.8+ | 1.3− | 2001 12 11 | 704 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2001 11 19 | 699 | 0.5+ | 0.5− | 2001 12 11 | 704 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2001 11 19 | 699 | 0.4+ | 0.5+ | 2001 12 11 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2001 11 19 | 699 | 0.3− | 0.2− | 2001 12 11 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2001 12 11 | 704 | 1.0+ | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | 0.1+ | 0.3− | 2001 12 14 | 704 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2001 12 14 | 704 | 0.4− | 0.9+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2001 12 14 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.4+ | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2001 12 14 | 704 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.4− | 0.4− | 2001 12 17 | 704 | 0.6+ | 0.9− | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.2− | 0.4− | 2001 12 17 | 704 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.4− | 0.2+ |
| 2001 11 21 | 704 | 0.5− | 0.7− | 2001 12 17 | 704 | 0.3+ | 0.7− | 2006 11 15 | G96 | 0.6+ | 0.4+ |
| 2001 11 21 | 704 | 0.2− | 1.0− | 2001 12 17 | 704 | 0.8+ | 1.3− | 2006 11 17 | 703 | 0.0 | 0.8− |
| 2001 11 21 | 704 | 0.2− | 1.0− | 2001 12 17 | 704 | 0.4− | 0.5− | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2001 11 24 | 704 | 0.2− | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2001 11 24 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.6+ | 1.2− |
| 2001 11 24 | 704 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.0− |
| 2001 11 24 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.6− |
| 2001 11 24 | 704 | 0.6+ | 0.1− | 2006 10 23 | 691 | 0.6− | 0.3− | 2006 11 21 | 704 | 0.9+ | 1.4+ |
| 2001 12 07 | 644 | 1.2− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− | | | | |
| 2001 12 07 | 644 | 1.2− | 0.3+ | 2006 10 23 | 691 | 0.1+ | 0.1− | | | | |

### 2001 $XR_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.81590 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18432385 | $\omega$ | 299.66666 | +0.91800981 | | −0.34304087 | |
| $a$ | 3.0578419 | $\Omega$ | 81.00798 | +0.39610067 | | +0.81728504 | |
| $e$ | 0.3305109 | $i$ | 11.62031 | −0.01903302 | | +0.46299905 | |
| $P$ | 5.35 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | (2.0+ | 1.5+) | 2001 12 11 | 704 | 0.7+ | 0.5− | 2002 01 21 | 704 | 0.8+ | 0.3− |
| 2001 10 24 | 704 | 1.3+ | 0.1− | 2001 12 11 | 704 | 0.4+ | 0.3− | 2002 01 21 | 704 | 0.3+ | 0.6− |
| 2001 10 24 | 704 | (2.4+ | 0.7+) | 2001 12 11 | 704 | 0.6+ | 0.2− | 2002 02 06 | 704 | 0.1− | 1.1+ |
| 2001 10 24 | 704 | 0.4+ | 0.1− | 2001 12 17 | 704 | (0.6− | 1.6−) | 2002 02 06 | 704 | 0.7+ | 0.3+ |
| 2001 10 24 | 704 | (0.7+ | 1.7+) | 2001 12 17 | 704 | 0.1− | 0.5− | 2002 02 06 | 704 | 0.8+ | 1.1+ |
| 2001 11 12 | 704 | 0.4+ | 0.3− | 2001 12 17 | 704 | 0.0 | 0.4− | 2006 07 31 | E12 | 0.6+ | 0.6+ |
| 2001 11 12 | 704 | 0.3+ | 0.3− | 2001 12 17 | 704 | 0.4− | 0.7− | 2006 07 31 | E12 | 0.3− | 0.0 |
| 2001 11 12 | 704 | 0.2− | 0.9+ | 2001 12 17 | 704 | 0.6− | 0.9− | 2006 07 31 | E12 | 0.1− | 0.4− |
| 2001 11 12 | 704 | 0.7− | 0.0 | 2001 12 20 | 704 | 0.6− | 0.1− | 2006 07 31 | E12 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.2− | 0.8− | 2001 12 20 | 704 | 0.2− | 0.0 | 2006 10 03 | E12 | 0.3− | 1.3+ |
| 2001 11 20 | 704 | 1.4− | 1.1+ | 2001 12 20 | 704 | 0.8− | 0.0 | 2006 10 03 | E12 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 1.4− | 0.9+ | 2001 12 20 | 704 | 0.9− | 0.3+ | 2006 10 03 | E12 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 1.3− | 1.2+ | 2001 12 20 | 704 | 0.4− | 0.1+ | 2006 10 03 | E12 | 0.3+ | 0.6− |
| 2001 11 20 | 704 | 1.5− | 0.9+ | 2001 12 24 | 691 | 0.1+ | 0.3− | 2006 10 12 | E12 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 1.1− | 0.8+ | 2001 12 24 | 691 | 0.2+ | 0.2− | 2006 10 12 | E12 | 0.1+ | 0.3− |
| 2001 11 24 | 704 | 0.0 | 0.4+ | 2001 12 24 | 691 | 0.2+ | 1.3− | 2006 10 12 | E12 | 0.0 | 0.6− |
| 2001 11 24 | 704 | 0.4− | 0.3− | 2002 01 09 | 704 | 1.4+ | 0.7+ | 2006 10 12 | E12 | 0.3+ | 0.8− |
| 2001 11 24 | 704 | 0.2− | 0.8+ | 2002 01 09 | 704 | 0.7+ | 0.4+ | 2006 11 19 | 703 | 0.5− | 0.0 |
| 2001 11 24 | 704 | 0.5− | 0.4+ | 2002 01 09 | 704 | 0.7+ | 1.1+ | 2006 11 19 | 703 | 0.5+ | 0.1− |
| 2001 11 24 | 704 | 0.3+ | 0.8+ | 2002 01 09 | 704 | (1.8+ | 0.1+) | 2006 11 19 | 703 | 0.8− | 0.2− |
| 2001 12 10 | 704 | 0.3+ | 0.7+ | 2002 01 14 | 704 | 0.3− | 0.5− | 2006 11 19 | 703 | 0.4− | 0.5− |
| 2001 12 10 | 704 | 0.9+ | 0.1+ | 2002 01 14 | 704 | 1.1− | 0.1− | 2006 11 27 | 703 | 1.3+ | 0.8− |
| 2001 12 10 | 704 | 0.7+ | 0.9+ | 2002 01 14 | 704 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.4− | 0.3+ |
| 2001 12 10 | 704 | 1.0+ | 0.8+ | 2002 01 14 | 704 | 0.3− | 0.5− | 2006 11 27 | 703 | 0.0 | 0.8+ |
| 2001 12 10 | 704 | (1.2+ | 1.6+) | 2002 01 14 | 704 | (1.0− | 3.0+) | 2006 11 27 | 703 | 0.2− | 0.6+ |
| 2001 12 11 | 704 | 0.7+ | 0.5− | 2002 01 21 | 704 | 0.6− | 0.6+ | | | | |
| 2001 12 11 | 704 | 0.7+ | 0.7− | 2002 01 21 | 704 | 0.0 | 0.3+ | | | | |

### 2001 $XH_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.07207 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18642026 | $\omega$ | 335.94437 | +0.61025198 | | −0.75347955 | |
| $a$ | 3.0348739 | $\Omega$ | 75.51564 | +0.76163905 | | +0.47305911 | |
| $e$ | 0.2291056 | $i$ | 14.63716 | +0.21794147 | | +0.45660009 | |
| $P$ | 5.29 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.1− | 0.5+ | 2006 09 18 | 703 | (0.4− | 2.0+) | 2006 11 19 | 703 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 1.4− | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.0 | 2006 11 19 | 704 | 0.0 | 1.2+ |
| 2001 11 12 | 704 | 0.0 | 0.9+ | 2006 09 19 | 699 | 1.0+ | 0.9+ | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2001 11 12 | 704 | (1.8− | 0.6+) | 2006 09 19 | 699 | 1.3+ | 0.9+ | 2006 11 19 | 703 | 1.3− | 0.1+ |
| 2001 12 09 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.4− | 1.4+ |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | (0.3− | 1.7+) | 2006 11 19 | 703 | 1.0− | 0.1+ |
| 2001 12 09 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.5− | 1.1− | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2001 12 13 | 704 | 0.9− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2001 12 13 | 704 | 0.4− | 0.4− | 2006 10 16 | 703 | 1.3− | 0.9+ | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2001 12 13 | 704 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.8− | 2006 11 20 | 704 | (0.4+ | 1.8+) |
| 2001 12 13 | 704 | 0.7− | 0.9+ | 2006 10 22 | 703 | 0.8− | 0.6− | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2001 12 17 | 704 | 0.5+ | 0.5− | 2006 10 22 | 703 | 0.6− | 0.4− | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.4+ | 0.2− | 2006 11 01 | 703 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2001 12 17 | 704 | 0.2+ | 0.3+ | 2006 11 01 | 703 | 0.3− | 0.3− | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2001 12 17 | 704 | 0.2+ | 0.1− | 2006 11 01 | 703 | 0.8+ | 1.0− | 2006 11 20 | G96 | 0.6+ | 0.4− |
| 2001 12 22 | 704 | 0.3+ | 0.1− | 2006 11 01 | 703 | 0.6− | 1.4− | 2006 11 20 | G96 | 0.4+ | 0.3− |
| 2001 12 22 | 704 | 0.2− | 0.5− | 2006 11 13 | 703 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.4− |
| 2001 12 22 | 704 | 0.6− | 1.0− | 2006 11 13 | 703 | 0.0 | 0.6− | 2006 11 20 | G96 | 0.5+ | 0.6− |
| 2001 12 22 | 704 | (0.4− | 1.9−) | 2006 11 13 | 703 | 0.9− | 0.8− | 2006 11 20 | G96 | 0.5+ | 0.4− |
| 2002 01 04 | 644 | 0.3+ | 0.4+ | 2006 11 13 | 703 | 0.6− | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.5− |
| 2002 01 04 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.5+ | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2002 01 04 | 644 | 0.3− | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.6+ |
| 2002 01 15 | 704 | 1.5+ | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.4+ |
| 2002 01 15 | 704 | 1.1+ | 0.7− | 2006 11 17 | 704 | 0.8− | 0.0 | 2006 11 28 | 704 | 1.4+ | 0.4+ |
| 2002 01 15 | 704 | 1.3+ | 0.7− | 2006 11 19 | 704 | 1.1+ | 1.0+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.9+ | 0.9+ |
| 2006 09 18 | 703 | 0.1+ | 1.0− | 2006 11 19 | 704 | (2.1+ | 0.4−) | | | | |

**2001 XB$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.92733 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17789152 | $\omega$ | 19.13070 | | +0.91122580 | | −0.41190597 |
| $a$ | 3.1311164 | $\Omega$ | 5.19425 | | +0.37646095 | | +0.83182217 |
| $e$ | 0.1545456 | $i$ | 0.63374 | | +0.16716665 | | +0.37202868 |
| $P$ | 5.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.0 | 0.6− | 2001 12 14 | 291 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 2001 11 09 | 704 | 0.1+ | 0.3− | 2001 12 14 | 291 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.9+ | 0.3− |
| 2001 11 09 | 704 | 0.4− | 1.1− | 2001 12 19 | 704 | 1.0− | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.3− |
| 2001 11 19 | 704 | 0.6+ | 0.0 | 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2001 11 19 | 704 | 0.3+ | 0.1+ | 2001 12 19 | 704 | 0.3− | 0.8− | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2001 11 19 | 704 | 0.7+ | 0.4− | 2001 12 19 | 704 | 0.5+ | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2001 11 19 | 704 | 0.4+ | 1.1− | 2006 08 28 | 703 | 1.0− | 0.3− | 2006 10 11 | 540 | 0.1+ | 0.7+ |
| 2001 11 19 | 704 | 1.3+ | 1.2− | 2006 08 28 | 703 | 0.2+ | 0.5+ | 2006 10 11 | 540 | 0.6+ | 0.9+ |
| 2001 11 21 | 704 | 0.4− | 1.2+ | 2006 08 28 | 703 | 0.9+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.6− | 0.8+ | 2006 10 16 | G96 | 0.4+ | 0.7− |
| 2001 11 21 | 704 | 0.9− | 0.4− | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 10 16 | G96 | 0.2− | 0.5− |
| 2001 12 07 | 691 | 0.6− | 0.2+ | 2006 09 19 | 699 | (0.7+ | 1.7+) | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2001 12 07 | 691 | 0.3− | 0.7+ | 2006 09 19 | 703 | 1.2− | 0.9+ | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2001 12 07 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.9− | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.4− |
| 2001 12 14 | 291 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.9− | 0.6− | 2006 11 21 | G96 | 0.0 | 0.3− |

**2001 XH$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.71965 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18360505 | $\omega$ | 145.41688 | | +0.85946234 | | −0.49511507 |
| $a$ | 3.0658175 | $\Omega$ | 244.74989 | | +0.43150184 | | +0.83608623 |
| $e$ | 0.1286560 | $i$ | 8.08616 | | +0.27409971 | | +0.23626442 |
| $P$ | 5.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 291 | 0.2− | 0.0 | 2001 12 14 | 291 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.5+ |
| 2001 11 16 | 291 | 0.2+ | 0.1− | 2001 12 14 | 291 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2001 11 16 | 291 | 0.3− | 0.0 | 2001 12 14 | 291 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.7+ |
| 2001 11 19 | 704 | 0.9− | 0.3+ | 2001 12 17 | 704 | 0.2− | 1.2+ | 2006 09 30 | 703 | 0.6− | 0.1− |
| 2001 11 19 | 704 | (1.6− | 0.1+) | 2001 12 17 | 704 | 0.7− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2001 11 19 | 704 | 0.7− | 0.4− | 2001 12 17 | 704 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.3− |
| 2001 11 19 | 704 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.7− | 0.9− |
| 2001 11 21 | 704 | 0.5+ | 0.6− | 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2001 11 21 | 704 | 0.4+ | 0.8+ | 2002 01 13 | 291 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.2+ | 1.3− |
| 2001 11 21 | 704 | 0.8+ | 0.4+ | 2002 01 13 | 291 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 1.0+ |
| 2001 11 21 | 704 | 0.4+ | 1.3+ | 2002 01 13 | 291 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.8+ |
| 2001 12 07 | 691 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.2+ | 1.0+ |
| 2001 12 07 | 691 | 0.5+ | 0.1− | 2006 09 28 | 703 | 1.1− | 0.8− | | | | |
| 2001 12 07 | 691 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.6+ | 0.6− | | | | |

**2001 XP$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.30769 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19639551 | $\omega$ | 322.06453 | | +0.40379201 | | −0.91341053 |
| $a$ | 2.9312196 | $\Omega$ | 104.06772 | | +0.85176532 | | +0.35488768 |
| $e$ | 0.1214256 | $i$ | 3.03244 | | +0.33383806 | | +0.19933872 |
| $P$ | 5.02 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 1.1− | 0.8− | 2001 11 21 | 704 | 1.1+ | 0.7− | 2001 12 17 | 704 | 0.5+ | 0.4− |
| 2001 10 23 | 704 | 0.6− | 0.5+ | 2001 11 21 | 704 | 0.2+ | 0.4− | 2001 12 17 | 704 | 0.3+ | 0.1+ |
| 2001 10 23 | 704 | 1.1− | 0.4+ | 2001 12 10 | 691 | 0.1− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 1.0+ | 0.3+ | 2001 12 10 | 691 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.4+ | 0.3+ |
| 2001 10 25 | 644 | 0.3− | 0.2+ | 2001 12 10 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.1− |
| 2001 10 25 | 644 | 0.2− | 0.8+ | 2001 12 14 | 704 | 1.0− | 0.7+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2001 10 25 | 644 | 0.1− | 1.3+ | 2001 12 14 | 704 | 1.1− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.5− | 0.3+ | 2001 12 14 | 704 | (1.7− | 0.3−) | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.3− | 0.3− | 2001 12 14 | 704 | 0.7− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2001 11 20 | 704 | 0.3+ | 0.6+ | 2001 12 14 | 691 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 0.6+ | 1.1+ | 2001 12 14 | 691 | 0.3− | 1.1− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2001 11 21 | 704 | 0.4+ | 0.5− | 2001 12 14 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2001 12 17 | 704 | 0.0 | 0.5− | | | | |
| 2001 11 21 | 704 | 0.6− | 0.5− | 2001 12 17 | 704 | 0.1+ | 0.8+ | | | | |

**2001 XH$_{35}$ = 2006 SU$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.78273 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17521398 | $\omega$ | 145.17707 | | +0.35257195 | | −0.89705813 |
| $a$ | 3.1629347 | $\Omega$ | 282.87498 | | +0.78446479 | | +0.43855233 |
| $e$ | 0.1080507 | $i$ | 15.86020 | | +0.51020390 | | −0.05439262 |
| $P$ | 5.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2001 12 14 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 703 | 1.1+ | 0.6− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2001 12 22 | 704 | 0.1− | 0.5− | 2006 09 16 | 703 | 1.0+ | 0.3− |
| 2001 12 09 | 704 | 0.0 | 0.3− | 2001 12 22 | 704 | 1.1− | 0.2− | 2006 09 16 | 703 | 0.9− | 0.8+ |
| 2001 12 09 | 704 | 0.2− | 0.2− | 2001 12 22 | 704 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.7+ |
| 2001 12 09 | 704 | 0.2+ | 0.1+ | 2001 12 23 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 703 | 0.7− | 0.8− |
| 2001 12 09 | 704 | 0.2− | 0.1− | 2001 12 23 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.7+ |
| 2001 12 09 | 704 | 0.1− | 0.4− | 2001 12 23 | 704 | 0.6+ | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.6+ |
| 2001 12 14 | 704 | 1.1− | 0.5− | 2001 12 23 | 704 | 0.6+ | 0.1− | | | | |
| 2001 12 14 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.5− | 0.4− | | | | |

**2001 XY$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.93857 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28438769 | $\omega$ | 63.68428 | | +0.19902436 | | −0.97979796 |
| $a$ | 2.2901408 | $\Omega$ | 14.87519 | | +0.86966440 | | +0.16734972 |
| $e$ | 0.2017098 | $i$ | 4.38504 | | +0.45174454 | | +0.10949897 |
| $P$ | 3.47 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.1+ | 0.2+ | 2001 12 17 | 704 | 0.4+ | 0.1− | 2006 03 24 | G96 | 0.1+ | 0.2+ |
| 2001 12 09 | 704 | 0.4+ | 0.2+ | 2001 12 22 | 704 | 1.1− | 1.0− | 2006 03 24 | G96 | 0.2− | 0.2+ |
| 2001 12 09 | 704 | 0.2+ | 0.1− | 2001 12 22 | 704 | 0.2+ | 0.5+ | 2006 03 24 | G96 | 0.4− | 0.2+ |
| 2001 12 09 | 704 | 0.5− | 0.4+ | 2001 12 22 | 704 | 0.4− | 0.5− | 2006 03 24 | G96 | 0.3− | 0.3− |
| 2001 12 09 | 704 | 0.4+ | 0.7+ | 2001 12 22 | 704 | 0.8+ | 0.0 | 2006 04 07 | G96 | 0.1− | 0.0 |
| 2001 12 13 | 644 | 0.2− | 0.2+ | 2001 12 22 | 704 | 0.3+ | 0.5+ | 2006 04 07 | G96 | 0.1− | 0.0 |
| 2001 12 13 | 644 | 0.5− | 0.2+ | 2001 12 23 | 704 | 0.3+ | 0.8− | 2006 04 07 | G96 | 0.0 | 0.2+ |
| 2001 12 13 | 644 | 0.4− | 0.2+ | 2001 12 23 | 704 | 0.0 | 0.1− | 2006 04 07 | G96 | 0.0 | 0.3+ |
| 2001 12 14 | 644 | 0.1− | 0.2+ | 2001 12 23 | 704 | 0.3+ | 0.2− | 2006 04 19 | G96 | 0.1− | 0.1+ |
| 2001 12 14 | 644 | 0.2− | 0.2+ | 2001 12 23 | 704 | 0.2+ | 1.1− | 2006 04 19 | G96 | 0.1− | 0.1− |
| 2001 12 14 | 644 | 0.0 | 0.2+ | 2006 02 27 | 691 | 0.4+ | 0.1− | 2006 04 19 | G96 | 0.2+ | 0.4− |
| 2001 12 17 | 704 | 0.3− | 0.1− | 2006 02 27 | 691 | 0.3− | 0.2+ | 2006 04 19 | G96 | 0.4+ | 0.3− |
| 2001 12 17 | 704 | 0.2+ | 0.3+ | 2006 02 27 | 691 | 0.1+ | 0.0 | | | | |

**2001 XC$_{36}$ = 2006 QK$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.55449 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17951029 | $\omega$ | 92.40594 | | +0.94823150 | −0.19703275 | |
| $a$ | 3.1122644 | $\Omega$ | 279.03588 | | +0.07711966 | +0.90365543 | |
| $e$ | 0.2476773 | $i$ | 14.60763 | | +0.30807398 | +0.38024328 | |
| $P$ | 5.49 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.3− | 0.1+ | 2001 12 22 | 704 | 0.4− | 0.0 | 2006 09 01 | 704 | 0.0 | 1.0− |
| 2001 10 25 | 704 | 0.2− | 0.1+ | 2001 12 22 | 704 | 1.1− | 0.1+ | 2006 09 21 | 699 | 0.8+ | 1.4− |
| 2001 10 25 | 704 | 0.4− | 0.3− | 2006 08 25 | 704 | 0.6− | 0.6− | 2006 09 21 | 699 | 1.0+ | 0.1+ |
| 2001 10 25 | 704 | 0.4+ | 0.7+ | 2006 08 25 | 704 | 0.7− | 0.9+ | 2006 09 21 | 699 | 0.3− | 0.6+ |
| 2001 12 09 | 704 | 0.3+ | 0.4− | 2006 08 25 | 704 | 0.5+ | 0.2− | 2006 09 21 | 699 | 0.2+ | 1.1+ |
| 2001 12 09 | 704 | 0.3− | 0.2− | 2006 08 25 | 704 | 0.6− | 1.0+ | 2006 09 27 | 703 | 0.0 | 0.2− |
| 2001 12 09 | 704 | 0.0 | 0.4− | 2006 08 29 | 699 | 0.3− | 0.3− | 2006 09 27 | 703 | 0.7− | 0.1− |
| 2001 12 09 | 704 | 0.9+ | 0.3+ | 2006 08 29 | 699 | 0.7− | 0.4− | 2006 09 27 | 703 | 0.5− | 0.9− |
| 2001 12 09 | 704 | 0.7+ | 0.0 | 2006 08 29 | 699 | 0.4+ | 0.4− | 2006 09 27 | 703 | 0.2+ | 0.5− |
| 2001 12 14 | 704 | 0.2− | 0.4− | 2006 08 29 | 699 | 0.0 | 1.0+ | 2006 10 26 | 703 | 0.7+ | 0.1+ |
| 2001 12 14 | 704 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.1− | 0.5+ | 2006 10 26 | 703 | 0.2+ | 0.7+ |
| 2001 12 14 | 704 | 0.8+ | 0.3+ | 2006 09 01 | 704 | 0.2+ | 0.6+ | 2006 10 26 | 703 | 0.2− | 0.3+ |
| 2001 12 14 | 704 | 0.4+ | 0.3+ | 2006 09 01 | 704 | 0.1+ | 0.7− | 2006 10 26 | 703 | 0.2− | 0.3− |
| 2001 12 22 | 704 | 1.0− | 0.3− | 2006 09 01 | 704 | 0.7+ | 0.1+ | | | | |

**2001 XK$_{38}$ = 2006 UD$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.45630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18775330 | $\omega$ | 317.50105 | | +0.98325867 | +0.13128466 | |
| $a$ | 3.0204918 | $\Omega$ | 35.54695 | | −0.04058619 | +0.83383611 | |
| $e$ | 0.1877527 | $i$ | 12.55331 | | −0.17763767 | +0.53617318 | |
| $P$ | 5.25 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 1.3− | 0.1+ | 2006 10 30 | 400 | 0.2+ | 0.9− | 2006 11 15 | 704 | 0.7− | 0.7+ |
| 2001 12 09 | 704 | 0.0 | 0.6+ | 2006 10 30 | 400 | 0.2+ | 1.2+ | 2006 11 15 | 704 | 1.1− | 0.2+ |
| 2001 12 09 | 704 | 0.0 | 0.1+ | 2006 10 30 | 400 | 0.7+ | 0.1+ | 2006 11 15 | 704 | 1.3− | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 1.1+ | 2006 11 01 | 400 | 0.3− | 0.1+ | 2006 11 15 | 704 | 0.4− | 0.5− |
| 2001 12 14 | 704 | 0.5+ | 0.4+ | 2006 11 01 | 400 | 0.4− | 0.2− | 2006 11 16 | 704 | 1.0+ | 1.5+ |
| 2001 12 14 | 704 | 0.1− | 0.2− | 2006 11 01 | 400 | 0.4+ | 1.0+ | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2001 12 14 | 704 | 0.2+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | (1.9− | 2.1+) |
| 2001 12 14 | 704 | 0.6− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1− | 1.4+ |
| 2001 12 22 | 704 | 0.2+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2001 12 22 | 704 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.1− | 1.4+ |
| 2001 12 22 | 704 | (0.6+ | 1.7−) | 2006 11 11 | 703 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 1.0+ | 0.5+ |
| 2001 12 22 | 704 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.5+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.5+ |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.4− | 2006 11 16 | 704 | (2.2+ | 1.1−) |
| 2006 09 27 | G96 | 0.6+ | 0.5− | 2006 11 14 | 703 | 0.9− | 0.7− | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.9− | 0.5− | 2006 11 16 | 704 | 0.2− | 0.0 |
| 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.4− | 0.5− | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.4− | 1.4− | 2006 11 16 | 704 | 0.3+ | 0.2+ |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.5+ | 1.3+ |
| 2006 10 19 | 703 | 0.3+ | 0.8− | 2006 11 14 | 703 | 0.6+ | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2006 10 19 | 703 | 1.2+ | 1.1− | 2006 11 14 | 703 | (2.5+ | 1.6−) | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2006 10 19 | 703 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 1.3+ | 0.4− |
| 2006 10 19 | 703 | (0.2− | 2.5+) | 2006 11 14 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2006 10 23 | 691 | 0.4− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2006 10 26 | 400 | 0.6− | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.4− | 2006 11 22 | 704 | 0.1− | 0.3+ |
| 2006 10 26 | 400 | 0.8+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2006 10 26 | 400 | 0.7+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.3+ | 0.9− |
| 2006 10 29 | 400 | 1.1+ | 0.3− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.8− |
| 2006 10 29 | 400 | 1.0− | 0.9− | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.9− |
| 2006 10 29 | 400 | 0.8− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.4+ | 0.6− |

**2001 XY$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.87445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21161863 | $\omega$ | 249.80076 | | −0.87617919 | −0.11179397 | |
| $a$ | 2.7889033 | $\Omega$ | 281.39745 | | +0.33965853 | −0.83336390 | |
| $e$ | 0.3357897 | $i$ | 28.57266 | | −0.34196801 | −0.54130094 | |
| $P$ | 4.66 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | (0.3− | 2.0−) | 2002 01 10 | 704 | 1.2− | 0.6− | 2006 10 16 | 703 | 1.0− | 1.5+ |
| 2001 12 09 | 704 | 0.5− | 1.3− | 2002 01 15 | 704 | 0.6− | 0.1− | 2006 10 17 | G96 | 0.6− | 0.4− |
| 2001 12 09 | 704 | 0.3− | 1.0− | 2002 01 15 | 704 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2001 12 09 | 704 | 0.5− | 0.8− | 2002 01 15 | 704 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.6+ | 0.1+ | 2002 01 15 | 704 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2002 01 15 | 704 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2001 12 14 | 704 | 0.0 | 0.1+ | 2002 01 21 | 704 | 0.3+ | 1.1− | 2006 10 21 | G96 | 0.5− | 0.1+ |
| 2001 12 14 | 704 | 0.2− | 0.1− | 2002 01 21 | 704 | 0.4+ | 1.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2002 01 21 | 704 | 0.3+ | 1.2− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 12 22 | 704 | 0.6− | 0.2+ | 2002 01 21 | 704 | 1.4+ | 0.3− | 2006 10 27 | G96 | 0.5− | 0.3− |
| 2001 12 22 | 704 | 0.1+ | 0.4+ | 2002 02 06 | 704 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.8− | 0.1− |
| 2001 12 22 | 704 | 0.4+ | 0.5+ | 2002 02 06 | 704 | 0.6+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2001 12 22 | 704 | 0.1+ | 0.3+ | 2002 02 06 | 704 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 12 22 | 704 | 1.1+ | 0.8+ | 2002 02 06 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 704 | 0.3+ | 0.2− |
| 2002 01 08 | 704 | 0.2+ | 0.8+ | 2002 02 06 | 704 | 1.0+ | 1.1+ | 2006 11 17 | 704 | (1.6+ | 0.5−) |
| 2002 01 08 | 704 | 1.0− | 1.1+ | 2002 02 07 | 704 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.6− |
| 2002 01 08 | 704 | 0.0 | 0.7+ | 2002 02 07 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.9+ | 0.6− |
| 2002 01 08 | 704 | 0.3− | 0.2+ | 2002 02 07 | 704 | 0.8+ | 0.5+ | 2006 12 01 | 703 | 0.2− | 1.0− |
| 2002 01 08 | 704 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.4− | 1.3+ | 2006 12 01 | 703 | 0.7+ | 0.7− |
| 2002 01 10 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 12 01 | 703 | 0.2− | 1.0+ |
| 2002 01 10 | 704 | 1.2− | 0.4− | 2006 10 16 | 703 | (0.5− | 2.0+) | 2006 12 01 | 703 | 0.1+ | 0.2− |

**2001 XT$_{40}$ = 2006 RE$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.83551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18515742 | $\omega$ | 6.57818 | | +0.92324003 | −0.38153907 | |
| $a$ | 3.0486575 | $\Omega$ | 16.08111 | | +0.34463928 | +0.77016950 | |
| $e$ | 0.1489130 | $i$ | 9.42091 | | +0.16985761 | +0.51114271 | |
| $P$ | 5.32 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8+ | 0.5− | 2006 09 02 | 152 | 0.2+ | 0.4− | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 2001 12 09 | 704 | 0.0 | 0.3− | 2006 09 02 | 152 | 0.4+ | 0.4− | 2006 11 15 | 703 | 0.2− | 0.3+ |
| 2001 12 09 | 704 | 0.2+ | 0.1− | 2006 09 02 | 152 | 0.2− | 1.0+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2001 12 09 | 704 | 0.4− | 0.2− | 2006 09 02 | 152 | 0.6+ | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2001 12 09 | 704 | (2.0+ | 0.2+) | 2006 09 03 | 152 | 1.3− | 0.3+ | 2006 11 15 | 704 | 1.3− | 1.4− |
| 2001 12 14 | 704 | 0.5− | 0.1− | 2006 09 26 | 152 | 0.6+ | 0.5+ | 2006 11 15 | 704 | 0.3− | 1.4+ |
| 2001 12 14 | 704 | 0.6− | 0.3− | 2006 09 26 | 152 | 0.2+ | 0.4+ | 2006 11 15 | 704 | (0.1+ | 1.7+) |
| 2001 12 14 | 704 | 0.7− | 0.0 | 2006 09 26 | 152 | 0.8+ | 0.3+ | 2006 11 15 | 704 | (1.3− | 1.7+) |
| 2001 12 14 | 704 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.6− | 2006 11 15 | 704 | 0.3− | 0.5+ |
| 2001 12 19 | 644 | 0.2− | 0.5+ | 2006 10 27 | 703 | 0.3+ | 0.5− | 2006 11 20 | G96 | 0.5+ | 0.1− |
| 2001 12 19 | 644 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.9− | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2001 12 19 | 644 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.4− | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2001 12 22 | 704 | 0.7− | 0.3+ | 2006 10 28 | D35 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2001 12 22 | 704 | 0.0 | 0.5+ | 2006 10 28 | D35 | 0.1− | 0.3+ | 2006 11 21 | 703 | 0.5+ | 0.1− |
| 2001 12 22 | 704 | 0.3− | 0.9+ | 2006 10 28 | D35 | 0.1+ | 0.5+ | 2006 11 21 | 703 | 0.1+ | 0.6+ |
| 2001 12 22 | 704 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.3+ | 2006 11 21 | 703 | 0.3+ | 0.8− |
| 2001 12 23 | 704 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.3+ | 2006 11 21 | 703 | 0.0 | 0.0 |
| 2001 12 23 | 704 | 1.3+ | 0.8− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.1− | 1.0− |
| 2001 12 23 | 704 | (1.0+ | 1.9−) | 2006 11 11 | 644 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.2− | 1.1− |
| 2001 12 23 | 704 | (1.6+ | 1.8−) | 2006 11 11 | 644 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.3− | 1.3+ |
| 2006 09 02 | 152 | 1.2− | 0.4− | 2006 11 11 | 644 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 1.4− | 0.2− |

**2001 XU$_{40}$ = 2006 UX$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.62529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18505278 | $\omega$ | 42.92652 | | +0.72623605 | −0.68744409 | |
| $a$ | 3.0498066 | $\Omega$ | 0.50759 | | +0.58214750 | +0.61394969 | |
| $e$ | 0.1442106 | $i$ | 8.77461 | | +0.36563026 | +0.38792577 | |
| $P$ | 5.33 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.7− | 0.2− |
| 2001 12 09 | 704 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.6+ |
| 2001 12 09 | 704 | 0.4+ | 0.8− | 2006 10 19 | 703 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.3− | 0.4+ |
| 2001 12 09 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.3+ | 1.0+ |
| 2001 12 09 | 704 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.4+ | 2006 11 15 | 704 | 0.6+ | 0.7− |
| 2001 12 14 | 704 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.6− | 0.0 | 2006 11 15 | 704 | 1.2+ | 0.6+ |
| 2001 12 14 | 704 | 0.5− | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.2− | 2006 11 21 | 703 | 0.5− | 0.0 |
| 2001 12 14 | 704 | 0.0 | 0.3− | 2006 11 02 | G96 | 0.6+ | 0.1− | 2006 11 21 | 703 | 0.1− | 0.6− |
| 2001 12 19 | 644 | 0.5− | 1.1+ | 2006 11 02 | G96 | 0.4− | 0.2− | 2006 11 21 | 703 | 0.6− | 0.7− |
| 2001 12 19 | 644 | 0.6− | 0.9+ | 2006 11 02 | G96 | 0.1+ | 0.3− | 2006 11 21 | 703 | 0.2− | 0.6− |
| 2001 12 19 | 644 | 0.5− | 1.1+ | 2006 11 02 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.1+ | 1.2+ |
| 2001 12 23 | 704 | 0.0 | 0.5− | 2006 11 02 | 703 | 0.5− | 0.3− | 2006 11 29 | 704 | 1.4− | 0.1+ |
| 2001 12 23 | 704 | 0.6+ | 0.0 | 2006 11 02 | 703 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.8+ | 0.1− |
| 2001 12 23 | 704 | 0.8+ | 0.5− | 2006 11 02 | 703 | 0.5+ | 0.7− | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2001 12 23 | 704 | 0.3+ | 0.8− | 2006 11 02 | 703 | 0.1− | 0.3+ | | | | |
| 2001 12 23 | 704 | 0.8+ | 0.4− | 2006 11 15 | 703 | 0.3+ | 0.5− | | | | |

**2001 XP$_{43}$ = 2006 SX$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.01555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17438832 | $\omega$ | 346.84559 | | +0.68393586 | −0.69490011 | |
| $a$ | 3.1729103 | $\Omega$ | 59.47948 | | +0.69051609 | +0.51835552 | |
| $e$ | 0.1001788 | $i$ | 14.94352 | | +0.23541299 | +0.49841888 | |
| $P$ | 5.65 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.2− | 0.3− | 2004 05 16 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.1− |
| 2000 09 20 | 704 | 0.8− | 0.6+ | 2004 05 16 | 704 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.5− |
| 2000 09 20 | 704 | 0.6− | 1.6+ | 2004 05 16 | 704 | 1.4− | 0.8− | 2006 10 16 | 703 | 0.8− | 0.3+ |
| 2000 09 20 | 704 | 0.3− | 0.6+ | 2004 06 17 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.6+ | 0.0 |
| 2000 10 02 | 699 | 0.5+ | 0.2− | 2004 06 17 | 691 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2000 10 02 | 699 | 0.6− | 0.5+ | 2004 06 17 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2000 10 02 | 699 | 0.1+ | 0.4− | 2005 08 08 | E12 | (1.2+ | 1.9+) | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2000 10 02 | 699 | 0.5− | 0.2− | 2005 08 08 | E12 | 0.4+ | 1.0+ | 2006 11 14 | 704 | 0.4− | 0.0 |
| 2001 12 09 | 704 | 0.2− | 0.4+ | 2005 08 08 | E12 | 0.4+ | 1.0+ | 2006 11 14 | 704 | 0.1− | 0.2+ |
| 2001 12 09 | 704 | 0.3− | 0.1+ | 2005 08 08 | E12 | 0.3+ | 0.8+ | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2001 12 09 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 0.7− | 0.1+ | 2006 11 20 | 704 | 1.6− | 0.7− |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.7− | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2001 12 14 | 704 | 0.3− | 0.5− | 2006 09 29 | 699 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 0.0 | 2006 09 29 | 699 | 0.2+ | 1.5+ | 2006 11 20 | 704 | 2.0− | 0.3− |
| 2001 12 14 | 704 | 1.3+ | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.3− |
| 2001 12 14 | 704 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 11 20 | 704 | 1.2− | 0.1+ |
| 2001 12 19 | 644 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.6+ | 0.1− |
| 2001 12 19 | 644 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.4− |
| 2001 12 19 | 644 | 0.5− | 0.7+ | 2006 10 01 | 704 | 0.7+ | 0.5+ | 2006 11 20 | 704 | 0.3− | 0.9− |
| 2001 12 22 | 704 | 0.7+ | 0.9+ | 2006 10 01 | 704 | 0.7+ | 0.9+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2001 12 22 | 704 | 0.0 | 1.3+ | 2006 10 01 | 704 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.8+ | 0.3− |
| 2001 12 22 | 704 | (1.8− | 2.5+) | 2006 10 12 | 644 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2001 12 22 | 704 | (0.2+ | 1.6+) | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 | | | | |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.5− | | | | |

**2001 XS$_{43}$ = 2006 TZ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.37246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17449298 | $\omega$ | 80.75292 | | +0.69372741 | −0.71255715 | |
| $a$ | 3.1716413 | $\Omega$ | 324.56500 | | +0.56913295 | +0.63160001 | |
| $e$ | 0.1042063 | $i$ | 10.42427 | | +0.44139547 | +0.30552206 | |
| $P$ | 5.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8− | 0.0 | 2001 12 22 | 704 | 0.1+ | 0.7− | 2006 10 19 | 703 | 0.4+ | 0.0 |
| 2001 12 09 | 704 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2001 12 09 | 704 | 0.7− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2001 12 14 | 704 | 0.6+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.8+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.9+ | 0.3+ |
| 2001 12 14 | 704 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.7+ |
| 2001 12 14 | 704 | 0.6+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.3+ |
| 2001 12 22 | 704 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.1− |
| 2001 12 22 | 704 | 1.0− | 0.6− | 2006 10 19 | 703 | 0.6− | 0.7− | | | | |
| 2001 12 22 | 704 | 0.3− | 1.1+ | 2006 10 19 | 703 | 0.9− | 0.4− | | | | |

**2001 XW$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.93778 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18527193 | $\omega$ | 74.24528 | | −0.31441505 | −0.94567808 | |
| $a$ | 3.0474011 | $\Omega$ | 34.43363 | | +0.80535045 | −0.31183760 | |
| $e$ | 0.2695722 | $i$ | 8.40801 | | +0.50254734 | −0.09192540 | |
| $P$ | 5.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.2+ | 0.2− | 2002 01 05 | 644 | 0.6+ | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.3− |
| 1995 10 26 | 691 | 0.3+ | 0.1− | 2002 01 05 | 644 | 0.7+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 1995 10 26 | 691 | 0.1− | 0.4− | 2002 01 13 | 644 | 0.0 | 1.0+ | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2001 11 11 | 704 | 0.7+ | 0.3− | 2002 01 13 | 644 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2001 11 11 | 704 | 1.0− | 0.1− | 2002 01 13 | 644 | 0.1+ | 0.8+ | 2006 10 19 | 695 | 0.4− | 0.0 |
| 2001 11 11 | 704 | 0.1+ | 0.1+ | 2002 01 13 | 644 | 0.1+ | 0.1− | 2006 10 19 | 695 | 0.4− | 0.1− |
| 2001 11 11 | 704 | 0.4+ | 1.0+ | 2002 01 13 | 644 | 0.1+ | 1.0+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 645 | 0.1− | 0.4− | 2002 01 13 | 644 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2001 11 21 | 645 | 0.1− | 0.4− | 2002 01 14 | 644 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2001 12 09 | 704 | 0.6+ | 0.4+ | 2002 01 14 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.1− | 0.5+ | 2002 01 14 | 644 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 12 09 | 704 | 0.4+ | 1.0+ | 2002 01 14 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2001 12 09 | 704 | 0.3+ | 0.4+ | 2002 01 14 | 644 | 0.4− | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.7− |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2002 01 14 | 644 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.8+ | 0.7+ |
| 2001 12 14 | 704 | 0.6+ | 0.1+ | 2002 01 18 | 699 | 0.2− | 0.2− | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2001 12 14 | 704 | 1.3+ | 0.5− | 2002 01 18 | 699 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.9+ | 1.0+ |
| 2001 12 14 | 704 | 0.7+ | 0.0 | 2002 01 18 | 699 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.5+ | 0.1− | 2002 01 18 | 699 | 0.5− | 0.5+ | 2006 11 15 | 704 | 0.3+ | 0.3− |
| 2001 12 18 | 699 | 0.7− | 0.7+ | 2002 01 21 | 699 | 1.4+ | 0.5+ | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 2001 12 18 | 699 | 1.4+ | 1.0+ | 2002 01 21 | 699 | 0.4+ | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.1+ |
| 2001 12 18 | 699 | 0.3− | 0.5− | 2002 01 21 | 699 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.2+ |
| 2001 12 18 | 699 | 1.0+ | 0.7+ | 2002 01 21 | 699 | 0.1+ | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.3− |
| 2001 12 18 | 699 | 1.1− | 0.4+ | 2002 01 23 | 704 | 0.6+ | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.1− |
| 2001 12 18 | 699 | (1.6+ | 1.0+) | 2002 01 23 | 704 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.8− | 0.3− |
| 2001 12 18 | 699 | 0.4− | 0.2− | 2002 01 23 | 704 | 0.9+ | 0.4+ | 2006 11 19 | 691 | 0.7+ | 1.4+ |
| 2001 12 18 | 699 | 1.5+ | 0.3+ | 2002 01 23 | 704 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.4− | 0.1+ |
| 2001 12 18 | 645 | 0.0 | 0.2− | 2002 01 23 | 704 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.5− | 0.0 |
| 2001 12 18 | 645 | 0.0 | 0.3− | 2002 02 03 | 644 | 0.4+ | 1.1+ | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2001 12 19 | 644 | 0.1− | 0.5− | 2002 02 03 | 644 | 0.4+ | 1.1+ | 2006 11 19 | 704 | 0.3+ | 0.9+ |
| 2001 12 19 | 644 | 0.0 | 0.3− | 2002 02 03 | 644 | 0.2+ | 1.1+ | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2001 12 19 | 644 | 0.3− | 0.1− | 2002 02 10 | 704 | 1.4− | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2001 12 20 | 644 | 0.2+ | 0.2+ | 2002 02 10 | 704 | 1.2− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2001 12 20 | 644 | 0.2+ | 0.4+ | 2002 02 10 | 704 | 1.3− | 0.3− | 2006 11 22 | 704 | 0.0 | 0.7+ |
| 2001 12 20 | 644 | 0.0 | 0.3+ | 2002 02 10 | 704 | 1.5− | 0.6− | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2001 12 22 | 704 | 0.2+ | 0.4+ | 2002 02 10 | 704 | 1.5− | 0.4− | 2006 11 22 | 704 | 0.4− | 1.1+ |
| 2001 12 22 | 704 | 0.7− | 0.0 | 2002 02 13 | 644 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8− | 0.7− |
| 2001 12 22 | 704 | 0.2+ | 1.2+ | 2002 02 13 | 644 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.3− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 0.0 | 0.1+ | 2002 02 13 | 644 | 0.1− | 0.3− | 2006 12 01 | G96 | 0.2− | 0.9− |
| 2002 01 05 | 644 | 0.2− | 0.3+ | 2002 03 05 | 704 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2002 01 05 | 644 | 0.2− | 0.7+ | 2002 03 05 | 704 | 0.2− | 1.0+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2002 01 05 | 644 | 0.0 | 0.5+ | 2002 03 05 | 704 | (0.4− | 1.6+) | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2002 01 05 | 644 | 0.6+ | 0.1+ | 2002 03 05 | 704 | (0.6− | 1.6+) | | | | |

**2001 XK$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.48895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17629460 | $\omega$ | 325.84744 | | +0.63904019 | −0.66316687 | |
| $a$ | 3.1499963 | $\Omega$ | 80.99422 | | +0.76391447 | +0.48806291 | |
| $e$ | 0.1689351 | $i$ | 23.23645 | | +0.08979044 | +0.56745423 | |
| $P$ | 5.59 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.2− | 0.4+ | 2002 01 05 | 699 | 0.8+ | 0.6+ | 2006 10 20 | 703 | 1.1+ | 0.9− |
| 2001 12 09 | 704 | 0.3− | 0.5+ | 2002 01 05 | 699 | 0.3− | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.4+ |
| 2001 12 09 | 704 | 0.0 | 1.4+ | 2002 01 14 | 644 | 1.1+ | 1.1+ | 2006 10 20 | 703 | 1.0− | 0.8+ |
| 2001 12 09 | 704 | 0.3− | 0.2− | 2002 01 14 | 644 | 1.4+ | 1.4+ | 2006 10 28 | 703 | 0.1+ | 0.6+ |
| 2001 12 09 | 704 | 0.1− | 0.8− | 2002 01 14 | 644 | (1.5+ | 1.0+) | 2006 10 28 | 703 | 0.2+ | 0.6+ |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2002 01 18 | 699 | 0.0 | 0.7+ | 2006 10 28 | 703 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 0.0 | 0.1− | 2002 01 18 | 699 | 1.0− | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2002 01 18 | 699 | 0.4+ | 0.5+ | 2006 11 10 | 704 | 0.1− | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 1.1+ | 2002 01 18 | 699 | 0.9+ | 0.6− | 2006 11 10 | 704 | 0.0 | 0.2+ |
| 2001 12 18 | 645 | 0.1− | 0.1− | 2002 01 19 | 699 | (1.8+ | 0.0 ) | 2006 11 10 | 704 | 0.1+ | 0.5− |
| 2001 12 18 | 645 | 0.1− | 0.1− | 2002 01 19 | 699 | 0.4+ | 0.3+ | 2006 11 10 | 704 | 0.0 | 0.9+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2002 01 19 | 699 | 0.1− | 0.4+ | 2006 11 10 | 704 | 0.7− | 0.9− |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2002 01 19 | 699 | 0.7− | 1.4+ | 2006 11 19 | 703 | 0.1− | 0.6− |
| 2001 12 22 | 704 | 0.6− | 0.0 | 2002 01 25 | 704 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.3− |
| 2001 12 22 | 704 | 0.1+ | 0.2− | 2002 01 25 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.0 | 0.5− |
| 2001 12 22 | 704 | 0.9+ | 0.4+ | 2002 01 25 | 704 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.4+ | 0.2− |
| 2001 12 22 | 704 | 0.7+ | 0.7− | 2004 06 22 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 1.1− | 0.9+ |
| 2001 12 22 | 704 | (1.7+ | 1.8−) | 2004 06 22 | 691 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2002 01 05 | 699 | 0.5+ | 0.2+ | 2004 06 22 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2002 01 05 | 699 | 0.9+ | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.6+ | 2006 11 21 | 704 | 0.6− | 0.1− |

**2001 XM$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.04076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21925222 | $\omega$ | 152.86808 | | +0.35534607 | −0.91116400 | |
| $a$ | 2.7237885 | $\Omega$ | 275.69797 | | +0.81507909 | +0.41128337 | |
| $e$ | 0.1984466 | $i$ | 12.10036 | | +0.45757540 | −0.02502304 | |
| $P$ | 4.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 699 | 0.2+ | 1.2− | 2001 11 12 | 704 | 0.5+ | 0.0 | 2005 08 29 | 644 | 0.2+ | 0.3− |
| 2001 09 22 | 699 | 0.3− | 0.7+ | 2001 12 07 | 644 | 0.1− | 0.1+ | 2005 08 29 | 644 | 0.2+ | 0.0 |
| 2001 09 22 | 699 | 0.4− | 0.3− | 2001 12 07 | 644 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 09 22 | 699 | 0.9+ | 0.8+ | 2001 12 07 | 644 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 10 20 | 699 | 0.3+ | 0.3− | 2001 12 10 | 704 | 1.3− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 10 20 | 699 | 0.4+ | 0.4+ | 2001 12 10 | 704 | 1.0− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2001 10 20 | 699 | 0.2+ | 0.5− | 2001 12 10 | 704 | 0.6− | 0.2− | 2006 11 13 | G96 | 1.0− | 0.2− |
| 2001 10 20 | 699 | 0.2− | 0.3+ | 2001 12 10 | 704 | 0.4+ | 0.6− | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2001 11 12 | 704 | 0.7+ | 0.5− | 2001 12 14 | 704 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.4− | 0.1+ |
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2001 12 14 | 704 | 0.2+ | 1.0+ | 2006 11 13 | G96 | 0.5+ | 0.1− |
| 2001 11 12 | 704 | 0.4+ | 0.4− | 2001 12 14 | 704 | 1.2− | 0.6+ | | | | |
| 2001 11 12 | 704 | 0.2+ | 0.3− | 2005 08 29 | 644 | 0.3− | 0.3− | | | | |

**2001 XQ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.55606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18328261 | $\omega$ | 199.05317 | | +0.88005053 | −0.47486129 | |
| $a$ | 3.0694122 | $\Omega$ | 189.30054 | | +0.43901587 | +0.81694401 | |
| $e$ | 0.3085846 | $i$ | 1.49693 | | +0.18104181 | +0.32727549 | |
| $P$ | 5.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | (1.3+ | 2.1+) | 2006 09 12 | 703 | 0.1− | 0.2+ | 2006 09 26 | 291 | 0.2− | 0.3+ |
| 2001 11 09 | 704 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.2+ | 0.1+ | 2006 09 26 | 291 | 0.1+ | 0.3+ |
| 2001 11 09 | 704 | 0.5− | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.3− | 2006 09 26 | 291 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 0.4+ | 0.3− | 2006 09 13 | 644 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.1− |
| 2001 11 18 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 09 29 | 704 | 1.2+ | 1.0− |
| 2001 11 18 | 691 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 2001 11 18 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.1− | 0.4− |
| 2001 12 10 | 704 | 0.1+ | 0.8− | 2006 09 16 | 699 | 0.9− | 0.5− | 2006 10 01 | 703 | 0.5+ | 0.7− |
| 2001 12 10 | 704 | 1.2− | 0.5− | 2006 09 16 | 699 | 0.4+ | 0.4+ | 2006 10 01 | 703 | 0.6− | 0.5− |
| 2001 12 10 | 704 | 0.8− | 0.6− | 2006 09 17 | 704 | 0.8− | 0.2+ | 2006 10 01 | 703 | 0.6− | 0.2− |
| 2001 12 10 | 704 | 0.8− | 0.6− | 2006 09 17 | 704 | 0.2+ | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.2− | 0.9+ | 2006 09 17 | 704 | 0.6− | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.7− | 0.8− | 2006 09 17 | 704 | 0.8− | 0.4− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 12 14 | 704 | 0.6+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.6− | 2006 10 16 | G96 | 0.4+ | 0.0 |
| 2001 12 17 | 704 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2001 12 17 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2001 12 20 | 704 | (1.9+ | 0.2−) | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.5+ | 0.5− |
| 2001 12 20 | 704 | 1.1+ | 1.3+ | 2006 09 20 | 704 | 0.5+ | 0.6− | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2001 12 20 | 704 | 0.8+ | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.1− | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2001 12 20 | 704 | 0.6+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.1+ | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2006 08 24 | 644 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.8+ | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.0 | 2006 11 21 | G96 | 0.8− | 0.5+ |
| 2006 09 12 | 703 | 0.0 | 0.6− | 2006 09 25 | 699 | 0.2+ | 0.2+ | | | | |

**2001 XX$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.24108 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19531095 | $\omega$ | 338.53637 | | +0.24283329 | −0.96462372 | |
| $a$ | 2.9420609 | $\Omega$ | 97.29472 | | +0.90440181 | +0.18686133 | |
| $e$ | 0.1156311 | $i$ | 5.93892 | | +0.35084093 | +0.18596754 | |
| $P$ | 5.05 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.1− | 0.7+ | 2001 12 20 | 704 | (0.4− | 1.7+) | 2006 11 17 | 704 | (0.5− | 2.1+) |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2001 12 20 | 704 | 0.5− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2001 11 20 | 704 | (0.4+ | 2.5−) | 2001 12 20 | 704 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2001 12 20 | 704 | (0.3− | 1.5+) | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2001 11 20 | 704 | 0.5+ | 0.0 | 2001 12 20 | 704 | 0.5− | 0.7− | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2001 12 10 | 704 | 0.2− | 0.2− | 2001 12 20 | 704 | 0.8+ | 1.4− | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2001 12 10 | 704 | 1.2+ | 0.7+ | 2001 12 20 | 704 | (0.4− | 1.9+) | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 12 10 | 704 | 0.2+ | 0.3− | 2001 12 20 | 704 | 1.2− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.4− | 0.1+ | 2001 12 20 | 704 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 0.9− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.1− | 1.0+ |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.8+ | 0.2− |
| 2001 12 14 | 704 | (2.3− | 2.3−) | 2006 11 02 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2001 12 14 | 704 | 0.6+ | 0.6− | 2006 11 02 | G96 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.7+ | 1.3− | 2006 11 24 | 703 | 0.8− | 0.1+ |
| 2001 12 17 | 704 | 0.6+ | 0.2+ | 2006 11 14 | 704 | 0.7+ | 0.5− | 2006 11 24 | 703 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 704 | (2.1+ | 0.3−) | 2006 11 24 | 703 | 0.6− | 0.1− |
| 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.4− | 2006 11 24 | 703 | 0.8− | 1.2+ |
| 2001 12 20 | 704 | (1.4+ | 1.8+) | 2006 11 16 | G96 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2001 12 20 | 704 | 0.4+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.4+ | 0.3+ |
| 2001 12 20 | 704 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.1+ |
| 2001 12 20 | 704 | (1.1− | 2.3+) | 2006 11 17 | 704 | 0.5− | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 2001 12 20 | 704 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.7+ | 2006 11 29 | 704 | 0.6+ | 0.9+ |
| 2001 12 20 | 704 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.9− | 0.2+ | | | | |

**2001 XA$_{55}$ = 2005 UH$_{510}$**

Id. Minor Planet Circular, S. Foglia

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.45077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27669980 | $\omega$ | 221.18882 | | −0.23960413 | −0.97038341 | |
| $a$ | 2.3323667 | $\Omega$ | 242.69504 | | +0.89957760 | −0.20998307 | |
| $e$ | 0.1166826 | $i$ | 1.98351 | | +0.36517119 | −0.11942840 | |
| $P$ | 3.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3+ | 0.7− | 2001 12 17 | 704 | 0.9− | 1.0+ | 2004 09 10 | 704 | 0.6+ | 0.6− |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2001 12 17 | 704 | 0.1− | 0.1+ | 2005 10 24 | 568 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.4− | 2001 12 17 | 704 | 0.9+ | 0.4− | 2005 10 24 | 568 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.4− | 0.5− | 2001 12 20 | 704 | 0.5+ | 0.7− | 2005 10 24 | 568 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.5+ | 2001 12 20 | 704 | 1.6− | 2.0+ | 2006 01 08 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 704 | 0.5+ | 0.0 | 2001 12 20 | 704 | 0.8− | 1.1− | 2006 01 08 | G96 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 0.0 | 0.1− | 2001 12 20 | 704 | 0.5− | 1.0+ | 2006 01 08 | G96 | 0.4− | 0.5− |
| 2001 11 21 | 704 | 0.4+ | 0.8− | 2001 12 20 | 704 | 0.1+ | 1.3+ | 2006 01 08 | G96 | 0.2− | 0.3− |
| 2001 12 10 | 704 | 0.5+ | 0.2+ | 2001 12 20 | 704 | 0.7− | 1.0+ | 2006 02 02 | 691 | 0.1+ | 0.1+ |
| 2001 12 10 | 704 | 1.4+ | 1.0+ | 2001 12 20 | 704 | 0.0 | 0.2− | 2006 02 02 | 691 | 0.3+ | 0.4+ |
| 2001 12 10 | 704 | 0.5+ | 1.0+ | 2004 09 07 | 691 | 0.3− | 0.3+ | 2006 02 02 | 691 | 0.3+ | 0.3+ |
| 2001 12 14 | 704 | 0.3− | 0.8− | 2004 09 07 | 691 | 0.2− | 0.3+ | 2006 02 21 | 699 | 0.0 | 0.5+ |
| 2001 12 14 | 704 | 0.3− | 1.3− | 2004 09 07 | 691 | 0.3− | 0.3+ | 2006 02 21 | 699 | 0.2− | 0.3− |
| 2001 12 14 | 704 | 0.1+ | 1.5− | 2004 09 10 | 704 | 0.8+ | 0.6+ | 2006 02 21 | 699 | 0.1− | 0.6− |
| 2001 12 14 | 704 | 0.1− | 1.0− | 2004 09 10 | 704 | 0.0 | 1.4− | 2006 02 21 | 699 | 0.0 | 1.2+ |
| 2001 12 14 | 704 | 0.6− | 1.6− | 2004 09 10 | 704 | 0.1− | 0.2+ | 2006 03 02 | G96 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 1.0+ | 1.2+ | 2004 09 10 | 704 | 0.7+ | 0.3+ | 2006 03 02 | G96 | 0.4− | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.0 | 2004 09 10 | 704 | 0.2− | 0.3− | 2006 03 02 | G96 | 0.0 | 0.3− |

**2001 XR$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.07981 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17907720 | $\omega$ | 325.65615 | | +0.72733822 | −0.66255668 | |
| $a$ | 3.1172803 | $\Omega$ | 76.89406 | | +0.66364668 | +0.61265255 | |
| $e$ | 0.1343965 | $i$ | 10.58320 | | +0.17479189 | +0.43090079 | |
| $P$ | 5.50 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.6+ | 0.1− | 2001 12 09 | 644 | 0.1− | 0.1+ | 2001 12 17 | 704 | 0.3+ | 0.5+ |
| 2001 11 09 | 704 | 0.7+ | 0.5− | 2001 12 09 | 644 | 0.1− | 0.2− | 2001 12 17 | 704 | 0.7+ | 0.4+ |
| 2001 11 09 | 704 | 0.2− | 0.1− | 2001 12 09 | 644 | 0.0 | 0.3+ | 2006 09 20 | 703 | (2.0− | 0.3−) |
| 2001 11 09 | 704 | 0.0 | 0.5+ | 2001 12 10 | 704 | 0.3− | 0.4− | 2006 09 20 | 703 | 0.1− | 0.5− |
| 2001 11 20 | 704 | 0.5+ | 1.0− | 2001 12 10 | 704 | 0.3+ | 0.2− | 2006 09 20 | 703 | 1.0− | 0.3+ |
| 2001 11 20 | 704 | (0.3+ | 1.7−) | 2001 12 10 | 704 | 0.7+ | 0.2− | 2006 09 20 | 703 | 0.2− | 0.8+ |
| 2001 11 20 | 704 | 0.1+ | 1.0− | 2001 12 10 | 704 | 0.2+ | 1.0+ | 2006 09 26 | 703 | 0.7− | 0.3+ |
| 2001 11 20 | 704 | 0.8+ | 0.7− | 2001 12 14 | 704 | 0.4+ | 0.6− | 2006 09 26 | 703 | 0.5+ | 0.4− |
| 2001 11 20 | 691 | 0.5− | 0.1− | 2001 12 14 | 704 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.5+ | 0.8− |
| 2001 11 20 | 691 | 0.3− | 0.2+ | 2001 12 14 | 704 | 0.6+ | 0.7− | 2006 09 26 | 703 | 0.2+ | 0.1− |
| 2001 11 20 | 691 | 0.5− | 0.3+ | 2001 12 14 | 704 | 0.1+ | 0.6+ | 2006 10 28 | 703 | (0.3+ | 1.7+) |
| 2001 11 21 | 704 | 0.5− | 0.1− | 2001 12 17 | 704 | 1.2− | 0.1− | 2006 10 28 | 703 | (0.6+ | 2.9+) |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2001 12 17 | 704 | 0.4+ | 0.0 | 2006 10 28 | 703 | 0.0 | 0.6+ |
| 2001 11 21 | 704 | 0.3+ | 0.6+ | 2001 12 17 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.9+ | 0.1− |

**2001 XC$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.70881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18478881 | $\omega$ | 256.83489 | | −0.81168495 | −0.56035938 | |
| $a$ | 3.0527103 | $\Omega$ | 248.85287 | | +0.58056162 | −0.74299618 | |
| $e$ | 0.1181329 | $i$ | 10.17868 | | +0.06415404 | −0.36599732 | |
| $P$ | 5.33 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1+ | 0.7− | 2002 01 15 | 704 | 0.2+ | 0.7− | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2001 11 20 | 704 | 0.6− | 0.3− | 2002 01 15 | 704 | (0.2− | 1.7−) | 2006 10 27 | 703 | 0.4+ | 0.7− |
| 2001 11 20 | 704 | 0.1− | 0.8− | 2002 01 15 | 704 | 0.2+ | 0.5− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 0.4− | 2002 01 15 | 704 | 0.5− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.4− | 0.5− | 2005 08 05 | 644 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3− |
| 2001 11 21 | 704 | (2.0+ | 0.5−) | 2005 08 05 | 644 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.3+ | 0.5− | 2005 08 05 | 644 | 0.3+ | 0.5− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.5− | 0.7− | 2005 08 05 | 644 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1+ | 1.3+ |
| 2001 11 21 | 704 | 0.4− | 0.6− | 2005 08 05 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | (2.1− | 0.4+) |
| 2001 12 10 | 704 | 0.3+ | 0.0 | 2005 08 05 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2001 12 10 | 704 | 1.0+ | 0.7+ | 2005 08 05 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.9− | 0.1− |
| 2001 12 10 | 704 | 0.1+ | 0.6+ | 2005 08 05 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.1+ |
| 2001 12 10 | 704 | 1.4+ | 0.6− | 2005 08 05 | 644 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2001 12 14 | 704 | 0.4− | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.5− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2001 12 14 | 704 | 0.5− | 1.1+ | 2006 10 19 | 703 | 0.3− | 0.4− | 2006 11 19 | 704 | 1.4− | 0.2− |
| 2001 12 17 | 704 | 0.1+ | 0.4− | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | (2.3− | 0.5+) |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.9− | 0.4+ |
| 2001 12 17 | 704 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.9+ | 0.7+ |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2006 10 19 | 703 | (1.6+ | 0.2+) | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2001 12 17 | 704 | 0.2+ | 0.3− | 2006 10 25 | D35 | 0.4− | 0.2+ | 2006 11 22 | 704 | 1.4+ | 0.6+ |
| 2001 12 20 | 704 | 0.3− | 0.3+ | 2006 10 25 | D35 | 0.1− | 0.3+ | 2006 11 22 | 704 | (1.6− | 0.7+) |
| 2001 12 20 | 704 | 0.6− | 0.5+ | 2006 10 25 | D35 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2001 12 20 | 704 | 0.0 | 1.1+ | 2006 10 27 | 703 | 1.0+ | 0.5− | | | | |
| 2001 12 20 | 704 | 1.0− | 1.1+ | 2006 10 27 | 703 | 0.9− | 1.0− | | | | |

**2001 XD$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.88749 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18614323 | $\omega$ | 296.64258 | | +0.96490719 | −0.16574950 | |
| $a$ | 3.0378842 | $\Omega$ | 73.46885 | | +0.24193789 | +0.86266409 | |
| $e$ | 0.2100241 | $i$ | 12.26603 | | −0.10207921 | +0.47784702 | |
| $P$ | 5.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2001 12 14 | 691 | 0.0 | 0.5− | 2006 10 09 | 644 | 0.8− | 0.2+ |
| 2001 10 20 | 704 | 0.1+ | 0.4+ | 2001 12 14 | 704 | (0.4− | 1.8−) | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.0 | 1.0− | 2001 12 14 | 704 | 0.4− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2001 11 19 | 699 | 0.0 | 0.1+ | 2001 12 14 | 704 | 1.1− | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2001 11 19 | 699 | 0.1+ | 0.0 | 2001 12 17 | 704 | 0.3+ | 0.6− | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2001 11 19 | 699 | 0.4− | 0.3+ | 2001 12 17 | 704 | (0.6+ | 1.6−) | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.2+ | 0.1+ | 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2001 12 11 | 704 | 0.7+ | 0.4+ | 2001 12 17 | 704 | 0.9+ | 0.5− | 2006 10 24 | 644 | 0.0 | 0.7− |
| 2001 12 11 | 704 | 0.5+ | 1.3− | 2001 12 18 | 704 | 0.6+ | 0.7+ | 2006 10 24 | 644 | 0.1+ | 0.3− |
| 2001 12 11 | 704 | 0.7− | 0.3− | 2001 12 18 | 704 | 0.6+ | 0.7− | 2006 10 24 | 644 | 0.3+ | 0.2− |
| 2001 12 11 | 704 | 0.0 | 0.7+ | 2001 12 18 | 704 | (1.7+ | 1.5+) | 2006 10 28 | 703 | 1.2− | 0.1+ |
| 2001 12 14 | 691 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.7+ | 0.6+ |
| 2001 12 14 | 704 | 0.6− | 0.0 | 2001 12 18 | 704 | 0.6− | 0.3+ | 2006 10 28 | 703 | 1.0+ | 0.1+ |
| 2001 12 14 | 691 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.3− |
| 2001 12 14 | 704 | 0.7− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | | | |

**2001 XK$_{70}$ = 2006 UT$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.47858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18782003 | $\omega$ | 333.16604 | | +0.66623230 | −0.72421867 | |
| $a$ | 3.0197763 | $\Omega$ | 74.48003 | | +0.71307048 | +0.54882283 | |
| $e$ | 0.0745917 | $i$ | 10.63857 | | +0.21832319 | +0.41749349 | |
| $P$ | 5.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.1− | 0.2+ | 2001 12 11 | 704 | 0.8+ | 0.5+ | 2006 10 22 | 644 | 0.6+ | 0.1+ |
| 2001 11 17 | 704 | 0.5+ | 0.8+ | 2001 12 14 | 704 | 0.8− | 1.0− | 2006 10 28 | 703 | (0.4+ | 2.5+) |
| 2001 11 17 | 704 | 0.2+ | 0.2− | 2001 12 14 | 704 | 1.3− | 1.2− | 2006 10 28 | 703 | 0.6+ | 0.0 |
| 2001 11 17 | 704 | 1.2+ | 0.5+ | 2001 12 14 | 704 | 1.0− | 1.2− | 2006 10 28 | 703 | 0.7− | 0.5+ |
| 2001 12 10 | 691 | 0.0 | 0.2+ | 2001 12 14 | 704 | (0.1− | 1.8−) | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2001 12 10 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.4+ | 2006 11 16 | 703 | 0.4− | 0.7− |
| 2001 12 10 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 16 | 703 | 0.3− | 0.5+ |
| 2001 12 11 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 1.3+ | 0.6− | 2006 11 16 | 703 | 1.3− | 1.1+ |
| 2001 12 11 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 16 | 703 | 1.1− | 0.2+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.3− | 0.8− | 2006 10 22 | 644 | 0.2+ | 0.2− | |
| 2001 12 11 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.6+ | 0.1− | |

**2001 XY$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.73164 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21403286 | $\omega$ | 296.42809 | | +0.72508364 | | −0.65566842 |
| $a$ | 2.7678916 | $\Omega$ | 105.33314 | | +0.68361140 | | +0.64831964 |
| $e$ | 0.2659664 | $i$ | 12.61353 | | +0.08324160 | | +0.38701494 |
| $P$ | 4.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.4− | 0.4− | 2001 12 20 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.9+ | 1.0+ |
| 2001 10 17 | 704 | 0.7− | 0.1+ | 2001 12 20 | 704 | 0.3+ | 0.2− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2001 10 17 | 704 | 0.1− | 0.4+ | 2002 01 07 | 699 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2001 10 17 | 704 | 1.0− | 0.4− | 2002 01 07 | 699 | 0.6− | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2001 12 11 | 704 | 0.3− | 0.2+ | 2002 01 07 | 699 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 12 11 | 704 | 0.4+ | 0.1− | 2002 01 07 | 699 | (3.0+ | 0.6+) | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2001 12 11 | 704 | 0.5+ | 0.2+ | 2002 01 09 | 704 | (0.3− | 1.8−) | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2002 01 09 | 704 | 0.2+ | 1.1− | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2001 12 11 | 704 | 0.4+ | 0.2+ | 2002 01 09 | 704 | 1.0− | 0.9− | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2001 12 15 | 704 | 0.0 | 0.0 | 2002 01 09 | 704 | 0.3+ | 1.0− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 12 15 | 704 | 0.5− | 0.5+ | 2002 01 09 | 704 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 12 15 | 704 | 0.9+ | 1.0+ | 2002 01 14 | 704 | (2.3+ | 0.0 ) | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 0.5− | 1.1+ | 2002 01 14 | 704 | 0.5+ | 0.9+ | 2006 11 24 | G96 | 0.5− | 0.1− |
| 2001 12 20 | 704 | 0.1+ | 0.6− | 2002 01 14 | 704 | 0.9+ | 0.8+ | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2001 12 20 | 704 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2001 12 20 | 704 | (1.9+ | 0.6−) | 2006 10 23 | G96 | 0.4− | 0.7− | 2006 11 24 | G96 | 0.2− | 0.1+ |

**2001 XZ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.55443 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18013290 | $\omega$ | 336.10661 | | +0.68098304 | | −0.71167907 |
| $a$ | 3.1050887 | $\Omega$ | 70.46592 | | +0.69791617 | | +0.55937997 |
| $e$ | 0.1291722 | $i$ | 10.54996 | | +0.22175466 | | +0.42497881 |
| $P$ | 5.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 691 | 0.1+ | 0.3+ | 2001 11 20 | 704 | 0.4− | 0.5+ | 2001 12 14 | 704 | 1.0+ | 0.6− |
| 2001 10 17 | 704 | (1.5+ | 3.5+) | 2001 11 20 | 704 | 0.6− | 0.2+ | 2001 12 17 | 704 | 0.2− | 0.3+ |
| 2001 10 17 | 704 | 0.3+ | 1.4+ | 2001 11 24 | 704 | 0.4− | 0.7− | 2001 12 17 | 704 | 0.6− | 0.2+ |
| 2001 10 17 | 704 | 1.0+ | 0.3− | 2001 11 24 | 704 | 1.0− | 1.0+ | 2001 12 17 | 704 | 0.1+ | 0.2− |
| 2001 11 17 | 704 | (0.8+ | 4.8+) | 2001 11 24 | 704 | 0.3− | 0.6+ | 2004 04 20 | 691 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 1.1+ | 0.5+ | 2001 12 09 | 691 | 0.5− | 0.4+ | 2004 04 20 | 691 | 0.3+ | 0.1+ |
| 2001 11 17 | 704 | 0.7+ | 0.1+ | 2001 12 09 | 691 | 0.5− | 0.1+ | 2004 04 20 | 691 | 0.1+ | 0.3+ |
| 2001 11 17 | 704 | 0.3− | 0.2− | 2001 12 09 | 691 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.1+ |
| 2001 11 19 | 699 | 0.5− | 0.0 | 2001 12 11 | 704 | 0.9+ | 0.7− | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2001 11 19 | 699 | 0.2− | 0.1− | 2001 12 11 | 704 | 0.8+ | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.4− |
| 2001 11 19 | 699 | 0.4+ | 0.4+ | 2001 12 11 | 704 | (1.5+ | 1.1−) | 2006 09 19 | 703 | 0.4+ | 1.3+ |
| 2001 11 19 | 699 | (0.7− | 1.5+) | 2001 12 11 | 704 | 1.1+ | 0.9− | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2001 11 20 | 704 | 0.4+ | 0.0 | 2001 12 14 | 704 | 1.1+ | 1.1− | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 11 20 | 704 | 1.2− | 0.1+ | 2001 12 14 | 704 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2001 12 14 | 704 | 0.8+ | 0.6+ | | | | |

**2001 XM$_{72}$ = 2006 SX$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.23397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17989857 | $\omega$ | 246.06031 | | +0.15426855 | | −0.98719885 |
| $a$ | 3.1077845 | $\Omega$ | 195.23166 | | +0.95327200 | | +0.15949125 |
| $e$ | 0.2754400 | $i$ | 8.86614 | | +0.25975702 | | +0.00098243 |
| $P$ | 5.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 699 | 0.2− | 0.1+ | 2006 09 17 | 703 | 1.0+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2001 12 08 | 699 | 0.1+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.4− | 0.3− |
| 2001 12 08 | 699 | 1.2+ | 0.3− | 2006 09 17 | 703 | (2.5+ | 1.1−) | 2006 09 29 | 704 | 0.4− | 0.5− |
| 2001 12 08 | 699 | 0.2− | 0.8− | 2006 09 17 | 703 | 0.8+ | 0.1− | 2006 09 29 | 704 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.7− | 1.4− |
| 2001 12 11 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.6− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 704 | 0.4− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 0.2− | 0.3+ | 2006 09 18 | 704 | (1.1− | 1.6+) | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2001 12 11 | 704 | 0.4+ | 1.3− | 2006 09 19 | 699 | 0.8+ | 1.2+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 12 15 | 704 | 0.6− | 0.5+ | 2006 09 19 | 699 | (1.8− | 0.4+) | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 0.5− | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.4− | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2001 12 15 | 704 | 0.4− | 0.1− | 2006 09 19 | 699 | 1.0+ | 0.6+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2001 12 23 | 209 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2001 12 23 | 209 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2001 12 23 | 209 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | | | | |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 | | | | |

**2001 XD$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.51232 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18119754 | $\omega$ | 184.93102 | | +0.53113260 | | −0.83693123 |
| $a$ | 3.0929140 | $\Omega$ | 233.05083 | | +0.78291366 | | +0.54437854 |
| $e$ | 0.1998232 | $i$ | 9.51278 | | +0.32395117 | | +0.05655193 |
| $P$ | 5.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2001 12 11 | 704 | 0.5− | 0.5+ | 2006 09 16 | 703 | 0.1+ | 0.1+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2001 12 11 | 704 | 0.8− | 0.3+ | 2006 09 16 | 703 | 0.3+ | 0.8− |
| 2001 10 24 | 704 | 1.0− | 0.0 | 2001 12 11 | 704 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.1+ |
| 2001 10 24 | 704 | 0.5− | 0.4− | 2001 12 11 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.5− |
| 2001 10 24 | 704 | 0.5− | 0.0 | 2001 12 14 | 704 | 0.8− | 0.6− | 2006 09 19 | 699 | 1.0− | 0.8+ |
| 2001 10 24 | 704 | 0.0 | 0.5+ | 2001 12 14 | 704 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.8+ |
| 2001 11 09 | 704 | 0.6− | 1.3+ | 2001 12 14 | 704 | 0.2+ | 0.4− | 2006 09 27 | 703 | 0.6+ | 0.7− |
| 2001 11 09 | 704 | 0.2− | 0.1+ | 2001 12 14 | 704 | 0.6+ | 0.3− | 2006 09 27 | 703 | 0.6− | 1.0− |
| 2001 11 09 | 704 | 0.6+ | 0.4− | 2001 12 14 | 704 | 0.2+ | 0.6− | 2006 09 27 | 703 | 1.1+ | 0.2+ |
| 2001 11 19 | 699 | 0.3− | 0.1− | 2001 12 17 | 704 | 0.7+ | 0.2− | 2006 09 27 | 703 | 0.2− | 0.2− |
| 2001 11 19 | 699 | 0.4− | 0.0 | 2001 12 17 | 704 | 0.1− | 0.4− | 2006 09 27 | 703 | 0.3+ | 0.8+ |
| 2001 11 19 | 699 | 0.2− | 0.1+ | 2001 12 17 | 704 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.3− | 0.7− |
| 2001 11 19 | 699 | 0.3+ | 0.1− | 2001 12 17 | 704 | 0.6+ | 0.0 | 2006 09 27 | 703 | 0.6+ | 0.5+ |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2001 12 17 | 704 | 0.1− | 0.1− | 2006 09 27 | 703 | 1.1− | 0.3+ |
| 2001 11 20 | 704 | 0.3+ | 0.9+ | 2001 12 20 | 704 | 0.6+ | 0.3− | 2006 09 27 | 703 | 0.0 | 0.8− |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2001 12 20 | 704 | 0.2+ | 1.2− | 2006 09 27 | 703 | 1.0+ | 0.4+ |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2001 12 20 | 704 | (0.6− | 2.1−) | 2006 09 27 | 703 | 1.2− | 1.1− |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2001 12 20 | 704 | 0.5− | 0.9− | 2006 09 27 | 703 | 1.4− | 0.2− |
| 2001 11 21 | 704 | 0.5+ | 0.1− | 2002 01 08 | 644 | 0.4− | 0.4+ | 2006 10 09 | 644 | 0.3+ | 0.2+ |
| 2001 11 21 | 704 | 0.7+ | 0.3+ | 2002 01 08 | 644 | 0.3− | 0.7+ | 2006 10 09 | 644 | 0.7+ | 0.3+ |
| 2001 11 21 | 704 | 0.1+ | 0.0 | 2002 01 08 | 644 | 0.2− | 0.9+ | 2006 10 09 | 644 | 0.5+ | 0.5+ |
| 2001 11 21 | 704 | 0.9+ | 0.7+ | 2006 09 16 | 703 | 0.6+ | 0.5− | | | | |
| 2001 11 21 | 704 | 1.0+ | 0.7+ | 2006 09 16 | 703 | 0.5− | 0.8− | | | | |

**2001 XJ$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.64225 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18036356 | $\omega$ | 330.76166 | | +0.44904048 | | −0.88362156 |
| $a$ | 3.1024409 | $\Omega$ | 92.27918 | | +0.84339985 | | +0.37017452 |
| $e$ | 0.1551569 | $i$ | 7.62437 | | +0.29502431 | | +0.28667711 |
| $P$ | 5.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 644 | 0.1+ | 0.0 | 2001 12 17 | 704 | 0.1+ | 0.6− | 2006 09 19 | 703 | 0.4+ | 0.3+ |
| 2001 10 25 | 644 | 0.4− | 0.2+ | 2001 12 17 | 704 | 0.8+ | 0.6+ | 2006 09 26 | 703 | 1.1+ | 0.1+ |
| 2001 10 25 | 644 | 0.0 | 0.3+ | 2001 12 17 | 704 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.2+ | 1.3− | 2001 12 20 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.9− |
| 2001 11 17 | 704 | 0.2− | 0.4+ | 2001 12 20 | 704 | (1.7− | 0.3+) | 2006 09 26 | 703 | 0.7+ | 1.0+ |
| 2001 11 17 | 704 | 0.4+ | 0.7+ | 2001 12 20 | 704 | 0.7− | 0.2− | 2006 10 02 | 703 | 0.7− | 1.0− |
| 2001 11 17 | 704 | (1.7− | 0.4+) | 2001 12 20 | 704 | 0.2− | 0.8− | 2006 10 02 | 703 | 0.1− | 0.0 |
| 2001 11 17 | 704 | 0.2− | 0.3− | 2002 01 08 | 644 | 0.4− | 0.5+ | 2006 10 02 | 703 | 1.0− | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.3− | 0.7+ | 2002 01 08 | 644 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.2+ | | |
| 2001 12 11 | 704 | 0.5+ | 0.1− | 2002 01 08 | 644 | 0.3− | 0.8+ | 2006 10 21 | 703 | 1.0+ | 1.3− | | |
| 2001 12 11 | 704 | 0.3− | 0.0 | 2002 01 13 | 704 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.4− | | |
| 2001 12 11 | 704 | (2.0− | 0.1+) | 2002 01 13 | 704 | 0.3+ | 0.5− | 2006 10 21 | 703 | 0.7− | 0.5− | | |
| 2001 12 14 | 704 | 0.4+ | 0.0 | 2002 01 13 | 704 | 0.5− | 0.1+ | 2006 10 21 | 703 | 1.0− | 0.5+ | | |
| 2001 12 14 | 704 | 0.2− | 0.1− | 2002 01 13 | 704 | 0.3− | 0.5+ | 2006 10 28 | 703 | (1.0− | 1.8+) | | |
| 2001 12 14 | 704 | 0.6+ | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 1.3+ | 0.4+ | | |
| 2001 12 14 | 704 | 0.1+ | 0.3− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.9+ | | |
| 2001 12 14 | 704 | 0.1+ | 1.0− | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 28 | 703 | 0.2− | 1.3+ | | |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.8+ | | | | | | |
| 2001 12 17 | 704 | 0.4− | 0.6− | 2006 09 19 | 703 | 0.1+ | 0.6+ | | | | | | |

**2001 XF$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.56589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19086959 | $\omega$ | 349.39621 | | +0.41988184 | | −0.88979924 |
| $a$ | 2.9875250 | $\Omega$ | 75.58319 | | +0.84561446 | | +0.31201932 |
| $e$ | 0.0625270 | $i$ | 10.63643 | | +0.32959889 | | +0.33301841 |
| $P$ | 5.16 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2001 12 11 | 704 | 0.1− | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.3+ | | |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2001 12 11 | 704 | 0.6+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.0 | 0.5+ | 2001 12 14 | 704 | (0.4− | 2.1−) | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 20 | 704 | (0.3+ | 1.6+) | 2001 12 14 | 704 | 0.2− | 1.5− | 2006 11 09 | 644 | 0.2+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.4− | 0.1+ | 2001 12 14 | 704 | 0.9− | 0.1− | 2006 11 11 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.2+ | 2001 12 14 | 704 | (2.1− | 0.2−) | 2006 11 11 | 644 | 0.1+ | 0.4− | | |
| 2001 11 21 | 704 | 0.7− | 0.3+ | 2001 12 17 | 704 | 0.1+ | 0.4− | 2006 11 11 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.2+ | 0.3+ | 2001 12 17 | 704 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.5− | | |
| 2001 11 21 | 704 | 0.2− | 0.2− | 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.4− | | |
| 2001 11 21 | 704 | 1.2− | 0.9− | 2001 12 17 | 704 | 0.4+ | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.4− | | |
| 2001 12 11 | 691 | 0.5+ | 0.0 | 2002 01 13 | 704 | 0.8− | 0.5− | 2006 11 18 | G96 | 0.3− | 0.7− | | |
| 2001 12 11 | 691 | 0.4+ | 0.1+ | 2002 01 13 | 704 | 0.6− | 0.5+ | 2006 11 28 | 704 | (1.5+ | 3.5+) | | |
| 2001 12 11 | 691 | 0.2+ | 0.3− | 2002 01 13 | 704 | 1.1+ | 1.3+ | 2006 11 28 | 704 | 0.9− | 0.8+ | | |
| 2001 12 11 | 704 | 0.5− | 0.9+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.2+ | | |
| 2001 12 11 | 704 | 1.1− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.4+ | | | | | | |

**2001 XS$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.78365 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18857753 | $\omega$ | 334.28049 | | +0.06388723 | | −0.99457013 |
| $a$ | 3.0116841 | $\Omega$ | 111.96571 | | +0.93021917 | | +0.02953777 |
| $e$ | 0.1063579 | $i$ | 5.08196 | | +0.36140105 | | +0.09978866 |
| $P$ | 5.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.5− | 0.3− | 2001 12 20 | 704 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2001 11 17 | 704 | 0.2− | 0.5+ | 2001 12 20 | 704 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2001 11 17 | 704 | 0.0 | 0.3+ | 2001 12 20 | 704 | 0.5+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.3+ | | |
| 2001 11 17 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1− | 0.4+ | | |
| 2001 12 11 | 704 | 0.9+ | 0.4− | 2006 10 16 | 703 | 0.0 | 1.2− | 2006 11 10 | 644 | 0.3− | 0.2+ | | |
| 2001 12 11 | 704 | 0.1− | 1.1− | 2006 10 16 | 703 | 0.4+ | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.4+ | | |
| 2001 12 11 | 704 | 0.3+ | 1.5− | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.8− | | |
| 2001 12 11 | 704 | 0.2+ | 1.2− | 2006 10 22 | 703 | 0.2− | 0.8− | 2006 11 11 | 703 | 0.4+ | 0.0 | | |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.1+ | 2006 11 11 | 703 | (1.5− | 0.9−) | | |
| 2001 12 14 | 704 | 0.6− | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.8− | 2006 11 11 | 703 | 0.4− | 0.8− | | |
| 2001 12 14 | 704 | 0.3+ | 0.7− | 2006 10 22 | 703 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 | | |
| 2001 12 14 | 704 | 0.0 | 1.2− | 2006 11 01 | 703 | 1.0+ | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.0 | | |
| 2001 12 17 | 704 | 0.2− | 0.8+ | 2006 11 01 | 703 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.5− | 0.8+ | 2006 11 01 | 703 | 1.4− | 1.2+ | 2006 11 17 | G96 | 0.3+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.1− | 0.7+ | 2006 11 01 | 703 | 0.3− | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2001 12 17 | 704 | 0.1− | 1.0+ | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.5+ | 0.0 | | |
| 2001 12 17 | 704 | 0.0 | 1.3+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2001 12 20 | 704 | 0.4− | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.5− | 0.4+ | | |

**2001 XK$_{79}$ = 2006 QC$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.46583 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18345769 | $\omega$ | 154.02395 | | +0.90295647 | | −0.41925043 |
| $a$ | 3.0674590 | $\Omega$ | 231.08936 | | +0.37012869 | | +0.87028288 |
| $e$ | 0.3577493 | $i$ | 6.96314 | | +0.21834462 | | +0.25852812 |
| $P$ | 5.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.3− | 0.1+ | 2001 12 14 | 704 | 0.2− | 0.8+ | 2006 09 15 | 691 | 0.4+ | 0.0 | | |
| 2001 10 24 | 704 | 0.8+ | 0.4+ | 2001 12 14 | 704 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1− | | |
| 2001 10 24 | 704 | 1.5+ | 0.4+ | 2001 12 14 | 704 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.5− | | |
| 2001 11 09 | 704 | 0.0 | 0.8− | 2001 12 17 | 704 | 1.6+ | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.0 | | |
| 2001 11 09 | 704 | 0.8− | 0.5− | 2001 12 17 | 704 | 0.5− | 1.8− | 2006 09 17 | 691 | 0.0 | 0.1− | | |
| 2001 11 09 | 704 | 1.2− | 1.1− | 2001 12 17 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.1− | | |
| 2001 11 09 | 704 | 1.5− | 0.8− | 2001 12 17 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2001 12 17 | 704 | 0.7− | 0.9+ | 2006 09 19 | 691 | 0.2+ | 0.0 | | |
| 2001 11 20 | 704 | 0.1− | 1.3+ | 2001 12 18 | 644 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.3− | 0.1+ | 2001 12 18 | 644 | 0.4+ | 0.6− | 2006 09 22 | 691 | 0.1+ | 0.1− | | |
| 2001 11 21 | 704 | 0.4+ | 0.9+ | 2001 12 18 | 644 | 0.3− | 0.8− | 2006 09 22 | 691 | 0.0 | 0.1− | | |
| 2001 11 21 | 704 | 0.3+ | 0.9+ | 2006 08 17 | 644 | 0.1− | 0.2− | 2006 09 22 | 691 | 0.0 | 0.1+ | | |
| 2001 11 21 | 704 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.3+ | | |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1− | | |
| 2001 12 11 | 704 | 0.4− | 0.9− | 2006 08 29 | 703 | 0.6− | 0.9+ | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2001 12 11 | 704 | (1.0− | 2.2−) | 2006 08 29 | 703 | 0.4− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.0 | | |
| 2001 12 11 | 704 | 0.2− | 1.6− | 2006 08 29 | 703 | 0.7− | 1.2+ | 2006 09 27 | 691 | 0.6− | 1.2− | | |
| 2001 12 14 | 704 | 0.8+ | 0.1+ | 2006 08 29 | 703 | 0.0 | 1.3+ | 2006 09 27 | 691 | 0.4+ | 0.7+ | | |

**2001 XL$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.02031 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18359414 | $\omega$ | 326.57561 | | +0.60573659 | | −0.77404344 |
| $a$ | 3.0659390 | $\Omega$ | 85.45829 | | +0.76450246 | | +0.50203155 |
| $e$ | 0.1255108 | $i$ | 10.64995 | | +0.22049756 | | +0.38577335 |
| $P$ | 5.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.2+ | 0.8− | 2001 12 17 | 704 | 0.7+ | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.0 | | |
| 2001 11 17 | 704 | 0.2− | 0.7− | 2001 12 20 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.4− | 1.3+ | | |
| 2001 11 17 | 704 | 0.0 | 0.3− | 2001 12 20 | 704 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.3+ | 0.1+ | | |
| 2001 11 17 | 704 | 0.1− | 0.3− | 2001 12 20 | 704 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2001 11 21 | 608 | 0.0 | 1.0− | 2001 12 20 | 704 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.6+ | 0.3+ | | |
| 2001 11 21 | 608 | 0.1− | 0.9− | 2002 01 13 | 704 | (1.9− | 0.7−) | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2001 11 21 | 608 | 0.1− | 0.1+ | 2002 01 13 | 704 | 0.5− | 1.2− | 2006 10 12 | 644 | 0.1− | 0.2+ | | |
| 2001 12 11 | 704 | 0.4− | 0.1+ | 2002 01 13 | 704 | 0.7− | 1.0− | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2001 12 11 | 704 | 0.0 | 0.8+ | 2006 09 19 | 703 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.4+ | | |
| 2001 12 11 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | (1.6+ | 0.1+) | 2006 10 16 | 703 | 0.8+ | 0.5− | | |
| 2001 12 14 | 644 | 0.1+ | 1.0+ | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.6− | | |
| 2001 12 14 | 704 | 0.3− | 0.7− | 2006 09 19 | 703 | 0.4− | 0.3+ | 2006 10 16 | 703 | 1.3− | 0.9+ | | |
| 2001 12 14 | 644 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.0 | 0.3− | 2006 10 22 | 703 | (1.5+ | 0.3−) | | |
| 2001 12 14 | 704 | 0.6− | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.8− | 2006 10 22 | 703 | 1.1+ | 0.2+ | | |
| 2001 12 14 | 704 | 0.4− | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.8− | 2006 10 22 | 703 | 0.1+ | 0.4− | | |
| 2001 12 14 | 704 | 0.6− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.7+ | 0.3+ | | |
| 2001 12 14 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.6− | 0.8+ | | |
| 2001 12 14 | 644 | 0.3− | 1.1+ | 2006 09 26 | 703 | 0.3− | 0.5− | 2006 10 28 | 703 | 0.2− | 0.6− | | |
| 2001 12 17 | 704 | 0.9+ | 0.4− | 2006 09 26 | 703 | 0.5+ | 0.4− | 2006 10 28 | 703 | 0.2+ | 0.2− | | |
| 2001 12 17 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 1.2− | 0.1+ | 2006 10 28 | 703 | 0.4− | 0.7+ | | |
| 2001 12 17 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 699 | (1.2− | 1.6+) | | | | | | |
| 2001 12 17 | 704 | 0.5+ | 0.6+ | 2006 09 29 | 699 | (2.0− | 0.5+) | | | | | | |

**2001 XN$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.43507 | | | (2000.0) | | |
| $n$ | 0.22134254 | $\omega$ | 338.46559 | | +0.10449783 | −0.99019880 |
| $a$ | 2.7066128 | $\Omega$ | 105.44176 | | +0.92592074 | +0.06286021 |
| $e$ | 0.0462088 | $i$ | 5.51658 | | +0.36297518 | +0.12471941 |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.4+ | 0.7− | 2001 12 17 | 704 | 0.2− | 0.8+ | 2005 10 03 | 703 | 0.3+ | 0.8+ |
| 2001 11 17 | 704 | 0.4+ | 0.3− | 2001 12 17 | 704 | 0.1− | 1.3+ | 2005 10 03 | 703 | 0.4+ | 0.5− |
| 2001 11 17 | 704 | 1.2+ | 0.5− | 2001 12 17 | 704 | 0.1+ | 1.4+ | 2005 10 03 | 703 | 0.7− | 0.1+ |
| 2001 11 17 | 704 | 0.5+ | 0.0 | 2001 12 18 | 644 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.7− |
| 2001 12 11 | 704 | 1.4− | 0.8+ | 2001 12 18 | 644 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.5− | 0.1− |
| 2001 12 11 | 704 | 0.8− | 0.2+ | 2001 12 18 | 644 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 12 11 | 704 | 1.3− | 0.1+ | 2005 08 31 | 644 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.7− |
| 2001 12 14 | 704 | 0.1− | 0.9− | 2005 08 31 | 644 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.9− |
| 2001 12 14 | 704 | 0.1+ | 0.4− | 2005 08 31 | 644 | 0.6+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 12 14 | 704 | 0.1+ | 0.2− | 2005 08 31 | 644 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.5− | 0.9− | 2005 08 31 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.8− |
| 2001 12 17 | 704 | 0.4+ | 0.6+ | 2005 08 31 | 644 | 0.1+ | 0.0 | | | | |
| 2001 12 17 | 704 | 0.9+ | 0.6+ | 2005 10 03 | 703 | 0.3− | 1.1− | | | | |

**2001 XU$_{80}$ = 2006 SC$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.25335 | | | (2000.0) | | |
| $n$ | 0.18219236 | $\omega$ | 276.52623 | | +0.98265238 | −0.09345054 |
| $a$ | 3.0816450 | $\Omega$ | 88.92040 | | +0.15062680 | +0.90607065 |
| $e$ | 0.2549863 | $i$ | 9.21966 | | −0.10819367 | +0.41267781 |
| $P$ | 5.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.2+ | 0.2+ | 2006 09 18 | 703 | 1.0+ | 0.8− | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2001 11 20 | 704 | 0.7+ | 0.3− | 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 1.4+ | 1.0− | 2006 09 21 | 699 | 0.7+ | 0.9+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2001 12 11 | 704 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 12 11 | 704 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.0 | 1.0+ | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2001 12 11 | 704 | 0.4− | 0.3+ | 2006 09 21 | 699 | 0.5− | 0.8− | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2001 12 11 | 704 | 0.5− | 0.9− | 2006 09 25 | 699 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2001 12 11 | 704 | 0.6− | 0.7+ | 2006 09 25 | 699 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2001 12 14 | 704 | 0.6− | 0.2+ | 2006 09 25 | 699 | 0.7+ | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.3− |
| 2001 12 14 | 704 | 1.2− | 0.2+ | 2006 09 25 | 699 | 0.5− | 0.3+ | 2006 10 28 | 703 | 0.3− | 1.1+ |
| 2001 12 14 | 704 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.5− | 0.5+ |
| 2001 12 14 | 704 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.0 | 1.2− | 2006 10 28 | 703 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.1− | 2006 11 07 | 644 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.0 | 0.4− |
| 2001 12 17 | 704 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.5− | 1.0+ | 2006 11 07 | 644 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.9+ | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2001 12 17 | 704 | 0.3− | 0.5+ | 2006 09 29 | 699 | 1.1+ | 0.6+ | 2006 11 16 | 703 | 1.2− | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 1.4+ | 0.3− |
| 2001 12 20 | 704 | 0.4+ | 0.4− | 2006 10 10 | 644 | 0.4+ | 0.1− | 2006 11 16 | 703 | 0.9− | 0.4− |
| 2001 12 20 | 704 | 0.6+ | 0.3− | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 16 | 703 | 1.0+ | 0.1+ |
| 2001 12 20 | 704 | 0.2+ | 0.6− | 2006 10 10 | 644 | 0.6+ | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2001 12 20 | 704 | (1.1+ | 1.8−) | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.1+ | 0.7+ |
| 2006 09 18 | 703 | (2.1+ | 0.5−) | 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 11 16 | 703 | 1.2+ | 0.7− |
| 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.8− | | | | |

**2001 XL$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.81756 | | | (2000.0) | | |
| $n$ | 0.17755474 | $\omega$ | 325.27153 | | +0.58450416 | −0.74517456 |
| $a$ | 3.1350745 | $\Omega$ | 86.79755 | | +0.79808226 | +0.45662988 |
| $e$ | 0.1477959 | $i$ | 18.75650 | | +0.14635433 | +0.48600826 |
| $P$ | 5.55 | $H$ | 14.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.4+ | 1.2+ | 2001 12 18 | 732 | 1.5− | 0.5− | 2002 01 19 | 704 | 0.1− | 0.9+ |
| 2001 11 17 | 704 | 0.8+ | 1.2+ | 2001 12 19 | 732 | 0.3+ | 0.6− | 2005 07 03 | 644 | 0.4+ | 0.3+ |
| 2001 11 17 | 704 | 0.5+ | 1.0+ | 2001 12 19 | 732 | 0.3+ | 0.2− | 2005 07 03 | 644 | 0.1+ | 0.4+ |
| 2001 11 17 | 704 | (0.9+ | 1.6+) | 2001 12 19 | 732 | 0.5+ | 0.5− | 2005 07 03 | 644 | 0.3− | 0.1− |
| 2001 11 17 | 704 | 1.3+ | 1.3+ | 2001 12 20 | 704 | 0.4− | 0.6− | 2006 09 22 | 703 | 0.8− | 0.7+ |
| 2001 12 11 | 704 | 0.3+ | 0.8− | 2001 12 20 | 704 | 0.9− | 0.2− | 2006 09 22 | 703 | 0.3− | 0.9+ |
| 2001 12 11 | 704 | (1.7+ | 0.2−) | 2001 12 20 | 704 | 0.0 | 0.1+ | 2006 09 22 | 703 | 0.2+ | 0.9− |
| 2001 12 11 | 704 | 0.8− | 0.1− | 2001 12 20 | 704 | 0.4− | 0.5− | 2006 09 22 | 703 | 0.7+ | 0.6+ |
| 2001 12 11 | 704 | 0.1+ | 0.8− | 2001 12 20 | 704 | 0.4− | 0.3− | 2006 09 24 | 699 | 0.7− | 0.3+ |
| 2001 12 11 | 704 | 0.6+ | 0.1− | 2001 12 21 | 704 | 0.6− | 0.8− | 2006 09 24 | 699 | 0.6− | 0.1− |
| 2001 12 14 | 704 | 0.2− | 0.3+ | 2001 12 21 | 704 | 0.3− | 0.1− | 2006 09 24 | 699 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 0.0 | 0.6+ | 2001 12 21 | 704 | (0.9− | 1.6−) | 2006 09 24 | 699 | 0.6− | 0.2+ |
| 2001 12 14 | 704 | 0.8+ | 0.7+ | 2001 12 21 | 704 | 0.6− | 0.8− | 2006 09 27 | 703 | 0.6− | 0.8− |
| 2001 12 14 | 704 | 0.1− | 0.8+ | 2001 12 23 | 704 | 1.2+ | 1.1− | 2006 09 27 | 703 | 1.1− | 0.3− |
| 2001 12 14 | 704 | 0.2+ | 1.3+ | 2001 12 23 | 704 | (0.6+ | 1.6−) | 2006 09 27 | 703 | 0.4− | 0.4− |
| 2001 12 16 | 732 | 0.3+ | 0.5− | 2001 12 23 | 704 | (0.6+ | 1.6−) | 2006 09 27 | 703 | (1.9− | 0.2−) |
| 2001 12 16 | 732 | 0.3− | 0.5− | 2001 12 23 | 704 | (1.2+ | 1.6−) | 2006 10 25 | E12 | 0.2+ | 0.2+ |
| 2001 12 16 | 732 | 0.1− | 0.4− | 2001 12 23 | 704 | (0.7+ | 1.9−) | 2006 10 25 | E12 | 1.0+ | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.5− | 2002 01 13 | 704 | 1.2+ | 0.8+ | 2006 10 25 | E12 | 0.9+ | 0.2+ |
| 2001 12 17 | 732 | 0.0 | 0.3− | 2002 01 13 | 704 | 0.9− | 0.7+ | 2006 10 25 | E12 | 0.4+ | 0.6− |
| 2001 12 17 | 704 | 0.3− | 0.5− | 2002 01 13 | 704 | 0.1− | 0.6+ | 2006 11 01 | 703 | 0.3+ | 0.3+ |
| 2001 12 17 | 732 | 0.6+ | 0.3− | 2002 01 13 | 704 | 0.7+ | 0.5+ | 2006 11 01 | 703 | 1.1− | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.4− | 2002 01 15 | 704 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.7+ | 0.4− |
| 2001 12 17 | 732 | 0.0 | 0.2− | 2002 01 15 | 704 | 0.2+ | 0.2+ | 2006 11 01 | 703 | 0.3+ | 0.8− |
| 2001 12 17 | 704 | 0.4− | 0.2− | 2002 01 15 | 704 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.2+ | 0.9+ |
| 2001 12 17 | 704 | 0.6− | 0.2− | 2002 01 15 | 704 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.6+ | 0.7− |
| 2001 12 18 | 732 | (2.2− | 0.1−) | 2002 01 15 | 704 | 0.4+ | 0.3− | 2006 11 19 | 703 | 1.4+ | 0.5+ |
| 2001 12 18 | 732 | 0.2− | 0.2+ | 2002 01 19 | 704 | 0.5− | 0.7+ | 2006 11 19 | 703 | 0.4− | 0.4+ |
| 2001 12 18 | 732 | 0.6− | 0.2+ | 2002 01 19 | 704 | 0.4+ | 0.1+ | | | | |

**2001 XM$_{84}$ = 2006 VH$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.63005 | | | (2000.0) | | |
| $n$ | 0.18938032 | $\omega$ | 284.16639 | | +0.73597899 | −0.67594884 |
| $a$ | 3.0031670 | $\Omega$ | 118.37694 | | +0.63652849 | +0.67188694 |
| $e$ | 0.0846221 | $i$ | 2.46167 | | +0.23057842 | +0.30275586 |
| $P$ | 5.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.1+ | 1.0+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2001 12 11 | 704 | 0.5+ | 0.6− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.9− | 0.7+ |
| 2001 12 11 | 704 | 1.2+ | 1.1− | 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2001 12 11 | 704 | 0.4− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.6− | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.3− | 0.5+ | 2006 10 22 | G96 | 0.3+ | 0.5− | 2006 11 23 | 691 | 0.3+ | 0.3+ |
| 2001 12 14 | 704 | 0.7− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 12 14 | 704 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.7− | 2006 11 27 | 691 | 0.3+ | 0.4+ |
| 2001 12 17 | 704 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.5− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.0 | 0.8− |
| 2001 12 17 | 704 | 0.1+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.6− | 2006 11 27 | 703 | 0.9− | 1.3− |
| 2001 12 20 | 704 | 0.3− | 1.0+ | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.3− | 0.6− |
| 2001 12 20 | 704 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 1.5− | 0.3− |
| 2001 12 20 | 704 | 0.0 | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2005 08 22 | 644 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.8− | 0.6+ |
| 2005 08 22 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 1.4+ | 0.8+ | 2006 11 29 | 704 | 1.7− | 1.9− |
| 2005 08 22 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | (1.6+ | 2.5+) | 2006 11 29 | 704 | 2.8− | 0.4− |
| 2005 10 28 | G96 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2005 10 28 | G96 | 0.3+ | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.3+ | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2005 10 28 | G96 | 0.5− | 0.2− | 2006 11 19 | 691 | 0.4+ | 0.1− | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2005 10 28 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.5+ | | | | |
| 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.0 | | | | |

**2001 XS$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.88935 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17837148 | $\omega$ | 205.12339 | +0.57766309 | | −0.81525511 | |
| $a$ | 3.1254972 | $\Omega$ | 209.64049 | +0.76216008 | | +0.55658782 | |
| $e$ | 0.1840310 | $i$ | 4.73192 | +0.29226250 | | +0.15990340 | |
| $P$ | 5.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 333 | 0.3− | 0.7− | 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.3− |
| 2001 10 24 | 333 | 0.2+ | 0.1− | 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.3+ | 0.9− |
| 2001 10 24 | 333 | 0.2− | 0.2− | 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.2− |
| 2001 12 11 | 704 | 0.7− | 0.7+ | 2006 09 04 | A13 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.0 | 0.2+ |
| 2001 12 11 | 704 | 0.7− | 0.8+ | 2006 09 04 | A13 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.9+ | 0.6+ |
| 2001 12 11 | 704 | 0.3+ | 0.7+ | 2006 09 04 | A13 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.6− | 1.1+ |
| 2001 12 11 | 704 | 0.5− | 1.1+ | 2006 09 05 | A13 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.2− | 0.5+ |
| 2001 12 11 | 704 | 0.3− | 0.3+ | 2006 09 05 | A13 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2001 12 13 | 012 | 0.1− | 0.0 | 2006 09 06 | A13 | 0.2− | 0.5− | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2001 12 13 | 012 | 0.1− | 0.9+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2001 12 13 | 012 | 0.7+ | 1.1+ | 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 12 13 | 012 | 0.7+ | 0.0 | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 12 13 | 012 | 0.2− | 0.3+ | 2006 09 17 | 703 | (1.3− | 3.2+) | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2001 12 13 | 012 | 0.9+ | 0.4+ | 2006 09 17 | 703 | 1.2− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2001 12 15 | 012 | 0.5+ | 0.7− | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2001 12 15 | 012 | 0.3− | 1.1− | 2006 09 17 | 703 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.0 | 1.0− | 2006 09 19 | 699 | 1.5− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.7+ |
| 2001 12 18 | 704 | 0.5+ | 1.4− | 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 2001 12 18 | 704 | 0.1− | 0.6− | 2006 09 19 | 699 | 0.5+ | 0.5− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.1− | 0.9− | 2006 09 19 | 699 | 1.1+ | 0.6− | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2001 12 18 | 704 | 0.1− | 0.6− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 12 20 | 644 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2001 12 20 | 644 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2001 12 20 | 644 | 0.3+ | 0.8+ | 2006 09 27 | 699 | 0.6− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2001 12 20 | 644 | 0.2+ | 0.2− | 2006 09 27 | 699 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2001 12 20 | 644 | 0.2+ | 0.5+ | 2006 09 27 | 699 | 0.4− | 0.7+ | | | | |
| 2001 12 20 | 644 | 0.4− | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.2− | | | | |

**2001 XV$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.95948 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18755608 | $\omega$ | 126.66227 | +0.81772708 | | −0.57063096 | |
| $a$ | 3.0226089 | $\Omega$ | 268.25107 | +0.50106555 | | +0.77024903 | |
| $e$ | 0.2952558 | $i$ | 4.33292 | +0.28329444 | | +0.28477488 | |
| $P$ | 5.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2+ | 0.9− | 2001 12 18 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 1.3− | 0.2− |
| 2001 10 21 | 704 | 0.1− | 0.9− | 2001 12 18 | 704 | 0.1+ | 0.2+ | 2006 09 23 | 106 | 0.4+ | 0.1− |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2001 12 18 | 704 | 0.5+ | 0.2− | 2006 09 23 | 106 | 0.0 | 1.0− |
| 2001 10 21 | 704 | 0.0 | 0.5− | 2001 12 19 | 704 | 0.1− | 0.4− | 2006 09 23 | 106 | 0.2− | 0.6− |
| 2001 10 21 | 704 | 0.6− | 0.4− | 2001 12 19 | 704 | 0.6+ | 0.8− | 2006 09 23 | 106 | 0.2+ | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.4− | 0.6+ | 2001 12 19 | 704 | 0.3− | 1.2− | 2006 09 25 | 704 | 0.1− | 0.6+ |
| 2001 11 12 | 704 | 0.2− | 1.2+ | 2001 12 19 | 704 | 0.3− | 0.4− | 2006 09 25 | 704 | 0.8− | 1.4+ |
| 2001 11 12 | 704 | 0.0 | 1.4+ | 2002 01 14 | 691 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | 0.2− | 1.4+ | 2002 01 14 | 691 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.8+ | 0.4− |
| 2001 11 24 | 704 | 0.4+ | 0.5− | 2002 01 14 | 691 | 0.0 | 0.4+ | 2006 09 27 | 699 | 0.6− | 0.4+ |
| 2001 11 24 | 704 | (1.0− | 1.6−) | 2006 08 29 | 699 | 0.9+ | 0.9− | 2006 09 27 | 699 | 0.2− | 0.9− |
| 2001 11 24 | 704 | 0.2− | 0.7− | 2006 08 29 | 699 | 1.0+ | 1.1+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2001 11 24 | 704 | 0.6+ | 0.9− | 2006 08 29 | 699 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2001 12 10 | 704 | 0.4− | 0.9+ | 2006 08 29 | 699 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2001 12 10 | 704 | 0.5− | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.4+ | 0.6+ |
| 2001 12 10 | 704 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 12 15 | 704 | 0.9+ | 0.3− | 2006 09 16 | 703 | 1.1− | 0.8− | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2001 12 15 | 704 | 0.9− | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2001 12 15 | 704 | 0.6+ | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.4+ | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.4+ | 0.3− | 2006 09 19 | 699 | 0.2+ | 0.5− | 2006 10 23 | G96 | 0.0 | 0.0 |

**2001 XZ$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.67117 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19306925 | $\omega$ | 74.75450 | +0.98808921 | | +0.12071238 | |
| $a$ | 2.9647903 | $\Omega$ | 278.24227 | −0.14946463 | | +0.90038912 | |
| $e$ | 0.1471519 | $i$ | 5.53381 | +0.03660659 | | +0.41800473 | |
| $P$ | 5.10 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.7+ | 0.1+ | 2001 12 18 | 704 | 0.2− | 0.7− | 2006 11 14 | 703 | 0.0 | 0.2− |
| 2001 11 12 | 704 | 0.8+ | 0.5− | 2001 12 18 | 704 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2001 11 12 | 704 | 1.1+ | 0.3− | 2001 12 18 | 704 | 1.1− | 0.7− | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2001 11 12 | 704 | 1.3+ | 0.2− | 2001 12 18 | 704 | 0.7− | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.9+ |
| 2001 11 12 | 704 | 0.5+ | 0.2+ | 2001 12 18 | 704 | 0.6− | 0.8− | 2006 11 16 | 704 | 0.3− | 0.3+ |
| 2001 11 24 | 704 | 0.2+ | 0.2− | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.7+ | 0.6+ |
| 2001 11 24 | 704 | 0.2− | 0.4+ | 2002 12 07 | 645 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.8+ |
| 2001 11 24 | 704 | 0.1+ | 0.3+ | 2006 10 20 | A50 | 0.2+ | 0.6− | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2001 11 24 | 704 | 0.7+ | 0.5+ | 2006 10 25 | D35 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2001 11 24 | 704 | (0.2+ | 1.5+) | 2006 10 25 | D35 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.9+ | 0.7+ |
| 2001 12 10 | 704 | 0.0 | 0.7− | 2006 10 25 | D35 | 0.2− | 0.3− | 2006 11 19 | 704 | 1.1− | 0.2+ |
| 2001 12 10 | 704 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 22 | 704 | (2.0− | 0.8+) |
| 2001 12 10 | 704 | 0.7+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2001 12 10 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.7− | 2006 11 22 | 704 | 0.2− | 0.8+ |
| 2001 12 10 | 704 | 1.1− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.1− | 2006 11 22 | 704 | 1.3+ | 0.1− |
| 2001 12 15 | 704 | 1.0− | 0.0 | 2006 11 14 | 703 | 1.1− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2001 12 15 | 704 | 0.3+ | 0.6− | 2006 11 14 | 703 | 0.3− | 0.5− | 2006 11 22 | 703 | 0.1+ | 0.7+ |
| 2001 12 15 | 704 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.4− | 2006 11 22 | 703 | 1.1− | 0.7+ |
| 2001 12 15 | 704 | 0.2− | 0.7− | 2006 11 14 | G96 | 0.2− | 0.4− | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2001 12 15 | 704 | 0.6− | 0.7+ | 2006 11 14 | 703 | 0.3− | 0.9− | 2006 11 22 | 703 | 0.4+ | 0.6+ |

**2001 XJ$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.76991 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19162757 | $\omega$ | 12.13854 | +0.33039146 | | −0.93039540 | |
| $a$ | 2.9796418 | $\Omega$ | 58.75862 | +0.84968686 | | +0.21995668 | |
| $e$ | 0.1600727 | $i$ | 10.70140 | +0.41094247 | | +0.29322935 | |
| $P$ | 5.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.2− | 0.7+ | 2001 12 10 | 704 | 1.0+ | 0.7− | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2001 10 23 | 704 | 0.5− | 1.0+ | 2001 12 10 | 704 | 0.5+ | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 1.1+ | 0.9+ | 2001 12 10 | 704 | 0.3+ | 0.4− | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2001 10 23 | 704 | 0.9+ | 1.2+ | 2001 12 15 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2+ | 0.1+ |
| 2001 10 23 | 704 | (0.9+ | 1.8+) | 2001 12 15 | 704 | 0.4− | 1.1+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2001 11 09 | 704 | 0.3− | 0.8− | 2001 12 15 | 704 | 0.7+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2001 11 09 | 704 | 0.9+ | 0.7− | 2001 12 15 | 704 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.3− |
| 2001 11 09 | 704 | 1.2+ | 0.1− | 2001 12 18 | 704 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.5+ | 0.3− |
| 2001 11 16 | 644 | 0.2− | 0.1− | 2001 12 18 | 704 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.4− |
| 2001 11 16 | 644 | 0.1− | 0.4− | 2001 12 18 | 704 | 0.4+ | 0.8+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2001 11 16 | 644 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.2− | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2001 11 17 | 291 | 0.1− | 0.0 | 2001 12 18 | 704 | 0.4− | 1.0+ | 2006 11 10 | 644 | 0.3− | 0.4− |
| 2001 11 17 | 291 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2001 11 17 | 291 | 0.6− | 0.1+ | 2001 12 19 | 704 | 0.2+ | 0.4− | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 2001 11 19 | 699 | 1.0− | 0.1− | 2001 12 19 | 704 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.7− | 0.3+ |
| 2001 11 19 | 699 | 0.0 | 0.3− | 2001 12 19 | 704 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 2001 11 19 | 699 | 0.1− | 0.6− | 2001 12 19 | 704 | 0.1+ | 0.4− | 2006 11 14 | 704 | (1.3+ | 2.3+) |
| 2001 11 19 | 699 | 0.1+ | 0.6+ | 2002 01 14 | 704 | 0.8− | 1.4+ | 2006 11 14 | 704 | 0.4− | 0.6+ |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2002 01 14 | 704 | 0.1+ | 0.9+ | 2006 11 14 | 704 | 0.8− | 0.7− |
| 2001 11 20 | 704 | 0.5− | 0.2− | 2002 01 14 | 704 | (1.0− | 1.7+) | 2006 11 14 | 704 | 0.2− | 0.9+ |
| 2001 11 20 | 704 | 0.3− | 0.1− | 2002 01 14 | 704 | (0.5− | 2.2+) | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2001 11 21 | 704 | 0.2− | 0.6− | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.1+ | 1.1− | 2006 09 30 | 703 | 0.7− | 0.2+ | 2006 11 18 | 704 | 1.0+ | 0.6+ |
| 2001 11 21 | 704 | 0.2+ | 0.5− | 2006 10 16 | 703 | (0.2− | 1.7+) | 2006 11 18 | 704 | 1.0+ | 0.8+ |
| 2001 11 21 | 704 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.8+ | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2001 12 10 | 704 | 0.6+ | 0.6− | 2006 10 16 | 703 | 1.3+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.1− |

**2001 XD$_{94}$ = 2006 VS$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.13920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19657516 | $\omega$ | 285.69021 | | +0.91632490 | +0.35829460 | |
| $a$ | 2.9294334 | $\Omega$ | 53.64753 | | −0.22565044 | +0.83091247 | |
| $e$ | 0.0787578 | $i$ | 12.82771 | | −0.33080288 | +0.42568702 | |
| $P$ | 5.01 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | (0.5− | 2.0+) | 2001 12 19 | 704 | 0.2+ | 1.2− | 2006 11 10 | 691 | 0.3− | 0.2− |
| 2001 11 19 | 704 | 0.3+ | 0.8+ | 2001 12 19 | 704 | 0.4− | 0.5+ | 2006 11 11 | 703 | 1.3− | 0.4− |
| 2001 11 19 | 704 | 0.2− | 1.2+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.0− | 0.3+ |
| 2001 11 21 | 704 | 0.6+ | 0.7− | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 1.1− | 0.8+ |
| 2001 11 21 | 704 | 0.7+ | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.4+ | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2001 12 10 | 704 | 0.3− | 0.8− | 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 14 | 691 | 0.1− | 0.2− |
| 2001 12 10 | 704 | 0.6− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 21 | 704 | 1.1+ | 1.1+ |
| 2001 12 10 | 704 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.2+ | 2006 11 21 | 704 | (2.0+ | 0.9+) |
| 2001 12 15 | 704 | 1.1+ | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2001 12 15 | 704 | 0.9− | 0.9+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2001 12 15 | 704 | 0.6− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2001 12 15 | 704 | 0.1− | 0.6− | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.5+ | 0.2+ |
| 2001 12 19 | 704 | 0.6− | 0.6− | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.6+ | 0.7− | 2006 11 10 | 691 | 0.2+ | 0.2− | | | | |

**2001 XH$_{94}$ = 2006 QT$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.72483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17295775 | $\omega$ | 307.69306 | | +0.99668913 | −0.02137320 | |
| $a$ | 3.1903820 | $\Omega$ | 53.66579 | | +0.05445325 | +0.89196011 | |
| $e$ | 0.1447183 | $i$ | 5.58835 | | −0.06037903 | +0.45160863 | |
| $P$ | 5.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.5+ | 0.9+ | 2001 12 19 | 704 | 1.4− | 0.0 | 2006 09 14 | 644 | 0.3+ | 0.5+ |
| 2001 11 12 | 704 | 0.7+ | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.7+ |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2001 12 19 | 704 | 0.2+ | 0.5− | 2006 09 14 | 703 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.9− | 2006 09 21 | 699 | 1.1− | 0.7− |
| 2001 11 12 | 704 | 0.5+ | 0.0 | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 21 | 699 | 0.6+ | 0.8+ |
| 2001 11 21 | 704 | 0.0 | 0.8− | 2006 08 16 | 644 | 0.3− | 0.0 | 2006 09 21 | 699 | 0.7− | 0.7+ |
| 2001 11 21 | 704 | 1.0− | 0.6− | 2006 08 16 | 644 | 0.1+ | 0.4− | 2006 09 21 | 699 | (0.0 | 2.0+) |
| 2001 11 21 | 704 | 0.8− | 0.2− | 2006 08 30 | 699 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.3+ |
| 2001 12 10 | 704 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.6− | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.7− |
| 2001 12 10 | 704 | 0.3+ | 0.2+ | 2006 08 30 | 699 | (2.6− | 1.0+) | 2006 09 26 | 703 | 0.3+ | 0.5− |
| 2001 12 10 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.7+ | 0.6− | 2006 09 26 | 703 | 0.6− | 0.1− |
| 2001 12 15 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2001 12 15 | 704 | 0.3+ | 0.3− | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 1.1+ | 0.3− |
| 2001 12 15 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.8− |
| 2001 12 15 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.2− |

**2001 XU$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.64840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18302102 | $\omega$ | 142.25844 | | +0.64153694 | −0.74735915 | |
| $a$ | 3.0723361 | $\Omega$ | 267.14231 | | +0.65490512 | +0.65096375 | |
| $e$ | 0.2377417 | $i$ | 9.96735 | | +0.39941162 | +0.13304323 | |
| $P$ | 5.39 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.0 | 0.3− | 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 08 29 | 699 | 0.0 | 0.1+ |
| 1995 08 25 | 691 | 0.2+ | 0.3− | 2001 12 19 | 704 | 0.2− | 0.5+ | 2006 08 29 | 699 | 0.1+ | 0.7+ |
| 1995 08 25 | 691 | 0.3+ | 0.2− | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.5+ | 0.9+ | 2001 12 19 | 704 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 1.0+ | 0.1+ | 2001 12 19 | 704 | 0.5− | 0.4+ | 2006 09 16 | 703 | 0.8− | 0.1− |
| 2001 09 20 | 704 | (1.9+ | 0.3−) | 2001 12 19 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 1.5− | 0.6+ |
| 2001 11 10 | 704 | 0.3+ | 0.2− | 2001 12 19 | 704 | 0.4− | 0.4+ | 2006 09 16 | 703 | 0.6− | 0.1− |
| 2001 11 10 | 704 | 0.1− | 0.8− | 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.6− | 0.2+ |
| 2001 11 10 | 704 | 0.2− | 0.3− | 2001 12 19 | 704 | 0.5− | 0.6+ | 2006 09 21 | 106 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 1.1+ | 0.0 | 2001 12 21 | 704 | 0.5− | 0.1+ | 2006 09 21 | 106 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.7+ | 0.1+ | 2001 12 21 | 704 | 0.2− | 0.0 | 2006 09 21 | 106 | 0.5+ | 0.5− |
| 2001 11 21 | 704 | 0.2+ | 0.9+ | 2001 12 21 | 704 | 0.9− | 0.8+ | 2006 09 21 | 106 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.3− | 0.8+ | 2001 12 21 | 704 | 0.9− | 0.5− | 2006 09 22 | 699 | 0.6+ | 0.3− |
| 2001 11 24 | 704 | 0.6− | 0.4− | 2002 01 05 | 699 | 0.3+ | 0.3− | 2006 09 22 | 699 | 0.5+ | 0.1+ |
| 2001 11 24 | 704 | 0.9− | 0.6− | 2002 01 05 | 699 | 0.2+ | 0.5+ | 2006 09 22 | 699 | 0.9+ | 0.6+ |
| 2001 11 24 | 704 | 0.4− | 1.0− | 2002 01 05 | 699 | 0.4− | 0.2− | 2006 09 22 | 699 | 0.5+ | 0.2− |
| 2001 11 24 | 704 | 0.0 | 0.4− | 2002 01 05 | 699 | 0.3+ | 0.7− | 2006 09 28 | 703 | 0.7+ | 0.1− |
| 2001 11 24 | 704 | 0.2− | 0.6− | 2002 01 08 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | 0.6− | 1.3− | 2002 01 08 | 704 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2001 12 10 | 704 | 0.1− | 1.1− | 2002 01 08 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.1− |
| 2001 12 10 | 704 | 0.3+ | 0.5− | 2002 01 08 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.3+ |
| 2001 12 10 | 704 | 0.1− | 0.7− | 2002 01 08 | 704 | 0.8+ | 0.1+ | 2006 09 28 | 703 | 0.3+ | 0.0 |
| 2001 12 10 | 704 | 0.2− | 0.5− | 2002 01 11 | 699 | 0.6− | 0.3− | 2006 09 28 | 703 | 0.5− | 0.2− |
| 2001 12 15 | 704 | 0.2+ | 0.1− | 2002 01 11 | 699 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.1− | 0.3− |
| 2001 12 15 | 704 | 0.2+ | 0.0 | 2002 01 11 | 699 | 0.5+ | 1.3− | 2006 10 04 | 703 | 0.3− | 0.8+ |
| 2001 12 15 | 704 | 0.4+ | 0.3+ | 2002 01 11 | 699 | 0.2+ | 0.1+ | 2006 10 04 | 703 | 0.3− | 0.5− |
| 2001 12 15 | 704 | 0.3+ | 0.3+ | 2002 01 14 | 704 | 0.3+ | 0.0 | 2006 10 04 | 703 | 0.5− | 0.2− |
| 2001 12 15 | 704 | 0.4+ | 0.4+ | 2002 01 14 | 704 | 0.4+ | 0.2− | 2006 10 04 | 703 | 0.5− | 0.3− |
| 2001 12 18 | 704 | 0.3+ | 0.3+ | 2002 01 14 | 704 | 0.2+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.4+ | 0.1+ | 2002 01 14 | 704 | 0.1− | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2002 01 14 | 704 | 0.3− | 0.5− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 0.6+ | 0.4+ | 2002 01 21 | 704 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.1− | 0.6+ |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2002 01 21 | 704 | 0.9+ | 0.2+ | 2006 11 28 | 704 | 0.1+ | 1.1+ |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2002 01 21 | 704 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 0.2+ | 1.3+ |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2002 01 21 | 704 | 0.6+ | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.7+ |
| 2001 12 19 | 704 | 0.3− | 0.2+ | 2002 01 21 | 704 | 0.1+ | 0.0 | 2006 11 28 | 704 | 1.5− | 0.3+ |
| 2001 12 19 | 704 | 0.5− | 0.3− | 2006 08 29 | 699 | 0.3− | 0.6+ | | | | |
| 2001 12 19 | 704 | 0.3− | 0.0 | 2006 08 29 | 699 | 0.2+ | 0.9+ | | | | |

**2001 XZ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.09430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17956689 | $\omega$ | 9.99436 | | +0.23542276 | −0.86018141 | |
| $a$ | 3.1116104 | $\Omega$ | 67.59595 | | +0.85450273 | −0.03857170 | |
| $e$ | 0.1375644 | $i$ | 29.29678 | | +0.46303479 | +0.50852745 | |
| $P$ | 5.49 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.0− | 0.8+ | 2001 12 08 | 699 | 0.3+ | 0.9+ | 2001 12 19 | 704 | 0.3+ | 0.3+ |
| 2001 11 09 | 704 | 0.6− | 0.9− | 2001 12 08 | 699 | 0.4− | 0.3+ | 2001 12 19 | 704 | 0.5+ | 0.1+ |
| 2001 11 09 | 704 | 0.6− | 0.8+ | 2001 12 10 | 704 | 0.4− | 0.1+ | 2001 12 19 | 704 | 0.8+ | 1.3+ |
| 2001 11 09 | 704 | 0.1+ | 0.0 | 2001 12 10 | 704 | 0.0 | 0.1− | 2001 12 20 | 704 | 1.6+ | 1.1− |
| 2001 11 20 | 704 | 0.4+ | 0.7− | 2001 12 10 | 704 | 0.3− | 0.4+ | 2001 12 20 | 704 | (3.1+ | 1.0−) |
| 2001 11 20 | 704 | 0.7+ | 0.6− | 2001 12 10 | 704 | 0.7− | 0.7+ | 2001 12 20 | 704 | (3.5+ | 0.7+) |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2001 12 15 | 704 | 0.3− | 1.4− | 2001 12 20 | 704 | 0.9− | 0.4+ |
| 2001 11 20 | 704 | 0.7+ | 0.3− | 2001 12 15 | 704 | 0.4− | 1.6− | 2002 01 08 | 704 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | 0.8+ | 1.9− | 2001 12 15 | 704 | 0.3− | 1.2− | 2002 01 08 | 704 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 0.4+ | 2001 12 15 | 704 | 0.4− | 1.6− | 2002 01 08 | 704 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.7− | 0.4+ | 2001 12 18 | 704 | 0.1+ | 0.3+ | 2002 01 08 | 704 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 0.2+ | 0.8+ | 2001 12 18 | 704 | 0.1− | 0.3+ | 2002 01 08 | 704 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.4+ | 0.0 | 2001 12 18 | 704 | 0.2− | 0.5+ | 2006 09 27 | 703 | 1.7+ | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2001 12 18 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 1.7− | 0.0 |
| 2001 12 08 | 699 | 0.1− | 0.0 | 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 703 | (2.3+ | 0.7+) |
| 2001 12 08 | 699 | 0.4− | 0.9+ | 2001 12 19 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 703 | (1.1− | 4.6+) |

**2001 XP$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.13687 | | (2000.0) | | | |
| $n$ | 0.18609388 | $\omega$ | 305.80729 | | +0.97116601 | −0.23321506 |
| $a$ | 3.0384213 | $\Omega$ | 67.72476 | | +0.23233003 | +0.87927967 |
| $e$ | 0.2831456 | $i$ | 3.06448 | | +0.05347270 | +0.41530470 |
| $P$ | 5.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.8+ | 0.4− | 2002 01 08 | 704 | 0.1+ | 0.7− | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2001 11 09 | 704 | 0.1− | 0.1+ | 2002 01 08 | 704 | 0.2+ | 0.6− | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 2001 11 09 | 704 | 0.7+ | 0.6− | 2006 08 28 | 703 | (0.4+ | 2.6−) | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.2− | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.7− | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2001 11 12 | 704 | 0.8+ | 0.3− | 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 10 21 | G96 | 0.6+ | 0.4− |
| 2001 11 12 | 704 | (2.4+ | 0.7−) | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.8− | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.4− | 1.4+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.8+ | 0.0 | 2006 09 22 | 704 | (1.6+ | 0.7−) | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.7− | 0.6+ | 2006 09 22 | 704 | 0.4− | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 1.0− | 0.8− | 2006 09 22 | 704 | (1.8− | 0.4−) | 2006 10 28 | 704 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 0.5− | 0.7− | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.3− | 1.1− | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 704 | 0.3− | 0.1− |
| 2001 12 10 | 704 | 0.4+ | 0.7− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 28 | 704 | 0.0 | 0.9+ |
| 2001 12 10 | 704 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.2+ | 2006 10 28 | 704 | 0.3− | 0.3+ |
| 2001 12 10 | 704 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.4+ | 2006 10 28 | 704 | 0.2+ | 0.0 |
| 2001 12 15 | 704 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.4+ | 0.0 |
| 2001 12 15 | 704 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 11 07 | 644 | 0.3+ | 0.1+ |
| 2001 12 15 | 704 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.9− | 0.5− | 2006 11 07 | 644 | 0.3+ | 0.1+ |
| 2001 12 15 | 704 | 0.6+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.6+ |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.2+ | 1.3+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2001 12 18 | 704 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2001 12 18 | 704 | 1.5− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.6+ | 0.2− |
| 2001 12 19 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.5+ | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2001 12 20 | 704 | 0.0 | 0.8− | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.0 |
| 2001 12 20 | 704 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2001 12 20 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2001 12 20 | 704 | 0.7+ | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.6− | 0.2− |
| 2002 01 08 | 704 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2002 01 08 | 704 | 0.1+ | 0.9− | 2006 10 21 | 703 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2002 01 08 | 704 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.1+ |

**2001 XE$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 118.16263 | | (2000.0) | | | |
| $n$ | 0.23438183 | $\omega$ | 63.18347 | | +0.73955810 | +0.48258748 |
| $a$ | 2.6052741 | $\Omega$ | 264.43083 | | −0.64939406 | +0.69492180 |
| $e$ | 0.3982367 | $i$ | 28.12786 | | +0.17703440 | +0.53309757 |
| $P$ | 4.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1− | 0.1− | 2001 12 20 | 704 | 0.6− | 0.7+ | 2005 12 04 | 703 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.0 | 0.2+ | 2002 01 15 | 704 | 0.2+ | 0.6− | 2005 12 04 | 703 | 0.8+ | 0.2+ |
| 2001 12 14 | 704 | 0.7+ | 0.0 | 2002 01 15 | 704 | 0.7− | 0.7− | 2005 12 04 | 703 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.8+ | 0.4+ | 2002 01 15 | 704 | 0.6− | 1.0− | 2005 12 10 | 703 | 0.8+ | 1.0+ |
| 2001 12 14 | 704 | 1.1+ | 0.6+ | 2002 01 15 | 704 | 0.7+ | 1.2− | 2005 12 10 | 703 | 0.8− | 0.1+ |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2002 01 15 | 704 | 0.9+ | 1.0+ | 2005 12 10 | 703 | 1.1− | 1.2− |
| 2001 12 17 | 704 | 0.6− | 0.7− | 2005 11 11 | 704 | 0.2− | 0.0 | 2005 12 10 | 703 | (2.7− | 1.2−) |
| 2001 12 17 | 704 | 0.7− | 0.4− | 2005 11 11 | 704 | 0.1− | 0.0 | 2005 12 28 | 703 | 0.7+ | 0.6− |
| 2001 12 17 | 704 | 0.7− | 0.3− | 2005 11 11 | 704 | 0.6+ | 0.0 | 2005 12 28 | 703 | 1.2− | 0.7+ |
| 2001 12 17 | 704 | 0.9− | 0.4− | 2005 11 11 | 704 | 0.1+ | 0.3− | 2005 12 28 | 703 | (0.3+ | 1.7−) |
| 2001 12 19 | 704 | 0.6+ | 0.7+ | 2005 11 11 | 704 | 0.8+ | 0.5+ | 2005 12 28 | 703 | (0.1− | 1.6+) |
| 2001 12 19 | 704 | 0.3+ | 0.8− | 2005 11 26 | 704 | (1.8+ | 0.4−) | 2006 01 22 | 703 | (2.1+ | 1.4−) |
| 2001 12 19 | 704 | 0.3+ | 0.3+ | 2005 11 26 | 704 | 0.4+ | 0.5+ | 2006 01 22 | 703 | 0.3− | 1.1− |
| 2001 12 19 | 704 | 0.2+ | 0.3+ | 2005 11 26 | 704 | 0.0 | 0.1− | 2006 01 22 | 703 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.1+ | 0.5+ | 2005 11 26 | 704 | 0.0 | 0.4− | 2006 01 22 | 703 | 1.3− | 1.1+ |
| 2001 12 20 | 704 | 0.0 | 0.3− | 2005 12 04 | 703 | 1.1− | 0.1− | 2006 03 03 | G96 | 0.1− | 0.4+ |
| 2001 12 20 | 704 | 0.4+ | 1.4+ | 2005 12 04 | 703 | 0.2− | 0.0 | 2006 03 03 | G96 | 0.4+ | 0.2+ |
| 2001 12 20 | 704 | 0.2+ | 0.1+ | 2005 12 04 | 703 | 0.4+ | 1.1− | 2006 03 03 | G96 | 0.1− | 0.1+ |
| 2001 12 20 | 704 | 0.8− | 0.7+ | 2005 12 04 | 703 | 0.3+ | 0.1− | 2006 03 03 | G96 | 0.1+ | 0.5− |

**2001 XT$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.78042 | | (2000.0) | | | |
| $n$ | 0.37855604 | $\omega$ | 349.36191 | | −0.16557310 | +0.93305910 |
| $a$ | 1.8925583 | $\Omega$ | 270.54545 | | −0.87974859 | −0.28608294 |
| $e$ | 0.0537223 | $i$ | 18.62467 | | −0.44567698 | +0.21807627 |
| $P$ | 2.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.3+ | 0.6+ | 2001 12 20 | 704 | 0.0 | 1.0− | 2006 11 20 | 703 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.4− | 0.5+ | 2001 12 20 | 704 | 0.1− | 0.4− | 2006 11 20 | 703 | 0.6− | 0.3− |
| 2001 12 14 | 704 | 0.4− | 0.5− | 2001 12 21 | 704 | 0.1+ | 0.3+ | 2006 11 20 | 703 | (2.1− | 0.0 ) |
| 2001 12 14 | 704 | 0.5− | 0.0 | 2001 12 21 | 704 | 0.8− | 1.0+ | 2006 11 20 | J95 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.7− | 0.6+ | 2001 12 21 | 704 | 0.0 | 0.2+ | 2006 11 20 | J95 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.3− | 0.8− | 2001 12 21 | 704 | 0.2+ | 0.7+ | 2006 11 20 | J95 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.3− | 1.1− | 2001 12 23 | 704 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.0 | 0.8− | 2001 12 23 | 704 | 0.5− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.2− | 1.5− | 2001 12 23 | 704 | 0.4− | 0.7− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 1.0+ | 1.4+ | 2002 01 09 | 704 | 0.2+ | 0.8− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.4+ | 0.7+ | 2002 01 09 | 704 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 1.3+ | 0.7+ | 2002 01 09 | 704 | 0.4+ | 0.6+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2001 12 20 | 704 | 0.1+ | 0.7+ | 2002 01 09 | 704 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2001 12 20 | 704 | 0.5+ | 0.8− | 2006 11 20 | 703 | 0.1− | 1.1+ | 2006 11 21 | G96 | 0.4+ | 0.2+ |

**2001 XU$_{103}$ = 2006 RM$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.03022 | | (2000.0) | | | |
| $n$ | 0.36277209 | $\omega$ | 256.40247 | | +0.90246198 | +0.07389756 |
| $a$ | 1.9470636 | $\Omega$ | 98.06768 | | +0.06522664 | +0.95037444 |
| $e$ | 0.1337146 | $i$ | 25.38038 | | −0.42580262 | +0.30220451 |
| $P$ | 2.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 691 | 1.2+ | 0.2− | 2001 12 17 | 704 | 0.6+ | 0.1+ | 2006 08 15 | E12 | 0.3+ | 0.3− |
| 2001 12 09 | 691 | 0.2− | 0.5+ | 2001 12 20 | 704 | 0.4− | 0.7+ | 2006 08 15 | E12 | 0.4+ | 0.0 |
| 2001 12 09 | 691 | 0.4− | 0.1− | 2001 12 20 | 704 | 0.9− | 0.8− | 2006 09 01 | E12 | 0.3+ | 0.9− |
| 2001 12 14 | 704 | 0.5− | 0.1− | 2001 12 20 | 704 | 0.6− | 0.3− | 2006 09 01 | E12 | 0.6− | 0.4+ |
| 2001 12 14 | 704 | 0.4− | 0.2+ | 2001 12 20 | 704 | 0.5− | 0.0 | 2006 09 01 | E12 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.2− | 0.0 | 2006 07 28 | E12 | 0.3− | 0.8+ | 2006 09 01 | E12 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.8− | 2006 07 28 | E12 | 0.5+ | 0.3− | 2006 09 15 | E12 | 0.4− | 0.2+ |
| 2001 12 14 | 704 | 0.6− | 0.1− | 2006 07 28 | E12 | 0.2− | 0.3− | 2006 09 15 | E12 | 0.1− | 0.3− |
| 2001 12 17 | 704 | 0.4+ | 0.4+ | 2006 07 28 | E12 | 0.3+ | 0.4+ | 2006 09 15 | E12 | 0.1− | 1.0− |
| 2001 12 17 | 704 | 0.0 | 0.2+ | 2006 08 15 | E12 | 0.1− | 0.9+ | 2006 09 15 | E12 | (2.4+ | 0.6−) |
| 2001 12 17 | 704 | 0.9+ | 0.0 | 2006 08 15 | E12 | 0.2− | 0.4+ | | | | |

**2001 XV$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.77774 | | (2000.0) | | | |
| $n$ | 0.37645132 | $\omega$ | 257.29411 | | +0.90742269 | −0.01320875 |
| $a$ | 1.8996059 | $\Omega$ | 102.26713 | | +0.14129934 | +0.95089773 |
| $e$ | 0.1174722 | $i$ | 25.45648 | | −0.39575062 | +0.30922327 |
| $P$ | 2.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.5+ | 0.2+ | 2001 12 20 | 291 | 0.8− | 0.3+ | 2002 01 08 | 704 | 0.8+ | 0.3− |
| 2001 11 17 | 704 | 0.1− | 0.8+ | 2001 12 20 | 704 | 0.4+ | 0.5− | 2002 01 17 | 644 | 0.8+ | 0.3− |
| 2001 11 17 | 704 | 1.1+ | 0.0 | 2001 12 20 | 291 | 0.6− | 0.6+ | 2002 01 17 | 644 | 0.7+ | 0.2− |
| 2001 11 17 | 704 | 0.6+ | 0.3+ | 2001 12 20 | 291 | 1.0− | 0.0 | 2002 01 17 | 644 | 0.5+ | 0.5− |
| 2001 12 10 | 291 | 0.2− | 0.1+ | 2001 12 20 | 704 | 0.8+ | 0.4+ | 2002 01 19 | 704 | 1.0− | 0.7− |
| 2001 12 10 | 291 | 0.4− | 0.0 | 2001 12 20 | 704 | 0.9− | 0.7+ | 2002 01 19 | 704 | 1.3− | 1.4− |
| 2001 12 10 | 291 | 0.4− | 0.1+ | 2001 12 20 | 704 | 1.1+ | 1.1− | 2002 01 19 | 704 | 0.8− | 0.4− |
| 2001 12 14 | 704 | 0.7+ | 0.4+ | 2001 12 20 | 704 | 1.5+ | 0.7− | 2002 01 19 | 704 | 1.3− | 0.4− |
| 2001 12 14 | 704 | 0.3+ | 0.4+ | 2001 12 20 | 704 | 0.7+ | 0.7− | 2005 03 11 | 703 | 0.8+ | 0.8+ |
| 2001 12 14 | 704 | 0.6+ | 0.6+ | 2001 12 20 | 704 | 0.4+ | 1.5− | 2005 03 11 | 703 | 1.0− | 0.4+ |
| 2001 12 14 | 704 | 0.7+ | 0.2+ | 2001 12 20 | 704 | (1.8+ | 1.2−) | 2005 03 11 | 703 | 0.6+ | 0.5− |
| 2001 12 14 | 704 | 0.5+ | 0.6+ | 2001 12 24 | 644 | 0.2+ | 0.1− | 2005 03 11 | 703 | 0.0 | 1.0− |
| 2001 12 17 | 704 | 0.6+ | 0.5− | 2001 12 24 | 644 | 0.5+ | 0.1+ | 2006 11 18 | 703 | 0.6+ | 0.6− |
| 2001 12 17 | 704 | (0.5+ | 1.6−) | 2001 12 24 | 644 | 0.7+ | 0.4+ | 2006 11 18 | 703 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 0.5− | 2001 12 26 | 608 | 0.4− | 0.4+ | 2006 11 18 | 703 | 0.0 | 1.1− |
| 2001 12 17 | 644 | 0.7+ | 0.1− | 2001 12 26 | 608 | 0.1+ | 0.6+ | 2006 11 18 | 703 | 0.5− | 0.9− |
| 2001 12 17 | 704 | 0.2+ | 0.8− | 2001 12 26 | 608 | 0.2− | 0.5+ | 2006 11 24 | 703 | 0.3− | 0.1− |
| 2001 12 17 | 644 | 0.6+ | 0.1+ | 2002 01 08 | 704 | 0.4+ | 0.5+ | 2006 11 24 | 703 | 0.9+ | 1.9+ |
| 2001 12 17 | 644 | 0.9+ | 0.0 | 2002 01 08 | 704 | 0.4+ | 0.3+ | 2006 11 24 | 703 | 0.5− | 0.1+ |
| 2001 12 17 | 704 | 0.3+ | 0.5− | 2002 01 08 | 704 | 0.6+ | 0.3+ | 2006 11 24 | 703 | 0.2+ | 0.1− |
| 2001 12 20 | 704 | (2.8+ | 0.1+) | 2002 01 08 | 704 | 0.7+ | 0.0 | | | | |

### 2001 XQ$_{107}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.18257 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19084197 | $\omega$ | 163.45743 | | +0.48989823 | | −0.86169658 |
| $a$ | 2.9878133 | $\Omega$ | 257.03994 | | +0.78369172 | | +0.50173284 |
| $e$ | 0.0863841 | $i$ | 7.79696 | | +0.38187304 | | +0.07578371 |
| $P$ | 5.16 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.4+ | 0.0 | 2001 12 17 | 704 | 0.1+ | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 11 19 | 704 | 0.7+ | 0.9− | 2001 12 19 | 704 | 0.5− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.9+ | 0.0 | 2001 12 19 | 704 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 11 19 | 704 | (1.5+ | 0.8−) | 2001 12 19 | 704 | 0.8− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.8+ | 0.2+ | 2001 12 19 | 704 | 0.5− | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.0 | 0.4+ | 2001 12 19 | 704 | 0.5− | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 1.3+ | 0.4+ | 2002 01 09 | 704 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.4− |
| 2001 11 21 | 704 | 0.2− | 1.2+ | 2002 01 09 | 704 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2001 12 10 | 704 | 1.0− | 0.5− | 2002 01 09 | 704 | 1.0− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | 0.1− | 0.1− | 2002 01 09 | 704 | 0.5− | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | 0.3+ | 0.6+ | 2002 01 15 | 704 | 0.1+ | 0.9− | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2001 12 12 | 644 | 0.0 | 0.6− | 2002 01 15 | 704 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2001 12 12 | 644 | 0.1+ | 0.1− | 2002 01 15 | 704 | 0.1+ | 0.6− | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2001 12 12 | 644 | 0.2+ | 0.1− | 2002 01 15 | 704 | 0.8+ | 0.1− | 2006 11 21 | 691 | 0.3− | 0.0 |
| 2001 12 12 | 644 | 0.1− | 0.2− | 2003 04 06 | 807 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2001 12 12 | 644 | 0.2+ | 0.3− | 2003 04 06 | 807 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.3− | 0.1− |
| 2001 12 12 | 644 | 0.2− | 0.0 | 2003 04 06 | 807 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 0.4− | 2003 04 06 | 807 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.5+ | 0.2+ |
| 2001 12 17 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 25 | 691 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.1− | | | | |

### 2001 XN$_{109}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.50512 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17814763 | $\omega$ | 280.31338 | | +0.96774188 | | −0.22791181 |
| $a$ | 3.1281148 | $\Omega$ | 92.92179 | | +0.25186980 | | +0.88550348 |
| $e$ | 0.1226839 | $i$ | 6.17274 | | −0.00610476 | | +0.40489479 |
| $P$ | 5.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 1.0+ | 0.2− | 2001 12 20 | 691 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.7− | 0.9+ |
| 2001 11 19 | 699 | 0.2+ | 0.8− | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.4+ |
| 2001 11 19 | 699 | 1.4− | 0.6+ | 2006 09 14 | 644 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.6+ |
| 2001 11 19 | 699 | 1.1− | 0.6+ | 2006 09 14 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2001 12 11 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.2− | 1.2− | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 2001 12 11 | 704 | 0.7+ | 1.4− | 2006 09 14 | 703 | 1.0+ | 0.6− | 2006 09 27 | G96 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.6+ | 0.6+ | 2006 09 14 | 703 | 0.1+ | 1.0− | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2001 12 11 | 704 | 1.0+ | 0.5+ | 2006 09 14 | 703 | 0.6+ | 0.7+ | 2006 09 27 | 703 | 0.0 | 1.2− |
| 2001 12 17 | 704 | 0.5− | 0.1+ | 2006 09 15 | 703 | 0.7+ | 1.1+ | 2006 09 27 | 703 | 0.2+ | 0.4− |
| 2001 12 17 | 704 | 0.5− | 0.9− | 2006 09 15 | 703 | 0.3+ | 0.3+ | 2006 09 27 | 703 | (2.1− | 0.1+) |
| 2001 12 17 | 704 | 0.9− | 0.2− | 2006 09 15 | 703 | 0.5+ | 0.4− | 2006 09 27 | 703 | 0.4+ | 0.5− |
| 2001 12 20 | 691 | 0.0 | 0.1+ | 2006 09 15 | 703 | 1.1− | 0.5+ | | | | |
| 2001 12 20 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.4− | | | | |

### 2001 XN$_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.65600 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18446196 | $\omega$ | 181.49505 | | +0.42964406 | | −0.89397672 |
| $a$ | 3.0563154 | $\Omega$ | 243.07510 | | +0.82995978 | | +0.44650049 |
| $e$ | 0.1160377 | $i$ | 8.21018 | | +0.35577063 | | +0.03798611 |
| $P$ | 5.34 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 11 12 | 704 | 0.6+ | 0.5+ | 2001 12 17 | 704 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.5+ | 0.7+ | 2001 12 17 | 704 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.2− | 1.2+ | 2001 12 20 | 704 | (1.8− | 0.2−) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.8− | 2001 12 20 | 704 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.6− | 2001 12 20 | 704 | 0.1− | 1.2− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2001 12 20 | 704 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 1.4− | 2006 10 19 | 644 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2001 12 11 | 704 | 1.2+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2001 12 11 | 704 | 0.5+ | 0.7− | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2001 12 11 | 704 | 1.0+ | 1.0+ | 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2001 12 17 | 704 | 0.6− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.3− | 1.0− |

### 2001 XW$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.02976 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36283152 | $\omega$ | 208.66863 | | −0.20694169 | | −0.92708169 |
| $a$ | 1.9468510 | $\Omega$ | 254.74065 | | +0.94804775 | | −0.11112215 |
| $e$ | 0.0835446 | $i$ | 18.90402 | | +0.24162079 | | −0.35801035 |
| $P$ | 2.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.9+ | 0.9− | 2001 12 11 | 704 | 0.2+ | 0.0 | 2001 12 18 | 704 | 0.0 | 0.4− |
| 2001 11 09 | 704 | 0.3+ | 0.1+ | 2001 12 11 | 704 | 0.6− | 0.1− | 2002 01 18 | 209 | 0.6+ | 0.4+ |
| 2001 11 09 | 704 | 0.5− | 0.5− | 2001 12 11 | 704 | 0.7− | 0.2+ | 2002 01 18 | 209 | 0.8+ | 0.3+ |
| 2001 11 09 | 704 | 0.2− | 0.2− | 2001 12 11 | 704 | 0.3+ | 0.6+ | 2002 01 18 | 209 | 0.6+ | 0.0 |
| 2001 11 20 | 704 | 0.2− | 0.4+ | 2001 12 11 | 704 | 0.4+ | 0.5+ | 2005 03 14 | E12 | 0.7− | 0.4− |
| 2001 11 20 | 704 | 0.3+ | 0.0 | 2001 12 17 | 704 | 0.6− | 0.3− | 2005 03 14 | E12 | 0.0 | 1.0+ |
| 2001 11 20 | 704 | 0.4+ | 0.8+ | 2001 12 17 | 704 | 2.8− | 0.1+ | 2005 03 14 | E12 | 0.3+ | 0.5− |
| 2001 11 20 | 704 | 0.5+ | 0.5+ | 2001 12 17 | 704 | 0.5− | 0.0 | 2005 03 14 | E12 | 0.3+ | 0.4− |
| 2001 11 21 | 704 | 0.3+ | 0.2− | 2001 12 17 | 704 | 0.7− | 0.1− | 2006 09 28 | 703 | 0.6+ | 0.2+ |
| 2001 11 21 | 704 | 0.5+ | 0.3− | 2001 12 17 | 704 | 0.6− | 0.6− | 2006 09 28 | 703 | 0.0 | 0.5− |
| 2001 11 21 | 704 | 0.8+ | 0.1+ | 2001 12 18 | 704 | 0.2+ | 0.3− | 2006 09 28 | 703 | 1.5− | 0.3+ |
| 2001 11 21 | 704 | 0.1− | 0.4− | 2001 12 18 | 704 | 0.7+ | 0.4+ | 2006 09 28 | 703 | 0.8+ | 0.1− |
| 2001 11 21 | 704 | 0.1+ | 0.4− | 2001 12 18 | 704 | 0.4+ | 0.4+ | | | | |

### 2001 XU$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.48281 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24194029 | $\omega$ | 248.25799 | | −0.97169990 | | +0.08786869 |
| $a$ | 2.5507266 | $\Omega$ | 296.20362 | | +0.03033264 | | −0.87414221 |
| $e$ | 0.0458317 | $i$ | 14.14537 | | −0.23426319 | | −0.47765521 |
| $P$ | 4.07 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 704 | 0.3+ | 0.9+ | 2004 07 11 | 644 | 0.5+ | 0.4− | 2004 09 10 | 704 | (2.5+ | 0.8+) |
| 2001 12 13 | 704 | 1.0− | 0.2+ | 2004 07 11 | 644 | 0.1+ | 0.4+ | 2004 09 10 | 704 | 1.3+ | 0.7+ |
| 2001 12 13 | 704 | 0.7− | 0.9+ | 2004 08 05 | 644 | 0.3+ | 0.0 | 2004 09 16 | 699 | 0.9+ | 0.5+ |
| 2001 12 17 | 704 | 0.2− | 0.0 | 2004 08 05 | 644 | 0.1− | 0.0 | 2004 09 16 | 699 | 1.4− | 1.9+ |
| 2001 12 17 | 704 | 0.3− | 0.5+ | 2004 08 05 | 644 | 0.0 | 0.1− | 2004 09 16 | 699 | 0.5+ | 1.5− |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2004 08 21 | 703 | 1.0− | 0.4− | 2004 09 16 | 699 | 0.2+ | 0.2+ |
| 2001 12 22 | 704 | 1.0+ | 0.8− | 2004 08 21 | 703 | 0.5− | 0.2− | 2005 12 24 | 704 | 0.6+ | 0.4− |
| 2001 12 22 | 704 | 0.0 | 0.7− | 2004 08 21 | 703 | 0.2+ | 0.5− | 2005 12 24 | 704 | 1.0− | 0.8+ |
| 2001 12 22 | 704 | 0.4+ | 0.9− | 2004 08 21 | 703 | 0.3− | 1.1− | 2005 12 24 | 704 | 0.5+ | 0.5+ |
| 2001 12 22 | 704 | 0.2+ | 0.9− | 2004 09 10 | 704 | 0.1− | 0.9− | 2005 12 24 | 704 | 0.1− | 0.4− |
| 2004 07 11 | 644 | 0.1+ | 0.2+ | 2004 09 10 | 704 | 0.4− | 1.0+ | | | | |

**2001 XL$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.66487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18149293 | $\omega$ | 354.59262 | | +0.19897695 | −0.95477761 | |
| $a$ | 3.0895572 | $\Omega$ | 83.79325 | | +0.90726117 | +0.09423398 | |
| $e$ | 0.2116202 | $i$ | 12.83991 | | +0.37052037 | +0.28199233 | |
| $P$ | 5.43 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 704 | 1.3+ | 0.6− | 2001 12 20 | 704 | 0.7− | 0.3+ | 2006 11 15 | 703 | 0.9− | 0.2+ |
| 2001 12 13 | 704 | 0.9− | 0.8− | 2001 12 20 | 704 | 1.1+ | 0.9+ | 2006 11 15 | 703 | 0.5− | 0.3+ |
| 2001 12 13 | 704 | 0.7+ | 0.4− | 2002 01 08 | 704 | (0.1− | 1.6−) | 2006 11 17 | 704 | (0.2+ | 2.3+) |
| 2001 12 13 | 704 | 0.3+ | 0.6− | 2002 01 08 | 704 | 0.2− | 0.4+ | 2006 11 17 | 704 | (1.4− | 2.8+) |
| 2001 12 17 | 704 | 0.1+ | 0.1+ | 2002 01 08 | 704 | 0.1− | 0.1− | 2006 11 17 | 704 | (0.5− | 2.3+) |
| 2001 12 17 | 704 | 0.4+ | 0.7− | 2002 02 03 | 699 | 0.6+ | 0.2+ | 2006 11 17 | 704 | (1.6− | 1.8+) |
| 2001 12 17 | 704 | 1.0+ | 1.3− | 2002 02 03 | 699 | 0.3+ | 0.5− | 2006 11 17 | 704 | (0.4− | 3.3+) |
| 2001 12 17 | 704 | 0.4− | 0.5− | 2002 02 03 | 699 | 0.8− | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2001 12 19 | 704 | 0.6− | 0.2+ | 2002 02 03 | 644 | 0.4+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2001 12 19 | 704 | 0.5− | 0.7+ | 2002 02 03 | 699 | 0.6− | 0.4+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.6+ | 2002 02 03 | 644 | 0.4+ | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 644 | 0.5− | 0.1+ | 2002 02 03 | 644 | 0.6+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.5+ | 2002 02 10 | 704 | (1.7+ | 0.3+) | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2001 12 19 | 644 | 0.3− | 0.2− | 2002 02 10 | 704 | 0.6− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2001 12 19 | 644 | 0.1− | 0.0 | 2002 02 10 | 704 | 0.5+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2001 12 20 | 704 | 0.7− | 0.1− | 2002 02 10 | 704 | 0.6− | 0.3+ | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2001 12 20 | 704 | 0.0 | 0.8+ | 2006 11 15 | 703 | 0.1− | 0.5+ | 2006 11 28 | 704 | 1.2+ | 0.1+ |
| 2001 12 20 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.1− |

**2001 XS$_{120}$ = 2001 XO$_{255}$ = 2006 TL$_{14}$**

Id. M. E. Sansaturio (d, *MPO* 27870), Minor Planet Center

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.43898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18854171 | $\omega$ | 248.73031 | | +0.79642373 | +0.57587080 | |
| $a$ | 3.0120656 | $\Omega$ | 75.65647 | | −0.45974376 | +0.77488921 | |
| $e$ | 0.1025869 | $i$ | 10.98507 | | −0.39286756 | +0.26061377 | |
| $P$ | 5.23 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.1− | 0.4− | 2001 12 17 | 704 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.3− | 1.0− |
| 2001 12 11 | 704 | 0.3− | 0.8− | 2001 12 20 | 691 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2001 12 11 | 704 | 0.2− | 0.4− | 2001 12 20 | 691 | 0.3− | 0.0 | 2006 10 17 | 703 | 1.3+ | 0.1+ |
| 2001 12 14 | 704 | 1.2+ | 0.7+ | 2001 12 20 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.4+ | 1.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.3− | 0.2− |
| 2001 12 14 | 704 | 1.0+ | 0.8+ | 2006 10 10 | 644 | 0.6− | 0.2− | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.4− | 0.5− |
| 2001 12 17 | 704 | 1.0+ | 0.9+ | 2006 10 16 | 703 | 0.2+ | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.8+ | 0.5− | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 16 | 703 | 1.3+ | 0.4− |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 16 | 703 | 0.2− | 1.1+ |
| 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.5− | 0.2+ |

**2001 XV$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.74047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17724267 | $\omega$ | 194.53599 | | +0.26355255 | −0.95693529 | |
| $a$ | 3.1387533 | $\Omega$ | 240.31076 | | +0.89844439 | +0.28944088 | |
| $e$ | 0.0673871 | $i$ | 8.05418 | | +0.35119472 | −0.02233463 | |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.9+ | 0.3+ | 2001 12 11 | 291 | 0.9− | 0.8+ | 2006 09 19 | 699 | 0.4+ | 0.4+ |
| 2001 11 11 | 704 | 0.1− | 0.9+ | 2001 12 14 | 704 | 0.9+ | 1.1− | 2006 09 19 | 699 | 0.9+ | 0.5+ |
| 2001 11 11 | 704 | (0.1− | 2.3+) | 2001 12 14 | 704 | 0.3+ | 0.6− | 2006 09 27 | 703 | 1.4− | 0.6− |
| 2001 11 20 | 704 | 0.3− | 0.6− | 2001 12 14 | 704 | 1.1+ | 0.9− | 2006 09 27 | 703 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.2+ | 0.6− | 2001 12 14 | 704 | 0.4+ | 0.8− | 2006 09 27 | 703 | 0.4− | 0.8+ |
| 2001 11 20 | 704 | 0.9+ | 0.0 | 2001 12 17 | 704 | 0.4+ | 0.6− | 2006 09 27 | 703 | 0.6− | 0.5+ |
| 2001 11 20 | 704 | 0.9+ | 0.1− | 2001 12 17 | 704 | 0.5+ | 1.1− | 2006 10 17 | 703 | 0.2+ | 0.5+ |
| 2001 11 20 | 704 | 0.4+ | 0.2− | 2001 12 17 | 691 | 1.2− | 1.1+ | 2006 10 17 | 703 | (1.2− | 2.2−) |
| 2001 11 21 | 704 | 0.9+ | 0.9− | 2001 12 17 | 704 | (1.7+ | 0.9−) | 2006 10 17 | 703 | 1.0− | 0.2− |
| 2001 11 21 | 704 | 0.2+ | 1.2− | 2001 12 17 | 704 | 0.4+ | 1.5− | 2006 10 17 | 703 | 0.2+ | 0.7− |
| 2001 11 21 | 704 | 0.8+ | 0.4− | 2001 12 17 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 1.0+ | 1.0− | 2001 12 17 | 704 | 0.2+ | 1.3− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 1.0+ | 0.1− | 2001 12 17 | 691 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 12 11 | 291 | 0.7− | 0.7+ | 2006 09 19 | 699 | 0.7+ | 0.3− | | | | |
| 2001 12 11 | 291 | 0.7− | 0.7+ | 2006 09 19 | 699 | 1.5+ | 1.0− | | | | |

**2001 XO$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.01809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17418856 | $\omega$ | 140.73228 | | +0.96914641 | −0.21775809 | |
| $a$ | 3.1753355 | $\Omega$ | 232.23087 | | +0.17284757 | +0.93442241 | |
| $e$ | 0.0884002 | $i$ | 8.40058 | | +0.17572410 | +0.28184425 | |
| $P$ | 5.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.1+ | 0.7− | 2001 11 21 | 704 | 0.6− | 0.6− | 2006 10 02 | H55 | 0.8− | 0.6+ |
| 2001 10 24 | 704 | 0.3+ | 0.1− | 2001 11 21 | 704 | 0.6− | 0.4− | 2006 10 02 | H55 | 1.0+ | 0.6− |
| 2001 10 24 | 704 | 1.4− | 0.0 | 2001 12 14 | 704 | 0.4+ | 0.3− | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2001 11 18 | 691 | 0.1+ | 0.0 | 2001 12 14 | 704 | 0.6− | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2001 11 18 | 691 | 0.2+ | 0.1− | 2001 12 14 | 704 | 1.3− | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 11 18 | 691 | 0.1+ | 0.1+ | 2001 12 17 | 704 | 1.0+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.3+ | 0.5+ | 2001 12 17 | 704 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.0 | 2001 12 17 | 704 | 0.5+ | 0.3− | 2006 10 19 | 691 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.9+ | 2001 12 17 | 704 | 0.8− | 0.5− | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.8+ | 0.3+ | 2006 09 27 | 703 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.5− | 0.1+ | 2006 09 27 | 703 | 0.6− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 11 21 | 704 | (2.3− | 0.5−) | 2006 09 27 | 703 | 0.0 | 0.7+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2006 10 02 | H55 | 1.3− | 0.8− | 2006 10 23 | 691 | 0.0 | 0.1− |

**2001 XP$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.67910 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18806498 | $\omega$ | 106.92209 | | +0.94650053 | +0.29899996 | |
| $a$ | 3.0171536 | $\Omega$ | 235.83676 | | −0.32243274 | +0.89161897 | |
| $e$ | 0.1000283 | $i$ | 8.43611 | | +0.01318602 | +0.34002152 | |
| $P$ | 5.24 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.2+ | 0.2+ | 2001 12 17 | 704 | 0.8− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.8− | 0.5+ | 2001 12 17 | 704 | 0.1− | 0.1− | 2006 10 25 | A44 | 0.2+ | 0.3− |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2001 12 17 | 704 | 0.1+ | 0.0 | 2006 10 25 | A44 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2001 12 19 | 644 | 0.1− | 0.1− | 2006 10 25 | A44 | 0.0 | 0.6− |
| 2001 10 21 | 704 | 0.0 | 0.2+ | 2001 12 19 | 644 | 0.7− | 0.2+ | 2006 10 27 | J95 | 0.1+ | 0.2+ |
| 2001 11 11 | 691 | 1.1+ | 0.1− | 2001 12 19 | 644 | 0.0 | 0.1+ | 2006 10 27 | J95 | 0.1− | 0.2− |
| 2001 11 11 | 691 | 0.0 | 0.0 | 2006 10 15 | 473 | 0.7+ | 0.5+ | 2006 10 27 | J95 | 0.9+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 691 | 0.1+ | 0.2− | 2006 10 15 | 473 | 0.4− | 0.5− | 2006 10 27 | 291 | 0.2− | 0.3+ |
| 2001 11 19 | 699 | 0.8+ | 0.5− | 2006 10 16 | 473 | 0.3− | 1.0+ | 2006 10 27 | 291 | 0.0 | 0.1+ |
| 2001 11 19 | 699 | 0.5− | 0.4− | 2006 10 16 | 473 | 0.4− | 0.8+ | 2006 10 27 | 291 | 0.0 | 0.0 |
| 2001 11 19 | 699 | 1.0− | 0.1− | 2006 10 16 | 473 | 0.5− | 0.3+ | 2006 10 27 | 291 | 0.1− | 0.1− |
| 2001 11 19 | 699 | 0.4− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 27 | 291 | 0.9− | 0.5− |
| 2001 11 19 | 704 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 10 27 | 291 | 0.5− | 0.4− |
| 2001 11 19 | 704 | 0.2+ | 0.5− | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2001 11 19 | 704 | 0.1− | 0.4− | 2006 10 17 | 703 | (2.1− | 1.1+) | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 2001 11 19 | 704 | 0.9− | 0.9− | 2006 10 17 | 703 | (1.9+ | 0.8−) | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 2001 11 21 | 704 | 0.7+ | 0.2+ | 2006 10 17 | 703 | 1.3− | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.8+ | 0.9− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.4− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2001 12 14 | 704 | 0.7− | 0.7− | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | (0.5+ | 1.9+) |
| 2001 12 17 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5+ | 1.0+ |
| 2001 12 17 | 704 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.6+ | | | | |

**2001 XN$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.66338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18705172 | $\omega$ | 335.45463 | | +0.62310695 | | −0.76214609 |
| $a$ | 3.0280397 | $\Omega$ | 75.51110 | | +0.74424230 | | +0.50868694 |
| $e$ | 0.1059601 | $i$ | 10.45558 | | +0.24050184 | | +0.40046341 |
| $P$ | 5.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2001 12 17 | 704 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.8− | 0.4+ |
| 2001 11 20 | 704 | 0.1− | 0.4− | 2001 12 17 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.7− |
| 2001 11 20 | 704 | 0.4+ | 0.3+ | 2001 12 17 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.6− |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2001 12 19 | 704 | 1.0− | 0.3− | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2001 11 20 | 704 | 0.1+ | 0.2+ | 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2001 12 07 | 644 | 0.0 | 0.0 | 2001 12 19 | 704 | 1.0− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.4+ |
| 2001 12 07 | 644 | 0.2+ | 0.2+ | 2001 12 19 | 704 | 0.5− | 0.7+ | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 2001 12 07 | 644 | 0.5+ | 0.2+ | 2001 12 23 | 704 | 0.1− | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 12 10 | 704 | 0.3− | 1.0+ | 2001 12 23 | 704 | 1.2− | 1.1− | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2001 12 10 | 704 | 0.1+ | 0.5+ | 2001 12 23 | 704 | 0.7− | 0.7− | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2001 12 10 | 704 | (1.5+ | 0.9+) | 2001 12 23 | 704 | (1.6− | 1.6−) | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 12 10 | 704 | 0.3+ | 0.1+ | 2002 01 14 | 291 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2001 12 10 | 704 | (2.2− | 0.8+) | 2002 01 14 | 291 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 0.9+ | 0.3+ | 2002 01 14 | 291 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 2001 12 14 | 704 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 19 | 703 | (1.8− | 0.6−) |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.5+ | 0.6− |
| 2001 12 14 | 704 | 0.5+ | 1.5− | 2006 10 11 | 644 | 0.0 | 0.6+ | 2006 11 19 | 703 | 0.0 | 1.0− |
| 2001 12 14 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.3+ | 0.3+ |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.2− | | | | |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.1+ | | | | |

**2001 XR$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.25161 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18601587 | $\omega$ | 290.91994 | | +0.97990518 | | −0.05037326 |
| $a$ | 3.0392708 | $\Omega$ | 72.37202 | | +0.13330560 | | +0.88515012 |
| $e$ | 0.1248545 | $i$ | 11.68363 | | −0.14837607 | | +0.46257086 |
| $P$ | 5.30 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.8− | 1.0+ | 2001 12 14 | 704 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.5+ | 0.6− |
| 2001 11 20 | 704 | 0.5+ | 0.3− | 2001 12 14 | 704 | 0.5− | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.2− |
| 2001 11 20 | 704 | 0.8− | 1.1+ | 2001 12 14 | 704 | 0.9− | 0.2− | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2001 11 20 | 704 | 0.9+ | 0.3− | 2001 12 17 | 704 | 0.0 | 1.0− | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.3− | 1.0+ | 2001 12 17 | 704 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 1.0+ | 0.4− | 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.6− | 0.3+ | 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2001 11 20 | 704 | 1.2+ | 0.2− | 2002 01 08 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.6+ |
| 2001 11 20 | 704 | 0.9− | 0.5+ | 2002 01 08 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.8+ |
| 2001 11 20 | 704 | 1.2+ | 0.2− | 2002 01 08 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.7− |
| 2001 11 21 | 704 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.7− | 0.5− | 2006 11 19 | 703 | (0.4+ | 1.9−) |
| 2001 11 21 | 704 | 0.5+ | 0.9− | 2006 10 16 | 703 | 0.6− | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | (0.5− | 2.1+) | 2006 11 19 | 703 | 0.1+ | 0.6− |

**2001 XE$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.53574 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18891797 | $\omega$ | 257.65329 | | +0.99751027 | | −0.05838170 |
| $a$ | 3.0080649 | $\Omega$ | 105.68366 | | +0.06916583 | | +0.91937641 |
| $e$ | 0.1698184 | $i$ | 2.35482 | | −0.01376037 | | +0.38902261 |
| $P$ | 5.22 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 049 | 0.6+ | 0.8− | 2001 12 17 | 704 | 0.5+ | 0.7+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2001 11 16 | 049 | 0.1− | 0.8− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 11 16 | 049 | 0.6− | 1.4− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | 0.7+ | 0.9− | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 0.4+ | 0.3− | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 704 | (1.8+ | 0.3−) | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | (0.2− | 2.9−) | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 1.3+ | 0.7− |
| 2001 12 09 | 644 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.5− |
| 2001 12 09 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6− | 0.9+ | 2006 11 11 | 703 | 0.6− | 0.7− |
| 2001 12 09 | 644 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2001 12 14 | 704 | 1.0− | 0.3+ | 2006 10 16 | 703 | 1.0− | 1.2+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2001 12 14 | 704 | 0.6− | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.7− |
| 2001 12 14 | 704 | 0.9− | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2001 12 14 | 704 | 1.0− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2− | 1.3− |
| 2001 12 17 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | (0.3+ | 2.1−) |
| 2001 12 17 | 704 | 1.0+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.7+ | 1.2+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.6− | 0.7− |
| 2001 12 17 | 704 | 0.4+ | 0.9+ | 2006 10 27 | 691 | 0.1− | 0.4+ | | | | |

**2001 XW$_{128}$ = 2006 SD$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.49385 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17690306 | $\omega$ | 331.51282 | | −0.04772088 | | −0.99805168 |
| $a$ | 3.1427692 | $\Omega$ | 121.19657 | | +0.92512101 | | −0.05933625 |
| $e$ | 0.1883733 | $i$ | 2.69325 | | +0.37666143 | | +0.01928869 |
| $P$ | 5.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.2+ | 0.1+ | 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 1.5+ | 0.7+ | 2001 12 14 | 704 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.8− | 0.1− | 2001 12 14 | 704 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.8− | 2001 12 14 | 704 | 0.8− | 0.7− | 2006 09 23 | 691 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.9− | 0.7+ | 2001 12 14 | 704 | 0.9+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.2− | 0.6− | 2001 12 17 | 704 | 0.6− | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | (2.3− | 0.7+) | 2001 12 17 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2001 12 09 | 644 | 0.3− | 0.3− | 2001 12 17 | 704 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2001 12 09 | 644 | 0.0 | 0.1− | 2001 12 17 | 704 | 0.7+ | 1.2+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2001 12 09 | 644 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.6+ | 0.1− | | | | |

**2001 XU$_{130}$ = 2006 TN$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.55531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18823933 | $\omega$ | 203.97245 | | +0.57302212 | | −0.81902640 |
| $a$ | 3.0152903 | $\Omega$ | 211.08947 | | +0.76070014 | | +0.54471729 |
| $e$ | 0.2322461 | $i$ | 3.22023 | | +0.30492778 | | +0.18021883 |
| $P$ | 5.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2− | 0.4− | 2001 12 17 | 704 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.7− |
| 2001 11 20 | 704 | 0.3− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2001 11 20 | 704 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2001 11 21 | 704 | 1.3+ | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.4+ | 2006 11 17 | 691 | 0.3− | 0.4− |
| 2001 11 21 | 704 | 1.4+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 1.1+ | 2006 11 17 | 691 | 0.0 | 0.5− |
| 2001 11 21 | 704 | (2.9+ | 0.2+) | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.6− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | (1.7− | 0.2−) |
| 2001 12 14 | 704 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2001 12 14 | 704 | 0.0 | 0.8+ | 2006 10 21 | 703 | 0.4+ | 0.7− | 2006 11 17 | 703 | 0.6+ | 0.7− |
| 2001 12 14 | 704 | 0.2− | 1.5+ | 2006 10 21 | 703 | (2.1− | 2.0−) | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 1.2+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.1− | 0.9− |
| 2001 12 17 | 704 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | | | |
| 2001 12 17 | 704 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.4− | | | | |

### 2001 XT$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.89838 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18889834 | $\omega$ | 298.92227 | | +0.96594018 | | −0.17985027 |
| $a$ | 3.0082733 | $\Omega$ | 71.95693 | | +0.24609775 | | +0.86069419 |
| $e$ | 0.1164849 | $i$ | 11.28381 | | −0.07997165 | | +0.47629759 |
| $P$ | 5.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.5− | 0.4+ | 2001 12 23 | 704 | 0.2+ | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.6− | 0.8+ | 2001 12 23 | 704 | 0.2+ | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.0 | 0.2− | 2001 12 23 | 704 | 0.7− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2001 12 14 | 704 | 0.7− | 0.6+ | 2001 12 23 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.1+ |
| 2001 12 14 | 704 | 0.3− | 0.3+ | 2002 01 14 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2001 12 17 | 704 | 0.8+ | 0.0 | 2002 01 14 | 704 | 1.1− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2001 12 17 | 704 | 0.6+ | 0.1+ | 2002 01 14 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 0.2+ | 2002 01 14 | 704 | 0.7− | 0.4+ | 2006 11 14 | 704 | 1.2− | 0.9− |
| 2001 12 17 | 704 | 1.3+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.9+ | 0.4+ |
| 2001 12 17 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.5+ | 1.2− | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 1.1− | 0.1− | 2006 11 14 | 704 | 0.9− | 0.4− |
| 2001 12 18 | 704 | 0.3− | 0.6− | 2006 10 16 | 703 | 1.0+ | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.8− |
| 2001 12 18 | 704 | 0.1+ | 1.0− | 2006 10 22 | 703 | 0.9− | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 2001 12 18 | 704 | 0.3− | 1.2− | 2006 10 22 | 703 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.5+ | 1.2+ |
| 2001 12 18 | 704 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.8− | 0.4+ |
| 2001 12 19 | 704 | 0.3+ | 0.6− | 2006 10 22 | 703 | 0.5+ | 0.7− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 11 01 | 703 | 0.2+ | 0.8+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.5− | 2006 11 01 | 703 | 0.1+ | 1.5− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | 0.2+ | 0.7− | 2006 11 01 | 703 | (0.2+ | 1.6−) | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.1− | 0.6− | 2006 11 01 | 703 | 0.2+ | 0.1+ | | | | |

### 2001 XB$_{132}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.00913 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18641490 | $\omega$ | 281.23496 | | +0.97325138 | | +0.08228313 |
| $a$ | 3.0349321 | $\Omega$ | 74.31623 | | +0.02187247 | | +0.89623631 |
| $e$ | 0.2386162 | $i$ | 12.87339 | | −0.22869927 | | +0.43587839 |
| $P$ | 5.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.1− | 0.1− | 2001 12 17 | 704 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2001 11 09 | 704 | 0.7+ | 0.9− | 2001 12 17 | 704 | 0.3+ | 1.1− | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2001 12 17 | 704 | 0.2− | 1.4− | 2006 10 17 | 703 | 0.6− | 0.3− |
| 2001 11 09 | 704 | (1.9+ | 0.1+) | 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 10 22 | 703 | 1.0+ | 0.6+ |
| 2001 11 18 | 691 | 0.1+ | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.4− | 1.3− |
| 2001 11 18 | 691 | 0.0 | 0.1+ | 2001 12 19 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2001 11 18 | 691 | 0.0 | 0.1− | 2001 12 19 | 704 | 0.9+ | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2001 11 20 | 704 | 0.5− | 1.0+ | 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.5+ | 0.8+ |
| 2001 11 20 | 704 | (0.3− | 3.0+) | 2001 12 20 | 704 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.7− |
| 2001 11 20 | 704 | 0.2− | 0.9+ | 2001 12 20 | 704 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.7− | 0.9− |
| 2001 11 20 | 704 | (0.2− | 1.9+) | 2001 12 20 | 704 | 0.4− | 0.1− | 2006 11 13 | 703 | 0.7− | 0.5− |
| 2001 12 09 | 644 | 0.3+ | 0.1− | 2001 12 23 | 291 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.4+ | 0.1+ |
| 2001 12 09 | 644 | 0.2− | 0.3+ | 2001 12 23 | 291 | 0.0 | 0.1+ | 2006 11 17 | 644 | 0.5+ | 0.2+ |
| 2001 12 09 | 644 | 0.3+ | 0.0 | 2001 12 23 | 291 | 0.2+ | 0.1+ | 2006 11 17 | 644 | 0.2+ | 0.6+ |
| 2001 12 14 | 704 | 0.0 | 0.2− | 2002 01 14 | 704 | (2.5+ | 0.2+) | 2006 11 19 | 703 | 0.3− | 0.7+ |
| 2001 12 14 | 704 | 0.6− | 0.4− | 2002 01 14 | 704 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.2− | 0.5− |
| 2001 12 14 | 704 | 0.8+ | 0.4+ | 2002 01 14 | 704 | 0.7+ | 0.1+ | 2006 11 19 | 703 | 0.4+ | 0.0 |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2002 01 14 | 704 | 0.7− | 0.2+ | 2006 11 19 | 703 | 0.1− | 0.3+ |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.2− | | | | |

### 2001 XJ$_{132}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.03947 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17655364 | $\omega$ | 277.38335 | | +0.98341481 | | +0.08031581 |
| $a$ | 3.1469144 | $\Omega$ | 78.11044 | | −0.00392152 | | +0.90581334 |
| $e$ | 0.1241355 | $i$ | 9.56599 | | −0.18132826 | | +0.41599467 |
| $P$ | 5.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 691 | 0.4+ | 0.4− | 2004 04 15 | 644 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2001 11 18 | 691 | 0.4+ | 0.6− | 2006 09 18 | 703 | 1.4+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2001 11 18 | 691 | 0.7+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.6− | 0.2− | 2006 09 18 | 703 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.3− | 0.6+ | 2006 09 21 | 699 | 0.0 | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.5− | 1.1+ | 2006 09 21 | 699 | (1.7+ | 1.1−) | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | 0.5− | 0.9+ | 2006 09 21 | 699 | 0.8− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.2− | 1.0+ | 2006 09 21 | 699 | 0.2+ | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 0.0 | 0.7+ | 2006 09 25 | 699 | 0.5+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.7− | 0.6− | 2006 09 25 | 699 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 12 14 | 704 | (0.0 | 1.7−) | 2006 09 25 | 699 | 0.4+ | 0.8− | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | (0.1− | 1.7−) | 2006 09 29 | 699 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.0 | 0.6− | 2006 09 29 | 699 | 0.8+ | 0.6+ | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.5− | 0.2− | 2006 09 29 | 699 | 0.3+ | 0.2+ | 2006 10 25 | D35 | 1.1− | 0.3+ |
| 2001 12 17 | 704 | 0.6− | 0.0 | 2006 10 02 | 703 | 0.7− | 0.2+ | 2006 10 25 | D35 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.7− | 0.0 | 2006 10 02 | 703 | 0.4+ | 0.1+ | 2006 10 25 | D35 | 0.5+ | 0.1− |
| 2001 12 23 | 691 | 0.1+ | 0.3− | 2006 10 02 | 703 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.4− | 0.0 |
| 2001 12 23 | 691 | 0.1+ | 0.2− | 2006 10 02 | 703 | 0.7− | 0.1− | 2006 10 28 | 703 | 0.2− | 0.3− |
| 2001 12 23 | 691 | 0.6− | 1.0+ | 2006 10 17 | 703 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.8+ | 0.6+ |
| 2004 04 15 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.5− | 0.5− |
| 2004 04 15 | 644 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.9+ | | | | |

### 2001 XG$_{134}$ = 2006 VK$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.10762 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19178337 | $\omega$ | 182.53510 | | +0.39596341 | | −0.91744520 |
| $a$ | 2.9780279 | $\Omega$ | 244.14114 | | +0.84325011 | | +0.38002781 |
| $e$ | 0.0672222 | $i$ | 2.47271 | | +0.36351373 | | +0.11778439 |
| $P$ | 5.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.7+ | 0.5− | 2006 10 17 | G96 | 0.3+ | 0.3+ |
| 2001 11 20 | 704 | 0.3− | 0.2+ | 2001 12 17 | 704 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 1.0− | 2001 12 17 | 704 | 1.0+ | 0.2− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2001 11 20 | 291 | 0.1− | 0.0 | 2001 12 17 | 704 | 0.5+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 0.1+ | 0.8+ | 2001 12 17 | 704 | 0.1− | 0.5− | 2006 11 14 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 291 | 0.0 | 0.2+ | 2001 12 18 | 691 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.8− | 0.2− | 2001 12 18 | 691 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 291 | 0.1− | 0.1+ | 2001 12 18 | 691 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.6− | 2003 03 25 | 699 | 0.5− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.0 | 0.5− | 2003 03 25 | 699 | (0.2− | 2.3−) | 2006 11 18 | 691 | 0.1− | 0.6+ |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2003 03 25 | 699 | 0.8+ | 0.6+ | 2006 11 18 | 704 | 0.6− | 1.1− |
| 2001 11 21 | 704 | 0.3− | 0.5+ | 2003 03 25 | 699 | (2.4+ | 1.5−) | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 18 | 704 | (1.4− | 1.9−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 12 | 644 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.6− |
| 2001 12 12 | 644 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.5− | 0.2− | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2001 12 12 | 644 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 2001 12 14 | 704 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.7− | 0.7+ |
| 2001 12 14 | 704 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.8− | 0.2+ | 2006 11 21 | 704 | 0.9+ | 0.5+ |
| 2001 12 14 | 704 | 1.3+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.2+ |

**2001 XT$_{135}$ = 2006 UR$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.52348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18473737 | $\omega$ | 215.31882 | | +0.16466048 | −0.98443117 | |
| $a$ | 3.0532770 | $\Omega$ | 225.29318 | | +0.92369336 | +0.17576892 | |
| $e$ | 0.2022637 | $i$ | 4.96413 | | +0.34594437 | −0.00075065 | |
| $P$ | 5.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3+ | 0.5− | 2001 12 17 | 704 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.4− | 1.1− | 2001 12 17 | 704 | 0.7+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.3+ | 1.1− | 2006 10 16 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.5+ |
| 2001 11 20 | 704 | 0.6+ | 0.8− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 1.1− | 1.4− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 12 12 | 644 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2001 12 12 | 644 | 0.5− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2001 12 12 | 644 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2001 12 14 | 704 | 0.2− | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2001 12 14 | 704 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.5− |
| 2001 12 17 | 704 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | | | | |
| 2001 12 17 | 704 | 1.0+ | 1.1+ | 2006 10 20 | 691 | 0.1+ | 0.1− | | | | |

**2001 XJ$_{136}$ = 2006 SV$_{307}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.52972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17405672 | $\omega$ | 217.24741 | | −0.43815723 | −0.89598662 | |
| $a$ | 3.1769389 | $\Omega$ | 258.84189 | | +0.84144775 | −0.38053474 | |
| $e$ | 0.1154525 | $i$ | 4.22570 | | +0.31620233 | −0.22891328 | |
| $P$ | 5.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1− | 0.4− | 2001 12 19 | 704 | 0.5− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.8+ | 0.8− | 2001 12 19 | 704 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2001 12 14 | 704 | 0.1+ | 0.4− | 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | 0.7− | 0.5+ | 2001 12 19 | 704 | 0.2− | 0.5− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.4− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.8− |
| 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.9− | 0.5− | 2006 10 17 | 703 | 0.8− | 0.3− |
| 2001 12 19 | 704 | 0.8+ | 0.5− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5− | 1.0+ |

**2001 XT$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.55965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31425058 | $\omega$ | 200.87768 | | +0.26815758 | −0.96335621 | |
| $a$ | 2.1426537 | $\Omega$ | 233.56814 | | +0.88493792 | +0.24879238 | |
| $e$ | 0.0701353 | $i$ | 0.42923 | | +0.38075766 | +0.10023555 | |
| $P$ | 3.14 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 12 | 644 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.9− | 0.1− | 2004 11 19 | 703 | 0.1+ | 0.6− |
| 2001 12 12 | 644 | 0.2+ | 0.6+ | 2004 10 15 | G96 | 0.0 | 0.4− | 2004 11 19 | 703 | (2.0− | 1.7−) |
| 2001 12 12 | 644 | 0.1+ | 0.4+ | 2004 10 15 | G96 | 0.1− | 0.5− | 2004 12 13 | 691 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.4− | 0.2− | 2004 10 15 | G96 | 0.1− | 0.5− | 2004 12 13 | 691 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2004 10 15 | G96 | 0.2+ | 0.4− | 2004 12 13 | 691 | 0.1− | 0.1− |
| 2001 12 14 | 704 | 1.0− | 0.2+ | 2004 10 23 | 691 | 0.1+ | 0.3+ | 2006 04 30 | 691 | 0.2+ | 0.2+ |
| 2001 12 17 | 704 | 1.5+ | 0.9− | 2004 10 23 | 691 | 0.1+ | 0.2+ | 2006 04 30 | 691 | 0.2− | 0.3− |
| 2001 12 17 | 704 | 1.2+ | 0.4− | 2004 10 23 | 691 | 0.2+ | 0.3+ | 2006 04 30 | 691 | 0.3+ | 0.1+ |
| 2001 12 17 | 704 | 0.3+ | 0.4+ | 2004 11 04 | 691 | 0.1− | 0.1+ | 2006 05 04 | 691 | 1.3− | 0.6+ |
| 2001 12 17 | 704 | 1.0+ | 0.7− | 2004 11 04 | 691 | 0.0 | 0.2+ | 2006 05 04 | 691 | 0.3+ | 0.6+ |
| 2001 12 17 | 704 | 0.4+ | 0.6− | 2004 11 04 | 691 | 0.1+ | 0.2+ | 2006 05 04 | 691 | 0.8+ | 0.6− |
| 2001 12 19 | 704 | 0.9− | 0.7+ | 2004 11 19 | 703 | (2.6+ | 2.0+) | | | | |
| 2001 12 19 | 704 | 0.4− | 0.1− | 2004 11 19 | 703 | 1.9− | 1.2− | | | | |

**2001 XF$_{138}$ = 2006 VS$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.72358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18928039 | $\omega$ | 235.84725 | | −0.41488039 | −0.89851585 | |
| $a$ | 3.0042239 | $\Omega$ | 239.29306 | | +0.88001897 | −0.35623338 | |
| $e$ | 0.0575680 | $i$ | 9.59621 | | +0.23117284 | −0.25645085 | |
| $P$ | 5.21 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.9− | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.4+ | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 1.0− | 2006 11 09 | 691 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.5− | 1.0− | 2006 11 09 | 691 | 0.2− | 0.2− | 2006 11 20 | 703 | 0.2− | 0.5− |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.3− | 0.1− | 2006 11 20 | 703 | 0.4− | 0.1− |
| 2001 12 14 | 704 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.6− | 2006 11 20 | 703 | (0.1− | 1.8−) |
| 2001 12 14 | 704 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.3− | 2006 11 20 | 703 | 0.4− | 1.1− |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.6+ | 0.6+ | 2006 11 20 | 704 | 0.8− | 0.3− |
| 2001 12 17 | 704 | 0.9− | 0.6− | 2006 11 11 | 703 | (2.1− | 0.4+) | 2006 11 20 | 704 | 0.1− | 1.5+ |
| 2001 12 17 | 704 | 0.2− | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.0 | 2006 11 20 | 704 | (0.7+ | 1.7−) |
| 2001 12 17 | 704 | 0.3+ | 0.3− | 2006 11 18 | 691 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.6− |
| 2001 12 17 | 704 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.0 | 2006 11 20 | 704 | (2.1+ | 1.3−) |
| 2001 12 19 | 704 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2001 12 19 | 704 | 1.4+ | 1.3+ | 2006 11 18 | 704 | 0.2− | 0.3+ | 2006 11 21 | 704 | 1.4+ | 0.8+ |
| 2001 12 19 | 704 | (3.0+ | 0.2−) | 2006 11 18 | 704 | 0.3− | 0.9+ | 2006 11 21 | 704 | 0.7− | 0.7+ |
| 2001 12 19 | 704 | 0.2+ | 1.3− | 2006 11 18 | 704 | 0.8+ | 0.3+ | 2006 11 21 | 704 | 0.7− | 1.1+ |
| 2005 08 30 | 599 | 0.4+ | 0.7− | 2006 11 19 | 704 | 0.2+ | 1.0+ | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2005 08 30 | 599 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.7− |
| 2005 08 30 | 599 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.8+ | 2006 11 24 | G96 | 0.4+ | 0.5− |
| 2005 08 30 | 599 | 0.5− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2+ | 1.1+ | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.4− | 2006 11 27 | 703 | 1.2+ | 1.1− |
| 2006 10 21 | 691 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.4+ | 1.1+ | 2006 11 27 | 703 | 0.1− | 0.1− |
| 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.9− | 0.1− |
| 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.6+ | 2006 11 27 | 703 | 0.7− | 0.0 |

**2001 XY$_{139}$ = 2006 SJ$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.57794 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17252501 | $\omega$ | 316.18942 | | +0.76389180 | −0.63616013 | |
| $a$ | 3.1957147 | $\Omega$ | 83.63566 | | +0.61807814 | +0.67285621 | |
| $e$ | 0.1560839 | $i$ | 6.26693 | | +0.18560368 | +0.37757757 | |
| $P$ | 5.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1− | 0.3− | 2002 01 13 | 704 | 0.1+ | 0.3− | 2006 09 25 | 703 | 0.0 | 1.1− |
| 2001 12 14 | 704 | 0.1− | 0.3− | 2002 01 13 | 704 | 0.2− | 0.3− | 2006 09 25 | 703 | (2.5− | 0.7+) |
| 2001 12 14 | 704 | 0.5+ | 0.1− | 2002 01 13 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 703 | 1.2− | 0.9+ |
| 2001 12 14 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.7− | 2006 10 19 | 703 | 0.4− | 1.2+ |
| 2001 12 14 | 704 | 0.7− | 0.5− | 2006 08 28 | 699 | 1.0+ | 0.6+ | 2006 10 19 | 703 | 0.1− | 1.0+ |
| 2001 12 17 | 704 | 0.2+ | 1.2+ | 2006 08 28 | 699 | 0.5+ | 0.0 | 2006 10 19 | 703 | 1.0− | 0.3+ |
| 2001 12 17 | 704 | 0.2+ | 1.3+ | 2006 08 28 | 699 | 0.3+ | 0.6− | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 1.4− | 0.0 | 2006 09 17 | 699 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 0.4− | 2006 09 17 | 699 | (1.0− | 2.2+) | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 1.2− | 2006 09 17 | 699 | 0.7+ | 0.7+ | 2006 10 23 | 644 | 0.4− | 0.4− |
| 2002 01 13 | 704 | 0.3− | 0.3− | 2006 09 17 | 699 | 0.1+ | 1.2− | | | | |
| 2002 01 13 | 704 | 0.8+ | 0.1− | 2006 09 25 | 703 | 0.2+ | 0.5− | | | | |

**2001 XK$_{140}$ = 2006 SN$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.62786 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17841500 | $\omega$ | 286.58421 | +0.94863713 | | −0.23270834 | |
| $a$ | 3.1249888 | $\Omega$ | 87.26389 | +0.30237534 | | +0.86616211 | |
| $e$ | 0.1474328 | $i$ | 12.39017 | −0.09304164 | | +0.44227823 | |
| $P$ | 5.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.3− | 0.4+ | 2006 09 19 | 703 | (2.6− | 0.1+) | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2001 12 14 | 704 | 0.8+ | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 12 14 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 1.1+ | 0.5+ | 2006 09 25 | 699 | 0.7− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.7− | 0.2− |
| 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.9− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.3− | 0.7+ | 2006 10 02 | 703 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2006 10 02 | 703 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.1− | 1.1+ |
| 2001 12 20 | 704 | 0.6+ | 0.5− | 2006 10 02 | 703 | (2.0− | 0.1+) | 2006 10 17 | 703 | 0.2+ | 0.8− |
| 2001 12 20 | 704 | 0.4+ | 0.1− | 2006 10 02 | 703 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.6− |
| 2001 12 20 | 704 | 1.0− | 0.7− | 2006 10 11 | 644 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.3− |
| 2001 12 20 | 704 | 0.8− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | (2.0− | 0.3−) |
| 2001 12 20 | 704 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1+ | | | | |
| 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 | | | | |

**2001 XH$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.12653 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19536671 | $\omega$ | 233.90148 | +0.99863745 | | −0.03697345 | |
| $a$ | 2.9415011 | $\Omega$ | 128.18827 | +0.04801171 | | +0.92748561 | |
| $e$ | 0.1956192 | $i$ | 2.68553 | −0.02044774 | | +0.37202609 | |
| $P$ | 5.04 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.0 | 1.0+ | 2001 12 17 | 704 | 0.4− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.2+ | 0.0 | 2001 12 17 | 704 | 1.0− | 0.3− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.6+ | 0.4+ | 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.5+ | 1.2+ | 2001 12 20 | 704 | 0.5− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 11 20 | 704 | 0.3− | 0.5− | 2001 12 20 | 704 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.6− | 0.6− | 2001 12 20 | 704 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.7− | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.0 | 0.7− | 2006 11 18 | 704 | 0.5+ | 0.1+ | 2006 11 29 | 704 | 0.8+ | 0.6+ |
| 2001 12 14 | 704 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.5− | 0.3+ |
| 2001 12 14 | 704 | 0.5+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.3− | 2006 11 29 | 704 | 0.2− | 0.7+ |
| 2001 12 14 | 704 | 0.3+ | 0.3− | 2006 11 19 | 691 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2001 12 17 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.5− | 2006 12 01 | 691 | 0.2+ | 0.1− |

**2001 XB$_{142}$ = 2006 UB$_{237}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.92235 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18442890 | $\omega$ | 306.43899 | +0.05566940 | | −0.99819689 | |
| $a$ | 3.0566806 | $\Omega$ | 140.35150 | +0.92694911 | | +0.04331506 | |
| $e$ | 0.1382712 | $i$ | 2.01609 | +0.37103405 | | +0.04155459 | |
| $P$ | 5.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1+ | 0.6− | 2001 12 14 | 704 | 0.7+ | 0.6+ | 2006 10 23 | 691 | 0.1+ | 0.3− |
| 2001 11 20 | 704 | 0.4+ | 0.6− | 2001 12 17 | 704 | (0.9+ | 1.9+) | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.7+ | 0.6− | 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 11 20 | 704 | 0.3+ | 0.5− | 2001 12 17 | 704 | 0.2+ | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 11 20 | 704 | 1.1+ | 0.1+ | 2001 12 17 | 704 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 691 | 0.4− | 0.2+ | 2001 12 17 | 704 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 691 | 0.0 | 0.1− | 2001 12 20 | 704 | (1.0+ | 1.8−) | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 691 | 0.3− | 0.0 | 2001 12 20 | 704 | 0.0 | 1.0− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.7− | 0.5+ | 2001 12 20 | 704 | 0.3− | 0.1+ | | | | |
| 2001 12 14 | 704 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.2− | | | | |

**2001 XA$_{147}$ = 2006 RJ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.49530 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17659669 | $\omega$ | 227.10393 | +0.95623145 | | −0.29238947 | |
| $a$ | 3.1464030 | $\Omega$ | 149.89185 | +0.27464982 | | +0.88342228 | |
| $e$ | 0.1821701 | $i$ | 1.30143 | +0.10094001 | | +0.36616043 | |
| $P$ | 5.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.0 | 0.2− | 2006 09 14 | 703 | (1.7− | 0.3−) | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2000 07 30 | 807 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2001 12 14 | 704 | (1.6− | 0.7−) | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2001 12 14 | 704 | 1.0− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 12 14 | 704 | 0.2− | 0.9+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 12 14 | 704 | 0.8− | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 12 17 | 704 | 1.4− | 0.9+ | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 12 17 | 704 | (1.7− | 0.3+) | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.9+ | 0.1+ | 2006 10 17 | 703 | 1.5+ | 0.5− |
| 2001 12 17 | 704 | 0.9− | 0.1− | 2006 09 18 | 699 | 0.6− | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2001 12 17 | 704 | 1.2− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2001 12 20 | 704 | 0.3− | 0.3− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2001 12 20 | 704 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 12 20 | 704 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2002 01 14 | 291 | 0.6+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 01 14 | 291 | 0.7+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 01 14 | 291 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2004 04 25 | 291 | 0.4+ | 1.1+ | 2006 09 28 | 699 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.5+ | 0.0 |
| 2004 04 25 | 291 | 0.3+ | 0.8+ | 2006 09 28 | 699 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 04 25 | 291 | 0.4+ | 1.1+ | 2006 09 28 | 699 | 0.5+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 28 | 699 | 0.7− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2006 07 21 | G96 | 0.2+ | 0.5− | 2006 10 01 | 704 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.8− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2006 07 21 | G96 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2006 09 14 | 703 | 0.2+ | 0.3− | 2006 10 01 | 704 | 1.0+ | 0.9+ | 2006 11 14 | G96 | 0.5− | 0.4− |
| 2006 09 14 | 703 | (0.0 | 1.9−) | 2006 10 03 | 291 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2006 09 14 | 703 | 0.0 | 1.0− | 2006 10 03 | 291 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2006 09 14 | 703 | (0.3+ | 4.5−) | 2006 10 03 | 291 | 0.1− | 0.0 | | | | |
| 2006 09 14 | 703 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.4− | 0.3+ | | | | |

**2001 XJ$_{147}$ = 2006 UU$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.30195 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18306493 | $\omega$ | 356.82750 | −0.10158313 | | −0.99315322 | |
| $a$ | 3.0718449 | $\Omega$ | 98.99747 | +0.91401685 | | −0.11606657 | |
| $e$ | 0.0734082 | $i$ | 3.34819 | +0.39275191 | | +0.01323783 | |
| $P$ | 5.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.6− | 0.5+ | 2001 12 19 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 0.3− | 2002 01 13 | 704 | (1.5− | 1.7+) | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.9+ | 0.0 | 2002 01 13 | 704 | 0.7− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2001 12 17 | 704 | 0.2− | 1.1− | 2002 01 13 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.3− | 0.7− | 2002 01 13 | 704 | 0.4− | 0.3− | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2001 12 17 | 704 | 0.5+ | 0.8− | 2002 01 15 | 704 | (1.9+ | 0.1+) | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 12 17 | 704 | 0.3− | 0.6− | 2002 01 15 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.7− | 0.6− |
| 2001 12 17 | 704 | 0.1+ | 0.3− | 2002 01 15 | 704 | 0.6+ | 0.9− | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2001 12 19 | 691 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.1+ | | | | |
| 2001 12 19 | 691 | 0.2− | 0.5+ | 2006 10 18 | 691 | 0.5+ | 0.0 | | | | |

**2001 XS$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 301.23262 | | (2000.0) | | | |
| $n$ | 0.17723311 | $\omega$ | 341.43809 | | −0.09181611 | −0.99131722 |
| $a$ | 3.1388663 | $\Omega$ | 113.74113 | | +0.92613353 | −0.11974165 |
| $e$ | 0.2019550 | $i$ | 5.90213 | | +0.36585035 | +0.05433332 |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1− | 0.8− | 2002 01 09 | 704 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2001 12 14 | 704 | 0.5+ | 0.3− | 2002 01 09 | 704 | (2.1+ | 1.0+) | 2006 10 04 | G96 | 0.3+ | 0.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.0 | 2002 01 13 | 704 | 0.6− | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.5− |
| 2001 12 14 | 704 | 0.3− | 0.1− | 2002 01 13 | 704 | 0.1+ | 1.0+ | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.6− | 0.8− | 2002 01 13 | 704 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2001 12 17 | 704 | 0.6− | 0.2− | 2002 01 15 | 704 | 0.3− | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 1.1− | 0.1+ | 2002 01 15 | 704 | 0.0 | 0.9− | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | (0.5− | 1.6−) | 2002 01 15 | 704 | 0.1− | 1.4− | 2006 10 16 | 703 | 1.3+ | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.8+ | 2002 01 15 | 704 | 0.6− | 0.8− | 2006 10 16 | 703 | 1.0− | 0.0 |
| 2001 12 20 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 703 | (0.6+ | 1.5+) | 2006 10 16 | 703 | 1.5+ | 0.5− |
| 2001 12 20 | 704 | 0.8− | 1.0+ | 2006 09 18 | 703 | (1.8+ | 1.2−) | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2001 12 20 | 704 | 0.7+ | 1.1+ | 2006 09 18 | 703 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2001 12 20 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2001 12 20 | 704 | 0.1− | 0.5+ | 2006 09 26 | 461 | 0.0 | 0.1+ | 2006 10 22 | 703 | (1.6− | 1.2+) |
| 2001 12 23 | 704 | 0.1− | 0.3− | 2006 09 26 | 461 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2001 12 23 | 704 | 0.3+ | 0.6− | 2006 09 26 | 461 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.2+ |
| 2001 12 23 | 704 | 0.4+ | 0.6− | 2006 10 04 | G96 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 1.2− | 0.5− |
| 2001 12 23 | 704 | 0.4+ | 0.6− | 2006 10 04 | G96 | 0.5+ | 0.8+ | 2006 10 22 | 703 | 0.8− | 0.3− |
| 2001 12 23 | 704 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 22 | 703 | (0.4+ | 1.7−) |
| 2002 01 09 | 704 | 0.7+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− | | | | |
| 2002 01 09 | 704 | 0.6+ | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.1− | | | | |

**2001 XY$_{148}$ = 2006 UY$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.42086 | | (2000.0) | | | |
| $n$ | 0.17903576 | $\omega$ | 116.34778 | | +0.98274310 | −0.12165657 |
| $a$ | 3.1177612 | $\Omega$ | 250.90465 | | +0.06620338 | +0.93471733 |
| $e$ | 0.1270170 | $i$ | 8.47939 | | +0.17272263 | +0.33392095 |
| $P$ | 5.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.0 | 1.0+ | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2001 12 14 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 703 | 0.7− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2001 12 14 | 704 | 1.1+ | 0.0 | 2006 10 19 | A50 | 0.5+ | 0.4− | 2006 10 27 | 703 | 0.1− | 1.0− |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2006 10 19 | A50 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.5− |
| 2001 12 17 | 704 | 1.2+ | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.4− | 1.2− |
| 2001 12 17 | 704 | 0.5+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2001 12 17 | 704 | (1.9+ | 0.4−) | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.2+ |
| 2001 12 22 | 691 | 1.1− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.3+ |
| 2001 12 22 | 691 | 0.4+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.5+ |
| 2001 12 22 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | | | |
| 2006 10 19 | 703 | (1.7− | 1.5+) | 2006 10 22 | 644 | 0.1− | 0.3+ | | | | |

**2001 XS$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 72.14197 | | (2000.0) | | | |
| $n$ | 0.22024061 | $\omega$ | 302.44030 | | +0.86571602 | −0.48957881 |
| $a$ | 2.7156333 | $\Omega$ | 87.06475 | | +0.48708773 | +0.77610504 |
| $e$ | 0.0643537 | $i$ | 5.98639 | | +0.11524456 | +0.39745886 |
| $P$ | 4.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4− | 0.2− | 2001 12 18 | 704 | 0.0 | 0.5− | 2005 10 07 | 703 | (0.8− | 2.3+) |
| 2001 12 14 | 704 | 0.5+ | 0.6− | 2001 12 18 | 704 | 0.9− | 0.3+ | 2005 10 22 | 644 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.4+ | 0.4+ | 2001 12 18 | 704 | 0.2− | 0.1+ | 2005 10 22 | 703 | 1.0+ | 0.1+ |
| 2001 12 14 | 704 | 0.1+ | 0.2+ | 2005 10 01 | 703 | 0.1+ | 0.1+ | 2005 10 22 | 703 | 0.1− | 1.0+ |
| 2001 12 17 | 704 | 0.2− | 0.4− | 2005 10 01 | 703 | 0.5+ | 0.4− | 2005 10 22 | 703 | 0.6+ | 0.2+ |
| 2001 12 17 | 704 | 0.0 | 0.3− | 2005 10 01 | 703 | 0.3+ | 1.0+ | 2005 10 22 | 644 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2005 10 01 | 703 | 0.4− | 0.1+ | 2005 10 22 | 703 | 0.0 | 0.7− |
| 2001 12 17 | 704 | 0.5− | 0.3+ | 2005 10 07 | 703 | 0.7− | 0.2+ | 2005 10 22 | 644 | 0.1− | 0.4+ |
| 2001 12 17 | 704 | 0.7+ | 0.2+ | 2005 10 07 | 703 | 0.8− | 0.0 | | | | |
| 2001 12 18 | 704 | 0.4+ | 0.1− | 2005 10 07 | 703 | 0.2− | 1.7− | | | | |

**2001 XU$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 148.37949 | | (2000.0) | | | |
| $n$ | 0.17589490 | $\omega$ | 343.69401 | | −0.44787870 | +0.88268657 |
| $a$ | 3.1547665 | $\Omega$ | 259.51175 | | −0.80329677 | −0.46717763 |
| $e$ | 0.0250071 | $i$ | 8.32504 | | −0.39257988 | −0.05108320 |
| $P$ | 5.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.3+ | 0.7+ | 2001 12 18 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 291 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | 0.6+ | 0.5− | 2001 12 18 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 291 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.9+ | 0.8− | 2001 12 18 | 691 | 0.7− | 0.1+ | 2006 11 10 | 291 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.1− | 2001 12 18 | 691 | 0.5− | 0.1+ | 2006 11 11 | 291 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.4− | 0.5− | 2001 12 18 | 691 | 0.5− | 0.0 | 2006 11 11 | 291 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.1+ | 0.0 | 2002 01 14 | 291 | 0.5+ | 0.0 | 2006 11 11 | 291 | 0.0 | 0.1+ |
| 2001 12 14 | 704 | 0.3− | 0.5− | 2002 01 14 | 291 | 0.2+ | 0.0 | 2006 11 13 | 291 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.1+ | 0.6+ | 2002 01 14 | 291 | 0.2+ | 0.3− | 2006 11 13 | 291 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3− | 2006 11 13 | 291 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.8− | 0.3− |
| 2001 12 17 | 704 | 0.7+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.4+ |
| 2001 12 18 | 704 | 0.6+ | 0.6− | 2006 11 01 | G96 | 0.4− | 0.4− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.1− | | | | |
| 2001 12 18 | 704 | 0.2+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.4− | | | | |

**2001 XZ$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 237.51958 | | (2000.0) | | | |
| $n$ | 0.19057907 | $\omega$ | 285.10942 | | −0.97083591 | +0.13234184 |
| $a$ | 2.9905605 | $\Omega$ | 262.80223 | | −0.05118442 | −0.92902669 |
| $e$ | 0.0797533 | $i$ | 11.62446 | | −0.23421741 | −0.34553587 |
| $P$ | 5.17 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4− | 0.2+ | 2002 01 09 | 704 | 0.8− | 0.7+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2001 12 14 | 704 | 0.4− | 0.1− | 2002 01 09 | 704 | 0.8+ | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.8+ | 0.1− | 2002 01 09 | 704 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2001 12 14 | 704 | 0.6+ | 0.6− | 2002 01 09 | 599 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | 0.4+ | 0.2− | 2002 01 09 | 599 | 0.3− | 0.3+ | 2006 11 24 | 691 | 0.5+ | 0.1+ |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2002 01 09 | 599 | 0.2+ | 0.8+ | 2006 11 24 | 691 | 0.5+ | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.5+ | 2002 01 13 | 704 | 0.0 | 0.4+ | 2006 11 24 | 691 | 0.2− | 1.4− |
| 2001 12 17 | 704 | 0.1+ | 0.4− | 2002 01 13 | 704 | 0.2− | 0.0 | 2006 11 30 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | (1.7+ | 0.5−) | 2002 01 13 | 704 | 0.7− | 0.4− | 2006 11 30 | 691 | 0.9− | 0.2+ |
| 2001 12 18 | 704 | 0.7+ | 0.7− | 2002 01 13 | 704 | 1.3− | 0.2− | 2006 11 30 | 691 | 0.0 | 0.4− |
| 2001 12 18 | 704 | (0.4+ | 1.8−) | 2006 11 13 | 691 | 0.0 | 0.1+ | | | | |
| 2001 12 18 | 704 | 0.3+ | 0.8− | 2006 11 13 | 691 | 0.1+ | 0.4+ | | | | |

**2001 XR$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.31806 | | (2000.0) | | | |
| $n$ | 0.18911422 | $\omega$ | 258.62007 | | +0.06706386 | −0.99772813 |
| $a$ | 3.0059835 | $\Omega$ | 187.54337 | | +0.93338687 | +0.06500433 |
| $e$ | 0.2118641 | $i$ | 2.79605 | | +0.35254983 | +0.01769201 |
| $P$ | 5.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.8− | 0.6+ | 2006 07 22 | G96 | 0.2+ | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2001 12 14 | 704 | 0.9− | 0.3+ | 2006 07 22 | G96 | 0.6− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 0.9− | 0.6+ | 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 1.4− | 0.9− |
| 2001 12 14 | 704 | 0.4− | 0.7+ | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.5− | 0.1− |
| 2001 12 14 | 704 | 1.2− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 1.6+ | 0.8− |
| 2001 12 17 | 704 | 1.0+ | 0.5− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 17 | 704 | 0.9− | 0.3+ |
| 2001 12 17 | 704 | 0.8+ | 0.6− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2001 12 17 | 704 | 0.2+ | 0.9− | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.6− |
| 2001 12 17 | 704 | 0.5+ | 1.0− | 2006 10 12 | 691 | 0.6+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.3+ | 0.9− | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2002 01 13 | 704 | 0.1− | 1.1− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2002 01 13 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2002 01 13 | 704 | 0.3+ | 0.7− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 01 13 | 704 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2002 01 13 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2002 01 13 | 704 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2002 01 13 | 704 | 0.4− | 1.1− | 2006 11 02 | 703 | 0.7+ | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2002 01 13 | 691 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.7+ | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2002 01 15 | 704 | 0.0 | 0.5+ | 2006 11 02 | 703 | 0.0 | 1.1+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2002 01 15 | 704 | 0.3− | 0.3− | 2006 11 02 | 703 | 1.0− | 1.2+ | 2006 11 28 | 704 | 0.6+ | 0.4+ |
| 2002 01 15 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 1.0− | 0.7− | 2006 11 28 | 704 | 0.0 | 0.9+ |
| 2002 01 15 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.1− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.5+ |
| 2003 04 04 | 291 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2003 04 04 | 291 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.3+ | 2006 11 28 | 704 | 0.6+ | 0.3− |
| 2003 04 04 | 291 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.4− | | | | |
| 2006 07 22 | G96 | 0.5+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.3− | | | | |

**2001 XX$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.64597 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18323770 | $\omega$ | 304.26171 | | +0.76341354 | | −0.61456179 |
| $a$ | 3.0699137 | $\Omega$ | 94.48154 | | +0.63854951 | | +0.67175708 |
| $e$ | 0.1509975 | $i$ | 11.50128 | | +0.09723321 | | +0.41358946 |
| $P$ | 5.38 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4+ | 0.5− | 2001 12 20 | 704 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.3− | 2001 12 20 | 704 | (2.7+ | 1.6−) | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2001 12 14 | 704 | 0.0 | 0.3− | 2001 12 20 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.9− |
| 2001 12 14 | 704 | 0.2+ | 0.2− | 2001 12 20 | 704 | (2.4+ | 2.1−) | 2006 10 22 | 703 | 0.2+ | 0.3− |
| 2001 12 17 | 704 | 0.7+ | 0.0 | 2002 01 08 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.1− | 0.9+ |
| 2001 12 17 | 704 | 0.9− | 0.6− | 2002 01 08 | 704 | 0.6+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.7− |
| 2001 12 17 | 704 | 0.2+ | 0.2− | 2002 01 08 | 704 | 0.4+ | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2002 01 08 | 704 | 0.3+ | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 1.1− | 0.2+ | 2002 01 08 | 704 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.7− | 0.0 | 2002 01 13 | 704 | 1.1− | 0.0 | 2006 11 13 | 703 | 0.4− | 0.4+ |
| 2001 12 19 | 704 | 0.1+ | 0.4+ | 2002 01 13 | 704 | 0.5− | 0.1− | 2006 11 13 | 703 | 0.2+ | 1.1− |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2002 01 13 | 704 | 0.3− | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.1− |
| 2001 12 20 | 704 | (3.0+ | 1.9−) | 2002 01 15 | 704 | 0.4+ | 0.4− | 2006 11 13 | 703 | 0.9− | 1.2− |
| 2001 12 20 | 704 | 0.0 | 0.2+ | 2002 01 15 | 704 | 0.3+ | 0.6− | 2006 11 19 | 703 | 0.5+ | 0.5+ |
| 2001 12 20 | 704 | (2.9+ | 2.2−) | 2002 01 15 | 704 | 0.9+ | 0.9− | 2006 11 19 | 703 | 0.2+ | 0.6+ |
| 2001 12 20 | 704 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.7+ | 2006 11 19 | 703 | 0.5− | 0.3− |
| 2001 12 20 | 704 | (2.8+ | 1.6−) | 2006 10 16 | 703 | 1.3+ | 1.3+ | 2006 11 19 | 703 | 0.6− | 0.3+ |

**2001 XL$_{158}$ = 1995 YV$_5$ = 2006 SE$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.14166 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17432492 | $\omega$ | 263.89359 | | +0.92521373 | | −0.37760963 |
| $a$ | 3.1736795 | $\Omega$ | 118.28690 | | +0.36273410 | | +0.85133796 |
| $e$ | 0.1767919 | $i$ | 2.42701 | | +0.11137116 | | +0.36419041 |
| $P$ | 5.65 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.4+ | 0.4+ |
| 1995 12 16 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 |
| 1995 12 16 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 1995 12 22 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 1995 12 22 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 1995 12 22 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 1.1− | 1.0− |
| 2001 12 14 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.9− | 2006 10 21 | 703 | 0.2− | 0.0 |
| 2001 12 14 | 704 | (1.8+ | 0.2−) | 2006 10 01 | 704 | 0.1+ | 1.0− | 2006 10 21 | 703 | 0.4− | 0.6− |
| 2001 12 14 | 704 | 1.1+ | 0.6+ | 2006 10 01 | 704 | 0.6+ | 1.0− | 2006 10 21 | 703 | 0.6− | 0.1− |
| 2001 12 14 | 704 | 0.6+ | 0.3− | 2006 10 01 | 704 | 1.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 12 17 | 704 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2001 12 17 | 704 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 12 17 | 704 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.3− | 0.9− | 2006 10 15 | 703 | 0.7− | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.0 |
| 2001 12 20 | 704 | 0.5+ | 0.5+ | 2006 10 15 | 703 | 0.7− | 0.3− | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2001 12 20 | 704 | (1.6− | 0.6+) | 2006 10 15 | 703 | 0.0 | 0.5− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2001 12 20 | 704 | 1.0− | 0.5+ | 2006 10 15 | 703 | 0.5− | 0.0 | | | | |
| 2001 12 20 | 704 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | | | | |

**2001 XC$_{160}$ = 2006 VW$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.43980 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18047361 | $\omega$ | 13.56793 | | −0.06567346 | | +0.98874761 |
| $a$ | 3.1011796 | $\Omega$ | 252.79455 | | −0.92813042 | | −0.10999086 |
| $e$ | 0.0132069 | $i$ | 8.08854 | | −0.36641631 | | +0.10139119 |
| $P$ | 5.46 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1− | 0.1− | 2003 03 31 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.7− | 0.8− | 2003 03 31 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2001 12 14 | 704 | 0.4− | 0.3+ | 2003 03 31 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2001 12 17 | 704 | 0.3− | 0.8+ | 2003 03 31 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.9+ | 1.0+ |
| 2001 12 17 | 704 | 0.2− | 0.5+ | 2003 03 31 | 644 | 0.1− | 0.5+ | 2006 11 21 | 704 | 1.5+ | 1.1− |
| 2001 12 17 | 704 | 1.0− | 0.6+ | 2003 03 31 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | (0.7+ | 1.8−) |
| 2002 01 09 | 704 | 1.2+ | 0.4− | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | (0.7+ | 1.6−) |
| 2002 01 09 | 704 | 1.2+ | 1.4− | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | (1.9+ | 1.6−) |
| 2002 01 09 | 704 | (1.7+ | 1.0−) | 2006 11 13 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | (0.9+ | 1.7−) |
| 2002 01 09 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.1− | | | | |

**2001 XK$_{162}$ = 1997 CU$_{30}$ = 2006 RP$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.11130 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17600856 | $\omega$ | 274.29584 | | +0.03732655 | | −0.99930173 |
| $a$ | 3.1534082 | $\Omega$ | 173.56430 | | +0.92265053 | | +0.03382152 |
| $e$ | 0.1606388 | $i$ | 0.85358 | | +0.38382643 | | +0.01587969 |
| $P$ | 5.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 691 | 0.1− | 0.3− | 2001 12 19 | 704 | 0.5− | 0.6− | 2006 09 25 | 691 | 0.5+ | 0.3+ |
| 1997 02 06 | 691 | 0.1− | 0.2− | 2001 12 20 | 704 | 0.5+ | 0.2− | 2006 09 25 | 691 | 0.4+ | 0.1− |
| 1997 02 06 | 691 | 0.1− | 0.2− | 2001 12 20 | 704 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2001 12 14 | 704 | 0.6− | 0.3− | 2001 12 20 | 704 | 1.5− | 0.2+ | 2006 10 16 | G96 | 0.7+ | 0.1− |
| 2001 12 14 | 704 | 0.4− | 1.3− | 2001 12 20 | 704 | 0.2− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 12 14 | 704 | 0.2+ | 0.6− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.5+ | 0.0 |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.5− | 0.8− | 2006 10 27 | G96 | 0.6+ | 0.4− |
| 2001 12 17 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2001 12 17 | 704 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.8+ | 0.4− |
| 2001 12 19 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 12 19 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.5+ | 0.2− | 2006 11 22 | G96 | 0.4− | 0.7− |
| 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.3+ | 1.2+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.1− | | | | |

**2001 XL$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.02317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18940318 | $\omega$ | 49.50848 | | −0.69517264 | −0.71449100 | |
| $a$ | 3.0029254 | $\Omega$ | 84.72295 | | +0.63320588 | −0.66065615 | |
| $e$ | 0.1911915 | $i$ | 4.54917 | | +0.34027240 | −0.23029560 | |
| $P$ | 5.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2002 01 14 | 704 | 0.2− | 0.4− | 2006 11 15 | 691 | 0.0 | 0.0 | |
| 2001 11 20 | 704 | 0.3+ | 0.4− | 2002 01 14 | 704 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.1− | 0.1+ | |
| 2001 11 20 | 704 | 0.3+ | 0.8− | 2002 01 14 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.0 | |
| 2001 12 14 | 704 | (1.1− | 1.8+) | 2002 01 14 | 704 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 2001 12 14 | 704 | 0.7+ | 0.7+ | 2002 01 14 | 704 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.1− | |
| 2001 12 14 | 704 | 0.5− | 1.4+ | 2003 05 01 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.6− | |
| 2001 12 14 | 704 | 1.1− | 0.4− | 2003 05 01 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1+ | |
| 2001 12 17 | 704 | 0.4+ | 0.3+ | 2003 05 01 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.7+ | |
| 2001 12 17 | 704 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.3+ | |
| 2001 12 17 | 704 | 0.5+ | 0.4− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 1.9+ | 0.2+ | |
| 2001 12 17 | 704 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 1.2− | 0.5+ | |
| 2001 12 17 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.7− | 2006 11 21 | 704 | 0.0 | 1.0+ | |
| 2001 12 19 | 704 | 0.6− | 0.2− | 2006 11 11 | 703 | (1.5− | 1.9−) | 2006 11 21 | 704 | 2.1− | 0.9+ | |
| 2001 12 19 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.2− | 0.9+ | 2006 11 23 | 691 | 0.1− | 0.0 | |
| 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.1+ | |
| 2001 12 19 | 704 | 0.6− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.1− | 0.2− | |
| 2001 12 19 | 704 | 0.6+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 1.7+ | 0.3− | |
| 2002 01 12 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 11 29 | 704 | 0.6+ | 0.4− | |
| 2002 01 12 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.5− | 2006 11 29 | 704 | 0.1+ | 1.0− | |
| 2002 01 12 | 691 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1− | | | | | |

**2001 XY$_{162}$ = 2006 WX$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.39825 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18721984 | $\omega$ | 332.00737 | | +0.56268500 | −0.80575665 | |
| $a$ | 3.0262268 | $\Omega$ | 83.18482 | | +0.78895386 | +0.45668059 | |
| $e$ | 0.0944997 | $i$ | 10.72468 | | +0.24685500 | +0.37709291 | |
| $P$ | 5.26 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.5− | 2002 01 14 | 704 | 0.5− | 0.4+ | |
| 2001 12 14 | 704 | 0.7+ | 0.4+ | 2001 12 19 | 704 | 0.8− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.3− | |
| 2001 12 14 | 704 | 1.0+ | 1.1+ | 2001 12 19 | 704 | 1.2+ | 1.0− | 2006 11 20 | 691 | 0.1+ | 0.2− | |
| 2001 12 14 | 704 | 0.1+ | 0.4+ | 2002 01 08 | 704 | 0.4+ | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.2− | |
| 2001 12 17 | 704 | 0.3− | 1.0− | 2002 01 08 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.2+ | |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2002 01 08 | 704 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.3+ | |
| 2001 12 17 | 704 | 0.4− | 0.2− | 2002 01 08 | 704 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 0.4− | 0.7+ | |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2002 01 14 | 704 | 0.9− | 0.5+ | 2006 11 24 | 691 | 0.2− | 0.1+ | |
| 2001 12 17 | 704 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.1− | 1.2− | 2006 11 24 | 691 | 0.1− | 0.2+ | |
| 2001 12 19 | 704 | 0.5− | 0.4+ | 2002 01 14 | 704 | 0.6− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ | |

**2001 XB$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.14176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17498662 | $\omega$ | 147.71655 | | +0.76430151 | −0.62682795 | |
| $a$ | 3.1656737 | $\Omega$ | 251.85885 | | +0.55261686 | +0.75768361 | |
| $e$ | 0.2323176 | $i$ | 9.16900 | | +0.33235193 | +0.18166527 | |
| $P$ | 5.63 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.2+ | 0.1+ | 2002 01 13 | 704 | 1.1+ | 0.9− | 2006 09 25 | 683 | 0.3− | 1.3+ | |
| 2001 11 12 | 704 | 0.5+ | 0.1− | 2002 01 13 | 691 | 0.2− | 0.0 | 2006 09 26 | 683 | 0.3+ | 0.6− | |
| 2001 11 12 | 704 | 0.3− | 0.1+ | 2002 01 13 | 704 | 0.2+ | 0.6− | 2006 09 26 | 683 | 0.6+ | 1.1+ | |
| 2001 11 12 | 704 | 0.2− | 0.5− | 2002 01 13 | 704 | 0.4− | 0.6+ | 2006 09 26 | 683 | 0.6+ | 0.3+ | |
| 2001 11 20 | 704 | 0.6+ | 0.1+ | 2002 01 13 | 691 | 0.2− | 0.0 | 2006 09 27 | 683 | (4.1− | 0.3−) | |
| 2001 11 20 | 704 | 0.3+ | 0.5+ | 2002 01 13 | 704 | (0.8− | 2.2+) | 2006 09 27 | 703 | 0.7− | 1.1+ | |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2002 01 13 | 691 | 0.4− | 0.2− | 2006 09 27 | 683 | 1.4− | 1.1+ | |
| 2001 11 20 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 699 | 0.8+ | 0.4− | 2006 09 27 | 703 | 0.2− | 0.9− | |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2006 08 29 | 699 | 0.8+ | 0.5+ | 2006 09 27 | 683 | (1.8− | 2.5+) | |
| 2001 11 21 | 704 | 0.6+ | 0.0 | 2006 08 29 | 699 | 1.0+ | 0.1− | 2006 09 27 | 703 | 0.5− | 0.2+ | |
| 2001 11 21 | 704 | 0.2+ | 0.4− | 2006 08 29 | 699 | 0.6+ | 0.4+ | 2006 09 27 | 703 | 0.4− | 0.2− | |
| 2001 11 21 | 704 | 0.5+ | 0.7− | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 0.0 | 1.0+ | |
| 2001 11 21 | 704 | 0.3+ | 0.8− | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.2− | 0.1− | |
| 2001 12 14 | 704 | 0.6+ | 0.1− | 2006 09 06 | 644 | 0.3+ | 0.1+ | 2006 10 03 | 704 | 0.9+ | 0.3− | |
| 2001 12 14 | 704 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.8+ | 0.0 | 2006 10 03 | 704 | 0.9− | 0.1+ | |
| 2001 12 14 | 704 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.1− | 0.3+ | 2006 10 03 | 704 | (0.8+ | 1.9+) | |
| 2001 12 14 | 704 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.6+ | 0.1+ | 2006 10 03 | 703 | 0.7− | 0.1+ | |
| 2001 12 17 | 704 | 0.0 | 1.0+ | 2006 09 16 | 703 | (1.8− | 0.9+) | 2006 10 03 | 703 | 0.4− | 0.3− | |
| 2001 12 17 | 704 | 0.4+ | 0.4− | 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 10 03 | 703 | 0.0 | 0.2− | |
| 2001 12 17 | 704 | 0.5+ | 0.8− | 2006 09 16 | 703 | 0.4+ | 0.1+ | 2006 10 03 | 703 | 0.1− | 0.5+ | |
| 2001 12 17 | 704 | 0.4+ | 0.5− | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.0 | |
| 2001 12 20 | 704 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.6− | 2006 10 22 | 691 | 0.1− | 0.1+ | |
| 2001 12 20 | 704 | 0.2− | 0.4+ | 2006 09 21 | 683 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.2+ | |
| 2001 12 20 | 704 | 0.4− | 0.3+ | 2006 09 21 | 683 | 0.6− | 0.8− | 2006 10 23 | 703 | 0.0 | 0.4+ | |
| 2001 12 20 | 704 | 0.6− | 0.6+ | 2006 09 21 | 683 | 0.3+ | 0.8− | 2006 10 23 | 703 | 0.2− | 0.1− | |
| 2001 12 20 | 704 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.4+ | 0.5+ | 2006 10 23 | 703 | 0.2+ | 1.6− | |
| 2001 12 23 | 704 | 0.4− | 0.7+ | 2006 09 21 | 699 | 0.5+ | 0.7+ | 2006 10 23 | 703 | 0.5− | 0.8− | |
| 2001 12 23 | 704 | 0.1− | 0.4+ | 2006 09 21 | 699 | 0.2− | 0.4+ | 2006 10 26 | 703 | 0.5+ | 0.4+ | |
| 2001 12 23 | 704 | 0.5− | 0.9+ | 2006 09 22 | 683 | 1.0− | 1.3− | 2006 10 26 | 703 | 0.6+ | 0.4− | |
| 2001 12 23 | 704 | 0.3− | 0.2+ | 2006 09 22 | 683 | (0.4+ | 2.8−) | 2006 10 26 | 703 | 0.0 | 0.5− | |
| 2002 01 09 | 704 | 0.7− | 0.1+ | 2006 09 22 | 683 | 1.3− | 1.3− | 2006 10 26 | 703 | 1.1− | 0.1− | |
| 2002 01 09 | 704 | 0.0 | 0.1− | 2006 09 25 | 683 | 0.3+ | 0.0 | | | | | |
| 2002 01 09 | 704 | 0.2− | 0.3− | 2006 09 25 | 683 | (1.7+ | 1.1+) | | | | | |

**2001 XK$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.30406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23685294 | $\omega$ | 18.56411 | | −0.72354440 | −0.68845858 | |
| $a$ | 2.5871217 | $\Omega$ | 117.82130 | | +0.62593012 | −0.68495572 | |
| $e$ | 0.0991989 | $i$ | 3.24632 | | +0.29102404 | −0.23845429 | |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 01 | 691 | 0.1+ | 0.5− | 2001 12 20 | 704 | 0.8− | 0.8+ | 2005 12 21 | 699 | 0.5− | 0.2− | |
| 1998 01 01 | 691 | 0.1− | 0.0 | 2001 12 20 | 704 | 1.6− | 0.3− | 2005 12 21 | 699 | 0.8− | 0.7− | |
| 1998 01 01 | 691 | 0.0 | 0.1− | 2005 11 01 | G96 | 0.2− | 0.2− | 2005 12 21 | 699 | 0.7+ | 0.6+ | |
| 2001 12 14 | 704 | 1.6+ | 0.4− | 2005 11 01 | G96 | 0.9− | 0.6+ | 2005 12 21 | 699 | 0.1+ | 0.5+ | |
| 2001 12 14 | 704 | (2.6+ | 1.1−) | 2005 11 01 | G96 | 1.1+ | 0.8+ | 2006 01 26 | G96 | 0.7+ | 0.2+ | |
| 2001 12 14 | 704 | 1.1+ | 1.1− | 2005 11 01 | G96 | 0.0 | 0.4− | 2006 01 26 | G96 | 0.4− | 0.3+ | |
| 2001 12 17 | 704 | 0.3− | 0.9+ | 2005 11 06 | 691 | 0.0 | 0.2− | 2006 01 26 | G96 | 0.1− | 0.1− | |
| 2001 12 17 | 704 | 0.3+ | 0.3+ | 2005 11 06 | 691 | 0.0 | 0.3− | 2006 01 26 | G96 | 0.2+ | 0.1− | |
| 2001 12 17 | 704 | 0.1+ | 0.5+ | 2005 11 06 | 691 | 0.0 | 0.2+ | 2006 02 25 | G96 | 0.2+ | 0.1+ | |
| 2001 12 17 | 704 | 0.0 | 0.7+ | 2005 11 28 | 703 | 0.6+ | 0.1+ | 2006 02 25 | G96 | 0.3− | 0.4+ | |
| 2001 12 17 | 704 | 0.8+ | 0.7+ | 2005 11 28 | 703 | 1.6+ | 0.6+ | 2006 02 25 | G96 | 0.1+ | 0.2− | |
| 2001 12 20 | 704 | 0.9− | 0.1+ | 2005 11 28 | 703 | 0.5− | 0.6− | 2006 02 25 | G96 | 0.4− | 0.3+ | |
| 2001 12 20 | 704 | 0.5− | 0.9+ | 2005 11 28 | 703 | 0.7− | 1.9− | | | | | |

**2001 XD$_{167}$ = 2006 UZ$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.69196 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18404348 | $\omega$ | 3.30103 | | −0.25861144 | −0.96423579 | |
| $a$ | 3.0609466 | $\Omega$ | 101.69254 | | +0.88490737 | −0.26057586 | |
| $e$ | 0.1838691 | $i$ | 3.39832 | | +0.38737458 | −0.04847222 | |
| $P$ | 5.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.0 | 1.0− | 2002 01 13 | 704 | 0.7+ | 0.9− | 2006 11 11 | 703 | 0.4− | 0.8− | |
| 2001 12 14 | 704 | 0.3− | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | (0.3+ | 1.6−) | |
| 2001 12 14 | 704 | 0.1+ | 0.4− | 2006 10 18 | 691 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.9+ | 0.5− | |
| 2001 12 14 | 704 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.3− | |
| 2001 12 17 | 704 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.1− | |
| 2001 12 17 | 704 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.8+ | 0.4− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.4− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.9− |
| 2001 12 17 | 704 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.2− |
| 2002 01 13 | 704 | 1.4+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.8+ | 0.1+ |
| 2002 01 13 | 704 | 0.1− | 1.2+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.7− | 0.7− |
| 2002 01 13 | 704 | 0.7− | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.7+ | | | | |
| 2002 01 13 | 704 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.6+ | | | | |

**2001 XM$_{168}$ = 1980 FX$_8$ = 1991 VK$_{11}$**

Id. Minor Planet Center (*MPO* 23255; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.44799 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30679042 | $\omega$ | 33.28132 | | −0.87135003 | +0.49065189 | |
| $a$ | 2.1772494 | $\Omega$ | 176.09814 | | −0.45963912 | −0.81400330 | |
| $e$ | 0.1264704 | $i$ | 2.64275 | | −0.17170032 | −0.31090087 | |
| $P$ | 3.21 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1980 03 23 | 809 | 1.0+ | 1.5+ | 2002 01 13 | 704 | 0.3− | 1.2+ | 2006 05 28 | 703 | 0.1− | 0.4+ |
| 1991 11 06 | 691 | 0.1+ | 0.6+ | 2002 01 13 | 704 | 0.8− | 1.1+ | 2006 05 28 | 703 | 0.1− | 0.1+ |
| 1991 11 06 | 691 | 0.6+ | 0.5+ | 2003 06 28 | 704 | 0.2+ | 0.0 | 2006 05 28 | 703 | 0.0 | 0.6− |
| 1991 11 06 | 691 | (0.6+ | 3.1+) | 2003 06 28 | 704 | 0.4+ | 0.3+ | 2006 05 28 | 703 | 0.1+ | 0.1+ |
| 1991 11 07 | 691 | 0.2− | 0.1− | 2003 06 28 | 704 | 0.3+ | 0.1− | 2006 05 28 | 704 | 0.2+ | 1.0+ |
| 1991 11 07 | 691 | 0.1+ | 1.7+ | 2004 12 09 | 703 | (0.4− | 3.8−) | 2006 05 28 | 704 | (0.4+ | 1.6+) |
| 1991 11 07 | 691 | 0.2− | 0.3+ | 2004 12 09 | 703 | (4.3+ | 3.1−) | 2006 05 28 | 704 | 0.1− | 0.8+ |
| 1991 11 07 | 691 | 0.5− | 0.9− | 2004 12 09 | 703 | 0.1+ | 0.1+ | 2006 05 28 | 704 | 1.2+ | 1.3+ |
| 1991 11 07 | 691 | 0.7− | 0.6+ | 2004 12 09 | 703 | 0.2− | 0.0 | 2006 05 28 | 704 | 0.4+ | 1.1+ |
| 1991 11 07 | 691 | 0.0 | 0.7− | 2004 12 14 | 703 | 0.2− | 0.5+ | 2006 06 05 | 704 | 0.2+ | 0.6+ |
| 1996 02 15 | 566 | 0.5− | 0.4− | 2004 12 14 | 703 | 1.1− | 0.1+ | 2006 06 05 | 704 | 0.3− | 0.7+ |
| 1996 02 15 | 566 | 0.2− | 0.5− | 2004 12 14 | 703 | 0.7− | 0.3− | 2006 06 05 | 704 | 0.9+ | 0.1− |
| 1996 02 15 | 566 | 0.6− | 0.6− | 2004 12 14 | 703 | 0.8− | 0.4+ | 2006 06 05 | 704 | 0.5− | 0.7+ |
| 2001 12 14 | 704 | 0.2+ | 1.4+ | 2004 12 20 | G96 | 0.1− | 0.3+ | 2006 06 16 | 644 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 1.6+ | 2004 12 20 | G96 | 0.1− | 0.0 | 2006 06 16 | 644 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.5+ | 1.3+ | 2004 12 20 | G96 | 0.0 | 0.0 | 2006 06 16 | 644 | 0.1− | 0.2− |
| 2001 12 14 | 704 | (0.3+ | 2.0+) | 2004 12 20 | G96 | 0.2− | 0.1− | 2006 06 20 | 703 | 0.3+ | 0.7− |
| 2001 12 17 | 704 | (0.3+ | 1.7+) | 2006 05 18 | 644 | 0.1− | 0.2+ | 2006 06 20 | 703 | 0.4+ | 0.2− |
| 2001 12 17 | 704 | 0.4− | 0.6+ | 2006 05 18 | 644 | 0.4− | 0.3+ | 2006 06 20 | 703 | 0.7− | 0.5− |
| 2001 12 17 | 704 | 0.3− | 0.3− | 2006 05 18 | 644 | 0.0 | 0.3+ | 2006 06 20 | 703 | 0.8− | 0.6− |
| 2001 12 17 | 704 | 0.3− | 0.5+ | 2006 05 27 | 703 | 0.2− | 0.9+ | 2006 06 23 | 644 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 05 27 | 703 | 0.6− | 0.2+ | 2006 06 23 | 644 | 0.2− | 0.3− |
| 2001 12 20 | 704 | 0.8+ | 0.5− | 2006 05 27 | 703 | 0.2+ | 0.1+ | 2006 06 23 | 644 | 0.3− | 0.3− |
| 2001 12 20 | 704 | 0.1− | 0.6− | 2006 05 27 | 703 | 0.1− | 0.6+ | 2006 06 23 | 644 | 0.3− | 0.1− |
| 2001 12 20 | 704 | 0.7+ | 0.1− | 2006 05 28 | 703 | (1.6+ | 0.3+) | 2006 06 23 | 644 | 0.5− | 0.1− |
| 2001 12 20 | 704 | 0.4+ | 0.1+ | 2006 05 28 | 703 | 0.2+ | 0.5+ | 2006 06 23 | 644 | 0.3− | 0.0 |
| 2001 12 20 | 704 | 1.3+ | 0.1− | 2006 05 28 | 703 | 0.8+ | 0.3− | | | | |
| 2002 01 13 | 704 | 0.2− | 0.9+ | 2006 05 28 | 703 | 0.8+ | 0.8+ | | | | |

**2001 XE$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.51067 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27902410 | $\omega$ | 142.33959 | | +0.72862125 | −0.68174494 | |
| $a$ | 2.3193960 | $\Omega$ | 260.77700 | | +0.61107458 | +0.69047443 | |
| $e$ | 0.1949093 | $i$ | 3.82460 | | +0.30935245 | +0.24180343 | |
| $P$ | 3.53 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.0 | 0.3− | 2001 12 20 | 704 | 0.6+ | 1.2− | 2004 08 20 | 691 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 0.0 | 0.3− | 2001 12 20 | 704 | 0.8+ | 1.1− | 2004 08 20 | 691 | 0.3− | 0.0 |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2004 08 09 | 699 | 1.4+ | 0.1+ | 2004 08 20 | 691 | 0.3− | 0.0 |
| 2001 12 17 | 691 | 0.9− | 1.0+ | 2004 08 09 | 699 | 0.9+ | 0.2− | 2004 09 10 | 704 | 0.4− | 0.5+ |
| 2001 12 17 | 704 | 1.1+ | 0.2− | 2004 08 09 | 699 | 0.1+ | 0.8− | 2004 09 10 | 704 | 0.2+ | 0.8− |
| 2001 12 17 | 704 | 1.4+ | 0.1+ | 2004 08 09 | 699 | (4.1− | 0.1+) | 2004 09 10 | 704 | 0.6− | 0.0 |
| 2001 12 17 | 691 | 0.5− | 0.1− | 2004 08 11 | 704 | (0.2− | 2.3+) | 2004 09 10 | 704 | 0.3+ | 0.3+ |
| 2001 12 17 | 691 | 0.6− | 0.9+ | 2004 08 11 | 704 | 0.4+ | 0.5+ | 2006 02 02 | 691 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 1.1+ | 0.4− | 2004 08 11 | 704 | 0.1− | 0.4+ | 2006 02 02 | 691 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 1.1+ | 0.4− | 2004 08 11 | 704 | 0.7+ | 0.1− | 2006 02 02 | 691 | 0.1+ | 0.1+ |
| 2001 12 20 | 704 | 1.5+ | 1.7− | 2004 08 11 | 704 | 0.2− | 0.4+ | | | | |
| 2001 12 20 | 704 | 0.1+ | 1.8− | 2004 08 11 | 704 | 0.4+ | 0.2+ | | | | |

**2001 XG$_{170}$ = 2006 SS$_{361}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.99044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18237097 | $\omega$ | 299.14003 | | +0.78286951 | −0.62077581 | |
| $a$ | 3.0796326 | $\Omega$ | 99.26440 | | +0.58456905 | +0.71082901 | |
| $e$ | 0.0627435 | $i$ | 2.43115 | | +0.21305951 | +0.33069549 | |
| $P$ | 5.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.3+ | 1.1+ | 2003 03 12 | 291 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2001 12 14 | 704 | 0.4+ | 0.8+ | 2003 03 31 | 645 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2001 12 14 | 704 | 0.0 | 1.2+ | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 1.1+ | 0.1− | 2003 04 09 | 691 | 0.1− | 0.4− | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2001 12 17 | 704 | 0.9+ | 1.3− | 2003 04 09 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 1.3− | 2003 04 09 | 691 | 0.4+ | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 12 17 | 704 | 0.5+ | 0.5− | 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2001 12 17 | 704 | 0.5+ | 1.0− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2001 12 18 | 691 | (3.4− | 2.5+) | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.3+ | 0.9− |
| 2001 12 18 | 691 | 0.6− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.0 | 1.4+ |
| 2001 12 18 | 691 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.9− |
| 2003 03 12 | 291 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2+ | 2006 11 17 | 703 | (1.6+ | 0.4+) |
| 2003 03 12 | 291 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.4− | 0.1− | | | | |

**2001 XH$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.02376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19080075 | $\omega$ | 282.00782 | | +0.57356153 | −0.81779754 | |
| $a$ | 2.9882436 | $\Omega$ | 132.88873 | | +0.77443480 | +0.52253382 | |
| $e$ | 0.1450567 | $i$ | 3.69903 | | +0.26697925 | +0.24117544 | |
| $P$ | 5.17 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4− | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.8− | 0.1− | 2006 11 16 | 691 | 0.2− | 0.0 | 2006 11 25 | 703 | (2.0− | 1.6+) |
| 2001 12 14 | 704 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.2− | 0.2+ | 2006 11 25 | 703 | 0.4+ | 0.5− |
| 2001 12 17 | 704 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1− | 2006 11 25 | 703 | 1.2+ | 1.0− |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.1− | 2006 11 25 | 703 | 0.6− | 0.8− |
| 2001 12 17 | 704 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2002 01 13 | 704 | 0.6+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.9− | 0.7+ |
| 2002 01 13 | 704 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.3+ |
| 2002 01 13 | 704 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.1− | | | | |

**2001 XC$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.37549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18963990 | $\omega$ | 205.24214 | | −0.47060050 | −0.87271087 | |
| $a$ | 3.0004259 | $\Omega$ | 273.06688 | | +0.83002257 | −0.38786103 | |
| $e$ | 0.2596742 | $i$ | 7.48280 | | +0.29932876 | −0.29654606 | |
| $P$ | 5.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.2− | 0.5+ | 2002 01 04 | 608 | (1.7+ | 0.6−) | 2002 01 15 | 704 | 0.7− | 1.1+ |
| 2001 12 14 | 704 | 0.1− | 0.4+ | 2002 01 04 | 608 | 1.2+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.2+ | 0.1− | 2002 01 04 | 608 | 0.7+ | 0.2− | 2006 11 17 | 691 | 0.7+ | 0.7+ |
| 2001 12 14 | 704 | 0.0 | 0.6+ | 2002 01 08 | 608 | 0.1+ | 1.2+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.1− | 2002 01 08 | 608 | (0.4+ | 1.6+) | 2006 11 19 | 704 | 0.9− | 0.4+ |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2002 01 08 | 608 | 0.0 | 1.1+ | 2006 11 19 | 704 | 1.2− | 1.0− |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2002 01 09 | 704 | 0.1+ | 0.8− | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2002 01 09 | 704 | 0.2− | 1.3− | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2001 12 20 | 704 | 0.8+ | 0.0 | 2002 01 09 | 704 | 0.9− | 0.9− | 2006 11 22 | 704 | 1.5− | 0.6− |
| 2001 12 20 | 704 | 0.1− | 0.2− | 2002 01 13 | 704 | 0.3+ | 0.7− | 2006 11 22 | 704 | 1.0− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 704 | 0.6+ | 0.3− | 2002 01 13 | 704 | 0.5− | 0.2− | 2006 11 22 | 704 | 0.2− | 0.2− | | |
| 2001 12 20 | 704 | 0.2− | 0.2+ | 2002 01 13 | 704 | 0.2+ | 0.1− | 2006 11 25 | 691 | 0.8+ | 0.3− | | |
| 2001 12 20 | 704 | 0.2− | 0.2+ | 2002 01 15 | 704 | 0.6+ | 0.4+ | 2006 11 25 | 691 | 0.1− | 0.0 | | |
| 2001 12 25 | 608 | 0.1+ | 0.9+ | 2002 01 15 | 704 | 1.0− | 0.2− | 2006 11 25 | 691 | 0.0 | 0.0 | | |
| 2001 12 25 | 608 | 0.2+ | 1.0− | 2002 01 15 | 704 | (0.1+ | 3.5+) | | | | | | |
| 2001 12 25 | 608 | 0.1+ | 1.2− | 2002 01 15 | 704 | 0.4− | 0.8+ | | | | | | |

**2001 XW$_{176}$ = 2006 WW$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.93525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17952194 | $\omega$ | 236.63582 | | −0.85243124 | −0.50176721 | |
| $a$ | 3.1121297 | $\Omega$ | 272.85050 | | +0.51513683 | −0.75796103 | |
| $e$ | 0.0760003 | $i$ | 8.46004 | | +0.08941491 | −0.41680301 | |
| $P$ | 5.49 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.3− | 0.4+ | 2001 12 18 | 644 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− | | |
| 2001 12 14 | 704 | 0.1− | 0.0 | 2001 12 18 | 644 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.3− | | |
| 2001 12 14 | 704 | 0.7+ | 0.1− | 2002 01 09 | 704 | 0.4+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.5− | | |
| 2001 12 14 | 704 | 0.2− | 0.8+ | 2002 01 09 | 704 | 0.4+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1+ | | |
| 2001 12 17 | 704 | 0.5− | 1.1− | 2002 01 09 | 704 | 0.6− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1+ | | |
| 2001 12 17 | 704 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.1+ | | |
| 2001 12 17 | 704 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.8+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1+ | | |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.5+ | | | | | | |
| 2001 12 18 | 644 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.4− | | | | | | |

**2001 XK$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.50655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37003085 | $\omega$ | 295.17447 | | +0.72133076 | −0.56039248 | |
| $a$ | 1.9215164 | $\Omega$ | 101.55612 | | +0.68321789 | +0.67209722 | |
| $e$ | 0.1011856 | $i$ | 24.54530 | | −0.11355729 | +0.48398925 | |
| $P$ | 2.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1+ | 0.3+ | 2001 12 19 | 704 | 0.7− | 0.1+ | 2002 02 03 | 644 | 0.1+ | 0.4+ | | |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2001 12 20 | 704 | 0.4− | 0.1+ | 2002 02 03 | 644 | 0.0 | 0.4+ | | |
| 2001 12 14 | 704 | 0.4− | 0.4− | 2001 12 20 | 704 | 0.5− | 0.2+ | 2002 02 03 | 644 | 0.0 | 0.4+ | | |
| 2001 12 14 | 704 | 0.1+ | 0.8+ | 2001 12 20 | 704 | 0.2− | 0.9+ | 2002 02 10 | 704 | 0.5+ | 0.6− | | |
| 2001 12 14 | 704 | 0.1− | 0.6− | 2001 12 20 | 704 | 0.6− | 0.4+ | 2002 02 10 | 704 | 0.1− | 0.1− | | |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2001 12 20 | 704 | 0.0 | 0.4− | 2002 02 10 | 704 | 0.0 | 0.7+ | | |
| 2001 12 14 | 704 | 0.4− | 0.9− | 2001 12 21 | 691 | (0.2− | 6.7−) | 2002 02 10 | 704 | 0.7+ | 0.6− | | |
| 2001 12 14 | 704 | 0.5+ | 0.5+ | 2001 12 21 | 691 | (0.3− | 6.5−) | 2005 03 11 | 703 | 0.3+ | 0.2− | | |
| 2001 12 17 | 704 | 0.6+ | 0.4+ | 2001 12 21 | 691 | (0.0 | 6.8−) | 2005 03 11 | 703 | 0.2− | 0.1− | | |
| 2001 12 17 | 704 | 0.5+ | 0.1− | 2001 12 23 | 704 | 0.1+ | 0.2− | 2005 03 11 | 703 | 0.1− | 0.2+ | | |
| 2001 12 17 | 704 | 0.7+ | 0.5+ | 2001 12 23 | 704 | 0.9− | 0.7− | 2005 03 11 | 703 | (2.1+ | 1.4−) | | |
| 2001 12 17 | 644 | 0.3+ | 0.2+ | 2001 12 23 | 704 | 1.0− | 1.1− | 2006 10 24 | E12 | 0.0 | 0.4+ | | |
| 2001 12 17 | 704 | 0.7+ | 0.5+ | 2001 12 23 | 704 | 0.9− | 0.9− | 2006 10 24 | E12 | 0.2+ | 0.0 | | |
| 2001 12 17 | 644 | 0.4+ | 0.5+ | 2001 12 26 | 608 | 0.4+ | 0.7− | 2006 10 24 | E12 | 0.0 | 0.1+ | | |
| 2001 12 17 | 644 | 0.3+ | 0.3+ | 2001 12 26 | 608 | 0.2+ | 1.1− | 2006 10 24 | E12 | 0.3+ | 0.3− | | |
| 2001 12 17 | 704 | 1.0+ | 0.8+ | 2001 12 26 | 608 | 0.3+ | 0.9− | 2006 11 14 | E12 | 0.4− | 0.0 | | |
| 2001 12 19 | 704 | 0.5− | 0.0 | 2002 01 08 | 704 | 0.1− | 0.2− | 2006 11 14 | E12 | 0.2− | 0.3− | | |
| 2001 12 19 | 704 | 1.1− | 0.7− | 2002 01 08 | 704 | 0.1− | 0.1+ | 2006 11 14 | E12 | 0.1+ | 0.3− | | |
| 2001 12 19 | 704 | 0.7− | 0.9+ | 2002 01 08 | 704 | 0.8+ | 0.4+ | | | | | | |

**2001 XV$_{185}$ = 1984 BE$_2$ = 2004 TD$_{313}$**

Id. Minor Planet Center (*MPO* 72434; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.62386 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27167377 | $\omega$ | 345.13528 | | −0.62507053 | −0.78024400 | |
| $a$ | 2.3610449 | $\Omega$ | 143.54406 | | +0.71996549 | −0.58743567 | |
| $e$ | 0.1162384 | $i$ | 2.16981 | | +0.30155683 | −0.21479904 | |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 01 25 | 675 | 0.2− | 0.1+ | 2004 10 11 | 691 | 0.1− | 0.5+ | 2006 02 24 | 704 | 1.2+ | 0.6+ | | |
| 1984 01 26 | 675 | 0.4+ | 0.1+ | 2004 10 11 | 691 | 0.2− | 0.6+ | 2006 02 24 | 704 | (2.3+ | 1.2+) | | |
| 1997 10 24 | 608 | 0.8− | 0.6+ | 2004 10 11 | 691 | 0.5− | 0.9+ | 2006 02 24 | 704 | 0.5− | 0.5+ | | |
| 1997 10 24 | 608 | 0.7− | 0.7+ | 2004 10 15 | 691 | 0.1+ | 0.1+ | 2006 02 24 | 704 | 0.8+ | 0.4− | | |
| 2000 07 30 | 807 | 0.5− | 0.7+ | 2004 10 15 | 691 | 0.3+ | 0.1+ | 2006 02 25 | 704 | 0.6+ | 0.6+ | | |
| 2000 07 30 | 807 | 0.1+ | 0.7+ | 2004 10 15 | 691 | 0.0 | 0.2+ | 2006 02 25 | 704 | 0.6− | 0.4+ | | |
| 2001 12 14 | 704 | 0.8− | 0.3− | 2005 12 01 | 695 | 0.3− | 0.1+ | 2006 02 25 | 704 | 0.8+ | 0.1+ | | |
| 2001 12 14 | 704 | 1.4− | 0.3+ | 2005 12 01 | 695 | 0.1+ | 0.0 | 2006 02 25 | 704 | 0.5+ | 0.6+ | | |
| 2001 12 14 | 704 | 1.2− | 0.4+ | 2006 02 03 | G96 | 0.1+ | 0.3− | 2006 03 23 | 703 | 0.1+ | 0.1+ | | |
| 2001 12 14 | 704 | 0.8− | 1.0− | 2006 02 03 | G96 | 0.0 | 0.1+ | 2006 03 23 | 703 | 0.5− | 1.2+ | | |
| 2001 12 17 | 644 | 0.8− | 0.3+ | 2006 02 03 | G96 | 0.2+ | 0.2− | 2006 03 23 | 703 | 1.0− | 0.4− | | |
| 2001 12 17 | 644 | 0.9− | 0.3+ | 2006 02 03 | G96 | 0.5− | 0.4− | 2006 03 23 | 703 | 0.6+ | 0.1− | | |
| 2001 12 17 | 644 | 0.8− | 0.2+ | 2006 02 06 | 703 | 0.8+ | 1.5+ | 2006 03 29 | 691 | 0.2− | 0.2− | | |
| 2001 12 17 | 704 | 0.5− | 0.7− | 2006 02 06 | 703 | 0.4+ | 1.7+ | 2006 03 29 | 691 | 0.0 | 0.0 | | |
| 2001 12 17 | 704 | 1.0− | 0.0 | 2006 02 06 | 703 | 0.9− | 0.1− | 2006 03 29 | 691 | 0.0 | 0.1− | | |
| 2001 12 17 | 704 | 1.2− | 0.5− | 2006 02 06 | 703 | 1.9− | 0.0 | 2006 04 02 | 691 | 0.3− | 0.1− | | |
| 2001 12 17 | 704 | 1.2− | 1.0− | 2006 02 20 | 703 | 1.3− | 0.8− | 2006 04 02 | 691 | 0.4− | 0.2− | | |
| 2001 12 20 | 704 | 1.2+ | 0.5+ | 2006 02 20 | 703 | 0.9+ | 1.2− | 2006 04 02 | 691 | 0.3− | 0.1− | | |
| 2001 12 20 | 704 | 0.9+ | 0.9+ | 2006 02 20 | 703 | 0.4+ | 0.2+ | 2006 04 06 | 691 | 0.2+ | 0.0 | | |
| 2001 12 20 | 704 | 1.9+ | 1.2+ | 2006 02 20 | 703 | 1.6+ | 0.2− | 2006 04 06 | 691 | 0.4+ | 0.1− | | |
| 2001 12 20 | 704 | 1.2+ | 1.0+ | 2006 02 21 | 699 | 0.5+ | 0.4+ | 2006 04 06 | 691 | 0.9− | 1.1+ | | |
| 2001 12 20 | 704 | 1.3+ | 0.3+ | 2006 02 21 | 699 | (2.0− | 0.5−) | 2006 05 04 | G96 | 0.4− | 0.2− | | |
| 2002 01 15 | 704 | 1.9+ | 0.2− | 2006 02 21 | 699 | (1.9+ | 2.4−) | 2006 05 04 | G96 | 0.1− | 0.1− | | |
| 2002 01 15 | 704 | 0.6+ | 1.3− | 2006 02 21 | 699 | 0.4+ | 1.0+ | 2006 05 04 | G96 | 0.1+ | 0.2− | | |
| 2002 01 15 | 704 | 0.4+ | 0.8− | 2006 02 23 | 691 | 0.1+ | 0.2+ | 2006 05 04 | G96 | 0.3+ | 0.0 | | |
| 2002 01 15 | 704 | 0.9+ | 0.6− | 2006 02 23 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2002 01 15 | 704 | 0.7+ | 1.0− | 2006 02 23 | 691 | 0.1+ | 0.1− | | | | | | |

**2001 XY$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.18284 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18382609 | $\omega$ | 306.25601 | | +0.48215188 | −0.86182900 | |
| $a$ | 3.0633594 | $\Omega$ | 114.19366 | | +0.84894488 | +0.41523017 | |
| $e$ | 0.2314640 | $i$ | 9.93762 | | +0.21638430 | +0.29126393 | |
| $P$ | 5.36 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1− | 0.1+ | 2002 01 13 | 691 | 0.4− | 0.0 | 2006 11 13 | 703 | 1.0+ | 0.5− | | |
| 2001 12 14 | 704 | 0.3+ | 0.2− | 2002 01 13 | 691 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.2+ | | |
| 2001 12 14 | 704 | 0.2− | 0.1− | 2002 01 13 | 704 | 0.3+ | 0.6− | 2006 11 13 | 703 | 0.4− | 0.1+ | | |
| 2001 12 14 | 704 | 0.5− | 0.6+ | 2002 01 13 | 691 | 0.2− | 0.0 | 2006 11 13 | 703 | 1.0+ | 0.1− | | |
| 2001 12 17 | 644 | 0.3+ | 0.7+ | 2002 01 13 | 704 | 0.3+ | 0.8− | 2006 11 19 | 703 | 0.1+ | 0.1− | | |
| 2001 12 17 | 644 | 0.2+ | 0.4+ | 2002 01 13 | 704 | 0.3+ | 0.8− | 2006 11 19 | 703 | 0.7− | 0.2− | | |
| 2001 12 17 | 644 | 0.2+ | 1.0+ | 2002 01 13 | 704 | 0.2+ | 0.8− | 2006 11 19 | 703 | 0.1+ | 0.6+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.7− | 2002 01 19 | 704 | 0.8+ | 0.2+ | 2006 11 19 | 703 | 0.5− | 0.2− | | |
| 2001 12 17 | 704 | 0.5+ | 0.2− | 2002 01 19 | 704 | 0.2+ | 0.5+ | 2006 12 01 | G96 | 0.3− | 0.1+ | | |
| 2001 12 17 | 704 | 0.4− | 0.1− | 2002 01 19 | 704 | (1.8+ | 0.8−) | 2006 12 01 | G96 | 0.2+ | 0.2− | | |
| 2002 01 12 | 122 | (0.7− | 2.3−) | 2002 02 12 | 704 | 1.3+ | 1.4+ | 2006 12 01 | G96 | 0.2+ | 0.7+ | | |
| 2002 01 12 | 122 | (1.5− | 0.5+) | 2002 02 12 | 704 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.4− | | |
| 2002 01 12 | 122 | 0.3− | 0.3− | 2002 02 12 | 704 | 0.2− | 0.4− | | | | | | |

**2001 XN$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.97607 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21040272 | $\omega$ | 131.17526 | | +0.60048224 | −0.79160850 | |
| $a$ | 2.7996376 | $\Omega$ | 281.56660 | | +0.69476882 | +0.58647456 | |
| $e$ | 0.2517036 | $i$ | 6.62547 | | +0.39587544 | +0.17147468 | |
| $P$ | 4.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 327 | 0.0 | 0.0 | 2002 01 11 | 699 | 0.1− | 0.5− | 2002 02 03 | 608 | 0.2− | 1.4− | | |
| 1996 11 09 | 327 | 0.1+ | 0.3− | 2002 01 11 | 699 | 0.0 | 0.8+ | 2002 02 03 | 608 | 0.2− | 1.1− | | |
| 1996 11 09 | 327 | 0.2− | 0.3+ | 2002 01 13 | 704 | 0.6− | 1.2− | 2002 02 03 | 608 | 0.8− | 0.8− | | |
| 2001 12 14 | 291 | 0.6− | 0.3− | 2002 01 13 | 704 | 0.1− | 0.4+ | 2002 02 06 | 644 | 0.3+ | 1.0+ | | |
| 2001 12 14 | 291 | 0.3− | 0.1− | 2002 01 13 | 704 | 0.2+ | 0.3+ | 2002 02 06 | 644 | 0.1− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.4− | 0.2− | 2002 01 13 | 704 | 0.1+ | 0.5+ | 2002 02 06 | 644 | 0.1+ | 0.9+ | | |
| 2001 12 14 | 704 | 0.1− | 0.2− | 2002 01 13 | 704 | 0.5+ | 0.5+ | 2002 02 06 | 644 | 0.4+ | 0.5+ | | |
| 2001 12 14 | 704 | 0.4+ | 0.5+ | 2002 01 14 | 704 | 0.1+ | 0.2− | 2002 02 06 | 644 | 0.1+ | 1.0+ | | |
| 2001 12 14 | 704 | 0.2− | 0.6+ | 2002 01 14 | 704 | 0.1+ | 0.1− | 2002 02 06 | 644 | 0.2+ | 0.6+ | | |
| 2001 12 14 | 704 | 0.1− | 0.5− | 2002 01 14 | 704 | 0.3+ | 0.3− | 2002 02 09 | 704 | 0.5− | 0.7+ | | |
| 2001 12 14 | 704 | 0.1+ | 0.5+ | 2002 01 14 | 704 | 0.2+ | 0.7− | 2002 02 09 | 704 | 0.2− | 0.5+ | | |
| 2001 12 17 | 704 | 0.4+ | 1.4− | 2002 01 14 | 704 | 0.5− | 0.7− | 2002 02 09 | 704 | 0.4+ | 0.5− | | |
| 2001 12 17 | 644 | 0.1+ | 0.3+ | 2002 01 18 | 704 | 0.2− | 0.1+ | 2005 09 09 | 704 | 0.3+ | 0.3+ | | |
| 2001 12 17 | 704 | 0.5+ | 1.2− | 2002 01 18 | 704 | 0.8− | 1.1+ | 2005 09 09 | 704 | 0.6+ | 0.7+ | | |
| 2001 12 17 | 644 | 0.1− | 0.3+ | 2002 01 18 | 704 | 0.0 | 0.8+ | 2005 09 09 | 704 | 0.0 | 0.3+ | | |
| 2001 12 17 | 644 | 0.1− | 0.2+ | 2002 01 19 | 704 | 0.2+ | 0.8+ | 2005 09 09 | 704 | 0.2+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.9+ | 1.6− | 2002 01 19 | 704 | 1.0+ | 1.9+ | 2005 09 23 | 644 | 0.8− | 0.1+ | | |
| 2001 12 17 | 704 | 1.4+ | 1.2− | 2002 01 19 | 704 | 0.3+ | 0.6+ | 2005 09 23 | 644 | 0.3− | 0.1− | | |
| 2001 12 18 | 291 | 0.5− | 0.3+ | 2002 01 19 | 704 | (1.5+ | 2.1+) | 2005 09 23 | 644 | 0.2− | 0.1− | | |
| 2001 12 18 | 291 | 0.7− | 0.5+ | 2002 01 19 | 704 | 0.8+ | 0.3+ | 2005 10 01 | 703 | 0.6− | 0.8− | | |
| 2001 12 18 | 291 | 0.5− | 0.5+ | 2002 01 19 | 704 | 1.4+ | 1.4+ | 2005 10 01 | 703 | 0.8− | 0.1+ | | |
| 2002 01 09 | 704 | 0.8+ | 0.7− | 2002 01 19 | 704 | 0.4+ | 0.3+ | 2005 10 01 | 703 | 0.4− | 0.4+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.5− | 2002 01 19 | 704 | (1.9+ | 2.3+) | 2005 10 01 | 703 | 1.6− | 0.1− | | |
| 2002 01 09 | 704 | 1.0+ | 1.2− | 2002 01 19 | 704 | 0.8+ | 0.3+ | 2005 10 08 | 704 | 0.9+ | 0.3+ | | |
| 2002 01 09 | 704 | 1.1+ | 1.6− | 2002 01 19 | 704 | (2.4+ | 0.6+) | 2005 10 08 | 704 | 1.5+ | 0.4− | | |
| 2002 01 09 | 704 | 0.5+ | 1.1− | 2002 01 22 | 704 | 0.3− | 0.4− | 2005 10 08 | 704 | 0.5+ | 0.6+ | | |
| 2002 01 11 | 699 | (0.2− | 3.0+) | 2002 01 22 | 704 | 0.4+ | 0.5− | 2005 10 08 | 704 | 0.3+ | 0.2− | | |
| 2002 01 11 | 699 | 0.2+ | 0.0 | 2002 01 22 | 704 | 0.1− | 0.3− | | | | | | |

### 2001 XX$_{200}$ = 2006 VN$_{87}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.67313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18600705 | $\omega$ | 329.01500 | | −0.65094990 | +0.73691989 | |
| $a$ | 3.0393667 | $\Omega$ | 259.70687 | | −0.65303204 | −0.66600949 | |
| $e$ | 0.0657190 | $i$ | 10.67431 | | −0.38705734 | −0.11567381 | |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.4− | 1.3− | 2001 12 19 | 704 | 0.2− | 0.5− | 2006 11 14 | 703 | 1.2+ | 0.3+ | | |
| 2001 11 21 | 704 | 0.3− | 0.8− | 2001 12 19 | 704 | 0.3− | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.8− | | |
| 2001 11 21 | 704 | (0.1+ | 1.8−) | 2001 12 19 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.7− | 0.6+ | | |
| 2001 12 15 | 704 | 0.2+ | 0.4+ | 2001 12 19 | 704 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.5− | 0.8+ | | |
| 2001 12 15 | 704 | 0.0 | 0.8+ | 2001 12 19 | 704 | 0.5− | 0.4− | 2006 11 15 | 691 | 0.1− | 0.1− | | |
| 2001 12 15 | 704 | 0.7− | 1.0+ | 2005 08 05 | 644 | 0.4+ | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.2− | | |
| 2001 12 15 | 704 | 0.4+ | 0.8+ | 2005 08 05 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.4− | 0.1− | | |
| 2001 12 17 | 704 | 0.7− | 0.6− | 2005 08 05 | 644 | 0.2+ | 0.5+ | 2006 11 22 | 704 | 0.7− | 0.4+ | | |
| 2001 12 17 | 704 | 0.1+ | 0.6− | 2005 11 04 | G96 | 0.3− | 0.7− | 2006 11 22 | 704 | 0.2+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.6+ | 1.1+ | 2005 11 04 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.2− | | |
| 2001 12 17 | 704 | 0.7+ | 0.1+ | 2005 11 04 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.9+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.2− | 2005 11 04 | G96 | 0.1− | 0.3− | | | | | | |

### 2001 XN$_{201}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.28986 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16871937 | $\omega$ | 325.85619 | | −0.03697057 | −0.99894339 | |
| $a$ | 3.2435909 | $\Omega$ | 126.24768 | | +0.92424673 | −0.04456871 | |
| $e$ | 0.0831594 | $i$ | 1.93989 | | +0.38000153 | +0.01121306 | |
| $P$ | 5.84 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 621 | 0.4− | 0.3− | 2002 02 08 | 691 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2001 12 14 | 621 | 0.1− | 0.6− | 2002 02 08 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2001 12 14 | 621 | 0.2+ | 0.3− | 2002 02 10 | 704 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.2− | | |
| 2001 12 15 | 621 | 0.1− | 0.0 | 2002 02 10 | 704 | 0.3− | 0.9− | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2001 12 15 | 621 | 0.2− | 0.0 | 2002 02 10 | 704 | 0.1− | 0.7− | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2001 12 15 | 621 | 0.6− | 0.1− | 2002 02 12 | 691 | 0.6− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.4+ | | |
| 2001 12 15 | 621 | 1.3− | 0.6+ | 2002 02 12 | 691 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1− | | |
| 2002 01 10 | 644 | 0.3+ | 0.0 | 2002 02 12 | 691 | (2.5− | 1.1+) | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 01 10 | 644 | 0.3+ | 0.3+ | 2002 02 14 | 691 | 0.9+ | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | | |
| 2002 01 10 | 644 | 0.2+ | 0.3+ | 2002 02 14 | 691 | 0.7+ | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.3+ | | |
| 2002 01 14 | 704 | 0.4+ | 0.0 | 2002 02 14 | 691 | 0.9+ | 0.5+ | 2006 11 13 | 644 | 0.4+ | 0.1− | | |
| 2002 01 14 | 704 | 0.4+ | 0.4+ | 2002 02 14 | 291 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.5+ | 0.2+ | | |
| 2002 01 14 | 704 | 0.0 | 0.0 | 2002 02 14 | 291 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.5+ | | |
| 2002 01 22 | 291 | 0.7− | 0.0 | 2002 02 14 | 291 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.4+ | | |
| 2002 01 22 | 291 | 0.5− | 0.0 | 2005 08 27 | 644 | 0.1− | 0.7+ | 2006 11 17 | 703 | 0.1− | 0.6− | | |
| 2002 01 22 | 291 | 0.7− | 0.2− | 2005 08 27 | 644 | 0.3− | 0.8+ | 2006 11 17 | 703 | 0.2− | 0.1+ | | |
| 2002 02 07 | 704 | 0.1+ | 0.6+ | 2005 08 27 | 644 | 0.3− | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.1− | | |
| 2002 02 07 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.7− | 0.5− | | |
| 2002 02 07 | 704 | 0.9− | 1.0+ | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.3− | | |
| 2002 02 08 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.6− | 0.8− | | |

### 2001 XV$_{201}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.81445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18152019 | $\omega$ | 272.24166 | | +0.09354630 | −0.99561255 | |
| $a$ | 3.0892479 | $\Omega$ | 172.38966 | | +0.91987080 | +0.08559242 | |
| $e$ | 0.1651639 | $i$ | 0.94226 | | +0.38090261 | +0.03780994 | |
| $P$ | 5.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.2− | 0.3+ | 2002 02 11 | 704 | (2.2+ | 0.9+) | 2006 11 11 | 691 | 0.3− | 0.3− | | |
| 2001 12 14 | 291 | 0.6− | 0.3− | 2002 02 11 | 704 | (0.5+ | 1.6+) | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2001 12 14 | 291 | 0.6− | 0.2− | 2003 04 02 | 807 | 0.7+ | 0.1+ | 2006 11 11 | 691 | 0.4− | 0.1+ | | |
| 2001 12 18 | 291 | (0.2+ | 1.8+) | 2003 04 02 | 807 | 0.6− | 0.7+ | 2006 11 15 | 691 | 0.2− | 0.0 | | |
| 2001 12 18 | 291 | 0.2− | 0.4+ | 2003 04 02 | 807 | 0.5− | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2001 12 18 | 291 | 0.2− | 0.3+ | 2003 04 02 | 807 | 0.9+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.2+ | | |
| 2002 01 09 | 704 | 0.7+ | 0.7+ | 2003 04 02 | 807 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.2+ | | |
| 2002 01 09 | 704 | (1.8+ | 0.6−) | 2006 09 27 | G96 | 0.7− | 0.2+ | 2006 11 19 | 691 | 0.4− | 0.0 | | |
| 2002 01 09 | 704 | 0.6+ | 1.4− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2002 01 09 | 704 | (1.6+ | 0.5−) | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1+ | | |
| 2002 01 13 | 704 | 0.4+ | 0.6− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2002 01 13 | 704 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2002 01 13 | 704 | (1.7+ | 0.6−) | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.5− | 0.4+ | | |
| 2002 01 13 | 704 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.8+ | 0.6− | | |
| 2002 01 13 | 704 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.5− | 2006 11 27 | 703 | 0.2+ | 0.2− | | |
| 2002 01 15 | 704 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.1− | 1.0+ | | |
| 2002 01 15 | 704 | 0.7− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 01 15 | 704 | 0.5− | 1.4− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.3− | 0.1+ | | |
| 2002 02 11 | 691 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2002 02 11 | 691 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.3+ | | |
| 2002 02 11 | 691 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.3+ | 0.3+ | | |
| 2002 02 11 | 704 | (1.7+ | 2.2+) | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 12 01 | 691 | 0.2+ | 0.2+ | | |
| 2002 02 11 | 704 | (1.8+ | 0.7+) | 2006 10 31 | G96 | 0.1− | 0.1− | | | | | | |

### 2001 XY$_{201}$ = 2006 WS$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.66514 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18123189 | $\omega$ | 8.93849 | | −0.01099674 | −0.99936285 | |
| $a$ | 3.0925232 | $\Omega$ | 81.69677 | | +0.91529272 | −0.02373349 | |
| $e$ | 0.1391275 | $i$ | 1.96650 | | +0.40263918 | +0.02665752 | |
| $P$ | 5.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.2− | 0.8+ | 2006 10 19 | G96 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.3− | 0.0 | | |
| 2001 12 14 | 291 | 0.7− | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2001 12 14 | 291 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.9− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2001 12 18 | 291 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2001 12 18 | 291 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.3− | 0.2− | | |
| 2001 12 18 | 291 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2002 01 14 | 645 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.0+ | 0.8− | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 2.4− | 2006 11 24 | G96 | 0.2+ | 0.1+ | | |
| 2002 01 14 | 704 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.3+ | 1.5− | 2006 11 24 | G96 | 0.4+ | 0.1− | | |
| 2002 01 14 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | 1.5− | 0.0 | 2006 11 27 | 691 | 0.2− | 0.2+ | | |
| 2002 01 14 | 704 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.3+ | 0.2+ | | |
| 2002 01 14 | 704 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 12 01 | 691 | 0.2− | 0.4− | | |
| 2006 09 27 | G96 | 1.1− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.7− | 2006 12 01 | 691 | 0.5+ | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 19 | J75 | 0.2+ | 1.6+ | 2006 12 01 | 691 | 0.1+ | 0.7+ | | |
| 2006 09 27 | G96 | 0.7+ | 0.2− | 2006 11 19 | J75 | 1.4+ | 0.4− | | | | | | |
| 2006 10 19 | G96 | 0.8+ | 0.3+ | 2006 11 19 | 691 | 0.4− | 0.1+ | | | | | | |

**2001 XE$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.02885 | | (2000.0) | | | |
| $n$ | 0.19063235 | $\omega$ | 355.55207 | | +0.38839508 | −0.90364309 |
| $a$ | 2.9900031 | $\Omega$ | 71.50964 | | +0.85121594 | +0.27679964 |
| $e$ | 0.0818534 | $i$ | 10.97145 | | +0.35295990 | +0.32681972 |
| $P$ | 5.17 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.4+ | 0.2− | 2002 01 08 | 704 | 0.1− | 0.9+ | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2001 12 11 | 704 | 0.4+ | 0.1− | 2002 01 08 | 704 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2001 12 11 | 704 | 0.5+ | 0.1+ | 2002 01 08 | 704 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.7+ | | |
| 2001 12 11 | 704 | 0.2− | 0.2+ | 2002 01 14 | 704 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2001 12 18 | 704 | 0.8− | 1.1+ | 2002 01 14 | 704 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.5− | | |
| 2001 12 18 | 704 | 0.3− | 0.4+ | 2002 01 14 | 704 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.4− | | |
| 2001 12 18 | 704 | 0.1− | 0.5+ | 2002 01 14 | 704 | (1.8+ | 0.2−) | 2006 11 24 | G96 | 0.3+ | 0.8− | | |
| 2001 12 19 | 704 | 0.3+ | 0.2− | 2002 01 14 | 704 | 0.6+ | 0.8− | 2006 11 27 | 691 | 0.3+ | 0.2− | | |
| 2001 12 19 | 704 | 0.5+ | 0.3− | 2006 11 15 | 691 | 0.5− | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.0 | | |
| 2001 12 19 | 704 | 0.4+ | 0.1+ | 2006 11 15 | 691 | 0.5− | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.1− | | |
| 2001 12 23 | 704 | 1.1− | 0.3− | 2006 11 15 | 691 | 0.4− | 0.0 | 2006 12 01 | 704 | 0.9+ | 0.6+ | | |
| 2001 12 23 | 704 | 0.8− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.6− | 0.0 | | |
| 2001 12 23 | 704 | 0.2− | 1.1− | 2006 11 19 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.1+ | 0.5+ | | |
| 2001 12 23 | 704 | (1.9− | 0.2−) | 2006 11 19 | 691 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.3− | 1.3+ | | |

**2001 XR$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.84285 | | (2000.0) | | | |
| $n$ | 0.17261765 | $\omega$ | 228.55045 | | +0.17756757 | −0.98224643 |
| $a$ | 3.1945713 | $\Omega$ | 211.37539 | | +0.93400999 | +0.18757811 |
| $e$ | 0.1642717 | $i$ | 6.67433 | | +0.30999208 | −0.00253140 |
| $P$ | 5.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.2− | 0.8− | 2001 12 17 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.2− | | |
| 2001 11 17 | 704 | 0.5− | 0.0 | 2001 12 17 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.3− | | |
| 2001 11 17 | 704 | 0.4− | 0.5− | 2001 12 18 | 704 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2001 11 17 | 704 | 1.0− | 0.1− | 2001 12 18 | 704 | 0.8+ | 1.2+ | 2006 10 24 | 644 | 0.1+ | 0.3− | | |
| 2001 11 17 | 704 | 0.4− | 0.7− | 2001 12 18 | 704 | 0.4+ | 0.7+ | 2006 10 24 | 644 | 0.1+ | 0.0 | | |
| 2001 12 11 | 704 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 10 24 | 644 | 0.4+ | 0.1− | | |
| 2001 12 11 | 704 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.7+ | 1.1+ | 2006 10 29 | 703 | 0.2+ | 1.1− | | |
| 2001 12 11 | 704 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 29 | 703 | 1.2− | 0.1+ | | |
| 2001 12 11 | 704 | 0.9+ | 0.8− | 2006 10 12 | 644 | 1.3+ | 0.5+ | 2006 10 29 | 703 | 0.6− | 0.1− | | |
| 2001 12 11 | 704 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 10 29 | 703 | 0.1− | 1.4− | | |
| 2001 12 17 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.4− | | | | | | |

**2001 XU$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.78690 | | (2000.0) | | | |
| $n$ | 0.17948154 | $\omega$ | 194.42467 | | +0.23449655 | −0.93944396 |
| $a$ | 3.1125967 | $\Omega$ | 242.54019 | | +0.91748185 | +0.29885010 |
| $e$ | 0.1912374 | $i$ | 16.35837 | | +0.32130735 | −0.16773092 |
| $P$ | 5.49 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 1.3− | 0.4+ | 2001 12 17 | 644 | 0.4+ | 0.3+ | 2006 09 28 | 703 | 0.3+ | 0.7+ | | |
| 2001 11 09 | 704 | 0.5− | 0.5+ | 2001 12 18 | 704 | 1.5+ | 0.7− | 2006 09 28 | 703 | 0.4+ | 0.8− | | |
| 2001 11 09 | 704 | 0.9− | 0.7+ | 2001 12 18 | 704 | 0.5+ | 0.0 | 2006 09 28 | 703 | 0.2− | 0.5− | | |
| 2001 11 12 | 704 | 0.7− | 1.2+ | 2001 12 18 | 704 | 0.9+ | 0.7− | 2006 09 28 | 703 | 0.5− | 0.4+ | | |
| 2001 11 12 | 704 | 0.2− | 0.3− | 2001 12 18 | 704 | 0.8+ | 0.5− | 2006 09 28 | 703 | 0.2− | 0.9− | | |
| 2001 11 12 | 704 | 0.6− | 0.7− | 2002 02 01 | 209 | 0.7− | 0.6+ | 2006 09 30 | 704 | 0.3+ | 0.3− | | |
| 2001 11 12 | 704 | 0.2+ | 1.1+ | 2002 02 01 | 209 | 0.8− | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.0 | | |
| 2001 11 12 | 704 | 0.1+ | 1.0+ | 2002 02 01 | 209 | 0.8− | 0.0 | 2006 09 30 | 704 | 0.9− | 0.2+ | | |
| 2001 11 20 | 704 | 0.6+ | 0.9− | 2002 02 02 | 209 | 0.8− | 0.1− | 2006 09 30 | 704 | 0.4− | 0.8+ | | |
| 2001 11 20 | 704 | (1.2+ | 2.0−) | 2002 02 02 | 209 | 0.8− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.1+ | | |
| 2001 11 20 | 704 | (1.2+ | 1.6−) | 2002 02 02 | 209 | 0.7− | 0.0 | 2006 10 19 | 703 | 0.6− | 0.0 | | |
| 2001 11 20 | 704 | (1.1+ | 1.9−) | 2006 09 17 | 703 | 0.0 | 0.5− | 2006 10 19 | 703 | 0.6− | 1.2+ | | |
| 2001 11 20 | 704 | (0.5+ | 1.6−) | 2006 09 17 | 703 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.1+ | | |
| 2001 11 20 | 691 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.4− | 0.3− | | |
| 2001 11 20 | 691 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.4− | | |
| 2001 11 20 | 691 | 0.2+ | 0.1+ | 2006 09 22 | 699 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.8− | 0.6− | | |
| 2001 12 11 | 704 | 0.8+ | 0.7− | 2006 09 22 | 699 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.4− | | |
| 2001 12 11 | 704 | 1.1+ | 1.0− | 2006 09 22 | 699 | 0.7+ | 0.2− | 2006 11 14 | 703 | 1.3+ | 0.1+ | | |
| 2001 12 11 | 704 | 1.2+ | 0.4− | 2006 09 22 | 699 | (1.7− | 0.2+) | 2006 11 14 | 703 | 0.2− | 0.3− | | |
| 2001 12 11 | 704 | 0.5+ | 0.7− | 2006 09 28 | 703 | 0.3− | 1.1+ | 2006 11 14 | 703 | 0.2− | 0.4− | | |
| 2001 12 17 | 644 | 0.1− | 0.2+ | 2006 09 28 | 703 | 1.2+ | 0.1− | 2006 11 14 | 703 | 0.3+ | 1.1− | | |
| 2001 12 17 | 644 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.4+ | | | | | | |

**2001 XG$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.83170 | | (2000.0) | | | |
| $n$ | 0.17900627 | $\omega$ | 158.34904 | | +0.76262751 | −0.60838807 |
| $a$ | 3.1181037 | $\Omega$ | 241.02961 | | +0.55049006 | +0.78879067 |
| $e$ | 0.1457425 | $i$ | 14.54323 | | +0.33964684 | +0.08759705 |
| $P$ | 5.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.6− | 0.2− | 2001 12 18 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1− | | |
| 2001 11 09 | 704 | 0.9− | 0.4− | 2002 01 09 | 704 | 0.0 | 1.2+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2001 11 09 | 704 | 1.1− | 0.5+ | 2002 01 09 | 704 | 0.0 | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2001 11 09 | 704 | 1.0− | 0.2− | 2002 01 09 | 704 | 0.7+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2001 11 09 | 704 | 0.0 | 0.4+ | 2002 01 09 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2002 02 02 | 209 | 0.2+ | 0.4− | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2001 11 20 | 704 | 0.1− | 0.4+ | 2002 02 02 | 209 | 0.7− | 0.3+ | 2006 10 24 | 644 | 0.2− | 0.0 | | |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2002 02 02 | 209 | 0.3+ | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.0 | | |
| 2001 11 20 | 704 | 0.3− | 0.1− | 2002 02 03 | 209 | 0.7+ | 0.1− | 2006 10 24 | 644 | 0.3− | 0.0 | | |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2002 02 03 | 209 | 0.2+ | 0.5− | 2006 10 31 | 703 | 1.0+ | 0.6− | | |
| 2001 12 11 | 704 | 0.1− | 0.5− | 2002 02 03 | 209 | 0.3− | 0.0 | 2006 10 31 | 703 | 0.2+ | 0.3+ | | |
| 2001 12 11 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 10 31 | 703 | 0.6− | 0.4− | | |
| 2001 12 11 | 704 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.4− | 2006 10 31 | 703 | 0.0 | 0.4− | | |
| 2001 12 11 | 704 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.4− | | |
| 2001 12 11 | 704 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.5− | 0.3+ | 2006 11 14 | 703 | 0.8+ | 0.4+ | | |
| 2001 12 18 | 704 | 0.5+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.2+ | | |
| 2001 12 18 | 704 | 1.1+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.5+ | 1.0+ | | |
| 2001 12 18 | 704 | 0.8+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.3− | | | | | | |

**2001 XZ$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.73751 | | (2000.0) | | | |
| $n$ | 0.18009903 | $\omega$ | 359.24845 | | −0.01655731 | −0.95464969 |
| $a$ | 3.1054781 | $\Omega$ | 91.66626 | | +0.91890097 | −0.13172710 |
| $e$ | 0.1851050 | $i$ | 17.30129 | | +0.39414066 | +0.26700550 |
| $P$ | 5.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 12 | 691 | 0.4− | 0.2− | 2001 12 20 | 704 | 1.0+ | 0.6− | 2002 01 15 | 704 | 0.5− | 0.2+ | | |
| 2001 10 12 | 691 | 0.5− | 0.6− | 2001 12 20 | 704 | 1.4+ | 0.2− | 2002 01 19 | 704 | 1.0+ | 0.2+ | | |
| 2001 10 12 | 691 | 0.2− | 0.5− | 2001 12 20 | 704 | (2.0+ | 0.9−) | 2002 01 19 | 704 | 1.3+ | 0.2− | | |
| 2001 11 17 | 704 | 0.8+ | 0.9+ | 2001 12 20 | 704 | 1.1+ | 1.1− | 2002 01 19 | 704 | (1.7+ | 0.5+) | | |
| 2001 11 17 | 704 | 0.0 | 0.2+ | 2002 01 09 | 704 | 0.3+ | 0.5+ | 2002 01 19 | 704 | 0.1+ | 0.4− | | |
| 2001 11 17 | 704 | 0.6+ | 0.3+ | 2002 01 09 | 704 | 0.4+ | 0.7− | 2003 04 09 | 644 | 0.3− | 0.7+ | | |
| 2001 11 17 | 704 | 0.0 | 0.9+ | 2002 01 09 | 704 | 0.6+ | 0.3− | 2003 04 09 | 644 | 0.3+ | 0.6+ | | |
| 2001 12 11 | 704 | 0.8− | 1.1+ | 2002 01 09 | 704 | 0.3+ | 0.7+ | 2003 04 09 | 644 | 0.7+ | 0.6+ | | |
| 2001 12 11 | 704 | 0.4− | 0.6+ | 2002 01 13 | 704 | 0.6− | 0.7− | 2006 09 25 | 703 | 1.1− | 0.3+ | | |
| 2001 12 11 | 704 | 0.6− | 1.2+ | 2002 01 13 | 704 | 0.6− | 0.0 | 2006 09 25 | 703 | 1.2+ | 1.3+ | | |
| 2001 12 11 | 704 | 0.8− | 1.0+ | 2002 01 13 | 704 | 0.2− | 0.2+ | 2006 09 25 | 703 | 0.8+ | 1.0+ | | |
| 2001 12 18 | 704 | 0.0 | 0.3− | 2002 01 13 | 704 | 0.2− | 0.1− | 2006 09 25 | 703 | 0.6− | 0.7− | | |
| 2001 12 18 | 704 | 0.4− | 0.4+ | 2002 01 15 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 1.0+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2+ | 0.2+ | 2002 01 15 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 3.0− | 0.7+ | | |
| 2001 12 18 | 704 | 0.2− | 0.1+ | 2002 01 15 | 704 | 0.8− | 0.6− | 2006 10 21 | 703 | 0.7+ | 1.2− | | |
| 2001 12 20 | 704 | 1.5+ | 0.7− | 2002 01 15 | 704 | 0.6− | 0.3+ | 2006 10 21 | 703 | 1.0+ | 0.3− | | |

**2001 XQ$_{211}$ = 2006 CW$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.77107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26997030 | $\omega$ | 112.54630 | | +0.74703338 | −0.65896416 | |
| $a$ | 2.3709664 | $\Omega$ | 288.79388 | | +0.57077765 | +0.70347898 | |
| $e$ | 0.1368662 | $i$ | 5.32103 | | +0.34081374 | +0.26623967 | |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | (0.5− | 1.9+) | 2001 12 19 | 704 | 0.2+ | 0.1− | 2006 01 26 | 291 | 0.0 | 0.1+ | | |
| 2001 12 11 | 704 | (1.3− | 3.0+) | 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 02 02 | 691 | 0.2− | 0.2+ | | |
| 2001 12 11 | 704 | (0.5− | 2.4+) | 2001 12 19 | 704 | 0.3− | 0.4+ | 2006 02 02 | 691 | 0.1+ | 0.1− | | |
| 2001 12 18 | 704 | 0.1− | 0.9− | 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 02 02 | 691 | 0.0 | 0.0 | | |
| 2001 12 18 | 704 | 0.1+ | 0.3− | 2004 08 23 | 691 | 0.1− | 0.1− | 2006 02 03 | G96 | 0.2− | 0.3− | | |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2004 08 23 | 691 | 0.0 | 0.0 | 2006 02 03 | G96 | 0.1+ | 0.3− | | |
| 2001 12 18 | 704 | 0.3+ | 0.6+ | 2004 08 23 | 691 | 0.0 | 0.0 | 2006 02 03 | G96 | 0.7− | 0.0 | | |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2006 01 26 | 291 | 0.1+ | 0.1+ | 2006 02 03 | G96 | 0.3+ | 0.3− | | |
| 2001 12 19 | 704 | 0.1+ | 0.3− | 2006 01 26 | 291 | 0.0 | 0.1− | | | | | | |

**2001 XR$_{211}$ = 2006 UV$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.87511 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18237174 | $\omega$ | 279.25768 | | +0.97041043 | +0.18354094 | |
| $a$ | 3.0796239 | $\Omega$ | 70.28968 | | −0.09675061 | +0.89089541 | |
| $e$ | 0.1146037 | $i$ | 9.59372 | | −0.22123048 | +0.41547334 | |
| $P$ | 5.40 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2004 04 26 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2001 12 11 | 704 | 0.5+ | 0.2+ | 2005 02 14 | 809 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.1− | | |
| 2001 12 11 | 704 | 0.9+ | 0.7+ | 2005 02 14 | 809 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.2− | | |
| 2001 12 18 | 704 | 0.2− | 0.0 | 2005 07 29 | E12 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.5+ | | |
| 2001 12 18 | 704 | 0.7− | 0.3− | 2005 07 29 | E12 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 1.1+ | | |
| 2001 12 18 | 704 | 0.3− | 0.0 | 2005 07 29 | E12 | 1.1− | 0.5− | 2006 11 14 | 704 | (2.9+ | 0.0 ) | | |
| 2001 12 18 | 704 | 0.3− | 0.2− | 2005 07 29 | E12 | 0.4+ | 0.7+ | 2006 11 14 | 704 | 0.4− | 0.0 | | |
| 2001 12 18 | 704 | 0.8− | 0.5− | 2005 08 12 | E12 | 0.0 | 0.1− | 2006 11 14 | 704 | 1.2− | 0.6+ | | |
| 2001 12 19 | 704 | 0.4+ | 0.5− | 2005 08 12 | E12 | 0.1+ | 0.4− | 2006 11 14 | 704 | 0.3− | 0.4− | | |
| 2001 12 19 | 704 | 0.1− | 0.3− | 2005 08 12 | E12 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2001 12 19 | 704 | 0.8+ | 0.4+ | 2005 08 12 | E12 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.2+ | | |
| 2001 12 19 | 704 | 0.6− | 0.9− | 2006 10 03 | G96 | 0.5− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2001 12 19 | 704 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2001 12 20 | 704 | 0.4+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | (1.5+ | 2.8+) | | |
| 2001 12 20 | 704 | (0.8+ | 1.8+) | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2001 12 20 | 704 | 0.9+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | (0.8+ | 2.2+) | | |
| 2001 12 20 | 704 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 1.0+ | 0.5+ | | |
| 2001 12 20 | 704 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | (2.0+ | 1.8+) | | |
| 2003 03 08 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.6− | 0.1+ | | |
| 2003 03 08 | 644 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.1− | 0.3+ | | |
| 2003 03 08 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.3− | | |
| 2004 04 26 | 691 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.5+ | 2006 11 28 | 704 | 0.3− | 1.3− | | |
| 2004 04 26 | 691 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.9+ | 1.1− | | |

**2001 XQ$_{216}$ = 2006 SZ$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.77787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17757197 | $\omega$ | 308.72224 | | +0.79126308 | −0.48046176 | |
| $a$ | 3.1348717 | $\Omega$ | 83.10093 | | +0.60850957 | +0.67956523 | |
| $e$ | 0.2639073 | $i$ | 22.39504 | | −0.06015680 | +0.55438939 | |
| $P$ | 5.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.4+ | 0.5− | 2001 12 19 | 704 | 0.7− | 0.8+ | 2002 01 14 | 704 | 0.6− | 0.2+ | | |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2001 12 19 | 704 | 0.6− | 0.5+ | 2002 01 14 | 704 | 0.8− | 0.3− | | |
| 2001 11 20 | 704 | 0.2+ | 0.3− | 2001 12 19 | 704 | 1.1− | 0.7+ | 2006 09 23 | E12 | 0.4+ | 0.1− | | |
| 2001 11 20 | 704 | 0.6+ | 0.5− | 2001 12 20 | 704 | 1.3+ | 0.4+ | 2006 09 23 | E12 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2001 12 20 | 704 | 0.8− | 0.1− | 2006 09 23 | E12 | 0.2− | 0.2− | | |
| 2001 11 21 | 704 | 0.8+ | 0.2− | 2001 12 20 | 704 | 0.9− | 0.8+ | 2006 09 23 | E12 | 0.3+ | 0.6− | | |
| 2001 11 21 | 704 | 0.0 | 0.8+ | 2001 12 20 | 704 | 0.1− | 0.1− | 2006 09 30 | E12 | 0.6+ | 0.1+ | | |
| 2001 12 14 | 704 | 0.2+ | 0.7+ | 2001 12 22 | 691 | 0.4+ | 0.1− | 2006 09 30 | E12 | 0.8+ | 0.8+ | | |
| 2001 12 14 | 704 | 0.1+ | 0.4+ | 2001 12 22 | 691 | 0.0 | 0.1+ | 2006 09 30 | E12 | 0.4+ | 0.4− | | |
| 2001 12 14 | 704 | 0.3− | 0.3+ | 2001 12 22 | 691 | 0.2− | 0.1+ | 2006 09 30 | E12 | 0.6− | 0.6+ | | |
| 2001 12 14 | 704 | (0.9− | 1.6+) | 2002 01 08 | 704 | 1.0+ | 0.4+ | 2006 10 13 | E12 | 0.1− | 0.0 | | |
| 2001 12 18 | 704 | 0.8+ | 0.7− | 2002 01 08 | 704 | 0.5+ | 0.1− | 2006 10 13 | E12 | 0.6− | 0.2+ | | |
| 2001 12 18 | 704 | 0.2+ | 0.6− | 2002 01 08 | 704 | 0.5+ | 0.6− | 2006 10 13 | E12 | 0.2+ | 0.1− | | |
| 2001 12 18 | 704 | 0.2+ | 0.4− | 2002 01 08 | 704 | 0.9+ | 0.7− | 2006 10 13 | E12 | 0.0 | 0.3− | | |
| 2001 12 18 | 704 | 0.4+ | 0.4− | 2002 01 08 | 704 | 0.1+ | 1.0− | 2006 10 28 | E12 | 1.0− | 0.4+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.4− | 2002 01 14 | 704 | 0.3− | 0.1+ | 2006 10 28 | E12 | 0.9+ | 0.5− | | |
| 2001 12 19 | 704 | 0.4− | 0.4+ | 2002 01 14 | 704 | 0.3− | 0.2− | 2006 10 28 | E12 | 1.0− | 0.3− | | |
| 2001 12 19 | 704 | 0.6− | 0.5+ | 2002 01 14 | 704 | 0.5− | 0.1− | 2006 10 28 | E12 | 0.6− | 0.4+ | | |

**2001 XT$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.87501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36904625 | $\omega$ | 130.03009 | | +0.55810423 | −0.77838656 | |
| $a$ | 1.9249326 | $\Omega$ | 283.71243 | | +0.64224649 | +0.62458026 | |
| $e$ | 0.1172537 | $i$ | 17.21121 | | +0.52539424 | +0.06335500 | |
| $P$ | 2.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 17 | 691 | (2.6− | 2.9+) | 2001 12 19 | 691 | 0.1+ | 0.1+ | 2002 01 14 | 704 | 0.0 | 0.4− | | |
| 1993 12 17 | 691 | 0.1− | 0.0 | 2001 12 20 | 704 | (0.2− | 3.7+) | 2006 10 16 | 704 | 1.4− | 0.1+ | | |
| 1993 12 17 | 691 | 0.1− | 0.3− | 2001 12 20 | 704 | (0.7− | 3.5+) | 2006 10 16 | 704 | 0.3+ | 0.7+ | | |
| 2001 12 14 | 704 | 0.0 | 0.2+ | 2001 12 20 | 704 | (0.6+ | 3.5+) | 2006 10 16 | 704 | 0.6+ | 0.1+ | | |
| 2001 12 14 | 704 | 0.4− | 0.5+ | 2002 01 09 | 704 | 0.1− | 0.7+ | 2006 10 16 | 704 | 0.1− | 0.3− | | |
| 2001 12 14 | 704 | 0.7+ | 0.0 | 2002 01 09 | 704 | 1.2− | 0.7+ | 2006 11 22 | 703 | 0.9+ | 0.0 | | |
| 2001 12 18 | 704 | 0.1− | 0.2+ | 2002 01 09 | 704 | 0.8− | 0.2+ | 2006 11 22 | 703 | (0.7+ | 1.7−) | | |
| 2001 12 18 | 704 | 0.4− | 0.2− | 2002 01 14 | 704 | 0.9+ | 0.3− | 2006 11 22 | 703 | (0.4− | 1.5−) | | |
| 2001 12 18 | 704 | 0.4− | 0.1+ | 2002 01 14 | 704 | 0.0 | 1.0− | 2006 11 22 | 703 | 0.0 | 0.9− | | |
| 2001 12 19 | 691 | 0.1+ | 0.1+ | 2002 01 14 | 704 | 0.1+ | 0.0 | | | | | | |
| 2001 12 19 | 691 | 0.3+ | 0.1+ | 2002 01 14 | 704 | 0.7+ | 0.3− | | | | | | |

**2001 XM$_{219}$ = 2006 SW$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.41895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18419565 | $\omega$ | 84.49184 | | +0.95380640 | +0.26019536 | |
| $a$ | 3.0592606 | $\Omega$ | 260.36097 | | −0.29826411 | +0.87996279 | |
| $e$ | 0.1230281 | $i$ | 8.76156 | | +0.03594273 | +0.39744667 | |
| $P$ | 5.35 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.3+ | 0.0 | 2001 12 18 | 704 | 0.3− | 0.4+ | 2006 09 30 | 704 | 0.0 | 0.3− | | |
| 2000 08 02 | 704 | 0.6+ | 0.2− | 2001 12 18 | 704 | 0.5+ | 0.2− | 2006 09 30 | 704 | 0.6+ | 0.6+ | | |
| 2000 08 02 | 704 | 0.8− | 0.5+ | 2001 12 18 | 704 | 1.0− | 0.5− | 2006 09 30 | 704 | 0.5+ | 1.3+ | | |
| 2000 08 02 | 704 | 0.4+ | 0.0 | 2001 12 18 | 704 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2000 08 02 | 704 | 0.6− | 0.4+ | 2001 12 18 | 704 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.2+ | | |
| 2001 11 12 | 704 | 0.6− | 0.6+ | 2001 12 19 | 704 | 0.9+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.4+ | | |
| 2001 11 12 | 704 | 0.7− | 0.9+ | 2001 12 19 | 704 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.0 | 0.7+ | 2001 12 19 | 704 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 12 | 704 | 0.5+ | 1.0+ | 2001 12 19 | 704 | 0.4− | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.8+ | 0.5+ | 2006 08 20 | 644 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.3+ | | |
| 2001 11 21 | 704 | (1.5+ | 2.3−) | 2006 08 20 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.1+ | | |
| 2001 11 21 | 704 | 1.4+ | 0.2− | 2006 08 20 | 644 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.6− | | |
| 2001 11 21 | 704 | 0.3+ | 0.7− | 2006 09 16 | 703 | (1.8+ | 0.3+) | 2006 10 17 | 703 | 0.6− | 0.2− | | |
| 2001 11 21 | 704 | 0.1+ | 0.7− | 2006 09 16 | 703 | 0.1+ | 0.7− | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2001 11 24 | 704 | 0.0 | 0.6− | 2006 09 16 | 703 | 0.4− | 0.7− | 2006 10 23 | 644 | 0.1+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 704 | 1.1+ | 0.2− | 2006 09 20 | 699 | 0.3− | 0.1+ | 2006 10 31 | 703 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | 0.4+ | 0.7− | 2006 09 20 | 699 | 0.0 | 0.5+ | 2006 10 31 | 703 | (0.7− | 1.7+) |
| 2001 11 24 | 704 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.9− | 2006 10 31 | 703 | 0.1+ | 0.8− |
| 2001 12 15 | 704 | 0.3− | 0.9+ | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 10 31 | 703 | 0.1− | 0.4− |
| 2001 12 15 | 704 | 0.1− | 0.5+ | 2006 09 28 | 703 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.2+ | 0.3+ |
| 2001 12 15 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.5− | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2001 12 15 | 704 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.5+ | 0.1+ |
| 2001 12 15 | 704 | 0.7− | 0.3− | 2006 09 28 | 703 | 0.1− | 0.7− | 2006 11 14 | 703 | 0.5− | 0.0 |

**2001 XY$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.65533 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18417443 | $\omega$ | 334.80091 | | +0.78483353 | −0.59517048 | |
| $a$ | 3.0594955 | $\Omega$ | 62.82298 | | +0.59636152 | +0.64961582 | |
| $e$ | 0.0543816 | $i$ | 11.19083 | | +0.16849118 | +0.47304480 | |
| $P$ | 5.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 691 | 0.5− | 0.1− | 2001 12 10 | 704 | 0.4+ | 0.6− | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 2001 11 16 | 691 | 0.6− | 0.1+ | 2001 12 15 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.6+ |
| 2001 11 16 | 691 | 0.5− | 0.2− | 2001 12 15 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.6+ |
| 2001 11 19 | 704 | 0.9+ | 0.5− | 2001 12 15 | 704 | 1.2+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 2001 11 19 | 704 | 0.2+ | 0.5− | 2001 12 15 | 704 | 0.3+ | 1.0+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 0.2+ | 0.5− | 2001 12 15 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.6+ |
| 2001 11 19 | 704 | (0.0 | 1.6−) | 2001 12 18 | 704 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2001 11 21 | 704 | 0.6− | 0.3+ | 2001 12 18 | 704 | 1.1− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2001 11 21 | 704 | 0.8− | 0.0 | 2001 12 18 | 704 | 0.2+ | 1.0+ | 2006 10 22 | 703 | 0.9− | 0.3− |
| 2001 11 21 | 704 | 0.7− | 0.6+ | 2001 12 18 | 704 | 0.6− | 0.9+ | 2006 10 22 | 703 | 0.5− | 1.2− |
| 2001 11 21 | 704 | 1.0− | 0.8− | 2002 01 07 | 691 | 0.7+ | 0.2+ | 2006 11 23 | G96 | 0.7+ | 0.7− |
| 2001 12 10 | 704 | (1.7+ | 3.1+) | 2002 01 07 | 691 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.6− |
| 2001 12 10 | 704 | 0.6+ | 0.8− | 2002 01 07 | 691 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.5− |
| 2001 12 10 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.7+ | 2006 11 23 | G96 | 0.2+ | 0.4− |

**2001 XD$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.13459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21355739 | $\omega$ | 108.98614 | | −0.60682220 | −0.79447030 | |
| $a$ | 2.7719984 | $\Omega$ | 18.43696 | | +0.69749569 | −0.54683616 | |
| $e$ | 0.0548153 | $i$ | 4.38144 | | +0.38113853 | −0.26417257 | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 695 | 0.2− | 0.7+ | 2001 12 18 | 704 | 0.2+ | 0.1+ | 2003 03 12 | 291 | 0.1− | 0.3+ |
| 2000 09 21 | 695 | 0.3− | 0.6+ | 2001 12 18 | 704 | 0.1+ | 0.6+ | 2003 03 12 | 291 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.6+ | 0.1− | 2001 12 18 | 704 | 0.6− | 0.1− | 2003 03 12 | 291 | 0.0 | 0.4+ |
| 2001 10 21 | 704 | 0.6− | 0.4− | 2001 12 18 | 704 | 0.2− | 0.1− | 2005 08 29 | 691 | 0.2− | 0.2+ |
| 2001 10 21 | 704 | 0.4− | 0.9+ | 2003 02 08 | 608 | 1.2+ | 0.1+ | 2005 08 29 | 691 | 0.1+ | 0.3+ |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2003 02 08 | 608 | 0.3+ | 0.5− | 2005 08 29 | 691 | 0.0 | 0.5+ |
| 2001 11 19 | 704 | 0.5+ | 0.2− | 2003 02 08 | 608 | 0.2− | 0.3+ | 2005 09 12 | 691 | 0.3− | 0.4+ |
| 2001 11 19 | 704 | 0.6+ | 0.3− | 2003 02 22 | 644 | 0.4+ | 0.4+ | 2005 09 12 | 691 | 0.3− | 0.4+ |
| 2001 11 19 | 704 | 0.1− | 0.1+ | 2003 02 22 | 644 | 0.6+ | 0.4+ | 2005 09 12 | 691 | 0.3− | 0.5+ |
| 2001 11 19 | 704 | 0.3+ | 1.0− | 2003 02 22 | 644 | 0.3+ | 1.0+ | 2005 10 06 | G96 | 0.2− | 0.0 |
| 2001 11 19 | 704 | 0.0 | 0.9− | 2003 03 06 | 699 | 0.0 | 0.5+ | 2005 10 06 | G96 | 0.0 | 0.1+ |
| 2001 12 15 | 704 | 0.7+ | 0.1− | 2003 03 06 | 699 | 0.4+ | 0.2+ | 2005 10 06 | G96 | 0.2+ | 0.1+ |
| 2001 12 15 | 704 | 0.4− | 0.5+ | 2003 03 06 | 699 | 1.6+ | 0.1+ | 2005 10 06 | G96 | 0.8− | 0.0 |
| 2001 12 15 | 704 | 0.2+ | 0.1+ | 2003 03 06 | 699 | 1.0+ | 2.9+ | | | | |

**2001 XT$_{221}$ = 2006 UN$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.45251 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18733971 | $\omega$ | 343.25596 | | +0.73420922 | −0.65537685 | |
| $a$ | 3.0249357 | $\Omega$ | 59.05147 | | +0.64418446 | +0.59003774 | |
| $e$ | 0.2097339 | $i$ | 11.92762 | | +0.21439031 | +0.47152588 | |
| $P$ | 5.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | (2.1− | 0.2+) | 2001 11 21 | 704 | 0.5+ | 0.9− | 2001 12 18 | 704 | 1.3+ | 0.9+ |
| 2001 11 09 | 704 | 1.7− | 0.6− | 2001 11 21 | 704 | 0.3− | 0.4− | 2001 12 18 | 704 | 0.4+ | 0.8+ |
| 2001 11 09 | 704 | 1.7− | 0.4+ | 2001 11 21 | 704 | 0.6+ | 0.0 | 2001 12 18 | 704 | 0.5− | 0.4+ |
| 2001 11 19 | 699 | 0.2+ | 0.2− | 2001 11 21 | 704 | 0.1+ | 0.9+ | 2001 12 18 | 704 | 0.5+ | 0.1− |
| 2001 11 19 | 699 | 0.2− | 0.8− | 2001 11 21 | 704 | 1.0+ | 1.5+ | 2001 12 18 | 704 | 0.2− | 0.6+ |
| 2001 11 19 | 699 | 1.3+ | 0.5− | 2001 12 07 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.5− |
| 2001 11 19 | 699 | 1.0+ | 0.1− | 2001 12 07 | 691 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2001 11 20 | 704 | 0.2− | 0.0 | 2001 12 07 | 691 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.7− | 0.3+ | 2001 12 15 | 704 | (0.2− | 2.8−) | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2001 11 20 | 704 | 0.4+ | 0.4+ | 2001 12 15 | 704 | 0.5+ | 0.9− | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 1.0+ | 2001 12 15 | 704 | 0.2+ | 1.0− | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2001 11 20 | 704 | 0.6− | 0.2− | 2001 12 15 | 704 | 0.4− | 1.5− | 2006 10 22 | 644 | 0.2− | 0.3− |

**2001 XM$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.73159 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23282406 | $\omega$ | 97.54824 | | +0.97570874 | +0.02078138 | |
| $a$ | 2.6168820 | $\Omega$ | 261.44427 | | −0.09976539 | +0.92842240 | |
| $e$ | 0.0602209 | $i$ | 12.74064 | | +0.19503674 | +0.37094471 | |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.5+ | 0.1− | 2001 12 19 | 704 | 0.2− | 0.1− | 2005 10 10 | 703 | 0.2+ | 0.5− |
| 2001 12 15 | 704 | 0.3− | 0.6− | 2001 12 19 | 704 | 0.3+ | 0.1− | 2005 10 30 | 644 | 0.1− | 0.1+ |
| 2001 12 15 | 704 | 0.5− | 0.1− | 2001 12 19 | 704 | 0.7− | 0.4+ | 2005 10 30 | 644 | 0.2+ | 0.4+ |
| 2001 12 15 | 704 | 1.2− | 0.7− | 2005 09 29 | 703 | 0.6− | 1.1− | 2005 10 30 | 644 | 0.0 | 0.4+ |
| 2001 12 18 | 704 | 0.2− | 0.4+ | 2005 09 29 | 703 | 0.1− | 1.8+ | 2005 11 03 | 704 | 0.3+ | 0.8+ |
| 2001 12 18 | 704 | 0.4+ | 1.4+ | 2005 09 29 | 703 | 0.2+ | 0.8+ | 2005 11 03 | 704 | 0.5− | 0.2− |
| 2001 12 18 | 704 | 0.1+ | 0.8+ | 2005 09 29 | 703 | 0.7− | 0.3+ | 2005 11 03 | 704 | 0.7+ | 1.0+ |
| 2001 12 18 | 704 | 0.8+ | 0.6+ | 2005 10 10 | 703 | 0.5+ | 0.1+ | 2005 11 03 | 704 | 0.3− | 1.8− |
| 2001 12 18 | 704 | 0.8+ | 0.9− | 2005 10 10 | 703 | 0.5+ | 1.5− | | | | |
| 2001 12 19 | 704 | 0.2+ | 1.0− | 2005 10 10 | 703 | 0.3− | 0.6− | | | | |

**2001 XF$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.60603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18361157 | $\omega$ | 357.82503 | | +0.54904790 | −0.82212649 | |
| $a$ | 3.0657449 | $\Omega$ | 58.83853 | | +0.76945399 | +0.42689389 | |
| $e$ | 0.1411198 | $i$ | 10.13063 | | +0.32632339 | +0.37665586 | |
| $P$ | 5.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 691 | 1.1− | 0.2− | 2001 12 15 | 704 | 0.8+ | 0.2− | 2006 09 25 | 699 | (1.8+ | 0.1+) |
| 2001 11 12 | 691 | 0.6− | 0.1+ | 2001 12 15 | 704 | 0.1− | 0.9− | 2006 09 25 | 699 | (1.6+ | 0.2−) |
| 2001 11 12 | 691 | 0.5− | 0.2− | 2001 12 15 | 704 | 0.4+ | 0.7− | 2006 09 25 | 699 | 1.4+ | 1.2− |
| 2001 11 19 | 704 | 0.2+ | 0.2+ | 2001 12 15 | 704 | 0.9+ | 0.2− | 2006 10 04 | G96 | 0.4+ | 0.2− |
| 2001 11 19 | 704 | (1.9+ | 0.0 ) | 2001 12 18 | 704 | 0.4− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 1.4+ | 0.2+ | 2001 12 18 | 704 | 0.3+ | 0.6− | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2001 12 18 | 704 | 0.4− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2001 12 18 | 704 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.7− | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.2+ | 2001 12 18 | 704 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2001 11 21 | 704 | 0.3+ | 0.5+ | 2001 12 19 | 704 | 0.2− | 0.6+ | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2001 12 07 | 644 | 0.3− | 0.3− | 2001 12 19 | 704 | 0.3+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2001 12 07 | 644 | 0.0 | 0.5− | 2001 12 19 | 704 | 0.2+ | 1.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 12 07 | 644 | 0.5− | 0.4− | 2001 12 19 | 704 | 0.7+ | 1.2+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2001 12 14 | 644 | 0.1+ | 0.4− | 2001 12 19 | 704 | 0.5+ | 0.7+ | 2006 11 24 | G96 | 0.5− | 0.2− |
| 2001 12 14 | 644 | 0.6+ | 0.1+ | 2001 12 19 | 704 | 0.4+ | 0.4+ | 2006 11 24 | G96 | 0.5− | 0.0 |
| 2001 12 14 | 644 | 0.5+ | 0.7− | 2001 12 19 | 704 | 1.2+ | 0.5+ | 2006 11 24 | G96 | 0.6+ | 0.0 |
| 2001 12 14 | 644 | 0.7+ | 0.2+ | 2001 12 19 | 704 | (0.9+ | 1.6+) | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 12 14 | 644 | 0.5+ | 0.5− | 2001 12 19 | 704 | (1.6+ | 0.7+) | | | | |
| 2001 12 14 | 644 | 0.8+ | 0.3+ | 2006 09 25 | 699 | 0.6+ | 1.2+ | | | | |

**2001 XN$_{226}$ = 2006 UR$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.71656 | | (2000.0) | | | |
| $n$ | 0.17347294 | $\omega$ | 170.13483 | | +0.15786877 | −0.97567808 |
| $a$ | 3.1840623 | $\Omega$ | 270.66629 | | +0.89529595 | +0.20639802 |
| $e$ | 0.2265632 | $i$ | 8.74835 | | +0.41656044 | −0.07383854 |
| $P$ | 5.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 704 | 0.3− | 0.4− | 2001 12 18 | 704 | 0.2− | 0.2− | 2001 12 19 | 704 | 0.3+ | 0.2+ |
| 2001 11 24 | 704 | 1.0+ | 0.4− | 2001 12 18 | 704 | 0.4+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2001 11 24 | 704 | 0.1− | 0.3+ | 2001 12 18 | 704 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.3− |
| 2001 11 24 | 704 | 0.8− | 0.0 | 2001 12 18 | 704 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2001 11 24 | 704 | 0.4+ | 0.0 | 2001 12 18 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2001 12 15 | 704 | 0.3− | 0.1− | 2001 12 19 | 704 | 0.1− | 0.9− | 2006 10 22 | 691 | 0.0 | 0.6+ |
| 2001 12 15 | 704 | 1.3− | 1.1+ | 2001 12 19 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2001 12 15 | 704 | 0.7− | 0.2+ | 2001 12 19 | 704 | 0.6+ | 0.4− | | | | |
| 2001 12 15 | 704 | 0.5− | 0.6+ | 2001 12 19 | 704 | 0.5+ | 0.2− | | | | |

**2001 XV$_{226}$ = 2006 WX$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.74687 | | (2000.0) | | | |
| $n$ | 0.19482361 | $\omega$ | 61.77785 | | +0.90593854 | +0.39254511 |
| $a$ | 2.9469651 | $\Omega$ | 274.73406 | | −0.42233243 | +0.81105197 |
| $e$ | 0.0765447 | $i$ | 9.16261 | | −0.03017741 | +0.43370846 |
| $P$ | 5.06 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | (1.0+ | 1.9−) | 2001 12 19 | 704 | 0.8− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2001 12 15 | 704 | 0.8+ | 0.5− | 2005 05 16 | 291 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2001 12 15 | 704 | 0.1− | 0.2− | 2005 05 16 | 291 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.6+ |
| 2001 12 18 | 704 | 0.1− | 0.2+ | 2005 05 16 | 291 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.9− |
| 2001 12 18 | 704 | 0.6+ | 0.4+ | 2006 11 13 | 691 | (1.9− | 1.1−) | 2006 11 22 | 704 | (1.7+ | 0.2−) |
| 2001 12 18 | 704 | 0.3− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | (1.8+ | 0.0 ) |
| 2001 12 18 | 704 | 0.6+ | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.9− | 0.3− |
| 2001 12 19 | 704 | 0.3− | 0.3− | 2006 11 17 | 691 | 0.1− | 0.2+ | 2006 11 25 | 691 | 0.1+ | 0.4− |
| 2001 12 19 | 704 | 0.4− | 0.3− | 2006 11 17 | 691 | 0.1− | 0.1− | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 11 17 | 691 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.6+ | 1.0+ | | | | |

**2001 XW$_{226}$ = 2006 TW$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.46198 | | (2000.0) | | | |
| $n$ | 0.18125004 | $\omega$ | 335.70820 | | +0.87113137 | −0.47140107 |
| $a$ | 3.0923167 | $\Omega$ | 53.12462 | | +0.47396390 | +0.73394426 |
| $e$ | 0.1185387 | $i$ | 9.89887 | | +0.12840702 | +0.48898553 |
| $P$ | 5.44 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.2− | 1.1+ |
| 2001 12 15 | 704 | 0.7+ | 1.1− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2001 12 15 | 704 | 0.5+ | 1.0− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2001 12 15 | 704 | 0.9+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | (1.8− | 0.3−) | 2006 10 16 | 703 | 1.2− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2001 12 18 | 704 | 1.1− | 0.5− | 2006 10 16 | 703 | 0.7+ | 0.7+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.9− | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2001 12 18 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.6− |
| 2001 12 19 | 704 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2001 12 19 | 704 | 1.2− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.6− |
| 2006 10 04 | G96 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.4− |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.5+ | 0.4− |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 16 | 703 | (0.3+ | 1.7−) |
| 2006 10 04 | G96 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.7− |
| 2006 10 11 | 644 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.9+ |
| 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.2− | 2006 11 16 | 703 | 0.2+ | 1.1+ |

**2001 XD$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.06901 | | (2000.0) | | | |
| $n$ | 0.18467401 | $\omega$ | 346.19278 | | +0.52111748 | −0.84830857 |
| $a$ | 3.0539754 | $\Omega$ | 72.32571 | | +0.79211145 | +0.43976348 |
| $e$ | 0.2447531 | $i$ | 5.65319 | | +0.31779871 | +0.29492484 |
| $P$ | 5.34 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.0 | 0.4− | 2001 12 19 | 704 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.1+ | 1.1− | 2001 12 20 | 704 | 0.9− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2001 11 09 | 704 | 0.1+ | 0.8− | 2001 12 20 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 11 09 | 704 | 0.0 | 0.2− | 2001 12 20 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 11 09 | 704 | 0.2+ | 0.3− | 2001 12 20 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 0.2− | 2001 12 20 | 704 | 0.6+ | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.2+ | 0.2+ | 2002 02 07 | 704 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2002 02 07 | 704 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 11 20 | 704 | 0.6+ | 0.4+ | 2002 02 07 | 704 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.7− |
| 2001 11 21 | 704 | 1.0− | 0.3− | 2006 09 21 | 699 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2006 09 21 | 699 | 0.3− | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.6− |
| 2001 11 21 | 704 | 0.9− | 0.3− | 2006 09 21 | 699 | 0.6+ | 1.3+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 0.8− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2001 12 09 | 644 | 0.2− | 0.7− | 2006 09 25 | 699 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2001 12 09 | 644 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 12 09 | 644 | 0.4− | 0.5− | 2006 09 26 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 12 10 | 704 | 0.5− | 0.8− | 2006 09 26 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2001 12 10 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.4− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2001 12 10 | 704 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.8+ | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 12 10 | 704 | (0.9+ | 2.8+) | 2006 09 26 | 704 | 0.2− | 0.5+ | 2006 10 22 | 704 | 0.1− | 0.3+ |
| 2001 12 15 | 704 | 0.5+ | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.2− | 2006 10 22 | 704 | 0.2− | 0.1+ |
| 2001 12 15 | 704 | 0.4+ | 0.2− | 2006 09 29 | 699 | 0.0 | 0.3− | 2006 10 22 | 704 | 1.0+ | 0.6− |
| 2001 12 15 | 704 | 0.3+ | 0.5− | 2006 09 29 | 699 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.9+ |
| 2001 12 15 | 704 | 0.4+ | 0.4− | 2006 09 29 | 699 | (0.4− | 1.6+) | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2001 12 18 | 704 | 0.6+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2001 12 18 | 704 | 0.9+ | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2001 12 18 | 704 | (0.0 | 1.8−) | 2006 10 01 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 1.0− | 0.1− |
| 2001 12 18 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.1− | 0.4+ |
| 2001 12 18 | 704 | 1.1+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.6− | 2006 10 22 | 703 | 0.9− | 0.2+ |
| 2001 12 19 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.7− | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2001 12 19 | 704 | 0.7+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 17 | 704 | 0.7+ | 0.9+ |
| 2001 12 19 | 704 | 1.1− | 1.4+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.4− | 0.6+ |
| 2001 12 19 | 704 | 0.4− | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.6+ |

**2001 XA$_{231}$ = 2006 SB$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.98400 | | (2000.0) | | | |
| $n$ | 0.17991229 | $\omega$ | 338.35388 | | +0.99676192 | +0.07884792 |
| $a$ | 3.1076266 | $\Omega$ | 17.14631 | | −0.06367021 | +0.89371100 |
| $e$ | 0.2146980 | $i$ | 3.06619 | | −0.04910981 | +0.44166011 |
| $P$ | 5.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.3− | 0.6− | 2006 09 14 | 703 | 0.5+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2001 12 15 | 704 | 0.8− | 0.6− | 2006 09 14 | 703 | 0.8− | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 12 15 | 704 | 0.3− | 1.4− | 2006 09 14 | 703 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2001 12 18 | 704 | 0.1+ | 1.3+ | 2006 09 14 | 703 | 0.1− | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.1+ | 0.9+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 17 | 703 | 1.0− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.6+ | 0.7− | 2006 10 17 | 703 | 0.3− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.1− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 12 20 | 644 | 0.2− | 0.8− | 2006 09 29 | 704 | 0.5+ | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 12 20 | 644 | 0.4+ | 0.2− | 2006 09 29 | 704 | 1.1− | 0.4− | 2006 10 27 | G96 | 0.6+ | 0.1+ |
| 2001 12 20 | 644 | 0.6+ | 0.5− | 2006 09 29 | 704 | 0.1− | 0.8− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.8− | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2− | | | | |

### 2001 XN$_{231}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.18756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27218977 | $\omega$ | 52.97309 | | +0.56556230 | −0.82470240 | |
| $a$ | 2.3580600 | $\Omega$ | 2.58879 | | +0.73963650 | +0.50599362 | |
| $e$ | 0.1685285 | $i$ | 2.90672 | | +0.36479739 | +0.25265870 | |
| $P$ | 3.62 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 691 | 0.6− | 0.1− | 2001 12 19 | 704 | 0.0 | 1.3+ | 2006 02 04 | 691 | 0.2+ | 0.0 |
| 1999 03 22 | 691 | 0.0 | 0.2− | 2001 12 19 | 704 | 1.5+ | 1.0− | 2006 02 04 | 691 | 0.3+ | 0.0 |
| 1999 03 22 | 691 | 0.3+ | 0.2− | 2001 12 19 | 704 | 1.6+ | 0.2− | 2006 02 04 | 691 | 1.6− | 0.6− |
| 2001 12 15 | 704 | 0.6− | 0.4− | 2001 12 19 | 704 | 0.4+ | 0.1− | 2006 02 09 | 644 | 0.2− | 0.2+ |
| 2001 12 15 | 704 | 0.6− | 1.4− | 2001 12 20 | 644 | 0.8− | 0.5− | 2006 02 09 | 644 | 0.0 | 0.3+ |
| 2001 12 15 | 704 | 0.0 | 0.0 | 2001 12 20 | 644 | 0.1− | 0.3− | 2006 02 09 | 644 | 0.2− | 0.2+ |
| 2001 12 15 | 704 | 0.1+ | 0.0 | 2001 12 20 | 644 | 0.3− | 0.8− | 2006 03 04 | 691 | 0.1+ | 0.5+ |
| 2001 12 18 | 704 | 0.9− | 0.9+ | 2006 01 31 | 691 | 0.5+ | 0.1− | 2006 03 04 | 691 | 0.1+ | 0.5+ |
| 2001 12 18 | 704 | 0.2− | 1.0+ | 2006 01 31 | 691 | 0.4+ | 0.1− | 2006 03 04 | 691 | 0.3+ | 0.2+ |
| 2001 12 18 | 704 | 0.1− | 0.8+ | 2006 01 31 | 691 | 0.1+ | 0.0 | | | | |

### 2001 XF$_{232}$ = 2006 VQ$_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.54465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19170333 | $\omega$ | 124.84152 | | +0.38201651 | −0.92364826 | |
| $a$ | 2.9788567 | $\Omega$ | 302.67150 | | +0.83558020 | +0.35936491 | |
| $e$ | 0.0578712 | $i$ | 2.08427 | | +0.39480264 | +0.13315686 | |
| $P$ | 5.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 1.6+ | 0.2+ | 2001 12 18 | 704 | 0.4− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.6+ |
| 2001 11 21 | 704 | 0.1− | 0.6− | 2001 12 19 | 704 | 0.3− | 0.6− | 2006 10 19 | 691 | 0.5+ | 0.4+ |
| 2001 11 21 | 704 | 0.3− | 1.7+ | 2001 12 19 | 704 | 0.6− | 0.9− | 2006 11 13 | 691 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 0.4− | 0.7+ | 2001 12 19 | 704 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.3− |
| 2001 12 15 | 704 | 1.2+ | 0.1+ | 2001 12 19 | 704 | 0.2− | 0.3− | 2006 11 13 | 691 | 0.3+ | 0.4− |
| 2001 12 15 | 704 | 0.0 | 0.9− | 2001 12 19 | 704 | 0.4− | 0.8+ | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2001 12 15 | 704 | 0.1+ | 0.2+ | 2001 12 20 | 644 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.2− |
| 2001 12 18 | 704 | 0.6+ | 0.5− | 2001 12 20 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2001 12 20 | 644 | 0.2− | 0.1+ | | | | |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.4− | 0.1+ | | | | |

### 2001 XW$_{232}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.98163 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17831518 | $\omega$ | 23.14292 | | +0.07923530 | −0.97838633 | |
| $a$ | 3.1261550 | $\Omega$ | 62.78116 | | +0.87773309 | −0.02235490 | |
| $e$ | 0.1497429 | $i$ | 12.40301 | | +0.47255306 | +0.20557348 | |
| $P$ | 5.53 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.9− | 0.1− | 2001 12 18 | 704 | 0.5+ | 0.2+ | 2001 12 23 | 704 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 1.0− | 2001 12 18 | 704 | 0.6− | 0.4+ | 2002 02 08 | 704 | 0.7− | 0.1+ |
| 2001 11 12 | 704 | 0.9+ | 0.3− | 2001 12 18 | 704 | 0.4− | 0.3+ | 2002 02 08 | 704 | 1.4+ | 0.4− |
| 2001 11 12 | 704 | 0.1+ | 0.9+ | 2001 12 18 | 704 | 0.6− | 0.1− | 2002 02 08 | 704 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.5− | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.4− | 2002 02 08 | 704 | 0.4− | 0.4− |
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.0 | 0.4− | 2006 10 22 | 703 | 1.3− | 1.6+ |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2001 12 19 | 704 | 0.6− | 0.5− | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2001 11 21 | 704 | 0.9+ | 0.1+ | 2001 12 19 | 704 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.4+ |
| 2001 11 21 | 704 | 0.7+ | 0.2+ | 2001 12 20 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2001 11 21 | 704 | 0.4+ | 0.4+ | 2001 12 20 | 704 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2001 11 24 | 704 | 0.7− | 0.6− | 2001 12 20 | 704 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.6+ | 0.5− |
| 2001 11 24 | 704 | 0.5− | 0.3+ | 2001 12 20 | 704 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 11 24 | 704 | 0.7− | 0.6+ | 2001 12 20 | 704 | 0.3+ | 1.1+ | 2006 10 23 | 644 | 0.3+ | 0.5− |
| 2001 12 15 | 704 | 0.9+ | 1.9− | 2001 12 23 | 704 | 0.5− | 0.5+ | 2006 10 23 | 644 | 0.4+ | 0.2− |
| 2001 12 15 | 704 | 0.6+ | 0.9− | 2001 12 23 | 704 | 0.4− | 0.4+ | 2006 10 23 | 644 | 0.6+ | 0.9− |
| 2001 12 15 | 704 | 0.9+ | 1.4− | 2001 12 23 | 704 | 0.1− | 1.4+ | | | | |

### 2001 XD$_{233}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.80106 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19161369 | $\omega$ | 356.54164 | | +0.49092315 | −0.86621923 | |
| $a$ | 2.9797857 | $\Omega$ | 64.03793 | | +0.80177591 | +0.40743375 | |
| $e$ | 0.1425405 | $i$ | 5.94056 | | +0.34080764 | +0.28924383 | |
| $P$ | 5.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | (1.0− | 2.1−) | 2002 01 14 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.9− |
| 2001 11 09 | 704 | (2.2− | 1.2−) | 2002 01 14 | 704 | 1.2− | 0.5− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2001 11 09 | 704 | 1.1− | 1.0+ | 2002 01 14 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.7− |
| 2001 11 21 | 704 | 0.7− | 0.6+ | 2002 01 14 | 704 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.6− | 0.6− |
| 2001 11 21 | 704 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.4− | 0.5− | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 0.0 | 1.3+ | 2006 10 17 | G96 | 0.7− | 0.5− | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.7+ | 2006 10 17 | G96 | 0.5− | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2001 12 12 | 644 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2001 12 12 | 644 | 0.7+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2001 12 12 | 644 | 1.2+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2001 12 15 | 704 | 0.7− | 0.9− | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | (1.6+ | 1.9−) |
| 2001 12 15 | 704 | 0.0 | 0.8− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2001 12 15 | 704 | 0.4+ | 0.5− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.7− | 0.0 |
| 2001 12 18 | 704 | 0.8+ | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.7+ | 1.2+ |
| 2001 12 18 | 704 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.7+ | 0.2+ | 2006 11 27 | 703 | 0.9− | 0.3+ |
| 2001 12 18 | 704 | 1.1− | 0.5+ | 2006 11 11 | 703 | (0.5− | 1.7−) | 2006 11 27 | 703 | 0.2+ | 1.2+ |
| 2001 12 18 | 704 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.9+ | 0.3− |
| 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.4− |
| 2001 12 19 | 704 | 0.2+ | 1.0− | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.3+ | 1.0+ |
| 2001 12 19 | 704 | 0.7+ | 0.3+ | 2006 11 14 | 691 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.5+ |
| 2001 12 19 | 704 | 0.6+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.1+ | | | | |
| 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.4− | | | | |

### 2001 XQ$_{233}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.42091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17292709 | $\omega$ | 158.94471 | | +0.45999603 | −0.87636503 | |
| $a$ | 3.1907592 | $\Omega$ | 263.42905 | | +0.79273238 | +0.47777638 | |
| $e$ | 0.1287875 | $i$ | 8.26378 | | +0.39997377 | +0.06094307 | |
| $P$ | 5.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2001 12 19 | 704 | (0.4+ | 1.8−) | 2006 09 16 | 703 | 0.8+ | 0.4− |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2001 12 19 | 704 | 1.1+ | 1.0− | 2006 09 16 | 703 | 0.3+ | 0.0 |
| 2001 11 21 | 704 | (0.9− | 2.1−) | 2002 01 05 | 691 | 0.1+ | 0.4− | 2006 09 19 | 699 | 0.4− | 0.5+ |
| 2001 11 21 | 704 | (0.6− | 2.6−) | 2002 01 05 | 691 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | (0.8+ | 2.9−) | 2002 01 05 | 691 | 0.0 | 0.7+ | 2006 09 19 | 699 | 0.2− | 0.7+ |
| 2001 12 15 | 704 | 0.0 | 0.1− | 2002 01 15 | 704 | 0.4+ | 1.0+ | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 2001 12 15 | 704 | 0.4− | 0.4− | 2002 01 15 | 704 | 1.0+ | 0.5− | 2006 09 27 | 699 | 0.3− | 0.0 |
| 2001 12 15 | 704 | 0.0 | 0.3− | 2002 01 15 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.1+ | 0.3− |
| 2001 12 18 | 704 | 1.3− | 0.1− | 2002 01 15 | 704 | 0.8+ | 0.4− | 2006 09 27 | 699 | (1.8− | 0.9−) |
| 2001 12 18 | 704 | 0.9− | 0.8+ | 2002 01 15 | 704 | 0.3+ | 0.2− | 2006 09 27 | 699 | (1.6− | 0.3−) |
| 2001 12 18 | 704 | 0.8− | 0.9+ | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.5− | 0.1+ |
| 2001 12 18 | 704 | 0.9− | 1.1+ | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 09 27 | 703 | 1.2− | 1.2− |
| 2001 12 19 | 704 | 0.7+ | 0.7+ | 2006 09 14 | 644 | 0.2+ | 0.4− | 2006 09 27 | 703 | 0.2− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.9+ | 0.9− | 2006 09 16 | 703 | 1.0+ | 0.2− | 2006 09 27 | 703 | 0.3+ | 0.4+ | |
| 2001 12 19 | 704 | 0.5+ | 1.1− | 2006 09 16 | 703 | 0.9+ | 0.5− | | | | | |

**2001 XV$_{234}$ = 2006 UQ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.87580 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18895695 | $\omega$ | 116.06830 | | −0.82541655 | | −0.56394068 |
| $a$ | 3.0076512 | $\Omega$ | 29.62326 | | +0.49762200 | | −0.74830736 |
| $e$ | 0.0874180 | $i$ | 2.97568 | | +0.26657057 | | −0.34929501 |
| $P$ | 5.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.3− | 0.2− | 2003 04 24 | 691 | 0.5+ | 0.9+ | 2006 10 21 | 691 | 0.2− | 0.3+ | |
| 2001 12 15 | 704 | 0.2+ | 0.2− | 2003 04 24 | 691 | 0.9+ | 0.9+ | 2006 11 09 | D35 | 0.4+ | 0.2+ | |
| 2001 12 15 | 704 | 0.5− | 0.2+ | 2003 04 24 | 691 | 0.2+ | 0.4+ | 2006 11 09 | D35 | 0.2+ | 0.6− | |
| 2001 12 18 | 704 | 0.4+ | 0.1+ | 2003 05 01 | 691 | 0.0 | 0.1+ | 2006 11 09 | D35 | 0.0 | 0.5+ | |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2003 05 01 | 691 | 0.3− | 0.6+ | 2006 11 10 | 691 | 0.3+ | 0.3− | |
| 2001 12 18 | 704 | 0.1− | 0.7+ | 2003 05 01 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− | |
| 2001 12 18 | 704 | 0.5+ | 0.1+ | 2005 08 30 | 691 | 0.3− | 1.0+ | 2006 11 10 | 691 | 0.1+ | 0.1− | |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2005 08 30 | 691 | 0.4− | 0.6+ | 2006 11 18 | 691 | 0.2− | 0.3+ | |
| 2001 12 19 | 704 | 0.1− | 1.1+ | 2005 08 30 | 691 | 0.3− | 0.8+ | 2006 11 18 | 691 | 0.1− | 0.3+ | |
| 2001 12 19 | 704 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 18 | 691 | 0.1− | 0.1+ | |
| 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 22 | 691 | 0.0 | 0.1+ | |
| 2003 03 25 | 699 | 0.2+ | 0.9− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.0 | 0.0 | |
| 2003 03 25 | 699 | 0.4− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.4+ | |
| 2003 03 25 | 699 | 0.0 | 0.9− | 2006 10 21 | 691 | 0.2+ | 0.1+ | | | | | |
| 2003 03 25 | 699 | 0.6+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− | | | | | |

**2001 XL$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.41058 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29021541 | $\omega$ | 316.34721 | | +0.89473139 | | −0.44056030 |
| $a$ | 2.2593789 | $\Omega$ | 69.92452 | | +0.42817348 | | +0.79957820 |
| $e$ | 0.1962705 | $i$ | 4.47161 | | +0.12697722 | | +0.40814376 |
| $P$ | 3.40 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.7− | 0.3+ | 2001 12 18 | 704 | 0.3+ | 0.1+ | 2004 08 21 | E12 | 0.3+ | 0.1+ | |
| 2001 11 21 | 704 | 0.1− | 0.3− | 2001 12 19 | 704 | 0.1− | 0.3− | 2004 08 21 | E12 | 0.5− | 0.6− | |
| 2001 11 21 | 704 | 0.7+ | 0.4+ | 2001 12 19 | 704 | 0.7− | 0.2+ | 2004 08 21 | E12 | 0.1+ | 0.3− | |
| 2001 11 21 | 704 | 0.1+ | 0.4+ | 2001 12 19 | 704 | 0.6− | 0.7+ | 2004 09 07 | 704 | 0.2+ | 0.7− | |
| 2001 11 21 | 704 | 0.0 | 0.2+ | 2001 12 19 | 704 | 0.3+ | 0.1+ | 2004 09 07 | 704 | 0.4+ | 0.2+ | |
| 2001 12 15 | 704 | 0.4− | 0.3− | 2001 12 19 | 704 | 1.1− | 0.9+ | 2004 09 07 | 704 | 0.3− | 0.1+ | |
| 2001 12 15 | 704 | 0.8+ | 0.3− | 2004 08 08 | 644 | 0.2+ | 0.0 | 2004 09 07 | 704 | 0.2− | 0.1− | |
| 2001 12 15 | 704 | 0.5+ | 0.6− | 2004 08 08 | 644 | 0.4− | 0.3+ | 2004 09 17 | 699 | 1.4− | 0.0 | |
| 2001 12 15 | 704 | 0.5− | 0.3+ | 2004 08 08 | 644 | 0.1− | 0.3+ | 2004 09 17 | 699 | 0.4+ | 0.4− | |
| 2001 12 18 | 704 | 0.5+ | 0.8− | 2004 08 08 | 644 | 0.1− | 0.5+ | 2004 09 17 | 699 | 0.8+ | 0.3− | |
| 2001 12 18 | 704 | 0.0 | 0.5− | 2004 08 08 | 644 | 0.1+ | 0.6+ | 2004 09 17 | 699 | 0.2+ | 0.1− | |
| 2001 12 18 | 704 | 0.6+ | 0.2− | 2004 08 08 | 644 | 0.0 | 0.4+ | | | | | |
| 2001 12 18 | 704 | 0.4+ | 0.1− | 2004 08 21 | E12 | 0.1+ | 0.2− | | | | | |

**2001 XC$_{236}$ = 2006 VY$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.52636 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18302718 | $\omega$ | 42.00288 | | −0.23057810 | | −0.95831903 |
| $a$ | 3.0722672 | $\Omega$ | 61.97017 | | +0.83414491 | | −0.28393736 |
| $e$ | 0.0387931 | $i$ | 11.01775 | | +0.50103493 | | +0.03168946 |
| $P$ | 5.39 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.8+ | 0.0 | 2003 03 08 | 644 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.5+ | |
| 2001 12 15 | 704 | 0.4+ | 0.3− | 2003 03 08 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.2− | |
| 2001 12 15 | 704 | 0.1− | 0.2− | 2003 03 08 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.0 | |
| 2001 12 18 | 704 | 1.1− | 0.4− | 2006 10 03 | G96 | 0.7+ | 0.6− | 2006 11 11 | 703 | 0.2+ | 0.4− | |
| 2001 12 18 | 704 | 1.4− | 0.7− | 2006 10 03 | G96 | 0.9+ | 0.6− | 2006 11 11 | 703 | 0.7+ | 0.5+ | |
| 2001 12 18 | 704 | 1.0− | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.5− | 2006 11 11 | 644 | 0.4+ | 0.3+ | |
| 2001 12 18 | 704 | 1.3− | 0.3+ | 2006 10 03 | G96 | 0.4+ | 0.6− | 2006 11 11 | 644 | 0.4+ | 0.2+ | |
| 2001 12 18 | 704 | 1.0− | 0.1− | 2006 10 16 | 703 | 0.8− | 1.2− | 2006 11 11 | 644 | 0.0 | 0.4+ | |
| 2001 12 19 | 704 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.1− | |
| 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− | |
| 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 1.3− | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.2− | |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2− | |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.2+ | |
| 2001 12 20 | 704 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.7+ | 0.2− | |
| 2001 12 20 | 704 | 0.8+ | 0.5+ | 2006 11 02 | 703 | 0.2− | 0.3− | 2006 11 17 | 704 | 1.0− | 0.8+ | |
| 2001 12 20 | 704 | 0.5+ | 0.8+ | 2006 11 02 | 703 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.3− | 0.4+ | |
| 2001 12 20 | 704 | 0.1+ | 0.0 | 2006 11 02 | 703 | 1.1− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.2+ | |
| 2001 12 22 | 691 | 0.2+ | 0.0 | 2006 11 02 | 703 | 0.5+ | 0.0 | 2006 11 17 | 703 | 0.7+ | 0.7− | |
| 2001 12 22 | 691 | 0.4+ | 0.0 | 2006 11 02 | 703 | 0.4− | 0.6− | 2006 11 17 | 703 | 0.2− | 0.1− | |
| 2001 12 22 | 691 | 0.4+ | 0.3− | 2006 11 02 | 703 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.4+ | |
| 2003 03 08 | 699 | 0.7− | 0.8− | 2006 11 02 | 703 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.7− | 0.3+ | |
| 2003 03 08 | 699 | 0.1+ | 0.4+ | 2006 11 02 | 703 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.4+ | |
| 2003 03 08 | 699 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.5+ | |
| 2003 03 08 | 699 | (0.4− | 2.0−) | 2006 11 09 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.2+ | |

**2001 XW$_{236}$ = 2006 UE$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.34080 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17857653 | $\omega$ | 103.13062 | | −0.60295298 | | −0.79773215 |
| $a$ | 3.1231042 | $\Omega$ | 23.95719 | | +0.72366551 | | −0.55135903 |
| $e$ | 0.1312339 | $i$ | 1.19001 | | +0.33579151 | | −0.24418564 |
| $P$ | 5.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.2+ | 0.4− | 2001 12 19 | 704 | 0.1− | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | |
| 2001 12 15 | 704 | 0.1+ | 0.1− | 2003 03 10 | 291 | (0.17− | 0.08+) | 2006 10 20 | 691 | 0.2− | 0.2+ | |
| 2001 12 15 | 704 | 0.5+ | 0.7− | 2003 03 10 | 291 | (0.17− | 0.08+) | 2006 10 20 | 691 | 0.1− | 0.3+ | |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2003 03 10 | 291 | (0.17− | 0.08+) | 2006 10 20 | 691 | 0.2+ | 0.9− | |
| 2001 12 18 | 704 | 0.5− | 0.7− | 2003 03 26 | 691 | (0.17− | 0.08+) | 2006 10 27 | G96 | 0.4− | 0.1+ | |
| 2001 12 18 | 704 | 0.6− | 0.2− | 2003 03 26 | 691 | (0.17− | 0.08+) | 2006 10 27 | G96 | 0.0 | 0.1+ | |
| 2001 12 18 | 704 | 0.0 | 0.3+ | 2003 03 26 | 691 | (0.17− | 0.08+) | 2006 10 27 | G96 | 0.1− | 0.3− | |
| 2001 12 18 | 704 | 0.0 | 0.4− | 2003 04 07 | 691 | (0.17− | 0.08+) | 2006 10 27 | G96 | 0.3− | 0.1− | |
| 2001 12 19 | 704 | 0.1− | 0.3− | 2003 04 07 | 691 | (0.17− | 0.08+) | 2006 10 29 | 691 | 0.0 | 0.1− | |
| 2001 12 19 | 704 | 0.1+ | 0.4+ | 2003 04 07 | 691 | (0.17− | 0.08+) | 2006 10 29 | 691 | 0.3+ | 0.4+ | |
| 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.0 | |
| 2001 12 19 | 704 | 0.1+ | 1.1+ | 2006 10 16 | 691 | 0.2+ | 0.2− | | | | | |

**2001 XP$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.14459 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20317768 | $\omega$ | 343.97215 | | +0.60477868 | | −0.78784823 |
| $a$ | 2.8656207 | $\Omega$ | 68.66988 | | +0.74370988 | | +0.50645510 |
| $e$ | 0.0728811 | $i$ | 7.17549 | | +0.28484797 | | +0.35042603 |
| $P$ | 4.85 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.3− | 0.2+ | 2001 11 19 | 699 | 0.9+ | 0.2+ | 2002 01 12 | 291 | 0.1− | 0.2+ | |
| 2001 10 24 | 704 | 0.2− | 1.5+ | 2001 11 21 | 704 | 0.4+ | 0.4− | 2002 01 12 | 291 | 0.2+ | 0.2+ | |
| 2001 10 24 | 704 | 0.9− | 0.7+ | 2001 11 21 | 704 | (1.6+ | 1.1−) | 2002 01 12 | 291 | 0.2+ | 0.1+ | |
| 2001 10 24 | 704 | 1.1− | 0.5+ | 2001 11 21 | 704 | (1.1+ | 1.6−) | 2003 01 28 | 645 | 0.0 | 0.0 | |
| 2001 11 09 | 704 | 0.5− | 1.2+ | 2001 12 14 | 704 | 0.8+ | 1.2+ | 2003 01 28 | 645 | 0.0 | 0.1+ | |
| 2001 11 09 | 704 | 0.3− | 0.2− | 2001 12 14 | 704 | 0.2− | 0.6+ | 2005 07 30 | 644 | 0.1− | 0.6+ | |
| 2001 11 09 | 704 | 0.6− | 0.4+ | 2001 12 14 | 704 | 0.1+ | 1.0+ | 2005 07 30 | 644 | 0.0 | 0.3+ | |
| 2001 11 09 | 704 | (1.7− | 0.5+) | 2001 12 19 | 691 | 0.0 | 0.3− | 2005 07 30 | 644 | 0.4− | 0.4+ | |
| 2001 11 14 | 691 | 1.1− | 0.4+ | 2001 12 19 | 691 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.2− | 0.2− | |
| 2001 11 14 | 691 | 0.4− | 0.4− | 2001 12 19 | 704 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.1− | |
| 2001 11 14 | 691 | 0.7− | 0.1− | 2001 12 19 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.0 | |
| 2001 11 14 | 691 | 0.8+ | 0.6+ | 2001 12 19 | 704 | 0.3+ | 0.6− | 2006 11 19 | 691 | 0.2+ | 0.1+ | |
| 2001 11 14 | 691 | 0.5+ | 0.0 | 2001 12 19 | 644 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.0 | |
| 2001 11 14 | 691 | 0.5+ | 0.3− | 2001 12 19 | 691 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.0 | 0.1− | |
| 2001 11 19 | 699 | (0.5+ | 2.5−) | 2001 12 19 | 644 | 0.4− | 0.2− | 2006 11 24 | 691 | 0.6+ | 0.0 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.4+ | 0.7+ | 2001 12 19 | 704 | 0.1+ | 0.6− | 2006 11 24 | 691 | 0.1− | 0.6− |
| 2001 11 19 | 699 | 0.4+ | 0.1+ | 2001 12 19 | 704 | 0.1+ | 1.1− | 2006 11 24 | 691 | 0.1+ | 0.1− |

**2001 XZ$_{241}$ = 2006 VW$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.01045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19119301 | $\omega$ | 173.80630 | | +0.33232137 | −0.94111764 | |
| $a$ | 2.9841550 | $\Omega$ | 256.77096 | | +0.86257597 | +0.32990905 | |
| $e$ | 0.1145543 | $i$ | 3.65929 | | +0.38147767 | +0.07387558 | |
| $P$ | 5.16 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 691 | 0.1+ | 0.0 | 2004 07 16 | 807 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.1− |
| 2001 12 07 | 691 | 0.2+ | 0.0 | 2004 07 16 | 807 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 12 07 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.5− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 12 14 | 704 | 0.8− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2001 12 14 | 704 | 0.6+ | 0.4+ | 2006 10 31 | G96 | 0.4− | 0.6− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.7− | 2006 11 20 | 691 | 0.3− | 0.1+ |
| 2001 12 17 | 291 | 0.3+ | 0.1− | 2006 11 09 | 691 | 0.3+ | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2001 12 17 | 291 | 0.1− | 0.2− | 2006 11 09 | 691 | 0.5+ | 0.2− | 2006 12 01 | G96 | 0.5− | 0.8− |
| 2001 12 17 | 291 | 0.2− | 0.2+ | 2006 11 09 | 691 | 0.4− | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.0 |
| 2001 12 19 | 704 | 0.4− | 0.6− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.0 | | | | |
| 2001 12 19 | 704 | 0.6− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ | | | | |

**2001 XD$_{242}$ = 2006 UA$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.79522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17914194 | $\omega$ | 97.57570 | | +0.98950504 | +0.07279213 | |
| $a$ | 3.1165292 | $\Omega$ | 258.31042 | | −0.11457739 | +0.92160280 | |
| $e$ | 0.1388325 | $i$ | 7.32330 | | +0.08804432 | +0.38124742 | |
| $P$ | 5.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 12 | 644 | 1.1− | 0.1+ | 2001 12 19 | 691 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2001 12 12 | 644 | 0.8− | 0.1+ | 2001 12 19 | 704 | 0.2+ | 1.5− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 12 12 | 644 | 1.1− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2001 12 14 | 704 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.8+ | 0.1− | 2006 10 17 | 703 | 1.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 12 14 | 704 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 12 19 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 0.7+ | 0.2− |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 10 31 | 703 | 0.4− | 0.1+ |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 10 31 | 703 | 1.0− | 0.5− |
| 2001 12 19 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.8− | 2006 10 31 | 703 | 0.4+ | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.7− | 0.2− | | | | |
| 2001 12 19 | 704 | 0.9− | 0.7− | 2006 10 19 | 703 | 0.2− | 0.3− | | | | |

**2001 XL$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.43880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28287703 | $\omega$ | 80.87402 | | +0.79539762 | −0.60545239 | |
| $a$ | 2.2982870 | $\Omega$ | 316.38101 | | +0.53908179 | +0.72764580 | |
| $e$ | 0.2336570 | $i$ | 2.30532 | | +0.27700802 | +0.32242673 | |
| $P$ | 3.48 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.7+ | 0.0 | 2001 11 20 | 704 | 0.5− | 0.6− | 2001 12 18 | 704 | 0.1+ | 0.7+ |
| 2001 11 12 | 704 | 1.8− | 0.0 | 2001 11 20 | 704 | 0.7− | 0.6− | 2001 12 19 | 704 | 0.3− | 0.1+ |
| 2001 11 12 | 704 | 1.0+ | 0.6− | 2001 11 20 | 704 | 0.8− | 0.9+ | 2001 12 19 | 704 | 0.3+ | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.9− | 2001 11 20 | 704 | 0.1+ | 0.8− | 2001 12 19 | 704 | 0.4− | 0.6+ |
| 2001 11 12 | 704 | 0.5+ | 0.6− | 2001 11 24 | 704 | 0.5− | 0.2− | 2001 12 19 | 704 | 0.3+ | 1.2+ |
| 2001 11 19 | 704 | 0.5+ | 0.9+ | 2001 11 24 | 704 | 1.4− | 1.3− | 2006 01 26 | 691 | 0.5+ | 0.0 |
| 2001 11 19 | 704 | 0.2− | 0.7+ | 2001 11 24 | 704 | 0.4+ | 0.4− | 2006 01 26 | 691 | 0.0 | 0.2+ |
| 2001 11 19 | 704 | 0.1− | 1.0+ | 2001 11 24 | 704 | 1.1− | 1.3− | 2006 01 26 | 691 | 0.3+ | 0.1− |
| 2001 11 19 | 704 | 0.1+ | 0.8+ | 2001 11 24 | 704 | 2.0− | 1.7− | 2006 02 04 | G96 | 1.0− | 0.2+ |
| 2001 11 19 | 704 | 0.1+ | 0.0 | 2001 12 15 | 704 | 0.2− | 0.7+ | 2006 02 04 | G96 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 0.2− | 2001 12 15 | 704 | 0.1+ | 0.6+ | 2006 02 04 | G96 | 1.5− | 0.0 |
| 2001 11 20 | 704 | 1.3+ | 1.0+ | 2001 12 15 | 704 | 0.2+ | 0.7+ | 2006 02 04 | G96 | 0.0 | 1.3+ |
| 2001 11 20 | 704 | 0.6+ | 0.4− | 2001 12 15 | 704 | 0.3+ | 0.5+ | 2006 02 20 | 691 | 0.3+ | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.1− | 2001 12 18 | 704 | 0.1+ | 1.8− | 2006 02 20 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 0.7+ | 2001 12 18 | 704 | 0.3+ | 1.7− | 2006 02 20 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.6− | 0.8+ | 2001 12 18 | 704 | 0.3+ | 1.4− | 2006 03 05 | 691 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.3− | 2001 12 18 | 704 | (0.5+ | 2.3−) | 2006 03 05 | 691 | 0.1+ | 0.3− |
| 2001 11 20 | 704 | 1.2+ | 0.1− | 2001 12 18 | 704 | 0.5− | 0.3+ | 2006 03 05 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.7+ | 0.4− | 2001 12 18 | 704 | 0.2− | 0.2+ | | | | |
| 2001 11 20 | 704 | 0.5+ | 1.7+ | 2001 12 18 | 704 | 0.2+ | 0.9+ | | | | |

**2001 XA$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.44328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17297689 | $\omega$ | 23.72737 | | −0.24870958 | −0.92653583 | |
| $a$ | 3.1901467 | $\Omega$ | 81.65473 | | +0.83672639 | −0.35232145 | |
| $e$ | 0.1034981 | $i$ | 16.57608 | | +0.48788574 | +0.13191268 | |
| $P$ | 5.70 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 05 | 327 | 0.4+ | 0.5+ | 2001 12 19 | 704 | 0.3+ | 1.4− | 2003 03 03 | 644 | 0.2+ | 0.5+ |
| 1998 03 05 | 327 | 0.4+ | 0.4+ | 2001 12 19 | 704 | 0.6+ | 0.3− | 2003 03 03 | 644 | 0.4+ | 0.7+ |
| 1998 03 05 | 327 | 0.3− | 0.2− | 2003 02 01 | 644 | 1.0+ | 1.1+ | 2003 03 07 | 645 | 0.1− | 0.2− |
| 2001 11 18 | 704 | 0.2− | 0.4+ | 2003 02 01 | 644 | 1.0+ | 1.1+ | 2003 03 07 | 645 | 0.1− | 0.2− |
| 2001 11 18 | 704 | 0.4− | 0.3− | 2003 02 01 | 644 | 1.8+ | 1.0+ | 2003 03 09 | 644 | 0.5− | 0.4+ |
| 2001 11 18 | 704 | 0.2+ | 0.1− | 2003 02 11 | 704 | 0.1+ | 1.4− | 2003 03 09 | 644 | 0.6− | 0.7+ |
| 2001 11 18 | 704 | 0.8− | 0.9+ | 2003 02 11 | 704 | 0.1+ | 0.1+ | 2003 03 09 | 644 | 0.2− | 0.8+ |
| 2001 11 18 | 704 | 0.8− | 0.2− | 2003 02 11 | 704 | 0.8− | 0.4− | 2003 03 09 | 644 | 0.8+ | 0.6+ |
| 2001 12 15 | 704 | 0.2+ | 0.2− | 2003 02 11 | 704 | 1.0+ | 1.5+ | 2003 03 09 | 644 | 0.5+ | 0.7+ |
| 2001 12 15 | 704 | 0.1− | 0.5− | 2003 02 19 | 644 | 0.1+ | 0.5+ | 2003 03 09 | 644 | 0.3+ | 0.8+ |
| 2001 12 15 | 704 | 0.3+ | 0.6+ | 2003 02 19 | 644 | 0.1+ | 0.5+ | 2003 04 26 | 645 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.3+ | 0.7+ | 2003 02 19 | 644 | 0.0 | 0.3+ | 2003 04 26 | 645 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 1.2+ | 0.2− | 2003 03 03 | 644 | 0.0 | 0.9+ | | | | |

**2001 XB$_{246}$ = 2006 TR$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.91564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18886965 | $\omega$ | 237.62933 | | +0.11400527 | −0.98916779 | |
| $a$ | 3.0085779 | $\Omega$ | 206.29940 | | +0.96715353 | +0.13178666 | |
| $e$ | 0.2050177 | $i$ | 12.04599 | | +0.22719343 | −0.06464795 | |
| $P$ | 5.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 05 | 608 | 0.4+ | 0.9− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 12 05 | 608 | 0.5− | 1.0− | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 12 05 | 608 | 0.0 | 1.0− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 2001 12 15 | 704 | 1.2+ | 0.8− | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 12 15 | 704 | 0.7+ | 0.3− | 2006 10 16 | 683 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2001 12 15 | 704 | 0.9+ | 0.3− | 2006 10 16 | 683 | 0.1+ | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 0.9+ | 2006 10 16 | 683 | 0.4− | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | (1.5+ | 1.0+) |
| 2001 12 19 | 704 | 0.6− | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.7− | 0.6+ |
| 2001 12 19 | 704 | 0.6− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.6− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2003 03 27 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 683 | 0.8− | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.3− |
| 2003 03 27 | 644 | 0.4+ | 0.2+ | 2006 10 19 | 683 | (0.8+ | 2.6+) | 2006 11 17 | 704 | 1.3− | 0.3+ |
| 2003 03 27 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 683 | 0.8− | 0.0 | 2006 11 17 | 704 | 1.6− | 0.5+ |
| 2003 04 01 | 644 | 0.3− | 1.2− | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 1.0− | 0.0 |
| 2003 04 01 | 644 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2003 04 01 | 644 | 0.3− | 0.7+ | 2006 10 19 | 644 | 0.4+ | 0.4+ | 2006 11 17 | 704 | 1.3− | 0.1− |
| 2003 04 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.7+ | 0.2− |
| 2003 04 26 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.2+ |
| 2003 04 26 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.7+ |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 20 | 704 | 1.2+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2− | | | | |

**2001 XG$_{247}$ = 2006 VA$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.12295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19254006 | $\omega$ | 60.60796 | | −0.28421122 | −0.95870342 | |
| $a$ | 2.9702202 | $\Omega$ | 45.90780 | | +0.87446701 | −0.26372813 | |
| $e$ | 0.2210296 | $i$ | 0.84332 | | +0.39310487 | −0.10646705 | |
| $P$ | 5.12 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.3− | 1.3+ | 2006 09 27 | G96 | 0.4− | 0.1− | 2006 11 14 | 691 | 0.3− | 0.2+ |
| 2001 11 21 | 704 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.5+ |
| 2001 11 21 | 704 | 0.1− | 0.7+ | 2006 09 27 | G96 | 0.9+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2001 11 21 | 704 | 0.7− | 0.6− | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2001 11 21 | 704 | 0.0 | 0.9+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 1.4+ | 0.2+ |
| 2001 12 15 | 704 | 0.1+ | 0.5− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.3− |
| 2001 12 15 | 704 | 0.6− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2001 12 15 | 704 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.7− |
| 2001 12 18 | 704 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2001 12 18 | 704 | (0.4+ | 2.4−) | 2006 11 11 | 703 | 0.6+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.6− |
| 2001 12 19 | 704 | 0.2+ | 0.8− | 2006 11 11 | 703 | 0.2− | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.3+ | 1.2− | | | | |
| 2001 12 19 | 704 | 0.9+ | 0.1− | 2006 11 11 | 703 | 0.2− | 1.5− | | | | |

**2001 XF$_{248}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.93758 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18566641 | $\omega$ | 228.87042 | | −0.90701562 | −0.38934318 | |
| $a$ | 3.0430832 | $\Omega$ | 287.65831 | | +0.41885614 | −0.79490836 | |
| $e$ | 0.0174917 | $i$ | 9.69203 | | +0.04338441 | −0.46533062 | |
| $P$ | 5.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.3− | 0.1+ | 2001 12 20 | 291 | 0.2− | 0.1− | 2002 01 15 | 704 | 0.7− | 1.2− |
| 2001 12 14 | 291 | 0.3− | 0.0 | 2001 12 20 | 291 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2001 12 14 | 291 | 0.6+ | 0.4+ | 2002 01 12 | 691 | 0.3+ | 0.4+ | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2001 12 19 | 291 | 0.2+ | 0.1− | 2002 01 12 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 291 | 0.4+ | 0.2− | 2002 01 12 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2001 12 19 | 291 | 0.1− | 0.3− | 2002 01 15 | 704 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2001 12 20 | 291 | 0.2− | 0.0 | 2002 01 15 | 704 | 1.3− | 1.0− | 2006 11 22 | 691 | 0.3− | 0.2+ |

**2001 XM$_{248}$ = 2006 VG$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.18977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18343712 | $\omega$ | 325.74742 | | +0.33391092 | −0.93609519 | |
| $a$ | 3.0676883 | $\Omega$ | 104.52929 | | +0.88838503 | +0.27331479 | |
| $e$ | 0.2753534 | $i$ | 6.55977 | | +0.31508019 | +0.22141550 | |
| $P$ | 5.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.2+ | 0.3− | 2002 01 05 | 608 | 0.5+ | 0.6− | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 1997 03 05 | 691 | 0.6− | 0.3− | 2002 01 05 | 608 | 0.0 | 0.8− | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 1997 03 05 | 691 | 0.2+ | 0.2− | 2002 01 05 | 608 | 0.4+ | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2001 12 14 | 291 | 0.4− | 0.5+ | 2002 01 08 | 704 | 1.1+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 2001 12 14 | 291 | 0.1+ | 1.2+ | 2002 01 08 | 704 | 1.1+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2001 12 14 | 291 | 0.3− | 0.3+ | 2002 01 08 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2001 12 17 | 644 | 0.2+ | 0.1− | 2002 01 08 | 704 | 1.0+ | 0.3− | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2001 12 17 | 644 | 0.1+ | 0.3+ | 2002 01 09 | 691 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.8+ | 0.4+ |
| 2001 12 17 | 644 | 0.4+ | 0.0 | 2002 01 09 | 691 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.2+ | 1.2+ |
| 2001 12 18 | 704 | 1.0+ | 0.0 | 2002 01 09 | 691 | 0.6− | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.6+ |
| 2001 12 18 | 704 | 1.1+ | 0.3+ | 2002 01 09 | 691 | 0.5+ | 0.5+ | 2006 11 19 | 703 | 0.3− | 0.4− |
| 2001 12 18 | 704 | 0.9+ | 0.5+ | 2002 01 09 | 691 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.5+ | 0.3− |
| 2001 12 19 | 291 | 0.7− | 0.1− | 2002 01 09 | 691 | 0.6+ | 0.5+ | 2006 11 19 | 703 | 0.4− | 0.4− |
| 2001 12 19 | 291 | 0.8− | 0.2− | 2002 01 09 | 645 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2001 12 19 | 291 | 0.8− | 0.3+ | 2002 01 09 | 645 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2001 12 20 | 291 | 0.4− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2001 12 20 | 291 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.5− | 1.4− |
| 2001 12 20 | 291 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.1− | 2006 11 24 | G96 | 1.5+ | 1.6− |

**2001 XS$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.44240 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18628503 | $\omega$ | 157.62233 | | +0.59812171 | −0.79804565 | |
| $a$ | 3.0363424 | $\Omega$ | 255.56652 | | +0.72333657 | +0.57697154 | |
| $e$ | 0.2529432 | $i$ | 4.34108 | | +0.34501394 | +0.17385910 | |
| $P$ | 5.29 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2001 11 20 | 704 | 0.4− | 0.7− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2001 11 20 | 704 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.3− | 0.1− | 2006 11 15 | 704 | (0.3+ | 2.0+) |
| 2001 11 20 | 704 | 0.7− | 0.6− | 2006 10 23 | 644 | 0.2− | 0.5+ | 2006 11 15 | 704 | 0.5+ | 0.2+ |
| 2001 11 20 | 704 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.7+ | 0.3− |
| 2001 12 14 | 704 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 1.0+ | 0.4+ |
| 2001 12 14 | 704 | 0.7+ | 0.1− | 2006 10 27 | 703 | 0.4− | 0.1+ | 2006 11 16 | 704 | (0.0 | 2.3+) |
| 2001 12 14 | 704 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.8+ | 1.2+ |
| 2001 12 14 | 704 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 2001 12 20 | 704 | 0.9+ | 0.1+ | 2006 10 29 | 704 | 0.4+ | 0.5+ | 2006 11 16 | 704 | (0.2− | 1.7+) |
| 2001 12 20 | 704 | 0.3+ | 0.7− | 2006 10 29 | 704 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.5− | 0.5− |
| 2001 12 20 | 704 | 0.6+ | 0.7− | 2006 10 29 | 704 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2001 12 20 | 704 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2002 01 09 | 704 | 1.4− | 0.5+ | 2006 10 29 | 704 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.4− | 0.6− |
| 2002 01 09 | 704 | 0.8− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.6− | 0.1− |
| 2002 01 09 | 704 | 1.3− | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2002 01 09 | 704 | 1.2− | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2002 01 15 | 704 | 0.6+ | 0.5− | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2002 01 15 | 704 | 0.4+ | 1.1− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.6− | 0.9+ |
| 2002 01 15 | 704 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2002 01 15 | 704 | 0.8+ | 0.9− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2002 01 19 | 704 | 0.8+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.4− |
| 2002 01 19 | 704 | 0.7+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2002 01 19 | 704 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.7− |
| 2002 01 19 | 704 | 0.7+ | 1.2+ | 2006 11 11 | 703 | 0.9+ | 0.6− | 2006 11 22 | 704 | 0.4− | 0.2+ |
| 2002 01 19 | 704 | 1.1− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.8+ |
| 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.3+ | 0.9− | 2006 11 22 | 704 | 0.3− | 0.6+ |
| 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 13 | 104 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.8− | 0.3− |
| 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 104 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 13 | 104 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.8− | 0.5+ |
| 2006 10 21 | 691 | 0.5− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.4− | 2006 11 29 | 704 | 0.2− | 1.1+ |

**2001 XM$_{258}$ = 2006 SF$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.81948 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18407625 | $\omega$ | 215.57258 | | +0.63466897 | −0.77176412 | |
| $a$ | 3.0605834 | $\Omega$ | 195.16251 | | +0.73948948 | +0.62143699 | |
| $e$ | 0.0692773 | $i$ | 8.72842 | | +0.22438939 | +0.13489330 | |
| $P$ | 5.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.7− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 11 17 | 704 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2001 11 17 | 704 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2001 11 17 | 704 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 11 17 | 704 | 0.3+ | 0.7+ | 2006 09 28 | 691 | 0.5+ | 1.0+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 12 08 | 699 | 1.5+ | 0.7− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 699 | 0.6+ | 0.4− | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2001 12 08 | 699 | 0.7− | 0.9− | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 12 08 | 699 | 1.0+ | 0.8− | 2006 10 02 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.4− | 0.8+ | 2006 10 02 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2001 12 11 | 704 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 12 11 | 704 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 12 11 | 704 | 0.9− | 0.5+ | 2006 10 11 | 691 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 12 11 | 704 | 1.5− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.4+ | 0.2+ |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.7− | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.4− | 0.5− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2006 09 24 | 691 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.6− | 2006 10 31 | G96 | 0.0 | 0.0 |

**2001 XV$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.73390 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18582440 | $\omega$ | 231.19525 | | +0.84094898 | | +0.49848076 |
| $a$ | 3.0413581 | $\Omega$ | 97.96320 | | −0.40673026 | | +0.83890893 |
| $e$ | 0.1485970 | $i$ | 12.27342 | | −0.35689677 | | +0.21851485 |
| $P$ | 5.30 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.7+ | 0.1+ | 2001 12 11 | 704 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2001 10 17 | 704 | 0.3+ | 0.6+ | 2001 12 11 | 704 | 0.1− | 1.2+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 0.6+ | 0.7− | 2001 12 11 | 704 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 10 17 | 704 | 0.8− | 0.8− | 2004 03 22 | 699 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 10 17 | 704 | 0.6+ | 0.4− | 2004 03 22 | 699 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2001 10 25 | 644 | 0.4− | 0.2+ | 2004 03 22 | 699 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.2− | 0.9− |
| 2001 10 25 | 644 | 0.3− | 0.1− | 2004 03 22 | 699 | 0.5− | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2001 10 25 | 644 | 0.5− | 0.3− | 2006 09 19 | 703 | 0.2− | 1.1+ | 2006 10 17 | 703 | 0.6− | 0.3− |
| 2001 11 24 | 704 | 0.1− | 0.7+ | 2006 09 19 | 703 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.5− | 0.0 |
| 2001 11 24 | 704 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.9− | 0.4+ |
| 2001 11 24 | 704 | 0.6− | 0.8− | 2006 09 19 | 703 | (1.4− | 1.7−) | 2006 10 28 | 703 | 0.7+ | 0.1+ |
| 2001 11 24 | 704 | 0.1+ | 0.5− | 2006 09 26 | 703 | 1.1− | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.3− |
| 2001 11 24 | 704 | 0.4+ | 0.2− | 2006 09 26 | 703 | 0.9− | 0.2+ | 2006 11 16 | 703 | 0.2− | 1.2− |
| 2001 11 24 | 704 | 0.1− | 0.7− | 2006 09 26 | 703 | 0.7− | 0.8+ | 2006 11 16 | 703 | 0.4− | 0.2+ |
| 2001 11 24 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.4− | 0.3+ | 2006 11 16 | 703 | 0.1− | 0.0 |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2006 09 30 | 704 | 0.7− | 0.9− | 2006 11 16 | 703 | 0.3− | 0.4− |
| 2001 12 08 | 699 | 0.6+ | 1.0+ | 2006 09 30 | 704 | 1.3+ | 0.6+ | 2006 11 17 | 703 | 0.5+ | 0.7+ |
| 2001 12 08 | 699 | 1.2− | 0.7− | 2006 09 30 | 704 | (1.8+ | 0.1+) | 2006 11 17 | 703 | 1.0+ | 0.4+ |
| 2001 12 08 | 699 | 0.8+ | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.0 | 2006 11 17 | 703 | (0.9+ | 1.6+) |
| 2001 12 08 | 699 | 0.4− | 0.3− | 2006 09 30 | 704 | 1.1+ | 1.1− | 2006 11 17 | 703 | (0.6+ | 1.6+) |
| 2001 12 11 | 704 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.1+ | | | | |
| 2001 12 11 | 704 | 0.6+ | 0.4+ | 2006 10 10 | 644 | 0.8+ | 0.0 | | | | |

**2001 XS$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.81428 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18632993 | $\omega$ | 159.63725 | | +0.78353488 | | −0.61712286 |
| $a$ | 3.0358546 | $\Omega$ | 238.67882 | | +0.55771404 | | +0.74983008 |
| $e$ | 0.2329403 | $i$ | 4.85739 | | +0.27391264 | | +0.23856701 |
| $P$ | 5.29 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.8+ | 0.2− | 2001 11 21 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.7− |
| 2001 11 09 | 704 | 0.6+ | 1.3− | 2001 11 21 | 704 | 0.9+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2001 11 09 | 704 | 1.1+ | 1.1− | 2001 12 10 | 704 | 0.6− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2001 11 09 | 704 | (0.2− | 1.8−) | 2001 12 10 | 704 | 0.5+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 11 17 | 291 | 0.8− | 0.0 | 2001 12 10 | 704 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 11 17 | 291 | 0.6− | 0.0 | 2001 12 10 | 704 | 0.1− | 1.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 11 17 | 291 | 0.8− | 0.1− | 2001 12 13 | 644 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.5+ |
| 2001 11 19 | 704 | 0.4+ | 0.3− | 2001 12 13 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 11 19 | 704 | (1.9+ | 0.8+) | 2001 12 13 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 1.0+ | 0.2+ | 2001 12 18 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 11 19 | 704 | (1.9+ | 0.3−) | 2001 12 18 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 11 19 | 704 | 0.7+ | 0.2+ | 2001 12 18 | 691 | 0.4+ | 0.7+ | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 703 | 0.8− | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.9+ | 0.7+ | 2006 09 16 | 703 | 0.3+ | 0.2− | 2006 11 20 | G96 | 0.7− | 0.3− |
| 2001 11 21 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.1− | 1.0+ | 2006 11 20 | G96 | 0.5+ | 0.1− |

**2001 XW$_{260}$ = 2006 UO$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.00988 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18036494 | $\omega$ | 199.95608 | | −0.18575414 | | −0.97277447 |
| $a$ | 3.1024251 | $\Omega$ | 260.94357 | | +0.91949451 | | −0.12236020 |
| $e$ | 0.0999197 | $i$ | 8.06708 | | +0.34644659 | | −0.19681922 |
| $P$ | 5.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.1− | 0.3− | 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2001 11 12 | 704 | 0.9− | 0.2+ | 2001 12 19 | 704 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.4+ | 2001 12 19 | 704 | 0.1− | 0.6− | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2001 12 10 | 704 | 0.5+ | 0.5− | 2001 12 19 | 704 | 1.4+ | 0.2+ | 2006 10 27 | 703 | (2.1− | 1.1−) |
| 2001 12 10 | 704 | 0.8− | 0.6− | 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2001 12 10 | 704 | 0.6+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.5− | 2006 10 27 | 703 | 0.2− | 0.3+ |
| 2001 12 10 | 704 | 0.7− | 0.3− | 2006 10 19 | 703 | 0.7− | 0.8+ | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2001 12 12 | 644 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.8+ | 0.2+ | 2006 11 25 | G96 | 0.6+ | 0.2+ |
| 2001 12 12 | 644 | 0.0 | 0.9+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2001 12 12 | 644 | (0.2+ | 2.7+) | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.4− | 0.1− |

**2001 XK$_{262}$ = 2006 RR$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.86982 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18311344 | $\omega$ | 105.20499 | | +0.92445857 | | +0.35918268 |
| $a$ | 3.0713023 | $\Omega$ | 233.90898 | | −0.38128064 | | +0.87192348 |
| $e$ | 0.2460975 | $i$ | 9.10846 | | +0.00119613 | | +0.33277207 |
| $P$ | 5.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 291 | 0.8− | 0.2− | 2001 12 14 | 704 | (0.1− | 1.8+) | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2001 11 18 | 291 | 0.0 | 0.4− | 2001 12 14 | 704 | 0.4− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2001 11 18 | 291 | 0.2− | 0.3− | 2006 09 14 | 644 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2001 11 18 | 691 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 2001 11 18 | 691 | 0.5+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 2001 11 18 | 691 | 0.5+ | 0.4+ | 2006 09 16 | 703 | 1.3+ | 1.2− | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 2001 11 20 | 704 | 0.4− | 1.1− | 2006 09 16 | 703 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 699 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.5− |
| 2001 11 20 | 704 | 0.5+ | 1.0− | 2006 09 27 | 699 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2001 11 21 | 704 | 0.7− | 0.1− | 2006 09 27 | 699 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.8− | 2006 09 27 | 699 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.7+ | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.0 | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.5+ | 2006 10 23 | 703 | 0.2+ | 0.2+ |
| 2001 12 13 | 644 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.2− | 0.6− |
| 2001 12 13 | 644 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 12 13 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.1− | 2006 10 23 | 703 | 0.3+ | 0.3+ |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.9− | 0.2+ | 2006 10 23 | 703 | 0.1− | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 1.4− | 0.2− | | | | |

**2001 XO$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.52582 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18559593 | $\omega$ | 313.19268 | | +0.73607906 | | −0.67657061 |
| $a$ | 3.0438535 | $\Omega$ | 89.39527 | | +0.62696333 | | +0.66977484 |
| $e$ | 0.1659610 | $i$ | 1.20176 | | +0.25515604 | | +0.30602919 |
| $P$ | 5.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.7− | 0.4− | 2001 12 14 | 704 | 0.6− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2001 11 19 | 699 | (0.0 | 1.6+) | 2001 12 18 | 691 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 11 19 | 699 | (0.6− | 1.8−) | 2001 12 18 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.3+ |
| 2001 11 19 | 699 | 1.1− | 0.2− | 2001 12 18 | 691 | 0.3+ | 0.2− | 2006 10 15 | 703 | 0.5− | 0.4+ |
| 2001 11 20 | 704 | 0.3+ | 0.4+ | 2002 01 12 | 291 | 0.2− | 0.2+ | 2006 10 15 | 703 | (0.2− | 1.6+) |
| 2001 11 20 | 704 | 0.4+ | 0.4+ | 2002 01 12 | 291 | 0.5− | 0.3+ | 2006 10 15 | 703 | 0.4− | 0.2+ |
| 2001 11 20 | 704 | 0.1+ | 0.2+ | 2002 01 12 | 291 | 0.7+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.9− |
| 2001 11 21 | 704 | 0.3+ | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.7+ | 0.3− |
| 2001 11 21 | 704 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 21 | 291 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 1.3+ | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 21 | 291 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.1+ | 1.0− | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 21 | 291 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.6+ | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2001 12 13 | 644 | 0.5− | 0.3+ | 2006 09 29 | 691 | 0.4− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2001 12 13 | 644 | 0.3− | 0.6+ | 2006 09 29 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.6− |
| 2001 12 13 | 644 | 0.0 | 0.6+ | 2006 09 29 | 691 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2001 12 14 | 704 | 0.3− | 0.5− | 2006 10 10 | 644 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2001 12 14 | 704 | 0.5− | 0.6− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.7− |
| 2001 12 14 | 704 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2001 12 14 | 704 | 0.4− | 1.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.5− |

### 2001 XU$_{262}$ = 2001 YA$_{140}$ = 2006 RZ$_{31}$

Id. Minor Planet Center (d, *MPO* 35668; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.31703 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18654621 | $\omega$ | 208.00688 | | +0.98567455 | +0.16833450 | |
| $a$ | 3.0335076 | $\Omega$ | 142.29754 | | −0.15137453 | +0.91028409 | |
| $e$ | 0.3028344 | $i$ | 0.97900 | | −0.07437365 | +0.37821472 | |
| $P$ | 5.28 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.0 |
| 2001 11 18 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.7+ | 0.3+ |
| 2001 11 18 | 691 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.8+ | 2006 09 27 | 704 | 0.4− | 0.4− |
| 2001 11 20 | 704 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.2− | 0.6− | 2006 09 27 | 704 | 0.2− | 0.4− |
| 2001 11 20 | 704 | 0.5− | 0.5− | 2006 09 17 | 704 | 0.6+ | 0.5− | 2006 09 27 | 704 | 0.3− | 0.9− |
| 2001 11 20 | 704 | 0.4+ | 0.3− | 2006 09 17 | H07 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.2− | 0.5− |
| 2001 11 20 | 704 | 0.2− | 0.8− | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 09 28 | 704 | 0.8− | 0.2+ |
| 2001 11 20 | 704 | 0.3− | 0.4− | 2006 09 17 | 704 | 0.9− | 0.1+ | 2006 09 28 | 704 | 0.6− | 0.0 |
| 2001 11 21 | 704 | 0.1− | 0.3− | 2006 09 17 | H07 | 0.6− | 0.0 | 2006 09 28 | 704 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 17 | H07 | 0.5− | 0.8− | 2006 09 28 | 704 | 0.8− | 0.4− |
| 2001 11 21 | 704 | 0.4− | 0.5− | 2006 09 17 | H07 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 0.4− | 0.3− | 2006 09 18 | H07 | 0.3+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.5− | 1.3+ | 2006 09 18 | H07 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2001 12 13 | 644 | 0.2− | 0.2+ | 2006 09 18 | H07 | 0.2− | 1.2− | 2006 10 01 | 704 | 0.0 | 0.8+ |
| 2001 12 13 | 644 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | (1.6+ | 0.4+) |
| 2001 12 13 | 644 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.5− | 0.0 |
| 2001 12 14 | 704 | 1.2− | 1.0+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2001 12 14 | 704 | (1.5− | 0.9+) | 2006 09 20 | 704 | 0.7+ | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.1+ | 1.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.7− | 0.7+ | 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.5− | 1.3+ | 2006 09 20 | 704 | (2.0+ | 0.2+) | 2006 10 15 | 106 | 0.3− | 0.2+ |
| 2001 12 18 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | (1.8+ | 0.2−) | 2006 10 15 | 106 | 0.2+ | 0.7− |
| 2001 12 18 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 15 | 106 | 0.1+ | 0.1− |
| 2001 12 18 | 691 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.6+ | 2006 10 15 | 106 | 0.0 | 1.2− |
| 2005 05 07 | G96 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2005 05 07 | G96 | 0.4+ | 0.8+ | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2005 05 07 | G96 | 0.2+ | 0.6+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 05 07 | G96 | 0.1− | 0.9+ | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2006 07 21 | G96 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.6− |
| 2006 09 06 | 644 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.3− | 0.6+ | 2006 10 22 | G96 | (2.8− | 1.3−) |
| 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.3+ | | | | |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.1− | | | | |

### 2001 XV$_{265}$ = 2006 QA$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.58757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17363643 | $\omega$ | 277.64396 | | +0.44680354 | −0.89255617 | |
| $a$ | 3.1820633 | $\Omega$ | 145.60799 | | +0.85744362 | +0.40781091 | |
| $e$ | 0.2203072 | $i$ | 6.19049 | | +0.25525877 | +0.19244154 | |
| $P$ | 5.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.4− | 0.8− | 2001 11 24 | 704 | 1.0+ | 0.6+ | 2001 12 18 | 704 | 0.7+ | 0.2− |
| 2001 11 19 | 699 | 0.3+ | 1.3+ | 2001 12 15 | 704 | 0.3− | 1.0+ | 2006 08 27 | 691 | 0.2− | 0.2− |
| 2001 11 19 | 699 | 0.4− | 0.3+ | 2001 12 15 | 704 | 1.3− | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.2+ |
| 2001 11 19 | 699 | 1.3+ | 0.0 | 2001 12 15 | 704 | 0.3− | 0.4+ | 2006 08 27 | 691 | 0.5+ | 0.2+ |
| 2001 11 24 | 704 | 0.5− | 0.5+ | 2001 12 15 | 704 | 0.2+ | 1.0− | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2001 11 24 | 704 | (2.3+ | 1.3+) | 2001 12 18 | 704 | 1.2+ | 0.6− | 2006 08 28 | 691 | 0.1− | 0.2− |
| 2001 11 24 | 704 | 1.4− | 1.4− | 2001 12 18 | 704 | 0.2+ | 0.5− | 2006 08 28 | 691 | 0.1− | 0.1− |

### 2001 XD$_{267}$ = 2005 YK$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.87887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23433427 | $\omega$ | 52.15793 | | −0.11160201 | −0.97749442 | |
| $a$ | 2.6056266 | $\Omega$ | 45.29429 | | +0.81417354 | −0.19323228 | |
| $e$ | 0.1930319 | $i$ | 14.58926 | | +0.56979509 | +0.08465195 | |
| $P$ | 4.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.5+ | 0.3+ | 2002 01 06 | 704 | 0.3+ | 0.6+ | 2002 02 21 | 704 | (0.6+ | 2.4−) |
| 2001 12 09 | 704 | 0.1+ | 0.8− | 2002 01 06 | 704 | 0.1+ | 0.5+ | 2002 02 21 | 704 | (0.5+ | 2.2−) |
| 2001 12 09 | 704 | 0.5+ | 0.7− | 2002 01 06 | 704 | 0.1+ | 0.2+ | 2002 02 21 | 704 | (0.8+ | 2.5−) |
| 2001 12 09 | 704 | 0.4+ | 0.6− | 2002 01 06 | 704 | 0.5+ | 0.0 | 2002 02 21 | 704 | 0.7− | 1.3− |
| 2001 12 09 | 704 | 0.9+ | 0.1+ | 2002 01 25 | 704 | 0.3+ | 0.1− | 2002 02 21 | 704 | 0.0 | 1.5− |
| 2001 12 15 | 645 | 0.1− | 0.0 | 2002 01 25 | 704 | 0.0 | 0.4− | 2005 12 21 | 703 | 1.1+ | 0.7+ |
| 2001 12 15 | 645 | 0.1− | 0.0 | 2002 01 25 | 704 | 1.2+ | 0.1+ | 2005 12 21 | 703 | 1.6+ | 0.5+ |
| 2001 12 23 | 704 | 0.4− | 1.7+ | 2002 01 25 | 704 | 0.1− | 0.0 | 2005 12 21 | 703 | 0.5− | 0.8− |
| 2001 12 23 | 704 | 0.0 | 0.0 | 2002 01 25 | 704 | 1.5+ | 0.2+ | 2005 12 21 | 703 | 0.5− | 1.1− |
| 2001 12 23 | 704 | 0.5+ | 0.2+ | 2002 02 07 | 699 | 0.5− | 0.0 | 2005 12 23 | 704 | 0.5− | 0.2+ |
| 2001 12 23 | 704 | 0.0 | 0.4+ | 2002 02 07 | 699 | 0.3− | 0.3− | 2005 12 23 | 704 | 0.6− | 0.7− |
| 2001 12 23 | 704 | 1.3− | 1.5+ | 2002 02 07 | 699 | 0.1− | 0.3− | 2005 12 23 | 704 | (0.6− | 2.4−) |
| 2002 01 06 | 704 | 0.3+ | 0.6+ | 2002 02 07 | 699 | 0.5− | 0.5+ | | | | |

### 2001 XE$_{267}$ = 2005 YW$_{172}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.33747 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23815576 | $\omega$ | 313.63915 | | +0.92704677 | −0.29606478 | |
| $a$ | 2.5776779 | $\Omega$ | 64.81731 | | +0.37292771 | +0.79165051 | |
| $e$ | 0.1487901 | $i$ | 14.72784 | | −0.03884848 | +0.53444842 | |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 21 | 691 | 0.1+ | 0.1− | 2001 12 22 | 704 | 1.4+ | 0.2+ | 2004 08 20 | E12 | 0.6+ | 0.1− |
| 1999 05 21 | 691 | 0.1− | 0.2+ | 2004 06 17 | E12 | 0.2− | 0.9+ | 2004 08 20 | E12 | 0.2+ | 0.6+ |
| 1999 05 21 | 691 | 0.0 | 0.0 | 2004 06 17 | E12 | 0.1− | 0.6+ | 2004 08 20 | E12 | 0.3− | 0.2− |
| 2001 12 09 | 704 | 0.6− | 0.7− | 2004 06 17 | E12 | 0.5− | 1.1+ | 2004 08 20 | E12 | 0.4− | 0.4− |
| 2001 12 09 | 704 | 0.2− | 0.7− | 2004 06 17 | E12 | 1.4− | 1.0+ | 2005 12 24 | 704 | 0.7− | 0.1+ |
| 2001 12 09 | 704 | 0.3+ | 0.1+ | 2004 07 15 | E12 | 0.1+ | 0.6+ | 2005 12 24 | 704 | 0.3− | 0.1+ |
| 2001 12 09 | 704 | 0.1+ | 1.3− | 2004 07 15 | E12 | 0.0 | 0.1+ | 2005 12 24 | 704 | 0.5− | 0.3+ |
| 2001 12 15 | 645 | 0.0 | 0.1+ | 2004 07 15 | E12 | 0.2− | 0.0 | 2005 12 30 | 704 | 0.1− | 0.1+ |
| 2001 12 15 | 645 | 0.0 | 0.1+ | 2004 07 15 | E12 | 0.2+ | 0.3+ | 2005 12 30 | 704 | 0.6+ | 0.6+ |
| 2001 12 19 | 645 | 0.0 | 0.1+ | 2004 08 09 | E12 | 0.4+ | 0.2+ | 2005 12 30 | 704 | 0.1− | 0.9− |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2004 08 09 | E12 | 0.5+ | 0.4− | 2005 12 30 | 704 | 0.9+ | 0.4− |
| 2001 12 22 | 704 | 0.3+ | 1.0+ | 2004 08 09 | E12 | 0.1− | 0.0 | | | | |
| 2001 12 22 | 704 | 0.0 | 1.1+ | 2004 08 09 | E12 | 0.4+ | 0.4− | | | | |

**2001 XF$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 59.46865 | | | (2000.0) | | |
| $n$ | 0.17923748 | $\omega$ | 281.30540 | | +0.96248561 | +0.17300967 |
| $a$ | 3.1154216 | $\Omega$ | 69.00190 | | −0.05895771 | +0.88529021 |
| $e$ | 0.0805812 | $i$ | 12.93745 | | −0.26484984 | +0.43165832 |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.1+ | 0.2+ | 2003 03 25 | 644 | 0.5+ | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2000 10 01 | 704 | 0.2+ | 0.4− | 2003 03 25 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2000 10 01 | 704 | 0.1+ | 0.1− | 2004 06 14 | 704 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2000 10 01 | 645 | 0.0 | 0.0 | 2004 06 14 | 704 | 0.4− | 0.7− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2000 10 01 | 645 | 0.0 | 0.0 | 2004 06 14 | 704 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2000 10 01 | 704 | 0.0 | 0.9+ | 2004 06 14 | 704 | 0.3+ | 0.8− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 0.2+ | 1.0+ | 2004 06 14 | 704 | 0.2− | 0.8− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 12 09 | 704 | 0.2+ | 1.4+ | 2005 07 28 | 644 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2001 12 09 | 704 | 0.0 | 1.1+ | 2005 07 28 | 644 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.6+ | 0.2+ | 2005 07 28 | 644 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 12 18 | 645 | 0.1− | 0.0 | 2005 08 27 | E12 | 0.3+ | 1.3+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2001 12 18 | 645 | 0.1− | 0.0 | 2005 08 27 | E12 | 0.6− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2005 08 27 | E12 | 1.0− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2005 08 27 | E12 | 0.8− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2002 01 13 | 644 | 0.2+ | 0.2+ | 2005 10 04 | 644 | 0.6− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 0.7− |
| 2002 01 13 | 644 | 0.6+ | 0.1+ | 2005 10 04 | 644 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.9− |
| 2002 01 13 | 644 | 0.6+ | 0.4+ | 2005 10 04 | 644 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.3+ | 1.0− |
| 2002 02 13 | 644 | 0.0 | 0.9+ | 2006 10 19 | G96 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.7− |
| 2002 02 13 | 644 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 12 01 | 704 | 0.2+ | 0.4− |
| 2002 02 13 | 644 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.1− | 1.1+ |
| 2003 03 12 | 644 | 0.2+ | 0.9+ | 2006 10 19 | G96 | 0.4− | 0.4− | 2006 12 01 | 704 | 0.5+ | 1.2+ |
| 2003 03 12 | 644 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.1− | 2006 12 01 | 704 | 0.4+ | 0.1+ |
| 2003 03 12 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.1− | | | | |
| 2003 03 25 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.1− | | | | |

**2001 XH$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 280.26261 | | | (2000.0) | | |
| $n$ | 0.17480019 | $\omega$ | 71.00951 | | −0.83358695 | −0.47100702 |
| $a$ | 3.1679242 | $\Omega$ | 79.97296 | | +0.32818622 | −0.84252938 |
| $e$ | 0.2241462 | $i$ | 17.04173 | | +0.44432714 | −0.26133623 |
| $P$ | 5.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 1.4+ | 0.4− | 2002 01 23 | 704 | (2.2+ | 1.2+) | 2006 11 17 | G92 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.5+ | 0.3+ | 2002 01 23 | 704 | 1.3+ | 0.4+ | 2006 11 17 | G92 | 0.2− | 0.2− |
| 2001 12 09 | 704 | 0.9+ | 0.1+ | 2002 01 23 | 704 | 0.8− | 1.2+ | 2006 11 17 | G92 | 0.4− | 0.5+ |
| 2001 12 23 | 704 | 0.8− | 0.1− | 2002 02 12 | 644 | 0.1− | 0.5− | 2006 11 18 | G92 | 0.7+ | 0.7+ |
| 2001 12 23 | 704 | 0.8− | 0.1− | 2002 02 12 | 644 | 0.2− | 1.2− | 2006 11 18 | G92 | 0.1+ | 0.0 |
| 2001 12 23 | 704 | 0.6− | 1.0− | 2002 02 12 | 644 | 0.1+ | 0.6− | 2006 11 18 | G92 | 0.9+ | 0.1+ |
| 2001 12 23 | 704 | 0.6− | 1.1− | 2002 02 21 | 704 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2001 12 23 | 704 | 0.6− | 0.5− | 2002 02 21 | 704 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.6− | 0.1− |
| 2002 01 14 | 644 | 0.5+ | 0.7+ | 2002 02 21 | 704 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2002 01 14 | 644 | 0.1+ | 1.1+ | 2002 02 21 | 704 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.5− | 0.3− |
| 2002 01 14 | 644 | 0.2+ | 0.6+ | 2002 02 21 | 704 | 0.4− | 0.4+ | | | | |

**2001 YQ$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.88570 | | | (2000.0) | | |
| $n$ | 0.37510067 | $\omega$ | 147.76885 | | +0.58575125 | −0.74220149 |
| $a$ | 1.9041631 | $\Omega$ | 264.28122 | | +0.65673710 | +0.67008310 |
| $e$ | 0.0733158 | $i$ | 19.10225 | | +0.47496512 | −0.01120710 |
| $P$ | 2.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.1− | 0.6− | 2001 12 19 | 704 | 0.8− | 0.6− | 2002 01 14 | 704 | 0.0 | 0.7+ |
| 2001 10 25 | 704 | 0.1− | 0.5− | 2001 12 19 | 704 | 0.2+ | 0.5− | 2002 01 14 | 704 | 0.4− | 1.2+ |
| 2001 10 25 | 704 | 0.4− | 0.4+ | 2001 12 19 | 704 | 0.5− | 0.7− | 2002 02 02 | 209 | 0.9+ | 1.1− |
| 2001 10 25 | 704 | 0.4− | 0.6− | 2001 12 19 | 704 | 0.7+ | 0.2+ | 2002 02 02 | 209 | 0.6+ | 0.6− |
| 2001 11 11 | 704 | 0.8+ | 0.0 | 2001 12 19 | 704 | 0.0 | 0.6− | 2002 02 02 | 209 | 0.7+ | 0.8− |
| 2001 11 11 | 704 | 1.2+ | 0.1+ | 2001 12 19 | 704 | 0.6+ | 0.2− | 2006 10 03 | 704 | 0.1+ | 0.2− |
| 2001 11 11 | 704 | 1.1+ | 0.9+ | 2001 12 19 | 704 | 0.1− | 0.7− | 2006 10 03 | 704 | 0.5+ | 1.1− |
| 2001 11 11 | 704 | 0.7+ | 0.4+ | 2001 12 19 | 704 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.2− | 0.5− |
| 2001 11 24 | 704 | 0.2+ | 0.1− | 2001 12 19 | 704 | 0.1+ | 0.8− | 2006 10 23 | 703 | 0.8− | 0.0 |
| 2001 11 24 | 704 | 0.0 | 0.3− | 2001 12 20 | 704 | 0.9− | 0.2− | 2006 10 23 | 703 | 0.4− | 0.8+ |
| 2001 11 24 | 704 | 0.0 | 0.0 | 2001 12 20 | 704 | 0.5− | 0.3− | 2006 10 23 | 703 | 0.2+ | 0.7− |
| 2001 12 14 | 291 | 0.5+ | 0.3+ | 2001 12 20 | 704 | 0.9− | 0.6− | 2006 10 23 | 703 | 0.7− | 0.1+ |
| 2001 12 14 | 291 | 0.2+ | 0.1+ | 2001 12 20 | 704 | 0.3− | 0.4− | 2006 11 16 | 703 | 0.2+ | 1.0+ |
| 2001 12 14 | 291 | 0.1− | 0.2+ | 2001 12 20 | 704 | 0.3− | 1.1− | 2006 11 16 | 703 | 0.8+ | 0.7+ |
| 2001 12 18 | 704 | 0.5+ | 0.3− | 2002 01 09 | 704 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.4+ | 0.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.0 | 2002 01 09 | 704 | 0.2− | 0.7+ | 2006 11 16 | 703 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2002 01 09 | 704 | 0.4− | 0.6+ | 2006 11 22 | 703 | (1.6+ | 0.4−) |
| 2001 12 18 | 704 | 0.2− | 0.1+ | 2002 01 09 | 704 | 0.7− | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.1− | 0.2+ | 2002 01 09 | 704 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.4+ |
| 2001 12 18 | 704 | 0.8− | 0.8+ | 2002 01 14 | 704 | 0.7− | 0.4− | 2006 11 22 | 703 | 0.4− | 0.5− |
| 2001 12 18 | 704 | 0.6− | 0.8+ | 2002 01 14 | 704 | 1.3− | 0.8+ | | | | |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2002 01 14 | 704 | 0.4+ | 0.3+ | | | | |

**2001 YY$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.07875 | | | (2000.0) | | |
| $n$ | 0.37521954 | $\omega$ | 270.99142 | | +0.91535790 | +0.09094259 |
| $a$ | 1.9037610 | $\Omega$ | 83.87101 | | +0.08268118 | +0.91094354 |
| $e$ | 0.0919102 | $i$ | 23.23425 | | −0.39406058 | +0.40238205 |
| $P$ | 2.63 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 691 | 0.2− | 0.1+ | 2001 12 22 | 704 | 1.0− | 1.3− | 2006 11 01 | 703 | 0.5+ | 0.6− |
| 2001 11 17 | 691 | 0.0 | 0.1− | 2001 12 22 | 704 | 0.6+ | 0.2− | 2006 11 01 | 703 | 0.6+ | 0.2+ |
| 2001 11 17 | 691 | 0.1− | 0.2+ | 2001 12 23 | 704 | 0.5+ | 0.5− | 2006 11 01 | 703 | 0.7+ | 0.5+ |
| 2001 12 09 | 704 | 0.1+ | 0.1+ | 2001 12 23 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 1.3+ |
| 2001 12 09 | 704 | 0.2− | 0.8+ | 2001 12 23 | 704 | 0.0 | 0.2+ | 2006 11 17 | 703 | 1.3+ | 0.1− |
| 2001 12 09 | 704 | 0.3+ | 0.3+ | 2001 12 23 | 704 | 0.2+ | 0.5− | 2006 11 17 | 703 | 1.4− | 0.8− |
| 2001 12 09 | 704 | 0.1− | 0.3− | 2002 01 05 | 644 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2001 12 19 | 644 | 0.2− | 0.4+ | 2002 01 05 | 644 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.1− | 0.2− |
| 2001 12 19 | 644 | 0.0 | 0.2+ | 2002 01 05 | 644 | 0.3+ | 0.0 | 2006 11 23 | 703 | 1.6− | 0.3+ |
| 2001 12 19 | 644 | 0.0 | 0.4+ | 2002 01 14 | 644 | 0.3− | 0.4+ | 2006 11 23 | 703 | 0.2− | 0.2− |
| 2001 12 22 | 704 | 0.0 | 1.1− | 2002 01 14 | 644 | 0.2− | 0.2+ | 2006 11 23 | 703 | 0.4+ | 0.2− |
| 2001 12 22 | 704 | 0.3+ | 0.1− | 2002 01 14 | 644 | 0.1− | 0.1+ | | | | |
| 2001 12 22 | 704 | 0.4+ | 0.3+ | 2006 11 01 | 703 | 0.4+ | 0.4− | | | | |

**2001 YG$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 306.74882 | | | (2000.0) | | |
| $n$ | 0.17752936 | $\omega$ | 73.14693 | | −0.32220453 | −0.93045930 |
| $a$ | 3.1353733 | $\Omega$ | 37.14742 | | +0.72071695 | −0.36057517 |
| $e$ | 0.2023314 | $i$ | 16.79050 | | +0.61380072 | −0.06504646 |
| $P$ | 5.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 699 | (0.0 | 2.7+) | 2002 01 10 | 446 | 0.8− | 0.4− | 2006 11 01 | G96 | 0.5+ | 0.0 |
| 2001 12 19 | 699 | 1.0+ | 0.9+ | 2002 01 13 | 446 | 0.1− | 0.9+ | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2001 12 19 | 699 | 1.0− | 0.2− | 2002 01 13 | 446 | 0.0 | 0.7− | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2001 12 19 | 699 | 0.5− | 0.8+ | 2002 01 25 | 704 | 0.8− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 12 23 | 704 | 0.9+ | 0.6− | 2002 01 25 | 704 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 12 23 | 704 | 0.4+ | 0.7− | 2002 01 25 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2001 12 23 | 446 | 0.1+ | 0.2+ | 2002 02 09 | 446 | 1.2− | 0.9+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2001 12 23 | 704 | 1.2+ | 0.3− | 2002 02 09 | 446 | 1.2+ | 1.4− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 12 23 | 704 | 1.1+ | 0.4− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2001 12 23 | 446 | 0.7− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.5+ | 0.7− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2001 12 26 | 446 | 1.4− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2001 12 26 | 446 | (2.7− | 0.9+) | 2006 10 16 | 691 | 0.0 | 0.5− | 2006 11 18 | G96 | 0.6− | 0.1− |
| 2002 01 10 | 446 | 0.7− | 1.4+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2002 01 10 | 446 | 0.6+ | 0.4− | 2006 11 01 | G96 | 0.4+ | 0.2− | | | | |

**2001 YC$_7$ = 2006 SA$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.09585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17725944 | $\omega$ | 119.78428 | | +0.36197390 | | −0.92486211 |
| $a$ | 3.1385555 | $\Omega$ | 308.52705 | | +0.79551280 | | +0.37170046 |
| $e$ | 0.0697051 | $i$ | 8.57458 | | +0.48593650 | | +0.08042918 |
| $P$ | 5.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.0 | 0.6+ | 2001 12 19 | 704 | (1.0+ | 1.9−) | 2006 09 28 | 703 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.8+ | 2001 12 19 | 704 | (0.0 | 2.0−) | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 0.1− | 0.3+ | 2001 12 19 | 704 | (0.7+ | 2.6−) | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2001 12 17 | 704 | 1.0− | 0.6+ | 2001 12 19 | 704 | (1.2+ | 2.0−) | 2006 10 10 | 644 | 0.5− | 0.5+ |
| 2001 12 17 | 704 | 0.7+ | 0.2− | 2001 12 22 | 704 | 1.0− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.3− | 0.4+ | 2001 12 22 | 704 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 1.0+ | 1.1− | 2001 12 22 | 704 | 0.7− | 0.6− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 12 17 | 704 | 0.9+ | 0.1− | 2006 09 17 | 703 | 0.6+ | 0.7− | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2001 12 18 | 704 | 0.2− | 0.3+ | 2006 09 17 | 703 | (0.6− | 1.8−) | 2006 10 12 | 644 | 0.4− | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.4+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2001 12 18 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 703 | 0.2− | 0.8− | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2001 12 18 | 704 | 0.9− | 0.3− | 2006 09 18 | 703 | 0.2+ | 0.9− | 2006 10 19 | 703 | 0.6+ | 0.6− |
| 2001 12 18 | 704 | 0.3− | 0.6− | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 19 | 703 | 1.2+ | 0.4+ |
| 2001 12 18 | 704 | 0.3+ | 0.6− | 2006 09 18 | 703 | 0.8− | 0.1− | 2006 10 19 | 703 | 0.3− | 1.1− |
| 2001 12 18 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.8+ | 2006 10 27 | 703 | 0.0 | 0.9− |
| 2001 12 18 | 704 | 0.4− | 0.1− | 2006 09 28 | 703 | 1.5− | 0.9+ | 2006 10 27 | 703 | 0.7+ | 0.5+ |
| 2001 12 18 | 704 | 0.6+ | 0.1+ | 2006 09 28 | 703 | 1.1+ | 0.4− | 2006 10 27 | 703 | 0.8+ | 0.7+ |
| 2001 12 19 | 704 | 0.8+ | 0.9− | 2006 09 28 | 703 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.6− | 0.4− |

**2001 YD$_7$ = 2006 UV$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.17862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17592648 | $\omega$ | 116.97850 | | +0.49765172 | | −0.85800523 |
| $a$ | 3.1543890 | $\Omega$ | 302.60686 | | +0.73266221 | | +0.49428922 |
| $e$ | 0.2282903 | $i$ | 8.68212 | | +0.46427239 | | +0.13966100 |
| $P$ | 5.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.4+ | 1.2+ | 2001 12 18 | 704 | 0.3− | 0.0 | 2006 09 22 | 703 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.6+ | 2001 12 18 | 704 | 0.2+ | 0.1+ | 2006 09 22 | 703 | 1.1− | 0.3+ |
| 2001 12 17 | 704 | (0.8+ | 2.2+) | 2001 12 18 | 704 | 1.4+ | 0.7− | 2006 09 22 | 703 | 0.2− | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.8+ | 2001 12 18 | 704 | 0.5+ | 0.7− | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 0.6+ | 0.9+ | 2001 12 18 | 704 | 0.5− | 0.5− | 2006 10 18 | 691 | 0.3+ | 0.0 |
| 2001 12 18 | 704 | 0.2+ | 0.8− | 2001 12 22 | 704 | 0.6− | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.3+ |
| 2001 12 18 | 704 | 0.3+ | 0.3+ | 2001 12 22 | 704 | 1.0− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2001 12 18 | 704 | 1.0− | 0.5+ | 2001 12 22 | 704 | 0.4− | 0.9− | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.6+ | 0.4− | 2006 09 22 | 703 | 0.7+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2− |

**2001 YQ$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.48189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17693917 | $\omega$ | 135.37256 | | +0.92176770 | | −0.36470014 |
| $a$ | 3.1423416 | $\Omega$ | 246.43352 | | +0.30334393 | | +0.88979317 |
| $e$ | 0.2449424 | $i$ | 8.25944 | | +0.24150935 | | +0.27433906 |
| $P$ | 5.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2001 12 20 | 704 | 0.4− | 1.1+ | 2006 09 22 | 703 | 0.3+ | 0.3+ |
| 2001 11 12 | 704 | 0.1+ | 0.0 | 2001 12 20 | 704 | 0.8− | 0.6+ | 2006 09 22 | 703 | 0.6+ | 0.7− |
| 2001 11 12 | 704 | 0.1+ | 0.1+ | 2002 01 13 | 704 | 0.2+ | 0.0 | 2006 09 22 | 703 | 0.2− | 1.1− |
| 2001 11 20 | 704 | 0.2− | 0.1+ | 2002 01 13 | 704 | 0.4+ | 0.2+ | 2006 09 22 | 703 | 0.2+ | 0.5− |
| 2001 11 20 | 704 | 0.4− | 0.6− | 2002 01 13 | 704 | 0.7+ | 0.6− | 2006 09 27 | 703 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.1− | 2006 09 14 | G92 | 0.4− | 0.3− | 2006 09 27 | 703 | 0.4− | 0.1+ |
| 2001 11 20 | 704 | 0.5− | 1.0− | 2006 09 14 | G92 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.2+ | 0.3− |
| 2001 12 14 | 691 | 0.2+ | 0.1+ | 2006 09 14 | G92 | 0.1− | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.4− |
| 2001 12 14 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2001 12 14 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.7+ | 2006 10 18 | 691 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.0 | 0.7− | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.7− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.4− | 0.4− | 2006 09 15 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | (2.7+ | 0.4−) | 2006 09 15 | 704 | 0.4+ | 0.9− | 2006 11 11 | 291 | 0.0 | 0.4+ |
| 2001 12 18 | 704 | (3.3+ | 0.6−) | 2006 09 16 | G92 | 0.5+ | 0.1+ | 2006 11 11 | 291 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | (2.7+ | 0.5−) | 2006 09 16 | G92 | 0.0 | 0.2− | 2006 11 11 | 291 | 0.1+ | 0.3+ |
| 2001 12 20 | 704 | (1.5− | 0.5+) | 2006 09 16 | G92 | 0.1− | 0.2− | | | | |

**2001 YE$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.38414 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21749582 | $\omega$ | 308.93446 | | +0.92011727 | | −0.33556545 |
| $a$ | 2.7384330 | $\Omega$ | 71.50599 | | +0.39149400 | | +0.80228978 |
| $e$ | 0.1114247 | $i$ | 12.29455 | | −0.01080051 | | +0.49368709 |
| $P$ | 4.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.0 | 0.4− | 2001 12 18 | 704 | 1.0− | 0.9+ | 2005 10 22 | 644 | 0.1+ | 0.1+ |
| 2001 11 09 | 704 | 0.6− | 0.2+ | 2005 09 14 | 703 | 0.7+ | 0.1− | 2005 10 26 | 704 | 0.9− | 1.8− |
| 2001 11 09 | 704 | 0.3− | 0.7+ | 2005 09 14 | 703 | 0.2− | 0.3+ | 2005 10 26 | 704 | 1.3+ | 0.3− |
| 2001 12 17 | 704 | 1.3+ | 0.3− | 2005 09 14 | 703 | 0.4− | 0.7− | 2005 10 26 | 704 | 0.5+ | 0.3− |
| 2001 12 17 | 704 | 0.6+ | 1.1− | 2005 09 14 | 703 | 0.4+ | 0.1+ | 2005 10 26 | 704 | 0.2+ | 0.9+ |
| 2001 12 17 | 704 | 0.5+ | 0.6− | 2005 10 01 | 699 | 0.5+ | 0.8+ | 2005 10 31 | 699 | 1.2− | 0.2+ |
| 2001 12 17 | 704 | 0.7+ | 0.8− | 2005 10 01 | 699 | 0.4+ | 0.3+ | 2005 10 31 | 699 | 0.5+ | 0.9+ |
| 2001 12 17 | 704 | 0.9+ | 0.6− | 2005 10 01 | 699 | 1.1+ | 0.2− | 2005 10 31 | 699 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 1.3− | 1.1+ | 2005 10 01 | 699 | 0.5− | 0.1− | 2005 10 31 | 699 | 2.0− | 0.0 |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2005 10 22 | 644 | 0.1− | 0.1+ | | | | |
| 2001 12 18 | 704 | 0.8− | 0.8+ | 2005 10 22 | 644 | 0.1− | 0.3− | | | | |

**2001 YM$_9$ = 2006 UT$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.95951 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18580639 | $\omega$ | 348.36033 | | +0.93691782 | | −0.34627505 |
| $a$ | 3.0415546 | $\Omega$ | 32.02814 | | +0.32749603 | | +0.82184454 |
| $e$ | 0.2561757 | $i$ | 5.16408 | | +0.12219392 | | +0.45239932 |
| $P$ | 5.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.2+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.7− | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.0 | 1.0+ |
| 2001 12 17 | 704 | 0.1− | 0.6− | 2006 10 23 | 400 | 0.8− | 0.4+ | 2006 11 16 | 704 | 0.5+ | 0.2+ |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 10 23 | 400 | 0.4− | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2001 12 17 | 704 | 0.4− | 0.5− | 2006 10 23 | 400 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.4− | 0.2− |
| 2001 12 17 | 704 | 0.3− | 0.9− | 2006 10 26 | 400 | 0.1− | 0.6− | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2001 12 17 | 704 | 0.5+ | 0.4+ | 2006 10 26 | 400 | 0.0 | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2001 12 17 | 704 | 0.7+ | 0.2− | 2006 10 26 | 400 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.5− |
| 2001 12 18 | 704 | 0.2− | 0.7− | 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2001 12 18 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.6− | 0.3− | 2006 10 29 | 704 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2001 12 22 | 704 | 0.9+ | 1.1+ | 2006 10 29 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.9+ |
| 2001 12 22 | 704 | 0.7+ | 1.0+ | 2006 10 29 | 704 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2001 12 22 | 704 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.5+ | 1.3+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2001 12 22 | 704 | 1.0− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7− | 0.0 |
| 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.3− |
| 2006 09 27 | G96 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.3− |
| 2006 09 27 | G96 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 23 | 703 | 1.0− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.2+ | 0.3− |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.7− |
| 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 15 | 704 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.2− | 0.7− |
| 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.3+ | 0.1+ | | | | |

**2001 YZ$_9$ = 2001 YC$_{95}$ = 2006 VJ$_{58}$**

Id. Minor Planet Center (d, *MPO* 24067; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 0.17685 | | (2000.0) | **P** | | **Q** | |
| *n* | 0.18199453 | $\omega$ | 335.80462 | +0.65928641 | | −0.72491210 | |
| *a* | 3.0838778 | $\Omega$ | 72.28602 | +0.71949431 | | +0.53115294 | |
| *e* | 0.0841881 | *i* | 12.09565 | +0.21833316 | | +0.43861031 | |
| *P* | 5.42 | *H* | 15.8 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.3+ | 0.1− | 2001 12 22 | 704 | 0.6− | 0.7− | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.8+ | 2003 03 23 | 645 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.9+ | 2003 03 23 | 645 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4− |
| 2001 12 18 | 644 | 0.5− | 0.6− | 2005 08 08 | E12 | (0.8− | 2.8+) | 2006 11 21 | 704 | 0.4+ | 0.3− |
| 2001 12 18 | 704 | 0.0 | 0.5+ | 2005 08 08 | E12 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.7− |
| 2001 12 18 | 704 | 0.2+ | 0.0 | 2005 08 08 | E12 | (0.5+ | 1.5+) | 2006 11 21 | 704 | 0.7+ | 0.5− |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2005 08 08 | E12 | (0.3− | 2.4−) | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2001 12 18 | 644 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 644 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 12 19 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 644 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.3− |
| 2001 12 19 | 644 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.6+ | 0.5− |
| 2001 12 22 | 704 | (0.1− | 1.8+) | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.9− |
| 2001 12 22 | 704 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.0 |

**2001 YC$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 328.20045 | | (2000.0) | **P** | | **Q** | |
| *n* | 0.18005062 | $\omega$ | 335.32219 | +0.74083664 | | −0.67115906 | |
| *a* | 3.1060346 | $\Omega$ | 66.86138 | +0.62096054 | | +0.66926614 | |
| *e* | 0.1818638 | *i* | 1.65650 | +0.25606461 | | +0.31879203 | |
| *P* | 5.47 | *H* | 16.1 | *G* | 0.15 | *U* | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.4+ | 1.0− | 2001 12 13 | 644 | 0.2− | 0.3+ | 2004 04 20 | 291 | 0.2+ | 1.0+ |
| 2001 10 24 | 704 | (3.9+ | 0.2−) | 2001 12 13 | 644 | 0.0 | 0.5+ | 2004 04 20 | 291 | 0.7+ | 1.0+ |
| 2001 10 24 | 704 | (2.7+ | 0.5+) | 2001 12 13 | 644 | 0.5+ | 0.9+ | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2001 10 24 | 704 | (3.3+ | 1.8−) | 2001 12 14 | 704 | 0.9+ | 1.1+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2001 10 24 | 704 | 1.4+ | 0.0 | 2001 12 14 | 704 | 0.7− | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.2− |
| 2001 11 09 | 704 | 0.7− | 0.4+ | 2001 12 14 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.4+ |
| 2001 11 09 | 704 | 0.1− | 0.5− | 2001 12 14 | 704 | 0.3+ | 0.4− | 2006 09 19 | 703 | 0.6+ | 0.0 |
| 2001 11 09 | 704 | 0.3+ | 0.0 | 2001 12 17 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.9+ |
| 2001 11 20 | 704 | 0.7+ | 0.5+ | 2001 12 17 | 704 | 1.0− | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.3+ |
| 2001 11 20 | 704 | 0.6− | 0.4− | 2001 12 17 | 704 | 1.2+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.5+ |
| 2001 11 20 | 704 | 0.4+ | 0.5+ | 2001 12 17 | 704 | 0.6− | 0.3− | 2006 09 20 | 644 | 0.0 | 0.7+ |
| 2001 11 20 | 704 | 0.2+ | 0.3+ | 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.5+ |
| 2001 11 20 | 704 | 0.0 | 0.4+ | 2001 12 19 | 704 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.4− | 0.3+ |
| 2001 11 20 | 691 | 0.2− | 0.2− | 2001 12 19 | 704 | 0.2− | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2001 11 20 | 691 | 0.4− | 0.2− | 2001 12 19 | 704 | 0.6+ | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2001 11 20 | 691 | 0.3− | 0.1− | 2001 12 19 | 704 | 0.7+ | 0.2− | 2006 09 26 | G96 | 0.5− | 0.3+ |
| 2001 11 21 | 704 | 0.4− | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.4− | 0.3− | 2002 01 12 | 291 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2002 01 12 | 291 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.4− | 0.5+ | 2002 01 12 | 291 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.1− | 1.1+ | 2004 04 20 | 291 | 0.3+ | 1.1+ | | | | |

**2001 YF$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 275.99866 | | (2000.0) | **P** | | **Q** | |
| *n* | 0.17778600 | $\omega$ | 218.61241 | −0.12529411 | | −0.96955032 | |
| *a* | 3.1323553 | $\Omega$ | 239.52623 | +0.96005808 | | −0.06500634 | |
| *e* | 0.0416776 | *i* | 14.13088 | +0.25017966 | | −0.23610664 | |
| *P* | 5.54 | *H* | 15.5 | *G* | 0.15 | *U* | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 13 | 918 | 0.2+ | 0.9− | 2001 12 14 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 703 | 0.4+ | 0.9+ |
| 2001 11 13 | 918 | 0.6+ | 0.6− | 2001 12 14 | 704 | (0.1+ | 2.2−) | 2006 09 16 | 703 | 0.2− | 0.2+ |
| 2001 11 13 | 918 | 1.1+ | 0.6− | 2001 12 17 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 703 | 1.5− | 0.3+ |
| 2001 11 19 | 704 | 1.6+ | 0.1+ | 2001 12 17 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 703 | 0.6+ | 0.1+ |
| 2001 11 19 | 704 | 0.7+ | 0.1+ | 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.6+ | 1.3− |
| 2001 11 19 | 704 | 1.6+ | 0.2+ | 2001 12 17 | 704 | 0.6− | 0.1+ | 2006 09 28 | 703 | 0.6+ | 2.3+ |
| 2001 11 19 | 704 | 1.8+ | 0.3+ | 2001 12 19 | 691 | 0.6− | 0.2+ | 2006 09 28 | 703 | 1.1+ | 1.7+ |
| 2001 11 19 | 704 | 2.2+ | 0.1+ | 2001 12 19 | 691 | 0.9− | 0.2+ | 2006 10 19 | 703 | 0.3− | 1.0− |
| 2001 11 21 | 704 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.2+ | 0.6− | 2006 10 19 | 703 | 0.4+ | 1.8− |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2001 12 19 | 704 | 0.2− | 0.4− | 2006 10 19 | 703 | 0.1− | 0.7− |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.3+ | 0.8− | 2006 10 19 | 703 | 1.6− | 0.6− |
| 2001 11 21 | 704 | 0.3− | 0.2+ | 2001 12 19 | 691 | 0.9− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.5− | 0.5+ | 2001 12 19 | 704 | 0.1+ | 1.2− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 12 14 | 704 | 0.2− | 1.0+ | 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.4− | 0.7− | | | | |

**2001 YZ$_{12}$ = 2001 YX$_{139}$ = 2006 TC$_{101}$**

Id. M. E. Sansaturio (d, *MPO* 26188), Minor Planet Center

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 288.82277 | | (2000.0) | **P** | | **Q** | |
| *n* | 0.18610593 | $\omega$ | 233.01962 | −0.56659934 | | −0.82142856 | |
| *a* | 3.0382901 | $\Omega$ | 251.61756 | +0.77608540 | | −0.50550431 | |
| *e* | 0.1926818 | *i* | 3.92537 | +0.27686936 | | −0.26404642 | |
| *P* | 5.30 | *H* | 16.4 | *G* | 0.15 | *U* | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 644 | 0.1+ | 0.5+ | 2001 12 19 | 704 | 0.7+ | 0.6− | 2006 10 15 | 691 | 0.7− | 0.1+ |
| 2001 12 09 | 644 | 0.2+ | 0.9+ | 2001 12 19 | 704 | 0.8+ | 0.8− | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2001 12 09 | 644 | 0.1+ | 1.2+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.6− | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.3− | 1.1+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.9− | 0.9+ | 2006 10 02 | G96 | 0.3+ | 0.6− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2001 12 18 | 691 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.6− | 0.3− |
| 2001 12 18 | 691 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.8+ | 0.6+ |
| 2001 12 18 | 691 | 0.1− | 0.4− | 2006 10 15 | 691 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.9+ | 0.3− |
| 2001 12 19 | 704 | 0.7+ | 0.0 | 2006 10 15 | 691 | 0.6+ | 0.5+ | | | | |

**2001 YG$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *M* | 25.37079 | | (2000.0) | **P** | | **Q** | |
| *n* | 0.17939922 | $\omega$ | 257.13893 | +0.80358287 | | +0.40112953 | |
| *a* | 3.1135489 | $\Omega$ | 77.74878 | −0.19457897 | | +0.87523426 | |
| *e* | 0.2412445 | *i* | 26.74129 | −0.56248875 | | +0.27029631 | |
| *P* | 5.49 | *H* | 15.3 | *G* | 0.15 | *U* | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | (1.9− | 2.9+) | 2005 05 21 | G96 | 0.4+ | 0.0 | 2005 06 03 | 703 | 0.2− | 1.1+ |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2005 05 21 | G96 | 0.0 | 0.0 | 2005 06 10 | 691 | 0.5+ | 0.1− |
| 2001 11 20 | 704 | 0.3− | 1.9+ | 2005 05 21 | G96 | 0.2+ | 0.1− | 2005 06 10 | 691 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | (1.8+ | 1.4+) | 2005 05 21 | G96 | 0.3+ | 0.2+ | 2005 06 10 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.8− | 0.3− | 2005 05 21 | G96 | 0.0 | 0.1+ | 2005 06 27 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.8− | 0.9− | 2005 05 21 | G96 | 0.1− | 0.3− | 2005 06 27 | 691 | 0.1+ | 0.2+ |
| 2001 12 17 | 704 | 0.6− | 0.5− | 2005 05 21 | G96 | 0.2− | 0.3+ | 2005 06 27 | 691 | 0.2+ | 0.3+ |
| 2001 12 17 | 704 | 0.4− | 0.7− | 2005 05 21 | G96 | 0.1+ | 0.0 | 2005 07 05 | G96 | 0.5+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 691 | 0.6− | 0.6+ | 2005 05 21 | G96 | 0.3− | 0.2+ | 2005 07 05 | G96 | 0.1+ | 0.5− |
| 2001 12 18 | 691 | 0.2− | 0.3+ | 2005 05 21 | G96 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.8+ | 0.3+ |
| 2001 12 18 | 691 | 0.5− | 0.4+ | 2005 05 21 | G96 | 0.3− | 0.0 | 2005 07 05 | G96 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2005 05 21 | G96 | 0.0 | 0.0 | 2006 11 19 | 703 | 1.3− | 0.7+ |
| 2001 12 19 | 704 | 0.8+ | 0.4− | 2005 06 03 | 703 | 0.5+ | 0.7+ | 2006 11 19 | 703 | 0.6+ | 1.3− |
| 2001 12 19 | 704 | 0.8+ | 0.8+ | 2005 06 03 | 703 | 0.1− | 1.0+ | 2006 11 19 | 703 | 0.0 | 0.8+ |
| 2001 12 19 | 704 | 1.1+ | 1.6+ | 2005 06 03 | 703 | 1.0− | 1.4+ | 2006 11 19 | 703 | 0.1− | 0.9+ |

**2001 YD$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.14334 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26242640 | $\omega$ | 48.50724 | | −0.01167340 | | −0.99226621 |
| $a$ | 2.4161897 | $\Omega$ | 42.64945 | | +0.85446943 | | −0.07409025 |
| $e$ | 0.0836318 | $i$ | 10.50958 | | +0.51937050 | | +0.09959121 |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 1.2− | 0.5+ | 2001 12 09 | 704 | 0.3+ | 0.0 | 2001 12 22 | 704 | 0.6− | 0.8− |
| 2001 10 21 | 704 | 1.2− | 0.1− | 2001 12 09 | 704 | 0.6+ | 0.2− | 2001 12 22 | 704 | 1.4− | 0.2− |
| 2001 10 21 | 704 | 0.3− | 0.5+ | 2001 12 09 | 704 | 1.0+ | 0.5− | 2001 12 22 | 704 | 1.0− | 0.0 |
| 2001 11 11 | 704 | 0.0 | 1.0+ | 2001 12 09 | 704 | 1.2+ | 0.0 | 2001 12 22 | 704 | 0.2− | 1.2− |
| 2001 11 11 | 704 | 0.0 | 0.7+ | 2001 12 09 | 704 | 1.0+ | 0.0 | 2003 05 25 | 691 | 0.1− | 0.6+ |
| 2001 11 11 | 704 | 0.0 | 0.7+ | 2001 12 17 | 704 | 0.6+ | 0.6− | 2003 05 25 | 691 | 0.2+ | 0.1+ |
| 2001 11 11 | 704 | 0.1− | 0.8+ | 2001 12 17 | 704 | 0.4+ | 0.9+ | 2003 05 25 | 691 | 0.6+ | 0.3+ |
| 2001 11 11 | 704 | 0.3+ | 1.6+ | 2001 12 17 | 704 | 0.3+ | 0.1+ | 2006 01 22 | 704 | 0.2+ | 0.0 |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2001 12 17 | 704 | 0.6+ | 0.1+ | 2006 01 22 | 704 | 0.1− | 1.0− |
| 2001 11 11 | 704 | 0.5− | 1.3+ | 2001 12 17 | 704 | 0.5+ | 0.2+ | 2006 01 22 | 704 | 0.2+ | 0.8− |
| 2001 11 24 | 704 | 0.2− | 0.2+ | 2001 12 19 | 704 | 0.5− | 0.6− | 2006 01 22 | 703 | 1.0+ | 0.8+ |
| 2001 11 24 | 704 | 0.5− | 0.3+ | 2001 12 19 | 704 | 0.6− | 0.6− | 2006 01 22 | 703 | 0.1+ | 0.2− |
| 2001 11 24 | 704 | 0.5+ | 0.6− | 2001 12 19 | 704 | 0.0 | 0.0 | 2006 01 22 | 703 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | 0.9− | 0.4− | 2001 12 19 | 704 | 0.1− | 0.4+ | 2006 01 22 | 703 | 1.5− | 0.2− |
| 2001 11 24 | 704 | 0.1+ | 0.2+ | 2001 12 19 | 704 | 0.5+ | 0.8+ | | | | |

**2001 YN$_{14}$ = 2006 VB$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.30191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18683288 | $\omega$ | 26.69020 | | −0.36766339 | | −0.92952052 |
| $a$ | 3.0304039 | $\Omega$ | 84.89272 | | +0.84801713 | | −0.34771102 |
| $e$ | 0.0118883 | $i$ | 1.64268 | | +0.38169436 | | −0.12283589 |
| $P$ | 5.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.1− | 0.1+ | 2001 12 20 | 704 | 0.6− | 1.3+ | 2006 11 01 | 691 | 1.3+ | 0.3+ |
| 1995 10 01 | 691 | 0.0 | 0.0 | 2003 02 22 | 644 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 1995 10 01 | 691 | 0.1+ | 0.0 | 2003 02 22 | 644 | 0.1+ | 0.8+ | 2006 11 08 | 644 | 0.5− | 0.0 |
| 2001 11 20 | 704 | 0.7− | 0.6− | 2003 02 22 | 644 | 0.5+ | 0.7+ | 2006 11 08 | 644 | 0.5− | 0.3+ |
| 2001 11 20 | 704 | 0.4− | 0.6− | 2005 10 28 | G96 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.0 | 0.7− | 2005 10 28 | G96 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 1.0+ |
| 2001 11 20 | 704 | 0.5− | 0.3+ | 2005 10 28 | G96 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2001 11 20 | 291 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.8− | 0.3− | 2006 11 11 | 703 | 1.3+ | 0.6+ |
| 2001 11 20 | 291 | 0.4+ | 0.1− | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2001 11 20 | 291 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2001 12 09 | 644 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2001 12 09 | 644 | 0.5+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.7− |
| 2001 12 09 | 644 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2001 12 17 | 704 | (2.4− | 0.5−) | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2001 12 17 | 704 | 0.2− | 0.6− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.8+ | 0.4− |
| 2001 12 17 | 704 | 0.4− | 1.2− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.8− | 0.0 |
| 2001 12 17 | 704 | (1.7− | 1.1−) | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2001 12 19 | 704 | (1.7+ | 0.4−) | 2006 10 28 | G96 | 1.0+ | 0.3− | 2006 11 21 | 704 | (0.5+ | 2.0+) |
| 2001 12 19 | 704 | 0.4− | 1.3− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.8− |
| 2001 12 19 | 704 | 1.0+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.6− |
| 2001 12 19 | 704 | 0.1− | 0.9+ | 2006 10 28 | 691 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.0+ |
| 2001 12 20 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2001 12 20 | 704 | 0.2+ | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.3+ | | | | |

**2001 YR$_{14}$ = 2006 TR$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.57951 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18637008 | $\omega$ | 189.01337 | | +0.98224650 | | −0.18759416 |
| $a$ | 3.0354186 | $\Omega$ | 181.79926 | | +0.17307092 | | +0.90720209 |
| $e$ | 0.1847287 | $i$ | 0.89243 | | +0.07237588 | | +0.37655384 |
| $P$ | 5.29 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.6− | 0.2− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2001 12 17 | 704 | 1.0− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.2+ | 0.7− |
| 2001 12 17 | 704 | 0.6− | 1.0+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.3− | 0.9+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.5− | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 1.3− | 0.5+ | 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2001 12 19 | 704 | 1.2− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2001 12 23 | 691 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 12 23 | 691 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.3+ |
| 2001 12 23 | 691 | 0.8+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.5− | 1.2− |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.5− | 0.3− | 2006 11 11 | 703 | 1.1+ | 0.5− |
| 2006 10 04 | G96 | 0.2+ | 0.8− | 2006 10 23 | 691 | 0.7− | 0.1+ | 2006 11 11 | 703 | (1.6+ | 0.4+) |
| 2006 10 04 | G96 | 0.5− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1+ | | | | |

**2001 YB$_{15}$ = 2006 UU$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.26518 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17974325 | $\omega$ | 154.53331 | | +0.56257000 | | −0.81432293 |
| $a$ | 3.1095747 | $\Omega$ | 260.92307 | | +0.73164455 | | +0.57080472 |
| $e$ | 0.1502337 | $i$ | 8.31502 | | +0.38498214 | | +0.10516718 |
| $P$ | 5.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.7+ | 0.8− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2001 12 17 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 0.3+ | 0.6− | 2006 09 28 | 703 | 0.3− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 12 17 | 704 | 0.0 | 1.2− | 2006 09 28 | 703 | (1.6+ | 1.1−) | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2001 12 19 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.5+ | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 09 28 | 703 | (4.3− | 3.5−) | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2001 12 19 | 704 | 0.2− | 0.1− | 2006 10 19 | 703 | 1.2+ | 0.3+ | 2006 10 31 | 703 | 0.5− | 1.1+ |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.6− | 0.5− | 2006 10 31 | 703 | 0.3− | 1.2+ |
| 2001 12 20 | 704 | 0.2− | 0.5+ | 2006 10 19 | 703 | 1.3− | 0.1− | 2006 10 31 | 703 | 0.4− | 0.2− |
| 2001 12 20 | 704 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.9− | 2006 10 31 | 703 | 0.6− | 0.2+ |
| 2001 12 20 | 704 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.9+ | 2006 11 14 | 703 | 0.2+ | 0.8− |
| 2001 12 20 | 704 | 0.2− | 0.6+ | 2006 10 19 | 703 | 1.3− | 0.6− | 2006 11 14 | 703 | 1.0+ | 0.5− |
| 2006 09 17 | 703 | 0.5+ | 0.6− | 2006 10 19 | 703 | 0.7+ | 0.8− | 2006 11 14 | 703 | (1.8− | 0.2−) |
| 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.6− | 2006 11 14 | 703 | (0.6+ | 1.8−) |

**2001 YT$_{15}$ = 2006 SA$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.18922 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17923823 | $\omega$ | 273.76667 | | +0.97397592 | | +0.04191155 |
| $a$ | 3.1154129 | $\Omega$ | 83.92646 | | +0.05444093 | | +0.91072304 |
| $e$ | 0.2333386 | $i$ | 12.94409 | | −0.22001611 | | +0.41088558 |
| $P$ | 5.50 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.4− | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.8− | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.1− | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.8+ |
| 2001 11 20 | 704 | 0.5− | 0.3+ | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.9+ | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.7− | 2006 10 28 | 703 | 0.4+ | 0.1+ |
| 2001 12 17 | 704 | 0.1− | 1.1+ | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 11 10 | 704 | 1.2+ | 0.5+ |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.5− | 2006 11 10 | 704 | 0.3− | 0.3+ |
| 2001 12 17 | 704 | 1.3− | 0.9+ | 2006 09 19 | 703 | 0.3+ | 0.7− | 2006 11 10 | 704 | 0.2+ | 0.2+ |
| 2001 12 19 | 704 | 0.2− | 0.9+ | 2006 09 26 | 703 | 0.2− | 0.3− | 2006 11 10 | 704 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.1− | 2006 11 10 | 704 | 1.0− | 0.0 | | |
| 2001 12 19 | 704 | 0.6− | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.4− | 2006 11 16 | 703 | 0.0 | 0.3+ | | |
| 2001 12 19 | 704 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.0 | 1.1− | 2006 11 16 | 703 | 0.1− | 0.4− | | |
| 2001 12 19 | 704 | 0.1+ | 0.7− | 2006 09 30 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 0.8− | 0.0 | | |
| 2002 01 05 | 691 | 0.3+ | 0.4− | 2006 09 30 | 704 | 1.0+ | 0.5+ | 2006 11 16 | 703 | 0.3+ | 0.1− | | |
| 2002 01 05 | 691 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 703 | 0.1− | 0.2− | | |
| 2002 01 05 | 691 | 0.2+ | 0.2− | 2006 09 30 | 704 | 0.3+ | 0.4− | 2006 11 16 | 703 | 0.2+ | 0.1− | | |
| 2002 01 08 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.0 | 0.2+ | | |
| 2002 01 08 | 704 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.4− | 2006 11 16 | 703 | 0.2+ | 0.0 | | |
| 2002 01 08 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 22 | 704 | 1.0− | 0.1+ | | |
| 2002 01 14 | 704 | 0.4+ | 0.5− | 2006 10 20 | 703 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.8+ | | |
| 2002 01 14 | 704 | 0.3− | 1.1− | 2006 10 20 | 703 | 0.4+ | 0.1+ | 2006 11 22 | 704 | 0.5− | 1.2+ | | |
| 2002 01 14 | 704 | 0.2− | 0.0 | 2006 10 20 | 703 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 0.7− | 0.1− | | |
| 2002 01 14 | 704 | 0.6+ | 0.6− | 2006 10 20 | 703 | 0.0 | 0.6+ | | | | | | |

### 2001 $YO_{17}$ = 2006 $RL_{33}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.72420 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17978613 | $\omega$ | 292.03503 | | +0.91531657 | | +0.07278818 |
| $a$ | 3.1090803 | $\Omega$ | 65.74026 | | +0.15928643 | | +0.83790641 |
| $e$ | 0.3860217 | $i$ | 25.75157 | | −0.36989649 | | +0.54093875 |
| $P$ | 5.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 644 | 0.1− | 0.3+ | 2001 12 19 | 704 | 0.2− | 0.4− | 2006 09 01 | E12 | 0.0 | 0.1− | | |
| 2001 12 13 | 644 | 0.1+ | 0.4+ | 2001 12 19 | 704 | 0.0 | 0.7+ | 2006 09 01 | E12 | 0.1+ | 0.1− | | |
| 2001 12 13 | 644 | 0.1+ | 0.1+ | 2001 12 19 | 704 | 0.8+ | 0.1− | 2006 09 01 | E12 | 0.6− | 0.3+ | | |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2001 12 19 | 704 | 0.1− | 0.7− | 2006 09 16 | E12 | 0.6− | 0.2− | | |
| 2001 12 17 | 704 | 0.4− | 0.1− | 2001 12 19 | 704 | 0.2+ | 0.8+ | 2006 09 16 | E12 | 0.7+ | 0.6+ | | |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2001 12 22 | 704 | 0.2+ | 0.4+ | 2006 09 16 | E12 | 0.6+ | 0.7− | | |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2001 12 22 | 704 | 0.5− | 0.3− | 2006 09 16 | E12 | 0.5− | 0.1+ | | |
| 2001 12 19 | 704 | 0.3+ | 0.4+ | 2001 12 22 | 704 | 0.6− | 0.4− | | | | | | |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2006 09 01 | E12 | 0.3+ | 0.1+ | | | | | | |

### 2001 $YO_{18}$ = 2006 $UH_{209}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.89139 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17723493 | $\omega$ | 295.52749 | | +0.72212403 | | −0.69058877 |
| $a$ | 3.1388447 | $\Omega$ | 108.17844 | | +0.64893359 | | +0.65608378 |
| $e$ | 0.1830998 | $i$ | 2.43101 | | +0.23962907 | | +0.30437021 |
| $P$ | 5.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.2+ | 1.0− | 2005 06 13 | G96 | 0.2− | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.3+ | | |
| 2001 12 17 | 704 | 0.1− | 0.2− | 2005 06 13 | G96 | 0.6+ | 0.8+ | 2006 10 31 | 691 | 0.2+ | 0.3+ | | |
| 2001 12 17 | 704 | 0.5+ | 0.5− | 2005 06 13 | G96 | 0.1− | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 2001 12 17 | 704 | 0.5+ | 0.2− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.4+ | 0.2− | | |
| 2001 12 17 | 704 | 0.3+ | 0.8− | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1− | | |
| 2001 12 19 | 644 | 0.1− | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 2001 12 19 | 644 | 0.4− | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− | | |
| 2001 12 19 | 644 | 0.2− | 0.8+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2001 12 19 | 704 | 0.1+ | 1.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | | |
| 2001 12 19 | 704 | 0.0 | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.2− | | |
| 2001 12 19 | 704 | 0.3+ | 1.0+ | 2006 10 16 | 703 | (0.5+ | 1.8−) | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2002 01 09 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.5− | 0.9+ | 2006 11 09 | 644 | 0.2− | 0.0 | | |
| 2002 01 09 | 704 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.4+ | | |
| 2002 01 09 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.7− | 2006 11 11 | 703 | 0.1− | 0.3− | | |
| 2002 01 09 | 704 | 0.8+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.9− | | |
| 2002 01 15 | 704 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4− | | |
| 2002 01 15 | 704 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.5− | | |
| 2002 01 15 | 704 | 0.0 | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.3− | 2006 11 17 | 703 | (1.1− | 2.6−) | | |
| 2002 01 15 | 704 | 1.0− | 0.9+ | 2006 10 27 | 691 | 1.1+ | 0.6+ | 2006 11 17 | 703 | 0.0 | 0.7− | | |
| 2005 06 13 | G96 | 1.0− | 1.2+ | 2006 10 27 | 691 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.4− | 0.3− | | |

### 2001 $YY_{19}$ = 2006 $WV_{184}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.91847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21414936 | $\omega$ | 319.64444 | | +0.40604758 | | −0.87975012 |
| $a$ | 2.7668877 | $\Omega$ | 105.08424 | | +0.89049280 | | +0.32010565 |
| $e$ | 0.1964000 | $i$ | 14.84122 | | +0.20529965 | | +0.35152824 |
| $P$ | 4.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.1− | 0.2− | 2001 11 18 | 704 | (2.4− | 0.6−) | 2001 12 19 | 704 | 0.2+ | 0.2− | | |
| 2000 07 30 | 807 | 0.0 | 0.2− | 2001 11 18 | 704 | (2.9− | 1.5+) | 2001 12 19 | 704 | 0.4− | 0.0 | | |
| 2001 10 26 | 291 | 0.1− | 0.3+ | 2001 12 07 | 704 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2001 10 26 | 691 | 0.2− | 0.2+ | 2001 12 07 | 704 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.4− | 0.1− | | |
| 2001 10 26 | 291 | 0.1− | 0.3+ | 2001 12 07 | 704 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3+ | | |
| 2001 10 26 | 691 | 0.2− | 0.1+ | 2001 12 07 | 704 | 0.4− | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.1+ | | |
| 2001 10 26 | 291 | 0.2− | 0.3+ | 2001 12 07 | 704 | 0.7− | 1.0+ | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2001 10 26 | 691 | 0.3− | 0.0 | 2001 12 18 | 704 | 0.0 | 0.5− | 2006 11 27 | G96 | 0.4− | 0.0 | | |
| 2001 10 28 | 644 | 0.0 | 0.3+ | 2001 12 18 | 704 | 0.9+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.1− | | |
| 2001 10 28 | 644 | 0.3− | 0.4+ | 2001 12 18 | 704 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.3− | 0.1− | | |
| 2001 10 28 | 644 | 0.0 | 0.3+ | 2001 12 18 | 704 | 0.4+ | 0.6− | 2006 11 28 | G96 | 0.3+ | 0.1+ | | |
| 2001 11 11 | 645 | 0.2+ | 0.2− | 2001 12 18 | 704 | 0.2+ | 0.3− | 2006 11 28 | G96 | 0.2+ | 0.0 | | |
| 2001 11 11 | 645 | 0.2+ | 0.2− | 2001 12 19 | 704 | 0.0 | 0.8+ | 2006 11 28 | G96 | 0.0 | 0.2+ | | |
| 2001 11 18 | 704 | (2.9− | 2.2−) | 2001 12 19 | 704 | 0.4− | 0.0 | 2006 11 28 | G96 | 0.1− | 0.0 | | |
| 2001 11 18 | 704 | 1.1− | 0.9− | 2001 12 19 | 704 | 0.1− | 0.1− | | | | | | |

### 2001 $YW_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.27645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18532995 | $\omega$ | 97.83192 | | +0.66666195 | | −0.74356685 |
| $a$ | 3.0467652 | $\Omega$ | 310.22467 | | +0.65441240 | | +0.61709514 |
| $e$ | 0.1299077 | $i$ | 3.88067 | | +0.35680002 | | +0.25749163 |
| $P$ | 5.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 1.1+ | 0.1− | 2001 12 18 | 704 | 0.6− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.0 | | |
| 2001 11 11 | 704 | 0.8+ | 0.3− | 2001 12 18 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.0 | | |
| 2001 11 11 | 704 | 0.2− | 0.5+ | 2001 12 18 | 704 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.5+ | | |
| 2001 11 20 | 704 | 0.1− | 0.4+ | 2001 12 18 | 704 | 0.6− | 0.3+ | 2006 10 17 | 703 | 0.8+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.1+ | 0.3+ | 2001 12 19 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.1− | | |
| 2001 11 20 | 704 | 0.1+ | 0.8+ | 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.1− | | |
| 2001 12 15 | 704 | 1.8+ | 0.0 | 2001 12 19 | 704 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.3− | | |
| 2001 12 15 | 704 | 0.2+ | 1.1− | 2001 12 19 | 704 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 12 15 | 704 | 1.5− | 0.0 | 2001 12 19 | 704 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2001 12 18 | 704 | 0.3− | 1.0− | 2006 10 17 | 691 | 0.0 | 0.0 | | | | | | |

### 2001 $YL_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.91814 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17514910 | $\omega$ | 352.79092 | | +0.33367589 | | −0.94170322 |
| $a$ | 3.1637157 | $\Omega$ | 77.70979 | | +0.86708492 | | +0.28866519 |
| $e$ | 0.1965328 | $i$ | 2.52671 | | +0.36989748 | | +0.17282201 |
| $P$ | 5.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.1− | 0.1+ | 2001 12 18 | 704 | 0.6− | 0.5− | 2002 01 14 | 704 | 0.6+ | 0.2− | | |
| 2000 07 31 | 807 | 0.0 | 0.0 | 2001 12 18 | 704 | 0.2− | 0.8+ | 2002 01 14 | 704 | 0.6+ | 0.9+ | | |
| 2001 11 12 | 704 | 0.5+ | 0.2+ | 2001 12 18 | 704 | 0.1− | 0.4− | 2002 01 14 | 704 | (0.4+ | 1.8+) | | |
| 2001 11 12 | 704 | 0.0 | 0.1− | 2001 12 18 | 704 | 0.1− | 0.4− | 2002 01 14 | 704 | 0.0 | 1.0+ | | |
| 2001 11 12 | 704 | 0.5− | 0.6+ | 2001 12 18 | 704 | 0.1+ | 0.5− | 2002 01 14 | 704 | 0.3− | 0.8+ | | |
| 2001 11 21 | 704 | 1.5+ | 0.7+ | 2001 12 18 | 704 | 0.1− | 0.2− | 2003 04 07 | 691 | 0.2+ | 0.0 | | |
| 2001 11 21 | 704 | (1.8+ | 1.1+) | 2001 12 18 | 704 | 0.1− | 0.8− | 2003 04 07 | 691 | 0.3− | 0.1+ | | |
| 2001 11 21 | 704 | 0.6+ | 0.3+ | 2001 12 19 | 704 | 0.2+ | 0.6+ | 2003 04 07 | 691 | 0.2+ | 0.0 | | |
| 2001 11 21 | 704 | 0.4+ | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | | |
| 2001 12 10 | 704 | 1.0+ | 0.5− | 2001 12 19 | 704 | 0.5− | 0.6+ | 2006 09 18 | 699 | 0.4+ | 0.5+ | | |
| 2001 12 10 | 704 | 0.3+ | 0.6− | 2001 12 19 | 704 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.7− | 1.4− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 704 | 1.3+ | 0.2+ | 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 1.1+ | 0.9+ |
| 2001 12 10 | 704 | 0.2+ | 0.0 | 2001 12 19 | 704 | 0.4− | 0.2+ | 2006 09 20 | 691 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 1.1− | 0.1+ | 2001 12 19 | 704 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.6− | 2001 12 19 | 704 | 0.6+ | 0.1+ | 2006 09 20 | 691 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.9− | 0.4+ | 2001 12 19 | 704 | 0.6+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2001 12 18 | 704 | 0.0 | 0.6− | 2001 12 19 | 704 | (1.8+ | 2.6+) | 2006 10 09 | 644 | 0.3− | 0.6+ |
| 2001 12 18 | 704 | 0.1− | 0.9− | 2002 01 12 | 691 | 0.3− | 0.3− | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.5− | 2002 01 12 | 691 | 0.2− | 0.1− | | | | |
| 2001 12 18 | 704 | 0.7− | 0.1+ | 2002 01 12 | 691 | 0.4− | 0.2− | | | | |

**2001 YV$_{24}$ = 2006 SP$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.31285 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18475190 | $\omega$ | 40.85609 | | +0.26894999 | | −0.96304234 |
| $a$ | 3.0531169 | $\Omega$ | 33.54970 | | +0.87662344 | | +0.23844701 |
| $e$ | 0.1347744 | $i$ | 1.52158 | | +0.39899529 | | +0.12526961 |
| $P$ | 5.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 1.0+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 12 09 | 644 | 0.6− | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.2− |
| 2001 12 09 | 644 | 0.1− | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 12 09 | 644 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 1.0− | 2006 10 15 | 691 | 0.9+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.8− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.7− |
| 2001 12 18 | 704 | 0.0 | 0.4− | 2006 10 15 | 691 | 0.4+ | 0.4+ | 2006 11 11 | G96 | 0.5− | 0.4− |
| 2001 12 18 | 704 | 0.2− | 0.7− | 2006 10 21 | 703 | 0.6+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2001 12 19 | 704 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.6+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.1− | 0.7− | 2006 10 21 | 703 | 0.9− | 0.9− | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2001 12 19 | 704 | 0.5+ | 0.3− | 2006 10 21 | 703 | 0.2− | 1.3+ | 2006 11 13 | G96 | 0.2− | 0.6− |
| 2001 12 19 | 704 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.4− | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2001 12 19 | 704 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.1− |
| 2003 01 30 | 291 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.1+ |
| 2003 01 30 | 291 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 20 | 691 | 0.7+ | 0.4− |
| 2003 01 30 | 291 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.7− |
| 2006 09 18 | 691 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.6− | 2006 11 23 | 691 | 0.4+ | 0.1+ |
| 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3− | | | | |

**2001 YF$_{25}$ = 2006 VY$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.39061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18873891 | $\omega$ | 21.60563 | | +0.84743063 | | −0.53084950 |
| $a$ | 3.0099672 | $\Omega$ | 10.46765 | | +0.48063155 | | +0.76089625 |
| $e$ | 0.1055126 | $i$ | 2.44635 | | +0.22550972 | | +0.37314302 |
| $P$ | 5.22 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.0 | 1.1+ | 2001 12 19 | 704 | 0.7− | 0.4− | 2006 11 11 | 703 | 0.3− | 1.2− |
| 2001 11 21 | 704 | 0.4+ | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2001 11 21 | 704 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.8− |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.2− |
| 2001 11 21 | 704 | 0.8+ | 0.7+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.6− |
| 2001 12 18 | 704 | 0.1+ | 0.8+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.3+ |
| 2001 12 18 | 704 | 1.0+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | (0.9− | 2.1+) |
| 2001 12 18 | 704 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2001 12 18 | 704 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.4+ | 0.3− | 2006 11 16 | 704 | 0.1− | 0.9+ |
| 2001 12 18 | 704 | 0.7− | 0.5− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4+ | 1.4+ |
| 2001 12 19 | 704 | 0.4+ | 0.5− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 1.1− | 0.1+ |
| 2001 12 19 | 704 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.7+ | 1.3− | 2006 11 17 | 703 | 1.1− | 0.6+ |
| 2001 12 19 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2001 12 19 | 704 | 0.4− | 0.5− | 2006 11 11 | 703 | (0.8+ | 3.4−) | 2006 11 17 | 703 | 0.5+ | 0.7+ |

**2001 YK$_{26}$ = 2006 VP$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.12448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18855783 | $\omega$ | 316.18679 | | +0.94248379 | | −0.27706178 |
| $a$ | 3.0118939 | $\Omega$ | 60.77212 | | +0.33382215 | | +0.80857783 |
| $e$ | 0.2100379 | $i$ | 12.37194 | | −0.01694353 | | +0.51907482 |
| $P$ | 5.23 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | (1.9+ | 0.3−) | 2006 09 30 | 703 | 1.4− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.5− |
| 2001 12 15 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.4− |
| 2001 12 15 | 704 | 1.0− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2001 12 18 | 704 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 1.3− | 0.3+ |
| 2001 12 18 | 704 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 1.4− | 0.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2001 12 18 | 704 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.9− | 0.3− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.3− | 0.4− |
| 2001 12 19 | 704 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.3− | 1.3+ |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.4+ | 0.1+ |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.4+ |
| 2001 12 19 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.3− | 2006 11 14 | 704 | 0.4+ | 0.6+ |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 12 20 | 644 | 0.5+ | 0.3+ | 2006 11 01 | 703 | 1.0+ | 1.3+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2001 12 20 | 644 | 0.4+ | 0.3+ | 2006 11 01 | 703 | (0.0 | 1.7−) | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2001 12 20 | 644 | 0.6+ | 0.1+ | 2006 11 01 | 703 | 0.1+ | 1.0− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2006 09 30 | 703 | 0.0 | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− | | | | |
| 2006 09 30 | 703 | 0.7+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.1− | | | | |

**2001 YF$_{28}$ = 2006 VH$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.32333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19620533 | $\omega$ | 355.47619 | | +0.61496571 | | −0.78748294 |
| $a$ | 2.9331133 | $\Omega$ | 56.56859 | | +0.72501971 | | +0.54416163 |
| $e$ | 0.1051664 | $i$ | 2.82168 | | +0.31010254 | | +0.28941103 |
| $P$ | 5.02 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 691 | 0.1+ | 0.1− | 2001 12 10 | 704 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 11 15 | 691 | 0.3+ | 0.2− | 2001 12 10 | 704 | 0.5+ | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 11 15 | 691 | 0.5+ | 0.0 | 2001 12 18 | 704 | 0.0 | 1.1− | 2006 11 14 | 701 | 0.5− | 0.1− |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2001 12 18 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.7− | 0.6+ | 2001 12 18 | 704 | 0.2+ | 0.1− | 2006 11 14 | 701 | 0.3+ | 0.3− |
| 2001 11 20 | 704 | 0.6− | 0.8+ | 2001 12 19 | 704 | 0.2− | 0.6+ | 2006 11 14 | 701 | 0.1− | 0.5− |
| 2001 11 21 | 704 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.3+ | 1.1+ | 2006 11 14 | 701 | 0.3+ | 0.3− |
| 2001 11 21 | 704 | 0.4+ | 0.3− | 2001 12 19 | 704 | 1.1− | 0.1+ | 2006 12 01 | G96 | 0.8+ | 0.0 |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2001 12 19 | 704 | 0.0 | 0.5+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 1.3− | 1.3− | 2006 11 10 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.2− |
| 2001 12 10 | 704 | (2.1+ | 1.1−) | 2006 11 10 | 691 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.4+ | 1.2− |
| 2001 12 10 | 704 | (1.6+ | 0.5−) | 2006 11 10 | 691 | 0.0 | 0.2+ | | | | |

**2001 YO$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.55930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19012297 | $\omega$ | 54.43944 | | −0.50687744 | | −0.84893228 |
| $a$ | 2.9953413 | $\Omega$ | 66.68248 | | +0.72875465 | | −0.51472600 |
| $e$ | 0.0660965 | $i$ | 9.37748 | | +0.46042581 | | −0.11987960 |
| $P$ | 5.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 691 | 0.2− | 0.1− | 2001 12 18 | 704 | 0.6+ | 1.0+ | 2006 10 18 | 691 | 0.3− | 0.2− |
| 2001 11 16 | 691 | 0.0 | 0.1− | 2001 12 18 | 704 | (1.5+ | 2.3−) | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2001 11 16 | 691 | 0.1− | 0.2− | 2001 12 18 | 704 | 1.1+ | 0.6− | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.5+ | 0.4+ | 2001 12 18 | 704 | 0.0 | 0.6− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.7+ | 0.0 | 2001 12 19 | 704 | (1.9+ | 0.7−) | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2001 12 19 | 704 | 1.2+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2001 12 19 | 704 | 0.5+ | 1.0+ | 2006 11 09 | 644 | 0.3+ | 0.4+ | | |
| 2001 11 20 | 704 | 0.9+ | 0.5− | 2001 12 19 | 704 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.0 | 0.0 | | |
| 2001 11 21 | 704 | 0.3− | 0.1+ | 2001 12 19 | 704 | 1.1− | 0.9+ | 2006 11 14 | G96 | 0.3+ | 0.2− | | |
| 2001 11 21 | 704 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.7+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.0 | | |
| 2001 11 21 | 704 | 0.2+ | 0.6+ | 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2001 12 07 | 644 | 0.8− | 0.0 | 2001 12 19 | 704 | 0.5− | 0.4− | 2006 11 18 | 704 | 0.4+ | 1.0− | | |
| 2001 12 07 | 644 | 0.5− | 0.9+ | 2001 12 19 | 704 | 0.4+ | 0.9− | 2006 11 18 | 704 | 1.5+ | 0.1− | | |
| 2001 12 07 | 644 | 0.5− | 0.4+ | 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.8+ | | |
| 2001 12 10 | 704 | 0.4+ | 1.4− | 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 11 18 | 704 | 0.8+ | 0.0 | | |
| 2001 12 10 | 704 | 0.5− | 0.0 | 2006 10 18 | 691 | 0.2− | 0.1+ | | | | | | |
| 2001 12 10 | 704 | 0.4− | 0.9− | 2006 10 18 | 691 | 0.2− | 0.0 | | | | | | |

**2001 YS$_{29}$ = 2006 VE$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.66350 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20000180 | $\omega$ | 301.73261 | | +0.96497355 | | −0.20365445 |
| $a$ | 2.8958770 | $\Omega$ | 70.46863 | | +0.25732099 | | +0.85754165 |
| $e$ | 0.0868248 | $i$ | 10.10650 | | −0.05110732 | | +0.47238457 |
| $P$ | 4.93 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 291 | 0.7+ | 0.1− | 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2+ | | |
| 2001 11 20 | 291 | 0.0 | 0.3− | 2001 12 19 | 704 | 0.7− | 0.8− | 2006 11 24 | 691 | 0.1+ | 0.4− | | |
| 2001 11 20 | 291 | 0.1− | 0.2− | 2001 12 19 | 704 | 0.7− | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.1+ | | |
| 2001 12 09 | 644 | 0.1− | 1.1+ | 2001 12 19 | 704 | 0.9− | 0.6− | 2006 11 24 | 691 | 0.6+ | 0.1− | | |
| 2001 12 09 | 644 | 0.7+ | 1.5+ | 2001 12 19 | 704 | 0.8+ | 0.4− | 2006 12 01 | G96 | 0.4− | 0.2− | | |
| 2001 12 09 | 644 | 0.5+ | 1.3+ | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.3− | | |
| 2001 12 18 | 704 | 1.2− | 0.5− | 2006 11 10 | 691 | 0.5− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.7− | | |
| 2001 12 18 | 704 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.3+ | 2006 12 01 | G96 | 0.7− | 0.2− | | |
| 2001 12 18 | 704 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.2+ | | | | | | |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.1− | | | | | | |

**2001 YV$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.67874 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17716616 | $\omega$ | 337.14241 | | +0.63322614 | | −0.74314229 |
| $a$ | 3.1396570 | $\Omega$ | 72.85246 | | +0.74047333 | | +0.50039004 |
| $e$ | 0.0863544 | $i$ | 13.07993 | | +0.22521970 | | +0.44424019 |
| $P$ | 5.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 291 | 0.2− | 0.1− | 2001 12 19 | 704 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.4+ | 0.4+ | | |
| 2001 11 20 | 291 | 0.1+ | 0.1− | 2001 12 19 | 704 | 0.2− | 1.0+ | 2006 10 02 | 703 | 0.3+ | 0.9+ | | |
| 2001 11 20 | 291 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.4+ | 0.2− | 2006 10 11 | 291 | 0.2− | 0.1− | | |
| 2001 11 21 | 704 | 0.8+ | 1.5+ | 2002 01 14 | 704 | (0.2− | 1.7+) | 2006 10 11 | 291 | 0.2− | 0.0 | | |
| 2001 11 21 | 704 | 1.0+ | 0.6+ | 2002 01 14 | 704 | 0.6+ | 1.2+ | 2006 10 11 | 291 | 0.3− | 0.0 | | |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2002 01 14 | 704 | 0.6+ | 0.9+ | 2006 10 17 | 703 | 0.7+ | 0.2− | | |
| 2001 11 21 | 704 | 0.9+ | 0.6− | 2002 01 14 | 704 | 0.6− | 0.8+ | 2006 10 17 | 703 | 0.8− | 0.5− | | |
| 2001 11 21 | 704 | 1.0− | 0.7− | 2003 03 08 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.3+ | | |
| 2001 12 07 | 691 | 0.2− | 0.5− | 2003 03 08 | 644 | 0.3+ | 0.8+ | 2006 10 17 | 703 | 0.5+ | 0.5− | | |
| 2001 12 07 | 691 | 0.2+ | 0.2− | 2003 03 08 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2001 12 07 | 691 | 0.3+ | 0.9− | 2006 09 21 | 699 | 1.3+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2− | | |
| 2001 12 10 | 704 | 0.7− | 0.9− | 2006 09 21 | 699 | 0.8− | 0.4− | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 12 10 | 704 | 1.0+ | 0.4+ | 2006 09 21 | 699 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 10 | 704 | (0.1+ | 1.8+) | 2006 09 21 | 699 | 0.2+ | 0.7− | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 10 | 704 | (1.7+ | 1.9+) | 2006 09 25 | 699 | (2.5+ | 0.6+) | 2006 10 23 | 644 | 0.4− | 0.0 | | |
| 2001 12 17 | 691 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.0 | 2006 10 28 | 703 | 0.8+ | 0.6− | | |
| 2001 12 17 | 691 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.6− | 0.7− | 2006 10 28 | 703 | 0.6+ | 1.1+ | | |
| 2001 12 17 | 691 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.1+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.1− | 1.0− | 2006 10 28 | 703 | 0.6− | 1.1+ | | |
| 2001 12 18 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.6− | 0.3+ | 2006 11 17 | 703 | 0.7− | 1.5+ | | |
| 2001 12 18 | 704 | 1.1+ | 0.0 | 2006 09 29 | 699 | 0.2− | 0.4− | 2006 11 17 | 703 | (0.1+ | 2.1+) | | |
| 2001 12 18 | 704 | 0.3− | 1.3+ | 2006 09 29 | 699 | (1.6− | 0.0 ) | 2006 11 17 | 703 | 1.3− | 0.9+ | | |
| 2001 12 19 | 704 | 1.2− | 0.6+ | 2006 10 02 | 703 | (2.1+ | 0.6+) | 2006 11 17 | 703 | (0.5− | 1.9+) | | |
| 2001 12 19 | 704 | 0.9+ | 0.1− | 2006 10 02 | 703 | 0.7+ | 0.4+ | | | | | | |

**2001 YR$_{33}$ = 2006 TC$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.20259 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17764604 | $\omega$ | 70.04605 | | +0.68625283 | | −0.72679488 |
| $a$ | 3.1340003 | $\Omega$ | 336.54274 | | +0.63743109 | | +0.61996859 |
| $e$ | 0.1353718 | $i$ | 4.14098 | | +0.35034076 | | +0.29564869 |
| $P$ | 5.55 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 644 | 0.1− | 0.1+ | 2001 12 19 | 704 | 1.0+ | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.0 | | |
| 2001 12 13 | 644 | 0.1+ | 0.2+ | 2001 12 23 | 704 | 1.1− | 0.6− | 2006 10 17 | 703 | 0.4− | 0.7− | | |
| 2001 12 13 | 644 | 0.3+ | 0.1+ | 2001 12 23 | 704 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.4+ | | |
| 2001 12 18 | 704 | 0.7− | 0.3− | 2001 12 23 | 704 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2001 12 18 | 704 | 0.5− | 0.1− | 2002 01 08 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2002 01 08 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2001 12 18 | 704 | 0.3− | 0.3− | 2002 01 08 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3− | | |
| 2001 12 18 | 704 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4− | | |
| 2001 12 19 | 704 | 0.8+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.7− | 0.0 | | |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2+ | | | | | | |
| 2001 12 19 | 704 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.8+ | 0.3+ | | | | | | |

**2001 YL$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.45414 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18149527 | $\omega$ | 345.17718 | | +0.49110053 | | −0.84409400 |
| $a$ | 3.0895307 | $\Omega$ | 75.00041 | | +0.82018370 | | +0.36481932 |
| $e$ | 0.1319144 | $i$ | 12.87507 | | +0.29346032 | | +0.39295315 |
| $P$ | 5.43 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | 0.3+ | 1.1+ | 2001 12 18 | 704 | 0.3− | 0.9+ | 2006 09 29 | 699 | 0.6− | 1.1+ | | |
| 2001 11 09 | 704 | 0.4− | 0.0 | 2001 12 18 | 704 | 0.5− | 0.7+ | 2006 09 29 | 699 | 0.8+ | 1.1− | | |
| 2001 11 09 | 704 | 0.0 | 0.4+ | 2001 12 18 | 704 | 0.2− | 0.9+ | 2006 09 29 | 699 | (1.7− | 2.3+) | | |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2001 12 19 | 704 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 11 20 | 704 | 0.3+ | 0.1− | 2001 12 19 | 704 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.2+ | | |
| 2001 11 20 | 704 | 0.3− | 0.7− | 2001 12 19 | 704 | 0.7− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 2001 11 20 | 704 | 0.4+ | 0.1+ | 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.9− | 0.2+ | | |
| 2001 11 24 | 704 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.2− | | |
| 2001 11 24 | 704 | 0.5+ | 0.4+ | 2004 06 17 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.5+ | | |
| 2001 11 24 | 704 | (1.1− | 2.3−) | 2004 06 17 | 691 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.9− | 0.6+ | | |
| 2001 11 24 | 704 | 0.3+ | 0.9− | 2004 06 17 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 703 | (3.8− | 2.7−) | | |
| 2001 12 07 | 691 | 0.2− | 0.5− | 2006 09 26 | 703 | 0.2+ | 0.8− | 2006 11 16 | 703 | 0.3− | 0.2+ | | |
| 2001 12 07 | 691 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 1.5+ | 0.6− | 2006 11 16 | 703 | 0.1+ | 0.3− | | |
| 2001 12 07 | 691 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.2+ | 0.7+ | 2006 11 16 | 703 | 1.2− | 1.1+ | | |
| 2001 12 18 | 704 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.9+ | | | | | | |
| 2001 12 18 | 704 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.5− | 0.9− | | | | | | |

**2001 YE$_{35}$ = 2006 VF$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.74141 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18714937 | $\omega$ | 94.44062 | | +0.14121977 | | −0.98995791 |
| $a$ | 3.0269864 | $\Omega$ | 347.43560 | | +0.89632005 | | +0.13057980 |
| $e$ | 0.0824102 | $i$ | 1.67249 | | +0.42031814 | | +0.05415025 |
| $P$ | 5.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.4+ | 0.5− | 2006 11 01 | G96 | 0.4+ | 0.6− | 2006 11 13 | 691 | 0.3− | 0.2+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 13 | 691 | 0.3− | 0.2+ | | |
| 2001 12 18 | 704 | 0.1− | 0.7+ | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2001 12 18 | 704 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.2− | | |
| 2001 12 19 | 704 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.2− | | |
| 2001 12 19 | 704 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.9+ | 1.0− | | |
| 2001 12 19 | 704 | (1.2+ | 1.6+) | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.8− | 0.1+ | | |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.8+ | | |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.5+ | 1.0+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | (0.3+ | 2.5−) | 2006 11 11 | 703 | 1.2+ | 0.2− | 2006 11 27 | 703 | 0.3− | 0.2+ | | |
| 2002 01 14 | 704 | (0.4+ | 2.0−) | 2006 11 11 | 703 | (0.4− | 1.5−) | 2006 11 27 | 703 | 0.3+ | 0.4+ | | |
| 2002 01 14 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.5+ | 2006 11 27 | 703 | 0.9− | 0.3− | | |
| 2002 01 14 | 704 | 0.1− | 0.7− | 2006 11 11 | 703 | 0.2+ | 0.3− | | | | | | |
| 2006 11 01 | G96 | 0.4+ | 0.7− | 2006 11 13 | 691 | 0.3− | 0.6+ | | | | | | |

**2001 YP$_{35}$ = 2006 SV$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.90084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17588626 | $\omega$ | 324.46934 | | +0.92075748 | −0.36110093 | |
| $a$ | 3.1548698 | $\Omega$ | 57.35264 | | +0.38605528 | +0.78871465 | |
| $e$ | 0.1231385 | $i$ | 10.10195 | | +0.05627594 | +0.49752922 | |
| $P$ | 5.60 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.2− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2001 12 15 | 704 | 0.6− | 0.1− | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2001 12 15 | 704 | (0.4− | 3.1+) | 2006 09 25 | 699 | (1.6− | 1.9+) | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | 0.6+ | 0.2− | 2006 09 25 | 699 | 0.2+ | 1.1+ | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.3− | 2006 09 25 | 699 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2001 12 18 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.9− | 0.9+ | 2006 10 22 | 703 | 0.3− | 0.6+ |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.8+ | 0.9− | 2006 10 22 | 703 | 0.3− | 0.5+ |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.6+ | 0.3− | 2006 10 22 | 703 | 0.8− | 0.1+ |
| 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.8− | 0.7− | | | | |
| 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.1− | | | | |

**2001 YQ$_{36}$ = 2006 UF$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.93119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17882036 | $\omega$ | 167.90014 | | −0.41393380 | −0.90854379 | |
| $a$ | 3.1202645 | $\Omega$ | 306.52570 | | +0.82920439 | −0.35065588 | |
| $e$ | 0.1378572 | $i$ | 4.04108 | | +0.37560469 | −0.22713133 | |
| $P$ | 5.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.4+ | 0.2+ | 2001 12 19 | 704 | 0.7− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.6+ | 0.6− | 2001 12 19 | 704 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.5+ | 1.4− | 2001 12 19 | 704 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.6+ | 0.2− | 2001 12 19 | 704 | 0.2− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2001 12 18 | 704 | 0.0 | 0.2+ | 2001 12 19 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.6+ | 0.3+ |
| 2001 12 19 | 704 | 0.0 | 0.5+ | 2002 01 14 | 704 | 0.0 | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.8− | 0.0 | 2002 01 14 | 704 | 0.6+ | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2002 01 14 | 704 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2001 12 19 | 704 | 0.2− | 1.2− | 2002 01 14 | 704 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.7− |
| 2001 12 19 | 704 | 0.1− | 0.3− | 2002 01 14 | 704 | 0.2+ | 0.6+ | 2006 11 25 | G96 | 0.4− | 0.4− |

**2001 YT$_{36}$ = 2006 WV$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.72527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19822322 | $\omega$ | 338.75711 | | +0.61681400 | −0.76861211 | |
| $a$ | 2.9131736 | $\Omega$ | 72.75742 | | +0.74533934 | +0.50108210 | |
| $e$ | 0.1263343 | $i$ | 10.23099 | | +0.25300150 | +0.39768347 | |
| $P$ | 4.97 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.3+ | 0.3− | 2002 01 14 | 704 | 0.5− | 0.1− | 2006 11 20 | 691 | 1.0− | 0.8− |
| 2001 12 18 | 704 | 1.1+ | 0.6− | 2002 01 14 | 704 | 0.1+ | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2001 12 18 | 704 | 0.4− | 0.4+ | 2002 01 14 | 704 | 0.6− | 1.1− | 2006 11 24 | 691 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.7− | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.5− |
| 2001 12 19 | 704 | 0.5− | 0.5+ | 2006 11 16 | 691 | 0.5+ | 0.2+ | 2006 11 24 | 691 | 0.2− | 0.5− |
| 2001 12 19 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.4+ | | | | |
| 2001 12 19 | 704 | 0.6− | 1.4+ | 2006 11 20 | 691 | 0.1− | 0.4+ | | | | |

**2001 YG$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.10690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18073636 | $\omega$ | 336.77094 | | +0.64081706 | −0.74493786 | |
| $a$ | 3.0981733 | $\Omega$ | 72.83887 | | +0.73129493 | +0.51880733 | |
| $e$ | 0.1282733 | $i$ | 11.19648 | | +0.23358342 | +0.41941214 | |
| $P$ | 5.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 09 | 704 | (1.0+ | 1.8+) | 2002 01 08 | 704 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2001 11 09 | 704 | (1.7+ | 0.5+) | 2002 01 08 | 704 | 0.7+ | 0.8− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 11 09 | 704 | 1.3+ | 1.1+ | 2002 01 08 | 704 | 0.3+ | 0.7− | 2006 10 23 | 644 | 0.3+ | 0.4+ |
| 2001 11 09 | 704 | 1.5+ | 1.0+ | 2002 01 14 | 704 | 1.0− | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2001 11 20 | 704 | 0.1− | 1.2− | 2002 01 14 | 704 | 0.8− | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2001 11 20 | 704 | 0.1+ | 0.8− | 2002 01 14 | 704 | 1.0− | 0.0 | 2006 10 28 | 703 | 1.3− | 0.9− |
| 2001 11 20 | 704 | 0.2− | 1.1− | 2002 01 14 | 704 | 0.7− | 0.7+ | 2006 10 28 | 703 | 0.9− | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 1.3− | 2002 01 14 | 704 | 1.0− | 0.2− | 2006 10 28 | 703 | 1.1− | 0.3− |
| 2001 12 18 | 704 | 0.4− | 1.3+ | 2006 10 16 | 703 | 0.8− | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.8+ |
| 2001 12 18 | 704 | 0.9+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 13 | 703 | 0.3− | 1.2+ |
| 2001 12 18 | 704 | 0.3+ | 1.0− | 2006 10 16 | 703 | 1.4+ | 0.6+ | 2006 11 13 | 703 | 0.7+ | 0.4+ |
| 2001 12 18 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 11 13 | 703 | 0.6− | 0.3− |
| 2001 12 18 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.6− | 2006 11 19 | 703 | 0.7+ | 0.5− |
| 2001 12 19 | 704 | 0.2+ | 1.0+ | 2006 10 22 | 703 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.8+ | 0.0 |
| 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.3+ | 0.9− |
| 2001 12 19 | 704 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.1− | 0.3− | 2006 11 19 | 703 | 0.2− | 0.6− |
| 2001 12 19 | 704 | 1.0− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.2+ | | | | |
| 2001 12 19 | 704 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | | | | |

**2001 YX$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.51318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23973777 | $\omega$ | 153.21241 | | +0.12646244 | −0.99055320 | |
| $a$ | 2.5663255 | $\Omega$ | 289.48352 | | +0.89973554 | +0.13704867 | |
| $e$ | 0.1577516 | $i$ | 3.22433 | | +0.41771188 | +0.00469273 | |
| $P$ | 4.11 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.4+ | 1.1− | 2001 12 19 | 704 | 0.3− | 0.3+ | 2002 01 14 | 704 | 0.6− | 0.6− |
| 2001 11 19 | 704 | 0.3− | 1.4− | 2001 12 19 | 704 | 0.3+ | 1.2+ | 2002 01 14 | 704 | 0.7− | 1.9− |
| 2001 11 19 | 704 | 1.2+ | 0.8− | 2001 12 19 | 704 | 0.1+ | 0.2+ | 2002 01 14 | 704 | 1.2− | 1.0− |
| 2001 11 21 | 704 | 0.1− | 0.2− | 2001 12 19 | 704 | 0.2+ | 0.2− | 2005 10 22 | 691 | 0.2− | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 0.7+ | 2001 12 19 | 704 | 0.6+ | 0.1+ | 2005 10 22 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2001 12 19 | 704 | 0.7+ | 0.9+ | 2005 10 22 | 691 | 0.3− | 0.3+ |
| 2001 11 21 | 704 | 0.6+ | 0.3+ | 2001 12 19 | 704 | 0.7− | 0.0 | 2005 11 06 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2001 12 19 | 704 | 0.4+ | 0.3+ | 2005 11 06 | 691 | 0.2+ | 0.5− |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2001 12 19 | 704 | 0.0 | 0.1− | 2005 11 06 | 691 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.2− | 1.2+ | 2001 12 19 | 704 | 0.4+ | 0.3− | 2005 11 21 | 703 | 0.3+ | 0.3+ |
| 2001 12 18 | 704 | 0.3− | 0.3+ | 2001 12 19 | 704 | 0.7+ | 0.0 | 2005 11 21 | 703 | 0.2− | 0.3− |
| 2001 12 18 | 704 | 0.5− | 0.9+ | 2001 12 19 | 704 | 0.4− | 0.8+ | 2005 11 21 | 703 | 0.7− | 0.1+ |
| 2001 12 19 | 704 | 0.1− | 0.0 | 2001 12 19 | 704 | 0.3+ | 0.1+ | 2005 11 21 | 703 | 1.6− | 1.3− |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2001 12 19 | 704 | 0.4+ | 0.2+ | 2005 11 28 | 704 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.2− | 0.5+ | 2001 12 19 | 704 | 0.9+ | 0.2− | 2005 11 28 | 704 | 1.0+ | 0.3+ |
| 2001 12 19 | 704 | 0.1− | 0.8+ | 2001 12 20 | 704 | 0.8− | 0.1+ | 2005 11 28 | 704 | 1.1+ | 0.6− |
| 2001 12 19 | 704 | 0.5− | 0.9+ | 2001 12 20 | 704 | 0.6− | 0.0 | 2006 01 25 | G96 | 0.3+ | 1.7+ |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2001 12 20 | 704 | 0.5− | 0.5+ | 2006 01 25 | G96 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.3+ | 0.2+ | 2001 12 20 | 704 | 1.2− | 0.2− | 2006 01 25 | G96 | 0.1− | 0.3− |
| 2001 12 19 | 704 | 0.0 | 0.3+ | 2001 12 20 | 704 | 1.1− | 0.7+ | 2006 01 25 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.2+ | 0.7+ | 2002 01 05 | 691 | 0.4+ | 0.5− | 2006 03 03 | G96 | 0.3− | 0.0 |
| 2001 12 19 | 704 | 0.1− | 1.1+ | 2002 01 05 | 691 | 0.4+ | 0.6− | 2006 03 03 | G96 | 0.4+ | 0.4− |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2002 01 05 | 691 | 0.4+ | 0.0 | 2006 03 03 | G96 | 0.5− | 0.7+ |
| 2001 12 19 | 704 | 0.1− | 0.0 | 2002 01 14 | 704 | 0.7− | 1.3− | 2006 03 03 | G96 | 0.1+ | 0.1+ |

### 2001 $YZ_{42}$ = 2006 $TK_{56}$ = 2006 $UV_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.20521 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18558671 | $\omega$ | 50.66594 | −0.22386890 | | −0.97404278 | |
| $a$ | 3.0439543 | $\Omega$ | 52.30273 | +0.88065783 | | −0.21689875 | |
| $e$ | 0.1243765 | $i$ | 2.42773 | +0.41752186 | | −0.06477338 | |
| $P$ | 5.31 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.5− | 0.1− | 2002 01 14 | 704 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 1996 12 04 | 691 | (5.1+ | 2.4+) | 2002 01 14 | 704 | 0.6− | 0.3+ | 2006 10 28 | 691 | 0.8+ | 0.2+ |
| 1996 12 04 | 691 | (7.1+ | 0.2+) | 2003 03 23 | 291 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 1996 12 11 | 691 | 0.1− | 0.2+ | 2003 03 23 | 291 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1996 12 11 | 691 | 0.1+ | 0.4− | 2003 03 23 | 291 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1996 12 11 | 691 | 0.1+ | 0.5− | 2003 04 25 | 691 | 0.5+ | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2001 12 18 | 704 | 0.4+ | 0.6− | 2003 04 25 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.6− |
| 2001 12 18 | 704 | 1.0+ | 0.9− | 2003 04 25 | 691 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2001 12 18 | 704 | 0.1+ | 0.3− | 2006 10 13 | 291 | 0.9− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.2+ | 0.4− | 2006 10 13 | 291 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2001 12 18 | 704 | 1.1+ | 0.7− | 2006 10 13 | 291 | 0.5− | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 0.7− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.8+ | 0.4− |
| 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 1.3− | 1.4− |
| 2002 01 14 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.1+ | 1.8− |
| 2002 01 14 | 704 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | |

### 2001 $YC_{44}$ = 2006 $TM_{72}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.48447 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17484181 | $\omega$ | 297.48279 | +0.97354161 | | −0.16201799 | |
| $a$ | 3.1674215 | $\Omega$ | 72.20947 | +0.21777211 | | +0.87145408 | |
| $e$ | 0.0794399 | $i$ | 9.74336 | −0.06922452 | | +0.46294487 | |
| $P$ | 5.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2001 12 18 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2001 12 18 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.3− | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2001 12 19 | 704 | 0.8− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.9− | 2006 10 28 | 703 | 0.6− | 1.0− |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.6+ |
| 2001 12 19 | 704 | 0.2− | 0.7+ | 2006 10 22 | 703 | 0.7+ | 0.6+ | 2006 10 28 | 703 | 0.7+ | 0.2+ |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.4− |
| 2002 01 08 | 704 | 0.7− | 0.8+ | 2006 10 22 | 703 | 0.4+ | 0.6− | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2002 01 08 | 704 | 0.6− | 0.0 | 2006 10 22 | 703 | (0.5+ | 2.0−) | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2002 01 08 | 704 | 0.3+ | 0.8− | 2006 10 22 | 644 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.5+ | 0.2− |

### 2001 $YZ_{53}$ = 2006 $TG_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.79720 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17682854 | $\omega$ | 354.32770 | +0.34365645 | | −0.93820149 | |
| $a$ | 3.1436521 | $\Omega$ | 75.56727 | +0.86325778 | | +0.29842958 | |
| $e$ | 0.1765843 | $i$ | 2.42439 | +0.36971104 | | +0.17526483 | |
| $P$ | 5.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.7− | 0.4− | 2006 10 15 | 703 | 1.1− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2001 12 18 | 704 | 1.1− | 0.7− | 2006 10 15 | 703 | (1.8− | 0.9−) | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 10 15 | 703 | 0.7+ | 0.3+ | 2006 10 31 | G96 | 0.6+ | 0.4− |
| 2001 12 19 | 704 | 0.4+ | 0.2+ | 2006 10 15 | 703 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 10 17 | G96 | (0.1+ | 2.2−) | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 01 14 | 704 | 0.4+ | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.2− | 1.2− |
| 2002 01 14 | 704 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2002 01 14 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.9+ | 0.9+ | 2006 11 16 | G96 | 0.8+ | 0.3+ |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.9− | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.7+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.8− | 0.5+ | | | | |
| 2006 09 25 | 691 | (1.1+ | 1.7+) | 2006 10 22 | 644 | 0.1− | 0.3− | | | | |

### 2001 $YR_{57}$ = 2006 $VH_{28}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.58983 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19151238 | $\omega$ | 194.89450 | −0.45429838 | | −0.88786142 | |
| $a$ | 2.9808365 | $\Omega$ | 282.17032 | +0.82477473 | | −0.38826231 | |
| $e$ | 0.2104735 | $i$ | 4.27713 | +0.33668921 | | −0.24688959 | |
| $P$ | 5.15 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2002 01 12 | 691 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.3− | 2002 01 14 | 704 | 0.8+ | 0.8+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 1.1+ | 0.4− | 2002 01 14 | 704 | 0.8+ | 1.0+ | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2002 01 14 | 704 | 0.5+ | 0.8+ | 2006 11 21 | G96 | 0.1+ | 0.8− |
| 2001 12 19 | 704 | 0.5+ | 0.2+ | 2002 01 14 | 704 | 1.0+ | 0.9+ | 2006 11 21 | G96 | 0.1− | 0.5− |
| 2001 12 19 | 704 | 0.6+ | 0.0 | 2002 01 14 | 704 | (1.7+ | 0.9+) | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2001 12 19 | 704 | 0.4+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 01 05 | 691 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.4− | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2002 01 05 | 691 | 0.4− | 0.4− | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.3+ | 0.2− |
| 2002 01 05 | 691 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 01 12 | 691 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.1+ | | | | |
| 2002 01 12 | 691 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1+ | | | | |

### 2001 $YT_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.51999 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18157779 | $\omega$ | 44.99499 | −0.61231115 | | −0.77334363 | |
| $a$ | 3.0885945 | $\Omega$ | 83.46665 | +0.67086587 | | −0.61821878 | |
| $e$ | 0.3180647 | $i$ | 9.52255 | +0.41834679 | | −0.14051752 | |
| $P$ | 5.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 691 | 0.1+ | 0.1− | 2001 12 21 | 704 | 0.6− | 0.1+ | 2006 10 16 | 703 | 1.1+ | 0.4+ |
| 2001 11 16 | 691 | 0.1− | 0.0 | 2002 01 02 | 644 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 2001 11 16 | 691 | 0.0 | 0.1− | 2002 01 02 | 644 | 0.4+ | 0.2− | 2006 10 22 | 703 | (0.9− | 1.7−) |
| 2001 12 10 | 704 | 0.1+ | 0.2− | 2002 01 02 | 644 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.6− | 1.1+ |
| 2001 12 10 | 704 | 0.1+ | 0.0 | 2002 01 08 | 704 | 0.1+ | 0.7− | 2006 10 22 | 703 | 0.4− | 0.6− |
| 2001 12 10 | 704 | 0.0 | 0.2+ | 2002 01 08 | 704 | 0.7+ | 1.3− | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2001 12 10 | 704 | 0.6− | 0.2− | 2002 01 08 | 704 | 0.1− | 0.9− | 2006 11 08 | 644 | 0.3− | 0.4+ |
| 2001 12 18 | 704 | (1.0− | 1.8+) | 2002 01 08 | 704 | 0.4+ | 0.6− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.7+ | 1.0+ | 2002 01 08 | 704 | 0.1− | 0.5− | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 1.1+ | 2002 01 15 | 704 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.5+ | 0.5+ | 2002 01 15 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.3+ | 0.5+ | 2002 01 15 | 704 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.5− | 0.6+ | 2002 01 15 | 704 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2001 12 19 | 704 | 0.0 | 0.7+ | 2002 01 19 | 704 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.1+ | 0.2+ | 2002 01 19 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.4+ |
| 2001 12 21 | 704 | 0.0 | 0.4− | 2002 01 19 | 704 | 0.2+ | 1.0+ | 2006 11 17 | 704 | 0.8− | 0.7− |
| 2001 12 21 | 704 | 0.2− | 0.2− | 2002 01 19 | 704 | 0.6− | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.9− |
| 2001 12 21 | 704 | 0.7− | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 17 | 704 | 0.8+ | 0.1− |
| 2001 12 21 | 704 | 0.9− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 17 | 704 | (0.6+ | 3.4−) |

### 2001 YH$_{68}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.04961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18337847 | $\omega$ | 308.94932 | | +0.67727750 | −0.67093156 | |
| $a$ | 3.0683424 | $\Omega$ | 95.51039 | | +0.73321197 | +0.58161221 | |
| $e$ | 0.1229366 | $i$ | 17.65626 | | +0.06078972 | +0.45997617 | |
| $P$ | 5.37 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.4+ | 0.3− | 2001 12 19 | 704 | 0.4− | 0.9− | 2002 01 21 | 704 | 0.8− | 1.1− | |
| 2001 11 20 | 704 | 0.2− | 0.8− | 2002 01 08 | 704 | 0.1− | 0.3+ | 2002 01 21 | 704 | 0.8− | 1.1− | |
| 2001 11 20 | 704 | 0.8+ | 0.6+ | 2002 01 08 | 704 | 0.6− | 0.3− | 2003 04 09 | 644 | 0.4+ | 0.1+ | |
| 2001 12 17 | 644 | 0.1− | 0.0 | 2002 01 08 | 704 | 0.6+ | 0.4+ | 2003 04 09 | 644 | 0.3− | 0.1− | |
| 2001 12 17 | 644 | 0.0 | 0.0 | 2002 01 08 | 704 | 0.2+ | 0.7− | 2003 04 09 | 644 | 0.0 | 0.2+ | |
| 2001 12 17 | 644 | 0.0 | 0.2+ | 2002 01 14 | 704 | 0.6+ | 0.6+ | 2006 11 13 | 703 | 0.2− | 1.1+ | |
| 2001 12 18 | 704 | 0.4− | 1.1+ | 2002 01 14 | 704 | 0.3+ | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.6− | |
| 2001 12 18 | 704 | 0.2+ | 0.3+ | 2002 01 14 | 704 | 0.9+ | 0.8+ | 2006 11 13 | 703 | 0.1+ | 0.3− | |
| 2001 12 18 | 704 | 0.6+ | 0.1+ | 2002 01 14 | 704 | 0.6+ | 0.8+ | 2006 11 13 | 703 | 0.3+ | 0.7− | |
| 2001 12 18 | 704 | 0.7+ | 0.9− | 2002 01 14 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.0 | |
| 2001 12 18 | 704 | 0.9+ | 0.3+ | 2002 01 17 | 644 | 0.4− | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.3+ | |
| 2001 12 19 | 704 | 0.3− | 0.0 | 2002 01 17 | 644 | 0.6− | 0.2+ | 2006 11 19 | 703 | 0.7− | 0.7+ | |
| 2001 12 19 | 704 | 0.6− | 0.1− | 2002 01 17 | 644 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.6+ | 0.0 | |
| 2001 12 19 | 704 | 0.2− | 0.2− | 2002 01 21 | 704 | 0.3− | 0.2+ | | | | | |
| 2001 12 19 | 704 | 0.5− | 0.7− | 2002 01 21 | 704 | 0.8− | 0.7− | | | | | |

### 2001 YP$_{69}$ = 2006 WL$_{100}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.80390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18051909 | $\omega$ | 351.16529 | | +0.24685086 | −0.95661399 | |
| $a$ | 3.1006586 | $\Omega$ | 84.43349 | | +0.89831930 | +0.16599501 | |
| $e$ | 0.1729473 | $i$ | 8.94610 | | +0.36343786 | +0.23944798 | |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 644 | 0.2− | 0.9− | 2002 01 14 | 704 | 0.4− | 0.1+ | 2006 11 17 | 704 | 1.1− | 1.0− | |
| 2001 12 18 | 644 | 0.7− | 1.0− | 2002 01 14 | 704 | 0.6− | 0.1− | 2006 11 17 | 704 | 0.3+ | 1.1+ | |
| 2001 12 18 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.6− | 2006 11 17 | 704 | 0.1− | 0.0 | |
| 2001 12 18 | 704 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.5+ | 0.9− | 2006 11 17 | 704 | 0.7+ | 1.4+ | |
| 2001 12 18 | 644 | 0.2+ | 0.5− | 2006 10 16 | 703 | (2.1+ | 1.4+) | 2006 11 17 | 704 | 0.2+ | 0.1+ | |
| 2001 12 18 | 704 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.5+ | 1.2+ | 2006 11 19 | 703 | (1.8+ | 0.6+) | |
| 2001 12 18 | 704 | 0.4+ | 0.2− | 2006 10 22 | 703 | 1.3+ | 0.7− | 2006 11 19 | 703 | 0.4− | 0.4+ | |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.9+ | |
| 2001 12 19 | 704 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.0 | 0.4+ | 2006 11 19 | 703 | (0.1+ | 1.6+) | |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.4− | 2006 11 20 | 704 | 0.2− | 0.1+ | |
| 2001 12 19 | 704 | 0.6+ | 0.7+ | 2006 11 01 | 703 | 0.7− | 0.0 | 2006 11 20 | 704 | 0.7− | 0.4− | |
| 2001 12 19 | 704 | 1.2+ | 1.3+ | 2006 11 01 | 703 | (3.1− | 1.4−) | 2006 11 20 | 704 | 0.6− | 1.2− | |
| 2002 01 08 | 704 | 0.9− | 0.1+ | 2006 11 01 | 703 | 0.3+ | 1.2+ | 2006 11 20 | 704 | 0.0 | 0.6− | |
| 2002 01 08 | 704 | 0.2+ | 0.0 | 2006 11 01 | 703 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.1− | 1.3− | |
| 2002 01 08 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− | |
| 2002 01 08 | 704 | 0.0 | 0.6− | 2006 11 11 | 703 | (1.4+ | 3.4−) | 2006 11 23 | G96 | 0.0 | 0.4− | |
| 2002 01 14 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.9+ | 2006 11 23 | G96 | 0.3+ | 0.3− | |
| 2002 01 14 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.5+ | 0.3− | |

### 2001 YJ$_{70}$ = 1981 KP

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.35267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22495707 | $\omega$ | 232.20300 | | −0.97040842 | −0.17920069 | |
| $a$ | 2.6775420 | $\Omega$ | 296.94455 | | +0.23527008 | −0.85257819 | |
| $e$ | 0.1341759 | $i$ | 10.46042 | | −0.05436436 | −0.49091501 | |
| $P$ | 4.38 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 05 28 | 809 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.8− | 0.4+ | 2004 09 13 | 704 | 0.6+ | 0.9− | |
| 1998 02 24 | 566 | 0.7− | 0.7− | 2002 01 21 | 704 | 0.2+ | 1.5− | 2004 09 13 | 704 | 0.9+ | 0.3+ | |
| 1998 02 24 | 566 | 0.4− | 0.6− | 2002 01 21 | 704 | 0.6+ | 1.5− | 2004 09 13 | 704 | 0.6− | 0.4+ | |
| 1998 02 24 | 566 | 0.6− | 0.4− | 2002 01 21 | 704 | 1.7+ | 1.5− | 2004 09 13 | 704 | 0.7+ | 0.6+ | |
| 2001 12 18 | 704 | 0.2− | 0.7− | 2002 01 21 | 704 | 0.9+ | 1.7− | 2004 09 13 | 704 | 0.3+ | 0.1− | |
| 2001 12 18 | 704 | 0.2− | 0.5− | 2002 02 06 | 704 | 1.3+ | 1.3+ | 2004 09 18 | 704 | 0.6+ | 0.2+ | |
| 2001 12 18 | 704 | 0.8− | 0.2− | 2002 02 06 | 704 | 1.5+ | 1.4+ | 2004 09 18 | 704 | 0.1− | 0.9− | |
| 2001 12 18 | 704 | 0.8− | 0.1+ | 2002 02 06 | 704 | 1.2+ | 1.0+ | 2004 09 18 | 704 | 0.3+ | 0.3+ | |
| 2001 12 18 | 704 | 1.3− | 0.8+ | 2002 02 06 | 704 | (0.1− | 3.5+) | 2004 09 18 | 704 | 0.1+ | 0.6+ | |
| 2001 12 19 | 704 | 0.2− | 0.0 | 2002 02 07 | 704 | (0.5+ | 2.1+) | 2005 11 21 | 644 | 0.5− | 0.1+ | |
| 2001 12 19 | 704 | 0.4− | 0.2+ | 2002 02 07 | 704 | (0.1− | 3.3+) | 2005 11 21 | 644 | 0.4− | 0.1+ | |
| 2001 12 19 | 704 | 0.1+ | 0.4+ | 2002 02 07 | 704 | (2.0− | 3.0+) | 2005 11 21 | 644 | 0.4− | 0.0 | |
| 2001 12 19 | 704 | 0.1− | 0.5+ | 2002 02 10 | 704 | 0.3+ | 0.8+ | 2005 11 28 | 703 | 0.2− | 0.1+ | |
| 2001 12 19 | 704 | 0.2− | 0.1− | 2002 02 10 | 704 | 0.3+ | 0.5+ | 2005 11 28 | 703 | 0.2+ | 0.2− | |
| 2001 12 20 | 704 | 0.3+ | 0.1− | 2002 02 10 | 704 | 0.0 | 0.1− | 2005 11 28 | 703 | 0.4− | 0.3+ | |
| 2001 12 20 | 704 | 1.0+ | 0.2− | 2002 02 10 | 704 | 0.3+ | 1.2+ | 2005 11 28 | 703 | 0.0 | 0.6− | |
| 2001 12 20 | 704 | 0.3− | 0.2− | 2004 08 25 | 691 | 0.4− | 0.3+ | 2005 12 01 | 644 | 0.2− | 0.1+ | |
| 2001 12 20 | 704 | 0.3+ | 0.1− | 2004 08 25 | 691 | 0.3− | 0.3+ | 2005 12 01 | 644 | 0.6− | 0.2+ | |
| 2001 12 20 | 704 | 0.5− | 0.1+ | 2004 08 25 | 691 | 0.3− | 0.2+ | 2005 12 01 | 644 | 0.3− | 0.2− | |
| 2002 01 08 | 704 | 0.1− | 0.4+ | 2004 09 08 | 704 | 0.4− | 1.3+ | 2006 01 05 | 703 | 0.3+ | 1.8− | |
| 2002 01 08 | 704 | 0.6+ | 0.1+ | 2004 09 08 | 704 | 0.5− | 0.2− | 2006 01 05 | 703 | 0.2− | 0.5− | |
| 2002 01 08 | 704 | 0.4+ | 1.2+ | 2004 09 08 | 704 | 0.0 | 0.1+ | 2006 01 05 | 703 | 0.2− | 0.2+ | |
| 2002 01 08 | 704 | 0.4+ | 0.9+ | 2004 09 08 | 704 | 1.1− | 0.3− | 2006 01 05 | 703 | 1.0− | 0.2+ | |
| 2002 01 08 | 704 | 0.6+ | 0.7+ | 2004 09 10 | 704 | 0.7− | 0.6− | 2006 01 06 | 704 | 0.2+ | 0.0 | |
| 2002 01 14 | 704 | 0.7− | 0.3+ | 2004 09 10 | 704 | 0.9+ | 0.8+ | 2006 01 06 | 704 | 0.9+ | 0.2− | |
| 2002 01 14 | 704 | 0.7− | 0.2+ | 2004 09 10 | 704 | 0.1− | 0.0 | 2006 01 06 | 704 | 0.8+ | 1.2− | |
| 2002 01 14 | 704 | 1.3− | 0.4− | 2004 09 10 | 704 | 0.1+ | 1.3− | 2006 01 06 | 704 | 1.2+ | 0.6+ | |
| 2002 01 14 | 704 | 0.4− | 0.1− | 2004 09 10 | 704 | 0.3+ | 0.9− | | | | | |

### 2001 YG$_{72}$ = 2004 RL$_{161}$ = 2005 VV$_{124}$

Id. Minor Planet Center (*MPO* 69059, unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.37338 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26075803 | $\omega$ | 93.60275 | | −0.46824968 | −0.88338497 | |
| $a$ | 2.4264849 | $\Omega$ | 24.34730 | | +0.79094370 | −0.42879636 | |
| $e$ | 0.1334433 | $i$ | 2.68595 | | +0.39389124 | −0.18911552 | |
| $P$ | 3.78 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 644 | 0.2− | 0.6+ | 2002 01 08 | 704 | 1.5+ | 1.1− | 2006 01 23 | 691 | 0.2+ | 0.5+ | |
| 2001 12 18 | 644 | 0.1− | 0.3+ | 2002 01 08 | 704 | (0.5+ | 2.1−) | 2006 01 23 | 691 | 0.3+ | 0.6+ | |
| 2001 12 18 | 644 | 0.2− | 0.1+ | 2002 01 14 | 704 | 0.3+ | 0.2− | 2006 01 23 | 691 | 0.3+ | 0.4+ | |
| 2001 12 18 | 704 | 0.2+ | 0.3+ | 2002 01 14 | 704 | 0.7+ | 1.2− | 2006 02 01 | 691 | 0.1+ | 0.1+ | |
| 2001 12 18 | 704 | 0.7− | 0.2+ | 2002 01 14 | 704 | 0.5+ | 0.4− | 2006 02 01 | 691 | 0.2+ | 0.3+ | |
| 2001 12 18 | 645 | 0.1− | 0.1− | 2004 09 10 | 691 | 0.7− | 0.5+ | 2006 02 01 | 691 | 0.3− | 0.3+ | |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2004 09 10 | 691 | 0.4− | 0.2+ | 2006 02 03 | 704 | 0.1− | 0.1− | |
| 2001 12 18 | 645 | 0.1− | 0.1− | 2004 09 10 | 691 | 0.0 | 0.4+ | 2006 02 03 | 704 | 0.6+ | 0.2+ | |
| 2001 12 18 | 704 | 0.2− | 1.0− | 2004 09 11 | 691 | 0.2− | 0.4+ | 2006 02 03 | 704 | 0.4+ | 0.7+ | |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2004 09 11 | 691 | 0.2+ | 0.1+ | 2006 02 03 | 704 | (0.1+ | 2.1+) | |
| 2001 12 19 | 704 | 0.1− | 0.2− | 2004 09 11 | 691 | 0.1+ | 0.5+ | 2006 02 21 | 699 | 0.0 | 0.1+ | |
| 2001 12 19 | 704 | 0.3+ | 0.9+ | 2005 11 04 | 691 | 0.0 | 0.3+ | 2006 02 21 | 699 | 0.0 | 0.1− | |
| 2001 12 19 | 704 | 0.3+ | 0.4+ | 2005 11 04 | 691 | 0.2+ | 0.1+ | 2006 02 21 | 699 | 0.1+ | 0.4+ | |
| 2002 01 08 | 704 | 0.9+ | 0.9− | 2005 11 04 | 691 | 0.2+ | 0.2− | 2006 02 21 | 699 | 0.1− | 1.7+ | |

### 2001 YD$_{76}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.62026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17168157 | $\omega$ | 70.16676 | | +0.44566070 | −0.89517197 | |
| $a$ | 3.2061729 | $\Omega$ | 353.35365 | | +0.79582340 | +0.39992178 | |
| $e$ | 0.1523183 | $i$ | 3.62973 | | +0.40994105 | +0.19679868 | |
| $P$ | 5.74 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3− | 0.5− | 2002 01 21 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3− | |
| 2000 09 24 | 704 | 0.6− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.0 | |
| 2000 09 24 | 704 | 0.5− | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.0 | |
| 2000 09 24 | 704 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.5+ | |
| 2000 09 24 | 704 | 1.2+ | 1.2+ | 2006 09 14 | 703 | 1.0− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | |
| 2001 12 18 | 704 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.5− |
| 2001 12 18 | 704 | 0.4+ | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.6− |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 2001 12 19 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2002 01 06 | 644 | 0.2− | 0.1+ | 2006 09 21 | A50 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2002 01 06 | 644 | 0.4− | 0.5+ | 2006 09 22 | A50 | 0.1− | 0.7+ | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2002 01 06 | 644 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 0.2+ | 0.6− | 2006 09 26 | 691 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 01 14 | 704 | 0.1− | 1.1− | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2002 01 14 | 704 | (0.2− | 2.4−) | 2006 09 29 | 704 | 1.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 01 14 | 704 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.6+ | 0.0 |
| 2002 01 14 | 704 | 0.3− | 1.3− | 2006 09 29 | 704 | 0.5− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 01 21 | 704 | 0.4− | 0.1− | 2006 09 29 | 704 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2002 01 21 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 704 | (0.2+ | 1.6+) | 2006 11 15 | G96 | 0.4+ | 0.0 |

### 2001 YG$_{81}$ = 2006 SC$_{302}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.87084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17516957 | $\omega$ | 269.33877 | | +0.86436169 | | −0.25927460 |
| $a$ | 3.1634692 | $\Omega$ | 105.61860 | | +0.38865588 | | +0.88814865 |
| $e$ | 0.3395802 | $i$ | 26.57685 | | −0.31910105 | | +0.37943202 |
| $P$ | 5.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 644 | 0.0 | 0.9+ | 2002 01 08 | 704 | 1.1− | 0.3+ | 2006 10 01 | E12 | 0.7− | 0.9− |
| 2001 12 17 | 644 | 0.1− | 0.5+ | 2002 01 08 | 704 | 0.1+ | 0.3+ | 2006 10 01 | E12 | 0.1+ | 0.0 |
| 2001 12 17 | 644 | 0.1− | 0.5+ | 2002 01 14 | 704 | 0.1− | 0.7− | 2006 10 01 | E12 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 1.1− | 2002 01 14 | 704 | 0.2+ | 0.5− | 2006 10 01 | E12 | 0.5− | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.0 | 2002 01 14 | 704 | 0.4− | 0.7− | 2006 10 12 | E12 | 0.3− | 0.2+ |
| 2001 12 18 | 704 | 0.9+ | 0.2− | 2002 01 14 | 704 | 0.4− | 0.2− | 2006 10 12 | E12 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 0.3− | 2002 01 21 | 704 | 0.4+ | 0.8+ | 2006 10 12 | E12 | 0.0 | 0.4− |
| 2001 12 19 | 704 | 0.3− | 0.5− | 2002 01 21 | 704 | 0.6+ | 0.1+ | 2006 10 12 | E12 | 0.5− | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 0.6+ | 2002 01 21 | 704 | (1.9+ | 0.8−) | 2006 10 30 | E12 | 0.4+ | 0.5− |
| 2001 12 19 | 704 | 0.2+ | 0.2− | 2006 09 26 | E12 | 0.0 | 0.8+ | 2006 11 19 | E12 | 0.6+ | 0.2− |
| 2002 01 08 | 704 | 0.2− | 0.4+ | 2006 09 26 | E12 | 0.5+ | 0.1+ | 2006 11 19 | E12 | 1.1− | 0.2+ |
| 2002 01 08 | 704 | 0.1− | 0.1+ | 2006 09 26 | E12 | 0.7+ | 0.1+ | 2006 11 19 | E12 | 0.4+ | 0.1+ |
| 2002 01 08 | 704 | 0.6− | 0.1− | 2006 09 26 | E12 | 0.1− | 0.4+ | 2006 11 19 | E12 | 0.5+ | 0.1− |

### 2001 YN$_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.64136 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36498017 | $\omega$ | 75.40805 | | +0.95400638 | | +0.01116078 |
| $a$ | 1.9392027 | $\Omega$ | 283.27030 | | −0.14954193 | | +0.88381673 |
| $e$ | 0.0857559 | $i$ | 17.92653 | | +0.25982502 | | +0.46770015 |
| $P$ | 2.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.4+ | 0.3+ | 2002 01 08 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.7+ | 0.6+ |
| 2001 12 18 | 704 | 0.4+ | 0.7− | 2002 01 08 | 691 | 0.8− | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.9+ |
| 2001 12 18 | 704 | 0.8+ | 0.8− | 2002 01 08 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 704 | (1.9+ | 0.8−) |
| 2001 12 18 | 704 | (1.3+ | 1.6−) | 2002 01 08 | 691 | 0.8− | 0.1+ | 2006 09 19 | 704 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.8+ | 1.0− | 2002 01 08 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 704 | 0.6+ | 0.4+ |
| 2001 12 19 | 291 | 0.2+ | 0.2+ | 2002 01 09 | 704 | 0.5− | 1.0+ | 2006 09 19 | 704 | 0.6+ | 0.5− |
| 2001 12 19 | 291 | 0.2+ | 0.2+ | 2002 01 09 | 704 | (0.5+ | 2.2+) | 2006 09 19 | 704 | (1.6− | 0.1+) |
| 2001 12 19 | 291 | 0.3+ | 0.3+ | 2002 01 09 | 704 | 0.4− | 1.0+ | 2006 10 04 | 703 | 0.2+ | 0.9+ |
| 2001 12 19 | 704 | 0.9+ | 0.1− | 2002 01 09 | 704 | 0.2− | 0.8+ | 2006 10 04 | 703 | 0.2− | 0.3− |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2002 01 09 | 704 | 0.0 | 0.6+ | 2006 10 04 | 703 | 0.2+ | 0.3+ |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2002 01 13 | 704 | 0.1+ | 0.8− | 2006 10 04 | 703 | 0.6− | 0.2+ |
| 2001 12 19 | 704 | 0.4+ | 0.1− | 2002 01 13 | 704 | 0.1+ | 1.0− | 2006 10 16 | 704 | 0.6− | 0.4− |
| 2001 12 20 | 291 | 0.5− | 0.0 | 2002 01 13 | 704 | 1.0+ | 1.2− | 2006 10 16 | 704 | 0.1− | 0.4− |
| 2001 12 20 | 291 | 0.2− | 0.1− | 2002 01 13 | 704 | 0.1− | 1.3− | 2006 10 16 | 704 | 0.7+ | 0.4+ |
| 2001 12 20 | 291 | 0.3− | 0.1+ | 2002 01 14 | 704 | 1.0+ | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2002 01 05 | 608 | 0.0 | 0.8− | 2002 01 14 | 704 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.5− | 0.4− |
| 2002 01 05 | 608 | 0.1+ | 0.6− | 2002 01 14 | 704 | 0.5+ | 0.6+ | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2002 01 05 | 608 | 0.4+ | 0.5− | 2002 01 14 | 704 | 1.3+ | 0.3+ | 2006 11 21 | 703 | 0.6− | 0.2+ |
| 2002 01 07 | 644 | 0.1− | 0.3+ | 2005 03 02 | 704 | 0.7− | 0.9+ | 2006 11 21 | 703 | 1.3+ | 1.0− |
| 2002 01 07 | 644 | 0.0 | 0.1+ | 2005 03 02 | 704 | 0.2+ | 0.3+ | 2006 11 21 | 703 | 0.1− | 0.6+ |
| 2002 01 07 | 644 | 0.1− | 0.3+ | 2005 03 02 | 704 | 0.9+ | 0.6− | 2006 11 21 | 703 | 1.4− | 0.4− |
| 2002 01 08 | 691 | 0.2− | 0.6− | 2006 09 17 | 704 | 0.2− | 0.2+ | | | | |

### 2001 YP$_{93}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.33092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17671648 | $\omega$ | 299.38582 | | +0.16189020 | | −0.98666442 |
| $a$ | 3.1449809 | $\Omega$ | 141.28602 | | +0.91447599 | | +0.14357390 |
| $e$ | 0.1664296 | $i$ | 1.54645 | | +0.37084395 | | +0.07668026 |
| $P$ | 5.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 01 13 | 691 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.3+ | 1.1+ |
| 2000 10 02 | 645 | 0.1+ | 0.2− | 2002 01 13 | 704 | (1.8+ | 1.5+) | 2006 11 02 | 703 | 0.1− | 0.3+ |
| 2001 12 17 | 291 | 0.1+ | 0.5− | 2002 01 13 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2001 12 17 | 291 | 0.2− | 0.6− | 2002 02 11 | 704 | 0.9− | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 12 17 | 291 | 0.1+ | 0.2− | 2002 02 11 | 704 | 0.1+ | 1.1+ | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2002 02 11 | 704 | 0.7− | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 12 17 | 704 | 0.1+ | 0.0 | 2002 02 11 | 704 | 0.0 | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2001 12 17 | 704 | 1.2+ | 0.6+ | 2005 07 05 | G96 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.5− | 1.0+ |
| 2001 12 19 | 691 | 0.4− | 0.0 | 2005 07 05 | G96 | 0.2− | 0.5+ | 2006 11 10 | 644 | 0.6+ | 0.4+ |
| 2001 12 19 | 691 | 0.3− | 0.2+ | 2005 07 05 | G96 | 0.4− | 0.7+ | 2006 11 10 | 644 | 0.3+ | 0.8+ |
| 2001 12 19 | 691 | 0.7− | 0.1+ | 2005 07 05 | G96 | 0.1− | 0.7+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2002 01 12 | 704 | 0.5− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | (1.7+ | 0.3−) |
| 2002 01 12 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.5− | 0.2+ | 2006 11 11 | 703 | (2.6+ | 0.2+) |
| 2002 01 12 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 01 12 | 704 | 1.1+ | 0.7− | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 1.4+ | 0.4− |
| 2002 01 13 | 704 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 18 | 704 | (2.0+ | 0.0 ) |
| 2002 01 13 | 704 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.1− | 0.1− |
| 2002 01 13 | 704 | 1.3+ | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.2− | 2006 11 18 | 704 | 1.0+ | 0.1+ |
| 2002 01 13 | 691 | 0.2+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.6+ | 2006 11 18 | 704 | (0.1+ | 2.1+) |
| 2002 01 13 | 704 | (1.5− | 0.1−) | 2006 11 02 | 703 | 0.4− | 0.8+ | | | | |

### 2001 YN$_{94}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.62214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17760579 | $\omega$ | 236.48746 | | −0.95808229 | | −0.26764290 |
| $a$ | 3.1344737 | $\Omega$ | 287.80778 | | +0.28529816 | | −0.85876100 |
| $e$ | 0.1332493 | $i$ | 6.16240 | | +0.02613993 | | −0.43691740 |
| $P$ | 5.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 291 | 0.0 | 0.0 | 2002 01 09 | 704 | 1.8+ | 1.1− | 2002 01 21 | 691 | 0.2+ | 0.0 |
| 2001 12 19 | 291 | 0.0 | 0.2+ | 2002 01 13 | 691 | 0.2− | 0.0 | 2002 01 21 | 691 | 0.4+ | 0.0 |
| 2001 12 19 | 291 | 0.0 | 0.3− | 2002 01 13 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.1+ |
| 2001 12 20 | 291 | 0.3− | 0.0 | 2002 01 13 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2001 12 20 | 291 | 0.2− | 0.1+ | 2002 01 13 | 704 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2001 12 20 | 291 | 0.2− | 0.1+ | 2002 01 13 | 704 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2001 12 22 | 291 | 0.1− | 0.1− | 2002 01 13 | 704 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2001 12 22 | 291 | 0.5− | 0.2+ | 2002 01 13 | 704 | 0.1+ | 0.9− | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2001 12 22 | 291 | 0.3− | 0.3+ | 2002 01 13 | 704 | 0.9+ | 0.9+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2002 01 09 | 704 | 1.2+ | 0.0 | 2002 01 14 | 645 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2002 01 09 | 704 | 1.4+ | 0.2+ | 2002 01 14 | 645 | 0.0 | 0.1− | | | | |
| 2002 01 09 | 704 | 0.9+ | 0.4+ | 2002 01 21 | 691 | 0.0 | 0.1+ | | | | |

### 2001 YV$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.45305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24421233 | $\omega$ | 286.88349 | | +0.54112614 | | −0.83782519 |
| $a$ | 2.5348815 | $\Omega$ | 130.13234 | | +0.80307396 | | +0.48932525 |
| $e$ | 0.2929896 | $i$ | 5.42842 | | +0.24950895 | | +0.24209450 |
| $P$ | 4.04 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.1− | 0.2− | 2001 12 20 | 704 | 0.6+ | 1.5− | 2005 11 25 | 703 | (3.8+ | 0.6−) |
| 2001 11 17 | 704 | 0.5− | 0.6+ | 2001 12 20 | 704 | (0.2+ | 2.8−) | 2005 11 25 | 703 | 0.6+ | 0.1+ |
| 2001 11 17 | 704 | 0.2+ | 0.2+ | 2005 11 20 | 644 | 0.1− | 0.2− | 2005 11 25 | 703 | 0.5− | 1.1− |
| 2001 11 17 | 704 | 0.6− | 0.2+ | 2005 11 20 | 644 | 0.2+ | 0.1+ | 2005 11 30 | 644 | 0.0 | 0.1− |
| 2001 11 17 | 704 | 0.1− | 0.9+ | 2005 11 20 | 644 | 1.0+ | 0.0 | 2005 11 30 | 644 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.0 | 0.8+ | 2005 11 25 | 703 | 0.2+ | 0.2− | 2005 11 30 | 644 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 1.0− | 1.1+ | 2005 11 25 | 703 | 1.4− | 1.1+ | 2006 01 31 | G96 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.7+ | 1.3+ | 2005 11 25 | 703 | 0.4− | 1.0− | 2006 01 31 | G96 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 0.3− | 0.6+ | 2005 11 25 | 703 | 1.1+ | 0.6− | 2006 01 31 | G96 | 0.0 | 0.3− |
| 2001 12 20 | 704 | 0.6+ | 0.8− | 2005 11 25 | 703 | 0.1− | 0.8− | 2006 01 31 | G96 | 0.1+ | 0.3− |

## 2001 $YD_{97}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.83061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18077176 | $\omega$ | 112.11482 | | +0.97982768 | +0.14412849 | |
| $a$ | 3.0977688 | $\Omega$ | 239.84143 | | −0.18187600 | +0.93019296 | |
| $e$ | 0.1958414 | $i$ | 9.21324 | | +0.08281811 | +0.33759151 | |
| $P$ | 5.45 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.5− | 0.5− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 11 10 | 683 | 0.1− | 0.4− |
| 2001 10 24 | 704 | 0.8− | 0.7− | 2006 09 16 | 703 | 0.4+ | 0.6+ | 2006 11 10 | 683 | 0.1+ | 0.7− |
| 2001 10 24 | 704 | 0.5− | 0.3+ | 2006 09 16 | 703 | 0.4+ | 0.6+ | 2006 11 10 | 683 | 0.1+ | 0.1+ |
| 2001 10 24 | 704 | 0.0 | 0.6− | 2006 09 16 | 703 | 0.1− | 0.3− | 2006 11 11 | 683 | 0.5+ | 0.1− |
| 2001 10 24 | 704 | 0.2− | 1.1− | 2006 09 20 | 699 | 0.5+ | 0.2+ | 2006 11 11 | 683 | 1.4− | 0.7− |
| 2001 11 09 | 704 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.5+ | 0.1+ | 2006 11 11 | 683 | 0.7+ | 0.5+ |
| 2001 11 09 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.3+ | 2006 11 13 | 683 | 1.0+ | 0.7− |
| 2001 11 09 | 704 | 0.6− | 0.1− | 2006 09 20 | 699 | 0.0 | 0.1+ | 2006 11 13 | 683 | 0.7+ | 0.9+ |
| 2001 11 17 | 691 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.8− | 0.2− | 2006 11 13 | 683 | 0.5+ | 0.2− |
| 2001 11 17 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.5− | 0.7+ |
| 2001 11 17 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 703 | (2.1+ | 2.6−) | 2006 11 15 | 704 | 0.0 | 0.7+ |
| 2001 12 14 | 704 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.3− | 2006 11 15 | 704 | 0.4+ | 0.3− |
| 2001 12 14 | 704 | 0.1− | 0.5+ | 2006 10 04 | 703 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.0 | 0.6+ |
| 2001 12 14 | 704 | 0.1+ | 0.3+ | 2006 10 04 | 703 | 0.7− | 0.8− | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2006 10 04 | 703 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 2001 12 14 | 704 | 0.6− | 0.6+ | 2006 10 04 | 703 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.9+ |
| 2001 12 17 | 704 | (2.0− | 1.0−) | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.8+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2001 12 17 | 704 | 0.0 | 1.3− | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2001 12 17 | 704 | 0.2− | 1.1− | 2006 10 17 | 703 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2001 12 20 | 704 | 1.0− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.9+ | 0.0 |
| 2001 12 20 | 704 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.6− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2001 12 20 | 704 | 1.0+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.0 |
| 2001 12 20 | 704 | 0.5+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.8− | 0.1+ |
| 2002 01 09 | 704 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.3− | 0.5− | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2002 01 09 | 704 | 0.7+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.1− |
| 2002 01 09 | 704 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 26 | 958 | 1.2− | 0.8− |
| 2002 01 09 | 704 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.4− | 0.0 | 2006 11 26 | 958 | 0.1+ | 0.5− |
| 2002 01 09 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 26 | 958 | 0.3− | 0.2− |
| 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | | | | |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | | | |

## 2001 $YO_{97}$ = 2006 $VS_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.50880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19285557 | $\omega$ | 198.63421 | | +0.28791662 | −0.95718331 | |
| $a$ | 2.9669798 | $\Omega$ | 234.64312 | | +0.88325126 | +0.27755050 | |
| $e$ | 0.0932476 | $i$ | 2.11290 | | +0.37009625 | +0.08225471 | |
| $P$ | 5.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.6− | 0.2− | 2006 11 10 | 691 | 0.6− | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2001 12 17 | 704 | 0.9− | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2001 12 17 | 704 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2001 12 20 | 704 | 1.2+ | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 2001 12 20 | 704 | 0.3− | 0.6+ | 2006 11 14 | 691 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2001 12 20 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2001 12 23 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2001 12 23 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.1+ | 2006 11 27 | 703 | 1.0+ | 0.4− |
| 2001 12 23 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.9+ | 2006 11 27 | 703 | 0.7− | 0.8+ |
| 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 23 | 291 | 0.7− | 0.1− | 2006 11 27 | 703 | 0.7+ | 0.1+ |
| 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 23 | 291 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.4− |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 23 | 291 | 0.3+ | 0.1+ | | | | |
| 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.3− | | | | |

## 2001 $YO_{98}$ = 2006 $TY_{100}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.91150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18110209 | $\omega$ | 250.47231 | | −0.75307738 | −0.65484037 | |
| $a$ | 3.0940007 | $\Omega$ | 248.56481 | | +0.62639092 | −0.68398510 | |
| $e$ | 0.1073140 | $i$ | 3.92443 | | +0.20126819 | −0.32147856 | |
| $P$ | 5.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | (1.6+ | 2.1−) | 2001 12 17 | 704 | 1.3+ | 0.0 | 2006 10 19 | 691 | 0.5+ | 0.5− |
| 2001 11 20 | 704 | 0.7+ | 0.8− | 2001 12 17 | 704 | 0.7− | 0.8+ | 2006 10 19 | 691 | 0.7+ | 0.0 |
| 2001 11 20 | 704 | 0.6+ | 0.6− | 2001 12 17 | 704 | 0.8+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2001 11 20 | 704 | 0.6+ | 0.7− | 2001 12 20 | 704 | 1.2− | 0.7− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2001 12 20 | 704 | 0.2+ | 0.7− | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2001 11 21 | 704 | 0.5+ | 0.2+ | 2001 12 20 | 704 | 0.5− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.8− | 0.5− | 2001 12 20 | 704 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 12 12 | 644 | 0.4− | 0.8+ | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 12 12 | 644 | 0.4− | 1.0+ | 2006 10 15 | 691 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2001 12 12 | 644 | 0.1− | 1.2+ | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2001 12 14 | 704 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 12 14 | 704 | 0.2− | 0.6− | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2001 12 14 | 704 | (3.1− | 2.4+) | 2006 10 19 | 691 | 0.3− | 0.1− | | | | |
| 2001 12 14 | 704 | 0.5− | 0.7− | 2006 10 19 | 691 | 0.0 | 0.2+ | | | | |

## 2001 $YD_{99}$ = 2006 $SF_{277}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.09792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17105225 | $\omega$ | 296.27501 | | +0.91921254 | −0.39188273 | |
| $a$ | 3.2140319 | $\Omega$ | 86.81708 | | +0.37360492 | +0.83717667 | |
| $e$ | 0.1456894 | $i$ | 2.20534 | | +0.12436907 | +0.38152738 | |
| $P$ | 5.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.2+ | 0.5− | 2002 01 12 | 291 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2001 12 17 | 704 | 0.4+ | 0.1− | 2002 01 12 | 291 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.4− |
| 2001 12 17 | 704 | 0.5+ | 0.5+ | 2006 08 19 | 291 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2001 12 17 | 704 | 0.7+ | 0.7+ | 2006 08 19 | 291 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.5− | 0.3− |
| 2001 12 20 | 704 | 0.0 | 0.4+ | 2006 08 19 | 291 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.3+ | 0.8+ |
| 2001 12 20 | 704 | 0.4+ | 0.5− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.5− |
| 2001 12 20 | 704 | 0.6− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | (0.9− | 2.4+) |
| 2002 01 12 | 291 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | (0.3− | 2.1+) |

## 2001 $YD_{102}$ = 2006 $UV_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.18141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18692692 | $\omega$ | 287.31775 | | +0.35108683 | −0.93609927 | |
| $a$ | 3.0293874 | $\Omega$ | 142.10674 | | +0.87174355 | +0.31845395 | |
| $e$ | 0.1867408 | $i$ | 1.99290 | | +0.34176194 | +0.14934940 | |
| $P$ | 5.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 11 12 | G96 | 0.4+ | 0.1− |
| 1995 09 22 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 1995 09 22 | 691 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.4+ | 0.0 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 691 | 0.2+ | 0.5− | 2006 10 17 | G96 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.3− | 2001 12 09 | 704 | 0.2− | 0.3− |
| 2000 08 03 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.3− | 2001 12 09 | 704 | 0.6+ | 0.0 |
| 2000 08 03 | 691 | 0.2+ | 0.5− | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.1+ | 2001 12 09 | 704 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.2− | 2001 12 09 | 704 | 1.2+ | 0.9− |
| 2001 12 14 | 704 | 1.1+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 14 | 704 | 1.1− | 0.3+ | 2001 12 09 | 704 | 0.5− | 0.4− |
| 2001 12 14 | 704 | 0.4− | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.7+ | 0.6− | 2001 12 14 | 704 | 0.9+ | 0.3+ |
| 2001 12 14 | 704 | 0.6− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.9− | 1.0+ | 2001 12 14 | 704 | 0.7+ | 0.9+ |
| 2001 12 14 | 704 | 1.2− | 0.2+ | 2006 10 22 | 691 | 0.6− | 0.1+ | 2006 11 14 | 704 | 1.2+ | 0.8+ | 2001 12 14 | 704 | 0.2+ | 1.0+ |
| 2001 12 17 | 704 | 0.1− | 1.0+ | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.4+ | 2001 12 14 | 704 | 0.2+ | 1.4+ |
| 2001 12 17 | 704 | (0.2+ | 1.7+) | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.2− | 1.2− | 2001 12 14 | 704 | 0.3− | 1.5+ |
| 2001 12 17 | 704 | (0.9+ | 2.0+) | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.4− | 2001 12 18 | 699 | 0.0 | 0.4− |
| 2001 12 20 | 704 | 1.4+ | 1.1− | 2006 11 09 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | (2.0+ | 7.0−) | 2001 12 18 | 699 | 0.1+ | 0.3+ |
| 2001 12 20 | 704 | 0.7+ | 0.8− | 2006 11 09 | 644 | 0.4+ | 0.4+ | 2006 11 28 | 704 | 0.4+ | 0.7− | 2001 12 18 | 699 | 0.0 | 0.5+ |
| 2001 12 20 | 704 | 0.2− | 1.4− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.8− | 0.6+ | | | | |
| 2001 12 20 | 704 | 0.8− | 1.0− | 2006 11 11 | 703 | 0.6+ | 0.3− | 2006 11 28 | 704 | 0.1− | 0.7+ | | | | |
| 2001 12 20 | 704 | 0.6+ | 0.6− | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.4− | 0.3+ | | | | |
| 2006 10 16 | 703 | 0.8+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.9+ | 0.8+ | | | | |
| 2006 10 16 | 703 | (1.7+ | 0.1−) | 2006 11 11 | 703 | 0.7− | 0.5+ | | | | | | | | |
| 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.1− | | | | | | | | |

### 2001 YJ$_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.15799 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18048478 | $\omega$ | 314.97483 | | +0.65072465 | | −0.67956695 |
| $a$ | 3.1010516 | $\Omega$ | 91.19229 | | +0.75637949 | | +0.54094993 |
| $e$ | 0.2996943 | $i$ | 19.80472 | | +0.06668965 | | +0.49554206 |
| $P$ | 5.46 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.5− | 0.1+ | 2002 01 20 | 699 | 0.4− | 0.8− | 2006 09 30 | 704 | 0.1+ | 0.6+ | 2001 12 22 | 704 | 0.5+ | 0.4− |
| 2001 12 14 | 704 | 0.1+ | 0.0 | 2002 01 20 | 699 | 0.9− | 0.5+ | 2006 09 30 | 704 | 0.1+ | 0.2+ | 2001 12 22 | 704 | 0.7+ | 0.3− |
| 2001 12 14 | 704 | 0.1+ | 0.5− | 2002 01 23 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 704 | 0.3+ | 0.2− | 2001 12 22 | 704 | 1.4+ | 0.5+ |
| 2001 12 14 | 704 | (1.0+ | 2.6−) | 2002 01 23 | 704 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.5+ | 2001 12 22 | 704 | 0.9+ | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 1.5− | 2002 01 23 | 704 | 0.9− | 0.6+ | 2006 10 28 | 703 | 0.1+ | 0.1+ | 2001 12 22 | 704 | 0.6+ | 0.3− |
| 2001 12 22 | 704 | 0.9− | 0.6+ | 2002 01 23 | 704 | 0.3− | 0.6+ | 2006 10 28 | 703 | 0.1+ | 0.0 | 2002 01 14 | 644 | 0.0 | 0.1+ |
| 2001 12 22 | 704 | 1.1− | 0.6− | 2002 02 02 | 644 | 0.3+ | 0.1− | 2006 10 28 | 703 | 0.2− | 0.3+ | 2002 01 14 | 644 | 0.0 | 0.1− |
| 2001 12 22 | 704 | 0.4+ | 0.5− | 2002 02 02 | 644 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.0 | 2002 01 14 | 644 | 0.0 | 0.0 |
| 2001 12 23 | 704 | 0.2+ | 0.8+ | 2002 02 02 | 644 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.2− | 0.2+ | 2002 01 14 | 644 | 0.1− | 0.2+ |
| 2001 12 23 | 704 | 0.7− | 0.0 | 2002 02 12 | 644 | 0.3+ | 0.4− | 2006 11 13 | 703 | 0.1+ | 0.7− | 2002 01 14 | 644 | 0.2− | 0.0 |
| 2001 12 23 | 704 | 0.7+ | 1.0+ | 2002 02 12 | 644 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.0 | 0.9− | 2002 01 14 | 644 | 0.0 | 0.1− |
| 2001 12 23 | 704 | 0.2+ | 0.1− | 2002 02 12 | 644 | 0.1+ | 0.3− | 2006 11 19 | 703 | 0.3− | 0.5− | 2002 01 14 | 644 | 0.0 | 0.0 |
| 2001 12 23 | 704 | 0.4+ | 0.0 | 2006 08 25 | E12 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.6− | 0.3− | 2002 01 21 | 699 | 0.4+ | 0.1− |
| 2002 01 11 | 699 | 1.5+ | 0.9− | 2006 08 25 | E12 | 0.2+ | 0.5− | 2006 11 19 | 703 | 0.2+ | 0.1− | 2002 01 21 | 699 | 0.3+ | 0.4− |
| 2002 01 11 | 699 | (1.6+ | 0.6+) | 2006 08 25 | E12 | 0.7+ | 1.4− | 2006 11 19 | 703 | 0.3+ | 0.1− | 2002 01 21 | 699 | 0.9+ | 0.5+ |
| 2002 01 11 | 699 | 0.5+ | 0.4− | 2006 08 25 | E12 | 0.5+ | 0.1+ | 2006 11 21 | 704 | 1.6+ | 0.3+ | 2002 01 21 | 699 | 1.2− | 0.4+ |
| 2002 01 11 | 699 | 0.2+ | 1.1+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.7+ | | | | |
| 2002 01 14 | 644 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.5+ | | | | |
| 2002 01 14 | 644 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.3− | 0.4+ | | | | |
| 2002 01 14 | 644 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.7+ | | | | |
| 2002 01 20 | 699 | 0.5+ | 1.1− | 2006 09 30 | 704 | 0.5− | 0.2+ | | | | | | | | |
| 2002 01 20 | 699 | (0.7+ | 1.7+) | 2006 09 30 | 704 | 0.9− | 0.6− | | | | | | | | |

### 2001 YV$_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.38391 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28570352 | $\omega$ | 181.25540 | | −0.81776391 | | −0.56572365 |
| $a$ | 2.2831038 | $\Omega$ | 323.62698 | | +0.52960462 | | −0.66757250 |
| $e$ | 0.1562973 | $i$ | 10.28848 | | +0.22534669 | | −0.48404929 |
| $P$ | 3.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.3− | 0.0 | 2001 12 18 | 699 | 0.4− | 0.5+ | 2002 02 04 | 644 | 0.3+ | 0.7+ | 2001 12 09 | 704 | 0.2− | 0.3− |
| 2001 12 09 | 704 | 0.4− | 0.3− | 2001 12 20 | 644 | 0.3+ | 0.1− | 2002 02 04 | 644 | 0.3− | 0.5+ | 2001 12 09 | 704 | 0.6+ | 0.0 |
| 2001 12 09 | 704 | 0.1− | 0.4− | 2001 12 20 | 644 | 0.2+ | 0.1− | 2002 02 08 | 704 | (1.3+ | 3.5−) | 2001 12 09 | 704 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.5− | 0.4− | 2001 12 20 | 644 | 0.2+ | 0.0 | 2002 02 08 | 704 | 0.3+ | 1.7− | 2001 12 09 | 704 | 1.2+ | 0.9− |
| 2001 12 09 | 704 | 0.7+ | 0.2− | 2001 12 22 | 704 | 0.3− | 0.0 | 2002 02 08 | 704 | 0.6+ | 1.4− | 2001 12 09 | 704 | 0.5− | 0.4− |
| 2001 12 09 | 704 | 0.2− | 0.3− | 2001 12 22 | 704 | 0.2+ | 0.1− | 2004 11 09 | 703 | 1.1− | 0.7− | 2001 12 14 | 704 | 0.9+ | 0.3+ |
| 2001 12 09 | 704 | 0.6+ | 0.0 | 2001 12 22 | 704 | 0.3− | 0.4− | 2004 11 09 | 703 | 0.9+ | 0.2− | 2001 12 14 | 704 | 0.7+ | 0.9+ |
| 2001 12 09 | 704 | 0.0 | 0.0 | 2001 12 22 | 704 | 0.0 | 0.2− | 2004 11 09 | 703 | 1.0+ | 0.3+ | 2001 12 14 | 704 | 0.2+ | 1.0+ |
| 2001 12 09 | 704 | 1.2+ | 0.9− | 2001 12 22 | 704 | 0.3+ | 0.0 | 2004 11 09 | 703 | 0.3− | 0.2− | 2001 12 14 | 704 | 0.2+ | 1.4+ |
| 2001 12 09 | 704 | 0.5− | 0.4− | 2002 01 04 | 644 | 0.0 | 0.0 | 2006 05 04 | E12 | 0.3+ | 0.1+ | 2001 12 14 | 704 | 0.3− | 1.5+ |
| 2001 12 14 | 704 | 0.9+ | 0.3+ | 2002 01 04 | 644 | 0.3+ | 0.4− | 2006 05 04 | E12 | 0.2+ | 0.2− | 2001 12 18 | 699 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 0.7+ | 0.9+ | 2002 01 04 | 644 | 0.0 | 0.1− | 2006 05 04 | E12 | 0.4− | 0.2− | 2001 12 18 | 699 | 0.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 1.0+ | 2002 01 21 | 704 | 0.6− | 0.1− | 2006 05 04 | E12 | 0.4+ | 0.2+ | 2001 12 18 | 699 | 0.0 | 0.5+ |
| 2001 12 14 | 704 | 0.2+ | 1.4+ | 2002 01 21 | 704 | 0.7− | 0.4+ | 2006 05 30 | E12 | 0.4− | 0.1+ | | | | |
| 2001 12 14 | 704 | 0.3− | 1.5+ | 2002 01 21 | 704 | 0.7+ | 0.3+ | 2006 05 30 | E12 | 0.3+ | 0.2+ | | | | |
| 2001 12 18 | 699 | 0.0 | 0.4− | 2002 01 21 | 704 | 0.2− | 0.2+ | 2006 05 30 | E12 | 0.5− | 0.1+ | | | | |
| 2001 12 18 | 699 | 0.1+ | 0.3+ | 2002 01 21 | 704 | 1.8− | 1.1− | 2006 05 30 | E12 | 0.1+ | 0.4− | | | | |
| 2001 12 18 | 699 | 0.0 | 0.5+ | 2002 02 04 | 644 | 0.9− | 0.2+ | | | | | | | | |

### 2001 YO$_{111}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.75716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17339748 | $\omega$ | 36.94204 | | −0.47054495 | | −0.83647985 |
| $a$ | 3.1849861 | $\Omega$ | 82.72396 | | +0.72667327 | | −0.54792198 |
| $e$ | 0.1499785 | $i$ | 16.44840 | | +0.50053312 | | +0.00910806 |
| $P$ | 5.68 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 699 | 0.3− | 1.5− | 2002 01 23 | 704 | 0.0 | 0.0 | 2003 06 02 | 691 | 0.0 | 0.0 | 2001 12 09 | 699 | (2.2+ | 0.9−) |
| 2001 12 18 | 699 | 0.8− | 0.7− | 2002 01 23 | 704 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.7− | 2001 12 09 | 699 | 0.8+ | 0.2− |
| 2001 12 18 | 699 | 0.2− | 0.1+ | 2002 01 23 | 704 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.7+ | 2001 12 09 | 699 | 1.0− | 0.7− |
| 2001 12 18 | 699 | 0.8− | 0.0 | 2002 01 23 | 704 | 0.4− | 0.3− | 2006 10 16 | 703 | 1.5+ | 0.1− | 2001 12 09 | 699 | (1.6+ | 0.8−) |
| 2001 12 19 | 644 | 0.3+ | 1.0+ | 2002 01 23 | 704 | 0.1− | 0.9− | 2006 10 16 | 703 | 0.9+ | 0.2− | 2001 12 18 | 704 | 0.4+ | 0.6+ |
| 2001 12 19 | 644 | 0.4+ | 1.3+ | 2002 02 07 | 699 | 0.5− | 0.5− | 2006 10 22 | 703 | 0.9+ | 0.6− | 2001 12 18 | 644 | 0.2− | 0.4− |
| 2001 12 19 | 644 | 0.4+ | 1.2+ | 2002 02 07 | 699 | 0.8− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.4+ | 2001 12 18 | 644 | 0.2− | 0.3− |
| 2001 12 22 | 704 | 0.5+ | 0.4− | 2002 02 07 | 699 | 0.6− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.1+ | 2001 12 18 | 644 | 0.0 | 0.5− |
| 2001 12 22 | 704 | 0.7+ | 0.3− | 2002 02 07 | 699 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.0 | 2001 12 18 | 704 | 0.4+ | 0.2+ |
| 2001 12 22 | 704 | 1.4+ | 0.5+ | 2002 02 10 | 704 | 0.3− | 0.2− | 2006 10 30 | 703 | 0.8− | 0.4+ | 2001 12 18 | 644 | 0.2− | 0.3− |
| 2001 12 22 | 704 | 0.9+ | 0.3+ | 2002 02 10 | 704 | 0.1− | 0.3− | 2006 10 30 | 703 | 0.5+ | 0.3− | 2001 12 18 | 704 | 0.4+ | 0.2+ |
| 2001 12 22 | 704 | 0.6+ | 0.3− | 2002 02 10 | 704 | 0.1+ | 0.2− | 2006 10 30 | 703 | 0.8− | 0.8− | 2001 12 18 | 644 | 0.0 | 0.5− |
| 2002 01 14 | 644 | 0.0 | 0.1+ | 2002 02 10 | 704 | 0.0 | 0.4− | 2006 10 30 | 703 | 0.4+ | 0.8− | 2001 12 18 | 704 | 1.5+ | 0.6+ |
| 2002 01 14 | 644 | 0.0 | 0.1− | 2002 02 10 | 704 | 0.2+ | 0.2− | 2006 11 13 | 703 | 1.1− | 0.0 | 2001 12 18 | 704 | 1.1+ | 1.1+ |
| 2002 01 14 | 644 | 0.0 | 0.0 | 2002 02 12 | 644 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 1.0+ | | | | |
| 2002 01 14 | 644 | 0.2− | 0.0 | 2002 02 12 | 644 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.0 | | | | |
| 2002 01 14 | 644 | 0.0 | 0.1− | 2002 02 12 | 644 | 0.2− | 0.2+ | 2006 11 13 | 703 | 1.2− | 0.2− | | | | |
| 2002 01 14 | 644 | 0.0 | 0.0 | 2002 02 19 | 704 | 0.0 | 1.0+ | 2006 11 19 | 703 | 0.4− | 0.6+ | | | | |
| 2002 01 21 | 699 | 0.4+ | 0.1− | 2002 02 19 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 703 | 0.6− | 0.2+ | | | | |
| 2002 01 21 | 699 | 0.3+ | 0.4− | 2002 02 19 | 704 | 0.8+ | 0.4− | 2006 11 19 | 703 | 0.0 | 0.1− | | | | |
| 2002 01 21 | 699 | 0.9+ | 0.5+ | 2003 06 02 | 691 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.2− | 0.5+ | | | | |
| 2002 01 21 | 699 | 1.2− | 0.4+ | 2003 06 02 | 691 | 0.3+ | 0.0 | | | | | | | | |

### 2001 YW$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.89869 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17646045 | $\omega$ | 5.72900 | | −0.19526373 | | −0.96612709 |
| $a$ | 3.1480222 | $\Omega$ | 95.61517 | | +0.89295502 | | −0.24628189 |
| $e$ | 0.2180753 | $i$ | 9.76140 | | +0.40559019 | | +0.07709522 |
| $P$ | 5.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 699 | (2.2+ | 0.9−) | 2002 01 08 | 704 | 0.3+ | 0.2+ | 2002 02 08 | 704 | 1.5− | 1.2− | 2001 12 18 | 704 | 0.4+ | 0.6+ |
| 2001 12 09 | 699 | 0.8+ | 0.2− | 2002 01 08 | 704 | 0.4− | 1.1+ | 2002 02 08 | 704 | (1.9− | 1.0−) | 2001 12 18 | 644 | 0.2− | 0.4− |
| 2001 12 09 | 699 | 1.0− | 0.7− | 2002 01 08 | 704 | 0.3− | 0.5+ | 2002 02 08 | 704 | 0.3+ | 0.7− | 2001 12 18 | 644 | 0.2− | 0.3− |
| 2001 12 09 | 699 | (1.6+ | 0.8−) | 2002 01 08 | 704 | 0.3+ | 0.5+ | 2002 02 12 | 704 | 0.4− | 0.3+ | 2001 12 18 | 704 | 0.4+ | 0.2+ |
| 2001 12 18 | 704 | 0.4+ | 0.6+ | 2002 01 11 | 699 | 0.1+ | 0.4− | 2002 02 12 | 704 | 0.3− | 0.9+ | 2001 12 18 | 644 | 0.0 | 0.5− |
| 2001 12 18 | 644 | 0.2− | 0.4− | 2002 01 11 | 699 | 0.1+ | 0.3− | 2002 02 12 | 704 | 0.2+ | 0.7+ | 2001 12 18 | 704 | 1.5+ | 0.6+ |
| 2001 12 18 | 644 | 0.2− | 0.3− | 2002 01 11 | 699 | 0.1+ | 0.1− | 2002 02 12 | 704 | 0.1+ | 0.1− | 2001 12 18 | 704 | 1.1+ | 1.1+ |
| 2001 12 18 | 704 | 0.4+ | 0.2+ | 2002 01 11 | 699 | 0.4+ | 0.3− | 2002 02 12 | 704 | 0.6− | 0.7+ | | | | |
| 2001 12 18 | 644 | 0.0 | 0.5− | 2002 01 20 | 699 | 0.1− | 0.1− | 2003 04 29 | 691 | 0.5+ | 0.1− | | | | |
| 2001 12 18 | 704 | 1.5+ | 0.6+ | 2002 01 20 | 699 | 0.7+ | 0.2+ | 2003 04 29 | 691 | 0.1− | 0.1− | | | | |
| 2001 12 18 | 704 | 1.1+ | 1.1+ | 2002 01 20 | 699 | 0.3+ | 0.5+ | 2003 04 29 | 691 | 0.4− | 0.0 | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.9+ | 0.7+ | 2002 01 20 | 699 | 0.4− | 0.7+ | 2006 10 22 | 703 | 0.8− | 0.1+ |
| 2001 12 23 | 608 | 0.5− | 0.9− | 2002 02 03 | 699 | 0.4− | 0.1+ | 2006 10 22 | 703 | (1.5+ | 1.2+) |
| 2001 12 23 | 608 | 0.2− | 0.6− | 2002 02 03 | 699 | 0.0 | 0.9− | 2006 10 22 | 703 | (2.1− | 1.3+) |
| 2001 12 23 | 608 | 0.1+ | 0.5− | 2002 02 03 | 699 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 2002 01 05 | 644 | 0.2+ | 0.2− | 2002 02 03 | 699 | 0.1+ | 0.8− | 2006 11 19 | 703 | 0.0 | 0.5+ |
| 2002 01 05 | 644 | 0.1− | 0.1+ | 2002 02 06 | 704 | (0.9− | 1.6+) | 2006 11 19 | 703 | 1.5+ | 0.3− |
| 2002 01 05 | 644 | 0.1− | 0.0 | 2002 02 06 | 704 | 0.3− | 0.4− | 2006 11 19 | 703 | 0.1+ | 0.3− |
| 2002 01 08 | 704 | 0.3− | 0.1− | 2002 02 06 | 704 | 0.6− | 0.4− | 2006 11 19 | 703 | 0.3+ | 1.0− |

**2001 YM$_{114}$ = 2000 SR$_{340}$ = 2006 TE$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.36072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17830934 | $\omega$ | 357.41846 | | +0.96800703 | −0.24572715 | |
| $a$ | 3.1262232 | $\Omega$ | 17.06806 | | +0.23320720 | +0.80631304 | |
| $e$ | 0.1329407 | $i$ | 9.96675 | | +0.09261100 | +0.53803108 | |
| $P$ | 5.53 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.1− | 0.3− | 2006 10 21 | 704 | 0.8+ | 0.6− | 2006 11 16 | 704 | 0.4− | 0.2− |
| 2000 09 24 | 704 | 0.5+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2000 09 24 | 704 | 0.6+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2000 09 24 | 704 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2000 09 26 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2000 09 26 | 691 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.4+ |
| 2000 09 26 | 691 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 1.2+ | 0.1− |
| 2001 12 14 | 704 | 0.6− | 0.2− | 2006 10 27 | 703 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2001 12 14 | 704 | 0.3− | 1.0− | 2006 10 29 | 704 | 0.3− | 0.6+ | 2006 11 21 | 704 | 0.5− | 0.3+ |
| 2001 12 14 | 704 | 1.0− | 0.7− | 2006 10 29 | 704 | 0.7− | 0.8+ | 2006 11 21 | 704 | 0.4− | 0.5− |
| 2001 12 14 | 704 | 0.6+ | 1.3− | 2006 10 29 | 704 | 0.7− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2001 12 19 | 644 | 0.3+ | 1.0+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2001 12 19 | 644 | 0.4+ | 0.8+ | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 1.0+ | 1.5+ |
| 2001 12 19 | 644 | 0.3+ | 1.1+ | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.6− |
| 2001 12 20 | 644 | 0.1− | 0.2+ | 2006 11 02 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2001 12 20 | 644 | 0.1+ | 0.2− | 2006 11 02 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2001 12 20 | 644 | 0.2+ | 0.1+ | 2006 11 02 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.4− |
| 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.7− | 0.7− | 2006 11 22 | 704 | 0.8− | 0.2+ |
| 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.2− | 2006 11 22 | 704 | 0.7+ | 1.2+ |
| 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.4+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.9− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.8− | 2006 11 22 | 704 | 1.0− | 0.5+ |
| 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.5− | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2006 10 21 | 704 | 0.4− | 0.2− | 2006 11 14 | 703 | 1.1+ | 0.6− | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2006 10 21 | 704 | 1.0− | 1.3+ | 2006 11 14 | 703 | 1.4+ | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2006 10 21 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.0 | 1.5+ | 2006 11 23 | G96 | 0.0 | 0.6− |

**2001 YW$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.48712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18563386 | $\omega$ | 250.13951 | | +0.42618363 | −0.90429842 | |
| $a$ | 3.0434389 | $\Omega$ | 174.44334 | | +0.89575129 | +0.41801682 | |
| $e$ | 0.3467448 | $i$ | 14.80088 | | +0.12647978 | +0.08663893 | |
| $P$ | 5.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.2+ | 1.1− | 2002 02 04 | 699 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.6+ | 0.7− |
| 2001 10 16 | 704 | 0.5− | 0.9+ | 2002 02 04 | 699 | 0.2+ | 1.5− | 2006 10 02 | G96 | 0.0 | 0.6− |
| 2001 10 16 | 704 | 0.1− | 0.3− | 2002 02 04 | 699 | 0.7− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 10 16 | 704 | 0.5+ | 0.3+ | 2006 09 17 | 704 | 0.5− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2001 12 13 | 644 | (2.0+ | 0.4−) | 2006 09 17 | 704 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.6− |
| 2001 12 13 | 644 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.4+ |
| 2001 12 13 | 644 | 0.1+ | 0.2− | 2006 09 28 | 704 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 1.3+ | 1.3+ |
| 2001 12 20 | 608 | 0.3− | 0.8− | 2006 09 28 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2001 12 20 | 608 | 0.0 | 0.4− | 2006 09 28 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2001 12 20 | 608 | 0.1+ | 0.2− | 2006 09 30 | 703 | (0.7− | 1.9+) | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2001 12 25 | 608 | 0.1− | 1.0− | 2006 09 30 | 703 | 0.8− | 0.6− | 2006 10 16 | 703 | 0.1+ | 1.2+ |
| 2001 12 25 | 608 | 0.4+ | 0.9− | 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 10 16 | 703 | (1.4+ | 3.1+) |
| 2001 12 25 | 608 | 0.1− | 1.0− | 2006 09 30 | 703 | 0.9− | 0.9+ | 2006 10 16 | 703 | 0.6+ | 0.5+ |
| 2002 01 12 | 704 | 0.0 | 1.4+ | 2006 09 30 | 704 | 0.0 | 0.7+ | 2006 10 22 | 703 | 1.0− | 0.8− |
| 2002 01 12 | 704 | 0.2− | 0.8+ | 2006 09 30 | 704 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.7− |
| 2002 01 12 | 704 | 0.3− | 0.6+ | 2006 09 30 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.6− |
| 2002 01 12 | 704 | 0.3+ | 1.3+ | 2006 09 30 | 704 | 0.1− | 0.8+ | 2006 10 22 | 703 | (0.1+ | 1.5−) |
| 2002 01 12 | 704 | 0.2+ | 1.4+ | 2006 10 02 | G96 | 0.2+ | 0.5− | | | | |
| 2002 02 04 | 699 | 0.7− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.4− | | | | |

**2001 YW$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.47916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17607088 | $\omega$ | 336.20706 | | +0.21712087 | −0.97329433 | |
| $a$ | 3.1526640 | $\Omega$ | 101.18579 | | +0.90734758 | +0.17306830 | |
| $e$ | 0.1566291 | $i$ | 4.35792 | | +0.35997069 | +0.15081617 | |
| $P$ | 5.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5+ | 1.0− | 2002 01 23 | 704 | 0.2+ | 0.4− | 2006 11 02 | 703 | 0.4− | 0.2− |
| 2001 12 18 | 704 | 0.5− | 0.7− | 2002 01 23 | 704 | 0.6+ | 0.1+ | 2006 11 02 | 703 | 0.8− | 0.8− |
| 2001 12 18 | 704 | 0.6− | 0.2+ | 2002 01 23 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | (0.1− | 2.1+) |
| 2001 12 18 | 704 | 0.4+ | 0.4− | 2002 01 23 | 704 | 0.5+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2001 12 18 | 704 | 0.5− | 0.9+ | 2002 02 06 | 704 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.8+ |
| 2001 12 21 | 704 | 0.1+ | 0.1+ | 2002 02 06 | 704 | 0.3− | 0.4− | 2006 11 11 | 703 | (2.6+ | 0.6+) |
| 2001 12 21 | 704 | 0.1− | 0.8+ | 2002 02 06 | 704 | 0.7− | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2001 12 21 | 704 | 0.3+ | 0.7− | 2002 02 06 | 704 | 0.2− | 0.8− | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2002 01 05 | 691 | 0.4− | 0.4+ | 2002 02 06 | 704 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.6− |
| 2002 01 05 | 691 | 0.2− | 0.0 | 2002 02 07 | 704 | 1.3− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.7− |
| 2002 01 05 | 691 | 0.4− | 0.1+ | 2002 02 07 | 704 | 0.5− | 0.1+ | 2006 11 19 | 704 | (1.6− | 0.7−) |
| 2002 01 09 | 704 | 0.2+ | 0.6− | 2002 02 07 | 704 | (2.2− | 0.7−) | 2006 11 19 | 704 | 0.7+ | 0.9+ |
| 2002 01 09 | 704 | 0.8+ | 0.8− | 2002 02 07 | 704 | (1.8− | 0.0 ) | 2006 11 19 | 704 | 0.8+ | 0.5+ |
| 2002 01 09 | 704 | 0.8+ | 0.4− | 2002 02 08 | 645 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 01 09 | 704 | 0.3+ | 0.2− | 2002 02 08 | 645 | 0.1+ | 0.0 | 2006 11 20 | 704 | 1.0+ | 1.0+ |
| 2002 01 09 | 704 | (1.5+ | 0.8−) | 2002 02 10 | 704 | 0.6+ | 0.5− | 2006 11 20 | 704 | 0.2− | 0.8+ |
| 2002 01 10 | 599 | 0.8+ | 0.3− | 2002 02 10 | 704 | 1.2+ | 0.1− | 2006 11 20 | 704 | 0.3− | 1.1+ |
| 2002 01 10 | 599 | 0.3− | 0.2+ | 2002 02 10 | 704 | 1.0+ | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.6+ |
| 2002 01 10 | 599 | 0.1− | 0.2+ | 2002 02 10 | 704 | 1.1+ | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2002 01 10 | 599 | 0.1− | 0.2− | 2002 02 13 | 691 | 0.2− | 0.3+ | 2006 11 25 | 683 | (1.7+ | 0.7+) |
| 2002 01 10 | 599 | 0.6+ | 0.6− | 2002 02 13 | 691 | 0.2− | 0.4+ | 2006 11 25 | 683 | 0.8+ | 0.1+ |
| 2002 01 11 | 599 | 0.2+ | 0.3+ | 2002 02 13 | 691 | 0.1− | 0.3+ | 2006 11 25 | 683 | (2.4+ | 0.2−) |
| 2002 01 14 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.8− | 2006 11 28 | 683 | 0.5+ | 0.8− |
| 2002 01 14 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.6+ | 2006 11 28 | 683 | (0.2+ | 1.9−) |
| 2002 01 14 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.8+ | 1.4− | 2006 11 28 | 683 | (0.5− | 2.6−) |
| 2002 01 14 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.9+ | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2002 01 14 | 704 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2002 01 21 | 704 | 0.4− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2002 01 21 | 704 | 0.4− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.6+ |
| 2002 01 21 | 704 | 0.3+ | 0.8− | 2006 11 02 | 703 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.1− | 0.6+ |
| 2002 01 21 | 704 | 0.8− | 0.1− | 2006 11 02 | 703 | 1.1− | 0.6− | | | | |

**2001 YV$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.07360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19746599 | $\omega$ | 272.01896 | | −0.83063037 | −0.54860650 | |
| $a$ | 2.9206163 | $\Omega$ | 234.72305 | | +0.54594618 | −0.76871584 | |
| $e$ | 0.3384472 | $i$ | 6.70453 | | +0.10952608 | −0.32879607 | |
| $P$ | 4.99 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.8+ | 2001 12 21 | 704 | 0.9− | 0.1− | 2002 01 14 | 704 | 0.4− | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2001 12 21 | 704 | 0.1+ | 0.6− | 2002 02 11 | 704 | 0.1− | 0.8− |
| 2001 11 20 | 704 | 0.2+ | 1.0− | 2001 12 21 | 704 | 0.5+ | 0.1− | 2002 02 11 | 704 | 0.2+ | 0.1− |
| 2001 12 11 | 704 | 0.4+ | 0.2− | 2001 12 21 | 704 | 0.6+ | 0.9− | 2002 02 11 | 704 | 0.2+ | 0.3+ |
| 2001 12 11 | 704 | 0.1+ | 0.4+ | 2002 01 09 | 704 | 0.5− | 0.7+ | 2002 02 11 | 704 | 0.5+ | 0.9− |
| 2001 12 11 | 704 | 0.1− | 0.2− | 2002 01 09 | 704 | 0.0 | 0.7+ | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.4− | 0.7− | 2002 01 09 | 704 | 0.2− | 0.7+ | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.5− | 0.3− | 2002 01 09 | 704 | 0.2− | 1.1+ | 2006 11 24 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.1+ | 1.3− | 2002 01 09 | 704 | 0.2− | 0.8+ | 2006 11 28 | 691 | 0.1+ | 0.1+ | | |
| 2001 12 19 | 704 | 0.3− | 0.4− | 2002 01 14 | 704 | 0.4+ | 0.1− | 2006 11 28 | 691 | 0.1− | 0.2+ | | |
| 2001 12 21 | 704 | 0.8+ | 0.4− | 2002 01 14 | 704 | 0.4− | 0.4+ | 2006 11 28 | 691 | 0.5− | 0.2+ | | |

**2001 YO$_{132}$ = 2006 VS$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.01778 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19114265 | $\omega$ | 107.33749 | | +0.71916831 | −0.67443840 | |
| $a$ | 2.9846791 | $\Omega$ | 295.43483 | | +0.54628519 | +0.69744974 | |
| $e$ | 0.2675320 | $i$ | 10.66457 | | +0.42938262 | +0.24227403 | |
| $P$ | 5.16 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.1− | 0.1+ | 2001 12 20 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.5+ | | |
| 2001 12 09 | 704 | 0.1− | 0.1− | 2001 12 20 | 704 | 0.1− | 0.4+ | 2006 11 14 | 704 | 0.5+ | 0.9+ | | |
| 2001 12 09 | 704 | 0.1− | 0.5+ | 2001 12 20 | 704 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.6+ | 0.1− | | |
| 2001 12 09 | 704 | 0.6− | 0.9+ | 2001 12 22 | 704 | 0.8− | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.6+ | | |
| 2001 12 09 | 704 | 1.1+ | 0.3− | 2001 12 22 | 704 | 1.4− | 0.4− | 2006 11 14 | 704 | 0.7− | 0.5+ | | |
| 2001 12 13 | 644 | 0.1− | 0.1− | 2001 12 22 | 704 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.1+ | 0.1− | | |
| 2001 12 13 | 644 | 0.0 | 0.1+ | 2002 01 08 | 704 | 0.5− | 0.4− | 2006 11 17 | 644 | 0.1+ | 0.0 | | |
| 2001 12 13 | 644 | 0.0 | 0.1+ | 2002 01 08 | 704 | 0.4+ | 1.0− | 2006 11 17 | 644 | 0.0 | 0.1− | | |
| 2001 12 13 | 644 | 0.3+ | 0.9− | 2002 01 08 | 704 | 0.4− | 0.0 | 2006 11 21 | 703 | 0.6− | 0.2− | | |
| 2001 12 13 | 644 | 0.5+ | 0.8− | 2002 01 08 | 704 | 0.1+ | 0.0 | 2006 11 21 | 703 | 0.4− | 0.0 | | |
| 2001 12 13 | 644 | 0.7+ | 0.8− | 2006 10 02 | 704 | 0.9+ | 0.6− | 2006 11 21 | 703 | 0.0 | 0.1+ | | |
| 2001 12 20 | 704 | 0.1+ | 0.1− | 2006 10 02 | 704 | 0.5+ | 0.3+ | 2006 11 21 | 703 | 0.3− | 0.0 | | |
| 2001 12 20 | 704 | 0.4+ | 0.2+ | 2006 10 02 | 704 | 0.6− | 0.8− | 2006 11 29 | 704 | 0.5+ | 0.5− | | |
| 2001 12 20 | 704 | 0.0 | 0.0 | 2006 10 02 | 704 | 0.5+ | 0.2− | 2006 11 29 | 704 | 0.3− | 0.9− | | |
| 2001 12 20 | 704 | 0.4+ | 0.5+ | 2006 10 29 | 703 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.0 | | |
| 2001 12 20 | 704 | 0.0 | 0.1+ | 2006 10 29 | 703 | 0.7− | 0.2+ | 2006 11 29 | 704 | 1.1+ | 0.3− | | |
| 2001 12 20 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 703 | 0.0 | 0.1+ | | | | | | |
| 2001 12 20 | 704 | 0.0 | 0.2+ | 2006 10 29 | 703 | 0.4− | 0.0 | | | | | | |

**2001 YF$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.21316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23240914 | $\omega$ | 97.59182 | | +0.74800546 | −0.64147818 | |
| $a$ | 2.6199957 | $\Omega$ | 302.48186 | | +0.50100769 | +0.71402078 | |
| $e$ | 0.2881335 | $i$ | 11.64531 | | +0.43529200 | +0.28049970 | |
| $P$ | 4.24 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 691 | 0.2+ | 0.6+ | 2001 12 22 | 704 | 0.0 | 0.3+ | 2005 11 20 | 703 | 0.6+ | 1.0+ | | |
| 1998 02 28 | 691 | 0.0 | 0.6− | 2002 01 08 | 644 | 1.0+ | 0.2+ | 2005 11 20 | 703 | 0.1− | 0.6+ | | |
| 1998 02 28 | 691 | 0.1− | 0.0 | 2002 01 08 | 644 | 1.0+ | 0.5+ | 2005 11 20 | 703 | 0.1− | 0.0 | | |
| 2001 12 19 | 644 | 0.7+ | 0.5− | 2002 01 08 | 644 | 1.3+ | 0.4+ | 2005 12 02 | 703 | 0.4+ | 0.6+ | | |
| 2001 12 19 | 644 | 0.7+ | 0.3− | 2005 10 31 | 703 | 0.2− | 0.1+ | 2005 12 02 | 703 | 0.4+ | 0.8− | | |
| 2001 12 19 | 644 | 1.3+ | 0.4− | 2005 10 31 | 703 | 0.2+ | 0.4+ | 2005 12 02 | 703 | 0.4− | 0.6− | | |
| 2001 12 21 | 704 | 0.6− | 0.3+ | 2005 10 31 | 703 | 0.0 | 0.1− | 2005 12 02 | 703 | 1.3+ | 0.6− | | |
| 2001 12 21 | 704 | 0.1− | 1.3− | 2005 10 31 | 703 | 0.5− | 0.4+ | 2005 12 04 | 703 | 0.5− | 0.2− | | |
| 2001 12 21 | 704 | 0.3− | 0.3+ | 2005 11 12 | 703 | 0.2+ | 0.0 | 2005 12 04 | 703 | 0.5+ | 2.0− | | |
| 2001 12 21 | 704 | 1.1− | 0.0 | 2005 11 12 | 703 | 0.1+ | 0.4− | 2005 12 04 | 703 | 1.3− | 0.3+ | | |
| 2001 12 22 | 704 | 1.6− | 0.6+ | 2005 11 12 | 703 | 1.2− | 0.7+ | 2005 12 04 | 703 | (4.0− | 0.0 ) | | |
| 2001 12 22 | 704 | 1.4− | 1.3+ | 2005 11 12 | 703 | 0.2+ | 0.7− | | | | | | |
| 2001 12 22 | 704 | 1.0− | 1.0− | 2005 11 20 | 703 | 0.5+ | 1.1+ | | | | | | |

**2001 YN$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.26146 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17453919 | $\omega$ | 247.29040 | | −0.92041488 | −0.35202770 | |
| $a$ | 3.1710815 | $\Omega$ | 271.75351 | | +0.39093996 | −0.83051272 | |
| $e$ | 0.2272921 | $i$ | 9.79467 | | −0.00155002 | −0.43165395 | |
| $P$ | 5.65 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 1.1+ | 0.7+ | 2002 01 14 | 704 | 1.4− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2001 12 17 | 704 | 0.6+ | 0.8+ | 2002 01 14 | 704 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.3− | | |
| 2001 12 17 | 704 | 0.1+ | 0.9+ | 2002 01 14 | 704 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.1− | | |
| 2001 12 17 | 704 | 0.9+ | 1.1+ | 2002 02 06 | 644 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.0 | | |
| 2001 12 23 | 704 | 0.7− | 1.4− | 2002 02 06 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 1.0+ | 1.4+ | | |
| 2001 12 23 | 704 | 0.1− | 0.1− | 2002 02 06 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.4+ | | |
| 2001 12 23 | 704 | 0.8− | 0.8− | 2002 02 07 | 644 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.7− | 0.7+ | | |
| 2002 01 09 | 704 | 0.5− | 0.3+ | 2002 02 07 | 644 | 0.1+ | 0.7− | 2006 11 21 | G96 | 0.3+ | 0.0 | | |
| 2002 01 09 | 704 | 0.5− | 0.1+ | 2002 02 07 | 644 | 0.2+ | 0.8− | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2002 01 09 | 704 | 0.9+ | 0.9− | 2002 02 08 | 704 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.0 | | |
| 2002 01 09 | 704 | 0.5+ | 0.3− | 2002 02 08 | 704 | 0.2− | 1.1− | 2006 11 21 | G96 | 0.3+ | 0.1+ | | |
| 2002 01 09 | 704 | 0.9+ | 0.1− | 2002 02 08 | 704 | 0.8+ | 0.8− | 2006 11 22 | G96 | 0.2+ | 0.2− | | |
| 2002 01 13 | 704 | 0.3− | 0.2+ | 2002 02 08 | 704 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.1− | 0.2− | | |
| 2002 01 13 | 704 | 0.9− | 0.0 | 2002 02 11 | 704 | 0.8− | 0.8+ | 2006 11 22 | G96 | 0.2+ | 0.1− | | |
| 2002 01 13 | 704 | 0.3+ | 0.4− | 2002 02 11 | 704 | 0.6+ | 0.4+ | 2006 11 22 | G96 | 0.5+ | 0.1− | | |
| 2002 01 13 | 704 | 0.3+ | 0.8− | 2002 02 11 | 704 | 0.2− | 0.8+ | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2002 01 13 | 704 | 0.2+ | 0.6− | 2002 02 11 | 704 | 0.2− | 1.3+ | 2006 11 22 | G96 | 0.1+ | 0.1− | | |
| 2002 01 14 | 704 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.1− | | |
| 2002 01 14 | 704 | 0.6− | 0.6+ | 2006 11 11 | 691 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.1− | | |

**2001 YO$_{134}$ = 2006 SW$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.19394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17620182 | $\omega$ | 31.87341 | | +0.43492400 | −0.88375395 | |
| $a$ | 3.1511020 | $\Omega$ | 33.27927 | | +0.74587031 | +0.24612442 | |
| $e$ | 0.1310151 | $i$ | 18.34299 | | +0.50449836 | +0.39799714 | |
| $P$ | 5.59 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 704 | 1.2− | 0.2− | 2001 12 23 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.9+ | 0.1+ | | |
| 2001 12 08 | 704 | 0.4− | 0.4− | 2006 09 18 | 703 | (1.4+ | 2.0+) | 2006 09 26 | 703 | 0.5+ | 0.4+ | | |
| 2001 12 08 | 704 | 0.6− | 0.3− | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.2− | 0.1− | | |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.8+ | | |
| 2001 12 18 | 704 | 0.8+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.3− | 0.7+ | | |
| 2001 12 18 | 704 | 0.1− | 0.9+ | 2006 09 25 | 699 | 0.6+ | 1.0− | 2006 10 16 | 703 | 0.4− | 0.1+ | | |
| 2001 12 18 | 704 | 0.4+ | 0.1− | 2006 09 25 | 699 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.5− | 0.3− | | |
| 2001 12 23 | 704 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.9− | 1.1+ | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2001 12 23 | 704 | 0.2+ | 1.1− | 2006 09 25 | 699 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 2001 12 23 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 0.5+ | 0.2− | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2001 12 23 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.6+ | | | | | | |

**2001 YP$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.78559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18201616 | $\omega$ | 335.33171 | | −0.00028289 | −0.99810247 | |
| $a$ | 3.0836334 | $\Omega$ | 114.63457 | | +0.92836125 | −0.02314796 | |
| $e$ | 0.1587411 | $i$ | 3.88416 | | +0.37167904 | +0.05705815 | |
| $P$ | 5.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 658 | 0.7+ | 2.0+ | 2002 01 09 | 704 | 0.8+ | 1.1− | 2002 02 06 | 291 | 0.1+ | 0.2+ | | |
| 2000 10 07 | 691 | 0.1+ | 0.1− | 2002 01 09 | 704 | 0.0 | 0.9− | 2002 02 06 | 291 | 0.5+ | 0.0 | | |
| 2000 10 07 | 691 | 0.2− | 0.3+ | 2002 01 14 | 704 | 0.1+ | 0.8− | 2002 02 06 | 291 | 0.6+ | 0.0 | | |
| 2000 10 07 | 691 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.8− | 0.7− | 2002 02 12 | 704 | 0.7+ | 0.6− | | |
| 2001 12 17 | 644 | 0.5+ | 0.3+ | 2002 01 14 | 704 | 0.2− | 0.3− | 2002 02 12 | 704 | 0.5− | 1.0− | | |
| 2001 12 17 | 644 | 0.7+ | 0.5+ | 2002 01 14 | 704 | 0.7+ | 0.6− | 2002 02 12 | 704 | 0.6− | 0.5− | | |
| 2001 12 17 | 644 | 0.6+ | 0.3+ | 2002 01 14 | 704 | 0.6+ | 0.1− | 2002 02 12 | 704 | 0.3− | 0.8− | | |
| 2001 12 18 | 291 | 0.1− | 0.0 | 2002 01 20 | 291 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2001 12 18 | 291 | 0.1+ | 0.4+ | 2002 01 20 | 291 | 0.5− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2001 12 18 | 291 | 0.5+ | 0.5+ | 2002 01 20 | 291 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.4− | | |
| 2001 12 24 | 691 | 0.4− | 0.4+ | 2002 01 21 | 704 | 1.6+ | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2001 12 24 | 691 | 0.6− | 0.3+ | 2002 01 21 | 704 | 0.1− | 0.5− | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2001 12 24 | 691 | 0.4− | 0.1− | 2002 01 21 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2002 01 09 | 704 | 0.3− | 0.1+ | 2002 01 21 | 704 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.1− | 0.1+ | | |

**2001 YC$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.94522 | | | (2000.0) | | |
| $n$ | 0.18833177 | $\omega$ | 213.08634 | | +0.78236651 | −0.62281075 |
| $a$ | 3.0143036 | $\Omega$ | 185.43839 | | +0.57822015 | +0.72816425 |
| $e$ | 0.1200852 | $i$ | 1.85400 | | +0.23143917 | +0.28615309 |
| $P$ | 5.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 704 | 1.1+ | 0.1+ | 2003 05 01 | 691 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.5+ | |
| 2000 08 25 | 704 | 0.2− | 0.5+ | 2003 05 01 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.6− | 0.2+ | |
| 2000 08 25 | 704 | 0.7+ | 0.6+ | 2003 05 01 | 691 | 0.6+ | 0.5+ | 2006 11 21 | 704 | (1.0− | 1.8+) | |
| 2000 08 25 | 704 | 1.6− | 1.3+ | 2005 07 29 | 644 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.1− | |
| 2000 08 26 | 704 | 1.4− | 1.4+ | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1− | |
| 2000 08 26 | 704 | 0.1− | 0.1+ | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.0 | |
| 2000 08 26 | 704 | 0.3− | 0.1+ | 2005 08 06 | 644 | 0.3− | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.3− | |
| 2000 09 21 | 691 | 0.1+ | 0.2− | 2005 08 06 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.3− | |
| 2000 09 21 | 691 | 0.2+ | 0.2− | 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.6− | |
| 2000 09 21 | 691 | 0.1+ | 0.2− | 2005 08 22 | 644 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.4− | |
| 2001 12 17 | 704 | 1.0+ | 0.1+ | 2005 08 22 | 644 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.0 | |
| 2001 12 17 | 704 | 0.8− | 0.2+ | 2005 08 22 | 644 | 0.4− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.0 | |
| 2001 12 17 | 704 | 0.8− | 0.6+ | 2006 11 18 | 704 | 0.3− | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.2− | |
| 2001 12 20 | 704 | 0.0 | 0.6− | 2006 11 18 | 704 | 0.0 | 0.7+ | 2006 12 01 | 704 | 0.1+ | 0.4+ | |
| 2001 12 20 | 704 | (1.4+ | 2.0−) | 2006 11 18 | 704 | 1.1− | 0.6+ | 2006 12 01 | 704 | 0.3+ | 0.6+ | |
| 2001 12 20 | 704 | 0.3+ | 1.4− | 2006 11 18 | 704 | 0.0 | 1.2+ | 2006 12 01 | 704 | 0.5+ | 0.7+ | |
| 2001 12 20 | 704 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.3− | 1.0+ | 2006 12 01 | 691 | 0.0 | 0.3+ | |
| 2001 12 20 | 704 | 0.4+ | 0.9− | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.1− | 0.1− | |
| 2002 01 15 | 704 | 0.6− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.0 | |
| 2002 01 15 | 704 | 0.1− | 0.7+ | 2006 11 19 | 691 | 0.2+ | 0.2− | | | | | |
| 2002 01 15 | 704 | 0.5− | 1.1+ | 2006 11 21 | 704 | (0.9− | 1.6+) | | | | | |

**2001 YH$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.09633 | | | (2000.0) | | |
| $n$ | 0.18261969 | $\omega$ | 256.24616 | | +0.80898789 | −0.57598105 |
| $a$ | 3.0768358 | $\Omega$ | 138.74681 | | +0.58424315 | +0.76584033 |
| $e$ | 0.2214592 | $i$ | 10.25648 | | +0.06479618 | +0.28589233 |
| $P$ | 5.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.2+ | 0.6+ | 2002 01 02 | 209 | 0.2+ | 1.2− | 2006 09 26 | 703 | 0.4− | 0.7− | |
| 2001 10 17 | 704 | 0.3− | 0.5− | 2002 01 04 | 209 | 0.5+ | 0.0 | 2006 10 02 | 703 | 1.0+ | 0.7− | |
| 2001 10 17 | 704 | 0.2+ | 0.0 | 2002 01 04 | 209 | 1.1+ | 0.7+ | 2006 10 02 | 703 | 0.3+ | 0.5− | |
| 2001 12 08 | 699 | 0.2− | 1.3+ | 2002 01 04 | 209 | 1.2+ | 0.7− | 2006 10 02 | 703 | 0.3− | 0.8− | |
| 2001 12 08 | 699 | 0.1+ | 0.9− | 2006 08 28 | 699 | 0.6+ | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.0 | |
| 2001 12 08 | 699 | 0.6− | 0.6− | 2006 08 28 | 699 | (1.7+ | 0.6+) | 2006 10 11 | 644 | 0.2+ | 0.2+ | |
| 2001 12 08 | 699 | 0.9+ | 0.8+ | 2006 08 28 | 699 | (0.3− | 2.6+) | 2006 10 11 | 644 | 0.1+ | 0.1+ | |
| 2001 12 19 | 704 | 1.2− | 0.8+ | 2006 08 28 | 699 | (0.3− | 2.1+) | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2001 12 19 | 704 | 1.2− | 0.0 | 2006 09 21 | 699 | 0.5+ | 1.1+ | 2006 10 21 | 703 | 0.6− | 0.0 | |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.6+ | 0.2+ | 2006 10 21 | 703 | 0.7+ | 0.9− | |
| 2001 12 19 | 704 | 0.4− | 0.5+ | 2006 09 21 | 699 | 1.1− | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.1+ | |
| 2001 12 19 | 704 | 0.1+ | 0.6− | 2006 09 21 | 699 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.6+ | |
| 2001 12 20 | 209 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.6− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.1− | |
| 2001 12 20 | 209 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.9− | 2006 10 22 | 644 | 0.2+ | 0.0 | |
| 2001 12 20 | 209 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.2+ | |

**2001 YC$_{152}$ = 2006 VH$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.55375 | | | (2000.0) | | |
| $n$ | 0.19105965 | $\omega$ | 4.42198 | | +0.37960712 | −0.89294753 |
| $a$ | 2.9855434 | $\Omega$ | 63.42783 | | +0.84029370 | +0.22337365 |
| $e$ | 0.1512633 | $i$ | 15.69598 | | +0.38704642 | +0.39083107 |
| $P$ | 5.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.5+ | 1.0− | 2001 12 22 | 704 | 0.5+ | 0.4− | 2006 11 17 | 691 | 0.1+ | 0.1− | |
| 2001 12 09 | 704 | 0.1− | 0.4+ | 2001 12 22 | 704 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.2− | 0.2− | |
| 2001 12 09 | 704 | 0.1− | 0.9+ | 2001 12 22 | 704 | 0.3+ | 1.4− | 2006 11 22 | 704 | 0.4+ | 0.4− | |
| 2001 12 09 | 704 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.7− | |
| 2001 12 19 | 644 | 0.4− | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | (2.2+ | 1.8−) | |
| 2001 12 19 | 644 | 0.2− | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.4− | |
| 2001 12 19 | 644 | 0.5− | 0.4+ | 2006 11 17 | 691 | 0.4+ | 0.7− | 2006 11 25 | 691 | 0.1− | 0.1− | |
| 2001 12 22 | 704 | 0.2− | 0.7+ | 2006 11 17 | 691 | 0.2− | 0.3+ | 2006 11 25 | 691 | 0.1− | 0.9+ | |

**2001 YT$_{154}$ = 2006 VL$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.11199 | | | (2000.0) | | |
| $n$ | 0.17012678 | $\omega$ | 169.13078 | | −0.09856134 | −0.84979597 |
| $a$ | 3.2256774 | $\Omega$ | 284.89435 | | +0.86810593 | +0.18096261 |
| $e$ | 0.0871967 | $i$ | 32.39939 | | +0.48649538 | −0.49507509 |
| $P$ | 5.79 | $H$ | 14.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.6− | 0.3+ | 2002 01 10 | 644 | 0.2+ | 0.6+ | 2006 11 11 | 704 | 0.0 | 0.2− | |
| 2001 12 19 | 704 | 1.1− | 0.9+ | 2002 02 08 | 644 | 0.0 | 0.5− | 2006 11 11 | 704 | 0.1+ | 0.4− | |
| 2001 12 19 | 704 | 0.3− | 0.7− | 2002 02 08 | 644 | 0.1− | 0.4− | 2006 11 11 | 704 | 0.1+ | 0.2+ | |
| 2001 12 23 | 608 | 0.2+ | 0.8− | 2002 02 08 | 644 | 0.0 | 0.4− | 2006 11 14 | 704 | 0.3+ | 0.2+ | |
| 2001 12 23 | 608 | 0.6+ | 0.3− | 2005 08 30 | 644 | 0.0 | 0.1− | 2006 11 14 | 704 | 1.3+ | 0.3+ | |
| 2001 12 23 | 608 | 0.4+ | 0.7− | 2005 08 30 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.5− | 0.2− | |
| 2002 01 10 | 644 | 0.2+ | 1.0+ | 2005 08 30 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.0 | 0.3− | |
| 2002 01 10 | 644 | 0.5+ | 1.1+ | 2006 11 11 | 704 | 0.2− | 0.9+ | 2006 11 14 | 704 | 1.1− | 0.6− | |

**2001 YB$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.38907 | | | (2000.0) | | |
| $n$ | 0.18025582 | $\omega$ | 31.55622 | | +0.28117316 | −0.93712211 |
| $a$ | 3.1036770 | $\Omega$ | 43.11159 | | +0.80542918 | +0.11331374 |
| $e$ | 0.2081924 | $i$ | 17.60877 | | +0.52175233 | +0.33009416 |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 1.1+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2001 11 11 | 704 | 0.8+ | 0.7+ | 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.3+ | |
| 2001 11 11 | 704 | 0.8+ | 0.0 | 2006 09 26 | 703 | 0.0 | 1.1+ | 2006 10 22 | 703 | (3.2− | 0.8+) | |
| 2001 11 11 | 704 | 0.0 | 0.7− | 2006 09 29 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | (2.6+ | 0.3+) | |
| 2001 11 19 | 644 | 0.2− | 0.5− | 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 10 27 | 704 | 0.6+ | 1.1− | |
| 2001 11 19 | 644 | 0.3− | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.1− | 2006 10 27 | 704 | 0.6+ | 1.2+ | |
| 2001 11 19 | 644 | 0.0 | 0.3− | 2006 09 29 | 699 | 0.2− | 0.5− | 2006 10 27 | 704 | 0.4− | 0.3+ | |
| 2001 12 20 | 644 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.2+ | 2006 10 27 | 704 | 1.1− | 0.1− | |
| 2001 12 20 | 644 | 0.1+ | 0.7+ | 2006 10 01 | 704 | 0.0 | 0.3− | 2006 11 07 | 644 | 0.2− | 0.1− | |
| 2001 12 20 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.0 | |
| 2001 12 23 | 704 | 0.6− | 0.2− | 2006 10 01 | 704 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.2− | 0.3− | |
| 2001 12 23 | 704 | 0.4+ | 0.1− | 2006 10 01 | 704 | 1.1− | 1.2− | 2006 11 13 | 703 | 0.8+ | 0.5− | |
| 2001 12 23 | 704 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.4− | 2006 11 13 | 703 | 0.5− | 0.9− | |
| 2001 12 23 | 704 | 0.5− | 0.6− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.3− | |
| 2002 01 06 | 704 | 0.7− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.0 | 0.0 | |
| 2002 01 06 | 704 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.3+ | 0.6+ | |
| 2002 01 06 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.1− | 0.1− | |
| 2002 01 06 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.2− | |
| 2002 01 06 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 11 14 | 704 | 1.0− | 0.3+ | |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.6− | 0.6+ | |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 17 | 704 | 0.4− | 1.4+ | |
| 2006 09 16 | 699 | 0.7+ | 1.0+ | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 1.4+ | |
| 2006 09 16 | 699 | 0.1+ | 1.0− | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.4+ | |
| 2006 09 16 | 699 | 0.9+ | 0.8− | 2006 10 19 | 644 | 0.0 | 0.3− | 2006 11 20 | 704 | 1.9+ | 1.4+ | |
| 2006 09 16 | 699 | 0.6+ | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.7− | 0.1+ | |
| 2006 09 21 | 699 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.6+ | |
| 2006 09 21 | 699 | (1.8− | 0.9+) | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1− | 1.4− | |
| 2006 09 21 | 699 | 0.9− | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.6− | 1.0− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 21 | 699 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− | | | | | | |
| 2006 09 26 | 703 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1− | | | | | | |

**2001 YL$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.53614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18667732 | $\omega$ | 14.77279 | | +0.57618431 | −0.80309662 | |
| $a$ | 3.0320872 | $\Omega$ | 40.36650 | | +0.72409400 | +0.41542993 | |
| $e$ | 0.0291028 | $i$ | 13.55617 | | +0.37907720 | +0.42714610 | |
| $P$ | 5.28 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.6+ | 1.9− | 2003 03 12 | 704 | (1.8+ | 0.7+) | 2005 10 02 | E12 | 0.0 | 0.3− | | |
| 1998 03 25 | 704 | 0.5+ | 0.4+ | 2003 03 12 | 704 | 0.5+ | 0.8+ | 2005 10 02 | E12 | 0.2− | 0.3− | | |
| 1998 03 25 | 704 | 1.1− | 0.4+ | 2003 03 12 | 704 | 1.0+ | 0.0 | 2005 10 02 | E12 | 0.4− | 0.1− | | |
| 1998 03 25 | 704 | (2.7− | 0.4+) | 2003 03 12 | 704 | 0.0 | 0.4+ | 2006 10 27 | 703 | (1.8− | 0.2+) | | |
| 1998 03 25 | 704 | (6.6− | 1.8−) | 2003 03 25 | 644 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.2− | 0.5− | | |
| 2000 09 23 | 699 | 0.2+ | 0.5+ | 2003 03 25 | 644 | 0.3− | 0.8+ | 2006 10 27 | 703 | (1.3− | 2.0−) | | |
| 2000 09 23 | 699 | 0.6+ | 0.9+ | 2003 03 25 | 644 | 0.1+ | 0.7+ | 2006 10 27 | 703 | 0.5− | 0.3− | | |
| 2000 09 23 | 699 | 0.9+ | 0.6+ | 2003 03 31 | 704 | 1.2+ | 0.5+ | 2006 10 29 | 704 | 1.2+ | 0.3− | | |
| 2000 09 23 | 699 | 1.2+ | 0.4+ | 2003 03 31 | 704 | 0.5− | 1.4+ | 2006 10 29 | 704 | (0.6− | 2.0−) | | |
| 2000 09 26 | 645 | 0.1− | 0.0 | 2003 03 31 | 704 | 0.1− | 0.2+ | 2006 10 29 | 704 | (0.9− | 2.4−) | | |
| 2000 09 26 | 645 | 0.1− | 0.0 | 2003 03 31 | 704 | 1.0− | 1.2+ | 2006 10 29 | 704 | 0.2− | 1.3− | | |
| 2000 10 01 | 704 | 0.5− | 0.8+ | 2003 03 31 | 704 | 0.8+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.2− | | |
| 2000 10 01 | 704 | 0.5+ | 1.0+ | 2003 03 31 | 704 | 0.5+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.1− | | |
| 2000 10 01 | 704 | 1.3− | 0.5+ | 2003 03 31 | 704 | 1.2+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.5− | | |
| 2000 10 01 | 704 | 1.6− | 0.6+ | 2003 03 31 | 704 | 0.1+ | 1.3+ | 2006 11 19 | 704 | 1.0− | 1.0+ | | |
| 2000 10 01 | 704 | 0.4+ | 0.5+ | 2003 04 05 | 699 | (1.6+ | 1.1−) | 2006 11 19 | 704 | 0.3+ | 1.2− | | |
| 2001 12 14 | 704 | 0.4− | 0.9− | 2003 04 05 | 699 | 0.4− | 0.7+ | 2006 11 21 | 691 | 0.2− | 0.3− | | |
| 2001 12 14 | 704 | 0.2− | 0.3+ | 2003 04 05 | 699 | 1.3− | 0.1+ | 2006 11 21 | 691 | 0.3+ | 0.1+ | | |
| 2001 12 14 | 704 | 0.3− | 0.4+ | 2003 04 05 | 699 | (2.0− | 0.4+) | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2003 04 20 | 049 | 0.8+ | 0.6− | 2006 11 21 | G96 | 0.2− | 0.2− | | |
| 2001 12 20 | 644 | 0.3− | 0.3− | 2003 04 20 | 049 | 0.9+ | 0.2− | 2006 11 21 | 691 | 0.2− | 0.4− | | |
| 2001 12 20 | 644 | 0.2− | 0.3− | 2003 04 20 | 049 | 0.6+ | 0.9− | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2001 12 20 | 644 | 0.1− | 0.1− | 2005 07 28 | 644 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.4− | | |
| 2001 12 22 | 704 | 0.1+ | 0.5+ | 2005 07 28 | 644 | 0.3− | 0.2+ | 2006 11 22 | 704 | 1.0+ | 0.6+ | | |
| 2001 12 22 | 704 | 0.2− | 0.4+ | 2005 07 28 | 644 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.3+ | | |
| 2001 12 22 | 704 | 0.1+ | 0.7+ | 2005 08 28 | E12 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.2− | | |
| 2001 12 22 | 704 | 0.4+ | 0.1+ | 2005 08 28 | E12 | (0.8− | 3.2+) | 2006 11 22 | 704 | 1.3+ | 0.8− | | |
| 2003 02 28 | 704 | 0.9+ | 1.3+ | 2005 08 28 | E12 | 0.6+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.4+ | | |
| 2003 02 28 | 704 | (1.0+ | 1.5+) | 2005 08 28 | E12 | 0.5− | 0.8+ | 2006 11 25 | 691 | 0.3+ | 1.9+ | | |
| 2003 02 28 | 704 | 0.3+ | 0.3+ | 2005 09 02 | 644 | 0.4− | 0.6+ | 2006 11 25 | 691 | 0.1− | 0.3− | | |
| 2003 02 28 | 704 | (3.6+ | 0.1−) | 2005 09 02 | 644 | 0.3− | 0.6+ | 2006 11 25 | 691 | 0.1− | 0.0 | | |
| 2003 02 28 | 704 | (0.8+ | 2.5+) | 2005 09 02 | 644 | 0.3− | 0.6+ | | | | | | |
| 2003 03 12 | 704 | 0.2+ | 0.3+ | 2005 10 02 | E12 | 0.8− | 0.6+ | | | | | | |

**2001 YK$_{156}$ = 2006 QM$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.33879 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17394477 | $\omega$ | 61.29279 | | +0.91188926 | −0.35857464 | |
| $a$ | 3.1783018 | $\Omega$ | 318.80844 | | +0.18101313 | +0.78804240 | |
| $e$ | 0.2721157 | $i$ | 17.65212 | | +0.36836425 | +0.50041323 | |
| $P$ | 5.67 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.4− | 1.3− | 2006 08 31 | 704 | 0.2+ | 0.2− | 2006 09 27 | 703 | 0.7− | 0.2+ | | |
| 2000 08 01 | 704 | 0.9− | 0.4+ | 2006 08 31 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 703 | 0.1+ | 0.2+ | | |
| 2000 08 01 | 704 | 0.9+ | 1.8+ | 2006 08 31 | 704 | 0.5+ | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.3+ | | |
| 2001 12 20 | 644 | 0.3+ | 0.5+ | 2006 08 31 | 704 | 0.6+ | 0.7+ | 2006 09 29 | 699 | 0.6− | 0.1− | | |
| 2001 12 20 | 644 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 1.4+ | 0.8+ | 2006 09 29 | 699 | 0.3− | 0.0 | | |
| 2001 12 20 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.0 | 2006 09 29 | 699 | 0.1− | 0.3− | | |
| 2001 12 23 | 704 | 0.4+ | 0.6− | 2006 09 14 | 703 | 0.6− | 0.2− | 2006 10 03 | 704 | 0.4+ | 1.0+ | | |
| 2001 12 23 | 704 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.5− | 0.2+ | 2006 10 03 | 704 | 0.8+ | 0.3+ | | |
| 2001 12 23 | 704 | 1.3− | 0.2− | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.1+ | | |
| 2001 12 23 | 704 | 0.3+ | 0.3+ | 2006 09 21 | 699 | 0.4+ | 0.0 | 2006 10 03 | 704 | (0.9+ | 1.6+) | | |
| 2002 01 14 | 644 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.1+ | 0.3− | 2006 10 03 | 704 | 0.3− | 0.1+ | | |
| 2002 01 14 | 644 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.8− | 0.8− | | |
| 2002 01 14 | 644 | 0.3− | 0.1+ | 2006 09 21 | 699 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.4− | 0.1+ | | |
| 2003 04 01 | 691 | 0.2+ | 0.6+ | 2006 09 22 | 703 | 0.5− | 0.3− | 2006 11 14 | 703 | 0.6− | 0.1+ | | |
| 2003 04 01 | 691 | 0.1+ | 0.2+ | 2006 09 22 | 703 | 0.5− | 0.0 | 2006 11 14 | 703 | 0.3− | 0.5− | | |
| 2003 04 01 | 691 | 0.6+ | 0.4+ | 2006 09 22 | 703 | 0.5− | 0.2− | 2006 11 25 | 703 | 0.1− | 1.7− | | |
| 2006 08 26 | 704 | (0.0 | 1.9+) | 2006 09 22 | 703 | 0.5− | 0.1− | 2006 11 25 | 703 | 0.0 | 0.5+ | | |
| 2006 08 26 | 704 | 0.8− | 1.2+ | 2006 09 27 | 703 | 0.0 | 0.2− | 2006 11 25 | 703 | 1.2+ | 0.4+ | | |
| 2006 08 26 | 704 | 1.2− | 0.0 | 2006 09 27 | 703 | 0.1− | 0.1+ | 2006 11 25 | 703 | 1.4+ | 0.1+ | | |

**2001 YQ$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.81894 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17739261 | $\omega$ | 28.99724 | | −0.18206844 | −0.90955955 | |
| $a$ | 3.1369844 | $\Omega$ | 73.63951 | | +0.81029792 | −0.35400539 | |
| $e$ | 0.1478971 | $i$ | 22.91294 | | +0.55701738 | +0.21767319 | |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 645 | 0.0 | 0.0 | 2002 01 06 | 704 | 0.2+ | 0.4− | 2006 11 20 | G96 | 0.2+ | 0.0 | | |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2002 01 06 | 704 | 0.2+ | 1.2− | 2006 11 20 | G96 | 0.1+ | 0.6+ | | |
| 2001 12 20 | 644 | 0.4− | 1.3+ | 2002 01 06 | 704 | 0.2+ | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.1+ | | |
| 2001 12 20 | 644 | 0.3− | 1.1+ | 2003 04 28 | 645 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.3− | 0.3+ | | |
| 2001 12 20 | 644 | 0.0 | 1.3+ | 2003 04 28 | 645 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.0 | | |
| 2001 12 23 | 704 | (1.5+ | 1.9+) | 2006 11 19 | 703 | 0.6− | 0.8− | 2006 11 25 | G96 | 0.3+ | 0.2+ | | |
| 2001 12 23 | 704 | (0.0 | 2.7+) | 2006 11 19 | 703 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3+ | | |
| 2001 12 23 | 704 | (0.2+ | 2.5+) | 2006 11 19 | 703 | 0.5− | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.1+ | | |
| 2002 01 06 | 704 | 0.9+ | 0.6− | 2006 11 19 | 703 | 0.1− | 0.0 | | | | | | |

**2001 YE$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.75428 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18400571 | $\omega$ | 19.17548 | | +0.68713405 | −0.71762310 | |
| $a$ | 3.0613655 | $\Omega$ | 27.78267 | | +0.63074147 | +0.51174882 | |
| $e$ | 0.2849716 | $i$ | 14.08295 | | +0.36057176 | +0.47236663 | |
| $P$ | 5.36 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.1− | 0.6+ | 2002 01 25 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.7+ | | |
| 2001 12 09 | 704 | 0.2− | 0.9+ | 2002 01 25 | 704 | 0.1+ | 0.9+ | 2006 10 27 | 703 | 0.5+ | 0.6− | | |
| 2001 12 09 | 704 | 1.4− | 0.8+ | 2002 01 25 | 704 | 0.8+ | 0.9+ | 2006 10 27 | 703 | 0.5− | 0.0 | | |
| 2001 12 09 | 704 | 0.2− | 0.6+ | 2002 01 25 | 704 | 0.7+ | 1.1+ | 2006 11 13 | 644 | 0.0 | 0.2− | | |
| 2001 12 09 | 704 | 1.1+ | 0.9+ | 2002 03 05 | 704 | 0.6− | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.5− | | |
| 2001 12 15 | 645 | 0.1− | 0.1− | 2002 03 05 | 704 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.2− | | |
| 2001 12 15 | 645 | 0.0 | 0.1− | 2002 03 05 | 704 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.0 | 0.2− | | |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2002 03 05 | 704 | 0.4+ | 0.3− | 2006 11 15 | 703 | 0.3− | 0.5− | | |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2006 09 02 | 152 | 0.3+ | 0.7+ | 2006 11 15 | 703 | 0.0 | 0.6− | | |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2006 09 02 | 152 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.5− | | |
| 2001 12 19 | 645 | 0.1+ | 0.2− | 2006 09 02 | 152 | 0.1− | 0.0 | 2006 11 15 | 704 | 1.3+ | 0.8+ | | |
| 2001 12 19 | 699 | 0.3− | 0.7+ | 2006 09 02 | 152 | (0.9+ | 2.2−) | 2006 11 15 | 704 | 0.2− | 0.1+ | | |
| 2001 12 19 | 699 | 0.1− | 0.6+ | 2006 09 02 | 152 | 1.0− | 1.0− | 2006 11 15 | 704 | 0.5− | 0.1− | | |
| 2001 12 19 | 699 | 0.4− | 0.0 | 2006 09 03 | 152 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.2+ | 0.0 | | |
| 2001 12 19 | 699 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.9+ | 1.2− | 2006 11 16 | 704 | 0.3− | 0.4− | | |
| 2001 12 23 | 704 | (1.8+ | 1.2+) | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.7− | 1.0+ | | |
| 2001 12 23 | 704 | 1.4+ | 0.9+ | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 11 16 | 704 | 0.7+ | 0.9+ | | |
| 2001 12 23 | 704 | (1.6+ | 1.2+) | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.6− | 0.4+ | | |
| 2002 01 06 | 704 | 0.2+ | 0.4+ | 2006 10 20 | 704 | 0.9− | 0.9+ | 2006 11 16 | 704 | 0.6− | 0.0 | | |
| 2002 01 06 | 704 | 0.6− | 0.2− | 2006 10 20 | 704 | 1.4+ | 0.1− | 2006 11 21 | 703 | 0.3− | 0.6− | | |
| 2002 01 06 | 704 | 0.2− | 0.5+ | 2006 10 20 | 704 | 0.6+ | 0.7+ | 2006 11 21 | 703 | 0.2− | 0.0 | | |
| 2002 01 06 | 704 | 0.4− | 0.6+ | 2006 10 20 | 704 | 0.8+ | 0.4− | 2006 11 21 | 703 | 0.2− | 0.3+ | | |
| 2002 01 06 | 704 | 0.8− | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.1− | 2006 11 21 | 703 | 0.7− | 0.1+ | | |

**2001 YZ$_{160}$ = 2001 YX$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.53267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18197254 | $\omega$ | 326.30776 | | +0.95135049 | −0.27002742 | |
| $a$ | 3.0841263 | $\Omega$ | 50.07692 | | +0.30767351 | +0.80693009 | |
| $e$ | 0.1805594 | $i$ | 11.15607 | | +0.01640885 | +0.52530850 | |
| $P$ | 5.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2001 11 12 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.9− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.9+ |
| 2001 11 12 | 704 | 0.9+ | 1.0+ | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 10 22 | 703 | 0.2− | 0.9− |
| 2001 11 24 | 704 | 0.4+ | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.8+ | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2001 11 24 | 704 | 0.1− | 0.4− | 2006 09 25 | 699 | (0.4+ | 1.7+) | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2001 11 24 | 704 | 0.3+ | 0.4− | 2006 09 25 | 699 | (1.6+ | 0.2+) | 2006 10 22 | 703 | (1.9− | 1.2−) |
| 2001 12 16 | 644 | 0.4− | 0.3+ | 2006 09 25 | 699 | 0.6+ | 0.3− | 2006 11 13 | 703 | 0.6− | 0.2− |
| 2001 12 16 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.4− |
| 2001 12 16 | 644 | 1.3+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.7− | 2006 11 13 | 703 | 0.3+ | 0.2− |
| 2001 12 17 | 704 | 1.0− | 1.3− | 2006 09 26 | 703 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.2+ | 0.2+ |
| 2001 12 17 | 704 | (1.6− | 0.7−) | 2006 09 26 | 703 | 0.5+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2001 12 17 | 704 | 1.3− | 0.5− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.1− | 0.5+ |
| 2001 12 17 | 704 | (2.1− | 1.2−) | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2001 12 20 | 644 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2001 12 20 | 644 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.4+ | 0.1− | | | | |
| 2001 12 20 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.6− | | | | |

**2001 YB$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.46250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19269562 | $\omega$ | 331.62054 | | +0.08127825 | −0.98936002 | |
| $a$ | 2.9686215 | $\Omega$ | 113.49952 | | +0.93752193 | +0.03479758 | |
| $e$ | 0.1746632 | $i$ | 7.56091 | | +0.33829939 | +0.14126527 | |
| $P$ | 5.11 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 1.0+ | 0.1− | 2001 12 18 | 644 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 0.1+ | 0.1− | 2001 12 18 | 644 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.1+ |
| 2001 11 17 | 704 | 0.9+ | 0.1− | 2001 12 18 | 644 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.0 |
| 2001 11 17 | 704 | 0.5+ | 0.2− | 2001 12 18 | 704 | 0.3+ | 1.2− | 2006 11 19 | 703 | 1.0− | 1.0+ |
| 2001 11 21 | 608 | 0.2− | 0.2+ | 2001 12 18 | 704 | 1.5− | 0.0 | 2006 11 19 | 703 | 1.2+ | 0.6− |
| 2001 11 21 | 608 | 0.6− | 0.2+ | 2001 12 18 | 704 | 0.2+ | 0.5− | 2006 11 19 | 703 | 1.1− | 0.3+ |
| 2001 11 21 | 608 | 0.6− | 0.2+ | 2001 12 18 | 704 | 0.8− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.3+ | 0.3+ | 2002 01 08 | 644 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.1+ | 0.3+ | 2002 01 08 | 644 | 0.7+ | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 0.1− | 0.2+ | 2002 01 08 | 644 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2001 12 11 | 704 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.7+ | 0.3− | | | | |
| 2001 12 11 | 704 | 0.2− | 1.1+ | 2006 11 13 | 703 | 0.2− | 0.4+ | | | | |

**2001 YM$_{161}$ = 2003 GR$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.72439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18345227 | $\omega$ | 15.50550 | | +0.50942385 | −0.83326133 | |
| $a$ | 3.0675195 | $\Omega$ | 44.46817 | | +0.75330044 | +0.31113466 | |
| $e$ | 0.3243050 | $i$ | 17.86118 | | +0.41596369 | +0.45702383 | |
| $P$ | 5.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 10 25 | 704 | 0.2+ | 1.3− | 2006 09 26 | 704 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.3− | 0.5+ |
| 2001 10 25 | 704 | 0.7+ | 0.9− | 2006 09 26 | 704 | 0.4+ | 0.1− | 2006 10 28 | 704 | 0.0 | 0.9+ |
| 2001 11 21 | 645 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.8+ |
| 2001 11 21 | 645 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.1− | 0.9+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.4− | 0.1− | 2006 10 28 | 704 | 0.2− | 0.9+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.3− | 0.8+ | 2006 10 28 | 704 | 0.2− | 0.3+ |
| 2001 12 23 | 704 | 0.2− | 0.9+ | 2006 09 30 | 699 | 0.6− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.4+ |
| 2001 12 23 | 704 | 1.2− | 0.7+ | 2006 09 30 | 699 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2001 12 23 | 704 | 0.7− | 0.5+ | 2006 09 30 | 699 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2001 12 23 | 704 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.3− | 2006 11 02 | 704 | 0.7+ | 0.5+ |
| 2001 12 23 | 704 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.0 | 2006 11 02 | 704 | 0.5+ | 0.7+ |
| 2002 01 08 | 704 | 0.2− | 0.1− | 2006 09 30 | 699 | 0.1+ | 0.2− | 2006 11 02 | 704 | 0.7+ | 0.8+ |
| 2002 01 08 | 704 | 0.1− | 0.6− | 2006 09 30 | 703 | 0.6− | 0.3− | 2006 11 02 | 704 | 0.8+ | 0.7+ |
| 2002 01 08 | 704 | 0.4+ | 0.7− | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 2002 01 08 | 704 | 0.4+ | 0.6− | 2006 10 03 | G96 | 0.1− | 0.7− | 2006 11 08 | 644 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 0.4+ | 0.9− | 2006 10 03 | G96 | 0.1+ | 0.8− | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2002 01 19 | 699 | (1.8+ | 0.3+) | 2006 10 03 | G96 | 0.1− | 0.8− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 01 19 | 699 | 0.5+ | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.7− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2002 01 19 | 699 | 0.5+ | 0.8+ | 2006 10 16 | 185 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 01 19 | 699 | 0.2− | 0.0 | 2006 10 16 | 185 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2002 01 25 | 704 | (0.7+ | 1.7+) | 2006 10 16 | 185 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2002 01 25 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 185 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2002 01 25 | 704 | 1.0+ | 0.0 | 2006 10 16 | 683 | 0.7+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2002 01 25 | 704 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 03 04 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2002 03 04 | 704 | 0.5+ | 1.2+ | 2006 10 16 | 683 | 0.7+ | 0.8− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2002 03 04 | 704 | 0.0 | 1.3+ | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2003 04 09 | 644 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2003 04 09 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 683 | 0.8+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 04 09 | 644 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2003 04 10 | 691 | 1.4+ | 1.2+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2003 04 10 | 691 | 1.4+ | 1.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2003 04 10 | 691 | 1.3+ | 1.2+ | 2006 10 17 | 683 | (0.3+ | 2.7+) | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2003 04 28 | 691 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2003 04 28 | 691 | 0.1− | 0.9+ | 2006 10 17 | 683 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2003 04 28 | 691 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2006 08 28 | 704 | (0.1− | 1.6+) | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2006 08 28 | 704 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2006 08 28 | 704 | 0.5− | 0.9− | 2006 10 22 | 704 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2006 08 28 | 704 | 0.9− | 0.3+ | 2006 10 22 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2006 08 28 | 704 | 0.2− | 0.4+ | 2006 10 22 | 704 | 0.5− | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2006 08 28 | 704 | 0.5− | 0.3+ | 2006 10 22 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2006 08 28 | 704 | 1.2− | 0.5− | 2006 10 22 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2006 08 28 | 704 | 0.8− | 0.2− | 2006 10 23 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2006 09 14 | 703 | 0.5− | 0.7− | 2006 10 23 | 704 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2006 09 14 | 703 | 0.9− | 0.3− | 2006 10 23 | 704 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.2+ |
| 2006 09 14 | 703 | 0.4− | 0.1− | 2006 10 23 | 704 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2006 09 14 | 703 | 0.6− | 0.9− | 2006 10 23 | 704 | 0.5+ | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2006 09 16 | 704 | 0.7+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2006 09 16 | 704 | 0.7+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.4+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2006 09 16 | 704 | 0.6+ | 0.9− | 2006 10 23 | 691 | 0.5− | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2006 09 16 | 704 | (1.2+ | 1.6−) | 2006 10 23 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2006 09 16 | 704 | 1.1+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.6+ |
| 2006 09 22 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2006 09 22 | 704 | 0.8− | 0.0 | 2006 10 26 | 704 | 0.9− | 0.3− | 2006 11 29 | 704 | 0.8+ | 0.2+ |
| 2006 09 22 | 704 | 0.0 | 0.5+ | 2006 10 26 | 704 | (2.7− | 0.4−) | 2006 11 29 | 704 | 0.2− | 0.2− |
| 2006 09 22 | 704 | 1.1+ | 0.2+ | 2006 10 26 | 704 | (2.0− | 0.8+) | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2006 09 22 | 704 | 0.7+ | 0.6+ | 2006 10 26 | 704 | (2.7− | 2.6+) | | | | |
| 2006 09 26 | 704 | 0.4− | 0.3− | 2006 10 27 | 691 | 0.1− | 0.3+ | | | | |

**2001 YN$_{161}$ = 2006 AG$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.55487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24488105 | $\omega$ | 204.81489 | | −0.98420520 | +0.16372742 | |
| $a$ | 2.5302645 | $\Omega$ | 344.16394 | | −0.09054710 | −0.79238527 | |
| $e$ | 0.0472242 | $i$ | 14.28448 | | −0.15212278 | −0.58763843 | |
| $P$ | 4.02 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.2− | 0.2+ | 2002 01 23 | 704 | (1.6+ | 0.8+) | 2004 09 18 | 704 | 0.3+ | 0.5− |
| 1996 10 06 | 691 | 0.0 | 0.0 | 2002 01 23 | 704 | (1.7+ | 0.7−) | 2004 09 18 | 704 | 0.9− | 0.1− |
| 1996 10 06 | 691 | 0.0 | 0.3+ | 2002 01 23 | 704 | 0.5+ | 0.7− | 2004 09 20 | 152 | (0.4− | 1.8+) |
| 2000 09 23 | 704 | 0.1− | 0.1− | 2002 02 10 | 704 | 0.2+ | 1.0+ | 2004 09 20 | 152 | (1.9+ | 9.8+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 1.5− | 0.3− | 2002 02 10 | 704 | 0.1− | 0.3+ | 2006 01 06 | 703 | 0.8+ | 0.0 |
| 2000 09 23 | 704 | 1.0− | 0.3+ | 2002 02 10 | 704 | (2.4+ | 0.6−) | 2006 01 06 | 703 | 0.4+ | 0.9+ |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2004 09 18 | 152 | 0.8+ | 0.3− | 2006 01 06 | 703 | 0.4+ | 0.8+ |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2004 09 18 | 152 | 2.6+ | 0.9− | 2006 01 06 | 703 | 0.0 | 0.4− |
| 2001 12 23 | 704 | 0.8+ | 0.2+ | 2004 09 18 | 152 | 0.3− | 0.1− | 2006 01 22 | 704 | 0.2+ | 0.3+ |
| 2001 12 23 | 704 | 0.2+ | 0.3+ | 2004 09 18 | 704 | 0.2+ | 0.3+ | 2006 01 22 | 704 | 1.1+ | 1.5+ |
| 2001 12 23 | 704 | 0.1+ | 0.4− | 2004 09 18 | 704 | 0.5+ | 0.0 | 2006 01 22 | 704 | 0.3+ | 0.8+ |
| 2001 12 23 | 704 | 0.6+ | 0.1+ | 2004 09 18 | 704 | 0.6− | 0.3+ | 2006 01 22 | 704 | 0.5− | 1.0+ |
| 2002 01 14 | 644 | 0.1+ | 0.0 | 2004 09 18 | 704 | 0.1+ | 0.2− | 2006 01 22 | 703 | 0.5− | 0.0 |
| 2002 01 14 | 644 | 0.1− | 0.7− | 2004 09 18 | 704 | 0.4+ | 0.6+ | 2006 01 22 | 703 | 1.0− | 0.1− |
| 2002 01 14 | 644 | 0.1+ | 0.1− | 2004 09 18 | 704 | 0.1− | 0.2− | 2006 01 22 | 703 | 0.1+ | 0.7− |
| 2002 01 23 | 704 | 0.4+ | 0.2− | 2004 09 18 | 704 | 0.1+ | 0.1− | 2006 01 22 | 703 | 0.6− | 0.5+ |

**2001 YO$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.75717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24130527 | $\omega$ | 156.16644 | | −0.16162683 | | +0.98019899 |
| $a$ | 2.5551997 | $\Omega$ | 104.37316 | | −0.92334148 | | −0.10929152 |
| $e$ | 0.0958869 | $i$ | 6.78209 | | −0.34830630 | | −0.16512207 |
| $P$ | 4.08 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2003 03 26 | 691 | 0.2− | 0.5+ | 2003 04 09 | 704 | 0.7+ | 0.3+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2003 03 26 | 691 | 0.1− | 0.6+ | 2003 04 09 | 704 | 1.1+ | 0.2− |
| 2001 12 17 | 704 | 0.7+ | 0.6− | 2003 03 26 | 691 | 0.1− | 0.3+ | 2004 08 08 | 704 | 0.2− | 1.3+ |
| 2001 12 17 | 704 | 0.0 | 0.2− | 2003 03 31 | 704 | 0.9− | 0.1+ | 2004 08 08 | 704 | 0.3− | 0.9+ |
| 2001 12 17 | 704 | 0.6+ | 0.6− | 2003 03 31 | 704 | 0.9− | 0.6− | 2004 08 08 | 704 | 0.7+ | 0.1+ |
| 2001 12 17 | 704 | 0.8+ | 0.4− | 2003 03 31 | 704 | 0.4− | 0.7+ | 2004 08 08 | 704 | 0.7+ | 1.1+ |
| 2002 01 08 | 691 | 0.2− | 0.0 | 2003 03 31 | 704 | 0.0 | 0.2− | 2004 09 07 | 704 | 0.2− | 0.4+ |
| 2002 01 08 | 691 | 0.3+ | 0.0 | 2003 04 01 | 645 | 0.0 | 0.0 | 2004 09 07 | 704 | 0.8− | 0.7− |
| 2002 01 08 | 691 | 0.1+ | 0.4+ | 2003 04 01 | 645 | 0.0 | 0.0 | 2004 09 07 | 704 | 0.9− | 0.0 |
| 2002 01 13 | 704 | (2.5− | 0.5+) | 2003 04 03 | 608 | 1.0+ | 1.3− | 2006 01 25 | G96 | 0.0 | 0.1− |
| 2002 01 13 | 704 | 1.1− | 1.5+ | 2003 04 03 | 608 | 0.1+ | 1.8− | 2006 01 25 | G96 | 0.1− | 0.2− |
| 2002 01 13 | 704 | 1.8− | 1.5+ | 2003 04 03 | 608 | 0.0 | 1.3− | 2006 01 25 | G96 | 0.3+ | 0.0 |
| 2003 03 26 | 644 | 0.2+ | 0.2+ | 2003 04 09 | 704 | 0.6+ | 2.6− | 2006 01 25 | G96 | 0.4− | 0.4− |
| 2003 03 26 | 644 | 0.0 | 0.3+ | 2003 04 09 | 704 | 0.5+ | 0.4− | | | | |
| 2003 03 26 | 644 | 0.4+ | 0.5+ | 2003 04 09 | 704 | 1.0+ | 0.4+ | | | | |

**2001 YP$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.47635 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26244874 | $\omega$ | 276.24417 | | +0.51698339 | | −0.85387096 |
| $a$ | 2.4160526 | $\Omega$ | 142.42682 | | +0.81925304 | | +0.47315724 |
| $e$ | 0.1281848 | $i$ | 5.67244 | | +0.24809803 | | +0.21685619 |
| $P$ | 3.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.3− | 0.4+ | 2002 02 06 | 644 | 1.2− | 1.8+ | 2006 01 26 | G96 | 0.1+ | 0.3− |
| 2001 12 17 | 704 | 1.0− | 0.1− | 2004 09 13 | 699 | 0.5+ | 0.1+ | 2006 02 04 | 691 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.6− | 0.6− | 2004 09 13 | 699 | 0.3− | 1.3+ | 2006 02 04 | 691 | 0.3+ | 0.3+ |
| 2002 01 08 | 644 | 0.3+ | 0.7+ | 2004 09 13 | 699 | 0.0 | 0.1+ | 2006 02 04 | 691 | 0.1+ | 0.2+ |
| 2002 01 08 | 644 | 0.4+ | 0.4+ | 2004 09 13 | 699 | 0.5− | 0.2− | 2006 02 27 | G96 | 0.4− | 0.1+ |
| 2002 01 08 | 644 | 0.7+ | 0.7+ | 2004 10 12 | 695 | 0.1− | 0.1+ | 2006 02 27 | G96 | 0.0 | 0.0 |
| 2002 01 13 | 704 | 0.5− | 0.9− | 2004 10 12 | 695 | 0.0 | 0.0 | 2006 02 27 | G96 | 0.2− | 0.0 |
| 2002 01 13 | 704 | 0.2− | 0.6− | 2005 10 24 | 568 | 0.1+ | 0.2− | 2006 02 27 | G96 | 0.4− | 0.2+ |
| 2002 01 13 | 704 | 0.1+ | 1.3− | 2005 10 24 | 568 | 0.1+ | 0.3− | 2006 02 27 | G96 | 0.3− | 0.1+ |
| 2002 01 13 | 704 | 0.1− | 1.0− | 2005 10 24 | 568 | 0.2+ | 0.3− | 2006 02 27 | G96 | 0.1+ | 0.0 |
| 2002 01 13 | 704 | 0.0 | 0.5− | 2006 01 26 | G96 | 0.4− | 0.5− | 2006 02 27 | G96 | 0.4− | 0.2+ |
| 2002 02 06 | 644 | 1.6+ | 1.0+ | 2006 01 26 | G96 | 0.5− | 0.5− | 2006 02 27 | G96 | 0.0 | 0.1+ |
| 2002 02 06 | 644 | 0.6+ | 0.5+ | 2006 01 26 | G96 | 0.1+ | 0.5− | | | | |

**2001 YQ$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.66170 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17918295 | $\omega$ | 103.32015 | | −0.98624558 | | −0.12935412 |
| $a$ | 3.1160536 | $\Omega$ | 69.32313 | | +0.07299830 | | −0.89939784 |
| $e$ | 0.1130655 | $i$ | 6.31405 | | +0.14829331 | | −0.41755363 |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.1+ | 1.2− | 2003 03 23 | 291 | 0.2− | 0.1− | 2003 05 25 | 691 | 0.3+ | 0.6+ |
| 2001 12 18 | 704 | 0.1+ | 0.9+ | 2003 03 26 | 699 | 0.8− | 1.5+ | 2003 06 06 | 691 | (0.4− | 2.4+) |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2003 03 26 | 699 | 0.1+ | 0.9− | 2003 06 06 | 691 | (0.1+ | 1.7+) |
| 2001 12 18 | 704 | 0.4+ | 1.4+ | 2003 03 26 | 699 | 0.2+ | 1.0− | 2003 06 06 | 691 | (0.1− | 2.1+) |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2003 03 26 | 699 | 0.7+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.7+ | 1.2− | 2003 04 09 | 704 | 0.8− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.8+ | 0.6− | 2003 04 09 | 704 | 0.1− | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2003 04 09 | 704 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2003 04 26 | 608 | 0.5+ | 1.2− | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2002 01 08 | 704 | 0.5− | 0.7+ | 2003 04 26 | 608 | 0.7+ | 0.6− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.1+ | 0.3+ | 2003 04 26 | 608 | 0.1+ | 0.7− | 2006 11 15 | 691 | 0.4+ | 0.3+ |
| 2002 01 08 | 704 | 0.6− | 0.3+ | 2003 05 05 | 704 | (0.4+ | 2.0+) | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2002 01 11 | 691 | 0.2+ | 0.3+ | 2003 05 05 | 704 | 0.5+ | 0.0 | 2006 11 23 | 691 | 0.6− | 0.6− |
| 2002 01 11 | 691 | 0.3+ | 0.1+ | 2003 05 05 | 704 | 0.9+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2002 01 11 | 691 | (0.3+ | 2.6+) | 2003 05 05 | 704 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 03 23 | 291 | 0.4− | 0.0 | 2003 05 25 | 691 | 0.3+ | 0.4+ | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2003 03 23 | 291 | 0.1− | 0.1− | 2003 05 25 | 691 | 0.3− | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.0 |

**2001 YR$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.49589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23423205 | $\omega$ | 29.86448 | | +0.57417274 | | −0.81285140 |
| $a$ | 2.6063846 | $\Omega$ | 25.48668 | | +0.69884003 | | +0.42422782 |
| $e$ | 0.1482702 | $i$ | 13.16049 | | +0.42655395 | | +0.39912824 |
| $P$ | 4.21 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 699 | 0.7− | 0.1+ | 2004 07 15 | E12 | 0.1+ | 0.4+ | 2005 11 26 | 704 | 0.3− | 0.4− |
| 2001 12 19 | 699 | 0.2− | 0.5+ | 2004 07 15 | E12 | 0.1− | 0.2+ | 2005 11 26 | 704 | 0.2− | 0.2+ |
| 2001 12 19 | 699 | 0.4− | 0.5− | 2004 07 15 | E12 | 0.3− | 0.5+ | 2005 12 10 | 703 | 0.6+ | 0.4− |
| 2001 12 19 | 699 | 0.4− | 0.3− | 2005 10 25 | 703 | 0.6− | 0.2− | 2005 12 10 | 703 | 0.0 | 0.6− |
| 2001 12 23 | 704 | 0.4+ | 1.4− | 2005 10 25 | 703 | 0.8− | 0.1+ | 2005 12 10 | 703 | 0.4+ | 0.6− |
| 2001 12 23 | 704 | 0.4+ | 0.7+ | 2005 10 25 | 703 | 0.3+ | 0.5+ | 2005 12 10 | 703 | 0.3+ | 0.3− |
| 2001 12 23 | 704 | 0.3− | 0.6+ | 2005 10 25 | 703 | (0.5+ | 4.8+) | 2005 12 10 | 703 | 0.3− | 0.1+ |
| 2001 12 23 | 704 | (0.3− | 2.1+) | 2005 10 30 | 704 | 0.5+ | 1.1− | 2005 12 10 | 703 | 1.2− | 0.9+ |
| 2002 01 06 | 704 | 0.3− | 0.2− | 2005 10 30 | 704 | 0.0 | 0.1− | 2005 12 10 | 703 | 0.0 | 0.5+ |
| 2002 01 06 | 704 | 0.1+ | 0.2+ | 2005 10 30 | 704 | 0.2+ | 0.1− | 2005 12 10 | 703 | 1.2− | 0.0 |
| 2002 01 06 | 704 | 0.7+ | 0.6+ | 2005 10 30 | 704 | 0.3+ | 0.7+ | 2005 12 23 | 644 | 0.3+ | 0.1− |
| 2002 01 06 | 704 | 0.2+ | 0.0 | 2005 11 03 | 704 | 0.2− | 0.5+ | 2005 12 23 | 704 | 0.3+ | 0.3− |
| 2002 01 06 | 704 | 0.6+ | 1.0+ | 2005 11 03 | 704 | 0.0 | 0.3+ | 2005 12 23 | 644 | 0.4+ | 0.2− |
| 2003 04 25 | 691 | 0.1+ | 0.4+ | 2005 11 03 | 704 | 0.1+ | 0.1+ | 2005 12 23 | 704 | 0.6+ | 0.7− |
| 2003 04 25 | 691 | 0.3+ | 0.2+ | 2005 11 03 | 704 | 0.1− | 0.7+ | 2005 12 23 | 704 | 0.0 | 0.3− |
| 2003 04 25 | 691 | 0.1+ | 0.2+ | 2005 11 03 | 704 | 0.5− | 0.3+ | 2005 12 23 | 644 | 0.5+ | 0.1+ |
| 2004 07 15 | E12 | 0.1− | 1.0+ | 2005 11 26 | 704 | 0.1− | 1.5− | | | | |

**2001 YS$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.87696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24004876 | $\omega$ | 158.63694 | | −0.95423629 | | −0.29888074 |
| $a$ | 2.5641085 | $\Omega$ | 4.01418 | | +0.24899818 | | −0.81288981 |
| $e$ | 0.0621216 | $i$ | 8.35252 | | +0.16562914 | | −0.49988044 |
| $P$ | 4.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.0 | 0.8+ | 2002 01 14 | 644 | 0.0 | 0.6+ | 2002 02 08 | 704 | 1.7+ | 1.3− |
| 2001 12 19 | 644 | 0.1− | 0.8+ | 2002 01 14 | 644 | 0.1+ | 0.6+ | 2004 09 17 | 704 | 0.5+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.4− | 0.8+ | 2002 01 21 | 704 | 1.8+ | 0.2+ | 2004 09 17 | 704 | 0.0 | 0.4− | | |
| 2001 12 22 | 704 | 1.1− | 1.3+ | 2002 01 21 | 704 | 0.7+ | 0.8− | 2004 09 17 | 704 | 0.5+ | 1.3− | | |
| 2001 12 22 | 704 | 0.8− | 0.1− | 2002 01 21 | 704 | 0.5+ | 0.9− | 2004 10 08 | 691 | 0.0 | 0.1+ | | |
| 2001 12 22 | 704 | 0.6− | 1.6− | 2002 02 08 | 704 | 0.1− | 0.1+ | 2004 10 08 | 691 | 0.0 | 0.1+ | | |
| 2001 12 22 | 704 | 1.2− | 0.8− | 2002 02 08 | 704 | 0.3+ | 0.5− | 2004 10 08 | 691 | 0.2− | 0.2+ | | |
| 2002 01 14 | 644 | 0.1+ | 0.5+ | 2002 02 08 | 704 | 0.8− | 0.2+ | | | | | | |

**2001 YT$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.48625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36086563 | $\omega$ | 174.83686 | | −0.15721423 | −0.94551445 | |
| $a$ | 1.9539151 | $\Omega$ | 283.98482 | | +0.89523028 | −0.01455919 | |
| $e$ | 0.0938145 | $i$ | 17.08655 | | +0.41694895 | −0.32525444 | |
| $P$ | 2.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.2− | 0.8+ | 2002 01 12 | 704 | 0.5+ | 0.1− | 2005 04 15 | E12 | 0.3− | 0.2+ | | |
| 1998 12 17 | 704 | 0.3+ | 0.1− | 2002 01 12 | 704 | 0.6− | 0.1+ | 2005 04 15 | E12 | 0.5− | 0.3+ | | |
| 1998 12 17 | 704 | 0.3− | 0.1− | 2002 02 09 | 691 | 0.5− | 0.1+ | 2005 04 15 | E12 | (3.0− | 1.3+) | | |
| 1998 12 17 | 704 | 0.6− | 1.1− | 2002 02 09 | 691 | 0.1− | 0.3+ | 2005 04 15 | E12 | 0.6− | 0.1− | | |
| 1998 12 17 | 704 | 0.5− | 1.0− | 2002 02 09 | 691 | 0.1− | 0.0 | 2006 10 29 | 703 | 0.4− | 0.5+ | | |
| 2001 12 19 | 704 | 0.6− | 0.2− | 2002 02 21 | 644 | 0.7+ | 0.1− | 2006 10 29 | 703 | 0.3+ | 0.8+ | | |
| 2001 12 19 | 704 | 0.4− | 0.0 | 2002 02 21 | 644 | 0.6+ | 0.3− | 2006 10 29 | 703 | 0.9− | 0.2− | | |
| 2001 12 19 | 704 | 0.4− | 0.2− | 2002 02 21 | 644 | 0.5+ | 0.5− | 2006 10 29 | 703 | 0.4− | 0.4+ | | |
| 2001 12 26 | 608 | 0.9+ | 0.0 | 2003 07 20 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.0 | 0.8− | | |
| 2001 12 26 | 608 | 1.4+ | 0.5− | 2003 07 20 | 644 | 0.0 | 0.6+ | 2006 11 14 | 704 | 1.4− | 1.5+ | | |
| 2001 12 26 | 608 | 1.2+ | 0.1+ | 2003 07 20 | 644 | 0.1− | 0.6+ | 2006 11 14 | 704 | 1.2+ | 1.0− | | |
| 2002 01 12 | 704 | 0.9+ | 0.1+ | 2003 08 29 | 608 | 0.5+ | 0.5− | 2006 11 14 | 704 | 0.4+ | 0.0 | | |
| 2002 01 12 | 704 | 0.0 | 0.4− | 2003 08 29 | 608 | 0.3+ | 0.2+ | | | | | | |
| 2002 01 12 | 704 | 0.9+ | 0.4+ | 2003 08 29 | 608 | 0.6+ | 0.2− | | | | | | |

**2001 YU$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.15583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21295874 | $\omega$ | 135.01922 | | +0.77110908 | −0.63046508 | |
| $a$ | 2.7771909 | $\Omega$ | 264.27334 | | +0.55615809 | +0.73494195 | |
| $e$ | 0.0600624 | $i$ | 5.12642 | | +0.30996608 | +0.24974809 | |
| $P$ | 4.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 25 | 291 | 0.3− | 0.1− | 2002 02 11 | 704 | 0.2− | 0.3+ | 2005 11 25 | 691 | 0.2+ | 0.0 | | |
| 2001 12 25 | 291 | 0.3+ | 0.3+ | 2002 02 11 | 704 | 0.6− | 0.5+ | 2005 11 28 | 703 | 0.6− | 0.8+ | | |
| 2001 12 25 | 291 | 0.2+ | 0.2+ | 2004 06 27 | 691 | 0.1− | 0.1− | 2005 11 28 | 703 | 0.8− | 0.5+ | | |
| 2002 01 13 | 704 | 0.8+ | 0.1+ | 2004 06 27 | 691 | 0.1+ | 0.1+ | 2005 11 28 | 703 | 1.0− | 0.7− | | |
| 2002 01 13 | 704 | 0.7+ | 0.4+ | 2004 06 27 | 691 | 0.2− | 0.5+ | 2005 11 28 | 703 | 0.9+ | 0.9+ | | |
| 2002 01 13 | 704 | 0.6+ | 0.1− | 2005 11 05 | 691 | 0.1+ | 0.0 | 2005 12 10 | 691 | 0.2− | 0.2+ | | |
| 2002 01 13 | 704 | 0.3+ | 0.0 | 2005 11 05 | 691 | 0.1+ | 0.1− | 2005 12 10 | 691 | 0.1+ | 0.0 | | |
| 2002 01 13 | 704 | 0.4− | 0.9− | 2005 11 05 | 691 | 0.1+ | 0.1− | 2005 12 10 | 691 | 0.2− | 0.2− | | |
| 2002 02 11 | 704 | 0.9− | 0.3− | 2005 11 25 | 691 | 0.1+ | 0.3− | | | | | | |
| 2002 02 11 | 704 | 0.7− | 0.1+ | 2005 11 25 | 691 | 0.1+ | 0.1+ | | | | | | |

**2002 AF$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.75310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17517506 | $\omega$ | 163.55902 | | −0.09033690 | −0.99040341 | |
| $a$ | 3.1634030 | $\Omega$ | 291.52792 | | +0.90060541 | −0.03640566 | |
| $e$ | 0.1533976 | $i$ | 6.45599 | | +0.42514602 | −0.13332557 | |
| $P$ | 5.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.1+ | 0.4+ | 2002 01 13 | 704 | 1.5+ | 1.0− | 2002 02 07 | 704 | 1.0+ | 0.7− | | |
| 2001 12 14 | 291 | 0.2− | 0.4+ | 2002 01 13 | 704 | 0.4+ | 0.9− | 2002 02 07 | 704 | 0.1− | 0.7− | | |
| 2001 12 14 | 291 | 0.0 | 0.2+ | 2002 01 13 | 704 | 0.6+ | 1.0− | 2002 02 07 | 704 | 0.8− | 0.1− | | |
| 2001 12 17 | 644 | 0.4+ | 0.5+ | 2002 01 13 | 704 | (0.2+ | 1.6−) | 2002 02 07 | 704 | 0.2+ | 0.7− | | |
| 2001 12 17 | 644 | 0.3+ | 0.5+ | 2002 01 13 | 704 | 0.7+ | 1.0− | 2002 02 11 | 704 | 0.0 | 1.1+ | | |
| 2001 12 17 | 644 | 0.3+ | 0.4+ | 2002 01 13 | 185 | 1.2− | 1.2+ | 2002 02 11 | 704 | 0.6− | 1.3+ | | |
| 2001 12 18 | 704 | 0.7+ | 0.0 | 2002 01 13 | 185 | 0.4− | 0.2+ | 2002 02 11 | 704 | 1.0− | 0.6+ | | |
| 2001 12 18 | 704 | 0.4+ | 0.1− | 2002 01 13 | 185 | 0.0 | 0.2+ | 2002 02 11 | 704 | 0.2− | 0.6+ | | |
| 2001 12 18 | 704 | 0.1− | 0.7− | 2002 01 13 | 185 | 0.1− | 0.1− | 2002 02 11 | 704 | 0.9− | 0.6+ | | |
| 2001 12 18 | 704 | 0.1− | 0.7− | 2002 01 13 | 185 | 0.2− | 0.5− | 2002 02 11 | 122 | 0.0 | 0.6− | | |
| 2001 12 20 | 291 | 0.1− | 0.2− | 2002 01 15 | 704 | 0.2− | 0.3+ | 2002 02 11 | 122 | 1.5− | 0.6− | | |
| 2001 12 20 | 291 | 0.2− | 0.2− | 2002 01 15 | 704 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.0 | | |
| 2001 12 20 | 291 | 0.0 | 0.2− | 2002 01 15 | 704 | 0.4− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.5− | | |
| 2002 01 05 | 185 | 0.2+ | 0.9+ | 2002 01 15 | 704 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.8+ | 0.1− | | |
| 2002 01 05 | 185 | 0.2− | 0.1+ | 2002 01 15 | 608 | 0.5− | 0.9− | 2006 10 19 | 703 | 0.8− | 0.5+ | | |
| 2002 01 05 | 185 | 0.2+ | 0.2− | 2002 01 15 | 608 | 0.5− | 0.8− | 2006 10 27 | 703 | 0.3+ | 0.6− | | |
| 2002 01 08 | 185 | 0.7− | 0.4− | 2002 01 15 | 608 | 0.2− | 0.7− | 2006 10 27 | 703 | 0.7− | 0.1− | | |
| 2002 01 08 | 185 | 0.1− | 0.5− | 2002 01 18 | 122 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.4− | | |
| 2002 01 08 | 185 | 0.8+ | 0.0 | 2002 01 18 | 122 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.7− | 0.4− | | |
| 2002 01 08 | 185 | 0.7+ | 0.5− | 2002 01 18 | 122 | 0.3− | 0.2+ | 2006 10 28 | 122 | 0.2+ | 0.5+ | | |
| 2002 01 08 | 185 | 0.7+ | 0.7− | 2002 01 18 | 122 | 0.1− | 0.0 | 2006 10 28 | 122 | 0.3+ | 0.0 | | |
| 2002 01 08 | 185 | 0.3+ | 0.2+ | 2002 01 18 | 122 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.4+ | | |
| 2002 01 09 | 704 | (0.6+ | 2.0+) | 2002 01 19 | 704 | 0.5− | 0.5+ | 2006 11 08 | 644 | 0.3− | 0.5+ | | |
| 2002 01 09 | 704 | 0.1− | 1.0+ | 2002 01 19 | 704 | 0.6+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.5+ | | |
| 2002 01 09 | 704 | 0.5+ | 1.0+ | 2002 01 19 | 704 | 0.5− | 0.1− | 2006 11 22 | 703 | (1.8+ | 0.4+) | | |
| 2002 01 09 | 704 | (1.8+ | 1.3+) | 2002 01 19 | 704 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.4+ | 0.6− | | |
| 2002 01 09 | 704 | 0.1+ | 0.4− | 2002 01 21 | 704 | 0.5+ | 0.2− | 2006 11 22 | 703 | 0.9+ | 0.1− | | |
| 2002 01 09 | 185 | 0.1− | 0.1+ | 2002 01 21 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 703 | 0.9− | 0.4− | | |
| 2002 01 09 | 185 | 0.6+ | 0.6+ | 2002 01 21 | 704 | 1.3+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.2+ | | |
| 2002 01 09 | 185 | 1.0+ | 0.3+ | 2002 02 02 | 185 | 0.6+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2+ | | |
| 2002 01 12 | 122 | 0.4− | 0.1+ | 2002 02 02 | 185 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.3+ | | |
| 2002 01 12 | 122 | 0.5− | 0.2− | 2002 02 02 | 185 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.0 | | |

**2002 AT$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.95161 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38652414 | $\omega$ | 202.77574 | | −0.97225346 | −0.23341251 | |
| $a$ | 1.8664583 | $\Omega$ | 323.71509 | | +0.21846974 | −0.88222520 | |
| $e$ | 0.4469685 | $i$ | 1.50568 | | +0.08363122 | −0.40889767 | |
| $P$ | 2.55 | $H$ | 21.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 644 | 0.3− | 0.2+ | 2002 01 21 | 649 | 0.1+ | 0.3+ | 2002 02 10 | 322 | 0.2− | 0.1+ | | |
| 2001 12 28 | 608 | 0.0 | 0.2+ | 2002 01 21 | 649 | 0.2+ | 0.4+ | 2002 02 10 | 322 | 0.8+ | 0.8− | | |
| 2001 12 28 | 608 | 0.3− | 0.0 | 2002 01 21 | 649 | 0.2+ | 0.3+ | 2002 02 10 | 322 | 0.7− | 0.3− | | |
| 2002 01 08 | 704 | 0.1+ | 0.7− | 2002 01 21 | 670 | 0.3− | 0.1+ | 2002 02 12 | 413 | 0.1− | 0.2− | | |
| 2002 01 08 | 704 | 0.5+ | 0.8− | 2002 01 25 | 704 | 0.2− | 0.0 | 2002 02 12 | 413 | 0.2+ | 0.1+ | | |
| 2002 01 08 | 704 | 0.1− | 0.9− | 2002 01 25 | 670 | 1.1− | 0.3+ | 2002 02 13 | 333 | 1.3− | 0.0 | | |
| 2002 01 08 | 704 | 0.4− | 0.6− | 2002 01 25 | 704 | 0.0 | 0.1− | 2002 02 13 | 333 | 1.5− | 0.3+ | | |
| 2002 01 08 | 704 | 0.3− | 1.4− | 2002 01 25 | 704 | 0.5− | 0.4− | 2002 02 13 | 333 | 0.1+ | 1.9− | | |
| 2002 01 09 | 704 | 0.5− | 0.6+ | 2002 01 25 | 704 | 0.2− | 0.1− | 2002 02 14 | 333 | 1.3+ | 1.4− | | |
| 2002 01 09 | 704 | 0.2− | 0.1+ | 2002 01 25 | 704 | 0.1− | 0.3− | 2002 02 14 | 333 | (3.4+ | 2.7−) | | |
| 2002 01 09 | 704 | 0.3− | 0.5+ | 2002 01 25 | 670 | 1.8+ | 1.5+ | 2002 02 14 | 333 | 0.0 | 0.6− | | |
| 2002 01 09 | 704 | 0.9− | 0.1− | 2002 01 31 | 670 | 0.4+ | 0.1− | 2002 02 15 | 704 | 0.3− | 0.6+ | | |
| 2002 01 09 | 704 | 0.1+ | 0.5+ | 2002 01 31 | 670 | 0.5− | 0.3+ | 2002 02 15 | 704 | 0.5− | 0.4+ | | |
| 2002 01 09 | 704 | 0.4− | 0.5+ | 2002 01 31 | 670 | 0.5− | 0.2− | 2002 02 15 | 704 | 0.3− | 0.1+ | | |
| 2002 01 09 | 704 | 0.7− | 0.1+ | 2002 02 02 | 322 | 0.9+ | 1.0+ | 2002 02 15 | 704 | 0.4− | 0.0 | | |
| 2002 01 09 | 704 | 0.3− | 0.3+ | 2002 02 02 | 322 | 0.6+ | 0.5− | 2002 02 15 | 704 | 0.3− | 0.4− | | |
| 2002 01 09 | 704 | 0.7− | 0.1− | 2002 02 02 | 322 | (3.3+ | 4.4−) | 2002 02 18 | 452 | (2.1− | 1.4+) | | |
| 2002 01 09 | 704 | 0.7− | 0.1+ | 2002 02 02 | 151 | 0.3+ | 0.5− | 2002 02 18 | 452 | 0.7− | 0.5+ | | |
| 2002 01 09 | 046 | 0.6+ | 0.4+ | 2002 02 02 | 151 | 0.1− | 0.2− | 2002 02 18 | 452 | 0.7+ | 0.4+ | | |
| 2002 01 09 | 046 | 0.2+ | 0.0 | 2002 02 02 | 151 | 0.3+ | 0.0 | 2002 02 18 | 761 | (2.2− | 0.6−) | | |
| 2002 01 09 | 046 | 0.3− | 0.1+ | 2002 02 02 | 151 | 0.1+ | 0.2− | 2002 02 18 | 761 | (3.8− | 0.6−) | | |
| 2002 01 09 | 046 | 0.4− | 0.0 | 2002 02 02 | 151 | 0.3+ | 0.2− | 2002 02 18 | 761 | (3.4− | 0.2−) | | |
| 2002 01 09 | 046 | 0.1− | 0.1− | 2002 02 02 | 151 | 0.1− | 0.0 | 2002 02 19 | 413 | 0.1− | 0.4− | | |
| 2002 01 09 | 046 | 0.4− | 0.5+ | 2002 02 02 | 215 | 0.1− | 0.2− | 2002 02 19 | 413 | 0.4− | 0.3− | | |
| 2002 01 09 | 046 | 0.1+ | 0.0 | 2002 02 02 | 215 | 0.5− | 0.1+ | 2002 02 20 | 807 | 0.7− | 1.1+ | | |
| 2002 01 11 | 699 | 0.9+ | 0.2− | 2002 02 02 | 215 | 0.1− | 0.0 | 2002 02 20 | 704 | 0.8+ | 0.9+ | | |
| 2002 01 11 | 699 | 0.4− | 0.7− | 2002 02 03 | 113 | 0.3− | 0.1+ | 2002 02 20 | 704 | 0.7+ | 0.6+ | | |
| 2002 01 11 | 699 | 0.4− | 0.6+ | 2002 02 03 | 113 | 0.2− | 0.2+ | 2002 02 20 | 704 | 0.5+ | 0.3+ | | |
| 2002 01 11 | 699 | 0.2− | 0.0 | 2002 02 03 | 113 | 0.0 | 0.1− | 2002 02 20 | 704 | 0.4+ | 0.3+ | | |
| 2002 01 13 | 649 | 0.2+ | 0.4+ | 2002 02 03 | 113 | 0.0 | 0.1+ | 2002 02 20 | 704 | 0.2+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 649 | 0.1+ | 0.1+ | 2002 02 03 | 113 | 0.2− | 0.1− | 2002 02 20 | 670 | 0.1− | 0.2− |
| 2002 01 13 | 649 | 0.1+ | 0.4+ | 2002 02 03 | 670 | 0.1+ | 0.4− | 2002 02 20 | 670 | 0.4+ | 0.1− |
| 2002 01 13 | 649 | 0.2+ | 0.1+ | 2002 02 03 | 670 | 0.6+ | 0.1+ | 2002 02 20 | 670 | 1.5+ | 0.3− |
| 2002 01 13 | 691 | 0.4+ | 0.1− | 2002 02 03 | 670 | 0.4+ | 0.1+ | 2002 02 24 | 670 | 0.3+ | 0.1+ |
| 2002 01 13 | 691 | 0.4+ | 0.1− | 2002 02 04 | 699 | 1.3− | 0.6+ | 2002 02 24 | 670 | 0.0 | 0.7− |
| 2002 01 13 | 691 | 1.4+ | 0.7− | 2002 02 04 | 699 | 0.1− | 0.1+ | 2002 03 05 | 413 | 0.3+ | 0.5+ |
| 2002 01 13 | 413 | 0.1− | 0.3− | 2002 02 04 | 699 | 0.1+ | 0.1+ | 2002 03 05 | 413 | 0.4− | 0.2− |
| 2002 01 13 | 413 | 0.1− | 0.4− | 2002 02 04 | 699 | 0.1− | 0.1− | 2002 03 05 | 413 | 0.1− | 0.0 |
| 2002 01 13 | 413 | 0.1− | 0.5− | 2002 02 05 | 118 | 0.1+ | 0.0 | 2002 03 11 | 428 | 0.7− | 0.9− |
| 2002 01 13 | 611 | 1.1+ | 1.1+ | 2002 02 05 | 118 | 0.1+ | 0.1− | 2002 03 26 | 413 | 0.1− | 0.2+ |
| 2002 01 13 | 611 | 0.4+ | 0.4+ | 2002 02 05 | 118 | 0.2+ | 0.1− | 2002 03 26 | 413 | 0.1+ | 0.2+ |
| 2002 01 13 | 611 | 0.0 | 0.4+ | 2002 02 06 | 670 | 0.0 | 0.2− | 2002 04 02 | 413 | 0.1− | 0.2+ |
| 2002 01 14 | 704 | 0.0 | 0.3− | 2002 02 06 | 670 | 0.1− | 0.3+ | 2002 04 02 | 413 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.3+ | 0.0 | 2002 02 06 | 608 | (3.2+ | 1.0−) | 2002 04 02 | 413 | 0.3+ | 0.4+ |
| 2002 01 14 | 704 | 0.3+ | 0.0 | 2002 02 06 | 608 | (3.1+ | 1.3−) | 2002 04 03 | 413 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 0.2+ | 0.1− | 2002 02 06 | 608 | (3.1+ | 1.2−) | 2002 04 03 | 413 | 0.1− | 0.2+ |
| 2002 01 14 | 704 | 0.0 | 0.1− | 2002 02 07 | 704 | 0.1− | 1.1+ | 2002 04 03 | 413 | 0.3+ | 0.0 |
| 2002 01 14 | 587 | 0.9− | 0.8+ | 2002 02 07 | 704 | 0.2− | 0.9+ | 2002 04 03 | 413 | 0.2+ | 0.1− |
| 2002 01 14 | 587 | 1.5− | 0.0 | 2002 02 07 | 704 | 0.1− | 1.1+ | 2002 04 22 | 413 | 0.0 | 0.2+ |
| 2002 01 14 | 587 | 1.0− | 0.9− | 2002 02 07 | 704 | 0.7− | 0.9+ | 2002 04 22 | 413 | 0.1+ | 0.0 |
| 2002 01 14 | 587 | 0.4+ | 0.7− | 2002 02 07 | 704 | 0.2− | 0.8+ | 2002 04 22 | 413 | 0.1− | 0.0 |
| 2002 01 15 | 704 | 0.2+ | 0.5+ | 2002 02 08 | 670 | 0.1+ | 0.6− | 2002 04 23 | 413 | 0.2+ | 0.1+ |
| 2002 01 15 | 704 | 0.1+ | 0.5+ | 2002 02 08 | 670 | 0.1− | 0.3− | 2002 04 23 | 413 | 0.0 | 0.3+ |
| 2002 01 15 | 704 | 0.1+ | 0.7+ | 2002 02 08 | 670 | 0.3+ | 0.3+ | 2002 04 23 | 413 | 0.2+ | 0.3+ |
| 2002 01 15 | 704 | 0.2+ | 0.0 | 2002 02 08 | 608 | (2.4+ | 1.6−) | 2002 04 23 | 413 | 0.0 | 0.2+ |
| 2002 01 16 | 046 | 0.1+ | 0.0 | 2002 02 08 | 608 | (2.4+ | 1.8−) | 2002 04 23 | 413 | 0.1+ | 0.2+ |
| 2002 01 16 | 046 | 0.1− | 0.0 | 2002 02 08 | 608 | (2.6+ | 1.7−) | 2002 04 23 | 413 | 0.2− | 0.0 |
| 2002 01 16 | 046 | 0.0 | 0.1+ | 2002 02 08 | 322 | 0.4− | 0.3+ | 2002 05 02 | 413 | 0.1− | 0.4+ |
| 2002 01 16 | 046 | 0.1+ | 0.2+ | 2002 02 08 | 322 | (2.4+ | 0.6+) | 2002 05 02 | 413 | 0.1− | 0.3+ |
| 2002 01 16 | 046 | 0.0 | 0.2− | 2002 02 08 | 322 | (2.8+ | 1.9−) | 2002 05 02 | 413 | 0.1− | 0.2+ |
| 2002 01 18 | 966 | 0.3− | 0.4+ | 2002 02 09 | 049 | 0.2− | 0.1+ | 2002 06 05 | 413 | 0.2+ | 0.6+ |
| 2002 01 18 | 966 | 0.1− | 0.2− | 2002 02 09 | 049 | 0.3− | 0.0 | 2002 06 05 | 413 | 0.1− | 0.5+ |
| 2002 01 18 | 966 | 0.3+ | 0.1+ | 2002 02 09 | 049 | 0.3− | 0.1+ | 2002 06 05 | 413 | 0.2− | 0.5+ |
| 2002 01 21 | 704 | 0.3− | 0.1− | 2002 02 09 | 413 | 0.1− | 0.0 | 2002 06 06 | 696 | 0.2− | 0.1+ |
| 2002 01 21 | 704 | 0.3− | 0.4− | 2002 02 09 | 413 | 0.5− | 0.4+ | 2002 06 06 | 696 | 0.1− | 0.4− |
| 2002 01 21 | 670 | 0.4+ | 0.7+ | 2002 02 09 | 413 | 0.0 | 0.1− | 2002 06 06 | 413 | 0.4+ | 0.1+ |
| 2002 01 21 | 704 | 0.3− | 0.1+ | 2002 02 10 | 704 | 0.0 | 0.5− | 2006 11 27 | 291 | 0.7− | 0.3+ |
| 2002 01 21 | 704 | 0.2− | 0.9− | 2002 02 10 | 704 | 0.3+ | 0.6− | 2006 11 27 | 291 | 0.7+ | 0.1+ |
| 2002 01 21 | 704 | 0.4− | 0.4− | 2002 02 10 | 704 | 0.3+ | 0.7− | 2006 11 27 | 291 | 0.6− | 1.8+ |
| 2002 01 21 | 670 | 0.6+ | 0.1+ | 2002 02 10 | 704 | 0.1+ | 1.0− | | | | |

## 2002 $AU_6$ = 2006 $TX_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 7.63477 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.19001970 | $\omega$ | 174.02722 | | | +0.85489423 | | −0.50459842 | |
| $a$ | 2.9964265 | $\Omega$ | 217.08452 | | | +0.46733289 | | +0.84991558 | |
| $e$ | 0.1293193 | $i$ | 11.53386 | | | +0.22529053 | | +0.15173638 | |
| $P$ | 5.19 | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2001 11 17 | 704 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 1.1+ | 0.6− |
| 2001 11 17 | 704 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2001 11 17 | 704 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2001 11 17 | 704 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 2001 12 11 | 704 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 1.0− |
| 2001 12 11 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.5− | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2001 12 11 | 704 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2002 01 05 | 209 | 0.2− | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.6− | 0.6+ |
| 2002 01 05 | 209 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2002 01 05 | 209 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2002 01 09 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 1.0− | 2006 11 25 | 704 | 0.6+ | 0.2− |
| 2002 01 09 | 644 | 0.5+ | 0.2+ | 2006 11 11 | 703 | (1.7+ | 0.6+) | 2006 11 25 | 704 | 0.3− | 0.9+ |
| 2002 01 09 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | (0.2+ | 2.5−) | 2006 11 25 | 704 | 1.1− | 0.1+ |
| 2002 01 10 | 209 | 1.1− | 0.8− | 2006 11 13 | 703 | 0.2+ | 0.1− | 2006 11 25 | 704 | 0.3− | 0.1− |
| 2002 01 10 | 209 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.9− | 0.5− | 2006 11 28 | 683 | 0.2+ | 0.7− |
| 2002 01 10 | 209 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.8− | 2006 11 28 | 683 | 0.1− | 0.1− |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1− | 1.0+ | 2006 11 28 | 683 | 0.3− | 0.7+ |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.6− | 2006 11 28 | 704 | (1.5+ | 0.5+) |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.5− | 2006 11 28 | 704 | 0.7+ | 0.4+ |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− | 2006 11 28 | 704 | 0.6+ | 0.0 |
| 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.7− | 2006 11 28 | 704 | 0.2+ | 0.4+ |
| 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.6+ | 0.2+ |
| 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 17 | 704 | 1.2+ | 0.7+ | | | | |
| 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.8+ | | | | |

## 2002 $AM_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 307.55195 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.17022710 | $\omega$ | 163.04805 | | | −0.27493476 | | −0.93789411 | |
| $a$ | 3.2244099 | $\Omega$ | 302.44231 | | | +0.85049501 | | −0.13461003 | |
| $e$ | 0.0574000 | $i$ | 14.51928 | | | +0.44840730 | | −0.31974173 | |
| $P$ | 5.79 | $H$ | 14.7 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 644 | 0.2+ | 0.2− | 2002 01 22 | 291 | 0.3− | 0.2+ | 2002 02 20 | 691 | 0.4+ | 0.0 |
| 2001 12 17 | 644 | 0.2− | 0.2+ | 2002 01 22 | 291 | 0.2+ | 0.2+ | 2002 02 20 | 704 | 0.5+ | 0.1− |
| 2001 12 17 | 644 | 0.3+ | 0.1+ | 2002 02 05 | 644 | 0.1− | 0.1+ | 2002 02 20 | 691 | 0.3+ | 0.2− |
| 2001 12 21 | 704 | 0.3+ | 0.9− | 2002 02 05 | 644 | 0.5− | 0.1+ | 2002 02 20 | 704 | 0.0 | 0.3− |
| 2001 12 21 | 704 | 0.2+ | 0.1+ | 2002 02 05 | 644 | 0.2+ | 0.1+ | 2002 02 20 | 704 | 0.3− | 0.8− |
| 2001 12 21 | 704 | 0.5+ | 0.1+ | 2002 02 07 | 704 | 0.0 | 0.2− | 2002 03 05 | 644 | 0.3− | 0.2− |
| 2002 01 07 | 644 | 0.0 | 0.3+ | 2002 02 07 | 704 | 0.4+ | 0.9+ | 2002 03 05 | 644 | 0.1+ | 0.1+ |
| 2002 01 07 | 644 | 0.3− | 0.7+ | 2002 02 07 | 704 | 0.9+ | 0.1+ | 2002 03 05 | 644 | 0.1+ | 0.1− |
| 2002 01 07 | 644 | 0.1− | 0.7+ | 2002 02 07 | 704 | 1.0− | 0.7+ | 2005 08 31 | 704 | 0.6+ | 0.4− |
| 2002 01 11 | 333 | 0.3+ | 0.6− | 2002 02 07 | 704 | 0.3+ | 0.0 | 2005 08 31 | 704 | 0.7+ | 0.2+ |
| 2002 01 11 | 333 | 0.5− | 0.0 | 2002 02 11 | 704 | 0.3− | 1.1+ | 2005 08 31 | 704 | 0.2− | 0.4+ |
| 2002 01 11 | 333 | 0.2+ | 0.6+ | 2002 02 11 | 704 | 0.0 | 0.8+ | 2005 10 02 | 699 | (3.0+ | 0.5+) |
| 2002 01 12 | 333 | 0.3− | 0.3− | 2002 02 11 | 704 | 1.0− | 0.6+ | 2005 10 02 | 699 | 0.7− | 1.0+ |
| 2002 01 12 | 333 | 0.4+ | 0.7− | 2002 02 11 | 704 | 0.8− | 1.3+ | 2005 10 02 | 699 | 0.6+ | 0.8− |
| 2002 01 12 | 333 | 1.0+ | 0.0 | 2002 02 11 | 608 | 0.7+ | 1.3− | 2005 10 02 | 699 | 1.0− | 0.5− |
| 2002 01 13 | 704 | 0.9− | 0.1− | 2002 02 11 | 608 | 0.3+ | 1.4− | 2006 10 23 | 703 | (7.5− | 0.8−) |
| 2002 01 13 | 704 | 0.5− | 0.0 | 2002 02 11 | 608 | 0.0 | 1.3− | 2006 10 23 | 703 | (6.5− | 0.5−) |
| 2002 01 13 | 704 | 0.8− | 0.2− | 2002 02 16 | 644 | 0.0 | 0.4+ | 2006 10 23 | 703 | (6.4− | 0.1−) |
| 2002 01 13 | 704 | 1.0− | 0.1+ | 2002 02 16 | 644 | 0.2+ | 0.1− | 2006 10 23 | 703 | (7.0− | 0.6−) |
| 2002 01 13 | 704 | 0.3− | 0.6− | 2002 02 16 | 644 | 0.1− | 0.3− | | | | |
| 2002 01 22 | 291 | 0.2− | 0.0 | 2002 02 20 | 691 | 0.3+ | 0.2− | | | | |

## 2002 $AN_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 348.96013 | | (2000.0) | | | **P** | | **Q** | |
| $n$ | 0.40234741 | $\omega$ | 116.63785 | | | +0.76255460 | | −0.55299162 | |
| $a$ | 1.8171966 | $\Omega$ | 278.76632 | | | +0.40332261 | | +0.81213615 | |
| $e$ | 0.3357942 | $i$ | 19.85814 | | | +0.50580762 | | +0.18610520 | |
| $P$ | 2.45 | $H$ | 18.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.9+ | 0.9+ | 2006 11 10 | 704 | 0.5− | 0.1+ | 2006 11 12 | 704 | 0.6+ | 0.5+ |
| 2002 01 08 | 704 | 0.4+ | 0.5− | 2006 11 10 | 673 | 0.0 | 0.0 | 2006 11 12 | 704 | 0.2+ | 0.2+ |
| 2002 01 08 | 704 | 0.9+ | 0.1+ | 2006 11 10 | 673 | 0.1+ | 0.1+ | 2006 11 12 | 704 | 0.1+ | 0.5− |
| 2002 01 08 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 704 | 0.4+ | 0.2+ | 2006 11 12 | 704 | 0.3+ | 0.5− |
| 2002 01 08 | 704 | 1.2+ | 0.1+ | 2006 11 10 | 673 | 0.0 | 0.3− | 2006 11 12 | 704 | 0.5+ | 0.6+ |
| 2002 01 11 | 649 | (1.9+ | 0.8+) | 2006 11 10 | 673 | 0.2+ | 0.0 | 2006 11 12 | 704 | 0.5+ | 0.3+ |
| 2002 01 11 | 649 | 0.1+ | 0.6− | 2006 11 10 | 704 | 0.8+ | 0.1− | 2006 11 12 | 704 | 0.1+ | 0.1+ |
| 2002 01 11 | 649 | 0.4+ | 0.7− | 2006 11 10 | 595 | 0.3+ | 0.1− | 2006 11 13 | 704 | (1.7− | 1.3+) |
| 2002 01 11 | 046 | (1.7+ | 0.4+) | 2006 11 10 | 595 | 0.1+ | 0.0 | 2006 11 13 | 704 | 0.4+ | 0.3− |
| 2002 01 11 | 046 | (2.6− | 1.0−) | 2006 11 10 | J87 | 0.1+ | 0.1+ | 2006 11 13 | 704 | 0.2− | 0.4− |
| 2002 01 11 | 046 | 1.2+ | 1.3− | 2006 11 10 | J87 | 0.1+ | 0.2− | 2006 11 13 | 704 | 0.3+ | 0.4− |
| 2002 01 12 | 711 | (2.1+ | 0.5+) | 2006 11 10 | J87 | 0.1− | 0.1+ | 2006 11 13 | 704 | 1.2− | 0.6+ |
| 2002 01 12 | 711 | (2.1+ | 1.0+) | 2006 11 11 | 470 | 0.1+ | 0.0 | 2006 11 13 | 704 | 0.8+ | 0.1− |
| 2002 01 12 | 711 | (3.3+ | 0.4−) | 2006 11 11 | 470 | 0.2− | 0.1+ | 2006 11 13 | 704 | 0.4+ | 0.5− |
| 2002 01 15 | 649 | 0.6− | 0.2+ | 2006 11 11 | 470 | 0.2− | 1.4+ | 2006 11 13 | 704 | 0.1+ | 0.4− |
| 2002 01 15 | 649 | 0.5− | 0.5− | 2006 11 11 | 704 | 0.0 | 0.4− | 2006 11 13 | 704 | (3.5+ | 0.9+) |
| 2002 01 15 | 649 | 0.6− | 0.4− | 2006 11 11 | 704 | 0.3− | 0.2+ | 2006 11 13 | 130 | 0.1− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 20 | 649 | 0.8− | 0.0 | 2006 11 11 | 704 | 0.1+ | 0.2− | 2006 11 13 | 130 | 0.0 | 0.0 | |
| 2002 01 20 | 649 | 1.3− | 0.0 | 2006 11 11 | 704 | 0.6− | 1.2− | 2006 11 13 | 130 | 0.0 | 0.2+ | |
| 2002 01 20 | 649 | 0.4− | 0.7+ | 2006 11 11 | H36 | 0.2− | 0.2+ | 2006 11 13 | 130 | 0.2− | 0.2− | |
| 2002 02 08 | 715 | (1.7− | 0.5+) | 2006 11 11 | H36 | 0.4− | 0.3− | 2006 11 15 | 704 | 0.5− | 0.3− | |
| 2002 02 08 | 715 | (1.9− | 0.5+) | 2006 11 11 | H36 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.7− | 0.2− | |
| 2002 02 08 | 715 | (2.1− | 0.3+) | 2006 11 11 | 704 | 0.4− | 0.3− | 2006 11 15 | 704 | 0.1+ | 0.2− | |
| 2002 02 08 | 715 | (3.4− | 1.2−) | 2006 11 11 | 704 | 0.5− | 0.3− | 2006 11 15 | 704 | 0.1− | 0.4− | |
| 2002 02 08 | 715 | (2.8− | 1.0−) | 2006 11 11 | H36 | 0.4− | 0.2+ | 2006 11 15 | 704 | 0.3− | 0.2− | |
| 2002 03 11 | 696 | 0.7− | 0.2+ | 2006 11 11 | 704 | 0.2+ | 0.0 | 2006 11 24 | H45 | 0.1+ | 0.4− | |
| 2002 03 11 | 696 | 0.7− | 0.5− | 2006 11 11 | 704 | 0.8− | 0.9− | 2006 11 24 | H45 | 0.0 | 0.2− | |
| 2006 07 17 | J95 | 0.5+ | 0.3+ | 2006 11 11 | 704 | 0.1+ | 0.2+ | 2006 11 24 | H45 | 0.3− | 0.2+ | |
| 2006 07 17 | J95 | 0.4− | 0.4− | 2006 11 11 | 704 | 0.3− | 0.1− | 2006 11 24 | H45 | 0.3− | 0.1− | |
| 2006 11 09 | 704 | 0.5+ | 1.0+ | 2006 11 12 | 704 | 0.3+ | 1.1+ | 2006 11 24 | H45 | 0.1− | 0.1+ | |
| 2006 11 09 | 704 | 0.3− | 0.6+ | 2006 11 12 | 704 | (2.0+ | 0.8−) | 2006 12 01 | 240 | 0.1− | 0.1+ | |
| 2006 11 09 | 704 | 0.0 | 0.6+ | 2006 11 12 | 704 | 0.2+ | 0.0 | 2006 12 01 | 240 | 0.0 | 0.1+ | |
| 2006 11 09 | 704 | 0.3+ | 0.4− | 2006 11 12 | 704 | 0.6+ | 0.1+ | 2006 12 01 | 240 | 0.0 | 0.0 | |
| 2006 11 09 | 704 | 0.3+ | 0.1− | 2006 11 12 | 704 | 0.8+ | 0.2− | 2006 12 01 | 240 | 0.1+ | 0.2+ | |
| 2006 11 10 | 704 | 0.5− | 0.2− | 2006 11 12 | 704 | 0.6+ | 0.6+ | 2006 12 01 | 240 | 0.0 | 0.3+ | |
| 2006 11 10 | 704 | 0.1+ | 0.3+ | 2006 11 12 | 704 | 0.2− | 0.6+ | 2006 12 01 | 240 | 0.1− | 0.4+ | |

**2002 $AC_{12}$ = 2006 $VY_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.02417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18172982 | $\omega$ | 21.29826 | | −0.35909444 | | −0.93084969 |
| $a$ | 3.0868717 | $\Omega$ | 89.79735 | | +0.84622340 | | −0.35528612 |
| $e$ | 0.1426017 | $i$ | 3.87629 | | +0.39364595 | | −0.08538516 |
| $P$ | 5.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.3+ | 0.1− | 2002 01 18 | 704 | 1.2+ | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.2+ | |
| 2002 01 08 | 704 | 0.1− | 0.4− | 2002 01 18 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | |
| 2002 01 08 | 704 | 1.0+ | 0.5+ | 2003 04 11 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.2+ | |
| 2002 01 08 | 704 | 0.5− | 0.0 | 2003 04 11 | 691 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.3+ | |
| 2002 01 10 | 599 | 1.0− | 0.2− | 2003 04 11 | 691 | 0.7+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.3+ | |
| 2002 01 10 | 599 | 0.0 | 0.5− | 2003 05 06 | 691 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.3− | 0.3− | |
| 2002 01 10 | 599 | 0.1+ | 0.9− | 2003 05 06 | 691 | 0.6− | 0.1− | 2006 11 23 | 691 | 0.2− | 0.2+ | |
| 2002 01 10 | 599 | 0.0 | 0.1− | 2003 05 06 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.3+ | |
| 2002 01 10 | 599 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.1− | |
| 2002 01 11 | 599 | 0.8− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.5− | |
| 2002 01 14 | 704 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.0 | 0.1+ | |
| 2002 01 14 | 704 | 0.6− | 0.0 | 2006 09 28 | G96 | 0.9− | 0.3− | 2006 11 24 | G96 | 0.0 | 0.1− | |
| 2002 01 14 | 704 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 12 01 | 691 | 0.0 | 0.2− | |
| 2002 01 14 | 704 | (0.4+ | 1.9−) | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.0 | |
| 2002 01 14 | 704 | 0.3+ | 1.2− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 12 01 | 691 | 0.1− | 0.1− | |
| 2002 01 18 | 704 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.0 | 0.2+ | | | | | |

**2002 $AA_{15}$ = 2006 $SL_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.17020 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17613948 | $\omega$ | 334.27981 | | +0.95207802 | | −0.24670178 |
| $a$ | 3.1518454 | $\Omega$ | 41.35005 | | +0.30583899 | | +0.76180114 |
| $e$ | 0.2310465 | $i$ | 15.88184 | | +0.00315670 | | +0.59899687 |
| $P$ | 5.60 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.3− | 0.3− | |
| 2001 12 23 | 704 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 10 27 | 704 | 0.1− | 0.8− | |
| 2001 12 23 | 704 | 0.4− | 0.3− | 2006 09 25 | 699 | 0.1− | 0.2− | 2006 10 27 | 704 | 0.5+ | 0.2− | |
| 2002 01 05 | 644 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 27 | 704 | 0.6+ | 0.2+ | |
| 2002 01 05 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.5+ | 2006 10 27 | 704 | 0.6+ | 1.1− | |
| 2002 01 05 | 644 | 0.5− | 0.2− | 2006 09 26 | 704 | 0.1+ | 0.4+ | 2006 10 31 | 704 | 0.4− | 0.2− | |
| 2002 01 06 | 704 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 31 | 704 | 0.2+ | 0.8− | |
| 2002 01 06 | 704 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.5+ | 2006 10 31 | 704 | (1.1+ | 2.1+) | |
| 2002 01 06 | 704 | 0.7+ | 0.5− | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 10 31 | 704 | 0.9− | 0.5+ | |
| 2002 01 06 | 704 | 0.1+ | 0.7− | 2006 09 26 | 703 | 0.4− | 0.0 | 2006 10 31 | 704 | 0.5− | 0.1− | |
| 2002 01 06 | 704 | 0.6− | 0.3− | 2006 09 26 | 703 | 0.4− | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.2+ | |
| 2002 01 08 | 704 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.7− | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.2+ | |
| 2002 01 08 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.8− | 2006 11 09 | 644 | 0.2+ | 0.1+ | |
| 2002 01 08 | 704 | 0.5− | 0.5− | 2006 09 29 | 699 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1+ | |
| 2002 01 08 | 704 | 0.3− | 0.8+ | 2006 09 29 | 699 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | |
| 2002 01 08 | 704 | 0.5+ | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.1+ | |
| 2002 01 09 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.5+ | 2006 11 13 | 703 | (4.4+ | 4.0−) | |
| 2002 01 09 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.2− | 0.6+ | 2006 11 13 | 703 | 0.4− | 0.2+ | |
| 2002 01 09 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 704 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.6− | 0.1+ | |
| 2002 01 09 | 704 | 0.3+ | 1.0+ | 2006 10 01 | 704 | 0.9+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.1+ | |
| 2004 05 13 | 691 | 0.3+ | 0.6+ | 2006 10 01 | 704 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.3+ | |
| 2004 05 13 | 691 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.6+ | 0.1− | |
| 2004 05 13 | 691 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.0 | |
| 2006 09 16 | 699 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.7+ | 0.1− | |
| 2006 09 16 | 699 | 0.7− | 0.3+ | 2006 10 15 | 703 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.1− | |
| 2006 09 16 | 699 | 0.5+ | 0.2− | 2006 10 15 | 703 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.1+ | |
| 2006 09 16 | 699 | 0.3+ | 0.2− | 2006 10 15 | 703 | 0.5− | 0.3− | 2006 11 18 | G96 | 0.6+ | 0.0 | |
| 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.0 | |
| 2006 09 18 | 703 | 0.6+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.8+ | 0.1− | |
| 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.6− | 0.1+ | |
| 2006 09 18 | 703 | 1.0+ | 0.7− | 2006 10 21 | 703 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.5− | |
| 2006 09 21 | 699 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.5+ | |
| 2006 09 21 | 699 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.4+ | |
| 2006 09 21 | 699 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.3+ | |
| 2006 09 21 | 699 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 0.4+ | |
| 2006 09 22 | 704 | 0.8− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.4+ | |
| 2006 09 22 | 704 | (0.2+ | 1.9+) | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.8+ | |
| 2006 09 22 | 704 | 0.3− | 1.3+ | 2006 10 22 | 704 | 0.9− | 1.4+ | 2006 11 27 | 703 | 0.5− | 0.1− | |
| 2006 09 22 | 704 | 0.1− | 0.9+ | 2006 10 22 | 704 | 1.1− | 0.4+ | 2006 11 27 | 703 | 0.4+ | 0.5+ | |
| 2006 09 22 | 704 | (0.3− | 1.8+) | 2006 10 22 | 704 | 1.0− | 0.9+ | 2006 11 27 | 703 | 0.3− | 0.1− | |
| 2006 09 25 | 699 | 0.5− | 0.1− | 2006 10 22 | 704 | 1.3− | 1.0+ | 2006 11 27 | 703 | 0.1+ | 0.2− | |

**2002 $AS_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.49268 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36723935 | $\omega$ | 311.68543 | | +0.22859512 | | −0.90308858 |
| $a$ | 1.9312415 | $\Omega$ | 121.49393 | | +0.97071963 | | +0.18313299 |
| $e$ | 0.0784488 | $i$ | 25.23707 | | +0.07380836 | | +0.38844991 |
| $P$ | 2.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 704 | 1.0− | 0.6+ | 2002 01 09 | 608 | 0.9+ | 1.9+ | 2002 02 03 | 644 | 0.3+ | 0.2− | |
| 2001 12 20 | 704 | 0.7− | 0.5− | 2002 01 09 | 608 | 0.7+ | 1.8+ | 2002 02 03 | 644 | 0.0 | 0.1− | |
| 2001 12 20 | 704 | 0.0 | 0.0 | 2002 01 09 | 608 | (0.4+ | 2.1+) | 2002 02 12 | 644 | 0.1+ | 0.3+ | |
| 2001 12 20 | 704 | 1.3− | 0.6+ | 2002 01 14 | 704 | 0.1− | 0.2− | 2002 02 12 | 644 | 0.2+ | 0.1+ | |
| 2002 01 06 | 608 | 0.0 | 0.6− | 2002 01 14 | 704 | 0.3+ | 0.2− | 2002 02 12 | 644 | 0.0 | 0.2+ | |
| 2002 01 06 | 608 | 0.1− | 0.3− | 2002 01 14 | 704 | 0.0 | 0.3− | 2002 02 19 | 704 | 0.2− | 0.4− | |
| 2002 01 06 | 608 | 0.9− | 0.8− | 2002 01 14 | 704 | 0.4+ | 0.6− | 2002 02 19 | 704 | 0.1+ | 0.4+ | |
| 2002 01 09 | 704 | 0.6+ | 0.2+ | 2002 01 14 | 704 | 0.4+ | 0.8− | 2002 02 19 | 704 | 0.7− | 0.6− | |
| 2002 01 09 | 704 | 0.1− | 0.5+ | 2002 02 03 | 644 | 0.2+ | 0.2− | 2006 11 18 | E12 | 0.1+ | 0.2+ | |
| 2002 01 09 | 704 | 0.3+ | 0.2+ | 2002 02 03 | 644 | 0.1+ | 0.1− | 2006 11 18 | E12 | 0.1+ | 0.3− | |
| 2002 01 09 | 704 | 0.1− | 0.4− | 2002 02 03 | 644 | 0.1+ | 0.1− | 2006 11 18 | E12 | 0.2+ | 0.3− | |
| 2002 01 09 | 704 | 0.1+ | 0.0 | 2002 02 03 | 644 | 0.0 | 0.1− | 2006 11 18 | E12 | 0.2− | 0.0 | |

**2002 $AQ_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.77847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18214240 | $\omega$ | 79.87401 | | −0.22164552 | | −0.97366493 |
| $a$ | 3.0822085 | $\Omega$ | 23.14247 | | +0.83302170 | | −0.21751959 |
| $e$ | 0.2078745 | $i$ | 7.80667 | | +0.50690050 | | −0.06827756 |
| $P$ | 5.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 0.1− | 0.6+ | 2002 02 08 | 645 | 0.0 | 0.1− | 2006 11 24 | 703 | 0.4− | 0.4− | |
| 2001 12 22 | 704 | 0.0 | 0.3+ | 2002 02 10 | 704 | 0.2− | 1.2+ | 2006 11 24 | 703 | 0.2+ | 0.8+ | |
| 2001 12 22 | 704 | 0.4− | 0.9+ | 2002 02 10 | 704 | 0.3− | 0.7+ | 2006 11 24 | 703 | 0.3+ | 0.0 | |
| 2002 01 07 | 699 | 0.3+ | 0.1+ | 2002 02 10 | 704 | 0.6− | 0.7+ | 2006 11 25 | J95 | 0.1− | 0.1− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 07 | 699 | 0.4+ | 0.0 | 2002 02 10 | 704 | 1.1− | 0.5+ | 2006 11 25 | J95 | 0.1− | 0.1+ | | |
| 2002 01 07 | 699 | 0.9+ | 0.4+ | 2002 02 10 | 704 | 0.9− | 0.8+ | 2006 11 25 | J95 | 0.0 | 0.2− | | |
| 2002 01 07 | 699 | 0.4+ | 1.0+ | 2006 11 16 | 704 | 0.3+ | 0.2− | 2006 11 25 | J95 | 0.1+ | 0.1− | | |
| 2002 01 11 | 699 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.6− | 0.2− | 2006 11 27 | 704 | 0.2+ | 0.1− | | |
| 2002 01 11 | 699 | 0.5+ | 0.4− | 2006 11 16 | 704 | 0.2− | 0.5− | 2006 11 27 | 704 | 0.1+ | 1.1− | | |
| 2002 01 11 | 699 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.1− | 2006 11 27 | 704 | 0.4− | 0.2− | | |
| 2002 01 11 | 699 | 0.5− | 0.1− | 2006 11 17 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 704 | 0.4− | 0.0 | | |
| 2002 01 14 | 644 | 0.6+ | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.8+ | 0.0 | | |
| 2002 01 14 | 644 | 0.7+ | 0.4+ | 2006 11 17 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.0 | 0.4− | | |
| 2002 01 14 | 644 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.6+ | 2006 11 28 | 704 | 0.2− | 0.9− | | |
| 2002 01 21 | 704 | (0.9+ | 1.5−) | 2006 11 19 | 704 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.7− | 0.1− | | |
| 2002 01 21 | 704 | 0.9+ | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.6− | 0.4− | | |
| 2002 01 21 | 704 | (2.4+ | 0.3−) | 2006 11 19 | 704 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.1− | | |
| 2002 01 21 | 704 | 1.5+ | 0.4− | 2006 11 22 | 704 | 0.4+ | 1.2+ | 2006 11 29 | 704 | 0.2+ | 0.5+ | | |
| 2002 02 03 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3− | 0.8+ | 2006 11 29 | 704 | 0.7+ | 0.6− | | |
| 2002 02 03 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.5− | 2006 11 29 | 704 | 0.2− | 0.0 | | |
| 2002 02 03 | 644 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.7+ | 2006 11 29 | 704 | 0.4+ | 0.1+ | | |
| 2002 02 08 | 645 | 0.1− | 0.2− | 2006 11 24 | 703 | 0.1− | 0.4+ | | | | | | |

### 2002 $AU_{28}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.02309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18045671 | $\omega$ | 330.43994 | | −0.00370418 | | −0.92288794 |
| $a$ | 3.1013732 | $\Omega$ | 117.29136 | | +0.98129658 | | −0.07746501 |
| $e$ | 0.2708171 | $i$ | 25.67595 | | +0.19246638 | | +0.37719627 |
| $P$ | 5.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 644 | 0.1− | 0.2− | 2002 01 20 | 699 | 0.6− | 0.1+ | 2002 03 05 | 704 | 0.1− | 1.0− | | |
| 2001 12 17 | 644 | 0.1− | 0.2− | 2002 01 20 | 699 | 0.0 | 0.2+ | 2002 03 05 | 704 | 0.3− | 0.7− | | |
| 2001 12 17 | 644 | 0.2− | 0.3− | 2002 01 20 | 699 | 0.5− | 0.4+ | 2006 11 01 | 703 | 1.2+ | 0.2+ | | |
| 2002 01 07 | 691 | 0.5− | 0.1− | 2002 01 20 | 699 | 0.2− | 0.1+ | 2006 11 01 | 703 | 0.1+ | 1.0+ | | |
| 2002 01 07 | 691 | 0.6− | 0.1− | 2002 02 03 | 644 | 0.4+ | 0.1− | 2006 11 01 | 703 | 0.1+ | 0.5+ | | |
| 2002 01 07 | 691 | 1.0− | 0.1− | 2002 02 03 | 644 | 0.5+ | 0.1+ | 2006 11 01 | 703 | 0.4− | 0.5+ | | |
| 2002 01 07 | 699 | 0.4+ | 0.2− | 2002 02 03 | 644 | 0.1+ | 0.1− | 2006 11 18 | 703 | 1.0− | 0.2+ | | |
| 2002 01 07 | 699 | 0.4+ | 0.0 | 2002 02 03 | 644 | 0.3+ | 0.0 | 2006 11 18 | 703 | 0.5− | 0.4− | | |
| 2002 01 07 | 699 | 0.3− | 1.0+ | 2002 02 03 | 644 | 0.1+ | 0.1− | 2006 11 18 | 703 | 0.2− | 0.1+ | | |
| 2002 01 07 | 699 | (1.7+ | 0.0 ) | 2002 02 03 | 644 | 0.4+ | 0.0 | 2006 11 18 | 703 | (0.2− | 1.7−) | | |
| 2002 01 09 | 608 | 1.0+ | 0.7+ | 2002 02 10 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 703 | 0.0 | 0.8− | | |
| 2002 01 09 | 608 | 1.0+ | 0.0 | 2002 02 10 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.5+ | 1.0− | | |
| 2002 01 09 | 608 | 0.4+ | 0.5+ | 2002 02 10 | 704 | 0.2− | 0.5+ | 2006 11 19 | 703 | (1.9− | 2.5−) | | |
| 2002 01 11 | 699 | 1.0+ | 0.1+ | 2002 02 10 | 704 | 0.1− | 0.5+ | 2006 11 19 | 703 | 1.3+ | 0.3− | | |
| 2002 01 11 | 699 | 0.5+ | 0.3− | 2002 02 10 | 704 | 1.1− | 0.5+ | 2006 11 24 | 703 | 1.1+ | 0.9+ | | |
| 2002 01 11 | 699 | 1.0+ | 0.2+ | 2002 02 13 | 644 | 0.4+ | 0.2− | 2006 11 24 | 703 | 0.8− | 0.6+ | | |
| 2002 01 11 | 699 | 1.0+ | 0.2− | 2002 02 13 | 644 | 0.7+ | 0.0 | 2006 11 24 | 703 | 0.0 | 1.0− | | |
| 2002 01 14 | 608 | 0.2+ | 0.1+ | 2002 02 13 | 644 | 0.2+ | 0.1+ | 2006 11 24 | 703 | 1.3− | 0.9− | | |
| 2002 01 14 | 608 | 0.7+ | 0.3− | 2002 03 05 | 704 | 0.9+ | 0.9− | | | | | | |
| 2002 01 14 | 608 | 0.4+ | 0.1+ | 2002 03 05 | 704 | 0.5+ | 1.0− | | | | | | |

### 2002 $AO_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.93141 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17505538 | $\omega$ | 192.60476 | | −0.17718642 | | −0.93669721 |
| $a$ | 3.1648447 | $\Omega$ | 268.19522 | | +0.92716418 | | −0.05594551 |
| $e$ | 0.1484550 | $i$ | 17.58671 | | +0.33010840 | | −0.34564206 |
| $P$ | 5.63 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1− | 0.3+ | 2001 12 09 | 704 | 0.3− | 0.2+ | 2002 01 12 | 704 | 0.6+ | 0.1+ | | |
| 2001 11 11 | 704 | 0.4− | 0.4− | 2001 12 09 | 704 | 0.7− | 0.6+ | 2002 01 12 | 704 | 1.4− | 0.4− | | |
| 2001 11 11 | 704 | 0.2− | 0.0 | 2001 12 09 | 704 | 0.4− | 0.6+ | 2002 01 14 | 704 | 0.2− | 0.1+ | | |
| 2001 11 11 | 704 | 0.6− | 0.6− | 2001 12 17 | 704 | 0.2+ | 1.2+ | 2002 01 14 | 704 | 0.1− | 0.1+ | | |
| 2001 11 11 | 704 | 0.1− | 0.3+ | 2001 12 17 | 704 | 0.2− | 0.1− | 2002 01 14 | 704 | 0.4+ | 0.5+ | | |
| 2001 11 21 | 704 | 0.5+ | 0.7+ | 2001 12 17 | 704 | 0.0 | 0.4+ | 2002 01 14 | 704 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 704 | 1.1+ | 0.2− | 2001 12 17 | 704 | 0.1− | 0.3− | 2002 01 14 | 704 | 0.1− | 0.3+ | | |
| 2001 11 21 | 704 | 0.9+ | 0.9+ | 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 10 20 | 703 | 0.1− | 0.4+ | | |
| 2001 11 24 | 704 | 0.2− | 0.5− | 2002 01 08 | 704 | 0.1− | 0.7− | 2006 10 20 | 703 | 0.1− | 0.2+ | | |
| 2001 11 24 | 704 | 0.8+ | 0.5+ | 2002 01 08 | 704 | 0.4+ | 0.7− | 2006 10 20 | 703 | 0.5− | 0.6+ | | |
| 2001 11 24 | 704 | 0.1+ | 0.3− | 2002 01 08 | 704 | 0.0 | 0.6− | 2006 10 20 | 703 | (1.6− | 2.3+) | | |
| 2001 11 24 | 704 | 0.7− | 1.7− | 2002 01 08 | 704 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.9+ | 0.1− | | |
| 2001 11 24 | 704 | 0.8+ | 0.8− | 2002 01 08 | 704 | 1.1+ | 1.0− | 2006 10 27 | 703 | 0.8− | 0.2+ | | |
| 2001 12 09 | 704 | 0.2− | 0.3+ | 2002 01 12 | 704 | 0.3− | 0.4+ | 2006 10 27 | 703 | 1.1+ | 0.4− | | |
| 2001 12 09 | 704 | 0.6− | 0.2+ | 2002 01 12 | 704 | 0.1− | 1.0+ | 2006 10 27 | 703 | 0.5− | 0.8− | | |

### 2002 $AC_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.98215 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17222461 | $\omega$ | 311.57005 | | −0.24461773 | | −0.96792192 |
| $a$ | 3.1994298 | $\Omega$ | 152.43154 | | +0.92241148 | | −0.25053207 |
| $e$ | 0.1408625 | $i$ | 7.11858 | | +0.29886322 | | −0.01899600 |
| $P$ | 5.72 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.4+ | 0.0 | 2002 02 06 | 644 | 0.2+ | 0.4+ | 2003 05 06 | 691 | 0.2+ | 0.3+ | | |
| 2002 01 09 | 704 | 1.5− | 0.6− | 2002 02 07 | 704 | 0.2+ | 0.4+ | 2003 05 06 | 691 | 0.0 | 0.1− | | |
| 2002 01 09 | 704 | 0.4− | 0.7− | 2002 02 07 | 704 | 0.4+ | 0.2− | 2005 10 01 | G96 | 0.2+ | 0.3+ | | |
| 2002 01 09 | 704 | 1.5− | 0.4+ | 2002 02 07 | 704 | 1.4+ | 0.4− | 2005 10 01 | G96 | 0.2− | 0.0 | | |
| 2002 01 12 | 704 | 0.4+ | 0.2+ | 2002 02 07 | 704 | 0.8+ | 1.1+ | 2005 10 01 | G96 | 0.1+ | 0.2+ | | |
| 2002 01 12 | 704 | 0.3+ | 0.7+ | 2002 02 07 | 704 | 0.7− | 0.3+ | 2005 10 01 | G96 | 0.3− | 0.0 | | |
| 2002 01 12 | 704 | 0.2+ | 0.5− | 2002 02 11 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.9− | 0.3+ | | |
| 2002 01 12 | 704 | 0.1+ | 0.0 | 2002 02 11 | 704 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.3+ | | |
| 2002 01 13 | 704 | 0.0 | 0.7− | 2002 02 11 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.2− | 0.7+ | | |
| 2002 01 13 | 704 | 0.3− | 0.0 | 2002 02 11 | 704 | 0.0 | 0.9+ | 2006 11 19 | 703 | 0.2− | 0.1+ | | |
| 2002 01 13 | 704 | 0.8− | 0.3+ | 2002 02 11 | 704 | 0.4+ | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2002 01 13 | 704 | 0.5− | 1.4− | 2002 02 21 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1+ | | |
| 2002 01 13 | 704 | 0.1− | 0.2+ | 2002 02 21 | 691 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.0 | | |
| 2002 01 22 | 704 | 0.5+ | 0.5− | 2002 02 21 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2002 01 22 | 704 | 0.7+ | 0.8− | 2002 03 05 | 644 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.0 | | |
| 2002 01 22 | 704 | 0.2+ | 0.1+ | 2002 03 05 | 644 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.5+ | 0.3+ | | |
| 2002 02 06 | 644 | 0.1− | 0.0 | 2002 03 05 | 644 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.0 | | |
| 2002 02 06 | 644 | 0.1+ | 0.1+ | 2003 05 06 | 691 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.7+ | 0.0 | | |

### 2002 $AE_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.29040 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18279458 | $\omega$ | 131.79294 | | −0.08152582 | | −0.99308782 |
| $a$ | 3.0748729 | $\Omega$ | 322.63040 | | +0.86820417 | | −0.02915524 |
| $e$ | 0.2781758 | $i$ | 7.99698 | | +0.48946405 | | −0.11369496 |
| $P$ | 5.39 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.1− | 0.2+ | 2002 01 14 | 704 | 0.2+ | 0.4+ | 2002 02 12 | 704 | 0.0 | 0.4+ | | |
| 2000 10 02 | 645 | 0.1− | 0.1+ | 2002 01 14 | 704 | 0.4+ | 0.1+ | 2002 02 12 | 704 | 0.4− | 0.6+ | | |
| 2002 01 07 | 699 | 0.5+ | 1.2+ | 2002 01 21 | 704 | 0.4− | 0.2+ | 2002 02 12 | 704 | 0.1+ | 0.5+ | | |
| 2002 01 07 | 699 | 0.6+ | 1.0+ | 2002 01 21 | 704 | 0.1− | 0.2+ | 2002 02 20 | 704 | 0.4+ | 0.3− | | |
| 2002 01 07 | 699 | 1.3+ | 0.2− | 2002 01 21 | 704 | 0.4− | 0.1+ | 2002 02 20 | 704 | 0.3− | 0.5− | | |
| 2002 01 07 | 699 | 0.7+ | 0.8+ | 2002 01 21 | 704 | 0.2− | 0.4+ | 2002 02 20 | 704 | 0.5− | 0.3− | | |
| 2002 01 08 | 608 | 0.8+ | 0.9− | 2002 01 21 | 704 | 0.1− | 0.1+ | 2002 02 20 | 704 | 0.3− | 0.1− | | |
| 2002 01 08 | 608 | 0.0 | 0.2− | 2002 02 05 | 644 | 0.1+ | 0.4− | 2002 02 20 | 704 | 0.3− | 0.3− | | |
| 2002 01 08 | 608 | 0.0 | 0.2− | 2002 02 05 | 644 | 0.2+ | 0.4− | 2002 03 04 | 699 | 0.3+ | 0.6− | | |
| 2002 01 09 | 704 | 0.3+ | 0.1+ | 2002 02 05 | 644 | 0.2+ | 0.4− | 2002 03 04 | 699 | 0.2− | 0.2+ | | |
| 2002 01 09 | 704 | 0.3+ | 0.3+ | 2002 02 06 | 333 | 0.6+ | 0.5+ | 2002 03 04 | 699 | 0.1− | 0.5− | | |
| 2002 01 09 | 704 | 1.0+ | 0.0 | 2002 02 06 | 333 | 0.0 | 0.4+ | 2002 03 04 | 699 | 0.9− | 0.2− | | |
| 2002 01 09 | 704 | 0.5+ | 0.2+ | 2002 02 06 | 333 | 0.1+ | 0.5− | 2006 10 23 | 703 | 0.4− | 0.7− | | |
| 2002 01 09 | 704 | 1.1+ | 0.4− | 2002 02 07 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 703 | 0.8+ | 0.6− | | |
| 2002 01 12 | 644 | 0.3+ | 0.2+ | 2002 02 07 | 704 | 0.4− | 0.5+ | 2006 10 23 | 703 | 0.9− | 0.2+ | | |
| 2002 01 12 | 644 | 0.1+ | 0.5+ | 2002 02 07 | 704 | 0.3− | 0.6+ | 2006 10 23 | 703 | 0.3+ | 0.8− | | |
| 2002 01 12 | 644 | 0.3+ | 0.0 | 2002 02 07 | 704 | 0.3− | 0.1− | 2006 10 29 | 703 | 0.2+ | 0.9− | | |
| 2002 01 12 | 644 | 0.1+ | 0.7+ | 2002 02 07 | 608 | (0.8− | 1.5−) | 2006 10 29 | 703 | 0.2− | 0.7− | | |
| 2002 01 12 | 644 | 0.3+ | 0.7+ | 2002 02 07 | 608 | 1.1− | 1.0− | 2006 10 29 | 703 | 0.4+ | 0.7− | | |
| 2002 01 12 | 644 | 0.4+ | 0.6+ | 2002 02 07 | 608 | 0.9− | 1.0− | 2006 10 29 | 703 | 0.5− | 0.2− | | |
| 2002 01 14 | 608 | 0.2− | 0.1+ | 2002 02 10 | 704 | 0.4− | 0.4+ | 2006 11 22 | 703 | 0.9+ | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 0.2+ | 0.0 | 2002 02 10 | 704 | 0.2− | 0.4+ | 2006 11 22 | 703 | 0.1+ | 0.1− |
| 2002 01 14 | 608 | 0.4− | 0.4− | 2002 02 10 | 704 | 0.4− | 0.3+ | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2002 01 14 | 608 | 0.3− | 0.3+ | 2002 02 10 | 704 | 0.3− | 0.3+ | 2006 11 22 | 703 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.2− | 0.1− | 2002 02 10 | 704 | 0.2− | 0.3+ | | | | |
| 2002 01 14 | 704 | 0.2+ | 0.0 | 2002 02 12 | 704 | 0.2+ | 0.5+ | | | | |

**2002 AK$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 180.09284 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24800342 | $\omega$ | 312.63973 | | +0.99853209 | | +0.03523874 | | |
| $a$ | 2.5089823 | $\Omega$ | 45.38701 | | −0.01389202 | | +0.90063961 | | |
| $e$ | 0.1044078 | $i$ | 3.31248 | | −0.05235151 | | +0.43313569 | | |
| $P$ | 3.97 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 06 | 691 | 0.4− | 0.2− | 2004 08 13 | 807 | 0.4− | 0.0 | 2004 09 08 | 704 | 0.5+ | 0.3− |
| 2002 01 06 | 691 | 0.5− | 0.6− | 2004 08 13 | 807 | 0.4− | 0.0 | 2004 09 08 | 704 | 0.4− | 0.3− |
| 2002 01 06 | 691 | 0.1+ | 0.3+ | 2004 09 04 | 644 | 0.2+ | 0.1− | 2004 09 08 | 704 | 1.1+ | 0.2− |
| 2002 01 13 | 691 | 0.2+ | 0.7+ | 2004 09 04 | 644 | 0.5− | 0.2− | 2004 09 08 | 704 | 1.1− | 0.1+ |
| 2002 01 13 | 691 | 0.4+ | 0.2− | 2004 09 04 | 644 | 0.5+ | 0.4+ | | | | |
| 2002 01 13 | 691 | 0.1+ | 0.0 | 2004 09 08 | 704 | 0.2+ | 0.5+ | | | | |

**2002 AQ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 60.23266 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20107972 | $\omega$ | 274.33361 | | +0.94120290 | | +0.31873669 | | |
| $a$ | 2.8855185 | $\Omega$ | 67.11106 | | −0.24110149 | | +0.86593421 | | |
| $e$ | 0.0826809 | $i$ | 6.98288 | | −0.23665835 | | +0.38544113 | | |
| $P$ | 4.90 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.1− | 0.9− | 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2001 10 24 | 704 | 0.1− | 0.9+ | 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.4− |
| 2001 10 24 | 704 | 0.2+ | 0.1− | 2002 01 09 | 291 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2001 11 09 | 704 | 0.3+ | 0.1+ | 2002 01 09 | 291 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2001 11 09 | 704 | 0.8− | 0.2+ | 2002 01 09 | 291 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2001 11 09 | 704 | 0.3− | 1.3+ | 2002 01 13 | 291 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 704 | 0.5− | 0.3+ | 2002 01 13 | 291 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.0 | 0.1− | 2002 01 13 | 291 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.6+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.5+ | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.3− | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 11 21 | 704 | 0.6− | 0.6− | 2006 10 21 | G96 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2001 12 10 | 291 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 12 01 | 691 | 0.2+ | 0.3− |
| 2001 12 10 | 291 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.4+ | 0.4+ |
| 2001 12 10 | 291 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2001 12 14 | 704 | 1.1+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | | | |

**2002 AS$_{37}$ = 2006 UR$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 27.36918 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18630861 | $\omega$ | 267.77660 | | +0.97128340 | | −0.13934108 | | |
| $a$ | 3.0360862 | $\Omega$ | 100.19030 | | +0.20190331 | | +0.91152859 | | |
| $e$ | 0.0941164 | $i$ | 11.29992 | | −0.12587139 | | +0.38691044 | | |
| $P$ | 5.29 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.0− | 0.5− | 2002 01 15 | 704 | 0.2+ | 0.2+ | 2006 10 30 | 703 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.0 | 1.0+ | 2002 01 15 | 704 | 0.1− | 0.5+ | 2006 10 30 | 703 | 0.9− | 0.4− |
| 2001 12 18 | 704 | 0.5+ | 0.2+ | 2004 03 18 | 291 | 0.2+ | 0.0 | 2006 10 30 | 703 | 0.9+ | 0.7+ |
| 2001 12 18 | 704 | 0.1+ | 0.2− | 2004 03 18 | 291 | 0.0 | 0.1− | 2006 10 30 | 703 | 0.3− | 0.1− |
| 2001 12 18 | 704 | 1.2+ | 0.7+ | 2004 03 18 | 291 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.2+ |
| 2002 01 09 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.1− | 0.5− |
| 2002 01 09 | 704 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.9− |
| 2002 01 09 | 704 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.7− |
| 2002 01 13 | 704 | 0.0 | 1.3− | 2006 10 16 | 703 | 0.2+ | 0.5+ | 2006 11 19 | 703 | 0.2+ | 0.5+ |
| 2002 01 13 | 704 | 0.2− | 0.7− | 2006 10 22 | 703 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.0 |
| 2002 01 13 | 704 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.5+ | 1.2− | 2006 11 19 | 703 | 0.8+ | 0.3− |
| 2002 01 13 | 704 | 0.2− | 1.3− | 2006 10 22 | 703 | 0.4+ | 0.4+ | 2006 11 19 | 703 | 0.2− | 0.5+ |
| 2002 01 15 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.4+ | | | | |

**2002 AT$_{45}$ = 2006 WQ$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 302.52872 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17841735 | $\omega$ | 326.31563 | | −0.47463612 | | −0.88007728 | | |
| $a$ | 3.1249614 | $\Omega$ | 152.01293 | | +0.81380313 | | −0.44466887 | | |
| $e$ | 0.1329357 | $i$ | 1.65879 | | +0.33532823 | | −0.16653398 | | |
| $P$ | 5.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.3− | 0.1+ | 2002 01 14 | 704 | 0.1+ | 1.0+ | 2006 11 11 | G96 | 0.8− | 0.8− |
| 2001 12 14 | 291 | 0.0 | 0.3+ | 2002 01 14 | 704 | 0.5− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2001 12 14 | 291 | 0.1+ | 0.0 | 2002 01 14 | 704 | 1.1+ | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 01 06 | 691 | 0.1− | 0.3+ | 2002 01 19 | 704 | 0.1− | 1.0− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 01 06 | 691 | 0.1+ | 0.1+ | 2002 01 19 | 704 | 1.1− | 0.7− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 01 06 | 691 | 0.0 | 0.1+ | 2002 01 19 | 704 | (1.7− | 0.3−) | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2002 01 09 | 704 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 01 09 | 704 | 0.0 | 0.4− | 2006 10 19 | G96 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2002 01 09 | 704 | 1.1+ | 0.1+ | 2006 10 19 | G96 | 0.5− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2002 01 09 | 704 | 0.4− | 1.3− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 25 | 291 | 0.4− | 0.0 |
| 2002 01 09 | 704 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.4+ | 0.5+ | 2006 11 25 | 291 | 0.1+ | 0.2+ |
| 2002 01 13 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.3− | 2006 11 25 | 291 | 0.1+ | 0.1+ |
| 2002 01 13 | 704 | 0.8− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 01 13 | 704 | (0.8+ | 2.1−) | 2006 11 11 | G96 | 0.5− | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2002 01 13 | 704 | 0.8+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.9− | 2006 11 27 | 691 | 0.0 | 0.2− |

**2002 AD$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 312.25178 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17534370 | $\omega$ | 317.74820 | | −0.23975517 | | −0.97001719 | | |
| $a$ | 3.1613745 | $\Omega$ | 146.06752 | | +0.90870553 | | −0.23865370 | | |
| $e$ | 0.1718919 | $i$ | 4.08866 | | +0.34171877 | | −0.04594628 | | |
| $P$ | 5.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.3+ | 0.3+ | 2002 01 22 | 704 | 0.6+ | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.1+ |
| 2002 01 09 | 704 | 0.2− | 0.2+ | 2002 01 22 | 704 | 1.2+ | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2002 01 09 | 704 | 0.7− | 0.7− | 2002 02 11 | 704 | 1.2+ | 0.8− | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2002 01 13 | 704 | 0.2− | 0.8− | 2002 02 11 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 01 13 | 704 | 0.6+ | 0.0 | 2002 02 11 | 704 | 0.7+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2002 01 13 | 704 | 0.4− | 0.4+ | 2002 02 11 | 704 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2002 01 13 | 704 | 0.2− | 0.3+ | 2002 02 13 | 691 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 01 13 | 704 | 0.4− | 0.1+ | 2002 02 13 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 01 22 | 704 | 0.6+ | 0.1− | 2002 02 13 | 691 | 0.5− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 01 22 | 704 | 0.8+ | 0.6− | 2006 10 18 | 691 | 0.0 | 0.2+ | | | | |

**2002 AC$_{54}$ = 2006 UD$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 253.00049 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17386193 | $\omega$ | 289.39769 | | −0.97760518 | | −0.20293064 | | |
| $a$ | 3.1793112 | $\Omega$ | 238.92921 | | +0.20910289 | | −0.90677097 | | |
| $e$ | 0.1388392 | $i$ | 3.73144 | | +0.02375058 | | −0.36957483 | | |
| $P$ | 5.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.2+ | 0.1+ | 2002 01 19 | 704 | 0.4− | 1.1+ | 2006 11 17 | 703 | (0.1+ | 1.6+) |
| 2002 01 09 | 704 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 17 | 703 | (0.5− | 1.8−) |
| 2002 01 09 | 704 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | (0.5− | 8.8−) |
| 2002 01 13 | 704 | 1.2+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 01 13 | 704 | 0.7+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2002 01 13 | 704 | 0.7+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.3− | 0.1− |
| 2002 01 15 | 704 | 1.2− | 1.3− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2002 01 15 | 704 | (0.2− | 1.9−) | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2002 01 15 | 704 | 0.3− | 1.2− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2002 01 19 | 704 | 0.6− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.7− |
| 2002 01 19 | 704 | 0.4+ | 1.0+ | 2006 11 13 | 691 | 0.1− | 0.2+ | | | | |
| 2002 01 19 | 704 | (0.3− | 1.6+) | 2006 11 17 | 703 | 0.2+ | 0.6+ | | | | |

## 2002 AU$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.51777 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18844740 | $\omega$ | 284.94119 | | −0.66434353 | | −0.74728425 |
| $a$ | 3.0130704 | $\Omega$ | 206.70843 | | +0.69765107 | | −0.61295982 |
| $e$ | 0.1795240 | $i$ | 1.86486 | | +0.26819893 | | −0.25660573 |
| $P$ | 5.23 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 691 | 0.4− | 0.1+ | 2002 01 13 | 704 | 0.0 | 0.8− | 2002 02 09 | 704 | 0.3− | 0.5+ |
| 2001 12 19 | 691 | 0.3+ | 0.0 | 2002 01 13 | 704 | 0.1− | 1.1− | 2002 02 11 | 704 | 0.4− | 0.4+ |
| 2001 12 19 | 691 | 0.2+ | 0.1− | 2002 01 13 | 704 | 0.1+ | 0.6− | 2002 02 11 | 704 | 1.3− | 1.1+ |
| 2002 01 05 | 644 | 0.1− | 1.2+ | 2002 01 13 | 704 | 0.3+ | 0.4− | 2002 02 11 | 704 | 0.3− | 0.9+ |
| 2002 01 05 | 644 | 0.4+ | 1.1+ | 2002 01 13 | 704 | 0.2− | 0.5− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2002 01 05 | 644 | 0.4+ | 1.0+ | 2002 01 22 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.3+ |
| 2002 01 09 | 704 | 0.1+ | 0.1+ | 2002 01 22 | 704 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 01 09 | 704 | 0.3+ | 0.5− | 2002 01 22 | 704 | 0.0 | 0.8+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2002 01 09 | 704 | 0.2− | 0.9− | 2002 02 09 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2002 01 09 | 704 | 0.3− | 1.9− | 2002 02 09 | 704 | 0.7+ | 0.7− | 2006 11 22 | 691 | 0.1+ | 0.2− |

## 2002 AK$_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.28411 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17637129 | $\omega$ | 136.31314 | | +0.03650737 | | −0.99006874 |
| $a$ | 3.1490831 | $\Omega$ | 311.10626 | | +0.86022936 | | +0.10027443 |
| $e$ | 0.3085348 | $i$ | 10.38002 | | +0.50859872 | | −0.09853387 |
| $P$ | 5.59 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 704 | 0.4+ | 0.5− | 2002 02 05 | 608 | 0.6− | 0.2+ | 2002 03 05 | 644 | 0.3+ | 0.1+ |
| 2002 01 11 | 704 | 0.3+ | 0.6− | 2002 02 05 | 608 | 0.9− | 0.2− | 2002 03 06 | 644 | 0.4+ | 0.3+ |
| 2002 01 11 | 704 | 0.1+ | 0.5− | 2002 02 05 | 608 | 0.8− | 0.2− | 2002 03 06 | 644 | 0.3+ | 0.2+ |
| 2002 01 11 | 704 | 0.5+ | 1.0+ | 2002 02 06 | 644 | 0.1+ | 0.4− | 2002 03 06 | 644 | 0.5+ | 0.4+ |
| 2002 01 13 | 704 | 0.9+ | 0.0 | 2002 02 06 | 644 | 0.3+ | 0.5− | 2002 03 09 | 704 | 0.3+ | 1.3− |
| 2002 01 13 | 704 | 0.4+ | 0.2+ | 2002 02 06 | 644 | 0.0 | 0.4− | 2002 03 09 | 704 | (0.5+ | 1.7−) |
| 2002 01 13 | 704 | 0.2− | 0.1− | 2002 02 07 | 704 | 1.0− | 0.6− | 2002 03 09 | 704 | 1.2+ | 0.1− |
| 2002 01 13 | 704 | 0.2− | 0.2+ | 2002 02 07 | 704 | 0.9− | 0.6− | 2002 03 13 | 644 | 0.0 | 0.2− |
| 2002 01 13 | 704 | 0.2+ | 1.1+ | 2002 02 07 | 704 | 0.6− | 0.9− | 2002 03 13 | 644 | 0.0 | 0.3− |
| 2002 01 13 | 704 | (1.8− | 1.1−) | 2002 02 07 | 704 | 0.5− | 0.7− | 2002 03 13 | 644 | 0.1+ | 0.7− |
| 2002 01 13 | 704 | 0.3− | 0.1+ | 2002 02 07 | 704 | 0.5− | 1.1− | 2002 03 14 | 644 | 0.4+ | 0.3+ |
| 2002 01 13 | 704 | 0.2− | 0.4− | 2002 02 11 | 704 | 0.3− | 0.1+ | 2002 03 14 | 644 | 0.3+ | 0.4+ |
| 2002 01 14 | 704 | 1.2− | 0.3− | 2002 02 11 | 704 | 0.4− | 0.1+ | 2002 03 14 | 644 | 0.7− | 0.3+ |
| 2002 01 14 | 704 | 0.5+ | 0.5+ | 2002 02 11 | 704 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 01 14 | 704 | 0.0 | 0.2+ | 2002 02 11 | 704 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2002 01 14 | 704 | (0.7− | 1.6+) | 2002 02 11 | 704 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 0.8− | 0.1− | 2002 02 15 | 333 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2002 01 14 | 704 | 0.3+ | 0.9− | 2002 02 15 | 333 | 0.6+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 0.7− | 0.4− | 2002 02 15 | 333 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 01 14 | 704 | 0.5+ | 0.3+ | 2002 02 16 | 644 | 0.1+ | 0.4+ | 2006 10 29 | 703 | 0.1− | 0.2− |
| 2002 01 19 | 704 | 0.1− | 1.0+ | 2002 02 16 | 644 | 0.0 | 0.4+ | 2006 10 29 | 703 | 0.8+ | 0.6+ |
| 2002 01 19 | 704 | 0.5+ | 0.2+ | 2002 02 16 | 644 | 0.2+ | 0.4+ | 2006 10 29 | 703 | 0.1− | 0.1+ |
| 2002 01 19 | 704 | 0.8+ | 0.3+ | 2002 02 20 | 704 | 0.4+ | 0.2− | 2006 10 29 | 703 | 0.6− | 0.3− |
| 2002 01 19 | 704 | 1.0+ | 0.0 | 2002 02 20 | 704 | 0.3+ | 0.2− | 2006 11 01 | 628 | 0.4+ | 0.5+ |
| 2002 01 22 | 704 | 0.1+ | 0.5+ | 2002 02 20 | 704 | 0.4+ | 0.1− | 2006 11 01 | 628 | 0.2+ | 0.4+ |
| 2002 01 22 | 704 | 0.3+ | 0.4+ | 2002 02 20 | 704 | 0.5+ | 0.5− | 2006 11 16 | 703 | 0.5+ | 0.2+ |
| 2002 01 22 | 704 | 0.2− | 0.0 | 2002 02 20 | 704 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2002 01 22 | 704 | 0.3− | 0.1+ | 2002 02 22 | 704 | 0.6− | 0.8+ | 2006 11 16 | 703 | 0.2− | 0.4− |
| 2002 01 22 | 704 | 0.3+ | 0.2+ | 2002 02 22 | 704 | 0.1− | 0.6+ | 2006 11 16 | 703 | 0.3− | 0.2− |
| 2002 02 05 | 699 | 0.3− | 0.1+ | 2002 02 22 | 704 | 0.5− | 0.8+ | 2006 11 16 | 703 | 0.5− | 0.1− |
| 2002 02 05 | 699 | 0.5− | 0.2+ | 2002 02 22 | 704 | 0.7+ | 1.0+ | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2002 02 05 | 699 | 0.3− | 0.2+ | 2002 03 05 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.5− |
| 2002 02 05 | 699 | 0.6− | 0.2+ | 2002 03 05 | 644 | 0.5+ | 0.4+ | 2006 11 16 | 703 | 0.1− | 0.3− |

## 2002 AX$_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.15453 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24283838 | $\omega$ | 0.18042 | | −0.11599923 | | −0.99145370 |
| $a$ | 2.5444339 | $\Omega$ | 96.48116 | | +0.91121314 | | −0.13014407 |
| $e$ | 0.1710549 | $i$ | 3.44447 | | +0.39526546 | | +0.00906004 |
| $P$ | 4.06 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 23 | 691 | 0.1− | 0.2− | 2002 01 14 | 691 | 0.2+ | 0.4+ | 2005 12 05 | 691 | 0.1+ | 0.1− |
| 1998 01 23 | 691 | 0.2− | 0.4− | 2002 01 14 | 691 | 0.2+ | 0.4+ | 2005 12 05 | 691 | 0.2− | 0.3+ |
| 1998 01 23 | 691 | 0.4− | 0.5− | 2002 01 15 | 704 | 0.2− | 0.6+ | 2005 12 05 | 691 | 0.1− | 0.2+ |
| 2002 01 07 | 644 | 0.5+ | 1.4+ | 2002 01 15 | 704 | 0.8− | 0.5− | 2005 12 25 | 691 | 0.2+ | 0.3− |
| 2002 01 07 | 644 | 0.7+ | 1.2+ | 2002 01 15 | 704 | 0.8− | 0.4+ | 2005 12 25 | 691 | 0.5+ | 0.2− |
| 2002 01 07 | 644 | 0.4+ | 1.9+ | 2002 01 15 | 704 | 0.5− | 0.2+ | 2005 12 25 | 691 | 0.1− | 0.2− |
| 2002 01 09 | 691 | 0.1+ | 0.4− | 2005 11 28 | G96 | 1.0− | 0.6− | 2006 01 30 | 291 | 0.4− | 0.1+ |
| 2002 01 09 | 691 | 0.3+ | 0.3− | 2005 11 28 | G96 | 0.7− | 0.6− | 2006 01 30 | 291 | 0.0 | 0.0 |
| 2002 01 09 | 691 | 0.3+ | 0.3− | 2005 11 28 | G96 | 0.2+ | 0.4− | 2006 01 30 | 291 | 0.3− | 0.2+ |
| 2002 01 14 | 691 | 0.2+ | 0.4+ | 2005 11 28 | G96 | 0.2+ | 0.5− | | | | |

## 2002 AB$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.72338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21245657 | $\omega$ | 192.52521 | | −0.56781699 | | −0.81242336 |
| $a$ | 2.7815654 | $\Omega$ | 292.21690 | | +0.76703818 | | −0.46380135 |
| $e$ | 0.2274861 | $i$ | 8.22780 | | +0.29872445 | | −0.35335052 |
| $P$ | 4.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 07 | 691 | 0.5− | 0.3− | 2001 12 20 | 644 | 0.0 | 0.2+ | 2002 01 14 | 704 | 0.6− | 0.5− |
| 1996 12 07 | 691 | 1.1+ | 0.2− | 2001 12 20 | 644 | 0.0 | 0.2+ | 2002 01 14 | 704 | 0.2− | 0.3+ |
| 1996 12 07 | 691 | 0.4− | 0.0 | 2001 12 20 | 644 | 0.0 | 0.2+ | 2002 01 21 | 704 | 0.5− | 0.4− |
| 2001 11 11 | 704 | 0.2+ | 0.7+ | 2001 12 22 | 704 | 0.6+ | 0.6+ | 2002 01 21 | 704 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.3− | 0.6+ | 2001 12 22 | 704 | 0.5− | 0.4− | 2002 01 21 | 704 | 1.0+ | 0.8+ |
| 2001 11 11 | 704 | 0.0 | 0.4+ | 2001 12 22 | 704 | 0.6− | 0.4− | 2002 01 21 | 704 | 0.1− | 0.6+ |
| 2001 11 11 | 704 | 0.4− | 0.7+ | 2001 12 22 | 704 | 0.3− | 0.1− | 2002 02 07 | 704 | 0.6− | 0.8− |
| 2001 11 11 | 704 | 0.4+ | 0.8+ | 2001 12 22 | 704 | 0.6− | 0.3− | 2002 02 07 | 704 | 0.4− | 0.2− |
| 2001 11 24 | 704 | 0.9− | 1.1− | 2001 12 22 | 704 | 0.6+ | 0.7− | 2002 02 07 | 704 | 1.0+ | 1.2+ |
| 2001 11 24 | 704 | 0.1+ | 0.8+ | 2001 12 22 | 704 | 0.2− | 0.8− | 2005 08 30 | 644 | 0.3− | 0.4+ |
| 2001 11 24 | 704 | 0.2− | 0.6− | 2001 12 22 | 704 | 0.3+ | 0.5− | 2005 08 30 | 644 | 0.4− | 0.3+ |
| 2001 11 24 | 704 | 0.0 | 0.8− | 2001 12 22 | 704 | (0.7+ | 1.9−) | 2005 08 30 | 644 | 0.2+ | 0.3+ |
| 2001 11 24 | 704 | 0.3+ | 0.3+ | 2001 12 22 | 704 | 0.2− | 0.3− | 2006 10 23 | G96 | (2.7− | 0.4+) |
| 2001 12 09 | 704 | (1.6+ | 0.5−) | 2002 01 08 | 704 | 0.0 | 0.2+ | 2006 10 23 | G96 | (2.6− | 0.7+) |
| 2001 12 09 | 704 | 0.3+ | 0.3− | 2002 01 08 | 704 | 0.4+ | 0.0 | 2006 10 23 | G96 | (2.9− | 0.7+) |
| 2001 12 09 | 704 | 1.3− | 1.3+ | 2002 01 08 | 704 | 0.4+ | 0.4+ | 2006 10 23 | G96 | (2.9− | 1.0+) |
| 2001 12 17 | 704 | (2.2+ | 0.3−) | 2002 01 08 | 704 | 0.4+ | 0.1− | 2006 11 16 | G96 | (4.2− | 1.5+) |
| 2001 12 17 | 704 | (1.9+ | 0.3+) | 2002 01 08 | 704 | 0.8+ | 0.6− | 2006 11 16 | G96 | (4.3− | 1.3+) |
| 2001 12 17 | 704 | (1.8+ | 0.1+) | 2002 01 14 | 704 | 0.1+ | 0.2+ | 2006 11 16 | G96 | (4.2− | 1.3+) |
| 2001 12 17 | 704 | (1.8+ | 0.4+) | 2002 01 14 | 704 | 0.3− | 0.0 | 2006 11 16 | G96 | (4.2− | 1.5+) |
| 2001 12 17 | 704 | 1.5+ | 0.6+ | 2002 01 14 | 704 | 0.2− | 0.1− | | | | |

**2002 AX$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.50780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23167806 | $\omega$ | 147.86729 | | +0.20590231 | −0.91469298 | |
| $a$ | 2.6255046 | $\Omega$ | 288.18867 | | +0.80242607 | +0.36122632 | |
| $e$ | 0.1267249 | $i$ | 21.47259 | | +0.56010414 | −0.18125204 | |
| $P$ | 4.25 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8+ | 0.4− | 2002 01 08 | 704 | 0.6+ | 0.7− | 2002 02 07 | 704 | 0.3+ | 0.7+ | |
| 2001 12 09 | 704 | 0.2+ | 0.3− | 2002 01 08 | 704 | 0.9+ | 0.9− | 2002 02 07 | 704 | (1.8+ | 1.3+) | |
| 2001 12 09 | 704 | 0.1+ | 0.5+ | 2002 01 14 | 704 | 1.3− | 0.3+ | 2004 07 11 | 704 | 0.4+ | 0.3+ | |
| 2001 12 09 | 704 | 0.3− | 1.0+ | 2002 01 14 | 704 | 1.4− | 0.1+ | 2004 07 11 | 704 | 0.3− | 0.5− | |
| 2001 12 09 | 704 | (2.6− | 1.2+) | 2002 01 14 | 704 | (1.6− | 0.1−) | 2004 07 11 | 704 | 0.1− | 0.6+ | |
| 2001 12 13 | 704 | 0.2+ | 0.2+ | 2002 01 14 | 704 | (1.9− | 0.2−) | 2004 07 11 | 704 | 0.7− | 0.3+ | |
| 2001 12 13 | 704 | 0.1+ | 0.4+ | 2002 01 21 | 704 | 0.6+ | 0.4+ | 2004 07 11 | 704 | 0.1+ | 0.2+ | |
| 2001 12 13 | 704 | 0.4− | 0.1+ | 2002 01 21 | 704 | 0.0 | 0.5+ | 2005 11 12 | 704 | 0.1− | 0.5+ | |
| 2001 12 13 | 704 | 0.1− | 0.4+ | 2002 01 21 | 704 | 0.5− | 0.2+ | 2005 11 12 | 704 | 0.3+ | 0.5− | |
| 2001 12 13 | 704 | 0.2+ | 0.2− | 2002 01 21 | 704 | 0.4− | 0.3+ | 2005 11 12 | 704 | 0.5+ | 0.4− | |
| 2001 12 22 | 704 | 0.7− | 0.5− | 2002 02 06 | 704 | 0.4+ | 0.0 | 2005 11 12 | 704 | 0.2+ | 0.7+ | |
| 2001 12 22 | 704 | 0.1+ | 0.1− | 2002 02 06 | 704 | 0.3+ | 0.3− | 2005 12 30 | 703 | 0.0 | 0.7− | |
| 2001 12 22 | 704 | 0.1− | 0.0 | 2002 02 06 | 704 | 0.5+ | 0.2− | 2005 12 30 | 703 | 0.1+ | 0.3+ | |
| 2001 12 22 | 704 | 0.1− | 0.0 | 2002 02 06 | 704 | 0.5+ | 0.0 | 2005 12 30 | 703 | 0.6− | 0.2− | |
| 2002 01 08 | 704 | 0.9+ | 0.3+ | 2002 02 07 | 704 | 0.0 | 0.0 | 2005 12 30 | 703 | 0.4− | 0.6− | |
| 2002 01 08 | 704 | 0.1+ | 0.4− | 2002 02 07 | 704 | 0.5− | 0.2+ | | | | | |

**2002 AE$_{72}$ = 2006 VV$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.22345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17842133 | $\omega$ | 333.08134 | | +0.38507450 | −0.90059689 | |
| $a$ | 3.1249149 | $\Omega$ | 93.69074 | | +0.87894316 | +0.29127926 | |
| $e$ | 0.0585145 | $i$ | 11.65509 | | +0.28138328 | +0.32261686 | |
| $P$ | 5.52 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 691 | 0.0 | 0.2+ | 2002 01 14 | 704 | 0.9− | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.6− | |
| 2001 11 21 | 691 | 0.4+ | 0.2+ | 2002 01 14 | 704 | 0.6− | 0.1+ | 2006 11 13 | 703 | 0.7+ | 0.7+ | |
| 2001 11 21 | 691 | 0.1− | 0.1− | 2002 01 14 | 704 | 0.6− | 0.9+ | 2006 11 19 | 703 | 0.3− | 0.3+ | |
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2005 07 05 | 644 | 0.4− | 0.1+ | 2006 11 19 | 703 | 0.4− | 0.2− | |
| 2001 12 19 | 704 | 0.6+ | 0.0 | 2005 07 05 | 644 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 0.5− | 0.3+ | |
| 2001 12 19 | 704 | 0.1+ | 1.0− | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.0 | |
| 2002 01 08 | 704 | (2.2+ | 0.1−) | 2006 11 01 | 703 | (0.4+ | 1.7+) | 2006 11 25 | G96 | 0.5+ | 0.2+ | |
| 2002 01 08 | 704 | 1.3+ | 1.0+ | 2006 11 01 | 703 | 1.5− | 0.8− | 2006 11 25 | G96 | 0.0 | 0.0 | |
| 2002 01 08 | 704 | (1.7+ | 0.8−) | 2006 11 01 | 703 | 0.6+ | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.2+ | |
| 2002 01 08 | 704 | 1.3+ | 1.1− | 2006 11 01 | 703 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.6+ | 0.2+ | |
| 2002 01 14 | 704 | 1.3− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.6− | | | | | |
| 2002 01 14 | 704 | 0.9− | 0.4− | 2006 11 13 | 703 | 0.1+ | 0.1− | | | | | |

**2002 AV$_{73}$ = 2006 SQ$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.69387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17443248 | $\omega$ | 312.89533 | | +0.61758509 | −0.78522412 | |
| $a$ | 3.1723747 | $\Omega$ | 98.91028 | | +0.73418800 | +0.55511548 | |
| $e$ | 0.1647791 | $i$ | 2.60214 | | +0.28205785 | +0.27435358 | |
| $P$ | 5.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.2− | |
| 2001 12 18 | 644 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− | |
| 2001 12 18 | 644 | 0.9+ | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.2− | |
| 2002 01 08 | 704 | 0.7+ | 0.7+ | 2006 09 30 | 703 | 0.9− | 0.7− | 2006 10 21 | G96 | 0.0 | 0.1− | |
| 2002 01 08 | 704 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2002 01 08 | 704 | 0.2− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2002 01 08 | 704 | 0.2− | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1− | |
| 2002 01 14 | 691 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1− | |
| 2002 01 14 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1− | |
| 2002 01 14 | 691 | 0.4− | 0.6− | 2006 10 11 | 644 | 0.6+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ | |
| 2002 01 14 | 704 | (1.4+ | 1.8+) | 2006 10 16 | 621 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.8+ | |
| 2002 01 14 | 704 | 0.2+ | 1.2+ | 2006 10 17 | 621 | 0.2+ | 0.2− | 2006 11 11 | 703 | (0.1− | 1.5−) | |
| 2002 01 14 | 704 | 0.3− | 1.3+ | 2006 10 17 | 621 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.9− | 0.2− | |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 621 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.3− | |
| 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 18 | 621 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.4+ | 0.3− | |
| 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 18 | 621 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.3− | |
| 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.0 | 0.1− | |
| 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− | |
| 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | | | | |

**2002 AB$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.51547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18027185 | $\omega$ | 54.08779 | | +0.22273304 | −0.97487621 | |
| $a$ | 3.1034930 | $\Omega$ | 23.04299 | | +0.89234488 | +0.20283327 | |
| $e$ | 0.1773403 | $i$ | 0.36934 | | +0.39256924 | +0.09205998 | |
| $P$ | 5.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 691 | 0.2− | 0.4− | 2002 01 14 | 704 | 1.3− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 | |
| 2001 12 07 | 691 | 0.2+ | 0.9− | 2002 01 14 | 691 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.1+ | |
| 2001 12 07 | 691 | 0.2− | 0.6− | 2002 01 14 | 704 | 1.4− | 1.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ | |
| 2001 12 19 | 704 | 1.1− | 0.1+ | 2002 01 14 | 704 | 0.9− | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1+ | |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.3+ | |
| 2001 12 19 | 704 | 0.8− | 0.8− | 2006 10 16 | 691 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.0 | |
| 2002 01 08 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.3− | |
| 2002 01 08 | 704 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.9− | |
| 2002 01 08 | 704 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.4+ | |
| 2002 01 08 | 704 | 1.5+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.2− | |
| 2002 01 08 | 704 | 1.2+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.3+ | |
| 2002 01 14 | 691 | 0.3+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− | |
| 2002 01 14 | 704 | 0.4− | 0.7− | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.0 | |
| 2002 01 14 | 691 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.6+ | 0.1− | |

**2002 AJ$_{77}$ = 1976 JH$_9$ = 2004 TV$_{72}$**

Id. Minor Planet Center (*MPO* 85399; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.77233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25872080 | $\omega$ | 194.38697 | | −0.88292914 | +0.46940650 | |
| $a$ | 2.4392060 | $\Omega$ | 13.62131 | | −0.42659999 | −0.79346244 | |
| $e$ | 0.1622041 | $i$ | 2.35526 | | −0.19608309 | −0.38739500 | |
| $P$ | 3.81 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 05 02 | 809 | 0.1− | 0.0 | 2004 10 07 | 691 | 0.4− | 0.1+ | 2006 02 03 | 699 | 0.5+ | 1.1+ | |
| 1996 09 08 | 691 | 0.7+ | 0.3− | 2004 10 07 | 691 | 0.3− | 0.1+ | 2006 02 03 | 699 | 0.7+ | 1.3− | |
| 1996 09 08 | 691 | 0.2+ | 0.2− | 2006 01 20 | 691 | 0.1+ | 0.3+ | 2006 02 03 | 699 | 0.8− | 0.1+ | |
| 1996 09 08 | 691 | 0.5+ | 0.3− | 2006 01 20 | 691 | 0.4+ | 0.4+ | 2006 02 07 | 691 | 0.4+ | 0.2+ | |
| 2002 01 08 | 704 | 1.5+ | 0.4− | 2006 01 20 | 691 | 0.0 | 0.5+ | 2006 02 07 | 691 | 0.3+ | 0.4+ | |
| 2002 01 08 | 704 | 0.4− | 0.3− | 2006 01 25 | 691 | (0.0 | 2.8+) | 2006 02 07 | 691 | 0.2+ | 0.4+ | |
| 2002 01 08 | 704 | 0.6+ | 0.5+ | 2006 01 25 | 691 | 0.2+ | 0.2+ | 2006 02 07 | G96 | 0.0 | 0.2+ | |
| 2002 01 08 | 704 | 0.7− | 0.7− | 2006 01 25 | 691 | 0.0 | 0.2+ | 2006 02 07 | G96 | 0.1− | 0.1− | |
| 2002 01 08 | 704 | 0.3+ | 0.1− | 2006 01 26 | 703 | 0.2+ | 0.3+ | 2006 02 07 | G96 | 0.2− | 0.1+ | |
| 2002 01 14 | 704 | 0.2+ | 0.2− | 2006 01 26 | 703 | 0.2+ | 1.0− | 2006 02 07 | G96 | 0.4− | 0.2+ | |
| 2002 01 14 | 704 | 0.1− | 1.0− | 2006 01 26 | 703 | 0.1+ | 0.2+ | 2006 05 03 | G96 | 0.7+ | 0.1− | |
| 2002 01 14 | 704 | 0.2+ | 1.1− | 2006 01 26 | 703 | 0.1+ | 0.2+ | 2006 05 03 | G96 | 0.3+ | 0.0 | |
| 2002 01 14 | 704 | 0.3+ | 1.3− | 2006 01 27 | 699 | 0.6− | 0.5+ | 2006 05 03 | G96 | 0.3+ | 0.3− | |
| 2002 02 12 | 704 | 0.2− | 0.7+ | 2006 01 27 | 699 | 0.2+ | 0.6+ | 2006 05 03 | G96 | 0.1− | 0.1− | |
| 2002 02 12 | 704 | 0.3− | 0.9+ | 2006 01 27 | 699 | 1.5− | 1.2− | 2006 05 28 | G96 | 0.0 | 0.3− | |
| 2002 02 12 | 704 | 0.9− | 0.5+ | 2006 01 27 | 699 | 0.3− | 0.5− | 2006 05 28 | G96 | 0.3+ | 0.9− | |
| 2004 10 06 | 291 | 0.2− | 0.1− | 2006 01 30 | 691 | 0.5+ | 0.4+ | 2006 05 28 | G96 | 0.2+ | 0.4− | |
| 2004 10 06 | 291 | 0.1− | 0.5+ | 2006 01 30 | 691 | 0.4+ | 0.4+ | 2006 05 28 | G96 | 1.1− | 0.4− | |
| 2004 10 06 | 291 | 0.3− | 0.1+ | 2006 01 30 | 691 | 0.2+ | 0.6+ | | | | | |
| 2004 10 07 | 691 | 0.4− | 0.2+ | 2006 02 03 | 699 | 1.1− | 0.4− | | | | | |

**2002 AW$_{79}$ = 2006 UM$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.07876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18134935 | $\omega$ | 21.48084 | | +0.26927105 | −0.96145486 | |
| $a$ | 3.0911877 | $\Omega$ | 52.94060 | | +0.87312453 | +0.21933003 | |
| $e$ | 0.1997989 | $i$ | 3.99929 | | +0.40638240 | +0.16582788 | |
| $P$ | 5.43 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 1.2+ | 0.7+ | 2006 10 12 | 691 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2001 12 19 | 704 | 0.9− | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.4− |
| 2001 12 19 | 704 | 0.7− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.9− |
| 2001 12 19 | 704 | 0.5+ | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 01 08 | 704 | 0.5+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2002 01 08 | 704 | 0.9+ | 1.0+ | 2006 10 28 | G96 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.3− | 1.3+ | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.6+ | 0.2− |
| 2002 01 08 | 704 | 0.4− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.5− | 0.8− | 2006 11 01 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2002 01 14 | 704 | 0.2− | 1.4− | 2006 11 11 | 703 | 0.5+ | 0.7+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2002 01 14 | 704 | 0.6+ | 1.4− | 2006 11 11 | 703 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.5− | 0.3− | 2006 11 11 | 703 | 0.9+ | 1.1− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2006 10 12 | 691 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.6− | 0.2− | | | | |

**2002 AE$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.06100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22040006 | $\omega$ | 304.23321 | | −0.22602092 | +0.97274419 | |
| $a$ | 2.7143233 | $\Omega$ | 312.61509 | | −0.86899525 | −0.22537276 | |
| $e$ | 0.0645926 | $i$ | 4.03632 | | −0.44018383 | −0.05455147 | |
| $P$ | 4.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.3− | 0.9+ | 2004 08 11 | 704 | 0.1+ | 0.3+ | 2004 09 15 | 691 | 0.1− | 0.1− |
| 2002 01 08 | 704 | 1.1− | 0.0 | 2004 08 11 | 704 | 0.5− | 0.8− | 2004 09 15 | 691 | 0.1− | 0.1+ |
| 2002 01 08 | 704 | 1.1+ | 1.1+ | 2004 08 11 | 704 | 0.1− | 0.2+ | 2004 09 22 | 691 | 0.2− | 0.2− |
| 2002 01 08 | 704 | 1.2+ | 0.1− | 2004 08 11 | 704 | 0.2− | 0.0 | 2004 09 22 | 691 | 0.4+ | 0.0 |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2004 08 11 | 704 | 0.6+ | 1.1+ | 2004 09 22 | 691 | 0.1− | 0.1+ |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2004 08 11 | 704 | 0.7− | 0.1− | 2005 12 21 | 691 | (2.5− | 1.4+) |
| 2002 01 14 | 704 | 0.2− | 0.5+ | 2004 08 11 | 704 | 0.6+ | 1.4+ | 2005 12 21 | 691 | 0.0 | 0.3− |
| 2002 01 14 | 704 | 0.1− | 0.5− | 2004 08 11 | 704 | 0.5+ | 0.4− | 2005 12 21 | 691 | 0.1+ | 0.1− |
| 2002 01 14 | 704 | 0.4+ | 1.1+ | 2004 08 11 | 704 | 0.1− | 0.7+ | 2006 11 20 | G96 | 0.1− | 0.6+ |
| 2004 08 11 | 704 | 0.4+ | 0.3+ | 2004 08 22 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.4+ |
| 2004 08 11 | 704 | 0.8+ | 0.4+ | 2004 08 22 | 691 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.8+ | 0.8+ |
| 2004 08 11 | 704 | 0.3+ | 0.6− | 2004 08 22 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.3+ |
| 2004 08 11 | 704 | 0.2− | 0.1+ | 2004 09 15 | 691 | 0.1− | 0.4− | | | | |

**2002 AN$_{80}$ = 2006 TW$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.89381 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17903012 | $\omega$ | 346.51883 | | +0.80461614 | −0.59343836 | |
| $a$ | 3.1178267 | $\Omega$ | 49.90174 | | +0.54726173 | +0.72766202 | |
| $e$ | 0.2035179 | $i$ | 1.54212 | | +0.23042888 | +0.34400421 | |
| $P$ | 5.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 645 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2001 12 20 | 645 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2002 01 08 | 704 | 0.5+ | 0.6− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2002 01 08 | 704 | 0.9+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 1.0− | 0.5− |
| 2002 01 08 | 704 | 0.5+ | 0.4− | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.9− | 0.3+ |
| 2002 01 10 | 599 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.4− |
| 2002 01 10 | 599 | 0.7+ | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.6+ | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2002 01 10 | 599 | 0.8− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | (2.4− | 2.4+) |
| 2002 01 11 | 291 | 0.8− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 20 | G96 | 1.2+ | 0.7− |
| 2002 01 11 | 291 | (1.8− | 0.3+) | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 20 | G96 | 0.6+ | 0.2− |
| 2002 01 11 | 291 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2002 01 14 | 704 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.5+ | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2002 01 14 | 704 | 0.3− | 1.3+ | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2002 01 14 | 704 | 0.8+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2002 01 14 | 704 | 0.8+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2006 10 12 | 691 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2006 10 13 | 291 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2006 10 13 | 291 | 0.1− | 0.1+ | 2006 11 12 | 703 | (1.8+ | 0.7+) | 2006 11 21 | 704 | 0.0 | 0.4− |
| 2006 10 13 | 291 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.3− | 0.4− | 2006 11 27 | 703 | 0.3− | 1.0+ |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 12 | 703 | 0.0 | 0.2− | 2006 11 27 | 703 | (1.4+ | 1.7+) |
| 2006 10 20 | 691 | 0.4+ | 0.2+ | 2006 11 12 | 703 | 0.4− | 0.5− | 2006 11 27 | 703 | 0.5+ | 0.5+ |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | (1.1− | 2.3−) | 2006 11 27 | 703 | 0.0 | 0.9− |
| 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 12 | G96 | (0.8+ | 2.0−) | 2006 11 29 | 704 | 0.2− | 0.1+ |
| 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.4− | 0.0 |
| 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 13 | 448 | 0.1+ | 0.2+ | 2006 11 29 | 704 | (0.8+ | 2.2+) |
| 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 13 | 448 | 0.1− | 0.0 | | | | |
| 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 13 | 448 | 0.1− | 0.2+ | | | | |

**2002 AK$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.22185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18644836 | $\omega$ | 311.44769 | | +0.24080685 | −0.95771664 | |
| $a$ | 3.0345689 | $\Omega$ | 123.94989 | | +0.93745718 | +0.18749498 | |
| $e$ | 0.1001855 | $i$ | 10.94162 | | +0.25136843 | +0.21823031 | |
| $P$ | 5.29 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.6+ | 0.6− | 2006 08 18 | 291 | 0.3− | 0.0 | 2006 10 30 | 703 | 0.6− | 0.1+ |
| 2001 12 11 | 704 | 0.1+ | 0.4− | 2006 08 18 | 291 | 0.3− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.6− |
| 2001 12 11 | 704 | 0.5− | 0.0 | 2006 08 18 | 291 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.9+ |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | (0.3− | 3.1+) | 2006 11 13 | 703 | 0.5+ | 0.4+ |
| 2002 01 09 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.5− | 1.1+ | 2006 11 13 | 703 | 0.6− | 1.2− |
| 2002 01 09 | 704 | 0.6− | 0.3− | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.3− | 0.9+ |
| 2002 01 09 | 704 | (0.6+ | 1.6−) | 2006 09 18 | 703 | 0.3+ | 0.7+ | 2006 11 19 | 703 | 0.5+ | 1.2− |
| 2002 01 09 | 704 | 1.1+ | 1.2− | 2006 10 28 | 703 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.3+ | 0.5+ |
| 2002 01 14 | 704 | 1.1− | 0.8− | 2006 10 28 | 703 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 1.2+ | 0.2− |
| 2002 01 14 | 704 | 0.8+ | 0.4− | 2006 10 28 | 703 | 1.1− | 0.4+ | 2006 11 20 | 704 | 0.2+ | 1.4+ |
| 2002 01 14 | 704 | 0.1− | 0.5+ | 2006 10 28 | 703 | 1.0− | 0.4− | 2006 11 20 | 704 | 0.8− | 0.9+ |
| 2002 01 14 | 704 | 0.6+ | 0.5− | 2006 10 30 | 703 | 0.4+ | 0.4+ | 2006 11 20 | 704 | (0.6− | 1.7+) |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 10 30 | 703 | (3.1− | 1.5+) | 2006 11 20 | 704 | 0.8+ | 0.0 |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.1+ | 0.7+ | | | | |

**2002 AO$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.19241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18447498 | $\omega$ | 293.40513 | | +0.66286945 | −0.67163983 | |
| $a$ | 3.0561716 | $\Omega$ | 110.67490 | | +0.74815686 | +0.61152126 | |
| $e$ | 0.2710587 | $i$ | 20.71331 | | −0.02941780 | +0.41826030 | |
| $P$ | 5.34 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 1.0+ | 0.3+ | 2002 01 22 | 704 | 0.2+ | 1.3− | 2006 10 22 | E12 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.9+ | 0.1− | 2002 01 22 | 704 | 0.4− | 1.0+ | 2006 10 22 | E12 | 0.4+ | 0.2+ |
| 2001 12 11 | 704 | 0.6+ | 0.2− | 2002 02 11 | 704 | 0.2− | 0.9+ | 2006 10 22 | E12 | 0.3+ | 0.3− |
| 2001 12 11 | 704 | 0.4+ | 0.3− | 2002 02 11 | 704 | 0.2− | 0.4+ | 2006 10 22 | E12 | 0.3− | 0.3+ |
| 2002 01 09 | 704 | 0.9− | 0.7− | 2002 02 11 | 704 | 0.1− | 0.3+ | 2006 11 18 | 703 | 0.6− | 1.2+ |
| 2002 01 09 | 704 | 1.1− | 0.6− | 2002 02 11 | 704 | 0.4− | 0.7+ | 2006 11 18 | 703 | (3.3− | 1.9−) |
| 2002 01 09 | 704 | (2.0+ | 0.8+) | 2004 05 13 | 691 | 0.2− | 0.2− | 2006 11 18 | 703 | 1.0− | 1.4− |
| 2002 01 09 | 704 | 0.7− | 0.1− | 2004 05 13 | 691 | 0.5+ | 0.2+ | 2006 11 18 | 703 | 0.2+ | 0.5+ |
| 2002 01 09 | 704 | 0.9− | 0.1+ | 2004 05 13 | 691 | 0.3− | 0.0 | 2006 11 24 | 703 | 0.3− | 0.7− |
| 2002 01 14 | 704 | 0.7+ | 0.0 | 2006 09 24 | 703 | (0.2− | 1.8+) | 2006 11 24 | 703 | 1.0+ | 0.1− |
| 2002 01 14 | 704 | 0.6+ | 0.6+ | 2006 09 24 | 703 | 0.3+ | 0.6+ | 2006 11 24 | 703 | 0.2+ | 1.0− |
| 2002 01 14 | 704 | 0.2+ | 0.2− | 2006 09 24 | 703 | (0.2− | 1.8+) | 2006 11 24 | 703 | 0.3− | 0.8− |
| 2002 01 22 | 704 | 0.2− | 0.2− | 2006 09 24 | 703 | 0.2− | 1.4+ | | | | |

**2002 AQ$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 300.98238 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17622261 | $\omega$ | 259.84777 | | −0.12194625 | | −0.98904380 | |
| $a$ | 3.1508541 | $\Omega$ | 197.81235 | | +0.98337363 | | −0.10903181 | |
| $e$ | 0.2315838 | $i$ | 15.78145 | | +0.13455637 | | −0.09952096 | |
| $P$ | 5.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.1+ | 0.1− | 2002 01 14 | 704 | (1.8+ | 0.6−) | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1995 10 26 | 691 | 0.1+ | 0.3− | 2002 01 14 | 704 | 1.3+ | 0.8− | 2006 10 16 | G96 | 0.2− | 0.3− |
| 1995 10 26 | 691 | 0.1− | 0.2− | 2002 01 14 | 704 | 1.2+ | 1.2− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2001 11 15 | 704 | 0.4− | 1.2+ | 2003 03 07 | 291 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2001 11 15 | 704 | (1.1+ | 1.5+) | 2003 03 07 | 291 | 0.0 | 1.1+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2001 11 15 | 704 | (0.7+ | 1.7+) | 2003 03 07 | 291 | 0.1+ | 1.0+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2001 11 15 | 704 | 1.4− | 1.3+ | 2006 09 14 | 703 | 1.2+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2001 11 18 | 704 | 1.3− | 0.7+ | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.6+ | 0.5− |
| 2001 11 18 | 704 | 0.8− | 1.0+ | 2006 09 14 | 703 | 0.4− | 0.1− | 2006 10 17 | 703 | 1.2+ | 0.3+ |
| 2001 11 18 | 704 | 0.1+ | 0.9+ | 2006 09 14 | 703 | 1.2+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2001 11 18 | 704 | 0.9− | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2001 11 18 | 704 | 0.1+ | 1.2+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.7+ |
| 2001 12 07 | 704 | 0.6− | 0.5+ | 2006 09 15 | 691 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 2001 12 07 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 12 07 | 704 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 2001 12 07 | 704 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2002 01 12 | 704 | 0.2− | 0.6− | 2006 09 29 | 704 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2002 01 12 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.3− | 0.5− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2002 01 12 | 704 | 0.9− | 0.4− | 2006 09 29 | 704 | 0.4− | 0.4− | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2002 01 12 | 704 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2002 01 12 | 704 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.9+ | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 01 14 | 704 | 1.4+ | 1.0− | 2006 09 30 | 691 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 01 14 | 704 | 1.2+ | 0.9− | 2006 09 30 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.5+ | 0.2− |

**2002 AW$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 24.16921 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26442623 | $\omega$ | 105.02161 | | −0.96738565 | | +0.23712759 | |
| $a$ | 2.4039920 | $\Omega$ | 88.75625 | | −0.25281421 | | −0.88187602 | |
| $e$ | 0.1137559 | $i$ | 5.11197 | | −0.01581072 | | −0.40751098 | |
| $P$ | 3.73 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 24 | 691 | 1.1+ | 0.7+ | 2002 01 08 | 704 | 0.0 | 0.1− | 2006 02 01 | 691 | 0.2+ | 0.2+ |
| 1995 03 24 | 691 | 0.4− | 0.3− | 2002 01 09 | 645 | 0.2− | 0.1− | 2006 02 01 | 691 | 0.2+ | 0.1+ |
| 1995 03 24 | 691 | 0.5− | 0.2− | 2002 01 09 | 645 | 0.1− | 0.1− | 2006 02 09 | 644 | 0.2− | 0.0 |
| 1999 06 06 | 691 | 0.2+ | 0.5+ | 2002 01 14 | 704 | 0.9+ | 1.0+ | 2006 02 09 | 644 | 0.4− | 0.1− |
| 1999 06 06 | 691 | 0.3− | 0.3− | 2002 01 14 | 704 | 0.2+ | 0.3+ | 2006 02 09 | 644 | 0.0 | 0.1− |
| 1999 06 06 | 691 | 0.0 | 0.4− | 2002 01 14 | 704 | 2.1+ | 0.9+ | 2006 02 20 | 703 | 1.1− | 0.8− |
| 1999 06 18 | 691 | 0.2− | 0.3− | 2002 01 14 | 704 | 2.1+ | 0.2+ | 2006 02 20 | 703 | 0.4− | 0.3+ |
| 1999 06 18 | 691 | 0.1+ | 0.6+ | 2006 01 23 | 691 | 0.1+ | 0.0 | 2006 02 20 | 703 | 0.7− | 0.6− |
| 1999 06 18 | 691 | 0.1+ | 0.4− | 2006 01 23 | 691 | 0.1− | 0.0 | 2006 02 20 | 703 | 0.1+ | 0.8+ |
| 2002 01 08 | 704 | 0.4+ | 0.3− | 2006 01 23 | 691 | 0.0 | 0.2− | | | | |
| 2002 01 08 | 704 | 0.2− | 0.2− | 2006 02 01 | 691 | 0.4+ | 0.0 | | | | |

**2002 AO$_{94}$ = 2006 UH$_{282}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 282.82357 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17473083 | $\omega$ | 52.73573 | | −0.68008427 | | −0.73158398 | |
| $a$ | 3.1687625 | $\Omega$ | 80.18623 | | +0.65640216 | | −0.63656385 | |
| $e$ | 0.0985710 | $i$ | 2.77161 | | +0.32652962 | | −0.24407241 | |
| $P$ | 5.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.1+ | 0.2+ | 2003 04 25 | 691 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 01 08 | 704 | 0.4− | 0.4− | 2005 08 28 | 291 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2002 01 08 | 704 | 0.2− | 0.9− | 2005 08 28 | 291 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2002 01 09 | 645 | 0.0 | 0.1− | 2005 08 28 | 291 | 0.4− | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2002 01 14 | 704 | 0.4+ | 0.8+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.0 | 0.5− | 2006 10 20 | 691 | 0.5− | 0.5+ | 2006 11 17 | 703 | 0.6− | 1.1+ |
| 2002 01 14 | 704 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.8+ | 0.6− |
| 2002 01 14 | 704 | 0.2− | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.7− | 0.3+ |
| 2002 01 14 | 704 | 0.7+ | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.3+ | 1.2+ |
| 2003 04 25 | 691 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.0 | | | | |
| 2003 04 25 | 691 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.1+ | | | | |

**2002 AQ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 94.86011 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21445291 | $\omega$ | 275.91374 | | +0.96432503 | | −0.23918185 | |
| $a$ | 2.7642761 | $\Omega$ | 97.96415 | | +0.26455095 | | +0.88609158 | |
| $e$ | 0.0994950 | $i$ | 6.57754 | | −0.00948873 | | +0.39703116 | |
| $P$ | 4.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.1− | 0.1+ | 2003 04 21 | 691 | 0.2+ | 0.4− | 2005 11 30 | 704 | 0.6− | 0.5− |
| 2000 09 05 | 645 | 0.1− | 0.0 | 2003 04 21 | 691 | 0.3+ | 0.3− | 2005 11 30 | 704 | 0.5+ | 1.2+ |
| 2002 01 08 | 704 | 1.1− | 0.5− | 2005 10 27 | 703 | 0.4+ | 0.4+ | 2005 11 30 | 699 | (2.1+ | 0.0 ) |
| 2002 01 08 | 704 | 0.4− | 0.8− | 2005 10 27 | 703 | 1.0+ | 1.0− | 2005 11 30 | 699 | 0.7− | 1.0− |
| 2002 01 08 | 704 | 0.2− | 0.7+ | 2005 10 27 | 703 | 0.8+ | 0.1+ | 2005 11 30 | 699 | (2.1+ | 0.1+) |
| 2002 01 08 | 704 | 0.1− | 0.6− | 2005 10 27 | 703 | 0.4+ | 0.1+ | 2006 01 28 | G96 | 0.7+ | 0.1− |
| 2002 01 08 | 704 | 0.3− | 0.2− | 2005 11 05 | 703 | 1.1+ | 0.4+ | 2006 01 28 | G96 | 0.3+ | 0.1− |
| 2002 01 14 | 704 | 0.3− | 0.6+ | 2005 11 05 | 703 | 0.4+ | 0.3− | 2006 01 28 | G96 | 0.8+ | 0.5− |
| 2002 01 14 | 704 | 0.2+ | 0.5+ | 2005 11 05 | 703 | (0.2+ | 1.6−) | 2006 01 28 | G96 | 0.4+ | 0.5− |
| 2002 01 14 | 704 | 0.3− | 0.2+ | 2005 11 05 | 703 | 0.6+ | 0.4+ | 2006 11 27 | G96 | 0.5− | 0.1+ |
| 2002 01 14 | 704 | 0.3+ | 0.8− | 2005 11 10 | 703 | 0.6− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2002 01 14 | 704 | 1.0+ | 0.2− | 2005 11 10 | 703 | 0.4− | 0.6− | 2006 11 27 | G96 | 0.6+ | 0.2− |
| 2002 02 06 | 704 | 1.3+ | 0.4+ | 2005 11 10 | 703 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2002 02 06 | 704 | 0.1+ | 0.0 | 2005 11 10 | 703 | 0.1− | 0.0 | 2006 11 28 | 291 | 0.4− | 0.7+ |
| 2002 02 06 | 704 | 0.7+ | 1.3+ | 2005 11 30 | 704 | 0.0 | 0.5− | 2006 11 28 | 291 | 0.4− | 0.8+ |
| 2003 04 21 | 691 | 0.1− | 0.1− | 2005 11 30 | 699 | 0.1− | 0.7− | 2006 11 28 | 291 | 0.2− | 0.6+ |

**2002 AC$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 298.45089 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.15181267 | $\omega$ | 331.46769 | | +0.27611656 | | −0.94265253 | |
| $a$ | 3.4801452 | $\Omega$ | 101.98645 | | +0.91422700 | | +0.19739330 | |
| $e$ | 0.0282752 | $i$ | 11.05233 | | +0.29656135 | | +0.26915069 | |
| $P$ | 6.49 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.4+ | 1.1+ | 2002 02 10 | 704 | 0.5+ | 0.4+ | 2004 06 16 | 704 | 0.5− | 0.6+ |
| 2002 01 08 | 704 | 0.2+ | 0.8+ | 2003 03 12 | 644 | 0.2+ | 0.4+ | 2004 06 16 | 704 | 1.4+ | 0.7+ |
| 2002 01 08 | 704 | 0.9+ | 1.0+ | 2003 03 12 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 703 | 1.5+ | 0.7− |
| 2002 01 08 | 704 | 0.1+ | 1.2+ | 2003 03 12 | 644 | 0.6+ | 0.7+ | 2006 09 20 | 703 | 0.5− | 0.2+ |
| 2002 01 08 | 704 | 0.5+ | 0.9+ | 2004 05 15 | 704 | 0.3− | 0.1− | 2006 09 20 | 703 | 0.0 | 0.8+ |
| 2002 01 14 | 704 | (1.6− | 1.0−) | 2004 05 15 | 704 | 0.0 | 0.4− | 2006 09 20 | 703 | 1.0− | 1.3+ |
| 2002 01 14 | 704 | (2.2− | 1.4−) | 2004 05 15 | 704 | 0.6+ | 1.1+ | 2006 09 25 | 703 | 0.3− | 0.5+ |
| 2002 01 14 | 704 | (1.5− | 1.6−) | 2004 05 15 | 704 | 0.2+ | 0.3− | 2006 09 25 | 703 | 0.8− | 0.9− |
| 2002 01 14 | 704 | 1.4− | 1.2− | 2004 05 23 | 704 | 0.5+ | 0.2− | 2006 09 25 | 703 | 1.2+ | 1.4+ |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2004 05 23 | 704 | 0.7+ | 0.5− | 2006 09 25 | 703 | 0.3− | 1.0+ |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2004 05 23 | 704 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 2002 01 20 | 699 | 0.2+ | 0.2+ | 2004 05 23 | 704 | 0.7+ | 0.3− | 2006 10 21 | 703 | 1.3+ | 0.3+ |
| 2002 01 20 | 699 | 0.2+ | 0.1+ | 2004 06 10 | 599 | 0.3− | 0.0 | 2006 10 21 | 703 | 1.0− | 0.7− |
| 2002 01 20 | 699 | 0.2− | 1.4+ | 2004 06 10 | 599 | 1.2− | 0.3− | 2006 10 21 | 703 | 0.6− | 0.6− |
| 2002 01 20 | 699 | 0.6− | 0.0 | 2004 06 10 | 599 | 1.2− | 0.3+ | 2006 10 28 | 703 | (1.6− | 1.2−) |
| 2002 02 10 | 704 | 0.4− | 1.1− | 2004 06 10 | 599 | (0.6− | 2.2+) | 2006 10 28 | 703 | 0.3− | 0.2+ |
| 2002 02 10 | 704 | 0.9+ | 0.0 | 2004 06 16 | 704 | 0.1− | 1.4+ | 2006 10 28 | 703 | 0.6− | 0.5+ |
| 2002 02 10 | 704 | 0.1+ | 0.2+ | 2004 06 16 | 704 | 0.8− | 1.1+ | 2006 10 28 | 703 | 0.5− | 0.3+ |

**2002 AG$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.10487 | | (2000.0) | | | |
| $n$ | 0.17777461 | $\omega$ | 331.65349 | | +0.37838666 | −0.91707196 |
| $a$ | 3.1324890 | $\Omega$ | 95.87815 | | +0.87134644 | +0.30705943 |
| $e$ | 0.1971566 | $i$ | 7.26003 | | +0.31237624 | +0.25434922 |
| $P$ | 5.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 644 | 0.1+ | 0.6+ | 2002 01 15 | 608 | 0.8+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.2− |
| 2001 12 18 | 644 | 0.2+ | 0.8+ | 2002 01 15 | 608 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2001 12 18 | 644 | 0.1+ | 0.7+ | 2002 01 18 | 704 | 0.6+ | 0.2− | 2006 11 10 | 644 | 0.4+ | 0.5+ |
| 2001 12 18 | 704 | (0.7− | 1.9+) | 2002 01 18 | 704 | 0.6+ | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | 0.6− | 0.1+ | 2002 01 18 | 704 | (0.6+ | 2.4+) | 2006 11 13 | 703 | 0.3− | 0.4− |
| 2001 12 18 | 704 | (0.9− | 1.7−) | 2002 02 06 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 0.3+ | 0.5− |
| 2002 01 08 | 704 | 0.1+ | 0.4+ | 2002 02 06 | 704 | 0.5+ | 0.2− | 2006 11 13 | 703 | 0.2− | 0.8− |
| 2002 01 08 | 704 | 0.1− | 0.2− | 2002 02 06 | 704 | 1.4+ | 0.3− | 2006 11 13 | 703 | 1.0+ | 0.1+ |
| 2002 01 08 | 704 | 0.8+ | 0.1− | 2002 02 07 | 704 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.3+ | 0.2+ |
| 2002 01 09 | 645 | 0.0 | 0.2− | 2002 02 07 | 704 | 1.2− | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2002 01 09 | 645 | 0.1− | 0.2− | 2002 02 07 | 704 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.2− | 0.3+ |
| 2002 01 09 | 608 | 0.0 | 0.0 | 2002 02 12 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 1.1− | 0.0 |
| 2002 01 09 | 608 | 0.0 | 0.3+ | 2002 02 12 | 704 | 0.1+ | 0.7− | 2006 11 19 | 703 | 0.2− | 0.5− |
| 2002 01 09 | 608 | 0.3+ | 0.2+ | 2002 02 12 | 704 | 0.0 | 1.2+ | 2006 11 19 | 703 | 0.0 | 0.6+ |
| 2002 01 14 | 704 | 0.9− | 1.1+ | 2006 10 12 | 644 | 0.3+ | 0.6+ | 2006 11 19 | 703 | 0.9+ | 0.4− |
| 2002 01 14 | 704 | 1.0− | 1.4+ | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 01 14 | 704 | 0.7− | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 01 14 | 704 | (1.5− | 1.1+) | 2006 10 16 | 703 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.5− | 0.7+ |
| 2002 01 14 | 704 | 1.1− | 1.4+ | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.7+ | 0.3+ |
| 2002 01 15 | 608 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.9− | | | | |

**2002 AX$_{103}$ = 2006 VW$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 295.81562 | | (2000.0) | | | |
| $n$ | 0.17820167 | $\omega$ | 203.12206 | | −0.60701290 | −0.79462343 |
| $a$ | 3.1274823 | $\Omega$ | 284.25336 | | +0.73078744 | −0.55299215 |
| $e$ | 0.1552865 | $i$ | 0.61702 | | +0.31222596 | −0.25054596 |
| $P$ | 5.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.3+ | 0.2+ | 2003 05 10 | 691 | 0.2+ | 0.9+ | 2006 11 20 | 703 | 0.3+ | 0.4+ |
| 2002 01 09 | 704 | 0.3− | 0.1− | 2003 05 30 | 807 | 0.8+ | 0.9− | 2006 11 20 | 703 | 1.2+ | 1.0− |
| 2002 01 09 | 704 | 0.4− | 0.3− | 2003 05 30 | 807 | 0.8+ | 1.0− | 2006 11 20 | 703 | 0.5− | 0.4+ |
| 2002 01 09 | 704 | 0.6+ | 0.6− | 2006 10 17 | G96 | 0.7+ | 0.1+ | 2006 11 20 | 703 | 1.0+ | 0.9+ |
| 2002 01 13 | 691 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.6+ | 0.2+ | 2006 11 20 | 704 | 0.9− | 0.5+ |
| 2002 01 13 | 691 | 0.3− | 0.3− | 2006 10 17 | G96 | (1.5+ | 0.0 ) | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2002 01 13 | 691 | 0.3− | 0.2− | 2006 10 17 | G96 | 1.0+ | 0.2+ | 2006 11 20 | 704 | (0.8+ | 1.7+) |
| 2002 01 14 | 704 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2002 01 14 | 704 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.6− | 1.4+ |
| 2002 01 14 | 704 | 0.5+ | 0.8+ | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 2002 01 14 | 704 | 0.5+ | 0.9+ | 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | (0.4− | 1.6+) |
| 2002 01 14 | 704 | 0.4+ | 1.4+ | 2006 11 09 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.7+ |
| 2002 01 15 | 704 | 0.2+ | 1.1− | 2006 11 09 | 691 | 0.5− | 0.3+ | 2006 11 24 | G96 | 0.6+ | 0.2+ |
| 2002 01 15 | 704 | (0.1− | 2.0−) | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.6+ | 0.2+ |
| 2002 01 15 | 704 | 0.7+ | 1.4− | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.6+ | 0.4+ |
| 2003 05 10 | 691 | 0.0 | 0.9+ | 2006 11 13 | 691 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.7+ | 0.3+ |
| 2003 05 10 | 691 | 0.3+ | 0.9+ | 2006 11 13 | 691 | 0.1− | 0.4+ | | | | |

**2002 AV$_{105}$ = 1985 BU$_1$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.28866 | | (2000.0) | | | |
| $n$ | 0.23137193 | $\omega$ | 344.41308 | | −0.09415071 | −0.99329201 |
| $a$ | 2.6278200 | $\Omega$ | 110.95200 | | +0.92091784 | −0.11251085 |
| $e$ | 0.1547419 | $i$ | 4.12223 | | +0.37821420 | +0.02668885 |
| $P$ | 4.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 01 20 | 691 | 0.8− | 2.3− | 2002 01 26 | 644 | 0.1− | 1.1+ | 2005 11 30 | 704 | 0.4+ | 0.4+ |
| 1985 01 20 | 691 | 0.5− | 2.8− | 2002 02 03 | 699 | 0.4− | 0.4+ | 2005 12 05 | 691 | 0.1+ | 0.1+ |
| 1985 01 20 | 691 | 0.4− | 2.2− | 2002 02 03 | 699 | 0.1+ | 0.1− | 2005 12 05 | 691 | 0.2+ | 0.1+ |
| 2001 12 18 | 291 | 0.1+ | 0.5+ | 2002 02 03 | 699 | 0.0 | 0.0 | 2005 12 05 | 691 | 0.2+ | 0.1− |
| 2001 12 18 | 291 | 0.1− | 0.2+ | 2002 02 03 | 699 | 0.5+ | 0.3− | 2005 12 07 | 704 | 1.5+ | 0.0 |
| 2001 12 18 | 704 | 1.4+ | 0.4− | 2002 02 05 | 644 | 0.1− | 0.6− | 2005 12 07 | 704 | 1.1− | 0.3− |
| 2001 12 18 | 291 | 0.1− | 0.5+ | 2002 02 05 | 644 | 0.3− | 0.8− | 2005 12 07 | 704 | 0.5+ | 0.4+ |
| 2001 12 18 | 704 | 1.1− | 0.2− | 2002 02 05 | 644 | 0.2− | 0.9− | 2005 12 07 | 704 | 0.4− | 0.4− |
| 2001 12 18 | 704 | 0.2+ | 1.9+ | 2002 02 07 | 691 | 0.1− | 0.6+ | 2005 12 07 | 704 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.9− | 0.6+ | 2002 02 07 | 691 | 0.2− | 0.4+ | 2005 12 09 | 704 | 0.2− | 0.3+ |
| 2002 01 05 | 644 | 0.2+ | 0.1− | 2002 02 07 | 691 | 0.3− | 0.4+ | 2005 12 09 | 704 | 0.5− | 0.6+ |
| 2002 01 05 | 644 | 0.2+ | 0.1+ | 2002 02 07 | 704 | 0.2− | 0.3− | 2005 12 09 | 704 | 0.9− | 0.9+ |
| 2002 01 05 | 644 | 0.3+ | 0.2+ | 2002 02 07 | 704 | 0.0 | 0.4− | 2005 12 09 | 704 | 0.2− | 0.1+ |
| 2002 01 09 | 704 | 0.2− | 0.5− | 2002 02 07 | 704 | 0.3+ | 0.8− | 2005 12 21 | 703 | 0.2− | 0.5+ |
| 2002 01 09 | 704 | 0.5− | 0.1− | 2002 02 07 | 704 | 0.0 | 1.4− | 2005 12 21 | 703 | 0.5+ | 0.4− |
| 2002 01 09 | 704 | 0.4+ | 0.5− | 2002 02 07 | 704 | 0.6+ | 1.2− | 2005 12 21 | 703 | 0.3+ | 0.2− |
| 2002 01 09 | 704 | 0.5− | 0.2− | 2002 02 10 | 704 | 0.4− | 0.3+ | 2005 12 21 | 703 | 0.1− | 0.0 |
| 2002 01 09 | 704 | 0.1− | 0.9− | 2002 02 10 | 704 | 0.1− | 0.2+ | 2005 12 27 | 704 | 0.5+ | 0.6− |
| 2002 01 14 | 704 | 1.8+ | 0.1− | 2002 02 10 | 704 | 0.8− | 0.3+ | 2005 12 27 | 704 | 0.6− | 0.5− |
| 2002 01 14 | 704 | (2.0+ | 0.2−) | 2002 02 10 | 704 | 0.7− | 0.2+ | 2005 12 27 | 704 | 0.0 | 0.6− |
| 2002 01 14 | 704 | (2.1+ | 0.0 ) | 2002 02 10 | 704 | 0.7− | 0.3+ | 2005 12 27 | 704 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 1.8+ | 0.1+ | 2002 02 12 | 704 | 0.4− | 0.9+ | 2005 12 27 | G96 | 0.2− | 0.4− |
| 2002 01 14 | 704 | (2.4+ | 0.1+) | 2002 02 12 | 704 | 0.9+ | 1.8+ | 2005 12 27 | G96 | 0.0 | 0.3− |
| 2002 01 15 | 691 | 0.3− | 1.0+ | 2002 02 12 | 704 | 0.1+ | 1.5+ | 2005 12 27 | G96 | 0.0 | 0.3− |
| 2002 01 15 | 691 | 0.0 | 1.0+ | 2002 02 12 | 704 | 0.3+ | 1.0+ | 2005 12 27 | G96 | 0.1+ | 0.2− |
| 2002 01 15 | 691 | 0.0 | 0.9+ | 2002 02 12 | 704 | 0.6+ | 1.8+ | 2006 01 24 | G96 | 0.0 | 0.3− |
| 2002 01 21 | 704 | 0.1− | 0.1− | 2003 05 25 | 691 | 0.3− | 0.1− | 2006 01 24 | G96 | 0.0 | 0.4− |
| 2002 01 21 | 704 | 0.4+ | 0.3− | 2003 05 25 | 691 | 0.0 | 0.1− | 2006 01 24 | G96 | 0.7+ | 0.4− |
| 2002 01 21 | 704 | 0.6− | 0.4− | 2003 05 25 | 691 | 0.2+ | 0.2− | 2006 01 24 | G96 | 0.2+ | 0.1+ |
| 2002 01 21 | 704 | 0.1+ | 0.0 | 2005 11 30 | 704 | 0.1+ | 0.4− | 2006 03 25 | G96 | 0.2+ | 0.0 |
| 2002 01 21 | 704 | 0.2+ | 0.0 | 2005 11 30 | 704 | 0.2− | 0.6+ | 2006 03 25 | G96 | 0.1+ | 0.2− |
| 2002 01 26 | 644 | 0.2− | 0.9+ | 2005 11 30 | 704 | 0.1+ | 0.2− | 2006 03 25 | G96 | 0.1+ | 0.4− |
| 2002 01 26 | 644 | 0.1− | 1.0+ | 2005 11 30 | 704 | 0.1+ | 0.4− | 2006 03 25 | G96 | 0.0 | 0.5+ |

**2002 AZ$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.26727 | | (2000.0) | | | |
| $n$ | 0.19759402 | $\omega$ | 314.57944 | | +0.19619682 | −0.96655728 |
| $a$ | 2.9193546 | $\Omega$ | 123.41830 | | +0.94636914 | +0.14256012 |
| $e$ | 0.0950633 | $i$ | 11.41183 | | +0.25669490 | +0.21317513 |
| $P$ | 4.99 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 05 | 691 | 0.5+ | 0.4− | 2002 02 04 | 644 | 0.1− | 0.2− | 2002 03 04 | 644 | 0.6+ | 1.3+ |
| 1996 11 05 | 691 | 0.3− | 0.7− | 2002 02 04 | 644 | 0.1− | 0.1− | 2002 03 04 | 644 | 0.5+ | 1.0+ |
| 1996 11 05 | 691 | 0.1+ | 0.3− | 2002 02 04 | 644 | 0.0 | 0.1+ | 2002 03 04 | 644 | 0.1+ | 1.3+ |
| 2002 01 09 | 704 | 1.2− | 0.8+ | 2002 02 07 | 704 | 0.2+ | 1.3− | 2002 03 12 | 691 | 0.2+ | 0.2− |
| 2002 01 09 | 704 | (0.1− | 1.8+) | 2002 02 07 | 704 | 0.0 | 0.9+ | 2002 03 12 | 644 | 0.4+ | 1.1− |
| 2002 01 09 | 704 | (0.8− | 2.3+) | 2002 02 07 | 704 | 0.8+ | 1.0+ | 2002 03 12 | 691 | 0.1+ | 0.6− |
| 2002 01 09 | 704 | 0.3+ | 0.2+ | 2002 02 07 | 704 | 0.7+ | 0.6+ | 2002 03 12 | 644 | 0.4+ | 0.2− |
| 2002 01 14 | 704 | 0.5+ | 0.8− | 2002 02 07 | 608 | 0.8− | 0.2+ | 2002 03 12 | 691 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 0.2+ | 0.3− | 2002 02 07 | 608 | 0.1− | 0.2+ | 2002 03 12 | 644 | 0.6+ | 0.5− |
| 2002 01 14 | 704 | 1.0− | 0.0 | 2002 02 07 | 608 | 1.2− | 0.0 | 2005 08 31 | 644 | 0.0 | 0.1+ |
| 2002 01 14 | 704 | 0.3− | 0.3+ | 2002 02 10 | 704 | 0.5− | 1.3+ | 2005 08 31 | 644 | 0.1− | 0.9+ |
| 2002 01 14 | 704 | 0.3− | 0.5− | 2002 02 10 | 704 | 0.5− | 0.8+ | 2005 08 31 | 644 | 0.1+ | 0.3+ |
| 2002 01 21 | 704 | 1.4+ | 0.9− | 2002 02 10 | 704 | 0.7− | 0.4+ | 2005 10 08 | 703 | 0.8− | 1.0+ |
| 2002 01 21 | 704 | 0.6+ | 0.1+ | 2002 02 10 | 704 | 0.4− | 0.5+ | 2005 10 08 | 703 | 0.2+ | 0.2− |
| 2002 01 21 | 704 | 0.1− | 0.9+ | 2002 02 12 | 704 | 0.7− | 0.3+ | 2005 10 08 | 703 | 0.1+ | 0.1+ |
| 2002 01 21 | 704 | 0.6+ | 1.0+ | 2002 02 12 | 704 | 0.5− | 0.0 | 2005 10 08 | 703 | 0.1+ | 0.4− |
| 2002 01 21 | 291 | 0.2− | 0.0 | 2002 02 12 | 704 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.6− |
| 2002 01 21 | 291 | 0.3− | 0.0 | 2002 02 12 | 704 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.7+ | 0.2− |
| 2002 01 21 | 291 | 0.3− | 0.0 | 2002 02 12 | 704 | 0.2− | 0.9− | 2006 11 21 | G96 | 0.5+ | 0.3− |
| 2002 02 03 | 608 | 0.6+ | 0.5+ | 2002 02 20 | 704 | 0.6+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2002 02 03 | 608 | 0.1+ | 0.3+ | 2002 02 20 | 704 | 0.3+ | 0.4− | | | | |
| 2002 02 03 | 608 | 0.4+ | 0.2+ | 2002 02 20 | 704 | 0.3+ | 0.6+ | | | | |

**2002 AU$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.93034 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17449259 | $\omega$ | 329.54310 | −0.29148009 | | −0.93771089 | |
| $a$ | 3.1716461 | $\Omega$ | 136.60005 | +0.92374025 | | −0.32725857 | |
| $e$ | 0.2005988 | $i$ | 15.97027 | +0.24848202 | | +0.11661952 | |
| $P$ | 5.65 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 691 | 0.1− | 0.8+ | 2002 02 07 | 644 | 0.2+ | 0.1+ | 2002 03 02 | 644 | 0.2+ | 0.1+ |
| 1999 08 12 | 691 | 0.2− | 0.7+ | 2002 02 07 | 704 | 1.4− | 0.5− | 2002 03 05 | 699 | 0.3− | 0.4+ |
| 1999 08 12 | 691 | 0.3+ | 1.0+ | 2002 02 07 | 704 | 0.6− | 0.7+ | 2002 03 05 | 699 | 0.2+ | 0.0 |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2002 02 07 | 704 | (1.0+ | 1.7−) | 2002 03 05 | 699 | 0.1− | 0.4+ |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2002 02 07 | 704 | 0.1+ | 0.2+ | 2002 03 05 | 699 | 0.3− | 0.7+ |
| 2001 12 20 | 704 | (1.7+ | 0.6−) | 2002 02 07 | 704 | 0.5+ | 0.4− | 2002 03 06 | 704 | 0.4− | 1.1+ |
| 2001 12 20 | 704 | 0.5+ | 0.4+ | 2002 02 07 | 644 | 0.2+ | 0.1+ | 2002 03 06 | 704 | 0.1+ | 0.6+ |
| 2001 12 20 | 704 | 1.3+ | 0.8+ | 2002 02 08 | 704 | 1.2− | 1.4− | 2002 03 06 | 704 | 0.2− | 0.3+ |
| 2001 12 20 | 704 | 0.6+ | 0.5+ | 2002 02 08 | 704 | 1.3− | 0.8− | 2006 10 28 | 703 | 1.0− | 1.4+ |
| 2002 01 09 | 704 | 0.5− | 0.3+ | 2002 02 08 | 704 | (1.7− | 1.1−) | 2006 10 28 | 703 | (0.1+ | 1.6+) |
| 2002 01 09 | 704 | 0.3− | 0.5+ | 2002 02 08 | 704 | 0.7− | 1.3− | 2006 10 28 | 703 | 0.7+ | 1.2+ |
| 2002 01 09 | 704 | 0.6+ | 0.5+ | 2002 02 10 | 704 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.4− | 0.6+ |
| 2002 01 14 | 704 | 0.7+ | 0.0 | 2002 02 10 | 704 | (2.1+ | 0.1−) | 2006 11 16 | 703 | (1.7+ | 0.2+) |
| 2002 01 14 | 704 | 0.6+ | 0.9+ | 2002 02 10 | 704 | 0.7− | 1.1+ | 2006 11 16 | 703 | 0.3− | 0.2+ |
| 2002 01 14 | 704 | 0.2+ | 0.3+ | 2002 02 10 | 704 | 0.5− | 0.5+ | 2006 11 16 | 703 | 0.3+ | 0.8− |
| 2002 01 14 | 704 | 0.6+ | 0.9+ | 2002 02 10 | 704 | 0.5− | 0.5+ | 2006 11 16 | 703 | 0.5+ | 0.5− |
| 2002 01 14 | 704 | 0.8+ | 1.0+ | 2002 02 10 | 106 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.9− |
| 2002 01 14 | 691 | 0.1+ | 0.1+ | 2002 02 10 | 106 | 0.4− | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.5− |
| 2002 01 14 | 691 | 0.1− | 0.1+ | 2002 02 10 | 106 | 0.5− | 0.7− | 2006 11 22 | 703 | 0.8− | 0.7− |
| 2002 01 14 | 691 | 0.0 | 0.1− | 2002 02 12 | 704 | 0.4+ | 0.0 | 2006 11 22 | 703 | 1.1+ | 1.3− |
| 2002 01 21 | 704 | 0.6+ | 0.4− | 2002 02 12 | 704 | 0.2− | 0.6− | 2006 11 22 | 703 | 0.3− | 0.1− |
| 2002 01 21 | 704 | 0.6− | 0.2+ | 2002 02 12 | 704 | 0.5− | 0.6− | 2006 11 22 | 703 | 0.1+ | 0.1+ |
| 2002 01 21 | 704 | 0.2− | 0.2+ | 2002 02 12 | 704 | 0.4− | 1.0− | 2006 11 22 | 703 | 0.3− | 0.5+ |
| 2002 01 21 | 704 | 0.5+ | 0.7+ | 2002 02 12 | 704 | 0.0 | 0.5− | 2006 11 22 | 703 | 0.6+ | 0.5+ |
| 2002 01 21 | 704 | 0.2+ | 0.3+ | 2002 02 14 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.1− |
| 2002 01 26 | 644 | 0.3+ | 0.2+ | 2002 02 14 | 644 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.6+ | 0.8+ |
| 2002 01 26 | 644 | 0.6+ | 0.2− | 2002 02 14 | 644 | 0.3+ | 0.4+ | 2006 11 23 | 703 | 0.1+ | 0.1+ |
| 2002 01 26 | 644 | 0.3+ | 0.3+ | 2002 02 20 | 704 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.6+ | 0.6− |
| 2002 02 05 | 644 | 0.2+ | 1.1+ | 2002 02 20 | 704 | 0.0 | 0.3− | 2006 11 24 | 703 | 0.6− | 0.4+ |
| 2002 02 05 | 644 | 0.8+ | 1.1+ | 2002 02 20 | 704 | 0.1+ | 0.4− | 2006 11 24 | 703 | 0.3− | 0.6+ |
| 2002 02 05 | 644 | 0.5+ | 0.9+ | 2002 02 20 | 704 | 0.3+ | 0.0 | 2006 11 24 | 703 | 0.6+ | 0.3− |
| 2002 02 07 | 644 | 0.1+ | 0.0 | 2002 02 20 | 704 | 0.2+ | 0.4− | 2006 11 24 | 703 | 0.6− | 0.9− |
| 2002 02 07 | 704 | 0.8− | 0.2− | 2002 03 02 | 644 | 0.4+ | 0.5+ | | | | |
| 2002 02 07 | 704 | 0.1− | 0.1+ | 2002 03 02 | 644 | 0.4+ | 0.1+ | | | | |

**2002 AD$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.27034 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.36514600 | $\omega$ | 85.25921 | +0.91068736 | | −0.31573785 | |
| $a$ | 1.9386155 | $\Omega$ | 292.94978 | +0.15678136 | | +0.86076309 | |
| $e$ | 0.1205873 | $i$ | 16.81467 | +0.38218861 | | +0.39924492 | |
| $P$ | 2.70 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.0 | 0.5+ | 2002 01 14 | 704 | 0.9− | 0.6− | 2002 01 21 | 691 | 0.3− | 0.1+ |
| 2001 12 17 | 704 | 0.4+ | 0.6+ | 2002 01 14 | 704 | 0.5+ | 1.2+ | 2002 01 21 | 691 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.5+ | 0.5− | 2002 01 14 | 704 | 0.8− | 0.2− | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2002 01 14 | 691 | 0.1+ | 0.7− | 2002 01 14 | 704 | 0.9+ | 1.3+ | 2006 10 27 | 703 | 0.2+ | 0.7+ |
| 2002 01 14 | 704 | 0.0 | 0.2− | 2002 01 19 | 704 | 0.4− | 0.4− | 2006 10 27 | 703 | 0.0 | 0.4+ |
| 2002 01 14 | 704 | 0.1− | 1.0− | 2002 01 19 | 704 | (1.3− | 2.0+) | 2006 10 27 | 703 | 0.1− | 0.9− |
| 2002 01 14 | 691 | 0.2+ | 0.3− | 2002 01 19 | 704 | 0.5+ | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.2− |
| 2002 01 14 | 704 | 0.5− | 0.3− | 2002 01 19 | 704 | 0.9+ | 1.2+ | 2006 11 23 | 703 | 0.1+ | 0.5− |
| 2002 01 14 | 704 | 0.7+ | 0.8+ | 2002 01 19 | 704 | 0.2+ | 0.9+ | 2006 11 23 | 703 | 0.8+ | 0.6− |
| 2002 01 14 | 691 | 0.1− | 0.3− | 2002 01 21 | 691 | 0.2− | 0.3+ | 2006 11 23 | 703 | 0.5− | 0.7+ |

**2002 AJ$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.05718 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.36922504 | $\omega$ | 318.12223 | −0.05205674 | | −0.94645497 | |
| $a$ | 1.9243111 | $\Omega$ | 132.11030 | +0.99171018 | | −0.08652513 | |
| $e$ | 0.0611201 | $i$ | 25.43449 | +0.11747775 | | +0.31102476 | |
| $P$ | 2.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.3+ | 0.2+ | 2002 01 25 | 704 | 0.3+ | 0.2+ | 2002 02 12 | 704 | 0.9+ | 0.4+ |
| 2002 01 13 | 704 | 0.1− | 0.3− | 2002 01 25 | 704 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.5− | 0.3− |
| 2002 01 13 | 704 | 0.7+ | 0.2− | 2002 01 25 | 704 | 0.4+ | 0.6+ | 2002 02 12 | 704 | 0.8− | 0.1+ |
| 2002 01 13 | 704 | 0.4+ | 0.0 | 2002 01 25 | 704 | 1.3− | 0.8+ | 2002 02 12 | 704 | 0.6+ | 0.1− |
| 2002 01 13 | 704 | 0.2+ | 0.3+ | 2002 01 25 | 704 | 1.0+ | 0.8+ | 2002 02 12 | 704 | 0.1− | 0.4− |
| 2002 01 19 | 704 | 0.0 | 0.9− | 2002 01 25 | 704 | 0.2− | 0.2+ | 2002 02 12 | 704 | 0.8− | 0.3+ |
| 2002 01 19 | 704 | 0.2+ | 0.7− | 2002 01 26 | 644 | 0.2− | 0.5+ | 2002 02 12 | 704 | 0.1+ | 0.1+ |
| 2002 01 19 | 704 | 0.3+ | 1.4− | 2002 01 26 | 644 | 0.4− | 0.7+ | 2002 02 12 | 704 | 0.6− | 0.2− |
| 2002 01 19 | 704 | 0.9+ | 1.2− | 2002 01 26 | 644 | 0.0 | 0.8+ | 2002 02 12 | 704 | 0.4− | 0.7− |
| 2002 01 22 | 704 | 0.5− | 0.1+ | 2002 02 12 | 704 | 0.2− | 0.2− | 2006 11 20 | E12 | 0.3− | 0.1− |
| 2002 01 22 | 704 | 0.3+ | 0.1− | 2002 02 12 | 704 | 0.2− | 0.1+ | 2006 11 20 | E12 | 0.4+ | 0.2+ |
| 2002 01 22 | 704 | 0.1− | 0.2− | 2002 02 12 | 704 | 0.9+ | 0.3− | 2006 11 20 | E12 | 1.0+ | 0.4+ |
| 2002 01 25 | 704 | 0.4− | 0.3+ | 2002 02 12 | 704 | 0.5− | 0.5+ | 2006 11 20 | E12 | 1.2− | 0.3− |
| 2002 01 25 | 704 | 0.6+ | 0.1− | 2002 02 12 | 704 | 0.7− | 0.2+ | | | | |

**2002 AK$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.90006 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.37139599 | $\omega$ | 308.24766 | +0.14094408 | | −0.94299334 | |
| $a$ | 1.9168049 | $\Omega$ | 130.79233 | +0.98621388 | | +0.10706431 | |
| $e$ | 0.0939499 | $i$ | 23.46762 | +0.08670030 | | +0.31512030 | |
| $P$ | 2.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 699 | 0.5+ | 0.1+ | 2002 01 23 | 704 | 0.4− | 0.3+ | 2002 02 12 | 704 | 0.2+ | 0.1+ |
| 2001 12 23 | 699 | 0.2− | 0.5+ | 2002 01 23 | 704 | 0.2− | 0.9+ | 2002 02 12 | 704 | 0.1+ | 0.3− |
| 2001 12 23 | 699 | 0.1+ | 0.1+ | 2002 01 25 | 704 | 0.1− | 0.0 | 2002 02 12 | 704 | 0.2+ | 0.1− |
| 2001 12 23 | 699 | 0.2+ | 0.2− | 2002 01 25 | 704 | 0.3+ | 0.4− | 2002 02 12 | 704 | 0.2+ | 0.2− |
| 2001 12 27 | 644 | 0.3+ | 0.0 | 2002 01 25 | 704 | 0.4− | 0.1+ | 2002 02 12 | 704 | 0.4+ | 0.1+ |
| 2001 12 27 | 644 | 0.3+ | 0.0 | 2002 01 25 | 704 | 0.0 | 0.4− | 2002 02 20 | 704 | 0.2+ | 0.8+ |
| 2001 12 27 | 644 | 0.4− | 0.3+ | 2002 01 25 | 704 | 0.1− | 0.0 | 2002 02 20 | 704 | 0.0 | 0.4+ |
| 2002 01 09 | 644 | 0.1+ | 0.8− | 2002 01 25 | 704 | 0.3+ | 0.1+ | 2002 02 20 | 704 | 0.2+ | 0.3+ |
| 2002 01 09 | 644 | 0.0 | 0.8− | 2002 01 25 | 704 | 0.5− | 0.1− | 2002 02 20 | 704 | 0.4− | 0.1− |
| 2002 01 09 | 644 | 0.1+ | 0.7− | 2002 01 25 | 704 | 0.1+ | 0.6− | 2002 03 03 | 699 | 1.1− | 0.5+ |
| 2002 01 14 | 704 | 0.4− | 0.2+ | 2002 02 05 | 644 | 0.2− | 0.1− | 2002 03 03 | 699 | 0.6− | 0.9− |
| 2002 01 14 | 704 | 1.2− | 0.8+ | 2002 02 05 | 644 | 0.0 | 0.0 | 2002 03 03 | 699 | 0.2− | 0.2− |
| 2002 01 14 | 704 | 0.6− | 0.5− | 2002 02 05 | 644 | 0.5+ | 0.2+ | 2002 03 03 | 699 | 0.8− | 0.2− |
| 2002 01 14 | 704 | 1.1− | 0.5+ | 2002 02 07 | 704 | 0.4− | 1.5+ | 2003 07 25 | 644 | 0.1+ | 0.5+ |
| 2002 01 22 | 704 | 0.0 | 0.1+ | 2002 02 07 | 704 | 0.2+ | 1.1+ | 2003 07 25 | 644 | 0.0 | 0.6+ |
| 2002 01 22 | 704 | 0.2+ | 0.4+ | 2002 02 07 | 704 | 0.4+ | 1.1+ | 2003 07 25 | 644 | 0.1+ | 0.3+ |
| 2002 01 22 | 704 | 0.2− | 0.4− | 2002 02 07 | 704 | 0.4+ | 1.2+ | 2006 10 25 | F84 | 0.0 | 0.0 |
| 2002 01 22 | 704 | 0.4− | 0.4− | 2002 02 09 | 691 | 0.2+ | 0.3− | 2006 10 25 | F84 | 0.0 | 0.1− |
| 2002 01 23 | 704 | 1.1− | 0.6+ | 2002 02 09 | 691 | 0.2+ | 0.3− | | | | |
| 2002 01 23 | 704 | 0.4− | 0.4+ | 2002 02 09 | 691 | 0.9+ | 0.3− | | | | |

**2002 AT$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.10963 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.37419472 | $\omega$ | 178.08160 | −0.21508448 | | −0.92396387 | |
| $a$ | 1.9072353 | $\Omega$ | 284.23471 | +0.89160783 | | −0.05364712 | |
| $e$ | 0.0884536 | $i$ | 19.04391 | +0.39846473 | | −0.37869876 | |
| $P$ | 2.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 08 | 704 | 0.1− | 0.0 | 2002 01 08 | 704 | 0.1+ | 0.4+ | 2002 02 06 | 704 | 0.7− | 0.2+ |
| 2001 11 08 | 704 | 0.7− | 0.3+ | 2002 01 08 | 704 | 0.5+ | 0.7+ | 2002 02 06 | 704 | 0.3− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 08 | 704 | 0.1− | 0.4+ | 2002 01 15 | 704 | (2.7+ | 0.2−) | 2006 09 25 | 703 | 0.5+ | 1.3+ | | |
| 2001 11 08 | 704 | 0.4+ | 0.3+ | 2002 01 15 | 704 | 1.1+ | 0.0 | 2006 09 25 | 703 | 0.5+ | 1.8+ | | |
| 2001 11 08 | 704 | 0.3+ | 0.1+ | 2002 01 15 | 704 | 1.2+ | 0.2− | 2006 09 25 | 703 | 0.0 | 0.4+ | | |
| 2001 12 22 | 704 | 0.4− | 0.6− | 2002 01 21 | 704 | 0.2+ | 0.6− | 2006 09 25 | 703 | 1.0− | 1.2− | | |
| 2001 12 22 | 704 | 1.1− | 0.9+ | 2002 01 21 | 704 | 0.3+ | 0.3− | 2006 10 03 | H82 | 0.2− | 0.4− | | |
| 2001 12 22 | 704 | 0.2+ | 0.7− | 2002 01 21 | 704 | 0.1+ | 0.1− | 2006 10 03 | H82 | 0.1+ | 1.1− | | |
| 2001 12 22 | 704 | 0.2+ | 0.4− | 2002 01 21 | 704 | 0.2− | 0.0 | 2006 10 03 | H82 | 0.6− | 1.1− | | |
| 2001 12 22 | 704 | 0.1− | 0.5− | 2002 01 21 | 704 | 0.1− | 0.4− | 2006 10 03 | H82 | 0.9+ | 0.0 | | |
| 2002 01 08 | 704 | 0.2+ | 0.1+ | 2002 02 06 | 704 | 0.8− | 0.7− | | | | | | |
| 2002 01 08 | 704 | 0.4+ | 0.6+ | 2002 02 06 | 704 | 0.5− | 0.0 | | | | | | |

### 2002 $AU_{137}$ = 2006 $WU_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.00696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17247934 | $\omega$ | 206.00113 | | −0.23048865 | −0.97137002 | |
| $a$ | 3.1962789 | $\Omega$ | 257.36861 | | +0.90275296 | −0.19137149 | |
| $e$ | 0.1456605 | $i$ | 3.38279 | | +0.36319701 | −0.14077370 | |
| $P$ | 5.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 1.4− | 0.1+ | 2002 01 15 | 704 | 0.5+ | 1.1− | 2006 11 20 | 691 | 0.4+ | 0.6− |
| 2001 12 17 | 704 | 0.3+ | 0.1+ | 2002 01 15 | 704 | 1.0+ | 1.0− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 12 17 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.5− | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2001 12 18 | 644 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.2+ |
| 2001 12 18 | 644 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 12 18 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.1− | 2006 11 24 | A44 | 0.8+ | 0.1+ |
| 2002 01 09 | 704 | 0.3+ | 0.9+ | 2006 11 18 | 691 | 0.1− | 0.1+ | 2006 11 24 | A44 | 0.0 | 0.0 |
| 2002 01 09 | 704 | 0.5− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.0 | 2006 11 24 | A44 | 0.2− | 0.6− |
| 2002 01 09 | 704 | 0.4− | 0.5− | 2006 11 20 | 691 | 0.1+ | 0.1− | | | | |
| 2002 01 15 | 704 | 0.4+ | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.4+ | | | | |

### 2002 $AP_{138}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.91396 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17534220 | $\omega$ | 237.72015 | | +0.64215336 | −0.76655424 | |
| $a$ | 3.1613924 | $\Omega$ | 172.31932 | | +0.71711100 | +0.59802519 | |
| $e$ | 0.2019280 | $i$ | 2.48776 | | +0.27090750 | +0.23400954 | |
| $P$ | 5.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.0 | 0.3− | 2002 01 15 | 704 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2000 09 20 | 691 | 0.2− | 0.2+ | 2002 01 22 | 691 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2000 09 20 | 691 | 0.2+ | 0.0 | 2002 01 22 | 691 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 2001 12 10 | 291 | 0.1− | 0.7+ | 2002 01 22 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 12 10 | 291 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 12 10 | 291 | 0.1− | 0.7+ | 2006 07 21 | G96 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 01 07 | 691 | 0.0 | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 01 07 | 691 | 0.1+ | 0.3− | 2006 07 21 | G96 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 01 07 | 691 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 01 09 | 704 | 0.8− | 0.8+ | 2006 09 30 | G96 | 1.2− | 1.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 01 09 | 704 | 0.0 | 0.5− | 2006 09 30 | G96 | (2.1+ | 0.4+) | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 01 09 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 01 15 | 704 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2002 01 15 | 704 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.3− |
| 2002 01 15 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 01 15 | 704 | 0.2+ | 0.8− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |

### 2002 $AY_{138}$ = 2006 $WA_{146}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.60942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17930714 | $\omega$ | 266.05889 | | −0.98740670 | −0.07989451 | |
| $a$ | 3.1146146 | $\Omega$ | 269.32160 | | +0.12798127 | −0.91077524 | |
| $e$ | 0.0416660 | $i$ | 7.84860 | | −0.09299896 | −0.40509917 | |
| $P$ | 5.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.2+ | 0.1− | 2002 01 15 | 704 | 0.4− | 0.6+ | 2006 11 20 | 691 | 0.4+ | 0.1− |
| 2001 12 19 | 644 | 0.9− | 0.4− | 2002 01 15 | 704 | (0.1− | 1.7−) | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2001 12 19 | 644 | 0.5+ | 0.0 | 2002 01 15 | 704 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 01 09 | 704 | 0.2+ | 0.8+ | 2002 01 15 | 704 | (0.3− | 1.9−) | 2006 11 24 | 691 | 0.3− | 0.1+ |
| 2002 01 09 | 704 | 0.2− | 0.5− | 2002 01 15 | 704 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.4− | 0.0 |
| 2002 01 09 | 704 | 0.1+ | 0.1+ | 2003 05 03 | 691 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 01 15 | 704 | 0.1+ | 0.3+ | 2003 05 03 | 691 | 0.1+ | 0.1+ | | | | |
| 2002 01 15 | 704 | 0.0 | 1.3− | 2003 05 03 | 691 | 0.3+ | 0.0 | | | | |

### 2002 $AC_{139}$ = 1980 $FM_8$ = 1999 $FV_{37}$

Id. Minor Planet Center (*MPO* 25584; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.47205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30938035 | $\omega$ | 63.65321 | | +0.58754416 | −0.80906945 | |
| $a$ | 2.1650814 | $\Omega$ | 350.32631 | | +0.70932721 | +0.52333393 | |
| $e$ | 0.1116494 | $i$ | 4.80928 | | +0.38941849 | +0.26744759 | |
| $P$ | 3.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1980 03 23 | 809 | 0.6− | 0.9− | 2002 02 03 | 608 | 0.4− | 0.4− | 2004 12 02 | 704 | 0.2− | 0.3+ |
| 1999 02 18 | 699 | 0.1− | 0.4+ | 2002 02 04 | 644 | 0.0 | 0.2+ | 2004 12 02 | 704 | 0.2− | 0.6− |
| 1999 02 18 | 699 | 0.9+ | 0.3− | 2002 02 04 | 644 | 0.0 | 0.2+ | 2004 12 09 | 704 | 0.0 | 0.3− |
| 1999 02 18 | 699 | 0.6+ | 1.2− | 2002 02 04 | 644 | 0.1− | 0.3+ | 2004 12 09 | 704 | 1.1− | 0.5− |
| 1999 03 19 | 699 | 0.6+ | 0.5− | 2002 02 07 | 704 | 0.3− | 0.3+ | 2004 12 09 | 704 | 0.1− | 0.1+ |
| 1999 03 19 | 699 | 0.2+ | 0.1+ | 2002 02 07 | 704 | 0.1− | 0.5+ | 2004 12 09 | 704 | 0.1− | 0.3− |
| 1999 03 19 | 699 | 0.9+ | 0.3− | 2002 02 07 | 704 | 0.1+ | 0.5− | 2004 12 10 | 644 | 0.6− | 0.0 |
| 1999 03 20 | 704 | 0.6+ | 1.7+ | 2002 02 07 | 704 | 0.4− | 0.1− | 2004 12 10 | 644 | 0.4− | 0.0 |
| 1999 03 20 | 704 | 1.6− | 0.7− | 2002 02 07 | 704 | 0.1+ | 0.0 | 2004 12 10 | 644 | 0.1− | 0.3− |
| 1999 03 20 | 704 | 0.3+ | 1.1+ | 2002 02 07 | 608 | 0.7− | 0.8− | 2004 12 11 | 704 | 0.3+ | 0.8− |
| 1999 03 20 | 704 | 1.9+ | 1.3− | 2002 02 07 | 608 | 0.7− | 0.4− | 2004 12 11 | 704 | 0.2− | 0.1+ |
| 1999 03 20 | 704 | 1.0− | 0.4+ | 2002 02 07 | 608 | 0.6− | 1.2− | 2004 12 11 | 704 | 0.1− | 0.1− |
| 1999 03 23 | 704 | (0.6− | 2.6+) | 2002 02 10 | 704 | 0.2− | 0.2− | 2004 12 11 | 704 | 0.2+ | 0.5− |
| 1999 03 23 | 704 | 1.8− | 1.5+ | 2002 02 10 | 704 | 0.2− | 0.3− | 2004 12 15 | 704 | 1.1+ | 0.4+ |
| 1999 03 23 | 704 | (2.3− | 2.5+) | 2002 02 10 | 704 | 0.2+ | 0.1+ | 2004 12 15 | 704 | 1.0+ | 0.7+ |
| 2001 11 24 | 704 | 0.7+ | 1.2− | 2002 02 10 | 704 | 0.0 | 0.1+ | 2004 12 15 | 704 | 0.4+ | 0.6+ |
| 2001 11 24 | 704 | 1.1+ | 0.8− | 2002 02 10 | 704 | 0.1+ | 0.1+ | 2004 12 15 | 704 | 1.1+ | 0.4+ |
| 2001 11 24 | 704 | 0.8+ | 0.1− | 2002 02 12 | 704 | 0.5+ | 1.2− | 2004 12 15 | 704 | 1.1+ | 0.2+ |
| 2001 11 24 | 704 | (2.1+ | 0.5+) | 2002 02 12 | 704 | 0.5+ | 1.4− | 2004 12 17 | 704 | 0.0 | 0.3− |
| 2001 12 10 | 704 | 1.8+ | 0.5+ | 2002 02 12 | 704 | 0.6+ | 1.3− | 2004 12 17 | 704 | 0.1− | 0.1− |
| 2001 12 10 | 704 | 1.4+ | 0.8− | 2002 02 12 | 704 | 0.6+ | 1.5− | 2004 12 17 | 704 | 0.1+ | 0.5+ |
| 2001 12 10 | 704 | 0.3+ | 0.9− | 2002 02 12 | 704 | 1.0+ | 1.7− | 2004 12 17 | 704 | 0.4− | 0.3+ |
| 2001 12 10 | 704 | (2.1+ | 3.0−) | 2002 02 14 | 644 | 1.0+ | 0.2+ | 2004 12 17 | 704 | 0.4− | 0.4− |
| 2002 01 09 | 704 | 0.4− | 0.5+ | 2002 02 14 | 644 | 0.9+ | 0.3+ | 2005 01 07 | 704 | 0.3+ | 0.4+ |
| 2002 01 09 | 608 | 0.8− | 1.0+ | 2002 02 14 | 644 | 1.0+ | 0.3+ | 2005 01 07 | 704 | 0.1− | 0.1+ |
| 2002 01 09 | 704 | 0.3− | 0.1+ | 2002 02 20 | 704 | 0.2− | 0.6+ | 2005 01 07 | 704 | 0.1− | 0.1+ |
| 2002 01 09 | 608 | 0.5− | 0.5+ | 2002 02 20 | 704 | 0.5+ | 0.4+ | 2005 01 07 | 704 | 0.0 | 0.6+ |
| 2002 01 09 | 608 | 0.7− | 0.7+ | 2002 02 20 | 704 | 0.5+ | 0.4+ | 2005 01 07 | 704 | 0.3+ | 0.6+ |
| 2002 01 09 | 704 | 0.4− | 1.2+ | 2002 03 06 | 704 | 0.2− | 0.0 | 2005 01 12 | 704 | 0.0 | 0.2− |
| 2002 01 09 | 704 | 0.1+ | 0.9+ | 2002 03 06 | 704 | 0.1− | 0.1− | 2005 01 12 | 704 | 0.6+ | 0.3− |
| 2002 01 09 | 704 | 0.2+ | 0.8+ | 2002 03 06 | 704 | 0.1− | 0.5+ | 2005 01 12 | 704 | 1.1+ | 0.9+ |
| 2002 01 11 | 699 | 0.6− | 0.3+ | 2002 03 06 | 704 | 0.2+ | 0.7+ | 2005 01 12 | 704 | 0.4+ | 0.7+ |
| 2002 01 11 | 699 | 0.3− | 0.3− | 2002 03 06 | 704 | 0.1− | 0.5+ | 2005 01 16 | 704 | 1.2− | 0.4− |
| 2002 01 11 | 699 | 1.1− | 1.2+ | 2002 03 09 | 704 | 0.6− | 0.6+ | 2005 01 16 | 704 | 0.8− | 0.4− |
| 2002 01 11 | 699 | 1.0− | 0.3+ | 2002 03 09 | 704 | 0.1+ | 1.3+ | 2005 01 16 | 704 | 1.1− | 0.1+ |
| 2002 01 14 | 608 | 0.9+ | 1.0+ | 2002 03 09 | 704 | 0.1+ | 0.0 | 2005 01 16 | 704 | 1.8− | 0.2+ |
| 2002 01 14 | 608 | 0.8+ | 0.8+ | 2002 04 17 | 704 | 0.7− | 0.2− | 2005 01 16 | 704 | 0.5+ | 0.2− |
| 2002 01 14 | 608 | 0.8+ | 0.8+ | 2002 04 17 | 704 | 0.6− | 0.4− | 2005 01 19 | 704 | 0.6+ | 0.3+ |
| 2002 01 15 | 704 | 0.5− | 0.0 | 2002 04 17 | 704 | 0.0 | 0.9− | 2005 01 19 | 704 | 0.5− | 0.8− |
| 2002 01 15 | 704 | 0.2− | 0.1− | 2002 04 17 | 704 | 0.2− | 0.9− | 2005 01 19 | 704 | 0.0 | 1.0− |
| 2002 01 15 | 704 | 0.2− | 0.2+ | 2004 11 21 | 599 | 0.2− | 0.2+ | 2005 01 19 | 704 | 0.2+ | 0.6− |
| 2002 01 20 | 699 | 0.7− | 0.3+ | 2004 11 21 | 599 | 0.1+ | 0.2+ | 2005 01 19 | 704 | 0.3− | 0.9− |
| 2002 01 20 | 699 | 0.1+ | 0.4+ | 2004 11 21 | 599 | 0.2+ | 0.1− | 2005 02 03 | 704 | 0.0 | 0.7+ |
| 2002 01 20 | 699 | 0.2− | 0.2+ | 2004 11 21 | 599 | 0.3+ | 0.3+ | 2005 02 03 | 704 | 0.2+ | 0.1− |
| 2002 01 20 | 699 | 0.8− | 0.0 | 2004 12 02 | 704 | 0.2− | 0.3− | 2005 02 03 | 704 | 0.2+ | 0.3− |
| 2002 02 03 | 608 | 0.3− | 0.7− | 2004 12 02 | 704 | 0.3− | 0.8− | 2005 02 03 | 704 | 0.5+ | 0.1+ |
| 2002 02 03 | 608 | 0.4− | 0.7− | 2004 12 02 | 704 | 0.6− | 0.1− | 2005 02 03 | 704 | 0.3+ | 0.6− |

**2002 AU$_{143}$ = 2001 XM$_{266}$**

Id. M. E. Sansaturio (d, *MPO* 58141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.68464 | | | (2000.0) | | |
| $n$ | 0.17665609 | $\omega$ | 121.37224 | | +0.71598244 | −0.68514128 |
| $a$ | 3.1456976 | $\Omega$ | 282.25355 | | +0.58487906 | +0.69347866 |
| $e$ | 0.0731905 | $i$ | 7.88026 | | +0.38116353 | +0.22286492 |
| $P$ | 5.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.1+ | 0.0 | 2002 01 15 | 704 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2001 12 14 | 291 | 0.1− | 0.3+ | 2002 02 06 | 644 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 1.3+ | 0.1+ |
| 2001 12 14 | 291 | 0.2− | 0.1+ | 2002 02 06 | 644 | 0.3− | 0.7+ | 2006 11 22 | 704 | 1.1+ | 0.9+ |
| 2002 01 07 | 691 | 0.1+ | 0.6− | 2002 02 06 | 644 | 0.1− | 0.6+ | 2006 11 22 | 704 | 1.1+ | 0.4− |
| 2002 01 07 | 691 | 0.1+ | 0.0 | 2002 02 11 | 704 | 0.7+ | 0.0 | 2006 11 22 | 704 | 0.0 | 0.7+ |
| 2002 01 07 | 691 | 0.1+ | 0.0 | 2002 02 11 | 704 | 0.9+ | 0.1− | 2006 11 25 | 691 | 0.0 | 0.4− |
| 2002 01 13 | 704 | 0.8− | 0.8+ | 2002 02 11 | 704 | 0.3+ | 0.7− | 2006 11 25 | 691 | 0.0 | 0.4− |
| 2002 01 13 | 704 | 0.6− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 25 | 691 | 0.2− | 0.3− |
| 2002 01 13 | 704 | (1.6− | 0.1+) | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 704 | 0.2+ | 1.4− |
| 2002 01 13 | 704 | 1.2− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 704 | 0.6− | 1.2+ |
| 2002 01 13 | 704 | 0.9− | 0.3− | 2006 11 17 | 691 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.6+ | 0.8+ |
| 2002 01 15 | 704 | 0.7+ | 0.6− | 2006 11 17 | 691 | 0.2+ | 0.1+ | | | | |
| 2002 01 15 | 704 | 0.6+ | 0.2− | 2006 11 17 | 691 | 0.9− | 0.3+ | | | | |

**2002 AW$_{143}$ = 1232 T-2**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 122.23226 | | | (2000.0) | | |
| $n$ | 0.18569555 | $\omega$ | 103.05905 | | +0.61427650 | +0.78906993 |
| $a$ | 3.0427648 | $\Omega$ | 204.84310 | | −0.72917302 | +0.56483444 |
| $e$ | 0.1113024 | $i$ | 0.78363 | | −0.30161414 | +0.24151748 |
| $P$ | 5.31 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | (6.6+ | 1.1+) | 2002 01 13 | 704 | 0.3+ | 0.6+ | 2003 04 07 | 691 | 1.2+ | 1.6+ |
| 1973 09 20 | 675 | 0.1+ | 1.4− | 2002 01 13 | 704 | 0.4− | 0.1+ | 2005 09 26 | 644 | 0.1− | 0.5+ |
| 1973 09 24 | 675 | (2.1− | 0.3+) | 2002 01 13 | 704 | 0.1+ | 0.7+ | 2005 09 26 | 644 | 0.4− | 0.6+ |
| 1973 09 24 | 675 | 0.4− | 0.3− | 2002 01 13 | 691 | 0.3− | 0.4+ | 2005 09 26 | 644 | 0.4− | 0.5+ |
| 1973 09 25 | 675 | (3.1− | 1.0−) | 2002 01 13 | 704 | 0.3+ | 0.1− | 2005 09 27 | 691 | 0.1− | 0.4+ |
| 1973 09 25 | 675 | 0.6− | 0.6+ | 2002 01 13 | 691 | 0.3− | 0.3+ | 2005 09 27 | 691 | 0.0 | 0.5+ |
| 1973 09 29 | 675 | 1.8+ | 1.3− | 2002 01 13 | 704 | 0.4− | 1.2+ | 2005 09 27 | 691 | 0.1− | 0.6+ |
| 1973 09 29 | 675 | 1.6+ | 0.2+ | 2002 01 13 | 691 | 0.2− | 0.3+ | 2005 09 30 | G96 | 0.0 | 0.3+ |
| 1973 09 30 | 675 | (2.9+ | 1.4+) | 2002 01 15 | 704 | 0.0 | 0.1+ | 2005 09 30 | G96 | 0.2+ | 0.2+ |
| 1973 09 30 | 675 | (3.2+ | 1.3+) | 2002 01 15 | 704 | 0.3− | 1.6+ | 2005 09 30 | G96 | 0.1− | 0.2+ |
| 1973 10 04 | 675 | 1.1− | 0.0 | 2002 01 15 | 704 | 0.0 | 0.1+ | 2005 09 30 | G96 | 0.2+ | 0.3+ |
| 1973 10 04 | 675 | (1.0+ | 2.3+) | 2002 01 15 | 704 | 0.7+ | 0.2+ | 2005 10 07 | 704 | 0.5+ | 0.2+ |
| 1973 10 05 | 675 | 0.3+ | 0.9− | 2002 01 15 | 704 | 0.3+ | 0.0 | 2005 10 07 | 691 | 0.2− | 0.4+ |
| 1973 10 05 | 675 | 0.2− | 1.6− | 2003 03 25 | 699 | 0.2+ | 0.4− | 2005 10 07 | 704 | 0.6+ | 0.5+ |
| 1997 01 10 | 691 | 0.2+ | 0.7− | 2003 03 25 | 699 | 0.1+ | 0.8− | 2005 10 07 | 691 | 0.1+ | 0.5+ |
| 1997 01 10 | 691 | 0.2− | 0.7− | 2003 03 25 | 699 | 0.6+ | 0.6− | 2005 10 07 | 704 | 0.1+ | 0.7+ |
| 1997 01 10 | 691 | 0.1− | 0.8− | 2003 03 25 | 699 | 0.3+ | 0.2− | 2005 10 07 | 691 | 0.1− | 0.6+ |
| 1999 08 08 | 691 | 0.3− | 1.3+ | 2003 03 31 | 291 | 0.1− | 0.0 | 2005 10 26 | 701 | 0.7− | 0.9− |
| 1999 08 08 | 691 | 0.4− | 1.4+ | 2003 03 31 | 291 | 0.2− | 0.1+ | 2005 10 26 | 701 | 1.9− | 1.3+ |
| 1999 08 08 | 691 | 0.3− | 1.0+ | 2003 03 31 | 291 | 0.2− | 0.1− | 2005 10 26 | 701 | (2.2− | 3.1−) |
| 2000 11 29 | 691 | 1.1+ | 0.2+ | 2003 04 03 | 699 | 0.2+ | 0.4+ | 2006 01 05 | G96 | 0.5− | 0.1− |
| 2000 11 29 | 691 | 1.0+ | 0.0 | 2003 04 03 | 699 | 1.2− | 0.9+ | 2006 01 05 | G96 | 1.4− | 0.1+ |
| 2000 11 29 | 691 | 1.2+ | 0.1+ | 2003 04 03 | 699 | 0.4− | 1.0+ | 2006 01 05 | G96 | 1.3− | 0.1+ |
| 2001 12 19 | 691 | 0.4− | 0.2+ | 2003 04 03 | 699 | 0.7+ | 0.2− | 2006 01 05 | G96 | 0.6− | 0.1− |
| 2001 12 19 | 691 | 0.2+ | 1.3− | 2003 04 07 | 691 | 0.6+ | 1.4+ | | | | |
| 2001 12 19 | 691 | 0.8− | 0.3− | 2003 04 07 | 691 | 0.9+ | 1.8+ | | | | |

**2002 AW$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.59401 | | | (2000.0) | | |
| $n$ | 0.17296873 | $\omega$ | 265.18663 | | +0.34653686 | −0.93772018 |
| $a$ | 3.1902470 | $\Omega$ | 164.47016 | | +0.89265770 | +0.32168447 |
| $e$ | 0.1880700 | $i$ | 5.21867 | | +0.28822637 | +0.13114861 |
| $P$ | 5.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.3− | 0.8+ | 2002 02 12 | 333 | 0.1+ | 0.1− | 2006 11 17 | 704 | 1.2+ | 0.6− |
| 2002 01 13 | 704 | 0.3− | 0.1− | 2002 02 13 | 333 | 0.4− | 0.6− | 2006 11 17 | 704 | 0.6+ | 1.0− |
| 2002 01 13 | 704 | 0.6− | 0.8+ | 2002 02 13 | 333 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2002 01 13 | 704 | 0.1− | 0.3+ | 2002 02 16 | 644 | 0.9+ | 0.8+ | 2006 11 17 | 704 | 0.6− | 0.4+ |
| 2002 01 13 | 704 | 0.4− | 0.2− | 2002 02 16 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.7− |
| 2002 01 19 | 704 | 0.0 | 0.3+ | 2002 02 16 | 644 | (1.6+ | 1.3+) | 2006 11 19 | 704 | 0.8− | 0.7− |
| 2002 01 19 | 704 | 0.2+ | 0.7− | 2002 02 16 | 644 | 0.6− | 0.5− | 2006 11 19 | 704 | 0.7− | 1.0+ |
| 2002 01 19 | 704 | 0.4+ | 0.5− | 2002 02 16 | 644 | 0.4+ | 0.9+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2002 01 19 | 704 | 0.3+ | 0.2− | 2002 02 16 | 644 | 0.9− | 0.3− | 2006 11 20 | 704 | 0.8− | 0.2+ |
| 2002 02 06 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 20 | 704 | (0.2+ | 1.6+) |
| 2002 02 06 | 644 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 20 | 704 | 1.0+ | 0.8+ |
| 2002 02 06 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.5− | 2006 11 20 | 704 | 0.3+ | 1.0+ |
| 2002 02 11 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 1.4− | 0.5− | 2006 11 20 | 704 | 0.1− | 0.3− |
| 2002 02 11 | 704 | 0.6+ | 1.0+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.5+ | 1.2+ |
| 2002 02 11 | 704 | 0.3+ | 0.7+ | 2006 10 18 | 691 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.0 |
| 2002 02 11 | 704 | 0.7+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.1− |
| 2002 02 11 | 704 | 0.6+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.9− |
| 2002 02 12 | 333 | 0.3− | 1.1− | 2006 11 09 | 644 | 0.0 | 0.0 | | | | |
| 2002 02 12 | 333 | 0.5− | 1.0− | 2006 11 09 | 644 | 0.4+ | 0.0 | | | | |

**2002 AM$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 84.52674 | | | (2000.0) | | |
| $n$ | 0.28531253 | $\omega$ | 248.13758 | | −0.98658486 | +0.16100915 |
| $a$ | 2.2851892 | $\Omega$ | 301.11872 | | −0.13573794 | −0.90078457 |
| $e$ | 0.1515769 | $i$ | 1.80405 | | −0.09069466 | −0.40331528 |
| $P$ | 3.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 691 | 0.2− | 0.2− | 2002 02 05 | 644 | 0.1+ | 0.2+ | 2002 03 13 | 704 | 1.3− | 0.2− |
| 2000 09 22 | 691 | 0.3+ | 0.8− | 2002 02 05 | 644 | 0.0 | 0.1− | 2002 03 13 | 704 | 0.6− | 1.6− |
| 2000 09 22 | 691 | 0.3+ | 0.1+ | 2002 02 05 | 644 | 0.1+ | 0.2− | 2002 03 13 | 644 | 0.3+ | 0.8− |
| 2002 01 13 | 704 | 0.2+ | 0.3+ | 2002 02 07 | 291 | 0.7− | 0.6+ | 2002 03 13 | 704 | 1.2− | 1.5− |
| 2002 01 13 | 704 | 0.3− | 0.1+ | 2002 02 07 | 291 | 0.4− | 0.6+ | 2002 03 13 | 644 | 0.3+ | 0.6− |
| 2002 01 13 | 704 | 0.0 | 0.8+ | 2002 02 07 | 291 | 0.2− | 0.5+ | 2002 03 13 | 644 | 0.6+ | 0.8− |
| 2002 01 13 | 704 | 0.3+ | 0.2− | 2002 02 11 | 704 | 0.5+ | 0.2− | 2002 03 15 | 704 | 0.5− | 0.0 |
| 2002 01 13 | 704 | 0.5− | 0.4+ | 2002 02 11 | 704 | 1.0+ | 0.1− | 2002 03 15 | 704 | 0.5+ | 0.1− |
| 2002 01 19 | 704 | 0.1+ | 0.6+ | 2002 02 11 | 704 | 1.4+ | 0.6+ | 2002 03 15 | 704 | 1.2− | 0.8− |
| 2002 01 19 | 704 | 1.0+ | 0.3+ | 2002 02 11 | 704 | 0.8+ | 0.5+ | 2002 03 15 | 704 | 0.5+ | 0.2− |
| 2002 01 19 | 704 | 1.5+ | 0.7+ | 2002 02 11 | 704 | 0.8+ | 0.3− | 2002 03 15 | 704 | 0.7− | 0.2+ |
| 2002 01 19 | 704 | 1.1+ | 0.2+ | 2002 02 20 | 704 | 0.1+ | 0.6+ | 2003 08 22 | 644 | 0.1+ | 0.7+ |
| 2002 01 19 | 704 | 1.7+ | 0.0 | 2002 02 20 | 704 | 0.5− | 0.3+ | 2003 08 22 | 644 | 0.6− | 0.8+ |
| 2002 02 04 | 608 | 0.1− | 0.9− | 2002 02 20 | 704 | 0.2− | 0.3− | 2003 08 22 | 644 | 0.4− | 0.8+ |
| 2002 02 04 | 608 | 0.1− | 1.6− | 2002 03 13 | 704 | 0.2− | 1.4− | | | | |
| 2002 02 04 | 608 | 0.3− | 0.8− | 2002 03 13 | 704 | (0.7− | 2.2−) | | | | |

**2002 AE$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.42249 | | | (2000.0) | | |
| $n$ | 0.20143823 | $\omega$ | 324.36193 | | +0.51856407 | −0.79631642 |
| $a$ | 2.8820938 | $\Omega$ | 92.43810 | | +0.83882283 | +0.40319809 |
| $e$ | 0.0867398 | $i$ | 18.16078 | | +0.16573343 | +0.45090072 |
| $P$ | 4.89 | $H$ | 15.4 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 644 | 0.1− | 1.1+ | 2002 01 05 | 644 | 0.2− | 0.4− | 2002 01 21 | 704 | 0.0 | 1.4− |
| 2001 12 17 | 644 | 0.1− | 0.5+ | 2002 01 05 | 644 | 0.0 | 0.8− | 2002 01 21 | 704 | (0.7− | 2.8−) |
| 2001 12 17 | 644 | 0.0 | 0.6+ | 2002 01 05 | 644 | 0.0 | 0.7− | 2006 11 14 | G96 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 1.1+ | 0.8− | 2002 01 05 | 644 | 0.0 | 0.6− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 12 18 | 704 | (2.1+ | 2.6−) | 2002 01 14 | 704 | 0.2− | 1.0+ | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2001 12 18 | 704 | (1.8+ | 3.0−) | 2002 01 14 | 704 | 0.6+ | 1.2+ | 2006 11 14 | G96 | 0.0 | 0.1+ |
| 2002 01 05 | 644 | 0.1− | 0.5− | 2002 01 14 | 704 | 0.0 | 0.9+ | 2006 11 15 | G96 | 0.6− | 0.3− |
| 2002 01 05 | 644 | 0.3− | 0.5− | 2002 01 14 | 704 | 0.1− | 1.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2002 01 05 | 644 | 0.2− | 0.3− | 2002 01 14 | 704 | 0.4+ | 1.7+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2002 01 05 | 644 | 0.2− | 0.5− | 2002 01 21 | 704 | 0.0 | 0.9− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 01 05 | 644 | 0.2+ | 0.6− | 2002 01 21 | 704 | 1.1− | 0.1− | | | | |

**2002 AV$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.93975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17752372 | $\omega$ | 301.64894 | | +0.86644416 | −0.48598178 | |
| $a$ | 3.1354397 | $\Omega$ | 87.65431 | | +0.48803903 | +0.77604722 | |
| $e$ | 0.1608337 | $i$ | 6.57679 | | +0.10532058 | +0.40196073 | |
| $P$ | 5.55 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5+ | 0.8− | 2002 02 10 | 704 | 0.0 | 1.3+ | 2006 11 17 | 704 | 1.1+ | 0.7+ |
| 2001 12 18 | 704 | 0.8− | 0.1− | 2002 02 10 | 704 | 0.7− | 0.7+ | 2006 11 17 | 704 | 0.1− | 0.9+ |
| 2001 12 18 | 704 | 0.2− | 0.3− | 2002 02 12 | 704 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2002 01 14 | 704 | 0.5+ | 0.9+ | 2002 02 12 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 01 14 | 704 | 0.3+ | 0.2+ | 2002 02 12 | 704 | 0.4+ | 0.4+ | 2006 11 19 | H07 | 0.9− | 0.5− |
| 2002 01 14 | 704 | 0.0 | 0.4+ | 2002 02 12 | 704 | 1.3+ | 0.0 | 2006 11 19 | H07 | 0.3+ | 0.3+ |
| 2002 01 14 | 704 | 0.0 | 0.4+ | 2002 02 12 | 704 | (0.9+ | 1.9+) | 2006 11 19 | H07 | 0.1+ | 0.0 |
| 2002 01 14 | 704 | 0.2− | 1.0+ | 2006 11 14 | 104 | 0.0 | 0.0 | 2006 11 19 | H07 | 1.1+ | 0.5+ |
| 2002 01 21 | 704 | 1.1+ | 0.1− | 2006 11 14 | 104 | (2.6− | 1.5+) | 2006 11 20 | 704 | 0.5− | 0.3− |
| 2002 01 21 | 704 | 1.0− | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.7− | 2006 11 20 | 704 | 0.1+ | 0.3− |
| 2002 01 21 | 704 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.6− |
| 2002 01 21 | 704 | (0.4+ | 1.7+) | 2006 11 14 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.2− |
| 2002 02 08 | 645 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2002 02 08 | 645 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.6− | 0.0 | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2002 02 10 | 704 | 0.7− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 02 10 | 704 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.4− | 0.1− | | | | |

**2002 AP$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.29984 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25628281 | $\omega$ | 34.67094 | | −0.50751057 | −0.85951297 | |
| $a$ | 2.4546509 | $\Omega$ | 85.89690 | | +0.77616413 | −0.48656355 | |
| $e$ | 0.1289028 | $i$ | 3.48230 | | +0.37416876 | −0.15650357 | |
| $P$ | 3.85 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 691 | 0.1− | 0.2− | 2002 01 21 | 704 | 0.8+ | 0.2+ | 2006 02 01 | 691 | 0.1+ | 0.1+ |
| 2002 01 13 | 691 | 0.2− | 0.3− | 2002 01 21 | 704 | 0.3+ | 0.0 | 2006 02 01 | 691 | 0.0 | 0.2+ |
| 2002 01 13 | 691 | 0.1− | 0.0 | 2002 02 12 | 704 | 1.2+ | 0.7+ | 2006 02 09 | 644 | 0.4+ | 0.3− |
| 2002 01 14 | 704 | 0.2+ | 0.6− | 2002 02 12 | 704 | 0.4− | 0.8+ | 2006 02 09 | 644 | 0.1+ | 0.3+ |
| 2002 01 14 | 704 | 0.1+ | 0.2− | 2002 02 12 | 704 | 0.8− | 0.9+ | 2006 02 09 | 644 | 0.1+ | 0.5− |
| 2002 01 14 | 704 | 0.4− | 0.0 | 2002 02 12 | 704 | 0.9− | 0.2+ | 2006 03 03 | 699 | 0.1+ | 0.2− |
| 2002 01 14 | 704 | 0.7− | 0.1+ | 2006 01 23 | 691 | 0.2− | 0.3− | 2006 03 03 | 699 | 0.7− | 0.4− |
| 2002 01 14 | 704 | 0.1− | 0.1+ | 2006 01 23 | 691 | 0.2+ | 0.0 | 2006 03 03 | 699 | 1.1− | 1.0− |
| 2002 01 21 | 704 | 0.7+ | 0.4− | 2006 01 23 | 691 | 0.1− | 0.1+ | 2006 03 03 | 699 | 0.8+ | 0.3+ |
| 2002 01 21 | 704 | 1.5+ | 1.0+ | 2006 02 01 | 691 | 0.0 | 0.1+ | | | | |

**2002 AJ$_{174}$ = 2000 QF$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.68886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23763037 | $\omega$ | 56.60464 | | +0.87921853 | −0.47397824 | |
| $a$ | 2.5814760 | $\Omega$ | 331.60069 | | +0.39654039 | +0.78408669 | |
| $e$ | 0.1092473 | $i$ | 5.81168 | | +0.26406532 | +0.40069027 | |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 01 | 691 | 0.1− | 0.1+ | 2000 09 24 | 704 | 0.3+ | 0.7− | 2004 08 21 | E12 | 0.5− | 0.2− |
| 1998 03 01 | 691 | 0.2− | 0.1+ | 2000 09 24 | 704 | 1.4− | 1.9− | 2004 08 21 | E12 | 0.5+ | 0.5− |
| 1998 03 01 | 691 | 0.0 | 0.1− | 2002 01 13 | 691 | 0.0 | 0.1+ | 2004 08 21 | E12 | 0.1− | 0.2− |
| 2000 08 24 | 704 | 0.2− | 0.7− | 2002 01 13 | 691 | 0.2− | 0.0 | 2004 08 21 | E12 | 1.1− | 0.4+ |
| 2000 08 24 | 704 | 0.0 | 0.1+ | 2002 01 13 | 691 | 0.3− | 0.1+ | 2004 09 12 | 691 | 0.1+ | 0.0 |
| 2000 08 24 | 704 | 0.4+ | 1.3+ | 2002 01 14 | 704 | 1.2+ | 0.1− | 2004 09 12 | 691 | 0.2+ | 0.1+ |
| 2000 08 27 | 807 | 0.7+ | 0.4+ | 2002 01 14 | 704 | 0.3+ | 0.2− | 2004 09 12 | 691 | 0.1+ | 0.0 |
| 2000 08 27 | 807 | 0.3+ | 0.1+ | 2002 01 14 | 704 | 1.2+ | 0.2+ | 2006 01 06 | 704 | 0.1+ | 1.0− |
| 2000 09 05 | 704 | 0.4+ | 0.2+ | 2002 01 14 | 704 | 0.9+ | 0.3− | 2006 01 06 | 704 | 0.7− | 0.3− |
| 2000 09 05 | 704 | 0.5− | 1.1+ | 2002 01 14 | 704 | 0.2+ | 0.2− | 2006 01 06 | 704 | 0.7− | 0.4− |
| 2000 09 05 | 704 | 0.0 | 0.1+ | 2002 01 21 | 704 | 0.2− | 0.8+ | 2006 01 06 | 704 | 0.2+ | 0.5+ |
| 2000 09 05 | 704 | 0.4− | 0.2+ | 2002 01 21 | 704 | 0.6+ | 0.3+ | | | | |
| 2000 09 24 | 704 | 0.0 | 0.5+ | 2002 01 21 | 704 | 0.1+ | 0.2+ | | | | |

**2002 AQ$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.63466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17642376 | $\omega$ | 351.11831 | | −0.12166221 | −0.99072690 | |
| $a$ | 3.1484587 | $\Omega$ | 105.85277 | | +0.91448462 | −0.13557446 | |
| $e$ | 0.2268317 | $i$ | 3.60497 | | +0.38589659 | +0.00893178 | |
| $P$ | 5.59 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 0.2− | 0.6+ | 2002 02 10 | 704 | 1.2− | 0.1− | 2006 11 09 | 644 | 0.4− | 0.4− |
| 2002 01 14 | 704 | 0.2− | 1.0+ | 2002 02 10 | 704 | 0.1− | 0.6− | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2002 01 14 | 704 | 0.4− | 0.5+ | 2002 02 12 | 704 | 0.5+ | 0.0 | 2006 11 10 | 644 | 0.4+ | 0.1− |
| 2002 01 14 | 704 | 0.4+ | 1.1+ | 2002 02 12 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 01 14 | 704 | 0.6+ | 1.4+ | 2002 02 12 | 704 | 0.0 | 0.3− | 2006 11 10 | 644 | 0.1− | 0.4− |
| 2002 01 15 | 608 | 0.5− | 0.4− | 2002 02 12 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 01 15 | 608 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 01 15 | 608 | 0.4− | 0.0 | 2002 02 20 | 704 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 01 21 | 704 | 0.0 | 0.3− | 2002 02 20 | 704 | 0.5+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 01 21 | 704 | 0.4+ | 1.3− | 2002 02 20 | 704 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.1+ |
| 2002 01 21 | 704 | (0.3+ | 1.7−) | 2002 03 04 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.3− |
| 2002 01 21 | 704 | 0.5+ | 1.1− | 2002 03 04 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.5+ |
| 2002 01 21 | 704 | 0.0 | 1.4− | 2002 03 04 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2002 02 04 | 644 | 0.7+ | 0.2+ | 2002 03 06 | 704 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.8+ | 0.1+ |
| 2002 02 04 | 644 | 0.4+ | 0.2+ | 2002 03 06 | 704 | 0.9+ | 0.6− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2002 02 04 | 644 | 0.5+ | 0.1− | 2002 03 06 | 704 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2002 02 07 | 704 | 0.4− | 0.5− | 2002 03 12 | 644 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2002 02 07 | 704 | 0.6− | 0.3− | 2002 03 12 | 644 | 0.1+ | 0.8+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2002 02 07 | 704 | 0.5− | 0.1+ | 2002 03 12 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.7− |
| 2002 02 07 | 704 | 0.9− | 0.1+ | 2006 10 17 | G96 | 0.7− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.7+ |
| 2002 02 07 | 704 | 0.5− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.4+ |
| 2002 02 08 | 608 | 0.5+ | 0.8+ | 2006 10 17 | G96 | 0.5− | 0.4− | 2006 11 28 | 704 | 0.7+ | 0.5+ |
| 2002 02 08 | 608 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 29 | 704 | 0.4+ | 0.8− |
| 2002 02 08 | 608 | 0.3+ | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.3+ | 0.1− |
| 2002 02 10 | 704 | 0.9− | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2002 02 10 | 704 | 0.7− | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.6+ | 2006 11 29 | 704 | 0.5− | 0.6− |
| 2002 02 10 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ | | | | |

**2002 AZ$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.50253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30196230 | $\omega$ | 281.90454 | | +0.95991295 | −0.26048843 | |
| $a$ | 2.2003963 | $\Omega$ | 93.26038 | | +0.28008750 | +0.87708384 | |
| $e$ | 0.1871088 | $i$ | 5.95060 | | +0.01086797 | +0.40357119 | |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 644 | 0.0 | 0.1− | 2003 04 11 | 691 | 0.4− | 1.5+ | 2004 11 02 | 699 | 0.4− | 0.4+ |
| 2002 01 05 | 644 | 0.1+ | 0.0 | 2003 04 11 | 691 | 0.0 | 1.4+ | 2004 11 02 | 699 | 0.7− | 0.2+ |
| 2002 01 05 | 644 | 0.0 | 0.0 | 2003 04 24 | 691 | 0.3+ | 0.0 | 2004 11 02 | 699 | 0.6− | 0.7+ |
| 2002 01 05 | 644 | 0.3+ | 0.1+ | 2003 04 24 | 691 | 0.7+ | 0.5− | 2004 11 18 | 704 | 0.1+ | 0.7+ |
| 2002 01 05 | 644 | 0.1+ | 0.0 | 2003 04 24 | 691 | 0.7+ | 0.2− | 2004 11 18 | 704 | 0.5− | 1.7+ |
| 2002 01 05 | 644 | 0.3+ | 0.1+ | 2004 10 07 | 704 | 0.7− | 0.3+ | 2004 11 18 | 704 | 0.7− | 1.2+ |
| 2002 01 08 | 704 | 0.4+ | 0.3− | 2004 10 07 | 704 | 0.8− | 0.7+ | 2004 11 18 | 704 | 0.5+ | 0.2+ |
| 2002 01 08 | 704 | 0.6− | 0.7+ | 2004 10 07 | 704 | 0.5− | 0.7+ | 2004 11 18 | 704 | 0.2− | 2.0+ |
| 2002 01 08 | 704 | 0.7+ | 0.4+ | 2004 10 07 | 704 | 0.2− | 0.5+ | 2005 01 11 | 704 | 0.0 | 0.6− |
| 2002 01 08 | 704 | 0.1− | 0.8− | 2004 10 07 | 704 | 0.2− | 0.5+ | 2005 01 11 | 704 | 0.4+ | 1.2− |
| 2002 01 14 | 704 | 0.4− | 0.5− | 2004 10 18 | 704 | 0.4− | 0.8+ | 2005 01 11 | 704 | 0.8− | 0.2− |
| 2002 01 14 | 704 | 0.1− | 0.3− | 2004 10 18 | 704 | 0.9+ | 0.2+ | 2006 04 08 | G96 | 0.6+ | 0.4− |
| 2002 01 14 | 704 | 0.3+ | 0.0 | 2004 10 18 | 704 | 0.9− | 0.2− | 2006 04 08 | G96 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.1− | 0.2− | 2004 10 18 | 704 | 0.2+ | 0.9+ | 2006 04 08 | G96 | 0.2+ | 0.3− |
| 2003 04 11 | 691 | 0.4− | 1.6+ | 2004 11 02 | 699 | 0.4+ | 0.7+ | 2006 04 08 | G96 | 0.6+ | 0.3− |

**2002 AU$_{182}$ = 2006 TS$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.46669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17437683 | $\omega$ | 41.46631 | | −0.09095343 | −0.99188529 | |
| $a$ | 3.1730496 | $\Omega$ | 53.93869 | | +0.88229264 | −0.12162760 | |
| $e$ | 0.1550059 | $i$ | 6.30882 | | +0.46183024 | +0.03701742 | |
| $P$ | 5.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 10 28 | 704 | 0.4− | 0.8+ |
| 2000 09 23 | 699 | 0.7+ | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 28 | 704 | 0.7+ | 0.5+ |
| 2000 09 23 | 699 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2000 09 23 | 699 | 1.4− | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.4− | 0.2− |
| 2001 12 18 | 644 | 0.9− | 0.2+ | 2006 09 30 | 703 | (0.2+ | 5.6−) | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2001 12 18 | 644 | 0.3+ | 0.3+ | 2006 10 14 | D35 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 12 18 | 644 | 0.3− | 0.6+ | 2006 10 14 | D35 | 0.1+ | 0.3− | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2006 10 14 | D35 | 0.3− | 0.2− | 2006 11 10 | 644 | 0.6− | 0.1− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2006 10 16 | 683 | (1.6− | 0.5+) | 2006 11 10 | 644 | 0.6− | 0.1+ |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2006 10 16 | 683 | 0.1− | 1.4+ | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2006 10 16 | 683 | (1.9− | 1.1+) | 2006 11 11 | 703 | 1.0+ | 0.7+ |
| 2002 01 05 | 699 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.6− | 0.2− | 2006 11 11 | 703 | (0.7+ | 1.9+) |
| 2002 01 05 | 699 | 1.2− | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2002 01 05 | 699 | 0.7− | 1.1+ | 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2002 01 05 | 699 | 0.5− | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 0.3− | 0.4+ | 2006 10 17 | 683 | 0.0 | 0.9+ | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2002 01 08 | 704 | 0.7− | 0.4+ | 2006 10 17 | 683 | 0.2− | 1.5+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2002 01 08 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 683 | 0.4− | 1.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 01 08 | 704 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 01 08 | 704 | 0.7− | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 01 17 | 644 | 1.0+ | 1.0+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.7− | 0.5+ |
| 2002 01 17 | 644 | 0.2+ | 0.0 | 2006 10 19 | 683 | (1.8+ | 0.4−) | 2006 11 17 | 703 | 0.2− | 0.6+ |
| 2002 01 17 | 644 | 0.9+ | 0.1+ | 2006 10 19 | 683 | (2.3+ | 0.5+) | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2002 01 19 | 704 | 1.5+ | 0.7− | 2006 10 19 | 683 | 0.5+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.8+ |
| 2002 01 19 | 704 | 1.2+ | 1.1− | 2006 10 19 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2002 01 19 | 704 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.8+ | 1.1+ |
| 2002 02 04 | 644 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.0 | 0.7− | 2006 11 19 | 704 | 0.8+ | 0.5+ |
| 2002 02 04 | 644 | 0.2+ | 0.7+ | 2006 10 20 | 683 | (2.9− | 0.5−) | 2006 11 19 | 704 | 1.1+ | 0.8− |
| 2002 02 04 | 644 | 0.0 | 0.4− | 2006 10 20 | 683 | (1.3− | 2.3+) | 2006 11 19 | 704 | 1.3+ | 0.5+ |
| 2002 02 04 | 644 | 0.4+ | 0.8+ | 2006 10 20 | 683 | (1.9− | 0.1+) | 2006 11 21 | 704 | 0.0 | 0.5− |
| 2002 02 04 | 644 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2002 02 04 | 644 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2003 03 12 | 291 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2003 03 12 | 291 | 0.3+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2003 03 12 | 291 | 0.1− | 0.8+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.9− |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.4− | 0.8− |
| 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 28 | 704 | (1.7− | 0.1−) | 2006 11 28 | 704 | 0.3− | 1.4− |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 28 | 704 | (0.3− | 1.9+) | 2006 11 28 | 704 | 0.5− | 0.4− |

**2002 AG$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.54319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17351813 | $\omega$ | 334.00443 | | +0.12226159 | −0.87082995 | |
| $a$ | 3.1835094 | $\Omega$ | 105.77105 | | +0.97485741 | +0.01531994 | |
| $e$ | 0.2009648 | $i$ | 29.65413 | | +0.18629311 | +0.49134559 | |
| $P$ | 5.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 644 | 0.2+ | 0.5+ | 2002 01 14 | 644 | 0.2− | 0.8− | 2002 02 07 | 699 | 0.3+ | 0.4− |
| 2002 01 05 | 644 | 0.1− | 0.3+ | 2002 01 14 | 644 | 0.1+ | 1.0− | 2002 02 07 | 699 | 0.2+ | 0.1+ |
| 2002 01 05 | 644 | 0.1− | 0.3+ | 2002 01 20 | 699 | 0.1− | 0.5− | 2002 02 07 | 699 | 0.1+ | 0.3+ |
| 2002 01 07 | 699 | 0.9− | 0.3+ | 2002 01 20 | 699 | 0.5+ | 0.5− | 2002 02 07 | 699 | 0.6+ | 0.1− |
| 2002 01 07 | 699 | 0.4+ | 0.3− | 2002 01 20 | 699 | 0.1+ | 0.8+ | 2002 02 12 | 644 | 0.1+ | 0.0 |
| 2002 01 07 | 699 | 0.7+ | 0.2− | 2002 01 20 | 699 | 0.2+ | 0.8+ | 2002 02 12 | 644 | 0.1− | 0.2− |
| 2002 01 07 | 699 | 0.1+ | 0.3+ | 2002 01 23 | 704 | 0.9− | 0.4+ | 2002 02 12 | 644 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | 0.3− | 1.1+ | 2002 01 23 | 704 | 1.8− | 1.9+ | 2006 11 25 | 703 | 0.4+ | 0.1+ |
| 2002 01 08 | 704 | 0.4− | 0.9− | 2002 01 23 | 704 | 1.7− | 0.2− | 2006 11 25 | 703 | 0.3+ | 0.6− |
| 2002 01 08 | 704 | 1.0+ | 0.5+ | 2002 02 02 | 644 | 0.3+ | 0.3− | 2006 11 25 | 703 | 0.5− | 0.1− |
| 2002 01 08 | 704 | 0.6+ | 1.1− | 2002 02 02 | 644 | 0.7+ | 0.1− | 2006 11 25 | 703 | 0.1− | 0.6+ |
| 2002 01 14 | 644 | 0.1− | 1.1− | 2002 02 02 | 644 | 0.5+ | 0.3+ | | | | |

**2002 AJ$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.59772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18430279 | $\omega$ | 333.24746 | | +0.61988895 | −0.75907887 | |
| $a$ | 3.0580748 | $\Omega$ | 77.76950 | | +0.75144817 | +0.50128137 | |
| $e$ | 0.2973828 | $i$ | 11.73918 | | +0.22597199 | +0.41535076 | |
| $P$ | 5.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | (0.5+ | 2.0+) | 2002 01 13 | 644 | 0.2+ | 0.4+ | 2006 11 14 | 704 | (2.0+ | 0.7−) |
| 2002 01 08 | 704 | 0.6+ | 0.9+ | 2002 01 14 | 645 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.1− | 1.0− |
| 2002 01 08 | 704 | 0.3+ | 0.4+ | 2002 01 14 | 645 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.0 | 0.6− |
| 2002 01 08 | 704 | 0.4+ | 0.0 | 2002 02 03 | 644 | 0.5+ | 0.9+ | 2006 11 17 | 704 | 0.2− | 0.7− |
| 2002 01 08 | 704 | 1.1+ | 1.2+ | 2002 02 03 | 644 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 1.0+ | 0.1− |
| 2002 01 11 | 699 | (1.6− | 1.1+) | 2002 02 03 | 644 | 0.5+ | 0.7+ | 2006 11 17 | 704 | 0.4− | 0.2− |
| 2002 01 11 | 699 | 0.5− | 0.2− | 2002 02 10 | 704 | 0.7− | 0.3+ | 2006 11 25 | 704 | 0.1+ | 0.2− |
| 2002 01 11 | 699 | 0.3− | 0.4− | 2002 02 10 | 704 | 0.2− | 0.6+ | 2006 11 25 | 704 | 0.1− | 0.9+ |
| 2002 01 11 | 699 | (0.5− | 1.6+) | 2002 02 10 | 704 | 0.5− | 0.4+ | 2006 11 25 | 704 | 0.1− | 0.1− |
| 2002 01 13 | 644 | 0.1− | 0.2+ | 2002 02 10 | 704 | 0.6− | 0.6− | 2006 11 29 | 704 | 0.3− | 0.3+ |
| 2002 01 13 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 704 | (2.0+ | 0.3−) | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2002 01 13 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.1− |
| 2002 01 13 | 644 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.3− | 1.0+ | | | | |
| 2002 01 13 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.8+ | 0.9+ | | | | |

**2002 AO$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.12544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37420634 | $\omega$ | 173.23245 | | +0.13485822 | −0.92646020 | |
| $a$ | 1.9071958 | $\Omega$ | 268.58218 | | +0.89182905 | +0.26803799 | |
| $e$ | 0.0926863 | $i$ | 20.57980 | | +0.43180344 | −0.26424824 | |
| $P$ | 2.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 13 | 608 | 0.2− | 0.8+ | 2001 12 27 | 644 | 0.3+ | 0.3+ | 2003 07 29 | 704 | 0.2− | 0.3+ |
| 2001 11 13 | 608 | 0.4+ | 0.4+ | 2001 12 27 | 644 | 0.3+ | 0.3+ | 2006 10 31 | J95 | 0.2− | 0.1+ |
| 2001 11 13 | 608 | 0.4+ | 1.1+ | 2002 01 10 | 644 | 0.2− | 0.2− | 2006 10 31 | J95 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.6+ | 0.1− | 2002 01 10 | 644 | 0.1− | 0.0 | 2006 10 31 | J95 | 0.1+ | 0.4− |
| 2001 12 11 | 704 | 0.6− | 0.8− | 2002 01 10 | 644 | 0.2− | 0.2+ | 2006 11 11 | 447 | 0.8+ | 0.1− |
| 2001 12 11 | 704 | 0.9− | 0.3− | 2002 01 12 | 704 | 0.5+ | 0.1− | 2006 11 11 | 447 | (1.8+ | 0.4−) |
| 2001 12 11 | 704 | 0.2+ | 0.4+ | 2002 01 12 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 447 | 0.8+ | 0.7+ |
| 2001 12 19 | 704 | 0.1− | 0.5− | 2002 01 12 | 704 | 0.1− | 0.2− | 2006 11 20 | 703 | 0.6− | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2002 01 12 | 704 | 0.4+ | 0.3− | 2006 11 20 | 703 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2003 07 29 | 704 | 0.3− | 0.2+ | 2006 11 20 | 703 | 0.7− | 0.3− |
| 2001 12 27 | 644 | 0.2− | 0.2+ | 2003 07 29 | 704 | 0.4− | 0.8+ | 2006 11 20 | 703 | 0.3+ | 0.5+ |

**2002 AO$_{197}$ = 2006 SD$_{357}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.12026 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17758386 | $\omega$ | 37.35794 | | +0.19106760 | −0.97253808 |
| $a$ | 3.1347317 | $\Omega$ | 42.09787 | | +0.84594146 | +0.09447425 |
| $e$ | 0.1956963 | $i$ | 11.43421 | | +0.49787169 | +0.21270708 |
| $P$ | 5.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | (1.7+ | 1.4−) | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2001 12 14 | 704 | 0.9+ | 1.1− | 2006 10 02 | G96 | 0.3+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.9+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2001 12 20 | 644 | 0.4− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2001 12 20 | 644 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 2001 12 20 | 644 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.0 |
| 2002 01 05 | 644 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2002 01 05 | 644 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2002 01 05 | 699 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.3− |
| 2002 01 05 | 644 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.3+ |
| 2002 01 05 | 699 | 0.8− | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.4− | 2006 11 13 | 644 | 0.4+ | 0.2+ |
| 2002 01 05 | 644 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2002 01 05 | 699 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2002 01 05 | 644 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 01 05 | 699 | 0.7− | 1.2+ | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 01 05 | 644 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 01 14 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.8− | 0.3− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 01 14 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.4− | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2002 01 14 | 644 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2002 01 14 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.2− | 2006 11 17 | 703 | 0.6− | 0.8+ |
| 2002 01 14 | 644 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | (1.6− | 0.5+) |
| 2002 01 14 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 1.0+ | 0.4− |
| 2002 01 18 | 699 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | (4.7+ | 0.1−) |
| 2002 01 18 | 699 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | (3.6+ | 0.4−) |
| 2002 01 18 | 699 | 0.5− | 0.9− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.7+ |
| 2002 01 18 | 699 | 0.2+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2− | 1.2− |
| 2006 09 30 | 703 | (1.1− | 1.5−) | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2006 09 30 | 703 | 0.6− | 0.5+ | 2006 10 29 | 691 | 0.8+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.0 |
| 2006 09 30 | 703 | (0.6− | 2.4−) | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2006 09 30 | 703 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.1+ | | | | |

**2002 AY$_{206}$ = 2004 JR$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.46444 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23923344 | $\omega$ | 199.82018 | | +0.99521065 | −0.07250716 |
| $a$ | 2.5699309 | $\Omega$ | 163.91272 | | +0.08315751 | +0.98052770 |
| $e$ | 0.2139851 | $i$ | 13.68609 | | −0.05138674 | +0.18250520 |
| $P$ | 4.12 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 645 | 0.0 | 0.0 | 2005 09 09 | 704 | 0.6+ | 0.5+ | 2005 10 31 | 699 | 0.1− | 0.6+ |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2005 09 09 | 704 | 0.6− | 0.1+ | 2005 10 31 | 644 | 0.3− | 0.1+ |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2005 09 09 | 704 | 0.1− | 0.3− | 2005 10 31 | 644 | 0.0 | 0.2+ |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2005 09 25 | 644 | 0.0 | 0.1+ | 2005 10 31 | 644 | 0.3− | 0.1+ |
| 2003 03 31 | 645 | 0.1+ | 0.1+ | 2005 09 25 | 644 | 0.2+ | 0.1− | 2005 11 05 | 703 | 0.4− | 0.6− |
| 2003 03 31 | 645 | 0.1− | 0.0 | 2005 09 25 | 644 | 0.3+ | 0.2+ | 2005 11 05 | 703 | 0.1+ | 0.5+ |
| 2004 05 14 | 691 | 0.1+ | 0.1− | 2005 10 05 | 703 | 1.0− | 0.2− | 2005 11 05 | 703 | 0.6− | 0.4+ |
| 2004 05 14 | 691 | 0.8+ | 0.6+ | 2005 10 05 | 703 | 0.7− | 0.3− | 2005 11 05 | 703 | 0.1− | 0.4+ |
| 2004 05 14 | 691 | 0.2− | 0.3+ | 2005 10 05 | 703 | 0.3+ | 0.1− | 2005 11 25 | 644 | 0.5− | 0.3+ |
| 2004 05 19 | 691 | 0.6− | 0.3+ | 2005 10 05 | 703 | 0.5− | 0.1− | 2005 11 25 | 644 | 0.2− | 0.2+ |
| 2004 05 19 | 691 | 0.1− | 0.1+ | 2005 10 31 | 699 | 2.7+ | 1.4+ | 2005 11 25 | 644 | 0.1− | 0.3+ |
| 2004 05 19 | 691 | 0.1+ | 0.1+ | 2005 10 31 | 699 | 0.6+ | 0.2+ | | | | |
| 2005 09 09 | 704 | 0.6− | 0.3+ | 2005 10 31 | 699 | 0.6+ | 0.6+ | | | | |

**2002 AM$_{208}$ = 2006 FW$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.09227 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27418446 | $\omega$ | 213.74828 | | −0.80517385 | −0.58777057 |
| $a$ | 2.3466095 | $\Omega$ | 290.05719 | | +0.56097154 | −0.71172842 |
| $e$ | 0.0573737 | $i$ | 4.81649 | | +0.19236946 | −0.38466662 |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 01 13 | 704 | 1.3+ | 0.2− | 2006 03 30 | D35 | 0.2− | 0.1− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 06 | 644 | 0.5− | 0.3+ | 2006 03 30 | D35 | 0.6− | 0.7− |
| 2002 01 08 | 691 | 0.0 | 0.1+ | 2002 02 06 | 644 | 0.6− | 0.3+ | 2006 03 30 | D35 | 0.1+ | 0.2+ |
| 2002 01 08 | 691 | 0.2− | 0.3+ | 2002 02 06 | 644 | 0.1− | 0.2+ | 2006 03 31 | D35 | 0.1− | 0.3− |
| 2002 01 08 | 691 | 0.1− | 0.1+ | 2002 02 11 | 704 | 0.2+ | 0.6− | 2006 03 31 | D35 | 0.2+ | 0.9+ |
| 2002 01 13 | 704 | 0.0 | 0.0 | 2002 02 11 | 704 | 0.1− | 0.2− | 2006 03 31 | D35 | 0.7+ | 0.3+ |
| 2002 01 13 | 704 | 0.1− | 1.2− | 2002 02 11 | 704 | 0.1+ | 0.0 | | | | |
| 2002 01 13 | 704 | 0.2+ | 0.4− | 2002 02 11 | 704 | 1.0+ | 0.0 | | | | |

**2002 AN$_{208}$ = 2000 UP$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.12438 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17506832 | $\omega$ | 18.81785 | | +0.10098380 | −0.98273544 |
| $a$ | 3.1646888 | $\Omega$ | 65.63313 | | +0.88956519 | +0.01941327 |
| $e$ | 0.0674294 | $i$ | 9.79867 | | +0.44550650 | +0.18399504 |
| $P$ | 5.63 | $H$ | 14.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 31 | 704 | 1.3− | 0.9+ | 2002 02 03 | 644 | 0.4+ | 0.3+ | 2005 10 10 | 703 | 0.2− | 0.2− |
| 2000 10 31 | 704 | 0.0 | 0.3+ | 2002 02 03 | 644 | (0.8+ | 1.5+) | 2005 10 10 | 703 | (1.7− | 1.4+) |
| 2000 10 31 | 704 | 0.9− | 0.7+ | 2002 02 03 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2000 10 31 | 704 | 0.1+ | 0.3+ | 2002 02 03 | 644 | 0.3+ | 0.9+ | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2000 11 02 | 704 | 0.3+ | 0.8− | 2002 02 03 | 644 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.2− |
| 2000 11 02 | 704 | 0.2+ | 0.8+ | 2002 02 10 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.0 |
| 2000 11 02 | 704 | 0.4+ | 0.2+ | 2002 02 10 | 704 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2000 11 02 | 704 | 0.1− | 0.6+ | 2002 02 10 | 704 | 0.3− | 1.4+ | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2000 11 02 | 704 | 0.2− | 0.6+ | 2002 02 10 | 704 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2002 01 08 | 704 | 0.1+ | 0.0 | 2002 02 10 | 704 | 0.1− | 0.8+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.2− | 0.1− | 2003 05 01 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.5− | 0.5− |
| 2002 01 08 | 704 | 0.1− | 0.1+ | 2003 05 01 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.2− |
| 2002 01 23 | 704 | 0.2+ | 0.3− | 2003 05 01 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2002 01 23 | 704 | 0.3+ | 0.6− | 2005 08 27 | 644 | 0.2− | 0.7+ | 2006 11 22 | 704 | 0.4+ | 0.3− |
| 2002 01 23 | 704 | 0.6− | 1.2− | 2005 08 27 | 644 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.0 | 0.5− |
| 2002 01 23 | 704 | 0.3− | 0.5− | 2005 08 27 | 644 | 0.2+ | 1.0+ | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2002 01 23 | 704 | 0.6− | 0.3+ | 2005 10 10 | 703 | 1.3− | 0.6+ | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2002 02 03 | 644 | 0.5+ | 1.1+ | 2005 10 10 | 703 | (1.7− | 1.7+) | 2006 11 24 | 691 | 0.1+ | 0.0 |

**2002 AO$_{208}$ = 2000 QJ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.85560 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28674702 | $\omega$ | 304.04233 | | +0.35400693 | +0.93517266 |
| $a$ | 2.2775615 | $\Omega$ | 346.67581 | | −0.84085445 | +0.31289361 |
| $e$ | 0.0823359 | $i$ | 2.84881 | | −0.40944216 | +0.16598101 |
| $P$ | 3.44 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 28 | 691 | 1.2− | 0.2+ | 2000 08 24 | 704 | 0.0 | 0.7+ | 2004 12 02 | 644 | 0.2+ | 0.4+ |
| 1992 02 28 | 691 | 0.2− | 0.2− | 2000 08 24 | 704 | 1.0− | 0.8+ | 2004 12 02 | 644 | 0.4− | 0.4+ |
| 1992 02 28 | 691 | 0.2+ | 0.5− | 2000 08 29 | 704 | (2.8− | 0.4+) | 2004 12 02 | 644 | 0.5+ | 1.2+ |
| 1997 11 08 | 910 | 0.9+ | 0.2+ | 2000 08 29 | 704 | 0.3− | 0.0 | 2004 12 20 | G96 | 0.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 08 | 910 | 0.8+ | 0.2+ | 2000 08 29 | 704 | 0.1− | 0.6+ | 2004 12 20 | G96 | 0.6− | 0.2− |
| 1997 11 08 | 910 | 0.6+ | 0.4+ | 2000 08 29 | 704 | 0.4− | 0.9+ | 2004 12 20 | G96 | 0.2− | 0.2− |
| 1999 02 09 | 691 | 0.2− | 0.2− | 2002 01 09 | 645 | 0.1− | 0.0 | 2004 12 20 | G96 | 0.2− | 0.1− |
| 1999 02 09 | 691 | 0.5− | 0.4− | 2002 01 09 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.3+ | 0.4+ |
| 1999 02 09 | 691 | 0.1+ | 0.2− | 2002 01 14 | 704 | 0.0 | 0.5− | 2006 03 04 | 691 | 0.4+ | 0.5+ |
| 1999 03 13 | 691 | 0.3+ | 0.2− | 2002 01 14 | 704 | 0.6+ | 0.5+ | 2006 03 04 | 691 | 0.3+ | 0.5+ |
| 1999 03 13 | 691 | 0.6+ | 0.5− | 2002 01 14 | 704 | 0.0 | 0.5+ | 2006 03 24 | 699 | 0.9− | 1.1+ |
| 1999 03 13 | 691 | 0.7+ | 0.2− | 2002 01 22 | 691 | 0.2− | 0.4+ | 2006 03 24 | 699 | 1.0+ | 0.4+ |
| 2000 08 24 | 704 | 0.3− | 0.7+ | 2002 01 22 | 691 | 0.0 | 0.4+ | 2006 03 24 | 699 | 0.2+ | 0.4+ |
| 2000 08 24 | 704 | 1.1− | 0.4+ | 2002 01 22 | 691 | 0.0 | 0.4+ | 2006 03 24 | 699 | (0.7− | 3.5+) |

## 2002 $AP_{208}$ = 2006 $AF_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.21022 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24116193 | $\omega$ | 121.87160 | | −0.12596056 | | −0.99056222 |
| $a$ | 2.5562121 | $\Omega$ | 335.19325 | | +0.86111397 | | −0.08212729 |
| $e$ | 0.0861663 | $i$ | 7.40049 | | +0.49256134 | | −0.10973418 |
| $P$ | 4.09 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.1− | 0.1− | 2002 02 04 | 644 | 0.5+ | 0.6+ | 2006 01 02 | 703 | 0.3+ | 0.2+ |
| 1992 10 03 | 691 | 0.3+ | 0.2− | 2002 02 04 | 644 | 0.2− | 0.5+ | 2006 01 02 | 703 | 0.3− | 0.2− |
| 1992 10 03 | 691 | 0.1+ | 0.1− | 2002 02 12 | 704 | 0.1+ | 0.1+ | 2006 01 02 | 703 | 0.2+ | 0.8+ |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.0 | 0.9+ | 2006 01 02 | 703 | 0.4− | 0.2− |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2002 02 12 | 704 | 0.2+ | 0.3+ | 2006 01 07 | 704 | 0.5− | 0.2− |
| 2002 01 20 | 699 | 0.2− | 0.5+ | 2002 02 12 | 704 | 0.1− | 0.5+ | 2006 01 07 | 704 | 0.6+ | 0.3− |
| 2002 01 20 | 699 | 0.5+ | 0.4+ | 2002 02 12 | 704 | 0.8+ | 0.7+ | 2006 01 07 | 704 | 0.4− | 0.9+ |
| 2002 01 20 | 699 | 0.3+ | 0.6+ | 2004 09 22 | 691 | 0.6− | 0.5+ | 2006 01 07 | 704 | 0.6+ | 0.0 |
| 2002 01 20 | 699 | 0.2+ | 1.0− | 2004 09 22 | 691 | 0.3+ | 0.1+ | | | | |
| 2002 02 04 | 644 | 0.1+ | 0.6+ | 2004 09 22 | 691 | 0.1− | 0.2+ | | | | |

## 2002 $AQ_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.69862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19000235 | $\omega$ | 79.43704 | | +0.99273629 | | +0.05996451 |
| $a$ | 2.9966089 | $\Omega$ | 277.06735 | | −0.09765351 | | +0.90799665 |
| $e$ | 0.1098460 | $i$ | 6.03296 | | +0.07027403 | | +0.41466414 |
| $P$ | 5.19 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.3− | 0.1+ | 2005 05 19 | G96 | 0.9− | 0.6− | 2005 08 31 | 691 | 0.2+ | 0.0 |
| 2000 08 31 | 704 | 0.3+ | 0.9+ | 2005 05 19 | G96 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.7− | 0.2+ |
| 2000 08 31 | 704 | 1.6− | 1.3+ | 2005 05 19 | G96 | 0.6− | 0.1− | 2006 10 27 | 703 | (1.6− | 0.4+) |
| 2001 12 19 | 704 | 1.0− | 0.1− | 2005 07 09 | 691 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.0 | 1.3− |
| 2001 12 19 | 704 | 0.5+ | 1.1− | 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.9− | 0.5− |
| 2001 12 19 | 704 | 0.6+ | 0.3− | 2005 07 09 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2002 01 05 | 691 | 0.2− | 0.0 | 2005 07 18 | 644 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.6− | 0.2− |
| 2002 01 05 | 691 | 0.1+ | 0.5− | 2005 07 18 | 644 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2002 01 05 | 691 | 0.1− | 0.5− | 2005 07 18 | 644 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2002 01 14 | 704 | 0.4+ | 0.2+ | 2005 08 06 | 644 | 0.5+ | 0.3− | 2006 11 22 | 704 | 1.3+ | 0.8+ |
| 2002 01 14 | 704 | 0.3− | 0.0 | 2005 08 06 | 644 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 1.2+ |
| 2002 01 14 | 704 | 0.4+ | 0.4+ | 2005 08 06 | 644 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 1.0+ | 1.0+ | 2005 08 25 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 1.3+ | 0.2− |
| 2004 05 19 | 291 | 0.0 | 0.0 | 2005 08 25 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2004 05 19 | 291 | 0.0 | 0.0 | 2005 08 25 | 644 | 0.0 | 0.2+ | 2006 11 25 | 691 | 0.1− | 0.2+ |
| 2004 05 19 | 291 | 0.2− | 0.3− | 2005 08 31 | 691 | 0.0 | 0.2− | 2006 11 25 | 691 | 0.1+ | 0.2+ |
| 2005 05 19 | G96 | 0.5− | 0.5− | 2005 08 31 | 691 | 0.2+ | 0.3− | 2006 11 25 | 691 | 0.3− | 0.2− |

## 2002 $AR_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.77589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29190426 | $\omega$ | 64.54187 | | +0.96097787 | | +0.24732198 |
| $a$ | 2.2506559 | $\Omega$ | 280.93941 | | −0.27659216 | | +0.86600592 |
| $e$ | 0.2633875 | $i$ | 7.25017 | | +0.00427876 | | +0.43458668 |
| $P$ | 3.38 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 691 | 0.0 | 0.3+ | 2004 09 13 | 644 | 0.2+ | 0.1− | 2004 11 04 | 704 | 0.8− | 0.0 |
| 2002 01 09 | 691 | 0.5+ | 0.0 | 2004 10 15 | 704 | 0.9+ | 0.7+ | 2004 11 19 | 704 | 0.4+ | 0.1+ |
| 2002 01 09 | 691 | 0.1+ | 0.1− | 2004 10 15 | 704 | 0.4− | 0.4− | 2004 11 19 | 704 | 0.0 | 0.2+ |
| 2002 01 09 | 599 | 0.1+ | 0.3− | 2004 10 15 | 704 | 0.2− | 0.3− | 2004 11 19 | 704 | 0.3− | 0.9− |
| 2002 01 09 | 599 | 0.0 | 0.6+ | 2004 10 15 | 704 | 0.6− | 0.7+ | 2004 11 19 | 704 | 0.7+ | 0.6+ |
| 2002 01 09 | 599 | 0.3+ | 0.7+ | 2004 10 24 | 704 | 2.1− | 0.7− | 2004 11 19 | 704 | 0.5+ | 0.4− |
| 2002 01 15 | 704 | 0.7− | 0.5− | 2004 10 24 | 704 | 0.4− | 0.2+ | 2004 12 02 | 703 | 0.9+ | 0.7+ |
| 2002 01 15 | 704 | 0.8− | 0.9− | 2004 10 24 | 704 | 0.7+ | 0.0 | 2004 12 02 | 703 | 0.7− | 1.3− |
| 2002 01 15 | 704 | 0.9− | 0.6+ | 2004 10 24 | 704 | 1.4+ | 0.7+ | 2004 12 02 | 703 | 0.2+ | 0.1− |
| 2002 01 15 | 704 | 0.3− | 0.8− | 2004 11 04 | 704 | 0.1+ | 0.2− | 2004 12 02 | 703 | 0.1+ | 0.3+ |
| 2004 09 13 | 644 | 0.3+ | 0.1− | 2004 11 04 | 704 | 0.3− | 0.5+ | | | | |
| 2004 09 13 | 644 | 0.3+ | 0.1− | 2004 11 04 | 704 | 0.5− | 0.2− | | | | |

## 2002 $AS_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.64903 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27137615 | $\omega$ | 113.27653 | | +0.48112644 | | −0.87471402 |
| $a$ | 2.3627708 | $\Omega$ | 307.83526 | | +0.77495749 | | +0.45543618 |
| $e$ | 0.1036543 | $i$ | 4.22948 | | +0.40982708 | | +0.16569027 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.3+ | 0.7+ | 2002 02 07 | 704 | 0.2+ | 0.1− | 2004 10 10 | 704 | 1.2+ | 0.4− |
| 2002 01 09 | 704 | 0.7− | 0.1− | 2004 09 10 | 704 | 0.0 | 0.6+ | 2004 10 21 | 704 | 0.3− | 0.2− |
| 2002 01 09 | 704 | 1.3+ | 0.6+ | 2004 09 10 | 704 | 1.2+ | 0.2− | 2004 10 21 | 704 | 0.1+ | 0.7− |
| 2002 01 09 | 704 | 1.8+ | 0.2− | 2004 09 10 | 704 | 0.5+ | 0.9+ | 2004 10 21 | 704 | 0.1− | 0.3− |
| 2002 01 19 | 291 | 0.5− | 0.2− | 2004 09 18 | 704 | 0.1+ | 0.3− | 2004 10 21 | 704 | 0.6− | 0.8− |
| 2002 01 19 | 291 | 0.2− | 0.1− | 2004 09 18 | 704 | 0.3− | 0.2+ | 2006 03 05 | 691 | 0.3+ | 1.2+ |
| 2002 01 19 | 291 | 0.0 | 0.2− | 2004 09 18 | 704 | 0.4− | 0.4+ | 2006 03 05 | 691 | 0.2− | 0.5− |
| 2002 02 07 | 704 | 0.1− | 1.3+ | 2004 10 10 | 704 | 0.1+ | 1.1+ | 2006 03 05 | 691 | 0.1− | 0.5− |
| 2002 02 07 | 704 | 0.9+ | 0.7− | 2004 10 10 | 704 | 0.7− | 0.7− | | | | |
| 2002 02 07 | 704 | 0.7− | 0.1+ | 2004 10 10 | 704 | 0.9− | 1.0+ | | | | |

## 2002 $AT_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.00999 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17970460 | $\omega$ | 76.98612 | | −0.87088923 | | −0.44077156 |
| $a$ | 3.1100206 | $\Omega$ | 76.50636 | | +0.31754921 | | −0.84228126 |
| $e$ | 0.0829051 | $i$ | 12.92023 | | +0.37511925 | | −0.31029455 |
| $P$ | 5.48 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.2− | 0.2+ | 2002 03 06 | 704 | 1.0− | 0.4− | 2005 10 06 | 703 | 0.8− | 1.2+ |
| 2000 11 24 | 691 | 0.7− | 0.1+ | 2002 03 06 | 704 | 0.8+ | 0.0 | 2005 10 22 | 703 | 0.4+ | 0.4+ |
| 2000 11 24 | 691 | 0.4− | 0.1+ | 2002 03 06 | 704 | 0.4− | 1.4− | 2005 10 22 | 703 | 1.1− | 1.4+ |
| 2000 12 21 | 691 | 0.5+ | 0.3− | 2002 03 06 | 704 | 0.2− | 0.8− | 2005 10 22 | 703 | 0.7+ | 0.0 |
| 2000 12 21 | 691 | 0.4+ | 0.2− | 2002 03 20 | 704 | 1.2− | 1.1+ | 2005 10 22 | 703 | 1.4+ | 0.4+ |
| 2000 12 21 | 691 | 0.5+ | 0.1− | 2002 03 20 | 704 | 0.6− | 0.0 | 2005 11 03 | 703 | 0.3+ | 0.2− |
| 2002 01 09 | 704 | 0.3− | 0.6+ | 2002 03 20 | 704 | 0.0 | 0.5+ | 2005 11 03 | 703 | 0.1+ | 1.1− |
| 2002 01 09 | 704 | 1.5+ | 0.3+ | 2002 04 14 | 699 | 0.1+ | 0.7− | 2005 11 03 | 703 | (1.3− | 3.7−) |
| 2002 01 09 | 704 | 0.6+ | 0.3− | 2002 04 14 | 699 | 0.6− | 0.0 | 2005 11 06 | 699 | 0.6+ | 0.8− |
| 2002 01 09 | 704 | 0.2+ | 1.2+ | 2002 04 14 | 699 | 0.8+ | 1.4− | 2005 11 06 | 699 | 0.5− | 1.1+ |
| 2002 01 23 | 704 | 0.0 | 0.6− | 2002 04 14 | 699 | 0.2− | 0.2− | 2005 11 06 | 699 | 1.6− | 0.1+ |
| 2002 01 23 | 704 | 1.4+ | 1.7+ | 2005 10 06 | 703 | 1.1+ | 0.1+ | 2005 11 06 | 699 | 0.5+ | 0.2+ |
| 2002 01 23 | 704 | 0.1+ | 0.8+ | 2005 10 06 | 703 | 0.1− | 0.0 | | | | |
| 2002 03 06 | 704 | 0.1− | 0.1+ | 2005 10 06 | 703 | 0.3+ | 1.1+ | | | | |

### 2002 $AU_{208}$ = 2000 $TV_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.47225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17785895 | $\omega$ | 232.51765 | | +0.20226419 | −0.97871132 | |
| $a$ | 3.1314987 | $\Omega$ | 205.87758 | | +0.92183010 | +0.20227618 | |
| $e$ | 0.1259030 | $i$ | 4.57766 | | +0.33063343 | +0.03476354 | |
| $P$ | 5.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.6− | 0.5+ | 2002 01 12 | 644 | 0.2+ | 0.1+ | 2005 08 30 | 691 | 0.1− | 0.3+ |
| 2000 10 01 | 704 | 0.0 | 0.2+ | 2002 01 12 | 644 | 0.3+ | 0.4+ | 2005 08 30 | 691 | 0.3+ | 0.0 |
| 2000 10 01 | 704 | 0.0 | 0.1+ | 2002 01 12 | 644 | 0.3+ | 0.3+ | 2005 08 30 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.3− | 0.1+ | 2002 02 06 | 644 | 0.0 | 0.5+ | 2005 08 31 | 291 | 0.8− | 0.1− |
| 2000 10 01 | 704 | 0.6− | 0.3+ | 2002 02 06 | 644 | 0.0 | 0.4+ | 2005 08 31 | 291 | 0.9+ | 0.4+ |
| 2000 10 05 | 691 | 0.3+ | 0.1− | 2002 02 06 | 644 | 0.0 | 0.6+ | 2005 08 31 | 291 | 0.2+ | 0.3− |
| 2000 10 05 | 691 | 0.3+ | 0.2− | 2002 02 16 | 644 | 0.2− | 0.3+ | 2005 09 12 | 691 | 0.4− | 0.3+ |
| 2000 10 05 | 691 | 0.4+ | 0.3− | 2002 02 16 | 644 | 0.1+ | 0.6+ | 2005 09 12 | 691 | 0.2− | 0.1+ |
| 2000 10 06 | 699 | (2.5− | 1.3+) | 2002 02 16 | 644 | 0.2+ | 0.4+ | 2005 09 12 | 691 | 0.1+ | 0.1+ |
| 2000 10 06 | 699 | 0.2− | 0.7+ | 2003 04 25 | 691 | 0.1+ | 0.3+ | 2005 09 25 | 691 | 0.2− | 0.2+ |
| 2000 10 06 | 699 | 1.3− | 0.3− | 2003 04 25 | 691 | 0.1+ | 0.1+ | 2005 09 25 | 691 | 0.1− | 0.0 |
| 2000 10 06 | 699 | 0.6− | 0.3+ | 2003 04 25 | 691 | 0.0 | 0.1+ | 2005 09 25 | 691 | 0.1− | 0.2+ |

### 2002 $AV_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.54501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27867971 | $\omega$ | 257.33200 | | −0.81524822 | +0.47533041 | |
| $a$ | 2.3213065 | $\Omega$ | 309.98182 | | −0.19708948 | −0.76485993 | |
| $e$ | 0.1900420 | $i$ | 25.57671 | | −0.54454208 | −0.43479913 | |
| $P$ | 3.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.4+ | 0.1− | 2002 02 07 | 644 | 0.1− | 0.1− | 2002 03 18 | 704 | 0.6− | 0.6− |
| 2002 01 13 | 704 | 0.1− | 0.1+ | 2002 02 15 | 704 | 0.0 | 0.6− | 2002 03 18 | 704 | 0.5− | 0.1− |
| 2002 01 13 | 704 | 0.2+ | 0.0 | 2002 02 15 | 704 | 0.1+ | 0.7− | 2003 09 17 | 691 | 0.0 | 0.1+ |
| 2002 01 13 | 704 | 0.0 | 0.3− | 2002 02 15 | 704 | 0.4− | 0.2− | 2003 09 17 | 691 | 0.2− | 0.3− |
| 2002 01 13 | 704 | 0.4+ | 0.6− | 2002 02 15 | 704 | 0.3− | 0.5− | 2003 09 17 | 691 | 0.1+ | 0.0 |
| 2002 01 19 | 704 | 1.8− | 1.7+ | 2002 02 15 | 704 | 0.6− | 0.1+ | 2003 09 22 | 691 | 0.2+ | 0.1− |
| 2002 01 19 | 704 | 0.2+ | 0.3+ | 2002 03 05 | 703 | 0.8+ | 0.6+ | 2003 09 22 | 691 | 0.2− | 0.3− |
| 2002 01 19 | 704 | 1.1+ | 0.1+ | 2002 03 05 | 703 | 0.5+ | 1.0+ | 2003 09 22 | 691 | 0.0 | 0.3− |
| 2002 01 19 | 704 | 0.8+ | 0.8− | 2002 03 05 | 703 | 0.2− | 0.7+ | 2003 09 27 | 291 | 0.0 | 0.3+ |
| 2002 02 07 | 644 | 0.1− | 0.1− | 2002 03 05 | 703 | 0.4+ | 0.1+ | 2003 09 27 | 291 | 0.3+ | 0.3+ |
| 2002 02 07 | 644 | 0.2− | 0.1+ | 2002 03 18 | 704 | 0.2− | 0.1− | 2003 09 27 | 291 | 0.1− | 0.2+ |

### 2002 $BM_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.52007 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17379351 | $\omega$ | 37.11777 | | −0.34551233 | −0.93355755 | |
| $a$ | 3.1801456 | $\Omega$ | 73.27072 | | +0.83531241 | −0.35226251 | |
| $e$ | 0.1458202 | $i$ | 5.71404 | | +0.42763817 | −0.06619239 | |
| $P$ | 5.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.2− | 0.1− | 2002 02 13 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 01 09 | 704 | 0.3− | 0.6− | 2002 02 13 | 704 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2002 01 09 | 704 | 0.1− | 0.0 | 2002 02 13 | 704 | 0.3− | 0.9− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 01 09 | 704 | 0.7+ | 0.8− | 2002 02 13 | 704 | 1.2− | 1.0− | 2006 11 19 | 691 | 0.7− | 0.7− |
| 2002 01 09 | 704 | 0.2− | 0.2− | 2002 02 13 | 704 | 1.1− | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 01 09 | 704 | 1.0+ | 0.7− | 2002 02 14 | 704 | 0.4− | 1.0+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 01 09 | 704 | 0.1− | 0.9− | 2002 02 14 | 704 | 0.3+ | 0.9+ | 2006 11 21 | 704 | 1.3+ | 0.2+ |
| 2002 01 09 | 704 | (0.1+ | 2.6−) | 2002 02 14 | 704 | 0.6− | 0.6+ | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2002 01 09 | 704 | 0.6+ | 0.5+ | 2002 02 15 | 704 | 0.6− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 1.2+ |
| 2002 01 19 | 333 | 0.5− | 0.2− | 2002 02 15 | 704 | 0.5− | 0.8− | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2002 01 19 | 333 | 0.6+ | 0.7− | 2002 02 15 | 704 | 0.9− | 0.2− | 2006 11 21 | 704 | 0.8+ | 0.0 |
| 2002 01 19 | 333 | 0.3+ | 0.4+ | 2002 02 15 | 704 | 0.9− | 0.2− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 01 23 | 333 | 1.0− | 0.6+ | 2002 02 15 | 704 | 1.2− | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2002 01 23 | 333 | 0.5− | 1.1− | 2002 02 23 | 644 | 0.4+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2002 01 23 | 333 | 0.1+ | 0.4− | 2002 02 23 | 644 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 02 03 | 699 | 0.6− | 1.2+ | 2002 02 23 | 644 | 0.7+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 02 03 | 699 | 0.4+ | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 02 03 | 699 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2002 02 03 | 699 | (1.7− | 0.2−) | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2002 02 03 | 644 | 0.5+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2002 02 03 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 695 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.4+ | 0.6− |
| 2002 02 03 | 644 | 0.4+ | 0.2+ | 2006 10 20 | 695 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.7+ | 1.2− |
| 2002 02 04 | 644 | 0.6+ | 1.1+ | 2006 10 20 | 695 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2002 02 04 | 644 | 0.2+ | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.5− | 0.0 |
| 2002 02 04 | 644 | (0.1+ | 1.5+) | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 1.0+ | 0.4+ |
| 2002 02 08 | 704 | 1.1+ | 0.8− | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 12 01 | 691 | 0.5− | 0.1− |
| 2002 02 08 | 704 | 1.1+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2002 02 08 | 704 | 1.1+ | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.3+ | 2006 12 01 | 704 | 0.9+ | 0.7+ |
| 2002 02 08 | 704 | 1.4+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.4+ | 0.1− |
| 2002 02 08 | 704 | (2.2+ | 0.1−) | 2006 11 11 | 691 | 0.3− | 0.2+ | 2006 12 01 | 704 | 0.2− | 1.4+ |
| 2002 02 12 | 704 | 0.0 | 0.8− | 2006 11 15 | 703 | (1.8− | 0.2−) | 2006 12 01 | 704 | 0.2− | 0.7+ |
| 2002 02 12 | 704 | 0.7− | 0.4− | 2006 11 15 | 703 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.9+ | 1.9+ |
| 2002 02 12 | 704 | 1.1− | 0.8+ | 2006 11 15 | 703 | 0.6− | 0.3− | | | | |
| 2002 02 12 | 704 | (0.5+ | 1.6−) | 2006 11 15 | 703 | 0.1+ | 0.3+ | | | | |

### 2002 $BM_2$ = 2006 $WZ_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.00166 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17451716 | $\omega$ | 280.03078 | | −0.61934396 | −0.78473434 | |
| $a$ | 3.1713484 | $\Omega$ | 208.28339 | | +0.73913912 | −0.57222121 | |
| $e$ | 0.0512566 | $i$ | 2.97576 | | +0.26473840 | −0.23823287 | |
| $P$ | 5.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 0.6− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 24 | 291 | 0.0 | 0.1− |
| 2002 01 14 | 704 | 1.0− | 0.5− | 2006 10 19 | G96 | 0.9− | 0.1+ | 2006 11 24 | 291 | 0.1− | 0.2+ |
| 2002 01 14 | 704 | (1.9− | 0.3−) | 2006 11 11 | 691 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 0.4− | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 01 19 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 01 19 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.7− |
| 2002 01 19 | 691 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 11 25 | 291 | 0.2− | 0.1+ |
| 2002 01 20 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.3− | 2006 11 25 | 291 | 0.1− | 0.3+ |
| 2002 01 20 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.3− | 0.1+ | 2006 11 25 | 291 | 0.1− | 0.2+ |
| 2002 01 20 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2006 10 19 | G96 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 24 | 291 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.0 |

### 2002 $BS_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.20392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18278943 | $\omega$ | 50.04625 | | +0.24782008 | −0.96237245 | |
| $a$ | 3.0749307 | $\Omega$ | 26.25145 | | +0.79417050 | +0.13590397 | |
| $e$ | 0.2489074 | $i$ | 14.59625 | | +0.55486793 | +0.23530697 | |
| $P$ | 5.39 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.6− | 0.9− | 2002 01 19 | 699 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2001 12 09 | 704 | 0.1+ | 0.9− | 2002 01 19 | 699 | 0.3+ | 0.3− | 2006 10 20 | 704 | 1.0− | 0.1+ |
| 2001 12 09 | 704 | 0.3+ | 1.2− | 2002 01 25 | 704 | 0.4− | 0.6+ | 2006 10 20 | 704 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | (0.5+ | 2.2−) | 2002 01 25 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 704 | 0.5+ | 0.1− |
| 2001 12 09 | 704 | 0.2− | 1.1− | 2002 01 25 | 704 | 0.2+ | 0.0 | 2006 10 23 | 703 | 0.2− | 0.9− |
| 2001 12 22 | 704 | 0.0 | 0.1+ | 2002 01 25 | 704 | 1.0+ | 0.6+ | 2006 10 23 | 703 | 0.3− | 0.5− |
| 2001 12 22 | 704 | (0.1+ | 2.3+) | 2002 01 25 | 704 | 0.6− | 0.9+ | 2006 10 23 | 703 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | (1.0− | 1.5+) | 2002 02 01 | 699 | 0.1+ | 0.5− | 2006 10 23 | 703 | 0.3− | 0.3− |
| 2001 12 22 | 704 | 0.1+ | 0.1+ | 2002 02 01 | 699 | 0.2+ | 0.6+ | 2006 10 29 | 703 | 0.2− | 0.2− |
| 2001 12 22 | 704 | 0.8− | 0.3+ | 2002 02 01 | 699 | 0.7+ | 0.1− | 2006 10 29 | 703 | 0.1+ | 0.1− |
| 2002 01 06 | 704 | 0.1− | 0.1− | 2002 02 01 | 699 | 0.3− | 0.5+ | 2006 10 29 | 703 | 0.0 | 0.0 |
| 2002 01 06 | 704 | 0.0 | 0.1− | 2002 02 19 | 704 | 0.6+ | 0.3+ | 2006 10 29 | 703 | 0.2− | 0.3− |
| 2002 01 06 | 704 | 0.2− | 0.2− | 2002 02 19 | 704 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 06 | 704 | 0.7+ | 0.2− | 2002 02 19 | 704 | 0.8+ | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.2+ | | |
| 2002 01 06 | 704 | 0.6+ | 0.2+ | 2002 02 21 | 704 | 1.3− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.2+ | | |
| 2002 01 18 | 699 | 0.0 | 0.8− | 2002 02 21 | 704 | 1.3− | 0.9− | 2006 11 22 | 703 | 0.4+ | 0.0 | | |
| 2002 01 18 | 699 | 0.0 | 0.1− | 2002 02 21 | 704 | (2.4− | 0.9+) | 2006 11 22 | 703 | 0.4+ | 0.0 | | |
| 2002 01 18 | 699 | 0.1− | 0.4+ | 2002 02 21 | 704 | (2.9− | 1.1+) | 2006 11 22 | 703 | 0.3+ | 0.0 | | |
| 2002 01 18 | 699 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.7+ | 2006 11 22 | 703 | 0.3+ | 0.2+ | | |
| 2002 01 19 | 699 | (1.9− | 0.6+) | 2006 10 19 | 703 | 0.3+ | 0.9+ | | | | | | |
| 2002 01 19 | 699 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.4+ | | | | | | |

## 2002 $BM_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.65739 | | (2000.0) | | | |
| $n$ | 0.17168340 | $\omega$ | 47.01632 | | −0.52841321 | −0.84733621 |
| $a$ | 3.2061501 | $\Omega$ | 74.95366 | | +0.76211484 | −0.50088991 |
| $e$ | 0.1702360 | $i$ | 3.14147 | | +0.37411289 | −0.17643875 |
| $P$ | 5.74 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 12 | 608 | 0.0 | 0.3+ | 2002 02 10 | 704 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.2− | | |
| 2002 01 12 | 608 | 0.1− | 0.0 | 2002 02 12 | 704 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.8+ | 0.2+ | | |
| 2002 01 12 | 608 | 0.1+ | 0.3+ | 2002 02 12 | 704 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.6+ | 0.5+ | | |
| 2002 01 14 | 704 | 0.2− | 0.4+ | 2002 02 12 | 704 | 0.6+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2002 01 14 | 704 | 0.5+ | 0.7+ | 2002 02 12 | 704 | 0.8− | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.3− | | |
| 2002 01 14 | 704 | 0.6+ | 0.2+ | 2002 02 12 | 704 | 0.2+ | 0.3− | 2006 10 19 | G96 | 0.5+ | 0.1− | | |
| 2002 01 14 | 704 | 1.0+ | 0.1+ | 2002 02 16 | 049 | 0.3+ | 0.7− | 2006 10 19 | G96 | 0.2− | 0.4− | | |
| 2002 01 18 | 704 | 0.7+ | 0.9− | 2002 02 16 | 049 | 0.1− | 0.7− | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2002 01 18 | 704 | 0.0 | 0.2− | 2002 02 16 | 049 | 0.1− | 0.6− | 2006 10 31 | G96 | 0.2− | 0.5− | | |
| 2002 01 18 | 704 | 0.3+ | 0.0 | 2002 03 06 | 704 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2002 01 18 | 704 | 1.1+ | 0.3− | 2002 03 06 | 704 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.4− | | |
| 2002 01 21 | 704 | 0.3+ | 0.8+ | 2002 03 06 | 704 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2002 01 21 | 704 | 0.0 | 0.5+ | 2002 03 09 | 691 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.2− | 0.0 | | |
| 2002 01 21 | 704 | 0.0 | 0.9+ | 2002 03 09 | 691 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2002 01 21 | 704 | 0.6− | 0.1+ | 2002 03 09 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.8− | | |
| 2002 02 04 | 644 | 0.1+ | 0.0 | 2002 03 12 | 644 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 1.0− | 0.4− | | |
| 2002 02 04 | 644 | 0.5+ | 0.5− | 2002 03 12 | 644 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.7− | | |
| 2002 02 04 | 644 | 0.6+ | 0.1− | 2002 03 12 | 644 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.5+ | 0.6− | | |
| 2002 02 07 | 704 | 0.5− | 0.1+ | 2002 03 14 | 704 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2002 02 07 | 704 | 0.0 | 0.9+ | 2002 03 14 | 704 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.2− | 0.0 | | |
| 2002 02 07 | 704 | (0.1+ | 1.5+) | 2002 03 14 | 704 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.2− | 0.1+ | | |
| 2002 02 07 | 704 | 0.5+ | 0.3+ | 2002 03 14 | 704 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2002 02 07 | 704 | 0.1− | 0.2+ | 2002 03 14 | 704 | 0.2− | 0.9+ | 2006 11 19 | 691 | 0.3− | 0.0 | | |
| 2002 02 10 | 704 | 0.6− | 0.6− | 2002 03 16 | 704 | 0.3− | 1.2− | 2006 11 19 | 691 | 0.0 | 0.2− | | |
| 2002 02 10 | 704 | 0.4− | 0.1− | 2002 03 16 | 704 | 1.3− | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.3+ | | |
| 2002 02 10 | 704 | 0.3− | 0.5− | 2002 03 16 | 704 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.9+ | 0.4− | | |
| 2002 02 10 | 704 | 0.2− | 0.1+ | 2002 03 16 | 704 | 0.3− | 0.8+ | 2006 11 21 | 704 | 0.3+ | 0.7− | | |
| 2002 02 10 | 704 | 0.2− | 0.4− | 2002 03 16 | 704 | (1.7− | 1.2+) | 2006 11 29 | 704 | 0.2− | 0.2+ | | |
| 2002 02 10 | 704 | 0.4− | 0.5+ | 2005 08 30 | 691 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.4+ | 1.2+ | | |
| 2002 02 10 | 704 | 0.7− | 0.7− | 2005 08 30 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.6+ | | |
| 2002 02 10 | 704 | 0.2− | 0.2+ | 2005 08 30 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.6+ | | |
| 2002 02 10 | 704 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.2− | | | | | | |

## 2002 $BQ_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.95997 | | (2000.0) | | | |
| $n$ | 0.36665026 | $\omega$ | 108.43999 | | +0.19866146 | −0.96721323 |
| $a$ | 1.9333095 | $\Omega$ | 328.72807 | | +0.74416012 | +0.25391633 |
| $e$ | 0.1013808 | $i$ | 17.74542 | | +0.63777687 | +0.00500738 |
| $P$ | 2.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 23 | 704 | 0.7+ | 0.7− | 2002 02 12 | 704 | 0.5+ | 0.6+ | 2002 03 14 | 704 | 0.3+ | 1.0− | | |
| 2002 01 23 | 704 | 0.9+ | 1.3− | 2002 02 12 | 704 | 0.9− | 0.1− | 2006 09 19 | 703 | 1.1+ | 1.0− | | |
| 2002 01 23 | 704 | 1.3+ | 0.2− | 2002 02 12 | 704 | 0.6− | 0.7+ | 2006 09 19 | 703 | 0.2− | 1.0− | | |
| 2002 01 23 | 704 | 1.5+ | 0.4− | 2002 02 12 | 704 | 0.0 | 0.0 | 2006 09 19 | 703 | 1.0+ | 0.3+ | | |
| 2002 01 25 | 704 | 0.1− | 0.2+ | 2002 02 12 | 704 | 0.3− | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.4+ | | |
| 2002 01 25 | 704 | 0.2+ | 0.4− | 2002 02 13 | 644 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.4+ | 0.4− | | |
| 2002 01 25 | 704 | 0.2+ | 0.2+ | 2002 02 13 | 644 | 0.3− | 0.5− | 2006 09 25 | 703 | 0.2+ | 0.4+ | | |
| 2002 02 03 | 644 | 0.2− | 0.0 | 2002 02 13 | 644 | 0.3− | 0.3− | 2006 09 25 | 703 | 0.8− | 0.7− | | |
| 2002 02 03 | 644 | 0.2− | 0.0 | 2002 03 06 | 704 | 0.1− | 0.8− | 2006 09 25 | 703 | 0.5− | 0.0 | | |
| 2002 02 03 | 644 | 0.1− | 0.1+ | 2002 03 06 | 704 | 0.9− | 0.3− | 2006 10 02 | 703 | 0.9− | 0.7+ | | |
| 2002 02 06 | 704 | 0.3− | 0.6+ | 2002 03 06 | 704 | 0.6+ | 0.1− | 2006 10 02 | 703 | 0.1+ | 1.0+ | | |
| 2002 02 06 | 704 | 0.5− | 0.5+ | 2002 03 06 | 704 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.8− | 0.4+ | | |
| 2002 02 06 | 704 | 0.0 | 0.6+ | 2002 03 14 | 704 | 1.5− | 0.1− | 2006 10 02 | 703 | 0.5+ | 0.7− | | |
| 2002 02 06 | 704 | 0.3− | 0.2+ | 2002 03 14 | 704 | 0.3+ | 1.1+ | | | | | | |
| 2002 02 06 | 704 | 0.1+ | 0.8+ | 2002 03 14 | 704 | 0.4− | 0.2− | | | | | | |

## 2002 $BT_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.95168 | | (2000.0) | | | |
| $n$ | 0.18392646 | $\omega$ | 120.99166 | | +0.15412494 | −0.95856987 |
| $a$ | 3.0622448 | $\Omega$ | 317.93332 | | +0.73987299 | +0.27266266 |
| $e$ | 0.4225092 | $i$ | 20.95017 | | +0.65485377 | −0.08245537 |
| $P$ | 5.36 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 1.2− | 0.1− | 2002 01 25 | 704 | 1.2+ | 0.2+ | 2006 09 16 | 703 | 0.2+ | 0.5+ | | |
| 2001 09 28 | 704 | (2.2− | 1.7−) | 2002 02 02 | 704 | 1.3− | 1.2− | 2006 09 17 | 703 | 0.6+ | 0.4+ | | |
| 2001 09 28 | 704 | 0.0 | 0.9− | 2002 02 02 | 704 | 0.6− | 0.5− | 2006 09 17 | 703 | 0.2− | 0.2− | | |
| 2001 09 28 | 704 | 0.9− | 0.6− | 2002 02 02 | 704 | (0.5− | 1.8−) | 2006 09 17 | 703 | 0.7+ | 0.0 | | |
| 2002 01 07 | 704 | 0.0 | 0.5− | 2002 02 10 | 704 | 0.3− | 0.7+ | 2006 09 28 | 703 | 0.3+ | 0.1+ | | |
| 2002 01 07 | 704 | 0.2+ | 0.7− | 2002 02 10 | 704 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.1− | | |
| 2002 01 07 | 704 | 0.1+ | 0.8− | 2002 02 10 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.1+ | | |
| 2002 01 07 | 704 | 0.3+ | 0.6− | 2002 02 10 | 704 | 0.9− | 0.5+ | 2006 09 28 | 703 | 0.3+ | 0.6− | | |
| 2002 01 07 | 704 | 0.3− | 0.7− | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.3− | 0.2+ | | |
| 2002 01 23 | 704 | 0.4− | 0.5+ | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.0 | | |
| 2002 01 23 | 704 | 0.3− | 1.1+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 20 | 703 | 0.2− | 0.3− | | |
| 2002 01 23 | 704 | 0.6+ | 1.2+ | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.4+ | 0.0 | | |
| 2002 01 23 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.6+ | 2006 11 23 | 703 | 0.6− | 0.6− | | |
| 2002 01 23 | 704 | 0.4− | 0.5+ | 2006 09 16 | 703 | 0.6+ | 0.3+ | 2006 11 23 | 703 | 0.1− | 0.6+ | | |
| 2002 01 25 | 704 | 1.1+ | 0.2− | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.5+ | 0.1+ | | |
| 2002 01 25 | 704 | 0.7+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.2− | 2006 11 23 | 703 | 1.0− | 0.7− | | |
| 2002 01 25 | 704 | 0.6+ | 0.5+ | 2006 09 16 | 703 | 0.1− | 1.0+ | | | | | | |
| 2002 01 25 | 704 | 1.0+ | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.0 | | | | | | |

## 2002 $BV_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.31486 | | (2000.0) | | | |
| $n$ | 0.18160956 | $\omega$ | 92.46847 | | −0.02814435 | −0.99959949 |
| $a$ | 3.0882344 | $\Omega$ | 359.12767 | | +0.82239288 | −0.02147184 |
| $e$ | 0.2543034 | $i$ | 11.20886 | | +0.56822341 | −0.01843429 |
| $P$ | 5.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 645 | 0.1− | 0.2− | 2002 02 07 | 699 | 0.7− | 0.5− | 2006 10 19 | 703 | 0.1+ | 0.2− | | |
| 2001 12 20 | 645 | 0.1− | 0.2− | 2002 02 07 | 699 | 0.7− | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.5− | | |
| 2002 01 14 | 644 | 0.1+ | 0.2+ | 2002 02 07 | 699 | 0.9+ | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.0 | | |
| 2002 01 14 | 644 | 0.2+ | 0.3+ | 2002 02 07 | 699 | 0.1− | 1.0+ | 2006 10 19 | 703 | 0.2− | 0.1+ | | |
| 2002 01 14 | 644 | 0.2+ | 0.1+ | 2002 02 10 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.3− | | |
| 2002 01 23 | 704 | 0.1− | 0.2+ | 2002 02 10 | 704 | 0.0 | 0.6+ | 2006 10 27 | 703 | 0.1+ | 1.0+ | | |
| 2002 01 23 | 704 | 0.1− | 0.4− | 2002 02 10 | 704 | 0.6− | 0.4− | 2006 10 27 | 703 | 0.3− | 0.2+ | | |
| 2002 01 23 | 704 | 0.9− | 0.6+ | 2002 02 19 | 704 | 0.7+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.0 | | |
| 2002 01 23 | 704 | 0.2+ | 1.1+ | 2002 02 19 | 704 | 0.5+ | 0.0 | 2006 11 15 | 703 | 0.5+ | 1.2+ | | |
| 2002 01 23 | 704 | 0.1+ | 0.2+ | 2002 02 19 | 704 | 0.8+ | 0.3+ | 2006 11 15 | 703 | 0.7− | 1.0+ | | |
| 2002 01 25 | 704 | 0.6− | 0.2+ | 2002 02 19 | 704 | 0.9+ | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.2+ | | |
| 2002 01 25 | 704 | 0.1− | 0.6+ | 2005 08 12 | 735 | 0.9− | 1.1+ | 2006 11 15 | 703 | 0.6+ | 0.0 | | |
| 2002 01 25 | 704 | 0.2− | 0.4+ | 2005 08 12 | 735 | 0.3− | 0.7+ | 2006 11 21 | 703 | 0.9− | 0.3+ | | |
| 2002 01 25 | 704 | 0.3+ | 0.3+ | 2005 08 12 | 735 | 0.8+ | 1.0− | 2006 11 21 | 703 | 0.3+ | 0.1+ | | |
| 2002 01 25 | 704 | 0.6+ | 0.8+ | 2006 09 28 | 703 | 0.6− | 1.2− | 2006 11 21 | 703 | 0.3− | 0.3− | | |
| 2002 02 02 | 644 | 0.7+ | 0.3+ | 2006 09 28 | 703 | 0.7− | 0.1+ | 2006 11 21 | 703 | 0.5+ | 0.0 | | |
| 2002 02 02 | 644 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.2− | | | | | | |
| 2002 02 02 | 644 | 0.5+ | 0.3+ | 2006 09 28 | 703 | 1.3+ | 0.1− | | | | | | |

### 2002 $BM_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.25089 | | | (2000.0) | | |
| $n$ | 0.39701686 | $\omega$ | 180.35481 | | −0.76680340 | −0.61598465 |
| $a$ | 1.8334261 | $\Omega$ | 319.72710 | | +0.58960087 | −0.56477671 |
| $e$ | 0.4444851 | $i$ | 16.21281 | | +0.25373876 | −0.54917227 |
| $P$ | 2.48 | $H$ | 20.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc (radar residuals in s.d.)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 26 | 704 | 0.2+ | 0.1+ | | 2002 02 04 | 587 | 0.1− | 0.2− | | 2002 02 14 | 639 | 0.0+ | 0.7+ | | 2002 02 03 | 670 | 0.4− | 0.6− |
| 2002 01 26 | 704 | 0.0+ | 0.4+ | | 2002 02 05 | 118 | 0.1+ | 0.1− | | 2002 02 14 | 639 | 0.4+ | 0.7− | | 2002 02 03 | 670 | 0.3+ | 0.5− |
| 2002 01 26 | 704 | 0.2+ | 0.2− | | 2002 02 05 | 118 | 0.2− | 0.3− | | 2002 02 14 | 639 | 0.7− | 1.2+ | | 2002 02 03 | 670 | 0.1+ | 0.1+ |
| 2002 01 26 | 704 | 0.3− | 1.0− | | 2002 02 05 | 118 | 0.0− | 0.2− | | 2002 02 14 | 639 | 1.1− | 0.8− | | 2002 02 03 | 185 | 0.2− | 0.2− |
| 2002 01 26 | 704 | 0.4− | 0.2− | | 2002 02 06 | 670 | 0.1− | 1.2− | | 2002 02 14 | 639 | 0.1+ | 0.3+ | | 2002 02 03 | 185 | 0.1− | 0.5+ |
| 2002 02 01 | 704 | 0.1+ | 0.5+ | | 2002 02 06 | 670 | 0.0− | 0.8− | | 2002 02 14 | 639 | 0.5+ | 0.8+ | | 2002 02 03 | 185 | 0.6− | 0.0+ |
| 2002 02 01 | 704 | 0.1− | 0.6+ | | 2002 02 06 | 670 | 0.1− | 0.2+ | | 2002 02 14 | 639 | 0.3− | 0.0− | | 2002 02 03 | 185 | 0.1− | 0.4− |
| 2002 02 01 | 704 | 0.3− | 0.8+ | | 2002 02 07 | 644 | 0.1+ | 0.3− | | 2002 02 14 | 639 | 0.1− | 0.3− | | 2002 02 03 | 185 | 0.0+ | 0.6− |
| 2002 02 01 | 704 | 0.2+ | 0.1+ | | 2002 02 07 | 644 | 0.4+ | 0.3− | | 2002 02 14 | 639 | 0.3+ | 0.5− | | 2002 02 04 | 046 | 0.2+ | 0.2+ |
| 2002 02 01 | 704 | 0.2+ | 0.5+ | | 2002 02 07 | 644 | 0.9+ | 0.2− | | 2002 02 15 | 379 | 0.5− | 0.5+ | | 2002 02 04 | 046 | 0.0− | 0.1− |
| 2002 02 01 | 046 | 0.4+ | 0.4+ | | 2002 02 08 | 670 | 0.1+ | 0.1− | | 2002 02 15 | 379 | 0.2+ | 0.4− | | 2002 02 04 | 046 | 0.0+ | 0.3− |
| 2002 02 01 | 046 | 0.2− | 0.5− | | 2002 02 08 | 670 | 0.1+ | 0.6+ | | 2002 02 15 | 379 | 0.9− | 1.2+ | | 2002 02 04 | 046 | 0.2+ | 0.4− |
| 2002 02 01 | 046 | 0.5+ | 0.5− | | 2002 02 08 | 670 | 0.0− | 0.1+ | | 2002 02 15 | 379 | 0.7+ | 0.5+ | | 2002 02 04 | 046 | 0.2+ | 0.3− |
| 2002 02 01 | 046 | 0.1− | 0.0+ | | 2002 02 09 | 251/ | 251 | 0.151+ | D | 2002 02 15 | 379 | 0.3− | 0.4+ | | 2002 02 04 | 046 | 0.2+ | 0.4− |
| 2002 02 01 | 946 | 1.3+ | 0.3− | | 2002 02 09 | 251/ | 251 | 0.203− | R | 2002 02 15 | 379 | 0.5− | 1.2+ | | 2002 02 04 | 046 | 0.2+ | 0.4− |
| 2002 02 01 | 946 | 0.1− | 0.0+ | | 2002 02 09 | 413 | 0.2+ | 0.2+ | | 2002 02 15 | 379 | 0.4− | 0.1+ | | 2002 02 04 | 118 | 0.1− | 0.2− |
| 2002 02 01 | 946 | 0.2− | 0.4+ | | 2002 02 09 | 413 | 0.2+ | 0.2+ | | 2002 02 15 | 118 | 0.2+ | 0.3− | | 2002 02 04 | 118 | 0.1− | 0.1− |
| 2002 02 01 | 151 | 0.2+ | 0.2+ | | 2002 02 09 | 413 | 0.3+ | 0.1+ | | 2002 02 15 | 118 | 0.3+ | 0.3− | | 2002 02 04 | 118 | 0.1− | 0.4− |
| 2002 02 01 | 151 | 0.8− | 0.0− | | 2002 02 10 | 251/ | 251 | 0.175+ | D | 2002 02 15 | 118 | 0.5+ | 0.7− | | 2002 02 04 | 587 | 0.1− | 0.1− |
| 2002 02 01 | 151 | 0.1− | 0.9− | | 2002 02 10 | 251/ | 251 | 0.033+ | R | 2002 02 16 | 379 | 0.0+ | 0.2− | | 2002 02 04 | 587 | 0.1− | 0.2− |
| 2002 02 01 | 151 | 0.2− | 0.1+ | | 2002 02 10 | 379 | 0.2− | 0.8+ | | 2002 02 16 | 379 | 0.4− | 1.4+ | | | | | |
| 2002 02 01 | 151 | 0.1− | 0.2− | | 2002 02 10 | 379 | 1.2+ | 0.3− | | 2002 02 16 | 379 | 0.0+ | 0.1+ | | | | | |
| 2002 02 01 | 151 | 0.6+ | 0.3+ | | 2002 02 10 | 379 | 0.2− | 0.9+ | | 2002 02 16 | 118 | 0.2− | 0.4− | | | | | |
| 2002 02 02 | 704 | 0.4+ | 0.0− | | 2002 02 10 | 379 | 0.7− | 0.1+ | | 2002 02 16 | 118 | 0.0+ | 0.1− | | | | | |
| 2002 02 02 | 704 | 0.4− | 0.5− | | 2002 02 10 | 379 | 0.2+ | 0.5+ | | 2002 02 16 | 118 | 0.1− | 0.1− | | | | | |
| 2002 02 02 | 704 | 0.6+ | 0.2+ | | 2002 02 10 | 379 | 0.6− | 0.1− | | 2002 02 16 | 629 | 0.8+ | 0.4+ | | | | | |
| 2002 02 02 | 704 | 0.6+ | 0.1+ | | 2002 02 10 | 379 | 0.4− | 0.0+ | | 2002 02 16 | 629 | 0.4+ | 1.9− | | | | | |
| 2002 02 02 | 670 | 0.5+ | 0.8+ | | 2002 02 10 | 379 | 0.2− | 0.5+ | | 2002 02 16 | 629 | 0.5− | 1.8− | | | | | |
| 2002 02 02 | 704 | 0.1− | 0.5− | | 2002 02 10 | 118 | 0.2+ | 0.1− | | 2002 02 16 | 629 | 1.0+ | 1.0+ | | | | | |
| 2002 02 02 | 704 | 0.9+ | 0.2+ | | 2002 02 10 | 118 | 0.1+ | 0.4− | | 2002 02 16 | 629 | 0.5+ | 0.5− | | | | | |
| 2002 02 02 | 918 | 0.0− | 0.3+ | | 2002 02 10 | 118 | 0.0+ | 0.6− | | 2002 02 16 | 629 | 0.0− | 0.6+ | | | | | |
| 2002 02 02 | 918 | 0.3− | 0.6+ | | 2002 02 10 | 118 | 0.3+ | 0.9− | | 2002 02 16 | 629 | 0.2− | 0.3− | | | | | |
| 2002 02 02 | 704 | 0.5+ | 0.4− | | 2002 02 11 | 379 | 0.1− | 1.3+ | | 2002 02 16 | 629 | 0.2− | 0.9− | | | | | |
| 2002 02 02 | 918 | 0.6− | 0.3+ | | 2002 02 11 | 379 | 0.1+ | 0.7− | | 2002 02 17 | 185 | 0.2− | 0.1− | | | | | |
| 2002 02 02 | 670 | 0.9+ | 0.1− | | 2002 02 11 | 379 | 0.1− | 0.1− | | 2002 02 17 | 185 | 0.1+ | 0.4− | | | | | |
| 2002 02 02 | 670 | 1.0+ | 1.3+ | | 2002 02 11 | 379 | 0.2− | 1.3+ | | 2002 02 17 | 185 | 0.1+ | 0.4− | | | | | |
| 2002 02 02 | 670 | 0.3+ | 0.5+ | | 2002 02 11 | 379 | 0.2+ | 1.2+ | | 2002 02 17 | 185 | 0.4+ | 0.3− | | | | | |
| 2002 02 02 | 157 | 0.9+ | 1.0− | | 2002 02 11 | 379 | 0.5− | 0.8+ | | 2002 02 17 | 185 | 0.3+ | 0.3+ | | | | | |
| 2002 02 02 | 157 | 0.4− | 0.8+ | | 2002 02 11 | 379 | 0.4− | 1.2+ | | 2002 02 17 | 185 | 0.4+ | 0.5− | | | | | |
| 2002 02 02 | 157 | 0.2+ | 0.1+ | | 2002 02 11 | 379 | 0.5− | 0.9+ | | 2002 02 17 | 185 | 0.0+ | 0.1− | | | | | |
| 2002 02 02 | 046 | 0.0+ | 0.1− | | 2002 02 12 | 670 | 0.0+ | 0.3− | | 2002 02 17 | 185 | 0.2+ | 0.0− | | | | | |
| 2002 02 02 | 046 | 0.1− | 0.2+ | | 2002 02 12 | 670 | 0.2− | 0.3− | | 2002 02 18 | 452 | 0.6− | 0.3− | | | | | |
| 2002 02 02 | 046 | 0.2+ | 0.1+ | | 2002 02 12 | 670 | 0.8+ | 0.8− | | 2002 02 18 | 452 | (1.4+ | 3.1−) | | | | | |
| 2002 02 02 | 046 | 0.1− | 0.2+ | | 2002 02 12 | 379 | 0.8− | 1.5+ | | 2002 02 18 | 452 | (13.6− | 2.3−) | | | | | |
| 2002 02 02 | 046 | 0.0+ | 0.0− | | 2002 02 12 | 379 | 0.3+ | 0.6− | | 2002 02 19 | 333 | 1.0+ | 1.3− | | | | | |
| 2002 02 02 | 118 | 0.0− | 0.2− | | 2002 02 12 | 379 | 0.7− | 0.6− | | 2002 02 19 | 333 | 0.6+ | 0.9+ | | | | | |
| 2002 02 02 | 118 | 0.3− | 0.1− | | 2002 02 12 | 379 | 1.3− | 1.1+ | | 2002 02 19 | 333 | 0.0+ | 1.5+ | | | | | |
| 2002 02 02 | 118 | 0.1− | 0.1+ | | 2002 02 12 | 379 | 0.6− | 0.6− | | 2002 02 19 | 413 | 0.1+ | 0.0− | | | | | |
| 2002 02 02 | 215 | 0.0− | 0.2− | | 2002 02 13 | 379 | 0.4− | 1.8+ | | 2002 02 19 | 413 | 0.2+ | 0.3− | | | | | |
| 2002 02 02 | 215 | 0.1− | 0.1+ | | 2002 02 13 | 379 | 0.5+ | 0.2− | | 2002 02 19 | 413 | 0.1+ | 0.2− | | | | | |
| 2002 02 02 | 215 | 0.0− | 0.1+ | | 2002 02 13 | 379 | 0.3− | 0.2+ | | 2002 02 19 | 422 | 0.3+ | 0.9− | | | | | |
| 2002 02 02 | 201 | 0.3− | 0.1− | | 2002 02 13 | 379 | 0.6− | 0.1+ | | 2002 02 19 | 422 | 0.4+ | 1.2− | | | | | |
| 2002 02 02 | 201 | 0.4− | 0.1− | | 2002 02 13 | 379 | 0.4− | 1.5+ | | 2002 02 19 | 422 | 0.3+ | 0.9− | | | | | |
| 2002 02 02 | 611 | 1.4− | 0.1− | | 2002 02 13 | 322 | 0.5− | 0.7− | | 2002 02 20 | 670 | 0.0− | 0.8− | | | | | |
| 2002 02 02 | 201 | 0.5− | 0.3− | | 2002 02 13 | 322 | 0.8+ | 1.3− | | 2002 02 20 | 670 | 1.2− | 0.3+ | | | | | |
| 2002 02 02 | 611 | 1.6− | 0.9− | | 2002 02 13 | 322 | 0.4− | 0.7+ | | 2002 02 20 | 670 | 0.0− | 0.1− | | | | | |
| 2002 02 02 | 611 | 0.0+ | 0.7− | | 2002 02 14 | 379 | 0.2+ | 0.1− | | 2002 03 06 | 413 | 0.1+ | 0.1+ | | | | | |
| 2002 02 02 | 611 | (1.8− | 2.7+) | | 2002 02 14 | 379 | 0.1− | 0.7+ | | 2002 03 06 | 413 | 0.0+ | 0.1+ | | | | | |

### 2002 $BW_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.63013 | | | (2000.0) | | |
| $n$ | 0.17562277 | $\omega$ | 322.20826 | | +0.35301640 | −0.88475774 |
| $a$ | 3.1580245 | $\Omega$ | 105.26030 | | +0.91677650 | +0.26216862 |
| $e$ | 0.2191529 | $i$ | 18.38470 | | +0.18681615 | +0.38531981 |
| $P$ | 5.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 291 | 0.2− | 0.1− | | 2002 01 21 | 704 | 1.2+ | 0.3+ | | 2006 10 20 | 703 | 0.1+ | 0.1− | | 2002 02 14 | 379 | 0.9− | 0.6+ |
| 2001 10 24 | 291 | 0.1− | 0.0 | | 2002 01 21 | 704 | 0.0 | 0.7− | | 2006 10 21 | 703 | 0.3− | 0.2− | | 2002 02 14 | 379 | 0.6− | 0.4− |
| 2001 10 24 | 291 | 0.3+ | 0.0 | | 2002 01 21 | 704 | 0.1− | 0.5− | | 2006 10 21 | 703 | (2.7+ | 1.3+) | | 2002 02 14 | 379 | 0.7+ | 0.1+ |
| 2001 12 17 | 704 | 0.1− | 0.3− | | 2002 01 21 | 704 | 0.3+ | 0.2− | | 2006 10 21 | 703 | 0.9+ | 0.5− | | 2002 02 14 | 379 | 0.0+ | 0.2− |
| 2001 12 17 | 704 | 1.0− | 0.4+ | | 2002 02 03 | 644 | 0.4+ | 0.1+ | | 2006 10 21 | 703 | (1.7+ | 0.1−) | | 2002 02 14 | 118 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 0.9− | 1.2+ | | 2002 02 03 | 644 | 0.1+ | 0.0 | | 2006 10 28 | 703 | 0.2+ | 1.5− | | 2002 02 14 | 118 | 0.1+ | 0.1+ |
| 2002 01 10 | 644 | 0.2− | 0.8+ | | 2002 02 03 | 644 | 0.1+ | 0.2− | | 2006 10 28 | 703 | 0.6− | 0.7+ | | 2002 02 14 | 046 | 0.5+ | 0.4+ |
| 2002 01 10 | 644 | 0.0 | 1.1+ | | 2002 02 03 | 644 | 0.0 | 0.1− | | 2006 10 28 | 703 | 0.1− | 0.6+ | | 2002 02 14 | 046 | 0.4+ | 0.1+ |
| 2002 01 10 | 644 | 0.2− | 0.6+ | | 2002 02 03 | 644 | 0.3+ | 0.0 | | 2006 10 28 | 703 | 0.3+ | 0.0 | | 2006 10 30 | 696 | 0.4+ | 0.6+ |
| 2002 01 20 | 699 | 0.1− | 0.9− | | 2002 02 03 | 644 | 0.1+ | 0.3− | | 2006 11 23 | 703 | 0.3+ | 0.2+ | | 2006 10 30 | 696 | 0.2− | 0.5+ |
| 2002 01 20 | 699 | 0.3− | 0.1− | | 2006 10 20 | 703 | 0.7− | 0.3+ | | 2006 11 23 | 703 | 0.4− | 1.1+ | | 2006 11 27 | A74 | 0.1+ | 0.1+ |
| 2002 01 20 | 699 | 0.4+ | 0.4+ | | 2006 10 20 | 703 | 0.6− | 0.1− | | 2006 11 23 | 703 | 0.1+ | 0.0 | | 2006 11 27 | A74 | 0.0+ | 0.2− |
| 2002 01 20 | 699 | 0.3− | 0.6− | | 2006 10 20 | 703 | 0.5+ | 0.4− | | 2006 11 23 | 703 | 0.5+ | 0.4− | | 2006 11 27 | A74 | 0.0− | 0.0− |

### 2002 $BO_{28}$ = 2006 $VH_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.34058 | | | (2000.0) | | |
| $n$ | 0.17405092 | $\omega$ | 333.41470 | | +0.62137627 | −0.72041871 |
| $a$ | 3.1770094 | $\Omega$ | 76.51040 | | +0.76338528 | +0.46812308 |
| $e$ | 0.2341600 | $i$ | 18.46823 | | +0.17644956 | +0.51172030 |
| $P$ | 5.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4− | 1.3− | | 2002 01 19 | 699 | 0.3+ | 0.2− | | 2006 10 21 | 703 | 0.5+ | 0.2+ | | 2002 01 23 | 704 | 0.4− | 0.1+ |
| 2001 12 14 | 704 | 0.1+ | 0.1− | | 2002 01 19 | 699 | 0.4− | 0.2+ | | 2006 10 21 | 703 | 0.1+ | 0.0 | | 2002 01 23 | 704 | 0.4− | 0.1+ |
| 2001 12 14 | 704 | (2.6+ | 0.2−) | | 2002 01 19 | 699 | 0.0 | 0.3+ | | 2006 10 21 | 703 | 0.1− | 0.3− | | 2002 01 23 | 704 | 0.4+ | 0.6+ |
| 2001 12 18 | 699 | 0.4+ | 0.4+ | | 2002 01 19 | 699 | 0.1− | 0.0 | | 2006 11 01 | 703 | 0.1− | 0.2− | | 2002 01 23 | 704 | (0.3+ | 2.5+) |
| 2001 12 18 | 699 | 0.1− | 0.1+ | | 2002 01 23 | 704 | 0.4− | 0.1+ | | 2006 11 01 | 703 | (1.0+ | 2.1+) | | 2002 01 23 | 704 | (0.0 | 1.6+) |
| 2001 12 18 | 699 | 0.4+ | 0.6+ | | 2002 01 23 | 704 | 0.4+ | 0.7+ | | 2006 11 01 | 703 | 1.1− | 0.3+ | | 2002 01 23 | 704 | 0.6+ | 1.0+ |
| 2001 12 18 | 699 | 0.2− | 0.5+ | | 2002 01 23 | 704 | (0.3+ | 2.5+) | | 2006 11 01 | 703 | 0.4− | 0.3− | | 2002 02 07 | 699 | 0.1− | 0.2+ |
| 2001 12 20 | 645 | 0.2− | 0.2− | | 2002 01 23 | 704 | (0.0 | 1.6+) | | 2006 11 01 | 703 | 0.5+ | 0.2− | | 2002 02 07 | 699 | 0.1+ | 0.0 |
| 2001 12 20 | 645 | 0.2− | 0.2− | | 2002 01 23 | 704 | 0.6+ | 1.0+ | | 2006 11 01 | 703 | 0.3+ | 0.5+ | | 2002 02 07 | 699 | 0.9+ | 1.2+ |
| 2001 12 22 | 704 | (0.3− | 1.7+) | | 2002 02 07 | 699 | 0.1− | 0.2+ | | 2006 11 01 | 703 | 0.3+ | 0.8+ | | 2002 02 07 | 699 | 0.1− | 0.7+ |
| 2001 12 22 | 704 | 1.0+ | 0.6+ | | 2002 02 07 | 699 | 0.1+ | 0.0 | | 2006 11 01 | 703 | 0.4− | 0.2− | | 2003 05 30 | 645 | 0.0 | 0.0 |
| 2001 12 22 | 704 | (1.6+ | 0.3−) | | 2002 02 07 | 699 | 0.9+ | 1.2+ | | 2006 11 06 | 644 | 0.3− | 0.1− | | | | | |
| 2001 12 22 | 704 | (1.3+ | 2.2+) | | 2002 02 07 | 699 | 0.1− | 0.7+ | | 2006 11 06 | 644 | 0.2− | 0.2− | | | | | |
| 2002 01 05 | 699 | 1.2+ | 0.7+ | | 2003 05 30 | 645 | 0.0 | 0.0 | | 2006 11 06 | 644 | 0.3− | 0.4− | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 699 | 0.1− | 0.0 | 2003 05 30 | 645 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2002 01 05 | 699 | 0.1+ | 0.4+ | 2006 09 25 | 703 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.9+ | 0.2− |
| 2002 01 05 | 699 | 0.0 | 0.8+ | 2006 09 25 | 703 | 0.7− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2002 01 14 | 644 | 0.1+ | 0.4− | 2006 09 25 | 703 | 0.1+ | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.6− |
| 2002 01 14 | 644 | 0.8+ | 0.7+ | 2006 09 25 | 703 | 0.9+ | 0.0 | 2006 11 23 | 703 | 0.1+ | 0.5+ |
| 2002 01 14 | 644 | 0.6+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.0 | 0.6− |
| 2002 01 14 | 644 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.0 | 0.5+ |
| 2002 01 14 | 644 | 0.7+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.2− | 2006 11 23 | 703 | 0.2− | 0.4+ |
| 2002 01 14 | 644 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.0 | 0.4− | | | | |

**2002 BL$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.40789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17397688 | $\omega$ | 132.28679 | | −0.44871630 | −0.88364090 | |
| $a$ | 3.1779108 | $\Omega$ | 342.86642 | | +0.62663040 | −0.20456268 | |
| $e$ | 0.1773702 | $i$ | 26.95469 | | +0.63717189 | −0.42110910 | |
| $P$ | 5.67 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.1+ | 0.1− | 2002 01 25 | 704 | 0.6+ | 0.1+ | 2005 08 04 | 644 | 0.0 | 0.1+ |
| 2001 12 23 | 704 | 0.1+ | 0.5− | 2002 01 25 | 704 | 0.4− | 0.2+ | 2005 08 04 | 644 | 0.0 | 0.0 |
| 2001 12 23 | 704 | 0.6− | 0.8− | 2002 01 25 | 704 | 0.2+ | 0.5− | 2005 11 06 | G96 | 0.1− | 0.3− |
| 2001 12 23 | 704 | 0.7− | 0.1− | 2002 02 21 | 704 | 0.7− | 0.5− | 2005 11 06 | G96 | 0.1+ | 0.4− |
| 2001 12 23 | 704 | 0.0 | 0.1+ | 2002 02 21 | 704 | 0.9− | 1.0− | 2005 11 06 | G96 | 0.1− | 0.4+ |
| 2002 01 21 | 699 | 1.0+ | 1.1+ | 2002 02 21 | 704 | 0.9− | 0.2+ | 2005 11 06 | G96 | 0.0 | 0.2− |
| 2002 01 21 | 699 | 0.8+ | 0.5+ | 2002 02 21 | 704 | 0.2− | 0.0 | 2006 11 13 | 704 | 1.0− | 0.9+ |
| 2002 01 21 | 699 | (2.2+ | 0.2−) | 2002 02 21 | 704 | 0.0 | 0.3+ | 2006 11 13 | 704 | 0.3− | 0.4− |
| 2002 01 21 | 699 | 0.9+ | 0.2+ | 2005 08 04 | 644 | 0.5+ | 0.2− | 2006 11 13 | 704 | 1.0+ | 0.2− |

**2002 BY$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.63026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18066194 | $\omega$ | 325.69753 | | +0.33781543 | −0.80724791 | |
| $a$ | 3.0990240 | $\Omega$ | 100.12949 | | +0.93549352 | +0.23137523 | |
| $e$ | 0.2166460 | $i$ | 29.44830 | | +0.10359831 | +0.54296991 | |
| $P$ | 5.46 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 704 | 0.3− | 0.7+ | 2002 01 19 | 699 | (2.5− | 1.2+) | 2002 02 13 | 704 | 0.3− | 0.7+ |
| 2001 12 13 | 704 | 0.0 | 0.5+ | 2002 01 19 | 699 | 0.3+ | 0.3+ | 2002 02 13 | 704 | 1.0− | 1.3+ |
| 2001 12 13 | 704 | 0.5+ | 0.1− | 2002 01 19 | 699 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2001 12 13 | 704 | 0.0 | 0.3+ | 2002 01 19 | 699 | 0.2+ | 1.9+ | 2006 11 17 | 703 | 0.7+ | 0.6+ |
| 2001 12 13 | 704 | 1.1+ | 1.1− | 2002 01 23 | 704 | 0.4+ | 0.4− | 2006 11 17 | 703 | 0.4− | 1.1− |
| 2001 12 19 | 644 | 0.4+ | 0.0 | 2002 01 23 | 704 | 0.2− | 1.8− | 2006 11 17 | 703 | 0.4− | 1.0+ |
| 2001 12 19 | 644 | 0.0 | 0.1− | 2002 01 23 | 704 | 0.2+ | 0.4− | 2006 11 23 | 703 | 0.0 | 0.6+ |
| 2001 12 19 | 644 | 0.2+ | 0.1− | 2002 01 23 | 704 | 0.1− | 0.1− | 2006 11 23 | 703 | 0.7− | 0.0 |
| 2002 01 18 | 699 | 0.1+ | 1.2− | 2002 01 23 | 704 | 0.4+ | 0.3+ | 2006 11 23 | 703 | 0.4− | 0.1− |
| 2002 01 18 | 699 | 0.4+ | 0.3+ | 2002 02 13 | 704 | 1.2− | 0.4− | 2006 11 23 | 703 | 0.5+ | 0.5− |
| 2002 01 18 | 699 | 0.7− | 0.2+ | 2002 02 13 | 704 | 0.6− | 0.2− | | | | |
| 2002 01 18 | 699 | 0.3− | 1.2− | 2002 02 13 | 704 | 0.1+ | 0.3+ | | | | |

**2002 CC**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.29647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17880980 | $\omega$ | 130.63245 | | −0.93316920 | −0.02786915 | |
| $a$ | 3.1203873 | $\Omega$ | 51.03588 | | −0.21511482 | −0.75542665 | |
| $e$ | 0.4504668 | $i$ | 27.44414 | | +0.28795983 | −0.65464027 | |
| $P$ | 5.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 704 | 0.1− | 0.6+ | 2002 02 02 | 046 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.2− |
| 2001 12 08 | 704 | 0.3+ | 1.1− | 2002 02 02 | 046 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.5+ |
| 2001 12 08 | 704 | 0.3+ | 0.6− | 2002 02 02 | 046 | 0.5+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2002 02 01 | 704 | 0.1+ | 0.8+ | 2002 02 02 | 046 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 2002 02 01 | 704 | 1.3− | 0.1+ | 2002 02 02 | 046 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 2002 02 01 | 704 | 0.5+ | 0.1+ | 2002 02 02 | 118 | 0.3+ | 0.8+ | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2002 02 01 | 704 | 0.9− | 0.3+ | 2002 02 02 | 118 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.5− |
| 2002 02 01 | 046 | 0.1+ | 0.2+ | 2002 02 02 | 118 | 0.8− | 0.4− | 2006 10 31 | G96 | 0.6+ | 0.1+ |
| 2002 02 01 | 046 | 0.1+ | 1.0− | 2002 04 02 | 704 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 02 01 | 046 | 0.7− | 0.2− | 2002 04 02 | 704 | 0.6− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2002 02 01 | 046 | 0.4− | 0.1− | 2002 04 02 | 704 | 0.4− | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 02 01 | 046 | 0.0 | 0.2− | 2002 04 02 | 704 | 0.2− | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.1− |
| 2002 02 01 | 046 | 0.2− | 0.2− | 2002 04 04 | 704 | 0.6+ | 0.2+ | 2006 11 09 | 691 | 0.2− | 0.0 |
| 2002 02 01 | 201 | 0.1+ | 0.2− | 2002 04 04 | 704 | 0.4− | 0.0 | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 2002 02 01 | 201 | 0.3+ | 0.0 | 2002 04 04 | 704 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2002 02 01 | 201 | 0.2+ | 0.0 | 2002 04 04 | 704 | 0.4+ | 0.2− | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2002 02 01 | 118 | 0.2+ | 0.4+ | 2002 04 04 | 704 | 0.0 | 0.9+ | 2006 11 13 | 691 | 0.2+ | 0.5+ |
| 2002 02 01 | 118 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2002 02 01 | 118 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.3− |
| 2002 02 02 | 151 | 1.1+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2002 02 02 | 151 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 02 02 | 151 | 0.4− | 1.0− | 2006 09 28 | G96 | 0.5+ | 0.1− | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2002 02 02 | 151 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2002 02 02 | 157 | 0.2+ | 0.7− | 2006 09 28 | G96 | 0.1− | 0.0 | | | | |
| 2002 02 02 | 157 | 0.3+ | 0.5− | 2006 09 28 | G96 | 0.5− | 0.1− | | | | |

**2002 CS**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.15475 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36497369 | $\omega$ | 304.61355 | | −0.15835337 | −0.98288328 | |
| $a$ | 1.9392256 | $\Omega$ | 154.00937 | | +0.96159677 | −0.17516499 | |
| $e$ | 0.1758924 | $i$ | 12.40671 | | +0.22417820 | +0.05707606 | |
| $P$ | 2.70 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 02 | 209 | 0.5+ | 0.4− | 2002 02 11 | 704 | 0.5+ | 0.4+ | 2002 03 13 | 704 | 0.2− | 0.1− |
| 2002 02 02 | 209 | 0.5+ | 0.4− | 2002 02 11 | 704 | 0.1− | 0.3− | 2002 03 13 | 704 | 0.2+ | 0.4− |
| 2002 02 02 | 209 | 0.3+ | 0.4− | 2002 02 16 | 644 | 0.5− | 0.3+ | 2002 03 15 | 704 | 0.8+ | 0.4+ |
| 2002 02 03 | 209 | 0.1+ | 0.0 | 2002 02 16 | 644 | 0.4− | 0.2+ | 2002 03 15 | 704 | 0.4+ | 0.5− |
| 2002 02 03 | 209 | 0.5− | 0.2+ | 2002 02 16 | 644 | 0.4− | 0.1+ | 2002 03 15 | 704 | 0.9+ | 0.6+ |
| 2002 02 03 | 209 | 0.0 | 0.1− | 2002 03 05 | 644 | 1.1− | 0.6− | 2002 03 15 | 704 | 0.1+ | 0.1+ |
| 2002 02 07 | 644 | 0.5− | 0.0 | 2002 03 05 | 644 | 1.3− | 0.7− | 2006 08 29 | 691 | 0.2+ | 0.0 |
| 2002 02 07 | 644 | 0.3− | 0.3+ | 2002 03 05 | 644 | 0.4− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2002 02 07 | 644 | 0.5− | 0.1+ | 2002 03 05 | 644 | 0.5− | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2002 02 11 | 704 | 0.8+ | 0.1+ | 2002 03 05 | 644 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.5− |
| 2002 02 11 | 704 | 0.6+ | 0.3− | 2002 03 05 | 644 | 0.3− | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.1+ |
| 2002 02 11 | 704 | 1.2+ | 0.4+ | 2002 03 13 | 704 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.4− |

**2002 CS$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.40850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18093441 | $\omega$ | 10.06616 | | −0.21225833 | −0.95827465 | |
| $a$ | 3.0959119 | $\Omega$ | 92.37839 | | +0.88272650 | −0.27206755 | |
| $e$ | 0.0918286 | $i$ | 11.04751 | | +0.41921395 | +0.08768663 | |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.1− | 0.1− | 2002 02 03 | 644 | 0.2+ | 0.0 | 2002 02 12 | 704 | 0.7+ | 0.1+ |
| 1995 12 27 | 691 | 0.2+ | 0.2− | 2002 02 03 | 644 | 0.3+ | 0.1− | 2002 02 13 | 704 | 0.3− | 0.2+ |
| 1995 12 27 | 691 | 0.1+ | 0.1− | 2002 02 04 | 644 | 0.6+ | 0.2− | 2002 02 13 | 704 | 0.0 | 0.2+ |
| 2001 12 18 | 644 | 0.0 | 0.3+ | 2002 02 04 | 644 | 0.4+ | 0.2− | 2002 02 13 | 704 | 0.7− | 0.6+ |
| 2001 12 18 | 644 | 0.0 | 0.1+ | 2002 02 04 | 644 | 0.1− | 0.1− | 2002 02 13 | 704 | 1.1− | 0.4+ |
| 2001 12 18 | 644 | 0.4− | 0.0 | 2002 02 08 | 704 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 12 21 | 704 | 0.5− | 0.6+ | 2002 02 08 | 704 | 0.2− | 0.8− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 12 21 | 704 | 0.3+ | 0.6+ | 2002 02 08 | 704 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 12 21 | 704 | 0.3− | 1.3+ | 2002 02 08 | 704 | 0.4− | 0.6− | 2006 11 20 | 704 | 0.8− | 1.3+ |
| 2002 01 08 | 704 | 0.3− | 0.6− | 2002 02 08 | 704 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.9+ | 1.1+ |
| 2002 01 08 | 704 | 0.7+ | 0.3− | 2002 02 08 | 704 | 0.4− | 0.8− | 2006 11 20 | 704 | 0.9+ | 0.3+ |
| 2002 01 08 | 704 | 0.8− | 0.0 | 2002 02 08 | 704 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 01 08 | 704 | 0.2+ | 0.2− | 2002 02 08 | 704 | 0.1− | 1.4− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2002 01 08 | 704 | 0.1− | 0.3+ | 2002 02 08 | 704 | 0.2− | 0.5+ | 2006 11 22 | 691 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 699 | 0.8+ | 0.6− | 2002 02 08 | 704 | 0.7− | 0.1+ | 2006 11 29 | 704 | 0.9+ | 1.0− |
| 2002 01 11 | 699 | 1.2+ | 0.0 | 2002 02 08 | 704 | 0.1+ | 1.0+ | 2006 11 29 | 704 | 1.2− | 1.4+ |
| 2002 01 11 | 699 | 1.1+ | 1.0+ | 2002 02 12 | 704 | 0.8− | 0.9+ | 2006 11 29 | 704 | (1.2− | 1.9−) |
| 2002 01 11 | 699 | 0.0 | 0.6− | 2002 02 12 | 704 | 0.2− | 0.9− | 2006 11 29 | 704 | 1.1+ | 0.6− |
| 2002 02 03 | 644 | 0.3+ | 0.0 | 2002 02 12 | 704 | 0.7+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.2+ |

## 2002 $CR_2$ = 2006 $WG_{135}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.59583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17719020 | $\omega$ | 33.52926 | | −0.18898318 | −0.97707187 | |
| $a$ | 3.1393730 | $\Omega$ | 67.53239 | | +0.87602753 | −0.21286980 | |
| $e$ | 0.1104337 | $i$ | 6.09143 | | +0.44369034 | +0.00412372 | |
| $P$ | 5.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.9+ | 0.4− | 2002 02 06 | 704 | 0.7+ | 0.8+ | 2003 06 05 | 691 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.3− | 0.0 | 2002 02 06 | 704 | 0.4− | 0.5− | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2002 01 08 | 704 | 1.0− | 0.1− | 2002 02 06 | 704 | 0.1− | 1.0− | 2006 11 16 | 691 | 0.3− | 0.1− |
| 2002 01 08 | 704 | 0.3+ | 0.0 | 2002 02 06 | 704 | 0.6+ | 0.6+ | 2006 11 16 | 691 | 0.5− | 0.1+ |
| 2002 01 11 | 699 | (0.9− | 1.9−) | 2002 02 08 | 704 | 0.3− | 1.2+ | 2006 11 18 | 704 | 0.8− | 0.8− |
| 2002 01 11 | 699 | (1.7− | 0.1−) | 2002 02 08 | 704 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 2002 01 11 | 699 | 1.2− | 0.5+ | 2002 02 08 | 704 | 0.9+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.2− |
| 2002 01 11 | 699 | (1.8− | 1.4−) | 2002 02 08 | 704 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2002 02 03 | 644 | 0.1− | 0.6− | 2002 02 12 | 704 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.6− | 0.5+ |
| 2002 02 03 | 644 | 0.3+ | 0.2− | 2002 02 12 | 704 | 0.5− | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 02 03 | 644 | 0.6+ | 0.3− | 2002 02 12 | 704 | 0.7+ | 0.5+ | 2006 11 24 | 691 | 1.4+ | 0.2− |
| 2002 02 04 | 644 | 0.7− | 0.1+ | 2002 02 12 | 704 | (0.7+ | 2.0−) | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 02 04 | 644 | 0.7− | 0.1+ | 2003 06 05 | 691 | 0.4− | 0.2− | | | | |
| 2002 02 04 | 644 | 0.4− | 0.0 | 2003 06 05 | 691 | 0.2+ | 0.0 | | | | |

## 2002 $CO_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.15047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17541486 | $\omega$ | 62.27250 | | −0.11645156 | −0.98377467 | |
| $a$ | 3.1605194 | $\Omega$ | 35.25143 | | +0.80751550 | −0.17378435 | |
| $e$ | 0.2853125 | $i$ | 13.67792 | | +0.57823676 | +0.04456905 | |
| $P$ | 5.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 704 | 1.5− | 0.4− | 2002 03 20 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2002 02 06 | 704 | 0.8− | 0.1− | 2002 03 20 | 644 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2002 02 06 | 704 | 0.7− | 0.7+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.6− | 0.7+ |
| 2002 02 06 | 704 | 0.1− | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2002 02 06 | 704 | 0.8− | 0.5+ | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.0 |
| 2002 02 07 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.8− | 0.3− |
| 2002 02 07 | 704 | 0.7+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2002 02 07 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2002 02 07 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.1− | 1.4− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 02 07 | 704 | (0.5+ | 2.0+) | 2006 10 19 | 703 | 0.6+ | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2002 02 08 | 704 | 0.5− | 1.0− | 2006 10 19 | 703 | 0.8− | 0.4+ | 2006 11 15 | 704 | (1.2+ | 1.7+) |
| 2002 02 08 | 704 | 0.7− | 0.2− | 2006 10 19 | 703 | (2.1− | 1.6−) | 2006 11 15 | 704 | 0.6+ | 0.0 |
| 2002 02 08 | 704 | 0.3− | 0.7− | 2006 10 20 | G96 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.7+ | 1.2+ |
| 2002 02 08 | 704 | 0.3− | 0.7− | 2006 10 20 | G96 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.5+ | 1.5+ |
| 2002 02 08 | 704 | (1.2+ | 1.6−) | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.8+ | 0.1− |
| 2002 02 21 | 704 | 1.2+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.9+ | 0.8+ |
| 2002 02 21 | 704 | 0.5− | 0.8+ | 2006 10 27 | 703 | 1.1+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 02 21 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 02 21 | 704 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2002 02 21 | 704 | 1.5+ | 0.3+ | 2006 10 27 | 703 | 0.7+ | 0.8− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2002 03 16 | 699 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2002 03 16 | 699 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.4+ |
| 2002 03 16 | 699 | 0.4+ | 0.7− | 2006 10 27 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2002 03 16 | 699 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.7− |
| 2002 03 20 | 644 | 0.5− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 03 20 | 644 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.4− |
| 2002 03 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.1− | | | | |
| 2002 03 20 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.3− | | | | |

## 2002 $CW_6$ = 2006 $SP_{154}$ = 2006 $SV_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.27159 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18273928 | $\omega$ | 63.85452 | | +0.33303777 | −0.94165818 | |
| $a$ | 3.0754932 | $\Omega$ | 7.22514 | | +0.66624479 | +0.19850291 | |
| $e$ | 0.4518677 | $i$ | 22.75125 | | +0.66723588 | +0.27180225 | |
| $P$ | 5.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 01 | 704 | 0.1+ | 0.8+ | 2002 02 21 | 704 | 0.7− | 0.4− | 2006 09 26 | 703 | 1.2− | 0.4− |
| 2002 02 01 | 704 | 0.8− | 0.2− | 2006 09 14 | 644 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2002 02 01 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2002 02 01 | 704 | 0.4+ | 0.7− | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.1− |
| 2002 02 01 | 704 | 0.3+ | 0.8− | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 09 26 | 703 | 0.7− | 0.1− |
| 2002 02 06 | 704 | 0.2+ | 1.0+ | 2006 09 14 | 703 | 0.7− | 0.5− | 2006 09 26 | 703 | 1.3+ | 0.4− |
| 2002 02 06 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.4+ | 0.9+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 2002 02 06 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 1.1+ | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.1− |
| 2002 02 06 | 704 | 0.8+ | 0.2+ | 2006 09 21 | 699 | (1.6+ | 0.4+) | 2006 09 27 | 703 | 0.3+ | 0.7+ |
| 2002 02 06 | 704 | 0.1+ | 0.7+ | 2006 09 21 | 699 | 1.1+ | 0.0 | 2006 09 27 | 703 | 0.7− | 0.4− |
| 2002 02 07 | 704 | 0.6+ | 0.4+ | 2006 09 21 | 699 | 0.5+ | 0.6− | 2006 09 30 | 703 | 0.9+ | 0.6− |
| 2002 02 07 | 704 | 0.2+ | 0.2− | 2006 09 21 | 699 | 0.1+ | 0.4− | 2006 09 30 | 703 | 1.0+ | 0.2+ |
| 2002 02 07 | 704 | 0.3− | 0.6− | 2006 09 26 | 704 | (0.2− | 1.7+) | 2006 09 30 | 703 | 0.1− | 0.7− |
| 2002 02 07 | 704 | 0.4− | 1.2− | 2006 09 26 | 704 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.7− |
| 2002 02 21 | 704 | 1.0+ | 0.8− | 2006 09 26 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 02 21 | 704 | 1.1− | 0.3+ | 2006 09 26 | 704 | 0.2− | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 02 21 | 704 | 1.1− | 0.0 | 2006 09 26 | 703 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 02 21 | 704 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.9− | 0.1− | | | | |

## 2002 $CA_7$ = 2006 $TJ_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.02994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18100263 | $\omega$ | 71.49528 | | −0.21839644 | −0.94431261 | |
| $a$ | 3.0951340 | $\Omega$ | 34.29230 | | +0.64587742 | −0.32893981 | |
| $e$ | 0.2925136 | $i$ | 25.90256 | | +0.73153630 | +0.00850304 | |
| $P$ | 5.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 699 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.6+ |
| 2002 01 13 | 699 | 0.7− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 2002 01 13 | 699 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.5− |
| 2002 01 13 | 699 | 1.1− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2002 02 01 | 704 | 1.5+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2002 02 01 | 704 | 0.6+ | 0.5− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2002 02 01 | 704 | 1.4+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4− | 1.5+ |
| 2002 02 01 | 704 | 1.0+ | 0.3− | 2006 11 01 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 1.0− | 0.0 |
| 2002 02 06 | 704 | 0.7− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2002 02 06 | 704 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 02 06 | 704 | 0.7− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 02 06 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 20 | 540 | 0.5+ | 0.1− |
| 2002 02 06 | 704 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 20 | 540 | 0.3+ | 0.3− |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (0.3− | 1.6+) | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (2.1− | 1.3+) | | | | |

**2002 $CM_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.29768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17741640 | $\omega$ | 77.17295 | | −0.25553903 | −0.95790416 | |
| $a$ | 3.1367040 | $\Omega$ | 28.68553 | | +0.74712153 | −0.28155185 | |
| $e$ | 0.2718945 | $i$ | 15.81813 | | +0.61360347 | −0.05610864 | |
| $P$ | 5.56 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.9− | 0.7+ | 2002 02 07 | 446 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2001 12 09 | 704 | 0.2+ | 0.7− | 2002 02 08 | 446 | 1.0− | 0.8+ | 2006 10 23 | 691 | 0.7− | 0.1+ |
| 2001 12 09 | 704 | 0.2+ | 0.2− | 2002 02 08 | 446 | (1.9− | 0.1−) | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2001 12 09 | 704 | 0.8− | 0.2− | 2002 02 08 | 446 | (2.2− | 0.5−) | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2001 12 09 | 704 | 0.3− | 0.9− | 2002 02 21 | 704 | 0.6+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 12 23 | 704 | 0.3− | 0.0 | 2002 02 21 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 12 23 | 704 | 0.2− | 0.2− | 2002 02 21 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.1− | 0.6− |
| 2001 12 23 | 704 | 0.6− | 0.5− | 2002 02 21 | 704 | 0.3+ | 0.6+ | 2006 10 29 | 704 | 0.0 | 0.2− |
| 2001 12 23 | 704 | 0.8− | 0.4− | 2002 02 21 | 704 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.8+ | 0.7− |
| 2001 12 23 | 704 | 0.5− | 0.6− | 2002 03 04 | 704 | 0.9+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 01 06 | 704 | 0.2+ | 0.3+ | 2002 03 04 | 704 | 0.4+ | 1.2+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2002 01 06 | 704 | 0.7+ | 0.5− | 2002 03 04 | 704 | (1.1− | 1.6+) | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 01 06 | 704 | 0.4+ | 0.1− | 2002 03 20 | 704 | 1.3+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 01 06 | 704 | 1.2+ | 0.6− | 2002 03 20 | 704 | 0.4+ | 1.3+ | 2006 11 09 | 644 | 0.4− | 0.2− |
| 2002 01 06 | 704 | 1.0+ | 0.8− | 2002 03 20 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.2− |
| 2002 01 21 | 699 | 0.1− | 0.1+ | 2002 03 20 | 704 | 0.4+ | 0.8+ | 2006 11 16 | 704 | 0.2− | 0.2+ |
| 2002 01 21 | 699 | 0.3− | 0.2+ | 2002 03 20 | 704 | 0.5+ | 0.1− | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2002 01 21 | 699 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2002 01 21 | 699 | 0.4− | 0.9+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2002 01 25 | 704 | 0.3+ | 0.6− | 2006 09 27 | G96 | 0.0 | 0.6− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 01 25 | 704 | 0.3− | 0.7− | 2006 09 27 | G96 | 0.3+ | 0.6− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 01 25 | 704 | 0.2− | 1.1− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2002 01 25 | 704 | 1.0− | 1.1− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 01 25 | 704 | (1.5− | 0.3−) | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2002 02 01 | 699 | 0.5− | 1.1+ | 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2002 02 01 | 699 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.3+ | 0.2− |
| 2002 02 01 | 699 | 0.7− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.6+ |
| 2002 02 01 | 699 | 0.9− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2002 02 06 | 678 | (0.7+ | 1.5−) | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.5+ |
| 2002 02 06 | 678 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2002 02 07 | 678 | (1.3− | 1.7−) | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4+ | 1.1+ |
| 2002 02 07 | 678 | (2.7− | 0.8+) | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2002 02 07 | 446 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.6+ |

**2002 $CR_8$ = 2006 $WP_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.47652 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17475062 | $\omega$ | 248.18988 | | −0.87752438 | −0.47714699 | |
| $a$ | 3.1685232 | $\Omega$ | 263.28304 | | +0.45581287 | −0.79902994 | |
| $e$ | 0.1040762 | $i$ | 2.75684 | | +0.14894827 | −0.36589877 | |
| $P$ | 5.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 26 | 644 | 0.2− | 0.4+ | 2002 02 11 | 704 | 0.9+ | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2002 01 26 | 644 | 0.0 | 0.1+ | 2002 02 11 | 704 | 0.1− | 1.0+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 01 26 | 644 | 0.0 | 0.1+ | 2003 05 01 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.4+ | 0.0 |
| 2002 02 05 | 644 | 0.2− | 0.1+ | 2003 05 01 | 691 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 02 05 | 644 | 0.3− | 0.3+ | 2003 05 01 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 02 05 | 644 | 0.4− | 0.5+ | 2005 10 30 | G96 | 0.4− | 0.9+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 02 06 | 644 | 0.3− | 0.7+ | 2005 10 30 | G96 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2002 02 06 | 644 | 0.4+ | 0.2+ | 2005 10 30 | G96 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.3− | 0.1+ |
| 2002 02 06 | 644 | 0.8+ | 0.2+ | 2005 10 30 | G96 | 0.4− | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2002 02 11 | 704 | 0.1+ | 0.5− | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2002 02 11 | 704 | 0.1− | 1.0− | 2006 11 01 | G96 | 0.1+ | 0.2+ | | | | |
| 2002 02 11 | 704 | 0.3− | 0.8− | 2006 11 01 | G96 | 0.4+ | 0.3− | | | | |

**2002 $CR_9$ = 2002 $JG_{118}$ = 1987 $DD_7$ = 1997 $UJ_9$**

Id. Minor Planet Center (*MPO* 35151, unpublished), M. E. Sansaturio (d, *MPO* 37746)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.64485 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26702807 | $\omega$ | 248.30703 | | −0.05545111 | −0.98494244 | |
| $a$ | 2.3883508 | $\Omega$ | 206.53133 | | +0.99660701 | −0.04460806 | |
| $e$ | 0.3029389 | $i$ | 21.50511 | | +0.06082461 | −0.16702844 | |
| $P$ | 3.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 02 27 | 413 | 0.4+ | 0.1− | 2002 03 21 | 699 | 0.2+ | 0.6+ | 2004 09 14 | 704 | 0.6+ | 0.8+ |
| 1995 04 25 | 691 | 0.3− | 0.6+ | 2002 03 21 | 699 | 0.2+ | 0.1+ | 2004 09 14 | 704 | 0.5+ | 0.3+ |
| 1995 04 25 | 691 | 0.1− | 0.3− | 2002 03 21 | 699 | 0.3+ | 0.4+ | 2004 09 16 | 699 | 1.6+ | 1.3− |
| 1995 04 25 | 691 | 0.0 | 0.1− | 2002 03 21 | 699 | 0.3− | 0.4+ | 2004 09 16 | 699 | 1.0+ | 0.6− |
| 1997 10 30 | 566 | 0.7− | 0.4+ | 2002 05 05 | 699 | 0.4+ | 1.0− | 2004 09 16 | 699 | 0.4+ | 0.5+ |
| 1997 10 30 | 566 | 0.3− | 0.6+ | 2002 05 05 | 699 | 1.2+ | 0.3− | 2004 09 16 | 699 | 0.5− | 1.4+ |
| 1997 10 30 | 566 | 0.8− | 0.5+ | 2002 05 05 | 699 | 1.4+ | 0.2+ | 2004 09 24 | 704 | 0.2+ | 0.1− |
| 1997 10 31 | 673 | 0.4+ | 0.2− | 2002 05 05 | 699 | 0.7− | 0.0 | 2004 09 24 | 704 | 1.0− | 1.2+ |
| 1997 10 31 | 673 | 0.6+ | 0.2− | 2002 05 08 | 704 | 1.3− | 0.4+ | 2004 09 24 | 704 | 1.8− | 1.1− |
| 1997 11 02 | 673 | (1.9− | 4.7−) | 2002 05 08 | 704 | 1.4− | 0.2− | 2006 04 18 | 699 | 0.7+ | 0.4− |
| 2002 02 06 | 704 | 0.4+ | 0.2− | 2002 05 08 | 704 | 0.6− | 1.4+ | 2006 04 18 | 699 | 0.3− | 1.0− |
| 2002 02 06 | 704 | 0.2− | 1.1− | 2002 05 08 | 704 | 0.7+ | 0.1− | 2006 04 18 | 699 | 0.2+ | 0.3+ |
| 2002 02 06 | 704 | 0.2+ | 1.2− | 2004 09 11 | 704 | 0.4− | 0.3+ | 2006 04 18 | 699 | 0.6+ | 0.4+ |
| 2002 02 06 | 704 | 0.7− | 0.0 | 2004 09 11 | 704 | 0.9− | 0.1− | 2006 04 18 | 644 | 0.1− | 0.2− |
| 2002 02 06 | 704 | 0.3− | 0.1− | 2004 09 11 | 704 | 0.1− | 0.1+ | 2006 04 18 | 644 | 0.0 | 0.1+ |
| 2002 02 07 | 704 | 1.2+ | 0.6+ | 2004 09 11 | 704 | 0.3+ | 0.1− | 2006 04 18 | 644 | 0.6− | 0.2+ |
| 2002 02 07 | 704 | 0.0 | 0.5+ | 2004 09 11 | 704 | 0.2− | 0.0 | 2006 04 19 | 703 | 0.9+ | 0.1+ |
| 2002 02 07 | 704 | 0.0 | 0.5− | 2004 09 14 | 704 | 0.3− | 0.5+ | 2006 04 19 | 703 | 1.3− | 0.6+ |
| 2002 02 07 | 704 | 0.2− | 0.5+ | 2004 09 14 | 704 | 0.4− | 0.1+ | 2006 04 19 | 703 | 0.4− | 0.5+ |
| 2002 02 07 | 704 | 0.5+ | 0.5+ | 2004 09 14 | 704 | 1.7+ | 0.7− | 2006 04 19 | 703 | 0.5− | 0.0 |

**2002 $CX_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.97065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37294980 | $\omega$ | 80.75819 | | −0.91523460 | +0.14515732 | |
| $a$ | 1.9114772 | $\Omega$ | 106.87359 | | −0.25493205 | −0.93100974 | |
| $e$ | 0.0859304 | $i$ | 23.12732 | | +0.31201806 | −0.33488837 | |
| $P$ | 2.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.6+ | 0.1− | 2002 04 22 | 704 | 0.5+ | 0.3+ | 2002 06 01 | 704 | 1.1+ | 0.0 |
| 2002 01 09 | 704 | 1.1+ | 0.7+ | 2002 04 22 | 704 | 0.6− | 0.3− | 2002 06 01 | 704 | 0.4+ | 0.1+ |
| 2002 01 09 | 704 | 0.2− | 0.7+ | 2002 04 22 | 704 | 0.2+ | 0.8− | 2002 06 19 | 704 | (2.4+ | 0.9+) |
| 2002 01 09 | 704 | 0.1− | 0.4+ | 2002 04 22 | 704 | 0.1+ | 0.6− | 2002 06 19 | 704 | 0.9+ | 0.7+ |
| 2002 02 06 | 704 | 0.0 | 0.0 | 2002 04 26 | 644 | 0.3+ | 0.2+ | 2002 06 19 | 704 | 0.7+ | 1.2+ |
| 2002 02 06 | 704 | 0.2− | 0.1− | 2002 04 26 | 644 | 0.0 | 0.1+ | 2002 06 19 | 704 | (0.4+ | 1.7+) |
| 2002 02 06 | 291 | 0.4− | 0.0 | 2002 04 26 | 644 | 0.1+ | 0.7+ | 2002 06 23 | 644 | 0.6+ | 1.0+ |
| 2002 02 06 | 291 | 0.4− | 0.2− | 2002 05 04 | 704 | 0.6− | 0.1− | 2002 06 23 | 644 | 0.5+ | 1.0+ |
| 2002 02 06 | 704 | 0.3+ | 0.4− | 2002 05 04 | 704 | 0.8− | 0.6− | 2002 06 23 | 644 | 0.1+ | 1.0+ |
| 2002 02 06 | 291 | 0.5− | 0.2− | 2002 05 04 | 704 | 0.9− | 0.4− | 2003 11 26 | 704 | 0.1− | 0.5+ |
| 2002 02 06 | 704 | 0.4+ | 0.3+ | 2002 05 04 | 704 | (1.6+ | 0.7−) | 2003 11 26 | 704 | 0.3− | 0.4− |
| 2002 02 06 | 704 | 0.2+ | 0.0 | 2002 05 04 | 704 | 1.2− | 1.0− | 2003 11 26 | 704 | 0.8− | 0.1− |
| 2002 02 07 | 704 | 0.0 | 0.2− | 2002 05 05 | 704 | 0.0 | 0.3+ | 2003 11 26 | 704 | 0.0 | 0.5− |
| 2002 02 07 | 704 | 0.3− | 0.1+ | 2002 05 05 | 704 | 0.1+ | 0.4+ | 2003 11 26 | 704 | 0.1− | 1.2+ |
| 2002 02 07 | 704 | 0.2+ | 0.5− | 2002 05 05 | 704 | 0.1+ | 0.4+ | 2006 11 05 | 644 | 0.5− | 0.1+ |
| 2002 02 07 | 704 | 0.2− | 0.0 | 2002 05 05 | 704 | 0.1− | 0.0 | 2006 11 05 | 644 | 0.5+ | 0.1+ |
| 2002 02 07 | 704 | 0.0 | 0.4− | 2002 05 05 | 704 | 0.1+ | 0.5+ | 2006 11 05 | 644 | 0.5+ | 0.3+ |
| 2002 03 05 | 704 | 0.8+ | 0.3− | 2002 05 18 | 699 | 0.0 | 1.0+ | 2006 11 28 | 704 | 0.7− | 0.1− |
| 2002 03 05 | 704 | 0.3+ | 0.2− | 2002 05 18 | 699 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.7+ |
| 2002 03 05 | 704 | 0.2+ | 0.4− | 2002 05 18 | 699 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.0 | 0.5+ |
| 2002 03 05 | 704 | 0.7+ | 0.8− | 2002 05 18 | 699 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.3− | 1.0+ |
| 2002 03 05 | 704 | 0.5+ | 0.1− | 2002 06 01 | 704 | 0.3− | 1.2+ | 2006 11 28 | 704 | 0.1+ | 0.9+ |

**2002 CF$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.44116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35844442 | $\omega$ | 104.52768 | | +0.07326188 | −0.99164180 | |
| $a$ | 1.9627041 | $\Omega$ | 340.31487 | | +0.74971408 | +0.12498678 | |
| $e$ | 0.1111804 | $i$ | 18.37797 | | +0.65769408 | −0.03201307 | |
| $P$ | 2.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 704 | 0.0 | 0.9+ | 2002 02 10 | 704 | (0.2+ | 1.9+) | 2002 03 14 | 704 | 0.1+ | 0.4+ |
| 2002 02 06 | 704 | 0.0 | 0.0 | 2002 02 10 | 704 | 0.1− | 1.5+ | 2002 03 14 | 704 | 0.0 | 0.1+ |
| 2002 02 06 | 704 | 0.0 | 1.1− | 2002 02 10 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 2002 02 06 | 704 | 0.5− | 0.5− | 2002 02 10 | 704 | 0.5+ | 1.2+ | 2006 09 19 | 699 | 0.2+ | 0.8+ |
| 2002 02 07 | 704 | 0.2+ | 0.5+ | 2002 02 10 | 704 | 0.8+ | 1.3+ | 2006 09 19 | 699 | 1.0− | 0.1− |
| 2002 02 07 | 704 | 0.3+ | 0.1− | 2002 03 05 | 699 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.1− | 0.3+ |
| 2002 02 07 | 704 | 0.6− | 0.3− | 2002 03 05 | 699 | 1.0− | 0.3− | 2006 09 27 | 703 | 0.5− | 0.9− |
| 2002 02 07 | 704 | 0.0 | 0.4− | 2002 03 05 | 699 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.7+ | 0.8+ |
| 2002 02 07 | 704 | 0.3− | 0.5− | 2002 03 05 | 699 | 0.4− | 0.2− | 2006 09 27 | 703 | 0.2− | 0.1− |
| 2002 02 08 | 704 | 0.4+ | 0.3− | 2002 03 06 | 704 | 0.0 | 1.0− | 2006 09 27 | 703 | 1.2− | 1.2− |
| 2002 02 08 | 704 | 0.3− | 0.4− | 2002 03 06 | 704 | 0.6− | 1.2− | 2006 10 20 | 703 | 0.1+ | 0.2− |
| 2002 02 08 | 704 | 0.5+ | 0.3− | 2002 03 06 | 704 | 0.0 | 1.4− | 2006 10 20 | 703 | 0.8+ | 0.5− |
| 2002 02 08 | 704 | 0.0 | 0.7− | 2002 03 12 | 644 | 0.6+ | 0.4+ | 2006 10 20 | 703 | 1.1− | 1.4+ |
| 2002 02 08 | 704 | 0.5+ | 0.1− | 2002 03 12 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 703 | 0.8+ | 0.7− |
| 2002 02 08 | 704 | 0.5− | 0.5+ | 2002 03 12 | 644 | 0.3+ | 0.2+ | 2006 10 26 | 703 | 1.3− | 0.2+ |
| 2002 02 08 | 704 | 0.1+ | 0.8− | 2002 03 14 | 704 | 0.8+ | 1.1+ | 2006 10 26 | 703 | 0.2+ | 0.7− |
| 2002 02 08 | 704 | 1.0− | 0.8+ | 2002 03 14 | 704 | 0.1+ | 0.6+ | 2006 10 26 | 703 | 2.0+ | 1.6+ |
| 2002 02 08 | 704 | 0.4− | 0.3− | 2002 03 14 | 704 | 0.4+ | 0.1+ | 2006 10 26 | 703 | 0.4+ | 0.2− |

**2002 CX$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.02952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23278062 | $\omega$ | 22.29941 | | −0.98185576 | +0.18186511 | |
| $a$ | 2.6172076 | $\Omega$ | 167.80503 | | −0.18815856 | −0.96955634 | |
| $e$ | 0.4395267 | $i$ | 14.72876 | | +0.02357170 | −0.16396823 | |
| $P$ | 4.23 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 08 | 608 | 0.1− | 0.1+ | 2002 03 12 | 704 | 0.3+ | 0.1− | 2002 04 09 | 704 | 0.7+ | 0.6− |
| 2001 01 08 | 608 | 0.3− | 1.7+ | 2002 03 12 | 704 | 0.1− | 0.1+ | 2002 04 09 | 704 | 0.7+ | 0.5− |
| 2002 02 07 | 704 | 0.1− | 1.1− | 2002 03 12 | 704 | 0.2− | 0.5− | 2002 04 10 | 704 | 0.4− | 0.1+ |
| 2002 02 07 | 704 | 0.3+ | 1.1− | 2002 03 12 | 704 | 0.5− | 0.4− | 2002 04 10 | 704 | 0.2− | 0.2+ |
| 2002 02 07 | 704 | 0.7− | 0.6− | 2002 03 12 | 704 | 0.2+ | 0.6− | 2002 04 10 | 704 | 0.1− | 0.1+ |
| 2002 02 07 | 704 | 0.2− | 0.3− | 2002 03 13 | 691 | 0.3− | 0.3+ | 2002 04 10 | 704 | 0.4− | 0.0 |
| 2002 02 08 | 946 | 1.4− | 1.1− | 2002 03 13 | 691 | 0.2− | 0.4+ | 2002 04 10 | 704 | 0.0 | 0.2+ |
| 2002 02 08 | 946 | (4.3− | 2.5−) | 2002 03 13 | 691 | 0.3− | 0.4+ | 2002 04 10 | 644 | 0.1− | 0.0 |
| 2002 02 08 | 946 | (5.2− | 2.3−) | 2002 03 15 | 333 | 0.9− | 0.3− | 2002 04 10 | 644 | 0.2− | 0.1+ |
| 2002 02 08 | 649 | 0.9− | 0.2− | 2002 03 15 | 333 | 0.8− | 0.3+ | 2002 04 10 | 644 | 0.4− | 0.0 |
| 2002 02 08 | 704 | 1.7+ | 0.1− | 2002 03 15 | 333 | 0.2− | 0.2− | 2002 04 20 | 704 | 0.5+ | 0.1+ |
| 2002 02 08 | 649 | 0.9+ | 0.6− | 2002 03 15 | 333 | 0.8− | 0.5+ | 2002 04 20 | 704 | 0.1+ | 0.1+ |
| 2002 02 08 | 649 | 0.4+ | 0.3+ | 2002 03 15 | 333 | 0.0 | 0.2+ | 2002 04 20 | 704 | (2.5+ | 0.9+) |
| 2002 02 08 | 649 | 0.2− | 0.3− | 2002 03 15 | 333 | 0.4− | 0.2− | 2002 04 20 | 704 | 0.0 | 0.0 |
| 2002 02 08 | 704 | 0.4+ | 0.2− | 2002 03 15 | 333 | 0.6− | 0.5+ | 2002 04 20 | 704 | 0.5+ | 0.4+ |
| 2002 02 08 | 704 | 0.6+ | 0.4− | 2002 03 15 | 333 | 0.6+ | 0.3+ | 2002 04 21 | 704 | 0.5+ | 0.3− |
| 2002 02 08 | 704 | 0.3+ | 0.5− | 2002 03 19 | 704 | 1.6+ | 0.5+ | 2002 04 21 | 704 | 0.5+ | 0.3− |
| 2002 02 08 | 704 | 1.7+ | 0.5+ | 2002 03 19 | 704 | 1.0+ | 0.9+ | 2002 04 21 | 704 | 0.4+ | 0.3− |
| 2002 02 08 | 704 | 0.4+ | 0.1− | 2002 03 19 | 704 | (2.2+ | 0.8+) | 2002 04 21 | 704 | 0.6+ | 0.2− |
| 2002 02 08 | 704 | 1.3+ | 0.4− | 2002 03 19 | 704 | 1.4+ | 1.5+ | 2002 04 21 | 704 | 0.4+ | 0.4− |
| 2002 02 08 | 704 | 0.6+ | 0.7− | 2002 03 20 | 704 | 1.6− | 0.4− | 2002 05 03 | 644 | 0.0 | 0.1+ |
| 2002 02 08 | 704 | 1.5+ | 1.0− | 2002 03 20 | 704 | 0.1− | 0.2− | 2002 05 03 | 644 | 0.0 | 0.2+ |
| 2002 02 08 | 428 | 0.5− | 0.1− | 2002 03 20 | 704 | 0.2− | 0.3− | 2002 05 03 | 644 | 0.2− | 0.1+ |
| 2002 02 08 | 422 | 0.0 | 0.5+ | 2002 03 20 | 704 | 0.1− | 0.3− | 2002 05 06 | 704 | 0.2+ | 0.5− |
| 2002 02 08 | 422 | 0.3− | 1.1+ | 2002 03 20 | 704 | 0.2− | 0.2− | 2002 05 06 | 704 | 0.2− | 0.4− |
| 2002 02 08 | 428 | 0.6+ | 0.1− | 2002 03 20 | 704 | 0.2− | 0.9+ | 2002 05 06 | 704 | 0.5+ | 0.4− |
| 2002 02 12 | 413 | 0.6− | 0.2+ | 2002 03 20 | 704 | 0.4+ | 0.6+ | 2002 05 06 | 704 | 0.5− | 0.3− |
| 2002 02 12 | 413 | 0.2− | 0.1+ | 2002 03 20 | 704 | 0.1+ | 0.6+ | 2002 05 06 | 704 | 0.7− | 0.5+ |
| 2002 02 12 | 413 | 0.2− | 0.1− | 2002 03 20 | 704 | 0.2+ | 1.0+ | 2002 05 07 | 056 | (1.7− | 3.2+) |
| 2002 02 20 | 761 | (2.9− | 0.0 ) | 2002 03 20 | 704 | 0.1− | 0.9+ | 2002 05 07 | 056 | 0.8− | 1.7+ |
| 2002 02 20 | 704 | 0.4+ | 0.2− | 2002 03 21 | 704 | 0.1− | 0.3+ | 2002 05 27 | 644 | 0.2+ | 0.1− |
| 2002 02 20 | 761 | (2.7− | 1.7−) | 2002 03 21 | 704 | 0.1− | 0.1+ | 2002 05 27 | 644 | 0.0 | 0.3− |
| 2002 02 20 | 704 | 0.3+ | 1.0− | 2002 03 21 | 704 | 0.2− | 0.2+ | 2002 05 27 | 644 | 0.3+ | 0.3− |
| 2002 02 20 | 704 | (0.5+ | 2.3+) | 2002 03 21 | 704 | 0.2− | 0.1+ | 2002 06 02 | 704 | 0.5+ | 0.2− |
| 2002 02 20 | 704 | 0.2+ | 0.9− | 2002 03 21 | 704 | 0.5− | 0.0 | 2002 06 02 | 704 | 0.2+ | 0.0 |
| 2002 02 20 | 704 | (0.9+ | 2.2+) | 2002 04 06 | 704 | 0.2− | 0.2− | 2002 06 02 | 704 | 0.3+ | 1.1− |
| 2002 02 20 | 761 | 0.8− | 0.9− | 2002 04 06 | 704 | 0.3− | 0.0 | 2002 06 02 | 704 | 0.8+ | 0.0 |
| 2002 02 20 | 704 | 0.3+ | 0.4− | 2002 04 06 | 704 | 0.2− | 0.0 | 2002 06 02 | 704 | 0.1− | 0.1− |
| 2002 02 20 | 704 | (1.1+ | 2.0+) | 2002 04 06 | 215 | 0.3+ | 0.5− | 2002 06 15 | 644 | 0.1+ | 0.0 |
| 2002 02 20 | 704 | 0.4+ | 0.3− | 2002 04 06 | 215 | 0.2+ | 0.2− | 2002 06 15 | 644 | 0.0 | 0.0 |
| 2002 02 20 | 704 | (1.1+ | 2.1+) | 2002 04 06 | 215 | 0.1− | 0.2+ | 2002 06 15 | 644 | 0.1+ | 0.1+ |
| 2002 02 21 | 649 | 0.1− | 0.3+ | 2002 04 08 | 704 | 0.4− | 0.5− | 2006 04 25 | H85 | 0.1+ | 0.6+ |
| 2002 02 21 | 649 | 0.2− | 0.3+ | 2002 04 08 | 704 | 0.1− | 0.2− | 2006 04 25 | H85 | 0.2− | 0.3+ |
| 2002 02 21 | 649 | 0.2− | 0.2+ | 2002 04 08 | 704 | 0.1+ | 0.3− | 2006 04 26 | G96 | 0.2+ | 0.1− |
| 2002 02 21 | 649 | 0.0 | 0.3+ | 2002 04 08 | 704 | 0.4− | 0.2− | 2006 04 26 | G96 | 0.1+ | 0.0 |
| 2002 03 04 | 198 | 0.5− | 0.1− | 2002 04 08 | 704 | 0.1− | 0.6− | 2006 04 26 | G96 | 0.3− | 0.3− |
| 2002 03 04 | 198 | 0.3− | 0.1+ | 2002 04 09 | 704 | 0.4+ | 0.5− | 2006 04 26 | G96 | 0.1+ | 0.3− |
| 2002 03 04 | 198 | 0.0 | 0.0 | 2002 04 09 | 704 | (0.1− | 2.3−) | | | | |

**2002 CE$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.04949 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20941802 | $\omega$ | 204.94871 | | −0.94898142 | −0.28198347 | |
| $a$ | 2.8084068 | $\Omega$ | 317.85810 | | +0.31291599 | −0.78681895 | |
| $e$ | 0.0752038 | $i$ | 12.14273 | | +0.03895962 | −0.54900023 | |
| $P$ | 4.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.3− | 0.2− | 2002 02 06 | 704 | 0.4− | 0.2+ | 2002 02 12 | 704 | 0.2+ | 0.6− |
| 2001 12 17 | 704 | 1.6+ | 0.9− | 2002 02 06 | 704 | 0.1+ | 0.4+ | 2002 02 12 | 704 | 0.5+ | 0.2+ |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2002 02 06 | 704 | 0.1− | 0.1− | 2002 02 20 | 704 | 0.9− | 0.3+ |
| 2001 12 17 | 704 | 0.4+ | 0.1− | 2002 02 06 | 704 | 0.9− | 0.8+ | 2002 02 20 | 704 | 0.2− | 1.3+ |
| 2001 12 19 | 644 | 0.1+ | 0.1+ | 2002 02 07 | 704 | 0.0 | 0.1+ | 2002 02 20 | 704 | 0.4− | 0.2+ |
| 2001 12 19 | 644 | 0.1− | 0.0 | 2002 02 07 | 704 | (0.7+ | 2.2+) | 2005 11 12 | 703 | 0.1+ | 1.6+ |
| 2001 12 19 | 644 | 0.5+ | 0.0 | 2002 02 07 | 704 | 0.4− | 0.1+ | 2005 11 12 | 703 | 0.6+ | 0.6− |
| 2002 01 08 | 704 | 0.6+ | 0.6+ | 2002 02 07 | 704 | 0.1+ | 0.1+ | 2005 11 12 | 703 | 0.7− | 1.4− |
| 2002 01 08 | 704 | 0.3+ | 0.3+ | 2002 02 10 | 704 | 0.1− | 0.5+ | 2005 11 12 | 703 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | 0.6+ | 0.4+ | 2002 02 10 | 704 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2002 01 08 | 704 | 0.1+ | 0.6+ | 2002 02 10 | 704 | 0.4− | 0.9− | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 01 08 | 644 | 0.8+ | 0.5+ | 2002 02 10 | 704 | 0.4− | 0.8− | 2006 11 24 | G96 | 0.3− | 0.7− |
| 2002 01 09 | 644 | 0.2− | 0.0 | 2002 02 12 | 704 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.3− | 0.7− |
| 2002 01 09 | 644 | 0.1− | 0.2− | 2002 02 12 | 704 | 0.2− | 0.3+ | | | | |
| 2002 01 09 | 644 | 0.3− | 0.1− | 2002 02 12 | 704 | 0.1+ | 1.5− | | | | |

**2002 CK$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.85137 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25879828 | $\omega$ | 85.66416 | | −0.97521330 | −0.21432686 | |
| $a$ | 2.4387192 | $\Omega$ | 81.95303 | | +0.17452458 | −0.89782324 | |
| $e$ | 0.1499019 | $i$ | 3.18320 | | +0.13601541 | −0.38467833 | |
| $P$ | 3.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.1+ | 0.6+ | 2002 02 06 | 704 | 0.0 | 0.5− | 2006 02 06 | 703 | 0.3− | 0.3− |
| 2002 01 09 | 704 | 1.1− | 0.5+ | 2002 02 07 | 704 | 0.2− | 0.3− | 2006 02 25 | 704 | 0.1− | 0.7+ |
| 2002 01 09 | 704 | 0.7+ | 0.1+ | 2002 02 07 | 704 | 0.4− | 0.9+ | 2006 02 25 | 704 | 0.5+ | 0.7+ |
| 2002 01 09 | 704 | 0.1+ | 1.9− | 2002 02 07 | 704 | 0.2+ | 0.5+ | 2006 02 25 | 704 | 0.4− | 0.8+ |
| 2002 01 14 | 704 | 0.0 | 0.2− | 2002 02 07 | 704 | 0.7+ | 0.4+ | 2006 02 25 | 704 | 0.5− | 1.1+ |
| 2002 01 14 | 704 | 0.3+ | 0.3+ | 2006 02 01 | 691 | 0.1− | 0.1− | 2006 03 03 | 699 | 0.6− | 1.1− |
| 2002 01 14 | 704 | 0.2+ | 0.1+ | 2006 02 01 | 691 | 0.0 | 0.3− | 2006 03 03 | 699 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 0.2+ | 0.2+ | 2006 02 01 | 691 | 0.1+ | 0.1− | 2006 03 03 | 699 | 0.7+ | 0.2− |
| 2002 01 14 | 704 | 0.2+ | 0.4− | 2006 02 06 | 703 | 1.6+ | 0.9+ | 2006 03 03 | 699 | 0.6+ | 0.7− |
| 2002 02 06 | 704 | 1.0− | 0.7+ | 2006 02 06 | 703 | 0.6− | 0.0 | | | | |
| 2002 02 06 | 704 | 0.2+ | 0.3− | 2006 02 06 | 703 | 0.8− | 0.9− | | | | |

**2002 CE$_{18}$ = 1999 JM$_{130}$ = 2006 FZ$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.17162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26626339 | $\omega$ | 229.83226 | | +0.03718859 | +0.99579337 | |
| $a$ | 2.3929213 | $\Omega$ | 42.52715 | | −0.87506606 | +0.07291758 | |
| $e$ | 0.0939786 | $i$ | 7.11657 | | −0.48257269 | −0.05548500 | |
| $P$ | 3.70 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 08 | 699 | 0.1− | 0.3+ | 2002 02 10 | 704 | (0.7+ | 2.0−) | 2004 11 09 | 703 | 0.2− | 0.5− |
| 1999 05 08 | 699 | 0.5+ | 0.3+ | 2002 02 10 | 704 | 0.2− | 0.1− | 2004 12 11 | 703 | 0.7− | 0.4− |
| 1999 05 08 | 699 | 1.2+ | 0.5+ | 2002 02 10 | 704 | 0.3+ | 0.1+ | 2004 12 11 | 703 | 0.5+ | 0.3+ |
| 1999 05 13 | 704 | 0.8+ | 0.9− | 2002 02 12 | 704 | 0.3+ | 0.3− | 2004 12 11 | 703 | 0.6+ | 0.3+ |
| 1999 05 13 | 704 | (0.3+ | 2.0+) | 2002 02 12 | 704 | 0.3+ | 0.2+ | 2004 12 11 | 703 | 1.0+ | 0.6+ |
| 1999 05 13 | 704 | 1.1− | 0.4− | 2002 02 12 | 704 | 0.5− | 0.2+ | 2006 03 24 | 699 | 0.4− | 0.3− |
| 1999 05 13 | 704 | 0.6− | 1.8+ | 2002 02 12 | 704 | 0.2− | 0.4+ | 2006 03 24 | 699 | 0.6− | 0.2− |
| 2002 02 06 | 704 | 0.2− | 0.1+ | 2002 02 12 | 704 | 0.2− | 0.1+ | 2006 03 24 | 699 | 0.5− | 0.5− |
| 2002 02 06 | 704 | 0.5+ | 0.5+ | 2002 02 13 | 704 | 0.1− | 0.7− | 2006 03 24 | 699 | 0.1+ | 0.3− |
| 2002 02 06 | 704 | (1.6− | 0.4+) | 2002 02 13 | 704 | 1.3− | 0.4− | 2006 04 02 | 703 | 0.6+ | 0.6− |
| 2002 02 06 | 704 | 0.4− | 0.3+ | 2002 02 13 | 704 | 1.4+ | 0.0 | 2006 04 02 | 703 | 0.4+ | 0.4− |
| 2002 02 07 | 704 | 0.9+ | 1.2+ | 2002 02 13 | 704 | 0.6− | 0.2+ | 2006 04 02 | 703 | 0.4− | 0.8− |
| 2002 02 07 | 704 | 0.0 | 0.0 | 2004 11 09 | 703 | 0.0 | 0.2+ | 2006 04 02 | 703 | 0.5− | 0.5+ |
| 2002 02 07 | 704 | 0.6+ | 0.1+ | 2004 11 09 | 703 | 1.1− | 0.5− | | | | |
| 2002 02 07 | 704 | 0.2− | 0.1+ | 2004 11 09 | 703 | 0.0 | 0.1+ | | | | |

**2002 CZ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.59505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17528893 | $\omega$ | 191.25918 | | −0.98451800 | −0.17053315 | |
| $a$ | 3.1620330 | $\Omega$ | 338.79208 | | +0.16826370 | −0.85469468 | |
| $e$ | 0.2079738 | $i$ | 6.43291 | | +0.04910830 | −0.49032178 | |
| $P$ | 5.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.3− | 0.4+ | 2002 02 06 | 704 | 0.0 | 0.6+ | 2002 02 12 | 704 | 0.2− | 0.4− |
| 2002 01 08 | 704 | 0.2+ | 0.5− | 2002 02 06 | 704 | 0.2− | 0.1+ | 2002 02 12 | 704 | 0.1− | 0.3− |
| 2002 01 08 | 704 | 0.1+ | 0.5− | 2002 02 06 | 704 | 0.6+ | 0.3− | 2002 02 12 | 704 | 0.2+ | 0.2− |
| 2002 01 10 | 644 | 0.1− | 0.3− | 2002 02 07 | 704 | 0.7− | 0.4− | 2002 04 06 | 621 | 0.7+ | 0.1− |
| 2002 01 10 | 644 | 0.1+ | 0.5− | 2002 02 07 | 704 | 0.5− | 0.6+ | 2002 04 06 | 621 | 0.3+ | 0.4− |
| 2002 01 10 | 644 | 0.5+ | 0.0 | 2002 02 07 | 704 | 0.1− | 0.1+ | 2002 04 06 | 621 | 1.1− | 0.3+ |
| 2002 01 20 | 699 | 0.3+ | 0.3− | 2002 02 07 | 704 | 0.2− | 1.0+ | 2005 11 03 | G96 | 0.2− | 0.1+ |
| 2002 01 20 | 699 | 0.8+ | 0.4+ | 2002 02 10 | 704 | 0.0 | 0.3− | 2005 11 03 | G96 | 0.3− | 0.1− |
| 2002 01 20 | 699 | 1.4− | 0.7+ | 2002 02 10 | 704 | 0.1+ | 0.0 | 2005 11 03 | G96 | 0.3+ | 0.6+ |
| 2002 01 20 | 699 | 0.8+ | 1.9+ | 2002 02 10 | 704 | 0.3+ | 0.1− | 2005 11 03 | G96 | 0.4− | 0.5+ |
| 2002 02 03 | 699 | 0.0 | 0.7+ | 2002 02 10 | 704 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2002 02 03 | 699 | 0.3+ | 1.1− | 2002 02 10 | 704 | 0.4+ | 0.9− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2002 02 03 | 699 | 0.7− | 0.3+ | 2002 02 12 | 704 | 0.4− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2002 02 03 | 699 | 0.0 | 0.2− | 2002 02 12 | 704 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.3− |

**2002 CF$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.33731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18337594 | $\omega$ | 273.01121 | | +0.65507974 | −0.73669978 | |
| $a$ | 3.0683707 | $\Omega$ | 134.52902 | | +0.75230734 | +0.61539872 | |
| $e$ | 0.3437996 | $i$ | 13.61074 | | +0.07002998 | +0.28028173 | |
| $P$ | 5.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.0 | 0.1− | 2002 02 03 | 608 | 0.4− | 0.2− | 2002 02 11 | 704 | 0.1+ | 0.5+ |
| 2001 12 17 | 704 | 0.6− | 0.1+ | 2002 02 05 | 644 | 0.2+ | 0.3+ | 2002 03 04 | 291 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.1+ | 0.3− | 2002 02 05 | 644 | 0.2+ | 0.3− | 2002 03 04 | 291 | 0.8+ | 0.3− |
| 2001 12 17 | 704 | 0.8+ | 0.3+ | 2002 02 05 | 644 | 0.4+ | 0.5+ | 2002 03 04 | 291 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2002 02 07 | 704 | 0.3− | 0.4+ | 2006 11 10 | 704 | 0.3− | 0.5− |
| 2002 01 13 | 704 | 0.1− | 0.1− | 2002 02 07 | 704 | 0.6+ | 0.4− | 2006 11 10 | 704 | 0.4+ | 0.5− |
| 2002 01 13 | 704 | 0.7− | 0.4− | 2002 02 07 | 704 | 0.5− | 0.2− | 2006 11 10 | 704 | 0.4− | 0.9+ |
| 2002 01 13 | 704 | 0.7− | 0.6− | 2002 02 07 | 704 | 0.5− | 0.7− | 2006 11 10 | 704 | 0.6+ | 0.1− |
| 2002 01 13 | 704 | 0.5− | 0.3+ | 2002 02 07 | 608 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2002 01 13 | 704 | 0.2+ | 0.9+ | 2002 02 07 | 608 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2002 01 22 | 704 | 0.9+ | 0.3+ | 2002 02 07 | 608 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2002 01 22 | 704 | 0.1+ | 1.1− | 2002 02 08 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 1.1+ | 0.0 |
| 2002 01 22 | 704 | 0.5+ | 1.2− | 2002 02 08 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.2− | 0.5− |
| 2002 01 26 | 644 | 0.1− | 0.1− | 2002 02 08 | 691 | 0.3− | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.2+ |
| 2002 01 26 | 644 | 0.1+ | 0.3+ | 2002 02 11 | 704 | 0.6+ | 0.6+ | 2006 11 22 | 703 | 0.5− | 0.2− |
| 2002 01 26 | 644 | 0.2+ | 0.4+ | 2002 02 11 | 704 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.2− | 0.1− |
| 2002 02 03 | 608 | 0.4− | 0.4− | 2002 02 11 | 704 | 0.2+ | 0.2+ | | | | |
| 2002 02 03 | 608 | 0.3− | 0.3+ | 2002 02 11 | 704 | 0.2− | 0.5+ | | | | |

**2002 CB$_{27}$ = 2006 VA$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.65989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17300244 | $\omega$ | 333.62325 | | +0.70021412 | −0.70882895 | |
| $a$ | 3.1898326 | $\Omega$ | 71.79585 | | +0.66985211 | +0.61099180 | |
| $e$ | 0.0260608 | $i$ | 5.14666 | | +0.24697842 | +0.35249190 | |
| $P$ | 5.70 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 20 | 699 | 0.1− | 0.9− | 2003 05 02 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2002 01 20 | 699 | 0.6+ | 0.8− | 2005 08 27 | 644 | 0.3− | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2002 01 20 | 699 | 0.7− | 0.0 | 2005 08 27 | 644 | 0.3− | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 01 20 | 699 | 0.0 | 0.3− | 2005 08 27 | 644 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 02 06 | 704 | 0.8− | 0.2− | 2005 09 22 | 644 | 0.2− | 0.5+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2002 02 06 | 704 | 0.3+ | 0.4− | 2005 09 22 | 644 | 0.3− | 0.8+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 02 06 | 704 | 0.1+ | 0.2− | 2005 09 22 | 644 | 0.3− | 0.5+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 02 08 | 704 | 0.7− | 0.3+ | 2005 09 25 | 703 | (1.1+ | 3.9−) | 2006 11 23 | 691 | 0.8− | 0.6+ |
| 2002 02 08 | 704 | 1.0+ | 1.3− | 2005 09 25 | 703 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2002 02 08 | 704 | 0.4− | 0.4+ | 2005 09 25 | 703 | 1.2+ | 0.4+ | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2002 02 08 | 704 | 0.4+ | 0.5+ | 2005 09 25 | 703 | 0.7− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2003 04 11 | 691 | 0.5− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2003 04 11 | 691 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2003 04 11 | 691 | 0.3+ | 1.0+ | 2006 09 28 | G96 | 0.4− | 0.2− | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2003 04 21 | 691 | 0.3+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 12 01 | 704 | 1.1+ | 0.2+ |
| 2003 04 21 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 12 01 | 704 | 1.2+ | 0.4− |
| 2003 04 21 | 691 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.3+ | 2006 12 01 | 704 | 0.8+ | 0.9+ |
| 2003 05 02 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.1− | | | | |
| 2003 05 02 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.4+ | 0.6+ | | | | |

**2002 CR$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.07360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18608131 | $\omega$ | 15.34571 | | −0.18976028 | −0.97478730 | |
| $a$ | 3.0385581 | $\Omega$ | 85.70019 | | +0.88796569 | −0.22140440 | |
| $e$ | 0.2368872 | $i$ | 6.76070 | | +0.41893672 | +0.02774548 | |
| $P$ | 5.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.1+ | 2002 02 03 | 699 | 0.0 | 1.1+ | 2006 11 18 | 704 | 1.2− | 0.1+ |
| 2000 09 26 | 645 | 0.1− | 0.1+ | 2002 02 03 | 699 | 0.5+ | 0.4+ | 2006 11 18 | 704 | 0.9− | 0.0 |
| 2001 12 13 | 704 | 0.7+ | 1.2− | 2002 02 03 | 699 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 0.4− | 0.2− |
| 2001 12 13 | 704 | 0.4+ | 0.8+ | 2002 02 03 | 699 | 0.6− | 0.7+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2001 12 13 | 704 | 0.2+ | 0.1+ | 2002 02 04 | 644 | 0.2− | 0.4− | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2001 12 13 | 704 | 0.2− | 0.8+ | 2002 02 04 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2001 12 18 | 644 | 0.5+ | 0.1− | 2002 02 04 | 644 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.0 |
| 2001 12 18 | 644 | 0.5+ | 0.0 | 2002 02 06 | 704 | 0.6− | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2001 12 18 | 644 | 0.6+ | 0.4+ | 2002 02 06 | 704 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.7− |
| 2001 12 21 | 704 | 1.2+ | 0.5+ | 2002 02 06 | 704 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2001 12 21 | 704 | 0.8+ | 0.1− | 2002 02 06 | 704 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2001 12 21 | 704 | 0.7+ | 0.9+ | 2002 02 06 | 704 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2002 01 04 | 608 | 0.7+ | 0.5+ | 2002 02 08 | 704 | 0.5− | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.1− |
| 2002 01 04 | 608 | 1.1+ | 0.1+ | 2002 02 08 | 704 | 0.3− | 1.0+ | 2006 11 21 | 691 | 0.5− | 0.1− |
| 2002 01 04 | 608 | 1.0+ | 0.1− | 2002 02 08 | 704 | 0.0 | 1.3+ | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2002 01 08 | 704 | (1.6− | 0.3+) | 2002 02 08 | 704 | 0.8+ | 1.0+ | 2006 11 21 | 691 | 0.2+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 1.4− | 0.6− | 2002 02 10 | 704 | 0.1− | 1.1− | 2006 11 22 | 291 | 0.3+ | 0.0 |
| 2002 01 08 | 704 | 0.3− | 0.2+ | 2002 02 10 | 704 | 0.2− | 1.0− | 2006 11 22 | 291 | 0.4+ | 0.0 |
| 2002 01 08 | 704 | (0.6− | 2.7+) | 2002 02 10 | 704 | 0.4− | 0.9− | 2006 11 22 | 291 | 0.4+ | 0.1+ |
| 2002 01 08 | 704 | 0.5− | 1.2+ | 2002 02 10 | 704 | 0.8− | 1.1− | 2006 11 25 | 691 | 0.2+ | 0.0 |
| 2002 01 11 | 699 | 0.3+ | 0.7+ | 2002 02 10 | 704 | 0.6− | 1.0− | 2006 11 25 | 691 | 0.2+ | 0.2− |
| 2002 01 11 | 699 | 0.1− | 0.3+ | 2002 02 12 | 704 | (1.2− | 1.9+) | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2002 01 11 | 699 | 0.9− | 0.7+ | 2002 02 12 | 704 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.1− | 0.6− |
| 2002 01 11 | 699 | 0.1+ | 0.7− | 2002 02 12 | 704 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.4− | 0.1− |
| 2002 01 14 | 608 | 0.2+ | 0.3− | 2002 02 12 | 704 | 0.7− | 0.6+ | 2006 12 01 | 704 | 1.5− | 0.3− |
| 2002 01 14 | 608 | 0.2+ | 0.6− | 2002 02 12 | 704 | 0.1− | 0.4− | 2006 12 01 | 704 | 0.3+ | 0.3+ |
| 2002 01 14 | 608 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.0 | 0.1− |

### 2002 $CD_{29}$ = 2006 $BQ_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 48.73232 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.24277311 | $\omega$ | 92.38149 | −0.69190068 | −0.71982516 | | | | | | |
| $a$ | 2.5448899 | $\Omega$ | 41.58655 | +0.62442732 | −0.63547493 | | | | | | |
| $e$ | 0.0632210 | $i$ | 4.83138 | +0.36244169 | −0.27932660 | | | | | | |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 12 | 644 | 0.1+ | 0.2− | 2002 02 06 | 704 | 0.5− | 0.5− | 2006 01 19 | 703 | 0.0 | 0.7+ |
| 2002 01 12 | 644 | 0.1− | 0.3− | 2002 02 08 | 704 | 0.4+ | 0.2+ | 2006 01 24 | 699 | 0.7+ | 0.6− |
| 2002 01 12 | 644 | 0.2− | 0.1− | 2002 02 08 | 704 | 0.6− | 0.1+ | 2006 01 24 | 699 | 0.7− | 1.0+ |
| 2002 02 03 | 644 | 0.1+ | 0.4+ | 2002 02 08 | 704 | 0.9+ | 0.8+ | 2006 01 24 | 699 | 0.4− | 0.5+ |
| 2002 02 03 | 644 | 0.1− | 0.2− | 2002 02 08 | 704 | 0.3+ | 0.1+ | 2006 01 24 | 699 | 0.3− | 0.0 |
| 2002 02 03 | 644 | 0.4+ | 0.2− | 2002 02 08 | 704 | 0.3− | 1.3+ | 2006 01 25 | 703 | 0.0 | 0.2− |
| 2002 02 06 | 704 | 0.5+ | 0.3− | 2006 01 19 | 703 | 0.9+ | 0.6− | 2006 01 25 | 703 | 0.2− | 0.1+ |
| 2002 02 06 | 704 | 0.0 | 0.7− | 2006 01 19 | 703 | (1.9− | 0.1−) | 2006 01 25 | 703 | (1.6+ | 0.6−) |
| 2002 02 06 | 704 | 1.2− | 1.0− | 2006 01 19 | 703 | 0.0 | 0.5− | 2006 01 25 | 703 | 0.0 | 0.3+ |

### 2002 $CP_{32}$ = 2006 $AE_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 93.39435 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23658857 | $\omega$ | 77.69447 | +0.39357672 | −0.91840769 | | | | | | |
| $a$ | 2.5890487 | $\Omega$ | 348.86896 | +0.74126333 | +0.34298487 | | | | | | |
| $e$ | 0.1566341 | $i$ | 12.05134 | +0.54371503 | +0.19720216 | | | | | | |
| $P$ | 4.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.1+ | 0.0 | 2002 02 08 | 704 | 1.1− | 0.1− | 2006 01 22 | 704 | 1.4+ | 0.3− |
| 1998 03 02 | 691 | 0.1− | 0.2− | 2002 02 12 | 704 | 0.3+ | 0.0 | 2006 01 22 | 704 | 0.1− | 0.2− |
| 1998 03 02 | 691 | 0.1− | 0.1+ | 2002 02 12 | 704 | 0.9− | 0.0 | 2006 01 22 | 704 | 0.5+ | 0.2+ |
| 2002 02 06 | 704 | 1.2+ | 0.8+ | 2002 02 12 | 704 | 0.3− | 0.4+ | 2006 01 22 | 703 | 0.1+ | 0.5+ |
| 2002 02 06 | 704 | 0.8+ | 0.2+ | 2002 02 12 | 704 | 0.6− | 0.2+ | 2006 01 22 | 703 | 0.4+ | 0.3− |
| 2002 02 06 | 704 | 0.8+ | 0.1+ | 2006 01 06 | 703 | 0.1− | 0.7− | 2006 01 22 | 703 | 0.6− | 0.2+ |
| 2002 02 08 | 704 | 0.2+ | 0.6− | 2006 01 06 | 703 | 0.5− | 0.2+ | 2006 01 22 | 703 | 0.8− | 0.6+ |
| 2002 02 08 | 704 | 0.1− | 0.4− | 2006 01 06 | 703 | 0.5− | 0.3+ | | | | |
| 2002 02 08 | 704 | 0.2+ | 0.2− | 2006 01 06 | 703 | 0.1+ | 0.7− | | | | |

### 2002 $CW_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 276.21039 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.17310002 | $\omega$ | 57.87103 | −0.94182625 | −0.27463863 | | | | | | |
| $a$ | 3.1886337 | $\Omega$ | 105.56372 | +0.19809161 | −0.91927391 | | | | | | |
| $e$ | 0.2088631 | $i$ | 11.60240 | +0.27151984 | −0.28197357 | | | | | | |
| $P$ | 5.69 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.1+ | 0.3+ | 2002 02 08 | 704 | 0.2+ | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2002 01 09 | 704 | 0.2+ | 0.7− | 2002 02 08 | 704 | 0.2− | 0.7− | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2002 01 09 | 704 | 0.2− | 0.9+ | 2002 02 13 | 644 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2002 01 09 | 704 | 0.8+ | 1.2+ | 2002 02 13 | 644 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2002 01 09 | 704 | 0.0 | 0.7− | 2002 02 13 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.6− | 0.0 |
| 2002 01 09 | 704 | 0.1+ | 0.7− | 2006 11 21 | G96 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2002 01 09 | 704 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2002 01 09 | 704 | 0.2− | 0.7+ | 2006 11 21 | G96 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2002 01 09 | 704 | 0.2− | 0.9− | 2006 11 21 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2002 02 03 | 644 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2002 02 03 | 644 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | (0.9− | 2.4−) |
| 2002 02 03 | 644 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.3− | 0.0 | 2006 11 23 | G96 | (1.3+ | 2.4−) |
| 2002 02 06 | 704 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2002 02 06 | 704 | 0.6− | 0.5− | 2006 11 22 | G96 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2002 02 06 | 704 | 0.4+ | 0.7+ | 2006 11 22 | G96 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2002 02 06 | 704 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2002 02 08 | 704 | 0.8− | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 02 08 | 704 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.4− | 0.1+ |

### 2002 $CS_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 334.16855 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.18154538 | $\omega$ | 42.96073 | −0.22657447 | −0.96856266 | | | | | | |
| $a$ | 3.0889622 | $\Omega$ | 60.37900 | +0.85853245 | −0.24840580 | | | | | | |
| $e$ | 0.1864214 | $i$ | 6.78572 | +0.45998482 | −0.01345073 | | | | | | |
| $P$ | 5.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 03 | 644 | 0.3+ | 0.3− | 2002 02 07 | 704 | 0.6− | 0.2− | 2002 03 21 | 644 | 0.4− | 0.4− |
| 2002 02 03 | 644 | 0.3+ | 0.3− | 2002 02 08 | 704 | 1.2− | 0.5− | 2002 04 14 | 291 | 0.1+ | 0.3+ |
| 2002 02 03 | 644 | 0.5+ | 0.3− | 2002 02 08 | 704 | 0.2− | 0.3+ | 2002 04 14 | 291 | 0.2+ | 0.3+ |
| 2002 02 04 | 699 | 0.3− | 0.1− | 2002 02 08 | 704 | 0.9+ | 0.3− | 2002 04 14 | 291 | 0.3+ | 0.2+ |
| 2002 02 04 | 699 | 0.4+ | 0.3+ | 2002 02 08 | 704 | 0.3+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2002 02 04 | 699 | 0.1+ | 0.5+ | 2002 02 08 | 704 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2002 02 04 | 699 | 0.5+ | 0.4− | 2002 02 22 | 644 | 0.4− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 02 07 | 704 | 0.5− | 0.3− | 2002 02 22 | 644 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2002 02 07 | 704 | 0.3− | 0.3− | 2002 02 22 | 644 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2002 02 07 | 704 | 0.3− | 0.3+ | 2002 03 21 | 644 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.4− | 0.2+ |
| 2002 02 07 | 704 | 0.1− | 0.7− | 2002 03 21 | 644 | 0.1+ | 0.4− | | | | |

### 2002 $CY_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 324.23562 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.17439424 | $\omega$ | 309.40516 | +0.17723570 | −0.97836320 | | | | | | |
| $a$ | 3.1728384 | $\Omega$ | 130.04948 | +0.94038639 | +0.13636381 | | | | | | |
| $e$ | 0.2993609 | $i$ | 8.01529 | +0.29027736 | +0.15559677 | | | | | | |
| $P$ | 5.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.6− | 0.8− | 2002 02 07 | 608 | 0.4− | 1.1− | 2002 02 12 | 704 | 0.7− | 0.1− |
| 2002 01 13 | 704 | 0.1+ | 0.9+ | 2002 02 07 | 608 | 0.3− | 0.9− | 2002 02 12 | 704 | 0.6− | 0.5− |
| 2002 01 13 | 704 | 0.4− | 0.3+ | 2002 02 07 | 608 | 0.4− | 0.8− | 2002 02 12 | 704 | 0.6− | 0.6+ |
| 2002 01 13 | 704 | 0.7− | 0.3+ | 2002 02 08 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.7+ |
| 2002 01 13 | 704 | 0.3− | 0.8+ | 2002 02 08 | 704 | 0.7+ | 1.6− | 2006 10 22 | 703 | 1.1− | 1.7− |
| 2002 01 20 | 691 | 0.3+ | 0.5− | 2002 02 08 | 691 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2002 01 20 | 691 | 0.4+ | 0.0 | 2002 02 08 | 704 | 0.0 | 1.2+ | 2006 10 22 | 703 | 0.7+ | 0.9+ |
| 2002 01 20 | 691 | 0.2− | 0.1− | 2002 02 08 | 691 | 0.4+ | 0.3− | 2006 10 22 | 644 | 0.8+ | 0.1− |
| 2002 01 26 | 644 | 0.7+ | 0.4+ | 2002 02 08 | 704 | 1.0− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 01 26 | 644 | 0.0 | 0.2− | 2002 02 08 | 691 | 0.4+ | 0.3− | 2006 10 22 | 644 | 0.5+ | 0.2− |
| 2002 01 26 | 644 | 0.6+ | 0.1+ | 2002 02 10 | 704 | 0.5− | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.1− |
| 2002 02 07 | 704 | 0.1− | 0.6+ | 2002 02 10 | 704 | 0.7− | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.1− |
| 2002 02 07 | 704 | 0.5+ | 1.2+ | 2002 02 10 | 704 | 1.2− | 1.2+ | 2006 10 28 | 703 | 0.4− | 0.3+ |
| 2002 02 07 | 704 | 0.2+ | 0.4+ | 2002 02 10 | 704 | 0.7− | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.7+ |
| 2002 02 07 | 704 | 0.4+ | 0.4+ | 2002 02 10 | 704 | 0.5− | 1.0+ | | | | |
| 2002 02 07 | 704 | 0.3+ | 1.0+ | 2002 02 12 | 704 | 0.6− | 0.6− | | | | |

**2002 CP$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.64481 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21612504 | $\omega$ | 100.25003 | | +0.27095526 | −0.95797459 | |
| $a$ | 2.7499997 | $\Omega$ | 333.44057 | | +0.78000877 | +0.27583425 | |
| $e$ | 0.1814728 | $i$ | 12.15818 | | +0.56406522 | +0.07874110 | |
| $P$ | 4.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.0 | 0.1+ | 2002 02 08 | 704 | (1.6+ | 0.3−) | 2002 02 13 | 704 | 0.5− | 0.7+ |
| 2000 09 23 | 704 | 0.7+ | 0.3+ | 2002 02 08 | 704 | 0.7+ | 0.2+ | 2002 02 20 | 704 | (0.4+ | 2.2+) |
| 2000 09 23 | 699 | 0.5− | 0.5+ | 2002 02 08 | 704 | 1.1+ | 0.6+ | 2002 02 20 | 704 | 0.3− | 0.8+ |
| 2000 09 23 | 704 | 0.1+ | 0.5− | 2002 02 10 | 704 | 0.7+ | 0.7− | 2002 02 20 | 704 | 0.2− | 1.1− |
| 2000 09 23 | 699 | 0.1− | 0.5+ | 2002 02 10 | 704 | 0.6+ | 0.6− | 2002 02 20 | 704 | 1.4+ | 0.9− |
| 2000 09 23 | 704 | 0.6− | 0.4+ | 2002 02 10 | 704 | 0.3+ | 0.5− | 2002 02 24 | 644 | 0.2− | 0.5+ |
| 2000 09 23 | 699 | 0.1− | 0.3+ | 2002 02 10 | 704 | (1.9+ | 0.8−) | 2002 02 24 | 644 | 0.1+ | 0.0 |
| 2000 09 23 | 704 | 0.5− | 0.2− | 2002 02 10 | 704 | 1.0+ | 0.3− | 2002 02 24 | 644 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.2+ | 0.2+ | 2002 02 12 | 704 | 1.1− | 0.5− | 2002 03 12 | 644 | 0.3+ | 0.6− |
| 2002 01 14 | 704 | 0.2+ | 0.5+ | 2002 02 12 | 704 | 0.5− | 0.1− | 2002 03 12 | 644 | 0.4+ | 0.1+ |
| 2002 01 14 | 704 | (0.1− | 1.9+) | 2002 02 12 | 704 | 0.1+ | 0.2+ | 2002 03 12 | 644 | 0.6+ | 0.2+ |
| 2002 01 14 | 704 | 0.4+ | 0.4+ | 2002 02 12 | 704 | 0.7− | 0.3+ | 2002 03 13 | 291 | 0.1− | 0.0 |
| 2002 02 07 | 704 | (0.0 | 2.1+) | 2002 02 12 | 704 | 1.2− | 1.0+ | 2002 03 13 | 291 | 0.0 | 0.1+ |
| 2002 02 07 | 704 | 0.5+ | 0.4− | 2002 02 12 | 704 | 0.2− | 0.1+ | 2002 03 13 | 291 | 0.3− | 0.2+ |
| 2002 02 07 | 704 | (1.2− | 1.8+) | 2002 02 12 | 704 | 0.9− | 0.4− | 2002 03 18 | 695 | 0.0 | 0.0 |
| 2002 02 07 | 704 | 0.9+ | 0.1− | 2002 02 12 | 704 | 0.2− | 0.5+ | 2002 03 18 | 695 | 0.3+ | 0.0 |
| 2002 02 07 | 291 | 0.2− | 0.2+ | 2002 02 12 | 704 | 1.3− | 0.8+ | 2005 11 26 | 704 | 0.3− | 0.3− |
| 2002 02 07 | 291 | 0.2+ | 0.2+ | 2002 02 13 | 704 | 0.7− | 0.0 | 2005 11 26 | 704 | 0.2− | 0.5− |
| 2002 02 07 | 291 | 0.1− | 0.1+ | 2002 02 13 | 704 | 0.7+ | 1.1− | 2005 11 26 | 704 | 0.7+ | 0.3− |
| 2002 02 08 | 704 | 0.9+ | 0.6− | 2002 02 13 | 704 | 0.4− | 0.7− | | | | |

**2002 CE$_{41}$ = 2006 VL$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.95382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18059091 | $\omega$ | 216.08744 | | −0.48881811 | −0.85323150 | |
| $a$ | 3.0998365 | $\Omega$ | 263.82610 | | +0.83711912 | −0.40010380 | |
| $e$ | 0.1852678 | $i$ | 10.53669 | | +0.24553703 | −0.33453395 | |
| $P$ | 5.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.2− | 0.2+ | 2002 02 15 | 704 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2002 02 07 | 644 | 0.1+ | 0.5+ | 2002 02 15 | 704 | 0.1+ | 0.5− | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2002 02 07 | 644 | 0.0 | 0.5+ | 2002 02 15 | 704 | 0.1+ | 0.9+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 02 08 | 644 | 0.2+ | 0.6− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 02 08 | 644 | 0.3+ | 0.6− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2002 02 08 | 644 | 0.1+ | 0.5− | 2006 11 11 | 691 | 0.1+ | 0.0 | | | | |
| 2002 02 15 | 704 | 0.7− | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.1+ | | | | |

**2002 CU$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.21021 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36258518 | $\omega$ | 109.74674 | | +0.50453240 | −0.82632225 | |
| $a$ | 1.9477327 | $\Omega$ | 307.39220 | | +0.62603991 | +0.54974908 | |
| $e$ | 0.0698216 | $i$ | 18.36160 | | +0.59457639 | +0.12234170 | |
| $P$ | 2.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 699 | 0.2+ | 0.4− | 2002 01 11 | 699 | 0.5− | 0.7+ | 2002 02 11 | 704 | 0.3− | 0.1+ |
| 2001 12 18 | 699 | 0.9− | 0.1− | 2002 02 07 | 704 | 0.3− | 0.5− | 2002 02 11 | 704 | 0.8− | 0.0 |
| 2001 12 18 | 699 | 1.2+ | 0.5+ | 2002 02 07 | 704 | 0.6− | 0.3− | 2006 09 17 | 703 | 0.2− | 0.3+ |
| 2001 12 18 | 699 | 0.0 | 0.3− | 2002 02 07 | 704 | 0.7− | 0.8+ | 2006 09 17 | 703 | 0.6− | 0.3− |
| 2002 01 08 | 704 | 0.7+ | 0.6+ | 2002 02 07 | 704 | 0.0 | 0.8+ | 2006 09 17 | 703 | 0.8+ | 0.0 |
| 2002 01 08 | 704 | 0.1+ | 0.3+ | 2002 02 09 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.5+ |
| 2002 01 08 | 704 | 0.2+ | 0.1+ | 2002 02 09 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 703 | 0.0 | 0.2+ |
| 2002 01 08 | 704 | 0.6+ | 0.0 | 2002 02 09 | 704 | 0.4+ | 0.2− | 2006 09 25 | 703 | 0.9+ | 0.3− |
| 2002 01 08 | 704 | 0.1+ | 0.3− | 2002 02 09 | 704 | 1.2+ | 0.5− | 2006 09 25 | 703 | 0.0 | 0.4− |
| 2002 01 11 | 699 | 0.9− | 0.3+ | 2002 02 11 | 704 | 0.1− | 0.2− | 2006 09 25 | 703 | 0.7− | 0.0 |
| 2002 01 11 | 699 | 0.2− | 0.6− | 2002 02 11 | 704 | 0.7+ | 0.3− | | | | |
| 2002 01 11 | 699 | 1.1− | 0.9− | 2002 02 11 | 704 | 0.2+ | 0.1− | | | | |

**2002 CE$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.75842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16934276 | $\omega$ | 114.39685 | | −0.18879594 | +0.96301283 | |
| $a$ | 3.2356258 | $\Omega$ | 143.03842 | | −0.97629061 | −0.16295248 | |
| $e$ | 0.1532624 | $i$ | 18.64750 | | −0.10589018 | −0.21459912 | |
| $P$ | 5.82 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.0 | 0.4− | 2002 02 10 | 704 | 1.1+ | 1.5− | 2003 05 05 | 691 | 0.0 | 2.2+ |
| 1996 02 10 | 691 | 0.0 | 0.3− | 2002 02 10 | 704 | 0.3+ | 1.5− | 2003 05 10 | 691 | 0.4+ | 0.3− |
| 1996 02 10 | 691 | 0.1+ | 0.1− | 2002 02 10 | 704 | 0.3− | 1.9− | 2003 05 10 | 691 | 0.1+ | 0.2− |
| 1999 10 13 | 645 | 0.1− | 0.2+ | 2002 02 10 | 704 | 0.3− | 0.5− | 2003 05 10 | 691 | 0.2+ | 0.0 |
| 1999 10 13 | 645 | 0.1− | 0.1+ | 2002 02 10 | 691 | 0.1+ | 0.4+ | 2003 05 30 | 645 | 0.1+ | 0.2− |
| 1999 10 14 | 645 | 0.0 | 0.1+ | 2002 02 10 | 691 | 0.0 | 0.6+ | 2003 05 30 | 645 | 0.2+ | 0.2− |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2002 02 10 | 691 | 0.8− | 0.0 | 2003 07 23 | 644 | 0.0 | 0.1− |
| 2002 02 07 | 291 | 0.5− | 0.7+ | 2002 02 12 | 704 | 0.8+ | 1.2− | 2003 07 23 | 644 | 0.2+ | 0.1+ |
| 2002 02 07 | 291 | 0.2− | 0.6+ | 2002 02 12 | 704 | 1.8+ | 0.7− | 2003 07 23 | 644 | 0.5+ | 0.1+ |
| 2002 02 07 | 291 | 0.4− | 0.6+ | 2002 02 12 | 704 | 0.0 | 0.7− | 2004 09 07 | 704 | 1.1+ | 0.3+ |
| 2002 02 07 | 291 | 0.3+ | 0.4+ | 2003 04 25 | 645 | 0.1+ | 0.2− | 2004 09 07 | 704 | 0.7− | 0.9+ |
| 2002 02 07 | 291 | 0.4+ | 0.6+ | 2003 04 25 | 645 | 0.1+ | 0.2− | 2004 09 07 | 704 | 0.2+ | 1.0+ |
| 2002 02 07 | 291 | 0.3+ | 0.6+ | 2003 05 05 | 691 | 1.7− | 0.7+ | 2004 09 07 | 704 | 0.0 | 1.8+ |
| 2002 02 10 | 704 | 0.8+ | 0.8− | 2003 05 05 | 691 | 1.3− | 2.9+ | | | | |

**2002 CA$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.58569 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17717356 | $\omega$ | 67.21277 | | −0.61488868 | −0.77711576 | |
| $a$ | 3.1395695 | $\Omega$ | 61.42499 | | +0.65587226 | −0.59840496 | |
| $e$ | 0.1783552 | $i$ | 8.78841 | | +0.43788525 | −0.19494255 | |
| $P$ | 5.56 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.0 | 0.3− | 2002 02 10 | 704 | 0.1+ | 1.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2002 01 08 | 704 | 0.4− | 0.8− | 2002 02 10 | 704 | 0.3− | 1.3+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2002 01 08 | 704 | 0.6+ | 0.9− | 2002 02 10 | 704 | 0.3+ | 1.0+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2002 01 08 | 704 | 0.6− | 1.5− | 2002 02 12 | 644 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2002 01 08 | 704 | 0.2+ | 0.6− | 2002 02 12 | 644 | 0.1+ | 0.4− | 2006 11 15 | 703 | 0.8− | 0.2− |
| 2002 01 23 | 704 | 0.1+ | 0.3+ | 2002 02 12 | 644 | (1.6− | 0.5−) | 2006 11 15 | 703 | 0.2− | 0.0 |
| 2002 01 23 | 704 | 0.3− | 0.4− | 2002 02 22 | 644 | 0.4− | 0.5− | 2006 11 15 | 703 | 0.5− | 0.5+ |
| 2002 01 23 | 704 | 0.1− | 0.2− | 2002 02 22 | 644 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2002 01 23 | 704 | 0.3− | 0.2− | 2002 02 22 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | (1.7+ | 1.1+) |
| 2002 01 23 | 704 | 0.4+ | 0.6+ | 2002 03 21 | 644 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.9+ |
| 2002 02 03 | 699 | 1.4+ | 0.2− | 2002 03 21 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.3+ |
| 2002 02 03 | 699 | 0.3+ | 0.3+ | 2002 03 21 | 644 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2002 02 03 | 699 | 1.2− | 0.6− | 2002 03 21 | 644 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 02 03 | 699 | 0.1+ | 1.2+ | 2002 03 21 | 644 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 02 03 | 644 | 0.1+ | 0.0 | 2002 03 21 | 644 | 0.2− | 0.0 | 2006 11 24 | 703 | 0.4+ | 0.8− |
| 2002 02 03 | 644 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 24 | 703 | 0.5+ | 0.6+ |
| 2002 02 03 | 644 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.5+ | 0.5− | 2006 11 24 | 703 | 1.2− | 0.0 |
| 2002 02 06 | 704 | 0.0 | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 24 | 703 | (1.6− | 1.8+) |
| 2002 02 06 | 704 | 0.4− | 0.8− | 2006 09 27 | G96 | 1.0+ | 0.2− | 2006 11 30 | 691 | 0.0 | 0.1+ |
| 2002 02 06 | 704 | 0.4− | 0.6− | 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 30 | 691 | 0.2− | 0.2+ |
| 2002 02 06 | 704 | 0.3+ | 0.2− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 30 | 691 | 0.3− | 0.3+ |
| 2002 02 10 | 704 | 0.5+ | 1.2+ | 2006 10 19 | G96 | 0.1− | 0.1− | | | | |
| 2002 02 10 | 704 | 0.3+ | 1.2+ | 2006 10 19 | G96 | 0.3− | 0.3− | | | | |

**2002 CS$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.73710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22148764 | $\omega$ | 311.73270 | | +0.34395089 | −0.93090626 | |
| $a$ | 2.7054305 | $\Omega$ | 117.75835 | | +0.89747395 | +0.28741889 | |
| $e$ | 0.2551602 | $i$ | 7.98503 | | +0.27611282 | +0.22539726 | |
| $P$ | 4.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 0.6+ | 0.0 | 2002 02 10 | 704 | 0.2− | 0.3+ | 2005 10 27 | 703 | 0.2− | 0.7− |
| 2002 01 14 | 704 | 0.2+ | 0.2+ | 2002 02 10 | 704 | 0.0 | 0.3+ | 2005 10 30 | 704 | (2.3+ | 0.6+) |
| 2002 01 14 | 704 | 0.2− | 0.1− | 2005 10 05 | 703 | 0.3− | 0.3+ | 2005 10 30 | 704 | 0.0 | 0.5+ |
| 2002 02 07 | 704 | 0.1+ | 0.5+ | 2005 10 05 | 703 | 0.2+ | 0.1+ | 2005 10 30 | 704 | (0.9+ | 2.7−) |
| 2002 02 07 | 704 | 0.0 | 0.2+ | 2005 10 05 | 703 | 1.2− | 0.2− | 2005 11 01 | 703 | 0.9+ | 0.2− |
| 2002 02 07 | 704 | 0.3− | 0.4− | 2005 10 05 | 703 | 1.5+ | 0.7+ | 2005 11 01 | 703 | 1.5− | 0.4− |
| 2002 02 10 | 704 | 0.3− | 0.8− | 2005 10 27 | 703 | 1.3− | 0.7+ | 2005 11 01 | 703 | 0.8+ | 0.1− |
| 2002 02 10 | 704 | 0.3+ | 0.2+ | 2005 10 27 | 703 | 0.7+ | 0.2− | 2005 11 01 | 703 | 0.1− | 0.0 |
| 2002 02 10 | 704 | 0.1− | 0.3− | 2005 10 27 | 703 | 0.5+ | 0.6− | | | | |

**2002 CZ$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.83091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27361765 | $\omega$ | 270.29612 | | +0.80640373 | −0.58292566 | |
| $a$ | 2.3498491 | $\Omega$ | 125.36268 | | +0.57943936 | +0.74522637 | |
| $e$ | 0.1080871 | $i$ | 7.01186 | | +0.11816541 | +0.32378284 | |
| $P$ | 3.60 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1− | 2002 02 10 | 704 | 0.3+ | 0.1+ | 2004 10 07 | 699 | 1.0− | 1.6+ |
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2002 02 10 | 704 | 0.8− | 0.5+ | 2004 10 07 | 699 | 0.6− | 1.3+ |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2002 02 10 | 704 | 0.1+ | 1.3+ | 2004 10 07 | 699 | 1.6− | 0.0 |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2002 02 10 | 704 | 0.2+ | 1.0+ | 2004 10 18 | 704 | 0.3− | 1.4+ |
| 2002 01 13 | 704 | (2.4+ | 1.3+) | 2002 02 11 | 691 | 0.1− | 0.0 | 2004 10 18 | 704 | 0.2− | 1.0+ |
| 2002 01 13 | 704 | 1.3+ | 0.5+ | 2002 02 11 | 691 | 0.0 | 0.1− | 2004 10 18 | 704 | 0.3− | 0.5+ |
| 2002 01 13 | 704 | 0.9+ | 1.7+ | 2002 02 11 | 691 | 0.2+ | 0.2+ | 2004 11 03 | 699 | 1.1+ | 0.7+ |
| 2002 02 07 | 704 | 1.1− | 0.1+ | 2003 06 03 | 691 | 0.5+ | 0.9+ | 2004 11 03 | 699 | 0.1− | 1.3+ |
| 2002 02 07 | 704 | 0.1+ | 1.0+ | 2003 06 03 | 691 | 0.0 | 1.1+ | 2004 11 03 | 699 | 1.8− | 0.1+ |
| 2002 02 07 | 704 | 0.6+ | 1.7+ | 2003 06 03 | 691 | 0.5+ | 1.6+ | 2004 11 03 | 699 | 0.5+ | 0.5− |
| 2002 02 07 | 704 | 0.4+ | 1.2+ | 2004 10 07 | 699 | 1.0+ | 0.5+ | | | | |

**2002 CG$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.61371 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16991829 | $\omega$ | 104.35320 | | −0.29448210 | −0.95558011 | |
| $a$ | 3.2283154 | $\Omega$ | 2.86013 | | +0.75616999 | −0.24074882 | |
| $e$ | 0.2731698 | $i$ | 14.06038 | | +0.58436909 | −0.17001961 | |
| $P$ | 5.80 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 23 | 704 | 0.3− | 0.1+ | 2002 02 12 | 644 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2002 01 23 | 704 | 0.5+ | 0.3+ | 2002 02 12 | 644 | 0.5+ | 0.0 | 2006 09 30 | 691 | 0.2− | 0.2− |
| 2002 01 23 | 704 | 0.1+ | 0.4− | 2002 02 22 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.2− |
| 2002 02 07 | 704 | 0.3+ | 0.3− | 2002 02 22 | 644 | 0.7+ | 0.1+ | 2006 10 19 | 703 | 0.9− | 1.1+ |
| 2002 02 07 | 704 | 0.7− | 0.4+ | 2002 02 22 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 1.0+ | 1.1− |
| 2002 02 07 | 704 | 0.3+ | 0.1+ | 2002 04 02 | 644 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.4− | 1.0− |
| 2002 02 07 | 704 | 0.3− | 0.2+ | 2002 04 02 | 644 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.7+ | 0.5− |
| 2002 02 10 | 704 | 0.5− | 0.6− | 2002 04 02 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2002 02 10 | 704 | 0.2− | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | 703 | (1.2− | 1.8+) |
| 2002 02 10 | 704 | 1.1− | 0.6− | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 27 | 703 | 1.1− | 1.2+ |
| 2002 02 10 | 704 | 0.0 | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | | | | |
| 2002 02 12 | 644 | 0.4+ | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.3− | | | | |

**2002 CP$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.57429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20029950 | $\omega$ | 112.52842 | | −0.53867899 | +0.84151148 | |
| $a$ | 2.8930070 | $\Omega$ | 124.81336 | | −0.79018916 | −0.48773221 | |
| $e$ | 0.0548399 | $i$ | 2.86446 | | −0.29227733 | −0.23232678 | |
| $P$ | 4.92 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 05 | 644 | 0.1+ | 0.9+ | 2002 02 10 | 704 | 1.1− | 0.5+ | 2003 05 05 | 704 | 0.2− | 1.1+ |
| 2002 02 05 | 644 | 0.1− | 0.7+ | 2002 02 10 | 691 | 0.1+ | 0.2− | 2003 05 05 | 704 | 0.6+ | 0.3+ |
| 2002 02 05 | 644 | 0.0 | 0.6+ | 2002 02 10 | 704 | 1.2− | 0.1− | 2003 05 05 | 704 | 0.7+ | 0.6+ |
| 2002 02 07 | 704 | 0.6+ | 0.5+ | 2002 02 10 | 704 | 1.1− | 0.4+ | 2003 05 05 | 704 | 0.3+ | 0.7− |
| 2002 02 07 | 704 | 0.3+ | 0.2− | 2002 02 11 | 333 | 0.4+ | 1.4− | 2003 05 11 | 608 | 0.1− | 0.5− |
| 2002 02 07 | 704 | 0.3− | 0.5+ | 2002 02 11 | 333 | 0.2− | 0.2− | 2003 05 11 | 608 | 0.1+ | 0.1− |
| 2002 02 07 | 704 | 0.3− | 0.9− | 2002 02 11 | 333 | 0.3− | 1.8− | 2003 05 11 | 608 | 0.0 | 0.5− |
| 2002 02 08 | 608 | 0.2− | 0.2− | 2002 02 12 | 704 | 0.3− | 0.3+ | 2003 05 24 | 926 | 0.8− | 0.3+ |
| 2002 02 08 | 608 | 0.0 | 0.1+ | 2002 02 12 | 704 | 0.2− | 0.1+ | 2003 05 24 | 926 | 0.1+ | 0.6− |
| 2002 02 08 | 608 | 0.1− | 0.1+ | 2002 02 12 | 704 | 0.3− | 0.2+ | 2003 05 30 | 704 | 0.7+ | 0.4− |
| 2002 02 10 | 691 | 0.3+ | 0.1+ | 2002 02 12 | 704 | 0.2+ | 0.8+ | 2003 05 30 | 704 | 0.3− | 0.0 |
| 2002 02 10 | 704 | 0.7− | 0.8+ | 2002 02 20 | 704 | 0.6+ | 0.8− | 2003 05 30 | 704 | 1.1− | 0.3+ |
| 2002 02 10 | 704 | 0.9− | 0.6+ | 2002 02 20 | 704 | 0.6+ | 0.3− | 2003 05 30 | 704 | 0.1− | 0.2+ |
| 2002 02 10 | 691 | 0.3+ | 0.2− | 2002 02 20 | 704 | 1.7+ | 0.3− | | | | |

**2002 CS$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.56222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21401690 | $\omega$ | 270.35968 | | −0.62525225 | +0.76861967 | |
| $a$ | 2.7680292 | $\Omega$ | 319.87849 | | −0.60619556 | −0.58744151 | |
| $e$ | 0.1671527 | $i$ | 12.11234 | | −0.49151457 | −0.25325139 | |
| $P$ | 4.61 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 1.5+ | 1.2+ | 2002 02 07 | 704 | 0.5+ | 0.6+ | 2002 03 04 | 699 | 0.5− | 0.2+ |
| 2002 01 09 | 704 | 0.3+ | 0.9− | 2002 02 07 | 704 | 0.4+ | 0.5+ | 2002 03 04 | 699 | 0.0 | 0.6+ |
| 2002 01 09 | 704 | 0.3+ | 1.6− | 2002 02 07 | 704 | 0.7+ | 0.5+ | 2002 03 04 | 699 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 0.7+ | 0.9− | 2002 02 07 | 704 | 0.4+ | 0.7+ | 2002 03 05 | 644 | 0.3− | 0.6− |
| 2002 01 14 | 704 | 0.5+ | 0.5+ | 2002 02 07 | 704 | 0.3+ | 0.4+ | 2002 03 05 | 644 | 0.2− | 0.9− |
| 2002 01 14 | 704 | 0.3+ | 1.2− | 2002 02 10 | 704 | 1.6+ | 0.2+ | 2002 03 05 | 644 | 0.2− | 0.8− |
| 2002 01 14 | 704 | 0.9+ | 0.4+ | 2002 02 10 | 704 | 0.5+ | 0.9+ | 2002 03 13 | 644 | 0.5− | 0.2− |
| 2002 01 14 | 704 | 0.5+ | 0.8− | 2002 02 10 | 704 | 1.0+ | 0.9+ | 2002 03 13 | 704 | 0.6− | 0.2+ |
| 2002 01 14 | 704 | 0.9+ | 0.6+ | 2002 02 10 | 704 | 0.6+ | 1.2+ | 2002 03 13 | 704 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.1+ | 0.9− | 2002 02 10 | 704 | 0.6+ | 1.1+ | 2002 03 13 | 644 | 0.3− | 0.0 |
| 2002 01 14 | 704 | 0.9+ | 0.8+ | 2002 02 10 | 608 | 0.5+ | 1.0+ | 2002 03 13 | 704 | 0.3− | 0.1− |
| 2002 01 14 | 704 | 0.0 | 1.2− | 2002 02 10 | 608 | 0.6+ | 1.5+ | 2002 03 13 | 644 | 0.7− | 0.1+ |
| 2002 01 14 | 704 | 1.1+ | 0.5+ | 2002 02 10 | 608 | 0.1+ | 0.9+ | 2002 03 13 | 704 | 0.3+ | 0.5+ |
| 2002 01 21 | 704 | 0.2− | 0.5− | 2002 02 12 | 704 | 0.5+ | 0.4− | 2002 03 15 | 704 | 0.1− | 1.4+ |
| 2002 01 21 | 704 | 0.2− | 1.1− | 2002 02 12 | 704 | 0.1− | 0.5− | 2002 03 15 | 704 | 0.7− | 0.1+ |
| 2002 01 21 | 704 | 0.4− | 1.3− | 2002 02 12 | 704 | 0.2− | 0.3− | 2002 03 15 | 704 | 0.8− | 0.2+ |
| 2002 01 21 | 704 | 0.8− | 1.5− | 2002 02 12 | 704 | 0.8− | 0.4− | 2002 03 15 | 704 | 1.2− | 0.1+ |
| 2002 01 21 | 704 | 0.4− | 0.2− | 2002 02 12 | 704 | 0.7− | 1.1− | 2004 09 22 | 699 | 0.3+ | 0.7− |
| 2002 01 24 | 691 | 0.1+ | 0.4+ | 2002 02 13 | 291 | 0.7− | 0.4− | 2004 09 22 | 699 | 0.3− | 0.5− |
| 2002 01 24 | 691 | 0.1− | 0.1+ | 2002 02 13 | 291 | 0.2+ | 0.1− | 2004 09 22 | 699 | 0.1− | 0.1− |
| 2002 01 24 | 691 | 0.2− | 0.3+ | 2002 02 13 | 291 | 0.5+ | 0.5+ | 2004 09 22 | 699 | 0.3+ | 0.7+ |
| 2002 01 26 | 644 | 0.4+ | 0.4+ | 2002 02 15 | 608 | 0.4+ | 0.2− | 2006 11 18 | G96 | 0.7− | 0.0 |
| 2002 01 26 | 644 | 0.3+ | 0.3+ | 2002 02 15 | 608 | 0.6+ | 1.1− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2002 01 26 | 644 | 0.2+ | 0.2+ | 2002 02 15 | 608 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 02 05 | 644 | 0.2− | 0.1+ | 2002 02 20 | 704 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2002 02 05 | 644 | 0.2− | 0.2+ | 2002 02 20 | 704 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2002 02 05 | 644 | 0.3− | 0.0 | 2002 02 20 | 704 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2002 02 07 | 691 | 0.4− | 0.3− | 2002 02 20 | 704 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2002 02 07 | 691 | 0.3− | 0.4− | 2002 02 20 | 704 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 02 07 | 691 | 0.7− | 0.4+ | 2002 03 04 | 699 | 0.4− | 1.0− | | | | |

**2002 CZ$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.45744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26444668 | $\omega$ | 141.44311 | | −0.79603424 | −0.60525147 | |
| $a$ | 2.4038681 | $\Omega$ | 1.31015 | | +0.55093738 | −0.72486952 | |
| $e$ | 0.1294068 | $i$ | 0.98966 | | +0.25059429 | −0.32899065 | |
| $P$ | 3.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 07 | 691 | 0.5− | 0.0 | 2002 02 07 | 704 | 0.1− | 0.9− | 2002 03 16 | 704 | 0.9− | 1.0+ |
| 2002 01 07 | 691 | 0.1− | 0.1+ | 2002 02 07 | 704 | 0.9− | 1.1− | 2002 03 16 | 704 | 0.4+ | 0.9+ |
| 2002 01 07 | 691 | 0.8− | 0.3+ | 2002 02 07 | 704 | 0.2− | 0.7− | 2002 03 16 | 704 | (0.1− | 2.1+) |
| 2002 01 21 | 704 | 0.4+ | 1.0+ | 2002 02 10 | 704 | 1.0+ | 0.8− | 2004 10 06 | 291 | 0.1− | 0.1+ |
| 2002 01 21 | 704 | 0.0 | 0.9− | 2002 02 10 | 704 | 0.6+ | 0.6− | 2004 10 06 | 291 | 0.1− | 0.2+ |
| 2002 01 21 | 704 | 1.3+ | 0.9− | 2002 02 10 | 704 | 0.3+ | 0.2− | 2004 10 06 | 291 | 0.1+ | 0.1+ |
| 2002 01 21 | 704 | 0.7− | 0.3− | 2002 02 10 | 704 | 0.6+ | 0.5− | 2006 03 25 | G96 | 0.6+ | 0.0 |
| 2002 01 21 | 704 | 0.1+ | 0.9+ | 2002 02 10 | 704 | 0.8+ | 0.7− | 2006 03 25 | G96 | 0.4+ | 0.3+ |
| 2002 01 21 | 704 | 0.6+ | 0.4+ | 2002 02 12 | 704 | 0.4− | 0.0 | 2006 03 25 | G96 | 0.5+ | 0.2+ |
| 2002 01 21 | 704 | 0.6+ | 0.4+ | 2002 02 12 | 704 | 0.4− | 0.1− | 2006 03 25 | G96 | 0.2+ | 0.2+ |
| 2002 02 05 | 644 | 0.1+ | 0.8+ | 2002 02 12 | 704 | 0.1+ | 0.4+ | 2006 05 06 | G96 | 0.1+ | 0.1+ |
| 2002 02 05 | 644 | 0.6+ | 0.5+ | 2002 02 12 | 704 | 0.4− | 0.0 | 2006 05 06 | G96 | 0.0 | 0.2+ |
| 2002 02 05 | 644 | 0.5+ | 0.9+ | 2002 02 12 | 704 | 0.3− | 0.2+ | 2006 05 06 | G96 | 0.0 | 0.1− |
| 2002 02 07 | 291 | 0.2− | 0.1− | 2002 02 20 | 704 | 1.0− | 0.1+ | 2006 05 06 | G96 | 0.1− | 0.0 |
| 2002 02 07 | 291 | 0.2+ | 0.2− | 2002 02 20 | 704 | 0.1+ | 0.5+ | 2006 05 31 | G96 | 0.4− | 0.4+ |
| 2002 02 07 | 291 | 0.2+ | 0.1− | 2002 02 20 | 704 | 0.4+ | 0.1+ | 2006 05 31 | G96 | 0.7− | 0.2+ |
| 2002 02 07 | 704 | 0.5− | 0.5− | 2002 02 20 | 704 | 0.3+ | 0.3+ | 2006 05 31 | G96 | 0.0 | 0.0 |
| 2002 02 07 | 704 | 1.0+ | 0.0 | 2002 02 20 | 704 | 0.4− | 0.5+ | 2006 05 31 | G96 | 0.3− | 0.1+ |

**2002 CX$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.52893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17773737 | $\omega$ | 326.65201 | | −0.10185939 | −0.98512375 | |
| $a$ | 3.1329266 | $\Omega$ | 128.80213 | | +0.94713889 | −0.13858376 | |
| $e$ | 0.0378457 | $i$ | 10.22988 | | +0.30422458 | +0.10161561 | |
| $P$ | 5.55 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 07 | 691 | 0.8− | 0.2+ | 2002 02 11 | 704 | 0.5+ | 0.5+ | 2002 02 20 | 704 | 0.0 | 0.6+ |
| 2002 01 07 | 691 | 0.8− | 0.1+ | 2002 02 11 | 704 | 0.6+ | 0.2− | 2002 02 20 | 704 | 0.2+ | 1.2+ |
| 2002 01 07 | 691 | 0.8− | 0.3+ | 2002 02 11 | 704 | 0.4+ | 0.0 | 2002 02 20 | 704 | 0.3+ | 0.9+ |
| 2002 01 14 | 704 | 1.0+ | 1.6− | 2002 02 11 | 704 | 0.8+ | 0.3− | 2002 03 09 | 691 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.8+ | 0.0 | 2002 02 11 | 704 | 0.4+ | 0.4− | 2002 03 09 | 691 | 0.7+ | 0.1− |
| 2002 01 14 | 704 | 0.2− | 0.8− | 2002 02 12 | 704 | 0.1− | 0.6+ | 2002 03 09 | 691 | 0.6+ | 0.1+ |
| 2002 01 14 | 704 | 0.8+ | 0.1− | 2002 02 12 | 704 | 0.3+ | 0.7+ | 2002 03 12 | 644 | 0.6− | 0.6+ |
| 2002 02 07 | 704 | 1.0− | 0.9− | 2002 02 12 | 704 | 0.1− | 0.1− | 2002 03 12 | 644 | 0.2− | 0.5+ |
| 2002 02 07 | 704 | 0.5− | 0.0 | 2002 02 12 | 704 | 0.7+ | 0.0 | 2002 03 12 | 644 | 0.5+ | 0.4+ |
| 2002 02 07 | 704 | 0.0 | 0.3− | 2002 02 12 | 704 | 0.4− | 0.1+ | 2004 07 17 | 807 | 0.2− | 0.1+ |
| 2002 02 07 | 704 | 0.3+ | 1.2− | 2002 02 12 | 704 | 0.1− | 0.3+ | 2004 07 17 | 807 | 0.0 | 0.6+ |
| 2002 02 10 | 704 | 0.2− | 0.4− | 2002 02 12 | 704 | 0.0 | 0.5− | 2005 10 03 | 703 | 0.4− | 0.2+ |
| 2002 02 10 | 704 | 0.8− | 0.3− | 2002 02 12 | 704 | 0.9+ | 0.4− | 2005 10 03 | 703 | 0.1− | 0.1+ |
| 2002 02 10 | 704 | 0.4− | 0.4− | 2002 02 12 | 704 | 0.3+ | 1.0− | 2005 10 03 | 703 | 0.3− | 0.2+ |
| 2002 02 10 | 704 | 0.2− | 0.4+ | 2002 02 20 | 704 | 0.7− | 0.0 | 2005 10 03 | 703 | 0.7+ | 0.6+ |
| 2002 02 10 | 704 | 0.2− | 0.2+ | 2002 02 20 | 704 | 0.0 | 0.8+ | | | | |

**2002 CT$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.11123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26053200 | $\omega$ | 30.55904 | | −0.97843037 | −0.18538455 | |
| $a$ | 2.4278881 | $\Omega$ | 138.44141 | | +0.15058160 | −0.94207972 | |
| $e$ | 0.1078676 | $i$ | 7.89667 | | +0.14141854 | −0.27949663 | |
| $P$ | 3.78 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 704 | 1.4+ | 0.3− | 2002 02 13 | 704 | (1.9+ | 0.3+) | 2002 03 12 | 644 | 0.5+ | 0.3+ |
| 2002 01 11 | 704 | 0.9+ | 0.6− | 2002 02 13 | 704 | 1.2+ | 0.5− | 2002 03 12 | 644 | 0.3+ | 0.1+ |
| 2002 01 11 | 704 | 0.5− | 1.3− | 2002 02 13 | 704 | (2.3+ | 0.7−) | 2002 03 14 | 704 | 0.3− | 0.5+ |
| 2002 01 11 | 704 | 0.3+ | 0.1− | 2002 02 13 | 704 | (1.7+ | 0.4−) | 2002 03 14 | 704 | 0.2− | 0.1+ |
| 2002 02 05 | 644 | 0.5+ | 0.5+ | 2002 02 15 | 291 | 0.2+ | 0.1− | 2002 03 14 | 704 | 1.3− | 0.6− |
| 2002 02 05 | 644 | 0.1+ | 0.7+ | 2002 02 15 | 291 | 0.1− | 0.2− | 2002 03 14 | 704 | 1.2− | 0.6+ |
| 2002 02 05 | 644 | 0.4+ | 1.1+ | 2002 02 15 | 291 | 0.3− | 0.2− | 2002 03 16 | 704 | 0.3+ | 1.1+ |
| 2002 02 07 | 704 | 0.5+ | 0.7− | 2002 02 16 | 557 | 0.1− | 0.1− | 2002 03 16 | 704 | 0.5− | 0.8+ |
| 2002 02 07 | 704 | 0.2+ | 0.5− | 2002 02 16 | 557 | 0.4− | 0.3− | 2002 03 16 | 704 | (0.3− | 2.0+) |
| 2002 02 07 | 704 | 0.0 | 1.2− | 2002 02 17 | 557 | 0.1− | 0.3− | 2002 03 16 | 704 | 0.7+ | 0.2+ |
| 2002 02 07 | 704 | 0.1+ | 0.2− | 2002 02 17 | 557 | 0.2+ | 0.2+ | 2006 02 24 | 644 | 0.1− | 0.1+ |
| 2002 02 07 | 704 | 0.3+ | 0.8− | 2002 02 17 | 557 | 0.0 | 0.1− | 2006 02 24 | 644 | 0.1+ | 0.1+ |
| 2002 02 07 | 291 | 0.5− | 0.4+ | 2002 02 20 | 704 | (0.3− | 3.0+) | 2006 02 24 | 699 | (0.0 | 1.5−) |
| 2002 02 07 | 291 | 0.3− | 0.1+ | 2002 02 20 | 704 | 0.1+ | 0.1+ | 2006 02 24 | 699 | 0.2− | 1.4− |
| 2002 02 07 | 291 | 0.3− | 0.0 | 2002 02 20 | 704 | 0.8+ | 0.3− | 2006 02 24 | 644 | 0.2+ | 0.4+ |
| 2002 02 10 | 704 | 0.1+ | 0.4− | 2002 02 20 | 704 | 0.6+ | 0.4− | 2006 02 24 | 699 | (1.7− | 1.5+) |
| 2002 02 10 | 704 | 0.2+ | 0.7− | 2002 02 24 | 644 | (0.4− | 1.7+) | 2006 02 24 | 699 | 1.2− | 0.7+ |
| 2002 02 10 | 704 | 0.5+ | 0.5− | 2002 02 24 | 644 | 0.2+ | 1.1+ | 2006 04 18 | 703 | 0.4− | 1.2− |
| 2002 02 10 | 704 | 0.5+ | 0.3− | 2002 02 24 | 644 | 0.1+ | 1.0+ | 2006 04 18 | 703 | 0.6+ | 0.4− |
| 2002 02 10 | 704 | 0.4+ | 0.4− | 2002 03 04 | 644 | 0.8− | 0.8+ | 2006 04 18 | 703 | 0.0 | 0.4+ |
| 2002 02 12 | 704 | (3.1− | 0.6+) | 2002 03 04 | 644 | 0.4− | 0.5+ | 2006 04 18 | 703 | 0.4+ | 0.2− |
| 2002 02 12 | 704 | (2.9− | 0.5−) | 2002 03 04 | 644 | 0.6− | 0.8+ | | | | |
| 2002 02 12 | 704 | (2.3− | 0.5+) | 2002 03 12 | 644 | 0.1+ | 0.4+ | | | | |

**2002 CF$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.79536 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26933142 | $\omega$ | 232.19542 | | −0.76999519 | +0.63772050 | |
| $a$ | 2.3747143 | $\Omega$ | 347.38272 | | −0.55194943 | −0.68185932 | |
| $e$ | 0.0827134 | $i$ | 5.38330 | | −0.32009255 | −0.35830217 | |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 691 | 0.4− | 0.2− | 2002 02 12 | 704 | 0.1− | 0.2− | 2006 01 05 | G96 | 0.2− | 0.4− |
| 2002 01 11 | 691 | 0.6+ | 0.2+ | 2002 02 12 | 704 | 0.6+ | 0.5− | 2006 01 05 | G96 | 0.1− | 0.3+ |
| 2002 01 11 | 691 | 0.5− | 0.2− | 2002 02 12 | 704 | 0.9+ | 0.0 | 2006 01 05 | G96 | 0.6+ | 0.3− |
| 2002 02 07 | 644 | 0.0 | 0.1− | 2002 02 12 | 704 | 0.2+ | 0.5− | 2006 01 05 | G96 | 0.3− | 0.4− |
| 2002 02 07 | 644 | 0.6− | 0.2+ | 2002 02 12 | 704 | 0.5+ | 0.4− | 2006 02 02 | G96 | 0.4− | 0.7− |
| 2002 02 07 | 704 | 0.7− | 0.1+ | 2002 02 21 | 704 | 0.2− | 0.3+ | 2006 02 02 | G96 | 0.8− | 0.0 |
| 2002 02 07 | 704 | 0.9− | 0.5+ | 2002 02 21 | 704 | 0.8+ | 1.0+ | 2006 02 02 | G96 | 0.2− | 0.2− |
| 2002 02 07 | 704 | 0.4− | 0.3+ | 2002 02 21 | 704 | 0.1+ | 0.6+ | 2006 02 02 | G96 | 0.5− | 0.4− |
| 2002 02 07 | 644 | 0.2− | 0.0 | 2002 02 21 | 704 | 1.0+ | 0.5+ | 2006 04 21 | 703 | 0.2+ | 0.3+ |
| 2002 02 07 | 704 | 0.5− | 0.3− | 2002 03 14 | 704 | 0.2+ | 1.2− | 2006 04 21 | 703 | 0.5+ | 0.1− |
| 2002 02 10 | 704 | 0.1− | 0.3+ | 2002 03 14 | 704 | 1.1+ | 0.6+ | 2006 04 21 | 703 | 0.2+ | 0.2+ |
| 2002 02 10 | 704 | 0.2− | 0.3+ | 2002 03 14 | 704 | (2.1− | 0.2+) | 2006 04 21 | 703 | (1.6+ | 2.3+) |
| 2002 02 10 | 704 | 0.1+ | 0.2+ | 2002 03 14 | 704 | 0.2+ | 0.6− | | | | |
| 2002 02 10 | 704 | 0.1− | 0.2+ | 2002 03 14 | 704 | 0.4− | 1.1+ | | | | |

**2002 CV$_{89}$ = 2006 WW$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.71025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17768473 | $\omega$ | 298.16588 | | +0.23940061 | −0.97048640 | |
| $a$ | 3.1335453 | $\Omega$ | 137.95018 | | +0.90531771 | +0.21231610 | |
| $e$ | 0.2390123 | $i$ | 2.48524 | | +0.35083785 | +0.11435915 | |
| $P$ | 5.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 704 | 1.4+ | 0.1− | 2002 02 10 | 704 | 0.4− | 0.1+ | 2002 03 12 | 691 | 0.1+ | 0.0 |
| 2002 02 07 | 704 | 1.2+ | 0.2− | 2002 02 10 | 704 | 0.7− | 0.2− | 2006 11 18 | 691 | 0.5− | 0.4− |
| 2002 02 07 | 704 | 1.5+ | 0.3− | 2002 02 12 | 704 | 0.1+ | 0.6− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 02 08 | 691 | 0.2− | 0.1+ | 2002 02 12 | 704 | 0.4+ | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2002 02 08 | 691 | 0.3− | 0.0 | 2002 02 12 | 704 | 0.4− | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2002 02 08 | 691 | 0.1− | 0.0 | 2002 02 12 | 704 | 0.0 | 0.8+ | 2006 11 22 | 691 | 0.3+ | 0.5+ |
| 2002 02 10 | 704 | 0.8− | 0.2+ | 2002 03 12 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 02 10 | 704 | 0.5− | 0.1+ | 2002 03 12 | 691 | 0.0 | 0.2− | | | | |

### 2002 $CH_{120}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 100.64188 | | | (2000.0) | | |
| $n$ | 0.28736530 | $\omega$ | 230.85775 | | −0.94119108 | −0.32519046 |
| $a$ | 2.2742934 | $\Omega$ | 289.99348 | | +0.33222317 | −0.84126804 |
| $e$ | 0.0751619 | $i$ | 5.60044 | | +0.06153955 | −0.43187875 |
| $P$ | 3.43 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 01 | 691 | 0.2+ | 0.1+ | 2002 02 04 | 699 | 0.5+ | 0.1− | 2002 02 16 | 644 | 0.4− | 0.4− |
| 1997 12 01 | 691 | 0.2− | 0.6+ | 2002 02 04 | 699 | 0.0 | 0.6− | 2002 02 16 | 644 | 0.6+ | 0.0 |
| 1997 12 01 | 691 | 0.4− | 0.3+ | 2002 02 06 | 644 | 0.2− | 0.3− | 2002 02 16 | 644 | 0.6− | 0.7− |
| 2002 01 13 | 704 | 0.3+ | 0.0 | 2002 02 06 | 644 | 0.2+ | 0.3− | 2002 02 16 | 644 | 0.1+ | 0.2+ |
| 2002 01 13 | 704 | 0.0 | 0.2− | 2002 02 06 | 644 | 0.2+ | 0.1− | 2002 02 16 | 644 | 0.2− | 0.3− |
| 2002 01 13 | 704 | 0.5− | 1.4− | 2002 02 07 | 704 | 0.1− | 0.4+ | 2002 02 16 | 644 | 0.5+ | 0.2+ |
| 2002 01 13 | 704 | 0.5+ | 1.0− | 2002 02 07 | 704 | 0.6+ | 0.7+ | 2002 03 20 | 291 | 0.3− | 0.2− |
| 2002 01 13 | 704 | 0.6− | 1.1− | 2002 02 07 | 704 | 0.8+ | 0.6+ | 2002 03 20 | 291 | 0.1+ | 0.2− |
| 2002 01 22 | 704 | 0.8+ | 0.0 | 2002 02 07 | 704 | 0.0 | 0.5+ | 2002 03 20 | 291 | 0.1+ | 0.4− |
| 2002 01 22 | 704 | 0.3+ | 0.8+ | 2002 02 07 | 704 | 0.4+ | 2.0+ | 2006 05 08 | E12 | 0.2− | 0.8+ |
| 2002 01 22 | 704 | 0.2+ | 0.2+ | 2002 02 11 | 704 | 1.4− | 1.3+ | 2006 05 08 | E12 | 1.2− | 1.5+ |
| 2002 02 04 | 699 | 0.2− | 0.1− | 2002 02 11 | 704 | 1.4− | 1.3+ | 2006 05 08 | E12 | 1.5+ | 0.8+ |
| 2002 02 04 | 699 | 0.5+ | 0.6− | 2002 02 11 | 704 | 0.9− | 1.3+ | 2006 05 08 | E12 | 0.8+ | 0.3+ |

### 2002 $CS_{122}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.56944 | | | (2000.0) | | |
| $n$ | 0.26429241 | $\omega$ | 345.20460 | | −0.99679483 | −0.07995785 |
| $a$ | 2.4048035 | $\Omega$ | 190.21033 | | +0.07481225 | −0.92010904 |
| $e$ | 0.1278678 | $i$ | 0.84290 | | +0.02834051 | −0.38341375 |
| $P$ | 3.73 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.4− | 0.5+ | 2002 02 11 | 704 | 0.8+ | 0.1− | 2006 03 04 | 691 | 0.3+ | 0.1− |
| 2000 10 01 | 704 | 0.1+ | 0.7+ | 2002 02 11 | 704 | 0.4+ | 0.2− | 2006 03 04 | 691 | 0.3+ | 0.1− |
| 2000 10 01 | 704 | 0.4+ | 0.2− | 2002 02 11 | 704 | 1.0+ | 0.3+ | 2006 03 23 | G96 | 0.5− | 0.1+ |
| 2000 10 01 | 704 | 0.3− | 0.4− | 2002 02 11 | 704 | 0.8+ | 0.0 | 2006 03 23 | G96 | 0.2− | 0.1− |
| 2002 01 13 | 704 | 0.4+ | 0.3− | 2002 02 11 | 704 | 0.8+ | 0.1− | 2006 03 23 | G96 | 0.0 | 0.1+ |
| 2002 01 13 | 704 | 0.3− | 0.9+ | 2004 10 09 | 691 | 0.0 | 0.1+ | 2006 03 26 | G96 | 0.6− | 0.5+ |
| 2002 01 13 | 704 | 0.3− | 0.7+ | 2004 10 09 | 691 | 0.0 | 0.2+ | 2006 03 26 | G96 | 0.1− | 0.3+ |
| 2002 01 13 | 704 | 1.0+ | 0.9+ | 2004 10 09 | 691 | 0.1− | 0.0 | 2006 03 26 | G96 | 0.4− | 0.2+ |
| 2002 02 07 | 704 | 0.9− | 0.1+ | 2006 01 08 | G96 | 0.8− | 0.5− | 2006 04 07 | G96 | 0.2− | 0.3+ |
| 2002 02 07 | 704 | (3.8− | 2.4−) | 2006 01 08 | G96 | 0.1− | 0.3− | 2006 04 07 | G96 | 0.4− | 0.6+ |
| 2002 02 07 | 704 | 1.9− | 0.8− | 2006 01 08 | G96 | 1.0− | 0.2− | 2006 04 07 | G96 | 0.0 | 0.1+ |
| 2002 02 07 | 704 | (3.1− | 1.4−) | 2006 01 08 | G96 | 0.7+ | 0.7− | 2006 04 07 | G96 | 0.2− | 0.7+ |
| 2002 02 07 | 704 | 1.8− | 1.4− | 2006 03 04 | 691 | 0.4+ | 0.0 | | | | |

### 2002 $CY_{123}$ = 2006 $WQ_{150}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 223.12770 | | | (2000.0) | | |
| $n$ | 0.17386178 | $\omega$ | 70.01093 | | −0.84709729 | +0.52834373 |
| $a$ | 3.1793131 | $\Omega$ | 141.82138 | | −0.51562827 | −0.79102535 |
| $e$ | 0.0381969 | $i$ | 5.31561 | | −0.12866110 | −0.30843442 |
| $P$ | 5.67 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 19 | 704 | 0.7+ | 0.1− | 2002 02 09 | 291 | 0.0 | 0.1+ | 2002 03 04 | 699 | (2.6+ | 0.3−) |
| 2002 01 19 | 704 | (0.1− | 1.7−) | 2002 02 11 | 704 | 0.2+ | 0.0 | 2002 03 04 | 699 | (2.4+ | 1.4+) |
| 2002 01 19 | 291 | 0.1+ | 0.3− | 2002 02 11 | 704 | 0.4+ | 0.4− | 2002 03 04 | 699 | 0.5− | 0.6+ |
| 2002 01 19 | 704 | 0.8+ | 0.4+ | 2002 02 11 | 704 | 0.1− | 0.5− | 2005 09 30 | 699 | 0.6− | 0.4+ |
| 2002 01 19 | 704 | (1.7− | 0.3−) | 2002 02 11 | 704 | 0.1+ | 1.1− | 2005 09 30 | 699 | 0.7− | 0.3+ |
| 2002 01 19 | 291 | 0.5− | 0.1+ | 2002 02 12 | 333 | 0.8− | 0.1− | 2005 09 30 | 699 | 1.1+ | 0.6− |
| 2002 01 19 | 291 | 0.8− | 0.1+ | 2002 02 12 | 333 | 0.7− | 0.3− | 2005 09 30 | 699 | 0.0 | 0.4+ |
| 2002 02 07 | 704 | 0.0 | 0.4+ | 2002 02 12 | 333 | 0.6− | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2002 02 07 | 704 | 0.4+ | 0.2+ | 2002 02 20 | 704 | 0.5+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2002 02 07 | 704 | 0.5− | 1.0− | 2002 02 20 | 704 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2002 02 07 | 704 | 0.1+ | 0.5+ | 2002 02 20 | 704 | 0.7+ | 0.2+ | 2006 11 24 | 691 | 0.4− | 0.3+ |
| 2002 02 07 | 704 | 0.3+ | 0.6+ | 2002 02 20 | 704 | 0.9+ | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 2002 02 09 | 291 | 0.3+ | 0.0 | 2002 02 20 | 704 | 0.5+ | 0.5− | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2002 02 09 | 291 | 0.1+ | 0.1+ | 2002 03 04 | 699 | 0.8+ | 0.6+ | | | | |

### 2002 $CZ_{126}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.36575 | | | (2000.0) | | |
| $n$ | 0.23533206 | $\omega$ | 43.65883 | | −0.98111511 | +0.07854285 |
| $a$ | 2.5982562 | $\Omega$ | 139.82023 | | −0.11239496 | −0.97522930 |
| $e$ | 0.0732565 | $i$ | 15.90046 | | +0.15741830 | −0.20678207 |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 644 | 0.2+ | 0.7+ | 2002 02 11 | 704 | 0.4+ | 0.4+ | 2006 04 08 | G96 | 0.2+ | 0.2+ |
| 2002 01 11 | 644 | 0.2+ | 1.0+ | 2002 02 11 | 704 | 0.5+ | 0.6+ | 2006 04 08 | G96 | 0.1− | 0.1+ |
| 2002 01 11 | 644 | 0.0 | 0.2+ | 2002 02 11 | 704 | 0.1+ | 0.3+ | 2006 04 08 | G96 | 0.2− | 0.0 |
| 2002 02 06 | 644 | 0.3+ | 0.6− | 2002 02 11 | 704 | 0.3− | 0.2+ | 2006 04 08 | G96 | 0.2− | 0.1+ |
| 2002 02 06 | 644 | 0.1− | 0.2− | 2002 02 11 | 704 | 0.2+ | 0.1− | 2006 04 26 | G96 | 0.0 | 0.6− |
| 2002 02 06 | 644 | 0.1− | 0.7− | 2002 03 14 | 704 | 0.6+ | 0.6+ | 2006 04 26 | G96 | 0.0 | 0.6− |
| 2002 02 07 | 704 | 0.6− | 0.8− | 2002 03 14 | 704 | 0.0 | 0.0 | 2006 04 26 | G96 | 0.5+ | 0.3− |
| 2002 02 07 | 704 | 1.6− | 1.6− | 2002 03 14 | 704 | 0.3+ | 1.0+ | 2006 04 26 | G96 | 0.1+ | 0.5− |
| 2002 02 07 | 704 | (2.2− | 1.6−) | 2002 03 14 | 704 | 0.1+ | 0.2+ | | | | |
| 2002 02 07 | 704 | (2.4− | 2.0−) | 2002 03 14 | 704 | 0.1− | 0.0 | | | | |

### 2002 $CU_{127}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.54542 | | | (2000.0) | | |
| $n$ | 0.17416096 | $\omega$ | 287.31401 | | +0.30218604 | −0.90973406 |
| $a$ | 3.1756710 | $\Omega$ | 141.13066 | | +0.95138185 | +0.30651205 |
| $e$ | 0.2958970 | $i$ | 26.98191 | | −0.05963362 | +0.28006124 |
| $P$ | 5.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.1+ | 0.0 | 2002 02 13 | 704 | 0.4+ | 0.6+ | 2002 03 14 | 704 | 0.5− | 0.4− |
| 2002 02 06 | 644 | 0.4+ | 0.3− | 2002 02 13 | 704 | 0.3− | 0.1+ | 2002 03 14 | 704 | 1.2+ | 0.2+ |
| 2002 02 06 | 644 | 0.3+ | 0.4− | 2002 02 13 | 704 | 0.5+ | 0.1− | 2002 03 14 | 704 | 0.0 | 0.4− |
| 2002 02 07 | 704 | 0.1− | 0.3+ | 2002 02 14 | 608 | 0.4+ | 0.1− | 2002 03 14 | 704 | 0.2− | 0.1+ |
| 2002 02 07 | 704 | 0.3− | 0.7− | 2002 02 14 | 608 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.4+ | 0.8+ |
| 2002 02 07 | 704 | 0.1− | 0.1+ | 2002 02 14 | 608 | 0.2+ | 0.6− | 2006 09 27 | 703 | 0.6+ | 0.4+ |
| 2002 02 11 | 704 | 0.0 | 0.1+ | 2002 02 20 | 704 | 0.7+ | 0.2− | 2006 09 27 | 703 | 0.2− | 1.2− |
| 2002 02 11 | 704 | 0.0 | 0.2− | 2002 02 20 | 704 | 0.0 | 0.8+ | 2006 09 27 | 703 | (1.0+ | 3.2+) |
| 2002 02 11 | 704 | 0.1+ | 0.4+ | 2002 02 20 | 704 | 0.6− | 0.3− | 2006 10 11 | E12 | 1.2− | 0.3− |
| 2002 02 11 | 704 | 0.3− | 0.2− | 2002 02 20 | 704 | 0.3− | 0.6+ | 2006 10 11 | E12 | 0.2+ | 0.3− |
| 2002 02 11 | 704 | 0.0 | 0.4+ | 2002 02 20 | 704 | 0.4− | 0.3+ | 2006 10 11 | E12 | 0.0 | 0.1+ |
| 2002 02 13 | 291 | 0.2+ | 0.1+ | 2002 02 21 | 704 | 0.9+ | 0.0 | 2006 10 11 | E12 | 0.1− | 0.5+ |
| 2002 02 13 | 291 | 0.5− | 0.1− | 2002 02 21 | 704 | 0.5+ | 0.5+ | 2006 11 18 | E12 | 0.5+ | 0.0 |
| 2002 02 13 | 291 | 0.7− | 0.0 | 2002 02 21 | 704 | (2.2+ | 0.7−) | 2006 11 18 | E12 | 1.0− | 0.4− |
| 2002 02 13 | 704 | 0.1− | 0.1− | 2002 02 21 | 704 | 1.5+ | 0.2− | 2006 11 18 | E12 | 0.6+ | 0.2+ |
| 2002 02 13 | 704 | 0.3− | 0.0 | 2002 03 14 | 704 | 0.1+ | 0.3− | 2006 11 18 | E12 | 0.3+ | 0.2+ |

### 2002 $CU_{130}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 304.13535 | | | (2000.0) | | |
| $n$ | 0.18000701 | $\omega$ | 218.57145 | | −0.69508127 | −0.71512275 |
| $a$ | 3.1065363 | $\Omega$ | 275.59893 | | +0.67665356 | −0.61600988 |
| $e$ | 0.1302755 | $i$ | 4.25848 | | +0.24290325 | −0.33035023 |
| $P$ | 5.48 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 12 | 644 | 0.0 | 0.1− | 2002 02 07 | 704 | 0.2+ | 1.3− | 2002 02 16 | 644 | 0.1− | 0.2+ |
| 2002 01 12 | 644 | 0.2− | 0.4− | 2002 02 07 | 704 | 0.4+ | 0.7− | 2002 02 16 | 644 | 0.3− | 0.3+ |
| 2002 01 12 | 644 | 0.2+ | 0.3− | 2002 02 07 | 608 | 0.7− | 1.3− | 2002 03 16 | 691 | 0.2+ | 1.0+ |
| 2002 01 13 | 704 | 0.7− | 0.3− | 2002 02 07 | 608 | 0.1+ | 1.6− | 2002 03 16 | 691 | 0.2+ | 0.1+ |
| 2002 01 13 | 704 | 0.9+ | 0.8− | 2002 02 07 | 608 | 0.5− | 0.8− | 2002 03 16 | 691 | 0.7+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.5− | 1.0− | 2002 02 11 | 704 | 0.3− | 0.7+ | 2004 07 17 | 807 | 0.2− | 0.8+ | | |
| 2002 01 13 | 704 | 1.4− | 1.5− | 2002 02 11 | 704 | 0.4− | 0.9+ | 2004 07 17 | 807 | 0.2− | 0.6+ | | |
| 2002 02 06 | 644 | 0.1+ | 0.7+ | 2002 02 11 | 704 | 0.0 | 0.7+ | 2006 11 11 | 691 | 0.4+ | 0.1+ | | |
| 2002 02 06 | 644 | 0.0 | 0.3+ | 2002 02 11 | 704 | 0.3− | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.4+ | | |
| 2002 02 06 | 644 | 0.0 | 0.6+ | 2002 02 11 | 704 | 0.1+ | 0.9+ | 2006 11 11 | 691 | 0.3− | 0.0 | | |
| 2002 02 07 | 704 | 0.3+ | 0.5+ | 2002 02 16 | 644 | 0.4− | 0.2+ | | | | | | |

**2002 CE$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.07719 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18315947 | $\omega$ | 264.26205 | | +0.53877779 | | −0.83847843 |
| $a$ | 3.0707878 | $\Omega$ | 152.64090 | | +0.82605564 | | +0.50677070 |
| $e$ | 0.3229946 | $i$ | 10.23834 | | +0.16538010 | | +0.20034314 |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 644 | 0.2+ | 0.2+ | 2002 02 16 | 644 | 0.2+ | 0.0 | 2006 10 27 | 151 | 0.2+ | 0.1− | | |
| 2002 01 08 | 644 | 0.3+ | 0.3+ | 2002 02 20 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 151 | 0.3+ | 0.1− | | |
| 2002 01 08 | 644 | 0.4+ | 0.4+ | 2002 02 20 | 704 | 0.4− | 0.3− | 2006 10 28 | 703 | 0.3− | 0.2− | | |
| 2002 01 14 | 699 | 0.5− | 0.1+ | 2002 02 20 | 704 | 0.2+ | 0.6− | 2006 10 28 | 703 | 0.5− | 0.1− | | |
| 2002 01 14 | 704 | 0.2+ | 0.3− | 2002 02 20 | 704 | 0.1+ | 0.6− | 2006 10 28 | 703 | 0.1− | 0.3− | | |
| 2002 01 14 | 699 | 0.0 | 1.0− | 2002 03 05 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.3− | 1.1− | | |
| 2002 01 14 | 704 | 0.5− | 0.4− | 2002 03 05 | 644 | 0.1− | 0.3+ | 2006 10 31 | 704 | 0.2+ | 0.3− | | |
| 2002 01 14 | 699 | (0.6− | 2.2−) | 2002 03 05 | 644 | 0.2− | 0.1+ | 2006 10 31 | 704 | 1.1+ | 0.7− | | |
| 2002 01 14 | 704 | 0.1+ | 0.1+ | 2002 03 13 | 704 | 0.3+ | 0.4− | 2006 10 31 | 704 | 0.1+ | 0.3+ | | |
| 2002 01 14 | 699 | 0.2− | 0.2+ | 2002 03 13 | 704 | 0.4+ | 0.2+ | 2006 10 31 | 704 | 0.8+ | 0.5− | | |
| 2002 01 14 | 704 | 0.3− | 0.3− | 2002 03 13 | 704 | 0.9+ | 0.3− | 2006 10 31 | 704 | 0.4+ | 0.2− | | |
| 2002 01 14 | 704 | 0.7+ | 0.2+ | 2002 03 13 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.0 | | |
| 2002 02 06 | 644 | 0.5+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.3− | | |
| 2002 02 06 | 644 | 0.5+ | 0.1− | 2006 09 18 | 703 | 1.0+ | 1.3+ | 2006 11 13 | 703 | 0.5+ | 0.3+ | | |
| 2002 02 06 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.9+ | 2006 11 13 | 703 | 0.2+ | 0.3+ | | |
| 2002 02 08 | 704 | 0.4+ | 0.2− | 2006 09 18 | 703 | (0.8− | 1.8+) | 2006 11 19 | 703 | 0.1− | 0.1− | | |
| 2002 02 08 | 704 | 0.5− | 0.5+ | 2006 09 19 | 699 | (1.0− | 1.9+) | 2006 11 19 | 703 | 0.4− | 0.1+ | | |
| 2002 02 08 | 704 | 0.3− | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.1− | | |
| 2002 02 08 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 699 | 0.7− | 0.4− | 2006 11 19 | 703 | 0.1− | 0.0 | | |
| 2002 02 11 | 704 | 1.0− | 0.1− | 2006 09 19 | 699 | 1.0− | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.5+ | | |
| 2002 02 11 | 704 | 1.2− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.2+ | | |
| 2002 02 11 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.0 | 2006 11 21 | 704 | 0.9− | 0.4+ | | |
| 2002 02 11 | 704 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.1+ | | |
| 2002 02 16 | 644 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.3+ | | |
| 2002 02 16 | 644 | 0.1− | 0.2− | 2006 10 26 | 151 | 0.5+ | 0.2− | | | | | | |

**2002 CW$_{156}$ = 2004 XD$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.08160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28826091 | $\omega$ | 250.99810 | | +0.95530292 | | −0.28877096 |
| $a$ | 2.2695803 | $\Omega$ | 125.73812 | | +0.29199329 | | +0.88818792 |
| $e$ | 0.1772330 | $i$ | 4.47319 | | +0.04621966 | | +0.35739830 |
| $P$ | 3.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 1.0− | 0.7+ | 2003 06 07 | 291 | 0.2+ | 0.7+ | 2004 12 14 | 699 | 0.7+ | 0.4− | | |
| 2002 01 14 | 704 | 0.9+ | 0.2+ | 2003 06 07 | 291 | 0.0 | 0.6+ | 2004 12 14 | 699 | 0.2− | 0.2+ | | |
| 2002 01 14 | 704 | 1.2− | 1.1− | 2004 11 03 | 644 | 0.1− | 0.3+ | 2004 12 14 | 699 | 0.9− | 0.4+ | | |
| 2002 01 14 | 704 | 0.3+ | 0.9− | 2004 11 03 | 644 | 0.2− | 0.4+ | 2004 12 14 | 699 | (0.6− | 3.0+) | | |
| 2002 02 07 | 704 | (0.3+ | 3.4+) | 2004 11 03 | 644 | 0.1− | 0.3+ | 2004 12 18 | 704 | 0.3+ | 1.3+ | | |
| 2002 02 07 | 704 | (0.8− | 4.8+) | 2004 12 02 | 699 | 0.6− | 0.2− | 2004 12 18 | 704 | 0.7− | 0.9+ | | |
| 2002 02 07 | 704 | (0.6− | 2.6+) | 2004 12 02 | 699 | 1.1+ | 0.2− | 2004 12 18 | 704 | 0.1+ | 0.7− | | |
| 2002 02 07 | 704 | (1.2+ | 3.0+) | 2004 12 02 | 699 | 0.1− | 0.6+ | 2004 12 18 | 704 | 0.4+ | 0.6− | | |
| 2002 02 12 | 704 | 0.1− | 0.9− | 2004 12 02 | 699 | 0.3− | 0.1+ | 2006 03 24 | 691 | 0.3+ | 0.1+ | | |
| 2002 02 12 | 704 | 0.6− | 0.4+ | 2004 12 02 | 644 | 0.4− | 0.1+ | 2006 03 24 | 691 | 0.3− | 0.1− | | |
| 2002 02 12 | 704 | 0.1− | 0.1− | 2004 12 02 | 644 | 0.5− | 0.1− | 2006 03 24 | 691 | 0.4− | 0.3− | | |
| 2002 02 12 | 704 | 0.2− | 0.2− | 2004 12 02 | 644 | 0.2− | 0.0 | 2006 04 07 | 691 | 0.0 | 0.1+ | | |
| 2002 02 14 | 291 | 0.1+ | 0.1+ | 2004 12 09 | 703 | 0.1− | 0.5− | 2006 04 07 | 691 | 0.4+ | 0.1+ | | |
| 2002 02 14 | 291 | 0.1+ | 0.0 | 2004 12 09 | 703 | 0.3+ | 0.1+ | 2006 04 07 | 691 | 0.2+ | 0.3+ | | |
| 2002 02 14 | 291 | 0.2+ | 0.1− | 2004 12 09 | 703 | 0.2+ | 0.3+ | | | | | | |
| 2003 06 07 | 291 | 0.1+ | 0.2+ | 2004 12 09 | 703 | 0.4+ | 0.7+ | | | | | | |

**2002 CL$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.18177 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37921318 | $\omega$ | 172.17829 | | −0.86354476 | | −0.48498482 |
| $a$ | 1.8903712 | $\Omega$ | 337.14824 | | +0.44126937 | | −0.59417184 |
| $e$ | 0.0780080 | $i$ | 20.83565 | | +0.24407332 | | −0.64167713 |
| $P$ | 2.60 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 704 | 1.2+ | 0.1+ | 2002 02 10 | 691 | 0.7− | 0.7− | 2002 03 12 | 699 | 1.5− | 0.4+ | | |
| 2002 02 07 | 704 | (2.2+ | 2.2−) | 2002 02 12 | 333 | 0.1− | 0.6− | 2002 03 12 | 699 | 1.3− | 0.3− | | |
| 2002 02 07 | 704 | 0.2+ | 1.0+ | 2002 02 12 | 333 | 0.5− | 1.2− | 2002 03 12 | 699 | 0.3+ | 0.4+ | | |
| 2002 02 07 | 704 | 1.5− | 0.6− | 2002 02 12 | 333 | 0.1+ | 1.3− | 2002 03 14 | 644 | 0.3+ | 0.5− | | |
| 2002 02 07 | 704 | 0.1− | 0.7− | 2002 02 12 | 704 | 0.6+ | 0.3+ | 2002 03 14 | 644 | 0.3+ | 0.1+ | | |
| 2002 02 10 | 704 | 0.2− | 0.2+ | 2002 02 12 | 704 | 1.1+ | 1.6+ | 2002 03 14 | 644 | 0.4+ | 0.3− | | |
| 2002 02 10 | 704 | 0.0 | 0.2+ | 2002 02 12 | 704 | 1.1+ | 0.6+ | 2002 03 15 | 644 | 0.4+ | 0.0 | | |
| 2002 02 10 | 704 | 0.3− | 0.7+ | 2002 02 12 | 704 | 0.5+ | 1.7+ | 2002 03 15 | 644 | 0.5+ | 0.1− | | |
| 2002 02 10 | 704 | 0.2+ | 0.2+ | 2002 03 06 | 644 | 0.1+ | 0.5+ | 2002 03 15 | 644 | 0.5+ | 0.1+ | | |
| 2002 02 10 | 704 | 0.1+ | 0.3− | 2002 03 06 | 644 | 0.4+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.0 | | |
| 2002 02 10 | 691 | 0.3− | 0.2− | 2002 03 06 | 644 | 0.2+ | 0.6+ | 2006 11 27 | 703 | 0.2− | 0.5− | | |
| 2002 02 10 | 691 | 0.3+ | 0.5+ | 2002 03 12 | 699 | 0.4− | 1.2− | 2006 11 27 | 703 | 0.1+ | 0.5+ | | |

**2002 CD$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.28382 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17300475 | $\omega$ | 28.80786 | | −0.67234887 | | −0.68718989 |
| $a$ | 3.1898043 | $\Omega$ | 104.95146 | | +0.61278510 | | −0.72523819 |
| $e$ | 0.1876760 | $i$ | 16.54747 | | +0.41526067 | | −0.04242201 |
| $P$ | 5.70 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 333 | 0.0 | 1.3− | 2002 01 08 | 704 | 0.1− | 0.0 | 2002 02 12 | 704 | 0.7− | 0.3− | | |
| 2001 12 14 | 333 | 0.6− | 1.1− | 2002 01 08 | 704 | 0.1− | 0.6+ | 2002 02 12 | 704 | 0.1+ | 0.2+ | | |
| 2001 12 14 | 333 | 0.2+ | 2.0− | 2002 01 20 | 699 | 0.0 | 0.4− | 2002 02 12 | 704 | 0.3− | 0.3+ | | |
| 2001 12 17 | 644 | 0.1− | 0.9+ | 2002 01 20 | 699 | 0.2− | 0.3+ | 2002 03 03 | 644 | 0.1+ | 0.1+ | | |
| 2001 12 17 | 644 | 0.9+ | 0.4+ | 2002 01 20 | 699 | 0.2+ | 0.1+ | 2002 03 03 | 644 | 0.0 | 0.2+ | | |
| 2001 12 17 | 644 | 0.3+ | 1.0+ | 2002 01 20 | 699 | 0.4− | 0.2− | 2002 03 03 | 644 | 0.2− | 0.1+ | | |
| 2001 12 18 | 704 | 0.6+ | 0.6+ | 2002 02 08 | 704 | 0.1+ | 0.2− | 2003 06 02 | 691 | 0.0 | 0.2+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.7− | 2002 02 08 | 704 | 0.3+ | 0.1+ | 2003 06 02 | 691 | 0.1− | 0.3+ | | |
| 2001 12 18 | 704 | 0.3+ | 0.4− | 2002 02 08 | 704 | 0.3+ | 0.1+ | 2003 06 02 | 691 | 0.1+ | 0.3− | | |
| 2001 12 18 | 704 | 0.7− | 0.2+ | 2002 02 08 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 703 | 0.3− | 0.1− | | |
| 2002 01 08 | 704 | 0.1+ | 0.2− | 2002 02 08 | 704 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.2− | 0.1− | | |
| 2002 01 08 | 704 | 0.2+ | 0.2+ | 2002 02 12 | 704 | 0.7− | 0.3+ | 2006 11 16 | 703 | 0.1+ | 0.1+ | | |
| 2002 01 08 | 704 | 0.5+ | 0.2+ | 2002 02 12 | 704 | 0.6− | 0.1+ | 2006 11 16 | 703 | 0.2− | 1.5+ | | |

**2002 CZ$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.93807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19178699 | $\omega$ | 170.98968 | | −0.96942087 | | −0.24455931 |
| $a$ | 2.9779903 | $\Omega$ | 354.72155 | | +0.20912298 | | −0.77987251 |
| $e$ | 0.0680760 | $i$ | 12.77678 | | +0.12841636 | | −0.57618540 |
| $P$ | 5.14 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 704 | 0.2− | 0.4− | 2002 03 04 | 644 | 0.4− | 0.8− | 2002 03 16 | 704 | 0.4− | 0.4+ | | |
| 2002 02 08 | 704 | 0.5− | 0.5− | 2002 03 09 | 704 | 0.3+ | 1.0+ | 2002 03 16 | 704 | 0.3− | 0.1+ | | |
| 2002 02 08 | 704 | 0.6− | 0.5− | 2002 03 09 | 704 | 0.6+ | 0.2+ | 2002 03 20 | 691 | 0.2− | 0.5+ | | |
| 2002 02 08 | 704 | 0.2− | 0.3+ | 2002 03 09 | 704 | 0.9+ | 0.6+ | 2002 03 20 | 691 | 0.0 | 0.5+ | | |
| 2002 02 08 | 704 | 0.4+ | 1.3+ | 2002 03 09 | 704 | 0.7+ | 0.1+ | 2002 03 20 | 691 | 0.1+ | 0.5+ | | |
| 2002 02 12 | 704 | 0.3+ | 0.1+ | 2002 03 09 | 704 | 1.0+ | 0.7+ | 2002 04 01 | 699 | 1.7+ | 0.3+ | | |
| 2002 02 12 | 704 | 0.3− | 0.2+ | 2002 03 12 | 644 | 0.1+ | 1.1+ | 2002 04 01 | 699 | 0.1+ | 0.0 | | |
| 2002 02 12 | 704 | 0.5− | 0.3+ | 2002 03 12 | 644 | 0.1+ | 1.0+ | 2002 04 01 | 699 | 0.8+ | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 704 | 0.5+ | 0.4+ | 2002 03 12 | 644 | 0.2− | 1.0+ | 2002 04 01 | 699 | 0.9+ | 0.2+ |
| 2002 02 12 | 704 | 0.4+ | 0.4− | 2002 03 13 | 691 | 0.1− | 0.5− | 2002 04 15 | 704 | 1.6− | 0.3− |
| 2002 02 12 | 704 | 0.5− | 0.5− | 2002 03 13 | 691 | 0.2− | 0.5− | 2002 04 15 | 704 | 0.4− | 0.5− |
| 2002 02 12 | 704 | 0.3− | 0.5− | 2002 03 13 | 691 | 0.0 | 0.4− | 2002 04 15 | 704 | 0.7− | 0.0 |
| 2002 02 20 | 704 | 0.2− | 1.3− | 2002 03 14 | 704 | 1.0+ | 0.5+ | 2002 04 15 | 704 | 0.7− | 0.7− |
| 2002 02 20 | 704 | 1.3+ | 1.6+ | 2002 03 14 | 704 | 0.4+ | 0.5− | 2004 09 06 | 644 | 0.4− | 0.7+ |
| 2002 02 20 | 704 | 0.7+ | 0.8− | 2002 03 14 | 704 | 0.3+ | 0.2+ | 2004 09 06 | 644 | 0.6− | 0.7+ |
| 2002 02 20 | 704 | 0.7+ | 0.1− | 2002 03 14 | 704 | 0.1+ | 0.7− | 2004 09 06 | 644 | 0.5− | 0.9+ |
| 2002 02 20 | 704 | 0.1+ | 0.1− | 2002 03 16 | 704 | 0.6− | 0.3+ | 2005 12 01 | 644 | 0.1− | 0.1+ |
| 2002 03 04 | 644 | 0.5− | 0.6− | 2002 03 16 | 704 | 0.5− | 0.2+ | 2005 12 01 | 644 | 0.2+ | 0.0 |
| 2002 03 04 | 644 | 0.3− | 0.8− | 2002 03 16 | 704 | 0.9− | 0.2+ | 2005 12 01 | 644 | 0.2− | 0.1+ |

### 2002 CS$_{176}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.03599 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17573827 | $\omega$ | 127.59107 | | −0.05588128 | −0.99738036 | |
| $a$ | 3.1566407 | $\Omega$ | 325.52748 | | +0.88856905 | −0.02870011 | |
| $e$ | 0.1545522 | $i$ | 4.65464 | | +0.45532661 | −0.06639817 | |
| $P$ | 5.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 0.0 | 0.7− | 2002 02 12 | 704 | 0.3+ | 1.2+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2002 01 14 | 704 | 0.4− | 0.8− | 2002 02 19 | 691 | 0.2+ | 0.3− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.6− | 0.6− | 2002 02 19 | 691 | 0.1+ | 0.3− | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2002 02 08 | 691 | 0.0 | 0.2+ | 2002 02 19 | 691 | 0.2+ | 0.7− | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2002 02 08 | 691 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 02 08 | 691 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.4− |
| 2002 02 10 | 704 | 1.2+ | 1.4+ | 2006 11 11 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2002 02 10 | 704 | 0.0 | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.2− |
| 2002 02 10 | 704 | 0.1+ | 0.7+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 02 12 | 704 | 0.4− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 02 12 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 691 | 0.1+ | 0.4+ | | | | |
| 2002 02 12 | 704 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | | | | |

### 2002 CB$_{178}$ = 2004 VA$_{106}$ = 2005 SO$_{281}$

Id. Minor Planet Center (*MPO* 85443, unpublished), S. Foglia

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.40749 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25695672 | $\omega$ | 280.11392 | | −0.74909976 | +0.66242927 | |
| $a$ | 2.4503572 | $\Omega$ | 301.37178 | | −0.60496849 | −0.68780498 | |
| $e$ | 0.1340792 | $i$ | 0.40822 | | −0.26993086 | −0.29683627 | |
| $P$ | 3.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 22 | 291 | 0.6+ | 0.0 | 2004 11 10 | 568 | 0.2+ | 0.4+ | 2006 02 20 | 703 | 1.6− | 0.9+ |
| 2002 01 22 | 291 | 0.6+ | 0.0 | 2005 09 30 | 568 | 0.3− | 0.1− | 2006 02 20 | 703 | 0.7− | 1.1− |
| 2002 01 22 | 291 | 0.5+ | 0.3− | 2005 09 30 | 568 | 0.1+ | 0.2− | 2006 02 20 | G96 | 0.1− | 0.2− |
| 2002 02 08 | 691 | 0.1− | 0.2− | 2005 09 30 | 568 | 0.2− | 0.2− | 2006 02 20 | G96 | 0.6− | 0.3+ |
| 2002 02 08 | 691 | 0.8− | 0.4+ | 2005 10 07 | 568 | 0.1+ | 0.1− | 2006 02 20 | G96 | 0.2+ | 0.5+ |
| 2002 02 08 | 691 | 0.5− | 0.4+ | 2005 10 07 | 568 | 0.0 | 0.2− | 2006 02 20 | G96 | 0.5− | 0.3+ |
| 2002 02 10 | 704 | 0.2− | 1.5− | 2005 10 07 | 568 | 0.0 | 0.1− | 2006 03 05 | G96 | 0.3− | 0.1+ |
| 2002 02 10 | 704 | 1.2− | 0.3− | 2006 01 23 | G96 | 0.2+ | 0.4− | 2006 03 05 | G96 | 0.1+ | 0.2+ |
| 2002 02 10 | 704 | 0.2+ | 0.6+ | 2006 01 23 | G96 | 0.4− | 0.7− | 2006 03 05 | G96 | 0.5+ | 0.6+ |
| 2002 02 10 | 704 | 0.3+ | 0.5− | 2006 01 23 | G96 | 0.5− | 0.7− | 2006 03 05 | G96 | 0.8+ | 0.3+ |
| 2002 02 12 | 704 | (0.5+ | 2.1+) | 2006 01 23 | G96 | 0.1− | 0.3− | 2006 03 23 | G96 | 0.2+ | 0.4+ |
| 2002 02 12 | 704 | 0.1+ | 0.4+ | 2006 02 07 | 691 | 0.5+ | 0.4− | 2006 03 23 | G96 | 0.2+ | 0.3+ |
| 2002 02 12 | 704 | 0.5− | 0.5+ | 2006 02 07 | 691 | 0.2− | 0.3+ | 2006 03 23 | G96 | 0.1+ | 0.2+ |
| 2004 11 09 | 568 | 0.2− | 0.2+ | 2006 02 07 | 691 | 0.0 | 0.5− | 2006 03 23 | G96 | 0.1+ | 0.3+ |
| 2004 11 09 | 568 | 0.2− | 0.2+ | 2006 02 20 | 703 | 0.7+ | 1.5+ | | | | |
| 2004 11 09 | 568 | 0.2− | 0.2+ | 2006 02 20 | 703 | 0.6+ | 0.1+ | | | | |

### 2002 CK$_{186}$ = 2006 WX$_{162}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.40344 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17260223 | $\omega$ | 356.88516 | | −0.32515168 | −0.94480942 | |
| $a$ | 3.1947615 | $\Omega$ | 112.08674 | | +0.86856152 | −0.31516160 | |
| $e$ | 0.1399545 | $i$ | 2.48302 | | +0.37400170 | −0.08948925 | |
| $P$ | 5.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 691 | 0.0 | 0.2+ | 2002 02 10 | 704 | 0.1+ | 0.2+ | 2005 08 09 | 807 | 0.2− | 0.7+ |
| 2000 11 02 | 691 | 0.2− | 0.2− | 2002 02 10 | 704 | 0.4+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2000 11 02 | 691 | 0.0 | 0.2+ | 2002 02 10 | 704 | 0.4+ | 0.9− | 2006 11 11 | 691 | 0.3+ | 0.3− |
| 2002 01 22 | 691 | 0.3− | 0.1+ | 2002 02 12 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2002 01 22 | 691 | 0.2− | 0.1+ | 2002 02 12 | 704 | 1.5+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 01 22 | 691 | 0.2− | 0.1− | 2002 02 12 | 704 | 0.2+ | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2002 02 09 | 691 | 0.1+ | 0.1− | 2002 02 12 | 704 | 0.0 | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2002 02 09 | 691 | 0.1+ | 0.1+ | 2002 02 12 | 704 | 0.4− | 0.0 | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2002 02 09 | 691 | 0.1+ | 0.2+ | 2005 08 08 | 807 | 0.3− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2002 02 10 | 704 | 0.4− | 1.0− | 2005 08 08 | 807 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.1+ |

### 2002 CS$_{197}$ = 2005 YV$_{1}$ = 6339 P-L

Id. Minor Planet Center (*MPO* 94630; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.41742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22114790 | $\omega$ | 68.13494 | | +0.61632742 | −0.78737884 | |
| $a$ | 2.7082006 | $\Omega$ | 343.79543 | | +0.70387608 | +0.55834378 | |
| $e$ | 0.2169248 | $i$ | 2.71758 | | +0.35312741 | +0.26131740 | |
| $P$ | 4.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.0 | 0.2− | 2002 02 10 | 704 | 0.3+ | 0.9− | 2005 12 22 | 703 | 0.0 | 0.0 |
| 1960 09 24 | 675 | 0.3− | 0.5+ | 2002 02 10 | 704 | 0.8− | 0.6− | 2005 12 22 | 703 | 0.0 | 0.1+ |
| 1960 09 25 | 675 | (2.4− | 0.1+) | 2002 02 10 | 704 | 0.7− | 0.1+ | 2005 12 28 | G96 | 0.1− | 0.0 |
| 1960 09 25 | 675 | 0.6+ | 1.2− | 2002 02 10 | 704 | 1.0− | 0.6− | 2005 12 28 | G96 | 0.0 | 0.1+ |
| 1960 09 26 | 675 | 1.1+ | 1.0− | 2002 02 10 | 704 | 1.2− | 0.3− | 2005 12 28 | G96 | 0.1− | 0.0 |
| 1960 09 26 | 675 | 0.2− | 0.6− | 2002 02 12 | 704 | 0.1+ | 0.0 | 2005 12 28 | G96 | 0.6− | 0.0 |
| 1960 09 28 | 675 | (2.8− | 1.0+) | 2002 02 12 | 704 | 0.1+ | 1.4− | 2005 12 30 | G96 | 0.0 | 0.0 |
| 1960 09 28 | 675 | (2.5− | 0.9+) | 2002 02 12 | 704 | 0.1+ | 0.3+ | 2005 12 30 | G96 | 0.4− | 0.2− |
| 1993 01 29 | 691 | 0.8+ | 0.1− | 2005 12 05 | 704 | 0.5+ | 0.8+ | 2005 12 30 | G96 | 0.1+ | 0.1− |
| 1993 01 29 | 691 | 0.2+ | 0.2+ | 2005 12 05 | 704 | 0.7− | 0.9+ | 2005 12 30 | G96 | 0.4− | 0.0 |
| 1993 01 29 | 691 | 0.0 | 0.1+ | 2005 12 05 | 704 | 0.2+ | 0.8+ | 2005 12 30 | G96 | 0.1+ | 0.1− |
| 2000 09 03 | 645 | 0.1− | 0.4+ | 2005 12 05 | 704 | 0.5+ | 1.2+ | 2005 12 30 | G96 | 0.1+ | 0.1− |
| 2000 09 03 | 645 | 0.1− | 0.3+ | 2005 12 05 | 704 | 0.3+ | 0.3+ | 2005 12 30 | G96 | 0.1+ | 0.2− |
| 2002 02 07 | 644 | 0.6+ | 0.1+ | 2005 12 21 | 703 | 0.2− | 0.7− | 2005 12 30 | G96 | 0.0 | 0.0 |
| 2002 02 07 | 291 | 0.3− | 0.1+ | 2005 12 21 | 703 | 0.3+ | 0.2− | 2005 12 31 | G96 | 0.1+ | 0.1− |
| 2002 02 07 | 291 | 0.1+ | 0.2+ | 2005 12 21 | 703 | 0.4− | 0.1+ | 2005 12 31 | G96 | 0.1+ | 0.2− |
| 2002 02 07 | 291 | 0.2+ | 0.3+ | 2005 12 21 | 703 | 0.7+ | 0.6− | 2005 12 31 | G96 | 0.4− | 0.2− |
| 2002 02 07 | 644 | 0.4+ | 0.4+ | 2005 12 22 | 703 | 0.1− | 0.3− | 2005 12 31 | G96 | 0.0 | 0.1− |
| 2002 02 07 | 644 | 0.6+ | 0.5+ | 2005 12 22 | 703 | (1.5− | 2.9+) | | | | |

### 2002 CH$_{200}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.20473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23012125 | $\omega$ | 290.72228 | | +0.08032513 | +0.99645659 | |
| $a$ | 2.6373326 | $\Omega$ | 343.82483 | | −0.87797274 | +0.05888233 | |
| $e$ | 0.1260675 | $i$ | 5.13693 | | −0.47192345 | +0.06005938 | |
| $P$ | 4.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 1.0+ | 2.0+ | 2002 02 12 | 704 | 0.3+ | 0.1+ | 2002 03 14 | 704 | 0.4+ | 0.8+ |
| 1995 09 29 | 691 | 0.7− | 0.7− | 2002 02 12 | 704 | 0.5− | 0.7− | 2004 11 19 | 703 | 0.0 | 0.0 |
| 1995 09 29 | 691 | 0.6− | 0.7− | 2002 02 12 | 704 | 0.4+ | 1.3+ | 2004 11 19 | 703 | (2.5− | 0.3−) |
| 2002 01 07 | 691 | 0.3− | 0.2− | 2002 02 12 | 704 | 0.7− | 1.3− | 2004 11 19 | 703 | 0.6+ | 0.3+ |
| 2002 01 07 | 691 | 0.4− | 0.1+ | 2002 03 04 | 704 | 1.0− | 0.3− | 2004 11 19 | 703 | 0.3− | 0.1− |
| 2002 01 07 | 691 | 0.3− | 0.3− | 2002 03 04 | 704 | 0.5− | 0.2+ | 2006 01 27 | 699 | 0.9− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.2+ | 0.5+ | 2002 03 04 | 704 | 0.3− | 0.6+ | 2006 01 27 | 699 | 1.3− | 0.3− |
| 2002 02 07 | 644 | 0.3+ | 0.5+ | 2002 03 12 | 644 | 0.2+ | 0.5+ | 2006 01 27 | 699 | 0.3+ | 0.2+ |
| 2002 02 07 | 644 | 0.6+ | 0.3+ | 2002 03 12 | 644 | 0.2+ | 0.1+ | 2006 01 27 | 699 | 0.7+ | 0.5− |
| 2002 02 10 | 704 | 1.2+ | 0.3− | 2002 03 12 | 644 | 0.6+ | 0.3+ | 2006 02 02 | 703 | 0.5+ | 0.1− |
| 2002 02 10 | 704 | 0.8+ | 0.7+ | 2002 03 14 | 704 | 1.2+ | 0.1− | 2006 02 02 | 703 | 0.3+ | 0.5− |
| 2002 02 10 | 704 | 1.3+ | 0.2+ | 2002 03 14 | 704 | 0.9+ | 1.1+ | 2006 02 02 | 703 | 0.9− | 0.8− |
| 2002 02 10 | 704 | 0.3+ | 0.8+ | 2002 03 14 | 704 | 0.4+ | 0.6+ | 2006 02 02 | 703 | (2.6− | 0.7+) |

**2002 CU$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.76983 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23855960 | $\omega$ | 5.27099 | | +0.98739755 | +0.15493119 | |
| $a$ | 2.5747681 | $\Omega$ | 345.69384 | | −0.14955668 | +0.84675526 | |
| $e$ | 0.0861070 | $i$ | 7.50771 | | −0.05175795 | +0.50892225 | |
| $P$ | 4.13 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.3+ | 0.6− | 2002 03 20 | 691 | 0.1+ | 0.1+ | 2004 09 18 | 704 | 1.6+ | 0.1− |
| 2002 02 10 | 704 | 0.6− | 0.0 | 2004 09 07 | 644 | 0.2+ | 0.0 | 2004 09 18 | 704 | 0.3+ | 0.2+ |
| 2002 02 10 | 704 | 0.1− | 0.5+ | 2004 09 07 | 644 | 0.2+ | 0.2+ | 2004 10 10 | 704 | 0.3+ | 0.0 |
| 2002 02 10 | 704 | 0.4− | 0.0 | 2004 09 07 | 644 | 0.2+ | 0.0 | 2004 10 10 | 704 | 0.7+ | 1.0+ |
| 2002 02 10 | 704 | 0.9− | 0.1− | 2004 09 15 | 699 | 2.4− | 0.9− | 2004 10 10 | 704 | 1.0+ | 0.0 |
| 2002 02 12 | 704 | 0.1+ | 0.5− | 2004 09 15 | 699 | 0.6− | 0.6− | 2004 10 21 | 704 | 1.2− | 0.3+ |
| 2002 02 12 | 704 | 0.0 | 0.3+ | 2004 09 15 | 699 | 0.9− | 0.6+ | 2004 10 21 | 704 | 0.5+ | 0.4− |
| 2002 02 12 | 704 | 0.7+ | 1.0+ | 2004 09 15 | 699 | 0.3− | 0.2− | 2004 10 21 | 704 | 0.4− | 0.3− |
| 2002 03 20 | 691 | 0.3+ | 0.5− | 2004 09 18 | 704 | 1.5+ | 0.7− | 2004 10 21 | 704 | 1.1− | 0.4+ |
| 2002 03 20 | 691 | 0.1− | 0.1+ | 2004 09 18 | 704 | 0.5− | 0.7+ | 2004 10 21 | 704 | 0.9+ | 0.4− |

**2002 CD$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.61864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23761001 | $\omega$ | 337.18827 | | −0.41686745 | −0.90837473 | |
| $a$ | 2.5816234 | $\Omega$ | 137.42925 | | +0.84126363 | −0.39923824 | |
| $e$ | 0.1554773 | $i$ | 2.78042 | | +0.34423399 | −0.12435507 | |
| $P$ | 4.15 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.5− | 0.3− | 2002 02 12 | 704 | 0.4− | 1.7+ | 2006 01 04 | G96 | 0.1− | 0.7− |
| 1994 04 03 | 691 | 0.1+ | 0.3− | 2002 02 12 | 704 | 1.2+ | 0.1+ | 2006 01 04 | G96 | 1.1− | 0.1− |
| 1994 04 03 | 691 | 0.1− | 0.0 | 2004 07 17 | 807 | 0.0 | 0.3+ | 2006 01 04 | G96 | 0.4− | 0.5− |
| 2002 02 08 | 691 | 0.4+ | 0.2+ | 2004 07 17 | 807 | 0.2+ | 0.3+ | 2006 01 04 | G96 | 0.4− | 0.2− |
| 2002 02 08 | 691 | 0.1+ | 0.1+ | 2005 11 30 | G96 | 0.2+ | 0.4− | 2006 01 24 | 691 | 0.1+ | 0.1+ |
| 2002 02 08 | 691 | 0.5+ | 0.4+ | 2005 11 30 | G96 | 0.2− | 0.4− | 2006 01 24 | 691 | 0.0 | 0.1+ |
| 2002 02 10 | 704 | 0.3− | 0.1− | 2005 11 30 | G96 | 0.5+ | 0.1− | 2006 01 24 | 691 | 0.0 | 0.0 |
| 2002 02 10 | 704 | 0.1− | 0.7+ | 2005 11 30 | G96 | 0.1+ | 0.2− | 2006 02 25 | G96 | 0.3− | 0.1− |
| 2002 02 10 | 704 | 0.7− | 0.4− | 2005 12 26 | G96 | 0.5− | 0.5− | 2006 02 25 | G96 | 0.5− | 0.2− |
| 2002 02 10 | 704 | 0.2+ | 0.3− | 2005 12 26 | G96 | 0.0 | 0.5− | 2006 02 25 | G96 | 0.3− | 0.1− |
| 2002 02 12 | 704 | 0.2+ | 0.5+ | 2005 12 26 | G96 | 0.6− | 0.7− | 2006 02 25 | G96 | 0.4− | 0.0 |
| 2002 02 12 | 704 | 0.8+ | 0.4− | 2005 12 26 | G96 | 0.5+ | 0.3− | | | | |

**2002 CX$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.35923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20448912 | $\omega$ | 35.92302 | | −0.96758669 | −0.21721446 | |
| $a$ | 2.8533557 | $\Omega$ | 131.00449 | | +0.17286646 | −0.94153583 | |
| $e$ | 0.0610695 | $i$ | 9.82830 | | +0.18410103 | −0.25754255 | |
| $P$ | 4.82 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 15 | 691 | 0.1+ | 0.0 | 2002 02 10 | 704 | 0.2+ | 1.0− | 2002 03 17 | 704 | 1.5+ | 0.8+ |
| 1993 04 15 | 691 | 0.1− | 0.0 | 2002 02 10 | 704 | 0.2+ | 1.0− | 2002 03 22 | 644 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 0.8+ | 0.3+ | 2002 02 10 | 704 | 0.1− | 1.3− | 2002 03 22 | 644 | 0.0 | 0.1− |
| 2002 01 14 | 704 | (0.3+ | 2.5+) | 2002 02 12 | 704 | 0.3− | 0.6− | 2002 03 22 | 644 | 0.1+ | 0.4− |
| 2002 01 14 | 704 | 0.7+ | 0.6− | 2002 02 12 | 704 | 0.5− | 0.4− | 2002 04 02 | 644 | 0.9− | 0.3+ |
| 2002 01 14 | 704 | 0.4+ | 1.1+ | 2002 02 12 | 704 | 0.3+ | 0.2+ | 2002 04 02 | 644 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.2− | 0.2− | 2002 02 12 | 704 | 0.1− | 0.4− | 2002 04 02 | 644 | 0.2− | 0.0 |
| 2002 02 07 | 608 | (0.3− | 2.1+) | 2002 03 11 | 644 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.3+ |
| 2002 02 07 | 608 | 1.4− | 2.0+ | 2002 03 11 | 644 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2002 02 07 | 608 | 0.8− | 0.9+ | 2002 03 11 | 644 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2002 02 10 | 704 | 0.0 | 0.5− | 2002 03 17 | 704 | 0.3+ | 0.4+ | | | | |
| 2002 02 10 | 704 | 0.4− | 0.7− | 2002 03 17 | 704 | 0.8+ | 0.8+ | | | | |

**2002 CX$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.88457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20385995 | $\omega$ | 344.42347 | | +0.12476242 | −0.99060773 | |
| $a$ | 2.8592235 | $\Omega$ | 98.38494 | | +0.91624783 | +0.09339290 | |
| $e$ | 0.0282651 | $i$ | 3.24220 | | +0.38068919 | +0.09987036 | |
| $P$ | 4.83 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.1+ | 0.7− | 2002 03 05 | 291 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.1− | 0.3− |
| 2002 02 10 | 704 | 0.0 | 0.1+ | 2002 03 05 | 291 | 0.0 | 0.2+ | 2005 10 28 | 691 | 0.1+ | 0.0 |
| 2002 02 10 | 704 | 0.2+ | 0.5+ | 2002 03 05 | 291 | 0.2− | 0.0 | 2005 11 01 | 691 | 0.9− | 0.1+ |
| 2002 02 10 | 704 | 0.1+ | 0.4− | 2005 10 28 | 691 | 0.1− | 0.2− | 2005 11 01 | 691 | 0.1− | 0.2+ |
| 2002 02 12 | 704 | 0.1− | 1.0+ | 2005 10 28 | G96 | 0.3− | 0.1− | 2005 11 01 | 691 | 0.3+ | 0.0 |
| 2002 02 12 | 704 | 0.3− | 0.7− | 2005 10 28 | G96 | 0.1− | 0.3− | 2005 11 22 | 691 | 0.1+ | 0.2+ |
| 2002 02 12 | 704 | 0.6+ | 0.5+ | 2005 10 28 | 691 | 0.2+ | 0.2− | 2005 11 22 | 691 | 0.0 | 0.2+ |
| 2002 02 12 | 704 | 0.3+ | 1.0− | 2005 10 28 | G96 | 0.8+ | 0.4− | 2005 11 22 | 691 | 0.2+ | 0.1+ |

**2002 CJ$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.26006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23964667 | $\omega$ | 94.35896 | | −0.38219341 | +0.92378650 | |
| $a$ | 2.5669758 | $\Omega$ | 153.13400 | | −0.86702811 | −0.34972840 | |
| $e$ | 0.0921450 | $i$ | 2.96580 | | −0.31967240 | −0.15591199 | |
| $P$ | 4.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.4+ | 0.3− | 2002 02 20 | 699 | 0.5+ | 0.1+ | 2006 02 07 | G96 | 0.3− | 0.1− |
| 2002 02 11 | 704 | 0.1+ | 1.4− | 2002 02 20 | 699 | 0.8− | 0.7+ | 2006 02 07 | G96 | 0.7− | 0.1− |
| 2002 02 11 | 704 | 0.5− | 0.7− | 2002 02 20 | 699 | (0.5+ | 2.2+) | 2006 02 07 | G96 | 0.8− | 0.2− |
| 2002 02 11 | 704 | 0.0 | 0.5− | 2002 03 14 | 704 | 1.2− | 0.1− | 2006 02 07 | G96 | 0.1− | 0.3− |
| 2002 02 11 | 704 | 0.2− | 1.2− | 2002 03 14 | 704 | 1.6− | 0.2+ | 2006 03 23 | G96 | 0.0 | 0.2− |
| 2002 02 12 | 704 | 0.3+ | 0.9+ | 2002 03 14 | 704 | 0.9− | 0.4+ | 2006 03 23 | G96 | 0.0 | 0.0 |
| 2002 02 12 | 704 | 0.5+ | 0.9− | 2002 03 20 | 291 | 0.0 | 0.2+ | 2006 03 23 | G96 | 0.0 | 0.2− |
| 2002 02 12 | 704 | 0.0 | 0.8+ | 2002 03 20 | 291 | 0.0 | 0.0 | 2006 03 23 | G96 | 0.0 | 0.0 |
| 2002 02 12 | 704 | 0.0 | 0.0 | 2002 03 20 | 291 | 0.2+ | 0.1− | 2006 04 20 | G96 | 0.5− | 0.7+ |
| 2002 02 12 | 704 | 0.1− | 0.8− | 2006 01 06 | G96 | 0.3+ | 0.4+ | 2006 04 20 | G96 | 0.0 | 0.1− |
| 2002 02 12 | 704 | 0.2− | 0.4+ | 2006 01 06 | G96 | 0.1+ | 0.7+ | 2006 04 20 | G96 | 0.4+ | 0.1− |
| 2002 02 12 | 704 | 0.9− | 0.2+ | 2006 01 06 | G96 | 0.7− | 0.4− | 2006 04 20 | G96 | 0.1− | 1.0− |
| 2002 02 12 | 704 | 0.1+ | 0.1− | 2006 01 06 | G96 | 0.1+ | 1.3− | 2006 04 20 | G96 | 0.1+ | 0.1− |
| 2002 02 12 | 704 | 0.5+ | 0.4+ | 2006 01 23 | G96 | 0.4− | 0.1− | 2006 04 20 | G96 | 0.2+ | 0.3− |
| 2002 02 20 | 704 | 0.7+ | 0.0 | 2006 01 23 | G96 | 0.4− | 0.1+ | 2006 04 20 | G96 | 0.5+ | 0.5− |
| 2002 02 20 | 704 | 0.3+ | 0.0 | 2006 01 23 | G96 | 0.7− | 0.4+ | 2006 04 20 | G96 | 0.0 | 0.5+ |
| 2002 02 20 | 704 | 1.0+ | 1.1+ | 2006 01 23 | G96 | 0.6− | 0.3+ | 2006 05 26 | G96 | 0.1− | 0.1− |
| 2002 02 20 | 704 | 0.9+ | 1.2+ | 2006 02 01 | 691 | 0.4+ | 0.0 | 2006 05 26 | G96 | 0.3− | 0.0 |
| 2002 02 20 | 704 | 0.9+ | 0.3+ | 2006 02 01 | 691 | 0.3+ | 0.2+ | 2006 05 26 | G96 | 0.1− | 0.1− |
| 2002 02 20 | 699 | 0.9− | 0.3− | 2006 02 01 | 691 | 0.3+ | 0.0 | 2006 05 26 | G96 | 0.1+ | 0.1− |

**2002 CU$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.15097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18990766 | $\omega$ | 206.21757 | | −0.93260532 | −0.34063901 | |
| $a$ | 2.9976049 | $\Omega$ | 313.32799 | | +0.35318540 | −0.79351598 | |
| $e$ | 0.0549266 | $i$ | 9.43244 | | +0.07421185 | −0.50427914 | |
| $P$ | 5.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 704 | 0.6+ | 0.7− | 2002 02 11 | 704 | 0.7− | 0.6+ | 2002 03 13 | 704 | 0.3+ | 0.0 |
| 2002 01 11 | 704 | 0.3+ | 0.7+ | 2002 02 11 | 704 | 0.4− | 0.8+ | 2002 03 13 | 704 | 0.6− | 1.1+ |
| 2002 01 11 | 704 | 0.2− | 1.4+ | 2002 02 11 | 704 | 0.9− | 1.4+ | 2002 03 13 | 704 | 0.4+ | 0.9− |
| 2002 01 19 | 704 | 0.7+ | 0.2− | 2002 02 11 | 704 | 0.4− | 1.5+ | 2002 03 13 | 704 | 0.5+ | 0.3− |
| 2002 01 19 | 704 | 0.5+ | 0.7+ | 2002 02 20 | 704 | 0.7+ | 0.8+ | 2002 03 13 | 704 | 1.1+ | 0.0 |
| 2002 01 19 | 704 | 0.7+ | 0.1− | 2002 02 20 | 704 | 0.6+ | 0.7+ | 2004 09 12 | 691 | 0.2+ | 0.2+ |
| 2002 01 19 | 704 | 0.7+ | 0.9− | 2002 02 20 | 704 | 0.2+ | 1.0+ | 2004 09 12 | 691 | 0.0 | 0.4+ |
| 2002 02 05 | 644 | 0.0 | 0.5+ | 2002 02 20 | 704 | 0.4+ | 0.9+ | 2004 09 12 | 691 | 0.6− | 0.3+ |
| 2002 02 05 | 644 | 0.4+ | 0.7+ | 2002 02 20 | 704 | 0.7+ | 0.8+ | 2006 11 02 | G96 | 0.2− | 0.1− |
| 2002 02 05 | 644 | 0.6+ | 0.9+ | 2002 03 10 | 608 | 0.3+ | 0.8− | 2006 11 02 | G96 | 0.1+ | 0.7− |
| 2002 02 06 | 644 | 0.4+ | 0.2− | 2002 03 10 | 608 | 0.4+ | 0.1− | 2006 11 02 | G96 | 1.0− | 0.7− |
| 2002 02 06 | 644 | 0.0 | 0.1− | 2002 03 10 | 608 | 1.1+ | 0.4− | 2006 11 02 | G96 | 0.1− | 0.5− |
| 2002 02 06 | 644 | 0.2+ | 0.2− | 2002 03 12 | 645 | 0.1− | 0.2− | | | | |
| 2002 02 11 | 704 | 0.7− | 0.3+ | 2002 03 12 | 645 | 0.1− | 0.1− | | | | |

**2002 CX$_{227}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.42158 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17856373 | $\omega$ | 219.81989 | | −0.80704990 | −0.57192363 | |
| $a$ | 3.1232534 | $\Omega$ | 284.69168 | | +0.57304063 | −0.69858030 | |
| $e$ | 0.1663572 | $i$ | 8.73386 | | +0.14246011 | −0.42998712 | |
| $P$ | 5.52 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.1+ | 0.4+ | 2002 02 13 | 645 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2002 02 06 | 644 | 0.1+ | 0.3+ | 2002 02 16 | 644 | 0.6+ | 0.4+ | 2006 11 18 | 691 | 1.4+ | 0.2+ |
| 2002 02 06 | 644 | 0.3+ | 0.2+ | 2002 02 16 | 644 | 0.6+ | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2002 02 07 | 644 | 0.3+ | 0.0 | 2002 02 16 | 644 | 0.6+ | 0.5+ | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2002 02 07 | 644 | 0.8+ | 0.9+ | 2002 03 12 | 645 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.8− | 0.9− |
| 2002 02 07 | 644 | 0.7+ | 0.1− | 2002 03 12 | 645 | 0.0 | 0.0 | | | | |
| 2002 02 13 | 645 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2+ | | | | |

**2002 CG$_{235}$ = 2002 AG$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.96385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19863330 | $\omega$ | 93.60591 | | −0.18927961 | −0.98191800 | |
| $a$ | 2.9091627 | $\Omega$ | 7.30718 | | +0.89060078 | −0.17304921 | |
| $e$ | 0.1158865 | $i$ | 1.44353 | | +0.41352567 | −0.07675290 | |
| $P$ | 4.96 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 1.0− | 1.0+ | 2002 02 14 | 691 | 0.2+ | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.1− | 0.8+ | 2005 09 30 | G96 | 0.3+ | 0.0 | 2005 10 25 | G96 | 0.1− | 0.1− |
| 2002 01 14 | 704 | 0.4+ | 0.3+ | 2005 09 30 | G96 | 0.3+ | 0.6− | 2005 10 25 | G96 | 0.3+ | 0.1− |
| 2002 02 12 | 691 | 0.0 | 0.5− | 2005 09 30 | G96 | 0.4+ | 0.4− | 2005 10 25 | G96 | 0.0 | 0.0 |
| 2002 02 12 | 691 | 0.1+ | 0.1+ | 2005 09 30 | G96 | 0.2− | 0.5− | 2005 11 04 | 691 | 0.1− | 0.3+ |
| 2002 02 12 | 691 | 0.2− | 0.1+ | 2005 10 11 | 691 | 0.2− | 0.0 | 2005 11 04 | 691 | 0.2+ | 0.4+ |
| 2002 02 14 | 691 | 0.1− | 0.4− | 2005 10 11 | 691 | 0.2+ | 0.2− | 2005 11 04 | 691 | 0.3− | 0.0 |
| 2002 02 14 | 691 | 0.1+ | 0.1+ | 2005 10 11 | 691 | 0.0 | 0.0 | | | | |

**2002 CU$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.25154 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18256958 | $\omega$ | 33.54911 | | −0.96689945 | +0.24066895 | |
| $a$ | 3.0773987 | $\Omega$ | 159.85633 | | −0.25217150 | −0.95199406 | |
| $e$ | 0.1162927 | $i$ | 14.24809 | | +0.03892290 | −0.18917126 | |
| $P$ | 5.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 13 | 691 | 0.0 | 0.2+ | 2002 02 20 | 291 | 0.1− | 0.3+ | 2002 03 16 | 704 | 0.4− | 0.6+ |
| 1997 04 13 | 691 | 0.1+ | 0.1+ | 2002 02 20 | 291 | 0.0 | 0.4+ | 2002 03 16 | 704 | 0.3− | 0.2− |
| 1997 04 13 | 691 | 0.0 | 0.1− | 2002 02 20 | 291 | 0.3− | 0.3+ | 2002 03 24 | 691 | 0.2+ | 0.3− |
| 2002 01 14 | 291 | 0.2− | 0.3+ | 2002 03 09 | 644 | 0.3+ | 0.5+ | 2002 03 24 | 691 | 0.2− | 0.1+ |
| 2002 01 14 | 291 | 0.5− | 0.0 | 2002 03 09 | 644 | 0.5+ | 0.4+ | 2002 03 24 | 691 | 0.1− | 0.4− |
| 2002 01 14 | 291 | 0.3− | 0.4+ | 2002 03 09 | 644 | 0.5+ | 0.4+ | 2004 09 07 | 691 | 0.1+ | 0.3+ |
| 2002 02 13 | 691 | 0.3+ | 0.0 | 2002 03 16 | 704 | 0.2+ | 0.2+ | 2004 09 07 | 691 | 0.2− | 0.3+ |
| 2002 02 13 | 691 | 0.5+ | 0.2− | 2002 03 16 | 704 | 0.0 | 0.6− | 2004 09 07 | 691 | 0.1− | 0.6+ |
| 2002 02 13 | 691 | 0.4+ | 0.0 | 2002 03 16 | 704 | 0.3− | 0.4− | | | | |

**2002 CK$_{253}$ = 2005 TX$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.10985 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18148744 | $\omega$ | 197.67981 | | +0.97054114 | −0.24060576 | |
| $a$ | 3.0896195 | $\Omega$ | 176.17497 | | +0.23751494 | +0.94667248 | |
| $e$ | 0.0506703 | $i$ | 10.88735 | | +0.04045427 | +0.21428974 | |
| $P$ | 5.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 03 | 209 | 0.5− | 0.1+ | 2003 04 04 | 691 | 0.8+ | 0.6+ | 2003 04 25 | 291 | 0.1+ | 0.6− |
| 2002 02 03 | 209 | 0.6− | 0.1+ | 2003 04 04 | 691 | 0.5+ | 0.2+ | 2005 10 01 | 691 | 0.2− | 0.1+ |
| 2002 02 03 | 209 | 0.6+ | 0.2− | 2003 04 10 | 691 | 1.0− | 0.2+ | 2005 10 01 | 691 | 0.0 | 0.1+ |
| 2002 02 07 | 291 | 0.1− | 0.1− | 2003 04 10 | 691 | 0.4− | 0.1+ | 2005 10 01 | 691 | 0.3+ | 0.0 |
| 2002 02 07 | 291 | 0.0 | 0.1+ | 2003 04 10 | 691 | 0.4− | 0.3+ | 2005 10 06 | 691 | 0.0 | 0.2+ |
| 2002 02 07 | 291 | 0.3+ | 0.1+ | 2003 04 25 | 291 | 0.1+ | 0.4− | 2005 10 06 | 691 | 0.0 | 0.2+ |
| 2003 04 04 | 691 | 0.6+ | 0.5+ | 2003 04 25 | 291 | 0.2− | 0.5− | 2005 10 06 | 691 | 0.1− | 0.2− |

**2002 CQ$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.01327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17913605 | $\omega$ | 183.10843 | | −0.17873057 | −0.95752153 | |
| $a$ | 3.1165975 | $\Omega$ | 277.27000 | | +0.90755808 | −0.07161685 | |
| $e$ | 0.1205904 | $i$ | 13.18674 | | +0.37999173 | −0.27932694 | |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 24 | 608 | 0.4− | 0.4− | 2002 02 04 | 699 | 0.5+ | 0.2+ | 2006 11 17 | 691 | 0.2− | 0.2+ |
| 2001 12 24 | 608 | 0.7+ | 0.3− | 2002 02 04 | 699 | 0.8− | 0.3− | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2001 12 24 | 608 | 0.2+ | 0.1− | 2002 02 07 | 644 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2002 01 08 | 608 | 0.0 | 0.5+ | 2002 02 07 | 644 | 0.1+ | 0.2− | 2006 11 25 | 691 | 0.0 | 0.3+ |
| 2002 01 08 | 608 | 0.1+ | 0.8+ | 2002 02 07 | 644 | 0.0 | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2002 01 08 | 608 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.7+ | 0.6+ | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2002 02 04 | 699 | 0.8− | 1.0+ | 2006 11 16 | 704 | 0.3− | 0.7− | | | | |
| 2002 02 04 | 699 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.3+ | 0.4− | | | | |

**2002 CV$_{254}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.82898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23803978 | $\omega$ | 288.35593 | | −0.86710506 | +0.46155966 | |
| $a$ | 2.5785152 | $\Omega$ | 279.49764 | | −0.35433842 | −0.83584678 | |
| $e$ | 0.1056727 | $i$ | 10.94874 | | −0.35010441 | −0.29719159 | |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 699 | 0.5− | 0.1+ | 2002 02 17 | 644 | 0.4+ | 0.1+ | 2006 01 10 | 691 | 0.1− | 0.1− |
| 2002 02 06 | 699 | 0.5− | 0.7− | 2002 02 17 | 644 | 0.1− | 0.0 | 2006 01 23 | 704 | 0.2+ | 1.3+ |
| 2002 02 06 | 699 | 0.1+ | 0.7+ | 2005 11 30 | G96 | 0.4− | 0.2− | 2006 01 23 | 704 | 1.4+ | 0.8+ |
| 2002 02 06 | 699 | 0.2− | 0.2− | 2005 11 30 | G96 | 0.3− | 0.4+ | 2006 01 23 | 704 | 0.6+ | 1.6− |
| 2002 02 07 | 644 | 0.3+ | 0.1− | 2005 11 30 | G96 | 0.1− | 0.3+ | 2006 02 03 | 704 | 0.6+ | 0.3+ |
| 2002 02 07 | 644 | 0.1+ | 0.3− | 2005 11 30 | G96 | 0.1+ | 0.3− | 2006 02 03 | 704 | 0.2+ | 0.2+ |
| 2002 02 07 | 644 | 0.3+ | 0.0 | 2006 01 10 | 691 | 0.2− | 0.1− | 2006 02 03 | 704 | 0.5+ | 0.6+ |
| 2002 02 17 | 644 | 0.2− | 0.2− | 2006 01 10 | 691 | 0.4− | 0.1− | | | | |

**2002 $CL_{257}$ = 2006 $WS_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 223.85442 | | (2000.0) | | −0.88308068 | +0.46894242 |
| $n$ | 0.17104694 | $\omega$ | 59.07711 | | −0.44047427 | −0.81660823 |
| $a$ | 3.2140984 | $\Omega$ | 148.88013 | | −0.16171250 | −0.33651748 |
| $e$ | 0.1118380 | $i$ | 1.79307 | | | |
| $P$ | 5.76 | $H$ | 15.7 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 695 | 0.4− | 0.1− | 2003 06 01 | 807 | 0.2− | 0.3− | 2005 10 28 | G96 | 0.0 | 0.6+ | |
| 2002 02 06 | 695 | 0.3− | 0.1− | 2003 06 01 | 807 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.4+ | |
| 2002 02 08 | 691 | 0.2+ | 0.2+ | 2004 08 22 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1− | |
| 2002 02 08 | 691 | 0.3+ | 0.3+ | 2004 08 22 | 691 | 0.1− | 0.8+ | 2006 11 11 | 691 | 0.4− | 0.4+ | |
| 2002 02 08 | 691 | 0.4+ | 0.2+ | 2004 08 22 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1− | |
| 2002 02 11 | 704 | 1.2− | 0.1+ | 2005 10 01 | G96 | 0.5− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.6+ | |
| 2002 02 11 | 704 | 0.4− | 0.5+ | 2005 10 01 | G96 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1+ | |
| 2002 02 11 | 704 | 0.4+ | 0.2+ | 2005 10 01 | G96 | 0.3+ | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.1+ | |
| 2002 02 11 | 704 | 0.1− | 0.6+ | 2005 10 01 | G96 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.2− | |
| 2003 05 01 | 691 | 0.3+ | 1.3+ | 2005 10 10 | 691 | 0.8− | 0.9+ | 2006 11 23 | 691 | 0.1+ | 0.3+ | |
| 2003 05 01 | 691 | 0.3+ | 1.4+ | 2005 10 10 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2+ | |
| 2003 05 01 | 691 | 0.4+ | 1.0+ | 2005 10 10 | 691 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.4+ | |
| 2003 05 24 | 691 | 0.2− | 0.0 | 2005 10 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.3− | 0.1+ | |
| 2003 05 24 | 691 | 0.2− | 0.1− | 2005 10 28 | G96 | 0.1− | 0.0 | | | | | |
| 2003 05 24 | 691 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.3+ | 0.2+ | | | | | |

**2002 $CY_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.96490 | | (2000.0) | | −0.62034212 | −0.78399167 |
| $n$ | 0.24257076 | $\omega$ | 324.41045 | | +0.73749339 | −0.59306131 |
| $a$ | 2.5463050 | $\Omega$ | 163.88981 | | +0.26698156 | −0.18339942 |
| $e$ | 0.1135418 | $i$ | 4.77124 | | | |
| $P$ | 4.06 | $H$ | 18.6 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 695 | 0.4+ | 0.1− | 2006 01 26 | 691 | 0.4+ | 0.1− | 2006 02 07 | 691 | 0.1− | 0.1− | |
| 2002 02 08 | 695 | 0.5+ | 0.3− | 2006 01 26 | 691 | 0.1− | 0.2+ | 2006 02 07 | 691 | 0.2+ | 0.4− | |
| 2002 02 09 | 291 | 0.1+ | 0.2+ | 2006 01 26 | 691 | 0.6− | 0.2+ | 2006 02 07 | 691 | 0.3+ | 0.2+ | |
| 2002 02 09 | 291 | 0.3− | 0.1+ | 2006 01 31 | G96 | 0.0 | 0.0 | 2006 02 24 | G96 | 0.2+ | 0.2+ | |
| 2002 02 09 | 291 | 0.4+ | 0.2+ | 2006 01 31 | G96 | 0.1− | 0.4− | 2006 02 24 | G96 | 0.2− | 0.2+ | |
| 2002 03 05 | 645 | 0.1− | 0.0 | 2006 01 31 | G96 | 0.3− | 0.3− | 2006 02 24 | G96 | 0.2+ | 0.1− | |
| 2002 03 05 | 645 | 0.0 | 0.0 | 2006 01 31 | G96 | 0.3− | 0.2− | 2006 02 24 | G96 | 0.1+ | 0.1+ | |

**2002 $CX_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 195.48581 | | (2000.0) | | +0.83564050 | +0.54563323 |
| $n$ | 0.22167768 | $\omega$ | 178.00327 | | −0.50561992 | +0.80904692 |
| $a$ | 2.7038841 | $\Omega$ | 148.66533 | | −0.21460066 | +0.21846615 |
| $e$ | 0.0530091 | $i$ | 6.97610 | | | |
| $P$ | 4.45 | $H$ | 15.7 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.0 | 0.1− | 2002 02 10 | 704 | 0.3− | 0.5+ | 2004 10 07 | 704 | 1.4+ | 0.5+ | |
| 2002 02 08 | 291 | 0.2− | 0.3− | 2002 03 12 | 691 | 0.3+ | 0.2− | 2004 10 07 | 704 | 0.8+ | 0.8+ | |
| 2002 02 08 | 291 | 0.5− | 0.2− | 2002 03 12 | 691 | 0.2+ | 0.3+ | 2004 10 07 | 704 | 0.3− | 0.1− | |
| 2002 02 08 | 291 | 0.3− | 0.1− | 2002 03 12 | 691 | 0.5+ | 0.3− | 2004 10 20 | 703 | 0.0 | 1.6− | |
| 2002 02 10 | 704 | 0.1− | 0.9+ | 2004 09 17 | 704 | 0.0 | 0.1− | 2004 10 20 | 703 | 0.1+ | 0.7+ | |
| 2002 02 10 | 704 | 0.1+ | 0.5+ | 2004 09 17 | 704 | 0.2− | 0.6+ | 2004 10 20 | 703 | 0.7− | 0.2+ | |
| 2002 02 10 | 704 | 0.3+ | 0.8+ | 2004 09 17 | 704 | 0.7− | 0.6− | 2004 10 20 | 703 | 0.3− | 0.0 | |
| 2002 02 10 | 704 | 0.1+ | 0.1+ | 2004 10 07 | 704 | 0.2− | 0.2− | | | | | |

**2002 $CU_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.62351 | | (2000.0) | | −0.17017464 | −0.95500084 |
| $n$ | 0.18182465 | $\omega$ | 205.45168 | | +0.94161891 | −0.08491580 |
| $a$ | 3.0857984 | $\Omega$ | 255.12254 | | +0.29050718 | −0.28418781 |
| $e$ | 0.2656394 | $i$ | 14.55765 | | | |
| $P$ | 5.42 | $H$ | 14.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 12 | 704 | 0.6− | 0.1+ | 2002 04 05 | 699 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 | |
| 2002 01 12 | 704 | 0.5− | 0.3− | 2002 04 05 | 699 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.0 | |
| 2002 01 12 | 704 | 0.1− | 0.1+ | 2002 04 05 | 699 | 0.4− | 1.0+ | 2006 11 16 | 691 | 0.2+ | 0.1+ | |
| 2002 01 12 | 704 | 0.4− | 0.3+ | 2002 04 10 | 704 | 0.8+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1− | |
| 2002 01 12 | 704 | 0.0 | 0.2− | 2002 04 10 | 704 | 1.0− | 0.7+ | 2006 11 16 | 691 | 0.1+ | 0.0 | |
| 2002 02 09 | 644 | 0.1+ | 0.3− | 2002 04 10 | 704 | 0.2− | 0.6− | 2006 11 18 | 704 | 0.2+ | 0.4− | |
| 2002 02 09 | 644 | 0.2− | 0.1− | 2002 04 10 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.5+ | |
| 2002 02 09 | 644 | 0.2+ | 0.0 | 2006 10 29 | 704 | (2.8+ | 0.8+) | 2006 11 18 | 704 | 0.2− | 0.3− | |
| 2002 02 10 | 699 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.0 | 0.1+ | |
| 2002 02 10 | 699 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.3− | 0.6− | 2006 11 18 | 704 | 0.5− | 0.3− | |
| 2002 02 10 | 699 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.2− | |
| 2002 02 10 | 699 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1− | |
| 2002 02 14 | 704 | 0.1+ | 0.6− | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 | |
| 2002 02 14 | 704 | 0.1− | 1.5− | 2006 11 15 | 704 | (0.8+ | 1.7+) | 2006 11 21 | 704 | 0.2− | 0.2+ | |
| 2002 02 14 | 704 | 0.1− | 0.3+ | 2006 11 15 | 704 | (0.7+ | 2.0+) | 2006 11 21 | 704 | 0.1− | 0.5+ | |
| 2002 02 14 | 704 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.3+ | 1.4+ | 2006 11 21 | 704 | 0.3− | 0.4+ | |
| 2002 02 14 | 704 | 1.1+ | 0.3− | 2006 11 15 | 704 | 0.5+ | 1.0+ | 2006 11 21 | 704 | 0.0 | 0.5+ | |
| 2002 02 21 | 644 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.4− | 1.0− | 2006 11 21 | 704 | (2.6+ | 1.2−) | |
| 2002 02 21 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 1.5+ | 0.1− | 2006 11 28 | 704 | 1.2− | 0.2+ | |
| 2002 02 21 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.3− | |
| 2002 03 12 | 699 | 0.8+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.5− | 2006 11 28 | 704 | 0.5+ | 0.8+ | |
| 2002 03 12 | 699 | 0.7+ | 0.4+ | 2006 11 16 | 704 | (1.8+ | 0.6−) | 2006 11 28 | 704 | 0.7− | 0.6+ | |
| 2002 03 12 | 699 | 0.9+ | 0.1+ | 2006 11 16 | 704 | (2.2− | 0.1+) | 2006 11 28 | 704 | 1.1− | 0.8+ | |
| 2002 03 12 | 699 | 0.5+ | 0.4− | 2006 11 16 | 704 | 0.2− | 0.8− | 2006 12 01 | 704 | 0.3+ | 0.5− | |
| 2002 03 18 | 704 | 1.3− | 0.6− | 2006 11 16 | 704 | 0.2− | 0.6− | 2006 12 01 | 704 | 0.2+ | 0.3− | |
| 2002 03 18 | 704 | 0.2− | 0.0 | 2006 11 16 | 704 | (1.9+ | 0.4−) | 2006 12 01 | 704 | 0.1+ | 0.1− | |
| 2002 03 18 | 704 | 0.2− | 0.8+ | 2006 11 16 | 704 | 0.3+ | 0.6− | 2006 12 01 | 704 | 0.4+ | 0.1+ | |
| 2002 04 05 | 699 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.3− | |

**2002 $CU_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.21098 | | (2000.0) | | −0.62310495 | +0.78205284 |
| $n$ | 0.27515801 | $\omega$ | 320.80390 | | −0.71466094 | −0.57528996 |
| $a$ | 2.3410712 | $\Omega$ | 270.64978 | | −0.31780492 | −0.23965562 |
| $e$ | 0.1456002 | $i$ | 0.66225 | | | |
| $P$ | 3.58 | $H$ | 17.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 10 | 691 | 0.1+ | 0.6− | 2003 07 06 | 691 | 0.2− | 0.6+ | 2006 04 19 | G96 | 0.0 | 0.1+ | |
| 1999 06 10 | 691 | 0.3− | 0.1+ | 2003 07 06 | 691 | 0.2− | 0.3+ | 2006 04 19 | G96 | 0.0 | 0.0 | |
| 1999 06 10 | 691 | 0.1− | 0.1− | 2004 12 11 | 568 | 0.4− | 0.4+ | 2006 04 19 | G96 | 0.2− | 0.0 | |
| 2002 01 21 | 691 | 0.3+ | 0.3− | 2004 12 11 | 568 | 0.3− | 0.3+ | 2006 04 19 | G96 | 0.0 | 0.1+ | |
| 2002 01 21 | 691 | 0.0 | 0.5+ | 2004 12 11 | 568 | 0.4− | 0.3+ | 2006 05 03 | 691 | 0.3+ | 0.4+ | |
| 2002 01 21 | 691 | 0.1+ | 0.5+ | 2006 03 25 | 691 | 0.1+ | 0.1− | 2006 05 03 | 691 | 0.3+ | 0.3+ | |
| 2002 02 08 | 695 | 0.2− | 0.2+ | 2006 03 25 | 691 | 0.3+ | 0.2+ | 2006 05 03 | 691 | 0.3+ | 0.1+ | |
| 2002 02 08 | 695 | 0.1+ | 0.1− | 2006 03 25 | 691 | 0.2+ | 0.3− | 2006 06 19 | G96 | 1.1− | 0.5+ | |
| 2002 02 11 | 704 | 0.2− | 1.0+ | 2006 04 07 | 703 | 0.4− | 0.5− | 2006 06 19 | G96 | 0.3− | 0.1− | |
| 2002 02 11 | 704 | 0.3− | 0.2− | 2006 04 07 | 703 | 1.4− | 1.1+ | 2006 06 19 | G96 | 0.2− | 0.2− | |
| 2002 02 11 | 704 | 0.8+ | 0.1+ | 2006 04 07 | 703 | 0.3− | 0.2− | 2006 06 19 | G96 | 0.4− | 0.2− | |
| 2003 07 06 | 691 | 0.0 | 0.7+ | 2006 04 07 | 703 | 1.4− | 0.2− | | | | | |

**2002 CU$_{282}$ = 2002 DQ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.14021 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26230616 | $\omega$ | 307.39605 | | −0.05271663 | | +0.99759546 |
| $a$ | 2.4169280 | $\Omega$ | 319.51097 | | −0.89291558 | | −0.06726224 |
| $e$ | 0.1598646 | $i$ | 3.97334 | | −0.44712719 | | +0.01670585 |
| $P$ | 3.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 291 | 0.2− | 0.0 | 2002 02 20 | 704 | 0.3+ | 0.5− | 2003 08 04 | 704 | 0.3+ | 0.8− |
| 2002 02 08 | 291 | 0.2− | 0.0 | 2002 02 20 | 704 | 0.2− | 0.6+ | 2003 08 04 | 704 | 0.1− | 0.4+ |
| 2002 02 08 | 291 | 0.2− | 0.0 | 2002 02 20 | 704 | 0.5+ | 0.4+ | 2003 08 20 | 608 | 0.7+ | 0.2+ |
| 2002 02 11 | 704 | 0.6+ | 0.2+ | 2003 07 25 | 704 | 0.4+ | 0.4+ | 2003 08 20 | 608 | 0.1+ | 0.1− |
| 2002 02 11 | 704 | 0.3+ | 0.5− | 2003 07 25 | 704 | 0.6+ | 0.5+ | 2003 08 20 | 608 | 0.0 | 0.6− |
| 2002 02 11 | 704 | 0.8+ | 0.2+ | 2003 07 25 | 704 | 0.2+ | 0.1+ | 2003 08 25 | 704 | 0.1+ | 0.1+ |
| 2002 02 11 | 704 | 0.1− | 0.4− | 2003 07 25 | 704 | 0.3+ | 0.3− | 2003 08 25 | 704 | 1.0− | 1.3+ |
| 2002 02 11 | 704 | 0.1+ | 1.0+ | 2003 08 04 | 704 | 0.0 | 0.5+ | 2003 08 25 | 704 | 0.1− | 0.7+ |
| 2002 02 20 | 704 | 0.0 | 0.7+ | 2003 08 04 | 704 | 0.8− | 0.3− | 2003 08 25 | 704 | 0.8− | 0.3− |
| 2002 02 20 | 704 | 0.8+ | 0.1− | 2003 08 04 | 704 | 0.2− | 0.7− | | | | |

**2002 CL$_{285}$ = 2006 VM$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.38560 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17358834 | $\omega$ | 356.53613 | | −0.47328556 | | −0.88066132 |
| $a$ | 3.1826510 | $\Omega$ | 121.71064 | | +0.80880730 | | −0.44382185 |
| $e$ | 0.1384372 | $i$ | 1.40713 | | +0.34904375 | | −0.16570397 |
| $P$ | 5.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 20 | 691 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.5− | 2006 11 18 | G96 | 0.4+ | 0.6− |
| 2002 01 20 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.6− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.4+ |
| 2002 01 20 | 691 | 0.5+ | 0.4− | 2006 11 10 | 691 | 0.3+ | 0.3− | 2006 11 21 | 691 | 0.2− | 0.3+ |
| 2002 02 10 | 704 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2002 02 10 | 704 | 0.8− | 1.0+ | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2002 02 10 | 704 | 0.3− | 1.1+ | 2006 11 14 | 691 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.2+ |
| 2002 02 11 | 691 | 0.4+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.6+ | 0.4+ |
| 2002 02 11 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.4+ |
| 2002 02 11 | 691 | 1.2− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2− | | | | |

**2002 CG$_{289}$ = 2006 UU$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.22383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19069839 | $\omega$ | 72.61391 | | −0.89745206 | | −0.35477354 |
| $a$ | 2.9893128 | $\Omega$ | 85.96315 | | +0.23318806 | | −0.88600610 |
| $e$ | 0.0996582 | $i$ | 15.23559 | | +0.37443709 | | −0.29854467 |
| $P$ | 5.17 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.2− | 0.1− | 2002 02 02 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2002 01 08 | 704 | 1.1+ | 0.2+ | 2002 02 02 | 644 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 01 08 | 704 | 1.0+ | 0.0 | 2002 02 02 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 01 08 | 704 | 0.1− | 0.6+ | 2002 02 10 | 704 | (0.2− | 1.6+) | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2002 01 14 | 644 | 0.1+ | 0.3− | 2002 02 10 | 704 | 0.5− | 0.2− | 2006 10 29 | G96 | 0.3− | 0.8− |
| 2002 01 14 | 644 | 0.2+ | 0.1− | 2002 02 10 | 704 | 0.3− | 0.4− | 2006 10 29 | G96 | 0.2− | 0.2− |
| 2002 01 14 | 644 | 0.2+ | 0.5− | 2002 02 10 | 704 | 0.2− | 0.6− | 2006 10 29 | G96 | 0.3+ | 0.0 |
| 2002 01 14 | 644 | 0.1+ | 0.4+ | 2002 02 10 | 704 | 0.1− | 0.6− | 2006 10 29 | G96 | 0.4− | 0.1− |
| 2002 01 14 | 644 | 0.0 | 0.4+ | 2002 02 12 | 644 | 0.4+ | 0.6+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2002 01 14 | 644 | 0.2+ | 0.3+ | 2002 02 12 | 644 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2002 01 23 | 704 | 0.1− | 0.5− | 2002 02 12 | 644 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2002 01 23 | 704 | 0.6− | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2002 01 23 | 704 | 0.6− | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2002 01 23 | 704 | 0.4− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.7+ | 0.0 |

**2002 CJ$_{295}$ = 2006 OW$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.78636 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31111751 | $\omega$ | 138.55020 | | +0.31247190 | | +0.94869807 |
| $a$ | 2.1570146 | $\Omega$ | 149.56592 | | −0.89472404 | | +0.31101461 |
| $e$ | 0.0913932 | $i$ | 5.47201 | | −0.31910844 | | +0.05693750 |
| $P$ | 3.17 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 18 | 691 | 0.2+ | 0.4− | 2002 02 13 | 291 | 0.5− | 0.2+ | 2005 03 09 | G96 | 0.1− | 0.0 |
| 1993 05 18 | 691 | 0.3− | 0.2+ | 2002 02 16 | 644 | 0.9+ | 0.3+ | 2005 03 09 | G96 | 0.5− | 0.4+ |
| 1993 05 18 | 691 | 0.1+ | 0.2+ | 2002 02 16 | 644 | 0.7+ | 0.2+ | 2006 07 25 | 644 | 0.1− | 0.1+ |
| 2002 02 10 | 704 | 0.7+ | 1.0− | 2002 02 16 | 644 | 0.6+ | 0.6+ | 2006 07 25 | 644 | 0.4− | 0.2+ |
| 2002 02 10 | 704 | 1.0+ | 0.3− | 2003 09 24 | 644 | 0.1+ | 0.4+ | 2006 07 25 | 644 | 0.1− | 0.1+ |
| 2002 02 10 | 704 | 0.3− | 1.1+ | 2003 09 24 | 644 | 0.0 | 0.3+ | 2006 07 26 | 644 | 0.3+ | 0.1+ |
| 2002 02 10 | 704 | 0.2+ | 0.5− | 2003 09 24 | 644 | 0.3− | 0.5+ | 2006 07 26 | 644 | 0.1+ | 0.4− |
| 2002 02 13 | 291 | 0.0 | 0.1− | 2005 03 09 | G96 | 0.3− | 0.0 | 2006 07 26 | 644 | 0.0 | 0.3+ |
| 2002 02 13 | 291 | 0.1− | 0.0 | 2005 03 09 | G96 | 0.1+ | 0.1+ | | | | |

**2002 CN$_{310}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.59288 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26705522 | $\omega$ | 261.86284 | | −0.99493792 | | −0.09878459 |
| $a$ | 2.3881889 | $\Omega$ | 272.46659 | | +0.09793100 | | −0.91195200 |
| $e$ | 0.1223045 | $i$ | 1.05776 | | +0.02254027 | | −0.39822752 |
| $P$ | 3.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.1− | 0.3+ | 2002 02 21 | 704 | (0.4+ | 2.9−) | 2006 03 26 | G96 | 0.2− | 0.2− |
| 2002 02 07 | 644 | 0.0 | 0.5+ | 2002 03 13 | 291 | 0.0 | 0.1− | 2006 03 26 | G96 | 0.0 | 0.4− |
| 2002 02 07 | 644 | 0.4− | 0.4+ | 2002 03 13 | 291 | 0.1+ | 0.0 | 2006 03 26 | G96 | 1.1− | 0.2+ |
| 2002 02 11 | 704 | 1.3+ | 0.8+ | 2002 03 13 | 291 | 0.1− | 0.0 | 2006 03 26 | G96 | 0.0 | 0.4− |
| 2002 02 11 | 704 | 0.5− | 0.2− | 2002 04 17 | 291 | 0.4+ | 0.0 | 2006 05 07 | G96 | 0.2− | 0.1+ |
| 2002 02 11 | 704 | 0.9− | 0.3+ | 2002 04 17 | 291 | 0.3− | 0.3+ | 2006 05 07 | G96 | 0.0 | 0.0 |
| 2002 02 11 | 704 | 0.4+ | 0.0 | 2002 04 17 | 291 | 0.1+ | 0.3+ | 2006 05 07 | G96 | 0.0 | 0.4− |
| 2002 02 11 | 704 | 0.3− | 0.0 | 2006 03 26 | 691 | 0.2+ | 0.5− | 2006 05 07 | G96 | 0.1− | 0.4− |
| 2002 02 21 | 704 | 0.2− | 1.3− | 2006 03 26 | 691 | 0.2+ | 0.0 | | | | |
| 2002 02 21 | 704 | 0.3+ | 1.7− | 2006 03 26 | 691 | 0.0 | 0.8+ | | | | |

**2002 CM$_{313}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.02768 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18219054 | $\omega$ | 314.73935 | | +0.59521646 | | −0.77808473 |
| $a$ | 3.0816655 | $\Omega$ | 97.68482 | | +0.78257697 | | +0.50456323 |
| $e$ | 0.0524985 | $i$ | 11.68739 | | +0.18245724 | | +0.37416588 |
| $P$ | 5.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 12 | 644 | 0.3+ | 0.2− | 2002 02 13 | 644 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2002 01 12 | 644 | 0.3+ | 0.1− | 2002 02 13 | 644 | 0.4+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2002 01 12 | 644 | 0.9+ | 0.5+ | 2002 02 13 | 644 | 0.0 | 0.5− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2002 02 03 | 644 | 0.3− | 0.4+ | 2002 03 03 | 644 | 0.2− | 0.8+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 02 03 | 644 | 0.1+ | 0.1− | 2002 03 03 | 644 | 0.4− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 02 03 | 644 | 0.3− | 0.4− | 2002 03 03 | 644 | 0.7− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.2− |

**2002 CD$_{314}$ = 2005 UG$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.98516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23545435 | $\omega$ | 100.93058 | | −0.36202038 | | −0.93197421 |
| $a$ | 2.5973565 | $\Omega$ | 10.35526 | | +0.80833906 | | −0.32407470 |
| $e$ | 0.2789710 | $i$ | 6.10394 | | +0.46425123 | | −0.16247973 |
| $P$ | 4.19 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 645 | 0.0 | 0.0 | 2002 02 03 | 644 | 0.4− | 0.0 | 2005 10 25 | 691 | 0.2− | 0.0 |
| 2001 12 20 | 645 | 0.0 | 0.1− | 2002 02 03 | 644 | 0.3− | 0.1− | 2005 10 25 | 691 | 0.3− | 0.1+ |
| 2002 01 21 | 704 | 1.6− | 0.9+ | 2002 02 08 | 704 | 0.9+ | 0.2+ | 2005 10 25 | 691 | 0.1+ | 0.2+ |
| 2002 01 21 | 704 | 0.4− | 0.2+ | 2002 02 08 | 704 | 1.1+ | 0.2− | 2005 10 29 | 691 | 0.1+ | 0.1− |
| 2002 01 21 | 704 | 0.5− | 0.2+ | 2002 02 08 | 704 | 0.1+ | 0.5+ | 2005 10 29 | 691 | 0.1+ | 0.1+ |
| 2002 02 03 | 644 | 0.4− | 0.0 | 2002 02 08 | 704 | 1.3+ | 0.4+ | 2005 10 29 | 691 | 0.1+ | 0.1− |

**2002 CE$_{314}$ = 1998 ET**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.40819 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23744956 | $\omega$ | 333.41701 | −0.95264013 | | −0.30382718 | |
| $a$ | 2.5827863 | $\Omega$ | 188.92416 | +0.29169305 | | −0.90098184 | |
| $e$ | 0.1402243 | $i$ | 4.76168 | +0.08597642 | | −0.30971077 | |
| $P$ | 4.15 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 17 | 691 | 0.1− | 0.4− | 2000 09 28 | 691 | 0.0 | 0.0 | 2002 03 13 | 704 | 0.7− | 0.7+ |
| 1992 11 17 | 691 | 0.1+ | 0.4− | 2000 09 28 | 691 | 0.4− | 0.1+ | 2002 03 13 | 704 | 0.9− | 1.6+ |
| 1992 11 17 | 691 | 0.1+ | 0.4+ | 2000 09 28 | 691 | 0.3+ | 0.1− | 2002 03 13 | 704 | 0.5− | 2.4+ |
| 1998 03 02 | 910 | 0.2− | 1.3− | 2002 02 06 | 644 | 0.3− | 0.3+ | 2006 02 02 | G96 | 0.2+ | 0.2+ |
| 1998 03 02 | 910 | 0.1+ | 1.0− | 2002 02 06 | 644 | 0.3+ | 0.3+ | 2006 02 02 | G96 | 0.7+ | 0.3− |
| 1998 03 02 | 910 | 0.1− | 0.6− | 2002 02 06 | 644 | 0.4+ | 0.5+ | 2006 02 02 | G96 | 0.5+ | 0.4− |
| 1998 03 02 | 910 | 0.0 | 1.0− | 2002 02 16 | 644 | 0.2+ | 0.4+ | 2006 02 02 | G96 | 0.3+ | 0.2− |
| 1998 03 02 | 910 | 0.1− | 1.0− | 2002 02 16 | 644 | 0.3− | 0.2+ | | | | |
| 1998 03 02 | 910 | 0.0 | 0.7− | 2002 02 16 | 644 | 0.1− | 0.0 | | | | |

**2002 CF$_{314}$ = 2000 TC$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.24448 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26835103 | $\omega$ | 42.29881 | −0.97823883 | | +0.18552133 | |
| $a$ | 2.3804947 | $\Omega$ | 148.03859 | −0.20348858 | | −0.94528857 | |
| $e$ | 0.0589381 | $i$ | 10.10782 | +0.04051157 | | −0.26834930 | |
| $P$ | 3.67 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 645 | 0.0 | 0.0 | 2002 01 22 | 291 | 0.2+ | 0.2+ | 2002 02 13 | 691 | 0.5− | 0.4− |
| 2000 10 01 | 645 | 0.0 | 0.0 | 2002 01 22 | 291 | 0.9+ | 0.2− | 2002 02 13 | 691 | 0.4− | 0.2− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 06 | 695 | 0.2− | 0.5− | 2002 03 12 | 644 | 0.6+ | 0.9+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 06 | 695 | 0.6− | 0.1− | 2002 03 12 | 644 | 0.7+ | 0.7+ |
| 2002 01 22 | 291 | 0.1− | 0.4+ | 2002 02 13 | 691 | 0.3− | 0.1− | 2002 03 12 | 644 | 0.8+ | 0.6+ |

**2002 CG$_{314}$ = 2000 WM$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.89985 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21214629 | $\omega$ | 139.66056 | −0.83642230 | | −0.54748882 | |
| $a$ | 2.7842768 | $\Omega$ | 7.28044 | +0.43642336 | | −0.69351235 | |
| $e$ | 0.2257358 | $i$ | 11.63984 | +0.33156053 | | −0.46829117 | |
| $P$ | 4.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 695 | 0.3+ | 0.0 | 2000 11 25 | 695 | 0.2− | 0.1+ | 2002 02 22 | 644 | 0.2+ | 0.3− |
| 2000 11 24 | 695 | 0.3− | 0.1− | 2000 11 25 | 695 | 0.0 | 0.1− | 2002 03 11 | 644 | 0.0 | 0.1+ |
| 2000 11 24 | 695 | 0.1+ | 0.0 | 2002 02 10 | 704 | 0.2+ | 0.4+ | 2002 03 11 | 644 | 0.0 | 0.2+ |
| 2000 11 24 | 695 | 0.2+ | 0.1− | 2002 02 10 | 704 | 0.1− | 0.5+ | 2002 03 11 | 644 | 0.0 | 0.1− |
| 2000 11 24 | 695 | 0.2− | 0.0 | 2002 02 10 | 704 | 0.5− | 0.2+ | 2002 03 22 | 644 | 0.1+ | 0.3+ |
| 2000 11 24 | 695 | 0.0 | 0.1+ | 2002 02 10 | 704 | 0.2+ | 0.2+ | 2002 03 22 | 644 | 0.2− | 0.0 |
| 2000 11 25 | 695 | 0.1− | 0.1+ | 2002 02 10 | 704 | 0.6− | 0.6− | 2002 03 22 | 644 | 0.1− | 0.2− |
| 2000 11 25 | 695 | 0.3− | 0.0 | 2002 02 22 | 644 | 0.5+ | 0.3− | | | | |
| 2000 11 25 | 695 | 0.5+ | 0.0 | 2002 02 22 | 644 | 0.3+ | 0.3− | | | | |

**2002 CH$_{314}$ = 2006 CW$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.68395 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22913085 | $\omega$ | 93.01473 | −0.41170711 | | +0.91056682 | |
| $a$ | 2.6449269 | $\Omega$ | 152.57990 | −0.86475062 | | −0.37755379 | |
| $e$ | 0.1834104 | $i$ | 4.60221 | −0.28758238 | | −0.16828904 | |
| $P$ | 4.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 30 | 691 | 0.2+ | 0.3− | 2002 02 11 | 704 | 0.4+ | 0.1+ | 2006 02 02 | G96 | 0.2+ | 0.3− |
| 1995 09 30 | 691 | 0.0 | 0.5− | 2002 02 11 | 704 | 0.7+ | 0.4− | 2006 02 02 | G96 | 0.2+ | 0.5− |
| 1995 09 30 | 691 | 0.1+ | 0.1− | 2002 02 11 | 704 | 0.7+ | 0.7+ | 2006 02 02 | G96 | 0.2+ | 0.5− |
| 1998 03 22 | 691 | 0.0 | 0.6− | 2002 02 17 | 735 | 0.6+ | 0.2− | 2006 02 03 | G96 | 0.0 | 1.1− |
| 1998 03 22 | 691 | 0.2− | 0.4− | 2002 02 17 | 735 | 0.3− | 1.3+ | 2006 02 03 | G96 | 0.2+ | 0.1+ |
| 1998 03 22 | 691 | 0.2− | 0.4− | 2002 03 05 | 291 | 0.4− | 0.9+ | 2006 02 03 | G96 | 0.1− | 0.5− |
| 1999 08 12 | 691 | 0.4− | 0.4+ | 2002 03 05 | 291 | 0.2+ | 0.8+ | 2006 02 03 | G96 | 0.3− | 0.9− |
| 1999 08 12 | 691 | 0.1− | 0.5+ | 2002 03 05 | 291 | 0.2+ | 0.8+ | | | | |
| 1999 08 12 | 691 | 0.0 | 0.5+ | 2006 02 02 | G96 | 0.4− | 0.5− | | | | |

**2002 CJ$_{314}$ = 2005 UU$_{238}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.43057 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18486954 | $\omega$ | 47.16337 | −0.72030592 | | +0.69363074 | |
| $a$ | 3.0518216 | $\Omega$ | 176.73779 | −0.66313310 | | −0.68605474 | |
| $e$ | 0.1668162 | $i$ | 6.03282 | −0.20350397 | | −0.21955702 | |
| $P$ | 5.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.9+ | 0.2− | 2002 03 05 | 644 | 0.1+ | 0.4+ | 2005 10 25 | 691 | 0.2+ | 0.6− |
| 2002 02 11 | 704 | 1.6+ | 0.4− | 2002 03 05 | 644 | 0.2+ | 0.1+ | 2005 10 25 | 691 | 0.7− | 0.3+ |
| 2002 02 11 | 704 | (2.5+ | 0.3+) | 2002 03 05 | 644 | 0.1+ | 0.1+ | 2005 10 25 | 691 | 0.1− | 0.1+ |
| 2002 02 13 | 645 | 0.1− | 0.1+ | 2002 03 13 | 704 | 1.0+ | 1.7+ | 2005 10 29 | 691 | 0.5+ | 0.1+ |
| 2002 02 13 | 645 | 0.1− | 0.0 | 2002 03 13 | 704 | 0.8+ | 1.1+ | 2005 10 29 | 691 | 0.0 | 0.1+ |
| 2002 03 05 | 645 | 0.0 | 0.1− | 2002 03 13 | 704 | 0.4+ | 1.0+ | 2005 10 29 | 691 | 0.0 | 0.1+ |
| 2002 03 05 | 645 | 0.0 | 0.2− | 2002 03 13 | 704 | 1.3+ | 0.9+ | | | | |

**2002 CK$_{314}$ = 2006 KN$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.32041 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27218378 | $\omega$ | 37.50196 | −0.99586164 | | +0.09084476 | |
| $a$ | 2.3580946 | $\Omega$ | 147.70995 | −0.08452255 | | −0.91522485 | |
| $e$ | 0.1456621 | $i$ | 0.28023 | −0.03339963 | | −0.39256937 | |
| $P$ | 3.62 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 691 | 0.4+ | 0.1+ | 2002 03 05 | 691 | 0.0 | 0.3− | 2006 05 19 | G96 | 0.8− | 0.2− |
| 2002 02 11 | 691 | 0.0 | 0.3+ | 2002 03 21 | 291 | 0.4+ | 0.4+ | 2006 05 20 | 691 | 0.3+ | 0.3+ |
| 2002 02 11 | 691 | 0.0 | 0.1− | 2002 03 21 | 291 | 0.3− | 0.6+ | 2006 05 20 | 691 | 0.1+ | 0.1+ |
| 2002 02 13 | 645 | 0.1− | 0.1− | 2002 03 21 | 291 | 0.4+ | 0.4+ | 2006 05 20 | 691 | 0.1+ | 0.0 |
| 2002 02 13 | 645 | 0.0 | 0.1− | 2006 05 19 | G96 | 0.0 | 0.1− | 2006 05 24 | 691 | 0.2− | 0.4− |
| 2002 03 05 | 691 | 0.3− | 0.1− | 2006 05 19 | G96 | 0.5− | 0.1− | 2006 05 24 | 691 | 0.1+ | 0.1− |
| 2002 03 05 | 691 | 0.1+ | 0.0 | 2006 05 19 | G96 | 0.4− | 0.1− | 2006 05 24 | 691 | 0.0 | 0.1− |

**2002 CL$_{314}$ = 2005 YH$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.26498 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23180591 | $\omega$ | 278.59014 | +0.14215424 | | −0.98740975 | |
| $a$ | 2.6245391 | $\Omega$ | 162.76551 | +0.97507323 | | +0.12762401 | |
| $e$ | 0.1784538 | $i$ | 13.54339 | +0.17036541 | | +0.09345634 | |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2002 02 07 | 644 | 0.4+ | 0.3+ | 2005 12 22 | 703 | 0.4− | 0.3+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2002 02 12 | 209 | 0.1+ | 0.3+ | 2005 12 22 | 703 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 22 | 704 | 0.0 | 1.5− | 2002 02 12 | 209 | 0.1+ | 0.1− | 2005 12 22 | 703 | 0.1− | 0.8− |
| 2002 01 22 | 704 | 0.6− | 1.0+ | 2002 02 12 | 209 | 0.6+ | 0.1− | 2005 12 28 | 644 | 0.4+ | 0.1− |
| 2002 01 22 | 704 | 1.4− | 0.2− | 2002 02 17 | 644 | 0.2+ | 0.2+ | 2005 12 28 | 644 | 0.1+ | 0.1− |
| 2002 01 22 | 704 | 0.0 | 0.9+ | 2002 02 17 | 644 | 0.2+ | 0.4+ | 2005 12 28 | 644 | 0.3+ | 0.0 |
| 2002 02 07 | 644 | 0.6+ | 0.3+ | 2002 02 17 | 644 | 0.1− | 0.0 | | | | |
| 2002 02 07 | 644 | 0.3+ | 0.2+ | 2005 12 22 | 703 | 0.2− | 0.1+ | | | | |

**2002 $CM_{314}$ = 1995 $TT_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.67676 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20509677 | $\omega$ | 116.22526 | −0.00840505 | | −0.99991256 | |
| $a$ | 2.8477171 | $\Omega$ | 334.25015 | +0.90886049 | | −0.00338123 | |
| $e$ | 0.0268038 | $i$ | 1.34653 | +0.41701554 | | −0.01278427 | |
| $P$ | 4.81 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2+ | 0.2− | 2002 02 13 | 645 | 0.1− | 0.1+ | 2005 12 06 | 691 | 0.3− | 0.2+ |
| 1995 10 15 | 691 | 0.3− | 0.1− | 2002 02 22 | 644 | 0.4+ | 0.3+ | 2005 12 06 | 691 | 0.6+ | 0.2− |
| 1995 10 15 | 691 | 0.2− | 0.1− | 2002 02 22 | 644 | 0.6+ | 0.5+ | 2005 12 10 | 691 | 0.1+ | 0.1+ |
| 1995 10 22 | 691 | 0.2+ | 0.5− | 2002 02 22 | 644 | 0.9+ | 0.0 | 2005 12 10 | 691 | 0.6+ | 0.1+ |
| 1995 10 22 | 691 | 0.2− | 0.4+ | 2002 03 12 | 645 | 0.0 | 0.0 | 2005 12 10 | 691 | 0.4+ | 0.2+ |
| 1995 10 22 | 691 | 0.2+ | 0.5+ | 2002 03 12 | 645 | 0.0 | 0.1− | 2005 12 27 | G96 | 0.7− | 0.0 |
| 2000 12 16 | 691 | 0.0 | 0.2− | 2005 11 25 | 691 | 0.1+ | 0.1+ | 2005 12 27 | G96 | 0.0 | 0.5− |
| 2000 12 16 | 691 | 0.2+ | 0.3− | 2005 11 25 | 691 | 0.1− | 0.0 | 2005 12 27 | G96 | 0.0 | 0.3+ |
| 2000 12 16 | 691 | 0.0 | 0.2− | 2005 11 25 | 691 | 0.1− | 0.2+ | 2005 12 27 | G96 | 0.1+ | 0.1+ |
| 2002 02 13 | 645 | 0.1− | 0.0 | 2005 12 06 | 691 | 1.2− | 0.1− | | | | |

**2002 $CN_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.18470 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26765704 | $\omega$ | 145.47155 | −0.06743649 | | +0.99180385 | |
| $a$ | 2.3846076 | $\Omega$ | 120.43845 | −0.94142999 | | −0.02723431 | |
| $e$ | 0.1257048 | $i$ | 7.23114 | −0.33039657 | | −0.12483352 | |
| $P$ | 3.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 608 | 0.2− | 0.2+ | 2003 07 08 | 644 | 0.1+ | 0.4+ | 2006 03 24 | 704 | 0.5− | 0.9− |
| 2002 02 07 | 608 | 0.3− | 0.1− | 2003 07 08 | 644 | 0.3− | 0.3+ | 2006 03 24 | 704 | 0.5+ | 0.5− |
| 2002 02 07 | 608 | 0.1− | 0.1+ | 2004 12 12 | 599 | 0.4+ | 0.3− | 2006 03 24 | 704 | 0.2+ | 0.2− |
| 2002 02 13 | 704 | 0.6− | 0.0 | 2004 12 12 | 599 | 0.1− | 0.1+ | 2006 04 07 | 703 | (0.5+ | 3.1−) |
| 2002 02 13 | 704 | 0.5+ | 0.7+ | 2004 12 12 | 599 | 0.1− | 0.2+ | 2006 04 07 | 703 | 0.2− | 0.3− |
| 2002 02 13 | 704 | 0.3+ | 0.2+ | 2004 12 12 | 599 | 0.2− | 0.3+ | 2006 04 07 | 703 | 0.1+ | 0.3+ |
| 2002 02 13 | 704 | 0.3+ | 0.5+ | 2006 03 23 | 703 | 1.4− | 0.7− | 2006 04 07 | 703 | 0.1− | 0.3+ |
| 2002 03 11 | 644 | 0.3+ | 0.3− | 2006 03 23 | 703 | 0.7− | 0.7+ | 2006 04 24 | 704 | 2.2+ | 2.2+ |
| 2002 03 11 | 644 | 0.0 | 0.3+ | 2006 03 23 | 703 | 1.2− | 0.7+ | 2006 04 24 | 704 | 0.1+ | 1.0− |
| 2002 03 11 | 644 | 0.0 | 0.1+ | 2006 03 23 | 703 | 1.1− | 0.9+ | 2006 04 24 | 704 | 1.7+ | 0.3− |
| 2003 07 08 | 644 | 0.1− | 0.4+ | 2006 03 24 | 704 | 0.6− | 0.7+ | 2006 04 24 | 704 | 0.5+ | 0.5+ |

**2002 $CO_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.58926 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20890454 | $\omega$ | 187.46780 | −0.02283861 | | +0.98493365 | |
| $a$ | 2.8130069 | $\Omega$ | 81.33508 | −0.90804528 | | +0.05129607 | |
| $e$ | 0.0970763 | $i$ | 9.98539 | −0.41824893 | | −0.16514966 | |
| $P$ | 4.72 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.8+ | 0.3+ | 2003 05 05 | 704 | 1.0− | 0.0 | 2004 09 07 | 704 | 0.7− | 0.1+ |
| 1998 04 21 | 704 | 0.9− | 0.7+ | 2003 05 05 | 704 | 0.2− | 0.6− | 2004 09 07 | 704 | 1.1− | 1.1+ |
| 1998 04 21 | 704 | 1.7+ | 0.3+ | 2003 05 27 | 608 | 0.3+ | 0.1− | 2004 09 07 | 704 | 1.0− | 0.3+ |
| 1998 04 21 | 704 | 2.4+ | 0.2− | 2003 05 27 | 608 | 0.6+ | 0.1− | 2004 10 20 | 703 | 1.0− | 0.2− |
| 1998 04 21 | 704 | (3.9− | 1.7+) | 2003 05 27 | 608 | 0.2+ | 0.4− | 2004 10 20 | 703 | 0.2− | 0.0 |
| 2002 02 10 | 704 | 0.4− | 0.1+ | 2003 06 03 | 704 | 0.6+ | 0.9− | 2004 10 20 | 703 | 0.5+ | 1.1+ |
| 2002 02 10 | 704 | 0.5+ | 0.2+ | 2003 06 03 | 704 | 0.3+ | 1.6+ | 2004 10 20 | 703 | 0.8+ | 0.4+ |
| 2002 02 10 | 704 | 0.1+ | 0.6+ | 2003 06 03 | 704 | 0.3− | 1.1− | 2005 12 07 | 691 | 0.1− | 0.5+ |
| 2002 02 10 | 704 | 0.4− | 1.5− | 2003 06 03 | 704 | 0.1+ | 2.8+ | 2005 12 07 | 691 | 0.1− | 0.2+ |
| 2002 02 10 | 704 | 0.5− | 0.1− | 2003 06 03 | 704 | 0.3+ | 0.0 | 2005 12 07 | 691 | 0.1− | 0.2+ |
| 2002 02 22 | 644 | 0.3+ | 0.7+ | 2003 07 08 | 644 | 0.0 | 0.2+ | 2005 12 31 | 691 | 0.2+ | 0.7− |
| 2002 02 22 | 644 | 0.6+ | 0.1+ | 2003 07 08 | 644 | 0.1+ | 0.5+ | 2005 12 31 | 691 | 0.1− | 0.3+ |
| 2002 02 22 | 644 | 0.3+ | 0.4+ | 2003 07 08 | 644 | 0.0 | 0.4+ | 2005 12 31 | 691 | 0.0 | 0.2+ |
| 2002 04 01 | 644 | 0.3+ | 0.6+ | 2004 08 18 | E12 | 0.1+ | 0.1− | 2006 01 31 | G96 | 0.2+ | 0.2+ |
| 2002 04 01 | 644 | 0.4+ | 0.5+ | 2004 08 18 | E12 | 0.3+ | 0.7+ | 2006 01 31 | G96 | 0.1− | 0.0 |
| 2002 04 01 | 644 | 0.0 | 1.1+ | 2004 08 18 | E12 | 0.1− | 0.4+ | 2006 01 31 | G96 | 0.0 | 0.2+ |
| 2003 05 05 | 704 | 0.5− | 0.5+ | 2004 08 18 | E12 | 0.3+ | 1.1+ | | | | |

**2002 $CP_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.29673 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22895585 | $\omega$ | 229.09668 | −0.99385068 | | +0.00043944 | |
| $a$ | 2.6462745 | $\Omega$ | 310.62385 | +0.05316564 | | −0.87528914 | |
| $e$ | 0.0337301 | $i$ | 8.38860 | −0.09713000 | | −0.48359976 | |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.1+ | 0.3+ | 2004 10 04 | 705 | 0.1+ | 0.0 | 2006 01 27 | G96 | 0.0 | 0.5− |
| 2002 02 11 | 704 | 0.8+ | 0.7− | 2004 10 04 | 705 | 0.2− | 0.1− | 2006 01 27 | G96 | 0.0 | 0.6− |
| 2002 02 11 | 704 | 0.4+ | 0.1+ | 2004 10 04 | 705 | 0.2+ | 0.2− | 2006 02 04 | 291 | 0.3+ | 0.0 |
| 2002 02 11 | 704 | 0.5− | 0.7− | 2005 12 29 | 691 | 0.0 | 0.3+ | 2006 02 04 | 291 | 0.3+ | 0.1+ |
| 2002 02 11 | 704 | 0.4+ | 0.0 | 2005 12 29 | 691 | 0.5+ | 0.1− | 2006 02 04 | 291 | 0.4+ | 0.2+ |
| 2002 02 20 | 704 | 0.4− | 0.3− | 2005 12 29 | 691 | 1.3− | 0.4− | 2006 02 23 | G96 | 0.3+ | 0.1− |
| 2002 02 20 | 704 | 0.5+ | 1.0+ | 2006 01 07 | 691 | 0.3+ | 0.2− | 2006 02 23 | G96 | 1.4− | 0.7+ |
| 2002 02 20 | 704 | 0.8+ | 0.4− | 2006 01 07 | 691 | 0.2− | 0.3+ | 2006 02 23 | G96 | 0.4− | 0.2− |
| 2002 03 05 | 645 | 0.1− | 0.0 | 2006 01 07 | 691 | 0.1+ | 0.1+ | 2006 02 23 | G96 | 0.5− | 0.2− |
| 2002 03 05 | 645 | 0.1− | 0.0 | 2006 01 27 | G96 | 0.1+ | 0.5− | | | | |

**2002 $CQ_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.82679 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26820899 | $\omega$ | 147.57342 | +0.80658974 | | +0.59106086 | |
| $a$ | 2.3813350 | $\Omega$ | 176.16722 | −0.56405582 | | +0.77352620 | |
| $e$ | 0.1327883 | $i$ | 6.65779 | −0.17678808 | | +0.22870129 | |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 566 | 1.4+ | 0.7+ | 2002 02 11 | 704 | 0.3− | 0.9− | 2006 02 24 | 691 | 0.4+ | 0.3+ |
| 1996 09 17 | 566 | 0.6+ | 0.7+ | 2002 02 21 | 704 | 0.9+ | 0.0 | 2006 03 06 | G96 | 0.2+ | 0.3+ |
| 1996 09 17 | 566 | 1.2+ | 0.9+ | 2002 02 21 | 704 | 0.4+ | 0.0 | 2006 03 06 | G96 | 0.4− | 0.9+ |
| 1999 05 13 | 704 | 1.1+ | 0.6− | 2002 02 21 | 704 | 0.4+ | 0.1− | 2006 03 06 | G96 | 0.1− | 0.0 |
| 1999 05 13 | 704 | 0.7+ | 2.8− | 2002 02 21 | 704 | 0.0 | 0.6− | 2006 03 06 | G96 | 0.2− | 0.1− |
| 1999 05 13 | 704 | 2.0− | 0.3+ | 2002 03 12 | 645 | 0.2− | 0.3− | 2006 03 26 | 699 | 1.9+ | 1.6+ |
| 1999 05 13 | 704 | (5.1− | 0.9−) | 2002 03 12 | 645 | 0.2− | 0.2− | 2006 03 26 | 699 | 1.6+ | 0.2+ |
| 2000 09 24 | 699 | 2.2− | 0.6− | 2002 03 13 | 704 | 0.9+ | 0.8+ | 2006 03 26 | 699 | 0.7+ | 0.1+ |
| 2000 09 24 | 699 | 1.6− | 1.0− | 2002 03 13 | 704 | 0.8+ | 0.8+ | 2006 03 26 | 699 | 0.2+ | 1.0+ |
| 2000 09 24 | 699 | 0.4+ | 0.3− | 2002 03 13 | 704 | 1.0+ | 1.7+ | 2006 04 07 | G96 | 0.0 | 0.3+ |
| 2000 09 24 | 699 | 2.8+ | 0.5+ | 2002 03 13 | 704 | 1.4+ | 0.8+ | 2006 04 07 | G96 | 0.1− | 0.2+ |
| 2000 11 20 | 704 | 1.1− | 0.1− | 2006 01 27 | G96 | 0.4− | 0.0 | 2006 04 07 | G96 | 0.2− | 0.4+ |
| 2000 11 20 | 704 | 1.8− | 0.7+ | 2006 01 27 | G96 | 0.2+ | 0.4+ | 2006 04 07 | G96 | 0.3+ | 0.4+ |
| 2000 11 20 | 704 | 0.9− | 0.0 | 2006 01 27 | G96 | 0.0 | 0.1+ | 2006 04 20 | 703 | 0.6− | 0.5− |
| 2002 02 11 | 704 | 0.8+ | 0.2− | 2006 01 27 | G96 | 0.1− | 0.1+ | 2006 04 20 | 703 | 1.1+ | 0.7+ |
| 2002 02 11 | 704 | 0.1− | 0.2− | 2006 02 24 | 691 | 0.1+ | 0.3+ | 2006 04 20 | 703 | 0.7+ | 0.7+ |
| 2002 02 11 | 704 | 0.4+ | 0.6− | 2006 02 24 | 691 | 0.2+ | 0.4+ | 2006 04 20 | 703 | 0.8− | 0.8+ |

**2002 $DH_3$ = 2006 $VS_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.56188 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17576580 | $\omega$ | 68.54642 | −0.68267348 | | −0.66482872 | |
| $a$ | 3.1563110 | $\Omega$ | 68.34114 | +0.48899233 | | −0.72402270 | |
| $e$ | 0.2382750 | $i$ | 19.04344 | +0.54299486 | | −0.18383118 | |
| $P$ | 5.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 645 | 0.0 | 0.0 | 2002 03 09 | 704 | 0.9+ | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2000 11 27 | 645 | 0.0 | 0.0 | 2002 03 09 | 704 | 1.0+ | 0.5− | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2002 02 21 | 704 | 0.5− | 0.6− | 2002 03 09 | 704 | 1.4+ | 1.0+ | 2006 11 21 | 704 | 0.3+ | 0.7− |
| 2002 02 21 | 704 | 0.3− | 0.4− | 2002 03 09 | 704 | (1.7+ | 0.9+) | 2006 11 21 | 704 | 0.4+ | 0.3− |
| 2002 02 21 | 704 | 0.2− | 0.0 | 2002 03 09 | 704 | (1.8+ | 1.1−) | 2006 11 21 | 704 | 0.7− | 0.6+ |
| 2002 02 21 | 704 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 24 | 703 | 0.8− | 0.9+ |
| 2002 02 22 | 704 | 0.6− | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 24 | 703 | 0.7+ | 0.0 |
| 2002 02 22 | 704 | (1.0− | 2.2−) | 2006 11 11 | 691 | 0.5− | 0.3+ | 2006 11 24 | 703 | 0.2− | 0.3+ |
| 2002 02 22 | 704 | 0.9+ | 0.0 | 2006 11 11 | G96 | 0.6− | 0.3− | 2006 11 24 | 703 | 1.6− | 0.6− |
| 2002 02 22 | 704 | 0.8− | 0.7− | 2006 11 11 | G96 | 0.7− | 0.3− | 2006 11 24 | 691 | 0.6− | 0.8− |
| 2002 03 05 | 704 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2002 03 05 | 704 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.3− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2002 03 05 | 704 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 30 | 691 | 0.1+ | 0.0 |
| 2002 03 05 | 704 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 30 | 691 | 1.6+ | 0.7+ |
| 2002 03 05 | 704 | 0.6− | 1.2+ | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 30 | 691 | 0.0 | 0.5+ |
| 2002 03 06 | 704 | 0.3− | 0.8− | 2006 11 19 | 691 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.4+ | 0.1+ |
| 2002 03 06 | 704 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.0 |
| 2002 03 06 | 704 | 0.9+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 12 01 | 704 | 1.5+ | 0.8− |
| 2002 03 06 | 704 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.5− |
| 2002 03 06 | 704 | 0.0 | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.0 | | | | |

### 2002 $DM_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.83302 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28937847 | $\omega$ | 308.88322 | | −0.33388906 | | +0.94202880 |
| $a$ | 2.2637332 | $\Omega$ | 301.58122 | | −0.85232887 | | −0.31674763 |
| $e$ | 0.1433791 | $i$ | 2.23104 | | −0.40255881 | | −0.11069181 |
| $P$ | 3.41 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.1+ | 0.5+ | 2002 02 21 | 291 | 0.5+ | 0.1+ | 2003 09 23 | 644 | 0.3− | 0.1− |
| 2002 02 11 | 704 | 0.1+ | 0.8− | 2002 02 21 | 291 | 0.2+ | 0.1+ | 2003 09 23 | 644 | 0.5− | 0.1− |
| 2002 02 11 | 704 | 1.1− | 0.3+ | 2002 02 21 | 291 | 0.4+ | 0.2− | 2003 09 27 | 291 | 0.1+ | 0.3− |
| 2002 02 11 | 704 | 0.1− | 0.5− | 2003 09 19 | 691 | 0.1− | 0.3+ | 2003 09 27 | 291 | 0.1− | 0.2− |
| 2002 02 20 | 691 | 0.1− | 0.2− | 2003 09 19 | 691 | 0.1+ | 0.2+ | 2003 09 27 | 291 | 0.2− | 0.3− |
| 2002 02 20 | 691 | 0.3− | 0.1+ | 2003 09 19 | 691 | 0.3+ | 0.2+ | | | | |
| 2002 02 20 | 691 | 0.4− | 0.2+ | 2003 09 23 | 644 | 0.1+ | 0.4+ | | | | |

### 2002 $DR_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.73516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17584864 | $\omega$ | 15.97137 | | −0.08030359 | | −0.95610724 |
| $a$ | 3.1553198 | $\Omega$ | 79.28780 | | +0.88025830 | | −0.20066223 |
| $e$ | 0.2526392 | $i$ | 16.66625 | | +0.46765015 | | +0.21352661 |
| $P$ | 5.60 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 699 | 1.0− | 1.3+ | 2002 02 21 | 704 | 0.2− | 0.8+ | 2006 10 31 | 704 | 1.2− | 1.0+ |
| 2000 09 30 | 699 | 0.9− | 1.0− | 2002 02 21 | 704 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.1+ |
| 2000 09 30 | 699 | 0.1+ | 1.7+ | 2002 02 21 | 704 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.6− | 0.3+ |
| 2000 09 30 | 699 | 0.1+ | 1.0+ | 2002 03 05 | 704 | (0.3+ | 2.1+) | 2006 11 13 | 703 | 0.4+ | 0.0 |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2002 03 05 | 704 | 0.4− | 0.9+ | 2006 11 13 | 703 | 0.3− | 0.1+ |
| 2001 12 14 | 704 | 0.8+ | 0.6− | 2002 03 05 | 704 | 1.3− | 0.6+ | 2006 11 13 | 703 | 0.7+ | 0.3− |
| 2001 12 14 | 704 | 0.9+ | 0.2− | 2003 05 26 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2001 12 14 | 704 | 0.8+ | 0.8+ | 2003 05 26 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 2001 12 22 | 704 | 0.2+ | 1.3+ | 2003 05 26 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.5+ | 0.2− |
| 2001 12 22 | 704 | 0.4− | 0.4− | 2006 10 16 | 703 | 1.0+ | 0.7− | 2006 11 19 | 703 | 0.2+ | 0.1+ |
| 2001 12 22 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.0 | 0.3+ |
| 2001 12 22 | 704 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2002 01 21 | 699 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.4− | 0.1− | 2006 11 19 | 703 | 0.3+ | 0.2− |
| 2002 01 21 | 699 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.4− |
| 2002 01 21 | 699 | 0.2− | 0.9− | 2006 10 22 | 703 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2002 01 21 | 699 | 0.1− | 0.5− | 2006 10 22 | 703 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2002 02 19 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.7− | 1.3− |
| 2002 02 19 | 704 | 0.6+ | 0.5+ | 2006 10 31 | 704 | (2.0− | 1.4+) | 2006 11 21 | 704 | 1.0+ | 0.8+ |
| 2002 02 19 | 704 | 0.1+ | 0.3+ | 2006 10 31 | 704 | 1.4− | 0.0 | | | | |
| 2002 02 21 | 704 | (1.8− | 1.2+) | 2006 10 31 | 704 | 1.3− | 1.4+ | | | | |

### 2002 $DK_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.81733 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17414795 | $\omega$ | 47.74886 | | −0.13015848 | | −0.97756923 |
| $a$ | 3.1758292 | $\Omega$ | 50.49948 | | +0.83474493 | | −0.19816048 |
| $e$ | 0.2216262 | $i$ | 12.39145 | | +0.53503241 | | +0.07134995 |
| $P$ | 5.66 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 20 | 699 | 0.7− | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2002 01 20 | 699 | 0.9+ | 1.0+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2002 01 20 | 699 | 0.7+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.8− |
| 2002 01 20 | 699 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2002 02 19 | 704 | 0.0 | 0.8− | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2002 02 19 | 704 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1+ | 2006 11 12 | 703 | 0.2− | 0.6+ |
| 2002 02 19 | 704 | 0.6− | 1.0− | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 12 | 703 | 1.1− | 0.7+ |
| 2002 02 19 | 704 | 1.0− | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 12 | 703 | 1.3+ | 1.1+ |
| 2002 02 21 | 704 | 0.8+ | 0.8− | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 12 | 703 | 0.1+ | 0.1+ |
| 2002 02 21 | 704 | 0.6− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2002 02 21 | 704 | 0.8− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2002 02 21 | 704 | 0.8− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2002 03 05 | 704 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2002 03 05 | 704 | 0.6+ | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2002 03 05 | 704 | 1.3+ | 0.6+ | 2006 11 08 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.9− |
| 2006 10 16 | 703 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.3− |
| 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2006 10 16 | 703 | 0.8− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.5− |
| 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 1.1+ | 0.6+ | 2006 11 21 | 704 | 0.5+ | 0.6+ |
| 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.4− |

### 2002 $DY_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.87355 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17754785 | $\omega$ | 8.42445 | | +0.50039035 | | −0.82822864 |
| $a$ | 3.1351557 | $\Omega$ | 51.95131 | | +0.77451813 | | +0.29797937 |
| $e$ | 0.2633134 | $i$ | 18.68499 | | +0.38695112 | | +0.47460048 |
| $P$ | 5.55 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.2+ | 0.3− | 2006 08 28 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.4− | 0.2+ | 2006 08 28 | 704 | 1.0− | 1.3+ | 2006 11 13 | 644 | 0.1+ | 0.3− |
| 2001 12 09 | 704 | 0.3+ | 0.7− | 2006 08 28 | 704 | (0.4+ | 2.7+) | 2006 11 13 | 644 | 0.1+ | 0.4− |
| 2001 12 09 | 704 | 0.4− | 1.3+ | 2006 09 30 | 699 | 1.1+ | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.4− |
| 2001 12 09 | 704 | 0.3+ | 0.9+ | 2006 09 30 | 699 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2001 12 23 | 704 | 0.3− | 0.0 | 2006 09 30 | 699 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2001 12 23 | 704 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.8− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2001 12 23 | 704 | 0.5− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2001 12 23 | 704 | 0.4− | 0.8+ | 2006 09 30 | 699 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2001 12 23 | 704 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2002 01 06 | 704 | 1.0+ | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.3− | 2006 11 17 | 703 | 0.6+ | 0.1− |
| 2002 01 06 | 704 | 0.6+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2002 01 06 | 704 | 0.6+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4+ | 1.4+ |
| 2002 01 06 | 704 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (0.5+ | 1.8+) |
| 2002 01 06 | 704 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.4+ | 1.2+ |
| 2002 01 19 | 699 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 18 | 704 | (0.5+ | 1.8+) |
| 2002 01 19 | 699 | 0.4− | 0.8− | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1+ | 1.4+ |
| 2002 01 19 | 699 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.5+ | 1.4+ |
| 2002 01 19 | 699 | 0.6+ | 0.0 | 2006 10 22 | 704 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 2002 01 25 | 704 | 0.4− | 0.1+ | 2006 10 22 | 704 | 0.0 | 0.2+ | 2006 11 18 | 704 | (0.2+ | 1.9+) |
| 2002 01 25 | 704 | 0.7− | 0.0 | 2006 10 22 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 1.1+ |
| 2002 01 25 | 704 | 0.1− | 0.4+ | 2006 10 22 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | (0.2+ | 1.6+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 25 | 704 | 0.6+ | 1.0− | 2006 10 22 | 704 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2002 01 25 | 704 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 02 19 | 704 | 0.0 | 0.9− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2002 02 19 | 704 | (1.2+ | 1.5−) | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 02 19 | 704 | 0.2− | 0.9− | 2006 10 27 | 704 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2002 02 21 | 704 | 0.2− | 0.6− | 2006 10 27 | 704 | 0.5− | 0.5− | 2006 11 26 | 704 | 0.7+ | 0.0 |
| 2002 02 21 | 704 | 0.1− | 0.1− | 2006 10 27 | 704 | 0.0 | 0.2− | 2006 11 26 | 704 | 0.4+ | 0.3+ |
| 2002 02 21 | 704 | 0.0 | 0.8− | 2006 10 27 | 704 | 0.2− | 0.2− | 2006 11 26 | 704 | 0.2+ | 0.2− |
| 2002 02 21 | 704 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 26 | 704 | 0.8+ | 0.2− |
| 2002 03 04 | 704 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.4+ | 0.6− |
| 2002 03 04 | 704 | 0.9+ | 0.6+ | 2006 11 09 | 644 | 0.6− | 0.9+ | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2002 03 04 | 704 | 0.4+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.1− | 1.5− |
| 2002 03 09 | 699 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.3− |
| 2002 03 09 | 699 | 0.4− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.5− | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2002 03 09 | 699 | 0.0 | 0.8+ | 2006 11 11 | 703 | 0.4+ | 0.3− | 2006 11 29 | 704 | 0.1− | 0.1− |
| 2002 03 09 | 699 | (1.7+ | 0.7+) | 2006 11 11 | 703 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2006 08 28 | 704 | 0.9− | 0.7+ | 2006 11 11 | 703 | 0.6+ | 0.3− | 2006 11 29 | 704 | 0.2− | 0.1+ |

### 2002 DH$_{14}$ = 2006 WS$_{126}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.70430 | | (2000.0) | | +0.02552777 | −0.99576207 |
| $n$ | 0.18729415 | $\omega$ | 310.88050 | | +0.95196288 | −0.00276398 |
| $a$ | 3.0254263 | $\Omega$ | 137.40571 | | +0.30514753 | +0.09192535 |
| $e$ | 0.0892090 | $i$ | 7.50107 | | | |
| $P$ | 5.26 | $H$ | 15.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 704 | 1.5− | 0.4+ | 2002 02 20 | 704 | 0.7+ | 0.5− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2002 02 12 | 704 | 0.4− | 0.1− | 2002 02 20 | 704 | 0.6+ | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2002 02 12 | 704 | 1.2+ | 0.2− | 2002 02 20 | 704 | 0.8− | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2002 02 12 | 704 | 0.3+ | 0.4− | 2005 11 01 | 644 | 0.3− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2002 02 16 | 644 | 0.3− | 0.2+ | 2005 11 01 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2002 02 16 | 644 | 0.1− | 0.3+ | 2005 11 01 | 644 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2002 02 16 | 644 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.0 | | | | |
| 2002 02 20 | 704 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.7− | 0.1+ | | | | |

### 2002 DX$_{15}$ = 2002 ET$_{143}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.26971 | | (2000.0) | | +0.13896668 | −0.97951687 |
| $n$ | 0.17310041 | $\omega$ | 279.65015 | | +0.98953062 | +0.14313578 |
| $a$ | 3.1886289 | $\Omega$ | 160.45194 | | −0.03895404 | +0.14162924 |
| $e$ | 0.2732224 | $i$ | 25.81807 | | | |
| $P$ | 5.69 | $H$ | 15.7 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.2− | 0.5+ | 2002 02 20 | 704 | 0.5+ | 1.0− | 2006 11 20 | E12 | 0.3+ | 0.7+ |
| 2002 02 06 | 644 | 0.1+ | 0.6+ | 2002 03 13 | 704 | 0.4− | 1.2+ | 2006 11 20 | E12 | 0.4+ | 0.4− |
| 2002 02 06 | 644 | 0.1+ | 0.3+ | 2002 03 13 | 704 | 0.2− | 0.9+ | 2006 11 20 | E12 | 1.5+ | 0.6+ |
| 2002 02 16 | 644 | 0.2+ | 0.1+ | 2002 03 13 | 704 | 0.3+ | 1.1+ | 2006 11 20 | E12 | 0.9− | 0.3+ |
| 2002 02 16 | 644 | 0.3+ | 0.1+ | 2002 03 13 | 704 | 0.3+ | 1.7+ | 2006 11 25 | 703 | 0.5− | 0.5+ |
| 2002 02 16 | 644 | 0.1− | 1.0− | 2002 03 16 | 691 | 0.0 | 0.3− | 2006 11 25 | 703 | 0.4− | 0.2− |
| 2002 02 20 | 704 | 0.2− | 0.3− | 2002 03 16 | 691 | 0.1+ | 0.3− | 2006 11 25 | 703 | 0.3+ | 0.9− |
| 2002 02 20 | 704 | 0.0 | 0.5− | 2002 03 16 | 691 | 0.2− | 0.3− | 2006 11 25 | 703 | 0.6− | 0.6− |

### 2002 DW$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 218.41545 | | (2000.0) | | −0.98283494 | +0.17823933 |
| $n$ | 0.36604616 | $\omega$ | 182.58240 | | −0.16268657 | −0.71566261 |
| $a$ | 1.9354360 | $\Omega$ | 8.16321 | | −0.08699742 | −0.67532049 |
| $e$ | 0.0565568 | $i$ | 19.58839 | | | |
| $P$ | 2.69 | $H$ | 17.3 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 20 | 699 | 1.0− | 0.4− | 2002 02 21 | 704 | 0.2− | 0.1+ | 2003 09 29 | 704 | 0.6− | 0.5+ |
| 2002 02 20 | 699 | 0.5+ | 0.6+ | 2002 04 01 | 644 | 0.4+ | 0.1− | 2003 09 29 | 704 | 0.5+ | 0.3− |
| 2002 02 20 | 699 | 0.3− | 0.4+ | 2002 04 01 | 644 | 0.3+ | 0.1+ | 2003 09 29 | 704 | 0.6− | 0.3+ |
| 2002 02 20 | 699 | 1.3− | 0.4− | 2002 04 01 | 644 | 0.5+ | 0.1− | 2003 10 16 | 691 | 0.3+ | 0.2− |
| 2002 02 21 | 704 | 0.3+ | 0.1− | 2003 09 17 | 644 | 0.1+ | 0.1− | 2003 10 16 | 691 | 0.1+ | 0.0 |
| 2002 02 21 | 704 | 0.8+ | 0.2+ | 2003 09 17 | 644 | 0.4+ | 0.0 | 2003 10 16 | 691 | 0.2− | 0.3+ |
| 2002 02 21 | 704 | 0.3+ | 0.2+ | 2003 09 17 | 644 | 0.2+ | 0.1+ | | | | |
| 2002 02 21 | 704 | 0.0 | 0.3− | 2003 09 29 | 704 | 0.6− | 0.8− | | | | |

### 2002 DR$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.39619 | | (2000.0) | | −0.29505959 | +0.94009140 |
| $n$ | 0.21379387 | $\omega$ | 176.46619 | | −0.88088800 | −0.19840826 |
| $a$ | 2.7699540 | $\Omega$ | 76.31678 | | −0.37010291 | −0.27724053 |
| $e$ | 0.1036983 | $i$ | 10.12377 | | | |
| $P$ | 4.61 | $H$ | 15.4 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 21 | 049 | 0.6− | 0.6+ | 2002 04 11 | 699 | 0.9− | 0.8+ | 2004 11 17 | E12 | 0.8+ | 0.0 |
| 2002 02 21 | 049 | 0.3− | 1.3+ | 2002 04 16 | 704 | (1.0+ | 2.2−) | 2006 01 05 | 703 | 1.0+ | 0.6− |
| 2002 02 21 | 049 | 1.7+ | 0.5+ | 2002 04 16 | 704 | 1.8− | 1.0− | 2006 01 05 | 703 | 0.2+ | 0.1+ |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2002 04 16 | 704 | 0.2− | 1.9− | 2006 01 05 | 703 | 1.0− | 0.9− |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2002 04 16 | 704 | 0.1− | 1.5− | 2006 02 02 | 703 | 0.0 | 0.3+ |
| 2002 03 20 | 704 | 0.4+ | 1.4+ | 2002 05 13 | 699 | 1.2+ | 0.4+ | 2006 02 02 | 703 | 0.1+ | 0.9+ |
| 2002 03 20 | 704 | 1.0+ | 0.1+ | 2002 05 13 | 699 | 1.7+ | 0.6− | 2006 02 02 | 703 | 0.0 | 0.0 |
| 2002 03 20 | 704 | 0.9+ | 0.3+ | 2002 05 13 | 699 | 0.3− | 0.1+ | 2006 02 02 | 703 | 0.1+ | 0.3+ |
| 2002 03 20 | 704 | 0.6+ | 0.6+ | 2002 05 13 | 699 | 1.8− | 1.8+ | 2006 02 24 | 699 | 0.3+ | 0.9− |
| 2002 04 11 | 699 | 1.0+ | 0.5− | 2004 11 17 | E12 | 0.2− | 0.1− | 2006 02 24 | 699 | 1.1− | 0.2+ |
| 2002 04 11 | 699 | 0.5+ | 0.5− | 2004 11 17 | E12 | 0.4+ | 0.0 | 2006 02 24 | 699 | 0.5+ | 0.6+ |
| 2002 04 11 | 699 | 1.0− | 0.2− | 2004 11 17 | E12 | 0.8− | 0.1+ | 2006 02 24 | 699 | 0.1− | 0.4− |

### 2002 EL$_{8}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 146.90186 | | (2000.0) | | −0.75570596 | −0.65447800 |
| $n$ | 0.28859138 | $\omega$ | 344.00497 | | +0.60689079 | −0.71349850 |
| $a$ | 2.2678473 | $\Omega$ | 155.06589 | | +0.24615457 | −0.25015683 |
| $e$ | 0.0228133 | $i$ | 3.23812 | | | |
| $P$ | 3.42 | $H$ | 17.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 21 | 691 | 0.5+ | 0.4+ | 2002 02 20 | 704 | 1.0− | 0.1+ | 2002 03 16 | 704 | 0.0 | 0.0 |
| 1995 02 21 | 691 | 0.3− | 0.7− | 2002 03 07 | 209 | 0.5− | 0.3− | 2002 03 16 | 704 | 0.2− | 0.0 |
| 1995 02 21 | 691 | 0.4− | 0.2− | 2002 03 07 | 209 | 0.1− | 0.0 | 2002 03 16 | 704 | 0.2+ | 0.2− |
| 2002 01 13 | 291 | 0.2+ | 0.2+ | 2002 03 08 | 209 | 0.2+ | 0.7− | 2002 03 16 | 704 | 0.1− | 0.5+ |
| 2002 01 13 | 291 | 0.1+ | 0.1+ | 2002 03 09 | 644 | 0.0 | 0.1− | 2002 03 16 | 704 | 0.2− | 0.1+ |
| 2002 01 13 | 291 | 0.0 | 0.1− | 2002 03 09 | 704 | 0.2− | 0.7+ | 2002 03 17 | 691 | 0.2+ | 0.0 |
| 2002 02 12 | 691 | 0.2+ | 0.0 | 2002 03 09 | 704 | 1.5+ | 0.8+ | 2002 03 17 | 691 | 0.1+ | 0.2+ |
| 2002 02 12 | 691 | 0.1+ | 0.1− | 2002 03 09 | 704 | 1.0+ | 0.7+ | 2002 03 17 | 691 | 0.0 | 0.4+ |
| 2002 02 12 | 691 | 0.0 | 0.1− | 2002 03 09 | 704 | 1.1+ | 0.4+ | 2002 04 03 | 644 | 0.4− | 0.1− |
| 2002 02 19 | 333 | 1.0− | 0.2− | 2002 03 09 | 644 | 0.3+ | 0.0 | 2002 04 03 | 644 | 0.0 | 0.4− |
| 2002 02 19 | 333 | 0.3− | 0.2+ | 2002 03 09 | 704 | 0.4− | 0.0 | 2004 12 03 | 691 | 0.2+ | 0.2+ |
| 2002 02 19 | 333 | 0.3− | 0.7− | 2002 03 09 | 644 | 0.1+ | 0.1+ | 2004 12 03 | 691 | 0.2− | 0.1+ |
| 2002 02 20 | 704 | 1.8− | 0.5− | 2002 03 13 | 209 | 0.0 | 0.4+ | 2004 12 03 | 691 | 0.0 | 0.0 |
| 2002 02 20 | 704 | 1.1− | 0.6− | 2002 03 13 | 209 | 0.1+ | 0.4− | | | | |
| 2002 02 20 | 704 | 0.5− | 0.0 | 2002 03 13 | 209 | 0.3− | 0.2+ | | | | |

### 2002 EV$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.22520 | | (2000.0) | | +0.56025384 | +0.82805861 |
| $n$ | 0.26073078 | $\omega$ | 315.52862 | | −0.72787908 | +0.48014956 |
| $a$ | 2.4266540 | $\Omega$ | 348.49183 | | −0.39535765 | +0.28943969 |
| $e$ | 0.1505895 | $i$ | 5.99771 | | | |
| $P$ | 3.78 | $H$ | 16.7 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.2− | 0.3+ | 2002 03 09 | 291 | 0.3− | 0.2+ | 2006 02 27 | G96 | 0.3− | 0.4+ |
| 1996 09 08 | 691 | 0.2− | 0.2+ | 2002 03 09 | 291 | 0.8+ | 0.1+ | 2006 02 27 | G96 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.0 | 0.3+ | 2006 01 23 | 691 | 0.1+ | 0.1− | 2006 02 27 | G96 | 0.1− | 0.1+ |
| 2002 01 07 | 691 | 0.5− | 0.2− | 2006 01 23 | 691 | 0.1+ | 0.1− | 2006 02 27 | G96 | 0.1− | 0.1+ |
| 2002 01 07 | 691 | 0.1+ | 0.4− | 2006 01 23 | 691 | 0.2+ | 0.1− | 2006 02 27 | G96 | 0.2+ | 0.3+ |
| 2002 01 07 | 691 | 0.5− | 0.2+ | 2006 02 20 | 691 | 0.5+ | 0.3+ | 2006 03 02 | G96 | 0.8− | 0.0 |
| 2002 03 05 | 691 | 0.0 | 0.4− | 2006 02 20 | 691 | 0.1− | 0.1+ | 2006 03 02 | G96 | 0.0 | 0.1+ |
| 2002 03 05 | 691 | 0.2− | 0.3− | 2006 02 20 | 691 | 0.1+ | 0.7+ | 2006 03 02 | G96 | 0.3+ | 0.1− |
| 2002 03 05 | 691 | 0.2+ | 0.3− | 2006 02 27 | G96 | 0.0 | 0.3+ | 2006 03 02 | G96 | 0.1+ | 0.1− |
| 2002 03 09 | 291 | 0.1+ | 0.4+ | 2006 02 27 | G96 | 0.5+ | 1.0+ | | | | |

**2002 EA$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.98711 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18968485 | $\omega$ | 19.95394 | | −0.99747844 | | −0.01624132 |
| $a$ | 2.9999518 | $\Omega$ | 158.75738 | | +0.00010428 | | −0.97379670 |
| $e$ | 0.0427498 | $i$ | 10.99246 | | +0.07097005 | | −0.22683962 |
| $P$ | 5.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 291 | 0.4+ | 0.6+ | 2002 03 09 | 691 | 0.3+ | 0.2+ | 2002 03 16 | 704 | 0.9+ | 0.3+ |
| 2002 01 13 | 291 | 0.0 | 0.1+ | 2002 03 09 | 644 | 0.4+ | 0.8+ | 2004 10 08 | 691 | 0.2+ | 0.3+ |
| 2002 01 13 | 291 | 0.1+ | 0.5+ | 2002 03 09 | 644 | 0.3+ | 0.7+ | 2004 10 08 | 691 | 0.2− | 0.3+ |
| 2002 02 13 | 691 | 0.0 | 0.0 | 2002 03 13 | 291 | 0.1− | 0.1+ | 2004 10 08 | 691 | 0.3− | 0.7+ |
| 2002 02 13 | 691 | 0.4− | 0.1+ | 2002 03 13 | 291 | 0.6− | 0.2− | 2006 10 30 | G96 | 0.2+ | 1.1− |
| 2002 02 13 | 691 | 0.2− | 0.2− | 2002 03 13 | 291 | 0.2+ | 0.1− | 2006 10 30 | G96 | 0.7− | 0.1− |
| 2002 03 09 | 644 | 0.4+ | 0.9+ | 2002 03 16 | 704 | 0.8− | 0.6− | 2006 10 30 | G96 | 0.1+ | 0.3− |
| 2002 03 09 | 691 | 0.2+ | 0.3+ | 2002 03 16 | 704 | 0.1+ | 0.1+ | 2006 10 30 | G96 | 0.2+ | 0.4− |
| 2002 03 09 | 691 | 0.3+ | 0.0 | 2002 03 16 | 704 | 0.0 | 0.8− | | | | |

**2002 ET$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.84875 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25804381 | $\omega$ | 275.97872 | | −0.03773624 | | +0.99928499 |
| $a$ | 2.4434704 | $\Omega$ | 351.85753 | | −0.91016243 | | −0.03533807 |
| $e$ | 0.1652455 | $i$ | 0.94750 | | −0.41252919 | | −0.01344361 |
| $P$ | 3.82 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.1+ | 0.1− | 2002 03 15 | 704 | 0.3− | 0.9− | 2006 03 24 | 691 | 0.4+ | 0.4+ |
| 1999 09 03 | 691 | 0.0 | 0.1− | 2003 09 17 | 691 | 0.1− | 0.6+ | 2006 04 09 | 691 | 0.1− | 0.1− |
| 1999 09 03 | 691 | 0.1− | 0.2+ | 2003 09 17 | 691 | 0.2− | 0.2+ | 2006 04 09 | 691 | 0.2− | 0.1+ |
| 2002 03 12 | 644 | 0.4+ | 0.5+ | 2003 09 17 | 691 | 0.2+ | 0.2− | 2006 04 09 | 691 | 0.1+ | 0.0 |
| 2002 03 12 | 644 | 0.5+ | 0.4+ | 2003 09 27 | 691 | 0.1− | 0.2+ | 2006 04 18 | 699 | 0.9− | 1.0+ |
| 2002 03 12 | 644 | 0.2− | 0.6+ | 2003 09 27 | 691 | 0.0 | 0.0 | 2006 04 18 | 699 | 0.1− | 0.3+ |
| 2002 03 13 | 644 | 0.6+ | 1.8+ | 2003 09 27 | 691 | 0.2− | 0.2+ | 2006 04 18 | 699 | 0.2+ | 0.8+ |
| 2002 03 13 | 644 | 0.5+ | 1.6+ | 2003 10 17 | 691 | 0.4− | 0.6+ | 2006 04 18 | 699 | 0.4+ | 1.1− |
| 2002 03 13 | 644 | 0.4+ | 1.2+ | 2003 10 17 | 691 | 0.1− | 0.0 | 2006 05 06 | G96 | 0.2− | 0.5− |
| 2002 03 15 | 704 | 0.2− | 0.3+ | 2003 10 17 | 691 | 0.0 | 0.4+ | 2006 05 06 | G96 | 0.6− | 0.2− |
| 2002 03 15 | 704 | (1.2− | 2.5+) | 2006 03 24 | 691 | 0.2+ | 0.2+ | 2006 05 06 | G96 | 0.4− | 0.6− |
| 2002 03 15 | 704 | 0.7+ | 0.1− | 2006 03 24 | 691 | 0.3+ | 0.3+ | 2006 05 06 | G96 | 0.2− | 0.3− |

**2002 EZ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.72701 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20210508 | $\omega$ | 156.52341 | | +0.71441509 | | +0.69529282 |
| $a$ | 2.8757507 | $\Omega$ | 158.79064 | | −0.67148248 | | +0.71283540 |
| $e$ | 0.0358598 | $i$ | 12.54925 | | −0.19677997 | | +0.09183455 |
| $P$ | 4.88 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 21 | 691 | 0.1+ | 0.4+ | 2002 03 12 | 644 | 1.0+ | 0.3+ | 2004 09 09 | 704 | 0.7− | 0.2+ |
| 2002 01 21 | 691 | 0.0 | 0.3− | 2002 03 14 | 704 | (2.5+ | 2.0+) | 2004 09 09 | 704 | 0.8− | 0.4− |
| 2002 01 21 | 691 | 0.4+ | 0.1− | 2002 03 14 | 704 | (2.6+ | 1.3+) | 2004 09 14 | 699 | 0.7+ | 0.2+ |
| 2002 03 05 | 645 | 0.2− | 0.1− | 2002 03 14 | 704 | (2.3+ | 2.5+) | 2004 09 14 | 699 | 0.3+ | 0.4+ |
| 2002 03 05 | 645 | 0.2− | 0.1− | 2002 03 16 | 704 | 1.5+ | 0.3+ | 2004 09 14 | 699 | 1.7+ | 0.7+ |
| 2002 03 09 | 704 | 0.0 | 0.9+ | 2002 03 16 | 704 | 1.8+ | 0.8+ | 2004 09 14 | 699 | 1.2+ | 0.6+ |
| 2002 03 09 | 704 | 0.1− | 1.0+ | 2002 03 16 | 704 | 1.2+ | 0.4+ | 2004 09 17 | 704 | 0.9− | 0.3− |
| 2002 03 09 | 704 | 0.4− | 0.4+ | 2002 03 16 | 704 | 1.4+ | 1.0+ | 2004 09 17 | 704 | 0.2− | 0.0 |
| 2002 03 12 | 644 | 0.7+ | 0.3+ | 2004 09 09 | 704 | 0.2+ | 0.5− | 2004 09 17 | 704 | 0.3− | 0.4− |
| 2002 03 12 | 644 | 0.8+ | 0.3+ | 2004 09 09 | 704 | 1.1− | 0.5+ | 2004 09 17 | 704 | 0.3− | 0.3− |

**2002 EL$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.85208 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28357929 | $\omega$ | 261.02710 | | −0.13555888 | | −0.99048988 |
| $a$ | 2.2944911 | $\Omega$ | 196.81858 | | +0.93797124 | | −0.12064992 |
| $e$ | 0.1197540 | $i$ | 4.66429 | | +0.31911401 | | −0.06613167 |
| $P$ | 3.48 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.3+ | 0.7− | 2002 03 13 | 704 | 0.2− | 0.6− | 2002 04 12 | 704 | 0.6+ | 0.3− |
| 2002 02 11 | 704 | 1.2+ | 0.2− | 2002 03 13 | 704 | 0.7+ | 0.9− | 2002 04 12 | 704 | 0.4+ | 0.0 |
| 2002 02 11 | 704 | 1.8+ | 0.4+ | 2002 03 13 | 644 | 0.0 | 0.2− | 2002 04 12 | 704 | 0.1+ | 0.8− |
| 2002 02 15 | 704 | 0.9− | 1.7+ | 2002 03 13 | 644 | 0.1− | 0.2− | 2006 05 21 | 691 | 0.2− | 0.0 |
| 2002 02 15 | 704 | 0.3− | 0.3+ | 2002 03 13 | 644 | 0.2+ | 0.1− | 2006 05 21 | 691 | 0.1− | 0.1+ |
| 2002 02 15 | 704 | 0.2− | 1.3− | 2002 03 15 | 704 | 0.8− | 0.7+ | 2006 05 21 | 691 | 0.1− | 0.1+ |
| 2002 03 10 | 699 | 1.5− | 0.4+ | 2002 03 15 | 704 | 0.1− | 0.3+ | 2006 05 29 | 691 | 0.1− | 0.1+ |
| 2002 03 10 | 699 | 1.0+ | 0.7− | 2002 03 15 | 704 | 0.0 | 0.1− | 2006 05 29 | 691 | 0.3− | 0.3+ |
| 2002 03 10 | 699 | 0.4− | 0.5+ | 2002 03 15 | 704 | 0.5+ | 1.6+ | 2006 05 29 | 691 | 0.0 | 0.3+ |
| 2002 03 10 | 699 | 0.9− | 0.6+ | 2002 04 04 | 644 | 0.3− | 0.3− | 2006 06 16 | 691 | 0.7+ | 0.2− |
| 2002 03 13 | 704 | 1.2− | 0.1− | 2002 04 04 | 644 | 0.3− | 0.2− | 2006 06 16 | 691 | 0.1+ | 0.3− |
| 2002 03 13 | 704 | 0.4+ | 0.0 | 2002 04 04 | 644 | 0.2+ | 0.1− | 2006 06 16 | 691 | 0.1+ | 0.4− |

**2002 EG$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.05140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26612810 | $\omega$ | 128.57193 | | −0.36313080 | | −0.93151782 |
| $a$ | 2.3937322 | $\Omega$ | 342.68747 | | +0.83228077 | | −0.31451560 |
| $e$ | 0.1017470 | $i$ | 3.90435 | | +0.41886125 | | −0.18263212 |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 704 | 0.1− | 0.3− | 2002 03 15 | 704 | 0.7− | 0.2− | 2004 11 04 | 703 | 0.2− | 0.3− |
| 2002 03 13 | 704 | 0.3− | 0.1− | 2002 03 15 | 704 | 0.5+ | 0.7− | 2004 11 04 | 703 | 0.2− | 1.1+ |
| 2002 03 13 | 704 | 0.2− | 0.2+ | 2002 03 15 | 704 | (1.1+ | 2.6−) | 2004 11 19 | 704 | 0.2+ | 1.0+ |
| 2002 03 13 | 704 | 0.3− | 0.5− | 2002 04 12 | 704 | 0.4+ | 0.5+ | 2004 11 19 | 704 | 0.4+ | 0.7− |
| 2002 03 13 | 704 | 0.2− | 0.4+ | 2002 04 12 | 704 | 0.1+ | 0.5+ | 2004 11 19 | 704 | 0.3− | 0.5+ |
| 2002 03 13 | 644 | 0.1+ | 0.1+ | 2002 04 12 | 704 | 0.4+ | 0.7+ | 2004 12 02 | 703 | 0.8− | 1.0+ |
| 2002 03 13 | 644 | 0.6+ | 0.2− | 2002 04 12 | 704 | 0.8− | 0.1− | 2004 12 02 | 703 | 0.0 | 0.1− |
| 2002 03 13 | 644 | 0.5+ | 0.2+ | 2004 11 04 | 703 | 0.9+ | 0.4+ | 2004 12 02 | 703 | 0.4− | 0.1− |
| 2002 03 15 | 704 | 0.0 | 0.5− | 2004 11 04 | 703 | 1.8+ | 0.8− | 2004 12 02 | 703 | 1.2− | 1.8− |

**2002 EA$_{73}$ = 2002 GZ$_5$ = 2006 DV$_{67}$**

Id. Minor Planet Center (d, *MPO* 30776; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.32514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23973156 | $\omega$ | 161.45761 | | −0.95793182 | | −0.28680933 |
| $a$ | 2.5663699 | $\Omega$ | 1.96590 | | +0.21002903 | | −0.72514350 |
| $e$ | 0.0894967 | $i$ | 17.55231 | | +0.19558740 | | −0.62602500 |
| $P$ | 4.11 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 704 | 0.3+ | 1.4− | 2002 04 10 | 704 | 0.1+ | 0.4− | 2006 02 28 | 704 | 0.6− | 0.2+ |
| 2002 03 13 | 704 | 0.2+ | 1.0− | 2002 04 12 | 704 | 0.2+ | 0.6− | 2006 02 28 | 704 | 0.8− | 0.4+ |
| 2002 03 13 | 704 | 0.0 | 0.2− | 2002 04 12 | 704 | 0.3− | 1.0− | 2006 02 28 | 704 | 0.1− | 0.1+ |
| 2002 03 15 | 704 | 0.1+ | 1.3+ | 2002 04 12 | 704 | 0.6− | 0.3− | 2006 02 28 | 704 | 1.2− | 0.1+ |
| 2002 03 15 | 704 | 0.2+ | 0.1+ | 2002 04 12 | 608 | 1.2− | 0.2+ | 2006 03 05 | 704 | 0.6+ | 0.7+ |
| 2002 03 15 | 704 | 0.4+ | 0.5+ | 2002 04 12 | 608 | 1.4− | 0.1+ | 2006 03 05 | 704 | 1.2+ | 1.3− |
| 2002 03 15 | 704 | 0.6− | 0.5+ | 2002 04 12 | 608 | (1.7− | 0.8+) | 2006 03 05 | 704 | 0.2+ | 0.1− |
| 2002 03 15 | 704 | 0.8− | 0.9+ | 2002 04 14 | 608 | (2.4− | 1.0−) | 2006 03 05 | 704 | 0.8+ | 0.3− |
| 2002 04 04 | 644 | 0.0 | 0.1− | 2002 04 14 | 608 | (2.3− | 1.1−) | 2006 03 05 | 704 | 0.9− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.1+ | 0.0 | 2002 04 14 | 608 | (2.4− | 1.5−) | 2006 03 23 | 703 | 0.7− | 0.3− |
| 2002 04 04 | 644 | 0.1+ | 0.2− | 2006 02 23 | 699 | 0.3+ | 1.0− | 2006 03 23 | 703 | 0.8− | 0.0 |
| 2002 04 05 | 699 | 0.4+ | 0.6− | 2006 02 23 | 699 | (2.4+ | 1.2+) | 2006 03 23 | 703 | 0.9− | 0.5− |
| 2002 04 05 | 699 | 0.9+ | 0.4+ | 2006 02 23 | 699 | 1.1+ | 0.5+ | 2006 03 23 | 703 | 0.4− | 0.3− |
| 2002 04 05 | 699 | 0.5− | 0.0 | 2006 02 23 | 699 | (1.9+ | 1.9−) | 2006 04 24 | G96 | 0.2+ | 0.4+ |
| 2002 04 05 | 699 | 0.1− | 0.8+ | 2006 02 25 | 704 | 1.3+ | 0.2− | 2006 04 24 | G96 | 0.1− | 0.2+ |
| 2002 04 10 | 704 | 0.8+ | 0.3+ | 2006 02 25 | 704 | 1.0− | 0.0 | 2006 04 24 | G96 | 0.2− | 0.2+ |
| 2002 04 10 | 704 | 0.7+ | 0.5+ | 2006 02 25 | 704 | 0.5+ | 0.3+ | 2006 04 24 | G96 | 0.1+ | 0.3+ |
| 2002 04 10 | 704 | 0.9+ | 0.4+ | 2006 02 25 | 704 | 0.4+ | 0.7+ | | | | |
| 2002 04 10 | 704 | 0.5+ | 0.1+ | 2006 02 28 | 704 | 0.5+ | 0.5− | | | | |

### 2002 EC$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.09577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16931181 | $\omega$ | 237.21366 | | −0.52951003 | +0.84827470 | |
| $a$ | 3.2360202 | $\Omega$ | 0.90694 | | −0.55113303 | −0.33772081 | |
| $e$ | 0.1541593 | $i$ | 26.29624 | | −0.64488101 | −0.40789054 | |
| $P$ | 5.82 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 608 | 0.1+ | 0.5− | 2002 03 18 | 704 | 1.2− | 2.0+ | 2002 04 14 | 704 | 0.7− | 0.9+ |
| 1996 04 14 | 608 | 0.7− | 0.0 | 2002 03 18 | 704 | (2.3− | 1.5+) | 2002 04 14 | 704 | 0.5− | 0.2− |
| 2002 02 20 | 704 | 0.0 | 0.8− | 2002 03 18 | 704 | 0.3+ | 1.1+ | 2002 04 14 | 704 | 0.3− | 0.3− |
| 2002 02 20 | 704 | 0.1+ | 0.7+ | 2002 03 18 | 704 | 0.7− | 1.2+ | 2002 04 14 | 704 | 0.6+ | 0.1− |
| 2002 02 20 | 704 | 1.2+ | 0.7− | 2002 03 18 | 704 | 0.4− | 1.5+ | 2002 04 18 | 644 | 0.1+ | 0.4− |
| 2002 02 20 | 704 | 1.7+ | 0.9− | 2002 03 20 | 699 | 0.4− | 0.5+ | 2002 04 18 | 644 | 0.0 | 0.1− |
| 2002 03 13 | 704 | 0.4+ | 0.6+ | 2002 03 20 | 699 | 1.1− | 0.4− | 2002 04 18 | 644 | 0.0 | 0.0 |
| 2002 03 13 | 704 | 0.2− | 0.1+ | 2002 03 20 | 699 | 0.9− | 0.5+ | 2002 04 30 | 644 | 0.2+ | 0.4+ |
| 2002 03 13 | 704 | 0.4+ | 0.1+ | 2002 03 20 | 699 | 0.5+ | 0.1+ | 2002 04 30 | 644 | 0.5+ | 0.0 |
| 2002 03 13 | 704 | 0.7+ | 0.3− | 2002 03 23 | 704 | 0.8+ | 0.2− | 2002 04 30 | 644 | 0.4+ | 0.2+ |
| 2002 03 14 | 699 | 0.4− | 0.1− | 2002 03 23 | 704 | 0.8+ | 0.0 | 2002 05 08 | 704 | 0.6+ | 0.1+ |
| 2002 03 14 | 699 | 0.4− | 0.7− | 2002 03 23 | 704 | 0.2− | 0.4− | 2002 05 08 | 704 | 0.1− | 0.6+ |
| 2002 03 14 | 699 | 0.3− | 0.6− | 2002 03 23 | 704 | 0.5+ | 0.0 | 2002 05 08 | 704 | 0.6+ | 1.0− |
| 2002 03 14 | 699 | 0.9− | 1.1− | 2002 04 04 | 644 | 0.2+ | 0.2− | 2002 05 17 | 644 | 0.0 | 0.3+ |
| 2002 03 15 | 704 | 1.4+ | 1.0+ | 2002 04 04 | 644 | 0.2+ | 0.1+ | 2002 05 17 | 644 | 0.1+ | 0.3+ |
| 2002 03 15 | 704 | 0.7+ | 0.2+ | 2002 04 04 | 644 | 0.1+ | 0.0 | 2002 05 17 | 644 | 0.4+ | 0.0 |
| 2002 03 15 | 704 | 0.8+ | 0.5+ | 2002 04 10 | 704 | 0.4− | 0.7− | 2004 09 18 | 704 | 0.7− | 0.0 |
| 2002 03 15 | 704 | 1.8+ | 0.0 | 2002 04 10 | 704 | 0.0 | 0.1− | 2004 09 18 | 704 | 0.7− | 0.8+ |
| 2002 03 15 | 704 | 0.7+ | 1.9+ | 2002 04 10 | 704 | 0.4− | 0.0 | 2004 09 18 | 704 | 1.2− | 0.9+ |
| 2002 03 16 | 608 | 0.3− | 0.8− | 2002 04 10 | 704 | 0.5− | 0.5+ | 2004 09 18 | 704 | 0.0 | 0.6+ |
| 2002 03 16 | 608 | 0.9− | 0.8− | 2002 04 10 | 704 | 0.3+ | 0.6− | 2004 09 18 | 704 | 1.2− | 1.2+ |
| 2002 03 16 | 608 | 0.6− | 0.9− | 2002 04 14 | 704 | 0.5− | 0.4+ | | | | |

### 2002 ED$_{85}$ = 1979 OQ$_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.65220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29366577 | $\omega$ | 125.54609 | | +0.01388661 | +0.99982116 | |
| $a$ | 2.2416467 | $\Omega$ | 145.24284 | | −0.92452788 | +0.01772923 | |
| $e$ | 0.1847255 | $i$ | 1.29036 | | −0.38086133 | −0.00658255 | |
| $P$ | 3.36 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 07 24 | 675 | 0.1− | 0.8+ | 2003 10 23 | 704 | 0.4− | 1.0+ | 2006 08 18 | 699 | 0.4− | 0.2+ |
| 1979 07 24 | 413 | (2.9− | 1.0−) | 2003 10 23 | 704 | 0.6− | 1.4+ | 2006 08 18 | 699 | 0.2− | 0.4+ |
| 1979 07 25 | 675 | (6.1− | 1.0−) | 2003 10 23 | 704 | 0.4+ | 1.2+ | 2006 08 18 | 699 | 0.1− | 0.6+ |
| 2002 03 06 | 644 | 0.4+ | 0.5+ | 2003 10 23 | 704 | 1.1− | 0.7+ | 2006 08 18 | 699 | (2.0− | 0.1+) |
| 2002 03 06 | 644 | 0.3+ | 0.7+ | 2003 10 23 | 704 | 0.5− | 1.1+ | 2006 08 28 | 703 | 0.5− | 0.1+ |
| 2002 03 06 | 644 | 0.2+ | 0.6+ | 2003 10 25 | 691 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.4+ |
| 2002 03 09 | 704 | 0.3− | 1.0+ | 2003 10 25 | 691 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.2− |
| 2002 03 09 | 704 | 0.2+ | 0.2+ | 2003 10 25 | 691 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.1− |
| 2002 03 09 | 704 | 0.4− | 0.5− | 2003 10 28 | 704 | 1.1+ | 0.3+ | 2006 08 29 | 704 | 1.2+ | 1.1+ |
| 2002 03 09 | 704 | 0.4− | 0.6− | 2003 10 28 | 704 | 0.3+ | 0.8+ | 2006 08 29 | 704 | 0.1− | 0.8+ |
| 2002 03 16 | 704 | 0.5+ | 1.1+ | 2003 10 28 | 704 | 1.2+ | 0.4+ | 2006 08 29 | 704 | 0.5+ | 0.1− |
| 2002 03 16 | 704 | 1.0+ | 0.8+ | 2003 11 01 | 704 | 0.6− | 0.4+ | 2006 08 31 | 704 | 0.3+ | 0.2− |
| 2002 03 16 | 704 | 1.0+ | 0.3+ | 2003 11 01 | 704 | (0.1− | 2.0+) | 2006 08 31 | 704 | 1.1+ | 0.2+ |
| 2002 03 16 | 704 | 1.0+ | 0.6+ | 2003 11 01 | 704 | (0.5+ | 1.8+) | 2006 08 31 | 704 | 0.5− | 1.3+ |
| 2002 03 16 | 704 | 0.9+ | 0.1− | 2003 11 21 | 704 | 0.3− | 0.3+ | 2006 08 31 | 704 | 0.5− | 1.3+ |
| 2002 03 19 | 699 | 0.5− | 0.2+ | 2003 11 21 | 704 | 0.5− | 1.2− | 2006 09 12 | 699 | 0.4− | 1.5+ |
| 2002 03 19 | 699 | 0.2− | 0.1− | 2003 11 21 | 704 | 0.2+ | 0.4+ | 2006 09 12 | 699 | 0.8− | 0.4+ |
| 2002 03 19 | 699 | 0.2− | 1.1+ | 2003 11 21 | 704 | 0.6+ | 0.5+ | 2006 09 12 | 699 | 0.3− | 0.5+ |
| 2002 03 19 | 699 | 0.3− | 0.3+ | 2005 01 16 | 691 | 0.3− | 0.4+ | 2006 09 12 | 699 | 0.7− | 0.9+ |
| 2002 03 23 | 608 | (0.5− | 2.5+) | 2005 01 16 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.5+ |
| 2002 03 23 | 608 | (0.9− | 2.3+) | 2005 01 16 | 691 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 2002 03 23 | 608 | (0.1− | 1.8+) | 2005 02 02 | 703 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.2− | 1.0+ |
| 2002 04 03 | 644 | 0.1+ | 0.7+ | 2005 02 02 | 703 | (4.9+ | 2.1−) | 2006 09 14 | 703 | 0.5− | 0.3− |
| 2002 04 03 | 644 | 0.4+ | 0.9+ | 2005 02 02 | 703 | 0.1− | 0.8+ | 2006 09 30 | G96 | 0.5− | 0.4+ |
| 2002 04 03 | 644 | 0.6+ | 0.9+ | 2005 02 02 | 703 | 1.5+ | 1.0+ | 2006 09 30 | G96 | 0.8− | 0.1+ |
| 2002 04 15 | 704 | 0.3+ | 0.8+ | 2005 03 08 | G96 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.5− | 0.3+ |
| 2002 04 15 | 704 | 0.1− | 0.8+ | 2005 03 08 | G96 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.5+ |
| 2002 04 15 | 704 | 0.1− | 0.7+ | 2005 03 08 | G96 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 2002 04 15 | 704 | 0.4− | 1.1+ | 2005 03 08 | G96 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2002 04 17 | 704 | (1.9+ | 1.0+) | 2006 06 20 | G96 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.4+ |
| 2002 04 17 | 704 | 0.9+ | 0.2+ | 2006 06 20 | G96 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.6+ | 1.1− |
| 2002 04 17 | 704 | 0.6+ | 0.3+ | 2006 06 20 | G96 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2002 04 17 | 704 | 1.2+ | 0.7+ | 2006 06 20 | G96 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2002 04 17 | 704 | 1.0+ | 1.3+ | 2006 06 21 | 703 | 0.7− | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2002 04 18 | 691 | 0.1+ | 0.6+ | 2006 06 21 | 703 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.2+ |
| 2002 04 18 | 691 | 0.1+ | 0.7+ | 2006 06 21 | 703 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2002 04 18 | 691 | 0.0 | 0.7+ | 2006 06 21 | 703 | 0.6+ | 0.8+ | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2003 10 21 | 644 | 0.0 | 0.4+ | 2006 08 13 | 644 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2003 10 21 | 644 | 0.0 | 0.4+ | 2006 08 13 | 644 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 10 21 | 644 | 0.3− | 0.2+ | 2006 08 13 | 644 | 0.3− | 0.7+ | | | | |

### 2002 EO$_{89}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.02633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17196898 | $\omega$ | 266.92107 | | −0.87033267 | +0.47323270 | |
| $a$ | 3.2025995 | $\Omega$ | 301.28508 | | −0.36421522 | −0.80479908 | |
| $e$ | 0.1294328 | $i$ | 9.17590 | | −0.33146392 | −0.35825863 | |
| $P$ | 5.73 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.3+ | 0.7− | 2002 02 11 | 704 | 0.9− | 0.1− | 2002 03 14 | 644 | 0.3+ | 1.4+ |
| 2002 01 13 | 704 | 0.0 | 0.5− | 2002 02 11 | 704 | 0.8− | 0.5+ | 2002 03 14 | 644 | 0.1− | 0.9+ |
| 2002 01 13 | 704 | 0.8+ | 0.6+ | 2002 02 16 | 644 | 0.0 | 0.1+ | 2002 03 14 | 644 | 0.1+ | 1.1+ |
| 2002 02 06 | 644 | 0.6− | 1.4− | 2002 02 16 | 644 | 0.1+ | 0.2+ | 2002 03 16 | 704 | (2.2+ | 2.0−) |
| 2002 02 06 | 644 | 0.3+ | 0.2− | 2002 02 16 | 644 | 0.3+ | 0.2+ | 2002 03 16 | 704 | 1.9+ | 1.0− |
| 2002 02 06 | 644 | 0.3+ | 0.3− | 2002 03 05 | 645 | 0.2− | 0.0 | 2002 03 16 | 704 | 1.1+ | 1.8− |
| 2002 02 11 | 704 | 0.5+ | 0.2+ | 2002 03 05 | 645 | 0.2− | 0.1− | 2002 03 16 | 704 | 1.8+ | 1.5− |
| 2002 02 11 | 704 | 1.0− | 0.2− | 2002 03 05 | 699 | 0.2− | 0.3+ | 2002 03 16 | 704 | 0.6+ | 0.1− |
| 2002 02 11 | 704 | 0.2+ | 0.2+ | 2002 03 05 | 699 | 0.5+ | 0.6+ | 2002 03 19 | 608 | 0.0 | 0.4− |
| 2002 02 11 | 704 | 0.8+ | 0.4+ | 2002 03 05 | 699 | 0.1− | 0.3+ | 2002 03 19 | 608 | 1.0+ | 0.0 |
| 2002 02 11 | 704 | 0.4+ | 0.5+ | 2002 03 05 | 699 | 0.5− | 0.1+ | 2002 03 19 | 608 | 0.1+ | 0.1+ |
| 2002 02 11 | 704 | 0.1− | 0.7+ | 2002 03 06 | 644 | 0.3+ | 0.5− | 2004 08 07 | 599 | 1.1− | 0.3+ |
| 2002 02 11 | 704 | 0.4− | 0.6− | 2002 03 06 | 644 | 0.1+ | 0.4− | 2004 08 07 | 599 | 0.2− | 0.1+ |
| 2002 02 11 | 704 | 0.4+ | 0.2+ | 2002 03 06 | 644 | 0.3+ | 0.3− | 2004 08 07 | 599 | 0.0 | 0.1+ |
| 2002 02 11 | 704 | 0.2+ | 1.3+ | 2002 03 12 | 704 | 0.5+ | 0.2+ | 2004 08 08 | 599 | 0.0 | 0.3+ |
| 2002 02 11 | 704 | 0.4− | 0.1− | 2002 03 12 | 704 | 0.1+ | 0.4+ | 2004 08 12 | 704 | 0.5+ | 0.5− |
| 2002 02 11 | 704 | 0.1+ | 0.2+ | 2002 03 12 | 704 | 0.5+ | 0.1− | 2004 08 12 | 704 | 0.7+ | 0.2− |
| 2002 02 11 | 704 | 0.5+ | 0.8+ | 2002 03 12 | 704 | 0.6− | 1.4+ | 2004 08 12 | 704 | 0.1+ | 0.0 |

### 2002 EP$_{90}$ = 2003 OU$_{22}$ = 5033 P-L

Id. Minor Planet Center (*MPO* 50031; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.29783 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27524794 | $\omega$ | 296.97012 | | +0.63546399 | +0.77183199 | |
| $a$ | 2.3405612 | $\Omega$ | 12.55461 | | −0.66878377 | +0.56409269 | |
| $e$ | 0.2377496 | $i$ | 5.66805 | | −0.38589350 | +0.29338509 | |
| $P$ | 3.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 10 22 | 675 | 0.0 | 1.2− | 2003 08 25 | 704 | 0.7− | 0.1+ | 2003 10 21 | 704 | 0.0 | 0.3+ |
| 1960 10 25 | 675 | 0.4+ | 0.6+ | 2003 08 25 | 704 | 1.1+ | 1.1+ | 2003 10 21 | 704 | 0.6− | 0.2+ |
| 1960 10 26 | 675 | 0.3+ | 0.5− | 2003 08 25 | 704 | 0.6+ | 0.4+ | 2003 10 24 | 704 | 0.5− | 0.3+ |
| 1995 04 06 | 691 | 0.2− | 0.3+ | 2003 09 04 | 704 | 0.6+ | 0.5+ | 2003 10 24 | 704 | 0.3− | 0.5+ |
| 1995 04 06 | 691 | 0.1− | 0.0 | 2003 09 04 | 704 | 0.9+ | 0.2+ | 2003 10 24 | 704 | 0.4− | 0.2+ |
| 1995 04 06 | 691 | 0.2− | 0.0 | 2003 09 04 | 704 | 0.1+ | 1.3− | 2003 10 24 | 704 | 0.3− | 0.4+ |
| 2002 03 09 | 704 | 0.2− | 0.8− | 2003 09 04 | 704 | 1.6+ | 0.2+ | 2003 10 24 | 704 | 0.7− | 0.2+ |
| 2002 03 09 | 704 | 0.1− | 0.4+ | 2003 09 04 | 704 | 0.0 | 1.6+ | 2003 11 01 | 704 | 1.2− | 0.6+ |
| 2002 03 09 | 704 | 1.0− | 1.6+ | 2003 09 19 | 699 | 0.5+ | 0.0 | 2003 11 01 | 704 | 0.1− | 0.4+ |
| 2002 03 12 | 704 | 0.1+ | 0.1+ | 2003 09 19 | 699 | 0.2− | 0.5− | 2003 11 01 | 704 | 0.1+ | 0.1+ |
| 2002 03 12 | 704 | 0.6+ | 0.9+ | 2003 09 19 | 699 | 0.2+ | 0.0 | 2003 11 01 | 704 | 0.1+ | 0.5− |
| 2002 03 12 | 704 | 1.6+ | 1.3+ | 2003 09 19 | 699 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.4− | 0.3+ |
| 2002 03 12 | 704 | 1.7+ | 0.7+ | 2003 09 20 | 704 | 0.3− | 0.4+ | 2003 12 22 | 704 | 0.4− | 0.1+ |
| 2002 03 12 | 644 | 0.2+ | 0.5+ | 2003 09 20 | 704 | 0.9− | 0.1+ | 2003 12 22 | 704 | 1.0− | 1.4− |
| 2002 03 12 | 644 | 0.0 | 0.9+ | 2003 09 20 | 704 | 0.4− | 0.1− | 2003 12 22 | 704 | 1.0+ | 0.2+ |
| 2002 03 12 | 644 | 0.3+ | 0.3+ | 2003 09 21 | 608 | 0.3− | 0.6− | 2005 01 16 | 704 | 1.1− | 0.2− |
| 2002 03 12 | 644 | 0.2+ | 0.7+ | 2003 09 21 | 608 | 0.7− | 0.4− | 2005 01 16 | 704 | 0.1+ | 0.7− |
| 2002 03 12 | 644 | 0.2+ | 0.6+ | 2003 09 21 | 608 | 0.5− | 0.3− | 2005 01 16 | 704 | 0.7+ | 0.9+ |
| 2002 03 12 | 644 | 0.1+ | 0.8+ | 2003 09 26 | 704 | 0.2− | 0.9+ | 2005 01 16 | 704 | 0.9+ | 0.2+ |
| 2002 03 16 | 704 | 0.7+ | 0.4+ | 2003 09 26 | 704 | 0.6+ | 0.1+ | 2006 03 25 | 644 | 0.2+ | 0.0 |
| 2002 03 16 | 704 | 0.3+ | 0.2+ | 2003 09 26 | 704 | 0.3− | 0.3+ | 2006 03 25 | 644 | 0.3+ | 0.1+ |
| 2002 03 16 | 704 | 0.2+ | 0.3+ | 2003 09 29 | 704 | 1.2− | 0.4+ | 2006 03 25 | 644 | 0.0 | 0.3+ |
| 2002 03 16 | 704 | 0.3+ | 0.2+ | 2003 09 29 | 704 | 0.2− | 0.2+ | 2006 04 26 | 704 | 1.3+ | 0.2+ |
| 2002 03 16 | 704 | 0.7+ | 0.3+ | 2003 09 29 | 704 | 0.9− | 0.6+ | 2006 04 26 | 704 | 0.8− | 0.2+ |
| 2003 07 30 | 704 | 0.3+ | 0.4+ | 2003 09 29 | 704 | 0.9− | 0.5+ | 2006 04 26 | 704 | 0.1+ | 0.2− |
| 2003 07 30 | 704 | 0.1+ | 0.4+ | 2003 09 29 | 704 | 0.7− | 0.5+ | 2006 04 26 | 704 | 0.4+ | 1.5+ |
| 2003 07 30 | 704 | 0.6− | 0.0 | 2003 10 02 | 704 | 1.0− | 1.1+ | 2006 05 16 | E12 | 0.3+ | 0.2+ |
| 2003 07 30 | 704 | 0.8− | 0.0 | 2003 10 02 | 704 | 0.8− | 1.2+ | 2006 05 16 | E12 | 0.1+ | 0.4+ |
| 2003 07 30 | 704 | 0.1− | 0.8+ | 2003 10 02 | 704 | 0.8− | 1.1+ | 2006 05 16 | E12 | 0.1− | 0.7− |
| 2003 08 04 | 704 | 0.1− | 0.2− | 2003 10 03 | 608 | 0.1+ | 0.2− | 2006 05 16 | E12 | 0.1+ | 1.2+ |
| 2003 08 04 | 704 | 0.6+ | 0.2+ | 2003 10 03 | 608 | 0.0 | 0.7− | 2006 05 18 | 644 | 0.1+ | 0.3+ |
| 2003 08 04 | 704 | 0.5− | 0.3+ | 2003 10 03 | 608 | 0.1+ | 0.7− | 2006 05 18 | 644 | 0.1− | 0.4+ |
| 2003 08 04 | 704 | 0.7+ | 0.6− | 2003 10 15 | 699 | 0.2− | 0.2+ | 2006 05 18 | 644 | 0.0 | 0.3+ |
| 2003 08 04 | 704 | 0.1− | 0.9+ | 2003 10 15 | 699 | 0.3− | 0.6+ | 2006 05 24 | 644 | 0.0 | 0.3+ |
| 2003 08 04 | 704 | 0.1− | 1.0− | 2003 10 15 | 699 | 0.8+ | 0.3− | 2006 05 24 | 644 | 0.0 | 0.4+ |
| 2003 08 04 | 704 | 0.7− | 0.6+ | 2003 10 15 | 699 | 0.3+ | 0.2− | 2006 05 24 | 644 | 0.1+ | 0.5+ |
| 2003 08 04 | 704 | 0.0 | 0.6+ | 2003 10 19 | 691 | 0.1− | 0.0 | 2006 06 01 | 699 | 0.4− | 0.3− |
| 2003 08 22 | 704 | 0.6+ | 0.1+ | 2003 10 19 | 691 | 0.4− | 0.0 | 2006 06 01 | 699 | 0.4+ | 0.7− |
| 2003 08 22 | 704 | 0.9+ | 1.1+ | 2003 10 19 | 691 | 0.4− | 0.1− | 2006 06 01 | 699 | 0.3+ | 0.8+ |
| 2003 08 22 | 704 | 1.2+ | 0.6+ | 2003 10 21 | 704 | 0.1− | 0.6+ | 2006 06 01 | 699 | 0.2− | 0.3+ |
| 2003 08 25 | 704 | 1.0+ | 0.1− | 2003 10 21 | 704 | 0.2− | 0.4+ | | | | |
| 2003 08 25 | 704 | 1.1+ | 0.3+ | 2003 10 21 | 704 | 0.1+ | 0.3− | | | | |

**2002 ET$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.31328 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27142253 | $\omega$ | 84.96380 | | −0.74480688 | | +0.66354172 |
| $a$ | 2.3625017 | $\Omega$ | 136.58236 | | −0.64565412 | | −0.68993811 |
| $e$ | 0.1881319 | $i$ | 5.89027 | | −0.16850363 | | −0.28930570 |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 31 | 691 | 0.4+ | 0.0 | 2002 02 20 | 704 | 0.8+ | 1.6+ | 2002 03 19 | 699 | 0.8− | 0.3− |
| 1995 05 31 | 691 | 0.3− | 0.3+ | 2002 03 03 | 608 | 0.6− | 0.5− | 2002 03 22 | 644 | 0.1− | 0.4+ |
| 1995 05 31 | 691 | 0.0 | 0.2+ | 2002 03 03 | 608 | 0.4+ | 0.2− | 2002 03 22 | 644 | 0.2+ | 0.5+ |
| 2002 01 08 | 691 | 0.9+ | 1.1+ | 2002 03 03 | 608 | 0.1− | 0.8− | 2002 03 22 | 644 | 0.5+ | 0.2+ |
| 2002 01 08 | 691 | 0.2+ | 0.4+ | 2002 03 05 | 645 | 0.3− | 0.1− | 2002 04 01 | 644 | 0.1− | 0.5+ |
| 2002 01 08 | 691 | 0.2− | 0.4+ | 2002 03 05 | 645 | 0.2− | 0.2− | 2002 04 01 | 644 | 0.3− | 0.5+ |
| 2002 01 11 | 461 | 0.8+ | 0.7+ | 2002 03 11 | 644 | 0.2+ | 0.6+ | 2002 04 01 | 644 | 0.2+ | 0.5+ |
| 2002 01 11 | 461 | 1.4+ | 0.3+ | 2002 03 11 | 644 | 0.4+ | 0.6+ | 2002 04 02 | 644 | 0.1− | 0.2+ |
| 2002 01 12 | 461 | 0.1− | 0.5+ | 2002 03 11 | 644 | 0.2+ | 0.4+ | 2002 04 02 | 644 | 0.1− | 0.4+ |
| 2002 01 12 | 461 | 0.2+ | 0.4+ | 2002 03 12 | 704 | 0.2+ | 0.6+ | 2002 04 02 | 644 | 0.2+ | 0.3+ |
| 2002 01 16 | 461 | 0.3+ | 0.1− | 2002 03 12 | 704 | 0.2+ | 1.0+ | 2002 04 03 | 644 | 0.2+ | 0.1+ |
| 2002 01 16 | 461 | 1.1− | 0.1− | 2002 03 12 | 704 | 0.6+ | 0.5− | 2002 04 03 | 644 | 0.2− | 0.3+ |
| 2002 01 16 | 461 | 0.6− | 0.1− | 2002 03 12 | 704 | 0.3+ | 0.9+ | 2002 04 03 | 644 | 0.4+ | 0.4+ |
| 2002 02 10 | 704 | 0.6+ | 0.4− | 2002 03 17 | 152 | 0.3+ | 1.3− | 2002 04 16 | 704 | 0.5+ | 0.1− |
| 2002 02 10 | 704 | 0.8+ | 0.8− | 2002 03 17 | 152 | 0.1+ | 1.3+ | 2002 04 16 | 704 | 0.4+ | 0.2+ |
| 2002 02 10 | 704 | 0.6+ | 0.4− | 2002 03 17 | 704 | 0.4+ | 0.1+ | 2002 04 16 | 704 | 0.5+ | 0.7+ |
| 2002 02 10 | 704 | 0.2+ | 0.1+ | 2002 03 17 | 704 | 0.5+ | 1.1− | 2002 04 16 | 704 | (0.5+ | 2.0+) |
| 2002 02 10 | 704 | 0.1+ | 0.1− | 2002 03 17 | 704 | 0.8+ | 0.1+ | 2003 09 21 | 691 | 0.3− | 0.7+ |
| 2002 02 20 | 704 | 0.0 | 1.1− | 2002 03 17 | 704 | 1.3+ | 0.0 | 2003 09 21 | 691 | 0.3− | 0.7+ |
| 2002 02 20 | 704 | 0.6+ | 0.0 | 2002 03 19 | 699 | 0.3− | 0.5+ | 2003 09 21 | 691 | 0.1− | 0.6+ |
| 2002 02 20 | 704 | 0.4− | 0.9+ | 2002 03 19 | 699 | 0.5+ | 0.2− | | | | |
| 2002 02 20 | 704 | 0.2+ | 0.4+ | 2002 03 19 | 699 | 0.0 | 0.4− | | | | |

**2002 EH$_{105}$ = 2006 KO$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.90096 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27222837 | $\omega$ | 176.53018 | | −0.62955229 | | +0.77119825 |
| $a$ | 2.3578371 | $\Omega$ | 54.42817 | | −0.71561094 | | −0.52821038 |
| $e$ | 0.1814581 | $i$ | 6.66683 | | −0.30259693 | | −0.35531260 |
| $P$ | 3.62 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.5+ | 0.4+ | 2002 03 09 | 699 | 1.3+ | 0.9− | 2006 05 20 | E12 | 1.2+ | 0.1+ |
| 1995 03 26 | 691 | 0.2+ | 0.7− | 2002 03 11 | 644 | 0.6+ | 1.4+ | 2006 05 23 | 428 | (1.9− | 0.7−) |
| 1995 03 26 | 691 | 0.4+ | 0.4− | 2002 03 11 | 644 | 0.5+ | 1.6+ | 2006 05 23 | 428 | (2.1− | 1.7−) |
| 1995 04 25 | 691 | 1.5− | 0.7+ | 2002 03 11 | 644 | 0.1+ | 1.4+ | 2006 05 24 | 644 | 0.1− | 0.2+ |
| 1995 04 25 | 691 | 0.9− | 0.2+ | 2003 09 21 | 691 | 0.0 | 0.5+ | 2006 05 24 | 644 | 0.2+ | 0.5+ |
| 1995 04 25 | 691 | 1.3+ | 0.5− | 2003 09 21 | 691 | 0.2− | 0.3+ | 2006 05 24 | 644 | 0.2− | 0.4+ |
| 2002 02 22 | 644 | 0.1− | 0.6+ | 2003 09 21 | 691 | 0.4− | 0.4+ | 2006 05 24 | 644 | 0.1− | 0.8+ |
| 2002 02 22 | 644 | 0.3− | 0.1− | 2006 05 20 | 428 | 0.6− | 1.2− | 2006 05 24 | 644 | 0.1− | 0.3+ |
| 2002 02 22 | 644 | 0.5− | 0.4+ | 2006 05 20 | 428 | 1.2− | 0.4− | 2006 05 24 | 644 | 0.3+ | 0.4+ |
| 2002 03 09 | 699 | 0.0 | 0.7+ | 2006 05 20 | E12 | 0.2+ | 0.2− | 2006 05 30 | 428 | 0.2+ | 0.2+ |
| 2002 03 09 | 699 | 0.4+ | 0.3+ | 2006 05 20 | E12 | 0.3+ | 0.3+ | 2006 05 30 | 428 | 0.1− | 0.1− |
| 2002 03 09 | 699 | 0.1+ | 0.7− | 2006 05 20 | E12 | 0.2+ | 0.3+ | | | | |

**2002 EL$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.02192 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24213680 | $\omega$ | 305.32280 | | +0.25996609 | | −0.96410745 |
| $a$ | 2.5493464 | $\Omega$ | 129.51757 | | +0.90709918 | | +0.22466273 |
| $e$ | 0.1494106 | $i$ | 4.01292 | | +0.33104186 | | +0.14150436 |
| $P$ | 4.07 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 691 | 0.2− | 0.3+ | 2004 09 13 | 699 | 0.0 | 0.2+ | 2004 10 09 | 704 | 0.1− | 0.4+ |
| 2002 03 10 | 691 | 0.1+ | 0.1+ | 2004 09 13 | 699 | 0.0 | 1.4+ | 2004 10 09 | 704 | 0.9− | 0.2+ |
| 2002 03 10 | 691 | 0.1− | 0.3+ | 2004 09 13 | 699 | 0.4+ | 0.3− | 2004 10 09 | 704 | 1.2− | 1.3+ |
| 2002 03 12 | 644 | 0.4+ | 1.0+ | 2004 09 13 | 699 | 0.4− | 0.7+ | 2006 02 02 | G96 | 0.0 | 0.2− |
| 2002 03 12 | 644 | 0.4+ | 0.7+ | 2004 09 17 | 704 | 0.2+ | 1.3− | 2006 02 02 | G96 | 0.6+ | 0.1− |
| 2002 03 12 | 644 | 0.2+ | 1.1+ | 2004 09 17 | 704 | 0.1+ | 0.2− | 2006 02 02 | G96 | 0.4+ | 0.1+ |
| 2002 03 16 | 704 | 0.4+ | 0.5+ | 2004 09 17 | 704 | 0.1− | 0.3− | 2006 02 02 | G96 | 0.4+ | 0.2+ |
| 2002 03 16 | 704 | 0.5+ | 0.7+ | 2004 10 05 | 699 | 1.5− | 0.2− | 2006 03 26 | 691 | 0.1− | 0.7− |
| 2002 03 16 | 704 | 0.9+ | 0.7+ | 2004 10 05 | 699 | 0.7+ | 1.7− | 2006 03 26 | 691 | 0.5− | 0.6− |
| 2002 03 16 | 704 | 0.7+ | 0.2+ | 2004 10 05 | 699 | 1.3+ | 0.2+ | 2006 03 26 | 691 | 0.4− | 0.6− |
| 2002 03 16 | 704 | 0.4+ | 0.5+ | 2004 10 05 | 699 | 1.1+ | 0.6+ | | | | |

**2002 EG$_{122}$ = 2004 RD$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.50919 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23764417 | $\omega$ | 88.19156 | | +0.13993334 | | −0.99004182 |
| $a$ | 2.5813760 | $\Omega$ | 353.70197 | | +0.84367832 | | +0.12733622 |
| $e$ | 0.1637020 | $i$ | 8.04764 | | +0.51829099 | | +0.06002238 |
| $P$ | 4.15 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 691 | 0.0 | 0.5− | 2002 03 13 | 704 | 0.4+ | 1.2+ | 2006 02 01 | 691 | 0.1− | 0.2− |
| 2000 09 22 | 691 | 0.5+ | 0.1− | 2004 09 10 | 691 | 0.5− | 0.6+ | 2006 02 01 | 691 | 0.3+ | 0.1− |
| 2000 09 22 | 691 | 0.3+ | 0.6− | 2004 09 10 | 691 | 0.7− | 0.8+ | 2006 02 20 | 691 | 0.1+ | 0.3+ |
| 2002 02 12 | 691 | 0.1+ | 0.2+ | 2004 09 10 | 691 | 0.2− | 0.8+ | 2006 02 20 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 691 | 0.3+ | 0.5+ | 2004 09 16 | 691 | 0.4− | 0.4+ | 2006 02 20 | 691 | 0.2− | 0.1+ |
| 2002 02 12 | 691 | 0.1− | 0.2+ | 2004 09 16 | 691 | 0.3− | 0.3+ | 2006 03 03 | 699 | (3.0− | 0.7+) |
| 2002 03 12 | 644 | 0.1+ | 0.3+ | 2004 09 16 | 691 | 0.0 | 0.5+ | 2006 03 03 | 699 | 0.1+ | 0.6+ |
| 2002 03 12 | 644 | 0.1+ | 0.5+ | 2006 01 23 | 691 | 0.4+ | 0.1− | 2006 03 03 | 699 | 0.9− | 2.5+ |
| 2002 03 12 | 644 | 0.3+ | 0.4+ | 2006 01 23 | 691 | 0.1− | 0.1− | 2006 03 03 | 699 | 1.1+ | 0.7+ |
| 2002 03 13 | 704 | 0.6+ | 0.6− | 2006 01 23 | 691 | 0.1+ | 0.0 | | | | |
| 2002 03 13 | 704 | 0.4+ | 1.2+ | 2006 02 01 | 691 | 0.6+ | 0.3− | | | | |

### 2002 EB$_{130}$ = 2006 WG$_{140}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.47985 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17439855 | $\omega$ | 301.06391 | | −0.43079478 | | −0.90110775 |
| $a$ | 3.1727861 | $\Omega$ | 173.80979 | | +0.90176963 | | −0.42771333 |
| $e$ | 0.2597996 | $i$ | 27.14737 | | −0.03503416 | | +0.07117682 |
| $P$ | 5.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 699 | 0.8+ | 0.6+ | 2002 03 17 | 704 | 0.1+ | 1.4− | 2006 11 19 | 703 | 0.6+ | 0.8+ |
| 2002 03 12 | 699 | 0.5− | 0.2+ | 2002 03 17 | 704 | 1.2+ | 0.9− | 2006 11 19 | 703 | 0.4− | 0.9+ |
| 2002 03 12 | 699 | 0.3+ | 0.4− | 2002 04 03 | 699 | 1.7− | 0.4+ | 2006 11 24 | 703 | 0.2+ | 1.4− |
| 2002 03 12 | 699 | 0.4− | 0.8+ | 2002 04 03 | 699 | 0.3− | 0.1− | 2006 11 24 | 703 | 0.1+ | 0.4− |
| 2002 03 15 | 644 | 0.3+ | 0.3+ | 2002 04 03 | 699 | 0.8+ | 1.1+ | 2006 11 24 | 703 | 0.6− | 0.3− |
| 2002 03 15 | 644 | 0.1− | 0.1+ | 2002 04 03 | 699 | 0.2− | 0.3− | 2006 11 24 | 703 | 0.8− | 0.5− |
| 2002 03 15 | 644 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.7+ | 1.2+ | | | | |
| 2002 03 17 | 704 | 0.4− | 0.1− | 2006 11 19 | 703 | 0.2+ | 0.2− | | | | |

### 2002 ED$_{130}$ = 2002 EL$_{100}$

Id. Minor Planet Center (d, *MPO* 32045)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.48756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16092669 | $\omega$ | 295.20124 | | −0.61784282 | | −0.78367345 |
| $a$ | 3.3474749 | $\Omega$ | 193.55180 | | +0.78324774 | | −0.60619310 |
| $e$ | 0.3006331 | $i$ | 15.91018 | | +0.06923319 | | −0.13559446 |
| $P$ | 6.12 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 699 | 0.2− | 0.1− | 2002 03 15 | 644 | 0.2+ | 0.0 | 2006 10 03 | 691 | 0.4− | 0.4− |
| 2002 02 10 | 699 | 0.4+ | 0.9− | 2002 03 15 | 644 | 0.3− | 0.0 | 2006 10 03 | 691 | 0.2+ | 0.4+ |
| 2002 02 10 | 699 | 0.6− | 0.2+ | 2002 04 04 | 699 | 0.2− | 0.3− | 2006 10 03 | 691 | 0.3− | 0.1+ |
| 2002 02 10 | 699 | 0.3− | 0.5− | 2002 04 04 | 699 | 0.7− | 0.3− | 2006 10 16 | 012 | (1.8+ | 0.3+) |
| 2002 03 05 | 703 | 0.5+ | 0.7+ | 2002 04 04 | 699 | (1.0+ | 2.1−) | 2006 10 16 | 012 | 0.6− | 0.3− |
| 2002 03 05 | 703 | 1.3+ | 0.5− | 2002 04 04 | 699 | (1.9+ | 0.8−) | 2006 10 16 | 012 | 1.0+ | 0.6+ |
| 2002 03 05 | 703 | (0.1+ | 1.6+) | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 16 | 118 | 1.1+ | 0.3− |
| 2002 03 05 | 703 | 0.8− | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 16 | 118 | 0.6+ | 0.2+ |
| 2002 03 09 | 644 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.4+ | 0.3− | 2006 10 18 | A44 | 0.2− | 0.1+ |
| 2002 03 09 | 644 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 10 18 | A44 | 0.3+ | 0.5− |
| 2002 03 09 | 644 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 20 | A44 | 0.6− | 0.1+ |
| 2002 03 12 | 699 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.7+ | 2006 10 20 | A44 | 0.7− | 0.4+ |
| 2002 03 12 | 699 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.8− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 03 12 | 699 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.7− | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2002 03 12 | 699 | 0.5+ | 0.8+ | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 03 15 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 22 | G96 | 0.1+ | 0.1+ |

### 2002 EK$_{144}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.83447 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26911992 | $\omega$ | 78.25296 | | −0.69421016 | | +0.71946300 |
| $a$ | 2.3759583 | $\Omega$ | 147.75020 | | −0.67482236 | | −0.64037912 |
| $e$ | 0.1306535 | $i$ | 2.26628 | | −0.25037378 | | −0.26886350 |
| $P$ | 3.66 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 691 | 0.1+ | 0.0 | 2003 09 19 | 691 | 0.5− | 0.7+ | 2006 05 06 | G96 | 0.1− | 0.3+ |
| 2002 03 13 | 691 | 0.1+ | 0.0 | 2003 09 19 | 691 | 0.2+ | 0.5+ | 2006 05 06 | G96 | 0.1− | 0.2+ |
| 2002 03 13 | 691 | 0.2+ | 0.1− | 2006 04 26 | G96 | 0.3+ | 0.6− | 2006 05 06 | G96 | 0.2− | 0.3+ |
| 2002 03 16 | 704 | 0.6+ | 0.1+ | 2006 04 26 | G96 | 0.6+ | 0.2− | 2006 05 06 | G96 | 0.2− | 0.2+ |
| 2002 03 16 | 704 | 1.0+ | 0.4− | 2006 04 26 | G96 | 0.5+ | 0.1− | 2006 05 06 | G96 | 0.3+ | 0.1+ |
| 2002 03 16 | 704 | 0.5+ | 0.4− | 2006 04 26 | G96 | 0.4+ | 0.3− | 2006 05 06 | G96 | 0.3+ | 0.1+ |
| 2002 03 16 | 704 | 1.0− | 0.4− | 2006 05 06 | G96 | 0.2+ | 0.1+ | 2006 05 28 | 703 | 0.1+ | 0.6− |
| 2002 03 16 | 704 | 0.0 | 1.0+ | 2006 05 06 | G96 | 0.0 | 0.3+ | 2006 05 28 | 703 | 0.1− | 0.7− |
| 2002 04 17 | 691 | 0.2− | 0.6+ | 2006 05 06 | G96 | 0.2+ | 0.1+ | 2006 05 28 | 703 | 1.2− | 0.6− |
| 2002 04 17 | 691 | 0.2− | 0.5+ | 2006 05 06 | G96 | 0.4+ | 0.1+ | 2006 05 28 | 703 | 1.2− | 0.6− |
| 2002 04 17 | 691 | 0.2+ | 0.5+ | 2006 05 06 | G96 | 0.4− | 0.0 | | | | |
| 2003 09 19 | 691 | 0.2− | 0.2+ | 2006 05 06 | G96 | 0.0 | 0.1+ | | | | |

### 2002 ER$_{147}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.86026 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21457446 | $\omega$ | 297.33956 | | −0.26568702 | | −0.96398757 |
| $a$ | 2.7632321 | $\Omega$ | 168.05057 | | +0.90336934 | | −0.25320370 |
| $e$ | 0.1692386 | $i$ | 3.25696 | | +0.33665152 | | −0.08133789 |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.4− | 0.6+ | 2002 03 15 | 644 | 0.1+ | 0.6+ | 2002 04 03 | 644 | 0.3− | 0.0 |
| 1995 09 21 | 691 | 0.2− | 0.7+ | 2002 03 15 | 644 | 0.0 | 0.6+ | 2002 04 03 | 644 | 0.4+ | 0.3+ |
| 1995 09 21 | 691 | 0.1− | 0.7+ | 2002 03 15 | 644 | 0.1− | 0.5+ | 2002 04 18 | 691 | 0.2− | 0.0 |
| 2002 02 15 | 704 | 0.0 | 0.6− | 2002 03 16 | 704 | 0.3+ | 1.5+ | 2002 04 18 | 691 | 0.1− | 0.1+ |
| 2002 02 15 | 704 | 0.7+ | 0.1+ | 2002 03 16 | 704 | 0.4+ | 0.9+ | 2002 04 18 | 691 | 0.0 | 0.3− |
| 2002 02 15 | 704 | 0.6+ | 0.1− | 2002 03 16 | 704 | 0.4+ | 0.6+ | 2004 09 16 | 691 | 0.1− | 0.1− |
| 2002 03 06 | 644 | 0.1+ | 0.5+ | 2002 03 16 | 704 | 0.8+ | 0.8+ | 2004 09 16 | 691 | 0.1+ | 0.1− |
| 2002 03 06 | 644 | 0.1− | 0.4+ | 2002 03 16 | 704 | 0.1− | 0.0 | 2004 09 16 | 691 | 0.1+ | 0.3− |
| 2002 03 06 | 644 | 0.1− | 0.3+ | 2002 04 03 | 644 | 0.4+ | 0.3+ | | | | |

### 2002 EW$_{160}$ = 2000 WT$_{194}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.52338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29876355 | $\omega$ | 168.77342 | | −0.96571522 | | +0.25608315 |
| $a$ | 2.2160743 | $\Omega$ | 26.18428 | | −0.24503451 | | −0.84494558 |
| $e$ | 0.0707940 | $i$ | 5.54125 | | −0.08574496 | | −0.46956192 |
| $P$ | 3.30 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.2− | 0.3+ | 2000 12 04 | 691 | 0.2+ | 0.2+ | 2002 04 05 | 291 | 0.3+ | 0.1+ |
| 2000 10 02 | 691 | 0.2− | 0.3+ | 2002 03 05 | 291 | (2.7+ | 2.5−) | 2002 04 05 | 291 | 0.1− | 0.2+ |
| 2000 10 02 | 691 | 0.0 | 0.3+ | 2002 03 05 | 291 | 0.0 | 0.3− | 2002 04 05 | 291 | 0.3+ | 0.1+ |
| 2000 11 29 | 691 | 0.0 | 0.1+ | 2002 03 05 | 291 | 0.0 | 0.5− | 2002 04 14 | 691 | 0.1− | 0.1+ |
| 2000 11 29 | 691 | 0.1− | 0.2− | 2002 03 16 | 704 | 0.9+ | 0.8+ | 2002 04 14 | 691 | 0.1− | 0.2+ |
| 2000 11 29 | 691 | 0.5+ | 0.2− | 2002 03 16 | 704 | 0.1+ | 0.7+ | 2002 04 14 | 691 | 0.2− | 0.1+ |
| 2000 12 04 | 691 | 0.4− | 0.2− | 2002 03 16 | 704 | 0.2− | 0.1− | | | | |
| 2000 12 04 | 691 | 0.1− | 0.0 | 2002 03 16 | 704 | 0.0 | 0.3+ | | | | |

### 2002 EX$_{160}$ = 2006 DR$_{120}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.73960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24513770 | $\omega$ | 62.75069 | | −0.97715839 | | +0.09842801 |
| $a$ | 2.5284982 | $\Omega$ | 122.33778 | | −0.14922702 | | −0.94881123 |
| $e$ | 0.1184398 | $i$ | 12.88036 | | +0.15130359 | | −0.30011527 |
| $P$ | 4.02 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.0 | 0.9− | 2002 03 09 | 699 | 0.3+ | 1.1− | 2006 02 21 | 703 | 0.2− | 0.2+ |
| 2002 02 10 | 704 | 0.2+ | 0.8− | 2002 03 09 | 699 | 0.2− | 1.1+ | 2006 02 21 | 703 | 0.1+ | 0.2− |
| 2002 02 10 | 704 | 0.5− | 1.8+ | 2002 03 09 | 699 | 0.2− | 0.5− | 2006 02 21 | 703 | 0.5+ | 0.6− |
| 2002 02 10 | 704 | 0.0 | 0.3− | 2002 03 20 | 704 | 0.1+ | 0.6− | 2006 02 21 | 703 | 1.0− | 0.3+ |
| 2002 02 21 | 644 | 0.2− | 0.3− | 2002 03 20 | 704 | 0.5− | 0.1+ | 2006 02 28 | 703 | 0.7+ | 0.5+ |
| 2002 02 21 | 644 | 0.2+ | 0.4+ | 2002 03 20 | 704 | 0.4− | 0.2− | 2006 02 28 | 703 | 0.2− | 0.3− |
| 2002 02 21 | 644 | 0.4+ | 0.6+ | 2002 03 20 | 704 | 0.2+ | 0.2− | 2006 02 28 | 703 | 0.1− | 0.3− |
| 2002 03 09 | 699 | 0.8+ | 0.6+ | 2002 03 20 | 704 | 0.1− | 0.7+ | 2006 02 28 | 703 | (3.1+ | 0.3−) |

**2002 EY$_{160}$ = 2005 BC$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.51852 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28293400 | $\omega$ | 163.06437 | | −0.19077925 | | +0.97114816 |
| $a$ | 2.2979785 | $\Omega$ | 95.76145 | | −0.91647421 | | −0.12399103 |
| $e$ | 0.1023100 | $i$ | 8.26871 | | −0.35167925 | | −0.20370930 |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 608 | 0.1− | 0.6+ | 2002 04 01 | 644 | 0.0 | 1.2+ | 2002 04 16 | 704 | 1.2− | 0.5+ |
| 2002 03 10 | 608 | 0.1− | 0.7+ | 2002 04 01 | 644 | 0.0 | 1.2+ | 2005 01 16 | 704 | 0.2+ | 0.6+ |
| 2002 03 10 | 608 | 0.3− | 0.6+ | 2002 04 11 | 699 | 0.8+ | 0.8− | 2005 01 16 | 704 | 0.7+ | 0.6− |
| 2002 03 20 | 704 | 0.3+ | 0.1− | 2002 04 11 | 699 | 1.2+ | 0.6− | 2005 01 16 | 704 | 0.1+ | 0.4+ |
| 2002 03 20 | 704 | 0.1+ | 0.7− | 2002 04 11 | 699 | 0.1+ | 0.0 | 2005 01 16 | 704 | 1.6+ | 0.4− |
| 2002 03 20 | 704 | 0.4+ | 0.5− | 2002 04 11 | 699 | 0.1− | 0.5− | 2005 01 16 | 704 | 0.9+ | 0.9+ |
| 2002 04 01 | 644 | 0.6+ | 0.8− | 2002 04 16 | 704 | 0.3− | 0.3− | 2005 01 17 | 691 | 0.1− | 0.5− |
| 2002 04 01 | 644 | 0.5+ | 0.4− | 2002 04 16 | 704 | 1.2− | 0.2+ | 2005 01 17 | 691 | 0.4− | 0.6+ |
| 2002 04 01 | 644 | 0.2− | 1.1+ | 2002 04 16 | 704 | 0.2− | 0.6− | 2005 01 17 | 691 | 0.4− | 0.4− |
| 2002 04 01 | 644 | 0.0 | 0.6− | 2002 04 16 | 704 | 0.2− | 0.1− | | | | |

**2002 EZ$_{160}$ = 2006 FS$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.61639 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23829064 | $\omega$ | 75.31272 | | −0.89014888 | | +0.42223023 |
| $a$ | 2.5767052 | $\Omega$ | 129.35510 | | −0.45418871 | | −0.85243603 |
| $e$ | 0.0865817 | $i$ | 12.80225 | | +0.03670947 | | −0.30834145 |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 645 | 0.0 | 0.0 | 2002 04 17 | 704 | 0.1+ | 0.1+ | 2002 05 13 | 644 | 0.0 | 0.2− |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2002 04 17 | 704 | 0.4+ | 0.9+ | 2002 05 13 | 644 | 0.0 | 0.0 |
| 2002 03 20 | 704 | (2.7+ | 1.2+) | 2002 04 17 | 704 | 0.9+ | 1.2+ | 2006 03 24 | 699 | 0.2+ | 0.3+ |
| 2002 03 20 | 704 | 0.2− | 0.5+ | 2002 04 17 | 704 | 0.1+ | 0.2− | 2006 03 24 | 699 | 0.6− | 0.2+ |
| 2002 03 20 | 704 | 0.3− | 0.4− | 2002 04 17 | 704 | 0.0 | 0.2− | 2006 03 24 | 699 | 0.6+ | 0.2− |
| 2002 04 11 | 699 | 0.1− | 0.3− | 2002 04 22 | 644 | 0.0 | 0.0 | 2006 03 24 | 699 | 0.1+ | 0.1+ |
| 2002 04 11 | 699 | 1.2− | 1.6− | 2002 04 22 | 644 | 0.4+ | 0.1+ | 2006 04 02 | 703 | 0.3− | 0.2− |
| 2002 04 11 | 644 | 0.4− | 0.2+ | 2002 04 22 | 644 | 0.0 | 0.3+ | 2006 04 02 | 703 | 0.5+ | 0.2− |
| 2002 04 11 | 699 | 0.2− | 0.3+ | 2002 05 05 | 644 | 0.2− | 0.0 | 2006 04 02 | 703 | 0.4+ | 0.1− |
| 2002 04 11 | 644 | 0.0 | 0.1+ | 2002 05 05 | 644 | 0.2− | 0.3− | 2006 04 02 | 703 | 0.9− | 0.3+ |
| 2002 04 11 | 699 | 0.1+ | 0.1− | 2002 05 05 | 644 | 0.2− | 0.4− | | | | |
| 2002 04 11 | 644 | 0.1+ | 0.2+ | 2002 05 13 | 644 | 0.1− | 0.2+ | | | | |

**2002 EA$_{161}$ = 1995 UG$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.06106 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22749743 | $\omega$ | 335.12271 | | −0.93793379 | | +0.34525828 |
| $a$ | 2.6575720 | $\Omega$ | 225.11697 | | −0.30994326 | | −0.87691428 |
| $e$ | 0.0724331 | $i$ | 2.65462 | | −0.15561295 | | −0.33439207 |
| $P$ | 4.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.2+ | 0.3+ | 2002 03 13 | 704 | 1.2+ | 1.6+ | 2002 04 14 | 704 | 0.1− | 1.6+ |
| 1995 10 16 | 691 | 0.1+ | 0.4− | 2002 03 20 | 699 | 2.7+ | 0.0 | 2002 04 14 | 704 | 0.3+ | 0.3+ |
| 1995 10 16 | 691 | 0.0 | 0.0 | 2002 03 20 | 699 | 0.1− | 0.5+ | 2003 07 06 | 691 | 0.3− | 0.4+ |
| 1995 10 21 | 691 | 0.2− | 0.2+ | 2002 03 20 | 699 | 0.1+ | 1.7+ | 2003 07 06 | 691 | 0.2− | 0.3+ |
| 1995 10 21 | 691 | 0.0 | 0.3+ | 2002 03 20 | 699 | 1.2− | 0.3− | 2003 07 06 | 691 | 0.2+ | 0.4+ |
| 1995 10 21 | 691 | 0.5− | 0.4+ | 2002 04 04 | 644 | 0.2− | 0.3+ | 2004 10 09 | 691 | 0.1− | 0.5+ |
| 2002 03 13 | 704 | 0.4− | 0.1− | 2002 04 04 | 644 | 0.0 | 0.3+ | 2004 10 09 | 691 | 0.1− | 0.2+ |
| 2002 03 13 | 704 | 0.2+ | 1.1+ | 2002 04 04 | 644 | 0.1− | 0.1+ | 2004 10 09 | 691 | 0.3− | 0.9+ |
| 2002 03 13 | 704 | 0.7− | 0.1− | 2002 04 14 | 704 | 0.7+ | 0.6+ | | | | |
| 2002 03 13 | 704 | 1.2+ | 0.6+ | 2002 04 14 | 704 | 0.1− | 1.1+ | | | | |

**2002 EC$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.41417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24387914 | $\omega$ | 104.49905 | | −0.01582052 | | +0.99977099 |
| $a$ | 2.5371897 | $\Omega$ | 164.57279 | | −0.93696703 | | −0.00979209 |
| $e$ | 0.1693292 | $i$ | 3.10544 | | −0.34905945 | | −0.01902838 |
| $P$ | 4.04 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.2− | 0.5+ | 2002 03 10 | 344 | 0.3− | 0.1+ | 2006 02 07 | G96 | 0.3+ | 0.3− |
| 1994 03 05 | 691 | 0.3− | 0.2+ | 2002 03 10 | 344 | 0.1+ | 0.1− | 2006 02 25 | 691 | 0.3+ | 0.4+ |
| 1994 03 05 | 691 | (1.2− | 4.5−) | 2003 08 25 | 704 | 1.1− | 0.3+ | 2006 02 25 | 691 | 0.2+ | 0.3+ |
| 2000 11 29 | 691 | 0.1− | 0.2− | 2003 08 25 | 704 | 0.9− | 0.6+ | 2006 02 25 | 691 | 0.1+ | 0.6+ |
| 2000 11 29 | 691 | 0.2− | 0.3− | 2003 08 25 | 704 | 0.9− | 0.3− | 2006 03 09 | G96 | 0.2− | 0.6− |
| 2000 11 29 | 691 | 0.3+ | 0.4− | 2003 08 25 | 704 | 0.4− | 0.8+ | 2006 03 09 | G96 | 0.5− | 0.1+ |
| 2002 02 08 | 695 | 0.5+ | 0.5+ | 2003 09 22 | 291 | 0.3+ | 0.2+ | 2006 03 09 | G96 | 0.0 | 0.2− |
| 2002 02 08 | 695 | 0.5+ | 0.7+ | 2003 09 22 | 291 | 0.2+ | 0.3+ | 2006 03 09 | G96 | 0.3− | 0.2− |
| 2002 02 13 | 645 | 0.1− | 0.0 | 2003 09 22 | 291 | 0.2+ | 0.2+ | 2006 03 23 | G96 | 0.5− | 0.4+ |
| 2002 02 13 | 645 | 0.2− | 0.0 | 2006 01 30 | 691 | 0.2+ | 0.3+ | 2006 03 23 | G96 | 0.5+ | 0.0 |
| 2002 02 14 | 291 | 0.7+ | 0.8+ | 2006 01 30 | 691 | 0.3+ | 0.4+ | 2006 03 23 | G96 | 0.2− | 0.2+ |
| 2002 02 14 | 291 | 1.7+ | 0.4+ | 2006 01 30 | 691 | 0.3− | 0.6+ | 2006 03 23 | G96 | 0.4− | 0.3+ |
| 2002 02 14 | 291 | 0.6+ | 0.8+ | 2006 02 07 | G96 | 0.1− | 0.0 | 2006 04 27 | 807 | 0.2− | 0.1+ |
| 2002 03 10 | 344 | 0.4+ | 0.7− | 2006 02 07 | G96 | 0.1− | 0.1+ | 2006 04 27 | 807 | 0.1− | 0.0 |
| 2002 03 10 | 344 | 0.2+ | 0.0 | 2006 02 07 | G96 | 0.6− | 0.0 | | | | |

**2002 ED$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.09887 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25271935 | $\omega$ | 103.82343 | | −0.06842218 | | +0.99757705 |
| $a$ | 2.4776714 | $\Omega$ | 162.23871 | | −0.93053110 | | −0.05926378 |
| $e$ | 0.1411532 | $i$ | 2.36480 | | −0.35976419 | | −0.03643942 |
| $P$ | 3.90 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.9− | 0.2+ | 2003 08 04 | 704 | 0.3+ | 0.4+ | 2006 02 20 | 703 | 0.9− | 1.1− |
| 2002 02 11 | 704 | 0.7+ | 0.8+ | 2003 08 04 | 704 | 0.1+ | 0.9+ | 2006 02 20 | 703 | 0.7− | 1.4− |
| 2002 02 11 | 704 | 0.9− | 0.5+ | 2003 08 04 | 704 | 0.8− | 0.7+ | 2006 02 21 | G96 | 0.0 | 0.0 |
| 2002 02 11 | 704 | 0.2− | 0.9+ | 2004 11 10 | 691 | 0.1− | 0.5+ | 2006 02 21 | G96 | 0.4− | 0.3− |
| 2002 02 11 | 704 | 0.5− | 1.4+ | 2004 11 10 | 691 | 0.0 | 0.3+ | 2006 02 21 | G96 | 0.1− | 0.1− |
| 2002 03 13 | 704 | 1.3+ | 0.1+ | 2004 11 10 | 691 | 0.0 | 0.2+ | 2006 02 21 | G96 | 0.2− | 0.1− |
| 2002 03 13 | 704 | 0.4+ | 0.4+ | 2005 12 02 | 695 | 0.2− | 0.2− | 2006 03 03 | 691 | 0.5+ | 0.1+ |
| 2002 03 13 | 704 | 2.2+ | 1.7+ | 2005 12 02 | 695 | 0.2+ | 0.1+ | 2006 03 03 | 691 | 0.1− | 0.4+ |
| 2003 07 05 | 691 | 0.3− | 0.5+ | 2006 02 07 | 691 | 0.2+ | 0.4+ | 2006 03 03 | 691 | 0.2+ | 0.1+ |
| 2003 07 05 | 691 | 0.2+ | 0.2+ | 2006 02 07 | 691 | 0.1− | 0.1+ | 2006 04 07 | G96 | 0.2− | 0.2− |
| 2003 07 05 | 691 | 0.2− | 0.4+ | 2006 02 07 | 691 | 0.2− | 0.1− | 2006 04 07 | G96 | 0.1− | 0.0 |
| 2003 08 04 | 704 | 0.5− | 0.5+ | 2006 02 20 | 703 | 0.0 | 0.9+ | 2006 04 07 | G96 | 0.6− | 0.1+ |
| 2003 08 04 | 704 | 0.1+ | 0.7+ | 2006 02 20 | 703 | 1.7+ | 0.6− | 2006 04 07 | G96 | 0.6− | 0.4− |

**2002 EE$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.85542 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17587379 | $\omega$ | 242.04174 | | −0.48427850 | | −0.85831892 |
| $a$ | 3.1550189 | $\Omega$ | 237.92015 | | +0.85648409 | | −0.42550804 |
| $e$ | 0.1049452 | $i$ | 11.54626 | | +0.17863183 | | −0.28676043 |
| $P$ | 5.60 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 1.0− | 0.3+ | 2002 05 11 | 644 | 0.1+ | 0.2+ | 2005 11 06 | 704 | 0.0 | 0.3+ |
| 1999 09 08 | 704 | 0.3+ | 0.2+ | 2004 09 11 | 704 | 0.0 | 0.2+ | 2005 11 06 | 704 | 0.2+ | 1.2+ |
| 1999 09 08 | 704 | 1.7+ | 1.4+ | 2004 09 11 | 704 | 0.4+ | 0.2+ | 2005 11 06 | 704 | 0.4− | 0.6− |
| 1999 10 03 | 703 | 0.2− | 0.2− | 2004 09 11 | 704 | 0.3− | 0.5+ | 2005 11 06 | 704 | 0.9+ | 0.1− |
| 1999 10 03 | 703 | 0.6− | 0.3+ | 2005 10 03 | 704 | 0.1+ | 0.7+ | 2005 11 06 | 704 | 0.8+ | 0.5+ |
| 1999 10 03 | 703 | 1.9− | 0.5+ | 2005 10 03 | 704 | 0.5+ | 0.2− | 2005 11 25 | 703 | 0.3− | 1.2+ |
| 1999 10 03 | 703 | 0.5+ | 1.0+ | 2005 10 03 | 704 | 0.6− | 0.6+ | 2005 11 25 | 703 | 1.0− | 0.4− |
| 2002 03 09 | 644 | 0.2+ | 0.2+ | 2005 10 10 | 699 | 0.2− | 1.0+ | 2005 11 25 | 703 | 0.3− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 644 | 0.2− | 0.1+ | 2005 10 10 | 699 | 1.2+ | 0.5+ | 2005 11 25 | 703 | 0.1− | 0.6− |
| 2002 03 09 | 644 | 0.1+ | 0.5+ | 2005 10 10 | 699 | 0.2+ | 0.0 | 2005 12 02 | 703 | 1.0− | 0.3+ |
| 2002 04 08 | 644 | 0.4+ | 0.6+ | 2005 10 10 | 699 | 0.1− | 0.1− | 2005 12 02 | 703 | 0.2+ | 1.1− |
| 2002 04 08 | 644 | 0.0 | 0.7+ | 2005 10 23 | 644 | 0.1− | 0.3+ | 2005 12 02 | 703 | 0.7− | 0.4− |
| 2002 04 08 | 644 | 0.3+ | 0.5+ | 2005 10 23 | 644 | 0.3− | 0.1+ | 2005 12 02 | 703 | 0.5+ | 0.3− |
| 2002 04 19 | 644 | 0.3+ | 0.7+ | 2005 10 23 | 644 | 0.4− | 0.1+ | 2006 11 15 | G92 | 0.2+ | 0.2− |
| 2002 04 19 | 644 | 0.0 | 0.4+ | 2005 10 23 | 703 | 0.5− | 0.5− | 2006 11 15 | G92 | 0.2+ | 0.1− |
| 2002 04 19 | 644 | 0.4+ | 0.8+ | 2005 10 23 | 703 | 0.2+ | 0.9− | 2006 11 15 | G92 | 0.3− | 0.5+ |
| 2002 05 11 | 644 | 0.2+ | 0.8+ | 2005 10 23 | 703 | 0.0 | 0.8+ | | | | |
| 2002 05 11 | 644 | 0.2+ | 0.6+ | 2005 10 23 | 703 | 0.3+ | 0.2− | | | | |

**2002 EF$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.19730 | | (2000.0) | | | |
| $n$ | 0.23835726 | $\omega$ | 139.71819 | | +0.08770936 | +0.97898330 |
| $a$ | 2.5762250 | $\Omega$ | 134.41661 | | −0.96735775 | +0.12782046 |
| $e$ | 0.0574891 | $i$ | 14.93769 | | −0.23775210 | −0.15891391 |
| $P$ | 4.14 | $H$ | 15.9 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 645 | 0.0 | 0.1− | 2002 04 11 | 644 | 0.0 | 0.0 | 2006 03 03 | 703 | 0.2− | 0.9− |
| 2002 03 12 | 645 | 0.0 | 0.1− | 2002 04 11 | 699 | 0.0 | 0.5+ | 2006 03 03 | 703 | 0.6− | 1.1+ |
| 2002 03 20 | 704 | 0.4+ | 0.5+ | 2002 05 05 | 644 | 0.1+ | 0.5+ | 2006 03 03 | 703 | 0.2− | 0.8+ |
| 2002 03 20 | 704 | 0.2+ | 0.5+ | 2002 05 05 | 644 | 0.1+ | 0.5+ | 2006 03 03 | 703 | 0.2− | 0.8+ |
| 2002 03 20 | 704 | 0.6+ | 0.9+ | 2002 05 05 | 644 | 0.0 | 0.4+ | 2006 03 24 | 699 | 0.7+ | 0.3+ |
| 2002 03 20 | 704 | 0.2+ | 0.5+ | 2002 05 13 | 644 | 0.2+ | 0.4− | 2006 03 24 | 699 | 0.4+ | 1.1+ |
| 2002 03 20 | 704 | 0.8− | 0.4+ | 2002 05 13 | 644 | 0.1− | 0.5− | 2006 03 24 | 699 | 0.2+ | 0.1− |
| 2002 04 11 | 699 | 0.9− | 0.0 | 2002 05 13 | 644 | 0.1+ | 0.5− | 2006 03 24 | 699 | 0.5− | 0.5− |
| 2002 04 11 | 699 | 0.2+ | 0.3+ | 2006 02 06 | 703 | 0.6+ | 0.4+ | 2006 04 02 | 703 | 0.3+ | 0.7− |
| 2002 04 11 | 644 | 0.1− | 0.1+ | 2006 02 06 | 703 | 0.8− | 0.9− | 2006 04 02 | 703 | 0.4− | 0.8− |
| 2002 04 11 | 699 | 0.1− | 0.0 | 2006 02 06 | 703 | 0.7+ | 0.1+ | 2006 04 02 | 703 | 0.2+ | 0.3− |
| 2002 04 11 | 644 | 0.0 | 0.2− | 2006 02 06 | 703 | (0.8+ | 3.0+) | 2006 04 02 | 703 | 0.3− | 0.5− |

**2002 FD$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.58684 | | (2000.0) | | | |
| $n$ | 0.71982730 | $\omega$ | 256.75618 | | +0.03145242 | +0.99844396 |
| $a$ | 1.2330590 | $\Omega$ | 15.27255 | | −0.83595327 | +0.05153232 |
| $e$ | 0.3419544 | $i$ | 10.06780 | | −0.54789860 | −0.02130893 |
| $P$ | 1.37 | $H$ | 22.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc (radar residuals in s.d.)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 704 | 0.1+ | 0.3+ | 2002 04 03 | 151 | 0.0− | 1.8+ | 2002 04 04 | 732 | 1.4+ | 0.7− |
| 2002 03 21 | 704 | 0.2+ | 0.1− | 2002 04 03 | 185 | 0.7+ | 0.7+ | 2002 04 04 | 732 | 2.0+ | 0.6+ |
| 2002 03 21 | 704 | 0.6+ | 0.5− | 2002 04 03 | 185 | 0.6+ | 0.4+ | 2002 04 04 | 732 | 1.1+ | 0.2+ |
| 2002 03 21 | 704 | 0.1− | 0.2+ | 2002 04 03 | 185 | 0.7+ | 0.4+ | 2002 04 04 | 732 | 1.3+ | 0.3+ |
| 2002 03 21 | 704 | 0.4+ | 0.5+ | 2002 04 03 | 185 | 0.3+ | 1.0+ | 2002 04 04 | 732 | 1.7+ | 1.7− |
| 2002 03 23 | 704 | 0.2+ | 0.1− | 2002 04 03 | 185 | 0.4+ | 0.7+ | 2002 04 04 | 732 | 1.0+ | 0.0+ |
| 2002 03 23 | 704 | 0.2− | 0.0+ | 2002 04 03 | 185 | 0.3+ | 0.9+ | 2002 04 04 | 732 | 1.1+ | 0.7− |
| 2002 03 23 | 704 | 0.3+ | 0.1+ | 2002 04 03 | 185 | 0.7+ | 0.7+ | 2002 04 04 | 732 | 0.5+ | 0.2+ |
| 2002 03 23 | 704 | 0.2+ | 0.3− | 2002 04 03 | 185 | 0.5+ | 0.9+ | 2002 04 04 | 732 | 0.4+ | 0.4− |
| 2002 03 23 | 704 | 0.2+ | 0.4+ | 2002 04 03 | 185 | 0.7+ | 0.9+ | 2002 04 04 | 732 | 0.5+ | 0.4− |
| 2002 03 25 | 670 | 0.4− | 0.6+ | 2002 04 03 | 185 | 0.3+ | 1.1+ | 2002 04 04 | 732 | 0.8+ | 0.1− |
| 2002 03 25 | 670 | 0.1+ | 0.8+ | 2002 04 03 | 224 | 1.8− | 0.8− | 2002 04 04 | 732 | (3.2+ | 1.8−) |
| 2002 03 25 | 704 | 0.2+ | 0.4+ | 2002 04 03 | 224 | 1.1− | 0.8− | 2002 04 04 | 732 | 0.4+ | 0.7+ |
| 2002 03 25 | 704 | 0.1− | 0.4+ | 2002 04 03 | 224 | 1.4− | 0.5− | 2002 04 04 | 732 | 0.2+ | 0.3− |
| 2002 03 25 | 704 | 0.4− | 0.2+ | 2002 04 03 | 224 | 0.6− | 1.6− | 2002 04 04 | 732 | 1.5+ | 1.3− |
| 2002 03 27 | 966 | 0.1+ | 0.1− | 2002 04 03 | 224 | 1.1− | 1.2− | 2002 04 04 | 732 | 1.2+ | 0.4− |
| 2002 03 27 | 966 | 0.2+ | 0.1+ | 2002 04 03 | 185 | 0.6+ | 0.8+ | 2002 04 04 | 732 | 0.5+ | 0.4− |
| 2002 03 27 | 966 | 1.1+ | 0.2+ | 2002 04 03 | 224 | 0.8− | 1.6− | 2002 04 04 | 732 | 1.2+ | 1.2− |
| 2002 03 27 | 649 | 0.3+ | 0.1+ | 2002 04 03 | 185 | 0.3+ | 1.2+ | 2002 04 04 | 732 | 0.3+ | 0.9+ |
| 2002 03 27 | 649 | 0.5+ | 0.1+ | 2002 04 03 | 224 | 0.7− | 1.4− | 2002 04 04 | 732 | 0.7+ | 0.2+ |
| 2002 03 27 | 649 | 0.1− | 0.2+ | 2002 04 03 | 185 | 0.2+ | 1.5+ | 2002 04 04 | 732 | 0.6+ | 0.3+ |
| 2002 03 27 | 670 | 0.3+ | 0.0− | 2002 04 03 | 224 | 1.2− | 1.5− | 2002 04 04 | 732 | 0.5+ | 0.2+ |
| 2002 03 27 | 670 | 0.3+ | 0.7− | 2002 04 03 | 185 | 0.1+ | 1.3+ | 2002 04 04 | 732 | 0.9+ | 1.2− |
| 2002 03 27 | 670 | 0.9+ | 0.4− | 2002 04 03 | 224 | 1.4− | 1.4− | 2002 04 04 | 732 | 0.7+ | 0.4+ |
| 2002 03 27 | 670 | 0.4− | 0.8− | 2002 04 03 | 185 | 0.6+ | 1.0+ | 2002 04 04 | 732 | 1.5+ | 0.7− |
| 2002 03 27 | 670 | 0.9+ | 0.5− | 2002 04 03 | 224 | 1.4− | 0.6− | 2002 04 04 | 732 | 1.1+ | 0.1− |
| 2002 03 28 | 966 | 0.2− | 0.3+ | 2002 04 03 | 224 | 1.8− | 0.5− | 2002 04 04 | 732 | 1.1+ | 0.0+ |
| 2002 03 28 | 966 | 0.0− | 0.3+ | 2002 04 03 | 224 | 1.8− | 1.5− | 2002 04 04 | 732 | 2.0+ | 0.4− |
| 2002 03 28 | 966 | 0.1+ | 0.5+ | 2002 04 03 | 185 | 0.5+ | 1.4+ | 2002 04 04 | 732 | 1.0+ | 0.0− |
| 2002 03 29 | 649 | 0.4+ | 0.2+ | 2002 04 03 | 224 | 2.1− | 0.8− | 2002 04 04 | 732 | 0.7+ | 0.1+ |
| 2002 03 29 | 649 | 0.8− | 0.3+ | 2002 04 03 | 224 | 0.3+ | 2.1+ | 2002 04 04 | 732 | 0.8+ | 0.0− |
| 2002 03 29 | 649 | 0.2+ | 0.5+ | 2002 04 03 | 185 | 0.4+ | 1.3+ | 2002 04 04 | 732 | 0.7+ | 0.7+ |
| 2002 03 31 | 684 | 0.3+ | 0.9− | 2002 04 03 | 224 | 1.0− | 2.2− | 2002 04 04 | 732 | 0.9+ | 0.1+ |
| 2002 03 31 | 684 | 0.3+ | 0.6− | 2002 04 03 | 185 | 0.5+ | 1.2+ | 2002 04 04 | 732 | 1.0+ | 0.6− |
| 2002 03 31 | 684 | 0.3+ | 0.5− | 2002 04 03 | 224 | 1.3− | 2.0− | 2002 04 04 | 732 | 1.2+ | 1.1− |
| 2002 03 31 | 684 | 0.5+ | 0.0+ | 2002 04 03 | 224 | 2.0− | 1.6− | 2002 04 04 | 732 | 1.1+ | 0.2− |
| 2002 03 31 | 684 | 0.3+ | 0.7− | 2002 04 03 | 224 | 1.1− | 1.6− | 2002 04 04 | 732 | 0.8+ | 0.1+ |
| 2002 03 31 | 379 | 1.2+ | 1.3+ | 2002 04 03 | 224 | 1.7− | 1.7− | 2002 04 04 | 732 | 0.8+ | 0.1− |
| 2002 03 31 | 379 | 0.3− | 1.6+ | 2002 04 03 | 224 | 1.4− | 1.6− | 2002 04 04 | 732 | 1.0+ | 0.7− |
| 2002 03 31 | 379 | 0.1+ | 1.0+ | 2002 04 03 | 224 | (1.5− | 2.4−) | 2002 04 04 | 732 | 1.3+ | 0.3− |
| 2002 03 31 | 422 | 0.1+ | 0.0+ | 2002 04 03 | 224 | 1.4− | 1.8− | 2002 04 04 | 732 | 1.1+ | 0.9− |
| 2002 03 31 | 422 | 0.1− | 0.2− | 2002 04 03 | 224 | 1.7− | 2.2− | 2002 04 04 | 732 | 0.4+ | 0.5− |
| 2002 03 31 | 422 | 0.3+ | 0.0+ | 2002 04 03 | 224 | 1.3− | 1.3− | 2002 04 04 | 732 | 0.9+ | 0.3− |
| 2002 03 31 | 422 | 0.3− | 0.1+ | 2002 04 03 | 224 | 1.6− | 1.5− | 2002 04 04 | 732 | 0.3+ | 0.6− |
| 2002 03 31 | 422 | 0.2− | 0.0− | 2002 04 03 | 224 | 1.9− | 1.5− | 2002 04 04 | 732 | 0.2+ | 0.9− |
| 2002 03 31 | 422 | 0.0+ | 0.2+ | 2002 04 03 | 224 | 1.6− | 1.2− | 2002 04 04 | 732 | 0.3+ | 0.0− |
| 2002 03 31 | 422 | 0.1+ | 0.0− | 2002 04 03 | 224 | 1.0− | 1.4− | 2002 04 04 | 732 | 0.8+ | 1.0− |
| 2002 03 31 | 185 | 0.7− | 0.2+ | 2002 04 03 | 185 | 1.2+ | 0.9+ | 2002 04 04 | 732 | 0.9+ | 0.7− |
| 2002 03 31 | 185 | 0.5− | 0.3+ | 2002 04 03 | 224 | 1.5− | 1.4− | 2002 04 04 | 732 | 1.2+ | 1.0− |
| 2002 03 31 | 185 | 0.2− | 0.2+ | 2002 04 03 | 185 | 1.2+ | 0.8+ | 2002 04 04 | 732 | 0.6+ | 0.3+ |
| 2002 03 31 | 185 | 0.2− | 0.1+ | 2002 04 03 | 224 | 1.4− | 1.2− | 2002 04 04 | 732 | 0.8+ | 0.8− |
| 2002 03 31 | 185 | 0.5− | 0.4+ | 2002 04 03 | 185 | 0.4+ | 1.0+ | 2002 04 04 | 732 | 0.8+ | 1.2− |
| 2002 03 31 | 185 | 0.3− | 0.4+ | 2002 04 03 | 224 | 1.8− | 1.1− | 2002 04 04 | 732 | 0.4+ | 0.7− |
| 2002 03 31 | 185 | 0.2− | 0.3+ | 2002 04 03 | 185 | 0.5+ | 1.0+ | 2002 04 04 | 732 | 0.0+ | 0.0− |
| 2002 04 01 | 726 | 0.5+ | 0.2+ | 2002 04 03 | 224 | 1.7− | 1.6− | 2002 04 04 | 732 | 1.1+ | 1.4− |
| 2002 04 01 | 726 | 0.0+ | 0.8+ | 2002 04 03 | 185 | 0.5+ | 1.2+ | 2002 04 04 | 732 | 0.6+ | 0.5− |
| 2002 04 01 | 726 | 0.1+ | 0.2+ | 2002 04 03 | 224 | 1.7− | 1.5− | 2002 04 04 | 732 | 0.3+ | 0.4+ |
| 2002 04 01 | 726 | 0.6+ | 0.0+ | 2002 04 03 | 185 | 0.3+ | 1.4+ | 2002 04 04 | 732 | 0.8+ | 0.9− |
| 2002 04 01 | 726 | 0.0− | 0.2− | 2002 04 03 | 224 | 1.8− | 1.1− | 2002 04 04 | 732 | 0.6+ | 0.6− |
| 2002 04 01 | 726 | 0.5+ | 0.4− | 2002 04 03 | 224 | 1.4− | 1.9− | 2002 04 04 | 732 | 0.6+ | 0.5− |
| 2002 04 01 | 379 | 1.1+ | 0.1− | 2002 04 03 | 185 | 0.2+ | 1.1+ | 2002 04 04 | 732 | 0.2+ | 0.1+ |
| 2002 04 01 | 379 | 0.7+ | 1.7+ | 2002 04 03 | 224 | 1.5− | 2.2− | 2002 04 04 | 732 | 0.4+ | 0.4− |
| 2002 04 01 | 379 | 2.5+ | 0.7+ | 2002 04 03 | 185 | 0.2+ | 1.6+ | 2002 04 04 | 732 | 0.8+ | 0.7− |
| 2002 04 01 | 587 | 0.6+ | 0.1+ | 2002 04 03 | 185 | 0.0− | 2.2+ | 2002 04 04 | 732 | 0.6+ | 0.0− |
| 2002 04 01 | 587 | 0.3+ | 0.6+ | 2002 04 03 | 224 | 1.9− | 1.4− | 2002 04 04 | 732 | 0.9+ | 0.6− |
| 2002 04 01 | 587 | 0.2+ | 0.9+ | 2002 04 03 | 224 | 1.4− | 1.4− | 2002 04 04 | 732 | 0.4+ | 0.1+ |
| 2002 04 01 | 198 | 0.1− | 1.2+ | 2002 04 03 | 185 | 0.4+ | 0.9+ | 2002 04 04 | 732 | 1.1+ | 0.7− |
| 2002 04 01 | 198 | 0.4− | 1.3+ | 2002 04 03 | 224 | 1.8− | 1.8− | 2002 04 04 | 732 | 1.0+ | 0.9− |
| 2002 04 01 | 198 | 0.5− | 0.8+ | 2002 04 03 | 185 | 0.5+ | 1.0+ | 2002 04 04 | 732 | 0.8+ | 0.8− |
| 2002 04 01 | 198 | 0.6− | 1.0+ | 2002 04 03 | 224 | 1.4− | 0.9− | 2002 04 04 | 732 | 0.5+ | 0.3− |
| 2002 04 01 | 198 | 0.3− | 1.1+ | 2002 04 03 | 185 | 0.8+ | 1.5+ | 2002 04 04 | 732 | 1.1+ | 0.8− |
| 2002 04 01 | 113 | 0.6+ | 0.4+ | 2002 04 03 | 224 | 1.5− | 1.7− | 2002 04 04 | 732 | 0.6+ | 0.1+ |
| 2002 04 01 | 113 | 0.7+ | 0.4+ | 2002 04 03 | 185 | 0.7+ | 1.7+ | 2002 04 04 | 732 | 0.6+ | 0.2− |
| 2002 04 01 | 113 | 0.8+ | 0.3+ | 2002 04 03 | 224 | 2.0− | 0.8− | 2002 04 04 | 732 | 0.7+ | 0.4− |
| 2002 04 01 | 113 | 0.6+ | 0.5+ | 2002 04 03 | 185 | 0.9+ | 1.1+ | 2002 04 04 | 732 | 0.2+ | 0.2− |
| 2002 04 02 | 113 | 0.7+ | 0.2+ | 2002 04 03 | 224 | 1.9− | 1.1− | 2002 04 04 | 732 | 1.6+ | 0.8− |
| 2002 04 02 | 253/ | 253 | 0.300− d | 2002 04 03 | 185 | 1.0+ | 1.7+ | 2002 04 04 | 732 | 0.4+ | 0.4+ |
| 2002 04 02 | 413 | 0.4+ | 0.6+ | 2002 04 03 | 224 | 1.7− | 1.4− | 2002 04 04 | 732 | 0.6+ | 0.4+ |
| 2002 04 02 | 413 | 0.1− | 0.5+ | 2002 04 03 | 185 | 1.0+ | 1.8+ | 2002 04 04 | 732 | 0.8+ | 0.3− |
| 2002 04 02 | 413 | 0.7+ | 0.4+ | 2002 04 03 | 224 | 1.5− | 0.9− | 2002 04 04 | 732 | 0.7+ | 0.3+ |
| 2002 04 02 | 253/ | 253 | 0.202− D | 2002 04 03 | 185 | 1.0+ | 1.1+ | 2002 04 04 | 732 | 0.5+ | 0.1+ |
| 2002 04 02 | 355 | 0.3+ | 0.2− | 2002 04 03 | 224 | 1.6− | 1.7− | 2002 04 04 | 732 | 0.9+ | 0.1− |
| 2002 04 02 | 355 | 0.2+ | 0.5+ | 2002 04 03 | 224 | 1.8− | 1.1− | 2002 04 04 | 732 | 0.8+ | 0.1− |
| 2002 04 02 | 355 | 0.0+ | 0.0− | 2002 04 03 | 224 | 1.6− | 1.4− | 2002 04 04 | 732 | 0.6+ | 0.4+ |
| 2002 04 02 | 379 | 0.4+ | 0.9+ | 2002 04 03 | 224 | 1.7− | 0.8− | 2002 04 04 | 732 | 0.8+ | 0.2− |
| 2002 04 02 | 379 | 0.2− | 1.1+ | 2002 04 03 | 224 | 1.3− | 1.0− | 2002 04 04 | 732 | 0.5+ | 0.6− |
| 2002 04 02 | 379 | 0.2− | 0.2+ | 2002 04 03 | 224 | 1.8− | 1.4− | 2002 04 04 | 732 | 0.5+ | 0.4+ |
| 2002 04 02 | 379 | 0.2− | 1.0+ | 2002 04 03 | 224 | 1.7− | 1.1− | 2002 04 04 | 732 | 0.6+ | 0.9+ |
| 2002 04 02 | 379 | 0.2− | 1.0+ | 2002 04 03 | 224 | 1.6− | 1.1− | 2002 04 04 | 732 | 1.5+ | 1.2− |
| 2002 04 02 | 413 | 0.1+ | 0.3+ | 2002 04 03 | 224 | 2.4− | 0.8− | 2002 04 04 | 732 | 0.8+ | 0.0+ |
| 2002 04 02 | 413 | 0.1+ | 0.4+ | 2002 04 03 | 224 | 2.0− | 0.7− | 2002 04 04 | 732 | 1.1+ | 0.4− |
| 2002 04 02 | 413 | 0.2+ | 0.5+ | 2002 04 03 | 224 | 2.4− | 1.4− | 2002 04 04 | 732 | 0.8+ | 0.1− |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 02 | 413 | 0.0− | 0.5+ | 2002 04 03 | 224 | 2.0− | 1.6− | 2002 04 04 | 732 | 1.1+ | 0.8− | 2002 04 03 | 246 | 0.3+ | 1.0+ | 2002 04 03 | 224 | 1.1− | 1.1− | 2002 04 05 | 732 | (4.2+ | 3.5−) |
| 2002 04 02 | 413 | 0.1+ | 0.4+ | 2002 04 03 | 224 | 1.8− | 1.1− | 2002 04 04 | 732 | 1.3+ | 0.3− | 2002 04 03 | 557 | 0.4− | 1.2+ | 2002 04 03 | 246 | (1.2− | 4.2+) | 2002 04 05 | 732 | (5.5+ | 3.4−) |
| 2002 04 02 | 413 | 0.2+ | 0.2+ | 2002 04 03 | 198 | (1.1− | 3.5+) | 2002 04 04 | 732 | 1.1+ | 0.8− | 2002 04 03 | 649 | 0.2+ | 1.1+ | 2002 04 03 | 246 | 0.6+ | 1.2+ | 2002 04 05 | 732 | (4.6+ | 4.1−) |
| 2002 04 02 | 557 | 1.0− | 1.3+ | 2002 04 03 | 224 | 2.1− | 0.0+ | 2002 04 04 | 732 | 0.6+ | 0.1− | 2002 04 03 | 649 | 0.6+ | 0.5+ | 2002 04 03 | 224 | 0.8− | 2.0− | 2002 04 05 | 732 | (4.8+ | 4.6−) |
| 2002 04 02 | 138 | 0.5− | 0.1+ | 2002 04 03 | 224 | 1.4− | 1.3− | 2002 04 04 | 732 | 1.1+ | 0.7− | 2002 04 03 | 649 | 0.5+ | 0.6+ | 2002 04 03 | 246 | (0.4− | 3.0+) | 2002 04 05 | 732 | (5.4+ | 4.9−) |
| 2002 04 02 | 557 | 0.6− | 1.0+ | 2002 04 03 | 224 | 1.3− | 1.3− | 2002 04 04 | 732 | 0.7+ | 0.1− | 2002 04 03 | 253/ | 253 | 0.090+ R | 2002 04 03 | 224 | 1.6− | 1.2− | 2002 04 05 | 732 | (3.9+ | 3.3−) |
| 2002 04 02 | 138 | 0.3+ | 0.4− | 2002 04 03 | 224 | 1.6− | 1.1− | 2002 04 04 | 732 | 0.0+ | 1.2+ | 2002 04 03 | 474 | 1.2+ | 0.2− | 2002 04 04 | 557 | 0.4+ | 1.0+ | 2002 04 05 | 732 | (5.1+ | 5.2−) |
| 2002 04 02 | 138 | 0.1− | 0.1+ | 2002 04 03 | 224 | 1.9− | 0.7− | 2002 04 04 | 732 | 0.9+ | 0.4− | 2002 04 03 | 474 | 0.9+ | 0.4− | 2002 04 04 | 224 | 1.5− | 1.0− | 2002 04 05 | 732 | (5.1+ | 3.8−) |
| 2002 04 02 | 138 | (4.6+ | 0.9+) | 2002 04 03 | 224 | 1.5− | 0.6− | 2002 04 04 | 732 | (3.6+ | 0.5+) | 2002 04 03 | 474 | 0.9+ | 0.2− | 2002 04 04 | 224 | 0.5− | 2.7− | 2002 04 05 | 732 | (3.9+ | 2.3−) |
| 2002 04 02 | 557 | 0.4− | 1.7+ | 2002 04 03 | 224 | 2.0− | 0.4− | 2002 04 04 | 732 | 1.0+ | 0.2− | 2002 04 03 | 253/ | 253 | 0.321− R | 2002 04 04 | 224 | 0.5− | 1.9− | 2002 04 05 | 649 | 0.7+ | 2.4+ |
| 2002 04 02 | 138 | 0.4− | 1.1+ | 2002 04 03 | 224 | 1.0− | 1.5− | 2002 04 04 | 732 | 0.3+ | 0.2+ | 2002 04 03 | 253/ | 253 | 0.094+ R | 2002 04 04 | 224 | 1.1− | 1.4− | 2002 04 05 | 649 | 0.7+ | 1.7+ |
| 2002 04 02 | 138 | 0.4+ | 0.6+ | 2002 04 03 | 224 | 1.2− | 1.3− | 2002 04 04 | 732 | 0.7+ | 0.5− | 2002 04 03 | 413 | 0.2+ | 0.6+ | 2002 04 04 | 246 | 0.0+ | 1.8+ | 2002 04 05 | 649 | 0.5+ | 1.5+ |
| 2002 04 02 | 138 | 0.1+ | 0.7+ | 2002 04 03 | 198 | 0.1− | 2.0+ | 2002 04 04 | 732 | 0.5+ | 0.1− | 2002 04 03 | 413 | 0.1+ | 0.7+ | 2002 04 04 | 224 | 1.2− | 1.0− | 2002 04 05 | 670 | 1.8+ | 0.2− |
| 2002 04 02 | 138 | 0.1+ | 0.1+ | 2002 04 03 | 224 | 1.5− | 0.6− | 2002 04 04 | 732 | 0.2+ | 0.4+ | 2002 04 03 | 413 | 0.0+ | 0.6+ | 2002 04 04 | 246 | 0.4− | 2.5+ | 2002 04 05 | 670 | 1.5+ | 0.1+ |
| 2002 04 02 | 138 | 0.4− | 1.0+ | 2002 04 03 | 224 | 1.1− | 1.2− | 2002 04 04 | 732 | 0.8+ | 0.7− | 2002 04 03 | 474 | 1.2+ | 0.5− | 2002 04 04 | 224 | 1.2− | 1.2− | 2002 04 05 | 340 | (2.0+ | 3.2+) |
| 2002 04 02 | 138 | 0.0− | 0.2+ | 2002 04 03 | 198 | 0.5+ | 1.8+ | 2002 04 04 | 732 | 1.4+ | 1.5− | 2002 04 03 | 474 | 1.1+ | 0.6− | 2002 04 04 | 246 | (0.5− | 3.2+) | 2002 04 05 | 340 | (0.1− | 3.4+) |
| 2002 04 02 | 138 | 0.6+ | 0.3+ | 2002 04 03 | 224 | 1.9− | 0.4− | 2002 04 04 | 732 | 0.1− | 0.5+ | 2002 04 03 | 413 | 0.0− | 0.6+ | 2002 04 04 | 224 | 1.0− | 1.3− | 2002 04 05 | 340 | (1.1− | 3.5+) |
| 2002 04 02 | 138 | 0.2− | 1.0+ | 2002 04 03 | 224 | 1.7− | 1.1− | 2002 04 04 | 732 | 0.6+ | 0.5− | 2002 04 03 | 474 | 1.1+ | 0.2− | 2002 04 04 | 224 | 0.7− | 1.3− | 2002 04 05 | 340 | 0.2+ | 2.3+ |
| 2002 04 02 | 138 | 0.6− | 0.8+ | 2002 04 03 | 224 | 1.8− | 1.0− | 2002 04 04 | 732 | 0.7+ | 0.5− | 2002 04 03 | 413 | 0.0− | 0.5+ | 2002 04 04 | 224 | 1.3− | 1.2− | 2002 04 05 | 340 | (0.6+ | 3.9+) |
| 2002 04 02 | 138 | 0.1+ | 0.3+ | 2002 04 03 | 198 | 0.1+ | 2.0+ | 2002 04 04 | 732 | 0.4+ | 0.3− | 2002 04 03 | 185 | 0.6+ | 0.4+ | 2002 04 04 | 224 | 1.0− | 1.3− | 2006 09 13 | 474 | 0.6− | 0.2+ |
| 2002 04 02 | 138 | 0.1+ | 0.9+ | 2002 04 03 | 224 | 1.8− | 0.7− | 2002 04 04 | 732 | 1.1+ | 0.1− | 2002 04 03 | 185 | 0.3− | 1.7+ | 2002 04 04 | 224 | 1.0− | 1.0− | 2006 09 13 | 474 | 0.8+ | 0.0+ |
| 2002 04 02 | 557 | 0.3− | 1.3+ | 2002 04 03 | 224 | 1.7− | 1.0− | 2002 04 04 | 732 | 1.4+ | 1.0− | 2002 04 03 | 185 | 0.5+ | 0.9+ | 2002 04 04 | 224 | 0.9− | 0.7− | 2006 09 13 | 474 | 0.2− | 0.1− |
| 2002 04 02 | 138 | 0.2− | 0.6+ | 2002 04 03 | 198 | 0.2+ | 1.5+ | 2002 04 04 | 732 | 1.1+ | 0.4− | 2002 04 03 | 185 | 0.4+ | 0.8+ | 2002 04 04 | 224 | 1.1− | 1.3− | 2006 09 13 | 474 | 1.4+ | 0.9+ |
| 2002 04 02 | 138 | 0.2− | 0.8+ | 2002 04 03 | 224 | 1.4− | 1.2− | 2002 04 04 | 732 | 0.8+ | 0.5− | 2002 04 03 | 185 | 0.2− | 1.4+ | 2002 04 04 | 224 | 0.7− | 1.4− | 2006 09 13 | 474 | 1.1+ | 0.1− |
| 2002 04 02 | 138 | 0.3+ | 0.5+ | 2002 04 03 | 198 | 0.6+ | 1.2+ | 2002 04 04 | 732 | 0.6+ | 0.2+ | 2002 04 03 | 151 | 1.7+ | 1.5+ | 2002 04 04 | 224 | 1.0− | 1.4− | 2006 09 28 | A13 | 2.3− | 0.7+ |
| 2002 04 02 | 138 | 0.5− | 1.3+ | 2002 04 03 | 224 | 1.2− | 1.5− | 2002 04 04 | 732 | 0.9+ | 0.4− | 2002 04 03 | 151 | 0.8+ | 1.5+ | 2002 04 04 | 557 | 0.5+ | 0.5+ | 2006 09 28 | A13 | 1.6− | 0.1+ |
| 2002 04 02 | 138 | 0.3− | 0.3+ | 2002 04 03 | 224 | 1.1− | 1.8− | 2002 04 04 | 732 | 0.3+ | 0.0− | 2002 04 03 | 151 | 0.5+ | 1.5+ | 2002 04 04 | 224 | 1.6− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2002 04 02 | 138 | 0.2+ | 0.6+ | 2002 04 03 | 224 | 1.5− | 0.8− | 2002 04 04 | 732 | 0.9+ | 0.9− | 2002 04 03 | 185 | 0.5− | 2.0+ | 2002 04 04 | 224 | 0.9− | 1.1− | 2006 09 30 | 703 | 0.5+ | 0.3+ |
| 2002 04 02 | 138 | 0.1+ | 0.7+ | 2002 04 03 | 224 | 1.6− | 1.2− | 2002 04 04 | 732 | 1.1+ | 0.8− | 2002 04 03 | 185 | 0.5− | 1.3+ | 2002 04 04 | 224 | 1.1− | 1.5− | 2006 09 30 | 703 | 0.5− | 0.4+ |
| 2002 04 02 | 557 | 0.4− | 1.0+ | 2002 04 03 | 224 | 1.2− | 1.4− | 2002 04 04 | 732 | 0.7+ | 0.1− | 2002 04 03 | 151 | 1.0+ | 1.2+ | 2002 04 04 | 224 | 1.0− | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.4+ |
| 2002 04 02 | 138 | 0.3− | 0.7+ | 2002 04 03 | 224 | 1.6− | 1.0− | 2002 04 04 | 732 | 1.0+ | 0.4− | 2002 04 03 | 185 | 0.4+ | 1.1+ | 2002 04 04 | 224 | 0.4− | 2.1− | 2006 09 30 | 703 | 0.6+ | 0.8+ |
| 2002 04 02 | 138 | 0.3− | 1.0+ | 2002 04 03 | 224 | 1.4− | 1.9− | 2002 04 04 | 732 | 1.4+ | 1.2− | 2002 04 03 | 185 | 0.0+ | 2.2+ | 2002 04 04 | 557 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2002 04 02 | 138 | 0.1− | 0.9+ | 2002 04 03 | 224 | 1.3− | 1.2− | 2002 04 04 | 732 | 1.3+ | 0.4− | 2002 04 03 | 185 | 1.0− | 1.9+ | 2002 04 04 | 557 | 0.3+ | 1.0+ | 2006 09 30 | 703 | 0.0− | 0.1− |
| 2002 04 02 | 138 | 0.0+ | 0.5+ | 2002 04 03 | 224 | 1.2− | 1.7− | 2002 04 04 | 732 | 0.9+ | 0.8− | 2002 04 03 | 151 | 0.6− | 0.7+ | 2002 04 04 | 557 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.4− | 1.5− |
| 2002 04 02 | 138 | 0.1− | 0.4+ | 2002 04 03 | 224 | 1.7− | 0.7− | 2002 04 04 | 732 | 1.0+ | 0.4− | 2002 04 03 | 185 | 1.8− | 1.8+ | 2002 04 04 | 557 | 0.0+ | 0.7+ | 2006 10 11 | 691 | 0.3+ | 0.4+ |
| 2002 04 02 | 138 | 0.5− | 0.2+ | 2002 04 03 | 224 | 1.1− | 1.4− | 2002 04 04 | 732 | 0.6+ | 0.2+ | 2002 04 03 | 151 | 0.7+ | 1.4+ | 2002 04 04 | 557 | 0.2+ | 1.2+ | 2006 10 11 | 691 | 0.4+ | 0.4+ |
| 2002 04 02 | 138 | 0.1+ | 0.8+ | 2002 04 03 | 224 | 1.0− | 1.9− | 2002 04 04 | 732 | 1.1+ | 0.9− | 2002 04 03 | 151 | 1.1+ | 2.0+ | 2002 04 04 | 557 | 0.5+ | 1.2+ | 2006 10 11 | 691 | 0.0− | 0.4+ |
| 2002 04 02 | 138 | 0.8− | 0.8+ | 2002 04 03 | 224 | 1.0− | 1.7− | 2002 04 04 | 732 | 0.2+ | 0.1+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.1− | 1.7+ | 2002 04 03 | 224 | 0.8− | 1.7− | 2002 04 04 | 732 | 0.9+ | 0.3+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.4− | 1.2+ | 2002 04 03 | 224 | 0.8− | 0.9− | 2002 04 04 | 732 | 1.0+ | 0.8− | | | | | | | | | | | | |
| 2002 04 02 | 557 | 0.5− | 1.2+ | 2002 04 03 | 224 | 1.4− | 1.3− | 2002 04 04 | 649 | 0.4+ | 0.9+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.1+ | 1.0+ | 2002 04 03 | 224 | 1.6− | 1.4− | 2002 04 04 | 649 | 0.7+ | 1.1+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.2+ | 0.5+ | 2002 04 03 | 224 | 1.4− | 1.4− | 2002 04 04 | 649 | 0.7+ | 0.7+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.5+ | 1.6+ | 2002 04 03 | 224 | 1.2− | 1.8− | 2002 04 04 | 649 | 0.6+ | 1.1+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.3− | 1.0+ | 2002 04 03 | 224 | 1.4− | 0.9− | 2002 04 04 | 253/ | 253 | 16.53− R | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.1+ | 0.9+ | 2002 04 03 | 224 | 0.6− | 1.5− | 2002 04 04 | 379 | 1.3+ | 1.8+ | | | | | | | | | | | | |
| 2002 04 02 | 557 | 0.2− | 1.0+ | 2002 04 03 | 224 | 1.2− | 1.6− | 2002 04 04 | 379 | 0.3+ | 2.0+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.5− | 2.2+ | 2002 04 03 | 224 | 1.0− | 1.4− | 2002 04 04 | 379 | 0.5+ | 1.6+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.3− | 1.4+ | 2002 04 03 | 224 | 1.8− | 1.1− | 2002 04 04 | 379 | 0.2+ | 1.6+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.5− | 1.8+ | 2002 04 03 | 224 | 0.9− | 1.6− | 2002 04 04 | 379 | 0.1− | 2.2+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.3− | 1.6+ | 2002 04 03 | 224 | 1.3− | 1.3− | 2002 04 04 | 379 | 0.7+ | 2.1+ | | | | | | | | | | | | |
| 2002 04 02 | 198 | 0.7+ | 0.9+ | 2002 04 03 | 224 | 1.4− | 1.2− | 2002 04 04 | 379 | 0.3+ | 1.4+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.6− | 1.5+ | 2002 04 03 | 224 | 1.1− | 1.9− | 2002 04 04 | 349 | 0.5+ | 1.6+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.5− | 1.6+ | 2002 04 03 | 557 | 0.4− | 1.9+ | 2002 04 04 | 349 | 0.6+ | 1.5+ | | | | | | | | | | | | |
| 2002 04 02 | 198 | 0.5+ | 0.8+ | 2002 04 03 | 224 | 1.7− | 1.0− | 2002 04 04 | 349 | 1.8+ | 0.3+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.1− | 1.6+ | 2002 04 03 | 224 | 1.3− | 1.4− | 2002 04 05 | 198 | 0.0− | 2.3+ | | | | | | | | | | | | |
| 2002 04 02 | 138 | 0.4− | 1.8+ | 2002 04 03 | 224 | 1.3− | 1.4− | 2002 04 05 | 198 | 1.7+ | 0.9+ | | | | | | | | | | | | |
| 2002 04 02 | 198 | 0.2+ | 0.7+ | 2002 04 03 | 224 | 0.8− | 2.0− | 2002 04 05 | 198 | 1.3+ | 1.9+ | | | | | | | | | | | | |
| 2002 04 02 | 557 | 0.3− | 1.2+ | 2002 04 03 | 224 | 1.2− | 1.5− | 2002 04 05 | 198 | 0.2− | 2.5+ | | | | | | | | | | | | |
| 2002 04 02 | 198 | 0.5+ | 0.1+ | 2002 04 03 | 224 | 1.4− | 1.4− | 2002 04 05 | 198 | (0.8− | 3.5+) | | | | | | | | | | | | |
| 2002 04 02 | 198 | 0.2+ | 0.7+ | 2002 04 03 | 224 | 0.9− | 1.5− | 2002 04 05 | 452 | 0.4+ | 2.3+ | | | | | | | | | | | | |
| 2002 04 02 | 198 | 0.3+ | 0.4+ | 2002 04 03 | 224 | 1.0− | 1.6− | 2002 04 05 | 452 | 0.4+ | 1.6+ | | | | | | | | | | | | |
| 2002 04 03 | 557 | 0.5− | 1.1+ | 2002 04 03 | 224 | 1.4− | 1.0− | 2002 04 05 | 452 | (0.6− | 2.9+) | | | | | | | | | | | | |
| 2002 04 03 | 246 | 0.4+ | 1.1+ | 2002 04 03 | 246 | (1.2− | 4.7+) | 2002 04 05 | 452 | 0.1+ | 2.3+ | | | | | | | | | | | | |
| 2002 04 03 | 246 | 0.4− | 2.6+ | 2002 04 03 | 246 | 0.1− | 2.3+ | 2002 04 05 | 452 | 0.3+ | 1.9+ | | | | | | | | | | | | |
| 2002 04 03 | 246 | 0.1+ | 1.5+ | 2002 04 03 | 224 | 0.6− | 2.3− | 2002 04 05 | 670 | 1.5+ | 0.1+ | | | | | | | | | | | | |
| 2002 04 03 | 246 | 0.5− | 2.7+ | 2002 04 03 | 246 | 0.2+ | 2.3+ | 2002 04 05 | 732 | (4.9+ | 3.5−) | | | | | | | | | | | | |
| 2002 04 03 | 246 | 0.2+ | 1.3+ | 2002 04 03 | 246 | (1.3− | 4.5+) | 2002 04 05 | 732 | (5.5+ | 4.7−) | | | | | | | | | | | | |

**2002 FM$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 132.29264 | | (2000.0) | | | |
| $n$ | 0.27182701 | $\omega$ | 87.77722 | | −0.52613623 | −0.84813466 |
| $a$ | 2.3601575 | $\Omega$ | 34.19901 | | +0.72976933 | −0.48775116 |
| $e$ | 0.1826819 | $i$ | 6.33652 | | +0.43659753 | −0.20680038 |
| $P$ | 3.63 | $H$ | 16.7 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 608 | 0.4+ | 0.7− | 2002 03 19 | 699 | 0.6− | 0.2+ | 2004 11 04 | 703 | 0.4+ | 0.7+ | |
| 2002 03 10 | 608 | 0.2+ | 0.5− | 2002 03 19 | 699 | 0.7− | 0.3+ | 2004 11 04 | 703 | 1.2+ | 0.1− | |
| 2002 03 10 | 608 | 0.2− | 0.5− | 2004 10 10 | 691 | 0.1+ | 0.0 | 2004 11 04 | 703 | (2.1+ | 1.1−) | |
| 2002 03 16 | 704 | 0.4+ | 0.2− | 2004 10 10 | 691 | 0.0 | 0.1− | 2004 11 19 | 704 | 0.1− | 0.4− | |
| 2002 03 16 | 704 | 1.3+ | 1.4+ | 2004 10 10 | 691 | 0.1+ | 0.2+ | 2004 11 19 | 704 | 1.1− | 0.1+ | |
| 2002 03 16 | 704 | 0.2+ | 0.8+ | 2004 10 23 | 691 | 0.2− | 0.0 | 2004 11 19 | 704 | 0.1+ | 0.1+ | |
| 2002 03 16 | 704 | 0.4− | 0.4− | 2004 10 23 | 691 | 0.0 | 0.1− | 2004 11 19 | 704 | 0.1+ | 0.3− | |
| 2002 03 19 | 699 | 0.2− | 0.2− | 2004 10 23 | 691 | 0.2− | 0.0 | 2004 11 19 | 704 | 0.2+ | 0.1+ | |
| 2002 03 19 | 699 | 0.2− | 0.2− | 2004 11 04 | 703 | 0.2+ | 0.2+ | | | | | |

**2002 FN$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.00869 | | (2000.0) | | | |
| $n$ | 0.17537934 | $\omega$ | 46.21857 | | −0.55827624 | −0.80892896 |
| $a$ | 3.1609462 | $\Omega$ | 78.59413 | | +0.69694641 | −0.57776725 |
| $e$ | 0.2241098 | $i$ | 10.83606 | | +0.45010371 | −0.10871497 |
| $P$ | 5.62 | $H$ | 14.9 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 704 | 1.0+ | 0.4+ | 2002 03 20 | 704 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 2002 01 11 | 704 | 1.2+ | 0.0 | 2002 03 20 | 704 | 0.9+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2002 01 11 | 704 | 1.0+ | 0.7− | 2002 03 20 | 704 | 0.9+ | 0.5+ | 2006 11 21 | 704 | 0.7− | 0.7− |
| 2002 02 10 | 704 | 1.2− | 0.1− | 2002 03 31 | 644 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2002 02 10 | 704 | 0.5− | 0.4+ | 2002 03 31 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.3− |
| 2002 02 10 | 704 | 0.1− | 0.4− | 2002 03 31 | 644 | 0.4+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 2002 02 10 | 704 | 0.7− | 0.3− | 2005 08 27 | 644 | 0.4− | 0.6+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2002 02 10 | 704 | 0.9− | 0.7− | 2005 08 27 | 644 | 0.1− | 0.6+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 02 21 | 644 | 0.1+ | 0.3− | 2005 08 27 | 644 | 0.5− | 0.9+ | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2002 02 21 | 644 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.5− | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2002 02 21 | 644 | 0.1+ | 0.3− | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2002 03 16 | 608 | 0.8− | 1.0+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.8− | 2.1+ |
| 2002 03 16 | 608 | 1.2− | 1.3+ | 2006 11 18 | 704 | 0.5+ | 0.8− | 2006 11 28 | 704 | 0.1+ | 1.7+ |
| 2002 03 16 | 608 | 0.6− | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.7− | 2006 11 28 | 704 | 0.0 | 0.4+ |
| 2002 03 20 | 704 | 0.7+ | 0.7+ | 2006 11 18 | 704 | 1.1− | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.1+ |

**2002 FT$_{18}$ = 2006 BC$_{57}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.78138 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23751118 | $\omega$ | 354.32627 | | −0.85953531 | | −0.51093002 |
| $a$ | 2.5823395 | $\Omega$ | 154.93622 | | +0.47003134 | | −0.79967439 |
| $e$ | 0.1369448 | $i$ | 1.65426 | | +0.20067283 | | −0.31539084 |
| $P$ | 4.15 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 291 | 0.0 | 0.1− | 2006 01 22 | G96 | 0.3+ | 0.1− | 2006 01 31 | G96 | 0.1− | 0.1+ |
| 2002 03 12 | 291 | 0.2− | 0.3− | 2006 01 22 | G96 | 0.1− | 0.4− | 2006 01 31 | G96 | 0.2+ | 0.0 |
| 2002 03 12 | 291 | 0.1− | 0.0 | 2006 01 22 | G96 | 0.3− | 0.7− | 2006 02 01 | G96 | 0.5+ | 0.0 |
| 2002 03 18 | 695 | 0.7+ | 0.1+ | 2006 01 26 | 291 | 0.0 | 0.6+ | 2006 02 01 | G96 | 0.4+ | 0.1− |
| 2002 03 18 | 695 | 0.9+ | 0.0 | 2006 01 26 | 291 | 0.1− | 0.6+ | 2006 02 01 | G96 | 0.3− | 0.2− |
| 2002 03 20 | 695 | 0.9− | 0.1+ | 2006 01 26 | 291 | 0.2+ | 0.4+ | 2006 02 01 | G96 | 0.0 | 0.1− |
| 2002 03 20 | 695 | 0.4− | 0.2+ | 2006 01 31 | G96 | 0.3− | 0.0 | | | | |
| 2006 01 22 | G96 | 0.4− | 0.2+ | 2006 01 31 | G96 | 0.1+ | 0.2− | | | | |

**2002 FA$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.32377 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18512124 | $\omega$ | 13.59321 | | −0.67681065 | | −0.69771487 |
| $a$ | 3.0490547 | $\Omega$ | 119.59531 | | +0.64765451 | | −0.71596124 |
| $e$ | 0.1837931 | $i$ | 15.66459 | | +0.34995855 | | −0.02436096 |
| $P$ | 5.32 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 699 | 0.1+ | 0.8− | 2002 03 23 | 704 | 0.4− | 0.0 | 2002 05 05 | 644 | 0.6+ | 0.6+ |
| 2002 02 10 | 699 | 0.1+ | 0.1− | 2002 03 23 | 704 | 0.1− | 1.2+ | 2002 05 05 | 644 | 0.3+ | 0.6+ |
| 2002 02 10 | 699 | 0.6− | 0.7− | 2002 03 23 | 704 | 0.9+ | 1.3− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2002 02 10 | 699 | 1.3+ | 0.5+ | 2002 04 15 | 644 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.4− | 1.3+ |
| 2002 03 21 | 704 | 0.3− | 0.1+ | 2002 04 15 | 644 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.3+ | 0.4− |
| 2002 03 21 | 704 | 0.6− | 0.5+ | 2002 04 15 | 644 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.7− |
| 2002 03 21 | 704 | 0.1− | 0.3+ | 2002 04 15 | 644 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 03 21 | 704 | 0.7+ | 0.2− | 2002 04 15 | 644 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.7− |
| 2002 03 23 | 704 | 0.4+ | 0.2+ | 2002 04 15 | 644 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.8− |
| 2002 03 23 | 704 | 0.7− | 1.3− | 2002 05 05 | 644 | 0.6+ | 0.1− | | | | |

**2002 FV$_{40}$ = 2005 VO$_{47}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.85974 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17610178 | $\omega$ | 133.05386 | | −0.97398684 | | +0.14510907 |
| $a$ | 3.1522953 | $\Omega$ | 56.02067 | | −0.21405739 | | −0.84120425 |
| $e$ | 0.2100733 | $i$ | 12.11589 | | +0.07435773 | | −0.52088269 |
| $P$ | 5.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 704 | 0.0 | 0.3− | 2002 04 16 | 704 | 1.5+ | 0.3+ | 2005 11 05 | 691 | 0.1+ | 0.6+ |
| 2002 03 20 | 704 | 0.3− | 0.1+ | 2002 04 16 | 704 | 0.8+ | 1.1− | 2005 11 05 | 691 | 0.6− | 0.1+ |
| 2002 03 20 | 704 | 0.3+ | 0.4+ | 2002 04 16 | 704 | 0.5− | 0.5+ | 2005 11 05 | 691 | 0.1− | 0.2+ |
| 2002 03 20 | 704 | 0.4+ | 0.6− | 2002 04 16 | 704 | 0.2+ | 0.2− | 2005 11 06 | G96 | 0.4+ | 0.8+ |
| 2002 03 20 | 704 | 0.1− | 0.0 | 2002 04 16 | 704 | 0.1+ | 0.7+ | 2005 11 06 | G96 | 0.0 | 0.7− |
| 2002 04 12 | 644 | 0.7− | 0.5+ | 2002 04 16 | 704 | 0.0 | 0.4− | 2005 11 06 | G96 | 0.0 | 0.8− |
| 2002 04 12 | 644 | 0.8− | 0.4+ | 2002 04 16 | 704 | 1.0− | 0.6+ | 2005 11 06 | G96 | 0.2+ | 0.3− |
| 2002 04 12 | 644 | 0.8− | 0.5+ | 2002 04 16 | 704 | 1.6+ | 1.6− | | | | |
| 2002 04 16 | 704 | 1.0+ | 0.8− | 2002 04 16 | 704 | 1.6− | 0.8+ | | | | |

**2002 FW$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.43977 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17963772 | $\omega$ | 188.69308 | | +0.06458226 | | +0.96130042 |
| $a$ | 3.1107923 | $\Omega$ | 85.32797 | | −0.89865258 | | +0.17271587 |
| $e$ | 0.1872731 | $i$ | 15.58803 | | −0.43388095 | | −0.21464094 |
| $P$ | 5.49 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 704 | 0.8+ | 1.8+ | 2002 05 05 | 644 | 0.3− | 0.0 | 2005 11 10 | G96 | 0.3− | 0.3− |
| 2002 03 20 | 704 | 0.6+ | 0.2− | 2002 05 05 | 644 | 0.3− | 0.1+ | 2005 12 06 | 691 | 0.0 | 0.1− |
| 2002 03 20 | 704 | 0.1+ | 0.8− | 2002 05 13 | 644 | 0.0 | 0.1− | 2005 12 06 | 691 | 0.0 | 0.1− |
| 2002 03 20 | 704 | 0.1+ | 1.3− | 2002 05 13 | 644 | 0.2− | 0.1− | 2005 12 06 | 691 | 0.1+ | 0.1+ |
| 2002 04 22 | 644 | 0.1− | 0.2− | 2002 05 13 | 644 | 0.2− | 0.8+ | 2005 12 10 | 691 | 0.0 | 0.0 |
| 2002 04 22 | 644 | 0.2− | 0.0 | 2005 11 10 | G96 | 0.9+ | 0.1+ | 2005 12 10 | 691 | 0.5− | 0.0 |
| 2002 04 22 | 644 | 0.0 | 0.1− | 2005 11 10 | G96 | 0.7+ | 0.6− | 2005 12 10 | 691 | 0.2+ | 0.2+ |
| 2002 05 05 | 644 | 0.0 | 0.1− | 2005 11 10 | G96 | 0.2+ | 0.1+ | | | | |

**2002 FX$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.64193 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17006667 | $\omega$ | 118.09498 | | −0.95365098 | | −0.08595776 |
| $a$ | 3.2264374 | $\Omega$ | 58.33604 | | −0.08690690 | | −0.83881917 |
| $e$ | 0.0917843 | $i$ | 19.80449 | | +0.28809200 | | −0.53758131 |
| $P$ | 5.80 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 704 | 1.0− | 0.7+ | 2002 05 05 | 644 | 0.4+ | 0.7+ | 2005 11 06 | 699 | 0.7− | 0.3+ |
| 2002 03 21 | 704 | 0.4+ | 1.0+ | 2005 10 29 | 703 | 0.0 | 0.2+ | 2005 11 06 | 699 | (2.3+ | 1.4−) |
| 2002 03 21 | 704 | 0.1− | 0.0 | 2005 10 29 | 703 | 1.0+ | 0.1− | 2005 11 25 | 703 | 0.5+ | 1.4− |
| 2002 04 10 | 644 | 0.3− | 0.2− | 2005 10 29 | 703 | 0.6− | 0.4− | 2005 11 25 | 703 | 0.1+ | 1.4+ |
| 2002 04 10 | 644 | 0.1+ | 0.2− | 2005 10 29 | 703 | 0.2+ | 0.1+ | 2005 11 25 | 703 | 1.3+ | 0.1− |
| 2002 04 10 | 644 | 0.2− | 0.2− | 2005 11 05 | 703 | 0.8− | 0.7− | 2005 11 25 | 703 | (2.2− | 0.9+) |
| 2002 04 22 | 644 | 0.3+ | 0.7− | 2005 11 05 | 703 | 0.6− | 0.1− | 2006 02 24 | G96 | 0.3+ | 0.0 |
| 2002 04 22 | 644 | 0.4+ | 0.5− | 2005 11 05 | 703 | 0.6+ | 0.6− | 2006 02 24 | G96 | 0.3− | 0.2− |
| 2002 04 22 | 644 | 0.6− | 0.4− | 2005 11 05 | 703 | 0.2+ | 0.2− | 2006 02 24 | G96 | 0.4− | 0.2+ |
| 2002 05 05 | 644 | 0.9+ | 1.0− | 2005 11 06 | 699 | 1.4− | 0.7+ | 2006 02 24 | G96 | 0.0 | 0.5+ |
| 2002 05 05 | 644 | 0.1+ | 0.7+ | 2005 11 06 | 699 | 0.7+ | 0.4+ | | | | |

**2002 FY$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.97165 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28294035 | $\omega$ | 103.38440 | | +0.14165697 | | +0.98987061 |
| $a$ | 2.2979441 | $\Omega$ | 174.73183 | | −0.94343147 | | +0.13789284 |
| $e$ | 0.1362763 | $i$ | 5.91353 | | −0.29978387 | | +0.03378977 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 291 | 0.1+ | 0.0 | 2003 09 16 | 691 | 0.1− | 0.1+ | 2003 10 20 | 704 | 0.2+ | 0.3+ |
| 2002 03 21 | 291 | 0.1+ | 0.1+ | 2003 09 16 | 691 | 0.0 | 0.2− | 2003 10 20 | 704 | 0.5− | 0.1+ |
| 2002 03 21 | 291 | 0.1− | 0.0 | 2003 09 16 | 691 | 0.1− | 0.2− | 2003 10 29 | 699 | (2.6+ | 1.2−) |
| 2002 04 07 | 807 | 0.3− | 0.2+ | 2003 10 01 | 691 | 0.1− | 0.2+ | 2003 10 29 | 699 | 0.2− | 1.2− |
| 2002 04 07 | 807 | 0.1+ | 0.2+ | 2003 10 01 | 691 | 0.1+ | 0.1+ | 2003 10 29 | 699 | 1.2+ | 0.4+ |
| 2002 04 17 | 704 | 0.7+ | 0.1− | 2003 10 01 | 691 | 0.0 | 0.5+ | 2003 10 29 | 699 | 0.4+ | 0.1− |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2002 04 17 | 704 | 0.0 | 0.2− | 2003 10 20 | 704 | 0.7+ | 0.6− |
| 2002 04 17 | 704 | 0.0 | 0.3+ | 2003 10 20 | 704 | 1.4− | 0.2− |

**2002 GX$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.24922 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30277392 | $\omega$ | 236.69156 | | +0.27011554 | | +0.95767993 |
| $a$ | 2.1964622 | $\Omega$ | 49.30550 | | −0.83403932 | | +0.28433080 |
| $e$ | 0.2928868 | $i$ | 7.53564 | | −0.48105717 | | +0.04477881 |
| $P$ | 3.26 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 10 | 704 | 0.1+ | 0.4− | 2002 04 16 | 704 | 0.1− | 1.3+ | 2002 06 06 | 704 | 0.6− | 0.8+ |
| 2002 04 10 | 704 | 0.1+ | 0.3− | 2002 04 16 | 704 | 0.3− | 1.4+ | 2002 06 06 | 704 | (0.9+ | 1.9+) |
| 2002 04 10 | 704 | 0.6− | 0.6+ | 2002 04 16 | 704 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.5+ |
| 2002 04 10 | 704 | 0.0 | 0.6− | 2002 04 16 | 704 | (0.3− | 1.5+) | 2006 09 28 | G96 | 0.0 | 0.3+ |
| 2002 04 10 | 704 | 0.0 | 0.3− | 2002 05 03 | 333 | 0.5− | 0.6+ | 2006 09 28 | G96 | 0.5+ | 0.9+ |
| 2002 04 10 | 644 | 0.2+ | 0.6− | 2002 05 03 | 333 | 1.1− | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.5+ |
| 2002 04 10 | 644 | 0.1+ | 0.7− | 2002 05 08 | 704 | 0.6+ | 1.0− | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2002 04 10 | 644 | 0.1+ | 0.9− | 2002 05 08 | 704 | 0.7− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.1− |
| 2002 04 11 | 704 | 0.1+ | 0.1+ | 2002 05 08 | 704 | 0.6− | 0.4− | 2006 10 17 | G96 | 0.2− | 1.1− |
| 2002 04 11 | 704 | 1.0+ | 0.1− | 2002 05 08 | 644 | 1.2+ | 0.7+ | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2002 04 11 | 704 | 0.3− | 0.6+ | 2002 05 08 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.4+ |
| 2002 04 11 | 704 | 0.7+ | 0.4− | 2002 05 08 | 644 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.5− | 0.4+ |
| 2002 04 11 | 704 | 0.0 | 0.5− | 2002 05 14 | 699 | 1.4− | 0.4− | 2006 10 21 | 691 | 0.1− | 0.5+ |
| 2002 04 13 | 644 | 0.0 | 0.4+ | 2002 05 14 | 699 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 04 13 | 644 | 0.1− | 0.2+ | 2002 05 14 | 699 | 0.3+ | 0.7− | 2006 10 31 | G96 | 0.7− | 0.3− |
| 2002 04 13 | 644 | 0.0 | 0.1+ | 2002 05 14 | 699 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2002 04 14 | 333 | 0.3+ | 0.8+ | 2002 05 16 | 704 | 1.3+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 04 14 | 333 | 0.6− | 0.3− | 2002 05 16 | 704 | 0.1+ | 0.6− | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2002 04 14 | 333 | 0.2+ | 0.6+ | 2002 05 16 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 04 14 | 644 | 0.4+ | 0.0 | 2002 05 16 | 608 | 0.4− | 0.7+ | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2002 04 14 | 644 | 0.2+ | 0.0 | 2002 05 16 | 608 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 04 14 | 644 | 0.1+ | 0.2+ | 2002 05 16 | 608 | 0.3+ | 0.5+ | 2006 11 20 | 691 | 0.6+ | 0.0 |
| 2002 04 15 | 333 | 0.5+ | 1.1− | 2002 05 18 | 704 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2002 04 15 | 333 | 0.3− | 0.2− | 2002 05 18 | 704 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 04 15 | 333 | 0.3+ | 0.3+ | 2002 05 18 | 704 | (1.7+ | 0.2+) | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2002 04 16 | 333 | 0.4+ | 0.8− | 2002 05 18 | 704 | 0.5+ | 0.7− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 04 16 | 333 | 0.2+ | 0.0 | 2002 05 18 | 704 | 0.7− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2002 04 16 | 333 | 0.8− | 0.3− | 2002 06 06 | 704 | 0.9+ | 1.0+ | | | | |
| 2002 04 16 | 704 | 0.2+ | 0.8+ | 2002 06 06 | 704 | 0.0 | 0.3+ | | | | |

**2002 GZ$_{10}$ = 2006 SQ$_{356}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.50321 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30794529 | $\omega$ | 137.39361 | | +0.27876785 | | +0.95967592 |
| $a$ | 2.1718025 | $\Omega$ | 148.74201 | | −0.89883269 | | +0.27399882 |
| $e$ | 0.1888536 | $i$ | 4.00070 | | −0.33821337 | | +0.06282334 |
| $P$ | 3.20 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 644 | 0.3− | 0.4+ | 2002 04 14 | 644 | 0.0 | 0.6− | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2002 04 09 | 644 | 0.2− | 0.1+ | 2002 04 17 | 704 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2002 04 09 | 644 | 0.2− | 0.3+ | 2002 04 17 | 704 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2002 04 10 | 644 | 0.4− | 0.2− | 2002 04 17 | 704 | 0.4+ | 1.1+ | 2006 10 16 | 703 | 0.5+ | 1.0+ |
| 2002 04 10 | 644 | 0.1− | 0.1− | 2002 04 17 | 704 | (0.6+ | 1.7+) | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2002 04 10 | 644 | 0.2− | 0.1− | 2006 09 30 | 703 | 1.3− | 0.6− | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2002 04 10 | 704 | 0.1+ | 1.2− | 2006 09 30 | 703 | 1.3+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 04 10 | 704 | 0.8− | 0.2− | 2006 09 30 | 703 | 1.2+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2002 04 10 | 704 | 1.0+ | 0.3+ | 2006 09 30 | 703 | 1.0− | 1.0− | 2006 11 22 | G96 | 0.5+ | 0.3− |
| 2002 04 10 | 704 | 0.7+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2002 04 14 | 644 | 0.1+ | 0.6− | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2002 04 14 | 644 | 0.2+ | 0.8− | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.7+ | 0.3− |

**2002 GV$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.91087 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.00340179 | $\omega$ | 58.79052 | | −0.46999256 | | −0.88206377 |
| $a$ | 43.7855718 | $\Omega$ | 59.27787 | | +0.79633495 | | −0.43971923 |
| $e$ | 0.0898037 | $i$ | 2.18120 | | +0.38073303 | | −0.16914640 |
| $P$ | 290 | $H$ | 5.7 | $G$ | 0.15 | $U$ | 8 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 06 | 807 | 0.3− | 0.2+ | 2002 04 08 | 807 | 0.2− | 0.0 | 2004 02 18 | 493 | 0.2− | 0.0 |
| 2002 04 06 | 807 | 0.0 | 0.0 | 2002 04 09 | 807 | 0.3− | 0.1− | 2004 02 18 | 493 | 0.3− | 0.2+ |
| 2002 04 07 | 807 | 0.3− | 0.3+ | 2004 02 17 | 493 | 0.2− | 0.1+ | 2004 02 18 | 493 | 0.2− | 0.3+ |
| 2002 04 07 | 807 | 0.6− | 0.0 | 2004 02 17 | 493 | 0.5− | 0.1− | 2004 02 18 | 493 | 0.1− | 0.2+ |
| 2002 04 07 | 807 | 0.4− | 0.2+ | 2004 02 17 | 493 | 0.1− | 0.0 | | | | |
| 2002 04 08 | 807 | 0.2− | 0.2+ | 2004 02 18 | 493 | 0.2− | 0.1+ | | | | |

**2002 GL$_{33}$ = 1999 FA$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.57110 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29810440 | $\omega$ | 339.12208 | | +0.71172612 | | −0.69515522 |
| $a$ | 2.2193398 | $\Omega$ | 65.33844 | | +0.65922395 | | +0.61130719 |
| $e$ | 0.0755962 | $i$ | 6.38216 | | +0.24263080 | | +0.37823635 |
| $P$ | 3.31 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2002 04 01 | 644 | 0.1− | 0.6+ | 2005 01 07 | 704 | 0.5− | 0.2− |
| 1999 03 20 | 645 | 0.0 | 0.1− | 2002 04 01 | 644 | 0.0 | 0.1+ | 2005 01 07 | 704 | 0.2+ | 0.5+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2002 04 01 | 644 | 0.3+ | 0.4+ | 2005 01 16 | 704 | 0.1+ | 0.1− |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2002 04 02 | 644 | 0.2− | 0.1+ | 2005 01 16 | 704 | 0.2− | 0.1+ |
| 2002 01 21 | 644 | 0.2− | 0.3+ | 2002 04 02 | 644 | 0.1+ | 0.2− | 2005 01 16 | 704 | 0.2+ | 0.3− |
| 2002 01 21 | 644 | 0.3+ | 0.2+ | 2002 04 02 | 644 | 0.0 | 0.0 | 2005 02 03 | 704 | 0.4+ | 1.0+ |
| 2002 01 21 | 644 | 0.2− | 0.3− | 2004 12 15 | 704 | 0.3+ | 1.0− | 2005 02 03 | 704 | 1.2− | 0.2+ |
| 2002 02 10 | 704 | 0.3− | 0.7+ | 2004 12 15 | 704 | 0.3+ | 0.1− | 2005 02 03 | 704 | 0.8+ | 0.3− |
| 2002 02 10 | 704 | 0.1− | 0.0 | 2004 12 15 | 704 | 0.5− | 0.7− | 2005 02 03 | 704 | (2.9− | 0.5−) |
| 2002 02 10 | 704 | 0.4− | 0.3− | 2004 12 15 | 704 | 0.4+ | 1.2+ | 2006 05 25 | 568 | 0.3+ | 1.0+ |
| 2002 03 11 | 644 | 0.6+ | 0.4+ | 2005 01 07 | 704 | 0.4− | 0.6+ | 2006 05 25 | 568 | 0.3+ | 1.1+ |
| 2002 03 11 | 644 | 0.5+ | 0.4+ | 2005 01 07 | 704 | 0.3− | 0.1− | 2006 05 25 | 568 | 0.3+ | 0.9+ |
| 2002 03 11 | 644 | 0.5+ | 0.4+ | 2005 01 07 | 704 | 0.6+ | 0.3+ | | | | |

**2002 GA$_{41}$ = 1998 HP$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.49317 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23463792 | $\omega$ | 19.16996 | | −0.49808974 | | +0.85825082 |
| $a$ | 2.6033781 | $\Omega$ | 221.21042 | | −0.81809024 | | −0.51242185 |
| $e$ | 0.1761443 | $i$ | 10.82572 | | −0.28746299 | | −0.02879888 |
| $P$ | 4.20 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 704 | 0.1− | 0.4+ | 2002 04 05 | 699 | 1.4+ | 0.2+ | 2003 09 23 | 644 | 0.2+ | 0.4+ |
| 1998 04 20 | 704 | 0.2− | 0.6+ | 2002 04 05 | 699 | 1.1+ | 0.5+ | 2004 11 10 | 691 | 0.2+ | 0.1+ |
| 1998 04 20 | 704 | 0.6− | 0.0 | 2002 04 05 | 699 | (3.0+ | 0.6+) | 2004 11 10 | 691 | 0.2+ | 0.0 |
| 1998 04 20 | 704 | 0.3+ | 0.3− | 2002 04 08 | 644 | 1.1+ | 0.1+ | 2004 11 10 | 691 | 0.1− | 0.2− |
| 1998 04 20 | 704 | 1.5− | 0.4− | 2002 04 08 | 644 | 0.4+ | 0.5− | 2004 11 10 | 695 | 0.3− | 0.4− |
| 1998 04 22 | 704 | 0.8+ | 1.1+ | 2002 04 08 | 644 | 1.2+ | 0.5+ | 2004 11 10 | 695 | 0.6− | 0.4− |
| 1998 04 22 | 704 | 0.3+ | 0.4+ | 2003 09 03 | 704 | 0.2− | 0.6+ | 2005 11 13 | 291 | 0.0 | 0.5+ |
| 1998 04 22 | 704 | 0.0 | 1.6− | 2003 09 03 | 704 | 0.5− | 0.8+ | 2005 11 13 | 291 | 0.0 | 0.5+ |
| 1998 04 22 | 704 | 0.2− | 0.8− | 2003 09 03 | 704 | 0.0 | 1.2+ | 2005 11 13 | 291 | 0.0 | 0.6+ |
| 1998 04 22 | 704 | (6.3− | 0.5−) | 2003 09 17 | 691 | 0.3− | 0.2+ | 2006 01 26 | 699 | 0.6+ | 0.8− |
| 2002 04 04 | 608 | 0.4− | 1.0+ | 2003 09 17 | 691 | 0.1− | 0.0 | 2006 01 26 | 699 | 0.2− | 1.6+ |
| 2002 04 04 | 608 | 0.2− | 1.2+ | 2003 09 17 | 691 | 0.0 | 0.3+ | 2006 01 26 | 699 | 1.1− | 0.2− |
| 2002 04 04 | 608 | 0.1− | 0.8+ | 2003 09 23 | 644 | 0.7+ | 0.8+ | 2006 01 26 | 699 | 0.8− | 1.9− |
| 2002 04 05 | 699 | (2.4+ | 0.1+) | 2003 09 23 | 644 | 0.2− | 0.3+ | | | | |

**2002 GZ$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 151.55850 | | | (2000.0) | | |
| $n$ | 0.30099470 | $\omega$ | 333.30803 | | −0.99605182 | −0.08505660 |
| $a$ | 2.2051094 | $\Omega$ | 201.85732 | | +0.08863284 | −0.93670725 |
| $e$ | 0.0922909 | $i$ | 3.91504 | | +0.00499892 | −0.33962466 |
| $P$ | 3.27 | $H$ | 18.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.0 | 0.2+ | 2002 04 14 | 704 | 0.2− | 0.6+ | 2003 09 29 | 645 | 0.1− | 0.1− |
| 2002 04 04 | 644 | 0.1+ | 0.1− | 2002 04 14 | 704 | 0.1− | 0.4+ | 2005 02 14 | 691 | 0.3+ | 0.1+ |
| 2002 04 04 | 644 | 0.3+ | 0.4+ | 2002 04 14 | 704 | 0.7− | 0.4+ | 2005 02 14 | 691 | 0.1+ | 0.3+ |
| 2002 04 08 | 644 | 0.0 | 0.3+ | 2002 04 14 | 644 | 0.2+ | 0.3+ | 2005 02 14 | 691 | 0.0 | 0.0 |
| 2002 04 08 | 644 | 0.1+ | 0.3+ | 2002 04 14 | 704 | 0.1− | 0.7+ | 2005 03 03 | 703 | 1.0− | 1.1− |
| 2002 04 08 | 644 | 0.0 | 0.3+ | 2002 04 14 | 644 | 0.2− | 0.1+ | 2005 03 03 | 703 | 0.8− | 1.5− |
| 2002 04 12 | 291 | 0.1+ | 0.7− | 2002 04 14 | 644 | 0.0 | 0.6+ | 2005 03 03 | 703 | (0.3+ | 2.5−) |
| 2002 04 12 | 291 | 0.3+ | 0.1− | 2003 09 16 | 691 | 0.4+ | 0.3+ | 2005 03 03 | 703 | 0.4− | 0.4− |
| 2002 04 12 | 291 | 0.1+ | 0.1− | 2003 09 16 | 691 | 0.6+ | 0.4+ | 2005 03 17 | G96 | 0.3− | 0.1− |
| 2002 04 12 | 704 | 0.3+ | 0.9− | 2003 09 16 | 691 | 0.7− | 0.5+ | 2005 03 17 | G96 | 0.3+ | 0.0 |
| 2002 04 12 | 704 | 0.6+ | 0.5− | 2003 09 26 | 645 | 0.0 | 0.1− | 2005 03 17 | G96 | 0.1− | 0.0 |
| 2002 04 12 | 704 | 1.4− | 1.1− | 2003 09 26 | 645 | 0.0 | 0.1− | 2005 03 17 | G96 | 0.1− | 0.0 |
| 2002 04 14 | 704 | 1.4− | 0.9+ | 2003 09 29 | 645 | 0.0 | 0.1− | | | | |

**2002 GF$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.68209 | | | (2000.0) | | |
| $n$ | 0.29363169 | $\omega$ | 76.82369 | | +0.09067631 | +0.99580633 |
| $a$ | 2.2418201 | $\Omega$ | 198.39193 | | −0.92796647 | +0.08005903 |
| $e$ | 0.2124626 | $i$ | 2.20649 | | −0.36146375 | +0.04427540 |
| $P$ | 3.36 | $H$ | 17.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.7− | 0.1− | 2002 04 15 | 644 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.5− |
| 1999 07 13 | 704 | 0.7+ | 0.1− | 2002 04 15 | 644 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.9− | 0.7+ |
| 1999 07 13 | 704 | 0.2− | 0.5− | 2002 04 15 | 644 | 0.4+ | 0.1− | 2006 09 19 | 699 | 0.3− | 1.2− |
| 1999 07 13 | 704 | 1.0+ | 0.2+ | 2002 04 18 | 644 | 0.1+ | 0.9− | 2006 09 19 | 699 | 1.0+ | 1.0+ |
| 1999 07 13 | 704 | 0.7− | 0.1− | 2002 04 18 | 644 | 0.1− | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2002 03 11 | 691 | 0.1− | 0.9+ | 2002 04 18 | 644 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.3+ | 0.2+ |
| 2002 03 11 | 691 | 0.1+ | 0.1− | 2005 03 11 | G96 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2002 03 11 | 691 | 0.3+ | 0.6+ | 2005 03 11 | G96 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2002 04 05 | 699 | 0.2+ | 0.2− | 2005 03 11 | G96 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2002 04 05 | 699 | (0.7+ | 1.7+) | 2005 03 11 | G96 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2002 04 05 | 699 | 0.5+ | 0.2− | 2005 03 11 | G96 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2002 04 05 | 699 | 0.5− | 1.2+ | 2005 03 11 | G96 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.5− | 0.3− |
| 2002 04 08 | 291 | 0.0 | 0.3− | 2005 03 11 | G96 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.3+ |
| 2002 04 08 | 291 | 0.1+ | 0.2+ | 2005 03 11 | G96 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2002 04 08 | 291 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.0 |
| 2002 04 14 | 704 | (1.6− | 1.0+) | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 04 14 | 704 | (0.5− | 3.0+) | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2002 04 14 | 704 | (0.1− | 2.2+) | 2006 09 17 | 291 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.3+ |
| 2002 04 14 | 704 | (0.5− | 1.7+) | 2006 09 17 | 291 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 04 14 | 704 | 0.6− | 1.4+ | 2006 09 17 | 291 | 0.2− | 0.2+ | | | | |

**2002 GE$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 108.65655 | | | (2000.0) | | |
| $n$ | 0.29641850 | $\omega$ | 125.43472 | | −0.79994550 | +0.59609461 |
| $a$ | 2.2277469 | $\Omega$ | 91.25462 | | −0.57049665 | −0.71983215 |
| $e$ | 0.1199563 | $i$ | 3.95643 | | −0.18606656 | −0.35568651 |
| $P$ | 3.33 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 699 | 0.9+ | 0.5+ | 2002 04 11 | 704 | 0.2+ | 0.9− | 2002 04 16 | 704 | 0.3− | 0.5+ |
| 2002 04 09 | 699 | 0.1− | 0.2+ | 2002 04 11 | 704 | 0.9+ | 0.8− | 2003 09 26 | 645 | 0.0 | 0.0 |
| 2002 04 09 | 699 | 0.8− | 0.6− | 2002 04 11 | 704 | 0.8− | 0.3+ | 2003 09 26 | 645 | 0.0 | 0.1− |
| 2002 04 09 | 699 | 0.2+ | 0.6+ | 2002 04 15 | 644 | 0.0 | 0.0 | 2003 09 28 | 645 | 0.0 | 0.1− |
| 2002 04 10 | 704 | 0.3− | 0.3− | 2002 04 15 | 644 | 0.3+ | 0.1− | 2003 09 28 | 645 | 0.0 | 0.0 |
| 2002 04 10 | 704 | 0.6+ | 0.8+ | 2002 04 15 | 644 | 0.3+ | 0.3− | 2003 10 02 | 691 | 0.1− | 0.4+ |
| 2002 04 10 | 704 | 0.1+ | 0.2− | 2002 04 16 | 704 | 0.9− | 0.4+ | 2003 10 02 | 691 | 0.1− | 0.3+ |
| 2002 04 10 | 704 | 0.7+ | 0.3+ | 2002 04 16 | 704 | 0.5− | 0.2+ | 2003 10 02 | 691 | 0.2+ | 0.3+ |
| 2002 04 11 | 704 | (0.7+ | 2.4−) | 2002 04 16 | 704 | 0.7− | 0.9+ | | | | |
| 2002 04 11 | 704 | 0.5+ | 1.7− | 2002 04 16 | 704 | 0.1− | 0.5+ | | | | |

**2002 GG$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 150.55737 | | | (2000.0) | | |
| $n$ | 0.18595664 | $\omega$ | 316.17425 | | +0.97714791 | +0.10949099 |
| $a$ | 3.0399160 | $\Omega$ | 38.66782 | | +0.01939487 | +0.80762536 |
| $e$ | 0.0799686 | $i$ | 16.95362 | | −0.21167380 | +0.57944197 |
| $P$ | 5.30 | $H$ | 14.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.2+ | 0.5− | 2002 04 10 | 704 | 1.2+ | 1.2+ | 2004 09 21 | 699 | 0.5+ | 0.5+ |
| 1999 10 03 | 691 | 0.2+ | 0.4− | 2002 04 10 | 704 | (2.4+ | 1.3−) | 2004 09 21 | 699 | 0.5− | 0.1− |
| 1999 10 03 | 691 | 0.2+ | 0.3− | 2002 04 10 | 704 | 0.1− | 1.2+ | 2004 09 21 | 699 | 0.4− | 0.2+ |
| 1999 10 21 | 704 | 0.1+ | 0.6− | 2002 04 10 | 704 | 0.3− | 0.1+ | 2004 09 21 | 699 | 1.0− | 0.2+ |
| 1999 10 21 | 704 | 0.1− | 0.2− | 2002 04 13 | 644 | 0.7+ | 0.8+ | 2004 10 07 | 704 | 0.6+ | 1.4+ |
| 1999 10 21 | 704 | 0.2− | 0.2− | 2002 04 13 | 644 | 0.8+ | 0.6+ | 2004 10 07 | 704 | 0.2+ | 0.8+ |
| 1999 11 04 | 704 | 1.5+ | 0.2+ | 2002 04 13 | 644 | 0.5+ | 0.6+ | 2004 10 07 | 704 | 0.7+ | 0.8+ |
| 1999 11 04 | 704 | 0.5+ | 0.1+ | 2002 04 15 | 644 | 0.6+ | 0.2− | 2004 10 07 | 704 | 0.1+ | 0.3+ |
| 1999 11 04 | 704 | 0.1− | 0.0 | 2002 04 15 | 644 | 0.8+ | 0.6− | 2004 10 07 | 704 | 0.3+ | 0.4+ |
| 1999 12 04 | 703 | 0.8− | 2.0+ | 2002 04 15 | 644 | 1.0+ | 0.3− | 2004 10 18 | 704 | 1.3− | 1.1+ |
| 1999 12 04 | 703 | 0.5− | 0.5− | 2002 04 16 | 704 | 0.1+ | 0.5− | 2004 10 18 | 704 | 1.7− | 0.3+ |
| 1999 12 04 | 703 | 1.8− | 0.6+ | 2002 04 16 | 704 | 0.5+ | 1.3− | 2004 10 18 | 704 | 0.4− | 1.2− |
| 1999 12 04 | 703 | 1.3+ | 0.3+ | 2002 04 16 | 704 | 0.1− | 0.0 | 2004 10 18 | 704 | 1.3− | 0.4− |
| 2001 01 17 | 704 | 0.3+ | 0.2+ | 2002 04 16 | 704 | 0.6− | 1.0+ | 2004 10 18 | 704 | 0.5− | 0.8− |
| 2001 01 17 | 704 | 0.4− | 0.8+ | 2002 04 16 | 704 | 0.2− | 0.2+ | 2004 11 12 | 704 | 1.1− | 2.1+ |
| 2001 01 17 | 704 | 0.4+ | 0.1− | 2004 09 08 | 704 | 1.4+ | 0.6+ | 2004 11 12 | 704 | 0.2− | 0.5− |
| 2002 04 09 | 699 | 0.7+ | 0.2− | 2004 09 08 | 704 | 0.0 | 0.9+ | 2004 11 12 | 704 | 0.0 | 1.0+ |
| 2002 04 09 | 699 | 0.5− | 0.1+ | 2004 09 08 | 704 | 0.4− | 0.2− | 2004 11 12 | 704 | 0.5− | 1.0+ |
| 2002 04 09 | 699 | 0.5− | 1.0+ | 2004 09 08 | 704 | 0.4− | 0.1− | | | | |
| 2002 04 09 | 699 | 0.5− | 1.7+ | 2004 09 08 | 704 | 0.5− | 0.0 | | | | |

**2002 GV$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 99.64416 | | | (2000.0) | | |
| $n$ | 0.31559328 | $\omega$ | 33.07835 | | +0.26588915 | +0.96312583 |
| $a$ | 2.1365721 | $\Omega$ | 252.37025 | | −0.89356115 | +0.23022589 |
| $e$ | 0.2284918 | $i$ | 2.47342 | | −0.36173392 | +0.13922885 |
| $P$ | 3.12 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 704 | 0.3+ | 0.6+ | 2002 04 16 | 704 | (2.6+ | 1.1+) | 2005 03 03 | 691 | 0.1− | 0.5− |
| 2002 04 09 | 704 | 0.1− | 0.8+ | 2002 04 29 | 644 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2002 04 09 | 704 | 1.1− | 1.4+ | 2002 04 29 | 644 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2002 04 09 | 704 | 0.9− | 0.4+ | 2002 04 29 | 644 | 0.1+ | 1.0+ | 2006 11 11 | G96 | 0.7+ | 0.2− |
| 2002 04 10 | 644 | 0.5+ | 0.6+ | 2002 05 09 | 644 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.7+ | 0.0 |
| 2002 04 10 | 644 | 0.6+ | 0.4+ | 2002 05 09 | 644 | 0.1− | 0.6+ | 2006 11 15 | 691 | 0.5− | 0.2+ |
| 2002 04 10 | 644 | 0.3+ | 0.7+ | 2002 05 09 | 644 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2002 04 14 | 704 | 0.4− | 0.4− | 2002 05 13 | 704 | 0.9+ | 0.3− | 2006 11 15 | 691 | 0.2− | 0.1− |
| 2002 04 14 | 704 | 0.3+ | 0.8− | 2002 05 13 | 704 | 1.2− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2002 04 14 | 704 | 0.2+ | 0.6− | 2002 05 13 | 704 | 0.8+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2002 04 14 | 704 | 0.1− | 0.3− | 2002 05 13 | 704 | 0.4+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2002 04 14 | 704 | 0.0 | 0.7− | 2002 05 13 | 704 | 1.1+ | 0.7+ | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2002 04 16 | 704 | (0.2+ | 1.8−) | 2005 03 03 | 691 | 0.0 | 0.5− | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2002 04 16 | 704 | 0.0 | 0.7− | 2005 03 03 | 691 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1+ |

**2002 GQ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.14543 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30060693 | $\omega$ | 192.11645 | | −0.20317849 | +0.97574032 | |
| $a$ | 2.2070054 | $\Omega$ | 66.20538 | | −0.89074021 | −0.14961170 | |
| $e$ | 0.1125588 | $i$ | 5.11291 | | −0.40657151 | −0.15983481 | |
| $P$ | 3.28 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 18 | 691 | 0.2+ | 0.0 | 2002 04 11 | 704 | 0.7− | 0.5+ | 2003 10 20 | 691 | 0.1+ | 0.2− |
| 2000 11 18 | 691 | 0.3+ | 0.2+ | 2002 04 13 | 644 | 0.1+ | 0.2+ | 2003 11 21 | 926 | 0.6− | 0.9+ |
| 2000 11 18 | 691 | 0.7+ | 0.1− | 2002 04 13 | 644 | 0.1+ | 0.3+ | 2003 11 21 | 926 | 0.3− | 0.6+ |
| 2000 11 29 | 691 | 0.3− | 0.0 | 2002 04 13 | 644 | 0.0 | 0.3+ | 2003 11 21 | 926 | 0.2+ | 0.3+ |
| 2000 11 29 | 691 | 0.4− | 0.2+ | 2002 04 16 | 704 | 0.2+ | 0.5+ | 2006 08 28 | D35 | (2.0+ | 0.3−) |
| 2000 11 29 | 691 | 0.2− | 0.2− | 2002 04 16 | 704 | 0.2− | 0.3− | 2006 08 28 | D35 | (2.6+ | 0.5+) |
| 2002 04 10 | 704 | 0.9+ | 0.4− | 2002 04 16 | 704 | 0.4− | 0.3+ | 2006 08 28 | D35 | (2.0+ | 0.1−) |
| 2002 04 10 | 704 | (2.6+ | 1.0+) | 2002 04 16 | 704 | 0.6− | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.6+ |
| 2002 04 10 | 704 | 1.0+ | 0.4− | 2003 10 20 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.8− |
| 2002 04 10 | 704 | 0.8+ | 0.1− | 2003 10 20 | 644 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2002 04 11 | 704 | 0.2− | 0.5+ | 2003 10 20 | 691 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.7+ | 1.4+ |
| 2002 04 11 | 704 | 0.8− | 0.7− | 2003 10 20 | 644 | 0.4− | 0.3− | | | | |
| 2002 04 11 | 704 | 0.5+ | 1.2+ | 2003 10 20 | 691 | 0.3− | 0.2+ | | | | |

**2002 GX$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.71501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29125076 | $\omega$ | 7.48435 | | +0.29278143 | −0.94980407 | |
| $a$ | 2.2540212 | $\Omega$ | 65.54338 | | +0.87088364 | +0.21728971 | |
| $e$ | 0.0524072 | $i$ | 6.95550 | | +0.39476667 | +0.22507203 | |
| $P$ | 3.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 24 | 704 | 0.2+ | 0.1− | 2002 04 11 | 704 | 0.3− | 0.7+ | 2003 08 31 | 704 | 0.2− | 0.9+ |
| 2000 10 24 | 704 | 0.3− | 1.5+ | 2002 04 11 | 704 | 0.5+ | 0.5+ | 2003 08 31 | 704 | 0.3− | 0.2+ |
| 2000 10 24 | 704 | 0.6+ | 0.7+ | 2002 04 15 | 699 | 0.1− | 0.4+ | 2003 09 23 | 608 | 0.4− | 0.4− |
| 2000 10 24 | 704 | 0.6+ | 0.5− | 2002 04 15 | 699 | 0.6− | 0.2− | 2003 09 23 | 608 | 0.2− | 0.0 |
| 2000 10 24 | 704 | 0.8+ | 0.5+ | 2002 04 15 | 699 | 0.2+ | 0.4+ | 2003 09 23 | 608 | 0.1− | 0.1+ |
| 2000 11 01 | 704 | 1.3− | 1.3− | 2002 04 15 | 699 | 0.0 | 0.7− | 2005 03 01 | 703 | 0.9− | 0.7+ |
| 2000 11 01 | 704 | 0.1+ | 0.0 | 2002 04 16 | 704 | 0.5− | 0.6+ | 2005 03 01 | 703 | 0.5+ | 0.3+ |
| 2000 11 01 | 704 | 0.5− | 0.0 | 2002 04 16 | 704 | 0.1− | 0.0 | 2005 03 01 | 703 | 2.1+ | 0.6+ |
| 2000 11 01 | 704 | 0.8− | 1.3+ | 2002 04 16 | 704 | 0.1+ | 0.5+ | 2005 03 01 | 703 | 0.6+ | 0.8− |
| 2002 04 10 | 704 | 0.8+ | 0.2+ | 2002 04 16 | 704 | 0.3+ | 0.3− | 2005 03 09 | 703 | 0.5− | 0.3− |
| 2002 04 10 | 704 | 0.5+ | 0.4+ | 2003 08 23 | 644 | 0.1+ | 0.3+ | 2005 03 09 | 703 | 0.1+ | 1.1+ |
| 2002 04 10 | 704 | 0.3+ | 0.3+ | 2003 08 23 | 644 | 0.2+ | 0.4+ | 2005 03 09 | 703 | 0.1+ | 0.6+ |
| 2002 04 11 | 704 | 0.4− | 1.3+ | 2003 08 23 | 644 | 0.1+ | 0.5+ | 2005 03 09 | 703 | 1.1− | 0.1+ |
| 2002 04 11 | 704 | 0.5+ | 0.1− | 2003 08 31 | 704 | 0.5− | 1.3+ | | | | |
| 2002 04 11 | 704 | 0.1+ | 0.6− | 2003 08 31 | 704 | 0.5− | 0.1− | | | | |

**2002 GO$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.34452 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28590699 | $\omega$ | 12.67685 | | −0.99249784 | −0.11143221 | |
| $a$ | 2.2820205 | $\Omega$ | 160.70851 | | +0.09460938 | −0.96061731 | |
| $e$ | 0.1695339 | $i$ | 8.75883 | | +0.07744093 | −0.25455304 | |
| $P$ | 3.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 25 | 691 | 0.1− | 0.5− | 2002 04 12 | 644 | 0.5− | 0.1+ | 2002 06 10 | 704 | 0.1+ | 0.3+ |
| 1995 03 25 | 691 | 0.2− | 0.7− | 2002 04 12 | 644 | 0.3− | 0.1+ | 2002 06 10 | 704 | 0.6+ | 0.2+ |
| 1995 03 25 | 691 | 0.3− | 0.6− | 2002 04 15 | 699 | 0.3− | 0.4+ | 2002 06 10 | 704 | 0.3+ | 1.0+ |
| 2002 01 21 | 704 | (3.2+ | 1.9−) | 2002 04 15 | 699 | 0.1+ | 0.3− | 2002 06 10 | 704 | 0.4+ | 1.2+ |
| 2002 01 21 | 704 | 1.2+ | 0.1+ | 2002 04 15 | 699 | 0.5+ | 0.2− | 2004 12 18 | 704 | 0.0 | 0.5+ |
| 2002 01 21 | 704 | 0.6+ | 0.4+ | 2002 04 15 | 699 | 0.1− | 0.1+ | 2004 12 18 | 704 | 0.5+ | 0.3+ |
| 2002 02 07 | 704 | 0.3+ | 0.1− | 2002 04 16 | 704 | 0.4+ | 0.4+ | 2004 12 18 | 704 | 0.1+ | 1.0+ |
| 2002 02 07 | 704 | 1.2+ | 0.1+ | 2002 04 16 | 704 | 0.8+ | 0.6+ | 2004 12 18 | 704 | 0.2+ | 0.8+ |
| 2002 02 07 | 704 | 0.2− | 0.4+ | 2002 04 16 | 704 | 0.9+ | 0.1+ | 2004 12 18 | 704 | 0.1− | 0.6+ |
| 2002 02 07 | 704 | 0.6+ | 0.4− | 2002 04 16 | 704 | 0.7+ | 0.5+ | 2005 04 12 | 704 | 0.5− | 0.9+ |
| 2002 02 07 | 704 | (1.6+ | 0.7+) | 2002 04 16 | 704 | 0.7+ | 0.3+ | 2005 04 12 | 704 | 1.4− | 0.7+ |
| 2002 02 20 | 704 | 1.2+ | 0.6+ | 2002 05 07 | 704 | 0.1− | 0.0 | 2005 04 12 | 704 | 0.2+ | 0.9+ |
| 2002 02 20 | 704 | 1.1+ | 0.3+ | 2002 05 07 | 704 | 0.0 | 0.2+ | 2006 05 11 | G96 | 0.3+ | 0.3+ |
| 2002 02 20 | 704 | 0.7+ | 0.1+ | 2002 05 07 | 704 | 0.0 | 0.2− | 2006 05 11 | G96 | 0.8− | 0.5− |
| 2002 02 20 | 704 | 1.1+ | 0.2− | 2002 05 07 | 704 | 0.5− | 0.5− | 2006 05 11 | G96 | 0.3− | 0.5− |
| 2002 04 10 | 704 | 0.5− | 0.1+ | 2002 05 07 | 704 | 0.0 | 0.4+ | 2006 05 11 | G96 | 0.3− | 0.4− |
| 2002 04 10 | 704 | 0.7− | 0.2+ | 2002 05 12 | 644 | 0.1+ | 0.0 | 2006 05 25 | 691 | 0.0 | 0.4+ |
| 2002 04 10 | 704 | 0.4− | 0.0 | 2002 05 12 | 644 | 0.2− | 0.0 | 2006 05 25 | 691 | 0.1+ | 0.2+ |
| 2002 04 10 | 704 | 0.3− | 0.1+ | 2002 05 12 | 644 | 0.2− | 0.0 | 2006 05 25 | 691 | 0.2+ | 0.2+ |
| 2002 04 10 | 704 | 0.4− | 0.1+ | 2002 05 27 | 644 | 0.1− | 0.1− | 2006 06 20 | 691 | 0.4− | 0.2− |
| 2002 04 11 | 704 | 0.9− | 0.4+ | 2002 05 27 | 644 | 0.4+ | 0.1− | 2006 06 20 | 691 | 0.3+ | 0.1+ |
| 2002 04 11 | 704 | (2.3− | 0.1+) | 2002 05 27 | 644 | 0.1+ | 0.0 | 2006 06 20 | 691 | 0.1− | 0.3− |
| 2002 04 11 | 704 | 1.0− | 0.5+ | 2002 06 03 | 704 | 1.0+ | 1.3+ | 2006 08 13 | 644 | 0.1+ | 0.0 |
| 2002 04 11 | 704 | 1.1− | 0.1− | 2002 06 03 | 704 | (1.8+ | 0.6+) | 2006 08 13 | 644 | 0.1− | 0.0 |
| 2002 04 11 | 704 | 1.4− | 0.0 | 2002 06 03 | 704 | (1.7+ | 0.1−) | 2006 08 13 | 644 | 0.4+ | 0.5+ |
| 2002 04 12 | 644 | 0.3− | 0.0 | 2002 06 10 | 704 | 0.5+ | 0.0 | | | | |

**2002 GS$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.44452 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26975013 | $\omega$ | 115.48679 | | −0.87712921 | +0.43922179 | |
| $a$ | 2.3722563 | $\Omega$ | 91.09140 | | −0.47995540 | −0.78741727 | |
| $e$ | 0.1804088 | $i$ | 11.20230 | | −0.01694579 | −0.43250233 | |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 10 | 704 | 0.3− | 0.6+ | 2002 05 07 | 704 | 0.4+ | 0.2− | 2002 06 06 | 699 | 0.7+ | 0.1− |
| 2002 04 10 | 704 | 0.2+ | 0.1− | 2002 05 07 | 704 | 0.7− | 0.2− | 2002 06 09 | 608 | 0.6− | 0.6− |
| 2002 04 10 | 704 | 0.1− | 0.9+ | 2002 05 07 | 704 | 0.4− | 0.2− | 2002 06 09 | 608 | 0.7− | 0.3+ |
| 2002 04 10 | 704 | 1.0+ | 0.2− | 2002 05 07 | 704 | 0.1− | 0.6+ | 2002 06 09 | 608 | 0.7− | 0.2+ |
| 2002 04 10 | 704 | 0.3− | 0.3− | 2002 05 07 | 704 | 0.1+ | 0.2− | 2004 12 12 | 691 | 0.3+ | 0.3− |
| 2002 04 11 | 644 | 0.4+ | 0.4+ | 2002 05 09 | 608 | 0.3− | 0.1+ | 2004 12 12 | 691 | 0.0 | 0.1− |
| 2002 04 11 | 644 | 0.3+ | 0.7+ | 2002 05 09 | 608 | 0.3+ | 1.3− | 2004 12 12 | 691 | 0.2− | 0.0 |
| 2002 04 11 | 644 | 0.5− | 0.0 | 2002 05 09 | 608 | 0.2+ | 0.9− | 2006 05 22 | G96 | 0.3− | 0.1− |
| 2002 04 11 | 644 | 0.3+ | 0.1+ | 2002 06 06 | 699 | 0.6+ | 0.8− | 2006 05 22 | G96 | 0.1− | 0.1+ |
| 2002 04 11 | 644 | 0.4− | 0.4+ | 2002 06 06 | 699 | 0.2+ | 1.1+ | 2006 05 22 | G96 | 0.1+ | 0.4− |
| 2002 04 11 | 644 | 0.6− | 0.4+ | 2002 06 06 | 699 | 0.7+ | 1.1− | 2006 05 22 | G96 | 0.2+ | 0.3− |

**2002 GT$_{89}$ = 2006 SE$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.69954 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30545355 | $\omega$ | 107.88100 | | +0.62704853 | +0.77843164 | |
| $a$ | 2.1835976 | $\Omega$ | 201.03519 | | −0.74198143 | +0.58541890 | |
| $e$ | 0.2055311 | $i$ | 4.67082 | | −0.23722080 | +0.22655882 | |
| $P$ | 3.23 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 04 08 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2002 04 08 | 644 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2002 04 12 | 704 | 1.2− | 0.5+ | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 04 12 | 704 | 0.8− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.4− |
| 2002 04 12 | 704 | 0.8+ | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 04 12 | 704 | 0.5− | 1.2+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | (1.9− | 0.4+) |
| 2002 04 14 | 704 | 0.2+ | 1.0+ | 2006 10 15 | 691 | 1.0+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 04 14 | 704 | 1.4+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 1.2− | 0.5+ |
| 2002 04 14 | 704 | 1.3− | 0.8− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.6− |
| 2002 04 14 | 704 | 0.3+ | 1.2− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2002 04 14 | 704 | 1.4+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.8− |
| 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.8+ | 0.5− | 2006 11 17 | 703 | 0.3+ | 1.0− | | |
| 2006 09 30 | G96 | 0.5− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1− | | |

**2002 GQ$_{90}$ = 2006 DJ$_{203}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.08932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21991245 | $\omega$ | 266.58605 | | +0.69052840 | +0.71936836 | |
| $a$ | 2.7183341 | $\Omega$ | 47.39259 | | −0.61630197 | +0.63971037 | |
| $e$ | 0.0527226 | $i$ | 5.87710 | | −0.37860587 | +0.27070241 | |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.2+ | 0.8− | 2002 04 17 | 704 | 0.4− | 0.3+ | 2006 02 22 | 699 | 0.5+ | 0.4+ | | |
| 2002 04 08 | 644 | 0.3+ | 0.8− | 2002 04 17 | 704 | 0.6− | 0.1− | 2006 02 22 | 699 | 0.2+ | 0.3+ | | |
| 2002 04 08 | 644 | 0.3+ | 0.6− | 2002 04 17 | 704 | 0.5− | 0.2+ | 2006 02 22 | 699 | 1.4+ | 1.5− | | |
| 2002 04 12 | 704 | 0.1+ | 0.4− | 2002 04 17 | 704 | 0.4− | 0.3+ | 2006 03 03 | 699 | 0.2− | 0.2+ | | |
| 2002 04 12 | 704 | 0.6+ | 0.4− | 2002 04 17 | 704 | 0.6− | 0.1+ | 2006 03 03 | 699 | 0.8− | 0.0 | | |
| 2002 04 12 | 704 | 0.1− | 0.4− | 2002 04 20 | 644 | 0.8+ | 0.5+ | 2006 03 03 | 699 | 1.0− | 0.3+ | | |
| 2002 04 14 | 644 | 0.3− | 0.2+ | 2002 04 20 | 644 | 0.5− | 0.9+ | 2006 03 03 | 699 | 0.1− | 0.4+ | | |
| 2002 04 14 | 644 | 0.2+ | 0.0 | 2002 04 20 | 644 | 1.0+ | 0.7+ | | | | | | |
| 2002 04 14 | 644 | 0.1− | 0.2+ | 2006 02 22 | 699 | (3.6+ | 0.8+) | | | | | | |

**2002 GM$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.80408 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26002292 | $\omega$ | 288.98341 | | −0.36187560 | +0.93205306 | |
| $a$ | 2.4310560 | $\Omega$ | 319.78662 | | −0.84448702 | −0.33592257 | |
| $e$ | 0.0875935 | $i$ | 1.59547 | | −0.39482620 | −0.13576864 | |
| $P$ | 3.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 691 | 0.4+ | 0.3− | 2002 04 14 | 704 | 0.2+ | 0.2− | 2006 05 06 | G96 | 0.2− | 0.3− | | |
| 2002 04 09 | 691 | 0.2+ | 0.2− | 2002 04 14 | 704 | 0.9+ | 0.3− | 2006 05 20 | 691 | 0.0 | 0.0 | | |
| 2002 04 09 | 691 | 0.5+ | 0.2− | 2006 04 07 | 691 | 0.4+ | 0.0 | 2006 05 20 | 691 | 0.1− | 0.1− | | |
| 2002 04 12 | 704 | 1.3− | 0.1+ | 2006 04 07 | 691 | 0.2− | 0.1− | 2006 05 20 | 691 | 0.0 | 0.1− | | |
| 2002 04 12 | 704 | 1.5− | 1.0+ | 2006 04 07 | 691 | 0.1− | 0.0 | 2006 06 02 | 691 | 0.2+ | 0.3+ | | |
| 2002 04 12 | 704 | 1.6− | 1.0+ | 2006 05 06 | G96 | 0.3− | 0.1− | 2006 06 02 | 691 | 0.1+ | 0.0 | | |
| 2002 04 14 | 704 | 0.6− | 0.8+ | 2006 05 06 | G96 | 0.1− | 0.1+ | 2006 06 02 | 691 | 0.0 | 0.0 | | |
| 2002 04 14 | 704 | 0.1− | 0.6+ | 2006 05 06 | G96 | 0.3− | 0.2− | | | | | | |

**2002 GN$_{97}$ = 2006 SU$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.95878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28919724 | $\omega$ | 289.95366 | | +0.20216831 | +0.97933332 | |
| $a$ | 2.2646788 | $\Omega$ | 351.70360 | | −0.88269634 | +0.17962486 | |
| $e$ | 0.2444900 | $i$ | 2.32371 | | −0.42423479 | +0.09295786 | |
| $P$ | 3.41 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.3− | 0.3+ | 2002 04 15 | 644 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.3− | | |
| 2002 04 04 | 644 | 0.3− | 0.3+ | 2002 04 15 | 644 | 0.6− | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.4− | | |
| 2002 04 04 | 644 | 0.6− | 0.6+ | 2002 04 15 | 644 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.5− | | |
| 2002 04 09 | 691 | 0.3− | 0.2− | 2006 09 16 | 691 | 0.3+ | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.4− | | |
| 2002 04 09 | 691 | 1.3+ | 0.5+ | 2006 09 16 | 691 | 1.0− | 1.1+ | 2006 10 20 | G96 | 0.3− | 0.3+ | | |
| 2002 04 09 | 691 | 0.0 | 0.3− | 2006 09 16 | 691 | 0.4+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.7+ | | |
| 2002 04 12 | 704 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 20 | G96 | 0.3+ | 0.1+ | | |
| 2002 04 12 | 704 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.5− | 0.2+ | | |
| 2002 04 12 | 704 | 1.2− | 0.7− | 2006 09 26 | G96 | 0.4+ | 0.4− | | | | | | |
| 2002 04 12 | 704 | 0.8− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.3− | | | | | | |

**2002 GR$_{99}$ = 2006 SQ$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.24792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30447125 | $\omega$ | 4.73696 | | −0.34113517 | +0.93960894 | |
| $a$ | 2.1882916 | $\Omega$ | 245.31910 | | −0.86344097 | −0.32481916 | |
| $e$ | 0.1491379 | $i$ | 1.74070 | | −0.37161335 | −0.10783112 | |
| $P$ | 3.24 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.3+ | 0.7+ | 2003 09 22 | 691 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.8+ | 1.3− | | |
| 2002 04 04 | 644 | 0.6+ | 0.7+ | 2003 09 22 | 691 | 0.1− | 0.3+ | 2006 09 16 | 699 | (2.1− | 0.1−) | | |
| 2002 04 04 | 644 | 0.3+ | 0.6+ | 2003 09 22 | 691 | 0.4− | 0.3− | 2006 09 16 | 699 | (1.7− | 0.8+) | | |
| 2002 04 10 | 704 | 0.7+ | 0.7+ | 2003 10 18 | 691 | 0.1− | 0.1− | 2006 09 16 | 699 | (2.6+ | 2.9+) | | |
| 2002 04 10 | 704 | (0.6− | 1.6+) | 2003 10 18 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.5+ | 0.6+ | | |
| 2002 04 10 | 704 | 0.4+ | 1.2+ | 2003 10 18 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.7+ | 0.4− | | |
| 2002 04 10 | 704 | 0.1− | 0.9+ | 2003 10 18 | 291 | 0.1− | 0.1+ | 2006 09 19 | 703 | 1.2− | 0.2+ | | |
| 2002 04 12 | 704 | 0.1+ | 0.5− | 2003 10 18 | 291 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 1.1− | 0.8− | | |
| 2002 04 12 | 704 | 0.6+ | 0.0 | 2003 10 18 | 291 | 0.1+ | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.5+ | | |
| 2002 04 12 | 704 | 0.1+ | 0.1+ | 2005 01 19 | 691 | 0.4+ | 0.2− | 2006 09 20 | 691 | 0.2+ | 0.5+ | | |
| 2002 04 12 | 704 | 0.6− | 0.5− | 2005 01 19 | 691 | 0.1− | 0.1+ | 2006 09 20 | 691 | 0.4− | 0.4+ | | |
| 2002 04 14 | 704 | 0.5+ | 0.2+ | 2005 01 19 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.3− | | |
| 2002 04 14 | 704 | 0.6− | 0.2+ | 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.0 | | |
| 2002 04 14 | 704 | 0.3− | 0.3+ | 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.0 | | |
| 2002 04 14 | 704 | 0.1− | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.5− | | |
| 2002 04 14 | 704 | 0.5+ | 0.9+ | 2005 03 11 | G96 | 0.2− | 0.0 | | | | | | |

**2002 GY$_{115}$ = 2006 CJ$_{61}$ = 2006 CM$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.86610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21250719 | $\omega$ | 134.32318 | | +0.38676405 | +0.92147055 | |
| $a$ | 2.7811236 | $\Omega$ | 158.35130 | | −0.87150875 | +0.37804145 | |
| $e$ | 0.0627152 | $i$ | 5.62078 | | −0.30147316 | +0.08931226 | |
| $P$ | 4.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 11 | 704 | 0.5− | 0.9+ | 2004 11 19 | 703 | 0.3− | 1.3+ | 2006 02 24 | G96 | 0.5− | 0.3− | | |
| 2002 04 11 | 704 | 0.2− | 1.1− | 2004 11 19 | 703 | 0.4+ | 0.3− | 2006 02 24 | G96 | 0.3− | 0.4+ | | |
| 2002 04 11 | 704 | 0.0 | 0.1+ | 2004 11 19 | 703 | 0.4− | 1.1+ | 2006 02 24 | G96 | 0.0 | 0.1− | | |
| 2002 04 11 | 704 | 0.2+ | 0.2− | 2006 01 08 | G96 | 0.1− | 0.4− | 2006 02 24 | G96 | 0.1+ | 0.0 | | |
| 2002 04 13 | 644 | 0.6+ | 0.2− | 2006 01 08 | G96 | 0.5− | 0.1+ | 2006 03 04 | 691 | 0.1− | 0.1+ | | |
| 2002 04 13 | 644 | 1.4+ | 0.7− | 2006 01 08 | G96 | 0.6− | 0.2− | 2006 03 04 | 691 | 0.1− | 0.2+ | | |
| 2002 04 13 | 644 | 0.2+ | 0.5+ | 2006 01 08 | G96 | 0.2+ | 0.3− | 2006 03 04 | 691 | 0.3+ | 0.1− | | |
| 2002 04 16 | 704 | 0.2+ | 0.8+ | 2006 02 02 | 691 | 0.1+ | 0.3+ | 2006 03 08 | 691 | 0.0 | 0.6− | | |
| 2002 04 16 | 704 | 1.0− | 1.4+ | 2006 02 02 | 691 | 0.2+ | 0.0 | 2006 03 08 | 691 | 0.2+ | 0.2− | | |
| 2002 04 16 | 704 | 0.3− | 0.4+ | 2006 02 02 | 691 | 0.2+ | 0.3+ | 2006 03 08 | 691 | 0.2− | 0.1+ | | |
| 2003 07 26 | 644 | 0.0 | 0.3+ | 2006 02 04 | G96 | 0.0 | 0.2+ | 2006 03 25 | G96 | 0.2− | 0.1− | | |
| 2003 07 26 | 644 | 0.2− | 0.3+ | 2006 02 04 | G96 | 0.0 | 0.1+ | 2006 03 25 | G96 | 0.1− | 0.3− | | |
| 2003 07 26 | 644 | 0.0 | 0.5+ | 2006 02 04 | G96 | 0.2− | 0.0 | 2006 03 25 | G96 | 0.1+ | 0.1+ | | |
| 2004 11 19 | 703 | 0.1− | 0.3− | 2006 02 04 | G96 | 0.1− | 0.1− | 2006 03 25 | G96 | 0.3− | 0.1− | | |

**2002 GG$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.91349 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27016126 | $\omega$ | 135.25538 | | −0.75738962 | +0.65179256 | |
| $a$ | 2.3698489 | $\Omega$ | 85.46265 | | −0.60952470 | −0.68427043 | |
| $e$ | 0.1333713 | $i$ | 2.24687 | | −0.23418070 | −0.32701749 | |
| $P$ | 3.65 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 25 | 691 | 0.3− | 0.2+ | 2002 04 14 | 644 | 0.3− | 0.7+ | 2003 09 26 | 645 | 0.0 | 0.0 | | |
| 1998 01 25 | 691 | 0.2− | 0.1+ | 2002 04 14 | 644 | 0.2− | 0.7+ | 2003 09 28 | 645 | 0.1− | 0.0 | | |
| 1998 01 25 | 691 | 0.3− | 0.2+ | 2002 04 17 | 704 | 1.8+ | 1.7+ | 2003 09 28 | 645 | 0.0 | 0.1+ | | |
| 2000 11 29 | 691 | 0.4+ | 0.3+ | 2002 04 17 | 704 | 1.5+ | 1.4+ | 2003 09 29 | 691 | 0.2− | 0.1+ | | |
| 2000 11 29 | 691 | 0.7+ | 0.3+ | 2002 04 17 | 704 | 0.7+ | 0.1+ | 2003 09 29 | 691 | 0.6− | 0.2+ | | |
| 2000 11 29 | 691 | 0.5+ | 0.2+ | 2002 04 17 | 704 | 1.0+ | 1.0+ | 2003 09 29 | 691 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 12 | 644 | 0.4− | 0.8− | 2002 05 19 | 644 | 0.3− | 0.3+ | 2005 03 12 | G96 | 1.3− | 0.0 | | |
| 2002 04 12 | 644 | 0.3− | 0.9− | 2002 05 19 | 644 | 0.3− | 0.3+ | 2005 03 12 | G96 | 0.6− | 0.2+ | | |
| 2002 04 12 | 644 | 0.7+ | 1.5− | 2002 05 19 | 644 | 0.1− | 0.3+ | 2005 03 12 | G96 | 0.5− | 0.4+ | | |
| 2002 04 14 | 644 | 0.1+ | 0.5+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2005 03 12 | G96 | 0.3− | 0.5+ | | |

**2002 GG$_{130}$ = 2005 UB$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.55761 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17517902 | $\omega$ | 337.64399 | | −0.94207861 | +0.33089447 | |
| $a$ | 3.1633554 | $\Omega$ | 221.80557 | | −0.29395402 | −0.89320036 | |
| $e$ | 0.0885659 | $i$ | 4.71051 | | −0.16148970 | −0.30446998 | |
| $P$ | 5.63 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.0 | 0.1+ | 2002 04 14 | 704 | 1.0+ | 0.1+ | 2005 12 01 | 695 | 0.2+ | 0.1+ | | |
| 1999 10 02 | 691 | 0.1− | 0.3− | 2002 04 14 | 704 | 0.5+ | 0.8+ | 2005 12 06 | 291 | 0.5− | 0.1+ | | |
| 1999 10 02 | 691 | 0.1+ | 0.0 | 2002 04 14 | 704 | 0.4+ | 0.8+ | 2005 12 06 | 291 | 0.5− | 0.4+ | | |
| 1999 10 13 | 691 | 0.3+ | 0.1+ | 2002 04 14 | 704 | 1.2+ | 0.5+ | 2005 12 06 | 291 | 0.4+ | 0.3+ | | |
| 1999 10 13 | 691 | 0.0 | 0.0 | 2002 04 15 | 644 | 0.1+ | 0.1+ | 2005 12 06 | G96 | 0.3+ | 0.3− | | |
| 1999 10 13 | 691 | 0.4− | 0.2+ | 2002 04 15 | 644 | 0.2+ | 0.1+ | 2005 12 06 | G96 | 0.2+ | 0.0 | | |
| 2002 04 04 | 644 | 0.2− | 0.0 | 2002 04 15 | 644 | 0.1− | 0.0 | 2005 12 06 | G96 | 0.3+ | 0.1− | | |
| 2002 04 04 | 644 | 0.0 | 0.4+ | 2005 10 25 | G96 | 0.1− | 0.1+ | 2005 12 06 | G96 | 0.4+ | 0.4− | | |
| 2002 04 04 | 644 | 0.1+ | 0.4+ | 2005 10 25 | G96 | 0.2− | 0.2− | 2005 12 06 | G96 | 0.2− | 0.0 | | |
| 2002 04 12 | 704 | 0.7− | 1.2− | 2005 10 25 | G96 | 0.4+ | 0.3− | 2005 12 06 | G96 | 0.1+ | 0.4− | | |
| 2002 04 12 | 691 | 0.4− | 0.1− | 2005 10 25 | G96 | 0.2− | 0.3− | 2005 12 06 | G96 | 0.5+ | 0.2− | | |
| 2002 04 12 | 704 | 0.9− | 0.4+ | 2005 11 30 | G96 | 0.0 | 0.2− | 2005 12 06 | G96 | 0.0 | 0.0 | | |
| 2002 04 12 | 691 | 0.1+ | 0.4− | 2005 11 30 | G96 | 0.3+ | 0.3− | 2005 12 06 | G96 | 0.0 | 0.1− | | |
| 2002 04 12 | 704 | 0.0 | 0.4+ | 2005 11 30 | G96 | 0.0 | 0.4− | 2005 12 06 | G96 | 0.0 | 0.2− | | |
| 2002 04 12 | 704 | 0.1− | 0.0 | 2005 11 30 | G96 | 0.2+ | 0.2− | 2005 12 06 | G96 | 0.4− | 0.3− | | |
| 2002 04 12 | 691 | 0.2− | 0.1− | 2005 12 01 | 695 | 0.0 | 0.0 | | | | | | |
| 2002 04 14 | 704 | 0.6+ | 0.2− | 2005 12 01 | 695 | 0.3+ | 0.1+ | | | | | | |

**2002 GS$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.71699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23224905 | $\omega$ | 288.25109 | | +0.65272808 | +0.75691778 | |
| $a$ | 2.6211996 | $\Omega$ | 22.59224 | | −0.65985827 | +0.58874280 | |
| $e$ | 0.3392662 | $i$ | 4.77229 | | −0.37220038 | +0.28365012 | |
| $P$ | 4.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 25 | 809 | 1.3+ | 1.8+ | 2002 05 08 | 291 | 0.3− | 0.9− | 2006 03 03 | 691 | 0.3+ | 0.3+ | | |
| 1998 04 25 | 809 | 0.8− | 0.3+ | 2002 05 08 | 291 | 0.1− | 0.7− | 2006 03 26 | G96 | 0.3− | 0.3+ | | |
| 1998 04 25 | 809 | 1.2− | 0.2− | 2002 05 08 | 291 | 0.1− | 1.0− | 2006 03 26 | G96 | 0.1− | 0.1+ | | |
| 2002 04 08 | 644 | 0.2+ | 0.8+ | 2003 10 23 | 691 | 0.1− | 0.3− | 2006 03 26 | G96 | 0.1− | 0.1+ | | |
| 2002 04 08 | 644 | 0.2+ | 0.5+ | 2003 10 23 | 691 | 0.1+ | 0.0 | 2006 03 26 | G96 | 0.2− | 0.3+ | | |
| 2002 04 08 | 644 | 0.3+ | 0.8+ | 2003 10 23 | 691 | 0.2+ | 0.2− | 2006 04 21 | 691 | 0.2+ | 0.3+ | | |
| 2002 04 12 | 704 | (2.4+ | 0.0 ) | 2006 02 24 | 691 | 0.1+ | 0.6+ | 2006 04 21 | 691 | 0.4+ | 0.1+ | | |
| 2002 04 12 | 704 | 0.6+ | 0.0 | 2006 02 24 | 691 | 1.3− | 0.4+ | 2006 04 21 | 691 | 0.3+ | 0.1− | | |
| 2002 04 12 | 704 | 0.2+ | 0.5+ | 2006 02 24 | 691 | 0.4+ | 0.6+ | 2006 04 25 | G96 | 0.5+ | 0.5+ | | |
| 2002 04 14 | 704 | 0.3+ | 0.9+ | 2006 03 02 | 691 | 0.5+ | 0.4+ | 2006 04 25 | G96 | 0.7− | 0.3− | | |
| 2002 04 14 | 704 | 0.8+ | 0.5+ | 2006 03 02 | 691 | 0.4+ | 0.6+ | 2006 04 25 | G96 | 0.3+ | 0.2− | | |
| 2002 04 14 | 704 | 1.0+ | 0.3− | 2006 03 02 | 691 | 1.5− | 3.0− | 2006 04 25 | G96 | 0.2+ | 1.1− | | |
| 2002 04 14 | 704 | 1.6− | 0.5+ | 2006 03 03 | 691 | 0.0 | 0.1− | | | | | | |
| 2002 04 14 | 704 | 0.6+ | 0.2+ | 2006 03 03 | 691 | 0.0 | 0.9+ | | | | | | |

**2002 GP$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.54933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29015027 | $\omega$ | 74.72468 | | −0.10114244 | +0.99468345 | |
| $a$ | 2.2597171 | $\Omega$ | 189.53348 | | −0.95175956 | −0.10240941 | |
| $e$ | 0.1989744 | $i$ | 6.71484 | | −0.28969629 | −0.01082369 | |
| $P$ | 3.40 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 13 | 644 | 0.5− | 0.0 | 2002 05 17 | 644 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | | |
| 2002 04 13 | 644 | 0.2− | 0.1− | 2002 05 17 | 644 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.3+ | | |
| 2002 04 13 | 644 | 0.4− | 0.3+ | 2002 05 17 | 644 | 0.9+ | 0.6− | 2006 09 28 | 691 | 0.1− | 0.1+ | | |
| 2002 04 14 | 644 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.2− | 0.6− | | |
| 2002 04 14 | 644 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.7− | 0.3− | | |
| 2002 04 14 | 644 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.1− | 0.5− | | |
| 2002 04 17 | 704 | 0.7+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.1− | | |
| 2002 04 17 | 704 | 0.7+ | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.3− | 0.3− | | |
| 2002 04 17 | 704 | 0.5− | 0.4+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.5− | | |
| 2002 04 17 | 704 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 20 | G96 | 0.2− | 0.4− | | |
| 2002 05 07 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.5+ | 0.2− | | |
| 2002 05 07 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.6− | 0.7− | | |
| 2002 05 07 | 644 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.1+ | | |
| 2002 05 08 | 704 | 0.1+ | 0.7− | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.5− | | |
| 2002 05 08 | 704 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.1− | | |
| 2002 05 08 | 704 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ | | | | | | |

**2002 GU$_{148}$ = 2006 RU$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.29691 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30975480 | $\omega$ | 310.03897 | | −0.35688605 | +0.93401470 | |
| $a$ | 2.1633362 | $\Omega$ | 299.04527 | | −0.85147461 | −0.33220095 | |
| $e$ | 0.1169879 | $i$ | 1.03399 | | −0.38421783 | −0.13137377 | |
| $P$ | 3.18 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 699 | 0.5− | 1.0+ | 2003 10 19 | 291 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | | |
| 2002 04 05 | 699 | (0.1+ | 1.5+) | 2003 10 24 | 704 | 0.9+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.3+ | | |
| 2002 04 05 | 699 | 0.4+ | 0.5+ | 2003 10 24 | 704 | 0.1+ | 1.1− | 2006 09 19 | 691 | 0.1+ | 0.2+ | | |
| 2002 04 05 | 699 | 0.3− | 1.2+ | 2003 10 24 | 704 | 0.0 | 0.5− | 2006 09 19 | 691 | 0.2+ | 0.4− | | |
| 2002 04 12 | 704 | (1.7+ | 0.8+) | 2003 10 24 | 704 | 0.3+ | 0.2− | 2006 09 23 | 691 | 0.4− | 0.1+ | | |
| 2002 04 12 | 704 | 0.9+ | 0.1+ | 2005 02 02 | 691 | 0.3+ | 0.3+ | 2006 09 23 | 691 | 0.5− | 0.2+ | | |
| 2002 04 12 | 704 | 0.7− | 0.2+ | 2005 02 02 | 691 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.2− | 0.1+ | | |
| 2002 04 14 | 704 | 0.1− | 0.8+ | 2005 02 02 | 691 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− | | |
| 2002 04 14 | 704 | 0.6+ | 0.2+ | 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.3− | | |
| 2002 04 14 | 704 | 0.9+ | 0.4+ | 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− | | |
| 2002 04 14 | 704 | 0.9+ | 1.0+ | 2005 03 08 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− | | |
| 2002 04 15 | 644 | 0.4+ | 1.1+ | 2005 03 08 | G96 | (0.9+ | 1.8+) | 2006 09 26 | G96 | 0.1− | 0.0 | | |
| 2002 04 15 | 644 | 1.0+ | 0.7+ | 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | | |
| 2002 04 15 | 644 | 0.4+ | 1.1+ | 2005 05 08 | G96 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | | |
| 2003 09 22 | 691 | 0.3− | 0.3+ | 2005 05 08 | G96 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− | | |
| 2003 09 22 | 691 | 0.5− | 0.0 | 2005 05 08 | G96 | 0.6− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2003 09 22 | 691 | 0.2− | 0.4+ | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.5+ | | |
| 2003 09 27 | 691 | 0.0 | 0.1+ | 2006 07 22 | G96 | 0.5+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.4+ | | |
| 2003 09 27 | 691 | 0.2+ | 0.1+ | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.9− | | |
| 2003 09 27 | 691 | 0.1+ | 0.2+ | 2006 07 22 | G96 | 0.4− | 0.4+ | 2006 10 20 | G96 | 0.4+ | 0.3− | | |
| 2003 10 19 | 291 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.2− | | |
| 2003 10 19 | 291 | 0.4− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.5− | 0.3− | | |

**2002 GY$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.82178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29993847 | $\omega$ | 85.66818 | | +0.43532377 | +0.89935078 | |
| $a$ | 2.2102833 | $\Omega$ | 210.24261 | | −0.85475956 | +0.39867801 | |
| $e$ | 0.2020561 | $i$ | 4.64189 | | −0.28262929 | +0.17951052 | |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.4+ | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | | |
| 2002 04 04 | 644 | 0.6+ | 0.0 | 2006 10 15 | 691 | 0.5+ | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 2002 04 04 | 644 | 0.6+ | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2002 04 09 | 704 | (1.6− | 1.4+) | 2006 10 16 | 683 | 1.2− | 0.3− | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 2002 04 09 | 704 | 0.1+ | 1.4+ | 2006 10 16 | 683 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 04 09 | 704 | 0.2− | 0.4+ | 2006 10 16 | 683 | 1.0+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4− | | |
| 2002 04 09 | 704 | 0.8+ | 1.1+ | 2006 10 17 | 683 | 0.7− | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 683 | (1.6− | 1.9+) | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 04 14 | 704 | 0.3+ | 0.1− | 2006 10 17 | 683 | 0.3+ | 1.5+ | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2002 04 14 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 04 14 | 704 | 1.2+ | 0.9+ | 2006 10 19 | 691 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 04 14 | 704 | 0.0 | 1.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2002 04 19 | 291 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 04 19 | 291 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 04 19 | 291 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 05 09 | 644 | 0.3+ | 0.8+ | 2006 10 21 | 703 | 0.7+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 05 09 | 644 | 0.4+ | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2002 05 09 | 644 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.2− | 2006 11 19 | 691 | 0.4− | 0.3+ |
| 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2006 10 11 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |

### 2002 GZ$_{179}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.92624 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30783747 | $\omega$ | 240.06542 | | +0.37271251 | | +0.92709342 |
| $a$ | 2.1723096 | $\Omega$ | 51.87147 | | −0.83298800 | | +0.35315978 |
| $e$ | 0.1820948 | $i$ | 2.89937 | | −0.40892100 | | +0.12560242 |
| $P$ | 3.20 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.5+ | 0.9− | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 27 | 691 | 0.4− | 0.5− |
| 2002 04 08 | 644 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.7− | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2002 04 08 | 644 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.8− | 2006 10 31 | 691 | 0.2+ | 0.4+ |
| 2002 04 09 | 644 | 1.0+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.9− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 04 09 | 644 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2002 04 09 | 644 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3+ |
| 2002 04 14 | 644 | 0.1− | 0.3− | 2006 10 11 | 691 | 0.1− | 0.8+ | 2006 11 11 | G96 | 0.1− | 0.1+ |
| 2002 04 14 | 644 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2002 04 14 | 644 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.2+ |
| 2002 04 24 | 644 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2002 04 24 | 644 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2002 05 08 | 291 | 0.2+ | 0.9+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2002 05 08 | 291 | 0.2+ | 0.9+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2002 05 08 | 291 | 0.1+ | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.3− | | | | |

### 2002 GZ$_{180}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.12035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22523386 | $\omega$ | 81.80241 | | −0.29304020 | | +0.95583699 |
| $a$ | 2.6753479 | $\Omega$ | 171.06098 | | −0.92418775 | | −0.27717077 |
| $e$ | 0.2043766 | $i$ | 8.29971 | | −0.24495804 | | −0.09773442 |
| $P$ | 4.38 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 01 | 644 | 0.7+ | 0.3+ | 2003 09 18 | 691 | 0.0 | 0.0 | 2006 02 02 | G96 | 0.1+ | 0.1− |
| 2002 04 01 | 644 | 1.3+ | 0.0 | 2003 09 18 | 691 | 0.2+ | 0.1− | 2006 02 25 | 691 | 0.2+ | 0.2− |
| 2002 04 12 | 608 | 1.7− | 0.8+ | 2006 02 02 | 691 | 0.1− | 0.1− | 2006 02 25 | 691 | 0.1− | 0.0 |
| 2002 04 12 | 608 | (2.0− | 1.9+) | 2006 02 02 | 691 | 0.4+ | 0.2− | 2006 02 25 | 691 | 0.0 | 0.1+ |
| 2002 04 13 | 644 | 0.1− | 0.2− | 2006 02 02 | 691 | 0.1+ | 0.2+ | 2006 03 03 | G96 | 0.3+ | 0.1− |
| 2002 04 13 | 644 | 0.2− | 0.2− | 2006 02 02 | G96 | 0.3− | 0.0 | 2006 03 03 | G96 | 0.3− | 0.6+ |
| 2002 04 13 | 644 | 0.0 | 0.5− | 2006 02 02 | G96 | 0.1− | 0.5− | 2006 03 03 | G96 | 0.0 | 0.1+ |
| 2003 09 18 | 691 | 0.2− | 0.1+ | 2006 02 02 | G96 | 0.0 | 0.4+ | 2006 03 03 | G96 | 1.2− | 0.4+ |

### 2002 GP$_{181}$ = 2003 SV$_{230}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.18499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23834016 | $\omega$ | 251.96559 | | +0.57353373 | | +0.81772212 |
| $a$ | 2.5763482 | $\Omega$ | 53.13090 | | −0.72658034 | | +0.53535425 |
| $e$ | 0.1290842 | $i$ | 3.50317 | | −0.37833858 | | +0.21148608 |
| $P$ | 4.14 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.4− | 0.2− | 2002 04 13 | 691 | 0.1+ | 0.2− | 2006 03 02 | G96 | 0.3+ | 0.7− |
| 1993 01 22 | 691 | 0.0 | 0.4+ | 2003 09 24 | 644 | 0.1+ | 0.8+ | 2006 03 02 | G96 | 0.3+ | 0.6− |
| 1993 01 22 | 691 | 0.5+ | 0.1+ | 2003 09 24 | 644 | 0.2− | 0.4+ | 2006 03 02 | G96 | 0.3− | 0.1+ |
| 2002 04 02 | 691 | 0.2− | 0.1+ | 2003 09 24 | 644 | 0.4− | 0.4+ | 2006 03 02 | G96 | 0.3− | 0.0 |
| 2002 04 02 | 691 | 0.2− | 0.3+ | 2003 09 28 | 704 | 0.3− | 0.4+ | 2006 03 23 | 691 | 0.0 | 0.4+ |
| 2002 04 02 | 691 | 0.1+ | 0.3+ | 2003 09 28 | 704 | 0.3+ | 0.4+ | 2006 03 23 | 691 | 0.0 | 1.0+ |
| 2002 04 08 | 644 | 0.3+ | 0.0 | 2003 09 28 | 704 | 0.8− | 0.3+ | 2006 03 23 | 691 | 0.0 | 0.5− |
| 2002 04 08 | 644 | 0.2+ | 0.0 | 2006 03 02 | G96 | 0.1+ | 0.5− | 2006 03 29 | 691 | 0.1+ | 0.1+ |
| 2002 04 08 | 644 | 0.1− | 0.1− | 2006 03 02 | G96 | 0.7− | 0.1− | 2006 03 29 | 691 | 0.2+ | 0.2− |
| 2002 04 13 | 691 | 0.0 | 0.1− | 2006 03 02 | G96 | 0.1+ | 0.1− | 2006 03 29 | 691 | 0.1+ | 0.1+ |
| 2002 04 13 | 691 | 0.0 | 0.2− | 2006 03 02 | G96 | 0.2− | 0.3+ | | | | |

### 2002 GQ$_{181}$ = 2005 YW$_{232}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.83565 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18146983 | $\omega$ | 257.65169 | | −0.15017226 | | +0.98865887 |
| $a$ | 3.0898194 | $\Omega$ | 3.71224 | | −0.89854838 | | −0.13589937 |
| $e$ | 0.1426818 | $i$ | 1.22777 | | −0.41238222 | | −0.06391396 |
| $P$ | 5.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.2+ | 0.1+ | 2002 04 03 | 291 | 0.0 | 0.5+ | 2003 09 04 | 691 | 0.4+ | 1.1+ |
| 1998 09 19 | 645 | 0.3+ | 0.1+ | 2002 04 07 | 807 | 0.0 | 0.6+ | 2004 10 09 | 691 | 0.5− | 0.6+ |
| 1998 09 24 | 691 | 0.5− | 0.5− | 2002 04 07 | 807 | 0.1+ | 0.2+ | 2004 10 09 | 691 | 0.1− | 0.2+ |
| 1998 09 24 | 691 | 0.9− | 0.1− | 2002 04 14 | 704 | 0.2+ | 0.5+ | 2004 10 09 | 691 | 0.4− | 0.5+ |
| 1998 09 24 | 691 | 1.1− | 0.0 | 2002 04 14 | 704 | 0.3− | 0.3− | 2005 12 28 | 691 | 0.1+ | 0.2+ |
| 2001 02 03 | 691 | 0.0 | 0.2+ | 2002 04 14 | 704 | 0.3+ | 0.8+ | 2005 12 28 | 691 | 0.2+ | 0.3+ |
| 2001 02 03 | 691 | 0.1− | 0.1− | 2002 04 14 | 704 | 0.9+ | 0.2+ | 2005 12 28 | 691 | 0.0 | 0.1+ |
| 2001 02 03 | 691 | 0.4+ | 0.3+ | 2002 04 14 | 704 | 0.7+ | 0.3+ | 2006 01 05 | 691 | 0.3− | 0.0 |
| 2002 04 03 | 291 | 0.1− | 0.5+ | 2003 09 04 | 691 | 0.0 | 0.1+ | 2006 01 05 | 691 | 0.3+ | 0.1+ |
| 2002 04 03 | 291 | 0.2+ | 0.7+ | 2003 09 04 | 691 | 0.5− | 0.3+ | 2006 01 05 | 691 | 0.1+ | 0.2− |

### 2002 GR$_{181}$ = 2004 VE$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.42238 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25170556 | $\omega$ | 105.12152 | | −0.85374820 | | −0.51920565 |
| $a$ | 2.4843199 | $\Omega$ | 43.61902 | | +0.45321598 | | −0.77810540 |
| $e$ | 0.1023975 | $i$ | 3.26052 | | +0.25633824 | | −0.35352153 |
| $P$ | 3.92 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 645 | 0.1+ | 0.1− | 2002 04 14 | 691 | 0.2− | 0.3+ | 2006 03 24 | 691 | 0.2− | 0.2− |
| 2000 11 30 | 645 | 0.0 | 0.1− | 2002 04 14 | 691 | 0.1+ | 0.2+ | 2006 03 24 | 691 | 0.1+ | 0.1+ |
| 2002 04 05 | 291 | 0.2+ | 0.1+ | 2004 11 04 | 691 | 0.1− | 0.2+ | 2006 03 24 | 691 | 0.0 | 0.2− |
| 2002 04 05 | 291 | 0.1+ | 0.3+ | 2004 11 04 | 691 | 0.1− | 0.1+ | 2006 04 09 | 691 | 0.1− | 0.1− |
| 2002 04 05 | 291 | 0.4+ | 0.1+ | 2004 11 04 | 691 | 0.0 | 0.2− | 2006 04 09 | 691 | 0.1+ | 0.5− |
| 2002 04 07 | 807 | 0.0 | 0.0 | 2004 11 10 | 691 | 0.2+ | 0.2+ | 2006 04 09 | 691 | 0.4− | 0.4− |
| 2002 04 07 | 807 | 0.0 | 0.0 | 2004 11 10 | 691 | 0.1− | 0.0 | | | | |
| 2002 04 14 | 691 | 0.1− | 0.0 | 2004 11 10 | 691 | 0.1− | 0.1+ | | | | |

### 2002 GS$_{181}$ = 2004 TE$_{74}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.18278 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19156656 | $\omega$ | 39.40361 | | −0.37977161 | | +0.92051080 |
| $a$ | 2.9802744 | $\Omega$ | 208.62570 | | −0.88977118 | | −0.39063671 |
| $e$ | 0.0423216 | $i$ | 11.05113 | | −0.25314179 | | −0.00792672 |
| $P$ | 5.14 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 27 | 910 | 0.4− | 0.4+ | 2002 04 14 | 704 | 0.0 | 0.1+ | 2002 05 19 | 644 | 0.3− | 0.6+ |
| 1997 05 28 | 910 | 0.3− | 0.2+ | 2002 04 14 | 704 | 0.2+ | 1.1+ | 2004 10 06 | 291 | 0.1− | 0.2+ |
| 1997 05 28 | 910 | 0.7+ | 0.2− | 2002 04 14 | 704 | 0.4− | 1.2+ | 2004 10 06 | 291 | 0.2− | 0.0 |
| 2001 01 16 | 608 | 0.1+ | 0.0 | 2002 04 14 | 704 | 0.0 | 1.2+ | 2004 10 06 | 291 | 0.1+ | 0.3− |
| 2001 01 16 | 608 | 0.1− | 0.0 | 2002 05 06 | 291 | 0.2+ | 0.1− | 2004 10 08 | 691 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 16 | 608 | 0.0 | 0.1+ | 2002 05 06 | 291 | 0.2+ | 0.5− | 2004 10 08 | 691 | 0.0 | 0.4+ |
| 2002 04 06 | 807 | 0.4− | 0.5+ | 2002 05 06 | 291 | 0.0 | 0.4− | 2004 10 08 | 691 | 0.0 | 0.3+ |
| 2002 04 06 | 807 | 0.3− | 0.7+ | 2002 05 19 | 644 | 0.2− | 0.6+ | | | | |
| 2002 04 14 | 704 | 0.1+ | 0.4+ | 2002 05 19 | 644 | 0.1− | 1.0+ | | | | |

**2002 GT$_{181}$ = 2004 XM$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.01011 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28244281 | $\omega$ | 272.75293 | | −0.87669166 | | −0.46321950 |
| $a$ | 2.3006420 | $\Omega$ | 239.68248 | | +0.47903346 | | −0.81595755 |
| $e$ | 0.1033094 | $i$ | 8.64576 | | +0.04403028 | | −0.34589155 |
| $P$ | 3.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 644 | 0.0 | 0.4+ | 2002 04 08 | 644 | 0.1+ | 0.1+ | 2004 12 13 | 691 | 0.3− | 0.1+ |
| 2002 03 09 | 644 | 0.0 | 0.2+ | 2002 04 08 | 644 | 0.3+ | 0.2+ | 2004 12 17 | 704 | 0.4+ | 0.2− |
| 2002 03 09 | 644 | 0.1+ | 0.3+ | 2002 04 08 | 644 | 0.1+ | 0.2+ | 2004 12 17 | 704 | 0.1+ | 0.1+ |
| 2002 03 23 | 704 | 0.3− | 0.6− | 2002 04 19 | 644 | 0.2− | 0.6+ | 2004 12 17 | 704 | 1.1+ | 0.1− |
| 2002 03 23 | 704 | 0.2− | 0.9− | 2002 04 19 | 644 | 0.0 | 0.1+ | 2004 12 17 | 704 | 0.0 | 0.6− |
| 2002 03 23 | 704 | 0.1− | 0.3− | 2002 04 19 | 644 | 0.3− | 0.4+ | 2004 12 17 | 704 | 0.2+ | 0.1+ |
| 2002 03 23 | 704 | 0.7+ | 0.5− | 2004 12 13 | 691 | 0.1− | 0.1+ | | | | |
| 2002 03 23 | 704 | 0.2− | 0.1+ | 2004 12 13 | 691 | 0.1− | 0.0 | | | | |

**2002 GU$_{181}$ = 2000 TE$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.25425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30265051 | $\omega$ | 72.54769 | | +0.16162617 | | −0.98674622 |
| $a$ | 2.1970593 | $\Omega$ | 8.19171 | | +0.86256595 | | +0.13414053 |
| $e$ | 0.1068103 | $i$ | 5.82166 | | +0.47943401 | | +0.09131382 |
| $P$ | 3.26 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 1.1− | 0.0 | 2002 03 20 | 291 | 0.2− | 0.2+ | 2005 03 12 | 704 | 1.3+ | 0.1− |
| 2000 10 01 | 704 | 0.6+ | 0.3+ | 2002 04 09 | 691 | 0.3+ | 0.2− | 2005 04 11 | G96 | 0.6− | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.9+ | 2002 04 09 | 691 | 0.5+ | 0.1− | 2005 04 11 | G96 | 0.6− | 0.0 |
| 2000 10 01 | 704 | 0.2− | 1.0+ | 2002 04 09 | 691 | 0.1+ | 0.2− | 2005 04 11 | G96 | 0.4− | 0.3− |
| 2000 10 02 | 704 | 0.4− | 0.8+ | 2002 04 15 | 644 | 0.0 | 0.2+ | 2005 04 11 | G96 | 0.6− | 0.3+ |
| 2000 10 02 | 704 | 0.7− | 0.7+ | 2002 04 15 | 644 | 0.4+ | 0.2+ | 2005 05 10 | G96 | 0.5− | 0.3− |
| 2000 10 02 | 704 | 0.1− | 0.5− | 2002 04 15 | 644 | 0.6+ | 0.2+ | 2005 05 10 | G96 | 0.6− | 0.3− |
| 2002 03 20 | 291 | 0.3− | 0.6+ | 2005 03 12 | 704 | 0.8+ | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.5− |
| 2002 03 20 | 291 | 0.2− | 0.4+ | 2005 03 12 | 704 | 0.5+ | 0.8+ | 2005 05 10 | G96 | 0.0 | 0.5− |

**2002 GW$_{181}$ = 2004 XY$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.23486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21040933 | $\omega$ | 220.83906 | | +0.52769984 | | +0.83099753 |
| $a$ | 2.7995789 | $\Omega$ | 81.70970 | | −0.72573265 | | +0.54874128 |
| $e$ | 0.1415331 | $i$ | 10.24505 | | −0.44141251 | | +0.09124754 |
| $P$ | 4.68 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 691 | 0.3+ | 0.0 | 2002 05 08 | 704 | 0.1− | 0.3− | 2004 12 10 | 704 | 0.2− | 0.7+ |
| 2000 01 04 | 691 | 0.1− | 0.2− | 2002 05 08 | 704 | 0.5+ | 0.7− | 2004 12 16 | 704 | 0.3+ | 0.2+ |
| 2000 01 04 | 691 | 0.2+ | 0.2− | 2002 05 08 | 704 | 1.0+ | 2.0− | 2004 12 16 | 704 | 0.5+ | 0.4− |
| 2001 02 16 | 704 | 0.2− | 0.9− | 2002 05 08 | 704 | 0.8− | 0.5− | 2004 12 16 | 704 | 0.3− | 0.3− |
| 2001 02 16 | 704 | 0.5− | 0.2− | 2002 05 08 | 704 | 0.5+ | 1.1− | 2004 12 16 | 704 | 0.4+ | 0.1− |
| 2001 02 16 | 704 | 0.0 | 0.9− | 2002 05 18 | 704 | 0.1+ | 0.0 | 2004 12 16 | 704 | 0.8− | 0.5+ |
| 2001 02 16 | 704 | 0.3− | 0.0 | 2002 05 18 | 704 | 1.9− | 0.2+ | 2006 01 28 | 703 | 0.1+ | 1.5+ |
| 2002 04 10 | 704 | 0.2− | 0.5+ | 2002 05 18 | 704 | 0.1− | 0.7+ | 2006 01 28 | 703 | 0.3+ | 0.4+ |
| 2002 04 10 | 704 | 0.8+ | 0.0 | 2002 05 18 | 704 | 0.4− | 0.5+ | 2006 01 28 | 703 | 0.4+ | 0.2+ |
| 2002 04 10 | 704 | 0.0 | 0.2− | 2003 08 29 | 608 | 0.4− | 0.7+ | 2006 01 28 | 703 | (3.3+ | 0.9+) |
| 2002 04 10 | 704 | 0.4− | 0.5− | 2003 08 29 | 608 | 0.3− | 0.5+ | 2006 02 21 | 703 | 0.8− | 0.2+ |
| 2002 04 16 | 704 | 1.2+ | 1.0+ | 2003 08 29 | 608 | 0.4− | 0.4+ | 2006 02 21 | 703 | 0.9− | 0.3− |
| 2002 04 16 | 704 | 0.1+ | 1.2+ | 2004 12 10 | 704 | 0.3+ | 0.8+ | 2006 02 21 | 703 | 0.1− | 0.3+ |
| 2002 04 16 | 704 | 1.0+ | 0.1− | 2004 12 10 | 704 | 0.2− | 0.1− | 2006 02 21 | 703 | 0.6− | 1.3− |
| 2002 04 16 | 704 | 0.5− | 1.4+ | 2004 12 10 | 704 | 0.2− | 1.3+ | | | | |
| 2002 04 16 | 704 | 0.2− | 1.1+ | 2004 12 10 | 704 | 0.5− | 0.4+ | | | | |

**2002 GX$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.93604 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24260904 | $\omega$ | 194.71506 | | +0.78395513 | | −0.61352440 |
| $a$ | 2.5460371 | $\Omega$ | 203.92390 | | +0.59061325 | | +0.78414238 |
| $e$ | 0.1140569 | $i$ | 13.53085 | | +0.19128604 | | +0.09331955 |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 02 | 291 | 0.0 | 0.1− | 2006 03 26 | G96 | 0.6− | 0.1+ | 2006 04 19 | G96 | 0.1− | 0.1+ |
| 2002 04 02 | 291 | 0.1− | 0.2+ | 2006 03 26 | G96 | 0.5− | 0.2+ | 2006 05 03 | 691 | 0.5+ | 0.1− |
| 2002 04 02 | 291 | 0.1+ | 0.3+ | 2006 03 26 | G96 | 0.6− | 0.3− | 2006 05 03 | 691 | 0.4+ | 0.1+ |
| 2002 04 14 | 704 | 0.7− | 0.4+ | 2006 03 26 | G96 | 0.0 | 0.1− | 2006 05 03 | 691 | 0.0 | 0.3+ |
| 2002 04 14 | 704 | 0.4− | 0.9+ | 2006 04 09 | 691 | 0.3− | 0.0 | 2006 05 19 | G96 | 0.0 | 0.0 |
| 2002 04 14 | 704 | 1.0− | 0.7− | 2006 04 09 | 691 | 0.1+ | 0.0 | 2006 05 19 | G96 | 0.2− | 0.2− |
| 2002 04 14 | 704 | 0.4+ | 0.3− | 2006 04 09 | 691 | 0.0 | 0.3− | 2006 05 19 | G96 | 0.3+ | 0.2− |
| 2002 04 19 | 691 | 0.0 | 0.0 | 2006 04 19 | G96 | 0.5− | 0.0 | 2006 05 19 | G96 | 0.4− | 0.1− |
| 2002 04 19 | 691 | 0.1+ | 0.2− | 2006 04 19 | G96 | 0.1− | 0.1+ | | | | |
| 2002 04 19 | 691 | 0.3+ | 0.3− | 2006 04 19 | G96 | 0.5− | 0.2+ | | | | |

**2002 GY$_{181}$ = 2004 XW$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.40399 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24196647 | $\omega$ | 185.97329 | | +0.71523652 | | −0.69214386 |
| $a$ | 2.5505426 | $\Omega$ | 218.42881 | | +0.64748766 | | +0.70839177 |
| $e$ | 0.0894534 | $i$ | 8.96143 | | +0.26305219 | | +0.13826778 |
| $P$ | 4.07 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 1.0+ | 0.2+ | 2002 05 09 | 704 | 0.2− | 0.7+ | 2004 12 18 | 704 | 0.2+ | 0.9+ |
| 1999 09 09 | 704 | 0.5− | 0.3− | 2002 05 09 | 704 | 0.7+ | 0.2+ | 2004 12 18 | 704 | 0.2+ | 0.4+ |
| 1999 09 09 | 704 | 0.4+ | 0.0 | 2003 08 20 | 644 | 0.0 | 0.1+ | 2006 03 26 | 691 | 0.1+ | 0.1+ |
| 1999 09 09 | 704 | 0.0 | 1.0− | 2003 08 20 | 644 | 0.1+ | 0.4+ | 2006 03 26 | 691 | 0.1+ | 0.2+ |
| 1999 09 09 | 704 | 0.0 | 0.5− | 2003 08 20 | 644 | 0.0 | 0.2+ | 2006 03 26 | 691 | 0.4+ | 0.2+ |
| 2001 01 24 | 704 | 0.0 | 0.2+ | 2003 08 28 | 644 | 0.2− | 0.2+ | 2006 04 09 | 691 | 0.1− | 0.0 |
| 2001 01 24 | 704 | 0.2+ | 0.3+ | 2003 08 28 | 644 | 0.1− | 0.1+ | 2006 04 09 | 691 | 0.0 | 0.3+ |
| 2001 01 24 | 704 | 0.5− | 2.4+ | 2003 08 28 | 644 | 0.2− | 0.3+ | 2006 04 09 | 691 | 0.2+ | 0.1− |
| 2001 01 24 | 704 | 0.5− | 0.2− | 2003 09 18 | 704 | 0.4− | 1.4+ | 2006 04 21 | 703 | 0.3− | 0.3− |
| 2001 01 24 | 704 | 0.1− | 0.7+ | 2003 09 18 | 704 | 0.9− | 2.1+ | 2006 04 21 | 703 | 0.7− | 0.3+ |
| 2002 04 08 | 691 | 0.7+ | 0.5+ | 2003 09 18 | 704 | 0.2− | 1.4+ | 2006 04 21 | 703 | 0.6− | 0.0 |
| 2002 04 08 | 691 | 0.3− | 0.4+ | 2003 09 18 | 704 | 1.1− | 1.2+ | 2006 04 21 | 703 | (1.9− | 0.8+) |
| 2002 04 08 | 691 | 0.3− | 0.3+ | 2003 09 18 | 704 | 0.4− | 0.9+ | 2006 05 02 | G96 | 0.9− | 0.3− |
| 2002 04 14 | 704 | 0.6+ | 0.2− | 2003 09 23 | 644 | 0.1− | 0.4+ | 2006 05 02 | G96 | 0.4− | 0.0 |
| 2002 04 14 | 704 | 0.6+ | 0.9− | 2003 09 23 | 644 | 0.0 | 0.5+ | 2006 05 02 | G96 | 0.7− | 0.0 |
| 2002 04 14 | 704 | 0.3+ | 0.1− | 2003 09 23 | 644 | 0.3− | 0.3+ | 2006 05 02 | G96 | (1.0− | 1.8+) |
| 2002 04 14 | 704 | 0.9+ | 0.3+ | 2004 12 13 | 599 | 0.1− | 0.5+ | 2006 05 25 | G96 | 0.3− | 0.1− |
| 2002 05 08 | 699 | 1.0− | 0.2− | 2004 12 13 | 599 | 0.2+ | 0.7+ | 2006 05 25 | G96 | 0.2+ | 0.3− |
| 2002 05 08 | 699 | 0.5+ | 0.3+ | 2004 12 13 | 599 | 0.0 | 0.5+ | 2006 05 25 | G96 | 0.6− | 0.2− |
| 2002 05 08 | 699 | 0.1+ | 0.5+ | 2004 12 13 | 599 | 0.1+ | 0.7+ | 2006 05 25 | G96 | 0.1− | 0.3− |
| 2002 05 08 | 699 | (2.0+ | 0.7−) | 2004 12 18 | 704 | 1.4+ | 0.2+ | | | | |
| 2002 05 09 | 704 | 0.3− | 0.6− | 2004 12 18 | 704 | 0.2+ | 0.0 | | | | |

**2002 GZ$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.48412 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12436025 | $\omega$ | 101.62330 | | −0.19540998 | | +0.97476015 |
| $a$ | 3.9751025 | $\Omega$ | 156.26269 | | −0.97141197 | | −0.17724512 |
| $e$ | 0.1010347 | $i$ | 15.55838 | | −0.13480994 | | −0.13574545 |
| $P$ | 7.93 | $H$ | 13.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 12 | 644 | 0.2− | 0.3+ | 2004 07 17 | 704 | 1.5− | 0.6+ | 2004 09 07 | 704 | 0.3− | 0.8− |
| 2002 04 12 | 644 | 0.4− | 0.2+ | 2004 07 17 | 704 | 1.6+ | 0.1− | 2004 09 07 | 704 | 1.1− | 0.8+ |
| 2002 04 12 | 644 | 0.1− | 0.3+ | 2004 07 17 | 704 | 0.1+ | 0.6− | 2004 09 12 | 691 | 0.0 | 0.1+ |
| 2002 04 16 | 704 | 0.6+ | 0.0 | 2004 08 11 | 704 | 0.8− | 0.5+ | 2004 09 12 | 691 | 0.5+ | 0.2− |
| 2002 04 16 | 704 | 1.0− | 0.4− | 2004 08 11 | 704 | 0.0 | 0.5+ | 2004 09 12 | 691 | 0.5− | 0.0 |
| 2002 04 16 | 704 | 0.6+ | 0.1− | 2004 08 11 | 704 | 0.6− | 0.0 | 2004 09 17 | 704 | 0.8+ | 0.1− |
| 2002 04 16 | 704 | 0.6+ | 0.8+ | 2004 08 11 | 704 | 0.7+ | 0.2− | 2004 09 17 | 704 | 0.4+ | 0.5+ |
| 2002 05 06 | 644 | 0.0 | 0.3+ | 2004 08 11 | 704 | 0.5− | 0.1+ | 2004 09 17 | 704 | 0.1− | 0.2+ |
| 2002 05 06 | 644 | 0.1+ | 0.0 | 2004 08 23 | 691 | 0.3+ | 0.1− | 2004 09 17 | 704 | 1.1+ | 1.2− |
| 2002 05 06 | 644 | 0.1+ | 0.0 | 2004 08 23 | 691 | 0.2+ | 0.0 | 2005 10 10 | 703 | 0.0 | 1.1+ |
| 2003 08 22 | 644 | 0.1− | 0.3− | 2004 08 23 | 691 | 0.1+ | 0.2− | 2005 10 10 | 703 | 0.6+ | 0.7+ |
| 2003 08 22 | 644 | 0.1− | 0.2− | 2004 09 07 | 704 | 0.3− | 0.8+ | 2005 10 10 | 703 | 0.4− | 0.2+ |
| 2003 08 22 | 644 | 0.2+ | 0.0 | 2004 09 07 | 704 | 0.9− | 0.4− | 2005 10 10 | 703 | 0.4− | 0.9− |
| 2004 07 17 | 704 | 0.9− | 0.5+ | 2004 09 07 | 704 | 0.2− | 1.1+ | | | | |

**2002 GA**$_{182}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.17048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27521451 | $\omega$ | 2.19566 | | −0.90286106 | | +0.42687419 |
| $a$ | 2.3407507 | $\Omega$ | 203.28460 | | −0.39640251 | | −0.87262345 |
| $e$ | 0.0242633 | $i$ | 7.44041 | | −0.16645408 | | −0.23729043 |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.0 | 0.4− | 2002 05 03 | 644 | 0.1− | 0.3+ | 2003 10 24 | 704 | 0.2− | 0.3+ |
| 1996 10 07 | 691 | 0.3+ | 0.6− | 2003 08 23 | 599 | 0.5+ | 0.6+ | 2003 10 24 | 704 | 0.1+ | 0.9+ |
| 1996 10 07 | 691 | 0.1+ | 0.4− | 2003 08 23 | 599 | 1.4+ | 0.4+ | 2003 10 24 | 704 | 0.3+ | 0.9+ |
| 2002 04 13 | 644 | 0.2+ | 0.3+ | 2003 08 23 | 599 | 0.0 | 0.1+ | 2003 10 24 | 704 | 0.5+ | 0.6+ |
| 2002 04 13 | 644 | 0.2+ | 0.0 | 2003 10 17 | 691 | 0.2− | 0.4+ | 2003 10 24 | 645 | 0.1− | 0.0 |
| 2002 04 13 | 644 | 0.0 | 0.2− | 2003 10 17 | 691 | 0.1+ | 0.3+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2002 04 18 | 691 | 0.1+ | 0.2+ | 2003 10 17 | 691 | 0.2+ | 0.3+ | 2003 10 24 | 704 | 0.6+ | 0.5− |
| 2002 04 18 | 691 | 0.2− | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.1+ | 2005 01 18 | 703 | 0.2+ | 1.2+ |
| 2002 04 18 | 691 | 0.0 | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.1+ | 2005 01 18 | 703 | 0.3+ | 0.7+ |
| 2002 05 03 | 644 | 0.3+ | 0.5+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2005 01 18 | 703 | 0.1+ | 1.0+ |
| 2002 05 03 | 644 | 0.4+ | 0.4− | 2003 10 23 | 645 | 0.1− | 0.0 | 2005 01 18 | 703 | 0.3+ | 0.7+ |

**2002 GB**$_{182}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.67777 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23350150 | $\omega$ | 48.24271 | | +0.32569084 | | +0.94328996 |
| $a$ | 2.6118181 | $\Omega$ | 240.87175 | | −0.88782413 | | +0.28175324 |
| $e$ | 0.0916440 | $i$ | 4.21877 | | −0.32510581 | | +0.17555385 |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.3+ | 0.6+ | 2003 09 17 | 691 | 0.0 | 0.3+ | 2003 10 22 | 691 | 0.3+ | 0.0 |
| 2002 04 14 | 704 | 0.4+ | 0.3+ | 2003 09 22 | 699 | 0.2− | 0.1− | 2003 10 22 | 645 | 0.0 | 0.1− |
| 2002 04 14 | 704 | 0.2+ | 0.8+ | 2003 09 22 | 699 | 0.5+ | 0.6+ | 2003 10 22 | 691 | 0.3+ | 0.2+ |
| 2002 04 14 | 704 | 0.5+ | 1.0+ | 2003 09 22 | 699 | 0.3+ | 0.2− | 2003 10 22 | 645 | 0.1− | 0.0 |
| 2002 05 09 | 644 | 0.2− | 0.8+ | 2003 09 22 | 699 | 0.7− | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2002 05 09 | 704 | 0.2− | 0.8+ | 2003 09 27 | 704 | 0.5− | 1.4+ | 2003 10 24 | 645 | 0.1− | 0.0 |
| 2002 05 09 | 644 | 0.1− | 0.4+ | 2003 09 27 | 704 | 0.4+ | 0.4+ | 2003 11 16 | 645 | 0.1− | 0.0 |
| 2002 05 09 | 704 | 0.4− | 0.4+ | 2003 09 27 | 704 | 0.7+ | 1.3+ | 2003 11 16 | 645 | 0.1− | 0.1− |
| 2002 05 09 | 644 | 0.0 | 0.6+ | 2003 10 17 | 645 | 0.1− | 0.0 | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2002 05 09 | 704 | 0.9+ | 0.7+ | 2003 10 17 | 645 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.1+ |
| 2002 05 18 | 644 | 0.2+ | 0.5+ | 2003 10 18 | 645 | 0.0 | 0.0 | 2004 12 21 | 691 | 0.0 | 0.5+ |
| 2002 05 18 | 644 | 0.4+ | 0.0 | 2003 10 18 | 645 | 0.0 | 0.0 | 2004 12 21 | 691 | 0.0 | 0.5+ |
| 2002 05 18 | 644 | 0.3+ | 0.8+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2004 12 21 | 691 | 0.1+ | 0.4+ |
| 2003 09 17 | 691 | 0.2+ | 0.3+ | 2003 10 19 | 645 | 0.0 | 0.0 | | | | |
| 2003 09 17 | 691 | 0.0 | 0.3+ | 2003 10 22 | 691 | 0.1+ | 0.0 | | | | |

**2002 GC**$_{182}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.08037 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27594206 | $\omega$ | 127.23442 | | −0.78586449 | | −0.61782232 |
| $a$ | 2.3366345 | $\Omega$ | 14.67047 | | +0.52874030 | | −0.69368630 |
| $e$ | 0.1321444 | $i$ | 6.05042 | | +0.32070346 | | −0.37026329 |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 17 | 691 | 0.3+ | 0.0 | 2002 05 14 | 644 | 0.1+ | 0.2− | 2005 01 06 | 703 | 0.1+ | 0.5− |
| 1993 11 17 | 691 | 0.4− | 0.0 | 2002 05 14 | 644 | 0.1+ | 0.0 | 2005 01 16 | 699 | 0.2− | 0.0 |
| 1993 11 17 | 691 | 0.1− | 0.2+ | 2002 05 14 | 644 | 0.1− | 0.0 | 2005 01 16 | 699 | 0.3+ | 0.7+ |
| 2002 04 14 | 704 | 0.0 | 0.2− | 2004 12 21 | 703 | 0.9+ | 1.0− | 2005 01 16 | 699 | 1.1+ | 0.1+ |
| 2002 04 14 | 704 | 0.1+ | 0.3+ | 2004 12 21 | 703 | 0.1− | 0.4+ | 2005 01 16 | 699 | 0.5− | 0.2− |
| 2002 04 14 | 704 | 0.5− | 0.7+ | 2004 12 21 | 703 | 1.2− | 0.3+ | 2005 01 31 | 704 | 0.4+ | 0.1+ |
| 2002 04 14 | 704 | 0.3+ | 0.0 | 2004 12 21 | 703 | 0.6+ | 0.1− | 2005 01 31 | 704 | 0.3− | 0.8+ |
| 2002 05 10 | 644 | 0.1− | 0.2+ | 2005 01 06 | 703 | 0.7− | 0.4+ | 2005 01 31 | 704 | 0.4− | 1.1− |
| 2002 05 10 | 644 | 0.0 | 0.0 | 2005 01 06 | 703 | 0.1+ | 0.1+ | 2005 01 31 | 704 | 0.3− | 0.5+ |
| 2002 05 10 | 644 | 0.4+ | 0.1+ | 2005 01 06 | 703 | 0.2+ | 0.8− | 2005 01 31 | 704 | 0.3− | 0.1− |

**2002 HF**$_{8}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.69699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27960222 | $\omega$ | 260.60617 | | +0.63987333 | | +0.76587391 |
| $a$ | 2.3161978 | $\Omega$ | 49.37063 | | −0.66832003 | | +0.59521052 |
| $e$ | 0.4918756 | $i$ | 4.77981 | | −0.37935531 | | +0.24323155 |
| $P$ | 3.53 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.0 | 0.3− | 2002 04 21 | 448 | (0.2− | 2.3−) | 2002 06 05 | 413 | 0.1− | 0.1− |
| 2002 04 08 | 644 | 0.1+ | 0.0 | 2002 04 21 | 691 | 0.3− | 0.1− | 2002 06 06 | 696 | 0.0 | 0.2− |
| 2002 04 08 | 644 | 0.1− | 0.6− | 2002 04 21 | 691 | 0.0 | 0.1+ | 2002 06 06 | 696 | 0.1− | 0.2− |
| 2002 04 09 | 644 | 0.3− | 0.8− | 2002 04 21 | 691 | 0.6+ | 0.1− | 2002 06 06 | 413 | 0.1+ | 0.5− |
| 2002 04 09 | 644 | 0.3− | 0.6− | 2002 04 22 | 691 | 0.2− | 0.3+ | 2002 06 06 | 413 | 0.0 | 0.6− |
| 2002 04 09 | 644 | 0.2+ | 0.3− | 2002 04 22 | 691 | 0.3− | 0.0 | 2002 06 22 | 413 | 0.1− | 0.4− |
| 2002 04 19 | 691 | 0.3+ | 0.1− | 2002 04 22 | 691 | 0.1− | 0.3− | 2002 06 22 | 413 | 0.2− | 0.4− |
| 2002 04 19 | 691 | 0.2+ | 0.1− | 2002 04 22 | 413 | 0.1− | 0.2+ | 2002 06 22 | 413 | 0.1+ | 0.4− |
| 2002 04 19 | 691 | 0.2+ | 0.0 | 2002 04 22 | 413 | 0.1+ | 0.3+ | 2002 06 22 | 413 | 0.4− | 0.4− |
| 2002 04 19 | 598 | (2.1+ | 0.0 ) | 2002 04 22 | 413 | 0.1+ | 0.2+ | 2002 08 20 | 413 | 0.0 | 0.1+ |
| 2002 04 19 | 598 | (1.8+ | 0.4+) | 2002 04 30 | 246 | 0.3+ | 1.1+ | 2002 08 20 | 413 | 0.1− | 0.5+ |
| 2002 04 20 | 598 | (1.8+ | 0.0 ) | 2002 04 30 | 246 | 0.5+ | 0.0 | 2006 09 28 | 291 | (0.1− | 2.1−) |
| 2002 04 20 | 598 | (1.9+ | 0.0 ) | 2002 04 30 | 246 | 0.1+ | 0.6+ | 2006 09 28 | 291 | 0.9+ | 0.6− |
| 2002 04 20 | 691 | 0.1+ | 0.1+ | 2002 04 30 | 246 | 0.5+ | 0.5+ | 2006 09 28 | 291 | 0.1− | 0.2− |
| 2002 04 20 | 691 | 0.6− | 0.4+ | 2002 04 30 | 246 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.6− | 0.3− |
| 2002 04 20 | 691 | 0.1+ | 0.0 | 2002 05 07 | 696 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.7− | 0.1+ |
| 2002 04 20 | 474 | 0.8+ | 0.7− | 2002 05 07 | 696 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.6− | 1.4+ |
| 2002 04 20 | 474 | 0.5− | 0.1− | 2002 05 18 | 704 | 0.9+ | 0.8+ | 2006 11 16 | 691 | 0.3+ | 0.1− |
| 2002 04 20 | 474 | 0.2− | 0.2− | 2002 05 18 | 704 | (0.2− | 1.8+) | 2006 11 20 | 691 | 0.3+ | 0.2− |
| 2002 04 21 | 858 | 0.4− | 0.5− | 2002 05 18 | 704 | 0.9− | 0.5+ | 2006 11 20 | 691 | 0.3− | 0.3+ |
| 2002 04 21 | 448 | (0.9− | 2.4−) | 2002 05 18 | 704 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.4+ | 0.6− |
| 2002 04 21 | 858 | 0.7− | 0.1+ | 2002 05 18 | 704 | 0.9+ | 0.2− | 2006 11 24 | 691 | 0.1− | 0.6− |
| 2002 04 21 | 858 | 0.7− | 0.8+ | 2002 06 05 | 413 | 0.1+ | 0.2− | 2006 11 24 | 691 | 1.1+ | 0.1− |
| 2002 04 21 | 448 | (0.3− | 2.7−) | 2002 06 05 | 413 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.3− | 0.4+ |

**2002 HU**$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.94642 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36662575 | $\omega$ | 76.61822 | | −0.86535368 | | −0.30288161 |
| $a$ | 1.9333957 | $\Omega$ | 84.58424 | | +0.13335740 | | −0.90715203 |
| $e$ | 0.0710165 | $i$ | 23.64520 | | +0.48309296 | | −0.29212655 |
| $P$ | 2.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 19 | 704 | 0.4− | 0.4− | 2002 05 01 | 644 | 0.2− | 0.5+ | 2002 05 06 | 704 | 0.6− | 0.0 |
| 2002 02 19 | 704 | 0.0 | 0.2− | 2002 05 01 | 644 | 0.2− | 0.4+ | 2002 05 06 | 704 | 1.0− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 19 | 704 | 0.4− | 0.9+ | 2002 05 04 | 704 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.9+ | 0.2+ |
| 2002 02 19 | 704 | 0.8+ | 0.1+ | 2002 05 04 | 704 | 1.4− | 0.2− | 2006 11 20 | 704 | 0.3− | 0.0 |
| 2002 02 19 | 704 | 0.7− | 0.5− | 2002 05 04 | 704 | 0.2+ | 0.5− | 2006 11 20 | 704 | 0.8− | 1.4− |
| 2002 04 22 | 704 | 0.8+ | 1.0+ | 2002 05 04 | 704 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2002 04 22 | 704 | 0.8+ | 1.0− | 2002 05 06 | 704 | 0.3− | 0.9− | 2006 11 28 | 691 | 0.1+ | 0.1+ |
| 2002 04 22 | 704 | 1.2+ | 0.0 | 2002 05 06 | 704 | 0.0 | 0.0 | 2006 11 28 | 691 | 0.2+ | 0.5+ |
| 2002 05 01 | 644 | 0.3− | 0.1+ | 2002 05 06 | 704 | 0.5+ | 0.3+ | 2006 11 28 | 691 | 0.3− | 0.2− |

**2002 HD$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 190.01293 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.38275827 | $\omega$ | 142.21108 | +0.38256743 | +0.89919796 |
| $a$ | 1.8786808 | $\Omega$ | 148.57466 | −0.91544523 | +0.39997896 |
| $e$ | 0.0577105 | $i$ | 24.03194 | −0.12490876 | −0.17736926 |
| $P$ | 2.58 | $H$ | 16.8 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 699 | 0.3− | 0.1+ | 2005 07 02 | 703 | 1.0− | 0.5− | 2005 08 16 | E12 | 0.5+ | 0.1− |
| 2002 03 21 | 699 | 1.0− | 0.2+ | 2005 07 02 | 703 | 0.8− | 1.8− | 2005 08 30 | 699 | 0.2+ | 0.0 |
| 2002 03 21 | 699 | 0.8+ | 1.0+ | 2005 07 02 | 703 | 1.0− | 1.3− | 2005 08 30 | 699 | 0.0 | 0.2− |
| 2002 03 21 | 699 | 0.3+ | 0.6− | 2005 07 08 | 699 | 0.6+ | 0.2− | 2005 08 30 | 699 | 0.1− | 1.7+ |
| 2002 04 22 | 704 | 0.4− | 0.7+ | 2005 07 08 | 699 | 0.2− | 0.2− | 2005 08 30 | 699 | 0.2− | 0.5+ |
| 2002 04 22 | 704 | 0.6− | 0.6+ | 2005 07 08 | 699 | 0.9+ | 0.0 | 2005 09 05 | 703 | 0.4− | 0.3− |
| 2002 04 22 | 704 | 0.2+ | 0.4− | 2005 07 08 | 699 | 1.0− | 0.8+ | 2005 09 05 | 703 | 0.3+ | 0.3− |
| 2002 04 22 | 704 | 0.1− | 0.3+ | 2005 08 02 | 704 | 0.3− | 0.3− | 2005 09 05 | 703 | 1.0− | 0.4− |
| 2002 04 22 | 704 | 0.4+ | 0.4− | 2005 08 02 | 704 | 1.6+ | 0.2− | 2005 09 05 | 703 | 0.9+ | 0.2− |
| 2002 05 05 | 704 | 0.6+ | 0.1+ | 2005 08 02 | 704 | 0.2+ | 0.2− | 2005 09 26 | 704 | 0.3− | 0.3− |
| 2002 05 05 | 704 | 0.1+ | 0.2− | 2005 08 02 | 704 | 0.2− | 0.0 | 2005 09 26 | 704 | 0.2− | 0.1+ |
| 2002 05 05 | 704 | 0.0 | 0.2− | 2005 08 16 | E12 | 0.2+ | 0.0 | 2005 09 26 | 704 | 0.5+ | 0.4+ |
| 2002 05 05 | 704 | 0.2+ | 0.5− | 2005 08 16 | E12 | 0.1+ | 0.8+ | | | | |
| 2005 07 02 | 703 | 0.2− | 2.0+ | 2005 08 16 | E12 | 0.1+ | 0.1− | | | | |

**2002 HJ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 49.73038 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.29696541 | $\omega$ | 322.03510 | +0.43380078 | +0.90070243 |
| $a$ | 2.2250109 | $\Omega$ | 333.64957 | −0.81316639 | +0.38014450 |
| $e$ | 0.1846183 | $i$ | 3.03427 | −0.38804292 | +0.21029808 |
| $P$ | 3.32 | $H$ | 17.3 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.0 | 0.6+ | 2005 03 08 | G96 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2002 04 04 | 644 | 0.5+ | 0.6+ | 2005 03 08 | G96 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2002 04 04 | 644 | 0.1+ | 0.9+ | 2005 03 08 | G96 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2002 04 16 | 704 | 0.8+ | 0.3− | 2005 03 08 | G96 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2002 04 16 | 704 | 0.6+ | 0.6+ | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1+ |
| 2002 04 16 | 704 | (0.5+ | 1.6+) | 2006 07 22 | G96 | 0.4− | 0.3+ | 2006 10 02 | 691 | 0.5+ | 0.2+ |
| 2002 04 16 | 704 | 0.6+ | 0.4+ | 2006 07 22 | G96 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2002 04 16 | 704 | 0.5− | 1.4+ | 2006 07 22 | G96 | 0.4− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 04 18 | 644 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 10 02 | 291 | 0.3+ | 0.1+ |
| 2002 04 18 | 644 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.1− |
| 2002 04 18 | 644 | 0.2+ | 0.8+ | 2006 08 28 | 703 | 0.4− | 1.5+ | 2006 10 02 | 291 | 0.2− | 0.1+ |
| 2003 10 25 | 704 | (1.9− | 1.9−) | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2003 10 25 | 704 | 0.0 | 0.8− | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 02 | 291 | 0.1− | 0.2+ |
| 2003 10 25 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.9− |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2003 11 18 | 691 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.5+ | 0.7− | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.6+ |
| 2003 12 01 | 691 | 0.3+ | 0.3+ | 2006 09 17 | 703 | (1.7+ | 0.4−) | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2003 12 01 | 691 | 0.1− | 0.2+ | 2006 09 17 | 703 | 1.4+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.6− |
| 2003 12 01 | 691 | 0.3− | 0.1− | 2006 09 21 | A50 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2003 12 18 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2003 12 18 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | | | | |
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.0 | | | | |

**2002 HC$_{18}$ = 2006 SU$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 34.03313 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27996441 | $\omega$ | 262.54386 | +0.66161659 | +0.74514337 |
| $a$ | 2.3141997 | $\Omega$ | 49.23284 | −0.63691297 | +0.61744322 |
| $e$ | 0.2494849 | $i$ | 6.35366 | −0.39573394 | +0.25204210 |
| $P$ | 3.52 | $H$ | 17.2 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.0 | 0.6− | 2002 06 12 | 644 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 1999 10 09 | 704 | 1.0+ | 0.1− | 2002 06 12 | 644 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.5+ | 0.2− |
| 1999 10 09 | 704 | 0.2− | 0.5− | 2002 06 12 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.2− |
| 1999 10 09 | 704 | 1.0+ | 0.7− | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 09 30 | 704 | 1.5+ | 0.6− |
| 1999 10 09 | 704 | 0.9+ | 0.9− | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 1999 11 28 | 691 | 0.8− | 1.1+ | 2006 09 18 | 703 | 0.6− | 0.2− | 2006 09 30 | 704 | 1.3+ | 1.4− |
| 1999 11 28 | 691 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.9+ |
| 1999 11 28 | 691 | 0.3− | 0.0 | 2006 09 21 | 699 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2002 04 21 | 291 | 0.1− | 0.5+ | 2006 09 21 | 699 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.9− | 0.0 |
| 2002 04 21 | 291 | 0.3− | 0.5− | 2006 09 21 | 699 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2002 04 21 | 291 | 0.1− | 1.0+ | 2006 09 21 | 699 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 05 11 | 704 | 0.5+ | 0.6− | 2006 09 22 | 704 | 0.3+ | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 05 11 | 704 | 0.3+ | 0.0 | 2006 09 22 | 704 | 0.8+ | 1.0− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 05 11 | 704 | 0.0 | 0.4+ | 2006 09 22 | 704 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 05 11 | 704 | 0.3+ | 0.7− | 2006 09 22 | 704 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2002 05 11 | 704 | 0.7+ | 0.2− | 2006 09 25 | 699 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.6+ |
| 2002 05 17 | 644 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 1.0+ | 0.5− | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2002 05 17 | 644 | 0.6+ | 0.1− | 2006 09 25 | 699 | 1.1− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2002 05 17 | 644 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.2+ | | | | |

**2002 JN$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 320.68581 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23246365 | $\omega$ | 189.76300 | +0.34088160 | +0.93994632 |
| $a$ | 2.6195862 | $\Omega$ | 100.16917 | −0.86133800 | +0.31965757 |
| $e$ | 0.0858577 | $i$ | 1.00938 | −0.37669163 | +0.11966603 |
| $P$ | 4.24 | $H$ | 17.3 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.2− | 0.4+ | 2003 09 29 | 691 | 0.1+ | 0.3+ | 2006 03 24 | 691 | 0.2+ | 0.1− |
| 1999 10 30 | 691 | 0.1+ | 0.1+ | 2003 09 29 | 691 | 0.2+ | 0.3+ | 2006 03 24 | G96 | 0.8− | 0.0 |
| 1999 10 30 | 691 | 0.0 | 0.1− | 2003 09 29 | 691 | 0.1− | 0.1+ | 2006 03 24 | G96 | 0.2+ | 0.1− |
| 2002 05 07 | 291 | 0.4+ | 0.2− | 2003 10 18 | 645 | 0.1+ | 0.0 | 2006 03 24 | G96 | 0.2− | 0.2+ |
| 2002 05 07 | 291 | 0.4+ | 0.1− | 2003 10 18 | 645 | 0.1+ | 0.1+ | 2006 03 24 | G96 | 0.1− | 0.1+ |
| 2002 05 07 | 291 | 0.1+ | 0.2+ | 2003 10 24 | 691 | 0.3− | 0.1+ | 2006 05 03 | 691 | 0.0 | 0.1− |
| 2002 05 08 | 291 | 0.4− | 0.1− | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 05 03 | 691 | 0.1− | 0.1+ |
| 2002 05 08 | 291 | 0.3− | 0.0 | 2003 10 24 | 691 | 0.1+ | 0.0 | 2006 05 03 | 691 | 0.0 | 0.1+ |
| 2002 05 08 | 291 | 0.2− | 0.4+ | 2003 10 24 | 645 | 0.1− | 0.1− | 2006 05 03 | 691 | 0.3− | 0.2+ |
| 2002 05 17 | 644 | 0.2+ | 0.1− | 2003 10 24 | 691 | 0.1− | 0.0 | 2006 05 03 | 691 | 0.0 | 0.0 |
| 2002 05 17 | 644 | 0.1+ | 0.2− | 2006 03 24 | 691 | 0.4+ | 0.2− | 2006 05 03 | 691 | 0.1+ | 0.0 |
| 2002 05 17 | 644 | 0.1− | 0.1− | 2006 03 24 | 691 | 0.1+ | 0.3+ | | | | |

**2002 JR$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 44.16024 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.26727477 | $\omega$ | 203.39193 | +0.82743383 | +0.54270007 |
| $a$ | 2.3868808 | $\Omega$ | 122.95400 | −0.48423780 | +0.81967846 |
| $e$ | 0.6364144 | $i$ | 9.90406 | −0.28437126 | +0.18331353 |
| $P$ | 3.69 | $H$ | 17.6 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 18 | 704 | 1.0− | 1.2− | 2002 06 01 | 151 | 0.1+ | 0.2+ | 2002 06 16 | 557 | 0.0 | 0.1+ |
| 2002 04 18 | 704 | 0.5− | 0.9− | 2002 06 01 | 203 | 1.1+ | 0.4− | 2002 06 16 | 557 | 0.1− | 0.1+ |
| 2002 04 18 | 704 | 0.2+ | 0.9− | 2002 06 01 | 157 | 0.2+ | 0.1− | 2002 06 16 | 557 | 0.2− | 0.2+ |
| 2002 04 18 | 704 | 0.5+ | 1.6− | 2002 06 01 | 157 | 0.3+ | 0.0 | 2002 06 16 | 557 | 0.1− | 0.1+ |
| 2002 05 07 | 704 | 0.1− | 0.0 | 2002 06 01 | 157 | 0.0 | 0.1+ | 2002 06 16 | 127 | 0.5− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 704 | 0.3− | 0.1+ | 2002 06 01 | 157 | 0.1+ | 0.1+ | 2002 06 16 | 127 | 0.5− | 0.7+ | | |
| 2002 05 07 | 704 | 0.0 | 0.0 | 2002 06 01 | 127 | 0.9− | 0.5− | 2002 06 16 | 557 | 0.0 | 0.0 | | |
| 2002 05 07 | 704 | 0.2+ | 0.1+ | 2002 06 01 | 127 | 0.8− | 0.7− | 2002 06 16 | 557 | 0.1− | 0.1+ | | |
| 2002 05 07 | 704 | 0.1− | 0.4− | 2002 06 01 | 118 | 0.1− | 0.4+ | 2002 06 17 | 557 | 0.1− | 0.0 | | |
| 2002 05 07 | 246 | 0.2+ | 0.2− | 2002 06 01 | 118 | 0.1− | 0.3+ | 2002 06 17 | 611 | 0.3+ | 0.8+ | | |
| 2002 05 07 | 246 | 0.1− | 0.2− | 2002 06 02 | 118 | 0.0 | 0.3+ | 2002 06 17 | 185 | 0.5+ | 0.0 | | |
| 2002 05 07 | 246 | 0.1+ | 0.1+ | 2002 06 02 | 939 | 0.3+ | 0.1− | 2002 06 17 | 611 | 0.4− | 0.1+ | | |
| 2002 05 07 | 246 | 0.1+ | 0.1− | 2002 06 02 | 939 | 0.4− | 0.0 | 2002 06 17 | 611 | 0.1+ | 0.2+ | | |
| 2002 05 07 | 246 | 0.3+ | 0.1+ | 2002 06 02 | 939 | 0.4− | 0.2+ | 2002 06 17 | 185 | 0.2+ | 0.0 | | |
| 2002 05 07 | 246 | 0.3+ | 0.1+ | 2002 06 02 | 704 | 0.5+ | 0.4− | 2002 06 17 | 185 | 0.6+ | 0.6+ | | |
| 2002 05 08 | 118 | 0.7+ | 0.2− | 2002 06 02 | 704 | 0.4+ | 0.2− | 2002 06 17 | 185 | 0.3+ | 0.2+ | | |
| 2002 05 08 | 118 | 0.9+ | 0.4− | 2002 06 02 | 704 | 0.5+ | 0.2− | 2002 06 17 | 557 | 0.3− | 0.0 | | |
| 2002 05 08 | 118 | 0.1+ | 0.4− | 2002 06 02 | 704 | 0.5+ | 0.4− | 2002 06 17 | 198 | 0.2+ | 0.2− | | |
| 2002 05 08 | 118 | 0.5+ | 0.7+ | 2002 06 02 | 704 | 0.4+ | 0.8+ | 2002 06 17 | 198 | 0.3+ | 0.0 | | |
| 2002 05 08 | 448 | (0.2+ | 2.1−) | 2002 06 02 | 611 | 0.6+ | 0.2+ | 2002 06 17 | 557 | 0.4− | 0.0 | | |
| 2002 05 08 | 448 | (2.0− | 2.1−) | 2002 06 02 | 611 | 0.6− | 0.4+ | 2002 06 17 | 198 | 0.2− | 0.0 | | |
| 2002 05 08 | 448 | 1.3− | 2.0− | 2002 06 05 | 333 | 0.5+ | 0.1− | 2002 06 17 | 198 | 0.3− | 0.1− | | |
| 2002 05 08 | 658 | 0.4+ | 0.2+ | 2002 06 05 | 333 | 0.2− | 0.4− | 2002 06 17 | 198 | 0.2− | 0.3+ | | |
| 2002 05 08 | 658 | 0.2+ | 0.1+ | 2002 06 05 | 333 | 0.2+ | 0.7− | 2002 06 17 | 557 | 0.4− | 0.2− | | |
| 2002 05 08 | 658 | 0.3− | 0.0 | 2002 06 09 | 071 | 0.3+ | 1.1− | 2002 06 17 | 557 | 0.4− | 0.2− | | |
| 2002 05 08 | 704 | 0.3+ | 0.8+ | 2002 06 09 | 071 | 0.4+ | 1.4− | 2002 06 18 | 557 | 0.4− | 0.3− | | |
| 2002 05 08 | 704 | 0.9+ | 0.1− | 2002 06 09 | 071 | 0.6− | 0.4− | 2002 06 18 | 355 | 0.2− | 0.2− | | |
| 2002 05 08 | 704 | 0.2+ | 0.3+ | 2002 06 10 | 452 | 0.1+ | 0.5+ | 2002 06 18 | 355 | 0.1+ | 0.2− | | |
| 2002 05 08 | 704 | 0.1+ | 0.1− | 2002 06 10 | 452 | 0.2+ | 0.5+ | 2002 06 18 | 355 | 0.2+ | 0.2+ | | |
| 2002 05 08 | 704 | 0.4+ | 0.4+ | 2002 06 10 | 452 | 0.2+ | 0.4+ | 2002 06 18 | 355 | 0.1+ | 0.1− | | |
| 2002 05 08 | 704 | 0.1+ | 0.0 | 2002 06 10 | 203 | 0.2+ | 0.5+ | 2002 06 20 | 950 | 0.1− | 0.0 | | |
| 2002 05 08 | 704 | 0.2− | 0.1+ | 2002 06 10 | 203 | 0.0 | 0.5+ | 2002 06 20 | 950 | 0.1− | 0.1− | | |
| 2002 05 08 | 704 | 0.5+ | 0.3− | 2002 06 10 | 185 | 0.3+ | 0.3+ | 2002 06 20 | 950 | 0.0 | 0.1− | | |
| 2002 05 08 | 704 | 0.6− | 0.2+ | 2002 06 10 | 185 | 0.0 | 0.5+ | 2002 06 21 | 198 | 0.1− | 1.2+ | | |
| 2002 05 08 | 704 | 0.1+ | 0.1− | 2002 06 10 | 185 | 0.2+ | 0.5+ | 2002 06 21 | 198 | 0.1− | 0.8+ | | |
| 2002 05 08 | 333 | 0.1+ | 0.3− | 2002 06 11 | 185 | 0.1− | 0.1+ | 2002 06 21 | 198 | 0.3+ | 0.2− | | |
| 2002 05 08 | 333 | 0.8− | 0.3− | 2002 06 11 | 185 | 0.1+ | 0.2− | 2002 06 21 | 198 | 0.4+ | 0.3− | | |
| 2002 05 08 | 333 | 0.6+ | 0.2− | 2002 06 11 | 185 | 0.2− | 0.2+ | 2002 06 21 | 198 | 0.4+ | 0.2+ | | |
| 2002 05 09 | 704 | 0.3+ | 0.2− | 2002 06 11 | 185 | 0.2− | 0.1+ | 2002 06 21 | 198 | 0.5+ | 0.0 | | |
| 2002 05 09 | 704 | 0.2+ | 0.5− | 2002 06 11 | 185 | 0.2− | 0.0 | 2002 06 22 | 649 | 0.1+ | 0.1+ | | |
| 2002 05 09 | 670 | 0.8− | 0.1+ | 2002 06 11 | 185 | 0.2− | 0.4+ | 2002 06 22 | 649 | 0.2+ | 0.0 | | |
| 2002 05 09 | 704 | 0.1+ | 0.5− | 2002 06 11 | 557 | 0.1− | 0.1− | 2002 06 22 | 649 | 0.1+ | 0.2+ | | |
| 2002 05 09 | 704 | 0.0 | 0.4− | 2002 06 11 | 557 | 0.1− | 0.0 | 2002 06 22 | 118 | 0.1+ | 0.1− | | |
| 2002 05 09 | 704 | 0.1+ | 0.3− | 2002 06 11 | 952 | 0.2− | 0.7− | 2002 06 22 | 118 | 0.1+ | 0.0 | | |
| 2002 05 09 | 670 | 0.8+ | 0.0 | 2002 06 11 | 952 | 0.3− | 0.2− | 2002 06 22 | 118 | 0.0 | 0.2+ | | |
| 2002 05 09 | 670 | 0.1+ | 0.4+ | 2002 06 11 | 952 | 0.3− | 0.2− | 2002 06 22 | 157 | 0.2− | 0.2+ | | |
| 2002 05 11 | 704 | 0.2+ | 0.3+ | 2002 06 11 | 952 | 0.1− | 0.4+ | 2002 06 22 | 157 | 0.0 | 0.6+ | | |
| 2002 05 11 | 704 | 0.3+ | 0.1− | 2002 06 11 | 952 | 0.2− | 0.2+ | 2002 06 22 | 157 | 0.2− | 0.7+ | | |
| 2002 05 11 | 704 | 0.5+ | 0.0 | 2002 06 11 | 952 | 0.3− | 0.2+ | 2002 06 22 | 157 | 0.5− | 0.4+ | | |
| 2002 05 11 | 704 | 0.6+ | 0.2− | 2002 06 11 | 557 | 0.2− | 0.1− | 2002 06 22 | 163 | 0.1− | 0.2+ | | |
| 2002 05 11 | 704 | 0.4+ | 0.1+ | 2002 06 11 | 198 | 0.2− | 0.3+ | 2002 06 22 | 163 | 0.0 | 0.0 | | |
| 2002 05 14 | 118 | 0.2+ | 0.0 | 2002 06 11 | 198 | 0.3− | 0.2+ | 2002 06 22 | 163 | 0.1− | 0.4+ | | |
| 2002 05 14 | 118 | 0.4+ | 0.3− | 2002 06 11 | 198 | 0.1− | 0.0 | 2002 06 22 | 185 | 0.1+ | 0.3+ | | |
| 2002 05 14 | 151 | 0.3+ | 0.1− | 2002 06 11 | 198 | 0.0 | 0.1+ | 2002 06 22 | 185 | 0.2+ | 0.3+ | | |
| 2002 05 14 | 151 | 0.2+ | 0.4+ | 2002 06 11 | 198 | 0.3− | 0.3+ | 2002 06 22 | 185 | 0.2+ | 0.4+ | | |
| 2002 05 14 | 151 | 0.0 | 0.2+ | 2002 06 12 | 557 | 0.2− | 0.1− | 2002 06 22 | 185 | 0.2+ | 0.4+ | | |
| 2002 05 14 | 151 | 0.2− | 0.1+ | 2002 06 12 | 557 | 0.2− | 0.2− | 2002 06 22 | 941 | 0.1− | 0.1+ | | |
| 2002 05 15 | 246 | 0.2+ | 0.2− | 2002 06 12 | 557 | 0.2− | 0.1− | 2002 06 22 | 941 | 0.4− | 0.1− | | |
| 2002 05 15 | 246 | 0.4+ | 0.2− | 2002 06 12 | 557 | 0.1− | 0.3− | 2002 06 22 | 941 | 0.1+ | 0.1+ | | |
| 2002 05 15 | 246 | 0.3+ | 0.3− | 2002 06 13 | 071 | 0.5− | 1.0+ | 2002 06 22 | 941 | 0.4− | 0.1+ | | |
| 2002 05 15 | 246 | 0.0 | 0.1− | 2002 06 13 | 071 | (0.3− | 2.7+) | 2002 06 22 | 941 | 0.3− | 0.3+ | | |
| 2002 05 15 | 118 | 0.0 | 0.2+ | 2002 06 13 | 071 | (1.4− | 2.3+) | 2002 06 22 | 941 | 0.0 | 0.1− | | |
| 2002 05 15 | 118 | 0.4+ | 0.3− | 2002 06 14 | 198 | 0.4+ | 0.2+ | 2002 06 22 | 941 | 0.2− | 0.2− | | |
| 2002 05 15 | 118 | 0.3+ | 0.2− | 2002 06 14 | 198 | 0.4+ | 0.1− | 2002 06 22 | 941 | 0.0 | 0.1− | | |
| 2002 05 16 | 704 | 1.0+ | 0.1+ | 2002 06 14 | 198 | 0.1+ | 0.2+ | 2002 06 22 | 941 | 0.2− | 0.2− | | |
| 2002 05 16 | 704 | 0.8+ | 0.6+ | 2002 06 14 | 198 | 0.1− | 0.0 | 2002 06 23 | 232 | 1.4+ | 0.5− | | |
| 2002 05 16 | 704 | 1.2+ | 0.6+ | 2002 06 14 | 557 | 0.1− | 0.1− | 2002 06 23 | 232 | 1.9+ | 0.9− | | |
| 2002 05 16 | 704 | 1.4+ | 0.2+ | 2002 06 14 | 108 | (0.7− | 5.3+) | 2002 06 23 | 232 | 0.8+ | 1.1− | | |
| 2002 05 16 | 704 | 1.3+ | 0.6+ | 2002 06 14 | 108 | 0.1+ | 0.1+ | 2002 06 23 | 232 | 0.8+ | 1.4− | | |
| 2002 05 16 | 469 | 0.4− | 0.4− | 2002 06 14 | 118 | 0.4+ | 0.2+ | 2002 06 23 | 232 | 0.4+ | 1.3− | | |
| 2002 05 16 | 469 | 0.6− | 0.2− | 2002 06 14 | 118 | 0.3+ | 0.3+ | 2002 06 23 | 232 | (0.4− | 2.1−) | | |
| 2002 05 16 | 469 | 0.5− | 0.2− | 2002 06 14 | 118 | 0.2+ | 0.1+ | 2002 06 23 | 232 | (0.2− | 2.2−) | | |
| 2002 05 16 | 469 | 0.1− | 0.2+ | 2002 06 14 | 118 | 0.3+ | 0.0 | 2002 06 23 | 939 | 0.1− | 0.0 | | |
| 2002 05 17 | 198 | 0.1+ | 0.2− | 2002 06 14 | 157 | 0.2− | 0.2− | 2002 06 23 | 939 | 0.1+ | 0.5+ | | |
| 2002 05 17 | 198 | 0.2− | 0.2− | 2002 06 14 | 157 | 0.1− | 0.4− | 2002 06 23 | 939 | 0.1− | 0.4+ | | |
| 2002 05 17 | 198 | 0.4− | 0.1+ | 2002 06 14 | 108 | 0.3+ | 0.1− | 2002 06 24 | 611 | 0.2+ | 0.2+ | | |
| 2002 05 17 | 198 | 0.5− | 0.4+ | 2002 06 14 | 557 | 0.1− | 0.2− | 2002 06 24 | 611 | 0.1+ | 0.1− | | |
| 2002 05 17 | 704 | 0.3+ | 0.3+ | 2002 06 14 | 157 | 0.3− | 0.4− | 2002 06 24 | 611 | 0.1+ | 0.0 | | |
| 2002 05 17 | 704 | 0.8+ | 1.1+ | 2002 06 14 | 157 | 0.1− | 0.5− | 2002 06 24 | 198 | 0.3− | 0.4− | | |
| 2002 05 17 | 704 | 0.2− | 0.4+ | 2002 06 14 | 108 | (0.7+ | 3.8−) | 2002 06 24 | 198 | 0.1− | 0.4− | | |
| 2002 05 17 | 704 | 0.4+ | 0.4+ | 2002 06 14 | 233 | (5.8+ | 1.6−) | 2002 06 24 | 198 | 0.2− | 0.3− | | |
| 2002 05 17 | 704 | 0.1− | 0.1+ | 2002 06 14 | 233 | (4.5+ | 0.9−) | 2002 06 24 | 198 | 0.2− | 0.5− | | |
| 2002 05 17 | 704 | 0.3+ | 0.9+ | 2002 06 14 | 557 | 0.1− | 0.1− | 2002 06 24 | 198 | 0.1− | 0.5− | | |
| 2002 05 17 | 704 | 0.2+ | 0.7+ | 2002 06 14 | 233 | (3.6+ | 0.7−) | 2002 06 24 | 198 | 0.1− | 0.5− | | |
| 2002 05 17 | 198 | 1.3− | 0.3+ | 2002 06 14 | 233 | (2.5+ | 0.8−) | 2002 06 24 | J95 | 0.8− | 0.6− | | |
| 2002 05 17 | 198 | 0.4+ | 0.4+ | 2002 06 14 | 233 | 1.4+ | 0.1− | 2002 06 24 | J95 | 0.2− | 0.9− | | |
| 2002 05 17 | 198 | 0.6+ | 0.3+ | 2002 06 14 | 587 | 0.1− | 0.0 | 2002 06 24 | J95 | 0.0 | 0.4+ | | |
| 2002 05 19 | 322 | 0.8− | 0.0 | 2002 06 14 | 587 | 0.0 | 0.1− | 2002 06 26 | 118 | 0.1− | 0.3+ | | |
| 2002 05 19 | 322 | 0.5+ | 0.6− | 2002 06 14 | 587 | 0.1− | 0.1− | 2002 06 26 | 118 | 0.2− | 0.3+ | | |
| 2002 05 20 | 151 | 0.5− | 0.2− | 2002 06 14 | 557 | 0.0 | 0.0 | 2002 06 28 | 176 | 0.1− | 0.7+ | | |
| 2002 05 20 | 151 | 0.6+ | 0.0 | 2002 06 14 | 203 | 0.0 | 0.0 | 2002 06 28 | 176 | 0.1− | 0.6+ | | |
| 2002 05 20 | 151 | 0.1− | 0.1+ | 2002 06 14 | 587 | 0.1− | 0.1− | 2002 06 28 | 176 | 0.0 | 0.5+ | | |
| 2002 05 20 | 151 | 0.0 | 0.5− | 2002 06 14 | 587 | 0.0 | 0.3− | 2002 06 28 | 176 | 0.0 | 0.4+ | | |
| 2002 05 20 | 611 | 0.3− | 0.1+ | 2002 06 14 | 611 | 0.1+ | 0.0 | 2002 06 28 | 176 | 0.1+ | 0.4+ | | |
| 2002 05 20 | 611 | 0.2− | 0.1+ | 2002 06 14 | 611 | 0.1+ | 0.0 | 2002 06 28 | 176 | 0.1+ | 0.3+ | | |
| 2002 05 20 | 611 | 0.0 | 0.0 | 2002 06 14 | 611 | 0.1+ | 0.1− | 2002 07 01 | 649 | 0.1− | 0.1− | | |
| 2002 05 22 | 246 | 0.1+ | 0.1− | 2002 06 14 | 203 | 0.1− | 0.0 | 2002 07 01 | 649 | 0.3− | 0.1+ | | |
| 2002 05 22 | 246 | 0.1− | 0.1− | 2002 06 14 | 557 | 0.1− | 0.0 | 2002 07 01 | 649 | 0.0 | 0.1− | | |
| 2002 05 22 | 246 | 0.1+ | 0.3− | 2002 06 14 | 557 | 0.1− | 0.1− | 2002 07 02 | 118 | 0.1+ | 0.1− | | |
| 2002 05 22 | 246 | 0.2+ | 0.1− | 2002 06 14 | 557 | 0.1− | 0.0 | 2002 07 02 | 118 | 0.1+ | 0.0 | | |
| 2002 05 22 | 246 | 0.2− | 0.3− | 2002 06 15 | 557 | 0.0 | 0.0 | 2002 07 02 | 118 | 0.2+ | 0.2− | | |
| 2002 05 24 | 201 | 1.3− | 0.0 | 2002 06 15 | 557 | 0.0 | 0.0 | 2002 07 02 | 118 | 0.3+ | 0.1− | | |
| 2002 05 24 | 201 | 0.2− | 0.2− | 2002 06 15 | 557 | 0.0 | 0.1− | 2002 09 10 | 848 | 1.6+ | 1.9+ | | |
| 2002 05 24 | 201 | 0.4+ | 0.4+ | 2002 06 15 | 939 | 0.0 | 0.2+ | 2002 09 10 | 848 | 0.1+ | 1.1+ | | |
| 2002 05 29 | 560 | 0.1+ | 0.5− | 2002 06 15 | 939 | 0.1− | 0.3+ | 2002 09 10 | 848 | 1.6+ | 0.4+ | | |
| 2002 05 29 | 560 | 0.1− | 1.3− | 2002 06 15 | 939 | 0.0 | 0.6+ | 2002 09 10 | 848 | 0.4− | 1.4− | | |
| 2002 05 29 | 560 | 0.0 | 0.1+ | 2002 06 16 | 941 | 0.3+ | 0.1− | 2002 10 21 | 649 | 0.4− | 0.0 | | |
| 2002 05 29 | 628 | 0.1+ | 1.9− | 2002 06 16 | 941 | 0.3+ | 0.2+ | 2002 10 21 | 649 | 0.3− | 0.3+ | | |
| 2002 05 29 | 628 | 0.7− | 0.8+ | 2002 06 16 | 941 | 0.4− | 0.1− | 2002 11 26 | 711 | 1.5+ | 0.1+ | | |
| 2002 05 31 | 203 | 0.1− | 0.4+ | 2002 06 16 | 941 | 0.8− | 0.2+ | 2002 11 26 | 711 | 0.7+ | 0.5+ | | |
| 2002 05 31 | 215 | 0.1− | 0.1+ | 2002 06 16 | 941 | 0.0 | 0.1− | 2002 12 05 | 644 | 0.7− | 0.4+ | | |
| 2002 05 31 | 215 | 0.1− | 0.2+ | 2002 06 16 | 941 | 0.9+ | 0.0 | 2002 12 05 | 644 | 0.1− | 0.4+ | | |
| 2002 05 31 | 215 | 0.0 | 0.1+ | 2002 06 16 | 941 | 0.6+ | 0.2+ | 2002 12 06 | 644 | 0.7− | 0.6+ | | |
| 2002 05 31 | 046 | 0.1+ | 0.2+ | 2002 06 16 | 939 | 0.2+ | 0.5+ | 2002 12 06 | 644 | 1.0− | 0.5+ | | |
| 2002 05 31 | 127 | 0.4− | 0.8+ | 2002 06 16 | 939 | 0.4+ | 0.2+ | 2002 12 06 | 644 | 0.4− | 0.4+ | | |
| 2002 05 31 | 046 | 0.0 | 0.2+ | 2002 06 16 | 939 | 0.4+ | 0.1+ | 2002 12 11 | 644 | 0.2− | 0.1− | | |
| 2002 05 31 | 151 | 0.1− | 0.2+ | 2002 06 16 | 151 | 0.0 | 0.1− | 2002 12 11 | 644 | 0.4− | 0.5− | | |
| 2002 05 31 | 127 | 0.7− | 0.4+ | 2002 06 16 | 151 | 0.2− | 0.0 | 2002 12 11 | 644 | 0.3− | 0.5− | | |
| 2002 05 31 | 046 | 0.1+ | 0.1+ | 2002 06 16 | 151 | 0.1− | 0.1+ | 2002 12 13 | 644 | 0.7− | 0.1+ | | |
| 2002 05 31 | 046 | 0.0 | 0.2+ | 2002 06 16 | 151 | 0.2− | 0.1+ | 2002 12 13 | 644 | 0.8− | 0.1− | | |
| 2002 05 31 | 151 | 0.0 | 0.1+ | 2002 06 16 | 151 | 0.0 | 0.2+ | 2006 11 21 | 696 | 0.4− | 0.2+ | | |
| 2002 05 31 | 046 | 0.1+ | 0.1+ | 2002 06 16 | 151 | 0.2− | 0.1− | 2006 11 21 | 696 | 0.0 | 0.4− | | |
| 2002 05 31 | 151 | 0.0 | 0.1+ | 2002 06 16 | 151 | 0.1− | 0.2+ | | | | | | |
| 2002 05 31 | 046 | 0.3+ | 0.5+ | 2002 06 16 | 151 | 0.1− | 0.2+ | | | | | | |

**2002 JE$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.63406 | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29366702 | $\omega$ | 234.85579 | +0.50074803 | | +0.84777898 | |
| $a$ | 2.2416403 | $\Omega$ | 66.10981 | −0.71897051 | | +0.51975866 | |
| $e$ | 0.2826336 | $i$ | 11.01564 | −0.48200915 | | +0.10545962 | |
| $P$ | 3.36 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 10 | 704 | 1.2− | 0.4− | 2002 05 09 | 704 | 0.8+ | 1.0+ | 2006 11 09 | 644 | 0.3+ | 0.2+ | | |
| 2002 04 10 | 704 | 0.2+ | 0.7− | 2002 05 09 | 704 | (1.4+ | 1.7+) | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 04 10 | 704 | 0.1− | 0.5− | 2002 05 09 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.4− | 0.6+ | | |
| 2002 04 10 | 704 | 0.2− | 0.1− | 2002 05 09 | 704 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.6+ | | |
| 2002 04 10 | 704 | 0.7− | 0.0 | 2002 05 14 | 699 | 0.4+ | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.2+ | | |
| 2002 04 16 | 704 | 0.2− | 0.2+ | 2002 05 14 | 699 | 1.3+ | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 16 | 704 | (1.4+ | 1.8−) | 2002 05 14 | 699 | 1.2+ | 0.3− | 2006 11 10 | 644 | 0.0 | 0.5+ | | |
| 2002 04 16 | 704 | 0.7+ | 0.3+ | 2002 05 14 | 699 | (1.3+ | 2.8+) | 2006 11 13 | 703 | 0.1− | 1.3+ | | |
| 2002 04 16 | 704 | 0.4− | 1.3− | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.9− | | |
| 2002 05 02 | 699 | 0.7− | 1.2− | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.9+ | 1.3+ | | |
| 2002 05 02 | 699 | 0.6+ | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.1− | | |
| 2002 05 02 | 699 | 1.2+ | 1.0− | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.2− | 1.1+ | | |
| 2002 05 02 | 699 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.9+ | | |
| 2002 05 07 | 704 | 1.2− | 1.1+ | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 14 | 704 | (0.1− | 2.4+) | | |
| 2002 05 07 | 704 | 0.8− | 1.2+ | 2006 10 16 | 703 | 0.7− | 1.5− | 2006 11 14 | 704 | (0.3− | 2.0+) | | |
| 2002 05 07 | 704 | 0.4− | 1.1+ | 2006 10 22 | 703 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.2− | | |
| 2002 05 07 | 704 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.7− | | |
| 2002 05 08 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.4− | | |
| 2002 05 08 | 704 | 0.1− | 0.5− | 2006 10 22 | 703 | 0.7− | 0.0 | 2006 11 23 | G96 | 0.4− | 0.4− | | |
| 2002 05 08 | 704 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.1+ | | | | | | |
| 2002 05 08 | 704 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | | | | | | |

**2002 JO$_{11}$ = 2006 SD$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.75281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27955263 | $\omega$ | 59.67857 | | +0.51956391 | +0.84959281 | |
| $a$ | 2.3164717 | $\Omega$ | 241.89608 | | −0.81502120 | +0.46088860 | |
| $e$ | 0.2766690 | $i$ | 5.90859 | | −0.25650300 | +0.25646396 | |
| $P$ | 3.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1− | 0.2− | 2002 05 11 | 704 | 0.5− | 0.9− | 2006 09 27 | 703 | 0.2− | 0.4− | | |
| 1999 10 10 | 704 | 0.1− | 0.2+ | 2002 05 11 | 704 | 0.3− | 0.8− | 2006 09 27 | 703 | 1.5− | 0.7− | | |
| 1999 10 10 | 704 | 0.5− | 0.3+ | 2002 05 13 | 704 | 0.2− | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.7− | | |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2002 05 13 | 704 | 0.5− | 0.5+ | 2006 09 27 | 703 | 1.0− | 0.1+ | | |
| 1999 10 10 | 704 | 0.2− | 1.0+ | 2002 05 13 | 704 | 0.7+ | 0.5+ | 2006 09 27 | 703 | 0.6− | 0.1− | | |
| 2002 05 04 | 699 | 0.1+ | 0.6− | 2002 05 13 | 704 | 0.3+ | 0.6− | 2006 09 27 | 703 | 0.7+ | 0.1− | | |
| 2002 05 04 | 699 | 0.5− | 0.6+ | 2002 05 13 | 704 | 0.4+ | 0.9+ | 2006 10 03 | 704 | (1.7+ | 0.2+) | | |
| 2002 05 04 | 699 | 0.8− | 0.3− | 2006 09 16 | 703 | 0.5+ | 0.7+ | 2006 10 03 | 704 | 1.0+ | 1.0− | | |
| 2002 05 04 | 699 | 0.8− | 0.6+ | 2006 09 16 | 703 | 0.5+ | 0.2+ | 2006 10 03 | 704 | 0.6− | 0.5− | | |
| 2002 05 07 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.4− | 0.1− | 2006 10 03 | 704 | 0.7− | 0.6+ | | |
| 2002 05 07 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.9− | 0.8+ | 2006 10 17 | 703 | 0.6+ | 0.0 | | |
| 2002 05 07 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 1.0+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.2− | | |
| 2002 05 08 | 699 | 1.0+ | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.8− | 2006 10 17 | 703 | 0.0 | 0.6+ | | |
| 2002 05 08 | 699 | (1.9+ | 0.5−) | 2006 09 19 | 699 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.7+ | | |
| 2002 05 08 | 699 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.2+ | | |
| 2002 05 08 | 699 | 0.2+ | 0.8+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.4+ | | |
| 2002 05 09 | 704 | 0.5+ | 1.1− | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2002 05 09 | 704 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.3+ | | |
| 2002 05 09 | 704 | 0.2− | 0.1+ | 2006 09 27 | 699 | 1.3+ | 0.4+ | 2006 11 20 | G96 | 0.1− | 0.5− | | |
| 2002 05 11 | 704 | 0.3+ | 0.6− | 2006 09 27 | 699 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.3+ | | |
| 2002 05 11 | 704 | 0.5− | 0.5− | 2006 09 27 | 699 | 0.2− | 0.3− | 2006 11 20 | G96 | 0.1− | 0.8− | | |
| 2002 05 11 | 704 | 0.4+ | 0.3− | 2006 09 27 | 703 | 0.7− | 0.2− | | | | | | |

**2002 JD$_{12}$ = 1999 LC$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.26488 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30670902 | $\omega$ | 184.57173 | | −0.25294834 | +0.96336238 | |
| $a$ | 2.1776346 | $\Omega$ | 70.79614 | | −0.88462494 | −0.19298572 | |
| $e$ | 0.1271539 | $i$ | 5.41777 | | −0.39173442 | −0.18625101 | |
| $P$ | 3.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 0.1+ | 0.4+ | 2003 10 16 | 699 | 0.2+ | 0.1+ | 2005 04 05 | 608 | 0.3+ | 0.7+ | | |
| 1999 06 15 | 704 | 0.1+ | 0.6+ | 2003 10 16 | 699 | 0.3− | 0.1+ | 2005 04 05 | 608 | 0.1+ | 0.7+ | | |
| 1999 06 15 | 704 | 0.1+ | 0.1+ | 2003 10 21 | 704 | 0.5+ | 0.7+ | 2005 04 09 | 703 | 0.3− | 1.0− | | |
| 1999 06 15 | 704 | 1.2+ | 0.4+ | 2003 10 21 | 704 | 0.2− | 0.5+ | 2005 04 09 | 703 | 0.2+ | 0.1− | | |
| 1999 06 15 | 704 | 0.8− | 1.7+ | 2003 10 21 | 704 | 0.6+ | 0.8+ | 2005 04 09 | 703 | 0.3− | 0.0 | | |
| 2002 04 10 | 704 | 0.3− | 1.0+ | 2003 10 21 | 704 | 0.1+ | 0.7+ | 2005 04 09 | 703 | 0.4− | 0.0 | | |
| 2002 04 10 | 704 | 0.2− | 0.7+ | 2003 10 21 | 704 | 0.2+ | 0.7+ | 2005 04 12 | 704 | 0.3+ | 0.4+ | | |
| 2002 04 10 | 704 | 0.3− | 0.8+ | 2003 10 24 | 704 | 0.8− | 0.8+ | 2005 04 12 | 704 | 0.1+ | 0.2+ | | |
| 2002 04 10 | 704 | 0.2− | 1.2+ | 2003 10 24 | 704 | 0.9− | 0.5+ | 2005 04 12 | 704 | 0.1− | 0.4+ | | |
| 2002 04 10 | 704 | 0.1− | 0.9+ | 2003 10 24 | 704 | 0.2− | 0.8+ | 2005 04 12 | 704 | 0.4+ | 0.3+ | | |
| 2002 04 11 | 704 | 0.2− | 0.4+ | 2003 10 24 | 704 | 0.1− | 0.8+ | 2005 04 12 | 704 | 0.2+ | 0.4+ | | |
| 2002 04 11 | 704 | 0.2+ | 0.0 | 2003 10 24 | 704 | 0.6− | 0.7+ | 2005 04 16 | 703 | 0.6+ | 0.1+ | | |
| 2002 04 11 | 704 | 0.1+ | 0.3+ | 2003 10 26 | 703 | 0.4− | 1.0+ | 2005 04 16 | 703 | 0.5− | 0.5+ | | |
| 2002 04 11 | 704 | 0.0 | 0.5+ | 2003 10 26 | 703 | (1.2− | 1.7+) | 2005 04 16 | 703 | 0.3− | 0.0 | | |
| 2002 04 11 | 704 | 0.1− | 0.6+ | 2003 10 26 | 703 | (0.6− | 2.5+) | 2005 04 16 | 703 | 0.8− | 0.2+ | | |
| 2002 04 15 | 699 | 0.1+ | 0.5+ | 2003 10 26 | 703 | 0.6− | 1.2+ | 2005 05 11 | 704 | 1.1+ | 1.3+ | | |
| 2002 04 15 | 699 | 0.5− | 0.7+ | 2003 10 29 | 704 | 0.3− | 0.3+ | 2005 05 11 | 704 | 1.0+ | 0.5+ | | |
| 2002 04 15 | 699 | 0.2+ | 0.6+ | 2003 10 29 | 704 | 0.5− | 0.7+ | 2005 05 11 | 704 | 0.4+ | 0.7+ | | |
| 2002 04 15 | 699 | 0.9+ | 0.0 | 2003 10 29 | 704 | 0.6− | 0.0 | 2005 05 11 | 704 | 1.3+ | 0.5+ | | |
| 2002 04 16 | 704 | 0.5− | 0.8+ | 2003 10 29 | 704 | 0.7+ | 0.3+ | 2005 05 21 | 644 | 0.1+ | 0.0 | | |
| 2002 04 16 | 704 | 0.7− | 0.7+ | 2003 11 01 | 704 | (0.4− | 3.0+) | 2005 05 21 | 644 | 0.0 | 0.2+ | | |
| 2002 04 16 | 704 | 0.2− | 0.5+ | 2003 11 01 | 704 | 1.0− | 1.3+ | 2005 05 21 | 644 | 0.1− | 0.2− | | |
| 2002 04 16 | 704 | 0.8+ | 0.4+ | 2003 11 01 | 704 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.0 | 0.4− | | |
| 2002 04 16 | 704 | 0.4− | 0.6+ | 2003 11 21 | 704 | 0.3− | 0.6+ | 2006 09 12 | 703 | 0.5− | 0.9+ | | |
| 2002 05 03 | 333 | 0.3− | 0.0 | 2003 11 21 | 704 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 1.4− | 1.4+ | | |
| 2002 05 03 | 333 | 0.4+ | 0.1− | 2003 11 21 | 704 | 0.4+ | 0.8+ | 2006 09 12 | 703 | 0.9− | 1.4+ | | |
| 2002 05 03 | 333 | 0.0 | 0.4− | 2003 11 21 | 704 | 0.5− | 0.4+ | 2006 09 16 | 704 | 0.6− | 1.1− | | |
| 2002 05 07 | 644 | 0.4+ | 0.5+ | 2003 11 21 | 704 | 0.1+ | 1.0+ | 2006 09 16 | 704 | 0.4+ | 0.1− | | |
| 2002 05 07 | 644 | 0.3+ | 0.6+ | 2003 11 21 | 699 | 0.1− | 1.2− | 2006 09 16 | 704 | 0.4+ | 0.0 | | |
| 2002 05 07 | 644 | 1.2− | 1.2+ | 2003 11 21 | 699 | 0.2+ | 1.5+ | 2006 09 18 | 703 | 0.2+ | 0.2− | | |
| 2002 05 08 | 704 | 0.3+ | 1.0+ | 2003 11 21 | 699 | 0.7− | 1.3+ | 2006 09 18 | 703 | 0.7− | 0.2− | | |
| 2002 05 08 | 704 | 0.3+ | 1.1+ | 2003 11 21 | 699 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.8+ | | |
| 2002 05 08 | 704 | 0.4+ | 0.9+ | 2003 11 30 | 691 | 0.6− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.3+ | | |
| 2002 05 08 | 704 | 0.5+ | 1.2+ | 2003 11 30 | 691 | 0.1− | 0.5+ | 2006 09 20 | 644 | 0.3− | 0.4+ | | |
| 2002 05 08 | 704 | 0.8+ | 1.0+ | 2003 11 30 | 691 | 0.4− | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.3+ | | |
| 2002 05 08 | 644 | 0.6+ | 0.2+ | 2003 11 30 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.6+ | | |
| 2002 05 08 | 644 | 0.6+ | 0.2+ | 2003 11 30 | 704 | 0.5+ | 1.1+ | 2006 09 22 | 704 | 0.2+ | 0.4+ | | |
| 2002 05 08 | 644 | 1.0+ | 0.1+ | 2003 11 30 | 704 | 0.0 | 1.1+ | 2006 09 22 | 704 | 0.2+ | 0.2− | | |
| 2002 05 09 | 333 | 0.6+ | 0.4+ | 2003 11 30 | 704 | 0.4− | 1.3+ | 2006 09 22 | 704 | 0.4− | 0.7+ | | |
| 2002 05 09 | 333 | 0.2− | 0.4+ | 2003 12 13 | 703 | 1.1− | 1.3+ | 2006 09 26 | 704 | (1.7+ | 0.1+) | | |
| 2002 05 09 | 333 | 0.4+ | 0.0 | 2003 12 13 | 703 | 0.7− | 1.0+ | 2006 09 26 | 704 | 0.2+ | 1.3+ | | |
| 2002 05 12 | 704 | 0.3+ | 0.0 | 2003 12 13 | 703 | 0.5− | 0.9+ | 2006 09 26 | 704 | 0.2+ | 0.4+ | | |
| 2002 05 12 | 704 | 0.5+ | 0.0 | 2003 12 13 | 703 | (2.6− | 0.7−) | 2006 09 26 | 704 | (0.2− | 1.7+) | | |
| 2002 05 12 | 704 | 0.4+ | 0.1− | 2005 01 07 | 704 | 0.7+ | 0.6− | 2006 09 30 | 703 | 0.7− | 0.3− | | |
| 2002 05 12 | 704 | 1.5+ | 0.3− | 2005 01 07 | 704 | 0.8+ | 0.5− | 2006 09 30 | 704 | 1.1− | 0.3+ | | |
| 2002 05 12 | 704 | 0.5+ | 0.5− | 2005 01 07 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.1+ | | |
| 2002 05 13 | 704 | 0.2− | 0.6+ | 2005 01 07 | 704 | 0.8+ | 0.2− | 2006 09 30 | 704 | 0.3+ | 0.4+ | | |
| 2002 05 13 | 704 | 0.1− | 0.5+ | 2005 01 09 | 703 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.9− | 0.3+ | | |
| 2002 05 13 | 704 | 0.1− | 0.7+ | 2005 01 09 | 703 | 0.8− | 0.5+ | 2006 09 30 | 704 | 1.1− | 0.8− | | |
| 2002 05 13 | 704 | 0.1+ | 0.5+ | 2005 01 09 | 703 | 0.5− | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.7− | | |
| 2002 05 13 | 704 | 0.2− | 0.4+ | 2005 01 09 | 703 | 1.2− | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.3− | | |
| 2002 05 14 | 699 | (1.9+ | 2.0+) | 2005 02 09 | 704 | 0.9+ | 1.1+ | 2006 09 30 | 704 | 0.5+ | 0.6− | | |
| 2002 05 14 | 699 | 1.3+ | 0.3+ | 2005 02 09 | 704 | 1.3+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.5+ | | |
| 2002 05 14 | 704 | 0.0 | 0.4+ | 2005 02 09 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.4+ | | |
| 2002 05 14 | 699 | 0.8+ | 0.1+ | 2005 02 09 | 704 | 0.4− | 0.9+ | 2006 10 16 | 703 | 0.8− | 1.0+ | | |
| 2002 05 14 | 699 | 1.1+ | 0.4+ | 2005 03 02 | 703 | 1.1+ | 1.0+ | 2006 10 16 | 703 | 0.8− | 0.3+ | | |
| 2002 05 14 | 704 | 0.9− | 0.8+ | 2005 03 02 | 703 | 1.4+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 05 14 | 704 | 0.1+ | 0.2+ | 2005 03 02 | 703 | (2.2+ | 0.6+) | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 05 16 | 704 | 0.1+ | 0.4+ | 2005 03 02 | 703 | (1.8+ | 1.5+) | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2002 05 16 | 704 | 0.4+ | 0.4+ | 2005 03 10 | 699 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2002 05 16 | 704 | 1.0+ | 0.8+ | 2005 03 10 | 699 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2002 05 16 | 704 | (1.6+ | 0.0 ) | 2005 03 10 | 699 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2002 05 16 | 704 | 0.8+ | 0.2+ | 2005 03 10 | 699 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.8+ | | |
| 2002 05 18 | 704 | 0.3− | 0.1+ | 2005 03 16 | 703 | 0.1− | 1.2− | 2006 10 22 | 703 | 0.5− | 0.8+ | | |
| 2002 05 18 | 704 | 0.1+ | 0.8+ | 2005 03 16 | 703 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1+ | 1.2+ | | |
| 2002 05 18 | 704 | 0.2− | 0.7+ | 2005 03 16 | 703 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.1+ | 1.0+ | | |
| 2002 05 18 | 704 | 0.2+ | 0.3+ | 2005 03 16 | 703 | 0.3− | 0.6− | 2006 11 06 | 644 | 0.1+ | 0.3+ | | |
| 2002 05 18 | 704 | 0.0 | 0.9+ | 2005 03 16 | 703 | 0.8− | 0.6− | 2006 11 06 | 644 | 0.1− | 0.1+ | | |
| 2002 05 19 | 644 | 0.1+ | 0.1+ | 2005 03 16 | 703 | 0.1− | 0.9− | 2006 11 06 | 644 | 0.0 | 0.3+ | | |
| 2002 05 19 | 644 | 0.1+ | 0.2+ | 2005 03 16 | 703 | 0.1− | 0.6− | 2006 11 10 | 644 | 0.2+ | 0.3+ | | |
| 2002 05 19 | 644 | 0.2+ | 0.3+ | 2005 03 16 | 703 | 0.3− | 0.7− | 2006 11 10 | 644 | 0.1− | 0.6+ | | |
| 2002 06 06 | 704 | 0.1− | 0.5+ | 2005 03 16 | 704 | (0.4+ | 1.8+) | 2006 11 10 | 644 | 0.1− | 0.7+ | | |
| 2002 06 06 | 704 | 1.1+ | 0.1+ | 2005 03 16 | 704 | 0.7+ | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2002 06 06 | 704 | (1.9+ | 0.0 ) | 2005 03 16 | 704 | (1.6− | 0.0 ) | 2006 11 24 | G96 | 0.2+ | 0.3+ | | |
| 2003 10 16 | 699 | 0.5+ | 0.3− | 2005 03 16 | 704 | (2.0+ | 0.9−) | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2003 10 16 | 699 | (1.0− | 1.6+) | 2005 04 05 | 608 | 0.2+ | 1.0+ | | | | | | |

**2002 JB$_{14}$ = 2006 UE$_{240}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.01844 | | | (2000.0) | | |
| $n$ | 0.30248857 | $\omega$ | 72.10676 | | +0.46608279 | +0.88030583 |
| $a$ | 2.1978434 | $\Omega$ | 226.01064 | | −0.85115303 | +0.41884716 |
| $e$ | 0.1872751 | $i$ | 7.06399 | | −0.24146501 | +0.22777498 |
| $P$ | 3.26 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 644 | 0.4+ | 0.8+ | 2006 10 02 | G96 | 0.7+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 05 07 | 644 | 0.1+ | 0.6+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.3− | 0.0 |
| 2002 05 07 | 644 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.4− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 05 09 | 644 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 05 09 | 644 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.1+ |
| 2002 05 09 | 644 | 0.8+ | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 11 09 | 691 | 0.1+ | 0.7+ |
| 2002 05 11 | 704 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.4+ | 0.4+ |
| 2002 05 11 | 704 | 0.9− | 1.4+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2002 05 11 | 704 | 0.6− | 0.9+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.5+ |
| 2002 05 11 | 704 | 0.4− | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2002 05 11 | 704 | 0.3− | 0.7+ | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.8+ | 0.1− |
| 2002 05 13 | 704 | 0.8+ | 1.0+ | 2006 10 23 | 691 | 0.6− | 0.6− | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2002 05 13 | 704 | 0.9+ | 0.1− | 2006 10 23 | 691 | 0.9− | 0.3− | 2006 11 22 | G96 | 1.0+ | 0.5+ |
| 2002 05 13 | 704 | 0.9+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.6− | 2006 11 22 | G96 | 0.9+ | 0.2+ |
| 2002 05 13 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.4+ | | | | |
| 2002 05 13 | 704 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | | | | |

**2002 JF$_{19}$ = 2005 GE$_{43}$ = 2006 QG$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 60.73381 | | | (2000.0) | | |
| $n$ | 0.28487177 | $\omega$ | 102.95547 | | +0.04169636 | +0.99899201 |
| $a$ | 2.2875457 | $\Omega$ | 169.39221 | | −0.94812984 | +0.04481073 |
| $e$ | 0.1425680 | $i$ | 5.18149 | | −0.31513684 | −0.00264032 |
| $P$ | 3.46 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 644 | 0.2+ | 0.1+ | 2005 04 06 | G96 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.0 | 0.6− |
| 2002 05 07 | 644 | 0.1− | 0.2+ | 2005 04 06 | G96 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.0 |
| 2002 05 07 | 644 | 0.1− | 0.2− | 2005 04 06 | G96 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.1− |
| 2002 05 08 | 704 | 0.5+ | 0.5− | 2005 04 06 | G96 | 0.1− | 0.2+ | 2006 08 28 | 703 | (0.5+ | 2.1−) |
| 2002 05 08 | 704 | 0.7− | 1.0− | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.4+ |
| 2002 05 08 | 704 | 0.4− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.2− | 0.4+ |
| 2002 05 08 | 704 | 0.2− | 0.8− | 2006 08 19 | 691 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.4+ |
| 2002 05 09 | 644 | 0.2+ | 0.1+ | 2006 08 19 | A50 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.0 | 0.4+ |
| 2002 05 09 | 644 | 0.3+ | 0.2+ | 2006 08 19 | A50 | 0.2− | 0.3+ | 2006 08 30 | 704 | 0.0 | 1.4+ |
| 2002 05 09 | 644 | 0.1− | 0.1+ | 2006 08 23 | 104 | 0.6+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2002 06 02 | 699 | 0.5+ | 0.3+ | 2006 08 23 | 104 | 0.5+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2002 06 02 | 699 | 0.6+ | 0.1− | 2006 08 24 | 104 | 0.7− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.3− |
| 2002 06 02 | 699 | 0.6− | 1.4+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.5− |
| 2002 06 02 | 699 | (1.9+ | 0.9+) | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.5− | 0.4− |
| 2005 04 05 | G96 | 0.5+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2005 04 05 | G96 | 0.3+ | 0.2+ | 2006 08 27 | 699 | 0.4− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.4+ |
| 2005 04 05 | G96 | 0.0 | 0.5+ | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.9+ | 0.7− |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.5+ | 0.9− | | | | |

**2002 JB$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.13876 | | | (2000.0) | | |
| $n$ | 0.17805940 | $\omega$ | 44.14795 | | −0.88137587 | −0.37260324 |
| $a$ | 3.1291481 | $\Omega$ | 111.89473 | | +0.29780487 | −0.91544033 |
| $e$ | 0.2002638 | $i$ | 18.23985 | | +0.36672721 | −0.15210465 |
| $P$ | 5.54 | $H$ | 14.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 699 | 0.3− | 0.3− | 2002 05 09 | 699 | 0.5− | 1.1+ | 2002 05 30 | 644 | 0.4+ | 0.3+ |
| 2002 03 20 | 699 | 0.4− | 0.8− | 2002 05 10 | 699 | 0.4+ | 1.0− | 2002 05 30 | 644 | 0.5+ | 0.3+ |
| 2002 03 20 | 699 | 0.3− | 1.9− | 2002 05 10 | 699 | 1.2− | 1.7− | 2002 06 08 | 644 | 0.4+ | 1.1+ |
| 2002 03 20 | 699 | 1.1− | 0.5+ | 2002 05 10 | 699 | 0.4+ | 0.7− | 2002 06 08 | 644 | 0.8+ | 1.6+ |
| 2002 04 21 | 644 | 0.3− | 0.2− | 2002 05 10 | 699 | 0.2− | 0.7− | 2002 06 08 | 644 | 0.5+ | 0.9+ |
| 2002 04 21 | 644 | 0.2− | 0.2− | 2002 05 14 | 644 | 0.5− | 0.1+ | 2005 11 30 | 703 | 0.0 | 1.0+ |
| 2002 04 21 | 644 | 0.2− | 0.1− | 2002 05 14 | 644 | 0.6− | 0.2+ | 2005 11 30 | 703 | 0.6− | 0.5− |
| 2002 05 06 | 704 | 0.6+ | 0.7+ | 2002 05 14 | 644 | 0.3− | 0.0 | 2005 11 30 | 703 | 0.5− | 0.2− |
| 2002 05 06 | 704 | 0.1+ | 0.4− | 2002 05 15 | 704 | 0.4+ | 0.0 | 2005 11 30 | 703 | 0.0 | 1.6+ |
| 2002 05 06 | 704 | 0.6+ | 0.4+ | 2002 05 15 | 704 | 0.3+ | 1.3+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 05 06 | 704 | 0.1+ | 0.4+ | 2002 05 15 | 704 | 0.9+ | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2002 05 09 | 699 | 0.4− | 0.3− | 2002 05 15 | 704 | 0.5− | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 05 09 | 699 | 1.2+ | 0.7+ | 2002 05 15 | 704 | 0.2− | 0.1+ | | | | |
| 2002 05 09 | 699 | 0.4+ | 0.6− | 2002 05 30 | 644 | 0.3− | 0.3+ | | | | |

**2002 JH$_{39}$ = 2005 EP$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 187.62681 | | | (2000.0) | | |
| $n$ | 0.30469685 | $\omega$ | 274.09151 | | −0.96098733 | −0.27375822 |
| $a$ | 2.1872113 | $\Omega$ | 250.02399 | | +0.26751068 | −0.88362127 |
| $e$ | 0.0427817 | $i$ | 2.40841 | | +0.07029498 | −0.37982876 |
| $P$ | 3.23 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 644 | 0.2+ | 0.2+ | 2003 09 20 | 644 | 0.2+ | 0.3+ | 2005 03 13 | 703 | 0.5− | 0.2− |
| 2002 05 09 | 644 | 0.3+ | 0.1− | 2003 09 20 | 644 | 0.3+ | 0.3+ | 2005 03 13 | 703 | 1.1− | 0.8+ |
| 2002 05 09 | 644 | 0.0 | 0.4+ | 2003 09 20 | 644 | 0.3+ | 0.6+ | 2005 03 13 | 703 | 0.2+ | 0.1− |
| 2002 05 10 | 291 | 0.4− | 0.2+ | 2003 09 28 | 691 | 0.1+ | 0.2+ | 2005 03 14 | G96 | 0.2+ | 0.3+ |
| 2002 05 10 | 291 | 0.4− | 0.2+ | 2003 09 28 | 691 | 0.5− | 0.0 | 2005 03 14 | G96 | 0.4+ | 0.0 |
| 2002 05 10 | 291 | 0.2− | 0.4+ | 2003 09 28 | 691 | 0.3+ | 0.2+ | 2005 03 14 | G96 | 0.4+ | 0.2+ |
| 2002 05 11 | 291 | 0.1− | 0.0 | 2003 10 17 | 691 | 0.2− | 0.0 | 2005 03 14 | G96 | 0.6+ | 0.1+ |
| 2002 05 11 | 291 | 0.3− | 0.1+ | 2003 10 17 | 691 | 0.0 | 0.1+ | 2006 08 29 | 703 | (0.5− | 1.6+) |
| 2002 05 11 | 291 | 0.1− | 0.1+ | 2003 10 17 | 691 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.8− | 0.3+ |
| 2002 05 11 | 704 | 0.6+ | 0.7− | 2003 10 24 | 704 | 0.1− | 0.2− | 2006 08 29 | 703 | (1.0+ | 1.6−) |
| 2002 05 11 | 704 | 0.9+ | 0.0 | 2003 10 24 | 704 | 0.3− | 0.2− | 2006 08 29 | 703 | 0.7+ | 0.0 |
| 2002 05 11 | 704 | 1.4+ | 0.6− | 2003 10 24 | 704 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.1+ |
| 2002 05 11 | 704 | 1.1+ | 0.4+ | 2003 10 24 | 704 | 0.4− | 0.1− | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2002 05 11 | 704 | 1.0+ | 0.7+ | 2003 10 24 | 704 | 0.1+ | 0.0 | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2002 05 13 | 704 | 0.5− | 0.8− | 2005 03 07 | 704 | (1.7+ | 0.2−) | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 05 13 | 704 | 0.3− | 1.2− | 2005 03 07 | 704 | 1.1+ | 1.2+ | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2002 05 13 | 704 | 0.4+ | 1.1− | 2005 03 07 | 704 | (1.7+ | 3.1+) | 2006 11 16 | G96 | 0.5+ | 0.5− |
| 2002 05 13 | 704 | 1.2+ | 0.9− | 2005 03 13 | 703 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.8+ | 0.1+ |

**2002 JT$_{50}$ = 2006 SC$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.52121 | | | (2000.0) | | |
| $n$ | 0.29135789 | $\omega$ | 268.27444 | | +0.73287810 | +0.67473360 |
| $a$ | 2.2534687 | $\Omega$ | 49.28030 | | −0.56940569 | +0.67853052 |
| $e$ | 0.1897207 | $i$ | 6.61560 | | −0.37237999 | +0.29039782 |
| $P$ | 3.38 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.8− | 0.4− | 2006 09 18 | 703 | 0.6− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 09 11 | 704 | 0.6− | 0.3− | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 10 15 | 703 | 0.4− | 0.2+ |
| 1999 09 11 | 704 | 0.2− | 0.5− | 2006 09 20 | 644 | 0.1− | 0.6+ | 2006 10 15 | 703 | (1.3− | 2.4+) |
| 1999 09 11 | 704 | 0.8+ | 1.0+ | 2006 09 20 | 644 | 0.2+ | 0.3− | 2006 10 15 | 703 | 0.4− | 0.4+ |
| 1999 09 11 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 05 09 | 704 | 1.4+ | 0.6− | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 05 09 | 704 | 0.5− | 0.6− | 2006 09 26 | 704 | 1.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 05 09 | 704 | 0.3+ | 0.7− | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 05 09 | 704 | 0.4− | 0.3− | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 10 22 | 704 | 0.4+ | 0.5+ |
| 2002 05 10 | 291 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.5+ | 2006 10 22 | 704 | 0.9+ | 0.8+ |
| 2002 05 10 | 291 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 10 22 | 704 | 0.1− | 0.2+ |
| 2002 05 10 | 291 | 0.2− | 0.0 | 2006 09 30 | 703 | 1.1+ | 0.3− | 2006 10 22 | 704 | 0.9+ | 1.0+ |
| 2002 05 11 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.2− |
| 2002 05 11 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.1− |
| 2002 05 11 | 704 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 05 11 | 704 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 20 | G96 | 0.7− | 0.3− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.4+ | 1.0+ | 2006 10 02 | G96 | 0.5− | 1.4− | 2006 11 20 | G96 | 0.2− | 0.3− | | | |
| 2006 09 18 | 703 | (1.5+ | 0.1−) | 2006 10 11 | 644 | 0.5+ | 0.0 | 2006 11 20 | G96 | 1.2− | 0.1− | | | |
| 2006 09 18 | 703 | 0.7+ | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 1.0− | 0.5+ | | | |

**2002 JS$_{53}$ = 2006 RS$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 40.86935 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28648696 | $\omega$ | 241.58711 | | +0.44084243 | | +0.89646777 | | |
| $a$ | 2.2789396 | $\Omega$ | 54.63957 | | −0.80312363 | | +0.41622598 | | |
| $e$ | 0.1649597 | $i$ | 3.14627 | | −0.40081215 | | +0.15199168 | | |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.6− | 0.3− | 2002 06 06 | 291 | 0.4+ | 0.2+ | 2006 09 14 | 703 | (1.1− | 1.8+) | | | |
| 1999 08 13 | 699 | 1.1+ | 0.4+ | 2002 06 06 | 291 | 0.1+ | 0.4+ | 2006 09 14 | 703 | (1.5+ | 1.5+) | | | |
| 1999 08 13 | 699 | 0.2− | 1.0− | 2003 10 28 | 704 | (2.1− | 0.6−) | 2006 09 14 | 703 | 0.4+ | 0.3− | | | |
| 2002 04 13 | 644 | 0.3− | 0.6+ | 2003 10 28 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.8− | 0.2+ | | | |
| 2002 04 13 | 644 | 0.3− | 0.4+ | 2003 10 28 | 704 | 0.6− | 0.7− | 2006 09 22 | 704 | (2.2+ | 0.8−) | | | |
| 2002 04 13 | 644 | 0.6− | 0.6+ | 2003 11 19 | 699 | 0.0 | 0.1− | 2006 09 22 | 704 | (0.1− | 1.9+) | | | |
| 2002 05 09 | 704 | 0.3+ | 0.6+ | 2003 11 19 | 699 | 0.7+ | 0.5+ | 2006 09 22 | 704 | 0.5− | 0.6+ | | | |
| 2002 05 09 | 644 | (0.4+ | 1.9+) | 2003 11 19 | 699 | 0.2+ | 1.0+ | 2006 09 22 | 704 | 0.2− | 0.6+ | | | |
| 2002 05 09 | 704 | 0.1+ | 0.9+ | 2003 11 19 | 699 | 1.0− | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.7− | | | |
| 2002 05 09 | 644 | (0.2+ | 2.0+) | 2003 12 18 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.0 | | | |
| 2002 05 09 | 704 | 0.1+ | 0.1− | 2003 12 18 | 691 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.7+ | | | |
| 2002 05 09 | 644 | (0.1+ | 2.0+) | 2003 12 18 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 1.0+ | | | |
| 2002 05 11 | 704 | 1.5+ | 0.7− | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | (2.2− | 0.3−) | | | |
| 2002 05 11 | 704 | 0.2+ | 0.7− | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.2− | | | |
| 2002 05 11 | 704 | (0.7+ | 1.5−) | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.2− | | | |
| 2002 05 16 | 704 | 1.0− | 0.2+ | 2006 09 12 | 704 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.1− | | | |
| 2002 05 16 | 704 | (1.8− | 0.1−) | 2006 09 12 | 704 | 0.5+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.3− | | | |
| 2002 05 16 | 704 | (2.4− | 1.2−) | 2006 09 12 | 704 | 0.0 | 0.3+ | | | | | | | |
| 2002 06 06 | 291 | 0.2+ | 0.5+ | 2006 09 12 | 704 | 0.1− | 0.1+ | | | | | | | |

**2002 JQ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 39.63158 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28641738 | $\omega$ | 204.52710 | | +0.55305581 | | +0.82552319 | | |
| $a$ | 2.2793087 | $\Omega$ | 99.23341 | | −0.74435367 | | +0.55021494 | | |
| $e$ | 0.1472545 | $i$ | 6.54058 | | −0.37425510 | | +0.12559851 | | |
| $P$ | 3.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 16 | 704 | 0.4− | 0.4+ | 2002 05 12 | 704 | 0.7+ | 1.3− | 2002 06 09 | 704 | 0.1− | 0.8+ | | | |
| 2002 04 16 | 704 | 0.0 | 0.6+ | 2002 05 12 | 704 | 0.9+ | 0.7− | 2006 10 10 | 644 | 0.4+ | 0.0 | | | |
| 2002 04 16 | 704 | 0.0 | 1.5+ | 2002 06 04 | 704 | 0.4− | 0.8− | 2006 10 10 | 644 | 0.3+ | 0.2+ | | | |
| 2002 05 08 | 704 | 0.2+ | 0.7− | 2002 06 04 | 704 | 0.5− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.0 | | | |
| 2002 05 08 | 704 | 0.7+ | 0.3− | 2002 06 04 | 704 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.6− | 0.1+ | | | |
| 2002 05 08 | 704 | 0.5− | 0.5+ | 2002 06 09 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− | | | |
| 2002 05 08 | 704 | 0.1+ | 0.3+ | 2002 06 09 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1+ | | | |
| 2002 05 08 | 704 | 0.1− | 1.1− | 2002 06 09 | 704 | 0.4− | 0.5+ | | | | | | | |
| 2002 05 12 | 704 | (0.4− | 2.2−) | 2002 06 09 | 704 | 0.2− | 0.2− | | | | | | | |

**2002 JF$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 47.54393 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27524163 | $\omega$ | 64.53904 | | +0.34372769 | | +0.93716821 | | |
| $a$ | 2.3405969 | $\Omega$ | 225.70268 | | −0.88877110 | | +0.30412301 | | |
| $e$ | 0.2950804 | $i$ | 4.78668 | | −0.30321149 | | +0.17095305 | | |
| $P$ | 3.58 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 18 | 704 | 1.0+ | 0.1+ | 2002 06 03 | 644 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.2− | 0.2+ | | | |
| 2002 04 18 | 704 | 0.5+ | 1.0− | 2002 06 05 | 704 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.1− | 0.1− | | | |
| 2002 04 18 | 704 | 0.8+ | 1.0− | 2002 06 05 | 704 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ | | | |
| 2002 04 18 | 704 | 0.4− | 0.9− | 2002 06 05 | 704 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1− | | | |
| 2002 05 09 | 704 | 1.1+ | 0.7− | 2002 06 05 | 704 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.1− | | | |
| 2002 05 09 | 704 | 0.9− | 0.9− | 2002 06 05 | 704 | 0.5− | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.6+ | | | |
| 2002 05 09 | 704 | 0.3+ | 1.2− | 2002 06 06 | 704 | 0.5− | 1.0+ | 2006 09 29 | 704 | 0.3+ | 0.4− | | | |
| 2002 05 09 | 704 | 0.1+ | 0.3− | 2002 06 06 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 704 | 1.3+ | 0.5+ | | | |
| 2002 05 12 | 704 | 0.2+ | 0.8− | 2002 06 06 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.8+ | 0.3− | | | |
| 2002 05 12 | 704 | 0.2+ | 0.6− | 2002 06 06 | 704 | (1.7+ | 0.1−) | 2006 09 30 | 703 | 1.2+ | 0.0 | | | |
| 2002 05 12 | 704 | 0.1+ | 1.2+ | 2002 06 06 | 704 | 0.8− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.7+ | | | |
| 2002 05 16 | 704 | 0.0 | 1.3− | 2002 06 07 | 608 | 0.1− | 0.9− | 2006 09 30 | 703 | 1.1− | 1.0− | | | |
| 2002 05 16 | 704 | 0.1+ | 0.5− | 2002 06 07 | 608 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | | |
| 2002 05 16 | 704 | 1.1− | 0.3− | 2002 06 07 | 608 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.0 | | | |
| 2002 05 16 | 704 | 0.4− | 0.8− | 2002 06 08 | 704 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.0 | | | |
| 2002 05 18 | 644 | 0.2+ | 0.2− | 2002 06 08 | 704 | 0.2− | 0.9+ | 2006 10 12 | G98 | 0.4+ | 0.6+ | | | |
| 2002 05 18 | 644 | 0.3+ | 0.3− | 2002 06 08 | 704 | 0.1− | 1.0+ | 2006 10 12 | G98 | 0.2+ | 0.7+ | | | |
| 2002 05 18 | 644 | 0.3+ | 0.1− | 2002 06 08 | 704 | 0.8− | 1.0+ | 2006 10 12 | G98 | 0.2− | 0.1+ | | | |
| 2002 05 21 | 704 | 0.4+ | 0.4+ | 2002 06 08 | 704 | 0.9− | 0.3+ | 2006 10 12 | G98 | 0.4+ | 0.6+ | | | |
| 2002 05 21 | 704 | 0.4− | 0.4+ | 2002 06 16 | 644 | 0.2+ | 0.6− | 2006 10 12 | G98 | 0.3+ | 0.4+ | | | |
| 2002 05 21 | 704 | 0.4− | 0.2− | 2002 06 16 | 644 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.3− | | | |
| 2002 05 21 | 704 | 0.5− | 0.3+ | 2002 06 16 | 644 | 0.2+ | 0.7− | 2006 10 17 | 703 | 0.2+ | 0.7− | | | |
| 2002 05 23 | 644 | 0.3+ | 0.2− | 2002 06 25 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.3− | | | |
| 2002 05 23 | 644 | 0.1+ | 0.2− | 2002 06 25 | 644 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.0 | 1.3− | | | |
| 2002 05 23 | 644 | 0.4+ | 0.1− | 2002 06 25 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.4− | | | |
| 2002 05 30 | 644 | 0.1− | 1.0+ | 2006 09 14 | 703 | 0.2− | 0.9− | 2006 10 20 | 644 | 0.3− | 0.2− | | | |
| 2002 05 30 | 644 | 0.0 | 1.0+ | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.1− | | | |
| 2002 05 30 | 644 | 0.1− | 1.0+ | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | | | |
| 2002 06 03 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | | | |
| 2002 06 03 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2− | | | |

**2002 JJ$_{68}$ = 2006 TN$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 52.22706 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29962184 | $\omega$ | 67.42742 | | +0.67164562 | | +0.73527908 | | |
| $a$ | 2.2118401 | $\Omega$ | 245.09349 | | −0.71121571 | | +0.60553796 | | |
| $e$ | 0.2223975 | $i$ | 5.74980 | | −0.20751957 | | +0.30444777 | | |
| $P$ | 3.29 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.4− | 0.2− | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.2+ | | | |
| 2002 05 11 | 704 | 0.1− | 0.2+ | 2006 10 13 | 691 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.7− | 0.7− | | | |
| 2002 05 11 | 704 | 0.8− | 0.9− | 2006 10 13 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.9− | 0.1− | | | |
| 2002 05 11 | 704 | 0.6− | 0.9+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− | | | |
| 2002 05 13 | 704 | (1.0− | 1.6−) | 2006 10 17 | 691 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2− | | | |
| 2002 05 13 | 704 | 0.4+ | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.3− | | | |
| 2002 05 13 | 704 | 1.0− | 0.4− | 2006 10 27 | 703 | 0.8+ | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.2− | | | |
| 2002 05 13 | 704 | 1.5+ | 0.7− | 2006 10 27 | 703 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.0 | | | |
| 2002 05 13 | 704 | 0.4+ | 1.2+ | 2006 10 27 | 703 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.2+ | | | |
| 2002 05 14 | 704 | 0.7+ | 0.3+ | 2006 10 27 | 703 | 0.9+ | 1.0− | 2006 11 19 | 704 | 0.3+ | 0.7+ | | | |
| 2002 05 14 | 704 | 0.1+ | 0.6− | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.2− | 1.3+ | | | |
| 2002 05 14 | 704 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.4− | 0.1+ | | | |
| 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.5− | 0.1− | | | |
| 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.4+ | 0.3− | | | | | | | |
| 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.0 | | | | | | | |

**2002 JV$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 67.13932 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27311264 | $\omega$ | 142.10723 | | −0.70100887 | | +0.69522579 | | |
| $a$ | 2.3527449 | $\Omega$ | 82.74927 | | −0.68718163 | | −0.59891979 | | |
| $e$ | 0.2513197 | $i$ | 9.21711 | | −0.19070386 | | −0.39743702 | | |
| $P$ | 3.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 01 | 691 | 0.1− | 0.2+ | 2002 04 11 | 699 | 0.2− | 0.3+ | 2002 05 11 | 699 | 0.8− | 0.6+ | | | |
| 2000 12 01 | 691 | 0.2− | 0.1+ | 2002 04 11 | 699 | 0.2− | 0.0 | 2002 05 11 | 699 | 0.3− | 0.6− | | | |
| 2000 12 01 | 691 | 0.0 | 0.3+ | 2002 04 17 | 704 | 0.4− | 0.2− | 2002 05 11 | 699 | 0.2− | 0.0 | | | |
| 2002 02 10 | 704 | 0.5− | 0.6− | 2002 04 17 | 704 | 0.8− | 0.4+ | 2002 05 11 | 699 | 0.0 | 0.8+ | | | |
| 2002 02 10 | 704 | 0.4− | 0.9− | 2002 04 17 | 704 | 0.3− | 0.7− | 2002 05 12 | 644 | 0.1+ | 0.0 | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 1.7− | 1.6− | 2002 04 17 | 704 | 0.2− | 0.3− | 2002 05 12 | 644 | 0.4+ | 0.2+ | | |
| 2002 02 10 | 704 | 0.3+ | 1.7− | 2002 04 17 | 704 | 0.0 | 0.2− | 2002 05 12 | 644 | 0.2+ | 0.0 | | |
| 2002 02 21 | 699 | 0.3+ | 0.1+ | 2002 04 23 | 644 | 0.4+ | 0.8+ | 2002 05 13 | 704 | 0.0 | 0.5− | | |
| 2002 02 21 | 699 | 0.2+ | 0.6+ | 2002 04 23 | 644 | 0.4+ | 1.0+ | 2002 05 13 | 704 | 0.0 | 0.2+ | | |
| 2002 02 21 | 699 | 0.1+ | 1.1+ | 2002 04 23 | 644 | 0.1− | 1.0+ | 2002 05 13 | 704 | 1.0− | 0.7− | | |
| 2002 02 21 | 699 | 0.5+ | 0.0 | 2002 05 06 | 704 | 0.8+ | 0.3− | 2002 05 13 | 704 | 0.4+ | 0.1+ | | |
| 2002 03 20 | 704 | 0.1+ | 0.1+ | 2002 05 06 | 644 | 0.1− | 1.2+ | 2002 06 09 | 704 | 0.4+ | 1.0+ | | |
| 2002 03 20 | 704 | 0.6+ | 0.1− | 2002 05 06 | 704 | 0.2− | 1.2− | 2002 06 09 | 704 | 0.6+ | 0.9+ | | |
| 2002 03 20 | 704 | 0.5+ | 0.1+ | 2002 05 06 | 644 | 0.0 | 1.2+ | 2002 06 09 | 704 | 0.4+ | 0.9+ | | |
| 2002 03 20 | 704 | 0.6+ | 0.5+ | 2002 05 06 | 704 | 0.4+ | 0.9− | 2006 07 29 | E12 | 0.2− | 0.3+ | | |
| 2002 03 20 | 704 | 0.1+ | 0.1− | 2002 05 06 | 704 | 0.1+ | 1.2− | 2006 07 29 | E12 | 0.2+ | 0.4− | | |
| 2002 04 11 | 699 | 0.4− | 0.2− | 2002 05 06 | 644 | 0.1− | 1.1+ | 2006 07 29 | E12 | 0.0 | 0.4− | | |
| 2002 04 11 | 699 | 0.1+ | 0.3+ | 2002 05 06 | 704 | 0.7+ | 1.5− | 2006 07 29 | E12 | 0.0 | 0.1− | | |

### 2002 JT$_{75}$ = 2006 SW$_{301}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.59750 | | (2000.0) | | | |
| $n$ | 0.29280715 | $\omega$ | 289.80044 | | +0.91025938 | +0.31605343 |
| $a$ | 2.2460268 | $\Omega$ | 52.71979 | | −0.11935083 | +0.81886701 |
| $e$ | 0.2496867 | $i$ | 19.64228 | | −0.39646343 | +0.47913157 |
| $P$ | 3.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 291 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.4+ | 1.1− | | |
| 2002 05 08 | 291 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.7− | | |
| 2002 05 08 | 291 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.3− | 1.0− | | |
| 2002 05 10 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.6− | 2006 11 17 | 704 | 0.2+ | 0.8− | | |
| 2002 05 10 | 704 | 0.7− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.3− | | |
| 2002 05 10 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.9− | 0.5− | | |
| 2002 05 13 | 704 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.1+ | | |
| 2002 05 13 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.2+ | 0.9− | 2006 11 17 | 703 | 0.9− | 0.4− | | |
| 2002 05 13 | 704 | 0.4− | 0.9+ | 2006 10 22 | 703 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.4− | 0.8− | | |
| 2002 05 13 | 704 | 1.0+ | 0.5+ | 2006 11 01 | 703 | 0.1− | 0.4+ | 2006 11 19 | 704 | (0.3+ | 1.5+) | | |
| 2002 05 13 | 704 | 0.2+ | 0.1+ | 2006 11 01 | 703 | 0.2+ | 0.4− | 2006 11 19 | 704 | 1.1− | 1.0+ | | |
| 2006 09 26 | 703 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.8− | | |
| 2006 09 26 | 703 | 0.0 | 0.5− | 2006 11 01 | 703 | 1.3− | 0.8− | 2006 11 19 | 704 | 1.1+ | 0.8+ | | |
| 2006 09 26 | 703 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 1.0+ | 1.0+ | | |
| 2006 09 26 | 703 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 1.1+ | 0.8+ | | |
| 2006 09 30 | 699 | 0.6+ | 1.0+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.2+ | | |
| 2006 09 30 | 699 | 1.0+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.8+ | 0.6− | | |
| 2006 09 30 | 699 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.6+ | | |
| 2006 09 30 | 699 | 0.7− | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.9− | 0.5− | | |
| 2006 10 01 | 704 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.8+ | | |
| 2006 10 01 | 704 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.8− | 2006 11 21 | 704 | 0.0 | 0.8+ | | |
| 2006 10 01 | 704 | 0.6+ | 0.1+ | 2006 11 14 | 704 | (0.1+ | 1.6+) | 2006 11 21 | 704 | 0.1+ | 0.2+ | | |
| 2006 10 01 | 704 | 0.4− | 1.5+ | 2006 11 14 | 704 | 1.1+ | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.4+ | | |
| 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.3− | 1.0+ | 2006 11 28 | 704 | 1.4− | 0.3+ | | |
| 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.5− | 1.0+ | 2006 11 28 | 704 | 0.9− | 0.5+ | | |
| 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.0 | 1.1+ | 2006 11 28 | 704 | 0.6− | 1.0+ | | |
| 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.4− | 0.8+ | | |

### 2002 JO$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.39877 | | (2000.0) | | | |
| $n$ | 0.29863474 | $\omega$ | 25.57770 | | −0.14152616 | +0.98829434 |
| $a$ | 2.2167114 | $\Omega$ | 236.33490 | | −0.91959592 | −0.15255488 |
| $e$ | 0.1767967 | $i$ | 3.92437 | | −0.36648832 | +0.00114423 |
| $P$ | 3.30 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.1− | 0.4− | 2002 05 09 | 644 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1− | | |
| 2002 04 14 | 704 | 0.9− | 0.6− | 2002 05 09 | 644 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.0 | | |
| 2002 04 14 | 704 | 0.4− | 0.3+ | 2002 05 11 | 704 | 0.3− | 0.5− | 2006 09 17 | 691 | 0.1+ | 0.2− | | |
| 2002 04 14 | 704 | 0.2+ | 0.1− | 2002 05 11 | 704 | 0.1+ | 0.6− | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2002 04 14 | 704 | 0.1+ | 0.3+ | 2002 05 11 | 704 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | | |
| 2002 04 18 | 644 | 0.3+ | 0.2− | 2002 05 11 | 704 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.2− | | |
| 2002 04 18 | 644 | 0.2+ | 0.2+ | 2002 05 11 | 704 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.2+ | | |
| 2002 04 18 | 644 | 0.1− | 0.3− | 2002 05 13 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.3+ | | |
| 2002 04 30 | 644 | 0.4+ | 0.5+ | 2002 05 13 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 | | |
| 2002 04 30 | 644 | 0.1− | 0.9+ | 2002 05 13 | 704 | 1.0+ | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.2− | | |
| 2002 04 30 | 644 | 0.5+ | 0.2+ | 2002 05 13 | 704 | 0.7+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.2+ | | |
| 2002 05 07 | 644 | 0.7− | 0.3+ | 2002 05 13 | 704 | 0.7+ | 0.2− | 2006 10 19 | G96 | 0.3− | 0.1+ | | |
| 2002 05 07 | 644 | 0.5− | 0.6+ | 2002 06 05 | 291 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1− | 0.0 | | |
| 2002 05 07 | 644 | (1.2− | 1.8−) | 2002 06 05 | 291 | 0.1− | 0.0 | | | | | | |
| 2002 05 09 | 644 | 0.4− | 0.2− | 2002 06 05 | 291 | 0.0 | 0.1− | | | | | | |

### 2002 JQ$_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.32652 | | (2000.0) | | | |
| $n$ | 0.28428154 | $\omega$ | 271.02016 | | −0.76409551 | −0.64282298 |
| $a$ | 2.2907109 | $\Omega$ | 228.97979 | | +0.61675784 | −0.70331250 |
| $e$ | 0.1059785 | $i$ | 4.11886 | | +0.18912382 | −0.30352947 |
| $P$ | 3.47 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 28 | 691 | 0.4+ | 0.3+ | 2002 05 13 | 704 | 0.6− | 0.4+ | 2005 02 02 | 704 | 0.9+ | 0.1+ | | |
| 1998 01 28 | 691 | 0.2+ | 0.0 | 2002 05 18 | 644 | 0.3+ | 1.5+ | 2005 02 02 | 704 | 0.1− | 0.9− | | |
| 1998 01 28 | 691 | 0.0 | 2.0+ | 2002 05 18 | 644 | 0.1+ | 1.4+ | 2005 02 14 | 691 | 0.0 | 0.1− | | |
| 2002 05 09 | 644 | 0.5+ | 0.3− | 2002 05 18 | 644 | 0.1+ | 1.4+ | 2005 02 14 | 691 | 0.1+ | 0.1− | | |
| 2002 05 09 | 644 | 0.3+ | 0.3+ | 2002 05 19 | 644 | 0.4+ | 0.6+ | 2005 02 14 | 691 | 0.0 | 0.0 | | |
| 2002 05 09 | 644 | 0.3+ | 0.2+ | 2002 05 19 | 644 | 0.1+ | 0.6+ | 2005 03 03 | 703 | 0.3− | 0.5+ | | |
| 2002 05 11 | 704 | 0.0 | 0.7− | 2002 05 19 | 644 | 0.5+ | 1.1+ | 2005 03 03 | 703 | 0.5+ | 0.1+ | | |
| 2002 05 11 | 704 | 0.2+ | 0.2− | 2003 09 20 | 691 | 0.1+ | 0.4+ | 2005 03 03 | 703 | 0.4+ | 0.5+ | | |
| 2002 05 11 | 704 | 0.9+ | 0.2+ | 2003 09 20 | 691 | 0.2+ | 0.3+ | 2005 03 03 | 703 | 0.4− | 0.6− | | |
| 2002 05 11 | 704 | 0.1− | 0.2− | 2003 09 20 | 691 | 0.1+ | 0.3+ | 2005 03 17 | 703 | 0.4− | 1.1− | | |
| 2002 05 13 | 704 | 0.4− | 0.2− | 2003 09 26 | 645 | 0.1− | 0.1+ | 2005 03 17 | 703 | 1.4− | 0.4− | | |
| 2002 05 13 | 704 | 0.5− | 0.2+ | 2003 09 26 | 645 | 0.1− | 0.1+ | 2005 03 17 | 703 | 1.1− | 0.6+ | | |
| 2002 05 13 | 704 | 0.3− | 0.1− | 2005 02 02 | 704 | 0.5+ | 0.5− | 2005 03 17 | 703 | 0.4− | 0.5+ | | |

### 2002 JN$_{87}$ = 2006 TY$_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.57874 | | (2000.0) | | | |
| $n$ | 0.29328224 | $\omega$ | 286.43051 | | +0.31936336 | +0.94763226 |
| $a$ | 2.2436005 | $\Omega$ | 2.19403 | | −0.86550275 | +0.29185228 |
| $e$ | 0.2237371 | $i$ | 0.58368 | | −0.38589121 | +0.12967403 |
| $P$ | 3.36 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 06 | 291 | 0.2+ | 0.3+ | 2005 03 04 | G96 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.1− | | |
| 2002 05 06 | 291 | 0.2+ | 0.8+ | 2005 03 04 | G96 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.2+ | | |
| 2002 05 06 | 291 | 0.2+ | 0.1+ | 2005 03 04 | G96 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.4+ | 0.3+ | | |
| 2002 05 11 | 704 | 0.6− | 0.3− | 2006 09 26 | G96 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.3+ | | |
| 2002 05 11 | 704 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.0 | | |
| 2002 05 11 | 704 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2002 05 11 | 704 | 0.4− | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 2002 05 13 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 691 | 0.5− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.2− | | |
| 2002 05 13 | 704 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.5+ | 0.8− | 2006 11 21 | 691 | 0.5− | 0.4+ | | |
| 2002 05 13 | 704 | 0.1+ | 0.4− | 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.2− | 0.6+ | | |
| 2002 05 13 | 704 | 0.5− | 0.3− | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 21 | 691 | 0.3− | 0.0 | | |
| 2005 03 04 | G96 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.4+ | | | | | | |

### 2002 JD$_{89}$ = 2006 TF$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.50978 | | (2000.0) | | | |
| $n$ | 0.30180234 | $\omega$ | 249.49573 | | +0.35112916 | +0.93383116 |
| $a$ | 2.2011737 | $\Omega$ | 41.26416 | | −0.81584356 | +0.34093678 |
| $e$ | 0.1801975 | $i$ | 5.94589 | | −0.45946446 | +0.10826578 |
| $P$ | 3.27 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 644 | 0.7+ | 0.7+ | 2006 10 12 | 691 | 0.5+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.1− |
| 2002 05 09 | 644 | 0.3+ | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2002 05 09 | 644 | 0.4+ | 1.0+ | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2002 05 11 | 704 | 0.4+ | 0.6− | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2002 05 11 | 704 | 0.2+ | 0.9− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2002 05 11 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 2002 05 11 | 704 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.6+ | 0.5+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2002 05 13 | 704 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.5+ |
| 2002 05 13 | 704 | 0.8− | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.4+ | 0.2+ |
| 2002 05 13 | 704 | 0.3− | 0.8+ | 2006 10 28 | G96 | 0.4− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.4− |
| 2002 05 13 | 704 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.5− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 05 18 | 644 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.4− | 0.3− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2002 05 18 | 644 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.8− | 0.2− |
| 2002 05 18 | 644 | 0.5+ | 0.0 | 2006 10 29 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1+ |

**2002 JA$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.88098 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27023007 | $\omega$ | 187.04386 | | −0.66334553 | | +0.74407245 |
| $a$ | 2.3694466 | $\Omega$ | 41.44565 | | −0.68056808 | | −0.55567239 |
| $e$ | 0.0798722 | $i$ | 6.90302 | | −0.31112665 | | −0.37092368 |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 0.2+ | 0.2− | 2002 05 13 | 704 | 0.4− | 0.5+ | 2003 09 28 | 699 | 0.3− | 1.2+ |
| 1998 03 25 | 704 | 1.3+ | 1.5+ | 2002 05 13 | 704 | 0.4− | 0.1− | 2003 09 28 | 699 | 0.6+ | 0.1− |
| 1998 03 25 | 704 | 1.4+ | 0.3− | 2002 05 13 | 704 | 0.4+ | 0.8+ | 2003 10 19 | 691 | 0.2− | 0.4+ |
| 1998 03 25 | 704 | 2.8− | 1.0− | 2002 05 13 | 704 | 0.1+ | 1.7+ | 2003 10 19 | 691 | 0.2− | 0.3+ |
| 2002 05 06 | 699 | 0.4+ | 0.6− | 2002 05 14 | 735 | 0.4+ | 0.1+ | 2003 10 19 | 691 | 0.1+ | 0.2+ |
| 2002 05 06 | 699 | 0.9+ | 0.1− | 2002 05 14 | 735 | 0.2+ | 0.5+ | 2003 10 19 | 645 | 0.0 | 0.1− |
| 2002 05 06 | 699 | 0.3− | 0.4+ | 2002 05 14 | 735 | 0.1+ | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.1− |
| 2002 05 06 | 699 | 1.7− | 0.3− | 2002 05 16 | 608 | 0.4+ | 1.3− | 2003 10 22 | 645 | 0.1+ | 0.1− |
| 2002 05 09 | 704 | (3.5− | 0.2+) | 2002 05 16 | 608 | 1.0+ | 0.9− | 2003 10 22 | 645 | 0.0 | 0.0 |
| 2002 05 09 | 704 | 0.8+ | 0.1+ | 2002 05 16 | 608 | 0.4+ | 0.8− | 2003 10 24 | 645 | 0.0 | 0.1+ |
| 2002 05 09 | 704 | 0.1− | 0.3− | 2002 05 19 | 735 | 0.4− | 0.3− | 2003 10 24 | 645 | 0.1− | 0.1+ |
| 2002 05 09 | 704 | 0.9− | 1.4− | 2002 05 19 | 735 | 0.0 | 0.2+ | 2003 11 16 | 645 | 0.0 | 0.1− |
| 2002 05 11 | 704 | 0.2− | 0.4+ | 2002 05 19 | 735 | 0.3+ | 0.5− | 2003 11 16 | 645 | 0.0 | 0.1− |
| 2002 05 11 | 704 | 0.0 | 0.5+ | 2002 05 20 | 735 | 0.3+ | 0.1− | 2005 01 06 | 703 | 0.1− | 0.1+ |
| 2002 05 11 | 704 | 0.2− | 0.5+ | 2002 05 20 | 735 | 0.4− | 0.3− | 2005 01 06 | 703 | 0.6− | 0.2+ |
| 2002 05 11 | 704 | 0.4− | 0.1+ | 2002 05 20 | 735 | 0.1− | 1.1+ | 2005 01 06 | 703 | 0.1+ | 0.5− |
| 2002 05 11 | 704 | 0.2+ | 0.3+ | 2003 09 28 | 699 | 1.5+ | 0.6+ | 2005 01 06 | 703 | 0.9+ | 1.0+ |
| 2002 05 13 | 704 | 0.2+ | 0.5+ | 2003 09 28 | 699 | 0.6+ | 0.3− | | | | |

**2002 JM$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.82565 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30537301 | $\omega$ | 65.00323 | | +0.50985469 | | +0.85348439 |
| $a$ | 2.1839815 | $\Omega$ | 236.07605 | | −0.82867065 | | +0.45362910 |
| $e$ | 0.1980856 | $i$ | 7.46196 | | −0.23098302 | | +0.25648594 |
| $P$ | 3.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 644 | 0.4+ | 0.0 | 2002 05 21 | 704 | (1.4− | 1.9+) | 2006 10 28 | G96 | 0.6− | 0.5+ |
| 2002 05 09 | 644 | 0.6+ | 0.2+ | 2002 05 21 | 704 | (2.4− | 2.6+) | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2002 05 09 | 644 | 0.4+ | 0.2+ | 2002 05 21 | 704 | (0.3+ | 3.0+) | 2006 11 10 | 691 | 0.3− | 0.6+ |
| 2002 05 11 | 704 | 0.5− | 0.1+ | 2002 05 31 | 644 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2002 05 11 | 704 | 0.3− | 0.2+ | 2002 05 31 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2002 05 11 | 704 | 0.3− | 0.1− | 2002 05 31 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2002 05 11 | 704 | 0.5− | 0.1+ | 2002 06 03 | 644 | 0.0 | 0.9+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2002 05 11 | 704 | 0.5− | 0.7− | 2002 06 03 | 644 | 0.3+ | 1.4+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2002 05 13 | 704 | 0.5+ | 0.6+ | 2002 06 03 | 644 | 1.0+ | 0.4+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2002 05 13 | 704 | 0.6+ | 0.2− | 2002 06 08 | 704 | (2.0− | 1.4−) | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 05 13 | 704 | 0.3+ | 0.9+ | 2002 06 08 | 704 | 1.0− | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2002 05 13 | 704 | 0.5+ | 0.9+ | 2002 06 08 | 704 | (1.8− | 0.6−) | 2006 11 27 | 703 | 0.3− | 0.4+ |
| 2002 05 17 | 644 | 0.2− | 0.2+ | 2002 06 11 | 644 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.3+ | 0.0 |
| 2002 05 17 | 644 | 0.1− | 0.1+ | 2002 06 11 | 644 | 0.4+ | 0.0 | 2006 11 27 | 703 | 1.0− | 0.8− |
| 2002 05 17 | 644 | 0.1− | 0.3+ | 2002 06 11 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.8+ |
| 2002 05 21 | 704 | 0.7− | 1.0+ | 2006 10 28 | G96 | 0.3− | 0.1− | | | | |

**2002 JU$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.94651 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27715614 | $\omega$ | 37.99290 | | +0.51112909 | | +0.85547331 |
| $a$ | 2.3298058 | $\Omega$ | 262.88945 | | −0.80767396 | | +0.44497169 |
| $e$ | 0.2510440 | $i$ | 4.80620 | | −0.29395547 | | +0.26488792 |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.5+ | 0.4− | 2002 06 05 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.9− |
| 2002 05 11 | 704 | 0.3+ | 0.6+ | 2002 06 08 | 704 | 0.1+ | 0.6− | 2006 09 19 | 699 | 0.2+ | 0.5− |
| 2002 05 11 | 704 | 1.3− | 0.3+ | 2002 06 08 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 699 | 0.2+ | 0.5+ |
| 2002 05 11 | 704 | 0.8+ | 0.1− | 2002 06 08 | 704 | 0.1− | 0.5− | 2006 09 27 | 699 | 0.1− | 0.3− |
| 2002 05 13 | 704 | 0.5+ | 0.1− | 2002 06 08 | 704 | 0.7− | 0.3+ | 2006 09 27 | 699 | 1.1− | 0.4− |
| 2002 05 13 | 704 | 0.1− | 0.0 | 2002 06 17 | 644 | 0.5+ | 0.1− | 2006 09 27 | 699 | 0.5+ | 0.5+ |
| 2002 05 13 | 704 | 0.1+ | 0.9+ | 2002 06 17 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.0 |
| 2002 05 17 | 704 | 0.4+ | 0.0 | 2002 06 17 | 644 | 0.4+ | 0.3+ | 2006 09 27 | 703 | 0.3+ | 0.1+ |
| 2002 05 17 | 704 | 0.5− | 0.2− | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.3− | 0.5+ |
| 2002 05 17 | 704 | 1.3− | 0.4− | 2006 09 16 | 703 | 0.0 | 0.6− | 2006 09 27 | 703 | 0.3− | 0.1+ |
| 2002 05 17 | 704 | 0.2− | 0.5− | 2006 09 16 | 703 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.4+ | 0.4+ |
| 2002 05 17 | 704 | (1.1− | 1.8+) | 2006 09 16 | 703 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.6+ | 0.4+ |
| 2002 06 05 | 644 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.9+ | 0.4+ | 2006 10 11 | 644 | 0.4+ | 0.5+ |
| 2002 06 05 | 644 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.2+ | | | | |

**2002 JY$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.93770 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21342728 | $\omega$ | 117.24369 | | −0.96014143 | | +0.12833705 |
| $a$ | 2.7731249 | $\Omega$ | 71.00841 | | −0.23387209 | | −0.85536708 |
| $e$ | 0.2201665 | $i$ | 15.22468 | | +0.15307605 | | −0.50187325 |
| $P$ | 4.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 20 | 691 | 0.0 | 0.3+ | 2002 03 21 | 699 | 0.7− | 0.5− | 2002 05 13 | 644 | 0.1− | 0.1− |
| 2000 12 20 | 691 | 0.0 | 0.1− | 2002 03 21 | 699 | 0.4− | 0.4+ | 2002 05 13 | 644 | 0.1− | 0.1− |
| 2000 12 20 | 691 | 0.0 | 0.2− | 2002 04 11 | 644 | 0.4− | 0.4− | 2002 05 16 | 644 | 0.2+ | 0.4− |
| 2002 01 23 | 704 | 0.4+ | 0.6+ | 2002 04 11 | 644 | 0.2− | 0.3− | 2002 05 16 | 644 | 0.2+ | 0.1+ |
| 2002 01 23 | 704 | 1.9− | 0.4− | 2002 04 11 | 644 | 0.3− | 0.0 | 2002 05 16 | 644 | 0.2+ | 0.5− |
| 2002 01 23 | 704 | 0.3− | 0.7− | 2002 05 05 | 644 | 0.2− | 0.0 | 2002 06 09 | 644 | 0.2+ | 0.8+ |
| 2002 01 23 | 704 | 0.4+ | 0.5+ | 2002 05 05 | 644 | 0.2− | 0.1− | 2002 06 09 | 644 | 0.3+ | 0.9+ |
| 2002 03 21 | 704 | 0.4+ | 0.1− | 2002 05 05 | 644 | 0.1− | 0.1− | 2002 06 09 | 644 | 0.1− | 1.2+ |
| 2002 03 21 | 704 | 0.4+ | 0.3+ | 2002 05 06 | 704 | 0.1− | 0.2− | 2005 12 24 | 704 | 0.0 | 0.2+ |
| 2002 03 21 | 704 | 0.7+ | 0.0 | 2002 05 06 | 704 | 0.1+ | 0.2− | 2005 12 24 | 704 | 0.2+ | 0.3− |
| 2002 03 21 | 704 | 0.1− | 0.4+ | 2002 05 06 | 704 | 0.6− | 0.6− | 2005 12 24 | 704 | 0.3+ | 0.7+ |
| 2002 03 21 | 699 | 0.3− | 0.1+ | 2002 05 06 | 704 | 0.5+ | 0.8− | 2005 12 24 | 704 | 0.8− | 0.1+ |
| 2002 03 21 | 704 | 1.0+ | 0.7+ | 2002 05 06 | 704 | 1.5+ | 0.6+ | 2005 12 24 | 704 | 0.2+ | 0.0 |
| 2002 03 21 | 699 | 0.6− | 0.3− | 2002 05 13 | 644 | 0.3+ | 0.0 | | | | |

**2002 JV$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.33783 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27585637 | $\omega$ | 135.86697 | | +0.68640890 | | +0.72720314 |
| $a$ | 2.3371183 | $\Omega$ | 177.46809 | | −0.69121773 | | +0.65425276 |
| $e$ | 0.3918929 | $i$ | 5.57361 | | −0.22596653 | | +0.20767503 |
| $P$ | 3.57 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 699 | 0.2+ | 1.0+ | 2002 05 20 | 440 | 0.8+ | 1.3− | 2006 10 03 | G96 | 0.0 | 0.2+ |
| 2002 05 07 | 699 | 0.5+ | 1.2+ | 2002 05 21 | 704 | 1.0+ | 0.4− | 2006 10 03 | G96 | 0.2− | 0.1+ |
| 2002 05 07 | 699 | 1.2− | 1.0+ | 2002 05 21 | 704 | 0.7+ | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2002 05 07 | 699 | (0.9− | 2.1+) | 2002 05 21 | 704 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 644 | 0.1− | 0.6+ | 2002 05 21 | 704 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.8+ | 0.2− |
| 2002 05 07 | 644 | 0.2+ | 0.5+ | 2002 05 22 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.7− | 1.2+ |
| 2002 05 07 | 644 | 0.0 | 0.4+ | 2002 05 22 | 704 | 0.6+ | 1.0+ | 2006 10 16 | 703 | 1.0− | 0.8+ |
| 2002 05 18 | 704 | 0.6− | 1.0− | 2002 05 22 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2002 05 18 | 704 | 0.8− | 0.7− | 2002 06 09 | 704 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 2002 05 18 | 704 | 0.3− | 0.0 | 2002 06 09 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.8+ |
| 2002 05 18 | 704 | 1.1− | 0.2− | 2002 06 09 | 704 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2002 05 18 | 704 | 1.1− | 0.6− | 2002 06 09 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.1+ |
| 2002 05 19 | 440 | 1.0− | 0.4+ | 2002 06 09 | 704 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.3+ |
| 2002 05 19 | 440 | (1.6− | 0.8+) | 2005 03 12 | 695 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.2+ |
| 2002 05 19 | 440 | 0.6− | 1.3+ | 2005 03 12 | 695 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2002 05 19 | 651 | 0.4+ | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 05 19 | 651 | 0.7+ | 0.2− | 2006 07 22 | G96 | 0.9− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2002 05 19 | 651 | 0.2+ | 0.0 | 2006 07 22 | G96 | 0.4+ | 0.8− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 05 20 | 440 | 0.5+ | 0.3+ | 2006 07 22 | G96 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2002 05 20 | 440 | 0.8+ | 1.0+ | 2006 10 03 | G96 | 0.4+ | 0.1+ | | | | |

**2002 JA$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.31188 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17274237 | $\omega$ | 85.03553 | | −0.79794418 | | +0.51511769 |
| $a$ | 3.1930334 | $\Omega$ | 125.60808 | | −0.57917124 | | −0.79904786 |
| $e$ | 0.0875783 | $i$ | 22.63913 | | +0.16687050 | | −0.31012301 |
| $P$ | 5.71 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 23 | 704 | 0.2+ | 0.3− | 2002 05 05 | 704 | 0.4− | 0.3− | 2004 10 09 | 644 | 0.1− | 0.2+ |
| 2002 03 23 | 704 | 0.3+ | 0.0 | 2002 05 10 | 699 | 0.4− | 1.2+ | 2004 10 09 | 644 | 0.3− | 0.1+ |
| 2002 03 23 | 704 | 0.8+ | 1.0− | 2002 05 10 | 699 | (1.8+ | 1.2+) | 2004 10 09 | 644 | 0.3+ | 0.2− |
| 2002 04 09 | 644 | 0.4− | 0.3− | 2002 05 10 | 699 | 0.4+ | 0.6− | 2006 10 21 | G96 | 0.9− | 0.5− |
| 2002 04 09 | 644 | 0.5− | 0.5− | 2002 05 10 | 699 | 0.7− | 0.0 | 2006 10 21 | G96 | 0.6− | 0.5− |
| 2002 04 09 | 644 | 0.4− | 0.4− | 2002 05 28 | 644 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.6− | 0.7− |
| 2002 05 03 | 644 | 0.4+ | 0.2+ | 2002 05 28 | 644 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.3− | 1.2− |
| 2002 05 03 | 644 | 0.2− | 0.2+ | 2002 05 28 | 644 | 0.4+ | 0.4+ | 2006 10 23 | 691 | 0.2+ | 0.7+ |
| 2002 05 03 | 644 | 0.1+ | 0.2+ | 2002 05 30 | 644 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2+ | 0.2+ |
| 2002 05 05 | 704 | 0.4− | 0.5+ | 2002 05 30 | 644 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.0 |
| 2002 05 05 | 704 | 0.2+ | 0.3+ | 2002 05 30 | 644 | 0.0 | 0.2+ | | | | |

**2002 JV$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.71873 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17566290 | $\omega$ | 43.93222 | | −0.91559201 | | −0.31982073 |
| $a$ | 3.1575435 | $\Omega$ | 115.94319 | | +0.25129206 | | −0.92829137 |
| $e$ | 0.1647895 | $i$ | 15.72660 | | +0.31391651 | | −0.18970984 |
| $P$ | 5.61 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 11 | 704 | 0.7− | 1.6+ | 2002 05 05 | 644 | 0.3− | 0.4+ | 2002 05 15 | 699 | 1.1+ | 0.2+ |
| 2002 01 11 | 704 | 0.0 | 1.2+ | 2002 05 05 | 644 | 0.2+ | 0.3+ | 2002 05 15 | 699 | 0.6+ | 0.2− |
| 2002 01 11 | 704 | 1.0− | 0.3+ | 2002 05 05 | 644 | 0.1− | 0.5+ | 2002 05 15 | 699 | 0.2+ | 0.4+ |
| 2002 01 23 | 704 | 1.5+ | 0.8+ | 2002 05 06 | 704 | 0.2− | 0.2+ | 2004 08 21 | E12 | 0.1+ | 0.7+ |
| 2002 01 23 | 704 | 0.2− | 0.1− | 2002 05 06 | 704 | 0.0 | 0.2+ | 2004 08 21 | E12 | 0.1− | 0.6+ |
| 2002 01 23 | 704 | 1.0+ | 0.3+ | 2002 05 06 | 704 | 0.0 | 0.6− | 2004 08 21 | E12 | 0.8− | 0.6+ |
| 2002 01 23 | 704 | 0.2+ | 0.1− | 2002 05 06 | 704 | 0.6− | 0.2− | 2004 08 21 | E12 | 0.2+ | 0.5+ |
| 2002 03 21 | 704 | 0.2− | 0.6− | 2002 05 06 | 704 | 0.3− | 0.2+ | 2006 11 02 | 703 | 0.9− | 1.4+ |
| 2002 03 21 | 704 | 0.5+ | 0.5− | 2002 05 13 | 644 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.1− | 0.4+ |
| 2002 03 21 | 704 | 1.0− | 0.5− | 2002 05 13 | 644 | 0.0 | 0.5+ | 2006 11 02 | 703 | 0.1+ | 0.3+ |
| 2002 03 21 | 704 | 0.2− | 0.9− | 2002 05 13 | 644 | 0.2+ | 0.5+ | 2006 11 02 | 703 | 0.9+ | 0.9− |
| 2002 03 21 | 704 | 0.7− | 0.9− | 2002 05 15 | 699 | 0.8+ | 0.0 | | | | |

**2002 JX$_{127}$ = 2006 SM$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.19755 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27628404 | $\omega$ | 220.10584 | | +0.64171250 | | +0.75574050 |
| $a$ | 2.3347059 | $\Omega$ | 90.22736 | | −0.66593932 | | +0.63353976 |
| $e$ | 0.2893487 | $i$ | 7.50543 | | −0.38043381 | | +0.16578202 |
| $P$ | 3.57 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.3− | 0.6+ | 2002 05 10 | 699 | 0.8− | 0.5− | 2006 09 19 | 703 | 0.1− | 0.3+ |
| 1999 10 09 | 704 | 0.5− | 0.2− | 2002 05 31 | 699 | 0.7− | 1.2− | 2006 09 19 | 703 | 0.2+ | 0.6− |
| 1999 10 09 | 704 | 0.5− | 0.3+ | 2002 05 31 | 699 | 0.7+ | 0.6− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 1999 10 09 | 704 | 0.0 | 0.4− | 2002 05 31 | 699 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.8+ | 0.5+ | 2002 05 31 | 699 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 05 07 | 644 | 0.1+ | 0.3− | 2006 07 31 | E12 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2002 05 07 | 644 | 0.4+ | 0.1+ | 2006 07 31 | E12 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 05 07 | 644 | 0.0 | 0.3+ | 2006 07 31 | E12 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 05 08 | 704 | 0.2+ | 0.3− | 2006 07 31 | E12 | 0.3− | 0.8+ | 2006 10 21 | 703 | 0.1− | 0.4− |
| 2002 05 08 | 704 | 1.0− | 0.5+ | 2006 08 10 | 644 | 0.1− | 0.5− | 2006 10 21 | 703 | 0.5+ | 0.5− |
| 2002 05 08 | 704 | 0.4− | 0.3− | 2006 08 10 | 644 | 0.8− | 0.4− | 2006 10 21 | 703 | (0.1+ | 1.7−) |
| 2002 05 08 | 704 | 0.1− | 0.4+ | 2006 08 10 | 644 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.6− |
| 2002 05 09 | 644 | 0.2+ | 0.9+ | 2006 09 17 | 699 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.7+ |
| 2002 05 09 | 644 | 0.0 | 0.8+ | 2006 09 17 | 699 | 0.4+ | 0.4+ | 2006 10 28 | 703 | 0.5− | 0.1+ |
| 2002 05 09 | 644 | 0.0 | 0.8+ | 2006 09 17 | 699 | 0.7− | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.3− |
| 2002 05 10 | 699 | 0.2+ | 0.6+ | 2006 09 17 | 699 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.4− |
| 2002 05 10 | 699 | 0.3− | 0.9− | 2006 09 19 | 703 | 0.4+ | 0.0 | | | | |
| 2002 05 10 | 699 | 1.3+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.3− | | | | |

**2002 JB$_{130}$ = 2006 KQ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.24618 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24542686 | $\omega$ | 86.95756 | | −0.36234706 | | +0.93163440 |
| $a$ | 2.5265117 | $\Omega$ | 161.72330 | | −0.88628482 | | −0.33524093 |
| $e$ | 0.1124619 | $i$ | 5.04968 | | −0.28845072 | | −0.14025286 |
| $P$ | 4.02 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 30 | 691 | 0.0 | 0.2+ | 2002 05 09 | 644 | 0.4− | 0.3+ | 2003 09 29 | 691 | 0.1− | 0.1− |
| 1995 09 30 | 691 | 0.1+ | 0.1+ | 2002 05 09 | 644 | 0.4− | 0.4+ | 2006 05 21 | 644 | 0.1− | 0.0 |
| 1995 09 30 | 691 | 0.1− | 0.1+ | 2002 05 09 | 644 | 0.2− | 0.2+ | 2006 05 21 | 644 | 0.2− | 0.1+ |
| 2002 04 30 | 644 | 0.3− | 0.5+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 05 21 | 644 | 0.2− | 0.2− |
| 2002 04 30 | 644 | 0.1− | 0.1+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 05 25 | 703 | 1.5+ | 0.7+ |
| 2002 04 30 | 644 | 0.2− | 0.3+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2006 05 25 | 703 | 0.9− | 0.3− |
| 2002 05 08 | 704 | 0.6+ | 0.2− | 2003 09 28 | 645 | 0.1+ | 0.0 | 2006 05 25 | 703 | 0.2− | 1.2− |
| 2002 05 08 | 704 | 0.8+ | 0.1+ | 2003 09 29 | 691 | 0.3− | 0.1+ | 2006 05 25 | 703 | 0.1+ | 0.1− |
| 2002 05 08 | 704 | 0.3+ | 0.8− | 2003 09 29 | 691 | 0.1− | 0.0 | | | | |

**2002 JO$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.35880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29945457 | $\omega$ | 235.24757 | | +0.15078769 | | +0.98783914 |
| $a$ | 2.2126637 | $\Omega$ | 43.47478 | | −0.88803446 | | +0.15220146 |
| $e$ | 0.1732839 | $i$ | 3.15824 | | −0.43434764 | | +0.03175761 |
| $P$ | 3.29 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 291 | 0.0 | 0.4+ | 2002 05 11 | 704 | 0.3+ | 0.8− | 2006 09 28 | 691 | 0.3− | 0.0 |
| 2002 04 08 | 291 | 0.2+ | 0.4+ | 2002 05 18 | 644 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.4− | 0.1+ |
| 2002 04 08 | 291 | 0.3+ | 0.6+ | 2002 05 18 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2002 04 22 | 691 | 0.3− | 0.2− | 2002 05 18 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2002 04 22 | 691 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 2002 04 22 | 691 | 0.3− | 0.5− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 05 09 | 644 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2002 05 09 | 644 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.6− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2002 05 09 | 644 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 21 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.8− | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 21 | 691 | 0.0 | 0.4+ | | |
| 2002 05 11 | 704 | 0.8+ | 1.1+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 21 | 691 | 0.4+ | 0.0 | | |
| 2002 05 11 | 704 | 1.3+ | 1.1− | 2006 09 28 | 691 | 0.3− | 0.0 | | | | | | |

**2002 JY$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.32472 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21845941 | $\omega$ | 124.61275 | −0.99651521 | | −0.05647171 | |
| $a$ | 2.7303745 | $\Omega$ | 52.22776 | +0.02374654 | | −0.89757603 | |
| $e$ | 0.0180649 | $i$ | 4.45413 | +0.07995966 | | −0.43722788 | |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 291 | 0.1− | 0.3− | 2002 05 11 | 704 | 0.4− | 0.4+ | 2004 12 10 | 704 | (2.3+ | 0.7+) |
| 2002 05 10 | 291 | 0.3− | 0.1− | 2002 05 17 | 644 | 0.1+ | 0.1− | 2004 12 10 | 704 | 0.6+ | 0.6+ |
| 2002 05 10 | 291 | 0.1+ | 0.3− | 2002 05 17 | 644 | 0.1+ | 0.0 | 2004 12 10 | 704 | 0.4+ | 0.3− |
| 2002 05 11 | 704 | 0.2+ | 0.7+ | 2002 05 17 | 644 | 0.4+ | 0.0 | 2004 12 19 | 704 | 1.3− | 0.5+ |
| 2002 05 11 | 704 | 0.6+ | 1.3+ | 2004 11 20 | 691 | 0.0 | 0.2+ | 2004 12 19 | 704 | 0.0 | 0.8− |
| 2002 05 11 | 704 | 0.2− | 0.1+ | 2004 11 20 | 691 | 0.0 | 0.2− | 2004 12 19 | 704 | 0.4+ | 0.1− |
| 2002 05 11 | 704 | 0.3+ | 0.7+ | 2004 11 20 | 691 | 0.1− | 0.1+ | | | | |

**2002 JU$_{148}$ = 2006 DK$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.28318 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20998613 | $\omega$ | 273.60236 | −0.02965991 | | +0.99954409 | |
| $a$ | 2.8033392 | $\Omega$ | 354.68814 | −0.89115293 | | −0.02900224 | |
| $e$ | 0.0618116 | $i$ | 3.49803 | −0.45273254 | | −0.00839559 | |
| $P$ | 4.69 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 691 | 1.2− | 0.6− | 2004 11 11 | 691 | 0.1− | 0.2+ | 2006 02 24 | 704 | 0.9+ | 0.3+ |
| 2000 12 22 | 691 | 0.6+ | 0.2− | 2004 11 11 | 691 | 0.1− | 0.2+ | 2006 02 24 | 704 | 0.7+ | 0.1+ |
| 2000 12 22 | 691 | 0.4+ | 0.2+ | 2004 11 11 | 691 | 0.1+ | 0.1+ | 2006 02 24 | 704 | 0.8+ | 0.2− |
| 2002 05 09 | 644 | 0.2− | 0.1− | 2006 02 04 | 691 | 0.2+ | 0.1+ | 2006 02 24 | 704 | 0.0 | 0.0 |
| 2002 05 09 | 644 | 0.5+ | 0.7− | 2006 02 04 | 691 | 0.3+ | 0.0 | 2006 02 25 | G96 | 0.1− | 0.4− |
| 2002 05 09 | 644 | 0.2− | 0.2+ | 2006 02 04 | 691 | 0.2+ | 0.0 | 2006 02 25 | G96 | 0.1− | 0.3+ |
| 2002 05 10 | 644 | 0.2− | 0.0 | 2006 02 07 | 703 | 2.1− | 0.6+ | 2006 02 25 | G96 | 0.2+ | 0.2− |
| 2002 05 10 | 644 | 0.3− | 0.0 | 2006 02 07 | 703 | 0.9+ | 0.5+ | 2006 02 25 | G96 | 0.0 | 0.2− |
| 2002 05 10 | 644 | 0.0 | 0.1+ | 2006 02 07 | 703 | (3.0− | 3.1+) | 2006 05 03 | G96 | 0.1+ | 0.2− |
| 2002 05 17 | 644 | 0.4+ | 0.4+ | 2006 02 07 | 703 | 1.2− | 0.6+ | 2006 05 03 | G96 | 0.1+ | 0.2− |
| 2002 05 17 | 644 | 0.2+ | 0.7+ | 2006 02 20 | 703 | 1.0+ | 1.4− | 2006 05 03 | G96 | 0.1− | 0.1− |
| 2002 05 18 | 644 | 0.1+ | 0.2+ | 2006 02 20 | 703 | 0.1+ | 0.2+ | 2006 05 03 | G96 | 0.1− | 0.2− |
| 2002 05 18 | 644 | 0.1+ | 0.2− | 2006 02 20 | 703 | 0.5+ | 1.0− | | | | |
| 2002 05 18 | 644 | 0.2− | 0.0 | 2006 02 20 | 703 | 0.9− | 0.8− | | | | |

**2002 JB$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.53744 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28296417 | $\omega$ | 265.38627 | +0.48306833 | | +0.87503900 | |
| $a$ | 2.2978151 | $\Omega$ | 33.55593 | −0.77957936 | | +0.44587610 | |
| $e$ | 0.2499762 | $i$ | 3.19947 | −0.39862389 | | +0.18841776 | |
| $P$ | 3.48 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 291 | 0.0 | 0.3+ | 2002 05 09 | 644 | 0.3− | 0.4− | 2006 09 18 | 703 | (0.9− | 2.1−) |
| 2002 04 09 | 291 | 0.1+ | 0.2+ | 2002 05 09 | 644 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.3+ |
| 2002 04 09 | 291 | 0.2+ | 0.1+ | 2002 05 11 | 704 | 1.0+ | 0.8− | 2006 09 18 | 699 | 0.4− | 0.5− |
| 2002 04 14 | 704 | 0.7− | 0.4− | 2002 05 11 | 704 | 0.4+ | 0.5− | 2006 09 18 | 699 | 0.2− | 0.4+ |
| 2002 04 14 | 704 | 0.1− | 1.0− | 2002 05 11 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | (1.8+ | 2.8+) |
| 2002 04 14 | 704 | 0.8− | 0.3− | 2002 05 11 | 704 | 1.0− | 0.4+ | 2006 09 18 | 699 | 1.0− | 0.8+ |
| 2002 04 14 | 704 | 0.6+ | 0.3− | 2002 05 14 | 644 | 0.5− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2002 05 01 | 644 | 1.3+ | 0.3+ | 2002 05 14 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.3+ | 0.1− |
| 2002 05 01 | 644 | 0.6− | 0.2+ | 2002 05 14 | 644 | 0.8+ | 0.7+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2002 05 01 | 644 | 0.0 | 0.7+ | 2002 05 18 | 644 | 0.3− | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2002 05 07 | 644 | 0.2− | 0.2− | 2002 05 18 | 644 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 05 07 | 644 | 0.3− | 0.0 | 2002 05 18 | 644 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2002 05 07 | 644 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.6− |
| 2002 05 09 | 644 | 0.6− | 0.3− | 2006 09 18 | 703 | 1.1− | 1.2− | | | | |

**2002 JC$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.72811 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24295328 | $\omega$ | 28.84274 | +0.09028646 | | +0.98811633 | |
| $a$ | 2.5436316 | $\Omega$ | 246.57250 | −0.93777765 | | +0.04229798 | |
| $e$ | 0.1172611 | $i$ | 7.79173 | −0.33529305 | | +0.14777349 | |
| $P$ | 4.06 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.0 | 0.1− | 2002 05 10 | 644 | 0.0 | 0.1+ | 2003 09 25 | 644 | 0.0 | 0.1+ |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2002 05 17 | 644 | 0.0 | 0.2− | 2003 09 25 | 644 | 0.3+ | 0.2− |
| 2002 05 01 | 644 | 0.7+ | 0.9+ | 2002 05 17 | 644 | 0.1− | 0.1+ | 2003 10 01 | 691 | 0.1+ | 0.0 |
| 2002 05 01 | 644 | 0.3+ | 0.5− | 2002 05 17 | 644 | 0.3+ | 0.1− | 2003 10 01 | 691 | 0.2− | 0.0 |
| 2002 05 01 | 644 | 0.7+ | 0.0 | 2002 05 18 | 644 | 0.6− | 0.4+ | 2003 10 01 | 691 | 0.1− | 0.1− |
| 2002 05 07 | 644 | 0.2− | 0.3− | 2002 05 18 | 644 | 0.1− | 0.1+ | 2003 10 16 | 691 | 0.1+ | 0.3+ |
| 2002 05 10 | 644 | 0.4− | 0.3− | 2002 05 18 | 644 | 0.4− | 0.0 | 2003 10 16 | 691 | 0.1+ | 0.1+ |
| 2002 05 10 | 644 | 0.1− | 0.3− | 2003 09 25 | 644 | 0.1+ | 0.4+ | 2003 10 16 | 691 | 0.2− | 0.1+ |

**2002 JG$_{149}$ = 1999 RY$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.17953 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26989313 | $\omega$ | 93.99607 | −0.15318483 | | +0.98790986 | |
| $a$ | 2.3714183 | $\Omega$ | 167.11842 | −0.94379336 | | −0.13910745 | |
| $e$ | 0.1275689 | $i$ | 6.13964 | −0.29289674 | | −0.06843408 | |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 691 | 0.1+ | 0.0 | 2002 06 02 | 644 | 0.2+ | 0.7− | 2005 04 06 | G96 | 0.3− | 0.2+ |
| 1999 09 05 | 691 | 0.0 | 0.1− | 2002 06 02 | 644 | 0.4+ | 0.4− | 2005 04 06 | G96 | 0.1− | 0.3− |
| 1999 09 05 | 691 | 0.1+ | 0.0 | 2002 06 02 | 644 | 0.1+ | 0.5− | 2005 04 06 | G96 | 0.2+ | 0.1− |
| 1999 09 06 | 691 | 0.3− | 0.0 | 2002 06 10 | 644 | 0.2− | 1.0+ | 2005 04 06 | G96 | 0.4+ | 0.3+ |
| 1999 09 06 | 691 | 0.2− | 0.1− | 2002 06 10 | 644 | 0.1− | 1.0+ | 2006 05 10 | G96 | 0.4+ | 0.2− |
| 1999 09 06 | 691 | 0.0 | 0.1− | 2002 06 10 | 644 | 0.1+ | 1.2+ | 2006 05 10 | G96 | 0.4− | 0.1− |
| 2002 05 08 | 704 | 0.2− | 0.4+ | 2003 10 22 | 691 | 0.2+ | 0.4+ | 2006 05 10 | G96 | 0.5− | 0.4+ |
| 2002 05 08 | 704 | 0.0 | 0.1+ | 2003 10 22 | 691 | 0.2− | 0.5+ | 2006 05 10 | G96 | 0.2− | 0.1+ |
| 2002 05 08 | 704 | 0.1+ | 0.2+ | 2003 10 22 | 691 | 0.1+ | 0.5+ | 2006 05 25 | 691 | 0.3+ | 0.0 |
| 2002 05 18 | 704 | 0.1+ | 0.8+ | 2005 03 11 | G96 | 0.5− | 0.1+ | 2006 05 25 | 691 | 0.5− | 0.6− |
| 2002 05 18 | 704 | 0.6− | 0.3+ | 2005 03 11 | G96 | 0.1− | 0.3+ | 2006 05 25 | 691 | 0.2+ | 0.2+ |
| 2002 05 18 | 704 | 0.9+ | 1.2+ | 2005 03 11 | G96 | 0.1− | 0.2+ | | | | |
| 2002 05 18 | 704 | 1.1+ | 0.1+ | 2005 03 11 | G96 | 0.5− | 0.3+ | | | | |

**2002 JH$_{149}$ = 2003 YS$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.82408 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26971521 | $\omega$ | 203.95925 | +0.19354516 | | +0.96530902 | |
| $a$ | 2.3724611 | $\Omega$ | 77.57678 | −0.86865656 | | +0.25164832 | |
| $e$ | 0.2112801 | $i$ | 10.33889 | −0.45604392 | | −0.06965353 | |
| $P$ | 3.65 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 644 | 0.5− | 0.3+ | 2002 06 08 | 704 | (0.0 | 2.3+) | 2002 06 16 | 644 | 0.1+ | 0.2− |
| 2002 05 12 | 644 | 0.1− | 0.2+ | 2002 06 08 | 704 | 0.0 | 1.6+ | 2003 12 19 | 691 | 0.3+ | 0.3+ |
| 2002 05 12 | 644 | 0.0 | 0.5+ | 2002 06 08 | 704 | (2.3− | 2.6+) | 2003 12 19 | 691 | 0.1+ | 0.1+ |
| 2002 05 16 | 704 | 1.1+ | 0.4+ | 2002 06 11 | 644 | 0.1− | 0.1− | 2003 12 19 | 691 | 0.4− | 0.0 |
| 2002 05 16 | 704 | 0.3− | 0.1+ | 2002 06 11 | 644 | 0.2− | 0.1− | 2003 12 21 | 691 | 0.1− | 0.0 |
| 2002 05 16 | 704 | 0.5− | 0.5− | 2002 06 11 | 644 | 0.0 | 0.0 | 2003 12 21 | 691 | 0.2− | 0.0 |
| 2002 05 16 | 704 | 0.5+ | 1.5− | 2002 06 16 | 644 | 0.1+ | 0.4− | 2003 12 21 | 691 | 0.3+ | 0.2− |
| 2002 06 08 | 704 | (0.6+ | 2.4+) | 2002 06 16 | 644 | 0.1− | 0.2− | | | | |

**2002 JJ$_{149}$ = 2000 YX$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.07687 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28684828 | $\omega$ | 321.25176 | | −0.64724929 | | +0.63510174 |
| $a$ | 2.2770254 | $\Omega$ | 263.84132 | | −0.55005828 | | −0.77200001 |
| $e$ | 0.2097545 | $i$ | 25.08793 | | −0.52773502 | | +0.02572473 |
| $P$ | 3.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.1+ | 0.2− | 2002 07 09 | 704 | 0.1− | 0.3− | 2005 04 19 | E12 | 0.3+ | 0.1+ |
| 2000 12 30 | 704 | 0.3+ | 0.8+ | 2002 07 09 | 704 | 0.5+ | 0.4− | 2005 04 19 | E12 | 0.3+ | 0.4+ |
| 2000 12 30 | 704 | 0.1+ | 0.0 | 2002 07 09 | 704 | 0.2− | 0.3− | 2005 04 19 | E12 | 0.1− | 0.0 |
| 2000 12 30 | 704 | 0.2+ | 1.5+ | 2002 07 09 | 704 | 0.1+ | 0.7− | 2005 04 19 | E12 | 1.0− | 1.0− |
| 2001 01 03 | 704 | 0.8+ | 0.5+ | 2002 07 18 | 704 | 0.6− | 0.1+ | 2005 05 13 | E12 | 0.4− | 0.2+ |
| 2001 01 03 | 704 | 0.5− | 0.8+ | 2002 07 18 | 704 | 0.4− | 0.1+ | 2005 05 13 | E12 | 0.5+ | 0.0 |
| 2001 01 03 | 704 | (1.8+ | 0.2+) | 2002 07 18 | 704 | 0.2− | 0.4+ | 2005 05 13 | E12 | 0.1− | 0.3+ |
| 2002 05 15 | 644 | 0.0 | 0.6+ | 2002 07 18 | 704 | 0.1− | 0.2− | 2005 05 13 | E12 | 0.1− | 0.5+ |
| 2002 05 15 | 644 | 0.3− | 0.8+ | 2002 07 18 | 704 | 0.0 | 0.4− | 2005 06 30 | E12 | 0.9+ | 0.2+ |
| 2002 05 15 | 644 | 0.3− | 0.7+ | 2002 08 12 | 704 | 0.7+ | 0.3+ | 2005 06 30 | E12 | 0.3− | 0.2+ |
| 2002 05 21 | 704 | 0.2− | 0.8+ | 2002 08 12 | 704 | 0.9+ | 0.4+ | 2005 06 30 | E12 | 0.7+ | 0.3+ |
| 2002 05 21 | 704 | 0.4− | 1.2+ | 2002 08 12 | 704 | 0.3+ | 0.1− | 2006 10 02 | 703 | 0.1− | 0.8− |
| 2002 05 21 | 704 | 0.1− | 0.7+ | 2003 12 17 | 704 | 0.9+ | 0.9+ | 2006 10 02 | 703 | 0.5− | 0.4+ |
| 2002 06 02 | 644 | 0.4− | 0.0 | 2003 12 17 | 704 | 0.6+ | 0.4− | 2006 10 02 | 703 | 0.6+ | 1.0+ |
| 2002 06 02 | 644 | 0.3− | 0.0 | 2003 12 17 | 704 | 0.3− | 1.0+ | 2006 10 02 | 703 | 0.7+ | 1.1+ |
| 2002 06 02 | 644 | 0.4− | 0.0 | 2003 12 17 | 704 | 0.4− | 0.4+ | 2006 10 23 | 703 | 1.1− | 0.6− |
| 2002 06 14 | 704 | 0.5− | 0.5− | 2003 12 17 | 704 | 0.3+ | 0.2− | 2006 10 23 | 703 | 0.4+ | 0.5− |
| 2002 06 14 | 704 | 0.4+ | 0.3− | 2005 03 02 | E12 | 0.8− | 0.2− | 2006 10 23 | 703 | 0.0 | 0.2− |
| 2002 06 14 | 704 | 0.0 | 0.6− | 2005 03 02 | E12 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.2− | 0.4− |
| 2002 06 14 | 704 | 0.0 | 0.1− | 2005 03 02 | E12 | (1.7+ | 0.4+) | | | | |
| 2002 06 14 | 704 | 0.6− | 1.0+ | 2005 03 02 | E12 | 0.4+ | 0.1− | | | | |

**2002 JK$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.34061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23465597 | $\omega$ | 63.85525 | | −0.35373906 | | +0.93499568 |
| $a$ | 2.6032446 | $\Omega$ | 185.61483 | | −0.92398966 | | −0.35355467 |
| $e$ | 0.1095678 | $i$ | 15.12526 | | −0.14529897 | | −0.02796740 |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 704 | 0.1+ | 0.8− | 2003 09 18 | 691 | 0.0 | 0.3+ | 2003 10 24 | 691 | 0.3− | 0.4+ |
| 2002 05 07 | 704 | 0.8− | 0.4− | 2003 09 18 | 691 | 0.2− | 0.1− | 2003 10 24 | 691 | 0.1+ | 0.5+ |
| 2002 05 07 | 704 | 0.4− | 0.0 | 2003 09 19 | 599 | 0.3− | 0.6− | 2006 03 03 | G96 | 0.3− | 0.2+ |
| 2002 05 07 | 704 | 1.0− | 0.6− | 2003 09 19 | 599 | 0.5− | 0.2+ | 2006 03 03 | G96 | 0.4− | 0.2+ |
| 2002 05 07 | 704 | 1.1− | 0.7− | 2003 09 19 | 599 | 1.1+ | 0.1+ | 2006 03 03 | G96 | 0.0 | 0.2+ |
| 2002 05 13 | 644 | 0.3− | 0.2− | 2003 09 29 | 691 | 0.2− | 0.3+ | 2006 03 03 | G96 | 0.1− | 0.5+ |
| 2002 05 13 | 644 | 0.3− | 0.4− | 2003 09 29 | 691 | 0.1− | 0.3+ | 2006 03 23 | 691 | 0.1− | 0.5+ |
| 2002 05 13 | 644 | 0.2− | 0.3− | 2003 09 29 | 691 | 0.3− | 0.5+ | 2006 03 23 | 691 | 0.1− | 0.0 |
| 2002 06 04 | 699 | 0.4+ | 0.3− | 2003 10 18 | 645 | 0.1+ | 0.1− | 2006 03 23 | 691 | 0.1+ | 0.2+ |
| 2002 06 04 | 699 | 1.4+ | 0.2+ | 2003 10 18 | 645 | 0.1+ | 0.0 | 2006 04 02 | 691 | 0.2+ | 0.4+ |
| 2002 06 04 | 699 | 1.4+ | 0.7+ | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 04 02 | 691 | 0.2+ | 0.4+ |
| 2002 06 04 | 699 | 0.7+ | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.4+ |
| 2003 09 18 | 691 | 0.1− | 0.0 | 2003 10 24 | 691 | 0.1− | 0.3+ | | | | |

**2002 KJ$_{14}$ = 2006 QX$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.70543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27600173 | $\omega$ | 123.27343 | | +0.20455519 | | +0.97646873 |
| $a$ | 2.3362977 | $\Omega$ | 158.21986 | | −0.94813422 | | +0.21499800 |
| $e$ | 0.1762928 | $i$ | 10.60843 | | −0.24330777 | | −0.01687250 |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 19 | 691 | 1.3− | 0.0 | 2002 06 08 | 644 | 0.1+ | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.1− |
| 2002 04 19 | 691 | 0.2+ | 0.2− | 2002 06 08 | 644 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.0 |
| 2002 04 19 | 691 | 0.3+ | 0.1+ | 2002 06 08 | 644 | 0.5+ | 0.1− | 2006 08 19 | 691 | 0.1− | 0.1+ |
| 2002 05 30 | 644 | 0.4+ | 0.0 | 2005 04 04 | G96 | 0.5+ | 0.7+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 2002 05 30 | 644 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.0 | 0.7+ | 2006 08 27 | 691 | 0.2+ | 0.1+ |
| 2002 05 30 | 644 | 0.5+ | 0.0 | 2005 04 04 | G96 | 0.6− | 0.5+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 2002 06 03 | 704 | 0.3− | 0.1+ | 2005 04 04 | G96 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 1.1− | 0.1+ |
| 2002 06 03 | 704 | 1.0+ | 0.9− | 2006 08 15 | D35 | 0.3− | 0.4− | 2006 09 14 | 703 | 1.0+ | 0.1+ |
| 2002 06 03 | 704 | 0.3+ | 0.3+ | 2006 08 15 | D35 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.0 | 0.3− |
| 2002 06 03 | 704 | 0.1+ | 0.8+ | 2006 08 15 | D35 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 1.1− | 0.3− |

**2002 KT$_{15}$ = 2006 ST$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.54484 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28676203 | $\omega$ | 20.30406 | | +0.26523231 | | +0.96385157 |
| $a$ | 2.2774820 | $\Omega$ | 265.08334 | | −0.88809517 | | +0.23398507 |
| $e$ | 0.1997124 | $i$ | 1.45724 | | −0.37541815 | | +0.12744074 |
| $P$ | 3.44 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.0 | 0.3+ | 2002 06 16 | 644 | 0.7− | 0.9− | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2002 05 18 | 644 | 0.0 | 0.4+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2002 05 18 | 644 | 0.2− | 0.4+ | 2005 03 11 | G96 | 0.7− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2002 06 04 | 644 | 0.4− | 0.1+ | 2005 03 11 | G96 | 0.6+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2002 06 04 | 644 | 0.5+ | 0.5− | 2005 03 11 | G96 | 0.6+ | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2002 06 04 | 644 | 0.6− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2002 06 16 | 644 | 0.6+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2002 06 16 | 644 | 1.0+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.2+ | | | | |

**2002 LD$_{8}$ = 2006 SO$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.95384 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29320315 | $\omega$ | 206.47519 | | +0.48839636 | | +0.86163648 |
| $a$ | 2.2440040 | $\Omega$ | 93.04101 | | −0.77410494 | | +0.50081280 |
| $e$ | 0.1410964 | $i$ | 7.94498 | | −0.40277853 | | +0.08227463 |
| $P$ | 3.36 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 704 | 1.1+ | 1.2+ | 2003 12 16 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 1.1− | 0.1+ |
| 2002 06 05 | 704 | 0.0 | 0.9+ | 2005 03 03 | 703 | 1.4+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.0 |
| 2002 06 05 | 704 | 0.2− | 0.7+ | 2005 03 03 | 703 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.6+ |
| 2002 06 05 | 704 | (0.4− | 1.7+) | 2005 03 03 | 703 | 0.2− | 1.0+ | 2006 09 26 | 703 | 1.1− | 1.0+ |
| 2002 06 05 | 704 | 0.3+ | 0.9+ | 2005 03 03 | 703 | 0.7− | 0.7+ | 2006 09 26 | 703 | (1.1− | 2.7−) |
| 2002 06 09 | 704 | 0.0 | 0.1+ | 2005 03 16 | 703 | 0.5+ | 1.0+ | 2006 09 26 | 703 | (1.6+ | 1.6−) |
| 2002 06 09 | 704 | 0.3+ | 0.2+ | 2005 03 16 | 703 | 0.6− | 0.8+ | 2006 09 29 | 699 | 0.6− | 0.2− |
| 2002 06 09 | 704 | 0.6+ | 0.0 | 2005 03 16 | 703 | 1.1+ | 0.9+ | 2006 09 29 | 699 | 0.2+ | 1.2+ |
| 2002 06 09 | 704 | 0.5− | 0.1+ | 2005 03 16 | 703 | 1.1+ | 0.7− | 2006 09 29 | 699 | 0.2+ | 0.6+ |
| 2002 06 09 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.4+ | 1.1+ |
| 2002 06 10 | 704 | 0.4− | 0.2− | 2006 09 18 | 703 | 0.9+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.2− |
| 2002 06 10 | 704 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.3− | 1.0− | 2006 10 16 | 703 | 0.7− | 0.3− |
| 2002 06 10 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2002 06 10 | 704 | 0.5− | 1.2+ | 2006 09 21 | 699 | 1.1− | 0.5− | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2002 07 04 | 644 | 0.1+ | 0.6− | 2006 09 21 | 699 | (1.7− | 0.6−) | 2006 10 28 | 703 | 0.1− | 0.5+ |
| 2002 07 04 | 644 | 0.1− | 1.1− | 2006 09 21 | 699 | (1.9− | 0.9+) | 2006 10 28 | 703 | 1.2+ | 0.4− |
| 2002 07 04 | 644 | 0.2− | 0.8− | 2006 09 21 | 699 | 0.5+ | 0.3+ | 2006 10 28 | 703 | (0.7− | 1.8−) |
| 2003 12 16 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.7+ | 2006 10 28 | 703 | 1.0− | 1.1+ |
| 2003 12 16 | 691 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.3+ | | | | |

**2002 LZ$_{8}$ = 1999 TL$_{315}$ = 2006 RO$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.92129 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28004998 | $\omega$ | 110.42399 | | +0.28461442 | | +0.95863049 |
| $a$ | 2.3137283 | $\Omega$ | 176.10265 | | −0.90335919 | | +0.26984324 |
| $e$ | 0.2129099 | $i$ | 3.97558 | | −0.32083766 | | +0.09062119 |
| $P$ | 3.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2+ | 0.5+ | 2005 02 16 | 809 | 0.5− | 0.1− | 2006 09 19 | 699 | (0.8+ | 2.5+) |
| 1999 10 09 | 704 | 0.8− | 1.7+ | 2005 02 16 | 809 | 0.0 | 0.0 | 2006 09 19 | 699 | 1.4+ | 0.7+ |
| 1999 10 09 | 704 | 0.1− | 0.4+ | 2005 02 16 | 809 | 0.2+ | 0.2+ | 2006 09 19 | 699 | (0.4− | 1.6+) |
| 1999 10 09 | 704 | 0.7− | 0.3− | 2005 04 02 | 691 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.7+ |
| 1999 10 19 | 691 | 0.1− | 0.1− | 2005 04 02 | 691 | 0.1+ | 0.4+ | 2006 09 20 | H07 | 0.4+ | 0.5− |
| 1999 10 19 | 691 | 0.1− | 0.1− | 2005 04 02 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.3+ |
| 1999 10 19 | 691 | 0.1− | 0.0 | 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.1− |
| 1999 11 04 | 691 | 0.1+ | 0.2+ | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 1.0+ |
| 1999 11 04 | 691 | 0.3+ | 0.3+ | 2005 04 02 | G96 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.3+ |
| 1999 11 04 | 691 | 0.2+ | 0.1− | 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 09 20 | H07 | 0.1+ | 0.8− |
| 2002 06 02 | 644 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.1− | 0.4− | 2006 09 20 | 704 | 0.2− | 0.2− |
| 2002 06 02 | 644 | 0.1− | 0.3− | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 20 | H07 | 0.5+ | 0.0 |
| 2002 06 02 | 644 | 0.1+ | 0.2− | 2005 05 10 | G96 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2002 06 05 | 704 | 0.5+ | 1.7+ | 2005 05 10 | G96 | 0.5− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2002 06 05 | 704 | (0.2+ | 2.2+) | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2002 06 05 | 704 | 0.7+ | 1.6+ | 2006 07 22 | G96 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 06 05 | 704 | (0.1+ | 1.8+) | 2006 07 22 | G96 | 0.4+ | 0.7− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2002 06 05 | 704 | (0.1+ | 2.0+) | 2006 07 22 | G96 | 0.4− | 0.5− | 2006 09 30 | 691 | 0.1− | 0.3− |
| 2002 06 09 | 704 | 0.9+ | 0.9+ | 2006 09 12 | 703 | 0.9− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2002 06 09 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.6+ | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 2002 06 09 | 704 | 0.6− | 0.8+ | 2006 09 12 | 703 | 0.6− | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.8+ |
| 2002 06 09 | 704 | 0.1− | 0.2+ | 2006 09 12 | 703 | 1.2− | 0.6+ | 2006 10 01 | 704 | 1.0+ | 0.5− |
| 2002 06 09 | 608 | 0.0 | 0.8− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 06 09 | 608 | 0.6− | 0.6− | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.7+ |
| 2002 06 09 | 608 | 0.6− | 0.8− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.6+ |

**2002 LF$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.20814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18091252 | $\omega$ | 228.95670 | | +0.82555687 | +0.52931294 | |
| $a$ | 3.0961617 | $\Omega$ | 98.21394 | | −0.44004498 | +0.82088644 | |
| $e$ | 0.1054709 | $i$ | 11.40192 | | −0.35329347 | +0.21441376 | |
| $P$ | 5.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2002 06 09 | 704 | 0.3− | 0.0 | 2003 09 16 | 704 | 0.4+ | 0.0 |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2002 06 10 | 644 | 0.8− | 0.5+ | 2003 09 20 | 608 | 0.0 | 0.9− |
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2002 06 10 | 644 | 0.5− | 0.1+ | 2003 09 20 | 608 | 0.8+ | 0.7− |
| 1998 09 25 | 645 | 0.1− | 0.0 | 2002 06 10 | 644 | 0.1− | 0.6+ | 2003 09 20 | 608 | 0.0 | 0.8− |
| 1999 12 07 | 691 | 0.2+ | 0.2− | 2002 06 16 | 704 | 0.3− | 0.2− | 2003 09 27 | 699 | 0.4− | 1.2+ |
| 1999 12 07 | 691 | 0.2+ | 0.0 | 2002 06 16 | 704 | 0.2+ | 0.2+ | 2003 09 27 | 699 | 0.3+ | 1.0+ |
| 1999 12 07 | 691 | 0.4− | 0.1+ | 2002 06 16 | 704 | 0.4− | 0.8+ | 2003 09 27 | 699 | 0.9+ | 0.4+ |
| 2002 06 05 | 704 | 0.5+ | 0.0 | 2002 06 16 | 704 | 0.4+ | 0.0 | 2003 09 27 | 699 | 0.9− | 0.0 |
| 2002 06 05 | 704 | 0.8+ | 0.4+ | 2003 08 31 | 704 | 0.5− | 0.6− | 2003 10 17 | 644 | 0.1+ | 0.1+ |
| 2002 06 05 | 704 | 0.6+ | 0.5− | 2003 08 31 | 704 | 0.1+ | 0.1+ | 2003 10 17 | 644 | 0.0 | 0.0 |
| 2002 06 09 | 704 | 0.1− | 1.1− | 2003 08 31 | 704 | 0.5+ | 0.8− | 2003 10 17 | 644 | 0.2+ | 0.0 |
| 2002 06 09 | 704 | 0.2− | 0.1+ | 2003 09 16 | 704 | 0.2− | 0.8− | | | | |
| 2002 06 09 | 704 | 0.7+ | 0.2− | 2003 09 16 | 704 | 0.5− | 0.0 | | | | |

**2002 LX$_{10}$ = 2006 UM$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.73658 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29642143 | $\omega$ | 66.45681 | | +0.30461591 | +0.95086868 | |
| $a$ | 2.2277322 | $\Omega$ | 221.40600 | | −0.90153417 | +0.26910538 | |
| $e$ | 0.1990471 | $i$ | 4.79606 | | −0.30731952 | +0.15307206 | |
| $P$ | 3.33 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 704 | 0.6+ | 0.1+ | 2002 06 10 | 704 | 0.8+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3− |
| 2002 06 05 | 704 | 0.1− | 0.4+ | 2002 06 10 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2002 06 05 | 704 | 0.8− | 0.5+ | 2002 06 10 | 704 | 0.8− | 0.3− | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 2002 06 05 | 704 | 0.9− | 0.1− | 2002 06 10 | 704 | 0.4+ | 0.6− | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2002 06 09 | 704 | 0.3+ | 0.4− | 2002 06 14 | 704 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.7− |
| 2002 06 09 | 704 | 0.1+ | 0.0 | 2002 06 14 | 704 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2002 06 09 | 704 | 0.1+ | 0.0 | 2002 06 14 | 704 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 06 09 | 704 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.7+ |
| 2002 06 09 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.5+ | | | | |

**2002 LP$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.65368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27614938 | $\omega$ | 198.12584 | | +0.81142401 | +0.57727007 | |
| $a$ | 2.3354649 | $\Omega$ | 126.26820 | | −0.52122718 | +0.78547249 | |
| $e$ | 0.2503075 | $i$ | 6.50782 | | −0.26441124 | +0.22314173 | |
| $P$ | 3.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 24 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 01 24 | 691 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 01 24 | 691 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 06 05 | 704 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2002 06 05 | 704 | 0.7+ | 0.5− | 2006 09 21 | 699 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2002 06 05 | 704 | 0.7+ | 0.3− | 2006 09 21 | 699 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.4− | 0.6− |
| 2002 06 05 | 704 | 0.8+ | 0.3− | 2006 09 25 | 699 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2002 06 05 | 704 | (2.6+ | 1.0−) | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.7− |
| 2002 06 09 | 704 | 0.8− | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.9+ | 0.4− |
| 2002 06 09 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.1+ | 2006 10 22 | 703 | (1.8+ | 0.3−) |
| 2002 06 09 | 704 | 0.4− | 0.6+ | 2006 09 26 | 704 | 1.4− | 0.7+ | 2006 10 22 | 703 | 0.5+ | 0.3− |
| 2002 06 09 | 704 | 0.6− | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.5− | 0.3+ |
| 2002 06 09 | 704 | 0.4+ | 0.9+ | 2006 09 26 | 704 | 0.9+ | 0.4− | 2006 10 28 | 703 | 0.5+ | 0.2+ |
| 2002 07 03 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.8+ |
| 2002 07 03 | 644 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2002 07 03 | 644 | 0.3− | 0.2− | 2006 09 26 | 703 | 0.2− | 0.8− | 2006 11 16 | 703 | 0.3− | 0.5+ |
| 2002 07 05 | 704 | (1.8− | 0.4+) | 2006 09 26 | 703 | 0.3− | 0.4− | 2006 11 16 | 703 | 0.4− | 0.8+ |
| 2002 07 05 | 704 | (0.0 | 2.2+) | 2006 09 29 | 699 | 0.6+ | 0.3− | 2006 11 16 | 703 | 0.6+ | 0.2+ |
| 2002 07 05 | 704 | (0.2+ | 1.7+) | 2006 09 29 | 699 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.1− | 0.7− |
| 2006 09 16 | 699 | 1.4− | 0.9+ | 2006 09 29 | 699 | 0.1− | 0.3+ | 2006 11 16 | 703 | 1.3+ | 0.1− |
| 2006 09 16 | 699 | (0.3− | 2.0+) | 2006 09 29 | 699 | 0.4− | 0.8+ | 2006 11 16 | 703 | 0.5− | 0.4+ |
| 2006 09 16 | 699 | 1.4− | 1.1+ | 2006 09 30 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 703 | 0.1+ | 0.1+ |
| 2006 09 16 | 699 | 0.9+ | 0.2+ | 2006 09 30 | 704 | (1.5+ | 0.4−) | 2006 11 16 | 703 | 0.5+ | 0.5+ |
| 2006 09 18 | 703 | 0.1+ | 0.8− | 2006 09 30 | 704 | 0.8+ | 0.7+ | | | | |
| 2006 09 18 | 703 | 0.3− | 0.7− | 2006 09 30 | 704 | 0.3+ | 0.9+ | | | | |

**2002 LU$_{14}$ = 1999 RQ$_{51}$ = 2006 VZ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.57418 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30142190 | $\omega$ | 48.28920 | | +0.75500505 | +0.65219802 | |
| $a$ | 2.2030255 | $\Omega$ | 270.88722 | | −0.61996530 | +0.67629798 | |
| $e$ | 0.1917657 | $i$ | 3.89160 | | −0.21356590 | +0.34243070 | |
| $P$ | 3.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 06 | 699 | 0.9+ | 1.2+ | 2002 06 08 | 704 | (0.3+ | 1.8+) | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 1999 09 06 | 699 | 0.2− | 0.7+ | 2002 06 08 | 704 | 0.4− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 1999 09 06 | 699 | 1.0− | 1.0+ | 2002 06 08 | 704 | (0.1− | 2.0+) | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 1999 09 07 | 704 | 0.1+ | 0.7+ | 2002 06 08 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.0 |
| 1999 09 07 | 704 | 0.1− | 0.5+ | 2002 06 08 | 704 | (0.1− | 2.5+) | 2006 11 15 | 703 | 0.1− | 0.3− |
| 1999 09 07 | 704 | 0.2− | 0.0 | 2002 06 08 | 704 | 0.1+ | 0.8− | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 1999 09 07 | 704 | 0.0 | 0.6− | 2002 06 08 | 704 | (0.6+ | 3.0+) | 2006 11 15 | 703 | 1.1− | 0.9− |
| 1999 09 07 | 704 | 0.1+ | 0.1+ | 2002 06 09 | 704 | 0.9+ | 1.3− | 2006 11 15 | 703 | 1.1+ | 0.1+ |
| 1999 09 08 | 703 | 0.8+ | 1.0+ | 2002 06 09 | 704 | 1.1+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 1999 09 08 | 703 | 0.3− | 0.7+ | 2002 06 09 | 704 | 1.2+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 1999 09 08 | 703 | 0.6− | 1.5− | 2002 06 09 | 704 | 0.5+ | 0.7− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 1999 09 08 | 703 | 0.4− | 0.2− | 2005 04 06 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.6+ | 1.4− |
| 1999 09 09 | 704 | 0.3+ | 0.2− | 2005 04 06 | 691 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 1999 09 09 | 704 | 0.4+ | 0.2− | 2005 04 06 | 691 | 0.3− | 0.9+ | 2006 11 19 | 704 | 0.6+ | 0.5+ |
| 1999 09 09 | 704 | 1.1− | 0.4+ | 2005 04 15 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.1− |
| 1999 09 09 | 704 | 0.1− | 0.8− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.4+ |
| 2002 06 06 | 704 | 0.5− | 0.7+ | 2005 04 15 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2002 06 06 | 704 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 1.5+ | 0.6+ |
| 2002 06 06 | 704 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.3− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 704 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.7+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.9+ | | |
| 2002 06 06 | 704 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.8+ | 0.1− | | |
| 2002 06 08 | 704 | 1.2− | 1.4+ | 2006 11 10 | 691 | 0.2− | 0.1+ | | | | | | |
| 2002 06 08 | 704 | 0.7− | 0.9+ | 2006 11 10 | 691 | 0.2− | 0.2+ | | | | | | |

**2002 LC$_{16}$ = 2006 RV$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.84947 | | (2000.0) | | +0.57516174 | +0.81010092 |
| $n$ | 0.27478596 | $\omega$ | 241.59661 | | −0.69928370 | +0.55901084 |
| $a$ | 2.3431838 | $\Omega$ | 63.96051 | | −0.42448943 | +0.17675797 |
| $e$ | 0.2258943 | $i$ | 7.26938 | | | |
| $P$ | 3.59 | $H$ | 16.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 704 | 0.3− | 0.7− | 2006 09 14 | 644 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2002 05 12 | 704 | 1.2− | 0.3− | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ | |
| 2002 05 12 | 704 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.4− | 0.2+ | |
| 2002 06 06 | 704 | 0.3+ | 0.4− | 2006 09 17 | 699 | 0.4+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | |
| 2002 06 06 | 704 | 0.7+ | 0.4− | 2006 09 17 | 699 | 0.4− | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.5+ | |
| 2002 06 06 | 704 | 0.5+ | 0.3− | 2006 09 17 | 699 | 0.1− | 1.1+ | 2006 10 21 | 703 | 1.4+ | 1.1− | |
| 2002 06 06 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.4− | 2006 10 21 | 703 | 0.0 | 0.4− | |
| 2002 06 08 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.6− | 2006 10 21 | 703 | 1.2− | 0.5− | |
| 2002 06 08 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 10 21 | 703 | 1.1+ | 1.4− | |
| 2002 06 08 | 704 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.5+ | |
| 2002 06 08 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 1.4+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.2+ | |
| 2002 06 08 | 704 | 0.1− | 0.5+ | 2006 09 25 | 703 | 0.5− | 0.4− | 2006 10 23 | 644 | 0.1− | 0.4+ | |
| 2002 06 09 | 704 | 0.4− | 0.8+ | 2006 09 25 | 703 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.8− | 0.2− | |
| 2002 06 09 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 703 | 0.0 | 0.4− | 2006 10 28 | 703 | 0.0 | 0.2+ | |
| 2002 06 09 | 704 | 0.4− | 0.2− | 2006 10 09 | 644 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.7+ | |
| 2002 06 12 | 644 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.2+ | 2006 10 28 | 703 | (2.0− | 0.0 ) | |
| 2002 06 12 | 644 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.3− | 0.1+ | | | | | |
| 2002 06 12 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3+ | | | | | |

**2002 LS$_{17}$ = 1996 XH$_{7}$ = 2006 QM$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.14545 | | (2000.0) | | +0.27914378 | +0.95200509 |
| $n$ | 0.28024932 | $\omega$ | 198.01365 | | −0.86483889 | +0.30607198 |
| $a$ | 2.3126310 | $\Omega$ | 88.34160 | | −0.41729179 | +0.00250028 |
| $e$ | 0.1040190 | $i$ | 7.21608 | | | |
| $P$ | 3.52 | $H$ | 16.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.0 | 0.0 | 2002 06 16 | 644 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.7− | 0.6− | |
| 1996 12 01 | 691 | 0.1+ | 0.4− | 2002 06 16 | 644 | 0.5+ | 0.2− | 2006 08 30 | 699 | 0.3+ | 0.4+ | |
| 1996 12 01 | 691 | 0.2− | 0.0 | 2003 12 22 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 699 | 0.3+ | 0.9+ | |
| 1996 12 08 | 691 | 0.1− | 0.1− | 2003 12 22 | 691 | 0.0 | 0.3+ | 2006 09 17 | 699 | 1.0− | 0.6+ | |
| 1996 12 08 | 691 | 0.1+ | 0.1− | 2003 12 22 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 699 | (1.6+ | 0.8+) | |
| 1996 12 08 | 691 | 0.1+ | 0.2− | 2005 03 16 | 703 | 0.2− | 0.2− | 2006 09 17 | 699 | 0.5+ | 0.2+ | |
| 2002 06 06 | 704 | (2.1− | 2.4+) | 2005 03 16 | 703 | 0.4− | 0.3− | 2006 09 20 | 703 | 0.3+ | 0.4− | |
| 2002 06 06 | 704 | (2.3− | 2.3+) | 2005 03 16 | 703 | 0.7+ | 0.7+ | 2006 09 20 | 703 | 0.8− | 0.1− | |
| 2002 06 06 | 704 | (2.2− | 2.6+) | 2005 03 16 | 703 | 1.4− | 0.1+ | 2006 09 20 | 703 | 0.8+ | 0.6− | |
| 2002 06 08 | 704 | 0.0 | 0.2− | 2006 08 23 | 644 | 0.2+ | 0.2− | 2006 09 20 | 703 | 0.2+ | 0.5− | |
| 2002 06 08 | 704 | (2.5+ | 0.4−) | 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.7− | 1.1− | |
| 2002 06 08 | 704 | 0.7+ | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.4− | |
| 2002 06 08 | 704 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.9− | 0.4+ | 2006 09 26 | 703 | 1.3− | 0.0 | |
| 2002 06 16 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.7+ | 0.7− | 2006 09 26 | 703 | 0.4+ | 0.8+ | |

**2002 LA$_{25}$ = 2006 RO$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.35974 | | (2000.0) | | +0.21325221 | +0.97631421 |
| $n$ | 0.27890046 | $\omega$ | 142.58485 | | −0.90947032 | +0.21203139 |
| $a$ | 2.3200814 | $\Omega$ | 139.69139 | | −0.35691349 | +0.04304937 |
| $e$ | 0.1738105 | $i$ | 3.23669 | | | |
| $P$ | 3.53 | $H$ | 17.3 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 02 | 644 | 0.1+ | 0.7+ | 2005 03 10 | G96 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.2− | 0.4+ | |
| 2002 06 02 | 644 | 0.1+ | 0.2+ | 2005 03 10 | G96 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.3− | |
| 2002 06 02 | 644 | 0.2− | 0.2+ | 2005 03 10 | G96 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.0 | |
| 2002 06 04 | 291 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.1− | 0.3+ | |
| 2002 06 04 | 291 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.1+ | 0.0 | 2006 09 14 | 703 | 1.1− | 0.3− | |
| 2002 06 04 | 291 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.8+ | 0.2+ | |
| 2002 06 11 | 704 | 0.0 | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.4− | |
| 2002 06 11 | 704 | 0.1+ | 0.3+ | 2005 04 11 | G96 | 0.2− | 0.2− | 2006 09 19 | 699 | 1.1+ | 0.7+ | |
| 2002 06 11 | 704 | 0.0 | 0.1+ | 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.7− | 0.3+ | |
| 2005 03 10 | G96 | 0.5+ | 0.1− | 2005 04 11 | G96 | 0.4− | 0.1− | | | | | |

**2002 LC$_{25}$ = 2006 WK$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.45400 | | (2000.0) | | +0.91303184 | +0.39682575 |
| $n$ | 0.30057607 | $\omega$ | 231.52703 | | −0.33719219 | +0.86446856 |
| $a$ | 2.2071564 | $\Omega$ | 104.91365 | | −0.22950879 | +0.30858295 |
| $e$ | 0.2329626 | $i$ | 5.60331 | | | |
| $P$ | 3.28 | $H$ | 16.9 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 02 | 644 | 0.2− | 0.4+ | 2002 06 10 | 704 | 0.1− | 0.5+ | 2004 01 31 | 691 | 0.1− | 0.3+ | |
| 2002 06 02 | 644 | 0.2− | 0.3+ | 2002 06 10 | 704 | 0.1− | 0.2+ | 2004 01 31 | 691 | 0.3− | 0.2+ | |
| 2002 06 02 | 644 | 0.1+ | 0.7+ | 2002 06 10 | 704 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.1+ | |
| 2002 06 04 | 291 | 0.2− | 0.1− | 2002 06 10 | 704 | 0.4− | 0.8+ | 2006 11 17 | G96 | 0.7+ | 0.0 | |
| 2002 06 04 | 291 | 0.3− | 0.2− | 2002 06 18 | 704 | (0.7+ | 1.7+) | 2006 11 17 | G96 | 0.1− | 0.1− | |
| 2002 06 04 | 291 | 0.3− | 0.1− | 2002 06 18 | 704 | 0.0 | 1.4+ | 2006 11 17 | G96 | 0.2+ | 0.0 | |
| 2002 06 09 | 704 | 0.8+ | 0.1− | 2002 06 18 | 704 | 1.3+ | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.3+ | |
| 2002 06 09 | 704 | 1.3+ | 0.5− | 2003 12 21 | 645 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2+ | |
| 2002 06 09 | 704 | 0.3+ | 1.0− | 2003 12 21 | 645 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2+ | |
| 2002 06 09 | 704 | 0.9+ | 0.1− | 2004 01 31 | 691 | 0.1− | 0.4+ | | | | | |

**2002 LJ$_{28}$ = 2006 QY$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.40766 | | (2000.0) | | +0.67640324 | +0.73577014 |
| $n$ | 0.26679174 | $\omega$ | 103.14095 | | −0.69935021 | +0.62733293 |
| $a$ | 2.3897610 | $\Omega$ | 209.50862 | | −0.23105832 | +0.25513858 |
| $e$ | 0.2540061 | $i$ | 3.89761 | | | |
| $P$ | 3.69 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.0 | 0.4− | 2006 08 27 | 699 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.3+ | |
| 1995 08 28 | 691 | 0.1+ | 0.4− | 2006 08 27 | 699 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.2+ | |
| 1995 08 28 | 691 | 0.2+ | 0.4− | 2006 08 28 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.2− | |
| 1995 10 27 | 691 | 0.1− | 0.2− | 2006 08 28 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.4+ | 0.0 | |
| 1995 10 27 | 691 | 0.1+ | 0.8+ | 2006 08 28 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.5− | |
| 1995 10 27 | 691 | 0.1− | 0.4− | 2006 08 28 | 704 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.7− | 0.2+ | |
| 2002 06 09 | 704 | (1.8− | 1.1+) | 2006 08 29 | 703 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.8− | 0.6+ | |
| 2002 06 09 | 704 | 0.5− | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.6+ | 2006 09 25 | 704 | 0.7− | 0.2− | |
| 2002 06 09 | 704 | 0.7− | 0.5+ | 2006 08 29 | 703 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.2+ | 0.0 | |
| 2002 06 09 | 704 | 1.0− | 0.0 | 2006 08 29 | 703 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.1+ | |
| 2002 06 09 | 704 | 0.4− | 0.8− | 2006 08 30 | 704 | 0.9+ | 0.2− | 2006 09 25 | 699 | 0.6− | 1.0+ | |
| 2002 06 10 | 704 | 0.1+ | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 704 | 0.4+ | 0.4+ | |
| 2002 06 10 | 704 | 0.4− | 0.8− | 2006 08 30 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 704 | (1.6− | 1.7−) | |
| 2002 06 10 | 704 | 0.0 | 0.5− | 2006 08 30 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.6− | 0.5+ | |
| 2002 06 18 | 704 | 1.3+ | 0.1− | 2006 08 30 | 704 | 0.5+ | 1.0+ | 2006 09 26 | 704 | (0.0 | 1.7−) | |
| 2002 06 18 | 704 | 1.0+ | 0.2+ | 2006 09 01 | 704 | 0.1− | 0.6− | 2006 09 29 | 704 | 0.7− | 0.2+ | |
| 2002 06 18 | 704 | 0.1+ | 0.6+ | 2006 09 01 | 704 | 0.4− | 0.7+ | 2006 09 29 | 704 | 0.9+ | 0.7+ | |
| 2005 03 17 | G96 | 0.0 | 0.4+ | 2006 09 01 | 704 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.2+ | |
| 2005 03 17 | G96 | 0.1+ | 0.1+ | 2006 09 01 | 704 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.5− | 0.6+ | |
| 2005 03 17 | G96 | 0.3+ | 0.4+ | 2006 09 01 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.7+ | 0.7+ | |
| 2005 03 17 | G96 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.5− | |
| 2006 08 22 | 644 | 0.0 | 0.3− | 2006 09 12 | 703 | 1.0− | 0.6− | 2006 10 02 | G96 | 0.0 | 0.4− | |
| 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.4− | |
| 2006 08 22 | 644 | 0.1+ | 0.3− | 2006 09 12 | 703 | 0.2− | 0.9− | 2006 10 02 | G96 | 0.2+ | 0.5− | |
| 2006 08 24 | 704 | 0.5+ | 0.2− | 2006 09 15 | H51 | 0.2+ | 0.6− | 2006 10 10 | 644 | 0.1− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 24 | 704 | 0.4− | 0.0 | 2006 09 15 | H51 | 0.7− | 0.4− | 2006 10 10 | 644 | 0.3+ | 0.2+ | | |
| 2006 08 24 | 704 | 0.1− | 0.1+ | 2006 09 15 | H51 | 0.2+ | 0.5− | 2006 10 10 | 644 | 0.1− | 0.1− | | |
| 2006 08 24 | 704 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2+ | | |
| 2006 08 24 | 704 | 0.2− | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2006 08 26 | 704 | 0.1− | 0.9+ | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2006 08 26 | 704 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.2− | 1.0− | | |
| 2006 08 26 | 704 | 0.1− | 0.6+ | 2006 09 18 | 704 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 1.1− | | |
| 2006 08 27 | 699 | 0.8− | 0.5− | 2006 09 18 | 704 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.2− | | |
| 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.4− | 0.0 | | |
| 2006 08 27 | 699 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.7+ | 2006 11 14 | G96 | 0.5− | 0.2− | | |
| 2006 08 27 | 699 | 0.9+ | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.7− | 2006 11 14 | G96 | 0.6+ | 0.7− | | |
| 2006 08 27 | 699 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2006 08 27 | 699 | 0.8+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.5− | 0.7− | | |

**2002 LV$_{28}$ = 2006 TX$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.19831 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27025449 | $\omega$ | 45.05786 | | +0.42870930 | | +0.88727586 |
| $a$ | 2.3693039 | $\Omega$ | 251.02261 | | −0.87127431 | | +0.35623808 |
| $e$ | 0.2652956 | $i$ | 10.36546 | | −0.23893391 | | +0.29297778 |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.5− | 0.4− | 2006 09 28 | 703 | 1.3− | 0.6− | 2006 10 19 | 673 | 0.2− | 0.3+ | | |
| 2002 06 09 | 704 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 673 | 0.2− | 0.2+ | | |
| 2002 06 09 | 704 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 10 19 | 703 | 0.5+ | 0.1− | | |
| 2002 06 09 | 704 | 0.6+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.1− | | |
| 2002 06 10 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.7− | 0.1− | | |
| 2002 06 10 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.6− | 1.4+ | | |
| 2002 06 10 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 20 | 673 | 0.2− | 0.4+ | | |
| 2002 06 10 | 704 | 0.8− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 20 | 673 | 0.2+ | 0.1+ | | |
| 2002 06 13 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 20 | 673 | 0.1+ | 0.1+ | | |
| 2002 06 13 | 704 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.8+ | 0.4+ | | |
| 2002 06 13 | 704 | 0.9+ | 1.2− | 2006 10 18 | 673 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.3− | | |
| 2006 09 28 | 703 | 0.0 | 0.1+ | 2006 10 18 | 673 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.4+ | 1.3− | | |
| 2006 09 28 | 703 | 0.6+ | 0.2− | 2006 10 18 | 673 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.6− | 0.1− | | |
| 2006 09 28 | 703 | 0.6+ | 0.3− | 2006 10 19 | 673 | 0.3− | 0.3+ | | | | | | |

**2002 LS$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.13912 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27854456 | $\omega$ | 163.36523 | | +0.50335612 | | +0.86192745 |
| $a$ | 2.3220573 | $\Omega$ | 136.80548 | | −0.80257025 | | +0.49249377 |
| $e$ | 0.2637271 | $i$ | 5.10789 | | −0.32017747 | | +0.12054442 |
| $P$ | 3.54 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 02 | 644 | 0.1− | 0.5+ | 2002 06 10 | 644 | 0.1− | 0.4− | 2006 09 29 | 699 | 0.0 | 0.9+ | | |
| 2002 06 02 | 644 | 0.4− | 0.3+ | 2002 06 10 | 644 | 0.2− | 0.5− | 2006 09 29 | 699 | (0.1+ | 1.9+) | | |
| 2002 06 02 | 644 | 0.1− | 0.3+ | 2002 06 10 | 644 | 0.1+ | 0.5− | 2006 10 04 | G96 | 0.1− | 0.0 | | |
| 2002 06 09 | 704 | 0.5+ | 0.3− | 2002 06 25 | 644 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− | | |
| 2002 06 09 | 704 | 0.4+ | 0.5+ | 2002 06 25 | 644 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.3− | | |
| 2002 06 09 | 704 | 0.1+ | 0.6+ | 2002 06 25 | 644 | 0.0 | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.2− | | |
| 2002 06 09 | 704 | 0.1+ | 0.3+ | 2002 07 03 | 644 | 0.8+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.4− | | |
| 2002 06 09 | 704 | 0.0 | 0.2− | 2002 07 03 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.4+ | | |
| 2002 06 09 | 608 | 0.4− | 0.8− | 2002 07 03 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.6− | | |
| 2002 06 09 | 608 | 0.8− | 0.9− | 2006 09 29 | 699 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.8+ | 0.1+ | | |
| 2002 06 09 | 608 | 0.1+ | 0.8− | 2006 09 29 | 699 | 0.0 | 0.6− | | | | | | |

**2002 LF$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.10210 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26046281 | $\omega$ | 332.46817 | | −0.21093467 | | +0.90036819 |
| $a$ | 2.4283181 | $\Omega$ | 283.24646 | | −0.80948642 | | −0.37914299 |
| $e$ | 0.0863867 | $i$ | 23.01588 | | −0.54794006 | | +0.21351282 |
| $P$ | 3.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 18 | 608 | 0.7+ | 0.3+ | 2002 06 11 | 291 | 0.4− | 0.3+ | 2002 07 18 | 704 | 0.3− | 0.6+ | | |
| 2001 02 18 | 608 | 0.1+ | 0.5+ | 2002 06 11 | 291 | 0.4− | 0.2+ | 2002 07 18 | 704 | 0.1+ | 0.5+ | | |
| 2001 02 18 | 608 | 0.2− | 0.3+ | 2002 06 11 | 291 | 0.3− | 0.2+ | 2002 07 29 | 644 | 1.3+ | 0.0 | | |
| 2002 05 24 | 644 | 0.6− | 0.2− | 2002 07 09 | 704 | 0.4+ | 0.8− | 2002 07 29 | 644 | 0.7+ | 0.4+ | | |
| 2002 05 24 | 644 | 0.0 | 0.1+ | 2002 07 09 | 704 | 1.1+ | 0.3− | 2002 07 29 | 644 | 0.8+ | 0.3+ | | |
| 2002 05 24 | 644 | 0.3− | 0.1+ | 2002 07 09 | 704 | 0.1+ | 0.9− | 2003 12 17 | 704 | 0.2+ | 0.6+ | | |
| 2002 06 08 | 291 | 0.3− | 0.6− | 2002 07 09 | 704 | 0.8+ | 0.8− | 2003 12 17 | 704 | 0.0 | 1.1+ | | |
| 2002 06 08 | 291 | 0.2− | 0.2+ | 2002 07 18 | 704 | 0.4+ | 0.6− | 2003 12 17 | 704 | 0.0 | 0.8+ | | |
| 2002 06 08 | 291 | 0.0 | 0.4+ | 2002 07 18 | 704 | 0.4− | 0.7+ | | | | | | |

**2002 LR$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.45608 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28011922 | $\omega$ | 226.51596 | | +0.51430656 | | +0.85075939 |
| $a$ | 2.3133470 | $\Omega$ | 74.73043 | | −0.75093414 | | +0.50765239 |
| $e$ | 0.2783948 | $i$ | 6.43705 | | −0.41423022 | | +0.13600557 |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 21 | 704 | 1.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.2+ | | |
| 2002 05 21 | 704 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.5+ | | |
| 2002 05 21 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.7+ | 1.1+ | | |
| 2002 06 06 | 704 | 0.1+ | 0.5− | 2006 10 14 | 118 | (1.6+ | 0.3−) | 2006 10 16 | 703 | 0.2− | 0.3− | | |
| 2002 06 06 | 704 | 0.1− | 0.3− | 2006 10 14 | 118 | 0.2− | 0.1+ | 2006 10 17 | 118 | 1.1+ | 0.3+ | | |
| 2002 06 06 | 704 | 0.1+ | 0.1+ | 2006 10 14 | 118 | 0.8− | 0.1− | 2006 10 17 | 118 | 0.3− | 0.1− | | |
| 2002 06 06 | 704 | 0.1− | 1.1− | 2006 10 14 | 118 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 06 11 | 704 | 0.5− | 0.2+ | 2006 10 14 | 118 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2002 06 11 | 704 | 0.5− | 0.9− | 2006 10 14 | 118 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.5− | 0.1+ | | |
| 2002 06 11 | 704 | 0.4− | 0.4+ | 2006 10 14 | 118 | 0.6− | 0.5− | 2006 10 22 | 703 | 0.6− | 0.8+ | | |
| 2002 06 11 | 704 | 0.3+ | 0.5+ | 2006 10 15 | 118 | 0.2− | 0.5− | 2006 10 22 | 703 | 0.3+ | 0.1− | | |
| 2002 06 16 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 118 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.6+ | | |
| 2002 06 16 | 644 | 0.5+ | 0.4+ | 2006 10 15 | 118 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.5+ | 0.5− | | |
| 2002 06 16 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 118 | 0.2+ | 0.7− | | | | | | |

**2002 LC$_{35}$ = 2006 TG$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.54270 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27777018 | $\omega$ | 56.88627 | | +0.24877287 | | +0.96088497 |
| $a$ | 2.3263710 | $\Omega$ | 228.01622 | | −0.93423566 | | +0.20489828 |
| $e$ | 0.2679043 | $i$ | 9.42339 | | −0.25556956 | | +0.18632436 |
| $P$ | 3.55 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.4+ | 0.9− | 2002 06 13 | 644 | 0.3− | 0.2+ | 2006 10 15 | 291 | 0.5+ | 0.1− | | |
| 2002 06 09 | 704 | 0.4− | 0.5− | 2002 06 13 | 644 | 0.3− | 0.1+ | 2006 10 15 | 291 | 0.4+ | 0.2− | | |
| 2002 06 09 | 704 | 0.1− | 0.3− | 2002 06 13 | 644 | 0.1− | 0.2+ | 2006 10 16 | 291 | 0.2− | 0.1− | | |
| 2002 06 09 | 704 | 0.5+ | 0.1+ | 2002 06 16 | 644 | 0.0 | 0.2+ | 2006 10 16 | 291 | 1.1− | 0.7+ | | |
| 2002 06 10 | 644 | 0.4+ | 0.2+ | 2002 06 16 | 644 | 0.2− | 0.1+ | 2006 10 16 | 291 | 0.2− | 0.2− | | |
| 2002 06 10 | 644 | 0.1− | 0.1+ | 2002 06 16 | 644 | 0.3− | 0.2+ | | | | | | |
| 2002 06 10 | 644 | 0.5+ | 0.3+ | 2006 10 15 | 291 | 0.5+ | 0.1− | | | | | | |

**2002 LO$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.83305 | | (2000.0) | | | |
| $n$ | 0.27558477 | $\omega$ | 70.54828 | | +0.63636912 | +0.76676628 |
| $a$ | 2.3386536 | $\Omega$ | 239.26406 | | −0.73940810 | +0.57520415 |
| $e$ | 0.2431158 | $i$ | 5.62737 | | −0.21979538 | +0.28497309 |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 691 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 03 | 703 | 0.1+ | 0.5+ |
| 1999 11 13 | 691 | 0.2+ | 0.5− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 03 | 703 | 0.6+ | 0.5− |
| 1999 11 13 | 691 | 0.1+ | 0.3− | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 03 | 703 | (1.7− | 0.6+) |
| 2002 05 11 | 704 | 0.4− | 0.3− | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 10 03 | 703 | 1.2− | 1.0− |
| 2002 05 11 | 704 | 0.1− | 0.4− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 03 | 703 | 0.3− | 0.1− |
| 2002 05 11 | 704 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 10 03 | 703 | 0.6− | 0.2− |
| 2002 05 11 | 704 | 0.2+ | 0.1− | 2006 09 13 | 644 | 0.0 | 0.2+ | 2006 10 03 | 703 | 0.8+ | 0.7− |
| 2002 05 11 | 704 | 0.5+ | 0.3+ | 2006 09 13 | 644 | 0.4+ | 0.1+ | 2006 10 03 | 703 | 0.1− | 0.1+ |
| 2002 05 21 | 704 | 0.2+ | 0.2− | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 03 | 703 | 0.9− | 0.2+ |
| 2002 05 21 | 704 | 1.1− | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.7− | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2002 05 21 | 704 | 0.2− | 0.3− | 2006 09 16 | 703 | 0.6− | 0.7− | 2006 10 10 | 644 | 0.1− | 0.4− |
| 2002 06 06 | 704 | (0.8+ | 1.6−) | 2006 09 16 | 703 | 0.1+ | 0.6− | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2002 06 06 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 10 17 | 703 | 0.6+ | 0.1+ |
| 2002 06 06 | 704 | 0.0 | 0.9− | 2006 09 19 | 699 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.4− | 1.1+ |
| 2002 06 06 | 704 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2002 06 07 | 291 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2002 06 07 | 291 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 06 07 | 291 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.2− | 0.2− |
| 2002 06 11 | 644 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2002 06 11 | 644 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.3− |
| 2002 06 11 | 644 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.3− | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2002 06 16 | 644 | 0.2+ | 0.2+ | 2006 10 03 | 703 | 1.0+ | 0.9+ | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2002 06 16 | 644 | 0.2+ | 0.1+ | 2006 10 03 | 703 | 0.4+ | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2002 06 16 | 644 | 0.5+ | 0.2+ | 2006 10 03 | 703 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.0 |

**2002 LF$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.34698 | | (2000.0) | | | |
| $n$ | 0.27300492 | $\omega$ | 184.22063 | | +0.55296206 | +0.82071721 |
| $a$ | 2.3533638 | $\Omega$ | 119.41027 | | −0.75954079 | +0.56743075 |
| $e$ | 0.2976325 | $i$ | 9.49636 | | −0.34253576 | +0.06667530 |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 10 | 704 | 0.9+ | 0.8− | 2002 06 14 | 704 | 1.2+ | 1.1− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 06 10 | 704 | 1.1+ | 0.9− | 2002 06 14 | 644 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 06 10 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 06 10 | 704 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.0 | 1.3+ | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2002 06 10 | 704 | 0.2+ | 0.7− | 2006 09 19 | 703 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2002 06 10 | 644 | 0.3− | 0.3+ | 2006 10 02 | 703 | (1.5− | 0.8+) | 2006 10 17 | 703 | 0.0 | 0.8− |
| 2002 06 10 | 644 | 0.4− | 0.3+ | 2006 10 02 | 703 | (0.8+ | 2.3+) | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2002 06 14 | 644 | 0.5− | 0.4+ | 2006 10 02 | 703 | 0.4+ | 0.6+ | 2006 10 28 | 703 | 1.2− | 0.6+ |
| 2002 06 14 | 704 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.7+ | 0.3− | 2006 10 28 | 703 | 0.2+ | 0.0 |
| 2002 06 14 | 704 | 0.6− | 0.6+ | 2006 10 10 | 644 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 1.1− | 0.3+ |
| 2002 06 14 | 644 | 0.4− | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.4− | 0.5− |
| 2002 06 14 | 704 | 0.7− | 1.5+ | 2006 10 10 | 644 | 0.6+ | 0.4+ | | | | |

**2002 LU$_{45}$ = 2006 SX$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.59211 | | (2000.0) | | | |
| $n$ | 0.29282738 | $\omega$ | 280.11843 | | +0.96067511 | +0.25332097 |
| $a$ | 2.2459233 | $\Omega$ | 65.28180 | | −0.17927171 | +0.87857795 |
| $e$ | 0.1859719 | $i$ | 7.19164 | | −0.21204950 | +0.40488179 |
| $P$ | 3.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2002 05 18 | 644 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.7+ | 0.8+ | 2006 10 22 | 703 | 1.2− | 0.4− |
| 2002 05 18 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.3+ | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2002 06 07 | 291 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2002 06 07 | 291 | 0.0 | 1.1− | 2006 10 11 | 644 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 06 07 | 291 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 06 08 | 704 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 06 08 | 704 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 06 08 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.4+ | 1.4+ |
| 2002 06 08 | 704 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.2− |
| 2006 09 26 | 703 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.8+ | 2006 11 14 | 704 | 0.3+ | 0.0 |
| 2006 09 26 | 703 | 0.7− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.6+ | 0.6+ |
| 2006 09 26 | 703 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 20 | 704 | 1.4− | 0.2− |
| 2006 09 26 | 703 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.4− | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2006 09 29 | 699 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.9+ | 1.1− |

**2002 LW$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.42683 | | (2000.0) | | | |
| $n$ | 0.27589875 | $\omega$ | 50.84170 | | +0.53322349 | +0.83962007 |
| $a$ | 2.3368790 | $\Omega$ | 251.67945 | | −0.80590727 | +0.46695013 |
| $e$ | 0.1286035 | $i$ | 6.25877 | | −0.25726675 | +0.27748102 |
| $P$ | 3.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.1+ | 1.0− | 2003 11 18 | 691 | 0.3+ | 0.1− | 2006 08 24 | 644 | 0.4− | 0.0 |
| 2002 05 11 | 704 | 0.4− | 0.3+ | 2003 11 24 | 699 | 1.4+ | 0.5− | 2006 08 24 | 644 | 0.3− | 0.2− |
| 2002 05 11 | 704 | 0.8− | 0.7+ | 2003 11 24 | 699 | 1.6− | 0.9+ | 2006 08 24 | 644 | 0.3− | 0.1− |
| 2002 05 11 | 704 | 1.0+ | 0.6− | 2003 11 24 | 699 | 1.3− | 0.3+ | 2006 08 30 | 699 | (3.1+ | 0.3−) |
| 2002 06 08 | 291 | 0.0 | 0.1− | 2003 11 24 | 699 | 1.1− | 1.0+ | 2006 08 30 | 699 | 0.3− | 0.2+ |
| 2002 06 08 | 291 | 0.1+ | 0.0 | 2003 12 18 | 691 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.6− | 0.6− |
| 2002 06 08 | 291 | 0.1+ | 0.2+ | 2003 12 18 | 691 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.3− | 1.6− |
| 2002 06 10 | 644 | 0.2− | 1.2+ | 2003 12 18 | 691 | 0.0 | 0.0 | 2006 09 16 | 691 | 0.1− | 0.1+ |
| 2002 06 10 | 644 | 0.2+ | 0.8+ | 2006 07 21 | 703 | 0.2− | 1.7+ | 2006 09 16 | 691 | 0.0 | 0.1− |
| 2002 06 10 | 644 | 0.2+ | 1.1+ | 2006 07 21 | 703 | 1.0+ | 1.3+ | 2006 09 16 | 691 | 0.1− | 0.3+ |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2006 07 21 | 703 | 0.2− | 0.6− | | | | |
| 2003 11 18 | 691 | 0.1− | 0.2+ | 2006 07 21 | 703 | 0.5− | 1.2− | | | | |

**2002 LK$_{55}$ = 2006 UV$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.76999 | | (2000.0) | | | |
| $n$ | 0.27346295 | $\omega$ | 346.17855 | | +0.45798295 | +0.88284422 |
| $a$ | 2.3507352 | $\Omega$ | 310.96750 | | −0.80194410 | +0.35977821 |
| $e$ | 0.2464208 | $i$ | 7.92470 | | −0.38358477 | +0.30190350 |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 14 | 644 | 0.1+ | 0.2+ | 2002 07 05 | 704 | 0.1− | 0.5+ | 2006 10 19 | 703 | 1.2+ | 1.4+ |
| 2002 06 14 | 644 | 0.0 | 0.1− | 2002 07 05 | 704 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2002 06 14 | 644 | 0.4− | 0.2− | 2006 09 17 | 703 | 0.4− | 0.6+ | 2006 10 19 | 703 | 0.8+ | 0.4+ |
| 2002 06 18 | 644 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 06 18 | 644 | 0.2+ | 0.2− | 2006 09 17 | 703 | 0.7+ | 0.5+ | 2006 10 22 | 644 | 0.4− | 0.6+ |
| 2002 06 18 | 644 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 06 24 | 644 | 0.2− | 0.3− | 2006 09 28 | 703 | 1.3− | 1.1− | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2002 06 24 | 644 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.7− | 0.0 | 2006 10 27 | 703 | 0.8− | 0.1+ |
| 2002 06 24 | 644 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.4− |
| 2002 07 05 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.6− | 1.3− | 2006 10 27 | 703 | 1.2+ | 0.6− |
| 2002 07 05 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.4+ | | | | |

**2002 LK$_{61}$ = 2006 ST$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.79396 | | | (2000.0) | | |
| $n$ | 0.29520318 | $\omega$ | 159.78722 | | +0.88806547 | +0.45925423 |
| $a$ | 2.2338570 | $\Omega$ | 172.77076 | | −0.44109319 | +0.86386964 |
| $e$ | 0.1217320 | $i$ | 9.43199 | | −0.12952420 | +0.20691736 |
| $P$ | 3.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.0 | 0.0 | 2002 06 12 | 644 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 1995 03 28 | 691 | 0.0 | 0.0 | 2005 04 04 | 703 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 1995 03 28 | 691 | 0.2− | 0.8+ | 2005 04 04 | 703 | (2.1− | 0.5+) | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 1998 04 21 | 691 | 0.3− | 0.3+ | 2005 04 04 | 703 | 0.2+ | 1.1− | 2006 10 16 | 703 | 0.2− | 0.5− |
| 1998 04 21 | 691 | 0.4+ | 0.4− | 2005 04 04 | 703 | 1.3− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.7− |
| 1998 04 21 | 691 | 0.3− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 1998 04 21 | 691 | 0.4+ | 0.1+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.1+ |
| 1998 04 21 | 691 | 0.1− | 0.4− | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.8+ |
| 1998 04 21 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.6− |
| 2002 05 18 | 704 | 0.2+ | 0.2− | 2006 09 20 | 699 | 1.2+ | 0.1− | 2006 10 22 | 703 | 0.2− | 1.0− |
| 2002 05 18 | 704 | (1.9+ | 1.0+) | 2006 09 20 | 699 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2002 05 18 | 704 | (1.0+ | 3.0+) | 2006 09 20 | 699 | 0.7− | 0.3+ | 2006 10 28 | 703 | 1.2− | 0.8+ |
| 2002 05 18 | 704 | (0.4+ | 2.1+) | 2006 09 20 | 699 | 0.6+ | 0.4+ | 2006 10 28 | 703 | 0.5− | 0.1+ |
| 2002 06 01 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.1− | 0.1− | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2002 06 01 | 644 | 0.2+ | 0.8− | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.6+ |
| 2002 06 01 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.6− | 2006 11 07 | 644 | 0.7+ | 0.1+ |
| 2002 06 07 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.6+ | 2006 11 07 | 644 | 0.5− | 0.3+ |
| 2002 06 07 | 644 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.0 | 0.7− | 2006 11 07 | 644 | 0.4− | 0.6+ |
| 2002 06 07 | 644 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 0.5+ | 0.6− | 2006 11 16 | 703 | 0.1+ | 1.1+ |
| 2002 06 09 | 644 | 0.2− | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.7+ | 1.3− |
| 2002 06 09 | 644 | 0.4+ | 0.2− | 2006 10 01 | 704 | 0.5+ | 0.4− | 2006 11 16 | 703 | (1.4+ | 2.3+) |
| 2002 06 09 | 644 | 0.3− | 0.9− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.3+ | 0.3+ |
| 2002 06 12 | 644 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.1− | | | | |
| 2002 06 12 | 644 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.1− | | | | |

**2002 LZ$_{61}$ = 2005 JD$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.16986 | | | (2000.0) | | |
| $n$ | 0.30049703 | $\omega$ | 120.40490 | | +0.61062969 | +0.79183522 |
| $a$ | 2.2075434 | $\Omega$ | 187.26190 | | −0.75384812 | +0.57683434 |
| $e$ | 0.1831158 | $i$ | 5.14224 | | −0.24257861 | +0.20064676 |
| $P$ | 3.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 644 | 0.0 | 0.0 | 2002 06 03 | 644 | 0.1− | 0.3+ | 2005 05 10 | 691 | 0.0 | 0.2− |
| 2002 05 10 | 644 | 0.2− | 0.1− | 2002 06 10 | 644 | 0.5+ | 0.4− | 2005 05 10 | 691 | 0.1+ | 0.1+ |
| 2002 05 10 | 644 | 0.0 | 0.4+ | 2002 06 10 | 644 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.2+ | 0.3+ |
| 2002 05 23 | 644 | 0.0 | 0.1+ | 2002 06 10 | 644 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2002 05 23 | 644 | 0.0 | 0.1− | 2005 05 09 | G96 | 0.6− | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2002 05 23 | 644 | 0.2− | 0.3− | 2005 05 09 | G96 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2002 06 03 | 644 | 0.2− | 0.2− | 2005 05 09 | G96 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 06 03 | 644 | 0.1+ | 0.2+ | 2005 05 09 | G96 | 0.3− | 0.3− | | | | |

**2002 LA$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 292.30045 | | | (2000.0) | | |
| $n$ | 0.18053911 | $\omega$ | 9.45016 | | +0.19410205 | +0.96384591 |
| $a$ | 3.1004294 | $\Omega$ | 271.90340 | | −0.91154135 | +0.10844290 |
| $e$ | 0.0659865 | $i$ | 10.52435 | | −0.36251449 | +0.24339517 |
| $P$ | 5.46 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 291 | 0.4− | 0.0 | 2003 09 29 | 699 | 0.6+ | 0.2− | 2003 11 19 | 704 | 1.3− | 1.7+ |
| 2002 06 06 | 291 | 0.2− | 0.2+ | 2003 09 29 | 699 | 0.4+ | 1.0+ | 2003 11 19 | 704 | 0.1− | 0.2− |
| 2002 06 06 | 291 | 0.2− | 0.1+ | 2003 09 29 | 699 | 0.2+ | 1.2− | 2003 11 19 | 704 | 0.1− | 0.3+ |
| 2002 07 03 | 644 | 0.1+ | 0.3+ | 2003 09 29 | 699 | 0.8+ | 0.8− | 2003 11 19 | 704 | 1.7− | 0.4+ |
| 2002 07 03 | 644 | 0.3+ | 0.5+ | 2003 10 05 | 704 | 0.2− | 0.6+ | 2003 11 19 | 704 | 1.5− | 0.8+ |
| 2002 07 03 | 644 | 0.0 | 0.3+ | 2003 10 05 | 704 | 0.5+ | 0.5− | 2004 12 19 | 691 | 0.2+ | 0.1+ |
| 2002 07 21 | 644 | 1.3+ | 0.9+ | 2003 10 05 | 704 | 0.4− | 0.2− | 2004 12 19 | 691 | 0.2− | 0.3+ |
| 2002 07 21 | 644 | 0.0 | 0.2+ | 2003 10 05 | 704 | 0.6+ | 0.1− | 2004 12 19 | 691 | 0.0 | 0.0 |
| 2002 07 21 | 644 | (0.1+ | 2.1−) | 2003 10 17 | 699 | 0.3− | 0.6+ | 2006 03 23 | E12 | 0.4+ | 0.6+ |
| 2002 07 29 | 644 | 0.0 | 0.1− | 2003 10 17 | 699 | 0.1+ | 1.1− | 2006 03 23 | E12 | 0.3+ | 1.1+ |
| 2002 07 29 | 644 | 0.2− | 0.1− | 2003 10 17 | 699 | 0.4+ | 0.4− | 2006 03 23 | E12 | 0.8+ | 0.4+ |
| 2002 07 29 | 644 | 0.3− | 0.4+ | 2003 10 17 | 699 | 0.7+ | 1.5+ | 2006 03 23 | E12 | 0.2+ | 1.1+ |

**2002 LB$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 349.34557 | | | (2000.0) | | |
| $n$ | 0.22407791 | $\omega$ | 19.01026 | | +0.17848921 | +0.98151470 |
| $a$ | 2.6845409 | $\Omega$ | 261.31734 | | −0.91156054 | +0.13852598 |
| $e$ | 0.2366563 | $i$ | 4.00649 | | −0.37040381 | +0.13205850 |
| $P$ | 4.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.1+ | 0.3+ | 2002 07 14 | 704 | 0.2+ | 0.2− | 2006 04 21 | 703 | 0.5− | 0.5+ |
| 2000 01 12 | 691 | 0.1− | 0.1− | 2002 07 14 | 704 | 1.1+ | 1.0− | 2006 04 30 | 699 | 2.1+ | 1.1+ |
| 2000 01 12 | 691 | 0.0 | 0.0 | 2002 07 14 | 704 | 0.5− | 1.0+ | 2006 04 30 | 699 | 0.7+ | 1.9+ |
| 2002 06 11 | 644 | 0.0 | 0.3+ | 2002 07 14 | 704 | 0.2+ | 1.2− | 2006 04 30 | 699 | 0.6+ | 0.3+ |
| 2002 06 11 | 644 | 0.2+ | 0.2+ | 2002 07 14 | 704 | 0.2− | 0.5+ | 2006 04 30 | 699 | 0.9+ | 0.8+ |
| 2002 06 11 | 644 | 0.2+ | 0.5+ | 2003 11 18 | 691 | 0.2− | 0.0 | 2006 05 09 | G96 | 0.7− | 1.0− |
| 2002 07 05 | 704 | 0.4− | 0.3+ | 2003 11 18 | 691 | 0.0 | 0.5− | 2006 05 09 | G96 | 0.2− | 0.4− |
| 2002 07 05 | 704 | 0.7− | 0.2+ | 2003 11 18 | 691 | 0.1+ | 0.7+ | 2006 05 09 | G96 | 0.4− | 0.3− |
| 2002 07 05 | 704 | 0.9− | 0.1− | 2004 12 20 | G96 | 0.4− | 0.4− | 2006 05 09 | G96 | 0.3− | 0.4− |
| 2002 07 05 | 704 | 0.9− | 0.2+ | 2004 12 20 | G96 | 0.5− | 0.2− | 2006 05 31 | G96 | 0.3− | 0.1− |
| 2002 07 14 | 704 | 0.8+ | 0.1− | 2004 12 20 | G96 | 0.4− | 0.2− | 2006 05 31 | G96 | 0.2− | 0.2− |
| 2002 07 14 | 704 | 0.1+ | 0.4+ | 2004 12 20 | G96 | 0.2+ | 0.4− | 2006 05 31 | G96 | 0.0 | 0.3− |
| 2002 07 14 | 704 | 0.6+ | 0.4− | 2006 04 21 | 703 | 0.5− | 0.6− | 2006 05 31 | G96 | 0.5− | 0.2− |
| 2002 07 14 | 704 | 0.1− | 0.4+ | 2006 04 21 | 703 | 0.1+ | 0.4− | | | | |
| 2002 07 14 | 704 | 0.1+ | 0.8− | 2006 04 21 | 703 | 0.5− | 0.0 | | | | |

**2002 LC$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.93080 | | | (2000.0) | | |
| $n$ | 0.23392946 | $\omega$ | 22.75050 | | +0.15573261 | +0.96478875 |
| $a$ | 2.6086318 | $\Omega$ | 256.73319 | | −0.93648861 | +0.07594335 |
| $e$ | 0.2344191 | $i$ | 12.57862 | | −0.31422354 | +0.25182388 |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 704 | 1.7+ | 0.2+ | 2002 06 23 | 644 | 0.1− | 0.2+ | 2002 08 24 | 644 | 0.4− | 0.5− |
| 1998 08 27 | 704 | 0.8+ | 0.3− | 2002 07 19 | 644 | 0.0 | 0.5− | 2003 11 30 | 691 | 0.0 | 0.2+ |
| 1998 08 27 | 704 | 1.1+ | 0.3+ | 2002 07 19 | 644 | 0.1+ | 0.2− | 2003 11 30 | 691 | 0.2− | 0.0 |
| 1998 08 27 | 704 | (3.4− | 0.8−) | 2002 07 19 | 644 | 0.1− | 0.3− | 2003 11 30 | 691 | 0.2+ | 0.3+ |
| 2002 06 14 | 704 | 0.5+ | 0.3− | 2002 08 12 | 704 | 0.1+ | 0.6+ | 2003 12 14 | 691 | 0.1− | 0.4+ |
| 2002 06 14 | 704 | 0.3+ | 0.4− | 2002 08 12 | 704 | 0.0 | 0.4+ | 2003 12 14 | 691 | 0.2− | 0.3− |
| 2002 06 14 | 704 | 0.4− | 0.5− | 2002 08 12 | 704 | 0.2− | 0.4+ | 2003 12 14 | 691 | 0.3+ | 0.3+ |
| 2002 06 14 | 704 | 1.6+ | 0.4− | 2002 08 12 | 704 | 0.1+ | 0.7+ | 2003 12 14 | 291 | 0.6− | 0.6− |
| 2002 06 14 | 704 | 0.4+ | 0.1− | 2002 08 12 | 704 | 0.7− | 1.6+ | 2003 12 14 | 291 | 0.1+ | 0.1− |
| 2002 06 23 | 644 | 0.3− | 0.4+ | 2002 08 24 | 644 | 0.4− | 0.7− | 2003 12 14 | 291 | 0.5+ | 0.1− |
| 2002 06 23 | 644 | 0.1+ | 0.2+ | 2002 08 24 | 644 | 0.4− | 0.5− | | | | |

**2002 LD$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.52095 | | | (2000.0) | | |
| $n$ | 0.29411348 | $\omega$ | 146.71894 | | +0.86397113 | +0.50353445 |
| $a$ | 2.2393712 | $\Omega$ | 183.05056 | | −0.47212008 | +0.80822914 |
| $e$ | 0.2195078 | $i$ | 2.83664 | | −0.17509000 | +0.30531740 |
| $P$ | 3.35 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 291 | 0.2− | 0.3− | 2002 07 22 | 644 | 0.3− | 0.2− | 2004 01 28 | 691 | 0.0 | 0.4+ |
| 2002 06 06 | 291 | 0.1− | 0.0 | 2002 07 22 | 644 | 0.3− | 0.0 | 2005 04 16 | 691 | 0.0 | 0.1+ |
| 2002 06 06 | 291 | 0.3− | 0.0 | 2002 07 22 | 644 | 0.1− | 0.1− | 2005 04 16 | 691 | 0.1+ | 0.1+ |
| 2002 07 09 | 644 | 0.1− | 0.3+ | 2002 08 06 | 644 | 0.3− | 1.0+ | 2005 04 16 | 691 | 0.4+ | 0.2+ |
| 2002 07 09 | 704 | (2.3− | 1.4−) | 2002 08 06 | 644 | 0.1− | 1.2+ | 2005 05 14 | G96 | 0.6+ | 0.3+ |
| 2002 07 09 | 644 | 0.1+ | 0.2+ | 2002 08 06 | 644 | 1.4+ | 1.3+ | 2005 05 14 | G96 | 0.2− | 0.0 |
| 2002 07 09 | 704 | (1.6− | 1.4−) | 2002 08 28 | 644 | 0.4+ | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.1+ |
| 2002 07 09 | 704 | (2.8− | 2.7−) | 2002 08 28 | 644 | 0.2+ | 0.1− | 2005 05 14 | G96 | 0.8− | 0.1+ |
| 2002 07 09 | 704 | (1.9− | 2.4−) | 2002 08 28 | 644 | 0.1+ | 0.3+ | 2006 11 28 | 691 | 0.0 | 0.1+ |
| 2002 07 09 | 704 | (2.6− | 2.1−) | 2004 01 28 | 691 | 0.5+ | 0.3+ | 2006 11 28 | 691 | 0.2+ | 0.1+ |
| 2002 07 09 | 644 | 0.1− | 0.2+ | 2004 01 28 | 691 | 0.2− | 0.2+ | 2006 11 28 | 691 | 0.3− | 0.5+ |

**2002 LE$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.00859 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26014244 | $\omega$ | 164.33829 | | +0.11357860 | | +0.97562346 |
| $a$ | 2.4303113 | $\Omega$ | 111.88458 | | −0.93189564 | | +0.17014336 |
| $e$ | 0.2556577 | $i$ | 11.67474 | | −0.34448574 | | −0.13860054 |
| $P$ | 3.79 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 1.1+ | 0.2+ | 2002 07 13 | 608 | 0.1+ | 0.5− | 2002 08 30 | 644 | 0.1+ | 0.3− |
| 2002 06 08 | 704 | 1.3+ | 0.5+ | 2002 07 13 | 608 | 0.1− | 0.7− | 2002 08 30 | 644 | 0.0 | 0.4− |
| 2002 06 08 | 704 | 1.4+ | 0.5+ | 2002 07 13 | 608 | 0.3+ | 0.5− | 2002 08 30 | 644 | 0.2− | 0.2− |
| 2002 06 08 | 704 | 1.4+ | 0.6+ | 2002 08 13 | 704 | 0.5− | 0.1− | 2006 07 31 | E12 | 0.8+ | 0.5− |
| 2002 06 12 | 608 | 1.4− | 0.6+ | 2002 08 13 | 704 | 0.3− | 0.2+ | 2006 07 31 | E12 | 1.5− | 0.6− |
| 2002 06 12 | 608 | 1.3− | 0.3+ | 2002 08 13 | 704 | 0.1+ | 1.2− | 2006 07 31 | E12 | 0.6− | 0.9+ |
| 2002 06 12 | 608 | 0.9− | 0.5+ | 2002 08 13 | 704 | 0.4− | 0.3− | 2006 07 31 | E12 | 1.8− | 1.4+ |
| 2002 07 05 | 704 | 0.3− | 0.3+ | 2002 08 13 | 704 | 0.2− | 0.5− | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 2002 07 05 | 704 | 0.4− | 0.3− | 2002 08 14 | 644 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.4+ |
| 2002 07 05 | 704 | 1.1+ | 0.5+ | 2002 08 14 | 644 | 0.1− | 0.0 | 2006 09 26 | 703 | 1.2+ | 0.2+ |
| 2002 07 05 | 704 | 0.2− | 0.4− | 2002 08 14 | 644 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.1+ |

**2002 MW$_1$ = 2006 VS$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.51467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28180588 | $\omega$ | 57.29270 | | +0.72419846 | | +0.68615237 |
| $a$ | 2.3041072 | $\Omega$ | 259.27831 | | −0.65380741 | | +0.65147911 |
| $e$ | 0.2702308 | $i$ | 4.01445 | | −0.21925431 | | +0.32368176 |
| $P$ | 3.50 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 04 | 691 | 0.3+ | 0.2− | 2002 07 11 | 735 | 0.5+ | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 1999 12 04 | 691 | 0.1+ | 0.4− | 2002 07 11 | 735 | 0.1+ | 0.6+ | 2006 11 14 | 691 | 0.3− | 0.3+ |
| 1999 12 04 | 691 | 0.2− | 0.9− | 2002 07 14 | 704 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2002 06 16 | 644 | 0.1+ | 0.8− | 2002 07 14 | 704 | 0.5− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 06 16 | 644 | 0.1+ | 1.4− | 2002 07 14 | 704 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.3+ | 0.1− |
| 2002 06 16 | 644 | 0.0 | 1.1− | 2002 07 14 | 704 | 0.7− | 0.4+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2002 06 18 | 704 | 0.0 | 0.2− | 2002 07 14 | 704 | 0.4− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 06 18 | 704 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2002 06 18 | 704 | 0.9+ | 0.8− | 2006 10 20 | G96 | 0.5+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 06 18 | 704 | 0.6+ | 0.2+ | 2006 10 20 | G96 | 0.7− | 0.5− | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2002 07 05 | 704 | 0.8+ | 1.0+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2002 07 05 | 704 | 0.5− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.7− | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2002 07 05 | 704 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.7− | 0.1− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 07 05 | 704 | 0.5− | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.9− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2002 07 05 | 704 | 0.5+ | 1.1+ | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 12 01 | 691 | 0.3− | 0.3+ |

**2002 MF$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.42602 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17606559 | $\omega$ | 180.01467 | | +0.31019934 | | +0.93548209 |
| $a$ | 3.1527272 | $\Omega$ | 108.05680 | | −0.87220594 | | +0.35087919 |
| $e$ | 0.1991797 | $i$ | 10.25504 | | −0.37819725 | | −0.04191726 |
| $P$ | 5.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.4− | 0.1+ | 2003 10 20 | 704 | 0.0 | 0.7− | 2003 11 19 | 644 | 0.3+ | 0.5+ |
| 2002 06 16 | 644 | 0.3− | 0.1+ | 2003 10 20 | 704 | 0.4+ | 1.5− | 2003 11 20 | 645 | 0.1− | 0.0 |
| 2002 06 16 | 644 | 0.6− | 0.1− | 2003 10 20 | 704 | 1.2− | 0.3+ | 2003 11 20 | 645 | 0.0 | 0.1+ |
| 2002 07 05 | 704 | (3.0+ | 1.2−) | 2003 10 20 | 704 | 0.8− | 1.1− | 2003 11 28 | 645 | 0.1+ | 0.0 |
| 2002 07 05 | 704 | (3.4+ | 0.5−) | 2003 10 20 | 704 | 1.4− | 1.6+ | 2003 11 28 | 645 | 0.1− | 0.0 |
| 2002 07 05 | 704 | (4.5+ | 0.6+) | 2003 10 22 | 645 | 0.0 | 0.0 | 2004 12 21 | 691 | 0.1+ | 0.2− |
| 2002 07 05 | 704 | 1.7+ | 1.0+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2004 12 21 | 691 | 0.0 | 0.0 |
| 2002 07 14 | 644 | 0.1− | 0.7+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2004 12 21 | 691 | 0.0 | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.8+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 01 23 | 691 | 0.4+ | 0.2+ |
| 2002 07 14 | 644 | 0.3− | 0.8+ | 2003 11 19 | 644 | 0.6− | 0.6+ | 2006 01 23 | 691 | 0.3− | 0.6+ |
| 2003 10 20 | 704 | 0.8+ | 0.9− | 2003 11 19 | 644 | 0.2− | 0.1+ | 2006 01 23 | 691 | 0.1+ | 0.2+ |

**2002 MG$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.16115 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18871492 | $\omega$ | 237.95173 | | +0.59848477 | | −0.80082921 |
| $a$ | 3.0102223 | $\Omega$ | 175.10988 | | +0.79424920 | | +0.58950610 |
| $e$ | 0.0104281 | $i$ | 15.02811 | | +0.10480551 | | +0.10561791 |
| $P$ | 5.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 699 | 0.6+ | 0.9− | 2002 08 04 | 644 | 0.2+ | 0.1+ | 2003 10 22 | 645 | 0.1− | 0.0 |
| 2001 05 22 | 699 | 1.4+ | 0.4− | 2002 08 04 | 644 | 0.1+ | 0.1− | 2003 10 23 | 645 | 0.1+ | 0.0 |
| 2001 05 22 | 699 | 1.4− | 0.8− | 2002 08 04 | 644 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.1+ | 0.0 |
| 2001 05 22 | 699 | 1.0− | 0.2− | 2002 08 15 | 644 | 0.1+ | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2002 06 18 | 291 | (3.0− | 3.2−) | 2002 08 15 | 644 | 0.4+ | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2002 06 18 | 291 | 0.2− | 0.5− | 2002 08 15 | 644 | 0.3+ | 0.1+ | 2006 04 23 | 699 | 0.8+ | 0.2+ |
| 2002 06 18 | 291 | 0.1− | 0.3− | 2003 10 21 | 644 | 0.1− | 0.1+ | 2006 04 23 | 699 | 0.6− | 0.3+ |
| 2002 07 20 | 644 | 0.0 | 0.9+ | 2003 10 21 | 644 | 0.1− | 0.4+ | 2006 04 23 | 699 | 0.1− | 0.0 |
| 2002 07 20 | 644 | 0.2− | 1.2+ | 2003 10 21 | 644 | 0.2− | 0.5+ | 2006 04 23 | 699 | 0.2+ | 1.1+ |
| 2002 07 20 | 644 | 0.3+ | 1.1+ | 2003 10 22 | 645 | 0.0 | 0.1− | | | | |

**2002 MH$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.99079 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18129174 | $\omega$ | 305.18390 | | −0.01930703 | | +0.98777377 |
| $a$ | 3.0918426 | $\Omega$ | 322.76776 | | −0.81393181 | | −0.10538317 |
| $e$ | 0.0584083 | $i$ | 14.81344 | | −0.58063952 | | +0.11487977 |
| $P$ | 5.44 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 20 | 644 | 0.3− | 0.3+ | 2003 10 05 | 691 | 0.2− | 0.2+ | 2006 02 06 | G96 | 0.1+ | 0.4− |
| 2002 06 20 | 644 | 0.2− | 0.3+ | 2003 10 22 | 704 | 0.2− | 1.1+ | 2006 02 06 | G96 | 0.3+ | 0.2− |
| 2002 06 20 | 644 | 0.4− | 0.3+ | 2003 10 22 | 704 | 1.1+ | 1.1− | 2006 02 24 | 644 | 0.5+ | 0.1− |
| 2002 07 06 | 644 | 0.0 | 0.5+ | 2003 10 22 | 704 | 0.2+ | 0.4+ | 2006 02 24 | 703 | 1.4− | 2.8+ |
| 2002 07 06 | 644 | 0.1+ | 0.6+ | 2003 10 22 | 704 | 0.2+ | 0.1− | 2006 02 24 | 703 | 2.3+ | 2.5+ |
| 2002 07 06 | 644 | 0.0 | 0.5+ | 2003 11 21 | 644 | 0.3+ | 0.2+ | 2006 02 24 | 703 | 0.4+ | 1.3+ |
| 2002 08 06 | 644 | 0.3− | 0.0 | 2003 11 21 | 644 | 0.5− | 0.4+ | 2006 02 24 | 703 | 0.8− | 0.1− |
| 2002 08 06 | 644 | 0.4− | 0.1− | 2003 11 21 | 644 | 0.3− | 0.4+ | 2006 02 24 | 644 | 0.3+ | 0.1− |
| 2002 08 06 | 644 | 0.1− | 0.1+ | 2005 01 06 | 703 | 0.5− | 0.2+ | 2006 02 24 | 644 | 0.2+ | 0.2− |
| 2003 09 17 | 644 | 0.5− | 0.5+ | 2005 01 06 | 703 | 0.1− | 0.4+ | 2006 03 03 | 704 | 0.5− | 0.5+ |
| 2003 09 17 | 644 | 0.3− | 0.4+ | 2005 01 06 | 703 | 0.1+ | 0.6− | 2006 03 03 | 704 | 1.3+ | 0.0 |
| 2003 09 17 | 644 | 0.3− | 0.2+ | 2005 01 06 | 703 | 0.2− | 0.6− | 2006 03 03 | 704 | 0.6+ | 0.1− |
| 2003 10 05 | 691 | 0.2− | 0.3+ | 2006 02 06 | G96 | 0.3+ | 0.2− | | | | |
| 2003 10 05 | 691 | 0.2− | 0.3+ | 2006 02 06 | G96 | 0.5+ | 0.3− | | | | |

**2002 NR$_2$ = 2006 UC$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.83378 | | (2000.0) | | | |
| $n$ | 0.27737509 | $\omega$ | 105.88782 | | +0.98515195 | −0.07307866 |
| $a$ | 2.3285795 | $\Omega$ | 258.49795 | | +0.01173248 | +0.93142587 |
| $e$ | 0.3115027 | $i$ | 9.12209 | | +0.17128332 | +0.35651838 |
| $P$ | 3.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 704 | 1.0− | 0.7− | 2002 07 09 | 704 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2002 07 05 | 704 | 1.0+ | 1.0− | 2003 12 29 | 699 | 0.5+ | 0.7− | 2006 10 23 | 644 | 0.3− | 0.3− |
| 2002 07 05 | 704 | 0.7− | 0.6− | 2003 12 29 | 699 | 0.7− | 0.7+ | 2006 10 27 | 703 | 0.4+ | 0.1− |
| 2002 07 05 | 704 | (0.5− | 1.5−) | 2003 12 29 | 699 | 0.5− | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 07 05 | 246 | (0.0 | 2.8+) | 2003 12 29 | 699 | 0.8+ | 1.3+ | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2002 07 05 | 246 | (0.6− | 1.9+) | 2004 02 14 | 699 | 1.0+ | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.2− |
| 2002 07 05 | 246 | 0.3+ | 1.5+ | 2004 02 14 | 699 | 0.7− | 0.8+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2002 07 05 | 246 | (1.6+ | 0.9+) | 2004 02 14 | 699 | 1.4+ | 0.5− | 2006 11 15 | 703 | 0.2− | 0.6+ |
| 2002 07 05 | 246 | (1.6+ | 0.5+) | 2004 02 14 | 699 | 0.2− | 1.0+ | 2006 11 15 | 703 | 0.3+ | 0.2− |
| 2002 07 05 | 246 | 0.3+ | 0.4+ | 2006 06 03 | 703 | 0.7− | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.4+ |
| 2002 07 05 | 246 | 1.0+ | 0.2− | 2006 06 03 | 703 | 1.1+ | 1.3+ | 2006 11 17 | 704 | 0.6− | 0.9+ |
| 2002 07 06 | 651 | (1.6+ | 1.0+) | 2006 06 03 | 703 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.3− | 0.8+ |
| 2002 07 06 | 651 | 0.8+ | 0.4+ | 2006 06 03 | 703 | 0.0 | 0.4− | 2006 11 17 | 704 | 1.4− | 0.7+ |
| 2002 07 06 | 651 | 0.9− | 1.2+ | 2006 10 02 | 704 | (0.7+ | 2.7+) | 2006 11 17 | 704 | 1.2− | 1.1+ |
| 2002 07 08 | 673 | 0.4− | 0.4+ | 2006 10 02 | 704 | (0.1+ | 2.7+) | 2006 11 23 | 703 | 0.0 | 0.4− |
| 2002 07 08 | 673 | 0.1+ | 0.1− | 2006 10 02 | 704 | (1.3− | 1.8−) | 2006 11 23 | 703 | 0.1− | 0.1− |
| 2002 07 08 | 673 | 0.4+ | 0.0 | 2006 10 02 | 703 | 0.0 | 0.6− | 2006 11 23 | 703 | 0.4− | 0.4− |
| 2002 07 08 | 246 | 0.5− | 1.1+ | 2006 10 02 | 703 | 0.1+ | 0.6− | 2006 11 23 | 703 | 0.1− | 0.2− |
| 2002 07 08 | 246 | 0.6+ | 0.8+ | 2006 10 02 | 703 | 0.1+ | 0.8− | 2006 11 23 | 703 | 0.3− | 0.4− |
| 2002 07 08 | 246 | 0.6+ | 1.0+ | 2006 10 02 | 703 | 0.2+ | 0.4− | 2006 11 23 | 703 | 0.4− | 0.4− |
| 2002 07 08 | 246 | 0.6− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.3− | 0.7− |
| 2002 07 08 | 246 | 0.4− | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 23 | 703 | 0.4− | 0.2− |
| 2002 07 08 | 246 | 0.3− | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.3− | 2006 12 01 | 704 | 1.0+ | 0.4+ |
| 2002 07 09 | 673 | (3.3− | 1.0+) | 2006 10 20 | 704 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.3+ | 1.6+ |
| 2002 07 09 | 673 | (3.5− | 0.8+) | 2006 10 20 | 704 | 0.0 | 1.1+ | 2006 12 01 | 704 | 1.1+ | 2.3+ |
| 2002 07 09 | 673 | (3.1− | 0.9+) | 2006 10 20 | 704 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.2− |
| 2002 07 09 | 704 | 0.6− | 0.3− | 2006 10 20 | 704 | 0.6+ | 0.3− | 2006 12 01 | 704 | 0.4+ | 0.9+ |
| 2002 07 09 | 704 | 0.4− | 0.1− | 2006 10 20 | 704 | 0.3+ | 0.2+ | | | | |
| 2002 07 09 | 704 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.3− | | | | |

**2002 NW$_7$ = 2006 KQ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.19879 | | (2000.0) | | | |
| $n$ | 0.24286023 | $\omega$ | 127.80125 | | +0.86334546 | +0.49236593 |
| $a$ | 2.5442812 | $\Omega$ | 203.33505 | | −0.50414768 | +0.85101921 |
| $e$ | 0.2623094 | $i$ | 16.19854 | | +0.02167316 | +0.18259817 |
| $P$ | 4.06 | $H$ | 15.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 11 | 704 | 0.3+ | 0.1− | 2002 07 17 | 644 | 0.2− | 0.4+ | 2006 05 29 | 704 | 0.1+ | 0.3− |
| 2002 07 11 | 704 | 0.2− | 0.6+ | 2002 07 17 | 644 | 0.3− | 0.0 | 2006 05 29 | 704 | 0.1− | 0.1+ |
| 2002 07 11 | 704 | 0.2+ | 0.8+ | 2002 07 17 | 644 | 0.3− | 0.3+ | 2006 06 11 | 644 | 0.0 | 0.2− |
| 2002 07 11 | 704 | 0.1− | 0.9+ | 2002 07 25 | 644 | 0.4+ | 0.1− | 2006 06 11 | 644 | 0.1− | 0.4− |
| 2002 07 13 | 704 | 0.5− | 0.5− | 2002 07 25 | 644 | 0.5+ | 0.1+ | 2006 06 11 | 644 | 0.1− | 0.3− |
| 2002 07 13 | 704 | 0.3− | 0.3− | 2002 07 25 | 644 | 0.5+ | 0.0 | 2006 07 20 | 644 | 0.2− | 0.2− |
| 2002 07 13 | 704 | 0.1+ | 0.9− | 2006 05 29 | 704 | 0.6+ | 0.4+ | 2006 07 20 | 644 | 0.1+ | 0.1− |
| 2002 07 13 | 704 | 0.2− | 0.2− | 2006 05 29 | 704 | 0.1− | 0.5+ | 2006 07 20 | 644 | 0.2+ | 0.4− |
| 2002 07 13 | 704 | 0.1− | 0.3− | 2006 05 29 | 704 | 0.3− | 0.1+ | | | | |

**2002 NT$_{10}$ = 2006 SX$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.98641 | | (2000.0) | | | |
| $n$ | 0.26468671 | $\omega$ | 79.10957 | | +0.99544846 | +0.07611011 |
| $a$ | 2.4024146 | $\Omega$ | 276.50743 | | −0.09283614 | +0.91042776 |
| $e$ | 0.2564018 | $i$ | 3.30936 | | +0.02153658 | +0.40660614 |
| $P$ | 3.72 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 12 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.1+ | 0.3+ |
| 1991 09 12 | 691 | 0.4+ | 0.0 | 2006 09 19 | 699 | 0.5− | 1.1+ | 2006 10 03 | 704 | 0.3− | 0.6+ |
| 1991 09 12 | 691 | 0.0 | 0.5− | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 10 03 | 704 | 0.8+ | 0.2+ |
| 2002 06 16 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.9+ | 2006 10 03 | 704 | 0.1− | 0.1+ |
| 2002 06 16 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.0 | 2006 10 03 | 704 | 0.6+ | 0.1+ |
| 2002 06 16 | 644 | 0.4+ | 0.3− | 2006 09 19 | 699 | 0.2+ | 1.3+ | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2002 06 29 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2002 06 29 | 644 | 0.2− | 0.6+ | 2006 09 19 | 699 | 0.3+ | 1.1+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 06 29 | 644 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2002 07 04 | 644 | 0.3+ | 0.3− | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2002 07 04 | 644 | 0.3+ | 0.4− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 07 04 | 644 | 0.0 | 0.2− | 2006 09 21 | 704 | 0.4+ | 1.4− | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2002 07 05 | 704 | 0.6+ | 0.6− | 2006 09 21 | 704 | 0.6+ | 0.0 | 2006 10 19 | 704 | 1.3+ | 0.3+ |
| 2002 07 05 | 704 | 0.8+ | 0.8+ | 2006 09 21 | 704 | 0.1− | 0.6+ | 2006 10 19 | 704 | 0.2− | 0.4− |
| 2002 07 05 | 704 | 0.6+ | 0.8− | 2006 09 21 | 704 | 0.1− | 0.0 | 2006 10 19 | 704 | 0.3+ | 0.0 |
| 2002 07 05 | 704 | (2.6+ | 0.9−) | 2006 09 22 | 104 | 0.3− | 0.1+ | 2006 10 19 | 704 | 0.0 | 0.2− |
| 2002 07 05 | 704 | 0.9+ | 1.0− | 2006 09 22 | 104 | 0.2− | 0.1− | 2006 10 19 | 704 | 0.2+ | 0.3+ |
| 2002 07 14 | 704 | 1.4− | 0.1+ | 2006 09 22 | 104 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 0.7− | 0.3+ | 2006 09 23 | 104 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 07 14 | 704 | 0.7− | 0.8+ | 2006 09 23 | 104 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 07 14 | 704 | 0.7− | 0.5+ | 2006 09 24 | 104 | 0.2− | 0.1− | 2006 10 29 | 704 | 0.8− | 0.0 |
| 2002 07 14 | 704 | 0.5− | 0.1− | 2006 09 24 | 104 | 0.5− | 0.1− | 2006 10 29 | 704 | 0.8− | 0.6+ |
| 2005 04 15 | 691 | 0.1− | 0.8+ | 2006 09 25 | 704 | 0.7− | 0.7+ | 2006 10 29 | 704 | 0.5− | 0.1+ |
| 2005 04 15 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 0.7− | 1.1+ | 2006 10 29 | 704 | 0.3− | 1.3− |
| 2005 04 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.8− | 0.8+ | 2006 11 16 | 704 | (0.0 | 1.8+) |
| 2006 07 21 | 703 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.8− | 0.5+ | 2006 11 16 | 704 | (2.1− | 0.3−) |
| 2006 07 21 | 703 | (1.7− | 1.6+) | 2006 09 25 | 704 | 0.8− | 0.5+ | 2006 11 16 | 704 | 1.0− | 0.4− |
| 2006 07 21 | 703 | 0.2− | 0.2− | 2006 09 25 | 683 | 1.1+ | 0.5− | 2006 11 16 | 704 | 0.8+ | 0.2+ |
| 2006 07 21 | 703 | 0.1+ | 0.5+ | 2006 09 25 | 683 | (2.1+ | 1.3−) | 2006 11 16 | 704 | 0.7+ | 0.2+ |
| 2006 08 29 | 699 | 0.4− | 0.3+ | 2006 09 25 | 683 | 0.8+ | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2006 08 29 | 699 | 0.5− | 0.2+ | 2006 09 26 | 683 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 1.3+ |
| 2006 08 29 | 699 | 0.3+ | 0.0 | 2006 09 26 | 683 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2006 08 29 | 699 | 0.6+ | 0.1− | 2006 09 26 | 683 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.0 | 1.1+ |
| 2006 09 16 | 703 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.9+ | 1.0+ |
| 2006 09 16 | 703 | 0.5− | 0.4− | 2006 09 27 | 703 | 0.1+ | 0.5− | 2006 11 20 | 704 | (0.2− | 1.8+) |
| 2006 09 16 | 703 | 0.0 | 0.0 | 2006 09 27 | 683 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.1− | 0.5− |
| 2006 09 16 | 703 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | (0.0 | 2.3+) |
| 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.4− | 2006 11 20 | G96 | 0.2− | 0.5− |
| 2006 09 18 | 703 | 0.0 | 0.1− | 2006 09 27 | 683 | 0.1+ | 0.4− | 2006 11 20 | G96 | 0.1− | 0.5− |
| 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 09 27 | 683 | 0.3− | 1.0− | 2006 11 20 | 704 | 1.2+ | 1.1+ |
| 2006 09 18 | 703 | 0.3− | 0.2− | 2006 09 28 | 683 | 0.0 | 1.0− | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 704 | 0.1− | 0.3+ | 2006 09 28 | 683 | 0.0 | 1.1− | 2006 11 22 | 704 | (3.2+ | 0.5+) |
| 2006 09 18 | 704 | 0.0 | 0.0 | 2006 09 28 | 683 | 0.0 | 1.1− | 2006 11 22 | 704 | (2.6+ | 0.7+) |
| 2006 09 18 | 704 | 0.9+ | 0.7+ | 2006 09 29 | 683 | 0.2− | 0.5− | 2006 11 22 | 704 | (3.0+ | 0.8+) |
| 2006 09 18 | 704 | (1.7− | 0.1+) | 2006 09 29 | 683 | 0.7− | 1.1+ | 2006 11 22 | 704 | (2.9+ | 1.3+) |
| 2006 09 18 | 704 | (2.4− | 1.2−) | 2006 09 29 | 683 | 0.7− | 0.0 | 2006 11 22 | 704 | (3.1+ | 1.3+) |

**2002 NM$_{12}$ = 2006 RL$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 60.40212 | | (2000.0) | | | |
| $n$ | 0.26342848 | $\omega$ | 142.31433 | | −0.01991343 | +0.99357874 |
| $a$ | 2.4100584 | $\Omega$ | 126.27380 | | −0.94761594 | +0.01676334 |
| $e$ | 0.2274372 | $i$ | 7.94082 | | −0.31879066 | −0.11189403 |
| $P$ | 3.74 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 23 | 691 | 0.2+ | 0.3− | 2002 07 14 | 704 | 0.5+ | 0.5− | 2005 02 01 | 691 | 0.1+ | 0.2+ |
| 1998 05 23 | 691 | 0.4− | 0.2− | 2002 07 14 | 704 | 0.4+ | 0.1+ | 2005 02 01 | 691 | 0.3− | 0.3+ |
| 1998 05 23 | 691 | 0.0 | 0.0 | 2002 07 14 | 704 | 0.5+ | 0.6− | 2005 02 01 | 691 | 0.3+ | 0.1+ |
| 2002 07 04 | 644 | 0.3− | 0.4+ | 2002 07 14 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.2+ |
| 2002 07 04 | 644 | 0.5− | 0.4+ | 2002 07 14 | 704 | 0.9+ | 0.7− | 2006 09 14 | 703 | (2.8+ | 0.3+) |
| 2002 07 04 | 644 | 0.4− | 0.4+ | 2002 07 16 | 608 | (0.5+ | 1.7+) | 2006 09 14 | 703 | 0.3− | 0.4+ |
| 2002 07 05 | 704 | 0.6− | 0.8+ | 2002 07 16 | 608 | 0.2+ | 0.9+ | 2006 09 14 | 703 | 1.2− | 0.4+ |
| 2002 07 05 | 704 | 0.5+ | 0.8+ | 2002 07 16 | 608 | 0.7+ | 0.8+ | 2006 09 15 | 703 | 0.1− | 1.7− |
| 2002 07 05 | 704 | 0.3− | 0.2+ | 2002 08 29 | 644 | 0.3− | 0.3− | 2006 09 15 | 703 | 0.6+ | 0.5− |
| 2002 07 05 | 704 | 0.4− | 0.5+ | 2002 08 29 | 644 | 0.2+ | 0.2− | 2006 09 15 | 703 | 0.4+ | 0.4+ |
| 2002 07 05 | 704 | 0.9− | 0.3+ | 2002 08 29 | 644 | 0.1− | 0.3− | 2006 09 15 | 703 | 0.2+ | 0.0 |

**2002 NO$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.18293 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27178109 | $\omega$ | 50.16470 | | +0.86744143 | | +0.45634999 |
| $a$ | 2.3604233 | $\Omega$ | 281.84367 | | −0.49547218 | | +0.75604546 |
| $e$ | 0.2191003 | $i$ | 11.68487 | | −0.04530650 | | +0.46919074 |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.0 | 0.4+ | 2002 08 05 | 644 | 0.3+ | 0.3+ | 2002 09 03 | 644 | 0.4− | 0.1− |
| 2002 06 16 | 644 | 0.1+ | 0.9+ | 2002 08 05 | 644 | 0.2− | 1.1+ | 2002 09 03 | 644 | 0.5− | 0.1− |
| 2002 06 16 | 644 | 0.3+ | 0.8+ | 2002 08 05 | 644 | 0.2+ | 0.2+ | 2002 09 03 | 644 | 0.5− | 0.1+ |
| 2002 07 12 | 644 | 0.0 | 0.2+ | 2002 08 05 | 644 | 0.1+ | 1.2+ | 2004 01 19 | 691 | 0.3+ | 0.3+ |
| 2002 07 12 | 644 | 0.2+ | 0.4+ | 2002 08 05 | 644 | 0.4+ | 0.1+ | 2004 01 19 | 691 | 0.3+ | 0.8+ |
| 2002 07 12 | 644 | 0.4+ | 0.1+ | 2002 08 05 | 644 | 0.1− | 1.1+ | 2004 01 19 | 691 | 0.2+ | 0.6+ |
| 2002 07 12 | 644 | 0.3+ | 0.3+ | 2002 08 06 | 644 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.2− |
| 2002 07 12 | 644 | 0.2+ | 0.3+ | 2002 08 06 | 644 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.5− |
| 2002 07 12 | 644 | 0.1+ | 0.4+ | 2002 08 06 | 644 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.4+ | 0.2− |
| 2002 07 14 | 644 | 0.7+ | 0.1+ | 2002 08 12 | 704 | 0.8− | 0.3− | 2006 11 16 | 703 | 0.4+ | 0.9− |
| 2002 07 14 | 704 | 0.5− | 0.1+ | 2002 08 12 | 704 | 0.9− | 0.3+ | 2006 11 16 | 703 | 0.2− | 0.7+ |
| 2002 07 14 | 704 | 0.2− | 0.1+ | 2002 08 12 | 704 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.4− | 0.2− |
| 2002 07 14 | 704 | 0.6+ | 0.0 | 2002 08 12 | 704 | 1.3− | 1.3− | 2006 11 16 | 703 | 0.2− | 0.1+ |
| 2002 07 14 | 704 | 1.4− | 1.0− | 2002 08 15 | 644 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.0 | 0.6+ |
| 2002 07 14 | 644 | 0.4+ | 0.2− | 2002 08 15 | 644 | 0.3+ | 0.0 | | | | |
| 2002 07 14 | 644 | 0.2+ | 0.1− | 2002 08 15 | 644 | 0.1+ | 0.1− | | | | |

**2002 NO$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.21434 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27743358 | $\omega$ | 22.78746 | | +0.33308339 | | +0.93826166 |
| $a$ | 2.3282522 | $\Omega$ | 266.77161 | | −0.87886269 | | +0.27306116 |
| $e$ | 0.1486340 | $i$ | 5.36684 | | −0.34154916 | | +0.21237385 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.1+ | 0.4+ | 2002 07 28 | 608 | 0.8+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 06 16 | 644 | 0.0 | 0.8+ | 2002 07 28 | 608 | 1.0+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 06 16 | 644 | 0.1− | 0.6+ | 2002 08 05 | 644 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2002 07 09 | 704 | 0.4− | 0.6− | 2002 08 05 | 644 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.4+ |
| 2002 07 09 | 704 | 0.2− | 0.3− | 2002 08 05 | 644 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.7− | 0.4+ |
| 2002 07 09 | 704 | 0.1− | 0.5− | 2002 08 16 | 644 | 0.3− | 0.3− | 2006 10 17 | 703 | 1.3− | 0.5− |
| 2002 07 09 | 704 | 0.8− | 0.5− | 2002 08 16 | 644 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2002 07 14 | 704 | 0.2+ | 1.0+ | 2002 08 16 | 644 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 07 14 | 644 | 0.3− | 0.1+ | 2002 08 26 | 644 | 0.3− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2002 08 26 | 644 | 0.3− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2002 07 14 | 704 | 1.5+ | 0.5+ | 2002 08 26 | 644 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2002 07 14 | 704 | 0.3+ | 0.9− | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2002 07 14 | 704 | 0.3− | 0.2+ | 2005 03 12 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2005 03 12 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.4− | 0.3− |
| 2002 07 14 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.3− | 0.1+ |
| 2002 07 14 | 644 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.5− | 0.2− |
| 2002 07 28 | 608 | 0.9+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2+ | | | | |

**2002 NP$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.23334 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25977846 | $\omega$ | 332.34486 | | +0.44882713 | | +0.89247460 |
| $a$ | 2.4325809 | $\Omega$ | 324.27147 | | −0.80492413 | | +0.38179113 |
| $e$ | 0.1091163 | $i$ | 4.43968 | | −0.38813831 | | +0.24025950 |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 17 | 644 | 0.0 | 0.3− | 2002 08 05 | 644 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.3− | 0.2+ |
| 2002 06 17 | 644 | 0.2− | 0.0 | 2002 08 05 | 644 | 0.1− | 0.2+ | 2006 09 12 | 699 | 1.5+ | 0.9− |
| 2002 06 17 | 644 | 0.0 | 0.1+ | 2002 08 05 | 644 | 0.2− | 0.5+ | 2006 09 12 | 699 | (2.0+ | 0.6−) |
| 2002 07 05 | 704 | 0.1− | 0.2− | 2006 08 15 | 644 | 0.3− | 0.4− | 2006 09 12 | 699 | 0.3+ | 0.8+ |
| 2002 07 05 | 704 | 0.1+ | 0.8+ | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 12 | 699 | 0.3+ | 0.6+ |
| 2002 07 05 | 644 | 0.1− | 0.4− | 2006 08 15 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | (1.9+ | 0.7−) |
| 2002 07 05 | 704 | 0.1+ | 0.4− | 2006 08 28 | 699 | 0.5− | 0.8− | 2006 09 14 | 703 | 0.6+ | 0.4− |
| 2002 07 05 | 644 | 0.2− | 0.2− | 2006 08 28 | 699 | 1.2+ | 1.2+ | 2006 09 14 | 703 | 0.3+ | 0.2− |
| 2002 07 05 | 704 | 0.7+ | 1.0+ | 2006 08 28 | 699 | 0.5− | 0.9− | 2006 09 14 | 703 | 0.0 | 0.3+ |
| 2002 07 05 | 704 | 1.1+ | 1.2+ | 2006 08 28 | 703 | 0.3− | 0.8− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2002 07 05 | 644 | 0.3− | 0.3− | 2006 08 28 | 703 | (1.6+ | 0.9−) | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 07 12 | 644 | 0.0 | 0.4− | 2006 08 28 | 699 | 0.4+ | 1.2+ | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2002 07 12 | 644 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2002 07 12 | 644 | 0.1− | 0.4− | 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.3+ |
| 2002 07 14 | 644 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.9− |
| 2002 07 14 | 644 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.7− | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2002 07 14 | 644 | 0.3+ | 0.5− | 2006 08 28 | 703 | 0.7− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.2+ |

**2002 NU$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.30701 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26130605 | $\omega$ | 221.56897 | | +0.83221491 | | +0.54573766 |
| $a$ | 2.4230911 | $\Omega$ | 105.10088 | | −0.47817050 | | +0.79583490 |
| $e$ | 0.2106479 | $i$ | 5.82121 | | −0.28066230 | | +0.26233037 |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.0 | 0.1+ | 2002 07 17 | 644 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.8+ | 0.8− |
| 2002 07 05 | 644 | 0.1− | 0.4+ | 2002 08 13 | 704 | 0.1− | 0.4− | 2006 09 17 | 699 | (0.7− | 2.5+) |
| 2002 07 05 | 644 | 0.3− | 0.2+ | 2002 08 13 | 704 | 0.1+ | 0.3− | 2006 09 17 | 699 | 0.2− | 1.2+ |
| 2002 07 13 | 608 | 0.5+ | 0.3− | 2002 08 13 | 704 | 0.2+ | 0.2− | 2006 09 17 | 699 | 0.1− | 1.1+ |
| 2002 07 13 | 608 | 0.3+ | 0.1+ | 2002 08 13 | 704 | 0.7− | 0.8− | 2006 09 17 | 699 | (0.7+ | 2.7+) |
| 2002 07 13 | 608 | 0.3+ | 0.5− | 2002 08 29 | 644 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.3− | 0.3− |
| 2002 07 14 | 644 | 0.2+ | 0.4+ | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.0 |
| 2002 07 14 | 644 | 0.4+ | 0.2− | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.2− | 0.5− |
| 2002 07 14 | 644 | 0.1+ | 0.3+ | 2002 08 30 | 644 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2002 07 17 | 644 | 0.1− | 0.1− | 2002 08 30 | 644 | 0.2+ | 0.9+ | 2006 10 21 | 703 | 0.5+ | 0.6− |
| 2002 07 17 | 644 | 0.2− | 0.1+ | 2002 08 30 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.5+ | 0.1− |
| 2002 07 17 | 644 | 0.4− | 0.3− | 2006 08 28 | 699 | (1.0− | 3.0+) | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 2002 07 17 | 644 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.4+ | 1.0− | | | | |
| 2002 07 17 | 644 | 0.2− | 0.3− | 2006 08 28 | 699 | 0.9− | 0.5+ | | | | |

**2002 NH$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.11801 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26958843 | $\omega$ | 92.48466 | | +0.98315302 | | +0.10083701 |
| $a$ | 2.3732048 | $\Omega$ | 261.75746 | | −0.15169560 | | +0.91544147 |
| $e$ | 0.2991157 | $i$ | 8.86139 | | +0.10197340 | | +0.38961368 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.6+ | 1.4− | 2002 08 13 | 683 | (1.8− | 0.1−) | 2002 10 31 | 645 | 0.1+ | 0.2− |
| 2002 07 09 | 704 | 0.0 | 0.4− | 2002 08 13 | 683 | 1.4+ | 1.1− | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2002 07 09 | 704 | 1.0+ | 0.6− | 2002 08 13 | 699 | 0.1− | 0.9+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2002 07 10 | 644 | 0.4− | 0.3+ | 2002 08 13 | 699 | 0.7+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.6− |
| 2002 07 10 | 644 | 0.3− | 0.1+ | 2002 08 13 | 699 | 0.7− | 1.0+ | 2006 11 12 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 10 | 644 | 0.3− | 0.0 | 2002 08 13 | 699 | 0.6− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2002 07 18 | 704 | 0.0 | 0.1− | 2002 08 16 | 704 | 1.1− | 0.8− | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2002 07 18 | 704 | 1.1+ | 0.1− | 2002 08 16 | 704 | 1.2− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.1+ |
| 2002 07 18 | 704 | 0.7+ | 0.6− | 2002 08 16 | 704 | 1.4− | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2002 07 18 | 704 | 0.6+ | 0.9+ | 2002 08 25 | 644 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.3− |
| 2002 07 18 | 704 | 0.4+ | 0.4+ | 2002 08 25 | 644 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.7− | 0.4− |
| 2002 07 20 | 644 | 0.3− | 0.3+ | 2002 08 25 | 644 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.1+ | 1.0− |
| 2002 07 20 | 644 | 0.1− | 0.2+ | 2002 09 04 | 699 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.8− | 0.2+ |
| 2002 07 20 | 644 | 0.2− | 0.1− | 2002 09 04 | 699 | 0.6− | 0.6+ | 2006 11 19 | 704 | 0.3− | 0.4− |
| 2002 07 30 | 461 | 0.2− | 0.3− | 2002 09 04 | 699 | 0.9− | 1.0+ | 2006 11 22 | 704 | 1.1− | 1.0+ |
| 2002 07 30 | 461 | 0.2+ | 0.6− | 2002 09 04 | 699 | 1.1− | 0.8+ | 2006 11 22 | 704 | 0.2− | 1.2+ |
| 2002 07 30 | 461 | 0.3+ | 0.4+ | 2002 09 06 | 704 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.7− | 0.5+ |
| 2002 07 30 | 461 | 0.1+ | 0.1− | 2002 09 06 | 704 | 0.0 | 0.5− | 2006 11 22 | 704 | 1.1− | 0.4+ |
| 2002 08 04 | 644 | 0.0 | 0.7+ | 2002 09 06 | 704 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.3+ | 0.3− |
| 2002 08 04 | 644 | 0.0 | 1.0+ | 2002 09 06 | 704 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.3+ | 0.2+ |
| 2002 08 04 | 644 | 0.3− | 0.8+ | 2002 09 06 | 704 | 0.4+ | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.4+ |
| 2002 08 12 | 704 | 0.6+ | 0.3+ | 2002 10 06 | 704 | 1.2− | 0.7+ | 2006 11 27 | 704 | 0.8+ | 0.5+ |
| 2002 08 12 | 704 | 0.5+ | 0.2− | 2002 10 06 | 704 | 0.5− | 0.0 | 2006 11 27 | 704 | 0.5+ | 0.9+ |
| 2002 08 12 | 704 | 0.2+ | 0.5+ | 2002 10 06 | 704 | 0.8− | 0.4+ | 2006 11 27 | 704 | 1.1+ | 1.0+ |
| 2002 08 12 | 704 | 0.1− | 0.0 | 2002 10 06 | 704 | 1.0− | 0.4− | | | | |
| 2002 08 13 | 683 | 1.4+ | 1.0− | 2002 10 31 | 645 | 0.1+ | 0.2− | | | | |

### 2002 NV$_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.20453 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26757849 | $\omega$ | 79.13091 | | +0.38455686 | | +0.91993819 |
| $a$ | 2.3850743 | $\Omega$ | 213.80656 | | −0.89146167 | | +0.34863369 |
| $e$ | 0.2922474 | $i$ | 7.88751 | | −0.23960825 | | +0.17935515 |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 10 | 704 | 1.1+ | 0.9+ | 2002 08 16 | 644 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2002 06 10 | 704 | 1.2+ | 0.4+ | 2002 08 16 | 644 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.2+ |
| 2002 06 10 | 704 | 0.6+ | 0.5+ | 2002 08 16 | 644 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.7− | 0.1+ |
| 2002 06 10 | 644 | 0.2− | 0.1+ | 2002 08 24 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 06 10 | 644 | 0.2− | 0.1+ | 2002 08 24 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 06 10 | 644 | 0.2− | 0.2+ | 2002 08 24 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 07 10 | 644 | 0.1+ | 0.9+ | 2002 09 03 | 644 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.5− | 0.6− |
| 2002 07 10 | 644 | 0.1+ | 0.7+ | 2002 09 03 | 644 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 07 10 | 644 | 0.0 | 0.5+ | 2002 09 03 | 644 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.5− | 0.4− |
| 2002 07 11 | 704 | 1.0+ | 0.3+ | 2005 03 13 | 691 | 0.2+ | 0.7+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 07 11 | 704 | 0.1+ | 0.2+ | 2005 03 13 | 691 | 0.0 | 0.8+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2002 07 11 | 704 | 0.0 | 0.4− | 2005 03 13 | 691 | 0.5+ | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2002 07 11 | 704 | 0.6+ | 0.9− | 2006 10 03 | 691 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2002 07 19 | 644 | 0.6− | 0.2+ | 2006 10 03 | 691 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.6− |
| 2002 07 19 | 644 | 0.6− | 0.2+ | 2006 10 03 | 691 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.5+ |
| 2002 07 19 | 644 | 0.5− | 0.4− | 2006 10 19 | G98 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2002 07 27 | 644 | 0.3− | 0.2− | 2006 10 19 | G98 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2002 07 27 | 644 | 0.2− | 0.2− | 2006 10 19 | G98 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.2− | 1.0+ |
| 2002 07 27 | 644 | 0.2− | 0.1− | 2006 10 19 | G98 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2002 08 12 | 704 | 0.3+ | 0.6+ | 2006 10 19 | G98 | 0.6+ | 0.3+ | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2002 08 12 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.5+ |
| 2002 08 12 | 704 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.3+ |
| 2002 08 12 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5+ | | | | |
| 2002 08 12 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.5− | 0.0 | | | | |

### 2002 NC$_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.18923 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26445621 | $\omega$ | 124.20486 | | +0.84503154 | | −0.37943977 |
| $a$ | 2.4038104 | $\Omega$ | 260.72180 | | +0.27035820 | | +0.91108341 |
| $e$ | 0.3480736 | $i$ | 22.44232 | | +0.46133300 | | +0.16109774 |
| $P$ | 3.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 13 | 704 | 0.4+ | 0.3+ | 2002 07 17 | 704 | 0.1− | 0.1− | 2006 11 13 | 704 | 0.0 | 0.4− |
| 2002 06 13 | 704 | 0.9− | 0.3− | 2002 07 17 | 704 | 0.7− | 0.6− | 2006 11 13 | 704 | 0.5− | 0.2− |
| 2002 06 13 | 704 | 0.9+ | 0.2− | 2002 07 18 | 704 | 0.2− | 0.2+ | 2006 11 13 | 704 | 0.4+ | 0.2− |
| 2002 06 13 | 704 | 0.0 | 0.5+ | 2002 07 18 | 704 | 0.1− | 0.2+ | 2006 11 13 | 704 | 0.5+ | 0.1+ |
| 2002 06 20 | 291 | 0.4− | 0.1+ | 2002 07 18 | 704 | 0.1− | 0.2+ | 2006 11 13 | 704 | 0.4+ | 0.1− |
| 2002 06 20 | 291 | 0.0 | 0.4+ | 2002 07 18 | 704 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.0 |
| 2002 06 20 | 291 | 0.1− | 0.1+ | 2002 07 18 | 704 | 0.4− | 0.2+ | 2006 11 14 | 704 | 0.6+ | 0.0 |
| 2002 07 13 | 704 | 0.0 | 0.0 | 2002 08 01 | 704 | 1.0+ | 1.2− | 2006 11 14 | 704 | 0.5+ | 0.2+ |
| 2002 07 13 | 704 | 0.1− | 0.2+ | 2002 08 01 | 704 | 1.1+ | 0.7− | 2006 11 14 | 704 | 0.8− | 0.5+ |
| 2002 07 13 | 704 | 0.4− | 0.2+ | 2002 08 01 | 704 | 0.7+ | 0.9− | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2002 07 13 | 704 | 0.0 | 0.4+ | 2002 08 01 | 704 | 0.8+ | 1.2− | 2006 11 29 | 704 | 0.5+ | 0.4− |
| 2002 07 13 | 704 | 0.4+ | 0.6+ | 2002 11 11 | 704 | 0.5+ | 1.3+ | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2002 07 17 | 704 | 0.3− | 0.1− | 2002 11 11 | 704 | 0.6+ | 0.8+ | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2002 07 17 | 704 | 0.0 | 0.1− | 2002 11 11 | 704 | 0.6− | 0.6− | 2006 11 29 | 704 | 1.8− | 0.3+ |
| 2002 07 17 | 704 | 0.4− | 0.1− | 2002 11 11 | 704 | 0.2+ | 0.0 | | | | |

### 2002 NJ$_{37}$ = 1985 OE$_1$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.02783 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23471648 | $\omega$ | 109.56552 | | +0.14330741 | | +0.98932246 |
| $a$ | 2.6027971 | $\Omega$ | 168.57637 | | −0.95080807 | | +0.14506951 |
| $e$ | 0.1769711 | $i$ | 7.69895 | | −0.27463978 | | +0.01399644 |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 07 20 | 413 | 0.0 | 1.8+ | 2002 07 12 | 644 | 0.1− | 0.1+ | 2002 08 26 | 644 | 0.2− | 0.3+ |
| 2001 02 01 | 691 | 0.8− | 1.8+ | 2002 07 12 | 644 | 0.2− | 0.1− | 2003 11 24 | 691 | 0.1+ | 0.5+ |
| 2001 02 01 | 691 | 0.2+ | 0.4+ | 2002 07 21 | 644 | 0.2− | 0.3+ | 2003 11 24 | 691 | 0.1− | 0.6+ |
| 2001 02 01 | 691 | 0.4+ | 0.4+ | 2002 07 21 | 644 | 0.2− | 0.0 | 2003 11 24 | 691 | 0.3− | 0.5+ |
| 2001 02 20 | 645 | 0.2+ | 0.2− | 2002 07 21 | 644 | 0.4− | 0.1+ | 2005 03 13 | G96 | 0.1− | 0.1+ |
| 2001 02 20 | 645 | 0.2+ | 0.1− | 2002 07 23 | 644 | 0.2− | 0.1+ | 2005 03 13 | G96 | 0.2+ | 0.0 |
| 2002 07 09 | 704 | 0.2+ | 0.2− | 2002 07 23 | 644 | 0.0 | 0.3+ | 2005 03 13 | G96 | 0.4+ | 0.0 |
| 2002 07 09 | 704 | 0.1+ | 0.4− | 2002 07 23 | 644 | 0.2− | 0.6+ | 2005 03 13 | G96 | 0.0 | 0.1− |
| 2002 07 09 | 704 | 1.7+ | 1.1− | 2002 08 26 | 644 | 0.0 | 0.3+ | | | | |
| 2002 07 12 | 644 | 0.2− | 0.0 | 2002 08 26 | 644 | 0.1− | 0.5+ | | | | |

### 2002 NL$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.04137 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25957813 | $\omega$ | 40.50783 | | +0.70826306 | | +0.59709851 |
| $a$ | 2.4338323 | $\Omega$ | 278.66506 | | −0.70503217 | | +0.57110408 |
| $e$ | 0.2042039 | $i$ | 22.39320 | | −0.03595928 | | +0.56330587 |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 0.0 | 0.0 | 2002 07 05 | 704 | 0.0 | 0.1− | 2002 07 18 | 704 | 0.2+ | 0.3− |
| 2002 06 08 | 704 | 0.8+ | 0.6− | 2002 07 05 | 704 | 0.7+ | 0.5− | 2002 07 18 | 704 | 0.2− | 0.2+ |
| 2002 06 08 | 704 | 0.5+ | 1.1+ | 2002 07 05 | 704 | 1.0+ | 0.7− | 2002 07 18 | 704 | 0.3+ | 0.5+ |
| 2002 06 08 | 704 | 0.5− | 0.2− | 2002 07 14 | 704 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 06 16 | 644 | 0.4− | 0.3+ | 2002 07 14 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.1− |
| 2002 06 16 | 644 | 0.2− | 0.1− | 2002 07 14 | 704 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 06 16 | 644 | 0.4− | 0.2+ | 2002 07 14 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2002 07 05 | 704 | 1.1− | 0.5− | 2002 07 18 | 704 | 0.0 | 0.0 | | | | |

### 2002 ND$_{40}$ = 2006 QU$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.47976 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26353258 | $\omega$ | 231.44292 | | +0.96679061 | | +0.24884336 |
| $a$ | 2.4094237 | $\Omega$ | 114.07941 | | −0.21012383 | | +0.90369036 |
| $e$ | 0.2150424 | $i$ | 3.65798 | | −0.14547813 | | +0.34845475 |
| $P$ | 3.74 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.2+ | 0.3− | 2002 08 29 | 644 | 0.2− | 0.7− | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 1991 10 01 | 691 | 0.1− | 0.1+ | 2002 08 29 | 644 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.2− | 0.6− |
| 1991 10 01 | 691 | 0.3+ | 0.3− | 2004 01 28 | 691 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.7+ | 0.8+ |
| 1994 05 14 | 691 | 1.2− | 0.2+ | 2004 01 28 | 691 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.1+ | 0.1+ |
| 1994 05 14 | 691 | 0.2+ | 0.0 | 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.4+ | 1.2+ |
| 1994 05 14 | 691 | 0.4+ | 0.3− | 2006 08 19 | 699 | 1.3− | 0.6+ | 2006 09 29 | 699 | 0.0 | 0.6+ |
| 1995 12 22 | 691 | 0.2− | 0.8+ | 2006 08 19 | 699 | 0.7+ | 1.2+ | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 1995 12 22 | 691 | 0.2+ | 0.0 | 2006 08 19 | 699 | 1.3− | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.6− |
| 1995 12 22 | 691 | 0.2− | 0.7− | 2006 08 19 | 699 | 1.2+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2002 07 14 | 644 | 0.3− | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2002 07 14 | 644 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 07 18 | 644 | 0.4+ | 0.5+ | 2006 09 14 | 291 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 07 18 | 644 | 0.2− | 0.2+ | 2006 09 14 | 291 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 07 18 | 644 | 0.0 | 0.2+ | 2006 09 14 | 291 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2006 09 18 | 703 | 1.1− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 08 08 | 644 | 0.4+ | 0.1− | 2006 09 18 | 703 | 1.4+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2002 08 13 | 704 | 1.1+ | 0.6− | 2006 09 18 | 703 | 0.5− | 0.5− | 2006 10 21 | 644 | 0.7+ | 0.9+ |
| 2002 08 13 | 704 | 0.9+ | 0.5+ | 2006 09 25 | 699 | (0.3+ | 1.7+) | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2002 08 13 | 704 | 0.8− | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.2− | 0.6+ |
| 2002 08 13 | 704 | 0.7+ | 0.3− | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.7+ | 0.9− |
| 2002 08 13 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 699 | (2.0− | 1.9+) | 2006 10 22 | 703 | 1.0− | 1.1+ |
| 2002 08 29 | 644 | 0.2− | 0.4− | 2006 09 28 | 691 | (1.2+ | 2.7+) | | | | |

**2002 NX$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.06256 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26681503 | $\omega$ | 172.59881 | | +0.59507820 | | +0.80265564 |
| $a$ | 2.3896219 | $\Omega$ | 133.90902 | | −0.74018895 | | +0.56692852 |
| $e$ | 0.1912973 | $i$ | 3.20843 | | −0.31305312 | | +0.18529970 |
| $P$ | 3.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.0 | 0.3− | 2002 08 17 | 644 | 0.1+ | 0.3− | 2006 09 30 | 291 | 0.5− | 0.1+ |
| 1995 10 27 | 691 | 0.2+ | 0.1− | 2002 08 17 | 644 | 0.1− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 1995 10 27 | 691 | 0.1+ | 0.3− | 2002 08 27 | 644 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2002 07 14 | 644 | 0.2+ | 0.0 | 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2002 07 14 | 644 | 0.2− | 0.1− | 2002 08 27 | 644 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.6+ | 0.6+ |
| 2002 07 14 | 644 | 0.0 | 0.1+ | 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2002 07 18 | 644 | 0.2− | 0.5− | 2002 08 29 | 644 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 07 18 | 644 | 0.5− | 0.6− | 2002 08 29 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2002 07 18 | 644 | 0.3− | 0.6− | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2002 07 22 | 644 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2002 07 22 | 644 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2002 07 22 | 644 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 08 08 | 644 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 08 08 | 644 | 0.1+ | 0.7+ | 2006 09 30 | 291 | 0.3− | 0.1+ | | | | |
| 2002 08 17 | 644 | 0.2+ | 0.5− | 2006 09 30 | 291 | 0.0 | 0.6+ | | | | |

**2002 ND$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.76383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25518883 | $\omega$ | 304.33185 | | +0.75944624 | | +0.65046086 |
| $a$ | 2.4616612 | $\Omega$ | 15.10340 | | −0.58085252 | | +0.68619920 |
| $e$ | 0.2037151 | $i$ | 2.62199 | | −0.29300470 | | +0.32562453 |
| $P$ | 3.86 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.4− | 0.4+ | 2002 08 13 | 704 | 0.1− | 1.0− | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2002 08 29 | 644 | 0.6− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2002 07 14 | 644 | 0.3− | 0.2+ | 2002 08 29 | 644 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.3− |
| 2002 07 15 | 644 | 0.2− | 0.9+ | 2002 08 29 | 644 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.9− |
| 2002 07 15 | 644 | 0.1+ | 0.8+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 09 17 | 704 | 1.0− | 0.5+ |
| 2002 07 15 | 644 | 0.0 | 0.8+ | 2005 04 04 | G96 | 0.3− | 0.8− | 2006 09 17 | 704 | 0.3− | 0.1− |
| 2002 07 28 | 608 | 0.7+ | 0.1+ | 2005 04 04 | G96 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.2+ | 0.6+ |
| 2002 07 28 | 608 | 0.1+ | 0.3− | 2005 04 04 | G96 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.2+ |
| 2002 07 28 | 608 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.2+ |
| 2002 08 11 | 644 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2002 08 11 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.7− | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2002 08 13 | 704 | 0.6+ | 0.6− | 2006 09 14 | 703 | 0.8+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.2+ |
| 2002 08 13 | 704 | 0.2+ | 0.8− | 2006 09 14 | 703 | 0.7+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2002 08 13 | 704 | (0.7+ | 1.8+) | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2002 08 13 | 704 | 0.5+ | 0.5− | 2006 09 14 | 703 | 0.7− | 0.0 | | | | |

**2002 NX$_{45}$ = 2006 VM$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.72166 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31268024 | $\omega$ | 329.98629 | | −0.35363411 | | +0.93387454 |
| $a$ | 2.1498216 | $\Omega$ | 279.26012 | | −0.84713441 | | −0.34383118 |
| $e$ | 0.0380393 | $i$ | 3.08497 | | −0.39661846 | | −0.09827748 |
| $P$ | 3.15 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 01 | 644 | 0.6− | 0.2+ | 2002 07 14 | 704 | 1.1+ | 0.6− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 07 01 | 644 | 0.3− | 0.4− | 2002 07 14 | 704 | 0.0 | 0.9+ | 2006 11 21 | 704 | 0.2+ | 0.9− |
| 2002 07 01 | 644 | 0.3+ | 0.1− | 2002 07 14 | 704 | 0.6+ | 0.7+ | 2006 11 21 | 704 | 1.4+ | 0.5+ |
| 2002 07 05 | 704 | 0.1+ | 0.4− | 2002 07 20 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.0 |
| 2002 07 05 | 704 | 0.1− | 0.9+ | 2002 07 20 | 644 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.8+ | 0.6+ |
| 2002 07 05 | 704 | (0.3− | 2.7+) | 2002 07 20 | 644 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 07 13 | 644 | 0.5− | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2002 07 13 | 644 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 07 13 | 644 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 30 | 691 | 0.4− | 0.1− |
| 2002 07 14 | 704 | 0.1− | 0.8− | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 30 | 691 | 0.3− | 0.2+ |
| 2002 07 14 | 704 | 0.2+ | 0.4− | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 30 | 691 | 0.0 | 0.2+ |

**2002 NR$_{49}$ = 2006 TE$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.87534 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26767653 | $\omega$ | 27.87536 | | +0.99247361 | | +0.11365727 |
| $a$ | 2.3844919 | $\Omega$ | 325.50477 | | −0.12188647 | | +0.88089265 |
| $e$ | 0.2497986 | $i$ | 4.61696 | | −0.01182445 | | +0.45946727 |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1− | 0.0 | 2002 08 14 | 704 | 0.4− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2002 08 14 | 704 | 0.6+ | 0.8− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2002 08 14 | 704 | 1.5− | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2002 07 18 | 644 | 0.0 | 0.4+ | 2002 08 31 | 704 | 1.2+ | 0.7− | 2006 10 27 | 703 | 0.1− | 0.4+ |
| 2002 07 18 | 644 | 0.0 | 0.4+ | 2002 08 31 | 704 | 0.9+ | 0.6− | 2006 10 27 | 703 | 0.4− | 0.2− |
| 2002 07 18 | 644 | 0.0 | 0.2+ | 2002 08 31 | 704 | 0.0 | 0.5− | 2006 10 27 | 703 | 1.0− | 0.2+ |
| 2002 07 28 | 608 | 0.2+ | 1.0− | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.8− | 1.1− |
| 2002 07 28 | 608 | (0.8+ | 2.0−) | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.8− |
| 2002 07 28 | 608 | 0.8+ | 1.0− | 2006 10 12 | 644 | 0.4+ | 0.4+ | 2006 11 15 | 703 | 1.4− | 0.0 |
| 2002 08 08 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.0 | 2006 11 15 | 703 | 0.7+ | 0.8+ |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 23 | 703 | 1.3+ | 0.5− |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.7− | 2006 11 23 | 703 | 0.6− | 0.1+ |
| 2002 08 14 | 704 | 1.2− | 1.4+ | 2006 10 19 | 703 | 0.2− | 0.3+ | 2006 11 23 | 703 | 0.2+ | 0.8+ |
| 2002 08 14 | 704 | 0.4− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.2− | 2006 11 23 | 703 | 0.4+ | 1.4+ |

**2002 NU$_{49}$ = 2006 VM$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.82619 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27145300 | $\omega$ | 16.10039 | | +0.98470044 | | +0.17380698 |
| $a$ | 2.3623249 | $\Omega$ | 333.88046 | | −0.16284453 | | +0.89232279 |
| $e$ | 0.2511664 | $i$ | 1.62661 | | −0.06202172 | | +0.41659473 |
| $P$ | 3.63 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.5− | 0.8+ | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2002 07 05 | 644 | 0.0 | 0.7+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2002 07 05 | 644 | 0.6− | 0.3+ | 2006 10 17 | 691 | 0.3+ | 0.6− | 2006 11 09 | 644 | 0.5+ | 0.0 |
| 2002 07 13 | 608 | 0.4+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2002 07 13 | 608 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2002 07 13 | 608 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2002 07 17 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.5− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2002 07 17 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.5− | 2006 11 16 | 691 | 0.2− | 0.3+ |
| 2002 07 17 | 644 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 16 | 691 | 0.3+ | 0.4+ |
| 2006 09 27 | G96 | 0.4+ | 0.7− | 2006 10 31 | G96 | 0.2+ | 0.7− | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.8− | 0.3+ |
| 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8− | 0.6+ |
| 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 09 | 691 | 0.7− | 1.5+ | | | | |

### 2002 NJ$_{50}$ = 2006 QY$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.01733 | | (2000.0) | | | |
| $n$ | 0.26517804 | $\omega$ | 246.38380 | | +0.97433951 | +0.21885273 |
| $a$ | 2.3994462 | $\Omega$ | 100.94138 | | −0.18201764 | +0.90355981 |
| $e$ | 0.2415929 | $i$ | 3.07060 | | −0.13240881 | +0.36835193 |
| $P$ | 3.72 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.5+ |
| 1995 10 23 | 691 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.9+ | 0.2+ | 2006 10 01 | 704 | 1.3+ | 0.1− |
| 1995 10 23 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.3− |
| 2002 06 29 | 644 | 0.8− | 0.3− | 2006 09 18 | 699 | 0.6+ | 0.2− | 2006 10 01 | 704 | 0.3− | 1.2+ |
| 2002 06 29 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 1.3− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 06 29 | 644 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2002 07 14 | 644 | 0.4+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 07 14 | 644 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 07 15 | 644 | 0.3+ | 0.1+ | 2006 09 22 | 704 | (1.6− | 0.8−) | 2006 10 11 | 644 | 0.4− | 0.2− |
| 2002 07 15 | 644 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.3− | 2006 10 16 | 703 | 1.0+ | 0.4+ |
| 2002 07 15 | 644 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 1.2+ | 0.0 |
| 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.7+ | 0.9+ |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.9+ | 1.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2006 08 23 | 644 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.9− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2006 09 16 | 704 | 0.5− | 0.8− | 2006 09 28 | 704 | (2.0− | 1.0+) | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2006 09 16 | 704 | 0.7− | 0.0 | 2006 09 28 | 704 | (1.1− | 1.6+) | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2006 09 16 | 704 | 0.4− | 0.1− | 2006 09 28 | 704 | 1.0+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2006 09 16 | 704 | 1.3− | 0.2− | 2006 09 30 | 704 | 1.1+ | 0.1− | 2006 11 23 | G96 | 0.5− | 0.3− |
| 2006 09 18 | 703 | 0.6− | 1.1+ | 2006 09 30 | 704 | 0.7− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 703 | 1.4+ | 0.0 | 2006 09 30 | 704 | 1.0+ | 1.1− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 703 | 0.5+ | 0.8+ | 2006 10 01 | 704 | 0.2+ | 0.5− | 2006 11 23 | G96 | 0.1+ | 0.3− |

### 2002 NJ$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 38.03563 | | (2000.0) | | | |
| $n$ | 0.27172314 | $\omega$ | 40.71637 | | +0.85439421 | +0.51928420 |
| $a$ | 2.3607589 | $\Omega$ | 287.98991 | | −0.48173598 | +0.77799284 |
| $e$ | 0.1939043 | $i$ | 1.13422 | | −0.19478444 | +0.35365387 |
| $P$ | 3.63 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.6− | 0.4+ | 2002 08 08 | 644 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 07 14 | 644 | 0.2− | 0.6+ | 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2002 07 14 | 644 | 0.4− | 0.5+ | 2002 08 27 | 644 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 07 18 | 644 | 0.0 | 0.2+ | 2002 08 27 | 644 | 0.0 | 0.7− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 07 18 | 644 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 07 18 | 644 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.5+ |
| 2002 08 07 | 644 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2002 08 07 | 644 | 0.3+ | 0.3− | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 08 07 | 644 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2− | 0.2− |
| 2002 08 08 | 644 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.2− | 0.0 |

### 2002 NK$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 113.30970 | | (2000.0) | | | |
| $n$ | 0.29737538 | $\omega$ | 314.00749 | | +0.04671132 | +0.99698663 |
| $a$ | 2.2229654 | $\Omega$ | 318.55006 | | −0.88763120 | +0.01298932 |
| $e$ | 0.2138744 | $i$ | 5.36841 | | −0.45817999 | +0.07647832 |
| $P$ | 3.31 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.2+ | 0.3+ | 2002 08 27 | 644 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.2+ |
| 2002 07 14 | 644 | 0.1− | 0.4+ | 2002 08 27 | 644 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2002 07 14 | 644 | 0.1− | 0.4+ | 2005 04 14 | 703 | 0.4− | 1.1+ | 2006 11 20 | G96 | 0.2− | 0.1− |
| 2002 07 18 | 644 | 0.2− | 0.3+ | 2005 04 14 | 703 | 0.7+ | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.4+ |
| 2002 07 18 | 644 | 0.3− | 0.4+ | 2005 04 14 | 703 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2002 07 18 | 644 | 0.3− | 0.4+ | 2005 04 14 | 703 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2002 07 28 | 608 | 0.6+ | 1.2− | 2005 05 05 | 644 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.5+ | 0.1+ |
| 2002 07 28 | 608 | 0.2+ | 1.1− | 2005 05 05 | 644 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2002 07 28 | 608 | 0.2+ | 0.5− | 2005 05 05 | 644 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 08 27 | 644 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.9− | 0.4− |

### 2002 NP$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.76511 | | (2000.0) | | | |
| $n$ | 0.26620058 | $\omega$ | 217.43456 | | +0.87437271 | +0.46966535 |
| $a$ | 2.3932976 | $\Omega$ | 114.12983 | | −0.40659910 | +0.84634440 |
| $e$ | 0.1307401 | $i$ | 7.68308 | | −0.26485759 | +0.25122820 |
| $P$ | 3.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1+ | 0.3− | 2002 08 13 | 704 | (1.2− | 2.0−) | 2006 09 17 | 699 | 0.2+ | 0.9+ |
| 2002 07 14 | 644 | 0.2− | 0.4− | 2002 08 13 | 704 | (1.8− | 0.6−) | 2006 09 17 | 699 | 0.4− | 0.2+ |
| 2002 07 14 | 644 | 0.2− | 0.3− | 2002 08 13 | 704 | (0.4− | 2.0−) | 2006 09 17 | 699 | 1.3− | 0.1+ |
| 2002 07 18 | 644 | 0.2− | 0.1− | 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 09 17 | 699 | 0.5+ | 0.4+ |
| 2002 07 18 | 644 | 0.0 | 0.0 | 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.5− |
| 2002 07 18 | 644 | 0.8− | 0.1+ | 2002 08 18 | 644 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2002 07 18 | 644 | 0.0 | 0.2− | 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 1.0+ | 0.6+ |
| 2002 07 18 | 644 | 0.6− | 0.1− | 2002 08 29 | 644 | 0.0 | 0.3− | 2006 09 25 | 703 | 0.3+ | 1.0+ |
| 2002 07 18 | 644 | 0.1+ | 0.2− | 2002 08 29 | 644 | 0.2− | 0.1− | 2006 09 25 | 703 | 0.1− | 1.2+ |
| 2002 07 28 | 608 | 0.1− | 0.7+ | 2002 09 02 | 644 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.7+ | 0.4− |
| 2002 07 28 | 608 | 0.4+ | 0.3+ | 2002 09 02 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.1− | 0.6− |
| 2002 07 28 | 608 | 0.4+ | 0.4+ | 2002 09 02 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.7+ | 1.1− |
| 2002 08 08 | 644 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.4− | 0.6− | 2006 10 21 | 703 | 0.1− | 0.5+ |
| 2002 08 08 | 644 | 0.1+ | 0.2− | 2006 08 28 | 699 | (2.5− | 0.3−) | 2006 10 21 | 703 | 0.4− | 1.4− |
| 2002 08 08 | 644 | 0.9+ | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.5+ | | | | |
| 2002 08 13 | 704 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.2+ | 1.0− | | | | |

### 2002 NY$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 51.30200 | | (2000.0) | | | |
| $n$ | 0.27199575 | $\omega$ | 343.44126 | | +0.52073476 | +0.85209202 |
| $a$ | 2.3591812 | $\Omega$ | 317.90066 | | −0.77409503 | +0.44524932 |
| $e$ | 0.2328419 | $i$ | 4.50626 | | −0.36001693 | +0.27512221 |
| $P$ | 3.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 09 | 691 | 1.1+ | 0.2+ | 2002 08 13 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 1996 12 09 | 691 | 1.0− | 0.0 | 2002 08 13 | 704 | 0.5+ | 0.9− | 2006 10 17 | 703 | 0.0 | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 09 | 691 | (1.7+ | 4.8−) | 2002 08 13 | 704 | 0.6+ | 1.2− | 2006 10 17 | 703 | 0.3+ | 0.5− | | |
| 2002 05 17 | 644 | 0.1+ | 0.2+ | 2002 09 05 | 704 | 1.1− | 0.7− | 2006 10 17 | 703 | 0.4− | 0.0 | | |
| 2002 05 17 | 644 | 0.0 | 0.2+ | 2002 09 05 | 704 | 0.8− | 0.8− | 2006 10 19 | G96 | 0.5− | 0.1+ | | |
| 2002 05 17 | 644 | 0.1− | 0.4+ | 2002 09 05 | 704 | 1.2− | 1.1− | 2006 10 19 | G96 | 0.0 | 0.0 | | |
| 2002 06 17 | 644 | 0.1− | 0.1+ | 2005 04 04 | 703 | (2.8+ | 0.9−) | 2006 10 19 | G96 | 0.1− | 0.0 | | |
| 2002 06 17 | 644 | 0.2− | 0.1+ | 2005 04 04 | 703 | (0.7− | 1.6−) | 2006 10 19 | G96 | 0.4− | 0.1+ | | |
| 2002 06 17 | 644 | 0.3− | 0.1+ | 2005 04 04 | 703 | 0.7− | 0.6− | 2006 10 19 | 644 | 0.2+ | 0.3− | | |
| 2002 07 12 | 644 | 0.2− | 0.2+ | 2005 04 04 | 703 | (0.5− | 2.0−) | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 07 12 | 644 | 0.0 | 0.2+ | 2006 09 20 | 699 | (1.6− | 0.3+) | 2006 10 19 | 644 | 0.1− | 0.2− | | |
| 2002 07 12 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− | | |
| 2002 07 14 | 644 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.4− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2002 07 14 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 07 14 | 644 | 0.2− | 0.4+ | 2006 09 25 | 704 | 0.4− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.2− | | |
| 2002 07 26 | 644 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.7+ | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.9− | | |
| 2002 07 26 | 644 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.9+ | 0.5+ | 2006 11 14 | 703 | 0.3− | 0.1+ | | |
| 2002 07 26 | 644 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 703 | 0.4+ | 0.6− | | |
| 2002 07 27 | 644 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 1.5+ | | |
| 2002 07 27 | 644 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.9+ | | |
| 2002 07 27 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.5− | 0.9+ | | |
| 2002 08 13 | 704 | 0.6+ | 0.6− | 2006 09 30 | 703 | 0.7+ | 0.5+ | 2006 11 19 | 704 | 0.7+ | 0.1+ | | |
| 2002 08 13 | 704 | 1.3+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.7+ | | | | | | |

## 2002 NY$_{57}$ = 2002 PP$_{150}$

Id. S. Foglia (d)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.65512 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18259528 | $\omega$ | 89.26485 | | −0.77707657 | | +0.58159222 |
| $a$ | 3.0771100 | $\Omega$ | 126.26456 | | −0.62714056 | | −0.74786861 |
| $e$ | 0.1974502 | $i$ | 17.36385 | | +0.05335459 | | −0.32006723 |
| $P$ | 5.40 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 24 | 608 | 0.2+ | 0.9− | 2002 08 08 | 699 | 0.1+ | 1.0− | 2006 01 20 | 703 | 0.2− | 0.1− | | |
| 2001 02 24 | 608 | 0.4+ | 0.8− | 2002 08 08 | 699 | 0.2− | 0.2− | 2006 01 20 | 703 | 0.3− | 1.4− | | |
| 2001 02 24 | 608 | 0.4+ | 0.7− | 2002 08 08 | 699 | 0.5− | 0.6+ | 2006 01 20 | 703 | 0.9− | 0.2− | | |
| 2001 03 23 | 608 | 0.0 | 0.2− | 2002 08 08 | 699 | 0.8− | 0.5+ | 2006 01 23 | 691 | 0.1+ | 0.3+ | | |
| 2001 03 23 | 608 | 0.1− | 0.1− | 2002 08 08 | 644 | 0.0 | 0.5− | 2006 01 23 | 691 | 0.2− | 0.2+ | | |
| 2001 03 23 | 608 | 0.1+ | 0.1+ | 2002 08 08 | 644 | 0.0 | 0.1+ | 2006 01 23 | 691 | 0.1− | 0.3+ | | |
| 2001 04 14 | 704 | 0.5− | 1.3+ | 2002 08 08 | 644 | 0.2+ | 0.5− | 2006 01 26 | 703 | 0.2− | 0.1+ | | |
| 2001 04 14 | 704 | 0.6− | 0.4− | 2002 08 08 | 644 | 0.2+ | 0.6− | 2006 01 26 | 703 | 0.3+ | 0.1+ | | |
| 2001 04 14 | 704 | 0.5+ | 0.8− | 2002 08 08 | 644 | 0.3− | 0.4− | 2006 01 26 | 703 | 0.3− | 0.3− | | |
| 2001 05 20 | 608 | 0.5− | 0.5+ | 2002 08 08 | 644 | 0.2− | 0.1+ | 2006 01 26 | 703 | 0.0 | 0.2− | | |
| 2001 05 20 | 608 | 0.1− | 0.4+ | 2002 08 09 | 807 | 0.0 | 0.2+ | 2006 02 01 | 691 | 0.1+ | 0.1− | | |
| 2001 05 20 | 608 | 0.1+ | 0.5+ | 2002 08 09 | 807 | 0.1− | 0.1+ | 2006 02 01 | 691 | 0.2+ | 0.1− | | |
| 2001 06 16 | 699 | 0.1− | 0.1− | 2002 08 13 | 704 | 0.3+ | 0.7+ | 2006 02 01 | 691 | 0.1− | 0.1− | | |
| 2001 06 16 | 699 | 0.3− | 0.6+ | 2002 08 13 | 704 | 0.2+ | 0.8+ | 2006 02 01 | 691 | 0.1+ | 0.0 | | |
| 2001 06 16 | 699 | 0.6− | 0.0 | 2002 08 13 | 704 | 0.4+ | 0.2+ | 2006 02 01 | 691 | 0.0 | 0.2+ | | |
| 2001 06 16 | 699 | 0.4+ | 0.8− | 2002 08 13 | 704 | 0.4+ | 0.1− | 2006 02 01 | 691 | 0.1+ | 0.2− | | |
| 2002 07 04 | 644 | 0.1− | 0.4+ | 2002 08 13 | 704 | 0.0 | 0.4+ | 2006 02 03 | 699 | 0.1+ | 0.5+ | | |
| 2002 07 04 | 644 | 0.1− | 0.1− | 2002 08 18 | 644 | 0.2− | 0.3+ | 2006 02 03 | 699 | 0.2+ | 0.9+ | | |
| 2002 07 04 | 644 | 0.0 | 0.1− | 2002 08 18 | 644 | 0.0 | 0.2− | 2006 02 03 | 699 | 0.1+ | 0.8+ | | |
| 2002 07 14 | 644 | 0.1− | 0.4+ | 2002 08 18 | 644 | 0.1+ | 0.0 | 2006 02 22 | 699 | 0.7+ | 0.3+ | | |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2002 08 29 | 644 | 0.3+ | 0.3+ | 2006 02 22 | 699 | 0.1− | 0.7+ | | |
| 2002 07 14 | 644 | 0.1+ | 0.3+ | 2002 08 29 | 644 | 0.2− | 0.3+ | 2006 02 22 | 699 | 0.2+ | 0.1− | | |
| 2002 07 18 | 644 | 0.0 | 0.2+ | 2002 08 29 | 644 | 0.1+ | 0.2+ | 2006 02 22 | 699 | 1.3+ | 0.2+ | | |
| 2002 07 18 | 644 | 0.1− | 0.2+ | 2006 01 06 | 699 | 0.9+ | 1.0+ | 2006 03 15 | 644 | 0.1− | 0.1+ | | |
| 2002 07 18 | 644 | 0.1+ | 0.3+ | 2006 01 06 | 699 | 1.9− | 0.3+ | 2006 03 15 | 644 | 0.0 | 0.1+ | | |
| 2002 07 28 | 608 | 0.3+ | 0.4+ | 2006 01 06 | 699 | 0.8− | 0.2− | 2006 03 15 | 644 | 0.1+ | 0.4+ | | |
| 2002 07 28 | 608 | 0.3+ | 0.2+ | 2006 01 06 | 699 | 0.4+ | 0.7− | | | | | | |
| 2002 07 28 | 608 | 0.1− | 0.2+ | 2006 01 20 | 703 | 0.4+ | 0.6+ | | | | | | |

## 2002 NG$_{59}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.21882 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27101516 | $\omega$ | 136.99002 | | +0.26609512 | | +0.96381978 |
| $a$ | 2.3648685 | $\Omega$ | 148.43254 | | −0.89231586 | | +0.25242942 |
| $e$ | 0.1826432 | $i$ | 1.71275 | | −0.36464475 | | +0.08562021 |
| $P$ | 3.64 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 0.2− | 0.2+ | 2002 08 07 | 644 | 0.2− | 0.2− | 2005 03 16 | 691 | 0.0 | 0.5+ | | |
| 2002 07 04 | 644 | 0.2− | 0.4+ | 2002 08 08 | 644 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.2+ | | |
| 2002 07 04 | 644 | 0.4− | 0.5+ | 2002 08 08 | 644 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | | |
| 2002 07 22 | 644 | 0.3+ | 0.0 | 2002 08 28 | 644 | 0.6− | 0.7− | 2006 09 14 | 691 | 0.1− | 0.0 | | |
| 2002 07 22 | 644 | 0.0 | 0.2+ | 2002 08 28 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.4+ | | |
| 2002 07 22 | 644 | 0.1+ | 0.0 | 2002 08 28 | 644 | 0.5+ | 0.2− | 2006 09 25 | 691 | 0.3− | 0.1+ | | |
| 2002 08 07 | 644 | 0.4+ | 0.2− | 2005 03 16 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.2+ | | |
| 2002 08 07 | 644 | 0.0 | 0.3− | 2005 03 16 | 691 | 0.2+ | 0.3+ | | | | | | |

## 2002 NM$_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.47056 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28394407 | $\omega$ | 327.35910 | | −0.04426557 | | +0.99378334 |
| $a$ | 2.2925255 | $\Omega$ | 299.91696 | | −0.88943892 | | −0.08576475 |
| $e$ | 0.1008022 | $i$ | 6.76847 | | −0.45490544 | | +0.07098645 |
| $P$ | 3.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 566 | 0.0 | 0.6+ | 2002 07 18 | 644 | 0.1+ | 0.2+ | 2002 09 12 | 608 | 0.2− | 0.5+ | | |
| 1998 04 28 | 566 | 0.4+ | 0.8+ | 2002 07 28 | 608 | 0.3− | 0.2− | 2002 09 12 | 608 | 0.5− | 0.2+ | | |
| 1998 04 28 | 566 | 0.1+ | 0.3− | 2002 07 28 | 608 | 0.4+ | 0.1− | 2002 09 12 | 608 | 0.0 | 0.2− | | |
| 2002 06 25 | 644 | 0.7+ | 0.6− | 2002 08 07 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.5+ | | |
| 2002 06 25 | 644 | 0.2+ | 0.1+ | 2002 08 07 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.7− | 0.1+ | | |
| 2002 07 14 | 704 | 0.0 | 0.0 | 2002 08 07 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | (0.2+ | 1.7−) | | |
| 2002 07 14 | 704 | 0.6− | 0.1− | 2002 08 14 | 704 | (1.4− | 1.8−) | 2006 10 19 | 703 | 0.4− | 0.0 | | |
| 2002 07 14 | 704 | 0.1+ | 0.1− | 2002 08 14 | 704 | 1.2+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 07 14 | 704 | 0.3− | 1.2− | 2002 08 14 | 704 | 0.1− | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.4+ | | |
| 2002 07 14 | 644 | 0.2− | 0.1+ | 2002 08 14 | 704 | 0.9− | 0.5+ | 2006 10 23 | 644 | 0.9− | 0.8+ | | |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2002 08 14 | 704 | 0.9+ | 0.6− | 2006 11 15 | 703 | 0.1+ | 0.7− | | |
| 2002 07 14 | 644 | 0.3+ | 0.2+ | 2002 08 17 | 644 | 0.2+ | 0.1− | 2006 11 15 | 703 | 1.8+ | 1.1− | | |
| 2002 07 17 | 608 | 0.2+ | 0.2+ | 2002 08 17 | 644 | 0.4+ | 0.0 | 2006 11 15 | 703 | 0.3+ | 1.2+ | | |
| 2002 07 17 | 608 | 0.2− | 0.4+ | 2002 09 02 | 608 | 1.0− | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.5− | | |
| 2002 07 17 | 608 | 0.6− | 0.3+ | 2002 09 02 | 608 | 0.1− | 0.1− | | | | | | |
| 2002 07 18 | 644 | 0.1− | 0.2+ | 2002 09 02 | 608 | 0.1− | 0.0 | | | | | | |

## 2002 NT$_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.26947 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26571774 | $\omega$ | 53.21999 | | +0.97505365 | | +0.21958961 |
| $a$ | 2.3961960 | $\Omega$ | 294.07483 | | −0.21328624 | | +0.88642002 |
| $e$ | 0.2043478 | $i$ | 2.03467 | | −0.06147653 | | +0.40748000 |
| $P$ | 3.71 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.1− | 0.2+ | 2002 08 07 | 644 | 0.1− | 0.3+ | 2006 09 27 | 699 | 1.1− | 0.9+ | | |
| 1995 11 30 | 691 | 0.2− | 0.0 | 2002 08 07 | 644 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.8− | 0.0 | | |
| 1995 11 30 | 691 | 0.0 | 0.6+ | 2002 08 28 | 644 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.1− | | |
| 2002 07 08 | 644 | 0.1+ | 0.1+ | 2002 08 28 | 644 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.4− | | |
| 2002 07 08 | 644 | 0.2− | 0.2+ | 2002 08 28 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.3− | | |
| 2002 07 08 | 644 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.7+ | | |
| 2002 07 09 | 644 | 0.1+ | 0.8+ | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.5− | | |
| 2002 07 09 | 644 | 0.2+ | 0.5− | 2006 09 16 | 644 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.4− | | |
| 2002 07 14 | 644 | 0.3− | 0.4− | 2006 09 17 | 703 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.4− | | |
| 2002 07 14 | 644 | 0.7+ | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.7− | | |
| 2002 07 21 | 644 | 0.6− | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2002 07 21 | 644 | 0.5− | 0.3− | 2006 09 17 | 703 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.0 | 0.2− | 2006 09 27 | 699 | 0.5+ | 0.6− | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2002 08 07 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 699 | 1.2− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.5− | | |

**2002 ND$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.96507 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18605029 | $\omega$ | 48.06875 | | +0.96880335 | | +0.24300872 |
| $a$ | 3.0388958 | $\Omega$ | 297.81421 | | −0.24053665 | | +0.87471965 |
| $e$ | 0.1713087 | $i$ | 3.15315 | | −0.05968412 | | +0.41929976 |
| $P$ | 5.30 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 0.5− | 0.2+ | 2002 08 06 | 644 | 0.8+ | 0.3− | 2002 08 17 | 644 | 0.0 | 0.1− | | |
| 2002 07 04 | 644 | 0.5+ | 0.5− | 2002 08 06 | 644 | 0.5+ | 0.1+ | 2003 11 24 | 691 | 0.1+ | 0.4+ | | |
| 2002 07 04 | 644 | 0.3− | 0.1+ | 2002 08 07 | 644 | 0.1+ | 0.3− | 2003 11 24 | 691 | 0.0 | 0.0 | | |
| 2002 07 14 | 644 | 0.1+ | 0.1− | 2002 08 07 | 644 | 0.2+ | 0.5− | 2003 11 24 | 691 | 0.1− | 0.2+ | | |
| 2002 07 14 | 644 | 0.4− | 0.1− | 2002 08 07 | 644 | 0.0 | 0.0 | 2003 12 14 | 691 | 0.0 | 0.3− | | |
| 2002 07 14 | 644 | 0.2+ | 0.2− | 2002 08 08 | 644 | 0.1− | 0.4− | 2003 12 14 | 691 | 0.1− | 0.3+ | | |
| 2002 07 18 | 644 | 0.1+ | 0.7+ | 2002 08 08 | 644 | 0.4+ | 0.4− | 2003 12 14 | 691 | 0.1− | 0.2− | | |
| 2002 07 18 | 644 | 0.0 | 0.0 | 2002 08 08 | 644 | 0.0 | 0.3− | 2003 12 19 | 691 | 0.1+ | 0.0 | | |
| 2002 07 18 | 644 | 0.1− | 0.1− | 2002 08 17 | 644 | 0.2+ | 0.2+ | 2003 12 19 | 691 | 0.1+ | 0.2+ | | |
| 2002 08 06 | 644 | 0.2+ | 0.1− | 2002 08 17 | 644 | 1.7− | 1.8+ | 2003 12 19 | 691 | 0.0 | 0.5− | | |

**2002 NH$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.48201 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26542498 | $\omega$ | 136.33066 | | +0.76871787 | | +0.63958770 |
| $a$ | 2.3979577 | $\Omega$ | 183.90843 | | −0.58937969 | | +0.70798058 |
| $e$ | 0.1924760 | $i$ | 0.54234 | | −0.24840373 | | +0.29948469 |
| $P$ | 3.71 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1− | 0.4− | 2002 08 27 | 644 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.1− | | |
| 2002 07 14 | 644 | 0.3+ | 0.5− | 2002 08 27 | 644 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.6− | | |
| 2002 07 14 | 644 | 0.1+ | 0.4− | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.5− | | |
| 2002 07 18 | 644 | 0.1+ | 0.4− | 2006 09 15 | 691 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.5− | | |
| 2002 07 18 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.4− | 1.0+ | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2002 07 18 | 644 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.5− | | |
| 2002 08 07 | 644 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 2002 08 07 | 644 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.3− | | |
| 2002 08 07 | 644 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2002 08 08 | 644 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 02 | G96 | 0.1+ | 0.2− | | |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.4+ | 0.8− | | |
| 2002 08 08 | 644 | 0.5+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 11 02 | G96 | 0.4− | 1.0− | | |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.9− | | |

**2002 NK$_{60}$ = 2006 RZ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.29801 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26007144 | $\omega$ | 164.21169 | | +0.60504366 | | +0.79457790 |
| $a$ | 2.4307536 | $\Omega$ | 142.97847 | | −0.73929895 | | +0.58429802 |
| $e$ | 0.2277924 | $i$ | 4.82798 | | −0.29556594 | | +0.16505085 |
| $P$ | 3.79 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 01 | 644 | 0.3− | 0.2+ | 2002 07 14 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.9+ | 1.0+ | | |
| 2002 07 01 | 644 | 0.0 | 0.1− | 2002 07 14 | 704 | 1.2+ | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.4+ | | |
| 2002 07 01 | 644 | 0.5− | 0.6− | 2002 07 14 | 704 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.0 | 0.4+ | | |
| 2002 07 03 | 644 | (0.8+ | 2.0+) | 2006 08 18 | 691 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.4+ | | |
| 2002 07 03 | 644 | 1.4+ | 0.9+ | 2006 08 18 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.5− | 0.6− | | |
| 2002 07 03 | 644 | (2.2+ | 1.7+) | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.3+ | | |
| 2002 07 07 | 644 | 0.5− | 0.8− | 2006 09 14 | 703 | 1.3+ | 0.6− | 2006 09 25 | 699 | 0.6+ | 1.4− | | |
| 2002 07 07 | 644 | 0.5− | 0.8− | 2006 09 14 | 703 | 1.1− | 1.2+ | 2006 09 25 | 699 | (0.2+ | 2.6+) | | |
| 2002 07 07 | 644 | 0.4− | 0.8− | 2006 09 14 | 703 | 0.4+ | 0.6− | | | | | | |
| 2002 07 14 | 704 | 0.4− | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.8− | | | | | | |

**2002 NP$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.17368 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27204888 | $\omega$ | 11.18330 | | −0.22062508 | | +0.97487203 |
| $a$ | 2.3588741 | $\Omega$ | 246.07687 | | −0.89745413 | | −0.21527152 |
| $e$ | 0.1792377 | $i$ | 1.93141 | | −0.38196944 | | −0.05729491 |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 0.2+ | 0.3+ | 2002 08 07 | 644 | 0.2+ | 0.4− | 2006 09 17 | 691 | 0.2− | 0.0 | | |
| 2002 07 04 | 644 | 0.2+ | 0.0 | 2002 08 07 | 644 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.0 | | |
| 2002 07 04 | 644 | 0.2− | 0.2− | 2002 08 17 | 644 | 0.3− | 0.5− | 2006 09 17 | 691 | 0.1+ | 0.3+ | | |
| 2002 07 19 | 644 | 0.1− | 0.2− | 2002 08 17 | 644 | 0.9− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.3− | | |
| 2002 07 19 | 644 | 0.0 | 0.1− | 2002 08 17 | 644 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | | |
| 2002 07 22 | 644 | 0.2− | 0.1+ | 2002 08 27 | 644 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.4+ | | |
| 2002 07 22 | 644 | 0.3− | 0.0 | 2002 08 27 | 644 | 0.2− | 0.6− | 2006 10 19 | G96 | 0.1− | 0.0 | | |
| 2002 07 22 | 644 | 0.3+ | 0.1+ | 2002 08 27 | 644 | 0.5+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2002 08 06 | 644 | 0.1+ | 0.5+ | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.6− | | |
| 2002 08 06 | 644 | 0.1+ | 0.1+ | 2005 05 12 | G96 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.5− | | |
| 2002 08 06 | 644 | 0.1+ | 0.6+ | 2005 05 12 | G96 | 0.2+ | 0.5+ | | | | | | |
| 2002 08 07 | 644 | 0.1+ | 0.2+ | 2005 05 12 | G96 | (2.9+ | 1.3+) | | | | | | |

**2002 NS$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.96843 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26284246 | $\omega$ | 106.87846 | | +0.23252141 | | +0.97256668 |
| $a$ | 2.4136393 | $\Omega$ | 176.54466 | | −0.93031122 | | +0.22448173 |
| $e$ | 0.0620231 | $i$ | 6.58980 | | −0.28364559 | | +0.06100818 |
| $P$ | 3.75 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.4− | 0.0 | 2002 08 16 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− | | |
| 2002 07 12 | 644 | 0.4− | 0.0 | 2002 08 26 | 644 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.2− | | |
| 2002 07 12 | 644 | 0.0 | 0.3− | 2002 08 26 | 644 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1+ | | |
| 2002 07 21 | 644 | 0.3+ | 0.0 | 2002 08 26 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.5− | | |
| 2002 07 21 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.9+ | 2006 10 20 | G96 | 0.2− | 0.3− | | |
| 2002 07 21 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.5+ | | |
| 2002 08 05 | 644 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2002 08 05 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 11 17 | G96 | 0.4− | 0.1+ | | |
| 2002 08 05 | 644 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.2+ | | |
| 2002 08 16 | 644 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.0 | 0.2− | | | | | | |
| 2002 08 16 | 644 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.3− | 0.5− | | | | | | |

**2002 NE$_{61}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.33443 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17940147 | $\omega$ | 39.89578 | | +0.99174296 | | −0.00568573 |
| $a$ | 3.1135228 | $\Omega$ | 319.86468 | | −0.06351958 | | +0.84608216 |
| $e$ | 0.1105841 | $i$ | 11.46408 | | +0.11140544 | | +0.53302218 |
| $P$ | 5.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.3− | 0.1− | 2002 07 18 | 644 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.2+ | 0.2− | | |
| 1992 11 28 | 691 | 0.2− | 0.1+ | 2002 08 08 | 644 | 0.4− | 0.1− | 2002 08 29 | 644 | 0.1− | 0.1+ | | |
| 1992 11 28 | 691 | 0.3+ | 0.4+ | 2002 08 08 | 644 | 0.3+ | 0.2+ | 2005 03 04 | G96 | 0.1+ | 0.1− | | |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2002 08 08 | 644 | 0.2− | 0.2− | 2005 03 04 | G96 | 0.1− | 0.2− | | |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2002 08 18 | 644 | 0.1+ | 0.2+ | 2005 03 04 | G96 | 0.1+ | 0.2+ | | |
| 2002 07 14 | 644 | 0.5+ | 0.5+ | 2002 08 18 | 644 | 0.1− | 0.1− | 2005 03 04 | G96 | 0.2− | 0.0 | | |
| 2002 07 14 | 644 | 0.5− | 0.8+ | 2002 08 27 | 644 | 0.2+ | 0.4− | 2006 03 24 | 291 | 0.0 | 0.1+ | | |
| 2002 07 14 | 644 | 0.0 | 0.2− | 2002 08 27 | 644 | 0.1− | 0.3− | 2006 03 24 | 291 | 0.1+ | 0.2+ | | |
| 2002 07 18 | 644 | 0.6+ | 0.3− | 2002 08 27 | 644 | 0.0 | 0.1+ | 2006 03 24 | 291 | 0.0 | 0.1+ | | |
| 2002 07 18 | 644 | 0.0 | 0.1− | 2002 08 29 | 644 | 0.3− | 0.3+ | | | | | | |

**2002 NK$_{61}$ = 1994 PH$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.96237 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24078780 | $\omega$ | 170.41506 | | +0.70936325 | | +0.70343454 |
| $a$ | 2.5588593 | $\Omega$ | 144.74478 | | −0.65168399 | | +0.67862651 |
| $e$ | 0.2009042 | $i$ | 4.42530 | | −0.26853632 | | +0.21129576 |
| $P$ | 4.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 809 | 1.4+ | 2.0− | 2001 02 20 | 645 | 0.1− | 0.0 | 2002 07 14 | 704 | 0.7+ | 1.4− |
| 1993 04 14 | 691 | 0.4+ | 0.4+ | 2001 03 21 | 608 | 0.1− | 1.3− | 2002 07 14 | 704 | 0.1− | 0.7− |
| 1993 04 14 | 691 | 0.0 | 0.8+ | 2001 03 21 | 608 | 0.1− | 0.7− | 2002 07 14 | 704 | 0.9+ | 1.2− |
| 1993 04 14 | 691 | 0.0 | 0.8+ | 2001 03 21 | 608 | 0.7− | 1.3− | 2002 07 14 | 704 | 0.3− | 0.5− |
| 1994 08 10 | 809 | 1.5− | 2.2+ | 2002 05 21 | 704 | 0.3− | 0.2+ | 2005 02 01 | 691 | 0.4+ | 0.0 |
| 1994 08 10 | 809 | (1.4− | 3.2+) | 2002 05 21 | 704 | 0.1+ | 0.3− | 2005 02 01 | 691 | 0.4+ | 0.1+ |
| 1994 08 10 | 809 | (1.3− | 2.7+) | 2002 05 21 | 704 | 0.5− | 0.1− | 2005 02 01 | 691 | 0.3+ | 0.0 |
| 1994 08 11 | 809 | 1.2− | 0.5+ | 2002 06 18 | 704 | 0.8− | 0.1+ | 2005 03 03 | 703 | 1.0− | 0.1+ |
| 1994 08 11 | 809 | 0.6− | 1.8+ | 2002 06 18 | 704 | 0.4− | 0.3+ | 2005 03 03 | 703 | 0.5+ | 0.4− |
| 1994 08 11 | 809 | 1.6− | 2.0+ | 2002 06 18 | 704 | 0.4− | 0.4− | 2005 03 03 | 703 | 1.7− | 0.6+ |
| 1998 08 17 | 704 | 0.9+ | 0.1− | 2002 06 18 | 704 | 0.7− | 0.2+ | 2005 03 03 | 703 | 0.8+ | 0.5+ |
| 1998 08 17 | 704 | (4.2+ | 0.4−) | 2002 07 05 | 704 | 0.0 | 0.7+ | 2005 03 10 | G96 | 0.0 | 0.1− |
| 1998 08 17 | 704 | 0.4+ | 1.1+ | 2002 07 05 | 704 | 0.7+ | 0.9+ | 2005 03 10 | G96 | 0.1− | 0.1− |
| 1998 08 17 | 704 | 1.0+ | 0.1+ | 2002 07 05 | 704 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.1+ | 0.0 |
| 1998 08 23 | 704 | 2.7+ | 0.3+ | 2002 07 05 | 704 | 0.2+ | 0.2+ | 2005 03 10 | G96 | 0.1− | 0.3+ |
| 1998 08 23 | 704 | 1.6+ | 2.1+ | 2002 07 14 | 704 | 1.1+ | 1.4− | 2005 04 11 | G96 | 0.1− | 0.2− |
| 1998 08 23 | 704 | 0.1− | 0.0 | 2002 07 14 | 704 | 0.7− | 0.4− | 2005 04 11 | G96 | 0.1− | 0.1− |
| 1998 08 23 | 704 | (5.6− | 0.8−) | 2002 07 14 | 704 | 0.3+ | 1.4− | 2005 04 11 | G96 | 0.4− | 0.3− |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2002 07 14 | 704 | 0.4− | 0.4− | 2005 04 11 | G96 | 0.0 | 0.1− |
| 2000 12 23 | 645 | 0.1+ | 0.1+ | 2002 07 14 | 704 | 0.3+ | 0.2− | | | | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 07 14 | 704 | 2.0− | 0.3+ | | | | |

**2002 NL$_{61}$ = 2004 XH$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.15527 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24120359 | $\omega$ | 280.34820 | | −0.78967031 | | +0.58991425 |
| $a$ | 2.5559177 | $\Omega$ | 296.00633 | | −0.46343811 | | −0.75359337 |
| $e$ | 0.2238991 | $i$ | 10.81169 | | −0.40205213 | | −0.28999691 |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 19 | 691 | 1.3− | 1.1+ | 2002 06 17 | 644 | 0.2+ | 0.2+ | 2003 10 05 | 691 | 0.2+ | 0.2− |
| 1998 06 19 | 691 | 0.9− | 0.6+ | 2002 07 05 | 644 | 0.1− | 0.5+ | 2003 10 05 | 691 | 0.1− | 0.1− |
| 1998 06 19 | 691 | 0.8− | 0.3+ | 2002 07 05 | 704 | 0.0 | 0.7− | 2003 10 05 | 691 | 0.2+ | 0.4− |
| 1998 07 01 | 691 | 0.6+ | 0.6+ | 2002 07 05 | 704 | 0.9− | 0.2+ | 2004 12 13 | 691 | 0.2+ | 0.3+ |
| 1998 07 01 | 691 | 0.6+ | 0.3+ | 2002 07 05 | 644 | 0.0 | 0.5+ | 2004 12 13 | 691 | 0.6+ | 0.2+ |
| 1998 07 01 | 691 | 0.8+ | 0.3− | 2002 07 05 | 704 | 0.2− | 1.1− | 2004 12 13 | 691 | 0.5+ | 0.3+ |
| 2001 01 21 | 704 | 1.0− | 2.7+ | 2002 07 05 | 704 | 0.1− | 0.4+ | 2004 12 18 | 691 | 0.1− | 0.4+ |
| 2001 01 21 | 704 | 0.1− | 0.6+ | 2002 07 05 | 704 | 1.6− | 0.5+ | 2004 12 18 | 691 | 0.2+ | 0.3+ |
| 2001 01 21 | 704 | 0.3+ | 0.6+ | 2002 07 14 | 644 | 0.2− | 0.5+ | 2004 12 18 | 691 | 0.1− | 0.7+ |
| 2002 06 17 | 644 | 0.1− | 0.4− | 2002 07 14 | 644 | 0.3+ | 0.6+ | | | | |
| 2002 06 17 | 644 | 0.1+ | 0.5− | 2002 07 14 | 644 | 0.4+ | 0.6+ | | | | |

**2002 NM$_{61}$ = 1996 LQ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.94180 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18388616 | $\omega$ | 255.63120 | | +0.79251110 | | +0.59577208 |
| $a$ | 3.0626922 | $\Omega$ | 67.63758 | | −0.49103923 | | +0.75009003 |
| $e$ | 0.3236131 | $i$ | 8.10058 | | −0.36167199 | | +0.28708985 |
| $P$ | 5.36 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 08 | 809 | 0.8+ | 0.1+ | 2002 05 18 | 644 | 0.2+ | 0.9− | 2002 07 16 | 644 | 0.4+ | 0.2+ |
| 1996 06 08 | 809 | 0.3+ | 0.5+ | 2002 06 20 | 644 | 0.5− | 0.1− | 2002 07 16 | 644 | 0.2− | 0.5+ |
| 1996 06 08 | 809 | 1.2+ | 0.4− | 2002 06 20 | 644 | 0.5− | 0.1− | 2002 07 16 | 644 | 0.3+ | 0.2+ |
| 1996 06 10 | 809 | 1.5− | 1.2+ | 2002 06 20 | 644 | 0.6− | 0.1− | 2002 10 10 | 699 | 0.1+ | 0.2+ |
| 1996 06 10 | 809 | (4.1− | 1.1−) | 2002 07 05 | 704 | 0.3+ | 0.6+ | 2002 10 10 | 699 | 0.9+ | 0.1− |
| 1996 06 10 | 809 | (4.3− | 1.3−) | 2002 07 05 | 704 | 0.2+ | 0.1+ | 2002 10 10 | 699 | 0.3− | 0.5+ |
| 2002 05 18 | 644 | 0.3+ | 1.0− | 2002 07 05 | 704 | 0.1− | 0.1+ | 2002 10 10 | 699 | 0.8− | 0.6+ |
| 2002 05 18 | 644 | 0.0 | 0.7− | 2002 07 05 | 704 | 0.1+ | 0.9− | | | | |

**2002 NN$_{61}$ = 1994 JJ$_6$ = 2006 RX$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.74921 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26217921 | $\omega$ | 274.22254 | | +0.95754965 | | +0.28522200 |
| $a$ | 2.4177082 | $\Omega$ | 69.20945 | | −0.24356204 | | +0.87805655 |
| $e$ | 0.2149916 | $i$ | 2.56251 | | −0.15419535 | | +0.38427216 |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 04 | 691 | 0.3+ | 0.5+ | 2002 08 29 | 644 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.0 | 0.4+ |
| 1994 05 04 | 691 | 0.1+ | 0.4+ | 2004 01 27 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 1.2− | 1.2+ |
| 1994 05 04 | 691 | 1.0+ | 0.7+ | 2004 01 27 | 691 | 0.1+ | 0.6+ | 2006 09 28 | 704 | 0.5− | 0.3− |
| 1994 05 11 | 691 | 0.1− | 0.3− | 2004 01 27 | 691 | 0.3− | 0.2+ | 2006 09 28 | 699 | 0.2− | 0.1− |
| 1994 05 11 | 691 | 0.3− | 0.7− | 2005 04 01 | 691 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.1− | 0.0 |
| 1994 05 11 | 691 | 0.6− | 0.0 | 2005 04 01 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.6− | 0.4− |
| 2002 06 08 | 291 | 0.5− | 0.0 | 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 699 | 0.2+ | 0.2− |
| 2002 06 08 | 291 | 0.4− | 0.2+ | 2005 04 12 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.5− | 0.1+ |
| 2002 06 08 | 291 | 0.5− | 0.0 | 2005 04 12 | 691 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.7− | 0.6+ |
| 2002 07 05 | 644 | 0.2+ | 0.2− | 2005 04 12 | 691 | 0.0 | 0.5+ | 2006 09 28 | 699 | 0.2− | 0.6+ |
| 2002 07 05 | 644 | 0.4+ | 0.1− | 2006 09 12 | 703 | 0.3− | 0.2+ | 2006 09 28 | 699 | 0.8− | 1.1− |
| 2002 07 05 | 644 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.3− | 0.3+ |
| 2002 07 14 | 644 | 0.3− | 1.3− | 2006 09 12 | 703 | 0.2− | 0.3+ | 2006 09 30 | 704 | 0.7− | 0.1+ |
| 2002 07 14 | 644 | 0.4− | 1.0− | 2006 09 12 | 703 | 0.3+ | 0.0 | 2006 09 30 | 704 | 0.7− | 0.4− |
| 2002 07 14 | 644 | 0.3− | 1.0− | 2006 09 18 | 703 | 1.2+ | 1.0+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2002 08 06 | 644 | 0.5+ | 1.0+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.4+ |
| 2002 08 06 | 644 | 0.5+ | 0.8+ | 2006 09 18 | 703 | 0.6+ | 1.1+ | 2006 10 09 | 644 | 0.5+ | 0.5+ |
| 2002 08 06 | 644 | 0.3+ | 0.9+ | 2006 09 18 | 703 | (1.6+ | 1.2+) | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2002 08 13 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 1.1− | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2002 08 13 | 704 | 0.4+ | 0.8− | 2006 09 18 | 699 | (0.4+ | 1.5+) | 2006 10 11 | 644 | 0.4+ | 0.4+ |
| 2002 08 13 | 704 | 0.2− | 0.7+ | 2006 09 18 | 699 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 1.3+ |
| 2002 08 13 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 17 | 703 | (1.7+ | 2.9+) |
| 2002 08 29 | 644 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 0.9+ | 0.0 | 2006 10 17 | 703 | (2.1+ | 1.3+) |
| 2002 08 29 | 644 | 0.3+ | 0.0 | 2006 09 26 | 704 | (1.9− | 0.1+) | 2006 10 17 | 703 | (2.2+ | 2.6+) |

**2002 NO$_{61}$ = 2005 JQ$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.86695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29023907 | $\omega$ | 251.72759 | | +0.91606803 | | +0.38981852 |
| $a$ | 2.2592561 | $\Omega$ | 85.24226 | | −0.32293158 | | +0.85624508 |
| $e$ | 0.1709115 | $i$ | 5.42011 | | −0.23776997 | | +0.33894820 |
| $P$ | 3.40 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.0 | 0.6+ | 2002 08 13 | 704 | 0.8− | 0.9− | 2005 05 14 | G96 | 0.2− | 0.1+ |
| 2002 07 05 | 644 | 0.0 | 0.9+ | 2002 08 13 | 704 | 1.3+ | 1.4+ | 2005 05 14 | 644 | 0.0 | 0.3+ |
| 2002 07 05 | 644 | 0.0 | 0.8+ | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2005 05 14 | 644 | 0.2+ | 0.2− |
| 2002 07 13 | 608 | 0.4− | 0.7+ | 2004 01 22 | 704 | 0.6+ | 0.1+ | 2005 05 14 | 644 | 0.2− | 0.3+ |
| 2002 07 13 | 608 | 0.3− | 0.8+ | 2004 01 22 | 704 | 0.4− | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 07 13 | 608 | 0.7− | 1.0+ | 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2002 07 22 | 644 | 0.3− | 0.2+ | 2005 05 08 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 691 | 0.1− | 1.3+ |
| 2002 07 22 | 644 | 0.0 | 0.1− | 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 07 22 | 644 | 0.3− | 0.2− | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.8+ |
| 2002 08 13 | 704 | 0.5+ | 1.0− | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2002 08 13 | 704 | 0.2+ | 0.6− | 2005 05 14 | G96 | 0.0 | 0.2+ | | | | |

**2002 NP$_{61}$ = 2003 YW$_{169}$ = 2005 ET$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.66941 | | | (2000.0) | | |
| $n$ | 0.26088583 | $\omega$ | 332.91589 | | +0.97551633 | +0.21761532 |
| $a$ | 2.4256924 | $\Omega$ | 14.62022 | | −0.17197433 | +0.84493646 |
| $e$ | 0.1439662 | $i$ | 7.23843 | | −0.13708652 | +0.48859590 |
| $P$ | 3.78 | $H$ | 16.9 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 28 | 691 | 0.3+ | 0.4+ | 2003 12 18 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.5+ |
| 2001 03 28 | 691 | 0.4+ | 0.2+ | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.0 | 1.4+ |
| 2001 03 28 | 691 | 0.3+ | 0.5+ | 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.3+ |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.1+ |
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2005 03 08 | G96 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.7+ |
| 2002 07 06 | 644 | 0.8− | 0.8+ | 2005 03 08 | G96 | 0.8− | 0.4− | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2002 07 06 | 644 | 0.4− | 0.4+ | 2005 03 08 | G96 | 0.1− | 0.1− | 2006 09 30 | 703 | 1.2− | 0.1+ |
| 2002 07 06 | 644 | 0.1− | 0.1− | 2005 03 08 | G96 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.6− | 0.1+ |
| 2002 07 16 | 644 | 0.1− | 0.1+ | 2006 08 23 | 704 | 0.1+ | 1.2+ | 2006 09 30 | 703 | 0.1+ | 0.6− |
| 2002 07 16 | 644 | 0.1+ | 0.1+ | 2006 08 23 | 704 | 0.8+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 07 16 | 644 | 0.1− | 0.0 | 2006 08 23 | 704 | 0.4+ | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 08 04 | 644 | 0.4+ | 0.2+ | 2006 08 23 | 704 | 0.4− | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2002 08 04 | 644 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.5− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2002 08 04 | 644 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.5− | 0.2− | 2006 11 17 | G96 | 0.5− | 0.4+ |
| 2003 12 18 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.9− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2003 12 18 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.5+ |

**2002 NQ$_{61}$ = 2006 OF$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.50097 | | | (2000.0) | | |
| $n$ | 0.24502093 | $\omega$ | 307.64395 | | +0.95319643 | +0.29634218 |
| $a$ | 2.5293014 | $\Omega$ | 35.23254 | | −0.23417173 | +0.84907158 |
| $e$ | 0.2351720 | $i$ | 5.96806 | | −0.19125940 | +0.43733141 |
| $P$ | 4.02 | $H$ | 17.1 | $G$ 0.15 | | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.3− | 0.1− | 2002 07 27 | 644 | 0.5+ | 0.4− | 2006 07 20 | E12 | 1.1+ | 0.4− |
| 2002 07 06 | 644 | 0.1− | 0.2− | 2002 08 13 | 644 | 0.1+ | 0.2− | 2006 07 20 | E12 | 1.2+ | 0.1+ |
| 2002 07 06 | 644 | 0.1− | 0.2− | 2002 08 13 | 644 | 0.2− | 0.3+ | 2006 07 20 | E12 | 0.3− | 0.2+ |
| 2002 07 16 | 644 | 0.0 | 0.2− | 2002 08 13 | 644 | 0.0 | 0.1− | 2006 07 29 | E12 | 0.2− | 0.6+ |
| 2002 07 16 | 644 | 0.1+ | 0.5− | 2004 01 16 | 691 | 0.1− | 0.4− | 2006 07 29 | E12 | 0.3+ | 0.0 |
| 2002 07 16 | 644 | 0.1+ | 0.3− | 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 07 29 | E12 | 0.3+ | 0.0 |
| 2002 07 27 | 644 | 0.2+ | 0.5− | 2004 01 16 | 691 | 0.3+ | 0.2+ | 2006 07 29 | E12 | 1.5− | 1.8+ |
| 2002 07 27 | 644 | 0.5+ | 0.4− | 2006 07 20 | E12 | 1.3− | 0.5+ | | | | |

**2002 NR$_{61}$ = 1999 TH$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.53568 | | | (2000.0) | | |
| $n$ | 0.29478119 | $\omega$ | 22.64153 | | +0.99692355 | +0.05466967 |
| $a$ | 2.2359884 | $\Omega$ | 334.03298 | | −0.07548789 | +0.86255468 |
| $e$ | 0.1534470 | $i$ | 7.37001 | | +0.02109527 | +0.50300164 |
| $P$ | 3.34 | $H$ | 16.8 | $G$ 0.15 | | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.7+ | 0.4− | 1999 10 13 | 704 | 0.2− | 0.5− | 2002 08 13 | 704 | 1.3+ | 1.4+ |
| 1999 10 12 | 704 | 0.2− | 0.4− | 1999 10 13 | 704 | 1.0− | 0.2− | 2002 08 13 | 704 | 0.1− | 0.5+ |
| 1999 10 12 | 704 | 1.7+ | 0.2+ | 2002 07 06 | 644 | 0.3− | 0.1+ | 2002 08 13 | 704 | 0.8− | 2.2+ |
| 1999 10 12 | 704 | 0.8+ | 0.2+ | 2002 07 06 | 644 | 0.5− | 0.5+ | 2002 08 29 | 644 | 0.2+ | 0.3+ |
| 1999 10 12 | 704 | 0.6+ | 0.2+ | 2002 07 06 | 644 | 0.5− | 0.6+ | 2002 08 29 | 644 | 0.0 | 0.0 |
| 1999 10 13 | 704 | 0.0 | 0.3+ | 2002 07 14 | 644 | 0.3− | 0.5− | 2002 08 29 | 644 | 0.3+ | 0.4+ |
| 1999 10 13 | 704 | 0.8− | 0.1+ | 2002 07 14 | 644 | 0.6− | 0.8− | 2004 01 22 | 704 | 0.6+ | 0.1+ |
| 1999 10 13 | 704 | 0.1+ | 0.1− | 2002 07 14 | 644 | 0.6− | 0.6− | 2004 01 22 | 704 | 0.1+ | 0.4+ |
| 1999 10 13 | 704 | 0.6− | 0.3+ | 2002 08 11 | 644 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.1+ | 0.2− |
| 1999 10 13 | 704 | 0.5− | 0.4+ | 2002 08 11 | 644 | 0.0 | 0.1− | 2004 02 11 | 691 | 0.1+ | 0.4+ |
| 1999 10 13 | 704 | 0.5− | 0.1− | 2002 08 11 | 644 | 0.0 | 0.3− | 2004 02 11 | 691 | 0.0 | 0.3+ |
| 1999 10 13 | 704 | 0.2− | 0.3+ | 2002 08 13 | 704 | 0.9+ | 0.3− | 2004 02 11 | 691 | 0.1+ | 0.3+ |

**2002 NS$_{61}$ = 1994 RO$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.13810 | | | (2000.0) | | |
| $n$ | 0.24216550 | $\omega$ | 208.42802 | | +0.99406660 | −0.09396434 |
| $a$ | 2.5491450 | $\Omega$ | 156.77016 | | +0.10553954 | +0.95511549 |
| $e$ | 0.2264535 | $i$ | 7.98541 | | −0.02632497 | +0.28093613 |
| $P$ | 4.07 | $H$ | 16.7 | $G$ 0.15 | | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 05 | 809 | 0.1− | 1.6− | 2002 07 12 | 644 | 0.6+ | 0.5− | 2002 08 17 | 644 | 0.1− | 0.7+ |
| 1994 09 05 | 809 | (1.4− | 2.4−) | 2002 07 12 | 644 | 0.5+ | 0.8− | 2002 08 17 | 644 | 0.0 | 0.3+ |
| 1994 09 05 | 809 | (1.3− | 2.8−) | 2002 07 12 | 644 | 0.4+ | 0.2+ | 2002 08 27 | 644 | 0.1− | 1.4+ |
| 1994 09 06 | 809 | 0.3+ | 0.9− | 2002 07 19 | 644 | 0.0 | 1.2+ | 2002 08 27 | 644 | 0.1− | 1.6+ |
| 1994 09 06 | 809 | 0.5− | 1.5− | 2002 07 19 | 644 | 0.0 | 1.3+ | 2002 08 27 | 644 | 0.2− | 1.7+ |
| 1994 09 06 | 809 | 0.4+ | 0.2+ | 2002 07 19 | 644 | 0.1+ | 1.4+ | 2006 05 30 | 691 | 0.1+ | 0.3− |
| 1998 08 17 | 704 | (2.7+ | 0.3−) | 2002 08 06 | 644 | 0.6− | 0.8− | 2006 05 30 | 691 | 0.2− | 0.1− |
| 1998 08 17 | 704 | (3.1+ | 1.8+) | 2002 08 06 | 644 | 0.5− | 1.0− | 2006 05 30 | 691 | 0.0 | 0.6− |
| 1998 08 17 | 704 | 1.9+ | 0.7− | 2002 08 06 | 644 | 0.6− | 0.7− | | | | |
| 1998 08 17 | 704 | 0.7− | 0.8+ | 2002 08 17 | 644 | 0.0 | 0.5+ | | | | |

**2002 NT$_{61}$ = 2005 JF$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 99.12325 | | | (2000.0) | | |
| $n$ | 0.28228826 | $\omega$ | 21.73233 | | +0.11076969 | +0.98806676 |
| $a$ | 2.3014816 | $\Omega$ | 254.75447 | | −0.92739499 | +0.06404674 |
| $e$ | 0.1022862 | $i$ | 6.36881 | | −0.35730744 | +0.14007887 |
| $P$ | 3.49 | $H$ | 17.1 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.1+ | 0.2+ | 2002 08 12 | 704 | 1.2+ | 0.6− | 2006 10 13 | 691 | 0.2+ | 0.1− |
| 2000 12 23 | 645 | 0.1+ | 0.1+ | 2002 08 12 | 704 | (2.9+ | 0.1−) | 2006 10 13 | 691 | 0.1+ | 0.1+ |
| 2002 07 12 | 644 | 0.2− | 0.2+ | 2002 08 12 | 704 | 1.3+ | 0.5− | 2006 10 13 | 691 | 0.0 | 0.2+ |
| 2002 07 12 | 644 | 0.0 | 0.2+ | 2002 08 16 | 644 | 0.4+ | 1.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 07 12 | 644 | 0.0 | 0.2+ | 2002 08 16 | 644 | 0.2+ | 1.1+ | 2006 10 17 | 691 | 0.1− | 0.3+ |
| 2002 07 18 | 704 | 1.2− | 0.3− | 2002 08 16 | 644 | 0.3+ | 1.4+ | 2006 10 17 | 691 | 0.2− | 0.1− |
| 2002 07 18 | 704 | 0.9− | 0.3+ | 2002 08 25 | 644 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.2− |
| 2002 07 18 | 704 | 1.3− | 0.7− | 2002 08 25 | 644 | 0.0 | 0.4+ | 2006 10 19 | 703 | 1.3− | 0.1+ |
| 2002 07 18 | 704 | 1.2− | 0.6+ | 2002 08 25 | 644 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.5+ |
| 2002 07 18 | 704 | (1.6− | 0.2+) | 2005 05 04 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2002 08 05 | 644 | (1.7− | 0.5+) | 2005 05 04 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 08 05 | 644 | 0.2− | 0.3+ | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 08 05 | 644 | 0.2+ | 0.5+ | 2005 05 19 | 644 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 08 12 | 704 | (3.1+ | 0.8+) | 2005 05 19 | 644 | 0.1+ | 0.3+ | | | | |
| 2002 08 12 | 704 | 0.1− | 0.8− | 2005 05 19 | 644 | 0.1+ | 0.3+ | | | | |

**2002 NU$_{61}$ = 2006 KJ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.81902 | | | (2000.0) | | |
| $n$ | 0.22735666 | $\omega$ | 124.16798 | | −0.13871451 | +0.98970984 |
| $a$ | 2.6586689 | $\Omega$ | 137.81458 | | −0.92495243 | −0.11680738 |
| $e$ | 0.1646949 | $i$ | 2.99699 | | −0.35386621 | −0.08264663 |
| $P$ | 4.34 | $H$ | 16.3 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 20 | 807 | 0.8+ | 0.1+ | 2002 08 17 | 644 | 0.3− | 0.2− | 2006 05 28 | 704 | 0.3+ | 0.0 |
| 2001 05 21 | 807 | 0.6+ | 0.0 | 2002 08 17 | 644 | 0.4− | 0.1+ | 2006 05 28 | 704 | 0.5− | 0.9+ |
| 2002 07 04 | 644 | 0.1+ | 0.2+ | 2003 10 21 | 291 | 0.0 | 0.5+ | 2006 05 28 | 704 | 0.4+ | 0.1− |
| 2002 07 04 | 644 | 0.3+ | 0.3+ | 2003 10 21 | 291 | 0.0 | 0.4+ | 2006 05 28 | 704 | 0.2− | 0.4− |
| 2002 07 04 | 644 | 0.0 | 0.2+ | 2003 10 21 | 291 | 0.0 | 0.1− | 2006 06 05 | 704 | (1.6− | 2.8+) |
| 2002 07 18 | 644 | 0.4+ | 0.6+ | 2003 11 21 | 691 | 0.4− | 0.8− | 2006 06 05 | 704 | (0.3− | 2.8+) |
| 2002 07 18 | 644 | 0.2− | 0.6+ | 2003 11 21 | 691 | 0.3+ | 0.3+ | 2006 06 05 | 704 | 0.9+ | 0.2+ |
| 2002 07 18 | 644 | 0.1− | 0.8+ | 2003 11 21 | 691 | 0.5+ | 0.1+ | 2006 06 05 | 704 | 0.9+ | 0.1− |
| 2002 08 08 | 644 | 0.2− | 1.0− | 2004 12 18 | G96 | 0.1+ | 0.6+ | 2006 06 15 | E12 | 0.1+ | 1.2+ |
| 2002 08 08 | 644 | 0.1− | 0.9− | 2004 12 18 | G96 | 1.3− | 0.6− | 2006 06 15 | E12 | 0.3− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.1− | 1.0− | 2004 12 18 | G96 | 0.3− | 0.3+ | 2006 06 15 | E12 | 0.2− | 1.0− | | |
| 2002 08 17 | 644 | 0.5− | 0.0 | 2004 12 18 | G96 | 0.8− | 0.1+ | 2006 06 15 | E12 | 0.7− | 0.3− | | |

### 2002 $NV_{61}$ = 4147 T-3

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.55424 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19186316 | $\omega$ | 157.97966 | | +0.92423266 | | +0.38182617 |
| $a$ | 2.9772021 | $\Omega$ | 179.56292 | | −0.37474232 | | +0.90790525 |
| $e$ | 0.1417693 | $i$ | 12.61406 | | −0.07322699 | | +0.17296482 |
| $P$ | 5.14 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.8+ | 1.7− | 2002 07 20 | 644 | 0.0 | 0.6+ | 2003 12 26 | 608 | 0.0 | 1.3+ | | |
| 1977 10 11 | 675 | 0.1+ | 1.0− | 2002 07 20 | 644 | 0.1− | 0.7+ | 2003 12 26 | 608 | 0.0 | 0.7+ | | |
| 1977 10 12 | 675 | 0.3− | 0.7− | 2002 07 20 | 644 | 0.3+ | 0.6+ | 2006 02 22 | G96 | 0.2+ | 0.2+ | | |
| 1977 10 12 | 675 | 0.3− | 0.6− | 2002 08 12 | 704 | 1.6+ | 0.1+ | 2006 02 22 | G96 | 0.5− | 0.2− | | |
| 1977 10 16 | 675 | 0.7− | 0.6− | 2002 08 12 | 704 | 0.2+ | 0.4− | 2006 02 22 | G96 | 0.3− | 0.1− | | |
| 1977 10 16 | 675 | 0.3+ | 1.6+ | 2002 08 12 | 704 | 1.8− | 0.5− | 2006 02 22 | G96 | 0.6− | 0.1+ | | |
| 1977 10 17 | 675 | 0.9+ | 1.0− | 2002 08 13 | 704 | 0.9− | 0.1− | 2006 03 02 | G96 | 0.3− | 0.2− | | |
| 1977 10 17 | 675 | 1.0+ | 1.3− | 2002 08 13 | 704 | 0.3− | 0.2− | 2006 03 02 | G96 | 0.1− | 0.1+ | | |
| 1977 10 21 | 675 | 0.2− | 0.3− | 2002 08 13 | 704 | 0.2− | 0.4− | 2006 03 02 | G96 | 0.2+ | 0.3− | | |
| 1977 10 21 | 675 | 0.6− | 0.4+ | 2002 08 13 | 704 | 0.2− | 0.1− | 2006 03 02 | G96 | 0.0 | 0.0 | | |
| 2002 07 09 | 704 | 0.1− | 0.9+ | 2003 11 19 | 703 | 0.3+ | 1.3+ | 2006 03 24 | 691 | 0.2+ | 0.1− | | |
| 2002 07 09 | 704 | 0.7+ | 0.3+ | 2003 11 19 | 703 | 0.3+ | 0.9− | 2006 03 24 | 691 | 0.1+ | 0.3− | | |
| 2002 07 09 | 704 | 0.4+ | 0.5+ | 2003 11 19 | 703 | 0.2− | 0.2+ | 2006 03 24 | 691 | 0.1− | 0.5− | | |
| 2002 07 09 | 704 | 0.1+ | 0.3− | 2003 11 19 | 703 | 0.6− | 0.5− | | | | | | |
| 2002 07 09 | 704 | 0.1+ | 0.1+ | 2003 12 26 | 608 | 0.3− | 1.2+ | | | | | | |

### 2002 $NW_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.08431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37262790 | $\omega$ | 56.68106 | | +0.84469712 | | +0.42935149 |
| $a$ | 1.9125779 | $\Omega$ | 276.03950 | | −0.53161506 | | +0.74240645 |
| $e$ | 0.1041952 | $i$ | 18.74662 | | +0.06222702 | | +0.51428588 |
| $P$ | 2.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 13 | 704 | 0.8+ | 0.8− | 2002 08 17 | 704 | 1.1+ | 0.1+ | 2006 01 26 | G96 | 0.4− | 0.1− | | |
| 2002 07 13 | 704 | 0.7+ | 1.1− | 2002 08 17 | 704 | 1.0+ | 0.3+ | 2006 01 26 | G96 | 0.2+ | 0.2+ | | |
| 2002 07 13 | 704 | 0.4+ | 1.6− | 2002 08 17 | 704 | 0.0 | 0.7− | 2006 01 26 | G96 | 0.3− | 0.4+ | | |
| 2002 07 26 | 644 | 0.5− | 0.6+ | 2002 10 10 | 704 | 0.1− | 0.3+ | 2006 01 26 | G96 | 0.1− | 0.2− | | |
| 2002 07 26 | 644 | 0.6− | 0.3+ | 2002 10 10 | 704 | 0.2+ | 0.7− | 2006 01 26 | G96 | 0.1+ | 0.4− | | |
| 2002 07 26 | 644 | 0.4− | 0.4+ | 2002 10 10 | 704 | 0.8− | 0.6− | 2006 02 25 | G96 | 0.1+ | 0.0 | | |
| 2002 08 01 | 704 | 1.3− | 1.5+ | 2006 01 26 | G96 | 0.1+ | 0.1− | 2006 02 25 | G96 | 0.1+ | 0.2+ | | |
| 2002 08 01 | 704 | 0.1− | 0.7+ | 2006 01 26 | G96 | 0.1− | 0.2− | 2006 02 25 | G96 | 0.4+ | 0.0 | | |
| 2002 08 01 | 704 | 0.3− | 0.5+ | 2006 01 26 | G96 | 0.2− | 0.3+ | 2006 02 25 | G96 | 0.2+ | 0.2− | | |

### 2002 $NX_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.33689 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22430289 | $\omega$ | 49.32693 | | +0.92746730 | | −0.36924848 |
| $a$ | 2.6827455 | $\Omega$ | 332.19282 | | +0.29359920 | | +0.81661498 |
| $e$ | 0.2359951 | $i$ | 7.24381 | | +0.23152520 | | +0.44361643 |
| $P$ | 4.39 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.3− | 0.2+ | 2002 08 29 | 644 | 0.3− | 0.2+ | 2004 01 13 | 699 | 0.7+ | 0.6− | | |
| 2002 07 15 | 644 | 0.1− | 0.4+ | 2002 08 29 | 644 | 0.4− | 0.2− | 2004 01 19 | 699 | 0.5+ | 0.1− | | |
| 2002 07 15 | 644 | 0.2− | 0.0 | 2002 08 29 | 644 | 0.7− | 0.2+ | 2004 01 19 | 699 | 0.1− | 0.2− | | |
| 2002 08 13 | 704 | 0.6+ | 0.5− | 2003 12 28 | 704 | 0.1− | 1.0+ | 2004 01 19 | 699 | 0.2− | 0.1− | | |
| 2002 08 13 | 704 | 0.6+ | 0.4− | 2003 12 28 | 704 | 0.1+ | 1.2+ | 2004 01 19 | 699 | 0.6− | 1.7− | | |
| 2002 08 13 | 704 | 0.1+ | 1.0− | 2003 12 28 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.2+ | 0.8− | | |
| 2002 08 13 | 704 | 0.4+ | 0.3+ | 2003 12 28 | 704 | 0.2+ | 0.8+ | 2004 02 23 | 704 | 0.7− | 0.2+ | | |
| 2002 08 13 | 704 | 1.6+ | 0.1+ | 2003 12 28 | 704 | 0.2+ | 0.9+ | 2004 02 23 | 704 | 0.1+ | 0.9+ | | |
| 2002 08 18 | 644 | 0.7− | 0.1− | 2004 01 13 | 699 | 1.3− | 1.2− | 2004 02 23 | 704 | 0.1+ | 1.0+ | | |
| 2002 08 18 | 644 | 0.4− | 0.4+ | 2004 01 13 | 699 | 0.6+ | 1.7− | 2004 02 23 | 704 | 0.3− | 0.4+ | | |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2004 01 13 | 699 | 0.4+ | 0.5− | | | | | | |

### 2002 $OF_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.04884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30243806 | $\omega$ | 28.38247 | | −0.28400235 | | +0.95620379 |
| $a$ | 2.1980880 | $\Omega$ | 225.21892 | | −0.89749490 | | −0.29110624 |
| $e$ | 0.1513302 | $i$ | 5.72703 | | −0.33741010 | | −0.03052001 |
| $P$ | 3.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 704 | (0.6+ | 1.8−) | 2002 08 25 | 644 | 0.5+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.3+ | | |
| 2002 07 17 | 704 | 0.4+ | 1.1− | 2002 08 25 | 644 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.4− | 0.1+ | | |
| 2002 07 17 | 704 | (0.5+ | 1.6−) | 2002 08 26 | 644 | 0.6+ | 0.8+ | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2002 07 18 | 704 | 0.5− | 0.1− | 2002 08 26 | 644 | 1.0+ | 0.9+ | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2002 07 18 | 704 | 0.0 | 0.0 | 2002 08 26 | 644 | 0.4+ | 0.7+ | 2006 11 19 | 691 | 0.6− | 0.1− | | |
| 2002 07 18 | 704 | (2.2− | 1.1−) | 2002 09 08 | 608 | 0.8− | 0.5− | 2006 11 21 | 704 | 1.5− | 0.1− | | |
| 2002 07 18 | 704 | 0.7− | 0.8− | 2002 09 08 | 608 | 0.1+ | 1.0− | 2006 11 21 | 704 | 0.9+ | 0.9+ | | |
| 2002 07 18 | 704 | 1.1− | 0.8− | 2002 09 08 | 608 | 1.1− | 1.1− | 2006 11 21 | 704 | (0.3+ | 2.0+) | | |
| 2002 08 05 | 644 | 0.7+ | 0.3+ | 2005 06 11 | 703 | 0.2− | 0.2+ | 2006 11 21 | 704 | (1.7+ | 1.1+) | | |
| 2002 08 05 | 644 | 0.1+ | 0.3− | 2005 06 11 | 703 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2002 08 05 | 644 | 0.4+ | 0.3+ | 2005 06 11 | 703 | (0.2− | 6.2+) | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2002 08 05 | 644 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 2002 08 05 | 644 | 0.6+ | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 25 | 291 | 0.1+ | 0.2+ | | |
| 2002 08 05 | 644 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.7− | 2006 11 25 | 291 | 0.0 | 0.4+ | | |
| 2002 08 12 | 704 | 0.4− | 0.7+ | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 25 | 291 | 0.0 | 0.3+ | | |
| 2002 08 12 | 704 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.6+ | 0.3− | | |
| 2002 08 12 | 704 | 0.5− | 1.0+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 12 | 704 | (0.1− | 1.6+) | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.2− | | |
| 2002 08 12 | 704 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.2− | | |
| 2002 08 15 | 644 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.5− | | |
| 2002 08 15 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.4− | | |
| 2002 08 15 | 644 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.1+ | | | | | | |
| 2002 08 25 | 644 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.2− | 0.3+ | | | | | | |

### 2002 $OF_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.33371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26316261 | $\omega$ | 92.61681 | | +0.91053387 | | +0.39506889 |
| $a$ | 2.4116814 | $\Omega$ | 244.13652 | | −0.41224894 | | +0.84528652 |
| $e$ | 0.2335701 | $i$ | 7.78286 | | −0.03128706 | | +0.35973778 |
| $P$ | 3.75 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 704 | (4.8+ | 5.6+) | 2002 09 04 | 644 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.0 | | |
| 2002 07 17 | 704 | (4.6+ | 5.8+) | 2002 09 04 | 644 | 0.1− | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.1− | | |
| 2002 07 17 | 704 | (4.2+ | 6.1+) | 2002 09 04 | 644 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.2− | | |
| 2002 07 18 | 704 | (1.6+ | 1.1+) | 2002 09 11 | 644 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.0 | 1.4+ | | |
| 2002 07 18 | 704 | 0.1− | 0.3+ | 2002 09 11 | 644 | 0.2− | 0.2+ | 2006 10 29 | 704 | 0.4+ | 1.2+ | | |
| 2002 07 18 | 704 | 0.6− | 0.0 | 2002 09 11 | 644 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1− | | |
| 2002 07 18 | 704 | 0.5− | 0.0 | 2002 09 12 | 644 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 2002 07 20 | 644 | 0.2− | 0.3+ | 2002 09 12 | 644 | 0.0 | 0.6− | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2002 07 20 | 644 | 0.0 | 0.3+ | 2002 09 12 | 644 | 0.1− | 0.7− | 2006 11 02 | 691 | 0.2+ | 0.0 | | |
| 2002 07 20 | 644 | 0.1+ | 0.1+ | 2002 09 30 | 704 | 0.3+ | 0.3+ | 2006 11 02 | 691 | 0.3+ | 0.1− | | |
| 2002 08 04 | 644 | 0.3− | 0.1+ | 2002 09 30 | 704 | 0.6− | 0.2+ | 2006 11 02 | 691 | 0.2− | 1.2+ | | |
| 2002 08 04 | 644 | 0.2− | 0.2+ | 2002 09 30 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.1+ | | |
| 2002 08 04 | 644 | 0.5− | 0.1+ | 2002 09 30 | 704 | 1.0+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2002 08 11 | 704 | (0.1− | 1.6+) | 2002 10 05 | 704 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.0 | | |
| 2002 08 11 | 704 | 0.3+ | 1.5+ | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.4− | 0.2+ | | |
| 2002 08 11 | 704 | 0.3− | 1.0+ | 2002 10 05 | 704 | 0.9− | 0.3− | 2006 11 13 | 644 | 0.4− | 0.2+ | | |
| 2002 08 11 | 704 | (0.1+ | 1.7+) | 2002 10 05 | 704 | 0.4+ | 0.3− | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2002 08 11 | 704 | 0.7+ | 0.1+ | 2002 10 08 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.3+ | | |
| 2002 08 11 | 704 | 0.4− | 1.4+ | 2002 10 08 | 644 | 0.1− | 0.2+ | 2006 11 14 | 703 | 1.1− | 0.4− | | |
| 2002 08 11 | 704 | 0.4+ | 0.6+ | 2002 10 08 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.7− | 0.4− | | |
| 2002 08 11 | 704 | (0.1+ | 2.0+) | 2002 10 31 | 645 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.1− | 0.5+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.6+ | 0.2+ | 2002 10 31 | 645 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.0 | |
| 2002 08 11 | 704 | 0.5− | 0.0 | 2002 10 31 | 704 | 0.3+ | 0.3− | 2006 11 16 | 704 | 1.1+ | 1.0+ | |
| 2002 08 13 | 704 | 0.8+ | 1.3+ | 2002 10 31 | 704 | 0.5+ | 0.3− | 2006 11 16 | 704 | 1.4+ | 0.9+ | |
| 2002 08 13 | 704 | (0.7+ | 1.7+) | 2002 10 31 | 704 | 0.6+ | 0.1+ | 2006 11 16 | 704 | (1.9+ | 0.7+) | |
| 2002 08 13 | 704 | 1.4+ | 1.0+ | 2002 10 31 | 704 | 0.6+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.3− | |
| 2002 08 13 | 704 | (0.7+ | 1.6+) | 2002 10 31 | 704 | 0.5+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.4− | |
| 2002 08 13 | 704 | (1.1+ | 1.7+) | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.4− | |
| 2002 08 18 | 644 | 0.4+ | 0.1− | 2002 11 08 | 645 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.3− | |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.4− | |
| 2002 08 18 | 644 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.7− | 0.1+ | |
| 2002 09 03 | 644 | 0.4− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.1+ | |
| 2002 09 03 | 644 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.0 | |
| 2002 09 03 | 644 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.2+ | |
| 2002 09 04 | 699 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.7+ | |
| 2002 09 04 | 699 | 0.3− | 0.7− | 2006 10 27 | 703 | 0.9− | 0.2+ | 2006 11 22 | 704 | (0.7+ | 1.8−) | |
| 2002 09 04 | 699 | 0.3− | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.6+ | 2006 11 22 | 704 | 0.3− | 0.6− | |
| 2002 09 04 | 699 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.2+ | |

### 2002 $OO_4$ = 2006 $UP_{83}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.82297 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28030164 | $\omega$ | 168.40440 | +0.74965092 | | +0.66127982 | |
| $a$ | 2.3123432 | $\Omega$ | 150.14294 | −0.61148420 | | +0.70768634 | |
| $e$ | 0.1852884 | $i$ | 3.11638 | −0.25320066 | | +0.24877508 | |
| $P$ | 3.52 | $H$ | 18.1 | $G$ 0.15 | | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 02 | 691 | 0.4+ | 0.4+ | 2002 08 06 | 644 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.3+ | |
| 1999 11 02 | 691 | 0.6− | 0.3+ | 2002 08 06 | 644 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.3+ | |
| 1999 11 02 | 691 | 0.1+ | 0.4+ | 2002 08 06 | 644 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.0 | |
| 2002 07 18 | 644 | 0.1+ | 0.0 | 2002 08 27 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.7− | |
| 2002 07 18 | 644 | 0.2− | 0.1+ | 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.3+ | |
| 2002 07 18 | 644 | 0.1− | 0.3+ | 2002 08 27 | 644 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ | |
| 2002 07 19 | 644 | 0.2− | 0.6+ | 2005 04 18 | 691 | 0.4+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.1+ | |
| 2002 07 19 | 644 | 0.3+ | 0.7+ | 2005 04 18 | 691 | 0.1− | 0.2+ | | | | | |
| 2002 07 19 | 644 | 0.1+ | 0.8+ | 2005 04 18 | 691 | 0.2+ | 0.7+ | | | | | |

### 2002 $OO_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.20123 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27656538 | $\omega$ | 84.69185 | +0.81532211 | | +0.57072075 | |
| $a$ | 2.3331223 | $\Omega$ | 240.47218 | −0.56568163 | | +0.74919677 | |
| $e$ | 0.2148526 | $i$ | 6.44101 | −0.12350770 | | +0.33612798 | |
| $P$ | 3.56 | $H$ | 17.3 | $G$ 0.15 | | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.2− | 0.8+ | 2002 08 12 | 704 | 0.8+ | 0.3− | 2002 08 25 | 644 | 0.4− | 0.2+ | |
| 2002 07 12 | 644 | 0.2− | 0.7+ | 2002 08 13 | 704 | 0.1+ | 0.3− | 2002 08 25 | 644 | 0.5− | 0.4+ | |
| 2002 07 12 | 644 | 0.2− | 0.9+ | 2002 08 13 | 704 | 0.4+ | 0.7− | 2006 10 21 | G96 | 0.2− | 0.3+ | |
| 2002 07 20 | 644 | 0.5− | 0.0 | 2002 08 13 | 699 | 0.6− | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.2+ | |
| 2002 07 20 | 644 | 0.2− | 0.1+ | 2002 08 13 | 704 | 1.2− | 1.1− | 2006 10 21 | G96 | 0.0 | 0.0 | |
| 2002 07 20 | 644 | 0.2+ | 0.2− | 2002 08 13 | 704 | 1.2+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1− | |
| 2002 07 21 | 644 | 0.5− | 0.4+ | 2002 08 13 | 699 | 0.9+ | 0.3− | 2006 11 18 | 691 | 0.3+ | 0.1− | |
| 2002 07 21 | 644 | 0.5− | 0.4− | 2002 08 13 | 704 | 0.5− | 1.0− | 2006 11 18 | 691 | 0.0 | 0.1− | |
| 2002 07 21 | 644 | 0.0 | 0.1+ | 2002 08 13 | 704 | 0.8+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1− | |
| 2002 08 04 | 644 | 0.4− | 0.2− | 2002 08 13 | 699 | 0.2− | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.1+ | |
| 2002 08 04 | 644 | 0.4− | 0.1+ | 2002 08 13 | 704 | 0.6− | 0.0 | 2006 11 22 | 691 | 0.3− | 0.3+ | |
| 2002 08 04 | 644 | 0.9− | 0.8+ | 2002 08 13 | 704 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.2+ | |
| 2002 08 12 | 704 | 0.2− | 0.2+ | 2002 08 13 | 699 | 1.4+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.1− | |
| 2002 08 12 | 704 | 0.9+ | 0.4− | 2002 08 13 | 704 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2− | |
| 2002 08 12 | 704 | 0.2+ | 0.2− | 2002 08 13 | 704 | 0.5+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.3− | |
| 2002 08 12 | 704 | 0.6+ | 0.4+ | 2002 08 25 | 644 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.3− | |

### 2002 $OE_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.29095 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27161672 | $\omega$ | 174.69077 | +0.99981987 | | +0.01783115 | |
| $a$ | 2.3613755 | $\Omega$ | 184.30362 | −0.01897264 | | +0.94823166 | |
| $e$ | 0.2155789 | $i$ | 4.97050 | +0.00051255 | | +0.31707849 | |
| $P$ | 3.63 | $H$ | 16.9 | $G$ 0.15 | | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.3− | |
| 2002 07 12 | 644 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.0 | 0.3+ | |
| 2002 07 12 | 644 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2+ | |
| 2002 07 21 | 644 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 11 10 | 644 | 0.6+ | 0.2+ | |
| 2002 07 21 | 644 | 0.3+ | 0.8+ | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.2+ | |
| 2002 07 21 | 644 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.3+ | 0.2+ | |
| 2002 07 23 | 644 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.4+ | 0.7+ | |
| 2002 07 23 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | (1.6+ | 0.4+) | 2006 11 14 | 704 | 0.4− | 0.5+ | |
| 2002 07 23 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.1− | 0.0 | 2006 11 14 | 704 | 1.0− | 0.4+ | |
| 2002 08 08 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.7− | 1.0− | 2006 11 14 | 704 | 0.9+ | 0.2+ | |
| 2002 08 08 | 644 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 19 | 703 | 0.1+ | 0.2+ | |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.1+ | |
| 2002 08 14 | 704 | 0.8+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 19 | 703 | 0.3− | 0.1− | |
| 2002 08 14 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 19 | 703 | 1.2− | 0.7+ | |
| 2002 08 14 | 704 | 0.4+ | 1.5− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.4− | |
| 2002 08 14 | 704 | 0.8− | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 20 | 704 | 1.1+ | 1.0+ | |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 1.1+ | 0.5+ | |
| 2002 08 26 | 644 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.7+ | |
| 2002 08 26 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.4+ | |
| 2006 07 22 | G96 | 0.5+ | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.2− | |
| 2006 07 22 | G96 | 0.2− | 0.3− | 2006 11 02 | 703 | 0.7− | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.1− | |
| 2006 07 22 | G96 | 0.3− | 0.5+ | 2006 11 02 | 703 | 0.6− | 0.3− | 2006 11 28 | 704 | 0.1− | 0.2− | |
| 2006 07 22 | G96 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.5+ | |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 02 | 703 | (1.8+ | 1.4−) | 2006 11 28 | 704 | 0.6+ | 0.1+ | |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.3− | | | | | |

### 2002 $OU_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.50971 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17897633 | $\omega$ | 128.66995 | +0.97074005 | | +0.15379614 | |
| $a$ | 3.1184514 | $\Omega$ | 223.39553 | −0.19091302 | | +0.96012727 | |
| $e$ | 0.1473872 | $i$ | 15.57084 | +0.14565707 | | +0.23345742 | |
| $P$ | 5.51 | $H$ | 14.9 | $G$ 0.15 | | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 18 | 704 | 0.5− | 0.3+ | 2002 08 03 | 644 | 0.2+ | 0.4+ | 2003 11 19 | 699 | 0.5− | 0.3− | |
| 2002 07 18 | 704 | 0.8+ | 0.4− | 2002 08 03 | 644 | 0.1− | 0.6+ | 2003 11 19 | 699 | 0.8+ | 1.7− | |
| 2002 07 18 | 704 | 0.2+ | 0.6+ | 2003 10 25 | 704 | 0.6+ | 0.3− | 2003 11 26 | 691 | 0.2− | 0.0 | |
| 2002 07 18 | 704 | 0.7+ | 0.0 | 2003 10 25 | 704 | 0.1+ | 0.3+ | 2003 11 26 | 691 | 0.1− | 0.1− | |
| 2002 07 19 | 644 | 0.6− | 0.8− | 2003 10 25 | 704 | 0.6− | 0.3+ | 2003 11 26 | 691 | 0.0 | 0.2− | |
| 2002 07 19 | 644 | 0.6− | 0.6− | 2003 10 25 | 704 | 0.4− | 0.3− | 2003 12 01 | 704 | 0.0 | 0.5− | |
| 2002 07 19 | 644 | 0.4− | 0.5− | 2003 11 19 | 699 | 1.5+ | 2.0+ | 2003 12 01 | 704 | 0.4− | 0.5+ | |
| 2002 08 03 | 644 | 0.4+ | 0.4+ | 2003 11 19 | 699 | 0.2+ | 0.0 | 2003 12 01 | 704 | 0.5− | 0.9+ | |

### 2002 $OR_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.50635 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25229987 | $\omega$ | 113.63401 | +0.95032894 | | −0.26567151 | |
| $a$ | 2.4804170 | $\Omega$ | 262.09148 | +0.19056615 | | +0.90856527 | |
| $e$ | 0.2263862 | $i$ | 9.42230 | +0.24608830 | | +0.32237836 | |
| $P$ | 3.91 | $H$ | 16.8 | $G$ 0.15 | | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 704 | (0.2+ | 4.4−) | 2002 09 11 | 644 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.7+ | |
| 2002 07 17 | 704 | (0.1− | 4.9−) | 2002 09 11 | 644 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.5− | 0.1+ | |
| 2002 07 17 | 704 | (0.5+ | 4.3−) | 2002 10 06 | 704 | 0.9+ | 0.3− | 2006 09 29 | 699 | 0.4− | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 20 | 644 | 0.2+ | 0.4+ | 2002 10 06 | 704 | 0.8+ | 0.4− | 2006 09 29 | 699 | 0.6− | 0.1− |
| 2002 07 20 | 644 | 0.1+ | 0.6+ | 2002 10 06 | 704 | 0.6+ | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.0 |
| 2002 07 20 | 644 | 0.4+ | 0.4+ | 2002 10 07 | 699 | 0.6+ | 1.0− | 2006 10 03 | 704 | 0.8+ | 0.2− |
| 2002 08 04 | 644 | 0.0 | 0.3+ | 2002 10 07 | 699 | 0.1+ | 0.8+ | 2006 10 03 | 704 | 0.4+ | 0.2− |
| 2002 08 04 | 644 | 0.0 | 0.3+ | 2002 10 07 | 699 | 0.3+ | 0.6− | 2006 10 03 | 704 | 0.1+ | 0.2− |
| 2002 08 04 | 644 | 0.2− | 0.4+ | 2002 10 07 | 699 | 0.7+ | 0.7− | 2006 10 03 | 704 | 0.5+ | 0.1+ |
| 2002 08 11 | 704 | 0.2+ | 1.0− | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.8+ | 0.3− |
| 2002 08 11 | 704 | 0.2− | 0.2− | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | 1.3+ | 1.3+ |
| 2002 08 11 | 704 | 0.5+ | 0.9− | 2006 09 01 | 224 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.4+ |
| 2002 09 03 | 644 | 0.4− | 0.2+ | 2006 09 01 | 224 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 1.2+ |
| 2002 09 03 | 644 | 0.0 | 0.1+ | 2006 09 01 | 224 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.8+ |
| 2002 09 03 | 644 | 0.4− | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 26 | 703 | 0.1− | 0.3− |
| 2002 09 03 | 644 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.3− | 0.1− | 2006 10 26 | 703 | 0.8− | 0.3− |
| 2002 09 03 | 644 | 0.4− | 0.2+ | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 10 26 | 703 | 0.1− | 1.1− |
| 2002 09 03 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 10 26 | 703 | 0.4− | 1.0− |
| 2002 09 10 | 644 | 0.9− | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.8− | 2006 11 14 | 703 | 1.1− | 2.0+ |
| 2002 09 10 | 644 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.8− | 1.0− | 2006 11 14 | 703 | (3.2+ | 0.6−) |
| 2002 09 10 | 644 | 0.3− | 0.6+ | 2006 09 27 | 703 | 0.1+ | 0.2− | 2006 11 14 | 703 | 1.0− | 0.4+ |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.2+ | 2006 11 14 | 703 | 1.0− | 1.6+ |

**2002 OC$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.17164 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27065351 | $\omega$ | 62.41494 | | +0.45772953 | +0.88279777 | |
| $a$ | 2.3669746 | $\Omega$ | 235.21583 | | −0.85432813 | +0.40383062 | |
| $e$ | 0.1022188 | $i$ | 7.38743 | | −0.24618513 | +0.23997693 | |
| $P$ | 3.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 0.3+ | 2006 08 31 | 704 | 0.8+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.1− |
| 1999 10 12 | 704 | 0.5− | 0.6− | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 1999 10 12 | 704 | 0.6+ | 0.5+ | 2006 09 06 | 644 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.0 | 0.2− |
| 1999 10 12 | 704 | 0.2+ | 0.4+ | 2006 09 06 | 644 | 0.6− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2002 06 10 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2002 06 10 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 1.1− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2002 06 10 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.7− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2002 07 09 | 704 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.4+ |
| 2002 07 09 | 704 | 0.6− | 0.1− | 2006 09 21 | 699 | 0.5− | 1.1− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2002 07 09 | 704 | 0.3− | 0.2− | 2006 09 21 | 699 | 0.4+ | 1.0− | 2006 10 21 | 691 | 0.1+ | 0.3− |
| 2002 07 18 | 704 | 0.3+ | 0.7− | 2006 09 21 | 699 | 0.6+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2− |
| 2002 07 18 | 704 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.7− | 0.0 |
| 2002 07 18 | 704 | 0.3− | 0.6− | 2006 09 27 | 703 | 0.3+ | 0.4− | 2006 10 21 | 691 | 0.3− | 0.4+ |
| 2002 07 18 | 704 | 1.0+ | 0.2− | 2006 09 27 | 703 | 0.8+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2002 07 18 | 704 | 0.4− | 0.8− | 2006 09 27 | 703 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.2+ | 0.1− |
| 2002 07 21 | 644 | 0.1− | 1.0+ | 2006 10 03 | 703 | 0.5− | 0.4− | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2002 07 21 | 644 | 0.4+ | 0.5+ | 2006 10 03 | 703 | 0.6− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 07 21 | 644 | 0.2+ | 1.1+ | 2006 10 03 | 703 | 1.0+ | 1.1− | 2006 10 23 | 691 | 0.4+ | 0.1− |
| 2006 08 31 | 704 | 0.2− | 0.0 | 2006 10 03 | 703 | 0.7− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2006 08 31 | 704 | 0.4+ | 0.6− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2+ | 0.2− |
| 2006 08 31 | 704 | 0.8− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2006 08 31 | 704 | (0.6+ | 1.9+) | 2006 10 11 | 644 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2006 08 31 | 704 | 0.5+ | 0.7− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2006 08 31 | 704 | 0.5− | 0.9− | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.4+ | 0.1− |
| 2006 08 31 | 704 | 0.5+ | 1.0+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | | | |
| 2006 08 31 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.9− | 0.1− | | | | |

**2002 OA$_{17}$ = 2006 WG$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.03450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27913345 | $\omega$ | 91.67464 | | +0.97533712 | −0.09694091 | |
| $a$ | 2.3187902 | $\Omega$ | 273.92189 | | +0.00919611 | +0.91545578 | |
| $e$ | 0.2412687 | $i$ | 11.46434 | | +0.22052878 | +0.39056777 | |
| $P$ | 3.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.4+ | 1.1+ | 2002 08 04 | 644 | 0.0 | 0.1− | 2002 09 21 | 644 | 0.5+ | 0.6− |
| 2002 07 09 | 704 | 0.3− | 0.2− | 2002 08 12 | 704 | 0.3+ | 0.5+ | 2002 09 21 | 644 | 0.2+ | 0.9− |
| 2002 07 09 | 704 | 0.2− | 0.1− | 2002 08 12 | 704 | 0.4+ | 0.4+ | 2002 09 21 | 644 | 0.3+ | 0.7− |
| 2002 07 09 | 704 | 0.4− | 0.3− | 2002 08 12 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.3+ |
| 2002 07 09 | 704 | 0.1− | 0.1+ | 2002 08 12 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.5− |
| 2002 07 18 | 704 | 0.6+ | 0.9− | 2002 08 13 | 704 | 0.3+ | 0.7− | 2006 11 17 | 691 | 0.3+ | 0.7+ |
| 2002 07 18 | 704 | 0.3− | 0.3− | 2002 08 13 | 704 | 0.8− | 0.3+ | 2006 11 22 | 704 | 0.7− | 0.1− |
| 2002 07 18 | 704 | 0.3− | 0.8− | 2002 08 13 | 704 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.9− | 0.2− |
| 2002 07 18 | 704 | 0.1+ | 0.7− | 2002 09 03 | 644 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2002 07 21 | 644 | 0.0 | 0.7+ | 2002 09 03 | 644 | 0.4− | 0.8+ | 2006 11 27 | 704 | 0.4− | 0.1− |
| 2002 07 21 | 644 | 0.2+ | 1.2+ | 2002 09 03 | 644 | 0.1− | 0.8+ | 2006 11 27 | 704 | 0.3− | 0.3− |
| 2002 07 21 | 644 | 0.1+ | 0.6+ | 2002 09 20 | 644 | 0.1+ | 0.1− | 2006 11 27 | 704 | 0.3− | 0.4− |
| 2002 08 04 | 644 | 0.2− | 0.1− | 2002 09 20 | 644 | 0.3+ | 0.1− | | | | |
| 2002 08 04 | 644 | 0.1− | 0.2− | 2002 09 20 | 644 | 0.3− | 0.3− | | | | |

**2002 OQ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.18322 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26466647 | $\omega$ | 77.57081 | | +0.98069885 | +0.11967862 | |
| $a$ | 2.4025371 | $\Omega$ | 275.40556 | | −0.17354308 | +0.89707464 | |
| $e$ | 0.2614829 | $i$ | 8.93471 | | +0.09006980 | +0.42536351 | |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 1.0+ | 0.9− | 2002 08 13 | 699 | 0.3− | 0.6− | 2002 09 12 | 683 | (0.5− | 1.8−) |
| 2002 07 09 | 704 | 0.0 | 0.3− | 2002 08 13 | 704 | 0.1+ | 0.1+ | 2002 09 21 | 644 | 0.0 | 1.1+ |
| 2002 07 09 | 704 | 0.0 | 0.4+ | 2002 08 13 | 699 | 0.4− | 0.6− | 2002 09 21 | 644 | 0.1+ | 1.0+ |
| 2002 07 09 | 704 | 0.9− | 0.4− | 2002 08 15 | 683 | (0.7+ | 1.9−) | 2002 09 21 | 644 | 0.3+ | 0.9+ |
| 2002 07 18 | 704 | 0.0 | 0.1− | 2002 08 15 | 683 | (1.2− | 1.8−) | 2002 09 21 | 644 | 0.1+ | 0.0 |
| 2002 07 18 | 704 | 0.6+ | 1.2+ | 2002 08 15 | 683 | (0.1− | 2.5−) | 2002 09 21 | 644 | 0.0 | 0.1− |
| 2002 07 18 | 704 | 0.1+ | 0.0 | 2002 08 15 | 644 | 0.3− | 0.7− | 2002 09 21 | 644 | 0.4+ | 0.2+ |
| 2002 07 18 | 704 | 1.1+ | 0.6+ | 2002 08 15 | 644 | 0.3− | 0.5− | 2006 10 23 | 703 | 0.6+ | 0.7− |
| 2002 07 21 | 644 | 0.1+ | 0.1+ | 2002 08 15 | 644 | 0.2− | 0.5− | 2006 10 23 | 703 | 0.4+ | 0.3+ |
| 2002 07 21 | 644 | 0.2+ | 0.3− | 2002 08 16 | 704 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.3− | 0.7+ |
| 2002 07 21 | 644 | 0.1+ | 0.2− | 2002 08 16 | 704 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.2+ | 0.6+ |
| 2002 08 04 | 644 | 0.4− | 0.1− | 2002 08 16 | 704 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.4− | 0.4− |
| 2002 08 04 | 644 | 0.2+ | 0.1− | 2002 08 16 | 704 | 0.1+ | 0.3− | 2006 10 29 | 703 | 0.9− | 0.1+ |
| 2002 08 04 | 644 | 0.0 | 0.3− | 2002 08 25 | 644 | 0.1+ | 0.4− | 2006 10 29 | 703 | 0.1− | 0.2− |
| 2002 08 12 | 704 | 0.5+ | 0.8+ | 2002 08 25 | 644 | 0.2+ | 0.3− | 2006 10 29 | 703 | 0.6− | 0.3+ |
| 2002 08 12 | 704 | 0.2+ | 1.0+ | 2002 08 25 | 644 | 0.0 | 0.5− | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2002 08 12 | 704 | 0.3− | 1.4+ | 2002 09 02 | 644 | 0.0 | 0.1− | 2006 11 15 | 703 | (0.6− | 1.6+) |
| 2002 08 12 | 704 | 0.4+ | 1.1+ | 2002 09 02 | 644 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.5− |
| 2002 08 12 | 704 | 0.1+ | 1.2+ | 2002 09 02 | 644 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.8− |
| 2002 08 13 | 683 | 1.0− | 1.1+ | 2002 09 10 | 644 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.1+ | 0.4+ | 2002 09 10 | 644 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 2002 08 13 | 699 | 0.1− | 0.7− | 2002 09 10 | 644 | 0.1− | 0.2− | 2006 11 17 | 644 | 0.0 | 0.4+ |
| 2002 08 13 | 683 | 0.1+ | 1.4− | 2002 09 12 | 644 | 0.2− | 0.3− | 2006 11 21 | 703 | 0.2+ | 0.2− |
| 2002 08 13 | 683 | (1.7− | 0.1+) | 2002 09 12 | 644 | 0.1− | 0.4− | 2006 11 21 | 703 | 0.9− | 0.3− |
| 2002 08 13 | 704 | 0.3− | 0.7+ | 2002 09 12 | 644 | 0.2+ | 0.3− | 2006 11 21 | 703 | 0.2+ | 0.1+ |
| 2002 08 13 | 699 | 0.8− | 0.9− | 2002 09 12 | 683 | 0.6− | 0.2− | 2006 11 21 | 703 | 0.5+ | 0.3− |
| 2002 08 13 | 704 | 0.0 | 0.3+ | 2002 09 12 | 683 | 0.7+ | 1.0− | | | | |

**2002 OM$_{19}$ = 2006 UK$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.26869 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27061672 | $\omega$ | 84.88520 | | +0.95174177 | +0.29786053 | |
| $a$ | 2.3671892 | $\Omega$ | 257.77066 | | −0.30292962 | +0.87313226 | |
| $e$ | 0.2141670 | $i$ | 4.33880 | | −0.04920617 | +0.38590045 | |
| $P$ | 3.64 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.1+ | 0.4+ | 2002 08 16 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 07 21 | 644 | 0.2+ | 0.4+ | 2002 08 16 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.4+ | 0.1+ |
| 2002 07 21 | 644 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2002 07 22 | 644 | 0.1− | 0.8− | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.3+ | 0.6− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.3− |
| 2002 07 22 | 644 | 0.2− | 0.7− | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2002 08 07 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.4+ | 0.1− |
| 2002 08 07 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 26 | 104 | 0.5+ | 0.1+ |
| 2002 08 07 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.3+ | 2006 11 26 | 104 | 0.9− | 1.1+ |
| 2002 08 16 | 644 | 0.8− | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.0 | 2006 11 26 | 104 | 0.9− | 0.0 |

**2002 OO$_{19}$ = 2006 UF$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.75009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27166111 | $\omega$ | 222.83204 | | +0.97375729 | −0.19161155 | |
| $a$ | 2.3611183 | $\Omega$ | 147.60472 | | +0.21416735 | +0.95404240 | |
| $e$ | 0.1683100 | $i$ | 13.25132 | | −0.07700055 | +0.23040860 | |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 1.2+ | 0.5+ | 2002 08 08 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 1.3− | 0.5+ |
| 2002 07 09 | 704 | (0.1− | 1.7+) | 2002 08 12 | 608 | 0.1+ | 0.7− | 2006 09 18 | 703 | 0.3+ | 0.4− |
| 2002 07 09 | 704 | 0.3+ | 1.0+ | 2002 08 12 | 608 | 0.4+ | 0.2− | 2006 10 21 | 703 | 0.7+ | 0.2− |
| 2002 07 09 | 704 | 0.8+ | 0.7− | 2002 08 12 | 608 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2002 07 21 | 644 | 0.2− | 0.2+ | 2002 08 15 | 699 | 0.3− | 0.9− | 2006 10 21 | 703 | 0.6+ | 0.5+ |
| 2002 07 21 | 644 | 0.4− | 0.3+ | 2002 08 15 | 699 | 0.3+ | 0.5− | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 2002 07 21 | 644 | 0.0 | 0.1− | 2002 08 15 | 699 | 0.2− | 1.0− | 2006 10 28 | 703 | 0.6− | 0.4− |
| 2002 07 22 | 644 | 0.8− | 0.3− | 2002 08 15 | 699 | 0.1+ | 0.4− | 2006 10 28 | 703 | 0.6+ | 0.3− |
| 2002 07 22 | 644 | 0.5− | 0.2− | 2002 08 17 | 644 | 0.2− | 1.0+ | 2006 10 28 | 703 | 0.7− | 0.6− |
| 2002 07 22 | 644 | 0.4− | 0.4− | 2002 08 17 | 644 | 0.5− | 1.0+ | 2006 10 28 | 703 | 0.6+ | 0.4− |
| 2002 08 06 | 644 | 0.1+ | 0.2+ | 2002 08 17 | 644 | 0.2− | 1.1+ | 2006 11 17 | 703 | 0.0 | 0.6+ |
| 2002 08 06 | 644 | 0.1+ | 0.1+ | 2002 08 24 | 644 | 0.8− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.0 |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2002 08 24 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.9+ | 0.1− |
| 2002 08 08 | 699 | 0.4− | 0.9− | 2002 08 24 | 644 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.8− | 1.2+ |
| 2002 08 08 | 699 | 0.1+ | 0.4+ | 2002 08 27 | 644 | 0.2+ | 0.3− | 2006 11 23 | 703 | 0.9− | 0.5+ |
| 2002 08 08 | 699 | 0.4− | 0.5− | 2002 08 27 | 644 | 0.5+ | 0.3− | 2006 11 23 | 703 | 0.3− | 0.4+ |
| 2002 08 08 | 699 | 0.1− | 0.4+ | 2002 08 27 | 644 | 0.3+ | 0.1− | 2006 11 23 | 703 | 0.3+ | 0.2− |
| 2002 08 08 | 644 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.7+ | 0.1− | 2006 11 23 | 703 | 0.6+ | 0.3− |
| 2002 08 08 | 644 | 0.6+ | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.0 | | | | |

**2002 OQ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.34360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25807130 | $\omega$ | 67.84348 | | +0.31417911 | +0.94839492 | |
| $a$ | 2.4432969 | $\Omega$ | 220.54693 | | −0.89351886 | +0.28013415 | |
| $e$ | 0.1652151 | $i$ | 3.78196 | | −0.32080450 | +0.14856625 | |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.3+ | 0.3+ | 2002 08 16 | 644 | 0.1− | 0.1− | 2006 09 19 | 703 | (0.6+ | 1.9+) |
| 2002 07 12 | 644 | 0.2+ | 0.6+ | 2002 08 16 | 644 | 0.0 | 0.4− | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2002 07 12 | 644 | 0.3+ | 0.3+ | 2002 08 24 | 644 | 0.5+ | 0.5+ | 2006 09 20 | 691 | 0.0 | 0.0 |
| 2002 07 21 | 644 | 0.2+ | 0.1+ | 2002 08 24 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 2002 07 21 | 644 | 0.4− | 0.3+ | 2002 08 24 | 644 | 0.5+ | 0.0 | 2006 09 24 | 291 | 0.2+ | 0.3+ |
| 2002 07 21 | 644 | 0.0 | 0.2+ | 2002 08 26 | 644 | 0.1+ | 0.1− | 2006 09 24 | 291 | 0.1+ | 0.3+ |
| 2002 07 23 | 644 | 0.3+ | 1.2− | 2002 08 26 | 644 | 0.3+ | 0.0 | 2006 09 24 | 291 | 0.1− | 0.3+ |
| 2002 07 23 | 644 | 0.1+ | 0.9− | 2002 08 26 | 644 | 0.1+ | 0.3− | 2006 09 25 | 291 | 0.2+ | 0.3+ |
| 2002 07 23 | 644 | 0.2− | 1.2− | 2002 09 09 | 644 | 0.2− | 0.2− | 2006 09 25 | 291 | 0.1+ | 0.3+ |
| 2002 08 05 | 644 | 0.3− | 0.3+ | 2002 09 09 | 644 | 0.6− | 1.3− | 2006 09 25 | 291 | 0.3− | 0.3+ |
| 2002 08 05 | 644 | 0.6− | 0.3+ | 2005 05 12 | G96 | 0.2+ | 0.1+ | 2006 09 26 | 291 | 0.1− | 0.1+ |
| 2002 08 05 | 644 | 0.7− | 0.1+ | 2005 05 12 | G96 | 0.1− | 0.4+ | 2006 09 26 | 291 | 0.2− | 0.1+ |
| 2002 08 05 | 599 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.1+ | 0.3+ | 2006 09 26 | 291 | 0.2− | 0.0 |
| 2002 08 05 | 599 | 0.4− | 0.2− | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2002 08 05 | 599 | 0.4− | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3− |
| 2002 08 06 | 644 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.8− | 2006 10 20 | 691 | 0.1+ | 0.2− |
| 2002 08 06 | 644 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.5− |
| 2002 08 06 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.4− | 1.1− | 2006 10 20 | G96 | 0.2+ | 0.7− |
| 2002 08 08 | 699 | 0.1+ | 0.6+ | 2006 09 03 | 152 | (2.4− | 1.2+) | 2006 10 20 | G96 | 0.4+ | 0.6− |
| 2002 08 08 | 699 | 1.0+ | 0.0 | 2006 09 03 | 152 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.4− | 0.5− |
| 2002 08 08 | 699 | 0.8+ | 0.3+ | 2006 09 03 | 152 | 1.2− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.4− |
| 2002 08 08 | 699 | 0.6+ | 1.0+ | 2006 09 12 | 703 | 0.0 | 1.0+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2002 08 12 | 608 | 0.3− | 0.3− | 2006 09 12 | 703 | 0.5− | 0.6− | 2006 10 22 | 691 | (1.9− | 0.5−) |
| 2002 08 12 | 608 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.5− | 0.4+ | 2006 11 14 | G96 | 0.2− | 1.0− |
| 2002 08 12 | 608 | 0.2− | 0.8− | 2006 09 12 | 703 | 1.2+ | 0.1− | 2006 11 14 | G96 | 0.6− | 1.2− |
| 2002 08 14 | 291 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.4+ |
| 2002 08 14 | 291 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.9+ | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.2+ |
| 2002 08 14 | 291 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.5− | 0.2+ | | | | |
| 2002 08 16 | 644 | 0.1+ | 0.3− | 2006 09 16 | 699 | 0.1− | 0.8+ | | | | |

**2002 OP$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.39882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27093505 | $\omega$ | 91.78039 | | +0.75097334 | +0.65824323 | |
| $a$ | 2.3653346 | $\Omega$ | 227.05804 | | −0.63077131 | +0.69156844 | |
| $e$ | 0.1822268 | $i$ | 4.11159 | | −0.19536272 | +0.29740366 | |
| $P$ | 3.64 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.2− | 0.4+ | 2005 03 17 | G96 | 0.1− | 0.6− | 2006 10 25 | 557 | 0.5+ | 0.3− |
| 2002 07 12 | 644 | 0.3− | 0.3+ | 2005 03 17 | G96 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 07 12 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 07 17 | 644 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 07 17 | 644 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.5+ | 0.1+ |
| 2002 07 17 | 644 | 0.3+ | 0.8+ | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 07 21 | 644 | 0.2+ | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 07 21 | 644 | 0.2+ | 0.5+ | 2006 10 03 | 691 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2002 07 21 | 644 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2002 08 03 | 644 | 0.5− | 1.1− | 2006 10 16 | 691 | 0.4− | 0.6− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2002 08 03 | 644 | 0.1− | 0.8− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2002 08 03 | 644 | 0.1− | 0.8− | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2002 08 16 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2002 08 16 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2002 08 26 | 644 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.7+ | 0.4− |
| 2002 08 26 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2002 09 22 | 644 | 0.1+ | 0.4+ | 2006 10 25 | 557 | 0.6− | 0.9− | 2006 11 20 | G96 | 0.4− | 0.1+ |
| 2002 09 22 | 644 | 1.4+ | 0.6+ | 2006 10 25 | 557 | 0.7+ | 0.5− | 2006 11 20 | G96 | 0.2− | 0.2− |
| 2002 09 22 | 644 | 0.1+ | 1.0− | 2006 10 25 | 557 | 0.6+ | 1.1− | 2006 11 20 | G96 | 0.2− | 0.7− |
| 2005 03 17 | G96 | 0.5+ | 0.0 | 2006 10 25 | 557 | 0.6+ | 0.7− | | | | |
| 2005 03 17 | G96 | 0.1− | 0.1+ | 2006 10 25 | 557 | 0.5− | 0.5+ | | | | |

**2002 OW$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.64888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26748048 | $\omega$ | 161.59251 | | +0.98205111 | +0.17395290 | |
| $a$ | 2.3856569 | $\Omega$ | 189.34311 | | −0.17050334 | +0.98402718 | |
| $e$ | 0.3601816 | $i$ | 26.68647 | | +0.08064886 | −0.03782718 | |
| $P$ | 3.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 31 | 704 | 0.0 | 0.4+ | 2002 08 01 | 734 | 0.5+ | 0.3− | 2002 10 29 | 704 | 0.4+ | 1.0+ |
| 2002 07 31 | 704 | 0.0 | 0.6+ | 2002 08 01 | 734 | 0.5+ | 0.2− | 2002 10 29 | 704 | (0.3− | 2.2+) |
| 2002 07 31 | 704 | 0.0 | 0.6+ | 2002 08 01 | 704 | 0.0 | 0.3− | 2002 11 06 | 704 | 0.0 | 0.7− |
| 2002 07 31 | 704 | 0.5− | 0.7+ | 2002 08 01 | 704 | 0.2+ | 0.3− | 2002 11 06 | 704 | 1.3− | 0.7− |
| 2002 07 31 | 704 | 0.3− | 0.8+ | 2002 08 01 | 951 | 0.1− | 0.4− | 2002 11 06 | 704 | 0.4− | 0.5− |
| 2002 07 31 | 461 | 0.0 | 0.2− | 2002 08 02 | 951 | 0.2+ | 0.1− | 2002 11 06 | 704 | 0.4− | 0.8− |
| 2002 07 31 | 461 | 0.2+ | 0.3− | 2002 08 02 | 951 | 0.4+ | 0.5− | 2002 11 07 | 699 | 0.3− | 0.6+ |
| 2002 07 31 | 461 | 0.2+ | 0.1− | 2002 08 09 | 658 | 0.1+ | 0.0 | 2002 11 07 | 699 | 0.4+ | 1.4+ |
| 2002 07 31 | 461 | 0.3+ | 0.2− | 2002 08 09 | 658 | 0.1+ | 0.0 | 2002 11 07 | 699 | 0.1− | 0.8+ |
| 2002 07 31 | 461 | 0.0 | 0.1− | 2002 08 09 | 658 | 0.0 | 0.0 | 2002 11 07 | 699 | 0.0 | 0.8− |
| 2002 08 01 | 557 | 0.1+ | 1.0+ | 2002 08 29 | 848 | 0.2− | 0.1− | 2002 11 16 | 644 | 0.3− | 0.1− |
| 2002 08 01 | 859 | 0.5− | 0.1− | 2002 08 29 | 848 | 0.6− | 0.9+ | 2002 11 16 | 644 | 0.0 | 0.1− |
| 2002 08 01 | 557 | 0.3− | 0.8+ | 2002 08 29 | 848 | 0.3+ | 0.1− | 2002 11 16 | 644 | 0.1− | 0.0 |
| 2002 08 01 | 859 | 1.3− | 0.7+ | 2002 09 29 | 636 | 0.7+ | 0.7− | 2002 12 07 | 704 | 0.1− | 0.5+ |
| 2002 08 01 | 859 | 0.9− | 0.5− | 2002 09 29 | 636 | 0.8+ | 1.2− | 2002 12 07 | 704 | 0.3− | 0.6+ |
| 2002 08 01 | 704 | 0.1+ | 0.1+ | 2002 09 29 | 636 | 0.0 | 0.4+ | 2002 12 07 | 704 | 0.2+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 01 | 704 | 0.3+ | 0.7+ | 2002 10 01 | 704 | 0.1− | 0.2− | 2002 12 07 | 704 | 0.5+ | 1.4+ |
| 2002 08 01 | 704 | 1.1− | 0.1+ | 2002 10 01 | 704 | 0.1+ | 0.5− | 2006 09 20 | 703 | 0.8− | 0.6+ |
| 2002 08 01 | 649 | 0.2+ | 0.2− | 2002 10 01 | 704 | 0.4− | 0.1− | 2006 09 20 | 703 | 0.5− | 0.9+ |
| 2002 08 01 | 704 | 0.2+ | 0.3+ | 2002 10 05 | 683 | 0.5+ | 1.3− | 2006 09 20 | 703 | 0.2− | 0.7+ |
| 2002 08 01 | 642 | 0.1− | 0.4− | 2002 10 05 | 683 | 0.2− | 1.0− | 2006 11 01 | 703 | 0.1+ | 0.2− |
| 2002 08 01 | 642 | 0.1− | 0.5− | 2002 10 05 | 683 | 1.2+ | 1.2− | 2006 11 01 | 703 | 0.3− | 0.0 |
| 2002 08 01 | 704 | 0.2+ | 0.1− | 2002 10 06 | 704 | 0.5− | 0.0 | 2006 11 01 | 703 | 0.9+ | 0.1+ |
| 2002 08 01 | 704 | 0.1− | 0.2− | 2002 10 06 | 704 | 0.1+ | 0.3+ | 2006 11 01 | 703 | 0.5+ | 0.1− |
| 2002 08 01 | 642 | 0.4− | 0.2− | 2002 10 06 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.9− | 0.8− |
| 2002 08 01 | 704 | 0.1+ | 0.5+ | 2002 10 06 | 704 | 0.4− | 1.4− | 2006 11 19 | 703 | 0.4− | 0.0 |
| 2002 08 01 | 642 | 0.9+ | 0.6− | 2002 10 06 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 703 | 0.1+ | 0.4− |
| 2002 08 01 | 642 | 0.2− | 0.8− | 2002 10 28 | 608 | (1.3− | 2.6+) | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2002 08 01 | 704 | 0.2+ | 0.3− | 2002 10 28 | 608 | (1.7− | 2.8+) | 2006 11 25 | 703 | 0.4+ | 0.1− |
| 2002 08 01 | 704 | 0.7+ | 0.7+ | 2002 10 28 | 608 | (1.5− | 3.0+) | 2006 11 25 | 703 | 0.3+ | 0.4− |
| 2002 08 01 | 704 | 0.6− | 1.0+ | 2002 10 29 | 704 | 0.3+ | 0.5+ | 2006 11 25 | 703 | 0.4+ | 0.1+ |
| 2002 08 01 | 649 | 0.3+ | 0.1− | 2002 10 29 | 704 | 0.5+ | 0.6+ | 2006 11 25 | 703 | 0.4+ | 0.2− |
| 2002 08 01 | 704 | 0.4− | 0.3− | 2002 10 29 | 704 | 0.5+ | 0.7+ | | | | |

**2002 OH$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.17146 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26505254 | $\omega$ | 319.51856 | | −0.28732512 | | +0.95373098 |
| $a$ | 2.4002035 | $\Omega$ | 293.61692 | | −0.85194938 | | −0.29672024 |
| $e$ | 0.1090311 | $i$ | 5.54611 | | −0.43775167 | | −0.04852123 |
| $P$ | 3.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 0.2+ | 0.1+ | 2002 08 17 | 644 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.1+ | 0.0 |
| 2002 07 04 | 644 | 0.3− | 0.0 | 2002 08 17 | 644 | 0.1− | 1.0+ | 2006 08 29 | 691 | 0.2+ | 0.1+ |
| 2002 07 04 | 644 | 0.2− | 0.3+ | 2002 08 17 | 644 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.4− | 0.3+ |
| 2002 07 22 | 644 | 0.2+ | 0.2+ | 2002 08 28 | 644 | 0.2− | 0.7+ | 2006 09 13 | 644 | 0.1− | 0.5+ |
| 2002 07 22 | 644 | 0.1− | 0.1− | 2002 08 28 | 644 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.3+ | 0.5+ |
| 2002 07 22 | 644 | 0.0 | 0.1+ | 2002 08 28 | 644 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.3− | 0.8− |
| 2002 08 07 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | 1.7− | 0.6− | 2006 09 18 | 703 | 0.1+ | 1.6− |
| 2002 08 07 | 644 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.1− | 1.3+ | 2006 09 18 | 703 | 0.2+ | 0.5− |
| 2002 08 09 | 608 | 0.4− | 0.9− | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.1+ | 1.2+ |
| 2002 08 09 | 608 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.3− | 0.9+ | 2006 09 20 | A13 | 0.1− | 0.3− |
| 2002 08 09 | 608 | 0.9+ | 1.3− | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 20 | A13 | 1.2+ | 0.4− |

**2002 OM$_{28}$ = 2001 HT$_{14}$ = 2006 RB$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.46373 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26605492 | $\omega$ | 344.08499 | | +0.99910528 | | +0.02970534 |
| $a$ | 2.3941711 | $\Omega$ | 14.31417 | | −0.01053638 | | +0.86418633 |
| $e$ | 0.1521066 | $i$ | 6.99366 | | −0.04095880 | | +0.50229431 |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 01 | 291 | 0.0 | 0.1+ |
| 1995 10 17 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.0 | 2006 10 01 | 291 | 0.0 | 0.0 |
| 1995 10 17 | 691 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | (1.7+ | 0.4+) |
| 2001 04 23 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.4− | 1.2− | 2006 10 01 | 704 | 0.4+ | 0.2− |
| 2001 04 23 | 691 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 0.3+ | 1.5− | 2006 10 01 | 704 | 0.4− | 0.6+ |
| 2001 04 23 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.1− | 2006 10 01 | 291 | 0.1− | 0.2+ |
| 2001 04 24 | 691 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.3− | 2006 10 01 | 291 | 0.1− | 0.2+ |
| 2001 04 24 | 691 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.4+ | 0.3− | 2006 10 01 | 291 | 0.4− | 0.2+ |
| 2001 04 24 | 691 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 02 | 291 | 0.1− | 0.1− |
| 2002 07 16 | 644 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 02 | 291 | 0.1− | 0.0 |
| 2002 07 16 | 644 | 0.3− | 1.1+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 02 | 291 | 0.0 | 0.0 |
| 2002 07 16 | 644 | 0.3− | 1.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 2002 07 29 | 644 | 0.1+ | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 07 29 | 644 | 0.1− | 0.7+ | 2006 09 27 | 704 | 0.8− | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2002 07 29 | 644 | 0.2− | 1.1+ | 2006 09 27 | 704 | 1.1+ | 0.7− | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2002 08 13 | 704 | 0.0 | 0.5− | 2006 09 27 | 704 | 0.2− | 0.6+ | 2006 10 15 | 106 | 0.5+ | 0.5+ |
| 2002 08 13 | 704 | 0.2+ | 0.8− | 2006 09 27 | 704 | 0.5+ | 0.9− | 2006 10 15 | 106 | 0.2+ | 0.3+ |
| 2002 08 13 | 704 | 0.1− | 0.8− | 2006 09 28 | 704 | 0.6− | 0.6− | 2006 10 15 | 106 | 0.3− | 0.3− |
| 2002 08 13 | 704 | 0.6+ | 1.3+ | 2006 09 28 | 704 | 0.7− | 0.2+ | 2006 10 15 | 106 | 0.4+ | 0.3+ |
| 2002 08 13 | 704 | 1.5+ | 1.0+ | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.8+ | 0.0 |
| 2003 12 21 | 645 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.6+ | 0.5− | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2003 12 21 | 645 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2004 01 16 | 644 | 0.3− | 0.7+ | 2006 09 28 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2004 01 16 | 644 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2004 01 16 | 644 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.7+ |
| 2005 03 17 | G96 | 0.3+ | 0.3+ | 2006 09 29 | 291 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2005 03 17 | G96 | 0.4− | 0.1+ | 2006 09 29 | 291 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.1− |
| 2005 03 17 | G96 | 0.0 | 0.0 | 2006 09 29 | 291 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2005 03 17 | G96 | 0.1+ | 0.4− | 2006 09 29 | 291 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.4+ |
| 2005 04 14 | 691 | 0.1+ | 0.9+ | 2006 09 29 | 291 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2005 04 14 | 691 | 0.4− | 0.2+ | 2006 09 29 | 291 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 12 | 703 | 0.2+ | 0.5− | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 09 12 | 703 | 0.5+ | 0.2+ | 2006 09 30 | 291 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2006 09 12 | 703 | 1.3+ | 0.1+ | 2006 09 30 | 291 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2006 09 12 | 703 | 1.0+ | 0.2+ | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.0 | 1.0+ |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 30 | 291 | 0.2− | 0.0 | 2006 10 31 | G96 | 2.5+ | 0.9+ |
| 2006 09 14 | 691 | 1.1− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 09 30 | 291 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 699 | 1.0− | 0.2+ | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2006 09 18 | 699 | 0.2− | 0.0 | 2006 09 30 | 291 | 0.1− | 0.0 | | | | |
| 2006 09 18 | 699 | 0.1− | 0.2− | 2006 10 01 | 291 | 0.1− | 0.0 | | | | |

**2002 ON$_{28}$ = 1998 SU$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.70422 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22913798 | $\omega$ | 113.29171 | | +0.40882529 | | +0.91260386 |
| $a$ | 2.6448720 | $\Omega$ | 180.87041 | | −0.90365097 | | +0.40419268 |
| $e$ | 0.1869340 | $i$ | 15.30197 | | −0.12758055 | | +0.06150176 |
| $P$ | 4.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 23 | 691 | 0.2+ | 0.8− | 1998 09 24 | 691 | 0.3− | 0.1− | 2002 08 04 | 644 | 0.3− | 0.0 |
| 1993 06 23 | 691 | 0.2− | 0.4+ | 1998 09 24 | 691 | 0.3− | 0.1+ | 2002 08 15 | 644 | 0.1+ | 0.1+ |
| 1993 06 23 | 691 | 0.0 | 0.2+ | 2002 07 20 | 644 | 0.3− | 0.7+ | 2002 08 15 | 644 | 0.1+ | 0.2+ |
| 1998 09 18 | 691 | 0.1+ | 0.1− | 2002 07 20 | 644 | 0.6+ | 0.6+ | 2002 08 15 | 644 | 0.3+ | 0.5+ |
| 1998 09 18 | 691 | 0.2+ | 0.1+ | 2002 07 20 | 644 | 0.5+ | 1.0+ | 2002 08 26 | 644 | 0.1− | 0.6− |
| 1998 09 18 | 691 | 0.4+ | 0.1− | 2002 08 04 | 644 | 0.0 | 0.4− | 2002 08 26 | 644 | 0.1− | 0.3− |
| 1998 09 24 | 691 | 0.1− | 0.0 | 2002 08 04 | 644 | 0.3− | 0.3− | 2002 08 26 | 644 | 0.2− | 0.6− |

**2002 OO$_{28}$ = 2005 CF$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.35014 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17588002 | $\omega$ | 14.96376 | | +0.99531387 | | +0.03523366 |
| $a$ | 3.1549444 | $\Omega$ | 342.26292 | | −0.08483355 | | +0.76509519 |
| $e$ | 0.2122150 | $i$ | 17.19253 | | +0.04640653 | | +0.64295252 |
| $P$ | 5.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.0 | 2002 08 13 | 704 | 0.6+ | 0.9− | 2005 02 09 | G96 | 0.1− | 0.4− |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2002 08 13 | 644 | 0.2− | 0.2+ | 2005 02 09 | G96 | 0.1− | 0.2+ |
| 2002 07 16 | 644 | 0.1− | 0.2− | 2002 08 13 | 644 | 0.2− | 0.2+ | 2005 02 09 | G96 | 0.5− | 0.1− |
| 2002 07 16 | 644 | 0.2− | 0.3+ | 2002 08 13 | 644 | 0.1− | 0.2+ | 2005 02 09 | G96 | 0.1− | 0.1− |
| 2002 07 16 | 644 | 0.0 | 0.5+ | 2002 08 30 | 644 | 0.3− | 0.0 | 2005 02 09 | G96 | 0.1+ | 0.2− |
| 2002 08 13 | 704 | 0.3+ | 0.3− | 2002 08 30 | 644 | 0.5− | 0.2+ | 2005 02 09 | G96 | 0.4− | 0.1− |
| 2002 08 13 | 704 | 0.7− | 0.3− | 2002 08 30 | 644 | 0.3− | 0.0 | 2005 02 14 | G98 | 0.6+ | 0.2+ |
| 2002 08 13 | 704 | 1.0+ | 0.2− | 2005 02 09 | G96 | 0.2− | 0.0 | 2005 02 14 | G98 | 0.2+ | 0.1+ |
| 2002 08 13 | 704 | 0.9+ | 0.2+ | 2005 02 09 | G96 | 0.3+ | 0.1+ | 2005 02 14 | G98 | 0.0 | 0.2+ |

**2002 OP$_{28}$ = 2001 BK$_{42}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 176.23534 | | (2000.0) | | | |
| $n$ | 0.40156492 | $\omega$ | 104.27619 | | +0.63615082 | −0.71368387 |
| $a$ | 1.8195565 | $\Omega$ | 302.32842 | | +0.50336710 | +0.67188989 |
| $e$ | 0.1495942 | $i$ | 20.30308 | | +0.58475097 | +0.19803869 |
| $P$ | 2.45 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 25 | 608 | 0.3+ | 0.4− | 2002 07 21 | 644 | 0.1− | 0.1+ | 2002 08 13 | 699 | 0.2+ | 0.4+ |
| 2001 01 25 | 608 | 0.2− | 0.7− | 2002 07 21 | 644 | 0.1− | 0.1− | 2002 08 13 | 699 | 0.1− | 0.1− |
| 2001 01 25 | 608 | 0.6+ | 0.4+ | 2002 08 04 | 644 | 0.2− | 0.4− | 2002 08 25 | 644 | 0.1− | 0.2− |
| 2001 01 27 | 608 | 0.3+ | 0.3+ | 2002 08 04 | 644 | 0.4− | 0.0 | 2002 08 25 | 644 | 0.2− | 0.2− |
| 2001 01 27 | 608 | 0.3− | 0.1+ | 2002 08 04 | 644 | 0.6− | 0.2− | 2002 08 25 | 644 | 0.5− | 0.2− |
| 2001 01 27 | 608 | 0.7− | 0.2+ | 2002 08 13 | 699 | 0.7+ | 0.6+ | | | | |
| 2002 07 21 | 644 | 0.2+ | 0.0 | 2002 08 13 | 699 | 1.1+ | 0.4+ | | | | |

**2002 OQ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.40312 | | (2000.0) | | | |
| $n$ | 0.24625437 | $\omega$ | 216.79509 | | +0.97736823 | −0.06627032 |
| $a$ | 2.5208485 | $\Omega$ | 145.32099 | | +0.08889303 | +0.99041070 |
| $e$ | 0.2833459 | $i$ | 20.67604 | | −0.19196190 | +0.12122249 |
| $P$ | 4.00 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | (0.4+ | 2.5+) | 2002 08 08 | 699 | 0.3− | 0.1+ | 2002 08 29 | 644 | 0.2− | 0.3− |
| 2002 07 21 | 644 | 0.1+ | 0.1+ | 2002 08 08 | 699 | 0.1− | 0.4− | 2006 08 13 | 644 | 0.0 | 0.1+ |
| 2002 07 21 | 644 | 0.1− | 0.2− | 2002 08 14 | 704 | 1.4+ | 0.3− | 2006 08 13 | 644 | 0.2+ | 0.3− |
| 2002 07 23 | 644 | 0.1+ | 0.1− | 2002 08 14 | 704 | 0.8+ | 0.8+ | 2006 08 13 | 644 | 0.1+ | 0.3− |
| 2002 07 23 | 644 | 0.4− | 0.1− | 2002 08 14 | 704 | 0.1− | 0.4− | 2006 08 31 | 704 | 0.3− | 0.3− |
| 2002 07 23 | 644 | 0.1+ | 0.3+ | 2002 08 14 | 704 | 0.7+ | 0.2+ | 2006 08 31 | 704 | 0.7− | 0.4+ |
| 2002 08 08 | 699 | 0.3− | 0.2+ | 2002 08 29 | 644 | 0.2− | 0.2− | 2006 08 31 | 704 | 0.1+ | 0.3+ |
| 2002 08 08 | 699 | 1.3− | 0.0 | 2002 08 29 | 644 | 0.2− | 0.3− | 2006 08 31 | 704 | 0.7+ | 0.5+ |

**2002 PE**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.21781 | | (2000.0) | | | |
| $n$ | 0.25953218 | $\omega$ | 224.82530 | | +0.93267339 | +0.35122343 |
| $a$ | 2.4341196 | $\Omega$ | 114.45091 | | −0.30042654 | +0.88250328 |
| $e$ | 0.2188725 | $i$ | 5.18292 | | −0.19966030 | +0.31277798 |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 25 | 644 | 0.0 | 0.5+ | 2002 08 06 | 735 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.1− |
| 2002 06 25 | 644 | 0.2− | 0.5+ | 2002 08 06 | 735 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.9+ |
| 2002 06 25 | 644 | 0.1− | 0.3+ | 2002 08 07 | 735 | (2.1+ | 0.4+) | 2006 09 18 | 699 | 0.3− | 0.5+ |
| 2002 07 04 | 644 | 0.2+ | 0.5+ | 2002 08 07 | 735 | 0.9+ | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.5+ |
| 2002 07 04 | 644 | 0.5− | 1.1+ | 2002 08 07 | 735 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.9− | 0.4+ |
| 2002 07 04 | 644 | 1.0+ | 0.9+ | 2002 08 11 | 735 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 1.0− |
| 2002 07 14 | 644 | 0.1− | 0.1+ | 2002 08 11 | 735 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.4+ |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2002 08 11 | 735 | 0.6− | 0.4− | 2006 09 19 | 703 | 0.5+ | 0.8− |
| 2002 07 14 | 644 | 0.1+ | 0.3+ | 2002 08 13 | 735 | 0.4− | 0.7+ | 2006 09 26 | 703 | 0.1− | 0.6− |
| 2002 07 28 | 608 | 1.1+ | 1.0− | 2002 08 13 | 735 | 1.0+ | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2002 07 28 | 608 | 0.2+ | 0.8− | 2002 08 13 | 735 | 0.3− | 0.4+ | 2006 09 26 | 703 | 0.6+ | 0.2− |
| 2002 07 28 | 608 | 1.0+ | 1.1− | 2002 08 13 | 704 | 0.4− | 1.1− | 2006 09 26 | 703 | 0.6− | 0.6+ |
| 2002 08 01 | 735 | 0.1− | 1.3+ | 2002 08 13 | 704 | 1.1− | 0.4− | 2006 10 02 | 703 | 0.3+ | 0.2+ |
| 2002 08 01 | 735 | 0.0 | 0.2+ | 2002 08 13 | 704 | 1.4− | 0.9− | 2006 10 02 | 703 | 0.0 | 0.2− |
| 2002 08 01 | 735 | 0.8− | 0.1+ | 2002 08 13 | 704 | 0.6− | 0.9− | 2006 10 02 | 703 | 0.1− | 0.4− |
| 2002 08 02 | 735 | (3.6− | 1.6−) | 2002 08 13 | 704 | 0.4− | 0.7− | 2006 10 02 | 703 | 0.9− | 0.7− |
| 2002 08 02 | 735 | (3.5− | 2.5−) | 2002 08 18 | 644 | 0.6− | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.4+ |
| 2002 08 02 | 735 | (3.5− | 1.6−) | 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2002 08 06 | 735 | 0.5+ | 0.1+ | 2002 08 18 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.5+ | 0.6+ |

**2002 PL$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.76297 | | (2000.0) | | | |
| $n$ | 0.21007635 | $\omega$ | 36.25158 | | +0.78183742 | +0.59491644 |
| $a$ | 2.8025364 | $\Omega$ | 286.18280 | | −0.60793421 | +0.66100562 |
| $e$ | 0.2478807 | $i$ | 11.20133 | | −0.13836994 | +0.45732483 |
| $P$ | 4.69 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 26 | 910 | 0.1+ | 0.5− | 2002 08 30 | 704 | 0.5− | 0.4+ | 2002 10 06 | 704 | 0.2+ | 0.4− |
| 1997 07 26 | 910 | 0.1+ | 0.4− | 2002 08 30 | 704 | 0.3− | 0.7+ | 2002 10 06 | 704 | 0.3− | 0.4− |
| 1997 07 26 | 910 | 0.3+ | 0.2− | 2002 09 03 | 644 | 0.2+ | 0.1+ | 2002 10 06 | 704 | 0.3− | 0.6− |
| 2002 08 04 | 704 | 0.5− | 0.2+ | 2002 09 03 | 644 | 0.2+ | 0.0 | 2002 10 09 | 704 | 0.4+ | 0.3− |
| 2002 08 04 | 704 | 0.8− | 0.8− | 2002 09 03 | 644 | 0.2+ | 0.1+ | 2002 10 09 | 704 | 0.2+ | 0.4+ |
| 2002 08 04 | 704 | 1.5− | 0.4− | 2002 09 11 | 644 | 0.2+ | 0.1+ | 2002 10 09 | 704 | 0.3+ | 0.2+ |
| 2002 08 05 | 704 | 0.1+ | 0.1+ | 2002 09 11 | 644 | 0.1− | 0.1+ | 2002 10 09 | 704 | 0.0 | 0.1+ |
| 2002 08 05 | 704 | 0.2+ | 0.0 | 2002 09 11 | 644 | 0.0 | 0.1+ | 2002 10 09 | 704 | 0.2− | 0.4+ |
| 2002 08 05 | 704 | 1.0+ | 0.0 | 2002 10 03 | 644 | 0.1− | 0.1− | 2002 10 09 | 704 | 0.4− | 0.2− |
| 2002 08 05 | 704 | 0.3+ | 0.7+ | 2002 10 03 | 644 | 0.2− | 0.3− | 2002 10 09 | 704 | 0.8+ | 0.1− |
| 2002 08 13 | 704 | 0.8+ | 0.8+ | 2002 10 03 | 644 | 0.2− | 0.1− | 2002 10 09 | 704 | 0.0 | 0.2+ |
| 2002 08 13 | 704 | 0.0 | 0.3+ | 2002 10 05 | 699 | 0.5− | 0.4+ | 2002 10 09 | 704 | 0.3− | 0.0 |
| 2002 08 13 | 704 | 0.6− | 0.1− | 2002 10 05 | 699 | 1.0+ | 0.8− | 2002 10 09 | 704 | (0.0 | 1.8+) |
| 2002 08 13 | 704 | 0.2+ | 0.3+ | 2002 10 05 | 699 | 0.1− | 0.5− | 2003 12 29 | 691 | 0.3− | 0.2+ |
| 2002 08 13 | 704 | 0.1− | 0.7− | 2002 10 05 | 699 | 0.1+ | 0.9− | 2003 12 29 | 691 | 0.1− | 0.1+ |
| 2002 08 30 | 704 | 0.3+ | 1.0+ | 2002 10 06 | 704 | 0.1− | 0.1+ | 2003 12 29 | 691 | 0.3+ | 0.5− |
| 2002 08 30 | 704 | 0.0 | 0.7+ | 2002 10 06 | 704 | 0.0 | 0.1+ | | | | |

**2002 PR$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.62927 | | (2000.0) | | | |
| $n$ | 0.28529226 | $\omega$ | 87.21371 | | +0.96994855 | +0.13088694 |
| $a$ | 2.2852974 | $\Omega$ | 265.20550 | | −0.20117413 | +0.90556301 |
| $e$ | 0.0845277 | $i$ | 11.87786 | | +0.13685310 | +0.40351486 |
| $P$ | 3.45 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 03 | 644 | 0.2+ | 0.3+ | 2002 08 25 | 644 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2002 08 03 | 644 | 0.1+ | 0.1− | 2002 08 25 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2002 08 03 | 644 | 0.0 | 0.3+ | 2002 10 10 | 645 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2002 08 04 | 644 | 0.2+ | 0.6+ | 2002 10 10 | 645 | 0.1− | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.3+ |
| 2002 08 04 | 644 | 0.1− | 0.4+ | 2002 10 29 | 645 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2002 08 04 | 644 | 0.3− | 0.7+ | 2002 10 29 | 645 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2002 08 25 | 644 | 0.5+ | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.2+ | | | | |

**2002 PJ$_{6}$ = 2006 TO$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 144.01843 | | (2000.0) | | | |
| $n$ | 0.26737658 | $\omega$ | 274.09127 | | −0.83925113 | +0.53540179 |
| $a$ | 2.3862749 | $\Omega$ | 298.30471 | | −0.44627251 | −0.77792930 |
| $e$ | 0.0836532 | $i$ | 6.18655 | | −0.31064189 | −0.32889350 |
| $P$ | 3.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 02 | 599 | 0.0 | 0.2− | 2006 09 27 | 703 | 0.2− | 1.6− | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2002 08 02 | 599 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2002 08 02 | 599 | 0.1− | 0.4− | 2006 09 27 | 703 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2002 08 05 | 599 | (3.2+ | 0.2−) | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2002 08 05 | 599 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2002 08 05 | 599 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.5+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2002 08 06 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2002 08 06 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.4− |
| 2002 08 06 | 644 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.5+ | 0.2− |
| 2002 08 07 | 599 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.3+ |
| 2002 08 07 | 599 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 599 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | | | | | | |
| 2006 09 27 | 703 | 0.1+ | 1.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | | | | | | |

**2002 PG$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.18124 | | (2000.0) | | | |
| $n$ | 0.25783134 | $\omega$ | 126.89953 | | +0.98837212 | −0.14315420 |
| $a$ | 2.4448126 | $\Omega$ | 241.38294 | | +0.11419186 | +0.92140815 |
| $e$ | 0.1615355 | $i$ | 3.34749 | | +0.10040303 | +0.36126708 |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 11 | 691 | 0.2− | 0.6− | 2002 09 22 | 644 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.0 | | |
| 1991 11 11 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.4− | 2006 09 25 | 704 | 1.4+ | 0.2− | | |
| 1991 11 11 | 691 | 0.4+ | 0.6− | 2006 08 29 | 703 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.4+ | 0.7− | | |
| 2002 07 22 | 644 | 0.1− | 0.6− | 2006 08 29 | 703 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.3+ | | |
| 2002 07 22 | 644 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.3+ | 0.3− | 2006 09 25 | 704 | 0.4− | 0.3+ | | |
| 2002 07 22 | 644 | 0.1− | 0.5− | 2006 09 12 | 703 | 0.9− | 0.5− | 2006 09 25 | 699 | 0.1− | 0.9+ | | |
| 2002 08 05 | 644 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.1− | 1.4+ | 2006 09 25 | 699 | 0.4+ | 0.1− | | |
| 2002 08 05 | 644 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.6+ | 0.1+ | 2006 10 01 | 703 | 0.6− | 0.2+ | | |
| 2002 08 05 | 644 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.4− | 0.7− | 2006 10 01 | 703 | 0.0 | 1.1+ | | |
| 2002 08 06 | 644 | 0.2+ | 0.6− | 2006 09 19 | 699 | 0.5− | 0.1+ | 2006 10 01 | 703 | 1.2− | 0.0 | | |
| 2002 08 06 | 644 | 0.3+ | 1.0− | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 10 01 | 703 | 0.6− | 0.5+ | | |
| 2002 08 06 | 644 | 0.3+ | 1.1− | 2006 09 19 | 699 | (0.2− | 1.5+) | 2006 10 10 | 644 | 0.2+ | 0.3+ | | |
| 2002 08 07 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.5− | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 2002 08 07 | 644 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.2+ | | |
| 2002 08 07 | 644 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.3+ | | |
| 2002 08 08 | 699 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | | |
| 2002 08 08 | 699 | 0.8− | 0.6+ | 2006 09 19 | 699 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.2+ | | |
| 2002 08 08 | 699 | 0.9+ | 0.3− | 2006 09 20 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2002 08 08 | 699 | 0.1− | 0.0 | 2006 09 20 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2002 08 16 | 644 | 0.2− | 0.2− | 2006 09 20 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.4+ | | |
| 2002 08 16 | 644 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.0 | 0.1− | | |
| 2002 08 16 | 644 | 0.4− | 0.1− | 2006 09 20 | 703 | 0.9− | 0.3− | 2006 10 16 | 703 | 0.5+ | 1.4− | | |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 1.0− | 0.6− | 2006 10 16 | 703 | 0.1− | 0.3− | | |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 09 22 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.7− | 0.6− | | |
| 2002 08 26 | 644 | 0.0 | 0.1− | 2006 09 22 | 703 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.1− | 0.3+ | | |
| 2002 09 13 | 644 | 0.1− | 0.7− | 2006 09 22 | 703 | 0.9− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.1+ | | |
| 2002 09 13 | 644 | 0.1− | 0.8− | 2006 09 22 | 703 | 0.4− | 0.6− | 2006 10 22 | 691 | 0.0 | 0.5+ | | |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2006 09 24 | 106 | 1.5+ | 0.9− | 2006 11 13 | 104 | 0.4− | 0.1+ | | |
| 2002 09 14 | 644 | 0.1+ | 0.0 | 2006 09 24 | 106 | 0.4− | 0.0 | 2006 11 13 | 104 | 0.9− | 0.9+ | | |
| 2002 09 14 | 644 | 0.4+ | 0.1− | 2006 09 24 | 106 | 0.5− | 0.2+ | 2006 11 13 | 104 | 0.3+ | 0.4+ | | |
| 2002 09 14 | 644 | 0.2− | 0.1− | 2006 09 24 | 106 | 0.3− | 0.0 | 2006 11 13 | 104 | 0.7− | 1.0+ | | |
| 2002 09 22 | 644 | 1.2+ | 0.3− | 2006 09 25 | 704 | 0.4+ | 0.4+ | | | | | | |
| 2002 09 22 | 644 | 0.2+ | 0.5− | 2006 09 25 | 704 | 0.1− | 1.0+ | | | | | | |

**2002 PF$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.27086 | | (2000.0) | | | |
| $n$ | 0.26992762 | $\omega$ | 26.87939 | | +0.79803798 | +0.59820723 |
| $a$ | 2.3712163 | $\Omega$ | 296.19071 | | −0.56642715 | +0.70348128 |
| $e$ | 0.1725904 | $i$ | 4.64630 | | −0.20565912 | +0.38374757 |
| $P$ | 3.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 12 | 644 | 0.3− | 0.1+ | 2002 08 06 | 644 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.1+ | | |
| 2002 06 12 | 644 | 0.1+ | 0.0 | 2002 08 06 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.5− | | |
| 2002 06 12 | 644 | 0.1− | 0.0 | 2002 08 06 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 1.1− | | |
| 2002 06 17 | 644 | 0.3− | 0.5+ | 2002 08 07 | 644 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.6− | | |
| 2002 06 17 | 644 | 0.6− | 0.8− | 2002 08 07 | 644 | 0.5+ | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.0 | | |
| 2002 06 17 | 644 | 0.7+ | 0.2− | 2002 08 07 | 644 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.0 | | |
| 2002 07 04 | 644 | 0.7+ | 0.6− | 2002 08 13 | 644 | 0.3− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 2002 07 04 | 644 | 0.5+ | 0.4− | 2002 08 13 | 644 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.4− | 0.3− | | |
| 2002 07 04 | 644 | 0.1+ | 0.1+ | 2002 08 13 | 644 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.4+ | | |
| 2002 07 08 | 644 | 0.0 | 0.0 | 2002 08 28 | 644 | 0.4− | 0.1− | 2006 10 17 | 703 | 1.2+ | 0.8− | | |
| 2002 07 08 | 644 | 0.1− | 0.1+ | 2002 08 28 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | (0.0 | 2.2+) | | |
| 2002 07 14 | 644 | 0.2+ | 0.1− | 2002 08 28 | 644 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.8+ | | |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.8− | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2002 07 21 | 644 | 0.0 | 0.4− | 2006 09 20 | 699 | 0.0 | 1.0+ | 2006 10 22 | 644 | 0.3− | 0.2+ | | |
| 2002 07 21 | 644 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 07 21 | 644 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.2− | 0.5+ | | | | | | |

**2002 PH$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.92815 | | (2000.0) | | | |
| $n$ | 0.26868128 | $\omega$ | 343.05805 | | +0.00937612 | +0.99033493 |
| $a$ | 2.3785436 | $\Omega$ | 287.31083 | | −0.89982194 | −0.05200430 |
| $e$ | 0.0824445 | $i$ | 8.33407 | | −0.43615659 | +0.12857793 |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 08 07 | 644 | 0.0 | 0.9+ | 2006 09 15 | 704 | 0.1+ | 0.1− | | |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2002 08 07 | 644 | 0.2− | 0.6+ | 2006 09 15 | 704 | 0.5+ | 0.1− | | |
| 2002 06 16 | 644 | 0.2− | 0.1+ | 2002 08 07 | 644 | 0.2− | 0.8+ | 2006 09 15 | 704 | 0.4+ | 0.7+ | | |
| 2002 06 16 | 644 | 0.2− | 0.5− | 2002 08 15 | 291 | 0.1+ | 0.0 | 2006 09 16 | G92 | 1.5+ | 0.3− | | |
| 2002 06 16 | 644 | 0.0 | 0.3− | 2002 08 15 | 291 | 0.1+ | 0.3+ | 2006 09 16 | G92 | 0.2+ | 0.6+ | | |
| 2002 07 09 | 644 | 0.2+ | 0.2+ | 2002 08 15 | 291 | 0.0 | 0.2+ | 2006 09 16 | G92 | 0.3+ | 0.4+ | | |
| 2002 07 09 | 644 | 0.3− | 0.3+ | 2005 04 06 | G96 | 0.2− | 0.2− | 2006 09 16 | 644 | 0.2+ | 0.5+ | | |
| 2002 07 09 | 644 | 0.1− | 0.2+ | 2005 04 06 | G96 | 0.1− | 0.1− | 2006 09 16 | 644 | 0.3− | 0.2− | | |
| 2002 07 22 | 644 | 0.1+ | 0.4− | 2005 04 06 | G96 | 0.1+ | 0.2− | 2006 09 16 | 644 | 0.0 | 0.2+ | | |
| 2002 07 22 | 644 | 0.1+ | 0.1− | 2005 04 06 | G96 | 0.1+ | 0.2− | 2006 09 22 | 703 | (1.5+ | 1.1+) | | |
| 2002 07 22 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 1.4− | 0.0 | 2006 09 22 | 703 | 0.9+ | 0.5− | | |
| 2002 08 06 | 644 | 0.0 | 0.4− | 2006 09 14 | 703 | 1.4− | 0.7+ | 2006 09 22 | 703 | 0.8− | 0.2− | | |
| 2002 08 06 | 644 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.4− | 0.5+ | 2006 09 22 | 703 | 1.5− | 1.0− | | |
| 2002 08 06 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.8+ | 0.1− | | | | | | |

**2002 PR$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 33.57314 | | (2000.0) | | | |
| $n$ | 0.26846522 | $\omega$ | 29.82884 | | +0.80569856 | +0.59130351 |
| $a$ | 2.3798196 | $\Omega$ | 293.88079 | | −0.55069782 | +0.72615540 |
| $e$ | 0.1894367 | $i$ | 2.18016 | | −0.21813242 | +0.35079695 |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 644 | 0.0 | 0.3+ | 2002 08 28 | 644 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2− | | |
| 2002 07 09 | 644 | 0.1+ | 0.4+ | 2002 08 28 | 644 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.1− | | |
| 2002 07 09 | 644 | 0.7− | 0.1+ | 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.1− | | |
| 2002 07 14 | 644 | 0.4+ | 0.2+ | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.2− | | |
| 2002 07 14 | 644 | 0.2+ | 0.0 | 2003 12 29 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.4− | 0.1− | | |
| 2002 07 22 | 644 | 0.5− | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.1− | | |
| 2002 07 22 | 644 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 08 06 | 644 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 2002 08 06 | 644 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 1.3− | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 2002 08 06 | 644 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.8+ | 1.0− | 2006 10 17 | 703 | 0.7+ | 0.2+ | | |
| 2002 08 07 | 644 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.2+ | | |
| 2002 08 07 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.6+ | | |
| 2002 08 07 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2002 08 08 | 644 | 0.1+ | 0.4− | 2006 09 19 | 703 | (1.7+ | 1.1−) | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2002 08 08 | 644 | 0.6− | 0.2− | 2006 09 19 | 703 | 0.8− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2002 08 08 | 644 | 0.3+ | 0.2− | 2006 09 22 | 224 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.0 | | |
| 2002 08 17 | 644 | 1.1+ | 0.3+ | 2006 09 22 | 224 | 0.1− | 1.2+ | 2006 11 06 | 644 | 0.1+ | 0.5+ | | |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2006 09 22 | 224 | 0.0 | 0.4+ | 2006 11 06 | 644 | 0.0 | 0.0 | | |

**2002 PL$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.94400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28821872 | $\omega$ | 28.43714 | | +0.82683406 | | +0.56107408 |
| $a$ | 2.2698018 | $\Omega$ | 297.37989 | | −0.52404708 | | +0.74315730 |
| $e$ | 0.1800471 | $i$ | 2.53401 | | −0.20425497 | | +0.36457250 |
| $P$ | 3.42 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.3− | 0.4− | 2002 08 06 | 644 | 0.1− | 0.1+ | 2002 08 28 | 644 | 0.1+ | 0.1− |
| 2002 07 22 | 644 | 0.3+ | 0.5− | 2002 08 06 | 644 | 0.3+ | 0.1+ | 2002 08 28 | 644 | 0.2− | 0.3− |
| 2002 07 22 | 644 | 0.4+ | 0.3− | 2002 08 06 | 644 | 0.4+ | 0.0 | 2002 08 28 | 644 | 0.0 | 0.2− |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2002 08 07 | 644 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 07 22 | 644 | 0.0 | 0.6+ | 2002 08 07 | 644 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2002 07 22 | 644 | 0.3− | 0.8+ | 2002 08 07 | 644 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.6− |
| 2002 07 28 | 608 | 0.3− | 0.3− | 2002 08 15 | 291 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 07 28 | 608 | 0.1− | 0.9− | 2002 08 15 | 291 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.5+ |
| 2002 07 28 | 608 | 0.1− | 0.7− | 2002 08 15 | 291 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.2− |

**2002 PC$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.64982 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25674343 | $\omega$ | 141.19472 | | +0.94671106 | | +0.32175209 |
| $a$ | 2.4517141 | $\Omega$ | 200.05107 | | −0.30511763 | | +0.88137754 |
| $e$ | 0.2197330 | $i$ | 2.44406 | | −0.10315720 | | +0.34590349 |
| $P$ | 3.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.3− | 0.6+ | 2006 09 28 | 691 | 0.2+ | 0.1− |
| 2002 07 22 | 644 | 0.0 | 0.3+ | 2006 09 17 | 704 | 1.3+ | 0.6+ | 2006 09 28 | 691 | 0.4+ | 0.0 |
| 2002 07 22 | 644 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.6− | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2002 08 06 | 644 | 0.1− | 0.5+ | 2006 09 17 | 703 | 1.1− | 0.2− | 2006 09 29 | 704 | 0.1− | 0.5+ |
| 2002 08 06 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.4− | 0.3− |
| 2002 08 06 | 644 | 0.5+ | 0.5+ | 2006 09 17 | 703 | 0.7− | 0.6− | 2006 09 29 | 704 | 0.9− | 0.4− |
| 2002 08 07 | 644 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.2− | 0.2+ |
| 2002 08 07 | 644 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.7+ | 2006 09 29 | 704 | 0.0 | 0.9+ |
| 2002 08 07 | 644 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2002 08 17 | 644 | 0.1− | 0.7− | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 08 17 | 644 | 0.3− | 0.7− | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 08 17 | 644 | 0.1+ | 0.6− | 2006 09 20 | 704 | 0.2− | 1.4+ | 2006 10 20 | G96 | 0.4+ | 0.3+ |
| 2002 08 27 | 644 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.5− | 0.6+ | 2006 10 20 | G96 | 0.4+ | 0.2+ |
| 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2002 08 27 | 644 | 0.3+ | 0.3− | 2006 09 20 | 704 | 0.6− | 1.0− | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 1.4− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2006 08 21 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.9+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3+ |
| 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.7+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2006 09 12 | 703 | 0.8− | 0.6− | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2006 09 12 | 703 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 09 12 | 703 | 0.6+ | 0.5− | 2006 09 27 | 704 | 1.0− | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.5− |
| 2006 09 12 | 703 | 0.4+ | 0.6− | 2006 09 27 | 704 | 0.3− | 0.6+ | 2006 11 11 | G96 | 0.7− | 0.7− |
| 2006 09 17 | 704 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2006 09 17 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.3− | 0.4+ | | | | |

**2002 PO$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.33683 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26212787 | $\omega$ | 184.08301 | | +0.90007858 | | +0.43481417 |
| $a$ | 2.4180239 | $\Omega$ | 150.09286 | | −0.39815336 | | +0.84702843 |
| $e$ | 0.2236453 | $i$ | 3.24223 | | −0.17700977 | | +0.30574415 |
| $P$ | 3.76 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2002 08 13 | 291 | 0.7− | 0.2+ | 2002 08 27 | 644 | 0.2+ | 0.2− |
| 2002 07 22 | 644 | 0.4− | 0.2− | 2002 08 13 | 291 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1− |
| 2002 08 06 | 644 | 0.3+ | 0.1+ | 2002 08 13 | 291 | 0.6− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.4− |
| 2002 08 06 | 644 | 1.0+ | 0.5+ | 2002 08 16 | 291 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.4− |
| 2002 08 06 | 644 | 0.3+ | 0.1+ | 2002 08 16 | 291 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2002 08 07 | 644 | 0.3+ | 0.2+ | 2002 08 16 | 291 | 0.2+ | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 08 07 | 644 | 0.8+ | 0.7+ | 2002 08 17 | 644 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2002 08 07 | 644 | 0.3+ | 0.0 | 2002 08 17 | 644 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 08 11 | 644 | 0.5+ | 0.0 | 2002 08 17 | 644 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2002 08 11 | 644 | 0.6+ | 0.4− | 2002 08 27 | 644 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2002 08 11 | 644 | 0.4+ | 0.2− | 2002 08 27 | 644 | 0.1+ | 0.1− | | | | |

**2002 PQ$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.32385 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26965683 | $\omega$ | 324.35102 | | +0.08678488 | | +0.99304192 |
| $a$ | 2.3728035 | $\Omega$ | 310.48766 | | −0.88804167 | | +0.04090124 |
| $e$ | 0.0989477 | $i$ | 6.00766 | | −0.45149793 | | +0.11043023 |
| $P$ | 3.66 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 08 16 | 291 | 0.2+ | 0.5− | 2006 09 30 | 683 | (1.8+ | 1.4+) |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 08 27 | 644 | 0.7− | 0.1+ | 2006 09 30 | 683 | 0.1− | 0.9+ |
| 2002 07 22 | 644 | 0.3+ | 0.6+ | 2002 08 27 | 644 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.5− | 0.5− |
| 2002 07 22 | 644 | 0.0 | 0.6+ | 2002 08 27 | 644 | 0.6− | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2002 07 22 | 644 | 0.1− | 0.4+ | 2002 09 04 | 644 | 0.1− | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2002 09 04 | 644 | 0.2− | 0.8+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2002 08 06 | 644 | 0.2− | 0.2+ | 2002 09 04 | 644 | 0.3− | 0.7+ | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2002 08 06 | 644 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.4− | 1.5+ | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2002 08 07 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 08 07 | 644 | 0.4+ | 0.5+ | 2006 09 16 | 703 | 0.4+ | 0.5− | 2006 10 12 | 644 | 0.5+ | 0.3+ |
| 2002 08 07 | 644 | 0.1+ | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2002 08 08 | 644 | 0.3+ | 0.2+ | 2006 09 25 | 291 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2002 08 08 | 644 | 0.2+ | 0.0 | 2006 09 25 | 291 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2002 08 08 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 291 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2002 08 12 | 608 | 0.0 | 0.4− | 2006 09 27 | 703 | 0.4+ | 0.4− | 2006 10 17 | 703 | (1.1+ | 1.7+) |
| 2002 08 12 | 608 | 0.7− | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.8− | 0.8− |
| 2002 08 12 | 608 | 0.5− | 0.1− | 2006 09 27 | 703 | 0.4− | 0.4− | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2002 08 16 | 291 | 0.0 | 0.2− | 2006 09 27 | 703 | 0.9− | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 08 16 | 291 | 0.0 | 0.5− | 2006 09 30 | 683 | 1.0− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.4− |

**2002 PB$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.18392 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25831678 | $\omega$ | 168.09784 | | +0.68408766 | | +0.72461591 |
| $a$ | 2.4417487 | $\Omega$ | 144.96746 | | −0.68056549 | | +0.67523567 |
| $e$ | 0.2087911 | $i$ | 8.35400 | | −0.26240175 | | +0.13779903 |
| $P$ | 3.82 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 26 | 644 | 1.2− | 1.1+ | 2002 08 12 | 608 | 0.4+ | 0.8− | 2006 08 29 | 691 | 0.1− | 0.1− |
| 2002 06 26 | 644 | 0.4+ | 0.4− | 2002 08 17 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | (2.9+ | 1.0−) |
| 2002 07 28 | 644 | 0.2− | 0.0 | 2002 08 17 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | (0.7+ | 2.1+) |
| 2002 08 06 | 644 | 0.0 | 0.6+ | 2002 08 24 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 1.0+ | 0.7− |
| 2002 08 06 | 644 | 0.1− | 0.6+ | 2002 08 27 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.6+ |
| 2002 08 06 | 644 | 0.0 | 0.5+ | 2002 08 27 | 644 | 0.4− | 0.0 | 2006 09 25 | 703 | 0.3− | 0.1− |
| 2002 08 07 | 644 | 0.8+ | 0.8+ | 2002 09 15 | 644 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.9− | 0.3− |
| 2002 08 07 | 644 | 0.5+ | 0.2+ | 2002 09 15 | 644 | 0.9− | 1.1− | 2006 09 25 | 703 | 0.5− | 0.7+ |
| 2002 08 07 | 644 | 0.6+ | 0.1+ | 2002 09 15 | 644 | 0.6− | 0.2− | 2006 09 25 | 703 | 0.5+ | 0.1+ |
| 2002 08 12 | 608 | 0.5+ | 0.7− | 2006 08 29 | 691 | 0.1− | 0.1+ | | | | |
| 2002 08 12 | 608 | 0.2+ | 1.6− | 2006 08 29 | 691 | 0.1− | 0.1+ | | | | |

**2002 PD$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.59986 | | (2000.0) | | | |
| $n$ | 0.27194223 | $\omega$ | 205.01766 | | +0.94648989 | −0.32270420 |
| $a$ | 2.3594907 | $\Omega$ | 173.80408 | | +0.30246314 | +0.88226511 |
| $e$ | 0.2291158 | $i$ | 2.30767 | | +0.11257413 | +0.34273937 |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.5− | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2002 07 22 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.8− | 2006 11 17 | 704 | 0.6+ | 0.6+ |
| 2002 07 22 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.8− | 2006 11 18 | 704 | (1.9− | 1.4−) |
| 2002 08 06 | 644 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2002 08 06 | 644 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 18 | 704 | (1.1+ | 2.2+) |
| 2002 08 06 | 644 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.8+ |
| 2002 08 07 | 644 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2002 08 07 | 644 | 0.5+ | 0.4+ | 2006 11 02 | 703 | 0.3+ | 0.1− | 2006 11 20 | 704 | 1.1+ | 0.6+ |
| 2002 08 07 | 644 | 0.5+ | 0.2− | 2006 11 02 | 703 | 0.8+ | 0.3− | 2006 11 20 | 704 | 0.0 | 0.9+ |
| 2002 08 12 | 608 | 0.2− | 0.8− | 2006 11 02 | 703 | (2.7− | 0.3−) | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2002 08 12 | 608 | 0.4− | 0.6− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 08 12 | 608 | 0.4− | 0.7− | 2006 11 09 | 644 | 0.4− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2002 08 17 | 644 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2002 08 17 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2002 08 27 | 644 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.4+ | 1.1+ |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 1.3− | 0.1+ |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.5− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 17 | 704 | 0.2+ | 0.7− | 2006 11 29 | 704 | 0.2+ | 0.4+ |
| 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.4+ | 2006 12 01 | 691 | 0.0 | 0.5− |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.2+ | 0.5− | 2006 12 01 | 691 | 0.2+ | 0.3− |
| 2006 10 19 | G96 | 0.2+ | 0.6− | 2006 11 17 | 704 | 0.0 | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.0 |

**2002 PS$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.92800 | | (2000.0) | | | |
| $n$ | 0.25798583 | $\omega$ | 32.12995 | | +0.80443165 | +0.59261417 |
| $a$ | 2.4438365 | $\Omega$ | 291.47230 | | −0.55396543 | +0.72330137 |
| $e$ | 0.1784481 | $i$ | 2.53801 | | −0.21450413 | +0.35446238 |
| $P$ | 3.82 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.1+ | 0.0 | 2002 08 27 | 644 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.8− | 1.1− |
| 2002 07 22 | 644 | 0.3+ | 0.2+ | 2002 08 27 | 644 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.5− |
| 2002 07 22 | 644 | 0.1+ | 0.2− | 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.3− |
| 2002 08 06 | 644 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.3− | 2006 09 14 | 644 | 0.5+ | 0.1− |
| 2002 08 06 | 644 | 0.3+ | 0.4+ | 2006 08 21 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.4− |
| 2002 08 06 | 644 | 0.3+ | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 20 | 691 | 0.1+ | 0.2+ |
| 2002 08 07 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 1.4+ | 2006 09 20 | 691 | 0.1− | 0.3+ |
| 2002 08 07 | 644 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.9+ | 0.6− | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 2002 08 07 | 644 | 0.0 | 0.4− | 2006 08 28 | 703 | (0.9− | 1.7−) | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 08 12 | 608 | 0.1+ | 0.9− | 2006 08 28 | 703 | 1.1− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 08 12 | 608 | 0.6− | 0.3− | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2002 08 12 | 608 | 0.2− | 1.1− | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2002 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.7− |
| 2002 08 17 | 644 | 0.3+ | 0.3+ | 2006 09 12 | 703 | (1.9− | 1.7−) | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2002 08 17 | 644 | 0.3− | 0.2+ | 2006 09 12 | 703 | (0.3− | 1.5−) | 2006 10 23 | G96 | 0.2+ | 0.4− |

**2002 PD$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.68065 | | (2000.0) | | | |
| $n$ | 0.28638654 | $\omega$ | 187.67305 | | +0.86674649 | +0.49464390 |
| $a$ | 2.2794723 | $\Omega$ | 142.46120 | | −0.45184665 | +0.83298111 |
| $e$ | 0.1392088 | $i$ | 6.01604 | | −0.21115190 | +0.24793122 |
| $P$ | 3.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.4− | 0.5− | 2002 08 29 | 291 | 0.5+ | 0.1− | 2006 11 22 | G96 | 0.4− | 0.1+ |
| 2002 07 22 | 644 | 0.2− | 0.4− | 2002 08 29 | 644 | 0.2+ | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2002 07 22 | 644 | 0.2− | 0.5− | 2002 08 29 | 644 | 0.3+ | 0.7+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2002 08 29 | 644 | 0.2+ | 1.2+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2002 08 06 | 644 | 0.1− | 0.2− | 2005 06 09 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.3− | 0.1+ |
| 2002 08 06 | 644 | 0.0 | 0.1+ | 2005 06 09 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2002 08 07 | 644 | 0.3− | 0.2− | 2005 06 09 | 691 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2002 08 07 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2002 08 07 | 644 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2002 08 08 | 644 | 0.6+ | 1.0+ | 2006 11 21 | G96 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2002 08 08 | 644 | 0.0 | 0.9+ | 2006 11 21 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2002 08 08 | 644 | 0.2− | 1.0+ | 2006 11 22 | G96 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2002 08 12 | 608 | 0.1− | 1.1− | 2006 11 22 | G96 | 0.5+ | 0.2− | 2006 11 23 | G96 | 1.0+ | 0.2− |
| 2002 08 12 | 608 | 0.4+ | 0.6− | 2006 11 22 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.2+ |
| 2002 08 12 | 608 | 0.4+ | 0.7− | 2006 11 22 | G96 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.3+ |
| 2002 08 13 | 291 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3+ |
| 2002 08 13 | 291 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 08 13 | 291 | 0.5− | 0.0 | 2006 11 22 | G96 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2002 08 17 | 644 | (1.1− | 1.6−) | 2006 11 22 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.1− | 2006 11 26 | 291 | 0.2− | 0.0 |
| 2002 08 29 | 291 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.1− | 2006 11 26 | 291 | 0.1+ | 0.0 |
| 2002 08 29 | 291 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.1− | 2006 11 26 | 291 | 0.3− | 0.1+ |

**2002 PQ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.82643 | | (2000.0) | | | |
| $n$ | 0.27582582 | $\omega$ | 176.01369 | | +0.85073375 | +0.52495679 |
| $a$ | 2.3372909 | $\Omega$ | 152.27240 | | −0.48375385 | +0.80134404 |
| $e$ | 0.2401552 | $i$ | 3.19505 | | −0.20550988 | +0.28682415 |
| $P$ | 3.57 | $H$ | 18.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.3+ | 0.1+ | 2002 08 08 | 699 | 1.5− | 0.5− | 2002 08 30 | 291 | 0.2+ | 0.1− |
| 2002 07 22 | 644 | 0.0 | 0.2− | 2002 08 08 | 699 | 0.7+ | 0.3− | 2002 08 30 | 291 | 0.1+ | 0.2− |
| 2002 07 22 | 644 | 0.1+ | 0.3+ | 2002 08 08 | 699 | 0.9− | 0.0 | 2006 11 16 | 691 | 0.3− | 0.1− |
| 2002 08 06 | 644 | 0.0 | 0.0 | 2002 08 17 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.5− | 0.0 |
| 2002 08 06 | 644 | 0.2+ | 0.2− | 2002 08 17 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.4− |
| 2002 08 06 | 644 | 0.1− | 0.2+ | 2002 08 17 | 644 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.6+ | 0.1+ |
| 2002 08 07 | 644 | 0.1+ | 0.2− | 2002 08 27 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2002 08 07 | 644 | 0.0 | 0.1+ | 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 08 07 | 644 | 0.3+ | 0.3+ | 2002 08 27 | 644 | 0.0 | 0.4− | | | | |
| 2002 08 08 | 699 | 0.4+ | 0.5− | 2002 08 30 | 291 | 0.2− | 0.2+ | | | | |

**2002 PA$_{28}$ = 2006 SP$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.15352 | | (2000.0) | | | |
| $n$ | 0.26963716 | $\omega$ | 111.35764 | | +0.89553064 | −0.43856247 |
| $a$ | 2.3729189 | $\Omega$ | 274.72093 | | +0.37509206 | +0.83511662 |
| $e$ | 0.2418320 | $i$ | 4.33997 | | +0.23943855 | +0.33202891 |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.5+ | 1.0+ | 2006 09 25 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 704 | 0.9− | 0.4− |
| 2002 08 06 | 644 | 0.1+ | 0.8+ | 2006 10 17 | A50 | 0.1− | 0.9+ | 2006 11 16 | 704 | 0.2− | 1.3+ |
| 2002 08 06 | 644 | 0.2+ | 0.8+ | 2006 10 17 | A50 | 0.3− | 0.7+ | 2006 11 16 | 704 | 0.9+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.4+ | 0.2+ | 2006 10 17 | A50 | 0.5− | 0.5+ | 2006 11 16 | 704 | (1.7− | 1.8+) |
| 2002 08 07 | 644 | 0.2+ | 0.3− | 2006 10 17 | A50 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2002 08 07 | 644 | 0.3+ | 0.1− | 2006 10 17 | A50 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.5+ | 0.1− |
| 2002 08 14 | 704 | (1.6− | 0.7−) | 2006 10 18 | A50 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2002 08 14 | 704 | 1.4− | 0.3+ | 2006 10 18 | A50 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.3− | 0.8+ |
| 2002 08 14 | 704 | 0.5− | 0.2+ | 2006 10 18 | A50 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.7+ | 0.2+ |
| 2002 08 14 | 704 | 0.1− | 0.7− | 2006 10 18 | A50 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2002 08 14 | 704 | (1.7− | 1.2−) | 2006 10 19 | 703 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2002 08 15 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 08 15 | 699 | 0.8+ | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2002 08 15 | 699 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.9− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 08 15 | 699 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2002 08 16 | 644 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2002 08 16 | 644 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2002 09 02 | 608 | 0.8− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.3+ |
| 2002 09 02 | 608 | 1.2− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2002 09 02 | 608 | 0.7− | 0.6− | 2006 11 13 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.0 | 1.9+ |
| 2002 09 05 | 699 | 0.4+ | 1.0− | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 1.0+ | 0.6− |
| 2002 09 05 | 699 | 0.5+ | 0.7− | 2006 11 13 | 644 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.2+ | 1.0− |
| 2002 09 05 | 699 | 0.9+ | 0.8− | 2006 11 14 | 703 | 0.2− | 0.6− | 2006 11 28 | 704 | 1.5+ | 2.8− |
| 2002 09 05 | 699 | 0.3− | 0.3− | 2006 11 14 | 703 | 1.0+ | 0.1− | 2006 11 28 | 704 | 0.8− | 0.6− |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.4+ | 2006 12 01 | 691 | 0.3+ | 0.3+ |
| 2002 10 04 | 704 | 0.6+ | 1.0+ | 2006 11 14 | 703 | 0.2+ | 0.4− | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.4+ |
| 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 1.0− | 1.2− |
| 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 11 15 | 691 | 0.4− | 0.0 | 2006 12 01 | 704 | 0.8− | 0.2− |
| 2006 09 18 | 703 | 0.8− | 0.3− | 2006 11 15 | 704 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.0 | 1.7− |
| 2006 09 18 | 703 | 0.2− | 1.0− | 2006 11 15 | 704 | 0.0 | 0.0 | 2006 12 01 | 704 | 1.5− | 1.5− |
| 2006 09 25 | 704 | 1.3+ | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.1+ | 2006 12 01 | 704 | 1.7− | 0.5− |
| 2006 09 25 | 704 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.2− | 0.2+ | | | | |

**2002 PP$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.45267 | | (2000.0) | | | |
| $n$ | 0.26422368 | $\omega$ | 135.85060 | | +0.94640808 | −0.31903500 |
| $a$ | 2.4052205 | $\Omega$ | 242.81569 | | +0.27845038 | +0.88487422 |
| $e$ | 0.1830899 | $i$ | 3.24050 | | +0.16363717 | +0.33943229 |
| $P$ | 3.73 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.6+ | 0.9+ | 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 07 22 | 644 | 0.4+ | 0.8+ | 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 683 | 1.4+ | 0.7− |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 08 06 | 644 | 0.4− | 0.1− | 2006 09 17 | 691 | 0.3+ | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 08 06 | 644 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2002 08 06 | 644 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 07 | 644 | 0.1+ | 0.6− | 2006 09 18 | 703 | 0.7+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 08 07 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 10 16 | 683 | 0.7− | 1.0+ |
| 2002 08 07 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 10 16 | 683 | (0.1− | 2.4+) |
| 2002 08 08 | 699 | (2.1+ | 0.5+) | 2006 09 18 | 699 | 0.5+ | 0.8− | 2006 10 17 | 703 | 0.4+ | 0.5− |
| 2002 08 08 | 699 | (1.7+ | 0.6+) | 2006 09 18 | 699 | 0.1− | 0.5− | 2006 10 17 | 703 | 0.6− | 1.5− |
| 2002 08 08 | 699 | 0.9+ | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.6+ |
| 2002 08 08 | 699 | (0.3− | 2.0+) | 2006 09 18 | 699 | 0.2+ | 0.5− | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2002 08 16 | 644 | 0.1− | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 08 16 | 644 | 1.0− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.7+ |
| 2002 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 09 14 | 644 | 0.6− | 0.7+ | 2006 09 29 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.7− | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.9− | 0.1+ | 2006 10 11 | 683 | (0.6+ | 1.8−) | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 683 | (2.7+ | 0.2−) | 2006 10 21 | 644 | 0.1− | 0.1+ |

**2002 PS$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.80464 | | (2000.0) | | | |
| $n$ | 0.26600976 | $\omega$ | 169.40605 | | +0.88770166 | +0.45923420 |
| $a$ | 2.3944421 | $\Omega$ | 163.13672 | | −0.43031182 | +0.85301972 |
| $e$ | 0.1420184 | $i$ | 6.53412 | | −0.16376047 | +0.24791391 |
| $P$ | 3.71 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2002 08 08 | 699 | 1.2+ | 0.4− | 2002 08 27 | 644 | 0.7− | 0.2− |
| 2001 04 16 | 645 | 0.1+ | 0.1− | 2002 08 08 | 699 | 0.7+ | 0.9− | 2002 08 27 | 644 | 0.6− | 0.6− |
| 2002 07 12 | 644 | 0.0 | 0.0 | 2002 08 08 | 699 | (2.0+ | 0.4−) | 2002 08 27 | 644 | 0.1− | 0.5− |
| 2002 07 12 | 644 | 0.4− | 0.3− | 2002 08 08 | 699 | 0.4+ | 0.5+ | 2002 09 04 | 644 | 0.3− | 0.0 |
| 2002 07 22 | 644 | 0.8− | 0.2+ | 2002 08 15 | 644 | 0.0 | 0.2− | 2002 09 04 | 644 | 0.1− | 0.1+ |
| 2002 07 22 | 644 | 0.1− | 0.1+ | 2002 08 15 | 644 | 0.6+ | 0.1− | 2006 09 29 | 699 | 0.0 | 0.7− |
| 2002 07 22 | 644 | 0.9− | 0.2+ | 2002 08 15 | 644 | 0.4+ | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.3− |
| 2002 08 06 | 644 | 0.4+ | 0.6+ | 2002 08 17 | 644 | 0.3+ | 0.8+ | 2006 09 29 | 699 | 0.5− | 0.6+ |
| 2002 08 06 | 644 | 0.2+ | 0.6+ | 2002 08 17 | 644 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.7+ | 1.1+ |
| 2002 08 06 | 644 | 0.1+ | 0.6+ | 2002 08 17 | 644 | 0.1− | 1.1+ | 2006 10 04 | G96 | 0.0 | 0.0 |
| 2002 08 07 | 644 | 0.3− | 1.1− | 2002 08 17 | 644 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.1+ |
| 2002 08 07 | 644 | 0.5− | 1.0− | 2002 08 17 | 644 | 0.5+ | 1.3+ | 2006 10 04 | G96 | 0.6− | 0.3− |
| 2002 08 07 | 644 | 0.0 | 1.0− | 2002 08 17 | 644 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.2+ |

**2002 PC$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.86729 | | (2000.0) | | | |
| $n$ | 0.26798453 | $\omega$ | 56.95477 | | +0.92747630 | +0.37380657 |
| $a$ | 2.3826645 | $\Omega$ | 281.09369 | | −0.34553032 | +0.84930277 |
| $e$ | 0.2011004 | $i$ | 0.43832 | | −0.14281635 | +0.37276462 |
| $P$ | 3.68 | $H$ | 18.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.2+ | 0.4− | 2002 08 27 | 644 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2002 07 29 | 644 | 0.3+ | 0.1− | 2002 08 27 | 644 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2002 07 29 | 644 | 0.1+ | 0.3− | 2002 09 04 | 644 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2002 08 06 | 644 | 0.0 | 0.0 | 2002 09 04 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2002 08 06 | 644 | 0.0 | 0.1+ | 2002 09 04 | 644 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 2002 08 06 | 644 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2002 08 07 | 644 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.5+ | 0.8+ | 2006 10 29 | 691 | 0.3+ | 0.2− |
| 2002 08 07 | 644 | 0.6− | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2002 08 07 | 644 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2002 08 17 | 644 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.6+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2002 08 17 | 644 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.7− | 0.3+ | | | | |
| 2002 08 27 | 644 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.2− | | | | |

**2002 PN$_{30}$ = 2006 SR$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 20.90829 | | (2000.0) | | | |
| $n$ | 0.25735425 | $\omega$ | 19.01004 | | +0.85868712 | +0.50688410 |
| $a$ | 2.4478332 | $\Omega$ | 310.29673 | | −0.48212792 | +0.74887810 |
| $e$ | 0.2152295 | $i$ | 5.69333 | | −0.17380766 | +0.42690759 |
| $P$ | 3.83 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.1− | 0.0 | 2002 08 26 | 644 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.4+ | 0.8+ |
| 2002 07 29 | 644 | 0.3− | 0.1− | 2002 08 26 | 644 | 0.5− | 0.1− | 2006 09 20 | 703 | 0.9− | 0.3+ |
| 2002 07 29 | 644 | 0.5− | 0.0 | 2002 08 27 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 703 | 0.7− | 0.7+ |
| 2002 08 06 | 644 | 0.1+ | 0.1− | 2002 08 27 | 644 | 0.1− | 0.0 | 2006 09 20 | 703 | 0.3− | 0.8− |
| 2002 08 06 | 644 | 0.2+ | 0.0 | 2002 08 27 | 644 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.4− | 0.0 |
| 2002 08 06 | 644 | 0.1− | 0.1+ | 2006 08 29 | 699 | 0.2− | 0.7− | 2006 09 27 | 703 | 0.9+ | 0.3+ |
| 2002 08 07 | 644 | 0.3+ | 0.3+ | 2006 08 29 | 699 | 1.3+ | 0.8− | 2006 09 27 | 703 | 0.6− | 0.1− |
| 2002 08 07 | 644 | 0.5+ | 0.3+ | 2006 08 29 | 699 | 0.2+ | 0.5− | 2006 09 27 | 703 | 0.3+ | 0.9+ |
| 2002 08 07 | 644 | 0.1− | 0.5+ | 2006 08 29 | 699 | 0.2− | 0.9+ | 2006 10 03 | 703 | 0.4+ | 0.2− |
| 2002 08 08 | 699 | 0.2+ | 0.1− | 2006 09 17 | 703 | 1.4− | 0.7+ | 2006 10 03 | 703 | 1.3+ | 2.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 699 | 0.4− | 0.9− | 2006 09 17 | 703 | 0.9+ | 0.7+ | 2006 10 03 | 703 | 1.4− | 0.7− |
| 2002 08 08 | 699 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 10 03 | 703 | 0.5+ | 0.2+ |
| 2002 08 08 | 699 | 0.9+ | 0.7+ | 2006 09 17 | 703 | 0.8+ | 0.2− | 2006 10 03 | 703 | 0.7− | 0.5− |
| 2002 08 17 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 1.1+ | 1.0− | 2006 10 03 | 703 | 0.6− | 0.2− |
| 2002 08 17 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.6+ | 1.1− | 2006 10 03 | 703 | 0.0 | 0.4+ |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.1+ | 1.3− | 2006 10 03 | 703 | 0.8− | 0.3− |
| 2002 08 26 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.6− | 0.2+ | | | | |

**2002 PT$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.30383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26240118 | $\omega$ | 203.38376 | | +0.99904764 | | +0.00952502 |
| $a$ | 2.4163445 | $\Omega$ | 155.95316 | | +0.00405887 | | +0.95136256 |
| $e$ | 0.2215699 | $i$ | 5.99813 | | −0.04344355 | | +0.30792622 |
| $P$ | 3.76 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.3− | 0.5− | 2002 09 04 | 644 | 0.0 | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2002 07 22 | 644 | 0.2− | 0.5− | 2002 09 04 | 644 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.7− | 0.3− |
| 2002 08 06 | 644 | 0.3− | 0.2+ | 2002 09 14 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.9+ | 0.9− |
| 2002 08 06 | 644 | 0.2− | 0.1+ | 2002 09 14 | 644 | 0.2+ | 0.3− | 2006 10 22 | 703 | 1.3− | 0.7− |
| 2002 08 06 | 644 | 0.2+ | 0.0 | 2002 09 14 | 644 | 0.2− | 0.8− | 2006 10 22 | 703 | 0.2+ | 0.4+ |
| 2002 08 07 | 644 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.4− | 1.0− |
| 2002 08 07 | 644 | 0.3+ | 0.1+ | 2002 09 15 | 644 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2002 08 07 | 644 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.4− | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2002 08 17 | 644 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2002 08 17 | 644 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 28 | 703 | 0.5+ | 0.9+ |
| 2002 08 27 | 644 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2002 08 27 | 644 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.7+ | 2006 10 28 | 703 | 1.0+ | 1.1+ |
| 2002 08 27 | 644 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 703 | (1.6+ | 0.7+) |
| 2002 09 04 | 644 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.5+ | | | | |

**2002 PP$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.37235 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25503382 | $\omega$ | 179.22580 | | +0.97185816 | | +0.23515830 |
| $a$ | 2.4626585 | $\Omega$ | 167.14774 | | −0.21646199 | | +0.91471275 |
| $e$ | 0.2019081 | $i$ | 3.57417 | | −0.09292966 | | +0.32863531 |
| $P$ | 3.86 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.9− | 0.3− |
| 2002 08 06 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.0 | 0.1− |
| 2002 08 06 | 644 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | (2.5− | 1.2+) |
| 2002 08 07 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 09 27 | 704 | 1.3− | 0.0 |
| 2002 08 07 | 644 | 0.4+ | 0.0 | 2006 09 16 | 699 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.5− | 1.1+ |
| 2002 08 07 | 644 | 0.5+ | 0.3− | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.9− | 0.8+ |
| 2002 08 17 | 644 | 0.4+ | 0.1− | 2006 09 16 | 699 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 08 17 | 644 | 0.4− | 0.3+ | 2006 09 16 | 699 | 0.9+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.7+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 08 27 | 644 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.3+ | 1.3+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2002 08 27 | 644 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.4− | 0.3− |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 10 10 | 291 | 0.5− | 0.1+ | 2006 09 20 | 704 | 1.0+ | 0.7− | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2002 10 10 | 291 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2002 10 10 | 291 | 1.0+ | 1.0− | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.7− | 0.7− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.7− |

**2002 PJ$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.62218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29091829 | $\omega$ | 171.50077 | | +0.99477396 | | −0.10137994 |
| $a$ | 2.2557382 | $\Omega$ | 194.33477 | | +0.09056330 | | +0.93093114 |
| $e$ | 0.1993007 | $i$ | 2.80578 | | +0.04714937 | | +0.35084088 |
| $P$ | 3.39 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.2+ | 0.4+ | 2002 09 16 | 683 | (1.8− | 0.5−) | 2002 10 07 | 704 | 0.0 | 0.5+ |
| 1995 10 22 | 691 | 0.1+ | 0.1− | 2002 09 16 | 683 | 0.3− | 1.1− | 2002 10 08 | 704 | 0.6− | 0.5− |
| 1995 10 22 | 691 | 0.3− | 0.2− | 2002 09 16 | 683 | 1.2− | 0.6− | 2002 10 08 | 704 | 0.9− | 0.0 |
| 2002 07 14 | 704 | 0.4− | 0.7− | 2002 09 29 | 608 | 0.0 | 0.7− | 2002 10 08 | 704 | 0.5− | 0.3− |
| 2002 07 14 | 704 | 0.0 | 1.1− | 2002 09 29 | 608 | 0.2+ | 0.5− | 2002 10 11 | 704 | 0.1+ | 0.1− |
| 2002 07 14 | 704 | 0.2+ | 0.4+ | 2002 09 29 | 608 | 0.0 | 0.6− | 2002 10 11 | 704 | 0.1+ | 0.2+ |
| 2002 08 05 | 704 | 0.7− | 0.3− | 2002 09 30 | 704 | 0.2− | 0.3+ | 2002 10 11 | 704 | 0.2− | 0.1− |
| 2002 08 05 | 704 | 0.2− | 0.1+ | 2002 09 30 | 704 | 0.7− | 0.3+ | 2002 10 11 | 704 | 0.3+ | 0.3− |
| 2002 08 05 | 704 | 0.3− | 0.2+ | 2002 09 30 | 704 | 0.2− | 0.0 | 2002 10 11 | 704 | 0.3+ | 0.5− |
| 2002 08 05 | 704 | 0.1− | 0.5+ | 2002 09 30 | 704 | 0.1+ | 0.2+ | 2002 11 06 | 704 | 0.7− | 0.1− |
| 2002 08 09 | 704 | 0.4− | 1.0− | 2002 09 30 | 704 | 0.1− | 0.3+ | 2002 11 06 | 704 | (0.4− | 2.1+) |
| 2002 08 09 | 704 | 0.5− | 1.1+ | 2002 10 02 | 704 | 0.4+ | 0.7+ | 2002 11 06 | 704 | 0.6− | 0.4+ |
| 2002 08 09 | 704 | 0.3+ | 0.0 | 2002 10 02 | 704 | 0.2+ | 0.6+ | 2002 11 06 | 704 | 0.1− | 0.8+ |
| 2002 08 09 | 704 | 1.1+ | 0.9+ | 2002 10 02 | 704 | 0.3+ | 0.5+ | 2002 11 06 | 704 | 0.6+ | 1.0+ |
| 2002 08 11 | 704 | 0.6+ | 0.0 | 2002 10 02 | 704 | 0.2+ | 0.5+ | 2002 11 07 | 695 | 0.2− | 0.4+ |
| 2002 08 11 | 704 | 0.5+ | 0.7− | 2002 10 03 | 704 | 1.2+ | 0.2+ | 2002 11 07 | 695 | 0.7+ | 0.5+ |
| 2002 08 11 | 704 | 0.0 | 0.4− | 2002 10 03 | 704 | 0.5+ | 0.1− | 2002 11 08 | 645 | 0.0 | 0.3− |
| 2002 08 11 | 704 | 0.5− | 1.0+ | 2002 10 03 | 704 | 0.1− | 0.6− | 2002 11 08 | 645 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.6− | 0.5+ | 2002 10 03 | 704 | 0.3+ | 0.3+ | 2002 11 19 | 644 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.2− | 0.4+ | 2002 11 19 | 644 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | 0.3+ | 0.5+ | 2002 10 04 | 644 | 0.5− | 0.7+ | 2002 11 19 | 644 | 0.3+ | 0.1+ |
| 2002 09 05 | 704 | 0.3+ | 0.3+ | 2002 10 04 | 644 | 0.3− | 0.8+ | 2002 12 05 | 704 | 0.0 | 0.8+ |
| 2002 09 05 | 699 | 0.1− | 0.1+ | 2002 10 04 | 644 | 0.2− | 0.8+ | 2002 12 05 | 704 | 1.0− | 0.1− |
| 2002 09 05 | 699 | 0.2+ | 0.3− | 2002 10 06 | 608 | 0.1− | 0.5+ | 2002 12 05 | 704 | 0.3+ | 1.2+ |
| 2002 09 05 | 699 | 0.0 | 0.2+ | 2002 10 06 | 608 | 0.2− | 0.4+ | 2002 12 05 | 704 | 0.5+ | 0.1− |
| 2002 09 05 | 699 | 0.4+ | 0.1− | 2002 10 06 | 608 | 0.0 | 0.5+ | 2002 12 05 | 704 | 0.1+ | 0.6+ |
| 2002 09 07 | 704 | 0.3+ | 0.4+ | 2002 10 07 | 704 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.8+ |
| 2002 09 07 | 704 | 0.4+ | 0.3+ | 2002 10 07 | 704 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.8+ |
| 2002 09 07 | 704 | 0.3+ | 0.2+ | 2002 10 07 | 704 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.1+ | 1.2+ |
| 2002 09 07 | 704 | 0.4+ | 0.4+ | 2002 10 07 | 704 | 0.2+ | 0.7+ | 2004 02 26 | 704 | 0.6+ | 0.8+ |

**2002 PF$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.17648 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27145999 | $\omega$ | 120.44097 | | +0.95767287 | | −0.28771395 |
| $a$ | 2.3622843 | $\Omega$ | 256.28147 | | +0.26077741 | | +0.88057089 |
| $e$ | 0.1872911 | $i$ | 0.53851 | | +0.12189269 | | +0.37658410 |
| $P$ | 3.63 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 18 | 644 | 0.9− | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2002 07 18 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2002 07 18 | 644 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.4+ | 0.0 |
| 2002 08 06 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.3+ |
| 2002 08 06 | 644 | 0.6+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2002 08 07 | 644 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2002 08 07 | 644 | 0.3− | 0.3− | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2002 08 07 | 644 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.8− |
| 2002 08 08 | 644 | 0.2− | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2002 08 08 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 24 | 291 | 0.0 | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 24 | 291 | 0.3− | 0.3+ |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 24 | 291 | 0.5+ | 0.2+ |
| 2002 08 27 | 644 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2002 08 27 | 644 | 0.5− | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.5+ | 0.4− | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.0 | | |
| 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1− | | | | | | |

**2002 PD$_{44}$ = 1964 TZ$_1$ = 2000 AT$_{160}$**

Id. Minor Planet Center (*MPO* 33728; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.91558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28522574 | $\omega$ | 38.09743 | | +0.97720959 | −0.21115426 | |
| $a$ | 2.2856527 | $\Omega$ | 334.06749 | | +0.18046940 | +0.88046709 | |
| $e$ | 0.2154133 | $i$ | 2.85752 | | +0.11176855 | +0.42448978 | |
| $P$ | 3.46 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1964 10 09 | 330 | 0.6− | 1.0+ | 2002 10 02 | 599 | 0.1+ | 0.0 | 2002 12 06 | 704 | 0.7+ | 0.0 | | |
| 1995 08 19 | 809 | 1.0+ | 0.5− | 2002 10 04 | 704 | (2.3− | 1.0+) | 2002 12 11 | 704 | 0.2− | 0.2+ | | |
| 2000 01 03 | 704 | 0.1+ | 0.5− | 2002 10 04 | 704 | 0.6− | 0.0 | 2002 12 11 | 704 | 0.3− | 0.3+ | | |
| 2000 01 03 | 704 | 0.2− | 0.3− | 2002 10 04 | 704 | 0.0 | 0.0 | 2002 12 11 | 704 | 0.2− | 0.2+ | | |
| 2000 01 03 | 704 | 0.3− | 0.9− | 2002 10 04 | 704 | 1.1− | 0.4− | 2004 03 18 | 704 | 0.1+ | 0.7+ | | |
| 2000 01 03 | 704 | 0.1+ | 0.6− | 2002 10 04 | 704 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.6− | 1.0+ | | |
| 2000 01 04 | 704 | 0.1+ | 0.7+ | 2002 10 05 | 644 | 0.5− | 0.1+ | 2004 03 18 | 704 | 1.2− | 1.2+ | | |
| 2000 01 04 | 704 | 0.0 | 1.4− | 2002 10 05 | 644 | 0.3− | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.8+ | | |
| 2000 01 04 | 704 | 0.4− | 0.1+ | 2002 10 05 | 644 | 0.4− | 0.2+ | 2004 03 19 | 704 | 0.6− | 0.3− | | |
| 2002 07 14 | 704 | (0.4− | 1.7+) | 2002 10 07 | 699 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.6+ | | |
| 2002 07 14 | 704 | 0.1− | 0.6+ | 2002 10 07 | 699 | 0.3− | 0.1− | 2004 03 19 | 704 | 0.4+ | 1.4+ | | |
| 2002 07 14 | 704 | 0.2− | 0.7+ | 2002 10 07 | 699 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.4+ | 1.1+ | | |
| 2002 07 14 | 704 | 0.0 | 0.4+ | 2002 10 07 | 699 | 0.1+ | 0.0 | 2004 03 20 | 699 | 0.2− | 1.5+ | | |
| 2002 07 14 | 704 | 0.6+ | 0.6+ | 2002 10 12 | 704 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.8+ | 0.0 | | |
| 2002 08 05 | 704 | 0.1+ | 0.0 | 2002 10 12 | 704 | 0.1+ | 0.4− | 2004 03 20 | 704 | 0.1− | 0.3+ | | |
| 2002 08 05 | 704 | 1.4+ | 0.1− | 2002 10 12 | 704 | 0.1− | 0.0 | 2004 03 20 | 699 | 0.9+ | 0.4− | | |
| 2002 08 05 | 704 | 0.5+ | 0.5+ | 2002 10 12 | 704 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.3+ | 0.7+ | | |
| 2002 08 05 | 704 | 0.1+ | 0.6+ | 2002 10 12 | 704 | 0.2− | 0.5− | 2004 03 20 | 704 | (2.1+ | 0.4+) | | |
| 2002 08 11 | 704 | 0.2− | 0.5+ | 2002 10 22 | 644 | 0.4− | 0.5+ | 2004 03 20 | 704 | (0.9− | 1.7+) | | |
| 2002 08 11 | 704 | 0.3− | 0.4+ | 2002 10 22 | 644 | 0.3− | 0.5+ | 2004 03 20 | 699 | 0.1+ | 0.2− | | |
| 2002 08 11 | 704 | 0.5− | 0.1− | 2002 10 22 | 644 | 0.0 | 0.2+ | 2004 03 20 | 704 | (1.6+ | 0.6+) | | |
| 2002 08 11 | 704 | 0.2+ | 1.1+ | 2002 10 30 | 644 | 0.7− | 0.0 | 2004 03 20 | 704 | 0.8− | 0.9+ | | |
| 2002 08 11 | 704 | 0.1+ | 0.5− | 2002 10 30 | 644 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.8+ | | |
| 2002 08 11 | 704 | 0.6− | 0.2+ | 2002 10 30 | 644 | 0.2− | 0.1+ | 2004 03 20 | 699 | 1.1− | 0.5− | | |
| 2002 08 11 | 704 | 1.1+ | 0.6− | 2002 10 31 | 699 | 0.1− | 0.3+ | 2004 03 21 | 691 | 0.0 | 0.1− | | |
| 2002 08 11 | 704 | 0.8− | 0.5+ | 2002 10 31 | 699 | 0.5+ | 0.1+ | 2004 03 21 | 691 | 0.2+ | 0.2+ | | |
| 2002 08 11 | 704 | 0.2+ | 0.2+ | 2002 10 31 | 699 | 0.3− | 0.3− | 2004 03 21 | 691 | 0.2+ | 0.2+ | | |
| 2002 08 11 | 704 | 0.0 | 0.5− | 2002 10 31 | 699 | 0.0 | 0.1+ | 2004 03 27 | 704 | (1.6+ | 0.0 ) | | |
| 2002 09 05 | 704 | 0.8+ | 0.1+ | 2002 11 01 | 704 | 0.4+ | 0.1− | 2004 03 27 | 704 | 1.0+ | 0.7+ | | |
| 2002 09 05 | 704 | 0.6− | 1.0− | 2002 11 01 | 704 | 0.1+ | 1.3− | 2004 03 27 | 704 | 0.2+ | 0.5+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.7+ | 2002 11 01 | 704 | 0.2+ | 0.4− | 2004 03 27 | 704 | 1.2+ | 0.1− | | |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2002 11 01 | 704 | 0.3+ | 0.1− | 2004 03 27 | 704 | 1.1+ | 1.3− | | |
| 2002 09 05 | 704 | 0.6− | 0.6+ | 2002 11 21 | 644 | 0.1+ | 0.7+ | 2004 03 30 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2002 11 21 | 644 | 0.3+ | 0.9+ | 2004 03 30 | 691 | 0.2− | 0.1+ | | |
| 2002 09 07 | 704 | 0.0 | 0.1+ | 2002 11 21 | 644 | 0.8+ | 0.9+ | 2004 03 30 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 07 | 704 | 0.3+ | 0.4− | 2002 12 01 | 704 | 0.3− | 0.5+ | 2004 03 31 | 691 | 0.3− | 0.6− | | |
| 2002 09 07 | 704 | 0.3− | 0.4+ | 2002 12 01 | 704 | 0.2− | 0.4+ | 2004 03 31 | 691 | 0.1+ | 0.0 | | |
| 2002 09 28 | 608 | (2.0− | 0.8−) | 2002 12 01 | 704 | 0.1− | 0.8+ | 2004 03 31 | 691 | 0.1+ | 0.1− | | |
| 2002 09 28 | 608 | (1.9− | 0.9−) | 2002 12 01 | 704 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.6− | | |
| 2002 09 28 | 608 | 1.4− | 0.7− | 2002 12 01 | 704 | 0.1− | 1.5+ | 2006 11 24 | G96 | 0.4− | 0.9− | | |
| 2002 10 02 | 599 | 0.1− | 0.3− | 2002 12 06 | 704 | 0.0 | 1.2+ | 2006 11 24 | G96 | 0.4+ | 0.4− | | |
| 2002 10 02 | 599 | 0.4+ | 0.5− | 2002 12 06 | 704 | 0.2+ | 1.0− | 2006 11 24 | G96 | 0.2− | 0.5− | | |
| 2002 10 02 | 599 | 0.4+ | 0.0 | 2002 12 06 | 704 | 0.3+ | 0.4+ | | | | | | |

**2002 PP$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.96411 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28091100 | $\omega$ | 83.39656 | | +0.99267968 | +0.04656803 | |
| $a$ | 2.3089980 | $\Omega$ | 273.89314 | | −0.08790660 | +0.91130161 | |
| $e$ | 0.1368744 | $i$ | 6.41309 | | +0.08282204 | +0.40909753 | |
| $P$ | 3.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 704 | 0.1+ | 0.6+ | 2002 09 07 | 704 | 0.1− | 0.1− | 2002 10 30 | 645 | 0.0 | 0.1− | | |
| 2002 08 10 | 704 | 0.5+ | 0.8+ | 2002 09 07 | 704 | 1.2+ | 0.0 | 2002 10 30 | 645 | 0.0 | 0.0 | | |
| 2002 08 10 | 704 | 0.7+ | 0.6+ | 2002 09 07 | 704 | 0.5+ | 0.0 | 2002 11 08 | 645 | 0.0 | 0.1− | | |
| 2002 08 10 | 704 | 0.1+ | 0.4+ | 2002 09 12 | 644 | 0.7− | 0.1+ | 2002 11 08 | 645 | 0.0 | 0.1− | | |
| 2002 08 11 | 704 | 1.2+ | 0.3+ | 2002 09 12 | 644 | 0.6− | 0.1+ | 2004 02 17 | 691 | 0.3+ | 0.4+ | | |
| 2002 08 11 | 704 | 0.1+ | 0.4+ | 2002 09 12 | 644 | 0.6− | 0.1+ | 2004 02 17 | 691 | 0.1+ | 0.5+ | | |
| 2002 08 11 | 704 | 0.2+ | 0.1+ | 2002 09 30 | 704 | 0.3− | 0.8− | 2004 02 17 | 691 | 0.2+ | 0.5+ | | |
| 2002 08 11 | 704 | (1.6+ | 0.3−) | 2002 09 30 | 704 | 0.0 | 0.9− | 2006 11 12 | G96 | 0.5− | 0.1− | | |
| 2002 08 18 | 608 | 0.0 | 0.0 | 2002 09 30 | 704 | 0.6− | 0.6− | 2006 11 12 | G96 | 0.5− | 0.1+ | | |
| 2002 08 18 | 608 | 0.7− | 0.4+ | 2002 09 30 | 704 | 0.5− | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2002 08 18 | 608 | 0.0 | 0.2+ | 2002 10 05 | 704 | 0.5+ | 1.2+ | 2006 11 12 | G96 | 0.1+ | 0.1− | | |
| 2002 08 27 | 644 | 0.5− | 0.3+ | 2002 10 05 | 704 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.1+ | | |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2002 10 05 | 704 | 0.5− | 1.1+ | 2006 11 17 | 691 | 0.3− | 0.0 | | |
| 2002 08 27 | 644 | 0.3− | 0.6+ | 2002 10 05 | 704 | 0.8− | 0.1− | 2006 11 17 | 691 | 0.1− | 0.2+ | | |
| 2002 09 04 | 644 | 0.5− | 0.7+ | 2002 10 05 | 704 | 0.6− | 1.1+ | 2006 11 19 | 704 | 1.2+ | 0.6− | | |
| 2002 09 04 | 644 | 0.6− | 0.7+ | 2002 10 05 | 704 | 0.5+ | 0.0 | 2006 11 19 | 704 | 1.1+ | 0.2− | | |
| 2002 09 04 | 644 | 0.5− | 0.6+ | 2002 10 05 | 704 | 0.9+ | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.6+ | | |
| 2002 09 07 | 704 | 0.5+ | 0.2− | 2002 10 05 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.7− | | |

**2002 PV$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.99360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27221375 | $\omega$ | 208.91269 | | +0.88064466 | −0.47377079 | |
| $a$ | 2.3579215 | $\Omega$ | 179.35082 | | +0.46591260 | +0.86505840 | |
| $e$ | 0.2091328 | $i$ | 12.72007 | | +0.08596763 | +0.16497034 | |
| $P$ | 3.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 704 | 0.4+ | 0.1+ | 2002 09 06 | 704 | 0.2+ | 0.2+ | 2002 10 07 | 704 | 0.3+ | 0.5+ | | |
| 2002 08 10 | 704 | 0.6+ | 0.2− | 2002 09 08 | 608 | 0.1− | 0.9− | 2002 10 07 | 704 | 1.3+ | 0.5− | | |
| 2002 08 10 | 704 | 0.3− | 0.2− | 2002 09 08 | 608 | 0.3− | 1.2− | 2002 10 07 | 704 | 0.3+ | 0.3+ | | |
| 2002 08 10 | 704 | 0.2− | 0.6+ | 2002 09 08 | 608 | 0.2− | 1.0− | 2002 10 07 | 704 | 0.1+ | 0.5+ | | |
| 2002 08 11 | 704 | 0.2+ | 0.3− | 2002 09 16 | 608 | 0.2+ | 0.9− | 2002 10 11 | 704 | 0.7+ | 0.0 | | |
| 2002 08 11 | 704 | 0.1+ | 1.0− | 2002 09 16 | 608 | 0.5+ | 0.7− | 2002 10 11 | 704 | 0.6− | 0.5+ | | |
| 2002 08 11 | 704 | 0.1+ | 0.1− | 2002 09 16 | 608 | 0.3+ | 0.7− | 2002 10 11 | 704 | 0.9+ | 0.3+ | | |
| 2002 08 11 | 704 | 0.4− | 1.3− | 2002 09 29 | 704 | 0.5+ | 0.6+ | 2002 10 11 | 704 | 0.4− | 0.5+ | | |
| 2002 08 14 | 699 | 0.2− | 0.5+ | 2002 09 29 | 704 | 1.5+ | 0.1− | 2006 11 15 | 703 | 0.7− | 0.1− | | |
| 2002 08 14 | 699 | 1.5− | 0.5+ | 2002 09 29 | 704 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.0 | | |
| 2002 08 14 | 699 | 0.3− | 1.4+ | 2002 10 01 | 608 | 0.5− | 1.1+ | 2006 11 15 | 703 | 0.2− | 0.3− | | |
| 2002 08 14 | 699 | 0.1+ | 0.2− | 2002 10 01 | 608 | 0.5− | 1.5+ | 2006 11 15 | 703 | 0.8+ | 0.8− | | |
| 2002 08 28 | 644 | 0.2+ | 0.2+ | 2002 10 01 | 608 | 0.5− | 0.7+ | 2006 11 21 | 703 | 0.3+ | 0.1+ | | |
| 2002 08 28 | 644 | 0.3− | 0.1+ | 2002 10 03 | 704 | 0.1+ | 0.1− | 2006 11 21 | 703 | 0.5− | 0.3+ | | |
| 2002 08 28 | 644 | 0.4− | 0.2+ | 2002 10 03 | 704 | 0.2+ | 0.1− | 2006 11 21 | 703 | 0.4+ | 0.0 | | |
| 2002 09 06 | 704 | 0.5− | 0.3− | 2002 10 03 | 704 | 0.6+ | 1.1+ | 2006 11 21 | 703 | 0.2+ | 0.0 | | |
| 2002 09 06 | 704 | 0.3− | 0.0 | 2002 10 03 | 704 | 1.0− | 0.4− | | | | | | |
| 2002 09 06 | 704 | 0.3− | 0.5− | 2002 10 03 | 704 | 0.2− | 0.3− | | | | | | |

**2002 PS$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.64166 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28805545 | $\omega$ | 174.58003 | | +0.95089543 | +0.30874020 | |
| $a$ | 2.2706594 | $\Omega$ | 167.37100 | | −0.28759461 | +0.90744620 | |
| $e$ | 0.2271481 | $i$ | 5.73528 | | −0.11439942 | +0.28499277 | |
| $P$ | 3.42 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 691 | 0.3+ | 0.1+ | 2002 10 01 | 699 | 0.5− | 0.5+ | 2002 10 30 | 645 | 0.1+ | 0.0 | | |
| 2001 04 15 | 691 | 0.3+ | 0.6+ | 2002 10 01 | 699 | 0.1+ | 0.8+ | 2002 10 30 | 645 | 0.1+ | 0.0 | | |
| 2001 04 15 | 691 | 0.1+ | 1.3+ | 2002 10 01 | 699 | 0.6+ | 0.4+ | 2002 10 30 | 704 | 0.2− | 0.3− | | |
| 2002 08 10 | 704 | 0.4+ | 1.6+ | 2002 10 01 | 699 | 0.1+ | 0.4+ | 2002 10 30 | 704 | 0.1− | 0.1− | | |
| 2002 08 10 | 704 | 0.6− | 1.3− | 2002 10 02 | 704 | 0.1− | 0.5+ | 2002 10 30 | 704 | 0.5+ | 0.1+ | | |
| 2002 08 10 | 704 | 0.1− | 0.2+ | 2002 10 02 | 704 | 0.1+ | 0.5+ | 2002 10 30 | 704 | 0.2+ | 0.7− | | |
| 2002 08 10 | 704 | 0.8+ | 1.9+ | 2002 10 02 | 704 | 0.5+ | 0.3− | 2002 10 31 | 645 | 0.1+ | 0.0 | | |
| 2002 08 11 | 704 | 0.3− | 0.3+ | 2002 10 02 | 704 | 0.0 | 0.6+ | 2002 10 31 | 645 | 0.1+ | 0.0 | | |
| 2002 08 11 | 704 | 1.3+ | 1.0− | 2002 10 03 | 704 | 0.2− | 0.2+ | 2002 11 03 | 608 | 0.9+ | 0.8− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.9− | 0.4+ | 2002 10 03 | 704 | 0.2+ | 0.8+ | 2002 11 03 | 608 | 1.7+ | 0.9− | | |
| 2002 08 11 | 704 | 0.2− | 0.3− | 2002 10 03 | 704 | 0.3− | 0.6+ | 2002 11 03 | 608 | (2.5+ | 0.3+) | | |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2002 10 03 | 704 | 0.2+ | 1.2+ | 2002 11 05 | 699 | 1.0− | 0.2− | | |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2002 10 03 | 704 | 0.1+ | 0.5+ | 2002 11 05 | 699 | 0.2− | 0.3+ | | |
| 2002 09 06 | 704 | 0.5+ | 0.3+ | 2002 10 04 | 683 | (2.0− | 1.0−) | 2002 11 05 | 699 | 0.9+ | 0.8+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2002 10 04 | 683 | 1.3− | 0.6− | 2002 11 05 | 699 | 0.9− | 0.5+ | | |
| 2002 09 06 | 704 | 0.5+ | 0.1− | 2002 10 04 | 683 | 1.8− | 1.1− | 2002 11 07 | 704 | 0.1− | 0.2− | | |
| 2002 09 16 | 608 | 0.2+ | 0.2− | 2002 10 05 | 683 | 1.6− | 0.4+ | 2002 11 07 | 704 | 0.4+ | 0.6+ | | |
| 2002 09 16 | 608 | 0.1− | 1.0− | 2002 10 05 | 683 | 0.1− | 0.1− | 2002 11 07 | 704 | 0.5+ | 1.0+ | | |
| 2002 09 16 | 608 | 0.1+ | 0.1− | 2002 10 05 | 683 | 1.8− | 0.9− | 2002 11 21 | 644 | 0.5− | 0.2− | | |
| 2002 09 21 | 608 | 1.2− | 1.2− | 2002 10 11 | 704 | 0.0 | 0.3+ | 2002 11 21 | 644 | 0.2− | 0.3− | | |
| 2002 09 21 | 608 | 1.2− | 1.4− | 2002 10 11 | 704 | 0.0 | 0.6+ | 2002 11 21 | 644 | 0.4− | 0.1− | | |
| 2002 09 21 | 608 | 1.9− | 0.8− | 2002 10 11 | 704 | 0.2+ | 0.1+ | 2004 03 17 | 691 | 0.2+ | 0.0 | | |
| 2002 09 29 | 608 | 0.7− | 0.9+ | 2002 10 11 | 704 | 0.2− | 0.9+ | 2004 03 17 | 691 | 0.0 | 0.1+ | | |
| 2002 09 29 | 608 | 0.6− | 0.9+ | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2004 03 17 | 691 | 0.2− | 0.1+ | | |
| 2002 09 29 | 608 | 0.7− | 0.7+ | 2002 10 30 | 704 | 0.1+ | 0.5+ | | | | | | |

**2002 PX$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.96659 | | (2000.0) | | | |
| $n$ | 0.26469206 | $\omega$ | 219.65607 | | +0.95521876 | +0.28228918 |
| $a$ | 2.4023822 | $\Omega$ | 123.72875 | | −0.23712393 | +0.90960292 |
| $e$ | 0.1761957 | $i$ | 6.12324 | | −0.17700103 | +0.30485300 |
| $P$ | 3.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.4− | 0.1− | 2002 09 25 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.3+ | 0.7− | | |
| 2002 08 08 | 644 | 0.3− | 0.1+ | 2002 09 25 | 644 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.5− | 1.5+ | | |
| 2002 08 08 | 644 | 0.3− | 0.2+ | 2002 09 25 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.7− | | |
| 2002 08 10 | 807 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.5+ | | |
| 2002 08 10 | 807 | 0.2− | 0.2− | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.3− | | |
| 2002 08 11 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.5+ | 1.3+ | | |
| 2002 08 11 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.4− | 0.3− | | |
| 2002 08 11 | 644 | 0.5+ | 0.4+ | 2006 09 20 | 644 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2002 08 12 | 608 | 0.7+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2002 08 12 | 608 | 0.4+ | 0.1− | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 08 12 | 608 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.1+ | 1.4+ | 2006 10 22 | 703 | 0.5− | 0.2− | | |
| 2002 08 29 | 644 | 0.3− | 0.2− | 2006 09 25 | 699 | 1.1+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.9− | | |
| 2002 08 29 | 644 | 0.3− | 0.2− | 2006 09 25 | 699 | (2.4+ | 1.2+) | 2006 10 22 | 703 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 09 26 | 703 | 1.1− | 0.5− | 2006 10 22 | 703 | 0.3+ | 0.2− | | |

**2002 PY$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.80929 | | (2000.0) | | | |
| $n$ | 0.26124314 | $\omega$ | 265.77970 | | +0.98903524 | −0.14124607 |
| $a$ | 2.4234801 | $\Omega$ | 102.33621 | | +0.14684359 | +0.90957089 |
| $e$ | 0.1973385 | $i$ | 2.52947 | | +0.01569235 | +0.39080730 |
| $P$ | 3.77 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.6+ | 0.5− | 2006 09 30 | 704 | (0.4− | 2.0+) | | |
| 2002 07 14 | 644 | 0.4− | 0.0 | 2006 09 12 | 703 | 0.8+ | 0.9− | 2006 09 30 | 704 | 0.4+ | 0.1+ | | |
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.4+ | 0.0 | | |
| 2002 07 22 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 10 10 | 644 | 0.2− | 0.0 | | |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2002 07 22 | 644 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.4+ | 1.1+ | 2006 10 16 | 703 | 1.3+ | 0.2− | | |
| 2002 08 08 | 644 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.9+ | 0.6+ | | |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 1.1− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.1− | | |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | (1.6+ | 1.7+) | 2006 10 16 | 703 | 0.8− | 0.4+ | | |
| 2002 08 10 | 807 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2002 08 10 | 807 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2002 08 11 | 644 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.3− | | |
| 2002 08 11 | 644 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 1.1− | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2002 08 11 | 644 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.5+ | 1.4+ | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2002 08 18 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.1+ | | |
| 2002 08 18 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.4− | | |
| 2002 08 29 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.2− | 1.2− | 2006 10 22 | 703 | 0.8− | 1.0− | | |
| 2002 08 29 | 644 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.4− | 0.1− | | |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.1+ | | |
| 2004 01 30 | 691 | 0.2− | 0.3+ | 2006 09 28 | 704 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2004 01 30 | 691 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.1− | | |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 28 | 704 | (1.4− | 2.0+) | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2006 09 12 | 703 | 0.0 | 1.5− | 2006 09 30 | 704 | (0.0 | 1.7+) | | | | | | |
| 2006 09 12 | 703 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.2− | 0.6+ | | | | | | |

**2002 PM$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.33015 | | (2000.0) | | | |
| $n$ | 0.27757407 | $\omega$ | 313.69693 | | +0.34110966 | +0.93957683 |
| $a$ | 2.3274666 | $\Omega$ | 336.20166 | | −0.84048698 | +0.29104115 |
| $e$ | 0.2789513 | $i$ | 4.11779 | | −0.42098199 | +0.18025102 |
| $P$ | 3.55 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 1.6+ | 0.7+ | 2002 08 18 | 644 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.5+ | 0.1+ | | |
| 1998 04 23 | 691 | 0.9− | 0.3− | 2002 08 18 | 644 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3+ | | |
| 1998 04 23 | 691 | 0.1− | 0.1+ | 2002 08 31 | 704 | (5.6− | 2.7+) | 2006 10 19 | 691 | 0.1+ | 0.2+ | | |
| 1998 04 23 | 691 | 0.3− | 0.1− | 2002 08 31 | 704 | (5.6− | 1.6+) | 2006 10 23 | 691 | 0.3− | 0.2− | | |
| 2002 07 15 | 644 | 0.1− | 0.1+ | 2002 08 31 | 704 | (6.3− | 2.1+) | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 2002 07 15 | 644 | 0.2− | 0.1+ | 2002 09 02 | 608 | 0.5+ | 0.5+ | 2006 10 23 | 691 | 0.7− | 0.2− | | |
| 2002 07 15 | 644 | 0.3− | 0.1+ | 2002 09 02 | 608 | 0.9+ | 1.1+ | 2006 10 25 | D35 | 0.3+ | 0.4+ | | |
| 2002 08 08 | 699 | 0.4− | 0.5+ | 2002 09 02 | 608 | 1.2+ | 0.8+ | 2006 10 25 | D35 | 0.2− | 0.1− | | |
| 2002 08 08 | 699 | 0.4− | 0.2− | 2002 09 14 | 644 | 0.2+ | 0.1− | 2006 10 25 | D35 | 0.2− | 0.5+ | | |
| 2002 08 08 | 699 | 0.3− | 0.2+ | 2002 09 14 | 644 | 0.2+ | 0.8+ | 2006 10 27 | 703 | (2.7− | 1.7−) | | |
| 2002 08 08 | 699 | 0.6− | 0.1+ | 2002 09 14 | 644 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.1+ | | |
| 2002 08 08 | 644 | 0.3− | 0.2− | 2002 09 15 | 644 | 0.4− | 0.4+ | 2006 10 27 | 703 | 1.0+ | 0.4+ | | |
| 2002 08 08 | 644 | 0.1+ | 0.3− | 2002 09 15 | 644 | 0.2+ | 1.0+ | 2006 10 27 | 703 | 0.8− | 0.0 | | |
| 2002 08 08 | 644 | 0.2− | 0.2− | 2002 09 15 | 644 | 0.0 | 0.9+ | 2006 11 02 | 691 | 0.1− | 0.0 | | |
| 2002 08 11 | 644 | 0.3− | 0.3− | 2005 03 16 | 691 | 0.2+ | 0.4+ | 2006 11 02 | 691 | 0.4− | 0.4+ | | |
| 2002 08 11 | 644 | 0.2− | 0.4− | 2005 03 16 | 691 | 0.7+ | 0.3+ | 2006 11 02 | 691 | 0.1− | 0.4− | | |
| 2002 08 11 | 644 | 0.3− | 0.3− | 2005 03 16 | 691 | 1.0+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.1− | | |
| 2002 08 12 | 608 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2002 08 12 | 608 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.8+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1+ | | |
| 2002 08 12 | 608 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.2+ | 1.4− | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.2− | | |
| 2002 08 14 | 704 | (0.8+ | 2.8−) | 2006 10 19 | G96 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.5− | | |
| 2002 08 14 | 704 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.6+ | 0.3− | | |
| 2002 08 14 | 704 | (0.9− | 1.6−) | 2006 10 19 | G96 | 0.6+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.4− | | | | | | |

**2002 PO$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.52072 | | (2000.0) | | | |
| $n$ | 0.25927537 | $\omega$ | 292.63148 | | −0.18569640 | +0.97979787 |
| $a$ | 2.4357266 | $\Omega$ | 326.39738 | | −0.84507940 | −0.19780420 |
| $e$ | 0.1042912 | $i$ | 7.71018 | | −0.50135581 | −0.02948941 |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2002 08 18 | 644 | 0.2+ | 0.2− | 2006 09 20 | 691 | 0.2+ | 0.2− | | |
| 2002 08 08 | 644 | 0.1− | 0.2− | 2002 08 18 | 644 | 0.3+ | 0.1− | 2006 09 20 | 691 | 0.3+ | 0.2− | | |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2002 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.4− | 0.4− | | |
| 2002 08 11 | 644 | 0.5+ | 0.1− | 2002 09 14 | 644 | 0.7− | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | | |
| 2002 08 11 | 644 | 0.3+ | 0.5− | 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.1+ | | |
| 2002 08 11 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.2+ | | |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 1.1+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.1+ | | |
| 2002 08 17 | 644 | 0.2− | 0.6+ | 2006 09 19 | 703 | 0.9− | 0.6− | 2006 10 20 | 691 | 0.1+ | 0.0 | | |
| 2002 08 17 | 644 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.3+ | | | | | | |
| 2002 08 18 | 644 | 0.4− | 0.2− | 2006 09 20 | 691 | 0.1+ | 0.0 | | | | | | |

**2002 PO$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.79153 | | (2000.0) | | | |
| $n$ | 0.29466041 | $\omega$ | 46.01836 | | +0.98156809 | −0.18152805 |
| $a$ | 2.2365993 | $\Omega$ | 324.31625 | | +0.13244583 | +0.87157336 |
| $e$ | 0.1946532 | $i$ | 5.88057 | | +0.13777584 | +0.45542007 |
| $P$ | 3.34 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.3− | 0.9− | 2002 09 05 | 699 | 0.1− | 0.1+ | 2002 10 04 | 704 | 0.0 | 0.2+ |
| 2000 01 04 | 704 | 0.0 | 0.4− | 2002 09 05 | 699 | 0.5+ | 0.2− | 2002 10 12 | 704 | 0.3− | 0.2+ |
| 2000 01 04 | 704 | 0.3+ | 0.8− | 2002 09 05 | 699 | 0.3− | 0.0 | 2002 10 12 | 704 | 0.3− | 0.1− |
| 2002 08 09 | 704 | 0.3− | 0.4+ | 2002 09 06 | 704 | 0.1− | 0.3+ | 2002 10 12 | 704 | 1.0− | 1.0− |
| 2002 08 09 | 704 | 0.1− | 0.7+ | 2002 09 06 | 704 | 0.3+ | 0.1− | 2002 10 12 | 704 | 0.7− | 0.2− |
| 2002 08 09 | 704 | 0.0 | 1.0+ | 2002 09 06 | 704 | 0.2− | 0.4+ | 2002 10 31 | 704 | 0.3− | 0.4− |
| 2002 08 09 | 704 | 0.4− | 0.6+ | 2002 09 06 | 704 | 0.4− | 0.1+ | 2002 10 31 | 704 | 0.0 | 1.3− |
| 2002 08 09 | 608 | 0.1+ | 0.6+ | 2002 09 06 | 704 | 0.6− | 1.0+ | 2002 10 31 | 704 | 0.7+ | 0.1− |
| 2002 08 09 | 608 | 0.0 | 1.3+ | 2002 09 11 | 644 | 0.3− | 0.7+ | 2002 10 31 | 704 | 0.9+ | 0.8+ |
| 2002 08 09 | 608 | 0.3+ | 0.7+ | 2002 09 11 | 644 | 0.3− | 0.6+ | 2002 11 08 | 704 | 0.6− | 0.5− |
| 2002 08 12 | 704 | 0.3+ | 0.5− | 2002 09 11 | 644 | 0.1− | 0.6+ | 2002 11 08 | 704 | 0.5− | 0.1− |
| 2002 08 12 | 704 | 0.0 | 0.5− | 2002 09 11 | 608 | (2.6+ | 1.2+) | 2002 11 08 | 704 | 0.6+ | 0.1+ |
| 2002 08 12 | 704 | 0.1+ | 0.8− | 2002 09 11 | 608 | (2.0+ | 1.3+) | 2002 11 12 | 704 | 0.1− | 0.8− |
| 2002 08 12 | 704 | 0.2− | 0.2− | 2002 09 11 | 608 | (2.2+ | 1.2+) | 2002 11 12 | 704 | 0.0 | 0.2+ |
| 2002 08 12 | 704 | 0.2− | 0.9+ | 2002 09 13 | 644 | 0.4− | 0.1+ | 2002 11 12 | 704 | 0.3+ | 0.6+ |
| 2002 08 16 | 704 | 0.4+ | 1.1− | 2002 09 13 | 644 | 0.3− | 0.2− | 2002 12 11 | 704 | 0.9− | 0.5+ |
| 2002 08 16 | 704 | (1.7+ | 0.4−) | 2002 09 13 | 644 | 0.5− | 0.1− | 2002 12 11 | 704 | 0.1+ | 0.4+ |
| 2002 08 16 | 704 | 1.0+ | 0.1− | 2002 09 19 | 644 | 0.1− | 1.0+ | 2002 12 11 | 704 | 0.6− | 0.4− |
| 2002 08 16 | 704 | 0.7+ | 1.0+ | 2002 09 19 | 644 | 0.2− | 1.0+ | 2002 12 11 | 704 | 0.8+ | 0.3− |
| 2002 08 16 | 704 | 1.0+ | 0.6+ | 2002 09 19 | 644 | 0.3− | 0.9+ | 2004 03 27 | 691 | 0.5+ | 0.8+ |
| 2002 08 16 | 704 | 0.4− | 0.4− | 2002 09 26 | 608 | (2.3− | 0.5−) | 2004 03 27 | 691 | 0.5+ | 1.0+ |
| 2002 08 16 | 704 | 0.7+ | 0.3− | 2002 09 26 | 608 | (1.8− | 0.5+) | 2004 03 27 | 691 | 0.4+ | 0.8+ |
| 2002 08 16 | 704 | 0.0 | 0.9− | 2002 09 26 | 608 | (2.4− | 0.3−) | 2006 09 30 | 291 | 0.1+ | 0.1+ |
| 2002 08 28 | 644 | 0.3− | 0.0 | 2002 10 04 | 704 | 0.1+ | 0.2− | 2006 09 30 | 291 | 0.4+ | 0.7+ |
| 2002 08 28 | 644 | 1.1− | 0.1− | 2002 10 04 | 704 | 0.0 | 0.3+ | 2006 09 30 | 291 | 0.0 | 0.4+ |
| 2002 08 28 | 644 | 0.1− | 0.3− | 2002 10 04 | 704 | 0.1− | 0.2+ | | | | |
| 2002 09 05 | 699 | 0.1− | 0.4+ | 2002 10 04 | 704 | 0.1+ | 0.3+ | | | | |

**2002 PL$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 79.98605 | | (2000.0) | | | |
| $n$ | 0.27758096 | $\omega$ | 330.99778 | | +0.31916148 | +0.94483169 |
| $a$ | 2.3274280 | $\Omega$ | 317.49636 | | −0.84711131 | +0.24956399 |
| $e$ | 0.1094880 | $i$ | 6.26087 | | −0.42489808 | +0.21215771 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.4+ | 0.1− | 2002 08 12 | 608 | 0.1− | 0.4+ | 2006 09 28 | 703 | (2.0+ | 1.0+) |
| 2002 07 14 | 644 | 0.2+ | 0.2− | 2002 08 12 | 608 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.1− | 1.1+ |
| 2002 07 14 | 644 | 0.3+ | 0.2+ | 2002 08 17 | 644 | 0.1− | 0.5− | 2006 10 19 | 703 | 0.1− | 0.5− |
| 2002 07 22 | 644 | 0.1− | 0.0 | 2002 08 17 | 644 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.3− | 0.6+ |
| 2002 07 22 | 644 | 0.0 | 0.1+ | 2002 08 17 | 644 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.3− | 0.8− |
| 2002 07 22 | 644 | 0.1+ | 0.0 | 2005 05 04 | 644 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.9− | 0.5− |
| 2002 08 08 | 699 | 0.0 | 0.9− | 2005 05 04 | 644 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 08 08 | 699 | 0.7− | 0.2+ | 2005 05 04 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2002 08 08 | 699 | 0.2+ | 0.0 | 2006 09 16 | 703 | (0.5+ | 2.1−) | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2002 08 08 | 699 | 0.1− | 0.3+ | 2006 09 16 | 703 | 1.0+ | 0.6− | 2006 10 27 | 703 | 0.4+ | 0.3+ |
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.6− | 1.2+ | 2006 10 27 | 703 | 0.2+ | 1.1− |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.7− | 0.1+ | 2006 10 27 | 703 | 0.6− | 1.3− |
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 1.0+ | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.2− |
| 2002 08 12 | 608 | 0.4− | 0.2+ | 2006 09 28 | 703 | 1.0+ | 1.0+ | | | | |

**2002 PU$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 60.02356 | | (2000.0) | | | |
| $n$ | 0.27661319 | $\omega$ | 105.38293 | | +0.71837610 | +0.68998646 |
| $a$ | 2.3328534 | $\Omega$ | 211.14843 | | −0.68570567 | +0.68086260 |
| $e$ | 0.1974210 | $i$ | 9.86558 | | −0.11723275 | +0.24565180 |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 26 | 807 | 0.3+ | 0.7+ | 2002 08 14 | 049 | 0.5− | 0.3+ | 2002 10 05 | 704 | 0.4− | 0.6− |
| 2001 02 26 | 807 | 0.5+ | 0.6+ | 2002 08 15 | 704 | 1.1+ | 0.2+ | 2002 10 05 | 704 | 0.1− | 0.7− |
| 2001 02 26 | 807 | 0.2− | 1.0+ | 2002 08 15 | 704 | 0.7+ | 0.4+ | 2005 05 08 | G96 | 0.0 | 0.3+ |
| 2001 02 26 | 807 | 0.2+ | 0.7+ | 2002 08 15 | 704 | 0.5+ | 0.7+ | 2005 05 08 | G96 | 0.0 | 0.2+ |
| 2002 08 03 | 644 | 0.1+ | 0.3+ | 2002 08 15 | 704 | 0.9+ | 0.6+ | 2005 05 08 | G96 | 0.2+ | 0.1+ |
| 2002 08 03 | 644 | 0.5− | 0.6+ | 2002 08 25 | 644 | 0.2− | 0.4+ | 2005 05 08 | G96 | 0.1+ | 0.1+ |
| 2002 08 03 | 644 | 0.2+ | 0.1+ | 2002 08 25 | 644 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.6− |
| 2002 08 06 | 049 | 0.3− | 0.2− | 2002 08 25 | 644 | 0.5− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.3+ |
| 2002 08 06 | 049 | 1.0− | 0.0 | 2002 09 02 | 644 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2002 08 06 | 049 | 0.7− | 0.1+ | 2002 09 02 | 644 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 2002 08 10 | 049 | 0.1+ | 0.0 | 2002 09 02 | 644 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2002 08 10 | 049 | 0.5+ | 0.3− | 2002 09 03 | 049 | 0.2+ | 0.5− | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2002 08 10 | 049 | 0.2− | 0.2+ | 2002 09 03 | 049 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.5− |
| 2002 08 11 | 704 | 0.1+ | 0.7− | 2002 09 03 | 049 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.0 | 0.3+ |
| 2002 08 11 | 704 | 0.2+ | 0.1+ | 2002 09 04 | 699 | 0.7− | 0.0 | 2006 10 12 | 691 | 0.2− | 0.1+ |
| 2002 08 11 | 704 | 0.5+ | 0.2− | 2002 09 04 | 699 | 0.4− | 0.9+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2002 08 11 | 704 | 1.1+ | 0.2+ | 2002 09 04 | 699 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.3− | 0.9+ |
| 2002 08 11 | 704 | 0.2+ | 0.0 | 2002 09 04 | 699 | 0.2+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 1.6+ |
| 2002 08 14 | 049 | 1.0− | 0.1+ | 2002 10 05 | 704 | 0.6+ | 0.9− | 2006 11 28 | 704 | 0.9+ | 0.0 |
| 2002 08 14 | 049 | 0.2− | 0.2+ | 2002 10 05 | 704 | 0.4− | 0.7− | | | | |

**2002 PM$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.14449 | | (2000.0) | | | |
| $n$ | 0.27342760 | $\omega$ | 52.92370 | | +0.86176432 | +0.49656460 |
| $a$ | 2.3509378 | $\Omega$ | 277.08623 | | −0.49231232 | +0.76917027 |
| $e$ | 0.1974585 | $i$ | 6.00725 | | −0.12243710 | +0.40224457 |
| $P$ | 3.60 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.3+ | 0.5+ | 2002 07 22 | 644 | 0.6− | 0.5− | 2002 08 24 | 644 | 0.0 | 0.2− |
| 2002 06 16 | 644 | 0.0 | 0.2− | 2002 08 05 | 644 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.6− |
| 2002 06 16 | 644 | 0.1+ | 0.4− | 2002 08 05 | 644 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.1− |
| 2002 07 04 | 644 | 0.5+ | 0.3− | 2002 08 05 | 644 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.7+ | 1.5+ |
| 2002 07 04 | 644 | 0.1− | 0.0 | 2002 08 07 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.5− | 0.1− |
| 2002 07 04 | 644 | 0.4− | 0.6+ | 2002 08 07 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2002 07 09 | 644 | 0.3− | 0.0 | 2002 08 07 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2002 07 09 | 644 | 0.1+ | 0.1+ | 2002 08 07 | 599 | 0.6+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2002 07 09 | 644 | 0.1+ | 0.0 | 2002 08 07 | 599 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2002 07 22 | 644 | 0.4+ | 0.7− | 2002 08 07 | 599 | 0.0 | 0.1− | | | | |
| 2002 07 22 | 644 | 0.3+ | 0.4− | 2002 08 24 | 644 | 0.0 | 0.3− | | | | |

**2002 PT$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.76475 | | (2000.0) | | | |
| $n$ | 0.21870636 | $\omega$ | 85.08000 | | +0.84405859 | +0.51965665 |
| $a$ | 2.7283188 | $\Omega$ | 243.55417 | | −0.53166765 | +0.77874393 |
| $e$ | 0.1746918 | $i$ | 8.50187 | | −0.06996140 | +0.35144681 |
| $P$ | 4.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.0 | 0.1+ | 2002 09 04 | 699 | 0.2+ | 0.4+ | 2002 10 06 | 644 | 0.4− | 0.2− |
| 1998 12 14 | 691 | 0.3− | 0.1− | 2002 09 04 | 699 | 0.4− | 1.2+ | 2002 10 06 | 644 | 0.1− | 0.3− |
| 1998 12 14 | 691 | 0.3+ | 0.0 | 2002 09 04 | 699 | 0.2+ | 0.0 | 2002 10 06 | 644 | 0.5− | 0.2− |
| 2002 07 17 | 704 | 0.3+ | 0.6− | 2002 09 04 | 699 | 0.3− | 0.0 | 2002 10 06 | 644 | 0.2+ | 0.3− |
| 2002 07 17 | 704 | 0.4− | 1.3− | 2002 09 04 | 644 | 0.3− | 0.8− | 2002 10 06 | 644 | 0.5− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 704 | 0.4+ | 0.6− | 2002 09 04 | 644 | 0.4− | 0.9− | 2002 10 06 | 644 | 0.3− | 0.4− | | |
| 2002 08 11 | 704 | 0.7− | 0.0 | 2002 09 04 | 644 | 0.9− | 0.7− | 2002 10 06 | 704 | 0.1+ | 0.2+ | | |
| 2002 08 11 | 704 | 0.5− | 0.2+ | 2002 09 12 | 644 | 0.0 | 0.1+ | 2002 10 06 | 704 | 0.0 | 0.7+ | | |
| 2002 08 11 | 704 | 0.3+ | 0.3− | 2002 09 12 | 644 | 0.0 | 0.0 | 2002 10 06 | 704 | 0.3+ | 0.2− | | |
| 2002 08 11 | 704 | 0.7+ | 0.4+ | 2002 09 12 | 644 | 0.0 | 0.3+ | 2002 10 06 | 704 | 0.0 | 0.5− | | |
| 2002 08 13 | 704 | 0.0 | 0.5+ | 2002 10 04 | 699 | 0.4+ | 0.4− | 2002 10 06 | 704 | 0.3+ | 0.0 | | |
| 2002 08 13 | 704 | 0.5+ | 0.0 | 2002 10 04 | 699 | 0.2+ | 0.3− | 2002 10 31 | 704 | 0.5+ | 0.0 | | |
| 2002 08 13 | 704 | 0.3+ | 0.3+ | 2002 10 04 | 699 | 0.3− | 0.2− | 2002 10 31 | 704 | 0.0 | 0.4− | | |
| 2002 08 13 | 704 | 0.5− | 0.1+ | 2002 10 04 | 699 | 0.2− | 1.0+ | 2002 10 31 | 704 | 0.3+ | 0.5+ | | |
| 2002 08 13 | 704 | 0.2+ | 0.6− | 2002 10 05 | 704 | 0.2+ | 0.3− | 2002 10 31 | 704 | 0.3− | 0.6− | | |
| 2002 08 27 | 644 | 0.3− | 0.7+ | 2002 10 05 | 644 | 0.1+ | 0.3+ | 2002 10 31 | 704 | 0.1+ | 0.7− | | |
| 2002 08 27 | 644 | 0.2− | 0.7+ | 2002 10 05 | 704 | 0.2+ | 0.1− | 2005 03 13 | 703 | 0.5− | 1.2− | | |
| 2002 08 27 | 644 | 0.3− | 0.8+ | 2002 10 05 | 704 | 0.4− | 0.3− | 2005 03 13 | 703 | 0.2− | 0.5+ | | |
| 2002 08 30 | 699 | 1.6+ | 0.5+ | 2002 10 05 | 644 | 0.1− | 0.2+ | 2005 03 13 | 703 | 0.2+ | 0.0 | | |
| 2002 08 30 | 699 | 1.1+ | 0.2+ | 2002 10 05 | 704 | 0.4+ | 0.7− | 2005 03 13 | 703 | 0.0 | 0.9− | | |
| 2002 08 30 | 699 | 0.0 | 0.3+ | 2002 10 05 | 704 | 0.1+ | 0.5− | | | | | | |
| 2002 08 30 | 699 | 0.0 | 0.8+ | 2002 10 05 | 644 | 0.0 | 0.1+ | | | | | | |

### 2002 PE$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.33221 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27468067 | $\omega$ | 168.51926 | | +0.93390637 | −0.34754947 | |
| $a$ | 2.3437825 | $\Omega$ | 212.21596 | | +0.31430621 | +0.90988998 | |
| $e$ | 0.2152246 | $i$ | 9.04762 | | +0.17038340 | +0.22651618 | |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 30 | 691 | 0.1+ | 0.2+ | 2002 08 13 | 704 | 0.4− | 0.4+ | 2002 09 12 | 644 | 0.1+ | 0.2− | | |
| 2001 04 30 | 691 | 0.0 | 0.3+ | 2002 08 13 | 704 | 0.8− | 0.8+ | 2002 09 12 | 644 | 0.1+ | 0.1+ | | |
| 2001 04 30 | 691 | 0.2+ | 0.5+ | 2002 08 13 | 704 | 0.0 | 1.0+ | 2002 10 05 | 704 | 0.1− | 0.6+ | | |
| 2002 07 20 | 644 | 0.3+ | 0.5+ | 2002 08 15 | 644 | 0.0 | 0.1+ | 2002 10 05 | 704 | 0.1+ | 0.5+ | | |
| 2002 07 20 | 644 | 0.3+ | 0.4+ | 2002 08 15 | 644 | 0.0 | 0.2+ | 2002 10 05 | 704 | 0.3+ | 0.3+ | | |
| 2002 07 20 | 644 | 0.1+ | 0.2+ | 2002 08 15 | 644 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.0 | 0.5+ | | |
| 2002 08 04 | 644 | 0.2− | 0.4− | 2002 08 26 | 644 | 0.1+ | 0.6− | 2005 06 04 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 04 | 644 | 0.0 | 0.3− | 2002 08 26 | 644 | 0.2+ | 0.8− | 2005 06 04 | 691 | 0.2− | 0.1− | | |
| 2002 08 04 | 644 | 0.3− | 0.1− | 2002 08 26 | 644 | 0.1− | 0.6− | 2005 06 04 | 691 | 0.1+ | 0.0 | | |
| 2002 08 11 | 704 | 0.8− | 0.6+ | 2002 08 31 | 683 | 0.7− | 0.1− | 2006 11 22 | 683 | (1.3− | 2.2+) | | |
| 2002 08 11 | 704 | 0.2+ | 0.1+ | 2002 08 31 | 683 | 0.2+ | 0.7− | 2006 11 22 | 683 | (0.4+ | 2.4+) | | |
| 2002 08 11 | 704 | 0.3+ | 0.1− | 2002 08 31 | 683 | 1.2+ | 1.2− | 2006 11 28 | 704 | 0.4+ | 0.6+ | | |
| 2002 08 11 | 704 | 0.0 | 0.7− | 2002 09 04 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.9− | 0.1+ | | |
| 2002 08 11 | 704 | 0.1+ | 0.2+ | 2002 09 04 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2− | 1.4+ | | |
| 2002 08 13 | 704 | 0.7− | 1.1+ | 2002 09 04 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.9+ | 1.1+ | | |
| 2002 08 13 | 704 | 0.2+ | 1.0+ | 2002 09 12 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.1− | | |

### 2002 PW$_{70}$ = 2006 PG$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.17570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23817766 | $\omega$ | 73.70708 | | +0.92442894 | −0.32551677 | |
| $a$ | 2.5775199 | $\Omega$ | 304.87520 | | +0.18492444 | +0.83824599 | |
| $e$ | 0.3496772 | $i$ | 14.01424 | | +0.33351774 | +0.43747285 | |
| $P$ | 4.14 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 1.2− | 0.4− | 2002 09 03 | 644 | 0.0 | 0.1− | 2006 08 12 | 644 | 0.1+ | 0.0 | | |
| 2002 08 11 | 704 | 0.0 | 0.2+ | 2002 09 03 | 644 | 0.2+ | 0.1− | 2006 08 12 | 644 | 0.1+ | 0.0 | | |
| 2002 08 11 | 704 | 0.0 | 0.5− | 2002 09 03 | 644 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.0 | 0.2− | | |
| 2002 08 13 | 704 | 0.1− | 0.3+ | 2006 07 26 | 644 | 0.2− | 0.1+ | 2006 08 20 | 644 | 0.4+ | 0.0 | | |
| 2002 08 13 | 704 | 0.0 | 0.1+ | 2006 07 26 | 644 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.1− | | |
| 2002 08 13 | 704 | 0.0 | 0.1+ | 2006 07 26 | 644 | 0.1+ | 0.2− | | | | | | |
| 2002 08 13 | 704 | 0.6+ | 0.5+ | 2006 08 12 | 644 | 0.1− | 0.1+ | | | | | | |

### 2002 PV$_{71}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.67348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28358809 | $\omega$ | 62.46162 | | +0.60394127 | +0.79271297 | |
| $a$ | 2.2944436 | $\Omega$ | 244.93338 | | −0.75971897 | +0.54112833 | |
| $e$ | 0.1792182 | $i$ | 5.24670 | | −0.24100212 | +0.28068893 | |
| $P$ | 3.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.1− | 0.0 | 2002 08 13 | 704 | 0.5+ | 0.9− | 2006 10 17 | G96 | 0.4+ | 0.2− | | |
| 2002 07 21 | 644 | 0.1+ | 0.2− | 2002 08 15 | 644 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.1+ | | |
| 2002 07 21 | 644 | 0.0 | 0.0 | 2002 08 15 | 644 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.0 | 0.1− | | |
| 2002 08 05 | 644 | 0.1− | 0.2− | 2002 08 15 | 644 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.3− | | |
| 2002 08 05 | 644 | 0.0 | 0.2− | 2002 08 16 | 644 | 0.3− | 0.2− | 2006 11 20 | G96 | 0.3− | 0.3− | | |
| 2002 08 05 | 644 | 0.2− | 0.0 | 2002 08 16 | 644 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.1− | 0.3− | | |
| 2002 08 12 | 704 | 0.1− | 0.7+ | 2002 08 16 | 644 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2002 08 12 | 704 | 0.2+ | 0.9+ | 2002 08 25 | 644 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.1+ | | |
| 2002 08 12 | 704 | 0.0 | 0.7+ | 2002 08 25 | 644 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2− | 0.3+ | | |
| 2002 08 12 | 704 | 0.8+ | 0.4− | 2002 08 25 | 644 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2002 08 12 | 704 | 0.5+ | 0.4− | 2002 08 26 | 644 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2002 08 13 | 704 | 0.3− | 0.9+ | 2002 08 26 | 644 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.3− | | |
| 2002 08 13 | 704 | 0.1− | 0.0 | 2002 08 26 | 644 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2002 08 13 | 704 | 0.2+ | 0.6− | 2006 10 17 | G96 | 0.1− | 0.1+ | | | | | | |
| 2002 08 13 | 704 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.2+ | | | | | | |

### 2002 PH$_{73}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.59861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26454624 | $\omega$ | 25.91038 | | +0.36066592 | +0.92678495 | |
| $a$ | 2.4032650 | $\Omega$ | 265.37918 | | −0.87297230 | +0.29585914 | |
| $e$ | 0.0777005 | $i$ | 6.03718 | | −0.32838918 | +0.23138068 | |
| $P$ | 3.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5− | 1.0− | 2002 08 16 | 608 | 0.4− | 1.2− | 2006 09 16 | 703 | 0.4+ | 0.1− | | |
| 1999 12 07 | 704 | 1.2− | 0.4− | 2002 08 16 | 608 | 0.2− | 1.1− | 2006 09 19 | 699 | 0.5− | 0.5− | | |
| 1999 12 07 | 704 | 1.1+ | 0.8+ | 2002 08 26 | 644 | 0.2+ | 0.9+ | 2006 09 19 | 699 | 0.7− | 0.0 | | |
| 1999 12 07 | 704 | 0.7+ | 0.1+ | 2002 08 26 | 644 | 0.7+ | 0.8+ | 2006 09 19 | 699 | 0.1+ | 0.3− | | |
| 2002 07 22 | 644 | 0.6− | 0.0 | 2002 08 26 | 644 | 0.2+ | 1.0+ | 2006 09 19 | 699 | 0.4− | 0.3+ | | |
| 2002 07 22 | 644 | 0.3− | 0.2+ | 2002 09 06 | 704 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 07 22 | 644 | 0.3− | 0.3+ | 2002 09 06 | 704 | 0.9+ | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.0 | | |
| 2002 08 05 | 644 | 0.3+ | 0.2+ | 2002 09 06 | 704 | 0.5+ | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.0 | | |
| 2002 08 05 | 644 | 0.0 | 0.5− | 2002 09 06 | 704 | 0.0 | 0.5+ | 2006 09 27 | 699 | 0.6− | 0.0 | | |
| 2002 08 05 | 644 | 0.2+ | 0.1+ | 2002 09 13 | 644 | 0.6− | 0.0 | 2006 09 27 | 699 | 0.4+ | 0.4− | | |
| 2002 08 08 | 699 | 0.5+ | 0.1− | 2002 09 13 | 644 | 0.6− | 0.6− | 2006 09 27 | 699 | 0.7− | 1.3+ | | |
| 2002 08 08 | 699 | 0.2− | 0.6+ | 2002 09 13 | 644 | 0.4− | 0.3− | 2006 09 27 | 699 | 0.2+ | 0.1− | | |
| 2002 08 08 | 699 | 0.5+ | 0.1+ | 2006 08 29 | 699 | 1.0+ | 0.3+ | 2006 09 27 | 703 | 0.6− | 0.4+ | | |
| 2002 08 08 | 699 | 1.0+ | 0.4+ | 2006 08 29 | 699 | 0.7+ | 0.2− | 2006 09 27 | 703 | 0.3− | 0.3+ | | |
| 2002 08 12 | 704 | 0.3− | 0.2+ | 2006 08 29 | 699 | 0.2+ | 0.3− | 2006 09 27 | 703 | 0.0 | 1.1− | | |
| 2002 08 12 | 704 | 0.0 | 0.3+ | 2006 08 29 | 699 | 1.1+ | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.1+ | | |
| 2002 08 12 | 704 | 0.1− | 0.6+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | (0.1+ | 1.7+) | | |
| 2002 08 12 | 704 | 0.1+ | 0.5− | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.5− | | |
| 2002 08 12 | 704 | 0.5− | 0.4+ | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.3+ | | |
| 2002 08 13 | 704 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.6− | 1.2+ | | |
| 2002 08 13 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.2+ | | |
| 2002 08 13 | 704 | 0.1− | 0.6− | 2006 09 14 | 644 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.2+ | | |
| 2002 08 13 | 704 | 0.5− | 0.9− | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2002 08 13 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.2+ | | | | | | |
| 2002 08 16 | 608 | 0.5− | 1.3− | 2006 09 16 | 703 | 0.2+ | 0.0 | | | | | | |

**2002 PB$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.58371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26456042 | $\omega$ | 3.12178 | | +0.95138902 | | +0.30555183 |
| $a$ | 2.4031791 | $\Omega$ | 338.96117 | | −0.28486025 | | +0.82519974 |
| $e$ | 0.1338085 | $i$ | 6.18706 | | −0.11710492 | | +0.47506154 |
| $P$ | 3.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.1− | 0.1+ | 2006 09 04 | A13 | 0.4− | 0.5− | 2006 09 29 | 704 | 0.2− | 0.1− |
| 2002 07 15 | 644 | 0.5− | 0.1+ | 2006 09 04 | A13 | 0.3− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 07 15 | 644 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2002 08 08 | 699 | 0.1+ | 0.7− | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2002 08 08 | 699 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2002 08 08 | 699 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.7− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 08 08 | 699 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2006 09 17 | 703 | 1.1− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 08 08 | 644 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 08 13 | 644 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2002 08 13 | 704 | 0.7+ | 0.2− | 2006 09 18 | 704 | 0.1+ | 1.1+ | 2006 10 12 | 644 | 0.5+ | 0.0 |
| 2002 08 13 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 704 | 0.6− | 0.2− | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2002 08 13 | 704 | (2.6+ | 1.8−) | 2006 09 18 | 704 | (1.0− | 1.9−) | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2002 08 13 | 704 | 0.9+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.1− | 2006 10 17 | 703 | (1.6− | 1.6+) |
| 2002 08 13 | 644 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2002 08 13 | 704 | 0.6+ | 0.1− | 2006 09 19 | 699 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2002 08 13 | 644 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.6− | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 08 15 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 08 15 | 644 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 08 15 | 644 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.2− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.1+ | 0.8− | 2006 09 25 | 704 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.8− | 0.5+ | 2006 09 27 | 699 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2006 09 27 | 699 | 0.6+ | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2006 07 22 | G96 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.2− | 0.8− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2006 07 22 | G96 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.4− |
| 2006 07 22 | G96 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.4− | 0.2+ | | | | |
| 2006 09 04 | A13 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.6− | 0.1− | | | | |

**2002 PG$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.56197 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27547150 | $\omega$ | 322.97290 | | +0.99754756 | | +0.03957247 |
| $a$ | 2.3392947 | $\Omega$ | 34.89287 | | −0.00767967 | | +0.88172929 |
| $e$ | 0.1358021 | $i$ | 5.79219 | | −0.06956927 | | +0.47009305 |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 30 | 608 | 0.3+ | 0.8− | 2006 10 21 | 691 | 0.6− | 0.3+ | 2006 11 15 | 704 | 0.6+ | 0.0 |
| 2002 07 30 | 608 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.4− | 0.2+ |
| 2002 07 30 | 608 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2002 08 11 | 644 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2002 08 11 | 644 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2002 08 11 | 644 | 0.6+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.9+ | 0.1+ |
| 2002 08 13 | 704 | 1.1− | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.1− |
| 2002 08 13 | 704 | 1.2+ | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2002 08 13 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.7+ |
| 2002 08 13 | 704 | 0.9− | 0.5+ | 2006 11 09 | 644 | 0.6− | 0.2+ | 2006 11 16 | 113 | 0.2+ | 0.1+ |
| 2002 08 13 | 704 | 0.3+ | 1.4+ | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 16 | 113 | 0.3+ | 0.1+ |
| 2002 08 13 | 644 | 0.3+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 16 | 113 | 0.2+ | 0.1+ |
| 2002 08 13 | 644 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 08 13 | 644 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2002 08 31 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 08 31 | 704 | 0.6− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2002 08 31 | 704 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.7− | 0.0 |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | (0.9− | 1.7+) |
| 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.5− | 1.0+ |
| 2006 10 17 | 691 | 0.2+ | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.9+ | 0.3− | | | | |
| 2006 10 21 | 691 | 0.5− | 0.3+ | 2006 11 15 | 704 | 0.6+ | 0.0 | | | | |

**2002 PU$_{80}$ = 2006 VS$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.68522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27347625 | $\omega$ | 283.84006 | | +0.95029120 | | +0.30966383 |
| $a$ | 2.3506590 | $\Omega$ | 58.12992 | | −0.26885897 | | +0.86870467 |
| $e$ | 0.2037250 | $i$ | 2.19185 | | −0.15703977 | | +0.38660123 |
| $P$ | 3.60 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.0 | 0.1− | 2005 05 10 | 807 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 2002 08 08 | 644 | 0.2− | 0.2− | 2005 05 10 | 807 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 08 11 | 644 | 0.2− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2002 08 11 | 644 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.4− | 0.0 |
| 2002 08 11 | 644 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 2002 08 14 | 644 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2002 08 14 | 644 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2002 08 14 | 644 | 1.2+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2002 08 15 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2002 08 15 | 644 | 0.7− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.7− |
| 2002 08 15 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 18 | 704 | 1.3− | 0.4+ |
| 2002 08 16 | 644 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2002 08 16 | 644 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2002 08 16 | 644 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.6+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2002 08 29 | 644 | 0.1− | 0.5− | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2002 08 29 | 644 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.5− | 2006 11 27 | G96 | 0.2+ | 0.2− |

**2002 PY$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.64655 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25701134 | $\omega$ | 102.75020 | | +0.85248768 | | +0.52248532 |
| $a$ | 2.4500100 | $\Omega$ | 225.75353 | | −0.48812808 | | +0.78430356 |
| $e$ | 0.2128734 | $i$ | 1.32371 | | −0.18707146 | | +0.33448022 |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 699 | 0.0 | 0.2+ | 2002 09 15 | 608 | 0.1− | 0.7− | 2006 10 10 | 644 | 0.4− | 0.1− |
| 2002 08 08 | 699 | 0.4+ | 0.1+ | 2002 09 15 | 608 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 08 08 | 699 | 0.2− | 0.6− | 2002 09 15 | 608 | 0.6− | 1.0− | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2002 08 08 | 699 | 1.0+ | 0.2+ | 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 10 15 | 106 | 0.9+ | 1.1− |
| 2002 08 12 | 704 | 0.7− | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 15 | 106 | 0.2− | 0.8− |
| 2002 08 12 | 704 | 0.5− | 0.1+ | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 10 15 | 106 | 0.4+ | 0.3+ |
| 2002 08 12 | 704 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 15 | 106 | 0.9− | 0.4− |
| 2002 08 12 | 704 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.8+ |
| 2002 08 12 | 704 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2002 08 13 | 699 | 0.1+ | 0.8+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2002 08 13 | 699 | 0.7+ | 0.2+ | 2006 09 18 | 699 | 0.9+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 2002 08 13 | 699 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 08 13 | 699 | 0.1− | 0.5− | 2006 09 18 | 699 | 0.9+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 08 15 | 291 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 08 15 | 291 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.1− |
| 2002 08 15 | 291 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.3+ |
| 2002 08 17 | 644 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.9+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2002 08 17 | 644 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.8+ | 2006 11 01 | G96 | 0.7− | 0.5− |
| 2002 08 17 | 644 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.4− | 0.3− | 2006 11 02 | G96 | 0.1− | 0.4+ |
| 2002 08 27 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 1.0+ | 0.5+ | 2006 11 02 | G96 | 0.3+ | 1.0+ |
| 2002 08 27 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.2− | 2006 11 02 | G96 | 0.3− | 0.3+ |
| 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.2− | 2006 11 02 | G96 | 0.5+ | 1.0+ |
| 2002 09 05 | 704 | 0.3+ | 1.3+ | 2006 09 26 | 691 | 0.4− | 0.1− | 2006 11 02 | G96 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.3− | 0.8+ | 2006 09 27 | 699 | 1.1− | 1.3− | 2006 11 02 | G96 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.0 | 1.0+ | 2006 09 27 | 699 | 1.4+ | 1.0− | 2006 11 02 | G96 | 0.6+ | 0.1+ |
| 2002 09 05 | 704 | 1.5− | 0.4+ | 2006 09 27 | 699 | 0.4+ | 0.1− | 2006 11 02 | G96 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.5− |
| 2002 09 14 | 644 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2002 09 14 | 644 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |

**2002 PK**$_{89}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.23662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26443297 | $\omega$ | 164.79721 | | +0.52819163 | −0.82682617 | |
| $a$ | 2.4039512 | $\Omega$ | 252.96935 | | +0.75644673 | +0.56161188 | |
| $e$ | 0.2539237 | $i$ | 11.66475 | | +0.38574855 | +0.03083149 | |
| $P$ | 3.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 704 | 0.4+ | 0.6+ | 2006 08 12 | 644 | 0.0 | 0.1− | 2006 10 20 | 704 | 0.6+ | 1.1+ |
| 2000 02 08 | 704 | 0.1− | 0.4− | 2006 08 12 | 644 | 0.2− | 0.1− | 2006 10 20 | 704 | 0.3+ | 0.1− |
| 2000 02 08 | 704 | 0.1+ | 0.4+ | 2006 10 02 | 704 | 0.1+ | 0.3− | 2006 10 20 | 704 | 0.2+ | 0.2+ |
| 2002 07 20 | 644 | 0.0 | 0.8+ | 2006 10 02 | 704 | 0.3+ | 0.6− | 2006 10 20 | 704 | 0.4+ | 0.1− |
| 2002 07 20 | 644 | 0.2+ | 0.7+ | 2006 10 02 | 704 | 1.0+ | 0.4− | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2002 07 20 | 644 | 0.2+ | 0.7+ | 2006 10 02 | 704 | 0.8+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 08 03 | 644 | 0.0 | 0.2− | 2006 10 02 | 704 | 0.7− | 0.4− | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2002 08 03 | 644 | 0.1− | 0.2− | 2006 10 02 | 703 | 0.2+ | 0.5− | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2002 08 03 | 644 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2002 08 11 | 704 | 0.3− | 0.4+ | 2006 10 02 | 703 | 0.2+ | 0.6− | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2002 08 11 | 704 | 0.5− | 0.5+ | 2006 10 02 | 703 | 0.4− | 0.5− | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2002 08 11 | 704 | 0.4+ | 0.3− | 2006 10 13 | A24 | 0.9− | 0.8+ | 2006 11 12 | 106 | 0.4+ | 0.4+ |
| 2002 08 11 | 704 | 0.8+ | 1.4+ | 2006 10 13 | A24 | 1.0+ | 0.4+ | 2006 11 12 | 106 | 0.5+ | 0.2+ |
| 2002 08 11 | 704 | 0.8+ | 0.1− | 2006 10 13 | A24 | 0.0 | 0.0 | 2006 11 12 | 106 | 0.6− | 0.5− |
| 2002 08 11 | 704 | 0.4− | 0.6+ | 2006 10 13 | A24 | 0.4+ | 0.2− | 2006 11 12 | 106 | 0.7+ | 0.4− |
| 2002 08 11 | 704 | 0.1− | 0.5− | 2006 10 13 | A24 | 0.1+ | 0.3− | 2006 11 15 | 703 | 0.4− | 0.3− |
| 2002 08 11 | 704 | 0.7− | 0.1− | 2006 10 13 | A24 | 0.8+ | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.2− |
| 2002 08 11 | 704 | 0.3− | 0.0 | 2006 10 15 | A24 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.0 |
| 2002 08 11 | 704 | 0.7+ | 0.2+ | 2006 10 15 | A24 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.2− |
| 2002 08 15 | 704 | 0.1− | 0.5− | 2006 10 15 | A24 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.6− | 0.5− |
| 2002 08 15 | 704 | (0.1− | 1.6−) | 2006 10 15 | A24 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.7+ |
| 2002 08 15 | 704 | 0.4− | 0.3− | 2006 10 15 | A24 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.7+ |
| 2002 08 15 | 704 | 0.1− | 0.2+ | 2006 10 17 | A24 | 0.3+ | 0.8+ | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2002 09 10 | 644 | 0.3− | 0.4− | 2006 10 17 | A24 | 0.2+ | 0.3− | 2006 11 23 | 703 | 0.4+ | 0.4+ |
| 2002 09 10 | 644 | 0.3− | 0.3− | 2006 10 17 | A24 | 0.4− | 0.2− | 2006 11 23 | 703 | 0.3− | 0.2+ |
| 2002 09 10 | 644 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.1− | 0.4− | 2006 11 23 | 703 | 0.1− | 0.1− |
| 2002 09 21 | 644 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.5− | 2006 11 26 | 104 | 0.2− | 0.4+ |
| 2002 09 21 | 644 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.3− | 0.4− | 2006 11 26 | 104 | 0.3− | 0.5+ |
| 2002 09 21 | 644 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.5− | 0.1− | 2006 11 26 | 104 | 0.8+ | 0.1− |
| 2006 08 12 | 644 | 0.1− | 0.0 | 2006 10 20 | 704 | 0.3− | 0.2+ | | | | |

**2002 PZ**$_{89}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.91751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26414739 | $\omega$ | 124.73837 | | +0.96083088 | −0.23625569 | |
| $a$ | 2.4056836 | $\Omega$ | 249.30678 | | +0.17525389 | +0.92292658 | |
| $e$ | 0.2280353 | $i$ | 8.90871 | | +0.21468602 | +0.30395685 | |
| $P$ | 3.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 04 | 644 | 0.1+ | 1.1+ | 2006 10 20 | 704 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2002 08 04 | 644 | 0.0 | 1.1+ | 2006 10 20 | 704 | 0.0 | 1.3+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 08 04 | 644 | 0.3+ | 1.0+ | 2006 10 20 | 704 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2002 08 11 | 704 | 0.2− | 0.9− | 2006 10 27 | 703 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2002 08 11 | 704 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2002 08 11 | 704 | 0.2− | 0.7− | 2006 10 27 | 703 | 0.3− | 0.4− | 2006 11 15 | 704 | 0.1+ | 0.1− |
| 2002 08 11 | 704 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2002 08 15 | 704 | 0.5− | 0.7+ | 2006 10 29 | 704 | 0.7− | 0.2− | 2006 11 15 | 704 | 0.0 | 0.3− |
| 2002 08 15 | 704 | 0.6+ | 0.7− | 2006 10 29 | 704 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2002 08 15 | 704 | 0.3+ | 0.9− | 2006 10 29 | 704 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.0 | 1.2− |
| 2002 08 15 | 704 | 0.4− | 0.4− | 2006 10 29 | 704 | 0.2− | 0.1− | 2006 11 15 | 704 | 1.0+ | 0.1+ |
| 2002 09 04 | 699 | 0.3+ | 0.8− | 2006 10 29 | 704 | 0.9− | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2002 09 04 | 699 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.7− |
| 2002 09 04 | 699 | 0.6+ | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | (1.8+ | 0.1+) |
| 2002 09 04 | 699 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 1.3+ | 1.2− |
| 2002 10 04 | 699 | 1.2+ | 0.6− | 2006 11 01 | H07 | 0.5+ | 0.2− | 2006 11 16 | 704 | 1.1+ | 1.2− |
| 2002 10 04 | 699 | 0.3+ | 0.4+ | 2006 11 01 | H07 | 0.1+ | 0.4− | 2006 11 16 | 704 | (0.9+ | 2.0−) |
| 2002 10 04 | 699 | 0.4− | 0.1− | 2006 11 01 | H07 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.7+ | 1.1− |
| 2002 10 04 | 699 | 0.2+ | 0.7− | 2006 11 02 | 703 | 0.6+ | 0.1+ | 2006 11 16 | 704 | 0.8+ | 1.0− |
| 2002 10 05 | 644 | 0.4− | 0.2− | 2006 11 02 | 703 | 0.2− | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.8− |
| 2002 10 05 | 644 | 0.5− | 0.3− | 2006 11 02 | 703 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.8+ | 0.7− |
| 2002 10 05 | 644 | 0.6− | 0.2− | 2006 11 02 | 703 | 0.4− | 0.3− | 2006 11 16 | 704 | 1.4+ | 1.2− |
| 2002 10 06 | 644 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.4− | 0.5− | 2006 11 16 | 704 | 1.4+ | 1.0− |
| 2002 10 06 | 644 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2002 10 06 | 644 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2002 10 31 | 704 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2002 10 31 | 704 | 0.2+ | 0.9+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2002 10 31 | 704 | 0.9+ | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.0 | 1.1+ |
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.4− |
| 2006 08 29 | 703 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2006 08 29 | 703 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.5− | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2006 08 29 | 703 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.6+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2006 10 18 | A50 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.4+ |
| 2006 10 18 | A50 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.3− |
| 2006 10 18 | A50 | 0.1+ | 0.6− | 2006 11 14 | 703 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2006 10 18 | A50 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2006 10 19 | 703 | 0.2+ | 0.6+ | 2006 11 14 | 703 | 0.9− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2006 10 19 | 703 | 0.6− | 0.3− | 2006 11 14 | G96 | 0.5− | 0.1+ | 2006 12 01 | 704 | 1.5− | 1.3+ |
| 2006 10 19 | 703 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.5− | 0.1+ | 2006 12 01 | 704 | 2.1− | 0.2+ |
| 2006 10 19 | 703 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2006 10 20 | 704 | 0.4+ | 1.5+ | 2006 11 15 | G96 | 0.3− | 0.4− | 2006 12 01 | 704 | 1.4− | 0.2+ |

**2002 PU**$_{93}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.20695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26466478 | $\omega$ | 26.94773 | | +0.94677294 | −0.32159912 | |
| $a$ | 2.4025473 | $\Omega$ | 351.77508 | | +0.27494147 | +0.83045349 | |
| $e$ | 0.1946315 | $i$ | 5.60172 | | +0.16741621 | +0.45488571 | |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 608 | 1.1− | 1.4− | 2002 09 06 | 704 | 0.2− | 0.2+ | 2006 10 21 | 704 | 0.5+ | 0.1− |
| 2002 08 11 | 608 | (1.2− | 1.9−) | 2002 09 06 | 704 | 0.2+ | 0.3− | 2006 10 21 | 704 | 0.5+ | 0.1+ |
| 2002 08 11 | 608 | 0.3− | 1.0− | 2002 09 06 | 704 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.7+ | 0.1+ |
| 2002 08 15 | 699 | (1.7− | 0.3−) | 2002 09 11 | 608 | (0.6+ | 1.6−) | 2006 10 27 | 703 | 1.4− | 0.3− |
| 2002 08 15 | 699 | 0.8− | 0.4+ | 2002 09 11 | 608 | 0.5+ | 1.4− | 2006 10 27 | 703 | 0.2+ | 0.1+ |
| 2002 08 15 | 699 | 0.2− | 1.4+ | 2002 09 11 | 608 | 0.1− | 1.4− | 2006 10 27 | 703 | 0.4+ | 0.4− |
| 2002 08 15 | 699 | 0.2+ | 0.5− | 2002 09 15 | 644 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2002 08 18 | 644 | 0.3+ | 0.1+ | 2002 09 15 | 644 | 0.4− | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2002 08 18 | 644 | 0.5+ | 0.3+ | 2002 09 15 | 644 | 0.5− | 0.0 | 2006 11 01 | G96 | 0.5+ | 0.3− |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2002 09 29 | 843 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2002 09 29 | 843 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.0 | 0.1− | 2002 09 29 | 843 | 0.7+ | 0.8− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2002 10 03 | 704 | 0.8− | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2002 09 04 | 644 | 0.3− | 0.2− | 2002 10 03 | 704 | 0.5− | 0.8− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 09 04 | 644 | 0.2− | 0.1− | 2002 10 03 | 704 | 0.1− | 1.0+ | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2002 09 04 | 644 | 0.3− | 0.2− | 2002 10 03 | 704 | 0.1− | 0.6+ | 2006 11 13 | 644 | 0.6− | 0.5+ |
| 2002 09 05 | 704 | 0.8+ | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.5+ |
| 2002 09 05 | 704 | 0.3− | 1.0+ | 2006 10 19 | 703 | 0.1− | 0.4− | 2006 11 14 | 703 | 1.1− | 1.2+ |
| 2002 09 05 | 704 | 1.3+ | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.3− | 0.9+ |
| 2002 09 05 | 704 | 0.3+ | 1.3+ | 2006 10 19 | 703 | 0.6+ | 0.6− | 2006 11 14 | 703 | 1.0− | 0.3+ |
| 2002 09 05 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 704 | 0.1+ | 0.6− | 2006 11 14 | 703 | 0.3+ | 0.1− |
| 2002 09 06 | 704 | 0.1+ | 0.0 | 2006 10 21 | 704 | 0.4+ | 0.1+ | | | | |

**2002 PQ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.57362 | | (2000.0) | | | |
| $n$ | 0.26415005 | $\omega$ | 329.54355 | | +0.86530391 | −0.49383637 |
| $a$ | 2.4056674 | $\Omega$ | 60.29152 | | +0.47751651 | +0.76005715 |
| $e$ | 0.2307321 | $i$ | 5.67425 | | +0.15240444 | +0.42242014 |
| $P$ | 3.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.2+ | 0.3− | 2002 09 16 | 644 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2002 08 12 | 608 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.5+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2002 08 12 | 608 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.6+ | 2006 11 12 | G96 | 0.3+ | 0.5− |
| 2002 08 15 | 699 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2002 08 15 | 699 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2002 08 15 | 699 | 1.0+ | 0.8+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2002 08 15 | 699 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.6− |
| 2002 08 18 | 608 | 0.5− | 0.9− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.7− |
| 2002 08 18 | 608 | 0.3− | 1.1− | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.6− | 1.4+ |
| 2002 08 18 | 608 | 0.8− | 1.2− | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2002 08 19 | 644 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.7+ |
| 2002 08 19 | 644 | 0.5+ | 0.4+ | 2006 10 27 | 704 | 0.0 | 0.8− | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 2002 08 19 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 0.1+ | 1.1+ | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2002 08 19 | 644 | 0.6+ | 0.2+ | 2006 10 27 | 704 | (0.7− | 2.0−) | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2002 08 19 | 644 | 0.4− | 0.5+ | 2006 10 27 | 704 | 1.3− | 0.9− | 2006 11 18 | 704 | 0.3− | 0.2− |
| 2002 08 19 | 644 | 0.8+ | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.8+ |
| 2002 08 30 | 644 | 0.4+ | 0.5− | 2006 11 02 | 703 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.7+ |
| 2002 08 30 | 644 | 0.0 | 0.4+ | 2006 11 02 | 703 | 0.4− | 0.3+ | 2006 11 21 | 704 | (1.8+ | 0.4−) |
| 2002 08 30 | 644 | 0.7+ | 0.3− | 2006 11 02 | 703 | 0.2− | 0.3+ | 2006 11 21 | 704 | 1.3+ | 0.3− |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.3− |
| 2002 08 30 | 644 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.5− |
| 2002 08 30 | 644 | 0.3− | 0.5+ | 2006 11 02 | 703 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.4− |
| 2002 09 09 | 644 | 0.1+ | 0.2− | 2006 11 02 | 703 | 0.7− | 0.3− | 2006 11 27 | 703 | 0.3− | 0.2− |
| 2002 09 09 | 644 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.6− |
| 2002 09 09 | 644 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.1− |
| 2002 09 12 | 608 | (2.2+ | 0.9+) | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.2− |
| 2002 09 12 | 608 | (2.7+ | 1.5+) | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2002 09 12 | 608 | (2.2+ | 1.2+) | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2002 09 16 | 644 | 0.4− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.7− |
| 2002 09 16 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.8− | 2006 11 29 | 704 | 0.4+ | 0.0 |
| 2002 09 16 | 644 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.6− |
| 2002 09 16 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.1− | | | | |
| 2002 09 16 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.0+ | 0.2− | | | | |

**2002 PU$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.02148 | | (2000.0) | | | |
| $n$ | 0.25420936 | $\omega$ | 237.43496 | | +0.64821477 | +0.75863032 |
| $a$ | 2.4679803 | $\Omega$ | 73.11490 | | −0.67364512 | +0.61146929 |
| $e$ | 0.1886464 | $i$ | 3.92841 | | −0.35499277 | +0.22491186 |
| $P$ | 3.88 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.7− | 1.5− | 2006 09 26 | 704 | 0.7− | 0.1− |
| 2002 08 12 | 608 | 0.9− | 0.9− | 2006 09 12 | 703 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.5− |
| 2002 08 12 | 608 | 0.4− | 0.7− | 2006 09 12 | 703 | 0.7− | 1.1− | 2006 09 30 | 703 | 0.7− | 0.3− |
| 2002 08 15 | 699 | 0.8+ | 1.1+ | 2006 09 16 | 704 | 0.2− | 0.1− | 2006 09 30 | 703 | 1.2+ | 1.0+ |
| 2002 08 15 | 699 | 0.1− | 0.1+ | 2006 09 16 | 704 | (1.5+ | 0.5+) | 2006 09 30 | 703 | 0.8− | 0.7− |
| 2002 08 15 | 699 | 0.3− | 0.7+ | 2006 09 16 | 704 | 0.8+ | 0.9− | 2006 09 30 | 704 | (0.7− | 1.8+) |
| 2002 08 15 | 699 | 0.9+ | 0.1− | 2006 09 16 | 704 | 1.4+ | 0.5− | 2006 09 30 | 704 | 0.6− | 0.1+ |
| 2002 08 19 | 644 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 09 30 | 704 | 0.4− | 1.0+ |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.4+ | 0.1− |
| 2002 08 19 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 2002 08 30 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.7− | 1.0+ |
| 2002 08 30 | 644 | 0.2− | 0.3− | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.0 |
| 2002 08 30 | 644 | 0.2− | 0.2− | 2006 09 20 | 644 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.0 | 0.4− |
| 2002 09 16 | 644 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.2− | 0.7− |
| 2002 09 16 | 644 | 0.8+ | 1.1+ | 2006 09 22 | 704 | (1.8+ | 1.5+) | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 09 16 | 644 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 1.5+ | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2006 08 28 | 699 | 1.0− | 0.3− | 2006 09 22 | 704 | 1.4+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 08 28 | 699 | 0.1+ | 1.1+ | 2006 09 22 | 704 | 1.2+ | 0.1+ | 2006 11 23 | G96 | 0.8− | 0.1− |
| 2006 08 28 | 699 | 1.0+ | 1.4− | 2006 09 26 | 704 | 0.2+ | 1.0+ | 2006 11 23 | G96 | 0.6+ | 0.4− |
| 2006 08 28 | 699 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.6− | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2006 09 12 | 703 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.3− |

**2002 PO$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.98321 | | (2000.0) | | | |
| $n$ | 0.25854430 | $\omega$ | 198.33915 | | +0.57620816 | +0.81560949 |
| $a$ | 2.4403160 | $\Omega$ | 106.87704 | | −0.74281522 | +0.54944493 |
| $e$ | 0.1870397 | $i$ | 3.15017 | | −0.34089544 | +0.18135995 |
| $P$ | 3.81 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 09 | 691 | 0.9+ | 0.6+ | 2002 08 18 | 644 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.4+ | 0.2− |
| 1991 11 09 | 691 | 0.5− | 0.5+ | 2002 08 18 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | (0.7+ | 2.4+) |
| 1991 11 09 | 691 | 1.3− | 0.5+ | 2002 08 18 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.7+ |
| 2001 03 16 | 691 | 0.4+ | 0.6+ | 2002 08 29 | 644 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.6+ |
| 2001 03 16 | 691 | 0.6+ | 0.1− | 2002 08 29 | 644 | 0.5+ | 0.2+ | 2006 09 28 | 704 | 0.3− | 0.8+ |
| 2001 03 16 | 691 | 0.6+ | 0.9+ | 2002 08 29 | 644 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.3− | 0.4+ |
| 2002 06 27 | 644 | 0.0 | 0.7+ | 2002 08 30 | 644 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.5− | 1.1− |
| 2002 06 27 | 644 | 0.3+ | 0.9+ | 2002 08 30 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.8− |
| 2002 06 27 | 644 | 0.5+ | 0.3+ | 2002 08 30 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.2+ |
| 2002 07 30 | 608 | 0.8− | 0.1− | 2002 09 11 | 608 | 0.2+ | 0.5− | 2006 09 30 | 703 | 0.6+ | 0.1− |
| 2002 07 30 | 608 | 0.2− | 0.1+ | 2002 09 11 | 608 | 0.5+ | 0.4− | 2006 10 16 | 703 | (0.1− | 2.2+) |
| 2002 07 30 | 608 | 0.5− | 0.2+ | 2002 09 11 | 608 | 0.4+ | 0.5− | 2006 10 16 | 703 | (2.4+ | 1.9+) |
| 2002 08 14 | 704 | 1.5− | 1.2+ | 2002 09 15 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.0 | 1.1+ |
| 2002 08 14 | 704 | (1.7− | 0.4+) | 2002 09 15 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 2002 08 14 | 704 | 0.6− | 0.0 | 2002 09 15 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.8− | 0.2+ |
| 2002 08 15 | 699 | 0.4− | 0.4− | 2005 03 11 | 691 | 0.0 | 0.7+ | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2002 08 15 | 699 | 0.4− | 0.1+ | 2005 03 11 | 691 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2002 08 15 | 699 | 0.1+ | 0.9+ | 2005 03 11 | 691 | 0.1+ | 0.9+ | 2006 10 22 | 703 | 0.1+ | 0.8− |
| 2002 08 15 | 699 | 0.6− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.5+ | 0.5− |
| 2002 08 17 | 608 | 0.2− | 1.2+ | 2006 08 24 | 644 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2002 08 17 | 608 | 0.5− | 1.2+ | 2006 08 24 | 644 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2002 08 17 | 608 | 0.2− | 1.1+ | 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.7+ | 0.5− |

**2002 PY$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.35700 | | (2000.0) | | | |
| $n$ | 0.26470448 | $\omega$ | 3.90186 | | +0.99972542 | +0.01822751 |
| $a$ | 2.4023071 | $\Omega$ | 354.98234 | | −0.02331149 | +0.83747349 |
| $e$ | 0.2269074 | $i$ | 9.69290 | | +0.00238066 | +0.54617388 |
| $P$ | 3.72 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 608 | 1.1+ | 0.4− | 2002 09 11 | 608 | 0.2− | 0.9− | 2006 08 29 | 703 | 0.3+ | 0.3+ |
| 2002 08 11 | 608 | 0.7+ | 0.0 | 2002 09 11 | 608 | 0.1− | 0.6− | 2006 09 28 | 703 | 0.4− | 0.1+ |
| 2002 08 11 | 608 | 0.4+ | 0.2− | 2002 09 15 | 644 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.0 |
| 2002 08 14 | 704 | 0.4− | 0.0 | 2002 09 15 | 644 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.4+ |
| 2002 08 14 | 704 | 0.2− | 0.5− | 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2002 08 14 | 704 | 1.4− | 0.5+ | 2002 09 26 | 644 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.6− | 0.1+ |
| 2002 08 14 | 704 | 0.6− | 0.8− | 2002 09 26 | 644 | 0.4− | 0.3+ | 2006 09 28 | 703 | 0.4− | 0.1+ |
| 2002 08 14 | 704 | 0.1− | 0.1+ | 2002 09 26 | 644 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.4− |
| 2002 08 15 | 699 | 0.9− | 0.3− | 2002 10 03 | 704 | 0.7− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.1− |
| 2002 08 15 | 699 | 0.1+ | 0.4− | 2002 10 03 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.2− |
| 2002 08 15 | 699 | 0.6− | 0.3− | 2002 10 03 | 704 | 0.8+ | 1.3− | 2006 10 01 | 704 | 0.4− | 0.1− |
| 2002 08 15 | 699 | 0.5− | 0.1− | 2002 10 03 | 704 | 0.0 | 1.3− | 2006 10 01 | 704 | 0.5+ | 0.1− |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2002 10 05 | 704 | 0.6+ | 0.0 | 2006 10 01 | 704 | 0.4− | 0.7− |
| 2002 08 19 | 644 | 0.2+ | 0.1− | 2002 10 05 | 704 | 0.3+ | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2002 10 05 | 704 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.4− | 0.3− |
| 2002 08 30 | 644 | 0.3+ | 0.4+ | 2002 10 05 | 704 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.4− | 0.3+ |
| 2002 08 30 | 644 | 0.4− | 0.2+ | 2002 10 05 | 704 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.2+ | 0.5+ | 2002 10 07 | 704 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.4+ | 0.4+ | | |
| 2002 08 30 | 644 | 0.4− | 0.3+ | 2002 10 07 | 704 | 0.1− | 0.5− | 2006 10 27 | 703 | 0.0 | 0.2+ | | |
| 2002 08 30 | 644 | 0.5+ | 0.6+ | 2002 10 07 | 704 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.2+ | | |
| 2002 08 30 | 644 | 0.4− | 0.3+ | 2002 10 07 | 704 | 0.3− | 0.3− | 2006 11 15 | 703 | 0.3− | 0.0 | | |
| 2002 09 05 | 704 | 0.2+ | 0.5+ | 2002 10 07 | 704 | 1.2− | 0.9− | 2006 11 15 | 703 | 0.8− | 0.3+ | | |
| 2002 09 05 | 704 | 0.7+ | 0.3+ | 2002 10 09 | 699 | 0.0 | 1.2+ | 2006 11 15 | 703 | 0.5− | 0.2+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.4+ | 2002 10 09 | 699 | 1.0− | 0.2− | 2006 11 15 | 703 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | 0.4+ | 0.4+ | 2002 10 09 | 699 | 0.1+ | 0.5− | 2006 11 15 | 704 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2002 10 09 | 699 | 0.8− | 0.5+ | 2006 11 15 | 704 | 0.8+ | 1.2+ | | |
| 2002 09 05 | 608 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 11 15 | 704 | 1.4+ | 0.8− | | |
| 2002 09 05 | 608 | 0.2− | 0.2− | 2002 10 11 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 704 | 1.3+ | 1.5− | | |
| 2002 09 05 | 608 | 0.4+ | 0.5− | 2002 10 11 | 704 | 0.7+ | 0.4+ | 2006 11 15 | 704 | 0.9+ | 0.1− | | |
| 2002 09 06 | 704 | 0.4+ | 0.1+ | 2002 10 11 | 704 | 0.7+ | 0.7− | 2006 11 21 | 703 | 0.1− | 0.4− | | |
| 2002 09 06 | 704 | 0.4+ | 0.6+ | 2002 10 11 | 704 | 0.6+ | 0.1+ | 2006 11 21 | 703 | 0.2− | 0.3+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.4+ | 2006 11 21 | 703 | 0.1+ | 0.5+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.1− | 2006 08 29 | 703 | (1.4− | 1.7+) | 2006 11 21 | 703 | 0.4− | 0.3− | | |
| 2002 09 11 | 608 | 0.3− | 0.5− | 2006 08 29 | 703 | 0.2+ | 0.6+ | | | | | | |

**2002 PV**$_{97}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.94165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29597673 | $\omega$ | 319.33262 | | +0.85050429 | +0.52548128 | |
| $a$ | 2.2299631 | $\Omega$ | 9.05024 | | −0.43755863 | +0.73075849 | |
| $e$ | 0.2354872 | $i$ | 8.26957 | | −0.29186451 | +0.43573095 | |
| $P$ | 3.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 691 | (4.0− | 21.8−) | 2002 08 20 | 644 | 0.0 | 0.4− | 2002 10 03 | 704 | 0.8− | 0.4+ | | |
| 1998 04 23 | 691 | (3.6− | 20.3−) | 2002 08 20 | 644 | 0.3− | 0.6− | 2002 10 05 | 704 | 0.1− | 0.7+ | | |
| 1998 04 23 | 691 | (1.7− | 24.3−) | 2002 08 30 | 644 | 0.1− | 0.1− | 2002 10 05 | 704 | 0.7− | 0.4+ | | |
| 1998 04 29 | 691 | 0.1+ | 0.3+ | 2002 08 30 | 644 | 0.1− | 0.3− | 2002 10 05 | 704 | 0.7− | 0.8− | | |
| 1998 04 29 | 691 | 0.1+ | 0.5+ | 2002 08 30 | 644 | 0.1+ | 0.1− | 2002 10 05 | 704 | 0.8− | 0.5+ | | |
| 1998 04 29 | 691 | 0.4+ | 0.2+ | 2002 09 08 | 599 | 0.3− | 0.3− | 2002 10 05 | 704 | 0.4− | 1.3+ | | |
| 2002 08 12 | 608 | 0.4− | 0.9− | 2002 09 08 | 599 | 0.3− | 0.3− | 2002 10 06 | 704 | 0.6+ | 0.6+ | | |
| 2002 08 12 | 608 | 0.1− | 0.6− | 2002 09 08 | 599 | 0.3− | 0.2− | 2002 10 06 | 704 | (2.4+ | 0.1+) | | |
| 2002 08 12 | 608 | 0.1− | 0.8− | 2002 09 16 | 644 | 0.2− | 0.3+ | 2002 10 06 | 704 | (1.8+ | 0.6+) | | |
| 2002 08 14 | 704 | (1.8+ | 1.7+) | 2002 09 16 | 644 | 0.1− | 0.1+ | 2002 11 06 | 704 | (0.3− | 2.0+) | | |
| 2002 08 14 | 704 | 0.1− | 0.8+ | 2002 09 16 | 644 | 0.1+ | 0.2+ | 2002 11 06 | 704 | 0.9+ | 0.2− | | |
| 2002 08 14 | 704 | 0.6+ | 0.9+ | 2002 09 30 | 608 | 1.3+ | 0.7+ | 2002 11 06 | 704 | 0.6− | 0.2− | | |
| 2002 08 14 | 704 | 1.6+ | 1.1+ | 2002 09 30 | 608 | 1.3+ | 1.1+ | 2002 11 06 | 704 | 0.5− | 0.7− | | |
| 2002 08 15 | 699 | 0.4− | 0.1− | 2002 09 30 | 608 | 1.0+ | 1.0+ | 2002 11 06 | 704 | 1.1− | 0.8− | | |
| 2002 08 15 | 699 | 0.6+ | 0.6− | 2002 10 03 | 704 | 0.6− | 0.1+ | 2004 03 18 | 645 | 0.1+ | 0.1+ | | |
| 2002 08 15 | 699 | 0.4− | 0.3− | 2002 10 03 | 704 | 0.3− | 0.4+ | 2004 03 18 | 645 | 0.0 | 0.0 | | |
| 2002 08 15 | 699 | 0.2+ | 0.3+ | 2002 10 03 | 704 | 0.7− | 0.8+ | | | | | | |
| 2002 08 20 | 644 | 0.0 | 0.5− | 2002 10 03 | 704 | 0.3− | 0.3+ | | | | | | |

**2002 PZ**$_{97}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.23916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25672958 | $\omega$ | 327.36066 | | +0.72714983 | +0.68536880 | |
| $a$ | 2.4518023 | $\Omega$ | 349.10434 | | −0.57720133 | +0.57963853 | |
| $e$ | 0.2821323 | $i$ | 11.91403 | | −0.37160699 | +0.44078201 | |
| $P$ | 3.84 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.3+ | 0.2+ | 2002 09 13 | 704 | 0.3+ | 0.0 | 2006 09 14 | 644 | 0.2− | 0.1+ | | |
| 2001 02 20 | 645 | 0.1+ | 0.3+ | 2002 09 15 | 644 | 0.8− | 1.2+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 12 | 608 | 0.5+ | 0.6+ | 2002 09 15 | 644 | 0.7− | 1.2+ | 2006 09 16 | 703 | 0.1+ | 0.7− | | |
| 2002 08 12 | 608 | 0.9+ | 0.8+ | 2002 09 15 | 644 | 0.6− | 1.2+ | 2006 09 16 | 703 | 0.5+ | 0.7− | | |
| 2002 08 12 | 608 | 0.7+ | 1.4+ | 2002 09 16 | 644 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.9− | 0.8− | | |
| 2002 08 14 | 704 | 0.3− | 1.3− | 2002 09 16 | 644 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.6− | | |
| 2002 08 14 | 704 | 0.3+ | 0.4− | 2002 09 16 | 644 | 0.3− | 0.3+ | 2006 09 20 | 699 | 0.8+ | 0.9+ | | |
| 2002 08 14 | 704 | 0.7+ | 0.3− | 2002 09 26 | 699 | 0.9− | 0.1+ | 2006 09 20 | 699 | 0.7+ | 0.1− | | |
| 2002 08 14 | 704 | 0.6+ | 0.2− | 2002 09 26 | 699 | 0.5− | 0.5− | 2006 09 20 | 699 | 0.4− | 0.0 | | |
| 2002 08 14 | 704 | 1.3+ | 0.1+ | 2002 09 26 | 699 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.4+ | 0.3+ | | |
| 2002 08 15 | 699 | 0.0 | 0.5− | 2002 09 26 | 699 | 0.0 | 0.8− | 2006 09 28 | 703 | 0.5− | 0.4− | | |
| 2002 08 15 | 699 | 0.2− | 0.4+ | 2002 09 30 | 608 | 0.6− | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.6− | | |
| 2002 08 15 | 699 | 0.8− | 0.1− | 2002 09 30 | 608 | 0.2− | 1.1+ | 2006 09 28 | 703 | (0.8+ | 1.6+) | | |
| 2002 08 15 | 699 | 0.6− | 0.1− | 2002 09 30 | 608 | 0.5− | 0.9+ | 2006 09 28 | 703 | 0.2− | 0.1− | | |
| 2002 08 18 | 608 | (0.5− | 1.7−) | 2002 10 03 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 703 | 0.7+ | 1.2+ | | |
| 2002 08 18 | 608 | 0.5− | 1.2− | 2002 10 03 | 704 | 0.2+ | 1.2+ | 2006 09 28 | 703 | 0.6+ | 0.5+ | | |
| 2002 08 18 | 608 | 0.7− | 1.1− | 2002 10 03 | 704 | 0.7+ | 0.7− | 2006 09 28 | 703 | 0.1+ | 0.6+ | | |
| 2002 08 19 | 644 | 0.0 | 1.1+ | 2002 10 03 | 704 | (1.6+ | 1.4+) | 2006 10 04 | 703 | 0.5− | 1.0− | | |
| 2002 08 19 | 644 | 0.0 | 1.1+ | 2002 10 06 | 704 | 0.1− | 0.1− | 2006 10 04 | 703 | 0.2+ | 0.4+ | | |
| 2002 08 19 | 644 | 0.0 | 1.1+ | 2002 10 06 | 704 | 0.6− | 0.5− | 2006 10 04 | 703 | 0.1− | 0.2− | | |
| 2002 08 29 | 644 | 0.5+ | 0.2+ | 2002 10 06 | 704 | 0.5+ | 0.5− | 2006 10 04 | 703 | 0.1+ | 0.2− | | |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2002 10 06 | 704 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.1− | | |
| 2002 08 29 | 644 | 0.4+ | 0.2+ | 2002 10 07 | 704 | 0.6+ | 0.7+ | 2006 10 10 | 644 | 0.2+ | 0.1− | | |
| 2002 09 05 | 704 | 0.3+ | 0.5+ | 2002 10 07 | 704 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.8+ | 0.1+ | 2002 10 07 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 09 05 | 704 | 0.2+ | 0.8+ | 2002 10 07 | 704 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.8− | | |
| 2002 09 05 | 704 | 0.2+ | 0.7+ | 2002 10 11 | 704 | 0.1+ | 1.2+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2002 09 06 | 704 | 1.3− | 1.1− | 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | (0.1− | 2.5+) | | |
| 2002 09 06 | 704 | (0.8− | 1.7−) | 2002 10 11 | 704 | 0.6+ | 0.7− | 2006 10 17 | 703 | 0.5− | 0.2+ | | |
| 2002 09 06 | 704 | 1.0− | 0.7− | 2006 08 30 | 704 | 1.0+ | 1.3− | 2006 10 17 | 703 | 0.3− | 0.1+ | | |
| 2002 09 06 | 704 | 0.7− | 0.9− | 2006 08 30 | 704 | 1.0+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.5+ | | |
| 2002 09 06 | 704 | 1.0− | 0.6− | 2006 08 30 | 704 | 0.9+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.3− | | |
| 2002 09 12 | 608 | 1.4− | 0.5+ | 2006 08 30 | 704 | 0.1− | 1.2− | 2006 10 22 | 644 | 0.1− | 0.2− | | |
| 2002 09 12 | 608 | 1.1− | 0.6+ | 2006 08 30 | 699 | 0.2− | 1.0+ | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2002 09 12 | 608 | 1.2− | 0.7+ | 2006 08 30 | 699 | 0.2− | 0.0 | 2006 10 31 | 703 | 0.5− | 0.4− | | |
| 2002 09 13 | 704 | 0.3− | 0.2+ | 2006 08 30 | 699 | 0.0 | 0.7+ | 2006 10 31 | 703 | 0.1− | 0.3+ | | |
| 2002 09 13 | 704 | 0.1− | 0.1− | 2006 08 30 | 699 | 1.0+ | 1.0+ | 2006 10 31 | 703 | 0.9− | 0.1+ | | |
| 2002 09 13 | 704 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.2+ | 0.5+ | 2006 10 31 | 703 | 1.2− | 0.1+ | | |

**2002 PL**$_{105}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.01235 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26659225 | $\omega$ | 105.05462 | | +0.96609496 | +0.23896349 | |
| $a$ | 2.3909530 | $\Omega$ | 241.20382 | | −0.25812835 | +0.90203024 | |
| $e$ | 0.0922040 | $i$ | 6.40495 | | +0.00550256 | +0.35949674 | |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.3+ | 0.1− | 2002 08 26 | 644 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2002 08 12 | 704 | 0.7+ | 0.2− | 2002 08 26 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 08 12 | 704 | 0.4− | 0.2− | 2002 09 13 | 644 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2002 08 12 | 704 | 0.5+ | 0.2− | 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2002 08 12 | 704 | 0.6+ | 0.4+ | 2002 09 13 | 644 | 0.6+ | 0.1− | 2006 11 13 | 691 | 0.4− | 0.1+ | | |
| 2002 08 15 | 644 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.6+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ | | |
| 2002 08 15 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.1− | 1.2+ | 2006 11 13 | 691 | 0.2− | 0.0 | | |
| 2002 08 15 | 644 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.7+ | 1.2− | 2006 11 21 | 012 | 0.0 | 0.1− | | |
| 2002 08 17 | 608 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.7+ | 2006 11 21 | 012 | 1.0+ | 0.7− | | |
| 2002 08 17 | 608 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 21 | 012 | 0.5+ | 0.5− | | |
| 2002 08 17 | 608 | 0.6− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 21 | 012 | 0.3− | 0.8− | | |
| 2002 08 26 | 644 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.4− | | | | | | |

**2002 PT**$_{105}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.85888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26073875 | $\omega$ | 107.68052 | | +0.99139718 | −0.07435490 | |
| $a$ | 2.4266045 | $\Omega$ | 256.68799 | | +0.02917179 | +0.92779474 | |
| $e$ | 0.2266094 | $i$ | 6.35517 | | +0.12759558 | +0.36560670 | |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.2+ | 0.3+ | 2002 09 04 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.4+ | | |
| 2002 07 21 | 644 | 0.1+ | 0.1+ | 2002 09 04 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2002 07 21 | 644 | 0.1+ | 0.3+ | 2002 09 04 | 644 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2002 08 03 | 599 | 0.1− | 1.1+ | 2002 10 05 | 704 | 0.5+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.7+ | | |
| 2002 08 03 | 599 | 0.1− | 0.5+ | 2002 10 05 | 704 | 0.3+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.6+ | | |
| 2002 08 03 | 599 | 1.0+ | 0.4+ | 2002 10 05 | 704 | 0.1+ | 0.7+ | 2006 11 07 | 644 | 0.7+ | 0.2− | | |
| 2002 08 03 | 599 | 0.1− | 0.3+ | 2002 10 05 | 645 | 0.1+ | 0.2− | 2006 11 14 | 703 | (1.7− | 0.6+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 1.4− | 0.1+ | 2002 10 05 | 704 | 0.3+ | 1.0+ | 2006 11 14 | 703 | 0.5− | 0.8− |
| 2002 08 12 | 704 | 0.9− | 0.1− | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.4− | 0.3− |
| 2002 08 12 | 704 | 0.8− | 0.9+ | 2002 10 05 | 704 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.9+ | 0.3− |
| 2002 08 12 | 704 | 0.9− | 0.1+ | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 11 19 | 704 | 1.2− | 0.6− |
| 2002 08 15 | 644 | 0.0 | 0.1+ | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.5− |
| 2002 08 15 | 644 | 0.0 | 0.3− | 2006 10 19 | A50 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.8− | 0.6+ |
| 2002 08 15 | 644 | 0.0 | 0.1+ | 2006 10 19 | A50 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.7− | 0.5− |
| 2002 08 18 | 644 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.5− |
| 2002 08 18 | 644 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 1.1+ | 0.7− |
| 2002 08 18 | 644 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 10 21 | 704 | (0.5+ | 2.1+) | 2006 11 22 | 704 | 0.3+ | 1.0+ |
| 2002 08 26 | 644 | 0.4+ | 0.4+ | 2006 10 21 | 704 | 1.1+ | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2002 08 26 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 704 | 0.7− | 0.4+ | 2006 11 25 | G96 | 0.3+ | 0.1+ |
| 2002 09 04 | 699 | 0.7− | 0.9+ | 2006 10 21 | 704 | (0.6+ | 2.1+) | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2002 09 04 | 699 | 0.6− | 0.8− | 2006 10 21 | 644 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2002 09 04 | 699 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | | | |
| 2002 09 04 | 699 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.4+ | | | | |

### 2002 PV$_{105}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.22458 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28157149 | $\omega$ | 79.10288 | | +0.90599210 | +0.41399356 |
| $a$ | 2.3053857 | $\Omega$ | 256.39339 | | −0.41511781 | +0.82818922 |
| $e$ | 0.1300735 | $i$ | 5.20940 | | −0.08279801 | +0.37777236 |
| $P$ | 3.50 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.2− | 0.5+ | 2002 08 12 | 704 | 0.3+ | 0.4− | 2002 09 22 | 644 | 0.2+ | 0.4− |
| 2002 07 21 | 644 | 0.1− | 0.0 | 2002 08 15 | 644 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 07 21 | 644 | 0.4− | 0.1− | 2002 08 15 | 644 | 0.3+ | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.4− |
| 2002 08 05 | 644 | 0.1+ | 0.1− | 2002 08 15 | 644 | 0.0 | 0.4− | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2002 08 05 | 644 | 0.2− | 0.1− | 2002 08 16 | 644 | 0.3+ | 1.1+ | 2006 11 22 | 704 | 1.5− | 0.6+ |
| 2002 08 05 | 644 | 0.2− | 0.1− | 2002 08 16 | 644 | 0.0 | 1.0+ | 2006 11 22 | 704 | 0.8+ | 1.4+ |
| 2002 08 12 | 704 | 0.5− | 0.7− | 2002 08 16 | 644 | 0.3+ | 1.0+ | 2006 11 22 | 704 | 0.1− | 0.6− |
| 2002 08 12 | 704 | 0.3+ | 0.9− | 2002 09 22 | 644 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.8+ |

### 2002 PW$_{105}$ = 2006 UQ$_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.42230 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26278175 | $\omega$ | 136.43798 | | +0.97598293 | +0.21068083 |
| $a$ | 2.4140110 | $\Omega$ | 211.52481 | | −0.21735532 | +0.92466596 |
| $e$ | 0.1466985 | $i$ | 6.08388 | | −0.01462813 | +0.31718520 |
| $P$ | 3.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.1+ | 1.1+ | 2002 08 15 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 08 05 | 644 | 0.1+ | 1.4+ | 2002 08 15 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 08 05 | 644 | 0.0 | 1.1+ | 2006 10 17 | 703 | 0.9− | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.2+ |
| 2002 08 12 | 704 | 0.4− | 0.5− | 2006 10 17 | 703 | 1.0− | 0.9+ | 2006 10 31 | G96 | 0.5+ | 0.0 |
| 2002 08 12 | 704 | 0.3− | 0.9− | 2006 10 17 | 703 | 1.4+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.2+ |
| 2002 08 12 | 704 | 0.8− | 1.1− | 2006 10 17 | 703 | 0.9− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2002 08 12 | 704 | 0.2+ | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2002 08 15 | 644 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2002 08 15 | 644 | 0.4− | 1.2− | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2002 08 15 | 644 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.5− | 0.1− |
| 2002 08 15 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | | | |

### 2002 PD$_{111}$ = 2006 SZ$_{341}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.92256 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26890202 | $\omega$ | 54.54019 | | +0.13327801 | +0.98644831 |
| $a$ | 2.3772417 | $\Omega$ | 223.43409 | | −0.94842335 | +0.09892485 |
| $e$ | 0.1389653 | $i$ | 8.00054 | | −0.28762843 | +0.13089539 |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.0 | 0.3+ | 2005 04 15 | 691 | 0.4− | 1.0+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1999 11 28 | 691 | 0.0 | 0.3+ | 2005 04 15 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 1999 11 28 | 691 | 0.2− | 0.4+ | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2002 08 04 | 644 | 0.2− | 0.2+ | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 04 | 644 | 0.2− | 0.1+ | 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 08 04 | 644 | 0.1− | 0.0 | 2005 05 01 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 08 13 | 699 | (0.4− | 1.8+) | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 08 13 | 699 | (0.8− | 2.0+) | 2005 05 08 | 703 | (0.5− | 2.5−) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 13 | 699 | 0.4+ | 0.6− | 2005 05 08 | 703 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 08 13 | 699 | 0.6+ | 1.2+ | 2005 05 08 | 703 | (0.2− | 2.0−) | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2002 08 15 | 644 | 0.3+ | 0.4+ | 2005 05 08 | 703 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.2− | 0.5+ |
| 2002 08 15 | 644 | 0.5+ | 0.4+ | 2005 06 13 | G96 | 1.0− | 0.2− | 2006 11 11 | 691 | 0.4− | 0.1+ |
| 2002 08 15 | 644 | 0.4+ | 0.5+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.6− | 0.8+ | 2005 06 13 | G96 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 1.2− | 0.7+ | 2005 06 13 | G96 | 0.6− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2002 10 05 | 704 | 1.0− | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2005 04 06 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.4− | 0.5− |
| 2005 04 06 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.2− | 0.3+ |
| 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 1.4− | 0.6− |
| 2005 04 15 | 691 | 0.6+ | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | | | | |

### 2002 PA$_{112}$ = 2006 UW$_{124}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.60216 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26965899 | $\omega$ | 63.16778 | | +0.97577573 | +0.16797862 |
| $a$ | 2.3727908 | $\Omega$ | 286.89102 | | −0.21295023 | +0.87610844 |
| $e$ | 0.0883867 | $i$ | 8.42297 | | +0.05013904 | +0.45190395 |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 941 | 0.6+ | 1.5− | 2002 08 16 | 941 | 0.7+ | 1.1+ | 2006 10 19 | 703 | 0.1− | 0.6− |
| 2002 08 14 | 941 | (2.8− | 1.3−) | 2002 08 16 | 941 | 1.3+ | 1.2+ | 2006 10 19 | 703 | 0.5− | 0.5− |
| 2002 08 14 | 941 | (3.1− | 1.0−) | 2002 08 16 | 941 | 1.4+ | 1.4+ | 2006 10 24 | 644 | 0.2+ | 0.6+ |
| 2002 08 14 | 941 | (2.3− | 1.0−) | 2002 08 16 | 608 | 0.0 | 0.6+ | 2006 10 24 | 644 | 0.1+ | 0.3+ |
| 2002 08 14 | 941 | 1.6− | 0.9− | 2002 08 16 | 608 | 0.1+ | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 08 15 | 644 | 0.2+ | 0.3− | 2002 08 16 | 608 | 0.4+ | 1.4− | 2006 10 27 | 703 | 0.6+ | 1.0+ |
| 2002 08 15 | 644 | 0.2+ | 0.4− | 2002 08 17 | 941 | 0.8− | 0.4− | 2006 10 27 | 703 | (0.8+ | 2.3+) |
| 2002 08 15 | 644 | 0.3+ | 0.2− | 2002 08 17 | 941 | 1.1− | 0.5− | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2002 08 15 | 941 | 0.1− | 0.2+ | 2002 08 17 | 941 | (2.8+ | 1.3−) | 2006 10 27 | 703 | 0.5− | 0.2− |
| 2002 08 15 | 941 | 1.3− | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.3− | | | | |
| 2002 08 16 | 941 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.0 | | | | |

### 2002 PF$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.61650 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.25802519 | $\omega$ | 141.80093 | | +0.49616407 | +0.86259954 |
| $a$ | 2.4435880 | $\Omega$ | 157.42036 | | −0.84635335 | +0.50588663 |
| $e$ | 0.1677925 | $i$ | 14.89650 | | −0.19366780 | −0.00086721 |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.9− | 0.1− | 2002 08 26 | 644 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.6− | 0.0 |
| 2002 07 21 | 644 | 0.3− | 0.5− | 2002 08 26 | 644 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.1− | 0.6− |
| 2002 07 21 | 644 | 0.7− | 0.7− | 2002 08 26 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | (0.1+ | 2.0−) |
| 2002 08 05 | 644 | 0.0 | 0.0 | 2002 08 26 | 644 | 0.5+ | 0.2− | 2006 09 14 | 703 | 0.5+ | 1.5− |
| 2002 08 05 | 644 | 0.2− | 0.2+ | 2002 08 26 | 644 | 0.3+ | 0.1+ | 2006 09 18 | A55 | 0.3+ | 0.4+ |
| 2002 08 05 | 644 | 0.1+ | 0.1+ | 2002 08 27 | 644 | 0.1− | 0.1− | 2006 09 18 | A55 | 0.3− | 0.4+ |
| 2002 08 12 | 704 | 0.3− | 0.1− | 2002 08 27 | 644 | 0.2+ | 0.0 | 2006 09 18 | A55 | 0.4+ | 0.9+ |
| 2002 08 12 | 704 | 0.2− | 0.4+ | 2002 08 27 | 644 | 0.0 | 0.2− | 2006 09 19 | A55 | 0.1− | 0.4+ |
| 2002 08 12 | 704 | 0.5− | 0.0 | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 19 | A55 | 0.2− | 0.2+ |
| 2002 08 12 | 704 | 1.1+ | 0.6+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 19 | A55 | 0.2+ | 0.2− |
| 2002 08 12 | 704 | 0.8− | 0.5− | 2006 07 21 | G96 | 0.0 | 0.6− | 2006 09 19 | A55 | 0.1+ | 0.4+ |
| 2002 08 16 | 644 | 0.2− | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 09 19 | A55 | 0.3+ | 0.4+ |
| 2002 08 16 | 644 | 0.0 | 0.5+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 25 | 703 | (1.8− | 0.9+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.0 | 0.7+ | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 25 | 703 | (0.0 | 1.7−) |
| 2002 08 17 | 644 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 25 | 703 | (0.2− | 2.5−) |
| 2002 08 17 | 644 | 0.3+ | 0.3+ | 2006 08 29 | 691 | 0.3+ | 0.0 | 2006 09 25 | 703 | 1.1− | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.0 | | | | |
| 2002 08 26 | 644 | 0.3+ | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.1− | | | | |

### 2002 $PB_{114}$ = 2005 $KJ_2$ = 2006 $QF_{145}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.34634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26709428 | $\omega$ | 345.73348 | | −0.78690800 | −0.61653737 | |
| $a$ | 2.3879560 | $\Omega$ | 156.14540 | | +0.57218449 | −0.74459607 | |
| $e$ | 0.1202887 | $i$ | 3.63513 | | +0.23104265 | −0.25584832 | |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 691 | 0.3+ | 0.2+ | 2003 12 17 | 691 | 0.4− | 0.2+ | 2006 08 18 | 691 | 0.0 | 0.1− |
| 2001 03 22 | 691 | 0.1+ | 0.4+ | 2003 12 17 | 691 | 0.3+ | 0.2+ | 2006 08 18 | 691 | 0.3− | 0.2+ |
| 2001 03 22 | 691 | 0.2+ | 0.6+ | 2005 05 16 | G96 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.2− | 0.2− |
| 2002 08 13 | 291 | 0.4+ | 0.5+ | 2005 05 16 | G96 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.6+ |
| 2002 08 13 | 291 | 0.7− | 0.7− | 2005 05 16 | G96 | 0.5− | 0.7− | 2006 08 27 | 691 | 0.2+ | 0.6+ |
| 2002 08 13 | 291 | 0.3− | 0.3+ | 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2002 08 16 | 291 | 0.2+ | 0.2+ | 2005 05 19 | G96 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2002 08 16 | 291 | 0.0 | 0.1− | 2005 05 19 | G96 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2002 08 16 | 291 | 0.3+ | 0.1− | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2003 12 17 | 691 | 0.0 | 0.1+ | 2005 05 19 | G96 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− |

### 2002 $PS_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.75976 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27376836 | $\omega$ | 205.07778 | | +0.98979660 | +0.13190478 | |
| $a$ | 2.3489867 | $\Omega$ | 147.20185 | | −0.10810245 | +0.94154157 | |
| $e$ | 0.2435250 | $i$ | 5.70929 | | −0.09282536 | +0.31000097 | |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 704 | 0.6+ | 0.1− | 2002 08 17 | 644 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2002 07 14 | 704 | 0.0 | 0.7+ | 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.2+ |
| 2002 07 14 | 704 | 0.5− | 0.4+ | 2002 08 17 | 644 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.8− | 0.3− |
| 2002 07 14 | 704 | 0.2− | 0.6+ | 2002 09 01 | 608 | 0.5− | 0.8− | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2002 07 14 | 704 | 0.1+ | 0.2− | 2002 09 01 | 608 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2002 08 07 | 644 | 0.4+ | 0.3+ | 2002 09 01 | 608 | 0.7− | 0.4− | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2002 08 07 | 644 | 0.3+ | 0.3+ | 2002 09 05 | 699 | 1.2+ | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.8− |
| 2002 08 07 | 644 | 0.2+ | 0.3+ | 2002 09 05 | 699 | 0.4− | 0.5− | 2006 11 19 | 704 | 0.6+ | 0.7− |
| 2002 08 13 | 291 | 0.2+ | 0.1+ | 2002 09 05 | 699 | 0.7− | 0.0 | 2006 11 25 | 703 | 0.4+ | 0.1− |
| 2002 08 13 | 291 | 0.0 | 0.1+ | 2002 09 05 | 699 | 0.5+ | 0.5− | 2006 11 25 | 703 | 0.3− | 0.4+ |
| 2002 08 13 | 291 | 0.0 | 0.0 | 2002 09 05 | 704 | 0.8− | 0.1− | 2006 11 25 | 703 | 0.1− | 0.0 |
| 2002 08 14 | 704 | 0.6+ | 0.8+ | 2002 09 05 | 704 | 0.7− | 0.9+ | 2006 11 25 | 703 | 0.2+ | 0.0 |
| 2002 08 14 | 704 | 1.0+ | 0.4+ | 2002 09 05 | 704 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2002 08 14 | 704 | 0.2+ | 0.2− | 2002 09 05 | 704 | 1.1− | 0.4− | 2006 11 28 | 704 | 0.2− | 0.6+ |
| 2002 08 14 | 704 | 0.6+ | 1.3+ | 2002 09 05 | 704 | 1.3− | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.5− |
| 2002 08 16 | 291 | 0.0 | 0.4− | 2002 09 29 | 608 | 0.7+ | 0.7+ | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2002 08 16 | 291 | 0.0 | 0.4− | 2002 09 29 | 608 | 0.5+ | 0.5+ | 2006 11 28 | 704 | 0.5+ | 0.4+ |
| 2002 08 16 | 291 | 0.1− | 0.2− | 2002 09 29 | 608 | 0.8+ | 0.8+ | | | | |

### 2002 $PT_{114}$ = 2006 $WE_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.10151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27256904 | $\omega$ | 230.35345 | | +0.76086080 | −0.64882025 | |
| $a$ | 2.3558721 | $\Omega$ | 170.08207 | | +0.61335872 | +0.71348250 | |
| $e$ | 0.1757274 | $i$ | 3.69394 | | +0.21185357 | +0.26452791 | |
| $P$ | 3.62 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 291 | 0.5− | 0.0 | 2006 09 30 | G96 | 0.7+ | 0.3− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2002 08 15 | 291 | 0.7− | 0.1+ | 2006 09 30 | G96 | 0.8+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2002 08 15 | 291 | 0.6− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2002 08 16 | 291 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.8+ |
| 2002 08 16 | 291 | 0.4+ | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 08 16 | 291 | 0.5+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.3− | 0.1+ |
| 2002 08 27 | 644 | 0.2+ | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 08 27 | 644 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2002 08 27 | 644 | 0.1+ | 0.7+ | 2006 11 16 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2004 03 23 | 291 | 0.6+ | 0.8+ | 2006 11 17 | 704 | (2.4+ | 0.4+) | 2006 11 28 | 704 | 1.0− | 1.4− |
| 2004 03 23 | 291 | 0.0 | 0.8+ | 2006 11 17 | 704 | (1.6+ | 0.9+) | 2006 11 28 | 704 | 0.5− | 0.5+ |
| 2004 03 23 | 291 | 0.1+ | 0.3+ | 2006 11 17 | 704 | (1.5+ | 0.4+) | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2006 09 30 | G96 | 1.1+ | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.1+ | 0.6+ |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.3− |

### 2002 $PA_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.33054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25790568 | $\omega$ | 74.39007 | | +0.92499850 | +0.35398445 | |
| $a$ | 2.4443428 | $\Omega$ | 264.71999 | | −0.37949835 | +0.84254766 | |
| $e$ | 0.2435142 | $i$ | 7.97221 | | −0.01894156 | +0.40596608 | |
| $P$ | 3.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.8− | 0.1+ | 2002 10 04 | 699 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.7+ | 0.7− |
| 2002 08 13 | 704 | 0.0 | 0.3− | 2002 10 06 | 704 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2002 08 13 | 704 | (1.6− | 1.7−) | 2002 10 06 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.1− |
| 2002 08 16 | 704 | 1.2+ | 0.0 | 2002 10 06 | 704 | 0.9+ | 0.7+ | 2006 10 27 | 703 | 0.6− | 0.2− |
| 2002 08 16 | 704 | (2.3+ | 0.1−) | 2002 10 06 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 1.4− | 0.6− |
| 2002 08 16 | 704 | 0.2+ | 0.0 | 2002 10 06 | 704 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.3− | 0.3+ |
| 2002 08 16 | 704 | 0.9+ | 0.4− | 2002 10 09 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2002 09 11 | 644 | 0.3− | 0.0 | 2002 10 09 | 704 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.3+ | 0.0 |
| 2002 09 11 | 644 | 0.2− | 0.1+ | 2002 10 09 | 704 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.9+ | 0.7− |
| 2002 09 11 | 644 | 0.2− | 0.1+ | 2002 10 09 | 704 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.1− |
| 2002 10 04 | 644 | 0.2− | 0.0 | 2002 10 09 | 704 | 0.4+ | 0.5+ | 2006 11 23 | 703 | 0.6+ | 1.3+ |
| 2002 10 04 | 644 | 0.2− | 0.2+ | 2002 10 31 | 291 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.5+ | 0.4+ |
| 2002 10 04 | 644 | 0.2− | 0.0 | 2002 10 31 | 291 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.6− | 0.2+ |
| 2002 10 04 | 699 | 0.7− | 0.3− | 2002 10 31 | 291 | 0.2+ | 0.1− | 2006 11 23 | 703 | 0.4+ | 0.1+ |
| 2002 10 04 | 699 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.4− | 0.0 | | | | |
| 2002 10 04 | 699 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.5− | | | | |

### 2002 $PM_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.10831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25772502 | $\omega$ | 78.74690 | | +0.98681338 | +0.12864588 | |
| $a$ | 2.4454849 | $\Omega$ | 273.80710 | | −0.15759652 | +0.90204556 | |
| $e$ | 0.1417769 | $i$ | 5.64990 | | +0.03691474 | +0.41202432 | |
| $P$ | 3.82 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.2+ | 0.1+ | 2002 09 13 | 644 | 0.2− | 0.9+ | 2006 09 16 | 703 | 0.3− | 0.6− |
| 1998 08 17 | 704 | 1.8+ | 0.6+ | 2002 09 17 | 608 | 1.0− | 0.6− | 2006 09 16 | 703 | 0.5+ | 1.4− |
| 1998 08 17 | 704 | 1.2− | 1.5− | 2002 09 17 | 608 | 1.3− | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.1+ |
| 1998 08 17 | 704 | 1.7− | 1.0+ | 2002 09 17 | 608 | (1.5− | 0.4+) | 2006 09 20 | 699 | 0.6− | 0.4− |
| 2002 08 11 | 704 | 0.2+ | 0.5+ | 2002 09 30 | 683 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.3− |
| 2002 08 11 | 704 | 0.2+ | 0.1− | 2002 09 30 | 704 | 1.0+ | 0.3− | 2006 09 20 | 699 | 1.1+ | 0.4− |
| 2002 08 11 | 704 | 0.2+ | 0.3− | 2002 09 30 | 683 | (0.6− | 1.6−) | 2006 09 28 | 703 | 0.3+ | 0.5+ |
| 2002 08 11 | 704 | 0.3− | 0.8+ | 2002 09 30 | 683 | 0.9+ | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.7+ |
| 2002 08 11 | 704 | 0.1+ | 0.3+ | 2002 09 30 | 704 | 0.2+ | 0.1− | 2006 09 28 | 703 | 1.3+ | 0.3+ |
| 2002 08 14 | 699 | 0.1− | 0.4− | 2002 09 30 | 704 | 0.4+ | 0.1− | 2006 09 28 | 703 | 0.4+ | 0.3+ |
| 2002 08 14 | 699 | 0.7+ | 0.5+ | 2002 09 30 | 704 | 0.7+ | 0.3+ | 2006 10 04 | 703 | 0.9− | 0.1+ |
| 2002 08 14 | 699 | 0.6+ | 0.8− | 2002 09 30 | 704 | 0.5+ | 0.2− | 2006 10 04 | 703 | 0.1− | 0.2+ |
| 2002 08 14 | 699 | 0.3+ | 0.3+ | 2002 10 05 | 704 | 0.1− | 1.1+ | 2006 10 04 | 703 | 0.2− | 0.2− |
| 2002 08 16 | 704 | 0.3− | 0.3− | 2002 10 05 | 644 | 0.4− | 0.1− | 2006 10 04 | 703 | 1.3− | 0.3+ |
| 2002 08 16 | 704 | 0.0 | 0.3− | 2002 10 05 | 704 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2002 08 16 | 704 | 0.2− | 0.1+ | 2002 10 05 | 704 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 08 16 | 704 | 0.3− | 0.7− | 2002 10 05 | 644 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2002 10 05 | 704 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2− | 0.4+ | 2002 10 05 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2002 10 06 | 644 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ | |
| 2002 09 07 | 704 | 0.5− | 0.9− | 2002 10 06 | 644 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.7− | 0.0 | |
| 2002 09 07 | 704 | 0.1+ | 0.3− | 2002 10 06 | 644 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.2− | |
| 2002 09 07 | 704 | 0.5− | 0.5− | 2002 10 06 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4− | 0.5− | |
| 2002 09 07 | 704 | 0.2− | 0.1− | 2002 10 06 | 644 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.6− | 0.5+ | |
| 2002 09 07 | 704 | 0.3+ | 0.3− | 2002 10 06 | 644 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1+ | |
| 2002 09 13 | 644 | 0.2− | 0.9+ | 2006 09 16 | 703 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1+ | |
| 2002 09 13 | 644 | 0.5− | 1.0+ | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 10 23 | 644 | 0.0 | 0.2+ | |

**2002 PB$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.78696 | | (2000.0) | | | |
| $n$ | 0.26558291 | $\omega$ | 23.90350 | | +0.46740779 | +0.88240445 |
| $a$ | 2.3970070 | $\Omega$ | 274.00077 | | −0.81953428 | +0.40968693 |
| $e$ | 0.1963960 | $i$ | 3.09042 | | −0.33150193 | +0.23134173 |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.9− | 1.4− | 2002 09 05 | 699 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2− | |
| 2002 08 12 | 704 | 1.0− | 0.6+ | 2002 09 05 | 699 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 | |
| 2002 08 12 | 704 | 0.3− | 0.1− | 2002 09 06 | 704 | 0.3− | 1.0− | 2006 10 21 | 644 | 0.3+ | 0.3+ | |
| 2002 08 12 | 704 | 0.5+ | 0.4− | 2002 09 06 | 704 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2002 08 13 | 699 | 0.7+ | 0.3+ | 2002 09 06 | 704 | (0.5+ | 2.1−) | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2002 08 13 | 699 | 0.1+ | 0.1+ | 2002 09 06 | 704 | 0.3− | 1.2− | 2006 11 10 | 691 | 0.2− | 0.1− | |
| 2002 08 13 | 699 | 0.4+ | 0.0 | 2002 09 13 | 644 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.5− | 0.3− | |
| 2002 08 13 | 699 | 1.0+ | 0.4+ | 2002 09 13 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.1− | |
| 2002 08 16 | 644 | 0.4− | 0.2− | 2002 09 13 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.5+ | 0.4− | |
| 2002 08 16 | 644 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.5− | 0.6− | |
| 2002 08 16 | 644 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1− | |
| 2002 08 17 | 644 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.4+ | |
| 2002 08 17 | 644 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.3+ | 0.5+ | |
| 2002 08 17 | 644 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | |
| 2002 09 05 | 699 | 0.8− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.3+ | | | | | |
| 2002 09 05 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.5+ | | | | | |

**2002 PD$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.19402 | | (2000.0) | | | |
| $n$ | 0.28677546 | $\omega$ | 58.27490 | | +0.60605968 | +0.79233099 |
| $a$ | 2.2774109 | $\Omega$ | 249.19132 | | −0.75278265 | +0.54291133 |
| $e$ | 0.1261463 | $i$ | 4.29602 | | −0.25692400 | +0.27831438 |
| $P$ | 3.44 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.5+ | 0.6+ | 2002 08 26 | 644 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.5− | 0.1+ | |
| 2002 07 21 | 644 | 0.5+ | 0.5+ | 2002 08 26 | 644 | 0.5− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1− | |
| 2002 07 21 | 644 | 0.8+ | 0.6+ | 2002 08 27 | 644 | 0.3− | 0.8+ | 2006 11 15 | 691 | 0.4− | 0.3− | |
| 2002 08 12 | 704 | (2.2+ | 0.9+) | 2002 08 27 | 644 | 0.0 | 0.8+ | 2006 11 15 | 691 | 0.1− | 0.1− | |
| 2002 08 12 | 704 | 1.0+ | 0.3− | 2002 08 27 | 644 | 0.1− | 0.8+ | 2006 11 19 | 691 | 0.0 | 0.0 | |
| 2002 08 12 | 704 | 1.0+ | 0.3− | 2002 09 13 | 644 | 1.1− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 | |
| 2002 08 13 | 699 | 1.0+ | 0.7+ | 2002 09 13 | 644 | 1.1− | 0.5− | 2006 11 19 | 691 | 0.0 | 0.1+ | |
| 2002 08 13 | 699 | (0.9− | 1.8+) | 2002 09 13 | 644 | 0.7− | 0.6− | 2006 11 23 | 691 | 0.0 | 0.2+ | |
| 2002 08 13 | 699 | (2.8− | 0.3+) | 2003 12 27 | 291 | 0.5− | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.2+ | |
| 2002 08 13 | 699 | (1.1− | 2.3+) | 2003 12 27 | 291 | 0.0 | 1.1+ | 2006 11 23 | 691 | 0.0 | 0.3+ | |
| 2002 08 16 | 644 | 0.5− | 0.2+ | 2003 12 27 | 291 | 1.0+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3+ | |
| 2002 08 16 | 644 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.5− | 0.6− | 2006 11 27 | 691 | 0.3+ | 0.3+ | |
| 2002 08 16 | 644 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.7− | |
| 2002 08 19 | 644 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.5+ | 0.3− | |
| 2002 08 19 | 644 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.1+ | 0.1− | |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.7+ | 1.0− | 2006 12 01 | 691 | 0.1− | 0.0 | |
| 2002 08 26 | 644 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.5− | 0.1+ | | | | | |

**2002 PT$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.45555 | | (2000.0) | | | |
| $n$ | 0.27310461 | $\omega$ | 28.72503 | | +0.52245910 | +0.84929138 |
| $a$ | 2.3527910 | $\Omega$ | 272.86531 | | −0.79609158 | +0.45403751 |
| $e$ | 0.1557962 | $i$ | 4.35074 | | −0.30540906 | +0.26935867 |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.3− | 0.9− | 2002 09 06 | 704 | 0.2− | 0.3+ | 2006 11 14 | 703 | 1.0− | 1.3− | |
| 2002 08 09 | 608 | 0.1− | 0.6− | 2002 09 06 | 704 | 0.5− | 1.1− | 2006 11 14 | 703 | 0.3+ | 0.0 | |
| 2002 08 09 | 608 | 0.1+ | 0.4− | 2002 09 06 | 704 | 0.3− | 0.3− | 2006 11 14 | 703 | (1.7+ | 0.1+) | |
| 2002 08 12 | 704 | 0.2− | 0.2+ | 2002 09 06 | 704 | 0.0 | 0.1+ | 2006 11 16 | 408 | 0.2+ | 1.1+ | |
| 2002 08 12 | 704 | 0.6− | 0.2+ | 2002 09 13 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 408 | 0.0 | 1.1+ | |
| 2002 08 12 | 704 | 0.1+ | 0.5+ | 2002 09 13 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2− | |
| 2002 08 12 | 704 | 0.3− | 0.1− | 2002 09 13 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.5− | |
| 2002 08 12 | 704 | 0.4− | 0.1− | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− | |
| 2002 08 13 | 699 | 0.1+ | 0.6− | 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2− | |
| 2002 08 13 | 699 | 0.5+ | 0.6+ | 2006 10 13 | 691 | 0.3+ | 0.1− | 2006 11 17 | 408 | 1.1− | 1.0+ | |
| 2002 08 13 | 699 | 0.1+ | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 17 | 408 | 1.0− | 1.2+ | |
| 2002 08 13 | 699 | 0.1− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 291 | 0.1− | 0.2+ | |
| 2002 08 16 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 18 | 291 | 0.1− | 0.1+ | |
| 2002 08 16 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 18 | 291 | 0.2− | 0.1+ | |
| 2002 08 16 | 644 | 0.5+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.5+ | 0.4− | |
| 2002 08 17 | 608 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.3− | |
| 2002 08 17 | 608 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.6+ | 0.9+ | 2006 11 18 | G96 | 0.1+ | 0.3− | |
| 2002 08 17 | 608 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.1− | |
| 2002 08 26 | 644 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.3+ | 2006 11 19 | 291 | 0.3+ | 0.1+ | |
| 2002 08 26 | 644 | 0.2− | 0.4+ | 2006 10 27 | 703 | 1.0− | 0.5+ | 2006 11 19 | 291 | 0.2+ | 0.1+ | |
| 2002 08 26 | 644 | 0.5+ | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 19 | 291 | 0.3+ | 0.2+ | |
| 2002 08 28 | 644 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 24 | 408 | 0.5+ | 0.3− | |
| 2002 08 28 | 644 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 24 | 408 | 0.6+ | 0.0 | |
| 2002 08 28 | 644 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 25 | 408 | (1.7+ | 1.3−) | |
| 2002 09 06 | 704 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.1+ | 1.4− | 2006 11 25 | 408 | (2.2+ | 1.5−) | |

**2002 PF$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.58357 | | (2000.0) | | | |
| $n$ | 0.26968923 | $\omega$ | 65.56313 | | +0.72974959 | +0.67811803 |
| $a$ | 2.3726134 | $\Omega$ | 251.61019 | | −0.65588793 | +0.65826240 |
| $e$ | 0.1719637 | $i$ | 5.27863 | | −0.19307136 | +0.32687390 |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.2+ | 0.3+ | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− | |
| 2002 08 12 | 704 | (1.6+ | 0.0 ) | 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.5− | |
| 2002 08 12 | 704 | (2.3+ | 0.8+) | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.3− | |
| 2002 08 12 | 704 | 1.3− | 0.5− | 2006 10 17 | 691 | (1.3+ | 1.7+) | 2006 11 01 | G96 | 0.1+ | 0.2− | |
| 2002 08 12 | 704 | 0.6+ | 0.8− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.4− | |
| 2002 08 13 | 699 | 0.9− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− | |
| 2002 08 13 | 699 | 0.2− | 0.7+ | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.3− | |
| 2002 08 13 | 699 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 1.0+ | 0.3+ | |
| 2002 08 13 | 699 | 0.5− | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | (1.8− | 0.4−) | |
| 2002 08 16 | 644 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.4+ | |
| 2002 08 16 | 644 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.3− | 2006 11 14 | 703 | (7.7+ | 1.8−) | |
| 2002 08 16 | 644 | 0.4+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.0 | |
| 2002 08 26 | 644 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 0.6− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.1+ | |
| 2002 08 26 | 644 | 0.8+ | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.0 | |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | (1.7+ | 1.2+) | 2006 11 17 | G96 | 0.7− | 0.0 | |
| 2002 08 27 | 644 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.2− | 0.3+ | |
| 2002 08 27 | 644 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 17 | G96 | 0.1− | 0.2+ | |
| 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.3− | 0.5− | 2006 11 17 | G96 | 0.3− | 0.1+ | |
| 2002 09 13 | 644 | 0.0 | 0.7− | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.2+ | |
| 2002 09 13 | 644 | 0.1− | 0.5− | 2006 11 01 | G96 | 0.2+ | 0.6− | | | | | |
| 2002 09 13 | 644 | 0.0 | 0.9− | 2006 11 01 | G96 | 0.0 | 0.5− | | | | | |

**2002 PP$_{123}$ = 2006 TO$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.76328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26031789 | $\omega$ | 157.51619 | | +0.99217619 | +0.12225435 | |
| $a$ | 2.4292192 | $\Omega$ | 195.52552 | | −0.12401643 | +0.94181168 | |
| $e$ | 0.2700354 | $i$ | 5.42451 | | −0.01436420 | +0.31312078 | |
| $P$ | 3.79 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.4− | 0.6+ | 2002 09 06 | 704 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.0 | |
| 2002 08 12 | 704 | 0.5− | 0.0 | 2002 09 06 | 704 | 0.7− | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1+ | |
| 2002 08 12 | 704 | 0.1+ | 0.5+ | 2002 09 06 | 704 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.4− | 0.2+ | |
| 2002 08 15 | 185 | 1.1+ | 0.2+ | 2002 09 06 | 704 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.3− | 0.2+ | |
| 2002 08 15 | 185 | 0.4+ | 0.1+ | 2002 09 06 | 704 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.2+ | |
| 2002 08 15 | 185 | 0.1− | 0.1− | 2002 09 13 | 644 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ | |
| 2002 08 15 | 185 | 0.5+ | 0.3− | 2002 09 13 | 644 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 2002 08 16 | 185 | 0.2− | 0.2− | 2002 09 13 | 644 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.4− | 0.1+ | |
| 2002 08 16 | 185 | 1.1+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.4− | |
| 2002 08 16 | 185 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.1+ | 0.0 | |
| 2002 08 17 | 185 | 0.6− | 0.3− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7+ | 1.0+ | |
| 2002 08 17 | 185 | 0.1− | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.9− | |
| 2002 08 17 | 185 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.1+ | |
| 2002 08 18 | 608 | 0.5− | 0.5− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.4− | 0.2+ | |
| 2002 08 18 | 608 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.7+ | 0.1− | 2006 11 13 | 644 | 0.1− | 0.3+ | |
| 2002 08 18 | 608 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.1− | |
| 2002 08 28 | 644 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.1− | |
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.1− | |
| 2002 08 28 | 644 | 0.3− | 0.5+ | 2006 10 19 | 691 | 0.4+ | 0.3− | 2006 11 16 | G96 | 0.4− | 0.1− | |

**2002 PX$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.42730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27609126 | $\omega$ | 1.81798 | | +0.99292954 | +0.11822232 | |
| $a$ | 2.3357926 | $\Omega$ | 351.37048 | | −0.10978970 | +0.88035785 | |
| $e$ | 0.2482483 | $i$ | 4.08786 | | −0.04513475 | +0.45934033 | |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 28 | 691 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.1− | 0.0 | 2002 09 15 | 644 | 0.0 | 0.4+ | |
| 1995 07 28 | 691 | 0.4+ | 0.1− | 2002 08 29 | 644 | 0.1− | 0.3+ | 2002 10 03 | 704 | 0.2− | 0.7+ | |
| 1995 07 28 | 691 | 0.4− | 0.0 | 2002 08 29 | 644 | 0.2− | 0.1+ | 2002 10 03 | 704 | 0.8+ | 0.4+ | |
| 2002 08 08 | 644 | 0.1+ | 0.3+ | 2002 09 01 | 699 | 0.1− | 0.2− | 2002 10 03 | 704 | 0.3+ | 1.0+ | |
| 2002 08 08 | 644 | 0.2− | 0.2+ | 2002 09 01 | 699 | 0.1+ | 0.4− | 2002 10 06 | 608 | 0.2+ | 0.5− | |
| 2002 08 08 | 644 | 0.1+ | 0.3+ | 2002 09 01 | 699 | 0.4+ | 0.0 | 2002 10 06 | 608 | 0.4− | 0.4− | |
| 2002 08 14 | 704 | 1.0+ | 0.4+ | 2002 09 01 | 699 | 0.3+ | 0.3− | 2002 10 06 | 608 | 0.1− | 0.7− | |
| 2002 08 14 | 704 | 0.3+ | 0.6− | 2002 09 05 | 704 | 0.9− | 0.1+ | 2002 10 07 | 704 | 1.2+ | 0.8+ | |
| 2002 08 14 | 704 | 0.4+ | 0.2− | 2002 09 05 | 704 | 0.5− | 0.3+ | 2002 10 07 | 704 | 0.2− | 0.5− | |
| 2002 08 14 | 704 | 0.7+ | 0.4+ | 2002 09 05 | 704 | 0.0 | 0.4− | 2002 10 07 | 704 | 1.0− | 0.1+ | |
| 2002 08 14 | 704 | 0.5+ | 0.2− | 2002 09 05 | 704 | 0.2+ | 0.5− | 2006 11 16 | 704 | 0.4− | 0.9+ | |
| 2002 08 16 | 608 | 0.3− | 0.9+ | 2002 09 06 | 704 | 0.2+ | 1.0− | 2006 11 16 | 704 | 0.1+ | 0.7+ | |
| 2002 08 16 | 608 | 0.4− | 1.2+ | 2002 09 06 | 704 | 0.5− | 0.6− | 2006 11 16 | 704 | 0.3+ | 0.5+ | |
| 2002 08 16 | 608 | 0.1− | 1.1+ | 2002 09 06 | 704 | 0.1+ | 0.7− | 2006 11 17 | 691 | 0.1− | 0.4+ | |
| 2002 08 17 | 644 | 0.5− | 0.6− | 2002 09 06 | 704 | (0.4+ | 2.0−) | 2006 11 17 | 691 | 0.3+ | 0.1− | |
| 2002 08 17 | 644 | 0.6− | 0.7− | 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.8− | |
| 2002 08 17 | 644 | 0.6− | 0.7− | 2002 09 15 | 644 | 0.0 | 0.5+ | | | | | |

**2002 PA$_{127}$ = 1977 UF$_2$ = 2000 BL$_{48}$**

Id. Minor Planet Center (*MPO* 35333; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.35346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27222601 | $\omega$ | 7.44288 | | +0.84397701 | −0.53406391 | |
| $a$ | 2.3578507 | $\Omega$ | 25.03527 | | +0.48585780 | +0.72185779 | |
| $e$ | 0.1190357 | $i$ | 6.75627 | | +0.22725536 | +0.44011030 | |
| $P$ | 3.62 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 20 | 033 | 1.1− | 0.4+ | 2002 11 07 | 704 | 0.1− | 0.5+ | 2006 07 22 | G96 | 0.1+ | 0.1+ | |
| 1995 10 02 | 691 | 0.3+ | 0.4− | 2002 11 07 | 704 | 0.4− | 1.2+ | 2006 07 22 | G96 | 0.3− | 0.3− | |
| 1995 10 02 | 691 | 0.6+ | 0.3− | 2002 11 07 | 704 | 0.3− | 0.9− | 2006 09 17 | 704 | 0.2+ | 0.3+ | |
| 1995 10 02 | 691 | 0.4+ | 0.4− | 2002 11 07 | 704 | (1.5+ | 2.6+) | 2006 09 17 | 704 | 0.3− | 0.1− | |
| 1999 12 15 | 704 | 0.3− | 0.1− | 2002 11 11 | 704 | (1.0− | 2.4+) | 2006 09 17 | 704 | 1.4+ | 0.0 | |
| 1999 12 15 | 704 | 0.3+ | 1.2− | 2002 11 11 | 704 | 0.4− | 0.3+ | 2006 09 18 | 703 | (0.5− | 1.6+) | |
| 1999 12 15 | 704 | 0.1− | 0.3− | 2002 11 11 | 704 | 0.1+ | 0.5− | 2006 09 18 | 703 | 1.5− | 0.9+ | |
| 1999 12 15 | 704 | 0.1− | 0.2− | 2002 11 11 | 704 | 0.2− | 0.6+ | 2006 09 18 | 703 | (1.6− | 0.2+) | |
| 1999 12 15 | 704 | 1.1− | 0.1− | 2002 12 05 | 704 | 0.5− | 1.1+ | 2006 09 18 | 703 | 0.1− | 0.3− | |
| 2000 01 02 | 704 | 0.2+ | 0.8− | 2002 12 05 | 704 | 0.5− | 0.1+ | 2006 09 20 | 704 | (1.7+ | 0.4+) | |
| 2000 01 02 | 704 | 0.2+ | 0.5− | 2002 12 05 | 704 | 0.2− | 1.2+ | 2006 09 20 | 704 | 0.9+ | 0.2− | |
| 2000 01 02 | 704 | 1.1+ | 0.4− | 2002 12 05 | 704 | 0.7− | 0.5+ | 2006 09 20 | 704 | (1.7+ | 0.2−) | |
| 2000 01 29 | 704 | 0.6+ | 0.0 | 2003 12 25 | 645 | 0.0 | 0.0 | 2006 09 20 | 704 | (2.0+ | 0.3+) | |
| 2000 01 29 | 704 | 0.1+ | 0.3+ | 2003 12 25 | 645 | 0.0 | 0.1− | 2006 09 20 | 704 | 1.2+ | 0.0 | |
| 2000 01 29 | 704 | 0.4− | 0.4− | 2004 01 29 | 703 | 1.5+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.2− | |
| 2000 01 29 | 704 | 0.2− | 0.3− | 2004 01 29 | 703 | 0.0 | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.2− | |
| 2000 01 29 | 704 | 0.3+ | 0.7− | 2004 01 29 | 703 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.2− | |
| 2000 02 06 | 704 | 0.7− | 0.5− | 2004 01 29 | 703 | 0.6+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.1− | |
| 2000 02 06 | 704 | 0.4− | 0.3− | 2004 01 30 | 699 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.0 | 0.1− | |
| 2000 02 06 | 704 | 0.5− | 1.2+ | 2004 01 30 | 699 | 0.6− | 1.2− | 2006 10 19 | 703 | 0.8+ | 0.2+ | |
| 2000 02 06 | 704 | 0.6+ | 0.4+ | 2004 01 30 | 699 | 0.1− | 1.0+ | 2006 10 19 | 703 | 0.1+ | 0.6+ | |
| 2002 07 09 | 704 | (2.6+ | 0.8+) | 2004 01 30 | 699 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.2− | |
| 2002 07 09 | 704 | (2.9+ | 0.6−) | 2004 01 30 | 704 | 0.3+ | 0.7+ | 2006 10 20 | G96 | 0.3+ | 0.1− | |
| 2002 07 09 | 704 | (2.7+ | 1.1−) | 2004 01 30 | 704 | 0.8+ | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.0 | |
| 2002 07 09 | 704 | (2.0+ | 1.3−) | 2004 01 30 | 704 | 0.6+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.0 | |
| 2002 08 14 | 704 | 1.0− | 0.0 | 2004 01 30 | 704 | 1.1+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.2− | |
| 2002 08 14 | 704 | 1.1− | 0.3+ | 2004 01 30 | 704 | 0.7+ | 0.7+ | 2006 10 27 | 703 | 0.1+ | 0.1− | |
| 2002 08 14 | 704 | 0.5− | 1.1+ | 2004 02 14 | 608 | 0.5+ | 0.1− | 2006 10 27 | 703 | 0.0 | 0.3− | |
| 2002 08 14 | 704 | 0.8− | 0.3− | 2004 02 14 | 608 | 0.5+ | 0.6− | 2006 10 27 | 703 | 0.7+ | 0.4− | |
| 2002 08 14 | 704 | 0.5− | 0.3+ | 2004 02 14 | 608 | 0.2− | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.3− | |
| 2002 08 16 | 608 | 0.0 | 0.1+ | 2004 02 16 | 704 | 0.8+ | 0.5+ | 2006 10 29 | 704 | 1.4+ | 0.4− | |
| 2002 08 16 | 608 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.6+ | 0.4+ | 2006 10 29 | 704 | 0.4− | 0.0 | |
| 2002 08 16 | 608 | 0.3− | 0.5+ | 2004 02 16 | 704 | 0.4+ | 0.1+ | 2006 10 29 | 704 | 0.5− | 0.2− | |
| 2002 09 10 | 608 | (0.5− | 1.7+) | 2004 02 16 | 704 | 0.3+ | 0.7+ | 2006 10 29 | 704 | 0.9− | 0.3− | |
| 2002 09 10 | 608 | 0.3− | 1.5+ | 2004 02 16 | 704 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.3+ | |
| 2002 09 10 | 608 | 0.4− | 1.2+ | 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.1+ | |
| 2002 09 13 | 704 | 0.6− | 0.5− | 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.2+ | |
| 2002 09 13 | 704 | 0.3− | 0.2+ | 2004 02 17 | 608 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.4− | 0.0 | |
| 2002 09 13 | 704 | 0.5− | 0.0 | 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.4+ | |
| 2002 09 13 | 704 | 0.2− | 0.2− | 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.2− | |
| 2002 09 13 | 704 | 0.6− | 0.0 | 2004 02 17 | 608 | 0.1+ | 0.9+ | 2006 11 14 | 703 | 0.4− | 1.2+ | |
| 2002 09 16 | 644 | 0.1− | 1.0+ | 2004 02 17 | 608 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.6+ | 0.3+ | |
| 2002 09 16 | 644 | 0.1− | 1.0+ | 2004 02 17 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.2+ | |
| 2002 09 16 | 644 | 0.0 | 1.1+ | 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.3− | |
| 2002 10 03 | 704 | 0.7− | 1.5+ | 2004 03 12 | 735 | 0.8+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.8− | |
| 2002 10 03 | 704 | 0.3− | 0.7+ | 2004 03 12 | 735 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.0+ | 1.1+ | |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2004 03 12 | 735 | 0.5− | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.0 | |
| 2002 10 03 | 704 | 0.0 | 1.1+ | 2004 03 14 | 704 | 0.4− | 0.6+ | 2006 11 16 | 704 | 0.6− | 0.1− | |
| 2002 10 03 | 704 | 0.6− | 1.0+ | 2004 03 14 | 704 | 0.7+ | 0.7+ | 2006 11 16 | 704 | 0.7+ | 0.2+ | |
| 2002 10 05 | 704 | 0.8− | 0.9+ | 2004 03 14 | 704 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5− | 0.5− | |
| 2002 10 05 | 704 | 0.8− | 0.4+ | 2004 03 14 | 704 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.7− | 0.4− | |
| 2002 10 05 | 704 | 0.5− | 0.6+ | 2004 03 14 | 704 | 0.7+ | 0.1+ | 2006 11 19 | 704 | 0.6− | 1.2− | |
| 2002 10 05 | 704 | 0.5− | 0.4+ | 2004 03 20 | 704 | (0.6+ | 1.7+) | 2006 11 19 | 704 | 0.8− | 0.6− | |
| 2002 10 05 | 704 | 0.6− | 0.4+ | 2004 03 20 | 704 | 0.2− | 1.1+ | 2006 11 19 | 704 | 0.4− | 0.4− | |
| 2002 10 09 | 699 | 0.6− | 0.4+ | 2004 03 20 | 704 | 0.2− | 1.3+ | 2006 11 21 | G96 | 0.4+ | 0.1− | |
| 2002 10 09 | 699 | 0.7− | 0.3+ | 2004 03 20 | 704 | (0.4− | 1.8+) | 2006 11 21 | G96 | 0.1+ | 0.1− | |
| 2002 10 09 | 699 | 0.6− | 0.3+ | 2004 03 20 | 704 | 0.1− | 1.4+ | 2006 11 21 | G96 | 0.3+ | 0.1− | |
| 2002 10 09 | 699 | 0.5− | 0.3− | 2004 03 22 | 704 | 0.2+ | 1.4+ | 2006 11 21 | G96 | 0.4+ | 0.0 | |
| 2002 10 11 | 704 | 0.5+ | 0.8+ | 2004 03 22 | 704 | 1.2+ | 1.3+ | 2006 11 22 | 704 | 0.4− | 0.3− | |
| 2002 10 11 | 704 | 0.6+ | 0.7+ | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2006 11 22 | 704 | 0.4− | 0.2+ | |
| 2002 10 11 | 704 | 0.7+ | 0.9+ | 2004 03 22 | 704 | 0.0 | 1.4+ | 2006 11 22 | 704 | 0.1− | 0.1− | |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2004 03 26 | 703 | 0.5+ | 0.8+ | 2006 11 22 | 704 | 0.5− | 0.3+ | |
| 2002 10 29 | 704 | 0.0 | 0.4+ | 2004 03 26 | 703 | 0.6+ | 0.4+ | 2006 11 22 | 704 | 0.4− | 0.1− | |
| 2002 10 29 | 704 | 1.3− | 0.1+ | 2004 03 26 | 703 | (0.9+ | 1.8+) | 2006 11 28 | 704 | 0.6+ | 0.1− | |
| 2002 10 29 | 704 | 0.7+ | 0.9+ | 2004 03 26 | 703 | (1.4+ | 2.9+) | 2006 11 28 | 704 | 0.1− | 0.1+ | |
| 2002 10 29 | 704 | 0.4− | 0.9+ | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.3− | |
| 2002 10 29 | 704 | 0.4+ | 1.1+ | 2006 07 22 | G96 | 0.1+ | 0.3− | | | | | |

**2002 PG$_{127}$ = 1981 UO$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.53375 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27700511 | $\omega$ | 106.80469 | | +0.94403521 | −0.32797304 | |
| $a$ | 2.3306525 | $\Omega$ | 272.35191 | | +0.28767799 | +0.87072203 | |
| $e$ | 0.1853911 | $i$ | 2.01253 | | +0.16136571 | +0.36643804 | |
| $P$ | 3.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 10 30 | 381 | 1.2− | 0.1+ | 2002 08 17 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.6− | 0.2− |
| 1981 10 30 | 381 | 0.3− | 0.7− | 2002 08 17 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 1.1− |
| 1981 10 30 | 381 | 1.7+ | 0.6+ | 2002 08 17 | 644 | 0.2+ | 0.1− | 2006 11 20 | 691 | 1.5− | 1.7+ |
| 1981 10 30 | 381 | 0.1− | 1.0− | 2002 08 18 | 644 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2002 07 30 | 608 | 1.2− | 1.2+ | 2002 08 18 | 644 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2002 07 30 | 608 | 1.1− | 0.6+ | 2002 08 18 | 644 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.6− | 1.3− |
| 2002 07 30 | 608 | 0.4− | 1.2+ | 2002 09 05 | 704 | 0.8+ | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.4+ |
| 2002 08 08 | 699 | 0.1− | 1.1+ | 2002 09 05 | 704 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.9+ | 0.8− |
| 2002 08 08 | 699 | 1.4− | 0.9− | 2002 09 05 | 704 | 0.7+ | 0.2− | 2006 11 21 | 704 | 0.4− | 1.1− |
| 2002 08 08 | 699 | 0.1− | 0.9− | 2002 09 05 | 704 | 0.1+ | 0.9− | 2006 11 24 | 703 | 0.3− | 0.5− |
| 2002 08 08 | 699 | 0.3+ | 0.4+ | 2002 09 05 | 704 | 0.7+ | 0.7− | 2006 11 24 | 703 | 0.0 | 0.2+ |
| 2002 08 13 | 699 | 0.2− | 0.2− | 2002 09 14 | 644 | 0.0 | 0.0 | 2006 11 24 | 703 | 1.7− | 1.6+ |
| 2002 08 13 | 699 | 0.5− | 0.9+ | 2002 09 14 | 644 | 0.3− | 0.2− | 2006 11 24 | 703 | 0.1+ | 2.0+ |
| 2002 08 13 | 699 | 0.2− | 1.2+ | 2002 09 14 | 644 | 0.5− | 0.0 | 2006 11 30 | 691 | 0.0 | 0.0 |
| 2002 08 13 | 699 | 0.4− | 0.4+ | 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 11 30 | 691 | 0.1+ | 0.1− |
| 2002 08 14 | 704 | 0.8+ | 0.4− | 2004 02 14 | 691 | 0.3+ | 0.6+ | 2006 11 30 | 691 | 1.2+ | 0.2− |
| 2002 08 14 | 704 | 0.2− | 0.6+ | 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.1− | 0.4− |
| 2002 08 14 | 704 | 0.8+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.1+ | 0.4+ |
| 2002 08 14 | 704 | 0.9+ | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.6− | 2006 12 01 | 704 | 0.1− | 0.6+ |
| 2002 08 16 | 608 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.1+ | 0.3+ |
| 2002 08 16 | 608 | 0.0 | 0.7+ | 2006 11 18 | 704 | 1.0+ | 0.4+ | 2006 12 01 | 704 | 0.6+ | 0.4+ |
| 2002 08 16 | 608 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.5+ | | | | |

**2002 PR$_{127}$ = 2006 SC$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.62636 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25604360 | $\omega$ | 289.40102 | | +0.99320144 | +0.10037285 | |
| $a$ | 2.4561795 | $\Omega$ | 64.87510 | | −0.06629209 | +0.90402834 | |
| $e$ | 0.1921559 | $i$ | 3.73378 | | −0.09568830 | +0.41552142 | |
| $P$ | 3.85 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 691 | 0.4+ | 0.7+ | 2004 02 17 | 691 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.6+ | 1.0+ |
| 2001 04 15 | 691 | 0.3+ | 0.1+ | 2005 04 11 | G96 | 0.1− | 0.7+ | 2006 09 26 | 704 | 0.3− | 1.0+ |
| 2001 04 15 | 691 | 0.5+ | 0.4+ | 2005 04 11 | G96 | 0.3− | 0.0 | 2006 09 26 | 704 | (0.1− | 1.6+) |
| 2002 08 11 | 644 | 0.3− | 0.2− | 2005 04 11 | G96 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.1+ | 0.2+ |
| 2002 08 11 | 644 | 0.0 | 0.2− | 2005 04 11 | G96 | 0.9− | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.3+ |
| 2002 08 11 | 644 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.2+ |
| 2002 08 14 | 704 | 0.1+ | 0.6− | 2006 08 29 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.1− |
| 2002 08 14 | 704 | 0.0 | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.4− | 0.0 |
| 2002 08 14 | 704 | 0.5+ | 0.2+ | 2006 09 12 | 703 | 0.7− | 1.4− | 2006 09 30 | 703 | 0.3− | 0.1− |
| 2002 08 16 | 608 | 0.3− | 1.5+ | 2006 09 12 | 703 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.6− | 1.0+ |
| 2002 08 16 | 608 | 0.1+ | 1.5+ | 2006 09 12 | 703 | 0.8+ | 0.3− | 2006 09 30 | 703 | 0.8− | 0.4+ |
| 2002 08 16 | 608 | (0.4− | 1.6+) | 2006 09 12 | 703 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2002 08 19 | 644 | 0.2− | 0.2− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2002 08 19 | 644 | 0.1− | 1.3− | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.6− |
| 2002 08 19 | 644 | (0.1− | 1.5−) | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 16 | 703 | (0.7− | 1.9+) |
| 2002 08 19 | 644 | 0.3− | 0.3− | 2006 09 22 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2002 08 19 | 644 | 0.0 | 1.2− | 2006 09 22 | 704 | 0.9− | 0.9+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 08 19 | 644 | 0.1− | 0.2− | 2006 09 22 | 704 | (1.5+ | 1.0+) | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.9− | 1.1− | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.7− | | | | |

**2002 PS$_{127}$ = 2006 SH$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.55531 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25801907 | $\omega$ | 215.99703 | | +0.90546071 | +0.42136255 | |
| $a$ | 2.4436266 | $\Omega$ | 119.00642 | | −0.37452203 | +0.84967692 | |
| $e$ | 0.2170756 | $i$ | 3.33890 | | −0.19968514 | +0.31702167 | |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.4− | 0.6+ | 2002 08 29 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 1.3+ | 0.9+ |
| 2002 08 08 | 644 | 0.3− | 0.7+ | 2002 08 30 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2002 08 08 | 644 | 0.2− | 0.5+ | 2002 08 30 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.2− |
| 2002 08 12 | 699 | 0.8+ | 0.3+ | 2002 08 30 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 08 12 | 699 | 0.6− | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 08 12 | 699 | 0.6+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 08 12 | 699 | 0.8− | 1.2− | 2006 09 18 | 703 | 0.1− | 0.9− | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2002 08 14 | 704 | 1.0+ | 0.0 | 2006 09 18 | 703 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 08 14 | 704 | 0.5− | 0.9− | 2006 09 26 | 704 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 14 | 704 | 0.2+ | 1.0+ | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 08 14 | 704 | 1.2+ | 0.4+ | 2006 09 26 | 704 | 0.2+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2002 08 16 | 608 | 0.5− | 0.6− | 2006 09 26 | 704 | 0.4− | 0.9− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 08 16 | 608 | 0.8− | 0.7− | 2006 09 30 | 704 | 0.9− | 0.7− | 2006 10 22 | 703 | 0.8+ | 0.7− |
| 2002 08 16 | 608 | 0.3− | 0.8− | 2006 09 30 | 704 | 0.3+ | 1.2− | 2006 10 22 | 703 | 0.0 | 1.1− |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.2+ | 0.6− | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 1.0− | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2002 08 19 | 644 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2002 08 19 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2002 08 19 | 644 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ | | | | |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.2+ | | | | |

**2002 PV$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.62585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26793036 | $\omega$ | 356.55517 | | +0.95491199 | +0.29580931 | |
| $a$ | 2.3829857 | $\Omega$ | 346.15844 | | −0.26980063 | +0.82907041 | |
| $e$ | 0.1495038 | $i$ | 6.06982 | | −0.12389799 | +0.47448826 | |
| $P$ | 3.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.2− | 0.1+ | 2002 08 29 | 644 | 0.0 | 0.3− | 2006 09 20 | 699 | 0.0 | 0.3− |
| 2002 07 15 | 644 | 0.2− | 0.2+ | 2002 09 06 | 704 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2002 07 15 | 644 | 0.1+ | 0.1+ | 2002 09 06 | 704 | 0.7+ | 0.8+ | 2006 09 30 | 703 | 0.3+ | 0.6+ |
| 2002 08 13 | 704 | 0.6+ | 0.5− | 2002 09 06 | 704 | 0.1+ | 1.1+ | 2006 09 30 | 703 | 1.3+ | 0.1− |
| 2002 08 13 | 704 | 0.6+ | 1.3+ | 2002 09 06 | 704 | 1.0− | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.0 |
| 2002 08 13 | 704 | 0.2+ | 1.0+ | 2006 07 22 | G96 | 0.2+ | 1.0− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2002 08 13 | 704 | 0.4+ | 1.4+ | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2002 08 13 | 704 | 0.2+ | 0.5+ | 2006 07 22 | G96 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2002 08 17 | 644 | 0.1− | 1.4− | 2006 07 22 | G96 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2002 08 17 | 644 | 0.2− | 1.4− | 2006 09 18 | 699 | 0.7− | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.6− |
| 2002 08 17 | 644 | 0.1− | 1.4− | 2006 09 18 | 699 | (1.7− | 0.4+) | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2002 08 18 | 644 | (0.3− | 2.0+) | 2006 09 18 | 699 | 0.8+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.2+ |
| 2002 08 18 | 644 | 0.3− | 0.4− | 2006 09 18 | 699 | 0.4− | 1.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.2− | 0.2− | 2006 09 20 | 699 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.5− | 2006 09 20 | 699 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.2− | 0.6− | 2006 09 20 | 699 | 0.6− | 0.2+ | | | | |

### 2002 $PS_{135}$ = 2006 $SH_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.80486 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25440490 | $\omega$ | 277.13249 | | +0.67673828 | +0.73549199 | |
| $a$ | 2.4667155 | $\Omega$ | 35.52844 | | −0.65122421 | +0.61880244 | |
| $e$ | 0.2205027 | $i$ | 3.23721 | | −0.34341276 | +0.27592584 | |
| $P$ | 3.87 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.2+ | 0.3− | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.5− | 0.5+ |
| 2002 08 11 | 644 | 0.4− | 0.5− | 2002 08 29 | 644 | 0.3+ | 0.0 | 2006 09 16 | 699 | 1.6− | 1.2+ |
| 2002 08 11 | 644 | 0.3+ | 0.2− | 2002 08 30 | 644 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.6− | 0.3− |
| 2002 08 14 | 704 | (0.8− | 1.7+) | 2002 08 30 | 644 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.4+ | 0.8− |
| 2002 08 14 | 704 | 0.5− | 0.7+ | 2002 08 30 | 644 | 0.5+ | 0.5− | 2006 09 19 | 699 | 0.4+ | 0.0 |
| 2002 08 14 | 704 | 0.0 | 0.6+ | 2006 08 28 | 699 | 1.1− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.5+ |
| 2002 08 14 | 704 | 0.0 | 0.7+ | 2006 08 28 | 699 | 0.0 | 0.6+ | 2006 10 02 | G96 | 0.5+ | 0.5− |
| 2002 08 17 | 644 | 0.0 | 0.3− | 2006 08 28 | 699 | 0.4− | 0.5− | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2002 08 17 | 644 | 0.2− | 0.5− | 2006 08 28 | 699 | 0.2+ | 1.2+ | 2006 10 02 | G96 | 0.5+ | 0.4− |
| 2002 08 17 | 644 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.6+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.6− |
| 2002 08 29 | 644 | 0.4+ | 0.1− | 2006 09 16 | 699 | 0.9+ | 0.2− | | | | |

### 2002 $PK_{136}$ = 2006 $SU_{263}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.76801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26727120 | $\omega$ | 45.93196 | | +0.99472084 | +0.07890161 | |
| $a$ | 2.3869021 | $\Omega$ | 309.43099 | | −0.09996442 | +0.88951260 | |
| $e$ | 0.1351728 | $i$ | 4.87299 | | +0.02318546 | +0.45004653 | |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 291 | 0.1− | 0.1+ | 2004 01 19 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.5+ |
| 2002 08 13 | 291 | 0.0 | 0.4+ | 2004 01 19 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 1.0+ |
| 2002 08 13 | 291 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.5+ | 1.3− | 2006 10 19 | 703 | 0.3− | 0.5+ |
| 2002 08 14 | 704 | 1.2− | 1.1− | 2006 09 20 | 699 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 1.0+ |
| 2002 08 14 | 704 | 0.2+ | 1.4− | 2006 09 20 | 699 | 1.0− | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2002 08 14 | 704 | 0.7− | 0.8− | 2006 09 20 | 699 | 0.4− | 1.2+ | 2006 10 19 | 644 | 0.7− | 0.4+ |
| 2002 08 17 | 644 | 0.2+ | 0.5+ | 2006 09 26 | 691 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 08 27 | 644 | 0.1− | 0.8+ | 2006 09 28 | 703 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 27 | 644 | 0.3− | 0.9+ | 2006 09 28 | 703 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 27 | 644 | 0.1− | 0.8+ | 2006 09 28 | 703 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.0 | 1.2− | 2006 10 31 | 703 | 0.9+ | 0.4− |
| 2002 09 05 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 10 31 | 703 | 1.1− | 0.4− |
| 2002 09 05 | 704 | 0.8+ | 0.9− | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 31 | 703 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 0.6− | 0.6− | 2006 09 30 | 691 | 0.3+ | 0.2− | 2006 10 31 | 703 | 0.0 | 0.5− |
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.4+ | | | | |

### 2002 $PM_{136}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.62007 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26891385 | $\omega$ | 240.92943 | | +0.96885629 | +0.24030738 | |
| $a$ | 2.3771720 | $\Omega$ | 105.11280 | | −0.20018689 | +0.90213101 | |
| $e$ | 0.2628167 | $i$ | 3.54823 | | −0.14574875 | +0.35834621 | |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.9− | 0.4− | 2002 09 16 | 644 | 0.4+ | 0.4+ | 2006 11 16 | 691 | 1.2+ | 0.4− |
| 2002 08 14 | 704 | 0.3− | 0.5+ | 2002 09 16 | 644 | 0.4+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2002 08 17 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2002 08 17 | 644 | 0.4+ | 0.6+ | 2006 10 23 | G96 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.4+ | 0.6+ |
| 2002 08 29 | 644 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2002 08 29 | 644 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.4− | 0.1+ |
| 2002 08 29 | 644 | 0.4+ | 0.5+ | 2006 10 23 | G96 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.4− | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2006 11 10 | 644 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2006 11 10 | 644 | 0.4− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2002 09 15 | 644 | 0.4− | 1.4− | 2006 11 12 | G96 | 0.4+ | 0.4− | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 29 | 704 | 0.6+ | 0.8+ |
| 2002 09 15 | 644 | 0.3− | 1.1− | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.4− | 0.2+ |
| 2002 09 15 | 644 | 0.4− | 0.1− | 2006 11 13 | 703 | 0.4− | 0.3− | 2006 12 01 | 691 | 0.5− | 0.2+ |
| 2002 09 15 | 644 | 0.3− | 1.0− | 2006 11 13 | 703 | 0.4+ | 1.1− | 2006 12 01 | 691 | 0.4+ | 0.1+ |
| 2002 09 15 | 644 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.5+ | 0.9− | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2002 09 16 | 644 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.5− | 0.0 | | | | |

### 2002 $PO_{137}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.60329 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26010662 | $\omega$ | 214.39464 | | +0.99748166 | −0.06682359 | |
| $a$ | 2.4305344 | $\Omega$ | 149.41061 | | +0.07089725 | +0.93007902 | |
| $e$ | 0.2163319 | $i$ | 2.67712 | | +0.00198008 | +0.36123070 | |
| $P$ | 3.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 30 | 608 | (0.5− | 1.7−) | 2002 09 15 | 644 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 07 30 | 608 | (1.3− | 2.0−) | 2002 09 15 | 644 | 1.0− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 07 30 | 608 | (0.6− | 1.6−) | 2004 02 12 | 691 | 0.5+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 08 08 | 644 | 0.3− | 0.7+ | 2004 02 12 | 691 | 0.3− | 0.6+ | 2006 10 15 | 703 | 0.6− | 0.1− |
| 2002 08 08 | 644 | 0.0 | 0.7+ | 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.5− | 0.1− |
| 2002 08 08 | 644 | 0.3− | 0.8+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.5− | 0.2+ |
| 2002 08 15 | 704 | 0.9− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.4− | 0.1+ |
| 2002 08 15 | 704 | 0.3− | 1.1+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.5− |
| 2002 08 15 | 704 | 0.3− | 1.0+ | 2006 09 18 | 699 | 1.3− | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.1− | 0.6− | 2006 10 19 | 644 | 0.2− | 0.4− |
| 2002 08 17 | 644 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 1.2+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 08 17 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 08 19 | 644 | 0.5− | 0.2+ | 2006 09 26 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 08 19 | 644 | 0.3− | 0.1+ | 2006 09 26 | 704 | 1.3+ | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.1− |
| 2002 08 19 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.6− |
| 2002 08 27 | 644 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.0− | 0.2+ |
| 2002 08 27 | 644 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.8+ | 0.3− |
| 2002 08 27 | 644 | 0.4− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 1.1+ | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 09 05 | 704 | 1.3+ | 0.8− | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 09 15 | 644 | 0.6− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.1− |

### 2002 $PU_{137}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.66969 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25841031 | $\omega$ | 334.66902 | | +0.97793588 | +0.20817050 | |
| $a$ | 2.4411595 | $\Omega$ | 13.35100 | | −0.17644047 | +0.86792120 | |
| $e$ | 0.2342792 | $i$ | 4.34781 | | −0.11184888 | +0.45097432 | |
| $P$ | 3.81 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 699 | 0.3+ | 0.1+ | 2002 09 15 | 644 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 08 15 | 699 | 0.7+ | 1.0+ | 2002 09 15 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 08 15 | 699 | 0.1− | 0.8+ | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2002 08 15 | 699 | (1.0− | 1.8+) | 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.4− | 1.1+ |
| 2002 08 17 | 608 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.8− | 0.2− |
| 2002 08 17 | 608 | 0.7− | 0.6− | 2006 09 17 | 704 | 0.1− | 0.5− | 2006 10 21 | 703 | 1.0+ | 0.2− |
| 2002 08 17 | 608 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.8+ |
| 2002 08 18 | 644 | 0.5− | 0.0 | 2006 09 17 | 704 | 0.5+ | 1.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 2002 08 19 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | (2.0+ | 0.5+) | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.9+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 1.4+ | 0.5− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2002 08 30 | 644 | 0.3+ | 0.3− | 2006 09 20 | 704 | 0.0 | 1.0− | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2002 08 30 | 644 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.8+ | 1.4+ |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.4− |
| 2002 09 05 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (2.2− | 0.5−) |
| 2002 09 05 | 704 | 1.2− | 0.6− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 09 05 | 704 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2002 09 05 | 704 | 1.2+ | 0.7− | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.5− | 0.2− | | | | |

**2002 PW$_{138}$ = 2006 SC$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.70200 | | (2000.0) | | +0.98287024 | −0.16450205 |
| $n$ | 0.25799517 | $\omega$ | 27.82683 | | +0.08100073 | +0.79057776 |
| $a$ | 2.4437776 | $\Omega$ | 341.08548 | | +0.16554445 | +0.58985242 |
| $e$ | 0.2783223 | $i$ | 14.85352 | | | |
| $P$ | 3.82 | $H$ | 17.5 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 1.0+ | 1.2+ | 2002 08 29 | 644 | 0.1+ | 0.4+ | 2006 09 22 | 699 | 1.0− | 1.0+ |
| 2002 08 11 | 644 | 0.1− | 0.1− | 2002 08 29 | 644 | 0.8+ | 0.7− | 2006 09 22 | 699 | 1.0+ | 1.0− |
| 2002 08 11 | 644 | 0.4− | 0.1− | 2002 08 29 | 644 | 0.0 | 0.5+ | 2006 09 28 | 703 | (2.1− | 0.1−) |
| 2002 08 19 | 644 | 0.6− | 0.2− | 2002 08 30 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 1.0− | 0.0 |
| 2002 08 19 | 644 | 0.1− | 0.1− | 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | (1.9− | 0.5+) |
| 2002 08 19 | 644 | 0.0 | 0.4− | 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.8− |
| 2002 08 19 | 644 | 0.2+ | 0.2+ | 2006 09 16 | 703 | (1.1− | 3.1+) | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 08 19 | 644 | 0.2− | 0.3− | 2006 09 16 | 703 | 0.5+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.9− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 08 19 | 644 | 0.1− | 0.3− | 2006 09 16 | 703 | 1.0− | 0.2− | 2006 10 23 | 644 | 0.6+ | 0.1− |
| 2002 08 19 | 644 | 0.6− | 0.5− | 2006 09 22 | 699 | 0.1+ | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 08 19 | 644 | 0.2+ | 0.1− | 2006 09 22 | 699 | 0.7+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.2− |

**2002 PE$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.88399 | | (2000.0) | | +0.98386037 | −0.17676664 |
| $n$ | 0.26418415 | $\omega$ | 238.14500 | | +0.17420231 | +0.91070591 |
| $a$ | 2.4054604 | $\Omega$ | 132.02051 | | +0.04089412 | +0.37332064 |
| $e$ | 0.1859281 | $i$ | 2.14384 | | | |
| $P$ | 3.73 | $H$ | 17.8 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 807 | 0.0 | 0.3− | 2002 09 03 | 735 | 1.5− | 1.0− | 2002 09 29 | 291 | 0.0 | 0.5+ |
| 2002 08 10 | 807 | 0.0 | 0.3− | 2002 09 03 | 735 | 1.8− | 1.4− | 2002 09 29 | 291 | 0.1− | 0.4+ |
| 2002 08 14 | 621 | 0.1+ | 0.5− | 2002 09 03 | 735 | 1.8− | 1.8− | 2002 09 29 | 291 | 0.0 | 0.4+ |
| 2002 08 14 | 621 | 0.1− | 0.1− | 2002 09 05 | 704 | 0.1+ | 0.9+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2002 08 14 | 621 | 0.3+ | 0.2− | 2002 09 05 | 704 | 0.5+ | 1.2+ | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2002 08 14 | 621 | 0.7+ | 0.3− | 2002 09 05 | 704 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2002 08 14 | 621 | 0.0 | 0.1+ | 2002 09 06 | 735 | 1.5+ | 0.3− | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2002 08 15 | 621 | 0.7− | 0.3+ | 2002 09 06 | 735 | 1.3+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.3+ |
| 2002 08 15 | 621 | 0.3+ | 0.5− | 2002 09 06 | 735 | 0.8+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.0 |
| 2002 08 15 | 621 | 0.5+ | 0.7− | 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.3+ | 0.1− |
| 2002 08 15 | 621 | 0.6− | 0.7− | 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.7+ | 0.2− |
| 2002 08 15 | 621 | 1.3+ | 0.2− | 2002 09 15 | 644 | 0.4− | 0.0 | | | | |

**2002 PG$_{152}$ = 2002 PV$_{151}$ = 2006 RC$_{34}$**

Id. Minor Planet Center (d, *MPO* 41953; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.05458 | | (2000.0) | | +0.97663421 | −0.21430020 |
| $n$ | 0.25819469 | $\omega$ | 64.21634 | | +0.18908348 | +0.89257451 |
| $a$ | 2.4425184 | $\Omega$ | 308.15390 | | +0.10214229 | +0.39671925 |
| $e$ | 0.1841283 | $i$ | 1.17729 | | | |
| $P$ | 3.82 | $H$ | 17.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.9− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.3− | 0.4+ | 2006 09 17 | 704 | 0.6+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.7+ | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2002 08 10 | 807 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2002 08 10 | 807 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.8+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2002 08 12 | 699 | 0.1+ | 0.8− | 2006 09 17 | 704 | 1.2+ | 1.0+ | 2006 10 17 | 703 | (0.6+ | 1.8−) |
| 2002 08 12 | 699 | 0.5+ | 0.4− | 2006 09 20 | 704 | 0.2+ | 1.4+ | 2006 10 17 | 703 | 0.4− | 0.6+ |
| 2002 08 12 | 699 | 0.4− | 0.8+ | 2006 09 20 | 704 | 0.6− | 1.4+ | 2006 10 17 | 703 | 0.0 | 0.8− |
| 2002 08 12 | 699 | 1.0+ | 0.2+ | 2006 09 20 | 704 | (0.7+ | 2.6+) | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2002 09 02 | 291 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.3− |
| 2002 09 02 | 291 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 09 02 | 291 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2005 05 16 | G96 | 0.1+ | 0.7− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2005 05 16 | G96 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2005 05 16 | G96 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.4− | 0.3− |
| 2005 05 16 | G96 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.1− | 0.7− |
| 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 07 22 | G96 | 0.1− | 0.5− | 2006 09 27 | 704 | (0.1− | 2.3+) | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2006 07 22 | G96 | 0.3+ | 0.4− | 2006 09 27 | 704 | (0.1+ | 2.0+) | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2006 07 22 | G96 | 0.6− | 0.2− | 2006 09 27 | 704 | (0.8− | 2.0+) | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2006 08 24 | 644 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.5− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2006 09 12 | 703 | 0.5+ | 0.7+ | 2006 09 29 | 704 | 0.3+ | 0.6− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2006 09 12 | 703 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2006 09 12 | 703 | 0.7− | 1.0− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.9+ | 0.3− |

**2002 PO$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.40786 | | (2000.0) | | +0.99970574 | +0.01036225 |
| $n$ | 0.26001220 | $\omega$ | 43.80566 | | −0.01858717 | +0.90820109 |
| $a$ | 2.4311228 | $\Omega$ | 315.58640 | | +0.01558698 | +0.41840579 |
| $e$ | 0.2125361 | $i$ | 1.79597 | | | |
| $P$ | 3.79 | $H$ | 17.0 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 608 | 1.0− | 0.6+ | 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 08 11 | 608 | 0.6+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.4− | 2006 10 29 | 704 | 0.8− | 1.1+ |
| 2002 08 11 | 608 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 10 29 | 704 | 0.6− | 0.2− |
| 2002 08 12 | 807 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.2− | 2006 10 29 | 704 | 0.7− | 0.7+ |
| 2002 08 12 | 807 | 1.2− | 0.6− | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 29 | 704 | 0.3+ | 0.1− |
| 2002 08 17 | 644 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 29 | 704 | 1.2− | 1.2+ |
| 2002 08 17 | 644 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 07 | 644 | 1.1+ | 0.7+ |
| 2002 08 17 | 644 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.3− | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2002 08 27 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.3− | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2002 08 27 | 644 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 08 27 | 644 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.7− | 1.2+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.8− | 0.1− |
| 2002 09 05 | 704 | 0.8+ | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | (0.4+ | 3.6−) |
| 2002 09 05 | 704 | 0.8+ | 0.0 | 2006 10 17 | 703 | 1.1+ | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.8+ |
| 2002 09 05 | 704 | (1.3+ | 2.4−) | 2006 10 17 | 703 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2002 09 05 | 704 | 0.6+ | 0.7− | 2006 10 17 | 703 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.8+ | 0.4− |
| 2002 09 15 | 608 | 0.8− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.6− | 2006 11 14 | 703 | 0.1+ | 0.5− |
| 2002 09 15 | 608 | 1.0− | 0.5+ | 2006 10 19 | 704 | 0.5− | 0.7+ | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 2002 09 15 | 608 | 0.5− | 0.2− | 2006 10 19 | 704 | 0.5+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2006 09 25 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 704 | 1.1− | 0.7+ | 2006 11 14 | 703 | 0.4− | 0.4− |
| 2006 09 25 | 704 | 1.1+ | 0.8− | 2006 10 19 | 704 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2006 09 25 | 704 | 1.2+ | 0.1+ | 2006 10 19 | 704 | 0.8+ | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 25 | 704 | 1.4+ | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.2− | | |
| 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.7+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2006 09 25 | 691 | 0.8− | 0.9− | 2006 10 21 | 703 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 26 | 113 | 0.3+ | 0.0 | | |
| 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 26 | 113 | 0.5+ | 0.7− | | |
| 2006 09 28 | 691 | 0.4− | 0.6− | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 26 | 198 | 0.4− | 0.2+ | | |
| 2006 10 03 | 691 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 26 | 198 | 0.3− | 0.1+ | | |
| 2006 10 03 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 26 | 198 | 0.1− | 0.2− | | |

**2002 PL$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.86554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26317433 | $\omega$ | 353.02339 | | +0.76204328 | | +0.64748915 |
| $a$ | 2.4116098 | $\Omega$ | 326.62080 | | −0.59348457 | | +0.69413290 |
| $e$ | 0.2048983 | $i$ | 0.72025 | | −0.25897123 | | +0.31454303 |
| $P$ | 3.75 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.2+ | 0.1+ | 2002 08 17 | 644 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.2+ | | |
| 1995 11 21 | 691 | 0.2− | 0.2− | 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2− | | |
| 1995 11 21 | 691 | 0.1+ | 0.2− | 2002 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.0 | | |
| 2002 07 29 | 644 | 0.2− | 0.4− | 2002 08 18 | 644 | 0.3+ | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.0 | | |
| 2002 07 29 | 644 | 0.9+ | 0.0 | 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2002 08 08 | 644 | 0.0 | 0.3− | 2002 09 04 | 644 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2002 08 08 | 644 | 0.1− | 0.4− | 2002 09 04 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.1+ | | |
| 2002 08 08 | 644 | 0.5− | 0.5− | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.3− | | |
| 2002 08 17 | 644 | 0.3− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.2+ | | | | | | |

**2002 PT$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.65066 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27092916 | $\omega$ | 233.98363 | | +0.98698681 | | −0.15881252 |
| $a$ | 2.3653689 | $\Omega$ | 135.13897 | | +0.15662782 | | +0.91399266 |
| $e$ | 0.2540488 | $i$ | 2.04825 | | +0.03639722 | | +0.37335774 |
| $P$ | 3.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.1+ | 2006 11 20 | H07 | 0.3− | 0.3+ | | |
| 2002 07 23 | 644 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 20 | H07 | 0.4− | 0.6+ | | |
| 2002 07 23 | 644 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 11 20 | H07 | 0.4+ | 0.8+ | | |
| 2002 07 29 | 644 | 0.4− | 0.6+ | 2006 10 22 | G96 | 0.4− | 0.3− | 2006 11 20 | H07 | 0.7+ | 0.6+ | | |
| 2002 07 29 | 644 | 0.5− | 0.7+ | 2006 10 22 | G96 | 0.3+ | 0.3− | 2006 11 20 | H07 | 0.4+ | 1.0+ | | |
| 2002 08 08 | 644 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 21 | H07 | 0.9+ | 0.0 | | |
| 2002 08 08 | 644 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.2− | 2006 11 21 | H07 | 0.5− | 0.1+ | | |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2006 11 18 | H07 | 0.1− | 0.7− | 2006 11 21 | H07 | 0.6+ | 0.1− | | |
| 2002 08 11 | 807 | 0.1− | 0.7− | 2006 11 18 | H07 | 0.3+ | 0.8+ | 2006 11 21 | H07 | 0.5− | 0.9− | | |
| 2002 08 11 | 807 | 0.5+ | 0.4− | 2006 11 18 | H07 | 0.9− | 0.8− | 2006 11 21 | H07 | 0.4− | 0.6− | | |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2006 11 18 | H07 | 0.8− | 0.0 | 2006 11 21 | H07 | 0.4+ | 0.6− | | |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 11 19 | H07 | (2.5+ | 1.3+) | 2006 11 21 | H07 | 0.1+ | 0.2− | | |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 11 19 | H07 | 0.7+ | 0.0 | 2006 11 21 | H07 | 0.0 | 0.3+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 11 19 | H07 | 1.2− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.3+ | | |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2006 11 20 | H07 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.1− | | |
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 11 20 | H07 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.0 | | |
| 2006 09 28 | G96 | 0.4− | 0.2− | 2006 11 20 | H07 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.0 | | |

**2002 PC$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.99393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26195620 | $\omega$ | 213.31995 | | +0.98562954 | | +0.14309521 |
| $a$ | 2.4190802 | $\Omega$ | 138.15942 | | −0.10994999 | | +0.94689011 |
| $e$ | 0.0676579 | $i$ | 7.73384 | | −0.12823962 | | +0.28796333 |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.3− | 0.1+ | 2002 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.8− | | |
| 2002 07 22 | 644 | 0.1− | 0.0 | 2002 08 18 | 644 | 0.6+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.7+ | | |
| 2002 07 22 | 644 | 0.5+ | 0.3+ | 2002 08 18 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | (0.3+ | 1.9−) | | |
| 2002 07 29 | 644 | 0.6− | 0.0 | 2002 09 04 | 644 | 0.3− | 0.3− | 2006 09 19 | 699 | 0.6+ | 0.4− | | |
| 2002 07 29 | 644 | 0.5+ | 0.0 | 2002 09 04 | 644 | 0.5− | 0.3− | 2006 09 19 | 699 | 0.5+ | 1.1− | | |
| 2002 07 29 | 644 | 0.1+ | 0.0 | 2002 09 04 | 644 | 0.3− | 1.1− | 2006 09 19 | 699 | 0.3− | 0.4+ | | |
| 2002 08 08 | 644 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | | |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2006 09 14 | 703 | 1.0− | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.4− | | |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3− | 1.0+ | 2006 10 12 | 644 | 0.4− | 0.1− | | |
| 2002 08 17 | 644 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.6+ | 0.5− | 2006 10 12 | 644 | 0.5− | 0.1+ | | |
| 2002 08 17 | 644 | 0.1+ | 0.5− | 2006 09 18 | 703 | (0.1+ | 1.8−) | | | | | | |

**2002 PE$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.73498 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30629688 | $\omega$ | 168.45461 | | −0.04859013 | | +0.99728990 |
| $a$ | 2.1795876 | $\Omega$ | 98.74255 | | −0.92079066 | | −0.02329476 |
| $e$ | 0.1379202 | $i$ | 3.20410 | | −0.38701882 | | −0.06978691 |
| $P$ | 3.22 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 691 | 0.0 | 0.4+ | 2002 08 15 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.5+ | 0.0 | | |
| 2001 02 17 | 691 | 0.1− | 0.2+ | 2002 08 18 | 644 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 02 17 | 691 | 0.2+ | 0.2+ | 2002 08 18 | 644 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2− | 0.2− | | |
| 2002 07 23 | 644 | 0.6− | 0.1+ | 2002 08 18 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2002 07 23 | 644 | 0.3− | 0.5+ | 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2002 07 23 | 644 | 0.9− | 0.4+ | 2002 08 18 | 644 | 0.4+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2002 08 08 | 644 | 0.5− | 0.2− | 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2002 08 08 | 644 | 0.4+ | 0.1+ | 2002 08 29 | 644 | 0.4+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2002 08 29 | 644 | 0.5+ | 0.7+ | 2006 11 27 | 691 | 0.3− | 0.2− | | |
| 2002 08 15 | 644 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.1+ | | |
| 2002 08 15 | 644 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.4+ | | | | | | |

**2002 PW$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.86721 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26611015 | $\omega$ | 258.88437 | | +0.99380537 | | +0.09165156 |
| $a$ | 2.3938399 | $\Omega$ | 95.83496 | | −0.05996172 | | +0.91839751 |
| $e$ | 0.1725793 | $i$ | 3.62255 | | −0.09357070 | | +0.38489739 |
| $P$ | 3.70 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2002 07 14 | 644 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.4− | 0.8+ | 2006 10 16 | 703 | 1.3− | 0.7− | | |
| 2002 07 14 | 644 | 0.1− | 0.5− | 2006 09 25 | 699 | (0.4− | 1.8+) | 2006 10 16 | 703 | 0.6+ | 1.4− | | |
| 2002 08 08 | 644 | 0.3+ | 0.0 | 2006 09 29 | 699 | 0.8+ | 0.7+ | 2006 10 16 | 703 | 1.0+ | 0.8− | | |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2006 09 29 | 699 | (1.8− | 0.9+) | 2006 10 16 | 703 | 0.3+ | 0.1− | | |
| 2002 08 08 | 644 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2002 08 11 | 644 | 0.1− | 0.3+ | 2006 09 29 | 699 | (1.7− | 0.1+) | 2006 10 21 | 644 | 0.5− | 0.2+ | | |
| 2002 08 11 | 644 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2002 08 11 | 644 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.9+ | 0.7+ | | |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.6− | | |
| 2002 08 29 | 644 | 0.4− | 0.4− | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.8+ | 0.5− | 2006 10 11 | 644 | 0.5− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.6+ | | |
| 2006 09 25 | 699 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.0 | | | | | | |

**2002 PR$_{161}$ = 2006 UO$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.20108 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27244961 | $\omega$ | 268.81164 | | +0.93806268 | | −0.34482661 |
| $a$ | 2.3565605 | $\Omega$ | 111.35880 | | +0.33051600 | | +0.86150747 |
| $e$ | 0.1940251 | $i$ | 2.07127 | | +0.10391142 | | +0.37269221 |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.2+ | 0.9− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.5+ | |
| 2002 07 23 | 644 | 0.5+ | 0.6− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.3+ | |
| 2002 07 23 | 644 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.8− | |
| 2002 07 29 | 644 | 0.1− | 0.7− | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.7+ | |
| 2002 07 29 | 644 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.5− | |
| 2002 07 29 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1− | 1.4+ | |
| 2002 08 08 | 644 | 0.3− | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.3− | 0.2+ | |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2006 11 02 | 703 | 0.4+ | 0.5− | 2006 11 18 | 704 | 0.0 | 0.6+ | |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2006 11 02 | 703 | 0.6+ | 0.6− | 2006 11 21 | 704 | 0.9− | 0.1+ | |
| 2002 08 18 | 644 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 0.8− | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.8+ | |
| 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.9+ | |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.6− | 0.2− | 2006 11 21 | 704 | (1.7− | 0.7+) | |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.3− | |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | (2.0+ | 0.3−) | 2006 11 23 | G96 | 0.2+ | 0.2− | |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.8− | 2006 11 23 | G96 | 0.2+ | 0.4− | |
| 2002 09 04 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.8− | 2006 11 23 | G96 | 0.0 | 0.5− | |
| 2002 09 04 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.3− | 0.3+ | 2006 11 28 | 704 | 1.0− | 0.3− | |
| 2002 09 04 | 644 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.8− | |
| 2002 09 15 | 644 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.9+ | 0.3− | |
| 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.0 | |
| 2002 09 15 | 644 | 0.4+ | 0.3+ | 2006 11 12 | G96 | 0.5+ | 0.0 | 2006 11 28 | 704 | 0.0 | 0.4− | |

**2002 PW$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 19.65714 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26342186 | $\omega$ | 334.61320 | | +0.96715226 | | +0.25408855 | | |
| $a$ | 2.4100988 | $\Omega$ | 10.67524 | | −0.22582493 | | +0.87228959 | | |
| $e$ | 0.2260425 | $i$ | 2.30527 | | −0.11670310 | | +0.41779168 | | |
| $P$ | 3.74 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.2− | 0.1+ | 2002 09 04 | 644 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.1− | |
| 2002 07 23 | 644 | 0.3+ | 0.4+ | 2002 09 15 | 644 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.0 | |
| 2002 07 23 | 644 | 0.1− | 0.7+ | 2002 09 15 | 644 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.1− | |
| 2002 08 08 | 644 | 0.3− | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2− | 0.5− | |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.8+ | |
| 2002 08 16 | 644 | 0.5− | 0.2− | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.5+ | |
| 2002 08 16 | 644 | 0.0 | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.1+ | |
| 2002 08 16 | 644 | 0.4− | 0.2− | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 22 | 683 | 0.0 | 0.2+ | |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 22 | 683 | 0.6+ | 0.3− | |
| 2002 08 18 | 644 | 0.3− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 22 | 683 | 0.7− | 0.8+ | |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 27 | 683 | 1.2+ | 0.6− | |
| 2002 08 29 | 644 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 27 | 683 | 1.0+ | 0.3+ | |
| 2002 08 29 | 644 | 0.2+ | 0.4− | 2006 10 19 | 683 | 0.7+ | 0.6− | 2006 10 27 | 683 | (1.3+ | 2.0+) | |
| 2002 08 29 | 644 | 0.2+ | 0.3− | 2006 10 19 | 683 | 1.1+ | 1.0− | 2006 11 10 | 691 | 1.1− | 0.7− | |
| 2002 09 01 | 644 | 0.0 | 0.1− | 2006 10 19 | 683 | 0.2+ | 0.7− | 2006 11 10 | 691 | 0.1+ | 0.5+ | |
| 2002 09 01 | 644 | 0.5+ | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.3+ | |
| 2002 09 04 | 644 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.2− | | | | | |
| 2002 09 04 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.9+ | 0.3+ | | | | | |

**2002 PZ$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 50.52881 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26163223 | $\omega$ | 225.15599 | | +0.41993727 | | +0.90689698 | | |
| $a$ | 2.4210767 | $\Omega$ | 69.70306 | | −0.82194400 | | +0.39616925 | | |
| $e$ | 0.1860648 | $i$ | 2.10832 | | −0.38478664 | | +0.14348446 | | |
| $P$ | 3.77 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 291 | 0.1− | 0.1+ | 2002 08 16 | 644 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | |
| 2002 07 06 | 291 | 0.3− | 0.3+ | 2002 08 16 | 644 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.0 | |
| 2002 07 06 | 291 | 0.0 | 0.2+ | 2002 08 18 | 644 | 0.5− | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1+ | |
| 2002 07 23 | 644 | 1.1+ | 0.0 | 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.3− | |
| 2002 07 23 | 644 | 0.7+ | 0.2− | 2002 08 18 | 644 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1+ | |
| 2002 07 23 | 644 | 0.2+ | 0.1− | 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | |
| 2002 07 29 | 644 | 0.2+ | 0.3− | 2002 08 29 | 644 | 0.2− | 0.8− | 2006 09 27 | 691 | 0.1+ | 0.1+ | |
| 2002 07 29 | 644 | 0.0 | 0.2− | 2002 08 29 | 644 | 0.1− | 0.8− | 2006 09 27 | 691 | 0.2− | 0.1− | |
| 2002 08 08 | 644 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1− | |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.2− | |
| 2002 08 08 | 644 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1+ | |
| 2002 08 16 | 644 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3+ | |

**2002 PN$_{162}$ = 2006 TZ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 273.07715 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27958971 | $\omega$ | 348.38080 | | −0.35234273 | | −0.93029365 | | |
| $a$ | 2.3162669 | $\Omega$ | 122.17380 | | +0.86801223 | | −0.36560084 | | |
| $e$ | 0.0456242 | $i$ | 6.92271 | | +0.34987050 | | −0.02982875 | | |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.2+ | 0.8− | 2002 08 16 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3− | |
| 2002 07 29 | 644 | 0.1+ | 0.4+ | 2002 08 16 | 644 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1− | |
| 2002 07 29 | 644 | 0.3− | 0.3+ | 2002 08 18 | 644 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.8− | 1.0− | |
| 2002 08 08 | 644 | 0.1− | 0.2− | 2002 08 18 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 1.0+ | |
| 2002 08 08 | 644 | 0.3− | 0.0 | 2002 08 18 | 644 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.8+ | |
| 2002 08 16 | 644 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.1+ | |

**2002 PU$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 0.88326 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27393150 | $\omega$ | 265.50806 | | +0.83060997 | | −0.55301030 | | |
| $a$ | 2.3480539 | $\Omega$ | 128.05110 | | +0.53813338 | | +0.76698352 | | |
| $e$ | 0.2130947 | $i$ | 4.75815 | | +0.14317662 | | +0.32544721 | | |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.3− | |
| 2002 07 29 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.3+ | 2006 11 25 | 704 | 0.5+ | 0.1+ | |
| 2002 08 08 | 644 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.3− | 0.4− | 2006 11 25 | 704 | 1.2+ | 0.8+ | |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.3+ | 2006 11 25 | 704 | 0.1+ | 0.5+ | |
| 2002 08 11 | 644 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.0 | 2006 11 25 | 704 | 0.2+ | 1.1+ | |
| 2002 08 11 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.7− | 2006 11 28 | 704 | 0.5− | 1.2− | |
| 2002 08 11 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.5− | |
| 2002 08 18 | 644 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.2− | 2006 11 28 | 704 | 0.5− | 0.7− | |
| 2002 08 18 | 644 | 0.5− | 0.8+ | 2006 11 19 | 704 | 0.0 | 0.9+ | 2006 11 28 | 704 | 0.1+ | 0.1− | |
| 2002 08 29 | 644 | 0.1+ | 0.5− | 2006 11 23 | G96 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.2+ | 0.2+ | |
| 2002 08 29 | 644 | 0.1− | 0.6− | 2006 11 23 | G96 | 0.0 | 0.1− | | | | | |
| 2002 08 29 | 644 | 0.0 | 0.8− | 2006 11 23 | G96 | 0.0 | 0.1− | | | | | |

**2002 PY$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 41.19686 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26963027 | $\omega$ | 233.09318 | | +0.77592982 | | +0.62951132 | | |
| $a$ | 2.3729593 | $\Omega$ | 87.85619 | | −0.56507451 | | +0.72222915 | | |
| $e$ | 0.1967003 | $i$ | 2.32851 | | −0.28039920 | | +0.28653193 | | |
| $P$ | 3.66 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1+ | 0.2+ | 2002 08 13 | 704 | 0.8− | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.4− | |
| 2002 07 14 | 644 | 0.3+ | 0.1+ | 2002 08 13 | 704 | 0.4− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.3+ | |
| 2002 07 14 | 644 | 0.3+ | 0.1− | 2002 08 13 | 704 | 1.0− | 1.0− | 2006 10 22 | 691 | 0.6− | 0.3+ | |
| 2002 07 18 | 644 | 0.0 | 0.2+ | 2002 08 13 | 704 | (1.9− | 0.3−) | 2006 10 22 | 691 | 0.6− | 0.1+ | |
| 2002 07 18 | 644 | 0.5− | 0.1− | 2002 08 29 | 644 | 0.4+ | 0.3− | 2006 10 30 | 621 | 0.1+ | 0.2− | |
| 2002 07 18 | 644 | 0.2+ | 0.3+ | 2002 08 29 | 644 | 0.3+ | 0.4− | 2006 10 30 | 621 | 0.5+ | 0.1− | |
| 2002 08 08 | 644 | 0.1+ | 0.2+ | 2002 08 29 | 644 | 0.4+ | 0.1− | 2006 10 30 | 621 | 0.3+ | 0.0 | |
| 2002 08 08 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 621 | 0.5− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.4− | |
| 2002 08 11 | 807 | 0.1+ | 0.3+ | 2006 10 17 | 621 | 0.9+ | 0.3− | 2006 11 16 | G96 | 0.7+ | 0.3− | |
| 2002 08 11 | 644 | 0.0 | 0.3+ | 2006 10 17 | 621 | 1.0+ | 0.7+ | 2006 11 16 | G96 | 0.8+ | 0.6− | |
| 2002 08 11 | 807 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.7+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.1− | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2002 08 11 | 644 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.0 |

**2002 PO$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 338.10379 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.24768693 | | $\omega$ | 213.18551 | | +0.98881696 | | −0.14036775 | | | |
| $a$ | 2.5111192 | | $\Omega$ | 154.73913 | | +0.14902063 | | +0.94316425 | | | |
| $e$ | 0.0868455 | | $i$ | 6.77970 | | −0.00581926 | | +0.30122763 | | | |
| $P$ | 3.98 | | $H$ | 17.4 | $G$ | 0.15 | | $U$ | 5 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.4− | 0.2+ | 2002 08 28 | 644 | 0.3+ | 0.1− | 2006 08 28 | 691 | 0.1− | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.4+ | 2002 09 14 | 644 | 0.1− | 0.5+ | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2002 08 08 | 644 | 0.1+ | 0.5+ | 2002 09 14 | 644 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.9− | 1.2+ |
| 2002 08 17 | 644 | 0.3+ | 0.6− | 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.6− | 1.1− |
| 2002 08 17 | 644 | 0.2− | 0.5− | 2006 08 19 | 691 | 0.2− | 0.0 | 2006 08 28 | 699 | 1.5+ | 0.1+ |
| 2002 08 17 | 644 | 0.5+ | 0.2− | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 08 28 | 699 | 1.4+ | 0.7− |
| 2002 08 28 | 644 | 0.1+ | 0.1− | 2006 08 19 | 691 | 0.0 | 0.1+ | | | | |
| 2002 08 28 | 644 | 0.0 | 0.2− | 2006 08 28 | 691 | 0.1− | 0.1− | | | | |

**2002 PK$_{166}$ = 2006 SK$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 81.45288 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27179887 | | $\omega$ | 230.26537 | | +0.05058693 | | +0.99796199 | | | |
| $a$ | 2.3603204 | | $\Omega$ | 42.68356 | | −0.89786307 | | +0.06249861 | | | |
| $e$ | 0.1869213 | | $i$ | 3.28896 | | −0.43735898 | | −0.01287584 | | | |
| $P$ | 3.63 | | $H$ | 18.2 | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.2− | 0.2+ | 2002 08 18 | 644 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1− |
| 1995 09 18 | 691 | 0.1− | 0.3− | 2002 08 18 | 644 | 0.4− | 0.3− | 2006 09 18 | 691 | 0.4− | 0.2+ |
| 1995 09 18 | 691 | 0.3+ | 0.0 | 2002 08 18 | 644 | 0.1− | 0.8− | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2002 08 14 | 644 | 0.1− | 0.2+ | 2002 08 29 | 644 | 0.5+ | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.1− |
| 2002 08 14 | 644 | 0.1− | 0.3+ | 2002 08 29 | 644 | 0.4+ | 0.7+ | 2006 09 25 | 691 | 0.4+ | 0.1+ |
| 2002 08 14 | 644 | 0.3− | 0.4+ | 2002 08 29 | 644 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.6+ |
| 2002 08 16 | 644 | 0.3− | 0.2− | 2002 08 30 | 644 | 0.1+ | 0.0 | 2006 10 16 | 291 | 0.3+ | 0.2− |
| 2002 08 16 | 644 | 0.1+ | 0.2− | 2002 08 30 | 644 | 0.1+ | 0.4− | 2006 10 16 | 291 | 0.1+ | 0.2− |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2002 08 30 | 644 | 0.0 | 0.2− | 2006 10 16 | 291 | 0.0 | 0.2− |

**2002 PQ$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 9.17167 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26670290 | | $\omega$ | 29.57659 | | +0.97909723 | | −0.20336924 | | | |
| $a$ | 2.3902916 | | $\Omega$ | 342.15666 | | +0.18457064 | | +0.89477925 | | | |
| $e$ | 0.2023216 | | $i$ | 0.57856 | | +0.08545350 | | +0.39750603 | | | |
| $P$ | 3.70 | | $H$ | 18.2 | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.5+ | 0.0 | 2002 08 27 | 644 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 08 08 | 644 | 0.2− | 0.2− | 2002 09 14 | 644 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 2002 08 08 | 644 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.7+ | 0.2− |
| 2002 08 17 | 644 | 0.2− | 0.1− | 2002 09 14 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.2+ | 0.8+ |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2002 09 15 | 644 | 0.4− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.6+ |
| 2002 08 17 | 644 | 0.2+ | 0.2+ | 2002 09 15 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2002 09 15 | 644 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.7− |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2002 08 19 | 644 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2002 08 19 | 644 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2002 08 27 | 644 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.6− |
| 2002 08 27 | 644 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.2− |

**2002 PV$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 352.82426 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27448715 | | $\omega$ | 263.41439 | | +0.70660929 | | −0.70693163 | | | |
| $a$ | 2.3448840 | | $\Omega$ | 141.56431 | | +0.66724027 | | +0.65116058 | | | |
| $e$ | 0.1869415 | | $i$ | 2.84350 | | +0.23557109 | | +0.27611153 | | | |
| $P$ | 3.59 | | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 07 23 | 644 | 0.6+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2002 07 23 | 644 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.2− | 0.3− |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.5− | 2006 11 17 | 704 | 0.5+ | 0.3− |
| 2002 08 11 | 644 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.5− | 2006 11 17 | 704 | 1.0+ | 0.2− |
| 2002 08 11 | 644 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2002 08 17 | 644 | 0.3− | 0.1− | 2006 11 02 | 703 | 0.3+ | 1.4− | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2002 08 17 | 644 | 0.4− | 0.3+ | 2006 11 02 | 703 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2002 08 17 | 644 | 0.6− | 0.0 | 2006 11 02 | 703 | 1.1− | 0.7− | 2006 11 18 | 704 | 1.1+ | 0.0 |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.8− | 0.8− |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.4− | 0.4− | 2006 11 20 | 704 | 0.3− | 0.1− |
| 2002 08 18 | 644 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.0 | 0.7+ | 2006 11 10 | 644 | 0.4+ | 0.2− | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2002 08 18 | 644 | 0.0 | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2002 08 18 | 644 | 0.0 | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.4+ | 0.7− | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.7+ | 2006 11 28 | 704 | 0.1− | 0.8+ |
| 2002 08 29 | 644 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.1+ | 1.0+ | 2006 11 28 | 704 | 0.4− | 0.0 |
| 2002 09 06 | 557 | 0.0 | 0.4− | 2006 11 13 | 703 | 1.0− | 0.3− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2002 09 06 | 557 | 0.3+ | 0.7− | 2006 11 14 | 704 | 0.7− | 1.1+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2002 09 06 | 557 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.1− | 0.7+ | 2006 11 29 | 704 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.6+ | 0.9+ | 2006 11 29 | 704 | 0.1− | 1.3+ |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.0 | 1.1+ | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2002 09 15 | 644 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.7− | 2006 11 29 | 704 | 0.2+ | 0.7+ |
| 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− | | | | |

**2002 PY$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 344.10361 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26268771 | | $\omega$ | 120.72274 | | +0.94125197 | | −0.31963468 | | | |
| $a$ | 2.4145871 | | $\Omega$ | 258.10629 | | +0.25903829 | | +0.89041703 | | | |
| $e$ | 0.1273451 | | $i$ | 6.39483 | | +0.21666542 | | +0.32402342 | | | |
| $P$ | 3.75 | | $H$ | 17.3 | $G$ | 0.15 | | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 26 | 644 | 0.0 | 0.1− | 2002 08 07 | 644 | 0.1− | 0.5− | 2002 08 26 | 644 | 0.3− | 0.0 |
| 2002 06 26 | 644 | 0.1− | 0.4+ | 2002 08 07 | 644 | 0.1− | 0.5− | 2006 09 17 | 703 | 0.0 | 0.8+ |
| 2002 06 26 | 644 | 0.3− | 0.1+ | 2002 08 11 | 644 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.3− | 0.5− |
| 2002 07 12 | 644 | 0.1− | 0.1− | 2002 08 11 | 644 | 0.0 | 0.3− | 2006 09 17 | 703 | 1.5+ | 0.6− |
| 2002 07 12 | 644 | 0.1+ | 0.2− | 2002 08 11 | 644 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.0 | 0.3+ |
| 2002 07 12 | 644 | 0.3− | 0.1− | 2002 08 16 | 644 | 0.7+ | 1.1+ | 2006 09 27 | 703 | 0.9− | 0.8− |
| 2002 07 21 | 644 | 0.0 | 0.3− | 2002 08 16 | 644 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.0 |
| 2002 07 21 | 644 | 0.2+ | 0.4+ | 2002 08 16 | 644 | 0.1+ | 0.2− | 2006 09 27 | 703 | (2.6− | 0.5+) |
| 2002 07 21 | 644 | 0.2+ | 0.0 | 2002 08 26 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.7+ |
| 2002 08 07 | 644 | 0.0 | 0.7+ | 2002 08 26 | 644 | 0.4− | 0.1− | | | | |

**2002 PR$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 7.51204 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26094633 | | $\omega$ | 333.53099 | | +0.99975244 | | −0.01839277 | | | |
| $a$ | 2.4253174 | | $\Omega$ | 27.53160 | | +0.02194977 | | +0.90741192 | | | |
| $e$ | 0.2484264 | | $i$ | 1.55216 | | −0.00364249 | | +0.41983964 | | | |
| $P$ | 3.78 | | $H$ | 18.5 | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.5+ | 0.3− | 2006 10 21 | 703 | 1.2+ | 0.1+ |
| 2002 07 29 | 644 | 0.7+ | 0.1− | 2006 09 25 | G96 | 0.5+ | 0.5− | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 2002 08 15 | 644 | 0.3+ | 0.4− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 21 | 703 | 1.3+ | 1.4− |
| 2002 08 15 | 644 | 0.3− | 0.7− | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 10 21 | 703 | 1.4+ | 0.5− |
| 2002 08 15 | 644 | 0.4+ | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.5− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 08 18 | 644 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.6− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.4− |
| 2002 08 29 | 644 | 0.3− | 1.0+ | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.2− | 0.4− |
| 2002 08 29 | 644 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.4− | 0.4− |
| 2002 08 29 | 644 | 0.0 | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 09 01 | 644 | 0.4− | 0.3− | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2002 09 01 | 644 | 0.1− | 0.5− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2002 09 04 | 644 | 0.5+ | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 09 04 | 644 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2002 09 15 | 644 | 0.3− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.4− | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.2− |
| 2002 09 15 | 644 | 0.6− | 0.5− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 20 | 703 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.8+ | 0.2+ |
| 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 703 | 0.8− | 0.5− | 2006 11 10 | 691 | 0.5+ | 0.3+ |
| 2006 09 24 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.2− | | | | |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 20 | 703 | 0.3+ | 0.1+ | | | | |

**2002 PW$_{172}$ = 2006 WR$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.76224 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29050344 | $\omega$ | 175.63695 | | +0.46000706 | | +0.88733378 |
| $a$ | 2.2578852 | $\Omega$ | 121.74763 | | −0.81578539 | | +0.43664746 |
| $e$ | 0.1272741 | $i$ | 2.16527 | | −0.35055343 | | +0.14824896 |
| $P$ | 3.39 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | (1.7+ | 0.6+) | 2002 08 29 | 644 | 0.5+ | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 07 29 | 644 | (2.5+ | 0.1+) | 2002 08 29 | 644 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.5− |
| 2002 08 11 | 644 | 0.3− | 0.2+ | 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2002 08 11 | 644 | 0.2+ | 0.2+ | 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.3− | 0.5− |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2005 06 14 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.1− | 2005 06 14 | 691 | 0.0 | 0.2− | | | | |
| 2002 08 18 | 644 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.5+ | | | | |

**2002 PJ$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.06120 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25968986 | $\omega$ | 194.52154 | | +0.94651990 | | −0.32259502 |
| $a$ | 2.4331342 | $\Omega$ | 184.31109 | | +0.30307446 | | +0.89503053 |
| $e$ | 0.1565118 | $i$ | 4.35173 | | +0.11066145 | | +0.30798181 |
| $P$ | 3.80 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.3+ | 0.6− | 2006 09 15 | 691 | 0.3+ | 0.4− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 07 23 | 644 | 0.8− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.5− | 0.0 |
| 2002 08 08 | 644 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.6− | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2002 08 08 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.7− |
| 2002 08 17 | 644 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.6+ | 0.3− |
| 2002 08 17 | 644 | 0.4+ | 0.1+ | 2006 09 23 | 691 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 08 17 | 644 | 0.2+ | 0.8− | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 291 | 0.2− | 0.2+ |
| 2002 08 26 | 644 | 0.1+ | 0.9+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 27 | 291 | 0.1+ | 0.1− |
| 2002 08 26 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 27 | 291 | 0.3+ | 0.1− |
| 2002 08 26 | 644 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2002 08 27 | 644 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.5− |
| 2002 08 27 | 644 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2002 09 14 | 644 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2002 09 14 | 644 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2+ | | | | |
| 2002 09 14 | 644 | 0.4− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ | | | | |

**2002 PD$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.86445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25887905 | $\omega$ | 99.21992 | | +0.60232604 | | +0.79807719 |
| $a$ | 2.4382119 | $\Omega$ | 207.83771 | | −0.74564307 | | +0.55507685 |
| $e$ | 0.2005835 | $i$ | 2.03933 | | −0.28499079 | | +0.23444079 |
| $P$ | 3.81 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.1− | 0.2+ | 2002 08 27 | 644 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.2− | 0.2− | 2002 08 27 | 644 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2002 08 08 | 644 | 0.5+ | 0.0 | 2002 08 27 | 644 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.3− | 2002 09 14 | 644 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2002 08 17 | 644 | 0.2− | 0.3− | 2002 09 14 | 644 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.0 |
| 2002 08 17 | 644 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.8− |
| 2002 08 17 | 644 | 0.4+ | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2002 08 17 | 644 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.5− | 0.4− |
| 2002 08 17 | 644 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.5− | 0.0 |

**2002 PL$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.55824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26191161 | $\omega$ | 142.35579 | | +0.99444914 | | +0.10056650 |
| $a$ | 2.4193547 | $\Omega$ | 211.91373 | | −0.10501323 | | +0.93027423 |
| $e$ | 0.1027852 | $i$ | 3.35530 | | −0.00656772 | | +0.35281190 |
| $P$ | 3.76 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.7− | 0.3− | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 20 | 691 | 0.0 | 0.2+ |
| 2002 07 22 | 644 | 0.4+ | 0.1− | 2006 08 21 | 691 | 0.0 | 0.2− | 2006 09 23 | 106 | 0.4+ | 0.4+ |
| 2002 07 22 | 644 | 0.5− | 0.0 | 2006 08 21 | 691 | 0.3+ | 0.0 | 2006 09 24 | 106 | 1.1+ | 0.4− |
| 2002 07 28 | 644 | 0.0 | 0.1− | 2006 08 21 | 691 | 0.4+ | 0.1− | 2006 09 24 | 106 | 0.0 | 1.2− |
| 2002 07 28 | 644 | 0.1+ | 0.5− | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 09 24 | 106 | 0.1+ | 0.7− |
| 2002 08 07 | 644 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2002 08 07 | 644 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2002 08 07 | 644 | 0.0 | 0.2+ | 2006 09 16 | 699 | 1.3− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2002 08 11 | 644 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.3− | 1.1+ | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2002 08 11 | 644 | 0.2+ | 0.1− | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 08 11 | 644 | 0.1+ | 0.2− | 2006 09 16 | 699 | 0.0 | 1.1+ | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2002 08 16 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.5− |
| 2002 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2002 08 26 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2002 08 26 | 644 | 0.2+ | 1.0+ | 2006 09 19 | 703 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 08 26 | 644 | 0.6− | 0.9+ | 2006 09 20 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 20 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.1− |

**2002 PD$_{177}$ = 2004 CT$_{117}$ = 2006 RV$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.76897 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26609703 | $\omega$ | 104.61381 | | +0.63900765 | | −0.76883729 |
| $a$ | 2.3939185 | $\Omega$ | 305.64355 | | +0.69406242 | | +0.58955858 |
| $e$ | 0.1736545 | $i$ | 1.66634 | | +0.33158194 | | +0.24760834 |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.8+ | 1.1+ | 2006 10 01 | 703 | 0.4− | 0.2+ |
| 2002 08 08 | 644 | 0.1+ | 0.5+ | 2006 08 19 | 691 | 0.2− | 0.4− | 2006 10 01 | 703 | 0.5+ | 0.4− |
| 2002 08 08 | 644 | 0.6− | 1.2+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 10 01 | 703 | 0.8− | 0.8+ |
| 2002 08 17 | 644 | 0.8− | 1.0− | 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2002 08 17 | 644 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2002 08 17 | 644 | 0.7− | 0.2− | 2006 09 14 | 644 | 0.1− | 0.4− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 08 27 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2002 08 27 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.7− | 1.0+ | 2006 11 14 | G96 | 1.2+ | 0.1− |
| 2002 08 27 | 644 | 0.6+ | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.2+ |
| 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.4− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.5− | 2006 11 14 | G96 | 1.1− | 0.8− |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 1.2+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.5+ |
| 2004 02 26 | 704 | 0.1+ | 1.0+ | 2006 09 25 | 699 | 0.6+ | 0.5+ | 2006 11 15 | G96 | 0.6− | 0.4− |
| 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.9+ | 0.2+ | 2006 11 15 | G96 | 0.6− | 0.4− |
| 2004 02 26 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 703 | 0.9+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.9− |

**2002 PL$_{177}$ = 2006 TQ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.97183 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26370959 | $\omega$ | 319.16598 | | +0.99732128 | | −0.06218430 |
| $a$ | 2.4083454 | $\Omega$ | 44.44526 | | +0.07274311 | | +0.89835636 |
| $e$ | 0.2035351 | $i$ | 3.15302 | | −0.00766138 | | +0.43484360 |
| $P$ | 3.74 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.2− | 0.2− | 2002 08 18 | 644 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 08 11 | 644 | 0.0 | 0.0 | 2002 08 29 | 644 | 0.1+ | 0.6− | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2002 08 11 | 644 | 0.4− | 0.2− | 2002 08 29 | 644 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.2+ | 0.8+ | 2002 08 29 | 644 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 08 18 | 644 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |

**2002 PP$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.36863 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26777128 | $\omega$ | 148.83942 | | −0.66807637 | | −0.74383706 |
| $a$ | 2.3839294 | $\Omega$ | 343.05332 | | +0.66818004 | | −0.58817881 |
| $e$ | 0.0954213 | $i$ | 3.83666 | | +0.32742847 | | −0.31741474 |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 704 | 1.0+ | 1.3+ | 2002 08 29 | 291 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.9− | 0.1− |
| 2001 04 23 | 704 | 0.2+ | 0.1+ | 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.4− | 1.1− |
| 2001 04 23 | 704 | 0.7− | 0.4− | 2002 08 29 | 644 | 0.0 | 0.5− | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2002 07 29 | 644 | 0.2− | 0.3− | 2002 08 29 | 644 | 0.4− | 0.5− | 2006 09 23 | 691 | 0.2+ | 0.0 |
| 2002 07 29 | 644 | 0.0 | 0.1− | 2002 09 04 | 644 | 0.3− | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2002 07 29 | 644 | 0.0 | 0.1− | 2002 09 04 | 644 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.8− |
| 2002 08 08 | 644 | 0.3− | 0.1+ | 2002 09 04 | 644 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.7− | 0.4− |
| 2002 08 08 | 644 | 0.1− | 0.1+ | 2002 09 15 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2002 09 15 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.9− | 0.2− |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.3+ | 0.4− | 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2002 08 29 | 291 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 08 29 | 291 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.0 | 2006 10 20 | G96 | 0.7+ | 0.2+ |

**2002 PV$_{177}$ = 1998 SH$_{176}$ = 1999 XE$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.74991 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22081072 | $\omega$ | 237.37622 | | +0.72413676 | | +0.68812032 |
| $a$ | 2.7109569 | $\Omega$ | 79.09636 | | −0.61601528 | | +0.67536535 |
| $e$ | 0.0620368 | $i$ | 2.68528 | | −0.31008246 | | +0.26527734 |
| $P$ | 4.46 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 691 | 0.2− | 0.4+ | 2002 08 15 | 644 | 0.0 | 0.4+ | 2005 02 09 | 691 | 0.0 | 0.2+ |
| 1998 09 24 | 691 | 0.4− | 0.0 | 2002 08 15 | 644 | 0.2− | 0.3+ | 2005 02 09 | 691 | 0.1+ | 0.1− |
| 1998 09 24 | 691 | 0.1− | 0.3+ | 2002 08 18 | 644 | 0.1− | 0.3+ | 2005 02 09 | 691 | 0.2− | 0.3+ |
| 2001 04 14 | 691 | 0.2+ | 0.1− | 2002 08 18 | 644 | 0.1− | 0.0 | 2005 03 16 | G96 | 0.2− | 0.0 |
| 2001 04 14 | 691 | 0.1− | 0.2+ | 2003 11 24 | 691 | 0.0 | 0.1− | 2005 03 16 | G96 | 0.8− | 0.2+ |
| 2001 04 14 | 691 | 0.2+ | 0.2− | 2003 11 24 | 691 | 0.1− | 0.3+ | 2005 03 16 | G96 | 0.8− | 0.2+ |
| 2002 08 08 | 644 | 0.0 | 0.4− | 2003 11 24 | 691 | 0.6+ | 0.3− | 2005 03 16 | G96 | 0.4− | 0.2+ |
| 2002 08 08 | 644 | 0.1+ | 0.2− | 2005 02 01 | 691 | 0.1− | 0.0 | 2005 04 02 | 691 | 0.4+ | 0.5+ |
| 2002 08 08 | 644 | 0.2+ | 0.2− | 2005 02 01 | 691 | 0.0 | 0.4− | 2005 04 02 | 691 | 0.0 | 0.4+ |
| 2002 08 15 | 644 | 0.2− | 0.6+ | 2005 02 01 | 691 | 0.1− | 0.2− | 2005 04 02 | 691 | 0.3+ | 0.4+ |

**2002 PL$_{178}$ = 2006 SG$_{349}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.00627 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25941861 | $\omega$ | 341.29531 | | +0.91781040 | | +0.39696514 |
| $a$ | 2.4348299 | $\Omega$ | 355.30065 | | −0.35331928 | | +0.80916505 |
| $e$ | 0.2602490 | $i$ | 4.57764 | | −0.18107889 | | +0.43320965 |
| $P$ | 3.80 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 0.2− | 0.7− | 2006 09 19 | 691 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2002 08 15 | 644 | 0.1+ | 0.5− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.8+ |
| 2002 08 15 | 644 | 0.2− | 0.7− | 2006 09 29 | 704 | 1.4− | 0.8− | 2006 10 17 | 703 | (0.1− | 3.4−) |
| 2002 08 18 | 644 | 0.6+ | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 1.0− |
| 2002 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.5− |
| 2002 08 18 | 644 | 0.3+ | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 08 29 | 644 | 0.6− | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1+ | | | | |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.2− | 0.5− | | | | |

**2002 PN$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.58478 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23886248 | $\omega$ | 278.50145 | | −0.98960379 | | −0.02778556 |
| $a$ | 2.5725911 | $\Omega$ | 259.99246 | | +0.07885881 | | −0.92534814 |
| $e$ | 0.0510318 | $i$ | 8.23834 | | −0.12027318 | | −0.37809891 |
| $P$ | 4.13 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 0.5+ | 0.4+ | 2002 09 04 | 644 | 0.4− | 0.0 | 2003 12 17 | 691 | 0.2+ | 0.2+ |
| 2002 08 15 | 644 | 0.2+ | 0.3+ | 2002 09 04 | 644 | 0.3− | 0.1+ | 2003 12 17 | 691 | 0.1+ | 0.2+ |
| 2002 08 15 | 644 | 0.1+ | 0.5+ | 2002 09 04 | 644 | 0.2− | 0.0 | 2003 12 17 | 691 | 0.1+ | 0.2+ |
| 2002 08 26 | 644 | 0.5− | 0.1− | 2003 11 26 | 691 | 0.3+ | 0.2− | 2005 05 01 | 644 | 0.0 | 0.5+ |
| 2002 08 26 | 644 | 0.1+ | 0.5+ | 2003 11 26 | 691 | 0.5+ | 0.2− | 2005 05 01 | 644 | 0.3+ | 0.6+ |
| 2002 08 26 | 644 | 0.1− | 0.2− | 2003 11 26 | 691 | 1.1− | 0.3+ | 2005 05 01 | 644 | 0.4+ | 0.6+ |

**2002 PO$_{178}$ = 1999 XQ$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.92445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22936170 | $\omega$ | 353.04852 | | −0.67711782 | | +0.73298409 |
| $a$ | 2.6431518 | $\Omega$ | 234.30798 | | −0.67123053 | | −0.65150022 |
| $e$ | 0.2141841 | $i$ | 4.60176 | | −0.30159746 | | −0.19565731 |
| $P$ | 4.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.0 | 0.1− | 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 08 12 | 704 | 1.6− | 0.5− |
| 1999 12 07 | 691 | 0.2− | 0.4− | 2002 07 12 | 644 | 0.1+ | 0.6+ | 2002 08 12 | 704 | 0.1+ | 0.4+ |
| 1999 12 07 | 691 | 0.2+ | 0.0 | 2002 07 12 | 644 | 0.9+ | 0.8+ | 2002 08 16 | 644 | 0.4+ | 0.6+ |
| 1999 12 13 | 691 | 0.2+ | 0.6− | 2002 07 12 | 644 | 0.6+ | 0.7+ | 2002 08 16 | 644 | 0.5+ | 0.5+ |
| 1999 12 13 | 691 | 0.2+ | 0.2+ | 2002 08 05 | 644 | 0.1− | 0.4+ | 2002 08 16 | 644 | 0.2− | 0.2+ |
| 1999 12 13 | 691 | 0.3− | 0.4− | 2002 08 05 | 644 | 0.2− | 0.3+ | 2003 10 21 | 691 | 0.1− | 0.8+ |
| 2001 02 05 | 684 | 0.4+ | 0.2− | 2002 08 05 | 644 | 0.1− | 0.3+ | 2003 10 21 | 691 | 0.2− | 0.6+ |
| 2001 02 05 | 684 | 0.3+ | 0.1+ | 2002 08 12 | 704 | 1.9− | 0.7+ | 2003 10 21 | 691 | 0.1− | 0.2+ |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2002 08 12 | 704 | 0.3+ | 0.2+ | | | | |

**2002 PP$_{178}$ = 1997 CK$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.13193 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26013896 | $\omega$ | 120.62439 | | +0.04157809 | | +0.99773312 |
| $a$ | 2.4303330 | $\Omega$ | 151.61280 | | −0.95056424 | | +0.05581283 |
| $e$ | 0.1081315 | $i$ | 6.39011 | | −0.30773185 | | −0.03759716 |
| $P$ | 3.79 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 691 | 0.3− | 0.2− | 2002 08 17 | 644 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.2+ |
| 1997 02 01 | 691 | 0.2− | 0.4+ | 2002 08 17 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | 1.1− | 0.2+ |
| 1997 02 01 | 691 | 0.1− | 0.0 | 2002 08 27 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.1+ |
| 1997 02 07 | 691 | 0.1+ | 0.1− | 2002 08 27 | 644 | 0.2+ | 0.6+ | 2006 09 16 | 699 | 0.4+ | 0.4+ |
| 1997 02 07 | 691 | 0.4− | 0.1+ | 2002 08 27 | 644 | 0.5+ | 0.2+ | 2006 09 16 | 699 | 0.1− | 0.4− |
| 1997 02 07 | 691 | 0.2+ | 0.3− | 2005 03 10 | 703 | 1.0− | 0.9+ | 2006 09 19 | 699 | 1.4+ | 0.4+ |
| 2001 01 19 | 691 | 0.8+ | 1.0+ | 2005 03 10 | 703 | 0.9− | 1.0+ | 2006 09 19 | 699 | 0.1− | 0.9+ |
| 2001 01 19 | 691 | 0.4+ | 0.8+ | 2005 03 10 | 703 | 1.0− | 0.9+ | 2006 09 19 | 699 | 0.9+ | 0.2+ |
| 2001 01 19 | 691 | 0.6+ | 0.5+ | 2005 03 10 | 703 | 0.9+ | 0.1− | 2006 09 19 | 699 | 1.1+ | 0.1+ |
| 2001 03 20 | 608 | 0.4+ | 1.3− | 2005 04 04 | 703 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.6− | 0.9+ |
| 2001 03 20 | 608 | 0.3− | 1.1− | 2005 04 04 | 703 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2001 03 20 | 608 | 0.3+ | 0.4− | 2005 04 04 | 703 | 0.9+ | 0.6− | 2006 09 25 | 699 | 0.6− | 0.6+ |
| 2002 07 22 | 644 | 0.1− | 0.3+ | 2005 04 04 | 703 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.4− | 0.5+ |
| 2002 07 22 | 644 | 0.1+ | 0.3+ | 2005 05 04 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.5+ |
| 2002 07 22 | 644 | 0.0 | 0.0 | 2005 05 04 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | (2.4− | 0.3−) |
| 2002 08 07 | 644 | 0.0 | 0.2+ | 2005 05 04 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 1.1− | 0.3− |
| 2002 08 07 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.5− | 2006 09 30 | 703 | (1.2− | 1.5+) |
| 2002 08 07 | 644 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.5− | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.6+ |
| 2002 08 08 | 699 | 0.9− | 1.1+ | 2006 08 28 | 703 | 0.6+ | 0.6+ | 2006 09 30 | 703 | (0.0 | 1.8−) |
| 2002 08 08 | 699 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.8− | 0.1+ |
| 2002 08 08 | 699 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.4− | 1.1− |
| 2002 08 08 | 699 | (0.1+ | 1.6−) | 2006 09 14 | 703 | 0.1+ | 0.5+ | | | | |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.1+ | | | | |

### 2002 $PQ_{178}$ = 2000 $CW_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.42653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27353283 | $\omega$ | 141.15222 | | +0.47716500 | −0.86573769 | |
| $a$ | 2.3503349 | $\Omega$ | 279.87002 | | +0.76320374 | +0.49343352 | |
| $e$ | 0.2406190 | $i$ | 8.81850 | | +0.43569899 | +0.08379504 | |
| $P$ | 3.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.2+ | 0.4+ | 2002 08 27 | 644 | 0.2− | 0.3+ | 2002 10 13 | 644 | 0.5− | 0.2− |
| 2000 02 02 | 704 | 0.8− | 0.3+ | 2002 08 27 | 644 | 0.5− | 0.2+ | 2002 10 13 | 644 | 0.0 | 0.2− |
| 2000 02 02 | 704 | 0.1− | 0.2+ | 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.8− | 0.1+ |
| 2000 02 02 | 704 | 0.3− | 0.0 | 2002 09 04 | 699 | 1.2+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.9− | 2002 09 04 | 699 | 1.4+ | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.6+ |
| 2000 02 04 | 704 | 0.3− | 0.4+ | 2002 09 04 | 699 | 0.8+ | 1.1+ | 2006 11 16 | 704 | 0.5− | 0.1+ |
| 2000 02 04 | 704 | 0.3+ | 0.1− | 2002 09 04 | 699 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.2+ | 0.4− |
| 2000 02 04 | 704 | 0.6+ | 0.2− | 2002 09 12 | 644 | 0.6− | 0.2− | 2006 11 27 | 704 | 0.5+ | 0.4− |
| 2002 08 11 | 704 | 0.2− | 0.8− | 2002 09 12 | 644 | 0.3− | 0.3+ | 2006 11 27 | 704 | 0.4− | 0.0 |
| 2002 08 11 | 704 | 0.9− | 0.8− | 2002 09 12 | 644 | 0.5− | 0.2+ | | | | |
| 2002 08 11 | 704 | 0.3+ | 0.6− | 2002 10 13 | 644 | 0.2− | 0.3− | | | | |

### 2002 $PR_{178}$ = 2006 $BE_{267}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.85301 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17329957 | $\omega$ | 278.70374 | | −0.33767842 | +0.91579349 | |
| $a$ | 3.1861855 | $\Omega$ | 328.66573 | | −0.61141580 | −0.38907619 | |
| $e$ | 0.2126348 | $i$ | 24.72086 | | −0.71564237 | −0.09970954 | |
| $P$ | 5.69 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | (2.9− | 0.2+) | 2002 07 29 | 644 | 0.4− | 0.2+ | 2002 08 30 | 644 | 0.3− | 0.3+ |
| 1995 02 25 | 691 | 0.5− | 0.1− | 2002 07 29 | 644 | 0.1+ | 0.3+ | 2002 08 30 | 644 | 0.4− | 0.3+ |
| 1995 02 25 | 691 | 0.4− | 0.3− | 2002 07 29 | 644 | 0.2− | 0.1+ | 2006 01 26 | 703 | 0.2− | 0.5+ |
| 2000 04 06 | 645 | 0.2+ | 0.1+ | 2002 08 13 | 704 | (0.4− | 2.2−) | 2006 01 26 | 703 | 0.2− | 0.6+ |
| 2000 04 06 | 645 | 0.1+ | 0.1+ | 2002 08 13 | 704 | 0.1+ | 0.9− | 2006 01 26 | 703 | 0.6− | 0.6− |
| 2001 04 01 | 699 | 0.6− | 0.1+ | 2002 08 13 | 704 | 0.7− | 0.9+ | 2006 01 26 | 703 | 0.0 | 0.7+ |
| 2001 04 01 | 699 | 1.4+ | 1.0+ | 2002 08 13 | 704 | 0.3− | 0.4− | 2006 02 04 | 703 | 1.9+ | 1.6+ |
| 2001 04 01 | 699 | 1.0+ | 0.2+ | 2002 08 13 | 704 | 0.8+ | 0.6+ | 2006 02 04 | 703 | 0.4− | 0.0 |
| 2001 04 01 | 699 | 1.0+ | 0.4− | 2002 08 15 | 644 | 0.3− | 0.1− | 2006 02 04 | 703 | (0.8− | 3.9+) |
| 2002 07 16 | 644 | 0.0 | 0.6+ | 2002 08 15 | 644 | 0.4− | 0.2+ | 2006 02 04 | 703 | 0.3+ | 1.1+ |
| 2002 07 16 | 644 | 0.1− | 0.5+ | 2002 08 15 | 644 | 0.7− | 0.1+ | | | | |
| 2002 07 16 | 644 | 0.4− | 0.5+ | 2002 08 30 | 644 | 0.3− | 0.4+ | | | | |

### 2002 $PS_{178}$ = 2005 $EP_{214}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.28259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20994644 | $\omega$ | 68.20072 | | +0.96219206 | −0.26403951 | |
| $a$ | 2.8036924 | $\Omega$ | 307.04730 | | +0.20855560 | +0.87208871 | |
| $e$ | 0.0704450 | $i$ | 4.80493 | | +0.17518848 | +0.41200050 | |
| $P$ | 4.69 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 291 | 0.0 | 0.3+ | 2002 08 27 | 644 | 0.3− | 0.4+ | 2003 12 27 | 704 | 0.4+ | 0.2− |
| 2002 08 13 | 291 | 0.1+ | 0.0 | 2003 12 21 | 704 | 0.6+ | 0.7+ | 2005 03 08 | 691 | 0.3+ | 0.3+ |
| 2002 08 13 | 291 | 0.2− | 0.0 | 2003 12 21 | 704 | 0.4+ | 0.3+ | 2005 03 08 | 691 | 0.3+ | 0.2+ |
| 2002 08 17 | 644 | 0.2+ | 0.0 | 2003 12 21 | 704 | 0.3+ | 0.2+ | 2005 03 08 | 691 | 0.2+ | 0.2+ |
| 2002 08 17 | 644 | 0.2+ | 0.4+ | 2003 12 21 | 704 | 0.5− | 0.3− | 2005 03 10 | 703 | 1.8− | 0.0 |
| 2002 08 17 | 644 | 0.2− | 0.3+ | 2003 12 27 | 704 | 0.5− | 0.3+ | 2005 03 10 | 703 | (2.6− | 0.5+) |
| 2002 08 27 | 644 | 0.4− | 0.2+ | 2003 12 27 | 704 | 0.2+ | 0.3+ | 2005 03 10 | 703 | 0.5− | 0.6+ |
| 2002 08 27 | 644 | 0.5− | 0.3+ | 2003 12 27 | 704 | 1.0− | 0.2− | 2005 03 10 | 703 | 0.4+ | 0.6− |

### 2002 $PT_{178}$ = 2000 $AU_{180}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.43954 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24163667 | $\omega$ | 241.03367 | | +0.82018343 | −0.56727501 | |
| $a$ | 2.5528629 | $\Omega$ | 153.31929 | | +0.56534889 | +0.78381367 | |
| $e$ | 0.0580172 | $i$ | 9.50525 | | +0.08763436 | +0.25265627 | |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 24 | 691 | 0.2− | 0.0 | 2001 05 02 | 644 | 0.1− | 1.1+ | 2005 05 04 | 703 | 0.1+ | 1.0− |
| 1993 05 24 | 691 | 0.5+ | 0.9− | 2002 08 13 | 699 | 0.0 | 0.9− | 2005 05 04 | 703 | 1.2− | 1.0+ |
| 1993 05 24 | 691 | 0.1+ | 0.5− | 2002 08 13 | 699 | 0.5+ | 0.7− | 2005 05 04 | 703 | 0.1+ | 0.1+ |
| 1993 06 16 | 691 | 0.1− | 0.3+ | 2002 08 13 | 699 | 0.2− | 0.3+ | 2006 07 25 | 644 | 0.3− | 0.7+ |
| 1993 06 16 | 691 | (6.9+ | 1.9+) | 2002 08 13 | 699 | 1.0+ | 0.2− | 2006 07 25 | 644 | 0.0 | 0.0 |
| 1993 06 16 | 691 | 0.0 | 0.4+ | 2002 08 17 | 644 | 0.0 | 0.3+ | 2006 07 25 | 644 | 0.2+ | 0.2+ |
| 1998 08 17 | 704 | 0.4− | 0.8− | 2002 08 17 | 644 | 0.2− | 0.5+ | 2006 08 28 | 699 | 1.3+ | 0.2+ |
| 1998 08 17 | 704 | 0.4+ | 0.2+ | 2002 08 17 | 644 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.3+ | 0.9+ |
| 1998 08 17 | 704 | 1.6− | 0.4+ | 2002 08 28 | 644 | (0.6− | 1.8−) | 2006 08 28 | 699 | 1.3+ | 0.6+ |
| 1998 08 17 | 704 | 1.0− | 0.9+ | 2002 08 28 | 644 | 0.4− | 0.3+ | 2006 08 28 | 699 | 1.0− | 0.3− |
| 2000 01 07 | 704 | 0.2− | 0.5+ | 2002 08 28 | 644 | 0.6− | 0.1− | 2006 08 28 | 703 | 0.8+ | 1.0− |
| 2000 01 07 | 704 | 0.5+ | 0.2+ | 2002 09 05 | 704 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.1+ |
| 2000 01 07 | 704 | 0.3+ | 0.3+ | 2002 09 05 | 704 | 0.4+ | 0.9+ | 2006 08 28 | 703 | 0.1− | 0.1− |
| 2000 01 11 | 704 | 1.4− | 0.4− | 2002 09 05 | 704 | 0.0 | 0.6− | 2006 08 28 | 703 | 0.3− | 0.7+ |
| 2000 01 11 | 704 | 0.2+ | 1.3+ | 2002 09 05 | 704 | 0.7− | 0.2− | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2000 01 11 | 704 | 0.7+ | 0.4− | 2002 09 05 | 704 | 1.2+ | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.2+ |
| 2000 01 11 | 704 | 0.4+ | 0.3+ | 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2000 01 11 | 704 | 0.5+ | 0.2+ | 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.5− |
| 2001 05 02 | 644 | 0.1+ | 1.3+ | 2002 09 15 | 644 | 0.6− | 0.1+ | | | | |
| 2001 05 02 | 644 | 0.1+ | 0.9+ | 2005 05 04 | 703 | 0.7− | 1.0+ | | | | |

### 2002 $PU_{178}$ = 2005 $LR_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.89458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30845737 | $\omega$ | 234.60324 | | +0.67476108 | +0.73053386 | |
| $a$ | 2.1693982 | $\Omega$ | 78.19058 | | −0.63759741 | +0.64863738 | |
| $e$ | 0.2466975 | $i$ | 6.15597 | | −0.37170824 | +0.21351774 | |
| $P$ | 3.20 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.7+ | 1.6− | 2002 08 13 | 644 | 0.4+ | 0.3+ | 2002 09 09 | 644 | 0.0 | 0.1+ |
| 2002 08 13 | 704 | 0.5+ | 1.4+ | 2002 08 20 | 644 | 0.6+ | 0.4+ | 2002 09 09 | 644 | 0.2+ | 0.1+ |
| 2002 08 13 | 704 | 1.1− | 0.1− | 2002 08 20 | 644 | 0.4+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.1− |
| 2002 08 13 | 704 | 1.6− | 0.5− | 2002 08 20 | 644 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.1+ |
| 2002 08 13 | 644 | 0.0 | 0.1+ | 2002 08 31 | 704 | 0.1+ | 0.2− | 2005 06 13 | G96 | 0.0 | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.4+ | 0.1+ | 2002 08 31 | 704 | 0.1− | 0.6− | 2005 06 17 | G96 | 0.0 | 0.4− |
| 2002 08 13 | 644 | 0.1− | 0.0 | 2002 08 31 | 704 | 0.2− | 0.0 | 2005 06 17 | G96 | 0.2+ | 0.1+ |
| 2002 08 13 | 644 | 0.2+ | 0.0 | 2002 08 31 | 704 | 0.2− | 0.3+ | 2005 06 17 | G96 | 0.1− | 0.1+ |
| 2002 08 13 | 644 | 0.2− | 0.1− | 2002 09 09 | 644 | 0.2− | 0.0 | 2005 06 17 | G96 | 0.1− | 0.1+ |

**2002 PX$_{178}$ = 2004 BS$_{17}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 254.86337 | | (2000.0) | | | |
| $n$ | 0.17808635 | $\omega$ | 298.60280 | | +0.93957590 | −0.20740584 |
| $a$ | 3.1288323 | $\Omega$ | 74.47174 | | +0.31506686 | +0.83507164 |
| $e$ | 0.2511271 | $i$ | 16.42011 | | −0.13390298 | +0.50954703 |
| $P$ | 5.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.0 | 1.3+ | 2002 10 28 | 704 | 0.2− | 1.2− | 2004 01 18 | 703 | 1.1− | 0.1+ |
| 2002 08 14 | 704 | 0.1− | 0.1− | 2002 11 04 | 644 | 0.4− | 0.2− | 2004 01 18 | 703 | 0.9− | 0.2+ |
| 2002 08 14 | 704 | 0.0 | 0.2− | 2002 11 04 | 644 | 0.7+ | 0.8+ | 2004 01 18 | 644 | 0.0 | 0.1+ |
| 2002 08 14 | 704 | 0.0 | 1.1+ | 2002 11 04 | 644 | 0.2− | 0.3− | 2004 01 18 | 703 | 0.5− | 0.5+ |
| 2002 08 14 | 704 | 0.1− | 0.4+ | 2002 11 28 | 699 | 0.2− | 0.7+ | 2004 01 18 | 703 | 0.4+ | 0.7+ |
| 2002 10 08 | 644 | 0.1− | 0.2− | 2002 11 28 | 699 | 0.5+ | 0.3− | 2004 01 19 | 704 | 1.2+ | 0.2+ |
| 2002 10 08 | 644 | 0.2− | 0.3− | 2002 11 28 | 699 | 1.0+ | 0.5+ | 2004 01 19 | 704 | 0.2+ | 0.3− |
| 2002 10 08 | 644 | 0.1− | 0.2− | 2002 11 28 | 699 | 1.1+ | 0.4+ | 2004 01 19 | 704 | 0.1− | 0.9− |
| 2002 10 28 | 704 | 0.4− | 0.6− | 2004 01 18 | 644 | 0.2− | 0.2+ | 2004 01 19 | 704 | 1.5+ | 0.1+ |
| 2002 10 28 | 704 | 1.2− | 0.6− | 2004 01 18 | 644 | 0.3− | 0.0 | | | | |

**2002 PY$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 223.29885 | | (2000.0) | | | |
| $n$ | 0.17927187 | $\omega$ | 130.02036 | | +0.89731117 | −0.41244781 |
| $a$ | 3.1150232 | $\Omega$ | 254.86076 | | +0.33885274 | +0.87192927 |
| $e$ | 0.0861836 | $i$ | 9.37393 | | +0.28286301 | +0.26386767 |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 04 | 644 | 0.6− | 0.4− | 2002 08 26 | 644 | 0.5− | 0.4− | 2003 12 19 | 704 | 0.2+ | 0.2− |
| 2002 08 04 | 644 | 0.7− | 0.1− | 2002 10 10 | 645 | 0.0 | 0.0 | 2003 12 19 | 704 | 0.2− | 0.2− |
| 2002 08 04 | 644 | 0.3+ | 0.9+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2003 12 19 | 704 | 0.0 | 0.7+ |
| 2002 08 13 | 699 | 0.3− | 0.5+ | 2003 11 21 | 704 | 0.8− | 0.6+ | 2003 12 19 | 704 | 0.0 | 1.5+ |
| 2002 08 13 | 699 | 1.2+ | 0.0 | 2003 11 21 | 704 | 0.4+ | 0.2+ | 2003 12 19 | 691 | 0.1+ | 0.2− |
| 2002 08 13 | 699 | 1.1+ | 0.2+ | 2003 11 21 | 704 | 0.4− | 0.5+ | 2003 12 19 | 691 | 0.2+ | 0.1− |
| 2002 08 13 | 699 | 0.5+ | 0.7+ | 2003 11 21 | 704 | 0.3− | 0.5− | 2003 12 19 | 691 | 0.0 | 0.1− |
| 2002 08 26 | 644 | 0.3− | 0.1− | 2003 11 21 | 704 | 0.4− | 1.0− | | | | |
| 2002 08 26 | 644 | 0.5− | 0.1− | 2003 12 19 | 704 | 0.1+ | 0.1+ | | | | |

**2002 PZ$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 289.45530 | | (2000.0) | | | |
| $n$ | 0.20839273 | $\omega$ | 152.07069 | | +0.96472222 | +0.26239528 |
| $a$ | 2.8176108 | $\Omega$ | 192.77174 | | −0.25599271 | +0.91592316 |
| $e$ | 0.0164444 | $i$ | 5.56594 | | −0.06147162 | +0.30369966 |
| $P$ | 4.73 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 691 | 0.2− | 0.6+ | 2002 08 14 | 291 | 0.1− | 0.5+ | 2003 12 01 | 704 | 0.7+ | 0.4+ |
| 1996 03 17 | 691 | 0.3− | 0.4+ | 2002 08 26 | 644 | 0.6+ | 0.5+ | 2003 12 01 | 704 | 0.3+ | 0.1+ |
| 1996 03 17 | 691 | 0.1+ | 0.8+ | 2002 08 26 | 644 | 0.0 | 0.8+ | 2003 12 01 | 704 | 0.3+ | 1.2+ |
| 2000 02 02 | 704 | 0.5+ | 0.6+ | 2002 08 26 | 644 | 0.0 | 0.5+ | 2003 12 01 | 704 | 0.3− | 0.1− |
| 2000 02 02 | 704 | 0.3− | 1.7+ | 2003 11 19 | 699 | 0.5− | 0.3+ | 2003 12 21 | 691 | 0.1− | 0.3+ |
| 2000 02 02 | 704 | 1.3+ | 0.1+ | 2003 11 19 | 699 | 0.7+ | 0.6+ | 2003 12 21 | 691 | 0.5− | 0.4+ |
| 2000 02 02 | 704 | 0.4+ | 0.3+ | 2003 11 19 | 699 | 0.5+ | 0.0 | 2003 12 21 | 691 | 0.3− | 0.2+ |
| 2001 05 25 | 691 | 0.4+ | 0.4+ | 2003 11 19 | 699 | 1.4+ | 0.9+ | 2006 05 26 | G96 | 0.0 | 0.1+ |
| 2001 05 25 | 691 | 0.7+ | 0.6+ | 2003 11 26 | 691 | 0.5− | 0.6+ | 2006 05 26 | G96 | 0.3− | 0.1− |
| 2001 05 25 | 691 | 0.7+ | 0.5+ | 2003 11 26 | 691 | 0.3− | 0.3+ | 2006 05 26 | G96 | 0.1+ | 0.0 |
| 2002 08 07 | 644 | 0.2− | 0.6+ | 2003 11 26 | 691 | 0.3− | 0.5+ | 2006 05 26 | G96 | 0.3− | 0.1+ |
| 2002 08 07 | 644 | 0.0 | 0.4+ | 2003 12 01 | 703 | 1.1+ | 0.9− | 2006 06 21 | 691 | 0.1− | 0.2+ |
| 2002 08 07 | 644 | 0.5− | 0.4+ | 2003 12 01 | 703 | 0.9+ | 0.1+ | 2006 06 21 | 691 | 0.1+ | 0.1+ |
| 2002 08 14 | 291 | 0.2− | 0.4+ | 2003 12 01 | 703 | 0.2+ | 0.2+ | 2006 06 21 | 691 | 0.5− | 0.0 |
| 2002 08 14 | 291 | 0.1− | 0.5+ | 2003 12 01 | 703 | 0.4− | 0.4− | | | | |

**2002 PD$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.86970 | | (2000.0) | | | |
| $n$ | 0.26077501 | $\omega$ | 79.08610 | | +0.69484992 | +0.70803848 |
| $a$ | 2.4263795 | $\Omega$ | 235.68977 | | −0.70491193 | +0.63587566 |
| $e$ | 0.2509713 | $i$ | 8.77128 | | −0.14241757 | +0.30715412 |
| $P$ | 3.78 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 03 | 644 | 0.2− | 0.7+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 08 03 | 644 | 0.1− | 0.6+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 03 | 644 | 0.4− | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 08 13 | 699 | (1.9+ | 0.9+) | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 2002 08 13 | 699 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 08 13 | 699 | 0.9+ | 0.9+ | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.9+ |
| 2002 08 13 | 699 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.8+ | 0.8− |
| 2002 08 25 | 644 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 08 25 | 644 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 08 25 | 644 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.5+ |

**2002 PG$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.37087 | | (2000.0) | | | |
| $n$ | 0.26310470 | $\omega$ | 344.58115 | | +0.16280335 | +0.98078492 |
| $a$ | 2.4120352 | $\Omega$ | 294.68998 | | −0.89226851 | +0.09984832 |
| $e$ | 0.1352189 | $i$ | 6.79487 | | −0.42113177 | +0.16760446 |
| $P$ | 3.75 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 699 | 1.2− | 0.1+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2002 08 14 | 699 | 0.0 | 0.9+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.9− |
| 2002 08 14 | 699 | 0.5+ | 0.6− | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 17 | 703 | (0.1+ | 2.6−) |
| 2002 08 14 | 699 | 0.1− | 0.8+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2002 08 28 | 644 | 0.1+ | 1.0+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.1− | 0.6+ |
| 2002 08 28 | 644 | 0.0 | 1.0+ | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2002 08 28 | 644 | 0.1+ | 1.0+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.7− | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.6+ |
| 2002 09 13 | 644 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.8+ | | | | |
| 2002 09 13 | 644 | 0.4− | 0.5− | 2006 10 10 | 644 | 0.1− | 0.0 | | | | |

**2002 QY = 2006 TR$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.19243 | | (2000.0) | | | |
| $n$ | 0.27208324 | $\omega$ | 190.82856 | | +0.89750245 | −0.44076266 |
| $a$ | 2.3586755 | $\Omega$ | 195.34979 | | +0.40866896 | +0.84379428 |
| $e$ | 0.1739971 | $i$ | 3.19474 | | +0.16576800 | +0.30616906 |
| $P$ | 3.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.1+ | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2002 08 07 | 644 | 0.1− | 0.6− | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 2002 08 07 | 644 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 2002 08 16 | 644 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2002 08 16 | 644 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.5− |
| 2002 08 16 | 644 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.8+ | 0.5+ |
| 2002 08 17 | 644 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2002 08 17 | 644 | 0.1− | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2002 08 17 | 644 | 0.0 | 0.9+ | 2006 11 11 | 703 | 0.1+ | 1.1+ | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.4+ | 2006 11 19 | 704 | (2.6+ | 0.4+) |
| 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.9+ | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2006 10 15 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.1+ | | |
| 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.3+ | 0.6+ | | |
| 2006 10 16 | 703 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.6+ | 0.1+ | | |
| 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− | 2006 11 26 | 704 | 0.6− | 0.3+ | | |
| 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.6− | 2006 11 26 | 704 | 0.2− | 0.1− | | |
| 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.4− | 2006 11 26 | 704 | 0.6− | 0.8+ | | |
| 2006 10 19 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.7− | 0.5+ | | |
| 2006 10 21 | 644 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.5− | 2006 11 28 | 704 | 1.1− | 0.2+ | | |
| 2006 10 21 | 644 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.7+ | | |
| 2006 10 21 | 644 | 0.2− | 0.4− | 2006 11 17 | 703 | 1.0− | 0.6− | 2006 11 28 | 704 | 0.8− | 0.7+ | | |
| 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.1− | | | | | | |

### 2002 $QA_1$ = 2006 $VF_{128}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.24549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26965995 | $\omega$ | 78.37243 | | +0.99698428 | −0.04305985 | |
| $a$ | 2.3727852 | $\Omega$ | 284.07061 | | +0.01269228 | +0.91121235 | |
| $e$ | 0.2435447 | $i$ | 3.81634 | | +0.07655880 | +0.40968024 | |
| $P$ | 3.66 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.0 | 0.1− | 2002 08 16 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 1995 11 18 | 691 | 0.0 | 0.2− | 2002 08 17 | 644 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.4− | 0.2− | | |
| 1995 11 18 | 691 | 0.1+ | 0.1− | 2002 08 17 | 644 | 0.3− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2002 08 06 | 644 | 0.1+ | 0.4+ | 2002 08 17 | 644 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.2− | 0.2− | | |
| 2002 08 06 | 644 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1− | | |
| 2002 08 06 | 644 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.8− | 0.4+ | | |
| 2002 08 16 | 644 | 0.2− | 0.4− | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6− | 0.5− | | |
| 2002 08 16 | 644 | 0.5+ | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.2+ | | |
| 2002 08 16 | 644 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 1.4+ | 0.4− | | |
| 2002 08 16 | 644 | 0.6+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.2+ | | | | | | |
| 2002 08 16 | 644 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ | | | | | | |

### 2002 $QM_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.09046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27469488 | $\omega$ | 133.28052 | | −0.43456774 | +0.89459981 | |
| $a$ | 2.3437017 | $\Omega$ | 110.69217 | | −0.85520132 | −0.37361832 | |
| $e$ | 0.2002494 | $i$ | 6.39057 | | −0.28245634 | −0.24515412 | |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 691 | 0.2+ | 0.3+ | 2002 08 16 | 608 | 0.1+ | 0.7− | 2005 03 18 | 703 | 0.2− | 0.2+ | | |
| 1998 03 24 | 691 | 0.1+ | 0.2+ | 2002 08 16 | 608 | 0.6+ | 0.9− | 2005 03 18 | 703 | 0.0 | 0.8+ | | |
| 1998 03 24 | 691 | 0.1+ | 0.2+ | 2002 08 16 | 608 | 0.2+ | 0.8− | 2005 03 18 | 703 | 0.6+ | 0.7− | | |
| 1998 04 04 | 691 | 0.2− | 0.3+ | 2002 08 17 | 644 | 0.0 | 0.5+ | 2005 03 18 | 703 | 0.9− | 0.2+ | | |
| 1998 04 04 | 691 | 0.3− | 0.2− | 2002 08 17 | 644 | 0.2− | 0.6+ | 2005 03 30 | 703 | 0.1+ | 0.1− | | |
| 1998 04 04 | 691 | 0.1− | 0.3− | 2002 08 17 | 644 | 0.0 | 0.7+ | 2005 03 30 | 703 | 0.9− | 0.5− | | |
| 1998 05 23 | 704 | 0.1− | 0.8+ | 2002 08 19 | 644 | 0.2− | 0.3+ | 2005 03 30 | 703 | 1.1+ | 0.5− | | |
| 1998 05 23 | 704 | 0.4+ | 1.3− | 2002 08 19 | 644 | 0.4− | 0.4+ | 2005 03 30 | 703 | 1.5− | 0.5+ | | |
| 1998 05 23 | 704 | 0.8+ | 1.5+ | 2002 08 19 | 644 | 0.5− | 0.5+ | 2005 04 06 | 703 | 0.3− | 0.3+ | | |
| 1998 05 23 | 704 | 0.4+ | 0.4+ | 2005 03 10 | 703 | 0.9− | 0.6− | 2005 04 06 | 703 | 0.1− | 0.1+ | | |
| 2000 12 31 | 691 | 0.1− | 0.3+ | 2005 03 10 | 703 | 0.0 | 0.6− | 2005 04 06 | 703 | 0.8+ | 0.3+ | | |
| 2000 12 31 | 691 | 0.0 | 0.2+ | 2005 03 10 | 703 | 0.6+ | 0.6− | 2005 04 06 | 703 | 0.6+ | 0.6− | | |
| 2000 12 31 | 691 | 0.3+ | 0.5+ | 2005 03 10 | 703 | 0.2− | 1.2− | | | | | | |

### 2002 $QP_1$ = 2006 $SW_{363}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.96505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27553473 | $\omega$ | 9.64525 | | +0.92618007 | −0.37677866 | |
| $a$ | 2.3389368 | $\Omega$ | 12.52119 | | +0.34115460 | +0.82019380 | |
| $e$ | 0.1322847 | $i$ | 3.99652 | | +0.16063626 | +0.43048807 | |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 608 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.2+ | | |
| 2002 08 16 | 608 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.3− | 0.1− | | |
| 2002 08 16 | 608 | 0.5− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.2− | | |
| 2002 08 17 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.5+ | 0.2+ | | |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.3+ | 0.0 | | |
| 2002 08 17 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 13 | 104 | 0.2+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.3− | 2006 11 13 | 104 | 0.0 | 0.2+ | | |
| 2002 08 29 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.2− | 2006 11 13 | 104 | 0.1+ | 0.5+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.4− | | |
| 2004 02 16 | 704 | 0.9− | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.5− | | |
| 2004 02 16 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.4+ | 0.4− | 2006 11 14 | G96 | 0.5+ | 0.4− | | |
| 2004 02 16 | 704 | 0.8+ | 0.2+ | 2006 10 27 | 703 | (0.5− | 3.0−) | 2006 11 14 | G96 | 0.8+ | 0.2− | | |
| 2006 07 21 | G96 | 0.4+ | 0.6− | 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.2− | 0.4+ | | |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.4+ | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.5+ | | |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.8+ | 0.5+ | 2006 11 16 | 704 | 0.4− | 0.9+ | | |
| 2006 07 21 | G96 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.9− | 0.5+ | | |
| 2006 09 26 | 461 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 16 | 704 | 1.4+ | 0.7+ | | |
| 2006 09 26 | 461 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | (0.4− | 1.6+) | | |
| 2006 09 26 | 461 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.8− | 1.2+ | | |
| 2006 09 26 | 461 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.5− | | |
| 2006 09 26 | 461 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.6+ | | |
| 2006 09 26 | 461 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.6+ | | |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.8− | 0.1+ | | |
| 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5− | 0.5− | | |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.7− | 0.0 | | |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.3− | 0.8− | | |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.8− | 2006 11 22 | 704 | 0.1− | 0.1+ | | |

### 2002 $QP_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.60742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27358936 | $\omega$ | 199.51758 | | +0.99274957 | +0.11641047 | |
| $a$ | 2.3500111 | $\Omega$ | 153.74225 | | −0.09931649 | +0.93474171 | |
| $e$ | 0.1944315 | $i$ | 3.88152 | | −0.06770916 | +0.33571794 | |
| $P$ | 3.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 699 | 0.1− | 1.0− | 2002 08 26 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.3+ | | |
| 2002 08 08 | 699 | 0.1− | 0.6− | 2002 09 15 | 644 | 0.2− | 0.7+ | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2002 08 08 | 699 | 0.1+ | 0.5+ | 2002 09 15 | 644 | 0.0 | 0.6+ | 2006 11 20 | 691 | 0.2+ | 0.1+ | | |
| 2002 08 08 | 699 | 0.9− | 0.3+ | 2002 09 15 | 644 | 0.1− | 0.8+ | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.5− | 0.4− | 2006 11 24 | 691 | 0.0 | 0.0 | | |
| 2002 08 11 | 644 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 24 | 691 | 0.3− | 0.0 | | |
| 2002 08 11 | 644 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.3− | 2006 11 24 | 691 | 0.2− | 0.1+ | | |
| 2002 08 16 | 608 | 0.5+ | 0.9− | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2002 08 16 | 608 | 0.2− | 1.0− | 2006 11 15 | 703 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.4− | 0.3− | | |
| 2002 08 16 | 608 | 0.1− | 0.5− | 2006 11 15 | 703 | 0.4− | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.3− | | |
| 2002 08 17 | 644 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.3− | | |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.7+ | 2006 11 28 | 704 | 0.1+ | 0.4+ | | |
| 2002 08 17 | 644 | 0.4+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.6+ | | |
| 2002 08 18 | 644 | 0.1− | 1.1+ | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.3− | 0.1− | | |
| 2002 08 18 | 644 | 0.1+ | 1.0+ | 2006 11 16 | 691 | 0.0 | 0.3− | 2006 11 28 | 704 | 1.3− | 0.5+ | | |
| 2002 08 18 | 644 | 0.3+ | 1.1− | 2006 11 19 | 704 | 0.4+ | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.7+ | | |
| 2002 08 26 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.2+ | | | | | | |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.6− | | | | | | |

### 2002 $QZ_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.37797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25659311 | $\omega$ | 33.52129 | | +0.97632097 | −0.21601830 | |
| $a$ | 2.4526715 | $\Omega$ | 338.94490 | | +0.19074261 | +0.88481853 | |
| $e$ | 0.2325941 | $i$ | 1.84270 | | +0.10205206 | +0.41283443 | |
| $P$ | 3.84 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.3+ | 0.3− | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 07 23 | 644 | 0.4− | 0.4− | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2002 07 23 | 644 | 0.0 | 0.3− | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 08 | 644 | 0.0 | 0.9+ | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | (2.3+ | 0.6+) |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.2+ | 0.2+ |
| 2002 08 08 | 644 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 1.2+ |
| 2002 08 16 | 608 | 0.2− | 0.8− | 2006 09 17 | 703 | 0.6+ | 0.8− | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2002 08 16 | 608 | 0.4+ | 0.5− | 2006 09 17 | 703 | 0.8− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 08 16 | 608 | 0.0 | 0.5− | 2006 09 17 | 703 | 0.5+ | 0.7− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 08 17 | 644 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.7+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2002 08 17 | 644 | 0.5− | 0.3+ | 2006 09 19 | 699 | 1.4− | 0.9+ | 2006 10 19 | G96 | 0.5+ | 0.2− |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 08 18 | 644 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.4− | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.3− |
| 2002 08 27 | 644 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2002 08 27 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 08 27 | 644 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2002 09 14 | 644 | 0.1+ | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2002 09 14 | 644 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.8− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2002 09 15 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2002 09 15 | 644 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.2− | | | | |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.2+ | | | | |

## 2002 $QC_4$ = 2006 $UW_{120}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.00165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26942512 | $\omega$ | 144.40420 | | +0.42720023 | +0.90380007 | |
| $a$ | 2.3741637 | $\Omega$ | 150.86135 | | −0.84115969 | +0.40758248 | |
| $e$ | 0.2036152 | $i$ | 2.99069 | | −0.33158760 | +0.13046822 | |
| $P$ | 3.66 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.1− | 0.3+ | 2005 04 10 | G96 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.9+ | 0.4− |
| 2002 08 08 | 644 | 0.1+ | 0.3+ | 2005 04 10 | G96 | 0.3− | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.1− |
| 2002 08 08 | 644 | 0.4+ | 0.3+ | 2005 04 10 | G96 | 0.8− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2002 08 16 | 608 | 0.4− | 1.1− | 2005 04 10 | G96 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2002 08 16 | 608 | 0.7− | 0.4− | 2005 05 02 | 691 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2002 08 16 | 608 | 0.7− | 0.5− | 2005 05 02 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 2002 08 17 | 644 | 0.4+ | 0.6+ | 2005 05 02 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2002 08 17 | 644 | 0.4+ | 0.1+ | 2006 10 03 | G96 | 0.5+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.4− |
| 2002 08 17 | 644 | 0.7+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.3− | | | | |

## 2002 $QO_4$ = 2006 $UN_{64}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.31982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26267121 | $\omega$ | 19.66131 | | +0.63042489 | +0.77051288 | |
| $a$ | 2.4146882 | $\Omega$ | 289.53749 | | −0.72490503 | +0.54097015 | |
| $e$ | 0.1549693 | $i$ | 5.73682 | | −0.27762773 | +0.33713676 | |
| $P$ | 3.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.8+ | 0.8− | 2002 08 17 | 608 | 0.1+ | 0.1+ | 2006 10 23 | A55 | 0.1− | 0.4+ |
| 2002 08 12 | 704 | 1.1− | 0.2− | 2002 08 17 | 608 | 0.0 | 0.2− | 2006 10 23 | A55 | 0.4− | 0.2+ |
| 2002 08 12 | 704 | 0.5− | 0.4+ | 2002 08 28 | 644 | 0.1− | 0.8+ | 2006 10 23 | A55 | 0.3− | 0.2− |
| 2002 08 12 | 704 | 0.4+ | 0.3− | 2002 08 28 | 644 | 0.0 | 1.1+ | 2006 10 23 | A55 | 0.4+ | 0.3− |
| 2002 08 16 | 644 | 0.4+ | 0.1+ | 2002 08 28 | 644 | 0.3+ | 0.8+ | 2006 10 24 | A55 | 0.4− | 0.1+ |
| 2002 08 16 | 644 | 0.2+ | 0.1+ | 2002 09 06 | 704 | 0.5− | 0.6+ | 2006 10 24 | A55 | 0.4+ | 0.5− |
| 2002 08 16 | 644 | 0.2+ | 0.0 | 2002 09 06 | 704 | 0.2+ | 1.4− | 2006 10 24 | A55 | 0.4+ | 0.2+ |
| 2002 08 17 | 608 | 0.1+ | 0.3− | 2002 09 06 | 704 | 0.3− | 0.8− | | | | |

## 2002 $QL_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.77299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26545683 | $\omega$ | 79.85772 | | +0.80831069 | +0.58550371 | |
| $a$ | 2.3977659 | $\Omega$ | 244.27728 | | −0.56346885 | +0.73888738 | |
| $e$ | 0.2494745 | $i$ | 3.93344 | | −0.17069471 | +0.33351289 | |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.2+ | 0.4− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2002 08 12 | 704 | 0.0 | 0.2− | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.7+ | 0.4− | 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.6− |
| 2002 08 12 | 704 | 0.3+ | 0.5− | 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2002 08 12 | 704 | 0.2+ | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2002 08 16 | 644 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.8− | 0.5− |
| 2002 08 16 | 644 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2002 08 17 | 608 | (2.2− | 1.9+) | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2002 08 17 | 608 | (1.7− | 2.0+) | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2002 08 17 | 608 | (1.9− | 1.5+) | 2006 10 22 | 644 | 0.3− | 0.3+ | 2006 11 13 | 644 | 0.2+ | 0.2− |
| 2002 08 28 | 644 | 0.3− | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.5− |
| 2002 08 28 | 644 | 0.3− | 0.5− | 2006 10 27 | 703 | 0.8− | 0.2− | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2002 08 28 | 644 | 0.1− | 0.5− | 2006 10 27 | 703 | 0.7− | 0.6− | 2006 11 13 | 104 | 0.2+ | 0.6− |
| 2002 09 01 | 608 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.7− | 0.4− | 2006 11 13 | 104 | 0.0 | 0.2− |
| 2002 09 01 | 608 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 13 | 104 | 0.1+ | 0.6+ |
| 2002 09 01 | 608 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.5− | 0.2− | 2006 11 18 | 704 | 1.5− | 0.0 |
| 2002 09 05 | 699 | 0.3+ | 0.0 | 2006 10 29 | 704 | 0.9+ | 0.9+ | 2006 11 18 | 704 | 0.9+ | 0.5+ |
| 2002 09 05 | 699 | 0.2− | 0.5+ | 2006 10 29 | 704 | (0.8+ | 2.2+) | 2006 11 18 | 704 | 1.2+ | 0.2+ |
| 2002 09 05 | 699 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2002 09 05 | 699 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2002 09 06 | 704 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2002 09 06 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.6+ |
| 2002 09 06 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2− | 0.9+ |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.6− | 0.1− | 2006 11 22 | 704 | 0.7− | 0.3+ |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.9− | 0.9− |
| 2002 09 13 | 644 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.1− | 0.2− |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2006 11 10 | 644 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.2− | 0.4+ |
| 2002 10 04 | 704 | 1.3− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.4+ | 0.6+ |
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.2+ | 0.1− |

## 2002 $QC_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.55585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.77982645 | $\omega$ | 184.40575 | | −0.93924067 | −0.29051526 | |
| $a$ | 1.1689719 | $\Omega$ | 336.08504 | | +0.32710756 | −0.59605193 | |
| $e$ | 0.1957804 | $i$ | 26.80886 | | +0.10405576 | −0.74854724 | |
| $P$ | 1.26 | $H$ | 19.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.1− | 0.1− | 2002 08 29 | 649 | 0.7− | 0.5− | 2002 09 06 | 246 | 0.1+ | 0.3− |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2002 08 29 | 246 | 0.4− | 0.7+ | 2002 09 06 | 246 | 0.4+ | 0.4+ |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2002 08 29 | 246 | 0.4+ | 0.1− | 2002 09 06 | 246 | 0.0 | 0.7+ |
| 2002 08 19 | 413 | 0.2+ | 0.4− | 2002 08 29 | 246 | 0.8− | 1.0+ | 2002 09 06 | 246 | 0.1+ | 0.7+ |
| 2002 08 19 | 413 | 0.4+ | 0.4− | 2002 08 29 | 246 | 0.4+ | 0.0 | 2002 09 09 | 848 | 1.0+ | 0.7− |
| 2002 08 19 | 413 | 0.2+ | 0.1− | 2002 08 29 | 246 | 0.1+ | 0.1+ | 2002 09 09 | 848 | 0.3+ | 0.8− |
| 2002 08 20 | 644 | 0.0 | 0.3− | 2002 08 29 | 246 | 0.2− | 0.3+ | 2002 09 09 | 848 | 0.4− | 1.1− |
| 2002 08 20 | 644 | 0.2− | 0.1− | 2002 08 31 | 848 | 0.1+ | 0.5− | 2002 09 09 | 246 | 0.8+ | 0.3− |
| 2002 08 20 | 644 | 0.1+ | 0.5− | 2002 08 31 | 848 | (0.6− | 1.9+) | 2002 09 09 | 246 | 0.9− | 0.2+ |
| 2002 08 26 | 649 | 0.2− | 0.1+ | 2002 08 31 | 848 | 0.5+ | 0.2− | 2002 09 09 | 246 | 0.1+ | 0.7+ |
| 2002 08 26 | 649 | 0.2+ | 0.1+ | 2002 09 01 | 848 | (1.7− | 0.7+) | 2002 09 09 | 246 | 0.4+ | 0.2+ |
| 2002 08 28 | 649 | 0.7+ | 0.3− | 2002 09 01 | 848 | (2.0− | 2.3+) | 2002 09 09 | 246 | 0.0 | 0.7+ |
| 2002 08 28 | 649 | 0.3+ | 0.2+ | 2002 09 01 | 848 | (2.0− | 0.0 ) | 2002 09 09 | 246 | 0.1+ | 0.2+ |
| 2002 08 28 | 649 | 0.1+ | 0.2− | 2002 09 02 | 246 | 0.1+ | 0.7+ | 2002 09 22 | 715 | 0.3+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 291 | 0.2− | 0.3− | 2002 09 02 | 246 | 0.3− | 0.8− | 2002 09 22 | 715 | 0.2+ | 0.4− |
| 2002 08 28 | 291 | 0.1− | 0.3+ | 2002 09 02 | 246 | 0.2− | 0.7− | 2002 09 22 | 715 | 0.3− | 0.7− |
| 2002 08 28 | 291 | 0.9− | 0.2+ | 2002 09 02 | 246 | 1.1− | 0.3+ | 2002 10 11 | 715 | 0.3+ | 0.1+ |
| 2002 08 28 | 848 | (1.6+ | 0.0 ) | 2002 09 02 | 246 | 0.4− | 0.4− | 2002 10 11 | 715 | 0.5+ | 0.7+ |
| 2002 08 28 | 848 | 0.8+ | 0.2− | 2002 09 02 | 246 | 0.2− | 0.2− | 2002 10 11 | 715 | 0.9+ | 1.0+ |
| 2002 08 28 | 848 | 1.3+ | 1.4+ | 2002 09 06 | 246 | 0.3+ | 0.3+ | 2002 10 30 | 696 | 0.3+ | 0.4+ |
| 2002 08 28 | 848 | 0.1+ | 0.2− | 2002 09 06 | 246 | 0.6+ | 0.5− | 2002 10 30 | 696 | 0.5− | 0.7− |
| 2002 08 29 | 649 | 0.9− | 0.4+ | 2002 09 06 | 246 | 0.6+ | 0.3− | 2006 10 30 | 696 | 0.8+ | 0.7+ |
| 2002 08 29 | 649 | 0.0 | 0.2+ | 2002 09 06 | 246 | 0.7+ | 0.3− | 2006 10 30 | 696 | 0.2− | 0.8− |

**2002 QG$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.47148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28685299 | $\omega$ | 254.01331 | | +0.96132870 | | +0.25274985 |
| $a$ | 2.2770005 | $\Omega$ | 91.24848 | | −0.19168811 | | +0.89924846 |
| $e$ | 0.1965027 | $i$ | 6.28125 | | −0.19774429 | | +0.35702902 |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 24 | 644 | 0.3− | 1.0+ | 2002 10 16 | 644 | 0.0 | 0.8+ | 2004 02 17 | 691 | 0.3+ | 0.5+ |
| 2002 08 24 | 644 | 0.2+ | 1.0+ | 2002 10 16 | 644 | 0.3+ | 0.7+ | 2006 10 22 | G96 | 0.5− | 0.1+ |
| 2002 08 24 | 644 | 0.3− | 0.8+ | 2002 10 16 | 644 | 0.4+ | 0.8+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2002 08 25 | 644 | 0.8− | 0.3− | 2002 10 28 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 08 25 | 644 | 0.8− | 0.3− | 2002 10 28 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2002 08 25 | 644 | 0.8− | 0.1− | 2002 10 28 | 644 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4+ |
| 2002 09 09 | 608 | 0.3+ | 0.4− | 2002 10 30 | 704 | 0.1+ | 0.6− | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2002 09 09 | 608 | 0.0 | 0.1+ | 2002 10 30 | 704 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2002 09 09 | 608 | 0.2+ | 0.5− | 2002 10 30 | 704 | 0.5+ | 0.7− | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.0 | 2002 10 30 | 704 | 0.6− | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.4− | 0.2+ | 2002 10 30 | 704 | 0.3+ | 1.0− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.2− | 2002 11 06 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.2− | 0.0 | 2002 11 06 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.8+ | 0.3− |
| 2002 10 04 | 704 | 0.9− | 0.1− | 2002 11 06 | 644 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2002 10 06 | 704 | 0.5− | 0.1− | 2002 12 02 | 608 | 1.1+ | 0.8− | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2002 10 06 | 704 | 0.3+ | 0.5+ | 2002 12 02 | 608 | 0.5+ | 0.7− | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2002 10 06 | 704 | 0.3+ | 0.5+ | 2002 12 02 | 608 | 1.5+ | 0.5− | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2002 10 06 | 704 | 0.4− | 0.4+ | 2004 02 17 | 691 | 0.2+ | 0.2+ | | | | |
| 2002 10 06 | 704 | 0.1+ | 0.6+ | 2004 02 17 | 691 | 0.1− | 0.3+ | | | | |

**2002 QQ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.91117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26819873 | $\omega$ | 83.07906 | | +0.99221254 | | −0.11465640 |
| $a$ | 2.3813957 | $\Omega$ | 283.49628 | | +0.08503200 | | +0.90901586 |
| $e$ | 0.1958835 | $i$ | 2.86863 | | +0.09101560 | | +0.40067953 |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.9+ |
| 2002 08 07 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 1.2− | 1.4− |
| 2002 08 07 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | (2.2+ | 1.6−) |
| 2002 08 17 | 644 | 0.1+ | 1.2− | 2006 10 27 | 408 | (0.2+ | 1.7+) | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2002 08 17 | 644 | 0.3+ | 1.2− | 2006 10 27 | 408 | (0.1− | 1.8+) | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 1.0− | 2006 10 30 | 408 | 0.9− | 1.2+ | 2006 11 14 | 703 | 1.1+ | 0.1− |
| 2002 08 26 | 644 | 0.0 | 0.0 | 2006 10 30 | 408 | 1.1− | 0.6+ | 2006 11 16 | 408 | 0.6− | 0.3− |
| 2002 08 26 | 644 | 0.2+ | 0.1− | 2006 10 31 | 408 | 0.5− | 0.7+ | 2006 11 16 | 408 | 0.3− | 0.4− |
| 2002 08 26 | 644 | 0.0 | 0.0 | 2006 10 31 | 408 | 1.0− | 0.9+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 08 27 | 644 | 0.3+ | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.7− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 08 27 | 644 | 0.3+ | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2002 08 27 | 644 | 0.3+ | 0.8+ | 2006 11 01 | G96 | 0.3+ | 0.6− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.4− | 2006 11 17 | 408 | (0.2− | 1.7+) |
| 2002 09 14 | 644 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 17 | 408 | 1.2− | 1.4+ |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2006 10 20 | 408 | 0.8+ | 0.5+ | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2006 10 20 | 408 | 0.0 | 0.9+ | 2006 11 01 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2006 10 21 | 408 | 1.0+ | 1.0+ | 2006 11 13 | 644 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2006 10 21 | 408 | (0.3+ | 2.1+) | 2006 11 13 | 644 | 0.2+ | 0.1− | 2006 11 24 | 408 | 0.1+ | 0.4− |
| 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.1+ | 2006 11 24 | 408 | 0.6+ | 0.8− |
| 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.4− | 0.5+ | | | | |
| 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | (1.9− | 0.4+) | | | | |

**2002 QY$_{11}$ = 2006 WU$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.14416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27652247 | $\omega$ | 70.57236 | | +0.97772663 | | −0.19241459 |
| $a$ | 2.3333637 | $\Omega$ | 300.44204 | | +0.13673807 | | +0.88698401 |
| $e$ | 0.1208704 | $i$ | 5.57987 | | +0.15922734 | | +0.41980471 |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.0 | 0.9− | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2002 08 06 | 644 | 0.2+ | 0.0 | 2006 10 27 | 703 | (1.4+ | 1.8−) | 2006 11 22 | 703 | (3.1− | 0.7−) |
| 2002 08 06 | 644 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.0 | 0.2− | 2006 11 22 | 703 | (1.8+ | 0.9+) |
| 2002 08 26 | 644 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.1− | 0.7+ | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2002 08 26 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.5+ | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 08 26 | 644 | 0.2− | 0.5− | 2006 11 14 | 703 | 0.5+ | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 08 27 | 644 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.4− | 0.4− | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2002 08 27 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.1+ | | | | |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.5+ | 0.8+ | | | | |

**2002 QQ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.78368 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22435948 | $\omega$ | 104.78123 | | +0.97843250 | | −0.18910986 |
| $a$ | 2.6822943 | $\Omega$ | 266.17123 | | +0.14248559 | | +0.90916921 |
| $e$ | 0.0421668 | $i$ | 4.77805 | | +0.14955836 | | +0.37101051 |
| $P$ | 4.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.3− | 0.2− | 2002 08 26 | 644 | 0.8+ | 0.1+ | 2003 12 17 | 291 | 0.0 | 0.1− |
| 2002 08 16 | 644 | 0.1+ | 0.1− | 2002 08 26 | 644 | 0.1+ | 0.3− | 2003 12 17 | 291 | 0.0 | 0.0 |
| 2002 08 16 | 644 | 0.0 | 0.0 | 2002 08 27 | 644 | 0.1− | 0.2+ | 2003 12 17 | 291 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.2+ | 0.3− | 2002 08 27 | 644 | 0.1− | 0.2+ | 2004 01 28 | 691 | 0.1+ | 0.1− |
| 2002 08 19 | 644 | 0.3− | 0.1+ | 2002 08 27 | 644 | 0.2+ | 0.2+ | 2004 01 28 | 691 | 0.1+ | 0.0 |
| 2002 08 19 | 644 | 0.2− | 0.1+ | 2002 09 13 | 644 | 0.0 | 0.6+ | 2004 01 28 | 691 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.5+ | 0.2− | 2002 09 13 | 644 | 0.7− | 0.0 | | | | |
| 2002 08 26 | 644 | 0.3− | 0.0 | 2002 09 13 | 644 | 0.1− | 0.4− | | | | |

**2002 QU$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.16108 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26586270 | $\omega$ | 103.90514 | | +0.12577813 | | +0.99190370 |
| $a$ | 2.3953250 | $\Omega$ | 173.24698 | | −0.95799835 | | +0.12602841 |
| $e$ | 0.1994051 | $i$ | 8.56802 | | −0.25771888 | | +0.01561693 |
| $P$ | 3.71 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.2+ | 0.4− | 2002 09 05 | 699 | 0.9− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 08 12 | 704 | 1.1+ | 0.5+ | 2002 09 05 | 699 | 0.6+ | 0.3+ | 2006 09 27 | 691 | 0.6− | 0.3+ |
| 2002 08 12 | 704 | 0.1+ | 0.0 | 2002 09 05 | 699 | 0.7− | 0.8− | 2006 09 27 | 691 | 0.4− | 0.1+ |
| 2002 08 12 | 704 | 0.6+ | 0.6+ | 2002 09 06 | 704 | 0.0 | 0.1+ | 2006 09 29 | 699 | 1.3+ | 0.6+ |
| 2002 08 17 | 608 | 0.6− | 0.2− | 2002 09 06 | 704 | 0.1− | 0.3+ | 2006 09 29 | 699 | (2.1− | 1.4−) |
| 2002 08 17 | 608 | 1.1− | 0.8+ | 2002 09 06 | 704 | 0.8+ | 0.2− | 2006 09 29 | 699 | 0.0 | 0.7+ |
| 2002 08 17 | 608 | 0.4− | 0.6+ | 2002 09 06 | 704 | 1.0+ | 0.0 | 2006 09 29 | 699 | 0.4− | 0.9+ |
| 2002 08 26 | 644 | 0.4+ | 0.2− | 2002 09 14 | 644 | 0.5− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.3− |
| 2002 08 26 | 644 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.4− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.3− |
| 2002 08 26 | 644 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.5− | 0.3+ | 2006 10 01 | 691 | 1.1+ | 0.7− |
| 2002 08 27 | 644 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.8− | 0.4+ |
| 2002 08 27 | 644 | 0.2+ | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.6− | 0.3+ |
| 2002 08 27 | 644 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2002 09 05 | 699 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.0 | | | | |

**2002 QV$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.63601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24341974 | $\omega$ | 65.96247 | | −0.05267157 | +0.99722655 | |
| $a$ | 2.5403810 | $\Omega$ | 201.21946 | | −0.96086278 | −0.06495092 | |
| $e$ | 0.2148907 | $i$ | 8.35345 | | −0.27197138 | +0.03633999 | |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2002 08 26 | 644 | 0.2− | 0.1− | 2006 09 14 | 691 | 0.0 | 0.0 |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2002 08 27 | 644 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2002 08 27 | 644 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.1− |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2002 08 27 | 644 | 0.0 | 0.3+ | 2006 09 16 | 691 | 0.0 | 0.3− |
| 2002 07 20 | 644 | 0.7− | 0.3+ | 2002 09 07 | 704 | (2.5+ | 0.0 ) | 2006 09 16 | 691 | 0.0 | 0.2− |
| 2002 07 20 | 644 | 0.6− | 0.5+ | 2002 09 07 | 704 | 0.9+ | 0.2− | 2006 09 16 | 691 | 0.1+ | 0.0 |
| 2002 07 20 | 644 | 0.5− | 0.6+ | 2002 09 07 | 704 | 0.2+ | 0.3− | 2006 09 28 | 691 | 0.5− | 0.8− |
| 2002 08 12 | 704 | 0.1+ | 0.4+ | 2002 09 07 | 704 | (2.0+ | 0.6+) | 2006 09 28 | 691 | 0.5− | 1.4+ |
| 2002 08 12 | 704 | 0.4+ | 0.3+ | 2002 09 11 | 608 | 0.3+ | 1.4− | 2006 09 28 | 691 | 0.6+ | 0.1+ |
| 2002 08 12 | 704 | 0.3+ | 0.4− | 2002 09 11 | 608 | 0.4+ | 0.8− | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2002 08 12 | 704 | 0.1− | 0.2− | 2002 09 11 | 608 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2002 08 12 | 704 | 0.5+ | 0.6− | 2002 09 13 | 644 | 0.5− | 0.7− | 2006 10 01 | 691 | 0.1+ | 0.6+ |
| 2002 08 26 | 644 | 0.6+ | 0.1+ | 2002 09 13 | 644 | 0.5− | 0.7− | | | | |
| 2002 08 26 | 644 | 0.1+ | 0.2− | 2002 09 13 | 644 | 0.4− | 0.7− | | | | |

**2002 QY$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.50871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24280885 | $\omega$ | 115.44557 | | +0.92113914 | +0.19844200 | |
| $a$ | 2.5446402 | $\Omega$ | 234.90299 | | −0.25910230 | +0.95459060 | |
| $e$ | 0.3348162 | $i$ | 24.15837 | | +0.29046287 | +0.22221061 | |
| $P$ | 4.06 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 704 | (0.7+ | 1.7−) | 2002 11 01 | 704 | 0.6− | 0.7− | 2006 09 09 | A74 | 0.1+ | 0.3− |
| 2002 08 27 | 704 | 0.2− | 0.3− | 2002 11 01 | 704 | 0.2− | 0.2− | 2006 09 09 | A74 | 0.2+ | 0.1− |
| 2002 08 27 | 704 | 0.3− | 0.8− | 2002 11 01 | 704 | 0.4− | 0.3+ | 2006 09 09 | A74 | 0.2+ | 0.2− |
| 2002 08 28 | 704 | 0.1+ | 0.5− | 2002 11 08 | 704 | 0.9+ | 1.2+ | 2006 10 02 | 703 | 0.3− | 0.2− |
| 2002 08 28 | 704 | 0.4+ | 0.1+ | 2002 11 08 | 704 | 0.5+ | 1.4+ | 2006 10 02 | 703 | 0.1+ | 0.3− |
| 2002 08 28 | 704 | 0.7+ | 0.1+ | 2002 11 08 | 704 | 0.5+ | 1.1+ | 2006 10 02 | 703 | 0.2− | 0.8− |
| 2002 08 28 | 704 | 0.3+ | 0.3+ | 2002 11 08 | 704 | 0.2− | 0.9+ | 2006 10 02 | 703 | 0.0 | 0.3− |
| 2002 08 30 | 704 | 0.4− | 0.8+ | 2002 11 11 | 699 | 1.1+ | 0.2+ | 2006 10 12 | 151 | 0.1+ | 0.1+ |
| 2002 08 30 | 704 | 0.4− | 0.6+ | 2002 11 11 | 699 | 0.0 | 0.2+ | 2006 10 12 | 151 | 0.1+ | 0.2+ |
| 2002 08 30 | 704 | 0.6+ | 0.8+ | 2002 11 11 | 699 | 0.4+ | 0.6+ | 2006 10 12 | 151 | 0.1+ | 0.2+ |
| 2002 08 30 | 704 | 0.0 | 0.8+ | 2002 11 11 | 699 | 0.5+ | 0.3+ | 2006 10 12 | 151 | 0.1− | 0.1− |
| 2002 08 30 | 704 | 0.3+ | 0.4+ | 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 10 12 | 151 | 0.2− | 0.0 |
| 2002 09 30 | 704 | 0.7− | 0.1+ | 2002 11 13 | 644 | 0.1− | 0.2+ | 2006 10 12 | 151 | 0.3− | 0.0 |
| 2002 09 30 | 704 | 0.0 | 0.3+ | 2002 11 13 | 644 | 0.2+ | 0.1− | 2006 10 20 | 703 | 0.3+ | 0.1− |
| 2002 09 30 | 704 | 1.0− | 0.2+ | 2002 11 14 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 703 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 1.1− | 0.5− | 2002 11 14 | 704 | 0.1+ | 0.0 | 2006 10 20 | 704 | 0.5− | 1.3+ |
| 2002 09 30 | 704 | 1.1− | 0.1− | 2002 11 14 | 704 | 0.2− | 0.7+ | 2006 10 20 | 703 | 0.4+ | 0.1+ |
| 2002 10 05 | 704 | 0.1+ | 0.3− | 2002 11 14 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 703 | 0.3− | 0.2− |
| 2002 10 05 | 704 | 0.1+ | 0.0 | 2002 12 06 | 704 | 0.3− | 0.3− | 2006 10 20 | 704 | 0.1− | 1.1+ |
| 2002 10 05 | 704 | 0.2+ | 0.3− | 2002 12 06 | 704 | 1.0− | 1.2− | 2006 10 20 | 704 | 0.3+ | 0.4− |
| 2002 10 05 | 704 | 0.1− | 0.2+ | 2002 12 06 | 704 | (0.7+ | 1.7−) | 2006 10 27 | 703 | 0.7− | 0.7+ |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2002 12 06 | 704 | 0.1− | 0.6− | 2006 10 27 | 703 | 0.1+ | 0.7− |
| 2002 10 09 | 704 | 0.4− | 0.5− | 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2002 10 09 | 704 | 0.2− | 0.6− | 2002 12 11 | 704 | 0.2+ | 0.1− | 2006 11 09 | 240 | 0.2− | 0.0 |
| 2002 10 09 | 704 | 0.0 | 0.5− | 2002 12 11 | 704 | 1.0− | 0.2− | 2006 11 09 | 240 | 0.4+ | 0.0 |
| 2002 10 09 | 704 | 0.3+ | 0.7− | 2002 12 11 | 704 | 0.1− | 0.8− | 2006 11 09 | 240 | 0.8+ | 0.1+ |
| 2002 10 09 | 704 | 0.1+ | 0.4− | 2002 12 11 | 704 | 0.9+ | 0.9+ | 2006 11 15 | 703 | 0.3− | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.4− | 2006 09 08 | A74 | 1.2+ | 1.3+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | 0.1+ | 0.2− | 2006 09 08 | A74 | (1.6+ | 1.9+) | 2006 11 15 | 703 | 0.3− | 0.4− |
| 2002 10 12 | 704 | 0.2− | 0.5− | 2006 09 08 | A74 | (0.7+ | 1.8+) | 2006 11 15 | 703 | 0.2− | 0.7− |
| 2002 10 12 | 704 | 0.1+ | 0.1− | 2006 09 08 | A74 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.1+ | 1.1− |
| 2002 10 12 | 704 | 0.7+ | 0.1− | 2006 09 09 | A74 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.4+ | 0.4− |
| 2002 11 01 | 704 | 0.0 | 0.2− | 2006 09 09 | A74 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.0 | 0.7− |
| 2002 11 01 | 704 | 0.1− | 0.7− | 2006 09 09 | A74 | 0.3− | 0.3− | 2006 11 25 | 703 | 0.4− | 0.2+ |

**2002 QW$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.66006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26420862 | $\omega$ | 82.96003 | | +0.86472354 | +0.49525992 | |
| $a$ | 2.4053119 | $\Omega$ | 247.32247 | | −0.48909984 | +0.79258142 | |
| $e$ | 0.1534641 | $i$ | 5.19162 | | −0.11416891 | +0.35571379 | |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.6− | 0.2+ | 2002 08 28 | 644 | 0.8− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 08 12 | 704 | 0.4+ | 0.8− | 2002 08 28 | 644 | 0.7− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2002 08 12 | 704 | 0.1− | 0.2− | 2002 09 04 | 699 | 0.2− | 1.3− | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2002 08 12 | 704 | 0.1+ | 0.1+ | 2002 09 04 | 699 | 1.3+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.4− |
| 2002 08 12 | 704 | 0.2+ | 0.3− | 2002 09 04 | 699 | 0.6− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 08 18 | 608 | 0.7+ | 0.1− | 2002 09 04 | 699 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2− |
| 2002 08 18 | 608 | 0.9+ | 0.1+ | 2002 09 13 | 644 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 08 18 | 608 | 0.5+ | 0.2+ | 2002 09 13 | 644 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.2+ |
| 2002 08 27 | 644 | 0.3− | 0.2− | 2002 09 13 | 644 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.5− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 08 27 | 644 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.4− | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2002 08 28 | 644 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.4− | 2006 11 20 | 691 | 0.7− | 0.2+ |

**2002 QQ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.20911 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26864383 | $\omega$ | 283.39096 | | −0.26807909 | +0.96274621 | |
| $a$ | 2.3787646 | $\Omega$ | 330.98419 | | −0.85325227 | −0.25433180 | |
| $e$ | 0.0919776 | $i$ | 4.18557 | | −0.44731885 | −0.09184264 | |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.2− | 0.4− | 2002 08 29 | 291 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.8− | 0.3− |
| 2002 07 23 | 644 | 0.2− | 0.3− | 2002 08 29 | 291 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.6+ | 0.2+ |
| 2002 07 23 | 644 | 0.3− | 0.3− | 2002 08 29 | 644 | 0.1+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2002 07 29 | 644 | 0.3+ | 0.1− | 2002 08 29 | 644 | 0.3+ | 0.8+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2002 07 29 | 644 | 0.0 | 0.1+ | 2002 08 29 | 644 | 0.1− | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2002 07 29 | 644 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.8− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 08 08 | 644 | 0.4+ | 0.0 | 2002 09 14 | 644 | 0.7− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.8+ |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2002 08 08 | 644 | 0.3+ | 0.0 | 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2002 08 27 | 644 | 0.3− | 0.3− | 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.8− | 0.3− |
| 2002 08 27 | 644 | 0.7− | 0.9− | 2006 09 17 | 703 | 0.6− | 1.0− | 2006 10 23 | G96 | 0.5− | 0.3− |
| 2002 08 27 | 644 | 0.0 | 0.1− | 2006 09 17 | 703 | (1.9− | 0.7−) | | | | |
| 2002 08 29 | 291 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.0 | 0.9− | | | | |

**2002 QO$_{18}$ = 2006 VE$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.83251 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26797408 | $\omega$ | 240.55993 | | +0.97411831 | +0.22234151 | |
| $a$ | 2.3827265 | $\Omega$ | 106.56848 | | −0.18987476 | +0.90261656 | |
| $e$ | 0.1992303 | $i$ | 2.43463 | | −0.12264213 | +0.36857509 | |
| $P$ | 3.68 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.1− | 0.0 | 2002 08 29 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 1995 12 16 | 691 | 0.1+ | 0.2− | 2002 08 29 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 1995 12 16 | 691 | 0.1+ | 0.1− | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.8− | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2002 08 26 | 644 | 0.0 | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 08 26 | 644 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1+ | | | | |

**2002 QD$_{19}$ = 2006 UD$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.80080 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27245379 | $\omega$ | 179.20885 | | +0.27646325 | | +0.95897549 |
| $a$ | 2.3565364 | $\Omega$ | 106.83869 | | −0.88208227 | | +0.27911744 |
| $e$ | 0.1970562 | $i$ | 3.75740 | | −0.38144324 | | +0.04959306 |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.4− | 0.0 | 2002 09 05 | 704 | 0.1+ | 1.4− | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2002 08 26 | 644 | 0.4− | 0.1+ | 2002 09 05 | 704 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 08 26 | 644 | 0.2− | 0.0 | 2002 09 05 | 704 | (0.5+ | 1.6−) | 2006 10 21 | G96 | 0.0 | 0.6− |
| 2002 08 29 | 644 | 0.1+ | 0.4+ | 2002 09 05 | 704 | (0.5+ | 2.2−) | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2002 09 15 | 644 | 0.3− | 0.6+ | 2006 11 22 | G96 | (1.5+ | 1.8+) |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2002 09 15 | 644 | 0.2− | 0.5+ | 2006 11 22 | G96 | (2.0+ | 1.9+) |
| 2002 08 30 | 644 | 0.5+ | 0.1− | 2002 09 15 | 644 | 0.0 | 0.6+ | 2006 11 22 | G96 | (1.8+ | 1.5+) |
| 2002 08 30 | 644 | 0.7+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | (1.6+ | 2.0+) |
| 2002 08 30 | 644 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.0 | | | | |
| 2002 09 05 | 704 | 0.7+ | 1.0− | 2006 10 18 | 691 | 0.2− | 0.1+ | | | | |

**2002 QX$_{21}$ = 2006 US$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.46649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27402945 | $\omega$ | 1.01204 | | +0.80467351 | | +0.58796152 |
| $a$ | 2.3474944 | $\Omega$ | 322.57628 | | −0.54567425 | | +0.67764981 |
| $e$ | 0.1358277 | $i$ | 7.79981 | | −0.23396614 | | +0.44169219 |
| $P$ | 3.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 1.1+ | 0.5− | 2002 08 29 | 644 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 2002 08 13 | 704 | 0.5+ | 0.5+ | 2002 08 29 | 644 | 0.1− | 0.9+ | 2006 10 19 | 703 | 0.5+ | 0.2+ |
| 2002 08 13 | 704 | 0.5+ | 0.1− | 2006 09 28 | 703 | 0.6+ | 0.6− | 2006 10 19 | 703 | 1.0− | 0.7− |
| 2002 08 13 | 704 | 0.0 | 1.1− | 2006 09 28 | 703 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2002 08 27 | 644 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2002 08 27 | 644 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.9− | 2006 10 23 | 644 | 0.0 | 0.4− |
| 2002 08 27 | 644 | 0.5− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2002 08 29 | 644 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ |

**2002 QZ$_{21}$ = 2006 QK$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.79477 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26288312 | $\omega$ | 47.41087 | | +0.98279825 | | −0.14781342 |
| $a$ | 2.4133904 | $\Omega$ | 320.70715 | | +0.07030775 | | +0.85382370 |
| $e$ | 0.1537771 | $i$ | 10.06898 | | +0.17077594 | | +0.49913554 |
| $P$ | 3.75 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.1− | 0.5+ | 2006 08 31 | 704 | 0.2− | 0.8− | 2006 09 21 | 185 | 0.3+ | 0.6− |
| 1999 12 12 | 704 | 0.5− | 0.2− | 2006 08 31 | 704 | 0.6− | 0.2− | 2006 09 21 | 185 | 0.5+ | 0.3− |
| 1999 12 12 | 704 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.3+ | 1.1+ | 2006 09 27 | 703 | 0.1+ | 0.6− |
| 1999 12 12 | 704 | 0.4+ | 0.0 | 2006 08 31 | 704 | (1.5− | 0.5−) | 2006 09 27 | 703 | 0.2− | 0.5− |
| 2002 08 13 | 704 | 0.2− | 0.4− | 2006 08 31 | 704 | 0.3+ | 0.3− | 2006 09 27 | 703 | 0.4+ | 0.5− |
| 2002 08 13 | 704 | 0.3− | 0.3− | 2006 09 06 | 644 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.4− | 0.2+ |
| 2002 08 13 | 704 | 0.5+ | 0.0 | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.4+ | 0.0 |
| 2002 08 13 | 704 | 0.1− | 0.2+ | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 29 | 699 | 1.4+ | 0.1+ |
| 2002 08 13 | 704 | 0.5+ | 0.6− | 2006 09 15 | 704 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.6− | 0.7+ |
| 2002 08 27 | 644 | 0.2− | 0.0 | 2006 09 15 | 704 | 0.2+ | 0.3+ | 2006 10 03 | 703 | 0.2− | 0.4+ |
| 2002 08 27 | 644 | 0.4− | 0.0 | 2006 09 15 | 704 | 0.0 | 0.4+ | 2006 10 03 | 703 | 0.4− | 0.8− |
| 2002 08 27 | 644 | 0.5− | 0.3− | 2006 09 15 | 704 | 0.1− | 0.1+ | 2006 10 03 | 703 | 0.5− | 0.3− |
| 2002 08 29 | 644 | 0.1+ | 0.6+ | 2006 09 15 | 704 | 0.2− | 0.9+ | 2006 10 03 | 703 | (2.1− | 0.6+) |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.9− | 0.4− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.8+ | 2006 09 17 | 703 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2002 08 29 | 644 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 11 14 | 703 | 1.4− | 1.0− |
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 09 20 | 699 | 0.8+ | 0.8+ | 2006 11 14 | 703 | (0.1− | 1.7−) |
| 2006 08 27 | 699 | 0.5− | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.7+ | 2006 11 14 | 703 | 0.1+ | 1.0+ |
| 2006 08 27 | 699 | 0.1+ | 0.2− | 2006 09 20 | 699 | 0.8+ | 0.7− | 2006 11 14 | 703 | 1.3+ | 0.1+ |
| 2006 08 27 | 699 | 0.3− | 0.0 | 2006 09 21 | 185 | 0.4+ | 0.3− | | | | |
| 2006 08 27 | 699 | 0.2− | 0.3+ | 2006 09 21 | 185 | 0.1+ | 0.5− | | | | |

**2002 QR$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.71645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29609145 | $\omega$ | 287.83084 | | −0.22901782 | | +0.97296474 |
| $a$ | 2.2293870 | $\Omega$ | 328.88159 | | −0.86980819 | | −0.21830690 |
| $e$ | 0.0928270 | $i$ | 3.31008 | | −0.43701779 | | −0.07537712 |
| $P$ | 3.33 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.4+ | 0.3+ | 2002 08 29 | 644 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2002 08 29 | 644 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2002 07 14 | 644 | 0.5− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2002 08 08 | 644 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2002 08 27 | 644 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.8+ | 0.6− |
| 2002 08 27 | 644 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 08 27 | 644 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2002 08 29 | 644 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.9− |

**2002 QJ$_{23}$ = 2006 WM$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.40846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27234847 | $\omega$ | 9.93230 | | +0.97134773 | | −0.23766006 |
| $a$ | 2.3571439 | $\Omega$ | 3.81674 | | +0.21686375 | | +0.88437479 |
| $e$ | 0.2057504 | $i$ | 0.97782 | | +0.09723019 | | +0.40174485 |
| $P$ | 3.62 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.1− | 0.4+ | 2002 08 27 | 644 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.4− | 0.7− |
| 1999 12 07 | 691 | 0.2+ | 0.2+ | 2002 08 29 | 644 | 0.0 | 0.5+ | 2006 11 01 | G96 | 0.5− | 0.5− |
| 1999 12 07 | 691 | 0.0 | 0.3− | 2002 08 29 | 644 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2002 08 13 | 699 | 0.0 | 0.1+ | 2002 08 29 | 644 | 0.3− | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.7− |
| 2002 08 13 | 699 | 0.9− | 0.6− | 2002 09 04 | 644 | 0.1− | 0.5− | 2006 11 10 | 691 | 0.3− | 0.3− |
| 2002 08 13 | 699 | 0.6+ | 0.2+ | 2002 09 04 | 644 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2002 08 13 | 699 | 0.7− | 0.3− | 2002 09 04 | 644 | 0.2− | 0.1− | 2006 11 10 | 691 | 1.5+ | 1.3+ |
| 2002 08 17 | 644 | 0.4+ | 0.1+ | 2002 09 05 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 691 | 0.2− | 0.2− |
| 2002 08 17 | 644 | 0.3+ | 0.2+ | 2002 09 05 | 704 | 0.1− | 0.5− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2002 08 17 | 644 | 0.5+ | 0.8+ | 2002 09 05 | 704 | 0.6− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.2+ | 0.2+ | 2002 09 05 | 704 | 0.0 | 1.3− | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2002 08 18 | 644 | 0.5+ | 0.5+ | 2006 09 27 | G96 | 0.5+ | 0.8− | 2006 11 20 | 691 | 0.3− | 0.1+ |
| 2002 08 18 | 644 | 0.7+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2002 08 27 | 644 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.3− | | | | |
| 2002 08 27 | 644 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.7− | | | | |

**2002 QS$_{23}$ = 2006 WZ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.12998 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27657203 | $\omega$ | 261.21237 | | +0.73136123 | | −0.68135239 |
| $a$ | 2.3330849 | $\Omega$ | 141.72864 | | +0.64293955 | | +0.67441629 |
| $e$ | 0.1743863 | $i$ | 2.72901 | | +0.22746317 | | +0.28446721 |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.3+ | 0.1− | 2002 09 15 | 644 | 0.3− | 0.7− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.7+ | 0.2− | 2002 09 15 | 644 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2002 08 17 | 644 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.4+ | 0.3− | 2006 11 24 | 703 | 0.2− | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2006 11 02 | G96 | 0.1+ | 0.2− | 2006 11 24 | 703 | 0.1− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.5− | 2006 11 24 | 703 | 0.1− | 0.2− |
| 2002 08 18 | 644 | 0.1− | 0.6+ | 2006 11 02 | G96 | 0.2+ | 0.3− | 2006 11 24 | 703 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.2− | 2006 11 02 | G96 | 0.1+ | 0.1− | 2006 11 25 | 703 | 0.0 | 0.2+ |
| 2002 08 28 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− | 2006 11 25 | 703 | 0.1+ | 0.0 |
| 2002 08 28 | 644 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.3− | 2006 11 25 | 703 | 0.7− | 0.2+ |
| 2002 08 29 | 644 | 0.1+ | 1.0+ | 2006 11 17 | G96 | 0.1+ | 0.4− | 2006 11 25 | 703 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.3− | 0.4+ |
| 2002 08 29 | 644 | 0.2− | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.7+ |
| 2002 09 05 | 704 | 0.5+ | 1.3− | 2006 11 18 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.5+ | 1.2+ |
| 2002 09 05 | 704 | (0.4− | 1.8−) | 2006 11 18 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2002 09 05 | 704 | 1.0− | 0.7− | 2006 11 22 | 691 | 0.0 | 0.0 | | | | |

**2002 QL$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.75995 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26467478 | $\omega$ | 353.83004 | | +0.90280868 | | +0.42679208 |
| $a$ | 2.4024868 | $\Omega$ | 340.63924 | | −0.38743817 | | +0.75396565 |
| $e$ | 0.2571789 | $i$ | 9.15974 | | −0.18662299 | | +0.49938394 |
| $P$ | 3.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.2+ | 0.0 | 2006 10 17 | A50 | 0.3+ | 0.2+ | 2006 10 18 | A50 | 0.6− | 0.1+ |
| 2002 07 16 | 644 | 0.1− | 0.0 | 2006 10 17 | A50 | 0.1+ | 0.1+ | 2006 10 18 | A50 | 0.3− | 0.2+ |
| 2002 07 16 | 644 | 0.0 | 0.2+ | 2006 10 17 | A50 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.3− | 1.2− |
| 2002 08 13 | 704 | 0.2+ | 0.7+ | 2006 10 17 | A50 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.8− |
| 2002 08 13 | 704 | 0.3− | 0.7− | 2006 10 17 | A50 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.5− | 0.6− |
| 2002 08 13 | 704 | 0.0 | 0.0 | 2006 10 17 | A50 | 0.6− | 0.2+ | 2006 10 21 | 704 | 0.9+ | 0.6+ |
| 2002 08 13 | 704 | 0.5− | 0.2+ | 2006 10 17 | A50 | 0.0 | 0.3+ | 2006 10 21 | 704 | 0.3+ | 0.3+ |
| 2002 08 13 | 704 | 0.1+ | 0.4− | 2006 10 17 | A50 | 0.1− | 0.2+ | 2006 10 21 | 704 | 0.5+ | 0.6+ |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 10 18 | A50 | 0.2+ | 0.1+ | 2006 10 21 | 704 | 0.4+ | 0.1+ |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 10 18 | A50 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.4− |
| 2002 08 29 | 644 | 0.5+ | 0.1+ | 2006 10 18 | A50 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.5− |
| 2002 08 30 | 644 | 0.2+ | 0.2− | 2006 10 18 | A50 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 08 30 | 644 | 0.4− | 0.0 | 2006 10 18 | A50 | 0.2− | 0.2+ | | | | |
| 2002 08 30 | 644 | 0.3+ | 0.1− | 2006 10 18 | A50 | 0.6− | 0.2+ | | | | |

**2002 QD$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.49269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26754223 | $\omega$ | 262.82793 | | +0.87369011 | | −0.47306149 |
| $a$ | 2.3852898 | $\Omega$ | 125.34090 | | +0.48290189 | | +0.81508058 |
| $e$ | 0.2819956 | $i$ | 7.99689 | | +0.05891829 | | +0.33444951 |
| $P$ | 3.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 07 | 291 | 0.1+ | 0.2+ | 2002 08 30 | 644 | 0.2+ | 0.5− | 2006 10 28 | 703 | 0.2− | 0.6− |
| 2002 07 07 | 291 | 0.0 | 0.3+ | 2002 08 30 | 644 | 0.3− | 0.5− | 2006 10 30 | 703 | 0.1− | 0.2− |
| 2002 07 07 | 291 | 0.1− | 0.1+ | 2002 08 31 | 704 | 0.4− | 0.8− | 2006 10 30 | 703 | 0.4− | 0.1+ |
| 2002 07 29 | 644 | 0.7+ | 0.3+ | 2002 08 31 | 704 | 1.4− | 0.5+ | 2006 10 30 | 703 | 0.3− | 0.2+ |
| 2002 07 29 | 644 | 0.5+ | 0.5+ | 2002 08 31 | 704 | (1.2− | 1.6+) | 2006 10 30 | 703 | 0.1+ | 0.1− |
| 2002 07 29 | 644 | 0.4+ | 0.5+ | 2002 09 05 | 704 | 0.4− | 0.6+ | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2002 09 05 | 704 | 1.2− | 1.0− | 2006 11 13 | 703 | 0.1− | 0.3− |
| 2002 08 08 | 644 | 0.0 | 0.1− | 2002 09 05 | 704 | 0.1+ | 0.5− | 2006 11 13 | 703 | 0.4+ | 0.2− |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.6+ | 0.4+ | 2006 11 13 | 703 | 0.2− | 0.5− |
| 2002 08 16 | 644 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.6− | 2006 11 19 | 703 | 0.0 | 0.3− |
| 2002 08 16 | 644 | 0.2+ | 0.2− | 2006 09 18 | 703 | 1.1+ | 0.1+ | 2006 11 19 | 703 | 0.7− | 0.6− |
| 2002 08 16 | 644 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.7+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 11 19 | 703 | 0.0 | 0.2− |
| 2002 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 20 | 704 | 1.4+ | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.3+ | 1.2+ |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.4− | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2002 08 29 | 644 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.6− | 0.4+ | 2006 11 20 | 704 | 0.8+ | 0.0 |
| 2002 08 29 | 644 | 0.3+ | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.1+ | 1.0+ |
| 2002 08 30 | 644 | 0.2+ | 0.4− | 2006 10 28 | 703 | 0.0 | 0.0 | | | | |

**2002 QE$_{29}$ = 2006 SA$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.77580 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26313416 | $\omega$ | 343.69344 | | +0.99093608 | | −0.13192019 |
| $a$ | 2.4118552 | $\Omega$ | 23.93112 | | +0.12917356 | | +0.88393560 |
| $e$ | 0.1955762 | $i$ | 3.58335 | | +0.03687659 | | +0.44861444 |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.3− | 0.5− | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.5+ | 0.8− |
| 2002 08 11 | 644 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.7+ | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2002 08 11 | 644 | 0.1− | 0.5− | 2006 09 20 | 704 | 0.1− | 0.7− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 08 30 | 644 | 0.7+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 08 30 | 644 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 30 | 644 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2005 05 14 | G96 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.6− | 0.5− |
| 2005 05 14 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2005 05 14 | G96 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.6+ | 0.3− |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.6+ | 0.2− |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.7− | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 10 15 | 703 | 0.2− | 0.6− | | | | |

**2002 QJ$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.40268 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26908687 | $\omega$ | 26.59586 | | +0.86872190 | | −0.49527092 |
| $a$ | 2.3761529 | $\Omega$ | 3.10756 | | +0.43491258 | | +0.75756089 |
| $e$ | 0.2135284 | $i$ | 5.69850 | | +0.23700907 | | +0.42521549 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 0.1− | 0.3− | 2002 09 15 | 644 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 08 15 | 644 | 0.4+ | 0.0 | 2002 09 15 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 08 15 | 644 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 10 27 | 703 | (0.0 | 1.7−) |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.9− |
| 2002 08 17 | 644 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.2− | 2006 10 27 | 703 | 0.1− | 1.5− |
| 2002 08 17 | 644 | 0.0 | 0.3+ | 2006 10 13 | 691 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.9− |
| 2002 08 19 | 644 | 0.7− | 0.3+ | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 10 29 | 704 | 0.9+ | 0.1− |
| 2002 08 19 | 644 | 0.2+ | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 10 29 | 704 | 0.2− | 0.4+ |
| 2002 08 19 | 644 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.3− | 2006 10 29 | 704 | (1.7+ | 0.1−) |
| 2002 08 29 | 644 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.7+ | 2006 10 29 | 704 | 0.6− | 0.4+ |
| 2002 08 29 | 644 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.9− | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2002 08 29 | 644 | 0.1+ | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2002 08 30 | 644 | 0.1+ | 0.8+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.5− |
| 2002 08 30 | 644 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.4− | 2006 11 01 | G96 | (0.0 | 2.0−) |
| 2002 08 30 | 644 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.5+ | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2002 09 04 | 644 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.6+ |
| 2002 09 04 | 644 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2002 09 04 | 644 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2002 09 15 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ | | | | |

**2002 QV$_{29}$ = 2006 SS$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.49646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26231057 | $\omega$ | 252.53891 | | +0.61617503 | +0.78631117 | |
| $a$ | 2.4169010 | $\Omega$ | 55.58449 | | −0.70023414 | +0.57318749 | |
| $e$ | 0.1983661 | $i$ | 3.14087 | | −0.36055580 | +0.23058804 | |
| $P$ | 3.76 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.2− | 0.1− | 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.7+ | |
| 1995 11 19 | 691 | 0.1− | 0.3+ | 2002 08 30 | 644 | 0.2− | 0.2− | 2006 10 01 | 691 | 0.0 | 1.1− | |
| 1995 11 19 | 691 | 0.3+ | 0.0 | 2002 08 30 | 644 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1+ | |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2002 08 30 | 644 | 0.1− | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.5− | |
| 2002 08 18 | 644 | 0.4+ | 0.1− | 2002 08 30 | 644 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.3+ | |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2002 08 30 | 644 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.2− | 0.6+ | |
| 2002 08 19 | 644 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.5− | |
| 2002 08 19 | 644 | 0.5− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.4− | 0.3− | |
| 2002 08 19 | 644 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.2− | |
| 2002 08 29 | 644 | 0.4+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.3− | |
| 2002 08 29 | 644 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.1− | 0.1− | | | | | |
| 2002 08 29 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.0 | | | | | |

**2002 QA$_{30}$ = 2006 QO$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.57270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25939082 | $\omega$ | 354.55765 | | +0.84005707 | −0.54077934 | |
| $a$ | 2.4350038 | $\Omega$ | 38.28113 | | +0.50032294 | +0.74154735 | |
| $e$ | 0.1530689 | $i$ | 3.99381 | | +0.20971665 | +0.39707082 | |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.4+ | 0.1+ | 2006 08 22 | 644 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.7− | 0.3− | |
| 1991 11 06 | 691 | 0.3− | 0.3− | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.2+ | |
| 2002 08 18 | 644 | 0.2+ | 0.4− | 2006 08 22 | 644 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.3+ | |
| 2002 08 18 | 644 | 0.3+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 1.1+ | 0.8− | |
| 2002 08 18 | 644 | 0.7+ | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.4+ | |
| 2002 08 29 | 644 | 0.2− | 0.1− | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.9− | 1.3+ | |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 09 12 | 703 | (0.2− | 1.7+) | 2006 10 16 | 703 | 0.6− | 1.1− | |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.3+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.4− | |
| 2002 08 30 | 644 | 0.5− | 0.1− | 2006 09 12 | 703 | (1.9+ | 1.0+) | 2006 10 20 | G96 | 0.4+ | 0.1− | |
| 2002 08 30 | 644 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.3− | |
| 2002 08 30 | 644 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.3− | |
| 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3+ | |
| 2005 05 10 | G96 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 11 17 | G96 | 0.2− | 0.1− | |
| 2005 05 10 | G96 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.8+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.1− | |
| 2005 05 10 | G96 | (1.0+ | 2.0+) | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.0 | |

**2002 QP$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.45741 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26186398 | $\omega$ | 325.37799 | | +0.99218659 | −0.12238562 | |
| $a$ | 2.4196481 | $\Omega$ | 41.67281 | | +0.12111836 | +0.89823529 | |
| $e$ | 0.2066880 | $i$ | 2.08927 | | +0.02993517 | +0.42213164 | |
| $P$ | 3.76 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.3− | 0.4− | 2002 08 30 | 644 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.6+ | |
| 2002 08 08 | 644 | 0.2+ | 0.0 | 2002 08 30 | 644 | 0.2+ | 0.7− | 2006 10 21 | 703 | (0.6+ | 2.3+) | |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2002 08 30 | 644 | 0.3+ | 0.6− | 2006 10 21 | 703 | (2.4+ | 2.5+) | |
| 2002 08 11 | 644 | 0.0 | 0.3+ | 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.8+ | |
| 2002 08 11 | 644 | 0.6+ | 0.6− | 2002 09 15 | 644 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.3+ | |
| 2002 08 11 | 644 | 0.1+ | 0.2+ | 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.3− | |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2002 08 18 | 644 | 0.1+ | 0.6+ | 2006 10 15 | 703 | (1.7− | 0.7+) | 2006 10 27 | G96 | 0.5− | 0.5− | |
| 2002 08 19 | 644 | 0.1− | 0.5− | 2006 10 15 | 703 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.4− | 0.3− | |
| 2002 08 19 | 644 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.6+ | 0.8− | 2006 10 27 | G96 | 0.6+ | 0.2− | |
| 2002 08 19 | 644 | 0.2− | 0.7− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− | |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.3− | 1.0+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | |
| 2002 08 29 | 644 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.2+ | |

**2002 QN$_{31}$ = 2006 UD$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.90436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26998181 | $\omega$ | 248.79261 | | +0.57582304 | +0.81632211 | |
| $a$ | 2.3708990 | $\Omega$ | 56.44499 | | −0.72854321 | +0.53743884 | |
| $e$ | 0.1930606 | $i$ | 3.11144 | | −0.37101565 | +0.21160743 | |
| $P$ | 3.65 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2− | 0.2− | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1− | |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.2+ | |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2002 08 30 | 644 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.4+ | |
| 2002 08 19 | 644 | 0.1+ | 0.1+ | 2002 08 30 | 644 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.7− | |
| 2002 08 19 | 644 | 0.1+ | 0.2− | 2002 08 30 | 644 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.0 | |
| 2002 08 19 | 644 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.0 | |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.0 | |

**2002 QQ$_{31}$ = 2006 ST$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.23638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25988645 | $\omega$ | 312.48605 | | +0.99606508 | +0.07887486 | |
| $a$ | 2.4319070 | $\Omega$ | 43.03654 | | −0.05338662 | +0.89797860 | |
| $e$ | 0.2326513 | $i$ | 3.39472 | | −0.07074052 | +0.43291246 | |
| $P$ | 3.79 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2+ | 0.8+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.3+ | |
| 2002 08 18 | 644 | 0.1+ | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.9+ | 0.6− | |
| 2002 08 18 | 644 | 0.3− | 0.8+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.6− | |
| 2002 08 19 | 644 | 0.2+ | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.7− | |
| 2002 08 19 | 644 | 0.2+ | 0.8− | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.7+ | |
| 2002 08 19 | 644 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2+ | |
| 2002 08 29 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ | |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.1+ | |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3+ | |
| 2002 08 30 | 644 | 0.2− | 0.7− | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2− | |
| 2002 08 30 | 644 | 0.1− | 0.5− | 2006 10 17 | G96 | 0.0 | 0.9− | 2006 10 27 | G96 | 0.7+ | 0.5− | |
| 2002 08 30 | 644 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.0 | 1.0− | 2006 10 27 | G96 | 0.4+ | 0.4− | |
| 2002 09 16 | 644 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.3− | |
| 2002 09 16 | 644 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.3− | |
| 2002 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.4+ | |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 | |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.4− | 0.1+ | |

**2002 QO$_{32}$ = 2006 UZ$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.52033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26521027 | $\omega$ | 356.63381 | | +0.97317850 | +0.22982818 | |
| $a$ | 2.3992518 | $\Omega$ | 350.06174 | | −0.20967340 | +0.86799609 | |
| $e$ | 0.2059869 | $i$ | 3.36480 | | −0.09466080 | +0.44018383 | |
| $P$ | 3.72 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2002 09 07 | 704 | 0.9+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2+ | |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2002 09 12 | 644 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.5+ | 0.1+ | |
| 2002 08 29 | 644 | 0.3+ | 0.4− | 2002 09 12 | 644 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.5+ | 0.1− | |
| 2002 08 30 | 644 | 0.2+ | 0.1− | 2002 09 12 | 644 | 0.2− | 0.2− | 2006 10 23 | 691 | 1.1− | 0.2− | |
| 2002 08 30 | 644 | 0.3+ | 0.3− | 2002 09 14 | 644 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.6− | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2002 09 14 | 644 | 1.2− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2002 09 05 | 704 | 0.6− | 0.9− | 2002 09 14 | 644 | 0.4− | 0.5− | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | 0.2− | 0.3− | 2002 09 14 | 608 | 0.4+ | 1.4+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.1− | 0.2− | 2002 09 14 | 608 | 0.0 | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.1− | | |
| 2002 09 05 | 704 | 0.6+ | 0.7+ | 2002 09 14 | 608 | 1.0+ | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.3− | | |
| 2002 09 07 | 704 | 1.0+ | 0.0 | 2002 09 16 | 644 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.0 | | |
| 2002 09 07 | 704 | 1.0− | 0.2+ | 2002 09 16 | 644 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2002 09 16 | 644 | 0.2− | 0.1− | | | | | | |

**2002 QU$_{32}$ = 2006 SW$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 35.47025 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.26086298 | $\omega$ | 216.69380 | | +0.87106138 | | +0.49008720 | |
| $a$ | 2.4258340 | $\Omega$ | 113.92912 | | −0.44172501 | | +0.81070884 | |
| $e$ | 0.1620832 | $i$ | 2.04761 | | −0.21478147 | | +0.32025883 | |
| $P$ | 3.78 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.2+ | 0.1− | 2002 09 12 | 644 | 0.2− | 0.3− | 2006 10 01 | 691 | 0.3+ | 0.2+ | | |
| 2002 08 20 | 644 | 0.3+ | 0.9− | 2002 09 15 | 644 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.2+ | 0.1+ | | |
| 2002 08 20 | 644 | 0.2+ | 0.1− | 2002 09 15 | 644 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.5− | 0.2− | | |
| 2002 08 29 | 644 | 0.3+ | 0.1+ | 2002 09 15 | 644 | 0.1+ | 0.7− | 2006 10 22 | 691 | 0.2+ | 0.2− | | |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.4+ | 0.4+ | 2006 10 22 | 691 | 0.7− | 0.2− | | |
| 2002 08 29 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.4− | | |
| 2002 08 30 | 644 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.3− | | |
| 2002 08 30 | 644 | 0.4− | 0.3− | 2006 09 23 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2002 08 30 | 644 | 0.5+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.8+ | 0.2− | | |
| 2002 09 05 | 704 | 0.5+ | 0.8+ | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2002 09 05 | 704 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.4− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2002 09 12 | 644 | 0.5− | 0.5− | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.0 | | |
| 2002 09 12 | 644 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.5+ | 0.1− | | | | | | |

**2002 QC$_{33}$ = 2006 SS$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 79.36524 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.26602561 | $\omega$ | 118.64929 | | +0.37648041 | | +0.92637349 | |
| $a$ | 2.3943470 | $\Omega$ | 173.44402 | | −0.87694987 | | +0.35974117 | |
| $e$ | 0.0894031 | $i$ | 4.88819 | | −0.29869957 | | +0.11143806 | |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 691 | 0.3− | 0.9+ | 2005 04 04 | G96 | 0.3− | 0.2+ | 2006 10 21 | 703 | (1.8− | 1.3+) | | |
| 2001 03 22 | 691 | 0.7+ | 0.6+ | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.4+ | | |
| 2001 03 22 | 691 | 0.3+ | 0.5+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 10 21 | 703 | 1.1− | 0.5− | | |
| 2002 08 29 | 644 | 0.4− | 0.7+ | 2005 05 14 | 644 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.3+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.7+ | 2005 05 14 | 644 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.1+ | 0.3+ | 2005 05 14 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− | | |
| 2002 08 30 | 644 | 0.1+ | 0.9+ | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.3− | 0.2− | | |
| 2002 08 30 | 644 | 0.1− | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2002 08 30 | 644 | (2.7+ | 1.3+) | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ | | |
| 2002 09 12 | 644 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.3+ | | |
| 2002 09 12 | 644 | 0.3− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.2+ | | |
| 2002 09 12 | 644 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2002 09 14 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.6− | 1.0− | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2002 09 14 | 644 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.7− | 1.1+ | 2006 10 31 | G96 | 0.2+ | 0.0 | | |
| 2005 04 04 | G96 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.7+ | 1.0+ | | | | | | |

**2002 QO$_{33}$ = 2006 SC$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 11.20178 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.26284351 | $\omega$ | 328.23174 | | +0.99396215 | | −0.10350332 | |
| $a$ | 2.4136329 | $\Omega$ | 37.76229 | | +0.10893818 | | +0.89126278 | |
| $e$ | 0.2108682 | $i$ | 3.40939 | | +0.01310443 | | +0.44151752 | |
| $P$ | 3.75 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.7− | 2006 10 27 | 691 | 0.4− | 0.6+ | | |
| 1991 11 06 | 691 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.7− | 2006 10 27 | 691 | 0.2− | 0.1+ | | |
| 2002 08 19 | 644 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.2− | | |
| 2002 08 19 | 644 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 11 13 | 644 | 0.0 | 0.4+ | | |
| 2002 08 19 | 644 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 13 | 644 | 0.4+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.1− | | |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2002 08 30 | 644 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.5+ | 0.2− | | |
| 2002 08 30 | 644 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2002 08 30 | 644 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.6+ | 0.1− | | |
| 2006 09 30 | 703 | 1.0− | 0.9− | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.2− | | |
| 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.0 | | |
| 2006 09 30 | 703 | 0.7− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 27 | G96 | 0.1− | 1.6− | | |

**2002 QG$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 31.71708 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.26277803 | $\omega$ | 301.13616 | | +0.91579232 | | +0.40124568 | |
| $a$ | 2.4140338 | $\Omega$ | 35.21692 | | −0.35702090 | | +0.83381194 | |
| $e$ | 0.1889676 | $i$ | 1.79514 | | −0.18401226 | | +0.37915638 | |
| $P$ | 3.75 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2005 04 11 | G96 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.0 | 0.4+ | 2005 04 11 | G96 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2002 08 30 | 644 | 0.1− | 0.9+ | 2005 05 11 | G96 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.3− | | |
| 2002 08 30 | 644 | 0.4+ | 1.1+ | 2005 05 11 | G96 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2002 08 30 | 644 | 0.3+ | 1.0+ | 2005 05 11 | G96 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2005 05 11 | G96 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 2002 09 05 | 704 | 0.9+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.0 | | |
| 2002 09 05 | 704 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.7− | 2006 10 29 | 691 | 0.1+ | 0.1− | | |
| 2002 09 05 | 704 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 29 | 691 | 0.0 | 0.1− | | |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.6− | 2006 11 10 | 691 | 0.3+ | 0.4+ | | |
| 2002 09 06 | 704 | 0.1+ | 0.5− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2002 09 06 | 704 | 0.9− | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.4+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.5− | 1.0− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.3− | 1.0− | | |
| 2002 09 08 | 608 | 0.5− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 1.5− | 0.3− | | |
| 2002 09 08 | 608 | 0.6− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.2− | | |
| 2002 09 08 | 608 | 0.7− | 0.5+ | 2006 10 04 | G96 | 0.5− | 0.4− | 2006 11 11 | 703 | 0.7+ | 1.4+ | | |
| 2002 09 13 | 704 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2002 09 13 | 704 | 0.4+ | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2002 09 13 | 704 | 0.5− | 0.8+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2004 01 28 | 691 | 0.2+ | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 25 | 703 | 0.6+ | 0.4+ | | |
| 2004 01 28 | 691 | 0.5+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 25 | 703 | 0.2− | 0.9+ | | |
| 2004 01 28 | 691 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 25 | 703 | 0.9− | 0.5− | | |
| 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 0.6− | 0.5− | | |
| 2005 04 02 | G96 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.1+ | | |
| 2005 04 02 | G96 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2005 04 02 | G96 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2005 04 11 | G96 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1− | | | | | | |

### 2002 $QU_{34}$ = 2006 $RX_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.67696 | | | (2000.0) | | |
| $n$ | 0.25974023 | $\omega$ | 11.81637 | | +0.74213525 | −0.66892102 |
| $a$ | 2.4328196 | $\Omega$ | 30.30093 | | +0.60793058 | +0.64529140 |
| $e$ | 0.1353934 | $i$ | 4.79663 | | +0.28223338 | +0.36897654 |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.3− | 0.5− | 2006 09 20 | 704 | 0.6− | 0.3− | 2006 11 02 | G96 | (0.6+ | 1.6+) |
| 2002 08 19 | 644 | 0.1− | 0.5− | 2006 09 20 | 704 | 0.5− | 0.4+ | 2006 11 02 | G96 | (0.5+ | 2.0+) |
| 2002 08 19 | 644 | 0.1+ | 0.8− | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 11 02 | G96 | 0.1− | 1.1+ |
| 2002 08 29 | 644 | 0.5− | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.3+ | 2006 11 02 | G96 | 0.2− | 0.8+ |
| 2002 08 29 | 644 | 0.6− | 0.6+ | 2006 10 15 | 703 | 0.4− | 0.0 | 2006 11 02 | G96 | 0.6+ | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.8+ | 2006 10 15 | 703 | 0.7− | 0.4+ | 2006 11 02 | G96 | 0.1+ | 0.4− |
| 2002 08 30 | 644 | 0.4− | 0.3− | 2006 10 15 | 703 | 0.4− | 0.2+ | 2006 11 02 | G96 | 0.3+ | 0.1+ |
| 2002 08 30 | 644 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 02 | G96 | 0.4+ | 0.1+ |
| 2002 08 30 | 644 | 0.0 | 0.6− | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.5+ | 0.1+ |
| 2002 09 03 | 608 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.3+ | 0.2− |
| 2002 09 03 | 608 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2002 09 03 | 608 | 0.4+ | 1.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 02 | G96 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2002 09 06 | 704 | 1.3+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2002 09 16 | 644 | 0.6− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 2002 09 16 | 644 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2002 09 16 | 644 | 0.5− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.8+ | 0.3+ |
| 2004 02 16 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2004 02 16 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2006 09 14 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2006 09 14 | 691 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.1− |

### 2002 $QC_{37}$ = 2006 $SH_{148}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.55792 | | | (2000.0) | | |
| $n$ | 0.25503022 | $\omega$ | 198.54562 | | −0.59653457 | +0.80232274 |
| $a$ | 2.4626817 | $\Omega$ | 34.84072 | | −0.73172033 | −0.53313239 |
| $e$ | 0.0500642 | $i$ | 2.06733 | | −0.32974516 | −0.26841772 |
| $P$ | 3.86 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 291 | 0.0 | 0.1− | 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.1− |
| 2002 08 30 | 291 | 0.1− | 0.3− | 2002 09 15 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 291 | 0.3+ | 0.3− |
| 2002 08 30 | 291 | 0.1− | 0.2− | 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 09 19 | 291 | 0.4+ | 0.2− |
| 2002 08 31 | 291 | 0.0 | 0.2− | 2002 09 16 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.0 |
| 2002 08 31 | 291 | 0.3− | 0.0 | 2002 09 16 | 644 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.4− | 0.4− |
| 2002 08 31 | 291 | 0.2− | 0.0 | 2002 09 16 | 644 | 0.5+ | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2002 09 13 | 644 | 0.2− | 0.8+ | 2003 12 22 | 704 | 0.1− | 0.6− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2003 12 22 | 704 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2002 09 13 | 644 | 0.0 | 0.4+ | 2003 12 22 | 704 | 0.6+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 09 15 | 644 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.6+ |
| 2002 09 15 | 644 | 0.5+ | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 10 12 | 644 | 0.6− | 0.2+ |
| 2002 09 15 | 644 | 0.3+ | 0.5+ | 2006 09 19 | 291 | 0.2+ | 0.1− | | | | |

### 2002 $QY_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.42504 | | | (2000.0) | | |
| $n$ | 0.18955561 | $\omega$ | 221.07760 | | −0.42724837 | +0.90404358 |
| $a$ | 3.0013153 | $\Omega$ | 23.63785 | | −0.82095450 | −0.38196791 |
| $e$ | 0.2002391 | $i$ | 1.83050 | | −0.37880408 | −0.19184817 |
| $P$ | 5.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 291 | 0.3+ | 0.2− | 2006 02 22 | G96 | 0.0 | 0.4+ | 2006 04 21 | 703 | 1.5− | 0.6− |
| 2002 08 30 | 291 | 0.1+ | 0.1+ | 2006 02 22 | G96 | 0.5+ | 0.5− | 2006 05 02 | G96 | 0.1+ | 0.2− |
| 2002 08 30 | 291 | 0.4+ | 0.2− | 2006 02 22 | G96 | 0.4+ | 0.3+ | 2006 05 02 | G96 | 0.1− | 0.1− |
| 2002 08 31 | 291 | 0.1− | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.6+ | 2006 05 02 | G96 | 0.1+ | 0.1− |
| 2002 08 31 | 291 | 0.2− | 0.1− | 2006 03 25 | G96 | 0.0 | 0.2+ | 2006 05 02 | G96 | 0.3+ | 0.1− |
| 2002 08 31 | 291 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.1+ | 0.6+ | 2006 05 19 | 703 | 0.4− | 0.3+ |
| 2002 10 08 | 291 | 0.6− | 0.3+ | 2006 03 25 | G96 | 0.1+ | 0.6+ | 2006 05 19 | 703 | 1.6+ | 0.3− |
| 2002 10 08 | 291 | 0.2+ | 0.0 | 2006 04 21 | 703 | 1.3− | 0.5+ | 2006 05 19 | 703 | 1.4+ | 0.1+ |
| 2002 10 08 | 291 | 0.2− | 0.1+ | 2006 04 21 | 703 | 0.5− | 0.5− | 2006 05 19 | 703 | 0.4+ | 0.2− |
| 2006 02 22 | G96 | 0.0 | 0.0 | 2006 04 21 | 703 | 0.7− | 0.2− | | | | |

### 2002 $QM_{41}$ = 2006 $TZ_{76}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.70169 | | | (2000.0) | | |
| $n$ | 0.27572345 | $\omega$ | 9.30802 | | +0.97971691 | +0.19606199 |
| $a$ | 2.3378694 | $\Omega$ | 339.24522 | | −0.19054908 | +0.84756733 |
| $e$ | 0.1268984 | $i$ | 6.71004 | | −0.06201470 | +0.49314230 |
| $P$ | 3.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.2+ | 0.9− | 2002 09 05 | 699 | 0.8+ | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 08 13 | 704 | 1.0+ | 0.2+ | 2002 09 05 | 699 | 0.2+ | 1.5+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 08 13 | 704 | 0.6+ | 0.2+ | 2002 09 05 | 699 | 0.0 | 1.2− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 08 13 | 704 | 0.5− | 0.5+ | 2002 09 05 | 704 | 0.1− | 0.9+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 08 13 | 644 | 0.0 | 0.8− | 2002 09 05 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 08 13 | 704 | 0.3+ | 0.5+ | 2002 09 05 | 704 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 08 13 | 704 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.2− |
| 2002 08 13 | 644 | 0.1+ | 0.9− | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.8− |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.4− | 0.2+ |
| 2002 08 29 | 644 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.4− | 1.2+ | 2006 11 15 | 703 | 0.8+ | 0.3− |
| 2002 08 31 | 704 | 1.2− | 0.6− | 2006 10 19 | 703 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.6− | 0.4+ |
| 2002 08 31 | 704 | 0.6− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 22 | 703 | 1.0+ | 0.9− |
| 2002 08 31 | 704 | (1.8− | 1.0−) | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.0 | 0.7+ |
| 2002 09 05 | 699 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 22 | 703 | 0.6− | 0.2− |

### 2002 $QP_{42}$ = 2006 $MV_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.46560 | | | (2000.0) | | |
| $n$ | 0.24022145 | $\omega$ | 293.22668 | | +0.78747365 | −0.59006211 |
| $a$ | 2.5628795 | $\Omega$ | 103.39617 | | +0.61093356 | +0.70905228 |
| $e$ | 0.3113704 | $i$ | 10.54801 | | +0.08151955 | +0.38609787 |
| $P$ | 4.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.2− | 0.3+ | 2002 08 30 | 644 | 0.0 | 0.1− | 2002 08 31 | 704 | 0.7− | 0.5+ |
| 2002 07 15 | 644 | 0.1+ | 0.1− | 2002 08 30 | 644 | 0.0 | 0.4+ | 2006 06 17 | 691 | 0.1− | 0.3+ |
| 2002 07 15 | 644 | 0.4− | 0.2+ | 2002 08 30 | 644 | 0.1− | 0.0 | 2006 06 17 | 691 | 0.2+ | 0.1+ |
| 2002 08 13 | 704 | 0.2+ | 0.3− | 2002 08 30 | 644 | 0.1+ | 0.0 | 2006 06 17 | 691 | 0.0 | 0.3− |
| 2002 08 13 | 704 | 0.6+ | 1.0− | 2002 08 30 | 644 | 0.6− | 0.5− | 2006 06 21 | 691 | 0.8− | 0.4+ |
| 2002 08 13 | 704 | 0.0 | 0.4+ | 2002 08 30 | 644 | 0.3+ | 0.1+ | 2006 06 21 | 691 | 0.8+ | 0.4− |
| 2002 08 13 | 704 | 0.0 | 0.3− | 2002 08 31 | 704 | 0.7+ | 0.6+ | 2006 06 21 | 691 | 0.1− | 0.1− |
| 2002 08 13 | 704 | 0.5+ | 0.1− | 2002 08 31 | 704 | 0.5− | 0.1− | | | | |

**2002 QZ$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.73732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24073285 | $\omega$ | 133.96091 | | +0.95741733 | +0.27185735 | |
| $a$ | 2.5592486 | $\Omega$ | 210.65033 | | −0.28763493 | +0.92717992 | |
| $e$ | 0.3720152 | $i$ | 10.99023 | | +0.02486357 | +0.25774209 | |
| $P$ | 4.09 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.1− | 0.1+ | 2002 09 28 | 644 | 0.2− | 0.5− | 2002 10 31 | 704 | 0.8+ | 0.4− |
| 1998 10 13 | 691 | 0.1+ | 0.4+ | 2002 09 28 | 644 | 0.2− | 0.4− | 2002 10 31 | 704 | 0.2− | 0.4− |
| 1998 10 13 | 691 | 0.0 | 0.0 | 2002 09 28 | 644 | 0.3− | 0.6− | 2002 10 31 | 704 | 0.2+ | 0.4− |
| 2002 08 15 | 704 | 0.3− | 0.2− | 2002 10 04 | 644 | 0.3− | 0.0 | 2002 10 31 | 704 | 0.3− | 0.7+ |
| 2002 08 15 | 704 | 0.7+ | 0.5+ | 2002 10 04 | 644 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.3+ | 0.3− |
| 2002 08 15 | 704 | 0.9+ | 0.3+ | 2002 10 04 | 644 | 0.1− | 0.2− | 2006 08 28 | 691 | 0.3− | 0.6+ |
| 2002 08 30 | 704 | 0.2− | 0.1+ | 2002 10 12 | 704 | 0.4+ | 0.4+ | 2006 08 28 | 691 | 0.4+ | 0.4− |
| 2002 08 30 | 704 | 0.3+ | 0.7+ | 2002 10 12 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.9− | 0.2− |
| 2002 08 30 | 704 | 0.5+ | 1.2+ | 2002 10 12 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.4− |
| 2002 09 03 | 644 | 0.1− | 0.6− | 2002 10 12 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 1.0− | 1.0− |
| 2002 09 03 | 644 | 0.7− | 1.1+ | 2002 10 12 | 704 | 0.5+ | 0.7− | 2006 09 19 | 703 | 0.6− | 0.8− |
| 2002 09 03 | 644 | 0.0 | 0.7+ | 2002 10 30 | 644 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.6+ |
| 2002 09 26 | 608 | (1.3− | 2.2−) | 2002 10 30 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.8+ | 1.2+ |
| 2002 09 26 | 608 | 1.4− | 1.4− | 2002 10 30 | 644 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 2002 09 26 | 608 | (1.3− | 2.0−) | 2002 10 31 | 704 | 0.3− | 0.8− | 2006 09 26 | 703 | 0.2− | 0.2+ |

**2002 QX$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.78772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00767660 | $\omega$ | 3.55885 | | +0.17180891 | +0.97706903 | |
| $a$ | 25.4501301 | $\Omega$ | 276.36301 | | −0.90693531 | +0.10702974 | |
| $e$ | 0.3735540 | $i$ | 7.27018 | | −0.38464275 | +0.18406721 | |
| $P$ | 128.39 | $H$ | 8.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.4− | 1.3+ | 2006 09 20 | 705 | 0.1+ | 0.1− | 2006 10 19 | 695 | 0.2− | 0.3+ |
| 2002 08 26 | 644 | 0.5− | 0.1− | 2006 09 20 | 705 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.1− | 0.3+ |
| 2002 08 26 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 705 | 0.1+ | 0.0 | 2006 10 20 | 695 | 0.1− | 0.2+ |
| 2002 09 09 | 675 | 0.1+ | 0.4− | 2006 09 27 | 705 | 0.1+ | 0.0 | 2006 10 20 | 705 | 0.0 | 0.1− |
| 2002 09 09 | 675 | 0.1+ | 0.1− | 2006 09 29 | 705 | 0.0 | 0.0 | 2006 10 20 | 705 | 0.1− | 0.1− |
| 2002 09 10 | 675 | 0.3+ | 0.3− | 2006 09 29 | 705 | 0.1− | 0.1− | 2006 10 22 | 705 | 0.0 | 0.0 |
| 2002 11 28 | 695 | 0.4+ | 0.5− | 2006 10 01 | 705 | 0.0 | 0.0 | 2006 10 22 | 705 | 0.0 | 0.1− |
| 2002 11 28 | 695 | 0.0 | 0.2− | 2006 10 01 | 705 | 0.1+ | 0.0 | 2006 10 27 | 705 | 0.0 | 0.2+ |
| 2006 08 28 | 705 | 0.0 | 0.1− | 2006 10 03 | 705 | 0.1+ | 0.0 | 2006 10 27 | 705 | 0.3− | 0.1− |
| 2006 08 28 | 705 | 0.1+ | 0.1− | 2006 10 03 | 705 | 0.1− | 0.0 | 2006 10 29 | 705 | 0.1− | 0.1− |
| 2006 09 11 | 705 | 0.0 | 0.1− | 2006 10 11 | 705 | 0.1+ | 0.1− | 2006 10 29 | 705 | 0.1− | 0.0 |
| 2006 09 11 | 705 | 0.0 | 0.0 | 2006 10 11 | 705 | 0.1+ | 0.0 | 2006 10 31 | 705 | 0.0 | 0.2+ |
| 2006 09 18 | 705 | 0.0 | 0.0 | 2006 10 14 | 705 | 0.0 | 0.0 | 2006 10 31 | 705 | 0.1+ | 0.2+ |
| 2006 09 18 | 705 | 0.0 | 0.0 | 2006 10 14 | 705 | 0.0 | 0.1− | | | | |

**2002 QC$_{49}$ = 2006 QW$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.96032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24404632 | $\omega$ | 190.61591 | | +0.95861941 | +0.28339544 | |
| $a$ | 2.5360309 | $\Omega$ | 152.87370 | | −0.25664527 | +0.90149132 | |
| $e$ | 0.1424300 | $i$ | 3.41078 | | −0.12321536 | +0.32710920 | |
| $P$ | 4.04 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2002 09 08 | 608 | 0.5− | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2002 08 27 | 644 | 0.6+ | 0.0 | 2002 09 15 | 644 | 0.6− | 0.9+ | 2006 08 28 | 691 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.3+ | 0.5− | 2002 09 15 | 644 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2002 08 29 | 644 | 0.2+ | 0.3− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2002 08 29 | 644 | 0.5+ | 0.6− | 2006 08 19 | 691 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2002 09 08 | 608 | 1.1− | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2002 09 08 | 608 | 0.3+ | 0.5+ | 2006 08 28 | 691 | 0.1− | 0.1+ | | | | |

**2002 QO$_{49}$ = 2006 SF$_{310}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.20199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26463514 | $\omega$ | 175.40959 | | −0.99588935 | −0.09057071 | |
| $a$ | 2.4027267 | $\Omega$ | 359.39032 | | +0.07923491 | −0.86487756 | |
| $e$ | 0.0708943 | $i$ | 6.27635 | | +0.04388889 | −0.49374462 | |
| $P$ | 3.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 25 | 675 | 1.3− | 0.5− | 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 1971 03 26 | 675 | 0.5+ | 0.9− | 2002 09 15 | 644 | 0.7+ | 0.2− | 2006 10 17 | 703 | 0.6− | 0.6− |
| 1971 03 26 | 675 | 0.9− | 1.5− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2002 08 20 | 644 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.9− | 1.2− |
| 2002 08 20 | 644 | 0.0 | 0.4− | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 1.3− | 0.7− |
| 2002 08 20 | 644 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2002 09 12 | 644 | 0.2− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2002 09 12 | 644 | 0.5+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.4− | 0.0 |
| 2002 09 12 | 644 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | | | | |

**2002 QW$_{50}$ = 2006 UN$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.70379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27274861 | $\omega$ | 262.79216 | | +0.56265532 | −0.82627811 | |
| $a$ | 2.3548379 | $\Omega$ | 152.91654 | | +0.77933221 | +0.51960668 | |
| $e$ | 0.1092797 | $i$ | 3.29183 | | +0.27579031 | +0.21742444 | |
| $P$ | 3.61 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2002 09 15 | 644 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2002 09 15 | 644 | 0.5− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 08 29 | 644 | 0.5− | 0.5− | 2006 10 18 | 691 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 09 08 | 608 | 0.7+ | 0.3+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2002 09 08 | 608 | 0.7+ | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2002 09 15 | 644 | 0.6− | 0.5− | 2006 10 22 | 691 | 0.4− | 0.0 | | | | |

**2002 QC$_{51}$ = 2006 SC$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.17286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24408236 | $\omega$ | 196.06047 | | +0.94952904 | −0.31366835 | |
| $a$ | 2.5357812 | $\Omega$ | 182.22503 | | +0.29466107 | +0.89477115 | |
| $e$ | 0.2394322 | $i$ | 3.83924 | | +0.10756137 | +0.31779986 | |
| $P$ | 4.04 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.4+ | 0.2− | 2002 09 09 | 644 | 0.2+ | 0.8+ | 2006 09 26 | 291 | 0.0 | 0.2+ |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2002 09 14 | 644 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.7− |
| 2002 08 28 | 644 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2002 09 08 | 608 | 0.3− | 0.3− | 2002 09 14 | 644 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.8− |
| 2002 09 08 | 608 | 0.6− | 0.0 | 2006 09 26 | 291 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.8− |
| 2002 09 08 | 608 | 0.1− | 0.0 | 2006 09 26 | 291 | 0.1+ | 0.3+ | | | | |

**2002 QQ$_{51}$ = 2006 RO$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.77105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25920437 | $\omega$ | 332.17854 | | +0.92081596 | +0.38999388 | |
| $a$ | 2.4361714 | $\Omega$ | 4.86822 | | −0.35409840 | +0.83782602 | |
| $e$ | 0.1926436 | $i$ | 1.11722 | | −0.16343894 | +0.38203708 | |
| $P$ | 3.80 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.3+ | 0.2− | 2002 09 04 | 644 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.4− | 0.1− |
| 2002 08 18 | 644 | 0.2− | 0.3− | 2002 09 04 | 644 | 0.0 | 1.1+ | 2006 09 26 | G96 | 0.3+ | 0.2+ |
| 2002 08 18 | 644 | 0.3− | 0.2− | 2002 09 15 | 644 | 0.6− | 0.7− | 2006 09 26 | G96 | 0.5+ | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.3− | 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.4+ | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.1− | 0.3+ |
| 2002 09 01 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.3+ | 0.4+ | 2006 10 03 | 691 | 0.2+ | 0.1+ |
| 2002 09 01 | 644 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.5+ | 0.6− | 2006 10 03 | 691 | 0.5− | 0.2+ |
| 2002 09 04 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.2− | | | | |

**2002 QV$_{52}$ = 2006 TZ$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 19.55879 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26170083 | | $\omega$ | 329.16556 | | +0.98126388 | | +0.19194301 | |
| $a$ | 2.4206536 | | $\Omega$ | 19.78892 | | −0.16517992 | | +0.88272949 | |
| $e$ | 0.2091830 | | $i$ | 2.82834 | | −0.09918059 | | +0.42888988 | |
| $P$ | 3.77 | | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.4+ | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.3− | 2.1−) |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6+ | 1.0− |
| 2002 08 29 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.8+ |
| 2002 08 29 | 644 | 0.7+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.2− | 1.1− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.2− |
| 2002 09 11 | 608 | 0.6− | 0.4− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 09 11 | 608 | 0.6− | 1.2− | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2002 09 11 | 608 | 0.0 | 0.7− | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2002 09 15 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.6+ | 0.5− |
| 2002 09 15 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 09 15 | 644 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.4+ | 0.3− |
| 2002 09 16 | 644 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.6− | 0.1+ |
| 2002 09 16 | 644 | 0.4− | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.7+ | 0.5− |

**2002 QX$_{52}$ = 2006 SC$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 4.51130 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26104162 | | $\omega$ | 12.65194 | | +0.98737432 | | −0.15838499 | |
| $a$ | 2.4247272 | | $\Omega$ | 356.45841 | | +0.14161214 | | +0.88960966 | |
| $e$ | 0.1952616 | | $i$ | 2.30039 | | +0.07097855 | | +0.42837934 | |
| $P$ | 3.78 | | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2002 08 18 | 644 | 0.4+ | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.1+ |
| 2002 08 18 | 644 | 0.6− | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 08 29 | 644 | 0.5+ | 0.0 | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 09 01 | 644 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 09 01 | 644 | 0.4− | 0.1+ | 2006 10 17 | 703 | 1.2− | 1.3− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2002 09 04 | 644 | 0.6+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.3− | 2006 11 14 | 703 | 2.5+ | 1.0− |
| 2002 09 04 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.4− | 2006 11 14 | 703 | 0.0 | 0.5− |
| 2002 09 15 | 644 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.6− | 2006 11 14 | 703 | 1.5− | 0.2− |
| 2002 09 15 | 644 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.6+ | 0.5− | 2006 11 14 | 703 | 0.2+ | 0.1+ |
| 2002 09 15 | 644 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.7− | 0.0 |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2006 07 21 | G96 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.3+ | 0.2− |
| 2006 07 21 | G96 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1− | | | | |

**2002 QD$_{53}$ = 2006 WO$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 340.83463 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28225962 | | $\omega$ | 33.36165 | | +0.33036045 | | −0.94375950 | |
| $a$ | 2.3016372 | | $\Omega$ | 37.35265 | | +0.86106115 | | +0.29552981 | |
| $e$ | 0.1452943 | | $i$ | 1.26702 | | +0.38656910 | | +0.14825700 | |
| $P$ | 3.49 | | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.0 | 0.0 | 2002 09 04 | 644 | 0.6+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.1+ |
| 1992 11 28 | 691 | 0.1+ | 0.4− | 2002 09 04 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 1992 11 28 | 691 | 0.1+ | 0.2− | 2002 09 15 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 1995 08 01 | 691 | 0.2− | 0.0 | 2002 09 15 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 1995 08 01 | 691 | 0.1− | 0.2− | 2002 09 15 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 1.1− | 0.1+ |
| 1995 08 01 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.3− | 2006 11 21 | 673 | 0.5− | 0.1+ |
| 2002 08 18 | 644 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 21 | 673 | 0.3− | 0.0 |
| 2002 08 18 | 644 | 0.5− | 0.5− | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 21 | 673 | 0.1− | 0.2− |
| 2002 08 18 | 644 | 0.9− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 08 29 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 673 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.3+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2002 08 29 | 644 | 0.6+ | 1.3+ | 2006 11 16 | 673 | 0.1+ | 0.2− | 2006 11 30 | 691 | 0.0 | 0.3+ |
| 2002 09 01 | 644 | 0.4+ | 0.1+ | 2006 11 16 | 673 | 0.2− | 0.2− | 2006 11 30 | 691 | 0.2+ | 0.1+ |
| 2002 09 01 | 644 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 30 | 691 | 0.3− | 0.0 |
| 2002 09 04 | 644 | 0.4+ | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.0 | | | | |

**2002 QF$_{54}$ = 2006 TL$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 2.75095 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26358577 | | $\omega$ | 187.95904 | | +0.95047132 | | −0.31074406 | |
| $a$ | 2.4090995 | | $\Omega$ | 190.15222 | | +0.28716077 | | +0.88596774 | |
| $e$ | 0.2182567 | | $i$ | 2.11711 | | +0.11892419 | | +0.34423726 | |
| $P$ | 3.74 | | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.4+ | 0.1+ | 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.9− |
| 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.8− |
| 2002 08 17 | 644 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.8+ |
| 2002 08 18 | 644 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 08 18 | 644 | 0.5− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.2+ | 0.1− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2002 08 28 | 644 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.7+ |
| 2002 09 05 | 608 | (1.9− | 0.8−) | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.9+ |
| 2002 09 05 | 608 | 0.6− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 1.3− |
| 2002 09 14 | 644 | 0.4+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.1− | 0.9− |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.2+ | | | | |

**2002 QK$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 56.29781 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26680889 | | $\omega$ | 7.99701 | | +0.57473617 | | +0.81780441 | |
| $a$ | 2.3896585 | | $\Omega$ | 297.08893 | | −0.75263709 | | +0.51406218 | |
| $e$ | 0.1864776 | | $i$ | 1.90324 | | −0.32127209 | | +0.25871998 | |
| $P$ | 3.69 | | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.7− | 0.4+ | 2002 09 14 | 644 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2002 08 17 | 644 | 0.1+ | 0.4− | 2002 09 14 | 644 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.2− |
| 2002 08 17 | 644 | 0.4+ | 0.4− | 2002 09 14 | 644 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2002 08 17 | 644 | 0.2− | 0.4− | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 2002 08 28 | 644 | 0.4+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2002 08 28 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.0 | 0.4− |
| 2002 08 28 | 644 | 0.2+ | 0.1− | 2006 10 03 | 691 | 0.4+ | 0.6− | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.4+ | 1.1+ | 2006 10 03 | 691 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.4+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.3+ | | |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.4− | 0.3− | 2006 11 11 | 691 | 0.6− | 0.1+ | | |
| 2002 09 05 | 608 | 0.8− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.6+ | | | | | | |

**2002 QS$_{54}$ = 2006 SU$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.00490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25812564 | $\omega$ | 95.94189 | | +0.34094224 | −0.93797620 | |
| $a$ | 2.4429540 | $\Omega$ | 333.84990 | | +0.79612970 | +0.32368041 | |
| $e$ | 0.2997560 | $i$ | 8.20799 | | +0.49993589 | +0.12422418 | |
| $P$ | 3.82 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.2+ | 0.1+ | | |
| 2002 08 17 | 644 | 0.3+ | 0.0 | 2006 09 20 | 703 | 0.0 | 0.5− | 2006 10 11 | 691 | 0.2+ | 0.1+ | | |
| 2002 08 17 | 644 | 0.9− | 0.0 | 2006 09 20 | 703 | 0.1+ | 1.3− | 2006 10 17 | 691 | 0.3− | 0.1+ | | |
| 2002 08 18 | 644 | 0.1− | 1.4+ | 2006 09 20 | 703 | (3.2− | 2.8−) | 2006 10 17 | 691 | 0.3− | 0.0 | | |
| 2002 08 18 | 644 | 0.1− | 1.3+ | 2006 09 25 | 704 | 1.3+ | 0.8+ | 2006 10 17 | 691 | 0.3− | 0.1− | | |
| 2002 08 28 | 644 | 0.5+ | 0.8− | 2006 09 25 | 704 | 1.0− | 0.8+ | 2006 10 17 | 703 | 0.1+ | 0.3+ | | |
| 2002 08 28 | 644 | 0.3+ | 1.0− | 2006 09 25 | 704 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.0 | 1.1− | | |
| 2002 08 28 | 644 | 0.5+ | 0.8− | 2006 09 25 | 704 | (0.8− | 1.6+) | 2006 10 17 | 703 | 0.3+ | 0.4− | | |
| 2002 09 14 | 644 | 0.4− | 0.5− | 2006 09 25 | 704 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.8+ | 0.3− | | |
| 2002 09 14 | 644 | 0.2− | 0.2− | 2006 09 25 | 704 | 0.4− | 1.2+ | 2006 10 17 | 703 | 1.0+ | 0.3− | | |
| 2002 09 14 | 644 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.4− | 0.6− | 2006 10 17 | 703 | 0.5+ | 0.3+ | | |
| 2006 08 28 | 703 | 1.0+ | 1.0+ | 2006 09 27 | 703 | 1.4− | 0.8− | 2006 10 17 | 703 | 0.5+ | 0.5+ | | |
| 2006 08 28 | 703 | 0.8+ | 0.1− | 2006 09 27 | 703 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.8− | | |
| 2006 08 28 | 703 | 0.8− | 0.5+ | 2006 09 27 | 703 | 0.4+ | 1.1− | 2006 10 19 | 691 | 0.2+ | 0.0 | | |
| 2006 08 28 | 703 | 1.3− | 0.9+ | 2006 10 03 | 703 | 0.4− | 1.2− | 2006 10 19 | 691 | 0.3+ | 0.0 | | |
| 2006 09 17 | 703 | 1.5+ | 0.7− | 2006 10 03 | 703 | 0.8− | 0.9− | 2006 10 19 | 691 | 0.3+ | 0.3+ | | |
| 2006 09 17 | 703 | 1.0+ | 0.1− | 2006 10 03 | 703 | 1.4− | 1.1− | 2006 10 21 | 691 | 0.4− | 0.3− | | |
| 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 03 | 703 | 1.4− | 0.7− | 2006 10 21 | 691 | 0.1+ | 0.4+ | | |
| 2006 09 17 | 703 | 0.7− | 0.1− | 2006 10 03 | 703 | 1.2− | 0.6− | 2006 10 21 | 691 | 0.3+ | 0.2+ | | |
| 2006 09 19 | 699 | 0.8+ | 1.0+ | 2006 10 03 | 703 | 0.0 | 0.7− | 2006 10 23 | 691 | 0.1+ | 0.3+ | | |
| 2006 09 19 | 699 | 0.2+ | 0.3− | 2006 10 03 | 703 | 0.3− | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.3+ | | |
| 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 03 | 703 | 0.5− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2006 09 19 | 699 | 0.7+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | | | | | | |

**2002 QU$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.12376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27656274 | $\omega$ | 220.18772 | | +0.97140206 | +0.23249877 | |
| $a$ | 2.3331371 | $\Omega$ | 126.30314 | | −0.19960241 | +0.90952630 | |
| $e$ | 0.2511353 | $i$ | 3.42821 | | −0.12859592 | +0.34453771 | |
| $P$ | 3.56 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 704 | 0.2+ | 0.4− | 2002 09 05 | 704 | 0.9+ | 0.6− | 2002 09 30 | 608 | 0.2+ | 0.5+ | | |
| 2002 08 10 | 704 | 0.2− | 0.1+ | 2002 09 05 | 704 | 0.6+ | 0.3− | 2002 09 30 | 608 | 0.1− | 0.2+ | | |
| 2002 08 10 | 704 | 0.2+ | 0.3− | 2002 09 05 | 704 | 0.0 | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.0 | | |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2002 09 15 | 644 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2002 09 15 | 644 | 0.1+ | 0.8+ | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2002 08 18 | 644 | 0.2− | 0.3+ | 2002 09 15 | 644 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2002 08 29 | 644 | 0.2− | 0.2+ | 2002 09 16 | 608 | 1.0− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1− | | |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2002 09 16 | 608 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.2− | | |
| 2002 08 29 | 644 | 0.3− | 0.2+ | 2002 09 16 | 608 | 0.0 | 0.5− | | | | | | |
| 2002 09 05 | 704 | 0.7+ | 0.4+ | 2002 09 30 | 608 | 0.0 | 0.4+ | | | | | | |

**2002 QB$_{55}$ = 2006 SU$_{303}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.97484 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25684566 | $\omega$ | 297.08155 | | +0.99929985 | +0.02485483 | |
| $a$ | 2.4510635 | $\Omega$ | 61.50584 | | −0.01115125 | +0.91134007 | |
| $e$ | 0.2320098 | $i$ | 1.82344 | | −0.03571363 | +0.41090330 | |
| $P$ | 3.84 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.3− | 0.0 | 2002 09 15 | 644 | 0.4− | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.1− | | |
| 2002 08 18 | 644 | 0.0 | 0.3− | 2002 09 15 | 644 | 0.4− | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 2002 08 18 | 644 | 0.8+ | 0.4+ | 2002 09 16 | 644 | 0.5+ | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.0 | | |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2002 09 16 | 644 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.1− | | |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.0 | | |
| 2002 09 01 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.0 | | |
| 2002 09 01 | 644 | 0.5− | 0.2− | 2006 09 27 | G96 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.6+ | 0.2− | | |
| 2002 09 04 | 644 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.8− | 0.8− | 2006 10 31 | G96 | 0.0 | 0.1+ | | |
| 2002 09 04 | 644 | 0.2+ | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.2+ | | |
| 2002 09 04 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.0 | | |
| 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2+ | | |

**2002 QP$_{55}$ = 2006 SK$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.87870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25777202 | $\omega$ | 267.71421 | | +0.72044040 | +0.69251438 | |
| $a$ | 2.4451877 | $\Omega$ | 48.45337 | | −0.61485314 | +0.66266295 | |
| $e$ | 0.2197022 | $i$ | 2.85483 | | −0.32081340 | +0.28513444 | |
| $P$ | 3.82 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.3− | | |
| 2002 08 18 | 644 | 0.3+ | 0.2− | 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.0 | | |
| 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.3− | 0.1− | | |
| 2002 08 19 | 644 | 0.5+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2002 08 19 | 644 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2002 08 19 | 644 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1+ | | |
| 2002 08 29 | 644 | 0.1− | 0.5− | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.6+ | 0.2− | | |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.3− | | |
| 2002 09 16 | 644 | 1.4− | 1.0+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2002 09 16 | 644 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.1+ | | |
| 2002 09 16 | 644 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | | | | | | |

**2002 QU$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.48829 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26374886 | $\omega$ | 306.75001 | | +0.99960402 | +0.02676334 | |
| $a$ | 2.4081063 | $\Omega$ | 51.71803 | | −0.02097201 | +0.91449839 | |
| $e$ | 0.2177545 | $i$ | 0.63433 | | −0.01876098 | +0.40370339 | |
| $P$ | 3.74 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 599 | 0.3+ | 0.7− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.4− | | |
| 2002 08 08 | 599 | 0.3− | 0.0 | 2006 10 12 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 1.0− | | |
| 2002 08 08 | 599 | 0.6− | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.2− | | |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 2002 08 29 | 644 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.2− | | |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.1− | | |
| 2002 09 04 | 644 | 0.6+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.4− | 0.2− | | |
| 2002 09 04 | 644 | 0.7+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.9+ | 0.2− | | |
| 2002 09 04 | 644 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.1− | 0.2+ | | |
| 2002 09 15 | 644 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.7+ | 1.1+ | | |
| 2002 09 15 | 644 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2002 09 16 | 644 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.3+ | | |
| 2002 09 16 | 644 | 0.5− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1− | | |
| 2002 09 16 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.5+ | 2006 11 27 | 703 | 0.5+ | 0.9− | | |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.3+ | 0.8− | 2006 11 27 | 703 | 0.7− | 1.0+ | | |
| 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.4− | | |
| 2006 07 21 | G96 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 2.5− | 1.0− | | |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.1− | | | | | | |

**2002 QE$_{56}$ = 2006 SN$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.58179 | | | (2000.0) | | |
| $n$ | 0.25504555 | $\omega$ | 331.13125 | | +0.99618868 | +0.08524398 |
| $a$ | 2.4625831 | $\Omega$ | 23.99985 | | −0.06872770 | +0.89758459 |
| $e$ | 0.2248395 | $i$ | 2.60439 | | −0.05370863 | +0.43252209 |
| $P$ | 3.86 | $H$ | 18.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.5+ | 0.3− | 2002 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 2002 08 18 | 644 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 2002 08 18 | 644 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.3− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 2002 08 29 | 644 | 0.3+ | 0.1− | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3+ |
| 2002 09 04 | 644 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 09 04 | 644 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2002 09 04 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2002 09 15 | 644 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.7− | 0.0 |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.5+ |
| 2002 09 15 | 644 | 0.6− | 1.0+ | 2006 09 28 | 691 | 0.3− | 0.3− | | | | |
| 2002 09 16 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.3− | | | | |

**2002 QT$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.46567 | | | (2000.0) | | |
| $n$ | 0.25894819 | $\omega$ | 247.05021 | | +0.95080604 | +0.30685338 |
| $a$ | 2.4377779 | $\Omega$ | 95.05876 | | −0.26628570 | +0.87970866 |
| $e$ | 0.1820833 | $i$ | 2.44712 | | −0.15830289 | +0.36325428 |
| $P$ | 3.81 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 608 | 0.4− | 0.4− | 2002 09 15 | 644 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2002 08 11 | 608 | 0.1+ | 0.1+ | 2002 09 15 | 644 | 0.0 | 0.2− | 2006 10 02 | 291 | 0.5− | 0.3+ |
| 2002 08 11 | 608 | 0.0 | 0.6+ | 2006 09 17 | 691 | 0.3+ | 0.2− | 2006 10 02 | 291 | 0.3− | 0.4+ |
| 2002 08 18 | 644 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 02 | 291 | 0.5− | 0.1+ |
| 2002 08 18 | 644 | 0.4+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.5+ | 0.5− |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | | | | |
| 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.4+ | | | | |

**2002 QU$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.98459 | | | (2000.0) | | |
| $n$ | 0.27012114 | $\omega$ | 44.83947 | | +0.98125969 | +0.18650294 |
| $a$ | 2.3700836 | $\Omega$ | 304.35295 | | −0.18912285 | +0.88402759 |
| $e$ | 0.1681531 | $i$ | 3.36345 | | −0.03690480 | +0.42861624 |
| $P$ | 3.65 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 30 | 608 | 0.4+ | 0.4− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 07 30 | 608 | 0.4− | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2002 07 30 | 608 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2002 08 09 | 608 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2002 08 09 | 608 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 1.0− |
| 2002 08 17 | 644 | 0.1+ | 0.0 | 2006 10 25 | D35 | 0.2+ | 0.2+ | 2006 11 14 | 703 | (0.7− | 1.8−) |
| 2002 08 17 | 644 | 0.0 | 0.2− | 2006 10 25 | D35 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.0 | 1.2− |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2006 10 25 | D35 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.5− | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.7+ |
| 2002 09 14 | 644 | 0.2+ | 0.7+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2002 09 28 | 608 | 0.0 | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2002 09 28 | 608 | 0.2− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | (2.3− | 1.2−) |
| 2002 09 28 | 608 | 0.1− | 0.5− | 2006 11 08 | 644 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.3+ | | | | |

**2002 QY$_{60}$ = 1999 TU$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 118.11732 | | | (2000.0) | | |
| $n$ | 0.29793987 | $\omega$ | 95.32658 | | +0.23271802 | +0.97251869 |
| $a$ | 2.2201567 | $\Omega$ | 188.14087 | | −0.91085323 | +0.21540924 |
| $e$ | 0.1805904 | $i$ | 2.85419 | | −0.34086465 | +0.08835304 |
| $P$ | 3.31 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.5− | 0.2− | 2002 08 28 | 644 | 0.2− | 0.4+ | 2005 06 06 | 691 | 0.0 | 0.3+ |
| 1999 10 04 | 691 | 0.4+ | 0.3− | 2002 08 28 | 644 | 0.2− | 0.4+ | 2005 06 06 | 691 | 0.1− | 0.3+ |
| 1999 10 04 | 691 | 0.1− | 0.2− | 2002 08 28 | 644 | 0.1− | 0.2+ | 2005 06 10 | 691 | 0.2− | 0.2+ |
| 1999 10 06 | 691 | 0.1+ | 0.1− | 2005 05 20 | G96 | 0.5− | 0.0 | 2005 06 10 | 691 | 0.2− | 0.4+ |
| 1999 10 06 | 691 | 0.2+ | 0.4+ | 2005 05 20 | G96 | 0.4− | 0.1− | 2005 06 10 | 691 | 1.3+ | 1.9− |
| 2002 08 17 | 644 | 0.1− | 0.0 | 2005 05 20 | G96 | 0.4− | 0.2− | 2005 06 27 | 691 | 0.0 | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.2− | 2005 05 20 | G96 | 0.8− | 0.2− | 2005 06 27 | 691 | 0.1+ | 0.1+ |
| 2002 08 17 | 644 | 0.4+ | 0.1− | 2005 06 06 | 691 | 0.4− | 0.3+ | 2005 06 27 | 691 | 0.0 | 0.2+ |

**2002 QG$_{61}$ = 2006 RL$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 313.00221 | | | (2000.0) | | |
| $n$ | 0.24531350 | $\omega$ | 225.65773 | | +0.81108014 | −0.58391495 |
| $a$ | 2.5272900 | $\Omega$ | 169.89948 | | +0.57689704 | +0.78878667 |
| $e$ | 0.1155675 | $i$ | 11.35532 | | +0.09663751 | +0.19198677 |
| $P$ | 4.02 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.1+ | 0.4− | 2002 08 28 | 644 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.4+ |
| 2002 08 16 | 644 | 0.3+ | 0.3− | 2002 08 28 | 644 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2002 08 16 | 644 | 0.3− | 0.3− | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2002 08 17 | 608 | 0.4+ | 0.6+ | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.8− | 0.5− |
| 2002 08 17 | 608 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.5− | 0.0 |
| 2002 08 17 | 608 | 0.6− | 1.3+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.7− | 0.1− |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.4+ | 0.3− | 2006 09 27 | G96 | 0.4− | 0.1− |

**2002 QB$_{62}$ = 2006 UZ$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 78.27685 | | | (2000.0) | | |
| $n$ | 0.27798256 | $\omega$ | 335.28757 | | +0.50415865 | +0.86263528 |
| $a$ | 2.3251859 | $\Omega$ | 324.94723 | | −0.77998983 | +0.43442699 |
| $e$ | 0.1506783 | $i$ | 4.09787 | | −0.37072891 | +0.25910145 |
| $P$ | 3.55 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 09 05 | 704 | 0.0 | 0.9+ | 2002 09 14 | 644 | 0.7− | 0.2− |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2002 09 05 | 704 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2002 09 05 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2002 08 17 | 644 | 0.2+ | 0.0 | 2002 09 05 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.4− |
| 2002 08 17 | 644 | 0.0 | 0.2+ | 2002 09 05 | 608 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.6+ | 0.5+ |
| 2002 08 27 | 644 | 0.3− | 0.2+ | 2002 09 05 | 608 | 0.1+ | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2002 08 27 | 644 | 0.2+ | 0.0 | 2002 09 14 | 644 | 0.9− | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2002 08 27 | 644 | 0.0 | 0.3− | 2002 09 14 | 644 | 0.6− | 0.0 | | | | |

### 2002 $QN_{62}$ = 2006 $SF_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.15054 | | $\omega$ | 72.80030 | +0.99642127 | −0.08261155 |
| $n$ | 0.25477226 | | $\Omega$ | 291.93546 | +0.06835927 | +0.91206273 |
| $a$ | 2.4643438 | | $i$ | 1.10496 | +0.04971574 | +0.40164277 |
| $e$ | 0.2104829 | | | | | |
| $P$ | 3.87 | | $H$ | 17.7 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.1− | 0.3− | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2002 08 17 | 644 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.3+ | 0.4− | 2006 09 17 | 703 | 0.2+ | 0.4− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | (0.9+ | 1.8+) | 2006 10 20 | G96 | 0.2− | 0.4+ |
| 2002 08 28 | 644 | 0.0 | 0.1− | 2006 09 20 | 704 | (0.6− | 2.1+) | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.8− | 1.3+ |
| 2002 09 14 | 644 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2+ |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.3− | 0.7− | 2006 11 15 | G96 | 0.7+ | 0.3− |
| 2006 09 16 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.6+ | | | | |

### 2002 $QL_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.76090 | | $\omega$ | 17.84150 | +0.81365486 | −0.58122083 |
| $n$ | 0.26105711 | | $\Omega$ | 17.71128 | +0.52838238 | +0.73063113 |
| $a$ | 2.4246313 | | $i$ | 2.29278 | +0.24244141 | +0.35827435 |
| $e$ | 0.1978846 | | | | | |
| $P$ | 3.78 | | $H$ | 17.3 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2001 05 23 | 807 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2002 08 18 | 644 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2002 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 691 | (0.5+ | 1.9−) | 2006 10 17 | 703 | 0.4− | 0.8− |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 17 | 703 | 1.0− | 0.2− |
| 2002 08 28 | 644 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 08 28 | 644 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2002 08 28 | 644 | 0.2+ | 0.2− | 2006 09 25 | G96 | (0.0 | 1.7+) | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2002 08 28 | 644 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 09 15 | 644 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 09 15 | 644 | 0.1+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 09 28 | 608 | 0.8− | 0.5+ | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 09 28 | 608 | (1.6− | 0.2+) | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.7− |
| 2002 09 28 | 608 | 0.9− | 0.6+ | 2006 10 15 | 703 | 0.6− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.7− | 0.3− | 2006 11 27 | G96 | 0.8+ | 1.0+ |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.8− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.9+ |
| 2006 09 18 | 699 | (0.6− | 1.5−) | 2006 10 16 | G96 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.3− | 0.3+ |
| 2006 09 18 | 699 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− | | | | |

### 2002 $QD_{64}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.08099 | | $\omega$ | 358.28841 | +0.97530073 | +0.22021883 |
| $n$ | 0.25101112 | | $\Omega$ | 348.94488 | −0.20158073 | +0.85577595 |
| $a$ | 2.4888998 | | $i$ | 5.11401 | −0.09029780 | +0.46813587 |
| $e$ | 0.2145671 | | | | | |
| $P$ | 3.93 | | $H$ | 17.2 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 30 | 608 | 0.9+ | 0.5+ | 2002 09 10 | 608 | 0.8+ | 0.1+ | 2006 09 19 | 699 | 1.0+ | 0.2+ |
| 2002 07 30 | 608 | 0.1+ | 0.0 | 2002 09 28 | 608 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.4+ | 0.3+ |
| 2002 08 08 | 644 | 0.2− | 0.1− | 2002 09 28 | 608 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.7+ |
| 2002 08 08 | 644 | 0.4− | 0.2− | 2002 09 28 | 608 | 0.1− | 0.8+ | 2006 09 20 | 704 | 1.2+ | 0.3+ |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.2− |
| 2002 08 09 | 608 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.6+ |
| 2002 08 09 | 608 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.8+ | 0.9+ |
| 2002 08 17 | 608 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.8− | 2006 09 27 | 704 | 0.6+ | 0.6+ |
| 2002 08 17 | 608 | 0.4+ | 0.0 | 2006 09 12 | 703 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.6+ | 0.3+ |
| 2002 08 17 | 608 | 0.3+ | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.8− | 2006 09 27 | 704 | 0.3+ | 1.0+ |
| 2002 08 18 | 644 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.5− | 0.4− | 2006 09 27 | G96 | 0.3− | 0.3− |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2002 08 28 | 644 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2002 08 28 | 644 | 0.3− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.3+ | 0.3− |
| 2002 09 05 | 704 | (0.2− | 1.7−) | 2006 09 19 | 703 | 0.1− | 0.8− | 2006 09 30 | 704 | (2.0− | 0.9+) |
| 2002 09 05 | 704 | 0.3+ | 1.4− | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 09 30 | 704 | 0.9− | 0.5+ |
| 2002 09 05 | 704 | 0.4+ | 1.4− | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2002 09 10 | 608 | 0.2− | 0.6− | 2006 09 19 | 703 | 1.1− | 0.8+ | 2006 10 19 | G96 | 0.6+ | 0.7− |
| 2002 09 10 | 608 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.0 | 0.6− | 2006 10 19 | G96 | 0.2− | 0.5− |

### 2002 $QM_{64}$ = 2006 $UG_{138}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.22829 | | $\omega$ | 342.94179 | +0.89612164 | +0.44355995 |
| $n$ | 0.27393374 | | $\Omega$ | 350.68523 | −0.39573023 | +0.78344758 |
| $a$ | 2.3480411 | | $i$ | 5.26465 | −0.20090691 | +0.43527515 |
| $e$ | 0.1460517 | | | | | |
| $P$ | 3.60 | | $H$ | 17.6 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 608 | 0.6+ | 0.0 | 2002 09 05 | 608 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.3+ |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2002 09 05 | 608 | 0.2− | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2002 08 18 | 644 | 0.5+ | 0.0 | 2002 09 10 | 608 | 0.6− | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2002 08 18 | 644 | 0.1+ | 0.4+ | 2002 09 15 | 644 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2002 08 18 | 644 | 0.2+ | 0.4+ | 2002 09 15 | 644 | 0.7+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.3− | 0.3− | 2006 11 27 | 291 | 0.5− | 0.7− |
| 2002 08 28 | 644 | 0.4− | 0.5− | 2006 10 19 | 691 | 0.2+ | 0.2− | 2006 11 27 | 291 | 0.3+ | 0.2+ |
| 2002 08 28 | 644 | 0.1− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 27 | 291 | 0.2+ | 0.3+ |
| 2002 08 28 | 644 | 0.8− | 0.6− | 2006 10 23 | 691 | 0.0 | 0.3+ | | | | |
| 2002 09 05 | 608 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3+ | | | | |

### 2002 $QR_{66}$ = 2006 $SA_{303}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.24999 | | $\omega$ | 58.06367 | +0.77062023 | −0.63646563 |
| $n$ | 0.26135054 | | $\Omega$ | 341.39992 | +0.54490941 | +0.68449214 |
| $a$ | 2.4228161 | | $i$ | 5.84740 | +0.33048176 | +0.35550248 |
| $e$ | 0.0900297 | | | | | |
| $P$ | 3.77 | | $H$ | 17.5 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.0 | 0.5− | 2002 08 29 | 644 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2002 08 29 | 644 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.4+ | 0.1− |
| 2002 08 08 | 644 | 0.2+ | 0.7− | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2002 08 18 | 644 | 0.6− | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.9− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2002 08 26 | 644 | 0.2+ | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2002 08 26 | 644 | 0.0 | 0.3− | 2006 08 21 | 691 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2002 08 26 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 | | | | |
| 2002 08 29 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.2+ | | | | |

### 2002 $QW_{66}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.03650 | | $\omega$ | 234.95508 | +0.96216652 | +0.26481572 |
| $n$ | 0.27274854 | | $\Omega$ | 109.61441 | −0.22253903 | +0.89954248 |
| $a$ | 2.3548383 | | $i$ | 3.90164 | −0.15720043 | +0.34741325 |
| $e$ | 0.1914487 | | | | | |
| $P$ | 3.61 | | $H$ | 18.2 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.7+ | 0.1− | 2002 09 15 | 644 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2002 08 08 | 644 | 0.3− | 0.1+ | 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2002 08 08 | 644 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.9− | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2002 08 18 | 644 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.4− | 0.7− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 08 30 | 644 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.3− |
| 2002 08 30 | 644 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 09 15 | 644 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.4+ | 0.0 | | | | |

**2002 QZ$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.90431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27457948 | $\omega$ | 228.38143 | | −0.94447727 | | −0.32332811 |
| $a$ | 2.3443583 | $\Omega$ | 292.67959 | | +0.31716314 | | −0.85059251 |
| $e$ | 0.0854643 | $i$ | 3.63481 | | +0.08585008 | | −0.41467013 |
| $P$ | 3.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 608 | 0.4+ | 0.1− | 2002 09 25 | 644 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 1.3− | 0.6+ |
| 2001 04 24 | 608 | 0.0 | 0.0 | 2002 09 25 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2001 04 24 | 608 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.8+ | 2006 10 17 | 703 | 0.9+ | 0.8+ |
| 2002 08 17 | 644 | 0.8+ | 0.2− | 2006 09 18 | 703 | 1.0+ | 0.2− | 2006 11 18 | G96 | 0.4− | 0.4− |
| 2002 08 17 | 644 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.7− | 0.6− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 08 17 | 644 | 0.5+ | 0.9− | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.2− |
| 2002 08 28 | 644 | 0.5− | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2002 08 28 | 644 | 0.7− | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.2+ | 2006 11 21 | 682 | 0.2− | 0.8− |
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 21 | 682 | 0.6+ | 0.2+ |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2− | | | | |
| 2002 09 14 | 644 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.8− | 0.0 | | | | |

**2002 QZ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.14244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26017005 | $\omega$ | 320.29479 | | +0.99567838 | | +0.08922460 |
| $a$ | 2.4301394 | $\Omega$ | 34.61208 | | −0.06942924 | | +0.89938380 |
| $e$ | 0.2123092 | $i$ | 2.59922 | | −0.06167777 | | +0.42795765 |
| $P$ | 3.79 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.0 | 0.3− | 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2002 07 23 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.4+ |
| 2002 07 23 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 1.1− | 0.6− |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2002 08 08 | 644 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 08 08 | 644 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2002 08 16 | 608 | 0.4− | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2002 08 16 | 608 | 0.5− | 0.6+ | 2006 10 15 | 703 | 1.5− | 0.6− | 2006 10 28 | 691 | 0.4+ | 0.5− |
| 2002 08 16 | 608 | 0.3− | 0.3+ | 2006 10 15 | 703 | 1.3+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.7− | 2006 10 15 | 703 | 0.6− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2002 08 18 | 644 | 0.3− | 0.3− | 2006 10 15 | 703 | (1.1+ | 2.2−) | 2006 11 01 | 691 | 0.4− | 0.3− |
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 08 28 | 644 | 0.5+ | 0.1− | 2006 10 16 | 291 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.1− |
| 2002 08 28 | 644 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.7− | 0.8+ |
| 2006 09 14 | 691 | 0.4+ | 0.5− | 2006 10 16 | 291 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.3+ |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 16 | 291 | 0.2− | 0.3+ | | | | |

**2002 QB$_{69}$ = 2006 SN$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.68992 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25094053 | $\omega$ | 166.82543 | | +0.98979895 | | +0.14246319 |
| $a$ | 2.4893665 | $\Omega$ | 184.98491 | | −0.13224064 | | +0.91472565 |
| $e$ | 0.2226528 | $i$ | 0.99633 | | −0.05301374 | | +0.37812858 |
| $P$ | 3.93 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.3+ | 0.2+ | 2002 09 14 | 644 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.2− |
| 2002 08 17 | 644 | 0.1− | 0.6− | 2004 02 26 | 695 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.8+ | 0.0 |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2004 02 26 | 695 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 08 27 | 644 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.6+ | 1.1+ | 2006 10 27 | G96 | 0.3+ | 0.6− |
| 2002 08 27 | 644 | 0.3+ | 0.1− | 2006 09 19 | 703 | 1.1− | 1.2+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 09 01 | 644 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2002 09 01 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.4− | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2002 09 14 | 644 | 0.3− | 0.5− | 2006 09 25 | G96 | 0.4− | 0.1+ | | | | |

**2002 QM$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.68450 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25605307 | $\omega$ | 241.74027 | | +0.99199533 | | −0.11529933 |
| $a$ | 2.4561189 | $\Omega$ | 124.83647 | | +0.12615335 | | +0.92277067 |
| $e$ | 0.2456599 | $i$ | 3.59675 | | −0.00553233 | | +0.36769600 |
| $P$ | 3.85 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.6+ | 0.2+ | 2002 08 19 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 07 23 | 644 | 0.2− | 0.3+ | 2002 08 19 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.8− |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2002 08 19 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2002 08 08 | 644 | 0.4− | 0.1+ | 2002 08 27 | 644 | 0.1− | 0.5− | 2006 10 22 | 703 | 0.4+ | 0.4+ |
| 2002 08 08 | 644 | 0.2− | 0.2+ | 2002 08 27 | 644 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.7+ | 1.0+ |
| 2002 08 16 | 608 | 0.0 | 0.5− | 2002 08 27 | 644 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2002 08 16 | 608 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.7− | 1.0+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2002 08 16 | 608 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.7− | 2006 11 24 | G96 | 0.7+ | 0.8− |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.2− | | | | |

**2002 QD$_{70}$ = 2006 RR$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.30641 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25976442 | $\omega$ | 39.85593 | | +0.98221549 | | −0.18717021 |
| $a$ | 2.4326686 | $\Omega$ | 330.92161 | | +0.16354560 | | +0.89169115 |
| $e$ | 0.2156195 | $i$ | 1.74909 | | +0.09222568 | | +0.41213373 |
| $P$ | 3.79 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.1+ | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2002 08 08 | 644 | 0.2− | 0.2− | 2002 09 14 | 644 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2002 08 16 | 608 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2− |
| 2002 08 16 | 608 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2002 08 17 | 644 | 0.5− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.4+ | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | (1.7− | 0.9+) |
| 2002 08 18 | 644 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2002 08 19 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.3− | 0.0 |
| 2002 08 27 | 644 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 08 27 | 644 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.3− | | | | |
| 2002 08 27 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2− | | | | |

**2002 QJ$_{70}$ = 2006 US$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.29155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26151745 | $\omega$ | 312.01181 | | +0.80614630 | +0.59169318 | |
| $a$ | 2.4217851 | $\Omega$ | 11.71414 | | −0.53499521 | +0.73261637 | |
| $e$ | 0.1921134 | $i$ | 1.47545 | | −0.25280085 | +0.33641111 | |
| $P$ | 3.77 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2002 09 15 | 644 | 0.3− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.3+ |
| 2002 08 18 | 644 | 0.4+ | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.6− | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.5− | 0.3+ |
| 2002 08 29 | 644 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.9− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 1.0− | 0.1− |
| 2002 09 01 | 644 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.6− | 2006 10 28 | G96 | 0.3+ | 0.2+ |
| 2002 09 01 | 644 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.6− | 0.1− |
| 2002 09 15 | 644 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2002 09 15 | 644 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.0 | | | | |

**2002 QZ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.81888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25929864 | $\omega$ | 70.46278 | | +0.78977953 | −0.60896521 | |
| $a$ | 2.4355809 | $\Omega$ | 326.93174 | | +0.50004136 | +0.70863647 | |
| $e$ | 0.2192193 | $i$ | 7.74689 | | +0.35525614 | +0.35636460 | |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2002 09 14 | 644 | 0.6+ | 0.0 | 2006 09 27 | 703 | 0.4+ | 0.1+ |
| 2002 08 08 | 644 | 0.4− | 0.5+ | 2006 09 16 | 703 | 0.1− | 0.3− | 2006 09 27 | 703 | 0.7− | 0.6+ |
| 2002 08 08 | 644 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.7− | 2006 09 27 | 703 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.1+ | 0.3− | 2006 09 16 | 703 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.0 |
| 2002 08 17 | 644 | 0.5+ | 0.3− | 2006 09 16 | 703 | 0.4+ | 0.6− | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2002 08 17 | 644 | 0.3− | 0.9− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 08 27 | 644 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 08 27 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2002 08 27 | 644 | 0.6− | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.6− |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | (0.1− | 1.8−) |

**2002 QP$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.13908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27318180 | $\omega$ | 344.72354 | | +0.79531398 | +0.60434942 | |
| $a$ | 2.3523478 | $\Omega$ | 337.88714 | | −0.54217582 | +0.67424801 | |
| $e$ | 0.1370783 | $i$ | 7.21875 | | −0.27114764 | +0.42444246 | |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.5− | 0.1− | 2002 09 05 | 608 | 0.1− | 0.1− | 2006 10 02 | 291 | 0.1+ | 0.2− |
| 2002 08 09 | 608 | 0.3− | 0.5+ | 2002 09 05 | 608 | 0.2− | 0.3+ | 2006 10 02 | 291 | 0.2− | 0.0 |
| 2002 08 09 | 608 | 0.6− | 0.4+ | 2002 09 05 | 608 | 0.5− | 0.3− | 2006 10 14 | 850 | 0.5+ | 0.5+ |
| 2002 08 17 | 608 | 0.3− | 0.0 | 2002 09 14 | 644 | 0.3− | 0.1− | 2006 10 14 | 850 | (1.8− | 0.2−) |
| 2002 08 17 | 608 | 0.2− | 0.2− | 2002 09 14 | 644 | 0.0 | 0.0 | 2006 10 14 | 850 | 1.0+ | 0.3+ |
| 2002 08 17 | 608 | 0.1+ | 0.6− | 2002 09 14 | 644 | 0.1− | 0.3− | 2006 10 14 | 850 | 0.4+ | 0.1− |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2002 09 14 | 644 | 0.6− | 0.4+ | 2006 10 27 | 703 | 0.4+ | 1.0+ |
| 2002 08 18 | 644 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.4+ |
| 2002 08 18 | 644 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.7+ | 1.1+ | 2006 10 27 | 703 | (2.3− | 0.1−) |
| 2002 08 28 | 644 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.6− | 2006 10 27 | 703 | (2.1− | 1.1−) |
| 2002 08 28 | 644 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.7− | 0.2+ |
| 2002 08 29 | 644 | 0.4+ | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 15 | 703 | 0.6+ | 0.0 |
| 2002 08 29 | 644 | 0.4+ | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.3+ | 0.8− |
| 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2002 09 05 | 704 | 0.6− | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 11 22 | 703 | 0.9− | 0.7+ |
| 2002 09 05 | 704 | 0.5+ | 0.5+ | 2006 10 01 | 291 | 0.2− | 0.0 | 2006 11 22 | 703 | 0.2+ | 0.4− |
| 2002 09 05 | 704 | 0.3+ | 0.4− | 2006 10 01 | 291 | 0.4− | 0.0 | 2006 11 22 | 703 | 0.3+ | 0.4+ |
| 2002 09 05 | 704 | 0.2− | 0.4− | 2006 10 01 | 291 | 0.4− | 0.0 | 2006 11 22 | 703 | 1.0− | 1.1− |
| 2002 09 05 | 704 | 1.3+ | 0.9+ | 2006 10 02 | 291 | 0.0 | 0.1− | | | | |

**2002 QR$_{72}$ = 2006 KG$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.59915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19847252 | $\omega$ | 121.83030 | | +0.36311284 | −0.93165645 | |
| $a$ | 2.9107336 | $\Omega$ | 306.87281 | | +0.84933571 | +0.33663951 | |
| $e$ | 0.0581956 | $i$ | 0.92095 | | +0.38311606 | +0.13671174 | |
| $P$ | 4.97 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 691 | 0.3− | 0.3+ | 2002 08 17 | 644 | 0.1+ | 0.5+ | 2005 03 04 | 691 | 0.2+ | 0.1− |
| 2000 03 04 | 691 | 0.2+ | 0.1− | 2002 08 19 | 644 | 0.5+ | 0.2− | 2005 05 13 | G96 | 0.4− | 0.8+ |
| 2000 03 04 | 691 | 0.0 | 0.1− | 2002 08 19 | 644 | 0.2− | 0.6+ | 2005 05 13 | G96 | 0.4− | 0.1− |
| 2002 08 08 | 644 | 0.4+ | 0.1+ | 2002 08 27 | 644 | 0.0 | 0.4+ | 2005 05 13 | G96 | 0.2− | 0.4− |
| 2002 08 08 | 644 | 0.1+ | 0.2+ | 2002 08 27 | 644 | 0.2− | 0.3+ | 2005 05 13 | G96 | 0.8− | 0.3− |
| 2002 08 08 | 644 | 0.2+ | 0.4+ | 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 05 25 | 568 | 0.1− | 1.2+ |
| 2002 08 17 | 644 | 0.3− | 0.2+ | 2003 12 14 | 691 | 0.2− | 0.5+ | 2006 05 25 | 568 | 0.1− | 1.2+ |
| 2002 08 17 | 644 | 0.4− | 0.3− | 2003 12 14 | 691 | 0.3− | 0.2+ | 2006 05 25 | 568 | 0.0 | 1.2+ |
| 2002 08 17 | 644 | 0.6− | 0.1− | 2003 12 14 | 691 | 0.1+ | 0.4+ | 2006 05 26 | 568 | 0.3− | 0.6+ |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2005 03 04 | 691 | 0.3+ | 0.1+ | | | | |
| 2002 08 17 | 644 | 0.1+ | 0.4+ | 2005 03 04 | 691 | 0.3+ | 0.1+ | | | | |

**2002 QE$_{73}$ = 2006 UR$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.23759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25920992 | $\omega$ | 233.23765 | | +0.84117079 | −0.53902704 | |
| $a$ | 2.4361366 | $\Omega$ | 159.27123 | | +0.52695449 | +0.79902489 | |
| $e$ | 0.1816333 | $i$ | 7.03946 | | +0.12145234 | +0.26647530 | |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 608 | 0.3+ | 0.1− | 2002 08 27 | 644 | 0.6+ | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2002 08 16 | 608 | 0.4+ | 0.7− | 2002 09 14 | 644 | 0.3− | 0.1− | 2006 10 20 | 644 | 1.0− | 0.3+ |
| 2002 08 16 | 608 | 0.2− | 0.1− | 2002 09 14 | 644 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2002 08 17 | 644 | 0.6− | 0.5+ | 2002 09 14 | 644 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2002 08 17 | 644 | 0.5− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.9− | 0.2+ |
| 2002 08 19 | 644 | 0.3+ | 0.3+ | 2006 07 21 | G96 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.9+ | 1.2+ |
| 2002 08 19 | 644 | 0.1− | 0.1− | 2006 07 21 | G96 | 1.0− | 0.0 | 2006 10 22 | 703 | 1.0+ | 0.8+ |
| 2002 08 19 | 644 | 0.6+ | 0.2+ | 2006 07 21 | G96 | (0.1− | 1.7−) | 2006 10 22 | 703 | 0.1+ | 1.4− |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.3− | | | | |
| 2002 08 27 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.0 | | | | |

**2002 QM$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.08475 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30041102 | $\omega$ | 230.81696 | | −0.17554396 | +0.98397701 | |
| $a$ | 2.2079648 | $\Omega$ | 29.11790 | | −0.88231272 | −0.14318951 | |
| $e$ | 0.0885885 | $i$ | 3.67639 | | −0.43670193 | −0.10623561 | |
| $P$ | 3.28 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.3− | 0.2− | 2002 08 19 | 644 | 0.1− | 0.2− | 2002 09 15 | 644 | 0.3+ | 0.3− |
| 2002 08 11 | 644 | 0.2− | 0.2+ | 2002 08 19 | 644 | 0.1− | 0.1+ | 2002 09 15 | 644 | 0.3− | 0.3+ |
| 2002 08 18 | 644 | 0.2+ | 0.1− | 2002 08 29 | 644 | 0.5+ | 0.3− | 2006 11 24 | 408 | 0.1− | 0.0 |
| 2002 08 18 | 644 | 0.4+ | 0.1− | 2002 08 29 | 644 | 0.1− | 0.1− | 2006 11 24 | 408 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.2+ | 0.0 | 2002 08 29 | 644 | 0.2− | 0.2− | 2006 11 25 | 408 | 0.2− | 0.0 |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 11 25 | 408 | 0.2+ | 0.0 |

**2002 QQ$_{75}$ = 2006 TU$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 210.22627 | | (2000.0) | | | |
| $n$ | 0.27620811 | $\omega$ | 31.12465 | | −0.98653574 | −0.14607114 |
| $a$ | 2.3351338 | $\Omega$ | 140.26547 | | +0.11611556 | −0.94231332 |
| $e$ | 0.0493030 | $i$ | 6.60761 | | +0.11517121 | −0.30117908 |
| $P$ | 3.57 | $H$ | 17.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 608 | 0.3− | 0.3+ | 2002 08 28 | 644 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.7+ |
| 2002 08 17 | 608 | 0.3+ | 0.5+ | 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 08 17 | 608 | 0.2+ | 0.4+ | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2002 08 29 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.7− |
| 2002 08 18 | 644 | 0.3− | 0.3− | 2002 09 15 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2002 08 18 | 644 | 0.3− | 0.6− | 2002 09 15 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.3− | 0.4+ |
| 2002 08 28 | 644 | 0.2+ | 0.0 | 2002 09 15 | 644 | 0.5− | 0.1+ | | | | |
| 2002 08 28 | 644 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.0 | | | | |

**2002 QU$_{75}$ = 2006 SX$_{239}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.88275 | | (2000.0) | | | |
| $n$ | 0.25815791 | $\omega$ | 173.80315 | | +0.77077063 | +0.63686912 |
| $a$ | 2.4427504 | $\Omega$ | 146.61725 | | −0.58590570 | +0.71941146 |
| $e$ | 0.1910217 | $i$ | 1.83482 | | −0.25025417 | +0.27720908 |
| $P$ | 3.82 | $H$ | 18.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2002 08 17 | 644 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2002 08 08 | 644 | 0.1− | 0.5+ | 2002 08 28 | 644 | 0.5+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2002 08 08 | 644 | 0.2+ | 0.0 | 2002 08 28 | 644 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2002 08 17 | 644 | 0.1− | 0.4− | 2002 08 28 | 644 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2002 08 17 | 644 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1− |

**2002 QU$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.39065 | | (2000.0) | | | |
| $n$ | 0.26699826 | $\omega$ | 175.77297 | | +0.91930957 | −0.39042770 |
| $a$ | 2.3885285 | $\Omega$ | 207.37315 | | +0.35784103 | +0.88151916 |
| $e$ | 0.1258597 | $i$ | 6.16251 | | +0.16376727 | +0.26549988 |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.7+ | 0.2+ | 2005 05 11 | G96 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.7− |
| 2002 07 12 | 644 | 0.8+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2002 07 12 | 644 | (1.6+ | 0.8−) | 2006 09 19 | 699 | 0.7+ | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2002 08 05 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 1.0+ | 0.6+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2002 08 05 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.4+ |
| 2002 08 05 | 644 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2002 08 15 | 644 | 0.1− | 0.7− | 2006 09 25 | 691 | (0.1+ | 2.1+) | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2002 08 15 | 644 | 0.4+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2002 08 15 | 644 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.7− | 0.3− | 2006 11 01 | G96 | 0.3− | 0.4+ |
| 2002 08 16 | 644 | 0.3+ | 0.6− | 2006 10 17 | 703 | (0.1+ | 2.3−) | 2006 11 01 | G96 | 0.4+ | 0.1+ |
| 2002 08 16 | 644 | 0.5− | 0.1− | 2006 10 17 | 703 | 1.0− | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2002 08 16 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 1.0+ | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2002 08 26 | 644 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.1+ |
| 2002 08 26 | 644 | 1.1− | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2002 08 26 | 644 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.6+ | 0.9− |
| 2005 05 11 | G96 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2005 05 11 | G96 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2005 05 11 | G96 | 0.6− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− |

**2002 QW$_{76}$ = 2006 UV$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.07238 | | (2000.0) | | | |
| $n$ | 0.26604704 | $\omega$ | 7.45835 | | +0.92808857 | −0.37157137 |
| $a$ | 2.3942184 | $\Omega$ | 14.42641 | | +0.33641866 | +0.80885939 |
| $e$ | 0.1623129 | $i$ | 5.57749 | | +0.15960605 | +0.45572053 |
| $P$ | 3.70 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.0 | 0.2+ | 2002 09 16 | 644 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2002 08 19 | 644 | 0.1− | 0.1+ | 2002 09 16 | 644 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 08 30 | 644 | 0.6− | 0.3+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 08 30 | 644 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 08 30 | 644 | 0.2− | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 09 11 | 608 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2002 09 11 | 608 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2002 09 11 | 608 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2002 09 15 | 644 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2002 09 15 | 644 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.3− | 0.5+ | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2002 09 15 | 644 | 0.6+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 09 16 | 644 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1− | | | | |

**2002 QV$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.42472 | | (2000.0) | | | |
| $n$ | 0.26078901 | $\omega$ | 203.11596 | | +0.88839353 | +0.45699888 |
| $a$ | 2.4262927 | $\Omega$ | 129.61693 | | −0.41184699 | +0.83541550 |
| $e$ | 0.2271050 | $i$ | 3.25147 | | −0.20282747 | +0.30534074 |
| $P$ | 3.78 | $H$ | 18.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.4+ | 0.1+ | 2002 08 29 | 291 | 0.1+ | 0.3+ | 2006 09 28 | 291 | 0.1+ | 0.2+ |
| 2002 07 29 | 644 | 0.3− | 0.2− | 2002 08 29 | 291 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 2002 07 29 | 644 | 0.0 | 0.1− | 2002 08 29 | 291 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2002 07 29 | 644 | 0.2− | 0.4− | 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.6+ | 0.1− |
| 2002 07 29 | 644 | 0.3− | 0.2− | 2002 08 29 | 644 | 0.5− | 0.2− | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2002 08 08 | 644 | 0.3+ | 0.2− | 2002 08 29 | 644 | 0.5− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2002 08 08 | 644 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.1+ | 0.6− | 2006 10 04 | G96 | 0.4− | 0.3− |
| 2002 08 11 | 644 | 0.3− | 0.4− | 2002 09 15 | 644 | 0.2− | 0.4− | 2006 10 04 | G96 | 0.5− | 0.6− |
| 2002 08 11 | 644 | 0.4− | 0.1+ | 2002 09 15 | 644 | (0.5+ | 1.5−) | 2006 10 22 | 703 | (0.5− | 1.6+) |
| 2002 08 15 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 10 22 | 703 | (1.6− | 1.9−) |
| 2002 08 15 | 644 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2002 08 16 | 608 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2002 08 16 | 608 | 0.2+ | 0.9− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.5− | 0.2− |
| 2002 08 16 | 608 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.7− |
| 2002 08 18 | 644 | 0.2− | 0.1− | 2006 09 28 | 291 | 0.6+ | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2006 09 28 | 291 | 0.0 | 0.1+ | | | | |

**2002 QK$_{78}$ = 2006 SO$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 83.86840 | | (2000.0) | | | |
| $n$ | 0.25714405 | $\omega$ | 282.51067 | | +0.02841157 | +0.99947665 |
| $a$ | 2.4491670 | $\Omega$ | 349.08202 | | −0.88248045 | +0.01781270 |
| $e$ | 0.0643503 | $i$ | 4.68383 | | −0.46949019 | +0.02700235 |
| $P$ | 3.83 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.7+ | 0.1− | 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2002 08 20 | 644 | 0.7− | 0.2+ | 2002 09 14 | 644 | 1.0− | 0.1− | 2006 09 25 | 691 | 0.4+ | 0.1+ |
| 2002 08 27 | 644 | 0.3− | 0.5+ | 2004 01 16 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2002 08 27 | 644 | 0.1− | 0.3− | 2004 01 16 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.3+ | 0.0 | 2004 01 16 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.5+ | 0.6+ | 2006 07 21 | G96 | 0.5− | 0.2− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2002 09 08 | 608 | 0.1− | 0.7+ | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2002 09 08 | 608 | 0.4+ | 0.2− | 2006 07 21 | G96 | 0.3− | 0.6− | 2006 10 23 | G96 | 0.9− | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.1− |

**2002 QG$_{79}$ = 2006 SN$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.84743 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26081361 | $\omega$ | 346.41330 | | +0.62165414 | −0.78253762 | |
| $a$ | 2.4261401 | $\Omega$ | 65.13849 | | +0.72214917 | +0.55558321 | |
| $e$ | 0.1834142 | $i$ | 2.17066 | | +0.30339202 | +0.28100210 | |
| $P$ | 3.78 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2006 08 19 | 291 | 0.3− | 0.3+ | 2006 09 18 | 703 | 1.1− | 0.8+ |
| 2002 08 08 | 644 | 0.3− | 0.8− | 2006 08 27 | 691 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.6− | 0.4− |
| 2002 08 17 | 644 | 0.5− | 0.0 | 2006 08 27 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.4− |
| 2002 08 17 | 644 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.3+ | 0.2− | 2006 09 19 | 703 | (1.1+ | 2.1−) |
| 2002 08 17 | 644 | 0.3+ | 0.3− | 2006 09 18 | 703 | 1.0+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 1.3− |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 1.4+ | 2006 09 19 | 703 | 0.5+ | 0.3+ |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 11 17 | G96 | (4.4− | 1.8−) |
| 2002 08 18 | 644 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 11 17 | G96 | (4.2− | 2.2−) |
| 2006 08 19 | 291 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 11 17 | G96 | (4.5− | 1.9−) |
| 2006 08 19 | 291 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 11 17 | G96 | (4.2− | 1.8−) |

**2002 QJ$_{79}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.54335 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22129183 | $\omega$ | 175.80481 | | +0.99998046 | −0.00000124 | |
| $a$ | 2.7070262 | $\Omega$ | 184.21049 | | −0.00198953 | +0.94794731 | |
| $e$ | 0.0752858 | $i$ | 4.88457 | | +0.00592667 | +0.31842724 | |
| $P$ | 4.45 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.5+ | 0.1+ | 2002 08 17 | 644 | 0.6+ | 0.4− | 2005 03 11 | G96 | 0.4− | 0.2− |
| 2002 08 16 | 644 | 0.1+ | 0.2+ | 2002 08 26 | 644 | 0.2+ | 0.3− | 2005 03 11 | G96 | 0.0 | 0.1+ |
| 2002 08 16 | 608 | 0.2− | 0.4+ | 2002 08 26 | 644 | 0.1+ | 0.3+ | 2005 03 11 | G96 | 0.1+ | 0.1− |
| 2002 08 16 | 644 | 0.1+ | 0.7+ | 2002 08 27 | 644 | 0.8− | 0.8− | 2005 04 02 | G96 | 0.3+ | 0.1− |
| 2002 08 16 | 644 | 0.4− | 0.4+ | 2002 08 27 | 644 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.3− | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2002 08 27 | 644 | 0.3+ | 0.5− | 2005 04 02 | G96 | 0.1+ | 0.2− |
| 2002 08 17 | 644 | 0.5− | 0.3− | 2005 03 11 | G96 | 0.2− | 0.0 | 2005 04 02 | G96 | 0.5+ | 0.2+ |

**2002 QD$_{81}$ = 2006 SB$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.57206 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26548105 | $\omega$ | 286.06314 | | +0.98146371 | +0.18819173 | |
| $a$ | 2.3976201 | $\Omega$ | 63.10147 | | −0.15661589 | +0.89655796 | |
| $e$ | 0.2158347 | $i$ | 2.32852 | | −0.11045564 | +0.40095848 | |
| $P$ | 3.71 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2002 08 08 | 644 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2− | 0.4+ |
| 2002 08 15 | 644 | 0.3− | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2002 08 15 | 644 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.4− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.5− | 2006 10 22 | 691 | (3.4+ | 4.2−) |
| 2002 08 17 | 644 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2002 08 18 | 644 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.0 | 0.4− | | | | |
| 2006 09 26 | G96 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.0 | | | | |

**2002 QQ$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.17540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29351111 | $\omega$ | 129.12518 | | −0.27781352 | +0.95524006 | |
| $a$ | 2.2424341 | $\Omega$ | 124.45374 | | −0.91503231 | −0.23091854 | |
| $e$ | 0.0977640 | $i$ | 7.08227 | | −0.29246457 | −0.18491363 | |
| $P$ | 3.36 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 291 | 0.1− | 0.2− | 2002 08 30 | 644 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2002 08 14 | 291 | 0.1− | 0.0 | 2002 09 08 | 608 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2002 08 14 | 291 | 0.2− | 0.0 | 2002 09 08 | 608 | 0.5− | 0.4− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2002 08 19 | 644 | 0.5+ | 0.2+ | 2002 09 16 | 644 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2002 08 19 | 644 | 0.5+ | 0.6+ | 2002 09 16 | 644 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2002 08 19 | 644 | 1.0+ | 0.0 | 2002 09 16 | 644 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.4− | 0.1+ |
| 2002 08 30 | 644 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.0 | | | | |
| 2002 08 30 | 644 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.2+ | | | | |

**2002 QK$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.60791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26152618 | $\omega$ | 13.53031 | | +0.68801393 | −0.72413956 | |
| $a$ | 2.4217312 | $\Omega$ | 33.03491 | | +0.65743810 | +0.59423202 | |
| $e$ | 0.1614018 | $i$ | 5.00138 | | +0.30726531 | +0.35001457 | |
| $P$ | 3.77 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.7+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.2− | 0.3+ |
| 2002 08 19 | 644 | 0.3− | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 08 19 | 644 | 0.2+ | 0.2− | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 08 19 | 644 | 0.4+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2002 08 19 | 644 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2002 08 30 | 644 | 0.8+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2002 08 30 | 644 | 0.7− | 0.6+ | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 08 30 | 644 | 0.9+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2002 08 30 | 644 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 08 30 | 644 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 08 30 | 644 | 0.3− | 0.5+ | 2006 10 13 | D35 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 08 31 | 644 | 0.7+ | 0.0 | 2006 10 13 | D35 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 09 08 | 608 | 0.4− | 0.1− | 2006 10 13 | D35 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2002 09 08 | 608 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2002 09 08 | 608 | 0.7− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 09 13 | 608 | 0.5− | 0.8− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 09 13 | 608 | 0.7− | 1.0− | 2006 10 18 | H07 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2002 09 13 | 608 | 1.2− | 0.2− | 2006 10 18 | H07 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2002 09 16 | 644 | 0.8− | 0.5− | 2006 10 18 | H07 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2002 09 16 | 644 | 0.6− | 0.6− | 2006 10 18 | H07 | 0.2+ | 0.3− | 2006 11 07 | 644 | 0.7− | 0.5+ |
| 2002 09 16 | 644 | 0.8− | 0.5− | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.7− | 0.2+ |
| 2002 10 01 | 608 | 1.4+ | 1.4+ | 2006 10 19 | 644 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.7− | 0.2+ |
| 2002 10 01 | 608 | 1.4+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.7− | 0.4− |
| 2002 10 01 | 608 | 1.0+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2006 09 18 | 699 | 1.3+ | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.8− |
| 2006 09 18 | 699 | 0.5− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 699 | 1.1− | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.8− | 1.0− |

**2002 QO$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.23351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27483104 | $\omega$ | 95.98582 | | +0.99636207 | +0.04633827 | |
| $a$ | 2.3429276 | $\Omega$ | 261.37374 | | −0.07052656 | +0.91947113 | |
| $e$ | 0.0097508 | $i$ | 4.14842 | | +0.04783971 | +0.39041722 | |
| $P$ | 3.59 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.2− | 0.0 | 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.4− |
| 2002 08 08 | 644 | 0.0 | 0.1− | 2002 08 27 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.2− |
| 2002 08 16 | 644 | 0.1− | 0.5+ | 2002 08 27 | 644 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 08 16 | 644 | 0.1+ | 0.0 | 2002 09 13 | 644 | 0.4+ | 0.4− | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2002 08 16 | 644 | 0.4+ | 0.1+ | 2002 09 13 | 644 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.6− | 0.2+ |
| 2002 08 26 | 644 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.1− |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.6− |
| 2002 08 26 | 644 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2− | | | | |

**2002 QW$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.76514 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26505665 | $\omega$ | 100.76668 | | +0.87506397 | +0.48306272 | |
| $a$ | 2.4001787 | $\Omega$ | 230.35495 | | −0.45799467 | +0.80622271 | |
| $e$ | 0.2059940 | $i$ | 2.24947 | | −0.15653732 | +0.34154844 | |
| $P$ | 3.72 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 695 | 0.3+ | 0.4+ | 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.2− |
| 2001 03 26 | 695 | 0.1+ | 0.5+ | 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2002 08 08 | 644 | 0.5+ | 0.7+ | 2002 08 27 | 644 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.8+ |
| 2002 08 08 | 644 | 0.3− | 0.9− | 2002 08 27 | 644 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 08 16 | 644 | 0.3+ | 0.0 | 2002 09 14 | 644 | 0.7− | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.2+ |
| 2002 08 16 | 644 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2002 08 16 | 644 | 0.1+ | 0.1+ | 2002 09 14 | 644 | 0.2− | 0.4− | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 2002 08 17 | 644 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2002 08 17 | 644 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.8− |
| 2002 08 17 | 644 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.6− |

**2002 QN$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.71463 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26583496 | $\omega$ | 50.91852 | | +0.99528818 | +0.04686541 | |
| $a$ | 2.3954916 | $\Omega$ | 306.23334 | | −0.08041930 | +0.88806133 | |
| $e$ | 0.1397675 | $i$ | 6.04059 | | +0.05416806 | +0.45732998 | |
| $P$ | 3.71 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 699 | 1.0− | 1.1+ | 2002 09 09 | 608 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.3− |
| 2002 08 08 | 699 | 0.7− | 0.1+ | 2002 09 13 | 644 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.9+ | 0.3+ |
| 2002 08 08 | 699 | 1.0− | 0.2− | 2002 09 13 | 644 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.4− |
| 2002 08 08 | 699 | 0.8+ | 0.2+ | 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.4− | 0.9+ |
| 2002 08 08 | 644 | 0.4+ | 0.2− | 2002 09 14 | 644 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2002 08 08 | 644 | 0.7+ | 0.1− | 2002 09 14 | 644 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2002 08 17 | 644 | 0.1− | 0.3− | 2002 09 22 | 608 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.3+ | 0.6− |
| 2002 08 17 | 644 | 0.0 | 0.3− | 2002 09 22 | 608 | 0.8− | 0.3+ | 2006 10 27 | 703 | 1.0− | 0.8− |
| 2002 08 17 | 644 | 0.2+ | 0.0 | 2002 09 22 | 608 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.0 |
| 2002 08 27 | 644 | 0.0 | 0.1+ | 2006 10 17 | A50 | 0.3− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2002 08 27 | 644 | 0.3+ | 0.1− | 2006 10 17 | A50 | 0.6− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2002 08 27 | 644 | 0.0 | 0.2− | 2006 10 17 | A50 | 0.2− | 0.3+ | 2006 11 14 | 703 | 1.3+ | 0.1+ |
| 2002 09 09 | 608 | 0.1− | 0.2− | 2006 10 17 | A50 | 1.0+ | 0.8+ | 2006 11 14 | 703 | 0.4− | 0.5− |
| 2002 09 09 | 608 | 0.3+ | 0.9− | 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.0 | 1.1− |

**2002 QD$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.49034 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26213380 | $\omega$ | 92.99218 | | +0.99748437 | +0.06681513 | |
| $a$ | 2.4179874 | $\Omega$ | 263.17759 | | −0.07073018 | +0.91592628 | |
| $e$ | 0.2004834 | $i$ | 1.36648 | | −0.00470862 | +0.39574586 | |
| $P$ | 3.76 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2002 09 14 | 644 | 0.3− | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 08 13 | 699 | 0.4− | 0.6+ | 2002 09 14 | 644 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2002 08 13 | 699 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.2− |
| 2002 08 13 | 699 | 0.3− | 0.7+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2002 08 13 | 699 | (0.8− | 1.6+) | 2006 10 11 | 644 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2002 08 16 | 608 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4− |
| 2002 08 16 | 608 | 0.4+ | 0.4− | 2006 10 15 | 691 | 0.7+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2002 08 17 | 644 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2006 10 21 | 703 | (1.5− | 0.3+) | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.9− | 0.9− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2002 08 27 | 644 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.3− | 0.7− | 2006 11 16 | 691 | 0.3− | 0.1− |
| 2002 08 27 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.2− |
| 2002 08 27 | 644 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.8+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2002 08 27 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.5+ | 2006 11 18 | 691 | 0.3+ | 0.3− |
| 2002 08 27 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.6+ | 0.2− |
| 2002 08 27 | 644 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.5+ | 2006 11 20 | G96 | 0.6+ | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.9+ | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 0.5+ | 1.6− |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 10 27 | 691 | 1.5− | 0.1+ | | | | |

**2002 QH$_{86}$ = 2006 SU$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.21041 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26276914 | $\omega$ | 241.12972 | | +0.54360594 | −0.83932784 | |
| $a$ | 2.4140882 | $\Omega$ | 175.93182 | | +0.79099226 | +0.51044311 | |
| $e$ | 0.0830621 | $i$ | 3.73529 | | +0.28075582 | +0.18702033 | |
| $P$ | 3.75 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.5− | 0.7− | 2002 08 29 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2002 08 17 | 644 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.5− |
| 2002 08 17 | 644 | 0.3+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.8− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 08 18 | 644 | 0.4− | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.2+ |
| 2002 08 27 | 644 | 0.1− | 0.4− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2002 08 27 | 644 | 0.1− | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 08 29 | 644 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 08 29 | 644 | 1.0+ | 0.9+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |

**2002 QO$_{86}$ = 2006 SH$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.57504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26189611 | $\omega$ | 157.33784 | | −0.35867631 | −0.93055485 | |
| $a$ | 2.4194502 | $\Omega$ | 313.59241 | | +0.84010314 | −0.28742155 | |
| $e$ | 0.0478491 | $i$ | 5.83359 | | +0.40691280 | −0.22684031 | |
| $P$ | 3.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.5+ | 0.2− | 2002 08 29 | 644 | 0.5+ | 0.2− | 2006 08 21 | 691 | 0.1− | 0.2+ |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2002 08 29 | 644 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.6+ | 0.7− |
| 2002 08 17 | 644 | 0.4+ | 0.2− | 2002 09 14 | 644 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.5− | 0.7− |
| 2002 08 18 | 644 | 0.1− | 0.3− | 2002 09 14 | 644 | 0.5− | 0.8− | 2006 09 17 | 703 | 0.4− | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2003 12 28 | 704 | 1.0− | 0.5− | 2006 09 17 | 703 | 0.2+ | 0.3+ |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2003 12 28 | 704 | 0.4+ | 0.1− | 2006 09 20 | 703 | 0.5+ | 0.3+ |
| 2002 08 27 | 644 | 0.1− | 0.1− | 2003 12 28 | 704 | (2.1− | 0.2+) | 2006 09 20 | 703 | 0.4− | 0.9+ |
| 2002 08 27 | 644 | 0.0 | 0.1− | 2003 12 28 | 704 | 0.4+ | 0.6− | 2006 09 20 | 703 | 0.6− | 0.1− |
| 2002 08 27 | 644 | 0.4+ | 0.2− | 2006 08 21 | 691 | 0.1− | 0.4+ | 2006 09 20 | 703 | 0.4− | 0.4− |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 08 21 | 691 | 0.1+ | 0.2+ | | | | |

### 2002 QP$_{86}$ = 2006 RH$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.83524 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25571194 | $\omega$ | 148.74651 | | +0.98452503 | +0.17484075 | |
| $a$ | 2.4583028 | $\Omega$ | 201.19381 | | −0.16680296 | +0.91415789 | |
| $e$ | 0.2086715 | $i$ | 1.88338 | | −0.05373297 | +0.36571308 | |
| $P$ | 3.85 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.8+ | 0.1− |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.8− | 0.2+ |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2002 08 27 | 644 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 27 | 704 | 1.4− | 0.8+ |
| 2002 08 27 | 644 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.1− |
| 2002 08 27 | 644 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.0 | 0.4− | 2006 09 27 | 704 | 0.8− | 0.1− |
| 2002 09 14 | 644 | 0.1+ | 0.7− | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 09 27 | 704 | 1.2− | 0.8+ |
| 2002 09 14 | 644 | 0.4+ | 0.5− | 2006 09 26 | G96 | 0.3+ | 0.4− | | | | |

### 2002 QB$_{87}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.88763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25836799 | $\omega$ | 356.47246 | | +0.93210537 | −0.35861706 | |
| $a$ | 2.4414261 | $\Omega$ | 24.73206 | | +0.33519734 | +0.80108788 | |
| $e$ | 0.1080375 | $i$ | 6.96432 | | +0.13719446 | +0.47922022 | |
| $P$ | 3.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 28 | 691 | 0.0 | 0.8+ | 2002 09 28 | 608 | 1.1− | 0.3− | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2001 03 28 | 691 | 0.4+ | 0.4+ | 2006 08 20 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2001 03 28 | 691 | 0.5+ | 0.5+ | 2006 08 20 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 1.0+ | 0.6+ |
| 2002 07 30 | 608 | 1.5+ | 0.8− | 2006 08 20 | 691 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.1− |
| 2002 08 09 | 608 | 0.3+ | 0.2+ | 2006 08 29 | 691 | 0.6− | 0.2− | 2006 09 30 | 703 | 0.2− | 1.2+ |
| 2002 08 09 | 608 | 1.0− | 0.6− | 2006 08 29 | 691 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.5+ | 0.8+ |
| 2002 08 13 | D14 | 0.2+ | 0.9− | 2006 08 29 | 691 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2002 08 13 | D14 | 0.1− | 1.1− | 2006 09 12 | 703 | 0.6− | 1.5− | 2006 10 09 | 644 | 0.5+ | 0.5+ |
| 2002 08 16 | D14 | 0.7+ | 0.1− | 2006 09 12 | 703 | 0.0 | 0.3− | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2002 08 16 | D14 | 0.4+ | 0.6− | 2006 09 12 | 703 | 0.0 | 1.1− | 2006 10 16 | 703 | 0.6− | 1.2+ |
| 2002 08 17 | 608 | 0.7+ | 0.4− | 2006 09 12 | 703 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.1− | 1.3+ |
| 2002 08 17 | 608 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2002 08 17 | 608 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2002 08 19 | 644 | 0.5+ | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 08 19 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 08 19 | 644 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.7+ | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.6+ |
| 2002 09 16 | 644 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.7− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2002 09 16 | 644 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2002 09 28 | 608 | 0.6− | 1.1+ | 2006 09 18 | 699 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.5− | 0.1− |
| 2002 09 28 | 608 | 1.0− | 0.9+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.1− |

### 2002 QO$_{87}$ = 2006 WV$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.82392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27850044 | $\omega$ | 61.15725 | | +0.47353923 | −0.88077270 | |
| $a$ | 2.3223025 | $\Omega$ | 0.57860 | | +0.80032213 | +0.43018154 | |
| $e$ | 0.1681350 | $i$ | 1.24684 | | +0.36775683 | +0.19794771 | |
| $P$ | 3.54 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.2+ | 0.0 | 2002 08 27 | 644 | 0.1+ | 0.1− | 2002 09 04 | 644 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.2+ | 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 1.1− | 0.2+ | 2002 08 29 | 644 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.5− | 2002 08 29 | 644 | 0.8+ | 0.5− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2002 09 01 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.6+ | 2002 09 01 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2002 08 27 | 644 | 0.4− | 0.1+ | 2002 09 04 | 644 | 0.9− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 08 27 | 644 | 0.0 | 0.2− | 2002 09 04 | 644 | 0.5+ | 0.2+ | | | | |

### 2002 QF$_{89}$ = 2006 SB$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.33028 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25782494 | $\omega$ | 41.99743 | | +0.98579126 | −0.15721170 | |
| $a$ | 2.4448531 | $\Omega$ | 326.90908 | | +0.11017810 | +0.87102229 | |
| $e$ | 0.1413294 | $i$ | 6.22081 | | +0.12679269 | +0.46540805 | |
| $P$ | 3.82 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.4+ | 0.6− | 2002 09 04 | 644 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.1− | 2002 09 04 | 644 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.3+ | 2002 09 14 | 644 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.6− |
| 2002 08 27 | 644 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.8− | 0.7+ |
| 2002 08 27 | 644 | 0.3+ | 0.0 | 2002 09 14 | 644 | 0.4− | 0.2− | 2006 09 19 | 699 | 1.5+ | 0.7− |
| 2002 08 27 | 644 | 0.2+ | 0.1− | 2002 09 14 | 644 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.7− | 0.3− |
| 2002 09 01 | 644 | 0.2+ | 0.1+ | 2002 09 14 | 644 | 0.0 | 0.3− | 2006 09 21 | A13 | 0.7− | 0.2+ |
| 2002 09 01 | 644 | 0.2+ | 0.1− | 2002 09 14 | 644 | 0.3− | 0.6+ | 2006 09 21 | A13 | 0.1+ | 0.3+ |
| 2002 09 04 | 644 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 21 | A13 | 0.2− | 0.9− |

### 2002 QJ$_{89}$ = 2006 TM$_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.50777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28312997 | $\omega$ | 297.91999 | | −0.30150576 | +0.95283530 | |
| $a$ | 2.2969180 | $\Omega$ | 314.48729 | | −0.85684006 | −0.28670362 | |
| $e$ | 0.1065093 | $i$ | 2.78226 | | −0.41823365 | −0.09952855 | |
| $P$ | 3.48 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 291 | 0.0 | 0.1+ | 2002 08 27 | 644 | 0.3+ | 0.1− | 2006 10 13 | 691 | 0.2+ | 0.2− |
| 2002 08 16 | 291 | 0.1− | 0.1+ | 2002 09 01 | 644 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 08 16 | 291 | 0.2− | 0.3+ | 2002 09 01 | 644 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.6− | 0.6+ |
| 2002 08 17 | 644 | 0.1− | 0.6− | 2002 09 14 | 644 | 0.1+ | 0.4− | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 2002 08 17 | 644 | 0.5+ | 0.3− | 2002 09 14 | 644 | 0.5− | 0.3− | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2002 08 17 | 644 | 0.1− | 0.6− | 2002 09 14 | 644 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2002 08 27 | 644 | 0.2+ | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2002 08 27 | 644 | 0.3+ | 0.2− | 2006 10 13 | 691 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.4− |

### 2002 QN$_{90}$ = 2006 UK$_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.45225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26264523 | $\omega$ | 338.89870 | | +0.63076125 | −0.76984117 | |
| $a$ | 2.4148474 | $\Omega$ | 71.86186 | | +0.72581594 | +0.54093013 | |
| $e$ | 0.1792646 | $i$ | 5.88215 | | +0.27446578 | +0.33873172 | |
| $P$ | 3.75 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.6+ | 0.1+ | 2002 09 16 | 644 | 0.6− | 0.1+ | 2006 10 22 | 703 | 1.0− | 0.3+ |
| 2002 08 19 | 644 | 0.7+ | 0.5+ | 2002 09 16 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.7+ | 0.6+ |
| 2002 08 19 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.9− | 0.1− |
| 2002 08 30 | 644 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2002 08 30 | 644 | 0.2− | 0.5− | 2006 10 16 | 703 | 1.0+ | 0.2+ | 2006 11 20 | 291 | 0.0 | 0.1+ |
| 2002 08 30 | 644 | 0.4+ | 0.7− | 2006 10 16 | 703 | 1.0− | 0.1− | 2006 11 20 | 291 | 0.2+ | 0.2+ |
| 2002 09 09 | 644 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 20 | 291 | 0.1− | 0.0 |
| 2002 09 09 | 644 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 20 | G96 | 0.6+ | 0.4− |
| 2002 09 09 | 644 | 0.2+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2002 09 13 | 608 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2002 09 13 | 608 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 20 | G96 | (1.8+ | 0.5−) |
| 2002 09 16 | 644 | 0.9− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.7− | | | | |

## 2002 QO$_{90}$ = 2006 WQ$_{140}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.06565 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27451169 | $\omega$ | 287.18692 | | +0.93654929 | | +0.34120287 |
| $a$ | 2.3447443 | $\Omega$ | 52.93593 | | −0.27099807 | | +0.85015611 |
| $e$ | 0.1238983 | $i$ | 5.77910 | | −0.22234091 | | +0.40101770 |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.1+ | 0.6+ | 2002 10 01 | 608 | 0.9− | 0.5− | 2006 11 09 | 691 | 0.1− | 0.0 |
| 2002 08 19 | 644 | 0.3− | 0.2+ | 2002 10 01 | 608 | 0.3+ | 0.7− | 2006 11 09 | 691 | 0.4− | 0.3+ |
| 2002 08 30 | 644 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 1.3+ | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.4+ | 0.5+ |
| 2002 09 09 | 644 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.5+ | 0.5+ |
| 2002 09 09 | 644 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.7+ | 0.4− | 2006 11 20 | 691 | 0.2− | 0.4+ |
| 2002 09 09 | 644 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.7− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 09 13 | 608 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 09 13 | 608 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.7− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 09 16 | 644 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 09 16 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 2002 09 16 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2002 10 01 | 608 | 0.7+ | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.4− | | | | |

## 2002 QB$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.93917 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28027812 | $\omega$ | 334.61284 | | +0.95797673 | | −0.27588532 |
| $a$ | 2.3124725 | $\Omega$ | 41.65286 | | +0.27919096 | | +0.83395384 |
| $e$ | 0.1421740 | $i$ | 6.78634 | | +0.06582543 | | +0.47792079 |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.1− | 0.0 | 2002 09 09 | 608 | 0.2− | 0.3+ | 2002 10 01 | 608 | 0.1+ | 0.2+ |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2002 09 09 | 644 | 0.0 | 0.1− | 2002 10 01 | 608 | 1.3+ | 0.7+ |
| 2002 08 19 | 644 | 0.2− | 0.1+ | 2002 09 09 | 644 | 0.2− | 0.0 | 2003 12 25 | 645 | 0.0 | 0.0 |
| 2002 08 20 | 644 | 0.6+ | 0.1− | 2002 09 09 | 644 | 0.0 | 0.1− | 2003 12 25 | 645 | 0.0 | 0.0 |
| 2002 08 20 | 644 | 0.4+ | 0.0 | 2002 09 16 | 644 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2002 08 20 | 644 | 0.6− | 0.4− | 2002 09 16 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2002 09 16 | 644 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2002 08 30 | 644 | 0.4+ | 0.1+ | 2002 09 17 | 608 | 0.7− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 08 30 | 644 | 0.2+ | 0.1− | 2002 09 17 | 608 | 1.0− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 09 09 | 608 | 0.6+ | 0.6− | 2002 09 17 | 608 | 0.6− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 09 09 | 608 | 0.4− | 0.2− | 2002 10 01 | 608 | 0.1+ | 0.0 | | | | |

## 2002 QZ$_{91}$ = 2006 WO$_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.65104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28397691 | $\omega$ | 345.81033 | | +0.85821699 | | −0.50650399 |
| $a$ | 2.2923488 | $\Omega$ | 44.93798 | | +0.48166788 | | +0.73871520 |
| $e$ | 0.0890314 | $i$ | 6.76216 | | +0.17736868 | | +0.44469491 |
| $P$ | 3.47 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 21 | 644 | 0.3+ | 0.0 | 2002 09 09 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.4+ |
| 2002 08 21 | 644 | 0.1− | 0.2+ | 2002 09 16 | 644 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 08 21 | 644 | 0.4− | 0.4− | 2002 09 16 | 644 | 0.4− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.5− |
| 2002 08 30 | 644 | 0.1− | 0.3− | 2002 09 16 | 644 | 0.5− | 0.4− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2002 08 30 | 644 | 0.4+ | 0.1+ | 2004 02 16 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 08 30 | 644 | 1.5+ | 0.6+ | 2004 02 16 | 691 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 09 09 | 644 | 0.1− | 0.1+ | 2004 02 16 | 691 | 0.0 | 0.2+ | | | | |

## 2002 QJ$_{92}$ = 2006 SX$_{358}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.16595 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26512946 | $\omega$ | 257.74641 | | +0.97315033 | | +0.22061655 |
| $a$ | 2.3997393 | $\Omega$ | 89.48146 | | −0.17730317 | | +0.90032524 |
| $e$ | 0.1903761 | $i$ | 3.76295 | | −0.14677201 | | +0.37515704 |
| $P$ | 3.72 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.0 | 0.3− | 2002 08 30 | 644 | 0.5+ | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2002 08 16 | 644 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.8− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 08 16 | 644 | 0.0 | 0.4− | 2006 09 30 | 703 | 1.4+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.8− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 08 30 | 644 | 0.0 | 0.6+ | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2002 08 30 | 644 | 0.0 | 0.7+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.1− |

## 2002 QQ$_{93}$ = 2006 UG$_{143}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.13585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26346468 | $\omega$ | 13.99044 | | +0.79778530 | | −0.60285325 |
| $a$ | 2.4098376 | $\Omega$ | 23.09355 | | +0.55062633 | | +0.72148138 |
| $e$ | 0.1989638 | $i$ | 1.50814 | | +0.24566086 | | +0.34063553 |
| $P$ | 3.74 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2002 08 29 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2002 08 29 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.4− | 0.4− |
| 2002 09 04 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2002 09 04 | 644 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.3− | 0.7− |
| 2002 09 04 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 09 15 | 644 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.6− |
| 2006 10 19 | 644 | 0.4+ | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2006 10 19 | 644 | 0.8+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.3+ |
| 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | | | | |

**2002 QU$_{93}$ = 2006 WA$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.22377 | | (2000.0) | | | |
| $n$ | 0.27338151 | $\omega$ | 268.38127 | | +0.64050009 | −0.76682294 |
| $a$ | 2.3512021 | $\Omega$ | 141.68462 | | +0.72864624 | +0.58964773 |
| $e$ | 0.1149227 | $i$ | 3.86026 | | +0.24255779 | +0.25357076 |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 25 | 691 | 0.3+ | 0.2+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 1992 12 25 | 691 | 0.3− | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 1992 12 25 | 691 | 0.0 | 0.3+ | 2004 03 18 | 691 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.9− |
| 2002 08 18 | 644 | 0.1− | 0.6+ | 2004 03 18 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2002 08 18 | 644 | 0.2− | 1.0+ | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.9− |
| 2002 08 18 | 644 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2002 08 29 | 644 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2002 08 29 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.8− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.9− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 09 15 | 644 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 1.0+ | 2006 11 20 | 704 | 1.3− | 0.9+ |
| 2002 09 15 | 644 | 0.3− | 0.0 | 2006 10 16 | 703 | 1.4+ | 0.6+ | 2006 11 20 | 704 | 0.4− | 0.8+ |
| 2002 09 16 | 644 | 0.5− | 0.8+ | 2006 10 21 | G96 | 1.0+ | 1.0− | 2006 11 20 | 704 | 0.6− | 0.6+ |
| 2002 09 16 | 644 | 0.1− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.5− | 1.3+ |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.5− | | | | |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.0 | | | | |

**2002 QZ$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.61814 | | (2000.0) | | | |
| $n$ | 0.26665138 | $\omega$ | 3.12708 | | +0.99293004 | −0.11865087 |
| $a$ | 2.3905995 | $\Omega$ | 3.69249 | | +0.10771036 | +0.88839531 |
| $e$ | 0.2665807 | $i$ | 3.07153 | | +0.04988402 | +0.44348139 |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.1+ | 0.0 | 2002 09 05 | 704 | 0.6+ | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 07 23 | 644 | 0.0 | 0.0 | 2002 09 05 | 704 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 07 23 | 644 | 0.1+ | 0.2+ | 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2002 07 30 | 608 | 0.4− | 1.1− | 2002 09 15 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | 1.0− | 1.2− |
| 2002 07 30 | 608 | 0.0 | 0.6− | 2002 09 15 | 644 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.2+ |
| 2002 07 30 | 608 | 0.4− | 0.7− | 2002 09 22 | 608 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.8− |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2002 09 22 | 608 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.0 |
| 2002 08 08 | 644 | 0.0 | 0.0 | 2002 09 22 | 608 | 1.1− | 0.7+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2002 09 29 | 608 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2002 08 14 | 704 | 0.1− | 0.4− | 2002 09 29 | 608 | 0.1+ | 0.6+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2002 08 14 | 704 | 1.0+ | 0.7+ | 2002 09 29 | 608 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2002 08 14 | 704 | 0.2+ | 1.4+ | 2004 02 12 | 691 | 0.0 | 0.6+ | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2002 08 16 | 608 | 0.1− | 0.2+ | 2004 02 12 | 691 | 1.0+ | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2002 08 16 | 608 | 0.1+ | 0.1+ | 2004 02 12 | 691 | 0.2− | 1.0+ | 2006 11 16 | 704 | 0.4+ | 0.6− |
| 2002 08 16 | 608 | 0.1− | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2002 08 17 | 644 | 0.7− | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.7+ |
| 2002 08 17 | 644 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 2002 08 17 | 644 | 0.3− | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2002 08 17 | 644 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.6− | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.5− | 0.3− |
| 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2002 09 05 | 704 | 0.6− | 0.9+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.7+ | 0.1− |

**2002 QP$_{94}$ = 2006 WQ$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 52.36174 | | (2000.0) | | | |
| $n$ | 0.27913133 | $\omega$ | 104.42619 | | +0.92090270 | +0.38112474 |
| $a$ | 2.3188020 | $\Omega$ | 233.23499 | | −0.38525289 | +0.85802525 |
| $e$ | 0.1367373 | $i$ | 5.85669 | | −0.05931631 | +0.34429144 |
| $P$ | 3.53 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.2− | 0.5+ | 2006 09 27 | 291 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.1− |
| 2002 07 21 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 291 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2002 07 21 | 644 | 0.2− | 0.1− | 2006 09 27 | 291 | 0.1+ | 0.5+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 08 15 | 644 | 0.5+ | 0.0 | 2006 09 27 | G96 | (2.7− | 0.4+) | 2006 11 23 | 691 | 0.1− | 0.4− |
| 2002 08 15 | 644 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.5+ | 0.1+ |
| 2002 08 15 | 644 | 0.1− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2002 08 26 | 644 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.7− |
| 2002 08 26 | 644 | 0.5+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.9− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 08 26 | 644 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 09 04 | 644 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.7+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2002 09 04 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.3− | 0.4+ |
| 2002 09 04 | 644 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.5− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2− |

**2002 QY$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.76665 | | (2000.0) | | | |
| $n$ | 0.27590492 | $\omega$ | 302.28594 | | +0.87640682 | +0.48105540 |
| $a$ | 2.3368442 | $\Omega$ | 28.97762 | | −0.42491858 | +0.79425628 |
| $e$ | 0.2298501 | $i$ | 2.63695 | | −0.22661706 | +0.37113699 |
| $P$ | 3.57 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.2− | 0.5− | 2002 09 11 | 608 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.7− |
| 2002 08 09 | 608 | 0.5− | 0.6− | 2002 09 11 | 608 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2002 08 11 | 644 | 0.1− | 0.0 | 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2002 08 11 | 644 | 0.4+ | 0.1+ | 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2002 08 17 | 608 | 0.1+ | 0.4+ | 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 08 17 | 608 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2002 08 17 | 608 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.6+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 23 | H07 | 1.0+ | 0.2+ |
| 2002 08 30 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 23 | H07 | 0.1+ | 0.1− |
| 2002 08 30 | 644 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.4− | 2006 11 23 | H07 | 0.4− | 0.7+ |
| 2002 08 30 | 644 | 0.0 | 0.2− | 2006 10 20 | G96 | 1.4− | 0.3− | 2006 11 23 | H07 | (1.8+ | 1.5+) |
| 2002 09 11 | 608 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.4− | 0.6− | | | | |

**2002 QQ$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 62.80322 | | (2000.0) | | | |
| $n$ | 0.27758468 | $\omega$ | 226.02525 | | +0.73559816 | +0.67450179 |
| $a$ | 2.3274073 | $\Omega$ | 91.45282 | | −0.60215367 | +0.69351746 |
| $e$ | 0.1827164 | $i$ | 3.60117 | | −0.31033256 | +0.25314197 |
| $P$ | 3.55 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.3− | 0.4− | 2002 08 30 | 644 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.8− | 0.0 |
| 2002 08 11 | 644 | 0.1− | 0.0 | 2002 08 30 | 644 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.3− | 0.3+ |
| 2002 08 17 | 608 | 0.1− | 0.6− | 2002 08 30 | 644 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.2− | 0.2+ |
| 2002 08 17 | 608 | 0.0 | 0.8− | 2002 08 30 | 644 | 0.1+ | 0.2− | 2006 11 17 | 291 | 0.0 | 0.1+ |
| 2002 08 17 | 608 | 0.2+ | 0.6− | 2002 08 30 | 644 | 0.2+ | 0.0 | 2006 11 17 | 291 | 0.2− | 0.1+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2002 08 30 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 291 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2002 09 11 | 608 | 0.7− | 0.6+ | 2006 11 30 | 291 | 0.1+ | 0.5− |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2002 09 11 | 608 | 0.5− | 0.4+ | 2006 11 30 | 291 | 0.6+ | 0.2− |
| 2002 08 19 | 644 | 0.1+ | 0.3+ | 2002 09 16 | 644 | 0.5+ | 0.5− | 2006 11 30 | 291 | 1.0+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.0 | 0.1+ | 2002 09 16 | 644 | 0.1+ | 0.1+ | |
| 2002 08 19 | 644 | 0.0 | 0.4+ | 2002 09 16 | 644 | 0.1+ | 0.3+ | |

**2002 QL$_{96}$ = 2005 JN$_{39}$ = 2006 SQ$_{352}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.63171 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27579909 | $\omega$ | 9.04079 | | −0.36463906 | +0.92679692 | |
| $a$ | 2.3374419 | $\Omega$ | 239.61926 | | −0.86069552 | −0.37232307 | |
| $e$ | 0.0725831 | $i$ | 5.98305 | | −0.35530491 | −0.04922410 | |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.2− | 0.3− | 2005 05 08 | 699 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2002 08 05 | 644 | 0.1− | 0.2− | 2005 05 08 | 699 | 0.4+ | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2002 08 05 | 644 | 0.5− | 0.2+ | 2005 05 13 | 704 | 0.3− | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2002 08 16 | 644 | (0.3+ | 2.2+) | 2005 05 13 | 704 | 0.5+ | 0.6− | 2006 10 03 | G96 | 0.4− | 0.4− |
| 2002 08 16 | 644 | (0.3− | 1.9+) | 2005 05 13 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.8+ | 0.4+ |
| 2002 08 25 | 644 | 0.3+ | 0.1− | 2005 05 16 | G96 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2002 08 25 | 644 | 0.2− | 0.1+ | 2005 05 16 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.0 | 1.0− |
| 2002 08 25 | 644 | 0.2− | 0.3− | 2005 05 16 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 1.0− | 0.2+ |
| 2002 08 26 | 644 | 0.5+ | 0.2+ | 2005 05 16 | G96 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 08 26 | 644 | 0.3+ | 0.5+ | 2005 05 19 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 1.0+ |
| 2002 08 26 | 644 | 0.0 | 0.0 | 2005 05 19 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2005 05 07 | 691 | 0.1− | 0.0 | 2005 05 19 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2005 05 07 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3− | 1.0+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2005 05 07 | 691 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.5− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2005 05 08 | 699 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2005 05 08 | 699 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.8− | | | | |

**2002 QS$_{96}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.74697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25661028 | $\omega$ | 255.16755 | | +0.97225455 | +0.22561109 | |
| $a$ | 2.4525621 | $\Omega$ | 91.76483 | | −0.18371631 | +0.90000622 | |
| $e$ | 0.2050206 | $i$ | 3.54551 | | −0.14480820 | +0.37294563 | |
| $P$ | 3.84 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.3− | 0.3− | 2002 08 18 | 644 | 0.1+ | 0.3− | 2002 09 15 | 644 | 0.0 | 0.2+ |
| 2002 07 23 | 644 | 0.4+ | 0.2+ | 2002 08 18 | 644 | 0.0 | 0.8− | 2002 09 15 | 644 | 0.8− | 0.2− |
| 2002 07 23 | 644 | 0.6− | 0.0 | 2002 08 29 | 644 | 0.3+ | 0.2+ | 2006 09 25 | 152 | 0.3+ | 1.0+ |
| 2002 08 11 | 644 | 0.1+ | 0.6+ | 2002 08 29 | 644 | 0.0 | 0.2− | 2006 09 25 | 152 | 0.1+ | 0.5− |
| 2002 08 11 | 644 | 0.0 | 0.1− | 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 152 | (2.8− | 1.2−) |
| 2002 08 11 | 644 | 0.1+ | 0.3+ | 2002 08 30 | 644 | 0.1+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2002 08 30 | 644 | 0.4+ | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2002 08 18 | 644 | 0.3− | 0.7− | 2002 08 30 | 644 | 0.4+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2002 08 18 | 644 | 0.3− | 0.4− | 2002 09 15 | 644 | 0.0 | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.3− | 0.7+ | | | | |

**2002 QF$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.49103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27442085 | $\omega$ | 64.87765 | | +0.34331327 | −0.93920282 | |
| $a$ | 2.3452617 | $\Omega$ | 5.05417 | | +0.83610044 | +0.30278295 | |
| $e$ | 0.0582045 | $i$ | 3.79848 | | +0.42786920 | +0.16192760 | |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.6− | 0.8+ | 2002 09 15 | 644 | 0.6− | 0.3− | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 1999 10 13 | 704 | 0.2− | 0.0 | 2003 12 28 | 704 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.5− | 0.1+ |
| 1999 10 13 | 704 | 1.1+ | 1.8− | 2003 12 28 | 704 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2− |
| 2002 08 08 | 644 | 0.2+ | 0.2− | 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.3− |
| 2002 08 08 | 644 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.1− |
| 2002 08 11 | 644 | 0.5+ | 0.0 | 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.2− |
| 2002 08 11 | 644 | 0.7+ | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 10 15 | 691 | 0.0 | 0.3− |
| 2002 08 11 | 644 | 0.3+ | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.5+ | 0.2− |
| 2002 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2002 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2002 08 14 | 644 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 08 16 | 644 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2002 08 16 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 27 | 691 | 0.2+ | 0.4+ |
| 2002 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.5− | 0.0 |
| 2002 08 18 | 644 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 08 18 | 644 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2002 08 29 | 644 | 1.1− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 08 29 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 152 | 0.1+ | 1.3+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 09 26 | 152 | 1.0− | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 09 26 | 152 | 0.8+ | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.5− | 0.6− | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.5− |

**2002 QL$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.04470 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26360292 | $\omega$ | 359.26925 | | +0.68442941 | −0.72861922 | |
| $a$ | 2.4089951 | $\Omega$ | 47.53955 | | +0.66909495 | +0.61361602 | |
| $e$ | 0.1592011 | $i$ | 2.01130 | | +0.28960029 | +0.30428508 | |
| $P$ | 3.74 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.3− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 07 29 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 09 27 | G92 | 0.1+ | 0.5− |
| 2002 08 08 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 29 | 291 | 0.2− | 0.1+ |
| 2002 08 08 | 644 | 0.7− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 29 | 291 | 0.1− | 0.3+ |
| 2002 08 16 | 644 | 0.4− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.5− | 2006 09 29 | 291 | 0.4− | 0.3+ |
| 2002 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 08 16 | 644 | 0.6+ | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.4− | 0.1− |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 19 | 695 | 0.3+ | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 19 | 695 | 0.2+ | 0.0 |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.5+ | 0.2+ |
| 2004 02 23 | 704 | 0.6+ | 1.4+ | 2006 09 27 | G92 | (1.7− | 0.2+) | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2004 02 23 | 704 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2004 02 23 | 704 | 0.1− | 0.2+ | 2006 09 27 | 704 | (0.3− | 3.1−) | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 02 23 | 704 | 1.2+ | 0.9+ | 2006 09 27 | G92 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 02 23 | 704 | 0.6− | 0.9+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2006 09 15 | 691 | 0.9− | 1.0+ | 2006 09 27 | 704 | 1.1− | 1.3− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.9− | | | | |

**2002 QH$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.58764 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28994649 | $\omega$ | 256.94463 | | −0.06590539 | +0.99778524 | |
| $a$ | 2.2607757 | $\Omega$ | 9.29059 | | −0.89251489 | −0.05491194 | |
| $e$ | 0.1043791 | $i$ | 3.19755 | | −0.44617671 | −0.03754051 | |
| $P$ | 3.40 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.2+ | 0.0 | 2002 09 15 | 644 | 0.3+ | 0.5+ | 2006 11 09 | 691 | 0.3− | 0.4+ |
| 2002 08 08 | 644 | 0.2+ | 0.1− | 2002 09 15 | 644 | 0.3− | 0.0 | 2006 11 09 | 691 | 0.0 | 0.2− |
| 2002 08 16 | 644 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.6− |
| 2002 08 16 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2002 08 16 | 644 | 0.8+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.7− |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.5− | 0.6+ | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2002 08 18 | 644 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2002 08 29 | 644 | 0.4− | 0.3− | 2006 10 26 | A13 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.3− | 0.4− | 2006 10 26 | A13 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.6+ | 0.1− |
| 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 10 26 | A13 | (0.4+ | 2.3−) | | | | |

**2002 QD$_{99}$ = 2006 SS$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.04562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25842895 | $\omega$ | 148.74539 | | +0.84543155 | +0.53408334 | |
| $a$ | 2.4410421 | $\Omega$ | 178.97206 | | −0.49766641 | +0.78825642 | |
| $e$ | 0.2132962 | $i$ | 2.22201 | | −0.19383921 | +0.30562528 | |
| $P$ | 3.81 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.7− | 0.2+ | 2002 08 26 | 644 | 0.5+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2002 08 16 | 644 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.1+ |
| 2002 08 17 | 644 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2002 08 17 | 644 | 0.3+ | 0.4− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 08 17 | 644 | 0.3+ | 0.7− | 2006 09 27 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2002 08 26 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 08 26 | 644 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.3− |

**2002 QN$_{99}$ = 2006 RU$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.39695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26656660 | $\omega$ | 202.08037 | | −0.91530702 | +0.40273906 | |
| $a$ | 2.3911063 | $\Omega$ | 1.68334 | | −0.34758145 | −0.78513406 | |
| $e$ | 0.0610913 | $i$ | 7.40082 | | −0.20347040 | −0.47049524 | |
| $P$ | 3.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 691 | 0.0 | 0.5+ | 2002 09 15 | 644 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.6+ | 0.4+ |
| 2001 02 22 | 691 | 0.4+ | 0.1− | 2002 09 15 | 644 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.2+ | 0.3+ |
| 2001 02 22 | 691 | 0.2+ | 0.6+ | 2005 02 14 | 809 | 0.0 | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.3− | 2005 02 14 | 809 | 0.1+ | 0.5+ | 2006 09 24 | 691 | 0.2+ | 0.0 |
| 2002 08 18 | 644 | 0.6− | 0.2− | 2005 02 14 | 809 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.4+ | 0.1+ |
| 2002 08 18 | 644 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.0 |
| 2002 08 19 | 644 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.4− | 0.2+ |
| 2002 08 19 | 644 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.6− | 1.2+ |
| 2002 08 19 | 644 | 0.4− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.4− | 0.2+ |
| 2002 08 29 | 644 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2002 08 29 | 644 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.4− | 0.7− |
| 2002 08 29 | 644 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.5+ | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.4− |

**2002 QY$_{99}$ = 2006 VY$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.09645 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27517249 | $\omega$ | 285.98692 | | +0.99828363 | +0.04284141 | |
| $a$ | 2.3409890 | $\Omega$ | 71.57098 | | −0.02275239 | +0.91196701 | |
| $e$ | 0.1921432 | $i$ | 2.41221 | | −0.05396408 | +0.40802058 | |
| $P$ | 3.58 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2002 09 15 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.6− | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2002 08 18 | 644 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.7− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.6− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.5+ |
| 2002 09 15 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.2+ | | | | |
| 2002 09 15 | 644 | 0.0 | 0.4− | 2006 11 15 | 691 | 0.3− | 0.0 | | | | |

**2002 QB$_{100}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.38226 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21894700 | $\omega$ | 135.18920 | | −0.70857314 | −0.70563737 | |
| $a$ | 2.7263193 | $\Omega$ | 359.92935 | | +0.61454370 | −0.61701064 | |
| $e$ | 0.0331249 | $i$ | 6.00406 | | +0.34678545 | −0.34838740 | |
| $P$ | 4.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.1+ | 0.1+ | 2002 09 04 | 644 | 0.9− | 0.7− | 2005 03 01 | 691 | 0.0 | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2002 09 04 | 644 | 0.2+ | 0.1− | 2005 03 13 | 691 | 0.1− | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2002 09 04 | 644 | 0.8− | 0.2+ | 2005 03 13 | 691 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.4+ | 0.1− | 2002 09 15 | 644 | 0.3+ | 0.1+ | 2005 03 13 | 691 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.3− | 2002 09 15 | 644 | 0.0 | 0.1+ | 2005 04 05 | G96 | 0.3+ | 0.1− |
| 2002 08 29 | 644 | 0.4+ | 0.1− | 2002 09 15 | 644 | 0.1+ | 0.5+ | 2005 04 05 | G96 | 0.0 | 0.1− |
| 2002 09 01 | 644 | 0.0 | 0.2+ | 2005 03 01 | 691 | 0.2− | 0.0 | 2005 04 05 | G96 | 0.1− | 0.1− |
| 2002 09 01 | 644 | 0.0 | 0.0 | 2005 03 01 | 691 | 0.3+ | 0.3+ | 2005 04 05 | G96 | 0.2+ | 0.2+ |

**2002 QE$_{100}$ = 2006 WF$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.35150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27453750 | $\omega$ | 300.83181 | | +0.94933379 | +0.31322214 | |
| $a$ | 2.3445973 | $\Omega$ | 40.93018 | | −0.27331791 | +0.86314218 | |
| $e$ | 0.2015195 | $i$ | 2.24266 | | −0.15512149 | +0.39607760 | |
| $P$ | 3.59 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2− | 0.5+ | 2002 09 15 | 644 | 0.6+ | 0.2− | 2006 11 18 | 691 | 0.5+ | 0.1+ |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2002 09 15 | 644 | 0.4− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.5− | 2002 09 15 | 644 | 0.3+ | 0.2+ | 2006 11 22 | 691 | 0.4− | 0.1+ |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1− | | | | |
| 2002 09 15 | 644 | 0.3− | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.2+ | | | | |

**2002 QH$_{100}$ = 2006 SS$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.33405 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26090870 | $\omega$ | 247.52132 | | +0.93877131 | +0.34207155 | |
| $a$ | 2.4255506 | $\Omega$ | 92.45576 | | −0.29902470 | +0.86828082 | |
| $e$ | 0.2069167 | $i$ | 2.36207 | | −0.17115099 | +0.35927075 | |
| $P$ | 3.78 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2+ | 0.4+ | 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2002 08 18 | 644 | 0.5+ | 0.4− | 2002 09 15 | 644 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 08 18 | 644 | 0.3− | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 08 18 | 644 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.4− | 0.1+ | | | | |
| 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− | | | | |

**2002 QJ$_{100}$ = 2006 SJ$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.60165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25783233 | $\omega$ | 200.88879 | | +0.61188446 | +0.78984691 | |
| $a$ | 2.4448064 | $\Omega$ | 106.86058 | | −0.71935916 | +0.57764923 | |
| $e$ | 0.1788836 | $i$ | 2.49762 | | −0.32881578 | +0.20606608 | |
| $P$ | 3.82 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.1− | 0.9− | 2002 09 01 | 644 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.4− |
| 2002 08 18 | 644 | 0.3− | 0.2− | 2002 09 04 | 644 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2002 09 04 | 644 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.4+ | | |
| 2002 08 29 | 644 | 0.8+ | 0.2+ | 2002 09 04 | 644 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2− | 0.2− | | |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.3− | | |
| 2002 08 29 | 644 | 0.1+ | 0.5+ | 2002 09 15 | 644 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2002 09 01 | 644 | 0.1− | 0.0 | 2002 09 15 | 644 | 0.3− | 0.7+ | | | | | | |

**2002 QK$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.74940 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26909909 | $\omega$ | 229.65408 | | +0.66370287 | +0.74123738 | |
| $a$ | 2.3760810 | $\Omega$ | 82.22680 | | −0.65191279 | +0.63898555 | |
| $e$ | 0.2510068 | $i$ | 5.81162 | | −0.36675362 | +0.20558359 | |
| $P$ | 3.66 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.3− | 0.1− | 2002 08 31 | 644 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.0 | | |
| 2002 08 13 | 704 | 0.6− | 0.7+ | 2002 08 31 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2002 08 13 | 704 | 0.8− | 0.3+ | 2002 08 31 | 644 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.1− | | |
| 2002 08 13 | 704 | (2.2− | 0.6+) | 2002 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2002 08 19 | 644 | 0.2+ | 0.7− | 2002 09 16 | 644 | 0.2− | 1.0+ | 2006 11 16 | G96 | (0.9− | 3.9−) | | |
| 2002 08 19 | 644 | 0.3+ | 0.5− | 2002 10 09 | 644 | 0.7− | 0.1+ | 2006 11 16 | G96 | (1.2− | 4.6−) | | |
| 2002 08 19 | 644 | 0.2+ | 0.3− | 2002 10 09 | 644 | 0.2+ | 0.4− | 2006 11 16 | G96 | (0.5− | 4.1−) | | |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | (1.3− | 4.2−) | | |
| 2002 08 30 | 644 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2+ | | | | | | |
| 2002 08 30 | 644 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.1+ | | | | | | |

**2002 QN$_{100}$ = 2006 SD$_{351}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.39265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26025136 | $\omega$ | 323.19979 | | +0.99122008 | +0.11726872 | |
| $a$ | 2.4296332 | $\Omega$ | 30.23744 | | −0.07245380 | +0.86815139 | |
| $e$ | 0.1360000 | $i$ | 6.96662 | | −0.11060382 | +0.48224600 | |
| $P$ | 3.79 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.1+ | 0.6− | 2005 04 10 | G96 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1− | | |
| 2002 08 13 | 644 | 0.4+ | 0.3− | 2006 09 12 | 703 | (0.8− | 2.2−) | 2006 10 02 | G96 | 0.0 | 0.2− | | |
| 2002 08 13 | 644 | 0.2+ | 0.1− | 2006 09 12 | 703 | 1.3− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.4− | | |
| 2002 08 19 | 644 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.0 | | |
| 2002 08 19 | 644 | 0.4− | 0.2− | 2006 09 12 | 703 | (1.7− | 0.3−) | 2006 10 12 | 644 | 0.1+ | 0.2− | | |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.4− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 08 30 | 644 | 0.2+ | 0.3− | 2006 09 20 | 644 | 0.3+ | 0.7− | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2002 08 30 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2002 08 31 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.0+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.1− | | |
| 2002 08 31 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.3− | | |
| 2002 09 10 | 644 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.2+ | | |
| 2002 09 10 | 644 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.4+ | | |
| 2002 09 10 | 644 | 0.3− | 0.6+ | 2006 09 30 | 704 | (2.3+ | 1.4+) | 2006 10 22 | 703 | 0.3− | 0.3+ | | |
| 2005 04 10 | G96 | 0.3− | 0.4+ | 2006 09 30 | 704 | 0.6+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.2+ | | |
| 2005 04 10 | G96 | 0.3+ | 0.3+ | 2006 09 30 | 704 | (2.3+ | 0.3+) | | | | | | |
| 2005 04 10 | G96 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.5− | 0.9+ | | | | | | |

**2002 QP$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.18781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17470757 | $\omega$ | 199.59448 | | +0.73635709 | +0.63270710 | |
| $a$ | 3.1690437 | $\Omega$ | 118.78533 | | −0.57854611 | +0.77250060 | |
| $e$ | 0.1666747 | $i$ | 15.87295 | | −0.35080285 | +0.05407920 | |
| $P$ | 5.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.1− | 0.1− | 2002 08 13 | 644 | 0.2− | 0.8− | 2002 08 30 | 644 | 0.4+ | 0.7+ | | |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2002 08 19 | 644 | 0.1− | 0.4+ | 2002 08 31 | 644 | 0.4+ | 0.0 | | |
| 2001 06 16 | 645 | 0.0 | 0.1+ | 2002 08 19 | 644 | 0.2+ | 0.4+ | 2002 08 31 | 644 | 0.0 | 0.2+ | | |
| 2001 06 16 | 645 | 0.0 | 0.0 | 2002 08 19 | 644 | 0.4+ | 0.2+ | 2005 01 16 | 568 | 0.0 | 0.3+ | | |
| 2002 08 13 | 704 | 0.8− | 0.3+ | 2002 08 19 | 644 | 0.1+ | 0.4+ | 2005 01 16 | 568 | 0.1− | 0.4+ | | |
| 2002 08 13 | 704 | 0.1− | 0.2− | 2002 08 19 | 644 | 0.2+ | 0.5+ | 2005 01 16 | 568 | 0.1+ | 0.3+ | | |
| 2002 08 13 | 704 | 0.7− | 0.9− | 2002 08 19 | 644 | 0.1+ | 0.3+ | 2005 01 17 | 568 | 0.0 | 0.2+ | | |
| 2002 08 13 | 644 | 0.1+ | 0.8− | 2002 08 30 | 644 | 0.2+ | 0.3+ | | | | | | |
| 2002 08 13 | 644 | 0.3− | 0.7− | 2002 08 30 | 644 | 0.0 | 0.2+ | | | | | | |

**2002 QW$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.68275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26322306 | $\omega$ | 300.09094 | | +0.99193589 | −0.08861064 | |
| $a$ | 2.4113121 | $\Omega$ | 65.12360 | | +0.11943261 | +0.89279686 | |
| $e$ | 0.2404130 | $i$ | 5.73249 | | −0.04241514 | +0.44165815 | |
| $P$ | 3.74 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.3− | 0.7− | 2006 10 27 | 704 | 0.2+ | 0.8+ | | |
| 2002 08 13 | 644 | 0.0 | 0.8− | 2006 09 30 | 703 | 0.2− | 1.0− | 2006 11 10 | 644 | 0.2− | 0.1+ | | |
| 2002 08 13 | 644 | 0.3− | 0.9− | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.2+ | | |
| 2002 08 19 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | (3.1+ | 0.0 ) | 2006 11 10 | 644 | 0.1+ | 0.1− | | |
| 2002 08 19 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.5− | 2006 11 11 | 691 | 0.2− | 0.3+ | | |
| 2002 08 19 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.9− | 2006 11 11 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 30 | 644 | 0.1+ | 1.1+ | 2006 10 16 | 703 | 0.8+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2002 08 30 | 644 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.6− | 2006 11 13 | 703 | 0.5− | 0.3− | | |
| 2002 08 30 | 644 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.5− | 0.3− | | |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 13 | 703 | 1.1− | 0.6− | | |
| 2002 09 15 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.6− | 1.3+ | | |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.3− | | |
| 2006 09 29 | 699 | 0.4+ | 0.5− | 2006 10 22 | 703 | 0.5− | 0.4+ | 2006 11 20 | 704 | 0.5− | 0.4− | | |
| 2006 09 29 | 699 | 0.7+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.6− | 2006 11 20 | 704 | 0.2− | 0.2− | | |
| 2006 09 29 | 699 | 1.2+ | 0.9+ | 2006 10 22 | 703 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 1.2+ | | |
| 2006 09 29 | 699 | 0.0 | 0.1− | 2006 10 27 | 704 | 1.2− | 0.5+ | 2006 11 21 | 704 | 0.2− | 0.5+ | | |
| 2006 09 30 | 703 | 0.3+ | 0.4− | 2006 10 27 | 704 | 1.4+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 10 27 | 704 | 1.1− | 0.9− | | | | | | |

**2002 QP$_{101}$ = 2006 RZ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.10041 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24652584 | $\omega$ | 222.62261 | | +0.76689446 | −0.64173745 | |
| $a$ | 2.5189976 | $\Omega$ | 177.27223 | | +0.62049158 | +0.73872516 | |
| $e$ | 0.1283037 | $i$ | 8.18794 | | +0.16389964 | +0.20605384 | |
| $P$ | 4.00 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.1− | 0.1− | 2004 01 16 | 644 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.7+ | 0.4+ | | |
| 2002 08 16 | 644 | 0.1+ | 0.4+ | 2004 01 16 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 16 | 644 | 0.0 | 0.1− | 2004 01 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.6− | 0.5− | | |
| 2002 08 18 | 644 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.2− | 0.3− | | |
| 2002 08 18 | 644 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.4− | 0.4− | | |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.8− | 2006 09 27 | G96 | 0.6− | 0.2− | | |
| 2002 08 26 | 644 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.4− | | |
| 2002 08 26 | 644 | 0.1− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.6− | 0.3− | | |
| 2002 08 26 | 644 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.8− | 0.4− | | |
| 2002 08 27 | 644 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.4− | 0.4− | | |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− | | |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | | | | | |

**2002 QJ$_{102}$ = 2003 XF$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.96558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17278736 | $\omega$ | 332.92981 | | +0.62691303 | −0.74987884 | |
| $a$ | 3.1924791 | $\Omega$ | 77.46838 | | +0.74825150 | +0.50396231 | |
| $e$ | 0.0398120 | $i$ | 12.50301 | | +0.21702474 | +0.42860671 | |
| $P$ | 5.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.4+ | 0.3− | 2002 09 17 | 644 | 0.2+ | 0.6+ | 2003 12 14 | 691 | 0.2− | 0.2+ |
| 2002 08 20 | 644 | 1.0− | 0.6− | 2002 09 17 | 644 | 0.6+ | 0.1− | 2003 12 21 | 704 | 0.3− | 2.0− |
| 2002 08 20 | 644 | 0.8− | 0.5− | 2002 09 17 | 644 | 0.3+ | 0.1+ | 2003 12 21 | 704 | 0.6+ | 0.6− |
| 2002 09 01 | 644 | 0.1+ | 0.1+ | 2002 09 17 | 644 | 0.2+ | 0.3+ | 2003 12 21 | 704 | 0.5+ | 1.3− |
| 2002 09 01 | 644 | 0.1+ | 0.1+ | 2003 12 01 | 691 | 0.2− | 0.1− | 2003 12 21 | 704 | 0.9+ | 1.1− |
| 2002 09 10 | 644 | 0.3− | 0.4− | 2003 12 01 | 691 | 0.2− | 0.2+ | 2006 05 07 | G96 | 0.1− | 0.2+ |
| 2002 09 10 | 644 | 0.1− | 0.1+ | 2003 12 01 | 691 | 0.2− | 0.0 | 2006 05 07 | G96 | 0.2− | 0.1+ |
| 2002 09 10 | 644 | 0.1+ | 0.4+ | 2003 12 14 | 691 | 0.2+ | 0.5+ | 2006 05 07 | G96 | 0.3+ | 0.1− |
| 2002 09 17 | 644 | 0.2+ | 0.0 | 2003 12 14 | 691 | 0.1+ | 0.4+ | 2006 05 07 | G96 | 0.2+ | 0.2+ |

### 2002 QK$_{102}$ = 2005 BG$_{22}$ = 2006 JD$_2$ = 2006 KV$_{129}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.84816 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17741511 | $\omega$ | 202.03594 | | −0.81883174 | | +0.57400385 |
| $a$ | 3.1367192 | $\Omega$ | 12.99888 | | −0.52271193 | | −0.74137730 |
| $e$ | 0.0525919 | $i$ | 1.48885 | | −0.23724843 | | −0.34767696 |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.1+ | 0.1+ | 2002 08 30 | 644 | 0.1− | 0.4+ | 2006 03 26 | 691 | 0.2+ | 0.0 |
| 1992 11 28 | 691 | 0.5− | 0.2− | 2002 08 30 | 644 | 0.2+ | 0.0 | 2006 03 26 | 691 | 0.4+ | 0.7+ |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2002 09 12 | 644 | 0.3− | 0.2+ | 2006 03 26 | 691 | 0.9+ | 0.8+ |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2002 09 12 | 644 | 0.2− | 0.1+ | 2006 03 26 | 691 | 0.1+ | 0.2+ |
| 2000 03 11 | 704 | 0.4− | 0.1− | 2002 09 12 | 644 | 0.1− | 0.2+ | 2006 03 26 | 691 | 0.2+ | 0.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 05 01 | 704 | 0.4− | 1.3+ |
| 2000 03 11 | 704 | 0.3− | 0.0 | 2002 09 15 | 644 | 0.0 | 0.7+ | 2006 05 01 | 704 | 0.0 | 1.3+ |
| 2000 03 11 | 704 | 0.0 | 0.3− | 2002 09 15 | 644 | 0.5+ | 0.5+ | 2006 05 01 | 704 | 0.6+ | 0.9+ |
| 2000 04 02 | 691 | 0.3+ | 1.4− | 2003 11 21 | 704 | 0.3+ | 0.6− | 2006 05 03 | G96 | 0.2− | 0.1+ |
| 2000 04 02 | 691 | 1.2− | 0.1+ | 2003 11 21 | 704 | 0.3− | 1.4+ | 2006 05 03 | G96 | 0.2− | 0.0 |
| 2000 04 02 | 691 | 0.2− | 0.3− | 2003 11 21 | 704 | 0.8− | 0.2+ | 2006 05 03 | G96 | 0.1− | 0.0 |
| 2000 04 24 | 691 | 0.3+ | 0.2− | 2003 11 21 | 704 | 0.3− | 0.9+ | 2006 05 03 | G96 | 0.2− | 0.1− |
| 2000 04 24 | 691 | 0.2+ | 0.5− | 2005 01 16 | 691 | 0.2− | 0.1+ | 2006 05 19 | 703 | (0.6− | 1.8+) |
| 2000 04 24 | 691 | 0.1+ | 0.1− | 2005 01 16 | 691 | 0.1− | 0.3+ | 2006 05 19 | 703 | 0.8− | 1.2+ |
| 2002 08 20 | 644 | 0.0 | 0.3+ | 2005 01 16 | 691 | 0.1+ | 0.5+ | 2006 05 19 | 703 | 0.0 | 0.7− |
| 2002 08 20 | 644 | 0.1− | 0.5+ | 2005 01 19 | 691 | 0.5− | 0.3+ | 2006 05 19 | 703 | 0.8− | 1.0+ |
| 2002 08 20 | 644 | 0.2+ | 0.5+ | 2005 01 19 | 691 | 0.1− | 0.1+ | 2006 05 31 | G96 | 0.9− | 0.3+ |
| 2002 08 20 | 644 | 0.3+ | 0.3− | 2005 01 19 | 691 | 0.1− | 0.1+ | 2006 05 31 | G96 | 0.6− | 0.3+ |
| 2002 08 28 | 644 | 0.3− | 0.1+ | 2005 01 19 | 291 | 0.4+ | 0.4+ | 2006 05 31 | G96 | 0.3− | 0.5+ |
| 2002 08 28 | 644 | 0.3+ | 0.0 | 2005 01 19 | 291 | 0.5+ | 0.1+ | 2006 05 31 | G96 | 0.5− | 0.7+ |
| 2002 08 28 | 644 | 0.5+ | 0.9+ | 2005 01 19 | 291 | 0.8+ | 0.3+ | | | | |
| 2002 08 30 | 644 | 0.4− | 0.2+ | 2006 03 26 | 691 | 0.0 | 0.2+ | | | | |

### 2002 QL$_{102}$ = 2005 JS$_{166}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.55668 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24058371 | $\omega$ | 170.08030 | | −0.99706531 | | −0.07632272 |
| $a$ | 2.5603062 | $\Omega$ | 5.55289 | | +0.06533352 | | −0.88894532 |
| $e$ | 0.1561440 | $i$ | 3.53529 | | +0.03990353 | | −0.45160942 |
| $P$ | 4.10 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 691 | 0.0 | 0.0 | 2002 09 12 | 644 | 0.1− | 0.0 | 2005 05 19 | 644 | 0.3− | 0.2− |
| 1998 09 19 | 691 | 0.0 | 0.0 | 2002 09 15 | 644 | 0.7− | 0.4+ | 2006 08 21 | 691 | 0.1− | 0.1− |
| 1998 09 19 | 691 | 0.1− | 0.2− | 2002 09 15 | 644 | 0.1+ | 0.0 | 2006 08 21 | 691 | 0.0 | 0.0 |
| 2002 08 20 | 644 | 0.6+ | 0.3+ | 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 08 21 | 691 | 0.1− | 0.3+ |
| 2002 08 20 | 644 | 0.3+ | 0.3− | 2005 05 11 | 644 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2002 08 20 | 644 | 1.2+ | 0.5− | 2005 05 11 | 644 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2002 09 09 | 608 | 0.0 | 0.2+ | 2005 05 11 | 644 | 0.2− | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.2− |
| 2002 09 09 | 608 | 0.3+ | 0.2− | 2005 05 19 | 644 | 0.0 | 0.2+ | | | | |
| 2002 09 12 | 644 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.2− | | | | |

### 2002 QM$_{102}$ = 1998 DT$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.72750 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30826609 | $\omega$ | 205.93899 | | −0.24331184 | | +0.96981362 |
| $a$ | 2.1702955 | $\Omega$ | 49.98332 | | −0.88620018 | | −0.21550378 |
| $e$ | 0.1831873 | $i$ | 1.20847 | | −0.39426970 | | −0.11410375 |
| $P$ | 3.20 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.3− | 0.3− | 2002 08 20 | 644 | 0.1+ | 0.3+ | 2002 09 15 | 644 | 0.1+ | 0.3− |
| 1995 03 27 | 691 | 0.2− | 0.0 | 2002 08 20 | 644 | 0.2− | 0.0 | 2002 09 15 | 644 | 0.7+ | 0.4+ |
| 1995 03 27 | 691 | 0.2+ | 0.2− | 2002 09 09 | 608 | 0.1− | 0.4− | 2005 06 30 | 691 | 0.3− | 0.2+ |
| 1998 02 24 | 691 | 0.3+ | 0.1+ | 2002 09 09 | 608 | 0.2− | 0.4+ | 2005 06 30 | 691 | 0.1− | 0.2+ |
| 1998 02 24 | 691 | 0.0 | 0.4+ | 2002 09 12 | 644 | 0.4− | 0.4− | 2005 06 30 | 691 | 0.0 | 0.1+ |
| 1998 02 24 | 691 | 0.5+ | 0.2+ | 2002 09 12 | 644 | 0.3− | 0.1− | 2005 07 16 | 691 | 0.1+ | 0.1+ |
| 1998 02 28 | 691 | 0.9− | 0.0 | 2002 09 12 | 644 | 0.3− | 0.0 | 2005 07 16 | 691 | 0.0 | 0.1− |
| 1998 02 28 | 691 | 0.4+ | 0.3+ | 2002 09 15 | 644 | 0.5+ | 0.5+ | 2005 07 16 | 691 | 0.1+ | 0.1− |

### 2002 QN$_{102}$ = 2005 EQ$_{229}$ = 2006 QO$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.96468 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23705658 | $\omega$ | 280.90950 | | +0.10104556 | | +0.99485217 |
| $a$ | 2.5856399 | $\Omega$ | 354.87121 | | −0.87595520 | | +0.08530524 |
| $e$ | 0.2172732 | $i$ | 4.92692 | | −0.47169087 | | +0.05470073 |
| $P$ | 4.16 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.2+ | 0.3+ | 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 08 16 | E12 | 0.2− | 0.1− |
| 2002 08 20 | 644 | 0.2− | 0.1− | 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 08 16 | E12 | 0.1− | 0.0 |
| 2002 09 12 | 644 | 0.5− | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.3+ | 2006 08 16 | E12 | 0.1+ | 0.4+ |
| 2002 09 12 | 644 | 0.3− | 0.0 | 2005 03 10 | G96 | 0.4+ | 0.1+ | 2006 08 16 | E12 | 0.4+ | 0.6+ |
| 2002 09 12 | 644 | 0.1− | 0.5− | 2005 03 10 | G96 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.2− |
| 2002 09 12 | 644 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.6+ | 0.6+ | 2006 08 17 | 644 | 0.1− | 0.2− |
| 2002 09 12 | 644 | 0.3− | 0.0 | 2005 03 16 | G96 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.2− | 0.1− |
| 2002 09 12 | 644 | 0.1− | 0.0 | 2005 03 16 | G96 | 0.4− | 0.1− | 2006 08 20 | 644 | 0.3− | 0.0 |
| 2002 09 14 | 608 | 0.5+ | 0.5+ | 2005 03 16 | G96 | 0.3+ | 0.1− | 2006 08 20 | 644 | 0.3+ | 0.2+ |
| 2002 09 14 | 608 | 0.1− | 0.2+ | 2005 03 16 | G96 | 0.2− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.1− |
| 2002 09 14 | 608 | 0.7− | 0.0 | 2005 04 04 | G96 | 0.3− | 0.4+ | 2006 10 22 | G96 | 0.5+ | 0.0 |
| 2002 09 15 | 644 | 0.2+ | 0.0 | 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2002 09 15 | 644 | 0.3+ | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 09 15 | 644 | 0.5+ | 0.0 | 2005 04 04 | G96 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.2− |

### 2002 QP$_{102}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.71391 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17663938 | $\omega$ | 214.69616 | | +0.94984751 | | +0.27699372 |
| $a$ | 3.1458960 | $\Omega$ | 128.55577 | | −0.22801744 | | +0.93109283 |
| $e$ | 0.1054791 | $i$ | 10.69578 | | −0.21400408 | | +0.23736180 |
| $P$ | 5.58 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 691 | 0.1− | 0.3+ | 2002 09 15 | 644 | 0.6− | 0.3− | 2005 02 04 | 699 | 0.1− | 0.8− |
| 2001 04 16 | 691 | 0.2− | 0.5+ | 2002 09 15 | 644 | 0.0 | 0.8− | 2005 02 04 | 699 | (2.9+ | 0.3+) |
| 2001 04 16 | 691 | 0.8+ | 0.9+ | 2002 09 15 | 644 | 1.0− | 0.4+ | 2005 02 04 | 699 | (1.6+ | 1.0+) |
| 2002 08 18 | 644 | 0.0 | 1.1+ | 2003 12 22 | 691 | 0.2− | 0.6+ | 2005 02 04 | 699 | (0.8+ | 1.6+) |
| 2002 08 18 | 644 | 0.1+ | 0.4+ | 2003 12 22 | 691 | 0.2− | 0.6+ | 2005 03 13 | 691 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.3+ | 0.4+ | 2003 12 22 | 691 | 0.0 | 0.5+ | 2005 03 13 | 691 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.2+ | 0.5+ | 2005 01 16 | 691 | 0.1+ | 0.2+ | 2005 03 13 | 691 | 0.2− | 0.1− |
| 2002 08 29 | 644 | 0.0 | 0.5+ | 2005 01 16 | 691 | 0.3+ | 0.0 | | | | |
| 2002 08 29 | 644 | 0.2+ | 0.4+ | 2005 01 16 | 691 | 0.3− | 0.3+ | | | | |

**2002 QQ$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.04178 | | (2000.0) | | | |
| $n$ | 0.21826841 | $\omega$ | 248.10574 | | +0.57822801 | +0.81195663 |
| $a$ | 2.7319671 | $\Omega$ | 57.46770 | | −0.70922967 | +0.54862048 |
| $e$ | 0.1212779 | $i$ | 5.43589 | | −0.40329350 | +0.19935396 |
| $P$ | 4.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.2− | 0.1− | 2002 08 30 | 644 | 0.0 | 0.0 | 2003 11 29 | 691 | 0.2+ | 0.1− |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2002 09 16 | 644 | 0.0 | 0.4− | 2003 11 29 | 691 | 0.2− | 0.1+ |
| 2002 08 19 | 644 | 0.3− | 0.2+ | 2002 09 16 | 644 | 0.2+ | 0.3+ | 2003 12 29 | 691 | 0.1− | 0.0 |
| 2002 08 30 | 644 | 0.1− | 0.2− | 2002 09 16 | 644 | 0.4+ | 0.3+ | 2003 12 29 | 691 | 0.1+ | 0.1+ |
| 2002 08 30 | 644 | 0.1+ | 0.1− | 2003 11 29 | 691 | 0.1+ | 0.1− | 2003 12 29 | 691 | 0.1− | 0.0 |

**2002 QT$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 199.75628 | | (2000.0) | | | |
| $n$ | 0.17963700 | $\omega$ | 110.33648 | | +0.36872937 | −0.92316259 |
| $a$ | 3.1108007 | $\Omega$ | 317.51671 | | +0.78150927 | +0.37118104 |
| $e$ | 0.0968611 | $i$ | 9.25945 | | +0.50327121 | +0.09997738 |
| $P$ | 5.49 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 691 | 0.1− | 0.0 | 2002 09 13 | 644 | 0.4+ | 0.1+ | 2002 10 06 | 644 | 0.3+ | 0.3− |
| 1999 02 08 | 691 | 0.0 | 0.1+ | 2002 09 13 | 644 | 0.0 | 0.1+ | 2002 10 06 | 644 | 0.1− | 0.3+ |
| 1999 02 08 | 691 | 0.1+ | 0.2− | 2002 09 17 | 608 | 0.7− | 0.0 | 2003 11 24 | 691 | 0.2+ | 0.3+ |
| 2002 08 28 | 644 | 0.1− | 0.2− | 2002 09 17 | 608 | 0.2− | 0.3+ | 2003 11 24 | 691 | 0.3− | 0.1+ |
| 2002 08 28 | 644 | 0.5− | 0.2− | 2002 09 17 | 608 | 0.8− | 0.1+ | 2003 11 24 | 691 | 0.1+ | 0.4− |
| 2002 08 28 | 644 | 0.1+ | 0.2− | 2002 10 05 | 644 | 0.0 | 0.0 | 2003 12 03 | 704 | 0.2− | 0.2− |
| 2002 08 29 | 644 | 0.5+ | 0.1+ | 2002 10 05 | 644 | 0.5+ | 0.0 | 2003 12 03 | 704 | 0.0 | 0.6+ |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2002 10 05 | 644 | 0.0 | 0.1+ | 2003 12 03 | 704 | 0.4+ | 0.1+ |
| 2002 08 29 | 644 | 0.0 | 0.1+ | 2002 10 06 | 644 | 0.4+ | 0.2− | 2003 12 03 | 704 | 0.0 | 0.8+ |
| 2002 09 13 | 644 | 0.2+ | 0.0 | 2002 10 06 | 644 | 0.1+ | 0.1− | 2003 12 03 | 704 | 0.4− | 0.6− |

**2002 QX$_{102}$ = 2004 CR$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.87980 | | (2000.0) | | | |
| $n$ | 0.25644845 | $\omega$ | 151.00244 | | +0.78597230 | −0.61771857 |
| $a$ | 2.4535938 | $\Omega$ | 247.17050 | | +0.56168535 | +0.73093493 |
| $e$ | 0.1983957 | $i$ | 1.61091 | | +0.25837399 | +0.29009981 |
| $P$ | 3.84 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 20 | 691 | 0.1+ | 0.2− | 2005 05 10 | G96 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.2+ | 0.3+ |
| 1998 06 20 | 691 | 0.1− | 0.5+ | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 19 | 699 | (2.1− | 0.5−) |
| 1998 06 20 | 691 | 0.3− | 0.7+ | 2005 05 10 | G96 | 0.2− | 0.6− | 2006 09 20 | 704 | 0.7+ | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.0 | 2006 08 27 | 699 | 0.5− | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.9+ |
| 2002 08 17 | 644 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.8+ |
| 2002 08 17 | 644 | 0.3− | 0.1− | 2006 08 27 | 699 | 0.9− | 0.5− | 2006 09 20 | 704 | 0.6+ | 0.8+ |
| 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.9+ | 0.4− | 2006 09 25 | 699 | 0.5− | 0.6+ |
| 2002 08 27 | 644 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 1.0− | 0.7− |
| 2002 08 27 | 644 | 0.3− | 0.4+ | 2006 09 13 | 644 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 0.0 | 0.6+ |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.8+ | 0.2+ |
| 2002 08 27 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.2− |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.7− | 0.3+ | 2006 09 29 | 704 | (0.8− | 1.7+) |
| 2004 02 12 | 691 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2004 02 12 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.4− | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2004 02 29 | 691 | 0.3− | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.4− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 02 29 | 691 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.6− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2004 02 29 | 691 | 0.1− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.1− | | | | |
| 2005 05 10 | G96 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.2+ | 0.6− | | | | |

**2002 QY$_{102}$ = 2005 GX$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.79961 | | (2000.0) | | | |
| $n$ | 0.26753083 | $\omega$ | 194.23417 | | +0.70949281 | +0.69632451 |
| $a$ | 2.3853575 | $\Omega$ | 121.09740 | | −0.63354758 | +0.69761832 |
| $e$ | 0.1096831 | $i$ | 7.27322 | | −0.30860561 | +0.16870347 |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 09 | 691 | 0.0 | 0.6− | 2002 08 30 | 644 | 0.0 | 0.8+ | 2005 04 10 | 691 | 0.3+ | 0.2+ |
| 1994 05 09 | 691 | 1.0− | 0.0 | 2002 08 30 | 644 | 0.1− | 0.3+ | 2005 04 10 | 691 | 0.2+ | 0.5+ |
| 1994 05 09 | 691 | 0.6+ | 0.5− | 2002 08 30 | 644 | 0.1− | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.4+ |
| 2002 08 19 | 644 | 0.1− | 1.3+ | 2003 12 21 | 645 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.1− | 0.4+ |
| 2002 08 19 | 644 | 0.3− | 1.1+ | 2003 12 21 | 645 | 0.0 | 0.2+ | 2005 04 14 | 691 | 0.2+ | 0.5+ |
| 2002 08 19 | 644 | 0.2− | 1.3+ | 2004 01 22 | 704 | 0.9+ | 1.2+ | 2005 04 14 | 691 | 0.1+ | 0.4+ |
| 2002 08 26 | 644 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 08 26 | 644 | 0.3− | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2002 08 26 | 644 | 0.4− | 0.3+ | 2004 01 22 | 704 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2+ |

**2002 QZ$_{102}$ = 1999 XL$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.21230 | | (2000.0) | | | |
| $n$ | 0.28120622 | $\omega$ | 66.38545 | | +0.90535755 | +0.41922147 |
| $a$ | 2.3073816 | $\Omega$ | 268.77110 | | −0.41010396 | +0.82180826 |
| $e$ | 0.0428961 | $i$ | 3.88184 | | −0.11019277 | +0.38585560 |
| $P$ | 3.50 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.0 | 0.4− | 2002 09 06 | 704 | 0.1+ | 1.4+ | 2006 10 20 | G96 | 0.4− | 0.1+ |
| 1997 03 04 | 691 | 0.4− | 0.4+ | 2002 09 06 | 704 | 0.5− | 1.0+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 1997 03 04 | 691 | 0.1+ | 0.5+ | 2002 09 06 | 704 | 0.4− | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1999 12 06 | 691 | 0.4+ | 0.2− | 2002 09 06 | 704 | 1.0− | 0.8+ | 2006 11 17 | 691 | 0.2− | 0.1+ |
| 1999 12 06 | 691 | 0.3+ | 0.1− | 2002 09 13 | 644 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 1999 12 06 | 691 | 0.3+ | 0.1+ | 2002 09 13 | 644 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.3− |
| 1999 12 14 | 691 | 0.2− | 0.0 | 2002 09 13 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 1.0− |
| 1999 12 14 | 691 | 0.3− | 0.0 | 2004 02 11 | 644 | 0.9+ | 0.5+ | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 1999 12 14 | 691 | 0.1− | 0.1+ | 2004 02 11 | 644 | 0.9+ | 0.8+ | 2006 11 22 | 704 | 0.7− | 0.3− |
| 2002 08 29 | 644 | 0.0 | 0.3− | 2004 02 11 | 644 | 0.6+ | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2002 08 29 | 644 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.5− | 0.1+ | | | | |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3− | | | | |

**2002 QA$_{103}$ = 2003 YH$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 215.27931 | | (2000.0) | | | |
| $n$ | 0.17820334 | $\omega$ | 164.13608 | | +0.75843817 | −0.63747903 |
| $a$ | 3.1274628 | $\Omega$ | 236.26898 | | +0.57883298 | +0.75448030 |
| $e$ | 0.0732312 | $i$ | 9.38510 | | +0.29953951 | +0.15614085 |
| $P$ | 5.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 20 | 691 | 0.1− | 0.2+ | 2002 09 12 | 644 | 0.2− | 0.3− | 2003 12 22 | 704 | 0.6− | 0.4+ |
| 1996 06 20 | 691 | 0.1− | 0.7+ | 2002 09 12 | 644 | 0.2− | 0.3− | 2003 12 22 | 704 | 1.0+ | 0.6+ |
| 1996 06 20 | 691 | 0.2− | 0.2+ | 2002 10 05 | 644 | 0.3− | 0.3+ | 2003 12 22 | 704 | 1.0+ | 0.3+ |
| 2002 08 30 | 699 | 0.0 | 0.9− | 2002 10 05 | 704 | 0.6+ | 0.5− | 2006 05 05 | 691 | 0.1+ | 0.2+ |
| 2002 08 30 | 699 | 0.3− | 1.3+ | 2002 10 05 | 704 | 1.1+ | 0.5− | 2006 05 05 | 691 | 0.2− | 0.3+ |
| 2002 08 30 | 699 | 0.2+ | 0.9− | 2002 10 05 | 644 | 0.3− | 0.2+ | 2006 05 05 | 691 | 0.1+ | 0.1+ |
| 2002 08 30 | 699 | 0.5+ | 0.3− | 2002 10 05 | 704 | 0.4+ | 0.2− | 2006 05 20 | 691 | 0.6− | 0.6− |
| 2002 09 04 | 644 | 0.1+ | 0.1− | 2002 10 05 | 644 | 0.2− | 0.1+ | 2006 05 20 | 691 | 0.4+ | 0.0 |
| 2002 09 04 | 644 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.4− | 1.4+ | 2006 05 20 | 691 | 0.2+ | 0.1+ |
| 2002 09 04 | 644 | 0.2− | 0.0 | 2003 12 19 | 704 | 1.0− | 1.0+ | | | | |
| 2002 09 12 | 644 | 0.3− | 0.2− | 2003 12 19 | 704 | 0.2+ | 0.1− | | | | |

### 2002 QD$_{103}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.29682 | | | (2000.0) | | |
| $n$ | 0.26023832 | $\omega$ | 223.55030 | | +0.96626644 | +0.24241610 |
| $a$ | 2.4297144 | $\Omega$ | 122.22858 | | −0.19900309 | +0.91712608 |
| $e$ | 0.2002182 | $i$ | 5.90095 | | −0.16348375 | +0.31640826 |
| $P$ | 3.79 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.2+ | 0.0 | 2002 08 30 | 644 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 08 12 | 608 | 0.3− | 0.0 | 2002 08 30 | 644 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2002 08 12 | 608 | 0.2+ | 0.2+ | 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.5− |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2002 09 08 | 608 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.4− | 2002 09 08 | 608 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.9+ | 0.0 |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2002 09 08 | 608 | 0.3+ | 0.6− | 2006 11 16 | 703 | (3.6+ | 1.0+) |
| 2002 08 20 | 644 | 0.3− | 0.3+ | 2002 09 16 | 644 | 0.2− | 0.6+ | 2006 11 16 | 703 | (2.8+ | 0.7+) |
| 2002 08 20 | 644 | 0.1+ | 0.2+ | 2002 09 16 | 644 | 0.2− | 0.4+ | 2006 11 16 | 703 | (1.4+ | 2.8+) |
| 2002 08 30 | 644 | 0.1+ | 0.1− | 2002 09 16 | 644 | 0.1− | 0.7+ | 2006 11 16 | 703 | (3.2+ | 1.5+) |
| 2002 08 30 | 644 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2+ | | | | |
| 2002 08 30 | 644 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1+ | | | | |

### 2002 QG$_{103}$ = 2006 KK$_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 250.40826 | | | (2000.0) | | |
| $n$ | 0.18119910 | $\omega$ | 172.84323 | | +0.97134159 | −0.23300989 |
| $a$ | 3.0928963 | $\Omega$ | 200.81311 | | +0.21100666 | +0.93621341 |
| $e$ | 0.0716149 | $i$ | 7.58879 | | +0.10941531 | +0.26307953 |
| $P$ | 5.44 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 691 | 0.2+ | 0.4− | 2002 09 13 | 644 | 0.2+ | 0.2− | 2006 05 22 | 691 | 0.1+ | 0.2− |
| 2000 03 27 | 691 | 0.4− | 0.2− | 2002 09 13 | 644 | 0.1− | 0.1− | 2006 05 24 | G96 | 0.3− | 0.4− |
| 2000 03 27 | 691 | 0.3+ | 0.5+ | 2002 09 14 | 644 | 0.0 | 0.0 | 2006 05 24 | G96 | 0.7− | 0.6− |
| 2002 08 28 | 644 | 0.3− | 0.1− | 2002 09 14 | 644 | 0.2− | 0.1− | 2006 05 24 | G96 | 0.5− | 0.7− |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 05 24 | G96 | 0.4− | 0.4− |
| 2002 08 28 | 644 | 0.5+ | 0.1− | 2006 05 22 | 691 | 0.2+ | 0.2+ | | | | |
| 2002 09 13 | 644 | 0.1+ | 0.0 | 2006 05 22 | 691 | 0.1+ | 0.6+ | | | | |

### 2002 QK$_{103}$ = 2004 CA$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 275.03579 | | | (2000.0) | | |
| $n$ | 0.23327247 | $\omega$ | 298.76475 | | +0.34519915 | −0.92974329 |
| $a$ | 2.6135274 | $\Omega$ | 130.45879 | | +0.90908268 | +0.29731090 |
| $e$ | 0.1677934 | $i$ | 9.69403 | | +0.23325144 | +0.21721798 |
| $P$ | 4.23 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.2− | 0.7+ | 2002 08 30 | 644 | 0.1− | 0.3− | 2004 01 31 | 691 | 0.3− | 0.3− |
| 2002 08 19 | 644 | 0.1− | 0.2− | 2002 09 16 | 644 | 0.4− | 0.0 | 2004 02 11 | 291 | 0.3+ | 0.5+ |
| 2002 08 19 | 644 | 0.3− | 0.1+ | 2002 09 16 | 644 | 0.4+ | 0.3− | 2004 02 11 | 291 | 0.1+ | 0.4+ |
| 2002 08 30 | 644 | 0.0 | 0.2− | 2002 09 16 | 644 | 0.0 | 0.4− | 2004 02 11 | 291 | 0.1− | 0.3+ |
| 2002 08 30 | 644 | 0.3+ | 0.3+ | 2003 12 21 | 645 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.2− | 0.1− |
| 2002 08 30 | 644 | 0.2− | 0.1− | 2003 12 21 | 645 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.2+ | 0.2− |
| 2002 08 30 | 644 | 0.4+ | 0.8+ | 2004 01 31 | 691 | 0.2− | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.2− |
| 2002 08 30 | 644 | 0.1− | 0.4+ | 2004 01 31 | 691 | 0.1− | 0.1− | | | | |

### 2002 QL$_{103}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 295.27742 | | | (2000.0) | | |
| $n$ | 0.19258238 | $\omega$ | 230.40097 | | +0.97379198 | +0.14948536 |
| $a$ | 2.9697851 | $\Omega$ | 120.36612 | | −0.09344025 | +0.95007472 |
| $e$ | 0.1181046 | $i$ | 11.45923 | | −0.20735981 | +0.27388346 |
| $P$ | 5.12 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 07 | 691 | 0.1− | 0.4− | 2002 10 16 | 644 | 0.2− | 0.7+ | 2005 03 16 | 703 | 0.3+ | 1.2+ |
| 1999 01 07 | 691 | 0.4− | 0.0 | 2002 10 16 | 644 | 0.0 | 0.6+ | 2005 03 16 | 703 | 0.0 | 1.1+ |
| 1999 01 07 | 691 | 0.4+ | 1.0− | 2002 10 16 | 644 | 0.2− | 0.6+ | 2006 05 09 | G96 | 0.4− | 0.2+ |
| 2002 08 24 | 644 | 0.2− | 0.1− | 2002 10 25 | 644 | 0.2− | 0.4+ | 2006 05 09 | G96 | 0.1+ | 0.0 |
| 2002 08 24 | 644 | 0.0 | 0.0 | 2002 10 25 | 644 | 0.2− | 0.0 | 2006 05 09 | G96 | 0.0 | 0.2+ |
| 2002 08 24 | 644 | 0.1− | 0.2+ | 2002 10 25 | 644 | 0.4− | 0.2+ | 2006 05 09 | G96 | 0.0 | 0.2+ |
| 2002 09 08 | 608 | 0.5− | 0.0 | 2002 11 05 | 644 | 0.1− | 0.2+ | 2006 05 25 | G92 | 0.2− | 0.3+ |
| 2002 09 08 | 608 | 0.4− | 0.5− | 2002 11 05 | 644 | 0.1− | 0.2+ | 2006 05 25 | G92 | 0.2− | 0.2+ |
| 2002 09 08 | 608 | 0.4− | 0.3− | 2002 11 05 | 644 | 0.1+ | 0.4+ | 2006 05 25 | G92 | 0.1+ | 0.1+ |
| 2002 09 28 | 608 | 1.3− | 0.1− | 2003 12 17 | 691 | 0.3+ | 0.4+ | 2006 05 26 | G96 | 0.1− | 0.2+ |
| 2002 09 28 | 608 | 1.0− | 1.2− | 2003 12 17 | 691 | 0.2+ | 0.5+ | 2006 05 26 | G96 | 0.1− | 0.3+ |
| 2002 09 28 | 608 | 0.9− | 0.4− | 2003 12 17 | 691 | 0.2+ | 0.3+ | 2006 05 26 | G96 | 0.2+ | 0.2+ |
| 2002 10 05 | 704 | 0.2+ | 0.6+ | 2003 12 28 | 691 | 0.4− | 0.1+ | 2006 05 26 | G96 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 1.2+ | 0.9+ | 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 06 18 | 644 | 0.1+ | 0.4+ |
| 2002 10 05 | 704 | 0.7+ | 0.2+ | 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 06 18 | 644 | 0.4+ | 0.0 |
| 2002 10 05 | 704 | 0.3+ | 1.3+ | 2005 03 16 | 703 | 0.4− | 1.2+ | 2006 06 18 | 644 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 1.7+ | 1.2+ | 2005 03 16 | 703 | 1.9+ | 1.4+ | | | | |

### 2002 QO$_{103}$ = 2005 GR$_{193}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.81051 | | | (2000.0) | | |
| $n$ | 0.21157432 | $\omega$ | 261.01329 | | +0.26604703 | +0.96335476 |
| $a$ | 2.7892926 | $\Omega$ | 24.49863 | | −0.84889911 | +0.25093126 |
| $e$ | 0.0406825 | $i$ | 4.72463 | | −0.45671575 | +0.09476868 |
| $P$ | 4.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 691 | 0.1+ | 0.3− | 2002 08 29 | 644 | 0.0 | 0.5− | 2002 08 30 | 644 | 0.0 | 0.1+ |
| 1998 10 01 | 691 | 0.1+ | 0.3+ | 2002 08 29 | 644 | 0.3+ | 0.4+ | 2003 11 21 | 691 | 0.3− | 0.2+ |
| 1998 10 01 | 691 | 0.0 | 0.5− | 2002 08 29 | 644 | 0.1− | 0.0 | 2003 11 21 | 691 | 0.1+ | 0.2+ |
| 1998 10 12 | 691 | 0.4+ | 0.1+ | 2002 08 30 | 644 | 0.5− | 0.5+ | 2003 11 21 | 691 | 0.0 | 0.3+ |
| 1998 10 12 | 691 | 0.2− | 0.0 | 2002 08 30 | 644 | 0.3− | 0.3+ | 2005 04 10 | 695 | 0.1+ | 0.3+ |
| 1998 10 12 | 691 | 0.0 | 0.4− | 2002 08 30 | 644 | 0.4− | 0.5+ | 2005 04 10 | 695 | 0.0 | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.4+ | 2002 08 30 | 644 | 0.1+ | 0.3+ | 2005 04 11 | 695 | 0.2+ | 0.3+ |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2002 08 30 | 644 | 0.2− | 0.0 | | | | |

### 2002 QX$_{103}$ = 1996 FP$_{8}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.85722 | | | (2000.0) | | |
| $n$ | 0.21906435 | $\omega$ | 217.48703 | | +0.85675511 | −0.51497694 |
| $a$ | 2.7253456 | $\Omega$ | 173.33078 | | +0.51180354 | +0.84239347 |
| $e$ | 0.0701104 | $i$ | 13.81828 | | +0.06346506 | +0.15865684 |
| $P$ | 4.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 19 | 691 | 0.1− | 0.3− | 2002 07 21 | 644 | 0.4+ | 0.1+ | 2002 08 27 | 644 | 0.2− | 0.1+ |
| 1996 03 19 | 691 | 0.2+ | 1.0− | 2002 08 16 | 644 | 0.3− | 0.2− | 2002 08 27 | 644 | 0.0 | 0.4+ |
| 1996 03 19 | 691 | 0.3+ | 0.0 | 2002 08 16 | 644 | 0.2− | 0.3− | 2002 09 13 | 644 | 0.5− | 0.1+ |
| 1996 03 23 | 691 | 0.2+ | 0.5+ | 2002 08 16 | 644 | 0.0 | 0.2− | 2002 09 13 | 644 | 0.5− | 0.1+ |
| 1996 03 23 | 691 | 0.3− | 0.6+ | 2002 08 26 | 644 | 0.1− | 0.2+ | 2002 09 13 | 644 | 0.3− | 0.2+ |
| 1996 03 23 | 691 | 0.3− | 0.1+ | 2002 08 26 | 644 | 0.3− | 0.2− | 2002 09 22 | 644 | 1.1+ | 0.8− |
| 2002 07 21 | 644 | 0.6+ | 0.2− | 2002 08 26 | 644 | 0.0 | 0.3+ | 2002 09 22 | 644 | 0.7+ | 0.3− |
| 2002 07 21 | 644 | 0.1− | 0.4+ | 2002 08 27 | 644 | 0.1− | 0.1+ | | | | |

### 2002 QY$_{103}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.07313 | | | (2000.0) | | |
| $n$ | 0.25508741 | $\omega$ | 148.57029 | | +0.99114906 | −0.10497006 |
| $a$ | 2.4623136 | $\Omega$ | 217.72175 | | +0.07635380 | +0.95155311 |
| $e$ | 0.1630788 | $i$ | 7.63326 | | +0.10859852 | +0.28901204 |
| $P$ | 3.86 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 0.0 | 0.1+ | 2002 09 04 | 644 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2− | | |
| 2002 08 15 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.1− | | |
| 2002 08 15 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 10 21 | 691 | 0.2+ | 0.2− | | |
| 2002 08 19 | 644 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2− | | |
| 2002 08 19 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3− | | |
| 2002 08 26 | 644 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.5− | | |
| 2002 08 26 | 644 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.4− | | |
| 2002 08 26 | 644 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.2− | | |
| 2002 09 04 | 644 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 1.0+ | 1.3+ | | |
| 2002 09 04 | 644 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.5− | 0.5+ | 2006 11 15 | G96 | 0.3− | 0.1− | | |

## 2002 QM$_{104}$ = 2006 SP$_{206}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.75979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26503169 | $\omega$ | 164.47232 | | +0.99170961 | | −0.12810087 |
| $a$ | 2.4003294 | $\Omega$ | 202.89486 | | +0.11495539 | | +0.91959336 |
| $e$ | 0.1966552 | $i$ | 1.48921 | | +0.05742225 | | +0.37140034 |
| $P$ | 3.72 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 2002 08 17 | 644 | 0.2− | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.1− | | |
| 2002 08 17 | 644 | 0.1− | 0.4+ | 2006 10 15 | 691 | 1.1− | 0.4+ | 2006 10 27 | G96 | 0.6+ | 0.5+ | | |
| 2002 08 27 | 644 | 0.0 | 0.6− | 2006 10 15 | 691 | 0.9+ | 1.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 08 27 | 644 | 0.0 | 1.3− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.3− | | |
| 2002 08 27 | 644 | 0.1+ | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 09 01 | 644 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2002 09 01 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2006 09 18 | 699 | 1.0+ | 0.6− | 2006 10 19 | 644 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.5+ | | |
| 2006 09 18 | 699 | (0.8− | 1.9+) | 2006 10 20 | 703 | 0.0 | 0.5− | 2006 11 09 | 644 | 0.3− | 0.3+ | | |
| 2006 09 18 | 699 | 0.5− | 0.6− | 2006 10 20 | 703 | 0.0 | 0.5− | 2006 11 09 | 644 | 0.5− | 0.1− | | |
| 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 20 | 703 | 0.5− | 0.1− | 2006 11 11 | 703 | (2.6+ | 1.5−) | | |
| 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 20 | 703 | 0.1+ | 0.3− | 2006 11 11 | 703 | 1.5− | 0.5+ | | |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 21 | 703 | 1.1− | 0.9− | 2006 11 11 | 703 | 1.0+ | 0.1+ | | |
| 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.9+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.2+ | | |
| 2006 09 28 | 691 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.5− | 2006 11 19 | 691 | 1.1+ | 1.1− | | |
| 2006 09 28 | 691 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ | | |
| 2006 09 28 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | | | | | |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.2− | | | | | | |

## 2002 QN$_{104}$ = 2005 JN$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.92532 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27896297 | $\omega$ | 31.21077 | | −0.00650007 | | +0.99977431 |
| $a$ | 2.3197348 | $\Omega$ | 238.42393 | | −0.92228679 | | −0.01381050 |
| $e$ | 0.1583076 | $i$ | 1.36038 | | −0.38645159 | | +0.01614338 |
| $P$ | 3.53 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.4+ | 0.2− | 2002 09 04 | 644 | 0.0 | 0.8− | 2005 05 08 | G96 | 0.3− | 0.2− | | |
| 2002 07 29 | 644 | 0.4+ | 0.8+ | 2002 09 04 | 644 | 0.1− | 0.9− | 2005 05 08 | G96 | 0.0 | 0.3− | | |
| 2002 07 29 | 644 | 0.6+ | 0.5+ | 2002 09 04 | 644 | 0.3+ | 1.1− | 2005 05 08 | G96 | 0.5− | 0.4− | | |
| 2002 08 17 | 644 | 0.3− | 0.0 | 2005 04 09 | 691 | 0.4+ | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.3− | | |
| 2002 08 17 | 644 | 0.1− | 0.3− | 2005 04 09 | 691 | 0.4− | 0.2+ | 2005 05 12 | G96 | 0.2+ | 0.3− | | |
| 2002 08 17 | 644 | 0.2− | 0.1− | 2005 04 09 | 691 | 0.6+ | 0.1− | 2005 05 12 | G96 | 0.5− | 0.2− | | |
| 2002 08 27 | 644 | 0.4− | 0.8+ | 2005 04 17 | 691 | 0.2− | 0.1+ | 2005 05 12 | G96 | 0.1− | 0.4+ | | |
| 2002 08 27 | 644 | 0.0 | 1.3+ | 2005 04 17 | 691 | 0.1+ | 0.1− | 2005 05 12 | G96 | 0.4− | 0.0 | | |
| 2002 08 27 | 644 | 0.7− | 0.0 | 2005 04 17 | 691 | 0.2− | 0.1+ | | | | | | |

## 2002 QO$_{104}$ = 2006 RQ$_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.81259 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26227619 | $\omega$ | 71.63325 | | +0.56945667 | | +0.82183858 |
| $a$ | 2.4171122 | $\Omega$ | 233.09153 | | −0.76213723 | | +0.51995362 |
| $e$ | 0.0617180 | $i$ | 1.24214 | | −0.30800315 | | +0.23287243 |
| $P$ | 3.76 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 691 | 0.1+ | 0.5+ | 2002 09 04 | 644 | 0.2− | 0.2− | 2006 08 19 | 691 | 0.4+ | 0.6− | | |
| 2001 03 31 | 691 | 0.2+ | 0.3+ | 2005 03 11 | G96 | 0.3− | 0.2− | 2006 08 19 | 691 | 0.3+ | 0.2+ | | |
| 2001 03 31 | 691 | 0.1+ | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.2+ | | |
| 2002 07 29 | 644 | 0.3− | 0.2+ | 2005 03 11 | G96 | 0.3− | 0.4− | 2006 09 13 | 644 | 0.2+ | 0.0 | | |
| 2002 07 29 | 644 | 0.1− | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.3− | 0.3+ | | |
| 2002 07 29 | 644 | 0.3− | 0.2+ | 2005 04 05 | G96 | 0.3− | 0.2− | 2006 09 13 | 644 | 0.0 | 0.6+ | | |
| 2002 08 06 | 644 | 0.3+ | 0.3+ | 2005 04 05 | G96 | 0.4− | 0.3− | 2006 09 16 | 699 | 0.9+ | 0.2+ | | |
| 2002 08 06 | 644 | 0.5+ | 0.2+ | 2005 04 05 | G96 | 0.4− | 0.2− | 2006 09 16 | 699 | 0.3+ | 0.4− | | |
| 2002 08 06 | 644 | 0.3+ | 0.3+ | 2005 04 05 | G96 | 0.5− | 0.4− | 2006 09 16 | 699 | (0.8− | 1.9+) | | |
| 2002 08 17 | 644 | 0.0 | 0.2− | 2005 04 17 | 691 | 0.2+ | 0.1− | 2006 09 16 | 699 | (0.3− | 2.0+) | | |
| 2002 08 17 | 644 | 0.1+ | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | (2.3− | 1.2−) | | |
| 2002 08 17 | 644 | 0.1− | 0.2− | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.1+ | | |
| 2002 09 01 | 644 | 0.5− | 1.3+ | 2005 05 12 | G96 | 0.6− | 0.3− | 2006 09 20 | 704 | 1.3− | 0.1+ | | |
| 2002 09 01 | 644 | 0.1+ | 0.6+ | 2005 05 12 | G96 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.1+ | | |
| 2002 09 04 | 644 | 0.3− | 0.4− | 2005 05 12 | G96 | 0.4− | 0.6− | 2006 09 20 | 704 | 0.3− | 0.3+ | | |
| 2002 09 04 | 644 | 0.1− | 0.3− | 2005 05 12 | G96 | 0.4− | 0.5− | 2006 09 20 | 704 | 1.3− | 0.1− | | |

## 2002 QZ$_{104}$ = 2006 EV$_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.08388 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19097876 | $\omega$ | 301.42652 | | −0.64942651 | | +0.75078177 |
| $a$ | 2.9863864 | $\Omega$ | 287.57988 | | −0.64761528 | | −0.62927112 |
| $e$ | 0.1947578 | $i$ | 7.27480 | | −0.39854693 | | −0.20085963 |
| $P$ | 5.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.1+ | 0.0 | 2002 08 27 | 644 | 0.0 | 0.1+ | 2006 03 04 | 703 | 0.5− | 0.4− | | |
| 2002 08 16 | 644 | 0.1+ | 0.0 | 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 03 04 | 703 | 0.4− | 1.0− | | |
| 2002 08 16 | 644 | 0.0 | 0.2− | 2002 09 13 | 644 | 0.0 | 0.2− | 2006 03 04 | 703 | 0.5− | 0.9− | | |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2002 09 13 | 644 | 0.2− | 0.1− | 2006 03 04 | 703 | 0.3− | 0.6− | | |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2002 09 13 | 644 | 0.0 | 0.5− | 2006 03 05 | 699 | 0.7− | 0.6+ | | |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 02 24 | 703 | 0.1+ | 0.3+ | 2006 03 05 | 699 | 1.1+ | 1.3+ | | |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 02 24 | 703 | 0.4+ | 0.3+ | 2006 03 05 | 699 | 0.6+ | 0.5+ | | |
| 2002 08 26 | 644 | 0.1+ | 0.1+ | 2006 02 24 | 703 | 0.9+ | 0.6− | 2006 03 05 | 699 | 0.4− | 0.2+ | | |
| 2002 08 26 | 644 | 0.0 | 0.5+ | 2006 02 24 | 703 | 0.3− | 0.0 | | | | | | |

## 2002 QA$_{105}$ = 2003 YX$_{163}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.96025 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16758327 | $\omega$ | 14.40314 | | +0.81148408 | | −0.58434652 |
| $a$ | 3.2582341 | $\Omega$ | 21.35678 | | +0.53458670 | | +0.73835685 |
| $e$ | 0.1322258 | $i$ | 0.90018 | | +0.23603103 | | +0.33670211 |
| $P$ | 5.88 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.3− | 0.2+ | 2002 08 27 | 644 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.2− | 0.2+ | | |
| 2002 08 17 | 644 | 0.5− | 0.1− | 2002 08 29 | 644 | 0.4− | 0.1− | 2003 12 17 | 691 | 0.1+ | 0.0 | | |
| 2002 08 17 | 644 | 0.2− | 0.4− | 2002 08 29 | 644 | 0.3+ | 0.3− | 2003 12 17 | 691 | 0.2+ | 0.2− | | |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2002 08 29 | 644 | 0.4+ | 0.4− | 2003 12 17 | 691 | 0.2− | 0.3+ | | |
| 2002 08 18 | 644 | 0.1− | 0.7+ | 2002 09 01 | 644 | 0.2+ | 0.1− | 2003 12 29 | 691 | 0.3− | 0.2− | | |
| 2002 08 18 | 644 | 0.2+ | 0.2+ | 2002 09 01 | 644 | 0.2+ | 0.3− | 2003 12 29 | 691 | 0.0 | 0.0 | | |
| 2002 08 27 | 644 | 0.1− | 0.3+ | 2002 09 15 | 644 | 0.1− | 0.3− | 2003 12 29 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 27 | 644 | 0.1+ | 0.4+ | 2002 09 15 | 644 | 0.3+ | 0.0 | | | | | | |

**2002 QB$_{105}$ = 2006 JD$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.56224 | | (2000.0) | | | |
| $n$ | 0.18899024 | $\omega$ | 164.60952 | | +0.50651314 | +0.86198015 |
| $a$ | 3.0072980 | $\Omega$ | 135.81683 | | −0.79420705 | +0.47582926 |
| $e$ | 0.0398100 | $i$ | 1.71420 | | −0.33567783 | +0.17486207 |
| $P$ | 5.22 | $H$ | 16.4 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.1+ | 0.7+ | 2002 08 29 | 644 | 0.3+ | 0.2− | 2006 05 02 | G96 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.2− | 2002 08 29 | 644 | 0.2− | 0.3+ | 2006 05 03 | G96 | 0.1− | 0.2+ |
| 2002 08 17 | 644 | 0.2− | 0.1+ | 2002 09 01 | 644 | 0.5− | 0.1− | 2006 05 03 | G96 | 0.1− | 0.4− |
| 2002 08 18 | 644 | 0.2− | 0.2− | 2002 09 01 | 644 | 0.3+ | 0.2− | 2006 05 03 | G96 | 0.0 | 0.7− |
| 2002 08 18 | 644 | 0.0 | 0.4− | 2006 04 19 | 691 | 0.5+ | 0.1+ | 2006 05 03 | G96 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.5− | 0.1+ | 2006 04 19 | 691 | 0.3− | 0.3+ | 2006 05 04 | G96 | 0.1− | 0.1− |
| 2002 08 27 | 644 | 0.1+ | 0.1+ | 2006 04 19 | 691 | 0.0 | 0.1− | 2006 05 04 | G96 | 0.2− | 0.2− |
| 2002 08 27 | 644 | 0.3− | 0.1+ | 2006 05 02 | G96 | 0.2− | 0.3− | 2006 05 04 | G96 | 0.1+ | 0.3+ |
| 2002 08 27 | 644 | 0.5+ | 0.0 | 2006 05 02 | G96 | 0.2− | 0.1− | 2006 05 04 | G96 | 0.4− | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 05 02 | G96 | 0.1+ | 0.1− | | | | |

**2002 QC$_{105}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.40101 | | (2000.0) | | | |
| $n$ | 0.26265027 | $\omega$ | 139.39448 | | −0.77570699 | −0.63109292 |
| $a$ | 2.4148166 | $\Omega$ | 1.47515 | | +0.57251882 | −0.70412863 |
| $e$ | 0.1251567 | $i$ | 1.39765 | | +0.26551999 | −0.32546060 |
| $P$ | 3.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.2+ | 0.2+ | 2002 08 27 | 644 | 0.2− | 0.4− | 2002 09 15 | 644 | 0.5− | 0.2− |
| 1995 10 28 | 691 | 0.5+ | 0.3+ | 2002 08 27 | 644 | 0.2+ | 0.0 | 2006 08 19 | 691 | 0.3+ | 0.5− |
| 1995 10 28 | 691 | 0.3+ | 0.3+ | 2002 08 27 | 644 | 0.5+ | 0.5− | 2006 08 19 | 691 | 0.3− | 0.2+ |
| 1995 11 15 | 691 | 0.6− | 0.6− | 2002 08 29 | 644 | 0.2− | 0.2− | 2006 08 19 | 691 | 0.3− | 1.0− |
| 1995 11 15 | 691 | 0.5− | 0.2− | 2002 08 29 | 644 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 1999 12 03 | 691 | 0.1− | 0.1− | 2002 08 29 | 644 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.3+ |
| 1999 12 03 | 691 | 0.4+ | 0.2− | 2002 09 01 | 644 | 0.6− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 1999 12 03 | 691 | 0.2− | 0.2− | 2002 09 01 | 644 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.5+ |
| 2002 08 18 | 644 | 0.7+ | 0.2+ | 2002 09 15 | 644 | 0.6− | 0.5− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2002 08 18 | 644 | 0.5+ | 0.2+ | 2002 09 15 | 644 | 0.3+ | 0.4− | 2006 09 30 | 691 | 0.3− | 0.7+ |

**2002 QE$_{105}$ = 2006 RD$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.40050 | | (2000.0) | | | |
| $n$ | 0.25363005 | $\omega$ | 76.10079 | | +0.57163494 | −0.82040100 |
| $a$ | 2.4717369 | $\Omega$ | 339.01826 | | +0.73778542 | +0.52100521 |
| $e$ | 0.2379740 | $i$ | 2.12146 | | +0.35903506 | +0.23557542 |
| $P$ | 3.89 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.0 | 0.1− | 2004 02 27 | 695 | 0.0 | 0.3+ | 2006 09 16 | 699 | 1.1− | 0.5− |
| 2000 02 04 | 691 | 0.1+ | 0.0 | 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 09 16 | 699 | 0.0 | 0.8+ |
| 2000 02 04 | 691 | 0.1− | 0.1+ | 2004 03 18 | 691 | 0.4+ | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.3− |
| 2002 08 17 | 644 | 0.2+ | 0.0 | 2004 03 18 | 691 | 0.2+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.6+ | 0.3− | 2006 08 28 | 703 | 1.4− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.3− |
| 2002 08 17 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 1.4+ | 2006 09 25 | 699 | 0.7− | 1.4+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | (1.5+ | 1.1+) | 2006 09 25 | 699 | 1.2− | 0.6+ |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 703 | (0.1+ | 1.6+) | 2006 09 25 | 699 | (2.3+ | 0.7+) |
| 2002 08 18 | 644 | 0.4− | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.2+ |
| 2002 08 27 | 644 | 0.1− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 08 27 | 644 | 0.4− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.8+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2004 02 27 | 695 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.2− |

**2002 QG$_{105}$ = 2005 EV$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 175.26321 | | (2000.0) | | | |
| $n$ | 0.23152725 | $\omega$ | 356.26670 | | −0.79540588 | −0.60565698 |
| $a$ | 2.6266446 | $\Omega$ | 146.42408 | | +0.55711624 | −0.74530234 |
| $e$ | 0.0057045 | $i$ | 2.33824 | | +0.23864404 | −0.27875446 |
| $P$ | 4.26 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.3− | 0.4+ | 2002 08 29 | 644 | 0.4− | 0.1− | 2005 03 08 | G96 | 0.3− | 0.3+ |
| 2002 08 17 | 644 | 0.1+ | 0.7− | 2002 08 29 | 644 | 0.1− | 0.3+ | 2005 03 08 | G96 | 0.3− | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.3+ | 2002 08 29 | 644 | 0.4+ | 0.2+ | 2005 03 08 | G96 | 0.4− | 0.1+ |
| 2002 08 18 | 644 | 0.8− | 0.2− | 2002 09 15 | 644 | 0.2+ | 0.1− | 2005 03 12 | 691 | 0.0 | 0.1− |
| 2002 08 18 | 644 | 0.6+ | 0.4+ | 2002 09 15 | 644 | 0.1− | 0.2+ | 2005 03 12 | 691 | 0.0 | 0.2− |
| 2002 08 27 | 644 | 0.4+ | 0.2− | 2002 09 15 | 644 | 0.3+ | 0.2+ | 2005 03 12 | 691 | 0.2+ | 0.0 |
| 2002 08 27 | 644 | 0.2+ | 0.0 | 2002 09 15 | 644 | 0.6− | 0.6− | | | | |
| 2002 08 27 | 644 | 0.3+ | 0.0 | 2005 03 08 | G96 | 0.2+ | 0.2+ | | | | |

**2002 QO$_{105}$ = 2006 VM$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.24907 | | (2000.0) | | | |
| $n$ | 0.29391016 | $\omega$ | 11.25645 | | +0.09936298 | −0.99307385 |
| $a$ | 2.2404039 | $\Omega$ | 73.06418 | | +0.90777705 | +0.06466182 |
| $e$ | 0.1102667 | $i$ | 3.75802 | | +0.40751421 | +0.09809783 |
| $P$ | 3.35 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.3− | 0.2+ | 2002 08 29 | 644 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2002 08 29 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 691 | 0.4+ | 0.2− |
| 2002 08 18 | 644 | 0.2− | 0.1+ | 2002 08 30 | 644 | 0.5− | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.5+ |
| 2002 08 19 | 644 | 0.1− | 0.2− | 2002 08 30 | 644 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2002 08 19 | 644 | 0.5+ | 0.6− | 2002 08 30 | 644 | 0.2− | 0.2− | 2006 11 24 | 691 | 0.4+ | 0.7+ |
| 2002 08 19 | 644 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.4+ |
| 2002 08 29 | 644 | 0.6+ | 0.8− | 2006 11 10 | 691 | 0.3− | 0.4− | 2006 11 24 | 691 | 0.9− | 1.6− |

**2002 QW$_{105}$ = 2003 YM$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.34862 | | (2000.0) | | | |
| $n$ | 0.21037296 | $\omega$ | 331.12462 | | +0.88850055 | −0.45554603 |
| $a$ | 2.7999016 | $\Omega$ | 56.07900 | | +0.43275091 | +0.79184317 |
| $e$ | 0.1567354 | $i$ | 3.81267 | | +0.15262181 | +0.40677047 |
| $P$ | 4.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.2− | 0.2− | 2002 09 15 | 644 | 0.2+ | 0.3− | 2003 12 21 | 691 | 0.2+ | 0.2+ |
| 2002 08 19 | 644 | 0.1− | 0.1+ | 2002 09 16 | 644 | 0.0 | 0.0 | 2003 12 21 | 691 | 0.1+ | 0.4+ |
| 2002 08 19 | 644 | 0.2+ | 0.2+ | 2002 09 16 | 644 | 0.1− | 0.3− | 2003 12 21 | 691 | 0.2− | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2002 09 16 | 644 | 0.1+ | 0.0 | 2004 01 18 | 691 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2003 12 19 | 691 | 0.2− | 0.1− | 2004 01 18 | 691 | 0.2− | 0.2− |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2003 12 19 | 691 | 0.1+ | 0.2− | 2004 01 18 | 691 | 0.1+ | 0.1+ |
| 2002 09 15 | 644 | 0.0 | 0.1− | 2003 12 19 | 691 | 0.0 | 0.2− | | | | |

**2002 QZ$_{105}$ = 2003 YL$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 225.57568 | | (2000.0) | | | |
| $n$ | 0.20993890 | $\omega$ | 331.09503 | | +0.18400705 | −0.96764107 |
| $a$ | 2.8037595 | $\Omega$ | 107.85646 | | +0.93309841 | +0.11674443 |
| $e$ | 0.1423520 | $i$ | 10.45134 | | +0.30898020 | +0.22369957 |
| $P$ | 4.69 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.5− | 0.3− | 2002 09 17 | 644 | 0.7− | 0.3− | 2003 12 23 | 704 | 0.6− | 0.3+ |
| 2002 08 12 | 608 | 0.2− | 0.1+ | 2002 09 17 | 644 | 0.2− | 0.1− | 2003 12 27 | 704 | 0.2+ | 0.2− |
| 2002 08 19 | 644 | 0.2+ | 0.0 | 2002 10 09 | 644 | 0.4+ | 0.1+ | 2003 12 27 | 704 | 1.0+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.3+ | 0.2+ | 2002 10 09 | 644 | 0.6+ | 0.5− | 2003 12 27 | 704 | 0.6+ | 0.5+ |
| 2002 08 19 | 644 | 0.2+ | 0.0 | 2003 12 21 | 704 | 0.1− | 0.6− | 2003 12 27 | 704 | 0.3− | 0.0 |
| 2002 08 20 | 644 | 0.5− | 0.9+ | 2003 12 21 | 704 | 0.3− | 0.1+ | 2004 01 31 | 691 | 0.4− | 0.0 |
| 2002 08 20 | 644 | 0.7+ | 0.0 | 2003 12 21 | 704 | 0.0 | 0.0 | 2004 01 31 | 691 | 0.1+ | 0.0 |
| 2002 09 09 | 644 | 0.5− | 0.3+ | 2003 12 21 | 704 | 0.9− | 0.3+ | 2004 01 31 | 691 | 0.3+ | 0.0 |
| 2002 09 09 | 644 | 0.2+ | 0.1− | 2003 12 23 | 704 | 0.0 | 0.3− | | | | |
| 2002 09 09 | 644 | 0.0 | 0.4− | 2003 12 23 | 704 | 0.4+ | 0.4− | | | | |

**2002 QA$_{107}$ = 1960 SL = 2000 CU$_{11}$ = 2003 YF$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.66083 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23290461 | $\omega$ | 281.09799 | | −0.03024605 | −0.99948328 | |
| $a$ | 2.6162786 | $\Omega$ | 170.61481 | | +0.94113437 | −0.03214306 | |
| $e$ | 0.1061583 | $i$ | 3.82530 | | +0.33667681 | +0.00006095 | |
| $P$ | 4.23 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 26 | 675 | 0.9+ | 0.1− | 2000 02 03 | 704 | 0.1− | 0.6+ | 2003 12 19 | 704 | 0.3− | 0.7+ |
| 1960 09 26 | 675 | 0.8− | 0.4− | 2000 02 03 | 704 | 1.7− | 0.5+ | 2003 12 19 | 704 | 0.1+ | 0.5− |
| 1960 09 27 | 675 | 0.1+ | 0.4− | 2002 08 07 | 644 | 0.1− | 0.1− | 2003 12 19 | 704 | 0.4+ | 0.1+ |
| 1960 09 28 | 675 | 0.3− | 0.1− | 2002 08 07 | 644 | 0.2− | 0.3+ | 2003 12 22 | 704 | 0.4+ | 0.1+ |
| 1960 09 28 | 675 | 0.2− | 0.5− | 2002 08 17 | 644 | 0.1− | 0.1+ | 2003 12 22 | 704 | 0.2− | 0.1+ |
| 1992 03 26 | 691 | 0.4− | 0.7− | 2002 08 17 | 644 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.5+ | 0.0 |
| 1992 03 26 | 691 | 0.5+ | 0.2+ | 2002 08 17 | 644 | 0.3+ | 0.2+ | 2003 12 22 | 704 | 0.3+ | 0.3− |
| 1992 03 26 | 691 | 0.5+ | 0.6− | 2002 08 17 | 644 | 0.4+ | 0.2+ | 2003 12 22 | 704 | 0.4+ | 0.1+ |
| 2000 02 02 | 704 | 0.6+ | 0.3+ | 2002 08 17 | 644 | 0.0 | 0.1+ | 2005 05 11 | G96 | 1.1− | 0.8+ |
| 2000 02 02 | 704 | 0.2− | 0.3− | 2002 08 17 | 644 | 0.3+ | 0.4+ | 2005 05 11 | G96 | 0.4− | 0.8+ |
| 2000 02 02 | 704 | 0.3+ | 0.4− | 2002 08 27 | 644 | 0.5+ | 0.3+ | 2005 05 11 | G96 | 0.2+ | 1.0+ |
| 2000 02 02 | 704 | 0.7+ | 0.4+ | 2002 08 27 | 644 | 0.4+ | 0.1− | 2005 05 11 | G96 | 0.3− | 0.6+ |
| 2000 02 02 | 704 | 0.5− | 0.0 | 2002 08 27 | 644 | 0.6+ | 0.2+ | 2006 05 30 | G96 | 0.5− | 1.0− |
| 2000 02 03 | 704 | 0.2− | 0.5+ | 2002 09 14 | 644 | 0.4− | 0.0 | 2006 05 30 | G96 | 0.0 | 0.4+ |
| 2000 02 03 | 704 | 0.4− | 0.0 | 2002 09 14 | 644 | 0.9− | 0.4+ | 2006 05 30 | G96 | 0.3− | 0.5+ |
| 2000 02 03 | 704 | 1.6− | 1.2+ | 2003 12 19 | 704 | 0.4+ | 0.5+ | 2006 05 30 | G96 | 0.2− | 0.5+ |

**2002 QN$_{107}$ = 2006 PM$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.93455 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24159720 | $\omega$ | 3.63260 | | +0.45048570 | +0.89131910 | |
| $a$ | 2.5531409 | $\Omega$ | 293.14803 | | −0.82050766 | +0.39076977 | |
| $e$ | 0.0691551 | $i$ | 3.18683 | | −0.35189460 | +0.22988963 | |
| $P$ | 4.08 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.2+ | 0.3+ | 2002 08 27 | 644 | 0.3+ | 0.1− | 2006 08 12 | 644 | 0.3+ | 0.1+ |
| 2002 07 23 | 644 | 0.2− | 0.1− | 2002 08 27 | 644 | 0.0 | 0.0 | 2006 08 12 | 644 | 0.6+ | 0.3+ |
| 2002 07 29 | 644 | 0.1− | 0.0 | 2002 08 27 | 644 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2002 07 29 | 644 | 0.1+ | 0.1+ | 2002 09 14 | 644 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.4− | 0.0 |
| 2002 08 07 | 644 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.9− | 0.0 | 2006 08 14 | 644 | 0.2+ | 0.1− |
| 2002 08 07 | 644 | 0.2+ | 0.7− | 2002 09 14 | 644 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2002 08 07 | 644 | 0.1+ | 0.2+ | 2006 07 25 | 644 | 0.6− | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.2+ |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 07 25 | 644 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 08 17 | 644 | 0.0 | 0.2+ | 2006 07 25 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 08 17 | 644 | 0.2+ | 0.4+ | 2006 08 12 | 644 | 0.1− | 0.2− | | | | |

**2002 QG$_{108}$ = 2004 EA$_{88}$ = 2006 WB$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.67374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28066181 | $\omega$ | 230.94577 | | +0.52861526 | −0.84885830 | |
| $a$ | 2.3103645 | $\Omega$ | 187.14345 | | +0.78451871 | +0.48959889 | |
| $e$ | 0.1963108 | $i$ | 1.07944 | | +0.32418559 | +0.19933016 | |
| $P$ | 3.51 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.1+ | 1.0+ | 2002 09 14 | 644 | 0.5− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2002 08 07 | 644 | 0.3+ | 0.4+ | 2004 03 14 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2002 08 08 | 644 | 0.4+ | 0.2+ | 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 08 08 | 644 | 0.0 | 0.4+ | 2004 03 14 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2002 08 08 | 644 | 0.3− | 0.1+ | 2004 03 21 | 691 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2002 08 08 | 644 | 0.1+ | 0.2+ | 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2002 08 16 | 608 | 0.5− | 0.7+ | 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 0.5+ | 0.4+ |
| 2002 08 17 | 644 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.5+ | 2006 12 01 | 704 | 0.4− | 0.0 |
| 2002 08 17 | 644 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.5+ | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.2− | 0.7+ | 2006 12 01 | 704 | 0.4− | 0.8+ |
| 2002 09 14 | 644 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.4+ | | | | |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.8− | 0.4+ | | | | |

**2002 RL = 2006 SU$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.17947 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24472446 | $\omega$ | 38.70434 | | +0.55364750 | +0.82342948 | |
| $a$ | 2.5313438 | $\Omega$ | 265.24847 | | −0.79169021 | +0.47418278 | |
| $e$ | 0.2211458 | $i$ | 7.16225 | | −0.25826547 | +0.31163212 | |
| $P$ | 4.03 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 02 | 557 | 0.5− | 0.2+ | 2006 09 22 | 699 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 02 | 557 | 0.3− | 0.5− | 2006 09 22 | 699 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 03 | 557 | 0.1− | 0.9− | 2006 09 22 | 699 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 09 04 | 557 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 04 | 557 | 0.3− | 0.6+ | 2006 09 28 | 703 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 09 04 | 557 | 0.6+ | 0.5− | 2006 09 28 | 703 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 09 08 | 557 | 0.2+ | 0.6− | 2006 09 28 | 703 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 08 | 557 | 1.1+ | 0.3− | 2006 10 04 | 703 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 10 | 557 | 0.4− | 0.5+ | 2006 10 04 | 703 | 0.9− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 09 10 | 557 | 0.2− | 0.3+ | 2006 10 04 | 703 | 0.5− | 0.5− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 09 28 | 557 | 1.1+ | 1.0− | 2006 10 04 | 703 | 0.4− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 09 28 | 557 | 0.4− | 0.7− | 2006 10 17 | 703 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.3− | 0.2− |
| 2002 10 03 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2002 10 03 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 10 03 | 644 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.5− | 0.4− | | | | |
| 2006 09 22 | 699 | 0.3− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | | | |

**2002 RC$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.97669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27002272 | $\omega$ | 336.58276 | | +0.96498550 | +0.26171420 | |
| $a$ | 2.3706595 | $\Omega$ | 8.30386 | | −0.21730468 | +0.83515784 | |
| $e$ | 0.1373836 | $i$ | 6.98720 | | −0.14690696 | +0.48375310 | |
| $P$ | 3.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.3− | 0.2+ | 2002 09 17 | 608 | 1.0− | 0.3− | 2004 03 17 | 645 | 0.0 | 0.2+ |
| 2002 09 04 | 699 | 0.2+ | 0.4+ | 2002 09 17 | 608 | 0.9− | 0.7− | 2005 01 18 | 809 | 0.1− | 0.7+ |
| 2002 09 04 | 699 | 0.2+ | 1.0+ | 2002 09 17 | 608 | 1.4− | 0.2− | 2005 01 18 | 809 | 0.1+ | 0.2− |
| 2002 09 04 | 699 | 0.2+ | 1.0+ | 2002 10 01 | 699 | 0.8− | 0.2+ | 2006 10 25 | D35 | 0.0 | 0.2+ |
| 2002 09 05 | 704 | 0.5+ | 0.8+ | 2002 10 01 | 699 | 0.4− | 0.8+ | 2006 10 25 | D35 | 0.1− | 0.4+ |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2002 10 01 | 699 | 0.4− | 0.3+ | 2006 10 25 | D35 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.6− | 0.5− | 2002 10 01 | 699 | 0.7− | 0.7+ | 2006 10 25 | D35 | 0.4− | 0.5+ |
| 2002 09 05 | 704 | 0.2− | 0.4− | 2002 10 03 | 704 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.9+ | 0.9− |
| 2002 09 05 | 608 | 1.1+ | 0.9+ | 2002 10 03 | 704 | 0.2− | 0.8− | 2006 10 27 | 703 | 0.2− | 1.0− |
| 2002 09 05 | 608 | 0.9+ | 0.8+ | 2002 10 03 | 704 | 0.1+ | 0.9− | 2006 11 02 | 703 | 0.7− | 0.8− |
| 2002 09 05 | 608 | 0.9+ | 0.7+ | 2002 10 03 | 704 | 0.7+ | 0.9− | 2006 11 02 | 703 | 0.8− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.1− | 2002 10 03 | 704 | 0.2+ | 1.0− | 2006 11 02 | 703 | 0.5+ | 0.7− |
| 2002 09 06 | 704 | 0.2− | 0.8− | 2002 10 06 | 704 | (0.2− | 4.0−) | 2006 11 02 | 703 | 0.4+ | 0.4− |
| 2002 09 06 | 704 | 0.2− | 0.3− | 2002 10 06 | 704 | (0.0 | 3.4−) | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 1.2− | 0.1+ | 2002 10 06 | 704 | (0.5− | 3.3−) | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.2− | 1.0− | 2002 10 06 | 704 | (0.3+ | 3.5−) | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 09 11 | 608 | 0.2− | 0.4− | 2002 10 07 | 704 | 0.6+ | 0.7+ | 2006 11 15 | 703 | 1.3+ | 0.5+ |
| 2002 09 11 | 608 | 0.3− | 0.2− | 2002 10 07 | 704 | 0.4− | 0.5+ | 2006 11 15 | 703 | 0.3− | 0.9− |
| 2002 09 11 | 608 | 0.3+ | 1.2− | 2002 10 07 | 704 | 0.1+ | 0.8+ | 2006 11 15 | 703 | 0.4+ | 0.0 |
| 2002 09 15 | 699 | 0.1− | 0.7+ | 2002 10 07 | 704 | 0.1− | 0.7+ | 2006 11 15 | 703 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 0.3+ | 0.9+ | 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2002 09 15 | 699 | 0.1+ | 0.7+ | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2002 09 15 | 699 | 0.8+ | 0.3+ | 2002 10 11 | 704 | 0.2+ | 0.9+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2002 10 11 | 704 | 0.3− | 0.5+ | | | | |
| 2002 09 15 | 644 | 0.2− | 0.2+ | 2004 03 17 | 645 | 0.1+ | 0.2+ | | | | |

### 2002 $RB_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.09617 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26296666 | $\omega$ | 91.87169 | | +0.46819007 | +0.87906542 | |
| $a$ | 2.4128793 | $\Omega$ | 206.63403 | | −0.86921711 | +0.43992262 | |
| $e$ | 0.1811556 | $i$ | 11.53949 | | −0.15893294 | +0.18360846 | |
| $P$ | 3.75 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 704 | 0.3+ | 0.2− | 2002 09 11 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.6− | 0.6− |
| 2002 08 15 | 704 | 0.1+ | 0.9+ | 2002 10 05 | 704 | (0.1+ | 2.0+) | 2006 10 17 | 703 | 1.0+ | 0.5− |
| 2002 08 15 | 704 | 0.7+ | 0.2+ | 2002 10 05 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.7+ |
| 2002 08 15 | 704 | 0.9+ | 1.5+ | 2002 10 05 | 645 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2002 08 15 | 704 | 0.8+ | 0.1− | 2002 10 05 | 645 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.6− | 0.0 |
| 2002 09 03 | 644 | 0.2− | 0.0 | 2002 10 05 | 704 | 0.8− | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2002 09 03 | 644 | 0.2− | 0.3+ | 2002 10 05 | 704 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.2+ |
| 2002 09 03 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2002 09 04 | 644 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.8+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2002 09 04 | 644 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 1.0− |
| 2002 09 04 | 644 | 0.0 | 0.4+ | 2006 10 17 | 703 | (0.2− | 2.4+) | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2002 09 11 | 644 | 0.3− | 0.3+ | 2006 10 17 | 703 | 1.1− | 1.1+ | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2002 09 11 | 644 | 0.9− | 0.0 | 2006 10 17 | 703 | 0.8+ | 1.2+ | 2006 10 31 | G96 | 0.2+ | 0.7− |

### 2002 $RN_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.47182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23214709 | $\omega$ | 178.67569 | | +0.89059556 | −0.44198392 | |
| $a$ | 2.6219670 | $\Omega$ | 208.34041 | | +0.41516399 | +0.88631037 | |
| $e$ | 0.1829764 | $i$ | 13.05004 | | +0.18568362 | +0.13821774 | |
| $P$ | 4.25 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 29 | 910 | 0.4+ | 0.7+ | 2002 10 05 | 704 | 1.1+ | 0.5− | 2002 10 12 | 704 | 0.3− | 0.2− |
| 1998 09 29 | 910 | 0.2− | 1.2+ | 2002 10 05 | 704 | 0.1+ | 0.0 | 2002 10 12 | 704 | 0.4− | 0.4+ |
| 1998 09 29 | 910 | 0.3− | 0.9+ | 2002 10 05 | 704 | 0.3+ | 0.2+ | 2002 10 12 | 704 | 0.2+ | 1.1− |
| 2002 09 03 | 644 | 0.1+ | 0.1− | 2002 10 05 | 704 | 0.1− | 0.6− | 2002 10 31 | 704 | 0.9− | 0.4+ |
| 2002 09 03 | 644 | 0.2+ | 0.0 | 2002 10 05 | 704 | 0.6− | 1.2+ | 2002 10 31 | 704 | 0.3+ | 0.4+ |
| 2002 09 03 | 644 | 0.3+ | 0.1− | 2002 10 07 | 699 | 1.3− | 0.6− | 2002 10 31 | 704 | 0.4+ | 1.2+ |
| 2002 09 04 | 644 | 0.2+ | 0.0 | 2002 10 07 | 699 | 0.6+ | 0.4+ | 2002 10 31 | 704 | 0.2+ | 0.5+ |
| 2002 09 04 | 644 | 0.0 | 0.1− | 2002 10 07 | 699 | 0.0 | 0.0 | 2002 10 31 | 704 | 0.6+ | 0.1+ |
| 2002 09 04 | 644 | 0.2+ | 0.0 | 2002 10 07 | 699 | 0.7− | 0.1+ | 2002 11 05 | 291 | 0.2+ | 0.2+ |
| 2002 09 12 | 644 | 0.1− | 0.3− | 2002 10 08 | 704 | 0.3− | 0.8+ | 2002 11 05 | 291 | 0.4+ | 0.3+ |
| 2002 09 12 | 644 | 0.0 | 0.2− | 2002 10 08 | 704 | 0.4+ | 0.5+ | 2002 11 05 | 291 | 0.3+ | 0.1+ |
| 2002 09 12 | 644 | 0.2− | 0.6− | 2002 10 08 | 704 | 0.8− | 1.4+ | 2005 04 16 | 691 | 0.1+ | 0.3+ |
| 2002 09 28 | 608 | 0.8− | 1.7− | 2002 10 09 | 049 | 0.2− | 0.5− | 2005 04 16 | 691 | 0.1+ | 0.5+ |
| 2002 09 28 | 608 | 0.3− | 1.3− | 2002 10 09 | 049 | 0.9− | 1.6+ | 2005 04 16 | 691 | 0.1− | 0.4+ |
| 2002 09 28 | 608 | 0.7− | 1.7− | 2002 10 09 | 049 | 0.6+ | 0.0 | | | | |

### 2002 $RO_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.55727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24263254 | $\omega$ | 92.84927 | | +0.44089026 | −0.88721682 | |
| $a$ | 2.5458727 | $\Omega$ | 329.79193 | | +0.67814637 | +0.42844337 | |
| $e$ | 0.3128080 | $i$ | 15.66747 | | +0.58799089 | +0.17112159 | |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 699 | 0.0 | 0.3− | 2002 10 09 | 704 | 0.4+ | 0.5− | 2006 09 15 | 704 | 0.1− | 0.3+ |
| 1998 10 16 | 699 | 0.1− | 0.7− | 2002 10 10 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 699 | 0.4+ | 0.6− |
| 1998 10 16 | 699 | 0.8+ | 0.2+ | 2002 10 10 | 704 | 0.3− | 0.3+ | 2006 09 20 | 699 | 0.2− | 0.7+ |
| 2002 09 03 | 644 | 0.4− | 0.2− | 2002 10 10 | 704 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.4+ |
| 2002 09 03 | 644 | 0.0 | 0.4− | 2002 10 10 | 704 | 0.2− | 1.3+ | 2006 09 20 | 699 | 0.2+ | 0.4+ |
| 2002 09 03 | 644 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.3− | 0.1− | 2006 09 22 | 703 | 0.0 | 0.3− |
| 2002 09 04 | 644 | 0.3+ | 0.2− | 2002 10 11 | 704 | 0.4+ | 0.2− | 2006 09 22 | 703 | 0.5+ | 0.4+ |
| 2002 09 04 | 644 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.5+ | 2006 09 22 | 703 | 0.3− | 0.6− |
| 2002 09 04 | 644 | 0.2− | 0.2− | 2002 10 11 | 704 | 0.3− | 0.0 | 2006 09 22 | 703 | 0.5− | 0.3− |
| 2002 09 12 | 644 | 0.3− | 1.1+ | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 10 01 | 703 | 0.4− | 0.2− |
| 2002 09 12 | 644 | 0.5− | 0.9+ | 2006 08 30 | 704 | 0.7+ | 0.7+ | 2006 10 01 | 703 | 0.2+ | 0.7− |
| 2002 09 12 | 644 | 0.4− | 0.8+ | 2006 08 30 | 704 | 0.5+ | 0.8+ | 2006 10 01 | 703 | 0.2− | 0.0 |
| 2002 10 03 | 644 | 0.6− | 0.3− | 2006 08 30 | 704 | 0.4+ | 0.8− | 2006 10 01 | 703 | 0.0 | 0.4− |
| 2002 10 03 | 644 | 0.4− | 0.2− | 2006 09 14 | 703 | (0.9+ | 2.0−) | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2002 10 03 | 644 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 10 06 | 704 | 0.9+ | 0.4− | 2006 09 14 | 703 | 0.6− | 0.8− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2002 10 06 | 704 | 0.5+ | 0.0 | 2006 09 15 | 704 | (1.9+ | 0.8+) | 2006 10 17 | 703 | 1.0− | 0.5− |
| 2002 10 09 | 704 | 0.2+ | 1.1− | 2006 09 15 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 1.3+ |
| 2002 10 09 | 704 | (1.8− | 0.6−) | 2006 09 15 | 704 | (2.0+ | 1.4+) | 2006 10 17 | 703 | 0.1+ | 0.7+ |
| 2002 10 09 | 704 | 0.2+ | 0.4− | 2006 09 15 | 704 | 1.1+ | 0.4− | | | | |

### 2002 $RG_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.24267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29656573 | $\omega$ | 157.42697 | | +0.82400388 | +0.56626201 | |
| $a$ | 2.2270095 | $\Omega$ | 168.02646 | | −0.53287835 | +0.78599944 | |
| $e$ | 0.1868146 | $i$ | 5.28341 | | −0.19250523 | +0.24809721 | |
| $P$ | 3.32 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 19 | 691 | 0.0 | 0.2− | 2002 08 12 | 699 | 0.9− | 0.1+ | 2002 09 16 | 644 | 0.5− | 0.7+ |
| 1998 05 19 | 691 | 0.1+ | 0.0 | 2002 08 18 | 608 | 0.9+ | 0.0 | 2002 09 16 | 644 | 0.2− | 0.9+ |
| 1998 05 19 | 691 | 0.1− | 0.3+ | 2002 08 18 | 608 | 0.1+ | 0.2− | 2002 09 16 | 644 | 0.1− | 0.8+ |
| 2002 07 09 | 704 | (2.7+ | 1.0+) | 2002 08 18 | 608 | 0.5+ | 0.1− | 2002 09 29 | 291 | 0.1+ | 0.1− |
| 2002 07 09 | 704 | 0.2+ | 0.4− | 2002 09 01 | 608 | 0.4− | 0.4− | 2002 09 29 | 291 | 0.0 | 0.2− |
| 2002 07 09 | 704 | 0.5+ | 0.5− | 2002 09 01 | 608 | 0.2− | 0.6− | 2002 09 29 | 291 | 0.4+ | 0.1− |
| 2002 07 09 | 704 | 0.6+ | 1.2− | 2002 09 01 | 608 | 0.3− | 0.8− | 2002 10 03 | 704 | 0.0 | 0.4+ |
| 2002 08 12 | 704 | 0.0 | 0.7+ | 2002 09 05 | 704 | 0.2+ | 0.3+ | 2002 10 03 | 704 | 0.0 | 0.8+ |
| 2002 08 12 | 704 | 0.0 | 0.1+ | 2002 09 05 | 704 | 0.1+ | 0.3− | 2002 10 03 | 704 | 0.1+ | 0.9+ |
| 2002 08 12 | 704 | 0.5− | 0.3+ | 2002 09 05 | 704 | 0.1+ | 0.2+ | 2002 10 03 | 704 | 0.5+ | 0.4− |
| 2002 08 12 | 704 | 0.0 | 0.0 | 2002 09 05 | 704 | 0.2+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.0 |
| 2002 08 12 | 704 | 0.5+ | 0.3− | 2002 09 05 | 704 | 0.4+ | 0.7+ | 2005 06 14 | 691 | 0.0 | 0.0 |
| 2002 08 12 | 699 | 1.2− | 0.6+ | 2002 09 14 | 644 | 0.6− | 0.1− | 2005 06 14 | 691 | 0.0 | 0.2+ |
| 2002 08 12 | 699 | 0.6− | 0.2− | 2002 09 14 | 644 | 0.6− | 0.1− | | | | |
| 2002 08 12 | 699 | 0.1− | 0.7− | 2002 09 14 | 644 | 0.5− | 0.1− | | | | |

### 2002 $RS_6$ = 2006 $UM_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.95218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26813782 | $\omega$ | 168.52742 | | +0.83274668 | +0.55353099 | |
| $a$ | 2.3817563 | $\Omega$ | 157.85078 | | −0.51038730 | +0.77567390 | |
| $e$ | 0.1905075 | $i$ | 1.77524 | | −0.21456413 | +0.30320529 | |
| $P$ | 3.68 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 01 | 608 | 0.2− | 1.3+ | 2002 09 14 | 644 | 0.0 | 0.3− | 2006 10 18 | 691 | 0.1− | 0.5+ |
| 2002 09 01 | 608 | 0.1− | 0.7+ | 2002 09 14 | 644 | 0.0 | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2002 09 01 | 608 | 0.5− | 0.7+ | 2002 09 15 | 644 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 699 | 0.8+ | 0.2− | 2002 09 15 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 09 05 | 699 | 1.1+ | 1.3− | 2002 09 15 | 644 | 0.2− | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 09 05 | 699 | 0.1− | 0.8+ | 2002 09 16 | 644 | 0.3+ | 0.8− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 09 05 | 699 | 0.9− | 0.5− | 2002 09 16 | 644 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2002 09 05 | 704 | 0.8− | 0.5− | 2002 09 16 | 644 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.6+ | 0.4− |
| 2002 09 05 | 704 | 0.1− | 0.7− | 2006 10 17 | G96 | 0.4+ | 1.1− | 2006 11 15 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.9+ | 0.5− | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 0.1+ | 0.9+ | 2006 10 17 | G96 | 1.0+ | 0.5− | | | | |
| 2002 09 14 | 644 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.3− | | | | |

**2002 RS$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.77386 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25630111 | $\omega$ | 236.17098 | | +0.99758115 | | +0.04468930 |
| $a$ | 2.4545340 | $\Omega$ | 121.21469 | | −0.02204402 | | +0.92979992 |
| $e$ | 0.2075077 | $i$ | 3.56924 | | −0.06592359 | | +0.36534227 |
| $P$ | 3.85 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 30 | 691 | 0.3− | 0.3+ | 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 1998 06 30 | 691 | 0.1+ | 0.2− | 2002 09 15 | 644 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.5+ | 0.6+ |
| 1998 06 30 | 691 | 0.1+ | 0.3+ | 2002 09 15 | 644 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2002 08 20 | 644 | 0.1− | 0.0 | 2002 09 17 | 608 | 0.9− | 0.6− | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 2002 08 20 | 644 | 0.3− | 0.0 | 2002 09 17 | 608 | (0.7− | 1.6−) | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 08 20 | 644 | 0.1+ | 0.1+ | 2002 09 17 | 608 | 0.7+ | 1.2− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.6− | 0.4+ | 2002 11 01 | 950 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 08 29 | 644 | 0.5− | 0.2+ | 2002 11 01 | 950 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2002 11 01 | 950 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 09 03 | 608 | 1.4+ | 0.4+ | 2004 02 11 | 691 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 09 03 | 608 | 1.1+ | 0.7+ | 2004 02 11 | 691 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2002 09 03 | 608 | 1.2+ | 0.7+ | 2004 02 11 | 691 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 09 05 | 704 | 1.0− | 0.4+ | 2006 09 21 | 699 | 0.7+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.8− | 0.6+ | 2006 09 21 | 699 | 1.0− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2002 09 05 | 704 | 0.9− | 0.7+ | 2006 09 21 | 699 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.5− | 1.3+ | 2006 09 21 | 699 | (0.2+ | 1.8−) | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.4+ | 0.8− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.2− | 0.6+ | 2006 09 25 | 699 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 0.5− | 0.9+ | 2006 09 25 | 699 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 09 06 | 704 | (1.3− | 1.8+) | 2006 09 25 | 699 | 0.3− | 1.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 09 06 | 704 | 0.2+ | 1.1+ | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.9− |
| 2002 09 06 | 704 | 0.8− | 1.2+ | 2006 09 26 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2002 09 08 | 608 | 0.1− | 0.8− | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2002 09 08 | 608 | 0.0 | 0.6− | 2006 09 26 | 704 | 0.5+ | 1.3− | 2006 10 22 | 703 | 0.7+ | 0.6− |
| 2002 09 08 | 608 | 0.2− | 0.5− | 2006 09 26 | 704 | 0.4+ | 1.4− | 2006 10 22 | 703 | 0.1+ | 0.3+ |
| 2002 09 13 | 704 | 0.5− | 0.2+ | 2006 09 29 | 699 | 0.3− | 1.2+ | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2002 09 13 | 704 | 0.4− | 0.4+ | 2006 09 29 | 699 | 0.1− | 0.4− | 2006 10 22 | 703 | 1.0− | 0.4+ |
| 2002 09 13 | 704 | 0.1− | 0.5− | 2006 09 29 | 699 | 0.9+ | 0.6+ | 2006 10 22 | 703 | 0.7− | 0.9+ |
| 2002 09 13 | 704 | 0.4− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2002 09 13 | 608 | 0.5+ | 0.5− | 2006 09 30 | 703 | 1.0− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2002 09 13 | 608 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 09 13 | 608 | 0.4+ | 0.8− | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.0 | 0.3− |

**2002 RD$_{10}$ = 2006 WK$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.75403 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27252154 | $\omega$ | 349.83466 | | +0.86090017 | | +0.50788180 |
| $a$ | 2.3561458 | $\Omega$ | 339.55730 | | −0.46052874 | | +0.75273800 |
| $e$ | 0.1282555 | $i$ | 4.94651 | | −0.21625027 | | +0.41885747 |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.4+ | 0.5− | 2002 09 05 | 704 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2002 08 18 | 644 | 0.4+ | 0.4− | 2002 09 05 | 704 | 0.6+ | 0.7− | 2006 11 14 | 703 | 1.5+ | 1.3+ |
| 2002 08 18 | 644 | 0.3+ | 0.3− | 2002 09 05 | 704 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.7− |
| 2002 09 04 | 644 | 0.5− | 0.1− | 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.0 |
| 2002 09 04 | 644 | 0.4− | 0.1− | 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.9− | 0.5+ |
| 2002 09 04 | 644 | 0.5− | 0.1+ | 2005 05 19 | 644 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.3− |
| 2002 09 05 | 704 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.6+ | 1.4+ | 2006 11 22 | 703 | 1.0− | 0.4− |
| 2002 09 05 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.4+ | 0.1+ |
| 2002 09 05 | 704 | 0.7− | 0.7+ | 2006 10 27 | 703 | (0.9+ | 1.7+) | 2006 11 22 | 703 | 0.6− | 0.5− |
| 2002 09 05 | 704 | 0.5− | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.9+ | 2006 11 25 | G96 | 0.4− | 0.2− |
| 2002 09 05 | 704 | 0.6+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.2− | 0.2− |

**2002 RK$_{10}$ = 2006 UB$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.56961 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26842624 | $\omega$ | 202.11634 | | +0.97310482 | | +0.22852994 |
| $a$ | 2.3800499 | $\Omega$ | 144.63348 | | −0.20314016 | | +0.91065106 |
| $e$ | 0.1455430 | $i$ | 2.87203 | | −0.10863280 | | +0.34422189 |
| $P$ | 3.67 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2− | 0.0 | 2002 09 05 | 704 | 0.1− | 0.6− | 2006 10 18 | 691 | 0.3− | 0.4+ |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2006 10 16 | A44 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.2+ | 2006 10 17 | A44 | 0.4− | 0.2− | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.5+ | 0.5+ | 2006 10 17 | A44 | 0.2− | 0.9− | 2006 10 18 | A44 | 0.5+ | 0.3+ |
| 2002 08 29 | 644 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 10 18 | A44 | 0.3− | 0.7+ |
| 2002 08 29 | 644 | 0.7+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 10 19 | A44 | 0.1− | 0.1+ |
| 2002 09 04 | 644 | 0.2− | 0.6− | 2006 10 17 | G96 | 0.5+ | 0.6− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 09 04 | 644 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.8+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 09 04 | 644 | 0.3− | 0.2− | 2006 10 18 | A44 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2002 09 05 | 704 | 0.4− | 0.5− | 2006 10 18 | A44 | 0.9+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2006 10 18 | A44 | 0.4+ | 0.2+ | | | | |

**2002 RM$_{10}$ = 2006 QX$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.54558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24175204 | $\omega$ | 305.24110 | | −0.26442153 | | −0.95466481 |
| $a$ | 2.5520506 | $\Omega$ | 158.79316 | | +0.96106781 | | −0.27263256 |
| $e$ | 0.0509580 | $i$ | 22.20959 | | +0.08018675 | | +0.11952655 |
| $P$ | 4.08 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | (2.1+ | 0.6−) | 2005 06 08 | 703 | 0.4− | 0.2+ | 2006 08 29 | 703 | 0.6+ | 0.1+ |
| 2002 08 12 | 704 | 0.6+ | 0.4+ | 2005 06 08 | 703 | 0.4− | 0.9+ | 2006 08 29 | 703 | 0.3+ | 1.1− |
| 2002 08 12 | 704 | 0.9+ | 0.5− | 2006 08 19 | 699 | 0.5+ | 0.9− | 2006 09 14 | 703 | 0.8− | 0.0 |
| 2002 09 04 | 644 | 0.1− | 0.2+ | 2006 08 19 | 699 | 0.6+ | 1.3+ | 2006 09 14 | 703 | 0.3+ | 0.2− |
| 2002 09 04 | 644 | 0.2− | 0.3+ | 2006 08 19 | 699 | (2.2− | 1.3−) | 2006 09 14 | 703 | 0.1− | 1.2− |
| 2002 09 04 | 644 | 0.5− | 0.3+ | 2006 08 19 | 699 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 1.5− | 0.4− |
| 2002 09 05 | 704 | 0.5+ | 0.8+ | 2006 08 28 | 703 | 0.2+ | 1.0− | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 09 26 | G96 | 0.5− | 0.2− |
| 2002 09 05 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.9− | 0.2+ | 2006 08 28 | 703 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2005 06 08 | 703 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.7+ | 0.6− | | | | |
| 2005 06 08 | 703 | 0.7+ | 1.1− | 2006 08 29 | 703 | 0.2− | 0.4+ | | | | |

**2002 RU$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.47824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26693832 | $\omega$ | 24.73470 | | +0.92739897 | | −0.37404752 |
| $a$ | 2.3888861 | $\Omega$ | 357.21939 | | +0.32622225 | | +0.81450174 |
| $e$ | 0.2201092 | $i$ | 5.23662 | | +0.18305790 | | +0.44348096 |
| $P$ | 3.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.6− | 1.1+ | 2002 09 25 | 926 | 0.1+ | 0.2+ | 2002 10 07 | 699 | 0.6+ | 0.0 |
| 2002 09 04 | 699 | 1.2− | 0.0 | 2002 09 29 | 608 | 0.2− | 0.7− | 2002 10 07 | 699 | 0.4+ | 0.0 |
| 2002 09 04 | 699 | 0.7− | 0.3+ | 2002 09 29 | 608 | 0.3− | 0.8− | 2002 10 07 | 704 | 0.8− | 0.3+ |
| 2002 09 04 | 699 | 1.1− | 0.9+ | 2002 09 29 | 608 | 0.4− | 0.8− | 2002 10 07 | 704 | 0.8− | 0.7+ |
| 2002 09 05 | 704 | 0.5+ | 0.4− | 2002 09 30 | 704 | 0.2+ | 0.1− | 2002 10 07 | 704 | 0.3+ | 0.5+ |
| 2002 09 05 | 704 | 0.5+ | 0.5− | 2002 09 30 | 704 | 0.5+ | 0.1− | 2002 10 07 | 704 | 0.2+ | 0.5+ |
| 2002 09 05 | 704 | 0.7+ | 0.8− | 2002 09 30 | 704 | 0.1+ | 0.3− | 2002 10 08 | 704 | 0.4+ | 0.3+ |
| 2002 09 05 | 704 | 1.4+ | 0.5− | 2002 09 30 | 704 | 0.2− | 0.4− | 2002 10 08 | 704 | 0.1+ | 0.8+ |
| 2002 09 05 | 704 | 0.1+ | 1.5− | 2002 09 30 | 704 | 0.4− | 0.2− | 2002 10 08 | 704 | 0.3− | 0.2− |
| 2002 09 07 | 704 | 0.7+ | 0.2+ | 2002 10 02 | 704 | 0.1− | 0.3+ | 2002 10 11 | 704 | 1.9− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.4+ | 0.1− | 2002 10 02 | 704 | 0.3+ | 0.0 | 2002 10 11 | 704 | 0.3− | 0.3− |
| 2002 09 07 | 704 | 0.5+ | 0.1− | 2002 10 02 | 704 | 0.1− | 0.2+ | 2002 10 11 | 704 | 1.5+ | 1.0− |
| 2002 09 07 | 704 | 0.6+ | 0.2+ | 2002 10 02 | 704 | 0.1+ | 0.7+ | 2002 10 11 | 704 | 0.5− | 0.9− |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2002 10 03 | 704 | 0.5+ | 0.3− | 2006 11 15 | 704 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2002 10 03 | 704 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.8− | 0.5− |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.2− |
| 2002 09 15 | 636 | 0.9− | 0.3+ | 2002 10 03 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.1+ | 0.5+ |
| 2002 09 15 | 636 | 0.4− | 0.1+ | 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.8+ | 0.0 |
| 2002 09 15 | 636 | 0.9− | 0.6+ | 2002 10 07 | 699 | 0.8+ | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 2002 09 25 | 926 | 0.1+ | 0.3+ | 2002 10 07 | 699 | 0.7+ | 0.1+ | | | | |

**2002 RS$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.77353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26272810 | $\omega$ | 357.23487 | | +0.99848372 | −0.05429456 | |
| $a$ | 2.4143396 | $\Omega$ | 5.90051 | | +0.05204819 | +0.87747248 | |
| $e$ | 0.1864565 | $i$ | 5.06494 | | +0.01792358 | +0.47654395 | |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 31 | 699 | 0.6+ | 1.1+ | 2002 10 11 | 704 | 1.0+ | 0.3− | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2002 08 31 | 699 | 1.3− | 0.7+ | 2002 10 11 | 704 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.3− |
| 2002 08 31 | 699 | 0.7+ | 0.9− | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 11 16 | 704 | 1.0+ | 0.2− |
| 2002 08 31 | 699 | 0.4+ | 0.1− | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.2− | 0.3− |
| 2002 09 04 | 699 | 1.4+ | 0.3+ | 2002 11 08 | 645 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.6− | 0.8+ |
| 2002 09 04 | 699 | 1.0− | 0.3+ | 2002 11 08 | 645 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.6− | 0.9+ |
| 2002 09 04 | 699 | 0.3− | 0.8+ | 2006 10 23 | 691 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.5− |
| 2002 09 05 | 704 | 0.4+ | 0.9+ | 2006 10 27 | 703 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.7− | 0.7+ |
| 2002 09 05 | 704 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2002 09 05 | 704 | 0.7− | 0.2− | 2006 10 27 | 703 | 0.4− | 1.1− | 2006 11 18 | 704 | 0.2+ | 0.9+ |
| 2002 09 05 | 704 | (1.7− | 1.4+) | 2006 10 27 | 703 | 0.1+ | 0.9− | 2006 11 18 | 704 | 1.2− | 0.3+ |
| 2002 09 07 | 704 | 0.7− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2002 09 07 | 704 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.9+ | 0.6+ |
| 2002 09 07 | 704 | 1.4− | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2002 09 15 | 644 | 0.5− | 1.2− | 2006 11 01 | H07 | 0.6− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.9+ |
| 2002 09 15 | 644 | 0.3− | 1.2− | 2006 11 01 | H07 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2002 09 15 | 644 | 0.5− | 1.1− | 2006 11 01 | H07 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2002 10 02 | 704 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 1.0− | 0.8+ | 2006 11 22 | 704 | (1.6+ | 0.7+) |
| 2002 10 02 | 704 | 1.1+ | 0.7+ | 2006 11 14 | 703 | 0.7− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 1.4− | 2006 11 22 | 704 | 0.1− | 0.3+ |
| 2002 10 02 | 608 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2002 10 02 | 608 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.6+ | 0.6+ | 2006 11 22 | 703 | 0.1+ | 0.4+ |
| 2002 10 02 | 608 | 0.2− | 1.4+ | 2006 11 15 | G96 | 0.2+ | 0.2− | 2006 11 22 | 703 | 0.6− | 0.1− |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.2− | 2006 11 22 | 703 | 0.8− | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.1− | 2006 11 23 | 703 | 0.8− | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 1.3+ | 2006 11 15 | G96 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.8− | 1.1+ | 2006 11 15 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.6− |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.3− | 0.4− |
| 2002 10 07 | 704 | 1.3− | 0.9− | 2006 11 15 | 704 | 0.4− | 1.2− | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2002 10 07 | 704 | 1.5− | 0.2− | 2006 11 15 | 704 | 0.5+ | 1.4− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2002 10 07 | 704 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.3+ | 1.4− | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.5+ | 0.5+ | 2006 11 15 | 704 | 1.4− | 1.3− | 2006 12 01 | G96 | 0.3+ | 0.3− |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 1.0− | 0.5− | | | | |

**2002 RT$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.33267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26482773 | $\omega$ | 27.61124 | | +0.99878032 | −0.01634161 | |
| $a$ | 2.4015616 | $\Omega$ | 333.20254 | | −0.00805436 | +0.87707705 | |
| $e$ | 0.1482580 | $i$ | 5.93186 | | +0.04871351 | +0.48007167 | |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.8+ | 0.8− | 2002 09 14 | 644 | 0.0 | 0.4+ | 2002 10 31 | 645 | 0.0 | 0.0 |
| 2002 09 04 | 699 | 0.3− | 0.3+ | 2002 09 14 | 644 | 0.2− | 0.5+ | 2002 11 08 | 645 | 0.0 | 0.1+ |
| 2002 09 04 | 699 | 1.2− | 0.9+ | 2002 09 14 | 644 | 0.1− | 0.6+ | 2002 11 08 | 645 | 0.0 | 0.0 |
| 2002 09 04 | 699 | 0.5− | 0.2+ | 2002 09 15 | 699 | 0.7− | 0.9+ | 2006 10 27 | 703 | 0.7+ | 1.2+ |
| 2002 09 05 | 704 | 0.1+ | 0.1+ | 2002 09 15 | 699 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.9− | 0.4+ |
| 2002 09 05 | 704 | 0.4+ | 0.9+ | 2002 09 15 | 699 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 09 15 | 699 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 09 30 | 704 | 1.4− | 0.9+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2002 09 05 | 704 | 1.1− | 0.2+ | 2002 09 30 | 704 | 1.1− | 0.4+ | 2006 11 08 | 644 | 0.4− | 0.1+ |
| 2002 09 05 | 704 | 1.0+ | 0.0 | 2002 09 30 | 704 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | (0.3+ | 1.5−) | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.2+ | 1.3− |
| 2002 09 07 | 704 | 0.1− | 0.8+ | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.6+ | 1.0− |
| 2002 09 07 | 704 | 1.2+ | 0.4+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.7− | 0.7+ |
| 2002 09 07 | 704 | 0.2− | 0.2+ | 2002 10 30 | 645 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.9+ | 0.0 |
| 2002 09 07 | 704 | 0.4+ | 0.2+ | 2002 10 31 | 645 | 0.0 | 0.0 | | | | |

**2002 RV$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.69914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21988721 | $\omega$ | 6.11940 | | +0.97527492 | +0.21534385 | |
| $a$ | 2.7185421 | $\Omega$ | 341.22004 | | −0.20873761 | +0.82383152 | |
| $e$ | 0.1658491 | $i$ | 8.87311 | | −0.07257714 | +0.52433639 | |
| $P$ | 4.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 691 | 0.1− | 0.4+ | 2002 09 04 | 699 | 0.2+ | 0.7+ | 2002 09 14 | 644 | 0.2− | 0.3− |
| 2000 03 11 | 691 | 0.2+ | 0.5+ | 2002 09 04 | 699 | 0.3+ | 0.2− | 2002 09 25 | 608 | (2.5− | 0.6−) |
| 2000 03 11 | 691 | 0.6+ | 0.5+ | 2002 09 04 | 699 | 0.9− | 0.2− | 2002 09 25 | 608 | (2.4− | 0.7−) |
| 2002 08 10 | 704 | 0.1− | 0.5+ | 2002 09 04 | 699 | 0.8− | 0.4+ | 2002 09 25 | 608 | (2.7− | 1.2−) |
| 2002 08 10 | 704 | 0.2− | 1.8+ | 2002 09 05 | 704 | 0.4− | 0.5+ | 2002 10 01 | 699 | 1.9− | 0.4− |
| 2002 08 10 | 704 | 0.4− | 0.2− | 2002 09 05 | 704 | 0.0 | 0.6+ | 2002 10 01 | 699 | 0.3− | 0.5+ |
| 2002 08 10 | 704 | 0.1− | 0.7− | 2002 09 05 | 704 | 0.1− | 0.1+ | 2002 10 01 | 699 | 0.1− | 0.8+ |
| 2002 08 12 | 704 | 0.5− | 0.6− | 2002 09 05 | 704 | 0.4− | 0.3+ | 2002 10 01 | 699 | 0.5+ | 0.2+ |
| 2002 08 12 | 704 | 0.5− | 0.1+ | 2002 09 05 | 704 | 0.4− | 0.2+ | 2002 10 04 | 704 | 0.5− | 0.5+ |
| 2002 08 12 | 704 | 0.8− | 0.1− | 2002 09 07 | 704 | 0.0 | 0.3+ | 2002 10 04 | 704 | 0.5− | 0.7+ |
| 2002 08 12 | 704 | 0.7− | 0.0 | 2002 09 07 | 704 | 0.2− | 0.5+ | 2002 10 04 | 704 | 0.6− | 0.8+ |
| 2002 08 12 | 704 | 0.6− | 0.9+ | 2002 09 07 | 704 | 0.5− | 0.3+ | 2002 10 04 | 704 | 0.4− | 1.3+ |
| 2002 08 21 | 644 | 0.1− | 0.1− | 2002 09 07 | 704 | 0.0 | 0.2+ | 2002 10 04 | 704 | 0.0 | 0.4+ |
| 2002 08 21 | 644 | 0.2− | 0.0 | 2002 09 07 | 704 | 0.4+ | 0.2+ | 2002 11 08 | 645 | 0.2+ | 0.2− |
| 2002 08 21 | 644 | 0.6− | 0.2− | 2002 09 09 | 608 | 0.8+ | 0.1+ | 2002 11 08 | 645 | 0.2+ | 0.2− |
| 2002 08 30 | 699 | 0.6− | 0.4− | 2002 09 09 | 608 | 0.6+ | 0.1− | 2004 01 16 | 691 | 0.0 | 0.3+ |
| 2002 08 30 | 699 | 0.3− | 1.0+ | 2002 09 09 | 608 | 0.5+ | 0.1+ | 2004 01 16 | 691 | 0.0 | 0.0 |
| 2002 08 30 | 699 | 0.8+ | 0.2+ | 2002 09 14 | 644 | 0.0 | 0.1− | 2004 01 16 | 691 | 0.2+ | 0.1+ |
| 2002 08 30 | 699 | 0.3+ | 0.1+ | 2002 09 14 | 644 | 0.1− | 0.3− | | | | |

**2002 RC$_{17}$ = 2006 UZ$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.15307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26253670 | $\omega$ | 37.77566 | | +0.80177484 | −0.59762613 | |
| $a$ | 2.4155129 | $\Omega$ | 358.92424 | | +0.54383628 | +0.72984442 | |
| $e$ | 0.1888983 | $i$ | 1.03042 | | +0.24778863 | +0.33191887 | |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 12 | 691 | 0.2− | 1.0− | 2002 09 28 | 291 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 1991 11 12 | 691 | 1.1+ | 1.9− | 2002 09 28 | 291 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2000 02 04 | 691 | 0.0 | 0.3+ | 2002 10 03 | 704 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2000 02 04 | 691 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.5− | 0.5− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2000 02 04 | 691 | 0.2+ | 0.3+ | 2002 10 03 | 704 | 0.5− | 0.4− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 09 04 | 699 | 0.4+ | 0.7− | 2002 10 03 | 704 | 0.7+ | 0.7− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 09 04 | 699 | 0.3+ | 0.7− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 09 04 | 699 | 0.3− | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2002 09 04 | 699 | 0.6+ | 0.2− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.5− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | (0.2+ | 1.5+) |
| 2002 09 05 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.3− | 0.6− | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.7+ |
| 2002 09 07 | 704 | 0.1− | 0.5− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2002 09 07 | 704 | 0.7+ | 0.4− | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.4+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 1.2− | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2002 09 14 | 608 | 0.3− | 1.4+ | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.3− |
| 2002 09 14 | 608 | 0.2+ | 1.3+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 27 | 703 | 1.7+ | 0.4+ |
| 2002 09 14 | 608 | 0.1− | 1.2+ | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 27 | 703 | 0.1+ | 1.1+ |
| 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 1.0+ | 1.2+ |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 27 | 703 | 2.0+ | 0.2+ |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.0 | | | | |
| 2002 09 28 | 291 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.3+ | | | | |

### 2002 RQ$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.46075 | | (2000.0) | | +0.98303537 | −0.18287259 |
| $n$ | 0.29172419 | $\omega$ | 25.69985 | | +0.15761683 | +0.88159955 |
| $a$ | 2.2515819 | $\Omega$ | 344.81730 | | +0.09379982 | +0.43513199 |
| $e$ | 0.1870791 | $i$ | 3.08831 | | | |
| $P$ | 3.38 | $H$ | 16.9 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 21 | 644 | 0.4+ | 0.4+ | 2002 09 12 | 644 | 0.5− | 0.2− | 2002 10 11 | 704 | 0.3+ | 0.3− |
| 2002 08 21 | 644 | 0.6+ | 0.7+ | 2002 09 14 | 644 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.3− |
| 2002 08 21 | 644 | 0.4+ | 0.5+ | 2002 09 14 | 644 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.2− | 0.1+ |
| 2002 08 30 | 699 | 0.4+ | 0.2+ | 2002 09 14 | 644 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.0 |
| 2002 08 30 | 699 | 0.6− | 0.6− | 2002 09 17 | 608 | (1.7− | 1.0−) | 2002 11 06 | 704 | 0.0 | 0.3+ |
| 2002 08 30 | 699 | 0.7− | 0.1− | 2002 09 17 | 608 | (1.8− | 0.9−) | 2002 11 06 | 704 | 0.6− | 1.2+ |
| 2002 08 30 | 699 | 0.7+ | 1.0+ | 2002 09 17 | 608 | (1.9− | 0.7−) | 2002 11 06 | 704 | (0.4+ | 2.7+) |
| 2002 09 04 | 699 | 0.5− | 0.1− | 2002 10 01 | 699 | 0.3+ | 0.2+ | 2004 03 21 | 291 | 0.1− | 0.6+ |
| 2002 09 04 | 699 | 0.1− | 0.3+ | 2002 10 01 | 699 | 0.6− | 0.2− | 2004 03 21 | 291 | 0.5+ | 0.6+ |
| 2002 09 04 | 699 | 0.6− | 0.5+ | 2002 10 01 | 699 | 0.3− | 0.1− | 2004 03 21 | 291 | 0.5+ | 0.6+ |
| 2002 09 04 | 699 | 0.1− | 0.4+ | 2002 10 01 | 699 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.3− | 0.5+ |
| 2002 09 05 | 704 | 1.1− | 0.4+ | 2002 10 03 | 704 | 0.3+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.1− | 0.5− | 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.3− | 0.4+ | 2002 10 03 | 704 | 0.6+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2002 10 03 | 704 | 0.6+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2002 09 07 | 704 | 0.4+ | 0.0 | 2002 10 03 | 704 | 0.6+ | 0.1− | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2002 10 06 | 704 | 0.7− | 0.1− | 2006 11 25 | G96 | 0.6− | 0.1− |
| 2002 09 07 | 704 | 0.1+ | 0.6+ | 2002 10 06 | 704 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2002 09 07 | 704 | 0.5− | 0.6+ | 2002 10 06 | 704 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.3+ |
| 2002 09 07 | 704 | 0.3+ | 0.3+ | 2002 10 06 | 704 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2002 09 12 | 644 | 0.3− | 0.1− | 2002 10 06 | 704 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2002 09 12 | 644 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.0 |

### 2002 RU$_{17}$ = 2006 VX$_{102}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.55784 | | (2000.0) | | +0.99717126 | −0.07435750 |
| $n$ | 0.26855932 | $\omega$ | 199.96284 | | +0.07328613 | +0.92942725 |
| $a$ | 2.3792636 | $\Omega$ | 164.28945 | | +0.01669185 | +0.36143597 |
| $e$ | 0.2216142 | $i$ | 2.32278 | | | |
| $P$ | 3.67 | $H$ | 17.6 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.4− | 0.3− | 2002 09 15 | 699 | 0.6+ | 0.0 | 2002 10 03 | 704 | 0.6+ | 0.6− |
| 2002 09 04 | 699 | 0.8− | 0.3+ | 2002 09 15 | 699 | 0.7+ | 0.1− | 2002 10 03 | 704 | 0.5+ | 0.6− |
| 2002 09 04 | 699 | (0.5− | 1.7−) | 2002 09 15 | 699 | 0.4+ | 0.4+ | 2006 11 12 | G96 | 0.7− | 0.0 |
| 2002 09 04 | 699 | 0.3− | 0.4+ | 2002 09 15 | 699 | 0.6+ | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.4− |
| 2002 09 05 | 704 | 0.3+ | 0.1+ | 2002 09 17 | 608 | 0.6− | 0.5− | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.6+ | 1.2+ | 2002 09 17 | 608 | 0.4− | 1.0− | 2006 11 12 | G96 | 0.2− | 0.5− |
| 2002 09 05 | 704 | 0.1− | 1.3+ | 2002 09 17 | 608 | 0.8− | 0.9− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.3+ | 0.0 | 2002 10 01 | 699 | 1.3− | 1.0+ | 2006 11 18 | 691 | 0.5+ | 0.1− |
| 2002 09 13 | 644 | 0.0 | 0.1− | 2002 10 01 | 699 | 0.1+ | 0.6− | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2002 09 13 | 644 | 0.2+ | 0.0 | 2002 10 01 | 699 | 0.5+ | 0.1− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2002 10 01 | 699 | 0.4− | 0.7+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2002 10 03 | 704 | 0.3+ | 0.7− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2002 10 03 | 704 | 0.1+ | 0.9− | | | | |

### 2002 RP$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.16491 | | (2000.0) | | +0.71201676 | +0.70033114 |
| $n$ | 0.27015229 | $\omega$ | 292.46836 | | −0.58757447 | +0.63378314 |
| $a$ | 2.3699014 | $\Omega$ | 23.17848 | | −0.38443253 | +0.32841319 |
| $e$ | 0.1244069 | $i$ | 7.39796 | | | |
| $P$ | 3.65 | $H$ | 16.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.3+ | 0.4+ | 2002 09 19 | 644 | 0.3− | 0.4+ | 2005 05 16 | 644 | 0.4+ | 0.3+ |
| 2001 03 24 | 691 | 0.2+ | 0.4+ | 2002 09 19 | 644 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2+ |
| 2001 03 24 | 691 | 0.1+ | 0.2+ | 2002 09 19 | 644 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | (0.1+ | 1.7−) | 2002 10 01 | 699 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.1+ |
| 2002 09 04 | 699 | 0.0 | 0.4− | 2002 10 01 | 699 | 0.0 | 1.0+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.2+ | 0.4+ | 2002 10 01 | 699 | (0.1− | 2.0−) | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2002 09 04 | 699 | 0.6− | 0.4+ | 2002 10 01 | 699 | 0.8− | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.9+ | 0.1− | 2002 10 03 | 704 | 1.1+ | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.0 |
| 2002 09 05 | 704 | 0.8− | 0.5+ | 2002 10 03 | 704 | 0.2+ | 0.6− | 2006 10 04 | G96 | 0.3− | 0.0 |
| 2002 09 05 | 704 | 0.7+ | 0.1− | 2002 10 03 | 704 | 0.2+ | 0.1− | 2006 10 19 | A50 | 0.4− | 0.3+ |
| 2002 09 05 | 704 | 0.2− | 0.7+ | 2002 10 03 | 704 | 1.0+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.1− | 0.1− | 2002 10 03 | 704 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 09 06 | 704 | 1.4+ | 0.3− | 2002 10 06 | 704 | 0.7+ | 1.3− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2002 09 06 | 704 | 0.2− | 1.0+ | 2002 10 06 | 704 | (1.9+ | 0.1−) | 2006 11 15 | G96 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.8− | 2002 10 06 | 704 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.6− | 1.2+ |
| 2002 09 16 | 608 | 1.4− | 1.1+ | 2002 10 06 | 704 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.6− | 0.8+ |
| 2002 09 16 | 608 | (1.6− | 0.9+) | 2002 10 11 | 704 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2002 09 16 | 608 | 1.5− | 0.9+ | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 12 01 | G96 | 0.3− | 0.4+ |
| 2002 09 16 | 644 | 0.4− | 0.1− | 2002 10 11 | 704 | 0.0 | 0.6+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 09 16 | 644 | 0.6− | 0.1− | 2005 05 16 | 644 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2002 09 16 | 644 | 0.4− | 0.3− | 2005 05 16 | 644 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.4− |

### 2002 RG$_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.18863 | | (2000.0) | | +0.99814842 | −0.03745231 |
| $n$ | 0.26802986 | $\omega$ | 320.88271 | | +0.05495597 | +0.89298969 |
| $a$ | 2.3823959 | $\Omega$ | 41.34110 | | −0.02606850 | +0.44851616 |
| $e$ | 0.1950441 | $i$ | 4.16093 | | | |
| $P$ | 3.68 | $H$ | 16.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 02 | 691 | 0.1− | 0.7− | 2002 09 15 | 644 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.6+ | 1.1+ |
| 1991 10 02 | 691 | 0.5+ | 0.1+ | 2002 09 16 | 608 | 1.0− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 1991 10 02 | 691 | 0.4+ | 1.1− | 2002 09 16 | 608 | 1.2− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 2002 08 31 | 699 | (1.3+ | 1.6−) | 2002 09 16 | 608 | 0.9− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2002 08 31 | 699 | 0.9+ | 0.2− | 2002 09 29 | 608 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2002 08 31 | 699 | 0.3+ | 1.3− | 2002 09 29 | 608 | 0.1+ | 0.6− | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2002 08 31 | 699 | 0.6− | 0.9+ | 2002 09 29 | 608 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 2.2+ |
| 2002 09 04 | 699 | 0.9+ | 0.8+ | 2002 10 02 | 608 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.2− |
| 2002 09 04 | 699 | 0.3− | 0.5+ | 2002 10 02 | 608 | 0.7− | 0.4+ | 2006 11 18 | 704 | 1.0+ | 0.0 |
| 2002 09 04 | 699 | 0.2− | 0.0 | 2002 10 02 | 608 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 09 04 | 699 | 0.7− | 1.2+ | 2002 10 03 | 704 | 0.8+ | 1.3+ | 2006 11 20 | 691 | 0.3− | 0.2+ |
| 2002 09 05 | 704 | 0.0 | 0.3− | 2002 10 03 | 704 | (0.3+ | 1.7+) | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2002 09 05 | 704 | 1.0− | 0.4− | 2002 10 03 | 704 | 0.3− | 0.7+ | 2006 11 22 | 704 | 0.2+ | 1.4+ |
| 2002 09 05 | 704 | 1.0− | 0.6− | 2002 10 03 | 704 | 0.8+ | 1.0+ | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2002 09 05 | 704 | 0.5− | 0.4− | 2002 10 03 | 704 | 0.9+ | 0.9+ | 2006 11 22 | 704 | 0.4+ | 0.4− |
| 2002 09 05 | 704 | 0.4− | 0.4− | 2002 10 06 | 704 | 1.5+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.3− |
| 2002 09 13 | 608 | 0.7− | 0.2+ | 2002 10 06 | 704 | 0.6+ | 0.5− | 2006 11 30 | 691 | 0.0 | 0.2− |
| 2002 09 13 | 608 | 0.8− | 0.3+ | 2002 10 06 | 704 | 0.6+ | 0.1+ | 2006 11 30 | 691 | 0.0 | 0.2− |
| 2002 09 13 | 608 | 0.6− | 0.2+ | 2002 10 06 | 704 | 0.5+ | 0.1− | 2006 11 30 | 691 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 644 | 0.1+ | 0.4+ | 2002 10 11 | 704 | 1.2− | 1.3− | | | | | | |
| 2002 09 15 | 644 | 0.1+ | 0.3+ | 2002 10 11 | 704 | 1.0+ | 0.6− | | | | | | |

### 2002 $RM_{21}$ = 2006 $RE_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.27074 | | | (2000.0) | | |
| $n$ | 0.25428322 | $\omega$ | 341.82275 | | +0.98464464 | +0.17415623 |
| $a$ | 2.4675024 | $\Omega$ | 8.17583 | | −0.14783640 | +0.86849992 |
| $e$ | 0.2016545 | $i$ | 4.84968 | | −0.09284040 | +0.46408781 |
| $P$ | 3.88 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.9+ | 1.1+ | 2006 09 14 | 703 | (1.7− | 0.6−) | 2006 09 27 | 704 | 0.3+ | 1.1+ | | |
| 2002 09 04 | 699 | (0.8− | 1.8+) | 2006 09 14 | 703 | (2.0− | 0.0 ) | 2006 09 27 | 704 | 1.1− | 0.6− | | |
| 2002 09 04 | 699 | 0.1− | 0.6+ | 2006 09 14 | 703 | 1.5− | 0.5− | 2006 09 27 | 704 | 0.2− | 0.9+ | | |
| 2002 09 04 | 699 | 0.3+ | 1.3+ | 2006 09 14 | 703 | 0.8− | 0.5− | 2006 09 27 | 704 | 0.0 | 0.2+ | | |
| 2002 09 05 | 704 | 0.3+ | 1.0+ | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.7+ | | |
| 2002 09 05 | 704 | 1.1− | 0.1− | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 09 29 | 704 | (1.8− | 2.0+) | | |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 691 | 0.1− | 0.2− | | |
| 2002 09 05 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 29 | 691 | 0.2− | 0.2− | | |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2006 09 18 | 699 | (1.0− | 2.1+) | 2006 09 29 | 691 | 0.3− | 0.5− | | |
| 2002 09 06 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.1− | | |
| 2002 09 06 | 704 | 0.2+ | 0.0 | 2006 09 18 | 699 | (2.4− | 1.4+) | 2006 10 15 | 691 | 0.1+ | 0.1− | | |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.5+ | 0.6− | 2006 10 15 | 691 | 0.3+ | 0.0 | | |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.5+ | 0.7− | | |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 09 20 | 012 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.8− | | |
| 2002 09 13 | 644 | 0.2− | 0.1− | 2006 09 20 | 012 | (1.9+ | 0.1−) | 2006 10 17 | 703 | (3.4− | 0.3+) | | |
| 2002 09 15 | 644 | 0.4− | 0.0 | 2006 09 20 | 012 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.3+ | | |
| 2002 09 15 | 644 | 0.1− | 0.0 | 2006 09 20 | 012 | (2.3+ | 0.6−) | 2006 10 19 | 644 | 0.1− | 0.5+ | | |
| 2002 09 15 | 644 | 0.3− | 0.0 | 2006 09 20 | 012 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.3+ | | |
| 2002 09 17 | 608 | 1.2− | 1.2− | 2006 09 21 | 012 | 0.8+ | 0.1+ | 2006 10 19 | 644 | 0.5+ | 0.0 | | |
| 2002 09 17 | 608 | 1.4− | 0.8− | 2006 09 21 | 012 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2002 09 17 | 608 | (1.8− | 1.2−) | 2006 09 21 | 012 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 2002 10 03 | 704 | 0.6+ | 1.1+ | 2006 09 21 | 012 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.5− | 0.2+ | 2006 09 21 | 012 | 0.6+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.3+ | 1.0− | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2004 02 26 | 695 | 0.3+ | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.4+ | | |
| 2004 02 26 | 695 | 0.1+ | 0.9+ | 2006 09 25 | 691 | 0.5− | 0.0 | | | | | | |

### 2002 $RM_{22}$ = 2006 $QT_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.31793 | | | (2000.0) | | |
| $n$ | 0.23955708 | $\omega$ | 343.22798 | | +0.86750983 | +0.49490068 |
| $a$ | 2.5676158 | $\Omega$ | 346.75945 | | −0.42764163 | +0.69069574 |
| $e$ | 0.1755356 | $i$ | 12.60941 | | −0.25406562 | +0.52726910 |
| $P$ | 4.11 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 29 | 704 | 0.4+ | 0.0 | 2002 09 04 | 699 | 0.5− | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.0 | | |
| 1998 09 29 | 704 | 0.6+ | 0.9+ | 2002 09 04 | 699 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.0 | | |
| 1998 09 29 | 704 | 1.9− | 1.8− | 2002 09 05 | 704 | 1.1− | 0.4+ | 2006 08 24 | 644 | 0.2+ | 0.2− | | |
| 1998 09 29 | 704 | 0.8+ | 0.4+ | 2002 09 05 | 704 | 0.3− | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.3− | | |
| 1998 09 29 | 704 | (2.9− | 0.8−) | 2002 09 05 | 704 | 0.1− | 0.5+ | 2006 08 28 | E12 | 0.7− | 0.1− | | |
| 1998 09 29 | 704 | 0.9+ | 0.2− | 2002 09 05 | 704 | 0.1− | 0.5+ | 2006 08 28 | E12 | 0.3− | 0.4− | | |
| 1998 09 29 | 704 | 1.5+ | 0.7− | 2002 09 07 | 704 | 1.0− | 0.5+ | 2006 08 28 | E12 | 0.1+ | 0.2− | | |
| 1998 09 29 | 704 | (3.9− | 1.7−) | 2002 09 07 | 704 | 0.4− | 0.1+ | 2006 08 28 | E12 | 0.2− | 0.2− | | |
| 2002 08 20 | 644 | 0.1− | 0.3+ | 2002 09 07 | 704 | 0.5+ | 0.3− | 2006 09 14 | 644 | 0.6− | 0.1+ | | |
| 2002 08 20 | 644 | 0.2− | 0.3+ | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.1+ | | |
| 2002 08 20 | 644 | 0.3− | 0.1+ | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 09 14 | 644 | 0.5+ | 0.2+ | | |
| 2002 08 30 | 699 | 0.4− | 0.4+ | 2002 09 14 | 644 | 0.6− | 0.5+ | 2006 10 22 | G96 | 0.7+ | 0.0 | | |
| 2002 08 30 | 699 | 0.4+ | 0.6− | 2006 08 16 | E12 | 0.5+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2002 08 30 | 699 | 1.1+ | 0.0 | 2006 08 16 | E12 | 0.6+ | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.1+ | | |
| 2002 08 30 | 699 | (2.2+ | 0.2+) | 2006 08 16 | E12 | (4.5+ | 0.7−) | 2006 10 22 | G96 | 0.7+ | 0.5− | | |
| 2002 09 04 | 699 | 0.3+ | 0.5− | 2006 08 17 | 644 | 0.3+ | 0.1− | | | | | | |
| 2002 09 04 | 699 | 0.3− | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.5− | | | | | | |

### 2002 $RZ_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.48570 | | | (2000.0) | | |
| $n$ | 0.26702058 | $\omega$ | 152.08756 | | +0.99970248 | −0.01837125 |
| $a$ | 2.3883954 | $\Omega$ | 208.97855 | | +0.01110988 | +0.92857549 |
| $e$ | 0.2105683 | $i$ | 1.89792 | | +0.02171477 | +0.37068864 |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2002 10 06 | 704 | 0.5+ | 0.1− | 2006 11 15 | 691 | 0.2− | 0.3+ | | |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2002 10 06 | 704 | 0.2− | 1.0− | 2006 11 21 | 704 | 0.2+ | 0.1+ | | |
| 2002 08 28 | 644 | 0.7+ | 0.5− | 2005 05 07 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.0 | | |
| 2002 09 04 | 699 | 0.1+ | 0.2+ | 2005 05 07 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.8+ | 0.0 | | |
| 2002 09 04 | 699 | (1.8− | 0.5+) | 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 2002 09 04 | 699 | 0.8+ | 0.5+ | 2005 05 07 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2002 09 04 | 699 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1− | 0.3+ | | |
| 2002 09 05 | 704 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.4+ | | |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.2− | 0.4− | | |
| 2002 09 05 | 704 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.2− | 0.5− | | |
| 2002 09 05 | 704 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2002 09 14 | 644 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.4− | | |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 25 | G96 | 0.0 | 0.2− | | |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.6− | 2006 11 25 | G96 | 0.1− | 0.3− | | |
| 2002 09 17 | 608 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.3− | 0.2− | | |
| 2002 09 17 | 608 | 0.2− | 0.4− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2002 09 17 | 608 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2002 10 06 | 704 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2002 10 06 | 704 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.1− | 0.6+ | | |
| 2002 10 06 | 704 | 0.7+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.4− | 2006 11 27 | 703 | 0.8+ | 0.8− | | |
| 2002 10 06 | 704 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.5− | 0.0 | 2006 11 27 | 703 | 0.6+ | 0.5+ | | |
| 2002 10 06 | 704 | 1.3− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.4+ | 0.8− | | |
| 2002 10 06 | 704 | 0.5− | 1.0− | 2006 11 15 | 691 | 0.1− | 0.2+ | | | | | | |

### 2002 $RC_{28}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.10601 | | | (2000.0) | | |
| $n$ | 0.23718591 | $\omega$ | 241.32388 | | +0.42438871 | −0.90545684 |
| $a$ | 2.5846999 | $\Omega$ | 183.58290 | | +0.86279014 | +0.40654496 |
| $e$ | 0.2888416 | $i$ | 5.96143 | | +0.27474971 | +0.12193891 |
| $P$ | 4.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.0 | 0.1− | 2002 11 11 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.5− | | |
| 1998 12 15 | 704 | 0.6+ | 0.3+ | 2002 11 11 | 644 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 | | |
| 1998 12 15 | 704 | (0.8− | 2.4−) | 2002 11 11 | 644 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.0 | | |
| 1998 12 15 | 704 | 0.5− | 1.3− | 2002 11 22 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 | | |
| 1998 12 15 | 704 | 0.0 | 0.2− | 2002 11 22 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.1− | | |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.2− | | |
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2002 12 01 | 704 | 0.3− | 0.0 | 2006 09 19 | 699 | 1.2− | 0.2− | | |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2002 12 01 | 704 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.1− | 0.7+ | | |
| 2002 09 05 | 704 | 0.4− | 0.4− | 2002 12 01 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.3− | 0.0 | | |
| 2002 09 06 | 599 | 0.0 | 0.6+ | 2002 12 01 | 704 | 0.2+ | 0.3− | 2006 09 20 | H07 | 1.1+ | 1.0− | | |
| 2002 09 06 | 599 | 0.1+ | 0.5+ | 2002 12 01 | 704 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.3+ | | |
| 2002 09 06 | 599 | 1.0− | 0.2+ | 2002 12 01 | 608 | 0.0 | 0.9− | 2006 09 20 | 704 | 0.4+ | 0.0 | | |
| 2002 09 06 | 599 | 0.4− | 0.4− | 2002 12 01 | 608 | 0.3+ | 0.5− | 2006 09 20 | 704 | 0.3+ | 0.3+ | | |
| 2002 09 07 | 704 | 1.1+ | 0.5+ | 2002 12 01 | 608 | 0.2+ | 0.9− | 2006 09 20 | 704 | 0.1+ | 0.5− | | |
| 2002 09 07 | 704 | 0.4+ | 0.1+ | 2002 12 07 | 704 | 0.1+ | 0.1+ | 2006 09 20 | H07 | 0.1+ | 0.2− | | |
| 2002 09 07 | 704 | 0.0 | 0.5+ | 2002 12 07 | 704 | 0.0 | 0.2+ | 2006 09 20 | H07 | 0.5+ | 0.2− | | |
| 2002 10 02 | 704 | 0.1+ | 0.8+ | 2002 12 07 | 704 | 0.3+ | 0.9+ | 2006 09 25 | G96 | 0.1− | 0.5− | | |
| 2002 10 02 | 704 | 0.3+ | 0.9− | 2002 12 07 | 704 | 0.0 | 1.1+ | 2006 09 25 | G96 | 0.1+ | 0.4− | | |
| 2002 10 02 | 704 | 0.2− | 0.6+ | 2002 12 07 | 704 | 1.0− | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.3− | | |
| 2002 10 02 | 704 | 0.4− | 0.4− | 2002 12 09 | 644 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.4− | | |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2002 12 09 | 644 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.4+ | 1.0+ | | |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2002 12 09 | 644 | 0.4+ | 1.0+ | 2006 09 27 | 704 | (1.8+ | 0.9+) | | |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2003 01 05 | 699 | 0.4− | 0.4− | 2006 09 27 | 704 | 0.2+ | 1.2+ | | |
| 2002 10 03 | 704 | 0.6− | 0.6+ | 2003 01 05 | 699 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.9+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2003 01 05 | 699 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.8+ | 0.8+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.1+ | 2003 01 05 | 699 | 1.2− | 0.3+ | 2006 09 28 | 704 | 0.6+ | 0.3+ | | |
| 2002 10 09 | 704 | 0.1+ | 0.5+ | 2003 01 07 | 704 | 0.3− | 0.0 | 2006 09 28 | 704 | 1.2+ | 0.3+ | | |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2003 01 07 | 704 | 0.1− | 0.5− | 2006 09 28 | 704 | 0.6+ | 0.0 | | |
| 2002 10 09 | 704 | 0.4+ | 0.9+ | 2003 01 07 | 704 | 0.3+ | 0.3− | 2006 09 28 | 704 | 0.6+ | 0.1− | | |
| 2002 10 11 | 704 | 0.2+ | 0.0 | 2003 01 07 | 704 | 0.7+ | 0.7+ | 2006 09 28 | 704 | 0.5− | 0.3+ | | |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2003 01 07 | 704 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.1+ | | |
| 2002 10 11 | 704 | 0.8+ | 0.1− | 2003 01 18 | 644 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | | |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2003 01 18 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 | | |
| 2002 10 11 | 704 | 0.1+ | 0.1+ | 2003 01 18 | 644 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.1− | 0.1− | | |
| 2002 11 01 | 704 | 0.3+ | 0.6− | 2003 01 27 | 644 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.4− | | |
| 2002 11 01 | 704 | 0.2+ | 0.3− | 2003 01 27 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.1− | | |
| 2002 11 01 | 704 | 0.1− | 0.7− | 2003 01 27 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.2+ | | |
| 2002 11 03 | 608 | 0.3− | 1.1− | 2003 02 02 | 704 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.3− | | |
| 2002 11 03 | 608 | 0.0 | 1.2− | 2003 02 02 | 704 | 0.7− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1+ | | |
| 2002 11 03 | 608 | 0.0 | 1.0− | 2003 02 02 | 644 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 06 | 699 | 0.3− | 0.2+ | 2003 02 02 | 644 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.0 | | |
| 2002 11 06 | 699 | 0.1+ | 0.1+ | 2003 02 02 | 704 | 0.6− | 1.3+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2002 11 06 | 699 | 0.2+ | 0.6− | 2003 02 02 | 704 | 0.6− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.3− | | |
| 2002 11 06 | 699 | 0.0 | 0.2− | 2003 02 02 | 644 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1− | | |
| 2002 11 07 | 704 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 1.1− | 0.0 | | |
| 2002 11 07 | 704 | 0.8+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.0 | 0.3+ | | |
| 2002 11 07 | 704 | (1.6− | 0.5−) | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.2− | 0.8+ | | |
| 2002 11 07 | 704 | 0.3− | 0.5− | 2006 09 16 | 644 | 0.2− | 0.0 | 2006 10 21 | 703 | (0.3+ | 1.7+) | | |
| 2002 11 07 | 704 | 0.1− | 0.5− | 2006 09 16 | 644 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.5− | | |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.5− | | |
| 2002 11 11 | 704 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.6− | | |
| 2002 11 11 | 704 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.9− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.7− | | |
| 2002 11 11 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.7− | | | | | | |
| 2002 11 11 | 704 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.7+ | 0.4− | | | | | | |

## 2002 RS$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.85484 | | (2000.0) | | | |
| $n$ | 0.26383622 | $\omega$ | 157.51019 | | +0.87881823 | −0.47389165 |
| $a$ | 2.4075747 | $\Omega$ | 230.89752 | | +0.42613060 | +0.83201412 |
| $e$ | 0.1932100 | $i$ | 4.11785 | | +0.21468868 | +0.28840806 |
| $P$ | 3.74 | $H$ | 16.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 1.2− | 1.2+ | 2002 09 30 | 704 | 0.4+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.3+ | | |
| 2002 08 12 | 704 | 0.1− | 0.5+ | 2002 10 04 | 704 | 0.1− | 0.9+ | 2006 11 13 | 644 | 0.5− | 0.4+ | | |
| 2002 08 12 | 704 | 0.4+ | 0.5+ | 2002 10 04 | 704 | 0.6+ | 0.3− | 2006 11 13 | 644 | 0.2− | 0.1− | | |
| 2002 08 12 | 704 | 0.8+ | 0.6+ | 2002 10 04 | 704 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.5− | 0.0 | | |
| 2002 08 12 | 704 | 0.6+ | 0.2+ | 2002 10 04 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.0 | | |
| 2002 08 28 | 644 | 0.4+ | 0.1+ | 2002 10 04 | 704 | 1.0+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.4+ | | |
| 2002 08 28 | 644 | 0.4+ | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.8+ | | |
| 2002 08 28 | 644 | 0.7+ | 0.5+ | 2006 08 29 | 703 | 0.7+ | 0.4− | 2006 11 17 | 703 | (2.1− | 1.1+) | | |
| 2002 09 03 | 608 | 0.3− | 0.7+ | 2006 08 29 | 703 | 1.3− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.2+ | | |
| 2002 09 03 | 608 | 0.6− | 0.7+ | 2006 08 29 | 703 | 0.9+ | 0.9− | 2006 11 18 | 704 | 0.2+ | 0.0 | | |
| 2002 09 03 | 608 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.4− | 0.3− | | |
| 2002 09 04 | 699 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.6+ | | |
| 2002 09 04 | 699 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | (1.2− | 1.6+) | | |
| 2002 09 04 | 699 | 0.4− | 0.8− | 2006 10 28 | 704 | 0.8− | 1.3− | 2006 11 21 | 704 | 0.4− | 0.7+ | | |
| 2002 09 04 | 699 | 1.2− | 0.1− | 2006 10 28 | 704 | 0.4− | 1.0− | 2006 11 21 | 704 | 0.0 | 0.5+ | | |
| 2002 09 06 | 704 | 0.6− | 0.1+ | 2006 10 28 | 704 | 1.0+ | 0.3− | 2006 11 21 | 704 | 0.7− | 0.7+ | | |
| 2002 09 06 | 704 | 0.0 | 0.1− | 2006 10 28 | 704 | 1.2− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.4+ | | |
| 2002 09 06 | 704 | 1.1+ | 1.2− | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 2002 09 06 | 704 | 0.6+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.3− | 0.1+ | | |
| 2002 09 06 | 704 | 0.9+ | 1.4− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.4− | | |
| 2002 09 13 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 27 | 703 | 1.0+ | 0.2− | | |
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.5− | 2006 11 27 | 703 | 0.1+ | 0.1+ | | |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.4− | 2006 11 29 | 704 | 0.7+ | 0.8+ | | |
| 2002 09 17 | 608 | 1.0− | 0.7− | 2006 11 11 | 703 | 0.1+ | 0.6− | 2006 11 29 | 704 | 0.0 | 0.1+ | | |
| 2002 09 17 | 608 | 0.6− | 1.4− | 2006 11 12 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.0 | 0.4+ | | |
| 2002 09 17 | 608 | 1.1− | 1.5− | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.8+ | 0.0 | | |
| 2002 09 30 | 704 | 0.3− | 0.9+ | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.7− | | |
| 2002 09 30 | 704 | 0.2+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | | | | | |
| 2002 09 30 | 704 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.6− | 0.4+ | | | | | | |

## 2002 RP$_{30}$ = 2002 RU$_{233}$

Id. Minor Planet Center (d, *MPO* 48394)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.24127 | | (2000.0) | | | |
| $n$ | 0.26534798 | $\omega$ | 106.72805 | | +0.99118107 | +0.12126240 |
| $a$ | 2.3984216 | $\Omega$ | 246.33291 | | −0.13246909 | +0.91726109 |
| $e$ | 0.1833541 | $i$ | 3.34477 | | +0.00346816 | +0.37937782 |
| $P$ | 3.71 | $H$ | 17.4 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 13 | 291 | 0.2− | 0.9+ | 2002 09 18 | 644 | 0.3+ | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2002 06 13 | 291 | 0.7− | 0.6+ | 2002 09 30 | 704 | 0.6+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2002 06 13 | 291 | 0.3− | 0.4+ | 2002 09 30 | 704 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.4+ | | |
| 2002 08 28 | 644 | 0.1+ | 0.5+ | 2002 09 30 | 704 | 1.1+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.3+ | | |
| 2002 08 28 | 644 | 0.0 | 0.7+ | 2002 09 30 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.4+ | | |
| 2002 08 28 | 644 | 0.1− | 0.3+ | 2002 10 04 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2002 09 04 | 699 | 0.1− | 0.0 | 2002 10 04 | 704 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.3+ | | |
| 2002 09 04 | 699 | 0.2− | 1.1+ | 2002 10 04 | 704 | 0.9+ | 1.0− | 2006 11 09 | 644 | 0.2− | 0.4− | | |
| 2002 09 04 | 699 | 0.1− | 0.0 | 2002 10 04 | 704 | 0.7+ | 0.1− | 2006 11 13 | 644 | 0.6+ | 0.2+ | | |
| 2002 09 04 | 699 | 1.1+ | 0.3+ | 2002 10 10 | 645 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.4+ | | |
| 2002 09 06 | 704 | 0.1− | 0.4− | 2002 10 10 | 645 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.1− | 0.6− | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.7+ | 0.5− | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.4+ | | |
| 2002 09 06 | 704 | 1.3+ | 0.0 | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 1.0+ | | |
| 2002 09 06 | 704 | 0.7+ | 0.0 | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (0.7− | 3.6+) | | |
| 2002 09 13 | 644 | 0.3− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.7− | | |
| 2002 09 13 | 644 | 0.0 | 0.7− | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 1.0+ | | |
| 2002 09 13 | 644 | 0.2− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (0.3+ | 1.8+) | | |
| 2002 09 14 | 608 | 0.3+ | 0.8− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.6+ | | |
| 2002 09 14 | 608 | (0.3+ | 2.0−) | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.2− | 1.3+ | | |
| 2002 09 14 | 608 | 0.5− | 0.9− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | (1.0− | 2.9+) | | |
| 2002 09 17 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.7− | 0.3− | 2006 11 27 | 703 | 0.7+ | 0.6− | | |
| 2002 09 17 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.4− | 1.0+ | | |
| 2002 09 17 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.8− | | |
| 2002 09 18 | 644 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.6+ | 0.5+ | | |
| 2002 09 18 | 644 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.4− | | | | | | |

## 2002 RJ$_{33}$ = 2006 KJ$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.73090 | | (2000.0) | | | |
| $n$ | 0.22956244 | $\omega$ | 123.01143 | | +0.62550752 | +0.78010875 |
| $a$ | 2.6416108 | $\Omega$ | 185.76062 | | −0.75221410 | +0.59852585 |
| $e$ | 0.1530524 | $i$ | 7.47904 | | −0.20715767 | +0.18220087 |
| $P$ | 4.29 | $H$ | 16.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 22 | 910 | 0.9+ | 0.4+ | 2002 09 04 | 699 | 0.4− | 0.5+ | 2005 03 11 | G96 | 0.1− | 0.2+ | | |
| 1998 10 22 | 910 | 0.8+ | 1.1+ | 2002 09 04 | 699 | (1.8− | 0.7+) | 2005 03 11 | G96 | 0.2− | 0.2− | | |
| 1998 10 22 | 910 | 0.6+ | 0.7+ | 2002 09 06 | 704 | 0.7+ | 0.2− | 2005 03 11 | G96 | 0.0 | 0.1+ | | |
| 2001 03 19 | 691 | 0.2− | 0.4+ | 2002 09 06 | 704 | 0.1+ | 0.6− | 2006 05 25 | 691 | 0.4+ | 0.0 | | |
| 2001 03 19 | 691 | 0.3+ | 0.8+ | 2002 09 06 | 704 | 0.3+ | 0.4+ | 2006 05 25 | 691 | 0.1+ | 0.1− | | |
| 2001 03 19 | 691 | 0.2+ | 0.5+ | 2002 09 06 | 704 | 0.4+ | 0.2+ | 2006 05 25 | 691 | 0.3+ | 0.2− | | |
| 2001 04 16 | 699 | 0.7− | 0.5+ | 2002 09 06 | 704 | 0.5+ | 0.0 | 2006 05 30 | 691 | 0.2+ | 0.1+ | | |
| 2001 04 16 | 699 | 0.3+ | 1.1+ | 2002 09 14 | 644 | 0.4− | 0.5+ | 2006 05 30 | 691 | 0.1+ | 0.3− | | |
| 2001 04 16 | 699 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.4− | 0.1+ | 2006 05 30 | 691 | 0.1+ | 0.1− | | |
| 2001 04 16 | 699 | 0.6+ | 0.0 | 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.0 | | |
| 2002 08 28 | 644 | 0.5− | 0.9+ | 2002 09 15 | 699 | 1.4− | 0.9+ | 2006 08 18 | 644 | 0.2+ | 0.1− | | |
| 2002 08 28 | 644 | 0.5− | 0.8+ | 2002 09 15 | 699 | 1.2− | 0.7+ | 2006 08 18 | 644 | 0.3− | 0.2+ | | |
| 2002 08 28 | 644 | 0.6− | 0.7+ | 2002 09 15 | 699 | 0.6− | 0.6+ | 2006 08 18 | 644 | 0.0 | 0.0 | | |
| 2002 09 04 | 699 | 0.2− | 1.0− | 2002 09 15 | 699 | 0.2− | 0.6+ | 2006 08 18 | 644 | 0.2− | 0.2− | | |
| 2002 09 04 | 699 | 0.5− | 0.5+ | 2005 03 11 | G96 | 0.1− | 0.3+ | 2006 08 18 | 644 | 0.4− | 0.0 | | |

**2002 RF$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.60873 | | (2000.0) | | | |
| $n$ | 0.25778654 | $\omega$ | 47.02457 | | +0.91380434 | −0.39313848 |
| $a$ | 2.4450958 | $\Omega$ | 335.58350 | | +0.26199056 | +0.76246083 |
| $e$ | 0.1207433 | $i$ | 14.28536 | | +0.31035878 | +0.51390235 |
| $P$ | 3.82 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.5+ | 1.0− | 2002 10 04 | 704 | 1.1+ | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 09 04 | 699 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2002 09 04 | 699 | 0.0 | 0.2+ | 2002 10 04 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 09 04 | 699 | (1.6− | 0.3−) | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.6− | 0.2+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 09 06 | 704 | 1.0− | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.2− | 0.6+ |
| 2002 09 06 | 704 | 1.0+ | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.5− |
| 2002 09 13 | 644 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1+ | | | | |
| 2002 09 13 | 644 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.4+ | 0.2+ | | | | |

**2002 RV$_{35}$ = 2006 VB$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.56978 | | (2000.0) | | | |
| $n$ | 0.27269382 | $\omega$ | 72.71403 | | +0.93903108 | −0.33231326 |
| $a$ | 2.3551533 | $\Omega$ | 306.60740 | | +0.25864209 | +0.85182713 |
| $e$ | 0.1221887 | $i$ | 6.31181 | | +0.22654999 | +0.40491781 |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2− | 0.4− | 2002 09 13 | 644 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2002 09 13 | 644 | 0.6− | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.6− |
| 2002 08 28 | 644 | 0.2+ | 0.2+ | 2002 09 13 | 644 | 0.4− | 0.3− | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2002 09 05 | 699 | 0.6+ | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.3+ |
| 2002 09 05 | 699 | 0.1− | 0.5+ | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.4+ | 0.5− |
| 2002 09 05 | 699 | 0.1+ | 0.0 | 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 11 21 | 703 | 0.1+ | 0.2+ |
| 2002 09 05 | 699 | 0.9− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.4− | 2006 11 21 | 703 | 0.4+ | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.5+ | 2006 11 02 | G96 | 0.3− | 0.3− | 2006 11 21 | 703 | 0.4− | 0.2− |
| 2002 09 06 | 704 | 1.0+ | 0.1+ | 2006 11 02 | G96 | 0.1− | 1.2+ | | | | |
| 2002 09 06 | 704 | 0.6+ | 0.4− | 2006 11 02 | G96 | 0.4− | 0.3− | | | | |

**2002 RH$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.36647 | | (2000.0) | | | |
| $n$ | 0.25791403 | $\omega$ | 161.81013 | | +0.92240832 | +0.38556503 |
| $a$ | 2.4442901 | $\Omega$ | 175.32547 | | −0.37963349 | +0.91582873 |
| $e$ | 0.0854709 | $i$ | 15.96590 | | −0.07100218 | +0.11223787 |
| $P$ | 3.82 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.3+ | 0.6− | 2002 09 06 | 704 | 0.7+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 1997 03 02 | 691 | 0.0 | 0.5− | 2002 09 06 | 704 | 0.4+ | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.3− |
| 1997 03 02 | 691 | 0.5− | 0.4− | 2002 09 06 | 704 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.3− |
| 2002 08 28 | 644 | 0.2+ | 0.0 | 2002 09 14 | 644 | (0.6− | 1.7−) | 2006 10 17 | 703 | 0.6− | 1.3+ |
| 2002 08 28 | 644 | 0.1+ | 0.3+ | 2002 09 14 | 644 | 0.5− | 1.3− | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2002 09 14 | 644 | 0.3− | 1.2− | 2006 10 17 | 703 | 1.2− | 0.5+ |
| 2002 09 05 | 699 | 0.8− | 0.1− | 2002 10 10 | 291 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.8+ |
| 2002 09 05 | 699 | 0.2− | 0.5+ | 2002 10 10 | 291 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2002 09 05 | 699 | 0.4− | 0.1− | 2002 10 10 | 291 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 2002 09 05 | 699 | 0.2− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.4+ | 1.0+ |
| 2002 09 06 | 704 | 0.3+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 1.0− |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2− | | | | |

**2002 RS$_{38}$ = 2006 SO$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 349.98331 | | (2000.0) | | | |
| $n$ | 0.25499586 | $\omega$ | 211.06017 | | +0.91218025 | −0.40916354 |
| $a$ | 2.4629029 | $\Omega$ | 172.97847 | | +0.40361655 | +0.88751684 |
| $e$ | 0.2464786 | $i$ | 10.67129 | | +0.07085815 | +0.21189398 |
| $P$ | 3.87 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 0.3− | 0.5+ | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.7− |
| 2002 09 05 | 699 | 0.5+ | 0.3− | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 2002 09 05 | 699 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.7− |
| 2002 09 05 | 699 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2002 09 06 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.9− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 09 06 | 704 | 0.1+ | 0.5− | 2006 09 26 | 704 | 0.4+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2002 09 06 | 704 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.0 | 0.3− | 2006 09 28 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.1− | 1.0− | 2006 10 28 | 703 | 0.9+ | 1.0+ |
| 2002 09 14 | 644 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.8− |
| 2006 09 18 | 699 | 0.1+ | 0.7− | 2006 09 28 | 704 | 0.9− | 0.2− | 2006 10 28 | 703 | 0.7− | 0.5+ |
| 2006 09 18 | 703 | 0.0 | 0.4− | 2006 09 30 | 704 | (1.7+ | 0.3+) | 2006 10 28 | 703 | 0.0 | 0.2− |
| 2006 09 18 | 703 | 0.5+ | 1.5+ | 2006 09 30 | 704 | 1.1+ | 0.4+ | | | | |
| 2006 09 18 | 703 | 0.2− | 0.0 | 2006 09 30 | 704 | (0.4+ | 2.5+) | | | | |

**2002 RE$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.71631 | | (2000.0) | | | |
| $n$ | 0.26823754 | $\omega$ | 73.20058 | | +0.98477545 | −0.16246199 |
| $a$ | 2.3811660 | $\Omega$ | 296.11347 | | +0.12134990 | +0.89719202 |
| $e$ | 0.1547042 | $i$ | 3.94869 | | +0.12446492 | +0.41067334 |
| $P$ | 3.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.5+ | 0.1+ | 2002 09 06 | 704 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2002 08 12 | 704 | 0.4− | 0.5+ | 2002 09 06 | 704 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2002 08 12 | 704 | 0.0 | 0.5− | 2002 09 06 | 704 | 0.2− | 0.6− | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2002 08 12 | 704 | 1.0+ | 0.3+ | 2002 09 06 | 704 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 08 12 | 704 | 0.2− | 1.0− | 2002 09 13 | 644 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2002 08 16 | 644 | 0.3− | 0.1+ | 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2002 08 16 | 644 | 0.4− | 0.1+ | 2002 09 13 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2002 08 16 | 644 | 0.1− | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2002 08 27 | 644 | 0.2− | 0.1− | 2002 09 14 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2002 08 27 | 644 | 0.2− | 0.3− | 2002 09 14 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2002 08 27 | 644 | 0.1+ | 0.1− | 2002 09 15 | 608 | 0.5− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.1− |
| 2002 09 05 | 699 | 0.3+ | 0.6+ | 2002 09 15 | 608 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2002 09 05 | 699 | 0.3+ | 0.3− | 2002 09 15 | 608 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2002 09 05 | 699 | 1.0+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 09 05 | 699 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.2+ |

**2002 RU$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 38.08775 | | (2000.0) | | | |
| $n$ | 0.26087107 | $\omega$ | 67.67951 | | +0.74981527 | +0.65789455 |
| $a$ | 2.4257839 | $\Omega$ | 251.10523 | | −0.63112705 | +0.67924259 |
| $e$ | 0.2008572 | $i$ | 4.26543 | | −0.19863461 | +0.32527569 |
| $P$ | 3.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.1+ | 0.1+ | 2002 09 05 | 699 | 0.8− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 1991 11 08 | 691 | 0.2− | 0.0 | 2002 09 05 | 699 | 0.6− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2002 08 08 | 699 | 0.4+ | 0.4− | 2002 09 05 | 699 | 1.0− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2002 08 08 | 699 | 0.8+ | 0.8− | 2002 09 05 | 699 | 0.6− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2002 08 08 | 699 | (2.6− | 0.4+) | 2002 09 06 | 704 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 699 | (2.2− | 0.6−) | 2002 09 06 | 704 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2002 08 12 | 704 | 0.1+ | 0.6+ | 2002 09 06 | 704 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2002 08 12 | 704 | 0.2+ | 0.7+ | 2002 09 06 | 704 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.8+ | 1.1+ |
| 2002 08 12 | 704 | 0.2− | 0.5+ | 2002 09 06 | 704 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.4+ | 0.5+ |
| 2002 08 12 | 704 | 0.3− | 0.2+ | 2002 09 26 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 08 12 | 704 | 0.2− | 0.0 | 2002 09 26 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2002 08 16 | 644 | 0.0 | 0.1− | 2002 09 26 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 08 16 | 644 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.8+ | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2002 08 16 | 644 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.4− | 1.4− | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2002 08 17 | 608 | 0.2− | 0.9− | 2006 09 16 | 703 | 0.5− | 0.9− | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2002 08 17 | 608 | 0.3+ | 1.0− | 2006 09 16 | 703 | 0.1− | 0.9− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2002 08 17 | 608 | 0.4− | 1.4− | 2006 09 30 | 703 | 0.5+ | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2002 08 26 | 644 | 0.2− | 1.2+ | 2006 09 30 | 703 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2002 08 26 | 644 | 0.3+ | 1.3+ | 2006 09 30 | 703 | 0.0 | 0.6− | | | | |
| 2002 08 26 | 644 | 0.2+ | 1.3+ | 2006 09 30 | 703 | 0.2− | 0.8− | | | | |

### 2002 RN$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.17422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25288394 | $\omega$ | 270.91356 | | +0.92086398 | +0.38607258 | |
| $a$ | 2.4765963 | $\Omega$ | 66.37770 | | −0.32993526 | +0.84597132 | |
| $e$ | 0.2007768 | $i$ | 3.40288 | | −0.20773121 | +0.36780495 | |
| $P$ | 3.90 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.3− | 0.4− | 2002 09 16 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | 1.3− | 0.1− |
| 2002 08 12 | 608 | 0.1− | 0.6+ | 2002 09 16 | 644 | 0.2− | 0.1− | 2006 09 28 | 704 | 1.2+ | 0.1+ |
| 2002 08 19 | 644 | 0.0 | 0.1− | 2002 09 30 | 608 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.8− | 0.1+ |
| 2002 08 19 | 644 | 0.1− | 0.1− | 2002 09 30 | 608 | 0.4+ | 0.4− | 2006 09 28 | 704 | 0.4− | 0.8− |
| 2002 08 19 | 644 | 0.3+ | 0.1− | 2002 09 30 | 608 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.5− |
| 2002 08 30 | 644 | 0.1+ | 0.2− | 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.6+ | 1.0− |
| 2002 08 30 | 644 | 0.3+ | 0.1+ | 2005 04 12 | 691 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 2002 08 30 | 644 | 0.1+ | 0.1− | 2005 04 12 | 691 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 2002 08 30 | 644 | 0.2+ | 0.3− | 2006 08 20 | 691 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.3− | 0.0 |
| 2002 08 30 | 644 | 0.9+ | 0.1− | 2006 08 20 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2006 08 20 | 691 | 0.0 | 0.2− | 2006 09 30 | 704 | (0.2− | 2.6+) |
| 2002 09 05 | 704 | 0.0 | 0.1− | 2006 09 12 | 703 | 1.1+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2006 09 12 | 703 | 0.3− | 0.8+ | 2006 10 16 | 703 | (1.7+ | 0.3−) |
| 2002 09 06 | 704 | 0.9− | 0.1+ | 2006 09 12 | 703 | 1.2− | 1.1− | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2002 09 06 | 704 | 0.6− | 0.5− | 2006 09 12 | 703 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.9− |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2006 09 18 | 699 | (1.8− | 0.5−) | 2006 10 22 | 644 | 0.1+ | 0.6+ |
| 2002 09 06 | 704 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 09 12 | 608 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.5− |
| 2002 09 12 | 608 | 0.1+ | 0.1− | 2006 09 18 | 699 | 1.2+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 09 12 | 608 | 0.5− | 0.2− | 2006 09 26 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 09 16 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.5− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.0 |

### 2002 RQ$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.00456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26254384 | $\omega$ | 155.12514 | | +0.14104214 | +0.98766318 | |
| $a$ | 2.4154691 | $\Omega$ | 122.91579 | | −0.92133206 | +0.15609659 | |
| $e$ | 0.2100524 | $i$ | 4.64854 | | −0.36229043 | −0.01246144 | |
| $P$ | 3.75 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 691 | 0.1+ | 0.6+ | 2002 09 06 | 704 | 0.2+ | 0.4+ | 2005 03 18 | 703 | 0.4− | 1.2+ |
| 2001 02 17 | 691 | 0.2+ | 0.4+ | 2002 09 06 | 704 | 0.3− | 0.7+ | 2005 03 18 | 703 | 1.4+ | 0.6+ |
| 2001 02 17 | 691 | 0.2+ | 0.4+ | 2002 09 06 | 704 | 0.6− | 0.5+ | 2005 03 18 | 703 | 0.6− | 1.1+ |
| 2002 08 12 | 608 | 0.5− | 0.8+ | 2002 09 06 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.4− |
| 2002 08 12 | 608 | 0.6− | 0.2− | 2002 09 06 | 704 | 0.2− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 08 12 | 608 | 0.6− | 0.0 | 2002 09 06 | 704 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.3− |
| 2002 08 29 | 644 | 0.1− | 0.3+ | 2002 09 13 | 704 | 0.1− | 1.3+ | 2006 10 11 | 644 | 0.4− | 0.6− |
| 2002 08 29 | 644 | 0.1+ | 0.3+ | 2002 09 13 | 704 | 0.9+ | 1.0+ | 2006 10 11 | 644 | 0.3− | 0.5− |
| 2002 08 29 | 644 | 0.2− | 0.5+ | 2002 09 13 | 704 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.4− |
| 2002 09 05 | 704 | 0.2+ | 0.6− | 2002 09 16 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 1.0+ | 0.8+ |
| 2002 09 05 | 704 | 0.7− | 1.0+ | 2002 09 16 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.1+ |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2002 09 16 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.9+ |
| 2002 09 06 | 704 | 0.0 | 0.2+ | 2005 03 18 | 703 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.3− |

### 2002 RD$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.13815 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26380617 | $\omega$ | 335.02400 | | +0.98328537 | −0.17886072 | |
| $a$ | 2.4077575 | $\Omega$ | 35.33234 | | +0.17536938 | +0.88013490 | |
| $e$ | 0.1840966 | $i$ | 3.37441 | | +0.04894348 | +0.43974014 | |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.2+ | 0.1+ | 2002 10 03 | 704 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2002 08 20 | 644 | 0.3+ | 0.2+ | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2002 08 20 | 644 | 0.3+ | 0.0 | 2002 10 05 | 704 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 08 30 | 699 | 1.0− | 0.2+ | 2002 10 05 | 704 | 0.9+ | 0.2− | 2006 11 09 | 644 | 0.4− | 0.0 |
| 2002 08 30 | 699 | 0.8− | 1.4− | 2002 10 05 | 704 | 0.0 | 0.6− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 08 30 | 699 | (2.9− | 0.6+) | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2002 08 30 | 699 | 1.1− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 09 05 | 704 | (1.7+ | 0.1−) | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2002 09 05 | 704 | 1.0+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2002 09 05 | 704 | 1.2+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2002 09 05 | 704 | (1.7+ | 0.5−) | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2002 09 05 | 704 | 1.2+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.9+ | 0.5− |
| 2002 09 06 | 704 | 1.0+ | 1.0+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3− | 0.6− |
| 2002 09 06 | 704 | 0.6+ | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.8− |
| 2002 09 06 | 704 | 1.4+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.6+ | 1.1− |
| 2002 09 06 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 1.4+ | 2006 10 20 | 691 | 0.2+ | 1.1− | 2006 11 13 | 644 | 0.5− | 0.1+ |
| 2002 09 09 | 608 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.6− | 0.1− |
| 2002 09 09 | 608 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.7− | 0.8+ |
| 2002 09 09 | 608 | 0.4− | 0.8− | 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2002 09 13 | 704 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.5+ |
| 2002 09 13 | 704 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2002 09 13 | 704 | (0.6− | 1.5−) | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2002 09 13 | 704 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2002 09 14 | 608 | 0.9− | 0.9− | 2006 10 28 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2002 09 14 | 608 | 0.9− | 0.9− | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 1.4+ | 1.0+ |
| 2002 09 14 | 608 | 1.1− | 0.8− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2002 09 15 | 644 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.0− | 0.2+ |
| 2002 09 15 | 644 | (0.4− | 2.3+) | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2002 10 03 | 704 | (1.0− | 1.5+) | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.5− |
| 2002 10 03 | 704 | 0.5− | 1.2+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.0 | 0.1+ |

### 2002 RB$_{45}$ = 2006 WO$_{85}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.18368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27357837 | $\omega$ | 227.94668 | | +0.95628127 | +0.28876318 | |
| $a$ | 2.3500740 | $\Omega$ | 115.22191 | | −0.25093309 | +0.89146569 | |
| $e$ | 0.2288989 | $i$ | 2.93245 | | −0.15019561 | +0.34914860 | |
| $P$ | 3.60 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.1+ | 0.1+ | 2002 09 06 | 704 | 0.8+ | 1.0+ | 2002 09 16 | 644 | 0.4+ | 0.7− |
| 2002 08 20 | 644 | 0.2+ | 0.2+ | 2002 09 06 | 704 | 1.6+ | 0.6+ | 2002 09 16 | 644 | 0.2+ | 0.7− |
| 2002 08 20 | 644 | 0.3− | 0.5− | 2002 09 13 | 704 | 0.1− | 0.8− | 2006 11 18 | 691 | 0.3− | 0.1− |
| 2002 09 05 | 704 | 0.6− | 0.3+ | 2002 09 13 | 704 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.1− | 0.7+ | 2002 09 13 | 704 | 0.1+ | 0.6− | 2006 11 18 | 691 | 0.4+ | 0.0 |
| 2002 09 05 | 704 | 1.0− | 0.1+ | 2002 09 13 | 704 | 0.2− | 0.6− | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.5+ | 0.2+ | 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2002 09 15 | 644 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 1.3− | 0.7+ | 2002 09 15 | 644 | 0.0 | 0.1+ | | | | | | |
| 2002 09 06 | 704 | 0.4− | 0.2+ | 2002 09 16 | 644 | 0.0 | 0.4− | | | | | | |

### 2002 $RA_{48}$ = 2006 $VZ_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.04960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28379247 | $\omega$ | 269.63666 | | +0.25924845 | +0.96566981 | |
| $a$ | 2.2933419 | $\Omega$ | 15.41919 | | −0.85960805 | +0.23849293 | |
| $e$ | 0.1630198 | $i$ | 3.55670 | | −0.44030018 | +0.10297056 | |
| $P$ | 3.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 31 | 699 | (2.0− | 1.4+) | 2002 09 15 | 699 | 0.1+ | 0.6− | 2006 09 28 | G96 | 0.6+ | 0.0 | | |
| 2002 08 31 | 699 | 0.3− | 0.5− | 2002 09 15 | 699 | 1.3+ | 0.1− | 2006 09 28 | G96 | 0.6+ | 0.3− | | |
| 2002 08 31 | 699 | (3.2− | 1.8+) | 2002 09 17 | 608 | (0.8− | 1.6−) | 2006 11 10 | 691 | 0.0 | 0.1− | | |
| 2002 08 31 | 699 | 0.9− | 0.9− | 2002 09 17 | 608 | (0.5− | 1.9−) | 2006 11 10 | 691 | 0.3− | 0.1+ | | |
| 2002 09 05 | 704 | 0.8+ | 0.9+ | 2002 09 17 | 608 | (1.2− | 1.9−) | 2006 11 10 | 691 | 0.1− | 0.3+ | | |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2002 10 01 | 699 | (1.7+ | 0.4+) | 2006 11 14 | 691 | 0.9− | 0.3+ | | |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2002 10 01 | 699 | 0.8+ | 0.4− | 2006 11 14 | 691 | 0.0 | 0.1− | | |
| 2002 09 05 | 608 | 0.2− | 0.2− | 2002 10 01 | 699 | 0.1− | 0.6+ | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 2002 09 05 | 608 | 0.6− | 0.2− | 2002 10 01 | 699 | 0.7+ | 0.7+ | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 05 | 608 | 0.5− | 0.3+ | 2002 10 03 | 704 | 0.4+ | 0.2− | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 2002 09 06 | 704 | 0.7− | 0.0 | 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.2− | | |
| 2002 09 06 | 704 | 0.5− | 0.7+ | 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.1+ | 0.8+ | 2002 10 03 | 704 | 1.1− | 1.0− | 2006 11 21 | 691 | 0.1+ | 0.1− | | |
| 2002 09 13 | 644 | 0.6− | 0.3− | 2005 05 19 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 13 | 644 | 0.4− | 0.2− | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1− | | |
| 2002 09 13 | 644 | 0.5− | 0.0 | 2005 05 19 | 644 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.0 | | |
| 2002 09 15 | 699 | 1.0+ | 0.0 | 2006 09 28 | G96 | 0.9+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.1− | | |
| 2002 09 15 | 699 | 0.3+ | 1.0− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− | | |

### 2002 $RC_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.97619 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25780677 | $\omega$ | 282.60484 | | +0.78603840 | −0.61716198 | |
| $a$ | 2.4449679 | $\Omega$ | 115.51539 | | +0.58131356 | +0.71845815 | |
| $e$ | 0.1999457 | $i$ | 2.24944 | | +0.21028119 | +0.32082546 | |
| $P$ | 3.82 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 1.0− | 0.3+ | 2002 10 06 | 704 | 0.3+ | 1.2+ | 2006 10 22 | 704 | 0.3+ | 1.5+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 10 22 | 704 | 0.6− | 0.5+ | | |
| 2002 09 05 | 704 | 0.9+ | 0.5+ | 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 11 14 | 704 | 0.4+ | 0.2+ | | |
| 2002 09 06 | 704 | (1.8− | 0.5−) | 2002 10 11 | 704 | 0.6− | 0.6− | 2006 11 14 | 704 | 0.1+ | 1.0+ | | |
| 2002 09 06 | 704 | 0.6− | 1.1+ | 2004 03 14 | 691 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 0.8+ | 0.8+ | | |
| 2002 09 06 | 704 | 0.3− | 0.1+ | 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.4+ | 0.3+ | | |
| 2002 09 13 | 608 | 1.0− | 0.6− | 2004 03 14 | 691 | 0.2+ | 0.5+ | 2006 11 14 | 704 | 0.4− | 0.4+ | | |
| 2002 09 13 | 608 | 0.7− | 0.6− | 2006 10 16 | 683 | 0.7+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2002 09 13 | 608 | 0.8− | 0.4− | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.4− | | |
| 2002 09 16 | 608 | 0.1− | 0.7− | 2006 10 16 | 683 | 0.6− | 1.3+ | 2006 11 16 | G96 | 0.2− | 0.4− | | |
| 2002 09 16 | 608 | 0.8− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.9− | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2002 09 16 | 608 | 0.4− | 0.9− | 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 11 17 | 704 | 0.2− | 0.6− | | |
| 2002 09 19 | 644 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.4− | | |
| 2002 09 19 | 644 | 0.2+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 17 | 704 | 0.4+ | 0.4− | | |
| 2002 09 19 | 644 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.6+ | | |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.3− | 1.2+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 10 17 | 683 | 0.3+ | 0.7− | 2006 11 19 | 704 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 0.1+ | 0.8− | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.6− | 0.2− | | |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2006 10 17 | 683 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.2+ | | |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2006 10 17 | 683 | 0.6+ | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.5− | | |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.0 | | |
| 2002 10 04 | 644 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.5− | | |
| 2002 10 04 | 644 | 0.4+ | 0.5+ | 2006 10 19 | 683 | 1.2− | 0.2− | 2006 11 20 | 704 | 0.1− | 0.1− | | |
| 2002 10 04 | 644 | 0.5+ | 0.5+ | 2006 10 19 | 683 | (0.5− | 1.5+) | 2006 11 28 | 704 | 0.6+ | 2.2− | | |
| 2002 10 06 | 704 | 0.1+ | 1.1+ | 2006 10 19 | 683 | 0.4− | 0.5+ | 2006 11 28 | 704 | 0.6− | 0.5+ | | |
| 2002 10 06 | 704 | 1.2+ | 0.5+ | 2006 10 22 | 704 | 1.0+ | 1.1+ | 2006 11 28 | 704 | 1.2+ | 1.0+ | | |
| 2002 10 06 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 704 | 0.9− | 0.4+ | 2006 11 28 | 704 | 0.3+ | 0.5+ | | |

### 2002 $RR_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.90611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25928647 | $\omega$ | 287.62421 | | +0.76511041 | −0.64115167 | |
| $a$ | 2.4356571 | $\Omega$ | 112.29673 | | +0.61243731 | +0.69612824 | |
| $e$ | 0.2506763 | $i$ | 3.68210 | | +0.19881300 | +0.32300156 | |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 21 | 644 | 0.1− | 0.4+ | 2002 10 09 | 699 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.0 | | |
| 2002 08 21 | 644 | 0.3− | 1.2+ | 2002 10 09 | 699 | 0.3− | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.1− | | |
| 2002 08 21 | 644 | 0.0 | 0.0 | 2002 10 09 | 699 | 0.3+ | 0.7− | 2006 11 10 | 644 | 0.2+ | 0.0 | | |
| 2002 08 30 | 699 | 0.7+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.0 | | |
| 2002 08 30 | 699 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1− | | |
| 2002 08 30 | 699 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.0 | | |
| 2002 08 30 | 699 | (1.0− | 1.6−) | 2006 10 16 | 703 | 0.7+ | 0.1− | 2006 11 10 | 644 | 0.3+ | 0.1− | | |
| 2002 09 05 | 699 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.4− | 2006 11 13 | 703 | 0.7− | 0.3+ | | |
| 2002 09 05 | 699 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.7+ | 0.3− | 2006 11 13 | 703 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.6− | 2006 11 13 | 703 | 0.3− | 0.4− | | |
| 2002 09 05 | 699 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.4+ | 0.4− | 2006 11 13 | 703 | 0.2− | 0.1+ | | |
| 2002 09 05 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 11 14 | 704 | 0.1− | 0.8− | | |
| 2002 09 05 | 699 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.2− | 2006 11 14 | 704 | 0.2− | 0.9− | | |
| 2002 09 05 | 704 | 0.8+ | 0.9+ | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.1− | 0.7− | | |
| 2002 09 06 | 704 | 1.1+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 14 | 704 | (2.7+ | 2.1−) | | |
| 2002 09 06 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.1− | 0.3+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.9− | 0.6+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 704 | 0.8− | 0.6− | 2006 11 17 | 704 | 0.5− | 1.5+ | | |
| 2002 09 06 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 704 | 0.3− | 0.5− | 2006 11 17 | 704 | 0.3− | 0.4+ | | |
| 2002 09 13 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 704 | 1.1− | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.4+ | | |
| 2002 09 13 | 704 | 0.0 | 0.2+ | 2006 10 22 | 704 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.7+ | | |
| 2002 09 13 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 704 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.8+ | | |
| 2002 09 13 | 704 | 0.5− | 0.2+ | 2006 10 27 | 704 | 0.5− | 0.9+ | 2006 11 20 | 704 | 0.1− | 0.2+ | | |
| 2002 09 13 | 704 | 0.3− | 0.4− | 2006 10 27 | 704 | 0.7− | 1.3+ | 2006 11 20 | 704 | 0.1+ | 0.7+ | | |
| 2002 09 16 | 644 | 0.4− | 0.7− | 2006 10 27 | 704 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.4− | 1.0+ | | |
| 2002 09 16 | 644 | 0.5− | 0.7− | 2006 10 27 | 704 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2002 09 16 | 644 | 0.2− | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.4− | | |
| 2002 09 17 | 608 | 1.4− | 1.3− | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.4− | | |
| 2002 09 17 | 608 | (0.8− | 1.5−) | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.5− | | |
| 2002 09 17 | 608 | 0.1+ | 1.0− | 2006 11 09 | 644 | 0.3+ | 0.1− | | | | | | |
| 2002 10 09 | 699 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1+ | | | | | | |

### 2002 $RL_{54}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.47744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25324301 | $\omega$ | 261.18141 | | +0.99840947 | −0.02750807 | |
| $a$ | 2.4742547 | $\Omega$ | 100.38406 | | +0.04452638 | +0.92015888 | |
| $e$ | 0.2127846 | $i$ | 2.86779 | | −0.03458216 | +0.39057769 | |
| $P$ | 3.89 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.3+ | 0.2+ | 2002 10 11 | 704 | 1.0+ | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.1− | | |
| 2002 09 05 | 704 | 0.0 | 0.4+ | 2002 10 11 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 704 | (0.8− | 2.4+) | 2002 10 11 | 704 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.9− | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.1− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2002 09 06 | 704 | (0.7+ | 2.3−) | 2006 09 30 | 703 | 0.0 | 0.9+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2002 09 06 | 704 | (0.3+ | 2.2−) | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2002 09 06 | 704 | (0.8+ | 2.2−) | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 27 | 704 | (1.0+ | 1.6+) | | |
| 2002 09 06 | 704 | (0.3+ | 2.9−) | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 27 | 704 | 0.0 | 0.4− | | |
| 2002 09 06 | 704 | (0.4− | 3.8−) | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.5− | 1.1+ | | |
| 2002 09 14 | 608 | 0.5− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 27 | 704 | 0.5− | 0.1− | | |
| 2002 09 14 | 608 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2002 09 14 | 608 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 608 | 1.3− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 09 30 | 608 | 1.0− | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.6+ | 0.4− |
| 2002 09 30 | 608 | 0.7− | 0.6− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.3+ |
| 2002 10 02 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2002 10 02 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.6− |
| 2002 10 02 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2002 10 02 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 17 | 704 | 0.3− | 1.4+ |
| 2002 10 03 | 704 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.8+ | 0.3+ |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.9− | 0.2+ | 2006 10 19 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 1.6+ |
| 2002 10 03 | 704 | 0.7− | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 1.3− | 0.7− |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.7+ | 0.4− | 2006 11 17 | 703 | 0.1− | 0.8− |
| 2002 10 08 | 699 | 0.5+ | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.8− | 2006 11 17 | 703 | 0.7− | 1.4− |
| 2002 10 08 | 699 | 0.9+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.4− |
| 2002 10 08 | 699 | (0.0 | 1.8+) | 2006 10 21 | 703 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2002 10 08 | 699 | 1.1− | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 1.2− | 0.2− |
| 2002 10 11 | 704 | 0.1− | 1.4+ | 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.0 | 1.0+ | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.8+ | 0.7− |

### 2002 RA$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.07596 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27094552 | $\omega$ | 33.25749 | | +0.95088657 | | +0.29977120 |
| $a$ | 2.3652737 | $\Omega$ | 309.10547 | | −0.30124446 | | +0.83888830 |
| $e$ | 0.2043291 | $i$ | 5.70580 | | −0.07117932 | | +0.45431669 |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.3+ | 0.0 | 2002 09 11 | 608 | 0.3+ | 0.9+ | 2002 10 04 | 704 | 0.2+ | 0.4+ |
| 2002 08 11 | 704 | 0.9+ | 0.1− | 2002 09 11 | 608 | 0.5+ | 0.5+ | 2002 10 04 | 704 | 0.0 | 0.1+ |
| 2002 08 11 | 704 | 0.4+ | 0.3− | 2002 09 11 | 608 | 0.5+ | 0.5+ | 2002 10 04 | 704 | 0.4+ | 0.0 |
| 2002 08 11 | 704 | 0.9− | 0.2+ | 2002 09 13 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | 1.3− | 1.1− |
| 2002 08 11 | 704 | 1.2− | 0.6+ | 2002 09 13 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.6+ | 0.1− |
| 2002 09 05 | 699 | 0.2− | 0.1+ | 2002 09 13 | 644 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2002 09 05 | 699 | 0.1− | 0.0 | 2002 09 15 | 608 | 1.1− | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.3− |
| 2002 09 05 | 699 | 0.3− | 0.4− | 2002 09 15 | 608 | 0.8− | 0.4+ | 2006 11 22 | 704 | 1.2+ | 0.4+ |
| 2002 09 05 | 699 | 0.2− | 0.2− | 2002 09 15 | 608 | 0.7− | 0.3+ | 2006 11 22 | 704 | 0.5+ | 0.4+ |
| 2002 09 06 | 704 | 1.1+ | 0.2+ | 2002 09 17 | 608 | 0.4− | 0.8− | 2006 11 22 | 704 | 0.5+ | 1.2+ |
| 2002 09 06 | 704 | 1.0+ | 0.5+ | 2002 09 17 | 608 | 0.2− | 0.7− | 2006 11 23 | G96 | 0.4− | 0.3− |
| 2002 09 06 | 704 | 0.4+ | 0.4− | 2002 09 17 | 608 | 0.7− | 0.9− | 2006 11 23 | G96 | 0.5− | 0.1− |
| 2002 09 06 | 704 | 0.2+ | 0.3− | 2002 10 04 | 704 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.5− | 0.3− |
| 2002 09 06 | 704 | 0.3+ | 0.3− | 2002 10 04 | 704 | 0.1+ | 0.0 | | | | |

### 2002 RK$_{56}$ = 2006 WW$_{157}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.77664 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26470564 | $\omega$ | 15.34345 | | +0.87680387 | | +0.47639472 |
| $a$ | 2.4023000 | $\Omega$ | 316.01287 | | −0.45047405 | | +0.76631557 |
| $e$ | 0.1309101 | $i$ | 5.39454 | | −0.16819067 | | +0.43105512 |
| $P$ | 3.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 1.3− | 0.6+ | 2002 09 07 | 704 | 1.2+ | 0.1− | 2002 10 07 | 699 | 0.6+ | 0.3− |
| 2002 09 05 | 699 | 0.0 | 1.1+ | 2002 09 07 | 704 | 0.4+ | 0.9− | 2002 10 07 | 699 | 1.3+ | 0.7+ |
| 2002 09 05 | 699 | (0.6+ | 2.2+) | 2002 09 07 | 704 | 0.5− | 0.2− | 2002 10 07 | 699 | 0.6+ | 0.1+ |
| 2002 09 05 | 699 | 0.8+ | 1.2+ | 2002 09 07 | 704 | 0.3− | 0.1+ | 2002 10 08 | 704 | 0.2− | 0.4− |
| 2002 09 06 | 704 | 0.4+ | 0.9− | 2002 09 07 | 704 | 0.2+ | 0.2− | 2002 10 08 | 704 | 0.2− | 0.3− |
| 2002 09 06 | 704 | 0.4+ | 0.6− | 2002 09 07 | 704 | 0.7+ | 1.1+ | 2002 10 08 | 704 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.8− | 2002 09 07 | 704 | 0.1+ | 0.2+ | 2002 10 09 | 049 | 0.4− | 0.2− |
| 2002 09 06 | 704 | 0.7+ | 0.2− | 2002 09 07 | 704 | 0.2− | 0.6+ | 2002 10 09 | 049 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.2− | 1.3− | 2002 09 07 | 658 | 0.4+ | 0.3− | 2002 10 09 | 049 | 0.3− | 0.2− |
| 2002 09 07 | 704 | 0.3+ | 0.3+ | 2002 09 07 | 658 | 0.0 | 0.3− | 2006 10 19 | D35 | 0.0 | 0.2− |
| 2002 09 07 | 704 | 0.7− | 0.5+ | 2002 09 07 | 658 | 0.5− | 0.1+ | 2006 10 19 | D35 | 0.2− | 0.5+ |
| 2002 09 07 | 704 | 0.2+ | 0.6+ | 2002 09 07 | 658 | 0.6+ | 0.3− | 2006 10 19 | D35 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2002 09 08 | 658 | 0.5− | 0.7− | 2006 11 22 | 703 | 0.5+ | 0.2− |
| 2002 09 07 | 704 | 0.6+ | 0.7+ | 2002 09 08 | 658 | 0.3− | 0.5− | 2006 11 22 | 703 | 1.2− | 0.5+ |
| 2002 09 07 | 704 | 0.5+ | 0.4+ | 2002 09 08 | 658 | 0.3+ | 0.7− | 2006 11 22 | 703 | 0.5+ | 0.9+ |
| 2002 09 07 | 704 | 0.3− | 0.4+ | 2002 09 08 | 658 | 0.4− | 0.6− | 2006 11 22 | 703 | 0.6+ | 0.4− |
| 2002 09 07 | 704 | 0.1− | 0.3+ | 2002 09 08 | 658 | 0.3− | 0.8− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2002 09 07 | 704 | 0.2− | 0.5+ | 2002 09 16 | 608 | 1.1− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2002 09 07 | 704 | 0.3− | 0.1− | 2002 09 16 | 608 | (1.8− | 0.3+) | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2002 09 07 | 704 | 0.6+ | 0.0 | 2002 09 16 | 608 | 1.5− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2002 09 07 | 704 | 0.4− | 0.4+ | 2002 10 07 | 699 | 0.3− | 0.9+ | | | | |

### 2002 RT$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.56651 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25456412 | $\omega$ | 29.37670 | | +0.57476647 | | +0.81554527 |
| $a$ | 2.4656869 | $\Omega$ | 275.78489 | | −0.76337367 | | +0.50473121 |
| $e$ | 0.1857358 | $i$ | 3.87876 | | −0.29479509 | | +0.28307651 |
| $P$ | 3.87 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.7+ | 0.6− | 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 09 21 | 621 | 0.3− | 0.1− |
| 2002 08 11 | 704 | 0.6− | 1.4− | 2002 09 19 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 1.1− | 0.8+ |
| 2002 08 11 | 704 | 0.2+ | 0.4+ | 2002 09 19 | 644 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 0.7− | 1.1+ |
| 2002 08 11 | 704 | 0.0 | 0.1− | 2002 09 19 | 644 | 0.1+ | 0.8+ | 2006 09 25 | 704 | 0.4+ | 0.8− |
| 2002 08 28 | 644 | 0.3+ | 0.2− | 2002 10 04 | 704 | 0.5− | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.9− |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2002 10 04 | 704 | 0.7− | 0.3− | 2006 09 30 | 703 | 0.4− | 0.7− |
| 2002 08 28 | 644 | 0.4+ | 0.0 | 2002 10 04 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.8+ |
| 2002 09 05 | 699 | 0.3+ | 0.1+ | 2002 10 04 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.1− |
| 2002 09 05 | 699 | 0.6− | 0.6+ | 2002 10 06 | 704 | 0.5− | 0.6− | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2002 09 05 | 699 | 0.7− | 0.2− | 2002 10 06 | 704 | 0.9− | 0.7+ | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2002 09 05 | 699 | 1.0− | 0.9+ | 2002 10 06 | 704 | 0.4+ | 1.0+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.4+ | 0.9+ | 2006 09 16 | 703 | 0.0 | 1.3− | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.3+ | 1.0− |
| 2002 09 06 | 704 | 0.2+ | 0.6+ | 2006 09 16 | 703 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 10 17 | 703 | 0.6− | 0.8− |
| 2002 09 06 | 704 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.9+ |
| 2002 09 11 | 608 | 0.3+ | 0.8− | 2006 09 19 | 703 | 0.7+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2002 09 11 | 608 | 0.5+ | 0.7− | 2006 09 19 | 703 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 09 11 | 608 | 0.2+ | 1.4− | 2006 09 21 | 621 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 09 21 | 621 | 0.2+ | 0.2− | | | | |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 09 21 | 621 | 0.2+ | 0.3− | | | | |

### 2002 RQ$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.60508 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22099890 | $\omega$ | 114.78308 | | +0.93108217 | | +0.35919462 |
| $a$ | 2.7094178 | $\Omega$ | 224.24129 | | −0.35893838 | | +0.87076815 |
| $e$ | 0.2245685 | $i$ | 5.24341 | | −0.06518613 | | +0.33577082 |
| $P$ | 4.46 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 910 | 0.0 | 0.3+ | 2002 09 13 | 644 | 0.2− | 0.5+ | 2002 10 04 | 704 | 0.3+ | 0.3− |
| 1998 11 19 | 910 | 0.1+ | 0.2+ | 2002 09 13 | 644 | 0.3− | 0.3+ | 2002 10 04 | 704 | 0.6− | 1.7− |
| 1998 11 19 | 910 | 0.1− | 0.1− | 2002 09 13 | 644 | 0.2− | 0.6+ | 2002 10 07 | 699 | 0.7+ | 1.7+ |
| 2002 08 16 | 704 | 0.8+ | 0.1+ | 2002 09 14 | 608 | 1.0− | 0.7− | 2002 10 07 | 699 | (0.8+ | 2.1+) |
| 2002 08 16 | 704 | 0.0 | 0.0 | 2002 09 14 | 608 | 0.9− | 0.6− | 2002 10 07 | 699 | 0.0 | 2.0+ |
| 2002 08 16 | 704 | 0.4+ | 0.3+ | 2002 09 14 | 608 | 1.1− | 0.5− | 2002 10 07 | 699 | 0.2− | 0.8+ |
| 2002 08 16 | 704 | 0.9+ | 1.3+ | 2002 09 16 | 683 | 0.5+ | 0.5− | 2002 10 09 | 704 | 0.0 | 1.1+ |
| 2002 08 22 | 644 | 0.2− | 0.2+ | 2002 09 16 | 683 | 0.5− | 0.9+ | 2002 10 09 | 704 | 0.4+ | 0.1+ |
| 2002 08 22 | 644 | 0.1+ | 0.7+ | 2002 09 30 | 704 | 0.1+ | 0.0 | 2002 10 09 | 704 | 0.2+ | 0.2− |
| 2002 08 22 | 644 | 0.8+ | 0.8+ | 2002 09 30 | 704 | 0.1− | 0.1+ | 2002 10 09 | 704 | 0.9+ | 0.0 |
| 2002 08 28 | 644 | 0.2− | 0.2− | 2002 09 30 | 704 | 0.3− | 0.1+ | 2002 10 09 | 704 | 1.3+ | 0.2− |
| 2002 08 28 | 644 | 0.0 | 0.1− | 2002 09 30 | 704 | 0.2+ | 0.4+ | 2002 10 10 | 645 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.0 | 2002 10 04 | 704 | 0.1+ | 0.1+ | 2002 10 10 | 645 | 0.0 | 0.1− |
| 2002 09 05 | 699 | 0.2+ | 0.1− | 2002 10 04 | 704 | 0.0 | 1.1− | 2002 10 11 | 645 | 0.0 | 0.1+ |
| 2002 09 05 | 699 | 0.5+ | 0.2+ | 2002 10 04 | 704 | 0.0 | 1.4− | 2002 10 11 | 645 | 0.0 | 0.0 |
| 2002 09 05 | 699 | 0.2+ | 0.5+ | 2002 10 04 | 704 | 0.4+ | 0.1− | 2002 10 30 | 645 | 0.1− | 0.1+ |
| 2002 09 05 | 699 | 0.0 | 0.9+ | 2002 10 04 | 704 | 0.4− | 0.5− | 2002 10 30 | 645 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.1− | 0.4+ | 2002 10 04 | 704 | 0.6− | 1.3− | 2002 10 31 | 645 | 0.1− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.3+ | 0.2+ | 2002 10 04 | 704 | 0.1− | 0.2+ | 2002 10 31 | 645 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.1− | 0.7+ | 2002 10 04 | 704 | 0.0 | 0.9− | 2005 03 08 | 691 | 0.0 | 0.9+ |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2002 10 04 | 704 | 0.1− | 0.9− | 2005 03 08 | 691 | 0.2+ | 0.6+ |
| 2002 09 13 | 644 | 0.4− | 0.1− | 2002 10 04 | 704 | 0.3+ | 0.2+ | 2005 03 08 | 691 | 0.5+ | 0.3+ |
| 2002 09 13 | 644 | 0.1− | 0.5+ | 2002 10 04 | 704 | 0.2− | 1.4− | | | | |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2002 10 04 | 704 | 0.1− | 1.6− | | | | |

**2002 RF$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.95855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28428704 | $\omega$ | 80.76959 | | +0.99414867 | +0.05078805 | |
| $a$ | 2.2906813 | $\Omega$ | 276.27704 | | −0.08538528 | +0.91006962 | |
| $e$ | 0.1806817 | $i$ | 5.50377 | | +0.06616478 | +0.41133180 | |
| $P$ | 3.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.2− | 0.3+ | 2002 10 05 | 704 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2002 09 03 | 644 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 09 03 | 644 | 0.1− | 0.2+ | 2002 10 05 | 704 | 0.1+ | 0.5− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2002 10 05 | 704 | 0.3− | 0.6− | 2006 10 23 | G96 | 0.4− | 0.3+ |
| 2002 09 07 | 704 | 0.0 | 0.7+ | 2002 10 09 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.6+ | 0.3+ | 2002 10 09 | 704 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2002 09 07 | 704 | 0.0 | 0.6− | 2002 10 09 | 704 | 0.3+ | 0.0 | 2006 10 29 | G96 | 0.1− | 0.2− |
| 2002 09 12 | 644 | 0.0 | 0.2+ | 2002 10 09 | 704 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.4− | 0.1+ |
| 2002 09 12 | 644 | 0.0 | 0.2+ | 2002 10 09 | 704 | 0.2+ | 0.2− | 2006 10 29 | G96 | 0.1− | 0.3− |
| 2002 09 12 | 644 | 0.1− | 0.2+ | 2002 11 06 | 704 | 0.7+ | 0.2− | 2006 10 29 | G96 | 0.1− | 0.1+ |
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2002 11 06 | 704 | 0.0 | 0.9− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2002 10 04 | 644 | 0.3− | 0.2+ | 2002 11 06 | 704 | 0.4+ | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2002 11 06 | 704 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.1+ |
| 2002 10 05 | 704 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.4− |

**2002 RL$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.02764 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26311505 | $\omega$ | 84.91804 | | +0.91160079 | −0.39983077 | |
| $a$ | 2.4119720 | $\Omega$ | 298.62072 | | +0.32071272 | +0.83707428 | |
| $e$ | 0.2668329 | $i$ | 6.24546 | | +0.25715237 | +0.37341935 | |
| $P$ | 3.75 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.0 | 0.2+ | 2002 10 12 | 704 | 0.3+ | 0.1+ | 2003 01 05 | 704 | 0.1+ | 0.6− |
| 2002 09 03 | 644 | 0.0 | 0.2+ | 2002 10 12 | 704 | (3.0+ | 1.5−) | 2006 09 18 | 704 | 0.1+ | 0.2+ |
| 2002 09 03 | 644 | 0.1+ | 0.2+ | 2002 10 12 | 704 | 0.5− | 1.2− | 2006 09 18 | 704 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.1− | 0.4− | 2002 10 12 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.5− | 0.4− | 2002 11 06 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | (0.6+ | 1.9+) |
| 2002 09 07 | 704 | 0.2− | 0.3− | 2002 11 06 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.8+ | 0.4+ |
| 2002 09 07 | 704 | 0.3− | 0.3− | 2002 11 06 | 704 | 0.0 | 0.8+ | 2006 11 15 | 704 | 0.8+ | 0.2− |
| 2002 10 04 | 644 | 0.3− | 0.6+ | 2002 11 06 | 704 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.2− | 0.3− |
| 2002 10 04 | 644 | 0.4− | 0.7+ | 2002 12 01 | 704 | 0.5− | 1.1− | 2006 11 15 | 704 | 0.5+ | 0.3+ |
| 2002 10 04 | 644 | 0.4− | 0.6+ | 2002 12 01 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2002 10 05 | 704 | 0.3+ | 0.0 | 2002 12 01 | 704 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.4− | 0.9+ |
| 2002 10 05 | 704 | 0.2+ | 0.0 | 2002 12 01 | 704 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 10 05 | 704 | 0.6+ | 0.3+ | 2002 12 01 | 704 | 0.4+ | 0.9− | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | 0.4+ | 0.1+ | 2002 12 05 | 704 | 0.2− | 1.0+ | 2006 11 22 | 704 | 0.1+ | 0.6− |
| 2002 10 05 | 704 | 0.4+ | 0.3+ | 2002 12 05 | 704 | (0.9− | 1.6+) | 2006 11 22 | 704 | 0.9− | 0.2− |
| 2002 10 07 | 699 | 0.2− | 0.1− | 2002 12 05 | 704 | (0.8− | 2.3+) | 2006 11 22 | 704 | 0.6− | 0.4− |
| 2002 10 07 | 699 | 0.1+ | 0.2− | 2002 12 05 | 704 | (1.8− | 1.9+) | 2006 11 22 | 704 | 0.8− | 0.0 |
| 2002 10 07 | 699 | 0.5− | 0.2+ | 2002 12 05 | 704 | 0.5− | 0.6+ | 2006 11 22 | 704 | 0.7− | 0.1+ |
| 2002 10 07 | 699 | 0.3− | 0.3+ | 2003 01 01 | 704 | 0.4+ | 0.2− | 2006 11 25 | 691 | 0.1− | 0.3+ |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2003 01 01 | 704 | 0.4− | 0.0 | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2002 10 09 | 704 | 0.5+ | 0.4− | 2003 01 01 | 704 | 0.2− | 0.2+ | 2006 11 25 | 691 | 0.2− | 0.0 |
| 2002 10 09 | 704 | 0.1+ | 0.2− | 2003 01 01 | 704 | 0.3− | 0.1− | 2006 11 27 | 704 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.2− | 2003 01 01 | 704 | 0.3− | 0.3+ | 2006 11 27 | 704 | 0.8+ | 0.5− |
| 2002 10 09 | 704 | 0.2+ | 0.2− | 2003 01 05 | 704 | 1.2+ | 0.7+ | 2006 11 27 | 704 | 0.4+ | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.5− | 2003 01 05 | 704 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.5+ |
| 2002 10 12 | 704 | 0.5+ | 0.1− | 2003 01 05 | 704 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.0 | 1.0− |
| 2002 10 12 | 704 | 0.1− | 0.8− | 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 11 29 | 704 | 2.2+ | 1.3− |

**2002 RX$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.50433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26234360 | $\omega$ | 113.34271 | | +0.98603969 | +0.15138958 | |
| $a$ | 2.4166981 | $\Omega$ | 238.01501 | | −0.16622574 | +0.91930374 | |
| $e$ | 0.2454556 | $i$ | 4.68867 | | +0.00973341 | +0.36326552 | |
| $P$ | 3.76 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 1.2+ | 0.9− | 2002 09 30 | 704 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 08 11 | 704 | (0.2− | 2.0+) | 2002 09 30 | 704 | 0.4+ | 0.3− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 08 11 | 704 | 0.6+ | 0.6+ | 2002 10 04 | 704 | 0.5− | 1.2+ | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2002 08 11 | 704 | 0.4− | 0.4+ | 2002 10 04 | 704 | (1.8− | 1.5+) | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2002 08 28 | 644 | 0.0 | 1.0+ | 2002 10 04 | 704 | 1.2− | 1.2+ | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2002 08 28 | 644 | 0.1− | 1.1+ | 2002 10 04 | 704 | (0.3− | 2.0+) | 2006 11 11 | 703 | 0.3+ | 0.7+ |
| 2002 08 28 | 644 | 0.1− | 1.0+ | 2002 10 04 | 704 | 0.4− | 1.1+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2002 09 03 | 608 | 0.0 | 0.0 | 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2002 09 03 | 608 | 0.4+ | 0.2− | 2002 10 10 | 645 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2002 09 03 | 608 | 0.2− | 0.3+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2002 09 04 | 699 | 0.7− | 0.5+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2002 09 04 | 699 | 0.4− | 0.7+ | 2002 10 31 | 645 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.6+ |
| 2002 09 04 | 699 | 0.5− | 0.3+ | 2002 10 31 | 645 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.8+ |
| 2002 09 04 | 699 | 0.3+ | 1.0+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.2+ |
| 2002 09 07 | 704 | 0.7− | 1.0− | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2002 09 07 | 704 | 1.2− | 0.7− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.8− | 1.0− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 1.1+ |
| 2002 09 07 | 704 | 0.6− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.9+ | 0.4− |
| 2002 09 07 | 704 | 0.6− | 0.6− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2002 09 08 | 608 | 0.5+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.1+ |
| 2002 09 08 | 608 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | (0.2− | 2.2+) |
| 2002 09 08 | 608 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2002 09 13 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2002 09 13 | 644 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.2− | 0.9− |
| 2002 09 13 | 644 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.3− | 1.0− |
| 2002 09 16 | 683 | 0.2− | 1.1+ | 2006 11 01 | G96 | 0.6+ | 0.4− | 2006 11 27 | 703 | 0.3− | 0.4− |
| 2002 09 16 | 683 | 0.5− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.3− | 0.9− |
| 2002 09 16 | 683 | 0.8+ | 0.4+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2002 09 17 | 608 | 0.4+ | 0.4− | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2002 09 17 | 608 | 1.1+ | 0.7− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2002 09 17 | 608 | 0.8+ | 1.0− | 2006 11 08 | 644 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2002 09 30 | 704 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2− | | | | |
| 2002 09 30 | 704 | 0.9+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2+ | | | | |

**2002 RF$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.43945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27450340 | $\omega$ | 38.11292 | | +0.63350206 | +0.76860438 | |
| $a$ | 2.3447915 | $\Omega$ | 271.37775 | | −0.72995980 | +0.55554127 | |
| $e$ | 0.2055283 | $i$ | 5.10802 | | −0.25658102 | +0.31720844 | |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 1.2+ | 0.5− | 2002 09 07 | 704 | 0.8+ | 0.0 | 2002 09 30 | 704 | 0.1− | 0.9+ |
| 2002 08 11 | 704 | 0.3+ | 0.6− | 2002 09 07 | 704 | 0.4+ | 0.5+ | 2002 10 11 | 645 | 0.1− | 0.1− |
| 2002 08 11 | 704 | 0.9+ | 0.3+ | 2002 09 07 | 704 | 1.1+ | 0.1− | 2002 10 11 | 645 | 0.1− | 0.1− |
| 2002 08 11 | 704 | 0.9+ | 0.5− | 2002 09 07 | 704 | 1.3+ | 0.3+ | 2002 10 30 | 645 | 0.0 | 0.1− |
| 2002 08 11 | 704 | 0.5+ | 0.7− | 2002 09 13 | 683 | 0.8− | 0.4− | 2002 10 30 | 645 | 0.1− | 0.1− |
| 2002 08 12 | 608 | 0.7− | 0.9− | 2002 09 13 | 683 | 0.3− | 0.0 | 2002 11 08 | 645 | 0.1+ | 0.0 |
| 2002 08 12 | 608 | 0.4− | 0.4− | 2002 09 13 | 683 | 0.1+ | 0.1+ | 2002 11 08 | 645 | 0.1+ | 0.1− |
| 2002 08 12 | 608 | 0.6− | 0.6− | 2002 09 13 | 644 | 0.4− | 0.3− | 2004 01 31 | 691 | 0.0 | 0.1+ |
| 2002 08 14 | 699 | 0.2+ | 0.9+ | 2002 09 13 | 644 | 0.4− | 0.4− | 2004 01 31 | 691 | 0.2+ | 0.1+ |
| 2002 08 14 | 699 | 0.4− | 1.4+ | 2002 09 13 | 644 | 0.1− | 0.2− | 2004 01 31 | 691 | 0.1− | 0.1+ |
| 2002 08 14 | 699 | 0.2− | 0.9+ | 2002 09 14 | 683 | 1.3− | 1.3+ | 2006 10 27 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 699 | 0.3+ | 1.3+ | 2002 09 14 | 683 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.4+ | 0.2+ | | |
| 2002 08 28 | 644 | 0.1+ | 1.3+ | 2002 09 14 | 683 | 0.4+ | 1.1− | 2006 10 27 | 691 | 0.2+ | 0.1+ | | |
| 2002 08 28 | 644 | 0.1+ | 1.3+ | 2002 09 16 | 608 | 0.8− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2002 08 28 | 644 | 0.2− | 1.4+ | 2002 09 16 | 608 | 1.3− | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.2+ | | |
| 2002 09 04 | 699 | 0.1+ | 0.4− | 2002 09 16 | 608 | 1.2− | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.2+ | | |
| 2002 09 04 | 699 | 0.4− | 1.0+ | 2002 09 30 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 691 | 0.3− | 0.0 | | |
| 2002 09 04 | 699 | 0.7− | 0.4+ | 2002 09 30 | 704 | 0.5+ | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.1− | | |
| 2002 09 04 | 699 | 0.4+ | 0.5− | 2002 09 30 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.2− | | |

**2002 RS$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.38046 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21554522 | $\omega$ | 320.94428 | | +0.72065719 | +0.69316857 | |
| $a$ | 2.7549293 | $\Omega$ | 355.11209 | | −0.59146744 | +0.60487744 | |
| $e$ | 0.2985928 | $i$ | 8.81647 | | −0.36168976 | +0.39197017 | |
| $P$ | 4.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.3− | 0.5+ | 2002 09 04 | 699 | 0.5− | 0.2+ | 2002 10 03 | 704 | 0.6− | 0.3− | | |
| 1996 03 12 | 691 | 0.0 | 0.1+ | 2002 09 07 | 704 | 0.1+ | 0.1+ | 2002 10 06 | 704 | 0.2− | 0.4− | | |
| 1996 03 12 | 691 | 0.5+ | 0.2− | 2002 09 07 | 704 | 0.3− | 0.2+ | 2002 10 06 | 704 | 0.3+ | 0.1− | | |
| 2002 07 09 | 704 | 0.4− | 0.1− | 2002 09 07 | 704 | 0.0 | 0.1− | 2002 10 06 | 704 | 0.2− | 0.8+ | | |
| 2002 07 09 | 704 | 0.4+ | 0.6− | 2002 09 07 | 704 | 0.1− | 0.3− | 2002 10 06 | 704 | 0.1+ | 0.1+ | | |
| 2002 07 09 | 704 | 0.4+ | 0.5+ | 2002 09 07 | 704 | 0.3− | 0.3− | 2002 10 07 | 704 | 0.3+ | 0.2− | | |
| 2002 07 09 | 704 | 0.1+ | 0.1+ | 2002 09 09 | 608 | 0.1− | 0.8− | 2002 10 07 | 704 | 0.9+ | 0.8+ | | |
| 2002 08 04 | G78 | 0.4− | 0.6+ | 2002 09 09 | 608 | 1.1− | 0.8− | 2002 10 07 | 704 | 0.3+ | 0.1+ | | |
| 2002 08 04 | G78 | 0.3+ | 0.7+ | 2002 09 09 | 608 | 0.0 | 0.8− | 2002 10 07 | 704 | 0.3+ | 0.0 | | |
| 2002 08 04 | G78 | 1.1− | 1.3+ | 2002 09 12 | 644 | 0.6− | 0.1+ | 2002 10 07 | 704 | 0.6+ | 0.2+ | | |
| 2002 08 10 | 704 | (0.8+ | 2.5+) | 2002 09 12 | 644 | 0.2− | 0.2+ | 2002 10 09 | 699 | 1.4+ | 0.3+ | | |
| 2002 08 10 | 704 | 0.1− | 0.0 | 2002 09 12 | 644 | 0.3− | 0.3+ | 2002 10 09 | 699 | 0.0 | 1.2+ | | |
| 2002 08 10 | 704 | 0.1− | 0.9− | 2002 09 15 | 644 | 0.1− | 0.3+ | 2002 10 09 | 699 | 0.6+ | 0.2+ | | |
| 2002 08 10 | 704 | 0.2+ | 0.5+ | 2002 09 15 | 644 | 0.2− | 0.3+ | 2002 10 09 | 699 | 0.5+ | 0.5+ | | |
| 2002 08 10 | 704 | 0.2+ | 0.1− | 2002 09 15 | 644 | 0.1− | 0.3+ | 2002 10 11 | 704 | 0.3+ | 0.3+ | | |
| 2002 08 14 | 704 | 1.1+ | 0.3+ | 2002 10 01 | 699 | 0.0 | 1.1+ | 2002 10 11 | 704 | 0.1− | 0.1+ | | |
| 2002 08 14 | 704 | 0.1− | 0.1− | 2002 10 01 | 699 | 0.3− | 0.3+ | 2002 10 11 | 704 | 0.7+ | 0.3+ | | |
| 2002 08 14 | 704 | 0.8− | 0.4− | 2002 10 01 | 699 | 0.1+ | 0.3+ | 2002 10 11 | 704 | 0.2− | 0.4+ | | |
| 2002 08 14 | 704 | 0.1− | 0.7+ | 2002 10 01 | 699 | 0.1+ | 0.6+ | 2002 10 11 | 704 | 0.1+ | 0.1− | | |
| 2002 08 14 | 704 | 0.3− | 0.8− | 2002 10 01 | 608 | 0.1+ | 0.3− | 2002 10 30 | 608 | 0.2+ | 0.1+ | | |
| 2002 08 21 | 644 | 0.2+ | 0.1− | 2002 10 01 | 608 | 0.5+ | 0.6− | 2002 10 30 | 608 | 0.6+ | 0.5− | | |
| 2002 08 21 | 644 | 0.1− | 0.3+ | 2002 10 01 | 608 | 0.6+ | 0.5− | 2002 10 30 | 608 | 0.4+ | 0.6− | | |
| 2002 08 21 | 644 | 0.2+ | 0.3+ | 2002 10 03 | 704 | 0.6− | 0.7− | 2005 02 09 | 691 | 0.2+ | 0.2+ | | |
| 2002 09 04 | 699 | 0.4− | 0.2+ | 2002 10 03 | 704 | 0.5− | 1.6− | 2005 02 09 | 691 | 0.2+ | 0.3+ | | |
| 2002 09 04 | 699 | 0.7− | 0.3− | 2002 10 03 | 704 | 0.9− | 0.2− | 2005 02 09 | 691 | 0.0 | 0.1+ | | |
| 2002 09 04 | 699 | 0.4− | 0.5+ | 2002 10 03 | 704 | 0.4− | 0.1+ | | | | | | |

**2002 RX$_{69}$ = 2006 TO$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.59941 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26244920 | $\omega$ | 212.03271 | | +0.99156298 | −0.12808355 | |
| $a$ | 2.4160498 | $\Omega$ | 155.30284 | | +0.12670771 | +0.92525822 | |
| $e$ | 0.2242333 | $i$ | 2.73493 | | +0.02734992 | +0.35705998 | |
| $P$ | 3.76 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.6− | 0.0 | 2002 09 15 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | | |
| 2002 09 04 | 699 | 0.6− | 1.2+ | 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 04 | 699 | 0.3− | 0.1+ | 2002 09 15 | 644 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 04 | 699 | 0.4− | 0.7− | 2006 10 15 | D35 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.8− | | |
| 2002 09 05 | 704 | 1.4+ | 0.0 | 2006 10 15 | D35 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.4− | 0.6− | | |
| 2002 09 05 | 704 | 0.5+ | 0.6− | 2006 10 15 | D35 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.3− | | |
| 2002 09 05 | 704 | 0.3+ | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | (5.4− | 0.2+) | | |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.6+ | 2006 11 14 | 704 | 0.2− | 0.3+ | | |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.3+ | | |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 14 | 704 | 0.5+ | 0.3+ | | |
| 2002 09 07 | 704 | 0.4− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 14 | 704 | 1.1+ | 1.0+ | | |
| 2002 09 07 | 704 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− | | |
| 2002 09 07 | 704 | 0.3− | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2− | | |
| 2002 09 08 | 608 | 0.5+ | 0.4− | 2006 11 02 | 703 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2002 09 08 | 608 | 0.0 | 0.6− | 2006 11 02 | 703 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2002 09 08 | 608 | 0.4+ | 0.6− | 2006 11 02 | 703 | (0.7− | 1.5−) | | | | | | |

**2002 RZ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.14508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26280467 | $\omega$ | 98.53374 | | +0.95982390 | +0.26837985 | |
| $a$ | 2.4138706 | $\Omega$ | 245.93088 | | −0.27953245 | +0.88903386 | |
| $e$ | 0.2387032 | $i$ | 5.14734 | | −0.02448850 | +0.37093268 | |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.0 | 0.2+ | 2002 10 04 | 704 | 1.1− | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.7− | | |
| 2002 08 11 | 704 | 0.7+ | 0.0 | 2002 10 04 | 704 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.4+ | 0.2− | | |
| 2002 08 11 | 704 | 0.0 | 0.1+ | 2002 10 04 | 704 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2002 08 11 | 704 | 0.3+ | 0.5+ | 2002 10 04 | 704 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.1− | | |
| 2002 08 11 | 704 | 0.4+ | 0.5+ | 2002 10 05 | 644 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− | | |
| 2002 08 12 | 608 | 0.7− | 1.0− | 2002 10 05 | 644 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.3+ | | |
| 2002 08 12 | 608 | 0.7− | 0.7− | 2002 10 05 | 644 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.4+ | | |
| 2002 08 12 | 608 | 0.3− | 0.6− | 2002 10 06 | 644 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.5+ | | |
| 2002 08 14 | 699 | 0.9− | 0.3+ | 2002 10 06 | 644 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | |
| 2002 08 14 | 699 | 0.1+ | 0.5− | 2002 10 06 | 644 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 14 | 699 | 0.4− | 0.3− | 2002 10 31 | 645 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2002 08 14 | 699 | 0.1− | 0.1+ | 2002 10 31 | 645 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.4+ | 0.3− | | |
| 2002 08 27 | 644 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2002 08 27 | 644 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.4+ | | |
| 2002 08 27 | 644 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2002 09 04 | 699 | 0.5+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2002 09 04 | 699 | 0.3+ | 0.7− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 2002 09 04 | 699 | 0.1+ | 1.2+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.2+ | | |
| 2002 09 04 | 699 | (0.6− | 2.1+) | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.3− | 0.2+ | | |
| 2002 09 04 | 644 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 2002 09 04 | 644 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.1− | | |
| 2002 09 04 | 644 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.0 | | |
| 2002 09 07 | 704 | 0.2− | 0.8+ | 2006 10 19 | 703 | 0.9− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.0 | | |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.0 | | |
| 2002 09 07 | 704 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.5+ | 0.3− | 2006 11 16 | 704 | 0.0 | 0.7+ | | |
| 2002 09 07 | 704 | 1.3+ | 0.3+ | 2006 10 19 | 703 | 0.8+ | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.2+ | | |
| 2002 09 08 | 608 | 0.2+ | 0.8− | 2006 10 19 | 703 | 0.6− | 0.9− | 2006 11 16 | 704 | 0.4+ | 0.6+ | | |
| 2002 09 08 | 608 | 0.2+ | 0.7− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 16 | 704 | (0.2+ | 1.5+) | | |
| 2002 09 08 | 608 | 0.3− | 0.5− | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.3− | 0.5+ | | |
| 2002 09 12 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.2+ | | |
| 2002 09 12 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.8+ | 0.4− | | |
| 2002 09 12 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.3+ | | |
| 2002 09 30 | 704 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.8− | 0.1+ | | |
| 2002 09 30 | 704 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.9− | 0.3+ | 2006 11 19 | 704 | 0.1− | 1.2+ | | |
| 2002 09 30 | 704 | 1.4− | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.4+ | | |
| 2002 09 30 | 704 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.4− | 2006 11 19 | 704 | (1.0− | 1.5+) | | |

**2002 RG$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.78936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26929977 | $\omega$ | 124.11000 | | +0.99113554 | +0.11127381 | |
| $a$ | 2.3749003 | $\Omega$ | 229.61331 | | −0.12945285 | +0.93172201 | |
| $e$ | 0.2373978 | $i$ | 5.46823 | | +0.02987124 | +0.34570543 | |
| $P$ | 3.66 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 644 | 0.0 | 0.2− | 2002 09 13 | 644 | 0.2− | 0.5+ | 2002 11 08 | 645 | 0.1+ | 0.1− | | |
| 2002 09 04 | 644 | 0.5− | 0.2− | 2002 10 04 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2002 09 04 | 644 | 0.4− | 0.2+ | 2002 10 04 | 704 | (0.0 | 2.1+) | 2006 11 15 | 691 | 0.8+ | 0.8+ | | |
| 2002 09 07 | 704 | 0.4− | 0.3− | 2002 10 04 | 704 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.3+ | | |
| 2002 09 07 | 704 | 0.1+ | 1.0+ | 2002 10 04 | 704 | 0.8+ | 1.1+ | 2006 11 18 | 691 | 0.2− | 0.1+ | | |
| 2002 09 07 | 704 | 0.8+ | 1.1+ | 2002 10 04 | 704 | 0.0 | 0.9+ | 2006 11 18 | 691 | 0.3− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.5+ | 1.3+ | 2002 10 06 | 644 | 0.1+ | 0.8+ | 2006 11 18 | 691 | 0.1− | 0.5+ |
| 2002 09 12 | 644 | 0.4− | 0.2− | 2002 10 06 | 644 | 0.4+ | 0.8+ | 2006 11 22 | 691 | 0.1+ | 0.3− |
| 2002 09 12 | 644 | 0.5− | 0.0 | 2002 10 06 | 644 | 0.3+ | 0.8+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 09 12 | 644 | 0.0 | 0.0 | 2002 10 31 | 645 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.6+ | 2002 10 31 | 645 | 0.1− | 0.2− | | | | |
| 2002 09 13 | 644 | 0.3− | 0.8+ | 2002 11 08 | 645 | 0.1+ | 0.2− | | | | |

**2002 RO$_{72}$ = 2006 TF$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.99054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26340164 | $\omega$ | 15.95612 | | +0.99925360 | −0.02009869 | |
| $a$ | 2.4102221 | $\Omega$ | 345.07861 | | +0.00055052 | +0.86130977 | |
| $e$ | 0.1241953 | $i$ | 7.36075 | | +0.03862557 | +0.50768250 | |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.4+ | 0.4− | 2002 09 08 | 608 | 0.3+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 08 29 | 644 | 1.0+ | 0.2− | 2002 09 08 | 608 | 0.2+ | 0.9− | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2002 08 29 | 644 | 0.4+ | 0.3− | 2002 09 14 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2002 09 05 | 704 | 0.6+ | 0.6+ | 2002 09 14 | 644 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.5− | 0.1+ | 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.5− | 0.2− |
| 2002 09 05 | 704 | 0.6− | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 31 | 703 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 31 | 703 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | 0.7− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 31 | 703 | 0.1− | 1.0+ |
| 2002 09 07 | 704 | 1.0− | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 14 | 703 | 0.6+ | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.9+ | 2006 10 19 | 703 | 0.4− | 0.8− | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2002 09 07 | 704 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.4− | 2006 11 14 | 703 | 1.3− | 0.8− |
| 2002 09 07 | 704 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.2+ | 1.2+ |
| 2002 09 08 | 608 | 0.0 | 1.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ | | | | |

**2002 RM$_{73}$ = 2006 UE$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.47343 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26702668 | $\omega$ | 36.23812 | | +0.99299068 | +0.11098411 | |
| $a$ | 2.3883591 | $\Omega$ | 317.33311 | | −0.11754850 | +0.89149225 | |
| $e$ | 0.1710715 | $i$ | 3.43821 | | −0.01232291 | +0.43923125 | |
| $P$ | 3.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2002 09 05 | 704 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2002 08 28 | 644 | 0.2− | 0.1− | 2002 09 07 | 704 | 0.4+ | 0.8− | 2006 10 27 | 691 | 0.3+ | 0.8− |
| 2002 08 28 | 644 | 0.3− | 0.0 | 2002 09 07 | 704 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 699 | 0.3+ | 0.2+ | 2002 09 07 | 704 | 0.5− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 699 | 0.2+ | 0.1+ | 2002 09 07 | 704 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2002 09 05 | 699 | 0.1− | 1.2+ | 2002 09 14 | 644 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2002 09 05 | 699 | 0.6− | 0.4− | 2002 09 14 | 644 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.2+ | 0.0 | 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 09 05 | 704 | 0.9+ | 0.4− | 2006 10 23 | 691 | 0.1− | 1.3+ | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− |

**2002 RJ$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.54508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26085125 | $\omega$ | 328.24279 | | +0.99944694 | +0.03020750 | |
| $a$ | 2.4259068 | $\Omega$ | 30.03560 | | −0.02158731 | +0.90741214 | |
| $e$ | 0.2002934 | $i$ | 1.59176 | | −0.02529426 | +0.41915477 | |
| $P$ | 3.78 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 691 | 0.1− | 0.1− | 2002 09 13 | 608 | 0.4+ | 0.3− | 2006 10 12 | 691 | 0.2+ | 0.0 |
| 2000 01 08 | 691 | 0.0 | 0.0 | 2002 09 15 | 644 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2000 01 08 | 691 | 0.1+ | 0.2+ | 2002 09 15 | 644 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2002 09 15 | 644 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2002 09 29 | 291 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 08 29 | 644 | 0.1− | 0.2+ | 2002 09 29 | 291 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 699 | 0.5+ | 0.2− | 2002 09 29 | 291 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2002 09 05 | 699 | 0.2+ | 0.6− | 2002 10 03 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2002 09 05 | 699 | 0.1− | 0.5− | 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 09 05 | 699 | 0.1− | 0.2+ | 2002 10 03 | 704 | 0.8+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2002 10 03 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2002 09 05 | 704 | 0.0 | 0.6+ | 2002 10 05 | 704 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.1− | 0.2− | 2002 10 05 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 09 05 | 704 | 0.2− | 0.1+ | 2002 10 05 | 704 | 0.6− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.6− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.1+ | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2002 09 07 | 704 | 0.7− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2002 09 13 | 704 | (2.0+ | 0.2+) | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2002 09 13 | 704 | 1.3+ | 1.1+ | 2006 10 04 | G96 | 0.2− | 0.5− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2002 09 13 | 704 | (2.2+ | 1.6+) | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.6+ |
| 2002 09 13 | 608 | 0.2+ | 0.8− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2002 09 13 | 608 | 0.2+ | 1.0− | 2006 10 12 | 691 | 0.4+ | 0.0 | | | | |

**2002 RL$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.02925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27014778 | $\omega$ | 99.48182 | | +0.86117531 | +0.50801650 | |
| $a$ | 2.3699278 | $\Omega$ | 229.98850 | | −0.47473788 | +0.79173620 | |
| $e$ | 0.2315313 | $i$ | 1.28786 | | −0.18166188 | +0.33922417 | |
| $P$ | 3.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2002 08 12 | 704 | 0.5+ | 0.5− | 2002 09 14 | 644 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2002 08 12 | 704 | 0.4+ | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2002 08 12 | 704 | 0.7− | 0.4− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2002 08 28 | 644 | 0.1+ | 0.3− | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 08 28 | 644 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 18 | 691 | 0.0 | 0.6− |
| 2002 08 28 | 644 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.7+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2002 09 07 | 704 | 0.6− | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2002 09 07 | 704 | 0.2+ | 0.9− | 2006 11 10 | 691 | 0.2− | 0.0 | | | | |
| 2002 09 07 | 704 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.6+ | | | | |

**2002 RB$_{79}$ = 2006 TY$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.05518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26402269 | $\omega$ | 22.17601 | | +0.81696561 | −0.57662089 | |
| $a$ | 2.4064410 | $\Omega$ | 13.04808 | | +0.52315144 | +0.73469939 | |
| $e$ | 0.1868541 | $i$ | 2.20625 | | +0.24265153 | +0.35738655 | |
| $P$ | 3.73 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.3− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2002 09 05 | 704 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.4− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 1.0− | 0.7+ | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 1.0+ | 0.9− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.7+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2002 09 07 | 704 | 0.8+ | 0.7− | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.9− |
| 2002 09 12 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.2+ |
| 2002 09 12 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2− | 0.6− | 2006 11 19 | 704 | 1.0+ | 0.8+ |
| 2002 09 12 | 644 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 1.1+ | 0.2− |
| 2002 09 15 | 699 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.5− | 2006 11 22 | 704 | 0.4− | 0.5− |
| 2002 09 15 | 699 | 0.5− | 0.8+ | 2006 11 09 | 644 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.6− | 0.6− |
| 2002 09 15 | 699 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.5− | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.3− |
| 2002 09 15 | 699 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 1.1+ | 0.5+ |
| 2002 09 15 | 644 | 1.0+ | 1.0− | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.5− | 0.1− |
| 2002 09 15 | 644 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.6− | 2006 11 24 | G96 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2002 09 28 | 291 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2002 09 28 | 291 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2002 09 28 | 291 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.4− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.5− | 0.4+ | | | | |

**2002 RL$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.49382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26572902 | $\omega$ | 21.22336 | | +0.99098602 | −0.13357476 | |
| $a$ | 2.3961282 | $\Omega$ | 346.44083 | | +0.11577636 | +0.89232827 | |
| $e$ | 0.2338528 | $i$ | 2.49892 | | +0.06739839 | +0.43117054 | |
| $P$ | 3.71 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 21 | 644 | 0.7− | 0.5+ | 2002 09 15 | 699 | 0.4+ | 0.7+ | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2002 08 21 | 644 | 0.5− | 0.6+ | 2002 09 17 | 608 | 1.0− | 1.0− | 2006 11 22 | H07 | 0.2− | 0.1− |
| 2002 08 21 | 644 | 0.1− | 0.2+ | 2002 09 17 | 608 | 0.9− | 1.1− | 2006 11 22 | H07 | 0.1+ | 0.3− |
| 2002 08 30 | 699 | 0.2+ | 0.7+ | 2002 09 17 | 608 | 1.0− | 0.8− | 2006 11 22 | H07 | 1.3− | 0.6− |
| 2002 08 30 | 699 | (1.8− | 1.5+) | 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 11 22 | H07 | 0.8− | 0.6+ |
| 2002 08 30 | 699 | 0.6+ | 0.3− | 2002 10 03 | 704 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2002 08 30 | 699 | (1.6− | 0.6+) | 2002 10 03 | 704 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.5− |
| 2002 09 05 | 704 | 0.3+ | 0.1− | 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 09 05 | 704 | 0.3+ | 0.1− | 2002 10 03 | 704 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.2+ | 0.8+ | 2002 10 07 | 704 | 0.4− | 0.9− | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.4− | 0.7− | 2002 10 07 | 704 | 0.6− | 0.8+ | 2006 11 23 | H07 | 0.4+ | 1.1− |
| 2002 09 07 | 704 | 1.3+ | 0.3− | 2002 10 07 | 704 | 0.8− | 0.1− | 2006 11 23 | H07 | 0.9− | 1.2+ |
| 2002 09 07 | 704 | 0.1+ | 0.9− | 2002 10 07 | 704 | 0.1− | 1.5+ | 2006 11 23 | H07 | 0.5+ | 0.5− |
| 2002 09 07 | 704 | 0.1− | 0.6− | 2002 10 11 | 704 | 1.4+ | 0.6− | 2006 11 23 | H07 | 0.7+ | 0.3+ |
| 2002 09 13 | 644 | 0.3− | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 11 27 | 704 | 0.1− | 0.0 |
| 2002 09 13 | 644 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.1− | 1.1+ |
| 2002 09 13 | 644 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 11 27 | 704 | 0.8− | 0.7+ |
| 2002 09 14 | 644 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2002 09 14 | 644 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 1.5+ | 0.2− |
| 2002 09 15 | 699 | 1.3+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 28 | 704 | 1.6+ | 1.4− |
| 2002 09 15 | 699 | 1.0+ | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.1− | | | | |
| 2002 09 15 | 699 | (1.5+ | 0.4+) | 2006 11 17 | 691 | 0.3− | 0.0 | | | | |

**2002 RB$_{80}$ = 2006 UN$_{227}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.08307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26036905 | $\omega$ | 139.76633 | | +0.61151919 | +0.79089272 | |
| $a$ | 2.4289010 | $\Omega$ | 167.87360 | | −0.75124782 | +0.58952905 | |
| $e$ | 0.1564697 | $i$ | 6.30954 | | −0.24833644 | +0.16414690 | |
| $P$ | 3.79 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.7+ | 0.4+ | 2002 09 14 | 644 | 0.3− | 0.0 | 2005 04 18 | 691 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.2+ | 2005 04 18 | 691 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 1.4+ | 0.5+ | 2002 09 15 | 699 | 0.6+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.6+ | 0.4+ | 2002 09 15 | 699 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.1+ |
| 2002 09 07 | 704 | 0.5− | 0.7+ | 2002 09 15 | 699 | 0.1− | 0.7− | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2002 09 15 | 699 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.4− | 0.6− |
| 2002 09 07 | 704 | 0.3− | 1.0+ | 2002 09 15 | 644 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 09 11 | 608 | 0.3− | 1.5− | 2002 09 15 | 644 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2002 09 11 | 608 | 0.4− | 1.3− | 2002 09 15 | 644 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 09 11 | 608 | (0.2+ | 1.7−) | 2002 10 03 | 704 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.2− | 2002 10 03 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.4− | 0.4− | 2002 10 03 | 704 | 1.0+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 09 13 | 644 | 0.6− | 0.4− | 2002 10 03 | 704 | 0.2+ | 0.2+ | | | | |
| 2002 09 14 | 644 | 0.4− | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.0 | | | | |

**2002 RG$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.96036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25950494 | $\omega$ | 330.54748 | | +0.82686304 | +0.56228479 | |
| $a$ | 2.4342899 | $\Omega$ | 355.19036 | | −0.48530579 | +0.70298597 | |
| $e$ | 0.1723758 | $i$ | 7.91565 | | −0.28421085 | +0.43548426 | |
| $P$ | 3.80 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2002 10 01 | 699 | 1.0− | 0.6+ | 2006 10 19 | 703 | 0.2+ | 0.3− |
| 2002 09 05 | 704 | 0.3+ | 0.9+ | 2002 10 03 | 704 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2002 09 05 | 704 | 0.3+ | 0.9+ | 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 10 19 | A50 | 0.3+ | 0.6+ |
| 2002 09 05 | 704 | 0.2− | 0.5+ | 2002 10 03 | 704 | 0.4+ | 0.4+ | 2006 10 19 | A50 | 0.5+ | 0.0 |
| 2002 09 05 | 645 | 0.1− | 0.2− | 2002 10 03 | 704 | 0.0 | 0.2+ | 2006 10 21 | 704 | 0.1+ | 0.2+ |
| 2002 09 05 | 645 | 0.1− | 0.1− | 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 10 21 | 704 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.5+ | 0.3+ | 2002 10 07 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 704 | 0.4+ | 0.1+ |
| 2002 09 07 | 704 | 1.0+ | 0.5− | 2002 10 07 | 704 | 0.0 | 0.1− | 2006 10 21 | 704 | 0.5− | 0.1+ |
| 2002 09 07 | 704 | 0.6+ | 0.2− | 2002 10 07 | 704 | 1.1+ | 0.9+ | 2006 10 21 | 704 | 0.1− | 0.3− |
| 2002 09 07 | 704 | 0.2+ | 0.1− | 2002 10 07 | 704 | 1.0+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2002 09 07 | 704 | 1.0+ | 0.3− | 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2002 10 11 | 704 | 0.4− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2002 09 14 | 644 | 0.3− | 0.4+ | 2002 10 11 | 704 | (1.6− | 1.3+) | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 09 28 | 608 | (2.4− | 0.7+) | 2002 10 11 | 704 | 0.1− | 1.3+ | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2002 09 28 | 608 | (2.6− | 1.0+) | 2002 10 11 | 704 | 0.2− | 0.3+ | 2006 10 27 | 703 | (0.4− | 2.5−) |
| 2002 09 28 | 608 | (2.4− | 0.9+) | 2002 10 31 | 704 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.0 | 0.4+ |
| 2002 09 30 | 704 | 0.2+ | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2002 09 30 | 704 | 0.4+ | 0.4− | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2002 09 30 | 704 | 0.1− | 0.7+ | 2002 10 31 | 704 | 0.3− | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.1+ |
| 2002 09 30 | 704 | 0.3− | 0.1+ | 2002 10 31 | 704 | 0.2− | 0.7+ | 2006 11 14 | 703 | 0.2+ | 1.0− |
| 2002 09 30 | 704 | 0.5− | 0.2− | 2002 10 31 | 704 | 0.0 | 0.8+ | 2006 11 14 | 703 | 0.5− | 0.2+ |
| 2002 10 01 | 699 | 1.0− | 0.0 | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.1− | 0.3− |
| 2002 10 01 | 699 | 0.3− | 0.5+ | 2002 11 08 | 645 | 0.0 | 0.0 | | | | |
| 2002 10 01 | 699 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.0 | | | | |

**2002 RR$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.01898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25694296 | $\omega$ | 237.23425 | | +0.76431308 | −0.64469595 | |
| $a$ | 2.4504447 | $\Omega$ | 162.89535 | | +0.60629764 | +0.71112695 | |
| $e$ | 0.1891132 | $i$ | 2.70488 | | +0.21961030 | +0.28047389 | |
| $P$ | 3.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2002 10 03 | 704 | 0.3− | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.4− | 2002 10 03 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 2002 09 07 | 704 | 0.8+ | 0.7+ | 2002 10 03 | 704 | (3.5− | 1.0−) | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 09 07 | 704 | 0.6+ | 0.1+ | 2002 10 04 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2002 09 07 | 704 | 0.0 | 0.3− | 2002 10 04 | 644 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2002 09 15 | 644 | 0.0 | 0.8+ | 2002 10 04 | 644 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 09 15 | 644 | 0.0 | 0.5+ | 2002 10 07 | 704 | 0.7+ | 0.5− | 2006 11 01 | G96 | 0.4− | 0.2− |
| 2002 09 15 | 644 | 0.2− | 0.6+ | 2002 10 07 | 704 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2002 09 29 | 608 | 0.5− | 0.8− | 2002 10 07 | 704 | 0.1− | 0.6− | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2002 09 29 | 608 | 0.6− | 1.2− | 2002 10 11 | 704 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2002 09 29 | 608 | (0.4− | 1.7−) | 2002 10 11 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2002 10 01 | 699 | 0.9− | 1.2+ | 2002 10 11 | 704 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2002 10 01 | 699 | 0.0 | 0.4− | 2002 10 11 | 704 | 1.3+ | 0.9− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 10 01 | 699 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.6− |
| 2002 10 01 | 699 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.8+ | 1.2+ | 2006 11 11 | 703 | (0.3+ | 1.7+) |
| 2002 10 02 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2002 10 02 | 704 | 0.9− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.9+ | 2006 11 11 | 703 | 0.9+ | 0.3+ |
| 2002 10 02 | 704 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.7+ | 0.9+ | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 1.1+ | 1.4+ | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 20 | 704 | 1.0+ | 0.5+ |
| 2002 10 03 | 704 | 0.6− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.2− |

**2002 RP$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.94292 | | (2000.0) | | | |
| $n$ | 0.23079424 | $\omega$ | 189.06689 | | +0.99731036 | −0.07257797 |
| $a$ | 2.6322032 | $\Omega$ | 175.06064 | | +0.07246034 | +0.95535150 |
| $e$ | 0.3016263 | $i$ | 6.81800 | | +0.01102466 | +0.28641919 |
| $P$ | 4.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 1.2+ | 0.3+ | 2002 09 26 | 644 | 0.1− | 0.2− | 2002 10 11 | 704 | 0.2− | 0.4− |
| 2002 08 11 | 704 | 0.2− | 0.1+ | 2002 09 26 | 644 | 0.1− | 0.3− | 2002 10 22 | 644 | 0.3− | 0.4+ |
| 2002 08 11 | 704 | 0.4+ | 0.2+ | 2002 09 26 | 644 | 0.2− | 0.2− | 2002 10 22 | 644 | 0.2− | 0.6+ |
| 2002 08 11 | 704 | 0.4+ | 0.3+ | 2002 09 30 | 704 | 0.3− | 0.4− | 2002 10 22 | 644 | 0.2− | 0.8+ |
| 2002 08 11 | 704 | 0.3+ | 0.3+ | 2002 09 30 | 704 | 0.2− | 0.1+ | 2002 10 30 | 704 | 0.3− | 0.9+ |
| 2002 08 16 | 704 | 0.3− | 0.3+ | 2002 09 30 | 704 | 0.3+ | 0.3− | 2002 10 30 | 704 | 0.9+ | 0.5− |
| 2002 08 16 | 704 | 0.3− | 0.6− | 2002 09 30 | 704 | 0.3+ | 0.2+ | 2002 10 30 | 704 | 0.2+ | 0.4+ |
| 2002 08 16 | 704 | 0.5− | 0.2+ | 2002 09 30 | 704 | 0.1− | 0.1+ | 2002 10 30 | 704 | 0.3− | 0.5− |
| 2002 09 05 | 704 | 0.8− | 0.7+ | 2002 09 30 | 608 | 0.2+ | 0.4− | 2002 11 06 | 644 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.0 | 0.2+ | 2002 09 30 | 608 | 0.1+ | 0.5− | 2002 11 06 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2002 09 30 | 608 | 0.2+ | 0.5− | 2002 11 06 | 644 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.2− | 0.2− | 2002 10 02 | 704 | 0.1− | 0.3+ | 2002 11 11 | 704 | 0.8− | 0.2+ |
| 2002 09 05 | 704 | 0.4− | 0.4− | 2002 10 02 | 704 | 0.1+ | 0.1+ | 2002 11 11 | 704 | 0.3− | 0.2+ |
| 2002 09 07 | 704 | 0.1+ | 0.6+ | 2002 10 02 | 704 | 0.4− | 0.1+ | 2002 11 11 | 704 | 0.6+ | 1.3+ |
| 2002 09 07 | 704 | 0.2+ | 0.6+ | 2002 10 03 | 704 | 0.3− | 0.7+ | 2002 11 11 | 704 | 0.9+ | 2.0+ |
| 2002 09 07 | 704 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.3− | 0.6+ | 2002 11 11 | 704 | 0.7+ | 1.1+ |
| 2002 09 07 | 704 | 0.0 | 0.4− | 2002 10 03 | 704 | 0.3− | 0.4+ | 2002 11 19 | 644 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.5+ | 0.1− | 2002 10 03 | 704 | 0.1− | 0.7+ | 2002 11 19 | 644 | 0.6+ | 0.1+ |
| 2002 09 14 | 683 | 1.0− | 0.2− | 2002 10 03 | 704 | 0.1+ | 0.7+ | 2002 11 19 | 644 | 0.5+ | 0.6+ |
| 2002 09 14 | 683 | 0.3− | 0.1+ | 2002 10 08 | 699 | 0.6+ | 0.2+ | 2005 04 12 | 691 | 0.2+ | 0.7+ |
| 2002 09 14 | 683 | 0.8− | 1.0− | 2002 10 08 | 699 | 0.5+ | 0.0 | 2005 04 12 | 691 | 0.0 | 0.5+ |
| 2002 09 14 | 608 | 0.1+ | 1.3− | 2002 10 08 | 699 | 0.5+ | 0.5− | 2005 04 12 | 691 | 0.3+ | 0.5+ |
| 2002 09 14 | 608 | 0.1− | 0.6− | 2002 10 08 | 699 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 09 14 | 608 | 0.2− | 1.2− | 2002 10 11 | 704 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 09 15 | 683 | 0.0 | 1.8+ | 2002 10 11 | 704 | 0.1− | 0.6− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2002 09 15 | 683 | 1.2+ | 1.5+ | 2002 10 11 | 704 | 0.2− | 0.7− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 09 15 | 683 | 0.8− | 0.8− | 2002 10 11 | 704 | 0.1− | 0.7− | | | | |

**2002 RX$_{85}$ = 2006 QC$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.62860 | | (2000.0) | | | |
| $n$ | 0.23449364 | $\omega$ | 175.82773 | | +0.97575817 | +0.21600073 |
| $a$ | 2.6044459 | $\Omega$ | 171.45037 | | −0.20702314 | +0.96317200 |
| $e$ | 0.2882435 | $i$ | 13.69976 | | −0.07097480 | +0.16013552 |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.4− | 0.1+ | 2002 10 04 | 704 | 0.7− | 0.9+ | 2002 10 16 | 644 | 0.1+ | 0.3+ |
| 2002 09 05 | 704 | 0.7− | 0.1− | 2002 10 04 | 704 | 0.2− | 0.8+ | 2002 10 16 | 644 | 0.2+ | 0.3+ |
| 2002 09 05 | 704 | 0.7− | 0.3− | 2002 10 04 | 704 | (0.6+ | 1.7+) | 2002 10 16 | 644 | 0.4+ | 0.2+ |
| 2002 09 07 | 704 | 0.4− | 0.5− | 2002 10 04 | 704 | (0.4− | 1.7+) | 2006 08 16 | 644 | 0.2+ | 0.2+ |
| 2002 09 07 | 704 | 0.1− | 0.2− | 2002 10 04 | 704 | 0.2− | 1.1+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 0.6+ | 0.4+ | 2002 10 06 | 704 | 0.6+ | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.2+ |
| 2002 09 07 | 704 | 0.1+ | 0.3+ | 2002 10 06 | 704 | 0.8− | 0.4− | 2006 08 21 | 644 | 0.2+ | 0.3+ |
| 2002 09 14 | 608 | 0.1+ | 1.3− | 2002 10 06 | 704 | 0.2− | 0.6+ | 2006 08 21 | 644 | 0.0 | 0.2+ |
| 2002 09 14 | 608 | 0.2+ | 1.5− | 2002 10 06 | 704 | 0.8− | 0.2+ | 2006 08 21 | 644 | 0.1− | 0.3+ |
| 2002 09 14 | 608 | 0.2+ | 1.4− | 2002 10 06 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.1− |
| 2002 09 30 | 608 | 0.1+ | 0.3− | 2002 10 07 | 608 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.3+ |
| 2002 09 30 | 608 | 0.3+ | 0.4− | 2002 10 07 | 608 | 0.4+ | 0.4− | 2006 09 14 | 703 | 0.5− | 0.4+ |
| 2002 09 30 | 608 | 0.2+ | 0.6− | 2002 10 07 | 608 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.0 | 0.9− |
| 2002 10 01 | 699 | 0.7− | 0.5+ | 2002 10 08 | 699 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2002 10 01 | 699 | 0.0 | 0.5+ | 2002 10 08 | 699 | 0.7+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2002 10 01 | 699 | 0.1− | 0.4+ | 2002 10 08 | 699 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2002 10 01 | 699 | 0.1− | 0.2+ | 2002 10 08 | 699 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.3− |

**2002 RC$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.73429 | | (2000.0) | | | |
| $n$ | 0.26178832 | $\omega$ | 44.76534 | | +0.91164604 | +0.41050222 |
| $a$ | 2.4201143 | $\Omega$ | 290.98897 | | −0.38273652 | +0.83053229 |
| $e$ | 0.2300089 | $i$ | 1.21109 | | −0.14971387 | +0.37643597 |
| $P$ | 3.76 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2− | 0.2+ | 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 08 28 | 644 | 0.4− | 0.0 | 2002 10 03 | 704 | 0.3+ | 0.5− | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.3− |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2002 10 03 | 704 | 0.5+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2002 10 03 | 704 | 0.8− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.8+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2002 09 07 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 09 07 | 704 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.6− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 09 07 | 704 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.5+ | 0.6− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.3− |
| 2002 09 14 | 644 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | | | | |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | | | | |

**2002 RR$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.74396 | | (2000.0) | | | |
| $n$ | 0.23941477 | $\omega$ | 26.84252 | | +0.96166415 | −0.27382667 |
| $a$ | 2.5686332 | $\Omega$ | 349.01871 | | +0.23549752 | +0.85240036 |
| $e$ | 0.0726380 | $i$ | 4.47609 | | +0.14050969 | +0.44545772 |
| $P$ | 4.12 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.2− | 0.4+ | 2002 10 02 | 704 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.3+ |
| 1996 02 15 | 691 | 0.3+ | 0.3+ | 2002 10 02 | 704 | 0.4− | 0.0 | 2006 08 28 | 703 | 1.0− | 0.0 |
| 1996 02 15 | 691 | 0.2+ | 0.1− | 2002 10 02 | 704 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.2− | 0.8− |
| 2002 09 05 | 704 | 0.2− | 0.7− | 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 0.2+ | 2002 10 03 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 1.3+ | 0.0 |
| 2002 09 05 | 704 | 0.4+ | 0.1− | 2002 10 03 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.9+ |
| 2002 09 05 | 704 | 0.7− | 0.5+ | 2002 10 03 | 704 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.7+ | 0.5− |
| 2002 09 07 | 704 | 0.2− | 0.8+ | 2002 10 03 | 704 | 0.3+ | 1.1+ | 2006 09 20 | 699 | 0.1+ | 0.3− |
| 2002 09 07 | 704 | 0.2+ | 1.0+ | 2002 10 11 | 704 | 0.8− | 0.6+ | 2006 09 20 | 699 | 0.4− | 0.4− |
| 2002 09 07 | 704 | 0.2− | 0.3− | 2002 10 11 | 704 | 1.1− | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.5+ |
| 2002 09 07 | 704 | 0.1+ | 0.5+ | 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.8− | 1.1+ |
| 2002 09 14 | 644 | 0.7− | 0.0 | 2002 10 11 | 704 | 1.0− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.5− | 0.1− | 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.3− | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 0.2− | 1.1− | 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 0.5− | 0.4− | 2002 10 31 | 645 | 0.1+ | 0.0 | | | | |
| 2002 09 30 | 704 | 0.7− | 1.0+ | 2006 08 28 | 703 | (1.9+ | 0.9−) | | | | |

**2002 RS$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.14120 | | (2000.0) | | | |
| $n$ | 0.27508855 | $\omega$ | 131.17868 | | +0.88603142 | −0.45529287 |
| $a$ | 2.3414652 | $\Omega$ | 256.07269 | | +0.39379640 | +0.83866628 |
| $e$ | 0.1619363 | $i$ | 5.17241 | | +0.24468902 | +0.29891014 |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.4+ | 0.5− | 2002 10 03 | 644 | 0.4+ | 0.4+ | 2004 02 15 | 644 | 0.1+ | 0.1+ |
| 2002 08 28 | 644 | 0.3+ | 0.5− | 2002 10 04 | 704 | 0.3+ | 0.1+ | 2004 02 15 | 644 | 0.1+ | 0.6+ |
| 2002 08 28 | 644 | 0.5+ | 0.2− | 2002 10 04 | 704 | 0.0 | 0.3+ | 2004 02 15 | 644 | 0.2+ | 0.2+ |
| 2002 09 05 | 699 | 0.1+ | 0.8+ | 2002 10 04 | 704 | 0.1− | 0.4+ | 2006 11 18 | 704 | 1.2− | 1.2− |
| 2002 09 05 | 699 | 0.4+ | 0.7+ | 2002 10 04 | 704 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.2− | 0.2− |
| 2002 09 05 | 699 | 0.2+ | 0.9+ | 2002 10 04 | 704 | 0.3+ | 0.5+ | 2006 11 18 | 704 | (1.2− | 2.6−) |
| 2002 09 05 | 699 | 0.0 | 0.8+ | 2002 10 05 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 017 | (1.1− | 2.2+) | 2002 10 05 | 644 | 0.2− | 0.6+ | 2006 11 18 | 704 | 1.0− | 1.1− | | |
| 2002 09 05 | 017 | (3.1+ | 7.1+) | 2002 10 05 | 644 | 0.3− | 0.4+ | 2006 11 21 | 704 | 1.2+ | 0.8+ | | |
| 2002 09 07 | 704 | 0.5+ | 1.2+ | 2002 10 07 | 699 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.5+ | | |
| 2002 09 07 | 704 | 0.9− | 0.5− | 2002 10 07 | 699 | (1.6+ | 1.0+) | 2006 11 21 | 704 | 0.5+ | 0.6+ | | |
| 2002 09 07 | 704 | 0.6− | 0.0 | 2002 10 07 | 699 | 0.3− | 0.7+ | 2006 11 21 | 704 | 0.4− | 0.3+ | | |
| 2002 09 07 | 704 | 0.8− | 0.2+ | 2002 10 07 | 699 | 0.6− | 0.0 | 2006 11 24 | 691 | 0.2− | 0.1− | | |
| 2002 09 13 | 644 | 0.3− | 0.7+ | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.2− | | |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.1− | 0.1+ | | |
| 2002 09 13 | 644 | 0.1− | 0.8+ | 2002 10 31 | 704 | 0.4+ | 0.8+ | 2006 11 28 | 704 | 0.4− | 0.6+ | | |
| 2002 09 17 | 608 | 0.8− | 0.6− | 2002 10 31 | 704 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.7+ | | |
| 2002 09 17 | 608 | 0.4− | 0.7− | 2002 10 31 | 704 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.2+ | | |
| 2002 09 17 | 608 | 0.7− | 0.3− | 2002 10 31 | 704 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.5+ | 0.8+ | | |
| 2002 10 03 | 644 | 0.2+ | 0.2+ | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.8+ | 0.2+ | | |
| 2002 10 03 | 644 | 0.5+ | 0.3+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 12 01 | 704 | (1.8+ | 0.8+) | | |

## 2002 $RJ_{100}$ = 2006 $UO_{215}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.87006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26248814 | $\omega$ | 225.57633 | | +0.75573988 | −0.65480495 | |
| $a$ | 2.4158108 | $\Omega$ | 175.30004 | | +0.62861750 | +0.72135868 | |
| $e$ | 0.1598877 | $i$ | 6.56309 | | +0.18356815 | +0.22554850 | |
| $P$ | 3.75 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 1.1− | 0.2− | 2002 10 11 | 704 | 0.3+ | 0.4+ | 2006 10 22 | D35 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.8− | 0.2− | 2002 10 11 | 704 | 0.3− | 0.6− | 2006 10 22 | D35 | 0.0 | 0.2− | | |
| 2002 09 05 | 704 | 0.1− | 0.8− | 2002 10 11 | 704 | 0.1− | 0.3− | 2006 10 22 | D35 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | 0.4− | 0.3− | 2002 10 11 | 704 | 0.2− | 0.0 | 2006 10 27 | D35 | 0.4+ | 0.1− | | |
| 2002 09 07 | 704 | 0.6+ | 0.1− | 2002 10 11 | 704 | 0.6− | 0.1− | 2006 10 27 | D35 | 0.3+ | 0.2− | | |
| 2002 09 07 | 704 | 0.2− | 0.9− | 2002 10 31 | 704 | 0.4+ | 0.3+ | 2006 10 27 | D35 | 0.1+ | 0.1− | | |
| 2002 09 07 | 704 | (1.7+ | 0.9−) | 2002 10 31 | 704 | 0.8+ | 0.4+ | 2006 11 25 | G96 | 0.5+ | 0.5− | | |
| 2002 09 07 | 704 | 0.8+ | 0.3− | 2002 10 31 | 704 | 0.2+ | 0.6+ | 2006 11 25 | G96 | 0.2− | 0.5− | | |
| 2002 10 01 | 699 | 0.2+ | 0.3+ | 2002 10 31 | 704 | 0.9+ | 1.4+ | 2006 11 25 | G96 | 0.2+ | 0.4− | | |
| 2002 10 01 | 699 | 1.3+ | 0.2− | 2002 10 31 | 704 | 0.5− | 1.5+ | 2006 11 25 | G96 | 0.2+ | 0.4− | | |
| 2002 10 01 | 699 | 1.0+ | 0.7+ | 2002 11 04 | 608 | 0.0 | 0.5− | 2006 11 25 | 703 | 0.5+ | 0.4− | | |
| 2002 10 01 | 699 | 1.2+ | 0.3+ | 2002 11 04 | 608 | 0.1− | 0.3− | 2006 11 25 | 703 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.2− | 0.2+ | 2002 11 04 | 608 | 0.0 | 0.5+ | 2006 11 25 | 703 | 0.6− | 0.1+ | | |
| 2002 10 02 | 704 | 0.3+ | 1.2+ | 2002 11 07 | 704 | 0.5− | 0.2+ | 2006 11 25 | 703 | 0.7− | 0.0 | | |
| 2002 10 02 | 704 | 0.8− | 0.3+ | 2002 11 07 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.4+ | | |
| 2002 10 03 | 704 | 0.7− | 0.1− | 2002 11 07 | 704 | 0.4+ | 1.0− | 2006 11 28 | 704 | 0.5− | 0.0 | | |
| 2002 10 03 | 704 | 0.8− | 0.6− | 2002 11 11 | 704 | (0.2+ | 1.9−) | 2006 11 28 | 704 | 0.2− | 0.3+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.4− | 2002 11 11 | 704 | 0.2− | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 03 | 704 | 1.3− | 1.1− | 2002 11 11 | 704 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.7+ | | |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2002 11 11 | 704 | 0.8− | 0.2− | | | | | | |

## 2002 $RC_{101}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.73124 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23712223 | $\omega$ | 94.90136 | | −0.39072535 | −0.90699301 | |
| $a$ | 2.5851626 | $\Omega$ | 20.43643 | | +0.55917738 | −0.36948282 | |
| $e$ | 0.2909435 | $i$ | 26.74890 | | +0.73120063 | −0.20210422 | |
| $P$ | 4.16 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 704 | 0.0 | 0.6− | 2002 12 27 | 644 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 1998 12 11 | 704 | 0.2− | 0.2− | 2002 12 27 | 644 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.2− | | |
| 1998 12 11 | 704 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− | | |
| 1998 12 11 | 704 | 0.2− | 0.6+ | 2002 12 31 | 704 | 0.4+ | 0.6− | 2006 10 16 | 703 | (0.7+ | 3.7+) | | |
| 1998 12 11 | 704 | (1.4− | 2.7−) | 2002 12 31 | 704 | 1.3− | 1.0+ | 2006 10 16 | 703 | 0.3+ | 0.7+ | | |
| 2002 09 05 | 704 | 0.3+ | 0.2− | 2002 12 31 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | (0.0 | 1.5+) | | |
| 2002 09 05 | 704 | 0.2+ | 0.3− | 2002 12 31 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | (1.9− | 0.1−) | | |
| 2002 09 05 | 704 | 0.0 | 0.9+ | 2006 09 12 | 703 | 0.2+ | 0.7− | 2006 10 18 | 106 | 0.3+ | 0.6− | | |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 10 18 | 106 | 0.0 | 0.3− | | |
| 2002 09 07 | 704 | 0.8− | 0.6+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 10 18 | 106 | 0.1+ | 0.5− | | |
| 2002 09 07 | 704 | 0.4− | 0.5+ | 2006 09 12 | 703 | 0.3− | 0.3− | 2006 10 18 | 106 | 0.2− | 0.7− | | |
| 2002 09 07 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.3− | 0.2− | | |
| 2002 10 04 | 704 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 10 04 | 704 | (0.0 | 1.7−) | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4− | | |
| 2002 10 04 | 704 | 0.5− | 0.4− | 2006 09 19 | 704 | 0.7− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3− | | |
| 2002 10 04 | 704 | 0.3+ | 0.8− | 2006 09 19 | 704 | 0.7+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2002 10 09 | 704 | 0.2+ | 1.2− | 2006 09 19 | 704 | (1.7+ | 0.4+) | 2006 10 22 | 704 | 0.1− | 0.5+ | | |
| 2002 10 09 | 704 | (0.6− | 2.0−) | 2006 09 19 | 704 | 0.2+ | 0.5− | 2006 10 22 | 704 | 1.2− | 1.0+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.9− | 2006 09 21 | H51 | 0.5+ | 0.1+ | 2006 10 22 | 704 | 1.0− | 0.7+ | | |
| 2002 10 09 | 704 | 0.5+ | 1.3− | 2006 09 21 | H51 | 0.3+ | 0.2+ | 2006 10 22 | 704 | 0.5+ | 0.8+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.7− | 2006 09 21 | H51 | 0.2− | 0.6− | 2006 10 22 | 704 | (0.2− | 1.9+) | | |
| 2002 10 11 | 644 | 0.3− | 0.8+ | 2006 09 22 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 703 | 0.9− | 0.0 | | |
| 2002 10 11 | 644 | 0.3− | 0.8+ | 2006 09 22 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.8− | | |
| 2002 10 11 | 644 | 0.3− | 0.9+ | 2006 09 22 | 704 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.9− | | |
| 2002 10 12 | 704 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.3+ | 0.5− | | |
| 2002 10 12 | 704 | 0.5− | 0.3− | 2006 09 22 | 704 | 0.1− | 0.7+ | 2006 10 23 | 704 | 0.7+ | 0.3− | | |
| 2002 10 12 | 704 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.0 | 1.1+ | 2006 10 23 | 704 | 0.8+ | 0.3− | | |
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.1+ | 2006 10 23 | 704 | 0.4− | 0.4− | | |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.6+ | 2006 10 28 | 704 | 0.3− | 0.8+ | | |
| 2002 10 18 | 644 | 0.1+ | 0.9+ | 2006 09 26 | 704 | 0.5+ | 0.2− | 2006 10 28 | 704 | 0.3+ | 0.8+ | | |
| 2002 10 18 | 644 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.2+ | 0.4+ | 2006 10 28 | 704 | 0.2+ | 0.7+ | | |
| 2002 10 18 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.6+ | 2006 11 06 | 644 | 0.2+ | 0.0 | | |
| 2002 10 30 | 608 | 0.8+ | 1.2+ | 2006 09 26 | 704 | 0.5+ | 0.1− | 2006 11 06 | 644 | 0.0 | 0.0 | | |
| 2002 10 30 | 608 | 0.6+ | 1.1+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.3− | | |
| 2002 10 30 | 608 | 0.6+ | 0.7+ | 2006 09 26 | 704 | 1.2+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.2+ | | |
| 2002 11 01 | 644 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.6+ | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.7− | | |
| 2002 11 01 | 644 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.8+ | 0.8+ | 2006 11 11 | 703 | 1.0− | 0.0 | | |
| 2002 11 01 | 644 | 0.1+ | 0.2− | 2006 09 28 | 704 | 0.6− | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.5− | | |
| 2002 11 06 | 704 | 0.1+ | 0.4− | 2006 09 28 | 704 | 0.7− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− | | |
| 2002 11 06 | 704 | 0.2+ | 0.4− | 2006 09 28 | 704 | 0.6− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.2− | | |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.8− | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.6− | | |
| 2002 11 06 | 704 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.6− | 2006 11 11 | 703 | 0.8− | 0.8+ | | |
| 2002 11 14 | 704 | 0.4+ | 0.8− | 2006 09 30 | 704 | 0.3− | 0.3− | 2006 11 13 | G96 | 0.2− | 0.7− | | |
| 2002 11 14 | 704 | 0.5+ | 1.0− | 2006 09 30 | 703 | 0.9+ | 1.1− | 2006 11 13 | G96 | 0.1+ | 0.4− | | |
| 2002 11 14 | 704 | 0.0 | 0.8− | 2006 09 30 | 704 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.7− | | |
| 2002 11 14 | 704 | 0.1− | 0.9− | 2006 09 30 | 703 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.6− | | |
| 2002 12 02 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.7+ | 2006 11 18 | 704 | 0.3+ | 1.4+ | | |
| 2002 12 02 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 18 | 704 | (0.1+ | 2.4+) | | |
| 2002 12 02 | 704 | 0.2− | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.4+ | 1.1+ | | |
| 2002 12 02 | 704 | 0.5− | 0.6+ | 2006 09 30 | 704 | 0.0 | 0.5+ | 2006 11 18 | 704 | (0.9+ | 2.0+) | | |
| 2002 12 06 | 704 | 0.0 | 0.6− | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.5− | 0.2+ | | |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | (0.4− | 1.6+) | | |
| 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.5− | 0.0 | | |
| 2002 12 06 | 704 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.3− | | |
| 2002 12 06 | 704 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.5− | | |
| 2002 12 27 | 644 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.3− | 0.8+ | | |

## 2002 $RQ_{108}$ = 2006 $SR_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.44194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25692124 | $\omega$ | 189.23883 | | +0.98331194 | +0.18176479 | |
| $a$ | 2.4505828 | $\Omega$ | 160.28355 | | −0.16542513 | +0.91091540 | |
| $e$ | 0.1940788 | $i$ | 1.30666 | | −0.07571098 | +0.37039801 | |
| $P$ | 3.84 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 691 | 0.3+ | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.1− | | |
| 1998 09 26 | 691 | 0.6+ | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.3+ | | |
| 1998 09 26 | 691 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2002 09 05 | 704 | 0.6+ | 0.6+ | 2002 10 06 | 704 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2002 09 05 | 704 | 0.3+ | 0.7+ | 2002 10 06 | 704 | (1.9− | 1.0+) | 2006 10 19 | 644 | 0.3+ | 0.2− | | |
| 2002 09 05 | 704 | 0.2+ | 1.0+ | 2002 10 06 | 704 | 0.7− | 0.6+ | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2002 09 05 | 704 | 0.4+ | 0.9+ | 2002 10 06 | 704 | 0.8+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2002 09 05 | 608 | 0.6− | 0.5+ | 2003 12 25 | 645 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 09 05 | 608 | 0.4− | 0.1+ | 2003 12 25 | 645 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 09 05 | 608 | 0.7− | 0.4+ | 2006 07 21 | G96 | 0.5− | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.4+ | | |
| 2002 09 07 | 704 | 0.1+ | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.2+ | 0.6− | | |
| 2002 09 07 | 704 | 0.9+ | 0.9+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 10 21 | 703 | 1.1+ | 0.8− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.7+ | 0.5+ | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.3− | 0.6− |
| 2002 09 07 | 704 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.7+ | 0.6+ |
| 2002 09 11 | 608 | 1.0− | 0.8− | 2006 09 18 | 691 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2002 09 11 | 608 | 0.9− | 0.9− | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2002 09 11 | 608 | 1.2− | 1.0− | 2006 09 24 | 691 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2002 09 13 | 644 | 0.4− | 0.3− | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.5− | 0.1− | 2006 09 24 | 691 | 0.9− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.5− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 09 15 | 291 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.7+ | 0.4− | 2006 11 01 | 691 | 0.5+ | 0.4+ |
| 2002 09 15 | 291 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2002 09 15 | 291 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 11 01 | 691 | 0.6+ | 0.2+ |
| 2002 09 15 | 644 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2002 09 15 | 644 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2002 09 15 | 644 | 0.5− | 0.1− | 2006 09 28 | 691 | 0.5− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2002 09 16 | 291 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.0+ | 1.1+ |
| 2002 09 16 | 291 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2002 09 16 | 291 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2002 09 17 | 608 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.6+ | 0.2− | 2006 11 14 | G96 | 0.6+ | 0.3− |
| 2002 09 17 | 608 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2002 09 17 | 608 | 1.0− | 0.3− | 2006 10 11 | 644 | 0.5+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.6+ | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.4− | 0.4− | 2006 11 21 | 691 | 0.3+ | 0.0 |

### 2002 RF$_{109}$ = 2006 SY$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.87892 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24406798 | $\omega$ | 180.32033 | | +0.95718361 | | −0.28695180 |
| $a$ | 2.5358808 | $\Omega$ | 196.50944 | | +0.26589202 | | +0.92365877 |
| $e$ | 0.2440906 | $i$ | 7.72261 | | +0.11445945 | | +0.25399438 |
| $P$ | 4.04 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 27 | 691 | 0.1+ | 0.0 | 2002 09 07 | 704 | 0.3+ | 0.1+ | 2005 04 12 | 695 | 0.3− | 0.3+ |
| 1994 09 27 | 691 | 0.1− | 0.1− | 2002 09 07 | 704 | 0.1+ | 0.9− | 2005 04 12 | 695 | 0.4+ | 0.2− |
| 1994 09 27 | 691 | 0.1− | 0.0 | 2002 09 07 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.1− | 1.4− |
| 2002 08 28 | 644 | 0.2− | 0.3+ | 2002 09 07 | 704 | 0.3− | 0.7+ | 2006 08 29 | 703 | 0.2+ | 0.3+ |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2002 09 07 | 704 | 0.1+ | 0.0 | 2006 08 29 | 703 | 1.0+ | 0.5+ |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2002 09 07 | 704 | 0.6+ | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.2− |
| 2002 09 06 | 704 | 0.3− | 0.8+ | 2002 09 07 | 704 | (1.7+ | 0.6−) | 2006 09 17 | 691 | 0.1− | 0.1− |
| 2002 09 06 | 704 | 0.6+ | 0.9− | 2002 09 08 | 608 | 0.4− | 0.5− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.6+ | 0.7+ | 2002 09 08 | 608 | 0.1+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.5+ | 0.2+ | 2002 09 08 | 608 | 0.1+ | 0.2− | 2006 09 22 | 691 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.6+ | 0.6+ | 2002 09 13 | 644 | 0.3− | 0.1+ | 2006 09 22 | 691 | 0.2− | 0.1+ |
| 2002 09 07 | 704 | 0.1+ | 0.4+ | 2002 09 13 | 644 | 0.4− | 0.1− | 2006 09 22 | 691 | 0.0 | 0.1− |
| 2002 09 07 | 704 | 0.2− | 0.4− | 2002 09 13 | 644 | 0.5− | 0.0 | | | | |

### 2002 RE$_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.54338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26118729 | $\omega$ | 115.74302 | | +0.98516315 | | +0.16135079 |
| $a$ | 2.4238255 | $\Omega$ | 235.02435 | | −0.17156609 | | +0.91734340 |
| $e$ | 0.0893660 | $i$ | 4.09241 | | −0.00431902 | | +0.36393271 |
| $P$ | 3.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 291 | 0.3+ | 0.8+ | 2006 08 19 | 291 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 2001 05 24 | 291 | 0.1+ | 0.4+ | 2006 08 19 | 291 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2001 05 24 | 291 | 0.2+ | 0.5+ | 2006 08 19 | 291 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2002 09 06 | 704 | (1.2− | 1.6−) | 2006 09 28 | G96 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2002 09 06 | 704 | 0.2+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2002 09 06 | 704 | 1.1− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2002 09 07 | 704 | 0.3− | 0.8− | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2002 09 07 | 704 | 0.1+ | 0.5− | 2006 10 03 | J95 | 0.6+ | 1.0− | 2006 10 28 | 691 | 0.0 | 0.7+ |
| 2002 09 07 | 704 | 0.2+ | 0.6− | 2006 10 03 | J95 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.4+ | 0.6− | 2006 10 03 | J95 | 0.7+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2002 09 07 | 704 | 0.1+ | 1.0+ | 2006 10 03 | J95 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.6+ | 0.6− |
| 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2002 09 13 | 644 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5− | 1.3− |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2006 10 03 | 291 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.3− | 2006 10 03 | 291 | 0.2− | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 0.3+ | 2006 10 03 | 291 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.9− |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2006 10 04 | J95 | 0.5+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2002 10 07 | 699 | 0.1− | 0.2+ | 2006 10 04 | J95 | 0.2+ | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2002 10 07 | 699 | 0.0 | 1.0+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2002 10 07 | 699 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2002 10 07 | 699 | 0.4− | 1.1+ | 2006 10 11 | 691 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2005 05 04 | G96 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.8− | 0.1− |
| 2005 05 04 | G96 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.9− |
| 2005 05 04 | G96 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.6+ | 2006 11 17 | 703 | (1.5+ | 3.8−) |
| 2005 05 04 | G96 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | |

### 2002 RT$_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.97150 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25773244 | $\omega$ | 21.76459 | | +0.89524407 | | +0.43869227 |
| $a$ | 2.4454380 | $\Omega$ | 311.97161 | | −0.42272418 | | +0.78085364 |
| $e$ | 0.1455024 | $i$ | 6.02369 | | −0.14086276 | | +0.44476588 |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2+ | 0.3+ | 2002 09 13 | 644 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2002 09 13 | 644 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 08 28 | 644 | 0.3+ | 0.1− | 2002 09 14 | 608 | 0.6− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2002 09 06 | 704 | 0.0 | 0.5+ | 2002 09 14 | 608 | 1.2− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 09 06 | 704 | 0.9+ | 0.4+ | 2002 09 14 | 608 | 1.2− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.9+ | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 09 06 | 704 | 0.7+ | 0.0 | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2002 09 07 | 704 | 0.1+ | 0.2+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.3− | 0.4+ |
| 2002 09 07 | 704 | 0.3− | 0.4+ | 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.9− |
| 2002 09 07 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.6+ | 2006 10 17 | 703 | 0.4− | 1.5− |
| 2002 09 07 | 704 | 0.8− | 0.1− | 2006 09 30 | 703 | (1.8− | 0.6+) | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2002 09 07 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2002 09 13 | 644 | 0.2− | 0.9+ | 2006 09 30 | 703 | 0.4+ | 0.3− | 2006 10 22 | 644 | 0.1− | 0.2− |

### 2002 RF$_{111}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.88520 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27103329 | $\omega$ | 78.81894 | | +0.93394370 | | −0.35106786 |
| $a$ | 2.3647630 | $\Omega$ | 301.70227 | | +0.28938456 | | +0.85288777 |
| $e$ | 0.2315258 | $i$ | 4.52254 | | +0.20977544 | | +0.38643734 |
| $P$ | 3.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 04 | 704 | 0.6+ | 1.0+ | 2002 10 05 | 704 | 0.1+ | 0.1+ | 2002 11 06 | 704 | 1.0− | 0.6− |
| 2002 08 04 | 704 | 0.8− | 0.7+ | 2002 10 07 | 704 | 0.2+ | 0.9+ | 2002 11 06 | 704 | 0.1− | 0.4− |
| 2002 08 04 | 704 | 0.3− | 0.7+ | 2002 10 07 | 704 | 0.5− | 0.2− | 2002 11 06 | 704 | 0.7− | 0.8− |
| 2002 08 04 | 704 | 0.1+ | 0.1+ | 2002 10 07 | 704 | 0.7+ | 0.2− | 2002 11 22 | 644 | 0.5+ | 0.7+ |
| 2002 08 04 | 704 | 0.1+ | 0.9+ | 2002 10 07 | 704 | 0.0 | 0.7+ | 2002 11 22 | 644 | 0.5+ | 0.6+ |
| 2002 09 06 | 704 | 0.7+ | 0.0 | 2002 10 07 | 704 | 0.3+ | 0.8+ | 2002 11 22 | 644 | 0.4+ | 0.7+ |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2002 10 07 | 704 | 0.1− | 0.5+ | 2002 12 01 | 704 | 0.4+ | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.3− | 2002 10 07 | 704 | 0.1+ | 0.5+ | 2002 12 01 | 704 | 0.6− | 0.4+ |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2002 10 07 | 704 | 0.1− | 0.4+ | 2002 12 01 | 704 | 0.8− | 0.5+ |
| 2002 09 06 | 704 | 0.1+ | 0.3− | 2002 10 07 | 704 | 0.4− | 0.3+ | 2002 12 01 | 704 | 0.1+ | 0.4+ |
| 2002 09 07 | 704 | 0.0 | 0.7− | 2002 10 07 | 704 | 0.2− | 0.4+ | 2002 12 01 | 704 | 0.2+ | 0.8+ |
| 2002 09 07 | 704 | 0.9+ | 1.3− | 2002 10 08 | 704 | 0.0 | 0.5+ | 2002 12 06 | 704 | 0.2+ | 0.0 |
| 2002 09 07 | 704 | 1.3+ | 1.5− | 2002 10 08 | 704 | 0.1+ | 0.7+ | 2002 12 06 | 704 | 0.3+ | 0.0 |
| 2002 09 07 | 704 | 0.9+ | 0.3− | 2002 10 08 | 704 | 0.1− | 0.1+ | 2002 12 06 | 704 | 0.2− | 0.0 |
| 2002 09 15 | 608 | (0.3+ | 1.7+) | 2002 10 09 | 704 | 0.2+ | 0.1− | 2002 12 06 | 704 | 0.7− | 0.8+ |
| 2002 09 15 | 608 | (0.3+ | 1.5+) | 2002 10 09 | 704 | 0.3+ | 0.3+ | 2002 12 06 | 704 | 0.1+ | 0.1+ |
| 2002 09 15 | 608 | (0.0 | 1.6+) | 2002 10 09 | 704 | 0.1− | 0.4+ | 2004 04 24 | 691 | 0.3+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 599 | 0.0 | 0.1− | 2002 10 09 | 704 | 0.1− | 0.6+ | 2004 04 24 | 691 | 0.2− | 1.0+ | | |
| 2002 10 02 | 599 | 0.2+ | 0.1− | 2002 10 09 | 704 | 0.4− | 0.9+ | 2004 04 24 | 691 | 0.7+ | 0.2+ | | |
| 2002 10 02 | 599 | 0.3+ | 0.0 | 2002 10 12 | 704 | 0.9− | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1− | | |
| 2002 10 02 | 599 | 0.4+ | 0.5− | 2002 10 12 | 704 | 1.2− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.2− | | |
| 2002 10 03 | 644 | 1.2− | 0.0 | 2002 10 12 | 704 | 0.6− | 0.2− | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2002 10 03 | 644 | 0.0 | 0.1− | 2002 10 12 | 704 | 0.9− | 0.3− | 2006 11 02 | G96 | 0.2+ | 0.8− | | |
| 2002 10 03 | 644 | 0.1− | 0.1− | 2002 10 12 | 704 | 0.8− | 0.5− | 2006 11 02 | G96 | 0.3− | 1.1− | | |
| 2002 10 05 | 704 | 0.2− | 0.1− | 2002 11 03 | 704 | 0.5+ | 0.4− | 2006 11 02 | G96 | 0.3− | 0.8− | | |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2002 11 03 | 704 | 0.6+ | 0.1− | 2006 11 02 | G96 | 0.3− | 0.4− | | |
| 2002 10 05 | 704 | 0.3− | 0.1+ | 2002 11 03 | 704 | 0.2− | 1.1− | | | | | | |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2002 11 06 | 704 | 0.6− | 0.3− | | | | | | |

### 2002 RD$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.35125 | | | (2000.0) | | |
| $n$ | 0.27038882 | $\omega$ | 58.27209 | | +0.99561180 | −0.00102825 |
| $a$ | 2.3685191 | $\Omega$ | 301.63143 | | −0.04120710 | +0.89295830 |
| $e$ | 0.1242640 | $i$ | 6.30960 | | +0.08401853 | +0.45013823 |
| $P$ | 3.65 | $H$ | 17.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 1.4+ | 0.3+ | 2002 10 05 | 645 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.4+ | 1.1+ | | |
| 2002 09 06 | 704 | 0.4+ | 0.2− | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.0 | 0.1+ | | |
| 2002 09 06 | 704 | 0.4+ | 0.0 | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 02 | G96 | 1.3+ | 0.5+ | | |
| 2002 09 07 | 599 | 0.2+ | 0.6+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.4+ | 0.3− | | |
| 2002 09 07 | 599 | 0.1+ | 1.1+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.2+ | 0.1− | | |
| 2002 09 07 | 599 | 0.1− | 0.5+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 02 | G96 | 0.6+ | 0.3− | | |
| 2002 09 07 | 599 | 0.0 | 0.3+ | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 11 27 | 291 | 0.3− | 0.4− | | |
| 2002 09 13 | 644 | 0.5− | 0.6+ | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 11 27 | 291 | 0.4− | 0.2+ | | |
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2006 10 27 | 703 | 1.2− | 0.7+ | 2006 11 27 | 291 | 0.4+ | 0.4+ | | |
| 2002 09 13 | 644 | 0.6− | 0.7+ | 2006 10 27 | 703 | 0.6− | 1.2− | | | | | | |

### 2002 RP$_{113}$ = 2006 UO$_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.46142 | | | (2000.0) | | |
| $n$ | 0.26350038 | $\omega$ | 141.35194 | | +0.98204237 | +0.18793860 |
| $a$ | 2.4096199 | $\Omega$ | 207.82883 | | −0.18067971 | +0.91175027 |
| $e$ | 0.1955598 | $i$ | 2.02408 | | −0.05429201 | +0.36522669 |
| $P$ | 3.74 | $H$ | 17.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 03 | 691 | 0.2− | 0.2+ | 2002 09 16 | 608 | (2.4+ | 4.0+) | 2006 10 27 | 691 | 0.2− | 0.4− | | |
| 1991 11 03 | 691 | 0.1− | 0.3+ | 2002 09 16 | 608 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.4− | 0.1− | | |
| 1991 11 03 | 691 | 0.1+ | 0.1+ | 2002 09 16 | 608 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.3+ | | |
| 2002 09 05 | 704 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.0 | 2005 05 10 | G96 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.2− | | |
| 2002 09 05 | 704 | 0.8+ | 0.4− | 2005 05 10 | G96 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.4− | 0.0 | | |
| 2002 09 05 | 704 | 0.6+ | 0.1+ | 2005 05 10 | G96 | 0.5− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− | | |
| 2002 09 08 | 608 | 0.3− | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.3+ | | |
| 2002 09 08 | 608 | 0.8− | 0.3+ | 2006 10 11 | 691 | 0.6+ | 0.6− | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 08 | 608 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 703 | (1.5− | 3.5+) | | |
| 2002 09 14 | 644 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 17 | 703 | (1.8− | 1.2+) | | |
| 2002 09 14 | 644 | 0.7− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.2− | | |
| 2002 09 14 | 644 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.8+ | 0.2+ | | |

### 2002 RR$_{113}$ = 2006 VV$_{127}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.09905 | | | (2000.0) | | |
| $n$ | 0.28138047 | $\omega$ | 318.95967 | | +0.45202138 | +0.89141980 |
| $a$ | 2.3064290 | $\Omega$ | 337.85509 | | −0.79434086 | +0.38575739 |
| $e$ | 0.1444429 | $i$ | 4.92528 | | −0.40583158 | +0.23782760 |
| $P$ | 3.50 | $H$ | 17.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 09 08 | 608 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.2− | | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 09 08 | 608 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.2− | 0.0 | | |
| 2002 08 27 | 644 | 0.5+ | 0.2+ | 2002 09 08 | 608 | 0.3+ | 0.5− | 2006 11 17 | 691 | 0.0 | 0.2+ | | |
| 2002 08 27 | 644 | 0.1+ | 0.4− | 2002 09 14 | 644 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.3+ | | |
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2002 09 14 | 644 | 0.6− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2002 08 28 | 644 | 0.5+ | 0.8+ | 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2002 08 28 | 644 | 0.1+ | 0.1+ | 2004 01 16 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1− | | |
| 2002 09 05 | 704 | 0.6− | 0.8+ | 2004 01 16 | 691 | 0.3− | 0.3+ | 2006 11 22 | 691 | 0.1+ | 0.1− | | |
| 2002 09 05 | 704 | 0.2− | 0.8+ | 2004 01 16 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 691 | 0.3+ | 0.3− | | |
| 2002 09 05 | 704 | 0.5− | 0.6+ | 2006 11 15 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.3− | 0.2− | | |
| 2002 09 05 | 704 | 1.2− | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.0 | | | | | | |

### 2002 RX$_{113}$ = 2006 UJ$_{6}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.27735 | | | (2000.0) | | |
| $n$ | 0.26331576 | $\omega$ | 170.92046 | | +0.95229240 | +0.30506556 |
| $a$ | 2.4107461 | $\Omega$ | 171.30284 | | −0.28345774 | +0.89459537 |
| $e$ | 0.1942082 | $i$ | 3.26537 | | −0.11309684 | +0.32654880 |
| $P$ | 3.74 | $H$ | 17.6 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.4− | 0.0 | 2002 09 08 | 608 | 0.8− | 0.9− | 2006 10 17 | G96 | 0.4+ | 0.3− | | |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2002 09 08 | 608 | 0.3− | 1.0− | 2006 10 22 | 691 | 0.3− | 0.3+ | | |
| 2002 08 28 | 644 | 0.3− | 0.0 | 2002 09 08 | 608 | 0.7− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2002 09 05 | 704 | 1.0+ | 1.0− | 2002 09 14 | 644 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2002 09 05 | 704 | 0.6+ | 0.4+ | 2002 09 14 | 644 | 0.8− | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.1+ | | |
| 2002 09 05 | 704 | 0.4+ | 0.3+ | 2002 09 14 | 644 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 1.0+ | 1.3− | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2002 09 05 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.6− | 2006 10 31 | G96 | 0.2+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 1.1+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2002 09 07 | 704 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.2− | | |
| 2002 09 07 | 704 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.1+ | | |
| 2002 09 07 | 704 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2002 09 07 | 704 | 0.4+ | 0.1− | 2006 10 17 | G96 | (0.8+ | 1.6+) | | | | | | |

### 2002 RE$_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.27697 | | | (2000.0) | | |
| $n$ | 0.25710119 | $\omega$ | 86.74748 | | +0.90499795 | −0.41810618 |
| $a$ | 2.4494392 | $\Omega$ | 297.95509 | | +0.34641890 | +0.83141991 |
| $e$ | 0.1253590 | $i$ | 5.10011 | | +0.24692640 | +0.36596195 |
| $P$ | 3.83 | $H$ | 17.0 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 1.2+ | 1.3+ | 2002 09 16 | 608 | 0.7− | 0.2− | 2006 09 27 | 703 | 0.1− | 0.6+ | | |
| 2002 08 12 | 704 | 0.2+ | 0.6+ | 2002 10 04 | 704 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.4− | | |
| 2002 08 12 | 704 | 0.1− | 0.1− | 2002 10 04 | 704 | 0.1− | 0.9+ | 2006 10 11 | 644 | 0.3− | 0.4+ | | |
| 2002 08 28 | 644 | 0.9+ | 0.0 | 2002 10 04 | 704 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.4− | 0.3+ | | |
| 2002 08 28 | 644 | 0.5+ | 0.1− | 2002 10 04 | 704 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2002 08 28 | 644 | 0.7+ | 0.1− | 2006 08 29 | 699 | 0.5+ | 0.3− | 2006 10 17 | 683 | (2.2− | 0.6−) | | |
| 2002 09 06 | 704 | 0.7− | 0.7+ | 2006 08 29 | 699 | 0.4− | 0.7+ | 2006 10 17 | 683 | 1.3− | 1.0− | | |
| 2002 09 06 | 704 | 0.1− | 0.3+ | 2006 08 29 | 699 | 0.6+ | 0.2− | 2006 10 17 | 683 | 0.2+ | 0.1+ | | |
| 2002 09 06 | 704 | 0.6− | 0.8+ | 2006 08 29 | 699 | 1.0+ | 0.6− | 2006 10 19 | 683 | 0.0 | 0.2+ | | |
| 2002 09 06 | 704 | 0.4− | 0.9+ | 2006 09 16 | 703 | 0.7− | 0.9− | 2006 10 19 | 683 | 1.1+ | 1.0− | | |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2006 09 16 | 703 | 0.0 | 1.5− | 2006 10 20 | 683 | 0.9+ | 1.3+ | | |
| 2002 09 08 | 608 | 0.4− | 1.1− | 2006 09 16 | 703 | 0.4− | 0.3− | 2006 10 20 | 683 | 0.8+ | 0.4+ | | |
| 2002 09 08 | 608 | 0.4− | 1.0− | 2006 09 16 | 703 | (2.9− | 0.9−) | 2006 10 20 | 683 | 1.5+ | 1.1+ | | |
| 2002 09 08 | 608 | 0.2− | 1.3− | 2006 09 19 | 699 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.6− | 0.5+ | | |
| 2002 09 13 | 644 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.5+ | 1.1+ | 2006 10 21 | 644 | 0.5− | 0.4+ | | |
| 2002 09 13 | 644 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.6− | 0.7+ | | |
| 2002 09 13 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 1.1− | 0.4− | 2006 10 22 | 683 | 1.1+ | 0.2− | | |
| 2002 09 16 | 608 | 0.2− | 0.5− | 2006 09 27 | 703 | 0.6− | 1.2− | 2006 10 22 | 683 | (0.4+ | 2.2+) | | |
| 2002 09 16 | 608 | 0.6− | 0.9− | 2006 09 27 | 703 | 0.3− | 1.0− | | | | | | |

**2002 RL$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.22830 | | (2000.0) | | | |
| $n$ | 0.25497682 | $\omega$ | 50.87591 | | +0.67629250 | −0.73661315 |
| $a$ | 2.4630256 | $\Omega$ | 356.55464 | | +0.64487839 | +0.59560252 |
| $e$ | 0.1929927 | $i$ | 5.18710 | | +0.35603416 | +0.32040397 |
| $P$ | 3.87 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 15 | 691 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.7+ | 0.3− |
| 2000 02 15 | 691 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2000 02 15 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2002 08 11 | 807 | 0.2+ | 0.1+ | 2006 09 17 | 291 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 08 11 | 807 | 0.2+ | 0.0 | 2006 09 17 | 291 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.4+ | 0.8+ | 2006 09 17 | 291 | 0.1− | 0.1− | 2006 10 17 | 703 | (1.5− | 1.7−) |
| 2002 09 07 | 704 | 0.3− | 0.0 | 2006 09 19 | 699 | (1.8+ | 0.5+) | 2006 10 17 | 703 | (1.1− | 1.8−) |
| 2002 09 07 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 699 | 0.0 | 0.6− | 2006 10 17 | 703 | 0.7+ | 0.7− |
| 2002 09 07 | 704 | 0.2+ | 0.4− | 2006 09 19 | 699 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2002 09 08 | 608 | 0.4− | 0.6− | 2006 09 19 | 699 | 1.3+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2002 09 08 | 608 | 0.4− | 1.0− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 09 08 | 608 | 0.6− | 0.9− | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2002 09 15 | 644 | 0.6− | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2002 10 09 | 291 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.9+ | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2002 10 09 | 291 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.4+ | | | | |
| 2002 10 09 | 291 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | | | | |

**2002 RX$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.98330 | | (2000.0) | | | |
| $n$ | 0.25590763 | $\omega$ | 97.65935 | | +0.59678210 | +0.79904550 |
| $a$ | 2.4570494 | $\Omega$ | 209.37156 | | −0.78247053 | +0.55927851 |
| $e$ | 0.2647382 | $i$ | 8.59858 | | −0.17773853 | +0.22075740 |
| $P$ | 3.85 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.7− | 0.2+ | 2002 10 05 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2002 08 16 | 704 | 0.2− | 0.2+ | 2002 10 06 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 08 16 | 704 | 0.1− | 0.4+ | 2002 10 06 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 08 16 | 704 | 1.2− | 0.9+ | 2002 10 06 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 08 22 | 644 | 0.3+ | 0.2+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2002 08 22 | 644 | 0.5+ | 0.4+ | 2002 10 31 | 645 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.5− | 0.1− |
| 2002 08 22 | 644 | 0.2+ | 0.4+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.4− | 0.1+ |
| 2002 08 29 | 644 | 0.2+ | 0.8− | 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.7+ | 0.8− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.5+ | 0.7− | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 09 07 | 704 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2002 09 07 | 704 | 1.2+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.1− | 1.4− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2002 09 07 | 704 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2002 09 10 | 608 | 0.5+ | 0.7− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2002 09 10 | 608 | 0.4+ | 0.9− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2002 09 10 | 608 | 0.2+ | 0.7− | 2006 10 15 | 691 | 0.7+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2002 09 12 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2002 09 12 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2002 09 12 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2002 09 13 | 644 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.0 | 1.1+ | 2006 10 20 | 644 | 0.3− | 0.4+ | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2002 09 13 | 644 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 691 | 0.5+ | 0.1− |
| 2002 09 17 | 608 | 1.0− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 20 | G96 | 1.3− | 0.5− |
| 2002 09 17 | 608 | 0.6− | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.5+ | 2006 11 20 | G96 | 0.5+ | 0.1+ |
| 2002 09 17 | 608 | 0.7− | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2002 10 05 | 644 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.6+ | 2006 11 20 | G96 | 0.6+ | 0.5− |
| 2002 10 05 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.7+ | 1.1+ | | | | |

**2002 RB$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.42950 | | (2000.0) | | | |
| $n$ | 0.27370683 | $\omega$ | 106.32580 | | +0.99692962 | −0.03789464 |
| $a$ | 2.3493387 | $\Omega$ | 255.88498 | | +0.00895741 | +0.92454231 |
| $e$ | 0.2458522 | $i$ | 4.05165 | | +0.07778879 | +0.37919060 |
| $P$ | 3.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.0 | 0.1+ | 2002 09 17 | 636 | 1.2+ | 0.4− | 2002 10 31 | 704 | 0.2+ | 0.4+ |
| 2002 08 11 | 704 | 0.9+ | 0.1− | 2002 09 17 | 636 | 0.4+ | 0.9+ | 2002 10 31 | 704 | 0.5− | 0.7+ |
| 2002 08 11 | 704 | 0.5+ | 0.6+ | 2002 10 04 | 704 | 0.2+ | 0.0 | 2002 10 31 | 704 | 0.8− | 0.0 |
| 2002 08 11 | 704 | 0.7+ | 0.3− | 2002 10 04 | 704 | 0.0 | 0.1+ | 2002 10 31 | 704 | 0.1+ | 0.5− |
| 2002 08 11 | 704 | 0.1+ | 1.1+ | 2002 10 04 | 704 | 0.0 | 0.1+ | 2002 10 31 | 704 | 0.4+ | 0.6+ |
| 2002 08 16 | 704 | 0.4+ | 0.7− | 2002 10 04 | 699 | 0.1+ | 0.4− | 2002 11 05 | 699 | 0.5− | 0.7− |
| 2002 08 16 | 704 | 0.4+ | 0.0 | 2002 10 04 | 704 | 0.1+ | 0.2+ | 2002 11 05 | 699 | 0.3− | 0.6+ |
| 2002 08 16 | 704 | 0.4− | 0.4+ | 2002 10 04 | 699 | 0.0 | 0.3− | 2002 11 05 | 699 | 0.7+ | 0.0 |
| 2002 08 16 | 704 | 0.2− | 0.3− | 2002 10 04 | 704 | 0.0 | 0.0 | 2002 11 05 | 699 | 0.3+ | 0.7+ |
| 2002 08 28 | 644 | 0.0 | 0.8− | 2002 10 04 | 699 | 0.0 | 0.1− | 2002 11 05 | 291 | 0.3+ | 0.1− |
| 2002 08 28 | 644 | 0.2+ | 0.7− | 2002 10 04 | 699 | 0.0 | 0.2− | 2002 11 05 | 291 | 0.2+ | 0.3− |
| 2002 08 28 | 644 | 0.4+ | 0.6− | 2002 10 05 | 644 | 0.0 | 0.0 | 2002 11 05 | 291 | 0.8− | 0.6+ |
| 2002 09 07 | 704 | 0.1+ | 0.5− | 2002 10 05 | 644 | 0.2+ | 0.1− | 2002 11 08 | 704 | 0.0 | 0.3− |
| 2002 09 07 | 704 | 0.1− | 0.4− | 2002 10 05 | 644 | 0.2+ | 0.2− | 2002 11 08 | 704 | 0.1+ | 0.5+ |
| 2002 09 07 | 704 | 0.0 | 0.8− | 2002 10 06 | 644 | 0.2+ | 0.1− | 2002 11 08 | 704 | 0.8− | 0.9− |
| 2002 09 07 | 704 | 0.2− | 0.4− | 2002 10 06 | 644 | 0.1+ | 0.1− | 2005 05 16 | 644 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.3− | 0.6− | 2002 10 06 | 644 | 0.1+ | 0.1− | 2005 05 16 | 644 | 0.0 | 0.6+ |
| 2002 09 10 | 608 | 0.3− | 0.8− | 2002 10 12 | 704 | 0.6− | 0.8+ | 2005 05 16 | 644 | 0.0 | 0.6+ |
| 2002 09 10 | 608 | 0.4− | 0.8− | 2002 10 12 | 704 | 0.9− | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 09 10 | 608 | 0.3− | 0.9− | 2002 10 12 | 704 | 0.8− | 0.9+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.3− | 0.1+ | 2002 10 12 | 704 | 1.1− | 1.1+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.5− | 0.3+ | 2002 10 30 | 608 | (1.0+ | 1.7+) | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.2+ | 2002 10 30 | 608 | 1.1+ | 1.2+ | 2006 11 22 | 691 | 0.2− | 0.2− |
| 2002 09 17 | 636 | 0.0 | 0.3+ | 2002 10 30 | 608 | 1.1+ | 1.5+ | 2006 11 22 | 691 | 0.0 | 0.1− |

**2002 RM$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 77.79924 | | (2000.0) | | | |
| $n$ | 0.28586102 | $\omega$ | 32.70838 | | +0.91308737 | +0.39993503 |
| $a$ | 2.2822651 | $\Omega$ | 303.51742 | | −0.39161700 | +0.80575835 |
| $e$ | 0.2195361 | $i$ | 5.47318 | | −0.11361149 | +0.43681283 |
| $P$ | 3.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.2+ | 0.1− | 2002 10 05 | 704 | 0.7+ | 1.4− | 2002 11 11 | 644 | 0.3+ | 0.1+ |
| 1995 07 26 | 691 | 0.2− | 0.1+ | 2002 10 09 | 704 | 0.9− | 0.3+ | 2002 11 11 | 644 | 0.1+ | 0.0 |
| 1995 07 26 | 691 | 0.0 | 0.0 | 2002 10 09 | 704 | 0.7− | 0.6+ | 2002 11 11 | 644 | 0.0 | 0.1+ |
| 2002 07 14 | 704 | 0.3+ | 0.5− | 2002 10 09 | 704 | 0.6− | 0.1+ | 2002 11 22 | 644 | 0.2+ | 0.9+ |
| 2002 07 14 | 704 | 0.9+ | 0.3+ | 2002 10 09 | 704 | 0.7− | 0.5+ | 2002 11 22 | 644 | 0.2+ | 0.9+ |
| 2002 07 14 | 704 | 0.4+ | 0.2+ | 2002 10 09 | 704 | 0.2+ | 0.3− | 2002 11 22 | 644 | 0.2+ | 0.8+ |
| 2002 07 14 | 704 | 0.3− | 0.2+ | 2002 10 09 | 704 | 1.0+ | 1.0+ | 2002 12 06 | 704 | 0.3+ | 0.3+ |
| 2002 07 14 | 704 | 0.9+ | 1.0+ | 2002 10 09 | 704 | 0.3− | 0.7− | 2002 12 06 | 704 | 0.2+ | 0.4− |
| 2002 09 07 | 704 | 0.6− | 0.7+ | 2002 10 12 | 704 | 0.1− | 0.9− | 2002 12 06 | 704 | 0.6+ | 0.0 |
| 2002 09 07 | 704 | 0.9− | 0.7+ | 2002 10 12 | 704 | 0.8− | 0.1+ | 2002 12 06 | 704 | 0.6− | 0.6+ |
| 2002 09 07 | 704 | 0.5− | 1.1+ | 2002 10 12 | 704 | 1.4− | 0.1+ | 2002 12 06 | 704 | (1.1+ | 2.1+) |
| 2002 09 07 | 704 | 0.5− | 1.1+ | 2002 10 12 | 704 | 0.6− | 1.0− | 2004 02 12 | 691 | 0.2+ | 0.5+ |
| 2002 09 07 | 704 | (1.1− | 2.5+) | 2002 10 24 | 608 | 1.2− | 1.0+ | 2004 02 12 | 691 | 0.1+ | 0.3+ |
| 2002 09 10 | 608 | 0.0 | 0.1+ | 2002 10 24 | 608 | 1.2− | 0.5+ | 2004 02 12 | 691 | 0.3+ | 0.3+ |
| 2002 09 10 | 608 | 0.1+ | 0.4+ | 2002 10 24 | 608 | (0.2− | 1.6+) | 2006 10 02 | 691 | 0.2+ | 0.4− |
| 2002 09 10 | 608 | 0.2+ | 0.2+ | 2002 11 03 | 704 | 0.7− | 0.5− | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2002 10 03 | 644 | 0.1+ | 0.1− | 2002 11 03 | 704 | 0.5+ | 0.3− | 2006 10 02 | 691 | 0.3− | 0.5− |
| 2002 10 03 | 644 | 0.3+ | 0.2− | 2002 11 03 | 704 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 644 | 0.5+ | 0.1− | 2002 11 06 | 704 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2002 10 05 | 704 | (0.4+ | 1.5−) | 2002 11 06 | 704 | 0.1+ | 0.5+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2002 10 05 | 704 | 0.7+ | 1.1− | 2002 11 06 | 704 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.5− | 0.2− |
| 2002 10 05 | 704 | 0.6+ | 1.2− | 2002 11 06 | 704 | 0.3+ | 0.2+ | | | | |
| 2002 10 05 | 704 | 0.9+ | 0.7− | 2002 11 06 | 704 | 1.0+ | 0.3− | | | | |

**2002 RS$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.14500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22370603 | $\omega$ | 133.41996 | | +0.97303126 | −0.15446925 | |
| $a$ | 2.6875152 | $\Omega$ | 236.17850 | | +0.10137624 | +0.95347395 | |
| $e$ | 0.2757635 | $i$ | 11.90051 | | +0.20720286 | +0.25889510 | |
| $P$ | 4.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 20 | 910 | 0.1+ | 0.1− | 2002 08 22 | 644 | 0.1− | 0.2− | 2002 10 06 | 704 | 0.4− | 0.7− |
| 1998 11 20 | 910 | 0.1− | 0.2+ | 2002 08 22 | 644 | 0.1+ | 0.2− | 2002 10 19 | 644 | 0.3+ | 0.1− |
| 1998 11 20 | 910 | 0.0 | 0.0 | 2002 09 10 | 644 | 0.0 | 0.3+ | 2002 10 19 | 644 | 0.2+ | 0.3− |
| 2002 08 04 | 644 | 0.2− | 0.9+ | 2002 09 10 | 644 | 0.2+ | 0.3+ | 2002 10 19 | 644 | 0.0 | 0.3− |
| 2002 08 04 | 644 | 0.2− | 0.8+ | 2002 09 10 | 644 | 0.2− | 0.4+ | 2002 10 31 | 704 | 0.2+ | 0.1+ |
| 2002 08 04 | 644 | 0.3− | 0.9+ | 2002 09 11 | 644 | 0.2− | 0.2− | 2002 10 31 | 704 | 0.9− | 0.4+ |
| 2002 08 15 | 704 | 0.4− | 0.7+ | 2002 09 11 | 644 | 0.1− | 0.0 | 2002 10 31 | 704 | 0.2+ | 1.2+ |
| 2002 08 15 | 704 | 0.1+ | 0.0 | 2002 09 11 | 644 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.0 | 0.1+ |
| 2002 08 15 | 704 | 0.9+ | 0.5− | 2002 10 06 | 704 | 0.0 | 0.4− | 2004 02 23 | 704 | 0.4+ | 0.6− |
| 2002 08 15 | 704 | 0.4+ | 0.2− | 2002 10 06 | 704 | 0.1− | 0.5− | 2004 02 23 | 704 | 0.1+ | 1.6+ |
| 2002 08 15 | 704 | 0.3+ | 0.3− | 2002 10 06 | 704 | 0.1+ | 0.6− | 2004 02 23 | 704 | 0.1− | 0.2− |
| 2002 08 22 | 644 | 0.2+ | 0.2− | 2002 10 06 | 704 | 0.3− | 0.1− | | | | |

**2002 RO$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.13021 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26730613 | $\omega$ | 145.41439 | | +0.81102650 | −0.56057594 | |
| $a$ | 2.3866942 | $\Omega$ | 249.54342 | | +0.48829924 | +0.80617844 | |
| $e$ | 0.1616517 | $i$ | 10.28617 | | +0.32217987 | +0.18929062 | |
| $P$ | 3.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 644 | 0.1+ | 0.4− | 2006 10 20 | 704 | (0.5+ | 1.8−) | 2006 11 16 | 704 | (0.9− | 1.7+) |
| 2002 09 10 | 644 | 0.2+ | 0.2− | 2006 10 20 | 704 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.3+ | 0.5− |
| 2002 09 10 | 644 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2002 09 11 | 644 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.4− | 0.8− | 2006 11 16 | 704 | 0.0 | 0.6+ |
| 2002 09 11 | 644 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2002 09 11 | 644 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.9− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2002 10 05 | 644 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 10 05 | 644 | 0.2− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 10 05 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2002 10 06 | 644 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2002 10 06 | 644 | 0.6− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.6+ | 1.3+ |
| 2002 10 06 | 644 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 2002 10 31 | 704 | 0.5− | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2002 10 31 | 704 | (0.9− | 2.4+) | 2006 11 14 | 703 | 1.1− | 0.1− | 2006 11 22 | 704 | (0.4+ | 2.2−) |
| 2002 10 31 | 704 | 0.3− | 0.9+ | 2006 11 14 | 703 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 1.2− |
| 2002 10 31 | 704 | 1.0+ | 1.2+ | 2006 11 14 | 703 | 0.1− | 0.3− | 2006 11 22 | 704 | (1.1+ | 2.5−) |
| 2006 10 20 | 704 | 0.1− | 0.5− | 2006 11 14 | 703 | 0.2− | 0.5− | 2006 11 22 | 704 | (0.5+ | 2.3−) |
| 2006 10 20 | 704 | 0.1+ | 0.4− | 2006 11 16 | 704 | 1.0+ | 0.5− | 2006 11 22 | 704 | 0.1− | 0.6− |

**2002 RP$_{129}$ = 2006 TS$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.37379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25456148 | $\omega$ | 326.06205 | | +0.71213853 | +0.70195743 | |
| $a$ | 2.4657039 | $\Omega$ | 349.33302 | | −0.63059031 | +0.63288893 | |
| $e$ | 0.1642020 | $i$ | 3.31378 | | −0.30856861 | +0.32666093 | |
| $P$ | 3.87 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 113 | 0.4− | 0.7− | 2002 09 29 | 608 | 0.3+ | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2002 09 11 | 113 | 1.4− | 0.5− | 2002 09 29 | 608 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2002 09 11 | 113 | 0.3− | 0.1+ | 2002 09 30 | 113 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 09 12 | 113 | 1.1+ | 0.4− | 2002 09 30 | 113 | 0.7− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2002 09 12 | 113 | 0.5− | 0.4− | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2002 09 12 | 113 | (3.2− | 1.1+) | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2002 09 13 | 113 | 0.1+ | 0.8+ | 2006 10 11 | 691 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2002 09 13 | 113 | 0.6+ | 1.2+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 09 14 | 644 | 0.8− | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.6+ | 2006 10 15 | 691 | 0.2− | 0.1− | | | | |
| 2002 09 29 | 608 | 0.1− | 0.6− | 2006 10 15 | 691 | 0.3+ | 0.4− | | | | |

**2002 RX$_{131}$ = 2006 VO$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.52341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26044850 | $\omega$ | 132.05907 | | +0.98607920 | −0.12091825 | |
| $a$ | 2.4284070 | $\Omega$ | 235.19434 | | +0.07856234 | +0.94377404 | |
| $e$ | 0.2845921 | $i$ | 7.99014 | | +0.14654612 | +0.30768382 | |
| $P$ | 3.78 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.1+ | 0.4− | 2002 10 09 | 704 | 0.6+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2002 09 11 | 644 | 0.0 | 0.1− | 2002 10 10 | 704 | 0.2+ | 0.7− | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2002 09 11 | 644 | 0.1− | 0.3− | 2002 10 10 | 704 | 1.4+ | 0.4+ | 2006 11 15 | 691 | 0.7+ | 0.0 |
| 2002 09 12 | 644 | 0.1+ | 1.0+ | 2002 10 10 | 704 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2002 09 12 | 644 | 0.2+ | 0.7+ | 2002 10 10 | 704 | 0.0 | 0.7− | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2002 09 12 | 644 | 0.1+ | 1.0+ | 2006 10 04 | G96 | 0.4− | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 644 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.6− | 0.5− | 2006 11 21 | 704 | (0.1+ | 1.8+) |
| 2002 10 04 | 644 | 0.3− | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.7− | 0.8+ |
| 2002 10 05 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3− | 1.5+ |
| 2002 10 05 | 704 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 704 | 0.3− | 1.0− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2002 10 05 | 704 | 0.7− | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.9− | 0.7− |
| 2002 10 09 | 704 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.1− | | | | |
| 2002 10 09 | 704 | 0.7− | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.0 | | | | |

**2002 RZ$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.28773 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27720751 | $\omega$ | 250.01196 | | +0.87606955 | +0.47872017 | |
| $a$ | 2.3295179 | $\Omega$ | 81.34859 | | −0.41770762 | +0.81324706 | |
| $e$ | 0.2302297 | $i$ | 3.34584 | | −0.24087859 | +0.33084168 | |
| $P$ | 3.56 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.1− | 0.1− | 2002 09 13 | 699 | 0.6− | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2002 08 30 | 644 | 0.1− | 0.1− | 2002 09 14 | 608 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 08 30 | 644 | 0.2+ | 0.1− | 2002 09 14 | 608 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2002 09 09 | 608 | 0.3− | 0.7+ | 2002 09 14 | 608 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2002 09 09 | 608 | 0.1− | 0.4+ | 2002 09 16 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 09 09 | 608 | 0.0 | 0.4+ | 2002 09 16 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2002 09 13 | 704 | 0.0 | 0.7− | 2002 09 16 | 644 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 09 13 | 704 | 0.8+ | 0.2− | 2002 10 01 | 608 | 0.4+ | 0.7− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 09 13 | 699 | 0.8− | 1.4+ | 2002 10 01 | 608 | 0.1+ | 0.7− | 2006 11 27 | 691 | 0.5− | 0.0 |
| 2002 09 13 | 704 | 1.0+ | 0.7− | 2002 10 01 | 608 | 0.5+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2002 09 13 | 699 | 0.6− | 0.1+ | 2005 04 11 | 695 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2002 09 13 | 704 | 0.4+ | 0.0 | 2005 04 11 | 695 | 0.2+ | 0.3+ | | | | |
| 2002 09 13 | 699 | 1.1− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.2+ | | | | |

**2002 RW$_{133}$ = 2006 VC$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.79552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26664500 | $\omega$ | 320.59716 | | +0.99180457 | −0.08851447 | |
| $a$ | 2.3906376 | $\Omega$ | 44.75017 | | +0.12210459 | +0.86893425 | |
| $e$ | 0.1289200 | $i$ | 7.51990 | | −0.03760525 | +0.48694811 | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 644 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.8+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2002 09 10 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.5− | 1.4− |
| 2002 09 10 | 644 | 0.0 | 0.1− | 2006 10 17 | G96 | 1.3− | 0.6− | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2002 09 13 | 704 | 0.9+ | 0.4− | 2006 10 17 | 691 | 0.5− | 0.1− | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2002 09 13 | 704 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2002 09 13 | 704 | 0.2− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2002 09 16 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2002 09 16 | 644 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 09 16 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 09 29 | 608 | 0.2− | 0.5− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2002 09 29 | 608 | 0.5− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2002 09 29 | 608 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 10 05 | 704 | 0.2− | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2002 10 05 | 704 | 0.7− | 0.9+ | 2006 11 09 | 691 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.3− |
| 2006 09 28 | G96 | 0.5+ | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.7+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.7− | 0.5+ |
| 2006 09 28 | G96 | 0.6+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1− | | | | |
| 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.6− | | | | |

## 2002 RO$_{136}$ = 2006 SU$_{245}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.48774 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25908322 | $\omega$ | 343.24670 | | +0.93598982 | −0.34356789 | |
| $a$ | 2.4369308 | $\Omega$ | 37.13384 | | +0.33579510 | +0.80597124 | |
| $e$ | 0.1522724 | $i$ | 7.30020 | | +0.10566319 | +0.48204923 | |
| $P$ | 3.80 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 608 | 0.4− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.7+ |
| 2002 09 11 | 608 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2002 09 11 | 608 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2002 09 13 | 704 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2002 09 13 | 704 | (0.1− | 1.7+) | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 09 13 | 704 | 0.4+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2002 09 13 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2002 09 15 | 608 | 0.2− | 1.3− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 09 15 | 608 | 0.6− | 0.5− | 2006 10 21 | 703 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 09 15 | 608 | 1.1− | 1.1− | 2006 10 21 | 703 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2002 09 16 | 644 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.2+ | 1.0+ |
| 2002 09 16 | 644 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.7+ |
| 2002 09 16 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.8− |
| 2002 10 04 | 704 | 1.2+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.1− |
| 2002 10 04 | 704 | 1.1− | 0.8− | 2006 10 23 | 704 | 0.2− | 1.2− | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.7− | 0.1− |
| 2002 10 05 | 704 | 0.6− | 0.5+ | 2006 10 23 | 704 | 1.0− | 0.7+ | 2006 11 18 | 704 | 1.0+ | 0.8+ |
| 2002 10 05 | 704 | 1.1+ | 0.6+ | 2006 10 23 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2002 10 05 | 704 | 0.5+ | 0.7+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.7+ | 0.8+ | 2006 10 28 | 691 | 0.8+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 10 09 | 699 | 1.0+ | 0.9− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2002 10 09 | 699 | 0.3− | 1.0− | 2006 10 28 | 704 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.6− |
| 2002 10 09 | 699 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.5+ | 1.1+ | 2006 11 21 | 704 | 1.2− | 1.0− |
| 2002 10 09 | 699 | 0.6− | 0.1− | 2006 10 28 | 704 | 0.2+ | 1.1+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2006 09 26 | 704 | 0.5+ | 0.7− | 2006 10 28 | 704 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2006 09 26 | 704 | 0.1− | 0.3− | 2006 10 28 | 704 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.6− |
| 2006 09 26 | 704 | 0.5+ | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2006 09 26 | 704 | 0.3− | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 07 | 644 | 0.1− | 0.2+ | 2006 11 27 | 703 | 1.1− | 0.2− |
| 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 11 07 | 644 | 0.3− | 0.2+ | 2006 11 27 | 703 | (1.0− | 1.8−) |
| 2006 09 30 | 703 | 0.8− | 0.3+ | 2006 11 07 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 1.1− | 0.5− |
| 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.6− | 0.0 |

## 2002 RR$_{136}$ = 2006 SN$_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.11345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24545379 | $\omega$ | 227.32022 | | +0.99196938 | +0.00938987 | |
| $a$ | 2.5263269 | $\Omega$ | 131.72479 | | +0.02767034 | +0.95697075 | |
| $e$ | 0.2865759 | $i$ | 9.72937 | | −0.12341437 | +0.29003243 | |
| $P$ | 4.02 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 01 | 644 | 0.1− | 1.0+ | 2002 09 13 | 699 | 0.3+ | 1.0+ | 2006 08 16 | 644 | 0.1− | 0.3− |
| 2002 09 01 | 644 | 0.2− | 0.8+ | 2002 09 13 | 699 | 0.9− | 1.4+ | 2006 08 16 | 644 | 0.7+ | 0.1− |
| 2002 09 01 | 644 | 0.0 | 0.6+ | 2002 09 15 | 608 | 0.4− | 0.8− | 2006 09 20 | 703 | 0.3− | 0.4− |
| 2002 09 11 | 608 | 0.3+ | 0.6− | 2002 09 15 | 608 | 0.4− | 1.3− | 2006 09 20 | 703 | 0.6+ | 0.6− |
| 2002 09 11 | 608 | 0.7+ | 1.0− | 2002 09 15 | 608 | 0.7− | 1.0− | 2006 09 20 | 703 | 0.5+ | 0.2− |
| 2002 09 11 | 608 | 0.1+ | 0.8− | 2002 09 17 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.1+ |
| 2002 09 13 | 704 | 0.2+ | 0.1− | 2002 09 17 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.7+ |
| 2002 09 13 | 704 | 0.1+ | 0.4− | 2002 09 17 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2002 09 13 | 699 | (0.1− | 1.8+) | 2002 10 08 | 644 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 2002 09 13 | 704 | 0.8− | 0.3+ | 2002 10 08 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.9− | 0.1− |
| 2002 09 13 | 704 | 0.4+ | 0.2− | 2002 10 08 | 644 | 0.6+ | 0.2+ | | | | |
| 2002 09 13 | 699 | 0.6− | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.1+ | | | | |

## 2002 RG$_{139}$ = 2006 VJ$_{106}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.16247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26202517 | $\omega$ | 224.76391 | | +0.98937960 | −0.11268466 | |
| $a$ | 2.4186556 | $\Omega$ | 141.42797 | | +0.13470002 | +0.94816738 | |
| $e$ | 0.2408864 | $i$ | 8.46814 | | −0.05462511 | +0.29712084 | |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.3− | 0.6+ | 2002 09 14 | 608 | 1.0− | 1.0− | 2006 09 18 | 703 | 0.7− | 0.4− |
| 2002 08 12 | 704 | 0.3+ | 0.7+ | 2002 09 14 | 608 | 0.8− | 1.0− | 2006 09 18 | 703 | 0.2+ | 0.6− |
| 2002 08 12 | 704 | 0.3+ | 0.9+ | 2002 09 16 | 644 | 0.1− | 0.0 | 2006 09 18 | 703 | 1.1− | 0.6+ |
| 2002 08 12 | 704 | 0.0 | 1.0+ | 2002 09 16 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.0 |
| 2002 08 12 | 704 | 0.1+ | 0.8+ | 2002 09 16 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.1+ | 1.4− |
| 2002 08 20 | 644 | 0.1+ | 0.3+ | 2002 09 27 | 704 | (1.7− | 1.1+) | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 2002 08 20 | 644 | 0.1+ | 0.0 | 2002 09 27 | 704 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 2002 08 20 | 644 | 0.1− | 0.0 | 2002 09 27 | 704 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.9+ | 0.4− |
| 2002 09 10 | 608 | 0.6+ | 0.5+ | 2002 10 04 | 704 | 0.8− | 1.0+ | 2006 10 28 | 703 | 0.4+ | 0.8+ |
| 2002 09 10 | 608 | 0.3+ | 0.8− | 2002 10 04 | 704 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.1− | 0.5− |
| 2002 09 10 | 608 | 0.6− | 1.4− | 2002 10 04 | 704 | 0.3+ | 0.1− | 2006 10 28 | 703 | 0.0 | 0.4− |
| 2002 09 13 | 704 | 1.2− | 0.0 | 2002 10 04 | 704 | 0.2+ | 1.3+ | 2006 11 13 | 703 | 0.3− | 0.4+ |
| 2002 09 13 | 704 | (1.6− | 0.2+) | 2002 10 09 | 699 | 0.4+ | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.8− |
| 2002 09 13 | 699 | 0.8+ | 0.8+ | 2002 10 09 | 699 | 1.4+ | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.4+ |
| 2002 09 13 | 704 | 0.8− | 0.2− | 2002 10 09 | 699 | 1.1+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.4+ |
| 2002 09 13 | 699 | 0.8+ | 0.9+ | 2002 10 09 | 699 | 0.2− | 0.5+ | 2006 11 19 | 703 | 0.6+ | 0.3+ |
| 2002 09 13 | 704 | 0.9− | 0.3− | 2004 02 22 | 691 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.0 | 0.1− |
| 2002 09 13 | 699 | 0.4+ | 0.2+ | 2004 02 22 | 691 | 0.2− | 0.7+ | 2006 11 19 | 703 | 0.4+ | 0.6+ |
| 2002 09 13 | 699 | 0.4+ | 0.7+ | 2004 02 22 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2002 09 14 | 608 | 1.0− | 0.9− | 2006 09 18 | 703 | (2.2− | 0.0 ) | | | | |

## 2002 RX$_{139}$ = 2006 SY$_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.81269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24333582 | $\omega$ | 195.97325 | | +0.25957253 | +0.94411570 | |
| $a$ | 2.5409650 | $\Omega$ | 89.41217 | | −0.86231007 | +0.32129704 | |
| $e$ | 0.2656668 | $i$ | 11.72152 | | −0.43479127 | −0.07357822 | |
| $P$ | 4.05 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 644 | 0.2+ | 0.4+ | 2002 09 29 | 608 | 0.3− | 0.5− | 2006 07 28 | E12 | 0.7− | 0.5+ |
| 2002 09 10 | 644 | 0.5+ | 0.0 | 2002 09 29 | 608 | 0.3− | 0.8− | 2006 07 28 | E12 | 0.3− | 0.3+ |
| 2002 09 10 | 644 | 0.3+ | 0.2− | 2002 10 08 | 644 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 2002 09 13 | 699 | 0.2− | 0.2+ | 2002 10 08 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 699 | 0.0 | 0.5+ | 2002 10 08 | 644 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.6− | | |
| 2002 09 13 | 699 | 0.6+ | 0.6− | 2005 03 09 | 703 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.3+ | | |
| 2002 09 13 | 699 | 1.2− | 0.6+ | 2005 03 09 | 703 | 0.8+ | 0.4+ | 2006 09 28 | E12 | 0.3+ | 0.1− | | |
| 2002 09 18 | 644 | 0.0 | 0.3+ | 2005 03 09 | 703 | 0.4+ | 0.4− | 2006 09 28 | E12 | 0.0 | 0.1+ | | |
| 2002 09 18 | 644 | 0.1+ | 0.0 | 2005 03 09 | 703 | 0.6− | 0.3+ | 2006 09 28 | E12 | 0.1− | 0.2+ | | |
| 2002 09 18 | 644 | 0.3− | 0.1+ | 2006 07 28 | E12 | 0.5+ | 0.6− | 2006 09 28 | E12 | 0.7+ | 0.0 | | |
| 2002 09 29 | 608 | 0.2+ | 0.8− | 2006 07 28 | E12 | 0.2− | 0.3− | | | | | | |

**2002 RT$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.86523 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27517387 | $\omega$ | 56.14915 | | +0.90920519 | | +0.41427417 |
| $a$ | 2.3409812 | $\Omega$ | 279.34660 | | −0.39454133 | | +0.82545084 |
| $e$ | 0.1585482 | $i$ | 2.41088 | | −0.13297765 | | +0.38341600 |
| $P$ | 3.58 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.5− | 0.2+ | 2002 09 14 | 644 | 0.3− | 0.6+ | 2006 11 26 | H07 | 0.8− | 0.1− | | |
| 2002 08 28 | 644 | 0.1− | 0.3+ | 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 11 26 | H07 | 1.1− | 0.4+ | | |
| 2002 08 28 | 644 | 0.3− | 0.3+ | 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 11 28 | H07 | 0.6+ | 0.2− | | |
| 2002 09 06 | 704 | 0.4+ | 0.3− | 2002 09 30 | 704 | 0.1− | 0.4+ | 2006 11 28 | H07 | 0.5+ | 0.2− | | |
| 2002 09 06 | 704 | 0.4+ | 0.1+ | 2002 09 30 | 704 | 0.2+ | 0.6+ | 2006 11 28 | H07 | 0.5− | 0.1− | | |
| 2002 09 06 | 704 | 0.4+ | 1.2+ | 2002 09 30 | 704 | 0.0 | 0.3− | 2006 11 30 | 691 | 0.1− | 0.6− | | |
| 2002 09 06 | 704 | 0.4− | 0.5+ | 2002 09 30 | 704 | 0.8+ | 0.6+ | 2006 11 30 | 691 | 0.3+ | 0.3+ | | |
| 2002 09 10 | 608 | 0.6− | 0.3− | 2002 10 04 | 704 | 1.2+ | 0.2+ | 2006 11 30 | 691 | 0.2+ | 0.5+ | | |
| 2002 09 10 | 608 | 0.8− | 0.1+ | 2002 10 04 | 704 | 0.9+ | 1.0+ | 2006 12 01 | H07 | 0.0 | 0.2+ | | |
| 2002 09 10 | 608 | 0.5− | 0.9− | 2002 10 04 | 704 | 0.3− | 0.2+ | 2006 12 01 | H07 | 0.3− | 0.6+ | | |
| 2002 09 13 | 644 | 0.3− | 0.4+ | 2002 10 04 | 704 | 0.9+ | 0.7− | 2006 12 01 | H07 | (1.0− | 2.0+) | | |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.2− | | | | | | |
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2002 10 10 | 645 | 0.0 | 0.2− | | | | | | |

**2002 RV$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.31663 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23254781 | $\omega$ | 31.95373 | | +0.13955040 | | +0.98854639 |
| $a$ | 2.6189540 | $\Omega$ | 246.12345 | | −0.92122051 | | +0.10832699 |
| $e$ | 0.1918236 | $i$ | 3.60274 | | −0.36315074 | | +0.10507757 |
| $P$ | 4.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.1+ | 0.6+ | 2002 09 19 | 644 | 0.2− | 0.3+ | 2006 08 14 | E12 | 0.1+ | 0.2− | | |
| 2002 08 16 | 704 | 0.0 | 0.3+ | 2002 09 19 | 644 | 0.4− | 0.1+ | 2006 08 14 | E12 | 0.9+ | 2.5− | | |
| 2002 08 16 | 704 | 0.3+ | 0.3− | 2002 09 19 | 644 | 0.8− | 0.1− | 2006 08 15 | 644 | 0.1− | 0.1+ | | |
| 2002 08 28 | 644 | 0.7+ | 0.5+ | 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.3+ | 0.0 | | |
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.7− | 0.0 | | |
| 2002 09 11 | 644 | 0.3− | 0.3− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.5− | 1.0+ | | |
| 2002 09 11 | 644 | 0.3− | 0.5− | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.3+ | 2.2+ | | |
| 2002 09 11 | 644 | 0.3− | 0.2− | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 2002 09 13 | 644 | 0.3− | 0.3+ | 2006 08 14 | E12 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 2002 09 13 | 644 | 0.3− | 0.3+ | 2006 08 14 | E12 | 0.0 | 1.0− | 2006 09 28 | G96 | 0.2− | 0.2− | | |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2006 08 14 | E12 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.2− | | |

**2002 RK$_{143}$ = 2006 UE$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.10236 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25644117 | $\omega$ | 44.36036 | | +0.99813186 | | −0.00330677 |
| $a$ | 2.4536402 | $\Omega$ | 315.71971 | | −0.02477647 | | +0.89083413 |
| $e$ | 0.1711251 | $i$ | 5.01298 | | +0.05584723 | | +0.45431664 |
| $P$ | 3.84 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.1− | 0.3+ | 2002 09 17 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 2002 09 11 | 644 | 0.1− | 0.0 | 2002 10 06 | 644 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.7+ | 2.0+ | | |
| 2002 09 11 | 644 | 0.0 | 0.1+ | 2002 10 06 | 644 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.4− | | |
| 2002 09 13 | 644 | 0.1+ | 0.2− | 2002 10 06 | 644 | 0.4− | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.6− | | |
| 2002 09 13 | 644 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2002 09 13 | 644 | 0.1− | 0.5− | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2002 09 17 | 644 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2002 09 17 | 644 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.4− | | | | | | |

**2002 RW$_{143}$ = 2006 VB$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.15577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26581440 | $\omega$ | 71.92343 | | +0.76245941 | | −0.64678249 |
| $a$ | 2.3956151 | $\Omega$ | 328.36872 | | +0.57981972 | | +0.69540851 |
| $e$ | 0.1783553 | $i$ | 1.97915 | | +0.28716674 | | +0.31317634 |
| $P$ | 3.71 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 09 15 | 644 | 0.2− | 0.7− | 2006 10 23 | 691 | 0.5+ | 1.0− | | |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 09 15 | 644 | 0.3− | 0.7− | 2006 10 23 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 11 | 644 | 0.0 | 0.7+ | 2002 09 16 | 644 | 0.4− | 0.8− | 2006 10 23 | 691 | 0.1+ | 0.6− | | |
| 2002 09 11 | 644 | 0.0 | 0.5+ | 2002 09 16 | 644 | 0.2− | 0.5− | 2006 11 13 | 691 | 0.1− | 0.2+ | | |
| 2002 09 11 | 644 | 0.2− | 0.7+ | 2002 09 16 | 644 | 0.3− | 0.5− | 2006 11 13 | 691 | 0.3− | 0.1+ | | |
| 2002 09 13 | 644 | 0.3− | 1.1+ | 2002 09 17 | 644 | 0.1+ | 0.6+ | 2006 11 13 | 691 | 0.1− | 0.0 | | |
| 2002 09 13 | 644 | 0.1+ | 1.1+ | 2002 09 17 | 644 | 0.2− | 0.8+ | 2006 11 17 | 691 | 0.0 | 0.3+ | | |
| 2002 09 13 | 644 | 0.4+ | 1.0+ | 2002 09 17 | 644 | 0.0 | 0.8+ | 2006 11 17 | 691 | 0.0 | 0.3+ | | |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 25 | 691 | 0.2− | 0.1+ | | |
| 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 25 | 691 | 0.0 | 0.2+ | | |
| 2002 09 15 | 644 | 0.0 | 0.8− | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 25 | 691 | 0.0 | 0.0 | | |

**2002 RC$_{144}$ = 2006 TV$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.84255 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26194535 | $\omega$ | 31.61271 | | +0.70788171 | | +0.70445041 |
| $a$ | 2.4191470 | $\Omega$ | 283.50819 | | −0.65859033 | | +0.63192419 |
| $e$ | 0.2257002 | $i$ | 3.03659 | | −0.25526898 | | +0.32314307 |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.1− | 0.3− | 2002 10 04 | 704 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.1− | | |
| 2002 09 06 | 704 | 0.6− | 0.4+ | 2002 10 04 | 704 | (1.0+ | 1.9+) | 2006 11 01 | G96 | 0.0 | 0.3− | | |
| 2002 09 06 | 704 | 0.3+ | 0.3− | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.3− | | |
| 2002 09 06 | 704 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2002 09 11 | 644 | (1.9− | 1.4+) | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.1− | | |
| 2002 09 11 | 644 | 0.3+ | 1.0+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 16 | 408 | 0.1+ | 0.6− | | |
| 2002 09 11 | 644 | 0.4+ | 1.0+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 16 | 408 | 0.3− | 0.4− | | |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.0 | | |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.0 | | |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.1+ | | |
| 2002 09 17 | 644 | 0.2− | 0.9− | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2002 09 17 | 644 | 0.1− | 0.7− | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2002 09 17 | 644 | 0.1− | 0.8− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.2− | | |
| 2002 09 18 | 644 | 0.5+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2002 09 18 | 644 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.7+ | | |
| 2002 09 18 | 644 | 0.1+ | 0.7− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 17 | 408 | 0.4− | 0.1+ | | |
| 2002 10 04 | 704 | 0.7− | 1.3+ | 2006 11 01 | G96 | 0.3+ | 0.1− | 2006 11 17 | 408 | 1.4− | 0.2− | | |
| 2002 10 04 | 704 | 0.5+ | 0.2− | 2006 11 01 | G96 | 0.1− | 0.4− | | | | | | |

**2002 RF$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.75949 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27925691 | $\omega$ | 126.46457 | | +0.73524837 | | −0.67555932 |
| $a$ | 2.3181068 | $\Omega$ | 276.10348 | | +0.60281665 | | +0.68887720 |
| $e$ | 0.1988593 | $i$ | 3.17318 | | +0.30987404 | | +0.26280755 |
| $P$ | 3.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.2+ | 0.5− | 2002 09 17 | 644 | 0.2+ | 0.0 | 2002 10 12 | 704 | 0.2+ | 1.1+ |
| 2002 09 06 | 704 | 0.8+ | 0.3+ | 2002 09 18 | 644 | 0.1− | 0.8+ | 2002 10 12 | 704 | 0.7+ | 0.4+ |
| 2002 09 06 | 704 | 1.0+ | 1.1− | 2002 09 18 | 644 | 0.7+ | 0.8+ | 2004 03 28 | 691 | 0.3− | 0.1+ |
| 2002 09 11 | 644 | 0.2+ | 0.1+ | 2002 09 18 | 644 | 0.1− | 1.4+ | 2004 03 28 | 691 | 0.2+ | 0.1+ |
| 2002 09 11 | 644 | 0.0 | 0.0 | 2002 10 04 | 704 | 0.3+ | 0.6+ | 2004 03 28 | 691 | 0.1+ | 0.1− |
| 2002 09 11 | 644 | 0.4+ | 0.1+ | 2002 10 04 | 704 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.2+ | 0.1− | 2002 10 04 | 704 | 0.5+ | 0.1− | 2006 10 22 | G96 | 0.5+ | 0.2+ |
| 2002 09 13 | 644 | 0.2+ | 0.1+ | 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2002 09 13 | 644 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.5+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2002 09 15 | 608 | 1.5− | 0.5− | 2002 10 07 | 699 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.6− | 0.5− |
| 2002 09 15 | 608 | 1.0− | 0.9− | 2002 10 07 | 699 | 0.7− | 0.4− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 09 15 | 608 | 0.9− | 1.0− | 2002 10 07 | 699 | 0.6− | 0.8− | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2002 09 17 | 644 | 0.0 | 0.3− | 2002 10 07 | 699 | 0.9− | 0.9− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 09 17 | 644 | 0.1+ | 0.1+ | 2002 10 12 | 704 | 0.2− | 0.1+ | | | | |

**2002 RW$_{144}$ = 2006 TD$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.66657 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25757113 | $\omega$ | 308.35551 | | +0.95429180 | +0.29743706 | |
| $a$ | 2.4464589 | $\Omega$ | 34.36909 | | −0.25547123 | +0.86264926 | |
| $e$ | 0.2122722 | $i$ | 2.97489 | | −0.15511806 | +0.40910568 | |
| $P$ | 3.83 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.3+ | 0.3+ | 2002 10 01 | 699 | (1.8+ | 0.3−) | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2002 09 11 | 644 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2002 09 11 | 644 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | (0.3+ | 1.7+) |
| 2002 09 11 | 608 | (0.1− | 1.8−) | 2006 10 12 | 691 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.7− |
| 2002 09 11 | 608 | 0.3− | 0.7− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.8+ | 1.1− |
| 2002 09 11 | 608 | 1.0− | 0.9− | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.5− | 0.0 |
| 2002 09 13 | 644 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.7− |
| 2002 09 13 | 644 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.3+ |
| 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.3+ |
| 2002 10 01 | 699 | 0.3− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.2+ |
| 2002 10 01 | 699 | 0.6+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2002 10 01 | 699 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 | | | | |

**2002 RY$_{145}$ = 2006 TS$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.02152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26187123 | $\omega$ | 189.31376 | | +0.98636518 | +0.16452555 | |
| $a$ | 2.4196034 | $\Omega$ | 161.21522 | | −0.15020443 | +0.90964649 | |
| $e$ | 0.1924687 | $i$ | 0.69086 | | −0.06724849 | +0.38141135 | |
| $P$ | 3.76 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 291 | 0.1− | 0.3− | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 08 30 | 291 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2002 08 30 | 291 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2002 09 11 | 644 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2002 09 11 | 644 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 09 11 | 644 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2002 09 13 | 644 | 0.0 | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2002 09 13 | 644 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.2− | 1.3+ |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | (1.4+ | 1.9+) |
| 2002 09 14 | 644 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | (0.7+ | 1.6+) |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | | | |
| 2006 10 12 | 691 | 0.4+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1− | | | | |

**2002 RJ$_{146}$ = 2006 TF$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.65515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26026958 | $\omega$ | 331.50795 | | +0.80616993 | +0.59166149 | |
| $a$ | 2.4295198 | $\Omega$ | 352.21089 | | −0.53536320 | +0.72568378 | |
| $e$ | 0.2075001 | $i$ | 2.18646 | | −0.25194502 | +0.35116910 | |
| $P$ | 3.79 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 10 30 | 198 | 0.2+ | 0.2− |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.6+ | 0.4+ | 2006 10 30 | 198 | 0.2+ | 0.2− |
| 2002 09 11 | 644 | 0.7− | 1.1+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 30 | A44 | 0.1− | 0.0 |
| 2002 09 11 | 644 | 0.2− | 1.2+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 01 | 198 | 0.9+ | 0.1+ |
| 2002 09 11 | 644 | 0.5− | 1.1+ | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 01 | 198 | 0.9+ | 0.2+ |
| 2002 09 13 | 644 | 0.4− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 01 | 198 | 0.9+ | 0.1+ |
| 2002 09 13 | 644 | 0.9− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.2− | 2006 11 01 | 198 | 0.9+ | 0.1+ |
| 2002 09 13 | 644 | 0.7− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 01 | 198 | 0.8+ | 0.3+ |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 15 | 198 | 0.1− | 0.2− |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 10 30 | A44 | 0.2− | 0.3+ | 2006 11 15 | 198 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.4+ | 0.1− | 2006 10 30 | 198 | 0.0 | 0.1− | 2006 11 15 | 198 | 0.1− | 0.1− |
| 2006 09 28 | G96 | 0.4− | 0.8− | 2006 10 30 | 198 | 0.1+ | 0.1− | 2006 11 15 | 198 | 0.1− | 0.2− |
| 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 10 30 | 198 | 0.0 | 0.1− | 2006 11 15 | 198 | 0.1− | 0.2− |
| 2006 09 28 | G96 | 0.3− | 0.1− | 2006 10 30 | 198 | 0.1+ | 0.3− | 2006 11 15 | 198 | 0.1− | 0.1− |
| 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 30 | A44 | 0.2+ | 0.0 | | | | |

**2002 RX$_{147}$ = 2001 FT$_{149}$ = 2006 SG$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.17914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26392139 | $\omega$ | 152.03057 | | +0.93424531 | +0.35661144 | |
| $a$ | 2.4070567 | $\Omega$ | 187.08026 | | −0.33260265 | +0.86746734 | |
| $e$ | 0.0988959 | $i$ | 1.73878 | | −0.12869026 | +0.34688426 | |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.2+ | 0.8+ | 2002 10 03 | 704 | 0.6− | 1.1+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2001 03 24 | 691 | 0.4+ | 0.7+ | 2005 05 20 | G96 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 03 24 | 691 | 0.3+ | 0.8+ | 2005 05 20 | G96 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.2+ |
| 2001 03 27 | 807 | 0.3− | 0.4+ | 2005 05 20 | G96 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2001 03 27 | 807 | 0.0 | 0.3+ | 2005 05 20 | G96 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2001 03 27 | 807 | 0.1− | 0.6+ | 2006 07 21 | G96 | 1.0− | 1.1− | 2006 10 23 | 691 | 0.7− | 0.0 |
| 2001 03 27 | 807 | 0.3+ | 0.5+ | 2006 07 21 | G96 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.4− | 0.2− |
| 2001 03 27 | 807 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.4− | 0.2− |
| 2001 04 24 | 291 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2001 04 24 | 291 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.5+ | 1.1− |
| 2001 04 24 | 291 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2002 09 11 | 644 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2002 09 11 | 644 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.5− | 0.8− |
| 2002 09 11 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2002 09 13 | 644 | (0.4+ | 1.7+) | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 09 13 | 644 | (0.3+ | 1.8+) | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 09 13 | 644 | (0.3+ | 2.0+) | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 09 15 | 608 | 0.4− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (4.5+ | 5.0+) |
| 2002 09 15 | 608 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 2.4+ | 1.4+ |
| 2002 09 15 | 608 | 0.9− | 0.4− | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 1.1+ | 1.3+ |
| 2002 10 03 | 704 | 0.2+ | 1.1+ | 2006 10 15 | 691 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 1.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 1.0+ | 2006 10 15 | 691 | 0.1+ | 0.5+ | | | | |
| 2002 10 03 | 704 | 1.0+ | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.3+ | | | | |

**2002 RG$_{148}$ = 2006 VJ$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.19041 | | | (2000.0) | | |
| $n$ | 0.26770209 | $\omega$ | 22.77271 | | +0.89977497 | −0.43634832 |
| $a$ | 2.3843401 | $\Omega$ | 3.10121 | | +0.39361502 | +0.80939101 |
| $e$ | 0.2008733 | $i$ | 2.40283 | | +0.18834070 | +0.39304750 |
| $P$ | 3.68 | $H$ | 18.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 06 | 691 | 0.1− | 0.5− | 2002 10 01 | 699 | 0.1+ | 1.2− | 2002 10 11 | 704 | 1.0− | 0.1− |
| 1991 10 06 | 691 | 0.1+ | 0.3− | 2002 10 01 | 699 | 1.3− | 0.3− | 2002 10 11 | 704 | 0.1− | 0.2+ |
| 1991 10 06 | 691 | 0.4+ | 0.1− | 2002 10 03 | 704 | 0.6− | 0.3− | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2002 09 11 | 644 | 0.1− | 0.4+ | 2002 10 03 | 704 | 0.0 | 0.7+ | 2006 11 13 | 691 | 0.4− | 0.1− |
| 2002 09 11 | 644 | 0.2− | 0.5+ | 2002 10 03 | 704 | 1.2+ | 1.0+ | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 2002 09 11 | 644 | 0.2− | 0.3+ | 2002 10 03 | 704 | 1.4− | 0.7− | 2006 11 17 | 691 | 0.2+ | 0.3− |
| 2002 09 13 | 644 | 0.7− | 0.3+ | 2002 10 08 | 291 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.3+ | 0.2− |
| 2002 09 13 | 644 | 0.6− | 0.5+ | 2002 10 08 | 291 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.5+ | 2002 10 08 | 291 | 0.6+ | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2002 10 01 | 699 | (1.1− | 1.6+) | 2002 10 11 | 704 | 0.8− | 1.3+ | 2006 11 25 | 691 | 0.2− | 0.2+ |
| 2002 10 01 | 699 | 0.0 | 0.2− | 2002 10 11 | 704 | 0.4+ | 0.9+ | 2006 11 25 | 691 | 0.0 | 0.1+ |

**2002 RM$_{148}$ = 2006 UJ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.10453 | | | (2000.0) | | |
| $n$ | 0.25670175 | $\omega$ | 203.28968 | | +0.92409557 | −0.38215951 |
| $a$ | 2.4519795 | $\Omega$ | 179.17488 | | +0.36260711 | +0.87579849 |
| $e$ | 0.2133890 | $i$ | 4.86272 | | +0.12067920 | +0.29484081 |
| $P$ | 3.84 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | (1.0+ | 2.8−) | 2002 10 03 | 704 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2002 09 07 | 704 | (1.2+ | 3.1−) | 2002 10 03 | 704 | 0.4+ | 0.9− | 2006 10 21 | G96 | 0.5− | 0.3− |
| 2002 09 07 | 704 | (0.0 | 1.9−) | 2002 10 03 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 09 11 | 644 | 0.2− | 0.1+ | 2002 10 03 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 09 11 | 644 | 0.2− | 0.2+ | 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 09 11 | 644 | 0.1− | 0.4+ | 2002 10 03 | 704 | 0.6− | 1.3+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2002 09 13 | 644 | 0.6+ | 0.3− | 2002 10 03 | 704 | 0.2+ | 0.8+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2002 09 13 | 644 | 0.2+ | 0.3− | 2002 10 04 | 704 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.1+ | 0.4− | 2002 10 04 | 704 | (2.7+ | 0.0 ) | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.5− | 0.6− | 2002 10 04 | 704 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 09 14 | 644 | 0.1− | 0.1− | 2002 10 04 | 704 | 0.0 | 1.0− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 09 14 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 10 01 | 699 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.4+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2002 10 01 | 699 | 0.5− | 1.1+ | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2002 10 01 | 699 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.4− | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2002 10 01 | 699 | 1.0+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2002 10 03 | 704 | (1.7− | 0.1+) | 2006 10 21 | G96 | 0.2+ | 0.1− | | | | |

**2002 RM$_{152}$ = 1997 JX$_1$ = 2006 QR$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.47581 | | | (2000.0) | | |
| $n$ | 0.24147274 | $\omega$ | 45.00707 | | −0.27976874 | +0.95489757 |
| $a$ | 2.5540181 | $\Omega$ | 209.17911 | | −0.92824448 | −0.29550080 |
| $e$ | 0.1369818 | $i$ | 11.77585 | | −0.24513596 | +0.02915316 |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 12 | 691 | 0.6− | 0.1+ | 2002 09 12 | 644 | 0.2− | 0.1− | 2005 06 01 | G92 | 0.3+ | 0.3− |
| 1993 06 12 | 691 | 0.5− | 0.1− | 2002 09 12 | 644 | 0.3− | 0.3+ | 2006 08 27 | 699 | 0.0 | 0.8+ |
| 1993 06 12 | 691 | 0.6− | 0.0 | 2002 09 13 | 644 | 0.0 | 1.1+ | 2006 08 27 | 699 | (0.3+ | 1.7+) |
| 1997 05 01 | 910 | 1.2+ | 1.2− | 2002 09 13 | 644 | 0.2+ | 0.9+ | 2006 08 27 | 699 | 0.1+ | 0.5− |
| 1997 05 01 | 910 | 1.5+ | 1.0− | 2002 09 13 | 644 | 0.1+ | 0.6+ | 2006 08 27 | 699 | 0.3− | 0.8+ |
| 1997 05 01 | 910 | 0.3+ | 1.4− | 2002 10 04 | 704 | 0.6− | 1.0+ | 2006 08 31 | 704 | 1.0− | 0.8+ |
| 1997 05 02 | 910 | 1.5+ | 1.3− | 2002 10 04 | 704 | (1.0+ | 1.7+) | 2006 08 31 | 704 | 0.6− | 0.3+ |
| 1997 05 02 | 910 | 1.3+ | 1.0− | 2002 10 04 | 704 | 0.1− | 1.2+ | 2006 08 31 | 704 | 1.3− | 0.1− |
| 1997 05 03 | 910 | 1.5+ | 1.1− | 2005 03 17 | 704 | 0.3− | 0.1+ | 2006 08 31 | 704 | 0.4− | 0.3+ |
| 1998 09 29 | 704 | 0.7− | 1.0+ | 2005 03 17 | 704 | (1.6+ | 0.4−) | 2006 09 14 | 703 | 0.0 | 0.4− |
| 1998 09 29 | 704 | 0.3+ | 0.2+ | 2005 03 17 | 704 | 0.1− | 1.2+ | 2006 09 14 | 703 | 0.3− | 0.2− |
| 1998 09 29 | 704 | 0.3+ | 0.5− | 2005 03 17 | 704 | 0.2+ | 0.5− | 2006 09 14 | 703 | 0.5+ | 0.6− |
| 1998 09 29 | 704 | (6.5− | 1.1+) | 2005 03 17 | 704 | 1.0− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2001 03 24 | 699 | 0.5+ | 0.6+ | 2005 04 14 | 703 | 0.7− | 0.1+ | 2006 09 15 | 704 | 0.4− | 0.6− |
| 2001 03 24 | 699 | 0.0 | 0.9+ | 2005 04 14 | 703 | 1.0− | 0.1+ | 2006 09 15 | 704 | 1.2+ | 0.2+ |
| 2001 03 24 | 699 | 0.5− | 0.7+ | 2005 04 14 | 703 | 0.4− | 0.2− | 2006 09 15 | 704 | (2.3+ | 0.3+) |
| 2001 03 24 | 699 | 0.9− | 1.4+ | 2005 04 14 | 703 | (1.6− | 0.0 ) | 2006 09 20 | 699 | 0.1− | 0.4− |
| 2001 04 18 | 704 | 0.1− | 0.6+ | 2005 05 08 | 703 | (2.9− | 0.9+) | 2006 09 20 | 699 | 0.5+ | 0.6− |
| 2001 04 18 | 704 | 0.7+ | 0.6− | 2005 05 08 | 703 | 0.8− | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.9+ |
| 2001 04 18 | 704 | (0.3− | 2.0+) | 2005 05 08 | 703 | 0.0 | 1.3+ | 2006 09 20 | 699 | 0.2+ | 0.2− |
| 2001 04 18 | 704 | (1.1+ | 2.2+) | 2005 05 08 | 703 | 0.3+ | 0.6+ | 2006 09 20 | 699 | 0.7+ | 0.7− |
| 2001 04 18 | 704 | 0.3+ | 1.2+ | 2005 05 12 | G96 | 0.3− | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.5+ |
| 2001 05 18 | 699 | 0.6+ | 0.2− | 2005 05 12 | G96 | 0.5− | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.1− |
| 2001 05 18 | 699 | 1.1+ | 0.9+ | 2005 05 12 | G96 | 0.3− | 0.2+ | 2006 09 20 | 699 | 1.1+ | 0.2+ |
| 2001 05 18 | 699 | (3.5+ | 1.2+) | 2005 05 12 | G96 | 0.2− | 0.2+ | 2006 09 30 | 699 | 0.2− | 1.1− |
| 2001 05 18 | 699 | (0.7+ | 2.1+) | 2005 05 23 | 644 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.2+ | 0.3− |
| 2001 05 30 | 644 | 1.3+ | 0.3+ | 2005 05 23 | 644 | 0.3− | 0.0 | 2006 09 30 | 699 | 0.9+ | 0.5+ |
| 2001 05 30 | 644 | 0.6+ | 0.6+ | 2005 05 23 | 644 | 0.2− | 0.1+ | 2006 09 30 | 699 | (1.7− | 0.1+) |
| 2001 05 30 | 644 | 0.6+ | 0.8+ | 2005 06 01 | G92 | 0.9+ | 0.6+ | | | | |
| 2002 09 12 | 644 | 0.3− | 0.1− | 2005 06 01 | G92 | 0.0 | 0.3+ | | | | |

**2002 RS$_{153}$ = 2006 PM$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.64605 | | | (2000.0) | | |
| $n$ | 0.23866750 | $\omega$ | 315.85313 | | +0.73317464 | +0.68001330 |
| $a$ | 2.5739920 | $\Omega$ | 1.34689 | | −0.53014379 | +0.57713444 |
| $e$ | 0.2208634 | $i$ | 14.96778 | | −0.42591373 | +0.45221428 |
| $P$ | 4.13 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 291 | 0.3+ | 1.3+ | 2002 10 16 | 644 | 0.1− | 0.3− | 2006 08 30 | 699 | 1.2+ | 0.1− |
| 2002 09 13 | 291 | 0.1− | 0.3− | 2002 10 16 | 644 | 0.0 | 0.2− | 2006 09 12 | 704 | 0.7+ | 0.3− |
| 2002 09 13 | 291 | 0.1+ | 0.2− | 2002 10 16 | 644 | 0.3+ | 0.4− | 2006 09 12 | 704 | 0.9− | 0.3+ |
| 2002 09 14 | 644 | 0.4− | 0.2− | 2005 03 09 | G96 | 0.4− | 0.0 | 2006 09 12 | 704 | 1.1− | 0.4+ |
| 2002 09 14 | 644 | 0.5− | 0.3− | 2005 03 09 | G96 | 0.3+ | 0.3+ | 2006 09 12 | 704 | 0.5+ | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2005 03 09 | G96 | 0.1+ | 0.0 | 2006 09 14 | 703 | 1.2+ | 0.5+ |
| 2002 10 04 | 644 | 0.0 | 0.0 | 2005 03 09 | G96 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.6+ |
| 2002 10 04 | 704 | 0.2− | 0.3− | 2006 08 15 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 1.4+ | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2006 08 15 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 1.2− | 0.8− |
| 2002 10 04 | 644 | 0.3− | 0.2− | 2006 08 15 | 644 | 0.3− | 0.3− | 2006 09 25 | 699 | 1.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2006 08 16 | 644 | 1.0− | 0.4− | 2006 09 25 | 699 | 1.3− | 0.5+ |
| 2002 10 04 | 704 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.6− | 1.0+ |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2006 08 16 | 644 | 0.7− | 0.7− | 2006 09 25 | 699 | 0.3+ | 0.9+ |
| 2002 10 04 | 644 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.1+ | 0.4+ |
| 2002 10 07 | 699 | (0.2+ | 2.2+) | 2006 08 16 | 644 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.4+ | 1.0− |
| 2002 10 07 | 699 | 0.0 | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 30 | 703 | 1.2− | 0.4− |
| 2002 10 07 | 699 | 0.7− | 0.1− | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.7− |
| 2002 10 07 | 699 | 0.2− | 0.7− | 2006 08 23 | 644 | 0.0 | 0.4− | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | (1.7+ | 1.2−) | 2006 08 30 | 699 | 0.6+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.3− |
| 2002 10 12 | 704 | 1.2+ | 0.4− | 2006 08 30 | 699 | 0.5+ | 0.4+ | | | | |
| 2002 10 12 | 704 | 0.4− | 0.4− | 2006 08 30 | 699 | 1.1+ | 0.7+ | | | | |

**2002 RZ$_{153}$ = 2006 RO$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.85988 | | | (2000.0) | | |
| $n$ | 0.24277006 | $\omega$ | 77.83233 | | +0.80708302 | −0.59036070 |
| $a$ | 2.5449112 | $\Omega$ | 318.34926 | | +0.53597405 | +0.73932579 |
| $e$ | 0.2443760 | $i$ | 0.82354 | | +0.24768693 | +0.32383887 |
| $P$ | 4.06 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.4+ | 0.6+ | 2002 10 07 | 704 | 0.3− | 1.3+ | 2006 09 16 | 699 | 0.9+ | 0.1− |
| 2000 04 10 | 695 | 0.1+ | 0.4+ | 2002 10 07 | 704 | 0.9+ | 1.1+ | 2006 09 16 | 699 | 0.5− | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 291 | 0.1− | 0.2+ | 2002 10 07 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 699 | 0.7+ | 0.6+ |
| 2002 09 13 | 291 | 0.3− | 0.1+ | 2002 10 07 | 704 | 1.4+ | 0.3− | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2002 09 13 | 291 | 0.5+ | 0.0 | 2002 10 11 | 704 | 0.9− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.0 |
| 2002 09 14 | 291 | 0.4− | 0.0 | 2002 10 11 | 704 | 0.7− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2002 09 14 | 291 | 0.4− | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2002 09 14 | 291 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.8− | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.6− |
| 2002 10 03 | 704 | 0.6+ | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.6+ | 0.4− |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.7+ | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.4+ | 0.6− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.7− |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 1.1− |
| 2002 10 04 | 644 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1− | | | | |
| 2002 10 04 | 644 | 0.0 | 0.6+ | 2006 09 16 | 699 | 0.3+ | 0.4− | | | | |

### 2002 $RD_{156}$ = 2006 $UJ_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.78750 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25971469 | $\omega$ | 14.91174 | | +0.63613184 | | +0.77123906 |
| $a$ | 2.4329791 | $\Omega$ | 294.59777 | | −0.71046945 | | +0.57388938 |
| $e$ | 0.2065170 | $i$ | 1.44618 | | −0.30094759 | | +0.27539297 |
| $P$ | 3.79 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.3+ | 0.2− | 2002 09 17 | 644 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2− |
| 2002 09 11 | 644 | 0.1− | 0.4− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.5− | 0.4− |
| 2002 09 11 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.4− |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.4− |
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.5+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 09 17 | 644 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 2002 09 17 | 644 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2− |

### 2002 $RK_{156}$ = 2006 $UJ_{222}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.23993 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25795186 | $\omega$ | 339.80074 | | +0.50618520 | | +0.86116868 |
| $a$ | 2.4440511 | $\Omega$ | 320.57018 | | −0.78085679 | | +0.43473903 |
| $e$ | 0.1316010 | $i$ | 4.20126 | | −0.36611367 | | +0.26342071 |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.0 | 0.2− | 2002 09 17 | 644 | 0.1− | 0.5− | 2006 10 03 | G96 | 0.2+ | 0.4− |
| 2002 09 11 | 644 | 0.3− | 0.0 | 2006 09 30 | 703 | (2.2+ | 0.9+) | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2002 09 11 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | (1.5+ | 2.1+) | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2002 09 14 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 703 | (0.6− | 1.8+) | 2006 10 17 | 703 | (1.8− | 0.0 ) |
| 2002 09 14 | 644 | 0.4+ | 0.6+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 09 17 | 644 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2002 09 17 | 644 | 0.5− | 0.4− | 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.4− | 0.2+ |

### 2002 $RR_{157}$ = 2006 $UT_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.35792 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26032311 | $\omega$ | 176.01990 | | +0.94213122 | | −0.33422298 |
| $a$ | 2.4291867 | $\Omega$ | 203.55733 | | +0.30574603 | | +0.88860783 |
| $e$ | 0.2041306 | $i$ | 3.75135 | | +0.13750682 | | +0.31411961 |
| $P$ | 3.79 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.2− | 0.6+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2002 09 11 | 644 | 0.2+ | 0.3+ | 2002 10 05 | 645 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2002 09 11 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2002 09 14 | 644 | 0.0 | 1.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 09 14 | 644 | (0.2+ | 2.0+) | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.3+ | 1.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 09 17 | 644 | 0.0 | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2002 09 17 | 644 | 0.2− | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.1+ | | | | |
| 2002 09 17 | 644 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1− | | | | |

### 2002 $RC_{160}$ = 2006 $RS_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.14723 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25440574 | $\omega$ | 20.49223 | | +0.96458729 | | −0.26373911 |
| $a$ | 2.4667101 | $\Omega$ | 354.79581 | | +0.23611579 | | +0.86949999 |
| $e$ | 0.1946760 | $i$ | 2.28193 | | +0.11756145 | | +0.41762597 |
| $P$ | 3.87 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.1− | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2002 08 28 | 644 | 0.5− | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 08 28 | 644 | 0.6− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2002 09 07 | 704 | 0.7+ | 1.2+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 09 07 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 644 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 09 07 | 704 | 0.0 | 1.1+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2002 09 07 | 704 | 1.3+ | 1.1+ | 2006 09 16 | 644 | 0.1− | 0.4+ | 2006 10 15 | 106 | 0.5+ | 0.6+ |
| 2002 09 12 | 644 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.3− | 2006 10 15 | 106 | 1.0− | 1.1+ |
| 2002 09 12 | 644 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.8− | 0.0 | 2006 10 15 | 106 | 1.3+ | 0.9+ |
| 2002 09 12 | 644 | (0.6− | 1.6+) | 2006 09 18 | 699 | (1.6− | 0.9−) | 2006 10 15 | 106 | (0.4+ | 1.7+) |
| 2002 09 14 | 644 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 09 14 | 644 | 0.8− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2002 09 14 | 608 | 0.6− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2002 09 14 | 608 | 0.3− | 1.1− | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 09 14 | 608 | 0.6− | 0.7− | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 09 15 | 644 | 0.4− | 0.2+ | 2006 09 27 | 699 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 09 16 | 644 | 0.3+ | 0.4+ | 2006 09 27 | 699 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2002 09 16 | 644 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 09 16 | 644 | 0.1− | 0.4+ | 2006 09 29 | 704 | 1.3+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 02 12 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.4− |
| 2004 02 12 | 691 | 0.1+ | 0.7+ | 2006 09 29 | 704 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.5− |
| 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.6− |
| 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.3− | 0.1− | | | | |

### 2002 $RD_{160}$ = 2006 $US_{72}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.41762 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27044915 | $\omega$ | 257.23672 | | −0.56183238 | | +0.82631251 |
| $a$ | 2.3681669 | $\Omega$ | 338.43751 | | −0.71131691 | | −0.50685977 |
| $e$ | 0.0806969 | $i$ | 6.15359 | | −0.42234184 | | −0.24556223 |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.3− | 0.3− | 2002 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2002 08 30 | 644 | 0.2− | 0.4+ | 2002 09 14 | 644 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.1+ | 0.1− | 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2002 09 12 | 644 | 0.1+ | 0.5− | 2002 09 16 | 644 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.0 |
| 2002 09 12 | 644 | 0.2+ | 0.1− | 2002 09 16 | 644 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.4− | 0.3− |
| 2002 09 12 | 644 | 0.2+ | 0.0 | 2002 09 16 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.0 |

**2002 RT$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.39432 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21641016 | $\omega$ | 234.20891 | −0.53410116 | | +0.84537361 | |
| $a$ | 2.7475838 | $\Omega$ | 3.54360 | −0.72168141 | | −0.45041236 | |
| $e$ | 0.1464475 | $i$ | 8.28955 | −0.44035427 | | −0.28717967 | |
| $P$ | 4.55 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 807 | 0.2− | 0.5+ | 2002 09 15 | 644 | 0.2− | 1.0+ | 2005 03 04 | 704 | 0.2− | 1.2+ |
| 2002 08 11 | 807 | 0.3− | 0.6+ | 2003 11 19 | 704 | 0.1+ | 0.1− | 2005 03 04 | 704 | 0.5+ | 0.3+ |
| 2002 09 12 | 644 | 0.1− | 0.8+ | 2003 11 19 | 704 | 0.6+ | 0.0 | 2005 03 09 | 704 | 0.1+ | 0.3+ |
| 2002 09 12 | 644 | 0.0 | 0.7+ | 2003 11 19 | 704 | 0.1+ | 0.5− | 2005 03 09 | 704 | 0.0 | 0.8+ |
| 2002 09 12 | 644 | 0.1+ | 0.9+ | 2003 11 19 | 704 | 0.0 | 1.3− | 2005 03 09 | 704 | 0.5− | 1.8− |
| 2002 09 14 | 608 | 0.8− | 0.2− | 2005 02 14 | 704 | 0.5− | 0.2+ | 2005 03 09 | 704 | 1.7+ | 1.3+ |
| 2002 09 14 | 608 | 1.2− | 0.1− | 2005 02 14 | 704 | 0.0 | 0.7− | 2005 03 12 | 704 | 1.0+ | 0.4+ |
| 2002 09 14 | 608 | 1.0− | 0.3+ | 2005 02 14 | 704 | 0.5− | 0.2+ | 2005 03 12 | 704 | 0.2− | 0.2+ |
| 2002 09 15 | 644 | 0.0 | 0.7+ | 2005 03 04 | 704 | 1.5+ | 1.8+ | 2005 03 12 | 704 | 0.3+ | 0.2+ |
| 2002 09 15 | 644 | 0.2− | 1.1+ | 2005 03 04 | 704 | 0.3+ | 0.9+ | 2005 03 12 | 704 | 0.5− | 1.1+ |

**2002 RW$_{163}$ = 2006 TC$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.16513 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25928686 | $\omega$ | 28.76363 | +0.94413436 | | −0.32938220 | |
| $a$ | 2.4356546 | $\Omega$ | 350.44877 | +0.28847175 | | +0.84188987 | |
| $e$ | 0.2322865 | $i$ | 3.74845 | +0.15935606 | | +0.42746792 | |
| $P$ | 3.80 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.1− | 0.9+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.0 |
| 2002 09 07 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.8+ | 0.5− |
| 2002 09 07 | 704 | 0.5− | 0.3− | 2006 10 17 | 691 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2002 09 07 | 704 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.6+ |
| 2002 09 07 | 704 | 0.0 | 1.6+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | (0.7+ | 1.6+) |
| 2002 09 12 | 644 | 0.2− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | (4.8− | 3.2−) |
| 2002 09 12 | 644 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.5− |
| 2002 09 12 | 644 | 0.4− | 0.3− | 2006 10 27 | 703 | 0.3+ | 1.0+ | 2006 11 18 | G96 | 0.6+ | 0.6− |
| 2002 09 14 | 644 | 0.3− | 0.7+ | 2006 10 27 | 703 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.7+ | 0.5− |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2002 09 14 | 644 | 0.0 | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.5− | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2004 02 18 | 291 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2004 02 18 | 291 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2004 02 18 | 291 | 0.4+ | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.7− | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.7+ | 0.5− |

**2002 RP$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.72667 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17088468 | $\omega$ | 286.90093 | +0.22227102 | | +0.97496212 | |
| $a$ | 3.2161327 | $\Omega$ | 355.92390 | −0.85503425 | | +0.19163475 | |
| $e$ | 0.1230435 | $i$ | 5.38213 | −0.46852110 | | +0.11280507 | |
| $P$ | 5.77 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.8− | 0.6+ | 2005 01 17 | 691 | 0.1− | 0.0 | 2006 04 07 | G96 | 0.2− | 0.1+ |
| 2002 09 12 | 644 | 0.6− | 0.8+ | 2005 01 17 | 691 | 0.1+ | 0.0 | 2006 04 19 | 691 | 0.3+ | 1.0− |
| 2002 09 12 | 644 | 0.5− | 0.9+ | 2005 01 17 | 691 | 0.1+ | 0.1+ | 2006 04 19 | 691 | 0.2+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.9+ | 2006 03 04 | 691 | 0.2+ | 0.2+ | 2006 04 19 | 691 | 0.5+ | 0.2− |
| 2002 09 14 | 644 | 0.0 | 0.9+ | 2006 03 04 | 691 | 0.2+ | 1.1+ | 2006 04 26 | 691 | 0.8− | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.7+ | 2006 03 04 | 691 | 0.2+ | 0.6+ | 2006 04 26 | 691 | 0.2− | 0.1+ |
| 2002 09 15 | 644 | 0.3− | 0.2− | 2006 04 07 | G96 | 0.9− | 0.1− | 2006 04 26 | 691 | 0.1+ | 0.1+ |
| 2002 09 15 | 644 | 0.0 | 0.1− | 2006 04 07 | G96 | 0.3+ | 0.1− | | | | |
| 2002 09 15 | 644 | 0.0 | 0.1− | 2006 04 07 | G96 | 0.2− | 0.3− | | | | |

**2002 RW$_{167}$ = 2005 EV$_{113}$ = 2006 PO$_5$**

Id. Minor Planet Center (*MPO* 103391; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.31243 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23309695 | $\omega$ | 284.99254 | +0.28577379 | | +0.95829631 | |
| $a$ | 2.6148392 | $\Omega$ | 1.61412 | −0.86156380 | | +0.25748950 | |
| $e$ | 0.2045394 | $i$ | 2.50626 | −0.41957258 | | +0.12396504 | |
| $P$ | 4.23 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 12 | 691 | 0.6− | 0.3− | 2002 09 16 | 291 | 0.1− | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.0 |
| 1996 01 12 | 691 | 0.7− | 0.4− | 2005 03 04 | G96 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.0 |
| 1996 01 12 | 691 | 0.6− | 0.1− | 2005 03 04 | G96 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.0 | 0.2− |
| 2001 03 26 | 691 | 0.6+ | 0.3+ | 2005 03 04 | G96 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.2− |
| 2001 03 26 | 691 | 0.4+ | 0.1+ | 2005 03 04 | G96 | 0.5− | 0.6+ | 2006 08 17 | 644 | 0.1− | 0.0 |
| 2001 03 26 | 691 | 0.3+ | 0.5+ | 2005 04 04 | G96 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.2− | 0.2− |
| 2002 09 13 | 644 | 0.4− | 0.5+ | 2005 04 04 | G96 | 0.3+ | 0.5+ | 2006 08 20 | 644 | 0.2− | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.1+ | 2005 04 04 | G96 | 0.2+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.1− |
| 2002 09 13 | 644 | 0.1+ | 0.1+ | 2005 04 04 | G96 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2005 05 10 | G96 | 0.6+ | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.4− |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.0 | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2005 05 10 | G96 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.8+ | 0.5− |
| 2002 09 15 | 644 | 0.2− | 1.0+ | 2005 05 10 | G96 | 1.4+ | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.1+ |
| 2002 09 15 | 644 | 0.1+ | 1.1+ | 2006 08 12 | 644 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.9+ | 0.0 |
| 2002 09 15 | 644 | 0.2− | 1.1+ | 2006 08 12 | 644 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.7+ | 0.2+ |
| 2002 09 16 | 291 | 0.3+ | 0.3+ | 2006 08 12 | 644 | 0.3− | 0.1− | | | | |
| 2002 09 16 | 291 | 0.3+ | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.0 | | | | |

**2002 RN$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.96386 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26418030 | $\omega$ | 302.05188 | +0.38785154 | | +0.92161770 | |
| $a$ | 2.4054838 | $\Omega$ | 350.73752 | −0.81398666 | | +0.33542623 | |
| $e$ | 0.0961498 | $i$ | 4.93841 | −0.43243138 | | +0.19521797 | |
| $P$ | 3.73 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.3− | 0.5− | 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 2002 09 13 | 644 | 0.5− | 0.7− | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2002 09 13 | 644 | 0.4− | 0.5− | 2002 10 10 | 645 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2002 09 14 | 644 | 0.3+ | 0.7+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.4− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.7− |
| 2002 10 03 | 704 | 0.8+ | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.5− | 2006 11 25 | G96 | 0.1− | 0.5+ |
| 2002 10 03 | 704 | 0.6− | 1.4+ | 2006 10 21 | 691 | 0.0 | 0.4+ | | | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− | | | | |

**2002 RV$_{170}$ = 2006 VC$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.38005 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27101184 | $\omega$ | 132.68784 | +0.99472653 | | +0.09612911 | |
| $a$ | 2.3648878 | $\Omega$ | 221.83327 | −0.10255160 | | +0.92708139 | |
| $e$ | 0.1457906 | $i$ | 3.07289 | −0.00151384 | | +0.36232483 | |
| $P$ | 3.64 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.5− | 0.6− | 2002 09 13 | 644 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.5− | 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2002 08 28 | 644 | 0.4− | 0.3− | 2002 09 14 | 644 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.7− | 0.1− |
| 2002 08 28 | 644 | 0.2− | 0.5− | 2002 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.4− |
| 2002 09 01 | 608 | 0.8+ | 0.5+ | 2005 06 13 | G96 | 0.7+ | 0.4+ | 2006 11 12 | 703 | 0.3− | 0.0 |
| 2002 09 01 | 608 | 0.2+ | 0.8+ | 2005 06 13 | G96 | 0.1− | 0.2− | 2006 11 12 | 703 | 0.8+ | 0.9+ |
| 2002 09 01 | 608 | 1.0+ | 1.4+ | 2005 06 13 | G96 | 0.4− | 0.6+ | 2006 11 12 | 703 | 0.8− | 0.1− |
| 2002 09 06 | 704 | 0.3+ | 0.0 | 2005 06 13 | G96 | 0.2+ | 0.9+ | 2006 11 12 | 703 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2002 09 06 | 704 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2002 09 13 | 644 | 0.4− | 0.6− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.0 | | | | |

**2002 RG$_{171}$ = 2006 WM$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.92280 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27343151 | $\omega$ | 251.58055 | | +0.90291387 | | +0.42549559 |
| $a$ | 2.3509154 | $\Omega$ | 83.20010 | | −0.36761262 | | +0.83779447 |
| $e$ | 0.2130302 | $i$ | 3.51207 | | −0.22272741 | | +0.34213145 |
| $P$ | 3.60 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.4+ | 0.6− | 2002 09 16 | 644 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.4+ | 1.0− | 2002 09 16 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 08 30 | 644 | 0.2+ | 0.9− | 2002 09 16 | 644 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 09 13 | 704 | 0.2+ | 0.6+ | 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 09 13 | 704 | 0.2+ | 0.7− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 09 13 | 699 | 1.2− | 1.2+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 09 13 | 704 | 0.7+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 09 13 | 699 | 0.8− | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 09 13 | 704 | 1.2+ | 0.6− | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2002 09 13 | 699 | 1.0− | 0.7− | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2002 09 13 | 699 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.5− | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2002 09 14 | 608 | 0.1+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.5+ |
| 2002 09 14 | 608 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2002 09 14 | 608 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | | | |

**2002 RG$_{172}$ = 2006 PM$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.73721 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23848583 | $\omega$ | 193.17525 | | +0.75718590 | | +0.64253706 |
| $a$ | 2.5752990 | $\Omega$ | 126.21388 | | −0.58531544 | | +0.74729797 |
| $e$ | 0.1889505 | $i$ | 8.37686 | | −0.28995749 | | +0.16938677 |
| $P$ | 4.13 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 699 | 0.4+ | 0.7+ | 2002 09 14 | 608 | 1.1− | 0.5− | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2002 08 15 | 699 | 0.6− | 0.6− | 2002 09 14 | 608 | 0.3− | 0.5− | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2002 08 15 | 699 | 0.1− | 0.6− | 2002 09 16 | 644 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2002 08 15 | 699 | 0.1+ | 0.7− | 2002 09 16 | 644 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.1+ |
| 2002 08 30 | 644 | 0.1− | 0.0 | 2002 09 16 | 644 | 0.4− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2002 08 30 | 644 | 0.2− | 0.1+ | 2006 06 22 | 699 | 0.6− | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.3+ | 0.0 | 2006 06 22 | 699 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.3− |
| 2002 09 09 | 608 | 0.4− | 0.5− | 2006 06 22 | 699 | 0.3− | 1.0− | 2006 08 28 | 703 | 0.7− | 1.4− |
| 2002 09 09 | 608 | 0.2+ | 0.5− | 2006 06 22 | 699 | 0.3+ | 0.8+ | 2006 08 28 | 703 | 0.0 | 0.1− |
| 2002 09 09 | 608 | 0.6− | 0.1− | 2006 08 12 | 644 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.3+ |
| 2002 09 13 | 699 | 0.9+ | 1.1+ | 2006 08 12 | 644 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.3+ |
| 2002 09 13 | 699 | 0.5+ | 0.8+ | 2006 08 12 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1+ |
| 2002 09 13 | 699 | 1.5+ | 0.6+ | 2006 08 12 | 644 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 2002 09 13 | 699 | 0.4+ | 0.4+ | 2006 08 12 | 644 | 0.5+ | 0.1+ | | | | |
| 2002 09 14 | 608 | 0.2− | 0.7− | 2006 08 12 | 644 | 0.0 | 0.1+ | | | | |

**2002 RH$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.78306 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28153904 | $\omega$ | 51.26003 | | +0.96376653 | | +0.26024737 |
| $a$ | 2.3055628 | $\Omega$ | 293.58575 | | −0.26024481 | | +0.86921163 |
| $e$ | 0.1681995 | $i$ | 3.66150 | | −0.05853817 | | +0.42040748 |
| $P$ | 3.50 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.4− | 0.4+ | 2002 09 06 | 704 | 0.2− | 0.3− | 2002 09 18 | 644 | 0.0 | 0.8− |
| 1995 10 24 | 691 | 0.5− | 0.1+ | 2002 09 06 | 704 | 0.1+ | 0.3+ | 2002 09 18 | 644 | 0.1+ | 0.8− |
| 1995 10 24 | 691 | 0.7+ | 0.0 | 2002 09 06 | 704 | 0.1+ | 0.2− | 2002 09 18 | 644 | 0.1+ | 0.7− |
| 2002 08 12 | 704 | 0.3+ | 0.1− | 2002 09 06 | 704 | 1.0+ | 0.8+ | 2002 10 05 | 645 | 0.0 | 0.1− |
| 2002 08 12 | 704 | 0.4− | 0.5+ | 2002 09 06 | 704 | 0.1+ | 0.4+ | 2002 10 05 | 645 | 0.0 | 0.0 |
| 2002 08 12 | 704 | 0.1+ | 0.3+ | 2002 09 13 | 644 | 0.0 | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.1− |
| 2002 08 12 | 704 | 0.5− | 0.3+ | 2002 09 13 | 644 | 0.1+ | 0.1+ | 2002 10 10 | 645 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2002 09 13 | 644 | 0.0 | 0.2+ | 2002 10 31 | 645 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.3− | 0.5+ | 2002 09 14 | 608 | 0.1+ | 0.7+ | 2002 10 31 | 645 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.1+ | 0.6+ | 2002 09 14 | 608 | 0.2− | 0.1− | 2002 11 08 | 645 | 0.1+ | 0.1− |
| 2002 09 04 | 699 | 0.9+ | 0.0 | 2002 09 14 | 608 | 0.2− | 0.4− | 2002 11 08 | 645 | 0.0 | 0.0 |
| 2002 09 04 | 699 | 1.1− | 0.4+ | 2002 09 17 | 644 | 0.2+ | 0.8+ | 2006 11 26 | 691 | 0.0 | 0.1− |
| 2002 09 04 | 699 | 0.1− | 0.7+ | 2002 09 17 | 644 | 0.0 | 1.1+ | 2006 11 26 | 691 | 0.1+ | 0.2+ |
| 2002 09 04 | 699 | 0.9− | 0.7+ | 2002 09 17 | 644 | 0.1+ | 1.1+ | 2006 11 26 | 691 | 0.1− | 0.5+ |

**2002 RU$_{174}$ = 2006 QP$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.24302 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23892242 | $\omega$ | 151.13882 | | +0.42011981 | | −0.90417412 |
| $a$ | 2.5721608 | $\Omega$ | 273.92770 | | +0.81701132 | | +0.41392142 |
| $e$ | 0.0928924 | $i$ | 4.44131 | | +0.39495803 | | +0.10553772 |
| $P$ | 4.13 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.4+ | 1.0+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2004 01 26 | 699 | 0.5+ | 0.9+ | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2002 09 13 | 644 | 0.1+ | 0.6+ | 2004 01 26 | 699 | 0.1− | 0.2− | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2002 09 14 | 608 | 0.4− | 0.2− | 2004 01 26 | 699 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.0 |
| 2002 09 14 | 608 | 1.0− | 0.3− | 2004 01 26 | 699 | 0.2+ | 1.3+ | 2006 09 14 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 608 | 1.2− | 0.2− | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 09 14 | 691 | 0.2+ | 0.1+ |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2002 10 05 | 645 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.2+ |
| 2002 11 08 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.9+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.1+ |

**2002 RA$_{178}$ = 2006 RR$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.83245 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24208498 | $\omega$ | 51.82657 | | +0.91874383 | | −0.39135195 |
| $a$ | 2.5497102 | $\Omega$ | 331.10217 | | +0.31974918 | | +0.81536188 |
| $e$ | 0.1412319 | $i$ | 6.23370 | | +0.23166838 | | +0.42664817 |
| $P$ | 4.07 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2+ | 0.0 | 2002 10 04 | 704 | 1.1− | 0.3− | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.2− | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.9+ | 0.8− | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.2+ | 0.5+ | 2006 08 19 | 691 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 1.0− | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2002 09 14 | 644 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 1.1+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2002 10 04 | 704 | 0.4− | 0.1+ | 2006 09 12 | 703 | 0.6− | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.5+ | 0.5+ | | | | |

**2002 RU$_{180}$ = 2006 WZ$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.66063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26449943 | $\omega$ | 190.10759 | | +0.98818672 | | +0.15314772 |
| $a$ | 2.4035485 | $\Omega$ | 161.08014 | | −0.13934706 | | +0.91343317 |
| $e$ | 0.2447705 | $i$ | 1.01174 | | −0.06379185 | | +0.37707508 |
| $P$ | 3.73 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.1+ | 0.7+ | 2002 10 03 | 704 | (1.5− | 1.8+) | 2002 10 30 | 645 | 0.1+ | 0.4− |
| 2002 09 14 | 608 | 0.6+ | 0.7+ | 2002 10 03 | 704 | 0.7− | 1.4+ | 2002 10 30 | 645 | 0.2+ | 0.4− |
| 2002 09 14 | 608 | 0.4+ | 0.7+ | 2002 10 07 | 699 | 0.2+ | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2002 09 15 | 291 | 0.0 | 0.7− | 2002 10 07 | 699 | 0.5+ | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2002 09 15 | 291 | 0.1+ | 0.2− | 2002 10 07 | 699 | 0.6− | 0.9− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 09 15 | 291 | 0.1− | 0.1− | 2002 10 07 | 699 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.5− | 0.0 | 2002 10 07 | 704 | 0.3+ | 0.8+ | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2002 09 26 | 644 | 0.4− | 0.0 | 2002 10 07 | 704 | 0.5+ | 0.3+ | 2006 11 24 | G96 | 0.5+ | 0.1− |
| 2002 09 26 | 644 | 0.3− | 0.0 | 2002 10 07 | 704 | 0.2+ | 0.7+ | 2006 11 26 | H07 | 0.4− | 0.8+ |
| 2002 09 30 | 704 | 0.5− | 1.0+ | 2002 10 07 | 704 | 1.0+ | 0.2+ | 2006 11 26 | H07 | 1.1− | 0.6+ |
| 2002 09 30 | 704 | 0.8− | 0.5+ | 2002 10 11 | 644 | 0.2− | 0.2+ | 2006 11 26 | H07 | 0.4− | 0.7+ |
| 2002 09 30 | 704 | 0.0 | 1.3+ | 2002 10 11 | 704 | 0.2+ | 1.0+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2002 09 30 | 704 | 0.4− | 0.2+ | 2002 10 11 | 644 | 0.4− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 09 30 | 704 | 1.0− | 0.3+ | 2002 10 11 | 704 | (0.6+ | 2.2+) | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 1.0+ | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2002 10 02 | 704 | 0.3− | 0.0 | 2002 10 11 | 644 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.2+ | 1.3+ | 2006 12 01 | 691 | 0.2− | 0.4+ |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2002 10 11 | 704 | (0.3+ | 2.5+) | 2006 12 01 | H07 | 0.6− | 0.0 |
| 2002 10 03 | 704 | 0.8− | 0.8+ | 2002 10 11 | 291 | 0.1+ | 0.0 | 2006 12 01 | H07 | 1.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.6− | 1.4+ | 2002 10 11 | 291 | 0.1− | 0.1+ | | | | |
| 2002 10 03 | 704 | 0.9− | 1.0+ | 2002 10 11 | 291 | 0.2− | 0.0 | | | | |

**2002 RR$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.42288 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24146200 | $\omega$ | 61.13214 | | +0.77329413 | | +0.61196439 |
| $a$ | 2.5540938 | $\Omega$ | 260.64336 | | −0.62439031 | | +0.68950642 |
| $e$ | 0.1340885 | $i$ | 9.67827 | | −0.11024032 | | +0.38740222 |
| $P$ | 4.08 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.1+ | 0.9+ | 2002 10 04 | 644 | 0.0 | 0.1− | 2006 09 16 | H06 | 0.5+ | 0.3− |
| 2002 08 16 | 704 | 0.2− | 0.2+ | 2002 10 04 | 644 | 0.3− | 0.1− | 2006 09 16 | H06 | 0.2− | 1.1− |
| 2002 08 16 | 704 | 0.4− | 0.8+ | 2005 05 01 | 644 | 0.4+ | 0.1+ | 2006 09 16 | H06 | 0.2+ | 0.5− |
| 2002 08 16 | 704 | 0.1+ | 0.2+ | 2005 05 01 | 644 | 0.0 | 0.1+ | 2006 10 01 | 703 | 1.2+ | 0.0 |
| 2002 09 11 | 644 | 0.1+ | 0.0 | 2005 05 01 | 644 | 0.2− | 0.3+ | 2006 10 01 | 703 | 0.6− | 0.2− |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2006 09 15 | H06 | 0.9+ | 0.7− | 2006 10 01 | 703 | 0.1− | 0.6+ |
| 2002 09 11 | 644 | 0.0 | 0.0 | 2006 09 15 | H06 | 0.6− | 0.0 | 2006 10 01 | 703 | (0.4− | 1.6−) |
| 2002 09 14 | 699 | 0.2+ | 0.1+ | 2006 09 15 | H06 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2002 09 14 | 699 | 0.6+ | 0.0 | 2006 09 15 | 704 | 0.5− | 1.0− | 2006 10 11 | 644 | 0.4− | 0.6+ |
| 2002 09 14 | 699 | 0.1+ | 0.4+ | 2006 09 15 | 704 | (0.4+ | 1.8+) | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2002 09 14 | 699 | 1.1− | 0.8+ | 2006 09 15 | 704 | (1.7+ | 0.2+) | | | | |
| 2002 10 04 | 644 | 0.1− | 0.2− | 2006 09 15 | 704 | 1.0+ | 0.3+ | | | | |

**2002 RD$_{183}$ = 2006 SO$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.48849 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24409282 | $\omega$ | 86.42313 | | +0.89240412 | | −0.40433762 |
| $a$ | 2.5357088 | $\Omega$ | 297.33710 | | +0.26930868 | | +0.83344276 |
| $e$ | 0.2221503 | $i$ | 13.03218 | | +0.36206038 | | +0.37667525 |
| $P$ | 4.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 704 | 0.5+ | 1.0− | 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 09 01 | 704 | 0.8− | 0.3− |
| 2002 08 15 | 704 | 0.7− | 0.3− | 2002 10 07 | 704 | (0.8− | 3.5−) | 2006 09 16 | 703 | 0.3+ | 0.3+ |
| 2002 08 15 | 704 | 0.0 | 0.0 | 2002 10 07 | 704 | (1.1− | 1.8−) | 2006 09 16 | 703 | (1.4− | 2.2+) |
| 2002 09 11 | 644 | 0.2+ | 0.2+ | 2002 10 07 | 704 | (0.9− | 1.9−) | 2006 09 16 | 703 | (0.7+ | 1.6+) |
| 2002 09 11 | 644 | 0.0 | 0.1− | 2002 10 07 | 704 | (0.3+ | 2.9−) | 2006 09 16 | 703 | 0.4− | 0.1− |
| 2002 09 11 | 644 | 0.0 | 0.1+ | 2002 10 10 | 704 | 0.4− | 0.2− | 2006 09 21 | 699 | (1.5− | 0.1−) |
| 2002 09 14 | 699 | 0.7+ | 1.0+ | 2002 10 10 | 704 | 0.3+ | 0.9+ | 2006 09 21 | 699 | 0.2+ | 0.7− |
| 2002 09 14 | 699 | 0.9+ | 0.9+ | 2002 10 10 | 704 | 0.4+ | 0.6− | 2006 09 21 | 699 | 1.0− | 0.1+ |
| 2002 09 14 | 699 | 1.0+ | 0.1+ | 2002 10 10 | 704 | 0.2+ | 0.4− | 2006 09 21 | 699 | 1.2− | 0.3− |
| 2002 09 14 | 699 | 0.9+ | 0.2− | 2006 08 29 | 699 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 0.6+ | 0.7+ |
| 2002 10 03 | 644 | 0.4− | 0.9− | 2006 08 29 | 699 | 0.1− | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.3+ |
| 2002 10 03 | 644 | 0.9− | 0.9− | 2006 08 29 | 699 | (0.1− | 1.8−) | 2006 09 27 | 703 | 0.0 | 0.1− |
| 2002 10 03 | 644 | 0.4− | 0.9− | 2006 08 29 | 699 | 1.1+ | 0.6+ | 2006 09 27 | 703 | 0.9− | 1.3+ |
| 2002 10 07 | 704 | 0.3− | 0.2− | 2006 09 01 | 704 | (2.2+ | 0.6−) | 2006 09 29 | 704 | 0.6+ | 0.1− |
| 2002 10 07 | 704 | 0.4− | 0.7+ | 2006 09 01 | 704 | 0.1+ | 0.6− | 2006 09 29 | 704 | 0.3+ | 0.6− |
| 2002 10 07 | 704 | 0.5− | 0.1− | 2006 09 01 | 704 | (1.8+ | 0.1−) | 2006 09 29 | 704 | 0.2− | 0.0 |

**2002 RL$_{183}$ = 2006 QA$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.31091 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23451546 | $\omega$ | 8.15845 | | +0.52609935 | | +0.82422654 |
| $a$ | 2.6042843 | $\Omega$ | 293.81646 | | −0.79260221 | | +0.38596079 |
| $e$ | 0.1702610 | $i$ | 13.23516 | | −0.30822267 | | +0.41434874 |
| $P$ | 4.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.0 | 0.3− | 2002 10 10 | 704 | (2.4+ | 1.8+) | 2006 08 30 | 699 | 0.9+ | 0.1− |
| 2002 09 11 | 644 | 0.1+ | 0.5− | 2006 05 02 | G96 | 0.7+ | 0.0 | 2006 08 30 | 699 | 0.9+ | 0.7+ |
| 2002 09 11 | 644 | 0.2− | 0.2− | 2006 05 02 | G96 | 0.0 | 0.1− | 2006 08 30 | 699 | 1.1+ | 0.9+ |
| 2002 09 14 | 699 | 0.6− | 0.9− | 2006 05 02 | G96 | 0.2+ | 0.3− | 2006 08 30 | 699 | 0.4− | 0.4− |
| 2002 09 14 | 699 | 0.4+ | 0.5− | 2006 05 02 | G96 | 1.4− | 0.6− | 2006 09 19 | 699 | 0.2+ | 0.0 |
| 2002 09 14 | 699 | 0.0 | 0.1+ | 2006 07 24 | 703 | 0.0 | 1.8+ | 2006 09 19 | 699 | 0.0 | 0.5− |
| 2002 09 14 | 699 | 0.5+ | 0.6+ | 2006 07 24 | 703 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.6+ | 1.1− |
| 2002 10 03 | 644 | 0.7− | 0.7+ | 2006 07 24 | 703 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.7− |
| 2002 10 03 | 644 | 1.0− | 0.5+ | 2006 07 24 | 703 | 0.7− | 0.6+ | 2006 09 19 | 703 | 0.2− | 1.0− |
| 2002 10 03 | 644 | 0.0 | 0.6+ | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.9− | 1.0− |
| 2002 10 10 | 704 | 0.4+ | 0.7+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.4− |
| 2002 10 10 | 704 | 0.3+ | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | (2.8− | 1.0−) |

**2002 RP$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.08815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24285399 | $\omega$ | 87.73294 | | +0.90614875 | | −0.35724394 |
| $a$ | 2.5443248 | $\Omega$ | 293.12941 | | +0.21778547 | | +0.85301753 |
| $e$ | 0.0673235 | $i$ | 14.25411 | | +0.36257955 | | +0.38044430 |
| $P$ | 4.06 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.3− | 0.8− | 2002 10 05 | 699 | 1.3− | 0.9+ | 2006 09 16 | 703 | 0.0 | 0.4+ |
| 2002 09 03 | 644 | 0.0 | 0.8+ | 2002 10 05 | 699 | 1.3− | 0.3− | 2006 09 21 | 699 | 0.6+ | 0.2+ |
| 2002 09 03 | 644 | 0.2− | 0.8− | 2002 10 10 | 704 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.3− | 1.0+ |
| 2002 09 03 | 644 | 0.1+ | 0.3+ | 2002 10 10 | 704 | 0.5+ | 0.1− | 2006 09 21 | 699 | 1.3− | 0.4+ |
| 2002 09 03 | 644 | 0.2− | 0.8− | 2002 10 10 | 704 | 0.3− | 0.4− | 2006 09 21 | 699 | 0.7+ | 0.8− |
| 2002 09 03 | 644 | 0.3+ | 0.5+ | 2002 10 10 | 704 | 0.5+ | 1.0− | 2006 09 28 | 703 | 0.3+ | 0.2− |
| 2002 09 11 | 644 | 0.7+ | 0.0 | 2002 10 15 | 644 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.4− | 0.7− |
| 2002 09 11 | 644 | 0.6+ | 0.3− | 2002 10 15 | 644 | 0.1− | 0.6− | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2002 09 11 | 644 | 0.6+ | 0.5− | 2002 10 15 | 644 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.3+ | 0.1− |
| 2002 09 14 | 699 | (1.6+ | 0.1−) | 2002 10 22 | 644 | 0.2+ | 0.0 | 2006 10 20 | 703 | 0.8− | 0.3− |
| 2002 09 14 | 699 | 0.6+ | 0.9+ | 2002 10 22 | 644 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.4+ | 0.2− |
| 2002 09 14 | 699 | 0.6+ | 0.3+ | 2002 10 22 | 644 | 0.4+ | 0.2+ | 2006 10 20 | 703 | 1.3+ | 0.1− |
| 2002 09 14 | 699 | (2.5+ | 0.3−) | 2006 09 16 | 703 | 0.0 | 0.5− | 2006 10 20 | 703 | 1.0− | 0.1− |
| 2002 10 05 | 699 | 0.4− | 1.1+ | 2006 09 16 | 703 | 0.7− | 0.6+ | | | | |
| 2002 10 05 | 699 | 0.6− | 0.7+ | 2006 09 16 | 703 | 0.7+ | 0.6+ | | | | |

**2002 RC$_{186}$ = 2006 RZ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.28580 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23775184 | $\omega$ | 89.12950 | | +0.75278780 | | −0.64412859 |
| $a$ | 2.5805966 | $\Omega$ | 310.95689 | | +0.50956461 | | +0.70070763 |
| $e$ | 0.2147000 | $i$ | 10.34993 | | +0.41671866 | | +0.30676892 |
| $P$ | 4.15 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.9+ | 2006 09 19 | 691 | 0.1+ | 0.3− |
| 2002 09 12 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.9+ | 2006 09 22 | 691 | 0.0 | 0.1+ |
| 2002 09 12 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 09 22 | 691 | 0.5+ | 0.5− |
| 2002 09 14 | 699 | 1.1− | 0.1− | 2006 08 28 | 703 | 0.3− | 1.3+ | 2006 09 22 | 691 | 0.4− | 0.2− |
| 2002 09 14 | 699 | 0.5− | 0.2− | 2006 09 11 | 703 | 0.2− | 0.7+ | 2006 09 25 | 691 | 0.3− | 0.1+ |
| 2002 09 14 | 699 | 1.2− | 0.1− | 2006 09 11 | 703 | (0.2− | 3.1+) | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2002 09 14 | 699 | 0.4+ | 0.5− | 2006 09 11 | 703 | 1.2− | 1.0− | 2006 09 25 | 691 | 0.1− | 0.2− |
| 2002 10 04 | 644 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.0 |
| 2002 10 04 | 644 | 0.5+ | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2002 10 05 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2002 10 05 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.6− | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2002 10 05 | 644 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.3+ |

**2002 RF$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.79876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17985158 | $\omega$ | 176.28687 | | +0.94396692 | −0.30755932 | |
| $a$ | 3.1083259 | $\Omega$ | 202.76977 | | +0.29427878 | +0.94858374 | |
| $e$ | 0.2496494 | $i$ | 18.01945 | | +0.14942038 | +0.07480745 | |
| $P$ | 5.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 691 | 0.0 | 0.6+ | 2002 10 05 | 704 | 0.6− | 0.0 | 2002 11 08 | 704 | 0.9+ | 1.2+ |
| 2000 05 02 | 691 | 0.0 | 0.3+ | 2002 10 05 | 704 | 0.1+ | 0.4− | 2002 11 08 | 704 | 0.4+ | 0.5+ |
| 2000 05 02 | 691 | 0.1+ | 0.0 | 2002 10 05 | 704 | 0.3+ | 0.6− | 2002 11 08 | 704 | 0.2− | 0.5+ |
| 2002 09 12 | 644 | 0.2− | 0.2+ | 2002 10 08 | 704 | 0.5− | 0.0 | 2002 11 08 | 704 | 0.7+ | 0.9+ |
| 2002 09 12 | 644 | 0.4− | 0.1+ | 2002 10 08 | 704 | 0.8− | 0.3+ | 2002 11 30 | 608 | 0.2− | 0.4+ |
| 2002 09 12 | 644 | 0.4− | 0.4+ | 2002 10 08 | 704 | 0.6+ | 0.8+ | 2002 11 30 | 608 | 0.6− | 0.9+ |
| 2002 09 14 | 699 | 0.1− | 0.3− | 2002 10 12 | 704 | 0.0 | 0.4− | 2002 11 30 | 608 | 0.4− | 0.8+ |
| 2002 09 14 | 699 | 0.5+ | 0.5+ | 2002 10 12 | 704 | 0.0 | 0.2− | 2002 12 05 | 704 | 0.3+ | 0.3− |
| 2002 09 14 | 699 | 0.2− | 0.4+ | 2002 10 12 | 704 | 0.2+ | 0.9− | 2002 12 05 | 704 | 0.2+ | 0.1+ |
| 2002 09 14 | 699 | 0.7− | 0.3+ | 2002 10 12 | 704 | 0.5− | 1.8− | 2002 12 05 | 704 | 0.2+ | 0.1− |
| 2002 09 20 | 644 | 0.2− | 0.0 | 2002 10 31 | 704 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 0.2+ | 0.3+ |
| 2002 09 20 | 644 | 0.2− | 0.1+ | 2002 10 31 | 704 | 0.6+ | 0.8− | 2006 05 09 | G96 | 0.3+ | 0.3− |
| 2002 09 20 | 644 | 0.2− | 0.0 | 2002 10 31 | 704 | 0.7− | 0.5− | 2006 05 09 | G96 | 0.0 | 0.5− |
| 2002 10 05 | 704 | 0.1+ | 0.5− | 2002 10 31 | 704 | 1.3+ | 0.6+ | 2006 05 09 | G96 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2002 10 31 | 704 | 0.5+ | 0.3+ | 2006 05 09 | G96 | 0.1− | 0.1+ |

**2002 RH$_{192}$ = 2006 US$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.36010 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26691397 | $\omega$ | 273.39676 | | +0.20081062 | +0.97961016 | |
| $a$ | 2.3890313 | $\Omega$ | 8.19561 | | −0.88049608 | +0.18328109 | |
| $e$ | 0.1700626 | $i$ | 2.51157 | | −0.42942024 | +0.08229199 | |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.1+ | 0.1+ | 2002 09 12 | 644 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2− |
| 2002 08 20 | 644 | 0.1+ | 0.0 | 2002 09 12 | 644 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2002 08 20 | 644 | 0.2+ | 0.3− | 2002 09 15 | 644 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.3+ | 0.1− |
| 2002 09 04 | 699 | 0.3− | 0.2− | 2002 09 15 | 644 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.3+ | 0.2+ |
| 2002 09 04 | 699 | (0.8+ | 1.8−) | 2002 09 15 | 644 | 0.3+ | 0.5+ | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2002 09 04 | 699 | 0.9+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 10 29 | 691 | 0.1− | 0.4− |
| 2002 09 04 | 699 | 1.3− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1+ | | | | |
| 2002 09 12 | 644 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.2+ | | | | |

**2002 RX$_{192}$ = 2006 UQ$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.07958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27776389 | $\omega$ | 275.09728 | | +0.19614543 | +0.98047307 | |
| $a$ | 2.3264061 | $\Omega$ | 6.26778 | | −0.84059265 | +0.17554478 | |
| $e$ | 0.1019973 | $i$ | 7.43412 | | −0.50490689 | +0.08863746 | |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.9− | 0.7+ | 2002 09 15 | 644 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.1− | 0.5− | 2002 09 15 | 644 | 0.6+ | 0.0 | 2006 11 25 | G96 | 0.8+ | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.7+ | 0.4+ |
| 2002 09 12 | 644 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.6+ | 0.2+ |
| 2002 09 12 | 644 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.2− | 1.5− |
| 2002 09 12 | 644 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1+ | | | | |
| 2002 09 15 | 644 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 | | | | |

**2002 RZ$_{192}$ = 2006 TC$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.77167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26045553 | $\omega$ | 292.47596 | | +0.51896516 | +0.85473394 | |
| $a$ | 2.4283633 | $\Omega$ | 8.80817 | | −0.75759969 | +0.46547583 | |
| $e$ | 0.1176211 | $i$ | 3.83813 | | −0.39587608 | +0.22970013 | |
| $P$ | 3.78 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.4+ | 0.1− | 2002 09 14 | 608 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2002 08 29 | 644 | 0.1+ | 0.5− | 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 09 09 | 608 | 0.4+ | 0.2+ | 2002 09 15 | 644 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.4− | 0.1+ |
| 2002 09 09 | 608 | 0.0 | 0.3+ | 2002 09 15 | 644 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 09 09 | 608 | 0.7+ | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2002 09 12 | 644 | 0.4− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2002 09 12 | 644 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | (2.8+ | 4.6−) |
| 2002 09 12 | 644 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.7− | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2002 09 14 | 608 | 0.7+ | 0.8− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 09 14 | 608 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | (1.4− | 4.6+) |

**2002 RC$_{195}$ = 2006 RF$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.61601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25723999 | $\omega$ | 320.04660 | | +0.83207177 | +0.55447488 | |
| $a$ | 2.4485580 | $\Omega$ | 6.33031 | | −0.46894975 | +0.71732909 | |
| $e$ | 0.1155911 | $i$ | 7.62729 | | −0.29621394 | +0.42189641 | |
| $P$ | 3.83 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 1.0+ | 0.9+ | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 1997 03 02 | 691 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.8− | 0.3+ | 2006 09 30 | 691 | 0.5+ | 0.1− |
| 1997 03 02 | 691 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.4+ | 0.3+ |
| 2002 09 05 | 699 | 0.6+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2002 09 05 | 704 | 0.5− | 0.4− | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 17 | 703 | 1.2+ | 0.1− |
| 2002 09 05 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | (1.6− | 1.9+) | 2006 10 17 | 703 | 0.0 | 0.7− |
| 2002 09 05 | 699 | 0.9− | 0.2+ | 2006 09 18 | 699 | 0.7− | 0.9+ | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2002 09 05 | 699 | 0.3− | 0.7− | 2006 09 18 | 699 | (0.8+ | 3.8−) | 2006 10 17 | 703 | 0.4+ | 1.2+ |
| 2002 09 05 | 704 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | (0.4− | 2.2+) |
| 2002 09 12 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.8+ |
| 2002 09 12 | 644 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2002 09 12 | 644 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2002 09 15 | 644 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2002 09 15 | 644 | 0.2+ | 0.7+ | 2006 09 25 | 691 | 1.0+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.2+ |
| 2002 09 15 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.8− | 0.3− | 2006 10 20 | 644 | 0.8+ | 0.8+ |
| 2006 09 14 | 703 | 1.1+ | 0.5+ | 2006 09 26 | 691 | 0.9− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2006 09 14 | 703 | 0.8− | 0.8− | 2006 09 26 | 691 | 1.4− | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.1+ |

**2002 RK$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.22116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17531446 | $\omega$ | 22.68699 | | +0.25426758 | −0.96674238 | |
| $a$ | 3.1617260 | $\Omega$ | 52.59372 | | +0.88192876 | +0.22009560 | |
| $e$ | 0.1658366 | $i$ | 1.98515 | | +0.39692527 | +0.13025778 | |
| $P$ | 5.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1+ | 0.7+ | 2003 12 22 | 704 | 1.0+ | 0.2+ | 2005 04 06 | G96 | 0.6+ | 0.3+ |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2003 12 22 | 704 | 1.3+ | 0.6+ | 2005 04 06 | G96 | 0.1+ | 0.3+ |
| 2002 09 13 | 644 | 0.3− | 0.1+ | 2003 12 22 | 704 | 1.1+ | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.6+ |
| 2002 09 15 | 644 | 0.0 | 0.5+ | 2003 12 27 | 704 | 0.2+ | 0.1− | 2005 04 06 | G96 | 0.3+ | 0.5+ |
| 2002 09 15 | 644 | 0.1− | 0.0 | 2003 12 27 | 704 | 0.8− | 1.1+ | 2006 05 25 | 568 | 0.1+ | 1.1+ |
| 2002 09 15 | 644 | 0.1+ | 0.2+ | 2003 12 27 | 704 | 0.8− | 0.6+ | 2006 05 25 | 568 | 0.2+ | 1.0+ |
| 2002 09 16 | 644 | 0.4− | 0.7+ | 2004 01 22 | 704 | 1.5− | 0.1− | 2006 05 25 | 568 | 0.2+ | 0.9+ |
| 2002 09 16 | 644 | 0.5− | 0.5+ | 2004 01 22 | 704 | 0.6− | 0.5+ | 2006 05 26 | 568 | 0.0 | 0.6+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.3− | 0.4+ | 2004 01 22 | 704 | 0.5− | 0.1+ | |
| 2003 12 22 | 704 | 0.9+ | 0.2+ | 2004 01 22 | 704 | 0.1− | 0.4+ | |

**2002 RN$_{200}$ = 2006 SK$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.56104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28493739 | $\omega$ | 346.42335 | | +0.77175864 | | −0.63340832 |
| $a$ | 2.2871944 | $\Omega$ | 53.02237 | | +0.58983681 | | +0.67986018 |
| $e$ | 0.2168965 | $i$ | 4.04941 | | +0.23765761 | | +0.36957276 |
| $P$ | 3.46 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.5− | 0.8− | 2002 08 19 | 644 | 0.0 | 1.1− | 2002 09 13 | 699 | 0.6− | 0.2+ |
| 2000 01 04 | 704 | 0.3− | 0.2+ | 2002 08 19 | 644 | 0.3+ | 0.2+ | 2002 09 15 | 608 | 1.0− | 0.4− |
| 2000 01 04 | 704 | 0.6− | 0.6− | 2002 08 19 | 644 | 0.2− | 1.0− | 2002 09 15 | 608 | 0.8− | 0.1+ |
| 2000 01 04 | 704 | 1.4+ | 0.9− | 2002 08 19 | 644 | 0.2+ | 0.4+ | 2002 09 15 | 608 | 0.8− | 0.6− |
| 2000 01 04 | 704 | 0.0 | 0.6+ | 2002 08 19 | 644 | 0.4− | 1.0− | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2002 08 14 | 704 | 1.3+ | 0.4+ | 2002 08 19 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2002 08 14 | 704 | 0.4+ | 0.9+ | 2002 08 30 | 644 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.4− |
| 2002 08 14 | 704 | 0.8+ | 0.1− | 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2002 08 14 | 704 | 0.2− | 0.3+ | 2002 08 30 | 644 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2002 08 18 | 608 | 0.3− | 0.1− | 2002 09 13 | 699 | 0.5− | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 08 18 | 608 | 0.7+ | 0.2− | 2002 09 13 | 699 | 1.2+ | 0.4+ | | | | |
| 2002 08 18 | 608 | 0.2− | 0.6+ | 2002 09 13 | 699 | 0.0 | 0.1− | | | | |

**2002 RP$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.01438 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26713297 | $\omega$ | 342.77239 | | +0.98157063 | | +0.19107700 |
| $a$ | 2.3877254 | $\Omega$ | 6.21420 | | −0.17196750 | | +0.88991912 |
| $e$ | 0.1962008 | $i$ | 1.55988 | | −0.08334436 | | +0.41416608 |
| $P$ | 3.69 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.2+ | 0.0 | 2002 09 29 | 291 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 08 12 | 608 | 0.3+ | 0.6− | 2002 09 29 | 291 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 08 12 | 608 | 0.6+ | 0.6− | 2002 09 29 | 291 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.8+ |
| 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 2002 08 29 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.8− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.5+ |
| 2002 09 05 | 704 | 1.2− | 0.6− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | (0.2− | 2.5−) |
| 2002 09 05 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | (1.6+ | 0.8+) |
| 2002 09 05 | 704 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 1.1+ | 0.9+ |
| 2002 09 05 | 704 | 0.5− | 0.8− | 2006 11 01 | G96 | 0.1− | 0.7− | 2006 11 18 | 704 | (0.5− | 2.1−) |
| 2002 09 05 | 704 | 0.6+ | 0.9+ | 2006 11 01 | G96 | 0.4+ | 0.7− | 2006 11 18 | 704 | (1.3− | 3.5−) |
| 2002 09 13 | 704 | 0.1+ | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.7− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 09 13 | 704 | 0.4− | 0.4+ | 2006 11 01 | G96 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2002 09 13 | 704 | 0.8− | 0.3+ | 2006 11 13 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.7− |
| 2002 09 15 | 644 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.2+ |
| 2002 09 15 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.4− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.4− | 0.2− | 2006 11 29 | 704 | (0.6− | 1.8+) |
| 2002 09 16 | 644 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2002 09 16 | 644 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.5+ | 0.2− | | | | |
| 2002 09 16 | 644 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ | | | | |

**2002 RU$_{201}$ = 2006 TW$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.72206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27332806 | $\omega$ | 228.03575 | | +0.35568434 | | +0.93348535 |
| $a$ | 2.3515086 | $\Omega$ | 62.85332 | | −0.84155724 | | +0.34118476 |
| $e$ | 0.2112233 | $i$ | 2.94757 | | −0.40653420 | | +0.11044488 |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.4− | 0.1− | 2002 09 16 | 644 | 0.6− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.4− |
| 2002 08 20 | 644 | 0.3− | 0.1− | 2002 09 16 | 644 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 20 | 644 | 1.0+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2002 09 13 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2002 09 13 | 704 | 0.6− | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.3− | 2006 11 13 | G96 | (0.7− | 1.8+) |
| 2002 09 13 | 704 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.5− | 0.0 | 2006 11 13 | G96 | 0.5− | 0.6− |
| 2002 09 15 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.6+ | 0.2− | 2006 11 13 | G96 | 0.4− | 0.6+ |
| 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | (1.3− | 1.8−) |
| 2002 09 15 | 644 | 0.4+ | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.0 | | | | |
| 2002 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.0 | | | | |

**2002 RV$_{201}$ = 2006 UP$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.14343 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27121809 | $\omega$ | 328.34610 | | +0.96275311 | | +0.26835407 |
| $a$ | 2.3636887 | $\Omega$ | 16.18709 | | −0.21666167 | | +0.83881758 |
| $e$ | 0.1004351 | $i$ | 6.80945 | | −0.16175344 | | +0.47367832 |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.0 | 0.6+ | 2006 07 22 | G96 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.7− | 0.0 |
| 1995 10 15 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 1995 10 15 | 691 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 04 28 | 691 | 0.9+ | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 04 28 | 691 | 0.0 | 0.6+ | 2006 10 04 | G96 | 0.4− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2001 04 28 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 09 13 | 704 | 0.3+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 09 13 | 704 | 0.9+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2002 09 13 | 704 | 0.1− | 0.7+ | 2006 10 19 | G96 | 0.4− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.3− |
| 2002 09 15 | 644 | 0.4− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2002 09 15 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2002 09 16 | 644 | 0.6− | 0.0 | 2006 10 25 | D35 | 0.0 | 0.2+ | 2006 11 11 | 703 | (1.1+ | 1.8+) |
| 2002 09 16 | 644 | 0.4− | 0.1− | 2006 10 25 | D35 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2002 09 16 | 644 | 0.4− | 0.1− | 2006 10 25 | D35 | 0.3+ | 0.5+ | 2006 11 14 | 703 | 1.4+ | 0.5+ |
| 2006 07 22 | G96 | 0.4− | 0.4− | 2006 10 27 | 703 | 0.9− | 1.4+ | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2006 07 22 | G96 | 0.5− | 0.6− | 2006 10 27 | 703 | (2.1− | 1.0+) | 2006 11 14 | 703 | 0.9− | 0.6− |
| 2006 07 22 | G96 | 1.3+ | 0.7− | 2006 10 27 | 703 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.2− |

**2002 RR$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.41530 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28634364 | $\omega$ | 75.95374 | | +0.98713442 | | −0.14002901 |
| $a$ | 2.2796999 | $\Omega$ | 292.05057 | | +0.09446159 | | +0.90021349 |
| $e$ | 0.1894295 | $i$ | 4.77691 | | +0.12900634 | | +0.41231973 |
| $P$ | 3.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.0 | 0.3+ | 2002 09 13 | 644 | 0.4− | 0.7+ | 2002 11 08 | 704 | 0.0 | 0.1+ |
| 2002 08 11 | 704 | 0.5− | 0.1+ | 2002 09 15 | 608 | 1.0− | 1.3− | 2002 11 08 | 704 | 0.2− | 0.3+ |
| 2002 08 11 | 704 | 0.4− | 0.4+ | 2002 09 15 | 608 | 0.8− | 1.3− | 2002 11 08 | 704 | 0.4− | 0.1+ |
| 2002 08 11 | 704 | 0.1− | 0.1+ | 2002 09 15 | 608 | 0.9− | 1.1− | 2002 11 12 | 704 | 0.7+ | 0.6+ |
| 2002 08 11 | 704 | 0.8− | 0.9+ | 2002 09 20 | 644 | 0.0 | 0.1+ | 2002 11 12 | 704 | 0.5+ | 0.8− |
| 2002 08 11 | 704 | 0.8− | 0.9+ | 2002 09 20 | 644 | 0.1+ | 0.2+ | 2002 11 12 | 704 | 0.9+ | 0.4− |
| 2002 08 11 | 704 | 0.1+ | 0.8+ | 2002 09 20 | 644 | 0.3− | 0.1− | 2002 11 12 | 704 | 0.4+ | 0.5− |
| 2002 08 11 | 704 | 0.9+ | 0.7+ | 2002 09 28 | 608 | (2.3− | 1.0−) | 2002 12 01 | 704 | 0.1+ | 0.5+ |
| 2002 08 11 | 704 | 1.0+ | 0.0 | 2002 09 28 | 608 | (2.3− | 1.1−) | 2002 12 01 | 704 | 0.0 | 0.1− |
| 2002 08 11 | 704 | 0.4+ | 0.3+ | 2002 09 28 | 608 | (2.2− | 0.9−) | 2002 12 01 | 704 | 0.5− | 0.7− |
| 2002 08 16 | 704 | (1.2+ | 2.4−) | 2002 10 05 | 704 | 0.4+ | 0.0 | 2002 12 01 | 704 | 0.6+ | 0.5+ |
| 2002 08 16 | 704 | 0.8+ | 0.6− | 2002 10 05 | 704 | 0.3+ | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.0 |
| 2002 08 16 | 704 | (0.9− | 2.1−) | 2002 10 05 | 704 | 0.7+ | 0.3− | 2002 12 06 | 704 | 0.2− | 0.0 |
| 2002 08 16 | 704 | 0.2+ | 1.1− | 2002 10 05 | 704 | 0.1+ | 0.6− | 2002 12 06 | 704 | 0.6− | 0.3+ |
| 2002 08 16 | 704 | 0.7+ | 1.3− | 2002 10 05 | 704 | 0.5+ | 0.6− | 2002 12 06 | 704 | 0.0 | 0.5+ |
| 2002 09 05 | 699 | 0.8+ | 0.1+ | 2002 10 07 | 699 | 0.5+ | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.5+ |
| 2002 09 05 | 699 | 0.6+ | 0.0 | 2002 10 07 | 699 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 0.3+ | 0.0 | 2002 10 07 | 699 | 0.0 | 0.6+ | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 2002 09 05 | 699 | 0.0 | 0.6− | 2002 10 07 | 699 | 0.6+ | 0.6+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2002 09 11 | 608 | 0.4− | 0.6− | 2002 10 12 | 704 | (2.8− | 1.1+) | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2002 09 11 | 608 | 0.4− | 0.7− | 2002 10 12 | 704 | 1.8− | 1.4+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2002 09 11 | 608 | 0.0 | 0.9− | 2002 10 12 | 704 | (2.1− | 0.9+) | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2002 09 13 | 644 | 0.5− | 0.7+ | 2002 10 12 | 704 | (3.3− | 0.5−) | | | | |
| 2002 09 13 | 644 | 0.5− | 0.7+ | 2002 11 08 | 704 | 0.4− | 0.3+ | | | | |

**2002 RL$_{203}$ = 2002 TW$_{168}$**

Id. Minor Planet Center (d, *MPO* 41953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.77434 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25880557 | $\omega$ | 18.49204 | | +0.79090291 | −0.61168850 | |
| $a$ | 2.4386734 | $\Omega$ | 19.25195 | | +0.55449604 | +0.70419461 | |
| $e$ | 0.1633867 | $i$ | 3.05985 | | +0.25885659 | +0.36048182 | |
| $P$ | 3.81 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.3+ | 0.3+ | 2002 10 06 | 704 | 0.7− | 0.1− | 2006 10 28 | 691 | (3.2+ | 3.4−) |
| 2002 09 07 | 704 | 0.3− | 0.9+ | 2002 10 11 | 704 | 1.5− | 0.2− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2002 09 07 | 704 | 0.2− | 1.2+ | 2002 10 11 | 704 | 0.6− | 1.4+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 09 13 | 608 | 0.4− | 0.9− | 2002 10 11 | 704 | 0.7− | 0.5+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2002 09 13 | 608 | 0.1− | 0.1− | 2002 10 11 | 704 | 1.5− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2002 09 13 | 608 | 0.5− | 0.3− | 2002 10 11 | 704 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2002 09 15 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 2002 09 15 | 644 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 1.3+ |
| 2002 09 15 | 644 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 09 29 | 608 | 0.1+ | 0.6− | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 09 29 | 608 | 0.4+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.5− | 0.5− |
| 2002 09 29 | 608 | 0.2− | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | (0.2+ | 2.2−) |
| 2002 10 01 | 699 | 0.4+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 0.9+ |
| 2002 10 01 | 699 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.8+ |
| 2002 10 01 | 699 | 0.8− | 0.5− | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2002 10 01 | 699 | 0.7− | 0.9− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 10 03 | 704 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.7− |
| 2002 10 03 | 704 | 0.7+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.9+ | 0.5− | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 22 | 104 | 0.2+ | 0.3+ |
| 2002 10 06 | 704 | 0.9+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.3− | 2006 11 22 | 104 | 0.2+ | 0.0 |
| 2002 10 06 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 22 | 104 | 1.5+ | 0.9− |
| 2002 10 06 | 704 | 1.0+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | | | |
| 2002 10 06 | 704 | 0.7+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.2− | | | | |

**2002 RQ$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.35949 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26543285 | $\omega$ | 12.64342 | | +0.99554774 | −0.09420797 | |
| $a$ | 2.3979103 | $\Omega$ | 352.76018 | | +0.08420481 | +0.90361811 | |
| $e$ | 0.1507090 | $i$ | 1.40541 | | +0.04235854 | +0.41785066 | |
| $P$ | 3.71 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 291 | 0.0 | 0.1− | 2002 10 10 | 291 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2002 08 30 | 291 | 0.1+ | 0.0 | 2002 10 10 | 291 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 08 30 | 291 | 0.1+ | 0.1− | 2002 10 10 | 291 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2002 09 07 | 704 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | (0.0 | 1.8+) | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 09 07 | 704 | 0.5+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 09 07 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.7+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2002 09 15 | 644 | 0.5− | 0.5+ | 2006 10 20 | 691 | 0.2+ | 1.0− | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2002 09 15 | 644 | 0.4− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2+ |
| 2002 09 15 | 644 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.1− |

**2002 RT$_{204}$ = 2006 HD$_{10}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.55232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18457767 | $\omega$ | 127.67746 | | +0.42718782 | +0.90335332 | |
| $a$ | 3.0550379 | $\Omega$ | 167.44178 | | −0.87504546 | +0.42371106 | |
| $e$ | 0.1119316 | $i$ | 10.13303 | | −0.22760936 | +0.06649594 | |
| $P$ | 5.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 21 | 644 | 0.3− | 0.7+ | 2002 09 14 | 644 | 0.1− | 0.0 | 2006 04 20 | D35 | 0.8− | 0.4− |
| 2002 08 21 | 644 | 0.3+ | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.0 | 2006 04 21 | 691 | 0.4+ | 0.2− |
| 2002 08 21 | 644 | 0.7− | 0.4− | 2002 09 15 | 644 | 0.1− | 0.5+ | 2006 04 21 | 691 | 0.1+ | 0.0 |
| 2002 08 28 | 644 | 0.6+ | 0.3− | 2002 09 15 | 644 | 0.0 | 0.6+ | 2006 04 21 | 691 | 0.4+ | 0.0 |
| 2002 08 28 | 644 | 0.6+ | 0.1− | 2002 09 15 | 644 | 0.1+ | 0.6+ | 2006 04 25 | 691 | 0.2+ | 0.1− |
| 2002 09 12 | 644 | 0.1− | 0.6− | 2006 04 19 | 691 | 0.4+ | 0.1− | 2006 04 25 | 691 | 0.0 | 0.0 |
| 2002 09 12 | 644 | 0.1− | 0.7− | 2006 04 19 | 691 | 0.2+ | 0.0 | 2006 04 25 | 691 | 0.7+ | 0.2− |
| 2002 09 12 | 644 | 0.2− | 0.6− | 2006 04 19 | 691 | 0.3+ | 0.2+ | | | | |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 04 20 | D35 | 1.8− | 0.8+ | | | | |

**2002 RW$_{204}$ = 2006 TW$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.40065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27023091 | $\omega$ | 289.32935 | | +0.23977075 | +0.97077891 | |
| $a$ | 2.3694417 | $\Omega$ | 354.51495 | | −0.84724837 | +0.20425230 | |
| $e$ | 0.1060080 | $i$ | 5.95349 | | −0.47400442 | +0.12597343 | |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.2− | 0.5+ | 2002 10 03 | 704 | 0.8− | 0.4− | 2006 10 04 | G96 | 0.4+ | 0.0 |
| 2002 09 04 | 699 | 1.0− | 0.4+ | 2002 10 03 | 704 | 0.5− | 1.1− | 2006 10 13 | 691 | 0.0 | 0.1+ |
| 2002 09 04 | 699 | 0.7− | 1.0+ | 2002 10 04 | 291 | 0.2+ | 0.5+ | 2006 10 13 | 691 | 0.0 | 0.2+ |
| 2002 09 04 | 699 | 0.1− | 0.9− | 2002 10 04 | 291 | 0.4+ | 0.8+ | 2006 10 13 | 691 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2002 10 04 | 291 | 0.7+ | 0.6+ | 2006 10 21 | 691 | 1.1− | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2003 12 28 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.0 |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2003 12 28 | 691 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 2002 09 15 | 644 | 0.4− | 1.1− | 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2002 09 15 | 644 | 0.2− | 0.9− | 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2002 09 15 | 644 | 0.4− | 1.0− | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2002 09 17 | 608 | (1.8− | 0.2+) | 2006 10 02 | G96 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2002 09 17 | 608 | 0.8− | 0.6− | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 11 23 | G96 | 0.7+ | 0.5− |
| 2002 09 17 | 608 | 1.3− | 0.7− | 2006 10 04 | G96 | 0.5+ | 0.4− | 2006 11 23 | G96 | 0.6+ | 0.5− |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.8+ | 2006 10 04 | G96 | 0.5+ | 0.7− | | | | |

**2002 RJ$_{205}$ = 1998 SU$_{31}$ = 2006 RH$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.05003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25270565 | $\omega$ | 287.70094 | | −0.07237045 | −0.99721139 | |
| $a$ | 2.4777610 | $\Omega$ | 166.41050 | | +0.94194744 | −0.07434214 | |
| $e$ | 0.1210934 | $i$ | 4.44736 | | +0.32786817 | −0.00653387 | |
| $P$ | 3.90 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 02 | 691 | 0.8+ | 0.1+ | 2002 09 17 | 608 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 1994 09 02 | 691 | (1.6− | 5.4−) | 2002 09 17 | 608 | 1.2− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 1994 09 02 | 691 | 0.5+ | 0.3+ | 2002 09 17 | 608 | 0.9− | 0.6+ | 2006 09 23 | 691 | 0.4− | 0.3− |
| 1998 09 20 | 691 | 0.0 | 0.1− | 2004 02 26 | 704 | 1.0+ | 0.8+ | 2006 09 23 | 691 | 0.3− | 0.3− |
| 1998 09 20 | 691 | 0.5− | 0.2− | 2004 02 26 | 704 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.1+ |
| 1998 09 20 | 691 | 0.8− | 0.2+ | 2004 02 26 | 704 | 1.0+ | 0.9+ | 2006 09 26 | G96 | 0.6+ | 0.6− |
| 1998 09 26 | 691 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1998 09 26 | 691 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.8− | 1.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 1998 09 26 | 691 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2002 09 13 | 644 | 0.1− | 0.5+ | 2004 03 18 | 704 | 0.5− | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.6− | 0.1− | 2006 07 21 | G96 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2002 09 13 | 644 | 1.1− | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.4− | 0.5+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2002 09 14 | 644 | 0.4− | 0.7+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 1.0+ | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3+ | 1.2− |
| 2002 09 15 | 644 | 0.7− | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 1.0− |
| 2002 09 15 | 644 | 0.6− | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.2+ | | | | |
| 2002 09 15 | 644 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.2+ | | | | |

**2002 RN$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.06712 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26790167 | $\omega$ | 172.30286 | | +0.81312151 | | −0.58168551 |
| $a$ | 2.3831558 | $\Omega$ | 223.29052 | | +0.53235245 | | +0.75826649 |
| $e$ | 0.1861175 | $i$ | 1.82214 | | +0.23544484 | | +0.29440430 |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | (2.1+ | 1.0−) | 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 11 17 | 704 | 1.5− | 0.2+ |
| 2002 09 04 | 699 | 0.6+ | 1.2+ | 2002 10 07 | 704 | (1.6− | 1.5−) | 2006 11 17 | 704 | 0.5+ | 1.1+ |
| 2002 09 04 | 699 | 1.4+ | 1.1+ | 2002 10 07 | 704 | 0.0 | 0.1+ | 2006 11 17 | 704 | 1.0− | 1.1+ |
| 2002 09 04 | 699 | 0.8+ | 1.2+ | 2002 10 07 | 704 | (0.3− | 1.5+) | 2006 11 17 | 704 | 0.2− | 0.2− |
| 2002 09 07 | 704 | 1.5− | 0.7+ | 2002 10 07 | 704 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.8− | 1.1+ |
| 2002 09 07 | 704 | (0.3+ | 1.8+) | 2002 10 11 | 704 | 0.0 | 0.8− | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2002 09 07 | 704 | 0.2− | 0.9+ | 2002 10 11 | 704 | 0.6− | 1.4− | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2002 09 13 | 683 | (0.6+ | 1.8+) | 2002 10 11 | 704 | 0.0 | 1.0− | 2006 11 18 | 704 | 0.2+ | 0.3− |
| 2002 09 13 | 683 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.9+ | 1.3− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2002 09 13 | 683 | (3.3+ | 0.6−) | 2002 10 11 | 704 | 0.4− | 1.3− | 2006 11 18 | 704 | 0.5+ | 0.0 |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.4− | 0.1+ |
| 2002 09 15 | 644 | 0.2− | 0.3+ | 2002 11 08 | 645 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.0− | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.6− | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.7− | 1.3+ |
| 2002 09 15 | 608 | 0.4− | 1.4+ | 2006 09 27 | G96 | 0.3+ | 0.7− | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2002 09 15 | 608 | 1.1− | 1.1+ | 2006 09 27 | G96 | 0.5+ | 0.5− | 2006 11 21 | 704 | 1.2− | 0.2− |
| 2002 09 15 | 608 | 1.2− | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | (2.0− | 0.0 ) |
| 2002 09 19 | 644 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2002 09 19 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 09 19 | 644 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 12 01 | 704 | 0.6+ | 0.4+ |
| 2002 09 30 | 704 | 1.5− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.4− | 2006 12 01 | 704 | 0.1+ | 0.8+ |
| 2002 09 30 | 704 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 12 01 | 704 | 0.3+ | 0.6+ |
| 2002 09 30 | 704 | 0.1− | 1.1+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 12 01 | 704 | 1.6+ | 0.8+ |
| 2002 09 30 | 704 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.3+ | 0.1− |
| 2002 09 30 | 704 | 0.8+ | 0.1+ | 2006 11 15 | 703 | 0.9− | 0.7− | 2006 12 01 | 691 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 1.0+ | 0.3+ | 2006 11 15 | 703 | 1.0+ | 0.9− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.8+ | 2006 11 15 | 703 | (1.8+ | 0.2−) | | | | |
| 2002 10 03 | 704 | 0.8+ | 0.4+ | 2006 11 15 | 703 | 0.5− | 0.1+ | | | | |

**2002 RZ$_{207}$ = 2006 RW$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.21447 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25864582 | $\omega$ | 313.28620 | | +0.71197764 | | +0.70219311 |
| $a$ | 2.4396774 | $\Omega$ | 2.12005 | | −0.61317528 | | +0.62417436 |
| $e$ | 0.1274574 | $i$ | 5.52290 | | −0.34220449 | | +0.34253644 |
| $P$ | 3.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.1− | 0.5− | 2002 10 09 | 291 | 0.0 | 0.1+ | 2006 09 23 | 152 | 0.7+ | 1.4+ |
| 2002 09 04 | 699 | 0.1+ | 0.8+ | 2005 03 17 | G96 | 0.3+ | 0.1− | 2006 09 23 | 152 | 0.2− | 0.7− |
| 2002 09 04 | 699 | 0.1+ | 0.6+ | 2005 03 17 | G96 | 0.5+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.3− |
| 2002 09 04 | 699 | 0.1− | 0.4+ | 2005 03 17 | G96 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2002 09 14 | 608 | 0.8− | 0.7− | 2005 03 17 | G96 | 0.9− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.3− |
| 2002 09 14 | 608 | 0.4− | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2002 09 14 | 608 | 0.0 | 1.4− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2002 09 15 | 644 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 17 | 703 | (0.2+ | 1.6−) |
| 2002 09 15 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2002 10 09 | 291 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.5+ | 2006 10 17 | 703 | (3.3− | 0.5−) |
| 2002 10 09 | 291 | 0.0 | 0.1+ | 2006 09 23 | 152 | (1.8− | 2.2−) | 2006 10 17 | 703 | 0.9− | 0.7+ |

**2002 RB$_{209}$ = 2006 WR$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.71325 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26764730 | $\omega$ | 172.25033 | | +0.97077500 | | +0.23984757 |
| $a$ | 2.3846655 | $\Omega$ | 173.85324 | | −0.22414084 | | +0.91848907 |
| $e$ | 0.2198479 | $i$ | 4.45069 | | −0.08577167 | | +0.31440574 |
| $P$ | 3.68 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.3+ | 1.0− | 2002 09 16 | 291 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 09 04 | 699 | 0.1− | 0.8− | 2002 09 16 | 291 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.1+ |
| 2002 09 04 | 699 | 0.5− | 1.2− | 2006 10 23 | G96 | 0.3− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2002 09 04 | 699 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.3− | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.3+ |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.5+ | 0.1− | 2006 11 24 | G96 | 0.5+ | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 09 16 | 291 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.5+ | 0.7− |

**2002 RN$_{211}$ = 2006 UN$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.81898 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25751849 | $\omega$ | 249.01966 | | +0.99588424 | | +0.04751616 |
| $a$ | 2.4467923 | $\Omega$ | 108.19234 | | −0.01533745 | | +0.92762769 |
| $e$ | 0.2011755 | $i$ | 4.65991 | | −0.08932714 | | +0.37047144 |
| $P$ | 3.83 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 608 | 0.3− | 0.5+ | 2002 11 03 | 608 | 0.9− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2002 09 09 | 608 | 0.7− | 0.4− | 2002 11 06 | 644 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 09 09 | 608 | 0.5− | 0.5− | 2002 11 06 | 644 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 09 15 | 608 | 0.4+ | 0.1− | 2002 11 06 | 644 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.4− | 0.3+ |
| 2002 09 15 | 608 | 0.7+ | 0.2− | 2006 10 17 | 683 | 0.2− | 0.6− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 09 15 | 608 | 0.2+ | 0.1− | 2006 10 17 | 683 | (0.8− | 2.9−) | 2006 11 14 | 704 | 0.0 | 0.4+ |
| 2002 09 19 | 599 | 0.1− | 0.6+ | 2006 10 17 | 683 | 1.2+ | 0.5− | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 2002 09 19 | 599 | 0.8+ | 0.7− | 2006 10 19 | 683 | 0.2− | 0.6− | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 2002 09 19 | 599 | 0.0 | 0.5+ | 2006 10 19 | 683 | 0.8+ | 0.0 | 2006 11 14 | 704 | 0.2+ | 0.2+ |
| 2002 10 02 | 608 | 0.0 | 0.1+ | 2006 10 19 | 683 | 0.2− | 0.3− | 2006 11 14 | 704 | 0.1− | 0.8+ |
| 2002 10 02 | 608 | 0.2+ | 0.2+ | 2006 10 20 | 683 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.3− |
| 2002 10 02 | 608 | 0.4+ | 0.0 | 2006 10 20 | 683 | 0.4+ | 0.3− | 2006 11 17 | 704 | 1.3− | 0.0 |
| 2002 10 04 | 704 | (1.8− | 0.0 ) | 2006 10 20 | 683 | 0.3+ | 1.2− | 2006 11 17 | 704 | 0.7− | 0.1+ |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2006 10 22 | 683 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.5− | 1.3+ |
| 2002 10 04 | 704 | 0.4− | 0.1− | 2006 10 22 | 683 | (1.6+ | 0.3+) | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.3− | 2006 10 22 | 683 | 0.6− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2006 10 27 | 683 | (2.4+ | 0.4−) | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2006 10 27 | 683 | 0.8+ | 0.4− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2006 10 27 | 683 | (1.9+ | 0.5−) | 2006 11 19 | 704 | 0.9+ | 0.4+ |
| 2002 10 15 | 644 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 2002 10 30 | 704 | 1.0+ | 0.7− | 2006 11 02 | 703 | 1.2− | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.9− |
| 2002 10 30 | 704 | 0.5− | 0.8+ | 2006 11 02 | 703 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.6− | 0.2− |
| 2002 10 30 | 704 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.1+ | 0.7− | 2006 11 28 | 704 | (1.6+ | 1.2+) |
| 2002 10 30 | 704 | 0.7+ | 0.9+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.4+ | 0.5+ |
| 2002 10 30 | 704 | 0.1+ | 1.2+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.3− |
| 2002 11 03 | 608 | 0.9− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.6+ | 0.3+ |
| 2002 11 03 | 608 | 1.0− | 0.3− | 2006 11 10 | 644 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.3+ |

**2002 RH$_{212}$ = 2006 SF$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.08132 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25164463 | $\omega$ | 359.07029 | | −0.04010650 | | −0.98272382 |
| $a$ | 2.4847208 | $\Omega$ | 93.21292 | | +0.91790790 | | −0.10767686 |
| $e$ | 0.1886766 | $i$ | 10.42596 | | +0.39476139 | | +0.15053100 |
| $P$ | 3.92 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 608 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.7− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 09 15 | 608 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2002 09 15 | 608 | 0.1+ | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 09 19 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.2− | 0.5− | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2002 09 19 | 644 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.6+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2002 09 19 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.8+ | 0.5− |
| 2002 09 28 | 608 | (2.3− | 1.2−) | 2006 09 26 | 703 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2002 09 28 | 608 | (1.7− | 0.7−) | 2006 09 30 | 704 | 0.6− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2002 09 28 | 608 | (2.3− | 0.3−) | 2006 09 30 | 704 | 1.3− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2002 11 05 | 644 | 0.2+ | 0.7+ | 2006 09 30 | 704 | 0.5+ | 0.9+ | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2002 11 05 | 644 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2002 11 05 | 644 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.2+ | 0.6− |
| 2006 09 19 | 703 | 0.6+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2006 09 19 | 703 | 0.3+ | 1.0− | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.8− |
| 2006 09 19 | 703 | 1.4+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.1− | 1.0+ |
| 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 | | | | |
| 2006 09 25 | 699 | (0.7+ | 1.8−) | 2006 10 12 | 644 | 0.0 | 0.2− | | | | |

### 2002 RD$_{213}$ = 2006 WX$_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.17881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29537678 | $\omega$ | 172.41388 | | −0.02030119 | +0.99304022 | |
| $a$ | 2.2329816 | $\Omega$ | 96.37146 | | −0.92331405 | +0.02588871 | |
| $e$ | 0.1653526 | $i$ | 6.70364 | | −0.38350883 | −0.11489516 | |
| $P$ | 3.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 608 | 0.3+ | 0.4+ | 2002 09 28 | 608 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 09 12 | 608 | 0.1+ | 0.7+ | 2002 09 28 | 608 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 09 12 | 608 | 0.1+ | 0.4+ | 2002 09 28 | 608 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2002 09 13 | 704 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.6+ | 0.9− |
| 2002 09 13 | 704 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.6− | 0.1+ |
| 2002 09 13 | 704 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2002 09 16 | 608 | 0.3+ | 1.1− | 2006 11 17 | G96 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2002 09 16 | 608 | 0.0 | 0.8− | 2006 11 18 | 691 | 0.1− | 0.3+ | | | | |
| 2002 09 16 | 608 | 0.4− | 0.7− | 2006 11 18 | 691 | 0.2+ | 0.1+ | | | | |

### 2002 RV$_{213}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.36353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26615754 | $\omega$ | 272.35377 | | +0.81388845 | +0.57217417 | |
| $a$ | 2.3935557 | $\Omega$ | 52.76271 | | −0.46981082 | +0.75036872 | |
| $e$ | 0.3014816 | $i$ | 7.28881 | | −0.34185288 | +0.33100380 | |
| $P$ | 3.70 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 07 | 691 | 0.1+ | 0.4− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 12 | 703 | 0.1+ | 0.0 |
| 1991 09 07 | 691 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 12 | 703 | (6.0− | 2.0+) |
| 1991 09 07 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2002 08 13 | 704 | 0.7+ | 0.4− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.8+ | 0.2+ |
| 2002 08 13 | 704 | 0.1− | 0.8− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2002 08 13 | 704 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.0 |
| 2002 08 13 | 704 | (1.7− | 1.2−) | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.5− | 0.3+ |
| 2002 08 13 | 704 | 0.2+ | 0.8− | 2006 10 28 | G96 | 0.3− | 0.2− | 2006 11 16 | 703 | 0.5+ | 0.2+ |
| 2002 08 21 | 644 | 0.1− | 1.2+ | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 16 | 703 | 0.2− | 0.0 |
| 2002 08 21 | 644 | 0.1− | 1.1+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.6+ | 1.3+ |
| 2002 08 21 | 644 | 0.5+ | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.8+ | 0.6− |
| 2002 09 09 | 644 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2002 09 09 | 644 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.6− | 0.1+ |
| 2002 09 09 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2002 09 13 | 699 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2002 09 13 | 699 | 0.5+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2002 09 13 | 699 | 1.1− | 1.3+ | 2006 11 01 | 691 | 0.5− | 0.1+ | 2006 12 01 | G96 | 1.5+ | 0.5+ |
| 2002 09 13 | 699 | 0.3− | 1.0− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.5+ | 0.2− |
| 2002 09 16 | 644 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2002 09 16 | 644 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2002 09 16 | 644 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.4− | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.7− |
| 2002 10 09 | 644 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 10 09 | 644 | 0.4+ | 0.6+ | 2006 11 12 | 703 | 0.4− | 0.4+ | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2002 10 09 | 644 | 0.2+ | 0.9+ | 2006 11 12 | 703 | 1.5− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.4− |

### 2002 RK$_{215}$ = 2006 TQ$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.65728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26318559 | $\omega$ | 282.38043 | | +0.86297746 | −0.49564695 | |
| $a$ | 2.4115409 | $\Omega$ | 107.40339 | | +0.49422469 | +0.78784035 | |
| $e$ | 0.1164757 | $i$ | 5.89475 | | +0.10493739 | +0.36557035 | |
| $P$ | 3.74 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 08 | 599 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.5− | 0.6+ | 2006 11 13 | 644 | 0.2− | 0.4+ |
| 2002 09 08 | 599 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.4+ | 1.5+ | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2002 09 08 | 599 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.3− | 2006 11 13 | 703 | 0.1− | 1.1+ |
| 2002 09 13 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 1.0− | 2006 11 19 | 703 | 0.2− | 0.9+ |
| 2002 09 13 | 704 | 0.8− | 0.3− | 2006 10 22 | 703 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.7− |
| 2002 09 13 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.0 | 0.5− | 2006 11 19 | 703 | (0.5+ | 1.7−) |
| 2002 09 16 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.4− | 2006 11 19 | 703 | 0.0 | 0.3+ |
| 2002 09 16 | 644 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 09 16 | 644 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 13 | 644 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 13 | 703 | 1.3+ | 1.4− | 2006 11 24 | G96 | 0.1− | 0.2+ |
| 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.8− | 1.3− | | | | |

### 2002 RD$_{217}$ = 2006 WS$_{148}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.27986 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28397878 | $\omega$ | 10.21412 | | +0.79595986 | +0.60483473 | |
| $a$ | 2.2923387 | $\Omega$ | 312.53898 | | −0.55775903 | +0.71673778 | |
| $e$ | 0.1649164 | $i$ | 1.94104 | | −0.23527167 | +0.34707621 | |
| $P$ | 3.47 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 608 | 0.8− | 0.6+ | 2002 09 05 | 704 | 0.1+ | 0.6− | 2004 01 19 | 691 | 0.4− | 0.4+ |
| 2002 08 18 | 608 | 0.6− | 1.0+ | 2002 09 14 | 644 | 0.4− | 0.0 | 2006 11 20 | 691 | 0.8+ | 0.3+ |
| 2002 08 18 | 608 | 0.5− | 0.8+ | 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 08 29 | 291 | 0.1+ | 0.1+ | 2002 09 14 | 644 | 0.4− | 0.2− | 2006 11 20 | 691 | 0.4− | 0.3− |
| 2002 08 29 | 291 | 0.2+ | 0.0 | 2002 09 16 | 644 | 0.8− | 0.0 | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2002 08 29 | 291 | 0.1+ | 0.1+ | 2002 09 16 | 644 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.1− | 0.5− |
| 2002 09 05 | 704 | 0.6+ | 0.7− | 2002 09 16 | 644 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.0 | 2004 01 19 | 691 | 0.3+ | 0.7+ | | | | |
| 2002 09 05 | 704 | 0.3+ | 0.6+ | 2004 01 19 | 691 | 0.5+ | 0.2+ | | | | |

### 2002 RJ$_{219}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.45763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27062436 | $\omega$ | 335.85460 | | +0.88438518 | +0.46675112 | |
| $a$ | 2.3671446 | $\Omega$ | 356.31892 | | −0.42166455 | +0.79663959 | |
| $e$ | 0.2313537 | $i$ | 2.22902 | | −0.20015457 | +0.38406868 | |
| $P$ | 3.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 704 | 0.0 | 0.1+ | 2002 09 05 | 704 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2002 08 10 | 704 | 0.3+ | 0.7− | 2002 09 15 | 644 | 0.3− | 0.8+ | 2006 10 31 | 691 | 0.4+ | 0.2− |
| 2002 08 10 | 704 | 1.1+ | 0.4− | 2002 09 15 | 644 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 08 10 | 704 | 0.9− | 0.5− | 2002 09 15 | 644 | 0.1+ | 0.5+ | 2006 11 17 | 691 | 0.4− | 0.2− |
| 2002 08 11 | 608 | 0.4− | 0.4+ | 2002 09 16 | 644 | 0.5− | 0.4− | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2002 08 11 | 608 | 0.5− | 0.2+ | 2002 09 16 | 644 | 0.1− | 0.3− | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2002 08 11 | 608 | 0.4− | 0.0 | 2002 09 16 | 644 | 0.2− | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2002 08 18 | 644 | 0.3+ | 0.1+ | 2002 09 30 | 608 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2002 08 18 | 644 | 0.3+ | 0.1+ | 2002 09 30 | 608 | 0.2− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.4+ | 0.2+ | 2002 09 30 | 608 | 0.4− | 0.6− | 2006 11 23 | 703 | 0.9− | 0.8− | | |
| 2002 08 29 | 644 | 0.1− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 23 | 703 | 0.8− | 0.1+ | | |
| 2002 08 29 | 644 | 0.2− | 0.6− | 2006 10 19 | 691 | 0.3− | 0.5+ | 2006 11 23 | 703 | 0.2+ | 0.8− | | |
| 2002 08 29 | 644 | 0.2− | 0.7− | 2006 10 19 | 691 | 0.7− | 0.6+ | 2006 11 23 | 703 | 0.3+ | 1.1− | | |
| 2002 09 04 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.4− | 2006 11 24 | 703 | 0.2− | 0.1+ | | |
| 2002 09 04 | 644 | 0.9+ | 0.3− | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 24 | 703 | 0.4+ | 0.4− | | |
| 2002 09 04 | 644 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 24 | 703 | 0.6+ | 0.5− | | |
| 2002 09 05 | 704 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.4− | 2006 11 24 | 703 | 0.7− | 0.3− | | |
| 2002 09 05 | 704 | 0.4− | 0.0 | 2006 10 27 | 691 | 0.4+ | 0.0 | | | | | | |
| 2002 09 05 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 691 | 0.4+ | 0.1+ | | | | | | |

**2002 RU$_{219}$ = 2006 SC$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.39841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25810291 | $\omega$ | 268.72355 | | +0.90645626 | +0.41965250 | |
| $a$ | 2.4430974 | $\Omega$ | 66.46209 | | −0.36408407 | +0.83324020 | |
| $e$ | 0.2001320 | $i$ | 2.95175 | | −0.21396222 | +0.36000355 | |
| $P$ | 3.82 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.0 | 0.0 | 2002 09 16 | 644 | 0.0 | 0.4+ | 2006 10 15 | 703 | 1.4− | 0.0 | | |
| 2002 08 18 | 644 | 0.2+ | 0.3− | 2002 09 16 | 644 | 0.5− | 0.2+ | 2006 10 15 | 703 | 1.4+ | 0.8+ | | |
| 2002 08 19 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 10 21 | 703 | 1.1− | 0.5+ | | |
| 2002 08 19 | 644 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | (1.7− | 1.9−) | | |
| 2002 08 19 | 644 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | (1.7− | 0.2+) | | |
| 2002 08 20 | 644 | 0.5− | 0.5− | 2006 09 27 | 691 | 0.2− | 0.2− | 2006 10 21 | 703 | 1.2+ | 1.0− | | |
| 2002 08 20 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2002 08 29 | 644 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2002 08 29 | 644 | 0.4+ | 0.6− | 2006 10 01 | 691 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.5− | 0.1− | | |
| 2002 08 30 | 644 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.1− | | |
| 2002 08 30 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.6+ | 0.5− | | |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.6− | | |
| 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 10 15 | 703 | 0.2− | 0.4− | | | | | | |
| 2002 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.5− | 1.3+ | | | | | | |

**2002 RE$_{228}$ = 2006 SH$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.73526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25280406 | $\omega$ | 7.36050 | | +0.82799783 | −0.55526620 | |
| $a$ | 2.4771180 | $\Omega$ | 26.83489 | | +0.50524274 | +0.67838151 | |
| $e$ | 0.2858071 | $i$ | 9.96237 | | +0.24320644 | +0.48112159 | |
| $P$ | 3.90 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 644 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.1+ | 2006 09 30 | 704 | (1.5− | 1.6+) | | |
| 2002 09 09 | 644 | 0.7+ | 0.4+ | 2006 09 12 | 703 | 1.0− | 0.1− | 2006 09 30 | 704 | 1.4+ | 0.2+ | | |
| 2002 09 09 | 644 | 0.6+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.6− | 0.6+ | | |
| 2002 09 14 | 608 | 0.4− | 1.0− | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.3+ | 0.3− | | |
| 2002 09 14 | 608 | 0.6− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1− | | |
| 2002 09 14 | 608 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.0 | 0.8− | 2006 10 01 | 691 | 0.1− | 0.3+ | | |
| 2002 09 17 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1− | 1.0− | 2006 10 01 | 691 | 0.3+ | 0.0 | | |
| 2002 09 17 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.5+ | | |
| 2002 09 17 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 1.1+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2006 08 27 | D35 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.4− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2006 08 27 | D35 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2006 08 27 | D35 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.0 | | |
| 2006 09 12 | 703 | 0.5− | 0.7− | 2006 09 26 | 703 | 0.0 | 0.8+ | 2006 11 11 | G96 | 0.4+ | 0.4− | | |
| 2006 09 12 | 703 | 0.6− | 0.3+ | 2006 09 26 | 703 | 0.7+ | 0.8+ | | | | | | |

**2002 RA$_{231}$ = 2006 SR$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.26744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26205928 | $\omega$ | 325.17603 | | +0.89551044 | −0.43040248 | |
| $a$ | 2.4184457 | $\Omega$ | 60.70217 | | +0.43209882 | +0.77997548 | |
| $e$ | 0.1047202 | $i$ | 7.45839 | | +0.10654417 | +0.45430381 | |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.1+ | 0.3+ | 2004 03 16 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.2+ | | |
| 1991 11 08 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.1+ | 0.5− | | |
| 1991 11 08 | 691 | 0.2− | 0.3+ | 2006 09 29 | 699 | 0.8+ | 0.1− | 2006 11 13 | 703 | 0.4+ | 0.6− | | |
| 2002 09 01 | 644 | 1.1− | 1.0+ | 2006 09 29 | 699 | 0.8− | 0.1+ | 2006 11 14 | 704 | 0.3− | 0.2+ | | |
| 2002 09 01 | 644 | 0.2− | 0.3+ | 2006 09 29 | 699 | 0.5+ | 0.8− | 2006 11 14 | 704 | 0.1+ | 0.2+ | | |
| 2002 09 01 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.0 | 2006 11 14 | 704 | 0.5+ | 0.2− | | |
| 2002 09 15 | 608 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.4− | 2006 11 14 | 704 | 0.1+ | 0.5− | | |
| 2002 09 15 | 608 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 14 | 704 | 0.5− | 0.6− | | |
| 2002 09 15 | 608 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 17 | 704 | (0.9− | 2.2+) | | |
| 2002 09 17 | 644 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 17 | 704 | (0.8− | 1.6+) | | |
| 2002 09 17 | 644 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.8− | 2006 11 17 | 704 | (0.7− | 1.6+) | | |
| 2002 09 17 | 644 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.2− | 1.4+ | | |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 21 | 704 | 1.1+ | 0.1+ | | |
| 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.6− | | |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.3− | 0.2− | 2006 11 21 | 704 | 1.1+ | 0.2+ | | |
| 2004 03 16 | 691 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.3+ | | |
| 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 703 | 0.1− | 1.4− | 2006 11 21 | 704 | 0.6+ | 0.8+ | | |

**2002 RP$_{235}$ = 2006 RL$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.24038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26449559 | $\omega$ | 8.28580 | | +0.03619224 | +0.99927186 | |
| $a$ | 2.4035717 | $\Omega$ | 263.78892 | | −0.91757602 | +0.02844037 | |
| $e$ | 0.1547086 | $i$ | 0.69613 | | −0.39590955 | +0.02543430 | |
| $P$ | 3.73 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.5− | 0.1+ | | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2002 08 27 | 644 | 0.7− | 0.4+ | 2005 05 12 | G96 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2002 08 27 | 644 | 0.4− | 1.2+ | 2005 05 12 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1+ | | |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1− | | |
| 2002 08 28 | 644 | 0.3+ | 0.1− | 2005 05 12 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 2002 08 28 | 644 | 0.0 | 0.8+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.5− | 0.3+ | | |
| 2002 09 07 | 704 | 0.4− | 1.3− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.6− | 0.5+ | | |
| 2002 09 07 | 704 | 0.9− | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.4− | 2006 09 30 | 691 | 0.3− | 0.5+ | | |
| 2002 09 07 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.5+ | 0.1− | | |
| 2002 09 08 | 608 | 0.4+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.4+ | | |
| 2002 09 08 | 608 | (0.0 | 1.6+) | 2006 09 19 | 691 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.2− | | | | | | |

**2002 RT$_{237}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.71567 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26776267 | $\omega$ | 24.43248 | | +0.82047239 | −0.57165084 | |
| $a$ | 2.3839805 | $\Omega$ | 10.44003 | | +0.51857363 | +0.73952193 | |
| $e$ | 0.2231169 | $i$ | 2.00953 | | +0.24063758 | +0.35541895 | |
| $P$ | 3.68 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.1− | 0.9− | 2006 10 20 | G96 | 0.6+ | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.4+ | | |
| 2002 08 20 | 644 | 0.5+ | 0.9− | 2006 10 20 | G96 | 0.7+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.4− | | |
| 2002 08 29 | 644 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.4+ | 0.4− | | |
| 2002 08 29 | 644 | 0.6+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.8− | 2006 11 19 | 704 | 1.0+ | 0.3− | | |
| 2002 08 29 | 644 | 0.8+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.6− | 2006 11 19 | 704 | 0.1+ | 0.4+ | | |
| 2002 09 05 | 704 | 0.0 | 0.7− | 2006 11 10 | 691 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.1− | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.8+ | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.3+ | 0.3− |
| 2002 09 08 | 608 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.2− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2002 09 08 | 608 | 0.7− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2002 09 08 | 608 | 0.6− | 0.4− | 2006 11 11 | 703 | 0.0 | 0.6− | 2006 11 22 | 704 | 1.3+ | 0.8− |
| 2002 09 13 | 608 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.4− | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2002 09 15 | 644 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.4− | 1.2+ |
| 2002 09 15 | 644 | 0.3− | 0.7− | 2006 11 14 | 691 | 0.9− | 0.9+ | 2006 11 22 | 704 | 0.6− | 1.2+ |
| 2002 09 30 | 608 | 1.0− | 0.9+ | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.0 | 0.7+ |
| 2002 09 30 | 608 | 0.3+ | 1.2+ | 2006 11 16 | 704 | 0.8− | 0.9+ | 2006 11 27 | 704 | 0.3− | 0.1+ |
| 2002 09 30 | 608 | 0.8− | 1.0+ | 2006 11 16 | 704 | 0.7− | 1.2+ | 2006 11 27 | 704 | 0.2− | 1.1+ |
| 2006 10 20 | G96 | 0.7+ | 0.3− | 2006 11 16 | 704 | (1.6+ | 0.2+) | 2006 11 27 | 704 | 0.3+ | 1.3+ |

**2002 RH$_{238}$ = 2006 TV$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.70382 | | (2000.0) | | +0.98076898 | +0.19425678 |
| $n$ | 0.26119124 | $\omega$ | 320.68494 | | −0.16745459 | +0.88723125 |
| $a$ | 2.4238011 | $\Omega$ | 28.13084 | | −0.10025552 | +0.41843161 |
| $e$ | 0.1848126 | $i$ | 2.29513 | | | |
| $P$ | 3.77 | $H$ | 17.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.3− | 0.0 |
| 2002 08 20 | 644 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 2002 08 20 | 644 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.3− | 1.0− |
| 2002 08 29 | 644 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2002 09 06 | 704 | 0.7− | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 09 06 | 704 | 1.2+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.6− |
| 2002 09 06 | 704 | 0.4+ | 0.8− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8+ | 1.3+ |
| 2002 09 09 | 608 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.8+ | 0.8− |
| 2002 09 09 | 608 | 0.6+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | (0.2+ | 2.0−) |
| 2002 09 09 | 608 | 0.5+ | 1.0− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2002 09 12 | 644 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.0 | 0.7− |
| 2002 09 12 | 644 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 09 12 | 644 | 0.7− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 608 | 0.6− | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.2− |
| 2002 09 14 | 608 | 0.7− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 09 14 | 608 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2002 09 15 | 644 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2002 09 15 | 644 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2002 09 15 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.3+ | | | | |
| 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.2− | | | | |

**2002 RM$_{238}$ = 2006 US$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.93056 | | (2000.0) | | +0.94918840 | +0.31394034 |
| $n$ | 0.25482602 | $\omega$ | 280.73332 | | −0.27802793 | +0.86922439 |
| $a$ | 2.4639972 | $\Omega$ | 60.97293 | | −0.14745118 | +0.38195605 |
| $e$ | 0.1695074 | $i$ | 1.44001 | | | |
| $P$ | 3.87 | $H$ | 18.5 | $G$ 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 19 | 695 | 0.3+ | 0.8+ |
| 2002 09 12 | 644 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2002 09 12 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.4− | 0.1+ |
| 2002 09 14 | 608 | 1.2− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 09 15 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2002 09 15 | 644 | 0.7+ | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.3− | | | | |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 695 | 0.0 | 0.3+ | | | | |

**2002 RR$_{239}$ = 2006 SR$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.88659 | | (2000.0) | | +0.86138406 | −0.50505109 |
| $n$ | 0.26446422 | $\omega$ | 74.83156 | | +0.43129455 | +0.78360334 |
| $a$ | 2.4037618 | $\Omega$ | 315.46671 | | +0.26833285 | +0.36178613 |
| $e$ | 0.1245120 | $i$ | 4.43485 | | | |
| $P$ | 3.73 | $H$ | 17.9 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.0 | 0.1− | 2004 02 12 | 691 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2002 08 28 | 644 | 0.2− | 0.9+ | 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 10 19 | 703 | 1.0− | 0.2+ |
| 2002 08 28 | 644 | 0.2− | 0.5+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2002 09 08 | 608 | 0.0 | 1.2− | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2002 09 08 | 608 | 0.3− | 0.9− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2002 09 14 | 644 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2002 09 16 | 608 | 0.5+ | 0.2− | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.8− |
| 2002 09 16 | 608 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 1.3+ | 0.4− |
| 2002 09 16 | 608 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.8− | | | | |

**2002 RR$_{240}$ = 2006 VB$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.95210 | | (2000.0) | | +0.99897261 | +0.02590520 |
| $n$ | 0.26404161 | $\omega$ | 118.44871 | | −0.03805182 | +0.92511125 |
| $a$ | 2.4063260 | $\Omega$ | 240.08866 | | +0.02461274 | +0.37881142 |
| $e$ | 0.2320364 | $i$ | 2.45863 | | | |
| $P$ | 3.73 | $H$ | 18.9 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.7+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.8+ | 2006 11 14 | 691 | 0.4− | 0.0 |
| 2002 08 28 | 644 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.4− | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2006 10 13 | 691 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.3+ | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.6+ | 0.4− |
| 2002 09 14 | 644 | 0.4− | 0.7− | 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 09 14 | 644 | 0.3+ | 0.5− | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.4− | 0.7− |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.4− | | | | |

**2002 RJ$_{241}$ = 2006 SD$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.89281 | | (2000.0) | | +0.96560640 | −0.25722583 |
| $n$ | 0.24035791 | $\omega$ | 156.55126 | | +0.22784573 | +0.90739874 |
| $a$ | 2.5619094 | $\Omega$ | 218.41732 | | +0.12526214 | +0.33235884 |
| $e$ | 0.0844555 | $i$ | 3.50014 | | | |
| $P$ | 4.10 | $H$ | 17.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.4+ | 0.2+ | 2002 09 13 | 644 | 0.1− | 0.3− | 2005 04 14 | 691 | 0.2+ | 0.1+ |
| 2002 08 28 | 644 | 0.2+ | 0.6+ | 2002 09 14 | 644 | 0.2− | 0.2− | 2006 09 17 | 691 | 0.2− | 0.4+ |
| 2002 08 28 | 644 | 0.0 | 0.7+ | 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2002 08 28 | 644 | 0.7+ | 0.3+ | 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2004 01 18 | 691 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2002 09 08 | 608 | 0.4− | 0.7− | 2004 01 18 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2002 09 09 | 644 | 0.4− | 0.2+ | 2004 01 18 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.2+ |
| 2002 09 13 | 644 | 0.3− | 0.1+ | 2005 04 14 | 691 | 0.2− | 0.5+ | | | | |
| 2002 09 13 | 644 | 0.3− | 0.0 | 2005 04 14 | 691 | 0.4+ | 0.6+ | | | | |

**2002 RF$_{242}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.88089 | | (2000.0) | | | |
| $n$ | 0.25372190 | $\omega$ | 219.90135 | | +0.58528727 | −0.81041003 |
| $a$ | 2.4711404 | $\Omega$ | 194.33723 | | +0.76811250 | +0.56442854 |
| $e$ | 0.1299960 | $i$ | 6.01972 | | +0.25969597 | +0.15702232 |
| $P$ | 3.88 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.4− | 0.2− | 2006 09 16 | 699 | 0.4− | 1.2− | 2006 09 29 | 704 | 0.2− | 0.4+ |
| 2002 08 12 | 704 | 1.3− | 0.8+ | 2006 09 16 | 699 | 0.5− | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.3− |
| 2002 08 12 | 704 | 0.4− | 0.0 | 2006 09 16 | 699 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 08 12 | 704 | 0.8− | 0.1− | 2006 09 16 | 699 | 0.9− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.3− |
| 2002 08 28 | 644 | 0.8+ | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.9+ |
| 2002 08 28 | 644 | 0.7+ | 0.0 | 2006 09 18 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2002 08 28 | 644 | 0.7+ | 0.4+ | 2006 09 18 | 704 | 0.6− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 09 01 | 608 | 0.9+ | 0.9− | 2006 09 18 | 704 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 09 01 | 608 | 0.6+ | 1.1− | 2006 09 19 | 699 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2002 09 06 | 704 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.5− | 0.5− | 2006 10 16 | 703 | (0.6− | 1.7−) |
| 2002 09 06 | 704 | 0.2− | 0.3+ | 2006 09 19 | 699 | 1.1− | 0.6+ | 2006 10 16 | 703 | 0.8+ | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.1+ | 2006 09 20 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6− | 1.3− |
| 2002 09 06 | 704 | 0.6− | 0.1+ | 2006 09 20 | 691 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.6− |
| 2002 09 13 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 1.4+ | 0.1− |
| 2002 09 13 | 644 | 0.2+ | 0.2− | 2006 09 20 | 704 | 1.1+ | 0.8− | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2002 09 13 | 644 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.4+ | 1.0− |
| 2002 09 14 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.4− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2002 09 14 | 644 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.3− | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2002 09 16 | 608 | 0.1− | 0.5− | 2006 09 25 | 704 | 0.6+ | 1.2+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2002 09 16 | 608 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2002 09 16 | 608 | 0.5− | 0.6+ | 2006 09 25 | 704 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.5+ | 0.2+ |
| 2006 08 21 | 691 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.7− | 1.1+ | 2006 10 24 | 644 | 0.2+ | 0.3+ |
| 2006 08 21 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.9+ | 0.6+ | 2006 10 24 | 644 | 0.8− | 0.0 |
| 2006 08 21 | 691 | 0.2+ | 0.4− | 2006 09 25 | 699 | 0.5− | 0.7− | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2006 09 12 | 703 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.1− | 1.1+ | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2006 09 12 | 703 | 0.2− | 0.4− | 2006 09 29 | 704 | 0.3− | 0.6− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2006 09 12 | 703 | 0.9+ | 0.9+ | 2006 09 29 | 704 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 09 12 | 703 | 0.1+ | 0.7+ | 2006 09 29 | 704 | 0.9− | 0.1− | | | | |

**2002 RM$_{242}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.14937 | | (2000.0) | | | |
| $n$ | 0.25928043 | $\omega$ | 316.98051 | | +0.48970732 | +0.86834728 |
| $a$ | 2.4356949 | $\Omega$ | 341.89028 | | −0.71565028 | +0.34890515 |
| $e$ | 0.2117604 | $i$ | 14.62503 | | −0.49802752 | +0.35247440 |
| $P$ | 3.80 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.0 | 0.4− | 2002 08 30 | 644 | 0.1− | 0.4+ | 2002 09 15 | 644 | 0.2− | 0.3− |
| 2002 08 13 | 644 | 0.0 | 0.5− | 2002 09 03 | 608 | 0.1+ | 0.1+ | 2002 09 15 | 644 | 0.5− | 0.2− |
| 2002 08 13 | 644 | 0.3− | 0.7− | 2002 09 03 | 608 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.2− | 0.5− |
| 2002 08 19 | 644 | 0.4+ | 0.8+ | 2002 09 03 | 608 | 0.7− | 0.7− | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2002 08 19 | 644 | 0.1+ | 0.7+ | 2002 09 04 | 644 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.2− |
| 2002 08 19 | 644 | 1.0+ | 0.2+ | 2002 09 04 | 644 | 0.4− | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.3+ |
| 2002 08 30 | 644 | 0.0 | 0.3+ | 2002 09 04 | 644 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.2+ | 0.2+ |
| 2002 08 30 | 644 | 0.0 | 0.5+ | 2002 09 15 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1− |

**2002 RO$_{245}$ = 2006 SX$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.68510 | | (2000.0) | | | |
| $n$ | 0.26207696 | $\omega$ | 311.12120 | | +0.36837999 | +0.92853780 |
| $a$ | 2.4183370 | $\Omega$ | 340.34802 | | −0.80674633 | +0.29470245 |
| $e$ | 0.0250176 | $i$ | 7.85732 | | −0.46201358 | +0.22576096 |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.1− | 0.0 | 2002 09 11 | 608 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.2+ | 0.4+ |
| 1993 01 26 | 691 | 0.3+ | 0.4+ | 2002 09 11 | 608 | 0.1− | 0.4− | 2006 09 19 | 699 | 0.5− | 1.0− |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.1− |
| 2002 08 18 | 644 | 0.4+ | 0.0 | 2002 09 14 | 644 | 0.6− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.4− | 0.4− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.0 | 0.2− | 2002 09 15 | 644 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2002 08 29 | 644 | 0.2+ | 0.1− | 2002 09 15 | 644 | 0.7− | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2002 09 01 | 644 | 0.2− | 0.5+ | 2005 05 12 | 644 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2002 09 01 | 644 | 0.2+ | 0.6+ | 2005 05 12 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.5− |
| 2002 09 01 | 608 | 0.4− | 0.6+ | 2005 05 12 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.6− |
| 2002 09 04 | 644 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 09 04 | 644 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 09 04 | 644 | 0.4+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.4+ | | | | |
| 2002 09 11 | 608 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.5− | 0.1+ | | | | |

**2002 RQ$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.55325 | | (2000.0) | | | |
| $n$ | 0.27132034 | $\omega$ | 275.98714 | | +0.64295774 | −0.76553588 |
| $a$ | 2.3630948 | $\Omega$ | 133.97117 | | +0.71507004 | +0.58892888 |
| $e$ | 0.1751087 | $i$ | 1.88458 | | +0.27437235 | +0.25907063 |
| $P$ | 3.63 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 599 | 0.5− | 0.1− | 2006 10 16 | 621 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.9− | 0.2+ |
| 2002 08 08 | 599 | 0.8+ | 1.3+ | 2006 10 16 | 621 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2002 08 08 | 599 | 0.1+ | 0.2− | 2006 10 16 | 621 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.6− | 2006 10 17 | 621 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.3− | 0.0 |
| 2002 08 17 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 621 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 08 17 | 644 | 0.7+ | 0.1− | 2006 10 17 | 621 | 0.2+ | 0.2− | 2006 11 14 | 704 | (0.9− | 2.4+) |
| 2002 08 18 | 644 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 11 14 | 704 | (0.4+ | 2.8+) |
| 2002 08 18 | 644 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 14 | 704 | (0.0 | 2.5+) |
| 2002 08 18 | 644 | 0.1− | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 17 | 704 | 0.3+ | 0.7− |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.5+ | 0.2− |
| 2002 08 27 | 644 | 0.4− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.1+ |
| 2002 08 29 | 644 | 0.6− | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.7− |
| 2002 08 29 | 644 | 0.5− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.2− |
| 2002 08 29 | 644 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.4+ |
| 2002 09 01 | 644 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.3+ |
| 2002 09 01 | 644 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2002 09 04 | 644 | 0.0 | 0.4− | 2006 11 02 | 703 | 0.7− | 0.0 | 2006 11 20 | 704 | 0.9+ | 1.0+ |
| 2002 09 04 | 644 | 0.2− | 0.1− | 2006 11 02 | 703 | (1.7− | 0.7−) | 2006 11 20 | 704 | 0.2− | 1.2+ |
| 2002 09 04 | 644 | 0.5+ | 0.0 | 2006 11 02 | 703 | 0.6− | 0.7− | 2006 11 20 | 704 | 0.9+ | 0.1− |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.6− | 1.0− | 2006 11 20 | 704 | 1.0+ | 0.7+ |
| 2002 09 15 | 644 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.5− | 0.3+ | 2006 11 28 | 704 | 0.9− | 0.4− |
| 2002 09 15 | 644 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.9+ | 0.9− |
| 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.4+ |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.3+ | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.1− | | | | |

**2002 RF$_{247}$ = 2006 WY$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.18606 | | (2000.0) | | | |
| $n$ | 0.27222430 | $\omega$ | 250.11136 | | +0.97639145 | −0.21446314 |
| $a$ | 2.3578606 | $\Omega$ | 122.26482 | | +0.20783875 | +0.90021132 |
| $e$ | 0.2227715 | $i$ | 1.74798 | | +0.05884540 | +0.37897907 |
| $P$ | 3.62 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 691 | 0.1− | 0.1− | 2002 08 28 | 644 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.5+ | 0.7− |
| 1999 12 31 | 691 | 0.2+ | 0.3− | 2002 09 05 | 608 | 0.4− | 0.8− | 2006 09 28 | G96 | 0.1− | 0.2− |
| 1999 12 31 | 691 | 0.1− | 0.0 | 2002 09 05 | 608 | 0.3− | 1.0− | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2002 08 08 | 644 | 0.3+ | 0.8+ | 2002 09 05 | 608 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2002 08 08 | 644 | 0.2+ | 0.6+ | 2002 09 11 | 608 | 0.8− | 0.4− | 2006 11 21 | 704 | (2.4− | 1.1+) |
| 2002 08 08 | 644 | 0.2+ | 0.6+ | 2002 09 11 | 608 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2002 09 11 | 608 | 0.4+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 1.2+ |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2002 09 15 | 644 | 0.3+ | 0.5− | 2006 11 24 | G96 | 0.3− | 0.1+ |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2002 09 15 | 644 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2002 08 28 | 644 | 0.2+ | 0.1+ | 2002 09 15 | 644 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2002 08 28 | 644 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.2− |

**2002 RG$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.30899 | | (2000.0) | | | |
| $n$ | 0.26247076 | $\omega$ | 346.08561 | | +0.99773946 | +0.06659222 |
| $a$ | 2.4159175 | $\Omega$ | 10.10905 | | −0.05568494 | +0.89444755 |
| $e$ | 0.2504566 | $i$ | 2.94724 | | −0.03761857 | +0.44218669 |
| $P$ | 3.76 | $H$ | 18.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.8+ | 0.8− | 2002 09 15 | 644 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2002 08 11 | 644 | 0.5+ | 0.7− | 2002 09 15 | 644 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.4− | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.1− | 0.7− | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2002 08 18 | 644 | 0.5+ | 0.4− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.4− |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2002 08 29 | 644 | 0.1− | 1.1+ | 2006 10 16 | 691 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 08 29 | 644 | 0.5− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 09 15 | 644 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3− |

**2002 RZ$_{249}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.73700 | | (2000.0) | | | |
| $n$ | 0.27362086 | $\omega$ | 114.50324 | | +0.72444537 | +0.68814463 |
| $a$ | 2.3498308 | $\Omega$ | 202.08476 | | −0.66497804 | +0.68218830 |
| $e$ | 0.1233572 | $i$ | 6.17556 | | −0.18161253 | +0.24713577 |
| $P$ | 3.60 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2− | 0.2− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2002 08 28 | 644 | 0.1− | 0.7− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.5+ |
| 2002 09 11 | 644 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 09 11 | 644 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.7− | 1.1− |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.7− | 2006 11 27 | 691 | 0.5+ | 0.7+ |
| 2002 09 13 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.6− | 2006 11 27 | 691 | 0.0 | 0.5+ |
| 2002 09 13 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.4− | | | | |

**2002 RZ$_{250}$ = 2006 SH$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.30663 | | (2000.0) | | | |
| $n$ | 0.25348880 | $\omega$ | 211.62307 | | +0.97564949 | −0.21912338 |
| $a$ | 2.4726550 | $\Omega$ | 161.02733 | | +0.20691702 | +0.90493276 |
| $e$ | 0.1912660 | $i$ | 1.69997 | | +0.07275593 | +0.36480357 |
| $P$ | 3.89 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.0 | 0.1+ | 2002 09 15 | 644 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2002 08 27 | 644 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.6− | 0.3− | 2006 10 20 | G96 | 1.2+ | 0.1− |
| 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | (2.2+ | 0.3+) |
| 2002 09 01 | 644 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 09 01 | 644 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.7− | 0.2+ |
| 2002 09 04 | 644 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.8+ | 0.2+ |
| 2002 09 04 | 644 | 0.5+ | 0.0 | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 09 04 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 644 | 0.5− | 0.2− | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.4− | 0.6+ |
| 2002 09 14 | 644 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | | | | |
| 2002 09 14 | 644 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | | | | |

**2002 RH$_{251}$ = 2006 UF$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 170.68272 | | (2000.0) | | | |
| $n$ | 0.28810290 | $\omega$ | 54.46211 | | −0.76685846 | +0.64132817 |
| $a$ | 2.2704100 | $\Omega$ | 165.37487 | | −0.61626875 | −0.72488200 |
| $e$ | 0.1208787 | $i$ | 5.68817 | | −0.17927893 | −0.25148413 |
| $P$ | 3.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.6+ | 0.4+ | 2002 09 04 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2002 08 17 | 644 | 0.1− | 0.0 | 2002 09 04 | 644 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2002 08 27 | 644 | 0.2+ | 0.0 | 2002 09 14 | 644 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2002 09 14 | 644 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2002 09 01 | 644 | 0.1− | 0.1− | 2002 09 14 | 644 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2002 09 01 | 644 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2002 09 01 | 644 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2002 09 01 | 644 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ | | | | |
| 2002 09 04 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.2− | | | | |

**2002 RK$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.56584 | | (2000.0) | | | |
| $n$ | 0.27336170 | $\omega$ | 161.71617 | | +0.98248124 | +0.18634754 |
| $a$ | 2.3513157 | $\Omega$ | 187.54523 | | −0.17307824 | +0.90784607 |
| $e$ | 0.1991374 | $i$ | 0.99546 | | −0.06909798 | +0.37561963 |
| $P$ | 3.61 | $H$ | 18.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.0 | 0.1+ | 2002 09 04 | 644 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− |
| 1995 11 14 | 691 | 0.1+ | 0.6− | 2002 09 14 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 1995 11 14 | 691 | 0.3+ | 0.5− | 2002 09 14 | 644 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.7− | 0.1+ |
| 2002 08 17 | 644 | 0.2+ | 0.4+ | 2002 09 14 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.4− | 0.1+ |
| 2002 08 17 | 644 | 0.2− | 0.4+ | 2002 09 26 | 644 | 0.7− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 08 17 | 644 | 0.8+ | 0.1− | 2002 09 26 | 644 | 0.1+ | 1.2+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 08 27 | 644 | 0.2− | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.5− | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2002 08 27 | 644 | 0.5+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.7+ | 0.4− |
| 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 09 01 | 644 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.3+ |
| 2002 09 01 | 644 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 09 04 | 644 | 0.4− | 0.1− | 2006 11 15 | 691 | 0.6+ | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2002 09 04 | 644 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.4− | 0.2+ | | | | |

**2002 RV$_{251}$ = 2006 SW$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.75336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25574725 | $\omega$ | 181.23789 | | +0.97027889 | | −0.24185618 |
| $a$ | 2.4580765 | $\Omega$ | 192.76685 | | +0.22233200 | | +0.90406891 |
| $e$ | 0.2098281 | $i$ | 2.08217 | | +0.09553721 | | +0.35237054 |
| $P$ | 3.85 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 20 | 703 | 0.8+ | 0.2− |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 703 | 0.6+ | 0.2+ |
| 2002 09 12 | 644 | 0.5− | 0.3+ | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 09 12 | 644 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 09 12 | 644 | 0.8− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.4+ | 0.1− |
| 2002 09 17 | 644 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 09 17 | 644 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.6− | 0.1− |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.7− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.4− |
| 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.4− | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.4+ | 0.5+ |
| 2006 09 28 | 691 | 0.3− | 0.2+ | 2006 10 20 | 703 | 0.1+ | 0.7− | | | | |
| 2006 09 28 | 691 | 0.2− | 0.3+ | 2006 10 20 | 703 | 0.5+ | 0.4− | | | | |

**2002 RB$_{252}$ = 2006 SZ$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.17216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26200133 | $\omega$ | 246.29643 | | −0.70860337 | | +0.70527639 |
| $a$ | 2.4188024 | $\Omega$ | 338.53472 | | −0.62398358 | | −0.64063044 |
| $e$ | 0.0829645 | $i$ | 3.38363 | | −0.32943247 | | −0.30360805 |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.2− | 0.0 | 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 1993 01 29 | 691 | 0.2+ | 0.0 | 2002 09 14 | 644 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1993 01 29 | 691 | 0.1+ | 0.1+ | 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2001 04 16 | 699 | 0.5+ | 0.7+ | 2002 09 17 | 608 | 0.6− | 0.7+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2001 04 16 | 699 | 0.6+ | 0.1+ | 2002 09 17 | 608 | 0.8− | 0.4− | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2001 04 16 | 699 | 0.1− | 0.6+ | 2002 09 17 | 608 | (1.8− | 0.4+) | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2001 04 16 | 699 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2002 09 12 | 644 | 0.5− | 0.4+ | 2006 09 26 | 691 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.3− | 0.3− |
| 2002 09 12 | 644 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 | | | | |
| 2002 09 12 | 644 | 0.3− | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.2+ | | | | |

**2002 RS$_{252}$ = 2006 UU$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.33058 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25565302 | $\omega$ | 200.27842 | | +0.52257148 | | −0.85184549 |
| $a$ | 2.4586805 | $\Omega$ | 218.24075 | | +0.78998877 | | +0.49954548 |
| $e$ | 0.1762406 | $i$ | 3.31143 | | +0.32068177 | | +0.15752324 |
| $P$ | 3.86 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.1+ | 0.6+ | 2002 09 17 | 644 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2002 08 28 | 644 | 0.2+ | 0.4− | 2002 09 18 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.8+ |
| 2002 08 28 | 644 | 0.4+ | 1.1+ | 2002 09 18 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 09 11 | 644 | 0.7+ | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2002 09 11 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.0 | 2006 11 15 | G96 | 1.0+ | 0.2+ |
| 2002 09 11 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.8− | 2006 11 15 | G96 | 0.4− | 0.3+ |
| 2002 09 14 | 644 | 0.8− | 0.1− | 2006 10 17 | 703 | 1.0− | 0.8− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2002 09 14 | 644 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2002 09 17 | 644 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.2+ |
| 2002 09 17 | 644 | 0.7− | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.4− | 0.5− |

**2002 RF$_{253}$ = 2000 BZ$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.36811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23741675 | $\omega$ | 189.66004 | | −0.80773996 | | −0.58749870 |
| $a$ | 2.5830242 | $\Omega$ | 314.24304 | | +0.54535473 | | −0.71304301 |
| $e$ | 0.0415097 | $i$ | 3.92238 | | +0.22392937 | | −0.38264206 |
| $P$ | 4.15 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.0 | 0.1− | 2002 09 14 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2000 01 28 | 691 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.4− | 0.4− | 2006 08 29 | 691 | 0.1− | 0.0 |
| 2000 01 28 | 691 | 0.1− | 0.1− | 2002 09 14 | 644 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2000 02 08 | 691 | 0.1+ | 0.0 | 2002 09 17 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.7+ | 0.0 |
| 2000 02 08 | 691 | 0.1− | 0.1+ | 2002 09 17 | 644 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.3− |
| 2000 02 08 | 691 | 0.0 | 0.1+ | 2002 09 18 | 644 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.6− |
| 2002 09 11 | 644 | 0.4− | 0.3+ | 2002 09 18 | 644 | 0.4+ | 0.7+ | | | | |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.3− | | | | |

**2002 RL$_{253}$ = 2005 EF$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.52170 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19711964 | $\omega$ | 212.83559 | | −0.99388295 | | −0.09725694 |
| $a$ | 2.9240364 | $\Omega$ | 321.47666 | | +0.11042434 | | −0.88275519 |
| $e$ | 0.0159377 | $i$ | 4.81905 | | −0.00177446 | | −0.45965679 |
| $P$ | 5.00 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.4− | 0.5+ | 2002 10 05 | 645 | 0.0 | 0.1− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 09 14 | 644 | 0.1− | 0.1+ | 2002 10 10 | 645 | 0.0 | 0.0 |
| 2002 09 11 | 644 | 0.2− | 0.3+ | 2002 09 17 | 644 | 0.5− | 0.5+ | 2002 10 10 | 645 | 0.0 | 0.0 |
| 2002 09 11 | 644 | 0.3− | 0.5+ | 2002 09 17 | 644 | 0.1− | 0.4+ | 2005 03 09 | 691 | 0.0 | 0.2+ |
| 2002 09 11 | 644 | 0.1− | 0.3+ | 2002 09 17 | 644 | 0.0 | 0.4+ | 2005 03 09 | 691 | 0.0 | 0.2+ |
| 2002 09 14 | 644 | 0.7− | 0.5+ | 2002 09 18 | 644 | 0.1+ | 0.5− | 2005 03 09 | 691 | 0.1− | 0.2+ |
| 2002 09 14 | 644 | 0.1− | 0.1− | 2002 09 18 | 644 | 0.2− | 0.3+ | 2005 03 13 | 691 | 0.2− | 0.2− |
| 2002 09 14 | 644 | 0.7− | 0.1+ | 2002 09 18 | 644 | 0.4− | 0.2− | 2005 03 13 | 691 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2002 10 05 | 645 | 0.1+ | 0.1+ | 2005 03 13 | 691 | 0.2+ | 0.2− |

**2002 RR$_{254}$ = 2006 UC$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.05888 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26633343 | $\omega$ | 126.34467 | | +0.69793138 | | +0.71614433 |
| $a$ | 2.3925018 | $\Omega$ | 187.92340 | | −0.66896519 | | +0.64922691 |
| $e$ | 0.2021246 | $i$ | 2.24186 | | −0.25568996 | | +0.25620640 |
| $P$ | 3.70 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.7− | 0.3+ | 2002 09 12 | 644 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.1− | 0.5− |
| 2002 08 28 | 644 | 0.2− | 0.0 | 2002 09 14 | 644 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2002 08 28 | 644 | 0.4+ | 0.3+ | 2002 09 14 | 644 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2002 09 07 | 704 | 0.7+ | 0.5+ | 2002 09 14 | 644 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2002 09 07 | 704 | 0.1+ | 1.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 09 12 | 644 | 0.2− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.3+ | | | | |
| 2002 09 12 | 644 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.0 | 0.1+ | | | | |

**2002 RZ$_{254}$ = 2006 TR$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.00810 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26218643 | $\omega$ | 235.93013 | | +0.27199348 | −0.96228044 | |
| $a$ | 2.4176638 | $\Omega$ | 198.28976 | | +0.88906389 | +0.25367120 | |
| $e$ | 0.1861616 | $i$ | 1.09398 | | +0.36821861 | +0.09832230 | |
| $P$ | 3.76 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 608 | 0.3− | 1.0− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.0 | |
| 2002 09 09 | 608 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 | |
| 2002 09 12 | 644 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.2− | |
| 2002 09 12 | 644 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− | |
| 2002 09 12 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.5− | |
| 2002 09 12 | 644 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.9+ | 0.9− | 2006 10 27 | G96 | 0.8+ | 0.1− | |
| 2002 09 12 | 644 | 0.5+ | 0.0 | 2006 10 21 | 703 | (1.4− | 1.8−) | 2006 11 01 | 691 | 0.2− | 0.1− | |
| 2002 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 703 | (1.1− | 1.9−) | 2006 11 01 | 691 | 0.0 | 0.5− | |
| 2002 09 14 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.5− | |
| 2002 09 14 | 644 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.2− | |
| 2006 10 11 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.5− | |
| 2006 10 11 | 691 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− | |
| 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 2006 10 15 | 691 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1+ | |
| 2006 10 15 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.0 | |
| 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.1− | |
| 2006 10 19 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 | | | | | |
| 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.2+ | | | | | |

**2002 RE$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.88438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26760669 | $\omega$ | 134.98747 | | +0.73723881 | −0.66764291 | |
| $a$ | 2.3849067 | $\Omega$ | 267.19170 | | +0.58703630 | +0.70889441 | |
| $e$ | 0.2055835 | $i$ | 5.95339 | | +0.33446571 | +0.22742396 | |
| $P$ | 3.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.0 | 0.0 | 2002 09 22 | 644 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.9+ | |
| 2002 07 21 | 644 | 0.1+ | 0.1+ | 2002 09 22 | 644 | 0.3+ | 0.0 | 2006 11 16 | 704 | (0.6+ | 1.9−) | |
| 2002 08 16 | 644 | 0.0 | 0.3+ | 2006 10 20 | A50 | 0.7+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 1.1+ | |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2006 10 20 | A50 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 1.2− | 0.1+ | |
| 2002 08 16 | 644 | 0.2− | 0.4+ | 2006 10 20 | 704 | 0.8− | 1.5+ | 2006 11 16 | 704 | 1.0+ | 0.3− | |
| 2002 08 26 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 704 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.6− | 0.1− | |
| 2002 08 26 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 704 | 0.5+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.1+ | |
| 2002 08 26 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 704 | 0.7− | 0.7− | 2006 11 22 | 704 | 0.4+ | 0.2− | |
| 2002 08 26 | 644 | 0.2− | 0.7− | 2006 10 20 | 704 | 0.7+ | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.1− | |
| 2002 08 26 | 644 | 0.0 | 0.5− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.1− | |
| 2002 08 26 | 644 | 0.2+ | 0.8− | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.0 | |
| 2002 09 10 | 608 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5− | 0.1− | |
| 2002 09 10 | 608 | 0.4− | 0.2− | 2006 11 14 | 703 | 0.4+ | 0.1+ | 2006 11 22 | 703 | 0.2− | 0.4− | |
| 2002 09 13 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.4− | 2006 11 22 | 703 | 0.3+ | 0.0 | |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.1− | 2006 11 22 | 703 | 0.2+ | 0.4− | |
| 2002 09 13 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.5− | 0.4− | 2006 11 22 | 703 | 0.2− | 1.1− | |
| 2002 09 22 | 644 | 0.5+ | 0.0 | 2006 11 16 | 704 | (0.7− | 2.5+) | | | | | |

**2002 RK$_{256}$ = 2006 WK$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.86569 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27123308 | $\omega$ | 336.79257 | | +0.94716220 | −0.31911107 | |
| $a$ | 2.3636016 | $\Omega$ | 41.86043 | | +0.30138012 | +0.85077896 | |
| $e$ | 0.2430414 | $i$ | 2.78577 | | +0.10978973 | +0.41754434 | |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 608 | 0.6+ | 0.1− | 2002 08 30 | 644 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.5− | |
| 2002 08 09 | 608 | 0.1− | 0.1− | 2002 08 30 | 644 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.7+ | 0.4− | |
| 2002 08 17 | 608 | 0.2− | 0.3+ | 2002 08 30 | 644 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.2− | 0.3− | |
| 2002 08 17 | 608 | 0.2− | 0.1− | 2002 09 15 | 644 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.5− | 0.5+ | |
| 2002 08 18 | 644 | 0.2+ | 0.2− | 2002 09 15 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.2− | |
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2002 09 15 | 644 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.3+ | 0.0 | |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2002 09 15 | 644 | 0.2− | 0.3− | 2006 11 24 | 703 | 0.2− | 0.3+ | |
| 2002 08 18 | 644 | 0.1+ | 0.1+ | 2002 09 15 | 644 | 0.5+ | 0.2+ | 2006 11 24 | 703 | 0.8+ | 0.1+ | |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2002 09 15 | 644 | 0.6− | 0.6+ | 2006 11 24 | 703 | 0.3+ | 0.3+ | |
| 2002 08 18 | 644 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 24 | 703 | 0.8− | 0.9− | |

**2002 RC$_{257}$ = 2005 EQ$_{200}$ = 2006 QU$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.68386 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23844702 | $\omega$ | 97.39677 | | −0.30723784 | +0.95130119 | |
| $a$ | 2.5755784 | $\Omega$ | 154.66632 | | −0.89462755 | −0.27973450 | |
| $e$ | 0.2463777 | $i$ | 3.36543 | | −0.32441711 | −0.12951701 | |
| $P$ | 4.13 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.3− | 0.1− | 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.0 | |
| 2002 09 12 | 644 | 0.0 | 0.1+ | 2005 03 08 | G96 | 0.2− | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | |
| 2002 09 12 | 644 | 0.3+ | 0.3− | 2005 03 14 | G96 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | |
| 2002 09 15 | 644 | 0.1+ | 0.3− | 2005 03 14 | G96 | 1.3+ | 0.8− | 2006 08 27 | 691 | 0.1− | 0.1− | |
| 2002 09 15 | 644 | 0.0 | 0.4+ | 2005 03 14 | G96 | 1.1− | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.2− | |
| 2002 09 15 | 644 | 0.1− | 0.1+ | 2005 03 14 | G96 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 | |
| 2005 03 08 | G96 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.0 | |
| 2005 03 08 | G96 | 0.5+ | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.1+ | |

**2002 RV$_{257}$ = 2005 GL$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.51736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18740664 | $\omega$ | 265.96274 | | +0.32026651 | −0.94732246 | |
| $a$ | 3.0242155 | $\Omega$ | 165.35708 | | +0.87392850 | +0.29419328 | |
| $e$ | 0.1424001 | $i$ | 0.69953 | | +0.36562047 | +0.12661152 | |
| $P$ | 5.26 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 291 | 0.2+ | 0.1+ | 2002 09 14 | 644 | 0.3− | 0.7− | 2005 04 04 | G96 | 0.7− | 0.4− | |
| 2002 08 30 | 291 | 0.1− | 0.2− | 2002 09 15 | 644 | 0.1+ | 0.2− | 2005 04 04 | G96 | 0.4+ | 0.1− | |
| 2002 08 30 | 291 | 0.1− | 0.0 | 2002 09 15 | 644 | 0.3+ | 0.5+ | 2005 04 11 | 695 | 0.2+ | 0.1+ | |
| 2002 09 14 | 644 | 0.5+ | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.3+ | 2005 04 11 | 695 | 0.0 | 0.1+ | |
| 2002 09 14 | 644 | 0.7− | 0.4+ | 2005 04 04 | G96 | 0.2+ | 0.0 | | | | | |

**2002 RW$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.90023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29595564 | $\omega$ | 281.21210 | | −0.51946883 | +0.85425544 | |
| $a$ | 2.2300690 | $\Omega$ | 317.47182 | | −0.77198517 | −0.47921485 | |
| $e$ | 0.1069005 | $i$ | 1.69502 | | −0.36632094 | −0.20149632 | |
| $P$ | 3.33 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 691 | 0.3+ | 0.0 | 2002 09 14 | 644 | 0.2− | 0.4+ | 2004 01 17 | 691 | 0.2+ | 0.2− | |
| 2001 02 20 | 691 | 0.1+ | 0.4+ | 2002 09 14 | 644 | 0.2+ | 0.5+ | 2004 01 17 | 691 | 0.2+ | 0.3+ | |
| 2001 02 20 | 691 | 0.0 | 0.3+ | 2002 09 17 | 644 | 0.4− | 0.3+ | 2004 01 27 | 691 | 0.4+ | 0.2+ | |
| 2002 09 11 | 644 | 0.4− | 0.3+ | 2002 09 17 | 644 | 0.4− | 0.2+ | 2004 01 27 | 691 | 0.4+ | 0.1− | |
| 2002 09 11 | 644 | 0.2− | 0.0 | 2002 09 18 | 644 | 0.6− | 0.4− | 2004 01 27 | 691 | 0.1+ | 0.7− | |
| 2002 09 11 | 644 | 0.2+ | 0.1− | 2002 09 18 | 644 | 0.2− | 0.1− | 2005 07 09 | 691 | 0.2+ | 0.1+ | |
| 2002 09 13 | 644 | 0.1− | 0.8+ | 2003 12 21 | 291 | 0.3− | 0.3+ | 2005 07 09 | 691 | 0.4− | 0.1+ | |
| 2002 09 13 | 644 | 1.0+ | 0.3− | 2003 12 21 | 291 | 0.1− | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.2+ | |
| 2002 09 13 | 644 | 0.1+ | 0.1− | 2003 12 21 | 291 | 1.4− | 0.3+ | | | | | |
| 2002 09 14 | 644 | 0.1− | 0.9+ | 2004 01 17 | 691 | 0.5+ | 0.0 | | | | | |

**2002 RH$_{258}$ = 2000 EO$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.83441 | | | (2000.0) | | |
| $n$ | 0.17510760 | $\omega$ | 141.01730 | | −0.62688170 | +0.77905859 |
| $a$ | 3.1642155 | $\Omega$ | 90.16025 | | −0.71713796 | −0.57229302 |
| $e$ | 0.1146041 | $i$ | 0.53458 | | −0.30452007 | −0.25602426 |
| $P$ | 5.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2002 09 15 | 644 | 0.8− | 0.6+ | 2006 04 18 | 699 | 0.9+ | 2.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.7+ | 2002 09 15 | 644 | 0.3− | 0.6+ | 2006 04 19 | G96 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.7− | 0.7− | 2002 09 15 | 644 | 0.1+ | 0.9+ | 2006 04 19 | G96 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.7+ | 2005 01 18 | 691 | 0.1+ | 0.3+ | 2006 04 19 | G96 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.3− | 0.7+ | 2005 01 18 | 691 | 0.1− | 0.1+ | 2006 04 19 | G96 | 1.0− | 1.8+ |
| 2000 03 11 | 704 | 0.6− | 0.1− | 2005 01 18 | 691 | 0.1+ | 0.1+ | 2006 04 27 | 807 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.2+ | 0.4+ | 2006 03 23 | G96 | 0.2− | 0.2+ | 2006 04 27 | 807 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.9+ | 0.5− | 2006 03 23 | G96 | 0.3− | 0.1− | 2006 05 05 | G96 | 0.8− | 1.2+ |
| 2000 03 11 | 704 | 0.7+ | 0.7+ | 2006 03 23 | G96 | 0.1+ | 0.2− | 2006 05 05 | G96 | 0.1− | 0.2− |
| 2002 09 13 | 644 | 0.6− | 0.7+ | 2006 03 23 | G96 | 0.1+ | 0.3+ | 2006 05 05 | G96 | 0.2+ | 0.2− |
| 2002 09 13 | 644 | 0.1− | 0.8+ | 2006 04 09 | 691 | 0.3+ | 0.2+ | 2006 05 05 | G96 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.1+ | 0.7+ | 2006 04 09 | 691 | 0.2+ | 0.2− | 2006 05 22 | G96 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.7+ | 2006 04 09 | 691 | 0.1+ | 0.2− | 2006 05 22 | G96 | 0.0 | 0.0 |
| 2002 09 14 | 644 | 0.4− | 1.0+ | 2006 04 18 | 699 | 0.5− | 1.3− | 2006 05 22 | G96 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.7− | 0.4+ | 2006 04 18 | 699 | 1.3− | 0.2− | 2006 05 22 | G96 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.1+ | 0.1+ | 2006 04 18 | 699 | 2.2+ | 0.8+ | | | | |

**2002 RS$_{259}$ = 2006 SU$_{318}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.95401 | | | (2000.0) | | |
| $n$ | 0.25866884 | $\omega$ | 236.53348 | | +0.99061845 | −0.12854967 |
| $a$ | 2.4395327 | $\Omega$ | 130.80702 | | +0.13661127 | +0.92277941 |
| $e$ | 0.1202246 | $i$ | 3.51216 | | +0.00352814 | +0.36325354 |
| $P$ | 3.81 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.3+ | 0.0 | 2004 01 30 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.1− |
| 2002 08 20 | 644 | 0.3− | 0.6+ | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.3+ | 0.1− |
| 2002 08 20 | 644 | 0.2+ | 0.8+ | 2005 05 12 | G96 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2002 09 09 | 608 | 0.3− | 0.2+ | 2005 05 12 | G96 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.8− | 0.1+ |
| 2002 09 09 | 608 | 0.7− | 0.4+ | 2005 05 12 | G96 | 0.1− | 0.5− | 2006 10 22 | 703 | 1.0− | 0.2− |
| 2002 09 12 | 644 | 0.3− | 0.0 | 2005 05 12 | G96 | 0.1− | 0.0 | 2006 10 22 | 703 | (0.8− | 1.6−) |
| 2002 09 12 | 644 | 0.5− | 0.0 | 2006 09 17 | 691 | 0.4+ | 0.0 | 2006 10 22 | 703 | 1.0− | 0.9− |
| 2002 09 12 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 11 16 | 715 | 0.6+ | 0.7− |
| 2002 09 15 | 644 | 0.5+ | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 11 16 | 715 | 0.2+ | 0.4− |
| 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 16 | 715 | 0.3+ | 0.6+ |
| 2002 09 15 | 644 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1− | | | | |
| 2004 01 30 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | | | |

**2002 RE$_{260}$ = 2006 SP$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.20122 | | | (2000.0) | | |
| $n$ | 0.25795388 | $\omega$ | 250.26769 | | +0.61554400 | −0.78803099 |
| $a$ | 2.4440383 | $\Omega$ | 161.72854 | | +0.73515856 | +0.56928547 |
| $e$ | 0.1331190 | $i$ | 1.94080 | | +0.28398498 | +0.23435275 |
| $P$ | 3.82 | $H$ | 17.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.6− | 0.2− | 2002 09 15 | 644 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.5+ |
| 2002 09 12 | 644 | 0.2+ | 0.1− | 2002 09 16 | 644 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.6− | 1.1− |
| 2002 09 12 | 644 | 0.4+ | 0.0 | 2002 09 16 | 644 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2− |
| 2002 09 14 | 644 | 0.0 | 0.1− | 2002 09 16 | 644 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2002 09 15 | 644 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.0 | | | | |

**2002 RQ$_{260}$ = 2006 TQ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.51923 | | | (2000.0) | | |
| $n$ | 0.26479976 | $\omega$ | 257.88486 | | +0.53240100 | −0.84643549 |
| $a$ | 2.4017308 | $\Omega$ | 159.93804 | | +0.78733449 | +0.49090641 |
| $e$ | 0.1599537 | $i$ | 1.63790 | | +0.31089158 | +0.20629557 |
| $P$ | 3.72 | $H$ | 17.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.4+ | 0.5− | 2004 02 26 | 695 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 1991 10 08 | 691 | 0.1− | 0.8− | 2004 02 26 | 695 | 0.4− | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.6+ |
| 1991 10 08 | 691 | 0.4+ | 0.8− | 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.1− |
| 1998 07 26 | 691 | 0.2+ | 0.6+ | 2004 03 18 | 691 | 0.2+ | 0.5+ | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 1998 07 26 | 691 | 0.1+ | 0.4+ | 2004 03 18 | 691 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 1998 07 26 | 691 | 0.1+ | 1.2+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.4+ | 0.4+ |
| 2002 08 28 | 644 | 1.2− | 0.5− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.4+ | 0.3+ |
| 2002 08 28 | 644 | (1.6− | 0.1−) | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.6+ |
| 2002 09 09 | 608 | 0.9− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2002 09 09 | 608 | 0.1− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2002 09 12 | 644 | 0.4− | 0.4+ | 2006 10 15 | 691 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 1.4− | 0.7− |
| 2002 09 12 | 644 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | (0.7− | 1.7−) |
| 2002 09 14 | 644 | 0.6− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2002 09 14 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.0− | 0.6− |
| 2002 09 14 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2002 09 15 | 644 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.9− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 09 15 | 644 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 09 15 | 644 | 0.7− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.1− |

**2002 RW$_{260}$ = 2006 QP**

Id. Minor Planet Center, S. Foglia

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.91966 | | | (2000.0) | | |
| $n$ | 0.24432409 | $\omega$ | 250.52598 | | +0.88205587 | +0.44413204 |
| $a$ | 2.5341084 | $\Omega$ | 82.83858 | | −0.35052391 | +0.84161361 |
| $e$ | 0.2944752 | $i$ | 9.11842 | | −0.31481810 | +0.30729996 |
| $P$ | 4.03 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 28 | 699 | 0.1− | 0.2− | 2002 10 24 | 608 | 0.1+ | 0.3+ | 2006 09 02 | 428 | 0.1+ | 0.1− |
| 1998 09 28 | 699 | 0.2+ | 0.6+ | 2002 10 24 | 608 | 0.5+ | 0.3− | 2006 09 12 | E12 | 0.6− | 0.1− |
| 1998 09 28 | 699 | 0.4+ | 0.2− | 2002 10 30 | 608 | 0.5+ | 0.1− | 2006 09 12 | E12 | 0.6+ | 0.3+ |
| 2002 08 13 | 704 | 0.2+ | 0.6− | 2002 10 30 | 608 | 0.2+ | 0.0 | 2006 09 12 | E12 | 0.2− | 0.2+ |
| 2002 08 13 | 704 | 0.1− | 0.0 | 2002 10 30 | 608 | 0.1− | 0.4− | 2006 09 12 | E12 | 0.4+ | 0.3+ |
| 2002 08 13 | 704 | 0.3+ | 0.2− | 2006 08 16 | E12 | 0.4− | 0.0 | 2006 09 27 | E12 | 0.5− | 0.0 |
| 2002 08 13 | 704 | 0.3+ | 0.1− | 2006 08 16 | E12 | 0.1+ | 0.3− | 2006 09 27 | E12 | 0.2+ | 0.3+ |
| 2002 08 13 | 704 | 0.3− | 0.3− | 2006 08 16 | E12 | 0.4− | 0.2− | 2006 09 27 | E12 | 0.3− | 0.1− |
| 2002 08 21 | 644 | 0.8− | 0.3+ | 2006 08 16 | E12 | 0.0 | 0.2− | 2006 10 11 | E12 | 0.1− | 0.4+ |
| 2002 08 21 | 644 | 0.2− | 0.7+ | 2006 08 18 | 428 | 0.7+ | 0.0 | 2006 10 11 | E12 | 0.0 | 0.0 |
| 2002 09 01 | 644 | 0.1+ | 0.2+ | 2006 08 18 | 428 | 0.0 | 0.0 | 2006 10 11 | E12 | 0.3− | 0.1+ |
| 2002 09 01 | 644 | 0.1+ | 0.1− | 2006 08 18 | 428 | 0.8+ | 0.6+ | 2006 10 11 | E12 | 0.0 | 0.2+ |
| 2002 09 01 | 644 | 0.3+ | 0.3+ | 2006 08 18 | 428 | 0.4− | 0.2+ | 2006 10 28 | 703 | 0.9− | 0.3+ |
| 2002 09 10 | 644 | 0.2− | 0.3+ | 2006 08 19 | 428 | 0.1− | 0.0 | 2006 10 28 | 703 | (0.7+ | 2.1+) |
| 2002 09 10 | 644 | 0.3− | 0.2+ | 2006 08 19 | 428 | 0.6+ | 0.5− | 2006 10 28 | 703 | 0.3− | 0.2+ |
| 2002 09 10 | 644 | 0.6− | 0.4+ | 2006 08 19 | 428 | 0.4− | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.4− |
| 2002 09 18 | 644 | 0.3− | 0.6+ | 2006 08 20 | 428 | 0.1+ | 0.1+ | 2006 10 28 | E12 | 0.6+ | 0.3− |
| 2002 09 18 | 644 | 0.2− | 0.0 | 2006 08 20 | 428 | 0.4+ | 0.2− | 2006 10 28 | E12 | 1.1+ | 0.1+ |
| 2002 09 18 | 644 | 0.2− | 0.2+ | 2006 08 25 | E12 | 0.1+ | 0.1− | 2006 10 28 | E12 | 0.2+ | 0.6+ |
| 2002 10 09 | 699 | 0.2− | 0.8− | 2006 08 25 | E12 | 0.3− | 0.1− | 2006 10 28 | E12 | 0.4+ | 0.2− |
| 2002 10 09 | 699 | 0.1− | 1.0− | 2006 08 25 | E12 | 0.3− | 0.4− | 2006 11 19 | 703 | 1.3− | 0.6+ |
| 2002 10 09 | 699 | 0.4+ | 0.6− | 2006 08 25 | E12 | 0.2+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.4+ |
| 2002 10 09 | 699 | 0.1+ | 0.5− | 2006 09 02 | 428 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 2.1+ | 0.5− |
| 2002 10 24 | 608 | 0.3− | 0.6− | 2006 09 02 | 428 | 0.4− | 0.4− | 2006 11 19 | 703 | 1.2− | 1.0+ |

**2002 RA$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 49.76115 | | (2000.0) | | | |
| $n$ | 0.26790534 | $\omega$ | 279.44138 | | +0.74871637 | +0.65212333 |
| $a$ | 2.3831340 | $\Omega$ | 39.99434 | | −0.51200569 | +0.68291615 |
| $e$ | 0.2400302 | $i$ | 10.66927 | | −0.42103916 | +0.32918187 |
| $P$ | 3.68 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 644 | 0.1− | 0.3+ | 2002 10 01 | 608 | 0.8+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2002 09 10 | 644 | 0.3− | 0.6+ | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2002 09 10 | 644 | 0.1− | 0.1− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.5− | 0.3− |
| 2002 09 10 | 644 | 0.2− | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2002 09 10 | 644 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.5− | 0.2− | 2006 11 13 | 691 | 0.5+ | 0.3+ |
| 2002 09 10 | 644 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.7+ | 0.3− | 2006 11 13 | 691 | 0.3+ | 0.3+ |
| 2002 09 17 | 644 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.6+ | 0.2+ |
| 2002 09 17 | 644 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.5− | 0.1− |
| 2002 09 17 | 644 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.4− | 0.1− |
| 2002 10 01 | 608 | 0.8+ | 0.8− | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.3− | 0.4− |

**2002 RB$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 201.31004 | | (2000.0) | | | |
| $n$ | 0.35523027 | $\omega$ | 289.24258 | | +0.50793611 | +0.85837161 |
| $a$ | 1.9745255 | $\Omega$ | 12.09117 | | −0.60262945 | +0.41391535 |
| $e$ | 0.0621984 | $i$ | 20.13469 | | −0.61549870 | +0.30310438 |
| $P$ | 2.77 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 01 | 644 | 0.3+ | 0.0 | 2002 09 10 | 644 | 0.1− | 0.3+ | 2005 10 08 | 704 | 0.6+ | 0.4+ |
| 2002 09 01 | 644 | 0.3+ | 0.5+ | 2002 09 10 | 644 | 0.1+ | 0.2− | 2005 10 08 | 704 | 0.4− | 0.6+ |
| 2002 09 10 | 644 | 0.3− | 0.1+ | 2002 09 17 | 644 | 0.1− | 0.3− | 2005 10 08 | 704 | 0.8+ | 0.5+ |
| 2002 09 10 | 644 | 0.4− | 0.6+ | 2002 09 17 | 644 | 0.3− | 0.2− | 2005 10 08 | 704 | 0.5− | 0.4+ |
| 2002 09 10 | 644 | 0.7+ | 0.2− | 2002 09 17 | 644 | 0.2− | 0.2− | 2005 10 08 | 704 | 0.3− | 0.2+ |
| 2002 09 10 | 644 | 0.0 | 0.1− | 2005 09 30 | 703 | 0.9+ | 0.7− | 2005 11 22 | 703 | 0.5− | 0.1− |
| 2002 09 10 | 644 | 0.0 | 0.2− | 2005 09 30 | 703 | 0.3+ | 1.3− | 2005 11 22 | 703 | 1.6+ | 0.0 |
| 2002 09 10 | 644 | 0.1+ | 0.3− | 2005 09 30 | 703 | 1.4− | 0.2+ | 2005 11 22 | 703 | 1.3− | 0.1+ |
| 2002 09 10 | 644 | 0.2− | 0.1+ | 2005 09 30 | 703 | 0.8− | 0.1− | 2005 11 22 | 703 | 0.9+ | 0.2− |

**2002 RF$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.49480 | | (2000.0) | | | |
| $n$ | 0.25900377 | $\omega$ | 143.43453 | | +0.24841709 | −0.96611631 |
| $a$ | 2.4374291 | $\Omega$ | 292.08812 | | +0.86984360 | +0.25431667 |
| $e$ | 0.1581715 | $i$ | 4.33615 | | +0.42621716 | +0.04407160 |
| $P$ | 3.81 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2+ | 0.7+ | 2004 03 13 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 08 28 | 644 | 0.0 | 0.1− | 2004 03 13 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 09 10 | 608 | 0.7− | 0.0 | 2004 03 13 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 09 10 | 608 | 0.4− | 0.1− | 2004 03 27 | 691 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 09 11 | 644 | 0.3+ | 0.1− | 2004 03 27 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2002 09 11 | 644 | 0.0 | 0.1− | 2004 03 27 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.7− |
| 2002 09 11 | 644 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 1.2− |
| 2002 09 18 | 644 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 2002 09 18 | 644 | 0.8+ | 0.1+ | 2006 09 30 | 703 | (1.8− | 0.9+) | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 05 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 10 05 | 644 | 0.3+ | 0.1− | 2006 10 10 | 644 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 10 05 | 644 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 10 06 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 10 06 | 644 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.0 | | | | |

**2002 RH$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 277.51262 | | (2000.0) | | | |
| $n$ | 0.17292540 | $\omega$ | 351.39805 | | +0.84795066 | +0.51930854 |
| $a$ | 3.1907800 | $\Omega$ | 336.36025 | | −0.46920109 | +0.64202436 |
| $e$ | 0.0669468 | $i$ | 15.37179 | | −0.24663742 | +0.56402426 |
| $P$ | 5.70 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.1+ | 0.1+ | 2002 09 13 | 644 | 0.0 | 0.2− | 2005 02 09 | G96 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.8+ | 0.2− | 2002 10 05 | 644 | 0.1− | 0.5+ | 2005 02 09 | G96 | 0.1+ | 0.3+ |
| 2002 08 28 | 644 | 0.2+ | 0.3+ | 2002 10 05 | 644 | 0.6+ | 0.1+ | 2005 02 09 | G96 | 0.0 | 0.1− |
| 2002 09 11 | 644 | 0.8− | 0.4+ | 2002 10 05 | 644 | 0.4+ | 0.1+ | 2005 03 01 | 691 | 0.0 | 0.3− |
| 2002 09 11 | 644 | 0.8− | 0.2− | 2002 10 06 | 644 | 0.2+ | 0.1− | 2005 03 01 | 691 | 0.0 | 0.1+ |
| 2002 09 11 | 644 | 0.3+ | 0.2− | 2002 10 06 | 644 | 0.2− | 0.2+ | 2005 03 01 | 691 | 0.1− | 0.1+ |
| 2002 09 13 | 644 | 0.4− | 0.5− | 2002 10 06 | 644 | 0.4+ | 0.2+ | | | | |
| 2002 09 13 | 644 | 0.4− | 0.4− | 2005 02 09 | G96 | 0.1+ | 0.2+ | | | | |

**2002 RS$_{261}$ = 2003 YJ$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 234.35964 | | (2000.0) | | | |
| $n$ | 0.18113949 | $\omega$ | 102.55175 | | +0.86500254 | −0.47894398 |
| $a$ | 3.0935748 | $\Omega$ | 286.23119 | | +0.37820259 | +0.81827803 |
| $e$ | 0.1550905 | $i$ | 8.96442 | | +0.32974748 | +0.31785804 |
| $P$ | 5.44 | $H$ | 14.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 1.2+ | 0.4+ | 2002 09 04 | 644 | 0.0 | 0.1− | 2003 12 18 | 704 | 1.7− | 0.2− |
| 2002 08 11 | 704 | 0.3+ | 0.0 | 2002 09 04 | 644 | 0.4− | 0.7+ | 2003 12 18 | 704 | 0.2+ | 0.1+ |
| 2002 08 11 | 704 | 0.6− | 0.4+ | 2002 09 12 | 644 | 0.2− | 0.4+ | 2003 12 18 | 704 | 1.2− | 0.3− |
| 2002 09 04 | 699 | 0.4+ | 1.1− | 2002 09 12 | 644 | 0.2− | 0.3+ | 2003 12 18 | 704 | 1.3− | 1.0− |
| 2002 09 04 | 699 | 1.3− | 0.5− | 2002 09 12 | 644 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.8+ | 0.1− |
| 2002 09 04 | 699 | 0.5+ | 0.4− | 2002 10 06 | 644 | 0.5+ | 0.1− | 2003 12 22 | 704 | 0.9+ | 0.5+ |
| 2002 09 04 | 699 | 0.4− | 0.0 | 2002 10 06 | 644 | 0.3+ | 0.2− | 2003 12 22 | 704 | 1.0+ | 0.4+ |
| 2002 09 04 | 644 | 0.1+ | 0.2+ | 2002 10 06 | 644 | 0.2+ | 0.1− | 2003 12 22 | 704 | 1.2+ | 0.7+ |

**2002 RT$_{261}$ = 2006 ON$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.36861 | | (2000.0) | | | |
| $n$ | 0.23541465 | $\omega$ | 284.70756 | | +0.74248555 | +0.66896813 |
| $a$ | 2.5976485 | $\Omega$ | 33.32630 | | −0.58781394 | +0.67543927 |
| $e$ | 0.2274643 | $i$ | 3.61024 | | −0.32123198 | +0.31026349 |
| $P$ | 4.19 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 691 | 0.3− | 0.0 | 2002 08 29 | 644 | 0.2− | 0.1− | 2005 03 16 | G96 | 0.1− | 0.2+ |
| 1998 10 18 | 691 | 0.2+ | 0.2− | 2002 08 29 | 644 | 0.7+ | 0.5+ | 2005 03 16 | G96 | 0.4+ | 1.3− |
| 1998 10 18 | 691 | 0.2+ | 0.3− | 2002 09 05 | 704 | 0.5− | 0.6+ | 2006 07 23 | 644 | 0.0 | 0.8− |
| 2002 08 20 | 644 | 0.0 | 0.2+ | 2002 09 05 | 704 | 1.1− | 1.1+ | 2006 07 23 | 644 | 0.4− | 0.2− |
| 2002 08 20 | 644 | 0.0 | 0.2+ | 2002 09 05 | 704 | 0.9− | 0.6+ | 2006 07 23 | 644 | 0.1+ | 0.1− |
| 2002 08 20 | 644 | 0.1+ | 0.2+ | 2002 09 08 | 608 | 0.8+ | 1.3− | 2006 07 26 | 644 | 0.3+ | 0.4− |
| 2002 08 29 | 644 | 0.3− | 0.1− | 2002 09 08 | 608 | 0.2+ | 0.2− | 2006 07 26 | 644 | 0.1− | 0.2− |
| 2002 08 29 | 644 | 0.8+ | 0.7+ | 2002 09 08 | 608 | 0.0 | 0.2− | 2006 07 26 | 644 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.5− | 0.2− | 2005 03 16 | G96 | 0.6+ | 0.2+ | | | | |
| 2002 08 29 | 644 | 0.7+ | 1.0+ | 2005 03 16 | G96 | 0.9− | 0.6+ | | | | |

**2002 RU$_{261}$ = 2005 LL$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.80147 | | (2000.0) | | | |
| $n$ | 0.27835287 | $\omega$ | 146.95035 | | +0.99826680 | +0.04607238 |
| $a$ | 2.3231232 | $\Omega$ | 210.47260 | | −0.05579034 | +0.93889777 |
| $e$ | 0.1700704 | $i$ | 4.14051 | | +0.01873033 | +0.34109868 |
| $P$ | 3.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1− | 0.1− | 2002 09 13 | 644 | 0.2+ | 0.2+ | 2004 02 18 | 691 | 0.3+ | 0.3+ |
| 1995 10 21 | 691 | 0.2− | 0.1− | 2002 09 13 | 644 | 0.6+ | 0.1+ | 2004 02 18 | 691 | 0.3+ | 0.2+ |
| 1995 10 21 | 691 | 0.2+ | 0.0 | 2002 10 04 | 704 | (1.6− | 1.5+) | 2004 02 18 | 691 | 0.3+ | 0.4+ |
| 2002 08 28 | 644 | 0.1− | 0.5+ | 2002 10 04 | 704 | 0.8− | 0.4+ | 2005 06 06 | 691 | 0.0 | 0.3+ |
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2002 10 04 | 704 | 1.0− | 0.7+ | 2005 06 06 | 691 | 0.3− | 0.4+ |
| 2002 08 28 | 644 | 0.1− | 0.3+ | 2002 10 09 | 699 | (2.3+ | 0.8+) | 2005 06 06 | 691 | 0.2+ | 0.2+ |
| 2002 09 06 | 704 | 0.7+ | 0.4+ | 2002 10 09 | 699 | (1.9+ | 1.5+) | 2005 06 10 | 691 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.0 | 0.0 | 2002 10 09 | 699 | 0.3+ | 0.8+ | 2005 06 10 | 691 | 0.1+ | 0.4+ |
| 2002 09 06 | 704 | 0.0 | 0.8+ | 2002 10 09 | 699 | 1.0+ | 0.2+ | 2005 06 10 | 691 | 0.2− | 0.2+ |
| 2002 09 06 | 704 | 0.3+ | 0.0 | 2002 10 30 | 608 | 1.0− | 0.9− | 2006 11 27 | 691 | 0.8− | 0.2+ |
| 2002 09 06 | 704 | 0.2− | 1.1+ | 2002 10 30 | 608 | 0.6− | 0.9− | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2002 09 13 | 644 | 0.3+ | 0.2+ | 2002 10 30 | 608 | 0.6− | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.4+ |

**2002 RV$_{261}$ = 2005 KX$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.11215 | | (2000.0) | | | |
| $n$ | 0.25871508 | $\omega$ | 279.83907 | | +0.97574223 | −0.16847185 |
| $a$ | 2.4392420 | $\Omega$ | 89.95746 | | +0.21090790 | +0.89459969 |
| $e$ | 0.1478625 | $i$ | 8.03634 | | −0.05869382 | +0.41389446 |
| $P$ | 3.81 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 704 | (0.7− | 1.7+) | 2002 10 10 | 699 | 0.7+ | 0.6+ | 2005 05 19 | G96 | 0.7− | 0.3+ |
| 2002 09 13 | 704 | 0.1+ | 0.0 | 2002 10 10 | 699 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.6− |
| 2002 09 13 | 699 | 0.6+ | 0.9+ | 2004 02 16 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.1− | 1.1− |
| 2002 09 13 | 704 | 0.7− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2002 09 13 | 699 | 1.2− | 0.9+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.8− |
| 2002 09 13 | 699 | 0.0 | 0.9+ | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | (2.4+ | 1.5+) |
| 2002 09 13 | 699 | 0.3− | 1.0+ | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.9+ |
| 2002 09 13 | 608 | 0.0 | 0.9+ | 2004 03 16 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 703 | (0.6+ | 1.8+) |
| 2002 09 13 | 608 | 0.1− | 0.9+ | 2005 05 16 | G96 | 0.5+ | 0.0 | 2006 11 13 | 703 | 0.7+ | 1.0+ |
| 2002 09 13 | 608 | 0.1+ | 1.1+ | 2005 05 16 | G96 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.5− | 0.3+ |
| 2002 09 29 | 608 | 0.4− | 0.8− | 2005 05 16 | G96 | 0.7+ | 1.3+ | 2006 11 19 | 703 | 0.5− | 0.2+ |
| 2002 09 29 | 608 | 0.4− | 0.5− | 2005 05 16 | G96 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 1.0+ | 0.1− |
| 2002 09 29 | 608 | 0.4− | 0.6− | 2005 05 19 | G96 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.0 | 0.4− |
| 2002 10 10 | 699 | 0.1+ | 0.5− | 2005 05 19 | G96 | 0.2− | 0.0 | | | | |
| 2002 10 10 | 699 | 0.4+ | 0.4− | 2005 05 19 | G96 | 0.0 | 0.2+ | | | | |

**2002 RW$_{261}$ = 2006 JC$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.25268 | | (2000.0) | | | |
| $n$ | 0.16797887 | $\omega$ | 344.98430 | | +0.91107900 | −0.37832013 |
| $a$ | 3.2531165 | $\Omega$ | 38.56021 | | +0.40009628 | +0.71585110 |
| $e$ | 0.1665894 | $i$ | 15.22879 | | +0.09928762 | +0.58688251 |
| $P$ | 5.87 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.4+ | 0.2+ | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2003 12 30 | 704 | 0.1− | 0.3− |
| 2002 09 14 | 608 | 1.0+ | 0.8− | 2002 10 11 | 704 | 0.0 | 0.6+ | 2003 12 30 | 704 | 0.0 | 0.2+ |
| 2002 09 14 | 608 | 0.3− | 0.1+ | 2002 10 31 | 704 | 0.2− | 0.4− | 2006 05 01 | 691 | 0.0 | 0.1+ |
| 2002 09 29 | 608 | 0.0 | 0.1− | 2002 10 31 | 704 | 0.7− | 0.2− | 2006 05 01 | 691 | 0.0 | 0.3+ |
| 2002 09 29 | 608 | 0.2− | 0.1− | 2002 10 31 | 704 | 0.8− | 0.1− | 2006 05 01 | 691 | 0.0 | 0.1+ |
| 2002 09 29 | 608 | 0.2+ | 0.3+ | 2002 10 31 | 704 | 0.2+ | 0.4− | 2006 05 05 | 691 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 0.6+ | 2003 12 30 | 704 | 0.1− | 0.9+ | 2006 05 05 | 691 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.6− | 0.4+ | 2003 12 30 | 704 | 0.4+ | 0.4− | 2006 05 05 | 691 | 0.1− | 0.1− |

**2002 RD$_{262}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.17777 | | (2000.0) | | | |
| $n$ | 0.20120305 | $\omega$ | 168.75397 | | +0.98672900 | −0.15275600 |
| $a$ | 2.8843392 | $\Omega$ | 200.28301 | | +0.13391993 | +0.95734417 |
| $e$ | 0.0335293 | $i$ | 9.13887 | | +0.09182225 | +0.24527075 |
| $P$ | 4.90 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.3+ | 0.2+ | 2002 09 13 | 644 | 0.5+ | 0.2− | 2005 03 08 | 691 | 0.1+ | 0.4− |
| 2002 08 28 | 644 | 0.5− | 0.3− | 2002 09 13 | 644 | 0.2− | 0.5+ | 2005 03 08 | 691 | 0.3− | 0.2− |
| 2002 08 28 | 644 | 0.4+ | 0.1+ | 2002 09 13 | 644 | 0.2− | 0.2+ | 2005 03 08 | 691 | 0.2+ | 0.8+ |
| 2002 09 11 | 644 | 0.0 | 0.1− | 2002 09 17 | 644 | 0.4− | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.1− |
| 2002 09 11 | 644 | 0.1− | 0.1− | 2002 09 17 | 644 | 0.2− | 0.1− | 2005 05 14 | G96 | 0.1+ | 0.1+ |
| 2002 09 11 | 644 | 0.1− | 0.0 | 2002 09 17 | 644 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.6+ | 0.3+ | 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.2+ | 0.1− |
| 2002 09 13 | 644 | 0.0 | 0.3− | 2002 10 30 | 645 | 0.0 | 0.1+ | | | | |

**2002 RJ$_{262}$ = 2004 DL$_{50}$ = 2006 UZ$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 254.82653 | | (2000.0) | | | |
| $n$ | 0.25908449 | $\omega$ | 281.29920 | | −0.60643706 | −0.79392229 |
| $a$ | 2.4369228 | $\Omega$ | 206.18750 | | +0.76276943 | −0.56530234 |
| $e$ | 0.0717789 | $i$ | 5.70052 | | +0.22453706 | −0.22387645 |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2− | 0.2− | 2004 02 23 | 704 | 0.6+ | 0.7− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.2+ | 0.5+ | 2004 02 23 | 704 | 1.0+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.0 | 2004 02 26 | 704 | 1.2− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.0 | 2004 02 26 | 704 | (0.0 | 2.1+) | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2002 09 14 | 644 | 0.5+ | 0.3− | 2004 02 26 | 704 | 0.9− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2002 09 17 | 644 | 0.2− | 0.5− | 2004 02 26 | 704 | 0.5− | 0.7+ | 2006 10 17 | G96 | (0.8+ | 2.9−) |
| 2002 09 17 | 644 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 2002 09 17 | 644 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 2004 02 23 | 704 | 0.6+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.8− |

**2002 RZ$_{262}$ = 2005 EP$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.36539 | | (2000.0) | | | |
| $n$ | 0.22102952 | $\omega$ | 63.36680 | | −0.25354930 | +0.96623248 |
| $a$ | 2.7091675 | $\Omega$ | 192.21233 | | −0.94663728 | −0.25760989 |
| $e$ | 0.0876412 | $i$ | 12.53424 | | −0.19897391 | −0.00565121 |
| $P$ | 4.46 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.3+ | 0.2+ | 2002 10 10 | 645 | 0.0 | 0.2+ | 2005 03 17 | 691 | 0.2+ | 0.3+ |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2002 11 07 | 695 | 0.5− | 0.8+ | 2005 03 17 | 691 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.4− | 2002 11 07 | 695 | 0.2− | 0.9+ | 2006 05 07 | 691 | 0.0 | 0.0 |
| 2002 09 14 | 644 | 0.3+ | 0.2− | 2005 03 13 | 691 | 0.0 | 0.0 | 2006 05 07 | 691 | 0.3− | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.2− | 2005 03 13 | 691 | 0.3− | 0.0 | 2006 05 07 | 691 | 0.3+ | 0.2+ |
| 2002 09 14 | 644 | 0.4− | 0.3− | 2005 03 13 | 691 | 0.2+ | 1.3+ | | | | |
| 2002 10 10 | 645 | 0.0 | 0.2+ | 2005 03 17 | 691 | 0.1+ | 0.2+ | | | | |

**2002 RD$_{263}$ = 2003 WQ$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.80496 | | (2000.0) | | | |
| $n$ | 0.17111979 | $\omega$ | 63.36103 | | −0.13795931 | +0.98877173 |
| $a$ | 3.2131861 | $\Omega$ | 198.97342 | | −0.95988950 | −0.14776815 |
| $e$ | 0.0258384 | $i$ | 10.17316 | | −0.24408886 | +0.02224942 |
| $P$ | 5.76 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.1+ | 0.5+ | 2003 11 24 | 699 | 0.2− | 0.2+ | 2006 04 24 | 699 | 1.8+ | 0.5− |
| 2000 04 05 | 704 | 0.0 | 0.3− | 2003 11 24 | 699 | 0.9+ | 0.3+ | 2006 04 24 | 699 | 0.3+ | 0.8+ |
| 2000 04 05 | 704 | 0.2+ | 0.6+ | 2003 11 26 | 691 | 0.5+ | 0.4+ | 2006 04 24 | 699 | 0.7+ | 0.1+ |
| 2002 09 13 | 644 | 0.1− | 0.7+ | 2003 11 26 | 691 | 0.0 | 0.3+ | 2006 04 24 | 699 | 1.2+ | 0.3− |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2003 11 26 | 691 | 0.5− | 0.3+ | 2006 05 06 | 691 | 0.3− | 0.0 |
| 2002 09 13 | 644 | 0.0 | 0.5+ | 2005 02 04 | 703 | 0.2− | 0.4− | 2006 05 06 | 691 | 0.0 | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 02 04 | 703 | 0.9− | 0.2+ | 2006 05 06 | 691 | 0.2− | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 02 04 | 703 | 0.3+ | 0.1− | 2006 05 06 | G96 | 0.6− | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 02 04 | 703 | 0.1+ | 0.0 | 2006 05 06 | G96 | 0.4− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 04 07 | 691 | 0.2+ | 0.4+ | 2006 05 06 | G96 | 0.2− | 0.0 |
| 2003 11 24 | 699 | 0.3+ | 1.0+ | 2006 04 07 | 691 | 0.2+ | 0.1+ | 2006 05 06 | G96 | 0.3− | 0.1− |
| 2003 11 24 | 699 | 0.5− | 1.4− | 2006 04 07 | 691 | 0.1− | 0.0 | | | | |

**2002 RE$_{263}$ = 2000 HK$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.23553 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18255738 | $\omega$ | 248.50362 | | −0.32620626 | | −0.94035808 |
| $a$ | 3.0775359 | $\Omega$ | 220.93865 | | +0.91264821 | | −0.28668950 |
| $e$ | 0.0846816 | $i$ | 8.47066 | | +0.24629804 | | −0.18312788 |
| $P$ | 5.40 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 09 | 691 | 0.0 | 0.1+ | 2002 09 13 | 644 | 0.2+ | 0.6+ | 2005 03 03 | 691 | 0.4+ | 0.3+ |
| 1997 10 09 | 691 | 0.1− | 0.0 | 2002 09 13 | 644 | 0.0 | 0.4+ | 2005 03 03 | 691 | 0.3+ | 0.1− |
| 1997 10 09 | 691 | 0.0 | 0.1− | 2002 09 28 | 608 | 0.9− | 0.8− | 2005 03 03 | 691 | 0.3+ | 0.3+ |
| 1997 10 31 | 910 | 0.3+ | 0.5+ | 2002 09 28 | 608 | 1.2− | 0.7− | 2005 03 13 | 703 | 0.3− | 0.9+ |
| 1997 10 31 | 910 | 0.2− | 0.6+ | 2002 09 28 | 608 | 1.2− | 0.9− | 2005 03 13 | 703 | 1.0− | 0.8+ |
| 1997 10 31 | 910 | 0.1+ | 0.7+ | 2002 10 04 | 704 | 1.4+ | 0.4+ | 2005 03 13 | 703 | 0.7− | 0.1− |
| 2000 04 25 | 699 | 0.2− | 0.0 | 2002 10 04 | 704 | 0.1+ | 0.6− | 2005 03 13 | 703 | 0.4− | 0.7+ |
| 2000 04 25 | 699 | 0.2− | 0.5+ | 2002 10 04 | 704 | 0.9+ | 1.1+ | 2005 04 05 | 703 | 1.0+ | 0.6− |
| 2000 04 25 | 699 | 0.2− | 0.9+ | 2002 10 04 | 704 | 0.2+ | 1.3+ | 2005 04 05 | 703 | 0.9− | 1.8− |
| 2000 04 25 | 699 | 0.2− | 0.0 | 2003 12 01 | 704 | 0.2+ | 0.1− | 2005 04 05 | 703 | 1.0− | 1.5+ |
| 2000 04 29 | 704 | 0.6+ | 0.3− | 2003 12 01 | 704 | 0.1+ | 0.1+ | 2005 04 05 | 703 | 0.2+ | 1.9− |
| 2000 04 29 | 704 | 0.5+ | 0.0 | 2003 12 01 | 704 | 0.3− | 0.5+ | 2005 04 13 | 699 | 0.4− | 0.0 |
| 2000 04 29 | 704 | 0.8− | 0.6+ | 2003 12 01 | 704 | 0.6+ | 0.4+ | 2005 04 13 | 699 | 0.1+ | 0.3+ |
| 2000 04 29 | 704 | 1.0− | 0.2− | 2003 12 24 | 704 | 0.5− | 1.0− | 2005 04 13 | 699 | 0.1− | 0.4+ |
| 2000 04 29 | 704 | 1.1+ | 0.1− | 2003 12 24 | 704 | 0.2− | 0.3− | 2005 04 13 | 699 | 0.5+ | 0.7− |
| 2002 09 13 | 644 | 0.1+ | 0.3+ | 2003 12 24 | 704 | 0.7− | 0.0 | | | | |

**2002 RF$_{263}$ = 2006 QH$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.64979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22986854 | $\omega$ | 239.19896 | | +0.96452416 | | +0.06917133 |
| $a$ | 2.6392651 | $\Omega$ | 115.75209 | | +0.00191823 | | +0.96320119 |
| $e$ | 0.1813414 | $i$ | 16.43126 | | −0.26398763 | | +0.25972831 |
| $P$ | 4.29 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 1.4+ | 1.6+ | 2002 10 29 | 704 | 0.4− | 0.4+ | 2005 05 13 | 704 | (0.1+ | 1.6+) |
| 1998 12 15 | 704 | (2.1+ | 1.2+) | 2002 10 29 | 704 | 0.2− | 0.2− | 2005 05 13 | 704 | 0.8+ | 0.9+ |
| 1998 12 15 | 704 | 1.4− | 0.4+ | 2002 10 29 | 704 | 0.9− | 0.2− | 2005 05 13 | 699 | 0.0 | 1.3+ |
| 1998 12 15 | 704 | 0.7+ | 1.6− | 2002 10 29 | 704 | 1.1− | 0.9− | 2005 05 13 | 704 | (2.1+ | 0.1+) |
| 1998 12 15 | 704 | (6.8− | 0.8−) | 2002 11 05 | 644 | 0.4− | 0.2+ | 2005 05 13 | 704 | 1.1+ | 1.4+ |
| 1998 12 22 | 704 | 0.3+ | 1.1− | 2002 11 05 | 644 | 0.1− | 0.1+ | 2005 05 13 | 699 | (0.2− | 2.0+) |
| 1998 12 22 | 704 | 0.5− | 0.5− | 2002 11 05 | 644 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.3+ | 0.1+ |
| 1998 12 22 | 704 | 1.5+ | 0.0 | 2004 01 18 | 644 | 0.0 | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.2+ |
| 1998 12 22 | 704 | 0.4− | 0.7+ | 2004 01 18 | 644 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.2+ | 0.2+ |
| 1998 12 22 | 704 | (4.2− | 1.4+) | 2004 01 18 | 644 | 0.0 | 0.5+ | 2006 08 28 | E12 | 0.4− | 0.2+ |
| 2002 09 15 | 699 | 0.6+ | 0.6− | 2004 02 13 | 691 | 0.2− | 0.3+ | 2006 08 28 | E12 | 0.5− | 0.5+ |
| 2002 09 15 | 699 | 1.1− | 0.2− | 2004 02 13 | 691 | 0.1+ | 0.5+ | 2006 08 28 | E12 | 0.6− | 0.5− |
| 2002 09 15 | 699 | 0.2− | 0.4+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 08 28 | E12 | 0.6+ | 0.3+ |
| 2002 09 15 | 699 | 0.2+ | 1.0+ | 2004 02 15 | 704 | 1.2+ | 0.6+ | 2006 09 28 | E12 | 0.5+ | 0.1+ |
| 2002 10 05 | 704 | 1.0+ | 0.5+ | 2004 02 15 | 704 | 0.9+ | 0.6− | 2006 09 28 | E12 | 0.1− | 0.0 |
| 2002 10 05 | 704 | 0.6+ | 0.1− | 2004 02 15 | 704 | 0.4+ | 0.5+ | 2006 09 28 | E12 | 0.6+ | 0.4− |
| 2002 10 05 | 704 | 1.3+ | 0.2− | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 09 28 | E12 | 0.1− | 0.1+ |
| 2002 10 05 | 699 | 0.6− | 0.7+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 10 09 | E12 | 0.7− | 0.2− |
| 2002 10 05 | 704 | 0.6+ | 0.4+ | 2004 05 14 | 645 | 0.0 | 0.0 | 2006 10 09 | E12 | 0.8− | 1.0+ |
| 2002 10 05 | 699 | 0.9− | 0.3+ | 2004 05 14 | 645 | 0.0 | 0.0 | 2006 10 09 | E12 | 0.4+ | 0.1− |
| 2002 10 05 | 699 | 0.4− | 0.5+ | 2005 04 14 | 703 | 0.7+ | 0.0 | 2006 10 09 | E12 | 0.7+ | 0.3+ |
| 2002 10 05 | 699 | 0.5− | 0.3+ | 2005 04 14 | 703 | 0.8− | 0.0 | 2006 10 24 | E12 | 0.4+ | 0.1+ |
| 2002 10 05 | 644 | 0.0 | 0.1− | 2005 04 14 | 703 | 0.4− | 0.3+ | 2006 10 24 | E12 | 0.1− | 1.0+ |
| 2002 10 05 | 644 | 0.1− | 0.1+ | 2005 04 14 | 703 | 1.0− | 0.6+ | 2006 10 24 | E12 | 0.1− | 0.4+ |
| 2002 10 05 | 644 | 0.1+ | 0.2+ | 2005 05 13 | 699 | 0.4− | 1.1+ | 2006 10 24 | E12 | 0.2+ | 0.6+ |
| 2002 10 29 | 704 | 1.4− | 0.6+ | 2005 05 13 | 699 | 0.5+ | 1.2+ | | | | |

**2002 RG$_{263}$ = 2006 RC$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.63417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24298071 | $\omega$ | 60.76987 | | +0.98153442 | | +0.18500482 |
| $a$ | 2.5434401 | $\Omega$ | 288.53321 | | −0.18843065 | | +0.89139189 |
| $e$ | 0.3193519 | $i$ | 2.93907 | | −0.03292533 | | +0.41375562 |
| $P$ | 4.06 | $H$ | 19.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.0 | 0.0 | 2002 09 17 | 644 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.3+ | 0.2+ |
| 2002 09 11 | 644 | 0.1− | 0.6− | 2002 09 17 | 644 | 0.7− | 0.0 | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2002 09 11 | 644 | 0.3+ | 0.3− | 2002 09 18 | 644 | 0.3+ | 0.2− | 2006 09 14 | 691 | 0.0 | 0.4− |
| 2002 09 13 | 644 | 0.3− | 0.6+ | 2002 09 18 | 644 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.1+ |
| 2002 09 13 | 644 | 0.5+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 09 17 | 644 | 0.2+ | 0.4− | 2006 08 29 | 691 | 0.0 | 0.1− | | | | |

**2002 RN$_{263}$ = 1993 TZ$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.76177 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21303471 | $\omega$ | 67.52200 | | +0.69242040 | | +0.71908939 |
| $a$ | 2.7765307 | $\Omega$ | 246.43898 | | −0.68331757 | | +0.62741087 |
| $e$ | 0.1380018 | $i$ | 3.68164 | | −0.23158386 | | +0.29877424 |
| $P$ | 4.63 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 691 | 0.2+ | 0.2+ | 2002 09 11 | 644 | 0.2− | 0.3+ | 2002 09 13 | 644 | 0.4+ | 0.6+ |
| 1993 10 09 | 691 | 0.1+ | 0.3+ | 2002 09 11 | 644 | 0.6− | 0.1− | 2002 09 13 | 644 | 0.1− | 0.1− |
| 1993 10 09 | 691 | 0.2− | 0.5− | 2002 09 11 | 644 | 0.1+ | 0.5− | 2002 09 13 | 644 | 0.5+ | 0.0 |
| 1993 10 15 | 691 | 0.0 | 0.4− | 2002 09 13 | 644 | 0.1+ | 0.0 | 2002 09 17 | 644 | 0.0 | 0.5− |
| 1993 10 15 | 691 | 0.7− | 0.5− | 2002 09 13 | 644 | 0.2− | 0.1− | 2002 09 17 | 644 | 0.1− | 0.2+ |
| 1993 10 15 | 691 | 0.7+ | 0.9+ | 2002 09 13 | 644 | 0.2+ | 0.2+ | | | | |

**2002 RR$_{263}$ = 1998 WB$_{26}$ = 2006 MY$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.19087 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22577886 | $\omega$ | 64.79829 | | +0.64537349 | | +0.76149550 |
| $a$ | 2.6710408 | $\Omega$ | 245.53055 | | −0.72246809 | | +0.58293113 |
| $e$ | 0.1016912 | $i$ | 3.78900 | | −0.24805831 | | +0.28340059 |
| $P$ | 4.37 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.4+ | 0.0 | 2002 09 13 | 644 | 0.1+ | 0.1− | 2006 05 30 | G96 | 0.4− | 0.3− |
| 1998 11 16 | 691 | 0.3+ | 0.3− | 2002 09 13 | 644 | 0.2+ | 0.4+ | 2006 05 30 | G96 | 0.0 | 0.4− |
| 1998 11 16 | 691 | 0.6+ | 0.3+ | 2002 09 17 | 644 | 0.3+ | 0.0 | 2006 05 30 | G96 | 0.5+ | 0.5− |
| 1998 11 19 | 691 | 0.4− | 0.4− | 2002 09 17 | 644 | 0.5− | 0.1− | 2006 06 19 | G96 | 0.3+ | 0.6− |
| 1998 11 19 | 691 | 0.1− | 0.1+ | 2002 09 17 | 644 | 0.1+ | 0.1+ | 2006 06 19 | G96 | 0.6+ | 0.5− |
| 1998 11 19 | 691 | 0.7− | 0.1− | 2002 09 18 | 644 | 0.3+ | 0.0 | 2006 06 19 | G96 | 0.5− | 0.6− |
| 2002 09 11 | 644 | 0.7+ | 0.1+ | 2002 09 18 | 644 | 0.1− | 0.3+ | 2006 06 19 | G96 | 0.1− | 0.9− |
| 2002 09 11 | 644 | 0.2− | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 06 22 | 691 | 0.2+ | 0.3+ |
| 2002 09 11 | 644 | 0.1+ | 0.3+ | 2002 10 31 | 645 | 0.1− | 0.0 | 2006 06 22 | 691 | 0.2− | 0.1+ |
| 2002 09 13 | 644 | 0.4− | 0.3− | 2006 05 30 | G96 | 0.2+ | 0.2− | 2006 06 22 | 691 | 0.1− | 0.3+ |

**2002 RW$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.36094 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17947998 | $\omega$ | 263.01620 | | +0.68112238 | | +0.72755761 |
| $a$ | 3.1126147 | $\Omega$ | 50.25717 | | −0.62255537 | | +0.63448383 |
| $e$ | 0.1250915 | $i$ | 6.12559 | | −0.38535324 | | +0.26094098 |
| $P$ | 5.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.3− | 0.2− | 2002 10 11 | 704 | 0.4− | 0.1+ | 2006 05 08 | G96 | 0.2− | 0.1− |
| 1991 10 01 | 691 | 0.1+ | 0.4− | 2002 10 28 | 644 | 0.6− | 0.8+ | 2006 05 22 | G96 | 0.4+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.4+ | 0.2+ | 2002 10 28 | 644 | 0.5− | 0.5+ | 2006 05 22 | G96 | 0.1+ | 0.1− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 28 | 644 | 0.4− | 0.6+ | 2006 05 22 | G96 | 0.3− | 0.2+ |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2004 01 19 | 691 | 0.1− | 0.1− | 2006 05 22 | G96 | 0.6+ | 0.1− |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 05 22 | G96 | 0.5+ | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 19 | 691 | 0.0 | 0.1− | 2006 05 22 | G96 | 0.2− | 0.1+ |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2006 05 08 | G96 | 0.3− | 0.1+ | 2006 05 22 | G96 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 2.2− | 0.8+ | 2006 05 08 | G96 | 0.1− | 0.4+ | 2006 05 22 | G96 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.5− | 0.1+ | 2006 05 08 | G96 | 0.3− | 0.2+ | | | | |

**2002 RY$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.86007 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28593238 | $\omega$ | 186.13379 | | +0.66043902 | | +0.74643599 |
| $a$ | 2.2818854 | $\Omega$ | 125.23287 | | −0.68460462 | | +0.64320642 |
| $e$ | 0.0637597 | $i$ | 5.73129 | | −0.30844256 | | +0.17064236 |
| $P$ | 3.45 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.6+ | 0.3− | 2002 10 07 | 608 | 0.3− | 0.3− | 2004 02 13 | 691 | 0.1− | 0.1+ |
| 1995 08 30 | 809 | 0.1+ | 1.7− | 2002 10 07 | 608 | 0.0 | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.2+ |
| 1995 08 30 | 809 | 1.2+ | 0.4+ | 2003 12 21 | 645 | 0.1− | 0.2− | 2004 02 16 | 704 | (1.7+ | 0.1+) |
| 1997 02 14 | 691 | 0.3− | 0.7− | 2003 12 21 | 645 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.6+ | 0.6− |
| 1997 02 14 | 691 | 0.5− | 0.5− | 2004 01 22 | 704 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.4− | 0.1− |
| 1997 02 14 | 691 | 0.2+ | 0.6− | 2004 01 22 | 704 | 0.6+ | 1.0+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 09 14 | 608 | 0.9− | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2002 09 14 | 608 | 1.1− | 0.4− | 2004 01 22 | 704 | 0.9+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.4+ |
| 2002 09 14 | 608 | 1.0− | 0.8− | 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 11 24 | 691 | 0.5+ | 0.1− |
| 2002 10 04 | 704 | 0.4+ | 1.1− | 2004 02 11 | 699 | 1.0+ | 0.5− | 2006 11 24 | 691 | 0.1− | 0.6+ |
| 2002 10 04 | 704 | 0.9+ | 0.7− | 2004 02 11 | 699 | 1.0+ | 0.8+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.6+ | 0.1− | 2004 02 11 | 699 | 0.8+ | 1.3+ | 2006 11 28 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 1.2+ | 0.2− | 2004 02 11 | 699 | (0.0 | 1.6+) | 2006 11 28 | 691 | 0.0 | 0.1+ |
| 2002 10 07 | 608 | 0.4− | 0.4+ | 2004 02 13 | 691 | 0.3− | 0.1+ | 2006 11 28 | 691 | 0.2− | 0.2+ |

**2002 RZ$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.79108 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22465722 | $\omega$ | 120.89513 | | +0.10754809 | | −0.98957914 |
| $a$ | 2.6799239 | $\Omega$ | 322.55561 | | +0.84994479 | | +0.14147542 |
| $e$ | 0.0959349 | $i$ | 9.06024 | | +0.51577831 | | −0.02679243 |
| $P$ | 4.39 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 16 | 691 | 0.1− | 0.3− | 2002 10 11 | 645 | 0.1+ | 0.0 | 2004 01 26 | 699 | 0.2+ | 0.3− |
| 1993 08 16 | 691 | 0.2+ | 1.2+ | 2003 12 28 | 704 | 0.2− | 0.4− | 2004 01 26 | 699 | 0.3− | 0.4+ |
| 1993 08 16 | 691 | 0.7− | 0.3+ | 2003 12 28 | 704 | 0.6+ | 0.8+ | 2004 01 26 | 699 | 0.1+ | 0.8+ |
| 2002 09 15 | 699 | 0.4− | 1.0+ | 2003 12 28 | 704 | 0.5+ | 0.6+ | 2004 02 15 | 704 | 0.7− | 0.4+ |
| 2002 09 15 | 699 | 0.7− | 1.3+ | 2003 12 28 | 704 | 0.5+ | 0.2+ | 2004 02 15 | 704 | 0.1+ | 0.7+ |
| 2002 09 15 | 699 | 2.2− | 0.4+ | 2003 12 28 | 704 | 0.2+ | 0.5+ | 2004 02 15 | 704 | 0.7− | 0.2− |
| 2002 09 15 | 699 | 1.5− | 1.0+ | 2004 01 18 | 691 | 0.2+ | 0.4− | 2004 02 23 | 704 | 0.2− | 1.3+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2004 01 18 | 691 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.4+ | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2004 01 18 | 691 | 0.2+ | 0.3− | 2004 02 23 | 704 | 0.9− | 1.2+ |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2004 01 26 | 699 | 1.1− | 0.1− | 2004 02 23 | 704 | 0.3+ | 2.0+ |

**2002 RG$_{264}$ = 2005 JT$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.63837 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28086420 | $\omega$ | 18.97618 | | +0.38618681 | | +0.92140740 |
| $a$ | 2.3092544 | $\Omega$ | 273.76018 | | −0.85180841 | | +0.33825196 |
| $e$ | 0.2105469 | $i$ | 2.48257 | | −0.35395224 | | +0.19129564 |
| $P$ | 3.51 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 09 15 | 608 | 0.7− | 0.4− | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 05 08 | 699 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.5+ | 0.0 |
| 2002 09 13 | 644 | 0.1+ | 0.0 | 2005 05 08 | 699 | 0.7− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2005 05 08 | 699 | 0.3+ | 0.9+ | 2006 11 18 | 691 | 0.1− | 0.4− |
| 2002 09 13 | 644 | 0.3+ | 0.4+ | 2005 05 08 | 699 | (1.7− | 0.7+) | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2005 05 19 | 644 | 0.4+ | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2005 05 19 | 644 | 0.3+ | 0.5+ | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.7+ | 2005 05 19 | 644 | 0.5+ | 0.2+ | 2006 11 22 | 691 | 0.4− | 0.2+ |
| 2002 09 15 | 608 | 0.4− | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.2− | | | | |

**2002 RV$_{264}$ = 2006 SC$_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.32548 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26047369 | $\omega$ | 346.88390 | | +0.20569027 | | +0.97599308 |
| $a$ | 2.4282504 | $\Omega$ | 294.94837 | | −0.89058320 | | +0.15634995 |
| $e$ | 0.1839413 | $i$ | 4.53038 | | −0.40565143 | | +0.15163177 |
| $P$ | 3.78 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 608 | 0.5− | 0.5− | 2002 09 28 | 608 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2002 09 11 | 608 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.7+ | 0.5− |
| 2002 09 11 | 608 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2002 09 13 | 644 | 0.3+ | 0.4− | 2006 09 26 | 691 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.3− | 0.4+ |
| 2002 09 13 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.6+ | 0.0 | 2006 09 30 | 691 | 0.6+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2002 09 15 | 608 | 0.4− | 0.4+ | 2006 09 30 | 691 | 0.4− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2002 09 15 | 608 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2002 09 19 | 644 | 0.7+ | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.2− |
| 2002 09 19 | 644 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1+ | | | | |
| 2002 09 28 | 608 | 0.3− | 0.1− | 2006 10 19 | G96 | 1.0+ | 0.3− | | | | |

**2002 RS$_{265}$ = 2005 JN$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.21117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26277743 | $\omega$ | 280.03361 | | +0.73392852 | | +0.67899318 |
| $a$ | 2.4140375 | $\Omega$ | 37.20494 | | −0.61107310 | | +0.67150679 |
| $e$ | 0.1902524 | $i$ | 1.68782 | | −0.29654441 | | +0.29672696 |
| $P$ | 3.75 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 291 | 0.1+ | 0.0 | 2002 09 05 | 608 | 0.2+ | 0.6+ | 2002 09 15 | 644 | 0.5+ | 0.0 |
| 2002 08 30 | 291 | 0.1− | 0.3− | 2002 09 11 | 608 | 0.3+ | 0.4+ | 2005 05 10 | 807 | 0.1− | 0.1+ |
| 2002 08 30 | 291 | 0.0 | 0.1− | 2002 09 11 | 608 | 0.3− | 0.3− | 2005 05 10 | 807 | 0.1+ | 0.0 |
| 2002 09 05 | 608 | 0.1+ | 0.5+ | 2002 09 15 | 644 | 0.2− | 0.5− | 2005 05 10 | 807 | 0.0 | 0.1− |
| 2002 09 05 | 608 | 0.1+ | 0.9+ | 2002 09 15 | 644 | 0.5− | 0.5− | 2005 05 11 | 807 | 0.0 | 0.1+ |

**2002 RD$_{266}$ = 2006 QB$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.32691 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24243186 | $\omega$ | 35.30986 | | +0.97450801 | | −0.20935283 |
| $a$ | 2.5472774 | $\Omega$ | 336.38262 | | +0.12969897 | | +0.81904671 |
| $e$ | 0.2089664 | $i$ | 11.61454 | | +0.18306368 | | +0.53416653 |
| $P$ | 4.07 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 291 | 0.0 | 0.2+ | 2002 09 17 | 644 | 0.1+ | 0.3− | 2002 10 06 | 644 | 0.3+ | 0.4− |
| 2002 08 16 | 291 | 0.1− | 0.1− | 2002 09 18 | 644 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2002 08 16 | 291 | 0.1+ | 0.1− | 2002 09 18 | 644 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.2+ | 0.1− | 2002 09 18 | 644 | 0.5− | 0.6+ | 2006 08 27 | 691 | 0.1+ | 0.2− |
| 2002 09 13 | 644 | 0.2+ | 0.3− | 2002 10 05 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.7− |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2002 10 05 | 644 | 0.2− | 0.2+ | 2006 08 28 | 703 | (0.2− | 1.7−) |
| 2002 09 17 | 644 | 0.2+ | 0.1− | 2002 10 06 | 644 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.1− | 1.4+ |
| 2002 09 17 | 644 | 0.2− | 0.5− | 2002 10 06 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.6− | 0.4− |

**2002 RF$_{266}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.52226 | | (2000.0) | | | |
| $n$ | 0.24155286 | $\omega$ | 255.76422 | | +0.86949195 | −0.48649400 |
| $a$ | 2.5534533 | $\Omega$ | 133.26502 | | +0.48626073 | +0.81263463 |
| $e$ | 0.2039734 | $i$ | 6.74154 | | +0.08680003 | +0.32085597 |
| $P$ | 4.08 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.0 | 0.0 | 2002 09 16 | 644 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.5− | 0.1+ |
| 2002 08 18 | 644 | 0.5+ | 0.0 | 2002 09 16 | 644 | 0.3+ | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 2002 08 18 | 644 | 0.2+ | 0.1− | 2002 09 16 | 644 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.3− | 0.6+ |
| 2002 08 29 | 644 | 0.0 | 0.1+ | 2004 02 12 | 691 | 0.2− | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.4+ |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.0 | 0.1+ | 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 10 20 | 695 | 0.1+ | 0.1− |
| 2002 09 15 | 644 | 0.3− | 0.1− | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 20 | 695 | 0.3+ | 0.1− |
| 2002 09 15 | 644 | 0.5− | 0.4+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 20 | 695 | 0.0 | 0.1− |
| 2002 09 15 | 644 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.1− | 0.1+ | | | | |

**2002 SW = 2002 UW**

Id. Minor Planet Center (d, *MPO* 41953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.40676 | | (2000.0) | | | |
| $n$ | 0.23379265 | $\omega$ | 76.55926 | | +0.78049663 | −0.53485782 |
| $a$ | 2.6096493 | $\Omega$ | 314.55767 | | +0.23009621 | +0.72714629 |
| $e$ | 0.4084207 | $i$ | 27.01497 | | +0.58127510 | +0.43033172 |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 23 | 644 | 0.7+ | 1.2+ | 2002 10 28 | 926 | 0.3− | 0.2− | 2002 12 14 | 699 | 0.5− | 0.2− |
| 2002 09 23 | 644 | 0.7+ | 1.1+ | 2002 10 28 | 926 | 0.1+ | 0.0 | 2002 12 14 | 699 | 0.1− | 0.2+ |
| 2002 09 23 | 644 | 0.7+ | 1.0+ | 2002 10 28 | 926 | 0.3+ | 0.2− | 2002 12 27 | 704 | 0.1− | 0.0 |
| 2002 09 24 | 966 | 0.2+ | 0.1− | 2002 10 28 | 670 | 0.6− | 0.1+ | 2002 12 27 | 704 | 0.3+ | 0.3+ |
| 2002 09 24 | 966 | 0.1− | 0.4− | 2002 10 28 | 670 | 0.5− | 0.7+ | 2002 12 27 | 704 | 0.5− | 0.4+ |
| 2002 09 24 | 946 | (0.8− | 2.4−) | 2002 10 29 | 704 | 0.4+ | 0.1− | 2002 12 28 | 704 | 0.2+ | 0.6− |
| 2002 09 24 | 946 | 0.6− | 1.4− | 2002 10 29 | 704 | 0.6+ | 0.4− | 2002 12 28 | 704 | 0.2− | 0.4− |
| 2002 09 24 | 649 | 0.2− | 0.7− | 2002 10 29 | 704 | 0.6+ | 0.1− | 2002 12 28 | 704 | 0.1− | 0.7− |
| 2002 09 24 | 649 | 0.1+ | 0.3− | 2002 10 29 | 704 | 0.5+ | 0.0 | 2002 12 28 | 704 | 0.6− | 0.4− |
| 2002 09 24 | 649 | 0.2− | 0.1− | 2002 10 29 | 704 | 0.5+ | 1.5− | 2002 12 28 | 704 | 0.1+ | 0.6− |
| 2002 09 25 | J95 | 0.0 | 0.1− | 2002 10 30 | 704 | 0.3+ | 0.2− | 2006 08 29 | 699 | 0.2+ | 0.0 |
| 2002 09 25 | J95 | 0.0 | 0.1− | 2002 10 30 | 704 | 0.5+ | 0.4+ | 2006 08 29 | 699 | 0.1+ | 0.4+ |
| 2002 09 25 | 926 | 0.1− | 0.6+ | 2002 10 30 | 704 | 0.0 | 0.2− | 2006 08 29 | 699 | 0.3− | 0.1+ |
| 2002 09 25 | 926 | 0.0 | 0.4− | 2002 10 30 | 704 | 1.7− | 0.3+ | 2006 09 09 | B03 | 0.0 | 0.2+ |
| 2002 09 25 | 926 | 1.3− | 0.2+ | 2002 11 20 | 704 | 0.9− | 0.3+ | 2006 09 09 | B03 | 0.1− | 0.1+ |
| 2002 09 25 | 926 | 0.5− | 0.6− | 2002 11 20 | 704 | 0.3− | 0.7+ | 2006 09 12 | B03 | 0.5+ | 0.1+ |
| 2002 10 25 | 704 | 0.4− | 0.6+ | 2002 11 20 | 704 | 0.2+ | 0.6+ | 2006 09 12 | B03 | 0.3+ | 0.1+ |
| 2002 10 25 | 704 | 0.2+ | 0.1− | 2002 11 20 | 704 | 1.2+ | 1.4+ | 2006 09 12 | B03 | 0.0 | 0.1− |
| 2002 10 25 | 704 | 0.2+ | 0.4− | 2002 11 20 | 704 | 0.8+ | 1.3+ | 2006 09 12 | B03 | 0.2− | 0.2− |
| 2002 10 25 | 704 | 1.7+ | 0.1− | 2002 11 24 | 704 | 0.0 | 0.2+ | 2006 09 15 | 644 | 0.0 | 0.2− |
| 2002 10 26 | 176 | 0.4− | 0.7− | 2002 11 24 | 704 | 1.0+ | 0.5− | 2006 09 15 | 644 | 0.1+ | 0.2− |
| 2002 10 26 | 176 | 0.4− | 0.0 | 2002 11 24 | 704 | 1.4+ | 0.4− | 2006 09 15 | 644 | 0.0 | 0.2− |
| 2002 10 26 | 176 | 0.3− | 0.3+ | 2002 11 24 | 704 | 1.5+ | 0.7− | 2006 09 20 | 703 | 0.1− | 0.2− |
| 2002 10 26 | 176 | 0.4− | 0.7+ | 2002 12 13 | 704 | 0.6− | 0.0 | 2006 09 20 | 703 | 0.0 | 0.2+ |
| 2002 10 26 | 587 | 0.0 | 1.0− | 2002 12 13 | 704 | 0.6− | 0.5+ | 2006 09 20 | 703 | 0.4− | 0.3+ |
| 2002 10 26 | 587 | 0.4+ | 0.1− | 2002 12 13 | 704 | 0.6− | 0.8+ | 2006 09 20 | 703 | 0.3− | 0.3− |
| 2002 10 26 | 587 | 0.6− | 0.3− | 2002 12 14 | 699 | 0.5+ | 0.0 | | | | |
| 2002 10 26 | 587 | 1.1− | 0.3− | 2002 12 14 | 699 | 0.5− | 0.3+ | | | | |

**2002 SE$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 337.27675 | | (2000.0) | | | |
| $n$ | 0.22938708 | $\omega$ | 120.10014 | | +0.96553023 | +0.22618729 |
| $a$ | 2.6429569 | $\Omega$ | 227.16325 | | −0.25433439 | +0.92508327 |
| $e$ | 0.2521492 | $i$ | 10.11663 | | +0.05536598 | +0.30505779 |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 15 | 691 | 0.2− | 0.0 | 2002 09 04 | 699 | 0.2+ | 0.3− | 2002 10 05 | 704 | 0.2+ | 0.5− |
| 1997 06 15 | 691 | 0.3+ | 0.0 | 2002 09 04 | 699 | 0.1+ | 0.5− | 2002 10 05 | 644 | 0.1− | 0.1+ |
| 1997 06 15 | 691 | 0.1− | 0.1− | 2002 09 11 | 644 | 0.3+ | 0.2− | 2002 10 05 | 704 | 0.0 | 0.2− |
| 1998 11 11 | 699 | 0.3+ | 0.1− | 2002 09 11 | 644 | 0.1+ | 0.4− | 2002 10 06 | 644 | 0.3− | 0.2+ |
| 1998 11 11 | 699 | 0.6+ | 0.7− | 2002 09 11 | 644 | 0.3+ | 0.3− | 2002 10 06 | 644 | 0.1− | 0.1+ |
| 1998 11 11 | 699 | 1.0− | 1.7+ | 2002 09 27 | 644 | 0.4− | 0.4+ | 2002 10 06 | 644 | 0.2− | 0.2+ |
| 2002 07 13 | 704 | 0.7+ | 0.8− | 2002 09 27 | 644 | 0.1− | 0.2+ | 2002 10 12 | 704 | 0.2− | 0.1+ |
| 2002 07 13 | 704 | 0.1− | 0.7− | 2002 09 27 | 644 | 0.2− | 0.1+ | 2002 10 12 | 704 | 0.3− | 0.3+ |
| 2002 07 13 | 704 | 0.4− | 0.7− | 2002 09 28 | 644 | 0.0 | 0.4+ | 2002 10 12 | 704 | 0.0 | 0.2− |
| 2002 08 04 | 704 | 0.4− | 0.4+ | 2002 09 28 | 644 | 0.4− | 0.3+ | 2002 10 12 | 704 | 0.8+ | 0.6+ |
| 2002 08 04 | 704 | 0.1− | 0.9+ | 2002 09 28 | 644 | 0.1+ | 0.2+ | 2002 10 31 | 704 | 0.1− | 0.0 |
| 2002 08 04 | 704 | 0.2− | 1.5+ | 2002 10 02 | 599 | 0.1+ | 0.1− | 2002 10 31 | 704 | 0.5− | 0.6− |
| 2002 08 15 | 704 | 0.5+ | 0.5+ | 2002 10 02 | 599 | 0.2+ | 0.0 | 2002 10 31 | 704 | 0.0 | 0.2− |
| 2002 08 15 | 704 | 0.3+ | 0.9+ | 2002 10 02 | 599 | 0.2+ | 0.2− | 2002 10 31 | 704 | 0.1+ | 0.9− |
| 2002 08 15 | 704 | 0.1+ | 0.9+ | 2002 10 03 | 599 | 0.2+ | 0.1+ | 2002 10 31 | 704 | 0.5+ | 0.8− |
| 2002 08 15 | 704 | 0.2+ | 0.6+ | 2002 10 03 | 599 | 0.0 | 0.0 | 2002 11 06 | 704 | 1.1− | 0.2+ |
| 2002 08 15 | 704 | 0.5− | 0.7+ | 2002 10 03 | 599 | 0.1− | 0.1− | 2002 11 06 | 704 | 0.6− | 0.9− |
| 2002 08 30 | 699 | 0.3+ | 0.1− | 2002 10 03 | 599 | 0.2+ | 0.1− | 2002 11 06 | 704 | 0.6+ | 0.7− |
| 2002 08 30 | 699 | 0.4− | 0.3− | 2002 10 05 | 704 | 0.2− | 0.3− | 2002 11 06 | 704 | 1.1+ | 0.2− |
| 2002 08 30 | 699 | 0.1+ | 0.2− | 2002 10 05 | 644 | 0.0 | 0.1− | 2002 11 12 | 704 | 0.4+ | 0.2+ |
| 2002 08 30 | 699 | 0.1+ | 0.6− | 2002 10 05 | 704 | 0.1+ | 0.2+ | 2002 11 12 | 704 | 0.3+ | 0.7+ |
| 2002 09 04 | 699 | 0.5− | 0.4− | 2002 10 05 | 704 | 0.1+ | 0.1+ | 2002 11 12 | 704 | 0.9− | 0.4− |
| 2002 09 04 | 699 | 0.2+ | 0.2− | 2002 10 05 | 644 | 0.0 | 0.1− | | | | |

**2002 SJ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.23956 | | (2000.0) | | | |
| $n$ | 0.25337422 | $\omega$ | 93.92308 | | +0.89170106 | −0.38669382 |
| $a$ | 2.4734004 | $\Omega$ | 288.95225 | | +0.24860424 | +0.85273430 |
| $e$ | 0.3189843 | $i$ | 14.40188 | | +0.37823954 | +0.35115822 |
| $P$ | 3.89 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.2+ | 0.6+ | 2002 09 27 | 644 | 0.0 | 0.3− | 2006 08 19 | 291 | 0.0 | 0.1− |
| 2002 09 03 | 644 | 0.2+ | 0.6+ | 2002 09 28 | 644 | 0.0 | 0.0 | 2006 08 19 | 291 | 0.1+ | 0.2− |
| 2002 09 03 | 644 | 0.2+ | 0.2+ | 2002 09 28 | 644 | 0.1− | 0.3− | 2006 08 19 | 291 | 0.0 | 0.0 |
| 2002 09 15 | 699 | 0.4+ | 0.8− | 2002 09 28 | 644 | 0.1− | 0.2+ | 2006 11 13 | 704 | 0.1+ | 0.2+ |
| 2002 09 15 | 699 | 0.8− | 0.3+ | 2002 10 10 | 704 | 0.1+ | 0.1− | 2006 11 13 | 704 | 0.6+ | 0.6+ |
| 2002 09 15 | 699 | 0.2− | 0.0 | 2002 10 10 | 704 | 0.9+ | 0.4− | 2006 11 13 | 704 | 0.6− | 0.6− |
| 2002 09 15 | 699 | 0.1+ | 0.3+ | 2002 10 10 | 704 | 0.3− | 0.2− | 2006 11 13 | 704 | 0.0 | 0.2+ |
| 2002 09 27 | 644 | 0.1− | 0.0 | 2002 10 10 | 704 | 0.8− | 0.1+ | 2006 11 13 | 704 | 0.1− | 0.2− |
| 2002 09 27 | 644 | 0.3− | 0.5− | 2002 10 10 | 704 | 0.4+ | 0.9+ | | | | |

**2002 SR$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.62446 | | (2000.0) | | | |
| $n$ | 0.26202938 | $\omega$ | 355.67696 | | +0.65985142 | −0.75040861 |
| $a$ | 2.4186297 | $\Omega$ | 53.02916 | | +0.69082966 | +0.58570779 |
| $e$ | 0.1706736 | $i$ | 2.76279 | | +0.29555114 | +0.30632220 |
| $P$ | 3.76 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.6− | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.9+ | 2006 11 14 | 691 | 0.0 | 0.8− |
| 2002 09 27 | 644 | 0.6− | 0.1+ | 2002 10 11 | 704 | 0.4− | 1.4+ | 2006 11 17 | 704 | 0.3+ | 0.5+ |
| 2002 09 27 | 644 | 0.7− | 0.0 | 2002 10 31 | 699 | (0.3+ | 2.1+) | 2006 11 17 | 704 | 0.2− | 0.8+ |
| 2002 09 28 | 644 | 0.5− | 0.1− | 2002 10 31 | 699 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 644 | 0.5− | 0.3+ | 2002 10 31 | 699 | 1.4+ | 0.5− | 2006 11 17 | 704 | (1.9− | 1.4+) | | |
| 2002 09 28 | 644 | 0.5− | 0.2+ | 2002 10 31 | 699 | 0.9+ | 0.1− | 2006 11 17 | 704 | 1.0+ | 0.2− | | |
| 2002 09 30 | 704 | 0.8− | 0.7+ | 2002 10 31 | 645 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.3− | 0.2+ | | |
| 2002 09 30 | 704 | 0.8− | 0.3− | 2002 10 31 | 645 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1− | | |
| 2002 09 30 | 704 | 1.0− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1− | | |
| 2002 09 30 | 704 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.7− | 0.2+ | | |
| 2002 10 01 | 608 | 0.5+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.6+ | | |
| 2002 10 01 | 608 | 0.6+ | 0.8+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.2+ | | |
| 2002 10 01 | 608 | 0.6+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2002 10 02 | 704 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.2− | | |
| 2002 10 02 | 704 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.2− | | |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.0 | | |
| 2002 10 03 | 704 | 0.0 | 0.7+ | 2006 11 10 | 691 | 0.2+ | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2002 10 08 | 699 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.0 | | |
| 2002 10 08 | 699 | 0.7+ | 1.3+ | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.2− | | |
| 2002 10 08 | 699 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.4− | | |
| 2002 10 08 | 699 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.1− | | |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.3− | 0.4+ | 2006 12 01 | 704 | 0.0 | 0.8+ | | |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.1+ | 1.0− | 2006 12 01 | 704 | 0.1− | 0.8+ | | |
| 2002 10 11 | 704 | 0.0 | 1.4+ | 2006 11 14 | 691 | 0.2− | 0.4+ | 2006 12 01 | 704 | 0.0 | 0.2+ | | |
| 2002 10 11 | 704 | 0.5− | 1.4+ | 2006 11 14 | 691 | 0.3+ | 0.7− | 2006 12 01 | 704 | 0.5− | 0.2+ | | |
| 2002 10 11 | 704 | 0.0 | 1.3+ | 2006 11 14 | 691 | 0.1− | 0.5+ | 2006 12 01 | 704 | 0.5− | 0.0 | | |

**2002 SZ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.32459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26176315 | $\omega$ | 206.00801 | | +0.81332354 | −0.58153135 | |
| $a$ | 2.4202694 | $\Omega$ | 189.61233 | | +0.55088913 | +0.77970958 | |
| $e$ | 0.1206811 | $i$ | 6.20852 | | +0.18715232 | +0.23210829 | |
| $P$ | 3.77 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.1− | 0.7+ | 2002 10 05 | 704 | 0.5− | 0.7− | 2006 10 18 | 691 | 0.1− | 0.1− | | |
| 2002 09 27 | 644 | 0.7− | 0.4− | 2002 10 11 | 704 | 0.2+ | 1.0+ | 2006 10 18 | 691 | 0.0 | 0.3− | | |
| 2002 09 27 | 644 | 0.7− | 0.5− | 2002 10 11 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2002 09 28 | 644 | 0.1− | 0.3− | 2002 10 11 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.2− | | |
| 2002 09 28 | 644 | 0.3− | 0.3− | 2002 10 11 | 704 | 0.3+ | 1.3+ | 2006 10 22 | 691 | 0.2+ | 0.3− | | |
| 2002 09 28 | 644 | 0.2− | 0.5− | 2002 10 11 | 704 | 0.7+ | 0.2− | 2006 10 30 | 703 | 0.5− | 0.8− | | |
| 2002 10 02 | 704 | 0.0 | 0.5+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 30 | 703 | 0.4− | 0.3− | | |
| 2002 10 02 | 704 | 0.1+ | 0.7+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 30 | 703 | 0.2− | 0.5− | | |
| 2002 10 02 | 704 | 0.5+ | 1.1+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.8+ | 0.3− | | |
| 2002 10 02 | 704 | 0.1+ | 0.6+ | 2002 10 31 | 645 | 0.1− | 0.0 | 2006 11 14 | 704 | (2.0− | 3.2−) | | |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 1.2+ | 0.9+ | 2006 11 14 | 704 | 0.3+ | 0.3− | | |
| 2002 10 03 | 704 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.6+ | 2006 11 14 | 704 | 0.5+ | 0.4− | | |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.4+ | 0.4− | | |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.2− | 0.2+ | | |
| 2002 10 03 | 704 | 0.7+ | 0.9+ | 2006 10 16 | 703 | 0.9− | 1.0+ | 2006 11 19 | 703 | 0.6− | 0.5+ | | |
| 2002 10 05 | 704 | 0.6− | 0.8− | 2006 10 16 | 703 | 0.4− | 0.7+ | 2006 11 19 | 703 | 0.5+ | 0.1− | | |
| 2002 10 05 | 704 | 0.1+ | 0.8− | 2006 10 16 | 703 | 0.7+ | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.8+ | | |
| 2002 10 05 | 704 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.7+ | 0.5− | 2006 11 20 | 704 | 0.2+ | 1.3+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 1.3+ | | |

**2002 SX$_5$ = 2006 WJ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.81037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26547570 | $\omega$ | 118.97355 | | +0.93148770 | +0.36360187 | |
| $a$ | 2.3976523 | $\Omega$ | 219.70778 | | −0.33953485 | +0.85801248 | |
| $e$ | 0.1838618 | $i$ | 1.00011 | | −0.13056322 | +0.36277853 | |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 02 | 691 | 0.2+ | 0.4− | 2002 10 07 | 704 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1+ | | |
| 1998 07 02 | 691 | 0.3+ | 0.2+ | 2002 10 07 | 704 | 0.6− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 1998 07 02 | 691 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.6− | 0.4− | 2006 11 11 | 691 | 0.1− | 0.1− | | |
| 2002 09 27 | 644 | 0.3− | 0.8+ | 2002 10 11 | 704 | 1.1− | 0.5− | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 2002 09 27 | 644 | 0.8− | 0.4+ | 2002 10 11 | 704 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.5− | 0.4− | | |
| 2002 09 27 | 644 | 0.6− | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2002 09 28 | 644 | 0.8− | 0.6+ | 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 11 11 | G96 | 0.3− | 0.4− | | |
| 2002 09 28 | 644 | 0.6− | 0.4+ | 2004 02 12 | 691 | 0.2+ | 0.6+ | 2006 11 18 | J75 | 1.4+ | 1.1+ | | |
| 2002 09 28 | 644 | 0.5− | 0.6+ | 2004 02 12 | 691 | 0.1− | 0.7+ | 2006 11 18 | J75 | (1.7− | 0.8+) | | |
| 2002 09 28 | 608 | (2.7− | 1.1−) | 2004 02 12 | 691 | 0.1− | 0.6+ | 2006 11 19 | J75 | 1.0+ | 0.3+ | | |
| 2002 09 28 | 608 | (3.3− | 0.3−) | 2005 06 11 | 691 | 0.3− | 0.9+ | 2006 11 19 | J75 | 1.0+ | 0.3+ | | |
| 2002 09 28 | 608 | (2.5− | 0.6−) | 2005 06 11 | 691 | 0.2− | 0.4+ | 2006 11 19 | J75 | 0.8+ | 0.4+ | | |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2005 06 11 | 691 | 0.5+ | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.3+ | | |
| 2002 10 02 | 704 | 0.4− | 0.0 | 2006 09 19 | 926 | 0.4+ | 0.9+ | 2006 11 19 | 691 | 0.2− | 0.2+ | | |
| 2002 10 02 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 926 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2002 10 02 | 704 | 0.3− | 0.7+ | 2006 09 19 | 926 | 0.4− | 0.1− | 2006 11 20 | J75 | (3.2+ | 0.2+) | | |
| 2002 10 03 | 704 | 0.7+ | 0.1− | 2006 09 19 | 926 | 0.3− | 0.2+ | 2006 11 20 | J75 | (1.5+ | 0.1−) | | |
| 2002 10 03 | 704 | 0.5− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 1.1+ | 1.1− | | |
| 2002 10 03 | 704 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.7+ | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2002 10 07 | 699 | 0.8− | 0.4+ | 2006 10 19 | G96 | 0.4+ | 1.1− | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2002 10 07 | 699 | 0.4+ | 0.8+ | 2006 10 19 | G96 | 0.5+ | 0.3− | 2006 11 27 | 691 | 1.8+ | 1.4− | | |
| 2002 10 07 | 699 | 0.9− | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.1− | 2006 12 01 | 691 | 0.8− | 0.3+ | | |
| 2002 10 07 | 699 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.3− | 0.1− | 2006 12 01 | 691 | 0.3− | 0.4+ | | |
| 2002 10 07 | 704 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 07 | 704 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.1− | | | | | | |
| 2002 10 07 | 704 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.1− | | | | | | |

**2002 SY$_5$ = 2006 UQ$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.99931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25287875 | $\omega$ | 148.19897 | | +0.99938723 | −0.03439462 | |
| $a$ | 2.4766301 | $\Omega$ | 213.77393 | | +0.02916451 | +0.92084356 | |
| $e$ | 0.1951210 | $i$ | 0.66940 | | +0.01935468 | +0.38841235 | |
| $P$ | 3.90 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 12 | 691 | 0.2− | 0.3+ | 2002 10 11 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.1+ | 1.1+ | | |
| 1998 09 12 | 691 | 0.1+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.8+ | 0.1+ | | |
| 1998 09 12 | 691 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.2− | | |
| 2002 09 27 | 644 | 0.7− | 1.0− | 2006 10 04 | G96 | 0.1+ | 0.6− | 2006 11 14 | G96 | 0.0 | 0.3+ | | |
| 2002 09 27 | 644 | 0.3− | 1.2− | 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 11 14 | G96 | 0.5+ | 0.0 | | |
| 2002 09 27 | 644 | 0.1+ | 1.0− | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.1− | | |
| 2002 09 28 | 644 | 0.3− | 1.1− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.2− | 0.3− | | |
| 2002 09 28 | 644 | 0.1− | 0.9− | 2006 10 12 | 691 | 0.3− | 0.3+ | 2006 11 22 | 691 | 0.4+ | 0.3+ | | |
| 2002 09 28 | 644 | 0.4− | 0.7− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.2− | 0.3− | | |
| 2002 10 03 | 704 | 0.5+ | 0.9− | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.3− | | |
| 2002 10 03 | 704 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.2− | 0.3− | | |
| 2002 10 05 | 704 | 0.1+ | 1.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.2− | | |
| 2002 10 05 | 704 | 0.2− | 0.7+ | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.3− | | |
| 2002 10 05 | 704 | 1.1+ | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.4− | 0.2− | | |
| 2002 10 05 | 704 | 0.4+ | 1.4+ | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.1− | | |
| 2002 10 05 | 704 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1− | | |
| 2002 10 07 | 704 | 0.9+ | 0.4− | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.1+ | | |
| 2002 10 07 | 704 | 0.6+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.2+ | | |
| 2002 10 07 | 704 | 0.4+ | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.6− | 0.3− | | |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2006 11 11 | 703 | (2.1− | 0.3−) | | | | | | |

**2002 SE$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.04406 | | | (2000.0) | | |
| $n$ | 0.26790505 | $\omega$ | 294.91866 | | +0.74605449 | −0.66492420 |
| $a$ | 2.3831357 | $\Omega$ | 106.77944 | | +0.62361920 | +0.67886613 |
| $e$ | 0.1836179 | $i$ | 2.14028 | | +0.23345618 | +0.31147486 |
| $P$ | 3.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 807 | 0.6− | 0.4− | 2002 10 02 | 704 | 0.4− | 0.9+ | 2002 10 30 | 704 | 0.3− | 0.6− |
| 2002 08 12 | 807 | 0.6− | 0.5− | 2002 10 02 | 704 | 1.1− | 1.0+ | 2002 10 30 | 645 | 0.1+ | 0.0 |
| 2002 09 27 | 644 | 0.8− | 0.1− | 2002 10 02 | 704 | (1.6− | 1.0+) | 2002 10 30 | 645 | 0.0 | 0.1− |
| 2002 09 27 | 644 | 0.6− | 0.1+ | 2002 10 03 | 704 | 0.0 | 0.7+ | 2002 10 30 | 704 | 0.3− | 1.0− |
| 2002 09 27 | 644 | 0.7− | 0.3+ | 2002 10 03 | 704 | 0.3− | 0.1+ | 2002 11 02 | 608 | 1.0− | 0.4− |
| 2002 09 28 | 644 | 0.6− | 0.3+ | 2002 10 03 | 704 | 0.1+ | 0.7+ | 2002 11 02 | 608 | 1.2− | 0.3− |
| 2002 09 28 | 644 | 0.3− | 0.2+ | 2002 10 03 | 704 | 0.7− | 0.5+ | 2002 11 02 | 608 | 1.1− | 0.4− |
| 2002 09 28 | 644 | 0.6− | 0.3+ | 2002 10 03 | 704 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2002 09 30 | 704 | 0.5+ | 0.3+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2002 09 30 | 704 | 0.2+ | 0.9+ | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2002 09 30 | 704 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 1.3− | 1.0+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 10 01 | 699 | 0.6+ | 0.7+ | 2002 10 11 | 704 | 0.1− | 1.2+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 10 01 | 699 | 0.6+ | 0.6+ | 2002 10 11 | 704 | 0.3− | 1.1+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2002 10 01 | 699 | 0.3+ | 0.6+ | 2002 10 11 | 704 | 0.6− | 1.1+ | 2006 11 25 | 691 | 0.2− | 0.1+ |
| 2002 10 01 | 699 | 0.4+ | 0.1+ | 2002 10 11 | 704 | (0.3− | 1.5+) | 2006 11 25 | 691 | 0.5− | 0.3+ |
| 2002 10 01 | 608 | (0.7+ | 1.9+) | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.2+ | 0.2− |
| 2002 10 01 | 608 | 0.9+ | 0.5+ | 2002 10 11 | 645 | 0.1+ | 0.1− | | | | |
| 2002 10 01 | 608 | 0.8+ | 0.6+ | 2002 10 30 | 704 | 0.1− | 0.2− | | | | |

**2002 SC$_7$ = 2006 UR$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 89.44867 | | | (2000.0) | | |
| $n$ | 0.26142423 | $\omega$ | 255.09333 | | +0.19731007 | +0.98027534 |
| $a$ | 2.4223608 | $\Omega$ | 26.29459 | | −0.88930325 | +0.18385051 |
| $e$ | 0.1819745 | $i$ | 1.46909 | | −0.41256329 | +0.07252060 |
| $P$ | 3.77 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.3+ | 0.2− | 2002 11 06 | 291 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.6+ |
| 1993 01 29 | 691 | 0.3− | 0.0 | 2002 11 06 | 291 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.7− | 0.0 |
| 1993 01 29 | 691 | 0.0 | 0.2+ | 2005 04 07 | 691 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 09 27 | 644 | 0.4− | 0.3− | 2005 04 07 | 691 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.3− | 0.4+ |
| 2002 09 27 | 644 | 0.7− | 0.5− | 2005 04 07 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 09 27 | 644 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.6+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2002 09 28 | 644 | 0.6− | 1.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.7− |
| 2002 09 28 | 644 | 0.2− | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.7− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2002 09 28 | 644 | 0.6− | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2002 10 04 | 291 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2002 10 04 | 291 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2002 10 04 | 291 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2002 11 06 | 291 | 0.4+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.4− |

**2002 SL$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.31813 | | | (2000.0) | | |
| $n$ | 0.25093096 | $\omega$ | 338.68998 | | +0.96765548 | −0.24919417 |
| $a$ | 2.4894298 | $\Omega$ | 35.81272 | | +0.24008290 | +0.86178666 |
| $e$ | 0.1527197 | $i$ | 3.85191 | | +0.07747955 | +0.44184389 |
| $P$ | 3.93 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.0 | 2006 10 16 | 185 | 0.5+ | 0.2− |
| 2002 09 05 | 704 | (0.7− | 1.7+) | 2002 10 11 | 704 | 0.9+ | 1.4− | 2006 10 16 | 185 | 0.2− | 0.4+ |
| 2002 09 05 | 704 | 0.2+ | 1.1+ | 2002 10 11 | 704 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 09 05 | 704 | 0.4− | 0.4− | 2002 10 11 | 704 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2002 09 05 | 704 | (2.1− | 1.2+) | 2002 10 31 | 704 | 0.3− | 0.6− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 09 27 | 644 | 0.7− | 0.2− | 2002 10 31 | 704 | 0.5− | 1.0− | 2006 10 21 | 703 | 0.3− | 0.7− |
| 2002 09 27 | 644 | 0.3− | 0.0 | 2002 10 31 | 704 | 0.7− | 0.4− | 2006 10 21 | 703 | 0.8− | 0.3− |
| 2002 09 27 | 644 | 0.3− | 0.3+ | 2002 10 31 | 704 | 1.1− | 0.6− | 2006 10 21 | 703 | 0.5+ | 0.6− |
| 2002 09 28 | 644 | 0.9− | 0.1+ | 2002 10 31 | 704 | 1.0− | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2002 09 28 | 644 | 0.6− | 0.1− | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 09 28 | 644 | 0.5− | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 09 30 | 704 | 0.3− | 0.7+ | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 09 30 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 09 30 | 704 | 0.1− | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 09 30 | 704 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 09 30 | 704 | 0.9+ | 0.5+ | 2006 09 20 | 704 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2002 10 01 | 608 | 0.5− | 1.1− | 2006 09 20 | 704 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 608 | 0.2− | 0.4− | 2006 09 20 | 704 | (1.3+ | 1.8−) | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2002 10 01 | 608 | 0.4− | 0.5− | 2006 09 20 | 704 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2002 10 02 | 704 | 0.7+ | 0.5+ | 2006 09 23 | 691 | 0.6− | 1.2− | 2006 10 31 | 691 | 0.4+ | 0.1+ |
| 2002 10 02 | 704 | 0.5+ | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 11 06 | 644 | 0.4+ | 0.1+ |
| 2002 10 02 | 704 | 0.4− | 0.4+ | 2006 09 27 | 691 | 0.5− | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.5+ |
| 2002 10 03 | 704 | 0.5+ | 0.6+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.6+ | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 11 13 | 704 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 11 13 | 704 | 0.7+ | 0.6+ |
| 2002 10 03 | 704 | 0.7− | 0.6+ | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 11 13 | 704 | 0.1− | 0.6+ |
| 2002 10 03 | 704 | 0.4+ | 0.9+ | 2006 10 01 | 691 | 0.3+ | 0.1− | 2006 11 13 | 704 | 0.3+ | 0.4+ |
| 2002 10 07 | 704 | 0.4− | 0.1− | 2006 10 13 | D35 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2002 10 07 | 704 | 0.1+ | 1.4+ | 2006 10 13 | D35 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.5+ | 0.3− |
| 2002 10 07 | 704 | 0.6+ | 0.6+ | 2006 10 13 | D35 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.1− |
| 2002 10 07 | 704 | 1.0+ | 0.1− | 2006 10 16 | 185 | (0.8+ | 2.0−) | 2006 11 20 | G96 | 0.5+ | 0.2− |
| 2002 10 07 | 704 | 0.1− | 1.0+ | 2006 10 16 | 185 | 0.1+ | 0.4− | | | | |

**2002 SD$_8$ = 2006 VP$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.56808 | | | (2000.0) | | |
| $n$ | 0.25528779 | $\omega$ | 301.38975 | | +0.62260762 | +0.78246995 |
| $a$ | 2.4610250 | $\Omega$ | 7.14237 | | −0.68779753 | +0.55329794 |
| $e$ | 0.1826660 | $i$ | 4.62509 | | −0.37322152 | +0.28566093 |
| $P$ | 3.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 699 | 0.5− | 0.4+ | 2002 10 03 | 704 | 0.5− | 1.2+ | 2006 07 21 | G96 | 0.0 | 0.1− |
| 1998 09 18 | 699 | 1.1− | 0.3+ | 2002 10 03 | 704 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.0 | 0.2− |
| 1998 09 18 | 699 | 1.2+ | 0.0 | 2002 10 05 | 644 | 0.5− | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.0 |
| 2002 09 27 | 644 | 0.1− | 0.9− | 2002 10 05 | 644 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.5+ | 0.2− |
| 2002 09 27 | 644 | 0.4− | 0.9− | 2002 10 05 | 644 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2002 09 27 | 644 | 0.2− | 0.7− | 2002 10 07 | 704 | 0.9+ | 0.5+ | 2006 09 28 | G96 | 0.5+ | 0.1− |
| 2002 09 28 | 644 | 0.8− | 0.2+ | 2002 10 07 | 704 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2002 09 28 | 644 | 0.5− | 0.2+ | 2002 10 07 | 704 | (0.0 | 1.6+) | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2002 09 28 | 644 | 0.5− | 0.5+ | 2002 10 07 | 704 | 0.4+ | 1.1+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.9+ | 2002 10 10 | 291 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.3− | 0.5− | 2002 10 10 | 291 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.4− | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.3− | 2002 10 10 | 291 | 0.6+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.6+ | 0.1− | 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2002 10 11 | 704 | 0.6− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2006 07 21 | G96 | 0.5+ | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.2+ |

**2002 SN$_8$ = 2006 RQ$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.11008 | | | (2000.0) | | |
| $n$ | 0.24042344 | $\omega$ | 275.19372 | | +0.96232898 | −0.27186689 |
| $a$ | 2.5614439 | $\Omega$ | 100.58170 | | +0.25078842 | +0.88280168 |
| $e$ | 0.1932420 | $i$ | 0.19611 | | +0.10501474 | +0.38307908 |
| $P$ | 4.10 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 910 | 0.7+ | 0.6− | 2002 10 07 | 704 | 0.1− | 0.5− | 2006 09 16 | 699 | 0.7− | 0.3− |
| 1998 09 24 | 910 | 0.2+ | 0.7− | 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 910 | 0.3+ | 0.4− | 2002 10 07 | 704 | 0.8+ | 0.0 | 2006 09 16 | 699 | 0.0 | 0.1+ | | |
| 1998 10 18 | 691 | 0.0 | 0.6− | 2002 10 11 | 704 | 1.3− | 1.2+ | 2006 09 16 | 699 | 0.0 | 0.4+ | | |
| 1998 10 18 | 691 | 0.0 | 0.4− | 2002 10 11 | 704 | 1.2+ | 0.8− | 2006 09 17 | 704 | 0.3+ | 0.3+ | | |
| 1998 10 18 | 691 | 0.1+ | 0.7− | 2002 10 11 | 704 | 0.6− | 0.7− | 2006 09 17 | 704 | 0.1− | 0.4+ | | |
| 2002 09 27 | 644 | 0.3− | 0.4+ | 2002 10 11 | 704 | 1.1+ | 0.6+ | 2006 09 17 | 704 | 0.2− | 0.4+ | | |
| 2002 09 27 | 644 | 0.4− | 0.2+ | 2002 10 11 | 704 | 0.5+ | 0.3− | 2006 09 17 | 704 | 1.2+ | 0.3+ | | |
| 2002 09 27 | 644 | 0.3− | 0.4+ | 2004 02 22 | 691 | 0.2+ | 0.8+ | 2006 09 17 | 704 | 0.5− | 0.2+ | | |
| 2002 09 28 | 644 | 0.3− | 0.8+ | 2004 02 22 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.2− | | |
| 2002 09 28 | 644 | 0.5− | 0.9+ | 2004 02 22 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.5− | 1.4+ | | |
| 2002 09 28 | 644 | 0.6− | 1.1+ | 2005 05 13 | G96 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.4+ | | |
| 2002 10 01 | 699 | 0.5+ | 0.6+ | 2005 05 13 | G96 | 0.5− | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.1+ | | |
| 2002 10 01 | 699 | 0.6− | 0.7− | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1+ | | |
| 2002 10 01 | 699 | 1.3− | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.5− | 2006 09 19 | 699 | 0.2− | 0.4− | | |
| 2002 10 01 | 699 | 0.6− | 0.4+ | 2006 07 25 | G96 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 1.1+ | | |
| 2002 10 02 | 704 | 0.5− | 1.4+ | 2006 07 25 | G96 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.1− | | |
| 2002 10 02 | 704 | 0.3+ | 0.2+ | 2006 07 25 | G96 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.4− | | |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2006 07 25 | G96 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.4− | | |
| 2002 10 02 | 704 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 1.2− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.6+ | 0.9+ | 2006 09 25 | G96 | 0.1+ | 0.5− | | |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.4− | | |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2006 08 28 | 703 | 1.2− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.5− | | |
| 2002 10 03 | 704 | 0.6+ | 1.3+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2006 09 13 | 644 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.5− | 0.4− | | |
| 2002 10 07 | 699 | 0.6+ | 0.4− | 2006 09 13 | 644 | 0.5− | 0.5− | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2002 10 07 | 699 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2002 10 07 | 699 | 1.4+ | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− | | |
| 2002 10 07 | 699 | 0.2+ | 0.4− | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.2− | | |

### 2002 $SS_8$ = 2006 $ST_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.07977 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25385051 | $\omega$ | 26.22994 | | −0.79485639 | | +0.60639255 |
| $a$ | 2.4703056 | $\Omega$ | 191.18139 | | −0.57489009 | | −0.76424773 |
| $e$ | 0.1063911 | $i$ | 6.56411 | | −0.19417699 | | −0.21957568 |
| $P$ | 3.88 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 04 | 691 | 0.6+ | 0.8− | 2002 10 03 | 704 | 0.7− | 0.1+ | 2006 10 13 | D35 | 0.0 | 0.0 | | |
| 1994 09 04 | 691 | 1.5+ | 0.3+ | 2002 10 03 | 704 | 0.3+ | 0.7+ | 2006 10 13 | D35 | 0.0 | 0.4+ | | |
| 1994 09 04 | 691 | 0.2+ | 0.6− | 2002 10 03 | 704 | 0.7+ | 0.2+ | 2006 10 13 | D35 | 0.0 | 0.1+ | | |
| 1998 10 27 | 691 | 0.7− | 0.1− | 2002 10 03 | 704 | 0.5− | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.1− | | |
| 1998 10 27 | 691 | 1.6− | 0.0 | 2003 12 22 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.3− | | |
| 1998 10 27 | 691 | 0.9− | 0.7− | 2003 12 22 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.1− | | |
| 2001 06 15 | 704 | 1.2+ | 1.2+ | 2003 12 22 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.2− | | |
| 2001 06 15 | 704 | 1.0+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 06 15 | 644 | 0.9− | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2001 06 15 | 704 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2001 06 15 | 644 | 0.9− | 1.3+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2001 06 15 | 644 | 0.5− | 1.3+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.5− | | |
| 2002 09 27 | 644 | 0.3− | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.4− | | |
| 2002 09 27 | 644 | 0.5− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.5− | | |
| 2002 09 27 | 644 | 1.3− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.5+ | 1.2− | | |
| 2002 09 28 | 644 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.2+ | 1.0+ | | |
| 2002 09 28 | 644 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.2− | 0.3− | | |
| 2002 09 28 | 644 | 0.5+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.2+ | 0.1− | | |
| 2002 10 03 | 704 | 0.7+ | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | | | | | | |

### 2002 $SG_{10}$ = 2006 $UN_{288}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.27632 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27559148 | $\omega$ | 218.31829 | | +0.55627191 | | −0.83093905 |
| $a$ | 2.3386157 | $\Omega$ | 197.89044 | | +0.77030151 | | +0.52015843 |
| $e$ | 0.1883072 | $i$ | 1.88269 | | +0.31176458 | | +0.19742212 |
| $P$ | 3.58 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 691 | 0.0 | 0.2− | 2002 10 03 | 704 | 0.7+ | 0.8+ | 2002 10 15 | 704 | 0.1+ | 0.5− | | |
| 2000 02 08 | 691 | 0.1− | 0.0 | 2002 10 03 | 704 | (1.7+ | 0.6+) | 2002 10 15 | 704 | 0.2+ | 1.5+ | | |
| 2000 02 08 | 691 | 0.0 | 0.1+ | 2002 10 07 | 704 | 1.2− | 0.9+ | 2002 10 15 | 704 | (0.1+ | 1.6+) | | |
| 2002 09 27 | 644 | 0.0 | 0.9− | 2002 10 07 | 704 | 0.3− | 0.3+ | 2002 10 15 | 704 | 0.4+ | 0.9− | | |
| 2002 09 27 | 644 | 0.1− | 0.8− | 2002 10 07 | 704 | 0.5+ | 0.7+ | 2006 10 29 | G96 | 0.2+ | 0.5+ | | |
| 2002 09 27 | 644 | 0.1− | 0.7− | 2002 10 07 | 704 | 0.7− | 0.6+ | 2006 10 29 | G96 | 0.2+ | 0.3+ | | |
| 2002 09 28 | 644 | 0.2+ | 0.5− | 2002 10 10 | 291 | 0.2− | 0.2− | 2006 10 29 | G96 | 0.1− | 0.4+ | | |
| 2002 09 28 | 644 | 0.1+ | 0.5− | 2002 10 10 | 291 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.6+ | 0.2+ | | |
| 2002 09 28 | 644 | 0.0 | 0.5− | 2002 10 10 | 291 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.5+ | 0.2− | | |
| 2002 10 02 | 704 | (2.0+ | 0.0 ) | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 11 01 | G96 | 1.1− | 0.1− | | |
| 2002 10 02 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.3− | | |
| 2002 10 02 | 704 | 0.3+ | 0.9+ | 2002 10 11 | 704 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.3− | 0.1− | | |
| 2002 10 03 | 704 | 0.6− | 0.1+ | 2002 10 11 | 704 | 0.3− | 0.2+ | | | | | | |
| 2002 10 03 | 704 | 0.5+ | 0.2+ | 2002 10 11 | 704 | 0.5+ | 0.1+ | | | | | | |

### 2002 $SJ_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.90938 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27490883 | $\omega$ | 215.92943 | | +0.14851986 | | +0.98790376 |
| $a$ | 2.3424855 | $\Omega$ | 62.64980 | | −0.89518719 | | +0.15346625 |
| $e$ | 0.1946660 | $i$ | 2.87737 | | −0.42021632 | | +0.02223214 |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 28 | 809 | 0.6− | 1.5+ | 2005 06 04 | 704 | 1.2− | 0.4− | 2006 10 19 | G96 | (1.8− | 1.5+) | | |
| 1998 06 28 | 809 | 0.5+ | 1.8+ | 2005 06 04 | 704 | 0.2+ | 1.1− | 2006 10 27 | G96 | 0.3− | 0.3− | | |
| 1998 06 28 | 809 | 0.8− | 1.7+ | 2005 06 14 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3+ | | |
| 2002 09 27 | 644 | 0.3− | 0.1+ | 2005 06 14 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.5− | | |
| 2002 09 27 | 644 | 0.6− | 0.2+ | 2005 06 14 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.4− | | |
| 2002 09 27 | 644 | 0.8− | 0.1+ | 2005 06 14 | G96 | 0.9− | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.4+ | | |
| 2002 09 28 | 644 | 0.6− | 0.1+ | 2005 06 26 | 644 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.3− | 0.3+ | | |
| 2002 09 28 | 644 | 0.4− | 0.4+ | 2005 06 26 | 644 | 0.5+ | 0.4− | 2006 11 14 | 691 | 0.1− | 0.3+ | | |
| 2002 09 28 | 644 | 0.5− | 0.0 | 2005 06 26 | 644 | 0.8+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.6+ | | |
| 2002 10 30 | 645 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.6− | 2006 11 18 | 691 | 0.1− | 0.4+ | | |
| 2002 10 30 | 645 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 18 | 691 | 0.1− | 0.5+ | | |
| 2005 05 11 | 644 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.6− | 0.2− | 2006 11 22 | 691 | 0.3− | 0.2− | | |
| 2005 05 11 | 644 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1+ | | |
| 2005 05 11 | 644 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2− | | |
| 2005 06 04 | 704 | 0.6+ | 0.5− | 2006 10 19 | G96 | 0.1− | 0.2− | | | | | | |
| 2005 06 04 | 704 | (0.7+ | 2.0−) | 2006 10 19 | G96 | 0.3+ | 0.0 | | | | | | |

### 2002 $SM_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.56184 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25854707 | $\omega$ | 138.60637 | | +0.81596830 | | +0.57808249 |
| $a$ | 2.4402986 | $\Omega$ | 186.08192 | | −0.53993012 | | +0.75957804 |
| $e$ | 0.2158496 | $i$ | 2.18824 | | −0.20657008 | | +0.29809703 |
| $P$ | 3.81 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.3+ | 0.7+ | 2002 10 11 | 704 | 0.0 | 0.7− | 2006 10 28 | 691 | 0.2− | 0.2+ | | |
| 2002 09 27 | 644 | 0.0 | 0.8+ | 2002 10 11 | 704 | 1.1− | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 27 | 644 | 0.0 | 0.5+ | 2002 10 11 | 704 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 2002 09 28 | 644 | 0.2− | 1.2− | 2002 11 06 | 291 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2002 09 28 | 644 | 0.0 | 1.0− | 2002 11 06 | 291 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2002 09 28 | 644 | 0.3+ | 1.0− | 2002 11 06 | 291 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.4− | 0.2− | | |
| 2002 10 03 | 704 | 0.6+ | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.2− | 0.3− | | |
| 2002 10 11 | 704 | 0.9− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.2+ | | | | | | |
| 2002 10 11 | 704 | 0.4+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.0 | | | | | | |

**2002 SO$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.06881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25368562 | $\omega$ | 331.15298 | | +0.99682318 | −0.06250405 | |
| $a$ | 2.4713759 | $\Omega$ | 32.54471 | | +0.07835518 | +0.88074263 | |
| $e$ | 0.0938655 | $i$ | 5.26496 | | −0.01428315 | +0.46945251 | |
| $P$ | 3.89 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.2− | 0.1+ | 2002 10 31 | 704 | 0.1− | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2002 09 27 | 644 | 0.0 | 0.1+ | 2002 11 06 | 291 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2002 09 27 | 644 | 0.2+ | 0.6+ | 2002 11 06 | 291 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2002 09 28 | 644 | 0.2− | 0.3+ | 2002 11 06 | 291 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2002 09 28 | 644 | 0.4− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | (2.3+ | 0.2+) |
| 2002 09 28 | 644 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7− | 1.1− |
| 2002 10 11 | 704 | 0.4+ | 0.4− | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.9− | 0.7− | 2006 10 16 | 691 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2002 10 11 | 704 | 0.1+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.0 |
| 2002 10 11 | 704 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.8+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.2− | 0.6− | 2006 10 20 | 691 | 0.0 | 0.1− | | | | |
| 2002 10 31 | 704 | 0.4+ | 1.2− | 2006 10 20 | 691 | 0.0 | 0.1− | | | | |

**2002 SR$_{11}$ = 2006 WX$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.59196 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26400752 | $\omega$ | 341.12454 | | +0.95871549 | +0.28436230 | |
| $a$ | 2.4065332 | $\Omega$ | 2.35657 | | −0.25550897 | +0.86393668 | |
| $e$ | 0.1892605 | $i$ | 2.28234 | | −0.12481895 | +0.41563384 | |
| $P$ | 3.73 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.5− | 1.1+ | 2002 10 07 | 704 | 0.8+ | 0.6− | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2002 09 27 | 644 | 0.5− | 1.1+ | 2002 10 07 | 704 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.2+ |
| 2002 09 27 | 644 | 0.3− | 0.9+ | 2002 10 07 | 704 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2002 09 28 | 644 | 0.2− | 1.0+ | 2002 10 08 | 291 | 0.7+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.6− |
| 2002 09 28 | 644 | 0.4− | 1.0+ | 2002 10 08 | 291 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.5+ | 0.8− |
| 2002 09 28 | 644 | 0.3− | 1.1+ | 2002 10 08 | 291 | 0.5+ | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2002 10 05 | 291 | 0.1− | 0.4− | 2002 10 11 | 704 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.5− | 0.1+ |
| 2002 10 05 | 291 | 0.4− | 0.4− | 2002 10 11 | 704 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2002 10 05 | 291 | 0.3− | 0.3− | 2002 10 11 | 704 | 0.7+ | 1.1− | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2002 10 06 | 644 | 0.4− | 0.1+ | 2002 10 11 | 704 | 0.5+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 10 06 | 644 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 10 06 | 644 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.2− |

**2002 ST$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.76640 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25498906 | $\omega$ | 23.31402 | | +0.71174259 | −0.70112447 | |
| $a$ | 2.4629467 | $\Omega$ | 21.39107 | | +0.62450491 | +0.60358026 | |
| $e$ | 0.1228235 | $i$ | 6.76687 | | +0.32158374 | +0.37962527 | |
| $P$ | 3.87 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.2− | 0.4− | 2002 10 11 | 704 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.5+ | 0.5− |
| 2002 09 27 | 644 | 0.4− | 0.0 | 2002 10 11 | 704 | 0.7+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.6− |
| 2002 09 27 | 644 | 0.7− | 0.2+ | 2002 10 11 | 704 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2002 09 28 | 644 | 0.4− | 0.1+ | 2002 10 31 | 704 | 0.6− | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 09 28 | 644 | 0.3− | 0.2+ | 2002 10 31 | 704 | 0.2− | 0.8− | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2002 09 28 | 644 | 0.1− | 0.3+ | 2002 10 31 | 704 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.7+ | 0.1− |
| 2002 10 02 | 704 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.5+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.4− |
| 2002 10 03 | 704 | (1.6+ | 1.5−) | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 1.2+ | 0.7− |
| 2002 10 03 | 704 | 0.8+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.5− | 1.0− |
| 2002 10 03 | 704 | 0.1+ | 0.9+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.2− | 0.3− |
| 2002 10 07 | 704 | 0.0 | 0.9− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.5+ | 0.5+ |
| 2002 10 07 | 704 | 0.1− | 0.5− | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 2002 10 07 | 704 | 0.5− | 0.4− | 2006 10 19 | 691 | 0.4+ | 1.1+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2002 10 11 | 704 | 0.3+ | 1.0− | 2006 10 20 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.4+ |

**2002 SD$_{12}$ = 2006 QQ$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.59982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23930893 | $\omega$ | 340.82433 | | +0.98885935 | −0.14494564 | |
| $a$ | 2.5693905 | $\Omega$ | 27.57771 | | +0.14433932 | +0.87807872 | |
| $e$ | 0.2909034 | $i$ | 4.19697 | | +0.03637779 | +0.45603566 | |
| $P$ | 4.12 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.8− | 0.1− | 2002 10 03 | 704 | 0.6+ | 0.3− | 2006 08 24 | 644 | 0.0 | 0.1− |
| 2002 09 27 | 644 | 0.5− | 0.0 | 2002 10 03 | 704 | 0.5− | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2002 09 27 | 644 | 0.6− | 0.1+ | 2002 10 03 | 704 | 0.7+ | 0.2− | 2006 08 24 | 644 | 0.0 | 0.1− |
| 2002 09 28 | 644 | 0.3− | 0.0 | 2002 10 07 | 704 | (1.8− | 0.9+) | 2006 09 25 | 699 | 0.5− | 0.2− |
| 2002 09 28 | 644 | 0.5− | 0.0 | 2002 10 07 | 704 | 0.0 | 0.8+ | 2006 09 25 | 699 | (1.8− | 0.3+) |
| 2002 09 28 | 644 | 0.5− | 0.2+ | 2002 10 07 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.7+ |
| 2002 10 02 | 704 | 0.1+ | 0.4− | 2002 10 07 | 704 | 0.1− | 0.2+ | 2006 09 25 | 699 | (3.0− | 1.4+) |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.7− |
| 2002 10 02 | 704 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2002 10 02 | 704 | 1.0+ | 0.6− | 2006 08 16 | 644 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2002 10 03 | 704 | 0.4+ | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.1− | | | | |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.0 | | | | |

**2002 SN$_{13}$ = 2006 QG$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.47756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23822689 | $\omega$ | 102.65478 | | +0.96925164 | +0.03637201 | |
| $a$ | 2.5771649 | $\Omega$ | 255.65096 | | −0.11750883 | +0.93737455 | |
| $e$ | 0.1916197 | $i$ | 14.54885 | | +0.21620116 | +0.34641885 | |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.0 | 0.4− | 2002 10 07 | 704 | 0.1− | 0.1− | 2006 08 29 | 699 | 0.4− | 0.6+ |
| 2002 09 27 | 644 | 0.3− | 0.5− | 2002 10 10 | 704 | 0.0 | 0.4+ | 2006 09 11 | 703 | 0.0 | 0.5+ |
| 2002 09 27 | 644 | 0.3− | 0.3− | 2002 10 10 | 704 | 0.3− | 0.3− | 2006 09 11 | 703 | 0.0 | 0.8− |
| 2002 09 28 | 644 | 0.4− | 0.5− | 2002 10 10 | 704 | 0.2+ | 0.4− | 2006 09 11 | 703 | 0.2− | 0.2+ |
| 2002 09 28 | 644 | 0.3− | 0.4− | 2002 10 10 | 704 | 0.2− | 0.7− | 2006 09 11 | 703 | 0.2+ | 0.8− |
| 2002 09 28 | 644 | 0.0 | 0.5− | 2002 10 10 | 704 | 0.1− | 0.7− | 2006 09 20 | 703 | 0.6+ | 0.0 |
| 2002 10 05 | 699 | 0.0 | 0.1− | 2006 08 25 | 704 | 0.2− | 0.2− | 2006 09 20 | 703 | 0.1+ | 0.3+ |
| 2002 10 05 | 699 | 0.2+ | 0.6+ | 2006 08 25 | 704 | 0.3− | 0.1+ | 2006 09 20 | 703 | 0.4− | 0.0 |
| 2002 10 05 | 699 | 0.2− | 0.8+ | 2006 08 25 | 704 | 0.9− | 0.4+ | 2006 09 20 | 703 | 0.4− | 0.2− |
| 2002 10 05 | 699 | 1.4+ | 0.0 | 2006 08 25 | 704 | 0.8+ | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.2− |
| 2002 10 07 | 704 | 1.3+ | 1.3+ | 2006 08 29 | 699 | 0.7+ | 0.0 | 2006 09 27 | 703 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 0.6− | 1.7+ | 2006 08 29 | 699 | 0.5+ | 0.1− | 2006 09 27 | 703 | 0.4− | 0.3+ |
| 2002 10 07 | 704 | 0.4− | 0.0 | 2006 08 29 | 699 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.1+ |

**2002 SZ$_{13}$ = 2006 TV$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.23342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25510465 | $\omega$ | 202.25346 | | +0.94003517 | +0.34036036 | |
| $a$ | 2.4622027 | $\Omega$ | 137.82718 | | −0.30776305 | +0.87437301 | |
| $e$ | 0.1992264 | $i$ | 1.88697 | | −0.14702307 | +0.34587087 | |
| $P$ | 3.86 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.4− | 0.2− | 2006 09 19 | 691 | (0.5− | 3.5−) | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 2002 09 27 | 644 | 0.1+ | 0.1− | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 2002 09 27 | 644 | 0.0 | 0.2− | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.7+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 644 | 0.4+ | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.6− |
| 2002 09 28 | 644 | 0.2− | 0.5+ | 2006 10 15 | 691 | 0.2− | 0.6− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2002 09 28 | 644 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 644 | 0.1+ | 0.6− | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 10 04 | 644 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2006 09 19 | 691 | 0.4+ | 0.3− | 2006 10 17 | G96 | 0.7+ | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.3− |

**2002 SJ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 35.51174 | | (2000.0) | | | | |
| $n$ | 0.23689637 | $\omega$ | 18.27883 | | +0.40313771 | | +0.89011986 |
| $a$ | 2.5868055 | $\Omega$ | 275.94751 | | −0.86402742 | | +0.29369077 |
| $e$ | 0.2416204 | $i$ | 12.33778 | | −0.30155698 | | +0.34847148 |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.7− | 0.4+ | 2002 10 06 | 704 | 0.1+ | 1.1− | 2006 09 06 | 644 | 0.1+ | 0.5+ |
| 2002 09 03 | 644 | 0.7− | 0.5+ | 2002 10 06 | 704 | 0.3+ | 0.4+ | 2006 09 06 | 644 | 0.1+ | 0.5+ |
| 2002 09 03 | 644 | 0.8− | 0.1+ | 2002 10 06 | 704 | 0.1+ | 1.0− | 2006 09 06 | 644 | 0.2+ | 0.6+ |
| 2002 09 14 | 699 | 0.8+ | 0.3+ | 2002 10 10 | 704 | 0.4+ | 0.5− | 2006 09 11 | 703 | 0.8− | 0.6+ |
| 2002 09 14 | 699 | 1.0+ | 0.7+ | 2002 10 10 | 704 | 0.2+ | 0.5− | 2006 09 11 | 703 | 0.1− | 0.3+ |
| 2002 09 14 | 699 | 1.1+ | 0.1+ | 2002 10 10 | 704 | 0.9+ | 0.4+ | 2006 09 11 | 703 | 0.6+ | 0.5+ |
| 2002 09 14 | 699 | 0.9+ | 0.3+ | 2002 10 10 | 704 | 1.0+ | 0.2− | 2006 09 20 | 699 | 0.6− | 0.1+ |
| 2002 09 27 | 644 | 0.2− | 0.2− | 2002 10 15 | 644 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.8+ | 1.1− |
| 2002 09 27 | 644 | 0.3− | 0.0 | 2002 10 15 | 644 | 0.3− | 0.4+ | 2006 09 20 | 699 | 0.3+ | 0.1− |
| 2002 09 27 | 644 | 0.4− | 0.1+ | 2002 10 15 | 644 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.2+ |
| 2002 09 28 | 644 | 0.1− | 0.2− | 2006 08 13 | 644 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.2+ |
| 2002 09 28 | 644 | 0.1− | 0.0 | 2006 08 13 | 644 | 0.3− | 0.5+ | 2006 09 27 | 703 | 0.0 | 0.1− |
| 2002 09 28 | 644 | 0.4− | 0.4− | 2006 08 13 | 644 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.1− |
| 2002 10 06 | 699 | 0.1− | 0.0 | 2006 09 01 | 704 | 0.1+ | 1.1− | 2006 09 27 | 703 | 0.2− | 0.6+ |
| 2002 10 06 | 699 | 0.2− | 0.8+ | 2006 09 01 | 704 | 0.2− | 0.7− | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 10 06 | 699 | (1.9− | 0.1+) | 2006 09 01 | 704 | 0.2+ | 0.9− | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 2002 10 06 | 699 | 1.5− | 0.1− | 2006 09 01 | 704 | 0.3− | 1.0− | 2006 10 17 | 703 | 0.7+ | 1.1+ |
| 2002 10 06 | 704 | 1.0− | 0.4− | 2006 09 01 | 704 | 0.4− | 0.9− | 2006 10 17 | 703 | 0.0 | 1.5− |

**2002 SA$_{17}$ = 2006 QF$_{125}$ = 2006 RC$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 350.20180 | | (2000.0) | | | | |
| $n$ | 0.23423632 | $\omega$ | 167.95148 | | +0.99820118 | | +0.05905600 |
| $a$ | 2.6063529 | $\Omega$ | 188.68277 | | −0.05910505 | | +0.94044951 |
| $e$ | 0.1639613 | $i$ | 3.92538 | | −0.01005022 | | +0.33476426 |
| $P$ | 4.21 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 644 | 0.1− | 0.4+ | 2002 10 04 | 291 | 0.0 | 0.2− | 2006 08 16 | 644 | 0.0 | 0.2+ |
| 2002 09 28 | 644 | 0.5− | 0.6+ | 2002 10 04 | 291 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.2+ |
| 2002 09 28 | 644 | 0.3− | 0.7+ | 2002 10 04 | 291 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.4+ |
| 2002 09 29 | 460 | 0.4+ | 0.3− | 2002 10 07 | 699 | 0.2+ | 0.7− | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2002 09 29 | 460 | 0.3+ | 1.1− | 2002 10 07 | 699 | 0.8− | 0.8+ | 2006 09 14 | 703 | 0.4− | 0.6− |
| 2002 09 30 | 460 | 0.1− | 1.1+ | 2002 10 07 | 699 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 1.4− | 0.3+ |
| 2002 09 30 | 460 | 0.5+ | 0.0 | 2002 10 07 | 699 | 0.1+ | 0.2− | 2006 09 14 | 703 | 1.0− | 1.3− |
| 2002 10 02 | 704 | 0.3− | 1.1+ | 2002 10 07 | 704 | 0.9+ | 0.1− | 2006 09 14 | 703 | (1.6− | 0.8−) |
| 2002 10 02 | 704 | 0.5+ | 0.0 | 2002 10 07 | 704 | 0.5+ | 0.1− | 2006 09 18 | 703 | 0.7+ | 0.9− |
| 2002 10 02 | 704 | 0.6− | 0.3+ | 2002 10 07 | 704 | 1.2+ | 0.9+ | 2006 09 18 | 703 | 0.6+ | 0.6− |
| 2002 10 02 | 704 | 1.0− | 0.8+ | 2002 10 07 | 704 | 0.2+ | 0.6− | 2006 09 18 | 703 | 0.6+ | 1.1− |
| 2002 10 02 | 704 | 0.1− | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.6− |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.2+ | 0.6− | 2006 09 27 | G96 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.5− | 0.2+ | 2005 04 10 | G96 | 0.0 | 0.7+ | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2005 04 10 | G96 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 1.0− | 0.2+ | 2005 04 10 | G96 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.5− | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2005 04 10 | G96 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.8+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 1.1− | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− |

**2002 SQ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 213.77652 | | (2000.0) | | | | |
| $n$ | 0.17477659 | $\omega$ | 222.94694 | | +0.60628111 | | −0.79473691 |
| $a$ | 3.1682094 | $\Omega$ | 189.84985 | | +0.76738673 | | +0.59408845 |
| $e$ | 0.0556062 | $i$ | 9.61536 | | +0.20866441 | | +0.12430669 |
| $P$ | 5.64 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.6− | 0.1− | 2002 10 11 | 704 | 0.7− | 0.5+ | 2005 03 17 | 703 | 0.3+ | 0.2+ |
| 2002 09 26 | 644 | 0.9− | 0.1− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2005 04 12 | G96 | 0.4− | 0.1+ |
| 2002 09 26 | 644 | 0.6− | 0.1− | 2002 10 11 | 704 | 0.2− | 0.5− | 2005 04 12 | G96 | 0.4− | 0.0 |
| 2002 09 29 | 291 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.0 | 2005 04 12 | G96 | 0.3− | 0.2+ |
| 2002 09 29 | 291 | 0.1+ | 0.1+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2005 04 12 | G96 | 0.4− | 0.1− |
| 2002 09 29 | 291 | 0.4+ | 0.2+ | 2002 10 30 | 645 | 0.1− | 0.1+ | 2006 05 09 | G96 | 0.7− | 0.3− |
| 2002 10 02 | 704 | 0.1+ | 0.5+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 05 09 | G96 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 0.3+ | 0.4+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 05 09 | G96 | 0.6− | 0.4− |
| 2002 10 02 | 704 | 0.5+ | 0.2+ | 2005 03 04 | 703 | 1.2− | 0.1+ | 2006 05 09 | G96 | 0.1− | 0.5− |
| 2002 10 02 | 704 | 0.0 | 0.6− | 2005 03 04 | 703 | 0.8+ | 0.1− | 2006 05 22 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2005 03 04 | 703 | 1.1+ | 0.3+ | 2006 05 22 | 691 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.7− | 0.4+ | 2005 03 04 | 703 | 2.0− | 0.8+ | 2006 05 22 | 691 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 1.4+ | 2005 03 10 | 699 | 1.0+ | 1.2+ | 2006 05 30 | 691 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.6+ | 0.1+ | 2005 03 10 | 699 | 1.0+ | 0.4+ | 2006 05 30 | 691 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2005 03 10 | 699 | 0.6+ | 0.6− | 2006 05 30 | 691 | 1.4− | 0.9− |
| 2002 10 07 | 291 | 0.1+ | 0.2− | 2005 03 10 | 699 | (2.9− | 0.3+) | 2006 06 20 | 691 | 1.3+ | 0.7+ |
| 2002 10 07 | 291 | 0.3+ | 0.3− | 2005 03 17 | 703 | 0.6− | 1.0+ | 2006 06 20 | 691 | 0.2+ | 0.2+ |
| 2002 10 07 | 291 | 0.5+ | 0.2− | 2005 03 17 | 703 | 1.5+ | 0.9− | 2006 06 20 | 691 | 0.2+ | 0.3+ |
| 2002 10 11 | 704 | 1.0− | 0.7+ | 2005 03 17 | 703 | 0.3− | 1.2+ | | | | |

**2002 SS$_{19}$ = 2006 RH$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 19.75789 | | (2000.0) | | | | |
| $n$ | 0.24338339 | $\omega$ | 174.74155 | | +0.83203203 | | +0.53579097 |
| $a$ | 2.5406339 | $\Omega$ | 151.35836 | | −0.51925737 | | +0.84339007 |
| $e$ | 0.2068548 | $i$ | 17.44566 | | −0.19517808 | | +0.04026447 |
| $P$ | 4.05 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.8− | 1.0− | 2002 09 30 | 608 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.6+ |
| 2002 09 14 | 608 | (0.7− | 1.7−) | 2002 10 08 | 644 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.5+ |
| 2002 09 14 | 608 | 0.7− | 1.2− | 2002 10 08 | 644 | 0.4− | 0.4+ | 2006 09 14 | 644 | 0.2+ | 0.3− |
| 2002 09 19 | 644 | 0.2+ | 0.6+ | 2002 10 08 | 644 | 0.1− | 0.3− | 2006 09 14 | 644 | 0.0 | 0.4− |
| 2002 09 19 | 644 | 0.3+ | 0.0 | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.1− |
| 2002 09 19 | 644 | 0.5+ | 0.7+ | 2004 01 28 | 645 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2002 09 19 | 644 | 0.6+ | 0.1− | 2006 07 21 | 703 | 0.7+ | 1.2+ | 2006 09 19 | 703 | (0.5+ | 1.6−) |
| 2002 09 19 | 644 | 0.7+ | 0.8+ | 2006 07 21 | 703 | 0.9+ | 0.4+ | 2006 09 19 | 703 | 1.3+ | 0.8+ |
| 2002 09 19 | 644 | 0.3+ | 0.1− | 2006 07 21 | 703 | 0.5− | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 2002 09 27 | 704 | 0.3− | 0.0 | 2006 07 21 | 703 | 1.4+ | 0.0 | 2006 09 20 | 703 | 0.5− | 0.6− |
| 2002 09 27 | 704 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.3+ | 0.9+ | 2006 09 20 | 703 | 1.2− | 0.0 |
| 2002 09 27 | 704 | 0.3+ | 1.0− | 2006 08 30 | 704 | 0.2+ | 0.7+ | 2006 09 20 | 703 | 0.2+ | 0.4− |
| 2002 09 27 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.7− |
| 2002 09 27 | 704 | 0.5− | 1.0− | 2006 08 30 | 704 | 0.3− | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2002 09 30 | 608 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.2+ | 1.5− | 2006 09 26 | 703 | 0.3− | 0.2+ |
| 2002 09 30 | 608 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.2+ | 2006 09 26 | 703 | 0.9− | 0.3− |

**2002 ST$_{20}$ = 2006 UG$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $M$ | 18.94404 | | (2000.0) | | | | |
| $n$ | 0.26182708 | $\omega$ | 355.38904 | | +0.98851548 | | −0.14889132 |
| $a$ | 2.4198754 | $\Omega$ | 13.25810 | | +0.14200513 | | +0.85667721 |
| $e$ | 0.1509921 | $i$ | 6.47335 | | +0.05168841 | | +0.49389829 |
| $P$ | 3.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.9− | 0.7− | 2002 10 11 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2002 09 14 | 608 | 0.7− | 1.0− | 2002 10 11 | 704 | 0.4− | 0.3− | 2006 11 11 | 703 | (1.7+ | 0.8−) |
| 2002 09 14 | 608 | 1.1− | 0.9− | 2002 10 11 | 704 | 0.4− | 1.2− | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 2002 09 26 | 644 | 0.2− | 0.4+ | 2002 10 11 | 704 | 0.1+ | 0.8− | 2006 11 11 | 703 | 0.7+ | 0.6+ |
| 2002 09 26 | 644 | 0.2− | 0.2+ | 2002 10 11 | 291 | 0.9− | 0.0 | 2006 11 14 | 703 | 0.7+ | 0.8− |
| 2002 09 26 | 644 | 0.3− | 0.3+ | 2002 10 11 | 291 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.2− | 0.8− |
| 2002 09 30 | 704 | 0.5+ | 0.1− | 2002 10 11 | 291 | 0.0 | 0.2− | 2006 11 14 | 703 | (0.3+ | 2.2−) |
| 2002 09 30 | 704 | 0.8+ | 0.1− | 2006 10 18 | A50 | 0.0 | 0.8+ | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2002 09 30 | 704 | 0.8+ | 0.9− | 2006 10 19 | A50 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 09 30 | 704 | 0.3+ | 0.6− | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2002 09 30 | 704 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2002 10 02 | 704 | 0.2− | 1.4+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2002 10 02 | 704 | 0.5+ | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.9+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.6+ | 1.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2002 10 03 | 704 | 1.0+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.5− |
| 2002 10 03 | 704 | 0.9+ | 1.1+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 0.5+ | 0.3− | 2006 11 02 | 703 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 1.0− | 0.2− |
| 2002 10 07 | 704 | 0.7+ | 0.6+ | 2006 11 02 | 703 | 0.4− | 0.5+ | 2006 11 22 | 703 | (0.6+ | 1.6−) |
| 2002 10 07 | 704 | 0.8+ | 1.1+ | 2006 11 02 | 703 | (0.0 | 1.6−) | 2006 11 22 | 703 | 0.8+ | 0.5− |
| 2002 10 11 | 704 | 0.4− | 0.2− | 2006 11 02 | 703 | 0.4+ | 0.8− | 2006 11 22 | 703 | 0.9− | 0.6− |

## 2002 $SU_{20}$ = 2006 $RN_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.91351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24678627 | $\omega$ | 284.96925 | | +0.65683471 | −0.75376910 | |
| $a$ | 2.5172251 | $\Omega$ | 123.95412 | | +0.70075192 | +0.60040816 | |
| $e$ | 0.1335745 | $i$ | 1.38216 | | +0.27841501 | +0.26709959 | |
| $P$ | 3.99 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 691 | 0.5− | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.4− | 2006 09 28 | 704 | 0.6− | 1.2+ |
| 1996 03 17 | 691 | 0.3− | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.0 | 1.2+ |
| 1996 03 17 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 28 | 291 | 0.0 | 0.2+ |
| 1998 09 25 | 645 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 28 | 291 | 0.1− | 0.2+ |
| 1998 09 25 | 645 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 28 | 291 | 0.1− | 0.2+ |
| 2002 09 26 | 644 | 0.7− | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 09 26 | 644 | 0.5− | 0.1+ | 2006 09 19 | 703 | (0.7+ | 1.8−) | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 09 26 | 644 | 0.5− | 0.2− | 2006 09 19 | 703 | 0.0 | 0.8− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 09 30 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 1.0+ | 0.0 | 2006 10 13 | 291 | 0.1+ | 0.1+ |
| 2002 09 30 | 704 | (0.2+ | 1.8+) | 2006 09 19 | 703 | 0.8− | 0.4+ | 2006 10 13 | 291 | 0.1− | 0.1+ |
| 2002 09 30 | 704 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.1+ | 2006 10 13 | 291 | 0.1+ | 0.3+ |
| 2002 09 30 | 704 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.8− | 2006 10 15 | 291 | (1.1− | 1.6+) |
| 2002 10 03 | 704 | 0.7− | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.5− | 2006 10 15 | 291 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | (0.8− | 1.6+) | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 15 | 291 | 0.7+ | 0.7+ |
| 2002 10 03 | 704 | 0.3− | 1.1+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.9− |
| 2002 10 03 | 704 | 1.0− | 1.0+ | 2006 09 25 | 291 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.5− |
| 2002 10 05 | 644 | 0.3− | 0.3+ | 2006 09 25 | 291 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.2− | 1.2− |
| 2002 10 05 | 644 | 0.0 | 0.1+ | 2006 09 25 | 291 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2002 10 05 | 644 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 17 | 703 | (1.1+ | 4.4+) |
| 2002 10 06 | 644 | 0.5− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 17 | 703 | (0.4+ | 2.0+) |
| 2002 10 06 | 644 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 17 | 703 | (1.4+ | 2.1+) |
| 2002 10 06 | 644 | (0.9− | 2.0+) | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 17 | 703 | 1.4+ | 0.6+ |
| 2002 10 10 | 645 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.1+ | 0.5+ | 2006 10 18 | 291 | 0.4− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 291 | 0.6− | 0.2+ |
| 2004 02 16 | 691 | 0.3+ | 0.2− | 2006 09 27 | 291 | 0.1+ | 0.1+ | 2006 10 18 | 291 | 0.7− | 0.2+ |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.5− |
| 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 291 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.1− |
| 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 09 27 | 291 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 07 21 | G96 | 0.4− | 0.2− | 2006 09 27 | 704 | 1.0− | 0.6+ | 2006 10 22 | 291 | 0.1+ | 0.3+ |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 27 | 691 | 1.2− | 0.7+ | 2006 10 22 | 291 | 0.1− | 0.2+ |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 291 | 0.0 | 0.2+ |
| 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 28 | 704 | 0.5− | 0.1− | | | | |

## 2002 $SE_{21}$ = 2006 $WC_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.63232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25461723 | $\omega$ | 312.57272 | | +0.83717517 | +0.54638548 | |
| $a$ | 2.4653440 | $\Omega$ | 14.36403 | | −0.46840512 | +0.73938665 | |
| $e$ | 0.2210236 | $i$ | 5.66952 | | −0.28237276 | +0.39340855 | |
| $P$ | 3.87 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.4− | 1.1− | 2002 10 03 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.4− |
| 2002 09 26 | 644 | 0.7− | 0.5+ | 2002 10 03 | 704 | 0.5− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 09 26 | 644 | 0.4− | 0.7+ | 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.5− |
| 2002 09 30 | 704 | 0.0 | 0.7+ | 2002 10 11 | 704 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.5− | 0.6+ |
| 2002 09 30 | 704 | 0.2+ | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2002 09 30 | 704 | 0.0 | 0.5− | 2002 10 11 | 704 | 0.4+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2002 09 30 | 704 | 0.2+ | 0.6+ | 2002 10 11 | 704 | 1.1− | 0.4− | 2006 11 20 | 691 | 0.3+ | 0.2+ |
| 2002 09 30 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1− | | | | |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.0 | | | | |

## 2002 $SM_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.66725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24732630 | $\omega$ | 341.10910 | | +0.99013004 | −0.13206067 | |
| $a$ | 2.5135595 | $\Omega$ | 26.61441 | | +0.13825603 | +0.86546207 | |
| $e$ | 0.1437340 | $i$ | 6.01331 | | +0.02297313 | +0.48325499 | |
| $P$ | 3.99 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 691 | 0.0 | 0.2− | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.5+ | 0.4− |
| 1998 11 19 | 691 | 0.2+ | 0.0 | 2002 10 10 | 645 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1998 11 19 | 691 | 0.0 | 0.6− | 2002 10 11 | 644 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2002 09 26 | 644 | 0.3− | 0.2+ | 2002 10 11 | 644 | 0.7− | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2002 09 26 | 644 | 0.1− | 0.3+ | 2002 10 11 | 644 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2002 09 26 | 644 | 0.4− | 0.3+ | 2002 10 31 | 645 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 09 30 | 704 | 1.0− | 1.0+ | 2002 10 31 | 645 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2002 09 30 | 704 | 0.3− | 0.3− | 2006 09 18 | 703 | (1.6+ | 0.1−) | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 09 30 | 704 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.7+ |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 1.1− | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2006 09 18 | 703 | (1.1− | 1.6−) | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1− | | | | |

## 2002 $SW_{21}$ = 2006 $RY_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.27377 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24288232 | $\omega$ | 353.95938 | | +0.99029695 | −0.13643270 | |
| $a$ | 2.5441270 | $\Omega$ | 13.96553 | | +0.13164391 | +0.86009201 | |
| $e$ | 0.2179274 | $i$ | 6.28518 | | +0.04451779 | +0.49155656 | |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.4− | 0.4− | 2002 10 07 | 704 | 0.4+ | 0.3− | 2006 09 25 | 699 | 1.2+ | 0.1+ |
| 2002 09 26 | 644 | 0.5− | 0.3− | 2002 10 07 | 704 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.1+ |
| 2002 09 26 | 644 | 0.3− | 0.4− | 2002 10 07 | 704 | 0.5+ | 0.9+ | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 2002 09 30 | 704 | 0.7+ | 1.0− | 2002 10 11 | 704 | 1.5− | 0.8+ | 2006 09 25 | 699 | 0.2− | 0.6+ |
| 2002 09 30 | 704 | 0.7+ | 0.5+ | 2002 10 11 | 704 | (2.0− | 1.0+) | 2006 10 02 | G96 | 0.3− | 0.5− |
| 2002 09 30 | 704 | 0.0 | 0.5− | 2002 10 11 | 704 | (1.9− | 0.8+) | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2002 09 30 | 704 | 0.1− | 0.1− | 2002 10 11 | 704 | (2.2− | 1.4+) | 2006 10 02 | G96 | 0.5− | 0.5− |
| 2002 09 30 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 1.1− | 1.4+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2002 09 30 | 608 | 0.4− | 0.2− | 2006 09 14 | 703 | (1.8+ | 0.7+) | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2002 09 30 | 608 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.2− |
| 2002 09 30 | 608 | 0.2− | 0.8+ | 2006 09 14 | 703 | 0.8− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.4− |
| 2002 10 02 | 704 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.5− | 0.7− | 2006 10 20 | G96 | 0.7− | 0.9− |
| 2002 10 02 | 704 | 0.6+ | 0.9− | 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 20 | G96 | 0.4+ | 1.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.3− | 2006 10 20 | G96 | 0.3− | 0.7− |
| 2002 10 02 | 704 | 0.2− | 0.6− | 2006 09 19 | 699 | 0.7+ | 1.4+ | 2006 10 20 | G96 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.9+ | 2006 11 11 | G96 | 0.4+ | 0.1+ |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 1.3+ | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2006 09 22 | 704 | (0.1+ | 2.0−) | 2006 11 11 | G96 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | (0.7+ | 2.3+) | 2006 09 22 | 704 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.8+ | 0.0 |
| 2002 10 03 | 704 | 0.3− | 1.1+ | 2006 09 22 | 704 | 0.5− | 0.1− | | | | |

**2002 SD$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.13777 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25409155 | $\omega$ | 152.85353 | | +0.91059987 | | +0.41325045 |
| $a$ | 2.4687431 | $\Omega$ | 182.75595 | | −0.39731314 | | +0.87155260 |
| $e$ | 0.1348011 | $i$ | 6.75068 | | −0.11379872 | | +0.26385625 |
| $P$ | 3.88 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.1+ | 0.2+ | 2002 10 11 | 704 | 0.3− | 1.0+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2002 09 27 | 644 | 0.2− | 0.3+ | 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 09 27 | 644 | 0.4− | 0.2+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.2+ |
| 2002 09 30 | 704 | 0.0 | 0.5+ | 2004 01 28 | 645 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.5+ | 0.1− |
| 2002 09 30 | 704 | 0.1− | 0.2+ | 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 09 30 | 704 | 1.1− | 0.7− | 2005 04 04 | G96 | (0.3− | 1.8+) | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2002 10 02 | 704 | 0.6− | 0.4− | 2005 04 04 | G96 | (0.3+ | 1.6+) | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 10 02 | 704 | 0.1− | 0.4+ | 2005 04 04 | G96 | 0.6+ | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.7− | 0.0 | 2005 04 04 | G96 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 10 02 | 704 | 0.6− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | (2.0+ | 1.0+) | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 0.4− | 2006 09 26 | 704 | (1.8+ | 0.3+) | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 10 07 | 704 | 0.1− | 0.4+ | 2006 09 26 | 704 | 1.0+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 10 07 | 704 | 1.3+ | 0.4− | 2006 09 26 | 704 | (2.9+ | 0.4+) | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2002 10 07 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 703 | (2.1− | 0.1+) | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2002 10 07 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 10 07 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2002 10 11 | 704 | 0.9− | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | | | |

**2002 SF$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.18668 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26475404 | $\omega$ | 204.74827 | | +0.96037330 | | −0.27793470 |
| $a$ | 2.4020073 | $\Omega$ | 171.31030 | | +0.27315427 | | +0.92368127 |
| $e$ | 0.1055274 | $i$ | 7.93888 | | +0.05540650 | | +0.26375220 |
| $P$ | 3.72 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.6− | 0.7− | 2002 10 02 | 704 | 0.4+ | 0.1− | 2006 09 18 | 703 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.4+ | 0.6+ | 2002 10 02 | 704 | 0.4− | 0.8− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 09 05 | 704 | 0.3− | 1.1− | 2002 10 03 | 704 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2002 10 03 | 704 | 1.0− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 09 05 | 704 | 0.0 | 0.5− | 2002 10 03 | 704 | 0.4+ | 1.5+ | 2006 10 22 | 703 | 0.9+ | 0.7+ |
| 2002 09 13 | 683 | 0.6− | 0.1− | 2002 10 03 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 703 | 0.5+ | 0.3+ |
| 2002 09 13 | 683 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.5− | 0.9+ | 2006 10 22 | 703 | 0.9− | 0.9− |
| 2002 09 13 | 683 | 0.1+ | 0.5− | 2002 10 11 | 704 | 0.1− | 0.8+ | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2002 09 27 | 644 | 0.2− | 0.7− | 2002 10 11 | 704 | 0.5+ | 0.6+ | 2006 10 30 | 703 | 0.7− | 0.2+ |
| 2002 09 27 | 644 | 0.3− | 0.7− | 2002 10 11 | 704 | 0.7+ | 0.6− | 2006 10 30 | 703 | 0.0 | 1.1− |
| 2002 09 27 | 644 | 0.3− | 0.5− | 2002 10 11 | 704 | 0.7+ | 0.6+ | 2006 10 30 | 703 | 0.5+ | 0.9− |
| 2002 09 30 | 704 | 0.7− | 0.7+ | 2002 11 02 | 608 | 0.3− | 1.2− | 2006 10 30 | 703 | (2.7+ | 0.9+) |
| 2002 09 30 | 704 | 1.0− | 0.9+ | 2002 11 02 | 608 | 0.2+ | 1.2− | 2006 11 13 | 703 | 0.0 | 0.5+ |
| 2002 09 30 | 704 | 0.0 | 0.2+ | 2002 11 02 | 608 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.3+ | 0.3+ |
| 2002 09 30 | 704 | 0.0 | 0.7+ | 2002 11 06 | 644 | 0.1− | 0.2+ | 2006 11 13 | 703 | 1.1+ | 0.9+ |
| 2002 09 30 | 704 | 0.0 | 1.2+ | 2002 11 06 | 644 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.7− | 0.3+ |
| 2002 10 01 | 608 | 0.3+ | 0.1− | 2002 11 06 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.4− |
| 2002 10 01 | 608 | 0.6+ | 0.4− | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 11 19 | 703 | 0.3+ | 0.2− |
| 2002 10 01 | 608 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.8− | 0.1+ |
| 2002 10 02 | 704 | 1.3+ | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.1− | 2006 11 19 | 703 | 0.8− | 0.3− |

**2002 SR$_{23}$ = 2006 UH$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.57514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25473306 | $\omega$ | 223.14861 | | +0.89848103 | | −0.43862586 |
| $a$ | 2.4645966 | $\Omega$ | 162.84087 | | +0.41785903 | | +0.84157056 |
| $e$ | 0.2030949 | $i$ | 3.57907 | | +0.13463160 | | +0.31522430 |
| $P$ | 3.87 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.3+ | 0.1+ | 2002 10 07 | 704 | 0.1− | 0.6− | 2006 11 10 | 644 | 0.2+ | 0.2+ |
| 2002 09 27 | 644 | 0.1+ | 0.1− | 2002 10 07 | 704 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.2− |
| 2002 09 27 | 644 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.3− | 0.5− | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 2002 09 30 | 704 | 0.6− | 1.0− | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 644 | 0.3+ | 0.1+ |
| 2002 09 30 | 683 | (1.7− | 2.2−) | 2002 10 11 | 704 | 0.0 | 0.7− | 2006 11 11 | 703 | (1.8− | 0.5−) |
| 2002 09 30 | 704 | (0.5− | 2.3−) | 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2002 09 30 | 683 | 0.2− | 1.3− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2002 09 30 | 683 | (3.6− | 3.4−) | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.3− | 0.2+ |
| 2002 09 30 | 704 | 0.6+ | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 09 30 | 704 | (0.2− | 1.8−) | 2006 10 22 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2002 10 02 | 704 | 0.5− | 1.0− | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 10 02 | 704 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2002 10 02 | 704 | 0.1− | 0.3− | 2006 11 01 | 703 | 0.3− | 0.7+ | 2006 11 17 | 704 | 0.8+ | 0.5+ |
| 2002 10 02 | 704 | (2.2− | 0.1−) | 2006 11 01 | 703 | 1.5− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 1.0+ | 2006 11 01 | 703 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.7+ | 1.2+ | 2006 11 01 | 703 | 0.4− | 0.1− | 2006 11 17 | 704 | (0.8+ | 1.5−) |
| 2002 10 03 | 704 | 0.4+ | 1.0+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.8− | 1.0+ | 2006 11 09 | 644 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 1.3+ | 1.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2002 10 07 | 704 | 0.9− | 1.2− | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 10 07 | 704 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.2− | | | | |

**2002 SC$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.78971 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25808636 | $\omega$ | 11.57582 | | +0.94345715 | | +0.33105108 |
| $a$ | 2.4432019 | $\Omega$ | 329.07459 | | −0.30674035 | | +0.85223219 |
| $e$ | 0.2030789 | $i$ | 1.91124 | | −0.12569389 | | +0.40509934 |
| $P$ | 3.82 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 1.2+ | 0.6− | 2002 10 07 | 699 | 1.5− | 0.6+ | 2006 10 03 | G96 | 0.4+ | 0.5− |
| 2002 09 07 | 704 | 0.5+ | 0.7− | 2002 10 07 | 699 | (0.1− | 1.9−) | 2006 10 15 | 691 | 0.4− | 0.1− |
| 2002 09 07 | 704 | (1.5+ | 1.8−) | 2002 10 07 | 704 | 0.7− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2002 09 07 | 704 | 0.9+ | 0.2− | 2002 10 07 | 704 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2002 10 07 | 704 | 0.8− | 1.1+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2002 09 14 | 644 | 0.5− | 0.2+ | 2002 10 07 | 704 | 1.1− | 0.2− | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2002 10 11 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2002 09 27 | 699 | 0.1+ | 0.9+ | 2002 10 11 | 704 | 0.5− | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.5− |
| 2002 09 27 | 699 | 0.2+ | 0.6+ | 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2002 09 27 | 699 | (0.1− | 1.7+) | 2002 10 11 | 704 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 09 27 | 699 | 1.0+ | 0.6+ | 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2002 09 30 | 704 | (3.4− | 0.3+) | 2002 11 08 | 645 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2002 09 30 | 704 | (4.3− | 1.5+) | 2002 11 08 | 645 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.4− |
| 2002 09 30 | 704 | (3.5− | 0.7+) | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2002 09 30 | 704 | (3.7− | 1.8+) | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2002 09 30 | 704 | (2.2− | 1.2+) | 2006 09 28 | G96 | 0.4+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2002 09 30 | 704 | (3.5− | 1.6+) | 2006 09 28 | G96 | 0.3+ | 0.6− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.6+ | 0.1− |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 699 | 1.3− | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 10 07 | 699 | 1.1− | 0.4− | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.0 |

**2002 SB$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.40401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25621763 | $\omega$ | 137.29502 | | +0.68750517 | −0.72569619 | |
| $a$ | 2.4550671 | $\Omega$ | 269.25325 | | +0.65890579 | +0.63873262 | |
| $e$ | 0.1823133 | $i$ | 1.51802 | | +0.30525367 | +0.25570624 | |
| $P$ | 3.85 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2002 10 30 | 645 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.1− | 0.4− |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2002 09 28 | 608 | 1.4− | 0.8− | 2006 10 11 | 644 | 0.6+ | 0.0 | 2006 11 07 | 644 | 0.2− | 0.1− |
| 2002 09 28 | 608 | (2.6− | 1.1−) | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2002 09 28 | 608 | (2.4− | 0.4−) | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2002 09 30 | 704 | 0.2− | 1.1+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | (2.0− | 1.8+) |
| 2002 09 30 | 704 | 0.9− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | (0.7+ | 4.7+) |
| 2002 09 30 | 704 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.8+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2002 10 11 | 704 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 1.1+ | 0.0 |
| 2002 10 11 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 1.1− | 0.0 |
| 2002 10 11 | 704 | 0.6+ | 0.8+ | 2006 10 29 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.7− | 0.7+ |
| 2002 10 11 | 704 | 0.1+ | 0.7+ | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | (4.2− | 1.1−) |

**2002 SS$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.99516 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25887766 | $\omega$ | 275.94458 | | +0.91867089 | −0.39104194 | |
| $a$ | 2.4382206 | $\Omega$ | 107.08533 | | +0.38162649 | +0.84199608 | |
| $e$ | 0.1628811 | $i$ | 3.35540 | | +0.10200497 | +0.37165683 | |
| $P$ | 3.81 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.7− | 0.1− | 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2002 09 05 | 704 | 0.3− | 0.8+ | 2002 10 11 | 704 | 0.9− | 0.0 | 2006 11 14 | 704 | 0.0 | 1.0+ |
| 2002 09 05 | 704 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.5− | 0.2− |
| 2002 09 11 | 608 | 0.4− | 0.8− | 2002 10 11 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.2− | 0.0 |
| 2002 09 11 | 608 | 0.3− | 0.4− | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.1− | 0.6− |
| 2002 09 11 | 608 | 0.2− | 0.2− | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.3− | 0.1− |
| 2002 09 15 | 608 | 0.3+ | 0.2+ | 2002 10 28 | 644 | 0.7− | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2002 09 15 | 608 | 0.0 | 0.4+ | 2002 10 28 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 09 15 | 608 | 0.2+ | 0.4+ | 2002 10 28 | 644 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2002 09 28 | 608 | (2.3− | 0.6+) | 2002 11 02 | 608 | 0.5− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 09 28 | 608 | (2.4− | 0.8+) | 2002 11 02 | 608 | 0.6− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2002 09 28 | 608 | (2.0− | 0.4+) | 2002 11 02 | 608 | 0.1− | 1.0+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 09 30 | 704 | 0.4− | 0.7+ | 2002 11 06 | 644 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 09 30 | 704 | 0.7+ | 0.4+ | 2002 11 06 | 644 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.5− | 0.0 |
| 2002 09 30 | 704 | 0.1+ | 0.7+ | 2002 11 06 | 644 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.2− | 0.8+ |
| 2002 10 02 | 704 | 1.4+ | 1.4+ | 2006 09 16 | 703 | 0.8+ | 1.5− | 2006 11 17 | 704 | 0.1+ | 0.9+ |
| 2002 10 02 | 704 | (1.6+ | 1.2+) | 2006 09 16 | 703 | 0.1+ | 0.9− | 2006 11 17 | 704 | 0.2− | 0.8+ |
| 2002 10 02 | 704 | (1.7+ | 1.3+) | 2006 09 16 | 703 | 0.9− | 0.5+ | 2006 11 17 | 704 | (2.3+ | 0.9−) |
| 2002 10 02 | 704 | (0.9+ | 1.7+) | 2006 09 16 | 703 | 1.1+ | 0.9+ | 2006 11 18 | 704 | (0.0 | 1.6+) |
| 2002 10 03 | 704 | 0.1− | 0.5− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.7− | 0.7+ |
| 2002 10 03 | 704 | 0.9− | 0.3− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.1− |
| 2002 10 03 | 704 | 0.3− | 0.9− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | (1.6− | 0.8+) |
| 2002 10 03 | 704 | 0.5− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2002 10 03 | 704 | 0.0 | 1.1− | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.2− |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.6− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.0 |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2002 10 08 | 699 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.2− |
| 2002 10 08 | 699 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2002 10 08 | 699 | 0.9− | 1.2+ | 2006 11 09 | 644 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.4+ | 0.8− |
| 2002 10 08 | 699 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.1+ |
| 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.1+ |

**2002 SU$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.26107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26544749 | $\omega$ | 180.39526 | | +0.96384646 | −0.26627428 | |
| $a$ | 2.3978222 | $\Omega$ | 195.05864 | | +0.24457510 | +0.89882357 | |
| $e$ | 0.1853559 | $i$ | 2.18369 | | +0.10574978 | +0.34815829 | |
| $P$ | 3.71 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.7− | 0.2+ | 2002 10 03 | 704 | 0.7− | 0.9+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.1− | 2002 10 03 | 704 | 0.7− | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.0 |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2002 10 04 | 644 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.4− | 0.3+ |
| 2002 09 29 | 608 | 0.5+ | 0.7+ | 2002 10 04 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2002 09 29 | 608 | 0.3+ | 0.9+ | 2002 10 04 | 644 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2002 09 29 | 608 | 0.5+ | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2002 09 30 | 704 | 1.3+ | 0.9+ | 2002 10 10 | 645 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 09 30 | 704 | (1.9+ | 0.7+) | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2002 09 30 | 704 | 0.7+ | 1.2+ | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 09 30 | 704 | 0.9+ | 1.0+ | 2002 10 11 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.4− | 2002 10 11 | 704 | 0.6− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | (0.4− | 2.1+) | 2002 10 11 | 704 | 1.0− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.5− |
| 2002 10 02 | 704 | 0.8+ | 0.2+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.4+ | 0.7+ | 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.4− |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 1.0+ |
| 2002 10 03 | 704 | 0.8− | 0.7+ | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.0− | 0.5+ |

**2002 SQ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.80153 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24395995 | $\omega$ | 208.22325 | | +0.96044809 | +0.27095223 | |
| $a$ | 2.5366294 | $\Omega$ | 135.90001 | | −0.23496444 | +0.91234910 | |
| $e$ | 0.3084636 | $i$ | 5.29498 | | −0.14943618 | +0.30692672 | |
| $P$ | 4.04 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.0 | 1.0+ | 2002 10 15 | 644 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.6+ | 2002 10 15 | 644 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.2+ | 0.6+ | 2002 10 15 | 644 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.1− |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2002 10 28 | 644 | 0.5− | 0.7− | 2006 09 22 | 704 | 0.1+ | 0.5+ |
| 2002 09 05 | 704 | 0.2+ | 0.2+ | 2002 10 28 | 644 | 0.6− | 0.5− | 2006 09 22 | 704 | 0.1+ | 0.6− |
| 2002 09 14 | 608 | 0.6− | 0.9− | 2002 10 28 | 644 | 0.4− | 0.5− | 2006 09 22 | 704 | 0.1− | 0.3+ |
| 2002 09 14 | 608 | 0.2− | 1.1− | 2002 10 30 | 704 | 0.7+ | 0.6− | 2006 09 22 | 704 | 0.2− | 0.3+ |
| 2002 09 14 | 608 | 0.3− | 0.8− | 2002 10 30 | 704 | 0.3− | 0.6+ | 2006 09 22 | 704 | 0.3+ | 0.0 |
| 2002 09 17 | 608 | 0.6− | 1.5− | 2002 10 30 | 704 | 0.7− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.5− |
| 2002 09 17 | 608 | 0.4− | 1.3− | 2002 10 30 | 704 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.3− |
| 2002 09 17 | 608 | 0.4− | 1.2− | 2002 10 30 | 704 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2002 09 29 | 608 | 0.0 | 0.3+ | 2002 11 21 | 644 | 0.4− | 1.0+ | 2006 09 26 | 703 | 0.5− | 0.1− |
| 2002 09 29 | 608 | 0.3+ | 0.3+ | 2002 11 21 | 644 | 0.4− | 0.9+ | 2006 09 30 | 703 | 0.4+ | 0.2− |
| 2002 09 29 | 608 | 0.3+ | 0.4+ | 2002 11 21 | 644 | (0.1+ | 1.9+) | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2002 09 30 | 704 | 1.1− | 1.1+ | 2006 08 23 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.4− |
| 2002 09 30 | 704 | 0.1− | 1.1+ | 2006 08 23 | 704 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.0 | 0.3− |
| 2002 09 30 | 704 | 0.4− | 1.2+ | 2006 08 23 | 704 | 0.4− | 0.0 | 2006 09 30 | 704 | 1.1− | 0.4− |
| 2002 10 04 | 704 | 1.2− | 0.5+ | 2006 08 23 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2002 10 04 | 704 | 0.6− | 1.2+ | 2006 09 12 | 703 | 0.3− | 0.5− | 2006 09 30 | 704 | 0.0 | 0.9+ |
| 2002 10 04 | 704 | 0.3+ | 0.8+ | 2006 09 12 | 703 | 0.2− | 0.9+ | 2006 09 30 | 704 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.6− | 0.8+ | 2006 09 12 | 703 | 0.3+ | 0.9+ | 2006 09 30 | 704 | 0.2− | 0.6+ |
| 2002 10 04 | 704 | 0.8− | 0.5+ | 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 10 02 | 703 | 0.5+ | 0.5+ |
| 2002 10 04 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.9− | 0.6+ |
| 2002 10 04 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 02 | 703 | 0.6+ | 0.3− |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 10 02 | 703 | 0.0 | 0.4+ |
| 2002 10 05 | 645 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2002 10 06 | 608 | 1.0+ | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 608 | 0.7+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2002 10 06 | 608 | 1.0+ | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 16 | 703 | (1.4− | 2.7−) |
| 2002 10 08 | 699 | 0.7− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 10 08 | 699 | 0.3+ | 0.5+ | 2006 09 19 | 704 | 1.0+ | 1.2− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 10 08 | 699 | 0.2− | 0.3+ | 2006 09 19 | 704 | 0.7+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 10 08 | 699 | 0.8− | 1.2+ | 2006 09 19 | 704 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 19 | 704 | (2.6+ | 2.0−) | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 19 | 704 | 0.1− | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.3+ |

**2002 ST$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.58710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23245214 | $\omega$ | 184.83093 | | +0.94842426 | −0.31145639 | |
| $a$ | 2.6196726 | $\Omega$ | 193.76386 | | +0.29852607 | +0.94017434 | |
| $e$ | 0.2104529 | $i$ | 14.36937 | | +0.10664715 | +0.13808380 | |
| $P$ | 4.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.7+ | 0.6+ | 2002 10 03 | 704 | 0.2− | 0.0 | 2002 10 31 | 704 | 0.4+ | 1.6+ |
| 2002 09 06 | 704 | 0.1− | 0.3− | 2002 10 03 | 704 | 0.3− | 0.3− | 2002 10 31 | 704 | 0.3+ | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.8+ | 2002 10 05 | 704 | 0.2+ | 0.4+ | 2002 10 31 | 704 | 0.6− | 0.5+ |
| 2002 09 06 | 704 | 0.7+ | 1.3+ | 2002 10 05 | 704 | 0.2− | 0.2− | 2002 10 31 | 704 | 0.6− | 1.3+ |
| 2002 09 28 | 644 | 0.4− | 0.6− | 2002 10 05 | 704 | 0.5+ | 0.2− | 2002 10 31 | 704 | 0.0 | 1.3+ |
| 2002 09 28 | 644 | 0.2− | 0.5− | 2002 10 05 | 704 | 0.7+ | 0.7− | 2002 11 02 | 608 | 0.4− | 0.5+ |
| 2002 09 28 | 644 | 0.2− | 0.3− | 2002 10 05 | 704 | 0.3+ | 0.5− | 2002 11 02 | 608 | 0.5− | 0.1+ |
| 2002 09 28 | 608 | (1.3− | 2.6−) | 2002 10 07 | 699 | 0.8+ | 0.9+ | 2002 11 02 | 608 | 0.9− | 0.3+ |
| 2002 09 28 | 608 | (1.2− | 2.4−) | 2002 10 07 | 699 | 1.3+ | 0.2+ | 2002 11 08 | 645 | 0.0 | 0.1− |
| 2002 09 28 | 608 | (0.9− | 2.3−) | 2002 10 07 | 699 | 1.7+ | 0.2− | 2002 11 08 | 645 | 0.0 | 0.2− |
| 2002 10 01 | 608 | 0.5− | 0.8− | 2002 10 07 | 699 | 0.6+ | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.4− |
| 2002 10 01 | 608 | 1.3− | 0.4+ | 2002 10 07 | 704 | 0.3− | 0.0 | 2006 09 11 | 703 | 0.5− | 0.6− |
| 2002 10 01 | 608 | 1.1− | 0.7− | 2002 10 07 | 704 | 0.6− | 0.1− | 2006 09 11 | 703 | 0.4− | 0.1+ |
| 2002 10 02 | 704 | 1.4− | 0.3− | 2002 10 07 | 704 | 0.2+ | 0.1+ | 2006 09 11 | 703 | 1.2− | 1.6− |
| 2002 10 02 | 704 | 0.0 | 0.5− | 2002 10 07 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.6+ | 0.9+ |
| 2002 10 02 | 704 | 0.7+ | 0.1− | 2002 10 11 | 704 | 0.3− | 0.3− | 2006 09 19 | 699 | 1.0+ | 1.0+ |
| 2002 10 02 | 704 | 1.2+ | 0.3+ | 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.7− |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.9+ | 0.7+ |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.2+ | | | | |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2002 10 11 | 704 | 0.4+ | 0.1+ | | | | |

**2002 SF$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.72616 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26063356 | $\omega$ | 333.29276 | | +0.84940710 | −0.52442461 | |
| $a$ | 2.4272573 | $\Omega$ | 58.45994 | | +0.49573234 | +0.75451196 | |
| $e$ | 0.2255137 | $i$ | 3.97265 | | +0.18098904 | +0.39457639 | |
| $P$ | 3.78 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.1− | 0.0 | 2002 10 11 | 704 | (0.5+ | 2.5−) | 2006 11 15 | 703 | 0.2− | 0.3+ |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2002 10 11 | 704 | 0.6− | 0.3− | 2006 11 15 | 703 | 0.0 | 0.8− |
| 2002 09 05 | 704 | 0.7+ | 0.1− | 2002 10 11 | 704 | (1.9+ | 3.3−) | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2002 09 10 | 608 | (0.3− | 1.7−) | 2002 10 11 | 704 | 1.5− | 0.1+ | 2006 11 15 | 703 | 0.9− | 0.4− |
| 2002 09 10 | 608 | 0.2− | 1.2− | 2002 10 11 | 704 | (0.7+ | 2.4−) | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2002 09 10 | 608 | (0.7− | 1.6−) | 2002 10 11 | 704 | 1.0− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2002 09 16 | 644 | 0.0 | 0.2− | 2002 10 11 | 704 | (1.2+ | 2.6−) | 2006 11 16 | 704 | 0.5− | 0.7+ |
| 2002 09 16 | 644 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.8− | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.5+ |
| 2002 09 16 | 644 | 0.1− | 0.2− | 2002 10 11 | 704 | (1.0+ | 2.6−) | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2002 09 16 | 644 | 0.2− | 0.2− | 2002 10 11 | 704 | 1.0− | 0.5− | 2006 11 16 | 704 | 0.9+ | 0.9+ |
| 2002 09 16 | 644 | 0.1− | 0.2− | 2002 10 22 | 644 | 0.2+ | 1.3+ | 2006 11 18 | 704 | 0.7− | 0.5+ |
| 2002 09 16 | 644 | 0.2− | 0.2− | 2002 10 22 | 644 | 0.1+ | 1.3+ | 2006 11 18 | 704 | 0.5− | 1.1+ |
| 2002 09 28 | 608 | (2.4− | 0.7−) | 2002 10 22 | 644 | 0.1+ | 1.4+ | 2006 11 18 | 704 | 0.2+ | 0.8+ |
| 2002 09 28 | 608 | (1.9− | 0.5−) | 2002 11 06 | 644 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.4− | 0.9+ |
| 2002 09 28 | 608 | (2.2− | 0.5−) | 2002 11 06 | 644 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 10 01 | 699 | 0.6+ | 0.4− | 2002 11 06 | 644 | 0.1− | 0.5− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 1.0+ | 0.0 | 2006 09 28 | G96 | 0.4+ | 0.7− | 2006 11 21 | 704 | 0.6+ | 0.6+ |
| 2002 10 01 | 699 | 1.1− | 0.7+ | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | (1.8+ | 0.1−) |
| 2002 10 01 | 699 | 0.7− | 0.2+ | 2006 09 28 | G96 | 0.6+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.5− |
| 2002 10 01 | 608 | 0.0 | 0.8− | 2006 09 28 | G96 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2002 10 01 | 608 | 0.3+ | 1.1− | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 10 01 | 608 | 0.2− | 0.7− | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2002 10 02 | 704 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | 1.0+ | 1.0+ | 2006 10 19 | G96 | 0.1− | 0.6− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 0.9+ | 0.7+ | 2006 10 28 | G96 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.9− | 0.6− |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.5− | 1.0− |
| 2002 10 02 | 704 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.7+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.3− | 2006 11 27 | 703 | 0.5− | 0.2− |
| 2002 10 03 | 704 | 1.2+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.7− | 2006 12 01 | 704 | 1.8+ | 0.2+ |
| 2002 10 08 | 699 | 1.1− | 0.2− | 2006 11 14 | J75 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2002 10 08 | 699 | 0.9− | 0.7− | 2006 11 14 | J75 | 0.9+ | 0.4− | 2006 12 01 | 704 | 0.8+ | 1.0+ |
| 2002 10 08 | 699 | 0.2− | 1.2+ | 2006 11 14 | J75 | 0.3+ | 0.4− | 2006 12 01 | 704 | 1.6− | 0.8− |
| 2002 10 08 | 699 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.2− | 2006 12 01 | 704 | 1.5+ | 0.7+ |

**2002 SH$_{31}$ = 2006 VO$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.98983 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27694570 | $\omega$ | 125.14442 | | +0.22592567 | +0.97344515 | |
| $a$ | 2.3309858 | $\Omega$ | 157.82592 | | −0.92255080 | +0.22597268 | |
| $e$ | 0.0741605 | $i$ | 5.61177 | | −0.31282200 | +0.03661819 | |
| $P$ | 3.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (1.9− | 0.6−) | 2002 10 02 | 704 | 0.0 | 0.5− | 2002 10 11 | 704 | 1.0− | 0.5− |
| 2002 09 28 | 608 | (2.1− | 0.5−) | 2002 10 02 | 704 | 0.4− | 0.3− | 2006 11 15 | 703 | 0.0 | 1.0+ |
| 2002 09 28 | 608 | (2.4− | 0.9−) | 2002 10 02 | 704 | 0.3− | 0.5− | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2002 10 01 | 699 | 1.0− | 1.4+ | 2002 10 02 | 704 | 0.6+ | 1.1+ | 2006 11 15 | 703 | 0.3− | 1.0+ |
| 2002 10 01 | 699 | 0.6− | 0.1− | 2002 10 02 | 704 | 0.6+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2002 10 01 | 699 | 1.3− | 0.6+ | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2002 10 01 | 699 | 0.5+ | 0.0 | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.5− | 0.1+ |
| 2002 10 01 | 608 | 0.1− | 0.6+ | 2002 10 11 | 704 | (1.4− | 1.9−) | 2006 11 25 | 683 | 1.1+ | 0.3− |
| 2002 10 01 | 608 | 0.5− | 0.6+ | 2002 10 11 | 704 | 0.9− | 0.3− | 2006 11 25 | 683 | 1.1+ | 0.4− |
| 2002 10 01 | 608 | 0.2− | 0.4+ | 2002 10 11 | 704 | 1.1− | 0.6+ | 2006 11 25 | 683 | 0.8− | 1.2− |

**2002 SX$_{31}$ = 2006 SN$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.98013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24450846 | $\omega$ | 242.40716 | | +0.40230122 | +0.91116865 | |
| $a$ | 2.5328343 | $\Omega$ | 51.59665 | | −0.79481832 | +0.39586871 | |
| $e$ | 0.2295254 | $i$ | 6.52299 | | −0.45433200 | +0.11427890 | |
| $P$ | 4.03 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.5+ | 0.1+ | 2002 10 08 | 699 | 1.3+ | 0.2− | 2006 09 26 | 703 | 0.6− | 0.3+ |
| 2002 09 09 | 599 | 0.0 | 0.0 | 2002 10 08 | 699 | 0.3− | 0.4+ | 2006 10 02 | 703 | 0.8− | 0.6+ |
| 2002 09 09 | 599 | 0.1− | 0.6+ | 2006 08 28 | 699 | 0.5− | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.8+ |
| 2002 09 28 | 608 | (2.9− | 0.2−) | 2006 08 28 | 699 | 0.4− | 0.3+ | 2006 10 02 | 703 | 0.5+ | 0.3+ |
| 2002 09 28 | 608 | (3.0− | 0.2−) | 2006 08 28 | 699 | 0.3+ | 1.3− | 2006 10 02 | 703 | 0.0 | 0.2+ |
| 2002 09 28 | 608 | (2.2− | 0.1−) | 2006 08 28 | 699 | (2.2+ | 0.4+) | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2002 10 01 | 699 | 0.9+ | 1.0− | 2006 09 18 | 703 | 1.2+ | 0.7− | 2006 10 16 | 703 | 0.0 | 0.9− |
| 2002 10 01 | 699 | 0.7+ | 0.7− | 2006 09 18 | 703 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2002 10 01 | 699 | 0.9+ | 0.7+ | 2006 09 18 | 703 | (1.1+ | 1.7−) | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 1.0− | 0.6+ | 2006 09 26 | 704 | 0.6− | 1.0+ | 2006 10 20 | 644 | 0.4− | 0.5− |
| 2002 10 03 | 704 | 0.9− | 0.4− | 2006 09 26 | 704 | 0.9+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2002 10 03 | 704 | 0.8− | 0.3− | 2006 09 26 | 704 | (1.6− | 0.9+) | 2006 10 21 | 644 | 0.4− | 0.6− |
| 2002 10 03 | 704 | 0.8− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 1.3− | 0.4− | 2006 09 26 | 703 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 08 | 699 | 0.9+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.9+ | | | | |
| 2002 10 08 | 699 | 0.5+ | 0.5− | 2006 09 26 | 703 | 0.2− | 0.7+ | | | | |

**2002 SZ$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.83645 | | | (2000.0) | | |
| $n$ | 0.25994667 | $\omega$ | 250.63853 | | +0.97325773 | −0.21815970 |
| $a$ | 2.4315314 | $\Omega$ | 121.90300 | | +0.22938588 | +0.90618711 |
| $e$ | 0.1950053 | $i$ | 4.86128 | | +0.01230913 | +0.36225857 |
| $P$ | 3.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.7− | 0.2− | 2006 11 17 | 704 | 0.5+ | 0.4+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 10 04 | 704 | (0.2+ | 1.9+) | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2002 09 09 | 599 | 0.1− | 0.3+ | 2002 10 04 | 704 | 0.4− | 0.9+ | 2006 11 17 | 704 | 0.6− | 0.1+ |
| 2002 09 09 | 599 | 0.1− | 0.4+ | 2002 10 06 | 704 | (0.4+ | 1.7+) | 2006 11 19 | 703 | 0.2+ | 1.0− |
| 2002 09 09 | 599 | 0.1− | 0.4+ | 2002 10 06 | 704 | 1.2+ | 0.1− | 2006 11 19 | 703 | 1.0+ | 0.6− |
| 2002 09 28 | 608 | (1.7− | 0.8−) | 2002 10 06 | 704 | 0.1− | 0.9+ | 2006 11 19 | 703 | 0.6− | 0.1− |
| 2002 09 28 | 608 | 1.2− | 0.2− | 2002 10 28 | 644 | 0.5− | 0.4+ | 2006 11 19 | 703 | 0.8+ | 0.5− |
| 2002 09 28 | 608 | (1.9− | 1.5−) | 2002 10 28 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.4− | 1.1− |
| 2002 10 01 | 608 | 0.2+ | 0.4− | 2002 10 28 | 644 | 0.1− | 0.4+ | 2006 11 28 | 704 | 0.6− | 0.9+ |
| 2002 10 01 | 608 | 0.2− | 0.0 | 2002 10 29 | 704 | 0.5+ | 0.5+ | 2006 11 28 | 704 | 0.1+ | 0.9+ |
| 2002 10 01 | 608 | 0.2+ | 1.0+ | 2002 10 29 | 704 | 0.4+ | 1.0+ | | | | |
| 2002 10 04 | 704 | 0.3− | 0.6− | 2002 10 29 | 704 | 0.1− | 0.5− | | | | |

**2002 SO$_{32}$ = 2006 UT$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.88187 | | | (2000.0) | | |
| $n$ | 0.25863512 | $\omega$ | 86.95511 | | +0.95424438 | −0.29851486 |
| $a$ | 2.4397447 | $\Omega$ | 290.41279 | | +0.26639773 | +0.87525426 |
| $e$ | 0.2306504 | $i$ | 1.07043 | | +0.13583047 | +0.38055074 |
| $P$ | 3.81 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (2.3− | 0.9−) | 2002 10 04 | 704 | 0.1+ | 1.2+ | 2006 10 27 | J95 | 0.4+ | 0.3+ |
| 2002 09 28 | 608 | (1.8− | 0.7−) | 2002 10 05 | 704 | 0.1− | 0.2− | 2006 10 28 | 715 | 0.1− | 0.2+ |
| 2002 09 28 | 608 | (2.2− | 0.3−) | 2002 10 05 | 704 | 0.2− | 0.6− | 2006 10 28 | 715 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 0.0 | 0.5− | 2002 10 05 | 704 | 0.7+ | 0.9− | 2006 10 28 | 715 | 0.3+ | 0.0 |
| 2002 10 01 | 699 | 0.3− | 0.4+ | 2002 10 05 | 704 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2002 10 01 | 699 | 0.2+ | 0.4− | 2002 10 07 | 704 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2002 10 01 | 699 | 0.9− | 0.3+ | 2002 10 07 | 704 | 0.2− | 0.7+ | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2002 10 03 | 704 | 0.2− | 0.7− | 2002 10 07 | 704 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2002 10 07 | 704 | 0.7− | 0.1− | 2006 11 09 | 644 | 0.3− | 0.6+ |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2002 10 11 | 704 | 1.4+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2002 10 11 | 704 | 1.1+ | 0.9− | 2006 11 09 | 644 | 0.7− | 1.0+ |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2002 10 11 | 704 | 1.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 1.1+ | 0.1+ | 2002 10 11 | 704 | (1.7+ | 0.7−) | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2002 10 11 | 704 | 0.4+ | 1.1− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | (1.8− | 0.0 ) | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.9− | 0.0 | 2006 09 30 | G96 | 0.7+ | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.9+ | 2006 10 26 | J95 | 0.8− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 0.0 | 1.4+ | 2006 10 26 | J95 | 0.2− | 1.1− | 2006 11 22 | 691 | 0.0 | 0.0 |

**2002 SQ$_{32}$ = 2006 SX$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 301.76962 | | | (2000.0) | | |
| $n$ | 0.24039207 | $\omega$ | 76.49054 | | +0.08514321 | −0.99423194 |
| $a$ | 2.5616667 | $\Omega$ | 9.38571 | | +0.68698147 | +0.01116904 |
| $e$ | 0.2483557 | $i$ | 23.57309 | | +0.72166966 | +0.10666817 |
| $P$ | 4.10 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (3.4− | 0.0 ) | 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.0 | 1.1+ |
| 2002 09 28 | 608 | (3.1− | 0.1+) | 2002 10 09 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 1.1− | 0.1+ |
| 2002 09 28 | 608 | (2.9− | 0.2+) | 2002 10 09 | 704 | 0.8− | 0.5+ | 2006 10 16 | 703 | (0.1− | 2.9+) |
| 2002 10 01 | 699 | 0.0 | 0.2− | 2002 10 09 | 704 | 1.4− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 10 01 | 699 | 0.8+ | 0.4− | 2002 10 09 | 704 | 0.2+ | 1.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 10 01 | 699 | 0.1− | 0.0 | 2002 10 12 | 704 | 0.0 | 1.0− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.4− | 0.4+ | 2002 10 12 | 704 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 10 02 | 599 | 0.3+ | 0.3− | 2002 10 12 | 704 | 0.0 | 0.8− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2002 10 02 | 599 | 0.1+ | 0.2− | 2002 10 12 | 704 | 0.5+ | 0.3− | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2002 10 02 | 599 | 0.4+ | 0.2− | 2002 10 12 | 704 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 2002 10 02 | 599 | 0.4+ | 0.2− | 2002 10 30 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2002 10 30 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.0 | 2002 10 30 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 2002 10 03 | 704 | 0.4+ | 0.3− | 2006 09 18 | 703 | 0.8− | 0.4− | 2006 10 22 | 644 | 0.0 | 1.3+ |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | (1.6− | 0.6−) | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.7− | 0.8− | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2006 09 18 | 703 | (1.0− | 2.1−) | 2006 10 22 | 703 | 0.8− | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 0.8− | 2006 09 18 | 699 | 0.8+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.9− | 1.1− |
| 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.6− | 1.0+ | 2006 10 22 | 703 | (2.0− | 0.4−) |
| 2002 10 03 | 704 | 0.3− | 0.5+ | 2006 09 18 | 699 | 1.2+ | 0.5− | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.6− | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 24 | 644 | 0.1+ | 0.3+ |
| 2002 10 04 | 704 | 0.7+ | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.6− | 2006 10 24 | 644 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.7+ | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.5+ |
| 2002 10 05 | 644 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.9− |
| 2002 10 05 | 644 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2002 10 05 | 644 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.5− |
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.1− | 1.0− | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2002 10 06 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.4+ | 1.2− | 2006 11 11 | 703 | (1.7− | 0.1+) |
| 2002 10 06 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.9− | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2002 10 07 | 699 | 0.4− | 1.0− | 2006 10 09 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.6+ |
| 2002 10 07 | 699 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2002 10 07 | 699 | 0.3+ | 0.7− | 2006 10 09 | 644 | 0.1− | 0.3+ | | | | |
| 2002 10 07 | 699 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.7+ | | | | |

**2002 SV$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 187.52442 | | | (2000.0) | | |
| $n$ | 0.12471803 | $\omega$ | 155.92786 | | +0.99525077 | −0.06928423 |
| $a$ | 3.9674965 | $\Omega$ | 208.30496 | | +0.04776535 | +0.95964437 |
| $e$ | 0.2538114 | $i$ | 8.29143 | | +0.08481968 | +0.27254795 |
| $P$ | 7.90 | $H$ | 14.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 24 | 691 | 0.0 | 0.3+ | 2002 10 02 | 599 | 0.5+ | 0.2− | 2002 10 12 | 704 | 0.2− | 0.5+ |
| 2000 05 24 | 691 | 0.1+ | 0.2+ | 2002 10 04 | 644 | 0.6− | 0.4− | 2002 10 12 | 704 | 0.1+ | 0.3+ |
| 2000 05 24 | 691 | 0.0 | 0.3+ | 2002 10 04 | 644 | 0.8+ | 0.7+ | 2002 10 30 | 644 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.4− | 0.3+ | 2002 10 04 | 644 | 0.2+ | 0.1+ | 2002 10 30 | 644 | 0.1− | 0.3+ |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2002 10 07 | 704 | 0.2+ | 0.4+ | 2002 10 30 | 644 | 0.4− | 0.2+ |
| 2002 09 06 | 704 | 0.2+ | 0.4+ | 2002 10 07 | 704 | 0.4− | 1.0+ | 2002 11 06 | 704 | 0.3+ | 1.6− |
| 2002 09 06 | 704 | 0.5+ | 0.9+ | 2002 10 07 | 704 | 0.3+ | 0.8+ | 2002 11 06 | 704 | 1.2− | 0.5− |
| 2002 09 06 | 704 | 1.3+ | 0.7− | 2002 10 07 | 704 | 0.3− | 0.1− | 2002 11 06 | 704 | 0.7− | 0.1− |
| 2002 09 28 | 608 | 0.4− | 1.6− | 2002 10 07 | 704 | 0.9+ | 0.5+ | 2002 11 21 | 644 | 0.9− | 0.1+ |
| 2002 09 28 | 608 | 0.9− | 1.2− | 2002 10 11 | 704 | 0.3+ | 0.3− | 2002 11 21 | 644 | 0.9− | 0.3+ |
| 2002 09 28 | 608 | 0.6− | 1.5− | 2002 10 11 | 704 | 0.0 | 0.1+ | 2002 11 21 | 644 | 0.6− | 0.2+ |
| 2002 10 01 | 699 | 0.3− | 1.9+ | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 03 05 | 691 | 0.0 | 0.6+ |
| 2002 10 01 | 699 | 0.4+ | 1.2+ | 2002 10 11 | 704 | 0.2+ | 0.8+ | 2006 03 05 | 691 | 0.1+ | 0.5+ |
| 2002 10 01 | 699 | 0.9− | 1.9+ | 2002 10 12 | 704 | 0.1+ | 0.5+ | 2006 03 05 | 691 | 0.3+ | 0.5+ |
| 2002 10 01 | 699 | 0.3− | 1.2+ | 2002 10 12 | 704 | 0.0 | 0.6+ | | | | |
| 2002 10 02 | 599 | 0.1+ | 0.7− | 2002 10 12 | 704 | 1.0+ | 0.3− | | | | |

**2002 SF$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.25238 | | | (2000.0) | | |
| $n$ | 0.25776683 | $\omega$ | 73.21020 | | +0.74096257 | −0.67066820 |
| $a$ | 2.4452205 | $\Omega$ | 328.88299 | | +0.58806370 | +0.67268821 |
| $e$ | 0.2485441 | $i$ | 3.80907 | | +0.32427697 | +0.31256156 |
| $P$ | 3.82 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 608 | 1.1− | 0.9− | 2002 10 09 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.9− |
| 2002 09 15 | 608 | 1.0− | 0.8− | 2002 10 09 | 704 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2002 09 15 | 608 | 1.1− | 0.9− | 2002 10 09 | 704 | 0.8+ | 0.5− | 2006 11 16 | 704 | 0.4− | 0.1+ |
| 2002 09 28 | 608 | 1.2− | 0.6+ | 2002 10 09 | 704 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.4+ | 0.1+ |
| 2002 09 28 | 608 | 0.5− | 0.2− | 2002 10 12 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.5+ | 0.4− |
| 2002 09 28 | 608 | 1.3− | 0.0 | 2002 10 12 | 704 | 0.3+ | 0.4+ | 2006 11 17 | 691 | 0.2+ | 0.4+ |
| 2002 10 01 | 699 | (1.8+ | 0.9−) | 2002 10 12 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2002 10 01 | 699 | 0.0 | 0.5+ | 2002 10 12 | 704 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.1− | 1.0− |
| 2002 10 01 | 699 | 0.9+ | 0.5+ | 2002 10 12 | 704 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.5− |
| 2002 10 01 | 699 | 0.9+ | 0.4− | 2002 10 28 | 644 | 0.4− | 1.0− | 2006 11 19 | 704 | 0.0 | 0.6− |
| 2002 10 04 | 704 | 1.2+ | 0.5− | 2002 10 28 | 644 | 0.3− | 0.8− | 2006 11 19 | 704 | 0.3− | 1.0− |
| 2002 10 04 | 704 | 1.1+ | 0.1− | 2002 10 28 | 644 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 0.1− | 2002 10 30 | 644 | 0.4− | 0.4+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.5+ | 0.6− | 2002 10 30 | 644 | 0.7− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.4− | 2002 10 30 | 644 | 0.6− | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2002 10 04 | 644 | 0.3− | 0.2− | 2002 11 02 | 608 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.4− | 0.4+ |
| 2002 10 04 | 644 | 0.1+ | 0.1+ | 2002 11 02 | 608 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.3− |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2002 11 02 | 608 | 0.2+ | 0.4− | 2006 11 22 | 704 | 1.0− | 1.0− |
| 2002 10 04 | 644 | 0.2+ | 0.4+ | 2002 11 22 | 644 | 0.4− | 0.2− | 2006 11 22 | 704 | 1.0− | 1.0− |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2002 11 22 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.9− |
| 2002 10 04 | 644 | 0.3+ | 0.1+ | 2002 11 22 | 644 | 0.2− | 0.1+ | 2006 11 24 | 703 | 0.6− | 0.6− |
| 2002 10 05 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 24 | 703 | 0.2− | 0.0 |
| 2002 10 05 | 644 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | 2006 11 24 | 703 | 0.9− | 0.3− |
| 2002 10 05 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.2+ | 2006 11 24 | 703 | 0.7+ | 0.4− |
| 2002 10 06 | 644 | 0.1+ | 0.7+ | 2006 11 15 | 704 | (0.2− | 1.8+) | 2006 11 27 | 704 | 0.0 | 0.2+ |
| 2002 10 06 | 644 | 0.2+ | 0.6+ | 2006 11 15 | 704 | 1.0+ | 1.3+ | 2006 11 27 | 704 | 0.3+ | 0.0 |
| 2002 10 06 | 644 | 0.0 | 1.0+ | 2006 11 15 | 704 | 0.1+ | 0.6+ | 2006 11 27 | 704 | (2.4− | 0.2+) |
| 2002 10 09 | 704 | 0.7+ | 0.3− | 2006 11 16 | 704 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.2+ | 0.2+ |

**2002 SZ$_{33}$ = 2006 VD$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.32931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26534056 | $\omega$ | 255.28970 | | +0.99603514 | −0.07280266 | |
| $a$ | 2.3984663 | $\Omega$ | 108.86512 | | +0.08684042 | +0.92041802 | |
| $e$ | 0.1917149 | $i$ | 3.09704 | | −0.01930626 | +0.38409692 | |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.4− | 0.1− | 2002 09 29 | 608 | 0.4+ | 1.3− | 2005 05 14 | G96 | 0.3+ | 0.4+ |
| 2000 02 05 | 691 | 0.1+ | 0.1+ | 2002 09 29 | 608 | 0.8+ | 0.8− | 2005 05 14 | G96 | 0.4− | 0.6+ |
| 2000 02 05 | 691 | 0.0 | 0.0 | 2002 09 29 | 608 | 0.6+ | 0.7− | 2005 05 14 | G96 | 0.0 | 0.2+ |
| 2002 09 13 | 608 | 0.9− | 0.1− | 2002 10 01 | 699 | 0.1− | 0.5− | 2005 05 14 | G96 | 0.6− | 0.2− |
| 2002 09 13 | 608 | 0.7− | 0.4+ | 2002 10 01 | 699 | 0.5− | 0.2+ | 2006 11 12 | G96 | 0.7+ | 0.8− |
| 2002 09 13 | 608 | 0.8− | 0.4+ | 2002 10 01 | 699 | 0.3+ | 0.6− | 2006 11 12 | G96 | 0.5+ | 0.6− |
| 2002 09 16 | 608 | 0.3− | 1.0+ | 2002 10 01 | 699 | 0.4+ | 1.4+ | 2006 11 12 | G96 | 0.3+ | 0.6− |
| 2002 09 16 | 608 | 1.0− | 0.4+ | 2002 10 03 | 704 | 0.6− | 1.1+ | 2006 11 12 | G96 | 0.1+ | 0.7− |
| 2002 09 16 | 608 | 1.0− | 1.0+ | 2002 10 03 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.4+ |
| 2002 09 16 | 644 | (0.6− | 1.7+) | 2002 10 03 | 704 | 1.3+ | 1.2+ | 2006 11 14 | 704 | 0.3− | 0.5+ |
| 2002 09 16 | 644 | 0.1+ | 0.1− | 2002 10 03 | 704 | 0.3− | 0.5+ | 2006 11 14 | 704 | 0.8− | 0.2+ |
| 2002 09 16 | 644 | 0.5+ | 0.0 | 2002 10 03 | 704 | 0.5− | 0.4+ | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2002 09 19 | 644 | 0.3+ | 0.4+ | 2004 02 22 | 691 | 0.6+ | 0.4+ | 2006 11 17 | 644 | 0.3− | 0.1− |
| 2002 09 19 | 644 | 0.2− | 0.6+ | 2004 02 22 | 691 | 0.0 | 0.4+ | 2006 11 17 | 644 | 0.2+ | 0.7− |
| 2002 09 19 | 644 | 0.0 | 0.7+ | 2004 02 22 | 691 | 0.4+ | 0.6+ | | | | |

**2002 SN$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.93229 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27154533 | $\omega$ | 355.61001 | | +0.87829799 | −0.47377421 | |
| $a$ | 2.3617893 | $\Omega$ | 32.91725 | | +0.44218303 | +0.75379473 | |
| $e$ | 0.1172396 | $i$ | 6.79215 | | +0.18184281 | +0.45533669 | |
| $P$ | 3.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.5− | 0.7+ | 2002 10 03 | 704 | 0.9+ | 0.7− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2002 09 04 | 699 | 0.3+ | 0.3+ | 2002 10 03 | 704 | 0.2− | 1.3+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2002 09 04 | 699 | 0.4+ | 0.8− | 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2002 09 04 | 699 | (1.5+ | 0.9−) | 2002 10 03 | 704 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2002 09 08 | 608 | 0.4− | 0.1− | 2002 10 06 | 608 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2002 09 08 | 608 | 0.8− | 0.6− | 2002 10 06 | 608 | 0.5+ | 0.5− | 2006 11 19 | 704 | 0.1− | 0.8− |
| 2002 09 08 | 608 | 0.6− | 0.4− | 2002 10 06 | 608 | 0.9+ | 0.0 | 2006 11 19 | 704 | 1.1+ | 0.4+ |
| 2002 09 16 | 644 | 0.7− | 0.5+ | 2002 10 08 | 699 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.9− | 0.6+ |
| 2002 09 16 | 644 | 0.6− | 0.8+ | 2002 10 08 | 699 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2002 09 16 | 644 | 0.5− | 0.2+ | 2002 10 08 | 699 | 0.6− | 0.4− | 2006 11 22 | 704 | 1.4− | 1.1+ |
| 2002 09 29 | 608 | 0.0 | 0.6+ | 2002 10 08 | 699 | 1.0− | 0.9− | 2006 11 22 | 704 | 0.3+ | 0.8− |
| 2002 09 29 | 608 | 0.6− | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.2− | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2002 09 29 | 608 | 0.3− | 0.9+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.0 | 0.3− |
| 2002 10 01 | 699 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.2− | 0.3− | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2002 10 01 | 699 | 1.2+ | 0.2+ | 2006 11 16 | 704 | 0.9+ | 1.2+ | 2006 11 27 | 704 | 0.0 | 0.1+ |
| 2002 10 01 | 699 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.7+ | 0.7+ | 2006 11 27 | 704 | 0.0 | 0.1+ |
| 2002 10 01 | 699 | 1.4+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 1.0+ | 2006 11 27 | 704 | 0.2− | 1.0− |
| 2002 10 03 | 704 | 0.1− | 0.7− | 2006 11 16 | 704 | 0.3− | 1.3+ | | | | |

**2002 SB$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.36478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23564221 | $\omega$ | 356.10756 | | +0.97024803 | −0.24190535 | |
| $a$ | 2.5959759 | $\Omega$ | 17.90110 | | +0.22300613 | +0.87678388 | |
| $e$ | 0.2116908 | $i$ | 1.86964 | | +0.09427106 | +0.41561019 | |
| $P$ | 4.18 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 291 | 0.3+ | 0.1− | 2002 10 03 | 704 | 0.8− | 1.0+ | 2002 10 30 | 291 | 0.4− | 0.1+ |
| 2002 09 29 | 291 | 0.4+ | 0.1− | 2002 10 07 | 704 | 0.4− | 0.5+ | 2002 11 04 | 291 | 0.1− | 0.0 |
| 2002 09 29 | 608 | 0.5− | 0.1− | 2002 10 07 | 704 | 0.1− | 0.9− | 2002 11 04 | 291 | 0.0 | 0.2+ |
| 2002 09 29 | 608 | 0.4− | 0.3+ | 2002 10 07 | 704 | 0.4+ | 0.4− | 2002 11 04 | 291 | 0.5+ | 0.1+ |
| 2002 09 29 | 291 | 0.5+ | 0.1− | 2002 10 09 | 291 | 0.3+ | 0.2− | 2006 08 21 | 691 | 0.0 | 0.2+ |
| 2002 09 29 | 608 | 1.4− | 0.3+ | 2002 10 09 | 291 | 0.2+ | 0.2− | 2006 08 21 | 691 | 0.0 | 0.0 |
| 2002 10 01 | 699 | 1.0− | 0.1− | 2002 10 09 | 291 | 0.5+ | 0.0 | 2006 08 21 | 691 | 0.2− | 0.1+ |
| 2002 10 01 | 699 | 1.0− | 1.7− | 2002 10 10 | 644 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.5− |
| 2002 10 01 | 699 | 0.3+ | 0.1+ | 2002 10 10 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | (0.4+ | 2.2−) |
| 2002 10 01 | 699 | 0.0 | 1.0+ | 2002 10 10 | 644 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | (2.3− | 0.4−) | 2002 10 30 | 291 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.5+ | 0.6− |
| 2002 10 03 | 704 | 1.5− | 1.0+ | 2002 10 30 | 291 | 0.3− | 0.1+ | | | | |

**2002 SV$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.75333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28709530 | $\omega$ | 115.48984 | | +0.70878602 | +0.70433939 | |
| $a$ | 2.2757191 | $\Omega$ | 199.81248 | | −0.68154007 | +0.66943751 | |
| $e$ | 0.1400400 | $i$ | 6.62340 | | −0.18200414 | +0.23613436 | |
| $P$ | 3.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.0 | 0.2+ | 2002 10 03 | 704 | 1.2− | 0.1+ | 2002 10 10 | 644 | 0.0 | 0.1− |
| 2001 05 24 | 807 | 0.1+ | 0.3+ | 2002 10 03 | 704 | 0.9− | 1.5+ | 2002 10 11 | 704 | 0.1+ | 0.4− |
| 2002 09 07 | 704 | 1.3+ | 0.1− | 2002 10 03 | 704 | 0.0 | 0.3+ | 2002 10 11 | 704 | 1.7+ | 0.1− |
| 2002 09 07 | 704 | 0.5+ | 0.2− | 2002 10 03 | 704 | 1.6− | 0.7+ | 2002 10 11 | 704 | 0.3− | 0.7− |
| 2002 09 07 | 704 | 0.0 | 1.3− | 2002 10 05 | 704 | (0.2− | 2.5−) | 2002 10 11 | 704 | 0.2− | 0.8− |
| 2002 09 17 | 608 | 0.2− | 0.4− | 2002 10 05 | 704 | (0.4− | 2.3−) | 2002 10 11 | 704 | 0.3− | 0.3− |
| 2002 09 17 | 608 | 0.5− | 0.1− | 2002 10 05 | 704 | 0.5− | 1.6− | 2002 10 30 | 644 | 0.2+ | 0.1− |
| 2002 09 17 | 608 | 0.8− | 0.6− | 2002 10 05 | 704 | (0.7− | 2.3−) | 2002 10 30 | 644 | 0.3+ | 0.1− |
| 2002 09 29 | 608 | 0.6+ | 0.4+ | 2002 10 05 | 704 | (0.7− | 2.5−) | 2002 10 30 | 644 | 0.1+ | 0.1+ |
| 2002 09 29 | 608 | 1.0+ | 0.8+ | 2002 10 07 | 704 | 0.9+ | 0.2+ | 2002 10 31 | 699 | 0.2+ | 0.7− |
| 2002 09 29 | 608 | 0.6+ | 0.4+ | 2002 10 07 | 704 | 0.4+ | 0.6+ | 2002 10 31 | 699 | 0.1− | 0.0 |
| 2002 10 01 | 699 | 0.4+ | 0.2+ | 2002 10 07 | 704 | 0.3+ | 0.2+ | 2002 10 31 | 699 | 0.1− | 0.3+ |
| 2002 10 01 | 699 | 0.2+ | 0.8+ | 2002 10 07 | 704 | 0.4+ | 0.5− | 2002 10 31 | 699 | 0.1+ | 0.4− |
| 2002 10 01 | 699 | 0.3+ | 0.1− | 2002 10 07 | 704 | 0.2+ | 0.2− | 2002 11 06 | 704 | 0.0 | 0.1− |
| 2002 10 01 | 699 | 0.2+ | 0.2− | 2002 10 09 | 704 | 0.5+ | 0.2+ | 2002 11 06 | 704 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.3− | 0.0 | 2002 10 09 | 704 | 0.1+ | 0.3+ | 2002 11 06 | 704 | 0.3+ | 0.3+ |
| 2002 10 02 | 704 | 0.1− | 0.0 | 2002 10 09 | 704 | 0.0 | 0.1− | 2002 11 06 | 704 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.3− | 0.2+ | 2002 10 09 | 704 | 0.5+ | 0.3+ | 2004 02 13 | 699 | 0.5+ | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.9− | 0.3− | 2002 10 09 | 704 | 0.2+ | 0.1+ | 2004 02 13 | 699 | 0.3+ | 0.2+ |
| 2002 10 02 | 704 | 1.3− | 0.6+ | 2002 10 10 | 644 | 0.3− | 0.3− | 2004 02 13 | 699 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 1.3− | 1.9+ | 2002 10 10 | 644 | 0.1− | 0.1− | 2004 02 13 | 699 | 0.3− | 0.0 |

**2002 SS$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.62638 | | (2000.0) | | | |
| $n$ | 0.26255712 | $\omega$ | 305.44730 | | +0.99877836 | −0.01393577 |
| $a$ | 2.4153877 | $\Omega$ | 55.39660 | | +0.03288199 | +0.90359357 |
| $e$ | 0.2018088 | $i$ | 3.30193 | | −0.03688588 | +0.42816404 |
| $P$ | 3.75 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.6+ | 0.4− | 2002 10 11 | 704 | 0.8+ | 1.0− | 2006 11 11 | 703 | 0.2− | 0.6+ |
| 2002 09 14 | 608 | 0.5+ | 0.6− | 2002 10 28 | 644 | 0.4− | 1.2+ | 2006 11 11 | 703 | 0.9− | 1.3+ |
| 2002 09 14 | 608 | 0.4+ | 0.0 | 2002 10 28 | 644 | 0.1− | 1.2+ | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2002 09 30 | 704 | 0.2− | 0.6− | 2002 10 28 | 644 | 0.1+ | 1.3+ | 2006 11 14 | 691 | 0.2+ | 0.5+ |
| 2002 09 30 | 704 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.4+ |
| 2002 09 30 | 704 | 0.9+ | 0.2− | 2005 05 10 | G96 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2002 09 30 | 704 | 0.4− | 0.5− | 2005 05 10 | G96 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.4+ | 0.1+ |
| 2002 09 30 | 704 | 0.1+ | 0.2− | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 10 01 | 699 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.3− | 0.1− |
| 2002 10 01 | 699 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.5+ | 0.6+ | 2006 10 19 | G96 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.6− |
| 2002 10 02 | 704 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.8− | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2002 10 02 | 704 | 0.1− | 0.7− | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.7− | 1.0− |
| 2002 10 02 | 704 | 0.3− | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.7− | 1.1+ |
| 2002 10 03 | 704 | 1.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2002 10 03 | 704 | 1.3− | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2002 10 03 | 704 | 1.3− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 1.2+ |
| 2002 10 03 | 704 | 1.1− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.7− | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.3− |
| 2002 10 11 | 704 | 1.0+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1− | 0.4− |
| 2002 10 11 | 704 | 1.4+ | 0.8− | 2006 11 11 | 703 | 0.8− | 0.9− | 2006 11 22 | 691 | 0.1− | 1.0− |
| 2002 10 11 | 704 | 1.2+ | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.2+ | | | | |

**2002 SU$_{39}$ = 2006 TX$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.49429 | | (2000.0) | | | |
| $n$ | 0.25714880 | $\omega$ | 321.87955 | | +0.97965286 | −0.19151047 |
| $a$ | 2.4491368 | $\Omega$ | 49.27080 | | +0.19804091 | +0.87389166 |
| $e$ | 0.2478288 | $i$ | 4.54376 | | +0.03255871 | +0.44680769 |
| $P$ | 3.83 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 08 | 608 | 0.2+ | 0.3− | 2002 10 11 | 704 | 1.0− | 0.8− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2002 09 08 | 608 | 0.3+ | 0.3− | 2002 10 11 | 704 | 1.3+ | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2002 09 08 | 608 | 0.3+ | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2002 09 16 | 644 | 0.5+ | 0.6+ | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 12 | 703 | 0.5− | 0.2− |
| 2002 09 16 | 644 | 0.3+ | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 12 | 703 | 0.6+ | 0.1+ |
| 2002 09 16 | 644 | 0.5+ | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 12 | 703 | 0.4− | 0.1+ |
| 2002 09 17 | 608 | 0.4− | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 12 | 703 | 0.2− | 0.0 |
| 2002 09 17 | 608 | 0.4− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.1+ |
| 2002 09 17 | 608 | 0.8− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 1.0+ | 0.2+ |
| 2002 09 30 | 608 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2002 09 30 | 608 | 0.5− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2002 09 30 | 608 | 0.1− | 0.4− | 2006 10 28 | 704 | 0.5− | 0.7+ | 2006 11 13 | 644 | 0.2− | 0.3+ |
| 2002 10 01 | 699 | 0.7+ | 0.1+ | 2006 10 28 | 704 | 0.7+ | 0.9− | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2002 10 01 | 699 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.2+ | 0.6+ |
| 2002 10 01 | 699 | 0.9+ | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.5− | 2006 11 17 | 703 | 1.4− | 0.2− |
| 2002 10 01 | 699 | 0.7+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 1.2− |
| 2002 10 02 | 704 | 0.5− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2002 10 02 | 704 | 0.5− | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.1− | 2006 11 17 | 703 | 1.0− | 0.4− |
| 2002 10 02 | 704 | 0.8− | 0.3− | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.1− | 0.1− |
| 2002 10 02 | 704 | 1.4− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | (0.9− | 1.5+) |
| 2002 10 03 | 704 | 0.2− | 0.9− | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 1.3+ |
| 2002 10 03 | 704 | 0.8− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 1.5+ | 1.3− |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 1.1+ | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.9+ | 0.6+ |
| 2002 10 06 | 704 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.8+ | 1.4+ |
| 2002 10 06 | 704 | 1.2+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.2+ |
| 2002 10 06 | 704 | 0.5+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.8− | 0.6+ |
| 2002 10 06 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2002 10 06 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3+ | 1.1− | 2006 11 20 | G96 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.6+ | 0.1− | 2006 11 11 | G96 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.2− | 0.1+ |
| 2002 10 11 | 704 | 0.2− | 1.0+ | 2006 11 11 | 703 | 0.3+ | 0.4− | | | | |

**2002 SF$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.44327 | | (2000.0) | | | |
| $n$ | 0.22600529 | $\omega$ | 211.50044 | | +0.81939417 | −0.57306557 |
| $a$ | 2.6692565 | $\Omega$ | 183.55588 | | +0.56115457 | +0.80679904 |
| $e$ | 0.1852132 | $i$ | 12.80794 | | +0.11704163 | +0.14377468 |
| $P$ | 4.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 18 | 699 | 0.5+ | 0.1− | 2002 10 03 | 704 | 0.5− | 0.6− | 2006 08 23 | 644 | 0.0 | 0.1+ |
| 2002 09 18 | 699 | 0.4+ | 0.2+ | 2002 10 03 | 704 | 0.5− | 0.9+ | 2006 08 23 | 644 | 0.1+ | 0.3+ |
| 2002 09 18 | 699 | 1.2− | 0.7+ | 2002 10 29 | 645 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.2+ |
| 2002 09 18 | 699 | 0.2+ | 0.3− | 2002 10 29 | 645 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.2+ |
| 2002 09 30 | 608 | 0.1− | 0.0 | 2002 10 30 | 704 | (2.2− | 1.6+) | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2002 09 30 | 608 | 0.3− | 0.6− | 2002 10 30 | 704 | 0.4− | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2002 09 30 | 608 | 0.2− | 0.4− | 2002 10 30 | 704 | 0.7− | 0.0 | 2006 09 16 | 691 | 0.2− | 0.2− |
| 2002 10 01 | 704 | (1.7+ | 0.0 ) | 2002 10 30 | 704 | 0.5− | 0.4+ | 2006 09 16 | 691 | 0.0 | 0.0 |
| 2002 10 01 | 704 | 1.4+ | 0.1+ | 2002 10 30 | 704 | 1.0− | 0.8+ | 2006 09 16 | 691 | 0.0 | 0.1− |
| 2002 10 01 | 704 | 1.4+ | 0.6+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.4+ | 0.3+ |
| 2002 10 01 | 704 | 0.8+ | 0.5+ | 2002 11 07 | 645 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.3+ | 0.1+ | 2002 11 21 | 644 | 0.5− | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 1.1+ | 0.0 | 2002 11 21 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 1.0+ | 0.6− | 2002 11 21 | 644 | 0.5− | 0.4+ | 2006 11 16 | G96 | 0.8− | 0.5− |
| 2002 10 02 | 704 | 0.2+ | 0.4+ | 2003 01 25 | 809 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.4− | 2003 01 25 | 809 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2003 01 25 | 809 | 0.3+ | 0.5+ | | | | |
| 2002 10 03 | 704 | 0.7− | 0.6− | 2003 01 25 | 809 | 0.3+ | 0.4+ | | | | |

**2002 SM$_{41}$ = 2006 SU$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.79857 | | (2000.0) | | | |
| $n$ | 0.24759281 | $\omega$ | 236.93234 | | +0.98884246 | −0.13664218 |
| $a$ | 2.5117555 | $\Omega$ | 130.84773 | | +0.14879465 | +0.92504966 |
| $e$ | 0.1934507 | $i$ | 4.49810 | | −0.00712393 | +0.35441790 |
| $P$ | 3.98 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.9− | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2002 09 16 | 644 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 16 | 703 | (0.3+ | 2.0+) |
| 2002 09 16 | 644 | 0.5− | 0.5+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 10 16 | 703 | (1.7+ | 0.4+) |
| 2002 09 29 | 608 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.8− | 0.9+ |
| 2002 09 29 | 608 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.7− | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2002 09 29 | 608 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 10 01 | 699 | 0.9− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 10 01 | 699 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.8− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 10 01 | 699 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.9− | 2006 10 22 | 703 | 0.8+ | 0.1− |
| 2002 10 01 | 699 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2006 09 18 | 703 | 0.3+ | 0.8− | 2006 10 09 | 644 | 0.8+ | 0.3− | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.4+ | 0.2− | 2006 10 22 | 703 | 0.0 | 0.5− |
| 2006 09 18 | 703 | 0.3− | 0.4− | 2006 10 09 | 644 | 0.3− | 0.2− | 2006 11 25 | G96 | 0.4− | 0.3− |
| 2006 09 18 | 703 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 1.3+ | 2006 11 25 | G96 | 0.3+ | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 699 | 0.4+ | 0.8− | 2006 10 16 | 703 | 0.0 | 0.5− | 2006 11 25 | G96 | 0.2+ | 0.1+ | |
| 2006 09 18 | 699 | 0.4− | 0.5+ | 2006 10 16 | 703 | (1.7− | 1.7+) | 2006 11 25 | G96 | 0.0 | 0.4− | |

**2002 SZ$_{41}$ = 2006 UA$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.60191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26266006 | $\omega$ | 38.00308 | | +0.18270929 | | −0.98260950 |
| $a$ | 2.4147566 | $\Omega$ | 41.49900 | | +0.88936049 | | +0.15082928 |
| $e$ | 0.1815572 | $i$ | 2.86372 | | +0.41911244 | | +0.10830096 |
| $P$ | 3.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 644 | 1.2− | 0.1− | 2004 04 20 | 691 | 0.6+ | 0.2+ | 2006 11 14 | 691 | 0.3+ | 0.1+ | |
| 2002 09 28 | 644 | 1.1− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1− | |
| 2002 09 28 | 644 | 1.1− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.2− | |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1− | |
| 2002 10 02 | 704 | 0.5− | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.9− | |
| 2002 10 02 | 704 | 0.7− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.2+ | |
| 2002 10 02 | 704 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.2− | |
| 2002 10 03 | 704 | 1.1− | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.6+ | 2006 11 18 | 704 | 0.1− | 0.5− | |
| 2002 10 03 | 704 | 0.4+ | 0.7+ | 2006 10 28 | G96 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.9+ | |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.3− | 1.2+ | |
| 2002 10 03 | 704 | 1.1+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4− | 1.4+ | |
| 2002 10 08 | 704 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.7+ | |
| 2002 10 08 | 704 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.5− | 1.1+ | |
| 2002 10 08 | 704 | 0.5− | 0.3− | 2006 11 10 | 691 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.2− | |
| 2002 10 11 | 704 | 1.0+ | 0.5+ | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.1+ | |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.1− | |
| 2002 10 11 | 704 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.4− | 2006 11 22 | 691 | 0.1− | 0.0 | |
| 2002 10 11 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.5− | 2006 12 01 | 704 | 0.6− | 0.3+ | |
| 2002 10 11 | 704 | 0.1− | 0.9+ | 2006 11 11 | 703 | 0.7+ | 1.3− | 2006 12 01 | 704 | 1.0+ | 0.7+ | |
| 2004 04 20 | 691 | 0.3− | 0.7+ | 2006 11 14 | 691 | 0.2+ | 0.1− | 2006 12 01 | 704 | 0.2− | 0.4+ | |
| 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 11 14 | 691 | 0.3+ | 0.0 | 2006 12 01 | 704 | 0.5− | 0.6+ | |

**2002 SB$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.71659 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24667630 | $\omega$ | 316.95492 | | +0.84975702 | | +0.52709033 |
| $a$ | 2.5179732 | $\Omega$ | 11.24723 | | −0.46960914 | | +0.76496759 |
| $e$ | 0.1130101 | $i$ | 2.76907 | | −0.23954177 | | +0.37013560 |
| $P$ | 4.00 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 15 | 327 | 0.4+ | 1.1− | 2002 10 11 | 704 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.1+ | |
| 1998 10 15 | 327 | 0.0 | 0.6− | 2002 10 31 | 704 | 0.6− | 0.7− | 2006 09 30 | 691 | 0.3+ | 0.0 | |
| 1998 10 15 | 327 | 0.0 | 0.0 | 2002 10 31 | 704 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1− | |
| 2002 08 12 | 807 | 0.1− | 0.4− | 2002 10 31 | 704 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.5+ | 0.7+ | |
| 2002 08 12 | 807 | 0.1+ | 0.1− | 2002 10 31 | 704 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1− | |
| 2002 09 28 | 644 | 0.0 | 1.0+ | 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1− | |
| 2002 09 28 | 644 | 0.1− | 0.7+ | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.5− | |
| 2002 09 28 | 644 | 0.3+ | 0.9+ | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2− | |
| 2002 10 02 | 704 | 0.4+ | 0.7− | 2006 09 18 | 699 | 1.4− | 0.3− | 2006 10 16 | G96 | 0.5+ | 0.4− | |
| 2002 10 02 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.7+ | 1.1− | 2006 10 16 | G96 | 0.3+ | 0.3− | |
| 2002 10 02 | 704 | (1.6+ | 0.1−) | 2006 09 18 | 699 | 0.0 | 0.6+ | 2006 10 17 | 703 | (0.7+ | 1.7−) | |
| 2002 10 03 | 704 | 1.1+ | 0.0 | 2006 09 18 | 699 | 0.9− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.7− | |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | (0.9− | 1.5−) | |
| 2002 10 03 | 704 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.6− | |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ | |
| 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | |
| 2002 10 10 | 291 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.0 | |
| 2002 10 10 | 291 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− | |
| 2002 10 10 | 291 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1− | |
| 2002 10 11 | 704 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.3− | |
| 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.5− | |
| 2002 10 11 | 704 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.2− | | | | | |

**2002 SC$_{42}$ = 2005 GY$_{86}$ = 2006 PD$_{13}$**

Id. Minor Planet Center (*MPO* 103406; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.94649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22245599 | $\omega$ | 166.85081 | | +0.99902608 | | +0.04168239 |
| $a$ | 2.6975737 | $\Omega$ | 190.79155 | | −0.04412357 | | +0.94402089 |
| $e$ | 0.0975025 | $i$ | 4.43328 | | +0.00003599 | | +0.32724172 |
| $P$ | 4.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 644 | 0.1− | 0.6+ | 2002 10 09 | 291 | 0.0 | 0.2− | 2006 07 20 | A50 | 0.1+ | 0.6+ | |
| 2002 09 28 | 644 | 0.0 | 0.8+ | 2002 10 09 | 291 | 0.3+ | 0.2− | 2006 07 20 | A50 | 0.4+ | 0.1− | |
| 2002 09 28 | 644 | 0.3− | 0.8+ | 2002 11 13 | 291 | 0.1+ | 0.3+ | 2006 08 14 | 644 | 0.2− | 0.1+ | |
| 2002 10 02 | 704 | 0.1− | 0.1+ | 2002 11 13 | 291 | 0.4− | 0.6− | 2006 08 14 | 644 | 0.2− | 0.6− | |
| 2002 10 02 | 704 | 0.4+ | 0.2− | 2002 11 13 | 291 | 0.3+ | 0.3+ | 2006 08 14 | 644 | 0.0 | 0.7− | |
| 2002 10 02 | 704 | 0.9− | 0.3− | 2005 04 04 | G96 | 1.6− | 1.0− | 2006 08 14 | E12 | 0.3+ | 0.1+ | |
| 2002 10 02 | 704 | 0.4+ | 1.3+ | 2005 04 04 | G96 | 0.5+ | 1.4− | 2006 08 14 | E12 | 0.1− | 0.3− | |
| 2002 10 03 | 704 | 0.0 | 0.7− | 2005 04 04 | G96 | 0.0 | 0.3+ | 2006 08 14 | E12 | 0.1+ | 1.3+ | |
| 2002 10 03 | 704 | 0.5+ | 1.2− | 2005 04 04 | G96 | 0.2+ | 0.2+ | 2006 08 14 | E12 | 0.3− | 0.5− | |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2005 04 11 | G96 | 0.1+ | 0.3+ | 2006 08 14 | E12 | 0.4+ | 0.5+ | |
| 2002 10 03 | 704 | 0.3+ | 0.2− | 2005 04 11 | G96 | 0.2+ | 0.9+ | 2006 08 15 | 644 | 0.0 | 0.2− | |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.3+ | 0.8+ | 2006 08 15 | 644 | 0.3− | 0.5− | |
| 2002 10 09 | 291 | 0.0 | 0.3− | 2005 04 11 | G96 | 0.3+ | 0.3+ | 2006 08 15 | 644 | 0.2− | 0.2− | |

**2002 SH$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.35519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22494079 | $\omega$ | 245.56400 | | −0.00929996 | | −0.99662514 |
| $a$ | 2.6776712 | $\Omega$ | 205.37743 | | +0.97248335 | | +0.00997313 |
| $e$ | 0.1558291 | $i$ | 10.97032 | | +0.23278671 | | −0.08147921 |
| $P$ | 4.38 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.4− | 0.6+ | 2002 10 07 | 704 | 0.5− | 0.5+ | 2002 11 06 | 704 | 0.5− | 1.5+ | |
| 2002 09 29 | 608 | 0.1+ | 0.0 | 2002 10 07 | 704 | 0.1− | 0.1− | 2002 11 06 | 704 | 0.0 | 0.3− | |
| 2002 09 29 | 608 | 0.3− | 1.5+ | 2002 10 09 | 704 | 0.0 | 0.7− | 2002 11 07 | 695 | 0.1− | 0.6− | |
| 2002 10 02 | 704 | 0.1− | 1.7− | 2002 10 09 | 704 | 0.2+ | 0.8− | 2002 11 07 | 695 | 0.0 | 0.4− | |
| 2002 10 02 | 704 | 0.9+ | 1.4− | 2002 10 09 | 704 | 0.9− | 0.2− | 2006 09 11 | 703 | 0.6− | 0.4+ | |
| 2002 10 02 | 704 | 1.0+ | 0.8− | 2002 10 09 | 704 | 0.9+ | 0.5+ | 2006 09 11 | 703 | 0.9− | 0.4+ | |
| 2002 10 02 | 704 | 0.5+ | 0.8+ | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 09 11 | 703 | 1.5+ | 1.4− | |
| 2002 10 03 | 704 | 0.3− | 0.5− | 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 09 11 | 703 | 0.1+ | 0.1− | |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2002 10 11 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.1+ | |
| 2002 10 03 | 704 | 1.1− | 0.8+ | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.3− | 1.4− | |
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.6+ | |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2002 11 06 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.1+ | 1.3+ | |
| 2002 10 07 | 704 | 0.3+ | 0.1+ | 2002 11 06 | 704 | 0.4+ | 0.5− | | | | | |

**2002 SM$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.12690 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27450980 | $\omega$ | 3.07600 | | +0.95431992 | | −0.29861125 |
| $a$ | 2.3447550 | $\Omega$ | 14.31093 | | +0.27323977 | | +0.85834726 |
| $e$ | 0.2358819 | $i$ | 2.37383 | | +0.12088641 | | +0.41721854 |
| $P$ | 3.59 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.4+ | 0.9+ | 2002 10 02 | 704 | 0.3− | 0.9+ | 2002 10 11 | 704 | 0.5+ | 0.5− | |
| 2001 05 23 | 807 | 0.2+ | 1.0+ | 2002 10 03 | 704 | 0.7− | 0.4+ | 2002 10 11 | 704 | 0.7− | 0.2+ | |
| 2002 09 17 | 049 | 0.5− | 0.7+ | 2002 10 03 | 704 | 0.3− | 1.1+ | 2002 10 11 | 704 | 0.1+ | 1.6+ | |
| 2002 09 18 | 049 | 0.2− | 0.1− | 2002 10 03 | 704 | 0.6− | 0.9+ | 2002 10 11 | 704 | 0.8+ | 1.2+ | |
| 2002 09 18 | 049 | 0.4− | 0.1− | 2002 10 03 | 704 | 0.4− | 1.0+ | 2002 11 22 | 644 | 0.2− | 0.2− | |
| 2002 09 29 | 291 | 0.2+ | 0.2− | 2002 10 03 | 704 | 0.7− | 1.0+ | 2002 11 22 | 644 | 0.2− | 0.0 | |
| 2002 09 29 | 291 | 0.2+ | 0.2− | 2002 10 07 | 704 | 0.3+ | 0.0 | 2002 11 22 | 644 | 0.3− | 0.1+ | |
| 2002 09 29 | 608 | 0.0 | 0.7+ | 2002 10 07 | 704 | 0.2+ | 0.4− | 2004 03 15 | 691 | 0.2+ | 1.0+ | |
| 2002 09 29 | 608 | 0.2− | 0.5+ | 2002 10 07 | 704 | 0.4+ | 0.1+ | 2004 03 15 | 691 | 0.2+ | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 291 | 0.1+ | 0.2− | 2002 10 07 | 704 | 0.3+ | 0.2− | 2004 03 15 | 691 | 0.6+ | 0.6+ | | |
| 2002 09 29 | 608 | 0.5− | 0.6+ | 2002 10 09 | 704 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.8− | 0.8− | | |
| 2002 10 02 | 704 | 0.2− | 0.8+ | 2002 10 09 | 704 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.8− | | |
| 2002 10 02 | 704 | 0.7− | 0.8− | 2002 10 09 | 704 | 0.7− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.6− | | |
| 2002 10 02 | 704 | 0.4+ | 0.5+ | 2002 10 09 | 704 | 0.2− | 0.8− | 2006 11 25 | G96 | 0.1+ | 0.4− | | |
| 2002 10 02 | 704 | 0.8− | 0.0 | 2002 10 11 | 704 | 0.9+ | 0.2− | | | | | | |

**2002 SG$_{47}$ = 2006 VK$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.71462 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27513403 | $\omega$ | 36.33884 | | +0.99903186 | −0.04093328 | |
| $a$ | 2.3412072 | $\Omega$ | 325.99638 | | +0.03040290 | +0.90723023 | |
| $e$ | 0.0747604 | $i$ | 1.65164 | | +0.03179648 | +0.41863800 | |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 704 | 0.2+ | 0.0 | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2002 09 30 | 704 | 0.7− | 0.2− | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.0 | 0.3− | | |
| 2002 09 30 | 704 | 1.1− | 0.7+ | 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2− | | |
| 2002 09 30 | 704 | 0.6− | 0.2− | 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 30 | 704 | 0.7− | 1.0− | 2004 02 12 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.5− | | |
| 2002 10 02 | 704 | 0.5+ | 0.1− | 2004 02 12 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.3− | | |
| 2002 10 02 | 704 | 0.8+ | 0.3+ | 2004 03 20 | 691 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.1+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.0 | 2004 03 20 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.1− | | |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2004 03 20 | 691 | 0.1+ | 0.1+ | 2006 11 29 | H07 | 0.7− | 2.2+ | | |
| 2002 10 03 | 704 | 0.5+ | 1.0+ | 2006 09 28 | G96 | 0.4− | 0.6− | 2006 11 29 | H07 | (1.1− | 4.9+) | | |
| 2002 10 03 | 704 | 0.1− | 0.8+ | 2006 09 28 | G96 | 1.0+ | 0.3+ | 2006 12 01 | H07 | 0.1+ | 0.3− | | |
| 2002 10 03 | 704 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.5− | 0.1− | 2006 12 01 | H07 | 0.2+ | 0.3− | | |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.8+ | 0.6− | 2006 12 01 | H07 | 0.2− | 0.4+ | | |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.3− | 0.3− | | | | | | |

**2002 SQ$_{47}$ = 2006 RU$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.51279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23727973 | $\omega$ | 188.37653 | | +0.97729601 | −0.21112468 | |
| $a$ | 2.5840186 | $\Omega$ | 183.94839 | | +0.20630712 | +0.96741211 | |
| $e$ | 0.2525038 | $i$ | 15.03029 | | +0.04826874 | +0.13978622 | |
| $P$ | 4.15 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 699 | 0.5+ | 0.5+ | 2002 10 02 | 704 | 0.1− | 0.5+ | 2006 09 11 | 703 | 0.0 | 0.0 | | |
| 2002 09 05 | 699 | 0.1− | 0.2+ | 2002 10 03 | 704 | 0.6+ | 0.6+ | 2006 09 11 | 703 | 0.6− | 0.1− | | |
| 2002 09 05 | 699 | 0.6− | 0.1− | 2002 10 03 | 704 | 0.3+ | 0.1+ | 2006 09 11 | 703 | 1.1+ | 0.5− | | |
| 2002 09 05 | 699 | 0.5+ | 0.0 | 2002 10 03 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 691 | 0.1− | 0.1+ | | |
| 2002 09 14 | 644 | 0.1+ | 0.3− | 2002 10 03 | 704 | 0.1− | 0.0 | 2006 09 16 | 691 | 0.1− | 0.2+ | | |
| 2002 09 14 | 644 | 0.2+ | 0.3− | 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.1− | 0.3− | 2002 10 04 | 644 | 0.6− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.5− | | |
| 2002 09 30 | 704 | 0.9− | 0.2− | 2002 10 04 | 644 | 0.5− | 0.4+ | 2006 09 18 | 691 | 0.3+ | 0.1+ | | |
| 2002 09 30 | 704 | 0.5− | 0.6− | 2002 10 04 | 644 | 0.6− | 0.3+ | 2006 09 18 | 703 | (1.5+ | 0.9+) | | |
| 2002 09 30 | 704 | 1.2− | 0.2− | 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.3+ | | |
| 2002 09 30 | 704 | 0.1− | 0.3− | 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 30 | 704 | 0.8− | 0.1+ | 2002 10 06 | 608 | (2.9− | 2.0+) | 2006 09 18 | 703 | 0.9− | 0.5+ | | |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2002 10 06 | 608 | (1.8− | 1.4+) | 2006 09 18 | 703 | 0.5− | 0.1− | | |
| 2002 10 02 | 704 | 0.5− | 0.8+ | 2002 10 06 | 608 | (2.5− | 1.6+) | | | | | | |
| 2002 10 02 | 704 | 0.6− | 0.7− | 2006 09 11 | 703 | 0.5− | 0.8− | | | | | | |

**2002 SC$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.91971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22869486 | $\omega$ | 243.69952 | | +0.35148097 | −0.93536186 | |
| $a$ | 2.6482874 | $\Omega$ | 186.13681 | | +0.93513671 | +0.35277621 | |
| $e$ | 0.0604263 | $i$ | 21.67760 | | +0.04450235 | −0.02543883 | |
| $P$ | 4.31 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 15 | 691 | 0.2− | 0.4+ | 2002 10 03 | 704 | 0.1− | 0.5+ | 2002 10 11 | 644 | 0.0 | 0.6+ | | |
| 1996 04 15 | 691 | 0.1+ | 0.0 | 2002 10 03 | 704 | 0.4− | 0.1+ | 2002 10 11 | 704 | 0.3+ | 0.5+ | | |
| 1996 04 15 | 691 | 0.0 | 0.3− | 2002 10 03 | 704 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.5+ | 0.1+ | | |
| 2002 09 05 | 704 | (1.9− | 0.1−) | 2002 10 05 | 644 | 0.2− | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | 1.1− | 0.4+ | 2002 10 05 | 644 | 0.4− | 0.3+ | 2002 10 11 | 645 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | (1.7− | 0.8+) | 2002 10 05 | 644 | 0.3− | 0.3+ | 2006 08 27 | 699 | 0.6+ | 0.1− | | |
| 2002 09 14 | 644 | 0.3− | 0.1− | 2002 10 07 | 704 | 0.5− | 0.6+ | 2006 08 27 | 699 | 0.8+ | 0.7− | | |
| 2002 09 14 | 644 | 0.2− | 0.4− | 2002 10 07 | 704 | 0.9− | 0.1+ | 2006 08 27 | 699 | (1.2+ | 1.8−) | | |
| 2002 09 14 | 644 | 0.5− | 0.2− | 2002 10 07 | 704 | 0.0 | 0.8+ | 2006 08 27 | 699 | 0.8− | 0.2− | | |
| 2002 09 30 | 704 | 0.4+ | 0.1− | 2002 10 07 | 704 | (0.3− | 1.6+) | 2006 09 19 | 703 | 0.2− | 1.0− | | |
| 2002 09 30 | 704 | 0.0 | 0.3− | 2002 10 08 | 699 | 1.0+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.6+ | | |
| 2002 09 30 | 704 | 0.3+ | 0.1− | 2002 10 08 | 699 | 1.1+ | 1.2− | 2006 09 19 | 703 | 0.3+ | 0.3− | | |
| 2002 09 30 | 704 | 0.8+ | 0.3+ | 2002 10 08 | 699 | 0.2− | 0.8+ | 2006 09 19 | 703 | 0.2− | 0.7− | | |
| 2002 09 30 | 704 | 0.6+ | 0.2− | 2002 10 08 | 699 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 2002 10 02 | 704 | 0.0 | 0.2+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.2− | 0.2+ | | |
| 2002 10 02 | 704 | 0.2+ | 0.2+ | 2002 10 10 | 645 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2002 10 11 | 644 | 0.2− | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.2− | 0.2+ | 2002 10 11 | 704 | 0.0 | 0.9+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.1− | 0.2+ | 2002 10 11 | 644 | 0.1+ | 0.8+ | 2006 09 30 | 691 | 0.3− | 0.2+ | | |
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2002 10 11 | 704 | 0.6+ | 0.6+ | | | | | | |

**2002 ST$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.67259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24156339 | $\omega$ | 274.49780 | | +0.81404446 | −0.57984471 | |
| $a$ | 2.5533791 | $\Omega$ | 120.94540 | | +0.54710471 | +0.74627948 | |
| $e$ | 0.3112730 | $i$ | 2.22801 | | +0.19495653 | +0.32687467 | |
| $P$ | 4.08 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 683 | 0.6+ | 1.4+ | 2002 10 31 | 704 | 0.3− | 0.8+ | 2006 09 19 | 704 | 0.1+ | 0.3− | | |
| 2002 09 28 | 683 | 0.4− | 0.1− | 2002 10 31 | 704 | 0.1+ | 1.1+ | 2006 09 19 | 699 | 0.4+ | 0.1− | | |
| 2002 09 28 | 683 | (2.1+ | 1.6+) | 2002 10 31 | 704 | 0.0 | 0.6+ | 2006 09 19 | 704 | (1.1− | 1.9+) | | |
| 2002 09 30 | 704 | 0.8+ | 0.6+ | 2002 10 31 | 704 | 1.1+ | 0.8+ | 2006 09 19 | 699 | 1.0+ | 0.8− | | |
| 2002 09 30 | 704 | 0.2− | 0.5+ | 2002 10 31 | 704 | 0.3− | 0.9+ | 2006 09 25 | 699 | 0.4+ | 0.2− | | |
| 2002 09 30 | 704 | 0.3− | 0.4+ | 2002 10 31 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 699 | (1.6+ | 0.3+) | | |
| 2002 09 30 | 704 | 0.2− | 1.1+ | 2002 10 31 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.8+ | 0.7+ | | |
| 2002 10 02 | 704 | 0.5+ | 0.6− | 2002 10 31 | 704 | 1.2+ | 1.3+ | 2006 09 25 | 699 | (1.8+ | 1.5+) | | |
| 2002 10 02 | 704 | (1.5− | 0.8−) | 2002 10 31 | 704 | 0.5− | 0.0 | 2006 09 26 | 704 | (2.0+ | 0.0 ) | | |
| 2002 10 02 | 704 | 0.7+ | 0.7− | 2002 10 31 | 704 | 0.6− | 0.6+ | 2006 09 26 | 704 | 0.6+ | 0.9+ | | |
| 2002 10 02 | 704 | 1.0− | 1.5− | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.8+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 09 26 | 704 | 1.4− | 0.2+ | | |
| 2002 10 03 | 704 | 0.4− | 0.9+ | 2006 08 28 | 703 | 0.9+ | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.3− | | |
| 2002 10 03 | 704 | 1.0− | 0.4+ | 2006 08 28 | 703 | (0.8− | 2.4−) | 2006 09 30 | 703 | 0.6− | 0.3+ | | |
| 2002 10 03 | 704 | 0.6− | 0.9+ | 2006 08 28 | 703 | 1.4− | 0.0 | 2006 09 30 | 703 | 1.1− | 0.2− | | |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2006 08 28 | 703 | (0.7+ | 1.8−) | 2006 09 30 | 703 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 1.4− | 2006 09 30 | 703 | 0.7+ | 0.1− | | |
| 2002 10 11 | 704 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.6− | | |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.6− | 2006 10 02 | G96 | 0.0 | 0.5− | | |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.0 | 0.6− | | |
| 2002 10 11 | 704 | 0.4− | 0.4+ | 2006 09 19 | 699 | 1.3+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.8− | | |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2006 09 19 | 704 | (0.1− | 1.6−) | | | | | | |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2006 09 19 | 699 | 1.0− | 0.7+ | | | | | | |

**2002 SP$_{49}$ = 2006 VZ$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.87498 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26337697 | $\omega$ | 281.48319 | | +0.76840136 | −0.63843654 | |
| $a$ | 2.4103726 | $\Omega$ | 118.20862 | | +0.60499541 | +0.70212647 | |
| $e$ | 0.2060327 | $i$ | 2.87830 | | +0.20866216 | +0.31530495 | |
| $P$ | 3.74 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.1+ | 0.1+ | 2002 10 03 | 704 | 0.5− | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.7− | | |
| 2002 09 14 | 608 | 0.4+ | 0.0 | 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.2− | 0.2+ | 2002 10 03 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2002 09 16 | 644 | 0.2− | 0.0 | 2002 10 03 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2002 09 16 | 644 | 0.2− | 0.2+ | 2002 10 08 | 699 | 0.9− | 0.7− | 2006 11 17 | 704 | (2.3+ | 1.0+) | | |
| 2002 09 16 | 644 | 0.0 | 0.0 | 2002 10 08 | 699 | 0.5− | 0.1+ | 2006 11 17 | 704 | (1.5+ | 1.7+) | | |
| 2002 09 16 | 644 | 0.2− | 0.1+ | 2002 10 08 | 699 | 0.1+ | 1.0+ | 2006 11 17 | 704 | (2.7+ | 1.7+) | | |
| 2002 09 16 | 644 | 0.0 | 0.1− | 2002 10 08 | 699 | 0.9+ | 0.5− | 2006 11 17 | 704 | (1.7+ | 0.5+) | | |
| 2002 09 16 | 644 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.8− | 2006 11 17 | 704 | (2.9+ | 0.6+) | | |
| 2002 09 30 | 704 | 1.1+ | 1.3+ | 2002 10 11 | 704 | (0.9− | 1.6+) | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2002 09 30 | 704 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.5− | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.0 | | |
| 2002 09 30 | 704 | 0.3+ | 0.5+ | 2002 10 11 | 704 | 0.4+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1+ | | |
| 2002 09 30 | 704 | (1.6+ | 0.5+) | 2006 10 21 | D35 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1+ | | |
| 2002 10 02 | 704 | 0.2− | 0.5− | 2006 10 21 | D35 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2002 10 02 | 704 | 0.5− | 0.1+ | 2006 10 21 | D35 | 0.2+ | 0.0 | 2006 11 22 | 691 | (3.7+ | 0.7−) | | |
| 2002 10 02 | 704 | 0.2− | 0.4+ | 2006 11 12 | 703 | (0.1− | 1.8−) | 2006 11 29 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.3− | 0.4− | 2006 11 12 | 703 | (0.0 | 1.8−) | 2006 11 29 | 704 | 1.0− | 1.2+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.9− | 2006 11 12 | 703 | 0.2− | 0.9− | 2006 11 29 | 704 | 0.0 | 0.4+ | | |
| 2002 10 03 | 704 | 0.8+ | 1.2− | 2006 11 12 | 703 | 1.0− | 1.4− | 2006 11 29 | 704 | 0.2+ | 0.5+ | | |

**2002 SQ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.49092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25634788 | $\omega$ | 299.23261 | | +0.64084662 | −0.76606401 | |
| $a$ | 2.4542354 | $\Omega$ | 110.82653 | | +0.72146489 | +0.57893330 | |
| $e$ | 0.1913874 | $i$ | 3.04282 | | +0.26230521 | +0.27925287 | |
| $P$ | 3.84 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 704 | (0.2− | 1.9+) | 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.8+ | 0.1− | | |
| 2002 09 30 | 704 | 0.2− | 1.4+ | 2006 10 16 | 703 | 0.8+ | 0.8+ | 2006 11 17 | 704 | 0.4+ | 0.1+ | | |
| 2002 09 30 | 704 | 0.4− | 1.4+ | 2006 10 16 | 703 | 1.1+ | 0.6+ | 2006 11 17 | 704 | 0.4+ | 0.8− | | |
| 2002 10 02 | 704 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.2+ | 1.0+ | 2006 11 17 | 704 | 0.1+ | 0.5− | | |
| 2002 10 02 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.2− | | |
| 2002 10 02 | 704 | 0.8− | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.5− | 0.2− | | |
| 2002 10 03 | 704 | 0.7+ | 1.2+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.8+ | 1.0+ | 2006 10 18 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.6− | 0.2− | | |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.5− | 0.3− | | |
| 2002 10 03 | 704 | 1.0+ | 1.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.3− | | |
| 2002 10 03 | 704 | 0.1+ | 0.8+ | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.7− | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.1− | | |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.5+ | | |
| 2002 10 08 | 699 | 0.4− | 0.2+ | 2006 11 02 | 703 | 0.4− | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.4+ | | |
| 2002 10 08 | 699 | 0.9− | 0.5+ | 2006 11 02 | 703 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.9+ | | |
| 2002 10 08 | 699 | 0.4− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.6+ | | |
| 2002 10 08 | 699 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.2− | | |
| 2002 10 11 | 704 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.1− | 1.3+ | | |
| 2002 10 11 | 704 | 0.7− | 0.3− | 2006 11 11 | 683 | 0.6− | 0.2− | 2006 11 20 | 704 | 1.3+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.7− | 0.6+ | 2006 11 11 | 683 | 0.8− | 0.7− | 2006 11 23 | 683 | 0.3− | 0.8− | | |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 11 11 | 683 | 1.3− | 1.0− | 2006 11 23 | 683 | (1.1− | 2.0+) | | |
| 2002 10 28 | 644 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.3− | 2006 11 23 | 683 | 0.6− | 0.4+ | | |
| 2002 10 28 | 644 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.0 | 2006 11 25 | 683 | 0.1− | 0.1− | | |
| 2002 10 28 | 644 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 25 | 683 | 1.5+ | 0.8+ | | |
| 2002 10 30 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.1+ | 2006 11 25 | 683 | 0.5− | 1.1+ | | |
| 2002 10 30 | 704 | 0.1− | 0.5+ | 2006 11 13 | 683 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.2− | 0.0 | | |
| 2002 10 30 | 704 | 0.9− | 0.1− | 2006 11 13 | 683 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.3+ | 0.8+ | | |
| 2002 10 30 | 704 | 1.0− | 0.3− | 2006 11 13 | 683 | 0.6− | 0.7+ | 2006 11 28 | 704 | 0.2+ | 0.7− | | |
| 2002 10 31 | 645 | 0.1+ | 0.2− | 2006 11 15 | 683 | 0.6+ | 1.0− | 2006 11 28 | 704 | 1.9+ | 0.4− | | |
| 2002 10 31 | 645 | 0.1+ | 0.2− | 2006 11 15 | 683 | (0.5− | 1.7−) | 2006 11 28 | 704 | 0.6− | 0.3− | | |
| 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 11 15 | 683 | 0.3− | 0.7− | | | | | | |

**2002 SS$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.80496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25678768 | $\omega$ | 260.34033 | | +0.68293220 | +0.72671288 | |
| $a$ | 2.4514324 | $\Omega$ | 52.99990 | | −0.62854017 | +0.63628794 | |
| $e$ | 0.2022772 | $i$ | 5.32433 | | −0.37221078 | +0.25889387 | |
| $P$ | 3.84 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 704 | 1.0− | 0.5− | 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | | |
| 2002 09 30 | 704 | 0.6− | 1.0+ | 2002 10 11 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.1+ | | |
| 2002 09 30 | 704 | 0.7− | 0.9+ | 2002 10 11 | 704 | 0.7− | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1− | | |
| 2002 10 02 | 704 | 0.5+ | 1.5− | 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2002 10 02 | 704 | 1.0+ | 1.0− | 2002 10 11 | 704 | 0.5− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2002 10 02 | 704 | 0.5+ | 1.5− | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2002 10 03 | 704 | 0.2+ | 1.0+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.0 | 0.7− | | |
| 2002 10 03 | 704 | 0.4+ | 0.5+ | 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.5+ | | |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | (0.2− | 1.5−) | | |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.4+ | 0.0 | | | | | | |
| 2002 10 05 | 645 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | | | | | | |

**2002 SH$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.72807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26205221 | $\omega$ | 332.44725 | | +0.98250353 | −0.18518237 | |
| $a$ | 2.4184893 | $\Omega$ | 38.24098 | | +0.17623506 | +0.88992195 | |
| $e$ | 0.2278306 | $i$ | 1.83842 | | +0.06023305 | +0.41682901 | |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.1− | 1.4− | 2002 10 03 | 704 | 0.6− | 0.3+ | 2002 11 06 | 704 | 0.3+ | 0.1− | | |
| 1998 08 17 | 704 | 0.0 | 0.4− | 2002 10 07 | 704 | 0.6− | 0.2− | 2002 11 06 | 704 | 0.3− | 0.5+ | | |
| 1998 08 17 | 704 | 1.1+ | 0.8+ | 2002 10 07 | 704 | 0.0 | 0.2− | 2002 11 06 | 704 | 0.1+ | 0.5− | | |
| 1998 08 17 | 704 | (0.3+ | 2.3−) | 2002 10 07 | 704 | 0.3− | 0.0 | 2002 11 06 | 704 | 1.3+ | 0.3+ | | |
| 1998 08 17 | 704 | (2.6− | 0.2−) | 2002 10 07 | 704 | 0.1− | 0.3− | 2002 11 06 | 704 | 0.5+ | 1.1+ | | |
| 2000 02 06 | 695 | 0.1+ | 0.2+ | 2002 10 07 | 704 | 0.6− | 0.3+ | 2002 11 10 | 704 | (1.8− | 0.2+) | | |
| 2000 02 06 | 695 | 0.0 | 0.4+ | 2002 10 09 | 704 | 0.4+ | 0.2+ | 2002 11 10 | 704 | 0.2− | 1.1+ | | |
| 2001 05 02 | 691 | 0.0 | 0.3+ | 2002 10 09 | 704 | 0.7+ | 0.2− | 2002 11 10 | 704 | 0.7+ | 0.3− | | |
| 2001 05 02 | 691 | 0.9+ | 1.2+ | 2002 10 09 | 704 | 0.8+ | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.3+ | | |
| 2001 05 02 | 691 | 0.3− | 0.6+ | 2002 10 09 | 704 | 0.3+ | 0.0 | 2002 12 05 | 704 | 0.3− | 0.5− | | |
| 2002 09 30 | 608 | 0.4− | 1.0+ | 2002 10 09 | 704 | 0.7+ | 0.3+ | 2002 12 05 | 704 | 0.2+ | 0.2− | | |
| 2002 09 30 | 608 | 0.6− | 0.6+ | 2002 10 10 | 644 | 0.1− | 0.0 | 2002 12 05 | 704 | 0.3− | 0.3− | | |
| 2002 09 30 | 608 | 1.0− | 1.0+ | 2002 10 10 | 644 | 0.3− | 0.0 | 2002 12 05 | 704 | 0.3− | 0.4− | | |
| 2002 10 02 | 704 | 0.7− | 0.2− | 2002 10 10 | 644 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.0 | | |
| 2002 10 02 | 704 | 1.0− | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.3− | | |
| 2002 10 02 | 704 | 0.8− | 0.0 | 2002 10 11 | 704 | 0.5+ | 0.2− | 2006 11 10 | 691 | (0.0 | 2.2−) | | |
| 2002 10 02 | 704 | 0.3− | 0.5+ | 2002 10 11 | 704 | 1.2+ | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.7+ | | |
| 2002 10 02 | 704 | 0.1− | 0.7+ | 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2002 10 11 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2002 11 01 | 704 | 0.7− | 0.6− | 2006 11 18 | 704 | 0.6+ | 1.1+ | | |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2002 11 01 | 704 | 0.6− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.1− | 0.2+ | 2002 11 01 | 704 | 0.2− | 0.1− | | | | | | |

**2002 SK$_{51}$ = 2006 UY$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.60962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26416368 | $\omega$ | 302.05799 | | +0.90458457 | +0.42325128 | |
| $a$ | 2.4055847 | $\Omega$ | 32.98183 | | −0.35282860 | +0.81028529 | |
| $e$ | 0.1767986 | $i$ | 5.35919 | | −0.23924618 | +0.40533455 | |
| $P$ | 3.73 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.6+ | 0.3+ | 2002 10 03 | 704 | 0.6+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2002 09 16 | 644 | 0.6+ | 0.4+ | 2002 10 03 | 704 | 0.5− | 0.8+ | 2006 11 09 | 644 | 0.5+ | 0.3+ | | |
| 2002 09 16 | 644 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.5− | | |
| 2002 09 19 | 644 | 0.4− | 0.9− | 2006 10 16 | 691 | 0.5+ | 0.2+ | 2006 11 13 | G96 | 0.6+ | 0.4− | | |
| 2002 09 19 | 644 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.5− | | |
| 2002 09 19 | 644 | 0.5− | 0.7− | 2006 10 20 | 691 | 0.5− | 0.2− | 2006 11 13 | G96 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.7+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.2− | 0.2+ | | | | | | |

**2002 SQ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 103.31619 | | (2000.0) | | | |
| $n$ | 0.29357813 | $\omega$ | 23.01234 | | +0.79277378 | +0.59042488 |
| $a$ | 2.2420928 | $\Omega$ | 299.92533 | | −0.58285762 | +0.66171988 |
| $e$ | 0.1852302 | $i$ | 10.05759 | | −0.17828834 | +0.46208794 |
| $P$ | 3.36 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 704 | 1.4+ | 0.9+ | 2002 09 27 | 644 | 0.4− | 0.1+ | 2002 11 01 | 644 | 0.1− | 0.6+ |
| 2002 08 30 | 704 | 0.6+ | 0.6+ | 2002 09 27 | 644 | 0.0 | 0.2+ | 2004 02 18 | 691 | 0.0 | 0.1+ |
| 2002 08 30 | 704 | 0.9+ | 0.6+ | 2002 09 27 | 644 | 0.1+ | 0.2+ | 2004 02 18 | 691 | 0.4+ | 0.1+ |
| 2002 09 20 | 644 | 0.6− | 0.1− | 2002 10 10 | 704 | 0.2+ | 0.8− | 2004 02 18 | 691 | 0.1− | 0.1+ |
| 2002 09 20 | 644 | 0.6− | 0.2− | 2002 10 10 | 704 | 0.2− | 0.4− | 2005 10 30 | 291 | 0.0 | 0.2+ |
| 2002 09 20 | 644 | 0.5− | 0.1+ | 2002 10 10 | 704 | 0.7+ | 1.1− | 2005 10 30 | 291 | 0.3− | 0.0 |
| 2002 09 21 | 644 | 0.5− | 0.3+ | 2002 10 10 | 704 | 0.5+ | 1.2− | 2005 10 30 | 291 | 0.1+ | 0.3+ |
| 2002 09 21 | 644 | 0.4− | 0.2+ | 2002 11 01 | 644 | 0.2− | 0.2+ | | | | |
| 2002 09 21 | 644 | 0.3− | 0.1− | 2002 11 01 | 644 | 0.2− | 0.3+ | | | | |

**2002 SV$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.59248 | | (2000.0) | | | |
| $n$ | 0.26718099 | $\omega$ | 314.91285 | | +0.98213249 | −0.17333846 |
| $a$ | 2.3874393 | $\Omega$ | 55.20372 | | +0.18777302 | +0.87668225 |
| $e$ | 0.2092255 | $i$ | 5.11951 | | +0.01253255 | +0.44875608 |
| $P$ | 3.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2002 08 12 | 608 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2002 08 12 | 608 | 0.5+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2002 08 14 | 704 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2002 08 14 | 704 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2002 08 14 | 704 | 0.8+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.5+ | 1.0+ |
| 2002 08 14 | 704 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.6− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2002 08 18 | 608 | 1.1− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.5− | 0.0 |
| 2002 08 18 | 608 | 0.9− | 0.9+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 08 18 | 608 | 1.1− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2002 08 19 | 644 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.9− | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2002 08 19 | 644 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | (1.7+ | 0.8+) |
| 2002 08 19 | 644 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.7− | 2006 11 22 | 704 | 1.5+ | 0.8+ |
| 2002 09 30 | 608 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.1− | 2006 11 22 | 704 | 1.2+ | 0.5+ |
| 2002 09 30 | 608 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 11 26 | 704 | 0.4+ | 0.1− |
| 2002 09 30 | 608 | 0.5+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.2+ | 2006 11 26 | 704 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.2+ | 0.5− | 2006 11 11 | 703 | 1.1− | 0.1+ | 2006 11 26 | 704 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2002 10 04 | 704 | 0.7+ | 0.5− | 2006 11 13 | 644 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.7+ | 0.6+ |
| 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.3− | 0.6+ | 2006 11 29 | 704 | 0.5+ | 0.3− |
| 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 11 17 | 704 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.3− | 0.2− |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 17 | 704 | 1.0+ | 0.2− | 2006 11 29 | 704 | (0.7− | 2.0−) |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 1.0− | 0.5− | 2006 11 29 | 704 | 0.5+ | 0.7− |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.2− | | | | |
| 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.2− | | | | |

**2002 SA$_{56}$ = 2006 VA$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.94535 | | (2000.0) | | | |
| $n$ | 0.26322930 | $\omega$ | 306.79923 | | +0.98925851 | −0.09818973 |
| $a$ | 2.4112740 | $\Omega$ | 59.07242 | | +0.13708796 | +0.88032990 |
| $e$ | 0.1404203 | $i$ | 7.25220 | | −0.05073949 | +0.46408839 |
| $P$ | 3.74 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 704 | 0.3− | 0.6+ | 2002 10 15 | 644 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 2002 09 30 | 704 | 0.6− | 0.0 | 2002 10 28 | 644 | 0.9+ | 0.5− | 2006 11 18 | 704 | 0.1− | 0.5− |
| 2002 09 30 | 704 | (0.2+ | 1.7−) | 2002 10 28 | 644 | 0.7+ | 0.4− | 2006 11 18 | 704 | 1.1− | 1.3+ |
| 2002 10 04 | 704 | 1.2− | 0.3+ | 2002 10 28 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.8+ |
| 2002 10 04 | 704 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.7− | 0.2+ |
| 2002 10 04 | 704 | 1.0− | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 1.2− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.3− |
| 2002 10 04 | 704 | 0.9+ | 0.3− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.4+ | 1.0+ |
| 2002 10 07 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 1.0− | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2002 10 07 | 644 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 10 07 | 644 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.5− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2002 10 08 | 699 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.4− | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2002 10 08 | 699 | 0.6− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 0.4+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2002 10 08 | 699 | 0.7+ | 0.6+ | 2006 11 15 | 691 | 0.8+ | 0.8+ | 2006 12 01 | 691 | 0.0 | 0.2− |
| 2002 10 15 | 644 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.6+ | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2002 10 15 | 644 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.3− | 2006 12 01 | 691 | 0.1+ | 0.3− |

**2002 SD$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.64929 | | (2000.0) | | | |
| $n$ | 0.24172067 | $\omega$ | 215.27557 | | +0.86648906 | −0.49856693 |
| $a$ | 2.5522714 | $\Omega$ | 174.45162 | | +0.49646624 | +0.85542304 |
| $e$ | 0.1032169 | $i$ | 15.01851 | | +0.05213429 | +0.14029412 |
| $P$ | 4.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.2+ | 0.5− | 2002 11 06 | 644 | 0.5− | 0.7+ | 2006 09 20 | 691 | 0.1+ | 0.2− |
| 2002 09 29 | 608 | 0.4− | 0.4− | 2002 11 06 | 644 | 0.0 | 0.8+ | 2006 09 20 | 691 | 0.2+ | 0.1+ |
| 2002 09 29 | 608 | 0.7− | 0.9− | 2002 11 06 | 644 | 0.5− | 0.7+ | 2006 09 26 | 704 | 0.4− | 0.8− |
| 2002 09 30 | 704 | 0.0 | 1.3+ | 2004 02 19 | 704 | 0.8+ | 1.1+ | 2006 09 26 | 704 | 0.3− | 0.0 |
| 2002 09 30 | 704 | 0.1+ | 0.4− | 2004 02 19 | 704 | 0.7− | 0.2+ | 2006 09 26 | 704 | 0.4− | 0.3+ |
| 2002 09 30 | 704 | 0.3− | 0.3− | 2004 02 19 | 704 | 0.2+ | 0.4− | 2006 09 28 | 704 | 0.2+ | 0.1− |
| 2002 09 30 | 704 | 1.4− | 1.0+ | 2004 02 19 | 704 | (0.5− | 1.8+) | 2006 09 28 | 704 | 0.1− | 0.4+ |
| 2002 10 02 | 608 | 0.8− | 0.6− | 2005 05 04 | 691 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.6− | 0.3+ |
| 2002 10 02 | 608 | 1.2− | 0.3+ | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.2− | 0.4− |
| 2002 10 02 | 608 | 1.3− | 0.5− | 2005 05 04 | 691 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | 0.4− | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.7+ | 2006 09 30 | 704 | 0.8+ | 0.3− |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.8− | 1.2− | 2006 09 30 | 704 | 0.1− | 0.4+ |
| 2002 10 04 | 704 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | (0.5+ | 2.1+) | 2006 08 28 | 703 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 2002 10 04 | 645 | 0.1+ | 0.2− | 2006 09 18 | 703 | 1.3+ | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.8+ |
| 2002 10 04 | 645 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.6+ | 1.2+ |
| 2002 10 08 | 699 | 1.4+ | 1.3+ | 2006 09 18 | 703 | 1.5+ | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 10 08 | 699 | 0.0 | 0.9+ | 2006 09 18 | 703 | 0.8+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2002 10 08 | 699 | 0.2− | 1.4+ | 2006 09 18 | 699 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2002 10 08 | 699 | 0.4+ | 1.0+ | 2006 09 18 | 699 | 0.7− | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.9− |
| 2002 10 15 | 644 | (0.8− | 2.1+) | 2006 09 18 | 699 | 0.1+ | 1.3− | 2006 10 22 | 703 | (1.9+ | 0.4+) |
| 2002 10 15 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 1.0− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2002 10 15 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.7− | 0.2− |

**2002 SG$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.71865 | | (2000.0) | | | |
| $n$ | 0.24505744 | $\omega$ | 82.67539 | | +0.35269305 | −0.93421915 |
| $a$ | 2.5290502 | $\Omega$ | 346.30282 | | +0.74489192 | +0.31478637 |
| $e$ | 0.2647869 | $i$ | 13.01142 | | +0.56634234 | +0.16776210 |
| $P$ | 4.02 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | (0.0 | 2.4+) | 2002 10 05 | 644 | 0.2− | 0.5+ | 2006 09 17 | 704 | 0.0 | 0.4− |
| 1998 09 26 | 704 | (4.3+ | 0.0 ) | 2002 10 05 | 644 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.2− | 0.2− |
| 1998 09 26 | 704 | 0.5+ | 0.6− | 2002 10 06 | 644 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.4+ |
| 1998 09 26 | 704 | 0.1+ | 1.7− | 2002 10 06 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.2− |
| 2002 09 05 | 704 | 0.5+ | 0.5+ | 2002 10 06 | 644 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.0 | 0.8− |
| 2002 09 05 | 704 | 0.2+ | 0.3− | 2002 10 07 | 699 | 0.0 | 0.6− | 2006 09 19 | 699 | 1.0+ | 1.2− |
| 2002 09 05 | 704 | 0.8− | 0.1+ | 2002 10 07 | 699 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.2+ |
| 2002 09 05 | 704 | 0.1+ | 0.2− | 2002 10 07 | 699 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.8− | 0.2+ |
| 2002 09 05 | 704 | 0.4+ | 0.9+ | 2002 10 07 | 699 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2002 09 05 | 608 | 0.2+ | 1.0− | 2002 10 31 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.1+ |
| 2002 09 05 | 608 | 0.5+ | 0.8− | 2002 10 31 | 704 | 0.3− | 1.1− | 2006 09 19 | 699 | 0.9+ | 0.1− |
| 2002 09 05 | 608 | 0.1+ | 0.3− | 2002 10 31 | 704 | 0.5− | 0.5− | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2002 09 17 | 644 | 0.3− | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.4− | 2006 09 19 | 699 | 1.2− | 0.3− |
| 2002 09 17 | 644 | 0.5− | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | (2.0+ | 1.6−) |
| 2002 09 17 | 644 | 0.3− | 0.5+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | (1.3+ | 1.5−) |
| 2002 09 30 | 704 | 0.2+ | 0.9+ | 2006 09 12 | 703 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.8+ | 0.6− |
| 2002 09 30 | 704 | (1.1+ | 1.9+) | 2006 09 12 | 703 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.2− |
| 2002 09 30 | 704 | 0.4+ | 1.3+ | 2006 09 12 | 703 | 0.1− | 1.1+ | 2006 09 25 | 699 | 0.7− | 0.0 |
| 2002 09 30 | 704 | 0.2− | 1.1+ | 2006 09 12 | 703 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.6− | 0.4+ |
| 2002 10 04 | 704 | 0.4− | 0.3− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.3+ |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | (1.8− | 0.6−) |
| 2002 10 04 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.8− | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.4− | 2006 09 16 | 699 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.7− | 2006 09 16 | 699 | 1.5+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2002 10 05 | 644 | 0.2− | 0.5+ | 2006 09 16 | 699 | 0.4+ | 0.1+ | | | | |

**2002 SK$_{56}$ = 2006 RK$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.12546 | | (2000.0) | | | |
| $n$ | 0.23161873 | $\omega$ | 282.81900 | | +0.73002006 | +0.66954142 |
| $a$ | 2.6259529 | $\Omega$ | 35.42998 | | −0.49857915 | +0.65891493 |
| $e$ | 0.1917802 | $i$ | 13.67574 | | −0.46742865 | +0.34284895 |
| $P$ | 4.26 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 01 | 691 | 0.1+ | 0.3+ | 2002 10 04 | 704 | 0.1+ | 0.7+ | 2002 10 31 | 704 | 0.2− | 1.0+ |
| 2001 05 01 | 691 | 0.4+ | 0.1+ | 2002 10 04 | 704 | 0.0 | 0.3+ | 2002 10 31 | 704 | 0.4− | 0.4+ |
| 2001 05 01 | 691 | 0.2+ | 0.6+ | 2002 10 04 | 704 | 0.2+ | 0.3+ | 2002 10 31 | 704 | 0.5− | 0.2+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 10 10 | 645 | 0.1+ | 0.1+ | 2002 10 31 | 704 | 0.4− | 0.8+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 08 25 | E12 | 0.4− | 0.2− |
| 2002 09 16 | 608 | 0.6− | 0.1+ | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 08 25 | E12 | 0.7+ | 0.3− |
| 2002 09 16 | 608 | 1.0− | 0.9+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 08 25 | E12 | 0.0 | 0.3− |
| 2002 09 16 | 608 | 0.5− | 0.2+ | 2002 10 15 | 644 | 0.1− | 0.1+ | 2006 08 25 | E12 | 0.1+ | 0.6− |
| 2002 09 30 | 704 | 0.5− | 0.1+ | 2002 10 15 | 644 | 0.1+ | 0.4+ | 2006 09 13 | 428 | 0.1+ | 0.0 |
| 2002 09 30 | 704 | 0.4− | 0.2− | 2002 10 15 | 644 | 0.2+ | 0.3+ | 2006 09 13 | 428 | 0.9− | 0.6− |
| 2002 09 30 | 704 | 0.4− | 0.8+ | 2002 10 31 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 428 | 0.3+ | 0.1+ |
| 2002 09 30 | 704 | 0.7− | 0.6+ | 2002 10 31 | 704 | 0.0 | 0.2+ | 2006 09 18 | 428 | 0.5+ | 0.1+ |
| 2002 10 02 | 608 | 0.7− | 0.4+ | 2002 10 31 | 704 | 0.1+ | 0.4+ | 2006 09 27 | E12 | 0.0 | 0.1+ |
| 2002 10 02 | 608 | 1.1− | 0.8+ | 2002 10 31 | 704 | 0.2− | 0.0 | 2006 09 27 | E12 | 0.7+ | 0.1+ |
| 2002 10 02 | 608 | 0.6− | 1.1+ | 2002 10 31 | 704 | 0.4+ | 0.7+ | 2006 09 27 | E12 | 0.2+ | 0.5− |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2002 10 31 | 645 | 0.1− | 0.1− | 2006 09 27 | E12 | 0.3− | 0.6+ |
| 2002 10 04 | 704 | 0.9− | 0.9+ | 2002 10 31 | 645 | 0.1− | 0.2− | | | | |

**2002 SY$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.64198 | | (2000.0) | | | |
| $n$ | 0.27266815 | $\omega$ | 303.45915 | | +0.99260223 | −0.04461044 |
| $a$ | 2.3553011 | $\Omega$ | 59.33310 | | +0.09163950 | +0.88536891 |
| $e$ | 0.1535335 | $i$ | 7.54350 | | −0.07964308 | +0.46274378 |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.2− | 0.3+ | 2002 09 30 | 704 | 0.4+ | 0.2− | 2002 11 11 | 704 | 0.2+ | 0.0 |
| 2001 05 24 | 807 | 0.1− | 0.6+ | 2002 10 04 | 704 | 0.5− | 0.2+ | 2002 11 11 | 704 | 0.2+ | 0.5− |
| 2002 08 25 | 644 | 0.4− | 0.6+ | 2002 10 04 | 704 | 0.1− | 0.1− | 2002 11 11 | 704 | 0.4+ | 0.1+ |
| 2002 08 25 | 644 | 0.0 | 0.6+ | 2002 10 04 | 704 | 0.3+ | 0.9+ | 2002 11 11 | 704 | 0.7+ | 0.9+ |
| 2002 08 25 | 644 | 0.2+ | 0.6+ | 2002 10 04 | 704 | (1.9− | 0.5−) | 2004 01 28 | 645 | 0.1+ | 0.1+ |
| 2002 09 17 | 608 | 0.9− | 0.1+ | 2002 10 31 | 704 | (1.6− | 2.8+) | 2004 01 28 | 645 | 0.1+ | 0.1+ |
| 2002 09 17 | 608 | 1.0− | 0.1− | 2002 10 31 | 704 | 0.6− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.3− |
| 2002 09 17 | 608 | 0.7− | 0.1− | 2002 10 31 | 704 | (1.3− | 1.6+) | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2002 09 30 | 704 | 0.1+ | 0.5+ | 2002 10 31 | 704 | (0.4+ | 2.2+) | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2002 09 30 | 704 | 0.9+ | 0.1+ | 2002 10 31 | 704 | 1.4− | 0.7+ | | | | |

**2002 SK$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.81251 | | (2000.0) | | | |
| $n$ | 0.28028914 | $\omega$ | 296.25170 | | +0.97316423 | −0.21898379 |
| $a$ | 2.3124119 | $\Omega$ | 76.46451 | | +0.22840805 | +0.88193371 |
| $e$ | 0.2611645 | $i$ | 4.16980 | | +0.02794895 | +0.41741949 |
| $P$ | 3.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 17 | 608 | 0.2− | 0.2+ | 2002 10 07 | 608 | 0.7− | 1.0− | 2002 10 29 | 704 | 0.6− | 0.2+ |
| 2002 09 17 | 608 | 0.1− | 0.3+ | 2002 10 07 | 608 | 1.3− | 0.4− | 2002 11 11 | 704 | 0.2+ | 0.3+ |
| 2002 09 17 | 608 | 0.4− | 0.4+ | 2002 10 07 | 608 | 0.4− | 1.0− | 2002 11 11 | 704 | 1.1+ | 0.7+ |
| 2002 09 30 | 608 | 0.8+ | 0.3+ | 2002 10 08 | 699 | 0.0 | 0.8− | 2002 11 11 | 704 | 0.0 | 0.3+ |
| 2002 09 30 | 608 | 0.9+ | 0.5+ | 2002 10 08 | 699 | 0.1− | 0.2+ | 2002 11 19 | 644 | 0.8− | 0.2+ |
| 2002 09 30 | 608 | 0.6+ | 0.4+ | 2002 10 08 | 699 | 0.0 | 0.1+ | 2002 11 19 | 644 | 0.4− | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2002 10 08 | 699 | 0.2+ | 0.4− | 2002 11 19 | 644 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.1+ | 2002 10 16 | 644 | 0.2− | 0.1− | 2005 06 13 | G96 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.4+ | 0.1+ | 2002 10 16 | 644 | 0.3− | 0.3+ | 2005 06 13 | G96 | 0.3+ | 0.4+ |
| 2002 10 04 | 704 | 0.9+ | 0.4− | 2002 10 16 | 644 | 0.1− | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 1.1− | 2002 10 28 | 644 | 0.6+ | 0.0 | 2005 06 13 | G96 | 0.2− | 0.2+ |
| 2002 10 06 | 704 | 0.4+ | 0.5− | 2002 10 28 | 644 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 1.1+ | 2002 10 28 | 644 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.3+ |
| 2002 10 06 | 704 | 0.0 | 0.5+ | 2002 10 29 | 704 | 1.1− | 0.6− | 2006 11 25 | G96 | 0.0 | 0.3+ |
| 2002 10 06 | 704 | 0.1− | 0.2+ | 2002 10 29 | 704 | 0.2+ | 0.7− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.2+ | 0.3+ | 2002 10 29 | 704 | 0.4+ | 0.0 | | | | |

**2002 SM$_{59}$ = 2006 SR$_{341}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 155.54075 | | (2000.0) | | | |
| $n$ | 0.28778481 | $\omega$ | 194.93573 | | −0.50786966 | +0.85646892 |
| $a$ | 2.2720827 | $\Omega$ | 44.64667 | | −0.77626537 | −0.40853898 |
| $e$ | 0.0838940 | $i$ | 7.55179 | | −0.37347086 | −0.31552639 |
| $P$ | 3.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 10 12 | 691 | 0.0 | 0.2+ |
| 2002 08 26 | 644 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.2− | 0.4+ |
| 2002 08 26 | 644 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.4+ | 0.2+ |
| 2002 09 16 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2002 09 16 | 644 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2002 09 16 | 644 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 09 17 | 644 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2002 09 17 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2002 09 17 | 644 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.3− |

**2002 SX$_{60}$ = 2006 SF$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.06695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24559449 | $\omega$ | 323.99276 | | +0.85825685 | | −0.50781315 |
| $a$ | 2.5253619 | $\Omega$ | 66.68764 | | +0.48776421 | | +0.76206158 |
| $e$ | 0.2327591 | $i$ | 4.64080 | | +0.15962850 | | +0.40173118 |
| $P$ | 4.01 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.1+ |
| 2002 09 16 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.3− | 2006 09 26 | 704 | 0.8+ | 0.5− |
| 2002 09 16 | 644 | 1.1+ | 0.3+ | 2006 09 14 | 703 | 0.9− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.2− |
| 2002 09 17 | 644 | 0.1− | 0.4+ | 2006 09 14 | 703 | (1.4+ | 3.8−) | 2006 09 26 | 704 | 0.2+ | 0.7+ |
| 2002 09 17 | 644 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.1− |
| 2002 09 17 | 644 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.6+ | 1.2− | 2006 10 19 | 703 | 0.4+ | 0.7− |
| 2002 09 19 | 644 | 0.8− | 0.6+ | 2006 09 16 | 704 | 0.3− | 0.3− | 2006 10 19 | 703 | 0.9+ | 1.0− |
| 2002 09 19 | 644 | 0.5− | 0.7+ | 2006 09 16 | 704 | 0.7+ | 0.7− | 2006 10 19 | 703 | (2.7+ | 1.3−) |
| 2002 09 19 | 644 | 0.5− | 1.0+ | 2006 09 19 | 699 | (3.2+ | 1.0−) | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2002 09 29 | 608 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2002 09 29 | 608 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2002 09 29 | 608 | 0.0 | 0.0 | 2006 09 19 | 699 | (1.6+ | 0.0 ) | 2006 11 23 | G96 | 0.3− | 0.2+ |

**2002 SP$_{61}$ = 2006 UF$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.80418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26259585 | $\omega$ | 284.29813 | | +0.95878530 | | −0.27649512 |
| $a$ | 2.4151502 | $\Omega$ | 91.78458 | | +0.27933866 | | +0.87515862 |
| $e$ | 0.1833688 | $i$ | 3.75342 | | +0.05196796 | | +0.39704890 |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.0 | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 14 | 704 | (1.7− | 1.5+) |
| 2002 09 16 | 644 | 0.3+ | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 14 | 704 | (0.2+ | 2.0+) |
| 2002 09 16 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 14 | 704 | (0.6− | 2.7+) |
| 2002 09 18 | 644 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 09 18 | 644 | 0.2− | 0.5− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 09 18 | 644 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 09 28 | 608 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.8− | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 09 28 | 608 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 2002 09 28 | 608 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.7+ | 0.9+ |
| 2006 10 18 | 691 | 0.5+ | 0.2− | 2006 11 11 | 703 | 1.1− | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2006 10 18 | 691 | 0.2+ | 0.2− | 2006 11 14 | 704 | (0.1− | 2.4+) | 2006 11 28 | 704 | 0.7+ | 0.5+ |
| 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.6− | 0.8+ | | | | |

**2002 SH$_{63}$ = 2006 VN$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.87479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27224272 | $\omega$ | 263.76372 | | +0.79590921 | | −0.60215246 |
| $a$ | 2.3577542 | $\Omega$ | 133.23937 | | +0.58394473 | | +0.73617355 |
| $e$ | 0.1618030 | $i$ | 4.94349 | | +0.15980328 | | +0.30896750 |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.7− | 0.5+ | 2006 11 15 | 703 | 0.7− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2002 08 20 | 644 | 0.2+ | 0.3− | 2006 11 15 | 703 | 0.0 | 0.5− | 2006 11 24 | 691 | 0.7− | 0.5+ |
| 2002 08 20 | 644 | 0.2− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.5+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 08 29 | 644 | 0.6+ | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.2− | 0.1− |
| 2002 08 29 | 644 | 0.6+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 1.2+ | 0.5+ |
| 2002 08 29 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2002 09 15 | 644 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2+ |
| 2002 09 15 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2002 09 15 | 644 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.7− |
| 2002 09 16 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.6− | 0.6+ |
| 2002 09 16 | 644 | 0.5− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.7+ | 0.9− |
| 2002 09 16 | 644 | 0.2+ | 0.5− | 2006 11 22 | G96 | 0.0 | 0.7− | 2006 11 28 | 704 | 0.3− | 0.2+ |
| 2006 11 15 | 703 | 0.3− | 0.5+ | 2006 11 22 | G96 | 0.3+ | 0.1− | | | | |

**2002 SA$_{66}$ = 2006 KF$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.70480 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18543095 | $\omega$ | 132.73329 | | +0.06158944 | | +0.98941419 |
| $a$ | 3.0456587 | $\Omega$ | 140.22285 | | −0.96522677 | | +0.09255272 |
| $e$ | 0.0764405 | $i$ | 11.85161 | | −0.25405514 | | −0.11177458 |
| $P$ | 5.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.5− | 0.1+ | 2002 09 16 | 644 | 0.4+ | 0.7+ | 2006 05 22 | G96 | 0.2+ | 0.4+ |
| 2002 08 29 | 644 | 0.0 | 0.5+ | 2002 09 16 | 644 | 0.1+ | 0.3+ | 2006 05 22 | G96 | 0.2− | 0.3+ |
| 2002 08 29 | 644 | 0.3− | 0.0 | 2005 01 17 | 691 | 0.4+ | 0.2+ | 2006 05 22 | G96 | 0.2+ | 0.3+ |
| 2002 09 08 | 608 | 0.2− | 0.2− | 2005 01 17 | 691 | 0.2− | 0.0 | 2006 05 24 | G96 | 0.1− | 0.2+ |
| 2002 09 08 | 608 | 0.5+ | 0.1+ | 2005 01 17 | 691 | 0.2− | 0.3+ | 2006 05 24 | G96 | 0.1+ | 0.1− |
| 2002 09 16 | 644 | 0.4− | 0.5+ | 2006 05 22 | G96 | 0.1+ | 0.1+ | 2006 05 24 | G96 | 0.1− | 0.1− |

**2002 ST$_{66}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.36070 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17027327 | $\omega$ | 272.91136 | | +0.27739205 | | +0.95980461 |
| $a$ | 3.2238271 | $\Omega$ | 13.42990 | | −0.79203479 | | +0.25364585 |
| $e$ | 0.1041017 | $i$ | 10.61010 | | −0.54381481 | | +0.12016191 |
| $P$ | 5.79 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.2− | 0.5+ | 2002 08 30 | 644 | 0.1+ | 0.4− | 2002 09 16 | 644 | 0.5+ | 0.6+ |
| 1991 10 13 | 691 | 0.1− | 0.2+ | 2002 09 08 | 599 | 0.9− | 0.5+ | 2003 11 16 | 691 | 0.0 | 0.2+ |
| 1991 10 13 | 691 | 0.1+ | 0.3− | 2002 09 08 | 599 | 0.1− | 0.1− | 2003 11 16 | 691 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.2+ | 0.1+ | 2002 09 08 | 599 | 0.1+ | 0.1+ | 2003 11 16 | 691 | 0.0 | 0.2− |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2002 09 16 | 644 | 0.4− | 0.0 | 2006 03 04 | G96 | 0.4+ | 0.4+ |
| 2002 08 19 | 644 | 0.1+ | 0.1+ | 2002 09 16 | 644 | 0.1+ | 0.0 | 2006 03 04 | G96 | 0.5+ | 0.1+ |
| 2002 08 30 | 644 | 0.2− | 0.4− | 2002 09 16 | 644 | 0.2− | 0.3+ | 2006 03 04 | G96 | 0.0 | 0.3+ |
| 2002 08 30 | 644 | 0.1+ | 0.3− | 2002 09 16 | 644 | 0.4+ | 0.2+ | 2006 03 04 | G96 | 0.2− | 0.1+ |

**2002 SY$_{66}$ = 2006 PK$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.95394 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23238126 | $\omega$ | 23.26164 | | +0.90806752 | | +0.38157705 |
| $a$ | 2.6202053 | $\Omega$ | 313.12209 | | −0.41174329 | | +0.73784115 |
| $e$ | 0.1633827 | $i$ | 13.68341 | | −0.07668664 | | +0.55676691 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 16 | 691 | 0.2+ | 0.2+ | 2002 09 12 | 644 | 0.7− | 0.8+ | 2004 01 18 | 691 | 0.1− | 0.0 |
| 2000 01 16 | 691 | 0.4+ | 0.1− | 2002 09 29 | 049 | 1.1+ | 1.1− | 2004 01 18 | 691 | 0.1+ | 0.0 |
| 2000 01 16 | 691 | 0.2− | 0.0 | 2002 09 29 | 049 | 1.1+ | 0.8− | 2006 08 12 | 644 | 0.0 | 0.0 |
| 2000 02 10 | 691 | 0.3− | 0.0 | 2002 09 29 | 049 | 0.6+ | 0.4− | 2006 08 12 | 644 | 0.2− | 0.1+ |
| 2000 02 10 | 691 | 0.1− | 0.2+ | 2002 10 03 | 644 | 0.6− | 0.1+ | 2006 08 12 | 644 | 0.2+ | 0.1− |
| 2000 02 10 | 691 | 0.2+ | 0.1− | 2002 10 03 | 644 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.1+ | 0.2+ |
| 2002 09 12 | 644 | 0.5− | 0.7+ | 2002 10 03 | 644 | 0.3− | 0.0 | 2006 08 20 | 644 | 0.0 | 0.0 |
| 2002 09 12 | 644 | 0.5− | 0.7+ | 2004 01 18 | 691 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.2− | 0.1− |

**2002 SZ$_{66}$ = 2006 MY$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.90437 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17889869 | $\omega$ | 244.49499 | | +0.81978670 | | −0.55818420 |
| $a$ | 3.1193536 | $\Omega$ | 148.95692 | | +0.57265409 | | +0.79741888 |
| $e$ | 0.1630056 | $i$ | 14.37018 | | +0.00413008 | | +0.22924557 |
| $P$ | 5.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2002 10 16 | 644 | 0.6− | 0.2+ | 2004 01 23 | 704 | 0.7− | 0.8+ |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2002 10 29 | 704 | 1.1− | 0.5− | 2004 01 23 | 704 | 0.4+ | 0.8+ |
| 2002 09 17 | 608 | 0.5− | 0.4− | 2002 10 29 | 704 | 0.1− | 0.3− | 2004 02 17 | 704 | 0.3+ | 0.1+ |
| 2002 09 17 | 608 | 0.6− | 0.2− | 2002 10 29 | 704 | 0.6− | 0.5− | 2004 02 17 | 704 | 0.3− | 1.2− |
| 2002 09 17 | 608 | 0.4− | 0.3− | 2002 11 05 | 644 | 0.3− | 0.8+ | 2004 02 17 | 704 | 0.1− | 0.4− |
| 2002 09 30 | 608 | 0.1− | 0.6+ | 2002 11 05 | 644 | 0.3− | 0.9+ | 2004 02 17 | 704 | 0.4+ | 0.3+ |
| 2002 09 30 | 608 | 0.3+ | 1.3+ | 2002 11 05 | 644 | 0.4− | 1.3+ | 2006 06 17 | 691 | 0.0 | 0.3+ |
| 2002 09 30 | 608 | 0.3+ | 0.7+ | 2003 12 22 | 704 | 0.4+ | 0.6+ | 2006 06 17 | 691 | 0.1+ | 0.5+ |
| 2002 10 07 | 608 | 1.3+ | 1.0+ | 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 06 17 | 691 | 0.1+ | 0.3+ |
| 2002 10 07 | 608 | 1.0+ | 0.6+ | 2003 12 22 | 704 | 0.3+ | 1.3+ | 2006 06 20 | 691 | 0.0 | 0.1+ |
| 2002 10 07 | 608 | 1.0+ | 1.0+ | 2003 12 22 | 704 | 0.8+ | 0.9+ | 2006 06 20 | 691 | 0.0 | 0.1+ |
| 2002 10 16 | 644 | 0.4− | 0.3+ | 2004 01 23 | 704 | 0.2− | 1.1+ | 2006 06 20 | 691 | 0.1+ | 0.1+ |
| 2002 10 16 | 644 | 0.6− | 0.3+ | 2004 01 23 | 704 | 0.4− | 0.4+ | | | | |

**2002 SG$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.09729 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18495818 | $\omega$ | 4.80071 | | −0.18177472 | | +0.97210446 |
| $a$ | 3.0508465 | $\Omega$ | 254.78198 | | −0.90723365 | | −0.22393640 |
| $e$ | 0.0519187 | $i$ | 8.83632 | | −0.37932184 | | +0.06975242 |
| $P$ | 5.33 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 23 | 608 | 0.1− | 0.4+ | 2002 10 05 | 704 | 0.4− | 0.0 | 2002 11 06 | 704 | 0.1+ | 0.3+ |
| 2001 07 23 | 608 | 0.0 | 0.7+ | 2002 10 05 | 704 | 0.5− | 0.2+ | 2003 12 23 | 704 | 0.2+ | 0.0 |
| 2001 07 23 | 608 | 0.1+ | 0.6+ | 2002 10 30 | 608 | 0.5− | 0.5− | 2003 12 23 | 704 | 0.0 | 0.6+ |
| 2001 07 23 | 608 | 0.3− | 0.5+ | 2002 10 30 | 608 | 0.2− | 0.4− | 2003 12 23 | 704 | 0.3− | 0.4+ |
| 2001 07 23 | 608 | 0.3− | 0.8+ | 2002 10 30 | 608 | 0.3− | 0.4− | 2005 03 11 | 699 | 1.0+ | 0.3+ |
| 2001 07 23 | 608 | 0.5− | 0.3+ | 2002 10 31 | 644 | 0.2+ | 1.4+ | 2005 03 11 | 699 | 0.5− | 1.3+ |
| 2002 09 17 | 608 | 0.6− | 0.3+ | 2002 10 31 | 644 | 0.2+ | 1.6+ | 2005 03 11 | 699 | 0.8+ | 2.9+ |
| 2002 09 17 | 608 | 0.2− | 0.1− | 2002 10 31 | 644 | 0.1+ | 1.6+ | 2005 03 11 | 699 | 0.8+ | 0.3+ |
| 2002 09 17 | 608 | 0.3− | 0.3+ | 2002 11 06 | 704 | 0.7+ | 0.4− | | | | |
| 2002 10 05 | 704 | 0.4+ | 0.7− | 2002 11 06 | 704 | 0.2+ | 0.7+ | | | | |

**2002 SH$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.22335 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18203246 | $\omega$ | 356.82303 | | +0.72548645 | | +0.65123125 |
| $a$ | 3.0834494 | $\Omega$ | 319.50502 | | −0.62364594 | | +0.48523148 |
| $e$ | 0.2372536 | $i$ | 20.05029 | | −0.29109303 | | +0.58347946 |
| $P$ | 5.41 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 25 | 644 | 0.0 | 0.0 | 2002 10 13 | 644 | 0.2+ | 0.2+ | 2002 11 15 | 704 | 0.1+ | 1.2− |
| 2002 09 25 | 644 | 0.1− | 0.2+ | 2002 10 13 | 644 | 0.3− | 0.0 | 2002 11 15 | 704 | 0.4− | 0.4− |
| 2002 09 25 | 644 | 0.2− | 0.1+ | 2002 10 19 | 644 | 0.1+ | 0.1− | 2003 12 30 | 704 | 0.3+ | 0.8+ |
| 2002 09 25 | 644 | 0.2− | 0.2+ | 2002 10 19 | 644 | 0.2+ | 0.3+ | 2003 12 30 | 704 | 0.1− | 0.6− |
| 2002 09 25 | 644 | 0.2− | 0.4+ | 2002 10 19 | 644 | 0.2+ | 0.4+ | 2003 12 30 | 704 | 0.4− | 0.1+ |
| 2002 09 25 | 644 | 0.2− | 0.2+ | 2002 10 31 | 704 | 0.6+ | 0.4+ | 2003 12 30 | 704 | 0.2+ | 0.1− |
| 2002 09 30 | 704 | 0.0 | 0.8− | 2002 10 31 | 704 | 0.1− | 1.1+ | 2004 12 11 | 291 | 0.1− | 0.1+ |
| 2002 09 30 | 704 | 0.2+ | 0.2− | 2002 10 31 | 704 | 0.4+ | 1.0+ | 2004 12 11 | 291 | 0.1+ | 0.3− |
| 2002 09 30 | 704 | 0.0 | 0.4− | 2002 10 31 | 704 | 0.1− | 1.0+ | 2004 12 11 | 291 | 0.1− | 0.1− |
| 2002 09 30 | 704 | 0.1− | 0.6− | 2002 11 15 | 704 | 0.1− | 0.0 | 2005 01 12 | 097 | 0.6+ | 0.3+ |
| 2002 09 30 | 704 | 0.0 | 0.9− | 2002 11 15 | 704 | 0.3− | 0.8− | 2005 01 12 | 097 | 0.1− | 0.0 |
| 2002 10 13 | 644 | 0.1+ | 0.1+ | 2002 11 15 | 704 | 0.2+ | 0.4− | 2005 01 13 | 097 | 0.2− | 0.4+ |

**2002 SO$_{67}$ = 2004 CY$_{45}$ = 2005 LL$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.60488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26949473 | $\omega$ | 260.44529 | | +0.92034018 | | −0.37450031 |
| $a$ | 2.3737548 | $\Omega$ | 121.47132 | | +0.39018453 | | +0.85920769 |
| $e$ | 0.1253704 | $i$ | 7.59977 | | +0.02701816 | | +0.34858523 |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.7− | 1.0+ | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 10 22 | 703 | 1.2− | 1.3+ |
| 2002 08 12 | 608 | 0.2+ | 0.0 | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 10 22 | 703 | 1.4− | 0.7+ |
| 2002 08 12 | 608 | 0.4− | 0.9+ | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.9− |
| 2002 08 19 | 644 | 0.0 | 0.5+ | 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.3+ | 1.0+ |
| 2002 08 19 | 644 | 0.3+ | 0.3+ | 2004 02 13 | 691 | 0.1+ | 0.6+ | 2006 11 13 | 703 | 1.2+ | 0.2+ |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2004 02 16 | 291 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.5+ |
| 2002 08 30 | 644 | 0.2+ | 0.5+ | 2004 02 16 | 291 | 0.4+ | 0.4+ | 2006 11 13 | 703 | 1.7− | 1.5+ |
| 2002 08 30 | 644 | 0.4+ | 0.8+ | 2004 02 16 | 291 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.7− | 0.1− |
| 2002 08 30 | 644 | 0.1+ | 0.4+ | 2005 06 04 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.6+ |
| 2002 09 12 | 608 | 0.7− | 0.1− | 2005 06 04 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 1.1− | 0.5+ |
| 2002 09 12 | 608 | 0.5− | 0.1+ | 2005 06 04 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.2+ |
| 2002 09 12 | 608 | 0.6− | 0.1− | 2005 06 11 | 691 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 1.4+ | 0.9+ |
| 2002 09 16 | 644 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.6− | 0.2+ |
| 2002 09 16 | 644 | 0.0 | 0.3+ | 2005 06 11 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.7+ | 0.7− |
| 2002 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.9+ | 0.4+ | 2006 11 19 | 703 | 0.3+ | 0.5+ |

**2002 TD**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.00362 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24253409 | $\omega$ | 353.82235 | | +0.98339227 | | −0.17766589 |
| $a$ | 2.5465616 | $\Omega$ | 16.55174 | | +0.17159054 | | +0.84358302 |
| $e$ | 0.3083267 | $i$ | 7.47757 | | +0.05912972 | | +0.50675687 |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 1.2− | 0.2− | 2002 11 12 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1+ |
| 2002 09 06 | 704 | 0.2+ | 0.1+ | 2002 11 12 | 704 | 1.1− | 0.4+ | 2006 09 29 | 704 | 0.4+ | 1.1− |
| 2002 09 06 | 704 | 0.0 | 0.2− | 2002 11 12 | 704 | 0.8− | 0.8− | 2006 09 29 | 704 | 0.2+ | 0.2− |
| 2002 09 09 | 608 | 0.9− | 1.1+ | 2002 11 13 | 704 | 1.3− | 0.4− | 2006 09 29 | 704 | 0.5+ | 0.4− |
| 2002 09 09 | 608 | (0.5− | 1.6+) | 2002 11 13 | 704 | 1.2− | 0.5− | 2006 09 29 | 704 | 1.3+ | 0.2− |
| 2002 09 09 | 608 | 0.6− | 0.9+ | 2002 11 13 | 704 | (1.7− | 0.1+) | 2006 09 29 | 704 | 0.5+ | 0.6− |
| 2002 10 01 | 699 | 0.2− | 0.4+ | 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.5+ | 0.1+ |
| 2002 10 01 | 699 | 0.6− | 0.2+ | 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.2+ |
| 2002 10 01 | 699 | 0.5− | 0.0 | 2002 11 22 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.5− |
| 2002 10 01 | 699 | 0.3− | 0.0 | 2002 11 28 | 695 | 0.8+ | 0.5− | 2006 09 30 | 704 | 0.6+ | 0.2− |
| 2002 10 02 | 704 | 0.8+ | 0.1+ | 2002 11 28 | 695 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.7− | 0.1− |
| 2002 10 02 | 704 | 0.3+ | 0.4+ | 2002 12 02 | 608 | 0.1+ | 0.4− | 2006 09 30 | 704 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.7+ | 0.3+ | 2002 12 02 | 608 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.6+ | 0.1− | 2002 12 02 | 608 | 0.4− | 0.2− | 2006 09 30 | 704 | 0.2+ | 0.1+ |
| 2002 10 02 | 608 | 0.6+ | 0.6+ | 2006 08 30 | 699 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2002 10 02 | 608 | 0.6+ | 0.8+ | 2006 08 30 | 699 | 0.6− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 608 | 0.8+ | 0.7+ | 2006 08 30 | 699 | 0.4− | 0.3− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2002 10 02 | 049 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 0.0 | 0.3− | 2006 10 09 | 644 | 0.3− | 0.2− |
| 2002 10 02 | 049 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.6− | 2006 10 16 | 703 | 1.0− | 0.3− |
| 2002 10 02 | 049 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.6− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2006 09 16 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 106 | 0.4+ | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 106 | 0.9+ | 1.0− |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2006 09 16 | 704 | 0.5− | 0.5− | 2006 10 17 | 106 | 1.1+ | 0.3− |
| 2002 10 04 | 704 | 1.0+ | 0.1− | 2006 09 16 | 704 | 0.1− | 0.7− | 2006 10 17 | 106 | 0.7+ | 0.6− |
| 2002 10 04 | 704 | 0.4− | 0.6+ | 2006 09 16 | 704 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.5+ | 0.4− |
| 2002 10 04 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 704 | 0.7+ | 0.5+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2002 10 07 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.9− | 0.1+ | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2002 10 07 | 644 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 10 07 | 704 | 0.6− | 0.1− | 2006 09 19 | 704 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 10 07 | 704 | 1.0− | 0.1− | 2006 09 19 | 699 | 0.6− | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2002 10 07 | 644 | 0.2− | 0.0 | 2006 09 19 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 10 07 | 704 | 0.5− | 0.3− | 2006 09 19 | 704 | (2.4+ | 0.8−) | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 10 07 | 704 | 0.1− | 1.2− | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2002 10 07 | 704 | 0.9− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2002 10 11 | 704 | 0.2− | 0.6− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2002 10 11 | 704 | 0.2− | 0.8− | 2006 09 20 | 608 | (0.7+ | 1.8−) | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2002 10 11 | 704 | 0.3+ | 0.5− | 2006 09 20 | 608 | (0.9+ | 2.0−) | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.1− | 0.9− | 2006 09 20 | 608 | (0.2+ | 1.8−) | 2006 10 23 | 644 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.2+ | 0.6− | 2006 09 22 | 704 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.3+ | | |
| 2002 11 01 | 704 | (1.6+ | 0.5−) | 2006 09 22 | 704 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2002 11 01 | 704 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 0.7− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.4− | | |
| 2002 11 01 | 704 | 0.3− | 0.2− | 2006 09 22 | 704 | 0.3− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2002 11 01 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 03 | 608 | 0.8+ | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.4+ | 2006 10 24 | 644 | 0.1− | 0.0 | | |
| 2002 11 03 | 608 | 0.7+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.5+ | 2006 10 24 | 644 | 0.1+ | 0.3− | | |
| 2002 11 03 | 608 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.8+ | 2006 10 24 | 644 | 0.0 | 0.1+ | | |
| 2002 11 11 | 644 | 0.4+ | 1.3+ | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.7− | | |
| 2002 11 11 | 644 | 0.2+ | 1.0+ | 2006 09 26 | 704 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.5+ | | |
| 2002 11 11 | 644 | 0.0 | 0.8+ | 2006 09 26 | 704 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 1.1+ | 0.7− | | |
| 2002 11 12 | 704 | 0.9+ | 0.8+ | 2006 09 26 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− | | |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.5+ | 1.1+ | | | | | | |

### 2002 TJ = 2006 UB$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.39407 | | (2000.0) | | | |
| $n$ | 0.26316926 | $\omega$ | 186.71187 | | +0.98926703 | −0.14610999 |
| $a$ | 2.4116407 | $\Omega$ | 181.69223 | | +0.13647548 | +0.92787014 |
| $e$ | 0.1497563 | $i$ | 3.13472 | | +0.05220327 | +0.34308728 |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.5− | 0.1+ | 2002 10 11 | 704 | 0.7+ | 0.9+ | 2006 11 11 | 703 | 0.1+ | 1.3+ | | |
| 2002 09 07 | 704 | 0.6+ | 0.5+ | 2002 10 11 | 704 | 0.7+ | 0.8+ | 2006 11 11 | 703 | (1.8− | 0.3+) | | |
| 2002 09 07 | 704 | 0.5+ | 0.7− | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 703 | 1.0+ | 0.5+ | | |
| 2002 09 30 | 704 | (1.6+ | 0.6+) | 2006 10 16 | 703 | 0.3− | 1.0+ | 2006 11 11 | 703 | (1.7+ | 1.3+) | | |
| 2002 09 30 | 704 | 0.7+ | 1.0+ | 2006 10 16 | 703 | 0.9− | 0.8+ | 2006 11 14 | 704 | 0.1− | 0.2+ | | |
| 2002 09 30 | 704 | 0.2+ | 1.2+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.3+ | 0.2− | | |
| 2002 09 30 | 704 | (0.6− | 1.7+) | 2006 10 16 | 703 | 0.5+ | 0.4+ | 2006 11 14 | 704 | 1.0+ | 1.3+ | | |
| 2002 10 01 | 699 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2002 10 01 | 699 | 1.3− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2002 10 01 | 699 | 1.3− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.3+ | | |
| 2002 10 01 | 699 | 0.4+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2002 10 02 | 704 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | (2.1+ | 0.2+) | | |
| 2002 10 02 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | (2.5+ | 0.5−) | | |
| 2002 10 02 | 704 | 0.7+ | 0.9− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | (2.5+ | 0.4+) | | |
| 2002 10 03 | 704 | 0.1+ | 0.8+ | 2006 11 02 | 703 | 0.4− | 0.9− | 2006 11 20 | 704 | (2.8+ | 0.6−) | | |
| 2002 10 03 | 704 | (0.3+ | 1.9+) | 2006 11 02 | 703 | 0.1− | 0.9− | 2006 11 28 | 704 | 0.9− | 0.3− | | |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 11 02 | 703 | 1.0− | 1.2− | 2006 11 28 | 704 | (1.6− | 0.8−) | | |
| 2002 10 03 | 704 | 0.5+ | 1.0+ | 2006 11 02 | 703 | 0.7− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.8− | | |
| 2002 10 05 | 645 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.0 | | |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1+ | | | | | | |
| 2002 10 11 | 704 | 0.1− | 1.4+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | | | | | | |

### 2002 TW = 2006 RM$_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.52177 | | (2000.0) | | | |
| $n$ | 0.24169811 | $\omega$ | 255.80626 | | +0.38864307 | −0.92086817 |
| $a$ | 2.5524302 | $\Omega$ | 171.13415 | | +0.90372207 | +0.37442827 |
| $e$ | 0.2612794 | $i$ | 11.58760 | | +0.17956330 | +0.10865215 |
| $P$ | 4.08 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 699 | 0.0 | 0.3− | 2002 10 06 | 608 | (0.0 | 2.0−) | 2006 09 16 | 699 | 0.5+ | 0.2+ | | |
| 1998 10 17 | 699 | 0.2− | 0.3− | 2002 10 06 | 608 | (0.2+ | 2.4−) | 2006 09 19 | 703 | 0.4− | 0.8− | | |
| 1998 10 17 | 699 | 0.4+ | 0.5+ | 2002 10 06 | 608 | (0.3+ | 2.1−) | 2006 09 19 | 703 | 0.3+ | 0.3+ | | |
| 2002 09 17 | 608 | 0.2− | 1.1− | 2002 10 08 | 699 | 0.3− | 1.0+ | 2006 09 19 | 703 | 0.9+ | 0.2− | | |
| 2002 09 17 | 608 | 0.6− | 1.1− | 2002 10 08 | 699 | (1.7+ | 0.2−) | 2006 09 19 | 703 | 0.5− | 0.5− | | |
| 2002 09 17 | 608 | 0.5− | 1.5− | 2002 10 08 | 699 | 0.3+ | 0.2+ | 2006 09 20 | 704 | (0.2+ | 2.0+) | | |
| 2002 10 01 | 699 | 0.5+ | 0.3− | 2002 10 08 | 699 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.3− | 0.7+ | | |
| 2002 10 01 | 699 | 0.9− | 0.8+ | 2002 10 11 | 704 | 0.6− | 0.4+ | 2006 09 20 | 704 | (0.3+ | 1.6+) | | |
| 2002 10 01 | 699 | 0.6− | 0.0 | 2002 10 11 | 704 | 0.5− | 0.5− | 2006 09 20 | 704 | 0.3− | 0.3+ | | |
| 2002 10 01 | 699 | 0.9− | 0.8+ | 2002 10 11 | 704 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.0 | 0.5+ | 2002 10 11 | 704 | 0.5− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.6− | | |
| 2002 10 02 | 704 | 0.2+ | 0.2− | 2002 10 11 | 704 | 0.9+ | 0.2+ | 2006 09 30 | 703 | 1.1− | 0.6− | | |
| 2002 10 02 | 704 | 0.5− | 0.7+ | 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.6+ | 0.3− | | |
| 2002 10 02 | 704 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 1.3+ | 0.9+ | 2006 09 30 | G96 | 0.3+ | 0.4− | | |
| 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.3− | | |
| 2002 10 03 | 704 | 0.4+ | 0.7− | 2006 09 12 | 703 | 0.6− | 0.5− | 2006 09 30 | G96 | 0.0 | 0.5− | | |
| 2002 10 03 | 704 | 0.4+ | 0.5− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.7+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.4− | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.4− | | |
| 2002 10 03 | 704 | 0.5+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.7+ | | |
| 2002 10 06 | 704 | 0.0 | 1.0+ | 2006 09 16 | 699 | 0.2+ | 0.4− | 2006 10 19 | 703 | 0.3− | 0.1+ | | |
| 2002 10 06 | 704 | 0.7+ | 0.4− | 2006 09 16 | 699 | 0.8− | 0.5+ | 2006 10 19 | 703 | (2.3− | 0.2+) | | |
| 2002 10 06 | 704 | 0.6+ | 0.8− | 2006 09 16 | 699 | 0.4− | 1.4+ | 2006 10 19 | 703 | 0.5+ | 0.4− | | |

### 2002 TA$_1$ = 2006 TL$_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.03278 | | (2000.0) | | | |
| $n$ | 0.25908977 | $\omega$ | 204.71723 | | +0.68804452 | +0.72341514 |
| $a$ | 2.4368897 | $\Omega$ | 108.81530 | | −0.65534400 | +0.65325373 |
| $e$ | 0.1797886 | $i$ | 3.46096 | | −0.31163917 | +0.22345045 |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.0 | 0.5− | 2002 10 11 | 704 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.4+ | 0.2− | | |
| 2002 09 14 | 608 | 0.1− | 0.2− | 2002 10 11 | 704 | 0.5− | 0.5− | 2006 10 21 | G96 | 0.1− | 0.4− | | |
| 2002 09 14 | 608 | 0.6− | 0.2+ | 2002 10 11 | 704 | 0.3+ | 1.0− | 2006 11 09 | 644 | 0.5+ | 0.3+ | | |
| 2002 10 01 | 699 | 0.5− | 0.1− | 2006 10 14 | D35 | 0.6+ | 0.3− | 2006 11 09 | 644 | 0.4+ | 0.4+ | | |
| 2002 10 01 | 699 | 0.6+ | 0.0 | 2006 10 14 | D35 | 0.5+ | 0.1+ | 2006 11 09 | 644 | 0.6+ | 0.1+ | | |
| 2002 10 01 | 699 | 0.7+ | 1.0+ | 2006 10 14 | D35 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.3+ | 0.5+ | | |
| 2002 10 01 | 699 | 0.2+ | 1.2+ | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.2− | | |
| 2002 10 02 | 704 | 0.6+ | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 13 | 703 | 1.0− | 0.1− | | |
| 2002 10 02 | 704 | 0.6+ | 0.4− | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 13 | 703 | 1.1− | 0.1+ | | |
| 2002 10 02 | 704 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.1− | | |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.0 | | |
| 2002 10 03 | 704 | 0.8− | 0.6− | 2006 10 21 | G96 | 0.3− | 0.2+ | | | | | | |
| 2002 10 11 | 704 | 0.8− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.2− | | | | | | |

### 2002 TU$_1$ = 2006 WN$_{146}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.25045 | | (2000.0) | | | |
| $n$ | 0.26207966 | $\omega$ | 341.56174 | | +0.98365412 | +0.18004975 |
| $a$ | 2.4183204 | $\Omega$ | 8.06691 | | −0.16281096 | +0.89541079 |
| $e$ | 0.2296313 | $i$ | 1.05311 | | −0.07692305 | +0.40721200 |
| $P$ | 3.76 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 0.0 | 0.4+ | 2002 10 07 | 704 | 0.4− | 1.3− | 2002 11 06 | 704 | (3.5− | 0.9−) | | |
| 2002 10 01 | 699 | 0.3− | 0.0 | 2002 10 09 | 704 | 0.5− | 0.0 | 2002 12 07 | 291 | 0.6+ | 0.1− | | |
| 2002 10 01 | 699 | 0.2+ | 0.2− | 2002 10 09 | 704 | 0.9+ | 0.5+ | 2002 12 07 | 291 | 0.2− | 0.4− | | |
| 2002 10 01 | 699 | 1.4+ | 0.5− | 2002 10 09 | 704 | 0.3− | 0.6− | 2002 12 07 | 291 | 0.2− | 0.0 | | |
| 2002 10 02 | 704 | 0.1+ | 0.1− | 2002 10 09 | 704 | 0.6− | 0.1− | 2005 05 10 | G96 | 0.2+ | 0.4+ | | |
| 2002 10 02 | 704 | 0.2+ | 0.1+ | 2002 10 09 | 704 | 0.6− | 0.6+ | 2005 05 10 | G96 | 0.1− | 0.0 | | |
| 2002 10 02 | 704 | 0.3+ | 0.0 | 2002 10 10 | 644 | 0.0 | 0.7+ | 2005 05 10 | G96 | 0.2+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2002 10 10 | 644 | 0.2− | 0.7+ | 2005 05 10 | G96 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2002 10 10 | 644 | 0.1− | 0.7+ | 2006 11 20 | 691 | 0.2+ | 0.0 | | |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 20 | 691 | 0.8− | 1.2+ | | |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2002 10 11 | 704 | 0.0 | 0.7− | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.3− | | |
| 2002 10 07 | 704 | 0.1+ | 0.6+ | 2002 10 11 | 704 | 0.2+ | 0.5− | 2006 11 24 | 691 | 0.0 | 0.2− | | |
| 2002 10 07 | 704 | 0.9− | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 11 24 | 691 | 0.5+ | 0.3− | | |
| 2002 10 07 | 704 | 0.4− | 0.5− | 2002 11 06 | 704 | (1.7− | 1.4−) | | | | | | |
| 2002 10 07 | 704 | 0.2− | 0.8− | 2002 11 06 | 704 | (3.5− | 0.3−) | | | | | | |

**2002 TZ$_3$ = 2006 QA$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.70985 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23587707 | $\omega$ | 308.50595 | | +0.99416425 | | +0.09737253 |
| $a$ | 2.5942524 | $\Omega$ | 45.95996 | | −0.06733128 | | +0.89637962 |
| $e$ | 0.2103522 | $i$ | 3.70350 | | −0.08428491 | | +0.43246060 |
| $P$ | 4.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 0.6− | 0.5+ | 2002 10 11 | 704 | 0.2− | 0.3− | 2006 09 14 | 644 | 0.4− | 0.4− |
| 2002 10 01 | 699 | 0.6+ | 0.4+ | 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.5− |
| 2002 10 01 | 699 | 0.2− | 1.4− | 2002 10 30 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 1.2− | 0.4+ |
| 2002 10 01 | 699 | 0.1+ | 0.1+ | 2002 10 30 | 644 | 0.2+ | 0.2− | 2006 09 16 | 704 | 0.3+ | 0.7+ |
| 2002 10 02 | 704 | 0.4− | 0.3+ | 2002 10 30 | 644 | 0.0 | 0.0 | 2006 09 16 | 704 | 0.7+ | 0.4+ |
| 2002 10 02 | 704 | 0.9− | 0.3+ | 2005 04 04 | G96 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.8− |
| 2002 10 02 | 704 | 0.3+ | 0.1− | 2005 04 04 | G96 | 0.1− | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.3+ | 0.5+ | 2005 04 04 | G96 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 0.8+ | 0.2+ | 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.6− | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.3− | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 09 21 | 699 | 1.0+ | 0.3− |
| 2002 10 07 | 704 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.2− | 0.1− | 2006 09 21 | 699 | (2.2− | 0.5+) |
| 2002 10 07 | 704 | 1.4− | 0.1+ | 2006 08 30 | 699 | (1.6+ | 0.8−) | 2006 09 21 | 699 | 0.1+ | 0.1− |
| 2002 10 07 | 704 | (3.1− | 0.5−) | 2006 08 30 | 699 | 0.3+ | 0.6+ | 2006 09 21 | 699 | 0.0 | 0.3+ |
| 2002 10 10 | 644 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 10 10 | 644 | 0.1+ | 0.0 | 2006 09 12 | 704 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2002 10 10 | 644 | 0.1+ | 0.0 | 2006 09 12 | 704 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.8+ | 0.6− |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 09 12 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 644 | 0.4− | 0.3− | | | | |

**2002 TA$_4$ = 2006 RO$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.52313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23472712 | $\omega$ | 306.41166 | | +0.97700492 | | +0.20032205 |
| $a$ | 2.6027185 | $\Omega$ | 42.17078 | | −0.14355526 | | +0.87124802 |
| $e$ | 0.0982857 | $i$ | 6.24457 | | −0.15764924 | | +0.44810486 |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 0.8+ | 0.6+ | 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.1− |
| 2002 10 01 | 699 | (1.7+ | 0.9−) | 2004 02 11 | 691 | 0.4− | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.0 |
| 2002 10 01 | 699 | 0.4− | 0.3− | 2004 03 17 | 645 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.3− | 1.0+ |
| 2002 10 01 | 699 | 0.5+ | 0.7+ | 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.7− | 0.6+ |
| 2002 10 02 | 704 | 0.9− | 0.5− | 2004 04 15 | 645 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2002 10 02 | 704 | 0.8− | 0.5− | 2005 04 17 | 691 | 0.5+ | 0.8− | 2006 09 26 | 704 | 0.5+ | 0.2+ |
| 2002 10 02 | 704 | 0.3− | 0.4− | 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.6− |
| 2002 10 03 | 704 | 0.2+ | 0.4− | 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 1.2− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2005 05 10 | G96 | 0.2− | 0.5+ | 2006 10 10 | 644 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.8− | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2005 05 10 | G96 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2002 10 07 | 704 | (2.5+ | 2.2−) | 2005 05 10 | G96 | 0.0 | 0.5+ | 2006 10 19 | 703 | 1.1+ | 1.3+ |
| 2002 10 07 | 704 | (2.6+ | 1.3−) | 2005 05 19 | 644 | 0.1− | 0.8+ | 2006 10 19 | 703 | (0.8− | 1.7+) |
| 2002 10 07 | 704 | (2.4+ | 3.4−) | 2005 05 19 | 644 | 0.2− | 0.9+ | 2006 10 19 | 703 | (2.1− | 1.1+) |
| 2002 10 10 | 644 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.7− | 0.7− |
| 2002 10 10 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.4− | 2006 10 23 | 644 | 0.7+ | 0.3+ |
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.4− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.9+ | 0.9+ | 2006 09 14 | 703 | 0.4− | 1.4+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.2− | 0.4− | 2006 09 16 | 704 | (1.5+ | 2.5+) | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2002 10 30 | 644 | 0.4− | 0.2+ | 2006 09 16 | 704 | 1.1− | 0.2+ | 2006 11 23 | G96 | 0.7+ | 0.1+ |
| 2002 10 30 | 644 | 0.2+ | 0.0 | 2006 09 16 | 704 | (0.9+ | 1.6+) | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2002 10 30 | 644 | 0.5− | 0.2− | 2006 09 16 | 704 | 1.3+ | 0.1− | | | | |
| 2004 02 11 | 691 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.4+ | 0.4− | | | | |

**2002 TD$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.28026 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25527517 | $\omega$ | 208.39006 | | +0.99923657 | | −0.02728418 |
| $a$ | 2.4611061 | $\Omega$ | 153.12975 | | +0.03528938 | | +0.93742934 |
| $e$ | 0.1908733 | $i$ | 3.54693 | | −0.01676135 | | +0.34710488 |
| $P$ | 3.86 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | (1.5+ | 0.9+) | 2002 10 11 | 704 | 0.6− | 0.8+ | 2006 11 02 | 703 | 0.3+ | 0.8+ |
| 2002 10 01 | 699 | 0.0 | 0.9− | 2002 10 31 | 704 | 0.4+ | 0.2+ | 2006 11 02 | 703 | 0.5+ | 1.4− |
| 2002 10 01 | 699 | (0.6+ | 1.6−) | 2002 10 31 | 704 | 0.8− | 0.2− | 2006 11 02 | 703 | 0.9− | 0.9+ |
| 2002 10 01 | 699 | 0.7+ | 0.4− | 2002 10 31 | 704 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.7− | 0.2− |
| 2002 10 02 | 704 | (1.9− | 0.2+) | 2002 10 31 | 704 | 0.3+ | 0.8− | 2006 11 17 | 704 | (1.0− | 1.9+) |
| 2002 10 02 | 704 | (2.5− | 0.8+) | 2002 10 31 | 704 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.7− | 0.4+ |
| 2002 10 02 | 704 | 1.3− | 0.4+ | 2002 11 05 | 699 | 0.8− | 0.4+ | 2006 11 17 | 704 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.7+ | 2002 11 05 | 699 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.1− |
| 2002 10 03 | 704 | 0.7+ | 0.1− | 2002 11 05 | 699 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.5+ | 0.4− |
| 2002 10 03 | 704 | 0.7− | 0.1+ | 2002 11 05 | 699 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.4− |
| 2002 10 03 | 704 | 1.2+ | 0.4− | 2005 05 14 | G96 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.6+ | 0.7− | 2005 05 14 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2002 10 10 | 644 | 0.1+ | 0.1− | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 11 20 | 704 | (2.2+ | 0.1−) |
| 2002 10 10 | 644 | 0.0 | 0.2− | 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 11 20 | 704 | (1.6+ | 0.5+) |
| 2002 10 10 | 644 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 0.1+ | 1.4+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 1.0+ | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.0 | 0.8− | | | | |

**2002 TL$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.97461 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26215529 | $\omega$ | 344.14080 | | +0.89637088 | | −0.43215744 |
| $a$ | 2.4178552 | $\Omega$ | 41.91351 | | +0.42110616 | | +0.76043807 |
| $e$ | 0.2196108 | $i$ | 8.50440 | | +0.13852384 | | +0.48474104 |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 06 | 691 | 0.0 | 0.6+ | 2002 10 11 | 704 | 0.3+ | 0.3− | 2002 11 22 | 644 | 0.2− | 0.1+ |
| 1997 05 06 | 691 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2002 11 22 | 644 | 0.1− | 0.1− |
| 1997 05 06 | 691 | 0.1− | 0.1− | 2002 10 11 | 704 | 0.2+ | 0.4+ | 2002 11 22 | 644 | 0.2− | 0.1− |
| 2002 08 25 | 644 | 0.1− | 0.7+ | 2002 10 30 | 644 | 0.3− | 0.1− | 2002 12 01 | 704 | 0.6− | 0.1+ |
| 2002 08 25 | 644 | 0.2+ | 1.0+ | 2002 10 30 | 644 | 0.3− | 0.1− | 2002 12 01 | 704 | 0.4− | 0.3+ |
| 2002 08 25 | 644 | 0.2− | 1.0+ | 2002 10 30 | 644 | 0.1− | 0.1+ | 2002 12 01 | 704 | 0.9− | 1.0+ |
| 2002 09 05 | 704 | 0.1− | 0.1+ | 2002 10 31 | 699 | 0.0 | 0.4− | 2002 12 01 | 704 | 0.4− | 1.1+ |
| 2002 09 05 | 704 | 0.5+ | 0.1− | 2002 10 31 | 699 | 0.1+ | 0.1− | 2002 12 01 | 704 | 1.3+ | 0.4+ |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2002 10 31 | 699 | 0.8+ | 0.5− | 2002 12 05 | 704 | 0.8− | 0.4+ |
| 2002 09 19 | 599 | 0.0 | 0.2+ | 2002 10 31 | 699 | 0.3+ | 0.8− | 2002 12 05 | 704 | 0.2− | 0.4− |
| 2002 09 19 | 599 | 0.2+ | 0.4+ | 2002 10 31 | 608 | 0.5+ | 0.0 | 2002 12 05 | 704 | 0.0 | 0.4− |
| 2002 09 19 | 599 | 0.9− | 0.5− | 2002 10 31 | 608 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 1.2+ | 0.2+ |
| 2002 10 01 | 704 | 0.1− | 0.4+ | 2002 10 31 | 608 | 0.2+ | 0.3+ | 2002 12 05 | 704 | 0.2+ | 0.7+ |
| 2002 10 01 | 704 | 1.0+ | 1.0− | 2002 11 01 | 704 | 0.4+ | 0.7+ | 2002 12 10 | 704 | 0.1− | 0.4− |
| 2002 10 01 | 704 | 0.5− | 0.6− | 2002 11 01 | 704 | 0.3+ | 0.2+ | 2002 12 10 | 704 | 0.4− | 0.3+ |
| 2002 10 01 | 704 | 0.5+ | 0.6− | 2002 11 01 | 704 | 1.0+ | 0.2+ | 2002 12 10 | 704 | 0.6+ | 1.5+ |
| 2002 10 02 | 704 | 0.6− | 0.0 | 2002 11 01 | 704 | 1.1+ | 0.3− | 2004 03 26 | 691 | 0.2− | 0.2+ |
| 2002 10 02 | 704 | 1.0− | 0.1+ | 2002 11 06 | 704 | (1.6+ | 0.4−) | 2004 03 26 | 691 | 0.2+ | 0.3+ |
| 2002 10 02 | 704 | 0.5− | 1.0− | 2002 11 06 | 704 | 0.4+ | 0.3− | 2004 03 26 | 691 | 0.5+ | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 1.4+ | 2002 11 06 | 704 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9− | 0.5− |
| 2002 10 03 | 704 | 1.0− | 0.6+ | 2002 11 06 | 704 | (0.2+ | 2.4−) | 2006 11 22 | 704 | 0.3− | 0.2− |
| 2002 10 03 | 704 | 0.8− | 0.1− | 2002 11 06 | 704 | 0.4+ | 0.2+ | 2006 11 22 | 704 | 0.7− | 0.0 |
| 2002 10 03 | 704 | 0.7− | 0.3− | 2002 11 10 | 704 | (2.1− | 0.0 ) | 2006 11 27 | 704 | 1.5+ | 0.6+ |
| 2002 10 03 | 704 | 1.1− | 0.4+ | 2002 11 10 | 704 | 0.5− | 0.5− | 2006 11 27 | 704 | 0.3− | 0.4− |
| 2002 10 11 | 704 | 0.0 | 0.9− | 2002 11 10 | 704 | 1.3− | 0.5+ | 2006 11 27 | 704 | 0.4+ | 0.7− |
| 2002 10 11 | 704 | 0.0 | 0.1− | 2002 11 10 | 704 | 0.8− | 0.0 | | | | |

**2002 TP$_5$ = 2006 VO$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.74194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25796037 | $\omega$ | 179.27118 | | +0.95571748 | +0.29396843 | |
| $a$ | 2.4439973 | $\Omega$ | 163.61329 | | −0.27024633 | +0.89507879 | |
| $e$ | 0.2083058 | $i$ | 2.77576 | | −0.11649472 | +0.33528573 | |
| $P$ | 3.82 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.2+ | 0.5+ | 2002 10 03 | 704 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.8− |
| 2002 09 07 | 704 | 0.4+ | 0.2+ | 2002 10 03 | 704 | 0.5− | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.3− |
| 2002 09 07 | 704 | 0.2+ | 0.6− | 2002 10 04 | 704 | 0.2− | 0.8+ | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2002 09 07 | 704 | 0.2− | 0.6− | 2002 10 04 | 704 | 0.7+ | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 2002 09 07 | 704 | 0.4− | 0.3− | 2002 10 04 | 704 | 0.1+ | 1.0− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2002 10 01 | 699 | 0.7− | 0.5+ | 2002 10 04 | 704 | 0.8+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2002 10 01 | 699 | 0.6− | 0.4+ | 2002 10 04 | 704 | 0.8+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2002 10 01 | 699 | 0.8+ | 0.1− | 2002 10 07 | 644 | 0.6− | 0.3− | 2006 11 09 | 644 | 0.7+ | 0.1+ |
| 2002 10 01 | 699 | 0.1+ | 0.1+ | 2002 10 07 | 644 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2002 10 07 | 644 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.5− |
| 2002 10 02 | 704 | 0.4+ | 1.5− | 2002 10 11 | 704 | 0.4− | 1.0+ | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.3− | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.8+ | 2006 11 11 | 703 | 0.8+ | 0.5− |
| 2002 10 02 | 704 | 0.8+ | 0.5− | 2002 10 11 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 703 | (0.5− | 2.2−) |
| 2002 10 02 | 608 | 0.2− | 0.5− | 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 10 02 | 608 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.6− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2002 10 02 | 608 | 0.5− | 0.0 | 2005 05 17 | G96 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2005 05 17 | G96 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.6− | 0.3− | 2005 05 17 | G96 | 0.6+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.7+ | 0.0 | 2005 05 17 | G96 | 0.0 | 0.6+ | | | | |

**2002 TW$_7$ = 2006 WK$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.67006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26399707 | $\omega$ | 204.03441 | | +0.86719077 | −0.49790152 | |
| $a$ | 2.4065967 | $\Omega$ | 185.84888 | | +0.46948896 | +0.82322851 | |
| $e$ | 0.2008033 | $i$ | 4.85045 | | +0.16601292 | +0.27274329 | |
| $P$ | 3.73 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 608 | 0.1− | 0.8+ | 2002 10 03 | 704 | 0.4+ | 0.8+ | 2002 10 11 | 704 | 0.0 | 0.4+ |
| 2002 09 10 | 608 | 0.0 | 0.2+ | 2002 10 03 | 704 | 0.5+ | 0.5+ | 2002 10 11 | 704 | 0.5+ | 0.1− |
| 2002 09 10 | 608 | 0.5+ | 0.2+ | 2002 10 03 | 704 | 0.1+ | 0.7+ | 2002 10 30 | 645 | 0.0 | 0.2− |
| 2002 09 26 | 644 | 0.8− | 0.2+ | 2002 10 03 | 704 | 0.6+ | 0.9+ | 2002 10 30 | 645 | 0.0 | 0.2− |
| 2002 09 26 | 644 | 0.7− | 0.2+ | 2002 10 04 | 683 | 1.0− | 0.5− | 2002 10 31 | 704 | 1.0− | 0.5− |
| 2002 09 26 | 644 | 0.6− | 0.4+ | 2002 10 04 | 683 | 0.2+ | 0.5− | 2002 10 31 | 704 | 0.3− | 1.1− |
| 2002 10 01 | 608 | 0.3− | 0.3+ | 2002 10 04 | 683 | 0.5− | 0.7− | 2002 10 31 | 704 | 1.0− | 0.1− |
| 2002 10 01 | 608 | 0.1+ | 0.3+ | 2002 10 07 | 704 | 0.7+ | 1.2− | 2006 11 25 | 735 | 0.4− | 0.4− |
| 2002 10 01 | 608 | 0.5− | 0.2+ | 2002 10 07 | 704 | 1.1− | 0.7+ | 2006 11 25 | 735 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.4+ | 0.1+ | 2002 10 07 | 704 | 0.0 | 0.3+ | 2006 11 25 | 735 | 0.3+ | 0.5+ |
| 2002 10 02 | 704 | 0.5+ | 0.0 | 2002 10 07 | 704 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.3+ |
| 2002 10 02 | 704 | 0.2+ | 0.1− | 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.2+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.8+ | 2006 11 27 | G96 | 0.1+ | 0.6+ |
| 2002 10 03 | 704 | 0.6+ | 0.7+ | 2002 10 11 | 704 | 0.7+ | 1.8+ | 2006 11 27 | G96 | 0.1+ | 0.7+ |

**2002 TA$_8$ = 2006 UE$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.64699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24076361 | $\omega$ | 244.22521 | | −0.23043337 | +0.97165544 | |
| $a$ | 2.5590307 | $\Omega$ | 12.79050 | | −0.78538329 | −0.15368368 | |
| $e$ | 0.0954109 | $i$ | 13.79363 | | −0.57452027 | −0.17963029 | |
| $P$ | 4.09 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.2− | 0.1− | 2002 10 12 | 704 | 0.6− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.6− |
| 2002 09 27 | 644 | 0.1− | 0.1− | 2002 10 12 | 704 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 2002 09 27 | 644 | 0.4− | 0.0 | 2002 10 12 | 704 | 0.8− | 0.6− | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2002 10 01 | 608 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.4− |
| 2002 10 01 | 608 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 2002 10 01 | 608 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2002 10 02 | 704 | 1.1+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.9+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2002 10 02 | 704 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.3− | 1.0− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.6− | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | (0.1+ | 1.8+) | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | (1.8+ | 0.2+) | 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 1.3+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.4+ |
| 2002 10 12 | 704 | 0.8+ | 0.6− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.2+ |

**2002 TJ$_8$ = 2006 TQ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.24573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26163670 | $\omega$ | 125.01113 | | +0.78570300 | +0.61824779 | |
| $a$ | 2.4210492 | $\Omega$ | 196.83242 | | −0.58855147 | +0.73665624 | |
| $e$ | 0.1914858 | $i$ | 4.15627 | | −0.19046774 | +0.27405703 | |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 608 | 0.5− | 0.7− | 2002 10 07 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 2002 10 01 | 608 | 1.1− | 0.6− | 2002 10 07 | 704 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2002 10 01 | 608 | 0.0 | 0.4− | 2002 10 11 | 704 | 0.1+ | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2002 10 02 | 704 | 0.1+ | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.1− | 2002 10 11 | 704 | 0.7+ | 0.5− | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.1+ | 0.0 | 2002 10 11 | 704 | 0.2+ | 0.6− | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.2+ | 0.6+ | 2005 04 16 | 691 | 0.1+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2005 04 16 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 0.4− | 0.4+ | 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.7− | 0.3− |
| 2002 10 03 | 704 | 0.1− | 0.8+ | 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.7− | 0.4+ | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.4+ | 0.3+ |
| 2002 10 07 | 699 | 0.4− | 0.0 | 2005 05 19 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2002 10 07 | 699 | 0.1+ | 0.1− | 2005 05 19 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 2002 10 07 | 699 | 0.2− | 0.5− | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 11 11 | 703 | 1.5+ | 1.5− |
| 2002 10 07 | 699 | 0.3+ | 0.8+ | 2005 05 19 | G96 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 2002 10 07 | 704 | 0.8+ | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2002 10 07 | 704 | 0.7+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.1+ | | | | |

**2002 TD$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.69475 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27277881 | $\omega$ | 297.30563 | | +0.94305494 | −0.30888399 | |
| $a$ | 2.3546641 | $\Omega$ | 80.90057 | | +0.33185469 | +0.84821688 | |
| $e$ | 0.2035570 | $i$ | 7.18167 | | +0.02280006 | +0.43025435 | |
| $P$ | 3.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 1.2+ | 0.6+ | 2002 10 31 | 704 | 0.0 | 0.5+ | 2002 12 06 | 608 | 0.2− | 0.2+ |
| 2002 10 01 | 704 | 0.2+ | 0.6+ | 2002 11 01 | 704 | 0.1+ | 0.3− | 2002 12 06 | 608 | 0.4+ | 0.4− |
| 2002 10 01 | 704 | 0.3+ | 0.0 | 2002 11 01 | 704 | 0.1+ | 1.2− | 2002 12 06 | 608 | 0.9+ | 1.1+ |
| 2002 10 01 | 704 | 0.1+ | 0.7+ | 2002 11 01 | 704 | 0.9− | 0.7+ | 2002 12 11 | 704 | 1.2− | 0.2+ |
| 2002 10 02 | 608 | 0.1− | 0.7− | 2002 11 01 | 704 | 0.3+ | 0.3− | 2002 12 11 | 704 | 0.1− | 1.1+ |
| 2002 10 02 | 608 | 0.2+ | 0.6− | 2002 11 01 | 608 | 0.6− | 0.4− | 2002 12 11 | 704 | 0.6− | 0.9+ |
| 2002 10 02 | 608 | 0.1+ | 1.3− | 2002 11 01 | 608 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2002 11 01 | 608 | 0.4− | 0.1− | 2006 10 22 | G96 | 0.5− | 0.0 |
| 2002 10 04 | 704 | (2.2− | 0.3−) | 2002 11 07 | 704 | 0.8− | 0.3− | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2002 10 04 | 704 | 0.1+ | 0.9− | 2002 11 07 | 704 | 0.3− | 0.6+ | 2006 10 22 | G96 | 0.5− | 0.2− |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2002 11 07 | 704 | 0.1− | 0.8+ | 2006 10 29 | G96 | 0.2− | 0.1− |
| 2002 10 09 | 699 | 0.2+ | 0.3+ | 2002 11 07 | 704 | 1.0− | 0.7+ | 2006 10 29 | G96 | 0.6+ | 0.2− |
| 2002 10 09 | 699 | 0.2− | 1.2+ | 2002 11 07 | 704 | 0.3+ | 0.0 | 2006 10 29 | G96 | 0.6+ | 0.5− |
| 2002 10 09 | 699 | 0.4+ | 0.3+ | 2002 11 11 | 704 | 0.2+ | 0.6− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2002 10 09 | 699 | 0.1− | 0.5+ | 2002 11 11 | 704 | 0.4+ | 1.0− | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2002 10 31 | 704 | 0.5+ | 0.0 | 2002 11 11 | 704 | 0.1+ | 0.6− | 2006 11 22 | G96 | 0.3+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.5+ | 0.6+ | 2002 11 11 | 704 | 0.1− | 0.4− | 2006 11 22 | G96 | 0.3− | 0.1− | | |
| 2002 10 31 | 704 | 0.1+ | 0.1+ | 2002 11 11 | 704 | 0.1− | 1.2− | | | | | | |

**2002 TQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.69739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26062383 | $\omega$ | 333.07751 | | +0.98304236 | +0.18244326 | |
| $a$ | 2.4273178 | $\Omega$ | 16.44182 | | −0.15427090 | +0.87731895 | |
| $e$ | 0.1630882 | $i$ | 3.74717 | | −0.09913730 | +0.44387601 | |
| $P$ | 3.78 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.7+ | 0.5− | 2002 10 08 | 291 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.5− | | |
| 2002 09 05 | 704 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.5− | | |
| 2002 09 05 | 704 | (1.2+ | 1.8+) | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.8+ | | |
| 2002 09 15 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.8− | 0.7+ | | |
| 2002 09 15 | 644 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2− | 1.4+ | | |
| 2002 09 15 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | (0.3− | 2.0+) | | |
| 2002 10 02 | 608 | 0.1− | 0.8− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.1− | | |
| 2002 10 02 | 608 | 0.6+ | 0.7− | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 02 | 608 | 0.5− | 0.9− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.0 | | |
| 2002 10 03 | 291 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.0 | | |
| 2002 10 03 | 704 | 0.0 | 0.6− | 2006 10 21 | 644 | 0.5+ | 0.2− | 2006 11 22 | 104 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | (0.7+ | 2.4−) | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 22 | 104 | 0.2− | 0.0 | | |
| 2002 10 03 | 291 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 22 | 104 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 1.0− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 22 | 104 | 0.0 | 0.2− | | |
| 2002 10 03 | 291 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 26 | 104 | 0.7+ | 0.1− | | |
| 2002 10 03 | 704 | 0.1− | 0.7− | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 26 | 104 | 0.6− | 0.3+ | | |
| 2002 10 07 | 704 | 0.6− | 0.7− | 2006 11 14 | 703 | 0.4− | 0.9− | 2006 11 26 | 104 | 0.2+ | 0.3− | | |
| 2002 10 07 | 704 | 0.3− | 0.1+ | 2006 11 14 | 703 | (1.7− | 0.3+) | 2006 11 27 | 104 | 0.5+ | 0.2+ | | |
| 2002 10 07 | 704 | (1.8− | 0.1+) | 2006 11 14 | 703 | 1.3+ | 0.3− | 2006 11 27 | 104 | 0.2− | 1.2+ | | |
| 2002 10 07 | 704 | (2.1+ | 1.1+) | 2006 11 14 | 703 | 0.4− | 1.5− | 2006 11 27 | 104 | (1.8− | 0.6+) | | |
| 2002 10 08 | 291 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.3− | | | | | | |
| 2002 10 08 | 291 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.4− | | | | | | |

**2002 TG$_{12}$ = 2006 SR$_{356}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.28243 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25411514 | $\omega$ | 244.65744 | | +0.96913331 | +0.24222432 | |
| $a$ | 2.4685903 | $\Omega$ | 101.29752 | | −0.20600520 | +0.89794141 | |
| $e$ | 0.1927677 | $i$ | 2.68358 | | −0.13543443 | +0.36746238 | |
| $P$ | 3.88 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | (0.1− | 2.2−) | 2002 10 11 | 704 | 1.5− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 01 | 699 | 1.3+ | 0.2+ | 2002 10 11 | 704 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2− | | |
| 2002 10 01 | 699 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2002 10 01 | 699 | 0.1− | 0.8− | 2006 09 30 | 703 | (2.1+ | 0.2+) | 2006 10 22 | 691 | 0.0 | 0.2− | | |
| 2002 10 01 | 608 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 1.0− | | |
| 2002 10 01 | 608 | 0.2− | 0.6+ | 2006 09 30 | 703 | (2.2+ | 0.1+) | 2006 11 01 | G96 | 0.4+ | 0.4− | | |
| 2002 10 01 | 608 | 0.3− | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 0.3+ | 0.5− | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 1.0+ | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 11 10 | 691 | 0.1− | 0.2+ | | |
| 2002 10 03 | 704 | 0.3− | 0.3− | 2006 10 03 | G96 | 0.5+ | 0.4− | 2006 11 10 | 691 | 0.0 | 0.4+ | | |
| 2002 10 11 | 704 | 0.5− | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.3− | | | | | | |

**2002 TK$_{12}$ = 2006 WS$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.59670 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27069325 | $\omega$ | 344.51317 | | +0.85297849 | −0.51410559 | |
| $a$ | 2.3667430 | $\Omega$ | 46.78534 | | +0.49105200 | +0.73190935 | |
| $e$ | 0.1016000 | $i$ | 7.10384 | | +0.17690571 | +0.44721824 | |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.9− | 0.2− | 2002 10 08 | 699 | 0.0 | 0.8+ | 2006 11 19 | 704 | 0.2+ | 1.0− | | |
| 2002 09 09 | 599 | 0.2+ | 0.3+ | 2002 10 08 | 699 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.7+ | | |
| 2002 09 09 | 599 | 0.6+ | 0.1− | 2002 10 08 | 608 | 0.1+ | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.1− | | |
| 2002 10 01 | 699 | 0.2− | 0.9+ | 2002 10 08 | 608 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.5+ | | |
| 2002 10 01 | 699 | 0.0 | 0.7+ | 2002 10 08 | 608 | 0.4− | 1.0− | 2006 11 19 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 01 | 699 | 0.2− | 0.6− | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 22 | 704 | (2.3+ | 1.3+) | | |
| 2002 10 01 | 699 | 0.8− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | (1.7+ | 0.7−) | | |
| 2002 10 03 | 704 | (2.1− | 1.3−) | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.8− | | |
| 2002 10 03 | 704 | 0.3− | 0.6− | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 25 | 691 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.1− | 0.4+ | 2006 11 25 | 691 | 0.2+ | 0.3− | | |
| 2002 10 08 | 699 | 1.4+ | 0.4+ | 2006 11 13 | 691 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.2− | | |
| 2002 10 08 | 699 | (2.6+ | 2.2+) | 2006 11 13 | 691 | 0.4− | 0.4+ | | | | | | |

**2002 TK$_{13}$ = 2006 RE$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.74420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24174751 | $\omega$ | 312.77477 | | +0.78685739 | +0.61709997 | |
| $a$ | 2.5520825 | $\Omega$ | 9.12728 | | −0.55344341 | +0.71031523 | |
| $e$ | 0.2014293 | $i$ | 2.37130 | | −0.27304917 | +0.33858514 | |
| $P$ | 4.08 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 30 | 691 | 0.6− | 0.2+ | 2005 03 08 | G96 | (1.3− | 1.6+) | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 1998 09 30 | 691 | 0.7− | 0.4− | 2005 03 08 | G96 | 0.1− | 1.3+ | 2006 09 27 | 704 | 0.0 | 1.4+ | | |
| 1998 09 30 | 691 | 0.1− | 1.4− | 2005 04 09 | 691 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.5+ | | |
| 1998 10 13 | 691 | 0.2+ | 0.1− | 2005 04 09 | 691 | 0.6− | 0.1+ | 2006 09 28 | 704 | 0.2− | 0.0 | | |
| 1998 10 13 | 691 | 0.1+ | 0.2+ | 2005 04 09 | 691 | 0.2+ | 0.3− | 2006 09 28 | 704 | 0.1− | 1.0+ | | |
| 1998 10 13 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 1.2− | 2006 09 28 | 704 | 0.3− | 0.7+ | | |
| 1998 10 21 | 910 | 1.6+ | 1.0+ | 2006 08 28 | 703 | 0.3− | 1.1− | 2006 09 28 | 704 | 0.1+ | 0.8+ | | |
| 1998 10 21 | 910 | 1.8+ | 0.9+ | 2006 08 28 | 703 | 0.7− | 1.4− | 2006 09 28 | 704 | (1.9+ | 3.1+) | | |
| 1998 10 22 | 910 | 1.5+ | 1.0+ | 2006 08 28 | 703 | 0.1+ | 1.1− | 2006 10 01 | 704 | 0.9− | 0.8+ | | |
| 2001 03 28 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.2− | 2006 10 01 | 704 | 0.7+ | 0.9+ | | |
| 2001 03 28 | 691 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.3+ | | |
| 2001 03 28 | 691 | 0.6− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1+ | 0.4+ | | |
| 2002 10 01 | 699 | 1.1− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.5+ | 0.8+ | | |
| 2002 10 01 | 699 | 0.1− | 0.8− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.5+ | 0.2+ | | |
| 2002 10 01 | 699 | 0.5− | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.3+ | | |
| 2002 10 01 | 699 | 0.8− | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1+ | | |
| 2002 10 02 | 599 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.7+ | 2006 10 16 | G96 | 0.2− | 0.3− | | |
| 2002 10 02 | 599 | 0.2− | 0.6+ | 2006 09 20 | 704 | 0.3− | 0.6− | 2006 10 16 | G96 | 0.1− | 0.4− | | |
| 2002 10 02 | 599 | 0.0 | 1.2+ | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3− | 0.6− | | |
| 2002 10 03 | 704 | 0.5+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.4− | | |
| 2002 10 03 | 704 | 0.5+ | 0.3− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2002 10 03 | 704 | 1.1+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2002 10 07 | 644 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 22 | G96 | 0.3− | 0.3− | | |
| 2002 10 07 | 644 | 0.3− | 0.5− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2002 10 07 | 644 | 0.3− | 0.3− | 2006 09 27 | 704 | (0.4+ | 1.9+) | 2006 10 22 | G96 | 0.4− | 0.5− | | |
| 2005 03 08 | G96 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | | | | | |
| 2005 03 08 | G96 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.1− | | | | | | |

**2002 TR$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.69496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26379250 | $\omega$ | 260.86143 | | +0.98361629 | −0.17618620 | |
| $a$ | 2.4078407 | $\Omega$ | 109.27912 | | +0.17717400 | +0.90566563 | |
| $e$ | 0.2010423 | $i$ | 2.31791 | | +0.03329215 | +0.38565293 | |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 0.9+ | 0.1− | 2002 10 11 | 704 | 0.8− | 0.6− | 2002 10 31 | 699 | 0.1+ | 0.4− | | |
| 2002 10 01 | 704 | 0.2+ | 1.0+ | 2002 10 11 | 644 | 0.1− | 0.3− | 2002 10 31 | 704 | 0.5+ | 0.1+ | | |
| 2002 10 01 | 704 | 0.1− | 0.7+ | 2002 10 11 | 704 | 0.6− | 0.6+ | 2002 10 31 | 704 | 0.4+ | 0.5− | | |
| 2002 10 03 | 704 | 0.7+ | 0.9+ | 2002 10 11 | 704 | 0.9− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2002 10 11 | 704 | 1.0− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.5+ | 0.7− | 2002 10 11 | 704 | (2.6+ | 1.5+) | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.4+ | 0.4− | 2002 10 11 | 644 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2002 10 31 | 699 | 1.0+ | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2002 10 09 | 699 | 0.3+ | 0.5+ | 2002 10 31 | 699 | 1.1− | 0.3− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 699 | 0.1+ | 0.3− | 2002 10 31 | 704 | 0.0 | 0.3− | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2002 10 09 | 699 | 0.6− | 0.2− | 2002 10 31 | 699 | 0.1− | 0.6+ | 2006 11 25 | 691 | 0.2+ | 0.2+ |
| 2002 10 09 | 699 | (1.7− | 0.5+) | 2002 10 31 | 704 | 0.7+ | 0.4− | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2002 10 11 | 644 | 0.0 | 0.9− | 2002 10 31 | 704 | 0.4+ | 0.2+ | | | | |

### 2002 TJ$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.49054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27308992 | $\omega$ | 263.94653 | | +0.73201527 | | −0.68104757 |
| $a$ | 2.3528754 | $\Omega$ | 138.97697 | | +0.63547497 | | +0.67296822 |
| $e$ | 0.1884511 | $i$ | 1.58080 | | +0.24561192 | | +0.28859658 |
| $P$ | 3.61 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.0 | 0.1+ | 2002 10 04 | 704 | 0.5− | 0.6+ | 2002 10 11 | 704 | 0.3− | 0.5+ |
| 2000 02 05 | 691 | 0.0 | 0.2+ | 2002 10 07 | 704 | 0.9+ | 1.0− | 2002 10 11 | 704 | 0.1− | 0.1+ |
| 2000 02 05 | 691 | 0.0 | 0.1+ | 2002 10 07 | 704 | 0.4+ | 0.1− | 2002 10 12 | 704 | 0.7+ | 0.8− |
| 2002 10 01 | 699 | 0.7+ | 0.1+ | 2002 10 07 | 704 | 0.4+ | 1.1+ | 2002 10 12 | 704 | 0.3+ | 0.5− |
| 2002 10 01 | 699 | 0.3− | 0.5+ | 2002 10 07 | 704 | 0.2+ | 0.8+ | 2002 10 12 | 704 | 0.1+ | 0.7− |
| 2002 10 01 | 699 | 0.8+ | 0.3+ | 2002 10 07 | 704 | 0.1− | 0.6− | 2002 10 12 | 704 | 0.7− | 0.9− |
| 2002 10 01 | 699 | 0.0 | 0.2− | 2002 10 10 | 704 | 0.4− | 1.1+ | 2002 10 31 | 704 | 0.7+ | 0.2+ |
| 2002 10 02 | 704 | (1.7− | 2.3+) | 2002 10 10 | 704 | 0.6− | 0.1+ | 2002 10 31 | 704 | 0.4− | 0.7+ |
| 2002 10 02 | 704 | 0.0 | 1.3− | 2002 10 10 | 704 | 1.4− | 0.8− | 2002 10 31 | 704 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.2− | 0.5+ | 2002 10 10 | 704 | (1.4− | 1.8+) | 2002 10 31 | 704 | 0.1− | 0.7+ |
| 2002 10 02 | 704 | 0.5+ | 0.9− | 2002 10 11 | 704 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.1− | 0.5− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.6+ | 0.5− | 2002 10 11 | 704 | 0.1+ | 0.7+ | 2006 11 14 | G96 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.7− | 2002 10 11 | 704 | 0.6+ | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | (0.5+ | 1.7−) | 2002 10 11 | 704 | 0.1− | 1.4+ | 2006 11 16 | G96 | 0.3− | 1.0− |
| 2002 10 04 | 704 | 0.5− | 0.9− | 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2002 10 04 | 704 | 1.2− | 0.6+ | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2002 10 11 | 704 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.5− | 0.1− |

### 2002 TA$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.21343 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22121131 | $\omega$ | 328.36077 | | +0.93284518 | | +0.35987212 |
| $a$ | 2.7076831 | $\Omega$ | 10.58850 | | −0.30810323 | | +0.82143690 |
| $e$ | 0.0687816 | $i$ | 5.33516 | | −0.18674117 | | +0.44241776 |
| $P$ | 4.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.0 | 1.0+ | 2002 10 07 | 704 | 0.7− | 0.5+ | 2005 03 10 | G96 | 0.4− | 0.1+ |
| 2002 09 26 | 644 | 0.1− | 1.3+ | 2002 10 07 | 704 | 0.9− | 1.0+ | 2005 03 10 | G96 | 0.3+ | 0.2+ |
| 2002 09 26 | 644 | 0.0 | 1.5+ | 2002 10 11 | 704 | 0.1− | 0.2+ | 2005 04 04 | 691 | 0.6+ | 0.5+ |
| 2002 10 01 | 608 | 0.5− | 0.1− | 2002 10 11 | 704 | 0.5− | 0.6+ | 2005 04 04 | 691 | 1.0+ | 0.5+ |
| 2002 10 01 | 608 | 1.0− | 0.3− | 2002 10 11 | 704 | 0.3+ | 0.6− | 2005 04 04 | 691 | 0.1+ | 0.1− |
| 2002 10 01 | 608 | 0.0 | 0.3+ | 2002 10 11 | 704 | 0.4+ | 0.8+ | 2005 04 17 | 691 | 0.3− | 0.5+ |
| 2002 10 03 | 704 | 0.7− | 1.1+ | 2002 10 11 | 704 | 0.3− | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 1.9− | 0.6− | 2004 01 18 | 691 | 0.1+ | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2004 01 18 | 691 | 0.0 | 0.2+ | 2005 05 01 | 644 | 0.4− | 0.5+ |
| 2002 10 03 | 704 | 0.5+ | 0.5+ | 2004 01 18 | 691 | 0.1+ | 0.3+ | 2005 05 01 | 644 | 0.3+ | 0.2+ |
| 2002 10 07 | 704 | 0.2+ | 1.0+ | 2005 03 10 | G96 | 0.0 | 0.2+ | 2005 05 01 | 644 | 0.5− | 0.1+ |
| 2002 10 07 | 704 | 0.0 | 0.6+ | 2005 03 10 | G96 | 0.1+ | 0.6+ | | | | |

### 2002 TD$_{16}$ = 2006 SP$_{274}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.78222 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26484692 | $\omega$ | 92.44536 | | +0.87020752 | | −0.49263321 |
| $a$ | 2.4014457 | $\Omega$ | 297.06853 | | +0.44877035 | | +0.79856345 |
| $e$ | 0.2002524 | $i$ | 0.46127 | | +0.20333236 | | +0.34584525 |
| $P$ | 3.72 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.0 | 0.1+ | 2002 10 03 | 704 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2000 02 05 | 691 | 0.2− | 0.2+ | 2002 10 05 | 645 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2000 02 05 | 691 | 0.2+ | 0.1− | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.4− | 0.0 |
| 2002 10 02 | 704 | 0.8+ | 0.5− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.5− | 0.2+ |
| 2002 10 02 | 704 | 0.1+ | 0.4− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2002 10 02 | 704 | (0.2− | 1.6−) | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 0.8− | 0.0 | 2002 10 30 | 645 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.3− | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.3− | 0.6− |
| 2002 10 03 | 704 | 0.3+ | 1.3− | 2006 09 27 | G96 | 0.0 | 0.2+ | | | | |
| 2002 10 03 | 704 | 0.4+ | 1.0− | 2006 09 27 | G96 | 0.2− | 0.0 | | | | |

### 2002 TJ$_{16}$ = 2006 QL$_{121}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.41347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23763598 | $\omega$ | 215.28243 | | +0.80535706 | | −0.59277740 |
| $a$ | 2.5814353 | $\Omega$ | 181.09490 | | +0.57969956 | | +0.78891951 |
| $e$ | 0.1864100 | $i$ | 11.67915 | | +0.12388875 | | +0.16192888 |
| $P$ | 4.15 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | (0.6− | 1.9+) | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.6− | 0.1− | 2006 09 13 | 644 | 0.3− | 0.2+ |
| 2002 10 01 | 608 | 0.1+ | 1.0− | 2002 10 11 | 645 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 2002 10 01 | 608 | 0.3+ | 0.3− | 2002 10 11 | 645 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.0 | 0.4− |
| 2002 10 01 | 608 | 0.2+ | 0.1− | 2006 08 18 | 644 | 0.2+ | 0.2− | 2006 09 17 | 703 | 0.5− | 0.2+ |
| 2002 10 02 | 704 | 0.2+ | 0.7+ | 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.5− | 0.2+ |
| 2002 10 02 | 704 | 0.0 | 0.3− | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 09 17 | 703 | (0.6+ | 1.7−) |
| 2002 10 02 | 704 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.9− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 2002 10 02 | 704 | 1.0− | 0.4+ | 2006 08 29 | 703 | 0.7+ | 0.9− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 1.0+ | 1.0+ | 2006 08 29 | 703 | 1.1− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.6+ | 0.3− | 2006 10 27 | G96 | 0.5− | 0.3− |
| 2002 10 03 | 704 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.8− | 0.8− |
| 2002 10 03 | 704 | 0.9− | 0.2+ | 2006 08 30 | 699 | 0.4+ | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 1.1− | 0.3+ | 2006 08 30 | 699 | 0.4+ | 0.9+ | 2006 10 27 | G96 | 0.4− | 0.6− |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2006 09 02 | 152 | 0.4+ | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2002 10 05 | 645 | 0.5+ | 0.4+ | 2006 09 02 | 152 | 0.6+ | 0.6− | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 02 | 152 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 10 10 | 645 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 0.9− | 1.1+ | 2006 09 13 | 644 | 0.2+ | 0.3+ | | | | |
| 2002 10 11 | 704 | 0.3− | 1.2+ | 2006 09 13 | 644 | 0.1− | 0.3+ | | | | |

### 2002 TK$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.40161 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26304491 | $\omega$ | 167.61887 | | +0.99000420 | | −0.13809984 |
| $a$ | 2.4124007 | $\Omega$ | 200.38567 | | +0.12137325 | | +0.93764124 |
| $e$ | 0.1912042 | $i$ | 4.71577 | | +0.07183470 | | +0.31899426 |
| $P$ | 3.75 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.3− | 0.8+ | 2002 10 04 | 644 | 0.0 | 0.4+ | 2006 11 12 | G96 | 0.3+ | 0.5− |
| 2002 09 06 | 704 | 1.1− | 0.4+ | 2002 10 07 | 699 | (0.6+ | 1.7+) | 2006 11 12 | G96 | 0.5+ | 0.5− |
| 2002 09 06 | 704 | 0.2− | 0.4+ | 2002 10 07 | 699 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.5+ | 0.6− |
| 2002 09 06 | 704 | 0.0 | 0.1− | 2002 10 07 | 699 | 1.0+ | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.9− |
| 2002 09 06 | 704 | 0.4− | 0.4+ | 2002 10 07 | 699 | 0.7− | 0.2+ | 2006 11 17 | 704 | 0.6− | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.6+ | 1.0+ | 2002 10 07 | 704 | 0.4− | 0.8+ | 2006 11 17 | 704 | 0.1+ | 1.0+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.1− | 2002 10 07 | 704 | 0.7+ | 0.6+ | 2006 11 17 | 704 | 0.6− | 0.2− | | |
| 2002 10 02 | 704 | 0.4+ | 0.8− | 2002 10 07 | 704 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.8− | 0.5+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.7− | 2002 10 07 | 704 | 0.3− | 0.4+ | 2006 11 24 | 691 | 0.1− | 0.2+ | | |
| 2002 10 03 | 704 | 0.0 | 0.6+ | 2002 10 11 | 704 | 0.2− | 0.9+ | 2006 11 24 | 691 | 0.1− | 0.2+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.1+ | 0.5+ | 2006 11 24 | 691 | 0.4− | 0.0 | | |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2002 10 11 | 704 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.4+ | 0.4+ | | |
| 2002 10 03 | 704 | 0.6+ | 0.1+ | 2002 10 11 | 704 | 0.8+ | 0.1− | 2006 11 28 | 704 | 0.6+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.7+ | 0.4− | 2002 10 31 | 645 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.6+ | | |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2002 10 31 | 645 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.1− | 0.3− | | |
| 2002 10 04 | 644 | 0.3+ | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.6− | 2006 11 28 | 704 | 0.4+ | 0.1− | | |

**2002 TN$_{17}$ = 2006 QT$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.34998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24276123 | $\omega$ | 156.64224 | | +0.94808283 | −0.31735540 | |
| $a$ | 2.5449729 | $\Omega$ | 221.87847 | | +0.28669737 | +0.88093662 | |
| $e$ | 0.2089269 | $i$ | 1.76863 | | +0.13763560 | +0.35105016 | |
| $P$ | 4.06 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 27 | 691 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.2− | 0.1− | 2006 09 20 | 704 | 1.5+ | 0.1− | | |
| 1994 10 27 | 691 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.5− | | |
| 1994 10 27 | 691 | 0.3+ | 0.1+ | 2005 05 13 | G96 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 1.2+ | 0.3+ | | |
| 2002 09 07 | 704 | 0.7− | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.7+ | 2006 09 20 | 704 | 0.7+ | 0.2− | | |
| 2002 09 07 | 704 | 0.8− | 0.5− | 2005 05 13 | G96 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.0 | 0.1+ | | |
| 2002 09 07 | 704 | 0.6− | 0.3+ | 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1− | | |
| 2002 09 07 | 704 | 0.9− | 0.0 | 2006 08 24 | 644 | 0.3+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.1+ | 0.2− | 2006 08 24 | 644 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.6− | | |
| 2002 10 02 | 704 | 0.5− | 0.6+ | 2006 08 28 | 703 | (2.3+ | 2.4+) | 2006 09 25 | 699 | 0.2+ | 0.3+ | | |
| 2002 10 02 | 704 | 0.4− | 0.6− | 2006 08 28 | 703 | 0.6− | 0.4+ | 2006 09 25 | 699 | 0.7− | 0.5+ | | |
| 2002 10 02 | 704 | 0.5− | 0.8− | 2006 08 28 | 703 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.2+ | | |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2006 08 28 | 703 | 1.3+ | 0.6+ | 2006 09 27 | 704 | 0.3+ | 0.5+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.3+ | 2006 09 03 | 152 | (1.4− | 1.9−) | 2006 09 27 | 704 | 0.8− | 0.2+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 09 03 | 152 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.4+ | 0.9+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2006 09 03 | 152 | 0.8− | 0.4− | 2006 09 27 | 704 | 0.0 | 0.6+ | | |
| 2002 10 03 | 704 | 0.4− | 0.2− | 2006 09 12 | 703 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.7+ | 0.2− | | |
| 2002 10 07 | 699 | 0.3− | 1.3+ | 2006 09 12 | 703 | 0.2− | 0.9− | 2006 10 01 | 703 | 0.2− | 0.9− | | |
| 2002 10 07 | 699 | 0.7− | 1.3+ | 2006 09 12 | 703 | 0.8− | 0.2− | 2006 10 01 | 703 | 0.0 | 0.6− | | |
| 2002 10 07 | 699 | 0.5− | 0.7+ | 2006 09 12 | 703 | (0.2+ | 1.6−) | 2006 10 01 | 703 | 0.3+ | 0.9− | | |
| 2002 10 07 | 699 | 0.3+ | 0.3− | 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.6− | | |
| 2002 10 07 | 704 | 0.8+ | 1.2− | 2006 09 16 | 699 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.5+ | 0.7− | | |
| 2002 10 07 | 704 | 0.5+ | 0.6+ | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.5− | | |
| 2002 10 07 | 704 | 1.1+ | 0.3− | 2006 09 16 | 699 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.2− | 0.5− | | |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 09 19 | 699 | 0.4+ | 0.3+ | 2006 11 13 | G96 | 0.4− | 0.5+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.8− | | |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.6− | | |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.5− | 0.1− | 2006 11 13 | G96 | 0.4− | 0.2+ | | |

**2002 TD$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.23929 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29856977 | $\omega$ | 80.89432 | | −0.01811803 | +0.99977203 | |
| $a$ | 2.2170330 | $\Omega$ | 188.09323 | | −0.94596419 | −0.02079962 | |
| $e$ | 0.1380860 | $i$ | 4.60271 | | −0.32376455 | +0.00482386 | |
| $P$ | 3.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.1+ | 0.8+ | 2002 10 03 | 704 | 0.3+ | 0.4− | 2005 08 01 | 599 | 0.1+ | 0.1+ | | |
| 1998 04 21 | 704 | 0.3− | 0.5+ | 2002 10 05 | 644 | 0.3− | 0.6− | 2005 08 01 | 599 | 0.0 | 0.1+ | | |
| 1998 04 21 | 704 | 0.4− | 0.2− | 2002 10 05 | 644 | 0.1+ | 0.4− | 2005 08 31 | 691 | 0.1− | 0.0 | | |
| 1998 04 21 | 704 | (2.7− | 0.6−) | 2002 10 05 | 644 | 0.0 | 0.2− | 2005 08 31 | 691 | 0.0 | 0.0 | | |
| 1998 05 01 | 704 | (2.1+ | 0.3−) | 2002 10 06 | 644 | 0.4− | 0.9+ | 2005 08 31 | 691 | 0.2+ | 0.1− | | |
| 1998 05 01 | 704 | 1.1− | 0.3+ | 2002 10 06 | 644 | 0.2− | 1.0+ | 2005 09 13 | 691 | 0.1+ | 0.1− | | |
| 1998 05 01 | 704 | 1.6+ | 0.5+ | 2002 10 06 | 644 | 0.3− | 0.9+ | 2005 09 13 | 691 | 0.0 | 0.1− | | |
| 1998 05 01 | 704 | 0.3− | 0.6+ | 2002 10 30 | 645 | 0.1+ | 0.1− | 2005 09 13 | 691 | 0.1− | 0.2− | | |
| 2002 09 26 | 644 | 0.6− | 0.1+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2005 10 07 | G96 | 0.5+ | 0.2− | | |
| 2002 09 26 | 644 | 0.7− | 0.0 | 2005 06 29 | 691 | 0.0 | 0.0 | 2005 10 07 | G96 | 0.5− | 0.1− | | |
| 2002 09 26 | 644 | 0.4− | 0.2+ | 2005 06 29 | 691 | 0.1− | 0.1+ | 2005 10 07 | G96 | 0.0 | 0.1+ | | |
| 2002 10 02 | 704 | 0.4− | 0.5+ | 2005 06 29 | 691 | 0.2− | 0.0 | 2005 10 07 | G96 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.3− | 0.5+ | 2005 07 11 | 703 | 0.3+ | 0.1+ | 2005 10 26 | G96 | 0.4− | 0.8− | | |
| 2002 10 02 | 704 | 0.9+ | 0.7+ | 2005 07 11 | 703 | 0.8+ | 0.4− | 2005 10 26 | G96 | 0.5+ | 0.2− | | |
| 2002 10 03 | 704 | 0.7− | 0.3+ | 2005 07 11 | 703 | 0.1+ | 0.0 | 2005 10 26 | G96 | 0.5− | 0.2− | | |
| 2002 10 03 | 704 | 0.1+ | 1.1+ | 2005 07 11 | 703 | 0.0 | 0.2− | 2005 10 26 | G96 | 0.0 | 0.0 | | |
| 2002 10 03 | 704 | 0.7− | 0.6+ | 2005 08 01 | 599 | 0.0 | 0.0 | | | | | | |
| 2002 10 03 | 704 | 0.4− | 1.4+ | 2005 08 01 | 599 | 0.1+ | 0.1+ | | | | | | |

**2002 TK$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.57553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26122819 | $\omega$ | 211.47328 | | +0.72750491 | −0.68587530 | |
| $a$ | 2.4235725 | $\Omega$ | 191.88214 | | +0.64595234 | +0.69337830 | |
| $e$ | 0.2286984 | $i$ | 4.91872 | | +0.23126216 | +0.22091083 | |
| $P$ | 3.77 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.2− | 1.0+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 704 | (1.3− | 1.5+) | | |
| 2002 09 26 | 644 | 0.4− | 1.2+ | 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.9− | 0.8+ | | |
| 2002 09 26 | 644 | 0.3− | 1.1+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 20 | 704 | (0.0 | 1.6+) | | |
| 2002 10 02 | 704 | 1.3+ | 1.3+ | 2002 10 11 | 704 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.0 | | |
| 2002 10 02 | 704 | 0.2+ | 0.4+ | 2002 10 11 | 704 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.4− | 0.2− | | |
| 2002 10 02 | 704 | 0.2− | 0.3+ | 2002 10 30 | 645 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.4+ | | |
| 2002 10 02 | 704 | 0.3− | 0.1− | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 20 | 704 | (0.7+ | 1.7−) | | |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2004 03 21 | 291 | 0.8+ | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2004 03 21 | 291 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.2− | 0.3− | | |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2004 03 21 | 291 | 0.2− | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2006 11 02 | G96 | 0.1− | 0.5− | 2006 11 23 | G96 | 0.2− | 0.1− | | |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.5+ | | |
| 2002 10 07 | 704 | 0.0 | 0.5− | 2006 11 02 | G96 | 0.1− | 0.5− | 2006 11 28 | 704 | 0.3− | 0.4− | | |
| 2002 10 07 | 704 | 0.6− | 0.1− | 2006 11 02 | G96 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.5− | | |
| 2002 10 07 | 704 | 0.1− | 1.1+ | 2006 11 14 | 704 | 1.3+ | 0.3− | 2006 11 28 | 704 | 0.6− | 1.3+ | | |
| 2002 10 07 | 704 | 0.3− | 1.0− | 2006 11 14 | 704 | 1.1+ | 1.4− | 2006 11 29 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 07 | 291 | 0.1+ | 0.1− | 2006 11 14 | 704 | (1.8+ | 0.3−) | 2006 11 29 | 704 | 0.9+ | 0.4+ | | |
| 2002 10 07 | 291 | 0.3+ | 0.3− | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.0 | | |
| 2002 10 07 | 291 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.3− | 0.3− | | |
| 2002 10 08 | 704 | 0.8+ | 1.5+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.7+ | | |
| 2002 10 08 | 704 | 1.1− | 0.8+ | 2006 11 17 | 704 | 0.1+ | 1.4− | | | | | | |
| 2002 10 08 | 704 | (1.9− | 0.1+) | 2006 11 17 | 704 | 0.4− | 1.1+ | | | | | | |

**2002 TW$_{18}$ = 2006 WU$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.21827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26339458 | $\omega$ | 176.00446 | | +0.91524749 | −0.40147898 | |
| $a$ | 2.4102652 | $\Omega$ | 207.74253 | | +0.36760985 | +0.86641352 | |
| $e$ | 0.2325441 | $i$ | 4.15337 | | +0.16487886 | +0.29688758 | |
| $P$ | 3.74 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.1+ | 0.1− | 2002 10 04 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2002 10 02 | 704 | 0.0 | 0.3− | 2002 10 04 | 704 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.7− | 0.3− | | |
| 2002 10 02 | 704 | 0.2+ | 0.3− | 2002 10 04 | 704 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.1− | | |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.0 | | |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2002 10 11 | 704 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2− | | |
| 2002 10 03 | 704 | 0.1− | 0.2− | 2002 10 11 | 704 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2002 10 11 | 704 | 0.1+ | 0.7− | 2006 11 29 | 704 | 0.1+ | 1.4+ | | |
| 2002 10 03 | 704 | 0.2− | 0.2− | 2002 10 11 | 704 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.3− | | |
| 2002 10 03 | 704 | 0.4+ | 0.1− | 2002 10 31 | 704 | 0.3− | 0.5+ | 2006 11 29 | 704 | 0.2+ | 0.6− | | |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2002 10 31 | 704 | 0.3− | 0.9+ | | | | | | |
| 2002 10 04 | 704 | 0.1− | 0.6− | 2002 10 31 | 704 | 0.4+ | 1.2+ | | | | | | |

### 2002 $TE_{19}$ = 2006 $VL_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.18060 | | (2000.0) | | | |
| $n$ | 0.25657683 | $\omega$ | 61.02919 | | +0.84811333 | −0.52959179 |
| $a$ | 2.4527752 | $\Omega$ | 330.94073 | | +0.47441741 | +0.77203169 |
| $e$ | 0.2055154 | $i$ | 1.81366 | | +0.23586414 | +0.35142511 |
| $P$ | 3.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 13 | 691 | 0.0 | 0.2− | 2002 10 11 | 704 | 0.4− | 0.0 | 2006 11 09 | 691 | 0.0 | 0.0 | |
| 1998 09 13 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.1+ | 0.6− | 2006 11 09 | 691 | 0.0 | 0.3− | |
| 1998 09 13 | 691 | 0.0 | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.4− | 2006 11 10 | 644 | 0.1+ | 0.2+ | |
| 2002 10 02 | 704 | 0.6− | 1.1− | 2004 03 16 | 291 | 0.4+ | 0.4+ | 2006 11 10 | 644 | 0.1+ | 0.3+ | |
| 2002 10 02 | 704 | 0.1− | 0.9− | 2004 03 16 | 291 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | |
| 2002 10 02 | 704 | 0.3− | 1.4− | 2004 03 16 | 291 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.5− | |
| 2002 10 02 | 704 | 0.9− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.6− | 0.2+ | |
| 2002 10 03 | 704 | 0.6− | 0.6+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.6+ | |
| 2002 10 03 | 704 | 0.1+ | 0.8+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.9− | 0.0 | |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 11 13 | 691 | 0.2+ | 0.0 | |
| 2002 10 03 | 704 | 1.1+ | 1.4+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ | |
| 2002 10 04 | 704 | 0.3+ | 1.2+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.2− | |
| 2002 10 04 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.4− | |
| 2002 10 04 | 704 | 0.0 | 0.7+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2− | |
| 2002 10 04 | 704 | 0.0 | 0.8+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.3− | 0.4− | |
| 2002 10 04 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.0 | 0.3− | |
| 2002 10 07 | 704 | 0.6+ | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.6− | 0.5+ | |
| 2002 10 07 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.6− | 0.3− | 2006 11 19 | 704 | (1.6− | 0.5+) | |
| 2002 10 07 | 704 | 1.1+ | 0.3+ | 2006 10 27 | 703 | (1.5+ | 1.5−) | 2006 11 19 | 704 | (2.5− | 0.0 ) | |
| 2002 10 07 | 704 | 1.3+ | 0.9+ | 2006 10 27 | 703 | 0.8− | 0.7+ | 2006 11 19 | 704 | 1.2− | 0.8+ | |
| 2002 10 10 | 291 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4+ | 0.1+ | |
| 2002 10 10 | 291 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 11 22 | 704 | 0.5− | 0.0 | |
| 2002 10 10 | 291 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.8+ | 0.2− | |
| 2002 10 11 | 704 | 0.9− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.1− | |
| 2002 10 11 | 704 | 1.1− | 0.9− | 2006 11 09 | 691 | 0.1+ | 0.0 | | | | | |

### 2002 $TM_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.83416 | | (2000.0) | | | |
| $n$ | 0.24576211 | $\omega$ | 170.96376 | | +0.99715317 | −0.07298021 |
| $a$ | 2.5242136 | $\Omega$ | 193.26593 | | +0.06298671 | +0.94442494 |
| $e$ | 0.1111753 | $i$ | 4.73926 | | +0.04145162 | +0.32052367 |
| $P$ | 4.01 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.0 | 0.9− | 2002 11 08 | 645 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.9+ | |
| 2002 09 26 | 644 | 0.2− | 1.1− | 2006 09 17 | 703 | 0.1+ | 0.4− | 2006 10 16 | G96 | 0.4− | 0.3− | |
| 2002 09 26 | 644 | 0.1− | 0.7− | 2006 09 17 | 703 | 0.5+ | 0.3+ | 2006 10 16 | G96 | 0.5− | 0.6− | |
| 2002 10 02 | 704 | 0.5− | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.1− | 0.2− | |
| 2002 10 02 | 704 | 0.3+ | 0.1− | 2006 09 17 | 703 | 1.2+ | 0.5− | 2006 10 16 | G96 | 0.2− | 0.5− | |
| 2002 10 02 | 704 | 0.1− | 0.8+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.6+ | |
| 2002 10 03 | 704 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.7− | |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.5+ | |
| 2002 10 03 | 704 | 0.1− | 0.8+ | 2006 10 01 | 704 | 1.4+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.1+ | |
| 2002 10 03 | 704 | 0.5− | 0.5+ | 2006 10 01 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ | |
| 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1+ | |
| 2002 10 07 | 704 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.4+ | |
| 2002 10 07 | 704 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 2002 10 07 | 704 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2002 10 11 | 704 | 0.6− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | |
| 2002 10 11 | 704 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.5− | |
| 2002 10 11 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | (0.3− | 1.9+) | 2006 10 27 | G96 | 0.3+ | 0.3− | |
| 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.3− | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | (1.9− | 0.6+) | | | | | |

### 2002 $TJ_{21}$ = 2006 $RO_{83}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.24745 | | (2000.0) | | | |
| $n$ | 0.24494488 | $\omega$ | 48.30406 | | +0.72384984 | −0.68994251 |
| $a$ | 2.5298249 | $\Omega$ | 355.31480 | | +0.61530943 | +0.64850711 |
| $e$ | 0.1586702 | $i$ | 3.19632 | | +0.31214694 | +0.32158648 |
| $P$ | 4.02 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 27 | 691 | 0.3+ | 0.3− | 2002 10 11 | 704 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.3− | 0.2− | |
| 1994 10 27 | 691 | 0.0 | 0.3− | 2002 10 11 | 704 | 0.2+ | 0.6− | 2006 09 28 | 691 | 0.2− | 0.2+ | |
| 1994 10 27 | 691 | 0.4− | 0.1− | 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.0 | |
| 1996 03 18 | 691 | 0.4+ | 0.5+ | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 10 02 | 691 | 0.3+ | 0.2− | |
| 1996 03 18 | 691 | 0.9− | 0.5− | 2002 10 30 | 644 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.0 | |
| 1996 03 18 | 691 | 0.7+ | 0.4+ | 2002 10 30 | 644 | 0.2+ | 0.7+ | 2006 10 02 | 691 | 0.2+ | 0.1− | |
| 2002 10 02 | 704 | 0.1+ | 0.7+ | 2002 10 30 | 644 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.3− | |
| 2002 10 02 | 704 | (0.1− | 1.7+) | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.5− | |
| 2002 10 02 | 704 | 0.4− | 0.9+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.4− | |
| 2002 10 02 | 704 | 0.4− | 1.5+ | 2006 07 21 | G96 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.6− | |
| 2002 10 03 | 704 | 0.5+ | 1.0+ | 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | |
| 2002 10 03 | 704 | 0.8− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.2+ | |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ | |
| 2002 10 05 | 644 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.5− | |
| 2002 10 05 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.5− | |
| 2002 10 05 | 644 | 0.6+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.5− | |
| 2002 10 11 | 704 | 0.8− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− | |

### 2002 $TT_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.89298 | | (2000.0) | | | |
| $n$ | 0.24441687 | $\omega$ | 33.60804 | | +0.62260605 | −0.77914931 |
| $a$ | 2.5334671 | $\Omega$ | 18.23169 | | +0.65701730 | +0.46999996 |
| $e$ | 0.2065896 | $i$ | 13.44035 | | +0.42507643 | +0.41476064 |
| $P$ | 4.03 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 608 | 1.1− | 0.9− | 2002 10 30 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 703 | (0.9+ | 2.3+) | |
| 2002 09 15 | 608 | 1.3− | 0.8− | 2002 11 02 | 608 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.2+ | |
| 2002 09 15 | 608 | (1.8− | 0.9−) | 2002 11 02 | 608 | 0.0 | 0.6− | 2006 09 30 | 704 | 0.6− | 0.3+ | |
| 2002 10 02 | 704 | 1.1+ | 0.1− | 2002 11 02 | 608 | 0.1+ | 0.3− | 2006 09 30 | 704 | 0.0 | 0.2− | |
| 2002 10 02 | 704 | 0.8− | 0.2− | 2006 09 12 | 703 | 0.1− | 0.5+ | 2006 09 30 | 704 | 0.0 | 0.2− | |
| 2002 10 02 | 704 | 0.8− | 0.3− | 2006 09 12 | 703 | 0.4+ | 0.5− | 2006 09 30 | 704 | 0.8− | 0.0 | |
| 2002 10 02 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.3− | 1.1− | 2006 10 16 | 703 | 0.4− | 1.2− | |
| 2002 10 03 | 704 | 0.4+ | 1.4+ | 2006 09 12 | 703 | (2.7− | 0.4−) | 2006 10 16 | 703 | 0.2− | 0.2+ | |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 09 18 | 703 | 1.1+ | 0.1− | 2006 10 16 | 703 | 0.5− | 1.2+ | |
| 2002 10 03 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 703 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.6+ | 0.0 | |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.5+ | 0.2− | |
| 2002 10 11 | 704 | 0.5+ | 1.3− | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.6+ | |
| 2002 10 11 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− | |
| 2002 10 11 | 704 | (0.5+ | 1.7+) | 2006 09 18 | 699 | 0.8− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− | |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.5− | 2006 10 27 | G96 | 0.0 | 0.3− | |
| 2002 10 30 | 644 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.4− | |
| 2002 10 30 | 644 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.6+ | | | | | |

### 2002 $TL_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.05514 | | (2000.0) | | | |
| $n$ | 0.24048810 | $\omega$ | 348.55368 | | +0.99840723 | +0.00112066 |
| $a$ | 2.5609847 | $\Omega$ | 11.82660 | | +0.03469746 | +0.77617101 |
| $e$ | 0.1645463 | $i$ | 15.97530 | | −0.04448705 | +0.63052145 |
| $P$ | 4.10 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.3− | 0.4+ | 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.6− | 0.5− |
| 2002 09 07 | 704 | 0.7+ | 1.3− | 2002 10 03 | 704 | 0.1− | 1.3− | 2006 09 30 | 703 | 0.8+ | 0.8− |
| 2002 09 07 | 704 | 0.3− | 0.6+ | 2002 10 03 | 704 | 1.2− | 0.7+ | 2006 09 30 | 703 | (0.6− | 1.6−) |
| 2002 09 07 | 704 | 0.9− | 0.4− | 2002 10 04 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 703 | (0.2− | 2.9−) |
| 2002 10 01 | 699 | (1.3+ | 1.7+) | 2002 10 04 | 644 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.9+ |
| 2002 10 01 | 699 | 1.1+ | 0.5+ | 2002 10 04 | 644 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 1.0+ | 0.8+ |
| 2002 10 01 | 699 | 1.3+ | 0.0 | 2002 10 09 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2002 10 01 | 699 | (1.7− | 1.5−) | 2002 10 09 | 704 | 0.1− | 0.1+ | 2006 10 16 | 703 | 1.1− | 0.7− |
| 2002 10 02 | 704 | 0.4− | 0.8− | 2002 10 09 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2002 10 02 | 704 | 0.0 | 1.1+ | 2002 10 09 | 704 | 0.3+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 10 02 | 704 | 0.6− | 0.4− | 2002 10 12 | 704 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 10 02 | 704 | 0.4+ | 1.5− | 2002 10 12 | 704 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.7− |
| 2002 10 02 | 599 | (1.1+ | 2.2−) | 2002 10 12 | 704 | 1.1− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2002 10 02 | 599 | 0.7+ | 0.2+ | 2002 10 12 | 704 | 0.5− | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 10 02 | 599 | 0.5+ | 0.4− | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2002 10 02 | 599 | 0.2+ | 0.0 | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.8− | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.2+ | 2006 10 20 | G96 | 0.5+ | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 1.4− | 0.5− | 2006 09 18 | 699 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.8+ | 0.7− |
| 2002 10 03 | 704 | 1.2+ | 0.4− | 2006 09 18 | 699 | 0.7− | 0.1+ | | | | |

**2002 TO$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.84429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26355818 | $\omega$ | 118.85488 | | +0.92347707 | +0.38290626 | |
| $a$ | 2.4092676 | $\Omega$ | 218.64503 | | −0.36399817 | +0.85474574 | |
| $e$ | 0.1738820 | $i$ | 2.19653 | | −0.12122468 | +0.35041764 | |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.2+ | 0.4− | 2002 10 07 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2002 10 02 | 704 | 0.1− | 0.2− | 2002 10 11 | 704 | 0.3+ | 0.8− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.7− | 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.5− | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2002 10 02 | 599 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.7+ | 0.6+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 10 02 | 599 | 0.2− | 1.1+ | 2002 10 11 | 704 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2002 10 02 | 599 | 0.4− | 0.1− | 2002 10 31 | 699 | (3.7+ | 0.1+) | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 599 | 0.1+ | 0.1− | 2002 10 31 | 699 | (0.9+ | 1.7+) | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2002 10 31 | 699 | (0.4+ | 2.5+) | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.7− | 0.4− | 2002 10 31 | 699 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2002 11 01 | 704 | 0.6− | 0.7+ | 2006 11 23 | 691 | 0.3− | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.4− | 2002 11 01 | 704 | (0.3− | 1.8+) | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.6− | 2002 11 01 | 704 | 0.6+ | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 10 03 | 704 | 0.0 | 1.2− | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2002 10 04 | 644 | 0.1+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.3− | 0.9+ |
| 2002 10 04 | 644 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | (1.5+ | 2.0+) |
| 2002 10 07 | 704 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.3− | 1.0+ |
| 2002 10 07 | 704 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.6+ |
| 2002 10 07 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.6− | | | | |
| 2002 10 07 | 704 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.1+ | | | | |

**2002 TT$_{22}$ = 2006 TQ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.70379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25444650 | $\omega$ | 137.26375 | | +0.99616277 | +0.08710984 | |
| $a$ | 2.4664466 | $\Omega$ | 217.74136 | | −0.08356738 | +0.91798633 | |
| $e$ | 0.1079797 | $i$ | 0.79218 | | −0.02600451 | +0.38692761 | |
| $P$ | 3.87 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.0 | 0.0 | 2002 10 07 | 704 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 1998 09 14 | 691 | 0.2+ | 0.1+ | 2002 10 07 | 704 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 1998 09 14 | 691 | 0.2+ | 0.2+ | 2002 10 11 | 704 | 0.6+ | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 04 24 | 691 | 0.1− | 0.2+ | 2002 10 11 | 704 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2001 04 24 | 691 | 0.0 | 0.5+ | 2002 10 11 | 704 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2001 04 24 | 691 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 1.0+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2002 10 02 | 704 | 0.4− | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2002 10 02 | 704 | 1.0− | 0.1+ | 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.5+ | 0.3− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 1.2− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 13 | 644 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 1.1− | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 10 05 | 291 | 0.2− | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2002 10 05 | 291 | 0.0 | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2002 10 05 | 291 | 0.0 | 0.7− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.2− |
| 2002 10 06 | 599 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.4− |
| 2002 10 06 | 599 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.4− | 0.3− |
| 2002 10 06 | 599 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 22 | G96 | (0.1− | 2.0−) |
| 2002 10 06 | 599 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− | | | | |
| 2002 10 07 | 704 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | | | |

**2002 TE$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.34255 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26002719 | $\omega$ | 356.12592 | | +0.91296657 | −0.40742212 | |
| $a$ | 2.4310294 | $\Omega$ | 27.95044 | | +0.37563374 | +0.81782473 | |
| $e$ | 0.2250305 | $i$ | 2.73243 | | +0.15934658 | +0.40641104 | |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.6+ | 0.8+ | 2002 11 03 | 608 | 1.0− | 0.6+ | 2006 11 16 | 704 | 1.0+ | 0.7+ |
| 2002 10 02 | 704 | 0.7+ | 0.1− | 2002 11 06 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.6− |
| 2002 10 02 | 704 | 0.1− | 0.7+ | 2002 11 06 | 704 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.6− |
| 2002 10 02 | 704 | 0.6+ | 0.3− | 2002 11 06 | 704 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.7+ | 1.0− |
| 2002 10 02 | 608 | 0.1− | 0.6+ | 2002 11 06 | 704 | 0.5− | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2002 10 02 | 608 | 0.2+ | 0.4+ | 2002 11 11 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.3− |
| 2002 10 02 | 608 | 0.6+ | 0.4+ | 2002 11 11 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 1.5+ | 0.7+ |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2002 11 11 | 644 | 0.4+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2002 11 21 | 644 | 0.3+ | 1.1+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 0.5− | 2002 11 21 | 644 | 0.1+ | 1.0+ | 2006 11 20 | 691 | 0.6+ | 0.2− |
| 2002 10 03 | 704 | 0.3− | 0.6− | 2002 11 21 | 644 | 0.2+ | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2002 10 03 | 704 | 0.0 | 1.1− | 2002 12 05 | 704 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 2002 10 07 | 644 | 0.2− | 0.2+ | 2002 12 05 | 704 | 0.7− | 0.9+ | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2002 10 07 | 644 | 0.3− | 0.4+ | 2002 12 05 | 704 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2002 10 07 | 704 | 0.1+ | 0.0 | 2002 12 05 | 704 | 0.7− | 0.5+ | 2006 11 22 | 704 | 0.1− | 0.3+ |
| 2002 10 07 | 704 | 0.1− | 0.4+ | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.0 | 0.1+ |
| 2002 10 07 | 644 | 0.1− | 0.3+ | 2004 03 15 | 691 | 0.4+ | 0.7+ | 2006 11 23 | 703 | 0.2− | 0.4− |
| 2002 10 07 | 704 | 0.2− | 0.8+ | 2004 03 15 | 691 | 0.4+ | 0.3+ | 2006 11 23 | 703 | 0.1+ | 0.4− |
| 2002 10 07 | 704 | 0.1+ | 0.7+ | 2004 03 15 | 691 | 0.0 | 0.7+ | 2006 11 23 | 703 | 1.2− | 0.5− |
| 2002 10 07 | 704 | 0.3− | 0.8+ | 2006 09 28 | G96 | 0.4− | 0.7− | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.5− | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | (4.8− | 1.6−) | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 1.2− | 0.4− | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 27 | 704 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 1.0− | 0.6− | 2006 11 10 | 691 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.3+ | 0.1+ |
| 2002 10 11 | 704 | (0.6− | 1.9−) | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 27 | 704 | 0.3− | 0.2+ |
| 2002 10 30 | 644 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.8− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.6− | 0.6− | 2006 11 28 | 704 | 0.6− | 0.3+ | | |
| 2002 10 30 | 644 | (0.3− | 2.1−) | 2006 11 15 | 704 | 0.0 | 1.0+ | 2006 11 28 | 704 | 0.4− | 0.3+ | | |
| 2002 11 01 | 704 | 0.8+ | 0.3− | 2006 11 15 | 704 | 0.6− | 0.5+ | 2006 11 28 | 704 | 0.9+ | 0.9+ | | |
| 2002 11 01 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.3− | 2006 11 30 | 691 | 0.0 | 0.1− | | |
| 2002 11 01 | 704 | 0.0 | 1.1+ | 2006 11 16 | 704 | 0.0 | 0.1+ | 2006 11 30 | 691 | 0.9− | 0.3− | | |
| 2002 11 01 | 704 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1− | 2006 11 30 | 691 | 0.3− | 0.4− | | |
| 2002 11 03 | 608 | 1.1− | 0.3+ | 2006 11 16 | 704 | 0.8− | 0.3+ | | | | | | |
| 2002 11 03 | 608 | 1.2− | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.0 | | | | | | |

### 2002 $TT_{28}$ = 2006 $SL_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.75317 | | (2000.0) | | | |
| $n$ | 0.24394751 | $\omega$ | 213.12254 | | +0.91264878 | −0.40863187 |
| $a$ | 2.5367157 | $\Omega$ | 170.98091 | | +0.38707049 | +0.85646757 |
| $e$ | 0.2797302 | $i$ | 3.51179 | | +0.13133410 | +0.31540973 |
| $P$ | 4.04 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.2+ | 0.5+ | 2002 10 31 | 704 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.1+ | | |
| 2000 04 10 | 695 | 0.1+ | 0.3+ | 2006 07 22 | G96 | 0.4− | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.8+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.8+ | 2006 07 22 | G96 | 0.5− | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.5+ | | |
| 2002 10 02 | 704 | 0.4+ | 0.4+ | 2006 07 22 | G96 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.1− | 0.1+ | | |
| 2002 10 02 | 704 | 1.0+ | 0.4+ | 2006 07 22 | G96 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.0 | | |
| 2002 10 02 | 704 | 0.8+ | 0.4− | 2006 09 16 | 644 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.0 | 0.1− | 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.6− | | |
| 2002 10 03 | 704 | 0.4+ | 0.2− | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.2− | | |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2006 09 17 | 704 | (0.1+ | 2.1−) | 2006 10 02 | 691 | 0.1+ | 0.2− | | |
| 2002 10 03 | 704 | 0.4+ | 0.7− | 2006 09 17 | 704 | 0.8+ | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.3− | | |
| 2002 10 03 | 704 | 0.2+ | 1.5− | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 09 | 699 | 0.5− | 0.3− | 2006 09 17 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 09 | 699 | 0.1− | 0.8+ | 2006 09 17 | 704 | 0.4+ | 0.8− | 2006 10 11 | 644 | 0.2+ | 0.3+ | | |
| 2002 10 09 | 699 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2002 10 09 | 699 | 0.4− | 0.5− | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2002 10 11 | 644 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2002 10 11 | 704 | 0.3− | 0.8+ | 2006 09 18 | 699 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.8− | | |
| 2002 10 11 | 644 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2− | | |
| 2002 10 11 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2002 10 11 | 704 | 0.8− | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.9− | | |
| 2002 10 11 | 704 | 0.5− | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 11 | 644 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 10 31 | 699 | 0.8− | 0.1− | 2006 09 25 | 691 | 0.6− | 0.1− | 2006 10 22 | 703 | 0.9− | 0.5− | | |
| 2002 10 31 | 699 | 0.2− | 0.8+ | 2006 09 25 | 691 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.0 | | |
| 2002 10 31 | 704 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.8+ | 1.1− | 2006 10 22 | 703 | 0.2+ | 0.2+ | | |
| 2002 10 31 | 699 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.5− | 2006 10 22 | 703 | 0.3− | 0.1− | | |
| 2002 10 31 | 704 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.9− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2002 10 31 | 704 | 0.7+ | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2002 10 31 | 699 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.5− | | |
| 2002 10 31 | 704 | 0.0 | 0.4+ | 2006 09 28 | 704 | 0.2− | 0.6+ | 2006 11 23 | G96 | 0.4+ | 0.4− | | |

### 2002 $TS_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.73844 | | (2000.0) | | | |
| $n$ | 0.27248007 | $\omega$ | 180.53879 | | +0.96641491 | −0.25688528 |
| $a$ | 2.3563849 | $\Omega$ | 194.35278 | | +0.23588966 | +0.89788054 |
| $e$ | 0.2157098 | $i$ | 1.66981 | | +0.10197203 | +0.35751992 |
| $P$ | 3.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 691 | 0.3− | 0.1− | 2002 10 08 | 699 | 0.1+ | 0.3+ | 2002 10 31 | 699 | 0.0 | 0.2+ | | |
| 2001 05 14 | 691 | 0.2+ | 0.3+ | 2002 10 08 | 699 | 0.9+ | 0.1+ | 2002 11 06 | 704 | (0.1− | 1.5−) | | |
| 2001 05 14 | 691 | 0.2+ | 0.1+ | 2002 10 08 | 699 | 0.0 | 0.3+ | 2002 11 06 | 704 | 0.6− | 0.3+ | | |
| 2002 09 05 | 704 | 0.2− | 0.1− | 2002 10 08 | 699 | 1.3+ | 0.2+ | 2002 11 06 | 704 | 0.4− | 0.9+ | | |
| 2002 09 05 | 704 | 0.2− | 0.4+ | 2002 10 09 | 704 | 0.2+ | 0.4+ | 2002 11 06 | 704 | 0.7− | 0.2− | | |
| 2002 09 05 | 704 | 0.2+ | 0.1− | 2002 10 09 | 704 | 0.3+ | 0.1+ | 2002 11 06 | 704 | 0.3− | 0.1+ | | |
| 2002 10 02 | 704 | 0.5+ | 0.5− | 2002 10 09 | 704 | 0.1+ | 0.7+ | 2002 11 10 | 704 | 0.4+ | 0.0 | | |
| 2002 10 02 | 704 | 0.1+ | 0.4− | 2002 10 09 | 704 | 0.4+ | 0.6+ | 2002 11 10 | 704 | 0.4+ | 0.6− | | |
| 2002 10 02 | 704 | 0.6+ | 0.1+ | 2002 10 09 | 704 | 0.2+ | 0.9+ | 2002 11 10 | 704 | 0.4+ | 0.5+ | | |
| 2002 10 02 | 704 | 0.3+ | 0.6− | 2002 10 11 | 644 | 0.8− | 0.5+ | 2002 11 10 | 704 | 0.1+ | 0.6− | | |
| 2002 10 03 | 704 | 0.2− | 0.2− | 2002 10 11 | 704 | 0.5− | 0.5+ | 2002 11 22 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.2− | 0.5− | 2002 10 11 | 704 | 0.4− | 0.4+ | 2002 11 22 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.5− | 2002 10 11 | 704 | 0.0 | 0.0 | 2002 11 22 | 644 | 0.4+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2002 10 11 | 644 | 0.8− | 0.5+ | 2004 03 15 | 691 | 0.0 | 0.5+ | | |
| 2002 10 03 | 704 | 0.1− | 0.3− | 2002 10 11 | 704 | 0.2− | 0.2− | 2004 03 15 | 691 | 0.4+ | 0.4+ | | |
| 2002 10 07 | 704 | 0.0 | 0.2− | 2002 10 11 | 704 | 0.1+ | 0.3− | 2004 03 15 | 691 | 0.0 | 0.3+ | | |
| 2002 10 07 | 704 | 0.6− | 0.8+ | 2002 10 11 | 644 | 0.2− | 0.9+ | 2006 11 01 | G96 | 0.3+ | 1.6− | | |
| 2002 10 07 | 704 | 0.1− | 0.3− | 2002 10 31 | 699 | 0.5− | 0.3− | 2006 11 01 | G96 | 0.5− | 0.8− | | |
| 2002 10 07 | 704 | 0.9− | 0.1− | 2002 10 31 | 699 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.6− | | |
| 2002 10 07 | 704 | 0.5− | 0.7+ | 2002 10 31 | 699 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.4− | 0.4− | | |

### 2002 $TM_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.17577 | | (2000.0) | | | |
| $n$ | 0.26191648 | $\omega$ | 157.59506 | | +0.99084761 | −0.12285920 |
| $a$ | 2.4193247 | $\Omega$ | 209.63143 | | +0.10021530 | +0.94705457 |
| $e$ | 0.1430990 | $i$ | 6.49377 | | +0.09043183 | +0.29663657 |
| $P$ | 3.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.1− | 0.4+ | 2002 10 09 | 704 | 0.2− | 0.7+ | 2002 11 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.4− | 0.2− | 2002 10 09 | 704 | 0.2+ | 0.6+ | 2002 11 22 | 644 | 0.6+ | 0.1− | | |
| 2002 10 02 | 704 | 0.7+ | 0.6− | 2002 10 09 | 704 | 0.5+ | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2002 10 03 | 704 | 0.2− | 0.6− | 2002 10 09 | 704 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.4− | | |
| 2002 10 03 | 704 | 0.1− | 0.7− | 2002 10 11 | 704 | (0.2− | 1.9−) | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2002 10 03 | 704 | 0.2+ | 0.4− | 2002 10 11 | 704 | 0.7+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.4− | | |
| 2002 10 03 | 704 | 0.2− | 0.2− | 2002 10 11 | 704 | 1.3− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.5− | | |
| 2002 10 03 | 704 | 0.5+ | 0.1+ | 2002 10 11 | 704 | (1.8− | 1.7+) | 2006 11 18 | G96 | 0.3+ | 0.4− | | |
| 2002 10 07 | 704 | 0.0 | 1.4+ | 2002 10 30 | 644 | 0.2− | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2002 10 07 | 704 | 0.8− | 0.3− | 2002 10 30 | 644 | 0.3− | 0.7+ | 2006 11 29 | 704 | 0.2− | 1.0+ | | |
| 2002 10 07 | 704 | 0.7− | 0.1− | 2002 10 30 | 644 | 0.3− | 0.8+ | 2006 11 29 | 704 | 0.8− | 0.7− | | |
| 2002 10 07 | 704 | 0.2− | 0.4− | 2002 10 31 | 699 | 0.3+ | 0.5+ | 2006 11 29 | 704 | 0.5− | 0.7+ | | |
| 2002 10 08 | 699 | 0.7+ | 0.3+ | 2002 10 31 | 699 | 0.2+ | 0.6− | 2006 11 29 | 704 | 0.7+ | 0.5+ | | |
| 2002 10 08 | 699 | 0.4+ | 0.1+ | 2002 10 31 | 699 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.3− | 0.2+ | | |
| 2002 10 08 | 699 | 0.2+ | 0.7− | 2002 10 31 | 699 | 0.3+ | 0.4+ | | | | | | |
| 2002 10 08 | 699 | 0.2− | 1.0− | 2002 11 22 | 644 | 0.1+ | 0.2− | | | | | | |

### 2002 $TC_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.12675 | | (2000.0) | | | |
| $n$ | 0.24796760 | $\omega$ | 312.47429 | | +0.96290289 | +0.26505687 |
| $a$ | 2.5092239 | $\Omega$ | 32.25192 | | −0.21127956 | +0.85723033 |
| $e$ | 0.1363591 | $i$ | 5.44365 | | −0.16786594 | +0.44147595 |
| $P$ | 3.97 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.4+ | 0.1− | 2002 11 22 | 644 | 0.8− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2− | | |
| 2002 10 02 | 704 | 0.3− | 0.3+ | 2002 11 22 | 644 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2− | | |
| 2002 10 02 | 704 | 0.6− | 0.5+ | 2005 05 16 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2002 10 02 | 704 | 0.7+ | 0.1+ | 2005 05 16 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2005 05 16 | 644 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.8− | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.4− | | |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2006 09 20 | 699 | 0.8− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.2− | | |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2006 09 20 | 699 | 0.6+ | 1.2+ | 2006 10 28 | 704 | 0.5+ | 0.0 | | |
| 2002 10 08 | 699 | 0.3+ | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 10 28 | 704 | 1.2− | 0.1+ | | |
| 2002 10 08 | 699 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.7+ | 0.6− | | |
| 2002 10 08 | 699 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 28 | 704 | 0.3+ | 0.2− | | |
| 2002 10 08 | 699 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 10 | 683 | (1.1− | 2.8−) | | |
| 2002 10 08 | 699 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 10 | 683 | 0.1− | 1.4− | | |
| 2002 10 08 | 699 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.4− | 1.1+ | 2006 11 10 | 683 | 0.3+ | 1.4− | | |
| 2002 10 08 | 699 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.8+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2002 10 08 | 699 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.0 | 0.6+ | 2006 11 13 | G96 | 0.4+ | 0.4− | | |
| 2002 10 09 | 704 | 0.8− | 0.8− | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.5− | | |
| 2002 10 09 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 14 | 683 | 0.1+ | 1.0− | | |
| 2002 10 09 | 704 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 14 | 683 | (1.7+ | 0.1+) | | |
| 2002 10 09 | 704 | 0.4− | 0.6− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 14 | 683 | (1.6− | 0.7−) | | |
| 2002 10 11 | 644 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.6− | 2006 11 15 | 691 | 0.3− | 0.3+ | | |
| 2002 10 11 | 704 | 0.4+ | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.8− | 0.2+ | | |
| 2002 10 11 | 704 | 0.8− | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.4− | 0.0 | | |
| 2002 10 11 | 704 | 0.2+ | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.1− | 0.1− | | |
| 2002 10 11 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.2+ | | |
| 2002 10 11 | 704 | 1.2+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.3− | 2006 11 17 | 703 | 1.2− | 0.7− | | |
| 2002 10 11 | 644 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.6+ | 0.2− | 2006 11 17 | 703 | 0.4− | 0.6− | | |
| 2002 10 30 | 644 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.7+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.4+ | | |
| 2002 10 30 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.7− | | |
| 2002 10 30 | 644 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.9+ | | |
| 2002 11 06 | 704 | 0.3− | 0.9+ | 2006 10 20 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.8− | 0.6+ | | |
| 2002 11 06 | 704 | 0.3+ | 1.3+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.6+ | | |
| 2002 11 06 | 704 | 1.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.3+ | | |
| 2002 11 22 | 644 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1− | | | | | | |

**2002 TZ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.71656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27600697 | $\omega$ | 261.01254 | | +0.65589692 | +0.75163912 | |
| $a$ | 2.3362681 | $\Omega$ | 50.21207 | | −0.65212339 | +0.61063349 | |
| $e$ | 0.1520949 | $i$ | 5.19334 | | −0.38017670 | +0.24932986 | |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 03 | 704 | 0.3+ | 0.0 | 2002 11 08 | 645 | 0.0 | 0.0 | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 03 | 704 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2002 09 10 | 608 | 0.5− | 0.4+ | 2002 10 05 | 645 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2002 09 10 | 608 | 0.5− | 0.4− | 2002 10 05 | 645 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2002 09 10 | 608 | 0.2− | 0.1+ | 2002 10 08 | 608 | 0.4− | 0.4− | 2006 11 20 | 691 | 0.2− | 0.2+ | | |
| 2002 10 02 | 704 | 0.3+ | 0.1+ | 2002 10 08 | 608 | 0.1+ | 0.8− | 2006 11 20 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2002 10 08 | 608 | 0.4+ | 0.2− | 2006 11 20 | 691 | 0.1− | 0.0 | | |
| 2002 10 02 | 704 | 0.2+ | 0.6+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.6+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.4− | 0.4− | | |
| 2002 10 03 | 704 | 0.4− | 0.2− | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.0 | 0.1− | | |

**2002 TA$_{33}$ = 2006 RW$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.45193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24265691 | $\omega$ | 316.61029 | | +0.99163938 | +0.12619215 | |
| $a$ | 2.5457023 | $\Omega$ | 36.16597 | | −0.10235280 | +0.89643136 | |
| $e$ | 0.0804882 | $i$ | 2.61855 | | −0.07858274 | +0.42483685 | |
| $P$ | 4.06 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.2− | 0.1− | 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 08 18 | 691 | (1.6− | 0.8+) | | |
| 1994 10 08 | 691 | 0.0 | 0.2+ | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.3− | 0.0 | | |
| 1994 10 08 | 691 | 0.7+ | 0.3− | 2002 10 11 | 704 | 1.2+ | 0.5− | 2006 08 27 | 691 | 0.4+ | 0.5− | | |
| 1998 09 26 | 691 | 0.8− | 0.1− | 2002 10 11 | 704 | (2.0+ | 0.5+) | 2006 08 27 | 691 | 0.0 | 0.2+ | | |
| 1998 09 26 | 691 | 0.7− | 0.4+ | 2002 10 11 | 704 | (1.7+ | 1.0+) | 2006 09 14 | 644 | 0.1− | 0.5+ | | |
| 1998 09 26 | 691 | 0.6− | 0.2+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.3− | 0.2+ | | |
| 2002 10 02 | 704 | 0.6− | 0.0 | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.4− | 0.3+ | | |
| 2002 10 02 | 704 | 0.6− | 1.2+ | 2004 02 14 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.1− | | |
| 2002 10 02 | 704 | (0.3+ | 2.0+) | 2004 02 14 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.3+ | | |
| 2002 10 03 | 704 | (1.8− | 0.9+) | 2004 02 14 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | (1.0− | 1.5+) | | |
| 2002 10 03 | 704 | 1.1− | 1.4+ | 2005 03 10 | G96 | 0.5− | 0.5− | 2006 09 19 | 703 | 0.3− | 0.4+ | | |
| 2002 10 03 | 704 | (1.8− | 2.3+) | 2005 03 10 | G96 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | (2.3− | 2.8+) | 2005 03 10 | G96 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.4− | | |
| 2002 10 03 | 704 | 0.7− | 0.9+ | 2005 03 10 | G96 | 0.5− | 0.8− | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 2002 10 04 | 644 | 0.5− | 0.5+ | 2005 05 07 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.4− | 0.1− | | |
| 2002 10 04 | 644 | 0.5− | 0.4+ | 2005 05 07 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.0 | | |
| 2002 10 04 | 644 | 0.5− | 0.5+ | 2005 05 07 | 691 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.6− | 0.2+ | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.7− | 0.3− | | |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 08 18 | 691 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.4+ | | |

**2002 TR$_{33}$ = 2006 UD$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.20040 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26377117 | $\omega$ | 100.50345 | | +0.81583106 | +0.57808069 | |
| $a$ | 2.4079705 | $\Omega$ | 224.18311 | | −0.53892515 | +0.75025718 | |
| $e$ | 0.1802052 | $i$ | 1.28003 | | −0.20971259 | +0.32083778 | |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.2+ | 1.1− | 2002 10 11 | 704 | 0.6− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.5− | | |
| 2002 09 07 | 704 | 0.3+ | 0.0 | 2002 10 11 | 704 | 0.9+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.9− | | |
| 2002 09 07 | 704 | 0.7− | 0.4+ | 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.6− | | |
| 2002 09 07 | 704 | 0.3+ | 0.3+ | 2002 10 11 | 704 | 0.6− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.7− | | |
| 2002 10 02 | 704 | 0.7+ | 0.7− | 2002 10 11 | 704 | 0.6+ | 0.1− | 2006 11 12 | 703 | 1.3− | 0.8− | | |
| 2002 10 02 | 704 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 12 | 703 | 0.8− | 0.8− | | |
| 2002 10 02 | 704 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 12 | 703 | (1.6+ | 0.3+) | | |
| 2002 10 03 | 704 | 0.8+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 12 | 703 | 0.8− | 0.3− | | |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.3+ | 0.3− | 2006 10 17 | 691 | 0.4− | 0.2+ | 2006 11 14 | 691 | 0.4+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.5+ | 0.0 | | |
| 2002 10 03 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.5− | 0.5+ | | |
| 2002 10 04 | 644 | 0.2− | 0.4− | 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.9− | 0.2+ | | |
| 2002 10 04 | 644 | 0.3− | 0.4− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.0 | 0.5− | | |
| 2002 10 04 | 644 | 0.2− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.6+ | | |
| 2002 10 07 | 699 | (1.9− | 1.1−) | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.1− | | |
| 2002 10 07 | 699 | (2.0− | 0.3−) | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.0 | 0.1+ | | |
| 2002 10 07 | 699 | 1.3− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2+ | | |
| 2002 10 07 | 699 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 12 01 | G96 | 0.3+ | 0.3+ | | |

**2002 TS$_{34}$ = 2006 UB$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.74537 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25693415 | $\omega$ | 30.00919 | | +0.71384499 | −0.70023145 | |
| $a$ | 2.4505007 | $\Omega$ | 14.45049 | | +0.63422812 | +0.64033262 | |
| $e$ | 0.1837508 | $i$ | 2.31083 | | +0.29695121 | +0.31567396 | |
| $P$ | 3.84 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.0 | 0.7− | 2002 10 06 | 291 | 0.5+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2002 10 02 | 704 | 0.4+ | 0.2− | 2002 10 07 | 644 | 0.0 | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.1− | | |
| 2002 10 02 | 704 | 0.1− | 0.5− | 2002 10 07 | 644 | 0.3+ | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.2− | | |
| 2002 10 02 | 608 | 0.4− | 0.0 | 2002 10 07 | 704 | 0.5− | 0.8+ | 2006 11 09 | 691 | 0.0 | 0.1− | | |
| 2002 10 02 | 608 | 0.5− | 0.1− | 2002 10 07 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.5+ | | |
| 2002 10 02 | 608 | 0.3− | 0.2− | 2002 10 07 | 704 | 0.5− | 1.4+ | 2006 11 11 | 703 | 0.1− | 0.6+ | | |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2002 10 07 | 704 | 0.8− | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.6+ | | |
| 2002 10 03 | 704 | 0.5+ | 0.2− | 2002 10 11 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.9− | 0.7+ | | |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2002 10 11 | 704 | (1.7− | 0.2−) | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.4− | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2002 10 04 | 704 | 0.5− | 0.5+ | 2002 10 11 | 704 | 0.3− | 0.8− | 2006 11 20 | 691 | 0.3+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.2− | 0.8+ | 2002 10 30 | 644 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2002 10 04 | 704 | 0.1+ | 0.8+ | 2002 10 30 | 644 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.2+ | 0.3+ | 2002 10 30 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.6− | | |
| 2002 10 05 | 291 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 1.0+ | 1.4− | | |
| 2002 10 05 | 291 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 1.4− | 0.8− | | |
| 2002 10 05 | 291 | 0.2− | 0.5− | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 06 | 599 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9− | 1.2− | | |
| 2002 10 06 | 599 | 0.3+ | 0.4− | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.0 | | |
| 2002 10 06 | 599 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.3− | | |
| 2002 10 06 | 599 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.4− | 0.2− | | |
| 2002 10 06 | 291 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.0 | 0.5− | | |
| 2002 10 06 | 291 | 0.5+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− | | | | | | |

### 2002 $TB_{35}$ = 2006 $RH_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.15227 | | | (2000.0) | | |
| $n$ | 0.24765476 | $\omega$ | 356.45344 | | +0.99186905 | −0.12651730 |
| $a$ | 2.5113366 | $\Omega$ | 10.84396 | | +0.11848625 | +0.87862121 |
| $e$ | 0.1486970 | $i$ | 4.19224 | | +0.04644123 | +0.46045428 |
| $P$ | 3.98 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.2+ | 1.0− | 2002 10 28 | 704 | 0.3− | 1.0+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 1994 11 01 | 691 | 0.6+ | 0.6− | 2002 10 28 | 704 | 0.3− | 1.5+ | 2006 10 11 | 691 | 0.1+ | 0.2− |
| 1994 11 01 | 691 | 0.2+ | 0.2− | 2002 10 28 | 704 | 0.3+ | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 1998 10 15 | 327 | 0.4+ | 0.4− | 2002 10 28 | 704 | 1.1− | 1.1+ | 2006 10 11 | 691 | 0.2+ | 0.1− |
| 1998 10 15 | 327 | 0.3+ | 0.7− | 2002 10 28 | 704 | 0.6+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 1998 10 15 | 327 | 0.0 | 0.5− | 2002 10 29 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.3+ |
| 2002 10 02 | 704 | 0.3− | 0.8+ | 2002 10 29 | 704 | 0.1− | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.3+ |
| 2002 10 02 | 704 | 0.8− | 0.1− | 2002 10 29 | 704 | 0.4− | 1.0+ | 2006 10 21 | 703 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 1.1− | 1.2+ | 2002 10 29 | 704 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.4− |
| 2002 10 03 | 704 | 1.0− | 0.0 | 2002 10 29 | 704 | 0.6− | 0.5+ | 2006 10 21 | 703 | 0.9− | 1.2+ |
| 2002 10 03 | 704 | 0.8− | 0.2+ | 2002 10 29 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.9+ | 0.8− |
| 2002 10 03 | 704 | 0.7− | 0.5+ | 2002 10 29 | 704 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 1.2− | 0.3− | 2002 10 29 | 704 | 0.7+ | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.3+ | 2002 10 29 | 704 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2002 10 07 | 644 | 0.6− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.3− | 0.3− |
| 2002 10 07 | 644 | 0.3− | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.3− |
| 2002 10 07 | 644 | 0.2− | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.6− | 0.1+ |
| 2002 10 09 | 704 | 0.9− | 0.4− | 2006 09 18 | 699 | 0.9+ | 1.0+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 0.3+ | 0.5− | 2006 09 18 | 699 | 0.3+ | 1.0− | 2006 11 11 | 691 | 0.1− | 0.4− |
| 2002 10 09 | 704 | 0.6+ | 0.8− | 2006 09 18 | 699 | 0.4+ | 1.3+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.0 | 0.5− | 2006 09 18 | 699 | (0.4− | 1.8−) | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2002 10 12 | 704 | 1.2+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.3− | 0.3− |
| 2002 10 12 | 704 | 0.5− | 0.7− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.6+ | 0.2+ |
| 2002 10 12 | 704 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2002 10 12 | 704 | 0.2+ | 0.4− | 2006 09 27 | 704 | 0.8+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2002 10 12 | 704 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 10 28 | 704 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.9+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 10 28 | 704 | 1.3+ | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.1− | | | | |
| 2002 10 28 | 704 | 0.0 | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.2+ | | | | |

### 2002 $TJ_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.03993 | | | (2000.0) | | |
| $n$ | 0.23834749 | $\omega$ | 131.63324 | | +0.48559969 | +0.87408734 |
| $a$ | 2.5762954 | $\Omega$ | 167.40007 | | −0.81850090 | +0.45976977 |
| $e$ | 0.2077219 | $i$ | 3.36831 | | −0.30700036 | +0.15678996 |
| $P$ | 4.14 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.6− | 0.8+ | 2006 09 12 | 703 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2002 09 07 | 704 | 0.8− | 1.0+ | 2006 09 12 | 703 | 0.6− | 1.1+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2002 09 07 | 704 | 1.3+ | 0.4− | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.1− | 0.2+ |
| 2002 09 07 | 704 | 0.8+ | 0.0 | 2006 09 13 | 644 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2002 09 16 | 608 | (1.6− | 0.7−) | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.6− | 0.6− |
| 2002 09 16 | 608 | (1.9− | 0.2−) | 2006 09 15 | 691 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2002 09 16 | 608 | 0.9− | 0.6− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2002 10 02 | 704 | 0.8− | 0.7+ | 2006 09 15 | 691 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2002 10 02 | 704 | 0.7+ | 0.1+ | 2006 09 17 | 704 | 1.1+ | 1.0+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.4− | 1.3+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 1.1− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.6− | 0.3− | 2006 09 18 | 699 | 0.5+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2006 09 20 | 704 | 0.1+ | 1.2− | 2006 10 21 | 291 | 0.2+ | 0.1+ |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 10 21 | 291 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.2− | 2006 10 21 | 291 | 0.3− | 0.2+ |
| 2005 03 11 | 695 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.5+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2005 03 11 | 695 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.3− | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2005 05 09 | G96 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2005 05 09 | G96 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2005 05 09 | G96 | 0.8− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2005 05 09 | G96 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 09 27 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2006 07 21 | G96 | 0.5+ | 0.4− | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2006 07 21 | G96 | 0.1− | 0.8− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2006 08 19 | 691 | 0.3− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2006 08 19 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.7− |
| 2006 09 12 | 703 | (0.8− | 1.7+) | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2006 09 12 | 703 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.2− | 0.4− | | | | |

### 2002 $TH_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.79301 | | | (2000.0) | | |
| $n$ | 0.23390447 | $\omega$ | 331.63659 | | +0.79106962 | −0.60537744 |
| $a$ | 2.6088175 | $\Omega$ | 65.88865 | | +0.57787464 | +0.69239898 |
| $e$ | 0.2504152 | $i$ | 5.52648 | | +0.20067323 | +0.39255803 |
| $P$ | 4.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.3− | 0.4+ | 2002 11 07 | 704 | 0.1+ | 0.7+ | 2006 08 30 | 699 | (1.1− | 2.0−) |
| 2002 10 02 | 704 | 0.0 | 0.1− | 2002 11 07 | 704 | 0.0 | 0.6+ | 2006 08 30 | 699 | (1.8− | 0.4+) |
| 2002 10 02 | 704 | 0.1− | 1.1+ | 2002 11 07 | 704 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.3− | 0.6+ |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2002 11 07 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 1.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.7− | 0.4− | 2002 11 07 | 704 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.5+ | 0.4+ |
| 2002 10 03 | 704 | (0.1− | 1.5−) | 2002 11 11 | 704 | 0.4+ | 1.3+ | 2006 09 14 | 703 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2002 11 11 | 704 | (1.9− | 1.7+) | 2006 09 14 | 703 | 1.0− | 1.0− |
| 2002 10 11 | 704 | 0.2+ | 0.1+ | 2002 11 11 | 704 | 0.8− | 1.5+ | 2006 09 20 | 703 | 0.1− | 0.9− |
| 2002 10 11 | 704 | 0.5+ | 1.2− | 2002 11 11 | 704 | (1.7− | 0.5+) | 2006 09 20 | 703 | 0.8+ | 0.7− |
| 2002 10 11 | 704 | 0.7− | 0.6− | 2002 11 11 | 704 | (2.2− | 1.4+) | 2006 09 20 | 703 | 0.8− | 0.2− |
| 2002 10 11 | 704 | 0.1+ | 0.4− | 2002 11 22 | 644 | 0.4− | 0.2− | 2006 09 20 | 703 | (1.5+ | 0.3−) |
| 2002 10 11 | 704 | 0.1− | 1.2− | 2002 11 22 | 644 | 0.2+ | 0.0 | 2006 09 21 | 699 | 0.0 | 0.4+ |
| 2002 10 30 | 644 | 0.2− | 0.1+ | 2002 11 22 | 644 | 0.6− | 0.2− | 2006 09 21 | 699 | 1.3+ | 1.0+ |
| 2002 10 30 | 644 | 0.1− | 0.1+ | 2002 11 22 | 644 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.9− | 1.0+ |
| 2002 10 30 | 644 | 0.1− | 0.2− | 2002 11 22 | 644 | 0.4− | 0.2− | 2006 09 21 | 699 | 0.4+ | 0.6+ |
| 2002 10 31 | 608 | 0.3+ | 0.1+ | 2002 11 22 | 644 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.7− | 1.0− |
| 2002 10 31 | 608 | 0.0 | 0.1+ | 2002 12 01 | 704 | 0.7+ | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.4− |
| 2002 10 31 | 608 | 0.1+ | 0.1+ | 2002 12 01 | 704 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2002 11 01 | 704 | 0.1+ | 0.4− | 2002 12 01 | 704 | 0.0 | 1.2− | 2006 09 26 | 703 | 0.8+ | 0.8− |
| 2002 11 01 | 704 | 0.0 | 0.2+ | 2002 12 01 | 704 | 0.2− | 1.3− | | | | |
| 2002 11 01 | 704 | 0.3+ | 0.1− | 2006 08 30 | 699 | 0.5− | 0.4+ | | | | |

### 2002 $TO_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.46459 | | | (2000.0) | | |
| $n$ | 0.23400342 | $\omega$ | 348.33454 | | +0.98890547 | −0.13595499 |
| $a$ | 2.6080821 | $\Omega$ | 19.78155 | | +0.14650463 | +0.82607260 |
| $e$ | 0.1303444 | $i$ | 10.18624 | | +0.02454326 | +0.54691892 |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 1.0+ | 0.4− | 2006 09 14 | 703 | 0.4− | 1.1− | 2006 09 28 | 704 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.0 | 0.3− | 2006 09 28 | 704 | 0.6+ | 0.3+ |
| 2002 10 02 | 704 | 0.1− | 1.0− | 2006 09 14 | 703 | 0.6− | 0.3− | 2006 09 30 | 703 | 1.1+ | 0.6− |
| 2002 10 03 | 704 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.6− |
| 2002 10 03 | 704 | 0.8+ | 0.8− | 2006 09 16 | 704 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.5− |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 704 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 2002 10 03 | 704 | 0.3− | 0.5− | 2006 09 16 | 704 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2006 09 16 | 704 | 1.1+ | 1.0+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2002 10 07 | 704 | 1.2− | 0.3− | 2006 09 18 | 703 | 0.6− | 0.7− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 0.9− | 0.1+ | 2006 09 18 | 703 | (1.7− | 1.2−) | 2006 10 12 | 644 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | (1.7− | 0.2−) | 2006 09 18 | 703 | 1.0− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2002 10 07 | 704 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 2002 10 08 | 699 | 1.3− | 0.3+ | 2006 09 19 | 699 | 0.8+ | 1.0+ | 2006 10 12 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 08 | 699 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.4+ | 1.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2002 10 08 | 699 | 0.8+ | 0.3+ | 2006 09 19 | 699 | (0.3+ | 1.7+) | 2006 10 12 | 644 | 0.2+ | 0.1− | | |
| 2002 10 08 | 699 | 1.0+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.8+ | 0.8+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.3− | | |
| 2002 10 09 | 704 | 0.9− | 1.2+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.8+ | 1.1− | | |
| 2002 10 09 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.6− | 0.4− | | |
| 2002 10 09 | 704 | 0.6+ | 0.3+ | 2006 09 22 | 704 | 0.7+ | 0.6− | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2002 10 09 | 704 | (1.7− | 1.3−) | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2002 10 12 | 704 | 0.2+ | 0.7+ | 2006 09 22 | 704 | 0.4+ | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.2− | | |
| 2002 10 12 | 704 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.3− | 2006 10 24 | 644 | 0.3− | 0.1+ | | |
| 2002 10 12 | 704 | 0.3− | 0.7− | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.1− | 0.2− | | |
| 2002 10 12 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.2+ | | |
| 2002 10 31 | 699 | 0.4− | 0.0 | 2006 09 25 | 699 | 1.3− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2002 10 31 | 699 | 0.6− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.1+ | | |
| 2002 10 31 | 699 | 0.9− | 0.9+ | 2006 09 26 | 704 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2002 10 31 | 699 | 0.5− | 0.0 | 2006 09 26 | 704 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.1− | | |
| 2002 11 12 | 644 | 0.6+ | 0.1− | 2006 09 26 | 704 | 0.3− | 0.7− | 2006 11 15 | G96 | 0.8+ | 0.1− | | |
| 2002 11 12 | 644 | 0.4+ | 1.0− | 2006 09 28 | 704 | 0.2+ | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.8+ | | |
| 2002 11 12 | 644 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.4+ | 0.0 | | | | | | |

**2002 TQ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.28889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27078563 | $\omega$ | 305.74845 | | +0.99419760 | −0.07881804 | |
| $a$ | 2.3662046 | $\Omega$ | 58.87748 | | +0.10301079 | +0.89360610 | |
| $e$ | 0.2166306 | $i$ | 4.90549 | | −0.03098226 | +0.44187765 | |
| $P$ | 3.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 691 | 0.5+ | 0.8+ | 2002 11 01 | 704 | 0.2− | 0.1− | 2002 12 05 | 704 | 0.1− | 0.3− | | |
| 2001 04 16 | 691 | 0.2− | 0.8+ | 2002 11 01 | 704 | 0.3− | 0.6− | 2002 12 05 | 704 | 0.4− | 0.2+ | | |
| 2001 04 16 | 691 | 0.6+ | 0.6+ | 2002 11 01 | 704 | 0.3− | 0.1− | 2002 12 05 | 704 | 1.2− | 0.2− | | |
| 2002 09 03 | 599 | 0.1− | 0.1− | 2002 11 01 | 704 | 0.2− | 0.2+ | 2002 12 05 | 704 | 0.7− | 1.2+ | | |
| 2002 09 04 | 599 | 0.4+ | 0.1+ | 2002 11 01 | 608 | 0.0 | 1.2− | 2002 12 11 | 704 | 0.5+ | 0.3+ | | |
| 2002 09 04 | 599 | 0.1+ | 0.0 | 2002 11 01 | 608 | 0.0 | 1.0− | 2002 12 11 | 704 | 0.1− | 0.5+ | | |
| 2002 09 04 | 599 | 0.7+ | 0.4+ | 2002 11 01 | 608 | 0.0 | 0.8− | 2002 12 11 | 704 | 0.3− | 0.3+ | | |
| 2002 10 02 | 704 | 0.2− | 0.5+ | 2002 11 06 | 699 | 0.2+ | 0.1− | 2002 12 11 | 704 | 0.6− | 0.3+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.5+ | 2002 11 06 | 699 | 0.4+ | 0.6+ | 2002 12 11 | 704 | 0.8+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.3− | 0.2+ | 2002 11 06 | 699 | 0.4− | 0.6+ | 2006 10 23 | G96 | 0.2+ | 0.2− | | |
| 2002 10 02 | 704 | 0.4− | 0.4+ | 2002 11 06 | 704 | 0.6− | 0.8+ | 2006 10 23 | G96 | 0.1− | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 0.1+ | 2002 11 06 | 699 | 0.8+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.2− | | |
| 2002 10 03 | 704 | 0.3− | 0.3+ | 2002 11 06 | 704 | 0.8− | 0.6+ | 2006 10 23 | G96 | 0.2+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2002 11 06 | 704 | 0.0 | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.1− | | |
| 2002 10 03 | 704 | 0.7− | 1.0− | 2002 11 06 | 704 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.4− | | |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2002 11 06 | 704 | 0.5− | 0.7+ | 2006 10 23 | G96 | (0.5+ | 2.8+) | | |
| 2002 10 09 | 704 | 0.3+ | 0.2− | 2002 11 10 | 704 | 0.6− | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.1− | | |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2002 11 10 | 704 | 0.6− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.0 | | |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2002 11 10 | 704 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.1− | | |
| 2002 10 09 | 704 | 0.1− | 0.8− | 2002 11 10 | 704 | 0.8+ | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.1− | | |
| 2002 10 09 | 704 | 0.1+ | 0.5− | 2002 11 22 | 644 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.2− | 0.1+ | | |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2002 11 22 | 644 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.2− | 0.2− | | |
| 2002 10 11 | 704 | 0.2− | 0.5+ | 2002 11 22 | 644 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2002 10 11 | 704 | 0.4− | 0.2+ | 2002 12 01 | 704 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2002 12 01 | 704 | 0.5+ | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 2002 10 11 | 704 | 0.5− | 0.6− | 2002 12 01 | 704 | 0.4+ | 1.3+ | 2006 11 22 | G96 | 0.1− | 0.1− | | |
| 2002 10 26 | 608 | 0.7+ | 0.3+ | 2002 12 01 | 704 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.0 | | |
| 2002 10 26 | 608 | 0.9+ | 0.6+ | 2002 12 01 | 704 | 0.4+ | 0.6+ | 2006 11 22 | G96 | 0.0 | 0.1− | | |
| 2002 10 26 | 608 | 0.3+ | 0.8+ | 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.2− | | |

**2002 TS$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.87640 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24116132 | $\omega$ | 317.01931 | | +0.96857683 | +0.24421747 | |
| $a$ | 2.5562164 | $\Omega$ | 28.94431 | | −0.19354527 | +0.85899064 | |
| $e$ | 0.2651427 | $i$ | 5.58291 | | −0.15620230 | +0.44999212 | |
| $P$ | 4.09 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 10 31 | 699 | 1.2− | 0.4+ | 2006 09 26 | 704 | (1.9− | 0.6+) | | |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 11 06 | 704 | (1.7+ | 1.5+) | 2006 09 28 | 704 | 0.9− | 0.0 | | |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2002 11 06 | 704 | 0.6+ | 0.3− | 2006 09 28 | 704 | 0.4− | 0.0 | | |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2002 11 06 | 704 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.7− | 0.2+ | | |
| 2002 10 03 | 704 | 0.3+ | 1.1+ | 2002 11 06 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 0.8− | 0.4− | | |
| 2002 10 03 | 704 | 0.3− | 1.2+ | 2006 09 12 | 703 | 0.5− | 0.8+ | 2006 09 30 | 703 | 0.3+ | 0.1− | | |
| 2002 10 09 | 704 | 0.6+ | 1.1− | 2006 09 12 | 703 | 0.8+ | 1.1− | 2006 09 30 | 703 | 0.0 | 0.4+ | | |
| 2002 10 09 | 704 | 0.4+ | 0.9− | 2006 09 12 | 703 | 1.0− | 0.8− | 2006 09 30 | 703 | (2.4− | 1.9−) | | |
| 2002 10 09 | 704 | 1.0− | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.3− | | |
| 2002 10 09 | 704 | 0.2− | 0.8− | 2006 09 18 | 703 | 0.3+ | 1.1+ | 2006 09 30 | 704 | 0.9+ | 0.3− | | |
| 2002 10 11 | 644 | 0.3− | 0.9− | 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 09 30 | 704 | (1.3− | 1.5−) | | |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.7+ | 0.2+ | 2006 09 30 | 704 | 1.1− | 0.2− | | |
| 2002 10 11 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.1+ | 0.1− | | |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.1+ | | |
| 2002 10 11 | 644 | 0.4− | 0.8− | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2002 10 11 | 704 | 0.5+ | 0.4− | 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 2002 10 11 | 704 | 1.0+ | 1.1+ | 2006 09 18 | 699 | 0.9+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.4− | | |
| 2002 10 11 | 644 | 0.4− | 0.6− | 2006 09 20 | 691 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2002 10 30 | 644 | 0.1− | 0.5+ | 2006 09 20 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.5+ | | |
| 2002 10 30 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2− | | |
| 2002 10 30 | 644 | 0.1+ | 0.7+ | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2002 10 31 | 699 | 0.0 | 0.5− | 2006 09 26 | 704 | 0.8+ | 0.7+ | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2002 10 31 | 699 | 0.1+ | 0.7+ | 2006 09 26 | 704 | 1.2− | 0.3+ | 2006 11 21 | G96 | 0.6+ | 0.2− | | |
| 2002 10 31 | 699 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |

**2002 TT$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.66087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26710490 | $\omega$ | 331.41522 | | +0.99834710 | −0.00765451 | |
| $a$ | 2.3878927 | $\Omega$ | 29.19128 | | +0.03456112 | +0.87182488 | |
| $e$ | 0.1280538 | $i$ | 6.70672 | | −0.04591940 | +0.48975789 | |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.0 | 0.8+ | 2002 10 11 | 644 | 0.6− | 0.7+ | 2002 11 06 | 704 | 0.0 | 0.8+ | | |
| 2002 10 02 | 704 | 1.0+ | 0.0 | 2002 10 11 | 704 | 1.3− | 1.6− | 2002 11 06 | 704 | 0.2− | 0.3+ | | |
| 2002 10 02 | 704 | 0.1+ | 0.6− | 2002 10 11 | 704 | 0.2− | 0.1+ | 2002 11 06 | 704 | 0.6+ | 0.6− | | |
| 2002 10 03 | 704 | 0.7+ | 0.6+ | 2002 10 11 | 644 | 0.6− | 0.6+ | 2002 11 22 | 644 | 0.2− | 0.3+ | | |
| 2002 10 03 | 704 | 0.4− | 0.1− | 2002 10 11 | 704 | 0.1− | 0.1− | 2002 11 22 | 644 | 0.0 | 0.5+ | | |
| 2002 10 03 | 704 | 0.9+ | 0.2+ | 2002 10 11 | 704 | 0.5+ | 0.3− | 2002 11 22 | 644 | 0.2− | 0.3+ | | |
| 2002 10 03 | 704 | 1.0+ | 0.5+ | 2002 10 11 | 644 | 0.5− | 0.5+ | 2006 11 13 | 691 | 0.2− | 0.1− | | |
| 2002 10 08 | 699 | 1.2− | 1.2− | 2002 10 11 | 291 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1− | | |
| 2002 10 08 | 699 | 0.9− | 0.9+ | 2002 10 11 | 291 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.1− | | |
| 2002 10 08 | 699 | 0.3− | 0.3− | 2002 10 11 | 291 | 0.4+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 08 | 699 | 0.5− | 0.3− | 2002 10 30 | 644 | 0.1+ | 0.6− | 2006 11 17 | 691 | 0.3+ | 0.2− | | |
| 2002 10 09 | 704 | 1.0+ | 0.2− | 2002 10 30 | 644 | 0.2+ | 0.6− | 2006 11 17 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 09 | 704 | 0.6+ | 0.4− | 2002 10 30 | 644 | 0.1+ | 0.8− | | | | | | |
| 2002 10 09 | 704 | 0.8− | 0.5+ | 2002 11 06 | 704 | 0.2− | 0.1+ | | | | | | |

**2002 TA$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.02268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23954832 | $\omega$ | 212.67110 | | +0.60357579 | −0.79673762 | |
| $a$ | 2.5676784 | $\Omega$ | 200.25328 | | +0.74891038 | +0.57948403 | |
| $e$ | 0.2616739 | $i$ | 4.98661 | | +0.27354983 | +0.17148591 | |
| $P$ | 4.11 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 699 | 0.4− | 0.5− | 2002 10 11 | 704 | (0.2+ | 2.0+) | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 1998 11 23 | 699 | 0.6+ | 0.1− | 2002 10 11 | 704 | (0.3+ | 1.6+) | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 1998 11 23 | 699 | 0.1− | 0.7− | 2002 10 11 | 704 | (0.0 | 1.8+) | 2006 09 25 | 691 | 0.3+ | 0.3+ |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2002 10 11 | 704 | 0.4− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.3− | 0.4+ | 2002 10 11 | 704 | (0.1− | 1.6+) | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2002 10 02 | 704 | 0.8+ | 0.3− | 2002 10 11 | 704 | 0.6+ | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.2− | 2002 10 11 | 704 | 0.0 | 1.3+ | 2006 09 27 | 691 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.6+ | 0.1− | 2002 10 11 | 704 | 1.4− | 1.0+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.8+ | 0.2+ | 2002 10 26 | 608 | 0.1− | 1.0− | 2006 09 27 | 704 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.1+ | 0.6− | 2002 10 26 | 608 | 0.5− | 1.3− | 2006 09 27 | 704 | 0.2+ | 0.6+ |
| 2002 10 03 | 704 | 0.9+ | 0.3+ | 2002 10 26 | 608 | 0.2− | 0.6− | 2006 09 27 | 704 | 0.4+ | 0.5+ |
| 2002 10 04 | 599 | 0.3+ | 0.1− | 2002 10 31 | 608 | 0.1+ | 1.2− | 2006 09 27 | 704 | 0.4+ | 0.5− |
| 2002 10 04 | 599 | 0.7+ | 0.2− | 2002 10 31 | 608 | 0.3+ | 0.3− | 2006 09 27 | 704 | 0.4+ | 0.3− |
| 2002 10 04 | 599 | 0.7+ | 0.2− | 2002 10 31 | 608 | 0.7+ | 1.2− | 2006 09 29 | 704 | 0.3+ | 0.6− |
| 2002 10 07 | 704 | 1.3− | 0.8+ | 2002 11 06 | 704 | 0.5− | 0.9+ | 2006 09 29 | 704 | 0.3− | 0.1− |
| 2002 10 07 | 704 | 1.0+ | 0.1+ | 2002 11 06 | 704 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.2+ |
| 2002 10 07 | 704 | 0.6− | 0.1+ | 2002 11 06 | 704 | 0.6− | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.9− |
| 2002 10 07 | 704 | 0.0 | 0.2+ | 2002 11 06 | 704 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.2− |
| 2002 10 09 | 704 | 0.6+ | 0.0 | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.2− | 1.1+ | 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | (0.9− | 1.5−) |
| 2002 10 09 | 704 | 0.9− | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.7+ | 1.0− |
| 2002 10 09 | 704 | 0.7− | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.7+ | 0.1− |
| 2002 10 10 | 704 | 1.4− | 1.2+ | 2006 09 17 | 703 | 0.4− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2002 10 10 | 704 | (2.5− | 0.9−) | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.3− |
| 2002 10 10 | 704 | 0.2− | 0.9+ | 2006 09 17 | 703 | 0.2+ | 0.7− | 2006 10 02 | 691 | 0.1− | 0.3− |
| 2002 10 10 | 704 | 0.2+ | 1.1+ | 2006 09 17 | 703 | 0.2− | 0.9+ | 2006 10 09 | 644 | 0.3+ | 0.2− |
| 2002 10 10 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 10 11 | 704 | (1.1+ | 1.6+) | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.2− |

**2002 TH$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.82781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22472158 | $\omega$ | 204.26403 | | +0.62514973 | −0.77572825 | |
| $a$ | 2.6794122 | $\Omega$ | 207.28912 | | +0.74332000 | +0.62541234 | |
| $e$ | 0.1773253 | $i$ | 10.83905 | | +0.23804033 | +0.08429165 | |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.6− | 0.1− | 2002 11 11 | 704 | (0.7+ | 1.8−) | 2006 09 18 | 703 | 0.8− | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.0 | 2002 11 11 | 704 | 1.1− | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.6+ |
| 2002 10 02 | 704 | 0.5− | 0.2− | 2002 11 11 | 704 | 0.3− | 0.2+ | 2006 09 20 | 699 | 1.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.2+ | 0.2− | 2002 11 11 | 704 | 0.6+ | 0.0 | 2006 09 20 | 699 | 0.7− | 1.0− |
| 2002 10 03 | 704 | 0.0 | 0.5− | 2002 11 22 | 644 | 0.1− | 0.3+ | 2006 09 20 | 699 | 0.2− | 0.4− |
| 2002 10 03 | 704 | (1.6+ | 0.6−) | 2002 11 22 | 644 | 0.1− | 0.1− | 2006 09 23 | 703 | 0.4− | 0.5− |
| 2002 11 02 | 608 | 0.1− | 0.5+ | 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 09 23 | 703 | 0.3+ | 0.4− |
| 2002 11 02 | 608 | 0.3− | 0.2+ | 2006 08 30 | 699 | 0.5+ | 0.1− | 2006 09 23 | 703 | (0.1+ | 1.7+) |
| 2002 11 02 | 608 | 0.6− | 0.1+ | 2006 08 30 | 699 | (2.6+ | 1.3+) | 2006 09 26 | 703 | 0.3− | 0.7+ |
| 2002 11 07 | 704 | 1.0+ | 1.0− | 2006 08 30 | 699 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.7+ | 0.6+ |
| 2002 11 07 | 704 | 0.3+ | 1.0− | 2006 08 30 | 699 | 0.9− | 0.1+ | 2006 09 26 | 703 | (0.8+ | 1.9−) |
| 2002 11 07 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 09 26 | 703 | (2.5+ | 0.7+) |
| 2002 11 07 | 704 | 1.3+ | 0.4+ | 2006 09 18 | 703 | (1.5+ | 1.9−) | | | | |
| 2002 11 07 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 703 | 0.6+ | 0.0 | | | | |

**2002 TW$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.73232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24022804 | $\omega$ | 20.24765 | | +0.62469101 | −0.77696577 | |
| $a$ | 2.5628327 | $\Omega$ | 31.24250 | | +0.69413774 | +0.50676750 | |
| $e$ | 0.3469378 | $i$ | 8.65033 | | +0.35767854 | +0.37351157 | |
| $P$ | 4.10 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.0 | 0.0 | 2002 11 03 | 704 | 1.1+ | 0.8+ | 2006 09 26 | 704 | 0.7+ | 1.0+ |
| 2002 09 09 | 599 | 0.3− | 0.4+ | 2002 11 03 | 704 | 1.2+ | 0.9− | 2006 09 26 | 704 | 1.2− | 1.4+ |
| 2002 09 09 | 599 | 0.3− | 0.3+ | 2002 11 03 | 704 | 0.7+ | 0.7− | 2006 09 26 | 704 | 0.5− | 0.6+ |
| 2002 10 02 | 704 | 0.6− | 0.3+ | 2002 11 08 | 704 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.4+ | 1.2+ |
| 2002 10 02 | 704 | 0.3− | 0.0 | 2002 11 08 | 704 | 0.3− | 0.6− | 2006 09 26 | 704 | 0.9− | 0.7+ |
| 2002 10 02 | 704 | 0.1− | 0.3+ | 2002 11 08 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.5− | 0.8− |
| 2002 10 02 | 704 | 0.1+ | 0.3+ | 2002 11 08 | 704 | 0.2− | 0.1− | 2006 09 30 | 703 | (0.5− | 3.3−) |
| 2002 10 03 | 704 | 0.2− | 0.0 | 2002 11 12 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.7− | 1.1− |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2002 11 12 | 704 | 0.9− | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.9− |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2002 11 12 | 704 | 1.2− | 0.9+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.1− | 2002 11 12 | 644 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.4− | 2002 11 12 | 704 | 1.3− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.7− |
| 2002 10 07 | 704 | 0.1+ | 0.3− | 2002 11 12 | 644 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2002 10 07 | 704 | 0.7− | 0.0 | 2002 11 12 | 704 | 1.1− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 10 07 | 704 | 0.8+ | 1.5+ | 2002 11 12 | 704 | 1.0− | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 10 07 | 704 | 0.2− | 0.1+ | 2002 11 23 | 644 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.8+ | 0.4+ |
| 2002 10 07 | 704 | 0.1+ | 0.7− | 2002 11 23 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 10 08 | 699 | 0.9+ | 0.5− | 2002 11 23 | 644 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 10 08 | 699 | 0.3+ | 0.4− | 2002 12 02 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 10 08 | 699 | 0.2− | 0.1− | 2002 12 02 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.6+ | 0.3− |
| 2002 10 08 | 699 | 1.1+ | 0.1+ | 2002 12 02 | 704 | 0.2+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 10 09 | 704 | 0.4− | 0.6− | 2002 12 02 | 704 | 0.1− | 0.7− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.6+ | 0.6− | 2002 12 06 | 704 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2002 10 09 | 704 | 0.6+ | 0.5− | 2002 12 06 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2002 10 09 | 704 | 0.5+ | 0.9− | 2002 12 06 | 704 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.2− | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2002 12 06 | 704 | 0.7+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.7+ | 0.3+ | 2002 12 11 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2002 10 11 | 704 | 0.5+ | 0.4+ | 2002 12 11 | 704 | 0.7− | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.6+ | 0.8+ | 2002 12 11 | 704 | 1.3− | 0.8− | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2002 10 28 | 049 | 0.2+ | 1.2− | 2002 12 11 | 704 | 0.6− | 0.0 | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2002 10 28 | 049 | 0.4− | 1.0− | 2006 08 29 | D35 | 0.6− | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2002 10 29 | 049 | 0.2+ | 0.9− | 2006 08 29 | D35 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2002 10 29 | 049 | 0.2− | 0.4− | 2006 08 29 | D35 | 0.6− | 0.3− | 2006 11 15 | G96 | 0.6+ | 0.1− |
| 2002 10 29 | 049 | 0.2− | 0.1− | 2006 09 17 | 699 | (1.6− | 0.3+) | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2002 10 29 | 049 | 0.2− | 0.0 | 2006 09 17 | 699 | 0.4+ | 0.4+ | | | | |
| 2002 10 30 | 049 | 0.2+ | 0.4− | 2006 09 17 | 699 | 0.1+ | 0.3+ | | | | |

**2002 TD$_{42}$ = 2006 SX$_{297}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.24323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24056808 | $\omega$ | 4.37039 | | +0.74962544 | −0.65652465 | |
| $a$ | 2.5604171 | $\Omega$ | 37.11031 | | +0.60295451 | +0.62512809 | |
| $e$ | 0.2061249 | $i$ | 7.99204 | | +0.27296071 | +0.42212587 | |
| $P$ | 4.10 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.1+ | 0.6+ | 2002 10 31 | 699 | 0.3− | 0.8− | 2006 10 01 | 704 | 0.6− | 0.1− |
| 2002 10 02 | 704 | 0.4+ | 0.3+ | 2002 10 31 | 699 | 0.3+ | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 0.8− | 2002 10 31 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 2002 10 02 | 704 | 0.7+ | 1.2− | 2002 10 31 | 699 | 0.0 | 1.0+ | 2006 10 01 | 704 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.1− | 2002 11 04 | 699 | 0.4− | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.4+ | 0.4− | 2002 11 04 | 699 | 0.6− | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.7+ | 0.3− | 2002 11 04 | 699 | 0.7+ | 0.1− | 2006 10 02 | G96 | 0.4− | 0.3− |
| 2002 10 03 | 704 | 0.9− | 0.7+ | 2002 11 04 | 699 | 0.3− | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.1− | 2002 11 06 | 704 | 1.5− | 0.7− | 2006 10 16 | 703 | 0.5− | 1.2+ |
| 2002 10 09 | 704 | 0.6+ | 0.2+ | 2002 11 06 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.1+ | 0.4− | 2002 11 06 | 704 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.4+ |
| 2002 10 09 | 704 | 0.7+ | 0.9+ | 2002 11 06 | 704 | 0.6− | 1.4+ | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2002 10 09 | 704 | 0.4+ | 0.1+ | 2002 11 06 | 704 | 0.2− | 1.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.7+ | 0.1− | 2002 11 22 | 644 | 1.2+ | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.3− | 0.2− | 2002 11 22 | 644 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.6− | 0.9− | 2002 11 22 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2002 10 11 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.9+ | 0.6− | 2006 10 22 | 703 | 0.1+ | 0.4− |
| 2002 10 11 | 704 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.0 | 1.0+ | 2006 10 22 | 703 | 1.4− | 0.5− |
| 2002 10 29 | 291 | 0.1− | 0.3− | 2006 09 18 | 703 | 1.4+ | 0.7− | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2002 10 29 | 291 | 0.0 | 0.3− | 2006 09 18 | 703 | (1.6− | 0.9−) | 2006 11 14 | G96 | 0.6+ | 0.4− |
| 2002 10 29 | 291 | 0.2− | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2002 10 31 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 10 31 | 699 | 0.4− | 0.1− | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.7− |
| 2002 10 31 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.9− | 0.1+ | | | | |

## 2002 TP$_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.67285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24183615 | $\omega$ | 343.63560 | | +0.97352238 | −0.19604676 | |
| $a$ | 2.5514589 | $\Omega$ | 28.49618 | | +0.22743772 | +0.77909624 | |
| $e$ | 0.1840526 | $i$ | 14.26463 | | +0.02294024 | +0.59546177 | |
| $P$ | 4.08 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 704 | 0.4+ | 0.4+ | 2002 12 02 | 704 | 0.3+ | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 1998 10 29 | 704 | 0.2+ | 0.2− | 2002 12 02 | 704 | 1.0+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 1998 10 29 | 704 | 0.4− | 1.8− | 2002 12 02 | 704 | (1.7+ | 0.3−) | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 1998 10 29 | 704 | (5.1− | 0.4+) | 2002 12 02 | 704 | 0.9+ | 0.7− | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2002 10 02 | 704 | 0.5+ | 0.7+ | 2002 12 06 | 704 | 0.6− | 0.3+ | 2006 10 15 | 703 | 0.2+ | 0.4− |
| 2002 10 02 | 704 | 0.3− | 0.0 | 2002 12 06 | 704 | 0.2− | 0.7+ | 2006 10 15 | 703 | 0.5− | 0.8− |
| 2002 10 02 | 704 | 0.4− | 0.1− | 2002 12 06 | 704 | 0.7+ | 1.1+ | 2006 10 15 | 703 | 0.5− | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.5+ | 2002 12 06 | 704 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.7− | 0.5− |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 704 | 0.4+ | 0.5− | 2006 10 21 | 703 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 704 | 0.2− | 1.3+ | 2006 10 21 | 703 | 0.4+ | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 704 | (0.2+ | 2.3+) | 2006 10 21 | 703 | 0.4− | 0.4− |
| 2002 10 03 | 704 | 0.4− | 1.0+ | 2006 09 16 | 704 | 0.0 | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.1+ | 1.2+ | 2006 09 18 | 703 | 0.8− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 07 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 10 07 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | 1.0− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 1.0− | 0.2− | 2006 09 18 | 703 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 10 07 | 704 | 0.9− | 0.0 | 2006 09 19 | 704 | 0.7+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 10 09 | 704 | 0.1− | 0.2− | 2006 09 19 | 704 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2006 09 19 | 704 | 0.4+ | 0.9− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 10 09 | 704 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 10 09 | 704 | 0.6− | 0.4+ | 2006 09 20 | 644 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2002 10 09 | 704 | 0.1+ | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 1.0− | 2006 09 21 | 699 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.4− | 0.9+ |
| 2002 10 11 | 704 | (2.1− | 0.3+) | 2006 09 21 | 699 | 0.8+ | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 0.0 | 0.9− | 2006 09 21 | 699 | 1.1− | 0.2− | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | (2.5− | 0.1−) | 2006 09 21 | 699 | 0.3+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 0.9− | 2006 09 25 | 699 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2002 10 11 | 704 | (2.0− | 0.4−) | 2006 09 25 | 699 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 1.0− |
| 2002 10 11 | 704 | 1.2+ | 1.4− | 2006 09 25 | 699 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.8+ |
| 2002 10 11 | 704 | (2.4− | 0.0 ) | 2006 09 25 | 699 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2002 10 11 | 704 | 0.4+ | 1.1− | 2006 09 29 | 699 | 0.4+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2002 10 28 | 644 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.8− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2002 10 28 | 644 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.7+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2002 10 28 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.6− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2002 10 31 | 644 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2002 10 31 | 644 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 17 | 703 | 1.0+ | 0.8− |
| 2002 10 31 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.6− |
| 2002 11 08 | 704 | 0.7− | 0.3− | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2002 11 08 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2002 11 08 | 704 | 0.2− | 0.5+ | 2006 10 01 | 704 | 0.9+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2002 11 08 | 704 | (0.2− | 1.7+) | 2006 10 01 | 704 | 0.6+ | 0.6− | 2006 11 21 | 704 | 1.3+ | 0.5+ |
| 2002 11 12 | 704 | 0.7− | 0.5+ | 2006 10 01 | 704 | 0.7+ | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2002 11 12 | 704 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2002 11 12 | 704 | 0.6− | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.2− | | | | |
| 2002 11 12 | 704 | 0.8− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.2− | | | | |

## 2002 TH$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.14491 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24368230 | $\omega$ | 136.51545 | | +0.98036995 | −0.18908474 | |
| $a$ | 2.5385559 | $\Omega$ | 234.46523 | | +0.15683175 | +0.91958715 | |
| $e$ | 0.1035704 | $i$ | 3.93699 | | +0.11949298 | +0.34439284 | |
| $P$ | 4.04 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.1+ | 0.0 | 2002 11 22 | 644 | 0.0 | 1.3+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 1998 11 16 | 691 | 0.2− | 0.1− | 2002 11 22 | 644 | 0.2− | 1.0+ | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 1998 11 16 | 691 | 0.1+ | 0.1− | 2002 11 22 | 644 | 0.1+ | 1.1+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2002 10 02 | 704 | 0.4− | 0.0 | 2006 09 23 | 152 | 0.6− | 1.0+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 10 02 | 704 | 1.1− | 0.7+ | 2006 09 24 | 152 | 0.2− | 1.1+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.5− | 0.8+ | 2006 09 24 | 152 | 0.0 | 1.0− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.1− | 0.5+ | 2006 09 25 | 152 | 0.3− | 0.4− | 2006 11 10 | 691 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.3− | 0.7+ | 2006 09 25 | 152 | 0.9+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.0 | 1.4+ | 2006 09 25 | 152 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.8+ | 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 1.2− |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.9− |
| 2002 10 16 | 644 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2002 10 16 | 644 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.8+ | 1.0− |
| 2002 10 16 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2002 10 31 | 699 | 0.1− | 0.0 | 2006 10 20 | 701 | 0.6+ | 0.3− | 2006 11 17 | 703 | (1.8− | 0.3−) |
| 2002 10 31 | 699 | 0.0 | 0.2− | 2006 10 20 | 701 | 0.2+ | 0.4− | 2006 11 17 | 703 | (1.9− | 0.9−) |
| 2002 10 31 | 699 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.1− | 0.0 |
| 2002 10 31 | 699 | (1.6− | 0.2−) | 2006 10 20 | 701 | 0.3+ | 0.4− | 2006 11 21 | 704 | 1.3+ | 1.0+ |
| 2002 11 06 | 704 | 1.0+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | (0.1− | 2.3+) |
| 2002 11 06 | 704 | 0.2− | 1.0+ | 2006 10 20 | 701 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.3− | 0.2− |
| 2002 11 06 | 704 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 21 | 704 | 1.4− | 0.4− |
| 2002 11 06 | 704 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.6− | 0.1− | 2006 11 21 | 704 | 1.2− | 0.3+ |

## 2002 TP$_{47}$ = 2006 WK$_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.77640 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27317524 | $\omega$ | 195.76687 | | +0.77109664 | −0.63621855 | |
| $a$ | 2.3523855 | $\Omega$ | 203.79995 | | +0.59072399 | +0.72961377 | |
| $e$ | 0.0966401 | $i$ | 3.58277 | | +0.23760289 | +0.25077821 | |
| $P$ | 3.61 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2002 10 03 | 704 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.0 | 0.2+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 09 19 | 644 | 0.2+ | 0.1+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 09 19 | 644 | 0.8+ | 0.0 | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2002 09 19 | 644 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2002 09 28 | 608 | (1.8− | 0.6−) | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2002 09 28 | 608 | (2.5− | 0.5−) | 2006 09 28 | G96 | 0.0 | 0.6+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 09 28 | 608 | (1.7− | 0.6−) | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2002 10 02 | 608 | 0.8− | 1.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 1.0− | 0.1+ |
| 2002 10 02 | 608 | 1.1− | 0.8+ | 2006 10 31 | G96 | 0.4− | 0.5− | 2006 11 29 | 704 | 0.6− | 0.7+ |
| 2002 10 02 | 608 | 0.1− | 1.1+ | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.6+ | 0.3− |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.5+ | 1.5+ |
| 2002 10 03 | 704 | 0.3+ | 0.6+ | 2006 11 12 | G96 | 0.1+ | 0.1− | | | | |
| 2002 10 03 | 704 | 1.4+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.3− | | | | |

**2002 TG$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.84354 | | (2000.0) | | | |
| $n$ | 0.23879806 | $\omega$ | 216.67053 | | +0.42182073 | −0.90314096 |
| $a$ | 2.5730537 | $\Omega$ | 208.63357 | | +0.86648436 | +0.42753507 |
| $e$ | 0.1859665 | $i$ | 9.61290 | | +0.26696840 | +0.03937217 |
| $P$ | 4.13 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.4− | 0.3− | 2002 11 11 | 644 | 1.2− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 10 02 | 704 | 0.7+ | 0.1− | 2002 11 22 | 644 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.3+ | 0.5+ |
| 2002 10 02 | 704 | 0.2− | 0.2+ | 2002 11 22 | 644 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.2− | 2002 11 22 | 644 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.7− | 0.3+ | 2002 11 30 | 608 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2002 10 03 | 704 | 0.8+ | 0.5+ | 2002 11 30 | 608 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.5+ | 0.7+ | 2002 11 30 | 608 | 1.2+ | 0.3− | 2006 10 21 | 703 | 0.8+ | 1.1+ |
| 2002 10 04 | 599 | 0.1+ | 0.4− | 2002 12 01 | 704 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.7− | 0.0 |
| 2002 10 04 | 599 | 0.0 | 0.3− | 2002 12 01 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.9− |
| 2002 10 07 | 699 | 1.2− | 1.0− | 2002 12 01 | 704 | 0.1− | 0.1+ | 2006 10 23 | 704 | 0.4+ | 1.3+ |
| 2002 10 07 | 699 | 0.2+ | 0.1− | 2002 12 01 | 704 | 0.5− | 0.3− | 2006 10 23 | 704 | 0.6+ | 0.2− |
| 2002 10 07 | 699 | 1.2− | 0.8+ | 2002 12 11 | 704 | 0.1+ | 1.2+ | 2006 10 23 | 704 | 0.2+ | 0.8+ |
| 2002 10 07 | 699 | 0.2− | 0.3− | 2002 12 11 | 704 | 0.4+ | 1.1+ | 2006 10 23 | 704 | 0.3+ | 0.4− |
| 2002 10 11 | 704 | 1.1+ | 0.2− | 2002 12 11 | 704 | (1.8+ | 1.1+) | 2006 10 28 | 691 | 0.4− | 0.0 |
| 2002 10 11 | 704 | 0.8+ | 0.6+ | 2006 09 16 | 703 | (1.8+ | 0.1−) | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.7+ | 0.7− | 2006 09 16 | 703 | 0.7− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2002 10 28 | 608 | (0.9− | 1.7−) | 2006 09 16 | 703 | 0.1− | 1.2− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2002 10 28 | 608 | (0.5− | 1.5−) | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 10 28 | 608 | (0.7− | 1.8−) | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 10 31 | 644 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 10 31 | 644 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.4− | 1.2+ | 2006 11 11 | G96 | 0.5− | 0.2− |
| 2002 10 31 | 644 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2002 11 07 | 704 | 0.4+ | 0.6− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2002 11 07 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2002 11 07 | 704 | 0.3+ | 0.7− | 2006 09 30 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.7− |
| 2002 11 07 | 704 | 0.5+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.3− | 0.5+ |
| 2002 11 11 | 704 | 0.5− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 1.0− | 0.0 |
| 2002 11 11 | 704 | 0.7− | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 11 11 | 704 | 0.4− | 0.2− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.2− |
| 2002 11 11 | 704 | 0.3− | 0.3− | 2006 10 15 | 691 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | 0.4− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.8− |
| 2002 11 11 | 644 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.3− |
| 2002 11 11 | 644 | 0.0 | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.0 | | | | |

**2002 TK$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 285.23430 | | (2000.0) | | | |
| $n$ | 0.24462741 | $\omega$ | 257.32340 | | −0.31076183 | −0.94177485 |
| $a$ | 2.5320132 | $\Omega$ | 211.72057 | | +0.93898745 | −0.28323644 |
| $e$ | 0.0368884 | $i$ | 14.13543 | | +0.14740985 | −0.18121051 |
| $P$ | 4.03 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.2− | 0.4+ | 2006 09 27 | J75 | 0.9+ | 0.8− | 2006 11 09 | 644 | 0.4+ | 0.4− |
| 2002 10 02 | 704 | 0.1− | 0.1− | 2006 09 27 | J75 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2002 10 02 | 704 | 1.1− | 0.3− | 2006 09 27 | J75 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.5+ | 1.3− |
| 2002 10 02 | 704 | 0.3− | 0.1− | 2006 09 28 | J75 | 0.5− | 0.9+ | 2006 11 13 | 703 | 1.1− | 0.2+ |
| 2002 10 03 | 704 | 0.8+ | 0.2− | 2006 09 28 | J75 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.6− | 0.7− |
| 2002 10 03 | 704 | (0.1+ | 1.8−) | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.1− | 0.8− |
| 2002 10 03 | 704 | 0.1+ | 0.9− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.3+ | 0.4− |
| 2002 10 03 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.7− | 0.1− |
| 2002 11 01 | 704 | 1.0+ | 0.6− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.4− |
| 2002 11 01 | 704 | 1.0+ | 0.3− | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.7− | 0.1− |
| 2002 11 01 | 704 | 1.3+ | 0.9+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 11 02 | 608 | 0.5− | 0.2− | 2006 10 19 | 691 | 1.1− | 0.6+ | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2002 11 02 | 608 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2002 11 02 | 608 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2002 11 07 | 704 | 0.7− | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 17 | 704 | (1.8− | 1.2+) |
| 2002 11 07 | 704 | 0.7− | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.2+ | 1.4+ |
| 2002 11 07 | 704 | 0.4+ | 1.2+ | 2006 10 23 | 691 | 0.2+ | 0.7− | 2006 11 17 | 704 | 0.3− | 1.3+ |
| 2002 11 07 | 704 | 0.9− | 0.4+ | 2006 10 31 | 691 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2002 11 21 | 644 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.6− | 0.4− |
| 2002 11 21 | 644 | 0.3+ | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2002 11 21 | 644 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2002 11 22 | 644 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.5− |
| 2002 11 22 | 644 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.0 | | | | |
| 2002 11 22 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.5− | | | | |

**2002 TB$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.69389 | | (2000.0) | | | |
| $n$ | 0.26611386 | $\omega$ | 18.53669 | | +0.77714828 | −0.62856545 |
| $a$ | 2.3938176 | $\Omega$ | 20.50224 | | +0.56571385 | +0.67635748 |
| $e$ | 0.2351551 | $i$ | 5.03807 | | +0.27569619 | +0.38398702 |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.8+ | 0.2− | 2002 10 28 | 608 | 0.1− | 0.4− | 2002 11 28 | 699 | 0.5− | 0.2− |
| 2002 10 02 | 704 | 0.5+ | 0.4− | 2002 11 05 | 704 | 0.5+ | 0.3+ | 2002 11 30 | 608 | 1.5− | 0.6+ |
| 2002 10 02 | 704 | 0.1+ | 0.8+ | 2002 11 05 | 704 | 0.9+ | 0.2+ | 2002 11 30 | 608 | 1.8− | 0.1− |
| 2002 10 03 | 704 | 0.9+ | 1.0+ | 2002 11 05 | 704 | 1.3+ | 0.9− | 2002 11 30 | 608 | 1.1− | 0.3+ |
| 2002 10 03 | 704 | 0.2− | 1.2− | 2002 11 05 | 704 | 1.0+ | 0.3+ | 2002 12 02 | 704 | 0.1− | 0.7− |
| 2002 10 03 | 704 | 0.9− | 0.7− | 2002 11 05 | 704 | 1.8+ | 0.6− | 2002 12 02 | 704 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.1+ | 0.7− | 2002 11 06 | 699 | 0.3− | 0.0 | 2002 12 02 | 704 | 0.1+ | 1.3− |
| 2002 10 03 | 704 | 0.6+ | 0.2− | 2002 11 06 | 699 | 0.8− | 0.3+ | 2002 12 02 | 704 | 0.3− | 0.5− |
| 2002 10 07 | 699 | 0.4− | 0.1− | 2002 11 06 | 699 | 1.3− | 0.2+ | 2002 12 02 | 704 | 0.1− | 1.3− |
| 2002 10 07 | 704 | 0.3− | 0.6+ | 2002 11 06 | 699 | 0.4+ | 0.3+ | 2002 12 06 | 704 | 0.1+ | 0.4+ |
| 2002 10 07 | 699 | 0.1− | 0.0 | 2002 11 08 | 704 | 0.3+ | 0.2+ | 2002 12 06 | 704 | 0.6+ | 0.0 |
| 2002 10 07 | 704 | 0.1− | 1.2+ | 2002 11 08 | 704 | 0.0 | 0.4− | 2002 12 06 | 704 | 0.5+ | 0.1− |
| 2002 10 07 | 704 | 0.0 | 0.4+ | 2002 11 08 | 704 | 0.0 | 0.4+ | 2002 12 06 | 704 | 0.1+ | 0.0 |
| 2002 10 07 | 699 | 0.6− | 0.3− | 2002 11 08 | 704 | 0.6+ | 0.3− | 2002 12 06 | 704 | 0.0 | 1.0+ |
| 2002 10 07 | 704 | 0.3+ | 0.8+ | 2002 11 12 | 704 | 0.3+ | 0.1− | 2002 12 11 | 644 | 0.1− | 0.3+ |
| 2002 10 07 | 699 | 1.1− | 0.9+ | 2002 11 12 | 704 | 0.5− | 0.2+ | 2002 12 11 | 644 | 0.2− | 0.4+ |
| 2002 10 11 | 704 | 0.3+ | 1.5+ | 2002 11 12 | 704 | 0.0 | 0.3+ | 2002 12 11 | 644 | 0.3− | 0.3+ |
| 2002 10 11 | 704 | 0.6− | 0.5+ | 2002 11 12 | 704 | 0.2+ | 0.5− | 2003 01 05 | 704 | 0.1+ | 0.6+ |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2002 11 12 | 704 | 0.0 | 0.6− | 2003 01 05 | 704 | 0.3+ | 0.7+ |
| 2002 10 11 | 704 | 0.7+ | 0.8− | 2002 11 14 | 704 | 0.2+ | 0.5+ | 2003 01 05 | 704 | 0.2− | 1.7+ |
| 2002 10 12 | 704 | 0.7− | 0.0 | 2002 11 14 | 704 | 0.5+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2− |
| 2002 10 12 | 704 | 0.2+ | 0.3− | 2002 11 14 | 704 | 0.1− | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2002 10 12 | 704 | 0.6− | 0.2+ | 2002 11 14 | 704 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 2002 10 12 | 704 | 0.0 | 0.8− | 2002 11 14 | 704 | 0.4− | 0.4− | 2006 11 03 | G96 | 0.4− | 0.1− |
| 2002 10 12 | 704 | 0.1+ | 0.0 | 2002 11 28 | 699 | 0.1+ | 0.2+ | 2006 11 03 | G96 | 0.1− | 0.3− |
| 2002 10 28 | 608 | 0.2− | 0.3− | 2002 11 28 | 699 | 0.2− | 1.0− | 2006 11 03 | G96 | 0.3− | 0.0 |
| 2002 10 28 | 608 | 0.1+ | 0.5− | 2002 11 28 | 699 | (2.8− | 0.5−) | 2006 11 03 | G96 | 0.1+ | 0.1− |

**2002 TM$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.69537 | | (2000.0) | | | |
| $n$ | 0.23869974 | $\omega$ | 287.51264 | | +0.89647682 | +0.43564867 |
| $a$ | 2.5737602 | $\Omega$ | 46.74701 | | −0.35263118 | +0.81198180 |
| $e$ | 0.3603021 | $i$ | 6.37473 | | −0.26829194 | +0.38845307 |
| $P$ | 4.13 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 599 | 0.6+ | 0.2+ | 2002 11 07 | 704 | 0.1+ | 0.3− | 2006 09 30 | 704 | (0.6+ | 1.7+) |
| 2002 09 06 | 599 | (1.7− | 1.4+) | 2002 11 12 | 644 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.3− | 1.2+ |
| 2002 09 06 | 599 | 0.6+ | 0.2− | 2002 11 12 | 644 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 2002 09 06 | 599 | 1.4− | 0.2− | 2002 11 12 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.3− |
| 2002 10 02 | 704 | (0.4+ | 1.6+) | 2002 11 14 | 704 | 0.5+ | 0.3+ | 2006 10 02 | G96 | 0.6+ | 0.3− |
| 2002 10 02 | 704 | 0.3+ | 0.1+ | 2002 11 14 | 704 | (1.8+ | 0.7−) | 2006 10 02 | G96 | 0.6− | 0.5− |
| 2002 10 02 | 704 | 0.2− | 0.9− | 2002 11 14 | 704 | (2.0+ | 1.3−) | 2006 10 15 | 106 | 0.5+ | 0.4− |
| 2002 10 03 | 704 | 0.5+ | 0.7+ | 2002 11 14 | 704 | 0.2− | 0.2− | 2006 10 15 | 106 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2002 11 14 | 704 | (1.8− | 2.1+) | 2006 10 15 | 106 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.2− | 2002 12 05 | 704 | 0.0 | 0.6+ | 2006 10 15 | 106 | 0.3− | 0.2+ |
| 2002 10 03 | 704 | 0.4+ | 0.1− | 2002 12 05 | 704 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2002 10 11 | 704 | 1.1− | 1.3+ | 2002 12 05 | 704 | (0.5+ | 1.6−) | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.3− | 2006 08 10 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2002 10 11 | 704 | 0.1− | 0.3+ | 2006 08 10 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2002 10 11 | 704 | 0.7+ | 0.0 | 2006 08 10 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.3− |
| 2002 10 11 | 704 | 0.1+ | 0.8− | 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.4− |
| 2002 10 16 | 699 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2002 10 16 | 699 | 1.2− | 0.7+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2002 10 16 | 699 | 0.0 | 1.0− | 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 10 16 | 699 | 1.1+ | 0.0 | 2006 09 18 | 703 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.2− | 1.0+ | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 22 | 703 | (2.1+ | 0.0 ) |
| 2002 10 31 | 644 | 0.3− | 0.9+ | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 1.0+ | 0.4− |
| 2002 10 31 | 644 | 0.1− | 0.8+ | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2002 11 05 | 699 | 0.5+ | 0.4− | 2006 09 26 | 703 | 0.0 | 0.1− | 2006 10 22 | 703 | 1.1− | 1.4− |
| 2002 11 05 | 699 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.1+ | 2006 10 27 | 704 | 0.1− | 0.1+ |
| 2002 11 05 | 699 | 1.1− | 0.5− | 2006 09 26 | 703 | 0.3− | 0.3+ | 2006 10 27 | 704 | 0.9− | 0.2− |
| 2002 11 05 | 699 | 0.7− | 0.7+ | 2006 09 26 | 703 | 0.5− | 0.1+ | 2006 10 27 | 704 | 0.5+ | 0.6+ |
| 2002 11 06 | 704 | 0.2− | 0.6− | 2006 09 29 | H06 | 0.3+ | 1.0− | 2006 10 27 | 704 | 0.9− | 0.1− |
| 2002 11 06 | 704 | 0.3− | 0.4− | 2006 09 29 | H06 | 1.0+ | 0.6− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2006 09 29 | H06 | 0.7+ | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2002 11 06 | 704 | 0.0 | 0.7+ | 2006 09 30 | H06 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2002 11 06 | 704 | 0.1+ | 0.6− | 2006 09 30 | H06 | 1.4+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 1.1+ | 1.0− | 2006 09 30 | H06 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.2− | 0.4− | 2006 09 30 | 704 | 0.7− | 0.8+ | 2006 11 21 | 704 | (2.2+ | 0.0 ) |
| 2002 11 07 | 704 | 0.5+ | 0.3− | 2006 09 30 | 704 | 0.5− | 1.1+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2002 11 07 | 704 | 0.0 | 1.0− | 2006 09 30 | 704 | 0.2− | 1.2+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |

**2002 TW$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.98134 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23909229 | $\omega$ | 157.06797 | | +0.95714907 | −0.26029579 | |
| $a$ | 2.5709423 | $\Omega$ | 218.73191 | | +0.22416645 | +0.94343148 | |
| $e$ | 0.2760731 | $i$ | 11.70493 | | +0.18334408 | +0.20538536 | |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | 0.7− | 0.2− | 2002 11 11 | 704 | 0.2− | 0.4− | 2006 10 04 | 703 | 0.4+ | 0.4+ |
| 1998 12 22 | 704 | (0.1+ | 2.5−) | 2002 11 11 | 704 | 0.0 | 0.6+ | 2006 10 04 | 703 | (2.1− | 1.0−) |
| 1998 12 22 | 704 | 0.5+ | 1.5− | 2002 11 11 | 704 | 0.4− | 1.1− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 1998 12 22 | 704 | (3.2− | 0.7−) | 2002 11 11 | 704 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.1− |
| 2002 09 18 | 049 | 1.0− | 0.2− | 2002 11 11 | 704 | 0.5− | 0.6− | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2002 09 18 | 049 | 0.1+ | 0.1− | 2002 11 11 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 09 18 | 049 | 0.8− | 0.5− | 2002 11 11 | 704 | 0.2+ | 0.9− | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2002 11 15 | 644 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.6+ | 2002 11 15 | 644 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 10 02 | 704 | 0.2− | 0.1− | 2002 11 15 | 644 | 0.1+ | 1.4+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.0 | 2002 11 23 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2002 11 23 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2002 11 23 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2002 12 01 | 704 | 0.6− | 0.3− | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 2002 10 07 | 699 | 0.1+ | 0.8− | 2002 12 01 | 704 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.7− | 0.7− |
| 2002 10 07 | 699 | (0.9− | 1.5+) | 2002 12 01 | 704 | 0.1+ | 0.4− | 2006 10 19 | 704 | 0.1+ | 0.0 |
| 2002 10 07 | 704 | 0.6+ | 0.1+ | 2002 12 01 | 704 | 0.7+ | 0.2+ | 2006 10 19 | 704 | 0.0 | 0.3+ |
| 2002 10 07 | 699 | 1.3− | 0.2− | 2002 12 01 | 704 | 0.8− | 0.5− | 2006 10 19 | 704 | 0.7− | 0.0 |
| 2002 10 07 | 699 | 0.4− | 0.1− | 2002 12 07 | 704 | 0.5− | 0.4+ | 2006 10 19 | 704 | 0.5− | 0.1+ |
| 2002 10 07 | 704 | 0.9+ | 0.9+ | 2002 12 07 | 704 | 0.0 | 0.2− | 2006 10 19 | 704 | 0.4+ | 0.3+ |
| 2002 10 07 | 699 | 0.9− | 0.5+ | 2002 12 07 | 704 | 0.4− | 0.4+ | 2006 10 26 | 704 | 0.4+ | 0.9+ |
| 2002 10 07 | 699 | 0.6+ | 1.0+ | 2002 12 07 | 704 | 0.2− | 0.1+ | 2006 10 26 | 704 | 0.2+ | 0.6+ |
| 2002 10 07 | 704 | 0.4+ | 0.0 | 2002 12 07 | 704 | 0.1− | 0.9+ | 2006 10 26 | 704 | 0.4+ | 0.2+ |
| 2002 10 07 | 699 | 0.2− | 0.2+ | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 10 26 | 704 | 0.4+ | 0.3+ |
| 2002 10 07 | 699 | 1.5+ | 0.1+ | 2005 05 11 | G96 | 0.6+ | 0.3− | 2006 10 26 | 704 | 0.6+ | 0.8+ |
| 2002 10 07 | 704 | 1.1+ | 0.6+ | 2005 05 11 | G96 | 0.0 | 0.2− | 2006 10 26 | 704 | 0.3− | 1.3+ |
| 2002 10 11 | 704 | 0.1− | 0.7+ | 2005 05 11 | G96 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.3+ | 0.0 |
| 2002 10 11 | 704 | 1.4+ | 1.1− | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.9+ | 0.6− |
| 2002 10 11 | 704 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.8+ | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.3− | 0.3− | 2006 10 29 | 704 | 0.0 | 0.3− |
| 2002 10 16 | 699 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.2− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2002 10 16 | 699 | 0.3+ | 0.9+ | 2006 09 20 | 699 | 0.2+ | 0.1− | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2002 10 16 | 699 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.2+ | 2006 11 06 | 644 | 0.2+ | 0.0 |
| 2002 10 16 | 699 | 0.3+ | 0.7+ | 2006 09 20 | 699 | 0.4− | 0.8− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 10 31 | 699 | 0.3+ | 0.4+ | 2006 09 20 | 699 | (0.1+ | 1.9+) | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 10 31 | 699 | 0.1+ | 0.5+ | 2006 09 21 | 704 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2002 10 31 | 699 | 0.6+ | 0.5+ | 2006 09 21 | 704 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 10 31 | 699 | 0.7+ | 0.2+ | 2006 09 21 | 704 | 1.3− | 0.2− | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 0.1− | 0.2− | 2006 09 28 | 703 | 1.0+ | 0.6− | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2002 11 07 | 704 | 0.3− | 0.6− | 2006 09 28 | 703 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.4− | 0.8− | 2006 09 28 | 703 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2002 11 07 | 704 | 0.4− | 0.8− | 2006 09 28 | 703 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 1.0− | 2006 09 28 | 703 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2002 11 10 | 704 | 0.4− | 0.2− | 2006 09 28 | 703 | 0.4− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2002 11 10 | 704 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.5− | 0.4+ |
| 2002 11 10 | 704 | 0.3− | 0.7− | 2006 09 28 | 703 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2002 11 11 | 704 | 0.1+ | 1.3− | 2006 10 04 | 703 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2002 11 11 | 704 | 0.0 | 0.5+ | 2006 10 04 | 703 | 0.8+ | 0.3− | | | | |

**2002 TY$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.86730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23404277 | $\omega$ | 30.94757 | | +0.43908921 | −0.89727935 | |
| $a$ | 2.6077897 | $\Omega$ | 33.06956 | | +0.80621698 | +0.37104690 | |
| $e$ | 0.2720455 | $i$ | 4.80652 | | +0.39650328 | +0.23919441 | |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.5− | 0.2− | 2002 11 14 | 704 | 0.3+ | 0.7− | 2003 01 05 | 704 | 0.2− | 1.1+ |
| 2002 10 02 | 704 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.1− | 1.2− | 2003 01 05 | 704 | 0.7+ | 0.3+ |
| 2002 10 02 | 704 | 1.2− | 0.1− | 2002 11 14 | 704 | 0.1+ | 1.3− | 2004 04 13 | 691 | 0.1+ | 0.4+ |
| 2002 10 02 | 704 | 0.1+ | 0.1+ | 2002 11 14 | 704 | 0.4+ | 1.3− | 2004 04 13 | 691 | 0.3+ | 0.4+ |
| 2002 10 03 | 704 | 0.4+ | 0.2− | 2002 11 14 | 704 | 0.4− | 0.3− | 2004 04 13 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 1.3+ | 0.1− | 2002 11 24 | 644 | 0.4− | 0.4+ | 2006 09 12 | 703 | 1.1− | 0.4− |
| 2002 10 03 | 704 | 0.3+ | 0.8+ | 2002 11 24 | 644 | 0.3− | 0.5+ | 2006 09 12 | 703 | (1.2+ | 1.7−) |
| 2002 10 03 | 704 | 0.9+ | 0.3+ | 2002 11 24 | 644 | 0.2− | 0.4+ | 2006 09 12 | 703 | 0.4+ | 0.5− |
| 2002 10 03 | 704 | 1.4+ | 0.0 | 2002 11 27 | 699 | 0.3− | 0.6+ | 2006 09 12 | 703 | 0.5+ | 1.1+ |
| 2002 10 09 | 239 | 0.6− | 0.1− | 2002 11 27 | 699 | 0.1+ | 0.2+ | 2006 09 18 | 703 | (0.7+ | 1.9+) |
| 2002 10 09 | 239 | 0.6− | 0.2− | 2002 11 27 | 699 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.6+ | 0.4+ |
| 2002 10 10 | 239 | 0.4− | 0.1− | 2002 11 27 | 699 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 1.1+ | 0.9+ |
| 2002 10 10 | 239 | 0.1− | 0.5− | 2002 11 28 | 699 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1− | 1.1+ |
| 2002 10 11 | 704 | 0.3+ | 0.7− | 2002 11 28 | 699 | 0.3+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.6− |
| 2002 10 11 | 704 | 0.1− | 0.9+ | 2002 11 28 | 699 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.8+ |
| 2002 10 11 | 704 | 0.3+ | 0.0 | 2002 11 28 | 699 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.3− | 1.2+ |
| 2002 10 11 | 704 | 0.5− | 0.2− | 2002 12 01 | 608 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.4− |
| 2002 10 11 | 704 | 0.5− | 0.4+ | 2002 12 01 | 608 | 0.8+ | 0.7+ | 2006 09 28 | 704 | 0.6− | 0.7− |
| 2002 10 30 | 608 | 0.1+ | 0.4− | 2002 12 01 | 608 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.6+ | 0.7+ |
| 2002 10 30 | 608 | 0.2+ | 1.1− | 2002 12 02 | 704 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.8− |
| 2002 10 30 | 608 | 0.1− | 0.5− | 2002 12 02 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.4+ | 0.0 |
| 2002 11 05 | 704 | 0.0 | 0.8+ | 2002 12 02 | 704 | 0.2− | 0.2+ | 2006 09 30 | 704 | 0.4− | 0.7− |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2002 12 02 | 704 | 0.0 | 0.6+ | 2006 09 30 | 704 | 0.7− | 0.2+ |
| 2002 11 05 | 704 | 0.0 | 1.1+ | 2002 12 02 | 704 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.8+ | 1.0+ |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2002 12 06 | 704 | 0.4− | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2002 11 06 | 704 | 0.2+ | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.5+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 11 06 | 704 | 0.7+ | 0.8− | 2002 12 11 | 704 | 0.5− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.5− | 0.2− | 2002 12 11 | 704 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.6− | 0.8− | 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2002 11 07 | 704 | 0.2− | 0.1− | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.5− | 0.0 |
| 2002 11 07 | 704 | 0.3− | 0.4− | 2002 12 12 | 608 | 0.4− | 1.1− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 08 | 704 | 0.5+ | 0.9+ | 2002 12 12 | 608 | 1.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2002 11 08 | 704 | 0.7− | 0.1− | 2002 12 12 | 608 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 704 | 0.2− | 0.0 | 2002 12 27 | 644 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 11 08 | 704 | (0.6+ | 1.6+) | 2002 12 27 | 644 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 11 08 | 704 | 0.3+ | 0.4− | 2002 12 27 | 644 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2002 11 08 | 704 | 0.3− | 0.8+ | 2002 12 31 | 699 | 0.8− | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.2+ | | |
| 2002 11 08 | 704 | 0.3− | 0.3+ | 2002 12 31 | 699 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 11 12 | 704 | 0.3+ | 0.3− | 2002 12 31 | 699 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.0 | | |
| 2002 11 12 | 704 | 0.1+ | 0.1− | 2002 12 31 | 699 | 0.4− | 0.6− | 2006 11 16 | G96 | 0.0 | 0.4− | | |
| 2002 11 12 | 704 | 0.1+ | 0.6− | 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2002 11 12 | 704 | 0.0 | 1.2− | 2003 01 05 | 704 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2002 11 12 | 704 | 0.7+ | 0.8− | 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.3− | | |

### 2002 TJ$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.58856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23064994 | $\omega$ | 337.33344 | | +0.99939891 | −0.00517858 | |
| $a$ | 2.6333009 | $\Omega$ | 23.04278 | | +0.02069889 | +0.88232430 | |
| $e$ | 0.3985019 | $i$ | 5.02411 | | −0.02780980 | +0.47061344 | |
| $P$ | 4.27 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.5− | 1.0+ | 2002 11 11 | 699 | 0.1+ | 0.1− | 2002 12 06 | 704 | 0.5− | 0.1− | | |
| 2002 10 02 | 704 | 0.2+ | 0.2+ | 2002 11 11 | 699 | 0.3− | 0.3+ | 2002 12 06 | 704 | 0.3− | 0.2+ | | |
| 2002 10 02 | 704 | 1.2− | 0.5+ | 2002 11 11 | 699 | 0.0 | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.4+ | | |
| 2002 10 02 | 704 | 0.2− | 0.3− | 2002 11 11 | 699 | 0.5− | 0.0 | 2002 12 06 | 704 | 0.1− | 0.5+ | | |
| 2002 10 03 | 704 | 1.4+ | 0.2− | 2002 11 12 | 704 | 0.0 | 0.2+ | 2002 12 11 | 704 | 0.3− | 0.0 | | |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2002 11 12 | 704 | 0.0 | 0.8+ | 2002 12 11 | 704 | 0.5− | 0.2− | | |
| 2002 10 03 | 704 | 1.0+ | 0.4− | 2002 11 12 | 704 | 0.3+ | 0.4+ | 2002 12 11 | 704 | 0.1+ | 0.5+ | | |
| 2002 10 07 | 704 | 0.8− | 0.7+ | 2002 11 12 | 704 | 0.2− | 0.4+ | 2002 12 11 | 704 | 0.6− | 0.7− | | |
| 2002 10 07 | 704 | 1.0+ | 1.6− | 2002 11 12 | 704 | 0.2+ | 0.5+ | 2002 12 27 | 644 | 0.4+ | 0.3+ | | |
| 2002 10 07 | 704 | 0.3− | 0.4+ | 2002 11 14 | 704 | 0.0 | 0.3+ | 2002 12 27 | 644 | 0.1+ | 0.1− | | |
| 2002 10 07 | 704 | 0.6− | 0.7− | 2002 11 14 | 704 | 0.2+ | 0.2− | 2002 12 27 | 644 | 0.2− | 0.2− | | |
| 2002 10 10 | 704 | 0.1− | 0.7− | 2002 11 14 | 704 | 1.3+ | 0.8+ | 2003 01 20 | 644 | 0.4− | 0.6− | | |
| 2002 10 10 | 704 | 0.1+ | 1.1− | 2002 11 14 | 704 | 0.4+ | 0.2+ | 2003 01 20 | 644 | 0.2− | 0.1− | | |
| 2002 10 10 | 704 | 0.2+ | 0.3− | 2002 11 14 | 704 | 1.0+ | 0.4+ | 2006 07 20 | E12 | 0.5− | 0.4+ | | |
| 2002 10 10 | 704 | 0.2+ | 1.2− | 2002 11 24 | 644 | 0.2− | 0.6− | 2006 07 20 | E12 | 0.1− | 0.0 | | |
| 2002 10 12 | 704 | 0.8+ | 0.2+ | 2002 11 24 | 644 | 0.4− | 0.5− | 2006 07 20 | E12 | 0.6− | 0.1+ | | |
| 2002 10 12 | 704 | 0.4+ | 0.3+ | 2002 11 24 | 644 | 0.3− | 0.4− | 2006 07 20 | E12 | 0.1+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.1− | 0.7− | 2002 12 02 | 704 | 0.5− | 0.3+ | 2006 07 29 | E12 | 0.3+ | 0.4+ | | |
| 2002 10 12 | 704 | 0.5+ | 1.0− | 2002 12 02 | 704 | 0.6− | 0.0 | 2006 07 29 | E12 | 0.3+ | 0.3+ | | |
| 2002 11 08 | 704 | 0.4− | 0.5+ | 2002 12 02 | 704 | 0.3− | 0.4+ | 2006 07 29 | E12 | 0.2+ | 0.6+ | | |
| 2002 11 08 | 704 | 0.1+ | 0.2− | 2002 12 02 | 704 | 0.4− | 0.2+ | | | | | | |
| 2002 11 08 | 704 | 0.2+ | 0.1+ | 2002 12 02 | 704 | 0.2− | 1.0+ | | | | | | |

### 2002 TV$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.01590 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21551886 | $\omega$ | 317.54730 | | +0.97138405 | +0.11625508 | |
| $a$ | 2.7551539 | $\Omega$ | 37.32670 | | +0.03935569 | +0.78118540 | |
| $e$ | 0.2809157 | $i$ | 19.97293 | | −0.23423098 | +0.61337927 | |
| $P$ | 4.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.6− | 0.1− | 2002 10 12 | 704 | 0.5− | 0.3+ | 2002 12 03 | 644 | 0.1− | 0.8+ | | |
| 2002 09 05 | 704 | 0.9− | 0.5− | 2002 10 12 | 704 | 0.5− | 0.2+ | 2002 12 03 | 644 | 0.2− | 0.4+ | | |
| 2002 09 05 | 704 | 0.2− | 0.0 | 2002 10 12 | 704 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.6+ | 0.2− | | |
| 2002 10 02 | 704 | 0.6+ | 0.4+ | 2002 10 12 | 704 | 1.0− | 0.7− | 2002 12 06 | 704 | 0.0 | 0.2− | | |
| 2002 10 02 | 704 | 0.8− | 1.1− | 2002 11 06 | 704 | 0.3− | 0.5+ | 2002 12 06 | 704 | 0.0 | 0.4+ | | |
| 2002 10 02 | 704 | 0.7− | 0.4− | 2002 11 06 | 704 | 1.2+ | 0.0 | 2002 12 06 | 704 | 0.1− | 0.3− | | |
| 2002 10 02 | 704 | 0.4+ | 0.3+ | 2002 11 06 | 699 | 0.7+ | 0.2+ | 2002 12 06 | 704 | 0.0 | 0.7− | | |
| 2002 10 03 | 704 | 0.6+ | 0.1− | 2002 11 06 | 704 | 0.3+ | 0.4− | 2002 12 12 | 644 | 0.4− | 0.1+ | | |
| 2002 10 03 | 704 | 0.9− | 0.4+ | 2002 11 06 | 699 | 0.3− | 0.4− | 2002 12 12 | 644 | 0.1− | 0.1+ | | |
| 2002 10 03 | 704 | 1.1− | 0.7+ | 2002 11 06 | 704 | 0.4+ | 0.1+ | 2002 12 12 | 644 | 0.2+ | 0.0 | | |
| 2002 10 07 | 704 | 0.1− | 0.5+ | 2002 11 06 | 699 | 0.3+ | 0.1+ | 2005 05 07 | 691 | 0.0 | 0.4+ | | |
| 2002 10 07 | 704 | 0.5+ | 0.6+ | 2002 11 06 | 704 | 0.3+ | 0.4+ | 2005 05 07 | 691 | 0.3+ | 0.3+ | | |
| 2002 10 07 | 704 | (1.6+ | 0.8−) | 2002 11 06 | 699 | 0.8− | 0.4+ | 2005 05 07 | 691 | 0.2+ | 0.0 | | |
| 2002 10 07 | 704 | 0.6− | 0.2+ | 2002 11 15 | 704 | 0.5+ | 0.1+ | 2006 07 20 | E12 | 0.7− | 0.6+ | | |
| 2002 10 10 | 704 | 0.1− | 0.6− | 2002 11 15 | 704 | 0.6+ | 0.2+ | 2006 07 20 | E12 | 0.1− | 0.2+ | | |
| 2002 10 10 | 704 | 0.6+ | 0.3+ | 2002 11 15 | 704 | 0.1+ | 0.3+ | 2006 07 20 | E12 | 0.2+ | 0.1− | | |
| 2002 10 10 | 704 | 0.1− | 0.5− | 2002 11 15 | 704 | 0.5+ | 0.0 | 2006 07 20 | E12 | 0.7+ | 0.4+ | | |
| 2002 10 10 | 704 | 0.7− | 0.0 | 2002 11 15 | 704 | 0.8+ | 0.6+ | | | | | | |
| 2002 10 10 | 704 | 0.5− | 0.1+ | 2002 12 03 | 644 | 0.3− | 0.5+ | | | | | | |

### 2002 TZ$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.00709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27852340 | $\omega$ | 333.61983 | | +0.85675036 | −0.51342040 | |
| $a$ | 2.3221749 | $\Omega$ | 57.35668 | | +0.48282107 | +0.76524642 | |
| $e$ | 0.2136639 | $i$ | 3.32020 | | +0.18128053 | +0.38832643 | |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.4− | 0.0 | 2002 11 14 | 704 | 0.3− | 0.5− | 2002 12 02 | 608 | 0.3− | 1.7− | | |
| 2000 02 05 | 695 | 0.4+ | 0.2− | 2002 11 14 | 704 | 0.4− | 0.5− | 2002 12 02 | 608 | 0.9− | 1.3− | | |
| 2002 10 02 | 704 | 0.2− | 0.3− | 2002 11 14 | 704 | 0.2− | 0.2− | 2002 12 05 | 704 | 0.9+ | 0.2+ | | |
| 2002 10 02 | 704 | 0.3+ | 0.5+ | 2002 11 14 | 704 | 0.2− | 0.1− | 2002 12 05 | 704 | 0.0 | 0.3+ | | |
| 2002 10 02 | 704 | 0.2+ | 1.0+ | 2002 11 23 | 644 | 0.0 | 0.6− | 2002 12 05 | 704 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.8+ | 0.7+ | 2002 11 23 | 644 | 0.0 | 0.7− | 2002 12 05 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2002 11 23 | 644 | 0.0 | 0.6− | 2002 12 05 | 704 | 0.2+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2002 11 27 | 699 | 0.5− | 0.3+ | 2002 12 10 | 704 | 0.2+ | 0.6+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.4+ | 2002 11 27 | 699 | 0.0 | 0.6+ | 2002 12 10 | 704 | 1.0− | 0.3+ | | |
| 2002 10 30 | 049 | 0.4+ | 1.1− | 2002 11 27 | 699 | 0.4− | 0.8+ | 2002 12 10 | 704 | 0.4− | 0.7+ | | |
| 2002 10 30 | 049 | 0.3+ | 0.9− | 2002 11 27 | 699 | 0.7− | 0.5+ | 2002 12 10 | 704 | 0.3− | 0.3− | | |
| 2002 10 30 | 049 | 0.1+ | 1.1− | 2002 11 28 | 699 | 0.1− | 0.0 | 2002 12 10 | 704 | 0.6+ | 0.8+ | | |
| 2002 10 30 | 608 | 0.2+ | 0.2+ | 2002 11 28 | 699 | 0.4+ | 0.2− | 2002 12 10 | 704 | 1.7− | 0.9+ | | |
| 2002 10 30 | 608 | 0.1+ | 0.2− | 2002 11 28 | 699 | 0.1+ | 0.7+ | 2002 12 27 | 644 | 0.2+ | 0.5+ | | |
| 2002 10 30 | 608 | 0.1+ | 0.2+ | 2002 11 28 | 699 | 0.5− | 0.8+ | 2002 12 27 | 644 | 0.5+ | 0.5+ | | |
| 2002 11 06 | 704 | 0.7+ | 0.3− | 2002 12 02 | 704 | 0.5+ | 0.3+ | 2002 12 27 | 644 | 0.3+ | 0.5+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.5− | 2002 12 02 | 704 | 0.6+ | 0.5+ | 2006 11 27 | G96 | 0.5− | 0.1+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.8− | 2002 12 02 | 704 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.6− | | |
| 2002 11 06 | 704 | 0.1− | 0.2− | 2002 12 02 | 704 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.4− | | |
| 2002 11 06 | 704 | 0.0 | 0.5− | 2002 12 02 | 704 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.4− | | |
| 2002 11 14 | 704 | 0.6− | 0.4− | 2002 12 02 | 608 | 0.0 | 1.0− | | | | | | |

### 2002 TY$_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.54808 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23967624 | $\omega$ | 169.65579 | | +0.87021247 | −0.49193725 | |
| $a$ | 2.5667647 | $\Omega$ | 219.84900 | | +0.44896115 | +0.81436075 | |
| $e$ | 0.2501306 | $i$ | 2.41333 | | +0.20288949 | +0.30791931 | |
| $P$ | 4.11 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.1− | 0.1− | 2002 12 28 | 699 | 0.4+ | 0.6− | 2006 11 10 | 644 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 1.2− | 0.7− | 2002 12 28 | 699 | 0.5− | 0.8− | 2006 11 10 | 644 | 0.0 | 0.0 | | |
| 2002 10 02 | 704 | 0.3+ | 0.1+ | 2002 12 28 | 699 | 0.1+ | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.0 | | |
| 2002 10 02 | 704 | (1.8− | 0.1+) | 2002 12 31 | 699 | 1.0− | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.1+ | | |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2002 12 31 | 699 | 0.8− | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.1− | | |
| 2002 10 03 | 704 | 0.1+ | 0.4− | 2002 12 31 | 699 | 0.8− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.1+ | | |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2002 12 31 | 699 | 0.7− | 1.0+ | 2006 11 11 | G96 | 0.2− | 0.2− | | |
| 2002 10 03 | 704 | 0.5+ | 0.8− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.3− | | |
| 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− | | |
| 2002 10 11 | 704 | (1.6− | 0.7+) | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2002 10 11 | 704 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.1− | | |
| 2002 10 11 | 704 | 1.3− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3− | | |
| 2002 11 05 | 704 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.1− | | |
| 2002 11 05 | 704 | 1.3+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.4− | | |
| 2002 11 05 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.2− | | |
| 2002 11 05 | 704 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.4− | | |
| 2002 11 05 | 704 | 0.5+ | 0.9+ | 2006 10 23 | 704 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.4− | | |
| 2002 11 06 | 704 | 0.2− | 1.5− | 2006 10 23 | 704 | 0.4− | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.0 | | |
| 2002 11 06 | 704 | (1.6+ | 0.4+) | 2006 10 23 | 704 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | |
| 2002 11 06 | 704 | 0.6− | 1.3+ | 2006 10 23 | 704 | 0.3− | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.4+ | 0.5− | 2006 10 23 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 703 | 0.1− | 0.6− | | |
| 2002 11 06 | 704 | 1.2+ | 1.4− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.3− | 0.4− | | |
| 2002 11 06 | 608 | (1.8+ | 1.1−) | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.3+ | 0.1+ | | |
| 2002 11 06 | 608 | (2.1+ | 1.7−) | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.2− | | |
| 2002 11 06 | 608 | (1.6+ | 1.8−) | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.4− | | |
| 2002 11 14 | 704 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.3+ | | |
| 2002 11 14 | 704 | 0.5− | 0.3+ | 2006 10 28 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.1− | | |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 10 28 | 704 | 1.0+ | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.6− | | |
| 2002 11 14 | 704 | 0.4+ | 1.2+ | 2006 10 28 | 704 | 1.4− | 0.6− | 2006 11 18 | 704 | 0.3+ | 0.2− | | |
| 2002 11 18 | 644 | 0.1+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.0 | | |
| 2002 11 18 | 644 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.6− | | |
| 2002 11 18 | 644 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.1+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.1− | | |
| 2002 12 05 | 704 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.3+ | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 11 02 | 704 | 0.7− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2002 12 05 | 704 | 0.1− | 1.1− | 2006 11 02 | 704 | 0.4+ | 1.4+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | | |
| 2002 12 05 | 608 | 0.0 | 0.1− | 2006 11 02 | 704 | 0.7+ | 0.9+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2002 12 05 | 608 | 0.3+ | 0.3− | 2006 11 02 | 704 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.2− | | |
| 2002 12 05 | 608 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.2− | | |
| 2002 12 10 | 704 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.5+ | | |
| 2002 12 10 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.7− | 0.9+ | | |
| 2002 12 10 | 704 | 0.7+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.0 | 0.8+ | | |
| 2002 12 10 | 704 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.5+ | | |
| 2002 12 28 | 699 | 0.1+ | 1.4− | 2006 11 10 | 644 | 0.2− | 0.0 | | | | | | |

**2002 TT$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.06906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23405158 | $\omega$ | 328.22388 | | +0.98382880 | −0.11457173 | |
| $a$ | 2.6077243 | $\Omega$ | 39.10137 | | +0.17174786 | +0.82158112 | |
| $e$ | 0.1957558 | $i$ | 12.60862 | | −0.05082874 | +0.55846019 | |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.8+ | 0.5+ | 2002 11 06 | 704 | 0.7− | 0.1+ | 2002 12 11 | 644 | 0.2− | 0.5− | | |
| 2002 10 02 | 704 | 0.7+ | 0.6+ | 2002 11 06 | 704 | 1.1− | 0.2+ | 2002 12 11 | 644 | 0.1− | 0.4− | | |
| 2002 10 02 | 704 | 1.2+ | 0.4+ | 2002 11 06 | 704 | 0.7− | 0.7+ | 2006 09 17 | 699 | 0.2− | 0.6+ | | |
| 2002 10 03 | 704 | 0.5+ | 1.2− | 2002 11 08 | 704 | 0.3− | 0.2− | 2006 09 17 | 699 | 0.2+ | 0.2− | | |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2002 11 08 | 704 | 0.2− | 0.0 | 2006 09 17 | 699 | 1.0− | 1.1− | | |
| 2002 10 03 | 704 | 0.7+ | 0.3+ | 2002 11 08 | 704 | 0.1− | 0.4− | 2006 09 17 | 699 | 0.8+ | 1.2− | | |
| 2002 10 03 | 704 | 0.5+ | 1.1− | 2002 11 08 | 704 | 0.4− | 0.7− | 2006 09 17 | 699 | 0.8+ | 0.1+ | | |
| 2002 10 07 | 704 | 0.1− | 0.1+ | 2002 11 12 | 704 | 0.5− | 0.7+ | 2006 09 17 | 699 | 0.6− | 0.3+ | | |
| 2002 10 07 | 704 | 0.2+ | 0.2− | 2002 11 12 | 704 | 0.4− | 0.5+ | 2006 09 17 | 699 | 0.0 | 1.4+ | | |
| 2002 10 07 | 704 | 1.3− | 1.1+ | 2002 11 12 | 704 | 0.6− | 0.2+ | 2006 09 17 | 699 | 0.3− | 0.0 | | |
| 2002 10 11 | 704 | 0.0 | 0.4+ | 2002 11 12 | 704 | (0.5− | 2.1+) | 2006 09 19 | 703 | 0.5+ | 1.0+ | | |
| 2002 10 11 | 704 | 0.3− | 0.6− | 2002 11 12 | 704 | (0.1− | 1.6+) | 2006 09 19 | 703 | 0.6+ | 0.5+ | | |
| 2002 10 11 | 704 | 0.4+ | 0.2+ | 2002 11 14 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.6+ | 1.0+ | | |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2002 11 14 | 704 | 0.1+ | 0.4− | 2006 09 25 | 703 | 0.3+ | 0.2− | | |
| 2002 10 28 | 608 | 0.2− | 0.3− | 2002 11 14 | 704 | 1.1− | 0.5− | 2006 09 25 | 703 | 0.4− | 1.1− | | |
| 2002 10 28 | 608 | 0.1− | 0.5− | 2002 11 14 | 704 | 0.0 | 0.8− | 2006 09 25 | 703 | 0.1− | 0.2− | | |
| 2002 10 28 | 608 | 0.1− | 0.1− | 2002 11 14 | 704 | 0.6− | 0.6− | 2006 09 25 | 703 | 0.8+ | 0.4+ | | |
| 2002 10 31 | 644 | 0.2− | 0.4− | 2002 11 23 | 644 | 0.2+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.1− | | |
| 2002 10 31 | 644 | 0.1− | 0.4− | 2002 11 23 | 644 | 0.3+ | 0.8+ | 2006 10 09 | 644 | 0.5− | 0.0 | | |
| 2002 10 31 | 644 | 0.3− | 0.3− | 2002 11 23 | 644 | 0.5+ | 0.9+ | 2006 10 09 | 644 | 0.8− | 1.1− | | |
| 2002 11 02 | 608 | 0.3+ | 0.1− | 2002 11 30 | 608 | 1.1+ | 0.3+ | 2006 10 10 | G92 | 0.1+ | 0.8+ | | |
| 2002 11 02 | 608 | 0.1+ | 0.3+ | 2002 11 30 | 608 | 0.5+ | 0.3+ | 2006 10 10 | G92 | 0.3− | 0.0 | | |
| 2002 11 02 | 608 | 0.3+ | 0.1− | 2002 11 30 | 608 | 0.7+ | 0.2+ | 2006 10 10 | G92 | 0.2− | 0.2− | | |
| 2002 11 04 | 699 | 0.5+ | 0.9− | 2002 12 02 | 704 | 0.9+ | 1.0+ | 2006 10 21 | 703 | 0.6+ | 0.8+ | | |
| 2002 11 04 | 699 | 0.5+ | 0.2− | 2002 12 02 | 704 | (0.4− | 1.9+) | 2006 10 21 | 703 | 0.1− | 0.9− | | |
| 2002 11 04 | 699 | 0.4− | 0.8− | 2002 12 02 | 704 | 1.3+ | 1.0+ | 2006 10 21 | 703 | 0.7+ | 0.7− | | |
| 2002 11 04 | 699 | 0.1− | 0.3− | 2002 12 02 | 704 | 0.3+ | 1.3+ | 2006 10 21 | 703 | 0.6− | 0.1− | | |
| 2002 11 05 | 704 | 0.1− | 0.0 | 2002 12 02 | 704 | 0.6+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.4− | | |
| 2002 11 05 | 704 | 0.1+ | 0.1− | 2002 12 06 | 704 | (1.4− | 1.6−) | 2006 10 22 | 644 | 0.1− | 0.4− | | |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2002 12 06 | 704 | 0.1+ | 1.1− | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2002 11 05 | 704 | 0.7− | 0.0 | 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 10 28 | 703 | 0.5+ | 0.3− | | |
| 2002 11 05 | 704 | 0.6− | 0.3+ | 2002 12 06 | 704 | 0.2− | 0.8− | 2006 10 28 | 703 | 0.1− | 0.7+ | | |
| 2002 11 06 | 704 | 0.2− | 0.1− | 2002 12 06 | 704 | (0.9− | 1.6−) | 2006 10 28 | 703 | 0.1− | 0.3+ | | |
| 2002 11 06 | 704 | 0.4− | 0.1− | 2002 12 11 | 644 | 0.3+ | 0.4− | 2006 10 28 | 703 | 1.2− | 0.5+ | | |

**2002 TS$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.29109 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23983789 | $\omega$ | 204.66981 | | +0.95757951 | +0.28248109 | |
| $a$ | 2.5656112 | $\Omega$ | 138.78785 | | −0.24795111 | +0.90841535 | |
| $e$ | 0.2391894 | $i$ | 4.96075 | | −0.14683911 | +0.30819797 | |
| $P$ | 4.11 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 599 | 0.4− | 0.2+ | 2005 04 02 | 691 | 0.2+ | 0.7+ | 2006 09 22 | 704 | 0.0 | 0.4+ | | |
| 2002 09 06 | 599 | 0.2− | 0.4+ | 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.5− | 1.3+ | | |
| 2002 09 06 | 599 | 0.1− | 0.1− | 2005 04 02 | 691 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.7+ | 1.0+ | | |
| 2002 09 06 | 599 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.8+ | 0.8+ | | |
| 2002 10 02 | 608 | 0.3+ | 0.3+ | 2006 08 17 | 644 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.1+ | | |
| 2002 10 02 | 608 | 0.4+ | 0.5+ | 2006 08 17 | 644 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.6+ | 0.2+ | | |
| 2002 10 02 | 608 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.8+ | | |
| 2002 10 03 | 704 | 0.8− | 0.3+ | 2006 09 12 | 703 | 0.2− | 0.4− | 2006 09 30 | 703 | 1.1+ | 0.2− | | |
| 2002 10 03 | 704 | 0.4− | 0.7− | 2006 09 12 | 703 | 1.2− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.5− | | |
| 2002 10 03 | 704 | 0.1− | 0.6− | 2006 09 12 | 703 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.6− | | |
| 2002 10 03 | 704 | 1.1− | 0.6+ | 2006 09 16 | 704 | 0.9+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.5− | | |
| 2002 10 10 | 704 | 0.5− | 0.9− | 2006 09 16 | 704 | 0.5− | 0.1+ | 2006 09 30 | 704 | 1.0− | 0.0 | | |
| 2002 10 10 | 704 | 0.2− | 0.4+ | 2006 09 16 | 704 | 1.2+ | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.3− | | |
| 2002 10 10 | 704 | 0.0 | 0.3− | 2006 09 16 | 704 | 0.0 | 0.6+ | 2006 09 30 | 704 | 0.4+ | 0.4+ | | |
| 2002 10 11 | 704 | 0.7− | 1.1+ | 2006 09 18 | 703 | 1.1− | 0.2− | 2006 09 30 | 704 | 0.1− | 0.0 | | |
| 2002 10 11 | 704 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.1+ | | |
| 2002 10 11 | 704 | 0.5− | 0.6− | 2006 09 18 | 703 | 0.2− | 0.5− | 2006 09 30 | 704 | 0.1− | 0.4+ | | |
| 2002 10 11 | 704 | 0.5− | 0.4− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 09 30 | 703 | (3.5− | 1.0+) | | |
| 2002 10 11 | 704 | 0.8− | 0.3− | 2006 09 18 | 699 | 0.3− | 0.2− | 2006 09 30 | 703 | (1.0+ | 3.3+) | | |
| 2002 10 31 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.2− | | |
| 2002 10 31 | 704 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.2− | | |
| 2002 10 31 | 704 | 0.7+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.4+ | 0.1− | | |
| 2002 10 31 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.6− | 1.2− | 2006 10 16 | 703 | 0.7− | 0.0 | | |
| 2002 10 31 | 704 | 0.6+ | 0.5+ | 2006 09 19 | 703 | 0.2− | 1.3− | 2006 10 16 | 703 | 0.2− | 0.7+ | | |
| 2002 10 31 | 608 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.6− | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2002 10 31 | 608 | 0.4+ | 0.8+ | 2006 09 20 | 644 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2002 10 31 | 608 | 0.4+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2002 11 11 | 704 | 0.2+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.4− | | |
| 2002 11 11 | 704 | 0.3+ | 0.2− | 2006 09 22 | 704 | 0.4− | 1.1+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 11 | 704 | 0.8+ | 0.6+ | 2006 09 22 | 704 | 1.1+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |

**2002 TQ$_{56}$ = 2006 QE$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.74536 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23941635 | $\omega$ | 296.04855 | | +0.66884399 | +0.74301108 | |
| $a$ | 2.5686219 | $\Omega$ | 16.00266 | | −0.64695186 | +0.59774893 | |
| $e$ | 0.1523341 | $i$ | 5.02143 | | −0.36619804 | +0.30104942 | |
| $P$ | 4.12 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 691 | 0.2+ | 0.0 | 2002 10 07 | 704 | (0.4− | 1.5+) | 2006 09 19 | 699 | 0.0 | 1.0− | | |
| 2001 03 31 | 691 | 0.2+ | 0.3+ | 2002 10 11 | 704 | 0.1− | 0.9+ | 2006 09 19 | 699 | 0.2+ | 0.8− | | |
| 2001 03 31 | 691 | 0.1+ | 0.7+ | 2002 10 11 | 704 | (1.3+ | 1.6+) | 2006 09 19 | 699 | 0.1+ | 0.4− | | |
| 2002 09 26 | 644 | 0.4− | 0.7+ | 2002 10 11 | 704 | 0.4+ | 1.1+ | 2006 09 26 | 704 | 0.7+ | 0.3− | | |
| 2002 09 26 | 644 | 0.8− | 0.1+ | 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.7+ | 0.7+ | | |
| 2002 09 26 | 644 | 0.2− | 0.5+ | 2002 10 11 | 704 | 0.5+ | 1.3+ | 2006 09 26 | 704 | 1.1− | 0.3− | | |
| 2002 09 30 | 704 | (1.6− | 0.8+) | 2002 10 11 | 291 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.7+ | 1.4+ | | |
| 2002 09 30 | 704 | (1.3− | 1.6+) | 2002 10 11 | 291 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.7+ | | |
| 2002 09 30 | 704 | (2.1− | 0.4+) | 2002 10 11 | 291 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.2+ | | |
| 2002 09 30 | 704 | (1.7− | 0.2−) | 2002 10 31 | 645 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.6− | 0.0 | | |
| 2002 09 30 | 704 | (0.8+ | 2.0+) | 2002 10 31 | 645 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.7− | | |
| 2002 10 02 | 704 | 0.3+ | 0.8+ | 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.7− | | |
| 2002 10 02 | 704 | 0.4− | 0.4− | 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | (1.6+ | 0.3+) | 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.5− |
| 2002 10 02 | 704 | 0.6+ | 0.4− | 2005 03 08 | G96 | 0.1+ | 0.1+ | 2006 10 19 | 695 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.8+ | 0.5+ | 2005 05 13 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2005 05 13 | 691 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.5+ | 0.0 |
| 2002 10 03 | 704 | 1.4− | 0.6+ | 2006 08 22 | 644 | 0.5+ | 0.7− | 2006 10 20 | 695 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.4− | 2006 08 22 | 644 | 0.8+ | 0.6− | 2006 10 20 | 695 | 0.0 | 0.1− |
| 2002 10 07 | 699 | (2.5− | 0.0 ) | 2006 08 22 | 644 | 0.3+ | 0.8− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2002 10 07 | 699 | 0.8− | 1.4− | 2006 08 30 | 699 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 10 07 | 699 | 0.3− | 0.6+ | 2006 08 30 | 699 | (0.3− | 1.7−) | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 10 07 | 699 | 1.1− | 0.8+ | 2006 08 30 | 699 | 0.0 | 1.2+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 10 07 | 704 | 0.3− | 0.3+ | 2006 08 30 | 699 | 0.5+ | 0.6+ | | | | |
| 2002 10 07 | 704 | 0.4+ | 1.1+ | 2006 09 19 | 699 | 0.1+ | 0.5− | | | | |

### 2002 $TW_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.58177 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26609969 | $\omega$ | 357.53985 | | +0.85584175 | −0.51212830 | |
| $a$ | 2.3939026 | $\Omega$ | 33.58459 | | +0.47676681 | +0.72671425 | |
| $e$ | 0.1342429 | $i$ | 7.53339 | | +0.20056998 | +0.45783295 | |
| $P$ | 3.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 22 | 699 | 0.9− | 0.2− | 2002 10 09 | 704 | 0.3− | 0.6− | 2002 11 12 | 704 | 0.3+ | 0.2− |
| 1998 09 22 | 699 | 1.0− | 1.2+ | 2002 10 09 | 704 | 0.8− | 0.3+ | 2002 11 12 | 704 | 0.4+ | 0.1− |
| 1998 09 22 | 699 | 0.6+ | 1.3+ | 2002 10 11 | 704 | 0.8− | 1.1− | 2002 11 14 | 704 | 0.7+ | 0.2+ |
| 2002 10 02 | 704 | 0.7− | 0.3− | 2002 10 11 | 704 | (1.4− | 1.8−) | 2002 11 14 | 704 | 0.8− | 0.1+ |
| 2002 10 02 | 704 | 0.4+ | 0.3− | 2002 10 11 | 704 | 0.2− | 0.5+ | 2002 11 14 | 704 | 0.3− | 0.6+ |
| 2002 10 02 | 704 | (0.7− | 1.8−) | 2002 10 11 | 704 | (2.5+ | 0.0 ) | 2002 11 14 | 704 | 0.6− | 0.2− |
| 2002 10 03 | 704 | 0.7− | 0.6− | 2002 10 28 | 608 | 0.6− | 0.7+ | 2002 11 14 | 704 | 0.3− | 0.8− |
| 2002 10 03 | 704 | (0.5− | 4.4−) | 2002 10 28 | 608 | 0.4− | 0.7+ | 2002 11 23 | 644 | 0.4+ | 0.5+ |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2002 10 28 | 608 | 0.3+ | 0.3+ | 2002 11 23 | 644 | 0.3+ | 0.3+ |
| 2002 10 03 | 704 | (1.8− | 1.8−) | 2002 10 31 | 644 | 0.1+ | 1.1+ | 2002 11 23 | 644 | 0.0 | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.0 | 2002 10 31 | 644 | 0.3+ | 1.3+ | 2002 12 02 | 704 | 0.3− | 0.6− |
| 2002 10 03 | 704 | (1.7− | 2.3−) | 2002 10 31 | 644 | 0.1+ | 1.2+ | 2002 12 02 | 704 | 1.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 1.0− | 2002 11 04 | 699 | 0.4+ | 0.5+ | 2002 12 02 | 704 | 0.3− | 0.1− |
| 2002 10 03 | 704 | (0.1− | 2.6−) | 2002 11 04 | 699 | 0.1− | 0.6− | 2002 12 02 | 704 | 0.9− | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2002 11 04 | 699 | 0.2− | 0.1+ | 2002 12 02 | 704 | 0.0 | 1.1− |
| 2002 10 04 | 599 | 0.1− | 0.2− | 2002 11 04 | 699 | 0.6− | 0.0 | 2002 12 06 | 704 | 0.3+ | 0.0 |
| 2002 10 04 | 599 | 0.1+ | 0.0 | 2002 11 06 | 704 | 0.4+ | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.1+ |
| 2002 10 04 | 599 | 0.1− | 0.2− | 2002 11 06 | 704 | (1.7+ | 1.0+) | 2002 12 06 | 704 | 0.4− | 0.3− |
| 2002 10 04 | 599 | 0.0 | 0.2− | 2002 11 06 | 704 | 0.4+ | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.6+ |
| 2002 10 04 | 599 | 0.3− | 0.3− | 2002 11 06 | 704 | 0.5+ | 0.1+ | 2004 03 20 | 704 | 0.3− | 0.8+ |
| 2002 10 04 | 599 | 0.0 | 0.1− | 2002 11 06 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 0.0 | 0.2+ |
| 2002 10 07 | 704 | 0.4+ | 0.5− | 2002 11 06 | 608 | 0.7+ | 0.7− | 2004 03 20 | 704 | (1.3− | 2.8+) |
| 2002 10 07 | 704 | 0.3+ | 0.5− | 2002 11 06 | 608 | 0.9+ | 0.3+ | 2004 03 20 | 704 | 1.0+ | 0.2+ |
| 2002 10 07 | 704 | 1.2+ | 0.4+ | 2002 11 06 | 608 | 0.9+ | 0.6− | 2004 03 20 | 704 | 0.5+ | 1.1+ |
| 2002 10 07 | 704 | (2.2+ | 0.3−) | 2002 11 12 | 704 | 0.4− | 0.2− | | | | |
| 2002 10 09 | 704 | (0.3+ | 2.3−) | 2002 11 12 | 704 | 0.7− | 0.0 | | | | |

### 2002 $TR_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.58465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27328129 | $\omega$ | 334.26430 | | +0.43328402 | −0.79045949 | |
| $a$ | 2.3517769 | $\Omega$ | 87.30201 | | +0.88351999 | +0.27770313 | |
| $e$ | 0.2681416 | $i$ | 25.68495 | | +0.17792523 | +0.54594392 | |
| $P$ | 3.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.5+ | 0.5+ | 2002 11 30 | 704 | 0.9+ | 0.0 | 2003 01 19 | 644 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.1− | 0.2+ | 2002 12 01 | 704 | 0.4− | 0.2+ | 2003 02 01 | 704 | 0.7− | 0.6+ |
| 2002 10 05 | 704 | 0.0 | 0.7+ | 2002 12 01 | 704 | 0.2− | 0.2+ | 2003 02 01 | 704 | 0.5+ | 0.0 |
| 2002 10 05 | 704 | 0.7+ | 0.8+ | 2002 12 01 | 704 | 0.3− | 0.0 | 2003 02 01 | 644 | 0.5− | 0.4+ |
| 2002 10 05 | 704 | 0.6+ | 0.1− | 2002 12 01 | 704 | 0.4− | 0.5+ | 2003 02 01 | 704 | 0.4− | 0.9− |
| 2002 10 06 | 704 | 0.7− | 0.4− | 2002 12 01 | 704 | 0.6− | 0.1− | 2003 02 01 | 644 | 0.4− | 0.5+ |
| 2002 10 06 | 704 | 0.2+ | 0.2+ | 2002 12 13 | 644 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.3− | 0.5− |
| 2002 10 06 | 704 | 1.1− | 0.0 | 2002 12 13 | 644 | 0.1+ | 0.0 | 2003 02 01 | 644 | 0.4− | 0.3+ |
| 2002 10 06 | 704 | 0.5− | 0.0 | 2002 12 13 | 644 | 0.0 | 0.1− | 2003 02 01 | 704 | 0.9− | 0.7− |
| 2002 10 06 | 704 | 0.3− | 0.6− | 2002 12 14 | 704 | 0.0 | 0.2− | 2003 02 04 | 704 | 0.3+ | 0.6+ |
| 2002 10 06 | 704 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.8− | 0.7− | 2003 02 04 | 704 | 0.2− | 0.8+ |
| 2002 10 06 | 704 | 0.7− | 0.7− | 2002 12 14 | 704 | 0.1+ | 0.9− | 2003 02 04 | 704 | 0.5+ | 0.9+ |
| 2002 10 06 | 704 | 0.0 | 0.5+ | 2002 12 14 | 704 | 0.4+ | 1.0− | 2003 02 04 | 704 | 0.6+ | 0.6+ |
| 2002 10 06 | 704 | 0.7− | 0.7− | 2002 12 14 | 704 | 0.1− | 0.8+ | 2003 02 04 | 704 | 0.6+ | 1.1+ |
| 2002 10 06 | 704 | 0.6+ | 0.3+ | 2002 12 15 | 704 | 0.1− | 0.3− | 2003 02 07 | 704 | (2.1+ | 0.2+) |
| 2002 10 29 | 704 | 0.3− | 0.7+ | 2002 12 15 | 704 | 0.2+ | 0.5− | 2003 02 07 | 704 | 0.5+ | 0.0 |
| 2002 10 29 | 704 | 0.1− | 0.2+ | 2002 12 15 | 704 | 0.3− | 0.1− | 2003 02 07 | 704 | 0.0 | 0.3− |
| 2002 10 29 | 704 | 0.0 | 0.4+ | 2002 12 15 | 704 | 0.2− | 0.5− | 2003 02 07 | 704 | 0.1− | 0.9+ |
| 2002 10 29 | 704 | 0.5− | 0.2+ | 2002 12 15 | 704 | 0.5− | 0.5− | 2003 02 07 | 704 | 0.4+ | 0.2+ |
| 2002 10 29 | 704 | 0.0 | 0.1− | 2003 01 01 | 704 | 0.2+ | 0.2− | 2003 03 05 | 704 | 0.6− | 0.3− |
| 2002 10 30 | 704 | 0.4− | 0.3− | 2003 01 01 | 704 | 0.0 | 0.2+ | 2003 03 05 | 704 | (0.1− | 1.6−) |
| 2002 10 30 | 704 | 0.0 | 0.3+ | 2003 01 01 | 704 | 0.3+ | 0.0 | 2003 03 05 | 704 | (1.0− | 1.7−) |
| 2002 10 30 | 704 | 0.3+ | 0.4− | 2003 01 01 | 704 | 0.6+ | 0.1− | 2004 03 29 | 704 | 0.4+ | 1.1+ |
| 2002 10 30 | 704 | 0.2+ | 0.2− | 2003 01 01 | 704 | 0.8+ | 0.1+ | 2004 03 29 | 704 | 0.2+ | 0.4+ |
| 2002 10 30 | 704 | 0.0 | 0.1− | 2003 01 05 | 699 | 0.5− | 0.2− | 2004 03 29 | 704 | 0.6+ | 1.2+ |
| 2002 11 14 | 644 | 0.1+ | 0.7+ | 2003 01 05 | 699 | 0.1− | 0.1+ | 2006 09 21 | 703 | 1.2+ | 0.4− |
| 2002 11 14 | 644 | 0.6+ | 0.9+ | 2003 01 05 | 699 | 0.0 | 0.3− | 2006 09 21 | 703 | (0.2+ | 1.9−) |
| 2002 11 14 | 644 | 0.3+ | 0.8+ | 2003 01 05 | 699 | 0.1− | 0.6− | 2006 09 21 | 703 | 0.5− | 1.3− |
| 2002 11 16 | 644 | 0.2+ | 0.3− | 2003 01 07 | 704 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.5− |
| 2002 11 16 | 644 | 0.1+ | 0.2− | 2003 01 07 | 704 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.5− |
| 2002 11 16 | 644 | 0.2+ | 0.4− | 2003 01 07 | 704 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.3+ |
| 2002 11 23 | 644 | 0.2+ | 0.2− | 2003 01 07 | 704 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.2− |
| 2002 11 23 | 644 | 0.1+ | 0.2− | 2003 01 07 | 704 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.4− | 0.3+ |
| 2002 11 23 | 644 | 0.1+ | 0.2− | 2003 01 07 | 608 | 0.3− | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.3+ |
| 2002 11 30 | 704 | 0.2+ | 0.5+ | 2003 01 07 | 608 | 0.7− | 0.3+ | 2006 11 23 | 703 | 0.9+ | 1.8− |
| 2002 11 30 | 704 | 0.5+ | 0.1+ | 2003 01 07 | 608 | 0.5− | 0.0 | 2006 11 23 | 703 | 0.6+ | 0.4− |
| 2002 11 30 | 704 | 0.1+ | 0.2+ | 2003 01 19 | 644 | 0.2− | 0.2+ | | | | |
| 2002 11 30 | 704 | 0.4+ | 0.1+ | 2003 01 19 | 644 | 0.2− | 0.0 | | | | |

### 2002 $TL_{62}$ = 2006 $JB_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.90199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17741500 | $\omega$ | 24.95792 | | +0.28294625 | +0.95650918 | |
| $a$ | 3.1367205 | $\Omega$ | 261.54241 | | −0.89158846 | +0.23503677 | |
| $e$ | 0.1167309 | $i$ | 4.11242 | | −0.35356956 | +0.17276547 | |
| $P$ | 5.56 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 599 | 0.1− | 0.3− | 2002 10 05 | 599 | 0.3+ | 0.2− | 2005 03 17 | G96 | 0.1+ | 0.2+ |
| 2002 10 03 | 599 | 0.2− | 0.2− | 2002 10 05 | 599 | 0.5+ | 0.0 | 2005 03 17 | G96 | 0.2− | 0.2+ |
| 2002 10 03 | 599 | 0.3− | 0.3− | 2002 10 05 | 599 | 0.3+ | 0.3− | 2005 03 17 | G96 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | 1.3+ | 0.2− | 2002 10 06 | 644 | 0.3− | 0.5+ | 2005 03 17 | G96 | 0.3+ | 0.1+ |
| 2002 10 04 | 704 | 0.8+ | 0.4− | 2002 10 06 | 644 | 0.4− | 0.4+ | 2006 05 06 | G96 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 0.0 | 2002 10 06 | 644 | 0.3− | 0.5+ | 2006 05 06 | G96 | 0.4− | 0.2− |
| 2002 10 04 | 704 | (1.7− | 0.6−) | 2002 10 12 | 704 | 0.8− | 0.2+ | 2006 05 06 | G96 | 0.3− | 0.1+ |
| 2002 10 04 | 644 | 0.5+ | 0.0 | 2002 10 12 | 704 | 0.4− | 0.5+ | 2006 05 06 | G96 | 0.3− | 0.2+ |
| 2002 10 04 | 644 | 0.5− | 0.1+ | 2002 10 12 | 704 | 0.2+ | 0.6− | 2006 05 18 | 644 | 0.7+ | 0.0 |
| 2002 10 04 | 644 | 0.4+ | 0.1+ | 2005 02 09 | 699 | 0.7− | 0.4+ | 2006 05 18 | 644 | 0.6+ | 0.4+ |
| 2002 10 05 | 644 | 0.9− | 0.5+ | 2005 02 09 | 699 | 0.4− | 0.3+ | 2006 05 18 | 644 | 0.1+ | 0.0 |
| 2002 10 05 | 644 | 0.5− | 0.2+ | 2005 02 09 | 699 | 0.1− | 1.5− | | | | |
| 2002 10 05 | 644 | 0.5− | 0.2+ | 2005 02 09 | 699 | 0.7+ | 0.7+ | | | | |

### 2002 $TP_{62}$ = 2006 $PV_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.65200 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22323528 | $\omega$ | 337.66607 | | +0.80983769 | +0.58598739 | |
| $a$ | 2.6912920 | $\Omega$ | 346.35236 | | −0.51874544 | +0.69302315 | |
| $e$ | 0.0961987 | $i$ | 6.80522 | | −0.27398190 | +0.41992582 | |
| $P$ | 4.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 599 | 0.2+ | 0.1+ | 2002 10 06 | 644 | 0.3− | 0.3− | 2006 08 14 | 644 | 0.1+ | 0.1+ |
| 2002 10 03 | 599 | 0.1+ | 0.3+ | 2002 10 06 | 644 | 0.1− | 0.5− | 2006 08 14 | 644 | 0.0 | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 599 | 0.5+ | 0.1+ | 2002 10 06 | 644 | 0.1− | 0.2− | 2006 08 14 | 644 | 0.3+ | 0.0 | |
| 2002 10 05 | 644 | 0.3− | 0.5− | 2005 04 06 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.3− | 0.1+ | |
| 2002 10 05 | 644 | 0.1− | 0.2− | 2005 04 06 | 691 | 0.4+ | 0.1− | 2006 08 17 | 644 | 0.2− | 0.3− | |
| 2002 10 05 | 644 | 0.0 | 0.4− | 2005 04 06 | 691 | 0.4+ | 0.3− | 2006 08 17 | 644 | 0.1− | 0.1− | |
| 2002 10 05 | 599 | 0.0 | 1.2+ | 2005 04 15 | 691 | 0.6− | 0.1− | 2006 08 21 | 807 | 0.0 | 0.1− | |
| 2002 10 05 | 599 | 0.0 | 0.3+ | 2005 04 15 | 691 | 0.2+ | 0.2+ | 2006 08 21 | 807 | 0.1+ | 0.1− | |
| 2002 10 05 | 599 | 0.1+ | 0.0 | 2005 04 15 | 691 | 0.4− | 0.1− | | | | | |

**2002 TJ$_{63}$ = 2006 QQ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.69759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22870922 | $\omega$ | 306.06260 | | +0.67043762 | +0.74153785 | |
| $a$ | 2.6481765 | $\Omega$ | 6.22388 | | −0.58380929 | +0.54818407 | |
| $e$ | 0.1706368 | $i$ | 13.44064 | | −0.45790840 | +0.38680207 | |
| $P$ | 4.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 599 | 0.4− | 0.4− | 2002 10 05 | 599 | 0.2− | 0.3− | 2006 08 16 | 428 | 0.1− | 0.4− | |
| 2002 10 03 | 599 | 0.2− | 0.4− | 2002 10 05 | 599 | 0.1− | 0.5− | 2006 08 16 | 428 | 0.8− | 0.3− | |
| 2002 10 03 | 599 | 0.3− | 0.3− | 2002 10 09 | 704 | 0.2− | 0.5+ | 2006 08 16 | E12 | 0.0 | 0.2+ | |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2002 10 09 | 704 | 0.1+ | 0.3− | 2006 08 16 | E12 | 0.6− | 0.0 | |
| 2002 10 04 | 704 | 0.1− | 0.8+ | 2002 10 09 | 704 | 1.0− | 0.2+ | 2006 08 16 | E12 | 0.2− | 1.3+ | |
| 2002 10 04 | 704 | 0.9− | 0.9+ | 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 08 16 | E12 | 0.1+ | 0.6− | |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2005 03 17 | 691 | 0.2− | 0.1+ | 2006 08 19 | 428 | 1.0+ | 0.4− | |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2005 03 17 | 691 | 0.2+ | 0.1− | 2006 08 19 | 428 | 0.1− | 0.6− | |
| 2002 10 05 | 704 | 0.7+ | 1.4+ | 2005 04 05 | G96 | 0.5+ | 0.4+ | 2006 08 28 | E12 | 0.1+ | 0.3+ | |
| 2002 10 05 | 704 | 1.1+ | 0.8+ | 2005 04 05 | G96 | 0.1+ | 0.1− | 2006 08 28 | E12 | 0.0 | 0.0 | |
| 2002 10 05 | 704 | 0.1− | 0.5− | 2005 04 05 | G96 | 0.0 | 0.8+ | 2006 08 28 | E12 | 0.7+ | 0.6+ | |
| 2002 10 05 | 599 | 0.2+ | 0.4− | 2005 04 05 | G96 | 0.6+ | 0.3+ | 2006 08 28 | E12 | 0.6− | 0.4+ | |

**2002 TQ$_{63}$ = 2006 UR$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.31645 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25820369 | $\omega$ | 242.46341 | | −0.12116932 | −0.99171342 | |
| $a$ | 2.4424617 | $\Omega$ | 214.57849 | | +0.93519518 | −0.09963517 | |
| $e$ | 0.1478454 | $i$ | 4.31392 | | +0.33275811 | −0.08110068 | |
| $P$ | 3.82 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.7− | 0.6− | |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.8− | 0.3− | |
| 2002 10 04 | 599 | 0.0 | 0.9+ | 2006 10 19 | G96 | 0.1− | 0.7− | 2006 11 21 | 704 | 0.8− | 0.2− | |
| 2002 10 04 | 599 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 0.0 | |
| 2002 10 04 | 599 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.6+ | |
| 2002 10 06 | 599 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.7+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.3− | |
| 2002 10 06 | 599 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 1.2+ | 0.8+ | |
| 2002 10 06 | 599 | 0.4+ | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.8+ | |
| 2002 10 10 | 644 | 0.7− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.6+ | |
| 2002 10 10 | 644 | 0.7− | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.6+ | |
| 2002 10 10 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.3− | 0.6+ | |
| 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.6− | 0.9− | 2006 11 29 | 704 | 0.5+ | 0.7+ | |
| 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.9+ | 0.2+ | 2006 11 30 | 291 | 0.4+ | 0.3− | |
| 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 14 | 691 | 0.2− | 0.1− | 2006 11 30 | 291 | 0.3+ | 0.0 | |
| 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 30 | 291 | 0.1+ | 0.1− | |
| 2006 10 17 | G96 | 0.5+ | 0.6− | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.3+ | 0.1+ | |
| 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.5− | 0.2+ | |
| 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 21 | 691 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.2+ | |
| 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 21 | 691 | 0.0 | 0.3− | | | | | |
| 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.3− | 0.3− | | | | | |

**2002 TS$_{63}$ = 2006 SL$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.96782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23511332 | $\omega$ | 26.99898 | | +0.89618097 | +0.44362487 | |
| $a$ | 2.5998676 | $\Omega$ | 306.66362 | | −0.40875207 | +0.81889760 | |
| $e$ | 0.1459668 | $i$ | 0.53762 | | −0.17257294 | +0.36414791 | |
| $P$ | 4.19 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 0.0 | 0.0 | 2005 05 11 | G96 | 0.5+ | 1.4− | 2006 09 20 | 704 | 0.2− | 0.2− | |
| 1998 11 17 | 691 | 0.2− | 0.2− | 2005 05 11 | G96 | (0.7+ | 3.0−) | 2006 09 20 | 704 | 0.4+ | 0.4+ | |
| 1998 11 17 | 691 | 0.4− | 0.1− | 2005 06 01 | G96 | 0.4− | 0.6+ | 2006 09 27 | 704 | 0.4+ | 0.2+ | |
| 2002 10 04 | 599 | 0.1+ | 0.5+ | 2005 06 01 | G96 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.1+ | 1.2− | |
| 2002 10 04 | 599 | 0.2+ | 0.3+ | 2005 06 01 | G96 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.9+ | 0.5− | |
| 2002 10 04 | 599 | 0.0 | 0.3+ | 2005 06 01 | G96 | 0.4− | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.7+ | |
| 2002 10 06 | 599 | 0.4+ | 0.5+ | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 10 01 | 703 | 0.8+ | 0.8+ | |
| 2002 10 06 | 599 | 0.9+ | 0.4+ | 2006 08 28 | 691 | 0.7+ | 0.3+ | 2006 10 01 | 703 | 1.1− | 0.4− | |
| 2002 10 06 | 599 | 0.2+ | 0.9+ | 2006 08 28 | 691 | 0.3+ | 0.3− | 2006 10 01 | 703 | 0.9− | 0.2+ | |
| 2002 10 11 | 704 | (2.3+ | 0.4−) | 2006 09 16 | 699 | 0.6+ | 0.4+ | 2006 10 01 | 703 | 0.7− | 0.5− | |
| 2002 10 11 | 704 | (2.2+ | 0.2+) | 2006 09 16 | 699 | 1.1− | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.9− | |
| 2002 10 11 | 704 | (3.0+ | 0.5+) | 2006 09 16 | 699 | 0.3− | 0.1+ | 2006 10 16 | 703 | (0.8+ | 2.5−) | |
| 2002 12 07 | 291 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.7− | 0.1− | 2006 10 16 | 703 | (2.5− | 0.5+) | |
| 2002 12 07 | 291 | 0.2+ | 0.0 | 2006 09 19 | 699 | 1.5− | 0.0 | 2006 10 16 | 703 | 1.4− | 0.5+ | |
| 2002 12 07 | 291 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.1− | |
| 2005 04 17 | 691 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.3− | 0.9+ | 2006 11 11 | G96 | 1.0− | 0.4− | |
| 2005 04 17 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.6− | 0.4− | 2006 11 11 | G96 | 0.4− | 0.6− | |
| 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.5− | 2006 11 11 | G96 | 0.4− | 0.7− | |
| 2005 05 11 | G96 | 0.4− | 0.3− | 2006 09 20 | 704 | 0.2− | 0.4− | | | | | |
| 2005 05 11 | G96 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.1+ | | | | | |

**2002 TN$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.80562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24502289 | $\omega$ | 65.42468 | | +0.98503085 | +0.16481826 | |
| $a$ | 2.5292880 | $\Omega$ | 285.05673 | | −0.17093178 | +0.89606516 | |
| $e$ | 0.2864233 | $i$ | 2.99703 | | −0.02228347 | +0.41219192 | |
| $P$ | 4.02 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.2− | 0.2− | 2002 10 15 | 704 | 0.7+ | 0.3− | 2006 09 29 | 704 | 0.3+ | 1.0+ | |
| 2002 10 04 | 704 | 0.3− | 0.1− | 2002 10 15 | 704 | 0.0 | 0.6+ | 2006 10 01 | J95 | 0.2− | 0.2− | |
| 2002 10 04 | 704 | 0.5+ | 0.6+ | 2002 10 29 | 926 | 0.5+ | 0.6− | 2006 10 01 | J95 | 0.1− | 0.3− | |
| 2002 10 04 | 704 | 0.1+ | 1.5+ | 2002 10 29 | 926 | 0.3+ | 0.2− | 2006 10 01 | J95 | 0.2+ | 0.2− | |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2002 12 07 | 926 | 0.4+ | 1.0− | 2006 10 12 | 644 | 0.1− | 0.1+ | |
| 2002 10 04 | 644 | 0.2− | 0.2− | 2002 12 07 | 926 | 1.0− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2002 12 07 | 926 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 | |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.3− | 0.4+ | 2006 10 17 | 703 | 1.3+ | 0.5+ | |
| 2002 10 05 | 678 | (0.7− | 2.9−) | 2006 09 16 | 644 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.1− | |
| 2002 10 05 | 678 | 0.4− | 0.7− | 2006 09 16 | 644 | 0.2+ | 0.4− | 2006 10 17 | 703 | 1.0+ | 0.9− | |
| 2002 10 05 | 678 | 0.7+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.8− | |
| 2002 10 07 | 678 | 0.7− | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 2002 10 07 | 678 | (0.0 | 1.6−) | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2− | |
| 2002 10 07 | 678 | 0.5− | 0.1− | 2006 09 19 | 699 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 2002 10 09 | 704 | 0.7+ | 0.7+ | 2006 09 19 | 703 | 0.7− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.3− | |
| 2002 10 09 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.5− | 0.2− | 2006 10 23 | G96 | 0.3+ | 0.2− | |
| 2002 10 09 | 704 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.5− | |
| 2002 10 09 | 704 | 0.5− | 1.0+ | 2006 09 19 | 703 | 0.2− | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.2− | |
| 2002 10 09 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.0 | |
| 2002 10 12 | 704 | 0.5− | 0.7+ | 2006 09 19 | 699 | 0.1+ | 0.3− | 2006 11 20 | G96 | 0.6− | 0.6− | |
| 2002 10 12 | 704 | 0.4− | 1.0+ | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 11 20 | G96 | 0.3− | 0.3− | |
| 2002 10 12 | 704 | 0.6− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.4+ | 2006 11 20 | G96 | 0.5+ | 0.3+ | |
| 2002 10 15 | 704 | 0.5+ | 0.7+ | 2006 09 29 | 704 | 0.4+ | 0.8+ | | | | | |

### 2002 $TZ_{64}$ = 2006 $VD_{104}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.24979 | | | (2000.0) | | |
| $n$ | 0.24151376 | $\omega$ | 283.08946 | | +0.97245790 | −0.00641941 |
| $a$ | 2.5537289 | $\Omega$ | 77.64419 | | +0.10967723 | +0.89463692 |
| $e$ | 0.2279876 | $i$ | 13.79890 | | −0.20566124 | +0.44674777 |
| $P$ | 4.08 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 699 | 0.1+ | 0.6+ | 2002 10 07 | 608 | 0.3+ | 0.5− | 2006 09 27 | 703 | 0.2− | 0.3− |
| 1998 10 29 | 699 | 0.5− | 0.3+ | 2002 10 07 | 608 | 0.4+ | 0.0 | 2006 09 27 | 703 | 0.5− | 0.1− |
| 1998 10 29 | 699 | 0.4+ | 0.3− | 2002 10 07 | 608 | 0.5+ | 0.3− | 2006 09 27 | 703 | 0.3− | 0.7− |
| 2002 09 13 | 704 | 0.6− | 0.7+ | 2002 10 29 | 704 | 0.1+ | 0.3+ | 2006 10 12 | E12 | 0.5+ | 0.5− |
| 2002 09 13 | 704 | (2.3− | 1.0+) | 2002 10 29 | 704 | 0.3− | 0.1+ | 2006 10 12 | E12 | 0.2− | 0.1− |
| 2002 09 13 | 704 | 1.3− | 0.7+ | 2002 10 29 | 704 | 0.1− | 0.3− | 2006 10 12 | E12 | 0.1+ | 0.0 |
| 2002 09 13 | 704 | 1.5− | 0.9+ | 2002 11 05 | 644 | 0.0 | 0.3+ | 2006 10 12 | E12 | 0.1− | 0.2− |
| 2002 09 13 | 704 | (2.9− | 0.9+) | 2002 11 05 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.0 |
| 2002 09 21 | 644 | 0.5− | 0.2+ | 2002 11 05 | 644 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2002 09 21 | 644 | 0.2− | 0.2+ | 2006 07 30 | E12 | 0.4− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 09 21 | 644 | 0.2− | 0.3+ | 2006 07 30 | E12 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.3+ | 0.3− |
| 2002 09 30 | 608 | 0.4+ | 0.7+ | 2006 07 30 | E12 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2002 09 30 | 608 | 0.6+ | 0.3+ | 2006 07 30 | E12 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.8+ | 0.4+ |
| 2002 09 30 | 608 | 0.5+ | 0.6+ | 2006 08 21 | E12 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.5+ | 0.6− |
| 2002 10 05 | 704 | 0.2− | 0.4− | 2006 08 21 | E12 | 0.4+ | 0.4− | 2006 11 27 | 703 | 0.9+ | 0.9+ |
| 2002 10 05 | 704 | 0.4− | 0.1− | 2006 08 21 | E12 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.6− | 0.1− |
| 2002 10 05 | 704 | 0.4− | 0.4− | 2006 08 21 | E12 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.6+ | 0.5− |
| 2002 10 05 | 704 | 0.6− | 0.1− | 2006 08 21 | E12 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.5+ | 1.6− |
| 2002 10 05 | 704 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.3− | | | | |

### 2002 $TP_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 5.26464 | | | (2000.0) | | |
| $n$ | 0.24160235 | $\omega$ | 284.17277 | | +0.88951279 | +0.09201002 |
| $a$ | 2.5531046 | $\Omega$ | 72.12125 | | +0.15414336 | +0.86166125 |
| $e$ | 0.3775538 | $i$ | 28.05116 | | −0.43012420 | +0.49907319 |
| $P$ | 4.08 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 1.3+ | 0.3+ | 2002 10 12 | 704 | 0.1+ | 0.3− | 2002 12 11 | 704 | 1.2− | 0.4− |
| 2002 10 05 | 704 | 0.7+ | 0.6− | 2002 10 12 | 704 | 0.2− | 0.6− | 2002 12 11 | 704 | 0.5+ | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 1.3+ | 2002 10 15 | 704 | 0.2+ | 0.2− | 2002 12 11 | 704 | 1.2− | 0.2+ |
| 2002 10 05 | 704 | 0.2− | 1.2+ | 2002 10 15 | 704 | 0.7+ | 0.7− | 2002 12 27 | 644 | 0.5+ | 0.2+ |
| 2002 10 06 | 850 | (2.0+ | 1.0+) | 2002 10 15 | 704 | 0.6− | 0.0 | 2002 12 27 | 644 | 0.2+ | 0.0 |
| 2002 10 06 | 850 | 0.3+ | 0.7− | 2002 10 30 | 704 | 0.6+ | 1.3+ | 2002 12 27 | 644 | 0.3+ | 0.3+ |
| 2002 10 06 | 704 | 0.1+ | 0.0 | 2002 10 30 | 704 | 0.5+ | 0.5+ | 2003 01 19 | 644 | 0.6+ | 0.0 |
| 2002 10 06 | 704 | 0.1− | 0.2+ | 2002 10 30 | 704 | 0.5+ | 0.1− | 2003 01 19 | 644 | 0.2+ | 0.6− |
| 2002 10 06 | 704 | 0.2+ | 0.5+ | 2002 11 06 | 644 | 0.0 | 0.9+ | 2003 01 28 | 644 | 0.4− | 0.4− |
| 2002 10 06 | 704 | 0.3+ | 0.5− | 2002 11 06 | 644 | 0.0 | 0.7+ | 2003 01 28 | 644 | 0.1− | 0.4− |
| 2002 10 06 | 670 | (4.0+ | 8.5+) | 2002 11 06 | 644 | 0.2+ | 1.0+ | 2006 09 05 | E12 | 0.6− | 0.2− |
| 2002 10 06 | 670 | (1.7− | 0.6+) | 2002 11 17 | 644 | 0.0 | 0.1+ | 2006 09 05 | E12 | 0.6− | 0.5+ |
| 2002 10 07 | 557 | 0.9− | 0.1− | 2002 11 17 | 644 | 0.6− | 0.4− | 2006 09 05 | E12 | 0.0 | 0.3+ |
| 2002 10 07 | 557 | 0.7− | 0.3+ | 2002 11 17 | 644 | 0.1− | 0.0 | 2006 09 05 | E12 | 0.2− | 0.2− |
| 2002 10 07 | 649 | 0.1− | 0.1+ | 2002 11 30 | 704 | 0.1− | 0.1+ | 2006 10 01 | E12 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.0 | 0.4− | 2002 11 30 | 704 | 0.2− | 0.1+ | 2006 10 01 | E12 | 0.3+ | 0.1− |
| 2002 10 07 | 649 | 0.1+ | 0.1− | 2002 11 30 | 704 | 0.3+ | 0.2+ | 2006 10 01 | E12 | 0.0 | 0.0 |
| 2002 10 07 | 704 | 0.3− | 0.4− | 2002 11 30 | 704 | 0.2− | 0.9+ | 2006 10 01 | E12 | 0.2− | 0.1+ |
| 2002 10 07 | 704 | 0.1− | 0.5− | 2002 12 01 | 704 | 0.0 | 0.6− | 2006 10 13 | E12 | 0.3+ | 0.2− |
| 2002 10 07 | 704 | 1.0− | 0.4− | 2002 12 01 | 704 | 0.1+ | 0.3+ | 2006 10 13 | E12 | 0.3+ | 0.2− |
| 2002 10 10 | 704 | 0.3+ | 0.8− | 2002 12 01 | 704 | 0.1− | 0.1− | 2006 10 13 | E12 | 0.3+ | 0.1− |
| 2002 10 10 | 704 | 0.2− | 0.2− | 2002 12 01 | 704 | 0.3− | 0.3+ | 2006 10 13 | E12 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.9+ | 0.1+ | 2002 12 01 | 704 | 0.4− | 0.3− | 2006 10 30 | E12 | 0.0 | 0.2+ |
| 2002 10 10 | 704 | 0.3− | 0.3− | 2002 12 01 | 704 | 0.1+ | 0.3+ | 2006 10 30 | E12 | 0.2+ | 0.2− |
| 2002 10 11 | 704 | 0.7− | 0.2− | 2002 12 01 | 704 | 0.4− | 0.1− | 2006 10 30 | E12 | 0.5+ | 0.0 |
| 2002 10 11 | 704 | 0.4− | 1.0− | 2002 12 01 | 704 | 0.1− | 0.7+ | 2006 10 30 | E12 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | (3.2− | 0.8−) | 2002 12 01 | 704 | 0.0 | 0.4− | 2006 11 19 | 703 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 1.1− | 0.2+ | 2002 12 01 | 704 | 0.4− | 0.5+ | 2006 11 19 | 703 | 0.2− | 0.2− |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2002 12 02 | 608 | 0.6+ | 0.8− | 2006 11 19 | 703 | 0.2− | 0.8− |
| 2002 10 12 | 704 | 0.8+ | 0.2+ | 2002 12 02 | 608 | (0.5+ | 1.7−) | 2006 11 19 | 703 | 0.3+ | 0.3− |
| 2002 10 12 | 704 | (1.3− | 1.7−) | 2002 12 02 | 608 | 1.1+ | 1.2− | | | | |

### 2002 $TS_{65}$ = 1998 $RP_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.72657 | | | (2000.0) | | |
| $n$ | 0.26058987 | $\omega$ | 37.77452 | | +0.54869428 | −0.83521982 |
| $a$ | 2.4275286 | $\Omega$ | 19.03463 | | +0.73705978 | +0.46259491 |
| $e$ | 0.1420789 | $i$ | 6.45037 | | +0.39455985 | +0.29734458 |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 1.0− | 0.2+ | 2002 10 11 | 704 | 0.3− | 0.8+ | 2002 11 22 | 644 | 0.3− | 0.3− |
| 1998 09 14 | 704 | 1.5+ | 0.1− | 2002 10 11 | 704 | 0.3− | 0.1+ | 2004 04 22 | 691 | 0.2+ | 0.4+ |
| 1998 09 14 | 704 | 0.7− | 1.5− | 2002 10 11 | 704 | 0.2+ | 0.3− | 2004 04 22 | 691 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.5+ | 2004 04 22 | 691 | 0.4+ | 0.4+ |
| 2002 10 03 | 704 | 0.7− | 0.4− | 2002 10 11 | 704 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2002 10 11 | 704 | 0.0 | 0.3− | 2006 11 16 | 704 | 1.0− | 0.5− |
| 2002 10 03 | 704 | 1.0+ | 0.1− | 2002 10 11 | 704 | 0.6− | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 1.4− | 2002 10 11 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 1.0+ | 0.4− |
| 2002 10 04 | 599 | 0.2− | 0.3+ | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 11 22 | 704 | 1.0+ | 1.3− |
| 2002 10 04 | 599 | 0.1− | 0.0 | 2002 10 11 | 704 | 0.7+ | 0.7+ | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2002 10 04 | 599 | 0.3− | 0.2+ | 2002 10 12 | 704 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.9+ |
| 2002 10 06 | 599 | 0.3− | 0.1+ | 2002 10 12 | 704 | 1.4+ | 0.8+ | 2006 11 22 | 704 | 0.4− | 0.7+ |
| 2002 10 06 | 599 | 0.1+ | 0.4+ | 2002 10 12 | 704 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2002 10 06 | 599 | 0.1+ | 0.1+ | 2002 10 12 | 704 | 0.2− | 0.5− | 2006 11 22 | 703 | 0.1− | 0.5− |
| 2002 10 07 | 704 | 0.4+ | 0.4+ | 2002 10 31 | 644 | 0.0 | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.3+ |
| 2002 10 07 | 704 | 1.4− | 0.1− | 2002 10 31 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 1.2− | 0.4− |
| 2002 10 07 | 704 | 0.2+ | 0.1+ | 2002 10 31 | 644 | 0.0 | 0.3+ | 2006 11 22 | 703 | 0.4+ | 0.2− |
| 2002 10 07 | 704 | 0.3− | 0.6+ | 2002 11 08 | 704 | 0.2+ | 0.5− | 2006 11 22 | G96 | 0.0 | 0.7− |
| 2002 10 10 | 704 | 0.4+ | 0.9+ | 2002 11 08 | 704 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.6− |
| 2002 10 10 | 704 | 0.1+ | 1.1+ | 2002 11 08 | 704 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.4− | 0.7− |
| 2002 10 10 | 704 | 1.0− | 1.3+ | 2002 11 22 | 644 | 0.1+ | 0.4− | | | | |
| 2002 10 10 | 704 | 0.9− | 0.6+ | 2002 11 22 | 644 | 0.1+ | 0.3− | | | | |

### 2002 $TX_{65}$ = 2006 $SN_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.95847 | | | (2000.0) | | |
| $n$ | 0.23352094 | $\omega$ | 13.29204 | | +0.97442060 | −0.22473203 |
| $a$ | 2.6116732 | $\Omega$ | 359.69499 | | +0.20386843 | +0.88420297 |
| $e$ | 0.0875178 | $i$ | 1.41206 | | +0.09456303 | +0.40948825 |
| $P$ | 4.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 1.1+ | 0.3− | 2002 10 30 | 644 | 0.3+ | 0.2− | 2006 09 20 | 704 | 0.2− | 0.0 |
| 2000 03 03 | 704 | 0.2+ | 1.2+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.6− | 0.7− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2000 03 03 | 704 | 0.6− | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2002 10 04 | 599 | 0.1− | 0.2+ | 2006 07 25 | G96 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2002 10 04 | 599 | 0.1+ | 0.1− | 2006 07 25 | G96 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2002 10 04 | 599 | 0.2− | 0.2+ | 2006 07 25 | G96 | 0.3+ | 0.0 | 2006 10 01 | 703 | 0.4− | 0.2− |
| 2002 10 06 | 599 | 0.6+ | 0.3+ | 2006 07 25 | G96 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.0 | 1.4− |
| 2002 10 06 | 599 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.1− | 1.3+ | 2006 10 01 | 703 | 1.0+ | 0.0 |
| 2002 10 06 | 599 | 0.2− | 0.1+ | 2006 09 16 | 699 | (0.6− | 2.2+) | 2006 10 01 | 703 | 0.3+ | 0.5− |
| 2002 10 11 | 704 | 0.4+ | 0.5+ | 2006 09 16 | 699 | (2.3+ | 0.3+) | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2002 10 11 | 704 | 0.8− | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.0 |
| 2002 10 11 | 704 | 0.7− | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.2+ | 0.8− | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.6− | 0.1− | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.3+ |
| 2002 10 11 | 704 | 0.6+ | 0.0 | 2006 09 20 | 704 | 0.2− | 1.3− | 2006 10 27 | G96 | 0.5− | 0.9+ |
| 2002 10 30 | 644 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.8+ |
| 2002 10 30 | 644 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3+ |

**2002 TM$_{67}$ = 2006 SL$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.60601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24303344 | $\omega$ | 329.21136 | | +0.99635619 | +0.07111928 | |
| $a$ | 2.5430722 | $\Omega$ | 26.83183 | | −0.03978774 | +0.87581791 | |
| $e$ | 0.2454811 | $i$ | 5.98689 | | −0.07544061 | +0.47737306 | |
| $P$ | 4.06 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2− | 0.9+ | | 2002 10 11 | 644 | 0.5− | 0.7+ | | 2006 10 01 | 704 | 0.5+ | 0.1− | | | |
| 2002 10 03 | 704 | 0.7− | 0.9+ | | 2002 10 11 | 704 | 0.0 | 0.8− | | 2006 10 01 | 704 | 0.3+ | 0.1+ | | | |
| 2002 10 03 | 704 | 0.8− | 0.8+ | | 2002 10 11 | 704 | 0.3− | 0.0 | | 2006 10 01 | 704 | 0.6+ | 0.3+ | | | |
| 2002 10 03 | 704 | 0.5− | 0.7+ | | 2002 10 11 | 644 | 0.2− | 1.0+ | | 2006 10 01 | 704 | (0.8− | 1.6−) | | | |
| 2002 10 03 | 704 | 0.6− | 0.9+ | | 2002 10 29 | 291 | 0.1− | 0.1+ | | 2006 10 15 | 703 | 0.6− | 0.8− | | | |
| 2002 10 04 | 599 | 0.5− | 0.0 | | 2002 10 29 | 291 | 0.1− | 0.1+ | | 2006 10 15 | 703 | 0.1− | 0.1− | | | |
| 2002 10 04 | 599 | 0.7+ | 0.8− | | 2002 10 29 | 291 | 0.1− | 0.1+ | | 2006 10 15 | 703 | 0.5− | 0.4− | | | |
| 2002 10 04 | 599 | 0.5+ | 0.9− | | 2002 11 10 | 704 | 0.0 | 0.1− | | 2006 10 15 | 703 | 0.0 | 0.0 | | | |
| 2002 10 07 | 678 | (2.1− | 1.7−) | | 2002 11 10 | 704 | 0.3− | 0.5+ | | 2006 10 19 | 644 | 0.2− | 0.1+ | | | |
| 2002 10 07 | 678 | (0.4− | 2.9−) | | 2002 11 10 | 704 | 0.3− | 0.0 | | 2006 10 19 | 644 | 0.3− | 0.1− | | | |
| 2002 10 07 | 678 | 0.5+ | 1.0− | | 2002 11 22 | 644 | 0.1+ | 0.4+ | | 2006 10 19 | 644 | 0.5− | 0.1+ | | | |
| 2002 10 07 | 704 | (1.5+ | 0.4−) | | 2002 11 22 | 644 | 0.4− | 0.2+ | | 2006 10 21 | G96 | 0.2+ | 0.4− | | | |
| 2002 10 07 | 704 | 1.3− | 0.2+ | | 2002 11 22 | 644 | 0.3− | 0.2+ | | 2006 10 21 | G96 | 0.0 | 0.4− | | | |
| 2002 10 07 | 704 | 0.9− | 1.4+ | | 2006 08 19 | 699 | 0.2− | 0.9+ | | 2006 10 21 | G96 | 0.2− | 0.4− | | | |
| 2002 10 07 | 704 | 0.0 | 1.4+ | | 2006 08 19 | 699 | 0.3− | 0.6− | | 2006 10 21 | 644 | 0.1− | 0.3− | | | |
| 2002 10 08 | 699 | 0.6− | 1.4+ | | 2006 08 19 | 699 | 0.8− | 0.1+ | | 2006 10 21 | G96 | 0.3− | 0.5− | | | |
| 2002 10 08 | 699 | 0.6+ | 0.3+ | | 2006 08 19 | 699 | 0.4− | 0.4− | | 2006 10 21 | 644 | 0.2− | 0.1− | | | |
| 2002 10 08 | 699 | 0.7+ | 0.0 | | 2006 09 18 | 699 | 0.4+ | 0.9+ | | 2006 10 21 | 644 | 0.1− | 0.0 | | | |
| 2002 10 08 | 699 | 0.5+ | 1.3− | | 2006 09 18 | 699 | 0.8− | 0.2− | | 2006 10 27 | G96 | 0.2+ | 0.6− | | | |
| 2002 10 09 | 678 | (1.7+ | 0.0 ) | | 2006 09 18 | 699 | (1.5− | 0.3+) | | 2006 10 27 | G96 | 0.0 | 0.3− | | | |
| 2002 10 09 | 678 | 0.9− | 1.3+ | | 2006 09 18 | 699 | 0.8− | 0.3+ | | 2006 10 27 | G96 | 0.4+ | 0.5− | | | |
| 2002 10 09 | 704 | 1.3+ | 0.7− | | 2006 09 22 | 704 | 0.8− | 0.1+ | | 2006 10 27 | G96 | 0.0 | 0.4− | | | |
| 2002 10 09 | 704 | (0.6− | 1.6−) | | 2006 09 22 | 704 | 0.4+ | 0.0 | | 2006 11 02 | G96 | 0.4+ | 0.3− | | | |
| 2002 10 09 | 704 | 0.8+ | 0.8− | | 2006 09 22 | 704 | 0.3+ | 0.2− | | 2006 11 02 | G96 | 0.5+ | 0.1− | | | |
| 2002 10 09 | 704 | 0.4− | 0.3− | | 2006 09 22 | 704 | 0.6+ | 0.5− | | 2006 11 02 | G96 | 0.5+ | 0.3− | | | |
| 2002 10 09 | 704 | 1.0+ | 0.7− | | 2006 09 22 | 704 | 1.3+ | 0.5− | | 2006 11 02 | G96 | 0.0 | 0.3− | | | |
| 2002 10 11 | 644 | 0.2− | 0.6+ | | 2006 09 27 | 704 | 0.3+ | 0.3+ | | 2006 11 27 | G96 | 0.6+ | 0.4− | | | |
| 2002 10 11 | 704 | 0.8+ | 0.6− | | 2006 09 27 | 704 | 0.9+ | 0.4+ | | 2006 11 27 | G96 | 0.7+ | 0.0 | | | |
| 2002 10 11 | 704 | 0.3+ | 0.7− | | 2006 09 27 | 704 | 0.5+ | 0.4+ | | 2006 11 27 | G96 | 0.5+ | 0.3− | | | |
| 2002 10 11 | 704 | 0.5+ | 0.6− | | 2006 10 01 | 704 | 0.2− | 0.4+ | | 2006 11 27 | G96 | 0.1+ | 0.5− | | | |

**2002 TY$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.35387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23292503 | $\omega$ | 74.34004 | | +0.59182596 | −0.78842723 | |
| $a$ | 2.6161257 | $\Omega$ | 336.76746 | | +0.47424683 | +0.50881263 | |
| $e$ | 0.1752009 | $i$ | 25.15974 | | +0.65179136 | +0.34567645 | |
| $P$ | 4.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 25 | 644 | 0.3− | 0.3+ | | 2002 10 29 | 704 | (1.6− | 0.6+) | | 2006 09 18 | 703 | 0.5+ | 0.5+ | | | |
| 2002 09 25 | 644 | 0.6− | 0.7+ | | 2002 10 29 | 704 | 1.4− | 0.5− | | 2006 09 18 | 703 | 0.1− | 0.7+ | | | |
| 2002 09 25 | 644 | 1.0− | 0.1+ | | 2002 10 29 | 704 | 0.4+ | 0.3− | | 2006 09 18 | 703 | 0.2+ | 0.6+ | | | |
| 2002 09 25 | 644 | 0.5− | 0.4+ | | 2004 03 17 | 704 | 0.7+ | 1.2+ | | 2006 09 18 | 703 | 0.6+ | 0.0 | | | |
| 2002 09 25 | 644 | 0.5− | 0.3+ | | 2004 03 17 | 704 | 1.3+ | 0.6+ | | 2006 09 27 | 703 | (3.0− | 1.0+) | | | |
| 2002 09 25 | 644 | 0.5− | 0.7+ | | 2004 03 17 | 704 | (2.6+ | 0.5+) | | 2006 09 27 | 703 | 0.2− | 0.7− | | | |
| 2002 10 05 | 704 | 0.9+ | 0.3+ | | 2006 09 16 | 703 | 0.3− | 0.3− | | 2006 09 27 | 703 | 1.1− | 0.9− | | | |
| 2002 10 05 | 704 | 1.0+ | 0.3− | | 2006 09 16 | 703 | 0.5+ | 0.8− | | 2006 09 29 | 699 | 0.9− | 0.2+ | | | |
| 2002 10 05 | 704 | 0.7+ | 0.0 | | 2006 09 16 | 703 | 0.5− | 0.2− | | 2006 09 29 | 699 | 1.1− | 0.2+ | | | |
| 2002 10 05 | 704 | 0.2+ | 0.2+ | | 2006 09 16 | 703 | 0.8+ | 0.6− | | 2006 09 29 | 699 | 0.7+ | 0.6+ | | | |
| 2002 10 09 | 704 | 0.7+ | 0.2+ | | 2006 09 16 | 703 | 0.1+ | 0.2+ | | 2006 09 29 | 699 | 0.6− | 0.8+ | | | |
| 2002 10 09 | 704 | (1.5+ | 0.0 ) | | 2006 09 16 | 703 | 0.3− | 0.0 | | 2006 10 26 | 703 | 0.4+ | 0.4− | | | |
| 2002 10 09 | 704 | 1.0+ | 0.1+ | | 2006 09 16 | 703 | (2.7− | 1.0−) | | 2006 10 26 | 703 | 0.3− | 0.5+ | | | |
| 2002 10 09 | 704 | 0.5+ | 0.0 | | 2006 09 17 | 703 | 0.1+ | 0.4+ | | 2006 10 26 | 703 | 1.2+ | 0.7− | | | |
| 2002 10 28 | 704 | 0.6+ | 0.7− | | 2006 09 17 | 703 | 0.2− | 0.9+ | | 2006 10 26 | 703 | 0.1+ | 0.4− | | | |
| 2002 10 28 | 704 | 0.4− | 0.2− | | 2006 09 17 | 703 | 0.9− | 0.0 | | | | | | | | |
| 2002 10 28 | 704 | 0.9− | 0.7− | | 2006 09 17 | 703 | 0.3+ | 0.4+ | | | | | | | | |

**2002 TJ$_{68}$ = 2006 PQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.28030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23273704 | $\omega$ | 124.86664 | | +0.33556585 | +0.94197989 | |
| $a$ | 2.6175343 | $\Omega$ | 164.73373 | | −0.87428490 | +0.31472013 | |
| $e$ | 0.0974694 | $i$ | 1.81377 | | −0.35074417 | +0.11672672 | |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 05 | 691 | 0.2+ | 0.3− | | 2005 03 08 | G96 | 0.6− | 0.2− | | 2006 08 15 | 644 | 0.2+ | 0.1− | | | |
| 1994 11 05 | 691 | 0.8− | 0.2+ | | 2005 03 08 | G96 | 0.2− | 0.0 | | 2006 08 15 | 644 | 0.1+ | 0.3− | | | |
| 1994 11 05 | 691 | 0.3+ | 0.2+ | | 2005 03 08 | G96 | 0.5− | 0.2− | | 2006 08 29 | 704 | 0.2− | 1.1− | | | |
| 2002 10 08 | 239 | 0.7− | 0.5+ | | 2005 03 08 | G96 | 0.1− | 0.2− | | 2006 08 29 | 704 | 0.4− | 0.3+ | | | |
| 2002 10 08 | 239 | 0.1+ | 0.2− | | 2005 05 12 | 691 | 0.2+ | 0.4+ | | 2006 08 29 | 704 | 0.6− | 0.7+ | | | |
| 2002 10 08 | 239 | 0.0 | 1.9+ | | 2005 05 12 | 691 | 0.2+ | 0.3+ | | 2006 09 25 | G96 | 0.3+ | 0.4− | | | |
| 2002 10 08 | 239 | 0.1− | 0.1− | | 2005 05 12 | 691 | 0.3+ | 0.3+ | | 2006 09 25 | G96 | 0.1+ | 0.7− | | | |
| 2002 10 09 | 239 | 0.4− | 0.5+ | | 2006 08 13 | 644 | 0.6− | 0.1+ | | 2006 09 25 | G96 | 0.0 | 0.4− | | | |
| 2002 10 09 | 239 | 0.3− | 0.8+ | | 2006 08 13 | 644 | 0.3+ | 0.3− | | 2006 09 25 | G96 | 0.2+ | 0.6− | | | |
| 2002 10 09 | 239 | 0.3+ | 0.6+ | | 2006 08 13 | 644 | 0.3+ | 0.2+ | | | | | | | | |
| 2002 10 10 | 239 | 0.7+ | 0.7+ | | 2006 08 15 | 644 | 0.1− | 0.2+ | | | | | | | | |

**2002 TL$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.21375 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26278936 | $\omega$ | 97.33259 | | +0.55674103 | +0.81432297 | |
| $a$ | 2.4139644 | $\Omega$ | 208.51170 | | −0.83060725 | +0.54844386 | |
| $e$ | 0.3716761 | $i$ | 20.10303 | | +0.01144642 | +0.18996690 | |
| $P$ | 3.75 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.4− | 0.0 | | 2002 10 10 | 704 | 0.4+ | 0.7+ | | 2002 10 10 | 651 | 0.3+ | 0.1− | | | |
| 2002 07 29 | 644 | 0.4− | 0.0 | | 2002 10 10 | 704 | 0.2+ | 0.2+ | | 2002 10 10 | 649 | 0.3+ | 0.0 | | | |
| 2002 09 19 | 644 | 0.3− | 0.5− | | 2002 10 10 | 448 | 0.1− | 0.2− | | 2002 10 10 | 649 | 0.4+ | 0.1− | | | |
| 2002 09 19 | 644 | 0.1− | 0.8− | | 2002 10 10 | 448 | 0.1+ | 0.3− | | 2002 10 10 | 649 | 0.1+ | 0.0 | | | |
| 2002 09 19 | 644 | 0.0 | 0.9− | | 2002 10 10 | 704 | 0.0 | 0.3− | | 2002 10 10 | 344 | 0.5+ | 0.3+ | | | |
| 2002 10 03 | 644 | 0.0 | 0.4− | | 2002 10 10 | 704 | 0.1− | 0.4− | | 2002 10 10 | 344 | 0.4+ | 0.4+ | | | |
| 2002 10 03 | 644 | 0.1− | 0.9− | | 2002 10 10 | 704 | 0.0 | 0.0 | | 2002 10 10 | 344 | 0.5+ | 0.2+ | | | |
| 2002 10 03 | 644 | 0.1− | 0.5− | | 2002 10 10 | 448 | 0.1+ | 0.0 | | 2002 10 11 | 704 | 0.0 | 0.1+ | | | |
| 2002 10 04 | 699 | 0.1− | 0.9+ | | 2002 10 10 | 704 | 0.4+ | 0.5+ | | 2002 10 11 | 704 | 0.6− | 0.0 | | | |
| 2002 10 04 | 699 | 0.6+ | 0.5+ | | 2002 10 10 | 704 | 0.1− | 0.8+ | | 2002 10 11 | 704 | 0.2− | 0.1− | | | |
| 2002 10 04 | 699 | 0.5− | 0.3− | | 2002 10 10 | 704 | 0.1+ | 0.2− | | 2002 10 11 | 704 | 1.1− | 0.9− | | | |
| 2002 10 04 | 699 | 0.5− | 1.0+ | | 2002 10 10 | 704 | 0.5+ | 0.1+ | | 2002 10 11 | 704 | 0.5+ | 0.7− | | | |
| 2002 10 06 | 704 | 0.1+ | 0.4+ | | 2002 10 10 | 704 | 0.1− | 0.3− | | 2002 10 11 | 704 | 0.2− | 0.9− | | | |
| 2002 10 06 | 704 | 0.2− | 0.6+ | | 2002 10 10 | 704 | 0.1+ | 0.1+ | | 2002 10 11 | 704 | 0.2− | 0.0 | | | |
| 2002 10 06 | 704 | 0.6+ | 0.3− | | 2002 10 10 | 704 | 0.1+ | 0.0 | | 2002 10 11 | 704 | 0.8+ | 0.6+ | | | |
| 2002 10 06 | 704 | 0.1+ | 0.5− | | 2002 10 10 | 704 | 0.5+ | 0.2+ | | 2002 10 11 | 704 | 0.0 | 0.2− | | | |
| 2002 10 06 | 704 | 0.4+ | 0.6− | | 2002 10 10 | 704 | 0.3+ | 0.1− | | 2002 10 12 | 704 | 1.0− | 1.2+ | | | |
| 2002 10 09 | 704 | 0.9− | 0.3+ | | 2002 10 10 | 704 | 0.3+ | 0.1+ | | 2002 10 12 | 704 | 0.8− | 0.1− | | | |
| 2002 10 09 | 704 | 0.3− | 0.2+ | | 2002 10 10 | 704 | 0.2+ | 0.4− | | 2002 10 12 | 704 | 0.2− | 0.1+ | | | |
| 2002 10 09 | 704 | 0.1− | 0.3− | | 2002 10 10 | 704 | 0.3− | 0.1− | | 2002 10 12 | 704 | 0.1+ | 0.5+ | | | |
| 2002 10 09 | 704 | 0.2− | 0.4+ | | 2002 10 10 | 704 | 0.0 | 1.1+ | | 2002 11 06 | 291 | 0.2+ | 0.1− | | | |
| 2002 10 09 | 704 | 0.3− | 0.6+ | | 2002 10 10 | 704 | 0.4− | 0.1+ | | 2002 11 06 | 291 | 0.1+ | 0.1+ | | | |
| 2002 10 10 | 734 | 0.6− | 0.4− | | 2002 10 10 | 704 | 0.3− | 0.3+ | | 2002 11 06 | 291 | 0.4− | 0.3+ | | | |
| 2002 10 10 | 734 | 0.2+ | 0.0 | | 2002 10 10 | 704 | 0.1− | 0.2− | | 2006 09 30 | G96 | 0.1+ | 0.0 | | | |
| 2002 10 10 | 734 | 0.4+ | 1.2+ | | 2002 10 10 | 704 | 0.3− | 0.1+ | | 2006 09 30 | G96 | 0.3+ | 0.0 | | | |
| 2002 10 10 | 918 | 0.6+ | 0.4− | | 2002 10 10 | 704 | 0.3+ | 0.3− | | 2006 09 30 | G96 | 0.0 | 0.1+ | | | |
| 2002 10 10 | 918 | 0.7− | 0.3+ | | 2002 10 10 | 926 | 0.1+ | 0.7− | | 2006 09 30 | G96 | 0.2+ | 0.3− | | | |
| 2002 10 10 | 918 | 0.5− | 0.3− | | 2002 10 10 | 704 | 0.8+ | 0.7+ | | 2006 10 22 | 703 | 0.5+ | 0.3− | | | |
| 2002 10 10 | 918 | 0.6+ | 0.5− | | 2002 10 10 | 704 | 0.1+ | 0.2− | | 2006 10 22 | 703 | 0.7− | 0.1− | | | |
| 2002 10 10 | 704 | 0.1+ | 0.0 | | 2002 10 10 | 704 | 0.4− | 0.7− | | 2006 10 22 | 703 | 0.4− | 0.4− | | | |
| 2002 10 10 | 704 | 0.0 | 0.5+ | | 2002 10 10 | 926 | 0.2− | 0.2− | | 2006 10 22 | 703 | (1.6− | 0.2+) | | | |
| 2002 10 10 | 704 | 0.4+ | 0.3− | | 2002 10 10 | 926 | 0.3+ | 0.6− | | | | | | | | |
| 2002 10 10 | 704 | 0.5− | 0.2− | | 2002 10 10 | 651 | 0.8+ | 0.3+ | | | | | | | | |

**2002 TQ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.11050 | | | (2000.0) | | |
| $n$ | 0.23349800 | $\omega$ | 290.13470 | | +0.60853451 | −0.76668449 |
| $a$ | 2.6118442 | $\Omega$ | 120.68744 | | +0.78746703 | +0.55164655 |
| $e$ | 0.2374873 | $i$ | 13.76689 | | +0.09788480 | +0.32845242 |
| $P$ | 4.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 0.7− | 0.1+ | 2002 11 06 | 644 | 0.1− | 0.1− | 2003 01 02 | 704 | 0.4+ | 0.2+ |
| 2002 09 15 | 699 | 0.2+ | 0.6+ | 2002 11 06 | 644 | 0.1− | 0.2− | 2003 01 02 | 704 | 0.1+ | 0.3+ |
| 2002 09 15 | 699 | 0.1+ | 0.5+ | 2002 11 06 | 644 | 0.2− | 0.1− | 2003 01 02 | 704 | 0.5− | 0.4+ |
| 2002 09 15 | 699 | 0.4+ | 0.1+ | 2002 11 16 | 644 | 0.5− | 0.1− | 2003 01 02 | 704 | 0.4− | 0.6− |
| 2002 10 05 | 644 | 0.2− | 0.7+ | 2002 11 16 | 644 | 0.1− | 0.1− | 2003 01 02 | 704 | 0.0 | 0.4− |
| 2002 10 05 | 644 | 0.1− | 0.8+ | 2002 11 16 | 644 | 0.7− | 0.1− | 2006 09 26 | 703 | 1.3− | 0.2+ |
| 2002 10 05 | 644 | 0.1− | 0.9+ | 2002 11 30 | 704 | 0.2+ | 0.6− | 2006 09 26 | 703 | 0.8− | 0.3+ |
| 2002 10 06 | 644 | 0.3+ | 0.3− | 2002 11 30 | 704 | 0.7+ | 1.0− | 2006 09 26 | 703 | 0.2− | 0.6− |
| 2002 10 06 | 644 | 0.1+ | 1.2+ | 2002 11 30 | 704 | 0.4+ | 0.7− | 2006 09 26 | 703 | 0.8+ | 0.4− |
| 2002 10 06 | 644 | 0.2− | 0.1− | 2002 11 30 | 704 | 0.2+ | 0.7− | 2006 10 12 | E12 | 0.5+ | 0.5+ |
| 2002 10 06 | 644 | 0.1− | 1.1+ | 2002 12 07 | 644 | 0.1− | 0.3+ | 2006 10 12 | E12 | 0.7+ | 0.3+ |
| 2002 10 06 | 644 | 0.4+ | 0.5− | 2002 12 07 | 644 | 0.0 | 0.3+ | 2006 10 12 | E12 | 0.8+ | 1.3− |
| 2002 10 06 | 644 | 0.2+ | 1.1+ | 2002 12 07 | 644 | 0.1− | 0.2+ | 2006 10 12 | E12 | 0.5+ | 0.0 |
| 2002 10 07 | 608 | 0.1− | 0.9− | 2002 12 10 | 644 | 0.0 | 0.3+ | 2006 11 18 | 703 | (0.1− | 2.0+) |
| 2002 10 07 | 608 | 0.6− | 1.0− | 2002 12 10 | 644 | 0.4+ | 0.2+ | 2006 11 18 | 703 | 0.1+ | 0.8− |
| 2002 10 07 | 608 | 0.1− | 1.2− | 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 703 | 0.9− | 0.7− |
| 2002 10 10 | 644 | 0.2− | 0.0 | 2002 12 13 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 703 | 0.2+ | 0.8+ |
| 2002 10 10 | 644 | 0.1+ | 0.1+ | 2002 12 13 | 644 | 0.0 | 0.3+ | | | | |
| 2002 10 10 | 644 | 0.1− | 0.1+ | 2002 12 13 | 644 | 0.1+ | 0.3+ | | | | |

**2002 TV$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.17514 | | | (2000.0) | | |
| $n$ | 0.24235408 | $\omega$ | 259.91881 | | +0.79450967 | −0.60385168 |
| $a$ | 2.5478224 | $\Omega$ | 137.18925 | | +0.58755421 | +0.73773921 |
| $e$ | 0.2475805 | $i$ | 5.41812 | | +0.15340937 | +0.30183440 |
| $P$ | 4.07 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 734 | 0.7− | 0.7+ | 2002 11 16 | 644 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2002 10 10 | 734 | 0.0 | 0.2− | 2002 11 28 | 699 | 0.5+ | 0.1+ | 2006 11 13 | 703 | 0.4+ | 0.8− |
| 2002 10 10 | 734 | 0.2+ | 0.7+ | 2002 11 28 | 699 | 0.5− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2002 10 11 | 734 | 0.1− | 0.9+ | 2002 11 28 | 699 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2002 10 11 | 734 | 0.4− | 0.0 | 2002 11 28 | 699 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 10 13 | 734 | 0.1− | 0.1+ | 2002 12 01 | 704 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 10 13 | 734 | 0.1+ | 0.6− | 2002 12 01 | 704 | 0.0 | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2002 10 31 | 644 | 0.2− | 0.7+ | 2002 12 01 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 644 | 0.0 | 0.6+ | 2002 12 01 | 704 | 0.2− | 0.1− | 2006 11 14 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.1− | 1.1+ | 2002 12 13 | 608 | 0.0 | 0.7− | 2006 11 14 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.1+ | 0.4+ | 2002 12 13 | 608 | 0.7− | 0.2+ | 2006 11 14 | 644 | 0.3+ | 0.1− |
| 2002 11 05 | 704 | (0.5+ | 2.4−) | 2002 12 13 | 608 | 0.2− | 0.1+ | 2006 11 19 | 703 | (0.0 | 1.5−) |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.3+ | 0.4− |
| 2002 11 05 | 704 | (0.9+ | 2.0−) | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2002 11 11 | 704 | (2.5+ | 0.4−) | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.5− | 0.5− |
| 2002 11 11 | 704 | (1.7+ | 0.6−) | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.1− | 0.4− |
| 2002 11 11 | 704 | (3.1+ | 1.8−) | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.4+ | 0.2− |
| 2002 11 12 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.8− | 2006 11 19 | 703 | 0.1− | 0.2− |
| 2002 11 12 | 704 | 0.7+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | (1.6+ | 1.1+) |
| 2002 11 12 | 704 | 0.0 | 0.9− | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.5− | 0.1− |
| 2002 11 12 | 704 | 0.0 | 0.8− | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.2− | 0.4+ |
| 2002 11 16 | 644 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2002 11 16 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.6+ | 0.1+ | | | | |

**2002 TZ$_{69}$ = 2002 TK$_{81}$**

Id. Minor Planet Center (d, *MPO* 38538)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.84247 | | | (2000.0) | | |
| $n$ | 0.24565990 | $\omega$ | 4.03922 | | +0.70768264 | −0.68215020 |
| $a$ | 2.5249137 | $\Omega$ | 41.06411 | | +0.64012793 | +0.50882205 |
| $e$ | 0.1737234 | $i$ | 16.26640 | | +0.29903430 | +0.52513925 |
| $P$ | 4.01 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 1.1+ | 0.5+ | 2002 10 13 | 734 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 10 01 | 704 | 0.4+ | 1.0− | 2002 10 13 | 734 | 0.7+ | 0.5− | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2002 10 01 | 704 | 0.3− | 1.0− | 2002 10 30 | 644 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2002 10 04 | 704 | (1.6− | 0.5+) | 2002 10 30 | 644 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 10 04 | 704 | (0.1− | 2.0+) | 2002 10 30 | 644 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 1.3− | 0.4+ | 2002 10 31 | 704 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 2002 10 04 | 704 | 1.4− | 0.5+ | 2002 10 31 | 704 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2002 10 11 | 649 | 0.1+ | 0.2− | 2002 10 31 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.2− |
| 2002 10 11 | 649 | 0.2+ | 0.2− | 2002 10 31 | 704 | 0.6+ | 0.9− | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.3+ | 1.0− | 2002 10 31 | 704 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 11 | 649 | 0.1+ | 0.2− | 2002 12 06 | 291 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.1+ | 0.6− | 2002 12 06 | 291 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2002 12 06 | 291 | 0.8− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.2+ | 0.5− | 2006 09 29 | 699 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2002 10 11 | 734 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.1− | 1.2− | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2002 10 11 | 734 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.1− | 0.4− | 2006 11 13 | 703 | 0.2− | 1.0− |
| 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.6+ | 2006 11 13 | 703 | 0.6− | 0.5+ |
| 2002 10 11 | 734 | 0.4+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 13 | 703 | (0.4− | 2.3+) |
| 2002 10 11 | 704 | 0.2+ | 0.4+ | 2006 10 03 | G96 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.5+ | 0.3− |
| 2002 10 11 | 704 | 1.4− | 0.5− | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2002 10 11 | 658 | 0.6+ | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2002 10 11 | 658 | 0.5+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2002 10 11 | 658 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2002 10 11 | 658 | 0.3+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | 1.1− | 0.6− |
| 2002 10 12 | 704 | 0.8+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.7+ |
| 2002 10 12 | 704 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2002 10 12 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.4− | 1.0− |
| 2002 10 12 | 658 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.6+ | 1.1+ |
| 2002 10 12 | 658 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.5− | 0.3− | 2006 11 27 | 703 | 0.1− | 0.7− |
| 2002 10 12 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.2− | 2006 11 27 | 703 | 1.5+ | 0.0 |
| 2002 10 12 | 658 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.9+ | 0.2− |
| 2002 10 13 | 734 | 0.1+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.5+ | | | | |

**2002 TD$_{71}$ = 2006 RN$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.27077 | | | (2000.0) | | |
| $n$ | 0.24652302 | $\omega$ | 0.10095 | | +0.99970563 | +0.02336272 |
| $a$ | 2.5190168 | $\Omega$ | 358.51227 | | −0.02243324 | +0.78730075 |
| $e$ | 0.2075287 | $i$ | 14.60270 | | −0.00924183 | +0.61612637 |
| $P$ | 4.00 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.3+ | 0.8− | 2002 10 12 | 704 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.3+ |
| 1998 10 12 | 699 | 1.7+ | 1.7− | 2006 09 14 | 703 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.8− |
| 1998 10 12 | 699 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.3+ | 2006 10 03 | 704 | (2.0− | 0.4+) |
| 2002 10 03 | 644 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.2+ | 1.1+ |
| 2002 10 03 | 644 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.5+ | 2006 10 03 | 704 | 0.9+ | 0.1+ |
| 2002 10 03 | 644 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2002 10 04 | 699 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.3− |
| 2002 10 04 | 699 | 0.7− | 0.3+ | 2006 09 17 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.4− |
| 2002 10 04 | 699 | 1.1− | 0.2− | 2006 09 18 | 703 | 0.5− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− |
| 2002 10 04 | 699 | 0.1+ | 0.8− | 2006 09 18 | 703 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 10 05 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 1.2− | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2002 10 05 | 704 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.0 | 0.8− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 10 05 | 704 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 10 09 | 704 | 0.7+ | 0.1− | 2006 09 18 | 699 | 1.5+ | 1.5− | 2006 10 17 | 703 | 1.2+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.9+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2002 10 09 | 704 | 0.4+ | 0.8+ | 2006 09 19 | 703 | 0.8− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.7+ |
| 2002 10 09 | 704 | 0.9+ | 0.2− | 2006 09 19 | 703 | 0.3− | 1.3− | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2002 10 09 | 704 | 0.7+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.2− |
| 2002 10 12 | 704 | (1.7− | 0.3−) | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2002 10 12 | 704 | (1.6− | 0.4+) | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ |

**2002 TX$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.66143 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24086122 | $\omega$ | 27.87558 | | +0.86076851 | −0.50892989 | |
| $a$ | 2.5583392 | $\Omega$ | 2.75884 | | +0.42933256 | +0.71725438 | |
| $e$ | 0.1848668 | $i$ | 9.86031 | | +0.27340652 | +0.47595853 | |
| $P$ | 4.09 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.2− | 0.1+ | 2002 11 13 | 644 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.8+ |
| 2002 10 03 | 644 | 0.1− | 0.1− | 2002 11 13 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.3− | 0.1+ |
| 2002 10 03 | 644 | 0.1− | 0.1+ | 2002 11 14 | 704 | 0.9− | 0.3− | 2006 09 29 | 704 | 0.4+ | 0.4+ |
| 2002 10 04 | 704 | 0.4+ | 0.1− | 2002 11 14 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.8− | 0.8+ |
| 2002 10 04 | 704 | (1.4+ | 1.7+) | 2002 11 14 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 1.3+ | 1.2− |
| 2002 10 04 | 704 | (1.7+ | 0.4+) | 2002 11 14 | 704 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.8− | 0.1− |
| 2002 10 04 | 699 | 0.1− | 0.0 | 2004 02 16 | 291 | 0.1− | 0.2+ | 2006 09 29 | 704 | (1.8+ | 2.0−) |
| 2002 10 04 | 704 | 0.1+ | 0.4+ | 2004 02 16 | 291 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.5− |
| 2002 10 04 | 704 | 1.0+ | 0.8+ | 2004 02 16 | 291 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.2− |
| 2002 10 04 | 699 | 0.3− | 0.3− | 2006 09 12 | 703 | 0.6− | 0.3− | 2006 10 01 | 704 | 0.0 | 0.2+ |
| 2002 10 04 | 699 | 0.0 | 0.2− | 2006 09 12 | 703 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.4− | 0.2+ |
| 2002 10 04 | 699 | 0.9− | 0.9− | 2006 09 12 | 703 | 0.0 | 0.5+ | 2006 10 01 | 704 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 1.3− | 0.7− | 2006 09 12 | 703 | 1.2− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 0.6− | 0.4+ | 2006 09 15 | 704 | (1.6− | 0.1−) | 2006 10 02 | 691 | 0.3+ | 0.2+ |
| 2002 10 09 | 704 | 0.1− | 0.4− | 2006 09 15 | 704 | 1.2− | 0.8− | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.1− | 0.9− | 2006 09 15 | 704 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.7+ |
| 2002 10 09 | 704 | 0.1+ | 0.5− | 2006 09 15 | 704 | (1.8− | 0.1+) | 2006 10 17 | 703 | 0.4+ | 0.4− |
| 2002 10 12 | 704 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2002 10 12 | 704 | 0.0 | 1.1− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2002 10 12 | 704 | 0.4− | 0.3− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.5+ | 0.0 |
| 2002 10 12 | 704 | (0.3+ | 1.8−) | 2006 09 19 | 699 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.5+ | 0.3+ |
| 2002 10 31 | 644 | 0.8+ | 1.0+ | 2006 09 19 | 699 | 0.1+ | 0.7− | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2002 10 31 | 644 | 0.7+ | 1.0+ | 2006 09 19 | 699 | 0.5+ | 0.7+ | 2006 10 22 | 644 | 0.5+ | 0.2− |
| 2002 10 31 | 644 | 1.2+ | 1.1+ | 2006 09 20 | 704 | 0.6+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2002 11 05 | 699 | 0.3+ | 1.2+ | 2006 09 20 | 704 | 0.6+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2002 11 05 | 699 | 0.1− | 0.7− | 2006 09 20 | 704 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2002 11 05 | 699 | 1.0+ | 0.6− | 2006 09 22 | A50 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 11 05 | 699 | 0.4− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2002 11 06 | 704 | (2.1+ | 0.0 ) | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2002 11 06 | 704 | 0.2+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2002 11 06 | 704 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 11 06 | 704 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.0 | 0.7+ | 2006 10 31 | G96 | 0.4+ | 0.5− |
| 2002 11 13 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.5− |

**2002 TY$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.69742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26169355 | $\omega$ | 103.08128 | | +0.98981275 | −0.11388935 | |
| $a$ | 2.4206985 | $\Omega$ | 263.50633 | | +0.07231230 | +0.91907929 | |
| $e$ | 0.1326132 | $i$ | 4.93303 | | +0.12264439 | +0.37725650 | |
| $P$ | 3.77 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.2− | 0.2+ | 2002 10 12 | 704 | 0.1+ | 0.4− | 2006 11 14 | 691 | 0.3− | 0.3+ |
| 2002 10 03 | 644 | 0.4− | 0.0 | 2002 10 12 | 704 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 644 | 0.2− | 0.0 | 2002 10 12 | 704 | 0.2+ | 0.6+ | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2002 10 12 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 1.1− | 0.1+ | 2002 10 30 | 608 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2002 10 04 | 704 | 0.0 | 0.7− | 2002 10 30 | 608 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 10 04 | 699 | 0.8+ | 0.1+ | 2002 10 30 | 608 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2002 10 04 | 699 | 0.9+ | 0.1− | 2002 11 04 | 608 | 0.5− | 0.1+ | 2006 11 15 | 291 | 0.2− | 0.1− |
| 2002 10 04 | 704 | 0.8− | 0.8− | 2002 11 04 | 608 | 0.4− | 0.7− | 2006 11 15 | 291 | 0.3+ | 0.1+ |
| 2002 10 04 | 699 | 0.1+ | 0.4+ | 2002 11 04 | 608 | 0.3− | 0.2− | 2006 11 15 | 291 | 0.6+ | 0.0 |
| 2002 10 04 | 699 | 0.1− | 0.7+ | 2002 11 08 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 1.3+ | 0.0 |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2002 11 08 | 704 | 0.6+ | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | 0.3− | 0.0 | 2002 11 08 | 704 | (0.2− | 1.9+) | 2006 11 16 | 704 | 1.3+ | 0.6+ |
| 2002 10 05 | 704 | 0.4− | 0.2+ | 2002 11 12 | 704 | 0.3− | 1.1+ | 2006 11 16 | 704 | 0.3+ | 1.0+ |
| 2002 10 05 | 704 | 0.4+ | 0.3− | 2002 11 12 | 704 | 0.3− | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.1− | 0.1+ | 2002 11 12 | 704 | 0.3− | 0.3− | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2002 10 09 | 704 | 0.4+ | 0.4+ | 2002 11 12 | 704 | 0.4+ | 0.7− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 0.7+ | 0.4− | 2006 11 10 | 691 | 0.5− | 0.7− | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.2− |

**2002 TZ$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.94055 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20335777 | $\omega$ | 92.68550 | | +0.83595866 | +0.54195611 | |
| $a$ | 2.8639287 | $\Omega$ | 234.51226 | | −0.53617613 | +0.77302121 | |
| $e$ | 0.3260826 | $i$ | 6.08781 | | −0.11699694 | +0.32972985 | |
| $P$ | 4.85 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 09 | 327 | 0.3+ | 1.2− | 2002 10 04 | 699 | 0.4− | 1.3+ | 2002 10 31 | 644 | 0.1− | 0.3+ |
| 1997 10 09 | 327 | 0.0 | 0.3− | 2002 10 04 | 699 | 1.1− | 1.0− | 2002 10 31 | 699 | 1.0− | 0.3+ |
| 1997 10 09 | 327 | 0.4+ | 0.5− | 2002 10 09 | 704 | 0.1− | 0.2− | 2002 10 31 | 644 | 0.1− | 0.4+ |
| 2002 09 17 | 608 | 0.8+ | 0.2+ | 2002 10 09 | 704 | 0.2− | 0.5− | 2002 11 22 | 644 | 0.0 | 0.3+ |
| 2002 09 17 | 608 | 0.8+ | 0.4+ | 2002 10 09 | 704 | 0.5+ | 0.4− | 2002 11 22 | 644 | 0.1− | 0.0 |
| 2002 09 17 | 608 | 0.7+ | 0.2+ | 2002 10 09 | 704 | 0.1+ | 0.2+ | 2002 11 22 | 644 | 0.0 | 0.0 |
| 2002 09 21 | 644 | 0.0 | 0.1+ | 2002 10 09 | 704 | 0.7+ | 0.1+ | 2006 04 07 | 691 | 0.1+ | 0.0 |
| 2002 09 21 | 644 | 0.6− | 0.0 | 2002 10 10 | 644 | 0.3− | 0.1− | 2006 04 07 | 691 | 0.2+ | 0.2+ |
| 2002 09 21 | 644 | 0.0 | 0.2+ | 2002 10 10 | 644 | 0.3− | 0.1− | 2006 04 07 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 644 | 0.2− | 0.4− | 2002 10 10 | 644 | 0.0 | 0.1− | 2006 05 04 | G96 | 0.3+ | 0.2+ |
| 2002 10 03 | 644 | 0.0 | 0.1− | 2002 10 12 | 704 | 0.2− | 0.4− | 2006 05 04 | G96 | 0.0 | 0.4+ |
| 2002 10 03 | 644 | 0.0 | 0.2− | 2002 10 12 | 704 | 0.1− | 0.3− | 2006 05 04 | G96 | 0.1− | 0.2+ |
| 2002 10 04 | 704 | 0.5+ | 0.1− | 2002 10 12 | 704 | 0.0 | 0.0 | 2006 05 04 | G96 | 0.2− | 0.9+ |
| 2002 10 04 | 704 | (0.3+ | 3.2+) | 2002 10 12 | 704 | 0.8− | 0.5+ | 2006 05 20 | G96 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.7+ | 0.8+ | 2002 10 12 | 704 | 0.1+ | 0.0 | 2006 05 20 | G96 | 0.0 | 0.3+ |
| 2002 10 04 | 699 | 1.0− | 0.3+ | 2002 10 31 | 699 | 0.2− | 0.4+ | 2006 05 20 | G96 | 0.4+ | 0.3+ |
| 2002 10 04 | 704 | 0.7+ | 1.2+ | 2002 10 31 | 699 | 0.4− | 0.8+ | 2006 05 20 | G96 | 0.4− | 0.3+ |
| 2002 10 04 | 704 | 1.0+ | 0.4+ | 2002 10 31 | 644 | 0.1− | 0.1+ | | | | |
| 2002 10 04 | 699 | 0.4− | 0.5+ | 2002 10 31 | 699 | 0.1− | 0.2− | | | | |

**2002 TZ$_{74}$ = 2006 VF$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.70942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27067944 | $\omega$ | 269.87577 | | +0.96813657 | +0.22012165 | |
| $a$ | 2.3668235 | $\Omega$ | 77.40712 | | −0.15180137 | +0.89508395 | |
| $e$ | 0.1427132 | $i$ | 7.02777 | | −0.19916809 | +0.38777723 | |
| $P$ | 3.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.2− | 0.1− | 2002 10 05 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1995 12 16 | 691 | 0.1+ | 0.1− | 2002 10 05 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 1995 12 16 | 691 | 0.2+ | 0.0 | 2002 10 05 | 704 | 0.1− | 0.9− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2002 10 01 | 699 | 0.5− | 0.6− | 2002 10 05 | 704 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.6+ | 1.0+ |
| 2002 10 01 | 699 | 0.1+ | 0.6− | 2002 10 05 | 704 | 1.2+ | 1.0+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2002 10 01 | 699 | 0.3− | 0.7+ | 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2002 10 01 | 699 | 0.2− | 1.1− | 2004 02 13 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.2+ |
| 2002 10 01 | 608 | 0.3− | 0.5+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2002 10 01 | 608 | 0.1+ | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2002 10 01 | 608 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2002 10 04 | 704 | 0.1− | 1.3− | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2002 10 04 | 704 | 1.0− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.0 | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 04 | 704 | 0.4− | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.1− | | | | | | |

**2002 TW$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.02886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30155396 | $\omega$ | 133.99955 | | +0.11377623 | −0.99253410 | |
| $a$ | 2.2023822 | $\Omega$ | 309.41551 | | +0.89447525 | +0.12158531 | |
| $e$ | 0.0898795 | $i$ | 3.26076 | | +0.43239912 | +0.00964789 | |
| $P$ | 3.27 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 07 | 691 | 0.2+ | 0.1− | 2002 10 04 | 644 | 0.5− | 0.1+ | 2005 07 30 | 644 | 0.2− | 0.3− |
| 1997 02 07 | 691 | 0.0 | 0.3− | 2002 10 09 | 704 | 0.2+ | 0.9− | 2005 07 30 | 644 | 0.3− | 0.3− |
| 1997 02 07 | 691 | 0.2− | 0.0 | 2002 10 09 | 704 | 0.1+ | 0.2+ | 2005 07 30 | 644 | 0.9+ | 0.0 |
| 2002 10 01 | 699 | 1.2+ | 0.5+ | 2002 10 09 | 704 | 0.3− | 0.1− | 2005 08 06 | 644 | 0.0 | 0.2− |
| 2002 10 01 | 699 | 0.2+ | 0.5+ | 2002 10 12 | 704 | 0.3+ | 1.9+ | 2005 08 06 | 644 | 0.1− | 0.3− |
| 2002 10 01 | 699 | 0.5− | 1.8+ | 2002 10 12 | 704 | 0.3− | 0.0 | 2005 08 06 | 644 | 0.3− | 0.4− |
| 2002 10 01 | 699 | 0.1− | 0.0 | 2002 10 12 | 704 | 0.0 | 0.9− | 2005 08 25 | 644 | 0.6− | 0.5− |
| 2002 10 04 | 704 | 0.3− | 0.1− | 2002 10 12 | 704 | 0.5− | 0.1+ | 2005 08 25 | 644 | 0.1− | 0.4− |
| 2002 10 04 | 704 | 0.2− | 0.7+ | 2002 10 12 | 704 | 0.2− | 0.2− | 2005 08 25 | 644 | 0.5− | 0.2− |
| 2002 10 04 | 704 | 0.1+ | 0.4− | 2004 04 14 | 699 | 0.2+ | 1.4+ | 2005 09 25 | 291 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.4− | 2004 04 14 | 699 | 0.2+ | 0.3− | 2005 09 25 | 291 | 0.4+ | 0.1+ |
| 2002 10 04 | 644 | 0.4− | 0.1+ | 2004 04 14 | 699 | 0.1− | 0.4+ | 2005 09 25 | 291 | 0.2+ | 0.1+ |
| 2002 10 04 | 644 | 0.3− | 0.1− | 2004 04 14 | 699 | 0.6+ | 0.8+ | | | | |

**2002 TZ$_{75}$ = 2006 WT$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.84053 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25927948 | $\omega$ | 154.00067 | | +0.91932861 | −0.38735418 | |
| $a$ | 2.4357009 | $\Omega$ | 228.96720 | | +0.34312808 | +0.87527150 | |
| $e$ | 0.1813719 | $i$ | 5.26517 | | +0.19260847 | +0.28957993 | |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 1.0− | 0.2+ | 2002 10 12 | 704 | 0.8− | 1.3− | 2006 11 17 | 644 | 0.3+ | 0.1− |
| 2002 10 01 | 699 | 0.4− | 0.2− | 2002 10 12 | 704 | 0.2+ | 0.5− | 2006 11 17 | 644 | 0.8+ | 0.1+ |
| 2002 10 01 | 699 | 0.3+ | 0.3+ | 2002 10 12 | 704 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.8− | 0.2− |
| 2002 10 01 | 699 | 0.1− | 0.1− | 2002 10 12 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.0 | 1.3+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.7+ | 0.1+ | 2006 09 27 | G96 | 0.8− | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.9− |
| 2002 10 04 | 704 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.1+ | 0.1− |
| 2002 10 04 | 704 | 1.0+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 21 | 704 | (2.5+ | 0.3−) |
| 2002 10 04 | 704 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2002 10 04 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 644 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.8− | 1.2+ |
| 2002 10 04 | 644 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2002 10 09 | 704 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 27 | 703 | 1.0− | 0.5+ |
| 2002 10 09 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 691 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.4− | 0.3+ |
| 2002 10 09 | 704 | 0.3− | 1.3+ | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.4− | 0.6− |
| 2002 10 12 | 704 | 0.1+ | 0.4− | 2006 11 17 | 644 | 0.3+ | 0.0 | | | | |

**2002 TF$_{82}$ = 2006 TD$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.28919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26142283 | $\omega$ | 58.98396 | | −0.11122128 | +0.99340887 | |
| $a$ | 2.4223694 | $\Omega$ | 204.67585 | | −0.93293226 | −0.11398208 | |
| $e$ | 0.0646105 | $i$ | 3.80774 | | −0.34244303 | −0.01212069 | |
| $P$ | 3.77 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 608 | 0.4+ | 0.3− | 2002 10 10 | 291 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2002 10 01 | 608 | 0.4− | 0.5− | 2002 10 10 | 291 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2002 10 01 | 608 | 0.2− | 0.5− | 2002 10 10 | 291 | 0.7+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.6− |
| 2002 10 04 | 704 | 0.3+ | 0.5+ | 2002 10 11 | 704 | 0.7− | 0.4− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2002 10 04 | 704 | 0.5− | 0.9+ | 2002 10 11 | 704 | 0.6+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | (0.7− | 2.2−) | 2002 10 11 | 704 | 0.3+ | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 1.1− | 1.3+ | 2002 10 11 | 704 | 1.1− | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2002 10 05 | 644 | 0.2− | 0.1− | 2002 10 11 | 704 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 10 05 | 644 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2002 10 05 | 644 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2002 10 06 | 644 | 0.5− | 0.1− | 2006 10 11 | 691 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2002 10 06 | 644 | 1.3− | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 1.5− |
| 2002 10 06 | 644 | 0.7− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2002 10 07 | 704 | 0.3− | 0.9− | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | (1.6− | 0.4−) |
| 2002 10 07 | 704 | 1.0+ | 0.6− | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 1.4− | 0.7+ |
| 2002 10 07 | 704 | 0.9+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.4+ | | | | |

**2002 TQ$_{82}$ = 2006 VR$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.58468 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25955938 | $\omega$ | 11.51332 | | +0.98148865 | −0.19152030 | |
| $a$ | 2.4339495 | $\Omega$ | 359.52814 | | +0.17447981 | +0.89443167 | |
| $e$ | 0.2013316 | $i$ | 0.87637 | | +0.07897363 | +0.40411874 | |
| $P$ | 3.80 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.2+ | 0.4− | 2002 10 08 | 291 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 10 02 | 704 | 0.0 | 0.7+ | 2002 10 08 | 291 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2002 10 02 | 704 | 0.2− | 0.2+ | 2002 10 11 | 704 | 0.5− | 1.1+ | 2006 11 15 | 691 | 0.2+ | 0.4+ |
| 2002 10 02 | 704 | 0.5+ | 0.1− | 2002 10 11 | 704 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | (1.6+ | 0.9+) | 2002 10 11 | 704 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.2− | 2002 10 11 | 704 | 0.9+ | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.5+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.4+ | 0.5− | 2006 11 01 | G96 | 0.2− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2002 10 05 | 291 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 1.1− | 1.2+ |
| 2002 10 05 | 291 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.7− | 0.6+ |
| 2002 10 05 | 291 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.5+ | 0.1− |
| 2002 10 08 | 291 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 1.2− | 0.2+ |

**2002 TT$_{82}$ = 2006 QE$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.49227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23631937 | $\omega$ | 109.13633 | | +0.74919543 | −0.66183642 | |
| $a$ | 2.5910144 | $\Omega$ | 292.31294 | | +0.59661984 | +0.69140892 | |
| $e$ | 0.1739121 | $i$ | 1.61376 | | +0.28766470 | +0.28970028 | |
| $P$ | 4.17 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 704 | 0.7+ | 0.5+ | 2002 10 12 | 704 | 0.4+ | 0.2+ | 2006 09 12 | 703 | 1.0+ | 1.0− |
| 1998 11 18 | 704 | 0.2− | 1.5− | 2002 10 12 | 704 | 0.1+ | 0.9− | 2006 09 12 | 703 | 0.5+ | 0.4− |
| 1998 11 18 | 704 | 0.7+ | 1.1+ | 2002 10 12 | 704 | 0.3− | 0.8− | 2006 09 12 | 703 | 0.4− | 0.4− |
| 1998 11 18 | 704 | 0.9− | 0.5− | 2002 10 12 | 704 | 0.0 | 1.3− | 2006 09 12 | 703 | 0.9− | 0.1+ |
| 2002 10 01 | 699 | 0.1− | 1.3+ | 2002 11 06 | 704 | 0.2− | 0.3− | 2006 09 16 | 699 | 0.3− | 0.2+ |
| 2002 10 01 | 699 | 0.2+ | 0.2− | 2002 11 06 | 704 | (0.1− | 1.7+) | 2006 09 16 | 699 | (0.0 | 1.7−) |
| 2002 10 01 | 699 | 1.0+ | 1.1− | 2002 11 06 | 704 | 0.6− | 0.7+ | 2006 09 16 | 699 | 1.2− | 0.0 |
| 2002 10 01 | 699 | (1.6− | 0.2−) | 2002 11 06 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.6− | 0.8− |
| 2002 10 02 | 704 | (3.8+ | 1.4−) | 2002 11 22 | 644 | 0.6+ | 0.2+ | 2006 09 17 | 704 | 1.2+ | 0.1+ |
| 2002 10 02 | 704 | (4.9+ | 0.9−) | 2002 11 22 | 644 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.1− | 0.4− |
| 2002 10 02 | 704 | (4.5+ | 1.5−) | 2002 11 22 | 644 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.1+ |
| 2002 10 02 | 704 | (4.3+ | 1.3−) | 2005 06 14 | G96 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.5− | 0.9− |
| 2002 10 04 | 704 | 0.7− | 0.2+ | 2005 06 14 | G96 | 0.6− | 0.4− | 2006 09 17 | 704 | 0.2+ | 0.5− |
| 2002 10 04 | 704 | 0.4+ | 0.3+ | 2005 06 14 | G96 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.5+ | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.4+ | 2005 06 14 | G96 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.5− | 0.3− |
| 2002 10 04 | 704 | 0.4+ | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.4+ | 0.0 | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.9+ |
| 2002 10 07 | 704 | 0.1− | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.5− | 0.3− | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.7+ | 1.3+ |
| 2002 10 07 | 704 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.3− | 2006 09 27 | 704 | (0.2− | 2.6+) |
| 2002 10 07 | 704 | 0.7− | 0.4+ | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 27 | 704 | 1.0+ | 0.3+ |
| 2002 10 07 | 704 | 0.7− | 0.2+ | 2006 08 28 | 703 | 0.6+ | 0.7+ | 2006 09 27 | 704 | 1.0+ | 0.3− |
| 2002 10 09 | 704 | 0.2− | 0.1+ | 2006 08 28 | 703 | (0.4+ | 1.7+) | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2002 10 09 | 704 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2002 10 09 | 704 | 0.3− | 0.4− | 2006 08 28 | 703 | 1.0+ | 1.2+ | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2002 10 09 | 704 | 0.1+ | 0.4− | 2006 08 28 | 691 | 0.5− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2002 10 09 | 704 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.1+ | | | | |
| 2002 10 12 | 704 | 0.4− | 0.9− | 2006 08 28 | 691 | 0.3− | 0.1+ | | | | |

**2002 TY$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.28563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25734930 | $\omega$ | 196.74215 | | +0.67837162 | −0.73359403 | |
| $a$ | 2.4478646 | $\Omega$ | 210.57784 | | +0.68291513 | +0.64997821 | |
| $e$ | 0.1293748 | $i$ | 4.58234 | | +0.27099606 | +0.19841403 | |
| $P$ | 3.83 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2002 09 14 | 644 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 09 17 | 608 | 0.7− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1− | 1.1− |
| 2002 09 17 | 608 | 0.9− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 2002 09 17 | 608 | 1.2− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 1.1− |
| 2002 10 02 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2002 10 02 | 704 | 0.7+ | 0.6− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2002 10 02 | 704 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 2002 10 04 | 704 | (1.7− | 0.5+) | 2006 10 21 | 644 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.0 | 2006 10 23 | H07 | (1.4+ | 1.6−) | 2006 11 17 | 703 | 1.3− | 0.1+ |
| 2002 10 07 | 699 | 1.2+ | 0.3+ | 2006 10 23 | H07 | (1.7+ | 2.4−) | 2006 11 17 | 703 | 1.2− | 0.1+ |
| 2002 10 07 | 699 | 0.8+ | 1.1− | 2006 10 23 | H07 | (2.9+ | 3.3−) | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2002 10 07 | 699 | 0.4+ | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2002 10 07 | 699 | 0.4+ | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 0.8− | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 1.2− | 0.1+ |
| 2002 10 11 | 704 | 0.8+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 1.0− | 0.1+ |
| 2002 10 11 | 704 | 0.4− | 0.3− | 2006 10 29 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.6+ | 1.3− | 2006 10 29 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.8− |
| 2002 10 31 | 704 | 0.4− | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 1.0+ |
| 2002 10 31 | 704 | 0.3− | 0.7+ | 2006 10 29 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2002 10 31 | 704 | 0.4− | 1.2− | 2006 10 29 | 691 | 0.3+ | 0.1+ | | | | |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.2+ | | | | |

**2002 TA$_{84}$ = 2006 SS$_{359}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.08818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25716391 | $\omega$ | 356.17975 | | +0.70404325 | −0.69808632 | |
| $a$ | 2.4490409 | $\Omega$ | 49.00693 | | +0.65604876 | +0.56905656 | |
| $e$ | 0.1074245 | $i$ | 9.94689 | | +0.27188810 | +0.43456889 | |
| $P$ | 3.83 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 608 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.0 | 1.1+ |
| 2002 10 02 | 608 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1− | 1.1+ |
| 2002 10 02 | 608 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.6− | 0.5+ | 2006 11 18 | 704 | 1.3− | 1.4+ |
| 2002 10 04 | 704 | 0.3− | 0.7+ | 2006 10 16 | 703 | (2.8− | 0.1+) | 2006 11 18 | 704 | (0.6− | 2.2+) |
| 2002 10 04 | 704 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.1+ | 1.1− | 2006 11 18 | 704 | (0.1− | 2.0−) |
| 2002 10 04 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 1.2+ |
| 2002 10 04 | 704 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2006 10 28 | 704 | (1.0− | 2.2+) | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 10 15 | 644 | 0.2− | 0.1+ | 2006 10 28 | 704 | (0.4+ | 1.7+) | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2002 10 15 | 644 | 0.2− | 0.0 | 2006 10 28 | 704 | 0.3− | 0.8+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 10 15 | 644 | 0.4+ | 0.2− | 2006 10 28 | 704 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2002 10 30 | 704 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | (1.5+ | 0.7+) |
| 2002 10 30 | 704 | 0.2− | 0.7− | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2002 10 30 | 704 | 1.1+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.1+ | 0.1+ |
| 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.4− | 0.5− | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2006 09 30 | 703 | 1.4− | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.7+ | 1.3− |
| 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.6+ | 0.7− | 2006 11 27 | 703 | 0.8+ | 0.0 |
| 2006 10 02 | G96 | 0.4− | 0.5− | 2006 11 17 | 703 | 0.2− | 0.5− | 2006 11 27 | 703 | 1.2− | 0.0 |
| 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.7− | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2006 10 11 | 691 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.6− | 2006 11 27 | 703 | 0.3− | 0.2− |
| 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | (0.0 | 1.6+) | 2006 11 29 | 704 | 1.1+ | 1.5− |
| 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1+ | 1.0+ | 2006 11 29 | 704 | 0.1+ | 0.5+ |
| 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | (1.1+ | 2.3+) | 2006 11 29 | 704 | 0.4+ | 0.2+ |
| 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.3− | | | | |

**2002 TN$_{84}$ = 2006 KO$_{13}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.91939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17409133 | $\omega$ | 131.12921 | | +0.80226630 | +0.59041787 | |
| $a$ | 3.1765177 | $\Omega$ | 193.48831 | | −0.59464825 | +0.80338929 | |
| $e$ | 0.1067167 | $i$ | 22.21293 | | +0.05255711 | +0.07728123 | |
| $P$ | 5.66 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 608 | 0.6− | 0.2+ | 2002 10 11 | 704 | 0.8+ | 0.6− | 2006 05 22 | 691 | 0.0 | 0.1− |
| 2002 10 02 | 608 | 0.3− | 0.7+ | 2002 10 11 | 704 | 0.4+ | 1.0+ | 2006 05 24 | 691 | 0.1− | 0.0 |
| 2002 10 02 | 608 | 0.2− | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.4− | 2006 05 24 | 691 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.4− | 1.0− | 2002 10 11 | 704 | 0.7− | 0.6+ | 2006 05 24 | 691 | 0.2− | 0.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.2− | 2006 05 20 | 691 | 0.5+ | 0.1− | 2006 05 26 | 691 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 1.1+ | 0.1+ | 2006 05 20 | 691 | 0.3+ | 0.1− | 2006 05 26 | 691 | 0.3− | 0.0 |
| 2002 10 07 | 644 | 0.6− | 0.3− | 2006 05 20 | 691 | 0.4+ | 0.2− | 2006 05 26 | 691 | 0.0 | 0.0 |
| 2002 10 07 | 644 | 0.1− | 0.1+ | 2006 05 22 | 691 | 0.1+ | 0.2+ | | | | |
| 2002 10 07 | 644 | 0.0 | 0.2− | 2006 05 22 | 691 | 0.2− | 0.1− | | | | |

**2002 TN$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.44862 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24105324 | $\omega$ | 19.92258 | | +0.62158276 | −0.72958739 | |
| $a$ | 2.5569804 | $\Omega$ | 33.59283 | | +0.63054224 | +0.24996474 | |
| $e$ | 0.1720120 | $i$ | 31.02810 | | +0.46481324 | +0.63656883 | |
| $P$ | 4.09 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.1− | 1.0− | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 10 02 | 608 | 0.5+ | 1.1+ | 2002 10 11 | 704 | (0.2− | 1.8−) | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 10 02 | 608 | 0.6+ | 0.8+ | 2002 11 06 | 704 | 0.2+ | 0.8− | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 10 02 | 608 | 0.2+ | 1.1+ | 2002 11 06 | 704 | 0.1− | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.4− |
| 2002 10 04 | 704 | 0.7+ | 0.1+ | 2002 11 06 | 704 | 0.2+ | 0.4+ | 2006 10 25 | D35 | 0.5− | 0.2+ |
| 2002 10 04 | 704 | 0.1+ | 0.7− | 2002 11 06 | 704 | 0.1+ | 0.3+ | 2006 10 25 | D35 | 0.4− | 0.6+ |
| 2002 10 04 | 704 | 0.8+ | 0.7− | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 25 | D35 | 0.1− | 0.7+ |
| 2002 10 04 | 704 | (1.9+ | 0.9−) | 2006 10 10 | 644 | 0.4+ | 0.2− | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 2002 10 09 | 699 | 0.5− | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 1.0− | 0.4− |
| 2002 10 09 | 699 | 1.0− | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.7+ | 0.3− |
| 2002 10 09 | 699 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.6− | 2006 10 28 | 703 | 0.4− | 0.5− |
| 2002 10 09 | 699 | 0.4+ | 1.3+ | 2006 10 11 | 644 | 0.0 | 0.0 | | | | |
| 2002 10 11 | 704 | 0.5− | 1.3− | 2006 10 12 | 644 | 0.0 | 0.0 | | | | |

**2002 TT$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.76245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19036322 | $\omega$ | 184.17103 | | −0.96125454 | +0.27326206 | |
| $a$ | 2.9928207 | $\Omega$ | 11.87915 | | −0.24753965 | −0.79773068 | |
| $e$ | 0.0433438 | $i$ | 10.15636 | | −0.12130062 | −0.53754406 | |
| $P$ | 5.18 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | 0.3+ | 2.4+ | 2002 10 04 | 704 | 0.6− | 0.2+ | 2005 04 04 | 704 | 0.9+ | 0.3− |
| 2000 04 26 | 699 | 0.4+ | 1.2+ | 2002 10 04 | 704 | 1.0− | 0.1+ | 2005 04 04 | G96 | 0.4− | 0.0 |
| 2000 04 26 | 699 | 0.7+ | 0.0 | 2002 10 04 | 704 | 0.4+ | 0.3+ | 2005 04 04 | 704 | 0.5+ | 0.0 |
| 2000 04 26 | 699 | 1.4+ | 1.0+ | 2002 10 04 | 704 | 1.0+ | 0.3− | 2005 04 04 | G96 | 0.3− | 0.1− |
| 2002 10 02 | 599 | 0.2− | 0.4+ | 2002 10 11 | 704 | 0.3− | 0.3− | 2005 04 04 | G96 | 0.3− | 0.1− |
| 2002 10 02 | 599 | 0.5+ | 0.2+ | 2002 10 11 | 704 | 0.0 | 0.2+ | 2005 04 04 | 704 | 0.1+ | 0.1+ |
| 2002 10 02 | 599 | 0.1+ | 0.5+ | 2002 10 11 | 704 | 0.1+ | 0.6+ | 2005 04 04 | G96 | 0.3− | 0.1− |
| 2002 10 02 | 599 | (7.1− | 2.2+) | 2002 10 11 | 704 | 0.5− | 0.6+ | 2005 04 07 | 704 | 1.0+ | 0.6− |
| 2002 10 03 | 704 | 0.8+ | 0.5+ | 2003 12 28 | 704 | 0.0 | 0.4+ | 2005 04 07 | 704 | 0.4+ | 0.6− |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2003 12 28 | 704 | 0.9− | 0.2+ | 2005 04 07 | 704 | 1.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2003 12 28 | 704 | 0.5+ | 0.5+ | 2005 04 07 | 704 | 0.3+ | 1.7+ |
| 2002 10 03 | 704 | 0.8+ | 0.1− | 2003 12 28 | 704 | 0.2+ | 0.0 | 2005 05 12 | G96 | 0.3− | 0.2− |
| 2002 10 03 | 704 | 0.2+ | 0.2+ | 2005 03 13 | 703 | 0.4− | 0.4− | 2005 05 12 | G96 | 0.5− | 0.3− |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2005 03 13 | 703 | 1.4− | 0.3− | 2005 05 12 | G96 | 0.4− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2005 03 13 | 703 | 0.6− | 0.9+ | 2005 05 12 | G96 | 0.4− | 0.3− |
| 2002 10 03 | 704 | 0.6+ | 0.2+ | 2005 03 13 | 703 | 0.9− | 0.2− | 2005 05 12 | 291 | 0.5+ | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.9+ | 2005 04 04 | 704 | 0.3− | 0.9+ | 2005 05 12 | 291 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.1− | 0.3− | 2005 04 04 | 704 | 0.8+ | 0.3+ | 2005 05 12 | 291 | 0.1+ | 0.3+ |

**2002 TQ$_{87}$ = 2006 RM$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.37845 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24137252 | $\omega$ | 132.09485 | | +0.86353812 | +0.50223161 | |
| $a$ | 2.5547250 | $\Omega$ | 197.90728 | | −0.49522239 | +0.82756403 | |
| $e$ | 0.2584171 | $i$ | 8.49957 | | −0.09516666 | +0.25080108 | |
| $P$ | 4.08 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.4+ | 0.2+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 1.0− | 1.1− |
| 2002 10 03 | 704 | (0.3− | 1.6+) | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | 0.1+ | 0.5− | 2006 08 18 | 644 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.4+ | 0.8− |
| 2002 10 04 | 704 | 1.0+ | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.3− | 2006 10 11 | 291 | 0.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.3− | 0.1− | 2006 09 13 | 644 | 0.5− | 0.3− | 2006 10 11 | 291 | 0.0 | 0.5+ |
| 2002 10 04 | 704 | 0.4− | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 10 11 | 291 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.6+ | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.2+ | | | | |

**2002 TU$_{87}$ = 2006 VS$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.24364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25419978 | $\omega$ | 210.00077 | | +0.93561743 | −0.35294023 | |
| $a$ | 2.4680423 | $\Omega$ | 170.65779 | | +0.33216707 | +0.87317662 | |
| $e$ | 0.2025267 | $i$ | 2.57578 | | +0.11952012 | +0.33614845 | |
| $P$ | 3.88 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.0 | 0.6− | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.9+ | 0.2− | 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.8− |
| 2002 10 03 | 704 | 0.8+ | 0.6− | 2002 10 11 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | (0.4+ | 1.6−) |
| 2002 10 04 | 704 | (1.7− | 0.6+) | 2002 10 11 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 1.0− | 0.1+ | 2002 10 11 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2002 10 04 | 704 | 0.5− | 0.1+ | 2002 10 11 | 704 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.6+ | 0.5+ |
| 2002 10 07 | 704 | 0.6+ | 0.1− | 2002 10 11 | 704 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.5+ | 0.3+ |
| 2002 10 07 | 704 | 0.2− | 0.3− | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.4− |
| 2002 10 07 | 704 | 0.4+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2002 10 10 | 704 | 0.5− | 0.7− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2002 10 10 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2002 10 10 | 704 | 0.3+ | 0.8− | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.3− |

**2002 TR$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.68112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28631084 | $\omega$ | 191.97077 | | −0.59499078 | −0.80029289 | |
| $a$ | 2.2798741 | $\Omega$ | 294.58615 | | +0.74398558 | −0.51343829 | |
| $e$ | 0.0561198 | $i$ | 4.68537 | | +0.30409114 | −0.30969729 | |
| $P$ | 3.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.2− | 0.5+ | 2004 04 16 | 644 | 0.2+ | 0.6+ | 2005 10 30 | G96 | 0.6− | 0.2+ |
| 2002 10 03 | 644 | 0.2− | 0.6+ | 2005 07 29 | 644 | 0.2− | 0.1− | 2005 10 30 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 644 | 0.4− | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.1− | 2005 10 30 | G96 | 0.7− | 0.3− |
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2005 07 29 | 644 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.6+ | 0.9+ | 2005 08 06 | 644 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2002 10 04 | 704 | 1.0+ | 0.7+ | 2005 08 06 | 644 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2002 10 30 | 608 | 0.4− | 0.2− | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.4+ |
| 2002 10 30 | 608 | (1.7− | 0.2+) | 2005 08 24 | 644 | 0.4− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2002 10 30 | 608 | 1.2− | 0.6− | 2005 08 24 | 644 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2004 03 19 | 704 | 0.6+ | 1.1+ | 2005 08 24 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2004 03 19 | 704 | 0.7+ | 0.3+ | 2005 08 29 | 699 | 0.0 | 0.5+ | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2004 03 19 | 704 | (0.5− | 1.8−) | 2005 08 29 | 699 | (2.4+ | 1.4−) | 2006 11 25 | G96 | 0.3+ | 0.0 |
| 2004 03 19 | 704 | 0.7+ | 0.7+ | 2005 08 29 | 699 | 0.5− | 0.7+ | 2006 11 25 | G96 | 0.1+ | 0.2+ |
| 2004 04 16 | 644 | 0.4− | 0.4+ | 2005 08 29 | 699 | (0.8− | 3.7+) | 2006 11 25 | G96 | 0.4− | 0.1+ |
| 2004 04 16 | 644 | 0.1− | 0.5+ | 2005 10 30 | G96 | 0.3− | 1.0+ | 2006 11 25 | G96 | 0.0 | 0.2+ |

**2002 TW$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.63849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21399497 | $\omega$ | 118.33238 | | +0.92683915 | +0.35889410 | |
| $a$ | 2.7682183 | $\Omega$ | 220.90761 | | −0.37545672 | +0.88500701 | |
| $e$ | 0.2825388 | $i$ | 9.69624 | | −0.00119793 | +0.29657648 | |
| $P$ | 4.61 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.1+ | 2002 10 10 | 644 | 0.4− | 0.5− | 2002 11 05 | 699 | 0.4− | 0.4+ |
| 2000 03 04 | 645 | 0.0 | 0.0 | 2002 10 10 | 644 | 0.3− | 0.5− | 2002 11 05 | 699 | 0.0 | 0.3− |
| 2002 09 17 | 699 | 0.2+ | 0.2+ | 2002 10 10 | 644 | 0.2− | 0.3− | 2002 11 06 | 704 | 1.0− | 0.5− |
| 2002 09 17 | 699 | 0.4+ | 0.4− | 2002 10 12 | 704 | 0.1+ | 0.1+ | 2002 11 06 | 704 | 0.3+ | 0.3− |
| 2002 09 17 | 699 | 0.0 | 1.0+ | 2002 10 12 | 704 | 0.3− | 0.6+ | 2002 11 06 | 704 | 0.4+ | 0.4− |
| 2002 09 17 | 699 | 0.4− | 0.2+ | 2002 10 12 | 704 | 0.8+ | 0.0 | 2002 11 06 | 704 | 0.0 | 0.5+ |
| 2002 10 03 | 644 | 0.3+ | 0.0 | 2002 10 12 | 704 | 0.4− | 0.0 | 2002 11 06 | 704 | 0.5+ | 0.1− |
| 2002 10 03 | 644 | 0.2+ | 0.3− | 2002 10 12 | 704 | 0.3+ | 0.0 | 2002 11 22 | 644 | 0.6− | 0.7+ |
| 2002 10 03 | 644 | 0.1− | 0.4− | 2002 10 18 | 644 | 0.1− | 0.1+ | 2002 11 22 | 644 | 1.0− | 0.9+ |
| 2002 10 04 | 704 | 0.1− | 0.2+ | 2002 10 18 | 644 | 0.2+ | 0.1+ | 2002 11 22 | 644 | 0.8− | 0.6+ |
| 2002 10 04 | 704 | 0.4− | 0.1− | 2002 10 18 | 644 | 0.3+ | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.2+ |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2002 10 31 | 644 | 0.2+ | 0.3+ | 2002 12 05 | 704 | 0.4− | 0.8+ |
| 2002 10 04 | 704 | 0.2+ | 0.1− | 2002 10 31 | 644 | 0.1− | 0.3+ | 2002 12 05 | 704 | 1.0− | 0.4− |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2002 10 31 | 644 | 0.2+ | 0.3+ | 2002 12 05 | 704 | 1.3+ | 0.9− |
| 2002 10 09 | 704 | 0.2+ | 0.4+ | 2002 11 04 | 608 | 0.9+ | 0.1− | 2006 07 26 | 644 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 1.1− | 0.1− | 2002 11 04 | 608 | 1.0+ | 1.3− | 2006 07 26 | 644 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | (0.5− | 2.4+) | 2002 11 04 | 608 | 1.7+ | 1.2− | 2006 07 26 | 644 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.9− | 0.2+ | 2002 11 05 | 699 | 0.4− | 0.6− | | | | |
| 2002 10 09 | 704 | 0.4− | 0.1+ | 2002 11 05 | 699 | 0.4+ | 0.5+ | | | | |

**2002 TZ$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.29914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29557399 | $\omega$ | 84.43954 | | +0.89730505 | +0.43931761 | |
| $a$ | 2.2319882 | $\Omega$ | 249.49403 | | −0.42096671 | +0.82242632 | |
| $e$ | 0.2116379 | $i$ | 2.62752 | | −0.13278054 | +0.36140696 | |
| $P$ | 3.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 21 | 644 | 0.1− | 0.0 | 2002 10 09 | 704 | (2.0− | 0.9−) | 2005 10 27 | G96 | 0.4+ | 0.0 |
| 2002 09 21 | 644 | 0.0 | 0.3+ | 2002 10 09 | 704 | 0.3− | 1.2− | 2005 10 27 | G96 | 0.1− | 0.4− |
| 2002 09 21 | 644 | 0.1− | 0.4+ | 2002 10 09 | 704 | 1.3− | 0.4+ | 2005 10 27 | G96 | 0.2− | 0.7− |
| 2002 10 03 | 644 | 0.7+ | 0.5+ | 2002 10 12 | 704 | (2.2+ | 0.1+) | 2006 11 20 | G96 | 0.1− | 0.1+ |
| 2002 10 03 | 644 | 0.8+ | 0.4+ | 2002 10 12 | 704 | 0.1− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 644 | 0.4+ | 0.5+ | 2002 10 12 | 704 | 0.6+ | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.3− | 0.7+ | 2002 10 12 | 704 | 0.8+ | 0.6+ | 2006 11 20 | G96 | 0.1+ | 0.6+ |
| 2002 10 04 | 704 | 0.1− | 0.5− | 2002 10 12 | 704 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 0.0 | 0.4− | 2002 10 31 | 644 | 0.6+ | 0.2− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.8− | 2002 10 31 | 644 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2002 10 09 | 704 | 1.1− | 0.3− | 2002 10 31 | 644 | 0.4+ | 0.3+ | 2006 11 22 | G96 | 0.7− | 0.8− |
| 2002 10 09 | 704 | 1.0− | 0.4− | 2005 10 27 | G96 | 0.2+ | 0.1− | | | | |

**2002 TW$_{92}$ = 2006 RM$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.70760 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22340583 | $\omega$ | 234.17369 | | −0.33328863 | | −0.93939901 |
| $a$ | 2.6899222 | $\Omega$ | 235.48817 | | +0.89341144 | | −0.28746249 |
| $e$ | 0.1052916 | $i$ | 5.59241 | | +0.30122200 | | −0.18680154 |
| $P$ | 4.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 691 | 0.2− | 1.5− | 2002 10 05 | 644 | 0.3− | 1.3+ | 2005 07 05 | G96 | 0.2− | 0.1+ |
| 1998 12 15 | 691 | 0.0 | 0.4+ | 2002 10 05 | 644 | 0.1− | 1.0+ | 2006 09 15 | 691 | 0.2+ | 0.1− |
| 1998 12 15 | 691 | 0.0 | 0.1− | 2002 10 06 | 644 | 0.5− | 0.9+ | 2006 09 15 | 691 | 0.2+ | 0.2+ |
| 2002 10 02 | 843 | 1.2+ | 0.2+ | 2002 10 06 | 644 | 0.6− | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.3− |
| 2002 10 02 | 843 | 1.4+ | 1.4+ | 2002 10 06 | 644 | 0.5− | 1.2+ | 2006 09 17 | 691 | 0.1+ | 0.3− |
| 2002 10 02 | 843 | (1.8+ | 1.7+) | 2002 10 31 | 843 | 0.5+ | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.8− |
| 2002 10 04 | 644 | 0.6− | 0.7+ | 2002 10 31 | 843 | 1.1+ | 1.2− | 2006 09 17 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 644 | 0.5− | 0.7+ | 2005 07 05 | G96 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2002 10 04 | 644 | 0.7− | 0.4+ | 2005 07 05 | G96 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.5− |
| 2002 10 05 | 644 | 1.1− | 0.9+ | 2005 07 05 | G96 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ |

**2002 TZ$_{93}$ = 2006 UU$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.39632 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25726901 | $\omega$ | 239.37478 | | +0.74602049 | | +0.66547885 |
| $a$ | 2.4483738 | $\Omega$ | 78.89436 | | −0.60217658 | | +0.68974754 |
| $e$ | 0.2319591 | $i$ | 1.42000 | | −0.28431812 | | +0.28528270 |
| $P$ | 3.83 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 691 | 0.0 | 0.4+ | 2002 10 04 | 644 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2001 03 19 | 691 | 0.1− | 0.2+ | 2005 04 10 | G96 | 1.4− | 0.4+ | 2006 10 18 | 691 | 0.6+ | 0.1− |
| 2001 03 19 | 691 | 0.5+ | 0.1+ | 2005 04 10 | G96 | 0.7+ | 0.3− | 2006 10 18 | 691 | 0.0 | 0.1− |
| 2002 09 29 | 608 | 0.3− | 0.5+ | 2005 04 10 | G96 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.7+ |
| 2002 09 29 | 608 | 0.6− | 0.1+ | 2005 04 10 | G96 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 09 29 | 608 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 11 10 | 691 | 0.4− | 0.3+ |
| 2002 10 03 | 704 | 0.6− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.5− | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.5− | 0.8+ | 2006 10 17 | G96 | 0.6+ | 0.6− | 2006 11 14 | G96 | 0.6+ | 0.9− |
| 2002 10 03 | 704 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 14 | G96 | 0.1− | 0.7− |
| 2002 10 04 | 644 | 0.2− | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2002 10 04 | 644 | 1.0+ | 1.0+ | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 11 14 | G96 | 0.1+ | 0.7− |

**2002 TB$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.13986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25944510 | $\omega$ | 351.08219 | | +0.99940875 | | +0.02923133 |
| $a$ | 2.4346642 | $\Omega$ | 7.31597 | | −0.01544878 | | +0.85213091 |
| $e$ | 0.1327081 | $i$ | 8.17258 | | −0.03071637 | | +0.52251167 |
| $P$ | 3.80 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1+ | 1.0+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | (0.5− | 2.2+) | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3+ | 1.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2002 10 30 | 645 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.8+ | 1.4+ |
| 2002 10 03 | 704 | 0.6+ | 1.2+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2002 10 04 | 644 | 0.3− | 0.0 | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.1− |
| 2002 10 04 | 644 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2002 10 04 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.5− | 0.1− | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.5− | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2002 10 11 | 704 | 0.8− | 1.0+ | 2006 10 13 | 691 | 0.4− | 0.0 | 2006 11 23 | 703 | 0.9+ | 1.0− |
| 2002 10 11 | 704 | 0.8− | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.1− | 2006 11 23 | 703 | 1.2+ | 0.9+ |
| 2002 10 11 | 704 | (0.3− | 1.5+) | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.3+ | 0.3− |
| 2002 10 11 | 645 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 1.0− | 0.2+ |

**2002 TP$_{94}$ = 2006 SU$_{349}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.06888 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23333869 | $\omega$ | 193.14361 | | −0.96657685 | | +0.25628009 |
| $a$ | 2.6130329 | $\Omega$ | 1.75337 | | −0.20941239 | | −0.77334914 |
| $e$ | 0.1275555 | $i$ | 13.32288 | | −0.14790420 | | −0.57987207 |
| $P$ | 4.22 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 291 | 0.1+ | 0.1− | 2002 10 04 | 644 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.4− | 0.1− |
| 2002 09 14 | 291 | 0.1+ | 0.2− | 2002 10 04 | 644 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3− | 0.3− |
| 2002 09 14 | 291 | 0.3+ | 0.3− | 2006 08 30 | 699 | 1.0+ | 0.3+ | 2006 10 02 | G96 | 0.4− | 0.2− |
| 2002 09 14 | 644 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.9+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.4− | 0.5− | 2006 08 30 | 699 | 0.2− | 0.7+ | 2006 10 20 | G96 | 0.4+ | 0.4− |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 08 30 | 699 | 0.0 | 1.1+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2002 09 28 | 644 | 0.8− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.7+ | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2002 09 28 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.8+ | 0.0 |
| 2002 09 28 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2006 09 14 | 703 | (0.0 | 1.7+) | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 10 03 | 704 | 0.3− | 1.3+ | 2006 09 30 | 703 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 1.1+ | 2006 09 30 | 703 | 0.9− | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 0.0 | 0.9+ | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2002 10 03 | 704 | 0.7− | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2002 10 04 | 644 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.4− | 0.0 |

**2002 TH$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.58248 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26455614 | $\omega$ | 208.98140 | | −0.91730144 | | +0.39816324 |
| $a$ | 2.4032050 | $\Omega$ | 354.47516 | | −0.35480290 | | −0.82287926 |
| $e$ | 0.1267488 | $i$ | 2.92308 | | −0.18075667 | | −0.40538347 |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 699 | 1.4+ | 1.2+ | 2003 12 17 | 699 | 0.1+ | 1.3− | 2006 10 03 | 691 | 0.1− | 0.1+ |
| 2001 04 26 | 699 | (1.0+ | 1.9+) | 2003 12 22 | 704 | 0.6− | 1.5+ | 2006 10 03 | 691 | 0.5− | 0.8+ |
| 2001 04 26 | 699 | 0.3+ | 1.4+ | 2003 12 22 | 704 | 1.5− | 0.9+ | 2006 10 16 | 691 | 0.2+ | 0.4+ |
| 2001 04 26 | 699 | 0.6− | 0.9+ | 2003 12 22 | 704 | (1.6− | 0.8+) | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 1.1+ | 0.7+ | 2003 12 22 | 704 | (2.2− | 1.3+) | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 704 | (1.8+ | 0.2+) | 2003 12 27 | 704 | 0.9− | 0.7− | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.3+ | 0.9+ | 2003 12 27 | 704 | 0.4− | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 644 | 0.3− | 0.8+ | 2003 12 27 | 704 | 1.1− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2002 10 04 | 644 | 0.4− | 0.9+ | 2003 12 27 | 704 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.4− | 1.0+ | 2004 01 22 | 704 | 0.8+ | 1.1+ | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.3− |
| 2002 10 10 | 645 | 0.1− | 0.1− | 2004 01 22 | 704 | 1.3+ | 0.4+ | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.8+ | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4− |
| 2003 12 17 | 699 | 0.5+ | 1.3− | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2003 12 17 | 699 | 0.0 | 1.3− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2003 12 17 | 699 | 0.3+ | 0.4+ | 2006 10 03 | 691 | 0.1− | 0.7+ | 2006 11 10 | 691 | 0.2+ | 0.1− |

**2002 TJ$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.05070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24308756 | $\omega$ | 188.07427 | | +0.92408798 | −0.38096159 | |
| $a$ | 2.5426947 | $\Omega$ | 194.43388 | | +0.35712288 | +0.88916159 | |
| $e$ | 0.0880774 | $i$ | 7.02620 | | +0.13610533 | +0.25349543 | |
| $P$ | 4.05 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2002 10 11 | 291 | 0.2+ | 0.1− | 2006 09 20 | 691 | 0.1− | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.1+ | 2002 10 11 | 291 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.7− |
| 2002 09 14 | 644 | 0.4− | 0.1+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | (0.8− | 1.6+) |
| 2002 09 27 | 644 | 0.4− | 0.1− | 2002 11 08 | 645 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.1+ | 1.0+ |
| 2002 09 27 | 644 | 0.1− | 0.1− | 2006 08 29 | 703 | 1.4− | 0.2− | 2006 09 25 | 699 | 1.0+ | 0.1− |
| 2002 09 27 | 644 | 0.0 | 0.5− | 2006 08 29 | 703 | (1.7− | 0.9+) | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2002 10 03 | 704 | 0.4+ | 0.7+ | 2006 08 29 | 703 | 0.4− | 0.4+ | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 1.4+ | 2006 08 29 | 703 | 0.7− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.4− | 0.7+ | 2006 09 12 | 703 | 0.6− | 1.1+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.3− | 2006 09 12 | 703 | 0.4+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2006 09 12 | 703 | 1.3+ | 1.3− | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2002 10 04 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 703 | (1.8+ | 0.6+) | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2002 10 04 | 644 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.6− | 0.2− |
| 2002 10 07 | 704 | 0.1+ | 1.0− | 2006 09 13 | 644 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 10 07 | 704 | 0.2− | 1.0− | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2002 10 07 | 704 | 0.9− | 1.1− | 2006 09 20 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.1− |
| 2002 10 11 | 291 | 0.3+ | 0.0 | 2006 09 20 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.3− | 0.3+ |

**2002 TM$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.47597 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25168241 | $\omega$ | 33.53153 | | +0.57306988 | −0.81860399 | |
| $a$ | 2.4844722 | $\Omega$ | 21.58168 | | +0.72704453 | +0.48620256 | |
| $e$ | 0.1157796 | $i$ | 6.00028 | | +0.37814965 | +0.30576884 | |
| $P$ | 3.92 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.9− | 0.2+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2002 09 26 | 644 | 0.4− | 0.0 | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2002 09 26 | 644 | 0.9− | 0.6+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | (0.7− | 2.0+) | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.7− | 0.5+ | 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.4+ | 0.9+ | 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.5− | 1.2+ |
| 2002 10 03 | 704 | 0.5− | 1.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.7− | 0.2+ |
| 2002 10 05 | 644 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2002 10 05 | 644 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.6+ | 0.6− |
| 2002 10 05 | 644 | 0.1− | 0.4+ | 2006 10 15 | 703 | (0.1+ | 1.7+) | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2002 10 06 | 644 | 0.4− | 0.4+ | 2006 10 15 | 703 | 1.2+ | 0.7− | 2006 11 01 | 691 | 0.8− | 0.2− |
| 2002 10 06 | 644 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.1+ | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2002 10 06 | 644 | 0.0 | 0.4+ | 2006 10 15 | 703 | (2.0− | 1.7−) | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 10 10 | 645 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.6+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.2+ |

**2002 TX$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.04827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25999376 | $\omega$ | 145.51239 | | +0.84546371 | +0.53403255 | |
| $a$ | 2.4312378 | $\Omega$ | 182.20954 | | −0.49338345 | +0.78068103 | |
| $e$ | 0.1889785 | $i$ | 0.88625 | | −0.20436215 | +0.32457106 | |
| $P$ | 3.79 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 291 | 0.2+ | 0.2+ | 2002 10 06 | 644 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2002 09 14 | 291 | 0.1− | 0.6− | 2002 10 06 | 644 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 2002 09 14 | 291 | 0.1+ | 0.0 | 2002 10 06 | 644 | 0.4− | 0.4− | 2006 10 27 | G96 | 0.5− | 0.2− |
| 2002 09 26 | 644 | 0.3− | 1.1+ | 2002 10 30 | 645 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2002 09 26 | 644 | 0.2− | 1.3+ | 2002 10 30 | 645 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 2002 09 26 | 644 | 0.3− | 1.1+ | 2005 05 10 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2002 10 03 | 704 | 0.6− | 0.0 | 2005 05 10 | G96 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2002 10 03 | 704 | 0.1+ | 0.6+ | 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2002 10 05 | 644 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 2002 10 05 | 644 | 0.1+ | 1.0+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2002 10 05 | 644 | 0.0 | 0.9+ | 2006 10 12 | 691 | 0.4− | 0.0 | | | | |

**2002 TJ$_{99}$ = 2006 QP$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.12610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24072460 | $\omega$ | 61.89315 | | +0.88667334 | −0.44729063 | |
| $a$ | 2.5593071 | $\Omega$ | 324.31823 | | +0.32131004 | +0.77831227 | |
| $e$ | 0.2547920 | $i$ | 11.59386 | | +0.33252105 | +0.44063715 | |
| $P$ | 4.09 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.1+ | 0.1+ | 2002 10 05 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.5− |
| 2002 09 12 | 644 | 0.3− | 0.0 | 2002 10 05 | 644 | 0.2− | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.0 |
| 2002 09 12 | 644 | 0.3+ | 0.1− | 2002 10 05 | 644 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 08 29 | 691 | (2.6+ | 0.4−) |
| 2002 10 04 | 644 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.3− | 0.2− | | | | |
| 2002 10 04 | 644 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.3− | 0.5+ | | | | |

**2002 TS$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.17978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27211831 | $\omega$ | 67.77936 | | +0.66925441 | +0.73787133 | |
| $a$ | 2.3584728 | $\Omega$ | 244.53384 | | −0.71240016 | +0.60376654 | |
| $e$ | 0.1473052 | $i$ | 5.55733 | | −0.21115054 | +0.30168173 | |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 699 | (2.3− | 0.1+) | 2002 10 05 | 644 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.2+ |
| 2002 08 14 | 699 | 0.0 | 1.4− | 2002 10 06 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2002 08 14 | 699 | 0.3+ | 0.7+ | 2002 10 06 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 08 14 | 699 | 0.4+ | 0.4+ | 2002 10 06 | 644 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.6− |
| 2002 08 28 | 644 | 0.6+ | 1.1+ | 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.1+ | 1.4+ | 2002 10 30 | 645 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2002 08 28 | 644 | 0.4+ | 0.9+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2002 09 13 | 644 | 0.5− | 0.9− | 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.7− | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2002 09 13 | 644 | 0.4− | 0.9− | 2006 10 17 | 691 | 0.4− | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.4+ | 0.0 |
| 2002 10 04 | 704 | 0.8− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2002 10 05 | 644 | 0.5− | 0.7+ | 2006 10 21 | G96 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 10 05 | 644 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |

**2002 TV$_{100}$ = 2006 QU$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.40490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23732056 | $\omega$ | 10.13715 | | +0.99881387 | −0.04714547 | |
| $a$ | 2.5837221 | $\Omega$ | 352.53283 | | +0.03547806 | +0.87587494 | |
| $e$ | 0.2560995 | $i$ | 5.37426 | | +0.03334907 | +0.48022952 | |
| $P$ | 4.15 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.5+ | 0.6− | 2002 10 07 | 699 | 0.4− | 1.0+ | 2006 08 24 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.4− | 0.2− | 2002 10 07 | 699 | 0.2+ | 0.8+ | 2006 08 24 | 644 | 0.3+ | 0.2+ |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2002 10 07 | 699 | 0.6− | 0.8+ | 2006 09 14 | 703 | 0.0 | 1.0− |
| 2002 10 04 | 704 | 0.9− | 0.0 | 2002 10 12 | 704 | (2.3− | 0.2+) | 2006 09 14 | 703 | 0.0 | 0.3− |
| 2002 10 04 | 704 | 0.4+ | 0.2− | 2002 10 12 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.1+ | 0.4− |
| 2002 10 05 | 644 | 0.3+ | 0.1− | 2002 10 12 | 704 | 0.3− | 0.3− | 2006 09 14 | 703 | 1.2+ | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.0 | 0.0 | 2002 10 12 | 704 | 0.4+ | 0.4− | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2002 10 05 | 644 | 0.3− | 0.1+ | 2002 10 12 | 704 | 1.2+ | 0.0 | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2002 10 06 | 644 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2+ |
| 2002 10 06 | 644 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2002 10 06 | 644 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.4− | 0.1+ | | | | |
| 2002 10 07 | 699 | 0.4− | 1.1− | 2006 08 24 | 644 | 0.5− | 0.3+ | | | | |

### 2002 TU$_{102}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.23683 | | | (2000.0) | | |
| $n$ | 0.24372071 | $\omega$ | 94.72249 | | +0.85690076 | +0.51409066 |
| $a$ | 2.5382891 | $\Omega$ | 234.34567 | | −0.48948559 | +0.78847450 |
| $e$ | 0.2138660 | $i$ | 2.66921 | | −0.16163213 | +0.33766663 |
| $P$ | 4.04 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | 1.2− | 1.5− | 2006 09 06 | 644 | 0.3+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.3− |
| 2002 09 28 | 608 | 1.3− | 1.4− | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2002 09 28 | 608 | 1.2− | 1.3− | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.3− |
| 2002 10 04 | 704 | 0.3− | 0.8− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2002 10 04 | 704 | (1.1− | 1.8−) | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 1.2− | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3− |
| 2002 10 04 | 704 | (0.8− | 1.8−) | 2006 09 17 | 703 | 0.9− | 0.9− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 10 04 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 699 | (0.8− | 1.5−) | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 10 04 | 644 | 0.4+ | 0.5+ | 2006 09 19 | 699 | (0.9+ | 1.9+) | 2006 10 17 | 703 | (0.4+ | 2.2+) |
| 2002 10 04 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.8+ | 2006 10 17 | 703 | (0.6+ | 1.8−) |
| 2002 10 05 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.9+ | 1.1− |
| 2002 10 05 | 644 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2002 10 05 | 644 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2002 10 06 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 10 06 | 644 | 0.1− | 0.3+ | 2006 09 25 | 691 | (0.0 | 2.1−) | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 10 06 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2002 10 12 | 704 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.5+ | 0.6− |
| 2002 10 12 | 704 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2002 10 12 | 704 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.3− | 1.4+ | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2002 10 30 | 644 | 0.3+ | 0.9+ | 2006 09 25 | 704 | 0.4− | 1.0+ | 2006 11 16 | 291 | 0.1− | 0.2+ |
| 2002 10 30 | 644 | 0.0 | 0.5+ | 2006 09 25 | 704 | 0.4− | 0.5+ | 2006 11 16 | 291 | 0.1− | 0.2+ |
| 2002 10 30 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 16 | 291 | 0.1− | 0.4+ |
| 2006 09 06 | 644 | 0.8+ | 0.5+ | 2006 09 27 | 691 | 0.3+ | 0.1− | | | | |
| 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 09 27 | 691 | 0.4+ | 0.1− | | | | |

### 2002 TD$_{104}$ = 2006 RC$_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.78988 | | | (2000.0) | | |
| $n$ | 0.24422586 | $\omega$ | 89.90157 | | +0.44996097 | −0.89057222 |
| $a$ | 2.5347879 | $\Omega$ | 333.04261 | | +0.74993013 | +0.41720902 |
| $e$ | 0.1659395 | $i$ | 8.42956 | | +0.48491229 | +0.18115674 |
| $P$ | 4.04 | $H$ | 17.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 608 | 0.1+ | 0.2− | 2002 10 05 | 644 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.4− |
| 2002 09 16 | 608 | 0.7+ | 1.0+ | 2006 08 29 | 703 | 0.6− | 0.4− | 2006 09 19 | 703 | 1.0− | 0.2− |
| 2002 09 16 | 608 | 0.4+ | 0.6+ | 2006 08 29 | 703 | 0.3+ | 0.9− | 2006 09 19 | 703 | 0.1− | 0.6− |
| 2002 09 28 | 608 | 1.5− | 0.9− | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.9− | 1.4− |
| 2002 09 28 | 608 | 1.0− | 1.2− | 2006 08 29 | 703 | 1.0− | 0.2+ | 2006 09 20 | 691 | 0.3+ | 0.4+ |
| 2002 09 28 | 608 | 1.6− | 0.2− | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.6+ | 0.1+ | 2006 09 06 | 644 | 0.6+ | 0.1− | 2006 09 20 | 691 | 0.2+ | 0.3+ |
| 2002 10 04 | 704 | 1.2+ | 0.4+ | 2006 09 06 | 644 | 0.4+ | 0.4+ | 2006 09 22 | 703 | 0.9− | 1.1− |
| 2002 10 04 | 704 | 0.4+ | 0.3− | 2006 09 12 | 703 | 0.3+ | 0.3+ | 2006 09 22 | 703 | 1.1+ | 0.1− |
| 2002 10 04 | 704 | 0.2− | 1.1− | 2006 09 12 | 703 | 0.6+ | 0.6+ | 2006 09 22 | 703 | 0.2− | 0.7− |
| 2002 10 05 | 644 | 0.2+ | 0.9+ | 2006 09 12 | 703 | 0.2+ | 0.9+ | 2006 09 22 | 703 | 1.4− | 0.3− |
| 2002 10 05 | 644 | 0.6+ | 0.6+ | 2006 09 12 | 703 | 1.0+ | 0.6− | | | | |

### 2002 TF$_{105}$ = 2006 TA$_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.19164 | | | (2000.0) | | |
| $n$ | 0.25328239 | $\omega$ | 91.34507 | | +0.96957404 | −0.23873211 |
| $a$ | 2.4739982 | $\Omega$ | 282.46873 | | +0.19670250 | +0.89147061 |
| $e$ | 0.1470908 | $i$ | 3.17966 | | +0.14572000 | +0.38508069 |
| $P$ | 3.89 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.1+ | 0.7− | 2002 10 09 | 704 | 0.3+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.1+ | 1.3+ | 2002 10 09 | 704 | 0.2− | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 1.1− | 0.8+ | 2002 10 09 | 704 | 1.0+ | 0.5− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.9− | 0.9− | 2002 10 12 | 704 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.3− |
| 2002 10 04 | 644 | 0.0 | 0.3− | 2002 10 12 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.6+ | 1.2+ |
| 2002 10 04 | 644 | 0.3+ | 0.1− | 2002 10 12 | 704 | 0.4+ | 0.3− | 2006 10 27 | 703 | (1.2+ | 2.4−) |
| 2002 10 04 | 644 | 0.3+ | 0.2− | 2002 10 12 | 704 | 0.4− | 0.2− | 2006 10 27 | 703 | 1.0− | 0.7− |
| 2002 10 05 | 644 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.5− | 2006 10 27 | 703 | (0.5+ | 3.0−) |
| 2002 10 05 | 644 | 0.0 | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 10 05 | 644 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 10 06 | 644 | 0.5− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 10 06 | 644 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 14 | 703 | 0.5− | 0.2− |
| 2002 10 06 | 644 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.2− |
| 2002 10 09 | 704 | 0.2− | 0.2− | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | (0.7+ | 1.9−) |
| 2002 10 09 | 704 | 0.2+ | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.5− | 1.3+ |

### 2002 TK$_{105}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 283.96454 | | | (2000.0) | | |
| $n$ | 0.19681201 | $\omega$ | 50.09256 | | +0.98562586 | +0.01411276 |
| $a$ | 2.9270827 | $\Omega$ | 308.42589 | | −0.09951128 | +0.85378853 |
| $e$ | 0.1247631 | $i$ | 12.40943 | | +0.13652532 | +0.52042865 |
| $P$ | 5.01 | $H$ | 14.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.3− | 0.4− | 2002 09 04 | 644 | 0.2+ | 0.1+ | 2002 10 05 | 704 | 0.2+ | 0.4− |
| 1998 12 17 | 704 | 2.7+ | 0.2− | 2002 09 04 | 644 | 0.2+ | 0.1− | 2002 10 05 | 704 | 0.3− | 0.6− |
| 1998 12 17 | 704 | 0.2− | 2.1− | 2002 09 04 | 644 | 0.8+ | 0.1+ | 2002 10 05 | 644 | 0.5+ | 0.8+ |
| 1998 12 17 | 704 | (3.6− | 1.0−) | 2002 09 12 | 644 | 0.4− | 0.1+ | 2002 10 06 | 644 | 0.0 | 0.0 |
| 2002 08 11 | 704 | 0.5+ | 0.4− | 2002 09 12 | 644 | 0.1− | 0.0 | 2002 10 06 | 644 | 0.3− | 0.3− |
| 2002 08 11 | 704 | 0.4− | 0.2− | 2002 09 12 | 644 | 0.1− | 0.0 | 2002 10 06 | 644 | 0.2+ | 0.1− |
| 2002 08 11 | 704 | 0.5+ | 0.3+ | 2002 10 04 | 699 | 0.2+ | 0.1+ | 2003 12 23 | 704 | 0.1− | 0.2+ |
| 2002 08 11 | 704 | 0.3− | 0.0 | 2002 10 04 | 699 | 1.0+ | 0.3+ | 2003 12 23 | 704 | 0.5− | 0.5− |
| 2002 08 11 | 704 | 0.3+ | 0.2+ | 2002 10 04 | 699 | 1.0− | 0.1− | 2003 12 23 | 704 | 0.6+ | 0.8+ |
| 2002 08 16 | 704 | 0.4+ | 0.7+ | 2002 10 04 | 699 | 1.3− | 0.3− | 2003 12 28 | 704 | 0.9+ | 0.4+ |
| 2002 08 16 | 704 | 0.6− | 0.1+ | 2002 10 05 | 704 | 0.1+ | 0.1− | 2003 12 28 | 704 | 0.2+ | 1.3+ |
| 2002 08 16 | 704 | 0.7− | 0.2− | 2002 10 05 | 644 | 0.2+ | 0.6+ | 2003 12 28 | 704 | 0.1+ | 0.6+ |
| 2002 09 04 | 644 | 0.2− | 0.1− | 2002 10 05 | 704 | 0.1+ | 0.5− | 2003 12 28 | 704 | 0.8+ | 0.1+ |
| 2002 09 04 | 644 | 0.1+ | 0.2+ | 2002 10 05 | 704 | 0.0 | 0.6− | 2003 12 28 | 704 | 0.8− | 0.8+ |
| 2002 09 04 | 644 | 0.2− | 0.2− | 2002 10 05 | 644 | 0.3+ | 0.9+ | | | | |

### 2002 TQ$_{105}$ = 2006 SW$_{133}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 304.01378 | | | (2000.0) | | |
| $n$ | 0.24518747 | $\omega$ | 231.09275 | | +0.02915492 | −0.99787171 |
| $a$ | 2.5281560 | $\Omega$ | 217.36188 | | +0.94427212 | +0.04663502 |
| $e$ | 0.2165638 | $i$ | 5.51549 | | +0.32787216 | −0.04557655 |
| $P$ | 4.02 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3+ | 0.8+ | 2002 10 12 | 704 | 0.6+ | 1.1+ | 2006 09 25 | 691 | 0.2+ | 0.4− |
| 2002 10 04 | 704 | 1.4+ | 0.8+ | 2002 10 28 | 644 | 0.3− | 0.2− | 2006 09 25 | 704 | (1.6− | 0.4−) |
| 2002 10 04 | 704 | 0.6+ | 0.6+ | 2002 10 28 | 644 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2− |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2002 10 28 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.8+ |
| 2002 10 04 | 644 | 0.1+ | 0.0 | 2002 10 30 | 644 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2002 10 04 | 644 | 1.5− | 0.0 | 2002 10 30 | 644 | 0.5+ | 0.8+ | 2006 10 17 | 703 | 0.3+ | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.4− | 0.3− | 2002 10 30 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 703 | (2.2+ | 0.6+) | | |
| 2002 10 05 | 644 | 0.0 | 0.4− | 2002 11 02 | 608 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 05 | 644 | 0.1− | 0.0 | 2002 11 02 | 608 | 0.2− | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.5+ | | |
| 2002 10 09 | 704 | 0.6− | 0.3− | 2002 11 02 | 608 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.3− | | |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2006 09 17 | 703 | 0.9− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 10 09 | 704 | 0.2− | 1.0− | 2006 09 17 | 703 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.1− | | |
| 2002 10 09 | 704 | 0.9− | 0.9− | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 09 | 704 | 1.1− | 1.0− | 2006 09 17 | 703 | 0.9− | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2002 10 12 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.8− | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2002 10 12 | 704 | 1.0+ | 0.5+ | 2006 09 25 | 704 | (2.2− | 0.1−) | 2006 11 15 | G96 | 0.3− | 0.3− | | |
| 2002 10 12 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.1− | | |

### 2002 TL$_{106}$ = 2006 VA$_{107}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.65217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26066760 | $\omega$ | 23.63939 | | +0.99954017 | +0.01928205 | |
| $a$ | 2.4270461 | $\Omega$ | 335.22143 | | −0.02766767 | +0.89576318 | |
| $e$ | 0.1859762 | $i$ | 3.20090 | | +0.01240786 | +0.44411320 | |
| $P$ | 3.78 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 691 | 0.1− | 0.4− | 2002 10 06 | 446 | 0.9− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.0 | | |
| 1998 10 19 | 691 | 0.1− | 0.4+ | 2002 10 06 | 644 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.4− | 0.1− | | |
| 1998 10 19 | 691 | 0.2+ | 0.1+ | 2002 10 09 | 704 | 0.7+ | 0.2− | 2006 10 04 | G96 | 0.3− | 0.2− | | |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2002 10 09 | 704 | 0.8+ | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.4+ | | |
| 2002 10 04 | 644 | 0.2− | 0.4+ | 2002 10 09 | 704 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.2+ | | |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2002 10 09 | 704 | 0.1+ | 0.5+ | 2006 11 13 | 691 | 0.4+ | 0.1− | | |
| 2002 10 05 | 644 | 0.0 | 0.1− | 2002 10 12 | 704 | 0.3+ | 0.8− | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 2002 10 05 | 644 | 0.2+ | 0.1− | 2002 10 12 | 704 | 0.1+ | 1.0− | 2006 11 17 | 691 | 0.2− | 0.3− | | |
| 2002 10 05 | 644 | 0.2+ | 0.1+ | 2002 10 12 | 704 | (1.6− | 0.5−) | 2006 11 17 | 691 | 0.0 | 0.2− | | |
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2002 10 13 | 446 | 0.8− | 0.8− | 2006 11 25 | 691 | 0.2− | 0.1− | | |
| 2002 10 06 | 446 | 0.2+ | 0.4+ | 2002 10 13 | 446 | 0.3+ | 0.6− | 2006 11 25 | 691 | 0.3− | 0.1− | | |
| 2002 10 06 | 644 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 25 | 691 | 0.4+ | 0.3+ | | |

### 2002 TR$_{107}$ = 2006 US$_{212}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.03104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25925600 | $\omega$ | 344.27829 | | +0.99724700 | +0.07228883 | |
| $a$ | 2.4358480 | $\Omega$ | 11.61377 | | −0.05606120 | +0.88079693 | |
| $e$ | 0.1999705 | $i$ | 4.70572 | | −0.04853424 | +0.46794347 | |
| $P$ | 3.80 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | (0.6+ | 1.7+) | 2006 10 04 | G96 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.0 | | |
| 2002 10 04 | 704 | 1.4+ | 0.9+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.6− | 1.1+ | 2006 10 04 | G96 | 0.4− | 0.0 | 2006 11 11 | 691 | 0.2− | 0.1− | | |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2002 10 05 | 291 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2002 10 05 | 291 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.2− | | |
| 2002 10 05 | 291 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.0 | | |
| 2002 10 11 | 704 | 0.8+ | 0.8+ | 2006 10 27 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2002 10 11 | 704 | 0.6− | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.5+ | 0.2− | | |
| 2002 10 11 | 704 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.1− | | |

### 2002 TS$_{107}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.94818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22790308 | $\omega$ | 259.03176 | | −0.18423208 | −0.98202280 | |
| $a$ | 2.6544176 | $\Omega$ | 201.71572 | | +0.93959313 | −0.16368845 | |
| $e$ | 0.0746895 | $i$ | 6.37866 | | +0.28848447 | −0.09400699 | |
| $P$ | 4.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.7+ | 1.1+ | 2002 10 08 | 291 | 0.2+ | 0.2− | 2004 02 11 | 644 | 0.0 | 0.7+ | | |
| 2002 10 04 | 704 | 0.5+ | 1.3+ | 2002 10 08 | 291 | 0.1+ | 0.2− | 2004 02 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.9+ | 0.2− | 2002 10 11 | 704 | 0.8− | 0.7+ | 2004 02 17 | 691 | 0.1− | 0.1+ | | |
| 2002 10 05 | 291 | 0.1+ | 0.1− | 2002 10 11 | 704 | 1.3− | 0.3+ | 2004 02 17 | 691 | 0.2+ | 0.1− | | |
| 2002 10 05 | 291 | 0.4− | 0.2− | 2002 10 11 | 704 | 0.5+ | 0.5+ | 2004 02 22 | 291 | 0.6+ | 0.6− | | |
| 2002 10 05 | 291 | 0.3− | 0.3− | 2004 02 11 | 644 | 0.1− | 0.6+ | 2004 02 22 | 291 | 0.5− | 0.0 | | |
| 2002 10 08 | 291 | 0.1+ | 0.0 | 2004 02 11 | 644 | 0.0 | 0.3+ | 2004 02 22 | 291 | 0.2− | 0.1+ | | |

### 2002 TB$_{109}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.98525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25829480 | $\omega$ | 260.26446 | | +0.97815345 | +0.00830779 | |
| $a$ | 2.4418873 | $\Omega$ | 99.04548 | | +0.06823098 | +0.93101785 | |
| $e$ | 0.2722377 | $i$ | 12.14192 | | −0.19636794 | +0.36487908 | |
| $P$ | 3.82 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 704 | 0.3− | 0.3+ | 2002 10 28 | 704 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2− | | |
| 2002 09 13 | 704 | 0.1+ | 0.1− | 2002 10 28 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.5+ | 0.4+ | | |
| 2002 09 13 | 704 | 0.0 | 0.6+ | 2002 10 28 | 704 | 0.3+ | 0.1+ | 2006 11 25 | 704 | 0.4− | 0.2+ | | |
| 2002 09 13 | 704 | 0.3− | 0.0 | 2002 11 05 | 644 | 0.4− | 0.2+ | 2006 11 25 | 704 | 0.1− | 1.0− | | |
| 2002 10 01 | 608 | 0.2− | 0.6− | 2002 11 05 | 644 | 0.3− | 0.3+ | 2006 11 25 | 704 | 0.1− | 0.3− | | |
| 2002 10 01 | 608 | 0.4− | 1.2+ | 2002 11 05 | 644 | 0.4− | 0.3+ | 2006 11 25 | 704 | 0.4+ | 0.7+ | | |
| 2002 10 01 | 608 | 0.1− | 0.2+ | 2002 11 27 | 699 | 0.5+ | 1.1+ | 2006 11 25 | 703 | 0.2+ | 0.6− | | |
| 2002 10 05 | 704 | 0.1+ | 0.7− | 2002 11 27 | 699 | 0.3+ | 0.3+ | 2006 11 25 | 703 | 0.4− | 0.3− | | |
| 2002 10 05 | 704 | 0.0 | 0.7− | 2002 11 27 | 699 | 0.6+ | 0.3− | 2006 11 25 | 703 | 0.3+ | 0.5− | | |
| 2002 10 05 | 704 | 0.3+ | 0.6− | 2002 11 27 | 699 | 0.2+ | 0.5+ | 2006 11 25 | 703 | 0.3+ | 0.2− | | |
| 2002 10 05 | 704 | 0.1+ | 0.5− | 2005 05 15 | 644 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.5+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.6− | 2005 05 15 | 644 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 1.4+ | 1.1+ | | |
| 2002 10 08 | 608 | 0.2− | 0.4− | 2005 05 15 | 644 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 1.5− | 1.5+ | | |
| 2002 10 08 | 608 | 0.4− | 0.2− | 2006 10 02 | 703 | 0.8+ | 1.3+ | 2006 11 28 | 704 | 0.5− | 0.2+ | | |
| 2002 10 08 | 608 | 0.1− | 0.1− | 2006 10 02 | 703 | 0.9− | 0.4− | 2006 11 28 | 704 | 0.5+ | 0.0 | | |
| 2002 10 18 | 644 | 0.5− | 0.1− | 2006 10 02 | 703 | 0.0 | 1.0+ | 2006 12 01 | 291 | 0.1− | 0.3− | | |
| 2002 10 18 | 644 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.0 | 0.2+ | 2006 12 01 | 291 | 0.2− | 0.4− | | |
| 2002 10 18 | 644 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.0 | 0.3+ | 2006 12 01 | 291 | 0.2− | 0.3− | | |
| 2002 10 28 | 704 | 0.5+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.4+ | | | | | | |
| 2002 10 28 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 1.0+ | | | | | | |

### 2002 TH$_{109}$ = 2006 SN$_{8}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.96701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25711811 | $\omega$ | 221.41947 | | +0.70198572 | +0.70228578 | |
| $a$ | 2.4493317 | $\Omega$ | 93.54317 | | −0.61823677 | +0.68340957 | |
| $e$ | 0.1332277 | $i$ | 6.81094 | | −0.35355246 | +0.19936410 | |
| $P$ | 3.83 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2004 01 22 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.5+ | | |
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2004 01 22 | 704 | 0.7− | 0.2− | 2006 09 30 | 704 | 1.2+ | 1.2+ | | |
| 2002 10 02 | 608 | 0.5− | 0.4+ | 2004 01 22 | 704 | 0.4− | 0.7+ | 2006 09 30 | 704 | 1.2+ | 0.3+ | | |
| 2002 10 02 | 608 | 0.3− | 0.6− | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.5+ | | |
| 2002 10 02 | 608 | 0.3− | 0.1+ | 2006 09 16 | 699 | (1.6+ | 1.7+) | 2006 10 16 | 703 | 0.1+ | 0.0 | | |
| 2002 10 05 | 704 | 1.3+ | 1.0+ | 2006 09 16 | 699 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 1.0− | 1.1− | | |
| 2002 10 05 | 704 | 0.4+ | 1.4+ | 2006 09 16 | 699 | (0.9+ | 2.5+) | 2006 10 16 | 703 | 0.0 | 0.6+ | | |
| 2002 10 05 | 704 | (1.7+ | 2.6+) | 2006 09 16 | 699 | (3.3+ | 0.8+) | 2006 10 16 | 703 | 0.5− | 0.7− | | |
| 2002 10 05 | 704 | (0.6+ | 2.0+) | 2006 09 18 | 703 | 0.7− | 0.7− | 2006 10 22 | 703 | 0.2− | 0.0 | | |
| 2002 10 10 | 699 | (0.7− | 1.8+) | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.4− | | |
| 2002 10 10 | 699 | 1.1− | 0.8+ | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.2− | | |
| 2002 10 10 | 699 | 1.0− | 1.0+ | 2006 09 18 | 703 | 1.3− | 1.5+ | 2006 10 22 | 703 | 0.4+ | 0.6− | | |
| 2002 10 10 | 699 | (0.0 | 1.9+) | 2006 09 25 | 699 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.3− | | |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.3− | | |
| 2003 12 19 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.2+ | | |
| 2004 01 15 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.6− | 2006 10 23 | 644 | 0.3+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.2+ | | |
| 2004 01 15 | 691 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.3− | 1.0+ | | | | | | |

**2002 TH$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.74946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26937258 | $\omega$ | 115.60122 | | +0.40031662 | −0.91430676 | |
| $a$ | 2.3744724 | $\Omega$ | 310.65965 | | +0.80896281 | +0.38415392 | |
| $e$ | 0.2038487 | $i$ | 4.65476 | | +0.43049481 | +0.12833131 | |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 599 | 0.1− | 0.1− | 2002 10 12 | 704 | 0.2+ | 0.4+ | 2002 11 22 | 644 | 0.2− | 1.1+ |
| 2002 10 02 | 599 | 0.7+ | 0.3+ | 2002 10 12 | 704 | 0.4− | 0.3+ | 2002 11 22 | 644 | 0.0 | 1.1+ |
| 2002 10 02 | 599 | 0.1+ | 0.2+ | 2002 10 12 | 704 | 0.3+ | 0.1+ | 2002 12 11 | 704 | 0.8− | 0.0 |
| 2002 10 02 | 599 | 0.0 | 0.3+ | 2002 10 12 | 704 | 0.3+ | 0.0 | 2002 12 11 | 704 | 1.0− | 0.1− |
| 2002 10 02 | 599 | 0.3+ | 0.4− | 2002 10 12 | 704 | 0.0 | 0.4+ | 2002 12 11 | 704 | 1.3+ | 0.4− |
| 2002 10 02 | 599 | 0.2+ | 0.2− | 2002 11 03 | 704 | 0.7− | 1.3− | 2002 12 11 | 704 | 0.3+ | 0.9+ |
| 2002 10 02 | 599 | 0.5+ | 0.5+ | 2002 11 03 | 704 | 1.1+ | 0.4− | 2002 12 11 | 704 | (0.8− | 1.6+) |
| 2002 10 02 | 599 | 0.0 | 0.1+ | 2002 11 03 | 704 | 0.5+ | 0.9+ | 2004 03 27 | 291 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.2+ | 0.1+ | 2002 11 06 | 704 | 0.7− | 0.2− | 2004 03 27 | 291 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.0 | 0.8− | 2002 11 06 | 704 | 0.8− | 0.5− | 2004 03 27 | 291 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.1− | 2002 11 06 | 704 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.7− | 0.3− |
| 2002 10 05 | 704 | 0.3− | 0.5− | 2002 11 06 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.4− |
| 2002 10 05 | 704 | 0.4− | 0.1− | 2002 11 11 | 704 | 0.3+ | 0.9− | 2006 10 21 | G96 | 0.4− | 0.7− |
| 2002 10 09 | 704 | (1.9− | 0.4−) | 2002 11 11 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 704 | 0.8− | 1.8− |
| 2002 10 09 | 704 | 0.2− | 0.7− | 2002 11 11 | 704 | 0.8− | 0.5+ | 2006 11 15 | 704 | 0.7+ | 1.2+ |
| 2002 10 09 | 704 | 0.4+ | 0.2− | 2002 11 11 | 704 | 0.2− | 0.2− | 2006 11 15 | 704 | 1.0+ | 0.7+ |
| 2002 10 09 | 704 | 0.3− | 0.5− | 2002 11 22 | 644 | 0.5− | 1.0+ | | | | |

**2002 TH$_{112}$ = 2006 WO$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.90092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28516068 | $\omega$ | 267.81157 | | +0.77684860 | +0.62649127 | |
| $a$ | 2.2860003 | $\Omega$ | 53.38967 | | −0.54179969 | +0.71630528 | |
| $e$ | 0.1353570 | $i$ | 4.52747 | | −0.32087280 | +0.30727094 | |
| $P$ | 3.46 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | 1.1− | 0.8+ | 2002 10 05 | 704 | 1.7+ | 0.6− | 2006 11 16 | 691 | 0.2+ | 0.5+ |
| 2002 09 28 | 608 | 1.6− | 0.8+ | 2002 10 05 | 704 | 0.6+ | 0.6− | 2006 11 20 | 691 | 0.3− | 0.2− |
| 2002 09 28 | 608 | 0.5− | 0.5+ | 2002 10 05 | 704 | 1.2+ | 1.4− | 2006 11 20 | 691 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2002 10 05 | 704 | (2.5+ | 1.3−) | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 1.1− | 0.5+ | 2002 10 05 | 704 | 1.9+ | 1.6− | 2006 11 24 | 691 | 0.7+ | 0.7− |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2006 11 16 | 691 | 0.3− | 0.6+ | 2006 11 24 | 691 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 1.0− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.4− |

**2002 TC$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.49358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25339168 | $\omega$ | 144.63482 | | +0.58115581 | −0.80209189 | |
| $a$ | 2.4732868 | $\Omega$ | 269.44528 | | +0.71140263 | +0.58277990 | |
| $e$ | 0.2137761 | $i$ | 7.90364 | | +0.39517620 | +0.13044612 | |
| $P$ | 3.89 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.3+ | 0.2− | 2002 12 01 | 704 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2002 10 03 | 644 | 0.1+ | 0.1− | 2002 12 01 | 704 | 0.2− | 0.6+ | 2006 10 24 | A24 | 0.4+ | 0.8+ |
| 2002 10 03 | 644 | 0.6+ | 0.1− | 2002 12 01 | 704 | 0.3− | 0.2+ | 2006 10 24 | A24 | 0.0 | 0.9+ |
| 2002 10 05 | 704 | 0.3+ | 0.1+ | 2002 12 05 | 704 | 0.5− | 0.0 | 2006 10 25 | A24 | 0.9+ | 0.9+ |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2002 12 05 | 704 | 0.8+ | 0.7− | 2006 10 25 | A24 | 0.1+ | 0.0 |
| 2002 10 05 | 704 | 0.3+ | 0.2+ | 2002 12 05 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 1.0− | 0.3+ |
| 2002 10 05 | 704 | 0.1+ | 0.9+ | 2002 12 05 | 704 | 0.2+ | 0.8+ | 2006 10 27 | 703 | (0.2+ | 3.9+) |
| 2002 10 05 | 704 | 0.4+ | 0.6+ | 2003 01 05 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2002 10 06 | 704 | 0.6− | 0.4+ | 2003 01 05 | 704 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.6− |
| 2002 10 06 | 704 | 0.9− | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.4− | 2006 10 29 | H51 | 0.3+ | 0.1+ |
| 2002 10 06 | 704 | 0.5− | 0.2− | 2003 01 27 | 704 | 0.3+ | 0.3+ | 2006 10 29 | H51 | 0.4+ | 0.1+ |
| 2002 10 06 | 704 | 0.7− | 0.4− | 2003 01 27 | 704 | 0.4− | 0.1+ | 2006 10 29 | H51 | 0.2+ | 0.0 |
| 2002 10 06 | 704 | 0.7− | 0.4− | 2003 01 27 | 704 | 0.9+ | 0.6+ | 2006 11 15 | 703 | 0.8− | 0.5− |
| 2002 10 09 | 704 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.6+ | 0.3− | 2006 11 15 | 703 | 0.8− | 0.6− |
| 2002 10 09 | 704 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.3− | 2006 11 15 | 703 | 0.2− | 1.5− |
| 2002 10 09 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.6+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.9− |
| 2002 10 09 | 704 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.5+ | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.3− |
| 2002 10 09 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 704 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.5− | 0.9− |
| 2002 10 31 | 644 | 0.1− | 0.0 | 2006 10 20 | 704 | 0.0 | 0.6− | 2006 11 17 | 704 | 0.8− | 0.8− |
| 2002 10 31 | 644 | 0.4− | 0.0 | 2006 10 20 | 704 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.2+ | 1.0− |
| 2002 10 31 | 644 | 0.1− | 0.0 | 2006 10 20 | 704 | 0.5+ | 0.2+ | 2006 11 23 | 703 | 0.3− | 0.3+ |
| 2002 11 06 | 699 | 0.1− | 0.5− | 2006 10 20 | 704 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.2− |
| 2002 11 06 | 699 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.2− | 0.2+ |
| 2002 11 06 | 699 | 0.8+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.8− | 0.0 |
| 2002 11 06 | 699 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.4+ | 2006 12 01 | 704 | 0.1+ | 0.4+ |
| 2002 11 07 | 704 | 0.9− | 1.3− | 2006 10 23 | 644 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.3− | 0.6+ |
| 2002 11 07 | 704 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.3+ | 2006 12 01 | 704 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.0 | 0.7+ |
| 2002 11 07 | 704 | (1.9− | 0.5−) | 2006 10 23 | 644 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.7+ | 0.8+ |
| 2002 12 01 | 704 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.1+ | | | | |

**2002 TV$_{113}$ = 2006 RZ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.73122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24276276 | $\omega$ | 31.67253 | | +0.17016224 | +0.97112259 | |
| $a$ | 2.5449622 | $\Omega$ | 248.58735 | | −0.93746776 | +0.10724219 | |
| $e$ | 0.1091957 | $i$ | 10.34811 | | −0.30364291 | +0.21311975 | |
| $P$ | 4.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 17 | 703 | 1.0− | 0.4− |
| 2002 10 03 | 644 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.1− | 0.6− | 2006 10 17 | 703 | 1.3+ | 0.1− |
| 2002 10 03 | 644 | 0.3+ | 0.5+ | 2006 09 16 | 703 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2002 10 05 | 704 | 0.5+ | 0.5− | 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2002 10 05 | 704 | 0.9+ | 0.8− | 2006 09 27 | 703 | 0.2+ | 0.2+ | 2006 10 20 | 734 | 0.6+ | 0.1+ |
| 2002 10 05 | 704 | 1.2+ | 0.3− | 2006 09 27 | 703 | 0.8+ | 0.1− | 2006 10 20 | 734 | 0.4+ | 0.3+ |
| 2002 10 05 | 704 | 0.1− | 1.0+ | 2006 09 27 | 703 | 0.0 | 0.4+ | 2006 10 20 | 734 | 0.4− | 0.0 |
| 2002 10 07 | 699 | 1.1− | 0.5− | 2006 09 27 | 703 | 0.6+ | 0.7+ | 2006 10 20 | 734 | 0.6− | 0.0 |
| 2002 10 07 | 699 | 0.6− | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 703 | 0.0 | 0.9− |
| 2002 10 07 | 699 | 1.1− | 1.2+ | 2006 10 09 | 644 | 0.0 | 0.2+ | 2006 10 23 | 703 | 1.1− | 0.5− |
| 2002 10 07 | 699 | (1.9− | 0.1+) | 2006 10 09 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 703 | 1.0− | 0.3− |
| 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 15 | 185 | 0.3+ | 0.9− | 2006 10 23 | 703 | (0.3− | 1.8−) |
| 2006 09 14 | 644 | 0.2− | 0.0 | 2006 10 15 | 185 | 0.3+ | 0.4+ | | | | |
| 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 15 | 185 | 0.2− | 0.9− | | | | |

**2002 TB$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.35058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26990508 | $\omega$ | 73.98022 | | +0.80745590 | +0.57938876 | |
| $a$ | 2.3713483 | $\Omega$ | 250.48485 | | −0.57621948 | +0.73427115 | |
| $e$ | 0.2159916 | $i$ | 6.76387 | | −0.12643607 | +0.35377188 | |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.7− | 0.5+ | 2002 10 09 | 704 | 0.4+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2002 09 07 | 704 | 1.5− | 1.0+ | 2002 10 09 | 704 | 0.8+ | 0.3− | 2006 11 10 | 691 | 0.4− | 0.0 |
| 2002 09 07 | 704 | 0.3− | 1.0+ | 2002 10 09 | 704 | 0.5+ | 1.2− | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2002 09 07 | 704 | 0.3− | 0.7+ | 2002 10 31 | 644 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2002 10 03 | 644 | 0.5+ | 0.3− | 2002 10 31 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2002 10 03 | 644 | 0.2+ | 0.0 | 2002 10 31 | 644 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 644 | 0.1+ | 0.1− | 2002 11 08 | 704 | 1.3− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2002 11 08 | 704 | 0.4− | 0.6+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.7+ | 0.1− | 2002 11 08 | 704 | 0.8− | 0.8+ | 2006 11 23 | 691 | 0.2+ | 0.6− |
| 2002 10 05 | 704 | 0.2+ | 0.5− | 2002 11 08 | 704 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2002 10 05 | 704 | 0.1− | 0.6− | 2002 11 22 | 644 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.1+ | 0.4− | 2002 11 22 | 644 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 10 09 | 704 | 0.3+ | 0.9− | 2002 11 22 | 644 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.2− | 0.3+ |

### 2002 TC$_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.36219 | | | (2000.0) | | |
| $n$ | 0.24693543 | $\omega$ | 195.60056 | | +0.47526106 | −0.86310253 |
| $a$ | 2.5162113 | $\Omega$ | 226.38050 | | +0.83038169 | +0.50418845 |
| $e$ | 0.1454845 | $i$ | 13.64855 | | +0.29084906 | −0.02912105 |
| $P$ | 3.99 | $H$ | 16.2 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.2− | 0.2− | 2002 10 31 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.2− |
| 2002 10 03 | 644 | 0.1− | 0.3− | 2002 10 31 | 644 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2002 10 03 | 644 | 0.0 | 0.2− | 2002 11 08 | 704 | 0.6− | 0.5− | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2002 10 05 | 704 | 0.0 | 0.3− | 2002 11 08 | 704 | 0.8+ | 0.4− | 2006 10 17 | 703 | 1.2− | 0.7− |
| 2002 10 05 | 704 | 0.1− | 0.6+ | 2002 11 08 | 704 | 0.3+ | 0.2+ | 2006 11 10 | 683 | (4.1+ | 0.3−) |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2002 11 08 | 704 | 1.0− | 0.7− | 2006 11 10 | 683 | (1.5+ | 0.3+) |
| 2002 10 05 | 704 | 0.2− | 0.8+ | 2002 11 22 | 644 | 0.2+ | 0.0 | 2006 11 10 | 683 | (2.0+ | 0.1+) |
| 2002 10 05 | 704 | 0.2+ | 0.5+ | 2002 11 22 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | (2.1− | 1.3−) |
| 2002 10 09 | 704 | 0.5− | 0.0 | 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.1− |
| 2002 10 09 | 704 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 1.2− | 1.0+ |
| 2002 10 09 | 704 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.4− |
| 2002 10 12 | 704 | 0.6+ | 1.3− | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.4+ |
| 2002 10 12 | 704 | 1.0+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2002 10 12 | 704 | (1.6+ | 0.4−) | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.8+ | 0.9+ |
| 2002 10 31 | 644 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.7− |

### 2002 TJ$_{121}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.24479 | | | (2000.0) | | |
| $n$ | 0.23696728 | $\omega$ | 105.58064 | | +0.47717279 | −0.87556892 |
| $a$ | 2.5862894 | $\Omega$ | 315.66196 | | +0.75929720 | +0.45395786 |
| $e$ | 0.1747471 | $i$ | 6.19345 | | +0.44246344 | +0.16523114 |
| $P$ | 4.16 | $H$ | 16.3 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.5− | 0.4+ | 2002 11 01 | 644 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.7+ | 1.1+ |
| 2002 10 03 | 644 | 0.3− | 0.4+ | 2002 11 06 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 704 | 0.5+ | 0.5− |
| 2002 10 03 | 644 | 0.3− | 0.4+ | 2002 11 06 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.3− | 0.8− |
| 2002 10 05 | 704 | 1.0+ | 0.2+ | 2002 11 06 | 704 | 0.6+ | 0.9+ | 2006 10 01 | 703 | 1.0− | 0.0 |
| 2002 10 05 | 704 | 0.1− | 0.3− | 2002 11 13 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.4− | 0.0 |
| 2002 10 05 | 704 | 0.1− | 0.3+ | 2002 11 13 | 644 | 0.1− | 0.0 | 2006 10 01 | 703 | 0.3+ | 0.2+ |
| 2002 10 05 | 704 | 0.4+ | 0.5− | 2002 11 13 | 644 | 0.0 | 0.1− | 2006 10 01 | 703 | 0.3− | 0.3+ |
| 2002 10 05 | 704 | 0.7− | 0.5− | 2006 08 29 | 703 | 0.7+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.6− | 0.8− | 2006 08 29 | 703 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.2− |
| 2002 10 10 | 704 | 0.3+ | 0.5− | 2006 08 29 | 703 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 1.0+ | 0.8− | 2006 08 29 | 703 | 0.8+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 10 10 | 704 | 0.3− | 0.6− | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2002 10 10 | 704 | 0.2− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 10 12 | 704 | 0.5− | 0.8+ | 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2002 10 12 | 704 | 0.6− | 0.4− | 2006 09 17 | 703 | 1.2− | 0.2− | 2006 10 17 | 703 | 0.4− | 1.2− |
| 2002 10 12 | 704 | 1.5− | 0.7+ | 2006 09 17 | 703 | 0.2− | 0.6− | 2006 10 17 | 703 | 0.4+ | 0.8− |
| 2002 10 15 | 704 | (1.7− | 0.9+) | 2006 09 17 | 703 | 0.7− | 0.3+ | 2006 10 17 | 703 | 0.8+ | 0.8− |
| 2002 10 15 | 704 | 0.9+ | 0.0 | 2006 09 17 | 703 | 0.7− | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2002 10 15 | 704 | 0.1− | 0.3+ | 2006 09 18 | 704 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 1.2+ | 1.0+ |
| 2002 10 15 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.8+ | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2002 11 01 | 644 | 0.2− | 0.2− | 2006 09 18 | 704 | 0.8+ | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2002 11 01 | 644 | 0.3+ | 0.2− | 2006 09 25 | 704 | 0.6− | 0.2− | | | | |

### 2002 TJ$_{122}$ = 2006 WY$_{173}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.29393 | | | (2000.0) | | |
| $n$ | 0.28028276 | $\omega$ | 188.96519 | | +0.11604548 | +0.98512271 |
| $a$ | 2.3124470 | $\Omega$ | 87.77131 | | −0.90323985 | +0.15775021 |
| $e$ | 0.1786919 | $i$ | 7.28763 | | −0.41314795 | −0.06817712 |
| $P$ | 3.52 | $H$ | 17.1 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 27 | 691 | 0.1+ | 0.2− | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1999 12 27 | 691 | 0.1− | 0.3+ | 2002 10 05 | 645 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2− |
| 1999 12 27 | 691 | 0.1− | 0.1+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 10 03 | 599 | 0.0 | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.3− | 0.2− |
| 2002 10 03 | 599 | 0.0 | 0.1+ | 2002 10 15 | 644 | (0.5− | 1.6+) | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 599 | 0.2+ | 0.1+ | 2002 10 15 | 644 | (0.6− | 1.5+) | 2006 11 27 | 691 | 0.3− | 0.2− |
| 2002 10 03 | 599 | 0.2− | 0.3+ | 2002 10 15 | 644 | 0.3− | 1.4+ | 2006 12 01 | 691 | 0.3+ | 0.3− |
| 2002 10 05 | 704 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.4+ | 0.2− |
| 2002 10 05 | 704 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.5+ | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2002 10 05 | 704 | 0.8+ | 1.1+ | 2006 11 15 | 691 | 0.1+ | 0.2+ | | | | |

### 2002 TZ$_{122}$ = 2006 UO$_{89}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.28230 | | | (2000.0) | | |
| $n$ | 0.26673021 | $\omega$ | 159.46784 | | +0.83888482 | −0.52779582 |
| $a$ | 2.3901285 | $\Omega$ | 233.09575 | | +0.47330064 | +0.82803989 |
| $e$ | 0.0943416 | $i$ | 9.57826 | | +0.26880991 | +0.18916003 |
| $P$ | 3.70 | $H$ | 15.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.2− | 0.7+ | 2002 10 11 | 704 | 1.3+ | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 1995 12 27 | 691 | 0.1+ | 0.1− | 2002 10 11 | 704 | 0.5− | 0.5− | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 1995 12 27 | 691 | 0.1+ | 0.1− | 2002 10 11 | 704 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.0 | 0.5− |
| 2001 04 26 | 699 | 1.1− | 0.3− | 2002 10 12 | 704 | 0.1− | 0.7− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2001 04 26 | 699 | (0.0 | 2.1+) | 2002 10 12 | 704 | 0.3− | 0.2− | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2001 04 26 | 699 | 1.2− | 0.3+ | 2002 10 12 | 704 | 0.4+ | 1.2− | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2001 04 26 | 699 | 1.2− | 0.1+ | 2006 09 19 | 703 | (1.3− | 1.6+) | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2001 05 24 | 291 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.2− | 2006 11 13 | 104 | 0.1− | 0.2+ |
| 2001 05 24 | 291 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 0.5+ | 0.1− | 2006 11 14 | 104 | 0.7− | 0.5− |
| 2001 05 24 | 291 | 0.6+ | 0.7+ | 2006 09 19 | 703 | 0.4+ | 0.6+ | 2006 11 14 | 104 | 0.8+ | 0.8+ |
| 2002 08 22 | 644 | 0.1+ | 0.7− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.2− |
| 2002 08 22 | 644 | 0.0 | 0.8− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.3− | 0.1− |
| 2002 08 22 | 644 | 0.1− | 0.5− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.4− | 0.1− |
| 2002 10 04 | 644 | 0.1− | 0.4− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 16 | 703 | 0.4− | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2002 10 04 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.2+ |
| 2002 10 05 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.1− | 0.5− | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | (0.4+ | 2.0+) | 2006 10 28 | 704 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.7− |
| 2002 10 05 | 704 | 1.1− | 0.6+ | 2006 10 28 | 704 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2002 10 05 | 704 | (2.1− | 1.5+) | 2006 10 28 | 704 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1+ | 1.0− |
| 2002 10 07 | 704 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.7+ |
| 2002 10 07 | 704 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2002 10 07 | 704 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2002 10 07 | 699 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2002 10 07 | 699 | 0.0 | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 10 07 | 699 | 0.7− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2002 10 07 | 699 | 0.0 | 1.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.5+ |
| 2002 10 09 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2002 10 09 | 704 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | 0.2+ | 1.0+ | 2006 11 11 | 703 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2002 10 09 | 704 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2002 10 09 | 704 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2002 10 09 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.6+ |
| 2002 10 09 | 704 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.3+ | 1.3+ |
| 2002 10 09 | 704 | 0.4− | 0.1− | 2006 11 12 | 703 | (0.4− | 1.9+) | 2006 11 29 | 704 | 0.3+ | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.5+ | 0.2− | 2006 11 12 | 703 | (1.2+ | 2.9+) | 2006 11 29 | 704 | 0.0 | 0.7+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.3+ | 2006 11 12 | 703 | 0.0 | 0.7+ | 2006 11 29 | 704 | 0.0 | 1.4+ | | |
| 2002 10 11 | 704 | 0.2− | 0.3− | 2006 11 12 | 703 | 0.3− | 0.0 | | | | | | |

**2002 TX$_{123}$ = 2006 QQ$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.24977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23883684 | $\omega$ | 39.73245 | | +0.91717752 | −0.39044601 | |
| $a$ | 2.5727752 | $\Omega$ | 342.73040 | | +0.26186335 | +0.74116296 | |
| $e$ | 0.2096584 | $i$ | 15.55462 | | +0.30035477 | +0.54610381 | |
| $P$ | 4.13 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.3+ | 0.0 | 2002 10 09 | 704 | 0.1+ | 1.2+ | 2006 08 28 | 703 | 0.1+ | 0.8− | | |
| 2000 02 27 | 691 | 0.1+ | 0.1− | 2002 10 09 | 704 | 0.6+ | 1.1+ | 2006 08 28 | 703 | 0.9− | 0.8− | | |
| 2000 02 27 | 691 | 0.5− | 0.1− | 2006 08 18 | 644 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.6+ | | |
| 2002 10 04 | 644 | 0.6− | 0.3− | 2006 08 18 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.0 | | |
| 2002 10 04 | 644 | 0.2− | 0.0 | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 644 | 0.5− | 0.2− | 2006 08 22 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.0 | 0.2− | | |
| 2002 10 05 | 704 | 0.2− | 0.4− | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.8− | 0.1+ | | |
| 2002 10 05 | 704 | 0.5− | 0.7− | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1− | 0.0 | | |
| 2002 10 05 | 704 | 0.6+ | 0.5− | 2006 08 22 | 644 | 0.2+ | 0.4− | 2006 09 14 | 703 | 0.9− | 0.4+ | | |
| 2002 10 05 | 704 | 0.7+ | 0.7− | 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.0 | 0.1− | | |
| 2002 10 05 | 704 | 0.5+ | 0.5− | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 1.0+ | 0.5− | | |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.2− | | |
| 2002 10 09 | 704 | 0.1− | 0.5+ | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.2− | | |

**2002 TQ$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.76760 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28818613 | $\omega$ | 292.23371 | | +0.99813287 | −0.01298686 | |
| $a$ | 2.2699729 | $\Omega$ | 68.55193 | | +0.03682990 | +0.90748305 | |
| $e$ | 0.1848071 | $i$ | 3.67656 | | −0.04872705 | +0.41988791 | |
| $P$ | 3.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 20 | 691 | 0.1+ | 0.2− | 2002 10 05 | 704 | 0.1+ | 0.1+ | 2002 11 18 | 644 | 0.5− | 0.2+ | | |
| 1998 06 20 | 691 | 0.1− | 0.3− | 2002 10 05 | 704 | 0.1+ | 0.1− | 2002 11 18 | 644 | 0.8− | 0.1− | | |
| 1998 06 20 | 691 | 0.1− | 0.1+ | 2002 10 05 | 704 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.7+ | 0.1+ | | |
| 2002 08 14 | 704 | 0.3− | 0.1+ | 2002 10 05 | 704 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.4+ | | |
| 2002 08 14 | 704 | 0.7− | 0.7+ | 2002 10 05 | 704 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.8+ | 0.4− | | |
| 2002 08 14 | 704 | 1.2− | 0.0 | 2002 10 09 | 699 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.5− | 0.1+ | | |
| 2002 08 14 | 704 | 1.0− | 0.3+ | 2002 10 09 | 699 | 1.0+ | 0.1+ | 2006 10 22 | G96 | 0.7− | 0.0 | | |
| 2002 09 13 | 704 | 0.3+ | 0.7− | 2002 10 09 | 699 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.1− | | |
| 2002 09 13 | 704 | 0.6+ | 0.1+ | 2002 10 09 | 699 | 0.5− | 0.5− | 2006 10 22 | G96 | 0.7− | 0.2− | | |
| 2002 09 13 | 704 | 0.5+ | 0.0 | 2002 10 29 | 704 | 0.8+ | 0.2− | 2006 10 29 | G96 | 0.6− | 0.2− | | |
| 2002 09 17 | 608 | 0.2+ | 0.0 | 2002 10 29 | 704 | 0.5− | 0.0 | 2006 10 29 | G96 | 0.3− | 0.2− | | |
| 2002 09 17 | 608 | 0.1− | 0.1+ | 2002 10 29 | 704 | 0.1+ | 0.1+ | 2006 10 29 | G96 | 0.6− | 0.2− | | |
| 2002 09 17 | 608 | 0.2− | 0.1+ | 2002 10 29 | 704 | 0.6+ | 0.4+ | 2006 10 29 | G96 | 0.5− | 0.3− | | |
| 2002 10 04 | 704 | 0.6+ | 0.3− | 2002 10 29 | 704 | 0.5− | 1.2+ | 2006 11 15 | G96 | 0.1− | 0.1+ | | |
| 2002 10 04 | 704 | 0.7+ | 0.3− | 2002 11 18 | 644 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2002 10 04 | 704 | 0.4+ | 0.4− | 2002 11 18 | 644 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.0 | | |
| 2002 10 04 | 704 | 0.5+ | 0.4− | 2002 11 18 | 644 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2002 10 04 | 704 | 0.6+ | 0.2+ | 2002 11 18 | 644 | 0.4− | 0.0 | | | | | | |

**2002 TY$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.70752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23326217 | $\omega$ | 109.64837 | | +0.92994995 | +0.34100488 | |
| $a$ | 2.6136044 | $\Omega$ | 230.66584 | | −0.36694060 | +0.88452278 | |
| $e$ | 0.2102494 | $i$ | 10.24070 | | +0.02340278 | +0.31833178 | |
| $P$ | 4.23 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.0 | 0.5+ | 2002 10 05 | 704 | 0.1+ | 0.2− | 2002 11 08 | 704 | (0.3− | 2.0+) | | |
| 2002 09 03 | 644 | 0.0 | 0.3+ | 2002 10 05 | 704 | 0.5− | 0.6− | 2002 11 08 | 704 | 0.2+ | 1.4+ | | |
| 2002 09 03 | 644 | 0.1+ | 0.5+ | 2002 10 09 | 704 | 0.4+ | 0.2+ | 2006 06 23 | 699 | 0.4− | 0.4+ | | |
| 2002 09 12 | 644 | 0.5− | 0.5− | 2002 10 09 | 704 | 0.5− | 0.6− | 2006 06 23 | 699 | 0.5+ | 0.2+ | | |
| 2002 09 12 | 644 | 0.4− | 0.6− | 2002 10 09 | 704 | 0.9+ | 0.0 | 2006 06 23 | 699 | 1.2+ | 0.1− | | |
| 2002 09 12 | 644 | 0.5− | 0.8− | 2002 10 09 | 704 | 0.3− | 0.1− | 2006 06 23 | 699 | 0.2+ | 0.1− | | |
| 2002 10 04 | 644 | 0.4− | 0.3+ | 2002 10 09 | 704 | 0.9+ | 0.5− | 2006 07 24 | 703 | 1.1− | 0.0 | | |
| 2002 10 04 | 644 | 0.3− | 0.5+ | 2002 10 09 | 704 | 0.4− | 0.6− | 2006 07 24 | 703 | 0.1+ | 1.1− | | |
| 2002 10 04 | 644 | 0.3− | 0.3+ | 2002 10 09 | 704 | 1.0+ | 0.2− | 2006 07 24 | 703 | (3.0− | 1.1+) | | |
| 2002 10 05 | 704 | 0.3+ | 0.5+ | 2002 10 09 | 704 | 0.5+ | 0.2+ | 2006 07 24 | 703 | 0.6− | 0.7+ | | |
| 2002 10 05 | 704 | 0.2+ | 0.4+ | 2002 10 09 | 704 | 0.9+ | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.0 | | |
| 2002 10 05 | 704 | 0.1+ | 0.4+ | 2002 10 09 | 704 | 0.7− | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.1− | | |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2002 10 12 | 704 | 0.4− | 1.1− | 2006 08 23 | 644 | 0.0 | 0.0 | | |
| 2002 10 05 | 704 | 0.1+ | 0.1+ | 2002 10 12 | 704 | 0.0 | 1.1− | 2006 09 13 | 644 | 0.1+ | 0.3+ | | |
| 2002 10 05 | 704 | 0.3+ | 0.0 | 2002 10 12 | 704 | 0.8− | 1.3− | 2006 09 13 | 644 | 0.4+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2002 11 08 | 704 | 0.0 | 1.0+ | 2006 09 13 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.3− | 0.1− | 2002 11 08 | 704 | 0.8+ | 0.4+ | | | | | | |

**2002 TV$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.43522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26961636 | $\omega$ | 30.54487 | | +0.38583800 | +0.91975215 | |
| $a$ | 2.3730409 | $\Omega$ | 262.23363 | | −0.86045109 | +0.33060699 | |
| $e$ | 0.2588651 | $i$ | 4.16757 | | −0.33279568 | +0.21155377 | |
| $P$ | 3.66 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2+ | 0.7+ | 2002 10 04 | 704 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.3− | | |
| 2002 08 28 | 644 | 0.3− | 0.6+ | 2002 10 04 | 704 | 0.0 | 0.6+ | 2006 10 04 | G96 | 0.4− | 0.1− | | |
| 2002 08 28 | 644 | 0.5+ | 0.7+ | 2002 10 04 | 704 | 0.7− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.4− | | |
| 2002 09 06 | 704 | 0.0 | 0.5− | 2002 10 04 | 704 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.6+ | 0.6+ | | |
| 2002 09 06 | 704 | 1.0− | 0.3− | 2002 10 05 | 704 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.8+ | 0.5+ | | |
| 2002 09 06 | 704 | 0.0 | 0.4+ | 2002 10 05 | 704 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.5+ | 0.6+ | | |
| 2002 09 06 | 704 | 0.7− | 0.0 | 2002 10 05 | 704 | 0.6+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.2+ | | |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2002 10 05 | 704 | 0.6+ | 0.3− | 2006 10 21 | 691 | 0.4− | 0.2+ | | |
| 2002 09 13 | 644 | 0.0 | 0.0 | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.4− | 0.5+ | | |
| 2002 09 13 | 644 | 0.0 | 0.0 | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.2− | | |
| 2002 09 13 | 644 | 0.1+ | 0.1− | 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.7+ | 0.3− | | |
| 2002 09 14 | 608 | 0.2− | 0.9+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.1− | | |
| 2002 09 14 | 608 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.7− | 0.6− | 2006 11 14 | G96 | 0.0 | 0.3+ | | |
| 2002 09 14 | 608 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.4+ | 0.2− | | | | | | |

**2002 TL$_{127}$ = 1998 QY$_{111}$ = 2006 SR$_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.32575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25681474 | $\omega$ | 41.65580 | | +0.50488726 | +0.85774776 | |
| $a$ | 2.4512603 | $\Omega$ | 258.87918 | | −0.81573648 | +0.43748424 | |
| $e$ | 0.1499177 | $i$ | 5.65775 | | −0.28224607 | +0.26995615 | |
| $P$ | 3.84 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 704 | 1.0+ | 0.8− | 2002 10 09 | 704 | 1.4+ | 0.6− | 2006 10 17 | 691 | 0.2+ | 0.0 | | |
| 1998 08 24 | 704 | 0.2− | 0.0 | 2002 10 09 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2+ | | |
| 1998 08 24 | 704 | (1.3+ | 2.3+) | 2002 10 09 | 704 | 0.7− | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.2− | | |
| 1998 08 24 | 704 | 0.2− | 0.0 | 2002 10 09 | 704 | 0.7+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.5− | | |
| 1998 08 24 | 704 | 0.3− | 0.7+ | 2002 10 09 | 704 | 0.3− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2002 10 04 | 644 | 0.2− | 0.1− | 2002 10 09 | 704 | 0.2− | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.4− | | |
| 2002 10 04 | 644 | 0.2− | 0.1− | 2003 12 22 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2003 12 22 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.6+ | | |
| 2002 10 05 | 704 | 0.4+ | 0.2− | 2003 12 22 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2002 10 05 | 704 | 0.0 | 0.8− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.4− | 0.0 | | |
| 2002 10 05 | 704 | 0.3− | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.4+ | 0.1+ | | |
| 2002 10 05 | 704 | (0.7− | 1.6−) | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.9− | 0.1− | | |
| 2002 10 07 | 699 | 0.2− | 0.3+ | 2006 09 28 | 703 | (0.1− | 1.5−) | 2006 10 21 | 691 | 0.3− | 0.2+ | | |
| 2002 10 07 | 699 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.9− | 0.5− | 2006 10 21 | 691 | 0.2− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 699 | 1.1− | 0.9+ | 2006 09 28 | 703 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2002 10 07 | 699 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2002 10 09 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 691 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2002 10 09 | 704 | 0.5− | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2002 10 09 | 704 | 0.5− | 0.1− | 2006 10 17 | 691 | 0.4+ | 0.1+ | | | | |

### 2002 TU$_{127}$ = 2006 UR$_{222}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.45527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26575504 | $\omega$ | 309.35392 | | +0.99463156 | +0.05900948 | |
| $a$ | 2.3959718 | $\Omega$ | 47.44222 | | −0.01257560 | +0.88431049 | |
| $e$ | 0.1412317 | $i$ | 6.62688 | | −0.10271275 | +0.46315532 | |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.5− | 0.7− | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 17 | 704 | 1.2− | 0.1+ |
| 2002 09 29 | 608 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.8− | 0.7+ |
| 2002 09 29 | 608 | 0.7− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.3− | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.2− |
| 2002 10 04 | 704 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2002 10 04 | 704 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.4+ | 0.3+ | 2006 11 18 | A13 | 0.0 | 0.4− |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.4+ | 2006 11 18 | A13 | 0.1+ | 0.5− |
| 2002 10 05 | 704 | 0.6− | 1.0+ | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 18 | A13 | 0.6+ | 0.2− |
| 2002 10 05 | 704 | (0.8− | 1.7+) | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2002 10 05 | 704 | 0.7+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2002 10 05 | 704 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | (0.7+ | 2.1+) |
| 2002 10 05 | 704 | 0.8+ | 1.3+ | 2006 11 09 | 691 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.6− |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 11 09 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2004 02 11 | 644 | 0.4+ | 0.1+ | 2006 11 09 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.7+ |
| 2004 02 13 | 691 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.7+ | 0.6− |
| 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.5+ | 0.3− |
| 2004 02 13 | 691 | 0.1− | 0.3− | 2006 11 17 | 704 | 1.2− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.7− | 1.1+ | 2006 12 01 | G96 | 0.1+ | 0.5− |

### 2002 TD$_{131}$ = 2006 WM$_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.47934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26649026 | $\omega$ | 222.39460 | | +0.89258259 | +0.44134316 | |
| $a$ | 2.3915630 | $\Omega$ | 111.19979 | | −0.38258272 | +0.84962799 | |
| $e$ | 0.2384575 | $i$ | 5.67932 | | −0.23859336 | +0.28870140 | |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.0 | 0.1+ | 2002 10 05 | 704 | 0.8− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 03 19 | 645 | 0.1+ | 0.1+ | 2002 10 05 | 704 | 0.0 | 0.9+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2002 09 16 | 644 | 0.2+ | 0.5+ | 2002 10 05 | 704 | 0.8− | 0.8+ | 2006 11 16 | 691 | 0.1− | 0.6+ |
| 2002 09 16 | 644 | 0.2− | 0.2+ | 2002 10 06 | 608 | 1.3+ | 0.3− | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2002 09 16 | 644 | 0.2+ | 0.9+ | 2002 10 06 | 608 | 1.1+ | 0.3− | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2002 09 17 | 608 | (1.8− | 0.8−) | 2002 10 06 | 608 | 0.7+ | 0.2− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 09 17 | 608 | 1.3− | 0.6− | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.3+ |
| 2002 09 17 | 608 | 1.3− | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.5+ | 2006 11 24 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.1+ | 1.3+ | 2005 04 15 | 691 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.2+ |
| 2002 10 04 | 704 | 0.7− | 0.8+ | 2006 10 23 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2002 10 04 | 704 | (0.5− | 1.9+) | 2006 10 23 | G96 | 0.5− | 0.1− | 2006 11 24 | G96 | 0.5+ | 0.0 |
| 2002 10 04 | 704 | (0.3− | 1.6+) | 2006 10 23 | G96 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.2− |

### 2002 TR$_{132}$ = 2006 VB$_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.60649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26390477 | $\omega$ | 100.00110 | | +0.99768292 | +0.01721975 | |
| $a$ | 2.4071578 | $\Omega$ | 259.03421 | | −0.04132356 | +0.92191529 | |
| $e$ | 0.1377343 | $i$ | 3.84423 | | +0.05404780 | +0.38700862 | |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.5− | 0.2+ | 2002 10 09 | 704 | 0.7− | 0.7− | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.7− | 0.2+ | 2002 10 09 | 704 | 0.3+ | 0.4− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.0 | 2005 06 14 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.9+ | 0.5− |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2005 06 14 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.8− | 2005 06 14 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | (2.0− | 0.6+) |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 11 21 | 704 | (1.7− | 1.2−) |
| 2002 10 04 | 644 | 0.5− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | (2.4− | 0.4−) |
| 2002 10 04 | 644 | 0.6− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | (2.0− | 0.8−) |
| 2002 10 05 | 704 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | (2.7− | 0.4−) |
| 2002 10 05 | 704 | 0.3+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.6+ | 0.2− | 2006 11 01 | G96 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 704 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.4− | 0.4− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2002 10 07 | 699 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 10 07 | 699 | 0.2− | 0.9+ | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 10 07 | 699 | (2.5+ | 1.2−) | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2002 10 07 | 699 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.2+ | 0.4− |
| 2002 10 09 | 704 | 0.1+ | 0.8+ | 2006 11 10 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2002 10 09 | 704 | 0.0 | 0.5− | 2006 11 14 | 691 | 0.2− | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.2− |
| 2002 10 09 | 704 | 1.4+ | 0.6+ | 2006 11 14 | 691 | 0.4− | 0.0 | 2006 11 27 | 703 | (0.4− | 1.6+) |

### 2002 TK$_{134}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.56040 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26992337 | $\omega$ | 97.76255 | | +0.92650637 | −0.36403781 | |
| $a$ | 2.3712412 | $\Omega$ | 283.62467 | | +0.29494104 | +0.85970477 | |
| $e$ | 0.1494817 | $i$ | 5.62132 | | +0.23365729 | +0.35830737 | |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (1.9− | 1.5−) | 2002 10 05 | 704 | 0.9− | 1.0+ | 2004 03 16 | 691 | 0.0 | 0.5+ |
| 2002 09 28 | 608 | (2.1− | 1.9−) | 2002 10 31 | 644 | 0.6− | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 09 28 | 608 | (1.9− | 1.2−) | 2002 10 31 | 644 | 0.5− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.3+ | 0.8+ | 2002 10 31 | 644 | 0.2− | 0.3− | 2006 11 18 | 691 | 1.3− | 0.8− |
| 2002 10 04 | 644 | 0.2+ | 0.4+ | 2002 11 22 | 644 | 1.3− | 0.0 | 2006 11 26 | 691 | 0.7+ | 0.0 |
| 2002 10 04 | 644 | 0.2+ | 0.6+ | 2002 11 22 | 644 | 0.6− | 0.1− | 2006 11 26 | 691 | 0.2+ | 0.1+ |
| 2002 10 05 | 704 | 0.7+ | 0.3+ | 2002 11 22 | 644 | 1.1− | 0.0 | 2006 11 26 | 691 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.5+ | 1.3+ | 2004 03 16 | 691 | 0.1+ | 0.0 | | | | |
| 2002 10 05 | 704 | 0.8+ | 0.1− | 2004 03 16 | 691 | 0.3+ | 0.5+ | | | | |

### 2002 TO$_{134}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.24288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27824520 | $\omega$ | 70.12412 | | +0.87280082 | +0.47872829 | |
| $a$ | 2.3237225 | $\Omega$ | 261.17175 | | −0.47602984 | +0.79194524 | |
| $e$ | 0.1315948 | $i$ | 5.52085 | | −0.10776977 | +0.37900126 | |
| $P$ | 3.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.6+ | 0.6− | 2002 10 05 | 704 | 0.8− | 0.9− | 2002 10 30 | 644 | 0.1+ | 0.8+ |
| 2002 09 07 | 704 | 0.4+ | 0.7+ | 2002 10 05 | 704 | 1.0− | 0.2− | 2002 11 22 | 644 | 0.2+ | 0.2+ |
| 2002 09 07 | 704 | 0.5+ | 1.5− | 2002 10 09 | 704 | 0.6+ | 0.4+ | 2002 11 22 | 644 | 0.4− | 0.0 |
| 2002 09 07 | 704 | 0.2+ | 0.2− | 2002 10 09 | 704 | 0.5+ | 0.3+ | 2002 11 22 | 644 | 0.1+ | 0.1+ |
| 2002 09 28 | 608 | (2.3− | 0.5−) | 2002 10 09 | 704 | 0.4+ | 0.5+ | 2004 02 17 | 691 | 0.0 | 0.0 |
| 2002 09 28 | 608 | (2.5− | 0.6−) | 2002 10 09 | 704 | 0.4+ | 0.7+ | 2004 02 17 | 691 | 0.0 | 0.1+ |
| 2002 09 28 | 608 | (2.4− | 0.6−) | 2002 10 09 | 704 | 0.6+ | 0.4+ | 2004 02 17 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.3+ | 1.2+ | 2002 10 12 | 704 | 0.9− | 1.3− | 2006 11 17 | 691 | 0.4+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.2+ | 1.1+ | 2002 10 12 | 704 | 0.9− | 0.6− | 2006 11 17 | 691 | 0.0 | 0.4− |
| 2002 10 04 | 644 | 0.3+ | 1.0+ | 2002 10 12 | 704 | 0.6− | 0.3− | 2006 11 17 | 691 | 0.0 | 0.3− |
| 2002 10 05 | 704 | 0.4− | 0.4− | 2002 10 12 | 704 | 0.9− | 0.3− | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.9− | 2002 10 30 | 644 | 0.1− | 1.1+ | 2006 12 01 | 691 | 0.0 | 0.4+ |
| 2002 10 05 | 704 | 0.2+ | 1.4− | 2002 10 30 | 644 | 0.1− | 1.0+ | 2006 12 01 | 691 | 0.5− | 0.3− |

**2002 TF$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.81875 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17433100 | $\omega$ | 345.67103 | | +0.73727432 | | +0.67093177 |
| $a$ | 3.1736057 | $\Omega$ | 331.68902 | | −0.60223700 | | +0.59954010 |
| $e$ | 0.0785874 | $i$ | 9.61681 | | −0.30616526 | | +0.43635105 |
| $P$ | 5.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.1+ | 0.7− | 2003 11 24 | 691 | 0.1+ | 0.3− | 2005 03 03 | 703 | 1.5− | 0.8− |
| 2002 10 04 | 644 | 0.1− | 0.5− | 2003 11 24 | 691 | 0.2− | 0.0 | 2005 03 03 | 703 | 0.3+ | 0.5+ |
| 2002 10 04 | 644 | 0.2− | 0.5− | 2003 12 17 | 704 | 0.9− | 1.3+ | 2005 03 03 | 703 | 0.9+ | 1.2+ |
| 2002 10 05 | 704 | 0.4− | 0.7+ | 2003 12 17 | 704 | 0.6+ | 0.7+ | 2005 03 03 | 703 | 0.7− | 1.9+ |
| 2002 10 05 | 704 | 0.3+ | 0.3+ | 2003 12 17 | 704 | 0.9+ | 0.0 | 2005 03 11 | G96 | 0.0 | 0.5− |
| 2002 10 05 | 704 | 0.7− | 0.2− | 2003 12 17 | 704 | 1.1+ | 0.9+ | 2005 03 11 | G96 | 0.2+ | 0.6− |
| 2002 10 05 | 704 | 0.1− | 0.9+ | 2005 02 01 | 691 | 0.3+ | 0.2+ | 2005 03 11 | G96 | 0.2− | 0.4− |
| 2002 10 05 | 704 | 0.1− | 0.2− | 2005 02 01 | 691 | 0.1− | 0.3+ | 2005 03 11 | G96 | 0.1− | 0.2− |
| 2002 10 09 | 704 | 0.2− | 0.3− | 2005 02 01 | 691 | 0.5+ | 0.1+ | 2005 04 12 | G96 | 0.6+ | 1.0− |
| 2002 10 09 | 704 | 0.8+ | 0.2+ | 2005 02 09 | G96 | 0.4− | 0.5− | 2005 04 12 | G96 | 0.0 | 0.3− |
| 2002 10 09 | 704 | 0.2+ | 0.7+ | 2005 02 09 | G96 | 0.2− | 0.3− | 2005 04 12 | G96 | 0.1− | 0.2− |
| 2002 10 09 | 704 | 0.1+ | 0.0 | 2005 02 09 | G96 | 0.4− | 0.6− | 2005 04 12 | G96 | 0.0 | 0.1− |
| 2003 11 24 | 691 | 0.3− | 0.7− | 2005 02 09 | G96 | 0.4− | 0.4− | | | | |

**2002 TK$_{135}$ = 2006 RS$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.01349 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23819948 | $\omega$ | 269.75352 | | +0.99374850 | | −0.04472829 |
| $a$ | 2.5773626 | $\Omega$ | 92.80878 | | +0.08151756 | | +0.91673900 |
| $e$ | 0.2765046 | $i$ | 5.87815 | | −0.07628105 | | +0.39697480 |
| $P$ | 4.14 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 691 | 0.1− | 0.5− | 2002 10 09 | 699 | (2.0− | 0.3+) | 2006 09 21 | 699 | (1.1− | 2.9+) |
| 1998 12 12 | 691 | 0.1+ | 1.1− | 2002 10 09 | 699 | 1.1− | 0.3+ | 2006 09 21 | 699 | 0.2− | 0.3− |
| 1998 12 12 | 691 | 0.1− | 0.6− | 2002 10 09 | 699 | 0.7− | 0.4− | 2006 09 21 | 699 | 0.7− | 0.8+ |
| 1998 12 25 | 691 | 0.3+ | 0.2+ | 2002 10 31 | 704 | (1.6+ | 0.8+) | 2006 09 26 | 703 | 0.2+ | 1.2− |
| 1998 12 25 | 691 | 0.1+ | 0.6+ | 2002 10 31 | 704 | 0.7− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.1− |
| 1998 12 25 | 691 | 0.2+ | 0.2+ | 2002 10 31 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.1+ |
| 2002 10 04 | 704 | 0.5+ | 0.2− | 2002 10 31 | 704 | 0.8+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.3− |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2002 10 31 | 704 | 0.3− | 1.2+ | 2006 09 26 | 703 | 0.4− | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2002 11 07 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 703 | 0.3+ | 0.2− |
| 2002 10 04 | 704 | 0.2− | 0.8− | 2002 11 07 | 704 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.5− | 0.0 |
| 2002 10 05 | 704 | 0.2+ | 0.7+ | 2002 11 07 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.3+ |
| 2002 10 05 | 704 | 0.8− | 0.6+ | 2002 11 07 | 704 | 0.8+ | 0.6− | 2006 09 26 | 703 | 0.8+ | 0.6+ |
| 2002 10 05 | 704 | 0.1+ | 0.7+ | 2006 08 23 | 644 | 0.3+ | 0.3− | 2006 09 26 | 703 | (1.5+ | 0.7+) |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.4+ | 0.3− | 2006 09 26 | 703 | 0.3+ | 0.5+ |
| 2002 10 05 | 704 | 0.1+ | 0.7+ | 2006 08 23 | 644 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.5+ | 0.7− |
| 2002 10 05 | 704 | 1.1− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.5− | 2006 10 02 | 703 | (1.4− | 1.7−) |
| 2002 10 05 | 704 | 0.6− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.5− | 2006 10 02 | 703 | (1.8− | 1.0−) |
| 2002 10 05 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | (2.6− | 0.1+) | 2006 10 02 | 703 | (0.8− | 2.2−) |
| 2002 10 05 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.6− | 0.5+ | 2006 10 02 | 703 | (1.4− | 1.7−) |
| 2002 10 05 | 704 | 0.0 | 1.0+ | 2006 09 20 | 703 | 0.7+ | 0.8− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 10 08 | 608 | 0.5− | 0.4− | 2006 09 20 | 703 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 10 08 | 608 | 0.2+ | 0.1− | 2006 09 20 | 703 | 0.7+ | 0.8− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2002 10 08 | 608 | 0.3+ | 0.0 | 2006 09 20 | 703 | 0.4+ | 0.5− | | | | |
| 2002 10 09 | 699 | 0.2− | 0.0 | 2006 09 21 | 699 | (2.2+ | 1.1+) | | | | |

**2002 TE$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.61800 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24505146 | $\omega$ | 34.84072 | | +0.97116764 | | −0.23537936 |
| $a$ | 2.5290914 | $\Omega$ | 338.67788 | | +0.18819045 | | +0.85430599 |
| $e$ | 0.4270579 | $i$ | 5.96945 | | +0.14634810 | | +0.46341971 |
| $P$ | 4.02 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 699 | 0.0 | 0.2− | 2002 11 25 | 644 | 0.1− | 0.1− | 2006 09 20 | 699 | (1.9+ | 0.7−) |
| 2002 10 04 | 699 | 0.1+ | 0.5+ | 2002 11 25 | 644 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.3− |
| 2002 10 04 | 699 | 0.8− | 0.3− | 2002 11 25 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.0 | 0.2− |
| 2002 10 04 | 699 | 1.1− | 0.5− | 2002 12 03 | 644 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.3− | 2002 12 03 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.4− |
| 2002 10 05 | 704 | 0.3− | 0.4+ | 2002 12 03 | 644 | 0.2+ | 0.4− | 2006 09 28 | 703 | 0.4+ | 0.0 |
| 2002 10 05 | 704 | 0.7+ | 0.6+ | 2002 12 04 | 673 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2002 12 04 | 673 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2002 10 05 | 704 | 0.3+ | 0.6− | 2002 12 04 | 673 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.3+ | 0.2− | 2002 12 04 | 673 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2002 10 10 | 704 | 0.4− | 0.8+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 2002 10 10 | 704 | 0.4+ | 1.2+ | 2006 09 14 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2002 11 07 | 704 | 0.6+ | 0.9+ | 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 1.0+ | 0.6− | 2006 09 16 | 703 | 0.3− | 0.6+ | 2006 10 21 | 704 | 0.3− | 0.2− |
| 2002 11 07 | 704 | 0.6− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 10 21 | 704 | 0.1− | 0.4+ |
| 2002 11 07 | 704 | 0.5− | 0.5− | 2006 09 16 | 703 | 0.1− | 0.3− | 2006 10 21 | 704 | 0.3+ | 0.8+ |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.5− | 0.1− | 2006 10 21 | 704 | 0.4− | 0.0 |
| 2002 11 13 | 644 | 0.3+ | 0.3− | 2006 09 18 | 704 | 0.3− | 0.3+ | 2006 10 21 | 704 | 0.8− | 0.7+ |
| 2002 11 13 | 644 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 11 15 | 704 | 0.2− | 0.9+ | 2006 09 18 | 704 | 0.6+ | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 11 15 | 704 | 0.2− | 0.5+ | 2006 09 18 | 704 | 0.6− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 11 15 | 704 | 0.4+ | 0.2− | 2006 09 20 | 699 | 0.8+ | 0.7− | | | | |

**2002 TS$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.43081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25594534 | $\omega$ | 211.87771 | | −0.36593996 | | −0.92008726 |
| $a$ | 2.4568080 | $\Omega$ | 259.91217 | | +0.88088615 | | −0.29401131 |
| $e$ | 0.2055796 | $i$ | 8.15981 | | +0.30021248 | | −0.25883736 |
| $P$ | 3.85 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 699 | (0.2− | 2.0−) | 2002 11 14 | 704 | 0.1− | 0.9+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2002 10 04 | 699 | (1.6− | 0.4−) | 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 699 | 0.3− | 1.0+ | 2002 11 14 | 704 | 0.3− | 0.8− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 699 | 0.5− | 0.0 | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2002 10 05 | 704 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.9+ | 1.3+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 0.6− | 0.2− | 2002 12 06 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2002 12 06 | 704 | 1.0+ | 0.4− | 2006 11 19 | 704 | 0.9− | 0.7+ |
| 2002 10 05 | 704 | 0.6− | 0.5− | 2002 12 11 | 704 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2002 10 10 | 704 | 1.0+ | 0.1− | 2002 12 11 | 704 | 0.7− | 0.3+ | 2006 11 19 | 704 | 0.8− | 0.3+ |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2002 12 11 | 704 | 0.7− | 0.5− | 2006 11 19 | 704 | 0.6− | 0.5+ |
| 2002 10 10 | 704 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.1+ | 0.0 | 2006 08 29 | 703 | (3.7− | 0.4−) | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.9+ | 0.2− | 2006 08 29 | 703 | 0.0 | 1.5+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.8+ | 0.5− | 2006 08 29 | 703 | (2.1− | 1.8+) | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2002 10 12 | 704 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.8− | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.7− | 2006 11 11 | 691 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2002 10 12 | 704 | 1.0− | 0.9− | 2006 11 11 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2002 10 12 | 704 | 1.1+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2002 10 30 | 608 | 0.0 | 1.2− | 2006 11 14 | 703 | 0.1+ | 0.3− | 2006 11 23 | 703 | 0.6− | 0.3− |
| 2002 10 30 | 608 | 0.1− | 1.2− | 2006 11 14 | 703 | 0.1+ | 0.6− | 2006 11 23 | 703 | 0.4− | 0.0 |
| 2002 10 30 | 608 | 0.1+ | 0.7− | 2006 11 14 | 703 | 0.6+ | 0.3+ | 2006 11 23 | 703 | (1.7− | 0.1−) |
| 2002 11 05 | 704 | 0.6− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.2− | 2006 11 23 | 703 | 0.4− | 0.2+ |
| 2002 11 05 | 704 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.9+ | 2006 11 24 | 703 | 0.2− | 0.3− |
| 2002 11 05 | 704 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 24 | 703 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 0.4+ | 0.9+ | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 11 24 | 703 | 0.3− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.3− | 1.0+ | 2006 11 15 | 704 | 0.2+ | 0.3− | 2006 11 24 | 703 | 0.2− | 0.2− |
| 2002 11 06 | 704 | 0.2− | 0.5− | 2006 11 15 | 704 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.6+ |
| 2002 11 06 | 704 | 0.4− | 0.2− | 2006 11 15 | 704 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.7− | 0.1− |
| 2002 11 06 | 704 | 0.1− | 0.8− | 2006 11 15 | 704 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2002 11 06 | 704 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 2002 11 06 | 704 | 0.4− | 0.8− | 2006 11 16 | 704 | 0.4− | 0.3− | 2006 11 28 | 704 | 0.7+ | 0.1+ |
| 2002 11 06 | 704 | 1.2+ | 1.0+ | 2006 11 16 | 704 | 0.7+ | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2002 11 06 | 704 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2002 11 06 | 704 | 0.9− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2002 11 06 | 704 | 0.5+ | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.3− | 2006 12 01 | 704 | 0.1+ | 0.3− |
| 2002 11 13 | 644 | 0.3− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.2+ | 2006 12 01 | 704 | 0.8− | 0.7+ |
| 2002 11 13 | 644 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.1+ | 2006 12 01 | 704 | 1.0− | 0.5+ |
| 2002 11 13 | 644 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.1+ | 2006 12 01 | 704 | 0.7− | 0.0 |
| 2002 11 14 | 704 | 0.2+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.4− |

### 2002 $TK_{139}$ = 2006 $RV_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.41482 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24017120 | $\omega$ | 25.24875 | | +0.85595232 | −0.51608409 |
| $a$ | 2.5632370 | $\Omega$ | 6.11312 | | +0.40943665 | +0.63912173 |
| $e$ | 0.2110579 | $i$ | 17.29984 | | +0.31576457 | +0.57024611 |
| $P$ | 4.10 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 699 | 0.6− | 0.6+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.6+ | 0.2+ |
| 2002 10 04 | 699 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 699 | 1.3+ | 0.8− | 2006 09 14 | 703 | 0.9− | 1.4− | 2006 09 26 | 691 | 0.0 | 1.2− |
| 2002 10 04 | 699 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.5+ | 0.3− | 2006 09 14 | 703 | 0.5+ | 0.2+ | 2006 09 27 | 699 | 1.1+ | 0.6+ |
| 2002 10 05 | 704 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.1+ | 0.5+ | 2006 09 27 | 699 | 0.7− | 0.8− |
| 2002 10 05 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.4− | 2006 09 27 | 699 | 0.8+ | 0.3+ |
| 2002 10 12 | 704 | 0.4− | 0.0 | 2006 09 17 | 704 | 1.0− | 1.2− | 2006 09 27 | 699 | 0.7+ | 0.2− |
| 2002 10 12 | 704 | 0.9− | 0.4− | 2006 09 17 | 704 | 0.6+ | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 1.0− | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.3− | 0.0 |
| 2002 10 12 | 704 | 1.1− | 0.4+ | 2006 09 17 | 704 | 0.8+ | 0.9− | 2006 09 29 | 704 | 0.2− | 0.1+ |
| 2002 11 14 | 644 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.1+ | 1.3− | 2006 09 29 | 704 | 0.3− | 0.1− |
| 2002 11 14 | 644 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.4− | 0.3− | 2006 09 29 | 704 | 0.3− | 0.1− |
| 2002 11 14 | 644 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2002 11 14 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.5+ | 0.9− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2002 11 14 | 644 | 0.7+ | 0.1− | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 11 14 | 644 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2+ | 1.2+ |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.7+ |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.7+ |
| 2006 08 18 | 644 | 0.2+ | 0.6+ | 2006 09 20 | 704 | 0.5− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.6− | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 2006 08 18 | 644 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 09 21 | 138 | (1.8+ | 1.8−) | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 09 22 | 138 | 0.8− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 09 22 | A50 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 138 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.1+ | 1.4+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2006 09 14 | 703 | 0.8− | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2006 09 14 | 703 | 0.3− | 1.0+ | 2006 09 25 | 704 | 0.0 | 0.0 | | | | |

### 2002 $TW_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.45734 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24617943 | $\omega$ | 341.49650 | | +0.84934958 | −0.46420330 |
| $a$ | 2.5213601 | $\Omega$ | 48.84327 | | +0.51655291 | +0.63313710 |
| $e$ | 0.2383646 | $i$ | 19.49280 | | +0.10852824 | +0.61939705 |
| $P$ | 4.00 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.2− | 0.1+ | 2002 11 11 | 704 | 0.7+ | 1.0+ | 2006 10 17 | 703 | 0.7− | 1.1+ |
| 2002 10 05 | 644 | 0.4− | 0.2+ | 2002 11 11 | 704 | 1.2+ | 1.3+ | 2006 10 17 | 703 | 1.1− | 0.7+ |
| 2002 10 05 | 644 | 0.3− | 0.2+ | 2006 09 19 | 703 | 1.1+ | 0.6− | 2006 10 17 | 703 | 1.0− | 0.4+ |
| 2002 10 06 | 644 | 0.4− | 0.8+ | 2006 09 19 | 703 | 1.3− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2002 10 06 | 644 | 0.1− | 0.8+ | 2006 09 19 | 703 | 0.6+ | 0.6+ | 2006 10 22 | 703 | (2.1+ | 0.3+) |
| 2002 10 06 | 644 | 0.2− | 0.7+ | 2006 09 19 | 703 | 0.8− | 0.5− | 2006 10 22 | 703 | 1.0+ | 0.7+ |
| 2002 10 29 | 645 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.2− | 0.7− | 2006 10 22 | 703 | 0.4+ | 1.1− |
| 2002 10 29 | 645 | 0.1− | 0.1− | 2006 09 26 | 703 | (2.1− | 0.5+) | 2006 10 22 | 703 | 0.3− | 0.9+ |
| 2002 10 30 | 704 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.1+ | 0.3+ |
| 2002 10 30 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.4− | 2006 10 28 | 703 | 0.7− | 0.1+ |
| 2002 10 30 | 704 | 1.1+ | 0.5+ | 2006 10 02 | 703 | 1.4+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.9− |
| 2002 10 30 | 704 | 0.9+ | 0.9+ | 2006 10 02 | 703 | (0.3− | 1.7+) | 2006 11 13 | 703 | 0.5− | 0.3+ |
| 2002 10 30 | 704 | 0.8+ | 0.4− | 2006 10 02 | 703 | 1.2+ | 0.6− | 2006 11 13 | 703 | 1.2− | 0.9− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 02 | 703 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.2− | 0.0 |
| 2002 11 07 | 645 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.8+ | 1.0+ |
| 2002 11 11 | 704 | (1.2− | 2.1+) | 2006 10 12 | 644 | 0.1+ | 0.1− | | | | |
| 2002 11 11 | 704 | 0.2− | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.2− | | | | |

### 2002 $TU_{144}$ = 2006 $VX_{8}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.79093 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26267041 | $\omega$ | 273.55647 | | +0.94043877 | −0.33775809 |
| $a$ | 2.4146932 | $\Omega$ | 106.18681 | | +0.32570530 | +0.86256807 |
| $e$ | 0.1982887 | $i$ | 2.30695 | | +0.09742163 | +0.37669059 |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 26 | 644 | 0.0 | 0.1− | 2002 10 08 | 699 | 0.9+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2002 09 26 | 644 | 0.1− | 0.0 | 2002 10 08 | 699 | (1.9− | 0.0 ) | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 09 26 | 644 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.4+ | 0.1+ |
| 2002 10 01 | 608 | 0.4− | 0.5+ | 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 11 15 | 691 | 0.3− | 0.2− |
| 2002 10 01 | 608 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 608 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 10 02 | 704 | (1.7+ | 0.8+) | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | (2.6+ | 2.8−) | 2006 11 11 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 1.3+ | 1.1− | 2006 11 11 | 691 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.3− |
| 2002 10 02 | 704 | 0.2+ | 0.2− | 2006 11 11 | 291 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2002 10 03 | 704 | 0.9− | 0.6+ | 2006 11 11 | 291 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.8+ | 0.3− |
| 2002 10 03 | 704 | 1.0+ | 0.7+ | 2006 11 11 | 291 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.9− | 0.4− | 2006 11 12 | 703 | 0.6− | 0.6+ | 2006 11 27 | 703 | 0.2+ | 0.5− |
| 2002 10 03 | 704 | 0.3+ | 0.5− | 2006 11 12 | 703 | 0.6− | 0.2− | 2006 11 27 | 703 | 0.6− | 0.6+ |
| 2002 10 06 | 644 | 0.0 | 0.2+ | 2006 11 12 | 703 | (0.7− | 1.7−) | 2006 11 29 | 704 | 0.5+ | 0.1− |
| 2002 10 06 | 644 | 0.2− | 0.0 | 2006 11 12 | 703 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.9− | 1.1+ |
| 2002 10 06 | 644 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.5− | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.8+ | 0.9+ |
| 2002 10 08 | 699 | 0.1− | 1.0+ | 2006 11 12 | G96 | 0.4+ | 0.4− | 2006 11 29 | 704 | (2.2− | 0.3−) |

### 2002 $TW_{144}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.25560 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26189973 | $\omega$ | 114.69514 | | +0.98002961 | −0.19781175 |
| $a$ | 2.4194279 | $\Omega$ | 256.71906 | | +0.17407021 | +0.90278498 |
| $e$ | 0.1865015 | $i$ | 1.19570 | | +0.09613282 | +0.38190286 |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.8− | 0.8+ | 2002 10 07 | 704 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2002 10 02 | 704 | 0.6+ | 0.7+ | 2002 10 07 | 704 | 0.6− | 0.9+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2002 10 02 | 704 | 0.5− | 0.1+ | 2002 10 11 | 704 | (0.5+ | 1.7−) | 2006 11 15 | 691 | 0.4− | 0.1− |
| 2002 10 02 | 704 | 0.6+ | 0.2− | 2002 10 11 | 704 | 0.6− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.0 | 0.4+ | 2002 10 11 | 704 | 1.2+ | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 10 02 | 599 | 0.5+ | 0.3− | 2002 10 11 | 704 | 0.4− | 0.6− | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 2002 10 02 | 599 | (0.1− | 1.6−) | 2002 11 07 | 695 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 2002 10 02 | 599 | 0.2− | 0.6− | 2002 11 07 | 695 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 1.0+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 21 | 704 | (0.1+ | 1.6+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 27 | 703 | (2.1+ | 1.6+) |
| 2002 10 03 | 704 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.9− | 2006 11 27 | 703 | 0.5+ | 1.1+ |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2002 10 06 | 644 | 0.1− | 0.5− | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.5+ |
| 2002 10 06 | 644 | 0.2− | 0.6− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.6− | 0.6− |
| 2002 10 06 | 644 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2002 10 07 | 704 | 0.3− | 0.6+ | 2006 11 11 | G96 | 0.6− | 0.4− | | | | |

**2002 TY$_{144}$ = 2006 RB$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.82648 | | (2000.0) | | | |
| $n$ | 0.24114103 | $\omega$ | 285.06970 | | +0.83291973 | −0.53606306 |
| $a$ | 2.5563598 | $\Omega$ | 107.52212 | | +0.54676488 | +0.75885285 |
| $e$ | 0.3072917 | $i$ | 8.28484 | | +0.08539839 | +0.36983612 |
| $P$ | 4.09 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 608 | 0.6+ | 0.1+ | 2002 10 15 | 644 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2002 10 02 | 608 | 0.3+ | 0.0 | 2002 10 15 | 644 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.7+ |
| 2002 10 02 | 608 | 0.2+ | 0.0 | 2002 10 28 | 644 | 0.0 | 0.2+ | 2006 09 20 | 703 | 0.7− | 0.6+ |
| 2002 10 06 | 704 | 0.4− | 0.4+ | 2002 10 28 | 644 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.2− | 0.3+ |
| 2002 10 06 | 644 | 0.1+ | 0.9− | 2002 10 28 | 644 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.2+ | 0.5− |
| 2002 10 06 | 704 | 0.4+ | 0.3− | 2002 10 30 | 704 | 0.2− | 0.6+ | 2006 09 20 | 703 | 0.7+ | 0.4− |
| 2002 10 06 | 644 | 0.0 | 0.7− | 2002 10 30 | 704 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.6− | 0.0 |
| 2002 10 06 | 704 | 0.4− | 0.3− | 2002 10 30 | 704 | 0.4+ | 0.8+ | 2006 09 26 | 703 | 0.6+ | 0.1− |
| 2002 10 06 | 644 | 0.1+ | 0.8− | 2002 10 30 | 704 | 1.0− | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.9− |
| 2002 10 15 | 644 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.4+ |

**2002 TA$_{146}$ = 2006 UE$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.26310 | | (2000.0) | | | |
| $n$ | 0.25997839 | $\omega$ | 153.02441 | | +0.92335381 | −0.38192123 |
| $a$ | 2.4313336 | $\Omega$ | 229.48485 | | +0.34224982 | +0.86525309 |
| $e$ | 0.1771001 | $i$ | 2.97223 | | +0.17401952 | +0.32476648 |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.5+ | 0.5+ |
| 1995 12 18 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.7− | 0.2− |
| 1995 12 18 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.5− | 0.5+ |
| 2002 09 06 | 704 | 0.3− | 0.9+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2002 09 06 | 704 | 0.1− | 1.1+ | 2006 10 17 | 691 | (0.0 | 1.6−) | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2006 10 17 | 691 | 1.5+ | 1.0− | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2002 10 04 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 691 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.6− | 0.4+ |
| 2002 10 04 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.5− | 2006 11 18 | 704 | 0.2− | 1.0+ |
| 2002 10 06 | 644 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 10 06 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2002 10 06 | 644 | 0.1− | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 21 | 704 | (0.6+ | 1.8+) |
| 2002 10 06 | 644 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2002 10 06 | 644 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2002 10 06 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | (0.4− | 2.4+) |
| 2002 10 12 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | (0.8− | 2.1+) |
| 2002 10 12 | 704 | 0.5− | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 0.5− | 0.5− | 2006 11 10 | 644 | 0.5+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2002 10 31 | 704 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2002 10 31 | 704 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 1.9− | 0.3+ |
| 2002 10 31 | 704 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 1.0− | 0.7+ |
| 2002 10 31 | 704 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.9+ |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.7+ | 0.5− |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.5+ |
| 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.4− |

**2002 TF$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.81787 | | (2000.0) | | | |
| $n$ | 0.21967352 | $\omega$ | 168.65301 | | +0.59439558 | −0.79131223 |
| $a$ | 2.7203049 | $\Omega$ | 244.71720 | | +0.72486142 | +0.60434066 |
| $e$ | 0.2337354 | $i$ | 9.11513 | | +0.34823816 | +0.09272178 |
| $P$ | 4.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 699 | 0.4+ | 1.5+ | 2002 09 04 | 699 | 0.8+ | 0.7+ | 2002 10 05 | 704 | 1.3+ | 0.8+ |
| 1999 01 23 | 699 | 0.0 | 0.2+ | 2002 09 04 | 699 | 1.1+ | 0.8+ | 2002 10 05 | 704 | 1.1+ | 1.9+ |
| 1999 01 23 | 699 | 0.4− | 0.3+ | 2002 09 04 | 644 | 0.2− | 0.7− | 2002 10 06 | 644 | 0.3− | 0.3+ |
| 2002 08 11 | 704 | 0.5− | 0.3− | 2002 09 04 | 644 | 0.4− | 0.7− | 2002 10 06 | 644 | 0.4− | 0.2+ |
| 2002 08 11 | 704 | 0.1+ | 0.5− | 2002 09 04 | 644 | 0.2− | 0.5− | 2002 10 06 | 644 | 0.3− | 0.3+ |
| 2002 08 11 | 704 | 0.3+ | 0.1+ | 2002 09 12 | 644 | 0.5− | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.2− |
| 2002 08 11 | 704 | 0.1− | 0.3− | 2002 09 12 | 644 | 0.4− | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.2− |
| 2002 08 27 | 644 | 0.5− | 0.8+ | 2002 09 12 | 644 | 0.3− | 0.1+ | 2004 01 17 | 608 | 0.1− | 0.5− |
| 2002 08 27 | 644 | 0.0 | 0.9+ | 2002 10 05 | 644 | 0.3− | 0.2+ | 2004 01 17 | 608 | 0.1+ | 0.4− |
| 2002 08 27 | 644 | 0.3− | 0.9+ | 2002 10 05 | 644 | 0.3− | 0.4+ | 2004 01 17 | 608 | 0.4− | 0.2− |
| 2002 09 04 | 699 | 0.9− | 0.0 | 2002 10 05 | 644 | 0.5− | 0.3+ | | | | |
| 2002 09 04 | 699 | 1.1+ | 0.1+ | 2002 10 05 | 704 | 0.8+ | 0.8+ | | | | |

**2002 TK$_{155}$ = 2006 WT$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.04897 | | (2000.0) | | | |
| $n$ | 0.27119932 | $\omega$ | 154.90519 | | +0.95295599 | −0.28850523 |
| $a$ | 2.3637978 | $\Omega$ | 222.21372 | | +0.24949883 | +0.92075067 |
| $e$ | 0.1745708 | $i$ | 7.95173 | | +0.17211979 | +0.26264602 |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2002 10 05 | 704 | 1.0+ | 0.1+ | 2006 11 16 | 691 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2002 10 06 | 644 | 1.0− | 0.2− | 2006 11 16 | 691 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.4− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 10 06 | 644 | 0.2+ | 0.7+ | 2006 11 17 | G96 | 0.4+ | 0.3− | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.4− | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.3+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 1.1+ |
| 2006 09 27 | G96 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.8+ | 0.1+ |
| 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.7+ | 0.2− |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.3− | 0.0 | | | | |

**2002 TU$_{158}$ = 2006 PG$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.13771 | | (2000.0) | | | |
| $n$ | 0.23977736 | $\omega$ | 279.92329 | | +0.97130869 | +0.07331671 |
| $a$ | 2.5660430 | $\Omega$ | 76.13677 | | +0.03422662 | +0.89829707 |
| $e$ | 0.2423390 | $i$ | 13.47535 | | −0.23534649 | +0.43322861 |
| $P$ | 4.11 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.1− | 0.8+ | 2002 10 07 | 608 | 0.3− | 0.4− | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2002 10 05 | 644 | 0.2− | 0.1− | 2002 10 07 | 608 | 0.2− | 0.9− | 2006 08 20 | 644 | 1.0+ | 0.1+ |
| 2002 10 05 | 704 | 0.5+ | 0.8+ | 2002 10 07 | 608 | 0.3+ | 0.7− | 2006 09 16 | E12 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2002 10 16 | 644 | 0.1− | 0.3+ | 2006 09 16 | E12 | 0.7− | 0.2+ |
| 2002 10 05 | 644 | 0.4− | 0.0 | 2002 10 16 | 644 | 0.0 | 0.2− | 2006 09 16 | E12 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2002 10 16 | 644 | 0.3+ | 0.3+ | 2006 09 16 | E12 | 0.2− | 0.4+ |
| 2002 10 05 | 644 | 0.4− | 0.0 | 2006 08 14 | 644 | 0.6− | 0.1+ | 2006 10 12 | E12 | 0.5+ | 1.1− |
| 2002 10 06 | 644 | 0.1+ | 0.3+ | 2006 08 14 | 644 | 0.4− | 0.5− | 2006 10 12 | E12 | 0.5+ | 0.4− |
| 2002 10 06 | 644 | 0.1− | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.1− | 2006 10 12 | E12 | 0.0 | 0.2+ |
| 2002 10 06 | 644 | 0.0 | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.1+ | 2006 10 12 | E12 | 0.3+ | 0.2− |

**2002 TA$_{159}$ = 2006 SR$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.74600 | | (2000.0) | | | |
| $n$ | 0.23398883 | $\omega$ | 265.28397 | | +0.98517337 | −0.00043289 |
| $a$ | 2.6081904 | $\Omega$ | 94.67075 | | +0.06640231 | +0.92301955 |
| $e$ | 0.1538308 | $i$ | 9.91185 | | −0.15819029 | +0.38475280 |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.7− | 0.0 | 2002 10 28 | 644 | 0.3− | 0.0 | 2006 08 28 | E12 | 0.0 | 0.4+ |
| 2002 10 05 | 644 | 0.3− | 0.0 | 2002 10 28 | 644 | 1.3+ | 0.0 | 2006 09 20 | 703 | 0.3+ | 1.3− |
| 2002 10 05 | 644 | 0.4− | 0.2+ | 2002 10 28 | 644 | 0.4+ | 0.2− | 2006 09 20 | 703 | 1.3+ | 0.2+ |
| 2002 10 06 | 644 | 0.1− | 0.4+ | 2005 04 10 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 703 | 0.1+ | 0.4+ |
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2005 04 10 | 691 | 0.5− | 0.2+ | 2006 09 20 | 703 | 1.0− | 0.6− |
| 2002 10 06 | 644 | 0.1− | 0.3+ | 2005 04 10 | 691 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.7− | 1.2− |
| 2002 10 15 | 644 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.5− | 1.2+ | 2006 09 26 | 703 | 0.9+ | 0.2+ |
| 2002 10 15 | 644 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.4+ | 0.1− |
| 2002 10 15 | 644 | 0.2− | 0.0 | 2006 08 28 | E12 | 0.9− | 0.8+ | 2006 09 26 | 703 | 0.4+ | 0.6− |

**2002 TO$_{164}$ = 2006 QH$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.18876 | | (2000.0) | | | |
| $n$ | 0.22452131 | $\omega$ | 234.97836 | | +0.93459641 | +0.24766738 |
| $a$ | 2.6810053 | $\Omega$ | 109.48305 | | −0.16692300 | +0.93921025 |
| $e$ | 0.1325826 | $i$ | 15.71378 | | −0.31411185 | +0.23779189 |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.1+ | 0.2+ | 2002 12 01 | 704 | 0.4+ | 1.1− | 2006 08 16 | 644 | 0.2+ | 0.2+ |
| 2002 10 05 | 644 | 0.1+ | 0.4+ | 2002 12 01 | 704 | 0.5− | 0.0 | 2006 08 16 | 644 | 0.4− | 0.0 |
| 2002 10 05 | 644 | 0.3− | 0.3+ | 2002 12 01 | 704 | 0.4− | 0.4+ | 2006 08 16 | 644 | 0.1+ | 0.4+ |
| 2002 10 06 | 644 | 0.3− | 1.0− | 2002 12 01 | 704 | 0.2+ | 1.4+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2002 10 06 | 644 | 0.6− | 0.8− | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.3− | 0.0 |
| 2002 10 06 | 644 | 0.4− | 1.0− | 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.4+ |
| 2002 10 28 | 644 | 0.4+ | 0.5+ | 2005 04 13 | 703 | 0.5+ | 0.6+ | 2006 09 28 | E12 | 0.1− | 0.7+ |
| 2002 10 28 | 644 | 0.7+ | 0.1+ | 2005 04 13 | 703 | 0.3+ | 0.1− | 2006 09 28 | E12 | 0.1− | 0.2− |
| 2002 10 28 | 644 | 0.1− | 0.4+ | 2005 04 13 | 703 | 0.3+ | 0.8+ | 2006 09 28 | E12 | 0.4+ | 0.2+ |
| 2002 12 01 | 704 | 0.1+ | 0.9+ | 2005 04 13 | 703 | 0.6− | 0.6+ | 2006 09 28 | E12 | 0.0 | 0.3+ |

**2002 TF$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.33293 | | (2000.0) | | | |
| $n$ | 0.27260687 | $\omega$ | 332.25201 | | +0.38131708 | −0.91552483 |
| $a$ | 2.3556541 | $\Omega$ | 95.09378 | | +0.87019923 | +0.30870702 |
| $e$ | 0.2414225 | $i$ | 7.38960 | | +0.31201054 | +0.25790360 |
| $P$ | 3.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 24 | 644 | 0.6+ | 0.1+ | 2002 10 25 | 644 | 0.5+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2002 08 24 | 644 | 0.5+ | 0.4+ | 2002 10 25 | 644 | 1.0+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.8− |
| 2002 08 24 | 644 | 0.6+ | 0.2+ | 2002 10 25 | 644 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2002 09 19 | 644 | 0.4− | 0.3+ | 2002 12 02 | 608 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.9− | 0.5+ |
| 2002 09 19 | 644 | 0.4− | 0.4+ | 2002 12 02 | 608 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2002 09 19 | 644 | 0.4− | 0.5+ | 2002 12 02 | 608 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.1− |
| 2002 10 02 | 608 | 0.0 | 0.7− | 2006 10 22 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2002 10 02 | 608 | 0.6− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− | 2006 11 28 | G96 | 0.4− | 1.1− |
| 2002 10 02 | 608 | 0.6− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.3− | 2006 11 28 | G96 | 0.3− | 0.6− |
| 2002 10 06 | 704 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.3− | 0.2− | 2006 11 28 | G96 | 0.1− | 0.5− |
| 2002 10 06 | 704 | 0.4− | 0.4− | 2006 10 31 | G96 | 0.1− | 0.6− | 2006 11 28 | G96 | 0.4− | 0.6− |
| 2002 10 06 | 704 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.4− | 2006 11 29 | 704 | 2.2+ | 2.4+ |
| 2002 10 16 | 644 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.4− | 2006 11 29 | 704 | 0.5− | 1.3+ |
| 2002 10 16 | 644 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.7− | 2006 11 29 | 704 | 0.6− | 1.8+ |
| 2002 10 16 | 644 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.4− | 0.9− | 2006 11 29 | 704 | 0.8+ | 1.7+ |

**2002 TM$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.86612 | | (2000.0) | | | |
| $n$ | 0.25511556 | $\omega$ | 237.61654 | | +0.86786832 | −0.49137887 |
| $a$ | 2.4621325 | $\Omega$ | 151.61541 | | +0.49162121 | +0.82827478 |
| $e$ | 0.3139807 | $i$ | 8.85191 | | +0.07150640 | +0.26927254 |
| $P$ | 3.86 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 25 | 644 | 0.2+ | 0.5− | 2006 11 19 | 703 | 0.4− | 0.2+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 29 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.4+ | 0.5− |
| 2002 10 02 | 608 | 0.2+ | 0.4− | 2002 10 29 | 704 | 1.0+ | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.3+ |
| 2002 10 02 | 608 | 0.0 | 0.7− | 2002 10 29 | 704 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2002 10 02 | 608 | 0.0 | 0.8− | 2002 10 29 | 704 | 0.5+ | 0.5+ | 2006 11 29 | 704 | 1.0+ | 0.8− |
| 2002 10 06 | 704 | 0.1+ | 0.1− | 2002 11 05 | 644 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.2+ |
| 2002 10 06 | 704 | 0.1+ | 0.1+ | 2002 11 05 | 644 | 0.4+ | 0.5+ | 2006 11 29 | 704 | 0.5+ | 0.4− |
| 2002 10 06 | 704 | 0.3+ | 0.4+ | 2002 11 05 | 644 | 0.5+ | 0.6+ | 2006 11 29 | 704 | 1.1− | 0.4+ |
| 2002 10 08 | 699 | 0.2− | 0.4+ | 2002 11 27 | 699 | 1.1− | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2002 10 08 | 699 | 0.0 | 0.0 | 2002 11 27 | 699 | 0.5− | 0.6+ | 2006 11 29 | 704 | 1.2+ | 0.7+ |
| 2002 10 08 | 699 | 0.7− | 0.2+ | 2002 11 27 | 699 | (1.7+ | 1.3−) | 2006 11 29 | 704 | 0.1+ | 0.3− |
| 2002 10 08 | 699 | 0.1− | 0.2+ | 2002 11 27 | 699 | 0.6− | 0.7− | 2006 11 29 | 704 | 2.2− | 0.6+ |
| 2002 10 16 | 644 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.0 | 2006 12 01 | 703 | 0.4− | 0.8− |
| 2002 10 16 | 644 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.0 | 0.3− | 2006 12 01 | 703 | 1.0+ | 0.1+ |
| 2002 10 16 | 644 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.2− | 0.1− | 2006 12 01 | 703 | 0.8+ | 0.0 |
| 2002 10 25 | 644 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.2+ | 0.0 | 2006 12 01 | 703 | 0.9− | 0.1− |
| 2002 10 25 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.1− | 0.1+ | | | | |

**2002 TF$_{166}$ = 2006 VE$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.16098 | | (2000.0) | | | |
| $n$ | 0.26165957 | $\omega$ | 104.68671 | | +0.96841552 | +0.21106505 |
| $a$ | 2.4209081 | $\Omega$ | 243.27590 | | −0.24409696 | +0.91113546 |
| $e$ | 0.2970319 | $i$ | 8.54739 | | +0.05087302 | +0.35395441 |
| $P$ | 3.77 | $H$ | 18.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 02 | 049 | 0.1− | 0.4− | 2002 10 06 | 704 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2002 09 02 | 049 | 0.4− | 0.7− | 2002 10 06 | 704 | 0.4− | 0.9+ | 2006 10 20 | G96 | 0.6− | 0.4− |
| 2002 09 02 | 049 | 0.5− | 0.2− | 2002 10 06 | 704 | 0.6+ | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2002 09 03 | 644 | 0.1+ | 0.3+ | 2002 10 06 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2002 09 03 | 644 | 0.2+ | 0.2+ | 2002 10 06 | 704 | 0.6+ | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.1− |
| 2002 09 03 | 644 | 0.2+ | 0.3+ | 2002 10 09 | 704 | 0.5− | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2002 09 11 | 644 | 0.5+ | 0.2+ | 2002 10 09 | 704 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.2− |
| 2002 09 11 | 644 | 0.4+ | 0.1+ | 2002 10 09 | 704 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2002 09 11 | 644 | 0.2+ | 0.0 | 2002 10 09 | 704 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2002 09 12 | 049 | 0.1− | 0.4− | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 09 12 | 049 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 09 12 | 049 | 0.4− | 0.5− | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2002 10 03 | 644 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 22 | 691 | 0.3− | 0.1+ |
| 2002 10 03 | 644 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.5− | 0.3+ | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 2002 10 03 | 644 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− | | | | |

**2002 TD$_{167}$ = 2006 UC$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.84292 | | (2000.0) | | | |
| $n$ | 0.25129678 | $\omega$ | 129.79897 | | +0.96697602 | −0.11496885 |
| $a$ | 2.4870132 | $\Omega$ | 237.95214 | | +0.05544767 | +0.96599708 |
| $e$ | 0.1152163 | $i$ | 15.56670 | | +0.24876282 | +0.23158540 |
| $P$ | 3.92 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.0 | 0.3+ | 2005 06 14 | 691 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2002 10 03 | 644 | 0.2− | 0.5+ | 2005 06 14 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 10 03 | 644 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.2+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 10 06 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 1.2− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.2+ | 0.5− | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2002 10 06 | 704 | 0.2+ | 0.8+ | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 10 27 | 703 | 1.0+ | 1.0− | | |
| 2002 10 06 | 704 | 0.5− | 0.9− | 2006 10 10 | 644 | 0.2+ | 0.3− | 2006 10 27 | 703 | 0.8− | 0.3− | | |
| 2002 10 06 | 704 | 0.3+ | 0.7− | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.2− | 0.5− | | |
| 2002 10 11 | 704 | 0.2+ | 0.7− | 2006 10 19 | 703 | 0.8+ | 0.0 | 2006 10 27 | 703 | 0.0 | 1.9− | | |
| 2002 10 11 | 704 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.8+ | 2.0+ | 2006 10 31 | 703 | 0.3− | 1.3+ | | |
| 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.9− | 1.1+ | 2006 10 31 | 703 | 0.6+ | 0.5+ | | |
| 2002 10 11 | 704 | 0.2− | 0.0 | 2006 10 19 | 703 | 1.0+ | 1.4+ | 2006 10 31 | 703 | 0.7− | 0.4+ | | |
| 2005 06 14 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.2− | 2006 10 31 | 703 | 0.3− | 0.4− | | |

**2002 TE$_{171}$ = 2006 RG$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.72446 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24467856 | $\omega$ | 24.50166 | | +0.97827515 | +0.17194148 | |
| $a$ | 2.5316603 | $\Omega$ | 324.97216 | | −0.20730643 | +0.81494311 | |
| $e$ | 0.1053081 | $i$ | 11.64124 | | +0.00133143 | +0.55344725 | |
| $P$ | 4.03 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 01 | 691 | 0.4+ | 0.1− | 2004 01 22 | 704 | 0.8+ | 1.0− | 2006 09 25 | 703 | 0.6− | 0.2− | | |
| 2000 03 01 | 691 | 0.2− | 0.4− | 2004 01 22 | 704 | (1.7+ | 0.3−) | 2006 09 25 | 703 | 0.4− | 0.7− | | |
| 2000 03 01 | 691 | 0.4− | 0.2+ | 2004 01 22 | 704 | 0.8+ | 0.7+ | 2006 09 28 | 703 | 0.4− | 0.6+ | | |
| 2002 10 03 | 644 | 0.0 | 0.3− | 2004 01 31 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 1.0+ | 1.3+ | | |
| 2002 10 03 | 644 | 0.2− | 0.1− | 2004 01 31 | 691 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.0 | 0.2+ | | |
| 2002 10 03 | 644 | 0.0 | 0.3− | 2004 01 31 | 691 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.4+ | | |
| 2002 10 06 | 704 | (2.2+ | 0.8−) | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 06 | 704 | (0.2+ | 1.5−) | 2006 09 14 | 644 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.1− | | |
| 2002 10 06 | 704 | 0.2− | 0.7+ | 2006 09 16 | 703 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.9− | | |
| 2002 10 10 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 703 | 0.5− | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.4− | | |
| 2002 10 10 | 704 | 0.2− | 0.3− | 2006 09 16 | 703 | 0.9− | 0.5− | 2006 10 19 | 703 | 1.0+ | 0.0 | | |
| 2002 10 10 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 1.0− | 2006 10 19 | 703 | 0.1+ | 0.4− | | |
| 2002 10 10 | 704 | 0.4− | 0.4+ | 2006 09 25 | 703 | 0.5− | 0.5− | | | | | | |
| 2004 01 22 | 704 | 1.0+ | 0.2+ | 2006 09 25 | 703 | 0.2+ | 0.3+ | | | | | | |

**2002 TF$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.53085 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31037987 | $\omega$ | 39.28489 | | +0.75802235 | +0.63950906 | |
| $a$ | 2.1604308 | $\Omega$ | 280.47418 | | −0.62642839 | +0.65911118 | |
| $e$ | 0.2087019 | $i$ | 7.48997 | | −0.18163036 | +0.39572795 | |
| $P$ | 3.18 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.4+ | 0.2− | 2002 10 31 | 644 | 0.3+ | 0.5+ | 2005 08 26 | 699 | 0.7− | 0.8+ | | |
| 2002 10 03 | 644 | 0.2− | 0.1+ | 2005 07 30 | 644 | 0.3− | 0.0 | 2005 08 26 | 699 | 0.2+ | 0.4− | | |
| 2002 10 03 | 644 | 0.6+ | 1.1− | 2005 07 30 | 644 | 0.0 | 0.2+ | 2005 09 02 | 644 | 0.2+ | 0.1− | | |
| 2002 10 06 | 704 | 0.2− | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.0 | 2005 09 02 | 644 | 0.2− | 0.1− | | |
| 2002 10 06 | 704 | 0.1+ | 0.3− | 2005 08 24 | 644 | 0.1− | 0.2− | 2005 09 02 | 644 | 0.3+ | 0.1− | | |
| 2002 10 06 | 704 | 0.0 | 0.4+ | 2005 08 24 | 644 | 0.5− | 0.1− | 2005 09 02 | 644 | 0.0 | 0.0 | | |
| 2002 10 06 | 704 | 0.8− | 0.3+ | 2005 08 24 | 644 | 0.0 | 0.2− | 2005 09 02 | 644 | 0.0 | 0.3− | | |
| 2002 10 31 | 644 | 0.3− | 0.1+ | 2005 08 26 | 699 | 0.8+ | 0.1− | 2005 09 02 | 644 | 0.0 | 0.0 | | |
| 2002 10 31 | 644 | 0.0 | 0.2+ | 2005 08 26 | 699 | 0.4+ | 0.6+ | | | | | | |

**2002 TJ$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.58800 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18528291 | $\omega$ | 111.82664 | | +0.93802684 | +0.28001055 | |
| $a$ | 3.0472807 | $\Omega$ | 232.50477 | | −0.32536119 | +0.91445777 | |
| $e$ | 0.2559362 | $i$ | 14.91457 | | +0.11935553 | +0.29216619 | |
| $P$ | 5.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 06 | 691 | 0.1− | 0.3− | 2002 10 06 | 704 | 0.8− | 0.1− | 2002 10 10 | 704 | 0.5+ | 0.4− | | |
| 1997 12 06 | 691 | 0.0 | 0.5− | 2002 10 06 | 704 | 0.6− | 0.0 | 2002 10 10 | 704 | 1.0+ | 0.1− | | |
| 1997 12 06 | 691 | 0.1+ | 0.4− | 2002 10 06 | 704 | 0.6− | 0.2− | 2002 10 10 | 704 | 0.2+ | 0.5− | | |
| 2001 06 16 | 691 | 0.2− | 0.4− | 2002 10 06 | 704 | 0.7− | 0.4− | 2002 10 10 | 704 | 0.3+ | 0.3− | | |
| 2001 06 16 | 691 | 0.3− | 0.3− | 2002 10 06 | 704 | 1.5− | 0.4− | 2002 10 10 | 704 | 0.1+ | 0.3− | | |
| 2001 06 16 | 691 | 0.5+ | 0.3− | 2002 10 07 | 704 | 0.1+ | 0.5+ | 2002 11 06 | 704 | 1.0− | 0.0 | | |
| 2002 09 14 | 699 | 0.6+ | 0.2− | 2002 10 07 | 704 | 0.2− | 0.3+ | 2002 11 06 | 704 | 0.4− | 0.9− | | |
| 2002 09 14 | 699 | 0.6+ | 0.5+ | 2002 10 07 | 704 | 0.1+ | 0.9− | 2002 11 06 | 704 | 0.5+ | 0.7− | | |
| 2002 09 14 | 699 | 0.7+ | 0.0 | 2002 10 07 | 704 | 0.6+ | 0.2− | 2002 11 06 | 704 | 0.5− | 0.6− | | |
| 2002 09 14 | 699 | 0.0 | 0.2+ | 2002 10 07 | 704 | 0.8+ | 0.6− | 2002 12 01 | 704 | 0.2− | 1.2+ | | |
| 2002 10 03 | 644 | 0.1+ | 1.1+ | 2002 10 08 | 704 | 0.1+ | 0.1− | 2002 12 01 | 704 | 0.4− | 1.1+ | | |
| 2002 10 03 | 644 | 0.3+ | 1.3+ | 2002 10 08 | 704 | 0.1+ | 0.2+ | 2002 12 01 | 704 | 1.1− | 0.7+ | | |
| 2002 10 03 | 644 | 0.3+ | 1.1+ | 2002 10 08 | 704 | 0.6+ | 0.2− | | | | | | |

**2002 TN$_{171}$ = 2006 RT$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.60944 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23795423 | $\omega$ | 50.17733 | | +0.98776303 | +0.08867958 | |
| $a$ | 2.5791332 | $\Omega$ | 304.36538 | | −0.13957303 | +0.86969945 | |
| $e$ | 0.1168200 | $i$ | 8.94150 | | +0.06959567 | +0.48555000 | |
| $P$ | 4.14 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.2+ | 0.0 | 2002 10 10 | 704 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.6+ | 0.8+ | | |
| 2002 10 03 | 644 | 1.0+ | 0.2+ | 2002 10 10 | 704 | 0.8− | 0.6− | 2006 09 16 | 644 | 0.3+ | 0.1− | | |
| 2002 10 03 | 644 | 0.1+ | 0.7− | 2003 12 21 | 645 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.2− | 0.0 | | |
| 2002 10 06 | 699 | 0.2− | 1.0− | 2003 12 21 | 645 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.3− | 0.5− | | |
| 2002 10 06 | 699 | 0.6+ | 0.1− | 2003 12 25 | 645 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.2− | 0.3+ | | |
| 2002 10 06 | 699 | (2.8+ | 1.0−) | 2003 12 25 | 645 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.2+ | 0.4+ | | |
| 2002 10 06 | 699 | 0.6+ | 0.5+ | 2006 08 29 | 699 | 1.1+ | 0.6− | 2006 09 17 | 703 | 0.5− | 0.0 | | |
| 2002 10 06 | 704 | 0.1+ | 0.2− | 2006 08 29 | 699 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.6− | 0.7− | | |
| 2002 10 06 | 704 | 0.1+ | 0.3− | 2006 08 29 | 699 | (1.8+ | 1.2+) | 2006 09 21 | 699 | 0.4− | 0.0 | | |
| 2002 10 06 | 704 | 0.5+ | 0.2− | 2006 08 29 | 699 | 0.8+ | 0.2− | 2006 09 21 | 699 | (0.3− | 2.1+) | | |
| 2002 10 06 | 704 | 0.4− | 0.2+ | 2006 09 06 | 644 | 0.6+ | 0.3+ | 2006 09 21 | 699 | 1.0− | 1.2+ | | |
| 2002 10 07 | 704 | 0.3− | 0.2− | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.8+ | 0.6+ | | |
| 2002 10 07 | 704 | 0.3− | 0.1+ | 2006 09 06 | 644 | 0.5+ | 0.0 | 2006 09 29 | 699 | 0.7− | 0.8+ | | |
| 2002 10 07 | 704 | 0.1+ | 0.6+ | 2006 09 15 | 704 | 0.1− | 0.2− | 2006 09 29 | 699 | (2.0− | 2.2−) | | |
| 2002 10 10 | 704 | 0.7− | 0.3+ | 2006 09 15 | 704 | 0.0 | 1.0− | 2006 09 29 | 699 | (1.5− | 2.6−) | | |
| 2002 10 10 | 704 | 0.3− | 0.4+ | 2006 09 15 | 704 | 1.0− | 0.2− | 2006 09 29 | 699 | 0.2− | 0.3+ | | |

**2002 TF$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.88947 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23157886 | $\omega$ | 348.68938 | | +0.96354963 | +0.26370146 | |
| $a$ | 2.6262543 | $\Omega$ | 355.24280 | | −0.18268616 | +0.52541312 | |
| $e$ | 0.1503495 | $i$ | 32.94010 | | −0.19544278 | +0.80895154 | |
| $P$ | 4.26 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.8+ | 0.0 | 2002 10 04 | 644 | 0.3+ | 0.5+ | 2006 08 25 | E12 | 0.3− | 0.9− | | |
| 2002 09 06 | 704 | 0.5+ | 0.1+ | 2002 10 04 | 644 | 0.1+ | 0.6+ | 2006 08 25 | E12 | 0.3− | 0.5− | | |
| 2002 09 06 | 704 | 0.2+ | 0.7− | 2002 10 04 | 644 | 0.3+ | 0.6+ | 2006 09 12 | E12 | 1.1− | 0.5+ | | |
| 2002 09 06 | 704 | 0.1− | 0.1+ | 2002 10 06 | 704 | 0.1+ | 0.4− | 2006 09 12 | E12 | 0.4+ | 0.4− | | |
| 2002 09 07 | 704 | 1.4− | 0.3− | 2002 10 06 | 704 | 0.8+ | 0.2− | 2006 09 12 | E12 | 0.1− | 0.1− | | |
| 2002 09 07 | 704 | 1.1− | 0.4− | 2002 10 06 | 704 | 0.8+ | 0.6+ | 2006 09 12 | E12 | 0.0 | 0.5+ | | |
| 2002 09 07 | 704 | 0.5− | 0.7− | 2002 10 06 | 704 | 0.2+ | 0.1− | 2006 10 11 | E12 | 0.9+ | 0.9− | | |
| 2002 09 07 | 704 | 1.3− | 0.5− | 2002 10 09 | 704 | 0.1+ | 0.7− | 2006 10 11 | E12 | 0.7+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.3− | 0.2+ | 2002 10 09 | 704 | 0.8+ | 1.6+ | 2006 10 11 | E12 | 0.2− | 0.5+ | | |
| 2002 09 07 | 704 | 1.1− | 0.2− | 2002 10 09 | 704 | 0.7+ | 0.1+ | 2006 10 11 | E12 | 0.0 | 0.1+ | | |
| 2002 09 07 | 704 | 0.0 | 0.7+ | 2002 10 09 | 704 | 0.7+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2002 09 07 | 704 | 1.2− | 0.3− | 2002 10 09 | 704 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.4+ | 0.1+ | | |
| 2002 09 07 | 704 | 0.1+ | 0.3− | 2006 08 25 | E12 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2002 09 07 | 704 | 0.7− | 0.5− | 2006 08 25 | E12 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.1− | | |

**2002 TE$_{175}$ = 2006 VY$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.90862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26337546 | $\omega$ | 357.00259 | | +0.85019037 | | +0.52332616 |
| $a$ | 2.4103818 | $\Omega$ | 331.21020 | | −0.48051442 | | +0.72669975 |
| $e$ | 0.2271294 | $i$ | 6.85695 | | −0.21513304 | | +0.44501371 |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.5− | 0.5+ | 2002 09 17 | 644 | 0.2+ | 1.0+ | 2002 10 06 | 704 | 0.5+ | 0.3− |
| 2002 08 12 | 704 | 0.0 | 0.2+ | 2002 09 17 | 644 | 0.2+ | 1.0+ | 2002 10 06 | 704 | (2.2− | 2.3−) |
| 2002 08 12 | 704 | 0.4+ | 0.1+ | 2002 09 17 | 644 | 0.5+ | 1.0+ | 2002 10 06 | 704 | 0.4− | 0.3+ |
| 2002 08 12 | 704 | 0.1+ | 0.5+ | 2002 09 18 | 644 | 0.1− | 1.0− | 2002 10 07 | 699 | 0.6− | 0.9+ |
| 2002 08 16 | 704 | 0.3− | 0.1− | 2002 09 18 | 644 | 0.0 | 0.9− | 2002 10 07 | 699 | 1.2+ | 0.1+ |
| 2002 08 16 | 704 | 0.4− | 0.1+ | 2002 09 18 | 644 | 0.3− | 0.9− | 2002 10 07 | 699 | 0.2+ | 0.5+ |
| 2002 08 16 | 704 | 0.2− | 0.1− | 2002 09 27 | 699 | 0.3+ | 0.3− | 2002 10 07 | 699 | 0.7+ | 1.0+ |
| 2002 09 05 | 608 | 0.5+ | 0.3− | 2002 09 27 | 699 | 0.8+ | 0.1− | 2006 10 27 | 703 | 0.8+ | 1.1+ |
| 2002 09 05 | 608 | 0.0 | 0.3− | 2002 09 27 | 699 | 0.8− | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2002 09 05 | 608 | 0.3+ | 0.2− | 2002 09 27 | 699 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 0.9+ | 0.1− |
| 2002 09 06 | 704 | 0.1+ | 0.4− | 2002 10 04 | 704 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.4− | 1.1− |
| 2002 09 06 | 704 | 0.3+ | 0.2− | 2002 10 04 | 704 | 0.6− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 09 06 | 704 | 0.2− | 0.0 | 2002 10 04 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2002 09 06 | 704 | 0.5+ | 0.4− | 2002 10 04 | 704 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.1+ | 0.3− | 2002 10 04 | 704 | 0.1+ | 1.2− | 2006 11 15 | 703 | (2.0− | 0.5−) |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2002 10 06 | 704 | 0.4− | 0.0 | 2006 11 15 | 703 | 0.5+ | 0.3− |
| 2002 09 13 | 644 | 0.3− | 0.0 | 2002 10 06 | 704 | 0.7− | 0.0 | 2006 11 15 | 703 | 0.8− | 0.2− |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2002 10 06 | 704 | 1.5− | 0.0 | 2006 11 15 | 703 | 0.5− | 0.5− |

**2002 TF$_{175}$ = 2006 SH$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.65404 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24417489 | $\omega$ | 251.10192 | | +0.82969372 | | +0.54275878 |
| $a$ | 2.5351406 | $\Omega$ | 75.83140 | | −0.44802016 | | +0.78688043 |
| $e$ | 0.2575957 | $i$ | 7.73311 | | −0.33299591 | | +0.29365303 |
| $P$ | 4.04 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.2+ | 0.2− | 2002 10 06 | 704 | 0.5− | 1.1+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 1998 09 25 | 645 | 0.2+ | 0.2− | 2002 10 06 | 704 | (1.0− | 1.9+) | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 09 16 | 608 | 0.5− | 0.4− | 2002 11 06 | 644 | 0.6− | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 09 16 | 608 | 0.1− | 0.4− | 2002 11 06 | 644 | 0.9− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2002 09 16 | 608 | 0.2− | 0.3− | 2002 11 06 | 644 | 0.6− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.8+ |
| 2002 09 29 | 608 | 0.9− | 0.3+ | 2006 09 20 | 703 | 0.3− | 0.1+ | 2006 10 21 | 703 | 1.0− | 1.0+ |
| 2002 09 29 | 608 | 0.7− | 0.3+ | 2006 09 20 | 703 | 0.5− | 0.3+ | 2006 10 21 | 703 | (0.3+ | 2.9+) |
| 2002 09 29 | 608 | 0.8− | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.3+ | 2006 10 28 | 703 | (2.2− | 0.8+) |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 703 | 0.2+ | 0.7− | 2006 10 28 | 703 | 0.1− | 1.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.0 | 2006 09 25 | 703 | 0.2+ | 1.2+ | 2006 10 28 | 703 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.3+ | 0.1− | 2006 09 25 | 703 | (0.6+ | 1.7+) | 2006 10 28 | 703 | 0.6− | 0.3+ |
| 2002 10 04 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 703 | (1.1+ | 1.8+) | | | | |
| 2002 10 06 | 704 | 0.4− | 0.1+ | 2006 09 25 | 703 | 1.0+ | 0.9+ | | | | |

**2002 TN$_{176}$ = 2006 QJ$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.04374 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23060033 | $\omega$ | 300.38371 | | +0.97707908 | | +0.08514774 |
| $a$ | 2.6336786 | $\Omega$ | 55.41358 | | +0.02688240 | | +0.85983076 |
| $e$ | 0.2836843 | $i$ | 13.70888 | | −0.21117247 | | +0.50342917 |
| $P$ | 4.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 21 | 644 | 0.6− | 0.3− | 2002 10 06 | 704 | 0.6+ | 0.4− | 2002 11 04 | 608 | 0.6− | 0.3− |
| 2002 09 21 | 644 | 0.8− | 0.4− | 2002 10 07 | 608 | 0.5− | 0.2− | 2006 07 26 | E12 | 0.2− | 0.2− |
| 2002 09 21 | 644 | 0.6− | 0.2− | 2002 10 07 | 608 | 0.4− | 0.4− | 2006 07 26 | E12 | 0.5+ | 0.5− |
| 2002 09 30 | 608 | 0.9+ | 0.9+ | 2002 10 07 | 608 | 0.3− | 0.6− | 2006 07 26 | E12 | 0.4− | 0.1+ |
| 2002 09 30 | 608 | 1.6+ | 0.8+ | 2002 10 15 | 644 | 0.0 | 0.2+ | 2006 08 23 | E12 | 0.1− | 0.0 |
| 2002 09 30 | 608 | 1.2+ | 0.4+ | 2002 10 15 | 644 | 0.1− | 0.1+ | 2006 08 23 | E12 | 0.3+ | 0.3− |
| 2002 10 05 | 644 | 0.4− | 0.2+ | 2002 10 15 | 644 | 0.1− | 0.1− | 2006 08 23 | E12 | 0.0 | 0.4+ |
| 2002 10 05 | 644 | 0.2− | 0.2+ | 2002 10 30 | 704 | 0.9− | 1.4+ | 2006 08 31 | E12 | 0.4− | 0.4+ |
| 2002 10 05 | 644 | 0.1− | 0.1+ | 2002 10 30 | 704 | 0.2+ | 0.2+ | 2006 08 31 | E12 | 0.1− | 0.2+ |
| 2002 10 06 | 704 | 0.4+ | 0.0 | 2002 10 30 | 704 | 0.5+ | 0.1+ | 2006 08 31 | E12 | 0.4+ | 0.1+ |
| 2002 10 06 | 704 | 1.1+ | 0.1− | 2002 10 30 | 704 | 0.1+ | 0.3+ | 2006 08 31 | E12 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 0.3− | 2002 11 04 | 608 | 0.6− | 0.6− | | | | |
| 2002 10 06 | 704 | 0.4+ | 0.8− | 2002 11 04 | 608 | 0.9− | 0.7− | | | | |

**2002 TO$_{177}$ = 2006 RH$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.39371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23589593 | $\omega$ | 72.15188 | | +0.98018686 | | −0.07024074 |
| $a$ | 2.5941142 | $\Omega$ | 291.54811 | | −0.02260893 | | +0.88922559 |
| $e$ | 0.3005140 | $i$ | 11.48545 | | +0.19678047 | | +0.45204433 |
| $P$ | 4.18 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 644 | 0.1+ | 0.2+ | 2002 12 06 | 291 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.8− | 0.6− |
| 2002 10 11 | 644 | 0.2+ | 0.3+ | 2002 12 06 | 291 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.2+ |
| 2002 10 11 | 644 | 0.0 | 0.0 | 2002 12 06 | 291 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.8+ | 0.4+ |
| 2002 10 15 | 704 | 0.0 | 0.2− | 2006 08 27 | 699 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.1+ |
| 2002 10 15 | 704 | 0.0 | 0.0 | 2006 08 27 | 699 | 1.0+ | 0.8+ | 2006 09 19 | 699 | 0.5+ | 0.2− |
| 2002 10 15 | 704 | 0.2− | 0.1− | 2006 08 27 | 699 | 0.3− | 0.8+ | 2006 09 19 | 703 | 0.5− | 0.8+ |
| 2002 10 15 | 704 | 0.9− | 0.1+ | 2006 08 27 | 699 | 0.7− | 1.2− | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2002 11 14 | 644 | 0.7+ | 0.6− | 2006 09 11 | 703 | 0.7− | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.5− |
| 2002 11 14 | 644 | 0.4+ | 0.5− | 2006 09 11 | 703 | 0.9+ | 0.0 | 2006 09 19 | 703 | 0.5− | 0.6− |
| 2002 11 14 | 644 | 0.3+ | 0.6− | 2006 09 11 | 703 | 0.1− | 0.6− | | | | |

**2002 TG$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.04628 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23459404 | $\omega$ | 65.97952 | | +0.93273733 | | +0.28887284 |
| $a$ | 2.6037027 | $\Omega$ | 276.65131 | | −0.35513554 | | +0.83943978 |
| $e$ | 0.1581229 | $i$ | 12.54608 | | +0.06228819 | | +0.46031873 |
| $P$ | 4.20 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 0.1− | 0.9+ | 2002 11 07 | 699 | 0.1− | 0.4− | 2002 12 31 | 704 | (0.5+ | 2.9−) |
| 2002 10 01 | 704 | 0.1− | 0.6+ | 2002 11 07 | 704 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.3+ | 0.2− |
| 2002 10 01 | 704 | 0.3+ | 0.5+ | 2002 11 07 | 699 | 0.5− | 0.4− | 2002 12 31 | 704 | 0.1+ | 1.2+ |
| 2002 10 05 | 699 | (2.1+ | 4.3−) | 2002 11 07 | 704 | 0.5− | 0.0 | 2002 12 31 | 704 | 0.7+ | 0.5+ |
| 2002 10 05 | 699 | 0.9+ | 0.9− | 2002 11 07 | 699 | 0.1+ | 0.7− | 2004 02 12 | 644 | 0.1− | 0.3− |
| 2002 10 05 | 699 | 0.3+ | 0.6− | 2002 11 07 | 704 | 0.3− | 0.2+ | 2004 02 12 | 644 | 0.6− | 0.5− |
| 2002 10 05 | 699 | 0.6+ | 0.7+ | 2002 11 08 | 704 | 0.2− | 0.2+ | 2004 02 12 | 644 | 0.3+ | 0.1− |
| 2002 10 06 | 704 | 0.3− | 0.0 | 2002 11 08 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.2− |
| 2002 10 06 | 704 | 0.2− | 0.1+ | 2002 11 08 | 704 | 0.1− | 0.8+ | 2006 09 17 | 703 | 0.7+ | 0.0 |
| 2002 10 06 | 704 | 0.0 | 0.1− | 2002 11 08 | 704 | 0.7+ | 0.7+ | 2006 09 17 | 703 | 0.2+ | 0.2− |
| 2002 10 06 | 704 | 0.3+ | 0.3− | 2002 11 15 | 704 | 0.3− | 1.2− | 2006 09 17 | 703 | 0.3− | 0.2− |
| 2002 10 06 | 704 | 0.1− | 0.3+ | 2002 11 15 | 704 | 0.3− | 0.5− | 2006 09 22 | 699 | 0.1+ | 0.2+ |
| 2002 10 13 | 644 | 0.4− | 0.0 | 2002 11 15 | 704 | 0.2+ | 1.3− | 2006 09 22 | 699 | 0.6− | 0.1+ |
| 2002 10 13 | 644 | 0.5− | 0.0 | 2002 11 15 | 704 | 0.5− | 1.0− | 2006 09 22 | 699 | 0.1+ | 0.0 |
| 2002 10 13 | 644 | 0.4− | 0.0 | 2002 11 15 | 704 | 0.2+ | 1.2− | 2006 09 28 | 703 | 0.8− | 0.4− |
| 2002 10 15 | 704 | 0.6− | 1.0+ | 2002 11 25 | 644 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.3− | 0.5+ |
| 2002 10 15 | 704 | 1.4+ | 0.2+ | 2002 11 25 | 644 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.4− | 0.1− |
| 2002 10 15 | 704 | 0.7− | 0.2− | 2002 11 25 | 644 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.0 |
| 2002 10 15 | 704 | 0.3+ | 0.1− | 2002 12 05 | 699 | (1.6+ | 0.0 ) | 2006 10 18 | 106 | 0.5+ | 0.5− |
| 2002 10 15 | 704 | 0.1− | 0.1− | 2002 12 05 | 699 | 0.8+ | 0.1− | 2006 10 18 | 106 | 0.0 | 0.3− |
| 2002 10 20 | 644 | 0.0 | 0.5+ | 2002 12 05 | 699 | 0.4+ | 0.5+ | 2006 10 18 | 106 | 0.4+ | 0.4− |
| 2002 10 20 | 644 | 0.0 | 0.3+ | 2002 12 05 | 699 | 1.1+ | 0.0 | 2006 10 18 | 106 | 0.1+ | 0.5+ |
| 2002 10 20 | 644 | 0.1− | 0.3+ | 2002 12 06 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 703 | 0.0 | 0.4− |
| 2002 10 31 | 704 | 0.0 | 0.2− | 2002 12 06 | 704 | 0.0 | 0.2+ | 2006 10 20 | 703 | 0.0 | 0.5− |
| 2002 10 31 | 704 | 0.4− | 0.1+ | 2002 12 06 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 703 | 0.6+ | 1.4− |
| 2002 10 31 | 704 | 0.3− | 0.2− | 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 10 20 | 703 | 1.6+ | 0.6− |
| 2002 10 31 | 704 | 0.6− | 0.2− | 2002 12 06 | 704 | 0.6+ | 0.3+ | 2006 10 21 | 704 | 1.1− | 1.4− |
| 2002 10 31 | 704 | 1.0− | 0.0 | 2002 12 09 | 699 | 0.2+ | 0.5+ | 2006 10 21 | 704 | 0.0 | 1.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2002 12 09 | 699 | 0.3+ | 0.1+ | 2006 10 21 | 704 | 0.8+ | 0.1− |
| 2002 11 07 | 699 | 0.6− | 0.1+ | 2002 12 09 | 699 | 0.3+ | 0.5+ | 2006 10 21 | 704 | 0.4− | 1.7+ |
| 2002 11 07 | 704 | 0.2+ | 0.0 | 2002 12 09 | 699 | 0.8− | 0.0 | | | | |

**2002 TR$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.52675 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23745359 | $\omega$ | 95.48938 | | +0.94422984 | | −0.24779150 |
| $a$ | 2.5827571 | $\Omega$ | 278.99388 | | +0.13903949 | | +0.89701473 |
| $e$ | 0.1959614 | $i$ | 12.68331 | | +0.29849294 | | +0.36601085 |
| $P$ | 4.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.1+ | 0.3+ | 2002 12 03 | 644 | 0.5− | 0.2− | 2006 10 02 | 703 | 0.6− | 0.3− |
| 2002 10 13 | 644 | 0.4+ | 0.1+ | 2002 12 03 | 644 | 0.5− | 0.1− | 2006 10 02 | 703 | 0.2+ | 0.4− |
| 2002 10 13 | 644 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.6− | 2006 10 02 | 704 | 0.4+ | 1.2+ |
| 2002 10 15 | 704 | 0.5+ | 0.3+ | 2002 12 06 | 704 | 0.2+ | 1.1− | 2006 10 02 | 703 | 0.9− | 0.1+ |
| 2002 10 15 | 704 | 0.4− | 0.5+ | 2002 12 06 | 704 | 0.5+ | 0.1+ | 2006 10 02 | 703 | 0.3+ | 0.3− |
| 2002 10 15 | 704 | 0.6+ | 0.3+ | 2002 12 06 | 704 | 1.0+ | 0.5− | 2006 10 02 | 704 | 0.2− | 0.7+ |
| 2002 11 15 | 704 | 0.9− | 0.9− | 2002 12 06 | 704 | 0.0 | 0.4− | 2006 10 02 | 704 | 0.3+ | 0.2+ |
| 2002 11 15 | 704 | 0.5− | 0.5− | 2006 09 24 | 699 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2002 11 15 | 704 | 0.1+ | 0.3+ | 2006 09 24 | 699 | 0.7+ | 0.6+ | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2002 11 15 | 704 | 0.6− | 0.6+ | 2006 09 24 | 699 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.1+ |
| 2002 11 15 | 704 | 0.0 | 0.8+ | 2006 09 25 | 703 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.1+ |
| 2002 11 25 | 644 | 0.5+ | 0.8+ | 2006 09 25 | 703 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.0 | 0.2− |
| 2002 11 25 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 703 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.2− | 0.7− |
| 2002 11 25 | 644 | 0.4+ | 0.7+ | 2006 09 25 | 703 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.5− | 0.8− |
| 2002 12 03 | 644 | 0.4− | 0.2− | 2006 10 02 | 704 | (2.1+ | 0.9+) | 2006 10 27 | 703 | 0.2− | 0.6− |

**2002 TH$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.35220 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23337925 | $\omega$ | 119.05499 | | +0.90007285 | | +0.15665621 |
| $a$ | 2.6127301 | $\Omega$ | 234.96611 | | −0.20745895 | | +0.97465436 |
| $e$ | 0.2597784 | $i$ | 29.77392 | | +0.38318357 | | +0.15971136 |
| $P$ | 4.22 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.3+ | 0.8+ | 2002 11 07 | 704 | 0.3+ | 0.3+ | 2002 12 06 | 704 | 0.2− | 0.5+ |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2002 11 11 | 699 | 0.2+ | 1.1− | 2002 12 11 | 704 | 0.2+ | 0.1+ |
| 2002 10 07 | 704 | 1.3− | 0.3− | 2002 11 11 | 699 | 0.1− | 0.6+ | 2002 12 11 | 704 | 0.0 | 0.0 |
| 2002 10 14 | 644 | 0.2− | 0.8− | 2002 11 11 | 699 | 0.5+ | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.1+ |
| 2002 10 14 | 644 | 0.1− | 1.0− | 2002 11 11 | 699 | 0.7− | 0.1− | 2002 12 11 | 704 | 0.8+ | 0.0 |
| 2002 10 14 | 644 | 0.1− | 0.9− | 2002 11 14 | 704 | 0.3− | 0.2+ | 2003 01 04 | 704 | 0.4− | 0.1+ |
| 2002 10 15 | 704 | (2.1− | 0.8+) | 2002 11 14 | 704 | 0.2+ | 0.3− | 2003 01 04 | 704 | 0.1− | 0.9− |
| 2002 10 15 | 704 | 0.6+ | 0.1+ | 2002 11 14 | 704 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.2− |
| 2002 10 15 | 704 | 0.7+ | 0.4+ | 2002 11 14 | 644 | 0.0 | 0.0 | 2006 09 19 | A74 | 0.4− | 0.1− |
| 2002 10 20 | 644 | 0.0 | 0.2+ | 2002 11 14 | 704 | 0.5+ | 0.4− | 2006 09 19 | A74 | 0.1− | 0.2− |
| 2002 10 20 | 644 | 0.2− | 0.2+ | 2002 11 14 | 644 | 0.2− | 0.1+ | 2006 09 19 | A74 | 0.6− | 0.0 |
| 2002 10 20 | 644 | 0.3− | 0.3+ | 2002 11 14 | 704 | 0.1− | 0.5− | 2006 09 19 | A74 | 0.1+ | 0.6− |
| 2002 11 01 | 704 | 0.1+ | 0.4+ | 2002 11 14 | 644 | 0.3− | 0.1+ | 2006 09 19 | A74 | 0.3+ | 0.6− |
| 2002 11 01 | 704 | 1.1− | 0.2− | 2002 12 02 | 704 | 1.4− | 0.7+ | 2006 09 19 | A74 | 0.5+ | 0.4+ |
| 2002 11 01 | 704 | 0.3− | 0.4− | 2002 12 02 | 704 | 0.6− | 0.2+ | 2006 09 20 | A74 | 1.1+ | 0.0 |
| 2002 11 01 | 704 | 0.3− | 0.2− | 2002 12 02 | 704 | 0.3− | 0.1+ | 2006 09 20 | A74 | 1.0− | 1.3+ |
| 2002 11 07 | 704 | 1.4+ | 0.0 | 2002 12 06 | 704 | 0.4+ | 0.6− | 2006 09 20 | A74 | 0.4+ | 0.2+ |
| 2002 11 07 | 704 | 0.5+ | 0.3+ | 2002 12 06 | 704 | 0.4+ | 0.1+ | 2006 09 20 | A74 | 0.5− | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.4+ | 2002 12 06 | 704 | 0.7+ | 0.2+ | | | | |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2002 12 06 | 704 | 0.6+ | 0.6+ | | | | |

**2002 TX$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.07089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20364300 | $\omega$ | 116.16174 | | +0.87120231 | | +0.48721530 |
| $a$ | 2.8612539 | $\Omega$ | 214.77277 | | −0.47964342 | | +0.81860264 |
| $e$ | 0.3228337 | $i$ | 6.06224 | | −0.10463612 | | +0.30415618 |
| $P$ | 4.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2002 09 19 | 644 | 0.2− | 0.8+ | 2002 10 31 | 645 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.2+ | 0.3+ | 2002 10 04 | 704 | 0.2+ | 0.9+ | 2002 11 08 | 645 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.2+ | 0.3+ | 2002 10 04 | 704 | 0.5+ | 0.5+ | 2002 11 08 | 645 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.0 | 0.1− | 2002 10 04 | 704 | 0.3+ | 0.9+ | 2006 04 19 | G96 | 0.3− | 1.4− |
| 2002 09 06 | 704 | 0.2− | 0.4− | 2002 10 04 | 704 | 0.5+ | 1.0+ | 2006 04 19 | G96 | (0.2− | 3.5−) |
| 2002 09 06 | 704 | 0.3+ | 0.4− | 2002 10 04 | 704 | 0.3+ | 0.7+ | 2006 04 19 | G96 | (0.1− | 4.5−) |
| 2002 09 06 | 704 | 0.0 | 0.3− | 2002 10 07 | 699 | 0.2− | 0.6− | 2006 04 19 | G96 | (0.0 | 6.6−) |
| 2002 09 06 | 704 | 0.2+ | 0.3− | 2002 10 07 | 699 | 0.4+ | 0.4− | 2006 05 04 | G96 | 0.7+ | 0.3− |
| 2002 09 13 | 644 | 0.4− | 0.2− | 2002 10 07 | 699 | 0.2+ | 0.4+ | 2006 05 04 | G96 | 0.2+ | 1.0+ |
| 2002 09 13 | 644 | 0.3− | 0.1+ | 2002 10 07 | 699 | 0.1+ | 0.5− | 2006 05 04 | G96 | 0.1+ | 0.3− |
| 2002 09 13 | 644 | 0.1− | 0.2− | 2002 10 12 | 704 | 0.2+ | 0.7+ | 2006 05 04 | G96 | 0.2+ | 0.8+ |
| 2002 09 17 | 608 | 0.6− | 1.2− | 2002 10 12 | 704 | 0.5+ | 0.3+ | 2006 05 19 | G96 | 0.6− | 0.5− |
| 2002 09 17 | 608 | 0.6− | 1.4− | 2002 10 12 | 704 | 0.7− | 0.5− | 2006 05 19 | G96 | 0.4− | 0.6− |
| 2002 09 17 | 608 | (0.6− | 1.8−) | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.2− | 0.1− |
| 2002 09 19 | 644 | 0.2− | 0.6+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.0 | 0.1+ |
| 2002 09 19 | 644 | 0.0 | 0.8+ | 2002 10 31 | 645 | 0.0 | 0.0 | | | | |

**2002 TJ$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.45647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25306508 | $\omega$ | 194.62250 | | +0.64883799 | | −0.75857640 |
| $a$ | 2.4754143 | $\Omega$ | 214.98279 | | +0.70818566 | | +0.63072977 |
| $e$ | 0.1315800 | $i$ | 5.98285 | | +0.27835648 | | +0.16352922 |
| $P$ | 3.89 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.6− |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2002 09 06 | 704 | 0.0 | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (2.6+ | 0.8−) |
| 2002 09 06 | 704 | 0.9− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2002 09 06 | 704 | 0.7+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.7+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.4− | 0.1− |
| 2002 10 04 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.6− | 0.1− | 2006 10 21 | 703 | 0.6− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.5− |
| 2002 10 07 | 699 | 0.5− | 0.4− | 2006 10 21 | 703 | 0.6+ | 1.3− | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2002 10 07 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 2002 10 07 | 699 | 0.0 | 1.1+ | 2006 10 21 | 703 | (0.2− | 1.7−) | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2002 10 07 | 699 | 0.9+ | 1.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3− | 0.4+ | 2006 11 22 | G96 | 0.3+ | 0.5− |
| 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1− | | | | |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1− | | | | |

**2002 TA$_{184}$ = 2006 SZ$_{364}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.99177 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25117669 | $\omega$ | 171.07609 | | +0.35053982 | | −0.93178578 |
| $a$ | 2.4878059 | $\Omega$ | 258.36036 | | +0.85321409 | | +0.35925611 |
| $e$ | 0.0770994 | $i$ | 5.52643 | | +0.38619625 | | +0.05206071 |
| $P$ | 3.92 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.0 | 0.3− | 2002 10 09 | 704 | 0.6+ | 1.3− | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2002 10 04 | 644 | 0.1− | 0.1− | 2002 10 09 | 704 | 0.5− | 1.2− | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2002 10 04 | 644 | 0.3− | 0.1− | 2002 10 12 | 704 | 0.8+ | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 10 04 | 704 | 0.2+ | 0.4+ | 2002 10 12 | 704 | 0.8− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 0.5+ | 2002 10 12 | 704 | 1.4− | 0.6− | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.9+ | 2006 09 20 | 699 | 1.4+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.4+ |
| 2002 10 04 | 704 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.2− | 0.7− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 10 07 | 699 | 0.9+ | 1.3+ | 2006 09 20 | 699 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.6+ | 0.4+ |
| 2002 10 07 | 699 | 0.2− | 1.0+ | 2006 09 30 | 703 | 1.0− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 10 07 | 699 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 10 07 | 699 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 10 09 | 704 | (0.0 | 1.9−) | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.5− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 0.4+ | 0.2− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |

### 2002 TQ$_{184}$ = 2006 SU$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.19082 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23928991 | $\omega$ | 180.48025 | | +0.84410287 | | −0.53093310 |
| $a$ | 2.5695266 | $\Omega$ | 211.94857 | | +0.49240701 | | +0.82283726 |
| $e$ | 0.1627437 | $i$ | 8.13026 | | +0.21219255 | | +0.20260525 |
| $P$ | 4.12 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 30 | 691 | 0.1+ | 0.1+ | 2002 10 07 | 699 | 0.9− | 0.3+ | 2006 08 18 | 644 | 0.5+ | 0.2+ |
| 1998 09 30 | 691 | 0.8+ | 0.2− | 2002 10 07 | 699 | 0.6− | 0.4− | 2006 08 27 | 699 | 0.6− | 0.6− |
| 1998 09 30 | 691 | 0.6+ | 0.0 | 2002 10 07 | 699 | 0.5− | 0.2− | 2006 08 27 | 699 | 0.2− | 0.8− |
| 1998 10 13 | 691 | 0.4− | 0.2− | 2002 10 12 | 704 | 0.6− | 1.3+ | 2006 08 27 | 699 | 0.6+ | 0.2+ |
| 1998 10 13 | 691 | 0.4− | 0.0 | 2002 10 12 | 704 | 0.5− | 0.5+ | 2006 08 27 | 699 | (2.5+ | 2.9−) |
| 1998 10 13 | 691 | 0.2− | 0.2− | 2002 10 12 | 704 | (1.8− | 0.1−) | 2006 09 18 | 703 | 0.9− | 0.6+ |
| 2000 03 04 | 645 | 0.1+ | 0.1+ | 2002 10 12 | 704 | 0.1− | 0.9+ | 2006 09 18 | 703 | 0.4+ | 0.0 |
| 2000 03 04 | 645 | 0.0 | 0.0 | 2002 10 12 | 704 | 0.8− | 0.4− | 2006 09 18 | 703 | 0.0 | 1.0− |
| 2002 10 04 | 704 | 0.1+ | 0.7+ | 2005 05 10 | G96 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.7+ |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.4− | 2006 09 20 | 699 | 0.7+ | 1.3+ |
| 2002 10 04 | 704 | 0.3+ | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.7+ | 2006 09 20 | 699 | (1.7+ | 0.4+) |
| 2002 10 04 | 704 | 0.1+ | 0.2− | 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.2+ | 1.5+ |
| 2002 10 04 | 704 | 0.3− | 0.6− | 2006 08 18 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.2− |
| 2002 10 07 | 699 | 0.3− | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.1+ | | | | |

### 2002 TA$_{185}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.30650 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26525282 | $\omega$ | 118.85852 | | +0.93033253 | | −0.36423053 |
| $a$ | 2.3989952 | $\Omega$ | 262.52895 | | +0.31969835 | | +0.86250185 |
| $e$ | 0.1361255 | $i$ | 2.46432 | | +0.17965062 | | +0.35132134 |
| $P$ | 3.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.3− | 0.4+ | 2002 10 12 | 704 | 0.7+ | 0.9− | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 1991 11 06 | 691 | 0.1+ | 0.3+ | 2002 10 16 | 644 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.1− |
| 1991 11 06 | 691 | 0.0 | 0.1− | 2002 10 16 | 644 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.8+ | 2002 10 16 | 644 | 0.2− | 0.4− | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.6+ | 2002 10 31 | 704 | 0.6+ | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.8+ |
| 2002 09 14 | 644 | 0.1+ | 0.6+ | 2002 10 31 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2002 10 31 | 704 | 0.3+ | 0.9+ | 2006 11 18 | 704 | (0.6− | 2.0+) |
| 2002 10 04 | 704 | 0.2− | 0.9− | 2006 10 20 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.5− |
| 2002 10 04 | 704 | 0.5+ | 0.9− | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.3+ | 0.2+ |
| 2002 10 04 | 704 | 0.3+ | 0.5− | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2002 10 04 | 704 | 0.3− | 0.3− | 2006 10 20 | G96 | 0.5− | 0.0 | 2006 11 21 | 704 | 1.1+ | 0.3− |
| 2002 10 07 | 699 | 0.1− | 0.6− | 2006 11 01 | G96 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2002 10 07 | 699 | 0.6− | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.7− | 2006 12 01 | G96 | 0.4− | 0.1− |
| 2002 10 07 | 699 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.8− | 0.0 |
| 2002 10 07 | 699 | 0.8− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.5− | 2006 12 01 | G96 | 0.6− | 0.1− |
| 2002 10 12 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.0 | 2006 12 01 | G96 | 0.4− | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.4− | 2006 11 11 | 703 | 1.3+ | 0.0 | | | | |
| 2002 10 12 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | (1.9− | 1.8+) | | | | |

### 2002 TJ$_{188}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.72644 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28209322 | $\omega$ | 100.92418 | | +0.81896291 | | −0.56944249 |
| $a$ | 2.3025423 | $\Omega$ | 293.82359 | | +0.49154093 | | +0.75992547 |
| $e$ | 0.1651229 | $i$ | 4.44873 | | +0.29612037 | | +0.31344622 |
| $P$ | 3.49 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 26 | 691 | 0.3+ | 0.2− | 2002 10 09 | 704 | 0.5− | 0.8+ | 2002 12 01 | 460 | 0.2− | 1.2+ |
| 2000 01 26 | 691 | 1.0− | 0.2+ | 2002 10 09 | 704 | 0.0 | 0.5+ | 2002 12 02 | 460 | 0.3− | 0.6− |
| 2000 01 26 | 691 | 0.7+ | 0.0 | 2002 10 09 | 704 | 0.4− | 1.0+ | 2002 12 02 | 460 | 0.3+ | 0.8− |
| 2002 09 28 | 608 | (2.1− | 1.1−) | 2002 10 09 | 704 | 0.1− | 0.6− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2002 09 28 | 608 | (1.9− | 1.1−) | 2002 10 12 | 704 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 09 28 | 608 | (2.4− | 1.1−) | 2002 10 12 | 704 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 10 04 | 644 | 0.1+ | 0.2− | 2002 10 12 | 704 | 0.7+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2002 10 04 | 644 | 0.2+ | 0.1+ | 2002 10 12 | 704 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2002 10 04 | 644 | 0.2+ | 0.1− | 2002 10 12 | 704 | 0.8+ | 0.8− | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2002 10 07 | 699 | 0.1− | 0.0 | 2002 11 22 | 644 | 0.3− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2002 10 07 | 699 | 0.0 | 0.1+ | 2002 11 22 | 644 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2002 10 07 | 699 | 0.0 | 0.7− | 2002 11 22 | 644 | 0.2+ | 0.0 | | | | |
| 2002 10 07 | 699 | 0.6− | 0.0 | 2002 12 01 | 460 | 0.4− | 1.2+ | | | | |

### 2002 TB$_{189}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.76432 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26911578 | $\omega$ | 148.58600 | | +0.97248135 | | −0.21790433 |
| $a$ | 2.3759827 | $\Omega$ | 224.24501 | | +0.18165174 | | +0.93075637 |
| $e$ | 0.2409944 | $i$ | 6.78632 | | +0.14588578 | | +0.29361587 |
| $P$ | 3.66 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 20 | 644 | 0.0 | 0.3+ | 2002 10 05 | 704 | 0.7+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 07 20 | 644 | 0.3− | 0.5+ | 2002 10 05 | 704 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 07 20 | 644 | 0.3− | 0.8+ | 2002 10 05 | 704 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 08 04 | 644 | 0.7− | 0.3+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 08 04 | 644 | 0.7− | 0.3+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.2− | 0.8+ |
| 2002 08 04 | 644 | 0.6− | 0.1+ | 2002 10 05 | 704 | 0.2+ | 0.8+ | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2002 08 11 | 704 | 1.0+ | 0.1+ | 2002 10 07 | 699 | (1.9+ | 0.6+) | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2002 08 11 | 704 | 0.8− | 0.4− | 2002 10 07 | 699 | 0.2− | 0.8+ | 2006 11 17 | 704 | 0.5− | 0.6− |
| 2002 08 11 | 704 | 0.6+ | 0.6− | 2002 10 07 | 699 | 1.3+ | 0.0 | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2002 08 11 | 704 | 0.2+ | 0.7− | 2002 10 07 | 699 | 1.0+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 11 20 | 704 | 1.0+ | 0.8+ |
| 2002 08 27 | 644 | 0.3− | 0.4+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 08 27 | 644 | 0.3− | 0.3+ | 2005 05 08 | G96 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2002 09 04 | 644 | 0.0 | 0.6+ | 2005 05 08 | G96 | 0.6+ | 1.3+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2002 09 04 | 644 | 0.1+ | 0.5+ | 2005 05 08 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.6− |
| 2002 09 04 | 644 | 0.0 | 0.5+ | 2005 05 08 | G96 | 0.4− | 0.5− | 2006 11 29 | 704 | 0.8− | 0.3+ |
| 2002 09 12 | 644 | 0.4− | 0.2+ | 2006 11 12 | 703 | 0.3− | 0.7− | 2006 11 29 | 704 | 0.4− | 0.2+ |
| 2002 09 12 | 644 | 0.4− | 0.3+ | 2006 11 12 | 703 | 0.8+ | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.4+ |
| 2002 09 12 | 644 | 0.5− | 0.2+ | 2006 11 12 | 703 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2002 10 05 | 704 | 0.1+ | 0.3+ | 2006 11 12 | 703 | 0.3− | 0.3− | | | | |

### 2002 TH$_{189}$ = 2002 RL$_{150}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.75403 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29095116 | $\omega$ | 76.68572 | | +0.96687197 | | −0.24500974 |
| $a$ | 2.2555683 | $\Omega$ | 297.45729 | | +0.19159700 | | +0.88196115 |
| $e$ | 0.2242659 | $i$ | 4.62921 | | +0.16866884 | | +0.40263478 |
| $P$ | 3.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.2− | 0.1+ | 2002 10 07 | 699 | 0.7− | 0.2+ | 2002 12 01 | 704 | 0.0 | 0.0 |
| 2002 08 16 | 704 | 0.2+ | 0.2+ | 2002 10 07 | 699 | 0.1+ | 0.6+ | 2002 12 01 | 704 | 0.1+ | 0.2+ |
| 2002 08 16 | 704 | 0.4+ | 0.9+ | 2002 10 12 | 704 | 0.3+ | 0.4+ | 2002 12 01 | 704 | 0.2+ | 0.6+ |
| 2002 08 16 | 704 | 0.6+ | 0.5+ | 2002 10 12 | 704 | 0.1− | 0.3+ | 2002 12 01 | 704 | 0.4− | 1.1+ |
| 2002 08 16 | 704 | 0.5+ | 0.8+ | 2002 10 12 | 704 | 0.3− | 0.9+ | 2002 12 06 | 704 | 0.2− | 1.0− |
| 2002 09 05 | 699 | 1.1+ | 0.2+ | 2002 10 12 | 704 | (1.5+ | 4.4−) | 2002 12 06 | 704 | 0.2+ | 0.7− |
| 2002 09 05 | 699 | 0.0 | 0.1− | 2002 11 06 | 699 | 0.6+ | 0.1− | 2002 12 06 | 704 | 0.5+ | 0.7− |
| 2002 09 05 | 699 | 0.7+ | 0.4+ | 2002 11 06 | 699 | 1.2− | 0.1+ | 2002 12 11 | 704 | 0.4− | 0.2+ |
| 2002 09 05 | 699 | 0.2− | 0.3− | 2002 11 06 | 699 | 0.3− | 0.8− | 2002 12 11 | 704 | 0.4+ | 0.5− |
| 2002 09 05 | 699 | 0.5+ | 0.5− | 2002 11 06 | 699 | 1.1+ | 0.7+ | 2002 12 11 | 704 | 0.2− | 0.8+ |
| 2002 09 05 | 699 | 0.1− | 0.1− | 2002 11 08 | 446 | 0.2+ | 0.5+ | 2002 12 11 | 704 | 0.4+ | 0.0 |
| 2002 09 05 | 699 | 0.2+ | 0.0 | 2002 11 08 | 704 | 0.0 | 0.0 | 2002 12 11 | 704 | 0.2− | 1.9+ |
| 2002 09 05 | 699 | 0.4+ | 0.2− | 2002 11 08 | 704 | 0.8+ | 0.5+ | 2002 12 28 | 460 | 0.7− | 0.7− |
| 2002 09 11 | 608 | 0.2− | 0.4− | 2002 11 08 | 446 | 0.2− | 0.1− | 2002 12 28 | 460 | 0.1+ | 0.3− |
| 2002 09 11 | 608 | 0.4− | 0.5− | 2002 11 08 | 704 | 0.7+ | 0.3+ | 2002 12 28 | 460 | 0.0 | 0.1+ |
| 2002 09 11 | 608 | 0.4− | 0.3− | 2002 11 08 | 704 | 0.2+ | 0.6− | 2003 01 05 | 704 | 0.7− | 0.6+ |
| 2002 09 28 | 608 | 1.6− | 0.7− | 2002 11 08 | 704 | 0.2− | 0.9+ | 2003 01 05 | 704 | 0.7+ | 0.8+ |
| 2002 09 28 | 608 | 1.5− | 0.6− | 2002 11 10 | 446 | 0.7− | 0.4− | 2003 01 05 | 704 | 0.5+ | 0.3+ |
| 2002 09 28 | 608 | 1.5− | 0.6− | 2002 11 10 | 446 | 1.1− | 0.7− | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2002 10 05 | 704 | 0.2+ | 0.5− | 2002 11 10 | 446 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2002 10 05 | 704 | 0.1+ | 0.4− | 2002 11 12 | 704 | 0.5− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2002 11 12 | 704 | 0.3+ | 0.5+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2002 10 05 | 704 | 0.8+ | 0.0 | 2002 11 12 | 704 | 0.5+ | 0.9+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2002 11 12 | 704 | 0.3+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2002 10 07 | 699 | 0.1+ | 0.8+ | 2002 11 12 | 704 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2002 10 07 | 699 | 0.2− | 0.2+ | 2002 12 01 | 704 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.3− | 0.2− |

## 2002 TV$_{190}$ = 2006 SZ$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.76334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23626207 | $\omega$ | 82.23789 | | +0.96772049 | +0.09365213 | |
| $a$ | 2.5914334 | $\Omega$ | 272.17241 | | −0.18260953 | +0.90040947 | |
| $e$ | 0.1801912 | $i$ | 13.54138 | | +0.17369748 | +0.42484358 | |
| $P$ | 4.17 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 0.4+ | 0.2− | 2006 09 16 | 703 | 0.4+ | 0.2− | 2006 09 28 | 703 | 0.0 | 0.1− |
| 2002 10 01 | 704 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.8− | 0.2− | 2006 09 28 | 703 | 0.5+ | 0.4+ |
| 2002 10 01 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.2− | 0.7− |
| 2002 10 05 | 699 | 0.3− | 0.6+ | 2006 09 16 | 703 | 0.3+ | 0.3+ | 2006 10 18 | 106 | 0.2+ | 0.1− |
| 2002 10 05 | 699 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.6− | 2006 10 18 | 106 | 0.8+ | 1.0− |
| 2002 10 05 | 699 | 0.5− | 0.4− | 2006 09 16 | 703 | 0.5− | 0.4+ | 2006 10 18 | 106 | 0.5+ | 0.2− |
| 2002 10 05 | 699 | 0.2+ | 0.6− | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 18 | 106 | 0.5− | 0.3− |
| 2002 10 20 | 644 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.2− | 0.8+ |
| 2002 10 20 | 644 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 10 20 | 703 | 0.8− | 0.3+ |
| 2002 10 20 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.3− | 0.1+ |
| 2006 08 10 | 644 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.7− | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.8+ |
| 2006 08 10 | 644 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 10 31 | 703 | 0.7+ | 0.8− |
| 2006 08 10 | 644 | 0.3+ | 0.2+ | 2006 09 22 | 699 | 0.2− | 0.1− | 2006 10 31 | 703 | 0.3+ | 0.5− |
| 2006 09 16 | 703 | 0.3− | 0.2− | 2006 09 22 | 699 | 0.9+ | 0.6+ | 2006 10 31 | 703 | 0.3− | 0.4+ |
| 2006 09 16 | 703 | 0.2+ | 0.3+ | 2006 09 22 | 699 | 0.6+ | 0.0 | 2006 10 31 | 703 | (0.3+ | 2.0−) |
| 2006 09 16 | 703 | 0.5− | 0.3− | 2006 09 22 | 699 | 1.0+ | 0.3− | | | | |
| 2006 09 16 | 703 | 0.9− | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.9+ | | | | |

## 2002 TG$_{193}$ = 2006 TS$_{74}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.90448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25570937 | $\omega$ | 352.35374 | | +0.99074946 | −0.13340765 | |
| $a$ | 2.4583193 | $\Omega$ | 15.37971 | | +0.12893962 | +0.86832663 | |
| $e$ | 0.2109575 | $i$ | 5.37808 | | +0.04230946 | +0.47771462 | |
| $P$ | 3.85 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 608 | 0.3+ | 0.2− | 2002 10 11 | 704 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 09 15 | 608 | 0.0 | 0.5− | 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 10 28 | 704 | 0.2− | 0.5+ |
| 2002 09 15 | 608 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.8− | 0.6− |
| 2002 10 03 | 704 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.4− | 2006 10 28 | 704 | 0.2+ | 0.8+ |
| 2002 10 03 | 704 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2002 10 07 | 704 | 0.7+ | 1.3− | 2006 10 16 | 691 | 0.7− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2002 10 07 | 704 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2002 10 07 | 704 | 0.1+ | 1.1− | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.1− | 0.4− |
| 2002 10 07 | 704 | 1.4+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.3− |
| 2002 10 11 | 704 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.4+ |
| 2002 10 11 | 704 | 0.8− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.3− |

## 2002 TB$_{194}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.45456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23991557 | $\omega$ | 216.68515 | | +0.61128384 | −0.78838753 | |
| $a$ | 2.5650575 | $\Omega$ | 196.01209 | | +0.77254347 | +0.61338668 | |
| $e$ | 0.1536418 | $i$ | 14.51119 | | +0.17178082 | +0.04692427 | |
| $P$ | 4.11 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2− | 0.6+ | 2006 09 17 | 703 | 1.2− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 2002 10 03 | 704 | 1.3+ | 0.1− | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2002 10 03 | 704 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.5− | 2006 09 29 | 704 | 0.7+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2002 10 07 | 704 | 1.3− | 0.2+ | 2006 09 29 | 699 | (0.6− | 1.7−) | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.5+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2002 10 07 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 699 | 0.9+ | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.7− | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.7− | 0.8+ | 2006 09 29 | 699 | 1.3− | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 0.4+ | 0.2− | 2006 10 01 | 703 | 0.9+ | 1.0+ | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2006 10 01 | 703 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.2− | 0.4− | 2006 10 01 | 703 | 0.7− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2006 10 01 | 703 | 0.4− | 1.2− | 2006 10 27 | 691 | 0.3+ | 0.6+ |
| 2002 10 11 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 10 | 644 | 1.0+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.5+ | 0.6− | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2006 09 17 | 703 | 0.2− | 0.5+ | 2006 10 16 | 703 | (2.0− | 0.6+) | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2006 09 17 | 703 | 0.7− | 1.1− | 2006 10 16 | 703 | (1.6− | 0.8+) | 2006 11 11 | G96 | 0.3− | 0.4− |

## 2002 TD$_{194}$ = 2006 US$_{241}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.44733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25687165 | $\omega$ | 28.84952 | | +0.03162927 | −0.99897757 | |
| $a$ | 2.4508982 | $\Omega$ | 59.35473 | | +0.90966623 | +0.01538079 | |
| $e$ | 0.1535507 | $i$ | 2.15170 | | +0.41413397 | +0.04251172 | |
| $P$ | 3.84 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1− | 0.2− | 2006 10 24 | 644 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 10 03 | 704 | 0.7− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 2002 10 07 | 704 | 0.4− | 0.7+ | 2006 10 28 | G96 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2002 10 07 | 704 | 0.2+ | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.8+ | 0.6+ |
| 2002 10 07 | 704 | 0.3− | 1.4+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2002 10 11 | 704 | (0.7+ | 2.3+) | 2006 10 29 | 291 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2006 10 29 | 291 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.4+ |
| 2002 10 11 | 704 | 1.4+ | 0.4+ | 2006 10 29 | 291 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.6− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.6− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 10 11 | 704 | (0.2− | 1.8+) | 2006 11 09 | 644 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2002 10 11 | 704 | 0.1+ | 0.8− | 2006 11 11 | 703 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2002 10 11 | 704 | (0.6+ | 2.1+) | 2006 11 11 | 703 | 0.5− | 1.0+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.5− | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2002 10 12 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (1.6+ | 0.1−) | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.2+ | 0.9+ | 2006 11 13 | G96 | 0.5+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.6− | 0.6+ | 2006 11 13 | G96 | 0.3− | 0.3− | 2006 11 27 | 703 | 1.2+ | 0.7− |
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.1+ | 0.6+ |
| 2004 04 28 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.2− | 2006 11 27 | 703 | 0.6+ | 1.1− |
| 2004 04 28 | 691 | 0.1− | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.6+ | 0.5− |
| 2004 04 28 | 691 | 0.4+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.0 | | | | |
| 2006 10 24 | 644 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.3+ | | | | |

**2002 TF$_{194}$ = 2006 VE$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.14238 | | (2000.0) | | | |
| $n$ | 0.26128770 | $\omega$ | 18.65074 | | +0.72636284 | −0.68723505 |
| $a$ | 2.4232045 | $\Omega$ | 24.77027 | | +0.62744389 | +0.65693425 |
| $e$ | 0.1813943 | $i$ | 1.40145 | | +0.28055515 | +0.31007317 |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 807 | 0.2+ | 0.3+ | 2004 02 26 | 695 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.9− |
| 2002 08 12 | 807 | 0.1− | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.6− | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.7+ | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 2002 10 07 | 704 | 1.1− | 1.0+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.0 | 0.4− |
| 2002 10 07 | 704 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 28 | 704 | 0.7+ | 0.4+ |
| 2002 10 07 | 704 | (0.4+ | 2.4+) | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3+ | 1.2+ |
| 2002 10 07 | 704 | 0.5+ | 0.8+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.8+ |
| 2002 10 11 | 704 | 0.4− | 0.7+ | 2006 11 10 | 691 | 0.6− | 0.4+ | 2006 11 28 | 704 | 0.2+ | 0.5+ |
| 2002 10 11 | 704 | 0.3+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.3− | 2006 12 01 | 704 | 0.8− | 0.1− |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.0 | 0.3+ |
| 2002 10 11 | 704 | 0.4− | 0.8− | 2006 11 16 | 691 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.7+ | 0.1− |
| 2004 02 26 | 695 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.1+ | 0.1− | | | | |

**2002 TE$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.97266 | | (2000.0) | | | |
| $n$ | 0.23901888 | $\omega$ | 43.50606 | | +0.29896390 | −0.95227122 |
| $a$ | 2.5714687 | $\Omega$ | 29.25982 | | +0.83735111 | +0.23080548 |
| $e$ | 0.3216843 | $i$ | 7.24559 | | +0.45767205 | +0.19977075 |
| $P$ | 4.12 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 2.0− | 0.5− | 2002 10 31 | 699 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.3− | 0.4− |
| 1998 12 17 | 704 | 1.8+ | 1.3+ | 2002 10 31 | 699 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 1.3+ | 0.9+ |
| 1998 12 17 | 704 | 0.7+ | 1.3− | 2002 11 05 | 608 | 0.4− | 1.1− | 2006 09 18 | 699 | 1.0+ | 0.1− |
| 1998 12 17 | 704 | 0.3+ | 0.1+ | 2002 11 05 | 608 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.2− | 0.2− |
| 1998 12 17 | 704 | 0.0 | 1.2− | 2002 11 05 | 608 | (0.6− | 1.7+) | 2006 09 18 | 699 | (2.0+ | 0.7+) |
| 2002 10 03 | 704 | 0.5− | 0.2− | 2002 11 06 | 704 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.3+ |
| 2002 10 03 | 704 | 0.6+ | 0.6+ | 2002 11 06 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.4− |
| 2002 10 03 | 704 | 0.4− | 0.0 | 2002 11 06 | 704 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 1.0− |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2002 11 06 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.4− | 1.3− |
| 2002 10 03 | 704 | 0.2+ | 0.4+ | 2002 11 06 | 704 | 0.1+ | 0.8+ | 2006 09 19 | 703 | 0.9− | 0.6− |
| 2002 10 07 | 704 | 0.6− | 0.4− | 2002 11 08 | 704 | 0.9− | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.6+ |
| 2002 10 07 | 704 | 0.5− | 0.8+ | 2002 11 08 | 704 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.8− |
| 2002 10 07 | 704 | 0.2− | 1.0+ | 2002 11 08 | 704 | 0.4+ | 0.6− | 2006 09 26 | 704 | 0.7+ | 0.6+ |
| 2002 10 08 | 699 | 0.0 | 0.6+ | 2002 11 11 | 049 | 1.1+ | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.2− |
| 2002 10 08 | 699 | 0.6− | 0.3+ | 2002 11 11 | 049 | 0.9+ | 0.2− | 2006 09 30 | 703 | 0.7− | 0.9− |
| 2002 10 08 | 699 | 1.2− | 1.1+ | 2002 11 11 | 049 | 0.5+ | 0.6− | 2006 09 30 | 703 | 0.2+ | 0.4− |
| 2002 10 08 | 699 | 0.8+ | 0.1+ | 2002 11 11 | 049 | (2.3− | 0.8−) | 2006 09 30 | 703 | 1.0− | 0.4+ |
| 2002 10 09 | 704 | 0.6− | 0.4+ | 2002 11 11 | 049 | (1.8− | 0.5−) | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 2002 10 09 | 704 | 1.5− | 0.8+ | 2002 11 11 | 049 | (2.2− | 0.7−) | 2006 10 02 | G96 | 0.5+ | 0.4− |
| 2002 10 09 | 704 | 0.1− | 0.4+ | 2002 11 12 | 644 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.4− |
| 2002 10 11 | 704 | 0.4+ | 0.1+ | 2002 11 12 | 704 | 0.2− | 0.6− | 2006 10 02 | G96 | 0.5+ | 0.4− |
| 2002 10 11 | 704 | 0.9− | 0.6− | 2002 11 12 | 644 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.6− |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2002 11 12 | 704 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.6+ | 0.4+ |
| 2002 10 11 | 704 | 0.4− | 0.1− | 2002 11 12 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 10 11 | 704 | (1.8− | 0.4+) | 2002 11 12 | 704 | 0.1+ | 1.2+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 10 31 | 644 | 0.3− | 0.3+ | 2002 11 12 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.4− |
| 2002 10 31 | 644 | 0.1− | 0.1+ | 2002 12 01 | 704 | 1.3+ | 0.7− | 2006 10 22 | 703 | 0.4+ | 0.3+ |
| 2002 10 31 | 644 | 0.1− | 0.2+ | 2002 12 01 | 704 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2002 10 31 | 644 | 0.3+ | 0.2+ | 2002 12 01 | 704 | 0.6− | 0.5+ | 2006 10 22 | 703 | (0.1− | 1.5−) |
| 2002 10 31 | 699 | 0.2− | 0.1− | 2002 12 01 | 704 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 644 | 0.3− | 0.2+ | 2002 12 01 | 704 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2002 10 31 | 644 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.7+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2002 10 31 | 699 | 0.5− | 0.2+ | 2006 09 18 | 703 | 1.2+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.1− |

**2002 TZ$_{196}$ = 2006 TJ$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.64364 | | (2000.0) | | | |
| $n$ | 0.24154219 | $\omega$ | 215.37609 | | +0.48998496 | −0.86738633 |
| $a$ | 2.5535286 | $\Omega$ | 205.61965 | | +0.83893204 | +0.49629383 |
| $e$ | 0.1679062 | $i$ | 11.59708 | | +0.23687079 | +0.03651552 |
| $P$ | 4.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3+ | 1.3+ | 2002 10 11 | 704 | 0.4+ | 0.5− | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2002 10 04 | 704 | 0.2+ | 0.7+ | 2002 10 11 | 704 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 1.1− | 2002 10 11 | 704 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 0.2− | 0.4− | 2002 10 30 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 10 04 | 704 | (0.3+ | 2.1+) | 2002 10 30 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 10 04 | 704 | 0.8− | 0.2+ | 2002 10 30 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2+ |
| 2002 10 04 | 704 | 0.8+ | 0.9− | 2002 11 01 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.1+ | 2002 11 01 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 10 07 | 704 | 0.5− | 0.4+ | 2002 11 01 | 704 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2002 10 07 | 704 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2002 10 07 | 704 | 0.7+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 10 07 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.5+ | | | | |
| 2002 10 11 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.1− | | | | |

**2002 TF$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.91843 | | (2000.0) | | | |
| $n$ | 0.23668239 | $\omega$ | 104.00675 | | +0.92292760 | −0.32428245 |
| $a$ | 2.5883644 | $\Omega$ | 275.23602 | | +0.22018309 | +0.88672617 |
| $e$ | 0.1305518 | $i$ | 12.02530 | | +0.31579115 | +0.32948080 |
| $P$ | 4.16 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 20 | 644 | 0.1+ | 0.5+ | 2002 10 07 | 704 | 0.5+ | 0.3+ | 2006 09 21 | 699 | 0.2+ | 0.2+ |
| 2002 09 20 | 644 | 0.1+ | 0.6+ | 2002 10 10 | 704 | 0.6− | 0.1− | 2006 09 21 | 699 | 0.1− | 0.6+ |
| 2002 09 20 | 644 | 0.1+ | 0.9+ | 2002 10 10 | 704 | 1.1− | 0.4− | 2006 09 21 | 699 | (0.6− | 2.0+) |
| 2002 09 27 | 644 | 0.1− | 0.4− | 2002 10 10 | 704 | 1.1− | 0.8− | 2006 09 27 | 703 | 0.3+ | 0.4− |
| 2002 09 27 | 644 | 0.2− | 0.7− | 2002 10 10 | 704 | 0.5− | 1.2− | 2006 09 27 | 703 | 0.5− | 0.7− |
| 2002 09 27 | 644 | 0.0 | 0.7− | 2002 10 10 | 704 | 0.8− | 0.9− | 2006 09 27 | 703 | 0.3− | 0.2− |
| 2002 10 06 | 699 | 0.1− | 0.2+ | 2002 11 01 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 0.5+ | 0.8− |
| 2002 10 06 | 699 | 0.3− | 0.4− | 2002 11 01 | 644 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.6+ |
| 2002 10 06 | 699 | 0.3− | 0.7+ | 2002 11 01 | 644 | 0.0 | 0.4+ | 2006 09 29 | 699 | 1.3+ | 1.0+ |
| 2002 10 06 | 699 | 0.3+ | 0.0 | 2002 11 08 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.4− |
| 2002 10 06 | 704 | 0.2+ | 0.2+ | 2002 11 08 | 704 | 0.9+ | 0.1+ | 2006 09 29 | 699 | 0.9+ | 0.5+ |
| 2002 10 06 | 704 | 0.3+ | 0.0 | 2002 11 08 | 704 | 0.9+ | 0.5+ | 2006 10 17 | 703 | 0.7− | 0.8+ |
| 2002 10 06 | 704 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.9− | 0.2− | 2006 10 17 | 703 | 1.4− | 0.4− |
| 2002 10 06 | 704 | 0.4+ | 1.0− | 2006 09 16 | 703 | 0.6− | 0.6− | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2002 10 06 | 704 | (1.8+ | 0.8−) | 2006 09 16 | 703 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.8− | 1.1+ |
| 2002 10 07 | 704 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.7− | 0.5− | | | | |
| 2002 10 07 | 704 | 1.0+ | 0.4+ | 2006 09 21 | 699 | (1.6+ | 1.3−) | | | | |

**2002 TK$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.43558 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22674661 | $\omega$ | 136.65939 | +0.54642733 | | −0.80971248 | |
| $a$ | 2.6634355 | $\Omega$ | 279.10963 | +0.69702209 | | +0.58131364 | |
| $e$ | 0.2548386 | $i$ | 12.51543 | +0.46430311 | | +0.08025057 | |
| $P$ | 4.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 10 | 691 | 0.1− | 0.0 | 2002 10 31 | 704 | 0.6− | 0.3− | 2002 12 05 | 699 | 0.0 | 0.1+ |
| 1998 12 10 | 691 | 0.1− | 0.7− | 2002 10 31 | 704 | 0.4− | 0.7− | 2002 12 06 | 704 | 0.7+ | 1.1+ |
| 1998 12 10 | 691 | 0.1− | 0.0 | 2002 10 31 | 704 | 0.0 | 0.9− | 2002 12 06 | 704 | 0.1+ | 0.2− |
| 2002 10 01 | 704 | 0.7+ | 0.2+ | 2002 10 31 | 704 | 0.1+ | 0.7− | 2002 12 06 | 704 | 0.6+ | 1.2+ |
| 2002 10 01 | 704 | 0.4+ | 0.5+ | 2002 11 07 | 699 | 0.1− | 0.6+ | 2002 12 06 | 704 | 1.3+ | 0.9+ |
| 2002 10 01 | 704 | 0.6+ | 0.2+ | 2002 11 07 | 699 | 0.0 | 0.5− | 2002 12 06 | 704 | 1.1+ | 0.0 |
| 2002 10 01 | 704 | 0.2+ | 0.2+ | 2002 11 07 | 699 | 0.5− | 0.1+ | 2002 12 08 | 699 | 0.1+ | 0.7− |
| 2002 10 06 | 704 | (0.2+ | 1.8−) | 2002 11 07 | 699 | 0.6− | 0.1+ | 2002 12 08 | 699 | 0.4+ | 0.1− |
| 2002 10 06 | 704 | (0.9+ | 1.8−) | 2002 11 08 | 704 | 0.5− | 0.1+ | 2002 12 08 | 699 | 0.1+ | 0.0 |
| 2002 10 06 | 704 | (1.6+ | 1.2−) | 2002 11 08 | 704 | 0.3− | 1.1+ | 2002 12 08 | 699 | 1.0+ | 0.8+ |
| 2002 10 07 | 704 | 0.2+ | 0.6− | 2002 11 08 | 704 | 0.3− | 0.5+ | 2002 12 31 | 704 | 0.4+ | 0.3+ |
| 2002 10 07 | 704 | 1.0− | 1.1− | 2002 11 15 | 704 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.4+ | 0.3+ |
| 2002 10 07 | 704 | 0.9− | 0.4− | 2002 11 15 | 704 | 0.6+ | 0.1+ | 2002 12 31 | 704 | 0.4− | 0.2+ |
| 2002 10 15 | 704 | 0.0 | 0.2+ | 2002 11 15 | 704 | 0.3− | 0.4− | 2002 12 31 | 704 | 0.0 | 1.1+ |
| 2002 10 15 | 704 | 0.6+ | 0.4+ | 2002 11 15 | 704 | 1.2− | 1.2− | 2002 12 31 | 704 | 0.6− | 0.1+ |
| 2002 10 15 | 704 | 0.2+ | 0.2+ | 2002 11 25 | 644 | 0.4− | 0.2+ | 2006 08 30 | 699 | 0.7+ | 0.3− |
| 2002 10 15 | 704 | 0.9+ | 0.1+ | 2002 11 25 | 644 | 0.4− | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.2− |
| 2002 10 20 | 644 | 0.4− | 0.1+ | 2002 11 25 | 644 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.8− |
| 2002 10 20 | 644 | 0.6− | 0.1− | 2002 12 05 | 699 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.1− | 0.1− |
| 2002 10 20 | 644 | 0.7− | 0.3+ | 2002 12 05 | 699 | 0.0 | 0.4− | | | | |
| 2002 10 31 | 704 | 0.0 | 0.9− | 2002 12 05 | 699 | 0.4− | 0.3+ | | | | |

**2002 TN$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.91817 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23665807 | $\omega$ | 123.19240 | +0.71092563 | | −0.53160760 | |
| $a$ | 2.5885418 | $\Omega$ | 273.19137 | +0.38592913 | | +0.84219685 | |
| $e$ | 0.2594597 | $i$ | 27.45979 | +0.58791449 | | +0.08998787 | |
| $P$ | 4.16 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.1+ | 0.3− | 2006 09 07 | A74 | 0.3+ | 0.1+ |
| 2002 10 06 | 704 | 0.1+ | 0.6+ | 2003 01 04 | 704 | 0.1+ | 0.3− | 2006 09 07 | A74 | 0.1+ | 0.3+ |
| 2002 10 06 | 704 | 0.1− | 0.7+ | 2003 01 08 | 704 | 0.5+ | 0.0 | 2006 09 07 | A74 | 0.4+ | 0.1+ |
| 2002 10 06 | 704 | 0.6− | 0.9+ | 2003 01 08 | 704 | 0.4+ | 0.4+ | 2006 09 09 | A74 | 0.3+ | 0.7− |
| 2002 10 07 | 704 | 0.3− | 0.1+ | 2003 01 08 | 704 | 0.4+ | 0.6+ | 2006 09 09 | A74 | 0.3+ | 0.4− |
| 2002 10 07 | 704 | 0.3− | 0.1− | 2003 01 08 | 704 | 0.3+ | 0.2− | 2006 09 09 | A74 | 0.1+ | 1.0+ |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2003 01 08 | 704 | 0.8+ | 0.6+ | 2006 09 09 | A74 | 0.3− | 0.7+ |
| 2002 12 05 | 704 | 0.3− | 0.4− | 2003 01 27 | 704 | 0.1− | 0.5− | 2006 09 09 | A74 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.2− | 2003 01 27 | 704 | 0.4− | 0.0 | 2006 09 09 | A74 | 0.3− | 0.4+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2003 01 27 | 704 | 0.1− | 0.1− | 2006 09 09 | A74 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2003 01 27 | 704 | 0.4− | 1.4− | 2006 09 09 | A74 | 0.9− | 1.1+ |
| 2002 12 15 | 704 | 0.2+ | 0.0 | 2003 01 27 | 704 | 0.7+ | 0.9+ | 2006 11 11 | 704 | 0.4− | 0.5− |
| 2002 12 15 | 704 | 0.1+ | 0.3+ | 2003 02 02 | 704 | 0.5− | 0.7+ | 2006 11 11 | 704 | 0.3− | 0.8− |
| 2002 12 15 | 704 | 1.1+ | 0.8− | 2003 02 02 | 704 | 0.0 | 0.5+ | 2006 11 11 | 704 | 0.2− | 0.5− |
| 2002 12 15 | 704 | 0.5+ | 0.6+ | 2003 02 02 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 704 | 0.0 | 0.5− |
| 2002 12 15 | 704 | 0.2+ | 0.7+ | 2003 02 02 | 704 | 0.7+ | 1.2+ | 2006 11 11 | 704 | 0.3+ | 1.2− |
| 2002 12 30 | 704 | (1.8− | 1.8−) | 2006 09 06 | A74 | 0.5+ | 0.1+ | 2006 11 30 | A24 | 0.3− | 0.5− |
| 2002 12 30 | 704 | 1.4− | 1.3− | 2006 09 06 | A74 | 0.5+ | 0.1+ | 2006 11 30 | A24 | 0.1− | 0.3+ |
| 2002 12 30 | 704 | (3.4− | 2.1−) | 2006 09 06 | A74 | 0.5+ | 0.2+ | 2006 11 30 | A24 | 0.1− | 0.3− |
| 2003 01 04 | 704 | 0.2− | 0.7− | 2006 09 06 | A74 | 0.4+ | 0.1+ | | | | |
| 2003 01 04 | 704 | 0.3− | 0.5− | 2006 09 06 | A74 | 0.1+ | 0.0 | | | | |

**2002 TR$_{199}$ = 2006 RP$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.58331 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23335691 | $\omega$ | 154.65347 | +0.88911432 | | −0.42291941 | |
| $a$ | 2.6128969 | $\Omega$ | 231.50287 | +0.37256454 | | +0.89083155 | |
| $e$ | 0.1946102 | $i$ | 12.91854 | +0.26584089 | | +0.16600702 | |
| $P$ | 4.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.1+ | 0.2− | 2002 10 12 | 704 | 1.2+ | 0.8+ | 2006 08 13 | 644 | 0.2+ | 0.6+ |
| 2002 10 05 | 704 | 0.3− | 0.3+ | 2002 11 12 | 704 | 0.8− | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.4+ |
| 2002 10 05 | 704 | 0.5− | 0.7+ | 2002 11 12 | 704 | (0.7− | 2.5+) | 2006 08 17 | 683 | 0.2+ | 0.7− |
| 2002 10 05 | 704 | 0.5− | 0.4+ | 2002 11 12 | 704 | 0.9− | 0.5+ | 2006 08 17 | 683 | 0.2− | 0.2+ |
| 2002 10 05 | 704 | 0.4− | 0.5+ | 2002 11 12 | 704 | 0.1+ | 0.7− | 2006 09 11 | 703 | (2.0− | 1.0+) |
| 2002 10 06 | 699 | 0.6+ | 0.3− | 2002 11 22 | 644 | 0.2− | 0.1− | 2006 09 11 | 703 | (1.7+ | 4.2+) |
| 2002 10 06 | 699 | 0.2+ | 0.4− | 2002 11 22 | 644 | 0.3− | 0.1+ | 2006 09 11 | 703 | 0.0 | 0.9− |
| 2002 10 06 | 699 | 0.3− | 0.6+ | 2002 11 22 | 644 | 0.4− | 0.1− | 2006 09 11 | 703 | 1.2− | 0.1− |
| 2002 10 06 | 699 | 1.5+ | 0.5+ | 2005 05 09 | G96 | 0.2+ | 0.3+ | 2006 09 15 | 704 | 0.8+ | 0.5− |
| 2002 10 09 | 704 | 0.5− | 0.9− | 2005 05 09 | G96 | 0.4− | 0.3+ | 2006 09 15 | 704 | 0.2+ | 0.8− |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2005 05 09 | G96 | 0.3+ | 0.8+ | 2006 09 15 | 704 | (0.2+ | 1.6−) |
| 2002 10 09 | 704 | 0.1− | 0.0 | 2005 05 09 | G96 | 0.3− | 0.4+ | 2006 09 15 | 704 | 0.3+ | 0.5− |
| 2002 10 09 | 704 | 0.8+ | 0.6+ | 2005 05 09 | G96 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.3− |
| 2002 10 12 | 704 | 0.2− | 0.9+ | 2005 05 09 | G96 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.6− |
| 2002 10 12 | 704 | 1.0+ | 1.1+ | 2005 05 09 | G96 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2002 10 12 | 704 | 0.8− | 0.4− | 2006 08 13 | 644 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.9− | 0.4− |

**2002 TY$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.47749 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23361215 | $\omega$ | 95.65174 | +0.95538469 | | −0.19537923 | |
| $a$ | 2.6109934 | $\Omega$ | 275.75885 | +0.09108548 | | +0.90829666 | |
| $e$ | 0.1671713 | $i$ | 12.86382 | +0.28096892 | | +0.36989746 | |
| $P$ | 4.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 704 | (1.6+ | 1.1−) | 2002 10 07 | 704 | 0.2+ | 0.1− | 2006 08 28 | 704 | 0.4− | 0.7+ |
| 2002 08 30 | 704 | 0.3− | 0.3+ | 2002 10 07 | 704 | 0.9− | 0.3+ | 2006 08 28 | 704 | 0.0 | 0.9+ |
| 2002 08 30 | 704 | 0.4+ | 0.6+ | 2002 10 07 | 704 | 0.4− | 0.0 | 2006 08 28 | 704 | 0.5− | 0.3+ |
| 2002 08 30 | 704 | 0.9+ | 0.7+ | 2002 10 07 | 704 | 0.2− | 0.0 | 2006 09 15 | 704 | 1.0+ | 0.0 |
| 2002 08 30 | 704 | 0.6+ | 0.5− | 2002 10 10 | 704 | 0.2+ | 0.1− | 2006 09 15 | 704 | 0.6+ | 0.0 |
| 2002 09 03 | 644 | 0.1− | 0.5+ | 2002 10 10 | 704 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.8− | 1.3− |
| 2002 09 03 | 644 | 0.1− | 0.4+ | 2002 10 10 | 704 | 0.6− | 0.0 | 2006 09 15 | 704 | 0.8+ | 0.4− |
| 2002 09 03 | 644 | 0.2− | 0.5+ | 2002 10 10 | 704 | 0.1+ | 0.5− | 2006 09 20 | 699 | 0.8+ | 0.2+ |
| 2002 09 14 | 699 | 0.2− | 0.0 | 2002 10 10 | 704 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.6+ | 0.4− |
| 2002 09 14 | 699 | 0.4− | 0.2+ | 2002 10 15 | 704 | 0.1+ | 1.5− | 2006 09 20 | 699 | 0.0 | 0.2+ |
| 2002 09 14 | 699 | 0.7− | 0.6+ | 2002 10 15 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.6− | 1.0− |
| 2002 09 14 | 699 | 1.0− | 0.4− | 2002 10 15 | 704 | 0.9+ | 0.3− | 2006 10 17 | 703 | 1.4− | 0.8− |
| 2002 09 28 | 644 | 0.5− | 0.4− | 2002 11 08 | 704 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2002 09 28 | 644 | 0.6− | 0.1− | 2002 11 08 | 704 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 2002 09 28 | 644 | 0.5− | 0.0 | 2002 11 08 | 704 | 0.5+ | 1.1+ | 2006 10 17 | 703 | 0.3+ | 0.8− |
| 2002 10 06 | 699 | (1.6+ | 0.4+) | 2002 11 08 | 704 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.4+ | 0.8+ |
| 2002 10 06 | 699 | 0.5+ | 0.9+ | 2002 11 14 | 704 | 0.3+ | 0.0 | 2006 11 27 | 703 | (2.9+ | 1.6−) |
| 2002 10 06 | 699 | 0.7+ | 0.4+ | 2002 11 14 | 704 | 0.6+ | 0.2− | 2006 11 27 | 703 | (2.3− | 1.6−) |
| 2002 10 06 | 699 | 0.5+ | 0.1− | 2002 11 14 | 704 | 0.6+ | 0.7− | 2006 11 27 | 703 | (0.4− | 2.3−) |
| 2002 10 07 | 704 | 0.1+ | 0.3+ | 2002 11 14 | 704 | 0.6− | 0.1+ | | | | |

**2002 TD$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.52904 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23678082 | $\omega$ | 328.67263 | +0.98603921 | | −0.08208981 | |
| $a$ | 2.5876470 | $\Omega$ | 36.90766 | +0.15037437 | | +0.81265506 | |
| $e$ | 0.1187793 | $i$ | 13.95983 | −0.07151374 | | +0.57693415 | |
| $P$ | 4.16 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 621 | 0.4+ | 0.8− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | (0.7− | 3.1+) |
| 2002 10 08 | 621 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | (0.1− | 2.2+) |
| 2002 10 08 | 621 | 0.4− | 0.1− | 2006 10 20 | 691 | (2.0+ | 0.6−) | 2006 11 16 | 704 | 0.1− | 1.4− |
| 2002 10 10 | 621 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | (0.2− | 1.9+) |
| 2002 10 10 | 621 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.1− | 1.0+ |
| 2002 10 10 | 621 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.2+ |
| 2002 10 12 | 704 | (1.7+ | 2.9−) | 2006 11 08 | 644 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.8− |
| 2002 10 12 | 704 | (0.5+ | 1.9−) | 2006 11 08 | 644 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 0.6+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.1− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.5− | 1.2− | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.5+ | 0.1+ |
| 2002 11 06 | 704 | 0.8− | 0.7− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 11 15 | 704 | 0.3+ | 0.3− | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2002 11 15 | 704 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 11 15 | 704 | 0.8− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.6− | 0.4− | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.8− | 0.4− |
| 2002 12 05 | 704 | 0.8+ | 0.7+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 0.7+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.6− | 0.2− |
| 2002 12 05 | 704 | 0.6+ | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.5− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 1.0+ | 0.4+ |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.6− | 0.9+ |
| 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2− | 1.0+ |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1− | 1.0− | 2006 11 22 | 704 | 0.7+ | 0.6− |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | (1.0+ | 1.8+) | | | | |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | (0.7+ | 1.9+) | | | | |

**2002 TM$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.62614 | | (2000.0) | | | |
| $n$ | 0.26755088 | $\omega$ | 168.55338 | | +0.89374835 | −0.44523033 |
| $a$ | 2.3852384 | $\Omega$ | 218.03694 | | +0.40423884 | +0.85221345 |
| $e$ | 0.1493555 | $i$ | 5.08605 | | +0.19443468 | +0.27477660 |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 10 | 691 | 0.3− | 0.1+ | 2002 10 04 | 704 | 0.4− | 0.8+ | 2006 11 20 | H07 | 0.1− | 0.3− |
| 1991 10 10 | 691 | 0.1+ | 0.3− | 2002 10 04 | 704 | 0.6+ | 0.5+ | 2006 11 20 | H07 | 0.2+ | 0.1+ |
| 1991 10 10 | 691 | 0.5+ | 0.6− | 2002 10 04 | 704 | 0.3− | 0.9+ | 2006 11 20 | H07 | 0.3+ | 0.3+ |
| 2002 09 07 | 704 | 0.5− | 0.2+ | 2002 10 08 | 704 | 0.1− | 0.4+ | 2006 11 21 | H07 | 0.3+ | 1.0− |
| 2002 09 07 | 704 | 0.8+ | 0.4+ | 2002 10 08 | 704 | 0.5− | 1.0+ | 2006 11 21 | H07 | 0.5+ | 0.3− |
| 2002 09 07 | 704 | 0.7+ | 1.2+ | 2002 10 08 | 704 | 1.0− | 0.8− | 2006 11 21 | H07 | (0.2− | 1.7+) |
| 2002 09 07 | 704 | 0.0 | 0.3+ | 2006 11 18 | H07 | 0.1+ | 0.1+ | 2006 11 21 | H07 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.7+ | 0.0 | 2006 11 18 | H07 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.6− |
| 2002 09 13 | 644 | 0.1+ | 0.0 | 2006 11 18 | H07 | 0.3+ | 0.9+ | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2002 09 13 | 644 | 0.0 | 0.0 | 2006 11 18 | H07 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.5− | 0.4+ |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 11 20 | H07 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2002 09 16 | 608 | 0.4− | 1.2− | 2006 11 20 | H07 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2002 09 16 | 608 | 1.1− | 1.2− | 2006 11 20 | H07 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.5+ | 0.3− |
| 2002 09 16 | 608 | (1.1− | 1.8−) | 2006 11 20 | H07 | 0.2− | 0.6+ | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2002 10 04 | 704 | 0.5+ | 0.2+ | 2006 11 20 | H07 | 0.1+ | 0.0 | | | | |

**2002 TN$_{203}$ = 2006 RD$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.74424 | | (2000.0) | | | |
| $n$ | 0.24388286 | $\omega$ | 188.01506 | | +0.97398102 | +0.22003321 |
| $a$ | 2.5371639 | $\Omega$ | 159.03300 | | −0.19860763 | +0.94407298 |
| $e$ | 0.3134860 | $i$ | 8.72507 | | −0.10916039 | +0.24558420 |
| $P$ | 4.04 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 608 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.9+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.0 |
| 2002 10 02 | 608 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.7− | 0.4− |
| 2002 10 02 | 608 | 0.5− | 0.3+ | 2006 09 12 | 703 | 1.0− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 10 04 | 704 | 1.1+ | 0.5+ | 2006 09 12 | 703 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2002 10 04 | 704 | 0.9+ | 0.8+ | 2006 09 13 | 644 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.8+ | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 08 | 699 | 0.2− | 0.8+ | 2006 09 13 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 10 08 | 699 | 0.8− | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 08 | 699 | 1.1− | 1.4− | 2006 09 18 | 703 | 0.8+ | 1.2− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 10 08 | 699 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1− |
| 2002 10 15 | 644 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.2+ | 0.9− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 10 15 | 644 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2002 10 15 | 644 | 0.2+ | 0.4− | 2006 09 20 | 644 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.5− |
| 2006 08 19 | 691 | 0.9− | 0.0 | 2006 09 20 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.3− | | | | |
| 2006 08 19 | 691 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.6+ | | | | |

**2002 TF$_{205}$ = 2006 PW$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.47557 | | (2000.0) | | | |
| $n$ | 0.23742744 | $\omega$ | 248.12975 | | +0.86383202 | −0.49983547 |
| $a$ | 2.5829467 | $\Omega$ | 141.78036 | | +0.49156739 | +0.80895851 |
| $e$ | 0.3227391 | $i$ | 5.83698 | | +0.11025306 | +0.30943600 |
| $P$ | 4.15 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | 0.1+ | 0.1− | 2002 10 08 | 699 | 0.5− | 1.8+ | 2006 08 13 | 644 | 0.1+ | 0.1− |
| 2002 09 28 | 608 | 0.1− | 0.4− | 2002 10 08 | 699 | 0.7+ | 0.6− | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2002 09 28 | 608 | 0.1− | 0.6− | 2006 07 25 | G96 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2002 10 04 | 704 | 0.3+ | 0.1+ | 2006 07 25 | G96 | 0.5− | 0.4+ | 2006 08 24 | 644 | 0.5+ | 0.1− |
| 2002 10 04 | 704 | 0.2+ | 0.3+ | 2006 07 25 | G96 | 0.2+ | 0.4− | 2006 08 28 | 703 | 0.3− | 0.6− |
| 2002 10 04 | 704 | 0.6− | 0.3− | 2006 07 25 | G96 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.4− | 0.8+ |
| 2002 10 08 | 699 | 1.0+ | 0.7− | 2006 08 13 | 644 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.7− | 0.6+ |
| 2002 10 08 | 699 | 0.9− | 0.4+ | 2006 08 13 | 644 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.4+ |

**2002 TL$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.43028 | | (2000.0) | | | |
| $n$ | 0.25851432 | $\omega$ | 78.39308 | | +0.93138999 | −0.36193271 |
| $a$ | 2.4405047 | $\Omega$ | 302.81469 | | +0.31331662 | +0.85152840 |
| $e$ | 0.2035469 | $i$ | 2.65662 | | +0.18532509 | +0.37934693 |
| $P$ | 3.81 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 14 | 691 | 0.2− | 0.4− | 2002 10 12 | 704 | 0.3+ | 0.5− | 2002 12 11 | 704 | 0.0 | 0.3− |
| 2000 02 14 | 691 | 0.2− | 0.5− | 2002 10 12 | 704 | 0.7+ | 0.7− | 2004 03 21 | 691 | 0.2− | 0.5+ |
| 2000 02 14 | 691 | 0.2− | 0.3− | 2002 10 12 | 704 | 0.1− | 0.3− | 2004 03 21 | 691 | 0.4+ | 0.1+ |
| 2002 10 04 | 704 | 0.7− | 0.2+ | 2002 10 30 | 608 | 0.9− | 0.9+ | 2004 03 21 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 704 | 0.2+ | 0.3+ | 2002 10 30 | 608 | 1.4− | 1.2+ | 2006 11 16 | 704 | 1.0− | 0.7− |
| 2002 10 04 | 704 | 0.9+ | 1.0− | 2002 10 30 | 608 | 1.1− | 0.8+ | 2006 11 16 | 704 | 0.3− | 0.6+ |
| 2002 10 04 | 704 | 0.3+ | 0.7+ | 2002 11 08 | 704 | 1.1+ | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2002 10 08 | 699 | 0.5− | 0.0 | 2002 11 08 | 704 | 0.7+ | 1.2− | 2006 11 16 | 704 | 1.0+ | 0.5+ |
| 2002 10 08 | 699 | 0.0 | 0.6+ | 2002 11 08 | 704 | 0.4− | 0.7− | 2006 11 16 | 704 | 1.4+ | 0.8+ |
| 2002 10 08 | 699 | 0.4− | 0.4− | 2002 11 08 | 704 | 0.1− | 0.5− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 0.4+ | 0.1− | 2002 11 08 | 704 | 0.2− | 0.6− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 704 | 0.6+ | 0.9+ | 2002 11 12 | 644 | 0.1+ | 0.6− | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2002 10 09 | 704 | 0.1+ | 0.9+ | 2002 11 12 | 704 | 0.5+ | 0.6+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2002 11 12 | 644 | 0.2+ | 0.5− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 704 | 0.4+ | 0.9+ | 2002 11 12 | 704 | 0.2− | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2002 10 09 | 704 | 0.1+ | 0.5− | 2002 11 12 | 644 | 0.4+ | 0.6− | 2006 11 22 | 704 | 0.3− | 1.3+ |
| 2002 10 11 | 644 | 0.5− | 0.8− | 2002 11 12 | 704 | 0.5+ | 1.0− | 2006 11 22 | 704 | 0.2+ | 1.4+ |
| 2002 10 11 | 644 | 0.5− | 0.9− | 2002 11 12 | 704 | 1.3+ | 0.1− | 2006 11 22 | 704 | 0.9− | 0.3+ |
| 2002 10 11 | 644 | 0.4− | 0.6− | 2002 11 12 | 704 | 0.1− | 0.3− | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.4− | 0.0 | 2002 12 11 | 704 | 0.2+ | 0.5+ | 2006 11 25 | 691 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.2+ | 0.4+ | 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.1+ |

**2002 TV$_{206}$ = 2002 TA$_{281}$**

Id. Minor Planet Center (d, *MPO* 38538)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.53501 | | (2000.0) | | | |
| $n$ | 0.24221339 | $\omega$ | 83.94285 | | +0.99318774 | +0.09786721 |
| $a$ | 2.5488090 | $\Omega$ | 270.42862 | | −0.11501717 | +0.91040238 |
| $e$ | 0.2617664 | $i$ | 3.62628 | | +0.01868589 | +0.40198198 |
| $P$ | 4.07 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.4− | 0.9− | 2002 11 12 | 704 | (0.6− | 1.7−) | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2002 10 04 | 704 | (0.8− | 1.9−) | 2002 11 12 | 644 | 0.7+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.8− |
| 2002 10 04 | 704 | 0.2+ | 0.3+ | 2002 11 12 | 704 | 0.0 | 0.2− | 2006 10 03 | 704 | 0.3− | 0.1− |
| 2002 10 04 | 704 | 0.2+ | 0.6− | 2002 11 12 | 704 | 0.6− | 0.6− | 2006 10 03 | 704 | 1.0+ | 0.8+ |
| 2002 10 04 | 704 | 0.4− | 0.4− | 2002 11 12 | 644 | 0.7+ | 0.6+ | 2006 10 03 | 704 | 0.4− | 0.6+ |
| 2002 10 08 | 699 | 0.2+ | 0.4+ | 2002 11 12 | 704 | 0.3− | 0.3− | 2006 10 03 | 704 | 0.7+ | 0.5+ |
| 2002 10 08 | 699 | 0.3+ | 0.8− | 2002 11 12 | 704 | 0.4+ | 0.8+ | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2002 10 08 | 699 | 1.3+ | 0.2+ | 2002 11 13 | 644 | 0.6− | 0.6− | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2002 10 08 | 699 | 0.1+ | 0.1− | 2002 11 13 | 644 | 0.4− | 0.2− | 2006 10 03 | 704 | 1.1− | 0.9+ |
| 2002 10 10 | 704 | 0.6+ | 0.0 | 2002 11 13 | 644 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2002 10 10 | 704 | 0.1+ | 0.2+ | 2002 11 14 | 704 | 0.9+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2002 10 10 | 704 | 0.1+ | 0.3− | 2002 11 14 | 704 | 0.8− | 0.8− | 2006 10 16 | 185 | 0.6+ | 0.7− |
| 2002 10 10 | 704 | 0.6+ | 0.0 | 2002 11 14 | 704 | 0.7+ | 0.6+ | 2006 10 16 | 185 | 0.5+ | 0.3+ |
| 2002 10 10 | 704 | 0.4− | 0.6− | 2002 11 14 | 704 | 0.1− | 0.3− | 2006 10 16 | 185 | 0.7+ | 0.1− |
| 2002 10 12 | 704 | 0.1− | 0.3− | 2002 11 23 | 644 | 0.1+ | 0.4− | 2006 10 16 | 185 | 0.5+ | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.8+ | 2002 11 23 | 644 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2002 10 12 | 704 | 0.2+ | 0.5+ | 2002 11 23 | 644 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2002 10 12 | 704 | 0.8− | 0.7− | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2002 10 12 | 704 | 0.9− | 0.0 | 2006 09 16 | 703 | 0.9− | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.1− |
| 2002 10 28 | 644 | 0.1− | 0.7+ | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 10 19 | 683 | 0.4− | 0.1− |
| 2002 10 28 | 644 | 0.0 | 0.7+ | 2006 09 16 | 703 | 0.2+ | 0.3+ | 2006 10 19 | 683 | (0.5+ | 1.6−) |
| 2002 10 28 | 644 | 0.2+ | 0.9+ | 2006 09 18 | 704 | 0.2+ | 0.6− | 2006 10 19 | 683 | 0.4− | 0.9− |
| 2002 10 31 | 644 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.0 | 0.5+ | 2006 09 18 | 704 | 0.8− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 644 | 0.3+ | 0.5+ | 2006 09 18 | 704 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2002 11 01 | 644 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 11 01 | 644 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 11 04 | 699 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 10 22 | 683 | 0.6− | 0.1+ |
| 2002 11 04 | 699 | 0.7− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.6+ | 2006 10 22 | 683 | 0.9+ | 0.5+ |
| 2002 11 04 | 699 | 1.3− | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.1− | 2006 10 22 | 683 | 0.6− | 0.4+ |
| 2002 11 04 | 699 | 0.9− | 0.4− | 2006 09 29 | 704 | 0.5+ | 0.2+ | 2006 10 23 | 683 | 0.1+ | 0.2+ |
| 2002 11 05 | 704 | 0.4− | 1.0− | 2006 09 29 | 704 | 0.2+ | 0.5− | 2006 10 23 | 683 | 1.4− | 0.6+ |
| 2002 11 05 | 704 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.5+ | 2006 10 23 | 683 | 0.1+ | 0.8+ |
| 2002 11 05 | 704 | 0.2− | 0.6− | 2006 09 29 | 704 | 0.4+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.4− | 2006 11 06 | 644 | 0.1− | 0.4− |
| 2002 11 12 | 644 | (1.8+ | 0.2−) | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.3+ | 0.0 |

## 2002 TS$_{207}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.82585 | | (2000.0) | | | |
| $n$ | 0.27906460 | $\omega$ | 36.08166 | | +0.95198730 | −0.30581097 |
| $a$ | 2.3191716 | $\Omega$ | 341.70981 | | +0.26926660 | +0.85840793 |
| $e$ | 0.1863159 | $i$ | 2.58176 | | +0.14565605 | +0.41184400 |
| $P$ | 3.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3+ | 0.2− | 2002 10 31 | 644 | 0.6+ | 0.8+ | 2002 11 12 | 704 | 1.4− | 0.4+ |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2002 11 01 | 644 | 0.1− | 0.5+ | 2002 11 12 | 704 | 0.6− | 0.3− |
| 2002 10 04 | 704 | 1.0+ | 0.5+ | 2002 11 01 | 644 | 0.1+ | 0.4+ | 2002 11 13 | 644 | 0.3− | 0.1+ |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2002 11 01 | 644 | 0.2− | 0.3+ | 2002 11 13 | 644 | 0.3+ | 0.0 |
| 2002 10 08 | 699 | 0.0 | 1.4+ | 2002 11 05 | 704 | 0.1− | 0.1− | 2002 11 13 | 644 | 0.2− | 0.2+ |
| 2002 10 08 | 699 | 0.0 | 0.3+ | 2002 11 05 | 704 | 0.0 | 0.3− | 2002 11 14 | 704 | 0.1− | 0.9− |
| 2002 10 08 | 699 | 1.1− | 0.6+ | 2002 11 05 | 704 | 0.0 | 1.1− | 2002 11 14 | 704 | 0.1+ | 1.3− |
| 2002 10 08 | 699 | 0.6− | 0.3+ | 2002 11 05 | 704 | 0.0 | 0.7− | 2002 11 14 | 704 | 0.1+ | 1.0− |
| 2002 10 09 | 704 | 0.8+ | 1.5− | 2002 11 05 | 704 | 0.5+ | 0.2− | 2002 11 14 | 704 | 0.7+ | 0.5+ |
| 2002 10 09 | 704 | 0.8− | 0.3− | 2002 11 06 | 704 | 1.0+ | 0.6− | 2002 11 14 | 704 | (0.3− | 2.0−) |
| 2002 10 09 | 704 | 0.1+ | 0.9− | 2002 11 06 | 704 | 0.3+ | 0.1− | 2004 03 17 | 691 | 0.1+ | 0.5+ |
| 2002 10 09 | 704 | 0.5+ | 1.2− | 2002 11 06 | 704 | 0.3− | 0.2− | 2004 03 17 | 691 | 0.2+ | 0.4+ |
| 2002 10 12 | 704 | 0.3+ | 0.3+ | 2002 11 06 | 704 | 0.0 | 0.3+ | 2004 03 17 | 691 | 0.2+ | 0.0 |
| 2002 10 12 | 704 | 0.4− | 0.9+ | 2002 11 06 | 704 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 0.8+ | 0.3+ | 2002 11 08 | 704 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.5− | 0.8− |
| 2002 10 12 | 704 | 0.1− | 0.0 | 2002 11 08 | 704 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2002 10 15 | 644 | 0.3− | 0.3+ | 2002 11 08 | 704 | 0.5− | 0.3− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 10 15 | 644 | 0.3− | 0.4+ | 2002 11 08 | 704 | 0.6− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 10 15 | 644 | 0.3− | 0.4+ | 2002 11 12 | 704 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2002 10 31 | 644 | 0.2+ | 1.3+ | 2002 11 12 | 704 | 0.4− | 0.8+ | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2002 10 31 | 644 | 0.5+ | 1.0+ | 2002 11 12 | 704 | 0.5− | 0.5+ | 2006 11 21 | G96 | 0.5+ | 0.0 |

## 2002 TB$_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 281.03026 | | (2000.0) | | | |
| $n$ | 0.24315809 | $\omega$ | 110.58461 | | −0.65765673 | −0.74917996 |
| $a$ | 2.5422031 | $\Omega$ | 21.16040 | | +0.58386783 | −0.57306280 |
| $e$ | 0.2356517 | $i$ | 12.61669 | | +0.47601048 | −0.33215720 |
| $P$ | 4.05 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 0.1− | 1.8+ | 2002 11 10 | 704 | (1.8− | 0.8+) | 2006 10 19 | 644 | 0.1+ | 0.9+ |
| 1998 11 14 | 704 | 0.8+ | 1.1− | 2002 11 10 | 704 | 1.3− | 0.8+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 1998 11 14 | 704 | 1.3+ | 0.3− | 2002 11 10 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.5+ |
| 1998 11 14 | 704 | (3.7− | 2.2−) | 2002 11 10 | 704 | (0.1+ | 1.7+) | 2006 10 21 | 691 | 0.4+ | 0.2− |
| 2002 10 04 | 704 | 0.6− | 1.3+ | 2002 11 12 | 704 | 1.1− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.9+ | 2002 11 12 | 704 | 0.7− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2002 10 04 | 704 | (0.4− | 1.7+) | 2002 11 12 | 704 | 0.7− | 0.4+ | 2006 10 29 | 704 | 1.4+ | 0.2+ |
| 2002 10 08 | 699 | 1.5+ | 0.3− | 2002 11 12 | 704 | 0.7− | 0.7+ | 2006 10 29 | 704 | 0.2− | 0.3+ |
| 2002 10 08 | 699 | 0.1− | 1.1+ | 2002 11 12 | 704 | 0.7− | 0.6+ | 2006 10 29 | 704 | 0.0 | 0.6+ |
| 2002 10 08 | 699 | 0.0 | 0.8− | 2002 11 14 | 704 | 0.1+ | 1.0− | 2006 10 29 | 704 | 0.8+ | 0.3+ |
| 2002 10 08 | 699 | 0.2− | 0.9+ | 2002 11 14 | 704 | 0.1− | 0.4− | 2006 10 29 | 704 | 0.7+ | 0.9− |
| 2002 10 10 | 704 | 0.4− | 0.3+ | 2002 11 14 | 704 | (2.0− | 0.2+) | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.6− | 1.1+ | 2002 11 14 | 704 | 0.5− | 0.3− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.6− | 0.2+ | 2002 11 24 | 644 | 1.2+ | 0.4− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 11 01 | 644 | 0.1+ | 0.1+ | 2002 11 24 | 644 | 0.6+ | 1.0− | 2006 11 14 | 703 | (1.0− | 1.5−) |
| 2002 11 01 | 644 | 0.7− | 0.1+ | 2002 11 24 | 644 | 0.3+ | 0.1− | 2006 11 14 | 703 | 1.0+ | 0.4− |
| 2002 11 01 | 644 | 0.2− | 0.2+ | 2002 12 05 | 704 | 0.6+ | 0.6+ | 2006 11 14 | 703 | (2.1+ | 0.5−) |
| 2002 11 05 | 704 | 0.0 | 0.7+ | 2002 12 05 | 704 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.9− | 0.2− |
| 2002 11 05 | 704 | 0.0 | 0.6+ | 2002 12 05 | 704 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.8+ |
| 2002 11 05 | 704 | 0.3+ | 0.5− | 2002 12 31 | 704 | 0.6− | 0.7+ | 2006 11 16 | 704 | 0.8+ | 0.6+ |
| 2002 11 05 | 704 | 0.7+ | 0.4+ | 2002 12 31 | 704 | 0.8+ | 0.6− | 2006 11 16 | 704 | 1.1− | 1.3+ |
| 2002 11 05 | 704 | 0.0 | 0.6+ | 2002 12 31 | 704 | 0.3+ | 0.9− | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2002 11 06 | 699 | (0.1− | 2.2+) | 2004 05 22 | 704 | 0.7− | 0.9+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 11 06 | 699 | 0.1+ | 0.2− | 2004 05 22 | 704 | 0.9+ | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2002 11 06 | 699 | 0.2− | 0.4− | 2004 05 22 | 704 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.2− | 1.3+ |
| 2002 11 06 | 699 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.9+ |
| 2002 11 07 | 704 | 0.9− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 22 | 704 | (1.6− | 1.7+) |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 22 | 704 | (0.6− | 2.4+) |
| 2002 11 07 | 704 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2002 11 07 | 704 | 1.1− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2002 11 07 | 704 | 1.1− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2002 11 08 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2002 11 08 | 704 | 0.3− | 0.7− | 2006 10 17 | 691 | 0.3+ | 0.3− | 2006 11 25 | G96 | 0.0 | 0.8− |
| 2002 11 08 | 704 | 0.5+ | 0.7− | 2006 10 17 | 691 | 0.2+ | 0.6− | 2006 11 25 | G96 | 0.4− | 2.8− |
| 2002 11 08 | 704 | 1.4+ | 0.5− | 2006 10 17 | 691 | 0.1+ | 0.3− | | | | |

## 2002 TO$_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.02288 | | (2000.0) | | | |
| $n$ | 0.23731946 | $\omega$ | 224.66255 | | +0.61465363 | −0.78866482 |
| $a$ | 2.5837301 | $\Omega$ | 187.45189 | | +0.75127891 | +0.59090141 |
| $e$ | 0.3362184 | $i$ | 6.39553 | | +0.24037660 | +0.16983321 |
| $P$ | 4.15 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 557 | 0.5+ | 0.5− | 2002 11 23 | 644 | 0.4− | 0.4+ | 2006 09 29 | 704 | 1.0+ | 1.4+ |
| 1999 01 17 | 557 | 0.0 | 0.6+ | 2002 12 01 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.6+ |
| 2002 10 04 | 704 | 0.4− | 0.8+ | 2002 12 01 | 704 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.9+ |
| 2002 10 04 | 704 | 0.8+ | 0.5+ | 2002 12 01 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.4+ |
| 2002 10 04 | 704 | 0.6+ | 0.7+ | 2002 12 01 | 704 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.2+ | 1.2+ |
| 2002 10 04 | 704 | 0.8+ | 0.1− | 2002 12 01 | 704 | 0.6+ | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.3+ | 2006 08 17 | 644 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.5+ |
| 2002 10 08 | 699 | 0.4+ | 1.3+ | 2006 08 17 | 644 | 0.0 | 0.6− | 2006 10 01 | 704 | 0.3− | 0.3+ |
| 2002 10 08 | 699 | 0.0 | 1.3+ | 2006 08 17 | 644 | 0.6− | 0.2− | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2002 10 08 | 699 | 0.4− | 1.2+ | 2006 09 17 | 704 | 0.5+ | 0.6− | 2006 10 01 | 704 | 0.2− | 0.5− |
| 2002 10 08 | 699 | 0.4+ | 0.2+ | 2006 09 17 | 704 | (1.5− | 1.5+) | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | (2.0+ | 0.4+) | 2006 09 17 | 704 | 1.0− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 10 09 | 704 | 1.0+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4+ | 1.4+ |
| 2002 10 09 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.9+ | 0.1− |
| 2002 10 31 | 644 | 0.1− | 0.5− | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | (0.4+ | 1.6+) |
| 2002 10 31 | 644 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 10 16 | 703 | (0.9+ | 1.7+) |
| 2002 10 31 | 644 | 0.2− | 0.5− | 2006 09 19 | 699 | 0.9− | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2002 11 01 | 704 | 1.0− | 0.4− | 2006 09 19 | 699 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2002 11 01 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2002 11 01 | 704 | 0.0 | 0.6− | 2006 09 20 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 1.1− |
| 2002 11 05 | 699 | 0.5+ | 0.3− | 2006 09 20 | 704 | 0.3+ | 0.2− | 2006 10 17 | 106 | 0.4− | 0.2+ |
| 2002 11 05 | 699 | 0.8+ | 0.2− | 2006 09 20 | 704 | 1.1+ | 0.4− | 2006 10 17 | 106 | 0.5+ | 0.2− |
| 2002 11 05 | 699 | 0.9+ | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 10 18 | 106 | 0.4+ | 0.4− |
| 2002 11 05 | 699 | 0.4− | 0.6+ | 2006 09 20 | 704 | 0.7+ | 0.3− | 2006 10 18 | 106 | 1.1− | 0.8− |
| 2002 11 12 | 704 | 1.3− | 0.4− | 2006 09 21 | A50 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 1.5− | 0.2− | 2006 09 21 | A50 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 1.2− | 0.5− | 2006 09 25 | 691 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 11 12 | 704 | (1.8− | 0.5−) | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 11 12 | 704 | 1.1− | 0.7− | 2006 09 25 | 691 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2002 11 12 | 644 | 0.8+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 644 | 0.5+ | 0.4− | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.4− |
| 2002 11 12 | 644 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 11 17 | 644 | 0.1− | 0.6− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.4+ |
| 2002 11 17 | 644 | 0.1− | 0.5− | 2006 09 27 | 704 | 0.8− | 0.9+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2002 11 17 | 644 | 0.1− | 0.5− | 2006 09 27 | 704 | (0.1− | 1.9+) | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 11 23 | 644 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.2+ | 1.1+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2002 11 23 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.9+ | 2006 11 17 | G96 | 0.1+ | 0.5− |

## 2002 TW$_{208}$ = 2006 QZ$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.74027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23659630 | $\omega$ | 218.80773 | | +0.91795036 | −0.38865933 | |
| $a$ | 2.5889923 | $\Omega$ | 163.51463 | | +0.39621833 | +0.90809107 | |
| $e$ | 0.2027033 | $i$ | 16.25736 | | −0.01944674 | +0.15593119 | |
| $P$ | 4.17 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 1.3− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.5− |
| 2002 10 05 | 704 | 1.0+ | 0.3− | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.9+ | 0.3+ |
| 2002 10 05 | 704 | 0.2+ | 0.3− | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| 2002 10 05 | 704 | 0.2+ | 0.6− | 2006 08 27 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 1.1− | 0.8+ |
| 2002 10 08 | 699 | 0.8− | 0.2− | 2006 08 28 | 703 | (2.9− | 1.1−) | 2006 09 18 | 699 | 0.3− | 0.7+ |
| 2002 10 08 | 699 | (0.4+ | 1.6+) | 2006 08 28 | 703 | 1.4− | 1.2+ | 2006 09 18 | 699 | 0.3+ | 0.0 |
| 2002 10 08 | 699 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.6− | | | | |
| 2002 10 08 | 699 | 0.6+ | 1.4+ | 2006 08 28 | 703 | 0.1− | 0.7− | | | | |

## 2002 TX$_{208}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.66437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18833926 | $\omega$ | 237.48600 | | +0.82487294 | +0.52383038 | |
| $a$ | 3.0142237 | $\Omega$ | 90.09446 | | −0.42060215 | +0.81991873 | |
| $e$ | 0.0981000 | $i$ | 12.27307 | | −0.37772803 | +0.23094375 | |
| $P$ | 5.23 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 17 | 691 | 0.1− | 0.1− | 2002 10 16 | 644 | 0.4− | 0.2+ | 2006 05 25 | G96 | 0.1+ | 0.0 |
| 1992 11 17 | 691 | 0.0 | 0.0 | 2002 10 16 | 644 | 0.0 | 0.3+ | 2006 05 25 | G96 | 0.0 | 0.1+ |
| 1992 11 17 | 691 | 0.1+ | 0.0 | 2005 03 02 | 703 | 0.7− | 0.8− | 2006 05 25 | G96 | 0.4+ | 0.0 |
| 2002 09 29 | 608 | 1.0− | 0.5+ | 2005 03 02 | 703 | 0.7− | 0.0 | 2006 05 28 | 703 | 0.1+ | 0.2− |
| 2002 09 29 | 608 | 0.9− | 0.1− | 2005 03 02 | 703 | 1.2+ | 1.3+ | 2006 05 28 | 703 | 0.3− | 0.2+ |
| 2002 09 29 | 608 | 0.9− | 0.2+ | 2005 03 02 | 703 | (1.1+ | 3.2+) | 2006 05 28 | 703 | 0.7− | 0.3− |
| 2002 10 05 | 704 | 0.6− | 0.9+ | 2005 04 02 | 703 | 0.1+ | 1.4+ | 2006 05 28 | 703 | 1.6− | 0.4+ |
| 2002 10 05 | 704 | 0.5− | 2.0+ | 2005 04 02 | 703 | 0.9+ | 0.1− | 2006 06 20 | 644 | 0.2− | 0.7+ |
| 2002 10 05 | 704 | 0.6− | 0.0 | 2005 04 02 | 703 | 0.0 | 0.2− | 2006 06 20 | 644 | 0.4+ | 0.5+ |
| 2002 10 05 | 704 | 1.0− | 0.0 | 2005 04 02 | 703 | 0.7+ | 0.1− | 2006 06 20 | 644 | 0.6+ | 0.1+ |
| 2002 10 08 | 699 | 1.0+ | 0.4− | 2006 05 08 | G96 | 0.4+ | 0.1+ | 2006 06 20 | 644 | 0.0 | 0.1− |
| 2002 10 08 | 699 | 1.1+ | 0.8+ | 2006 05 08 | G96 | 0.0 | 0.2+ | 2006 06 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 08 | 699 | 0.2+ | 0.6+ | 2006 05 08 | G96 | 0.0 | 0.4+ | 2006 06 20 | 644 | 0.3+ | 0.0 |
| 2002 10 08 | 699 | 1.1+ | 0.3+ | 2006 05 08 | G96 | 0.5+ | 0.2+ | | | | |
| 2002 10 16 | 644 | 0.2− | 0.2+ | 2006 05 25 | G96 | 0.2+ | 0.1− | | | | |

## 2002 TW$_{209}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.76453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24429828 | $\omega$ | 333.19650 | | +0.93696463 | −0.31051467 | |
| $a$ | 2.5342869 | $\Omega$ | 45.87113 | | +0.34704157 | +0.77348991 | |
| $e$ | 0.1955297 | $i$ | 12.89999 | | +0.04073613 | +0.55253415 | |
| $P$ | 4.03 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 608 | 0.5− | 0.1+ | 2002 11 08 | 645 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.8− |
| 2002 10 06 | 608 | 0.6− | 0.2− | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.3− | 0.6− |
| 2002 10 06 | 608 | 0.8− | 0.2− | 2006 09 24 | 699 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2002 10 08 | 699 | 0.4− | 0.4+ | 2006 09 24 | 699 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2002 10 08 | 699 | 1.2− | 1.1− | 2006 09 24 | 699 | 0.7+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2002 10 08 | 699 | (1.0− | 1.8+) | 2006 09 24 | 699 | 0.5− | 1.4− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.2+ | 1.3+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2002 10 15 | 644 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.5− | 2006 10 24 | 644 | 0.5− | 0.2+ |
| 2002 10 15 | 644 | 0.1+ | 0.7+ | 2006 09 26 | 703 | (1.6+ | 0.0 ) | 2006 10 28 | 703 | 1.4+ | 0.8− |
| 2002 10 15 | 644 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.3− | 2006 10 28 | 703 | (0.2− | 1.7+) |
| 2002 10 30 | 645 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.6+ |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.5− | 2006 10 28 | 703 | (1.6− | 0.1+) |

## 2002 TL$_{210}$ = 2006 SU$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.99899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24353261 | $\omega$ | 311.94506 | | +0.96884412 | +0.24113750 | |
| $a$ | 2.5395960 | $\Omega$ | 34.21358 | | −0.18689925 | +0.86154888 | |
| $e$ | 0.2101154 | $i$ | 5.76842 | | −0.16251077 | +0.44675075 | |
| $P$ | 4.05 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 22 | 910 | 0.7+ | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.2− |
| 1998 09 22 | 910 | 0.8+ | 0.2− | 2002 10 11 | 704 | 0.7+ | 1.3+ | 2006 10 01 | 691 | (2.8+ | 0.7−) |
| 1998 09 22 | 910 | 0.9+ | 0.0 | 2002 10 11 | 644 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 1998 10 19 | 691 | 0.0 | 0.5− | 2002 11 22 | 644 | 0.5− | 0.9+ | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 1998 10 19 | 691 | 0.1− | 0.4− | 2002 11 22 | 644 | 0.4− | 0.6+ | 2006 10 15 | 703 | 0.6− | 0.2− |
| 1998 10 19 | 691 | 0.1+ | 0.4− | 2002 11 22 | 644 | 0.4− | 0.6+ | 2006 10 15 | 703 | 0.9− | 0.1− |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2005 05 11 | 807 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 0.6+ | 0.4+ | 2005 05 11 | 807 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.8− | 1.2− |
| 2002 10 03 | 704 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.5− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.9+ | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.6+ | | |
| 2002 10 03 | 704 | 0.1+ | 0.4− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.5− | 0.7− | | |
| 2002 10 07 | 704 | 0.5+ | 0.5− | 2006 09 18 | 699 | 0.1− | 1.3− | 2006 10 21 | 703 | 0.5+ | 0.6− | | |
| 2002 10 07 | 704 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.5− | 2006 10 22 | G96 | 0.2+ | 0.0 | | |
| 2002 10 07 | 704 | 0.7− | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.8− | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2002 10 08 | 699 | 0.7− | 0.1− | 2006 09 18 | 699 | (1.5− | 0.4+) | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2002 10 08 | 699 | 0.4− | 0.5+ | 2006 09 22 | 704 | (2.3+ | 2.7−) | 2006 10 22 | G96 | 0.3+ | 0.1− | | |
| 2002 10 08 | 699 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.3− | | |
| 2002 10 08 | 699 | (1.8− | 0.9+) | 2006 09 22 | 704 | 0.8− | 1.3+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2002 10 09 | 704 | 0.4− | 1.2+ | 2006 09 26 | 704 | 0.4+ | 1.0+ | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2002 10 09 | 704 | (0.4− | 1.6+) | 2006 09 26 | 704 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2002 10 09 | 704 | 0.3− | 1.1+ | 2006 09 26 | 704 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.1− | | |
| 2002 10 09 | 704 | 0.9− | 0.0 | 2006 09 26 | 704 | 0.8+ | 1.3+ | 2006 11 11 | G96 | 0.3+ | 0.2+ | | |
| 2002 10 11 | 644 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.2− | | |
| 2002 10 11 | 704 | 0.6− | 1.0+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.2− | | |
| 2002 10 11 | 644 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.1− | | |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 10 01 | 704 | (0.4− | 1.6+) | 2006 11 22 | G96 | 0.0 | 0.0 | | |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 10 01 | 704 | 0.1+ | 0.6+ | 2006 11 22 | G96 | 0.3+ | 0.1+ | | |

## 2002 TW$_{212}$ = 2006 QK$_{130}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.07381 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24173007 | $\omega$ | 280.76756 | | +0.65224432 | −0.73540440 | |
| $a$ | 2.5522052 | $\Omega$ | 126.91293 | | +0.75369913 | +0.60338578 | |
| $e$ | 0.2542395 | $i$ | 13.28502 | | +0.08071535 | +0.30839255 | |
| $P$ | 4.08 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 608 | 0.1+ | 0.9− | 2002 10 22 | 644 | 0.2+ | 0.7+ | 2006 09 20 | 703 | 0.3− | 0.3+ | | |
| 2002 10 01 | 608 | 0.1+ | 0.2− | 2002 10 22 | 644 | 0.0 | 0.8+ | 2006 09 20 | 703 | (1.7+ | 1.1+) | | |
| 2002 10 01 | 608 | 0.2+ | 0.3− | 2006 08 19 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.7+ | | |
| 2002 10 07 | 608 | 0.1− | 0.2− | 2006 08 19 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.0 | | |
| 2002 10 07 | 608 | 0.2− | 1.0− | 2006 08 19 | 644 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.1− | | |
| 2002 10 07 | 608 | 0.4− | 0.5− | 2006 08 30 | 699 | 0.8+ | 0.7− | 2006 09 26 | 703 | 0.3+ | 0.2− | | |
| 2002 10 08 | 644 | 0.2+ | 0.2+ | 2006 08 30 | 699 | 0.1+ | 0.1+ | 2006 10 12 | E12 | 0.2+ | 0.5− | | |
| 2002 10 08 | 644 | 0.6− | 0.4+ | 2006 08 30 | 699 | 0.9+ | 1.0+ | 2006 10 12 | E12 | 0.2− | 0.4+ | | |
| 2002 10 08 | 644 | 0.5+ | 0.1+ | 2006 09 20 | 703 | 0.4− | 0.4+ | 2006 10 12 | E12 | 0.2+ | 0.3− | | |
| 2002 10 22 | 644 | 0.1+ | 0.7+ | 2006 09 20 | 703 | 0.9− | 1.1− | 2006 10 12 | E12 | 0.0 | 0.4− | | |

## 2002 TO$_{214}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.04415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17544848 | $\omega$ | 198.23663 | | +0.92589824 | +0.36358977 | |
| $a$ | 3.1601157 | $\Omega$ | 139.96128 | | −0.32372287 | +0.90354721 | |
| $e$ | 0.2056066 | $i$ | 9.17202 | | −0.19472019 | +0.22672655 | |
| $P$ | 5.62 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 691 | 0.3+ | 0.2− | 2002 10 04 | 704 | 0.5+ | 1.0− | 2002 10 30 | 704 | 0.2+ | 0.6+ | | |
| 1999 02 10 | 691 | 0.1− | 1.1− | 2002 10 07 | 608 | 0.5+ | 0.0 | 2002 11 04 | 608 | 0.1+ | 0.4− | | |
| 1999 02 10 | 691 | 0.1− | 1.3+ | 2002 10 07 | 608 | 0.2+ | 0.2− | 2002 11 04 | 608 | 0.9− | 1.1+ | | |
| 2002 08 25 | 644 | 0.3− | 0.4+ | 2002 10 07 | 608 | 0.1− | 0.3− | 2002 11 04 | 608 | 0.5− | 1.3+ | | |
| 2002 08 25 | 644 | 0.3− | 0.2+ | 2002 10 15 | 644 | 0.2− | 0.1− | 2006 05 05 | G96 | 0.0 | 0.2+ | | |
| 2002 08 25 | 644 | 0.2− | 0.2+ | 2002 10 15 | 644 | 0.2− | 0.2− | 2006 05 05 | G96 | 0.1− | 0.3+ | | |
| 2002 10 04 | 704 | 0.1+ | 0.7+ | 2002 10 15 | 644 | 0.2− | 0.0 | 2006 05 05 | G96 | 0.3+ | 0.0 | | |
| 2002 10 04 | 704 | 0.9+ | 1.2− | 2002 10 30 | 704 | 0.8+ | 0.8+ | 2006 05 05 | G96 | 0.0 | 0.0 | | |
| 2002 10 04 | 704 | 0.1− | 0.3− | 2002 10 30 | 704 | 0.7− | 0.0 | | | | | | |
| 2002 10 04 | 704 | 0.5+ | 0.2+ | 2002 10 30 | 704 | 0.4− | 1.0− | | | | | | |

## 2002 TK$_{215}$ = 2006 WV$_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.46424 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27153127 | $\omega$ | 336.31101 | | +0.20025445 | −0.97042143 | |
| $a$ | 2.3618709 | $\Omega$ | 101.91774 | | +0.91948444 | +0.13862929 | |
| $e$ | 0.0607953 | $i$ | 7.92086 | | +0.33829946 | +0.19764658 | |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.1+ | 0.1− | 2002 10 07 | 608 | 0.4− | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 1995 12 27 | 691 | 0.1− | 0.2− | 2002 10 15 | 644 | 0.5− | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 1995 12 27 | 691 | 0.2+ | 0.3− | 2002 10 15 | 644 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2002 10 04 | 704 | (1.9− | 0.3−) | 2002 10 15 | 644 | 0.4− | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.5− | 0.2− | 2005 07 02 | 691 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.2− | | |
| 2002 10 04 | 704 | 0.1+ | 0.1+ | 2005 07 02 | 691 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.3− | | |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2005 07 02 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.3− | 0.2+ | | |
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.1+ | | |
| 2002 10 07 | 608 | 0.2− | 1.1+ | 2006 11 20 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2002 10 07 | 608 | 0.2+ | 1.3+ | 2006 11 20 | 691 | 0.1+ | 0.1− | | | | | | |

## 2002 TC$_{217}$ = 2006 UZ$_{68}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.84266 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25262824 | $\omega$ | 259.81488 | | +0.97934835 | −0.19249709 | |
| $a$ | 2.4782671 | $\Omega$ | 111.26247 | | +0.20152912 | +0.90492449 | |
| $e$ | 0.1957885 | $i$ | 3.80352 | | +0.01621159 | +0.37954780 | |
| $P$ | 3.90 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.5+ | 1.1− | 2006 11 08 | 644 | 0.5+ | 0.3+ | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.6− | 0.5− | 2006 11 13 | 703 | (0.9− | 2.5−) | | |
| 2002 10 07 | 644 | 0.3− | 0.4+ | 2002 10 11 | 704 | 0.5− | 0.1− | 2006 11 13 | 703 | (2.5+ | 2.7−) | | |
| 2002 10 07 | 644 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.7− | | |
| 2002 10 07 | 644 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 13 | 703 | (1.7− | 0.3−) | | |
| 2002 10 08 | 699 | (0.0 | 1.5+) | 2006 10 16 | 703 | 0.3+ | 0.4− | 2006 11 17 | 704 | 1.2− | 0.2− | | |
| 2002 10 08 | 699 | (2.2+ | 1.3+) | 2006 10 16 | 703 | 0.4− | 0.9+ | 2006 11 17 | 704 | 1.2− | 0.8+ | | |
| 2002 10 08 | 699 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.3− | 0.0 | 2006 11 17 | 704 | 1.0− | 0.7+ | | |
| 2002 10 08 | 699 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.7+ | 0.3− | | |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.4− | | |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.4− | | |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.5+ | 0.4+ | 2006 11 23 | G96 | 0.4+ | 0.1− | | |
| 2002 10 11 | 704 | 0.8− | 0.2− | 2006 11 08 | 644 | 0.5+ | 0.1+ | | | | | | |

## 2002 TX$_{217}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.26692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26298219 | $\omega$ | 114.39926 | | +0.97331343 | −0.20314688 | |
| $a$ | 2.4127843 | $\Omega$ | 257.46329 | | +0.15008011 | +0.91536154 | |
| $e$ | 0.2368733 | $i$ | 6.27737 | | +0.17359988 | +0.34762710 | |
| $P$ | 3.75 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.7− | 0.1+ | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.1− | 0.3− | | |
| 2002 08 11 | 704 | 0.9− | 0.3+ | 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2002 08 11 | 704 | 0.7− | 0.5+ | 2002 10 31 | 645 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.5− | 0.3− | | |
| 2002 08 11 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 703 | (2.6− | 0.9+) | 2006 11 14 | G96 | 0.1+ | 0.5− | | |
| 2002 08 27 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.6− | | |
| 2002 08 27 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 11 14 | 703 | 0.6+ | 0.0 | | |
| 2002 08 27 | 644 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.6+ | 0.8+ | 2006 11 14 | G96 | 0.2+ | 0.6− | | |
| 2002 09 04 | 699 | (0.3− | 1.6+) | 2006 10 19 | 703 | 1.2+ | 0.8− | 2006 11 15 | 704 | 0.6− | 0.5− | | |
| 2002 09 04 | 699 | 1.2+ | 0.8+ | 2006 10 19 | 703 | 0.2− | 0.3− | 2006 11 15 | 704 | 1.0+ | 1.1+ | | |
| 2002 09 04 | 699 | (0.5+ | 1.7+) | 2006 10 19 | 703 | 0.2− | 0.5− | 2006 11 15 | 704 | 0.9+ | 1.1+ | | |
| 2002 09 04 | 699 | (0.3+ | 1.5+) | 2006 10 19 | 703 | 0.4+ | 0.3− | 2006 11 16 | 704 | 0.8+ | 0.6+ | | |
| 2002 09 04 | 644 | 0.1+ | 0.4+ | 2006 10 20 | A50 | 0.3− | 0.8+ | 2006 11 16 | 704 | 0.3− | 0.3+ | | |
| 2002 09 04 | 644 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 644 | 0.3− | 0.6+ | 2006 10 27 | 703 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.7+ |
| 2002 09 12 | 644 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2002 09 12 | 644 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.1− | 0.7+ | 2006 11 17 | 704 | 0.8+ | 0.7+ |
| 2002 09 12 | 644 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.4− | 1.1+ |
| 2002 09 30 | 704 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.1+ |
| 2002 09 30 | 704 | 0.6− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | (1.8− | 0.7+) |
| 2002 09 30 | 704 | 0.4+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.7− | 0.2+ |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2002 10 05 | 704 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2002 10 05 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2002 10 05 | 704 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.8− | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2002 10 09 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.2+ |
| 2002 10 09 | 704 | 0.8− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.8− | 0.1+ |
| 2002 10 09 | 704 | 0.0 | 0.8+ | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.7− |
| 2002 10 09 | 704 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.7− | 0.3− | 2006 11 22 | 704 | 0.5− | 0.4− |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.1− | 1.1− | 2006 11 22 | 704 | 0.2+ | 0.1− |

### 2002 TD$_{220}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 29.36782 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26743433 | $\omega$ | 98.66589 | +0.95789046 | −0.27398082 | |
| $a$ | 2.3859313 | $\Omega$ | 277.26886 | +0.21740025 | +0.88748412 | |
| $e$ | 0.2007462 | $i$ | 4.96834 | +0.18757133 | +0.37054884 | |
| $P$ | 3.69 | $H$ | 15.8 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 21 | 608 | 1.3− | 0.3+ | 2002 10 31 | 644 | 0.2+ | 0.2+ | 2002 12 02 | 608 | 0.7+ | 1.8− |
| 2002 09 21 | 608 | 0.6− | 0.1− | 2002 10 31 | 644 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.7− | 0.3+ |
| 2002 09 21 | 608 | 1.3− | 0.7+ | 2002 10 31 | 644 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.1− | 0.6+ |
| 2002 10 05 | 704 | 0.0 | 0.3+ | 2002 11 03 | 704 | 0.5− | 1.1+ | 2002 12 06 | 704 | 0.2+ | 0.4+ |
| 2002 10 05 | 704 | 0.4+ | 0.6+ | 2002 11 03 | 704 | (0.4+ | 2.5+) | 2002 12 06 | 704 | 0.2+ | 0.1+ |
| 2002 10 05 | 704 | 0.4+ | 0.7+ | 2002 11 03 | 704 | (0.3− | 2.7+) | 2002 12 12 | 704 | 0.3− | 0.3+ |
| 2002 10 09 | 704 | 0.4+ | 0.4− | 2002 11 06 | 704 | 0.5− | 0.2− | 2002 12 12 | 704 | 0.3− | 0.0 |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2002 11 06 | 704 | 0.1+ | 0.4+ | 2002 12 12 | 704 | 1.1− | 1.7+ |
| 2002 10 09 | 704 | 1.0− | 0.1+ | 2002 11 06 | 704 | 0.6− | 0.3− | 2005 07 03 | 644 | 0.4− | 0.6+ |
| 2002 10 09 | 704 | 0.5+ | 0.3− | 2002 11 06 | 704 | 0.2− | 0.0 | 2005 07 03 | 644 | 0.4+ | 0.3+ |
| 2002 10 09 | 704 | 0.4− | 0.2+ | 2002 12 01 | 704 | 0.8+ | 0.2− | 2005 07 03 | 644 | 0.1+ | 0.2+ |
| 2002 10 12 | 704 | (2.4+ | 0.5−) | 2002 12 01 | 704 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.9+ |
| 2002 10 12 | 704 | 1.2+ | 0.9− | 2002 12 01 | 704 | 0.7− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 1.5+ | 1.0− | 2002 12 01 | 704 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2002 10 12 | 704 | 1.0+ | 0.5− | 2002 12 02 | 608 | 0.3+ | 1.1− | | | | |
| 2002 10 12 | 704 | 1.1+ | 1.1− | 2002 12 02 | 608 | 0.4+ | 1.1− | | | | |

### 2002 TZ$_{220}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 334.86854 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22955788 | $\omega$ | 116.36083 | +0.97719928 | −0.10568271 | |
| $a$ | 2.6416458 | $\Omega$ | 250.17153 | +0.04000033 | +0.94342746 | |
| $e$ | 0.1859533 | $i$ | 11.28914 | +0.20852226 | +0.31428615 | |
| $P$ | 4.29 | $H$ | 16.3 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 691 | 0.2+ | 0.2+ | 2002 10 06 | 704 | 0.3− | 0.6− | 2002 10 10 | 704 | 0.1+ | 0.8+ |
| 1998 12 26 | 691 | 0.2− | 0.0 | 2002 10 09 | 704 | 0.0 | 0.7− | 2002 10 10 | 704 | 0.1− | 1.2+ |
| 1998 12 26 | 691 | 0.2− | 0.0 | 2002 10 09 | 704 | 0.1+ | 0.2− | 2002 10 15 | 644 | 0.4+ | 0.1− |
| 1999 01 07 | 691 | 0.2+ | 0.0 | 2002 10 09 | 704 | 0.6+ | 1.3− | 2002 10 15 | 644 | 0.6+ | 0.4− |
| 1999 01 07 | 691 | 0.1+ | 0.0 | 2002 10 09 | 704 | 0.0 | 0.2+ | 2002 10 15 | 644 | 0.9+ | 0.1− |
| 1999 01 07 | 691 | 0.0 | 0.0 | 2002 10 09 | 704 | 0.1− | 0.0 | 2002 11 07 | 704 | 0.5− | 0.9+ |
| 2002 09 14 | 699 | 0.6+ | 0.6+ | 2002 10 09 | 704 | 0.6+ | 0.1+ | 2002 11 07 | 704 | 0.4− | 0.4− |
| 2002 09 14 | 699 | 1.2+ | 0.9+ | 2002 10 09 | 704 | 0.5− | 0.2+ | 2002 11 07 | 704 | 1.4− | 0.5− |
| 2002 09 14 | 699 | 0.3− | 1.2+ | 2002 10 09 | 704 | 0.0 | 0.4− | 2003 01 07 | 695 | 0.3− | 0.6− |
| 2002 09 14 | 699 | 0.1+ | 0.6+ | 2002 10 09 | 704 | 0.2+ | 0.5− | 2003 01 07 | 695 | 0.1− | 0.0 |
| 2002 10 06 | 704 | 0.6+ | 0.5− | 2002 10 09 | 704 | 0.1− | 0.2+ | 2003 01 07 | 695 | 0.0 | 0.6− |
| 2002 10 06 | 704 | 0.6− | 0.0 | 2002 10 10 | 704 | 0.2− | 0.3+ | 2003 01 07 | 695 | 0.0 | 0.2+ |
| 2002 10 06 | 704 | 0.0 | 0.2+ | 2002 10 10 | 704 | 0.5− | 0.5− | 2003 01 07 | 695 | 1.0+ | 0.2− |
| 2002 10 06 | 704 | 0.4− | 0.7− | 2002 10 10 | 704 | 0.4− | 0.0 | | | | |

### 2002 TJ$_{222}$ = 2006 MV$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 22.44094 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.23518162 | $\omega$ | 65.41373 | +0.68033543 | +0.71927502 | |
| $a$ | 2.5993642 | $\Omega$ | 248.22268 | −0.71523207 | +0.60970037 | |
| $e$ | 0.1497708 | $i$ | 8.71255 | −0.15995871 | +0.33302989 | |
| $P$ | 4.19 | $H$ | 15.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 04 | 704 | 0.4− | 1.4+ | 2002 10 09 | 704 | 0.4+ | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.1+ |
| 2002 08 04 | 704 | 0.2− | 0.2− | 2002 10 09 | 704 | 0.3+ | 0.6− | 2006 08 18 | 644 | 0.2+ | 0.1+ |
| 2002 08 04 | 704 | 0.4+ | 0.4− | 2002 10 09 | 704 | 0.4+ | 0.0 | 2006 08 27 | 699 | 0.4+ | 0.2− |
| 2002 08 04 | 704 | 0.1− | 1.0+ | 2005 03 18 | 599 | 0.0 | 0.5+ | 2006 08 27 | 699 | 0.1+ | 0.5− |
| 2002 10 05 | 704 | 0.1+ | 0.2− | 2005 03 18 | 599 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 1.1+ | 0.5− |
| 2002 10 05 | 704 | 0.9+ | 0.3− | 2005 03 18 | 599 | 0.0 | 0.2+ | 2006 08 27 | 699 | 0.3+ | 0.0 |
| 2002 10 05 | 704 | (0.2+ | 2.0+) | 2005 03 18 | 599 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 0.9− | 0.0 |
| 2002 10 05 | 704 | 0.1+ | 0.5+ | 2005 04 06 | 699 | 0.8− | 0.6− | 2006 09 11 | 703 | 0.1− | 1.4− |
| 2002 10 05 | 704 | (2.3+ | 0.7−) | 2005 04 06 | 699 | 0.0 | 1.0+ | 2006 09 11 | 703 | 0.1+ | 0.4− |
| 2002 10 07 | 699 | 0.4− | 1.0+ | 2005 04 06 | 699 | 0.7+ | 0.4+ | 2006 09 11 | 703 | 0.3− | 0.6− |
| 2002 10 07 | 699 | 0.3− | 0.5+ | 2005 04 06 | 699 | 0.2+ | 0.6− | 2006 09 19 | 699 | 1.1+ | 0.6− |
| 2002 10 07 | 699 | 0.9− | 0.2− | 2006 06 21 | 703 | 1.1− | 0.4+ | 2006 09 19 | 699 | 1.0+ | 0.6− |
| 2002 10 07 | 699 | 0.9− | 1.1+ | 2006 06 21 | 703 | 1.3− | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.2− |
| 2002 10 09 | 704 | 0.6− | 0.8− | 2006 06 21 | 703 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 2002 10 09 | 704 | 0.4− | 0.4+ | 2006 06 21 | 703 | 0.6− | 0.8+ | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2002 10 09 | 704 | 0.0 | 0.1+ | 2006 07 01 | 703 | (0.5+ | 2.1−) | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2002 10 09 | 704 | 0.2+ | 0.1+ | 2006 07 01 | 703 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2002 10 09 | 704 | 0.5+ | 0.3+ | 2006 07 01 | 703 | 0.7+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 1.7+ |
| 2002 10 09 | 704 | 0.2− | 0.2+ | 2006 07 01 | 703 | 0.7− | 0.2+ | | | | |
| 2002 10 09 | 704 | 0.1+ | 0.5− | 2006 08 18 | 644 | 0.2+ | 0.1+ | | | | |

### 2002 TK$_{225}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 352.42193 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.24057316 | $\omega$ | 209.07395 | +0.91385047 | −0.40600080 | |
| $a$ | 2.5603811 | $\Omega$ | 174.86744 | +0.38496519 | +0.86129340 | |
| $e$ | 0.2474567 | $i$ | 4.08775 | +0.12914766 | +0.30551108 | |
| $P$ | 4.10 | $H$ | 16.6 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 599 | 0.0 | 0.2+ | 2002 11 14 | 644 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2002 09 06 | 599 | 0.1− | 0.6− | 2002 11 22 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.1− |
| 2002 09 06 | 599 | 0.1+ | 0.1− | 2002 11 22 | 644 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.3+ |
| 2002 09 06 | 599 | 0.6+ | 0.1− | 2002 11 22 | 644 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2002 09 06 | 599 | 0.3+ | 0.1− | 2002 12 01 | 704 | 0.5− | 0.3− | 2006 10 01 | 704 | 0.4+ | 0.9+ |
| 2002 09 06 | 599 | 0.5+ | 0.8− | 2002 12 01 | 704 | 1.1− | 0.0 | 2006 10 01 | 704 | 0.4− | 0.9+ |
| 2002 09 06 | 599 | (0.3− | 2.1+) | 2002 12 01 | 704 | 0.7− | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 09 06 | 599 | 0.7− | 0.5+ | 2002 12 01 | 704 | 1.2− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.2+ | 0.6+ | 2002 12 01 | 704 | 0.9− | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2002 10 08 | 699 | 0.9+ | 0.4+ | 2004 03 16 | 291 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 1.0+ | 0.6+ | 2004 03 16 | 291 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 10 08 | 699 | 1.4+ | 0.6+ | 2004 03 16 | 291 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.0 | 0.2+ | 2006 07 22 | G96 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2002 10 09 | 704 | 0.3+ | 0.2− | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.0 | 0.2− | 2006 07 22 | G96 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 10 09 | 704 | 0.2+ | 0.8+ | 2006 07 22 | G96 | 0.4+ | 0.3+ | 2006 10 15 | 703 | 0.4+ | 0.3− |
| 2002 10 09 | 704 | 0.2+ | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.4+ | 0.6− |
| 2002 10 11 | 704 | 0.6+ | 0.5+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.1− | 0.3− |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.8− |
| 2002 10 11 | 704 | 0.4− | 0.6+ | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.4+ | 0.8+ | 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2002 10 28 | 608 | 0.0 | 0.6+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 10 28 | 608 | 0.5− | 0.9− | 2006 09 17 | 704 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 10 28 | 608 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.0 | 0.8+ | 2006 09 17 | 704 | 0.4− | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 2002 10 30 | 644 | 0.2− | 0.9+ | 2006 09 17 | 704 | 0.7+ | 0.6− | 2006 10 21 | 703 | 0.6− | 0.3− | |
| 2002 10 30 | 644 | 0.0 | 0.7+ | 2006 09 17 | 704 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.5− | |
| 2002 11 07 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.5− | |
| 2002 11 07 | 704 | 0.2+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.7− | |
| 2002 11 07 | 704 | 0.3+ | 0.0 | 2006 09 17 | 691 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1− | |
| 2002 11 07 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.7− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2− | |
| 2002 11 07 | 704 | 0.7+ | 0.0 | 2006 09 18 | 699 | 0.7− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2002 11 11 | 704 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2002 11 11 | 704 | 0.9− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.8− | 2006 10 21 | 644 | 0.2− | 0.3− | |
| 2002 11 11 | 704 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2− | |
| 2002 11 11 | 704 | 0.7− | 0.1− | 2006 09 20 | 704 | (1.6− | 0.5+) | 2006 10 22 | G96 | 0.3+ | 0.4− | |
| 2002 11 11 | 704 | 0.7− | 0.3+ | 2006 09 20 | 704 | 1.0− | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.3− | |
| 2002 11 11 | 644 | 0.4+ | 1.2− | 2006 09 20 | 704 | 1.0− | 1.0− | 2006 10 22 | G96 | 0.3+ | 0.3− | |
| 2002 11 11 | 644 | 0.4+ | 0.8− | 2006 09 20 | 704 | 0.8− | 0.4+ | 2006 10 22 | G96 | 0.5+ | 0.5− | |
| 2002 11 11 | 644 | 0.4+ | 0.8− | 2006 09 27 | 704 | 0.2+ | 0.9+ | 2006 10 27 | 704 | 0.9+ | 0.7− | |
| 2002 11 12 | 704 | 0.9+ | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.5+ | 2006 10 27 | 704 | 0.7+ | 0.6− | |
| 2002 11 12 | 704 | 0.4− | 1.2− | 2006 09 27 | 704 | 0.6+ | 0.1+ | 2006 10 27 | 704 | 0.8+ | 0.1+ | |
| 2002 11 12 | 704 | (0.7− | 2.0−) | 2006 09 27 | 704 | 0.8+ | 0.3+ | 2006 10 27 | 704 | 0.5− | 0.5− | |
| 2002 11 12 | 704 | 1.2− | 0.6− | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 704 | 1.1+ | 0.6− | |
| 2002 11 14 | 644 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1− | | | | | |
| 2002 11 14 | 644 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1− | | | | | |

## 2002 TN$_{225}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.94207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23997046 | $\omega$ | 305.56139 | | +0.99701029 | −0.01457540 | |
| $a$ | 2.5646662 | $\Omega$ | 55.39057 | | +0.04688247 | +0.89473613 | |
| $e$ | 0.1945365 | $i$ | 5.28999 | | −0.06142077 | +0.44635728 | |
| $P$ | 4.11 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 699 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.7+ | 0.5+ | 2006 10 21 | 703 | 1.0+ | 0.1− | |
| 1998 11 25 | 699 | 1.0+ | 0.4+ | 2006 09 22 | 704 | 0.5− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.7+ | |
| 1998 11 25 | 699 | 0.1− | 1.0− | 2006 09 22 | 704 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.2+ | |
| 2002 10 08 | 699 | 0.9− | 0.2− | 2006 09 22 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 703 | (0.2+ | 1.5+) | |
| 2002 10 08 | 699 | 0.5+ | 0.7+ | 2006 09 22 | 704 | 0.0 | 0.8− | 2006 10 21 | 703 | 1.0− | 0.6+ | |
| 2002 10 08 | 699 | 0.5+ | 0.7− | 2006 09 22 | 704 | 1.0− | 1.1− | 2006 10 21 | 703 | 0.8+ | 0.5+ | |
| 2002 10 08 | 699 | 0.6+ | 0.4− | 2006 09 26 | 704 | 0.7+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.2+ | |
| 2002 10 09 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1− | |
| 2002 10 09 | 704 | 0.8+ | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.4− | |
| 2002 10 09 | 704 | 0.2+ | 0.3− | 2006 09 26 | 704 | 0.3+ | 1.4− | 2006 10 21 | G96 | 0.2+ | 0.2− | |
| 2002 10 09 | 704 | 1.2+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.7+ | 2006 10 21 | G96 | 0.3− | 0.2− | |
| 2002 10 09 | 704 | 0.1+ | 0.4− | 2006 09 30 | 703 | 1.0+ | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2002 11 04 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2002 11 04 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2002 11 04 | 644 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 10 27 | 704 | 0.5+ | 0.3− | |
| 2002 11 05 | 699 | 0.7− | 0.3− | 2006 10 01 | 704 | 0.5− | 1.1− | 2006 10 27 | 704 | 0.3− | 0.3− | |
| 2002 11 05 | 699 | 0.7− | 0.2+ | 2006 10 01 | 704 | 0.3− | 1.2+ | 2006 10 27 | 704 | 1.4+ | 0.0 | |
| 2002 11 05 | 699 | 0.0 | 1.4+ | 2006 10 01 | 704 | 1.1− | 0.2− | 2006 10 27 | 704 | 1.3+ | 1.3− | |
| 2002 11 05 | 699 | (0.5+ | 2.2+) | 2006 10 01 | 704 | 0.8− | 0.8+ | 2006 10 27 | 704 | 0.7− | 0.2− | |
| 2002 11 06 | 704 | 0.7− | 0.5− | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ | |
| 2002 11 06 | 704 | 0.8− | 0.7− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ | |
| 2002 11 06 | 704 | 0.0 | 0.4− | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3+ | |
| 2002 11 06 | 704 | 1.1− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.5+ | 0.4− | |
| 2002 11 06 | 704 | 0.9− | 1.2− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.4+ | |
| 2002 11 10 | 704 | 0.7+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.1+ | 0.2− | |
| 2002 11 10 | 704 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 1.1− | 1.2+ | |
| 2002 11 10 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.4+ | |
| 2002 11 12 | 644 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2− | |
| 2002 11 12 | 644 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.3− | |
| 2002 11 12 | 644 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.9− | 0.7− | 2006 11 18 | 704 | 0.0 | 0.3+ | |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.5+ | 0.1− | |
| 2002 12 10 | 644 | 0.1+ | 0.3− | 2006 10 15 | 703 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1− | |
| 2002 12 10 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 1.1− | 0.6− | |
| 2006 09 18 | 699 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.8+ | |
| 2006 09 18 | 699 | 0.3− | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.1− | |
| 2006 09 18 | 699 | 0.7− | 0.0 | 2006 10 21 | 703 | (2.8+ | 1.1−) | | | | | |

## 2002 TA$_{226}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.25895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24561744 | $\omega$ | 299.09238 | | +0.97232312 | −0.01922539 | |
| $a$ | 2.5252047 | $\Omega$ | 62.87314 | | +0.13514009 | +0.85925705 | |
| $e$ | 0.1574372 | $i$ | 15.16663 | | −0.19059094 | +0.51118265 | |
| $P$ | 4.01 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 1.6− | 0.1+ | 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.2− | |
| 1998 12 14 | 704 | 0.2− | 1.1− | 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.5− | 0.0 | |
| 1998 12 14 | 704 | 1.3+ | 1.0+ | 2002 12 05 | 704 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.0 | |
| 1998 12 14 | 704 | 0.5+ | 0.0 | 2002 12 05 | 704 | 0.5− | 0.8+ | 2006 10 23 | G96 | 0.1− | 0.4− | |
| 2002 10 03 | 704 | 0.0 | 1.0− | 2002 12 10 | 704 | 0.5− | 0.1− | 2006 10 23 | G96 | 1.2− | 0.7− | |
| 2002 10 03 | 704 | 0.2− | 1.1+ | 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.3+ | 0.2− | |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2002 12 10 | 704 | 0.6− | 0.2− | 2006 11 02 | 703 | 0.5− | 0.3+ | |
| 2002 10 03 | 704 | 0.2+ | 0.6− | 2002 12 10 | 704 | 0.1+ | 0.6− | 2006 11 02 | 703 | 0.1+ | 0.3− | |
| 2002 10 08 | 699 | 0.8+ | 0.4+ | 2002 12 10 | 704 | 0.1− | 0.5− | 2006 11 02 | 703 | 0.3− | 0.2+ | |
| 2002 10 08 | 699 | 0.1+ | 0.2− | 2002 12 11 | 644 | 0.0 | 0.5− | 2006 11 11 | 691 | 0.1+ | 0.3+ | |
| 2002 10 08 | 699 | 0.5+ | 0.6+ | 2002 12 11 | 644 | 0.4− | 0.5− | 2006 11 11 | 691 | 0.3+ | 0.3+ | |
| 2002 10 08 | 699 | 1.0+ | 0.7+ | 2002 12 11 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.3+ | 0.4+ | |
| 2002 10 09 | 704 | 0.1− | 0.4− | 2002 12 27 | 644 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.7− | 0.1+ | |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2002 12 27 | 644 | 0.3+ | 0.1− | 2006 11 13 | 703 | 1.0− | 0.5− | |
| 2002 10 09 | 704 | 0.5− | 0.5− | 2002 12 27 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.2− | |
| 2002 10 11 | 704 | 1.1− | 0.7− | 2002 12 28 | 699 | (0.4− | 1.6+) | 2006 11 13 | 703 | 0.3+ | 0.1+ | |
| 2002 10 11 | 704 | 1.1− | 0.7− | 2002 12 28 | 699 | 0.5− | 0.4+ | 2006 11 14 | 704 | (2.7− | 2.6−) | |
| 2002 10 11 | 704 | 1.3+ | 0.7− | 2002 12 28 | 699 | 0.2− | 0.8− | 2006 11 14 | 704 | 1.1− | 0.2− | |
| 2002 10 11 | 704 | 0.7+ | 0.5− | 2002 12 28 | 699 | 0.2+ | 0.9− | 2006 11 14 | 704 | (1.6− | 0.0 ) | |
| 2002 11 02 | 049 | 0.6+ | 1.0− | 2002 12 31 | 704 | 0.5− | 0.2+ | 2006 11 14 | 704 | 0.6− | 0.5+ | |
| 2002 11 02 | 049 | 0.8+ | 0.2− | 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.3− | 0.2− | |
| 2002 11 02 | 049 | 1.1+ | 0.5− | 2002 12 31 | 704 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.6+ | |
| 2002 11 05 | 699 | 0.3− | 0.1+ | 2002 12 31 | 704 | 1.0+ | 0.3− | 2006 11 18 | 704 | 0.9+ | 0.3− | |
| 2002 11 05 | 699 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.3+ | |
| 2002 11 05 | 699 | 0.2− | 0.1− | 2003 01 05 | 704 | (2.9+ | 0.5+) | 2006 11 18 | 704 | 0.2+ | 0.4+ | |
| 2002 11 05 | 699 | 0.3− | 0.7+ | 2003 01 05 | 704 | (2.4+ | 0.1+) | 2006 11 18 | 704 | 0.1− | 0.5+ | |
| 2002 11 06 | 704 | 0.5+ | 0.3− | 2003 01 05 | 704 | 0.9+ | 1.0+ | 2006 11 18 | 704 | 0.2+ | 0.5+ | |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.6+ | 0.7− | 2006 11 18 | 704 | 0.1+ | 0.6+ | |
| 2002 11 06 | 704 | (1.8+ | 1.7−) | 2003 01 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.3+ | |
| 2002 11 06 | 704 | 0.5− | 0.2− | 2003 01 20 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.0 | |
| 2002 11 06 | 704 | 0.1− | 0.0 | 2003 01 20 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.1− | |
| 2002 11 13 | 644 | 0.6− | 0.2− | 2003 02 01 | 704 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.5+ | |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2003 02 01 | 704 | 0.7− | 0.7+ | 2006 11 19 | 704 | (2.0− | 1.7+) | |
| 2002 11 13 | 644 | 0.2− | 0.1+ | 2003 02 01 | 704 | (1.7+ | 0.8−) | 2006 11 19 | 704 | 0.1− | 0.0 | |
| 2002 11 14 | 704 | 0.7+ | 0.1+ | 2003 02 01 | 704 | (2.1+ | 1.3−) | 2006 11 19 | 704 | 0.2+ | 0.4+ | |
| 2002 11 14 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 11 19 | 704 | (2.2− | 0.1−) | |
| 2002 11 14 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.6+ | 0.1− | 2006 11 21 | 691 | 0.0 | 0.2− | |
| 2002 11 14 | 704 | 0.6− | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.2− | |
| 2002 11 23 | 644 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.8+ | 2006 11 21 | 691 | 0.2− | 0.2− | |
| 2002 11 23 | 644 | 0.1− | 0.8+ | 2006 09 19 | 699 | 1.1+ | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.1− | |
| 2002 11 23 | 644 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.3− | |
| 2002 11 27 | 699 | 0.1− | 0.4+ | 2006 09 19 | 699 | 1.1− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.1− | |
| 2002 11 27 | 699 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3− | |
| 2002 11 27 | 699 | 0.1− | 0.2− | 2006 10 19 | 703 | (2.3− | 1.5−) | 2006 11 21 | 704 | 0.0 | 0.2− | |
| 2002 11 27 | 699 | 0.9− | 0.0 | 2006 10 19 | 703 | (0.1+ | 3.5−) | 2006 11 27 | 703 | 0.4+ | 1.6− | |
| 2002 11 28 | 699 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 1.3− | 0.5+ | 2006 11 27 | 703 | 0.0 | 0.4− | |
| 2002 11 28 | 699 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.2+ | 0.2− | |
| 2002 11 28 | 699 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.5+ | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.5− | |
| 2002 11 28 | 699 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.5+ | |
| 2002 12 02 | 704 | 0.8+ | 0.1− | 2006 10 23 | G96 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.7+ | |
| 2002 12 02 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.8+ | 0.0 | |
| 2002 12 02 | 704 | 0.4+ | 0.4− | 2006 10 23 | G96 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.7+ | |
| 2002 12 02 | 704 | 1.1+ | 0.4− | 2006 10 23 | G96 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.3+ | |

### 2002 $TE_{226}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.82557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27350742 | $\omega$ | 271.09449 | | +0.85908408 | −0.50305310 | |
| $a$ | 2.3504804 | $\Omega$ | 119.11419 | | +0.50199321 | +0.79211564 | |
| $e$ | 0.2494080 | $i$ | 6.20331 | | +0.09988676 | +0.34567382 | |
| $P$ | 3.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.0+ | 0.3+ | 2002 11 05 | 699 | 0.5− | 0.3+ | 2002 12 28 | 699 | 0.0 | 0.5− |
| 1998 08 17 | 704 | 0.3+ | 1.9+ | 2002 11 05 | 699 | 1.1+ | 0.6− | 2002 12 28 | 699 | 0.1+ | 0.4+ |
| 1998 08 17 | 704 | 0.5− | 0.9− | 2002 11 05 | 699 | 0.2− | 0.1+ | 2002 12 31 | 699 | 0.4− | 0.4+ |
| 1998 08 17 | 704 | 1.2− | 0.7+ | 2002 11 12 | 704 | 0.2+ | 0.3− | 2002 12 31 | 699 | 0.1− | 0.2− |
| 1998 08 17 | 704 | (4.2− | 2.4+) | 2002 11 12 | 704 | 0.4− | 0.3− | 2002 12 31 | 699 | 0.7− | 0.0 |
| 2002 10 08 | 699 | 0.7− | 0.0 | 2002 11 12 | 704 | 0.1+ | 0.3− | 2002 12 31 | 699 | 0.2+ | 0.2+ |
| 2002 10 08 | 699 | 0.7+ | 0.5− | 2002 11 12 | 704 | 0.0 | 0.3− | 2003 01 07 | 704 | 0.4− | 0.7+ |
| 2002 10 08 | 699 | 1.4+ | 0.0 | 2002 11 12 | 704 | 0.9+ | 0.3+ | 2003 01 07 | 704 | 0.5+ | 0.4+ |
| 2002 10 08 | 699 | 0.4− | 0.2− | 2002 11 25 | 644 | 0.0 | 0.3+ | 2003 01 07 | 704 | 0.3− | 0.7+ |
| 2002 10 09 | 704 | 0.5+ | 0.3− | 2002 11 25 | 644 | 0.5+ | 0.4+ | 2003 01 07 | 704 | 1.0+ | 1.4+ |
| 2002 10 09 | 704 | 0.9+ | 0.4− | 2002 11 25 | 644 | 0.5+ | 0.2+ | 2003 01 07 | 704 | 0.1− | 0.6+ |
| 2002 10 09 | 704 | 0.1+ | 0.1− | 2002 12 01 | 704 | 0.2+ | 0.6− | 2003 01 19 | 644 | 0.3+ | 0.3+ |
| 2002 10 09 | 704 | 0.9+ | 0.2− | 2002 12 01 | 704 | 0.0 | 0.1− | 2003 01 19 | 644 | 0.2+ | 0.3+ |
| 2002 10 09 | 704 | 0.4− | 0.1+ | 2002 12 01 | 704 | 0.2+ | 0.3− | 2003 01 19 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 608 | 0.2+ | 0.8− | 2002 12 10 | 644 | 0.3− | 0.0 | 2003 01 25 | 699 | 0.1+ | 1.0+ |
| 2002 10 31 | 608 | 0.1+ | 0.6− | 2002 12 10 | 644 | 0.3− | 0.1+ | 2003 01 25 | 699 | 1.2− | 0.0 |
| 2002 10 31 | 608 | 0.3+ | 1.1− | 2002 12 10 | 644 | 0.3− | 0.0 | 2003 01 25 | 699 | 1.3− | 0.8+ |
| 2002 11 05 | 704 | 0.9− | 0.4− | 2002 12 27 | 644 | 0.4− | 0.0 | 2003 01 25 | 699 | 0.4+ | 0.6− |
| 2002 11 05 | 704 | 1.2− | 0.5+ | 2002 12 27 | 644 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2002 11 05 | 704 | 0.7− | 0.5+ | 2002 12 27 | 644 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.1− | 1.3− |
| 2002 11 05 | 699 | 0.7+ | 0.3+ | 2002 12 28 | 699 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.7− | 0.9− |
| 2002 11 05 | 704 | 1.5− | 0.3+ | 2002 12 28 | 699 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.3+ |

### 2002 $TE_{227}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.39997 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27072797 | $\omega$ | 322.50443 | | +0.87135556 | −0.48494917 | |
| $a$ | 2.3665406 | $\Omega$ | 66.66258 | | +0.46754217 | +0.77455672 | |
| $e$ | 0.1326918 | $i$ | 4.65967 | | +0.14880797 | +0.40606181 | |
| $P$ | 3.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.1+ | 0.4+ | 2002 11 01 | 704 | 0.6+ | 0.5− | 2002 12 01 | 704 | 0.1− | 0.7+ |
| 2001 05 22 | 807 | 0.1+ | 0.4+ | 2002 11 01 | 704 | 0.8+ | 0.5− | 2002 12 01 | 704 | 0.1+ | 0.5+ |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2002 11 01 | 704 | 0.9− | 0.1− | 2002 12 01 | 704 | 0.2− | 0.7− |
| 2002 10 03 | 704 | 0.1− | 1.0+ | 2002 11 06 | 608 | 0.3+ | 1.1− | 2002 12 01 | 704 | 0.8− | 1.0+ |
| 2002 10 03 | 704 | 0.9− | 0.1+ | 2002 11 06 | 608 | 0.5+ | 1.0− | 2002 12 05 | 704 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.6− | 0.7+ | 2002 11 06 | 608 | 0.4+ | 0.7− | 2002 12 05 | 704 | 0.6− | 0.4− |
| 2002 10 03 | 704 | 1.5− | 1.2+ | 2002 11 07 | 704 | 0.5− | 0.6− | 2002 12 05 | 704 | 0.2+ | 0.3− |
| 2002 10 08 | 699 | 0.5− | 0.4− | 2002 11 07 | 704 | 0.2− | 0.0 | 2002 12 05 | 704 | 0.3+ | 0.4+ |
| 2002 10 08 | 699 | 1.0− | 0.3+ | 2002 11 07 | 704 | 0.6− | 0.0 | 2002 12 05 | 704 | 0.1+ | 0.3+ |
| 2002 10 08 | 699 | 0.5− | 0.1+ | 2002 11 07 | 704 | 0.1+ | 0.2− | 2002 12 10 | 644 | 0.3− | 0.4+ |
| 2002 10 08 | 699 | 0.1+ | 0.6+ | 2002 11 07 | 704 | 0.1+ | 0.1− | 2002 12 10 | 644 | 0.3− | 0.2+ |
| 2002 10 09 | 704 | 0.0 | 0.1− | 2002 11 11 | 704 | 0.9+ | 0.1− | 2002 12 10 | 644 | 0.3− | 0.0 |
| 2002 10 09 | 704 | 0.4− | 1.0− | 2002 11 11 | 704 | 0.7+ | 0.3− | 2004 03 23 | 704 | 0.8− | 0.7+ |
| 2002 10 09 | 704 | 0.4− | 0.1− | 2002 11 11 | 704 | 0.4+ | 0.3− | 2004 03 23 | 704 | 1.0+ | 0.2+ |
| 2002 10 09 | 704 | 0.1+ | 0.3− | 2002 11 11 | 704 | 0.6+ | 0.5+ | 2004 03 23 | 704 | 0.5+ | 0.5+ |
| 2002 10 11 | 704 | 0.9− | 0.3+ | 2002 11 11 | 704 | 0.8+ | 0.4+ | 2006 10 22 | G96 | (2.1+ | 0.4−) |
| 2002 10 11 | 704 | 0.4− | 0.1+ | 2002 11 12 | 644 | 0.1+ | 0.4+ | 2006 10 22 | G96 | (2.6+ | 0.3−) |
| 2002 10 11 | 704 | 0.1+ | 1.0− | 2002 11 12 | 644 | 0.2+ | 0.5− | 2006 10 22 | G96 | (2.0+ | 0.5−) |
| 2002 10 11 | 704 | 0.1+ | 0.0 | 2002 11 12 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | (2.6+ | 0.5−) |
| 2002 10 18 | 644 | 0.0 | 0.4+ | 2002 11 15 | 704 | 0.0 | 0.1+ | 2006 10 29 | G96 | (2.4+ | 0.7−) |
| 2002 10 18 | 644 | 0.1+ | 0.3+ | 2002 11 15 | 704 | 0.7+ | 0.5+ | 2006 10 29 | G96 | (2.2+ | 0.9−) |
| 2002 10 18 | 644 | 0.3+ | 0.4+ | 2002 11 15 | 704 | 0.2+ | 0.2− | 2006 10 29 | G96 | (2.6+ | 1.1−) |
| 2002 10 28 | 608 | 0.4+ | 0.0 | 2002 11 22 | 644 | 0.2− | 0.2− | 2006 10 29 | G96 | (2.1+ | 1.0−) |
| 2002 10 28 | 608 | 1.1+ | 1.2+ | 2002 11 22 | 644 | 0.2− | 0.2− | 2006 11 22 | G96 | (2.9+ | 0.9−) |
| 2002 10 28 | 608 | 0.4+ | 0.7+ | 2002 11 22 | 644 | 0.3− | 0.0 | 2006 11 22 | G96 | (3.1+ | 0.7−) |
| 2002 11 01 | 704 | 0.0 | 0.2+ | 2002 12 01 | 704 | 0.5− | 1.2− | 2006 11 22 | G96 | (2.4+ | 0.9−) |

### 2002 $TG_{227}$ = 2006 $SV_{368}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.62520 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24299446 | $\omega$ | 199.90893 | | +0.79237095 | −0.60592645 | |
| $a$ | 2.5433442 | $\Omega$ | 197.94574 | | +0.58617763 | +0.78834971 | |
| $e$ | 0.1699429 | $i$ | 13.26917 | | +0.16894986 | +0.10657334 | |
| $P$ | 4.06 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.8+ | 0.3− | 2002 11 30 | 704 | 0.4− | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 1.1+ | 0.4− | 2002 12 08 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.9+ | 1.4+ | 2002 12 08 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 1.1− | 0.7+ | 2002 12 08 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 10 08 | 699 | 0.1+ | 0.0 | 2002 12 08 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 10 08 | 699 | 0.2− | 0.7− | 2002 12 08 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 10 08 | 699 | 0.5− | 0.2+ | 2002 12 08 | 644 | 0.8+ | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2002 10 09 | 704 | 0.2− | 1.1+ | 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 10 09 | 704 | (2.1− | 0.8−) | 2006 08 28 | 703 | 0.8+ | 1.0− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 09 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2002 10 09 | 704 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 1.0− | 1.1− | 2006 09 20 | 699 | 0.8+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.4− |
| 2002 10 11 | 704 | 0.5− | 0.3− | 2006 09 20 | 699 | 0.7− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.4− |
| 2002 10 11 | 704 | 0.7− | 1.5− | 2006 09 20 | 699 | 0.5+ | 0.9+ | 2006 10 22 | 691 | 0.1− | 0.4− |
| 2002 10 16 | 699 | 1.1− | 0.3+ | 2006 09 20 | 699 | 0.5− | 0.1+ | 2006 10 22 | 704 | 0.8+ | 0.4+ |
| 2002 10 16 | 699 | (1.7− | 0.0 ) | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 22 | 704 | 0.1+ | 0.7+ |
| 2002 10 16 | 699 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 22 | 704 | 0.4− | 1.5+ |
| 2002 10 16 | 699 | 0.9− | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 22 | 704 | 0.1+ | 0.5+ |
| 2002 11 02 | 608 | 0.0 | 1.1− | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 31 | 704 | 0.7+ | 1.4+ |
| 2002 11 02 | 608 | 0.0 | 1.1− | 2006 09 27 | 704 | 0.9− | 0.1− | 2006 10 31 | 704 | 0.2+ | 0.9+ |
| 2002 11 02 | 608 | 0.2+ | 1.0− | 2006 09 27 | 704 | 0.0 | 0.2− | 2006 10 31 | 704 | 0.3− | 0.3− |
| 2002 11 05 | 704 | 0.9+ | 0.3+ | 2006 09 27 | 704 | 0.6+ | 0.0 | 2006 10 31 | 704 | 0.3+ | 1.4− |
| 2002 11 05 | 704 | 0.1− | 0.7+ | 2006 09 27 | 704 | 0.6− | 1.2− | 2006 11 17 | 704 | 0.3− | 0.7+ |
| 2002 11 05 | 704 | 0.3− | 0.1+ | 2006 09 28 | 683 | 0.9+ | 0.5+ | 2006 11 17 | 704 | 0.6− | 0.4+ |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2006 09 28 | 683 | 1.0+ | 1.3+ | 2006 11 17 | 704 | 0.3+ | 1.4− |
| 2002 11 06 | 699 | 0.4− | 1.0− | 2006 09 28 | 683 | 1.4− | 1.1+ | 2006 11 22 | 704 | 0.6− | 0.1+ |
| 2002 11 06 | 699 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 11 22 | 704 | (0.4+ | 1.5−) |
| 2002 11 06 | 699 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.4− | 0.6− |
| 2002 11 06 | 699 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 1.4− | 0.4+ |
| 2002 11 12 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.7− | 2006 11 22 | 704 | 0.1− | 1.1+ |
| 2002 11 12 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.4+ |
| 2002 11 12 | 704 | 0.9+ | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.9+ | 2006 11 24 | G96 | 0.5+ | 0.4+ |
| 2002 11 12 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.7+ | 0.4− |
| 2002 11 30 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 24 | G96 | 0.6+ | 0.6− |
| 2002 11 30 | 704 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.1− | | | | |

### 2002 $TL_{227}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.96821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24014814 | $\omega$ | 175.89291 | | +0.98065366 | +0.19544766 | |
| $a$ | 2.5634011 | $\Omega$ | 172.80855 | | −0.18198547 | +0.93077628 | |
| $e$ | 0.1759244 | $i$ | 4.99107 | | −0.07210888 | +0.30895910 | |
| $P$ | 4.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | (0.1+ | 2.7+) | 2002 12 01 | 704 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2002 10 08 | 699 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2002 10 08 | 699 | 0.7+ | 1.0+ | 2006 07 22 | G96 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2002 10 08 | 699 | 0.2+ | 0.7+ | 2006 07 22 | G96 | 0.4+ | 0.0 | 2006 10 02 | J95 | 0.3− | 0.6− |
| 2002 10 09 | 704 | 0.7− | 1.1+ | 2006 07 22 | G96 | 0.5− | 0.4− | 2006 10 02 | J95 | 0.2− | 0.4− |
| 2002 10 09 | 704 | 0.1− | 0.7+ | 2006 09 16 | 699 | 0.3+ | 0.8− | 2006 10 02 | J95 | 0.0 | 0.4− |
| 2002 10 09 | 704 | 0.2− | 0.7+ | 2006 09 16 | 699 | 0.4+ | 0.5− | 2006 10 02 | 291 | 0.4+ | 0.4+ |
| 2002 11 02 | 608 | 0.2− | 0.9− | 2006 09 16 | 699 | 1.3− | 0.4− | 2006 10 02 | 291 | 0.3+ | 0.4+ |
| 2002 11 02 | 608 | 0.4− | 0.6− | 2006 09 16 | 699 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.4+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 02 | 608 | 0.1− | 0.6− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2002 11 07 | 704 | (1.6+ | 0.1−) | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | (2.0+ | 0.1−) | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.6+ | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2002 11 11 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 11 11 | 704 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2002 11 11 | 704 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | (2.7− | 3.5+) |
| 2002 11 11 | 704 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2002 11 11 | 704 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.6+ | 0.4− |
| 2002 11 13 | 644 | 0.7− | 0.7− | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.3− |
| 2002 11 13 | 644 | 0.4− | 0.5− | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2002 11 13 | 644 | 0.5− | 0.4− | 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2002 11 22 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 11 22 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | (2.3+ | 2.8−) | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 11 22 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 12 01 | 704 | (1.7− | 0.4−) | 2006 09 30 | 703 | 0.2+ | 0.4+ | 2006 11 16 | 703 | 1.1− | 0.9+ |
| 2002 12 01 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 941 | 0.4+ | 0.6− | 2006 11 16 | 703 | 0.1+ | 0.1+ |
| 2002 12 01 | 704 | 0.7− | 0.3− | 2006 10 01 | 941 | 0.2+ | 0.7− | 2006 11 16 | 703 | 0.3− | 1.0− |
| 2002 12 01 | 704 | 0.4− | 0.1+ | 2006 10 01 | 941 | 0.1− | 1.0− | 2006 11 16 | 703 | 0.2− | 0.7− |

**2002 TY$_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.00821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27916235 | $\omega$ | 312.64598 | | +0.72834985 | | −0.67963009 |
| $a$ | 2.3186302 | $\Omega$ | 90.37081 | | +0.65142468 | | +0.64732799 |
| $e$ | 0.2612442 | $i$ | 5.00450 | | +0.21249091 | | +0.34506436 |
| $P$ | 3.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 683 | (2.6− | 4.4+) | 2002 11 04 | 608 | 0.3− | 0.3+ | 2002 12 11 | 704 | 0.2+ | 0.5+ |
| 2002 09 04 | 683 | 1.4+ | 0.7+ | 2002 11 04 | 608 | 0.4+ | 0.5+ | 2002 12 11 | 704 | 0.5+ | 0.1+ |
| 2002 09 04 | 683 | 0.0 | 1.0− | 2002 11 05 | 699 | 0.1− | 0.5+ | 2002 12 11 | 704 | 0.1+ | 0.7− |
| 2002 10 07 | 608 | 0.6+ | 1.2+ | 2002 11 05 | 699 | 0.2− | 0.8+ | 2002 12 11 | 704 | 0.8− | 0.3+ |
| 2002 10 07 | 608 | 0.2− | 1.2+ | 2002 11 05 | 699 | 0.1− | 0.6+ | 2003 01 04 | 704 | 1.4− | 0.0 |
| 2002 10 07 | 608 | 0.6+ | 1.2+ | 2002 11 05 | 699 | 0.0 | 0.4+ | 2003 01 04 | 704 | 0.1− | 0.1− |
| 2002 10 09 | 699 | 0.5− | 0.4+ | 2002 11 07 | 704 | 1.0− | 1.2− | 2003 01 04 | 704 | 0.1− | 0.1+ |
| 2002 10 09 | 699 | 0.7− | 0.2+ | 2002 11 07 | 704 | 0.0 | 1.5− | 2003 01 04 | 704 | 0.7− | 0.2+ |
| 2002 10 09 | 699 | 0.4− | 0.6+ | 2002 11 07 | 704 | 0.7− | 0.0 | 2003 01 04 | 704 | 0.2− | 0.6+ |
| 2002 10 09 | 699 | 0.7− | 0.3+ | 2002 11 07 | 704 | 1.1− | 1.2− | 2003 01 27 | 704 | 0.1− | 0.6− |
| 2002 10 29 | 645 | 0.1+ | 0.1− | 2002 11 07 | 704 | 0.8− | 0.5− | 2003 01 27 | 704 | 0.2− | 1.1+ |
| 2002 10 29 | 645 | 0.1+ | 0.1− | 2002 11 11 | 704 | 0.4− | 0.2− | 2003 01 27 | 704 | 0.7+ | 0.5+ |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2002 11 11 | 704 | 0.8− | 0.1+ | 2003 01 27 | 704 | 0.4+ | 0.1+ |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2002 11 11 | 704 | 0.9− | 0.4− | 2006 10 22 | 691 | 0.3+ | 0.4+ |
| 2002 10 31 | 704 | 0.1− | 0.1+ | 2002 11 11 | 704 | 0.9− | 0.4+ | 2006 10 22 | 691 | 0.4+ | 0.2− |
| 2002 10 31 | 704 | 0.1− | 0.2+ | 2002 11 11 | 704 | 0.8− | 0.1− | 2006 10 22 | 691 | 0.4+ | 0.1+ |
| 2002 10 31 | 704 | 0.7+ | 0.3+ | 2002 11 30 | 704 | 0.7+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.6+ |
| 2002 10 31 | 704 | 0.1− | 0.0 | 2002 11 30 | 704 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.2+ | 2002 11 30 | 704 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2002 11 04 | 608 | 0.6− | 0.3− | 2002 12 11 | 704 | 2.0+ | 0.6+ | | | | |

**2002 TA$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.86095 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23361646 | $\omega$ | 115.08371 | | +0.97800059 | | −0.01339544 |
| $a$ | 2.6109612 | $\Omega$ | 246.26648 | | −0.05154404 | | +0.95147391 |
| $e$ | 0.2153361 | $i$ | 13.14427 | | +0.20213379 | | +0.30743773 |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 704 | 0.7+ | 0.2− | 2002 10 06 | 699 | 0.8− | 0.7− | 2002 11 07 | 704 | 0.8− | 0.6+ |
| 2002 08 15 | 704 | 0.1− | 0.7− | 2002 10 06 | 704 | 0.3+ | 0.6− | 2002 12 01 | 704 | 0.4− | 1.4+ |
| 2002 08 15 | 704 | 0.6− | 0.7− | 2002 10 06 | 704 | 0.1+ | 0.2− | 2002 12 01 | 704 | 0.1− | 0.3+ |
| 2002 08 15 | 704 | 0.1+ | 0.6− | 2002 10 06 | 704 | 0.3+ | 0.5− | 2002 12 01 | 704 | 0.7− | 0.1+ |
| 2002 08 23 | 644 | 0.6− | 0.1− | 2002 10 06 | 704 | 0.5− | 0.3+ | 2002 12 01 | 704 | 0.7+ | 0.6− |
| 2002 08 23 | 644 | 0.1+ | 0.1+ | 2002 10 06 | 704 | 0.1− | 0.3+ | 2006 08 28 | 704 | 0.4+ | 0.4− |
| 2002 08 23 | 644 | 0.6− | 0.0 | 2002 10 10 | 704 | 0.9+ | 0.6+ | 2006 08 28 | 704 | 0.3− | 0.0 |
| 2002 08 23 | 644 | 0.1+ | 0.2+ | 2002 10 10 | 704 | 0.7+ | 0.9+ | 2006 08 28 | 704 | 1.3+ | 0.0 |
| 2002 08 23 | 644 | 0.4− | 0.2− | 2002 10 10 | 704 | 0.8+ | 0.8+ | 2006 08 28 | 704 | 0.1− | 0.1− |
| 2002 08 23 | 644 | 0.0 | 0.1+ | 2002 10 10 | 704 | 0.6+ | 0.1− | 2006 08 28 | 704 | 0.1− | 0.1− |
| 2002 08 30 | 704 | (0.6− | 2.0−) | 2002 10 10 | 704 | 1.1+ | 0.0 | 2006 09 15 | 704 | 0.2− | 0.6+ |
| 2002 08 30 | 704 | 0.4+ | 0.3+ | 2002 10 15 | 644 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.2+ | 0.7+ |
| 2002 08 30 | 704 | 0.6− | 0.6+ | 2002 10 15 | 644 | 0.1− | 0.5− | 2006 09 15 | 704 | 0.9− | 0.0 |
| 2002 09 14 | 699 | 0.7+ | 0.2− | 2002 10 15 | 644 | 0.1− | 0.1− | 2006 09 15 | 704 | 1.0− | 0.6+ |
| 2002 09 14 | 699 | 0.3+ | 0.5− | 2002 10 17 | 704 | 0.4+ | 0.0 | 2006 10 29 | 703 | (2.6− | 0.3−) |
| 2002 09 14 | 699 | 0.4+ | 0.3+ | 2002 10 17 | 704 | 1.3− | 0.3+ | 2006 10 29 | 703 | (1.5− | 0.4−) |
| 2002 09 14 | 699 | 0.2+ | 0.3− | 2002 10 17 | 704 | 0.1+ | 0.6− | 2006 10 29 | 703 | (1.5− | 1.1−) |
| 2002 10 06 | 699 | 1.5− | 0.4− | 2002 10 17 | 704 | (1.7− | 0.3−) | 2006 10 29 | 703 | (0.9− | 1.5−) |
| 2002 10 06 | 699 | 0.7− | 0.4− | 2002 11 07 | 704 | 0.6+ | 0.1+ | | | | |
| 2002 10 06 | 699 | 0.6− | 0.0 | 2002 11 07 | 704 | 1.1+ | 0.1− | | | | |

**2002 TJ$_{232}$ = 2006 RQ$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.59656 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22930010 | $\omega$ | 106.58163 | | +0.66560600 | | −0.72751643 |
| $a$ | 2.6436252 | $\Omega$ | 300.48486 | | +0.58972148 | | +0.64936122 |
| $e$ | 0.1407797 | $i$ | 11.13322 | | +0.45738082 | | +0.22147200 |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.6− | 0.1+ | 2002 10 11 | 704 | 0.3+ | 0.8− | 2006 08 16 | 644 | 0.4− | 0.2− |
| 2002 10 06 | 704 | 0.3− | 0.5+ | 2002 10 11 | 704 | 0.6+ | 1.0+ | 2006 08 16 | 644 | 0.4− | 0.3+ |
| 2002 10 06 | 704 | 0.3− | 0.0 | 2002 10 11 | 704 | 0.1− | 0.5− | 2006 08 16 | 644 | 0.7− | 0.1+ |
| 2002 10 06 | 704 | 0.4− | 0.2+ | 2002 10 11 | 704 | 0.5+ | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.1− |
| 2002 10 06 | 704 | 0.4− | 1.0− | 2002 10 11 | 704 | 0.2+ | 0.4− | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.8− | 0.1+ | 2002 10 11 | 704 | 0.4+ | 0.4+ | 2006 09 14 | 691 | 0.2− | 0.0 |
| 2002 10 10 | 704 | 0.5+ | 0.6+ | 2004 02 23 | 704 | 0.8+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.4− |
| 2002 10 10 | 704 | 0.3− | 0.7− | 2004 02 23 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.7+ |
| 2002 10 10 | 704 | 0.2+ | 0.1− | 2004 02 23 | 704 | 1.4+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.1− |
| 2002 10 10 | 704 | 0.1− | 0.2− | 2004 03 21 | 691 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2004 03 21 | 691 | 0.3− | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2002 10 11 | 704 | 0.7+ | 0.5+ | 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.4+ | 0.2− |
| 2002 10 11 | 704 | 0.2+ | 1.2− | 2006 08 16 | 644 | 0.7− | 0.2+ | 2006 09 23 | 691 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.1− | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.0 | | | | |

**2002 TK$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.90861 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23919460 | $\omega$ | 160.61383 | | −0.20886269 | | −0.96212279 |
| $a$ | 2.5702092 | $\Omega$ | 301.08984 | | +0.86806775 | | −0.09989064 |
| $e$ | 0.2496686 | $i$ | 11.80554 | | +0.45037179 | | −0.25365646 |
| $P$ | 4.12 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 699 | 0.7− | 0.1− | 2002 10 10 | 704 | 1.0− | 0.7− | 2006 10 03 | 703 | 0.3− | 0.2− |
| 1998 11 15 | 699 | 0.5− | 0.5+ | 2002 10 15 | 644 | 0.3+ | 0.9+ | 2006 10 03 | 703 | 0.2+ | 0.7+ |
| 1998 11 15 | 699 | 1.1+ | 0.3− | 2002 10 15 | 644 | 0.2+ | 0.7+ | 2006 10 03 | 703 | 1.2− | 0.0 |
| 2002 09 14 | 699 | 0.5+ | 1.0+ | 2002 10 15 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.4+ |
| 2002 09 14 | 699 | 0.5+ | 1.4− | 2006 09 16 | 703 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 1.4+ |
| 2002 09 14 | 699 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.8− | 0.5+ | 2006 10 17 | 703 | 0.6+ | 0.1− |
| 2002 09 14 | 699 | 1.3+ | 0.3− | 2006 09 16 | 703 | 0.6+ | 0.1+ | 2006 10 17 | 703 | 1.2+ | 0.7+ |
| 2002 10 06 | 704 | 0.3+ | 1.0+ | 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 10 26 | 703 | 1.2− | 0.7− |
| 2002 10 06 | 704 | 0.3− | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.0 | 2006 10 26 | 703 | 0.1+ | 1.5− |
| 2002 10 06 | 704 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.6− | 0.2− | 2006 10 26 | 703 | 0.2+ | 0.5− |
| 2002 10 10 | 704 | 0.1− | 0.4− | 2006 09 27 | 703 | 0.5− | 0.6− | 2006 10 26 | 703 | 0.4+ | 0.9+ |
| 2002 10 10 | 704 | 0.4− | 0.8− | 2006 09 27 | 703 | 0.8− | 0.6+ | | | | |
| 2002 10 10 | 704 | 0.9− | 1.1− | 2006 10 03 | 703 | 0.2+ | 0.7− | | | | |

**2002 TM$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.94012 | | (2000.0) | | | |
| $n$ | 0.23828013 | $\omega$ | 59.21163 | | +0.63859245 | +0.74139203 |
| $a$ | 2.5767809 | $\Omega$ | 251.93910 | | −0.75915775 | +0.56303909 |
| $e$ | 0.1847504 | $i$ | 12.52909 | | −0.12601268 | +0.36513675 |
| $P$ | 4.14 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.0 | 0.2− | 2002 11 07 | 704 | 0.9− | 0.2− | 2006 09 22 | 699 | 0.3− | 0.0 |
| 2002 09 27 | 644 | 0.3− | 0.2− | 2002 11 13 | 644 | 0.6− | 0.1− | 2006 09 22 | 699 | 0.1− | 0.3+ |
| 2002 09 27 | 644 | 0.4− | 0.1− | 2002 11 13 | 644 | 0.5− | 0.3− | 2006 09 28 | 703 | 0.1+ | 0.2− |
| 2002 10 06 | 704 | 0.3+ | 0.2− | 2002 11 13 | 644 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.2+ |
| 2002 10 06 | 704 | 0.2− | 0.1− | 2002 11 14 | 704 | (0.3+ | 1.8−) | 2006 09 28 | 703 | 0.2− | 0.1− |
| 2002 10 06 | 704 | 0.0 | 0.1− | 2002 11 14 | 704 | 0.1+ | 0.3− | 2006 09 28 | 703 | (1.8− | 0.9−) |
| 2002 10 06 | 704 | 0.0 | 0.1− | 2002 11 14 | 704 | 0.2− | 0.3− | 2006 09 30 | 291 | 0.2+ | 0.2− |
| 2002 10 06 | 704 | 0.4− | 0.9− | 2002 11 14 | 704 | 0.3+ | 1.0+ | 2006 09 30 | 291 | 0.2+ | 0.1− |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2006 07 24 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 291 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | 0.9+ | 0.6+ | 2006 07 24 | 704 | 0.7− | 0.1+ | 2006 10 20 | 703 | 0.4+ | 0.2+ |
| 2002 10 10 | 704 | 0.5+ | 0.5+ | 2006 07 24 | 704 | 0.6− | 0.3+ | 2006 10 20 | 703 | 0.1+ | 0.4+ |
| 2002 10 10 | 704 | 0.1+ | 1.2+ | 2006 09 16 | 703 | 0.5− | 0.5+ | 2006 10 20 | 703 | 0.2− | 0.2− |
| 2002 10 10 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.3− | 0.7− |
| 2002 11 07 | 704 | 0.5+ | 0.1− | 2006 09 16 | 703 | 0.4+ | 0.2+ | 2006 10 31 | 703 | (0.1+ | 2.1−) |
| 2002 11 07 | 704 | (0.3− | 1.9+) | 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 10 31 | 703 | (0.1+ | 1.6−) |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2006 09 22 | 699 | 0.3+ | 0.3+ | 2006 10 31 | 703 | 0.3− | 0.9− |
| 2002 11 07 | 704 | 0.7− | 0.3+ | 2006 09 22 | 699 | 0.4+ | 0.2− | 2006 10 31 | 703 | 0.9− | 0.9− |

**2002 TR$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.58173 | | (2000.0) | | | |
| $n$ | 0.23892551 | $\omega$ | 107.55337 | | +0.80415478 | −0.56251168 |
| $a$ | 2.5721386 | $\Omega$ | 287.08505 | | +0.44001523 | +0.78063658 |
| $e$ | 0.1870957 | $i$ | 11.59573 | | +0.39965195 | +0.27237317 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 699 | 1.1− | 1.0+ | 2002 10 15 | 704 | 0.8+ | 0.6− | 2006 09 16 | 703 | 0.1+ | 0.5+ |
| 2002 09 16 | 699 | 0.3+ | 0.3− | 2002 10 15 | 704 | 0.6+ | 0.5− | 2006 09 16 | 703 | 0.5− | 0.1+ |
| 2002 09 16 | 699 | 0.1+ | 0.2− | 2002 10 15 | 704 | 0.7− | 0.0 | 2006 09 16 | 703 | 0.6− | 0.1+ |
| 2002 09 16 | 699 | 0.7− | 0.7+ | 2002 10 15 | 704 | 1.1− | 0.3− | 2006 09 16 | 703 | 0.6+ | 0.0 |
| 2002 09 26 | 644 | 0.2− | 0.2+ | 2002 10 15 | 704 | 0.4− | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.4− |
| 2002 09 26 | 644 | 0.3− | 0.2+ | 2002 10 15 | 704 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.6+ | 0.1+ |
| 2002 09 26 | 644 | 0.3− | 0.1+ | 2002 10 15 | 704 | 0.2+ | 0.0 | 2006 09 21 | 699 | 1.0+ | 0.8+ |
| 2002 10 06 | 704 | 0.2− | 0.6− | 2002 10 15 | 704 | 0.3+ | 0.4+ | 2006 09 21 | 699 | (1.6+ | 0.7−) |
| 2002 10 06 | 704 | 0.0 | 0.5− | 2002 11 08 | 704 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.4− | 0.4− |
| 2002 10 06 | 704 | 0.2+ | 0.3− | 2002 11 08 | 704 | 0.4− | 0.5− | 2006 09 28 | 703 | 0.4− | 0.3+ |
| 2002 10 06 | 704 | 0.2+ | 0.3+ | 2002 11 08 | 704 | 0.6+ | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2002 10 06 | 699 | 0.0 | 0.5+ | 2002 11 14 | 644 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.8+ |
| 2002 10 06 | 704 | 0.0 | 0.1+ | 2002 11 14 | 644 | 0.3− | 0.1− | 2006 10 20 | 703 | 0.3− | 0.1+ |
| 2002 10 06 | 699 | 0.2− | 0.1− | 2002 11 14 | 644 | 0.3− | 0.3+ | 2006 10 20 | 703 | 0.1− | 0.2+ |
| 2002 10 06 | 699 | 0.2− | 0.6− | 2002 12 26 | 734 | 0.9+ | 0.2− | 2006 10 20 | 703 | (1.7+ | 0.6+) |
| 2002 10 06 | 699 | 0.7+ | 1.1− | 2002 12 26 | 734 | 0.2− | 0.4− | 2006 10 20 | 703 | 0.3+ | 0.1− |
| 2002 10 10 | 704 | 0.1− | 0.4+ | 2002 12 26 | 734 | 0.9− | 1.0+ | 2006 10 26 | 703 | 0.3− | 0.4+ |
| 2002 10 10 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 699 | 0.9− | 0.2− | 2006 10 26 | 703 | 0.3− | 0.1− |
| 2002 10 10 | 704 | 0.5+ | 0.3− | 2006 08 29 | 699 | 1.0+ | 0.4− | 2006 10 26 | 703 | 1.2− | 0.8− |
| 2002 10 10 | 704 | 1.0+ | 0.3− | 2006 08 29 | 699 | 0.3− | 0.2+ | 2006 10 26 | 703 | 1.1+ | 0.4+ |
| 2002 10 10 | 704 | 0.7+ | 0.8+ | 2006 08 29 | 699 | 0.4+ | 1.4− | | | | |

**2002 TD$_{237}$ = 2006 RQ$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 317.76885 | | (2000.0) | | | |
| $n$ | 0.22885140 | $\omega$ | 116.17473 | | +0.70249441 | −0.69171372 |
| $a$ | 2.6470796 | $\Omega$ | 288.11367 | | +0.57375917 | +0.68964296 |
| $e$ | 0.1532967 | $i$ | 10.14635 | | +0.42107247 | +0.21430052 |
| $P$ | 4.31 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.7− | 0.4+ | 2002 10 10 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 704 | 0.3+ | 0.5− |
| 2002 10 06 | 704 | 0.2− | 0.9+ | 2002 11 14 | 644 | 0.2+ | 0.4− | 2006 09 15 | 704 | 0.7− | 0.0 |
| 2002 10 06 | 704 | 0.8+ | 0.3+ | 2002 11 14 | 644 | 0.0 | 0.5− | 2006 09 15 | 704 | (0.1− | 1.8+) |
| 2002 10 06 | 704 | 0.0 | 0.3+ | 2002 11 14 | 644 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.1+ | 0.2+ |
| 2002 10 06 | 704 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.4− | 0.1+ | 2006 09 20 | 699 | 1.2+ | 0.7− |
| 2002 10 10 | 704 | 0.4− | 0.8− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.4− |
| 2002 10 10 | 704 | 0.2+ | 0.3− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.5− | 0.8+ |

**2002 TE$_{238}$ = 2006 RT$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.84147 | | (2000.0) | | | |
| $n$ | 0.23375828 | $\omega$ | 157.22695 | | +0.96022191 | −0.27838698 |
| $a$ | 2.6099051 | $\Omega$ | 218.95778 | | +0.25056542 | +0.89343320 |
| $e$ | 0.2144232 | $i$ | 1.98557 | | +0.12325118 | +0.35253057 |
| $P$ | 4.22 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.1+ | 1.1+ | 2002 10 11 | 644 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.0 | 0.2− | 2002 10 11 | 704 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.7+ | 0.4+ |
| 2002 10 03 | 704 | 0.3− | 0.2+ | 2002 10 11 | 704 | (0.2− | 1.6−) | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 0.6− | 0.5− | 2002 10 11 | 644 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.5− | 0.1− |
| 2002 10 07 | 704 | (0.2− | 2.4+) | 2002 10 30 | 644 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.3+ |
| 2002 10 07 | 704 | (2.0− | 0.8+) | 2002 10 30 | 644 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2002 10 07 | 704 | 1.0+ | 1.1+ | 2002 10 30 | 644 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2002 10 07 | 704 | 0.8− | 1.4+ | 2006 08 23 | 807 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2002 10 10 | 704 | 0.4+ | 0.2+ | 2006 08 23 | 807 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2002 10 10 | 704 | 0.1+ | 0.6− | 2006 09 13 | 644 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.7+ | 0.8− |
| 2002 10 10 | 704 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2002 10 11 | 644 | 0.1+ | 0.6− | 2006 09 13 | 644 | 0.1− | 0.0 | | | | |
| 2002 10 11 | 704 | 0.8− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.3− | | | | |

**2002 TE$_{242}$ = 2006 WO$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.80363 | | (2000.0) | | | |
| $n$ | 0.25858256 | $\omega$ | 279.29029 | | +0.69706772 | −0.70501169 |
| $a$ | 2.4400753 | $\Omega$ | 125.67818 | | +0.70464338 | +0.63991440 |
| $e$ | 0.0877478 | $i$ | 9.25165 | | +0.13256809 | +0.30572549 |
| $P$ | 3.81 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.2− | 0.1− | 2002 10 10 | 644 | 0.2− | 0.1+ | 2006 11 13 | 703 | 1.1− | 0.2+ |
| 1995 12 19 | 691 | 0.1− | 0.4− | 2002 10 10 | 644 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.7+ |
| 1995 12 19 | 691 | 0.3+ | 0.7− | 2002 10 10 | 644 | 0.1− | 0.4− | 2006 11 13 | 703 | 0.5+ | 0.1+ |
| 1997 06 02 | 691 | 0.3− | 0.2+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.9− | 0.1+ |
| 1997 06 02 | 691 | 0.1− | 0.2− | 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 11 19 | 703 | 1.0− | 1.0+ |
| 1997 06 02 | 691 | 0.0 | 0.4+ | 2002 10 15 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 1.0− | 0.0 |
| 2000 02 05 | 695 | 0.8− | 0.9+ | 2002 10 15 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.4+ | 0.2+ |
| 2000 02 05 | 695 | 0.3− | 0.8+ | 2002 10 15 | 644 | 0.0 | 0.7+ | 2006 11 26 | A13 | 0.6− | 0.3+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.3+ | 0.4+ | 2006 11 26 | A13 | 0.1− | 0.1+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.4+ | 0.3+ | 2006 11 26 | A13 | 0.0 | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 03 15 | 691 | 0.4+ | 0.2+ | 2006 11 26 | A13 | 0.3− | 0.3− |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.2+ | 0.2− | 2006 11 26 | A13 | 1.0− | 1.6− |
| 2002 10 09 | 699 | 0.9− | 0.3− | 2006 10 01 | 703 | 0.7+ | 0.7− | 2006 11 27 | A13 | 0.2− | 0.5+ |
| 2002 10 09 | 699 | 1.2+ | 0.3− | 2006 10 01 | 703 | 0.9− | 0.7− | 2006 11 27 | A13 | 0.1− | 0.4+ |
| 2002 10 09 | 699 | 0.7− | 1.1+ | 2006 10 01 | 703 | 1.2+ | 0.1− | 2006 11 27 | A13 | 0.4+ | 0.2− |
| 2002 10 09 | 699 | 1.4− | 1.1+ | 2006 11 13 | 703 | 1.2+ | 0.4+ | | | | |

**2002 TK$_{242}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.75492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24290514 | $\omega$ | 296.85980 | | +0.63547976 | −0.76155822 | |
| $a$ | 2.5439676 | $\Omega$ | 113.09656 | | +0.74838928 | +0.56698131 | |
| $e$ | 0.2628217 | $i$ | 7.95220 | | +0.18994461 | +0.31394468 | |
| $P$ | 4.06 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 13 | 704 | 1.1+ | 0.9− | 2002 10 31 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 1.1+ | 0.0 | |
| 1998 11 13 | 704 | 0.1+ | 0.9− | 2002 10 31 | 704 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.6+ | 0.6− | |
| 1998 11 13 | 704 | 0.7− | 0.8− | 2002 10 31 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.5+ | |
| 1998 11 13 | 704 | (3.0− | 0.9−) | 2002 10 31 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.7− | |
| 2002 09 22 | 644 | 0.2+ | 0.1− | 2002 10 31 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.3− | |
| 2002 09 22 | 644 | 0.5− | 0.4+ | 2002 10 31 | 704 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.4− | 0.7− | |
| 2002 09 22 | 644 | 0.2− | 0.5+ | 2002 10 31 | 704 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.4+ | |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2002 10 31 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 0.2− | 0.6+ | |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2002 11 06 | 644 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.8− | 0.7+ | |
| 2002 10 09 | 699 | 1.0− | 1.0+ | 2002 11 06 | 644 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.7− | 0.4− | |
| 2002 10 09 | 699 | 0.1+ | 1.4+ | 2002 11 06 | 644 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.5+ | 0.1− | |
| 2002 10 09 | 699 | 0.7− | 0.7+ | 2002 11 22 | 644 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.9− | 0.2+ | |
| 2002 10 09 | 699 | 0.2+ | 0.3+ | 2002 11 22 | 644 | 0.1+ | 1.4+ | 2006 09 30 | 704 | 0.7− | 0.8+ | |
| 2002 10 10 | 644 | 0.4− | 0.0 | 2002 11 22 | 644 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.3+ | 1.5+ | |
| 2002 10 10 | 644 | 0.3− | 0.1+ | 2002 11 22 | 644 | 0.1+ | 1.2+ | 2006 10 02 | 703 | 0.4− | 0.8+ | |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.3− | 0.3+ | |
| 2002 10 10 | 644 | 0.1− | 0.1+ | 2002 11 22 | 644 | 0.2− | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2002 11 30 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− | |
| 2002 10 11 | 645 | 0.0 | 0.2− | 2002 11 30 | 704 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | |
| 2002 10 11 | 645 | 0.1+ | 0.2− | 2002 11 30 | 704 | (1.7− | 0.1+) | 2006 10 17 | 703 | 0.7− | 0.4+ | |
| 2002 10 15 | 644 | 0.2− | 0.7− | 2002 11 30 | 704 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.5− | |
| 2002 10 15 | 644 | 0.2− | 0.7− | 2006 09 19 | 703 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.1+ | |
| 2002 10 15 | 644 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.7− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.3− | |
| 2002 10 28 | 644 | 0.2+ | 1.1+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2− | |
| 2002 10 28 | 644 | 0.3+ | 1.2+ | 2006 09 19 | 703 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ | |
| 2002 10 28 | 644 | 0.0 | 1.2+ | 2006 09 21 | 699 | 1.2+ | 0.5− | 2006 10 19 | 644 | 0.2− | 0.5+ | |
| 2002 10 30 | 704 | 1.1− | 0.3+ | 2006 09 21 | 699 | 0.4+ | 0.5+ | 2006 10 28 | 703 | 0.3− | 0.6− | |
| 2002 10 30 | 704 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.6+ | 1.0+ | 2006 10 28 | 703 | 0.1− | 0.3− | |
| 2002 10 30 | 704 | 0.3− | 0.2+ | 2006 09 21 | 699 | 0.2+ | 0.5− | 2006 10 28 | 703 | 0.3− | 0.1+ | |
| 2002 10 30 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.7+ | 2006 10 28 | 703 | 0.0 | 0.4− | |
| 2002 10 30 | 704 | 0.3− | 0.2− | 2006 09 25 | 699 | 0.9+ | 0.4+ | | | | | |
| 2002 10 31 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.8+ | | | | | |

**2002 TJ$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.55282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26858590 | $\omega$ | 273.13421 | | +0.48693976 | +0.87284114 | |
| $a$ | 2.3791066 | $\Omega$ | 26.08288 | | −0.76943982 | +0.44612656 | |
| $e$ | 0.1519575 | $i$ | 4.20231 | | −0.41334252 | +0.19778637 | |
| $P$ | 3.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 291 | 0.1− | 0.1− | 2002 10 09 | 291 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.8− | |
| 2002 09 29 | 291 | 0.1+ | 0.2− | 2002 10 10 | 644 | 0.0 | 1.1+ | 2006 11 14 | 691 | 0.1− | 0.2+ | |
| 2002 09 29 | 291 | 0.1+ | 0.1+ | 2002 10 10 | 644 | 0.2+ | 1.0+ | 2006 11 14 | 691 | 0.1− | 0.2− | |
| 2002 10 03 | 704 | 0.6− | 0.0 | 2002 10 10 | 644 | 0.3+ | 0.9+ | 2006 11 18 | 691 | 0.0 | 0.4+ | |
| 2002 10 03 | 704 | 0.4+ | 0.6+ | 2002 10 11 | 704 | 0.9− | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.1− | |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2002 10 11 | 704 | 0.2+ | 1.1− | 2006 11 18 | 691 | 0.1+ | 0.4+ | |
| 2002 10 03 | 704 | 0.1− | 1.0+ | 2002 10 11 | 704 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.3− | 0.3+ | |
| 2002 10 09 | 291 | 0.1− | 0.2− | 2002 11 07 | 695 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.2− | |
| 2002 10 09 | 291 | 0.0 | 0.2− | 2002 11 07 | 695 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.3− | 0.0 | |

**2002 TS$_{244}$ = 2006 RD$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.30817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24290906 | $\omega$ | 107.40188 | | +0.72645333 | +0.68644041 | |
| $a$ | 2.5439403 | $\Omega$ | 209.27481 | | −0.65312780 | +0.67486856 | |
| $e$ | 0.2515740 | $i$ | 3.82682 | | −0.21375135 | +0.27083574 | |
| $P$ | 4.06 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 691 | 0.1− | 0.4− | 2002 10 11 | 291 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | |
| 1998 10 19 | 691 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.4− | 0.3− | |
| 1998 10 19 | 691 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.5+ | 0.4− | 2006 10 15 | 703 | (2.2− | 0.6+) | |
| 2002 10 04 | 599 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 15 | 703 | 0.1− | 0.7+ | |
| 2002 10 04 | 599 | 0.4− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | (1.8− | 0.8+) | |
| 2002 10 04 | 599 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.9− | 0.5+ | |
| 2002 10 10 | 644 | 0.8− | 0.2− | 2006 09 19 | 691 | 0.3+ | 0.8+ | 2006 10 17 | G96 | 1.1+ | 0.0 | |
| 2002 10 10 | 644 | 0.6− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.4− | |
| 2002 10 10 | 644 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.8− | |
| 2002 10 11 | 291 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3− | 0.4− | |
| 2002 10 11 | 291 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1− | | | | | |

**2002 TV$_{244}$ = 2006 RH$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.63463 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23934241 | $\omega$ | 34.71796 | | +0.73882820 | −0.67388120 | |
| $a$ | 2.5691508 | $\Omega$ | 7.65344 | | +0.61105495 | +0.66734011 | |
| $e$ | 0.2033209 | $i$ | 1.77533 | | +0.28415619 | +0.31708249 | |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.4+ | 0.7− | 2002 10 11 | 644 | 0.2+ | 0.8+ | 2006 09 27 | 704 | (0.0 | 1.7+) | |
| 2002 10 03 | 704 | 0.5− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 1.2− | 0.6+ | |
| 2002 10 03 | 704 | 0.2+ | 0.9− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.5+ | |
| 2002 10 03 | 704 | 1.0+ | 1.0− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.1+ | |
| 2002 10 03 | 704 | (0.6− | 1.8−) | 2006 09 17 | 704 | 0.6− | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.5+ | |
| 2002 10 07 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.9− | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.3− | |
| 2002 10 07 | 704 | 0.0 | 0.2− | 2006 09 17 | 704 | 1.1− | 0.2− | 2006 10 01 | 704 | 0.1− | 0.2+ | |
| 2002 10 07 | 704 | 1.1+ | 0.4− | 2006 09 17 | 704 | 1.2− | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.0 | |
| 2002 10 07 | 704 | 0.5+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 10 01 | 704 | 0.5+ | 0.5+ | |
| 2002 10 09 | 704 | 0.6− | 1.0+ | 2006 09 20 | 644 | 0.5+ | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.4− | |
| 2002 10 09 | 704 | 0.4− | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.4− | |
| 2002 10 09 | 704 | (1.1− | 1.5−) | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3− | |
| 2002 10 11 | 644 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.4− | |
| 2002 10 11 | 644 | 0.2− | 0.2+ | 2006 09 23 | 691 | (2.2− | 1.1−) | 2006 10 20 | 644 | 0.1+ | 0.4− | |
| 2002 10 11 | 644 | 0.5− | 0.3− | 2006 09 24 | 291 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 2002 10 11 | 704 | 0.8− | 0.1+ | 2006 09 24 | 291 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1+ | |
| 2002 10 11 | 644 | 0.1− | 0.4+ | 2006 09 24 | 291 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.4− | |
| 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.4− | |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 22 | G96 | 0.0 | 0.5− | |
| 2002 10 11 | 644 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2002 10 11 | 704 | 0.1− | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.5− | | | | | |

**2002 TZ$_{245}$ = 2006 VX$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.01836 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26641254 | $\omega$ | 258.04466 | | +0.94943290 | +0.29535159 | |
| $a$ | 2.3920281 | $\Omega$ | 84.70573 | | −0.22996414 | +0.88513017 | |
| $e$ | 0.1341357 | $i$ | 6.14053 | | −0.21376075 | +0.35959980 | |
| $P$ | 3.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 0.2− | 0.5− | 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2− | |
| 2002 10 09 | 699 | 0.5+ | 0.2− | 2006 11 15 | 703 | 0.1− | 0.5+ | 2006 11 21 | 704 | (1.7+ | 0.5−) | |
| 2002 10 09 | 699 | 0.0 | 0.8+ | 2006 11 15 | 703 | 0.2− | 0.8− | 2006 11 21 | 704 | 0.2+ | 0.3− | |
| 2002 10 09 | 699 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.1− | 0.5− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.5+ | 2006 11 21 | 704 | 0.8+ | 0.4− |
| 2002 10 11 | 644 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 10 11 | 644 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2002 10 31 | 704 | 1.1+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2002 10 31 | 704 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.2− | 1.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.8− | 0.0 | 2006 11 18 | 704 | (1.0− | 1.9+) | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2002 10 31 | 704 | 0.3− | 0.4− | 2006 11 18 | 704 | (0.1+ | 1.9+) | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.5− | 0.2− | 2006 11 18 | 704 | 1.1+ | 1.3+ | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2004 02 16 | 691 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.2− | | | | |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1− | | | | |

**2002 TD$_{246}$ = 2006 QW$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.65533 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23728103 | $\omega$ | 233.24111 | | +0.91042952 | | +0.40464302 |
| $a$ | 2.5840091 | $\Omega$ | 102.74788 | | −0.34589211 | | +0.85858877 |
| $e$ | 0.2485246 | $i$ | 5.05377 | | −0.22688487 | | +0.31478460 |
| $P$ | 4.15 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 0.2− | 0.2− | 2006 08 26 | 104 | 0.2+ | 0.5− | 2006 09 21 | 699 | 0.6− | 0.3+ |
| 2002 10 09 | 699 | 0.1+ | 0.1+ | 2006 08 26 | 104 | 0.4+ | 0.2− | 2006 09 21 | 699 | 0.2+ | 0.2+ |
| 2002 10 09 | 699 | 0.0 | 0.7− | 2006 08 30 | 699 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.1− | 1.0− |
| 2002 10 09 | 699 | 0.1+ | 1.4+ | 2006 08 30 | 699 | 0.2− | 1.4+ | 2006 09 26 | 703 | 0.5+ | 0.2+ |
| 2002 10 11 | 644 | 0.3− | 0.2+ | 2006 08 30 | 699 | 0.8+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.3− |
| 2002 10 11 | 644 | 0.2− | 0.1− | 2006 08 30 | 699 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.8− |
| 2002 10 11 | 644 | 0.4− | 0.4+ | 2006 09 14 | 644 | 0.3+ | 0.2+ | 2006 10 02 | 703 | 0.6− | 0.9− |
| 2002 10 31 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.7+ | 0.0 | 2006 10 02 | 703 | 1.2+ | 1.2− |
| 2002 10 31 | 704 | 0.4− | 1.3− | 2006 09 14 | 644 | 0.4+ | 0.3+ | 2006 10 02 | 703 | (0.8+ | 1.9−) |
| 2002 10 31 | 704 | 0.8+ | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.3+ | 2006 10 02 | 703 | 0.4+ | 0.8− |
| 2002 10 31 | 704 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2006 08 24 | 104 | 0.5− | 0.1− | 2006 09 14 | 703 | 1.0− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2006 08 24 | 104 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.6− | 1.0− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2006 08 24 | 104 | 0.7+ | 0.1− | 2006 09 21 | 699 | 0.4+ | 1.4+ | | | | |
| 2006 08 26 | 104 | 0.5− | 1.1+ | 2006 09 21 | 699 | (1.6+ | 1.1+) | | | | |

**2002 TR$_{248}$ = 2002 TD$_{249}$**

Id. Minor Planet Center (d, *MPO* 38538)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.79028 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17172158 | $\omega$ | 106.31582 | | +0.81769131 | | −0.50203705 |
| $a$ | 3.2056748 | $\Omega$ | 284.60202 | | +0.35067805 | | +0.82245309 |
| $e$ | 0.1459457 | $i$ | 16.92231 | | +0.45651486 | | +0.26745041 |
| $P$ | 5.74 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.6+ | 0.6+ | 2002 10 11 | 704 | 0.3− | 0.4+ | 2003 12 19 | 704 | 0.8− | 0.2+ |
| 2002 10 07 | 704 | 0.3+ | 0.0 | 2002 10 11 | 704 | 0.5+ | 1.2− | 2003 12 19 | 691 | 0.1+ | 0.1+ |
| 2002 10 07 | 704 | 1.2− | 0.0 | 2002 10 12 | 704 | 0.8+ | 0.3− | 2003 12 19 | 704 | 0.2− | 0.1+ |
| 2002 10 07 | 704 | 0.6− | 0.5+ | 2002 10 12 | 704 | 0.1+ | 0.0 | 2003 12 21 | 645 | 0.0 | 0.2− |
| 2002 10 07 | 704 | 0.3− | 0.5+ | 2002 10 12 | 704 | 0.4− | 0.7+ | 2003 12 21 | 645 | 0.0 | 0.2− |
| 2002 10 07 | 704 | 0.5− | 0.7− | 2002 10 12 | 704 | 1.0− | 0.3− | 2003 12 27 | 691 | 0.3+ | 0.3+ |
| 2002 10 07 | 704 | 0.3− | 0.9+ | 2002 10 12 | 704 | 0.0 | 0.0 | 2003 12 27 | 691 | 0.4− | 0.3+ |
| 2002 10 07 | 704 | 0.7− | 0.6+ | 2002 10 12 | 704 | 0.6− | 0.2+ | 2003 12 27 | 691 | 0.1+ | 0.4+ |
| 2002 10 11 | 704 | 0.4− | 1.2+ | 2002 10 12 | 704 | 1.4+ | 0.4+ | 2004 01 03 | 413 | 0.7− | 0.2− |
| 2002 10 11 | 704 | 1.6+ | 1.6− | 2002 10 12 | 704 | 0.0 | 0.9+ | 2004 01 03 | 413 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.2− | 0.3− | 2002 10 12 | 704 | 0.2+ | 0.1− | 2004 01 13 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.8+ | 0.9− | 2003 12 19 | 691 | 0.0 | 0.3+ | 2004 01 13 | 691 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.9− | 0.5− | 2003 12 19 | 691 | 0.1+ | 0.3+ | 2004 01 13 | 691 | 0.2+ | 0.1+ |
| 2002 10 11 | 704 | 0.9+ | 1.1− | 2003 12 19 | 704 | 0.1+ | 0.8+ | | | | |

**2002 TZ$_{248}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.16751 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26022939 | $\omega$ | 1.05384 | | +0.67130995 | | −0.73952631 |
| $a$ | 2.4297699 | $\Omega$ | 46.78030 | | +0.67951911 | | +0.58746023 |
| $e$ | 0.1735184 | $i$ | 3.88973 | | +0.29596744 | | +0.32862031 |
| $P$ | 3.79 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 1.0− | 0.7− | 2002 10 31 | 704 | 0.5+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2002 10 01 | 699 | 0.1+ | 0.0 | 2002 10 31 | 704 | 0.4+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 10 01 | 699 | 1.2− | 0.9+ | 2006 09 27 | G96 | 0.3+ | 0.6− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 10 01 | 699 | 0.8+ | 1.2+ | 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 10 07 | 704 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2002 10 07 | 704 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.7+ | 0.6− | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2002 10 07 | 704 | 1.0− | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.2− | 1.3+ |
| 2002 10 07 | 704 | 0.1+ | 0.6− | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2002 10 11 | 704 | 0.7+ | 1.3+ | 2006 10 29 | G96 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2002 10 11 | 704 | 0.6+ | 0.1− | 2006 10 29 | G96 | 0.2+ | 0.4− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 1.0− | 0.7− | 2006 11 14 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.0 | 1.2− | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1+ |

**2002 TC$_{250}$ = 2006 TW$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.38443 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24555896 | $\omega$ | 231.47995 | | −0.08533907 | | +0.99449298 |
| $a$ | 2.5256056 | $\Omega$ | 33.77472 | | −0.87669721 | | −0.04593881 |
| $e$ | 0.1008535 | $i$ | 6.28248 | | −0.47341233 | | −0.09419838 |
| $P$ | 4.01 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.8− | 0.6+ | 2006 10 03 | 691 | 0.6− | 0.1− | 2006 10 29 | 291 | 0.1− | 0.1+ |
| 2002 10 02 | 704 | 0.8+ | 1.4+ | 2006 10 03 | 691 | 0.4− | 0.0 | 2006 10 29 | 291 | 0.1+ | 0.2+ |
| 2002 10 02 | 704 | 0.9+ | 0.8+ | 2006 10 03 | 691 | 0.3− | 0.1− | 2006 10 29 | 291 | 0.1+ | 0.1+ |
| 2002 10 07 | 704 | 1.0− | 0.6+ | 2006 10 15 | 703 | 0.5− | 0.8− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 10 07 | 704 | 1.0− | 0.2− | 2006 10 15 | 703 | 1.2− | 0.9+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 10 07 | 704 | 0.7− | 0.8+ | 2006 10 15 | 703 | 0.4− | 0.5− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 10 11 | 704 | 0.7− | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.8− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | (2.4− | 0.1−) | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2005 03 11 | G96 | 0.5− | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.7− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2005 03 11 | G96 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.7− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2005 03 11 | G96 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.3− | 1.0− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2006 09 17 | 691 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.5+ | 0.1− |

**2002 TC$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.86577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23215417 | $\omega$ | 3.07967 | | +0.69701852 | | −0.69597164 |
| $a$ | 2.6219137 | $\Omega$ | 42.82759 | | +0.65233858 | | +0.51554099 |
| $e$ | 0.2369630 | $i$ | 14.70790 | | +0.29769039 | | +0.49984095 |
| $P$ | 4.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.3− | 0.8+ | 2002 11 08 | 704 | 0.2+ | 0.4− | 2002 12 06 | 704 | 0.1+ | 0.3− |
| 2002 10 07 | 704 | 0.4− | 1.2+ | 2002 11 12 | 704 | 0.2+ | 0.4+ | 2002 12 06 | 704 | 0.5− | 0.2− |
| 2002 10 07 | 704 | 0.3− | 1.1+ | 2002 11 12 | 704 | 0.3+ | 0.2− | 2002 12 06 | 704 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.6− | 2002 11 12 | 704 | 0.6+ | 0.2+ | 2002 12 06 | 704 | 1.2+ | 0.2− |
| 2002 10 11 | 704 | 1.0− | 0.4− | 2002 11 12 | 704 | (1.8+ | 0.9−) | 2002 12 11 | 644 | 0.6− | 0.4− |
| 2002 10 11 | 704 | (1.8− | 0.0 ) | 2002 11 12 | 704 | 0.6+ | 0.0 | 2002 12 11 | 644 | 0.3− | 0.4+ |
| 2002 11 01 | 644 | 0.3+ | 0.0 | 2002 11 14 | 704 | 0.1+ | 0.3− | 2002 12 11 | 644 | 0.2− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.4+ | 0.1+ | 2002 11 14 | 704 | 0.3+ | 0.5− | 2006 09 20 | 703 | 0.2− | 0.3+ |
| 2002 11 01 | 644 | 0.3+ | 0.4+ | 2002 11 14 | 704 | 0.2− | 0.3− | 2006 09 20 | 703 | 0.8− | 0.3− |
| 2002 11 03 | 608 | 0.1− | 0.6− | 2002 11 14 | 704 | 0.1− | 0.5+ | 2006 09 20 | 703 | 1.0+ | 0.6+ |
| 2002 11 03 | 608 | 0.0 | 0.5− | 2002 11 14 | 704 | 0.6+ | 0.0 | 2006 09 20 | 703 | 0.5− | 0.6− |
| 2002 11 03 | 608 | 0.0 | 0.5− | 2002 11 28 | 699 | 1.3+ | 0.4+ | 2006 09 26 | 703 | (1.7+ | 0.8+) |
| 2002 11 05 | 704 | 1.4− | 0.4− | 2002 11 28 | 699 | (2.5+ | 1.6+) | 2006 09 26 | 703 | 0.3+ | 0.9− |
| 2002 11 05 | 704 | (2.4− | 0.3−) | 2002 11 28 | 699 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.4+ | 0.0 |
| 2002 11 05 | 644 | 0.0 | 0.1+ | 2002 11 28 | 699 | 0.2+ | 1.1+ | 2006 09 26 | 703 | 0.6− | 0.3+ |
| 2002 11 05 | 704 | 1.2− | 1.1− | 2002 12 02 | 704 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.6+ | 0.2− |
| 2002 11 05 | 704 | 1.3− | 0.5− | 2002 12 02 | 704 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 644 | 0.3+ | 0.2+ | 2002 12 02 | 704 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 11 05 | 644 | 0.5− | 0.1− | 2002 12 02 | 704 | 0.2+ | 1.0+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 11 08 | 704 | 0.4− | 0.0 | 2002 12 02 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 11 08 | 704 | 0.6+ | 0.3+ | 2002 12 06 | 704 | 0.3+ | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.0 |

### 2002 TY$_{251}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.34637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25235058 | $\omega$ | 244.38550 | | +0.94905812 | −0.31210458 | |
| $a$ | 2.4800847 | $\Omega$ | 133.76665 | | +0.30633394 | +0.88164973 | |
| $e$ | 0.2181840 | $i$ | 3.44160 | | +0.07381197 | +0.35395549 | |
| $P$ | 3.91 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 02 18 | 291 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2002 09 14 | 608 | 0.7− | 0.3− | 2004 02 18 | 291 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2002 09 14 | 608 | 0.9− | 0.8− | 2004 02 18 | 291 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2002 09 14 | 608 | (1.8− | 0.2−) | 2006 09 30 | 703 | 0.5+ | 0.6− | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 10 03 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 703 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.5− |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.8− | 0.6+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 19 | 644 | 0.6+ | 0.5− |
| 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 08 | 699 | 0.8− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 08 | 699 | 0.7+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 10 08 | 699 | (0.3− | 1.7+) | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 10 22 | 704 | (0.1− | 1.7+) |
| 2002 10 08 | 699 | 0.2+ | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 22 | 704 | 0.5− | 0.6+ |
| 2002 10 11 | 704 | 0.0 | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 22 | 704 | 0.7+ | 1.1+ |
| 2002 10 11 | 704 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 22 | 704 | 1.2+ | 0.4− |

### 2002 TZ$_{251}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.33981 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25204982 | $\omega$ | 323.13894 | | +0.93207256 | +0.35923389 | |
| $a$ | 2.4820572 | $\Omega$ | 16.00445 | | −0.27845141 | +0.79307591 | |
| $e$ | 0.2455626 | $i$ | 9.77627 | | −0.23174461 | +0.49191626 | |
| $P$ | 3.91 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.3+ | 0.4− | 2002 11 08 | 645 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.2+ |
| 2002 09 29 | 608 | 0.2− | 0.8− | 2002 11 08 | 645 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.6− | 1.1+ |
| 2002 09 29 | 608 | 0.3− | 0.6− | 2006 10 10 | 644 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.5+ |
| 2002 10 03 | 704 | 0.1− | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 03 | 704 | 0.8+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.9− | 1.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 10 03 | 704 | 0.7+ | 0.3− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2002 10 08 | 699 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2+ |
| 2002 10 08 | 699 | (1.7− | 0.3−) | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2002 10 08 | 699 | 1.3− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.4− | 0.2+ |
| 2002 10 08 | 699 | (1.9− | 0.2−) | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.4+ | | | | |

### 2002 TB$_{252}$ = 2006 UL$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.25987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25349883 | $\omega$ | 315.78060 | | +0.98828944 | +0.13430415 | |
| $a$ | 2.4725898 | $\Omega$ | 36.68361 | | −0.08290280 | +0.87110320 | |
| $e$ | 0.1479396 | $i$ | 6.96402 | | −0.12810586 | +0.47237866 | |
| $P$ | 3.89 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.9− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.3+ | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.8− | 0.3+ | 2006 10 22 | H36 | 1.2+ | 0.2− | 2006 11 03 | G96 | 0.0 | 0.1− |
| 2002 10 03 | 704 | 0.9− | 0.9+ | 2006 10 22 | H36 | 0.0 | 0.5− | 2006 11 03 | G96 | 0.0 | 0.4− |
| 2002 10 08 | 699 | 0.7− | 0.7+ | 2006 10 22 | H36 | 0.5− | 0.7− | 2006 11 03 | G96 | 0.1− | 0.2− |
| 2002 10 08 | 699 | 1.1− | 0.7− | 2006 10 23 | 683 | 0.6+ | 1.4+ | 2006 11 03 | G96 | 0.6− | 0.1− |
| 2002 10 08 | 699 | 0.7− | 0.1+ | 2006 10 23 | 683 | 0.4− | 0.8− | 2006 11 03 | G96 | 0.0 | 0.1− |
| 2002 10 08 | 699 | 1.3− | 0.9+ | 2006 10 23 | 683 | 1.3+ | 0.4+ | 2006 11 03 | G96 | 0.6+ | 0.3+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 23 | 734 | 0.1+ | 0.3− | 2006 11 03 | G96 | 0.2+ | 0.1+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 23 | 734 | 0.8− | 0.4+ | 2006 11 03 | G96 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.7+ | 1.0+ | 2006 10 23 | 734 | 1.2− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2002 10 11 | 704 | 0.7− | 0.2+ | 2006 10 23 | 734 | (1.5− | 1.0+) | 2006 11 11 | 703 | 0.8− | 0.8− |
| 2002 10 11 | 704 | 0.0 | 1.3+ | 2006 10 23 | 734 | 0.7− | 0.9+ | 2006 11 11 | 703 | 0.8− | 1.4− |
| 2002 10 11 | 704 | 0.1+ | 1.1+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | (0.8− | 1.9−) |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | (2.0+ | 1.6−) | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.3− | 0.7− |
| 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2006 10 20 | 691 | 0.6− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.6+ | 0.2+ |
| 2006 10 20 | 691 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.5+ | 0.4+ |
| 2006 10 20 | 644 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.5+ | 0.0 | | | | |
| 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | | | | |

### 2002 TH$_{253}$ = 2006 SA$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.18871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24348160 | $\omega$ | 188.35195 | | +0.89329242 | −0.44192907 | |
| $a$ | 2.5399507 | $\Omega$ | 198.55651 | | +0.42584461 | +0.89050683 | |
| $e$ | 0.1227801 | $i$ | 14.93550 | | +0.14382287 | +0.10814936 | |
| $P$ | 4.05 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.4− | 1.1+ | 2006 09 20 | 734 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 1.2+ | 0.7− | 2006 09 17 | 703 | 0.9+ | 0.3− | 2006 09 20 | 734 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | 0.1+ | 0.9− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 20 | 734 | 0.4+ | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.4+ | 1.1+ | 2006 09 20 | 734 | 0.0 | 0.2− |
| 2002 10 08 | 291 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2002 10 08 | 291 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.4− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2002 10 08 | 291 | 0.3− | 0.4− | 2006 09 18 | 703 | (1.9− | 0.7+) | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 704 | (0.9+ | 2.3−) | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.3+ | 0.8− | 2006 09 18 | 703 | 0.1+ | 0.8− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 734 | 0.7+ | 0.7− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2005 05 14 | G96 | 0.3+ | 0.2+ | 2006 09 19 | 734 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2005 05 14 | G96 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2005 05 14 | G96 | 0.3− | 0.3− | 2006 09 19 | 703 | 1.1− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2005 05 14 | G96 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.5− | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2006 09 16 | 703 | (1.5− | 0.8+) | 2006 09 19 | 703 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2006 09 16 | 703 | 0.2− | 0.9− | 2006 09 19 | 291 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2006 09 16 | 703 | 1.1− | 0.7− | 2006 09 19 | 291 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 703 | (5.0− | 1.5−) | 2006 09 19 | 291 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.0 | | |
| 2006 09 17 | 703 | 0.5− | 0.2− | 2006 09 20 | 734 | 0.6− | 0.1+ | | | | | | |

**2002 TG$_{254}$ = 2006 TC$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.41983 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23574859 | $\omega$ | 347.05973 | | +0.62373908 | | −0.77800302 |
| $a$ | 2.5951949 | $\Omega$ | 64.29890 | | +0.72436650 | | +0.53919108 |
| $e$ | 0.1802474 | $i$ | 4.78974 | | +0.29367113 | | +0.32246593 |
| $P$ | 4.18 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 1.4− | 0.4− | 2002 10 30 | 644 | 0.6+ | 0.4+ | 2006 10 03 | G96 | 0.3− | 0.5− | | |
| 2002 10 09 | 699 | 0.4− | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.5− | | |
| 2002 10 09 | 699 | 0.5− | 0.6− | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.2− | | |
| 2002 10 09 | 699 | 0.3− | 0.5+ | 2006 08 29 | 691 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.4− | | |
| 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 10 02 | 703 | 1.2+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.5− | | |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2006 10 02 | 703 | 0.9+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− | | |
| 2002 10 11 | 704 | 0.1+ | 0.3− | 2006 10 02 | 703 | 0.5− | 0.4− | 2006 11 23 | G96 | 0.3+ | 0.3− | | |
| 2002 10 30 | 644 | 0.3+ | 0.6+ | 2006 10 02 | 703 | 0.1+ | 0.5+ | | | | | | |
| 2002 10 30 | 644 | 0.4+ | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.2− | | | | | | |

**2002 TP$_{254}$ = 2006 SO$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.21434 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24259002 | $\omega$ | 262.40264 | | +0.80673399 | | +0.57892888 |
| $a$ | 2.5461702 | $\Omega$ | 62.14809 | | −0.47548986 | | +0.75496160 |
| $e$ | 0.2388220 | $i$ | 7.69660 | | −0.35084135 | | +0.30801676 |
| $P$ | 4.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.0 | 0.0 | 2002 11 06 | 699 | (0.1− | 2.0+) | 2006 10 01 | 704 | 1.3− | 1.1+ | | |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2002 11 06 | 699 | (1.6+ | 0.1+) | 2006 10 01 | 704 | 0.3− | 0.5+ | | |
| 2002 10 09 | 699 | 0.2+ | 1.4+ | 2002 11 06 | 699 | (1.0− | 2.2+) | 2006 10 01 | 704 | 0.0 | 0.7+ | | |
| 2002 10 09 | 699 | 0.6− | 1.2+ | 2002 11 07 | 704 | 0.2− | 0.6+ | 2006 10 01 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 09 | 699 | 0.4+ | 0.9+ | 2002 11 07 | 704 | 0.4− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.3− | | |
| 2002 10 09 | 699 | (1.9+ | 1.6−) | 2002 11 07 | 704 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.2− | | |
| 2002 10 11 | 704 | (1.3− | 1.9+) | 2002 11 07 | 704 | 0.4− | 0.9+ | 2006 10 04 | G96 | 0.0 | 0.3− | | |
| 2002 10 11 | 704 | (0.2− | 1.8+) | 2005 05 07 | 691 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.1− | | |
| 2002 10 11 | 704 | 0.0 | 1.1+ | 2005 05 07 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.4− | | |
| 2002 10 15 | 644 | 0.6+ | 0.7− | 2005 05 07 | 691 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.9− | | |
| 2002 10 15 | 644 | 0.2− | 0.4+ | 2006 09 18 | 703 | 1.2+ | 0.9− | 2006 10 16 | 703 | 0.4− | 0.4− | | |
| 2002 10 15 | 644 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.1− | | |
| 2002 10 16 | 644 | 0.5− | 0.0 | 2006 09 18 | 703 | 0.6− | 0.8+ | 2006 11 14 | 704 | 1.2+ | 1.1− | | |
| 2002 10 16 | 644 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.6− | 0.4− | 2006 11 14 | 704 | 0.9+ | 1.3− | | |
| 2002 10 16 | 644 | 0.6− | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.3− | 2006 11 14 | 704 | (0.3+ | 1.7+) | | |
| 2002 10 30 | 644 | 0.1− | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.3− | 2006 11 14 | 704 | 0.2+ | 1.4− | | |
| 2002 10 30 | 644 | 0.2− | 0.6+ | 2006 09 26 | 703 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.3− | | |
| 2002 10 30 | 644 | 0.6− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− | | |
| 2002 10 31 | 608 | (1.7− | 1.8+) | 2006 09 29 | 699 | 0.6− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.3− | | |
| 2002 10 31 | 608 | (1.7− | 1.8+) | 2006 09 29 | 699 | 0.3− | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.3− | | |
| 2002 10 31 | 608 | (1.1− | 1.9+) | 2006 09 29 | 699 | 0.8+ | 0.3− | | | | | | |
| 2002 11 06 | 699 | 0.2− | 1.4+ | 2006 09 29 | 699 | 0.4− | 1.0+ | | | | | | |

**2002 TM$_{255}$ = 1994 JV$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.48992 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27892425 | $\omega$ | 138.94815 | | +0.99802008 | | +0.00078083 |
| $a$ | 2.3199495 | $\Omega$ | 221.13730 | | −0.02152721 | | +0.94377123 |
| $e$ | 0.1604580 | $i$ | 5.48579 | | +0.05909733 | | +0.33059833 |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 11 | 691 | 0.0 | 0.8+ | 2002 10 11 | 704 | 0.8− | 0.2+ | 2002 11 06 | 704 | 0.0 | 0.3− | | |
| 1994 05 11 | 691 | 0.7+ | 1.3+ | 2002 10 11 | 704 | 0.8− | 0.0 | 2002 11 06 | 704 | 0.3− | 1.0− | | |
| 1994 05 11 | 691 | 0.3− | 0.2+ | 2002 10 11 | 704 | 0.2− | 0.0 | 2002 11 06 | 704 | 0.8− | 0.5− | | |
| 2001 04 24 | 291 | 0.0 | 0.5+ | 2002 10 16 | 644 | 0.1+ | 0.6+ | 2002 11 06 | 704 | 0.0 | 0.1+ | | |
| 2001 04 24 | 291 | 0.2+ | 0.7+ | 2002 10 16 | 644 | 0.3+ | 0.7+ | 2002 11 06 | 704 | 0.4+ | 0.8− | | |
| 2001 04 24 | 291 | 0.3+ | 0.5+ | 2002 10 16 | 644 | 0.3+ | 0.6+ | 2002 11 10 | 704 | 0.6+ | 0.4− | | |
| 2002 09 06 | 704 | 0.1+ | 0.3+ | 2002 10 26 | 608 | 0.0 | 0.9+ | 2002 11 10 | 704 | 0.0 | 0.5+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.2+ | 2002 10 26 | 608 | 0.0 | 1.2+ | 2002 11 10 | 704 | 0.8+ | 0.2+ | | |
| 2002 09 06 | 704 | 0.2+ | 0.8+ | 2002 10 26 | 608 | 0.3− | 0.9+ | 2002 11 12 | 644 | 0.5− | 0.1+ | | |
| 2002 09 06 | 704 | 0.1+ | 1.5+ | 2002 10 28 | 644 | 0.0 | 0.2+ | 2002 11 12 | 644 | 0.5− | 0.1− | | |
| 2002 10 04 | 704 | 0.2− | 0.3− | 2002 10 28 | 644 | 0.1+ | 0.2+ | 2002 11 12 | 644 | 0.1− | 0.4+ | | |
| 2002 10 04 | 704 | 0.4− | 0.1+ | 2002 10 28 | 644 | 0.1+ | 0.2+ | 2002 11 22 | 644 | 0.2+ | 0.4+ | | |
| 2002 10 04 | 704 | 0.5+ | 0.8+ | 2002 10 31 | 699 | 0.0 | 0.6+ | 2002 11 22 | 644 | 0.2+ | 0.4+ | | |
| 2002 10 04 | 704 | 0.1− | 0.4− | 2002 10 31 | 644 | 0.1+ | 0.2+ | 2002 11 22 | 644 | 0.1+ | 0.6+ | | |
| 2002 10 04 | 704 | 0.0 | 1.1+ | 2002 10 31 | 699 | 0.0 | 0.2+ | 2002 12 05 | 704 | 0.6− | 1.4+ | | |
| 2002 10 09 | 704 | 0.4− | 1.1+ | 2002 10 31 | 644 | 0.1− | 0.2+ | 2002 12 05 | 704 | 0.4− | 0.1+ | | |
| 2002 10 09 | 704 | 0.1+ | 1.5+ | 2002 10 31 | 699 | 0.0 | 0.4+ | 2002 12 05 | 704 | 0.7− | 1.1− | | |
| 2002 10 09 | 704 | 0.3+ | 1.0+ | 2002 10 31 | 644 | 0.1+ | 0.2+ | 2004 03 27 | 691 | 0.3+ | 0.4+ | | |
| 2002 10 09 | 704 | 0.1− | 0.2+ | 2002 10 31 | 699 | 0.5− | 0.4+ | 2004 03 27 | 691 | 0.2− | 0.5+ | | |
| 2002 10 09 | 704 | 0.6− | 0.7+ | 2002 11 03 | 704 | 0.5+ | 1.4+ | 2004 03 27 | 691 | 0.4+ | 0.6+ | | |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2002 11 03 | 704 | 0.3− | 0.5+ | | | | | | |
| 2002 10 11 | 704 | 1.2− | 0.8− | 2002 11 03 | 704 | 0.5+ | 0.3− | | | | | | |

**2002 TR$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.85719 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26422133 | $\omega$ | 333.34752 | | +0.99488190 | | −0.08272259 |
| $a$ | 2.4052347 | $\Omega$ | 31.56335 | | +0.10048346 | | +0.87039786 |
| $e$ | 0.0898175 | $i$ | 6.36457 | | −0.01063434 | | +0.48534992 |
| $P$ | 3.73 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.3− | 1.3+ | 2002 10 28 | 644 | 0.3− | 0.4+ | 2002 11 10 | 704 | 0.5− | 0.2+ | | |
| 2002 10 02 | 704 | 0.0 | 0.2− | 2002 10 31 | 699 | 0.1+ | 0.1+ | 2002 11 11 | 049 | 1.5+ | 0.9− | | |
| 2002 10 02 | 704 | 0.4+ | 1.1− | 2002 10 31 | 644 | 0.5+ | 0.1+ | 2002 11 11 | 049 | 1.5+ | 0.8− | | |
| 2002 10 02 | 704 | 0.3− | 0.2− | 2002 10 31 | 699 | 0.7− | 0.1− | 2002 11 11 | 049 | 1.4+ | 1.2− | | |
| 2002 10 09 | 704 | 0.7− | 0.3− | 2002 10 31 | 644 | 0.6+ | 0.3+ | 2002 11 12 | 644 | 0.1− | 0.0 | | |
| 2002 10 09 | 704 | 0.0 | 0.1− | 2002 10 31 | 699 | 0.2− | 0.6+ | 2002 11 12 | 644 | 0.3+ | 0.0 | | |
| 2002 10 09 | 704 | 0.1− | 0.1− | 2002 10 31 | 644 | 0.1− | 0.1− | 2002 11 12 | 644 | 0.1− | 0.0 | | |
| 2002 10 09 | 704 | 0.1+ | 0.8+ | 2002 10 31 | 699 | 0.5− | 0.0 | 2002 11 22 | 644 | 0.4+ | 0.2+ | | |
| 2002 10 09 | 704 | 0.8+ | 0.0 | 2002 11 06 | 704 | 0.4− | 0.4+ | 2002 11 22 | 644 | 0.5+ | 0.2+ | | |
| 2002 10 11 | 704 | (1.0+ | 5.3−) | 2002 11 06 | 704 | 0.6− | 0.9− | 2002 11 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 704 | (0.3+ | 5.9−) | 2002 11 06 | 704 | 0.6+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.8+ | | |
| 2002 10 11 | 704 | (1.4+ | 4.8−) | 2002 11 06 | 704 | 1.4− | 0.6+ | 2006 11 16 | 704 | 0.4− | 0.4− | | |
| 2002 10 11 | 704 | (1.0+ | 4.7−) | 2002 11 06 | 704 | 0.6+ | 0.3− | 2006 11 16 | 704 | 0.0 | 0.7+ | | |
| 2002 10 11 | 704 | (0.1+ | 5.2−) | 2002 11 10 | 704 | 0.7− | 0.4− | 2006 11 19 | 704 | 0.5+ | 0.2− | | |
| 2002 10 28 | 644 | 0.3− | 0.2+ | 2002 11 10 | 704 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.0 | | |
| 2002 10 28 | 644 | 0.4− | 0.2+ | 2002 11 10 | 704 | 1.0− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.4− | | |

**2002 TF$_{257}$ = 2006 SM$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.23695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24011217 | $\omega$ | 287.73985 | | +0.79679577 | | +0.58827506 |
| $a$ | 2.5636571 | $\Omega$ | 36.57452 | | −0.42836283 | | +0.71102772 |
| $e$ | 0.1735501 | $i$ | 13.39277 | | −0.42617108 | | +0.38519091 |
| $P$ | 4.10 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.1− | 0.4− | 2006 09 18 | 703 | (1.6+ | 1.3−) | 2006 10 11 | 644 | 0.1+ | 0.3− | | |
| 2002 10 09 | 704 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.9− | 0.9− | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 10 09 | 704 | 0.3− | 0.8+ | 2006 09 18 | 703 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.0 | | |
| 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.3− | 1.1− | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2002 10 11 | 704 | 0.7+ | 1.3+ | 2006 09 25 | 699 | 0.5+ | 0.8− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 10 11 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 699 | 1.4+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2002 10 11 | 704 | 0.0 | 0.8+ | 2006 09 25 | 699 | 0.9− | 0.7− | 2006 10 15 | 703 | 0.2− | 1.0− | | |
| 2002 10 11 | 704 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.6+ | 2006 10 15 | 703 | 0.6− | 0.4− | | |
| 2002 10 31 | 644 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.7− | 0.3+ | 2006 10 15 | 703 | 0.4− | 0.1− | | |
| 2002 10 31 | 644 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.4+ | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 11 01 | 608 | 0.8− | 1.0− | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 11 01 | 608 | 1.4− | 0.6− | 2006 09 26 | 703 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.3+ |
| 2002 11 01 | 608 | 0.4− | 0.7− | 2006 09 26 | 703 | 1.0+ | 1.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 11 06 | 704 | 1.0− | 0.6+ | 2006 09 26 | 703 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 1.3+ | 0.5+ | 2006 09 26 | 703 | 0.4+ | 0.7+ | 2006 10 21 | 703 | 0.4+ | 0.1+ |
| 2002 11 06 | 704 | 0.2+ | 0.2− | 2006 09 29 | 699 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.1+ |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.6− |
| 2005 05 14 | 644 | 0.4+ | 0.6+ | 2006 09 29 | 699 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2005 05 14 | 644 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2005 05 14 | 644 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2006 09 16 | 699 | (0.2+ | 1.8−) | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2006 09 16 | 699 | 1.0− | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.3− | 2006 11 20 | G96 | 0.5+ | 0.2+ |
| 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2006 09 16 | 699 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.1− | 0.1+ |

**2002 TG$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.45772 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23816330 | $\omega$ | 6.41368 | | +0.66743703 | | −0.74064479 |
| $a$ | 2.5776236 | $\Omega$ | 41.75542 | | +0.67795765 | | +0.56143012 |
| $e$ | 0.3047982 | $i$ | 6.66438 | | +0.30806045 | | +0.36910908 |
| $P$ | 4.14 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.2+ | 0.2+ | 2002 11 01 | 608 | 0.5+ | 1.1− | 2006 09 19 | 703 | 0.5+ | 0.2− |
| 2002 10 02 | 704 | 0.9− | 0.0 | 2002 11 04 | 699 | 0.1+ | 0.8− | 2006 09 19 | 703 | 0.7− | 0.1+ |
| 2002 10 02 | 704 | 0.5+ | 0.2+ | 2002 11 04 | 699 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.8− | 0.2− |
| 2002 10 09 | 704 | 0.7+ | 0.1− | 2002 11 04 | 699 | 0.3− | 0.2+ | 2006 09 19 | 703 | 1.0− | 0.6+ |
| 2002 10 09 | 704 | 0.2− | 0.7− | 2002 11 04 | 699 | 0.4− | 0.8+ | 2006 09 25 | 699 | 0.2− | 0.5− |
| 2002 10 09 | 704 | 1.3+ | 0.6+ | 2002 11 06 | 699 | 0.4− | 0.2− | 2006 09 25 | 699 | 0.6+ | 0.2− |
| 2002 10 09 | 704 | 0.3− | 0.2− | 2002 11 06 | 699 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2002 11 06 | 699 | 0.9− | 0.6− | 2006 09 25 | 699 | 0.1+ | 0.6+ |
| 2002 10 11 | 704 | 1.4− | 0.4+ | 2002 11 06 | 699 | 0.3− | 0.4+ | 2006 09 25 | 703 | 0.8− | 0.7+ |
| 2002 10 11 | 704 | 0.3+ | 0.6+ | 2002 11 06 | 704 | 0.4+ | 1.2+ | 2006 09 25 | 703 | 0.2+ | 0.5+ |
| 2002 10 11 | 704 | 0.6− | 0.6+ | 2002 11 06 | 704 | (1.5+ | 1.8−) | 2006 09 25 | 703 | (0.0 | 1.8+) |
| 2002 10 26 | 608 | 1.2− | 0.3− | 2002 11 06 | 704 | 0.6− | 0.2+ | 2006 09 25 | 703 | 1.0+ | 1.3+ |
| 2002 10 26 | 608 | 0.3− | 0.4− | 2002 11 06 | 704 | 0.8− | 0.6− | 2006 10 02 | 703 | 0.3+ | 0.6− |
| 2002 10 26 | 608 | 0.3− | 0.3− | 2002 11 10 | 704 | 0.2+ | 0.1+ | 2006 10 02 | 703 | 0.1− | 1.2− |
| 2002 10 31 | 699 | 0.3+ | 0.4+ | 2002 11 10 | 704 | 0.5− | 0.4+ | 2006 10 02 | 703 | 0.9− | 0.2+ |
| 2002 10 31 | 699 | 1.0+ | 0.3+ | 2002 11 10 | 704 | 0.3+ | 0.6− | 2006 10 02 | 703 | 0.7+ | 0.2− |
| 2002 10 31 | 699 | 0.9+ | 0.4+ | 2002 11 10 | 704 | 0.9+ | 1.0− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 644 | 0.2+ | 0.3+ | 2002 11 12 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2002 10 31 | 699 | 0.8+ | 0.2+ | 2002 11 12 | 644 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.4− |
| 2002 10 31 | 644 | 0.3+ | 0.3+ | 2002 11 12 | 644 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2002 10 31 | 644 | 0.4+ | 0.1+ | 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.5− |
| 2002 11 01 | 608 | (0.8+ | 2.2−) | 2002 12 06 | 704 | 0.5− | 0.4+ | 2006 10 22 | 644 | 0.7+ | 0.5− |
| 2002 11 01 | 608 | 0.3+ | 1.2− | 2002 12 06 | 704 | 1.1+ | 0.0 | | | | |

**2002 TH$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.27412 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21602129 | $\omega$ | 331.57990 | | +0.97476548 | | −0.16959641 |
| $a$ | 2.7508802 | $\Omega$ | 39.05224 | | +0.22201667 | | +0.80427412 |
| $e$ | 0.2184672 | $i$ | 13.32008 | | −0.02325640 | | +0.56954386 |
| $P$ | 4.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3+ | 0.6− | 2002 10 31 | 699 | 0.6− | 0.1− | 2002 11 06 | 704 | 0.3+ | 0.4− |
| 2002 10 03 | 704 | 1.0− | 1.2+ | 2002 10 31 | 699 | 0.6− | 0.2+ | 2002 11 12 | 644 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.3+ | 0.7+ | 2002 10 31 | 644 | 0.2− | 0.2+ | 2002 11 12 | 644 | 0.4− | 0.3− |
| 2002 10 03 | 704 | 0.9− | 0.2+ | 2002 10 31 | 699 | 1.3− | 0.1− | 2002 11 12 | 644 | 0.2− | 0.5− |
| 2002 10 09 | 704 | 0.4+ | 0.1+ | 2002 10 31 | 644 | 0.1+ | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 0.1− | 2002 10 31 | 699 | 0.8− | 0.8− | 2002 12 06 | 704 | 0.7+ | 0.6+ |
| 2002 10 09 | 704 | 0.3+ | 0.3+ | 2002 10 31 | 644 | 0.2+ | 0.2+ | 2002 12 06 | 704 | 0.5+ | 1.0+ |
| 2002 10 09 | 704 | 0.0 | 0.5+ | 2002 11 01 | 608 | 0.2− | 0.6− | 2002 12 06 | 704 | 0.5+ | 0.5+ |
| 2002 10 09 | 704 | 1.0+ | 0.9+ | 2002 11 01 | 608 | 0.4+ | 0.0 | 2005 04 11 | G96 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2002 11 01 | 608 | 0.3+ | 0.7− | 2005 04 11 | G96 | 0.5+ | 0.3+ |
| 2002 10 11 | 704 | 0.3− | 0.2+ | 2002 11 05 | 699 | 1.4+ | 1.2− | 2005 04 11 | G96 | 0.1+ | 0.9+ |
| 2002 10 11 | 704 | 0.2− | 0.7− | 2002 11 05 | 699 | 0.2− | 0.3− | 2005 04 11 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 1.0− | 2002 11 05 | 699 | 1.0+ | 1.0+ | 2006 07 20 | E12 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 0.3+ | 0.4− | 2002 11 05 | 699 | 0.1− | 0.8− | 2006 07 20 | E12 | 0.1+ | 0.0 |
| 2002 10 26 | 608 | 0.7− | 0.9+ | 2002 11 06 | 704 | 0.1+ | 0.3+ | 2006 07 20 | E12 | 0.6+ | 0.5− |
| 2002 10 26 | 608 | 1.0− | 0.5+ | 2002 11 06 | 704 | 1.3+ | 0.3+ | 2006 07 20 | E12 | 0.9− | 0.3+ |
| 2002 10 26 | 608 | 0.7− | 0.4+ | 2002 11 06 | 704 | 0.5− | 0.3− | 2006 07 20 | E12 | 0.2+ | 0.4+ |

**2002 TK$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.56739 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26962960 | $\omega$ | 356.09452 | | +0.46182071 | | −0.88474516 |
| $a$ | 2.3729632 | $\Omega$ | 66.39133 | | +0.81562855 | | +0.39577221 |
| $e$ | 0.2191509 | $i$ | 3.93182 | | +0.34852791 | | +0.24615109 |
| $P$ | 3.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 291 | 0.3− | 0.0 | 2002 10 26 | 608 | 0.7+ | 1.2+ | 2002 11 10 | 704 | 0.5− | 0.0 |
| 2002 07 06 | 291 | 0.3− | 0.4+ | 2002 10 26 | 608 | 1.0+ | 0.9+ | 2002 11 10 | 704 | 0.3− | 0.6+ |
| 2002 07 06 | 291 | 0.1− | 0.2+ | 2002 10 26 | 608 | 0.6+ | 1.2+ | 2002 11 14 | 644 | 0.8− | 0.1+ |
| 2002 10 03 | 704 | 0.3+ | 0.2− | 2002 11 01 | 704 | 0.3− | 0.2− | 2002 11 14 | 644 | 0.4− | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 0.1− | 2002 11 01 | 704 | 0.3− | 0.3− | 2002 11 14 | 644 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.2+ | 0.3− | 2002 11 01 | 704 | 0.4− | 0.1− | 2002 11 22 | 644 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 0.1+ | 0.3− | 2002 11 01 | 608 | 0.1− | 0.1− | 2002 11 22 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.5+ | 0.1− | 2002 11 01 | 608 | 0.4+ | 0.4− | 2002 11 22 | 644 | 0.3− | 0.2− |
| 2002 10 09 | 704 | 0.3+ | 0.2− | 2002 11 01 | 608 | 0.2+ | 0.0 | 2004 04 14 | 691 | 0.2+ | 0.8+ |
| 2002 10 09 | 704 | 0.5+ | 0.2+ | 2002 11 06 | 704 | 0.1− | 0.1+ | 2004 04 14 | 691 | 0.5+ | 0.6+ |
| 2002 10 09 | 704 | 1.3+ | 0.8+ | 2002 11 06 | 704 | 0.1− | 0.3− | 2004 04 14 | 691 | 0.2+ | 0.5+ |
| 2002 10 11 | 704 | 0.6− | 1.2+ | 2002 11 06 | 704 | 0.3− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 0.4− | 0.1+ | 2002 11 06 | 704 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.6− | 0.4+ | 2002 11 06 | 704 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.2+ | 0.2− | 2002 11 10 | 704 | 0.4− | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.2+ |
| 2002 10 11 | 704 | 0.3− | 0.7+ | 2002 11 10 | 704 | 0.4+ | 0.1+ | | | | |

**2002 TS$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.80694 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23315571 | $\omega$ | 9.84764 | | +0.50483411 | | −0.85687654 |
| $a$ | 2.6143999 | $\Omega$ | 49.91327 | | +0.78241002 | | +0.40311045 |
| $e$ | 0.2557879 | $i$ | 7.84502 | | +0.36466024 | | +0.32134803 |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.9− | 0.6+ | 2002 12 01 | 608 | 0.6+ | 0.2+ | 2006 08 29 | D35 | 0.8+ | 0.3− |
| 1998 12 17 | 704 | 1.0+ | 0.2− | 2002 12 01 | 608 | 0.8+ | 0.4+ | 2006 08 29 | D35 | 0.8+ | 0.0 |
| 1998 12 17 | 704 | (2.6+ | 0.5−) | 2002 12 02 | 704 | 0.7− | 0.6− | 2006 08 29 | D35 | 0.4+ | 0.5+ |
| 1998 12 17 | 704 | 0.3− | 1.1− | 2002 12 02 | 704 | 0.1− | 0.8− | 2006 09 17 | 699 | 0.8− | 1.5+ |
| 2002 10 09 | 704 | 0.3− | 0.1+ | 2002 12 02 | 704 | 0.6− | 0.1+ | 2006 09 17 | 699 | 1.4− | 0.2− |
| 2002 10 09 | 704 | 0.9− | 0.5− | 2002 12 02 | 704 | 1.0− | 0.6− | 2006 09 17 | 699 | 0.3+ | 0.4− |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2002 12 05 | 704 | 0.9+ | 0.2− | 2006 09 17 | 699 | 0.0 | 1.5+ |
| 2002 10 09 | 704 | 0.1+ | 0.9+ | 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.3+ |
| 2002 10 09 | 704 | 0.5− | 0.3+ | 2002 12 05 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.5− |
| 2002 10 11 | 704 | 1.5− | 0.7− | 2002 12 05 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.2− | 1.0− |
| 2002 10 11 | 704 | (2.0− | 0.6−) | 2002 12 05 | 704 | 0.8+ | 0.8+ | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 1.3− | 0.2− | 2002 12 06 | 704 | 0.5− | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.3− |
| 2002 10 11 | 704 | 1.5− | 0.8+ | 2002 12 06 | 704 | 0.5+ | 0.4− | 2006 09 25 | 703 | 0.6+ | 0.2− |
| 2002 11 06 | 704 | 0.6+ | 0.6+ | 2002 12 06 | 704 | 1.2+ | 0.6− | 2006 09 25 | 703 | 0.6− | 0.6+ |
| 2002 11 06 | 704 | 0.0 | 0.2− | 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.8− | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.5− | 2002 12 06 | 704 | 0.7+ | 0.5− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 11 06 | 704 | 0.5− | 0.1− | 2002 12 11 | 644 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.3+ | 0.3+ | 2002 12 11 | 644 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2002 11 10 | 704 | 0.3+ | 0.3+ | 2002 12 11 | 644 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 10 | 704 | 0.2+ | 0.4+ | 2002 12 11 | 704 | 0.1+ | 0.5− | 2006 10 19 | 703 | 1.0+ | 0.6− |
| 2002 11 10 | 704 | 0.7+ | 0.1+ | 2002 12 11 | 704 | 0.5− | 0.2− | 2006 10 19 | 703 | 1.1− | 0.8+ |
| 2002 11 12 | 644 | 0.1+ | 0.7+ | 2002 12 11 | 704 | 0.3+ | 0.5− | 2006 10 19 | 703 | 0.0 | 0.6− |
| 2002 11 12 | 644 | 0.1+ | 0.9+ | 2002 12 11 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.4+ | 0.2− |
| 2002 11 12 | 644 | 0.5+ | 0.7+ | 2002 12 11 | 704 | 0.8− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.3+ | 0.6+ | 2002 12 12 | 608 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.2− |
| 2002 11 14 | 704 | 0.5+ | 0.2+ | 2002 12 12 | 608 | 0.6− | 0.4+ | 2006 10 23 | 644 | 0.4+ | 0.1− |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2002 12 12 | 608 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.5+ | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 0.2− | 2002 12 31 | 704 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.5− |
| 2002 11 14 | 704 | 0.4− | 0.7− | 2002 12 31 | 704 | 1.0+ | 0.6− | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2002 11 23 | 644 | 0.0 | 0.2+ | 2002 12 31 | 704 | 0.7− | 0.0 | 2006 10 28 | 703 | (0.3+ | 1.7+) |
| 2002 11 23 | 644 | 0.2− | 0.2+ | 2002 12 31 | 704 | 0.5− | 0.2+ | 2006 10 28 | 703 | 0.6+ | 1.2− |
| 2002 11 23 | 644 | 0.1− | 0.2+ | 2002 12 31 | 704 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.2− | 1.1− |
| 2002 11 27 | 699 | 1.5+ | 0.1− | 2003 01 05 | 704 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.2− | 0.2+ |
| 2002 11 27 | 699 | 0.7+ | 0.5− | 2003 01 05 | 704 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.8− |
| 2002 11 27 | 699 | 0.8− | 0.4+ | 2003 01 05 | 704 | 1.1+ | 0.4− | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2002 11 27 | 699 | 0.2+ | 0.2− | 2003 01 05 | 704 | 0.2− | 0.5− | 2006 11 25 | G96 | 0.2+ | 0.7− |
| 2002 12 01 | 608 | 0.7+ | 0.2+ | 2003 01 05 | 704 | 0.5− | 0.1+ | | | | |

**2002 TT$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.32148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23215933 | $\omega$ | 52.07105 | | −0.16624402 | | −0.89313541 |
| $a$ | 2.6218748 | $\Omega$ | 52.96562 | | +0.65728824 | | −0.41631448 |
| $e$ | 0.3023818 | $i$ | 31.57080 | | +0.73507489 | | +0.17026862 |
| $P$ | 4.25 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 16 | 704 | 0.7+ | 0.3+ | 2002 12 07 | 704 | 0.9− | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 1999 03 16 | 704 | 1.2+ | 1.2+ | 2002 12 07 | 704 | 0.8− | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.2+ |
| 1999 03 16 | 704 | 1.6− | 0.1− | 2002 12 07 | 704 | 0.6− | 0.4− | 2006 09 19 | 703 | 0.4+ | 0.5+ |
| 1999 03 16 | 704 | 0.8− | 1.1− | 2002 12 07 | 704 | 0.6− | 0.2+ | 2006 09 25 | 703 | 0.8− | 0.6+ |
| 1999 03 16 | 704 | 0.1− | 0.5− | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 703 | 0.5+ | 0.1+ |
| 2002 10 02 | 704 | 0.2+ | 1.0+ | 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 1.0− | 0.3− |
| 2002 10 02 | 704 | 0.5+ | 1.0+ | 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.2+ | 0.1− |
| 2002 10 02 | 704 | 0.3− | 1.0+ | 2002 12 11 | 704 | 0.3− | 0.2− | 2006 10 09 | 644 | 0.7+ | 0.3+ |
| 2002 10 02 | 704 | (0.3− | 1.8+) | 2002 12 11 | 704 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.5+ | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 0.9+ | 2002 12 13 | 704 | 0.2− | 0.4− | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.4− | 1.0+ | 2002 12 13 | 704 | 0.1+ | 0.3− | 2006 10 21 | 703 | 1.1+ | 0.0 |
| 2002 10 09 | 704 | 0.4− | 0.5+ | 2002 12 13 | 704 | 0.2− | 0.3− | 2006 10 21 | 703 | 1.0− | 1.5+ |
| 2002 10 09 | 704 | 0.9+ | 0.7+ | 2002 12 13 | 704 | 0.3− | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.4+ |
| 2002 10 09 | 704 | 0.7+ | 0.5+ | 2002 12 14 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.5+ |
| 2002 10 11 | 704 | 0.4+ | 0.5− | 2002 12 14 | 704 | 0.6− | 0.3+ | 2006 11 01 | 703 | 0.2+ | 0.8− |
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2002 12 14 | 704 | 0.1+ | 0.0 | 2006 11 01 | 703 | 0.0 | 1.2− |
| 2002 10 11 | 704 | 0.4+ | 0.9− | 2002 12 14 | 704 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.1− | 0.6− |
| 2002 10 11 | 704 | 0.0 | 0.2− | 2002 12 15 | 704 | 0.3+ | 0.0 | 2006 11 01 | 703 | 0.2− | 0.4− |
| 2002 10 11 | 704 | 0.5+ | 0.8− | 2002 12 15 | 704 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.0 | 0.4− |
| 2002 11 01 | 704 | 0.5+ | 0.9− | 2002 12 15 | 704 | 0.4+ | 1.0− | 2006 11 01 | 703 | 0.5− | 0.6− |
| 2002 11 01 | 704 | 0.1− | 0.9− | 2002 12 15 | 704 | 0.6+ | 0.2+ | 2006 11 01 | 703 | 0.3− | 0.6− |
| 2002 11 01 | 704 | 0.5− | 0.4− | 2002 12 15 | 704 | 0.6+ | 0.4− | 2006 11 01 | 703 | 0.1− | 0.0 |
| 2002 11 01 | 704 | 0.4+ | 0.1− | 2002 12 28 | 704 | 0.8− | 0.8+ | 2006 11 06 | 644 | 0.5+ | 0.1+ |
| 2002 11 15 | 704 | 0.3+ | 0.9− | 2002 12 28 | 704 | 0.2− | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.0 |
| 2002 11 15 | 704 | 0.3− | 0.5− | 2002 12 28 | 704 | 0.2+ | 0.3+ | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2002 11 15 | 704 | 0.2− | 0.3− | 2002 12 28 | 704 | 0.8+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2002 11 15 | 704 | 0.5+ | 0.0 | 2002 12 28 | 704 | (2.4+ | 0.4+) | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2002 11 17 | 704 | 0.5+ | 0.0 | 2003 02 23 | 704 | 0.3− | 0.9+ | 2006 11 17 | 703 | 0.4+ | 0.7− |
| 2002 11 17 | 704 | 0.7+ | 0.4− | 2003 02 23 | 704 | 0.4− | 0.7+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2002 11 17 | 704 | 0.4+ | 0.1+ | 2003 02 23 | 704 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.9− | 0.3+ |
| 2002 11 17 | 704 | 0.0 | 0.1− | 2003 02 23 | 704 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.7− | 0.4+ |
| 2002 11 17 | 704 | 0.3+ | 0.3− | 2003 02 23 | 704 | 0.3− | 0.2− | 2006 11 23 | 703 | 0.5− | 0.2+ |
| 2002 12 07 | 704 | 0.9− | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.4− | 1.2+ |

**2002 TQ$_{261}$ = 2006 TW$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.68479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25441727 | $\omega$ | 164.26365 | | +0.99985369 | | −0.00069706 |
| $a$ | 2.4666356 | $\Omega$ | 195.80589 | | −0.00518400 | | +0.93983118 |
| $e$ | 0.1860406 | $i$ | 3.59756 | | +0.01630099 | | +0.34163851 |
| $P$ | 3.87 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.6− | 0.9+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2002 10 02 | 704 | 0.9− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 0.6− | 2006 09 26 | G96 | 0.0 | 0.7− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 291 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2002 10 09 | 291 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2002 10 09 | 291 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | (2.6+ | 1.1+) |
| 2002 10 10 | 644 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 1.2− | 0.8− |
| 2002 10 10 | 644 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2002 10 10 | 644 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.0 | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2002 10 11 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.1− |

**2002 TV$_{261}$ = 2006 WW$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.14823 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26121162 | $\omega$ | 280.29960 | | +0.82587327 | | +0.55922862 |
| $a$ | 2.4236750 | $\Omega$ | 45.74286 | | −0.46989473 | | +0.75326736 |
| $e$ | 0.1711321 | $i$ | 5.77668 | | −0.31166052 | | +0.34619594 |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.2− | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.5+ | 0.1+ |
| 2002 10 10 | 644 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2002 10 10 | 644 | 0.4+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.3− |
| 2002 10 11 | 704 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 10 31 | 704 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2002 10 31 | 704 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.1+ | 0.6− | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.3+ | | | | |
| 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1− | | | | |

**2002 TK$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.43616 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28978575 | $\omega$ | 256.48005 | | +0.53412111 | | +0.84055274 |
| $a$ | 2.2616116 | $\Omega$ | 46.18033 | | −0.71904154 | | +0.50795998 |
| $e$ | 0.1195402 | $i$ | 7.20355 | | −0.44462783 | | +0.18827575 |
| $P$ | 3.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.0 | 0.4+ | 2002 10 31 | 704 | 0.4− | 0.7+ | 2005 07 27 | E12 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2002 10 31 | 704 | 0.7− | 1.0+ | 2005 07 27 | E12 | 1.0− | 0.1+ |
| 2002 10 03 | 704 | 1.0− | 0.2− | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2005 08 12 | E12 | 0.5+ | 0.4+ |
| 2002 10 10 | 644 | 0.2− | 0.0 | 2004 03 16 | 691 | 0.0 | 0.2+ | 2005 08 12 | E12 | 0.2− | 0.0 |
| 2002 10 10 | 644 | 0.2− | 0.2− | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2005 08 12 | E12 | 0.0 | 0.2+ |
| 2002 10 10 | 644 | 0.2− | 0.1+ | 2005 07 10 | E12 | 0.6− | 0.8+ | 2005 08 12 | E12 | 0.2− | 0.2− |
| 2002 10 11 | 704 | 0.6− | 0.4− | 2005 07 10 | E12 | 0.2− | 0.4+ | 2005 08 24 | E12 | 0.9+ | 1.0− |
| 2002 10 11 | 704 | 0.2+ | 0.5− | 2005 07 10 | E12 | 0.2+ | 0.2+ | 2005 08 24 | E12 | 0.6+ | 0.3+ |
| 2002 10 11 | 704 | 1.6+ | 0.1+ | 2005 07 10 | E12 | 0.8− | 0.6+ | 2005 08 24 | E12 | 0.2+ | 0.3+ |
| 2002 10 11 | 704 | 1.1+ | 0.4− | 2005 07 27 | E12 | 0.5− | 0.1− | 2005 08 24 | E12 | 0.2+ | 0.3− |
| 2002 10 31 | 704 | 0.4− | 0.3+ | 2005 07 27 | E12 | 0.4+ | 0.7− | | | | |

**2002 TT$_{262}$ = 2006 PX$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.51877 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21370857 | $\omega$ | 283.88561 | | +0.63466440 | | +0.77087933 |
| $a$ | 2.7706909 | $\Omega$ | 25.75488 | | −0.65199875 | | +0.57184679 |
| $e$ | 0.0580455 | $i$ | 7.17589 | | −0.41484785 | | +0.28059992 |
| $P$ | 4.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3− | 0.4+ | 2003 12 28 | 704 | 0.3+ | 1.2+ | 2005 04 10 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.1− | 1.2+ | 2003 12 28 | 704 | 0.5+ | 1.5+ | 2005 05 01 | 644 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.0 | 2005 03 10 | G96 | 0.2− | 0.0 | 2005 05 01 | 644 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.5− | 0.4+ | 2005 03 10 | G96 | 0.1− | 0.1− | 2005 05 01 | 644 | 0.1+ | 0.1+ |
| 2002 10 10 | 644 | 0.1− | 0.4− | 2005 03 10 | G96 | 0.4− | 0.0 | 2005 05 10 | 807 | 0.1+ | 0.1+ |
| 2002 10 10 | 644 | 0.4− | 0.5+ | 2005 03 10 | G96 | 0.8+ | 0.3− | 2005 05 11 | 807 | 0.1+ | 0.1+ |
| 2002 10 10 | 644 | 0.2− | 0.5+ | 2005 04 02 | G96 | 0.1− | 0.3− | 2006 08 12 | 644 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 1.0− | 0.0 | 2005 04 02 | G96 | 0.2− | 0.1− | 2006 08 12 | 644 | 0.0 | 0.6+ |
| 2002 10 11 | 704 | 0.2− | 1.0+ | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 08 12 | 644 | 0.1+ | 0.4+ |
| 2002 10 11 | 704 | 0.9+ | 0.1+ | 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 08 19 | 644 | 0.3− | 0.4+ |
| 2003 12 28 | 704 | 0.1− | 1.0+ | 2005 04 10 | 691 | 0.2+ | 0.6+ | 2006 08 19 | 644 | 0.3− | 0.6+ |
| 2003 12 28 | 704 | 0.5+ | 0.4− | 2005 04 10 | 691 | 0.3+ | 0.5+ | 2006 08 19 | 644 | 0.6− | 0.3+ |

**2002 TB$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.42049 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23490879 | $\omega$ | 194.84016 | | +0.45153525 | | −0.87797439 |
| $a$ | 2.6013764 | $\Omega$ | 228.59757 | | +0.83870415 | | +0.47844394 |
| $e$ | 0.1684254 | $i$ | 12.23720 | | +0.30445240 | | −0.01588603 |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.9− | 0.2+ | 2002 11 12 | 704 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2002 10 10 | 704 | 0.6− | 0.3+ | 2002 11 12 | 704 | 0.4− | 0.6− | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2002 10 10 | 704 | 0.8− | 0.2+ | 2002 11 12 | 704 | 1.0+ | 0.6− | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 10 10 | 704 | 0.7+ | 0.9+ | 2002 11 14 | 704 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2002 10 11 | 704 | 0.1+ | 0.7+ | 2002 11 14 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 10 11 | 704 | 0.4+ | 0.6− | 2002 11 14 | 704 | 0.7− | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.5− | 0.2+ | 2002 11 14 | 704 | 0.5− | 0.8− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 0.9− | 0.5+ | 2002 11 14 | 704 | 1.0− | 0.0 | 2006 11 13 | 683 | 0.6+ | 0.4+ |
| 2002 10 30 | 608 | 0.6+ | 0.1+ | 2002 11 23 | 644 | 1.1− | 0.6− | 2006 11 13 | 683 | 0.4+ | 0.6+ |
| 2002 10 30 | 608 | 0.6+ | 0.4− | 2002 11 23 | 644 | 0.7− | 0.1− | 2006 11 13 | 683 | (1.6+ | 0.3+) |
| 2002 10 30 | 608 | 1.0+ | 0.1+ | 2002 11 23 | 644 | 0.1− | 0.6− | 2006 11 14 | 683 | 0.5+ | 0.0 |
| 2002 10 31 | 699 | 0.7− | 0.3+ | 2002 12 01 | 704 | 0.2− | 0.5+ | 2006 11 14 | 683 | 1.1+ | 1.5+ |
| 2002 10 31 | 699 | 0.1− | 0.0 | 2002 12 01 | 704 | 0.5+ | 0.1− | 2006 11 14 | 683 | (3.3− | 0.4+) |
| 2002 10 31 | 699 | 1.0− | 0.5− | 2002 12 01 | 704 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.8− |
| 2002 10 31 | 699 | (1.6− | 0.1−) | 2002 12 01 | 704 | (1.6+ | 0.5−) | 2006 11 14 | 703 | 0.5+ | 0.4− |
| 2002 11 01 | 644 | 0.2− | 0.4+ | 2002 12 01 | 704 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.9− |
| 2002 11 01 | 644 | 0.3− | 0.1− | 2002 12 07 | 704 | (1.5− | 0.2+) | 2006 11 14 | 703 | 1.0− | 0.2− |
| 2002 11 01 | 644 | 0.1− | 0.5+ | 2002 12 07 | 704 | (1.6+ | 0.0 ) | 2006 11 15 | 704 | 0.5− | 0.5− |
| 2002 11 04 | 608 | 0.3+ | 0.2− | 2002 12 07 | 704 | 0.2− | 0.4− | 2006 11 15 | 704 | (2.6− | 0.5−) |
| 2002 11 04 | 608 | 0.5− | 0.4+ | 2002 12 07 | 704 | (2.2+ | 0.6+) | 2006 11 15 | 704 | (1.9− | 0.7+) |
| 2002 11 04 | 608 | 0.1+ | 0.0 | 2002 12 07 | 704 | 1.0+ | 1.3− | 2006 11 15 | 704 | (1.8− | 0.8−) |
| 2002 11 05 | 704 | 0.0 | 0.4− | 2002 12 10 | 644 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.5+ |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2002 12 10 | 644 | 0.3− | 0.4+ | 2006 11 16 | 704 | 0.8− | 0.0 |
| 2002 11 05 | 704 | 0.4+ | 0.6− | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2002 11 05 | 704 | 0.6+ | 1.1− | 2002 12 11 | 704 | 0.3− | 0.5+ | 2006 11 16 | 704 | 1.0− | 0.5+ |
| 2002 11 06 | 704 | 0.1− | 0.5− | 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 2002 11 06 | 704 | 0.7+ | 0.3+ | 2002 12 11 | 704 | 0.5− | 0.5+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2002 11 06 | 704 | 0.5+ | 0.5+ | 2002 12 11 | 704 | 0.0 | 0.8− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2002 11 06 | 704 | 0.4− | 0.4+ | 2003 01 07 | 704 | 0.7− | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 11 10 | 704 | 0.4+ | 0.2− | 2003 01 07 | 704 | 1.2+ | 1.0+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2002 11 10 | 704 | 0.0 | 0.0 | 2003 01 07 | 704 | 1.0+ | 1.3+ | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 11 10 | 704 | 0.5− | 0.2− | 2003 01 07 | 704 | 0.8+ | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.4− |
| 2002 11 11 | 704 | 0.7+ | 0.2− | 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.6+ |
| 2002 11 11 | 704 | 0.3+ | 1.4− | 2006 08 12 | 644 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.5− |
| 2002 11 11 | 704 | 1.4+ | 0.8− | 2006 08 12 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2002 11 11 | 704 | 0.8+ | 0.8− | 2006 09 20 | 699 | 0.3− | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 11 11 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 699 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.6+ | 1.2+ |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.3+ | 1.2+ | 2006 11 19 | 704 | 0.8+ | 0.9− |
| 2002 11 11 | 704 | (3.0+ | 8.3+) | 2006 09 20 | 699 | (1.5+ | 0.3−) | 2006 11 22 | 704 | 0.6− | 1.3+ |
| 2002 11 11 | 704 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.6− | 2006 11 22 | 704 | (2.1− | 0.4+) |
| 2002 11 11 | 704 | 0.5− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.6− | 0.5+ |
| 2002 11 12 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 703 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.6− | 1.0+ |
| 2002 11 12 | 704 | 0.6− | 0.2− | 2006 09 28 | 703 | 0.2− | 0.6− | 2006 11 22 | 704 | 0.9− | 0.8+ |

**2002 TV$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.55189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22920562 | $\omega$ | 348.60956 | | +0.64090120 | | −0.73654356 |
| $a$ | 2.6443517 | $\Omega$ | 61.13056 | | +0.72225442 | | +0.48320715 |
| $e$ | 0.1869674 | $i$ | 14.29414 | | +0.25998885 | | +0.47330163 |
| $P$ | 4.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3+ | 0.5− | 2002 11 28 | 599 | 0.2− | 0.2− | 2006 09 24 | 699 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2002 11 28 | 599 | 0.4+ | 0.4− | 2006 09 24 | 699 | 0.4− | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.1+ | 2002 11 28 | 599 | 0.6+ | 0.5− | 2006 09 24 | 699 | 0.4+ | 0.4+ |
| 2002 10 03 | 704 | 0.5+ | 0.4+ | 2002 12 06 | 704 | 0.4+ | 0.1+ | 2006 10 02 | 703 | 0.1+ | 0.6+ |
| 2002 10 10 | 704 | 0.2− | 0.3+ | 2002 12 06 | 704 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.4− | 1.1− |
| 2002 10 10 | 704 | 0.0 | 1.1+ | 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.8+ | 0.8− |
| 2002 10 10 | 704 | 0.2− | 0.9+ | 2002 12 06 | 704 | 0.3− | 0.2− | 2006 10 02 | 703 | (1.7+ | 1.1−) |
| 2002 10 10 | 704 | 0.3− | 0.6+ | 2002 12 11 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.2+ | 0.3+ | 2002 12 11 | 704 | 0.2+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.4+ | 0.4− | 2002 12 11 | 704 | 0.5− | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 0.1− | 0.9− | 2002 12 11 | 704 | 0.9+ | 1.1+ | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2002 10 11 | 704 | 0.1+ | 0.4− | 2002 12 11 | 704 | 0.6+ | 1.1+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2002 10 29 | 291 | 0.8− | 0.1+ | 2002 12 14 | 704 | (0.6− | 3.9−) | 2006 10 17 | 703 | 0.4+ | 0.3− |
| 2002 10 29 | 291 | 0.8− | 0.0 | 2002 12 14 | 704 | (0.5− | 3.4−) | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2002 10 29 | 291 | 1.2− | 0.0 | 2002 12 14 | 704 | (0.4− | 2.7−) | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.2+ | 0.2+ | 2002 12 14 | 704 | (0.7− | 3.1−) | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.5+ | 0.3+ | 2002 12 15 | 704 | 1.2+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.1+ | 0.6− | 2002 12 15 | 704 | 0.7+ | 0.0 | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 11 06 | 704 | 0.1+ | 0.1− | 2002 12 15 | 704 | 1.1+ | 0.0 | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 11 06 | 704 | 0.3+ | 0.2− | 2002 12 15 | 704 | 0.7+ | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.3+ |
| 2002 11 07 | 704 | 0.6+ | 0.4− | 2003 01 04 | 704 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.3+ | 0.3− |
| 2002 11 07 | 704 | 0.5+ | 0.0 | 2003 01 04 | 704 | 0.6− | 0.1− | 2006 10 28 | 703 | 0.1− | 0.3+ |
| 2002 11 07 | 704 | 0.9+ | 0.8− | 2003 01 04 | 704 | 0.6− | 0.1− | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.6+ | 0.5− | 2003 01 31 | 704 | (1.6+ | 0.3+) | 2006 10 28 | 703 | 0.1− | 0.4+ |
| 2002 11 07 | 704 | 0.1− | 1.3− | 2003 01 31 | 704 | 1.2+ | 0.5+ | 2006 11 10 | 704 | 0.9− | 0.7+ |
| 2002 11 11 | 704 | 0.7+ | 1.3− | 2003 01 31 | 704 | 0.2+ | 1.4− | 2006 11 10 | 704 | 0.2− | 0.8+ |
| 2002 11 11 | 704 | (0.7− | 1.6−) | 2004 04 12 | 703 | 1.1+ | 1.1+ | 2006 11 10 | 704 | 0.7+ | 0.8+ |
| 2002 11 11 | 704 | 0.6+ | 0.9− | 2004 04 12 | 703 | 0.1− | 1.3+ | 2006 11 10 | 704 | 0.0 | 0.4+ |
| 2002 11 11 | 704 | 0.5− | 1.4− | 2004 04 12 | 703 | 0.8− | 0.7+ | 2006 11 10 | 704 | 0.3− | 1.2+ |
| 2002 11 12 | 926 | 0.2− | 0.6− | 2004 04 12 | 703 | 0.8+ | 1.2− | 2006 11 16 | 703 | 0.5− | 0.5− |
| 2002 11 12 | 926 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.0 | 1.0− |
| 2002 11 14 | 704 | 0.4− | 0.9+ | 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.4+ | 0.4− |
| 2002 11 14 | 704 | (1.6− | 0.0 ) | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.2− |
| 2002 11 14 | 704 | 0.2− | 1.2+ | 2006 09 19 | 703 | 0.3− | 0.6− | | | | |
| 2002 11 14 | 704 | 0.6− | 0.8+ | 2006 09 24 | 699 | 0.2+ | 0.0 | | | | |

**2002 TK$_{267}$ = 2006 ST$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.02765 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22682717 | $\omega$ | 111.01213 | | +0.27100218 | | −0.93465808 |
| $a$ | 2.6628048 | $\Omega$ | 320.83546 | | +0.69082987 | | +0.35535723 |
| $e$ | 0.0573131 | $i$ | 21.37261 | | +0.67030733 | | +0.01164091 |
| $P$ | 4.35 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.9− | 0.1− | 2006 08 29 | 699 | 0.1+ | 0.3− | 2006 09 21 | 699 | 0.7+ | 0.4+ |
| 2002 10 10 | 704 | 0.4+ | 0.6+ | 2006 08 29 | 699 | 0.5− | 0.3+ | 2006 09 21 | 699 | 0.4+ | 0.3− |
| 2002 10 10 | 704 | 0.5+ | 0.1− | 2006 09 16 | 703 | 0.4− | 0.2− | 2006 09 28 | 703 | (2.0+ | 0.7−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 703 | (0.2+ | 1.6−) | 2006 09 28 | 703 | 1.1− | 0.0 | | |
| 2002 10 12 | 704 | 0.1+ | 0.5− | 2006 09 16 | 703 | 0.7+ | 0.1− | 2006 09 28 | 703 | 0.5− | 0.7− | | |
| 2002 10 12 | 704 | 0.8− | 0.3− | 2006 09 16 | 703 | 0.7− | 1.0− | 2006 09 28 | 703 | 0.3− | 0.3− | | |
| 2006 08 29 | 699 | 0.7+ | 0.6+ | 2006 09 21 | 699 | 0.2+ | 0.8+ | | | | | | |
| 2006 08 29 | 699 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.4+ | 0.8+ | | | | | | |

**2002 TP$_{267}$ = 2006 SP$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.40400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24365158 | $\omega$ | 35.12342 | | +0.74476919 | | +0.66545090 |
| $a$ | 2.5387693 | $\Omega$ | 283.07918 | | −0.62339105 | | +0.66708484 |
| $e$ | 0.1456628 | $i$ | 2.93881 | | −0.23812277 | | +0.33492224 |
| $P$ | 4.05 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | 0.4− | 0.3+ | 2004 01 30 | 691 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2− | | |
| 2002 10 08 | 699 | 0.6+ | 0.4− | 2004 01 30 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2002 10 08 | 699 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− | | |
| 2002 10 08 | 699 | 0.3− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3− | | |
| 2002 10 12 | 704 | 0.8− | 0.9+ | 2006 09 25 | 691 | 0.8+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.2− | | |
| 2002 10 12 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 291 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.9+ | | |
| 2002 10 12 | 704 | 0.1+ | 1.1+ | 2006 09 28 | 291 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.6+ | | |
| 2002 10 12 | 704 | 0.4− | 0.1+ | 2006 09 28 | 291 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.4+ | 0.1+ | | |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.9+ | | |
| 2002 10 16 | 644 | 0.3− | 0.1+ | 2006 10 03 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.8+ | | |
| 2002 10 16 | 644 | 0.1− | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | (1.8+ | 1.0+) | | |
| 2002 10 31 | 644 | 0.3− | 1.0+ | 2006 10 28 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | 1.1+ | 1.2+ | | |
| 2002 10 31 | 644 | 0.2− | 1.0+ | 2006 10 28 | 691 | 0.0 | 0.4− | 2006 11 19 | 704 | (0.4+ | 1.6+) | | |
| 2002 10 31 | 644 | 0.2+ | 0.9+ | 2006 10 28 | 691 | 0.1+ | 0.3− | | | | | | |
| 2004 01 30 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.3− | | | | | | |

**2002 TZ$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.38929 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28331177 | $\omega$ | 332.71840 | | +0.77477435 | | +0.63186853 |
| $a$ | 2.2959353 | $\Omega$ | 348.01936 | | −0.55943441 | | +0.66923532 |
| $e$ | 0.1501310 | $i$ | 5.97475 | | −0.29454684 | | +0.39098114 |
| $P$ | 3.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.1− | 0.8+ | 2002 10 12 | 704 | 0.1+ | 0.2− | 2006 11 16 | G98 | 0.1− | 0.0 | | |
| 2002 10 03 | 644 | 0.0 | 0.9+ | 2002 10 12 | 704 | 0.2+ | 0.7+ | 2006 11 18 | G98 | 0.6− | 0.0 | | |
| 2002 10 03 | 644 | 0.8+ | 0.0 | 2002 10 12 | 704 | 0.6− | 0.6− | 2006 11 18 | G98 | 0.7+ | 0.3− | | |
| 2002 10 09 | 704 | 0.0 | 0.3− | 2002 10 12 | 704 | 0.0 | 0.9− | 2006 11 18 | G98 | 0.4+ | 0.1+ | | |
| 2002 10 09 | 704 | (1.3− | 1.8+) | 2002 11 05 | 644 | 0.2− | 0.0 | 2006 11 18 | G98 | 0.1− | 0.2− | | |
| 2002 10 09 | 704 | 0.5− | 0.7− | 2002 11 05 | 644 | 0.6+ | 0.2+ | 2006 11 19 | G98 | 0.8+ | 0.4+ | | |
| 2002 10 09 | 704 | 0.4− | 0.0 | 2002 11 05 | 644 | 0.5+ | 0.1− | 2006 11 19 | G98 | 0.4− | 0.2+ | | |
| 2002 10 12 | 704 | 0.4− | 0.1+ | 2006 11 16 | G98 | 0.0 | 0.3+ | 2006 11 19 | G98 | 0.6− | 0.5− | | |

**2002 TG$_{268}$ = 2006 RS$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.70320 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24293181 | $\omega$ | 46.68288 | | +0.67020440 | | −0.74216712 |
| $a$ | 2.5437815 | $\Omega$ | 1.25243 | | +0.62167993 | | +0.55862983 |
| $e$ | 0.2387625 | $i$ | 9.86458 | | +0.40538885 | | +0.37029810 |
| $P$ | 4.06 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.6+ | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2002 10 03 | 644 | 0.8+ | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.7− | | |
| 2002 10 03 | 644 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2002 10 09 | 704 | 1.4− | 1.2+ | 2006 09 17 | 703 | 0.8+ | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.4+ | | |
| 2002 10 09 | 704 | 0.7− | 0.9− | 2006 09 17 | 703 | 0.3+ | 0.6− | 2006 10 17 | 703 | 0.5− | 0.3− | | |
| 2002 10 09 | 704 | 0.4− | 0.2− | 2006 09 17 | 703 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.7− | 2006 09 17 | 703 | 0.6− | 0.9− | 2006 10 19 | 644 | 0.3+ | 0.2− | | |
| 2002 10 09 | 704 | 0.9− | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.1+ | | |
| 2002 10 12 | 704 | 0.7+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2002 10 12 | 704 | (2.6+ | 0.8−) | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2002 10 12 | 704 | 0.6− | 0.7− | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2002 10 12 | 704 | 0.1+ | 0.9− | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 10 30 | 608 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2002 10 30 | 608 | 0.4+ | 0.5+ | 2006 09 29 | 704 | 0.3− | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 2002 10 30 | 608 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2002 11 01 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 1.2− | 1.5+ | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2002 11 01 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 11 01 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1− | | | | | | |

**2002 TG$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.44890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24373248 | $\omega$ | 346.68208 | | +0.89895094 | | +0.43742630 |
| $a$ | 2.5382074 | $\Omega$ | 347.30097 | | −0.39153997 | | +0.77845585 |
| $e$ | 0.1277536 | $i$ | 6.09861 | | −0.19642725 | | +0.45018299 |
| $P$ | 4.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.6+ | 0.3− | 2006 09 15 | H07 | 0.3+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.0 | 2006 09 15 | H07 | (0.0 | 1.6−) | 2006 09 27 | 691 | 0.9− | 0.2+ | | |
| 2002 10 04 | 704 | 0.3+ | 0.1− | 2006 09 16 | H07 | 0.2+ | 0.6− | 2006 09 27 | 691 | 0.2− | 0.1+ | | |
| 2002 10 04 | 644 | 0.0 | 0.1+ | 2006 09 16 | H07 | 0.4+ | 0.3− | 2006 09 29 | 704 | 1.0− | 0.5+ | | |
| 2002 10 04 | 704 | 0.8+ | 0.2+ | 2006 09 16 | H07 | 0.1+ | 0.0 | 2006 09 29 | 704 | (0.2+ | 2.8+) | | |
| 2002 10 04 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | (1.7− | 0.0 ) | | |
| 2002 10 04 | 644 | 0.1− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.9− | | |
| 2002 10 04 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 | | |
| 2002 10 09 | 704 | 0.3− | 0.9− | 2006 09 17 | 703 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.3+ | 0.2− | | |
| 2002 10 09 | 704 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.5+ | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.2− | | |
| 2002 10 09 | 704 | 0.1− | 0.8− | 2006 09 17 | 703 | 0.6− | 0.4− | 2006 10 01 | 704 | 0.5− | 0.7+ | | |
| 2002 10 09 | 704 | 0.4− | 1.1− | 2006 09 17 | 703 | 0.1− | 0.6− | 2006 10 01 | 704 | 0.5+ | 1.4+ | | |
| 2002 10 09 | 704 | 0.1− | 0.6− | 2006 09 18 | 704 | 0.4− | 0.4− | 2006 10 01 | 704 | 1.2+ | 1.0+ | | |
| 2002 10 12 | 704 | (1.6− | 1.7+) | 2006 09 18 | 704 | 0.8− | 0.0 | 2006 10 01 | 704 | (2.8+ | 0.6−) | | |
| 2002 10 12 | 704 | (0.4− | 1.6+) | 2006 09 18 | 704 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.0 | | |
| 2002 10 12 | 704 | (1.8− | 0.5+) | 2006 09 18 | 704 | 1.0− | 0.3− | 2006 10 02 | G96 | 0.0 | 0.1− | | |
| 2002 10 31 | 644 | 0.4− | 0.3+ | 2006 09 19 | 699 | (1.8+ | 0.6+) | 2006 10 02 | G96 | 0.0 | 0.2− | | |
| 2002 10 31 | 644 | 0.2− | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.5− | 2006 10 02 | G96 | 0.2− | 0.1+ | | |
| 2002 10 31 | 644 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.7− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 11 07 | 460 | 0.9+ | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 11 07 | 460 | 0.5− | 0.4− | 2006 09 21 | A50 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 09 21 | A50 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.5+ | | |
| 2004 02 17 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.2− | | |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.5+ | 1.4− | | |
| 2006 07 21 | G96 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.0+ | 0.3+ | | |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.5− | | |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 1.4− | | |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.3− | 0.9+ | 2006 10 22 | G96 | 0.1− | 0.5− | | |
| 2006 08 28 | 703 | 0.7+ | 0.3− | 2006 09 25 | 704 | 0.2− | 1.3+ | 2006 10 22 | G96 | 0.3+ | 0.4− | | |
| 2006 08 28 | 703 | (1.9+ | 1.4+) | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.4− | | |
| 2006 08 28 | 703 | 1.2− | 1.0+ | 2006 09 25 | 704 | 0.1+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2006 09 15 | H07 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.7− | 1.0+ | | | | | | |

**2002 TJ$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.04950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26557650 | $\omega$ | 160.59081 | | +0.77041244 | | −0.63542995 |
| $a$ | 2.3970455 | $\Omega$ | 238.97124 | | +0.57663949 | | +0.72922250 |
| $e$ | 0.1539190 | $i$ | 3.47223 | | +0.27194037 | | +0.25389629 |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.2− | 0.4+ | 2002 10 12 | 704 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.0 | | |
| 2002 09 06 | 704 | 0.1− | 0.5− | 2002 10 12 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.4− | 0.7− | 2002 10 28 | 608 | (1.1− | 1.7−) | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2002 09 06 | 704 | 1.1− | 0.3+ | 2002 10 28 | 608 | 0.3+ | 1.5− | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2002 10 04 | 704 | 0.5+ | 0.3+ | 2002 10 28 | 608 | (0.2− | 1.6−) | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2002 10 04 | 704 | 0.7+ | 0.7+ | 2002 10 30 | 644 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2002 10 04 | 704 | 0.3+ | 0.1− | 2002 10 30 | 644 | 0.7− | 0.2+ | 2006 11 19 | 691 | 0.4− | 0.0 |
| 2002 10 04 | 644 | 0.1− | 0.3+ | 2002 10 30 | 644 | 0.6− | 0.4+ | 2006 11 19 | 691 | 0.4− | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2002 11 01 | 704 | 0.4+ | 0.9− | 2006 11 19 | 691 | 0.7+ | 0.2+ |
| 2002 10 04 | 644 | 0.3− | 0.5+ | 2002 11 01 | 704 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.7+ | 1.1+ |
| 2002 10 04 | 644 | 0.2− | 0.2+ | 2002 11 01 | 704 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2002 11 01 | 704 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2002 10 09 | 704 | 0.3− | 0.8− | 2004 04 24 | 691 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2002 10 09 | 704 | 0.4− | 1.0− | 2004 04 24 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.3− |
| 2002 10 09 | 704 | 0.2− | 0.6− | 2004 04 24 | 691 | 0.5+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2002 10 09 | 704 | 0.0 | 0.7− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.7− |
| 2002 10 09 | 704 | (0.2− | 1.7−) | 2006 09 27 | G96 | 0.1− | 0.9− | 2006 12 01 | 704 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 0.6+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.5− | 2006 12 01 | 704 | 0.2− | 0.4− |
| 2002 10 12 | 704 | 1.2+ | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.4− | | | | |
| 2002 10 12 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 691 | 0.1− | 0.3+ | | | | |

**2002 TH$_{270}$ = 2006 TE$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.35517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25948234 | $\omega$ | 253.18484 | | −0.48028845 | | +0.87686384 |
| $a$ | 2.4344313 | $\Omega$ | 348.04540 | | −0.76164131 | | −0.42870567 |
| $e$ | 0.1021119 | $i$ | 5.76428 | | −0.43500059 | | −0.21753447 |
| $P$ | 3.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 599 | 0.5− | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.6− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2002 10 03 | 599 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2002 10 03 | 599 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2002 10 09 | 704 | (1.2− | 1.6+) | 2006 10 13 | 691 | 0.4+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2002 10 09 | 704 | 0.7− | 0.3+ | 2006 10 13 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2002 10 09 | 704 | 0.4− | 0.9+ | 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 1.1+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2002 10 12 | 704 | 0.5+ | 1.4− | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.5− |
| 2002 10 12 | 704 | 0.3+ | 1.0− | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2006 10 04 | G96 | 0.1+ | 0.7− | 2006 10 21 | 691 | 0.2− | 0.1− | | | | |

**2002 TZ$_{271}$ = 2006 UV$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.56152 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25379474 | $\omega$ | 296.89139 | | +0.42063947 | | +0.90721380 |
| $a$ | 2.4706675 | $\Omega$ | 357.96322 | | −0.77372239 | | +0.35582376 |
| $e$ | 0.1224150 | $i$ | 8.17793 | | −0.47372577 | | +0.22439379 |
| $P$ | 3.88 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.3+ | 1.0− | 2002 10 12 | 704 | 0.2− | 1.0− | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2002 10 04 | 704 | (3.3+ | 0.9+) | 2002 10 12 | 704 | 0.4− | 0.2+ | 2006 10 23 | 400 | 0.4+ | 0.4+ |
| 2002 10 04 | 704 | 0.8− | 1.2+ | 2002 10 12 | 704 | 0.5+ | 0.2+ | 2006 10 23 | 400 | 0.5+ | 0.5− |
| 2002 10 04 | 704 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 10 23 | 400 | 0.5+ | 0.5− |
| 2002 10 09 | 704 | 0.8− | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 10 24 | 400 | 0.6− | 0.8− |
| 2002 10 09 | 704 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 10 24 | 400 | (1.9− | 1.4−) |
| 2002 10 09 | 704 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 01 | 400 | 0.8+ | 0.1+ |
| 2002 10 09 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 01 | 400 | 0.8+ | 0.3+ |
| 2002 10 09 | 704 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 01 | 400 | 0.9− | 0.2+ |
| 2002 10 12 | 704 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.0 | | | | |
| 2002 10 12 | 704 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.2+ | | | | |

**2002 TY$_{272}$ = 2006 SC$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.51282 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24206962 | $\omega$ | 101.97400 | | +0.90792973 | | −0.41490677 |
| $a$ | 2.5498180 | $\Omega$ | 282.56300 | | +0.35701285 | | +0.83971721 |
| $e$ | 0.2643954 | $i$ | 3.48287 | | +0.21955735 | | +0.35032468 |
| $P$ | 4.07 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.2− | 0.4+ | 2002 10 09 | 704 | 0.7− | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.5− | 0.9− | 2002 10 12 | 704 | (1.8+ | 0.1−) | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2002 10 04 | 644 | 0.1+ | 0.5+ | 2002 10 12 | 704 | 0.3+ | 0.4− | 2006 09 25 | 699 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.3+ | 0.3+ | 2002 10 12 | 704 | (1.9+ | 0.3−) | 2006 09 25 | 699 | (1.7− | 0.5+) |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2002 10 12 | 704 | 0.5+ | 0.7− | 2006 09 25 | 699 | 0.4+ | 0.7− |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2006 08 21 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2002 10 04 | 704 | 0.3− | 0.3+ | 2006 08 21 | 691 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2002 10 09 | 704 | 0.2− | 0.4− | 2006 08 21 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.3− |
| 2002 10 09 | 704 | 0.7+ | 0.7+ | 2006 09 19 | 703 | 0.1+ | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.0 | 0.2+ | 2006 09 19 | 703 | (0.6+ | 2.0−) | | | | |

**2002 TZ$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.83604 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23842110 | $\omega$ | 334.97209 | | +0.70604567 | | +0.70632144 |
| $a$ | 2.5757651 | $\Omega$ | 339.81201 | | −0.62227438 | | +0.58436099 |
| $e$ | 0.1629489 | $i$ | 8.51247 | | −0.33804452 | | +0.39954005 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (2.2− | 0.2−) | 2006 08 27 | 699 | 0.3− | 0.5+ | 2006 09 20 | 691 | 0.3+ | 0.0 |
| 2002 09 28 | 608 | (2.5− | 0.3+) | 2006 08 27 | 699 | 0.2+ | 0.8− | 2006 09 20 | 691 | 0.3+ | 0.1− |
| 2002 09 28 | 608 | (2.3− | 0.0 ) | 2006 08 27 | 699 | 0.9+ | 0.5− | 2006 09 20 | 691 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.9− | 0.0 | 2006 09 24 | 106 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.2− | 0.8− | 2006 09 12 | 703 | 0.1− | 0.3− | 2006 09 24 | 106 | 0.3− | 0.3− |
| 2002 10 04 | 704 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.0 | 1.4− | 2006 09 24 | 106 | 0.1+ | 0.3+ |
| 2002 10 04 | 644 | 0.1− | 0.4− | 2006 09 12 | 703 | (1.3− | 2.3−) | 2006 09 24 | 106 | 0.7− | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.7+ | 2006 09 12 | 703 | 0.2− | 1.0− | 2006 09 25 | 704 | 0.4+ | 0.1− |
| 2002 10 04 | 644 | 0.1+ | 0.6− | 2006 09 12 | 703 | 0.9− | 0.7− | 2006 09 25 | 704 | 0.1− | 0.2− |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.1+ | 0.7− | 2006 09 25 | 699 | 0.4− | 0.3+ |
| 2002 10 04 | 644 | 0.1+ | 0.7− | 2006 09 12 | 703 | 1.2− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.6+ |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2006 09 16 | 699 | 0.2− | 1.2+ | 2006 09 25 | 704 | 1.1+ | 0.2+ |
| 2002 10 09 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.2− | 1.1+ |
| 2002 10 09 | 704 | 0.6+ | 0.4+ | 2006 09 16 | 699 | 0.0 | 0.7+ | 2006 09 25 | 704 | 0.6+ | 0.7− |
| 2002 10 09 | 704 | 0.3+ | 0.7− | 2006 09 16 | 699 | 0.3+ | 0.9+ | 2006 09 25 | 699 | 0.3− | 0.7+ |
| 2002 10 12 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 704 | 0.9+ | 0.4− | 2006 09 25 | 699 | 0.1+ | 1.0+ |
| 2002 10 12 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.7− | 0.5+ | 2006 10 20 | 691 | 0.6− | 0.2− |
| 2002 10 12 | 704 | 0.5− | 0.5+ | 2006 09 18 | 704 | 0.8+ | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 1.3+ | 1.1− | 2006 09 18 | 704 | (0.7+ | 1.7−) | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 10 31 | 644 | 0.2− | 0.1+ | 2006 09 18 | 704 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2002 10 31 | 644 | 0.5− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2002 10 31 | 644 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2006 08 27 | 699 | 0.0 | 1.3+ | 2006 09 19 | 703 | (3.4+ | 0.2+) | | | | |

**2002 TC$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.90117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24387406 | $\omega$ | 111.06342 | | +0.99722308 | | −0.00779533 |
| $a$ | 2.5372250 | $\Omega$ | 249.44364 | | −0.02030032 | | +0.92839158 |
| $e$ | 0.1357340 | $i$ | 4.53682 | | +0.07165217 | | +0.37152161 |
| $P$ | 4.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 1.1− | 1.1− | 2002 10 12 | 704 | 0.7+ | 0.9− | 2006 09 19 | 699 | 1.2+ | 0.1+ |
| 1994 10 28 | 691 | 1.7+ | 1.2+ | 2002 10 30 | 644 | 0.0 | 1.2+ | 2006 09 19 | 699 | 0.1− | 0.5+ |
| 1994 10 28 | 691 | 0.5− | 0.4− | 2002 10 30 | 644 | 0.5− | 1.2+ | 2006 09 19 | 699 | 0.8− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.4+ | 0.4+ | 2002 10 30 | 644 | 0.4− | 1.2+ | 2006 09 25 | 704 | 0.6+ | 0.5− | | |
| 2002 09 06 | 704 | 0.1+ | 1.0+ | 2006 08 29 | 699 | (0.8+ | 1.9−) | 2006 09 25 | 704 | 0.4+ | 0.3+ | | |
| 2002 09 06 | 704 | 0.8− | 0.5+ | 2006 08 29 | 699 | 0.0 | 0.8+ | 2006 09 25 | 704 | 0.2− | 0.8− | | |
| 2002 09 28 | 608 | (2.2− | 0.7+) | 2006 08 29 | 699 | 0.5+ | 1.0+ | 2006 09 27 | A13 | 0.1+ | 0.4− | | |
| 2002 09 28 | 608 | 1.4− | 0.1+ | 2006 08 29 | 699 | 0.3− | 0.1+ | 2006 09 27 | A13 | 0.1− | 0.4− | | |
| 2002 09 28 | 608 | (1.8− | 0.1−) | 2006 09 06 | 644 | 0.1− | 0.6− | 2006 09 27 | A13 | 0.3− | 0.3− | | |
| 2002 10 04 | 704 | 0.8− | 0.9+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.4+ | 0.3+ | | |
| 2002 10 04 | 704 | 0.0 | 0.9− | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2002 10 04 | 704 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.8− | 2006 10 10 | 644 | 0.4+ | 0.2+ | | |
| 2002 10 04 | 704 | 0.5− | 0.9+ | 2006 09 16 | 703 | 0.3− | 1.2− | 2006 10 17 | 703 | 0.2+ | 0.2+ | | |
| 2002 10 04 | 644 | 0.1− | 0.6+ | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 10 17 | 703 | 0.7+ | 0.5− | | |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.3− | 1.1− | 2006 10 17 | 703 | 0.1− | 0.8− | | |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.3+ | 0.0 | 2006 10 17 | 703 | (0.6− | 1.8−) | | |
| 2002 10 09 | 704 | 0.3+ | 0.1− | 2006 09 16 | 644 | 0.4+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.3− | | |
| 2002 10 09 | 704 | 0.6− | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.3− | | |
| 2002 10 09 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 704 | 0.7− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.4− | | |
| 2002 10 09 | 704 | 0.4− | 0.7+ | 2006 09 18 | 704 | 0.1+ | 0.6− | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2002 10 12 | 704 | 0.7+ | 0.5− | 2006 09 18 | 704 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2002 10 12 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.0 | 0.6+ | 2006 10 23 | G96 | 0.1+ | 0.4− | | |
| 2002 10 12 | 704 | 0.3+ | 0.2− | 2006 09 18 | 704 | 0.9+ | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.3− | | |
| 2002 10 12 | 704 | 0.1+ | 0.3− | 2006 09 19 | 699 | 1.0− | 0.3− | 2006 10 23 | G96 | 0.0 | 0.5− | | |

### 2002 TS$_{273}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.01931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25497614 | $\omega$ | 170.38756 | | +0.24082944 | −0.96841980 | |
| $a$ | 2.4630299 | $\Omega$ | 265.65634 | | +0.88612439 | +0.24651485 | |
| $e$ | 0.1733971 | $i$ | 3.71061 | | +0.39596053 | +0.03732991 | |
| $P$ | 3.87 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.4− | 0.9− | 2006 10 22 | 644 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.0 | 0.7+ | | |
| 2002 10 09 | 704 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.0 | | |
| 2002 10 09 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 703 | (1.2+ | 2.0−) | 2006 11 16 | 704 | 0.2− | 0.0 | | |
| 2002 10 09 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 1.1+ | 1.0− | 2006 11 16 | 704 | 0.2+ | 1.1+ | | |
| 2002 10 12 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.2− | | |
| 2002 10 12 | 704 | 0.2+ | 0.5+ | 2006 10 27 | 703 | 0.1+ | 1.0− | 2006 11 16 | 704 | 0.4− | 0.0 | | |
| 2002 10 12 | 704 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.1+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.1− | 0.3+ | | |
| 2002 11 08 | 704 | 1.3− | 0.6+ | 2006 11 09 | 644 | 0.6+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.6+ | | |
| 2002 11 08 | 704 | 0.5+ | 1.1− | 2006 11 10 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.1− | | |
| 2002 11 08 | 704 | 0.3− | 0.7− | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.3− | | |
| 2002 11 08 | 704 | 0.0 | 0.6+ | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2002 11 09 | 695 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.1+ | 1.1+ | | |
| 2002 11 09 | 695 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.3+ | | |
| 2002 11 22 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.9− | 2006 11 19 | 704 | 0.5− | 0.7+ | | |
| 2002 11 22 | 644 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.9− | 2006 11 19 | 704 | 0.7− | 0.1− | | |
| 2002 11 22 | 644 | 0.2+ | 0.6+ | 2006 11 14 | G96 | 0.5+ | 0.5− | 2006 11 19 | 704 | 0.6+ | 0.8+ | | |
| 2002 12 10 | 644 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.5− | 2006 11 20 | 704 | 0.3− | 0.2+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 1.1− | 0.8+ | | |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.6− | 2006 11 20 | 704 | 0.6− | 0.0 | | |
| 2006 10 16 | 400 | 1.5− | 0.2+ | 2006 11 15 | 704 | 0.5+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.4− | | |
| 2006 10 16 | 400 | (2.6− | 0.9+) | 2006 11 15 | 704 | 0.4− | 0.3− | 2006 11 22 | 704 | 0.8+ | 0.0 | | |
| 2006 10 17 | 400 | (0.9− | 1.6−) | 2006 11 15 | 704 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.5+ | | |
| 2006 10 17 | 400 | (1.8− | 1.2−) | 2006 11 15 | 704 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.2− | 0.1+ | | |
| 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6− | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.5− | | |

### 2002 TS$_{276}$ = 2006 SW$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.53588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23967077 | $\omega$ | 5.49784 | | +0.99063623 | +0.13619777 | |
| $a$ | 2.5668038 | $\Omega$ | 346.66303 | | −0.12677722 | +0.89187009 | |
| $e$ | 0.1909947 | $i$ | 2.35734 | | −0.05066946 | +0.43129794 | |
| $P$ | 4.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.5− | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2002 10 09 | 704 | 0.5− | 0.3− | 2006 09 17 | 704 | 0.4+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2002 10 09 | 704 | 0.4− | 0.1+ | 2006 09 17 | 704 | 1.3+ | 1.1+ | 2006 10 17 | 703 | 0.3− | 0.6− | | |
| 2002 10 09 | 704 | 0.5− | 0.5− | 2006 09 17 | 704 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.1− | | |
| 2002 10 12 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.2− | | |
| 2002 10 12 | 704 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.1− | | |
| 2002 10 12 | 704 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.5− | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.2+ | | |
| 2002 10 12 | 704 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 31 | 644 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2002 10 31 | 644 | 0.5− | 0.3− | 2006 09 17 | 703 | 0.4+ | 0.6− | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2002 10 31 | 644 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.2− | | |
| 2002 11 04 | 608 | 0.1+ | 1.4+ | 2006 09 17 | 703 | 1.1− | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2002 11 04 | 608 | 0.4+ | 1.4+ | 2006 09 19 | 699 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2002 11 04 | 608 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2002 11 05 | 704 | 0.6+ | 0.2− | 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1− | | |
| 2002 11 05 | 704 | 0.1− | 0.5− | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 11 05 | 704 | 0.3− | 0.7− | 2006 09 27 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2002 11 05 | 704 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.7− | 0.7+ | 2006 10 22 | G96 | 0.3+ | 0.2− | | |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.2− | | |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 09 29 | 704 | 1.1+ | 0.3− | 2006 10 22 | G96 | 0.6+ | 0.2− | | |
| 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− | | |
| 2006 07 21 | G96 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.4− | 2006 10 23 | 704 | (1.1+ | 1.8+) | | |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.4− | 2006 10 23 | 704 | (1.0− | 3.5+) | | |
| 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.6− | 2006 10 23 | 704 | (1.2− | 3.4+) | | |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.5+ | 0.7− | 2006 10 31 | G96 | 0.3+ | 0.6− | | |
| 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.7− | | |
| 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.7− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.4− | | |
| 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1− | | | | | | |

### 2002 TL$_{277}$ = 2006 SK$_{279}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.25632 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24471320 | $\omega$ | 172.82850 | | +0.90511128 | −0.40288026 | |
| $a$ | 2.5314214 | $\Omega$ | 212.03383 | | +0.37626486 | +0.90779944 | |
| $e$ | 0.1400083 | $i$ | 14.84224 | | +0.19798568 | +0.11656620 | |
| $P$ | 4.03 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.6+ | 0.2− | 2006 09 24 | 152 | 0.1− | 1.0+ | 2006 09 30 | 703 | 0.1− | 0.2+ | | |
| 2002 10 10 | 644 | 0.1+ | 0.1+ | 2006 09 24 | 152 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.6+ | | |
| 2002 10 10 | 644 | 0.2− | 0.3− | 2006 09 24 | 152 | (3.0− | 1.9−) | 2006 10 17 | 703 | 0.1− | 0.3+ | | |
| 2002 10 12 | 704 | 0.3+ | 0.3− | 2006 09 24 | 152 | 0.3− | 0.6− | 2006 10 17 | 703 | 0.3+ | 0.2+ | | |
| 2002 10 12 | 704 | (0.3− | 1.8−) | 2006 09 25 | 152 | 0.4− | 1.2− | 2006 10 17 | 703 | 0.2+ | 0.1+ | | |
| 2002 10 12 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 152 | (1.8− | 0.6−) | 2006 10 17 | 703 | (1.6− | 0.1−) | | |
| 2002 10 12 | 704 | (2.4+ | 1.0−) | 2006 09 25 | 152 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2002 10 31 | 699 | 0.5− | 0.5+ | 2006 09 26 | 152 | (0.9+ | 1.6−) | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 10 31 | 699 | (0.7− | 2.2−) | 2006 09 26 | 152 | 0.5+ | 0.6− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 10 31 | 699 | 0.3+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.3− | 0.1− | | |
| 2002 10 31 | 699 | 0.9− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1− | | |
| 2006 09 23 | 152 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.4− | | |
| 2006 09 23 | 152 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.5+ | | | | | | |
| 2006 09 23 | 152 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.0 | | | | | | |

### 2002 TE$_{278}$ = 2006 SC$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.02742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23905299 | $\omega$ | 65.33189 | | +0.85621679 | −0.51073203 | |
| $a$ | 2.5712241 | $\Omega$ | 325.23269 | | +0.41086383 | +0.76442954 | |
| $e$ | 0.2101230 | $i$ | 7.83675 | | +0.31318321 | +0.39344666 | |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.1+ | 2006 10 21 | 246 | 0.4− | 0.4− |
| 2002 10 05 | 704 | 0.0 | 0.6− | 2006 09 17 | 703 | 0.3+ | 0.5+ | 2006 10 21 | 246 | 1.0+ | 0.6+ |
| 2002 10 05 | 704 | 0.1− | 0.5− | 2006 09 19 | 699 | 0.4− | 0.5+ | 2006 10 21 | 246 | 0.2− | 0.4− |
| 2002 10 05 | 704 | 0.1− | 0.9− | 2006 09 19 | 699 | 0.9− | 0.5+ | 2006 10 21 | 246 | 0.8+ | 0.4+ |
| 2002 10 05 | 704 | 0.3− | 0.6− | 2006 09 19 | 699 | 0.7+ | 0.2− | 2006 10 21 | 246 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.4+ | 1.5+ | 2006 09 19 | 699 | (0.6− | 1.7+) | 2006 10 21 | 246 | 0.0 | 0.1+ |
| 2002 10 10 | 704 | 0.6+ | 1.3+ | 2006 10 01 | 703 | (1.3− | 2.1−) | 2006 10 22 | 715 | 0.2− | 0.3− |
| 2002 10 10 | 704 | (0.3− | 2.6+) | 2006 10 01 | 703 | 0.6− | 0.2− | 2006 10 22 | 291 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.3− | 0.8+ | 2006 10 01 | 703 | 0.6− | 0.2+ | 2006 10 22 | 291 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 0.9− | 0.2+ | 2006 10 01 | 703 | 0.5+ | 0.6+ | 2006 10 22 | 715 | 0.2+ | 0.4− |
| 2002 10 12 | 704 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 10 22 | 291 | 0.1+ | 0.0 |
| 2006 08 29 | 703 | 1.4− | 1.3− | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 10 22 | 715 | 0.0 | 0.5− |
| 2006 08 29 | 703 | 0.9+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2006 08 29 | 703 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2006 08 29 | 703 | 1.0− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2006 09 16 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2006 09 16 | 644 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2006 09 16 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.2+ | 0.2− |
| 2006 09 17 | 703 | 1.1− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.1+ | | | | |
| 2006 09 17 | 703 | 0.1+ | 0.4+ | 2006 10 21 | 246 | 0.6+ | 0.0 | | | | |

### 2002 TH$_{278}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.76946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27686892 | $\omega$ | 87.33605 | | +0.93200234 | −0.35489776 | |
| $a$ | 2.3314167 | $\Omega$ | 293.44270 | | +0.29242806 | +0.85626841 | |
| $e$ | 0.2267941 | $i$ | 4.60227 | | +0.21414358 | +0.37530252 | |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 21 | 644 | 0.1− | 0.6+ | 2002 11 06 | 704 | 0.4− | 0.4+ | 2002 12 11 | 704 | 0.4− | 1.1+ |
| 2002 09 21 | 644 | 0.4− | 0.5+ | 2002 11 06 | 704 | 0.4+ | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.4+ |
| 2002 09 21 | 644 | 0.3− | 0.5+ | 2002 11 06 | 704 | 0.3+ | 0.1+ | 2002 12 11 | 704 | 0.4− | 0.2+ |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2002 11 06 | 704 | 0.2+ | 0.4+ | 2003 01 05 | 704 | 0.3− | 0.4+ |
| 2002 10 05 | 704 | 0.1− | 0.2− | 2002 11 13 | 644 | 0.1+ | 0.3+ | 2003 01 05 | 704 | 0.4− | 0.3+ |
| 2002 10 05 | 704 | 0.1+ | 0.1− | 2002 11 13 | 644 | 0.3− | 0.5+ | 2003 01 05 | 704 | 0.1− | 1.3+ |
| 2002 10 05 | 704 | 0.2− | 0.2− | 2002 11 13 | 644 | 0.0 | 0.2+ | 2004 03 16 | 691 | 0.4+ | 0.2+ |
| 2002 10 05 | 704 | 0.1+ | 0.1− | 2002 11 14 | 704 | 0.3+ | 0.0 | 2004 03 16 | 691 | 0.1+ | 0.3+ |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2002 11 14 | 704 | 0.2+ | 0.3+ | 2004 03 16 | 691 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.2− | 0.4+ | 2002 11 14 | 704 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2002 10 10 | 704 | 0.2+ | 1.0− | 2002 11 14 | 704 | 0.4+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.7+ | 0.3− | 2002 11 14 | 704 | 1.0+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2002 10 10 | 704 | 0.3+ | 0.0 | 2002 12 01 | 704 | 0.2+ | 0.7− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2002 10 12 | 704 | 0.6− | 0.2+ | 2002 12 01 | 704 | 0.6− | 1.0− | 2006 11 16 | G96 | 0.6− | 0.6− |
| 2002 10 12 | 704 | 0.2+ | 0.3− | 2002 12 01 | 704 | 0.5− | 0.4− | 2006 11 16 | G96 | 0.4− | 0.6− |
| 2002 10 12 | 704 | 0.3− | 0.4− | 2002 12 01 | 704 | 0.3− | 0.8− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2002 10 12 | 704 | 0.1− | 0.3− | 2002 12 01 | 704 | 0.5+ | 1.2− | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2002 10 12 | 704 | 0.1− | 0.3− | 2002 12 06 | 704 | 0.9− | 0.2− | 2006 11 28 | G96 | 0.5− | 0.2− |
| 2002 11 01 | 644 | 0.1− | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 11 28 | G96 | 0.6+ | 0.2− |
| 2002 11 01 | 644 | 0.0 | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.7+ | 2006 11 28 | G96 | 0.6+ | 0.1+ |
| 2002 11 01 | 644 | 0.2− | 0.3− | 2002 12 06 | 704 | 0.3+ | 0.6+ | 2006 11 28 | G96 | 0.3− | 0.2− |
| 2002 11 06 | 704 | 0.1+ | 0.6+ | 2002 12 11 | 704 | 0.5− | 0.4+ | | | | |

### 2002 TT$_{278}$ = 2006 VS$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.86295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25237942 | $\omega$ | 224.84948 | | −0.44309575 | −0.88976477 | |
| $a$ | 2.4798957 | $\Omega$ | 251.73782 | | +0.85144970 | −0.37947765 | |
| $e$ | 0.2054388 | $i$ | 6.61987 | | +0.28053441 | −0.25360474 | |
| $P$ | 3.91 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.6+ | 0.8− | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2002 10 04 | 704 | 0.4+ | 1.0− | 2006 10 22 | 644 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.7− |
| 2002 10 04 | 704 | 1.0+ | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2002 10 04 | 704 | (2.5+ | 1.2−) | 2006 11 08 | 644 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2002 10 10 | 704 | 0.4− | 1.0− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2002 10 10 | 704 | 0.5− | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.4− |
| 2002 10 10 | 704 | 0.1− | 0.6+ | 2006 11 14 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.1− | 0.4− |
| 2002 10 12 | 704 | 1.4− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.6− | 0.3+ |
| 2002 10 12 | 704 | 0.4− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.3− | 2006 11 22 | 704 | (0.8+ | 2.2+) |
| 2002 10 12 | 704 | 1.1− | 0.4+ | 2006 11 14 | G96 | 0.5+ | 0.4− | 2006 11 22 | 704 | 0.7− | 0.9+ |
| 2002 10 31 | 644 | 0.3+ | 0.8+ | 2006 11 16 | 704 | 0.4+ | 0.7+ | 2006 11 22 | 704 | 0.0 | 0.7− |
| 2002 10 31 | 644 | 0.7+ | 1.1+ | 2006 11 16 | 704 | 0.2+ | 0.8+ | 2006 11 29 | 704 | 0.4− | 0.3− |
| 2002 10 31 | 644 | 0.4+ | 0.8+ | 2006 11 16 | 704 | 0.1− | 0.7+ | 2006 11 29 | 704 | 0.7− | 0.7− |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.4+ | 1.3+ | 2006 11 29 | 704 | 0.4+ | 0.0 |
| 2006 10 04 | G96 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.3− | 0.9+ | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.3+ | 0.7+ |
| 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.4+ | 0.4− | | | | |

### 2002 TP$_{279}$ = 2006 RH$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.99919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24005964 | $\omega$ | 352.19586 | | +0.99324832 | +0.11586788 | |
| $a$ | 2.5640311 | $\Omega$ | 1.19569 | | −0.08612709 | +0.76940021 | |
| $e$ | 0.1543941 | $i$ | 15.83166 | | −0.07771678 | +0.62817032 | |
| $P$ | 4.11 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.1+ | 0.6− | 2006 09 18 | 699 | (1.6+ | 1.7+) | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 2002 10 05 | 704 | 0.5− | 0.8− | 2006 09 23 | 104 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 10 05 | 704 | 0.7+ | 0.2− | 2006 09 23 | 104 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.0 | 0.9− | 2006 09 23 | 104 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | 1.4+ | 0.6+ | 2006 09 24 | 104 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.9+ | 0.2+ |
| 2002 10 10 | 704 | 0.4+ | 0.7+ | 2006 09 24 | 104 | 0.6+ | 0.5− | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2002 10 10 | 704 | 0.4− | 0.2+ | 2006 09 24 | 104 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2002 10 10 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 704 | 1.0+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.5− | 0.3+ | 2006 10 19 | 683 | 1.0− | 0.9− |
| 2002 10 12 | 704 | 0.8− | 0.1− | 2006 09 25 | 704 | 0.3+ | 1.0+ | 2006 10 19 | 683 | (0.8− | 1.7−) |
| 2002 10 12 | 704 | 0.4− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 19 | 683 | (2.0+ | 0.2−) |
| 2002 10 12 | 704 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 20 | 683 | (0.1− | 2.7−) |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 20 | 683 | 0.1− | 1.4− |
| 2006 09 14 | 703 | 0.2+ | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.6− | 0.1− |
| 2006 09 14 | 703 | 0.2+ | 0.9− | 2006 09 29 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2006 09 14 | 703 | 0.7− | 0.5− | 2006 09 29 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2006 09 17 | 703 | 0.0 | 1.0+ | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 09 17 | 703 | 0.6+ | 0.7− | 2006 09 30 | 703 | 0.2− | 1.0− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2006 09 17 | 703 | 1.0+ | 1.2+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2006 09 17 | 703 | 0.6+ | 0.9+ | 2006 09 30 | 703 | 0.4+ | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 09 18 | 704 | 0.7− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 18 | 704 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2006 09 18 | 704 | 1.1− | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2006 09 18 | 704 | 0.5+ | 1.3− | 2006 10 02 | G96 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.4+ |
| 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.2− | 0.2+ |

### 2002 TM$_{281}$ = 2006 SH$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.80227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23851617 | $\omega$ | 17.94751 | | +0.88919226 | −0.45585652 | |
| $a$ | 2.5750806 | $\Omega$ | 9.46242 | | +0.38516546 | +0.69963130 | |
| $e$ | 0.2890482 | $i$ | 13.77317 | | +0.24695080 | +0.55019167 | |
| $P$ | 4.13 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.5+ | 1.3+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 2002 10 04 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 704 | 0.8+ | 0.9+ | 2006 09 30 | 703 | (0.6− | 2.1+) |
| 2002 10 04 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.5− | 2006 09 30 | 704 | 0.5+ | 0.2+ |
| 2002 10 04 | 704 | 0.7+ | 0.5+ | 2006 09 18 | 703 | 0.7− | 0.3− | 2006 09 30 | 703 | 1.0+ | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3− | 0.6+ | 2006 09 18 | 703 | 1.2− | 1.5− | 2006 09 30 | 704 | 0.6+ | 0.9+ |
| 2002 10 10 | 704 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.8− | 2006 09 30 | 703 | 0.1− | 0.7− |
| 2002 10 10 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.4− | 0.6− | 2006 09 30 | 704 | 0.0 | 0.2− |
| 2002 10 10 | 704 | 0.4+ | 0.4− | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2002 10 10 | 704 | 1.0− | 0.9− | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2002 10 10 | 704 | 0.1+ | 0.0 | 2006 09 19 | 704 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2002 10 12 | 704 | 1.4− | 0.5+ | 2006 09 19 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2002 10 12 | 704 | 0.4− | 1.1− | 2006 09 19 | 704 | 1.1+ | 0.6− | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.2+ | 1.1− | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2002 10 12 | 704 | 0.5− | 0.1− | 2006 09 19 | 704 | 0.7− | 1.2− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2002 10 12 | 704 | 0.5+ | 0.2+ | 2006 09 22 | 704 | 0.1− | 0.5− | 2006 10 16 | G96 | 0.2− | 0.6− |
| 2002 11 07 | 704 | 0.6− | 0.6− | 2006 09 22 | 704 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2002 11 07 | 704 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2002 11 14 | 644 | 0.1− | 0.7+ | 2006 09 22 | 704 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.4− |
| 2002 11 14 | 644 | 0.1− | 0.4− | 2006 09 26 | 704 | 0.1− | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 11 14 | 644 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.9− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2002 11 14 | 644 | 0.2− | 0.4− | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.7+ |
| 2002 11 14 | 644 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.3+ | 0.9+ | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2002 11 14 | 644 | 0.3+ | 0.2− | 2006 09 26 | 704 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2002 11 15 | 704 | 0.1+ | 0.7+ | 2006 09 28 | 704 | 0.5− | 0.9+ | 2006 10 22 | 703 | 0.6− | 0.5− |
| 2002 11 15 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.3+ |
| 2002 11 15 | 704 | 0.5+ | 0.5− | 2006 09 28 | 704 | 0.3− | 0.5− | 2006 11 11 | 703 | 0.5+ | 1.2+ |
| 2002 11 15 | 704 | 1.3+ | 0.3− | 2006 09 28 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2006 08 28 | 699 | 0.4+ | 0.5+ | 2006 09 28 | 704 | 0.5− | 0.1− | 2006 11 11 | 703 | (0.2− | 2.0+) |
| 2006 08 28 | 699 | 0.5+ | 0.2+ | 2006 09 28 | 704 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.1+ | 1.0+ |
| 2006 08 28 | 699 | 0.4− | 0.4+ | 2006 09 28 | 704 | 0.2+ | 1.0+ | 2006 11 13 | 703 | 0.8+ | 0.2+ |
| 2006 08 28 | 699 | (1.2+ | 2.0−) | 2006 09 28 | 704 | 0.9+ | 0.1− | 2006 11 13 | 703 | 0.5+ | 1.2− |
| 2006 09 16 | 704 | 0.4− | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.3+ |
| 2006 09 16 | 704 | 0.2− | 1.2+ | 2006 09 30 | 704 | 1.5+ | 0.1+ | | | | |

### 2002 TQ$_{281}$ = 2006 SW$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.12086 | | (2000.0) | | | |
| $n$ | 0.22868400 | $\omega$ | 102.82000 | | +0.98254060 | −0.04265299 |
| $a$ | 2.6483712 | $\Omega$ | 259.83840 | | −0.02611025 | +0.93212000 |
| $e$ | 0.1274242 | $i$ | 10.60161 | | +0.18420700 | +0.35962901 |
| $P$ | 4.31 | $H$ | 16.1 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2002 11 06 | 704 | 0.7− | 0.5− | 2006 08 29 | 699 | 0.4− | 0.9− |
| 2002 10 05 | 704 | 0.1− | 0.6+ | 2002 11 06 | 704 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.1− | 0.3+ |
| 2002 10 05 | 704 | 0.6− | 0.4+ | 2002 11 13 | 644 | 0.0 | 0.2− | 2006 09 16 | 644 | 0.4− | 0.2+ |
| 2002 10 05 | 704 | 0.6− | 0.1− | 2002 11 13 | 644 | 0.2+ | 0.5− | 2006 09 16 | 644 | 0.3− | 0.5+ |
| 2002 10 10 | 704 | 0.4− | 0.3− | 2002 11 13 | 644 | 0.4− | 0.0 | 2006 09 17 | 683 | 1.1− | 0.6+ |
| 2002 10 10 | 704 | 0.6− | 0.7− | 2002 11 24 | 644 | 0.3+ | 0.2− | 2006 09 17 | 683 | 0.7+ | 0.5+ |
| 2002 10 10 | 704 | 0.3+ | 0.4+ | 2002 11 24 | 644 | 0.4+ | 0.2− | 2006 09 17 | 683 | 0.3− | 1.0− |
| 2002 10 10 | 704 | 0.4+ | 0.0 | 2002 11 24 | 644 | 0.2+ | 0.2− | 2006 09 21 | 699 | (2.0− | 2.5+) |
| 2002 10 12 | 704 | (0.8+ | 2.0−) | 2002 12 06 | 704 | 0.2+ | 0.4+ | 2006 09 21 | 699 | 1.1+ | 0.5− |
| 2002 10 12 | 704 | 0.5− | 0.3+ | 2002 12 06 | 704 | (0.3+ | 1.7+) | 2006 09 21 | 699 | 1.3+ | 0.2+ |
| 2002 10 12 | 704 | 1.5+ | 0.9− | 2002 12 06 | 704 | 0.1− | 1.2+ | 2006 09 21 | 699 | (2.3+ | 1.0+) |
| 2002 10 12 | 704 | (3.4+ | 0.8−) | 2002 12 06 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 703 | 0.6− | 0.5− |
| 2002 11 06 | 704 | 1.1− | 0.9+ | 2006 08 29 | 699 | 0.0 | 0.7+ | 2006 09 27 | 703 | 0.6− | 0.4+ |
| 2002 11 06 | 704 | 1.1+ | 0.8− | 2006 08 29 | 699 | 1.2+ | 0.4+ | 2006 09 27 | 703 | (0.4+ | 1.7−) |
| 2002 11 06 | 704 | (1.4− | 2.1−) | 2006 08 29 | 699 | 0.5− | 0.1− | 2006 09 27 | 703 | 0.2− | 0.9− |

### 2002 TS$_{281}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.85709 | | (2000.0) | | | |
| $n$ | 0.24173688 | $\omega$ | 90.60469 | | +0.76432180 | −0.64232033 |
| $a$ | 2.5521573 | $\Omega$ | 309.36202 | | +0.55849141 | +0.70350010 |
| $e$ | 0.1902395 | $i$ | 4.21993 | | +0.32233449 | +0.30415819 |
| $P$ | 4.08 | $H$ | 16.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.9− | 0.4+ | 2002 11 12 | 704 | 0.1− | 0.8+ | 2006 09 20 | 699 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.2− | 1.0+ | 2002 11 12 | 704 | 1.3− | 0.2− | 2006 09 20 | 699 | 1.2+ | 0.1− |
| 2002 09 06 | 704 | 0.4+ | 0.3− | 2002 11 13 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2002 10 10 | 704 | 0.9− | 0.9+ | 2002 11 13 | 644 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.5+ |
| 2002 10 10 | 704 | 1.4− | 0.3+ | 2002 11 13 | 644 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2002 10 10 | 704 | 1.2− | 0.4− | 2002 11 14 | 704 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.2+ | 0.8− |
| 2002 10 12 | 704 | 0.2− | 0.0 | 2002 11 14 | 704 | 0.7− | 0.4− | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 2002 10 12 | 704 | 0.3+ | 0.1− | 2002 11 14 | 704 | 0.3+ | 0.5− | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 0.0 | 0.3+ | 2002 11 14 | 704 | 0.0 | 1.0− | 2006 09 30 | 703 | 0.1+ | 0.7− |
| 2002 10 12 | 704 | 0.1+ | 0.0 | 2002 11 24 | 644 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.5− | 0.0 |
| 2002 11 05 | 704 | 0.8+ | 0.1− | 2002 11 24 | 644 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2002 11 05 | 704 | 0.0 | 0.6− | 2002 11 24 | 644 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.2+ | 0.7− | 2002 12 02 | 704 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 11 05 | 704 | 0.3+ | 0.6− | 2002 12 02 | 704 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.1− | 0.2− | 2002 12 02 | 704 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | (1.7+ | 0.0 ) | 2002 12 06 | 704 | 0.6− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.2− |
| 2002 11 06 | 704 | 0.9+ | 0.4− | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2− |
| 2002 11 06 | 704 | 1.1+ | 0.9+ | 2002 12 06 | 704 | 0.4− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2002 11 06 | 699 | 0.0 | 0.3+ | 2002 12 06 | 704 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2002 11 06 | 704 | 0.5+ | 0.0 | 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.6− |
| 2002 11 06 | 699 | 0.0 | 0.1+ | 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | (2.0− | 0.1−) |
| 2002 11 06 | 704 | 1.1+ | 0.1− | 2004 03 16 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.6+ |
| 2002 11 06 | 699 | 0.6− | 0.0 | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2002 11 06 | 699 | 0.6+ | 0.1− | 2006 09 20 | 699 | 1.0+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 699 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 |

### 2002 TU$_{281}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 204.48063 | | (2000.0) | | | |
| $n$ | 0.12576177 | $\omega$ | 107.90956 | | +0.97391655 | +0.17382069 |
| $a$ | 3.9455143 | $\Omega$ | 242.29676 | | −0.21287263 | +0.92247026 |
| $e$ | 0.3160154 | $i$ | 9.48193 | | +0.07856079 | +0.34472451 |
| $P$ | 7.84 | $H$ | 13.1 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 02 | 608 | 0.2− | 0.3+ | 2002 11 04 | 699 | 0.0 | 0.2+ | 2002 12 01 | 704 | 0.3− | 0.1− |
| 2001 06 02 | 608 | 0.3− | 0.3+ | 2002 11 04 | 699 | 0.3+ | 0.2− | 2002 12 06 | 704 | 0.4+ | 0.8+ |
| 2001 06 02 | 608 | 0.1+ | 0.8+ | 2002 11 04 | 699 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.2+ | 0.3+ |
| 2002 08 30 | 704 | 0.1+ | 0.0 | 2002 11 05 | 704 | 0.5− | 0.3− | 2002 12 06 | 704 | 0.1+ | 0.1+ |
| 2002 08 30 | 704 | 0.6+ | 0.2− | 2002 11 05 | 704 | 0.0 | 0.4− | 2002 12 06 | 704 | 0.2+ | 0.1− |
| 2002 08 30 | 704 | 0.9+ | 0.1− | 2002 11 05 | 704 | 0.0 | 0.5− | 2002 12 06 | 704 | 0.3− | 0.9− |
| 2002 08 30 | 704 | 1.0+ | 0.5+ | 2002 11 05 | 704 | 0.3− | 0.1+ | 2002 12 11 | 704 | 0.0 | 0.3+ |
| 2002 10 04 | 704 | 0.5− | 0.2+ | 2002 11 05 | 704 | 0.4− | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.4− | 0.4+ | 2002 11 06 | 608 | 0.2− | 1.0− | 2002 12 11 | 704 | 1.1+ | 0.2− |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2002 11 06 | 608 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.4+ | 0.4− |
| 2002 10 04 | 704 | 0.7− | 0.4+ | 2002 11 06 | 608 | 0.1− | 0.6− | 2002 12 11 | 704 | 0.1− | 1.0− |
| 2002 10 04 | 704 | 0.9− | 0.4+ | 2002 11 08 | 704 | 0.1+ | 0.3− | 2002 12 19 | 644 | 0.1− | 0.2+ |
| 2002 10 04 | 699 | 0.3− | 0.6+ | 2002 11 08 | 704 | 0.0 | 0.3− | 2002 12 19 | 644 | 0.0 | 0.0 |
| 2002 10 04 | 699 | 0.0 | 0.0 | 2002 11 08 | 704 | 0.1− | 0.2− | 2002 12 19 | 644 | 0.4− | 0.1− |
| 2002 10 04 | 699 | 0.1+ | 0.5+ | 2002 11 08 | 704 | 0.6+ | 0.3− | 2002 12 31 | 704 | 0.4− | 0.8+ |
| 2002 10 04 | 699 | 0.4− | 0.4+ | 2002 11 08 | 704 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.3− | 0.8+ |
| 2002 10 10 | 704 | 0.1+ | 0.4+ | 2002 11 12 | 704 | 0.3+ | 0.6− | 2002 12 31 | 704 | 0.2− | 0.4+ |
| 2002 10 10 | 704 | 0.1− | 0.6+ | 2002 11 12 | 704 | 0.2+ | 0.5− | 2002 12 31 | 704 | 0.2+ | 1.2+ |
| 2002 10 10 | 704 | 0.1− | 0.0 | 2002 11 12 | 704 | 0.2+ | 0.8− | 2002 12 31 | 704 | 0.1− | 0.9+ |
| 2002 10 10 | 704 | 0.2+ | 0.5+ | 2002 11 12 | 704 | 0.0 | 0.4− | 2003 01 04 | 704 | 0.5− | 0.3+ |
| 2002 10 10 | 704 | 0.3− | 0.3+ | 2002 11 12 | 704 | 0.1− | 1.2− | 2003 01 04 | 704 | 0.5− | 0.5+ |
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2002 11 13 | 644 | 0.1+ | 0.1− | 2003 01 04 | 704 | 0.9− | 0.2+ |
| 2002 10 12 | 704 | 0.7+ | 0.4+ | 2002 11 13 | 644 | 0.1+ | 0.0 | 2003 01 04 | 704 | 0.7− | 0.2+ |
| 2002 10 12 | 704 | 0.4+ | 0.3− | 2002 11 13 | 644 | 0.1− | 0.1+ | 2003 01 04 | 704 | 0.9− | 0.1+ |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2002 11 14 | 704 | 0.3+ | 0.1− | 2003 01 31 | 704 | 0.7− | 0.7− |
| 2002 10 12 | 704 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.1+ | 0.1− | 2003 01 31 | 704 | 0.2+ | 0.1− |
| 2002 10 15 | 644 | 0.2− | 0.8− | 2002 11 14 | 704 | 0.0 | 0.5− | 2003 01 31 | 704 | 0.7+ | 1.3+ |
| 2002 10 15 | 644 | 0.3− | 0.6− | 2002 11 14 | 704 | 0.1− | 0.4− | 2003 02 19 | 699 | 0.4+ | 0.8+ |
| 2002 10 15 | 644 | 0.3− | 0.6− | 2002 11 14 | 704 | 0.4− | 0.4− | 2003 02 19 | 699 | 0.4+ | 0.2+ |
| 2002 10 26 | 608 | 0.1+ | 0.2− | 2002 11 23 | 644 | 0.1− | 0.1+ | 2003 02 19 | 699 | 0.5− | 0.4+ |
| 2002 10 26 | 608 | 0.3+ | 0.1− | 2002 11 23 | 644 | 0.4− | 0.0 | 2003 02 19 | 699 | 1.0+ | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 26 | 608 | 0.0 | 0.3− | 2002 11 23 | 644 | 0.3− | 0.1+ | 2003 12 22 | 704 | 0.6− | 0.2− |
| 2002 11 01 | 644 | 0.2− | 0.0 | 2002 12 01 | 704 | 0.7+ | 0.4+ | 2003 12 22 | 704 | 0.5+ | 0.4+ |
| 2002 11 01 | 644 | 0.3− | 0.0 | 2002 12 01 | 704 | 0.6+ | 0.1+ | 2003 12 22 | 704 | 0.0 | 0.6− |
| 2002 11 01 | 644 | 0.2− | 0.1+ | 2002 12 01 | 704 | 1.3+ | 0.2− | 2003 12 22 | 704 | 0.3+ | 0.7+ |
| 2002 11 04 | 699 | 0.1− | 0.2+ | 2002 12 01 | 704 | 0.7+ | 0.4+ | | | | |

**2002 TE$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.25716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28540102 | $\omega$ | 116.53211 | | +0.63719795 | −0.76591183 | |
| $a$ | 2.2847167 | $\Omega$ | 293.61652 | | +0.66959784 | +0.60527675 | |
| $e$ | 0.2343274 | $i$ | 5.37182 | | +0.38159862 | +0.21683896 | |
| $P$ | 3.45 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 31 | 104 | 0.1− | 0.3− | 2002 11 11 | 699 | 0.2− | 0.1− | 2002 12 02 | 704 | 0.4+ | 0.6+ |
| 1995 10 31 | 104 | 0.2+ | 0.4− | 2002 11 11 | 699 | 0.2+ | 0.4− | 2002 12 02 | 704 | 0.3+ | 1.0+ |
| 1995 10 31 | 104 | 0.4+ | 0.4− | 2002 11 11 | 699 | 0.4+ | 0.1− | 2002 12 05 | 704 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.3+ | 0.4+ | 2002 11 11 | 699 | 0.0 | 0.4+ | 2002 12 05 | 704 | 0.6− | 0.4− |
| 2002 10 05 | 704 | 0.3− | 0.5+ | 2002 11 13 | 446 | 0.3− | 0.5+ | 2002 12 05 | 704 | 0.3+ | 0.6− |
| 2002 10 05 | 704 | 2.0− | 0.6− | 2002 11 13 | 446 | (1.9− | 0.9−) | 2002 12 05 | 704 | 0.9− | 0.2− |
| 2002 10 05 | 704 | 0.4− | 1.1+ | 2002 11 14 | 644 | 0.4+ | 0.3− | 2002 12 11 | 644 | 0.2− | 0.1− |
| 2002 10 10 | 704 | 0.3− | 0.3− | 2002 11 14 | 704 | 0.5− | 0.3+ | 2002 12 11 | 644 | 0.2− | 0.1+ |
| 2002 10 10 | 704 | 0.1+ | 0.1− | 2002 11 14 | 644 | 0.0 | 0.5− | 2002 12 11 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 1.0+ | 0.7− | 2002 11 14 | 704 | 0.4− | 0.4+ | 2002 12 11 | 704 | 1.0− | 1.2+ |
| 2002 10 10 | 704 | 0.8+ | 0.1+ | 2002 11 14 | 644 | 0.3+ | 0.1+ | 2002 12 11 | 704 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | 0.2+ | 0.5− | 2002 11 14 | 704 | 0.2− | 0.3− | 2002 12 11 | 704 | 0.1+ | 0.5− |
| 2002 10 12 | 704 | 0.6+ | 0.4+ | 2002 11 14 | 704 | 0.3− | 0.3+ | 2002 12 11 | 704 | 0.4+ | 0.4+ |
| 2002 10 12 | 704 | 0.1− | 0.1+ | 2002 11 14 | 704 | 0.5− | 0.3+ | 2002 12 11 | 704 | 0.6+ | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.0 | 2002 11 17 | 446 | 0.1+ | 0.5− | 2005 07 15 | G96 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.1+ | 0.3− | 2002 11 17 | 446 | 0.0 | 0.2− | 2005 07 15 | G96 | 0.6− | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2002 11 24 | 644 | 0.1− | 0.1+ | 2005 07 15 | G96 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 0.3+ | 0.1− | 2002 11 24 | 644 | 0.1+ | 0.1− | 2005 07 15 | G96 | 0.1+ | 0.3+ |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2002 11 24 | 644 | 0.2+ | 0.1− | | | | |
| 2002 11 06 | 704 | 0.2+ | 0.2− | 2002 12 02 | 704 | (1.9+ | 1.1+) | | | | |

**2002 TL$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.40028 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21888763 | $\omega$ | 140.13617 | | +0.89959699 | −0.39143850 | |
| $a$ | 2.7268123 | $\Omega$ | 243.92131 | | +0.32512404 | +0.89633386 | |
| $e$ | 0.1347194 | $i$ | 12.45087 | | +0.29158123 | +0.20823428 | |
| $P$ | 4.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.6− | 0.2+ | 2002 11 08 | 704 | 0.5− | 0.6− | 2002 12 10 | 644 | 0.1+ | 0.9− |
| 2002 10 05 | 704 | 1.1− | 0.3− | 2002 11 08 | 704 | 0.2− | 0.3+ | 2002 12 10 | 644 | 0.1− | 0.7− |
| 2002 10 05 | 704 | 0.3− | 0.5+ | 2002 11 11 | 699 | 0.5− | 0.0 | 2002 12 10 | 644 | 0.2− | 0.6− |
| 2002 10 05 | 704 | 0.2− | 0.5+ | 2002 11 11 | 699 | 0.2+ | 0.4+ | 2002 12 31 | 704 | (1.2+ | 2.2+) |
| 2002 10 10 | 704 | 0.6+ | 0.7− | 2002 11 11 | 699 | 0.5+ | 0.1− | 2002 12 31 | 704 | 1.0+ | 0.7+ |
| 2002 10 10 | 704 | 0.7+ | 1.1− | 2002 11 11 | 699 | 0.2+ | 0.1+ | 2002 12 31 | 704 | (2.6+ | 0.1+) |
| 2002 10 10 | 704 | 1.3+ | 1.0− | 2002 11 12 | 704 | 0.8+ | 0.6+ | 2005 05 11 | 644 | 0.0 | 0.3+ |
| 2002 10 10 | 704 | 0.7+ | 1.0+ | 2002 11 12 | 704 | 0.1− | 0.0 | 2005 05 11 | 644 | 0.0 | 0.4+ |
| 2002 10 10 | 704 | 0.5+ | 0.7+ | 2002 11 12 | 704 | 0.3− | 0.9+ | 2005 05 11 | 644 | 0.0 | 0.3+ |
| 2002 10 12 | 704 | 0.5− | 0.4+ | 2002 11 12 | 704 | 0.8− | 0.8+ | 2006 09 11 | 703 | 0.1− | 0.3− |
| 2002 10 12 | 704 | 0.0 | 0.6+ | 2002 11 12 | 704 | 0.2− | 0.2+ | 2006 09 11 | 703 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.3+ | 0.3+ | 2006 09 11 | 703 | 0.3+ | 0.7− |
| 2002 10 12 | 704 | 0.7− | 0.1− | 2002 11 14 | 704 | 0.5+ | 0.3− | 2006 09 11 | 703 | 0.3+ | 0.2+ |
| 2002 10 12 | 704 | 0.5+ | 0.5+ | 2002 11 14 | 704 | 0.2− | 0.7+ | 2006 09 20 | 699 | 0.1− | 0.6− |
| 2002 11 01 | 644 | 0.2+ | 0.7− | 2002 11 14 | 704 | (1.9+ | 0.9+) | 2006 09 20 | 699 | 1.4+ | 0.6+ |
| 2002 11 01 | 644 | 0.3+ | 0.7− | 2002 11 14 | 704 | 0.0 | 0.7+ | 2006 09 20 | 850 | 0.6− | 0.1− |
| 2002 11 01 | 644 | 0.1+ | 0.9− | 2002 11 23 | 644 | 0.1+ | 1.2+ | 2006 09 20 | 850 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.7+ | 0.8− | 2002 11 23 | 644 | 0.3− | 1.0+ | 2006 09 20 | 699 | 0.2+ | 0.8+ |
| 2002 11 05 | 704 | 0.0 | 0.7− | 2002 11 23 | 644 | 0.3− | 0.7+ | 2006 09 20 | 699 | 0.8− | 0.4− |
| 2002 11 05 | 704 | 0.6+ | 0.1− | 2002 11 30 | 608 | 0.4− | 0.3+ | 2006 09 29 | 699 | 0.9+ | 0.8+ |
| 2002 11 05 | 704 | 0.3− | 0.8− | 2002 11 30 | 608 | 0.5− | 0.3+ | 2006 09 29 | 699 | 0.3+ | 0.5− |
| 2002 11 05 | 704 | 0.6+ | 1.2− | 2002 11 30 | 608 | 0.9− | 0.3+ | 2006 09 29 | 699 | (2.1− | 0.0 ) |
| 2002 11 06 | 608 | 0.4− | 0.1+ | 2002 12 02 | 704 | 0.5− | 0.2+ | 2006 09 29 | 699 | (1.8− | 2.6−) |
| 2002 11 06 | 608 | 0.5− | 0.2+ | 2002 12 02 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2002 11 06 | 608 | 0.5− | 0.0 | 2002 12 02 | 704 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.7− |
| 2002 11 08 | 704 | 0.1− | 0.4+ | 2002 12 02 | 704 | 0.3+ | 0.7− | 2006 10 22 | 703 | 1.4− | 1.0+ |
| 2002 11 08 | 704 | 0.1+ | 0.1− | 2002 12 02 | 704 | 0.3+ | 1.0− | 2006 10 22 | 703 | 0.5− | 0.1− |

**2002 TH$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.78490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23974527 | $\omega$ | 65.35057 | | +0.23028556 | −0.97290499 | |
| $a$ | 2.5662720 | $\Omega$ | 11.39318 | | +0.85087223 | +0.19103688 | |
| $e$ | 0.2573462 | $i$ | 5.98642 | | +0.47221289 | +0.13023361 | |
| $P$ | 4.11 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | (0.6+ | 2.7−) | 2002 11 13 | 644 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 1998 12 17 | 704 | (0.9+ | 2.5−) | 2002 11 14 | 704 | 0.5+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 1998 12 17 | 704 | (0.5+ | 5.2−) | 2002 11 14 | 704 | 0.1+ | 0.7− | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 1998 12 17 | 704 | (1.2+ | 5.7−) | 2002 11 14 | 704 | 0.8+ | 0.4− | 2006 10 11 | 691 | 0.0 | 0.4+ |
| 1998 12 17 | 704 | (2.2− | 3.0−) | 2002 11 14 | 704 | 0.9+ | 0.8− | 2006 10 15 | 691 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | 0.0 | 0.1+ | 2002 11 24 | 644 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 1.3+ | 0.6+ | 2002 11 24 | 644 | 0.1− | 0.3− | 2006 10 15 | 691 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.2− | 2002 11 24 | 644 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2002 10 04 | 704 | 0.3− | 0.2− | 2002 12 02 | 704 | 0.5− | 0.0 | 2006 10 17 | 703 | 1.0− | 0.3− |
| 2002 10 04 | 704 | 0.6+ | 0.1+ | 2002 12 02 | 704 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.6− |
| 2002 10 10 | 704 | 0.2− | 0.8+ | 2002 12 02 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2002 10 10 | 704 | (1.8+ | 1.1+) | 2002 12 02 | 704 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2002 10 10 | 704 | 0.3− | 0.4− | 2002 12 02 | 704 | 1.0− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2002 10 10 | 704 | 0.1− | 0.4− | 2002 12 05 | 704 | 0.1+ | 1.3− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 10 10 | 704 | 0.6− | 0.5+ | 2002 12 05 | 704 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.5− | 0.4− | 2002 12 05 | 704 | 0.4− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2002 10 12 | 704 | 0.5+ | 0.4+ | 2002 12 05 | 704 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 10 12 | 704 | 0.2+ | 0.0 | 2002 12 11 | 644 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 10 12 | 704 | 0.2+ | 1.0+ | 2002 12 11 | 644 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2002 12 11 | 644 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2002 10 28 | 608 | 0.1− | 0.4+ | 2002 12 27 | 644 | 0.2+ | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2002 10 28 | 608 | 0.5− | 0.7+ | 2002 12 27 | 644 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.5− |
| 2002 10 28 | 608 | 0.4− | 0.0 | 2002 12 27 | 644 | 0.6+ | 1.0+ | 2006 10 21 | 703 | 0.1+ | 0.7− |
| 2002 11 01 | 644 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.4− | 1.3+ |
| 2002 11 01 | 644 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 11 01 | 644 | 0.1− | 0.3+ | 2002 12 31 | 704 | 1.1+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 03 | 704 | 0.1− | 0.5+ | 2002 12 31 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 11 03 | 704 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 03 | 704 | 0.4− | 0.3− | 2003 01 05 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 05 | 704 | 0.5− | 0.2− | 2003 01 05 | 704 | 0.4+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.6− | 0.1− | 2003 01 05 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2002 11 05 | 704 | 0.4− | 0.3+ | 2003 01 05 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.0 | 0.2− | 2003 01 28 | 644 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2002 11 05 | 704 | 0.4− | 0.3− | 2003 01 28 | 644 | 0.5− | 0.0 | 2006 10 29 | 704 | 0.0 | 0.2− |
| 2002 11 06 | 699 | 1.1− | 0.4− | 2003 01 28 | 644 | 0.4− | 0.1− | 2006 10 29 | 704 | 1.5− | 0.3− |
| 2002 11 06 | 699 | 0.5− | 0.8− | 2004 04 22 | 691 | 0.5+ | 0.8+ | 2006 10 29 | 704 | 0.3+ | 0.5− |
| 2002 11 06 | 699 | 0.6− | 0.1+ | 2004 04 22 | 691 | 0.0 | 0.6+ | 2006 10 29 | 704 | 0.8− | 0.0 |
| 2002 11 06 | 699 | 0.6− | 0.3− | 2004 04 22 | 691 | 0.4+ | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 11 08 | 704 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2002 11 08 | 704 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2002 11 08 | 704 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2002 11 08 | 704 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 11 06 | 644 | 0.3− | 0.4+ |
| 2002 11 11 | 699 | 0.5+ | 0.8+ | 2006 09 19 | 691 | 0.4− | 0.4− | 2006 11 06 | 644 | 0.2+ | 0.4+ |
| 2002 11 11 | 699 | 0.4+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | (1.3− | 1.8+) |
| 2002 11 11 | 699 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.5− | 2006 11 11 | 703 | 0.8− | 0.2− |
| 2002 11 11 | 699 | 0.4+ | 0.7+ | 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.6+ |
| 2002 11 12 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.3+ | 1.3+ | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.6− |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.5− |
| 2002 11 12 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.5− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2+ | |
| 2002 11 13 | 644 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.0 | 0.1+ | |

**2002 TC$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.68559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21409148 | $\omega$ | 142.21573 | | +0.90484900 | −0.41321523 | |
| $a$ | 2.7673864 | $\Omega$ | 242.48697 | | +0.35700433 | +0.86760229 | |
| $e$ | 0.2869346 | $i$ | 6.63501 | | +0.23194008 | +0.27662147 | |
| $P$ | 4.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 1.6+ | 1.0+ | 2002 11 14 | 704 | 0.5− | 0.6− | 2002 12 05 | 704 | 0.7+ | 0.2− | |
| 2002 10 10 | 704 | 1.4+ | 0.2+ | 2002 11 14 | 704 | 0.6− | 0.8− | 2002 12 05 | 704 | 0.6+ | 0.1+ | |
| 2002 10 10 | 704 | (2.2+ | 0.1+) | 2002 11 14 | 704 | 0.3− | 1.0− | 2002 12 07 | 333 | 0.1+ | 0.5− | |
| 2002 10 12 | 704 | 1.7+ | 0.3+ | 2002 11 23 | 644 | 0.1+ | 0.3− | 2002 12 07 | 333 | 0.5+ | 0.6− | |
| 2002 10 12 | 704 | (2.0+ | 0.1+) | 2002 11 23 | 644 | 0.1− | 0.3− | 2002 12 07 | 333 | 0.3+ | 0.8− | |
| 2002 10 12 | 704 | 1.6+ | 0.8− | 2002 11 23 | 644 | 0.1+ | 0.4− | 2002 12 10 | 644 | 0.2− | 0.2+ | |
| 2002 10 16 | 699 | (2.0− | 2.1+) | 2002 11 27 | 699 | 0.0 | 0.0 | 2002 12 10 | 644 | 0.2− | 0.0 | |
| 2002 10 16 | 699 | 0.7− | 0.7+ | 2002 11 27 | 699 | 0.1− | 0.0 | 2002 12 10 | 644 | 0.3− | 0.2+ | |
| 2002 10 16 | 699 | 0.9− | 0.3− | 2002 11 27 | 699 | 0.2− | 0.2− | 2002 12 10 | 704 | 0.5+ | 0.1− | |
| 2002 10 16 | 699 | 0.6− | 0.2+ | 2002 11 27 | 699 | 0.3− | 0.4− | 2002 12 10 | 704 | 0.1+ | 0.0 | |
| 2002 10 31 | 699 | 0.1+ | 0.4+ | 2002 11 28 | 699 | 0.3− | 0.1− | 2002 12 10 | 704 | 0.0 | 0.5+ | |
| 2002 10 31 | 699 | 0.2− | 0.6+ | 2002 11 28 | 699 | 0.5− | 0.1− | 2002 12 10 | 704 | 0.1+ | 0.1− | |
| 2002 10 31 | 699 | 0.0 | 0.2+ | 2002 11 28 | 699 | 0.0 | 0.2− | 2002 12 10 | 704 | 0.3+ | 0.2+ | |
| 2002 10 31 | 699 | 0.4+ | 0.6+ | 2002 11 28 | 699 | 0.4− | 0.2− | 2002 12 31 | 704 | 0.6− | 0.6+ | |
| 2002 11 05 | 704 | 0.3− | 0.4+ | 2002 12 01 | 608 | 0.3+ | 0.2− | 2002 12 31 | 704 | 1.1− | 1.2+ | |
| 2002 11 05 | 704 | 0.3− | 0.3− | 2002 12 01 | 608 | 0.1+ | 0.2− | 2002 12 31 | 704 | 1.6− | 0.2+ | |
| 2002 11 05 | 704 | 1.8− | 0.4+ | 2002 12 01 | 608 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.6− | 0.5+ | |
| 2002 11 05 | 644 | 0.3− | 0.0 | 2002 12 02 | 704 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.2+ | 1.0+ | |
| 2002 11 05 | 704 | 0.4− | 0.1+ | 2002 12 02 | 704 | 0.2+ | 0.0 | 2003 01 04 | 704 | 0.2+ | 1.2+ | |
| 2002 11 05 | 699 | 0.2− | 0.5+ | 2002 12 02 | 704 | 0.2+ | 0.0 | 2003 01 04 | 704 | 0.1+ | 0.4+ | |
| 2002 11 05 | 704 | 0.4− | 0.1+ | 2002 12 02 | 704 | 0.4+ | 0.5+ | 2003 01 04 | 704 | 1.4+ | 1.0+ | |
| 2002 11 05 | 699 | 0.5− | 0.2+ | 2002 12 02 | 704 | 0.2+ | 0.3+ | 2003 01 27 | 704 | 0.8+ | 0.9+ | |
| 2002 11 05 | 699 | 0.3− | 0.2+ | 2002 12 04 | 333 | 0.1− | 0.6− | 2003 01 27 | 704 | 0.2+ | 0.5+ | |
| 2002 11 05 | 699 | 0.3+ | 0.1− | 2002 12 04 | 333 | 0.0 | 0.6− | 2003 01 27 | 704 | 0.3+ | 0.1+ | |
| 2002 11 05 | 644 | 0.1+ | 0.2+ | 2002 12 04 | 333 | 0.2− | 0.4− | 2004 03 16 | 691 | 0.2− | 0.0 | |
| 2002 11 05 | 644 | 0.2+ | 0.0 | 2002 12 04 | 333 | 0.3− | 0.8− | 2004 03 16 | 691 | 0.2+ | 0.2− | |
| 2002 11 10 | 704 | 0.5+ | 0.3− | 2002 12 04 | 333 | 0.1+ | 0.4− | 2004 03 16 | 691 | 0.0 | 0.0 | |
| 2002 11 10 | 704 | 0.1+ | 0.1+ | 2002 12 04 | 333 | 0.7− | 1.2− | 2006 05 05 | G96 | 0.1− | 0.5+ | |
| 2002 11 10 | 704 | 0.6+ | 1.1− | 2002 12 05 | 704 | 0.2+ | 0.2+ | 2006 05 05 | G96 | 0.3− | 0.8+ | |
| 2002 11 14 | 704 | 0.2− | 0.1− | 2002 12 05 | 704 | 0.2+ | 0.2+ | 2006 05 05 | G96 | 0.4− | 0.5− | |
| 2002 11 14 | 704 | 0.0 | 0.4− | 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 05 05 | G96 | 0.7+ | 0.6− | |

**2002 TP$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.20780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23294379 | $\omega$ | 214.15325 | | +0.16322962 | −0.89831517 | |
| $a$ | 2.6159853 | $\Omega$ | 230.25287 | | +0.98141803 | +0.19011768 | |
| $e$ | 0.2273417 | $i$ | 32.04072 | | +0.10086988 | −0.39608727 | |
| $P$ | 4.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 02 | 691 | 0.3− | 0.3+ | 2002 11 12 | 644 | 0.2+ | 0.6− | 2003 01 02 | 704 | 0.4+ | 0.3+ | |
| 2000 06 02 | 691 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.1− | 0.1− | 2003 01 02 | 704 | 0.3+ | 0.4+ | |
| 2000 06 02 | 691 | 0.2+ | 0.2+ | 2002 11 14 | 704 | 0.4− | 0.2− | 2003 01 02 | 704 | 0.5+ | 0.5+ | |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2002 11 14 | 704 | 0.2− | 0.8− | 2003 01 02 | 704 | 0.8+ | 0.2− | |
| 2002 10 05 | 704 | 0.2− | 0.4+ | 2002 11 14 | 704 | 0.4− | 0.4− | 2003 01 05 | 704 | 0.2− | 0.9+ | |
| 2002 10 05 | 704 | 0.6− | 0.2+ | 2002 11 22 | 644 | 0.0 | 0.7− | 2003 01 05 | 704 | 0.6− | 1.0+ | |
| 2002 10 05 | 704 | 0.1− | 0.2+ | 2002 11 22 | 644 | 0.1+ | 0.6− | 2003 01 05 | 704 | 0.2+ | 0.4+ | |
| 2002 10 05 | 704 | (0.7+ | 2.9+) | 2002 11 22 | 644 | 0.1− | 0.7− | 2003 01 05 | 704 | 0.0 | 0.8+ | |
| 2002 10 10 | 704 | 0.4+ | 0.1− | 2002 12 01 | 704 | 0.4+ | 0.4+ | 2003 01 05 | 704 | 0.0 | 0.9+ | |
| 2002 10 10 | 704 | 0.2+ | 0.1+ | 2002 12 01 | 704 | 0.3+ | 0.1− | 2003 01 24 | 809 | 0.2+ | 0.0 | |
| 2002 10 10 | 704 | 0.6+ | 0.4− | 2002 12 01 | 704 | 0.4− | 0.0 | 2003 01 24 | 809 | 0.2+ | 0.0 | |
| 2002 10 10 | 704 | 0.3+ | 0.2− | 2002 12 01 | 704 | 0.0 | 0.1+ | 2003 01 24 | 809 | 0.3− | 0.1+ | |
| 2002 10 10 | 704 | 0.4+ | 0.9− | 2002 12 01 | 704 | 0.2− | 0.3+ | 2003 01 25 | 644 | 0.1− | 0.0 | |
| 2002 10 12 | 704 | 0.0 | 0.9+ | 2002 12 01 | 608 | 0.5+ | 0.1+ | 2003 01 25 | 644 | 0.1− | 0.3+ | |
| 2002 10 12 | 704 | 0.8+ | 0.6+ | 2002 12 01 | 608 | 0.1+ | 0.4− | 2003 01 25 | 644 | 0.2+ | 0.3+ | |
| 2002 10 12 | 704 | 0.3+ | 0.5+ | 2002 12 01 | 608 | 0.1− | 0.1− | 2006 09 24 | 699 | 0.4− | 0.3− | |
| 2002 11 03 | 608 | 1.0+ | 1.3+ | 2002 12 07 | 704 | 0.3+ | 0.4+ | 2006 09 24 | 699 | 1.1+ | 0.6+ | |
| 2002 11 03 | 608 | 0.7+ | 1.4+ | 2002 12 07 | 704 | 0.3− | 0.0 | 2006 09 24 | 699 | 0.7− | 0.6+ | |
| 2002 11 03 | 608 | 1.2+ | 0.7+ | 2002 12 07 | 704 | 0.5+ | 0.6+ | 2006 09 25 | H82 | 0.2− | 0.0 | |
| 2002 11 05 | 704 | 0.9− | 0.1+ | 2002 12 07 | 704 | 0.2− | 0.4+ | 2006 09 25 | H82 | 1.0− | 0.3− | |
| 2002 11 05 | 704 | 0.6− | 0.4+ | 2002 12 07 | 704 | 0.4+ | 0.4+ | 2006 09 25 | H82 | 0.1+ | 0.9+ | |
| 2002 11 05 | 704 | 0.6− | 0.1+ | 2002 12 12 | 608 | 0.1+ | 0.7− | 2006 10 27 | 703 | 0.4+ | 0.4+ | |
| 2002 11 05 | 704 | 1.1− | 0.3+ | 2002 12 12 | 608 | 0.1− | 0.8− | 2006 10 27 | 703 | 0.0 | 0.3− | |
| 2002 11 05 | 704 | 1.0− | 0.3+ | 2002 12 12 | 608 | 0.2− | 0.8− | 2006 10 27 | 703 | 0.6+ | 0.2− | |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2002 12 22 | 608 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.1− | |
| 2002 11 06 | 704 | 0.3+ | 0.0 | 2002 12 22 | 608 | 0.4− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.3− | |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2002 12 22 | 608 | 0.6− | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.1+ | |
| 2002 11 06 | 704 | 0.1− | 0.3− | 2002 12 30 | 608 | 0.6− | 0.3− | 2006 11 15 | 703 | 0.6− | 0.1− | |
| 2002 11 06 | 704 | 0.4+ | 0.1− | 2002 12 30 | 608 | 0.3− | 0.7− | 2006 11 15 | 703 | 0.2+ | 0.3− | |
| 2002 11 10 | 704 | 0.4+ | 0.2+ | 2002 12 30 | 608 | 0.7− | 0.5− | 2006 11 23 | 703 | 0.2+ | 0.7− | |
| 2002 11 10 | 704 | 0.2− | 0.7+ | 2002 12 31 | 608 | 0.4− | 0.8− | 2006 11 23 | 703 | 0.0 | 0.2+ | |
| 2002 11 10 | 704 | 0.6+ | 0.3+ | 2002 12 31 | 608 | 0.1+ | 0.2− | 2006 11 23 | 703 | 0.1− | 0.7− | |
| 2002 11 12 | 644 | 0.2+ | 0.5− | 2002 12 31 | 608 | 0.2− | 0.8− | 2006 11 23 | 703 | 0.7− | 0.3− | |
| 2002 11 12 | 644 | 0.4+ | 0.5− | 2003 01 02 | 704 | 0.5+ | 0.5+ | | | | | |

**2002 TV$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.27452 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23472906 | $\omega$ | 343.06163 | | +0.99645602 | −0.03035903 | |
| $a$ | 2.6027042 | $\Omega$ | 19.19874 | | +0.07111913 | +0.80206659 | |
| $e$ | 0.2166618 | $i$ | 13.80088 | | −0.04491621 | +0.59646250 | |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2006 09 16 | 704 | 0.5− | 1.0+ | 2006 10 17 | 703 | 0.0 | 0.2− | |
| 2002 09 06 | 704 | 0.8− | 0.3− | 2006 09 16 | 704 | 0.7− | 0.0 | 2006 10 17 | 703 | 0.2− | 0.4− | |
| 2002 09 06 | 704 | 0.4+ | 0.9+ | 2006 09 16 | 704 | 0.7+ | 1.1− | 2006 10 17 | 703 | 0.3+ | 0.7− | |
| 2002 10 04 | 704 | 0.8− | 0.7+ | 2006 09 16 | 704 | 1.1+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.1− | |
| 2002 10 04 | 704 | 0.4− | 0.8− | 2006 09 18 | 703 | 0.7+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.2− | |
| 2002 10 04 | 704 | 0.3+ | 0.8− | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1+ | |
| 2002 10 10 | 704 | (2.1− | 0.7−) | 2006 09 18 | 703 | 0.4− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 2002 10 10 | 704 | 0.1− | 0.9+ | 2006 09 18 | 703 | 1.1− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.1− | |
| 2002 10 10 | 704 | 0.3− | 0.4+ | 2006 09 19 | 704 | 0.8− | 0.7− | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2002 10 10 | 704 | 0.4− | 0.4+ | 2006 09 19 | 704 | 0.8+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− | |
| 2002 10 12 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 704 | 0.6− | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.2− | |
| 2002 10 12 | 704 | 1.0− | 0.4− | 2006 09 19 | 704 | (2.1+ | 1.4−) | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2002 10 12 | 704 | (0.3+ | 3.8+) | 2006 09 21 | 699 | 0.7− | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.2− | |
| 2002 10 12 | 704 | 0.8+ | 0.7+ | 2006 09 21 | 699 | 0.6+ | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.1+ | |
| 2002 11 06 | 704 | 0.7+ | 0.0 | 2006 09 21 | 699 | 0.6− | 0.5+ | 2006 10 28 | 704 | 0.2+ | 0.6+ | |
| 2002 11 06 | 704 | 0.4+ | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.5+ | 2006 10 28 | 704 | 0.2+ | 0.1+ | |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2006 09 22 | 704 | 1.2+ | 0.3− | 2006 10 28 | 704 | 0.2+ | 0.2+ | |
| 2002 11 06 | 704 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.3+ | 0.4− | 2006 10 28 | 704 | 0.9− | 0.2+ | |
| 2002 11 13 | 644 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.3− | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.1− | |
| 2002 11 13 | 644 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− | |
| 2002 11 13 | 644 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.2− | |
| 2002 11 15 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.8− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− | |
| 2002 11 15 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.2− | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.1− | |
| 2002 11 15 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 0.8− | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.4− | |
| 2002 11 15 | 704 | 0.0 | 1.0− | 2006 09 26 | 704 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.1− | |
| 2002 11 25 | 644 | 0.3− | 1.0− | 2006 09 26 | 704 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.2− | |
| 2002 11 25 | 644 | 0.1+ | 1.0− | 2006 09 26 | 704 | 0.9+ | 0.8+ | 2006 11 11 | 703 | 0.8+ | 0.2− | |
| 2002 11 25 | 644 | 0.1+ | 1.0− | 2006 09 26 | 704 | 1.3+ | 0.3+ | 2006 11 11 | 703 | (1.5− | 0.1+) | |
| 2002 12 03 | 644 | 0.3− | 0.1+ | 2006 09 26 | 704 | (3.9− | 0.4+) | 2006 11 11 | 703 | (1.6− | 0.7+) | |
| 2002 12 03 | 644 | 0.3− | 0.2+ | 2006 09 26 | 704 | (3.1− | 0.8+) | 2006 11 11 | 703 | 0.7− | 0.8+ | |
| 2002 12 03 | 644 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.9+ | 0.7+ | 2006 11 13 | 703 | 1.3+ | 0.7− | |
| 2002 12 06 | 704 | (1.2+ | 2.8−) | 2006 09 28 | 704 | 0.5− | 0.5+ | 2006 11 13 | 703 | 1.1+ | 0.6+ | |
| 2002 12 06 | 704 | (1.2+ | 2.9−) | 2006 09 28 | 704 | 0.5− | 0.2− | 2006 11 13 | 703 | 0.1− | 0.3+ | |
| 2002 12 06 | 704 | (1.0+ | 2.8−) | 2006 09 28 | 704 | 0.3− | 0.2− | 2006 11 13 | 703 | (1.4+ | 1.6+) | |
| 2002 12 06 | 704 | (2.2+ | 3.2−) | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.5+ | 0.2− | |
| 2002 12 06 | 704 | (2.0+ | 3.2−) | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 15 | 704 | 0.0 | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 09 | 699 | (1.6− | 0.3+) | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 15 | 704 | 1.5+ | 0.6+ |
| 2002 12 09 | 699 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.5− | 0.7+ | 2006 11 15 | 704 | 0.6− | 0.5+ |
| 2002 12 09 | 699 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.4− | 0.0 |
| 2002 12 09 | 699 | 0.0 | 0.8+ | 2006 10 01 | 704 | 0.1+ | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2002 12 12 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.5− |
| 2002 12 12 | 644 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.1− |
| 2002 12 12 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.6+ | 1.1− | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2006 09 12 | 703 | 0.3− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2006 09 12 | 703 | 0.5+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2006 09 12 | 703 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.0− | 0.1− |
| 2006 09 12 | 703 | 0.9− | 1.1− | 2006 10 17 | 703 | 0.2+ | 0.3− | 2006 11 19 | 704 | 1.1− | 0.4− |

**2002 TT$_{290}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.55163 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22810782 | $\omega$ | 152.26882 | | +0.78328393 | −0.60712272 | |
| $a$ | 2.6528290 | $\Omega$ | 245.74442 | | +0.53978287 | +0.77087158 | |
| $e$ | 0.1299652 | $i$ | 8.43082 | | +0.30838407 | +0.19276675 | |
| $P$ | 4.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3− | 0.9+ | 2002 11 14 | 704 | (1.9− | 1.2+) | 2006 09 20 | 699 | 0.7+ | 0.8+ |
| 2002 10 04 | 704 | 0.7− | 0.0 | 2002 11 14 | 704 | 0.2− | 0.8− | 2006 09 20 | 699 | 0.8+ | 0.6− |
| 2002 10 04 | 704 | 0.3+ | 0.4+ | 2002 11 14 | 704 | 0.0 | 0.3− | 2006 09 20 | 699 | 1.0+ | 0.6+ |
| 2002 10 10 | 704 | 0.9+ | 0.3+ | 2002 11 30 | 608 | 0.3− | 0.2− | 2006 09 22 | 703 | 0.8− | 0.3− |
| 2002 10 10 | 704 | 0.5− | 1.0+ | 2002 11 30 | 608 | 0.2+ | 0.4− | 2006 09 22 | 703 | 0.5+ | 0.8− |
| 2002 10 10 | 704 | 0.1− | 0.4+ | 2002 11 30 | 608 | 0.3− | 0.5− | 2006 09 22 | 703 | (1.3− | 2.1+) |
| 2002 10 10 | 704 | 0.5+ | 0.2+ | 2002 12 02 | 704 | 0.9− | 0.9+ | 2006 09 22 | 703 | 0.6− | 0.4− |
| 2002 10 12 | 704 | 0.1+ | 0.4+ | 2002 12 02 | 704 | (0.4− | 1.7+) | 2006 09 23 | 106 | 1.2+ | 1.5− |
| 2002 10 12 | 704 | 0.2− | 0.6+ | 2002 12 02 | 704 | 0.4+ | 0.0 | 2006 09 23 | 106 | 0.6+ | 0.4− |
| 2002 10 12 | 704 | 0.5− | 0.8+ | 2002 12 02 | 704 | 0.4− | 0.2− | 2006 09 23 | 106 | (0.8+ | 1.6−) |
| 2002 11 05 | 704 | 0.8+ | 0.3+ | 2002 12 02 | 704 | 0.7− | 0.2− | 2006 09 23 | 106 | 0.6− | 0.7− |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 1.1+ | 0.5+ |
| 2002 11 05 | 704 | 0.2+ | 1.3− | 2002 12 06 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.0 | 0.5− |
| 2002 11 05 | 704 | 0.2+ | 0.7− | 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.5− |
| 2002 11 06 | 608 | 0.9+ | 0.5+ | 2002 12 06 | 704 | 0.0 | 0.3+ | 2006 09 27 | 703 | 1.1− | 0.1− |
| 2002 11 06 | 608 | 0.6+ | 0.2+ | 2002 12 06 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.4− |
| 2002 11 06 | 608 | 1.0+ | 0.5+ | 2002 12 10 | 644 | 0.6− | 0.8− | 2006 09 29 | 699 | 0.8− | 0.2+ |
| 2002 11 08 | 704 | 1.0− | 0.5− | 2002 12 10 | 644 | 0.3− | 0.6− | 2006 09 29 | 699 | 0.1+ | 0.0 |
| 2002 11 08 | 704 | 0.1+ | 0.2+ | 2002 12 10 | 644 | 0.3− | 0.6− | 2006 09 29 | 699 | 0.3− | 0.1+ |
| 2002 11 08 | 704 | 0.3− | 0.0 | 2005 06 13 | G96 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.7− | 1.0− |
| 2002 11 08 | 704 | 0.3− | 0.3− | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.7+ |
| 2002 11 11 | 049 | 0.4− | 0.1− | 2005 06 13 | G96 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2002 11 11 | 049 | 0.5− | 0.4− | 2005 06 13 | G96 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.5+ | 1.4− |
| 2002 11 11 | 049 | 0.2− | 0.3− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 1.0− | 0.2− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.6+ | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.9+ | 2006 11 17 | 291 | 0.1− | 0.4+ |
| 2002 11 12 | 704 | 0.6+ | 1.1+ | 2006 09 14 | 703 | 0.3+ | 1.1+ | 2006 11 17 | 291 | 0.1+ | 0.3+ |
| 2002 11 12 | 704 | 0.5+ | 0.7+ | 2006 09 14 | 703 | 0.2+ | 0.2+ | 2006 11 17 | 291 | 0.1− | 0.3+ |
| 2002 11 14 | 704 | 0.8+ | 0.8− | 2006 09 14 | 703 | 0.5− | 0.5− | | | | |
| 2002 11 14 | 704 | 0.4+ | 0.0 | 2006 09 20 | 699 | (4.0+ | 1.2+) | | | | |

**2002 TH$_{291}$ = 2006 SV$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.67449 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24286880 | $\omega$ | 332.95728 | | +0.99566803 | +0.01758301 | |
| $a$ | 2.5442214 | $\Omega$ | 26.51678 | | +0.03645090 | +0.82953792 | |
| $e$ | 0.2736057 | $i$ | 11.80032 | | −0.08553657 | +0.55817352 | |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.4+ | 0.8+ | 2006 08 28 | 703 | 0.7− | 0.5− | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2002 10 10 | 704 | 0.1− | 0.1− | 2006 09 24 | J75 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 10 10 | 704 | 1.4− | 0.0 | 2006 09 24 | J75 | 0.4+ | 0.9− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 0.4− | 1.2+ | 2006 09 24 | J75 | (0.1+ | 1.8−) | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 10 12 | 704 | 0.4− | 1.1− | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2002 10 12 | 704 | 1.0+ | 1.1+ | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2002 10 12 | 704 | 0.3+ | 1.4+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.1− | 2006 09 27 | J75 | 1.2+ | 0.4− | 2006 10 27 | 703 | 0.3− | 0.5− |
| 2002 11 06 | 699 | 0.5− | 0.4− | 2006 09 27 | J75 | (1.6+ | 0.4−) | 2006 10 27 | 703 | 0.4+ | 0.4− |
| 2002 11 06 | 699 | 0.4− | 0.0 | 2006 09 27 | J75 | 1.3+ | 0.9− | 2006 10 27 | 703 | 0.2+ | 0.5− |
| 2002 11 06 | 699 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.5− | 2006 10 29 | 704 | 0.5− | 0.3− |
| 2002 11 06 | 699 | 1.1+ | 0.0 | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 10 29 | 704 | 0.3− | 0.3− |
| 2002 11 11 | 699 | 0.8+ | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.5+ | 2006 10 29 | 704 | 0.2− | 0.1− |
| 2002 11 11 | 699 | 1.0− | 0.3− | 2006 09 27 | 704 | 0.5− | 0.3− | 2006 10 29 | 704 | 0.6+ | 0.5+ |
| 2002 11 11 | 699 | 0.4− | 1.0− | 2006 09 28 | J75 | 0.1+ | 0.0 | 2006 11 02 | 691 | 0.1+ | 0.1+ |
| 2002 11 11 | 699 | 0.1+ | 0.6− | 2006 09 28 | J75 | 0.5+ | 0.2− | 2006 11 02 | 691 | 0.2+ | 0.0 |
| 2002 11 15 | 644 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.2+ | 2006 11 02 | 691 | 0.2+ | 0.0 |
| 2002 11 15 | 704 | 0.0 | 0.5− | 2006 09 29 | 704 | 1.1+ | 0.2− | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 2002 11 15 | 704 | (1.7+ | 0.0 ) | 2006 09 29 | 704 | 1.4+ | 0.9+ | 2006 11 14 | 703 | 0.8− | 0.6− |
| 2002 11 15 | 644 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.3+ |
| 2002 11 15 | 704 | 0.2+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.1+ |
| 2002 11 15 | 704 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2002 11 15 | 704 | 0.6+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 2002 11 15 | 644 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.5+ |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 23 | 703 | 0.7+ | 0.3− |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 23 | 703 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.0 | 0.1− |
| 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 23 | 703 | 0.6+ | 0.4+ |
| 2006 08 28 | 703 | (1.7− | 1.0+) | 2006 10 21 | G96 | 0.0 | 0.3− | | | | |
| 2006 08 28 | 703 | 0.9− | 1.1+ | 2006 10 21 | 691 | 0.2− | 0.7− | | | | |

**2002 TC$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.09356 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27678320 | $\omega$ | 330.19624 | | +0.84537946 | +0.53407224 | |
| $a$ | 2.3318981 | $\Omega$ | 357.45535 | | −0.43453775 | +0.67667511 | |
| $e$ | 0.2600050 | $i$ | 13.04371 | | −0.31066140 | +0.50683099 | |
| $P$ | 3.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 699 | 0.8+ | 0.5+ | 2002 10 15 | 704 | 0.1− | 0.3+ | 2002 11 15 | 704 | 0.2− | 0.7+ |
| 2001 03 29 | 699 | 1.2+ | 0.8+ | 2002 10 15 | 704 | 0.6− | 0.1+ | 2002 11 25 | 644 | 0.2+ | 0.5+ |
| 2001 03 29 | 699 | 0.2+ | 1.2+ | 2002 10 20 | 644 | 0.1+ | 0.2− | 2002 11 25 | 644 | 0.0 | 0.1− |
| 2001 03 29 | 699 | 0.4− | 0.0 | 2002 10 20 | 644 | 0.3+ | 0.4+ | 2002 11 25 | 644 | 0.4+ | 0.5+ |
| 2002 09 06 | 704 | 0.9− | 0.1− | 2002 10 20 | 644 | 0.1+ | 0.0 | 2002 11 25 | 644 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.8− | 0.2− | 2002 10 31 | 704 | 0.2− | 0.1+ | 2002 11 25 | 644 | 0.1+ | 0.3+ |
| 2002 09 06 | 704 | 0.8− | 0.4+ | 2002 10 31 | 704 | 0.1+ | 0.2+ | 2002 11 25 | 644 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.6− | 0.7+ | 2002 10 31 | 704 | 0.5− | 0.0 | 2002 12 03 | 644 | 0.1+ | 0.4− |
| 2002 09 06 | 704 | 0.3+ | 0.7+ | 2002 10 31 | 704 | 0.3− | 0.2+ | 2002 12 03 | 644 | 0.3+ | 0.3− |
| 2002 10 05 | 704 | 1.4+ | 0.8+ | 2002 10 31 | 704 | 0.1− | 0.1+ | 2002 12 03 | 644 | 0.1+ | 0.2− |
| 2002 10 05 | 699 | 0.2− | 0.4+ | 2002 11 03 | 234 | 0.9− | 0.4− | 2002 12 07 | 704 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.9+ | 0.2+ | 2002 11 03 | 234 | 0.9− | 0.4− | 2002 12 07 | 704 | 0.1+ | 0.4− |
| 2002 10 05 | 699 | 0.4+ | 0.3+ | 2002 11 03 | 234 | 0.7− | 0.5− | 2002 12 07 | 704 | 0.5+ | 0.4− |
| 2002 10 05 | 704 | 1.0+ | 0.6+ | 2002 11 04 | 234 | 0.7− | 0.3− | 2002 12 07 | 704 | 0.5− | 0.3− |
| 2002 10 05 | 704 | 1.1+ | 0.4+ | 2002 11 04 | 234 | 0.6− | 0.5− | 2002 12 07 | 704 | 0.6+ | 0.6− |
| 2002 10 05 | 699 | 0.0 | 0.0 | 2002 11 04 | 234 | 0.9− | 0.4− | 2002 12 09 | 699 | 0.0 | 0.2− |
| 2002 10 05 | 704 | 0.7+ | 0.4+ | 2002 11 08 | 704 | 0.3+ | 0.1− | 2002 12 09 | 699 | 0.7− | 1.2− |
| 2002 10 05 | 699 | 0.3− | 0.1+ | 2002 11 08 | 704 | 0.1− | 0.2+ | 2002 12 09 | 699 | 0.4− | 0.3+ |
| 2002 10 13 | 644 | 0.2+ | 0.2− | 2002 11 08 | 704 | 0.1+ | 0.3+ | 2002 12 09 | 699 | 0.5+ | 0.8+ |
| 2002 10 13 | 644 | 0.1+ | 0.3+ | 2002 11 08 | 704 | 0.6− | 0.1− | 2002 12 12 | 644 | 0.2+ | 0.2− |
| 2002 10 13 | 644 | 0.1+ | 0.3+ | 2002 11 08 | 704 | 0.7+ | 1.1− | 2002 12 12 | 644 | 0.2+ | 0.2− |
| 2002 10 14 | 704 | 0.7− | 0.7− | 2002 11 12 | 699 | 0.7+ | 0.1+ | 2002 12 12 | 644 | 0.2− | 0.2− |
| 2002 10 14 | 704 | 0.2− | 0.1− | 2002 11 12 | 699 | 0.9+ | 0.4+ | 2004 02 16 | 704 | 0.2+ | 0.8− |
| 2002 10 14 | 704 | 0.2− | 0.8− | 2002 11 12 | 699 | 0.1+ | 0.1+ | 2004 02 16 | 704 | 0.3− | 0.5+ |
| 2002 10 14 | 704 | 0.1− | 0.3− | 2002 11 12 | 699 | 0.9+ | 0.7+ | 2004 02 16 | 704 | 0.0 | 0.0 |
| 2002 10 15 | 704 | 0.1− | 0.2+ | 2002 11 15 | 704 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.0 | 0.3+ |
| 2002 10 15 | 704 | 0.5− | 0.0 | 2002 11 15 | 704 | 0.1+ | 0.1− | | | | |
| 2002 10 15 | 704 | 0.3− | 0.3+ | 2002 11 15 | 704 | 0.7+ | 0.9+ | | | | |

**2002 TH$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.59392 | | (2000.0) | | | |
| $n$ | 0.23228097 | $\omega$ | 75.18402 | | +0.98366130 | −0.01802735 |
| $a$ | 2.6209594 | $\Omega$ | 285.60271 | | −0.06308249 | +0.89737747 |
| $e$ | 0.2520743 | $i$ | 10.71813 | | +0.16861511 | +0.44089534 |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.1− | 0.1+ | 2002 11 25 | 644 | 0.2− | 0.1− | 2006 09 20 | 224 | 0.4+ | 0.5+ |
| 2002 10 13 | 644 | 0.0 | 0.1+ | 2002 11 25 | 644 | 0.2− | 0.1− | 2006 09 20 | 224 | 0.0 | 0.5+ |
| 2002 10 13 | 644 | 0.1− | 0.0 | 2002 12 05 | 699 | 0.4+ | 0.2+ | 2006 09 21 | 224 | 0.4+ | 0.1+ |
| 2002 10 14 | 704 | 0.7− | 0.8+ | 2002 12 05 | 699 | 0.6+ | 0.8+ | 2006 09 21 | 224 | 0.4+ | 0.1− |
| 2002 10 14 | 704 | 0.4+ | 0.5+ | 2002 12 05 | 699 | 0.3+ | 0.6− | 2006 09 21 | 224 | 0.3+ | 0.1− |
| 2002 10 14 | 704 | 0.2+ | 0.0 | 2002 12 05 | 699 | 0.9+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.4− |
| 2002 10 14 | 704 | 0.3+ | 1.4+ | 2002 12 06 | 704 | 0.1+ | 1.0− | 2006 09 27 | 703 | 0.3− | 0.3− |
| 2002 10 20 | 644 | 0.0 | 0.0 | 2002 12 06 | 704 | 0.5− | 0.3− | 2006 09 27 | 703 | 0.4− | 0.4− |
| 2002 10 20 | 644 | 0.0 | 0.2− | 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 09 27 | 703 | 0.6− | 0.1− |
| 2002 10 20 | 644 | 0.2+ | 0.0 | 2002 12 06 | 704 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | 0.5+ | 0.1− | 2002 12 06 | 704 | 0.6− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.4+ | 0.1− | 2002 12 11 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 10 31 | 704 | 1.0+ | 0.5+ | 2002 12 11 | 644 | 0.3− | 0.0 | 2006 10 16 | 106 | 0.3+ | 0.9+ |
| 2002 11 13 | 644 | 0.2− | 0.0 | 2002 12 11 | 644 | 0.5− | 0.0 | 2006 10 16 | 106 | 0.1− | 0.3− |
| 2002 11 13 | 644 | 0.3− | 0.1− | 2006 08 17 | 683 | 0.5+ | 0.1− | 2006 10 16 | 106 | 0.1− | 1.2− |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2006 08 17 | 683 | 0.1− | 0.6+ | 2006 10 16 | 106 | 0.1+ | 0.6− |
| 2002 11 15 | 704 | 0.2+ | 1.4− | 2006 08 17 | 683 | (0.2+ | 2.0+) | 2006 11 14 | 703 | 0.7+ | 0.0 |
| 2002 11 15 | 704 | 0.1− | 0.4+ | 2006 08 31 | 704 | 0.5+ | 0.5− | 2006 11 14 | 703 | 0.1− | 0.2+ |
| 2002 11 15 | 704 | 0.7− | 0.7− | 2006 08 31 | 704 | 1.4− | 0.6+ | 2006 11 14 | 703 | 0.4+ | 0.5− |
| 2002 11 15 | 704 | 0.7− | 0.7− | 2006 08 31 | 704 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.9− | 0.3+ |
| 2002 11 15 | 704 | 0.1− | 0.7+ | 2006 08 31 | 704 | 0.1+ | 0.0 | | | | |
| 2002 11 25 | 644 | 0.3− | 0.1− | 2006 09 20 | 224 | 0.6+ | 0.1− | | | | |

**2002 TR$_{297}$ = 2006 SU$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.37105 | | (2000.0) | | | |
| $n$ | 0.24045229 | $\omega$ | 342.09547 | | +0.93868275 | −0.33911426 |
| $a$ | 2.5612390 | $\Omega$ | 37.91083 | | +0.32742891 | +0.82021748 |
| $e$ | 0.0690533 | $i$ | 5.81564 | | +0.10800467 | +0.46070034 |
| $P$ | 4.10 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.5+ | 0.4+ |
| 2002 10 11 | 704 | 0.4+ | 0.2− | 2006 09 23 | 691 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.7+ | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2002 10 15 | 644 | 0.1+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5+ |
| 2002 10 15 | 644 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2002 10 15 | 644 | 0.1+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2002 11 04 | 291 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.6+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2002 11 04 | 291 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 1.0− |
| 2002 11 04 | 291 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2002 11 06 | 699 | 0.0 | 0.7− | 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2002 11 06 | 699 | 0.7− | 0.4− | 2006 10 21 | 703 | 1.3+ | 0.5− | 2006 11 11 | 703 | 1.5− | 0.9− |
| 2002 11 06 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2002 11 06 | 699 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.7+ |
| 2002 11 06 | 704 | 0.9− | 0.7− | 2006 10 21 | 703 | 0.3− | 0.5+ | 2006 11 17 | 703 | 0.9− | 0.2− |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1− | 1.3− |
| 2002 11 06 | 704 | 0.7− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | 0.6+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2+ | | | | |

**2002 TF$_{298}$ = 2006 QJ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.48941 | | (2000.0) | | | |
| $n$ | 0.23639557 | $\omega$ | 21.28841 | | +0.98575976 | −0.16607645 |
| $a$ | 2.5904576 | $\Omega$ | 348.17898 | | +0.12959440 | +0.85027273 |
| $e$ | 0.1961159 | $i$ | 7.40089 | | +0.10715869 | +0.49945460 |
| $P$ | 4.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.2+ | 0.3− | 2002 10 16 | 644 | 0.5− | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.2+ |
| 2002 10 04 | 704 | 0.2+ | 0.5− | 2006 08 24 | 644 | 0.7− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.2− | 0.7− | 2006 08 24 | 644 | 0.4− | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.2− | 0.3− | 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.7+ | 0.2− |
| 2002 10 12 | 704 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.6+ | 0.6− | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2002 10 12 | 704 | 1.0+ | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 2002 10 12 | 704 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2002 10 16 | 644 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.5− | 0.3− |
| 2002 10 16 | 644 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.3− |

**2002 TP$_{298}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.15297 | | (2000.0) | | | |
| $n$ | 0.24075567 | $\omega$ | 29.98961 | | +0.98841228 | −0.14926272 |
| $a$ | 2.5590869 | $\Omega$ | 338.54226 | | +0.11989929 | +0.87922660 |
| $e$ | 0.1684652 | $i$ | 4.32707 | | +0.09308767 | +0.45241709 |
| $P$ | 4.09 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.5+ | 0.4− | 2002 11 05 | 704 | 0.6− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 2002 10 04 | 704 | 1.4+ | 0.3− | 2002 11 08 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.7− |
| 2002 10 04 | 704 | 0.0 | 0.3+ | 2002 11 08 | 704 | 0.2+ | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2002 10 04 | 704 | (0.6− | 2.7+) | 2002 11 08 | 704 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.2− |
| 2002 10 04 | 704 | (0.4− | 1.8+) | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2002 10 12 | 704 | 0.2+ | 0.4− | 2006 07 22 | G96 | 0.6− | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 1.0− | 0.1− | 2006 07 22 | G96 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2002 10 12 | 704 | 1.3− | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.4− |
| 2002 10 15 | 644 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.5− |
| 2002 10 15 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2002 10 15 | 644 | 0.5+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 05 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.8+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2002 11 05 | 704 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2002 11 05 | 704 | (0.0 | 1.9−) | 2006 09 30 | 703 | 0.0 | 0.8− | | | | |

**2002 TR$_{298}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 337.43588 | | (2000.0) | | | |
| $n$ | 0.23855370 | $\omega$ | 96.97399 | | +0.74491190 | −0.66550315 |
| $a$ | 2.5748105 | $\Omega$ | 304.75951 | | +0.58728350 | +0.68753917 |
| $e$ | 0.1311064 | $i$ | 3.28170 | | +0.31655071 | +0.29050894 |
| $P$ | 4.13 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3− | 1.4+ | 2002 11 12 | 704 | 0.9+ | 0.2+ | 2006 09 25 | 704 | 1.4+ | 0.3− |
| 2002 10 04 | 704 | 0.4− | 0.3− | 2002 11 12 | 704 | 0.8+ | 0.4− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.4− | 0.1− | 2002 11 12 | 704 | 0.2+ | 1.0+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.5+ | 0.5− | 2002 11 14 | 704 | (0.7+ | 3.1−) | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.3+ | 0.2− | 2002 11 14 | 704 | (0.1− | 2.4−) | 2006 10 16 | 683 | 1.4+ | 1.4− |
| 2002 10 12 | 704 | 0.4+ | 0.3+ | 2002 11 14 | 704 | (0.8+ | 2.8−) | 2006 10 16 | 683 | (0.8− | 2.1−) |
| 2002 10 12 | 704 | 1.4+ | 0.5− | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 683 | 0.4+ | 0.3− |
| 2002 10 15 | 644 | 0.4− | 0.0 | 2006 09 17 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2002 10 15 | 644 | 0.4− | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.9+ |
| 2002 10 15 | 644 | 0.4− | 0.2+ | 2006 09 18 | 703 | (0.3− | 1.6−) | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2002 10 31 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.9− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2002 10 31 | 699 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.3− | 0.2− | 2006 09 18 | 703 | 1.1− | 0.9− | 2006 10 19 | 644 | 0.1− | 0.0 | |
| 2002 10 31 | 699 | 0.5− | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1+ | |
| 2002 11 05 | 704 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 2002 11 05 | 704 | 0.8− | 0.5− | 2006 09 19 | 703 | 0.2− | 1.1− | 2006 10 21 | 644 | 0.3− | 0.0 | |
| 2002 11 05 | 704 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2002 11 05 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2002 11 05 | 704 | 0.8− | 0.6− | 2006 09 25 | 704 | 0.7− | 1.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2002 11 12 | 704 | 0.8+ | 0.3+ | 2006 09 25 | 704 | (1.6+ | 0.1−) | 2006 10 21 | 644 | 0.1− | 0.1+ | |

**2002 TW$_{298}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.27427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23950310 | $\omega$ | 92.08700 | | +0.70165371 | | +0.70066009 |
| $a$ | 2.5680016 | $\Omega$ | 223.46894 | | −0.70534470 | | +0.65731462 |
| $e$ | 0.2658100 | $i$ | 10.84576 | | −0.10085101 | | +0.27751203 |
| $P$ | 4.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 23 | 691 | 0.4− | 0.6+ | 2002 11 07 | 704 | (0.5− | 1.6+) | 2006 10 19 | 644 | 0.2+ | 0.3− | |
| 1993 06 23 | 691 | 0.4+ | 0.6+ | 2002 11 10 | 704 | 0.3− | 1.2− | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 1993 06 23 | 691 | 0.2+ | 0.5+ | 2002 11 10 | 704 | 0.9+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 1998 11 14 | 691 | 0.3− | 0.4− | 2002 11 10 | 704 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | |
| 1998 11 14 | 691 | 0.4− | 0.2− | 2002 11 10 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 1998 11 14 | 691 | 0.4− | 0.2− | 2002 11 12 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2002 09 11 | 049 | 1.1− | 1.1− | 2002 11 12 | 644 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2002 09 11 | 049 | 0.6− | 0.5− | 2002 11 12 | 644 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.4+ | 0.0 | |
| 2002 09 11 | 049 | (0.5− | 1.6−) | 2002 11 22 | 644 | 0.3− | 0.6+ | 2006 10 29 | 704 | 0.3− | 0.4− | |
| 2002 10 07 | 699 | 0.9− | 0.7+ | 2002 11 22 | 644 | 0.3− | 0.4+ | 2006 10 29 | 704 | 0.6− | 0.3+ | |
| 2002 10 07 | 704 | 0.1− | 0.0 | 2002 11 22 | 644 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.6− | 0.6+ | |
| 2002 10 07 | 704 | 0.5− | 0.3+ | 2002 12 05 | 704 | 0.3− | 0.2− | 2006 10 29 | 704 | 0.7− | 0.4+ | |
| 2002 10 07 | 699 | 0.7+ | 0.2+ | 2002 12 05 | 704 | 0.1− | 1.2+ | 2006 11 06 | 644 | 0.0 | 0.1+ | |
| 2002 10 07 | 704 | 0.9− | 0.1+ | 2002 12 05 | 704 | 0.5+ | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.3+ | |
| 2002 10 07 | 699 | 0.5+ | 0.2+ | 2002 12 05 | 704 | 0.5− | 0.9+ | 2006 11 06 | 644 | 0.1+ | 0.1+ | |
| 2002 10 07 | 704 | 0.1+ | 0.1− | 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.0 | |
| 2002 10 07 | 699 | (1.7− | 1.8+) | 2005 03 13 | 691 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1− | |
| 2002 10 12 | 704 | 0.5− | 0.1− | 2005 03 13 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.1− | |
| 2002 10 12 | 704 | 0.2− | 0.3− | 2006 08 12 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | (0.3− | 1.8+) | |
| 2002 10 12 | 704 | 0.0 | 1.2+ | 2006 08 12 | 644 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.4+ | |
| 2002 10 12 | 704 | 1.0+ | 0.2+ | 2006 08 12 | 644 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.1+ | |
| 2002 10 16 | 699 | 0.4+ | 1.2+ | 2006 09 16 | 703 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.8− | 0.7+ | |
| 2002 10 16 | 699 | (2.0+ | 0.9−) | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 11 13 | 691 | 0.3− | 0.3− | |
| 2002 10 16 | 699 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.4+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.0 | |
| 2002 10 16 | 699 | 1.0+ | 1.0− | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.2+ | |
| 2002 10 31 | 699 | 0.2+ | 1.3+ | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.5− | |
| 2002 10 31 | 699 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.3− | |
| 2002 10 31 | 699 | 0.1+ | 0.9+ | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.3− | |
| 2002 10 31 | 644 | 0.5+ | 0.7+ | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.0 | 0.2− | |
| 2002 10 31 | 699 | 0.3+ | 0.6+ | 2006 09 20 | 699 | 0.7− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.0 | |
| 2002 10 31 | 644 | 0.5+ | 0.5+ | 2006 09 20 | 699 | 1.0+ | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.2+ | |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 09 20 | 699 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1− | |
| 2002 11 05 | 291 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 1.0+ | 1.0+ | |
| 2002 11 05 | 291 | 0.9+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.8+ | |
| 2002 11 05 | 291 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 11 19 | 704 | 1.3+ | 0.9− | |
| 2002 11 06 | 704 | 0.4+ | 1.5+ | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 19 | 704 | (0.0 | 2.2+) | |
| 2002 11 06 | 704 | 0.3− | 1.0+ | 2006 09 30 | 703 | 0.7− | 0.2− | 2006 11 21 | 704 | 0.6+ | 1.1+ | |
| 2002 11 06 | 704 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | (0.9+ | 1.8+) | |
| 2002 11 06 | 704 | 0.0 | 1.4+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | (1.1+ | 2.4+) | |
| 2002 11 06 | 704 | (0.2+ | 1.5+) | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.3+ | |
| 2002 11 06 | 608 | 0.3+ | 1.0+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.4− | |
| 2002 11 06 | 608 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.6− | |
| 2002 11 06 | 608 | 0.3+ | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.4− | |
| 2002 11 07 | 704 | 0.6− | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.6− | |
| 2002 11 07 | 699 | 0.6+ | 1.3− | 2006 10 17 | 703 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.2− | |
| 2002 11 07 | 699 | 1.1− | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.4+ | |
| 2002 11 07 | 699 | 0.8+ | 0.4− | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.3− | |
| 2002 11 07 | 704 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.0 | 0.0 | |
| 2002 11 07 | 699 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.3+ | | | | | |

**2002 TR$_{299}$ = 2006 RB$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.15457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21570353 | $\omega$ | 44.42114 | | +0.69385217 | | +0.71788180 |
| $a$ | 2.7535811 | $\Omega$ | 269.60434 | | −0.67547727 | | +0.62152853 |
| $e$ | 0.0626089 | $i$ | 3.25050 | | −0.24959895 | | +0.31360488 |
| $P$ | 4.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.6+ | |
| 2002 10 15 | 644 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.9− | 0.0 | |
| 2002 10 15 | 644 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.5+ | 1.3− | 2006 09 18 | 703 | 0.1− | 0.4− | |
| 2002 10 16 | 644 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.4− | |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.6+ | 0.5− | |
| 2002 10 16 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.3− | |
| 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.7− | 0.7− | 2006 09 28 | G96 | 0.4+ | 0.3− | |

**2002 TA$_{303}$ = 2006 UE$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.46568 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24616617 | $\omega$ | 216.70821 | | +0.66306980 | | −0.74690430 |
| $a$ | 2.5214507 | $\Omega$ | 192.03209 | | +0.73092927 | | +0.66035554 |
| $e$ | 0.0316922 | $i$ | 13.79966 | | +0.16149568 | | +0.07787511 |
| $P$ | 4.00 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.4− | 0.6− | 2002 10 11 | 704 | 0.8− | 0.0 | 2006 10 21 | 703 | 0.8+ | 1.5− | |
| 2002 10 03 | 704 | 0.7+ | 1.0+ | 2002 10 15 | 704 | 0.1− | 1.4+ | 2006 10 21 | 703 | 0.5− | 0.6− | |
| 2002 10 03 | 704 | 0.3+ | 0.2+ | 2002 10 15 | 704 | 0.7+ | 1.4+ | 2006 10 21 | 703 | 0.7+ | 0.9− | |
| 2002 10 03 | 704 | 1.2+ | 0.0 | 2002 10 15 | 704 | 0.6+ | 1.9+ | 2006 10 22 | G96 | 0.1+ | 0.1− | |
| 2002 10 03 | 704 | 0.8+ | 0.4− | 2002 10 31 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2002 10 11 | 704 | 0.9− | 0.9− | 2002 10 31 | 704 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.2− | |
| 2002 10 11 | 704 | 0.8− | 0.1− | 2002 10 31 | 704 | 0.7− | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.1− | |
| 2002 10 11 | 704 | 0.6+ | 0.5− | 2002 10 31 | 704 | 1.0− | 0.8− | | | | | |
| 2002 10 11 | 704 | 1.1− | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.7− | | | | | |

**2002 TC$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.13851 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24343207 | $\omega$ | 334.98523 | | +0.90504486 | | −0.40952575 |
| $a$ | 2.5402952 | $\Omega$ | 49.68557 | | +0.41114949 | | +0.77332482 |
| $e$ | 0.1571803 | $i$ | 8.66030 | | +0.10885726 | | +0.48400143 |
| $P$ | 4.05 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2002 10 30 | 645 | 0.1− | 0.0 | 2006 10 02 | 703 | 1.0− | 0.3− | |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2002 11 08 | 645 | 0.0 | 0.1− | 2006 10 16 | 703 | 1.2− | 0.4+ | |
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.9− | 0.7+ | |
| 2002 10 04 | 645 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.5+ | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.4− | 0.3− | 2006 10 16 | 703 | (3.7+ | 1.8+) | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.0 | 1.1+ | 2006 10 22 | 703 | 0.7− | 1.2+ | |
| 2002 10 15 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.7+ | 1.1+ | 2006 10 22 | 703 | 0.1− | 0.3+ | |
| 2002 10 15 | 644 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.9− | 1.0+ | |
| 2002 10 15 | 644 | 0.1+ | 0.6+ | 2006 10 02 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.9+ | 0.0 | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 02 | 703 | 0.1+ | 1.0+ | | | | | |

**2002 TP$_{304}$ = 2006 WE$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.30326 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25719831 | $\omega$ | 229.79737 | | +0.98979223 | | +0.11823148 |
| $a$ | 2.4488225 | $\Omega$ | 123.27119 | | −0.08355207 | | +0.93373995 |
| $e$ | 0.1143169 | $i$ | 5.46165 | | −0.11545734 | | +0.33786243 |
| $P$ | 3.83 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.0 | 0.1+ | 2002 10 15 | 644 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.6− | 1.2− |
| 2002 10 04 | 645 | 0.1+ | 0.1+ | 2002 10 15 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.3+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.8+ | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2002 10 05 | 645 | 0.1− | 0.1− | 2006 11 19 | 703 | 1.1− | 1.7+ | 2006 11 23 | G96 | 0.3+ | 0.3+ |
| 2002 10 15 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.8− | 2006 11 23 | G96 | 0.1− | 0.0 |

**2002 TJ$_{306}$ = 2006 WE$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.23743 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26145766 | $\omega$ | 231.51036 | | +0.99661009 | | −0.05467858 |
| $a$ | 2.4221543 | $\Omega$ | 131.53377 | | +0.07268193 | | +0.93523815 |
| $e$ | 0.1605655 | $i$ | 4.71028 | | −0.03854432 | | +0.34977115 |
| $P$ | 3.77 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.0 | 0.0 | 2002 10 15 | 644 | 0.5+ | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.4+ | 0.1− | 2006 11 24 | 691 | 0.3+ | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 24 | 691 | 0.0 | 0.3+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.6− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2002 10 15 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.4+ | | | | |
| 2002 10 15 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.5− | 0.0 | | | | |

**2002 TS$_{307}$ = 2006 SX$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.05154 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23716248 | $\omega$ | 151.67569 | | +0.10288687 | | +0.99136086 |
| $a$ | 2.5848702 | $\Omega$ | 124.12025 | | −0.93015573 | | +0.12486832 |
| $e$ | 0.2474487 | $i$ | 5.63933 | | −0.35245512 | | −0.04014404 |
| $P$ | 4.16 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 03 | 691 | 0.1− | 0.2+ | 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.4+ |
| 1997 05 03 | 691 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.0 | 0.8+ | 2006 09 28 | 699 | 0.2+ | 0.8+ |
| 1997 05 03 | 691 | 0.1− | 0.1− | 2005 04 16 | 691 | 0.0 | 0.3+ | 2006 09 28 | 699 | 0.3+ | 0.8− |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.3+ | 0.6+ | 2006 09 28 | 699 | 0.8− | 1.3+ |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 09 28 | 699 | 0.2− | 0.0 |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 09 30 | 703 | (3.8− | 1.8+) |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2006 09 18 | 699 | 1.1+ | 0.7+ | 2006 09 30 | 703 | 0.9+ | 1.1+ |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.4+ | 0.1− | 2006 09 30 | 703 | 1.7− | 0.1+ |
| 2002 10 30 | 645 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2+ | | | | |

**2002 TJ$_{311}$ = 2006 QC$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.28427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21795817 | $\omega$ | 136.41313 | | +0.23964231 | | +0.96664257 |
| $a$ | 2.7345589 | $\Omega$ | 147.14384 | | −0.93018998 | | +0.25527633 |
| $e$ | 0.1007625 | $i$ | 9.59264 | | −0.27806144 | | −0.02088400 |
| $P$ | 4.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.1+ | 0.1− | 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 08 19 | 699 | 0.6+ | 0.6− |
| 2000 01 12 | 691 | 0.1+ | 0.1+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 1.1+ | 0.0 |
| 2000 01 12 | 691 | 0.3− | 0.1− | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.4+ |
| 2002 10 04 | 645 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.5− | 0.3− | 2006 08 28 | 703 | 0.1− | 1.0− |
| 2002 10 04 | 645 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.6− | 1.6+ | 2006 08 28 | 703 | 0.5− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.1− | 0.7− | | | | |

**2002 TS$_{312}$ = 2006 SQ$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.78356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24366407 | $\omega$ | 249.90280 | | +0.89861516 | | +0.41698410 |
| $a$ | 2.5386825 | $\Omega$ | 85.24945 | | −0.33371919 | | +0.85150710 |
| $e$ | 0.2828267 | $i$ | 7.86892 | | −0.28481976 | | +0.31789922 |
| $P$ | 4.04 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.8− | 0.1− | 2006 10 02 | 703 | 1.0− | 0.5− |
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.7− | 0.7− | 2006 10 02 | 703 | 0.8− | 0.3− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.5− | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.2− | 0.4+ | 2006 10 17 | 703 | 1.2+ | 0.4− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.4− | 0.8+ | 2006 10 17 | 703 | (1.3− | 2.0−) |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.4− | 0.8− | 2006 10 17 | 703 | 1.0+ | 0.0 |
| 2002 10 15 | 644 | 0.2+ | 1.5+ | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 10 17 | 703 | (2.7− | 1.4−) |
| 2002 10 15 | 644 | 0.1− | 1.2+ | 2006 09 29 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 703 | (2.4− | 1.8−) |
| 2002 10 15 | 644 | 0.2+ | 1.2+ | 2006 09 29 | 699 | 0.0 | 0.4− | 2006 10 28 | 703 | 1.2− | 0.1+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 1.1+ | 0.8+ | 2006 10 28 | 703 | 0.0 | 1.3+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 1.2+ | 0.0 | 2006 10 28 | 703 | 0.7+ | 0.7− |
| 2006 09 25 | 699 | 1.4+ | 0.2+ | 2006 10 02 | 703 | 1.1− | 0.1− | | | | |

**2002 TS$_{315}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.04009 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23902808 | $\omega$ | 227.35178 | | +0.91843743 | | −0.38568059 |
| $a$ | 2.5714028 | $\Omega$ | 154.94687 | | +0.39553329 | | +0.89254003 |
| $e$ | 0.1984909 | $i$ | 11.97781 | | +0.00510963 | | +0.23371517 |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.0 | 0.0 | 2002 11 22 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 0.1+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2002 11 22 | 644 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.3− | 0.3− | 2006 10 21 | 703 | 0.5− | 0.0 |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.7− |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.0 | 1.3+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 1.3+ | 0.7+ | 2006 10 24 | 644 | 0.2+ | 0.3+ |
| 2002 10 30 | 704 | 0.4− | 0.3− | 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2002 10 30 | 704 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.9− | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2002 10 30 | 704 | 0.5− | 0.4− | 2006 09 29 | 699 | 0.2− | 0.7+ | 2006 10 28 | 703 | 0.2− | 0.5− |
| 2002 10 30 | 704 | 0.0 | 0.8+ | 2006 09 29 | 699 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.8− | 1.4− |
| 2002 11 06 | 644 | 0.1+ | 0.5+ | 2006 10 02 | 703 | 0.3+ | 0.1+ | 2006 10 28 | 703 | 0.7− | 0.4+ |
| 2002 11 06 | 644 | 0.1+ | 0.7+ | 2006 10 02 | 703 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.2+ | 0.6− |
| 2002 11 06 | 644 | 0.3+ | 0.4+ | 2006 10 02 | 703 | 0.4+ | 0.0 | | | | |
| 2002 11 22 | 644 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.7+ | 0.7− | | | | |

**2002 TU$_{317}$ = 2006 QU$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.86915 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23838839 | $\omega$ | 338.81111 | | +0.09992706 | | +0.99289880 |
| $a$ | 2.5760007 | $\Omega$ | 296.87519 | | −0.90217021 | | +0.06305292 |
| $e$ | 0.2234277 | $i$ | 4.14982 | | −0.41964687 | | +0.10087766 |
| $P$ | 4.13 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 08 31 | 673 | 0.1+ | 0.0 |
| 2002 10 05 | 645 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.0 |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 08 30 | 673 | 0.3− | 0.4− | 2006 09 15 | 691 | 0.2− | 0.4+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 08 30 | 673 | 0.5+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 08 30 | 673 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2003 11 20 | 695 | 0.0 | 0.3+ | 2006 08 31 | 673 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2003 11 20 | 695 | 0.0 | 0.3+ | 2006 08 31 | 673 | 0.2− | 0.1− | | | | |

**2002 TJ$_{318}$ = 2006 VF$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.35896 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26512939 | $\omega$ | 235.01955 | | −0.76885475 | | −0.63821792 |
| $a$ | 2.3997397 | $\Omega$ | 265.28839 | | +0.59874657 | | −0.69704488 |
| $e$ | 0.1147958 | $i$ | 2.25684 | | +0.22442128 | | −0.32681235 |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 06 | 691 | 0.1+ | 0.1− | 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.5+ | 0.1+ |
| 2000 01 06 | 691 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.3− | 0.5+ | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2000 01 06 | 691 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.6− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.5+ |
| 2002 09 14 | 644 | 0.1− | 0.8+ | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.4− |
| 2002 09 14 | 644 | 0.2− | 1.0+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.5− | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.6− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.6+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.0 | 1.0+ | | | | |

**2002 TH$_{323}$ = 2006 WL$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.74663 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28720101 | $\omega$ | 79.44837 | | +0.02565916 | | +0.99959838 |
| $a$ | 2.2751607 | $\Omega$ | 192.04151 | | −0.93825201 | | +0.01992825 |
| $e$ | 0.0967478 | $i$ | 3.30546 | | −0.34499966 | | +0.02014823 |
| $P$ | 3.43 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.5+ | 0.5− | 2002 10 04 | 644 | 0.7− | 0.1− | 2006 11 16 | G96 | 0.7+ | 0.3− |
| 1995 07 26 | 691 | 0.0 | 0.3− | 2002 10 04 | 644 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 1995 07 26 | 691 | 0.2− | 0.4− | 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 1999 11 05 | 691 | 0.1+ | 0.3− | 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 1999 11 05 | 691 | 0.4− | 0.7− | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 1999 11 05 | 691 | 0.5+ | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.6− | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.7− | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.0 | | | | |
| 2002 09 14 | 644 | 0.3− | 0.6+ | 2002 10 11 | 645 | 0.0 | 0.1+ | | | | |

**2002 TZ$_{323}$ = 2006 TR$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.66532 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26883311 | $\omega$ | 244.70169 | | −0.35774987 | | +0.93377953 |
| $a$ | 2.3776479 | $\Omega$ | 4.36214 | | −0.81203995 | | −0.30663380 |
| $e$ | 0.0603064 | $i$ | 6.35246 | | −0.46109234 | | −0.18447631 |
| $P$ | 3.67 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.7− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.5+ | 0.4− | 2006 10 04 | G96 | 0.2− | 0.5− |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.5− | 0.1+ | | | | |
| 2002 10 30 | 645 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− | | | | |

**2002 TT$_{324}$ = 2006 VH$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.07692 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27518264 | $\omega$ | 173.37307 | | −0.99012075 | | +0.13834201 |
| $a$ | 2.3409314 | $\Omega$ | 14.63836 | | −0.13244164 | | −0.86917954 |
| $e$ | 0.0724473 | $i$ | 5.18892 | | −0.04604464 | | −0.47475089 |
| $P$ | 3.58 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.6− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.3− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.5− | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2002 10 10 | 645 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.1+ | | | | |

**2002 TF$_{327}$ = 2006 UO$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.17148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25827015 | $\omega$ | 40.29177 | | +0.28967975 | | −0.95664544 |
| $a$ | 2.4420426 | $\Omega$ | 32.90207 | | +0.86319636 | | +0.24746693 |
| $e$ | 0.1019009 | $i$ | 3.19248 | | +0.41349448 | | +0.15358913 |
| $P$ | 3.82 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.3− | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.5− | 0.0 | 2006 10 29 | 691 | 0.2− | 0.1− |
| 2002 10 31 | 645 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2006 09 25 | G96 | 0.2+ | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.6+ | 0.3+ | | | | |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.1− | | | | |

**2002 TN$_{332}$ = 2006 UH$_{238}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.87730 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25539004 | $\omega$ | 51.22460 | | −0.15792153 | | −0.98635533 |
| $a$ | 2.4603680 | $\Omega$ | 47.92769 | | +0.88542567 | | −0.16230212 |
| $e$ | 0.1400564 | $i$ | 3.59296 | | +0.43712947 | | −0.02758974 |
| $P$ | 3.86 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.1− | 0.1− | 2002 10 30 | 645 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.4− | 0.0 |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2002 10 31 | 645 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.3− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1− | | | | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.0 | | | | |

**2002 TB$_{338}$ = 2006 VQ$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.27333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25964921 | $\omega$ | 27.66271 | | +0.14524517 | | −0.98566232 |
| $a$ | 2.4333881 | $\Omega$ | 54.10850 | | +0.88705468 | | +0.09128897 |
| $e$ | 0.2119882 | $i$ | 6.08452 | | +0.43822121 | | +0.14190180 |
| $P$ | 3.80 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.3− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.5+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.8− | 2006 11 14 | 691 | 0.4− | 0.1− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 14 | 691 | 0.3+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2− | 0.6− | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2002 10 11 | 645 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2006 10 19 | G96 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.7− | 0.4+ |
| 2006 10 19 | G96 | 0.6+ | 0.4− | 2006 11 10 | 691 | 0.1− | 0.1+ | | | | |

**2002 TA$_{339}$ = 2006 SH$_{305}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.47340 | | $\omega$ | 161.46200 | +0.81144325 | +0.58286675 |
| $n$ | 0.24390556 | | $\Omega$ | 162.67920 | −0.55272066 | +0.78911947 |
| $a$ | 2.5370065 | | $i$ | 8.25258 | −0.18989401 | +0.19379580 |
| $e$ | 0.1103809 | | | | | |
| $P$ | 4.04 | $H$ | 16.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 910 | 0.3− | 0.5+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 1998 10 01 | 910 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 1998 10 01 | 910 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 15 | 106 | 0.2+ | 0.2− |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 15 | 106 | 0.6− | 1.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.4− | 0.0 | 2006 10 15 | 106 | 0.9− | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 15 | 106 | 0.7+ | 0.0 |

**2002 TG$_{342}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.57484 | | $\omega$ | 300.18613 | +0.97616681 | −0.19895962 |
| $n$ | 0.25936160 | | $\Omega$ | 71.40678 | +0.21687894 | +0.87985786 |
| $a$ | 2.4351867 | | $i$ | 5.24722 | +0.00786668 | +0.43158455 |
| $e$ | 0.2419701 | | | | | |
| $P$ | 3.80 | $H$ | 18.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2002 10 15 | 644 | 0.4− | 1.2+ | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2002 10 15 | 644 | 0.4− | 1.0+ | 2006 11 11 | 691 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 10 15 | 644 | 0.7− | 0.9+ | 2006 11 11 | 691 | 0.2− | 0.3− | 2006 12 01 | 691 | 0.3− | 0.3− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.4+ |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.2+ | 2006 12 01 | 691 | 0.4− | 0.2+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.5+ | 0.1− | | | | |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1− | 0.2− | | | | |

**2002 TW$_{349}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.58896 | | $\omega$ | 96.71867 | +0.65537802 | +0.74801452 |
| $n$ | 0.24036618 | | $\Omega$ | 214.95992 | −0.74484911 | +0.61710121 |
| $a$ | 2.5618507 | | $i$ | 10.52435 | −0.12521758 | +0.24425474 |
| $e$ | 0.0767327 | | | | | |
| $P$ | 4.10 | $H$ | 16.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 29 | 691 | 0.3− | 0.0 | 2002 08 15 | 644 | 0.2+ | 0.0 | 2002 10 05 | 645 | 0.1+ | 0.0 |
| 1997 04 29 | 691 | 0.0 | 0.1+ | 2002 09 04 | 644 | 0.1+ | 0.6+ | 2002 10 10 | 645 | 0.1− | 0.1− |
| 1997 04 29 | 691 | 0.3+ | 0.3− | 2002 09 04 | 644 | 0.2+ | 0.5+ | 2002 10 10 | 645 | 0.1− | 0.1− |
| 2002 08 04 | 644 | 0.1+ | 0.2− | 2002 09 04 | 644 | 0.5+ | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.1− |
| 2002 08 04 | 644 | 0.5+ | 0.1− | 2002 09 04 | 644 | 0.0 | 1.2+ | 2002 10 11 | 645 | 0.1− | 0.1− |
| 2002 08 04 | 644 | 0.2+ | 0.1− | 2002 09 04 | 644 | 0.1+ | 1.1+ | 2006 08 23 | 644 | 0.1+ | 0.0 |
| 2002 08 15 | 644 | 0.2+ | 0.2+ | 2002 09 04 | 644 | 0.0 | 1.1+ | 2006 08 23 | 644 | 0.1− | 0.2+ |
| 2002 08 15 | 644 | 0.0 | 0.3+ | 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.1− | 0.1+ |

**2002 TU$_{354}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.40403 | | $\omega$ | 244.92806 | +0.22352164 | −0.97389237 |
| $n$ | 0.26537306 | | $\Omega$ | 192.35320 | +0.94767612 | +0.22665594 |
| $a$ | 2.3982705 | | $i$ | 10.67927 | +0.22792114 | +0.01267808 |
| $e$ | 0.1693162 | | | | | |
| $P$ | 3.71 | $H$ | 17.4 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 1.0+ | 0.6+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2002 08 28 | 644 | 0.5+ | 0.5+ | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.5+ | 0.8+ |
| 2002 09 10 | 608 | 0.7+ | 0.3− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.7− | 0.7− |
| 2002 09 10 | 608 | 0.1− | 0.1− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.2− | 0.4+ |
| 2002 09 10 | 608 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 11 01 | 703 | 0.2− | 0.3+ |
| 2002 09 11 | 644 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 01 | 703 | 0.2− | 0.6+ |
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2002 09 11 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.1− | 2006 11 08 | 644 | 0.6+ | 0.2+ |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.4+ | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.5+ | 2006 11 13 | 703 | 0.7− | 0.4− |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.4+ | 2006 11 13 | 703 | 0.7+ | 0.8− |
| 2002 09 26 | 608 | 0.9− | 0.5− | 2006 10 22 | 703 | 0.5− | 0.7− | 2006 11 13 | 703 | 0.4− | 0.1− |
| 2002 09 26 | 608 | 0.9− | 1.2− | 2006 10 22 | 703 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.5− |

**2002 TM$_{355}$ = 2006 WX$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.82551 | | $\omega$ | 294.14101 | −0.66229886 | −0.74831806 |
| $n$ | 0.27421559 | | $\Omega$ | 197.49544 | +0.72444127 | −0.62693821 |
| $a$ | 2.3464319 | | $i$ | 7.09885 | +0.19116762 | −0.21672232 |
| $e$ | 0.0536407 | | | | | |
| $P$ | 3.59 | $H$ | 18.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 30 | 691 | 0.2+ | 0.3− | 2002 10 11 | 645 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.1+ |
| 1995 09 30 | 691 | 0.1− | 0.4− | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 1995 09 30 | 691 | 0.1+ | 0.0 | 2004 02 17 | 691 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.2+ | 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2002 10 05 | 645 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.7− | 0.1+ |

**2002 TW$_{355}$ = 2006 SR$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.70056 | | $\omega$ | 352.93254 | +0.87103030 | +0.49084505 |
| $n$ | 0.25345524 | | $\Omega$ | 337.63893 | −0.44815822 | +0.77784392 |
| $a$ | 2.4728733 | | $i$ | 2.92682 | −0.20114777 | +0.39246652 |
| $e$ | 0.1589451 | | | | | |
| $P$ | 3.89 | $H$ | 18.3 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 31 | 691 | 0.0 | 0.0 | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 1998 08 31 | 691 | 0.0 | 0.2+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1998 08 31 | 691 | 0.0 | 0.0 | 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2002 09 11 | 644 | 0.6− | 0.2+ | 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 09 11 | 644 | 0.5− | 0.4+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2002 09 11 | 644 | 0.4− | 0.4+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.2− | 0.3+ |

**2002 TE$_{362}$ = 2006 UP$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.86943 | | $\omega$ | 211.75563 | +0.99826942 | −0.05358031 |
| $n$ | 0.25159510 | | $\Omega$ | 151.28593 | +0.05870277 | +0.93237971 |
| $a$ | 2.4850469 | | $i$ | 2.89136 | −0.00348456 | +0.35748738 |
| $e$ | 0.2618169 | | | | | |
| $P$ | 3.92 | $H$ | 19.6 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.9+ | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2002 10 30 | 645 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.9+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.6+ |
| 2002 10 30 | 645 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.1− | | | | |

**2002 TP$_{374}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.78846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23965383 | $\omega$ | 265.50835 | | +0.73277915 | | +0.66491204 |
| $a$ | 2.5669247 | $\Omega$ | 52.73638 | | −0.52969121 | | +0.69082507 |
| $e$ | 0.1995490 | $i$ | 10.47269 | | −0.42715564 | | +0.28399418 |
| $P$ | 4.11 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.0 | 0.1− | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.4− | 0.3+ |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2002 10 06 | 608 | 0.8− | 0.7+ | 2002 10 31 | 704 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.1+ |
| 2002 10 06 | 608 | 0.4− | 0.8+ | 2002 10 31 | 704 | 0.6− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.7− |
| 2002 10 06 | 608 | 0.6− | 0.7+ | 2002 10 31 | 704 | 0.8− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2002 10 11 | 645 | 0.1+ | 0.1− | 2002 10 31 | 704 | 0.4+ | 0.2− | 2006 09 25 | 703 | 0.2− | 0.2+ |
| 2002 10 11 | 645 | 0.2+ | 0.1+ | 2002 11 08 | 645 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.1− | 0.5+ |
| 2002 10 15 | 644 | 0.0 | 0.5+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.0 | 0.2− |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.7+ | 0.9+ |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.0 | | | | |

**2002 TG$_{375}$ = 2006 SG$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.49332 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22335130 | $\omega$ | 183.22983 | | +0.99907777 | | +0.03540146 |
| $a$ | 2.6903600 | $\Omega$ | 174.56012 | | −0.03135569 | | +0.98812725 |
| $e$ | 0.1810737 | $i$ | 14.85033 | | −0.02933310 | | +0.14950341 |
| $P$ | 4.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 644 | 0.5− | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.5− | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2002 10 09 | 644 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.3+ | 0.3− |
| 2002 10 09 | 644 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.1− |
| 2002 10 28 | 644 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2+ |
| 2002 10 28 | 644 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 1.2− | 1.1+ | 2006 10 19 | G96 | 0.8− | 0.5+ |
| 2002 10 28 | 644 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.5− | 0.5− |
| 2002 11 06 | 644 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2002 11 06 | 644 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.2− | | | | |
| 2002 11 06 | 644 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.3− | | | | |

**2002 TM$_{375}$ = 1998 RZ$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.28765 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25330807 | $\omega$ | 257.94741 | | +0.95887042 | | −0.28005961 |
| $a$ | 2.4738310 | $\Omega$ | 118.30124 | | +0.27654208 | | +0.88506748 |
| $e$ | 0.2822867 | $i$ | 3.00761 | | +0.06396878 | | +0.37178242 |
| $P$ | 3.89 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 704 | 0.6− | 0.1+ | 2002 11 06 | 699 | 0.3− | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.2+ |
| 1998 09 14 | 704 | 1.4+ | 0.1+ | 2002 11 06 | 699 | 0.3+ | 0.1− | 2006 11 14 | 704 | 1.2+ | 0.4− |
| 1998 09 14 | 704 | (3.2− | 1.4−) | 2002 11 06 | 699 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 1998 09 18 | 704 | 0.0 | 1.0− | 2002 11 06 | 699 | 0.9− | 0.6+ | 2006 11 14 | 704 | (1.6− | 2.3+) |
| 1998 09 18 | 704 | 0.7+ | 0.5− | 2002 11 11 | 704 | 1.2− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 1998 09 18 | 704 | (1.0− | 2.5+) | 2002 11 11 | 704 | 0.4− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 1998 09 18 | 704 | 1.5− | 0.9+ | 2002 11 11 | 704 | 0.1− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 10 01 | 704 | 0.2− | 0.2− | 2002 11 11 | 704 | 0.6+ | 0.3− | 2006 11 17 | 704 | 1.0+ | 0.5− |
| 2002 10 01 | 704 | 0.5− | 0.5+ | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.6− | 0.1− |
| 2002 10 01 | 704 | 1.4+ | 0.4− | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.3+ | 1.1+ |
| 2002 10 11 | 704 | (0.8+ | 1.8+) | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 1.2+ | 1.0+ |
| 2002 10 11 | 704 | 0.2+ | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.7+ | 2006 10 23 | G96 | 1.5− | 0.9− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.4− | 2006 10 23 | G96 | 1.0+ | 0.0 | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2002 10 31 | 704 | 0.5+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.6− | 2006 11 20 | 704 | 0.8+ | 0.8+ |
| 2002 10 31 | 704 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.6+ | 0.4+ | 2006 11 12 | G96 | 0.2− | 0.6− | 2006 11 20 | 704 | 0.1+ | 0.6− |
| 2002 10 31 | 704 | 0.2− | 0.3− | 2006 11 12 | G96 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.3− |
| 2002 10 31 | 704 | 0.4− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.6− | | | | |

**2002 TN$_{375}$ = 2000 CV$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.90737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22398385 | $\omega$ | 184.12555 | | +0.93602484 | | +0.34868544 |
| $a$ | 2.6852924 | $\Omega$ | 155.30083 | | −0.31953787 | | +0.89882708 |
| $e$ | 0.0817747 | $i$ | 6.55584 | | −0.14748911 | | +0.26557174 |
| $P$ | 4.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.3+ | 0.2− | 2002 10 03 | 704 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.2+ | 0.0 |
| 2000 02 03 | 691 | 0.4+ | 0.4− | 2002 10 03 | 704 | 0.2− | 0.2− | 2006 08 14 | 644 | 0.2− | 0.4+ |
| 2000 02 03 | 691 | 0.0 | 0.3− | 2002 10 03 | 704 | 1.4− | 1.0− | 2006 08 14 | E12 | (2.5+ | 0.4−) |
| 2000 02 04 | 691 | 0.5− | 0.1+ | 2002 10 11 | 704 | 0.5− | 1.0+ | 2006 08 14 | E12 | 0.3+ | 0.7− |
| 2000 02 04 | 691 | 0.4− | 0.1+ | 2002 10 11 | 704 | 0.2+ | 0.8+ | 2006 08 14 | E12 | 0.0 | 0.4− |
| 2000 02 04 | 691 | 0.1+ | 0.2− | 2002 10 11 | 704 | 1.0+ | 0.6+ | 2006 08 14 | E12 | 0.5+ | 0.4− |
| 2001 05 23 | 691 | 0.0 | 0.0 | 2002 10 11 | 704 | 0.4+ | 0.6+ | 2006 08 14 | E12 | 0.0 | 0.5− |
| 2001 05 23 | 691 | 0.0 | 0.1− | 2002 10 11 | 704 | 0.5+ | 0.8− | 2006 10 20 | G96 | 0.5− | 0.3− |
| 2001 05 23 | 691 | 0.1− | 0.1− | 2005 04 02 | 644 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2002 10 01 | 608 | 0.2− | 0.8− | 2005 04 02 | 644 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2002 10 01 | 608 | 0.0 | 0.1− | 2005 04 02 | 644 | 0.2+ | 0.7+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2002 10 01 | 608 | 0.1+ | 0.3− | 2006 08 14 | 644 | 0.4+ | 0.1− | | | | |

**2002 TO$_{375}$ = 2004 CN$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.67692 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20257404 | $\omega$ | 56.53165 | | +0.22375853 | | −0.97397710 |
| $a$ | 2.8713107 | $\Omega$ | 20.62921 | | +0.85681272 | | +0.17893476 |
| $e$ | 0.0530010 | $i$ | 5.87546 | | +0.46454719 | | +0.13910774 |
| $P$ | 4.87 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.6− | 1.3+ | 2002 10 30 | 644 | 1.1− | 1.2+ | 2004 02 15 | 704 | 0.9+ | 0.4+ |
| 2000 04 06 | 704 | 0.4+ | 2.0+ | 2002 10 30 | 644 | 0.7− | 1.1+ | 2004 02 15 | 704 | 0.2− | 0.3− |
| 2000 04 06 | 704 | 1.2+ | 0.5+ | 2002 10 30 | 644 | 0.5− | 1.0+ | 2004 02 15 | 704 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 1.2+ | 0.8+ | 2002 12 06 | 291 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 1.1− | 0.7+ |
| 2002 10 02 | 704 | 0.3− | 1.3+ | 2002 12 06 | 291 | 0.1+ | 0.2− | 2005 05 16 | G96 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 1.0− | 1.6+ | 2002 12 06 | 291 | 0.9+ | 0.1+ | 2005 05 16 | G96 | 0.2− | 0.2− |
| 2002 10 02 | 704 | 1.3− | 0.5− | 2004 02 10 | 644 | 0.0 | 0.2− | 2005 05 16 | G96 | 0.0 | 0.0 |
| 2002 10 10 | 644 | 0.5− | 0.4− | 2004 02 10 | 644 | 0.4+ | 0.1− | 2005 05 16 | G96 | 0.1− | 0.0 |
| 2002 10 10 | 644 | 0.5− | 0.3− | 2004 02 10 | 644 | 0.3+ | 0.2− | | | | |
| 2002 10 10 | 644 | 0.4− | 0.5− | 2004 02 15 | 704 | 0.1− | 0.5+ | | | | |

**2002 TP$_{375}$ = 2004 DB$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.85651 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26546717 | $\omega$ | 2.41087 | | +0.96230946 | | −0.27181336 |
| $a$ | 2.3977036 | $\Omega$ | 13.37137 | | +0.24887211 | | +0.86706622 |
| $e$ | 0.1700630 | $i$ | 2.18875 | | +0.10965029 | | +0.41750889 |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.6+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 02 | 691 | 0.3+ | 0.1− |
| 2001 08 20 | 807 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 02 | G96 | 0.3+ | 0.4− |
| 2002 09 05 | 704 | 0.1− | 0.7+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 09 05 | 704 | 0.7− | 1.5+ | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2002 09 05 | 704 | 0.2− | 0.8+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.7− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.5− |
| 2002 10 03 | 704 | (0.2− | 2.8+) | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2002 10 03 | 704 | 0.7− | 1.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2002 10 03 | 704 | 0.8+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.2+ |
| 2002 10 10 | 291 | 0.4− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.4+ | 0.6− |
| 2002 10 10 | 291 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 291 | 0.1+ | 0.2+ | 2006 10 27 | 703 | (0.9− | 1.8+) | 2006 11 13 | 644 | 0.0 | 0.3− |
| 2004 02 22 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 703 | (1.3+ | 2.0+) | 2006 11 17 | 703 | 1.0+ | 1.1+ |
| 2004 02 22 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.8− | 2006 11 17 | 703 | 0.9+ | 0.6+ |
| 2004 02 22 | 691 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.9+ | 0.2+ |
| 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2004 02 29 | 691 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2006 07 21 | G96 | 1.0− | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.6− | 2006 11 19 | 704 | 1.5− | 0.2+ |
| 2006 07 21 | G96 | 0.0 | 0.5− | 2006 11 02 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 11 02 | 691 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.8− | 1.0+ |
| 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.6− | 2006 11 22 | 704 | 1.3+ | 0.6− |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 02 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 1.5− | 1.1+ |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 02 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.9− | 1.3− |

### 2002 $TQ_{375}$ = 2004 $ED_{102}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.73219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29048232 | $\omega$ | 325.43273 | | +0.69695712 | −0.71643875 | |
| $a$ | 2.2579947 | $\Omega$ | 80.36166 | | +0.66484942 | +0.62931002 | |
| $e$ | 0.0665707 | $i$ | 1.80686 | | +0.26874900 | +0.30113855 | |
| $P$ | 3.39 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.0+ | 0.7+ | 2002 10 11 | 645 | 0.1− | 0.0 | 2004 03 15 | 691 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 1.0+ | 0.5− | 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.3− | 0.1− |
| 2002 10 03 | 704 | 1.4+ | 1.7− | 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.1− | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2002 11 08 | 645 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2002 11 08 | 645 | 0.1+ | 0.0 | 2004 03 23 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 645 | 0.1− | 0.1+ | 2004 03 15 | 691 | 0.1+ | 0.0 | | | | |

### 2002 $TR_{375}$ = 2006 $QJ_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.51701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21872896 | $\omega$ | 348.20838 | | +0.57333593 | −0.81306928 | |
| $a$ | 2.7281308 | $\Omega$ | 66.72879 | | +0.76036747 | +0.48210075 | |
| $e$ | 0.0759126 | $i$ | 6.31313 | | +0.30516754 | +0.32633911 | |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 809 | 1.5+ | 1.0− | 2002 10 31 | 699 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.4+ |
| 1993 10 11 | 809 | 1.7+ | 1.6− | 2002 10 31 | 704 | 0.4− | 0.5+ | 2005 06 13 | G96 | 0.3− | 0.5+ |
| 1993 10 11 | 809 | 1.5− | 1.5− | 2002 10 31 | 699 | 0.1− | 0.2− | 2005 06 13 | G96 | 0.1+ | 0.4+ |
| 1993 10 21 | 809 | 0.1+ | 1.2+ | 2002 10 31 | 704 | 0.4− | 0.3+ | 2006 06 03 | 568 | 0.0 | 0.1+ |
| 1993 10 21 | 809 | 0.4+ | 0.4− | 2002 10 31 | 704 | 0.2+ | 0.3− | 2006 06 03 | 568 | 0.1+ | 0.1+ |
| 1993 10 21 | 809 | 0.1− | 0.3− | 2004 02 15 | 704 | 0.8+ | 1.0+ | 2006 06 03 | 568 | 0.2+ | 0.4+ |
| 2002 10 03 | 704 | (0.5− | 2.0+) | 2004 02 15 | 704 | 0.0 | 0.4+ | 2006 06 03 | 568 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.8− | 0.7+ | 2004 02 15 | 704 | 1.0+ | 0.1+ | 2006 06 03 | 568 | 0.2+ | 0.5+ |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2004 02 15 | 704 | 0.1− | 0.7+ | 2006 08 16 | E12 | 0.7+ | 0.3+ |
| 2002 10 11 | 704 | 0.5− | 0.3+ | 2004 03 18 | 644 | 0.2+ | 0.7+ | 2006 08 16 | E12 | 1.3− | 0.5− |
| 2002 10 11 | 704 | 0.6+ | 0.1+ | 2004 03 18 | 644 | 0.0 | 0.9+ | 2006 08 16 | E12 | 0.5+ | 0.0 |
| 2002 10 11 | 704 | 0.5− | 1.0+ | 2004 03 18 | 644 | 0.3+ | 0.6+ | 2006 08 16 | E12 | 0.3+ | 1.2+ |
| 2002 10 11 | 704 | 1.3− | 1.4+ | 2005 04 11 | G96 | 0.0 | 0.5+ | 2006 08 20 | 644 | 0.2− | 0.5+ |
| 2002 10 31 | 699 | 0.6− | 0.1− | 2005 04 11 | G96 | 0.5− | 0.6+ | 2006 08 20 | 644 | 0.1− | 0.3+ |
| 2002 10 31 | 699 | 0.7− | 0.8+ | 2005 04 11 | G96 | 0.3+ | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.6+ |
| 2002 10 31 | 704 | 0.4− | 1.0+ | 2005 04 11 | G96 | 0.3− | 0.5+ | | | | |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2005 06 13 | G96 | 0.3+ | 0.2+ | | | | |

### 2002 $TS_{375}$ = 1992 $WM_{9}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.65542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28930144 | $\omega$ | 135.93388 | | +0.93675936 | +0.34716255 | |
| $a$ | 2.2641350 | $\Omega$ | 203.85891 | | −0.34368750 | +0.88867214 | |
| $e$ | 0.1437996 | $i$ | 6.28383 | | −0.06603636 | +0.29956635 | |
| $P$ | 3.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 21 | 691 | 0.2− | 0.2− | 2002 10 03 | 704 | 0.2− | 0.4+ | 2002 11 06 | 704 | 0.9− | 0.2− |
| 1992 11 21 | 691 | 0.2− | 0.1− | 2002 10 03 | 704 | 0.2+ | 0.8+ | 2002 11 06 | 704 | 0.5+ | 0.4+ |
| 1992 11 21 | 691 | 1.2− | 0.1+ | 2002 10 09 | 704 | 0.3+ | 0.3− | 2002 11 06 | 704 | 0.4+ | 0.3− |
| 1992 12 02 | 691 | 0.6+ | 0.0 | 2002 10 09 | 704 | 0.1+ | 1.0− | 2002 11 06 | 704 | 0.8+ | 0.6+ |
| 1992 12 02 | 691 | 0.6+ | 0.1+ | 2002 10 09 | 704 | 0.4− | 0.9− | 2005 06 27 | 644 | 0.0 | 0.1+ |
| 1992 12 02 | 691 | 0.4+ | 0.2+ | 2002 10 31 | 608 | 0.1− | 0.3− | 2005 06 27 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.2− | 0.3− | 2002 10 31 | 608 | 0.4− | 0.4− | 2005 06 27 | 644 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 1.0+ | 2002 10 31 | 608 | 0.2− | 0.5+ | | | | |

### 2002 $TT_{375}$ = 2006 $OV_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.06216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21541122 | $\omega$ | 297.12899 | | +0.83651047 | +0.54346560 | |
| $a$ | 2.7560716 | $\Omega$ | 30.10365 | | −0.44027740 | +0.74264630 | |
| $e$ | 0.2256361 | $i$ | 8.01874 | | −0.32619938 | +0.39130756 | |
| $P$ | 4.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2002 10 31 | 644 | 0.2− | 0.5− | 2006 07 20 | E12 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 0.2+ | 2002 11 06 | 608 | 0.8− | 0.7− | 2006 07 20 | E12 | 0.2− | 0.2− |
| 2002 10 03 | 704 | 0.3+ | 0.4+ | 2002 11 06 | 608 | 0.5− | 0.5− | 2006 07 20 | E12 | 0.1+ | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.5− | 2002 11 06 | 608 | 0.7− | 0.3− | 2006 07 29 | E12 | 0.1+ | 0.5− |
| 2002 10 11 | 704 | 0.8+ | 0.1+ | 2002 11 14 | 704 | 0.1+ | 0.8+ | 2006 07 29 | E12 | 0.1+ | 1.2+ |
| 2002 10 11 | 704 | 0.1+ | 0.3+ | 2002 11 14 | 704 | 0.4− | 1.0+ | 2006 07 29 | E12 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.0 | 0.5+ | 2002 11 14 | 704 | 0.1+ | 0.6+ | 2006 08 26 | E12 | 0.6− | 0.4− |
| 2002 10 11 | 704 | (1.7− | 1.1−) | 2002 11 14 | 704 | 0.9+ | 0.6− | 2006 08 26 | E12 | 0.4+ | 0.3− |
| 2002 10 31 | 644 | 0.1− | 0.6− | 2006 07 20 | E12 | 0.1+ | 0.4+ | 2006 08 26 | E12 | 0.5− | 0.3− |
| 2002 10 31 | 644 | 0.1+ | 0.6− | 2006 07 20 | E12 | 0.2− | 0.1− | 2006 08 26 | E12 | 0.5+ | 0.0 |

### 2002 $TU_{375}$ = 2003 $YH_{133}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.52067 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18192483 | $\omega$ | 72.18587 | | +0.22396376 | −0.97452144 | |
| $a$ | 3.0846654 | $\Omega$ | 4.92077 | | +0.83179653 | +0.18462375 | |
| $e$ | 0.1289709 | $i$ | 8.15879 | | +0.50789248 | +0.12736574 | |
| $P$ | 5.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.4− | 1.9+ | 2002 10 30 | 645 | 0.1− | 0.0 | 2003 12 29 | 704 | 0.1− | 0.6+ |
| 2002 10 04 | 644 | 0.4− | 1.6+ | 2002 10 30 | 645 | 0.1− | 0.1− | 2003 12 29 | 704 | 0.9− | 1.3+ |
| 2002 10 04 | 644 | 0.1+ | 1.8+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.1+ | 0.3+ |
| 2002 10 11 | 704 | 0.1+ | 0.4+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.3− | 0.5+ |
| 2002 10 11 | 704 | 0.3− | 0.7+ | 2003 12 28 | 691 | 0.3+ | 0.5− | 2005 03 13 | 691 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 0.5− | 0.7+ | 2003 12 28 | 691 | 0.2+ | 0.0 | 2005 04 04 | 691 | 0.8+ | 0.4+ |
| 2002 10 11 | 704 | 1.4− | 0.2− | 2003 12 28 | 691 | 0.2+ | 0.1− | 2005 04 04 | 691 | 0.1+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2003 12 29 | 704 | 0.6− | 1.3+ | 2005 04 04 | 691 | 0.3+ | 0.4+ |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2003 12 29 | 704 | 0.9− | 0.8+ | | | | |

### 2002 $TV_{375}$ = 1998 $VG_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.32622 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23654914 | $\omega$ | 187.63076 | | +0.61360546 | −0.78092522 | |
| $a$ | 2.5893364 | $\Omega$ | 224.61277 | | +0.73295716 | +0.61833623 | |
| $e$ | 0.1149311 | $i$ | 9.57389 | | +0.29370416 | +0.08840873 | |
| $P$ | 4.17 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.2+ | 0.1− | 1998 11 19 | 691 | 0.3− | 0.3+ | 2002 10 09 | 704 | 0.1− | 0.1+ |
| 1994 12 01 | 691 | 0.2− | 0.4− | 1998 11 19 | 691 | 0.2+ | 0.1+ | 2002 10 12 | 704 | 1.0+ | 0.7− |
| 1994 12 01 | 691 | 0.1+ | 0.6− | 2002 10 04 | 644 | 0.6+ | 0.1− | 2002 10 12 | 704 | 0.3+ | 0.2− |
| 1998 11 15 | 691 | 0.0 | 0.1+ | 2002 10 04 | 644 | 0.5+ | 0.2− | 2002 10 12 | 704 | 1.7− | 0.1− |
| 1998 11 15 | 691 | 0.2− | 0.1+ | 2002 10 04 | 644 | 0.6+ | 0.4− | 2005 06 01 | 691 | 0.9+ | 0.1− |
| 1998 11 15 | 691 | 0.0 | 0.0 | 2002 10 09 | 704 | 0.6− | 0.7− | 2005 06 01 | 691 | 0.7− | 0.3− |
| 1998 11 19 | 691 | 0.1− | 0.5+ | 2002 10 09 | 704 | 0.5+ | 0.5+ | 2005 06 01 | 691 | 0.2− | 0.1− |

**2002 TW$_{375}$ = 1995 UP$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.80295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28539672 | $\omega$ | 36.03847 | | +0.81261301 | −0.58280346 | |
| $a$ | 2.2847397 | $\Omega$ | 359.60859 | | +0.51748874 | +0.72191069 | |
| $e$ | 0.1818025 | $i$ | 3.90934 | | +0.26807741 | +0.37307517 | |
| $P$ | 3.45 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.3− | 0.1+ | 2002 10 04 | 704 | 0.6− | 1.0+ | 2002 10 12 | 704 | 0.3+ | 1.1− |
| 1995 10 23 | 691 | 0.3− | 0.1− | 2002 10 04 | 704 | 0.0 | 0.8+ | 2002 10 31 | 644 | 0.4+ | 0.2+ |
| 1995 10 23 | 691 | 0.2+ | 0.2− | 2002 10 09 | 704 | 1.6− | 1.5− | 2002 10 31 | 644 | 0.2+ | 0.3+ |
| 1995 10 28 | 691 | 0.3+ | 0.2− | 2002 10 09 | 704 | 1.2− | 0.2− | 2002 10 31 | 644 | 0.2+ | 0.5+ |
| 1995 10 28 | 691 | 0.1+ | 0.2− | 2002 10 09 | 704 | 1.1+ | 1.8+ | 2002 11 12 | 704 | 0.5+ | 0.1+ |
| 1995 10 28 | 691 | 0.2+ | 0.1+ | 2002 10 12 | 704 | 0.1+ | 0.4+ | 2002 11 12 | 704 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.9+ | 2002 10 12 | 704 | 0.2+ | 0.9− | 2002 11 12 | 704 | 0.2− | 0.6− |

**2002 TX$_{375}$ = 2004 FZ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.84188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23137946 | $\omega$ | 149.55933 | | +0.28329251 | −0.95765919 | |
| $a$ | 2.6277629 | $\Omega$ | 283.94275 | | +0.86889503 | +0.27894971 | |
| $e$ | 0.1713040 | $i$ | 3.03138 | | +0.40591475 | +0.07124563 | |
| $P$ | 4.26 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 699 | 0.8+ | 1.1− | 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.1− | 1.7+ |
| 2002 10 04 | 699 | 0.5+ | 0.3+ | 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 09 16 | 699 | 1.3− | 0.4+ |
| 2002 10 04 | 699 | 0.9+ | 0.6+ | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.2+ |
| 2002 10 04 | 699 | (2.1+ | 1.5+) | 2004 03 19 | 704 | (3.2+ | 1.6+) | 2006 09 16 | 699 | (1.7+ | 0.1+) |
| 2002 10 09 | 704 | 0.3+ | 0.5− | 2004 03 19 | 704 | (2.3+ | 0.7+) | 2006 09 19 | 703 | 1.4+ | 0.7+ |
| 2002 10 09 | 704 | 0.5+ | 0.6− | 2004 03 19 | 704 | 1.1+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 1.0+ |
| 2002 10 09 | 704 | 0.7− | 1.3− | 2006 08 29 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 703 | (0.2+ | 1.9+) |
| 2002 10 31 | 644 | 0.4− | 0.2+ | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.6+ |
| 2002 10 31 | 644 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 1.0− | 0.5+ |
| 2002 10 31 | 644 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.6− | 2006 09 25 | 699 | 0.2− | 0.2− |
| 2002 11 22 | 644 | 0.5− | 0.5+ | 2006 09 12 | 703 | 1.8− | 2.3− | 2006 09 25 | 699 | 0.8− | 0.9− |
| 2002 11 22 | 644 | 0.7− | 0.2+ | 2006 09 12 | 703 | 0.4+ | 1.5− | 2006 09 25 | 699 | 0.1+ | 0.5+ |
| 2002 11 22 | 644 | 0.9− | 0.5+ | 2006 09 12 | 703 | 1.6− | 0.8+ | | | | |

**2002 TZ$_{375}$ = 1998 HM$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.53558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29221369 | $\omega$ | 245.89882 | | −0.19228737 | +0.98088148 | |
| $a$ | 2.2490667 | $\Omega$ | 13.12063 | | −0.84564491 | −0.15013624 | |
| $e$ | 0.2506792 | $i$ | 7.58192 | | −0.49790586 | −0.12381692 | |
| $P$ | 3.37 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 704 | 1.4− | 0.8+ | 1998 04 22 | 704 | 0.7+ | 0.6+ | 2002 10 11 | 704 | 0.2+ | 0.2+ |
| 1998 04 20 | 704 | 0.4− | 1.5− | 2002 10 05 | 645 | 0.1+ | 0.0 | 2002 10 11 | 704 | 0.6+ | 0.9+ |
| 1998 04 20 | 704 | (1.9+ | 2.2−) | 2002 10 05 | 645 | 0.0 | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.0 |
| 1998 04 20 | 704 | 0.0 | 1.1− | 2002 10 10 | 645 | 0.0 | 0.1− | 2002 10 31 | 645 | 0.0 | 0.0 |
| 1998 04 22 | 704 | 0.6+ | 1.3+ | 2002 10 10 | 645 | 0.1− | 0.2− | 2002 11 08 | 645 | 0.0 | 0.0 |
| 1998 04 22 | 704 | (3.9− | 2.7−) | 2002 10 11 | 704 | 0.6− | 0.9+ | 2002 11 08 | 645 | 0.0 | 0.0 |
| 1998 04 22 | 704 | 0.4+ | 0.4− | 2002 10 11 | 704 | 0.6− | 0.1+ | | | | |

**2002 TA$_{376}$ = 2000 AP$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.19906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26661022 | $\omega$ | 7.06018 | | +0.72402952 | +0.68440066 | |
| $a$ | 2.3908456 | $\Omega$ | 309.37688 | | −0.63815910 | +0.61738373 | |
| $e$ | 0.1234819 | $i$ | 6.37949 | | −0.26179039 | +0.38785701 | |
| $P$ | 3.70 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.5+ | 1.1− | 2000 01 08 | 691 | 0.1− | 0.0 | 2002 11 01 | 644 | 0.6+ | 0.5− |
| 1998 08 17 | 704 | 2.2− | 1.4+ | 2000 01 11 | 691 | 0.1− | 0.1− | 2002 11 01 | 644 | 0.5+ | 0.3− |
| 1998 08 17 | 704 | 2.0+ | 0.2− | 2000 01 11 | 691 | 0.1− | 0.1− | 2002 11 01 | 644 | 0.7+ | 0.2− |
| 1998 08 17 | 704 | (5.6− | 1.9+) | 2000 01 11 | 691 | 0.0 | 0.2− | 2002 11 04 | 049 | 2.0− | 0.5+ |
| 1998 09 16 | 699 | 1.0+ | 1.0− | 2002 10 05 | 704 | 0.2− | 0.2+ | 2002 11 04 | 049 | 2.2− | 0.5+ |
| 1998 09 16 | 699 | 0.1− | 0.7− | 2002 10 05 | 704 | 0.2+ | 0.4+ | 2002 11 05 | 049 | 2.0− | 0.2+ |
| 1998 09 16 | 699 | 0.6+ | 0.7+ | 2002 10 05 | 704 | 0.7+ | 0.3+ | 2002 11 24 | 644 | 0.4+ | 0.5+ |
| 1998 10 11 | 699 | 0.0 | 0.9+ | 2002 10 10 | 704 | 0.8+ | 0.1+ | 2002 11 24 | 644 | 0.6+ | 0.5+ |
| 1998 10 11 | 699 | 1.6+ | 0.5− | 2002 10 10 | 704 | 0.2+ | 0.4− | 2002 11 24 | 644 | 0.9+ | 0.1+ |
| 1998 10 11 | 699 | 0.6+ | 0.3+ | 2002 10 10 | 704 | 0.6+ | 0.7− | 2004 03 20 | 691 | 0.3+ | 0.7+ |
| 2000 01 08 | 691 | 0.0 | 0.1− | 2002 10 10 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 691 | 0.0 | 0.5+ |
| 2000 01 08 | 691 | 0.1+ | 0.1+ | 2002 10 10 | 704 | 0.4− | 0.1− | 2004 03 20 | 691 | 0.4+ | 0.2− |

**2002 TB$_{376}$ = 2001 OX$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.54447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19808071 | $\omega$ | 28.53681 | | +0.99412257 | +0.05120463 | |
| $a$ | 2.9145707 | $\Omega$ | 328.09064 | | −0.09437384 | +0.84159923 | |
| $e$ | 0.1279392 | $i$ | 10.39639 | | +0.05304607 | +0.53766981 | |
| $P$ | 4.98 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 03 | 645 | 0.0 | 0.1+ | 2002 10 13 | 644 | 0.8− | 0.1− | 2002 11 25 | 644 | 0.5− | 0.2+ |
| 2000 05 03 | 645 | 0.1+ | 0.2+ | 2002 10 13 | 644 | 0.5− | 0.3− | 2002 11 25 | 644 | 0.5− | 0.3+ |
| 2001 07 18 | 644 | 0.5+ | 0.1− | 2002 10 13 | 644 | 0.5+ | 0.0 | 2002 11 25 | 644 | 0.7− | 0.1+ |
| 2001 07 18 | 644 | 0.0 | 0.3− | 2002 11 07 | 704 | 0.0 | 0.4+ | 2004 02 13 | 691 | 0.2− | 0.3− |
| 2001 07 18 | 644 | 0.0 | 0.6− | 2002 11 07 | 704 | 0.3− | 0.9+ | 2004 02 13 | 691 | 0.1− | 0.1− |
| 2001 07 24 | 644 | 0.3+ | 0.4− | 2002 11 07 | 704 | 0.1− | 0.5+ | 2004 02 13 | 691 | 0.4− | 0.8− |
| 2001 07 24 | 644 | 0.4+ | 0.6− | 2002 11 07 | 704 | 2.9+ | 0.4− | 2004 02 23 | 704 | 0.1+ | 0.4− |
| 2001 07 24 | 644 | 0.1+ | 0.8− | 2002 11 07 | 704 | 0.0 | 0.8+ | 2004 02 23 | 704 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.7+ | 0.4+ | 2002 11 15 | 704 | 0.1− | 0.7+ | 2004 02 23 | 704 | 0.5− | 0.3+ |
| 2002 10 05 | 704 | 0.7− | 0.1− | 2002 11 15 | 704 | 0.5− | 1.0+ | 2004 02 23 | 704 | 0.4+ | 0.1− |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2002 11 15 | 704 | 0.3− | 0.2+ | | | | |
| 2002 10 05 | 704 | 0.6+ | 0.0 | 2002 11 15 | 704 | 0.9− | 0.3− | | | | |

**2002 TC$_{376}$ = 2001 JY**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.96605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25951341 | $\omega$ | 185.54190 | | +0.68950905 | +0.71692563 | |
| $a$ | 2.4342369 | $\Omega$ | 128.10104 | | −0.65938539 | +0.68015705 | |
| $e$ | 0.0841947 | $i$ | 7.51597 | | −0.29964674 | +0.15298375 | |
| $P$ | 3.80 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.3+ | 0.6− | 2002 10 15 | 644 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.3+ |
| 2000 02 11 | 691 | 0.0 | 0.6− | 2002 10 15 | 644 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.5− | 1.7+ |
| 2000 02 11 | 691 | 0.1− | 0.1− | 2002 10 28 | 644 | 0.4− | 0.8+ | 2006 11 19 | 703 | 0.5− | 0.3− |
| 2001 05 11 | 557 | 0.6+ | 0.1+ | 2002 10 28 | 644 | 0.1− | 0.8+ | 2006 11 19 | 703 | 0.1− | 0.6+ |
| 2001 05 11 | 557 | 0.2− | 0.1− | 2002 10 28 | 644 | 0.6− | 0.5+ | 2006 11 19 | 703 | 0.3+ | 0.7+ |
| 2001 05 13 | 557 | 0.1+ | 0.9+ | 2004 01 30 | 691 | 0.3− | 0.2+ | 2006 11 20 | 703 | 0.3+ | 0.1− |
| 2001 05 13 | 557 | 0.1+ | 0.7+ | 2004 01 30 | 691 | 0.1− | 0.3+ | 2006 11 20 | 703 | 0.2− | 0.8+ |
| 2001 05 13 | 557 | 0.4+ | 0.9+ | 2004 01 30 | 691 | 0.3+ | 0.4+ | 2006 11 20 | 703 | 0.2− | 1.5+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.9+ | 1.2+ | 2006 11 20 | 703 | 0.7− | 0.3− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.2− | 0.4+ | | | | |
| 2002 10 15 | 644 | 0.3− | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.9− | | | | |

**2002 TD$_{376}$ = 2006 QM$_{30}$ = 2006 RK$_{62}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.15355 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23109340 | $\omega$ | 304.04660 | +0.68673897 | | +0.72588924 | |
| $a$ | 2.6299310 | $\Omega$ | 9.61868 | −0.56789248 | | +0.56873831 | |
| $e$ | 0.1104136 | $i$ | 13.28553 | −0.45374852 | | +0.38680945 | |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.7+ | 1.3+ | 2006 08 20 | 691 | 0.3+ | 0.1− | 2006 09 19 | 704 | 0.8+ | 0.4+ |
| 2000 03 04 | 704 | 0.3− | 0.3− | 2006 08 20 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 1.6− | 0.0 |
| 2000 03 04 | 704 | 0.3+ | 1.3+ | 2006 08 20 | 691 | 0.4+ | 0.2+ | 2006 09 22 | 704 | 0.3− | 0.1+ |
| 2000 03 04 | 704 | 0.4+ | 1.9+ | 2006 08 23 | 704 | 0.5+ | 0.1− | 2006 09 22 | 704 | (2.1− | 0.3+) |
| 2000 03 04 | 704 | 0.5− | 0.6+ | 2006 08 23 | 704 | 0.4+ | 0.8− | 2006 09 22 | 704 | 0.8− | 0.4+ |
| 2002 09 17 | 699 | 0.1− | 0.4− | 2006 08 23 | 704 | 0.1− | 0.1+ | 2006 09 22 | 704 | (2.4− | 0.0 ) |
| 2002 09 17 | 699 | 1.7+ | 0.9+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2002 09 17 | 699 | 0.9− | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.6− | 0.1+ |
| 2002 09 17 | 699 | 0.7− | 0.4− | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.9− | 0.3+ |
| 2002 10 12 | 704 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.8− | 0.1+ | 2006 09 26 | 704 | 0.7− | 0.1+ |
| 2002 10 12 | 704 | 0.2− | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.8+ | 0.6− |
| 2002 10 12 | 704 | 0.5+ | 0.3+ | 2006 09 12 | 703 | 1.5− | 0.2+ | 2006 09 27 | 704 | (2.1+ | 2.5−) |
| 2002 10 12 | 704 | 0.5+ | 0.1+ | 2006 09 12 | 703 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.9+ | 0.4+ |
| 2002 10 12 | 704 | 1.4+ | 0.2− | 2006 09 13 | 644 | 0.3− | 0.3− | 2006 09 27 | 704 | 0.9− | 1.4+ |
| 2002 10 30 | 608 | 0.1+ | 0.8− | 2006 09 13 | 644 | 0.4+ | 0.1− | 2006 09 28 | 704 | 0.8− | 0.3− |
| 2002 10 30 | 608 | 0.6+ | 0.7− | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 09 28 | 704 | 1.5− | 0.6+ |
| 2002 10 30 | 608 | 0.1+ | 0.9− | 2006 09 16 | 704 | 0.3− | 1.1+ | 2006 09 28 | 704 | 0.8− | 0.2+ |
| 2002 11 06 | 704 | (2.0+ | 3.6−) | 2006 09 16 | 704 | 0.6+ | 0.6+ | 2006 09 28 | 704 | 1.2− | 0.0 |
| 2002 11 06 | 704 | (2.2+ | 3.8−) | 2006 09 16 | 704 | 0.8+ | 1.2+ | 2006 09 28 | 704 | 1.3− | 0.5+ |
| 2002 11 06 | 704 | (0.9+ | 2.9−) | 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.7− | 0.9− |
| 2002 11 13 | 644 | 0.4+ | 0.5− | 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 09 28 | 704 | 0.7− | 0.2+ |
| 2002 11 13 | 644 | 0.3+ | 0.6− | 2006 09 18 | 703 | 0.6+ | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.7− |
| 2002 11 13 | 644 | 0.0 | 0.6− | 2006 09 18 | 703 | 0.2− | 0.7− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2003 12 29 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.0 | 1.2+ |
| 2003 12 29 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.5+ | 1.0+ |
| 2003 12 29 | 704 | 0.5+ | 1.1+ | 2006 09 18 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2003 12 29 | 704 | 0.9+ | 0.5− | 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2004 01 18 | 644 | 0.2− | 0.8+ | 2006 09 18 | 699 | 0.7+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 01 18 | 644 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2004 01 18 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 703 | (2.2− | 0.8+) | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2004 02 10 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | (2.4+ | 0.6+) | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2004 02 10 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 704 | 0.4− | 0.9+ | 2006 10 23 | 644 | 0.2+ | 0.5+ |
| 2004 02 10 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2005 05 16 | 644 | 0.9+ | 1.0+ | 2006 09 19 | 704 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2005 05 16 | 644 | 1.0+ | 1.0+ | 2006 09 19 | 703 | 0.2+ | 0.1− | | | | |
| 2005 05 16 | 644 | 1.0+ | 1.2+ | 2006 09 19 | 704 | 1.2− | 0.7+ | | | | |

**2002 TE$_{376}$ = 2000 CR$_{136}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.16284 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26832632 | $\omega$ | 223.53873 | +0.99201927 | | −0.07542597 | |
| $a$ | 2.3806408 | $\Omega$ | 140.45100 | +0.10114151 | | +0.95451682 | |
| $e$ | 0.2593819 | $i$ | 9.13033 | −0.07528715 | | +0.28845896 | |
| $P$ | 3.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.2+ | 0.0 | 2002 10 07 | 608 | 0.3+ | 0.2+ | 2002 10 28 | 644 | 0.2+ | 0.5− |
| 2000 02 03 | 691 | 0.1+ | 0.4− | 2002 10 07 | 608 | 0.1− | 0.4− | 2002 10 28 | 644 | 0.6+ | 0.0 |
| 2000 02 03 | 691 | 0.1− | 0.4− | 2002 10 07 | 608 | 0.0 | 0.1− | 2002 10 28 | 644 | 1.1+ | 0.3− |
| 2000 02 05 | 691 | 0.0 | 0.4+ | 2002 10 10 | 644 | 0.2− | 0.2+ | 2002 11 06 | 644 | 0.5− | 0.1+ |
| 2000 02 05 | 691 | 0.0 | 0.1+ | 2002 10 10 | 644 | 0.5− | 0.2+ | 2002 11 06 | 644 | 0.6− | 0.2+ |
| 2000 02 05 | 691 | 0.2− | 0.2+ | 2002 10 10 | 644 | 0.0 | 0.3+ | 2002 11 06 | 644 | 0.4− | 0.1+ |

**2002 TF$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.72602 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21369614 | $\omega$ | 0.46533 | −0.45545094 | | −0.88988584 | |
| $a$ | 2.7707984 | $\Omega$ | 116.62882 | +0.81670499 | | −0.42919621 | |
| $e$ | 0.0232586 | $i$ | 1.65634 | +0.35434080 | | −0.15457622 | |
| $P$ | 4.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.5+ | 0.6+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2005 04 10 | G96 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.1− | 0.3+ | 2002 11 08 | 645 | 0.1+ | 0.0 | 2005 04 10 | G96 | 0.1− | 0.2− |
| 2000 03 11 | 704 | 0.7+ | 1.3+ | 2002 11 08 | 645 | 0.0 | 0.1− | 2005 04 10 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 704 | 0.1− | 0.1+ | 2003 12 17 | 291 | 0.2− | 0.1+ | 2005 05 11 | 807 | 0.2+ | 0.3+ |
| 2002 10 03 | 704 | 0.1+ | 1.2+ | 2003 12 17 | 291 | 0.1+ | 0.2+ | 2005 05 11 | 807 | 0.5+ | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2003 12 17 | 291 | 0.2+ | 0.1+ | 2006 07 21 | G96 | 0.6− | 1.4+ |
| 2002 10 03 | 704 | 0.3− | 1.3+ | 2003 12 28 | 691 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.3− | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2003 12 28 | 691 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.5+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2003 12 28 | 691 | 0.2− | 0.1+ | | | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 04 10 | G96 | 0.1− | 0.2− | | | | |

**2002 TG$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.52532 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.30808654 | $\omega$ | 268.71906 | +0.38648612 | | +0.92011083 | |
| $a$ | 2.1711387 | $\Omega$ | 24.32257 | −0.77305899 | | +0.36069502 | |
| $e$ | 0.1651237 | $i$ | 8.86032 | −0.50299929 | | +0.15262753 | |
| $P$ | 3.20 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.3+ | 0.1− | 2002 10 12 | 704 | 0.4+ | 0.2− | 2005 08 31 | 644 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.5+ | 0.1− | 2005 08 06 | E12 | 0.0 | 0.6− | 2005 08 31 | 644 | 0.5+ | 0.2+ |
| 2002 10 03 | 704 | 1.0− | 0.4+ | 2005 08 06 | E12 | 0.2− | 0.2− | 2005 09 25 | 703 | 1.4− | 0.3− |
| 2002 10 03 | 704 | 1.1+ | 0.5− | 2005 08 06 | E12 | 0.8− | 0.2+ | 2005 09 25 | 703 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 1.0+ | 0.4− | 2005 08 06 | E12 | 0.7+ | 0.2+ | 2005 09 25 | 703 | 1.3− | 0.1+ |
| 2002 10 11 | 704 | 0.4− | 0.3+ | 2005 08 28 | 699 | 0.6− | 1.0+ | 2005 09 25 | 703 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 1.4− | 0.1− | 2005 08 28 | 699 | 0.9+ | 0.7− | 2005 12 01 | G96 | 0.0 | 0.3− |
| 2002 10 12 | 704 | 0.3− | 0.2− | 2005 08 28 | 699 | 0.7+ | 0.0 | 2005 12 01 | G96 | 0.9− | 0.2+ |
| 2002 10 12 | 704 | 0.3− | 0.1− | 2005 08 28 | 699 | 0.6+ | 0.0 | 2005 12 01 | G96 | 0.3+ | 0.6+ |
| 2002 10 12 | 704 | 0.5− | 0.5+ | 2005 08 31 | 644 | 0.3+ | 0.2+ | 2005 12 01 | G96 | 0.4+ | 0.1− |

**2002 TH$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.56010 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21019227 | $\omega$ | 274.58969 | +0.98522957 | | +0.14710123 | |
| $a$ | 2.8015060 | $\Omega$ | 76.96966 | −0.09816115 | | +0.90461325 | |
| $e$ | 0.1147903 | $i$ | 5.16216 | −0.14031067 | | +0.40004512 | |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 04 | 691 | 0.9− | 0.2+ | 2002 10 31 | 704 | 0.2− | 0.2+ | 2004 02 17 | 691 | 0.1+ | 0.5+ |
| 1994 01 04 | 691 | 1.2+ | 1.0− | 2002 10 31 | 608 | 0.9− | 1.0+ | 2004 02 17 | 691 | 0.0 | 0.1+ |
| 1994 01 04 | 691 | 0.0 | 0.4− | 2002 10 31 | 608 | 0.9− | 0.4+ | 2005 04 01 | 691 | 0.2+ | 0.5+ |
| 2002 10 03 | 704 | 0.2+ | 0.6+ | 2002 10 31 | 608 | 0.2− | 0.9+ | 2005 04 01 | 691 | 0.4+ | 0.6+ |
| 2002 10 03 | 704 | 0.4− | 0.0 | 2002 11 11 | 704 | 0.2+ | 0.1+ | 2005 04 01 | 691 | 0.1− | 0.3+ |
| 2002 10 03 | 704 | 0.6+ | 0.2− | 2002 11 11 | 704 | 0.8− | 1.0+ | 2005 05 04 | 691 | 0.1− | 0.4− |
| 2002 10 31 | 704 | 0.3+ | 0.6+ | 2002 11 11 | 704 | 0.5− | 0.8+ | 2005 05 04 | 691 | 0.0 | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.5+ | 2004 02 17 | 691 | 0.1+ | 0.1+ | 2005 05 04 | 691 | 0.1− | 0.3− |

**2002 TJ$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.41982 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17266929 | $\omega$ | 26.09165 | | +0.76536952 | | +0.60838627 |
| $a$ | 3.1939344 | $\Omega$ | 294.82188 | | −0.62352655 | | +0.62013052 |
| $e$ | 0.2219189 | $i$ | 13.37428 | | −0.15944949 | | +0.49528202 |
| $P$ | 5.71 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.8+ | 1.3− | 2002 10 31 | 704 | 1.0− | 0.5+ | 2003 12 22 | 704 | 0.2− | 0.6− |
| 2002 10 06 | 704 | 0.4+ | 1.3− | 2002 11 15 | 704 | 0.5− | 0.4− | 2003 12 22 | 704 | 0.8+ | 0.3− |
| 2002 10 06 | 704 | 0.2+ | 1.4− | 2002 11 15 | 704 | 0.1+ | 0.2+ | 2004 01 21 | 704 | 0.9− | 0.3− |
| 2002 10 06 | 704 | 1.2+ | 1.2− | 2002 11 15 | 704 | 0.6− | 0.1− | 2004 01 21 | 704 | 0.0 | 0.2+ |
| 2002 10 06 | 704 | 1.0+ | 1.4− | 2002 11 15 | 704 | 0.2+ | 0.4+ | 2004 01 21 | 704 | 0.5− | 0.8+ |
| 2002 10 31 | 704 | 0.9− | 1.0+ | 2002 11 25 | 644 | 0.6+ | 0.9+ | 2006 04 29 | E12 | 0.4+ | 0.3+ |
| 2002 10 31 | 704 | 0.4− | 0.4+ | 2002 11 25 | 644 | 0.0 | 0.7+ | 2006 04 29 | E12 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.5− | 1.0+ | 2002 11 25 | 644 | 0.2+ | 0.9+ | 2006 04 29 | E12 | 0.4− | 0.7− |
| 2002 10 31 | 704 | 1.1− | 0.7+ | 2003 12 22 | 704 | 0.5+ | 0.8− | 2006 04 29 | E12 | 0.0 | 0.1+ |

**2002 TK$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.67396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18568812 | $\omega$ | 215.91157 | | −0.98324634 | | −0.04436281 |
| $a$ | 3.0428460 | $\Omega$ | 320.38386 | | +0.14022495 | | −0.80379175 |
| $e$ | 0.2951353 | $i$ | 16.09755 | | −0.11646284 | | −0.59325438 |
| $P$ | 5.31 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 566 | 0.1− | 0.4− | 2002 12 28 | 704 | 0.7− | 0.3− | 2005 08 06 | 704 | 0.3− | 0.6− |
| 1998 03 24 | 566 | 0.2− | 0.0 | 2002 12 28 | 704 | 0.3− | 0.1+ | 2005 08 06 | 704 | 0.8+ | 0.5+ |
| 1998 03 24 | 566 | 0.2+ | 0.3− | 2002 12 28 | 704 | 0.3− | 0.0 | 2005 08 06 | 644 | 0.1− | 0.1+ |
| 2001 09 29 | 644 | 0.6− | 0.6+ | 2002 12 28 | 704 | 0.5− | 0.2+ | 2005 08 06 | 644 | 0.2+ | 0.1+ |
| 2001 09 29 | 644 | 0.5− | 0.2+ | 2003 03 05 | 704 | 0.2+ | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.2− |
| 2001 09 29 | 644 | 0.7− | 0.4+ | 2003 03 05 | 704 | 0.2− | 0.9+ | 2005 08 25 | 644 | 0.1+ | 0.2+ |
| 2002 10 06 | 704 | 0.5+ | 0.2+ | 2003 03 05 | 704 | 1.0− | 0.0 | 2005 08 25 | 644 | 0.3+ | 0.1− |
| 2002 10 06 | 704 | 0.8+ | 0.8− | 2003 03 05 | 704 | 0.2+ | 0.2+ | 2005 08 25 | 644 | 0.3+ | 0.4+ |
| 2002 10 06 | 704 | 1.2+ | 0.1+ | 2003 03 05 | 704 | 0.6− | 0.8+ | 2005 10 27 | G96 | 0.1+ | 0.6− |
| 2002 12 07 | 704 | 0.0 | 0.6− | 2005 07 28 | 644 | 0.5+ | 0.0 | 2005 10 27 | G96 | 0.5− | 0.5− |
| 2002 12 07 | 704 | 0.7+ | 0.2− | 2005 07 28 | 644 | 0.1+ | 0.1+ | 2005 10 27 | G96 | 0.7− | 0.4− |
| 2002 12 07 | 704 | 0.1+ | 0.5− | 2005 07 28 | 644 | 0.2+ | 0.0 | 2005 10 27 | G96 | 0.3+ | 0.6− |
| 2002 12 07 | 704 | 0.1− | 0.5− | 2005 08 06 | 704 | 0.6− | 0.1− | 2006 10 14 | 540 | 0.6+ | 0.2+ |
| 2002 12 07 | 704 | 0.2+ | 0.5− | 2005 08 06 | 704 | 0.4− | 0.2− | 2006 10 14 | 540 | 0.4+ | 0.2− |

**2002 TL$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.91500 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24444519 | $\omega$ | 107.88055 | | +0.42912722 | | +0.90242808 |
| $a$ | 2.5332714 | $\Omega$ | 187.86381 | | −0.89788288 | | +0.42157150 |
| $e$ | 0.2892838 | $i$ | 16.29311 | | −0.09826577 | | +0.08888770 |
| $P$ | 4.03 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 691 | 0.2− | 0.4+ | 2005 03 13 | 703 | 0.5− | 1.0− | 2005 05 03 | 691 | 0.3+ | 0.0 |
| 2001 03 04 | 691 | 0.3− | 0.1+ | 2005 03 13 | 703 | (2.2+ | 1.0+) | 2005 05 08 | 703 | 0.0 | 1.2− |
| 2001 03 04 | 691 | 0.1− | 0.4+ | 2005 03 13 | 703 | 0.8+ | 1.3− | 2005 05 08 | 703 | 0.7+ | 1.4+ |
| 2002 10 09 | 644 | 0.3− | 0.2+ | 2005 03 13 | 703 | 0.8− | 0.5+ | 2005 05 08 | 703 | 1.3− | 1.3+ |
| 2002 10 09 | 644 | 0.4− | 0.4+ | 2005 04 04 | 703 | 0.6− | 0.8+ | 2005 05 08 | 703 | 0.6+ | 0.6+ |
| 2002 10 09 | 644 | 0.3− | 0.6+ | 2005 04 04 | 703 | 0.8− | 0.6− | 2006 10 16 | 703 | 0.7− | 0.7− |
| 2002 10 31 | 704 | 0.1+ | 1.0+ | 2005 04 04 | 703 | 0.5− | 0.5− | 2006 10 16 | 703 | 0.7− | 0.5− |
| 2002 10 31 | 704 | 0.4− | 0.0 | 2005 04 04 | 703 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2002 10 31 | 704 | 1.1− | 0.0 | 2005 04 18 | 703 | 0.5+ | 0.9− | 2006 10 16 | 703 | 0.9− | 0.2− |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2005 04 18 | 703 | 0.9− | 0.9− | 2006 10 22 | 703 | (1.7− | 0.2+) |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2005 04 18 | 703 | 1.3+ | 0.9+ | 2006 10 22 | 703 | 0.2+ | 1.2+ |
| 2005 03 12 | 691 | 0.1+ | 0.3− | 2005 04 18 | 703 | (0.7− | 1.9+) | 2006 10 22 | 703 | (1.0+ | 2.0−) |
| 2005 03 12 | 691 | 0.0 | 0.2− | 2005 05 03 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2005 03 12 | 691 | 0.1+ | 0.2− | 2005 05 03 | 691 | 0.4+ | 0.5+ | | | | |

**2002 TM$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.85171 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37034466 | $\omega$ | 97.81500 | | −0.40059052 | | −0.91008384 |
| $a$ | 1.9204308 | $\Omega$ | 17.03978 | | +0.63064431 | | −0.35793117 |
| $e$ | 0.0849260 | $i$ | 21.24472 | | +0.66469165 | | −0.20888438 |
| $P$ | 2.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.3− | 0.0 | 2002 10 31 | 704 | 0.2+ | 0.8− | 2005 12 30 | 703 | 0.6− | 0.6+ |
| 2002 10 13 | 644 | 0.1+ | 0.2+ | 2002 10 31 | 704 | 0.4− | 0.2+ | 2005 12 30 | 703 | 1.5+ | 1.0+ |
| 2002 10 13 | 644 | 0.1+ | 0.1− | 2002 11 15 | 644 | 0.1− | 0.4− | 2006 03 05 | 703 | 1.1− | 0.1+ |
| 2002 10 20 | 644 | 0.1− | 0.1− | 2002 11 15 | 644 | 0.2+ | 0.1− | 2006 03 05 | 703 | 0.4+ | 0.1+ |
| 2002 10 20 | 644 | 0.2− | 0.1+ | 2002 11 15 | 644 | 0.4+ | 0.4+ | 2006 03 05 | 703 | 0.1− | 0.5− |
| 2002 10 20 | 644 | 0.0 | 0.0 | 2005 12 30 | 703 | 0.1− | 2.0− | 2006 03 05 | 703 | 0.6+ | 0.3+ |
| 2002 10 31 | 704 | 0.1+ | 0.5+ | 2005 12 30 | 703 | 0.3− | 0.4+ | | | | |

**2002 TR$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.56231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25572730 | $\omega$ | 48.13042 | | +0.29824939 | | +0.95078863 |
| $a$ | 2.4582044 | $\Omega$ | 239.40561 | | −0.90207657 | | +0.25203448 |
| $e$ | 0.1158497 | $i$ | 5.59702 | | −0.31193775 | | +0.18022098 |
| $P$ | 3.85 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.0 | 0.6− | 2002 10 05 | 644 | 0.2− | 0.2− | 2006 10 18 | 291 | 0.3− | 0.1+ |
| 2002 08 28 | 644 | 0.1− | 0.2− | 2002 10 05 | 644 | 0.6− | 0.6+ | 2006 10 18 | 291 | 0.2− | 0.1+ |
| 2002 08 28 | 644 | 0.5+ | 0.0 | 2002 10 06 | 644 | 0.2− | 0.1+ | 2006 10 18 | 291 | 0.6+ | 0.4+ |
| 2002 09 13 | 644 | 0.1+ | 0.2− | 2002 10 06 | 644 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.1+ | 1.0− |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2002 10 06 | 644 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.6− | 0.8− |
| 2002 09 13 | 644 | 0.2− | 0.2− | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2002 10 05 | 644 | 0.1+ | 0.4− | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2− | 0.7− |

**2002 TS$_{376}$ = 2005 EH$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.48203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24277864 | $\omega$ | 303.10787 | | +0.10258819 | | +0.99038807 |
| $a$ | 2.5448512 | $\Omega$ | 332.32887 | | −0.83307035 | | +0.03457596 |
| $e$ | 0.1611695 | $i$ | 11.52380 | | −0.54357103 | | +0.13392529 |
| $P$ | 4.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.3− | 0.1− | 2002 10 05 | 644 | 0.1+ | 0.3+ | 2005 03 10 | 691 | 0.2+ | 0.1− |
| 2002 08 28 | 644 | 0.6− | 0.1− | 2002 10 05 | 644 | 0.0 | 0.1+ | 2005 03 10 | 691 | 0.3+ | 0.2− |
| 2002 08 28 | 644 | 0.1+ | 0.3+ | 2002 10 06 | 644 | 0.4+ | 0.2− | 2005 03 10 | 691 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.3− | 2002 10 06 | 644 | 0.3− | 0.1+ | 2005 03 10 | 691 | (0.0 | 1.9−) |
| 2002 08 28 | 644 | 0.0 | 0.4+ | 2002 10 06 | 644 | 0.1+ | 0.1+ | 2005 03 10 | G96 | 0.9− | 0.2− |
| 2002 08 28 | 644 | 0.6+ | 0.0 | 2005 03 08 | 691 | 0.3+ | 0.1− | 2005 03 10 | G96 | 0.7− | 0.1− |
| 2002 09 13 | 644 | 0.5+ | 0.0 | 2005 03 08 | 691 | 0.1+ | 0.3− | 2005 03 10 | G96 | 0.4− | 0.2− |
| 2002 09 13 | 644 | 0.2+ | 0.3− | 2005 03 08 | 691 | 0.3+ | 0.2+ | 2005 03 10 | G96 | 0.8− | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2005 03 09 | 691 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.5− | 0.1− |
| 2002 09 17 | 644 | 0.5− | 0.3+ | 2005 03 09 | 691 | 0.1+ | 0.0 | 2005 03 11 | G96 | 0.4− | 0.1− |
| 2002 09 17 | 644 | 0.1− | 0.0 | 2005 03 09 | 691 | 0.1+ | 0.2+ | 2005 03 11 | G96 | 0.5− | 0.0 |
| 2002 09 17 | 644 | 0.1− | 0.3+ | 2005 03 09 | 691 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.6− | 0.1+ |
| 2002 09 18 | 644 | 0.0 | 0.2− | 2005 03 09 | 691 | 0.0 | 0.1− | 2005 03 11 | 691 | 0.1− | 0.1+ |
| 2002 09 18 | 644 | 0.5− | 0.2+ | 2005 03 09 | 691 | 0.4− | 0.1− | 2005 03 11 | 691 | 0.1+ | 0.1+ |
| 2002 09 18 | 644 | 0.5+ | 0.6− | 2005 03 10 | 691 | 0.1+ | 0.3+ | 2005 03 11 | 691 | 0.1− | 0.2+ |
| 2002 10 05 | 644 | 0.0 | 0.1+ | 2005 03 10 | 691 | 0.0 | 0.1− | | | | |

**2002 UC**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 303.29811 | | (2000.0) | | | |
| $n$ | 0.23130180 | $\omega$ | 265.10629 | | −0.04257960 | −0.99682785 |
| $a$ | 2.6283511 | $\Omega$ | 188.28573 | | +0.99629253 | −0.04739957 |
| $e$ | 0.3547579 | $i$ | 27.81309 | | −0.07475405 | −0.06393371 |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 608 | 0.3− | 1.4− | 2006 09 21 | 185 | 1.3+ | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2002 10 06 | 608 | 0.3− | 1.0− | 2006 09 21 | 185 | 0.6+ | 0.4− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2002 10 06 | 608 | 0.5− | 1.2− | 2006 09 29 | 699 | 1.0+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.7− |
| 2002 10 10 | 644 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2002 10 10 | 644 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.7+ | 0.1− |
| 2002 10 10 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.2− | 2006 10 22 | 703 | 0.9− | 0.1− |
| 2002 10 16 | 644 | 0.2− | 1.0+ | 2006 10 01 | 703 | 0.7− | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 10 16 | 644 | 0.1− | 0.9+ | 2006 10 01 | 703 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2002 10 16 | 644 | 0.1− | 1.0+ | 2006 10 01 | 703 | (0.3+ | 2.2−) | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 10 20 | 608 | 1.3+ | 0.6+ | 2006 10 01 | 703 | (2.5+ | 1.7+) | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2002 10 20 | 608 | 1.0+ | 0.6+ | 2006 10 01 | 704 | (2.1+ | 0.7+) | 2006 11 11 | 703 | 1.2+ | 0.9+ |
| 2002 10 20 | 608 | 0.9+ | 0.7+ | 2006 10 01 | 704 | (2.0+ | 1.9+) | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2002 11 04 | 644 | 0.2− | 0.3− | 2006 10 01 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.9− |
| 2002 11 04 | 644 | 0.1− | 0.3− | 2006 10 01 | 704 | 1.3− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 11 04 | 644 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2003 01 13 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2003 01 13 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2003 01 13 | 644 | 0.3− | 0.0 | 2006 10 16 | 703 | (1.6+ | 0.8+) | 2006 11 25 | G96 | 0.3− | 0.4− |
| 2006 09 06 | 644 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2006 09 06 | 644 | 0.4− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.4− | 0.4− |
| 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2006 09 16 | 644 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.5+ | 1.3− |
| 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 1.5− | 0.8− |
| 2006 09 16 | 644 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.4− | 1.0+ |
| 2006 09 17 | 703 | 0.1+ | 0.6− | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.2+ | 0.1+ |
| 2006 09 17 | 703 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.1− | | | | |

**2002 UE = 2002 VZ$_1$ = 2006 RO$_{47}$**

Id. Minor Planet Center (d, *MPO* 48394; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.08876 | | (2000.0) | | | |
| $n$ | 0.23572407 | $\omega$ | 313.17865 | | +0.98897646 | −0.14483305 |
| $a$ | 2.5953749 | $\Omega$ | 55.17187 | | +0.14439938 | +0.89728793 |
| $e$ | 0.1146907 | $i$ | 2.15066 | | +0.03277773 | +0.41701050 |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 22 | 691 | 0.0 | 0.3+ | 2002 11 11 | 291 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.3− | 0.1− |
| 1996 03 22 | 691 | 0.4+ | 0.2+ | 2002 11 11 | 291 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 10 18 | 644 | 0.1− | 0.2+ | 2005 02 16 | 809 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 10 18 | 644 | 0.1− | 0.1+ | 2005 02 16 | 809 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 10 18 | 644 | 0.1− | 0.4+ | 2005 02 16 | 809 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 2002 10 19 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 10 19 | 644 | 0.2− | 0.0 | 2006 09 14 | 691 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 10 19 | 644 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.8− | 0.9+ |
| 2002 11 02 | 608 | 0.5+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.9+ |
| 2002 11 02 | 608 | 0.1+ | 0.6− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | (1.8− | 1.1−) |
| 2002 11 02 | 608 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2002 11 04 | 291 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.5+ | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2002 11 04 | 291 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2002 11 04 | 291 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.7− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.6+ | 0.2− |
| 2002 11 06 | 704 | 0.4− | 0.7− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 11 06 | 704 | 0.6− | 0.5− | 2006 10 02 | 691 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4+ |
| 2002 11 11 | 291 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− |

**2002 UT = 2006 SD$_{364}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 90.20262 | | (2000.0) | | | |
| $n$ | 0.25532896 | $\omega$ | 7.72562 | | +0.06492438 | +0.99323653 |
| $a$ | 2.4607604 | $\Omega$ | 266.03282 | | −0.92062867 | +0.02240089 |
| $e$ | 0.0866650 | $i$ | 5.53717 | | −0.38500348 | +0.11392718 |
| $P$ | 3.86 | $H$ | 16.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 25 | 673 | 0.3+ | 0.1− | 2002 11 01 | 673 | 0.1− | 0.4− | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2002 10 25 | 673 | 0.1+ | 0.2− | 2002 11 01 | 673 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.2− |
| 2002 10 25 | 673 | 0.1− | 0.3+ | 2002 11 01 | 673 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.6+ | 0.1− |
| 2002 10 25 | 673 | 0.2+ | 0.3− | 2002 11 14 | 673 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2002 10 28 | 673 | 0.1− | 0.1+ | 2002 11 14 | 673 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.2− | 0.0 |
| 2002 10 28 | 673 | 0.3− | 0.1− | 2002 11 14 | 673 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.3− | 0.2− |
| 2002 10 28 | 673 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.5+ | 0.2− | | | | |
| 2002 10 28 | 673 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.1− | 0.5+ | | | | |

**2002 UX$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.90063 | | (2000.0) | | | |
| $n$ | 0.23738304 | $\omega$ | 83.26056 | | +0.40893433 | −0.90490974 |
| $a$ | 2.5832687 | $\Omega$ | 341.19962 | | +0.62341830 | +0.37140595 |
| $e$ | 0.1394898 | $i$ | 21.46793 | | +0.66642504 | +0.20783642 |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 704 | 0.0 | 0.4− | 2002 11 15 | 704 | 0.5− | 0.4− | 2006 10 16 | 704 | 0.0 | 0.5+ |
| 2002 10 28 | 704 | 0.9+ | 1.3+ | 2002 11 15 | 704 | 0.5− | 0.5+ | 2006 10 16 | 704 | 0.7− | 0.5− |
| 2002 10 28 | 704 | 0.3+ | 0.3− | 2002 11 15 | 704 | 0.2− | 0.2− | 2006 10 16 | 704 | 0.2+ | 0.3− |
| 2002 10 28 | 704 | 0.6+ | 0.2+ | 2002 11 15 | 704 | 0.4− | 0.3− | 2006 11 01 | 703 | 0.3+ | 0.1+ |
| 2002 10 29 | 704 | 0.4− | 0.0 | 2002 11 15 | 704 | 0.3− | 0.3− | 2006 11 01 | 703 | 0.4− | 0.6− |
| 2002 10 29 | 704 | 0.2− | 0.6− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.2− | 0.4− |
| 2002 10 29 | 704 | 0.7+ | 0.7+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.2− | 0.5− |
| 2002 10 29 | 704 | 0.3− | 0.8+ | 2004 03 26 | 704 | 0.9− | 0.4+ | 2006 11 13 | 704 | 0.6+ | 0.3− |
| 2002 10 29 | 704 | 0.6+ | 0.6+ | 2004 03 26 | 704 | 0.6+ | 0.5+ | 2006 11 13 | 704 | 0.3+ | 0.4+ |
| 2002 11 13 | 704 | 0.0 | 0.2− | 2004 03 26 | 704 | 0.5+ | 0.7− | 2006 11 13 | 704 | 0.8+ | 0.2− |
| 2002 11 13 | 704 | 0.3− | 0.4+ | 2006 10 16 | 704 | 0.4− | 1.0+ | 2006 11 13 | 704 | 0.7+ | 0.4− |
| 2002 11 13 | 704 | 0.7− | 0.4+ | 2006 10 16 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 704 | 0.0 | 0.0 |

**2002 UY$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 291.45810 | | (2000.0) | | | |
| $n$ | 0.22345968 | $\omega$ | 23.47599 | | +0.25987000 | −0.94846494 |
| $a$ | 2.6894900 | $\Omega$ | 51.96122 | | +0.84547179 | +0.13275886 |
| $e$ | 0.2089188 | $i$ | 13.31105 | | +0.46652442 | +0.28773137 |
| $P$ | 4.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.6+ | 0.5+ | 2002 10 31 | 608 | 0.0 | 0.9− | 2002 11 22 | 644 | 0.4+ | 0.1+ |
| 2000 04 10 | 695 | 0.0 | 0.6+ | 2002 10 31 | 608 | 0.1+ | 0.9− | 2002 11 22 | 644 | 0.3+ | 0.1+ |
| 2002 10 04 | 704 | 1.5− | 1.1+ | 2002 11 01 | 704 | 1.4+ | 1.0− | 2002 12 01 | 704 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 0.6− | 0.1− | 2002 11 01 | 704 | 0.1+ | 0.0 | 2002 12 01 | 704 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 1.1− | 0.4+ | 2002 11 01 | 704 | 0.2− | 0.8− | 2002 12 01 | 704 | 1.0− | 0.1− |
| 2002 10 04 | 704 | 0.7− | 1.0+ | 2002 11 01 | 704 | 0.2− | 0.1− | 2002 12 01 | 704 | 0.4+ | 0.3− |
| 2002 10 09 | 699 | (0.5− | 2.0+) | 2002 11 07 | 704 | 0.4+ | 0.3+ | 2002 12 01 | 704 | 0.6− | 0.3+ |
| 2002 10 09 | 699 | 0.2+ | 0.8− | 2002 11 07 | 704 | 0.7+ | 0.4+ | 2002 12 05 | 704 | 0.1− | 0.5+ |
| 2002 10 09 | 699 | 0.6+ | 1.2− | 2002 11 07 | 704 | 0.5+ | 0.7+ | 2002 12 05 | 704 | 0.3− | 0.1− |
| 2002 10 09 | 699 | 0.5+ | 0.1+ | 2002 11 07 | 704 | 0.5+ | 0.0 | 2002 12 05 | 704 | 0.2− | 0.8+ |
| 2002 10 11 | 704 | (0.9+ | 2.1+) | 2002 11 07 | 704 | 0.4+ | 0.1+ | 2002 12 05 | 704 | 0.1− | 1.0+ |
| 2002 10 11 | 704 | 0.5− | 0.6+ | 2002 11 08 | 704 | 0.1− | 1.1− | 2002 12 05 | 704 | 0.9+ | 0.0 |
| 2002 10 11 | 704 | 1.3− | 0.1+ | 2002 11 08 | 704 | 0.5− | 0.7− | 2002 12 11 | 704 | 0.6+ | 0.1− |
| 2002 10 26 | 608 | 0.7+ | 1.7+ | 2002 11 08 | 704 | (0.8− | 2.0−) | 2002 12 11 | 704 | 0.7− | 0.2+ |
| 2002 10 26 | 608 | (0.8+ | 1.8+) | 2002 11 11 | 704 | 0.7− | 0.8+ | 2002 12 11 | 704 | 0.6+ | 0.5+ |
| 2002 10 26 | 608 | (1.1+ | 2.0+) | 2002 11 11 | 704 | 0.5− | 0.1− | 2002 12 11 | 704 | 0.5− | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.4+ | 0.4+ | 2002 11 11 | 704 | 0.3− | 0.3− | 2004 03 30 | 704 | 0.5− | 0.8+ | | |
| 2002 10 30 | 644 | 0.2+ | 0.5+ | 2002 11 11 | 704 | 0.6− | 0.1− | 2004 03 30 | 704 | 0.5+ | 0.0 | | |
| 2002 10 30 | 644 | 0.6+ | 0.1+ | 2002 11 11 | 704 | (1.6− | 0.2−) | 2004 03 30 | 704 | 0.4− | 0.5+ | | |
| 2002 10 31 | 608 | 0.2+ | 1.1− | 2002 11 22 | 644 | 0.3+ | 0.0 | 2004 03 30 | 704 | 0.7+ | 0.8− | | |

### 2002 $UZ_3$ = 2006 $VV_{73}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.71606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25744455 | $\omega$ | 305.85853 | | +0.96103990 | −0.14372363 | |
| $a$ | 2.4472607 | $\Omega$ | 63.48190 | | +0.24574003 | +0.83532922 | |
| $e$ | 0.1318729 | $i$ | 15.29958 | | −0.12654699 | +0.53063039 | |
| $P$ | 3.83 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 29 | 644 | 0.4+ | 0.5+ | 2002 11 13 | 644 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.2+ | 0.6− | | |
| 2002 10 29 | 644 | 0.4+ | 0.6+ | 2002 12 01 | 704 | (1.0− | 2.1+) | 2006 11 15 | 703 | 0.2− | 0.4− | | |
| 2002 10 29 | 644 | 0.2+ | 0.3+ | 2002 12 01 | 704 | 1.3+ | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.3− | | |
| 2002 10 30 | 644 | 0.0 | 0.3− | 2002 12 01 | 704 | 0.1− | 0.9+ | 2006 11 15 | 703 | 0.6− | 0.1+ | | |
| 2002 10 30 | 644 | 0.3+ | 0.0 | 2002 12 01 | 704 | 0.3− | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2002 10 30 | 644 | 0.4+ | 0.2− | 2002 12 01 | 704 | 0.7+ | 1.0− | 2006 11 15 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 31 | 704 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.5+ | | |
| 2002 10 31 | 704 | 0.5− | 0.2− | 2002 12 11 | 704 | 0.7− | 0.5+ | 2006 11 18 | 704 | 0.1+ | 1.3+ | | |
| 2002 10 31 | 704 | 0.1− | 0.2+ | 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.6+ | 1.1+ | | |
| 2002 10 31 | 704 | 0.5+ | 0.4+ | 2002 12 11 | 704 | 0.3+ | 0.4− | 2006 11 18 | 704 | 1.3+ | 1.0+ | | |
| 2002 10 31 | 704 | 0.4− | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 11 18 | 704 | (0.8+ | 2.9+) | | |
| 2002 11 02 | 608 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.5+ | 0.0 | 2006 11 18 | 704 | 1.6+ | 0.1+ | | |
| 2002 11 02 | 608 | 0.6− | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2002 11 02 | 608 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.0 | | |
| 2002 11 05 | 704 | (0.9− | 2.0+) | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2002 11 05 | 704 | 0.0 | 1.1+ | 2006 10 31 | G96 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.0 | | |
| 2002 11 05 | 704 | 1.3− | 1.4+ | 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.1+ | | |
| 2002 11 11 | 704 | 0.2− | 0.9− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.1− | 0.0 | | |
| 2002 11 11 | 704 | 0.7+ | 0.4− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.2− | 0.0 | | |
| 2002 11 11 | 704 | 0.4+ | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.9− | 2006 11 30 | 691 | 0.1− | 0.2− | | |
| 2002 11 11 | 704 | 0.4+ | 0.5− | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 30 | 691 | 0.5− | 0.1+ | | |
| 2002 11 11 | 704 | 0.6− | 0.8− | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 30 | 691 | 0.2− | 0.0 | | |
| 2002 11 13 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.3− | | | | | | |
| 2002 11 13 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− | | | | | | |

### 2002 $UF_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.82774 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26853687 | $\omega$ | 108.50599 | | +0.87409857 | −0.28941261 | |
| $a$ | 2.3793962 | $\Omega$ | 269.82840 | | +0.14165530 | +0.92009361 | |
| $e$ | 0.2855201 | $i$ | 22.96195 | | +0.46463477 | +0.26394714 | |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 704 | 0.2− | 0.2+ | 2002 10 31 | 704 | 0.1+ | 0.3+ | 2002 12 12 | 644 | 0.2+ | 0.2+ | | |
| 2002 10 28 | 704 | 1.8− | 0.2+ | 2002 11 13 | 704 | 1.0+ | 0.5− | 2002 12 28 | 699 | 0.2+ | 0.1− | | |
| 2002 10 28 | 704 | 0.9− | 0.1− | 2002 11 13 | 704 | 0.1+ | 0.2− | 2002 12 28 | 699 | 0.2+ | 0.6+ | | |
| 2002 10 28 | 704 | 0.2− | 0.2− | 2002 11 13 | 704 | 0.1+ | 0.1+ | 2002 12 28 | 699 | 0.5+ | 0.5− | | |
| 2002 10 28 | 704 | 0.8− | 1.0+ | 2002 11 13 | 704 | 0.1+ | 0.2− | 2002 12 28 | 699 | 0.2+ | 0.9+ | | |
| 2002 10 30 | 704 | 0.8+ | 0.1+ | 2002 11 13 | 704 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.3+ | | |
| 2002 10 30 | 704 | 0.4+ | 0.2− | 2002 12 10 | 704 | 0.5− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.5+ | | |
| 2002 10 30 | 704 | 0.7+ | 0.1+ | 2002 12 10 | 704 | 0.1− | 0.5− | 2006 10 22 | G96 | 0.0 | 0.2+ | | |
| 2002 10 30 | 704 | 0.4+ | 0.1+ | 2002 12 10 | 704 | 0.4− | 0.9− | 2006 10 22 | G96 | 0.4+ | 0.6+ | | |
| 2002 10 31 | 704 | 0.3+ | 0.3+ | 2002 12 10 | 704 | 0.7− | 0.6− | 2006 10 28 | G96 | 0.4+ | 0.1− | | |
| 2002 10 31 | 704 | 0.4+ | 0.1− | 2002 12 10 | 704 | 1.3− | 0.4− | 2006 10 28 | G96 | 0.7− | 0.7− | | |
| 2002 10 31 | 704 | 0.7+ | 0.1+ | 2002 12 12 | 644 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.2− | | |
| 2002 10 31 | 704 | 0.4+ | 0.2− | 2002 12 12 | 644 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.6+ | 0.1− | | |

### 2002 $UT_5$ = 2006 $QY_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.89848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22122478 | $\omega$ | 251.85341 | | +0.54263239 | −0.83770234 | |
| $a$ | 2.7075731 | $\Omega$ | 164.80509 | | +0.83179883 | +0.52568430 | |
| $e$ | 0.0910872 | $i$ | 13.61172 | | +0.11687942 | +0.14802299 | |
| $P$ | 4.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.3− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.6− | | |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.6+ | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.4− | | |
| 2002 10 04 | 704 | 0.3+ | 1.2− | 2006 08 19 | 699 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.5− | | |
| 2002 10 04 | 704 | 0.5+ | 0.1+ | 2006 08 19 | 699 | 0.3− | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.4− | | |
| 2002 10 04 | 704 | 0.5+ | 0.3+ | 2006 08 19 | 699 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 1.2− | 0.8+ | | |
| 2002 10 15 | 644 | 0.2− | 0.2+ | 2006 08 19 | 699 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.1+ | | |
| 2002 10 15 | 644 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 2002 10 15 | 644 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.2+ | | |
| 2002 10 28 | 644 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.7− | 2006 11 16 | G96 | 0.1− | 0.5− | | |
| 2002 10 28 | 644 | 0.3− | 0.4+ | 2006 08 28 | 703 | 0.7+ | 0.7+ | 2006 11 16 | G96 | 0.2− | 0.3− | | |
| 2002 10 28 | 644 | 0.7− | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.0 | 2006 11 16 | G96 | 0.7+ | 0.3− | | |
| 2002 10 30 | 704 | (2.1+ | 1.6−) | 2006 09 14 | 703 | (1.8− | 0.9−) | 2006 11 16 | G96 | 0.4− | 0.1+ | | |
| 2002 10 30 | 704 | (0.5+ | 1.9−) | 2006 09 14 | 703 | 0.5+ | 0.4+ | 2006 11 23 | G96 | 0.6− | 0.1− | | |
| 2002 10 30 | 704 | 0.8+ | 1.4− | 2006 09 14 | 703 | 1.1+ | 0.8+ | 2006 11 23 | G96 | 0.4+ | 0.2− | | |
| 2004 02 18 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2004 02 18 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.5+ | 0.6− | | |
| 2004 02 18 | 691 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.0 | | | | | | |
| 2006 08 16 | 644 | 0.2− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.2− | | | | | | |

### 2002 $UW_6$ = 2006 $QQ_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.05460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22413888 | $\omega$ | 274.15731 | | +0.87525874 | +0.42949648 | |
| $a$ | 2.6840540 | $\Omega$ | 60.53984 | | −0.27587901 | +0.82100980 | |
| $e$ | 0.2027449 | $i$ | 14.79786 | | −0.39725672 | +0.37613254 | |
| $P$ | 4.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.8+ | 0.6− | 2002 10 30 | 704 | 0.7+ | 0.7+ | 2006 07 18 | E12 | 0.1− | 1.2+ | | |
| 2002 10 03 | 644 | 0.2+ | 0.2− | 2002 10 30 | 704 | 0.9+ | 0.2+ | 2006 08 23 | E12 | 0.3+ | 0.6+ | | |
| 2002 10 03 | 644 | 0.9+ | 0.2+ | 2002 10 30 | 704 | 0.1+ | 0.2+ | 2006 08 23 | E12 | 1.0+ | 1.0− | | |
| 2002 10 15 | 644 | 0.5− | 0.0 | 2002 10 30 | 704 | 0.1− | 0.3+ | 2006 08 23 | E12 | 0.6− | 0.2− | | |
| 2002 10 15 | 644 | 0.6− | 0.1− | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 08 23 | E12 | 0.5+ | 0.7+ | | |
| 2002 10 15 | 644 | 0.7− | 0.3+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 26 | E12 | 0.5− | 0.7− | | |
| 2002 10 28 | 644 | 0.1− | 0.4+ | 2006 07 18 | E12 | 0.6+ | 0.6+ | 2006 08 26 | E12 | 0.3− | 0.3− | | |
| 2002 10 28 | 644 | 0.2− | 0.5+ | 2006 07 18 | E12 | 0.7− | 0.8− | 2006 08 26 | E12 | 0.1− | 0.0 | | |
| 2002 10 28 | 644 | 0.4− | 0.4+ | 2006 07 18 | E12 | 0.5+ | 0.1− | 2006 08 26 | E12 | 0.7− | 0.0 | | |

### 2002 $UH_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.68995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22997443 | $\omega$ | 301.72067 | | +0.26433376 | −0.95008847 | |
| $a$ | 2.6384550 | $\Omega$ | 132.00416 | | +0.94301801 | +0.21861516 | |
| $e$ | 0.1941385 | $i$ | 12.88521 | | +0.20210071 | +0.22257429 | |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 29 | 691 | 0.1+ | 0.0 | 2002 11 16 | 644 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.2− | 0.4− | | |
| 1997 06 29 | 691 | 0.1− | 0.1− | 2002 11 30 | 704 | 0.0 | 0.7− | 2006 09 19 | 703 | 0.9+ | 0.6− | | |
| 1997 06 29 | 691 | 0.1− | 0.4+ | 2002 11 30 | 704 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.1− | 1.4− | | |
| 2002 10 28 | 644 | 0.3− | 0.3+ | 2002 11 30 | 704 | 0.6+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.1− | | |
| 2002 10 28 | 644 | 0.0 | 0.3+ | 2002 11 30 | 704 | 1.1− | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.3− | | |
| 2002 10 28 | 644 | 0.1− | 0.1+ | 2003 01 02 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 703 | 1.1− | 0.6− | | |
| 2002 10 30 | 704 | 0.4+ | 0.5+ | 2003 01 02 | 704 | 0.3− | 0.9+ | 2006 09 25 | 703 | 0.3− | 0.6− | | |
| 2002 10 30 | 704 | 0.1− | 0.4+ | 2003 01 02 | 704 | 0.0 | 1.1+ | 2006 09 25 | 703 | 0.5+ | 0.6+ | | |
| 2002 10 30 | 704 | 0.4+ | 1.5+ | 2003 01 02 | 704 | 0.2− | 0.4+ | 2006 09 25 | 703 | 0.9− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 699 | 0.2+ | 1.7− | 2004 03 21 | 691 | 0.6− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.9+ | | |
| 2002 11 16 | 644 | 0.4− | 0.3− | 2004 03 21 | 691 | 0.5+ | 0.5+ | 2006 09 27 | 703 | 0.1− | 1.8+ | | |
| 2002 11 16 | 699 | 0.4+ | 0.3− | 2004 03 21 | 691 | 0.5+ | 0.6+ | 2006 09 27 | 703 | 0.3+ | 0.9+ | | |
| 2002 11 16 | 699 | 0.0 | 0.8− | 2006 09 17 | 699 | 0.1− | 0.8+ | 2006 09 27 | 703 | 0.6+ | 0.8+ | | |
| 2002 11 16 | 644 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.2+ | 0.8+ | | | | | | |
| 2002 11 16 | 699 | 0.5+ | 0.2+ | 2006 09 17 | 699 | 0.2− | 1.0+ | | | | | | |

**2002 UX$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.51742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26078242 | $\omega$ | 308.44633 | | +0.99110002 | −0.07463201 | |
| $a$ | 2.4263336 | $\Omega$ | 56.09647 | | +0.11759415 | +0.87893250 | |
| $e$ | 0.1345230 | $i$ | 7.63209 | | −0.06238878 | +0.47107083 | |
| $P$ | 3.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | (0.0 | 2.6−) | 2002 11 01 | 704 | 0.1− | 0.9− | 2006 11 16 | 408 | 1.1+ | 0.3− | | |
| 2002 10 02 | 704 | 0.5+ | 0.4− | 2002 11 01 | 704 | 0.0 | 0.3− | 2006 11 16 | 408 | 0.9+ | 0.1− | | |
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2002 11 01 | 704 | 0.1− | 0.4− | 2006 11 21 | 408 | 0.7+ | 0.1+ | | |
| 2002 10 02 | 704 | 1.1− | 0.0 | 2002 11 06 | 608 | 0.5− | 0.9− | 2006 11 21 | 408 | 0.6+ | 0.9− | | |
| 2002 10 09 | 704 | 0.6+ | 0.2+ | 2002 11 06 | 608 | 0.2− | 0.9− | 2006 11 22 | 704 | 0.4− | 1.3+ | | |
| 2002 10 09 | 704 | 1.0− | 0.8+ | 2002 11 06 | 608 | 0.1− | 1.3− | 2006 11 22 | 704 | 0.7− | 0.5− | | |
| 2002 10 09 | 704 | 0.2+ | 0.1− | 2002 11 07 | 704 | 0.5+ | 0.7− | 2006 11 22 | 704 | 0.5+ | 1.1+ | | |
| 2002 10 09 | 704 | (0.1− | 2.6−) | 2002 11 07 | 704 | 0.3− | 0.7− | 2006 11 22 | 704 | 1.1− | 1.0+ | | |
| 2002 10 26 | 608 | 1.1− | 0.1− | 2002 11 07 | 704 | 0.4+ | 1.0− | 2006 11 24 | 408 | 0.6+ | 0.3+ | | |
| 2002 10 26 | 608 | 0.1− | 0.6+ | 2002 11 07 | 704 | 1.1+ | 0.3+ | 2006 11 24 | 408 | 0.3+ | 0.2+ | | |
| 2002 10 26 | 608 | 0.2− | 0.6+ | 2002 11 07 | 704 | 0.1+ | 0.3+ | 2006 11 25 | 408 | 1.3− | 0.6− | | |
| 2002 10 30 | 644 | 0.2+ | 0.7+ | 2002 11 22 | 644 | 0.3+ | 0.8+ | 2006 11 25 | 408 | 1.3− | 1.1− | | |
| 2002 10 30 | 644 | 0.3+ | 0.8+ | 2002 11 22 | 644 | 0.4+ | 0.4+ | | | | | | |
| 2002 10 30 | 644 | 0.1+ | 0.7+ | 2002 11 22 | 644 | 0.2+ | 0.7+ | | | | | | |

**2002 UM$_{10}$ = 2006 WR$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.40323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27109521 | $\omega$ | 320.98737 | | +0.37537702 | −0.92538081 | |
| $a$ | 2.3644029 | $\Omega$ | 106.90879 | | +0.86355185 | +0.32857048 | |
| $e$ | 0.1846241 | $i$ | 3.14906 | | +0.33670505 | +0.18897564 | |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.2− | 0.0 | 2002 11 11 | 704 | 0.1+ | 0.3− | 2002 12 08 | 608 | 0.2− | 0.4− | | |
| 2002 10 09 | 704 | 0.7+ | 0.6+ | 2002 11 11 | 704 | 0.2− | 0.1− | 2002 12 08 | 608 | 0.0 | 0.2+ | | |
| 2002 10 09 | 704 | 0.3+ | 0.6− | 2002 11 11 | 704 | 0.2+ | 0.5− | 2002 12 08 | 608 | 0.2− | 0.1+ | | |
| 2002 10 09 | 704 | 0.3− | 0.0 | 2002 11 12 | 644 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2− | | |
| 2002 10 09 | 704 | 0.5− | 0.4− | 2002 11 12 | 644 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.2− | 0.6− | | |
| 2002 10 28 | 608 | 0.8+ | 0.0 | 2002 11 12 | 644 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− | | |
| 2002 10 28 | 608 | 0.6+ | 0.6+ | 2002 11 22 | 644 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.0 | 0.0 | | |
| 2002 10 28 | 608 | 0.7+ | 0.4+ | 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.5− | 0.3− | | |
| 2002 10 30 | 644 | 0.1+ | 0.4− | 2002 11 22 | 644 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.7− | | |
| 2002 10 30 | 644 | 0.2+ | 0.6− | 2002 11 22 | 644 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.6+ | 0.3− | | |
| 2002 10 30 | 644 | 0.3+ | 0.6− | 2002 11 22 | 644 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.5− | | |
| 2002 11 01 | 704 | 0.3− | 0.6+ | 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | (0.0 | 2.0+) | | |
| 2002 11 01 | 704 | 0.5− | 0.6+ | 2002 12 01 | 704 | 0.7− | 0.4+ | 2006 11 27 | 703 | 0.1− | 1.3+ | | |
| 2002 11 01 | 704 | 0.4− | 0.4+ | 2002 12 01 | 704 | 0.1− | 0.7+ | 2006 11 27 | 703 | 0.3+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.4− | 2002 12 01 | 704 | 0.6− | 0.3+ | 2006 11 27 | 703 | 0.8+ | 0.8+ | | |
| 2002 11 07 | 704 | 0.2+ | 0.5− | 2002 12 01 | 704 | 0.6− | 0.2+ | 2006 11 28 | G96 | 0.2− | 0.0 | | |
| 2002 11 07 | 704 | 0.1+ | 0.6− | 2002 12 01 | 704 | 0.8+ | 0.0 | 2006 11 28 | G96 | 0.2− | 0.1− | | |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2002 12 07 | 704 | 0.5− | 0.5+ | 2006 11 28 | G96 | 0.2− | 0.3− | | |
| 2002 11 07 | 704 | 0.7− | 0.5+ | 2002 12 07 | 704 | 0.7+ | 0.1− | 2006 11 28 | G96 | 0.4− | 0.1− | | |
| 2002 11 11 | 704 | 0.5− | 0.1− | 2002 12 07 | 704 | 0.6+ | 0.3+ | | | | | | |
| 2002 11 11 | 704 | 0.2− | 0.0 | 2002 12 07 | 704 | (1.9+ | 0.8+) | | | | | | |

**2002 UA$_{11}$ = 2006 SM$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.80219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22539779 | $\omega$ | 161.83905 | | +0.85971062 | −0.50730180 | |
| $a$ | 2.6740506 | $\Omega$ | 228.79430 | | +0.45827804 | +0.81754438 | |
| $e$ | 0.1723185 | $i$ | 4.53747 | | +0.22556348 | +0.27251801 | |
| $P$ | 4.37 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.4+ | 1.8+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | | |
| 2002 10 16 | 644 | 0.4+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2− | | |
| 2002 10 16 | 644 | 0.6+ | 0.3+ | 2006 08 29 | 703 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.5− | 0.3+ | | |
| 2002 10 28 | 049 | 0.5+ | 0.0 | 2006 08 29 | 703 | 0.4+ | 0.5− | 2006 09 25 | 691 | 0.1− | 0.1− | | |
| 2002 10 28 | 049 | 0.2+ | 0.6− | 2006 08 29 | 703 | 1.4+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.0 | | |
| 2002 10 28 | 049 | 0.5− | 0.8− | 2006 08 29 | 703 | 0.8+ | 0.7− | 2006 09 27 | 691 | 0.7+ | 0.3+ | | |
| 2002 10 29 | 049 | 0.9− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | | |
| 2002 10 29 | 049 | 0.1− | 0.5− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2002 10 30 | 049 | 0.5− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 | | | | | | |
| 2006 08 29 | 691 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− | | | | | | |

**2002 UB$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.31103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23282743 | $\omega$ | 263.25632 | | −0.04469516 | −0.99832609 | |
| $a$ | 2.6168568 | $\Omega$ | 189.53983 | | +0.98156455 | −0.03705054 | |
| $e$ | 0.1603764 | $i$ | 12.79592 | | +0.18583160 | −0.04441032 | |
| $P$ | 4.23 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 699 | 0.3− | 0.2− | 2002 11 30 | 704 | 0.0 | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.3− | | |
| 2002 10 16 | 699 | 0.2− | 0.8+ | 2002 11 30 | 704 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.3− | | |
| 2002 10 16 | 699 | 0.4+ | 0.3+ | 2002 12 01 | 608 | 0.1+ | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.4− | | |
| 2002 10 16 | 699 | 0.3+ | 1.3+ | 2002 12 01 | 608 | 0.1+ | 0.7− | 2006 09 25 | G96 | 0.2− | 0.3− | | |
| 2002 10 29 | 644 | 0.2− | 0.5− | 2002 12 01 | 608 | 0.1− | 0.9− | 2006 09 28 | 704 | 0.5+ | 0.5− | | |
| 2002 10 29 | 644 | 0.0 | 0.6− | 2002 12 08 | 644 | 0.2− | 0.4+ | 2006 09 28 | 704 | 1.0+ | 0.6− | | |
| 2002 10 29 | 644 | 0.1− | 0.6− | 2002 12 08 | 644 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.4− | | |
| 2002 10 31 | 704 | 0.8− | 0.1− | 2002 12 08 | 644 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.7+ | 0.5− | | |
| 2002 10 31 | 704 | 0.4− | 0.4− | 2002 12 13 | 644 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.2− | 0.3+ | | |
| 2002 10 31 | 704 | 0.5− | 0.4− | 2002 12 13 | 644 | 0.7− | 0.4+ | 2006 10 01 | 704 | 0.9− | 0.9+ | | |
| 2002 10 31 | 704 | 0.5− | 0.2− | 2002 12 13 | 644 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.8− | 0.8+ | | |
| 2002 10 31 | 704 | 0.8− | 0.0 | 2004 03 18 | 704 | 0.1+ | 1.2+ | 2006 10 01 | 704 | 0.4− | 0.3+ | | |
| 2002 11 05 | 704 | 0.7− | 0.8+ | 2004 03 18 | 704 | 0.5+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 2002 11 05 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 704 | 0.5− | 0.8− | 2006 10 10 | 644 | 0.2− | 0.2+ | | |
| 2002 11 05 | 704 | 0.9+ | 0.6+ | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 2002 11 06 | 699 | 1.2+ | 1.0+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.3+ | | |
| 2002 11 06 | 699 | 1.3+ | 1.1+ | 2006 09 06 | 644 | 0.6− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 06 | 699 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.4+ | | |
| 2002 11 06 | 699 | 1.0+ | 1.3+ | 2006 09 14 | 703 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2002 11 12 | 683 | (2.0− | 2.1−) | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2002 11 12 | 683 | 0.8− | 1.3− | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 11 13 | 704 | 0.3− | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.4− | | |
| 2002 11 13 | 704 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.6− | 2006 10 22 | G96 | 0.0 | 0.1− | | |
| 2002 11 13 | 704 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4− | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.4− | | |
| 2002 11 13 | 704 | 0.8+ | 0.9− | 2006 09 18 | 699 | 0.9+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2002 11 13 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2002 11 13 | 704 | 0.4+ | 1.0− | 2006 09 18 | 699 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.4− | 0.1+ | | |
| 2002 11 13 | 704 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.9+ | 0.2− | 2006 11 17 | G96 | 0.2− | 0.1− | | |
| 2002 11 13 | 704 | 0.3− | 1.5− | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2002 11 30 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.0 | | | | | | |
| 2002 11 30 | 704 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.0 | | | | | | |

**2002 UA$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 318.97228 | | (2000.0) | | | |
| $n$ | 0.22718453 | $\omega$ | 99.58869 | | +0.62447713 | −0.76571263 |
| $a$ | 2.6600117 | $\Omega$ | 310.61652 | | +0.61312828 | +0.60273519 |
| $e$ | 0.1658801 | $i$ | 11.70432 | | +0.48384091 | +0.22448708 |
| $P$ | 4.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 03 | 645 | 0.0 | 0.1+ | 2002 11 15 | 644 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.4− |
| 2000 05 03 | 645 | 0.0 | 0.1− | 2002 11 15 | 644 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2002 10 06 | 704 | 0.7+ | 0.4+ | 2002 11 15 | 644 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.7− | 0.2− |
| 2002 10 06 | 704 | 0.6− | 0.0 | 2002 11 15 | 704 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.6− |
| 2002 10 06 | 704 | 0.8+ | 0.0 | 2002 11 15 | 704 | 0.7− | 0.9+ | 2006 09 15 | 704 | 0.7− | 0.0 |
| 2002 10 30 | 704 | 0.1− | 0.1− | 2002 11 15 | 704 | 0.5− | 1.3+ | 2006 09 15 | 704 | 0.3+ | 0.0 |
| 2002 10 30 | 704 | 0.5− | 1.4− | 2002 11 15 | 704 | 0.9− | 0.7+ | 2006 09 15 | 704 | 0.6− | 1.5+ |
| 2002 10 30 | 704 | 1.0− | 0.2− | 2002 11 15 | 704 | 0.7− | 0.1+ | 2006 09 15 | 704 | 0.1− | 0.1+ |
| 2002 10 30 | 704 | 0.3− | 0.4− | 2002 11 25 | 644 | 0.3+ | 0.4− | 2006 09 15 | 704 | 1.3+ | 0.6+ |
| 2002 10 30 | 704 | 0.4− | 1.0− | 2002 11 25 | 644 | 0.4+ | 0.9− | 2006 09 22 | 703 | (0.9− | 1.7+) |
| 2002 10 31 | 704 | 0.6− | 1.4+ | 2002 11 25 | 644 | 0.1+ | 0.2− | 2006 09 22 | 703 | 0.2+ | 1.3− |
| 2002 10 31 | 704 | 0.3− | 0.9+ | 2002 12 03 | 644 | 0.3+ | 0.0 | 2006 09 22 | 703 | 0.7+ | 0.5− |
| 2002 10 31 | 704 | 0.2+ | 1.3+ | 2002 12 03 | 644 | 0.3+ | 0.0 | 2006 09 22 | 703 | 0.3− | 0.3+ |
| 2002 11 08 | 704 | 1.5+ | 1.5+ | 2002 12 03 | 644 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.3+ | 0.3+ |
| 2002 11 08 | 704 | 0.6+ | 0.7− | 2002 12 12 | 644 | 0.2− | 0.5− | 2006 09 27 | 703 | 0.5− | 0.5− |
| 2002 11 08 | 704 | 0.8+ | 0.4− | 2002 12 12 | 644 | 0.4− | 0.6− | 2006 09 27 | 703 | 0.5+ | 0.2+ |
| 2002 11 08 | 704 | 1.4+ | 1.8− | 2002 12 12 | 644 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.2− |

**2002 US$_{15}$ = 1990 WN$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 347.20019 | | (2000.0) | | | |
| $n$ | 0.24508568 | $\omega$ | 249.68313 | | +0.71944188 | −0.69305569 |
| $a$ | 2.5288560 | $\Omega$ | 154.12354 | | +0.66982846 | +0.67498402 |
| $e$ | 0.2444170 | $i$ | 5.99427 | | +0.18366605 | +0.25312128 |
| $P$ | 4.02 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 11 17 | 809 | 1.3+ | 0.0 | 2002 11 11 | 644 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 1990 11 17 | 809 | 0.8− | 1.9− | 2002 11 11 | 644 | 1.0− | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.1+ |
| 1990 11 17 | 809 | 0.6+ | 1.8− | 2002 11 11 | 644 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2002 10 06 | 608 | 1.2+ | 0.3+ | 2002 11 12 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2002 10 06 | 608 | 1.3+ | 0.6+ | 2002 11 12 | 704 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2002 10 06 | 608 | 0.6+ | 0.4− | 2002 11 12 | 704 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2002 10 30 | 644 | 0.1+ | 0.2+ | 2002 11 30 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.5+ | 0.1− |
| 2002 10 30 | 644 | 0.0 | 0.2+ | 2002 11 30 | 704 | 0.2+ | 0.7+ | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2002 10 30 | 644 | 0.0 | 0.4+ | 2002 11 30 | 704 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 704 | 0.1+ | 0.1+ | 2002 11 30 | 704 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2002 10 31 | 704 | 0.0 | 0.3+ | 2002 12 08 | 644 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.0 | 0.6+ | 2002 12 08 | 644 | 1.0+ | 0.8+ | 2006 11 13 | 703 | 0.2+ | 1.2− |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2002 12 08 | 644 | 0.3+ | 0.9+ | 2006 11 13 | 703 | 0.8− | 0.1+ |
| 2002 10 31 | 704 | 0.3+ | 0.3− | 2002 12 13 | 644 | 0.1+ | 0.3− | 2006 11 13 | 703 | 0.2− | 0.4+ |
| 2002 11 05 | 704 | 0.7− | 0.4+ | 2002 12 13 | 644 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.5+ | 0.6− |
| 2002 11 05 | 704 | 1.0− | 0.0 | 2002 12 13 | 644 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.6− | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2002 11 05 | 704 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.6− | 2006 11 19 | 703 | 0.1− | 0.2+ |
| 2002 11 05 | 704 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 11 19 | 703 | 0.3− | 0.5+ |
| 2002 11 06 | 699 | 1.3− | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2002 11 06 | 699 | (0.9− | 1.6+) | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2002 11 06 | 699 | 1.2− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2002 11 06 | 699 | (1.6− | 0.0 ) | 2006 10 16 | 703 | 0.6− | 0.3+ | 2006 11 21 | 704 | 1.2+ | 0.9+ |

**2002 UL$_{16}$ = 2006 SF$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.30362 | | (2000.0) | | | |
| $n$ | 0.24064096 | $\omega$ | 261.49735 | | +0.90567137 | −0.41773163 |
| $a$ | 2.5599001 | $\Omega$ | 123.16476 | | +0.41505110 | +0.83860964 |
| $e$ | 0.2685786 | $i$ | 4.97013 | | +0.08655604 | +0.34962003 |
| $P$ | 4.10 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.2− | 0.6+ | 2006 09 16 | 704 | 0.2− | 0.2− | 2006 09 30 | 704 | 1.0+ | 0.0 |
| 2002 10 30 | 644 | 0.5− | 0.3+ | 2006 09 16 | 704 | 1.3+ | 0.4+ | 2006 09 30 | 704 | 0.4− | 1.0+ |
| 2002 10 30 | 644 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.9− | 0.7− | 2006 09 30 | 704 | 0.2− | 0.3+ |
| 2002 10 31 | 704 | 0.0 | 0.7+ | 2006 09 18 | 703 | (1.7− | 0.4+) | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.6− |
| 2002 10 31 | 704 | 0.9+ | 0.6+ | 2006 09 18 | 703 | 0.1− | 1.3− | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 0.0 | 2006 09 25 | 699 | (2.7+ | 1.5−) | 2006 10 16 | 703 | 0.8− | 0.6+ |
| 2002 10 31 | 704 | 0.4+ | 0.7+ | 2006 09 25 | 699 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 02 | 608 | 0.4− | 0.3− | 2006 09 25 | 699 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 02 | 608 | 0.0 | 0.7− | 2006 09 25 | 699 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 11 02 | 608 | 0.1− | 0.5− | 2006 09 29 | 699 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.1− | 1.1− |
| 2002 11 06 | 608 | 0.1− | 1.0− | 2006 09 29 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.4+ |
| 2002 11 06 | 608 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.3− | 0.7+ | 2006 10 22 | 703 | 0.5+ | 0.2− |
| 2002 11 06 | 608 | 0.2+ | 1.0− | 2006 09 29 | 699 | 0.2+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 1.1− |
| 2006 09 16 | 704 | 0.2+ | 0.2− | 2006 09 30 | 704 | 0.5− | 0.3− | | | | |

**2002 US$_{16}$ = 2006 SP$_{367}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.08260 | | (2000.0) | | | |
| $n$ | 0.23831591 | $\omega$ | 260.96621 | | +0.97153896 | +0.08201660 |
| $a$ | 2.5765230 | $\Omega$ | 94.10295 | | +0.00703503 | +0.92774306 |
| $e$ | 0.2138857 | $i$ | 12.87349 | | −0.23677534 | +0.36409626 |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 699 | 0.2− | 0.7− | 2002 10 31 | 704 | 0.5+ | 0.0 | 2006 10 04 | 703 | 0.3+ | 0.7+ |
| 2002 09 16 | 699 | (0.8− | 2.0+) | 2002 12 02 | 608 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2002 09 16 | 699 | 0.9+ | 0.1− | 2002 12 02 | 608 | 0.6+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2002 09 16 | 699 | 0.8− | 0.8+ | 2002 12 02 | 608 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2002 10 30 | 608 | 0.0 | 0.8− | 2006 09 26 | 703 | 0.2− | 0.5− | 2006 11 17 | 703 | 0.1+ | 1.2− |
| 2002 10 30 | 608 | 0.1+ | 0.6− | 2006 09 26 | 703 | 0.1+ | 0.9− | 2006 11 23 | 703 | (0.1− | 1.8+) |
| 2002 10 30 | 608 | 0.1− | 0.5− | 2006 09 26 | 703 | 0.1− | 0.6− | 2006 11 23 | 703 | 0.5+ | 1.3+ |
| 2002 10 31 | 704 | 0.4− | 0.6+ | 2006 09 26 | 703 | 0.4+ | 1.0− | 2006 11 23 | 703 | 0.8− | 0.5+ |
| 2002 10 31 | 704 | 0.2− | 0.1+ | 2006 10 04 | 703 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.1− |
| 2002 10 31 | 704 | 0.2− | 0.6+ | 2006 10 04 | 703 | 0.7+ | 0.9+ | | | | |
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2006 10 04 | 703 | 1.0− | 1.2+ | | | | |

**2002 UF$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.64178 | | (2000.0) | | | |
| $n$ | 0.23581338 | $\omega$ | 7.11580 | | +0.34965211 | −0.93565361 |
| $a$ | 2.5947195 | $\Omega$ | 62.42798 | | +0.85688487 | +0.29870099 |
| $e$ | 0.2048413 | $i$ | 3.09849 | | +0.37880302 | +0.18796287 |
| $P$ | 4.18 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.2+ | 0.4+ | 2002 11 06 | 704 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.7+ | 0.5+ |
| 1998 12 17 | 704 | 1.4− | 0.4− | 2002 11 06 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.9+ | 0.7+ |
| 1998 12 17 | 704 | 0.6+ | 1.1− | 2002 11 06 | 704 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.3− |
| 1998 12 17 | 704 | 0.1+ | 1.8− | 2002 11 06 | 704 | 0.5+ | 1.3+ | 2006 09 26 | 704 | 0.0 | 0.5− |
| 1998 12 17 | 704 | (0.7− | 2.1−) | 2002 11 06 | 704 | 0.1+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | (3.6− | 0.9−) | 2002 11 07 | 699 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.7− | 1.0− | 2002 11 07 | 699 | 0.5+ | 0.9+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2002 10 11 | 704 | 0.3− | 0.1− | 2002 11 07 | 699 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.3− | 0.2− |
| 2002 10 28 | 608 | 0.3+ | 0.3+ | 2002 11 07 | 699 | 0.9+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2002 10 28 | 608 | 0.2− | 0.7− | 2002 11 12 | 644 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 608 | 0.1− | 0.7− | 2002 11 12 | 644 | 0.8− | 0.8+ | 2006 10 01 | 704 | 0.2+ | 0.4+ | | |
| 2002 10 31 | 699 | 1.2− | 0.4+ | 2002 11 12 | 644 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.6− | | |
| 2002 10 31 | 699 | 0.3− | 0.4+ | 2002 11 13 | 291 | 0.0 | 0.3+ | 2006 10 16 | 703 | (0.5+ | 1.6−) | | |
| 2002 10 31 | 699 | 0.2+ | 0.8+ | 2002 11 13 | 291 | 0.1− | 0.2+ | 2006 10 16 | 703 | (2.9− | 0.2−) | | |
| 2002 10 31 | 699 | 0.7− | 0.4+ | 2002 11 13 | 291 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.8− | | |
| 2002 10 31 | 644 | 0.6+ | 0.3+ | 2002 11 22 | 644 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2002 10 31 | 644 | 0.5+ | 0.2+ | 2002 11 22 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2002 10 31 | 644 | 0.1− | 0.0 | 2002 11 22 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.2+ | | |
| 2002 11 02 | 608 | 0.1+ | 0.7− | 2002 12 01 | 704 | 0.5+ | 0.8− | 2006 10 21 | 703 | 0.2+ | 1.4+ | | |
| 2002 11 02 | 608 | 0.3+ | 0.6− | 2002 12 01 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2002 11 02 | 608 | 0.2− | 1.0− | 2002 12 01 | 704 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.6+ | 0.4+ | | |
| 2002 11 04 | 699 | 0.3− | 0.8− | 2006 09 18 | 703 | (0.6+ | 1.7−) | 2006 10 21 | 703 | 0.7− | 1.1+ | | |
| 2002 11 04 | 699 | 0.3− | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.2− | 0.2− | | |
| 2002 11 04 | 699 | 0.9− | 0.1− | 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.8− | | |
| 2002 11 04 | 699 | 0.9− | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.5− | | |
| 2002 11 05 | 049 | 0.6+ | 1.1− | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2002 11 05 | 049 | 0.7+ | 0.1− | 2006 09 18 | 703 | 0.6+ | 0.6− | | | | | | |
| 2002 11 05 | 049 | 0.6+ | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.1− | | | | | | |

## 2002 UG$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.98168 | | (2000.0) | | | |
| $n$ | 0.24408657 | $\omega$ | 140.84163 | | +0.90266198 | −0.42947204 |
| $a$ | 2.5357521 | $\Omega$ | 244.61300 | | +0.38680507 | +0.83765886 |
| $e$ | 0.2071536 | $i$ | 1.74301 | | +0.18863506 | +0.33746318 |
| $P$ | 4.04 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.2− | 0.2− | 2002 11 23 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1− | | |
| 2002 10 11 | 704 | 0.0 | 0.5− | 2002 11 23 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | (0.3− | 1.7+) | | |
| 2002 10 11 | 704 | 0.0 | 1.0+ | 2002 11 23 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.2− | 1.6+) | | |
| 2002 10 11 | 704 | 0.7− | 0.5+ | 2002 11 30 | 608 | 0.2− | 0.9− | 2006 11 15 | 691 | 0.6− | 0.3− | | |
| 2002 10 18 | 644 | 0.2+ | 0.3+ | 2002 11 30 | 608 | 0.0 | 0.9− | 2006 11 15 | 691 | 0.2+ | 0.0 | | |
| 2002 10 18 | 644 | 0.4+ | 0.3+ | 2002 11 30 | 608 | 0.0 | 0.9− | 2006 11 15 | 691 | 0.2+ | 0.2− | | |
| 2002 10 18 | 644 | 0.4+ | 0.3+ | 2002 12 01 | 704 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.1− | | |
| 2002 10 28 | 608 | 0.6+ | 0.1− | 2002 12 01 | 704 | (0.9− | 1.9−) | 2006 11 17 | 703 | 1.4+ | 0.2+ | | |
| 2002 10 28 | 608 | 0.1− | 0.5+ | 2002 12 01 | 704 | 0.5− | 1.4− | 2006 11 17 | 703 | 0.2+ | 0.9− | | |
| 2002 10 28 | 608 | 0.1− | 0.1+ | 2002 12 01 | 704 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.9− | | |
| 2002 10 31 | 699 | 0.7+ | 0.2− | 2002 12 09 | 291 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.4− | 1.2+ | | |
| 2002 10 31 | 699 | 0.2− | 0.1− | 2002 12 09 | 291 | 0.0 | 0.1− | 2006 11 18 | 704 | (0.9− | 1.7+) | | |
| 2002 10 31 | 699 | 0.3− | 0.4− | 2002 12 09 | 291 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.7+ | | |
| 2002 10 31 | 699 | 0.7− | 0.2− | 2002 12 10 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.0− | 0.7− | | |
| 2002 10 31 | 644 | 0.1+ | 0.3+ | 2002 12 10 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.5+ | | |
| 2002 10 31 | 644 | 0.3+ | 0.2+ | 2002 12 10 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.6+ | | |
| 2002 10 31 | 644 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2002 11 02 | 608 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1− | | |
| 2002 11 02 | 608 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.4+ | | |
| 2002 11 02 | 608 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.4+ | | |
| 2002 11 06 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.3+ | | |
| 2002 11 06 | 704 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.8+ | | |
| 2002 11 06 | 704 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.7+ | 0.4− | | |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.4− | 2006 11 22 | 683 | (1.4+ | 2.5−) | | |
| 2002 11 06 | 704 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 22 | 683 | 0.1+ | 0.2+ | | |
| 2002 11 10 | 704 | 0.9− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 22 | 683 | 0.1− | 0.7+ | | |
| 2002 11 10 | 704 | 0.1+ | 0.9+ | 2006 10 29 | 691 | 0.4+ | 0.8+ | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2002 11 10 | 704 | 0.1− | 0.7+ | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2− | | |
| 2002 11 11 | 704 | 0.7− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2002 11 11 | 704 | (1.6− | 1.4+) | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 26 | 704 | 0.5+ | 0.9+ | | |
| 2002 11 11 | 704 | 0.7− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.4− | 2006 11 26 | 704 | 0.3− | 0.3− | | |
| 2002 11 11 | 704 | 0.8− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 26 | 704 | 1.2− | 0.5− | | |
| 2002 11 11 | 704 | 1.0− | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2002 11 14 | 291 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2002 11 14 | 291 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.3− | | |
| 2002 11 14 | 291 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 1.1− | | | | | | |

## 2002 UX$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.28993 | | (2000.0) | | | |
| $n$ | 0.23646504 | $\omega$ | 223.55175 | | +0.93455914 | −0.35342121 |
| $a$ | 2.5899502 | $\Omega$ | 157.04839 | | +0.34847744 | +0.88581559 |
| $e$ | 0.2813222 | $i$ | 6.05624 | | +0.07185177 | +0.30070615 |
| $P$ | 4.17 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.0 | 0.6− | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 26 | 704 | 0.1+ | 0.0 | | |
| 2002 10 30 | 608 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.6+ | 0.9− | | |
| 2002 10 30 | 608 | 0.2+ | 1.1− | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.7− | | |
| 2002 10 31 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 09 29 | 699 | 0.4+ | 0.4+ | | |
| 2002 10 31 | 644 | 0.3+ | 0.0 | 2006 09 16 | 704 | 0.8+ | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.5+ | | |
| 2002 10 31 | 644 | 0.3+ | 0.1− | 2006 09 16 | 704 | 0.4+ | 0.5− | 2006 09 29 | 699 | 0.3+ | 0.2− | | |
| 2002 11 05 | 704 | 0.4− | 0.2+ | 2006 09 16 | 704 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.3− | 0.2+ | 2006 09 16 | 704 | 0.8− | 0.3+ | 2006 09 30 | 704 | (1.6− | 0.3−) | | |
| 2002 11 05 | 704 | 0.5− | 0.1− | 2006 09 16 | 704 | 0.7+ | 0.5− | 2006 09 30 | 703 | 0.1− | 0.9+ | | |
| 2002 11 05 | 704 | 1.3− | 1.0+ | 2006 09 18 | 703 | (1.7− | 0.2−) | 2006 09 30 | 704 | 0.2+ | 0.1− | | |
| 2002 11 05 | 704 | 1.2− | 0.7− | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.4+ | | |
| 2002 11 07 | 699 | 1.0+ | 0.5− | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.3+ | 0.2+ | | |
| 2002 11 07 | 699 | (0.6+ | 1.9+) | 2006 09 18 | 703 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.8+ | | |
| 2002 11 07 | 699 | 1.0+ | 0.1+ | 2006 09 19 | 704 | 1.3− | 0.1+ | 2006 09 30 | 704 | 0.2+ | 0.5− | | |
| 2002 11 07 | 699 | (0.1+ | 1.6+) | 2006 09 19 | 704 | 1.0− | 0.8+ | 2006 09 30 | 704 | 0.1− | 0.5− | | |
| 2002 11 11 | 699 | 0.7+ | 1.2+ | 2006 09 19 | 704 | 0.5+ | 1.4− | 2006 10 16 | 703 | 0.0 | 0.8− | | |
| 2002 11 11 | 699 | 0.6+ | 0.8+ | 2006 09 19 | 704 | 0.8− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.4− | | |
| 2002 11 11 | 699 | 0.7− | 0.9− | 2006 09 20 | 608 | (1.0+ | 2.3−) | 2006 10 16 | 703 | 0.3+ | 0.4− | | |
| 2002 11 11 | 699 | 0.6+ | 0.6+ | 2006 09 20 | 608 | (0.6+ | 2.1−) | 2006 10 16 | 703 | 0.2+ | 0.0 | | |
| 2002 11 12 | 644 | 0.4+ | 0.4− | 2006 09 20 | 608 | (0.7+ | 2.2−) | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 12 | 644 | 0.2+ | 0.5− | 2006 09 21 | 699 | 0.5+ | 0.9− | 2006 10 21 | 644 | 0.3+ | 0.1− | | |
| 2002 11 12 | 644 | 0.1+ | 1.1− | 2006 09 21 | 699 | 0.2− | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2002 11 23 | 644 | 0.3− | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.6− | 2006 10 22 | 703 | 0.1− | 0.2+ | | |
| 2002 11 23 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.2+ | | |
| 2002 11 23 | 644 | 0.0 | 0.6+ | 2006 09 22 | 704 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.3− | 0.2+ | | |
| 2002 12 01 | 704 | 0.2− | 0.5+ | 2006 09 22 | 704 | 0.1− | 0.5− | 2006 10 22 | 703 | 1.2− | 0.2+ | | |
| 2002 12 01 | 704 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2002 12 01 | 704 | 0.5+ | 0.5− | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 01 | 704 | 0.1− | 0.6+ | 2006 09 22 | 704 | 0.2− | 1.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2002 12 01 | 704 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2002 12 14 | 704 | 0.6+ | 0.0 | 2006 09 25 | 699 | 0.5− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.6− | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 14 | 704 | 0.7− | 0.3+ | 2006 09 25 | 699 | 0.7+ | 0.2− | | | | | | |

## 2002 UX$_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.51408 | | (2000.0) | | | |
| $n$ | 0.28710672 | $\omega$ | 65.50444 | | +0.94412493 | +0.32360380 |
| $a$ | 2.2756588 | $\Omega$ | 275.56519 | | −0.32054596 | +0.85742585 |
| $e$ | 0.2646433 | $i$ | 3.60144 | | −0.07667076 | +0.40012684 |
| $P$ | 3.43 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 691 | 0.1− | 0.0 | 2002 11 07 | 704 | 0.2− | 0.2+ | 2002 11 14 | 704 | 0.6− | 0.2+ | | |
| 1999 12 15 | 691 | 0.1− | 0.1− | 2002 11 07 | 704 | 0.3− | 0.2− | 2002 11 14 | 704 | 0.7− | 0.1− | | |
| 1999 12 15 | 691 | 0.2+ | 0.0 | 2002 11 07 | 704 | 0.1+ | 0.5− | 2002 11 14 | 704 | 0.6− | 0.3− | | |
| 2002 10 10 | 704 | 0.5+ | 0.4+ | 2002 11 07 | 704 | 0.3− | 0.4− | 2002 12 02 | 704 | 0.9+ | 0.0 | | |
| 2002 10 10 | 704 | 0.1+ | 0.2+ | 2002 11 07 | 704 | 0.2+ | 0.4− | 2002 12 02 | 704 | 0.8+ | 1.1+ | | |
| 2002 10 10 | 704 | 0.3− | 0.4+ | 2002 11 07 | 704 | 0.4− | 0.2+ | 2002 12 02 | 704 | 0.3+ | 0.0 | | |
| 2002 10 28 | 608 | 0.3+ | 0.8− | 2002 11 07 | 704 | 0.1+ | 0.8− | 2002 12 02 | 704 | 0.0 | 0.6+ | | |
| 2002 10 28 | 608 | 0.1− | 1.3− | 2002 11 07 | 704 | 0.0 | 0.1− | 2002 12 02 | 704 | 1.1− | 0.6+ | | |
| 2002 10 28 | 608 | 0.1+ | 1.0− | 2002 11 07 | 704 | 0.2− | 0.2− | 2002 12 06 | 704 | 0.2− | 0.6+ | | |
| 2002 10 31 | 699 | 0.6+ | 0.3+ | 2002 11 07 | 704 | 0.2− | 0.5+ | 2002 12 06 | 704 | 0.7+ | 0.5+ | | |
| 2002 10 31 | 699 | 0.1+ | 0.8− | 2002 11 08 | 704 | 0.1− | 0.4− | 2002 12 06 | 704 | 0.6+ | 0.0 | | |
| 2002 10 31 | 699 | 0.6+ | 0.7− | 2002 11 08 | 704 | 0.1− | 0.4− | 2002 12 06 | 704 | 0.0 | 0.1+ | | |
| 2002 10 31 | 699 | 0.2+ | 0.2− | 2002 11 08 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 644 | 0.1− | 0.3+ | | |
| 2002 11 01 | 644 | 0.5+ | 0.3+ | 2002 11 11 | 699 | 1.0− | 1.0+ | 2002 12 11 | 644 | 0.1− | 0.8+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.5+ | 0.2+ | 2002 11 11 | 699 | 1.1− | 0.3− | 2002 12 11 | 644 | 0.0 | 0.7+ | | |
| 2002 11 01 | 644 | 0.6+ | 0.3+ | 2002 11 11 | 699 | 0.1+ | 0.2+ | 2002 12 11 | 704 | 0.6+ | 0.4− | | |
| 2002 11 04 | 644 | 0.3+ | 0.9+ | 2002 11 11 | 699 | 0.3+ | 1.5+ | 2002 12 11 | 704 | 1.0− | 0.5− | | |
| 2002 11 04 | 644 | 0.4+ | 1.0+ | 2002 11 12 | 704 | 0.1− | 0.3+ | 2002 12 11 | 704 | 0.1− | 0.1− | | |
| 2002 11 04 | 644 | 0.7+ | 1.0+ | 2002 11 12 | 704 | 0.3− | 0.2+ | 2002 12 11 | 704 | 0.8+ | 0.0 | | |
| 2002 11 05 | 704 | 1.4+ | 0.6+ | 2002 11 12 | 704 | 0.3+ | 0.7− | 2006 11 01 | G96 | 0.2− | 0.3− | | |
| 2002 11 05 | 704 | 0.2− | 0.9− | 2002 11 12 | 704 | 0.5− | 1.3− | 2006 11 01 | G96 | 0.3− | 0.0 | | |
| 2002 11 05 | 704 | 0.7− | 0.8− | 2002 11 12 | 704 | 0.5− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.3− | | |
| 2002 11 05 | 704 | 0.2− | 0.3− | 2002 11 14 | 704 | 0.9− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.3− | | |
| 2002 11 05 | 704 | 0.5− | 0.3− | 2002 11 14 | 704 | 0.3− | 0.4− | | | | | | |

### 2002 $UE_{21}$ = 2006 $QM_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.14686 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23462271 | $\omega$ | 343.69324 | | +0.95547025 | −0.28853933 | |
| $a$ | 2.6034906 | $\Omega$ | 33.27804 | | +0.28176055 | +0.82982685 | |
| $e$ | 0.1018117 | $i$ | 6.46896 | | +0.08767892 | +0.47763213 | |
| $P$ | 4.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 644 | 0.5− | 0.4− | 2006 08 28 | 699 | (0.5− | 1.8+) | 2006 09 28 | 704 | 0.6+ | 0.7+ | | |
| 2002 10 11 | 644 | 0.6− | 0.1− | 2006 08 28 | 699 | 0.5− | 0.4− | 2006 09 28 | 704 | 0.1+ | 0.2+ | | |
| 2002 10 11 | 644 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.3− | 0.2− | | |
| 2002 10 30 | 644 | 0.5+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.2− | 0.5− | | |
| 2002 10 30 | 644 | 0.6+ | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.6− | 0.7+ | | |
| 2002 10 30 | 644 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.3+ | | |
| 2002 10 31 | 699 | 0.6+ | 0.6− | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.3+ | | |
| 2002 10 31 | 699 | 0.6− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.1+ | 0.7− | | |
| 2002 10 31 | 699 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 09 30 | 703 | 0.1− | 0.6− | | |
| 2002 10 31 | 699 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 0.3+ | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.0 | | |
| 2004 02 16 | 691 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2004 02 16 | 691 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.1− | 1.2+ | | |
| 2004 02 16 | 691 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.5+ | | |
| 2006 08 20 | 691 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.1− | 1.3− | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2006 08 20 | 691 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.8+ | 2006 11 17 | G96 | 0.7+ | 0.2− | | |
| 2006 08 20 | 691 | 0.1− | 0.5+ | 2006 09 26 | 704 | 1.0+ | 0.4+ | 2006 11 17 | G96 | 0.5+ | 0.2+ | | |
| 2006 08 28 | 699 | (1.7+ | 0.8−) | 2006 09 26 | 704 | 0.2+ | 1.1+ | 2006 11 17 | G96 | 0.3+ | 0.1− | | |
| 2006 08 28 | 699 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.3− | | | | | | |

### 2002 $UH_{21}$ = 2006 $SP_{247}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.89559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23363720 | $\omega$ | 346.99340 | | +0.89766748 | −0.44032303 | |
| $a$ | 2.6108067 | $\Omega$ | 39.14630 | | +0.40676083 | +0.81258871 | |
| $e$ | 0.1492001 | $i$ | 1.59488 | | +0.16952499 | +0.38185759 | |
| $P$ | 4.22 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.4− | 0.5+ | 2002 11 04 | 291 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 16 | 644 | 0.1− | 0.7+ | 2002 11 06 | 704 | 1.2+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 16 | 644 | 0.0 | 1.0+ | 2002 11 06 | 704 | 1.1+ | 0.1+ | 2006 10 20 | 644 | 0.6− | 0.3+ | | |
| 2002 10 30 | 291 | 0.0 | 0.1− | 2002 11 06 | 704 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2002 10 30 | 291 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 10 30 | 291 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 2002 10 31 | 699 | 0.5− | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.3− | | |
| 2002 10 31 | 699 | 1.0− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.5− | | |
| 2002 10 31 | 699 | 0.5− | 1.0− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 20 | G96 | 0.3− | 0.5− | | |
| 2002 10 31 | 699 | 0.2+ | 0.7− | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2002 11 04 | 291 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 2002 11 04 | 291 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1− | | |

### 2002 $UC_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.78721 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23927500 | $\omega$ | 240.63860 | | +0.95186866 | +0.29734249 | |
| $a$ | 2.5696334 | $\Omega$ | 101.97999 | | −0.24819831 | +0.89014828 | |
| $e$ | 0.2545753 | $i$ | 4.36120 | | −0.17984342 | +0.34528754 | |
| $P$ | 4.12 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.6+ | 0.2− | 2002 12 10 | 644 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.4− | 0.3− | | |
| 2002 10 30 | 608 | 0.5+ | 0.5− | 2002 12 10 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.4− | 0.2− | | |
| 2002 10 30 | 608 | 0.5+ | 0.1− | 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.3− | 0.1− | | |
| 2002 10 31 | 699 | 0.9− | 1.2− | 2002 12 11 | 704 | 0.8+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.1− | | |
| 2002 10 31 | 699 | 0.9+ | 0.7− | 2002 12 11 | 704 | 0.0 | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.3− | | |
| 2002 10 31 | 699 | 0.1+ | 0.4− | 2002 12 11 | 704 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.2− | | |
| 2002 10 31 | 699 | 0.5+ | 0.3− | 2002 12 11 | 704 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.2− | 0.1− | | |
| 2002 11 05 | 699 | (0.3+ | 1.5−) | 2002 12 31 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.5− | | |
| 2002 11 05 | 699 | 0.2+ | 0.1− | 2002 12 31 | 704 | 0.1+ | 1.4+ | 2006 11 13 | 703 | 0.3− | 0.1− | | |
| 2002 11 05 | 699 | 1.2− | 0.4− | 2002 12 31 | 704 | 0.2− | 0.5− | 2006 11 13 | 703 | 0.3− | 0.4+ | | |
| 2002 11 05 | 699 | 0.9− | 0.0 | 2002 12 31 | 704 | 0.7− | 0.1− | 2006 11 13 | 703 | (3.0− | 0.4+) | | |
| 2002 11 07 | 704 | 0.1+ | 0.7− | 2002 12 31 | 704 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.1− | | |
| 2002 11 07 | 704 | 0.0 | 1.2− | 2006 10 16 | 703 | (1.6+ | 0.8−) | 2006 11 14 | 704 | 0.4− | 0.2+ | | |
| 2002 11 07 | 704 | 0.7− | 0.9− | 2006 10 16 | 703 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.2+ | | |
| 2002 11 07 | 704 | 0.3− | 0.8− | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.3− | 0.2+ | | |
| 2002 11 07 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.7− | 0.0 | | |
| 2002 11 11 | 704 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 1.0− | 0.2− | | |
| 2002 11 11 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.2− | 0.4+ | | |
| 2002 11 11 | 704 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.2+ | 0.2+ | | |
| 2002 11 11 | 704 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.5+ | 0.4+ | | |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 10 22 | 704 | (1.5− | 0.1+) | 2006 11 17 | 704 | 0.8+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 10 22 | 704 | 0.4+ | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.3+ | | |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 704 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.3+ | 0.6+ | | |
| 2002 11 25 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 704 | 0.3− | 0.7+ | 2006 11 20 | 704 | 0.3− | 1.3+ | | |
| 2002 11 25 | 644 | 0.0 | 0.4+ | 2006 10 27 | 704 | 0.8+ | 0.5+ | 2006 11 20 | 704 | 0.6− | 0.4+ | | |
| 2002 11 25 | 644 | 0.1− | 0.6+ | 2006 10 27 | 704 | 0.7+ | 0.5+ | 2006 11 20 | 704 | 0.4− | 0.5+ | | |
| 2002 12 01 | 704 | (1.8+ | 0.2−) | 2006 10 27 | 704 | 0.1+ | 0.6− | 2006 11 23 | G96 | 0.3− | 0.6− | | |
| 2002 12 01 | 704 | 0.9+ | 0.4+ | 2006 10 27 | 704 | 0.7+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.4− | | |
| 2002 12 01 | 704 | 0.4+ | 0.1− | 2006 10 27 | 704 | 1.4+ | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2002 12 01 | 704 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.5− | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.4− | | |
| 2002 12 01 | 704 | 0.4+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1− | | | | | | |

### 2002 $UF_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.44068 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23577882 | $\omega$ | 269.29910 | | +0.95555366 | +0.28541402 | |
| $a$ | 2.5949731 | $\Omega$ | 74.11522 | | −0.23060652 | +0.87969204 | |
| $e$ | 0.2952108 | $i$ | 4.40451 | | −0.18367860 | +0.38036924 | |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.1+ | 0.2− | 2006 09 22 | 704 | 0.4− | 0.7+ | | |
| 2002 09 09 | 599 | 0.2+ | 0.3− | 2006 08 28 | 699 | 0.1+ | 0.7+ | 2006 09 26 | 704 | 0.5− | 0.4− | | |
| 2002 09 09 | 599 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.4+ | 2006 09 26 | 704 | 0.9− | 1.3− | | |
| 2002 10 31 | 644 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.3− | 2006 09 26 | 704 | 0.8− | 0.4+ | | |
| 2002 10 31 | 644 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.6− | 0.2− | 2006 09 26 | 704 | 1.4− | 0.1− | | |
| 2002 10 31 | 644 | 0.4+ | 0.5− | 2006 09 14 | 703 | 0.5− | 0.6− | 2006 09 26 | 704 | 1.1− | 0.1− | | |
| 2002 11 01 | 950 | 0.3− | 0.5− | 2006 09 14 | 703 | 0.3− | 1.0− | 2006 10 04 | 703 | 0.1− | 0.3+ | | |
| 2002 11 01 | 950 | 0.3− | 0.5− | 2006 09 17 | 699 | 1.4+ | 0.2+ | 2006 10 04 | 703 | 0.3− | 0.2+ | | |
| 2002 11 01 | 950 | 0.4− | 0.5− | 2006 09 17 | 699 | 0.3+ | 0.1+ | 2006 10 04 | 703 | 0.5+ | 0.8+ | | |
| 2002 11 04 | 644 | 0.1− | 0.1− | 2006 09 17 | 699 | 0.2+ | 0.5+ | 2006 10 04 | 703 | 1.4+ | 0.0 | | |
| 2002 11 04 | 644 | 0.3− | 0.2− | 2006 09 17 | 699 | 0.7+ | 0.8− | 2006 10 09 | 644 | 0.3+ | 0.1+ | | |
| 2002 11 04 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 608 | 1.1+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1− | | |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2006 09 17 | 608 | 1.1+ | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 608 | 1.2+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2002 11 07 | 704 | 0.3− | 0.8+ | 2006 09 19 | 704 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.1− | 0.4+ | 2006 09 19 | 704 | 0.3+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | (0.4− | 1.7−) |
| 2002 11 11 | 704 | 0.4− | 0.9− | 2006 09 19 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.3− | 1.1− |
| 2002 11 11 | 704 | 0.2− | 1.0+ | 2006 09 19 | 704 | 1.4− | 0.7+ | 2006 10 16 | 703 | (0.7− | 2.9−) |
| 2002 11 11 | 704 | 0.6− | 0.6− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2002 11 11 | 704 | 0.0 | 0.7− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 11 11 | 704 | 0.4+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 11 22 | 644 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 11 22 | 644 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2006 08 28 | 699 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.5− | 0.6+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |

**2002 UX$_{23}$ = 2006 SL$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.53512 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23335957 | $\omega$ | 331.87406 | | +0.99504320 | | +0.09739309 |
| $a$ | 2.6128770 | $\Omega$ | 22.56359 | | −0.07856469 | | +0.89376952 |
| $e$ | 0.1479362 | $i$ | 3.00128 | | −0.06096411 | | +0.43782489 |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | (0.5− | 2.3−) | 2006 09 17 | 704 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.4+ | 0.6− | 2006 09 17 | 704 | 1.3+ | 1.3+ | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2002 10 11 | 704 | 0.4+ | 0.7+ | 2006 09 17 | 704 | (0.2+ | 1.7+) | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2002 10 28 | 644 | 0.6− | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 704 | (1.6+ | 0.5−) |
| 2002 10 28 | 644 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 09 30 | 704 | 1.1+ | 0.4+ |
| 2002 10 28 | 644 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.5+ | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 1.3− | 0.6− | 2006 10 20 | G96 | 0.5+ | 1.0− |
| 2002 10 31 | 644 | 0.4− | 0.5+ | 2006 09 19 | 699 | 1.4+ | 0.3− | 2006 10 20 | G96 | 0.1− | 0.7− |
| 2002 10 31 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.6− |
| 2005 05 16 | G96 | (2.7− | 2.5+) | 2006 09 19 | 703 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.1+ | 1.0− |
| 2005 05 16 | G96 | 0.5− | 0.0 | 2006 09 19 | 699 | 1.3+ | 0.7− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2005 05 16 | G96 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.1− | 0.9+ | 2006 11 15 | G96 | 0.6− | 0.5− |
| 2005 05 16 | G96 | 0.0 | 0.6− | 2006 09 19 | 699 | 0.2+ | 1.0− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 08 18 | 691 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2006 08 18 | 691 | 0.3− | 0.3+ | 2006 09 25 | 699 | 0.4− | 1.0+ | 2006 11 21 | G96 | 0.4+ | 0.5− |
| 2006 08 18 | 691 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.9− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2006 09 16 | 699 | (1.5+ | 0.3−) | 2006 09 25 | 699 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.5− |
| 2006 09 16 | 699 | 0.7− | 0.7− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2006 09 16 | 699 | 1.4+ | 0.8− | 2006 09 26 | 691 | 0.1− | 0.1+ | | | | |
| 2006 09 16 | 699 | (3.1+ | 1.1+) | 2006 09 26 | 691 | 0.0 | 0.2− | | | | |

**2002 UM$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.67168 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23297574 | $\omega$ | 66.93099 | | +0.93957452 | | +0.33018302 |
| $a$ | 2.6157461 | $\Omega$ | 273.69143 | | −0.33780288 | | +0.85128851 |
| $e$ | 0.1171081 | $i$ | 5.19958 | | −0.05557820 | | +0.40778309 |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.1+ | 0.6− | 2002 11 06 | 704 | 0.7+ | 0.6− | 2006 09 17 | 703 | (0.4+ | 1.6−) |
| 2002 10 03 | 644 | 0.4− | 0.7− | 2002 11 06 | 704 | 0.4− | 1.2+ | 2006 09 17 | 703 | 0.3− | 0.2+ |
| 2002 10 03 | 644 | 0.2+ | 0.9− | 2002 11 06 | 704 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.4− | 0.3− |
| 2002 10 12 | 704 | 0.3− | 0.7+ | 2006 08 29 | 703 | 1.1+ | 0.5+ | 2006 09 20 | 699 | (1.1− | 2.0+) |
| 2002 10 12 | 704 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.6− | 0.2+ | 2006 09 20 | 699 | 1.1− | 0.8+ |
| 2002 10 12 | 704 | 1.0+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 09 20 | 699 | 0.7+ | 0.7− |
| 2002 10 12 | 704 | 0.9− | 1.1− | 2006 08 29 | 703 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.4+ | 0.3− |
| 2002 10 30 | 608 | 0.5− | 1.0− | 2006 09 06 | 644 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.0 | 0.3+ |
| 2002 10 30 | 608 | 0.5− | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.1+ |
| 2002 10 30 | 608 | 0.4− | 0.4− | 2006 09 06 | 644 | 0.0 | 0.5− | 2006 09 29 | 699 | 0.4− | 0.1− |
| 2002 10 31 | 644 | 0.6+ | 0.5+ | 2006 09 15 | 704 | (2.2+ | 0.1−) | 2006 09 29 | 699 | 0.1+ | 0.4− |
| 2002 10 31 | 644 | 0.6+ | 0.8+ | 2006 09 15 | 704 | 0.8− | 0.0 | 2006 10 11 | 644 | 0.6+ | 0.2− |
| 2002 10 31 | 644 | 0.6+ | 0.9+ | 2006 09 15 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2002 11 06 | 704 | (0.3+ | 3.0+) | 2006 09 15 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.6+ | 0.3− |
| 2002 11 06 | 704 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.0 | 0.6+ | | | | |

**2002 UO$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.57190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25781067 | $\omega$ | 168.96811 | | +0.55749426 | | −0.82320368 |
| $a$ | 2.4449433 | $\Omega$ | 247.06617 | | +0.75252373 | | +0.55573273 |
| $e$ | 0.0806444 | $i$ | 6.69728 | | +0.35058264 | | +0.11617590 |
| $P$ | 3.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.4− | 1.0+ | 2002 11 12 | 704 | 0.3− | 0.5− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 10 10 | 704 | 0.6+ | 0.6− | 2002 11 12 | 704 | 0.5+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 10 10 | 704 | 0.6+ | 1.2+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2002 10 10 | 704 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 10 10 | 704 | (1.7+ | 1.1+) | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2002 10 10 | 704 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2002 10 10 | 704 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.5− | 1.0− |
| 2002 10 10 | 704 | 0.5+ | 1.1+ | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.5− | 1.4+ |
| 2002 10 10 | 704 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.3− | 1.1+ |
| 2002 10 10 | 704 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.7− | 0.2+ |
| 2002 10 10 | 704 | 0.9+ | 0.7+ | 2006 11 09 | D35 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2002 10 10 | 704 | 1.3− | 0.6− | 2006 11 09 | D35 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.5− | 0.9+ |
| 2002 10 30 | 608 | 0.6− | 0.6− | 2006 11 09 | D35 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2002 10 30 | 608 | 0.7− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.7+ | 2006 11 21 | 704 | 0.4+ | 0.1− |
| 2002 10 30 | 608 | 0.6− | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 10 31 | 644 | 0.0 | 0.7− | 2006 11 13 | 644 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2002 10 31 | 644 | 0.2− | 0.7− | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.4+ | 0.5− | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.7+ | 0.9+ | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.0 |

**2002 UB$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.47869 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25147210 | $\omega$ | 9.14404 | | +0.49117154 | | −0.84488590 |
| $a$ | 2.4858572 | $\Omega$ | 51.74252 | | +0.78115339 | | +0.31957807 |
| $e$ | 0.1437249 | $i$ | 15.65864 | | +0.38542172 | | +0.42899612 |
| $P$ | 3.92 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 699 | 1.4+ | 0.3+ | 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.6− |
| 1998 10 17 | 699 | 1.1+ | 0.7− | 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.7− |
| 1998 10 17 | 699 | 0.3− | 0.2− | 2002 12 11 | 704 | 0.6− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2002 10 06 | 608 | 0.7− | 0.8+ | 2002 12 11 | 704 | 0.4+ | 0.8− | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2002 10 06 | 608 | 0.7− | 0.2+ | 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2002 10 06 | 608 | 0.7− | 0.4− | 2002 12 11 | 704 | 0.6− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2002 10 15 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.6+ | 0.7+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2002 10 15 | 644 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.6− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2002 10 15 | 644 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.6+ | 2006 11 11 | 644 | 0.0 | 0.3− |
| 2002 10 30 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 1.0+ | 0.2− | 2006 11 11 | 644 | 0.0 | 0.2− |
| 2002 10 30 | 644 | 0.9+ | 0.4+ | 2006 09 19 | 683 | 0.1+ | 1.4− | 2006 11 11 | 644 | 0.0 | 0.3− |
| 2002 10 30 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 683 | 0.9+ | 1.3− | 2006 11 18 | 704 | (2.0− | 0.6+) |
| 2002 11 01 | 704 | 0.8− | 0.2+ | 2006 09 19 | 683 | 0.9+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2002 11 01 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.7− |
| 2002 11 01 | 704 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.2+ | 2006 11 18 | 704 | (0.8+ | 1.7+) |
| 2002 11 01 | 608 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.6− | 2006 11 18 | 704 | 0.3− | 0.2− |
| 2002 11 01 | 608 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2002 11 01 | 608 | 0.6− | 0.3− | 2006 10 03 | G96 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2002 11 07 | 704 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 1.5− |
| 2002 11 07 | 704 | 0.6− | 0.2− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.5− |
| 2002 11 07 | 704 | 0.2+ | 0.4− | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.5− | 0.4− | 2006 10 28 | 704 | 1.4− | 1.4+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2002 11 07 | 704 | 1.0− | 0.3− | 2006 10 28 | 704 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2002 11 11 | 704 | 1.1− | 0.1+ | 2006 10 28 | 704 | 0.7− | 0.6+ | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2002 11 11 | 704 | 0.3− | 0.4− | 2006 10 28 | 704 | 0.8+ | 0.6− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2002 11 11 | 704 | 0.6− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2002 11 11 | 704 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 644 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.8− | 0.8− |
| 2002 11 11 | 644 | 0.2+ | 0.1− | 2006 11 02 | 703 | 0.4+ | 0.8+ | 2006 11 27 | 703 | 0.4− | 0.1+ |
| 2002 11 11 | 644 | 1.1+ | 0.3+ | 2006 11 02 | 703 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 0.3+ | 0.3+ |
| 2002 12 01 | 704 | 0.8+ | 0.2+ | 2006 11 02 | 703 | 1.1− | 0.4+ | 2006 11 29 | 704 | 0.2− | 0.1+ |
| 2002 12 01 | 704 | 0.3+ | 0.3+ | 2006 11 02 | 703 | 0.4+ | 0.7+ | 2006 11 29 | 704 | 0.5+ | 0.4− |
| 2002 12 01 | 704 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.3+ |
| 2002 12 01 | 704 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | | | |

**2002 UC$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.83974 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23669552 | $\omega$ | 27.24652 | | +0.44681846 | | −0.88218202 |
| $a$ | 2.5882687 | $\Omega$ | 36.76260 | | +0.76889916 | | +0.29372282 |
| $e$ | 0.1308140 | $i$ | 14.38488 | | +0.45732630 | | +0.36807851 |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.7+ | 0.6+ | 2002 11 06 | 704 | 0.2+ | 0.3+ | 2006 09 21 | 699 | 0.7− | 0.1+ |
| 2002 10 02 | 704 | 0.1+ | 0.8+ | 2002 11 06 | 704 | 0.8+ | 0.1+ | 2006 09 25 | 699 | 1.0+ | 0.0 |
| 2002 10 02 | 704 | 0.1− | 0.4− | 2002 11 06 | 704 | 0.1− | 0.7+ | 2006 09 25 | 699 | 0.4− | 0.1+ |
| 2002 10 07 | 704 | 0.2− | 0.3− | 2002 11 08 | 704 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.3+ |
| 2002 10 07 | 704 | 0.1+ | 0.9− | 2002 11 08 | 704 | 0.1− | 0.8+ | 2006 09 25 | 699 | 0.0 | 0.4− |
| 2002 10 07 | 704 | 0.5− | 0.1+ | 2002 11 08 | 704 | 0.5− | 0.5− | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2002 10 11 | 704 | 0.9− | 0.5− | 2002 11 08 | 704 | 0.1− | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2002 10 11 | 704 | 0.2+ | 0.5− | 2002 11 10 | 704 | 0.7− | 1.0− | 2006 09 26 | 703 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.8+ | 0.5− | 2002 11 10 | 704 | 0.6+ | 0.6− | 2006 09 26 | 703 | 0.7− | 1.1− |
| 2002 10 11 | 704 | (2.4+ | 1.4+) | 2002 11 10 | 704 | 1.2+ | 1.1− | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2002 10 15 | 644 | 0.3− | 0.1− | 2002 11 10 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 2002 10 15 | 644 | 0.2− | 0.3− | 2002 11 12 | 644 | 0.2− | 1.0+ | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2002 10 15 | 644 | 0.5− | 0.2− | 2002 11 12 | 644 | 0.5+ | 1.3+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2002 10 26 | 608 | 0.8+ | 1.2+ | 2002 11 12 | 644 | 0.6− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 26 | 608 | 0.4+ | 0.6+ | 2002 12 06 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2002 10 26 | 608 | 1.1+ | 0.5+ | 2002 12 06 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.5+ | 1.0− |
| 2002 10 31 | 699 | 0.3− | 0.3− | 2002 12 06 | 704 | 0.4− | 0.6− | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2002 10 31 | 699 | 0.3+ | 0.1+ | 2002 12 06 | 704 | 1.3− | 0.8− | 2006 10 22 | 703 | 0.1+ | 1.0+ |
| 2002 10 31 | 699 | 0.4− | 0.6+ | 2006 09 18 | 703 | (1.6− | 1.7+) | 2006 10 22 | 703 | 0.8+ | 1.4+ |
| 2002 10 31 | 699 | 0.0 | 1.2− | 2006 09 18 | 703 | 0.3− | 0.7+ | 2006 10 22 | 703 | 1.0+ | 0.8+ |
| 2002 11 01 | 608 | 0.2− | 0.3− | 2006 09 18 | 703 | (2.2+ | 0.9+) | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 11 01 | 608 | 0.3− | 0.5− | 2006 09 18 | 703 | (0.9+ | 2.4+) | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2002 11 01 | 608 | 0.6− | 0.5− | 2006 09 21 | 699 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2002 11 06 | 704 | 0.7− | 0.1+ | 2006 09 21 | 699 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 1.2+ | 0.1+ | 2006 09 21 | 699 | 0.9+ | 0.9− | | | | |

**2002 UY$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.17418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27100221 | $\omega$ | 293.80684 | | +0.97839900 | | −0.06669226 |
| $a$ | 2.3649438 | $\Omega$ | 70.49326 | | +0.15044646 | | +0.87887437 |
| $e$ | 0.1963115 | $i$ | 11.98099 | | −0.14177894 | | +0.47236849 |
| $P$ | 3.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 608 | 0.0 | 0.0 | 2002 11 05 | 704 | 0.3− | 0.9+ | 2002 12 01 | 704 | 0.1− | 0.4− |
| 2002 09 16 | 608 | 0.4+ | 0.1− | 2002 11 05 | 704 | 0.1− | 1.1+ | 2002 12 07 | 704 | 0.6− | 0.2+ |
| 2002 09 16 | 608 | 0.3+ | 0.2+ | 2002 11 07 | 704 | 0.2+ | 0.1− | 2002 12 07 | 704 | 0.4− | 0.8− |
| 2002 10 07 | 608 | 0.1+ | 0.6− | 2002 11 07 | 704 | 0.0 | 0.4− | 2002 12 07 | 704 | 0.5− | 0.5+ |
| 2002 10 07 | 608 | 0.1− | 1.0− | 2002 11 07 | 704 | 0.4+ | 0.4− | 2002 12 07 | 704 | 0.3+ | 0.6+ |
| 2002 10 07 | 608 | 0.3+ | 0.4− | 2002 11 07 | 704 | 0.1+ | 0.2− | 2002 12 07 | 704 | 1.1− | 0.1− |
| 2002 10 16 | 699 | 0.4+ | 0.2+ | 2002 11 07 | 704 | 0.2+ | 0.5− | 2002 12 11 | 704 | 0.0 | 0.1+ |
| 2002 10 16 | 699 | 0.4+ | 0.3+ | 2002 11 11 | 704 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.2− | 0.1+ |
| 2002 10 16 | 699 | 0.4− | 0.2+ | 2002 11 11 | 704 | 0.0 | 0.2+ | 2002 12 11 | 704 | 0.1+ | 0.8+ |
| 2002 10 16 | 699 | 0.4− | 0.0 | 2002 11 11 | 704 | 0.2+ | 0.5+ | 2002 12 11 | 704 | 1.0− | 0.4+ |
| 2002 10 28 | 608 | 0.7+ | 1.6− | 2002 11 11 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.1− | 0.5+ |
| 2002 10 28 | 608 | 0.5+ | 0.5− | 2002 11 11 | 704 | 0.5+ | 0.4+ | 2003 01 04 | 704 | 0.4+ | 0.6− |
| 2002 10 28 | 608 | 0.5+ | 1.4− | 2002 11 14 | 644 | 0.3− | 0.0 | 2003 01 04 | 704 | 0.8− | 0.2+ |
| 2002 10 30 | 644 | 0.1− | 0.3+ | 2002 11 14 | 644 | 0.2− | 0.1+ | 2003 01 04 | 704 | 0.0 | 1.0− |
| 2002 10 30 | 644 | 0.2− | 0.5+ | 2002 11 14 | 644 | 0.1− | 0.1+ | 2003 01 04 | 704 | 0.2+ | 0.8− |
| 2002 10 30 | 644 | 0.3− | 0.2+ | 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.1− |
| 2002 11 01 | 704 | 1.0+ | 0.2+ | 2002 11 22 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2002 11 01 | 704 | 0.3− | 0.4− | 2002 11 22 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2002 11 01 | 704 | 0.2+ | 0.2− | 2002 12 01 | 704 | 0.4− | 0.2− | 2006 11 02 | G96 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.7− | 0.9+ | 2002 12 01 | 704 | 0.1+ | 0.4+ | 2006 11 02 | G96 | 0.3+ | 0.3− |
| 2002 11 05 | 704 | 0.3− | 0.9+ | 2002 12 01 | 704 | 0.1− | 0.3− | 2006 11 02 | G96 | 0.1− | 0.5− |
| 2002 11 05 | 704 | 0.1+ | 0.3+ | 2002 12 01 | 704 | 0.3+ | 0.3− | 2006 11 02 | G96 | 0.5+ | 0.5− |

**2002 UP$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.26824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26332659 | $\omega$ | 320.39237 | | +0.81115674 | | −0.56736459 |
| $a$ | 2.4106800 | $\Omega$ | 74.73831 | | +0.56692022 | | +0.70327165 |
| $e$ | 0.2550211 | $i$ | 8.45532 | | +0.14361826 | | +0.42837648 |
| $P$ | 3.74 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 699 | 0.2− | 0.0 | 2002 11 11 | 704 | 0.1− | 0.9− | 2002 12 10 | 704 | 0.2+ | 0.2− |
| 2002 09 16 | 699 | 1.3− | 0.8− | 2002 11 11 | 704 | 0.2− | 1.0− | 2002 12 10 | 704 | 0.1+ | 0.1+ |
| 2002 09 16 | 699 | 1.5+ | 1.5− | 2002 11 11 | 704 | 0.1− | 1.1− | 2002 12 10 | 704 | 0.4− | 0.0 |
| 2002 09 16 | 699 | 1.1− | 0.3− | 2002 11 11 | 704 | 0.2− | 0.9− | 2002 12 10 | 704 | 0.2− | 0.1− |
| 2002 10 30 | 644 | 0.1+ | 0.3+ | 2002 11 11 | 704 | 0.3− | 1.0− | 2002 12 31 | 704 | 0.6− | 0.7− |
| 2002 10 30 | 644 | 0.0 | 0.4+ | 2002 11 11 | 644 | 0.7+ | 0.1− | 2002 12 31 | 704 | 0.3− | 0.0 |
| 2002 10 30 | 644 | 0.5− | 0.3+ | 2002 11 11 | 644 | 1.4+ | 0.1+ | 2002 12 31 | 704 | 0.2− | 0.6− |
| 2002 11 01 | 704 | 0.6− | 1.2− | 2002 11 11 | 644 | 0.4+ | 0.5− | 2002 12 31 | 704 | 0.6− | 0.4− |
| 2002 11 01 | 704 | 0.0 | 0.2− | 2002 12 01 | 704 | 0.1+ | 0.1+ | 2003 01 04 | 704 | 0.7− | 0.0 |
| 2002 11 01 | 704 | 0.7+ | 0.7− | 2002 12 01 | 704 | 0.3+ | 1.0+ | 2003 01 04 | 704 | 1.4+ | 0.2− |
| 2002 11 02 | 608 | 1.0+ | 0.1+ | 2002 12 01 | 704 | 0.7+ | 0.4+ | 2003 01 04 | 704 | 0.4+ | 0.1− |
| 2002 11 02 | 608 | 0.3+ | 0.4− | 2002 12 01 | 704 | 0.3+ | 0.8+ | 2003 01 04 | 704 | 0.5− | 1.1+ |
| 2002 11 02 | 608 | 0.6+ | 0.4− | 2002 12 01 | 704 | 0.5+ | 0.2+ | 2003 01 19 | 644 | 0.1− | 0.2+ |
| 2002 11 07 | 704 | 1.0− | 0.8+ | 2002 12 05 | 704 | 0.0 | 0.4− | 2003 01 19 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.9− | 0.9+ | 2002 12 05 | 704 | 0.2− | 0.7− | 2003 01 19 | 644 | 0.5− | 0.1+ |
| 2002 11 07 | 704 | 0.5− | 1.0+ | 2002 12 05 | 704 | 0.1+ | 0.6− | 2006 09 24 | 691 | 0.2+ | 0.1− |
| 2002 11 07 | 704 | 0.8− | 1.0+ | 2002 12 05 | 704 | 0.3− | 0.9− | 2006 09 24 | 691 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.7− | 1.6+ | 2002 12 05 | 704 | 0.4− | 1.4− | 2006 09 24 | 691 | 0.1− | 0.2− |
| 2002 11 08 | 704 | 0.7+ | 1.5+ | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2002 11 08 | 704 | 0.2+ | 1.6+ | 2002 12 10 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3− | 0.3− |
| 2002 11 08 | 704 | 0.5+ | 1.5+ | 2002 12 10 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.9+ |
| 2002 11 08 | 704 | 0.7+ | 1.4+ | 2002 12 10 | 704 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.4− |

**2002 UZ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.37138 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25359104 | $\omega$ | 268.29875 | | +0.97864951 | | −0.16327477 |
| $a$ | 2.4719904 | $\Omega$ | 101.08453 | | +0.19873444 | | +0.90666576 |
| $e$ | 0.1646788 | $i$ | 7.30893 | | −0.05243820 | | +0.38897114 |
| $P$ | 3.89 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | (2.0+ | 1.2−) | 2002 11 30 | 704 | 0.0 | 0.1+ | 2006 11 19 | 703 | (2.0+ | 2.0−) |
| 2002 10 04 | 704 | 0.2− | 0.2− | 2002 11 30 | 704 | 0.4− | 0.8+ | 2006 11 19 | 703 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.6− | 0.2+ | 2002 12 08 | 644 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 1.1+ |
| 2002 10 31 | 704 | 0.2+ | 0.3− | 2002 12 08 | 644 | 0.4− | 0.1+ | 2006 11 19 | 703 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.7+ | 0.3− | 2002 12 08 | 644 | 0.2− | 0.8+ | 2006 11 23 | G96 | 0.2− | 0.5− |
| 2002 10 31 | 704 | 0.4+ | 0.6− | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2002 10 31 | 704 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2002 11 01 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.8− | 2006 11 23 | G96 | 0.2− | 0.5− |
| 2002 11 01 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2002 11 01 | 704 | 0.9+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.5− |
| 2002 11 01 | 704 | 0.5− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.7− |
| 2002 11 05 | 704 | 0.6− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2002 11 05 | 704 | 0.4+ | 0.6− | 2006 11 19 | 704 | (1.9+ | 0.8−) | 2006 11 28 | 704 | 0.2− | 0.5− |
| 2002 11 05 | 704 | 0.0 | 0.5+ | 2006 11 19 | 703 | (0.2− | 2.0−) | | | | |
| 2002 11 30 | 704 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.8+ | | | | |

**2002 UE$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.87414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24357574 | $\omega$ | 15.08028 | | +0.94106177 | +0.32769478 | |
| $a$ | 2.5392962 | $\Omega$ | 325.42627 | | −0.32359577 | +0.80019422 | |
| $e$ | 0.2973415 | $i$ | 8.48999 | | −0.09843034 | +0.50230006 | |
| $P$ | 4.05 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.3+ | 0.3− | 2002 11 12 | 699 | 0.5− | 0.6− | 2006 09 28 | 703 | 0.1+ | 0.7+ |
| 2000 02 05 | 695 | 0.1+ | 0.2− | 2002 11 12 | 699 | 0.1+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.5− | 1.0+ | 2002 11 12 | 699 | 0.4− | 0.7− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.5+ | 0.3+ | 2002 11 15 | 704 | 0.6− | 1.3− | 2006 10 12 | 644 | 0.5+ | 0.0 |
| 2002 10 05 | 704 | 0.5+ | 1.1+ | 2002 11 15 | 704 | 0.6− | 0.8− | 2006 10 20 | 704 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 0.3− | 1.3+ | 2002 11 15 | 704 | 0.0 | 0.9− | 2006 10 20 | 704 | 0.8− | 0.3+ |
| 2002 10 12 | 704 | 0.6+ | 0.9+ | 2002 11 15 | 704 | 0.8− | 0.4− | 2006 10 20 | 704 | 0.6+ | 0.3+ |
| 2002 10 12 | 704 | 0.9+ | 1.0+ | 2002 11 25 | 644 | 0.6+ | 0.5+ | 2006 10 20 | 704 | (1.7− | 1.0+) |
| 2002 10 12 | 704 | 1.4+ | 0.9+ | 2002 11 25 | 644 | 0.9+ | 1.0+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2002 10 31 | 704 | 0.7− | 0.1+ | 2002 11 25 | 644 | 0.3+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.3− |
| 2002 10 31 | 704 | 0.3− | 0.6− | 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 2002 10 31 | 704 | 0.7− | 0.4+ | 2002 12 06 | 704 | 0.6+ | 0.8− | 2006 10 27 | 703 | 0.8+ | 0.7+ |
| 2002 10 31 | 704 | 0.6− | 0.1− | 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.0 | 0.7+ |
| 2002 11 01 | 704 | 0.5− | 0.6+ | 2002 12 06 | 704 | 0.8+ | 0.0 | 2006 10 27 | 703 | (1.1− | 2.4−) |
| 2002 11 01 | 704 | 0.3− | 0.3+ | 2002 12 06 | 704 | 0.4+ | 0.1+ | 2006 10 27 | 703 | (1.0+ | 1.5−) |
| 2002 11 01 | 704 | 0.5− | 0.6+ | 2002 12 12 | 644 | 0.3+ | 0.5+ | 2006 10 27 | 703 | (2.3+ | 1.4−) |
| 2002 11 01 | 704 | 0.2− | 0.1+ | 2002 12 12 | 644 | 1.0+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.2− |
| 2002 11 01 | 704 | 1.4− | 1.0+ | 2002 12 12 | 644 | (1.5+ | 0.2+) | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2002 11 05 | 704 | 0.2− | 1.0− | 2004 02 12 | 691 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2002 11 05 | 704 | 0.2+ | 0.2− | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.4− |
| 2002 11 05 | 704 | 0.0 | 0.4− | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2002 11 05 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.5− | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.4− | 2006 11 15 | 703 | 0.5+ | 0.4− |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 11 21 | 703 | 0.2+ | 0.5− |
| 2002 11 07 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.6− | 2006 11 21 | 703 | 0.1+ | 1.0− |
| 2002 11 07 | 704 | 0.9− | 0.0 | 2006 09 28 | 703 | 0.3+ | 0.1− | 2006 11 21 | 703 | 0.9− | 0.8− |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.4− | 2006 11 21 | 703 | 0.9− | 1.8− |
| 2002 11 12 | 699 | 0.1− | 0.5− | 2006 09 28 | 703 | 0.7+ | 0.2+ | | | | |

**2002 UN$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.21648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23467842 | $\omega$ | 250.59456 | | +0.53019932 | −0.84758026 | |
| $a$ | 2.6030786 | $\Omega$ | 167.31427 | | +0.81100156 | +0.49930270 | |
| $e$ | 0.1940329 | $i$ | 5.82287 | | +0.24731588 | +0.17973455 | |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 13 | 691 | 0.1− | 0.6+ | 2002 11 12 | 704 | 0.7− | 1.2+ | 2006 09 20 | 644 | 0.5+ | 0.3− |
| 1993 08 13 | 691 | 0.2− | 0.3− | 2002 11 12 | 644 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1993 08 13 | 691 | 0.3+ | 0.3− | 2002 11 12 | 644 | 0.4− | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 2002 10 09 | 704 | 0.8+ | 0.2+ | 2002 11 12 | 644 | 0.5− | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 0.6+ | 0.3− | 2002 11 23 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.4− |
| 2002 10 09 | 704 | 0.2− | 0.6− | 2002 11 23 | 644 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.5− |
| 2002 10 31 | 644 | 0.8+ | 0.7+ | 2002 11 23 | 644 | 0.1− | 0.4− | 2006 10 01 | 704 | 0.8− | 0.8+ |
| 2002 10 31 | 644 | 0.5+ | 0.6+ | 2002 11 28 | 699 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 10 31 | 644 | 0.6+ | 0.8+ | 2002 11 28 | 699 | 0.7− | 0.7+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2002 11 01 | 704 | 0.2− | 0.4− | 2002 11 28 | 699 | 0.8+ | 1.0+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2002 11 01 | 704 | 0.9− | 0.5− | 2002 11 28 | 699 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2002 11 01 | 704 | 0.1− | 1.0− | 2002 12 01 | 704 | 0.7+ | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2002 11 05 | 699 | 0.2+ | 0.2− | 2002 12 01 | 704 | 1.1+ | 0.9− | 2006 10 10 | 644 | 0.6+ | 0.2+ |
| 2002 11 05 | 699 | 0.8− | 0.2+ | 2002 12 01 | 704 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 11 05 | 699 | (0.2− | 1.9+) | 2002 12 01 | 704 | (1.4+ | 1.6−) | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 699 | 1.2− | 0.2+ | 2002 12 01 | 704 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2002 11 07 | 704 | (2.1+ | 1.2+) | 2002 12 07 | 644 | 0.7+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2002 11 07 | 704 | (1.4+ | 1.7−) | 2002 12 07 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.3+ |
| 2002 11 07 | 704 | (3.6+ | 1.7+) | 2002 12 07 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2002 11 07 | 704 | (2.5+ | 0.4−) | 2002 12 13 | 608 | 0.2+ | 0.1− | 2006 10 16 | 703 | 1.3− | 0.1− |
| 2002 11 11 | 704 | 0.1+ | 0.3+ | 2002 12 13 | 608 | 0.1+ | 1.0− | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2002 11 11 | 704 | 0.7− | 0.5− | 2002 12 13 | 608 | 0.7+ | 0.3− | 2006 10 19 | 644 | 0.3+ | 0.3− |
| 2002 11 11 | 704 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2002 11 11 | 704 | 0.6− | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2002 11 11 | 704 | 0.7− | 0.5− | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.7− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.3− |

**2002 UB$_{31}$ = 2006 UF$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.46431 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24077885 | $\omega$ | 267.71228 | | +0.86996453 | +0.17739268 | |
| $a$ | 2.5589227 | $\Omega$ | 81.80605 | | +0.03282378 | +0.91015143 | |
| $e$ | 0.3836367 | $i$ | 27.70033 | | −0.49202064 | +0.37437444 | |
| $P$ | 4.09 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 1.5− | 0.9− | 2002 12 01 | 704 | 0.5+ | 0.5− | 2002 12 11 | 704 | 0.2+ | 0.7+ |
| 2002 10 31 | 704 | 1.3− | 0.3− | 2002 12 01 | 704 | 0.3+ | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.4− | 0.7− | 2002 12 01 | 704 | 0.8+ | 0.1− | 2002 12 11 | 704 | 0.0 | 0.4+ |
| 2002 10 31 | 704 | (1.8− | 0.9−) | 2002 12 03 | 644 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.1+ | 0.5+ |
| 2002 11 01 | 926 | 0.7+ | 0.5− | 2002 12 03 | 644 | 0.1− | 0.1+ | 2006 10 23 | E12 | 0.0 | 0.3− |
| 2002 11 01 | 926 | 0.7+ | 0.5+ | 2002 12 03 | 644 | 0.3+ | 0.4− | 2006 10 23 | E12 | 0.0 | 0.1+ |
| 2002 11 01 | 926 | 0.2+ | 0.1+ | 2002 12 05 | 704 | 0.1− | 0.0 | 2006 10 23 | E12 | 0.9+ | 0.1+ |
| 2002 11 02 | 176 | 0.1+ | 0.0 | 2002 12 05 | 704 | 0.2− | 0.0 | 2006 10 23 | E12 | 0.4+ | 0.5+ |
| 2002 11 02 | 176 | 0.3+ | 0.1+ | 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 10 23 | E12 | 0.6+ | 0.3+ |
| 2002 11 02 | 176 | 0.4+ | 0.2+ | 2002 12 05 | 704 | 0.4+ | 0.3+ | 2006 11 01 | 703 | 0.7− | 0.1− |
| 2002 11 02 | 176 | 0.4+ | 0.3+ | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 703 | 0.4+ | 0.3+ |
| 2002 11 02 | 176 | 0.6+ | 0.4+ | 2002 12 05 | 608 | 0.6− | 0.3− | 2006 11 01 | 703 | 0.1− | 0.8+ |
| 2002 11 02 | 176 | 0.7+ | 0.4+ | 2002 12 05 | 608 | 0.0 | 0.1+ | 2006 11 01 | 703 | 0.6− | 0.2− |
| 2002 11 28 | 608 | 1.1− | 0.8− | 2002 12 05 | 608 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2002 11 28 | 608 | 1.5− | 0.3− | 2002 12 10 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2002 11 28 | 608 | 0.7− | 0.1+ | 2002 12 10 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2002 12 01 | 704 | 1.0+ | 0.4− | 2002 12 10 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.0 |

**2002 UD$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.21777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22634039 | $\omega$ | 163.26481 | | +0.60141586 | −0.78872933 | |
| $a$ | 2.6666213 | $\Omega$ | 249.58424 | | +0.71657268 | +0.60298444 | |
| $e$ | 0.2784695 | $i$ | 7.80667 | | +0.35330236 | +0.11964868 | |
| $P$ | 4.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 1.8+ | 0.3− | 2002 11 08 | 704 | 0.6− | 0.0 | 2002 12 06 | 704 | 0.4− | 0.6− |
| 2002 10 10 | 704 | 1.5− | 0.4+ | 2002 11 08 | 704 | 0.2+ | 1.2− | 2002 12 06 | 704 | 0.2− | 0.5− |
| 2002 10 10 | 704 | 1.1− | 0.9+ | 2002 11 10 | 704 | 0.6+ | 0.1+ | 2002 12 06 | 704 | 0.4− | 0.1+ |
| 2002 10 10 | 704 | 0.9− | 0.8+ | 2002 11 10 | 704 | 1.7+ | 0.1− | 2002 12 06 | 704 | 0.4− | 1.2− |
| 2002 10 28 | 608 | 0.1− | 0.1+ | 2002 11 10 | 704 | 1.9+ | 1.7− | 2002 12 06 | 704 | 0.6− | 0.6− |
| 2002 10 28 | 608 | 0.1− | 0.1+ | 2002 11 10 | 704 | 0.6+ | 0.1− | 2002 12 10 | 644 | 0.6+ | 1.2+ |
| 2002 10 28 | 608 | 0.1+ | 0.0 | 2002 11 10 | 704 | 1.5+ | 0.5− | 2002 12 10 | 644 | 1.0+ | 0.8+ |
| 2002 11 01 | 644 | 0.1− | 0.9+ | 2002 11 12 | 704 | 0.2− | 0.5− | 2002 12 10 | 644 | 0.5+ | 0.2+ |
| 2002 11 01 | 644 | 0.1+ | 1.1+ | 2002 11 12 | 704 | 0.0 | 0.5− | 2002 12 11 | 644 | 0.2− | 0.9+ |
| 2002 11 01 | 644 | 0.2+ | 1.0+ | 2002 11 12 | 704 | 0.6− | 0.3− | 2002 12 11 | 644 | 0.3− | 0.6+ |
| 2002 11 05 | 704 | 0.8+ | 0.1+ | 2002 11 12 | 704 | 0.1+ | 0.5− | 2002 12 11 | 644 | 0.1+ | 0.9+ |
| 2002 11 05 | 704 | 0.3+ | 0.4+ | 2002 11 12 | 704 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.0 | 0.9+ |
| 2002 11 05 | 704 | 0.4+ | 1.5− | 2002 11 14 | 704 | 0.1− | 0.6+ | 2002 12 11 | 704 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.3+ | 0.7− | 2002 11 14 | 704 | 0.2− | 0.3+ | 2002 12 11 | 704 | 0.1+ | 0.4+ |
| 2002 11 06 | 699 | 0.1+ | 0.3− | 2002 11 14 | 704 | 0.6+ | 0.8+ | 2002 12 11 | 704 | 0.0 | 0.2+ |
| 2002 11 06 | 699 | 0.5− | 0.4+ | 2002 11 14 | 704 | 0.0 | 0.1+ | 2002 12 11 | 704 | 0.9− | 0.4− |
| 2002 11 06 | 699 | 0.4− | 0.7+ | 2002 11 14 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 691 | 0.1− | 0.1+ |
| 2002 11 06 | 699 | 0.9− | 0.3+ | 2002 11 30 | 608 | 0.2− | 0.6− | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2002 11 06 | 608 | 0.7− | 0.5− | 2002 11 30 | 608 | 0.4− | 0.7− | 2006 09 14 | 691 | 0.3− | 0.0 |
| 2002 11 06 | 608 | 0.3− | 0.2+ | 2002 11 30 | 608 | 0.2− | 1.1− | 2006 09 16 | 691 | 0.1+ | 0.2− |
| 2002 11 06 | 608 | 0.4− | 0.3− | 2002 12 02 | 704 | 0.1+ | 0.0 | 2006 09 16 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 704 | 0.4− | 0.6+ | 2002 12 02 | 704 | 0.0 | 0.7− | 2006 09 16 | 691 | 0.1+ | 0.2+ |
| 2002 11 08 | 704 | 0.0 | 0.2− | 2002 12 02 | 704 | 0.8− | 0.5− | | | | |

**2002 UC$_{32}$ = 2006 ST$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.72196 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24467710 | $\omega$ | 32.25089 | | +0.96153201 | −0.27314989 | |
| $a$ | 2.5316704 | $\Omega$ | 343.52564 | | +0.22521400 | +0.84450868 | |
| $e$ | 0.3727346 | $i$ | 5.88461 | | +0.15727319 | +0.46064544 | |
| $P$ | 4.03 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 21 | 644 | 0.3− | 0.0 | 2006 08 28 | 703 | 1.0+ | 1.2− | 2006 09 29 | 704 | 0.6− | 0.4− |
| 2002 09 21 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 1.1+ | 1.2+ | 2006 09 30 | 703 | 0.7− | 0.4− |
| 2002 10 10 | 704 | 0.3+ | 0.4− | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 09 30 | 703 | 1.4− | 0.7− |
| 2002 10 10 | 704 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.7− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2002 10 10 | 704 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.1− |
| 2002 10 10 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | (1.6+ | 0.3−) | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 10 30 | 608 | 0.0 | 0.8− | 2006 09 19 | 699 | 0.4+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2002 10 30 | 608 | 0.3+ | 0.9− | 2006 09 19 | 699 | 1.1+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2002 10 30 | 608 | 0.1− | 0.9− | 2006 09 25 | 683 | 0.7+ | 0.5− | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2002 11 01 | 644 | 0.1− | 0.2− | 2006 09 25 | 683 | 1.0+ | 0.1+ | 2006 10 17 | 703 | 1.2+ | 0.1+ |
| 2002 11 01 | 644 | 0.1+ | 0.4− | 2006 09 25 | 683 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.3− | 0.4− |
| 2002 11 01 | 644 | 0.4+ | 0.3− | 2006 09 27 | 699 | 0.9− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2002 11 05 | 704 | 0.8+ | 0.8+ | 2006 09 27 | 699 | 0.7− | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 11 05 | 704 | 0.3− | 0.8+ | 2006 09 27 | 699 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 11 05 | 704 | 0.3− | 0.1− | 2006 09 27 | 699 | (1.7+ | 1.1−) | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2002 11 13 | 644 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.7− | 0.4+ | 2006 10 22 | 644 | 0.4+ | 0.3+ |
| 2002 11 13 | 644 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 11 13 | 644 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |

**2002 UD$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.49600 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24075636 | $\omega$ | 171.16356 | | +0.49966896 | −0.86185204 | |
| $a$ | 2.5590820 | $\Omega$ | 248.81715 | | +0.78893852 | +0.49419294 | |
| $e$ | 0.2949790 | $i$ | 5.34415 | | +0.35764080 | +0.11394913 | |
| $P$ | 4.09 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.1− | 0.0 | 2002 11 27 | 699 | 0.0 | 0.3− | 2006 09 30 | 703 | 1.5+ | 0.3− |
| 2002 10 30 | 608 | 0.1− | 0.5− | 2002 11 27 | 699 | 0.5+ | 1.5+ | 2006 09 30 | 703 | 0.2− | 0.7+ |
| 2002 10 30 | 608 | 0.1− | 0.4− | 2002 11 27 | 699 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.6+ |
| 2002 11 01 | 644 | 0.1+ | 0.5− | 2002 11 27 | 699 | (1.7+ | 0.5+) | 2006 09 30 | 703 | 0.1− | 0.7+ |
| 2002 11 01 | 644 | 0.1+ | 0.3− | 2002 11 28 | 699 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.6− |
| 2002 11 01 | 644 | 0.1+ | 0.2− | 2002 11 28 | 699 | 0.8− | 0.6− | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2002 11 05 | 704 | 0.8+ | 1.3− | 2002 11 28 | 699 | 0.1− | 0.7+ | 2006 10 17 | 703 | (1.7− | 0.1+) |
| 2002 11 05 | 704 | (0.1+ | 1.7+) | 2002 11 28 | 699 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2002 11 05 | 704 | 0.7+ | 0.7+ | 2002 12 02 | 704 | 0.5− | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 11 05 | 704 | 0.2+ | 0.6+ | 2002 12 02 | 704 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2002 12 02 | 704 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2002 11 07 | 704 | 0.1+ | 0.5+ | 2002 12 02 | 704 | 0.7− | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 11 07 | 704 | 0.3− | 1.5+ | 2002 12 02 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2002 11 07 | 704 | 1.0+ | 1.4+ | 2002 12 05 | 704 | 0.4+ | 0.9− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 11 08 | 704 | 0.4− | 0.2− | 2002 12 05 | 704 | 0.6+ | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2002 11 08 | 704 | 0.1+ | 0.2+ | 2002 12 05 | 704 | 1.4+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 11 08 | 704 | 0.2− | 1.2+ | 2002 12 05 | 704 | 0.9− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 11 12 | 704 | 0.5+ | 0.8− | 2002 12 05 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 11 12 | 704 | 0.4+ | 0.7− | 2002 12 05 | 704 | 0.3− | 0.4+ | 2006 10 29 | 704 | 0.4+ | 1.2− |
| 2002 11 12 | 704 | 0.2+ | 0.7− | 2002 12 05 | 704 | 0.0 | 1.3+ | 2006 10 29 | 704 | 0.3+ | 0.1+ |
| 2002 11 12 | 704 | 0.2+ | 0.0 | 2002 12 10 | 704 | 0.3− | 0.2− | 2006 10 29 | 704 | 0.6− | 1.0+ |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2002 12 10 | 704 | 0.7+ | 1.0− | 2006 11 14 | 703 | 0.7− | 0.2+ |
| 2002 11 14 | 704 | 0.2+ | 0.1− | 2002 12 10 | 704 | 1.0− | 0.5− | 2006 11 14 | 703 | (0.4+ | 1.6+) |
| 2002 11 14 | 704 | 0.4− | 0.2+ | 2002 12 10 | 704 | 0.6− | 0.4− | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | 0.9− | 0.4− | 2002 12 12 | 608 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.7− | 0.8+ |
| 2002 11 14 | 704 | 0.0 | 0.3+ | 2002 12 12 | 608 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.5− | 0.7− | 2002 12 12 | 608 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.6− |
| 2002 11 24 | 644 | 0.1− | 0.2− | 2003 01 03 | 291 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.8+ | 0.7− |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2003 01 03 | 291 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.5− |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2003 01 03 | 291 | 0.2+ | 0.0 | | | | |

**2002 UM$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.55376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23313674 | $\omega$ | 342.57464 | | +0.99787350 | +0.06375735 | |
| $a$ | 2.6145417 | $\Omega$ | 13.79095 | | −0.05095933 | +0.89269804 | |
| $e$ | 0.1418179 | $i$ | 3.25742 | | −0.04064012 | +0.44612241 | |
| $P$ | 4.23 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 691 | 0.6− | 0.6+ | 2002 12 11 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 703 | 0.2+ | 0.8− |
| 2000 04 06 | 691 | 0.3− | 0.2− | 2002 12 27 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.2− |
| 2000 04 06 | 691 | 0.9+ | 0.3− | 2002 12 27 | 644 | 0.2− | 0.8+ | 2006 10 21 | 703 | 0.4− | 0.2+ |
| 2002 10 30 | 608 | 0.3+ | 0.5+ | 2002 12 27 | 644 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2002 10 30 | 608 | 0.3− | 1.4+ | 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 10 30 | 608 | 0.0 | 0.8+ | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 11 01 | 644 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.9− | 1.2− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 11 01 | 644 | 0.2+ | 0.9− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 704 | 0.2− | 0.1+ |
| 2002 11 01 | 644 | 0.7+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.2+ | 1.0− |
| 2002 11 05 | 704 | (0.6− | 1.8−) | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 23 | 704 | 0.4+ | 0.2− |
| 2002 11 05 | 704 | 0.5+ | 0.4− | 2006 09 20 | 704 | 1.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 11 05 | 704 | 0.0 | 1.1− | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 11 05 | 704 | 0.1+ | 1.0− | 2006 09 20 | 704 | 1.0+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2002 11 13 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.5− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 11 13 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.5− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2002 11 13 | 644 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 11 24 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.2− | 1.2− | 2006 10 31 | 691 | 0.4+ | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 1.1+ | 0.6− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 11 27 | 699 | 0.2− | 1.1− | 2006 09 27 | 704 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.6+ | 0.7− |
| 2002 11 27 | 699 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.6+ | 0.6− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 11 27 | 699 | 0.7− | 0.3− | 2006 09 29 | 704 | 0.7− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2002 11 27 | 699 | 1.0− | 0.3+ | 2006 09 29 | 704 | 0.7− | 0.6− | 2006 11 11 | 703 | (1.4+ | 1.8−) |
| 2002 12 02 | 704 | 0.4+ | 1.1− | 2006 09 29 | 704 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.8− | 1.2− |
| 2002 12 02 | 704 | 1.0− | 0.3− | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2002 12 02 | 704 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.3− |
| 2002 12 06 | 704 | 0.3+ | 0.4− | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 1.2+ | 0.6− | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 1.1− | 2006 10 15 | 691 | 0.6− | 0.5+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2002 12 11 | 644 | 0.1− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2002 12 11 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.3− |
| 2002 12 11 | 644 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 0.6+ | 0.8− |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 20 | G96 | 0.4+ | 0.3− |
| 2002 12 11 | 644 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.6+ | 0.6− |
| 2002 12 11 | 704 | 0.4− | 1.2+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | | | |

**2002 UY$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.84539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24342380 | $\omega$ | 97.86288 | | +0.99558243 | −0.06999525 | |
| $a$ | 2.5403527 | $\Omega$ | 266.16627 | | +0.03987133 | +0.91861099 | |
| $e$ | 0.3241770 | $i$ | 3.59599 | | +0.08500528 | +0.38891454 | |
| $P$ | 4.05 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.3− | 0.9− | 2002 11 06 | 704 | 0.6+ | 0.5− | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2002 09 06 | 704 | 0.3− | 0.4+ | 2002 11 06 | 704 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.2+ | 0.8+ |
| 2002 09 06 | 704 | 0.6+ | 0.5+ | 2002 11 07 | 704 | 1.0− | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2002 11 07 | 704 | 0.9− | 0.0 | 2006 10 10 | A24 | 0.6+ | 1.1+ |
| 2002 10 04 | 704 | 0.4− | 1.1− | 2002 11 07 | 704 | 1.3− | 0.1− | 2006 10 10 | A24 | 0.7− | 0.5+ |
| 2002 10 04 | 704 | 0.1− | 0.3− | 2002 11 07 | 704 | 0.3− | 1.0+ | 2006 10 13 | 291 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.6− | 1.0− | 2002 11 07 | 704 | 1.1− | 0.4− | 2006 10 13 | 291 | 0.0 | 0.2+ | | |
| 2002 10 10 | 704 | 0.7+ | 0.4+ | 2002 11 12 | 704 | 0.2+ | 0.4+ | 2006 10 13 | 291 | 0.5− | 0.0 | | |
| 2002 10 10 | 704 | 0.1− | 0.2− | 2002 11 12 | 704 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.2− | 1.0− | | |
| 2002 10 10 | 704 | 0.3+ | 0.7− | 2002 11 12 | 704 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.0 | 0.2− | | |
| 2002 10 16 | 644 | 0.1+ | 0.2+ | 2002 11 12 | 704 | (0.4− | 1.8+) | 2006 10 17 | 703 | 0.2+ | 0.3− | | |
| 2002 10 16 | 644 | 0.3+ | 0.3+ | 2002 11 14 | 704 | 0.5− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.4+ | | |
| 2002 10 16 | 644 | 0.4+ | 0.3+ | 2002 11 14 | 704 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.2− | | |
| 2002 10 31 | 699 | 0.9+ | 0.1+ | 2002 11 14 | 704 | 0.4− | 0.3+ | 2006 10 19 | 644 | 0.5+ | 0.3− | | |
| 2002 10 31 | 699 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 2002 10 31 | 699 | 0.5+ | 0.7− | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2002 10 31 | 699 | (1.7+ | 0.4−) | 2006 09 18 | 699 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2002 11 01 | 644 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2002 11 01 | 644 | 0.8+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 10 27 | 683 | 0.1+ | 0.9− | | |
| 2002 11 01 | 644 | 0.8+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 10 27 | 683 | 0.1− | 0.1− | | |
| 2002 11 05 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 27 | 683 | 0.6+ | 1.2+ | | |
| 2002 11 05 | 704 | 0.1+ | 1.2+ | 2006 10 03 | 704 | 0.2+ | 0.5+ | 2006 11 18 | G96 | 0.3+ | 0.6− | | |
| 2002 11 05 | 704 | (0.5+ | 1.6+) | 2006 10 03 | 704 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.3− | 0.7− | | |
| 2002 11 05 | 704 | 0.6+ | 1.1+ | 2006 10 03 | 704 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.7− | | |
| 2002 11 05 | 704 | (0.7+ | 2.4+) | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.7− | | |
| 2002 11 06 | 704 | (0.3+ | 3.1−) | 2006 10 03 | G96 | 0.0 | 0.0 | | | | | | |
| 2002 11 06 | 704 | (0.1− | 1.9−) | 2006 10 03 | G96 | 0.5+ | 0.3− | | | | | | |

**2002 UG$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.05815 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23720941 | $\omega$ | 131.92915 | | +0.67380931 | −0.73639638 | |
| $a$ | 2.5845292 | $\Omega$ | 275.60163 | | +0.65855621 | +0.63583891 | |
| $e$ | 0.2546132 | $i$ | 3.50473 | | +0.33508913 | +0.23114769 | |
| $P$ | 4.16 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.2− | 0.1+ | 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.8+ | 0.4+ | | |
| 2002 10 31 | 699 | 0.1+ | 0.7− | 2002 11 24 | 644 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.3+ | 0.0 | | |
| 2002 10 31 | 699 | 0.5− | 0.5+ | 2002 12 01 | 608 | 0.3+ | 0.6− | 2006 09 25 | 704 | (0.0 | 1.8+) | | |
| 2002 10 31 | 699 | 0.1− | 0.6− | 2002 12 01 | 608 | 0.1− | 0.1− | 2006 09 25 | 704 | (1.5+ | 2.2+) | | |
| 2002 11 01 | 644 | 0.2− | 0.1+ | 2002 12 01 | 608 | 0.0 | 0.5− | 2006 09 25 | 704 | (1.7+ | 1.0+) | | |
| 2002 11 01 | 644 | 0.3+ | 0.1+ | 2002 12 02 | 704 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.2+ | 0.6+ | | |
| 2002 11 01 | 644 | 0.2− | 0.1+ | 2002 12 02 | 704 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.7− | 0.1− | | |
| 2002 11 05 | 704 | 0.7+ | 1.0− | 2002 12 02 | 704 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.1− | 0.4+ | | |
| 2002 11 05 | 704 | 0.7+ | 0.0 | 2002 12 02 | 704 | 0.4− | 0.9− | 2006 09 29 | 704 | 0.0 | 0.9− | | |
| 2002 11 05 | 704 | 0.8+ | 0.3− | 2002 12 02 | 704 | 0.6− | 1.0− | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2002 11 05 | 704 | 0.8− | 0.1− | 2002 12 11 | 644 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.3+ | | |
| 2002 11 08 | 704 | 1.1+ | 0.1− | 2002 12 11 | 644 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.4+ | | |
| 2002 11 08 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 644 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 08 | 704 | 0.3+ | 0.3− | 2002 12 11 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.5+ | | |
| 2002 11 11 | 699 | 0.1+ | 0.7+ | 2002 12 11 | 704 | 0.4+ | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.4+ | | |
| 2002 11 11 | 699 | 0.0 | 0.6+ | 2002 12 11 | 704 | 0.7− | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.2+ | | |
| 2002 11 11 | 699 | 0.4+ | 0.4+ | 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.6− | | |
| 2002 11 11 | 699 | 0.5+ | 0.0 | 2002 12 27 | 644 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.3− | | |
| 2002 11 12 | 704 | 0.5− | 0.5+ | 2002 12 27 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.5− | | |
| 2002 11 12 | 704 | 0.3+ | 0.1+ | 2002 12 27 | 644 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.0 | | |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2002 11 12 | 704 | 0.6− | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.1− | | |
| 2002 11 12 | 704 | 0.2+ | 0.2− | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.1− | | |
| 2002 11 14 | 704 | 0.0 | 0.7+ | 2006 09 16 | 703 | 0.1− | 1.0− | 2006 11 20 | G96 | 0.1+ | 0.6− | | |
| 2002 11 14 | 704 | 0.0 | 1.0+ | 2006 09 18 | 704 | 0.2− | 1.1+ | 2006 11 20 | G96 | 0.2− | 0.5− | | |
| 2002 11 14 | 704 | 0.7− | 1.2+ | 2006 09 18 | 704 | 0.9− | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.2− | | |
| 2002 11 14 | 704 | 0.8− | 0.6+ | 2006 09 18 | 704 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.4− | | |
| 2002 11 14 | 704 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | | | | | | |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.9− | 0.4− | | | | | | |

**2002 UZ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.28468 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22653993 | $\omega$ | 264.61899 | | +0.69359256 | −0.71964766 | |
| $a$ | 2.6650552 | $\Omega$ | 141.39998 | | +0.67967860 | +0.63895359 | |
| $e$ | 0.2091165 | $i$ | 2.95817 | | +0.23867628 | +0.27174541 | |
| $P$ | 4.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 291 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.0 | 0.4+ | | |
| 2002 10 31 | 291 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.4+ | | |
| 2002 10 31 | 291 | 0.8− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.1+ | | |
| 2002 11 02 | 291 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.5+ | | |
| 2002 11 02 | 291 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.4− | | |
| 2002 11 02 | 291 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.6− | 1.0− | | |
| 2002 12 28 | 291 | 0.1+ | 0.4− | 2006 11 02 | 703 | 0.2− | 0.5− | 2006 11 18 | 704 | (0.7− | 1.6−) | | |
| 2002 12 28 | 291 | 0.2+ | 0.3− | 2006 11 02 | 703 | 0.5− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.6− | | |
| 2002 12 28 | 291 | 0.5+ | 0.1− | 2006 11 02 | 703 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.1+ | | |
| 2003 01 08 | 704 | 0.3− | 0.1+ | 2006 11 02 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.3− | | |
| 2003 01 08 | 704 | 0.5+ | 1.0+ | 2006 11 13 | 703 | 0.1+ | 1.1− | 2006 11 20 | 704 | 0.1+ | 0.0 | | |
| 2003 01 08 | 704 | 0.2− | 1.0+ | 2006 11 13 | 703 | 0.2+ | 0.7− | 2006 11 20 | 704 | 0.7− | 0.6− | | |
| 2003 01 08 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2003 01 11 | 291 | 0.2− | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2003 01 11 | 291 | 0.3− | 0.3− | 2006 11 14 | 704 | 0.6+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2003 01 11 | 291 | 0.5− | 0.2− | 2006 11 14 | 704 | 0.7+ | 1.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2003 01 27 | 704 | 0.1+ | 0.7+ | 2006 11 14 | 704 | 0.6− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2003 01 27 | 704 | 0.1+ | 0.8+ | 2006 11 14 | 704 | 0.1− | 1.0+ | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2003 01 27 | 704 | 0.4+ | 0.7+ | 2006 11 14 | 704 | 0.4− | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.1− | | |
| 2003 01 27 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.4+ | | |
| 2006 09 30 | 703 | (1.8− | 1.5+) | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.4− | 0.1+ | | |
| 2006 09 30 | 703 | 0.2− | 0.9+ | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.1+ | | |
| 2006 09 30 | 703 | 0.6− | 1.1− | 2006 11 16 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.8+ | | |
| 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.4− | 0.1+ | | |
| 2006 09 30 | 703 | 1.1− | 0.7− | 2006 11 16 | G96 | 0.2− | 0.4− | 2006 11 29 | 704 | 0.0 | 0.6+ | | |
| 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.3+ | | |
| 2006 09 30 | G96 | 0.7+ | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.5+ | | |
| 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.5+ | | | | | | |

**2002 UM$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.37423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23551774 | $\omega$ | 251.89177 | | +0.91451584 | −0.39972275 | |
| $a$ | 2.5968905 | $\Omega$ | 131.61856 | | +0.39549336 | +0.85096595 | |
| $e$ | 0.2504725 | $i$ | 4.78105 | | +0.08512218 | +0.34070320 | |
| $P$ | 4.18 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.1− | 0.2+ | 2002 12 02 | 608 | 0.1+ | 1.1− | 2006 09 30 | 703 | 0.5− | 0.2− | | |
| 2002 10 30 | 644 | 0.6− | 0.4+ | 2002 12 02 | 608 | 0.1+ | 0.9− | 2006 09 30 | 703 | 0.3+ | 0.3− | | |
| 2002 10 30 | 644 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.6− | | |
| 2002 11 02 | 608 | 0.6− | 0.8+ | 2006 09 18 | 703 | 1.0+ | 0.6+ | 2006 09 30 | H06 | 0.9− | 0.3− | | |
| 2002 11 02 | 608 | (1.3− | 2.3+) | 2006 09 18 | 703 | 0.6+ | 1.1+ | 2006 09 30 | H06 | 0.4− | 0.3+ | | |
| 2002 11 02 | 608 | 0.1− | 1.1+ | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 09 30 | H06 | 0.4− | 0.0 | | |
| 2002 11 07 | 704 | 0.0 | 0.5− | 2006 09 18 | 699 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.2+ | | |
| 2002 11 07 | 704 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.5− | 0.3− | 2006 10 16 | 703 | 1.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 1.2+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.5+ | | |
| 2002 11 11 | 704 | 0.4+ | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.1− | | |
| 2002 11 11 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 11 11 | 704 | 0.4+ | 0.3− | 2006 09 26 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 11 11 | 704 | 0.4+ | 0.3− | 2006 09 26 | 704 | (2.2− | 0.4+) | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 11 11 | 704 | (0.1− | 2.0−) | 2006 09 26 | 704 | 0.7− | 1.5− | 2006 11 25 | G96 | 0.1+ | 0.0 | | |
| 2002 12 01 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2002 12 01 | 704 | 0.1+ | 0.6+ | 2006 09 29 | H06 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.5+ | 0.1− | | |
| 2002 12 01 | 704 | 0.3− | 0.8+ | 2006 09 29 | H06 | 0.6+ | 0.5− | 2006 11 25 | G96 | 0.6+ | 0.2− | | |
| 2002 12 01 | 704 | 0.2− | 0.6− | 2006 09 29 | H06 | 0.9+ | 0.1− | | | | | | |
| 2002 12 02 | 608 | 0.7+ | 1.1− | 2006 09 30 | 703 | 0.5+ | 0.1+ | | | | | | |

**2002 UD$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.70917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23517167 | $\omega$ | 287.20890 | | −0.61927661 | −0.76085726 | |
| $a$ | 2.5994375 | $\Omega$ | 204.49292 | | +0.77011578 | −0.63671853 | |
| $e$ | 0.3791566 | $i$ | 27.88337 | | −0.15302992 | −0.12524271 | |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.3+ | 1.5− | 2002 12 06 | 644 | 0.6− | 0.7+ | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2002 09 29 | 608 | 0.6+ | 1.3− | 2002 12 06 | 644 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 06 | 608 | 0.2− | 0.2− | 2002 12 06 | 644 | 1.2− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 10 06 | 608 | 0.4− | 0.6− | 2006 09 23 | 152 | 1.2+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 10 29 | 644 | 0.4+ | 0.2− | 2006 09 23 | 152 | 0.0 | 1.1− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 10 29 | 644 | 0.1+ | 0.3− | 2006 09 23 | 152 | 1.0+ | 1.2+ | 2006 10 28 | 691 | 0.2− | 0.2− |
| 2002 10 29 | 644 | 0.2+ | 0.7− | 2006 09 24 | 152 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2002 10 31 | 704 | (1.8+ | 0.7+) | 2006 09 24 | 152 | 1.0+ | 0.4− | 2006 11 11 | 703 | 0.3+ | 1.2− |
| 2002 10 31 | 704 | (1.7− | 0.1−) | 2006 09 25 | 152 | 0.8− | 1.4+ | 2006 11 11 | 703 | 0.3− | 1.3+ |
| 2002 10 31 | 704 | 1.1+ | 0.3+ | 2006 09 25 | 152 | 0.8+ | 1.2+ | 2006 11 11 | 703 | (1.7− | 0.2+) |
| 2002 10 31 | 704 | 0.2+ | 1.3+ | 2006 09 25 | 152 | (0.6− | 2.0+) | 2006 11 11 | 703 | 1.4− | 0.0 |
| 2002 11 02 | 608 | 0.2− | 0.2− | 2006 09 25 | 152 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 11 02 | 608 | 0.3− | 0.1+ | 2006 09 25 | 152 | 0.9+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2002 11 02 | 608 | 0.5− | 0.0 | 2006 09 26 | 152 | 1.3− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2002 11 06 | 699 | 0.2− | 1.2+ | 2006 09 26 | 152 | 0.2+ | 0.8+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2002 11 06 | 699 | 0.1− | 1.0+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2002 11 06 | 699 | 0.0 | 1.0+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2002 11 06 | 699 | 0.3− | 0.9+ | 2006 10 15 | 691 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2002 11 22 | 644 | 0.4+ | 0.4− | 2006 10 19 | G96 | 0.5+ | 0.4− | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2002 11 22 | 644 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.5− | | | | |
| 2002 11 22 | 644 | 0.3+ | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.6− | | | | |

**2002 UG$_{37}$ = 2006 UY$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.91746 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23895759 | $\omega$ | 163.29813 | | +0.89335202 | −0.43649448 | |
| $a$ | 2.5719084 | $\Omega$ | 223.09521 | | +0.39235276 | +0.87349348 | |
| $e$ | 0.2098279 | $i$ | 8.98880 | | +0.21904675 | +0.21559619 | |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 1.1− | 0.1+ | 2002 11 14 | 291 | 0.2+ | 0.1− | 2006 09 27 | 699 | 0.7+ | 1.0+ |
| 2002 10 31 | 699 | 1.2− | 0.1− | 2002 11 14 | 926 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.3− | 0.3− |
| 2002 10 31 | 699 | 0.7− | 1.0+ | 2002 11 14 | 926 | 0.9− | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.4− |
| 2002 10 31 | 699 | 1.2− | 0.7+ | 2002 11 14 | 926 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.5− | 0.3+ |
| 2002 11 04 | 699 | 0.3+ | 0.0 | 2002 11 14 | 926 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.2+ | 0.4− |
| 2002 11 04 | 699 | (0.0 | 1.8+) | 2002 11 22 | 644 | 0.1+ | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 11 04 | 699 | 0.2− | 1.0+ | 2002 11 22 | 644 | 0.2+ | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 11 04 | 699 | 1.2− | 1.1+ | 2002 11 22 | 644 | 0.1+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 1.0+ | 0.4− | 2002 11 30 | 608 | 0.5− | 0.6− | 2006 10 17 | 703 | 0.0 | 0.7− |
| 2002 11 06 | 704 | 0.9+ | 0.2+ | 2002 11 30 | 608 | 0.6− | 0.8− | 2006 10 17 | 703 | 0.3− | 0.7+ |
| 2002 11 06 | 704 | 0.4+ | 0.9− | 2002 11 30 | 608 | 0.5− | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2002 11 06 | 608 | 0.8+ | 0.3− | 2002 12 01 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2002 11 06 | 608 | 0.6+ | 0.2− | 2002 12 01 | 704 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 608 | 0.6+ | 0.4− | 2002 12 01 | 704 | 0.8− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 11 | 291 | 0.1+ | 0.2+ | 2002 12 01 | 704 | 0.8− | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 11 11 | 291 | 0.1+ | 0.3+ | 2002 12 01 | 704 | 0.3+ | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 11 | 291 | 0.0 | 0.1+ | 2006 09 26 | 152 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 11 13 | 291 | 0.1+ | 0.4− | 2006 09 26 | 152 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 13 | 291 | 0.2+ | 0.4− | 2006 09 26 | 152 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.3− | 0.9− |
| 2002 11 13 | 291 | 0.0 | 0.3− | 2006 09 27 | 699 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.9− |
| 2002 11 14 | 291 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.9+ | 0.9+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2002 11 14 | 291 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.5+ |

**2002 UZ$_{36}$ = 2006 SY$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.43222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24292590 | $\omega$ | 330.52729 | | +0.98827726 | −0.06612062 | |
| $a$ | 2.5438227 | $\Omega$ | 34.12124 | | +0.13378520 | +0.80930573 | |
| $e$ | 0.3407828 | $i$ | 14.20046 | | −0.07354976 | +0.58365426 | |
| $P$ | 4.06 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1− | 1.0− | 2002 11 12 | 704 | 0.7+ | 0.8− | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2002 10 03 | 704 | 0.5− | 1.0− | 2006 09 24 | 699 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.6− | 0.1− |
| 2002 10 03 | 704 | 0.6− | 1.3− | 2006 09 24 | 699 | 0.4− | 0.5− | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2002 10 31 | 644 | 0.2− | 0.8+ | 2006 09 24 | 699 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2002 10 31 | 644 | 0.3− | 0.7+ | 2006 09 24 | 699 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.7− | 1.4+ |
| 2002 10 31 | 699 | (0.3+ | 1.7+) | 2006 09 25 | 703 | 0.3− | 1.0− | 2006 10 22 | 703 | (2.2+ | 0.1+) |
| 2002 10 31 | 644 | 0.3− | 0.7+ | 2006 09 25 | 703 | (0.1− | 1.7−) | 2006 11 22 | G96 | 0.3+ | 0.7− |
| 2002 10 31 | 699 | 0.1+ | 0.7+ | 2006 09 25 | 703 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.6− |
| 2002 10 31 | 699 | 1.1+ | 1.1+ | 2006 09 25 | 703 | 0.6− | 1.0− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2002 10 31 | 699 | 0.3− | 0.9+ | 2006 10 17 | 703 | 0.8+ | 1.1+ | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2002 11 02 | 049 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 1.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 11 02 | 049 | 0.8− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.8+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2002 11 02 | 049 | 0.4− | 0.2+ | 2006 10 17 | 703 | 1.3+ | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 11 08 | 704 | 0.9+ | 0.8+ | 2006 10 17 | 703 | 0.1+ | 0.2− | 2006 11 24 | 291 | 0.3+ | 0.2− |
| 2002 11 08 | 704 | (1.9+ | 0.3−) | 2006 10 17 | 703 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2002 11 08 | 704 | (2.2+ | 0.3+) | 2006 10 17 | 703 | 0.1− | 0.5+ | 2006 11 24 | 291 | 0.3+ | 0.2− |
| 2002 11 12 | 704 | (2.7+ | 0.6−) | 2006 10 17 | 703 | 0.1+ | 0.1− | 2006 11 24 | 291 | 0.2+ | 0.2− |
| 2002 11 12 | 704 | (2.2+ | 0.3−) | 2006 10 20 | 644 | 0.4− | 0.0 | | | | |

**2002 UJ$_{37}$ = 2006 RC$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.04094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25287959 | $\omega$ | 320.41753 | | +0.99203337 | +0.09862627 | |
| $a$ | 2.4766247 | $\Omega$ | 34.16623 | | −0.04649587 | +0.86487593 | |
| $e$ | 0.1080558 | $i$ | 8.02226 | | −0.11708084 | +0.49220168 | |
| $P$ | 3.90 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.8− | 1.1+ | 2006 09 05 | 673 | 0.4+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 10 31 | 699 | 0.2+ | 0.1− | 2006 09 05 | 673 | 1.0+ | 0.0 | 2006 11 02 | 691 | 0.2+ | 0.2− |
| 2002 10 31 | 699 | 0.6− | 0.6+ | 2006 09 06 | 673 | 0.1+ | 0.1+ | 2006 11 02 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 699 | 0.0 | 0.7− | 2006 09 06 | 673 | 0.1+ | 0.2+ | 2006 11 02 | 691 | 0.2− | 0.1− |
| 2002 11 04 | 699 | 0.7+ | 0.4− | 2006 09 06 | 673 | 0.4+ | 0.2+ | 2006 11 15 | 704 | 0.8− | 0.9+ |
| 2002 11 04 | 699 | 0.6− | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 15 | 704 | 1.2+ | 0.5− |
| 2002 11 04 | 699 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 15 | 704 | 0.6− | 0.9+ |
| 2002 11 04 | 699 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 15 | 704 | 1.0+ | 1.3− |
| 2002 11 06 | 704 | 0.2+ | 0.5− | 2006 10 17 | 691 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2002 11 06 | 704 | (0.5+ | 1.6+) | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2002 11 06 | 704 | 1.0− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2002 11 06 | 704 | 0.9− | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.7+ |
| 2002 11 06 | 608 | 0.4+ | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 11 06 | 608 | 0.2+ | 0.7+ | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.7+ |
| 2002 11 06 | 608 | 0.5+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.9+ |
| 2006 09 05 | 673 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.2− | | | | |

**2002 UR$_{37}$ = 2006 WA$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.58114 | | | (2000.0) | | |
| $n$ | 0.26031912 | $\omega$ | 214.30927 | | +0.47602479 | −0.87868203 |
| $a$ | 2.4292115 | $\Omega$ | 207.31745 | | +0.82356368 | +0.45988466 |
| $e$ | 0.1858771 | $i$ | 4.53778 | | +0.30845301 | +0.12815609 |
| $P$ | 3.79 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.8− | 0.2− | 2002 10 31 | 644 | 0.2+ | 0.7− | 2002 11 22 | 644 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.1+ | 0.9+ | 2002 11 04 | 699 | 1.0+ | 0.5+ | 2002 11 22 | 644 | 0.3− | 0.0 |
| 2002 10 02 | 704 | 0.0 | 0.0 | 2002 11 04 | 699 | 0.5− | 0.4− | 2002 11 22 | 644 | 0.2+ | 0.0 |
| 2002 10 09 | 704 | 0.4+ | 1.7− | 2002 11 04 | 699 | 0.1− | 0.6+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2002 10 09 | 704 | 0.1+ | 0.7− | 2002 11 04 | 699 | 0.3+ | 0.8+ | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 2002 10 09 | 704 | 0.3− | 0.3− | 2002 11 06 | 704 | (2.3+ | 0.1+) | 2006 11 24 | 691 | 0.2+ | 0.3+ |
| 2002 10 09 | 704 | 0.1− | 0.8+ | 2002 11 06 | 704 | 0.8− | 0.6+ | 2006 11 28 | 691 | 0.3+ | 0.2− |
| 2002 10 31 | 644 | 0.4− | 0.1− | 2002 11 06 | 704 | 0.2− | 0.1− | 2006 11 28 | 691 | 0.7− | 0.2+ |
| 2002 10 31 | 644 | 0.4+ | 0.2− | 2002 11 06 | 704 | 0.5+ | 0.2+ | 2006 11 28 | 691 | 0.1+ | 0.1− |

**2002 UW$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 281.64170 | | | (2000.0) | | |
| $n$ | 0.22643154 | $\omega$ | 88.49606 | | −0.10912291 | −0.99401098 |
| $a$ | 2.6659056 | $\Omega$ | 7.77602 | | +0.89390680 | −0.10070964 |
| $e$ | 0.1724200 | $i$ | 2.48344 | | +0.43476755 | −0.04242345 |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.7− | 0.3− | 2002 11 08 | 704 | 0.1− | 0.4− | 2006 10 01 | 703 | 0.5− | 1.1− |
| 2002 10 31 | 699 | 0.4+ | 0.2+ | 2002 11 08 | 704 | 0.7− | 0.6− | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2002 10 31 | 699 | 0.3− | 0.3+ | 2002 11 08 | 704 | 0.1− | 0.4− | 2006 10 16 | G96 | 0.5+ | 0.3− |
| 2002 10 31 | 644 | 0.9+ | 0.0 | 2002 12 05 | 695 | 0.6+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 10 31 | 699 | (1.9− | 1.0+) | 2002 12 05 | 695 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2002 10 31 | 644 | 0.4+ | 0.6+ | 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2002 10 31 | 644 | 1.1+ | 0.2+ | 2006 08 18 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.9− |
| 2002 11 04 | 699 | 0.1− | 0.4+ | 2006 08 18 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.6+ | 0.7− |
| 2002 11 04 | 699 | 0.8− | 0.9− | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2002 11 04 | 699 | 0.0 | 0.5− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.8+ | 0.7− |
| 2002 11 04 | 699 | 0.6− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2002 11 06 | 704 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.7− |
| 2002 11 06 | 704 | 0.1− | 1.0+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2002 11 06 | 704 | 0.7− | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.6+ | 0.1+ |
| 2002 11 06 | 704 | 0.1− | 1.3+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 11 06 | 608 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2002 11 06 | 608 | 0.0 | 0.1− | 2006 10 01 | 703 | 0.9− | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2002 11 06 | 608 | 0.2+ | 1.1− | 2006 10 01 | 703 | 0.6− | 0.5+ | | | | |

**2002 UG$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.92992 | | | (2000.0) | | |
| $n$ | 0.26283779 | $\omega$ | 47.34069 | | +0.81543971 | +0.57523759 |
| $a$ | 2.4136679 | $\Omega$ | 277.44331 | | −0.54828783 | +0.73186482 |
| $e$ | 0.2338564 | $i$ | 3.72941 | | −0.18557621 | +0.36534314 |
| $P$ | 3.75 | $H$ | 16.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.1− | 0.0 | 2002 10 09 | 704 | 0.3+ | 0.4− | 2002 10 31 | 699 | 0.2− | 1.2− |
| 2002 10 04 | 704 | 1.0+ | 0.4+ | 2002 10 09 | 704 | 0.2− | 0.9− | 2002 11 04 | 644 | 0.6+ | 0.7+ |
| 2002 10 04 | 704 | 0.6+ | 0.4− | 2002 10 09 | 704 | 0.3− | 1.1− | 2002 11 04 | 644 | 0.2+ | 0.5+ |
| 2002 10 04 | 699 | 0.0 | 0.6+ | 2002 10 09 | 704 | 0.5− | 1.6− | 2002 11 04 | 644 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 1.7− | 0.1− | 2002 10 31 | 699 | 0.3+ | 1.5+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.4+ | 1.2+ | 2002 10 31 | 644 | 1.2− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 699 | 0.3− | 1.0+ | 2002 10 31 | 699 | 0.1− | 0.7− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2002 10 04 | 699 | 0.4+ | 0.4+ | 2002 10 31 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 699 | 0.1+ | 0.1+ | 2002 10 31 | 699 | 0.3− | 0.2− | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2002 10 09 | 704 | 0.4+ | 0.6− | 2002 10 31 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 691 | 0.1− | 0.3− |

**2002 UN$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 309.83249 | | | (2000.0) | | |
| $n$ | 0.24537408 | $\omega$ | 58.58547 | | −0.20883811 | −0.97452329 |
| $a$ | 2.5268740 | $\Omega$ | 43.71183 | | +0.85226819 | −0.22238180 |
| $e$ | 0.2102208 | $i$ | 6.79814 | | +0.47960982 | −0.02916677 |
| $P$ | 4.02 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.8− | 1.4+ | 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.6− |
| 2002 10 31 | 699 | 0.7− | 0.5− | 2002 12 05 | 704 | 0.5− | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.5− |
| 2002 10 31 | 699 | 0.2+ | 0.3+ | 2002 12 10 | 644 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.3+ | 0.5− |
| 2002 10 31 | 699 | (1.9− | 0.7+) | 2002 12 10 | 644 | 0.4+ | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.7− |
| 2002 11 04 | 644 | 0.3− | 0.6− | 2002 12 10 | 644 | 0.3− | 0.4+ | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2002 11 04 | 644 | 0.3− | 0.7− | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.5− | 0.2− |
| 2002 11 04 | 644 | 0.3− | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2002 11 05 | 291 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2002 11 05 | 291 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.7− |
| 2002 11 05 | 291 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2002 11 10 | 704 | 1.2+ | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2002 11 10 | 704 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.5+ |
| 2002 11 10 | 704 | (2.5+ | 1.8−) | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2002 11 10 | 704 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.2+ | 0.6+ |
| 2002 11 10 | 704 | (1.9+ | 0.7−) | 2006 10 27 | G96 | 0.8+ | 0.4− | 2006 11 18 | 704 | 0.8− | 0.2− |
| 2002 11 13 | 735 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | (1.9− | 0.6−) |
| 2002 11 13 | 735 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 1.1− | 0.4− |
| 2002 11 13 | 735 | 0.5+ | 0.2+ | 2006 11 01 | 691 | (3.2− | 0.1+) | 2006 11 18 | 704 | 0.0 | 0.9− |
| 2002 11 14 | 704 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2002 11 14 | 704 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3− | 1.3+ |
| 2002 11 14 | 704 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | 1.0+ | 0.7− |
| 2002 11 14 | 704 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2002 11 30 | 608 | (0.4− | 1.7−) | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.9− | 0.2+ |
| 2002 11 30 | 608 | (0.2+ | 1.7−) | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2002 11 30 | 608 | (0.3− | 2.2−) | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.5+ |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.3− | 0.8− |
| 2002 12 05 | 704 | 0.1− | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.4− | 0.8+ |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.7− | 2006 11 27 | 703 | 0.6+ | 1.1+ |

**2002 UQ$_{38}$ = 2006 SF$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.39326 | | | (2000.0) | | |
| $n$ | 0.23836169 | $\omega$ | 297.89549 | | +0.93153169 | +0.34631368 |
| $a$ | 2.5761931 | $\Omega$ | 42.10652 | | −0.24728455 | +0.82696815 |
| $e$ | 0.1800481 | $i$ | 9.52679 | | −0.26664407 | +0.44293399 |
| $P$ | 4.13 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.7+ |
| 2002 10 31 | 644 | 0.5− | 0.7+ | 2006 09 30 | 703 | 1.1− | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 1.4+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 11 04 | 644 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 11 04 | 644 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2002 11 04 | 644 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2002 11 14 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 11 14 | 704 | 0.3+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2006 09 16 | 699 | 0.3− | 1.4− | 2006 10 10 | 644 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.5− |
| 2006 09 16 | 699 | 0.9+ | 1.4− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2006 09 16 | 699 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2006 09 16 | 699 | 0.7− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.6+ | 0.2− |
| 2006 09 18 | 703 | 0.6+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.6+ | 0.2+ |
| 2006 09 18 | 703 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 20 | G96 | (1.7+ | 0.7−) |
| 2006 09 18 | 703 | 0.7− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.3− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.4+ | |
| 2006 09 30 | 703 | 0.5− | 0.7+ | 2006 10 21 | 703 | 0.5− | 0.0 | |

**2002 UU$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.84930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26541947 | $\omega$ | 304.52486 | | +0.97311281 | +0.21516819 | |
| $a$ | 2.3979909 | $\Omega$ | 43.21428 | | −0.15152259 | +0.86675685 | |
| $e$ | 0.1442226 | $i$ | 6.89344 | | −0.17347148 | +0.44992801 | |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.9− | 0.1− | 2002 11 05 | 704 | 0.1+ | 0.7− | 2002 12 06 | 704 | 0.3+ | 1.3+ |
| 2002 10 31 | 644 | 0.0 | 1.2+ | 2002 11 05 | 704 | 0.1+ | 0.7− | 2002 12 06 | 704 | 0.8− | 0.6− |
| 2002 10 31 | 699 | 1.0+ | 0.4+ | 2002 11 05 | 704 | 0.2+ | 0.8+ | 2002 12 06 | 704 | 0.4+ | 1.4+ |
| 2002 10 31 | 644 | 0.6+ | 0.1+ | 2002 11 06 | 704 | 0.1+ | 0.3− | 2002 12 06 | 704 | (0.2+ | 2.0+) |
| 2002 10 31 | 644 | 0.5+ | 1.3+ | 2002 11 06 | 704 | 0.1− | 0.8− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 10 31 | 699 | 0.4+ | 0.5+ | 2002 11 06 | 704 | 0.9− | 0.7− | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2002 10 31 | 644 | 0.5+ | 0.3− | 2002 11 06 | 704 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 10 31 | 644 | 0.2+ | 0.7+ | 2002 11 14 | 704 | 0.6− | 0.5+ | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2002 10 31 | 699 | (2.1− | 0.3+) | 2002 11 14 | 704 | 0.7− | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2002 10 31 | 644 | 0.5+ | 0.4− | 2002 11 14 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2002 11 04 | 644 | 0.5− | 1.1− | 2002 11 14 | 704 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2002 11 04 | 644 | 0.5− | 0.9− | 2002 12 01 | 608 | 0.4− | 0.9− | 2006 11 23 | 691 | 0.9+ | 0.9− |
| 2002 11 04 | 644 | 0.0 | 1.0− | 2002 12 01 | 608 | 0.6− | 0.4− | 2006 11 23 | 691 | 0.2− | 0.5+ |
| 2002 11 05 | 704 | 0.6+ | 0.6+ | 2002 12 01 | 608 | 0.1− | 0.6− | 2006 11 23 | 691 | 0.2+ | 0.1− |

**2002 UM$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.38137 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24027002 | $\omega$ | 273.51479 | | −0.10700056 | −0.99420651 | |
| $a$ | 2.5625341 | $\Omega$ | 182.69227 | | +0.97654098 | −0.10315785 | |
| $e$ | 0.2175853 | $i$ | 12.55691 | | +0.18686519 | −0.03019710 | |
| $P$ | 4.10 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 683 | 0.3+ | 0.9+ | 2006 09 20 | 699 | (0.7+ | 1.7+) | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2002 10 30 | 683 | 1.0+ | 0.3+ | 2006 09 20 | 699 | 0.8− | 1.4+ | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2002 10 30 | 683 | (3.1+ | 0.9+) | 2006 09 20 | 699 | 0.6+ | 0.9+ | 2006 10 23 | 644 | 0.4+ | 0.4− |
| 2002 10 31 | 704 | 0.5− | 1.1+ | 2006 09 20 | 699 | (0.4+ | 1.9+) | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.1− | 0.8+ | 2006 09 30 | 703 | (1.8+ | 2.3−) | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2002 10 31 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.5+ | 2006 10 28 | 703 | 0.4− | 0.3− |
| 2002 10 31 | 704 | 0.5− | 0.4− | 2006 09 30 | 703 | 0.7− | 1.1− | 2006 10 28 | 703 | 0.3+ | 0.7+ |
| 2002 11 03 | 608 | 0.1+ | 0.6− | 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 10 28 | 703 | (0.3+ | 1.9−) |
| 2002 11 03 | 608 | 0.3+ | 0.8− | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 11 10 | 704 | 0.3− | 0.1− |
| 2002 11 03 | 608 | 0.0 | 0.8− | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 11 10 | 704 | 0.0 | 1.2+ |
| 2002 11 30 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.9− | 2006 11 10 | 704 | 0.4− | 0.0 |
| 2002 11 30 | 704 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.6− | 0.8− | 2006 11 10 | 704 | 0.5+ | 1.4+ |
| 2002 11 30 | 704 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.2− | 1.1− | 2006 11 10 | 704 | 0.5+ | 0.5+ |
| 2002 11 30 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.8− | 2006 11 16 | 703 | (4.7+ | 0.6+) |
| 2002 11 30 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 16 | 703 | (1.6− | 0.3−) |
| 2002 12 10 | 644 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 16 | 703 | 0.7− | 0.1− |
| 2002 12 10 | 644 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.7+ | 2006 11 16 | 703 | 0.7+ | 0.4− |
| 2002 12 10 | 644 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1− | 0.3− | | | | |

**2002 UZ$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.18915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23782585 | $\omega$ | 352.86554 | | +0.61920235 | −0.78483651 | |
| $a$ | 2.5800612 | $\Omega$ | 58.87327 | | +0.72186530 | +0.55646740 | |
| $e$ | 0.2725534 | $i$ | 1.66697 | | +0.30902903 | +0.27271904 | |
| $P$ | 4.14 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 08 | 807 | 0.2− | 0.6+ | 2002 11 14 | 704 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.6+ |
| 2000 03 08 | 807 | 0.4+ | 0.7+ | 2002 11 27 | 699 | 0.7+ | 0.9− | 2006 09 28 | 704 | 0.3+ | 0.3− |
| 2000 03 08 | 807 | 0.4+ | 0.5+ | 2002 11 27 | 699 | 1.1− | 1.0+ | 2006 09 28 | 704 | 0.4+ | 1.2+ |
| 2002 10 31 | 644 | 0.3+ | 1.0+ | 2002 11 27 | 699 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 1.0+ | 0.0 |
| 2002 10 31 | 644 | 0.1+ | 1.2+ | 2002 11 27 | 699 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.9+ | 0.9+ |
| 2002 10 31 | 644 | 0.2+ | 1.1+ | 2002 12 05 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.4+ |
| 2002 11 03 | 608 | 0.1− | 0.5− | 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.2+ |
| 2002 11 03 | 608 | 0.2+ | 0.4− | 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.4+ | 0.5+ |
| 2002 11 03 | 608 | 0.1+ | 0.4− | 2002 12 05 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.4+ |
| 2002 11 05 | 644 | 0.1− | 0.0 | 2002 12 05 | 704 | 0.3+ | 1.0− | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2002 11 05 | 644 | 0.0 | 0.1+ | 2002 12 10 | 644 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 11 05 | 644 | 0.4+ | 0.2+ | 2002 12 10 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2002 12 10 | 704 | 0.0 | 0.7− | 2006 10 15 | 106 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.7− | 0.7− | 2002 12 10 | 644 | 0.1− | 0.7+ | 2006 10 15 | 106 | 0.9+ | 0.6+ |
| 2002 11 06 | 704 | 0.3+ | 0.6+ | 2002 12 10 | 704 | 0.2− | 0.5+ | 2006 10 15 | 106 | 0.2− | 0.7− |
| 2002 11 06 | 704 | 0.2+ | 0.5+ | 2002 12 10 | 704 | 0.1+ | 0.3− | 2006 10 15 | 106 | 0.3− | 0.3− |
| 2002 11 10 | 704 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.8+ | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 11 10 | 704 | 0.4− | 0.7+ | 2006 09 18 | 691 | 0.7− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.6+ |
| 2002 11 10 | 704 | 0.7− | 0.3− | 2006 09 18 | 691 | 0.6− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 11 12 | 644 | 0.1+ | 0.7− | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2002 11 12 | 644 | 0.1− | 0.8− | 2006 09 20 | 704 | (1.8− | 0.8+) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 11 12 | 644 | 0.4+ | 0.9− | 2006 09 20 | 704 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2002 11 14 | 704 | 0.0 | 0.4− | 2006 09 20 | 704 | (1.8− | 0.2−) | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.1+ | 0.4− | 2006 09 27 | 704 | (0.4+ | 1.6+) | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2002 11 14 | 704 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.7− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.8+ | 0.9− | 2006 10 22 | G96 | 0.1− | 0.1− |

**2002 UA$_{41}$ = 2006 SP$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.93394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22356044 | $\omega$ | 154.79089 | | +0.96039306 | −0.27136189 | |
| $a$ | 2.6886818 | $\Omega$ | 221.11901 | | +0.23656249 | +0.91407847 | |
| $e$ | 0.0494322 | $i$ | 5.52427 | | +0.14725269 | +0.30136899 | |
| $P$ | 4.41 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.3+ | 0.7+ | 2002 11 12 | 644 | 0.2+ | 0.1− | 2006 09 25 | 704 | (0.8− | 1.8+) |
| 2002 10 31 | 644 | 0.0 | 0.8+ | 2002 11 12 | 644 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.5+ |
| 2002 10 31 | 644 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.8+ | 0.3− | 2006 09 25 | 704 | 0.0 | 0.6+ |
| 2002 11 03 | 608 | 0.3− | 0.4− | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 09 25 | 704 | (1.2+ | 1.9−) |
| 2002 11 03 | 608 | 0.3− | 0.8− | 2006 09 17 | 703 | 0.2+ | 1.0− | 2006 09 25 | 704 | 0.7− | 0.3+ |
| 2002 11 03 | 608 | 0.4+ | 0.5− | 2006 09 17 | 703 | 0.7− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2002 11 05 | 644 | 0.3− | 0.7− | 2006 09 21 | 104 | (4.1+ | 0.3−) | 2006 10 12 | 644 | 0.1− | 0.3− |
| 2002 11 05 | 644 | 0.1+ | 0.5− | 2006 09 21 | 104 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 11 05 | 644 | 0.5− | 0.3− | 2006 09 21 | 104 | 0.1+ | 0.2+ | | | | |
| 2002 11 12 | 644 | 0.0 | 0.5+ | 2006 09 21 | 104 | 0.4+ | 0.4+ | | | | |

**2002 UB$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.76779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23129321 | $\omega$ | 350.30784 | | +0.67446888 | −0.73532197 | |
| $a$ | 2.6284162 | $\Omega$ | 57.24505 | | +0.68254861 | +0.58679204 | |
| $e$ | 0.0984719 | $i$ | 4.52041 | | +0.28145891 | +0.33908216 | |
| $P$ | 4.26 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.1− | 0.2− | 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 10 31 | 699 | 1.1+ | 0.3+ | 2004 03 17 | 691 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2002 10 31 | 644 | 0.3− | 0.5− | 2006 09 18 | 703 | 1.0− | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 10 31 | 699 | (2.5− | 0.1+) | 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 699 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.2+ | 0.6− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 644 | 0.6− | 0.4− | 2006 09 30 | 703 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.7+ | 1.5− |
| 2002 11 03 | 608 | 0.8+ | 0.1+ | 2006 09 30 | 703 | (0.5− | 1.8−) | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2002 11 03 | 608 | 0.8+ | 0.7+ | 2006 09 30 | 703 | (0.6+ | 1.5−) | 2006 10 16 | 703 | 0.4− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | 1.2+ | 1.0+ | 2006 09 30 | 703 | 0.8+ | 0.5− | 2006 10 16 | 703 | (1.7− | 1.0+) | | |
| 2002 11 25 | 291 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.0 | 1.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 25 | 291 | 0.3− | 0.0 | 2006 10 01 | 704 | (0.0 | 1.7+) | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2002 11 25 | 291 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.2− | | |
| 2002 12 05 | 704 | 1.0+ | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2002 12 05 | 704 | 0.4− | 0.6− | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.1− | | |
| 2002 12 05 | 704 | 0.5− | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2+ | | |

**2002 UV$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.76172 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23304738 | $\omega$ | 310.52600 | | +0.84479013 | −0.20362897 | |
| $a$ | 2.6152100 | $\Omega$ | 66.78653 | | +0.47907051 | +0.69977721 | |
| $e$ | 0.2842862 | $i$ | 32.57668 | | −0.23837174 | +0.68472410 | |
| $P$ | 4.23 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.5− | 0.0 | 2002 12 01 | 704 | 0.9+ | 0.5− | 2006 09 01 | E12 | 0.7+ | 1.0− | | |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2002 12 01 | 704 | 0.2+ | 0.1− | 2006 09 01 | E12 | 0.3− | 0.3+ | | |
| 2002 10 31 | 704 | 0.4− | 0.5+ | 2002 12 01 | 704 | 0.8+ | 0.2+ | 2006 09 01 | E12 | 0.0 | 0.3− | | |
| 2002 10 31 | 704 | 0.8− | 0.8+ | 2002 12 01 | 704 | 0.5+ | 0.3− | 2006 09 01 | E12 | 0.3+ | 1.0− | | |
| 2002 11 05 | 683 | (1.7+ | 1.9−) | 2002 12 10 | 704 | 0.5+ | 1.1− | 2006 09 01 | E12 | 0.5− | 0.8+ | | |
| 2002 11 05 | 683 | 1.3+ | 1.5− | 2002 12 10 | 704 | 0.4+ | 0.5+ | 2006 09 01 | E12 | 0.3+ | 1.0+ | | |
| 2002 11 12 | 704 | 0.3+ | 0.8− | 2002 12 10 | 704 | 0.2+ | 0.1+ | 2006 09 01 | E12 | 0.6− | 0.2− | | |
| 2002 11 12 | 704 | 0.1− | 0.2− | 2002 12 10 | 704 | 0.2+ | 0.5+ | 2006 09 18 | E12 | 0.4+ | 0.4− | | |
| 2002 11 12 | 704 | 0.0 | 0.5− | 2002 12 31 | 704 | 0.1+ | 0.3− | 2006 09 18 | E12 | 0.2+ | 0.2− | | |
| 2002 11 14 | 704 | 0.0 | 1.2+ | 2002 12 31 | 704 | 0.5+ | 0.1+ | 2006 09 18 | E12 | 0.2+ | 0.3+ | | |
| 2002 11 14 | 704 | 0.7− | 0.7+ | 2002 12 31 | 704 | 0.4+ | 0.4− | 2006 09 18 | E12 | 0.3− | 0.6+ | | |
| 2002 11 14 | 704 | 1.4− | 1.3+ | 2002 12 31 | 704 | 0.2− | 0.5− | 2006 10 25 | E12 | 0.3+ | 0.0 | | |
| 2002 11 14 | 704 | 0.8− | 0.2+ | 2003 01 05 | 704 | 0.5− | 0.3+ | 2006 10 25 | E12 | 0.4− | 0.3− | | |
| 2002 11 16 | 704 | 0.3− | 0.6− | 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 10 25 | E12 | 0.0 | 0.1− | | |
| 2002 11 16 | 704 | 0.5− | 0.6− | 2003 01 05 | 704 | 0.0 | 1.1+ | 2006 10 25 | E12 | 0.3− | 0.3+ | | |
| 2002 11 16 | 704 | 0.0 | 0.6− | 2003 01 05 | 704 | 0.1− | 0.3+ | | | | | | |
| 2002 12 01 | 704 | (2.8+ | 0.5−) | 2006 09 01 | E12 | 0.5+ | 0.2+ | | | | | | |

**2002 US$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.99557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24013797 | $\omega$ | 269.14951 | | +0.84940262 | −0.52254341 | |
| $a$ | 2.5634735 | $\Omega$ | 122.35027 | | +0.51229757 | +0.78277254 | |
| $e$ | 0.2798284 | $i$ | 5.01957 | | +0.12675330 | +0.33795789 | |
| $P$ | 4.10 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 25 | 644 | 0.5− | 0.3+ | 2002 10 30 | 704 | 0.9− | 0.3+ | 2006 09 19 | 699 | 0.6+ | 0.3+ | | |
| 2002 08 25 | 644 | 0.9− | 0.1+ | 2002 10 30 | 704 | 0.9− | 0.5− | 2006 09 19 | 699 | 0.7+ | 1.1+ | | |
| 2002 08 25 | 644 | 0.7− | 0.3− | 2002 11 05 | 699 | 0.7− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.2− | | |
| 2002 09 15 | 683 | 1.3− | 0.8+ | 2002 11 05 | 699 | 0.4− | 1.1+ | 2006 09 20 | 644 | 0.1− | 0.2− | | |
| 2002 09 15 | 683 | 0.1+ | 0.4− | 2002 11 05 | 699 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.0 | | |
| 2002 09 15 | 683 | (0.6+ | 2.1−) | 2002 11 05 | 699 | 0.9− | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.9+ | | |
| 2002 10 04 | 704 | 0.5− | 0.1+ | 2002 12 07 | 704 | 0.1+ | 0.8− | 2006 09 26 | 704 | 0.5− | 0.5+ | | |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2002 12 07 | 704 | 0.2+ | 1.0+ | 2006 09 26 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.4+ | 0.8+ | 2002 12 07 | 704 | 0.3− | 1.3+ | 2006 09 26 | 704 | 0.5− | 0.1− | | |
| 2002 10 04 | 704 | 0.9− | 0.9+ | 2004 04 12 | 291 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.1+ | 0.7+ | 2004 04 12 | 291 | 0.3+ | 0.4+ | 2006 10 02 | 703 | 0.7+ | 1.1− | | |
| 2002 10 07 | 608 | 0.7+ | 1.0+ | 2004 04 12 | 291 | 0.2− | 1.0+ | 2006 10 02 | 703 | 0.0 | 0.7− | | |
| 2002 10 07 | 608 | 0.6+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.4+ | 2006 10 02 | 703 | 0.7− | 0.2+ | | |
| 2002 10 07 | 608 | 0.2+ | 1.1+ | 2006 09 14 | 703 | 0.1+ | 1.1− | 2006 10 02 | 703 | 1.0− | 0.8− | | |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.2− | | |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.2− | | |
| 2002 10 15 | 644 | 0.1− | 1.1+ | 2006 09 16 | 704 | 0.3+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.1+ | | |
| 2002 10 15 | 644 | 0.1− | 1.1+ | 2006 09 16 | 704 | (1.7− | 1.2+) | 2006 10 19 | 703 | 0.1+ | 0.3− | | |
| 2002 10 15 | 644 | 0.0 | 1.1+ | 2006 09 16 | 704 | 0.0 | 1.0+ | 2006 10 19 | 703 | 0.8− | 0.5+ | | |
| 2002 10 29 | 645 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.5− | 0.5− | 2006 10 19 | 703 | 0.7− | 0.1− | | |
| 2002 10 29 | 645 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.4− | 0.7+ | 2006 10 19 | 703 | 1.2− | 0.7− | | |
| 2002 10 30 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 704 | 0.1+ | 0.1− | 2006 10 24 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 30 | 704 | 0.3− | 0.5+ | 2006 09 16 | 704 | 0.7+ | 0.2+ | 2006 10 24 | 644 | 0.1+ | 0.1− | | |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 09 16 | 704 | 0.9− | 1.3+ | 2006 10 24 | 644 | 0.2+ | 0.1− | | |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.9+ | 0.7+ | | | | | | |
| 2002 10 30 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 0.6+ | 0.4+ | | | | | | |

**2002 UC$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.69388 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24169395 | $\omega$ | 224.59444 | | +0.97692685 | −0.20858295 | |
| $a$ | 2.5524595 | $\Omega$ | 147.36325 | | +0.21189417 | +0.91968599 | |
| $e$ | 0.2561612 | $i$ | 4.88259 | | +0.02673558 | +0.33267225 | |
| $P$ | 4.08 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1− | 0.1− | 2006 09 16 | 704 | 0.6+ | 0.0 | 2006 09 30 | 704 | 0.0 | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2006 09 16 | 704 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.6− | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2006 09 16 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.2− | | |
| 2002 10 09 | 699 | 1.0+ | 0.4− | 2006 09 16 | 704 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.5+ | | |
| 2002 10 09 | 699 | (1.9+ | 0.0 ) | 2006 09 18 | 703 | 0.5+ | 0.1+ | 2006 09 30 | 704 | (1.8− | 0.1−) | | |
| 2002 10 09 | 699 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.0 | | |
| 2002 10 09 | 699 | 0.6− | 0.6− | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 01 | 704 | 0.4− | 0.2+ | | |
| 2002 10 31 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 1.3+ | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.6+ | | |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.4− | 1.2+ | | |
| 2002 10 31 | 704 | 0.2− | 0.3− | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.3− | 0.3− | | |
| 2002 10 31 | 704 | 0.3+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.1− | 0.3+ | | |
| 2002 10 31 | 608 | 0.7− | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.7− | 1.1− | | |
| 2002 10 31 | 608 | 0.8− | 0.7+ | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.0− | | |
| 2002 10 31 | 608 | 0.2− | 0.5+ | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.1− | | |
| 2002 11 06 | 699 | 0.4+ | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.3− | | |
| 2002 11 06 | 699 | 0.6+ | 0.7+ | 2006 09 28 | 704 | 0.7− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3− | | |
| 2002 11 06 | 699 | 0.2+ | 0.7− | 2006 09 28 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.3− | | |
| 2002 11 06 | 699 | 0.6− | 0.6+ | 2006 09 28 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | (1.6+ | 1.3−) | | |
| 2002 11 11 | 704 | 0.3+ | 0.4− | 2006 09 28 | 704 | 0.3+ | 0.3− | 2006 10 22 | 703 | (1.8+ | 0.4−) | | |
| 2002 11 11 | 704 | 0.8+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.5+ | 2006 10 22 | 703 | 0.7+ | 1.0+ | | |
| 2002 11 11 | 704 | 0.1− | 0.4− | 2006 09 30 | 703 | 0.6+ | 0.2− | 2006 10 22 | 703 | (1.7+ | 0.8+) | | |

**2002 UC$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.19618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23164579 | $\omega$ | 286.95647 | | −0.23618466 | −0.97162526 | |
| $a$ | 2.6257484 | $\Omega$ | 176.62684 | | +0.95327689 | −0.23421739 | |
| $e$ | 0.2271902 | $i$ | 12.45972 | | +0.18836130 | −0.03296299 | |
| $P$ | 4.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 22 | 704 | 1.8− | 1.1− | 2002 12 13 | 644 | 0.0 | 0.2− | 2006 10 01 | 704 | (0.8− | 1.7−) | | |
| 1999 01 22 | 704 | 1.5+ | 0.5+ | 2003 01 02 | 704 | (3.7− | 2.7+) | 2006 10 01 | 704 | 0.5− | 0.5− | | |
| 1999 01 22 | 704 | 0.2− | 0.9+ | 2003 01 02 | 704 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.6− | | |
| 1999 01 22 | 704 | 0.5+ | 1.1− | 2003 01 02 | 704 | 0.1− | 1.3− | 2006 10 02 | G96 | 0.2+ | 0.5− | | |
| 2002 10 31 | 704 | 0.4− | 0.7+ | 2003 01 02 | 704 | 1.3− | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.5− | | |
| 2002 10 31 | 704 | 0.4− | 0.7+ | 2006 09 25 | 699 | 0.6+ | 0.5− | 2006 10 02 | G96 | 0.0 | 0.6− | | |
| 2002 10 31 | 704 | 0.7− | 0.9+ | 2006 09 25 | 699 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.6− | | |
| 2002 10 31 | 704 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.6− | | |
| 2002 10 31 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 0.1− | 1.3+ | 2006 10 16 | 703 | 0.1− | 0.1+ | | |
| 2002 11 06 | 699 | 0.8− | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.1+ | | |
| 2002 11 06 | 699 | 0.1+ | 0.9+ | 2006 09 28 | 691 | 0.6− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.1− | | |
| 2002 11 06 | 699 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.3− | | |
| 2002 11 06 | 699 | 0.3− | 0.0 | 2006 09 28 | 291 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2006 09 28 | 291 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.2+ | | |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2006 09 28 | 291 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.3− | | |
| 2002 11 30 | 704 | 0.3+ | 1.0− | 2006 09 29 | 699 | (2.3− | 1.0−) | 2006 10 20 | 644 | 0.5− | 0.1+ | | |
| 2002 11 30 | 704 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.9− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 1.1− | | |
| 2002 11 30 | 704 | 0.8+ | 0.2+ | 2006 09 29 | 699 | 1.0+ | 0.5+ | 2006 10 22 | 703 | 1.0+ | 1.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 644 | 0.3− | 0.1− | 2006 09 29 | 699 | (1.6+ | 0.2−) | 2006 10 22 | 703 | 0.0 | 0.5− |
| 2002 12 13 | 644 | 0.1− | 0.1+ | 2006 10 01 | 704 | (1.6− | 0.8−) | 2006 10 22 | 703 | 0.2+ | 0.0 |

**2002 UD$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.81828 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23551954 | $\omega$ | 240.33852 | | +0.90908814 | | +0.30829031 |
| $a$ | 2.5968772 | $\Omega$ | 100.48577 | | −0.20887829 | | +0.91924558 |
| $e$ | 0.2174208 | $i$ | 16.55680 | | −0.36045612 | | +0.24483597 |
| $P$ | 4.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.2− | 0.1− | 2002 12 01 | 704 | 0.4− | 0.6− | 2006 09 25 | 703 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2002 12 01 | 704 | 0.1+ | 0.4+ | 2006 10 25 | E12 | 0.4+ | 0.4− |
| 2002 10 31 | 704 | 0.8+ | 0.9+ | 2002 12 01 | 704 | 0.2− | 0.2+ | 2006 10 25 | E12 | 0.4+ | 0.4− |
| 2002 10 31 | 704 | 1.1+ | 0.3+ | 2002 12 01 | 704 | 0.6− | 0.3+ | 2006 10 25 | E12 | 0.1− | 0.0 |
| 2002 11 07 | 699 | 0.4+ | 0.1− | 2005 05 04 | 703 | 0.7+ | 0.3+ | 2006 10 25 | E12 | 0.1+ | 0.1+ |
| 2002 11 07 | 699 | 0.4− | 1.2− | 2005 05 04 | 703 | (2.0+ | 0.0 ) | 2006 10 31 | 703 | 0.4− | 0.0 |
| 2002 11 07 | 699 | 0.8− | 0.3− | 2005 05 04 | 703 | 0.1+ | 0.3− | 2006 10 31 | 703 | 0.3+ | 0.1+ |
| 2002 11 07 | 699 | 1.0− | 0.1+ | 2005 05 04 | 703 | 0.7− | 0.1+ | 2006 10 31 | 703 | 0.0 | 0.0 |
| 2002 11 30 | 704 | 1.2− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.7+ | 2006 10 31 | 703 | 0.1+ | 0.2+ |
| 2002 11 30 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.5+ | 0.8− | 2006 11 06 | 644 | 0.1− | 0.3− |
| 2002 11 30 | 704 | 1.1+ | 0.2− | 2006 09 25 | 703 | 0.8− | 0.7+ | 2006 11 06 | 644 | 0.2+ | 0.2− |
| 2002 11 30 | 704 | 1.0+ | 0.3− | 2006 09 25 | 703 | (0.5+ | 2.5+) | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2002 12 01 | 704 | 0.4− | 0.2+ | 2006 09 25 | 703 | 0.3− | 0.4+ | | | | |

**2002 UK$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.17895 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28379166 | $\omega$ | 65.39461 | | +0.68988564 | | +0.70878549 |
| $a$ | 2.2933463 | $\Omega$ | 249.07286 | | −0.70804689 | | +0.61829711 |
| $e$ | 0.2617231 | $i$ | 9.07013 | | −0.15075612 | | +0.33960537 |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.2+ | 0.3+ | 2002 09 01 | 644 | 0.3− | 0.9+ | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2002 08 11 | 704 | 0.4+ | 0.4+ | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2002 08 11 | 704 | 0.2+ | 0.2− | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2002 08 11 | 704 | 0.4+ | 0.8+ | 2002 10 11 | 645 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.3− |
| 2002 08 24 | 644 | 0.0 | 0.4− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2002 08 24 | 644 | 0.0 | 0.3− | 2002 10 29 | 645 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.5− | 0.5+ |
| 2002 08 24 | 644 | 0.2− | 0.4− | 2002 10 29 | 645 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.4− | 0.3+ |
| 2002 09 01 | 644 | 0.0 | 0.6+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.4− | 0.2− |
| 2002 09 01 | 644 | 0.4− | 0.5+ | 2002 10 30 | 645 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.4+ | 0.0 |

**2002 UX$_{54}$ = 2006 WY$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.01600 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26471586 | $\omega$ | 216.54921 | | +0.69032126 | | +0.71458986 |
| $a$ | 2.4022383 | $\Omega$ | 97.41291 | | −0.63381865 | | +0.67276177 |
| $e$ | 0.0425771 | $i$ | 6.55578 | | −0.34889895 | | +0.19171054 |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 02 16 | 691 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.2+ |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 03 16 | 691 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 11 16 | 691 | (1.6− | 0.2+) | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.3− | 0.3+ |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.3+ | 2006 11 24 | 691 | 0.4+ | 0.0 |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.6+ | 0.0 | | | | |

**2002 UV$_{59}$ = 2006 WN$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.85626 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26587060 | $\omega$ | 243.34440 | | +0.87626881 | | +0.45695243 |
| $a$ | 2.3952775 | $\Omega$ | 89.12508 | | −0.36960607 | | +0.84093517 |
| $e$ | 0.1640186 | $i$ | 8.79019 | | −0.30910246 | | +0.28986639 |
| $P$ | 3.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.0 | 0.1− | 2002 10 15 | 644 | 0.4− | 1.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2002 10 15 | 644 | 0.1− | 1.2+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2002 10 10 | 644 | 0.3− | 0.6+ | 2002 10 15 | 644 | 0.1− | 1.4+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2002 10 10 | 644 | 0.0 | 0.7+ | 2002 10 29 | 645 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 10 10 | 644 | 0.1− | 0.8+ | 2002 10 29 | 645 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.3− | 0.1+ |

**2002 UC$_{60}$ = 2006 US$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.03088 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24562423 | $\omega$ | 194.98131 | | +0.92739255 | | −0.37304341 |
| $a$ | 2.5251582 | $\Omega$ | 187.11300 | | +0.36223410 | | +0.91415657 |
| $e$ | 0.2411185 | $i$ | 13.04906 | | +0.09343184 | | +0.15860761 |
| $P$ | 4.01 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.1− | 0.4+ | 2002 10 31 | 704 | 0.5+ | 1.2− | 2006 10 16 | 703 | 0.8+ | 0.4− |
| 2002 10 16 | 644 | 0.2− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.6− |
| 2002 10 16 | 644 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.0 |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.0 | 1.0+ |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.7− | 1.3+ |
| 2002 10 31 | 704 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.7− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 10 31 | 704 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.7− | | | | |

**2002 UD$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.78752 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23826730 | $\omega$ | 333.58502 | | +0.51770522 | | −0.83783559 |
| $a$ | 2.5768734 | $\Omega$ | 84.78306 | | +0.81252634 | | +0.41807000 |
| $e$ | 0.1479783 | $i$ | 10.01830 | | +0.26792210 | | +0.35106836 |
| $P$ | 4.14 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 704 | 0.1− | 0.0 | 2002 10 15 | 644 | 0.1+ | 1.3+ | 2006 09 20 | 703 | 0.7+ | 0.7− |
| 1998 11 24 | 704 | (0.6+ | 2.6−) | 2002 10 29 | 645 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.5+ | 0.3− |
| 1998 11 24 | 704 | 0.4− | 0.9+ | 2002 10 29 | 645 | 0.0 | 0.1− | 2006 09 24 | 699 | 0.0 | 1.3+ |
| 1998 11 24 | 704 | (2.6− | 2.3+) | 2002 10 30 | 704 | 0.4− | 1.0+ | 2006 09 24 | 699 | 0.2+ | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.2− | 2002 10 30 | 704 | 1.5+ | 0.4+ | 2006 09 24 | 699 | (0.7+ | 2.7+) |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2002 10 30 | 704 | (0.6+ | 1.8+) | 2006 09 24 | 699 | (0.8+ | 1.8+) |
| 2002 10 10 | 644 | 0.2− | 1.4+ | 2002 10 30 | 704 | 0.1− | 0.8+ | 2006 10 10 | 644 | 0.8− | 0.3− |
| 2002 10 10 | 644 | 0.2+ | 1.3+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.3− | 0.1− |
| 2002 10 10 | 644 | 0.2+ | 1.2+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.4− | 0.3+ |
| 2002 10 15 | 644 | 0.4+ | 1.4+ | 2006 09 20 | 703 | 0.4− | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.1− |
| 2002 10 15 | 644 | 0.2+ | 1.1+ | 2006 09 20 | 703 | 0.2− | 0.3+ | | | | |

**2002 UW$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.72400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25427557 | $\omega$ | 140.38390 | | +0.93812655 | +0.33502752 | |
| $a$ | 2.4675519 | $\Omega$ | 200.56113 | | −0.34548915 | +0.92272665 | |
| $e$ | 0.2035627 | $i$ | 14.44487 | | +0.02357607 | +0.19060978 | |
| $P$ | 3.88 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.1− | 0.3+ | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2002 09 12 | 644 | 0.2+ | 0.4+ | 2002 11 08 | 645 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.4− | 0.1− |
| 2002 09 12 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.5+ | 2006 10 21 | 703 | (1.8+ | 0.8+) |
| 2002 10 04 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2006 10 15 | 703 | (0.7− | 1.8+) | 2006 10 21 | 703 | 0.6+ | 1.0+ |
| 2002 10 04 | 704 | 0.8+ | 0.5+ | 2006 10 15 | 703 | 1.4+ | 1.0+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.3− | 0.6+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.7− | 0.7− | 2006 11 24 | G96 | 0.3− | 0.3+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.6+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.1− | | | | |

**2002 UN$_{65}$ = 2006 SR$_{285}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.80209 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24692337 | $\omega$ | 156.12311 | | +0.97872573 | +0.19880824 | |
| $a$ | 2.5162932 | $\Omega$ | 192.72569 | | −0.20477491 | +0.96191210 | |
| $e$ | 0.0249514 | $i$ | 13.30833 | | +0.01277449 | +0.18761769 | |
| $P$ | 3.99 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.6− | 1.1+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2002 10 03 | 704 | 0.0 | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2002 10 03 | 704 | 1.0− | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 26 | J75 | 1.0+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 09 26 | J75 | 1.3+ | 0.9− | 2006 10 21 | 644 | 0.0 | 0.8+ |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.6+ | 0.4− | 2006 11 16 | G96 | 0.4− | 0.3+ |
| 2002 11 08 | 645 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.5+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.0 |

**2002 UX$_{69}$ = 2006 VR$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.10179 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26204967 | $\omega$ | 41.42990 | | −0.22551048 | −0.96159919 | |
| $a$ | 2.4185049 | $\Omega$ | 62.14645 | | +0.84079970 | −0.27321005 | |
| $e$ | 0.2065716 | $i$ | 10.19123 | | +0.49213909 | +0.02613943 | |
| $P$ | 3.76 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 599 | 0.2− | 0.0 | 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2002 10 03 | 599 | 0.1− | 0.3+ | 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2002 10 03 | 599 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.2+ |
| 2002 10 03 | 599 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2002 10 04 | 645 | 0.1− | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 1.1+ | 0.5+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2002 10 09 | 699 | 0.3− | 1.0+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 10 09 | 699 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2002 10 09 | 699 | 0.1+ | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.6+ |
| 2002 10 09 | 699 | (1.3− | 1.8−) | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2002 10 15 | 644 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2002 10 15 | 644 | 0.5− | 0.4+ | 2006 11 15 | 703 | 0.8− | 0.6− | 2006 11 24 | 691 | 0.3− | 0.0 |
| 2002 10 15 | 644 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.1− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2002 10 28 | 644 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.3− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2002 10 28 | 644 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.5− | 2006 11 28 | 704 | 1.0− | 0.7+ |
| 2002 10 28 | 644 | 0.6− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.2+ |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.2− |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.5+ | 1.2− |

**2002 UQ$_{70}$ = 1994 GZ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.29412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29428590 | $\omega$ | 63.25017 | | +0.12895271 | −0.99123060 | |
| $a$ | 2.2384965 | $\Omega$ | 19.40556 | | +0.87617605 | +0.10025682 | |
| $e$ | 0.1040280 | $i$ | 4.98368 | | +0.46442085 | +0.08608408 | |
| $P$ | 3.35 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.1+ | 1.6− | 1999 12 13 | 704 | 0.2+ | 0.1+ | 2002 11 08 | 645 | 0.0 | 0.0 |
| 1994 04 06 | 691 | 0.0 | 1.2− | 1999 12 13 | 704 | 0.5+ | 0.1− | 2002 11 08 | 645 | 0.1+ | 0.0 |
| 1994 04 06 | 691 | 0.6+ | 0.0 | 2002 10 11 | 291 | 0.1− | 0.3+ | 2004 03 29 | 691 | 0.3+ | 0.6+ |
| 1994 04 16 | 691 | 0.3− | 0.6+ | 2002 10 11 | 291 | 0.1− | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.4+ |
| 1994 04 16 | 691 | 0.7− | 0.2+ | 2002 10 11 | 291 | 0.0 | 0.2+ | 2004 03 29 | 691 | 0.3+ | 0.6+ |
| 1994 04 16 | 691 | 0.9− | 0.3− | 2002 10 30 | 645 | 0.0 | 0.2− | | | | |
| 1999 12 13 | 704 | 0.5− | 0.4− | 2002 10 30 | 645 | 0.1− | 0.1− | | | | |

**2002 UR$_{70}$ = 2004 FU$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.38339 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28580063 | $\omega$ | 263.73892 | | +0.22884250 | −0.97335456 | |
| $a$ | 2.2825866 | $\Omega$ | 172.98120 | | +0.93361547 | +0.21521467 | |
| $e$ | 0.0706111 | $i$ | 6.84366 | | +0.27566876 | +0.07914262 | |
| $P$ | 3.45 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.3+ | 0.7+ | 2002 10 31 | 645 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.6− | 0.2− | 2002 10 31 | 645 | 0.0 | 0.1− | 2004 03 28 | 704 | 0.2+ | 0.4− |
| 2002 10 02 | 704 | 0.9+ | 0.3− | 2004 03 24 | 699 | 1.0+ | 0.4− | 2005 07 08 | 691 | 0.5− | 0.6− |
| 2002 10 15 | 644 | (0.0 | 2.0+) | 2004 03 24 | 699 | 0.2− | 0.6+ | 2005 07 08 | 691 | 0.1+ | 0.3+ |
| 2002 10 15 | 644 | 0.2− | 1.7+ | 2004 03 24 | 699 | 1.2− | 0.7+ | 2005 07 08 | 691 | 0.0 | 0.5+ |
| 2002 10 15 | 644 | 0.2− | 1.4+ | 2004 03 24 | 699 | 0.2− | 0.2− | 2005 09 11 | 691 | 0.1+ | 0.2+ |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.8+ | 0.8+ | 2005 09 11 | 691 | 0.0 | 0.4− |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.0 | 0.5+ | 2005 09 11 | 691 | 0.3+ | 0.1+ |

**2002 US$_{70}$ = 2004 FM$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.78626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28814211 | $\omega$ | 16.24567 | | +0.52937876 | −0.83855131 | |
| $a$ | 2.2702041 | $\Omega$ | 42.02684 | | +0.75540121 | +0.39678863 | |
| $e$ | 0.0526131 | $i$ | 11.09234 | | +0.38616984 | +0.37335035 | |
| $P$ | 3.42 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.1− | 2002 10 30 | 645 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.3− | 0.5+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 11 08 | 645 | 0.1+ | 0.0 | 2004 03 25 | 704 | 0.9+ | 0.2− |
| 2002 10 15 | 644 | 0.2− | 0.4+ | 2002 11 08 | 645 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 0.3− | 0.6− |
| 2002 10 15 | 644 | 0.1+ | 0.6+ | 2004 03 23 | 704 | 0.7− | 0.7+ | 2004 03 25 | 704 | 0.8+ | 0.8− |
| 2002 10 15 | 644 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.0 | 0.1− | | | | |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.4− | 0.6+ | | | | |

**2002 UT$_{70}$ = 1998 EK$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.70108 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17484352 | $\omega$ | 293.91656 | | +0.07035845 | −0.99043378 | |
| $a$ | 3.1674008 | $\Omega$ | 151.26686 | | +0.98125643 | +0.04731761 | |
| $e$ | 0.2830366 | $i$ | 14.29555 | | +0.17940322 | +0.12962241 | |
| $P$ | 5.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 01 | 691 | 0.6− | 0.1− | 2002 10 30 | 704 | 0.1− | 0.5+ | 2002 11 30 | 704 | 0.0 | 0.2+ | |
| 1998 03 01 | 691 | 0.2− | 0.1+ | 2002 10 30 | 704 | 0.2+ | 0.1− | 2002 11 30 | 704 | 0.2+ | 0.7− | |
| 1998 03 01 | 691 | 0.4− | 0.1− | 2002 11 06 | 644 | 0.4+ | 0.0 | 2002 11 30 | 704 | 0.3− | 0.7+ | |
| 1998 03 02 | 691 | 0.4+ | 0.2+ | 2002 11 06 | 644 | 0.2− | 0.6− | 2002 11 30 | 704 | 0.3+ | 0.2− | |
| 1998 03 02 | 691 | 0.4+ | 0.2+ | 2002 11 06 | 644 | 0.1− | 0.6− | 2003 01 28 | 704 | 0.3− | 0.8− | |
| 1998 03 02 | 691 | 0.4+ | 0.2− | 2002 11 16 | 699 | 0.5− | 0.1− | 2003 01 28 | 704 | 1.0+ | 0.1− | |
| 2002 10 30 | 704 | 0.3+ | 0.5− | 2002 11 16 | 699 | 1.3+ | 0.3− | 2003 01 28 | 704 | (3.0+ | 1.4+) | |
| 2002 10 30 | 704 | 0.6− | 0.6+ | 2002 11 16 | 699 | 1.7− | 1.5+ | | | | | |
| 2002 10 30 | 704 | 0.2+ | 0.2+ | 2002 11 16 | 699 | 0.1+ | 0.2+ | | | | | |

**2002 UU$_{70}$ = 1997 HA$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.21387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23990184 | $\omega$ | 48.42062 | | +0.22673508 | +0.97076631 | |
| $a$ | 2.5651553 | $\Omega$ | 234.85170 | | −0.91980166 | +0.18683546 | |
| $e$ | 0.2860930 | $i$ | 5.52785 | | −0.32024383 | +0.15068273 | |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 23 | 809 | (0.3− | 2.7−) | 2001 05 18 | 699 | 0.8− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2+ | |
| 1993 05 23 | 809 | 0.9− | 1.5− | 2001 05 18 | 699 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.5+ | 0.0 | |
| 1993 05 23 | 809 | (0.6+ | 2.8−) | 2001 05 18 | 699 | 0.1− | 1.1+ | 2006 10 21 | 644 | 0.4− | 0.2− | |
| 1997 04 30 | 704 | 1.0+ | 1.0+ | 2002 10 31 | 644 | 0.5− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 1997 04 30 | 704 | 0.1+ | 0.9+ | 2002 10 31 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2− | |
| 1997 04 30 | 704 | 0.6+ | 0.2+ | 2002 10 31 | 644 | 0.1− | 0.5+ | 2006 11 10 | A44 | 0.1− | 0.9+ | |
| 1997 04 30 | 704 | 0.7+ | 0.3+ | 2002 11 06 | 704 | (0.9− | 1.7+) | 2006 11 10 | A44 | 0.2+ | 0.8+ | |
| 1997 04 30 | 704 | 0.2+ | 0.1+ | 2002 11 06 | 704 | 0.2+ | 1.1+ | 2006 11 15 | 691 | 0.1− | 0.1− | |
| 1997 05 01 | 704 | 0.7+ | 1.0+ | 2002 11 06 | 704 | (0.3+ | 1.8+) | 2006 11 15 | 691 | 1.0− | 0.2− | |
| 1997 05 01 | 704 | 0.2+ | 0.4+ | 2005 04 13 | 699 | 0.3+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.1− | |
| 1997 05 01 | 704 | 0.5− | 0.6+ | 2005 04 13 | 699 | 0.7+ | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− | |
| 1997 05 01 | 704 | 0.2+ | 0.8+ | 2005 04 13 | 699 | 0.7− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.1+ | |
| 1997 05 01 | 704 | 0.4+ | 0.9+ | 2005 04 13 | 699 | 0.2+ | 1.1+ | 2006 11 17 | 691 | 0.4+ | 0.0 | |
| 1998 11 26 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.1+ | |
| 1998 11 26 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.2+ | |
| 1998 11 26 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.2− | |
| 2001 04 23 | 704 | (1.8+ | 0.2−) | 2006 09 30 | 691 | 0.6+ | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.1− | |
| 2001 04 23 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.2+ | |
| 2001 04 23 | 704 | 0.4+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.0 | |
| 2001 05 18 | 699 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | | | | |

**2002 UV$_{70}$ = 2005 GH$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.93539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18323327 | $\omega$ | 147.88471 | | +0.98163076 | −0.15776424 | |
| $a$ | 3.0699631 | $\Omega$ | 221.62138 | | +0.12215358 | +0.95167650 | |
| $e$ | 0.0802796 | $i$ | 9.29594 | | +0.14655906 | +0.26348109 | |
| $P$ | 5.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 21 | 691 | 0.3+ | 0.4− | 2002 11 11 | 704 | 0.0 | 0.3− | 2005 04 11 | 691 | 0.0 | 0.1− | |
| 1996 10 21 | 691 | 0.1+ | 0.3+ | 2002 11 11 | 704 | 1.0− | 0.5− | 2005 04 11 | 691 | 0.1+ | 0.2+ | |
| 1996 10 21 | 691 | 0.5− | 0.4+ | 2002 11 23 | 644 | 0.2+ | 0.6+ | 2005 04 11 | 691 | 0.0 | 0.2+ | |
| 2002 10 30 | 608 | 0.6+ | 0.1− | 2002 11 23 | 644 | 0.0 | 0.6+ | 2005 04 15 | 691 | 0.1− | 0.3+ | |
| 2002 10 30 | 608 | 0.2+ | 0.4− | 2002 11 23 | 644 | 0.3+ | 0.2+ | 2005 04 15 | 691 | 0.1− | 0.2− | |
| 2002 10 30 | 608 | 0.3− | 0.1− | 2002 12 10 | 644 | 0.4+ | 0.1+ | 2005 04 15 | 691 | 0.2+ | 0.1+ | |
| 2002 11 11 | 704 | 0.5− | 0.7+ | 2002 12 10 | 644 | 0.5+ | 0.1+ | | | | | |
| 2002 11 11 | 704 | 0.5− | 0.9− | 2002 12 10 | 644 | 0.1+ | 0.8+ | | | | | |

**2002 UW$_{70}$ = 2005 NO$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.99360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22576208 | $\omega$ | 349.95059 | | −0.49492780 | −0.86571775 | |
| $a$ | 2.6711732 | $\Omega$ | 129.67261 | | +0.80381591 | −0.48879292 | |
| $e$ | 0.1970929 | $i$ | 5.56892 | | +0.33004009 | −0.10776949 | |
| $P$ | 4.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 608 | 0.9− | 1.1− | 2004 04 26 | 691 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.1− | |
| 2002 10 31 | 608 | 1.1− | 0.4− | 2004 05 13 | 699 | 0.4+ | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.3− | |
| 2002 10 31 | 608 | 0.1− | 0.5− | 2004 05 13 | 699 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.1− | |
| 2002 12 01 | 704 | (2.9− | 1.9+) | 2004 05 13 | 699 | 0.6− | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.1− | |
| 2002 12 01 | 704 | 1.0− | 1.2+ | 2004 05 13 | 699 | 0.4− | 1.2+ | 2006 10 04 | G96 | 0.4+ | 0.0 | |
| 2002 12 01 | 704 | (2.2− | 0.7+) | 2005 07 07 | 568 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.2+ | |
| 2002 12 01 | 704 | (2.1− | 0.7+) | 2005 07 07 | 568 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.0 | |
| 2002 12 11 | 704 | 0.3+ | 1.5+ | 2005 07 07 | 568 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.1− | |
| 2002 12 11 | 704 | 0.6+ | 0.1+ | 2005 07 08 | 568 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− | |
| 2002 12 11 | 704 | 1.1+ | 1.0− | 2006 09 14 | 291 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | |
| 2002 12 27 | 644 | 0.7+ | 0.1− | 2006 09 14 | 291 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | |
| 2002 12 27 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 291 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2− | |
| 2002 12 27 | 644 | 0.0 | 0.7+ | 2006 09 29 | 699 | 0.3− | 0.9− | 2006 10 12 | 644 | 0.1− | 0.1− | |
| 2003 01 18 | 644 | 0.0 | 1.0+ | 2006 09 29 | 699 | 1.3− | 1.4+ | 2006 10 12 | 644 | 0.7− | 0.5+ | |
| 2003 01 18 | 644 | 0.8− | 1.1+ | 2006 09 29 | 699 | 0.2+ | 0.8− | 2006 10 22 | 703 | 1.4− | 0.6− | |
| 2003 01 18 | 644 | 0.2− | 1.0+ | 2006 09 29 | 699 | 0.7+ | 1.0+ | 2006 10 22 | 703 | 1.2− | 0.6− | |
| 2004 04 20 | 704 | (0.8+ | 2.2+) | 2006 10 02 | 691 | 0.2− | 0.3+ | 2006 10 22 | 703 | 1.0− | 0.5− | |
| 2004 04 20 | 704 | 1.2+ | 0.8+ | 2006 10 02 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.2− | 1.0+ | |
| 2004 04 20 | 704 | (0.7+ | 1.7+) | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | (5.1+ | 2.3−) | |
| 2004 04 20 | 704 | 0.5+ | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 22 | 703 | 0.7+ | 0.2− | |
| 2004 04 20 | 704 | 0.9+ | 0.8+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 22 | 703 | 1.4− | 0.2+ | |
| 2004 04 26 | 691 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 22 | 703 | 1.4+ | 0.2+ | |
| 2004 04 26 | 691 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.3− | | | | | |

**2002 UX$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.00205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38213449 | $\omega$ | 247.96216 | | +0.06080791 | −0.99175155 | |
| $a$ | 1.8807247 | $\Omega$ | 199.59158 | | +0.99399431 | +0.07047048 | |
| $e$ | 0.1215236 | $i$ | 19.66377 | | +0.09098191 | −0.10706430 | |
| $P$ | 2.58 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.0 | 0.1− | 2002 11 06 | 644 | 0.0 | 0.4− | 2006 04 21 | 691 | 0.1+ | 0.2+ | |
| 1999 10 14 | 645 | 0.0 | 0.1+ | 2002 11 16 | 644 | 0.2+ | 0.3+ | 2006 04 21 | 691 | 0.1+ | 0.1+ | |
| 2002 10 30 | 704 | 0.1− | 0.9+ | 2002 11 16 | 644 | 0.0 | 0.2− | 2006 04 21 | 691 | 0.2+ | 0.3+ | |
| 2002 10 30 | 704 | 0.1− | 0.9+ | 2002 11 16 | 644 | 0.2− | 0.2+ | 2006 05 06 | G96 | 0.7− | 0.3− | |
| 2002 10 30 | 704 | 0.7+ | 0.0 | 2002 12 06 | 644 | 0.4+ | 0.2− | 2006 05 06 | G96 | 1.0− | 0.2− | |
| 2002 11 06 | 644 | 0.1− | 0.6− | 2002 12 06 | 644 | 0.1− | 0.2− | 2006 05 06 | G96 | 0.3− | 0.0 | |
| 2002 11 06 | 644 | 0.4− | 0.3− | 2002 12 06 | 644 | 0.1− | 0.2+ | 2006 05 06 | G96 | 0.0 | 0.5− | |

**2002 UY$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.13538 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17499467 | $\omega$ | 357.78644 | | −0.34832269 | −0.89876943 | |
| $a$ | 3.1655766 | $\Omega$ | 112.50581 | | +0.86439154 | −0.41785204 | |
| $e$ | 0.2357339 | $i$ | 16.74965 | | +0.36262732 | +0.13271470 | |
| $P$ | 5.63 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.4+ | 1.2− | 2002 11 30 | 704 | 0.5− | 0.8− | 2004 03 19 | 644 | 0.3− | 0.3+ | |
| 2002 10 31 | 704 | 1.0+ | 0.7− | 2002 11 30 | 704 | 0.6− | 0.5− | 2004 03 19 | 644 | 0.1− | 0.6+ | |
| 2002 10 31 | 704 | 0.5+ | 0.1− | 2002 12 13 | 644 | 0.6− | 0.2+ | 2004 03 29 | 704 | 0.9+ | 1.7− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.7+ | 0.0 | 2002 12 13 | 644 | 0.3− | 0.2+ | 2004 03 29 | 704 | 0.9− | 0.2− | | |
| 2002 11 11 | 699 | 1.2+ | 1.9+ | 2002 12 13 | 644 | 0.4− | 0.3+ | 2004 03 29 | 704 | 0.4+ | 0.3− | | |
| 2002 11 11 | 699 | 1.5− | 1.2+ | 2003 01 05 | 704 | 0.9+ | 0.2− | 2004 03 29 | 704 | 0.1+ | 0.9+ | | |
| 2002 11 11 | 699 | 1.7− | 0.5− | 2003 01 05 | 704 | 0.5+ | 0.5− | 2004 03 29 | 704 | 0.0 | 0.3+ | | |
| 2002 11 11 | 699 | 0.1+ | 0.7+ | 2003 01 05 | 704 | 0.6+ | 0.3+ | | | | | | |
| 2002 11 30 | 704 | 0.0 | 0.4− | 2004 03 19 | 644 | 0.0 | 0.3+ | | | | | | |

### 2002 $UZ_{70}$ = 2006 $SQ_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.03898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23454579 | $\omega$ | 154.05974 | | +0.98267648 | +0.17709323 | |
| $a$ | 2.6040598 | $\Omega$ | 196.02548 | | −0.18478108 | +0.95888590 | |
| $e$ | 0.1989166 | $i$ | 11.41443 | | +0.01424366 | +0.22175623 | |
| $P$ | 4.20 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.2− | 0.8− | 2006 09 16 | 644 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.6+ | 1.1+ |
| 2002 10 16 | 644 | 0.6− | 0.6− | 2006 09 18 | 704 | 0.9− | 0.9− | 2006 09 27 | 704 | 1.0+ | 0.7− |
| 2002 10 16 | 644 | 0.3+ | 0.1− | 2006 09 18 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 1.0+ | 0.1+ |
| 2002 10 30 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2002 10 30 | 644 | 0.8− | 0.4+ | 2006 09 18 | 704 | 1.3− | 1.9+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2002 10 30 | 644 | 0.0 | 1.7+ | 2006 09 20 | 699 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2002 11 03 | 644 | 0.5+ | 0.1− | 2006 09 20 | 699 | 0.8− | 0.5− | 2006 10 20 | 691 | 0.0 | 0.3− |
| 2002 11 03 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.7− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.2− |
| 2002 11 03 | 644 | 0.2+ | 0.1− | 2006 09 20 | 699 | 1.0+ | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.5− | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.4− | 0.3+ | 2006 11 13 | G96 | 1.1− | 0.4− |
| 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.4− | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2006 09 16 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.7− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2006 09 16 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.4− | | | | |

### 2002 $VK_1$ = 2006 $SE_{146}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.42282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22948961 | $\omega$ | 16.66617 | | −0.89767321 | +0.44059854 | |
| $a$ | 2.6421696 | $\Omega$ | 189.48625 | | −0.40929075 | −0.83992498 | |
| $e$ | 0.0364632 | $i$ | 2.59606 | | −0.16329078 | −0.31685795 | |
| $P$ | 4.29 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 02 | 950 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2002 11 02 | 950 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 11 02 | 950 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2002 11 03 | 950 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2002 11 03 | 950 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 10 16 | G96 | 0.5− | 0.4− |
| 2002 11 03 | 950 | 0.1− | 0.0 | 2006 09 25 | G96 | 1.0− | 0.3− | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2002 11 13 | 291 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 16 | G96 | 0.5+ | 0.2+ |
| 2002 11 13 | 291 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2002 11 13 | 291 | 0.4− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | | | | |

### 2002 $VT_1$ = 2006 $UB_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.94531 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24183627 | $\omega$ | 183.42562 | | +0.79203116 | +0.61028573 | |
| $a$ | 2.5514580 | $\Omega$ | 138.95113 | | −0.55954524 | +0.73582112 | |
| $e$ | 0.1622141 | $i$ | 1.34605 | | −0.24412243 | +0.29345973 | |
| $P$ | 4.08 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 02 | 950 | 0.7− | 0.2+ | 2002 11 11 | 291 | 0.4+ | 0.4− | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2002 11 02 | 950 | 0.6− | 0.3+ | 2002 11 11 | 291 | 0.6+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 11 02 | 950 | 0.7− | 0.3+ | 2002 11 13 | 291 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2002 11 03 | 950 | 0.6+ | 0.4+ | 2002 11 13 | 291 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2002 11 03 | 950 | 0.5+ | 0.3+ | 2002 11 13 | 291 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2+ |
| 2002 11 03 | 950 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2002 11 04 | 950 | (0.7+ | 2.4+) | 2006 10 17 | G96 | 0.9+ | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2002 11 04 | 950 | (0.9+ | 2.2+) | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.1+ |
| 2002 11 04 | 950 | (0.8+ | 2.3+) | 2006 10 17 | G96 | 0.6+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.3+ |
| 2002 11 06 | 950 | 1.3− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2002 11 06 | 950 | 0.9− | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.5− |
| 2002 11 06 | 950 | 0.8+ | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.3− |
| 2002 11 11 | 291 | 0.4− | 0.5− | 2006 10 22 | 691 | 0.5− | 0.0 | | | | |

### 2002 $VR_2$ = 2006 $WP_{146}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.05574 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25513614 | $\omega$ | 137.00770 | | +0.51145898 | −0.85884768 | |
| $a$ | 2.4620001 | $\Omega$ | 282.21285 | | +0.78039178 | +0.47793529 | |
| $e$ | 0.1640005 | $i$ | 1.64831 | | +0.35971987 | +0.18427837 | |
| $P$ | 3.86 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | (1.9− | 0.2−) | 2002 11 12 | 704 | 1.3− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2002 11 01 | 644 | 0.5+ | 0.6+ | 2002 11 12 | 704 | 0.7− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2002 11 01 | 644 | 0.7+ | 0.6+ | 2002 11 12 | 704 | 0.9− | 0.5+ | 2006 11 20 | 691 | 0.9+ | 0.5− |
| 2002 11 04 | 699 | 1.2− | 0.3− | 2002 11 14 | 704 | 0.1− | 1.5− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 11 04 | 699 | 1.5+ | 0.3+ | 2002 11 14 | 704 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 11 04 | 699 | 0.3− | 0.9− | 2002 11 14 | 704 | (0.4− | 1.6+) | 2006 11 24 | 691 | 0.8− | 0.6− |
| 2002 11 04 | 699 | 0.1+ | 0.1+ | 2004 04 13 | 291 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.3+ |
| 2002 11 05 | 704 | 1.2+ | 0.1− | 2004 04 13 | 291 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2002 11 05 | 704 | 0.6− | 0.7+ | 2004 04 13 | 291 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.9− | 1.5+ |
| 2002 11 05 | 704 | 1.0+ | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.2− | 2006 12 01 | 704 | (2.0− | 0.6+) |
| 2002 11 05 | 704 | 0.4− | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 12 01 | 704 | 0.6+ | 0.4+ |
| 2002 11 05 | 704 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.1− | 1.4− |
| 2002 11 12 | 704 | 0.1− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.2− | | | | |

### 2002 $VT_2$ = 2006 $SK_{85}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.96373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23688923 | $\omega$ | 276.40633 | | +0.80065859 | −0.59897742 | |
| $a$ | 2.5868575 | $\Omega$ | 120.39116 | | +0.55551589 | +0.73401215 | |
| $e$ | 0.1715674 | $i$ | 0.87085 | | +0.22438344 | +0.32008158 | |
| $P$ | 4.16 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 02 | 608 | 0.3− | 0.8+ | 2002 11 11 | 291 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2002 11 02 | 608 | 0.5− | 0.4+ | 2002 11 13 | 291 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2002 11 02 | 608 | 0.2− | 0.7+ | 2002 11 13 | 291 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2002 11 04 | 699 | 0.4+ | 0.0 | 2002 11 13 | 291 | 0.6+ | 0.4− | 2006 10 02 | G96 | 0.5+ | 0.1+ |
| 2002 11 04 | 699 | (0.6− | 1.8−) | 2002 11 22 | 644 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2002 11 04 | 699 | (1.9− | 0.7−) | 2002 11 22 | 644 | 0.1+ | 0.6− | 2006 10 17 | 703 | 1.0+ | 1.3− |
| 2002 11 04 | 699 | 0.8− | 0.2+ | 2002 11 22 | 644 | 0.0 | 0.8− | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 2002 11 07 | 704 | 0.8+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2002 11 07 | 704 | 0.5− | 0.4− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2002 11 07 | 704 | 0.9+ | 0.7− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 11 08 | 704 | 0.3− | 0.4− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 11 08 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 11 08 | 704 | 0.0 | 1.4+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 11 11 | 291 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− | | | | |
| 2002 11 11 | 291 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | | | | |

### 2002 $VD_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.71015 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23667056 | $\omega$ | 140.22251 | | +0.91350053 | −0.35800489 | |
| $a$ | 2.5884507 | $\Omega$ | 241.77061 | | +0.29453017 | +0.90964954 | |
| $e$ | 0.1864319 | $i$ | 12.67079 | | +0.28065774 | +0.21064240 | |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 1.1+ | 1.3+ | 2002 11 07 | 704 | 1.1− | 0.7− | 2002 12 10 | 704 | 0.7− | 0.1− |
| 2002 11 01 | 644 | 0.8+ | 0.7+ | 2002 11 07 | 704 | 0.1+ | 0.8− | 2003 01 03 | 291 | 0.1− | 0.4+ |
| 2002 11 01 | 644 | 1.2+ | 1.2+ | 2002 11 08 | 704 | 0.0 | 0.4− | 2003 01 03 | 291 | 1.1+ | 0.5+ |
| 2002 11 04 | 644 | 0.0 | 0.3− | 2002 11 08 | 704 | 0.4− | 0.3− | 2003 01 03 | 291 | 1.1+ | 0.5+ |
| 2002 11 04 | 644 | 0.3+ | 0.1− | 2002 11 08 | 704 | 1.0− | 0.4+ | 2006 09 17 | 703 | 0.5+ | 0.6+ |
| 2002 11 04 | 644 | 0.3+ | 0.2+ | 2002 11 08 | 704 | (2.0− | 0.5+) | 2006 09 17 | 703 | 0.7− | 0.2− |
| 2002 11 05 | 704 | 0.2+ | 0.3+ | 2002 11 11 | 699 | 0.8+ | 0.0 | 2006 09 17 | 703 | 0.5− | 0.9− |
| 2002 11 05 | 704 | 0.3− | 0.1+ | 2002 11 11 | 699 | 0.5+ | 0.3+ | 2006 09 17 | 703 | 1.3+ | 1.3− |
| 2002 11 05 | 704 | 0.0 | 0.3+ | 2002 11 11 | 699 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 0.4+ | 0.3− |
| 2002 11 05 | 704 | 0.3+ | 0.7− | 2002 11 11 | 699 | 0.6+ | 0.0 | 2006 09 28 | 703 | 0.5+ | 0.5− |
| 2002 11 05 | 699 | 0.9− | 0.6− | 2002 11 12 | 704 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.9+ |
| 2002 11 05 | 704 | 0.1+ | 0.4− | 2002 11 12 | 704 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.6+ | 0.0 |
| 2002 11 05 | 699 | 0.5− | 0.1+ | 2002 11 12 | 704 | 0.4+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2002 11 05 | 699 | 0.5+ | 0.7+ | 2002 11 12 | 704 | 0.2− | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 699 | 0.8− | 0.6− | 2002 11 12 | 704 | 0.2− | 1.1+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.6+ | 0.4+ | 2002 11 14 | 704 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.1− | 0.8− | 2002 11 14 | 704 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | 0.9− | 0.3+ | 2002 11 14 | 704 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.0 | 1.3− | 2002 11 14 | 704 | 0.1+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.3− | 0.7− | 2002 11 14 | 704 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.8− | 2002 11 28 | 699 | 0.8+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.7− | 0.1− | 2002 11 28 | 699 | 0.5− | 0.2− | 2006 10 19 | 703 | 0.4− | 0.6− |
| 2002 11 06 | 704 | 0.2− | 0.8− | 2002 11 28 | 699 | 0.4− | 0.9− | 2006 10 19 | 703 | 0.4+ | 0.6+ |
| 2002 11 06 | 704 | 0.5− | 0.2− | 2002 11 28 | 699 | 0.6− | 0.5− | 2006 10 19 | 703 | 0.7− | 0.2− |
| 2002 11 06 | 704 | 0.2+ | 0.7− | 2002 12 01 | 608 | 0.4− | 0.8− | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2002 11 07 | 246 | 0.2− | 0.1+ | 2002 12 01 | 608 | 0.4− | 0.6− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 11 07 | 246 | 0.2+ | 0.2− | 2002 12 01 | 608 | 0.5− | 0.9− | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2002 11 07 | 246 | 0.4+ | 0.4− | 2002 12 02 | 704 | (0.0 | 1.5+) | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 11 07 | 246 | 0.0 | 0.2− | 2002 12 02 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 246 | 0.1+ | 0.2− | 2002 12 02 | 704 | 1.3+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 858 | 0.3− | 0.2+ | 2002 12 05 | 695 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 11 07 | 734 | 0.1+ | 0.5− | 2002 12 05 | 695 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2002 11 07 | 858 | 0.9+ | 0.8− | 2002 12 05 | 704 | 0.4+ | 0.6− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 11 07 | 734 | 0.3+ | 0.5− | 2002 12 05 | 704 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2002 11 07 | 858 | 0.7+ | 0.6− | 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 734 | 0.3− | 0.9− | 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.3− | 0.5− | 2002 12 10 | 644 | 0.2− | 0.7+ | 2006 11 25 | 703 | 0.4− | 0.5+ |
| 2002 11 07 | 704 | 0.7− | 0.2+ | 2002 12 10 | 644 | 0.1− | 1.1+ | 2006 11 25 | 703 | 1.5− | 0.3+ |
| 2002 11 07 | 704 | 0.6− | 0.2− | 2002 12 10 | 644 | 0.1+ | 0.9+ | 2006 11 25 | 703 | 0.4− | 0.2+ |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2002 12 10 | 704 | 1.1− | 0.6+ | 2006 11 25 | 703 | 0.1+ | 0.7+ |
| 2002 11 07 | 704 | 0.8− | 0.7− | 2002 12 10 | 704 | 0.8− | 0.1+ | | | | |
| 2002 11 07 | 704 | 0.4− | 0.6− | 2002 12 10 | 704 | 1.0− | 0.4+ | | | | |

## 2002 $VL_3$ = 2006 $SC_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.26706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24046806 | $\omega$ | 42.09674 | | +0.95656319 | −0.29024299 | |
| $a$ | 2.5611270 | $\Omega$ | 334.73691 | | +0.24749253 | +0.85801775 | |
| $e$ | 0.2625716 | $i$ | 3.66904 | | +0.15405945 | +0.42375058 | |
| $P$ | 4.10 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.3− | 0.4− | 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.5+ | 0.3− |
| 2002 11 01 | 644 | 0.1+ | 0.5− | 2006 08 28 | 703 | 0.1− | 1.4+ | 2006 10 03 | G96 | 0.6+ | 0.4− |
| 2002 11 01 | 644 | 0.2+ | 0.6− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2002 11 04 | 644 | 0.1+ | 1.1+ | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 04 | 644 | 0.1− | 1.4+ | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 04 | 644 | 0.1+ | 1.2+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 704 | (0.5− | 1.8−) | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | (1.0− | 3.5−) | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | (1.4− | 4.3−) | 2006 09 25 | 704 | 0.9− | 0.6− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | (0.9− | 2.8−) | 2006 09 25 | 704 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2002 11 24 | 644 | 0.5− | 0.4− | 2006 09 25 | 704 | 0.3+ | 1.2+ | 2006 10 17 | 703 | 0.7− | 0.5− |
| 2002 11 24 | 644 | 0.0 | 0.5− | 2006 09 29 | 704 | 1.0− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2002 11 24 | 644 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.3− |
| 2002 11 28 | 699 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2002 11 28 | 699 | 0.2− | 0.1− | 2006 09 30 | 703 | (1.7+ | 0.1+) | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 11 28 | 699 | 0.7+ | 0.3− | 2006 09 30 | 703 | 1.0+ | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2002 11 28 | 699 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 08 28 | 703 | 0.6− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2006 08 28 | 703 | 0.5+ | 1.3− | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |

## 2002 $VU_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.75731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23797511 | $\omega$ | 214.02982 | | +0.11375250 | −0.97862861 | |
| $a$ | 2.5789823 | $\Omega$ | 230.06364 | | +0.95401408 | +0.15572786 | |
| $e$ | 0.0516566 | $i$ | 12.90990 | | +0.27734006 | −0.13429403 | |
| $P$ | 4.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.2+ | 0.1+ | 2002 11 14 | 704 | 0.2+ | 0.2− | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2002 11 01 | 644 | 0.7− | 0.2− | 2002 12 05 | 704 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2002 11 01 | 644 | 0.1+ | 0.1+ | 2002 12 05 | 704 | 0.3− | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.3− |
| 2002 11 04 | 644 | 0.3+ | 0.3+ | 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.1− |
| 2002 11 04 | 644 | 0.1+ | 0.5+ | 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.4+ | 0.1+ |
| 2002 11 04 | 644 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 0.3+ | 0.6− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2002 11 05 | 704 | 0.6− | 0.1− | 2002 12 10 | 704 | 0.4+ | 1.3− | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2002 11 05 | 704 | 0.6+ | 0.5+ | 2002 12 10 | 704 | 1.1+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2002 11 05 | 704 | 0.2− | 1.0− | 2002 12 10 | 704 | 0.8− | 0.9+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2002 11 05 | 704 | 0.4+ | 1.0− | 2002 12 10 | 704 | 1.1− | 0.3− | 2006 11 19 | 704 | 1.4− | 0.7+ |
| 2002 11 05 | 704 | 0.6+ | 0.6− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2002 11 06 | 704 | (1.6− | 0.4−) | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2− | 1.4+ |
| 2002 11 06 | 704 | 0.8− | 1.0+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2002 11 06 | 704 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | (0.7− | 1.6+) |
| 2002 11 06 | 704 | 0.3− | 1.4+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2002 11 14 | 704 | 0.4+ | 0.6− | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | (1.1− | 1.8−) |
| 2002 11 14 | 704 | (0.2+ | 1.9+) | 2006 10 29 | 691 | 0.1+ | 0.3− | 2006 11 22 | 704 | 1.2− | 0.6− |
| 2002 11 14 | 704 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1− | | | | |

## 2002 $VX_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.47331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23481220 | $\omega$ | 89.29626 | | +0.86605403 | +0.45285940 | |
| $a$ | 2.6020898 | $\Omega$ | 243.75642 | | −0.49823535 | +0.81685231 | |
| $e$ | 0.1346850 | $i$ | 13.66036 | | +0.04137575 | +0.35731034 | |
| $P$ | 4.20 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.2+ | 0.5− | 2002 11 28 | 699 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.4− |
| 2002 11 01 | 644 | 0.0 | 0.7− | 2002 11 28 | 699 | 0.5− | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.5− |
| 2002 11 01 | 644 | 0.1+ | 0.4− | 2002 12 01 | 608 | 1.4− | 1.1− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2002 11 04 | 644 | 0.2+ | 0.6+ | 2002 12 01 | 608 | 1.1− | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 11 04 | 644 | 0.8+ | 1.0+ | 2002 12 01 | 608 | 0.6− | 0.6− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2002 11 04 | 644 | (1.6+ | 0.7+) | 2002 12 06 | 704 | 0.3+ | 1.0− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.5− | 0.2+ | 2002 12 06 | 704 | 0.7− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.5− | 0.9+ | 2002 12 06 | 704 | 0.5− | 0.8+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2002 11 05 | 704 | 1.0+ | 0.6+ | 2002 12 06 | 704 | 0.2+ | 0.3− | 2006 10 27 | 703 | 1.4+ | 0.0 |
| 2002 11 05 | 704 | 0.7+ | 0.5− | 2002 12 06 | 704 | 0.4+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.9+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.5− | 0.6+ |
| 2002 11 14 | 704 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.9+ | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.6− |
| 2002 11 14 | 704 | 0.6+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.0 |
| 2002 11 14 | 704 | 0.6+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.3− |
| 2002 11 14 | 704 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.3− | 1.4− |
| 2002 11 23 | 644 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 25 | 703 | (2.9− | 1.0+) |
| 2002 11 23 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 25 | 703 | (3.8− | 1.0+) |
| 2002 11 23 | 644 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.3− | 2006 11 25 | 703 | 0.2− | 0.0 |
| 2002 11 28 | 699 | 0.1+ | 0.9+ | 2006 10 19 | 703 | 0.3+ | 0.1− | 2006 11 25 | 703 | 0.1− | 0.9+ |
| 2002 11 28 | 699 | 0.9− | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.3− | | | | |

### 2002 $VD_4$ = 2006 $SW_{355}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.70772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23991987 | $\omega$ | 271.91862 | | +0.71493813 | +0.68843769 | |
| $a$ | 2.5650268 | $\Omega$ | 44.60312 | | −0.55220066 | +0.66310777 | |
| $e$ | 0.1332693 | $i$ | 10.01664 | | −0.42887981 | +0.29383946 | |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | (2.2+ | 1.1+) | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 10 11 | 704 | (0.4+ | 1.8+) | 2006 10 11 | 644 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | (1.4+ | 3.4+) | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 02 | 608 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 11 02 | 608 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 11 02 | 608 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2002 11 05 | 291 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.3+ |
| 2002 11 05 | 291 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 11 05 | 291 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 11 07 | 704 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 0.7+ | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2002 11 07 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 1.1+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2006 09 30 | 703 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2006 09 30 | 703 | 0.4− | 0.5− | 2006 10 21 | 703 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2006 09 30 | 703 | 0.8− | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2006 09 30 | 703 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 1.2+ | 0.7− |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.8− | 1.4− | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.5+ | 1.0+ |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.1− | | | | |
| 2006 10 02 | G96 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− | | | | |

### 2002 $VL_4$ = 2006 $SX_{82}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.71170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23706277 | $\omega$ | 316.66207 | | +0.98937551 | +0.14293186 | |
| $a$ | 2.5855949 | $\Omega$ | 35.14624 | | −0.11757278 | +0.89417980 | |
| $e$ | 0.1968524 | $i$ | 2.64661 | | −0.08551459 | +0.42427935 | |
| $P$ | 4.16 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.1+ | 0.6− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 11 04 | 644 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.7+ |
| 2002 11 04 | 644 | 0.1+ | 0.8+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2002 11 05 | 291 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.6+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 11 05 | 291 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 11 05 | 291 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 11 13 | 735 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2002 11 13 | 735 | 0.6+ | 1.0+ | 2006 10 15 | 703 | 1.2− | 1.2+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2002 11 13 | 735 | 0.1+ | 0.2+ | 2006 10 15 | 703 | (1.8− | 1.1+) | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 15 | 703 | (0.7+ | 2.6+) | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 15 | 703 | 0.6− | 1.1+ | | | | |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.4− | 0.3+ | | | | |

### 2002 $VT_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.65875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24073376 | $\omega$ | 87.73464 | | +0.98829826 | −0.13960989 | |
| $a$ | 2.5592421 | $\Omega$ | 280.28624 | | +0.10287868 | +0.90751204 | |
| $e$ | 0.2657633 | $i$ | 3.58044 | | +0.11261674 | +0.39614514 | |
| $P$ | 4.09 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.4+ | 0.2− | 2002 11 08 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 400 | (2.1− | 0.9+) |
| 2002 10 12 | 704 | 0.6− | 0.0 | 2002 11 08 | 704 | 0.1− | 0.0 | 2006 10 17 | 400 | 0.9− | 0.5− |
| 2002 10 12 | 704 | 0.6− | 1.3+ | 2002 11 08 | 704 | 0.6+ | 1.1− | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2002 11 01 | 644 | 0.9+ | 1.1+ | 2002 12 01 | 608 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2002 11 01 | 644 | (1.6+ | 0.9+) | 2002 12 01 | 608 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2002 11 01 | 644 | 0.7+ | 1.2+ | 2002 12 01 | 608 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2002 11 05 | 644 | 0.3− | 0.5− | 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | (0.4+ | 1.7+) | 2002 12 06 | 704 | 0.5+ | 0.6− | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2002 11 05 | 704 | 0.5+ | 0.4+ | 2002 12 06 | 704 | 0.4− | 0.5− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.0 | 0.2+ | 2002 12 06 | 704 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.4− | 0.3+ |
| 2002 11 05 | 704 | 0.3+ | 0.3+ | 2002 12 06 | 704 | 0.1+ | 0.7− | 2006 10 19 | 644 | 0.0 | 0.6+ |
| 2002 11 05 | 699 | 0.2− | 0.5− | 2006 10 16 | 400 | 0.6+ | 0.4− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 11 05 | 644 | 0.3− | 0.4− | 2006 10 16 | 400 | 0.2+ | 0.6− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2002 11 05 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 400 | 0.8+ | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2002 11 05 | 699 | 0.9− | 1.2+ | 2006 10 17 | 703 | 0.3+ | 0.6+ | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2002 11 05 | 699 | 0.4+ | 0.2− | 2006 10 17 | 703 | 1.1− | 0.2− | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2002 11 05 | 699 | 0.4− | 0.9− | 2006 10 17 | 703 | 0.3+ | 0.2+ | | | | |
| 2002 11 05 | 644 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.4− | | | | |

### 2002 $VU_6$ = 2006 $UJ_{124}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.73716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23685561 | $\omega$ | 120.37862 | | +0.98180877 | −0.02723352 | |
| $a$ | 2.5871023 | $\Omega$ | 241.76962 | | −0.03018288 | +0.95469069 | |
| $e$ | 0.1823406 | $i$ | 12.31452 | | +0.18745808 | +0.29635119 | |
| $P$ | 4.16 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.8+ | 1.1+ | 2002 11 14 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.4− |
| 2002 11 01 | 644 | 0.7+ | 0.9+ | 2002 11 14 | 704 | 0.5+ | 1.1− | 2006 10 24 | 644 | 0.2+ | 0.3+ |
| 2002 11 01 | 644 | 0.5+ | 1.2+ | 2002 11 14 | 704 | 0.6+ | 0.4− | 2006 10 24 | 644 | 0.5+ | 0.4+ |
| 2002 11 05 | 704 | 0.0 | 0.6− | 2002 11 14 | 704 | (0.2+ | 1.6−) | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2002 11 05 | 704 | 0.8+ | 1.0− | 2002 11 28 | 699 | 0.7− | 0.6− | 2006 10 27 | 703 | 0.1− | 0.7− |
| 2002 11 05 | 644 | 0.0 | 0.1− | 2002 11 28 | 699 | 1.3− | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2002 11 05 | 704 | 0.2− | 0.3− | 2002 11 28 | 699 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.4− | 0.3− |
| 2002 11 05 | 699 | 0.2− | 0.4+ | 2002 11 28 | 699 | (1.6+ | 0.6+) | 2006 10 27 | 703 | 0.3− | 0.9− |
| 2002 11 05 | 704 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.8+ | 0.4+ | 2006 10 31 | 703 | (0.1− | 1.7+) |
| 2002 11 05 | 699 | 1.2− | 1.0+ | 2006 10 19 | 703 | 0.1− | 0.4+ | 2006 10 31 | 703 | 0.9− | 0.1− |
| 2002 11 05 | 699 | 1.4− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.3− | 2006 10 31 | 703 | 0.2− | 0.2+ |
| 2002 11 05 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.6− | 2006 10 31 | 703 | 0.1+ | 1.0+ |
| 2002 11 05 | 699 | (1.8− | 0.3−) | 2006 10 23 | 644 | 0.5+ | 0.1+ | | | | |
| 2002 11 05 | 644 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.3+ | | | | |

### 2002 $VC_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.16412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27917832 | $\omega$ | 36.46103 | | +0.92927920 | −0.36926182 | |
| $a$ | 2.3185418 | $\Omega$ | 345.20073 | | +0.32974364 | +0.84061228 | |
| $e$ | 0.2171339 | $i$ | 2.07917 | | +0.16646111 | +0.39625333 | |
| $P$ | 3.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.2+ | 0.1+ | 2002 11 13 | 644 | 0.1− | 0.6− | 2002 12 05 | 704 | 0.6− | 0.0 |
| 2000 02 27 | 691 | 0.1+ | 0.0 | 2002 11 13 | 644 | 0.0 | 0.6− | 2002 12 05 | 704 | 0.1− | 0.5− |
| 2000 02 27 | 691 | 0.0 | 0.3+ | 2002 11 14 | 704 | 0.2+ | 0.4+ | 2002 12 05 | 704 | 0.4− | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.1+ | 2002 11 14 | 704 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.4− | 0.2− | 2002 11 14 | 704 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.8− |
| 2002 09 05 | 704 | 0.8− | 1.1− | 2002 11 14 | 704 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.0 | 0.0 |
| 2002 11 01 | 644 | 1.2+ | 0.7+ | 2002 11 14 | 704 | 0.0 | 0.4+ | 2002 12 06 | 704 | 0.4− | 0.2+ |
| 2002 11 01 | 644 | 1.1+ | 1.2+ | 2002 11 24 | 644 | 0.0 | 0.6− | 2002 12 06 | 704 | 0.5− | 0.3+ |
| 2002 11 01 | 644 | 0.8+ | 1.1+ | 2002 11 24 | 644 | 0.2+ | 0.4− | 2002 12 06 | 704 | 0.3+ | 0.6+ |
| 2002 11 05 | 704 | 0.3+ | 0.6+ | 2002 11 24 | 644 | 0.0 | 0.4− | 2002 12 11 | 704 | 1.5− | 0.8+ |
| 2002 11 05 | 704 | 0.3− | 0.5+ | 2002 11 27 | 699 | 0.2+ | 0.4− | 2002 12 11 | 704 | 0.2− | 0.1− |
| 2002 11 05 | 704 | 0.2− | 0.1+ | 2002 11 27 | 699 | 0.7− | 0.0 | 2002 12 11 | 704 | 0.0 | 0.3− |
| 2002 11 05 | 704 | 0.0 | 0.3+ | 2002 11 27 | 699 | 0.4+ | 0.3+ | 2002 12 11 | 704 | 0.5− | 0.4− |
| 2002 11 05 | 699 | (1.8+ | 0.2+) | 2002 11 27 | 699 | 0.1− | 0.5+ | 2002 12 11 | 704 | 0.4− | 0.3+ |
| 2002 11 05 | 704 | 0.2+ | 0.3+ | 2002 11 28 | 699 | 0.3− | 0.2− | 2002 12 27 | 644 | 0.1− | 0.3− |
| 2002 11 05 | 699 | 0.2+ | 0.2+ | 2002 11 28 | 699 | 0.0 | 0.1+ | 2002 12 27 | 644 | 0.0 | 0.1− |
| 2002 11 05 | 699 | 1.2+ | 0.1+ | 2002 11 28 | 699 | 0.2− | 0.6+ | 2002 12 27 | 644 | 0.0 | 0.2− |
| 2002 11 05 | 699 | 0.2+ | 0.6− | 2002 11 28 | 699 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.2+ | 0.4− | 2002 12 02 | 704 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.0 | |
| 2002 11 12 | 704 | 0.2− | 0.1− | 2002 12 02 | 704 | 0.3+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.0 | |
| 2002 11 12 | 704 | 0.1+ | 0.3− | 2002 12 02 | 704 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.2− | |
| 2002 11 12 | 704 | 0.7+ | 0.4+ | 2002 12 02 | 704 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.4− | 0.6− | |
| 2002 11 12 | 704 | 0.0 | 0.5+ | 2002 12 02 | 704 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.4− | 1.1− | |
| 2002 11 13 | 644 | 0.2+ | 0.4− | 2002 12 05 | 704 | 0.8− | 0.1+ | 2006 11 24 | G96 | 0.4− | 1.0− | |

## 2002 $VF_7$ = 2006 $RL_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.37392 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23733871 | $\omega$ | 16.80612 | | +0.90983405 | | −0.41487691 |
| $a$ | 2.5835904 | $\Omega$ | 7.72321 | | +0.37271035 | | +0.80755977 |
| $e$ | 0.2286668 | $i$ | 3.79590 | | +0.18245271 | | +0.41919491 |
| $P$ | 4.15 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.3+ | |
| 2002 11 04 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 1.3+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 0.2+ | |
| 2002 11 04 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.7− | 2006 10 17 | G96 | (0.1− | 2.0−) | |
| 2002 11 05 | 699 | 1.2− | 0.2− | 2006 09 18 | 699 | 0.1− | 1.0+ | 2006 10 17 | G96 | 0.8− | 0.6− | |
| 2002 11 05 | 699 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 17 | 703 | (2.2+ | 2.1−) | |
| 2002 11 05 | 699 | 0.2− | 1.1− | 2006 09 20 | J75 | 0.9− | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.5− | |
| 2002 11 05 | 699 | (0.1− | 1.7−) | 2006 09 20 | J75 | 0.9+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 1.4+ | |
| 2002 11 08 | 704 | 0.1+ | 0.2+ | 2006 09 20 | J75 | 1.0+ | 0.4− | 2006 10 17 | G96 | 0.9+ | 0.3− | |
| 2002 11 08 | 704 | 0.3+ | 0.5− | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.8− | 0.5− | |
| 2002 11 08 | 704 | 0.6+ | 0.6− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.9+ | |
| 2002 11 14 | 704 | 0.3− | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− | |
| 2002 11 14 | 704 | 0.1+ | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.3+ | |
| 2002 11 14 | 704 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.1− | |
| 2002 11 14 | 704 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 2002 11 14 | 704 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.0 | |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2− | |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.4− | |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.9+ | 0.9+ | 2006 10 31 | G96 | 0.4+ | 0.6− | |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 1.0− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1+ | |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.9− | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.3− | |

## 2002 $VG_8$ = 2006 $SG_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.59376 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23295250 | $\omega$ | 114.44457 | | +0.80133307 | | −0.59344665 |
| $a$ | 2.6159200 | $\Omega$ | 282.04322 | | +0.51714182 | | +0.75056828 |
| $e$ | 0.1411446 | $i$ | 4.42219 | | +0.30071524 | | +0.29063435 |
| $P$ | 4.23 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 24 | 691 | 0.2+ | 0.2− | 2002 11 14 | 704 | 0.5− | 0.3− | 2006 09 29 | 699 | 0.1+ | 0.7+ | |
| 1993 07 24 | 691 | 0.1− | 0.3+ | 2002 11 14 | 704 | 1.1+ | 0.6− | 2006 09 29 | 699 | 0.0 | 0.3+ | |
| 1993 07 24 | 691 | 0.1− | 0.1− | 2002 11 14 | 704 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.5+ | 0.1+ | |
| 1994 12 03 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 1.1+ | |
| 1994 12 03 | 691 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.8− | 0.1− | 2006 10 01 | 704 | 0.6− | 0.9+ | |
| 1994 12 03 | 691 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.7+ | 0.2+ | |
| 2002 11 01 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 1.3− | 0.7− | 2006 10 17 | 703 | 0.4+ | 0.1− | |
| 2002 11 01 | 644 | 0.2− | 0.2+ | 2006 09 06 | 644 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.2− | |
| 2002 11 01 | 644 | 0.9− | 0.2+ | 2006 09 06 | 644 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.4− | |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2006 09 06 | 644 | 0.4+ | 0.1− | 2006 10 17 | 703 | (2.4− | 0.7+) | |
| 2002 11 05 | 704 | 0.6+ | 0.2− | 2006 09 17 | 703 | 0.7− | 0.6+ | 2006 10 22 | 644 | 0.5+ | 0.0 | |
| 2002 11 05 | 704 | 0.6+ | 0.6− | 2006 09 17 | 703 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.3+ | |
| 2002 11 05 | 704 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.2+ | |
| 2002 11 05 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.3− | |
| 2002 11 12 | 704 | 1.3− | 0.6+ | 2006 09 18 | 704 | 0.6+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.3− | |
| 2002 11 12 | 704 | 1.3+ | 0.1+ | 2006 09 18 | 704 | 1.1+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.0 | |
| 2002 11 12 | 704 | 0.1+ | 0.2− | 2006 09 18 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1− | |
| 2002 11 12 | 704 | 0.5− | 0.0 | 2006 09 20 | 699 | 1.2− | 0.7+ | 2006 10 23 | 644 | 0.7+ | 0.4− | |
| 2002 11 12 | 704 | 1.1− | 0.1− | 2006 09 20 | 699 | 0.5− | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.2− | |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.2− | |
| 2002 11 13 | 644 | 0.5− | 0.2+ | 2006 09 20 | 699 | (0.9+ | 1.8+) | 2006 10 24 | 644 | 0.3+ | 0.2+ | |
| 2002 11 13 | 644 | 0.0 | 0.9+ | 2006 09 29 | 699 | 1.0− | 1.0− | 2006 10 24 | 644 | 0.0 | 0.4− | |
| 2002 11 14 | 704 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 0.6− | 0.4− | | | | | |

## 2002 $VU_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.15549 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24164275 | $\omega$ | 116.53181 | | +0.84781015 | | −0.52628616 |
| $a$ | 2.5528200 | $\Omega$ | 275.28725 | | +0.46029494 | | +0.79130190 |
| $e$ | 0.1944606 | $i$ | 3.74981 | | +0.26333728 | | +0.31123010 |
| $P$ | 4.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 699 | 0.2− | 0.2− | 2002 11 06 | 704 | 0.9+ | 0.8+ | 2002 12 06 | 704 | 0.5− | 0.0 | |
| 2002 10 04 | 699 | 0.6+ | 0.3− | 2002 11 06 | 704 | 0.2− | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.2− | |
| 2002 10 04 | 699 | 0.6− | 1.2+ | 2002 11 06 | 704 | 0.8− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 | |
| 2002 10 04 | 699 | (0.4+ | 1.8+) | 2002 11 08 | 704 | 1.3− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1+ | |
| 2002 11 01 | 644 | 1.3+ | 0.9− | 2002 11 08 | 704 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.1+ | |
| 2002 11 01 | 644 | 0.5+ | 0.3+ | 2002 11 08 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.0 | |
| 2002 11 01 | 644 | (1.6+ | 0.5+) | 2002 11 08 | 704 | 1.0+ | 0.8+ | 2006 09 30 | 703 | 0.5− | 1.0+ | |
| 2002 11 05 | 704 | 0.4+ | 0.8+ | 2002 11 12 | 704 | 0.1− | 1.1− | 2006 09 30 | 703 | 0.6− | 0.6− | |
| 2002 11 05 | 704 | 1.1− | 0.0 | 2002 11 12 | 704 | (0.6− | 2.6−) | 2006 10 19 | 644 | 0.2+ | 0.2+ | |
| 2002 11 05 | 704 | 0.3+ | 0.6− | 2002 11 12 | 704 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.2− | |
| 2002 11 05 | 704 | 0.2− | 0.1− | 2002 11 12 | 704 | (1.7− | 1.6−) | 2006 10 19 | 644 | 0.4+ | 0.3− | |
| 2002 11 05 | 704 | 0.5+ | 0.4− | 2002 12 06 | 704 | 0.8+ | 0.0 | | | | | |
| 2002 11 06 | 704 | (0.7− | 2.0+) | 2002 12 06 | 704 | 0.5− | 0.2− | | | | | |

## 2002 $VG_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.22293 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24563177 | $\omega$ | 56.55763 | | +0.19189962 | | −0.97901776 |
| $a$ | 2.5251064 | $\Omega$ | 22.67779 | | +0.83106979 | | +0.12495453 |
| $e$ | 0.2275363 | $i$ | 10.24118 | | +0.52201297 | | +0.16096764 |
| $P$ | 4.01 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 0.4− | 0.4+ | 2002 11 12 | 704 | 0.3+ | 0.3− | 2004 04 21 | 291 | 0.7+ | 1.2+ | |
| 1998 11 14 | 704 | 1.4− | 1.9− | 2002 11 12 | 704 | 0.9+ | 0.2− | 2004 04 21 | 291 | 0.3+ | 0.0 | |
| 1998 11 14 | 704 | 0.1+ | 0.4+ | 2002 11 12 | 704 | 0.6+ | 0.3− | 2006 09 28 | G96 | 0.4− | 0.2− | |
| 1998 11 14 | 704 | 0.5− | 0.1+ | 2002 11 12 | 704 | 0.9+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.2− | |
| 1998 11 14 | 704 | (4.5− | 0.5−) | 2002 11 12 | 704 | 0.3− | 0.7− | 2006 09 28 | G96 | 0.2− | 0.0 | |
| 2002 10 04 | 704 | 0.6+ | 0.2− | 2002 11 13 | 644 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.2− | |
| 2002 10 04 | 704 | 0.7− | 0.7+ | 2002 11 13 | 644 | 0.4+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.1+ | |
| 2002 10 04 | 704 | 0.2− | 0.4− | 2002 11 13 | 644 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.3+ | |
| 2002 10 04 | 704 | 0.9− | 0.1+ | 2002 11 14 | 704 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.0 | |
| 2002 10 16 | 644 | 0.2− | 0.0 | 2002 11 14 | 704 | 0.5+ | 0.3− | 2006 10 17 | 691 | 0.3− | 0.3+ | |
| 2002 10 16 | 644 | 0.1+ | 0.2+ | 2002 11 14 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.6− | 0.5+ | |
| 2002 10 16 | 644 | 0.2+ | 0.1+ | 2002 11 14 | 704 | 0.6+ | 0.7+ | 2006 10 17 | 691 | 0.5− | 0.6+ | |
| 2002 11 01 | 644 | 0.3+ | 0.7+ | 2002 11 14 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.6− | |
| 2002 11 01 | 644 | 0.9+ | 0.5+ | 2002 11 24 | 644 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.0 | |
| 2002 11 01 | 644 | 0.3+ | 0.4+ | 2002 11 24 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.5+ | |
| 2002 11 05 | 704 | 0.4+ | 0.5− | 2002 11 24 | 644 | 0.0 | 0.3+ | 2006 11 14 | 703 | 1.0+ | 1.2− | |
| 2002 11 05 | 704 | 0.5− | 0.1− | 2002 12 05 | 704 | 0.3+ | 0.4− | 2006 11 14 | 703 | 0.3+ | 0.4− | |
| 2002 11 05 | 704 | 0.1+ | 0.8− | 2002 12 05 | 704 | 0.2− | 1.2− | 2006 11 14 | 703 | 0.7− | 0.2− | |
| 2002 11 05 | 704 | 0.2+ | 0.7− | 2002 12 05 | 704 | 0.2+ | 0.5− | 2006 11 14 | 703 | 0.6+ | 0.1− | |
| 2002 11 05 | 704 | 0.8+ | 0.3− | 2002 12 05 | 704 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− | |
| 2002 11 06 | 699 | 0.1− | 0.3+ | 2002 12 11 | 644 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.2− | |
| 2002 11 06 | 699 | 0.1+ | 0.2− | 2002 12 11 | 644 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.3− | |
| 2002 11 06 | 699 | 0.5− | 0.2− | 2002 12 11 | 644 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.5− | 0.1+ | |
| 2002 11 06 | 699 | 0.2+ | 0.5− | 2002 12 31 | 704 | 0.7− | 0.5+ | 2006 11 23 | 703 | 0.1− | 0.7− | |
| 2002 11 08 | 704 | 1.2− | 0.5+ | 2002 12 31 | 704 | 0.0 | 0.5+ | 2006 11 23 | 703 | 0.1+ | 0.0 | |
| 2002 11 08 | 704 | 0.2− | 0.8+ | 2002 12 31 | 704 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.5+ | 0.3+ | |
| 2002 11 08 | 704 | 0.3− | 1.1+ | 2002 12 31 | 704 | 0.6+ | 0.2+ | | | | | |
| 2002 11 08 | 704 | 0.6− | 1.0+ | 2004 04 21 | 291 | 0.2+ | 0.7+ | | | | | |

**2002 VO$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.89414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24273990 | $\omega$ | 327.07458 | | +0.79403085 | +0.60781242 | |
| $a$ | 2.5451220 | $\Omega$ | 355.46355 | | −0.53058389 | +0.68585471 | |
| $e$ | 0.1964612 | $i$ | 6.45514 | | −0.29664076 | +0.40020918 | |
| $P$ | 4.06 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.1− | 0.8+ | 2002 12 11 | 644 | 0.3− | 0.4− | 2006 10 19 | 644 | 0.6− | 0.2− |
| 2002 10 04 | 704 | 0.2+ | 0.6+ | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.3− | 2002 12 11 | 644 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.2− | 1.0− |
| 2002 10 12 | 704 | 0.3+ | 0.4+ | 2005 05 04 | 644 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2002 10 12 | 704 | 0.7+ | 0.3+ | 2005 05 04 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 10 12 | 704 | 0.3+ | 0.0 | 2005 05 04 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.7− | 2006 09 20 | 699 | 1.2− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 01 | 644 | 0.1+ | 0.5− | 2006 09 20 | 699 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 11 01 | 644 | 0.2+ | 0.7− | 2006 09 20 | 699 | 0.4− | 0.4+ | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2002 11 01 | 644 | 0.4+ | 0.6− | 2006 09 20 | 699 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.4− | 0.3+ |
| 2002 11 05 | 704 | 0.5− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.3+ | 1.2− |
| 2002 11 05 | 704 | 0.8− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.7+ | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.2− |
| 2002 11 05 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.5+ | 0.5− | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2002 12 02 | 704 | 0.8− | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.4− | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2002 12 02 | 704 | 0.7− | 1.1+ | 2006 10 19 | 703 | 0.5+ | 0.8− | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2002 12 02 | 704 | (0.1− | 2.3+) | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 25 | G96 | 0.7+ | 0.4− |
| 2002 12 02 | 704 | (0.1− | 3.1+) | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.5+ | 0.2− |

**2002 VF$_{10}$ = 2006 SF$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.28217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23002349 | $\omega$ | 186.06589 | | +0.12665261 | −0.98247561 | |
| $a$ | 2.6380798 | $\Omega$ | 256.71684 | | +0.91589793 | +0.16876449 | |
| $e$ | 0.1074794 | $i$ | 8.07736 | | +0.38090694 | −0.07912153 | |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.4+ | 0.5+ | 2002 11 24 | 644 | 0.3− | 0.5− | 2006 09 27 | 703 | 0.4− | 0.8− |
| 2002 11 01 | 644 | 0.9+ | 0.6+ | 2002 11 24 | 644 | 0.4− | 0.1− | 2006 09 27 | 703 | 0.0 | 0.6− |
| 2002 11 01 | 644 | 1.0+ | 0.9+ | 2006 09 16 | 703 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 11 05 | 704 | 0.5− | 0.7− | 2006 09 16 | 703 | 0.6+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 0.6− | 0.6+ | 2006 09 16 | 703 | 1.3− | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.1− | 0.9− | 2006 09 16 | 703 | 1.0− | 1.0+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 11 05 | 704 | 0.3+ | 0.7− | 2006 09 22 | 699 | 0.8+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.3+ |
| 2002 11 14 | 704 | 0.1+ | 1.0+ | 2006 09 22 | 699 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 0.3− | 2006 09 22 | 699 | 0.1+ | 0.4− | 2006 10 24 | 644 | 0.3+ | 0.1− |
| 2002 11 14 | 704 | 0.3− | 0.3+ | 2006 09 22 | 699 | 0.5+ | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.6− | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2002 11 24 | 644 | 0.6− | 0.2− | 2006 09 27 | 703 | 0.3− | 1.0+ | | | | |

**2002 VM$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.80729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22825785 | $\omega$ | 57.88641 | | +0.51744946 | −0.85571265 | |
| $a$ | 2.6516665 | $\Omega$ | 0.95555 | | +0.75439981 | +0.45541898 | |
| $e$ | 0.2578500 | $i$ | 4.77311 | | +0.40388981 | +0.24566119 | |
| $P$ | 4.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.2+ | 0.1+ | 2002 11 12 | 704 | 0.4− | 0.4+ | 2002 12 06 | 704 | 0.1+ | 1.4+ |
| 2002 11 01 | 644 | 0.2+ | 0.2+ | 2002 11 12 | 704 | 0.1+ | 0.2− | 2002 12 27 | 644 | 0.0 | 0.1+ |
| 2002 11 01 | 644 | 0.2+ | 0.1+ | 2002 11 12 | 704 | 0.4− | 0.8− | 2002 12 27 | 644 | 0.4+ | 0.3+ |
| 2002 11 05 | 704 | 0.2− | 0.1− | 2002 11 12 | 704 | 0.6+ | 0.5+ | 2002 12 27 | 644 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 0.9− | 0.3− | 2002 11 14 | 704 | 0.3+ | 0.8− | 2003 01 05 | 704 | 0.8− | 0.9+ |
| 2002 11 05 | 704 | 0.4− | 0.2+ | 2002 11 14 | 704 | 0.6+ | 0.3− | 2003 01 05 | 704 | 0.6− | 0.2+ |
| 2002 11 05 | 704 | 0.5− | 0.1− | 2002 11 14 | 704 | 0.9+ | 0.3+ | 2003 01 05 | 704 | 0.0 | 1.2+ |
| 2002 11 05 | 704 | 0.9− | 0.3− | 2002 11 14 | 704 | 1.1+ | 0.7− | 2006 08 21 | 691 | 0.1− | 0.0 |
| 2002 11 06 | 699 | 0.2− | 0.1− | 2002 11 24 | 644 | 0.1− | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.0 |
| 2002 11 06 | 699 | 0.1+ | 0.0 | 2002 11 24 | 644 | 0.3− | 0.2− | 2006 08 21 | 691 | 0.5− | 0.2+ |
| 2002 11 06 | 699 | 0.4− | 0.3− | 2002 11 24 | 644 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2002 11 06 | 699 | 0.1+ | 0.2− | 2002 12 06 | 704 | 0.7+ | 0.4− | 2006 10 20 | G96 | 0.8+ | 0.2+ |
| 2002 11 08 | 704 | 1.0+ | 0.4− | 2002 12 06 | 704 | 0.8− | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2002 11 08 | 704 | 0.1+ | 0.7− | 2002 12 06 | 704 | 0.7− | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2002 11 08 | 704 | 0.2+ | 0.2+ | 2002 12 06 | 704 | 0.5+ | 0.5+ | | | | |

**2002 VE$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.80206 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24184377 | $\omega$ | 99.41157 | | +0.99558897 | +0.04094799 | |
| $a$ | 2.5514053 | $\Omega$ | 258.27581 | | −0.07016942 | +0.92222919 | |
| $e$ | 0.1974157 | $i$ | 4.94581 | | +0.06228047 | +0.38446923 | |
| $P$ | 4.08 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 12 06 | 704 | 0.7+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.9− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2002 12 11 | 644 | 0.1− | 0.5+ | 2006 10 29 | 704 | 0.3− | 0.9− |
| 2002 11 01 | 644 | 0.4− | 0.7+ | 2002 12 11 | 644 | 0.7+ | 0.2+ | 2006 10 29 | 704 | 0.3+ | 0.4+ |
| 2002 11 01 | 644 | 0.2− | 0.6+ | 2002 12 11 | 644 | 0.7+ | 0.3+ | 2006 10 29 | 704 | 0.2− | 0.6− |
| 2002 11 01 | 644 | 0.3− | 0.7+ | 2006 09 29 | 400 | 0.2+ | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.2− | 0.1− | 2006 09 29 | 400 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 11 05 | 704 | 0.8− | 0.2− | 2006 09 30 | 400 | 0.2− | 1.2− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 11 05 | 704 | 0.1+ | 0.2− | 2006 09 30 | 400 | 1.4+ | 0.7− | 2006 11 09 | 644 | 0.3+ | 0.4− |
| 2002 11 05 | 704 | 0.3+ | 0.2− | 2006 09 30 | 400 | 0.8+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.3− |
| 2002 11 05 | 704 | 1.2+ | 0.9− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.7− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.0 | 0.9− |
| 2002 11 12 | 704 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 14 | 703 | 1.0+ | 0.3− |
| 2002 11 12 | 704 | 0.9− | 0.1− | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 14 | 703 | 0.6− | 0.8− |
| 2002 11 14 | 704 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 14 | 703 | 1.1− | 0.7− |
| 2002 11 14 | 704 | 0.7− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.9− | 0.8+ |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2002 11 14 | 704 | 0.0 | 0.5− | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2002 11 24 | 644 | 0.1− | 0.2− | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.8+ |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 1.0+ |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2002 12 02 | 704 | 1.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | (1.7+ | 0.7+) |
| 2002 12 02 | 704 | 0.5+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2002 12 02 | 704 | 1.0+ | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.3− |
| 2002 12 02 | 704 | 0.7− | 0.8− | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.6+ |
| 2002 12 06 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.4− | 0.1+ | 2006 11 29 | 704 | 0.7+ | 0.7+ |
| 2002 12 06 | 704 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.6− | 0.9+ | 2006 11 29 | 704 | 1.2− | 0.9− |
| 2002 12 06 | 704 | 1.0− | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.1− | | | | |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.7− | 0.1− | | | | |

**2002 VF$_{11}$ = 2006 SU$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.53714 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23652458 | $\omega$ | 300.40665 | | +0.94752842 | +0.22801346 | |
| $a$ | 2.5895156 | $\Omega$ | 47.45045 | | −0.06330782 | +0.82084831 | |
| $e$ | 0.3010165 | $i$ | 17.70605 | | −0.31334010 | +0.52365821 | |
| $P$ | 4.17 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.0 | 0.1− | 2002 11 23 | 644 | 0.1− | 0.5− | 2006 09 27 | 703 | 0.3− | 0.7+ |
| 2002 11 01 | 644 | 0.1− | 0.0 | 2002 11 23 | 644 | 0.0 | 0.7− | 2006 09 27 | 703 | 0.3− | 0.6+ |
| 2002 11 01 | 644 | 0.1− | 0.2− | 2002 11 24 | 644 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.3− |
| 2002 11 05 | 704 | 0.5+ | 0.1+ | 2002 11 24 | 644 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | 1.4+ | 0.1− | 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2002 11 05 | 704 | 1.2+ | 0.0 | 2002 12 06 | 704 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 11 05 | 704 | 0.3+ | 0.6+ | 2002 12 06 | 704 | (1.7+ | 1.2−) | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 11 05 | 704 | 0.2− | 0.6− | 2002 12 06 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.8+ | 0.1+ | 2002 12 06 | 704 | (1.7+ | 0.1+) | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.3− | 0.0 | 2006 09 22 | 703 | 0.6− | 0.9− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.1− | 0.7− | 2006 09 22 | 703 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.6− | 0.1− | 2006 09 22 | 703 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.9+ | 0.1− | 2006 09 22 | 703 | (1.5+ | 0.3−) | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2002 11 12 | 704 | 0.7− | 0.2− | 2006 09 24 | 699 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.8− |
| 2002 11 12 | 704 | 0.8− | 0.8+ | 2006 09 24 | 699 | 1.2+ | 0.7− | 2006 10 21 | 703 | 1.4+ | 0.5− |
| 2002 11 12 | 704 | 0.0 | 1.1+ | 2006 09 24 | 699 | 0.9− | 1.0− | 2006 10 23 | 644 | 0.5+ | 0.2+ |
| 2002 11 12 | 704 | 0.4− | 1.0+ | 2006 09 24 | 699 | 0.1+ | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 1.0− | 0.3+ | 2006 09 27 | 703 | 1.2− | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 11 23 | 644 | 0.2− | 0.6− | 2006 09 27 | 703 | 0.0 | 0.7+ | | | | |

### 2002 VK$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.58993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23523668 | $\omega$ | 128.81375 | | +0.98475662 | −0.01568111 | |
| $a$ | 2.5989586 | $\Omega$ | 232.76987 | | −0.03171711 | +0.96304169 | |
| $e$ | 0.1125958 | $i$ | 12.56619 | | +0.17102172 | +0.26889553 | |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.4+ | 0.1+ | 2002 12 10 | 644 | 0.1− | 0.7− | 2006 10 31 | 703 | 0.4− | 0.7− |
| 2002 11 01 | 644 | 0.7+ | 0.4+ | 2002 12 10 | 644 | 0.0 | 0.3− | 2006 10 31 | 703 | (0.7− | 1.9−) |
| 2002 11 01 | 644 | 0.6+ | 0.3− | 2002 12 10 | 644 | 0.1− | 0.3− | 2006 10 31 | 703 | 0.6+ | 1.4− |
| 2002 11 05 | 704 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.7− | 2006 11 14 | 703 | (0.5+ | 5.3−) |
| 2002 11 05 | 704 | 0.8− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.4− | 2006 11 14 | 703 | (0.4+ | 1.9−) |
| 2002 11 05 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8− | 0.6+ | 2006 11 14 | 703 | (1.9+ | 0.1+) |
| 2002 11 06 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.9+ | 2006 11 14 | 703 | 0.9− | 1.0− |
| 2002 11 06 | 704 | 0.5− | 0.5+ | 2006 10 19 | 703 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.9+ | 0.3+ |
| 2002 11 06 | 704 | 0.9− | 1.0− | 2006 10 19 | 703 | 0.8− | 0.9− | 2006 11 19 | 704 | 0.6+ | 1.2+ |
| 2002 11 06 | 704 | 0.7+ | 0.1− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.8+ |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2006 10 19 | 703 | (0.9− | 1.8−) | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2002 11 14 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2002 11 14 | 704 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2002 11 14 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.5− | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.9+ |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2002 12 05 | 704 | 0.1+ | 1.0− | 2006 10 31 | 703 | (0.6− | 2.6−) | | | | |

### 2002 VS$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.30102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22550826 | $\omega$ | 106.84694 | | +0.94488048 | +0.21851479 | |
| $a$ | 2.6731772 | $\Omega$ | 241.11991 | | −0.28051125 | +0.92434434 | |
| $e$ | 0.2147625 | $i$ | 16.16828 | | +0.16886182 | +0.31279199 | |
| $P$ | 4.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.3− | 0.5− | 2002 12 05 | 704 | 0.8− | 0.8− | 2006 09 15 | 703 | 0.1+ | 0.6− |
| 2002 11 01 | 644 | 0.4− | 0.3− | 2002 12 05 | 704 | 0.6− | 0.1− | 2006 09 15 | 703 | 0.6− | 0.5+ |
| 2002 11 01 | 644 | 0.3− | 0.4− | 2002 12 05 | 704 | 0.0 | 0.0 | 2006 09 15 | 703 | 0.6− | 0.1− |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2002 12 05 | 704 | 0.7− | 0.4− | 2006 09 16 | 703 | 0.2− | 0.3− |
| 2002 11 05 | 704 | 0.2− | 0.2+ | 2002 12 10 | 704 | 0.1− | 0.5− | 2006 09 16 | 703 | 0.4− | 0.1+ |
| 2002 11 05 | 704 | 0.5− | 0.1+ | 2002 12 10 | 704 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.4+ | 0.0 |
| 2002 11 05 | 704 | 0.0 | 0.6− | 2002 12 10 | 644 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.2+ | 0.2+ |
| 2002 11 05 | 704 | 0.5− | 0.9− | 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.2+ |
| 2002 11 13 | 644 | 0.6+ | 1.3+ | 2002 12 10 | 704 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.2− | 0.3+ |
| 2002 11 13 | 644 | 0.4+ | 0.8+ | 2002 12 10 | 644 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.3+ | 0.0 |
| 2002 11 13 | 644 | 0.2+ | 0.7+ | 2002 12 10 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.9+ | 0.9− |
| 2002 11 27 | 699 | 0.1− | 0.1+ | 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 09 21 | 699 | (1.4+ | 1.8+) |
| 2002 11 27 | 699 | 0.2+ | 0.2+ | 2002 12 27 | 644 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.5+ | 0.5+ |
| 2002 11 27 | 699 | 0.0 | 0.1+ | 2002 12 27 | 644 | 0.0 | 0.3+ | 2006 09 21 | 699 | 0.2+ | 0.2− |
| 2002 11 27 | 699 | 0.1− | 0.2+ | 2002 12 31 | 704 | 1.1+ | 0.3+ | 2006 09 21 | 699 | 0.5− | 1.0+ |
| 2002 12 02 | 704 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.1+ |
| 2002 12 02 | 704 | 0.5+ | 0.0 | 2002 12 31 | 704 | 0.3+ | 0.8+ | 2006 09 28 | 703 | 0.3− | 0.2− |
| 2002 12 02 | 704 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 0.8− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.4+ |
| 2002 12 02 | 704 | 0.3+ | 0.1− | 2006 08 24 | 704 | 0.6− | 0.3− | 2006 09 28 | 703 | 0.1− | 0.4+ |
| 2002 12 02 | 704 | 0.2+ | 0.2+ | 2006 08 24 | 704 | 1.5+ | 0.9+ | 2006 10 20 | 703 | 0.2− | 0.7+ |
| 2002 12 02 | 608 | 0.1− | 0.3− | 2006 08 24 | 704 | (0.8+ | 1.7+) | 2006 10 20 | 703 | 0.1− | 0.6+ |
| 2002 12 02 | 608 | 0.7+ | 1.0− | 2006 08 24 | 704 | 0.4+ | 0.1− | 2006 10 20 | 703 | 0.6− | 0.2− |
| 2002 12 02 | 608 | 0.2+ | 0.6− | 2006 09 15 | 703 | 0.1− | 0.3− | 2006 10 20 | 703 | 0.0 | 0.0 |
| 2002 12 03 | 644 | 0.2− | 0.1− | 2006 09 15 | 703 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3+ | 1.3− |
| 2002 12 03 | 644 | 0.3+ | 0.2− | 2006 09 15 | 703 | 0.3− | 0.7− | 2006 11 28 | 704 | 0.5+ | 0.6− |
| 2002 12 03 | 644 | 0.3+ | 0.0 | 2006 09 15 | 703 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.4− | 0.1− |
| 2002 12 05 | 704 | 0.8− | 0.2+ | 2006 09 15 | 703 | 0.1+ | 0.2− | | | | |

### 2002 VE$_{12}$ = 2006 WK$_{160}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.92362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27645771 | $\omega$ | 298.37838 | | +0.95804256 | −0.28066466 | |
| $a$ | 2.3337280 | $\Omega$ | 77.97060 | | +0.27936620 | +0.86898155 | |
| $e$ | 0.2261606 | $i$ | 3.40876 | | +0.06410133 | +0.40755173 | |
| $P$ | 3.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | (0.3− | 3.2+) | 2002 11 11 | 704 | 0.7+ | 0.5+ | 2002 12 02 | 704 | 0.0 | 0.5− |
| 2002 09 05 | 704 | 0.4+ | 1.5+ | 2002 11 11 | 704 | 0.9+ | 0.6+ | 2002 12 02 | 704 | 0.2− | 0.6− |
| 2002 09 05 | 704 | 1.5− | 1.9+ | 2002 11 11 | 704 | 1.4+ | 0.5+ | 2002 12 05 | 704 | 0.1− | 0.0 |
| 2002 10 07 | 704 | 0.5− | 1.2− | 2002 11 11 | 704 | 1.3+ | 0.1+ | 2002 12 05 | 704 | 0.1− | 0.0 |
| 2002 10 07 | 704 | 0.5− | 0.4− | 2002 11 11 | 704 | 1.6+ | 0.2− | 2002 12 05 | 704 | 0.7− | 0.1+ |
| 2002 10 07 | 704 | 0.5− | 0.6− | 2002 11 13 | 644 | 0.4− | 0.3− | 2002 12 05 | 704 | 0.3− | 0.3+ |
| 2002 11 02 | 644 | 0.8+ | 0.2+ | 2002 11 13 | 644 | 0.3− | 0.3− | 2002 12 05 | 704 | 0.0 | 0.0 |
| 2002 11 02 | 644 | 1.0+ | 0.2− | 2002 11 13 | 644 | 0.4− | 0.1− | 2002 12 10 | 704 | 0.4− | 0.1+ |
| 2002 11 02 | 644 | 0.7+ | 0.3− | 2002 11 14 | 704 | 0.4− | 0.1− | 2002 12 10 | 704 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | 0.6− | 0.3+ | 2002 11 14 | 704 | 0.1+ | 0.6− | 2002 12 10 | 704 | 0.3− | 0.2+ |
| 2002 11 05 | 704 | 0.1− | 0.4− | 2002 11 14 | 704 | 0.4− | 0.5− | 2002 12 10 | 704 | 0.7+ | 0.1+ |
| 2002 11 05 | 704 | 0.4+ | 0.2− | 2002 11 14 | 704 | 0.2− | 0.6− | 2002 12 10 | 704 | 0.3+ | 0.7+ |
| 2002 11 05 | 704 | 0.1+ | 0.2+ | 2002 11 14 | 704 | 0.1+ | 0.5− | 2002 12 27 | 644 | 0.5− | 0.1+ |
| 2002 11 05 | 704 | 0.2− | 0.2− | 2002 11 27 | 699 | 0.3− | 0.3− | 2002 12 27 | 644 | 0.4− | 0.2+ |
| 2002 11 06 | 704 | 0.7+ | 0.3+ | 2002 11 27 | 699 | 0.1− | 0.5− | 2002 12 27 | 644 | 0.4− | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.7+ | 2002 11 27 | 699 | 0.4− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.2− | 0.2+ | 2002 11 27 | 699 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2002 11 28 | 699 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.3− | 0.0 | 2002 11 28 | 699 | 0.6− | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2002 11 28 | 699 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2002 11 28 | 699 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.2− | 2002 12 02 | 704 | 0.8+ | 1.0− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.5+ | 0.7+ | 2002 12 02 | 704 | 0.6− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.4+ | 2002 12 02 | 704 | 0.4− | 0.1− | | | | |

### 2002 VL$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.23548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24408479 | $\omega$ | 205.13303 | | −0.37999681 | −0.92112264 | |
| $a$ | 2.5357644 | $\Omega$ | 267.29462 | | +0.86230668 | −0.31972127 | |
| $e$ | 0.2313446 | $i$ | 4.85108 | | +0.33470827 | −0.22206168 | |
| $P$ | 4.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 1.0− | 0.2− | 2002 11 12 | 704 | 0.3− | 0.9+ | 2006 10 29 | 691 | 0.0 | 0.2− |
| 2002 10 10 | 704 | 0.3+ | 0.1− | 2002 11 12 | 704 | 0.0 | 0.9+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.3+ | 0.1+ | 2002 11 14 | 704 | 0.3− | 0.9+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2002 10 28 | 644 | 0.3− | 0.9− | 2002 11 14 | 704 | 1.2+ | 0.2− | 2006 11 14 | 703 | 0.6+ | 0.6+ |
| 2002 10 28 | 644 | 0.2− | 0.8− | 2002 11 14 | 704 | 0.4− | 1.0+ | 2006 11 14 | 703 | 0.2+ | 0.4+ |
| 2002 10 28 | 644 | 0.2+ | 0.6− | 2002 11 14 | 704 | (2.4− | 0.6−) | 2006 11 14 | 703 | 1.2+ | 0.1+ |
| 2002 11 04 | 699 | 0.5− | 0.1− | 2002 11 14 | 704 | 1.5− | 0.3+ | 2006 11 14 | 703 | 0.9− | 0.7− |
| 2002 11 04 | 699 | 1.0+ | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.2− |
| 2002 11 04 | 699 | 1.3− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.1− | 0.5+ |
| 2002 11 04 | 699 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.3− | 0.4− |
| 2002 11 05 | 704 | 0.9+ | 0.8− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2002 11 05 | 704 | (0.1+ | 1.8−) | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | (1.3+ | 2.8−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 1.2− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | (0.6+ | 1.7−) |
| 2002 11 07 | 704 | 0.6+ | 0.5− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | (0.0 | 1.9−) |
| 2002 11 07 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | (1.7+ | 2.0−) |
| 2002 11 07 | 704 | 0.3+ | 0.5− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.8− |
| 2002 11 07 | 704 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.7+ | 0.5− |
| 2002 11 12 | 704 | 0.3+ | 1.5+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.7+ | 0.4− |
| 2002 11 12 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.6− |

### 2002 $VF_{13}$ = 2006 $UF_{186}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.15181 | | (2000.0) | | | |
| $n$ | 0.24130553 | $\omega$ | 186.49760 | | +0.39568658 | −0.91267246 |
| $a$ | 2.5551978 | $\Omega$ | 240.23628 | | +0.84781708 | +0.40582165 |
| $e$ | 0.3249847 | $i$ | 6.76646 | | +0.35304153 | +0.04835047 |
| $P$ | 4.08 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2− | 0.2− | 2002 11 27 | 699 | 0.7− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 11 04 | 644 | 0.0 | 0.2− | 2002 11 27 | 699 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 11 04 | 644 | 0.3+ | 0.0 | 2002 11 27 | 699 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 0.6− | 0.1+ | 2002 11 27 | 699 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.9+ |
| 2002 11 05 | 704 | 0.2+ | 0.2− | 2002 12 01 | 608 | 0.8+ | 0.3+ | 2006 10 17 | 703 | (3.0− | 2.2−) |
| 2002 11 05 | 704 | 0.6+ | 0.6+ | 2002 12 01 | 608 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 1.0− | 0.5+ |
| 2002 11 05 | 704 | 0.2+ | 0.3+ | 2002 12 01 | 608 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.2+ | 0.1− | 2002 12 02 | 704 | 0.6− | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.1+ | 0.5+ | 2002 12 02 | 704 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.6− | 0.1− | 2002 12 02 | 704 | 0.1+ | 0.5+ | 2006 11 06 | 644 | 0.4+ | 0.2+ |
| 2002 11 12 | 704 | 0.3− | 0.6+ | 2002 12 02 | 704 | 0.8+ | 0.4+ | 2006 11 06 | 644 | 0.5+ | 0.0 |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2002 12 02 | 704 | 0.4− | 0.4+ | 2006 11 06 | 644 | 0.5+ | 0.2+ |
| 2002 11 12 | 704 | 0.1− | 0.6− | 2002 12 10 | 644 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.9− |
| 2002 11 14 | 704 | 0.1− | 0.9− | 2002 12 10 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.4− | 0.7− | 2002 12 10 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.1− | 0.0 |
| 2002 11 14 | 704 | 0.0 | 0.0 | 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 1.3+ | 0.5− |
| 2002 11 14 | 704 | (0.3+ | 1.5−) | 2002 12 11 | 704 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2002 11 14 | 704 | 0.1+ | 0.7− | 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.8+ |
| 2002 11 23 | 644 | 0.1− | 0.2− | 2002 12 11 | 704 | 0.0 | 0.4− | 2006 11 19 | 704 | 1.1− | 0.3+ |
| 2002 11 23 | 644 | 0.2− | 0.1− | 2002 12 11 | 704 | 0.4− | 0.5− | 2006 11 19 | 704 | 0.7− | 0.2− |
| 2002 11 23 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− | | | | |

### 2002 $VO_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.77528 | | (2000.0) | | | |
| $n$ | 0.22909903 | $\omega$ | 163.71794 | | +0.82140378 | −0.55601508 |
| $a$ | 2.6451718 | $\Omega$ | 230.75986 | | +0.50328387 | +0.81141228 |
| $e$ | 0.2109418 | $i$ | 9.44193 | | +0.26833035 | +0.18015920 |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 291 | 0.2− | 0.1− | 2002 12 06 | 704 | 0.5− | 0.7+ | 2006 09 21 | 699 | 0.3+ | 0.8+ |
| 2002 11 04 | 291 | 0.2− | 0.2− | 2002 12 06 | 704 | 0.4+ | 0.7+ | 2006 09 27 | 703 | 0.1− | 1.1+ |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2002 12 06 | 704 | 0.7+ | 0.6+ | 2006 09 27 | 703 | 1.2+ | 0.5+ |
| 2002 11 05 | 704 | 0.7+ | 0.6− | 2002 12 06 | 704 | (1.6+ | 0.6+) | 2006 09 27 | 703 | 0.4− | 0.6+ |
| 2002 11 05 | 704 | (1.7+ | 0.6−) | 2002 12 10 | 644 | 0.5+ | 0.3+ | 2006 09 27 | 703 | 0.3− | 0.7+ |
| 2002 11 05 | 704 | (1.6− | 0.5+) | 2002 12 10 | 644 | 0.7+ | 0.5+ | 2006 09 29 | 699 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.1+ | 0.3− | 2002 12 10 | 644 | 0.5+ | 0.0 | 2006 09 29 | 699 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.2− | 0.9− | 2006 09 29 | 699 | 0.5− | 0.9+ |
| 2002 11 06 | 704 | 0.8+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.8− | 2006 09 29 | 699 | 0.7+ | 0.4− |
| 2002 11 06 | 704 | (1.9+ | 1.5+) | 2006 09 16 | 703 | 0.6− | 0.8− | 2006 10 17 | 703 | (2.0+ | 5.7+) |
| 2002 11 06 | 704 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.5− | 1.0+ |
| 2002 11 13 | 644 | 0.9− | 0.4− | 2006 09 16 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.6+ | 0.3+ |
| 2002 11 13 | 644 | 0.1− | 0.5+ | 2006 09 16 | 644 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.8+ |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.5+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.2− |
| 2002 12 02 | 608 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.2− |
| 2002 12 02 | 608 | 0.6− | 0.1− | 2006 09 17 | 703 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2002 12 02 | 608 | 0.2+ | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.9− | 2006 10 20 | 691 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.5+ | 0.2− | 2006 09 17 | 703 | 0.9+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 09 21 | 699 | (0.5− | 2.6+) | 2006 10 20 | 691 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.4− | 2006 09 21 | 699 | 0.9− | 0.6− | | | | |
| 2002 12 05 | 704 | 0.0 | 0.5− | 2006 09 21 | 699 | 1.0− | 1.3+ | | | | |

### 2002 $VT_{14}$ = 2006 $SG_{292}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.24189 | | (2000.0) | | | |
| $n$ | 0.22285800 | $\omega$ | 67.95581 | | +0.70081362 | +0.71005727 |
| $a$ | 2.6943286 | $\Omega$ | 246.72668 | | −0.67886400 | +0.63441368 |
| $e$ | 0.0366375 | $i$ | 4.27029 | | −0.21909802 | +0.30551260 |
| $P$ | 4.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2− | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2002 11 04 | 644 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2002 11 04 | 644 | 0.3− | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.2− |
| 2002 11 07 | 735 | 0.3+ | 1.1+ | 2005 06 13 | G96 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.4− |
| 2002 11 07 | 735 | 0.4− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.6− | 2006 10 01 | 691 | 0.3− | 0.2− |
| 2002 11 07 | 735 | 0.7+ | 0.7+ | 2006 09 17 | 703 | 0.5− | 0.7+ | 2006 10 11 | 691 | 0.3+ | 0.0 |
| 2002 11 13 | 735 | (2.4− | 1.3−) | 2006 09 17 | 703 | 1.1− | 1.4+ | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2002 11 13 | 735 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.6− | 2006 10 11 | 691 | 0.3+ | 0.1− |
| 2002 11 13 | 735 | 0.7− | 0.5− | 2006 09 25 | 691 | 0.0 | 0.1− | | | | |

### 2002 $VL_{15}$ = 2006 $ST_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.11813 | | (2000.0) | | | |
| $n$ | 0.23275339 | $\omega$ | 271.63327 | | +0.69216339 | +0.62453829 |
| $a$ | 2.6174117 | $\Omega$ | 49.90831 | | −0.31240149 | +0.71108037 |
| $e$ | 0.4015831 | $i$ | 28.22038 | | −0.65062673 | +0.32298084 |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 1.0− | 0.4− | 2006 09 29 | 850 | 0.9+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.3− |
| 2002 11 06 | 704 | 0.1+ | 0.8+ | 2006 09 29 | 734 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2002 11 06 | 704 | 0.7− | 0.7+ | 2006 09 29 | 850 | 0.7+ | 0.7− | 2006 11 13 | 703 | 0.9+ | 0.2− |
| 2002 11 07 | 246 | 0.4+ | 0.0 | 2006 09 29 | 850 | 0.8+ | 0.4− | 2006 11 13 | 703 | 0.1+ | 1.1− |
| 2002 11 07 | 246 | 1.3+ | 1.2− | 2006 09 29 | 850 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2002 11 07 | 246 | 0.3+ | 0.3+ | 2006 09 29 | 673 | 0.1− | 0.5− | 2006 11 13 | 703 | 0.0 | 0.3− |
| 2002 11 07 | 246 | 0.2+ | 1.1+ | 2006 09 29 | 673 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.4− | 0.4− |
| 2002 11 07 | 246 | 0.0 | 0.3+ | 2006 09 29 | 673 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 2002 11 07 | 734 | 0.9− | 0.3+ | 2006 09 29 | 673 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.6− |
| 2002 11 07 | 734 | 1.4− | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.5+ | 2006 11 14 | 704 | 0.6+ | 0.7+ |
| 2002 11 07 | 926 | 0.4− | 0.3− | 2006 09 30 | 704 | 0.6− | 0.3+ | 2006 11 14 | 704 | 0.9+ | 0.7+ |
| 2002 11 07 | 926 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.1− | 0.9+ | 2006 11 14 | 704 | 0.6+ | 0.3+ |
| 2002 11 08 | 858 | 0.0 | 0.3− | 2006 09 30 | 704 | 1.0− | 1.1+ | 2006 11 14 | 644 | 0.4+ | 0.1+ |
| 2002 11 08 | 858 | 0.3− | 0.7+ | 2006 09 30 | 704 | 0.2− | 0.7− | 2006 11 14 | 704 | 0.6+ | 0.5+ |
| 2003 02 01 | 645 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.4− | 2006 11 14 | 644 | 0.1+ | 0.0 |
| 2003 02 01 | 645 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.6− | 0.0 | 2006 11 14 | 704 | 0.5+ | 0.6+ |
| 2006 09 21 | 703 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.9+ | 0.4− | 2006 11 14 | 644 | 0.1− | 0.1− |
| 2006 09 21 | 703 | 0.4− | 0.6+ | 2006 10 01 | 704 | 0.1− | 0.5− | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2006 09 21 | 703 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.3− |
| 2006 09 21 | 703 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.1+ |
| 2006 09 22 | 703 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 11 17 | 644 | 0.1− | 0.2− |
| 2006 09 22 | 703 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.3− |
| 2006 09 22 | 703 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.0 |
| 2006 09 22 | 703 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 17 | 644 | 0.1− | 0.2− |
| 2006 09 28 | 703 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2006 09 28 | 703 | 1.2− | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.1− | 2006 11 20 | 704 | (2.4− | 0.6−) |
| 2006 09 28 | 703 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.7− | 0.9− | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2006 09 28 | 703 | 0.3+ | 1.3− | 2006 10 17 | 703 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.2− | 1.5+ |
| 2006 09 29 | 118 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.5− | 0.7+ |
| 2006 09 29 | 118 | 0.2− | 0.1+ | 2006 10 31 | 704 | (1.5− | 0.3−) | 2006 11 20 | 704 | 0.2− | 0.7− |
| 2006 09 29 | 118 | 0.1+ | 0.1− | 2006 10 31 | 704 | 0.9− | 1.1+ | 2006 11 20 | 704 | 0.1+ | 0.3− |
| 2006 09 29 | 118 | 0.2− | 0.0 | 2006 10 31 | 704 | 1.4+ | 0.1− | 2006 11 20 | 704 | (1.8+ | 0.4+) |
| 2006 09 29 | 850 | 0.2− | 0.5− | 2006 10 31 | 704 | (1.0− | 1.5−) | 2006 11 20 | 704 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 29 | 734 | 0.3− | 0.2− | 2006 10 31 | 704 | 1.3− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.1− | | |
| 2006 09 29 | 734 | 0.3− | 1.4+ | 2006 11 08 | 644 | 0.2− | 0.3− | | | | | | |

**2002 VN$_{18}$ = 2006 SH$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.57242 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23986025 | $\omega$ | 304.92491 | | +0.88214033 | +0.46914237 | |
| $a$ | 2.5654518 | $\Omega$ | 27.16710 | | −0.39689815 | +0.78806345 | |
| $e$ | 0.2675882 | $i$ | 5.23253 | | −0.25357504 | +0.39857425 | |
| $P$ | 4.11 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.5+ | 1.0+ | 2006 08 23 | 644 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2002 10 02 | 704 | 0.4+ | 1.1+ | 2006 08 23 | 644 | 0.2− | 0.4− | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 2002 10 02 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 1.3− | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2002 10 02 | 704 | 0.9− | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 09 28 | 699 | 0.6+ | 0.3+ |
| 2002 10 28 | 644 | 0.7− | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.2+ |
| 2002 10 28 | 644 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.3− | 2006 09 28 | 704 | 0.2+ | 0.3− |
| 2002 10 28 | 644 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 28 | 699 | 0.3+ | 0.3+ |
| 2002 11 02 | 049 | 0.9− | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 09 28 | 704 | 0.3+ | 0.2− |
| 2002 11 02 | 049 | 0.8− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.5− | 2006 09 28 | 704 | 0.1− | 0.7+ |
| 2002 11 02 | 049 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.0 |
| 2002 11 06 | 704 | 1.2+ | 0.5+ | 2006 09 18 | 699 | 1.2− | 0.4+ | 2006 09 28 | 699 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.6− | 0.0 | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 11 10 | 049 | 1.1+ | 1.1− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 11 10 | 049 | 1.2+ | 1.3− | 2006 09 20 | 644 | 0.5− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 11 10 | 049 | 1.2+ | 1.1− | 2006 09 22 | 704 | 0.5− | 0.7+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2002 11 11 | 049 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2002 11 11 | 049 | 0.6− | 0.1− | 2006 09 22 | 704 | 0.7− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2002 11 11 | 049 | 0.6− | 0.2+ | 2006 09 22 | 704 | 0.7+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2005 04 09 | G96 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2005 04 09 | G96 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2005 04 09 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.9+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2005 04 09 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.3− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2006 08 23 | 644 | 0.1− | 0.6− | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.0 |

**2002 VC$_{19}$ = 2006 TS$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.64076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23472279 | $\omega$ | 199.36330 | | +0.43859004 | −0.89025643 | |
| $a$ | 2.6027505 | $\Omega$ | 224.85030 | | +0.84579203 | +0.45509401 | |
| $e$ | 0.1580466 | $i$ | 10.02832 | | +0.30376736 | +0.01824659 | |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.3+ | 0.3− | 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 11 04 | 644 | 0.0 | 0.3− | 2002 12 05 | 704 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 04 | 644 | 0.1+ | 0.3− | 2002 12 05 | 704 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | 0.6+ | 0.9− | 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 11 06 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 11 06 | 704 | 1.3− | 1.2− | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 11 06 | 704 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.2− | 1.1− |
| 2002 11 10 | 704 | (0.2+ | 1.6+) | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2002 11 10 | 704 | 0.4+ | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.1− |
| 2002 11 10 | 704 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.2− | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 644 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.6+ | 2006 11 20 | G96 | 0.3− | 0.3− |
| 2002 11 12 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 703 | (2.1+ | 1.5−) | 2006 11 20 | G96 | 0.1+ | 0.7− |
| 2002 11 12 | 644 | (0.1+ | 1.9+) | 2006 10 17 | 703 | 0.8− | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.3− |

**2002 VU$_{19}$ = 2006 SQ$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.70977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23626495 | $\omega$ | 136.17841 | | +0.98303924 | +0.14534054 | |
| $a$ | 2.5914123 | $\Omega$ | 215.91402 | | −0.16930154 | +0.95364596 | |
| $e$ | 0.2099480 | $i$ | 10.99254 | | +0.07050413 | +0.26350619 | |
| $P$ | 4.17 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 699 | (0.6+ | 1.8+) | 2006 09 16 | 703 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.3− |
| 2002 11 04 | 699 | (2.0+ | 0.0 ) | 2006 09 16 | 703 | 0.8+ | 0.5− | 2006 09 27 | 703 | 0.1− | 0.0 |
| 2002 11 04 | 699 | 0.7− | 0.5+ | 2006 09 16 | 703 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2002 11 04 | 699 | 1.0+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 1.1+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2002 11 04 | 649 | 0.7+ | 0.1+ | 2006 09 16 | 703 | 0.3+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2002 11 04 | 649 | 0.5+ | 0.4+ | 2006 09 16 | 703 | 1.3+ | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2002 11 04 | 649 | 0.3+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 1.4− | 2006 10 17 | 703 | 0.8+ | 0.8+ |
| 2002 11 06 | 704 | 0.5+ | 0.2− | 2006 09 16 | 703 | 0.0 | 1.2− | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2002 11 06 | 704 | 0.7− | 1.2− | 2006 09 19 | 699 | 0.7− | 1.5− | 2006 10 17 | 703 | 0.2+ | 1.4+ |
| 2002 11 06 | 704 | 0.1− | 1.4− | 2006 09 19 | 699 | 1.1− | 1.0+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2002 11 13 | 291 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2002 11 13 | 291 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2002 11 13 | 291 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2002 11 14 | 291 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2002 11 14 | 291 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.1− | | | | |
| 2002 11 14 | 291 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.5− | 0.0 | | | | |

**2002 VP$_{21}$ = 2006 RY$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.23411 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24154262 | $\omega$ | 91.00129 | | +0.20381432 | −0.97887995 | |
| $a$ | 2.5535255 | $\Omega$ | 347.20504 | | +0.86718900 | +0.18806272 | |
| $e$ | 0.2521741 | $i$ | 4.12485 | | +0.45435994 | +0.08016515 | |
| $P$ | 4.08 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 26 | 608 | 0.2− | 0.2+ | 2002 11 12 | 704 | (0.3+ | 2.1−) | 2006 09 26 | 691 | 0.3+ | 0.0 |
| 2002 10 26 | 608 | 0.8− | 1.3+ | 2002 11 12 | 704 | 1.4+ | 0.5− | 2006 09 26 | 691 | 0.4+ | 0.0 |
| 2002 10 26 | 608 | 0.4− | 0.7+ | 2002 11 12 | 704 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.1+ |
| 2002 11 05 | 704 | 0.0 | 1.2− | 2002 11 14 | 704 | 0.0 | 0.1+ | 2006 09 30 | 691 | 1.0− | 0.7− |
| 2002 11 05 | 704 | 0.3− | 0.2+ | 2002 11 14 | 704 | 0.6− | 1.0+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2002 11 05 | 704 | 0.1− | 0.3+ | 2002 11 14 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2002 11 05 | 704 | 0.0 | 0.3− | 2002 11 23 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2002 11 23 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 2002 11 06 | 704 | 0.1+ | 0.4+ | 2002 11 23 | 644 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.7− |
| 2002 11 06 | 704 | 0.0 | 1.1− | 2006 09 15 | 691 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.9− |
| 2002 11 07 | 704 | 0.7+ | 0.0 | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 11 07 | 704 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 11 07 | 704 | 0.3− | 0.8− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 11 07 | 704 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1− | | | | |
| 2002 11 12 | 704 | 0.3+ | 0.7− | 2006 09 19 | 691 | 0.0 | 0.1+ | | | | |

**2002 VO$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.05534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17849241 | $\omega$ | 284.05009 | | +0.95669196 | −0.01925442 | |
| $a$ | 3.1240853 | $\Omega$ | 77.66790 | | +0.15083383 | +0.88620607 | |
| $e$ | 0.2333123 | $i$ | 17.29702 | | −0.24897721 | +0.46289099 | |
| $P$ | 5.52 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 699 | 0.5− | 0.6+ | 2002 11 05 | 704 | 1.0− | 0.4− | 2002 11 30 | 704 | 0.8+ | 0.7+ |
| 2002 10 16 | 699 | 0.1+ | 0.2+ | 2002 11 06 | 704 | 1.0+ | 0.3− | 2002 12 07 | 704 | 0.4+ | 1.8+ |
| 2002 10 16 | 699 | 0.4+ | 0.5+ | 2002 11 06 | 704 | 0.2− | 0.3− | 2002 12 07 | 704 | 0.3+ | 1.7+ |
| 2002 10 16 | 699 | 0.4− | 0.7+ | 2002 11 06 | 704 | 0.1+ | 0.2+ | 2002 12 07 | 704 | 0.0 | 1.2+ |
| 2002 10 30 | 683 | 0.1+ | 0.3− | 2002 11 06 | 704 | 0.0 | 0.3− | 2002 12 07 | 704 | (1.0+ | 2.3+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 683 | 0.0 | 0.4− | 2002 11 06 | 704 | 0.4− | 0.6+ | 2003 01 02 | 704 | 0.2− | 0.0 |
| 2002 10 30 | 683 | 0.2+ | 0.5+ | 2002 11 07 | 704 | 0.9+ | 0.4− | 2003 01 02 | 704 | 0.7+ | 0.2− |
| 2002 10 31 | 704 | 0.1− | 0.7− | 2002 11 07 | 704 | 0.5+ | 0.6− | 2003 01 02 | 704 | 0.2− | 0.6− |
| 2002 10 31 | 704 | 0.0 | 0.6− | 2002 11 07 | 704 | 0.2+ | 0.4+ | 2006 04 19 | 691 | 0.5− | 0.0 |
| 2002 10 31 | 704 | 0.3+ | 0.7− | 2002 11 07 | 704 | 0.5+ | 0.1− | 2006 04 19 | 691 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.0 | 0.5− | 2002 11 07 | 704 | 0.2+ | 0.3+ | 2006 04 19 | 691 | 0.6− | 0.0 |
| 2002 10 31 | 704 | 0.1− | 0.5− | 2002 11 12 | 704 | 0.7− | 1.4+ | 2006 05 05 | 691 | 0.0 | 0.3+ |
| 2002 11 03 | 608 | 0.4− | 1.0− | 2002 11 12 | 704 | 0.0 | 0.9+ | 2006 05 05 | 691 | 0.3+ | 0.9+ |
| 2002 11 03 | 608 | 0.6+ | 0.7− | 2002 11 12 | 704 | 0.1− | 0.4+ | 2006 05 05 | 691 | 0.1− | 0.1+ |
| 2002 11 03 | 608 | 0.2− | 1.5− | 2002 11 12 | 704 | 0.0 | 1.0+ | 2006 05 22 | 691 | 0.6+ | 0.2− |
| 2002 11 05 | 704 | 1.1− | 0.4− | 2002 11 12 | 704 | 0.2− | 0.3− | 2006 05 22 | 691 | 0.4+ | 0.0 |
| 2002 11 05 | 704 | 1.0− | 0.2− | 2002 11 30 | 704 | 1.3− | 1.3+ | 2006 05 22 | 691 | 0.4+ | 0.1− |
| 2002 11 05 | 704 | 0.6− | 0.5− | 2002 11 30 | 704 | 1.2− | 0.5+ | | | | |
| 2002 11 05 | 704 | 0.2− | 0.2− | 2002 11 30 | 704 | 0.9+ | 0.3+ | | | | |

### 2002 VU$_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.96859 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22777774 | $\omega$ | 170.23392 | | +0.48896849 | −0.87132449 | |
| $a$ | 2.6553913 | $\Omega$ | 250.48320 | | +0.79733734 | +0.46563654 | |
| $e$ | 0.1381861 | $i$ | 2.50972 | | +0.35378381 | +0.15484263 | |
| $P$ | 4.33 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.7− | 0.1− | 2002 12 02 | 704 | 0.5+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 699 | 0.5− | 0.3+ | 2002 12 02 | 704 | 0.7− | 0.8− | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 699 | 1.0+ | 0.1− | 2002 12 02 | 704 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.4− | 0.3− |
| 2002 10 31 | 699 | 0.9− | 0.1+ | 2002 12 02 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 1.2+ | 0.4− |
| 2002 11 05 | 704 | 0.3− | 0.6− | 2002 12 10 | 644 | 0.2− | 0.9− | 2006 10 01 | 704 | 0.0 | 1.4− |
| 2002 11 05 | 704 | 0.7+ | 0.6+ | 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.5+ |
| 2002 11 05 | 704 | 0.5+ | 0.2− | 2002 12 10 | 644 | 0.2− | 0.7− | 2006 10 01 | 704 | 0.0 | 0.3− |
| 2002 11 05 | 704 | 1.0− | 0.1− | 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.7+ |
| 2002 11 06 | 704 | 0.4+ | 0.0 | 2002 12 10 | 644 | 0.4− | 0.9− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.9+ | 0.4+ | 2002 12 10 | 644 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2002 11 06 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.7+ | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2002 11 06 | 704 | 0.3− | 0.9− | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 10 17 | 703 | (0.9− | 1.9−) |
| 2002 11 14 | 704 | 0.3− | 0.4− | 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.7− | 1.1+ |
| 2002 11 14 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.4+ | 2006 10 17 | 703 | (1.5+ | 0.9−) |
| 2002 11 14 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.8− |
| 2002 11 14 | 704 | 0.3− | 1.2+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | (2.5+ | 0.7+) |
| 2002 12 02 | 704 | 0.4− | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 1.0+ | 0.2− |

### 2002 VC$_{23}$ = 2006 TQ$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.37586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24216585 | $\omega$ | 38.47217 | | +0.39451960 | −0.91851295 | |
| $a$ | 2.5491425 | $\Omega$ | 28.31997 | | +0.82878646 | +0.34336082 | |
| $e$ | 0.1739572 | $i$ | 3.17009 | | +0.39682147 | +0.19605432 | |
| $P$ | 4.07 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.9− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2002 11 05 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.3− | 0.7− |
| 2002 11 05 | 704 | 0.9+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.2− |
| 2002 11 05 | 704 | 0.6− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.4+ | 0.1− |
| 2002 11 05 | 704 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.4+ | 0.0 |
| 2002 11 06 | 704 | 0.9− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 11 06 | 704 | 1.4− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 11 06 | 704 | 0.5+ | 1.0+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 11 06 | 704 | 0.4− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2002 11 06 | 704 | 0.4− | 0.7+ | 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | (1.6+ | 1.2−) |
| 2002 11 24 | 644 | 1.0+ | 1.1+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2002 11 24 | 644 | 0.5+ | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.1+ |
| 2002 11 24 | 644 | 0.8+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.4− |
| 2006 10 12 | 691 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.8+ | 1.1− |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.4− |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.1− | 1.1+ |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.6− | | | | |

### 2002 VO$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.91609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23790273 | $\omega$ | 38.03379 | | +0.12058321 | −0.99112865 | |
| $a$ | 2.5795053 | $\Omega$ | 45.11895 | | +0.89036416 | +0.08308349 | |
| $e$ | 0.2397977 | $i$ | 4.52400 | | +0.43898902 | +0.10373587 | |
| $P$ | 4.14 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.5+ | 0.2− | 2002 11 14 | 704 | 0.1− | 0.4+ | 2002 12 11 | 704 | 0.1− | 0.5+ |
| 2002 10 30 | 608 | 0.6+ | 0.1− | 2002 11 14 | 704 | 0.5+ | 0.2− | 2002 12 11 | 704 | 0.4− | 0.2− |
| 2002 10 30 | 608 | 0.5+ | 0.4− | 2002 11 14 | 704 | 0.2+ | 0.3+ | 2002 12 11 | 644 | 0.3− | 0.3− |
| 2002 11 05 | 704 | 0.1+ | 0.9+ | 2002 11 28 | 699 | 0.4− | 0.6− | 2002 12 11 | 704 | 0.9− | 0.8− |
| 2002 11 05 | 704 | 0.2− | 0.5− | 2002 11 28 | 699 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.7+ |
| 2002 11 05 | 704 | 0.5− | 0.4− | 2002 11 28 | 699 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.4− | 0.6− |
| 2002 11 05 | 704 | 0.5− | 0.0 | 2002 11 28 | 699 | (9.4− | 11.8+) | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.5− | 0.2+ | 2002 12 02 | 704 | 1.0+ | 1.0+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2002 11 06 | 704 | 0.2− | 0.7− | 2002 12 02 | 704 | 1.2+ | 0.9+ | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2002 11 06 | 704 | 0.0 | 0.4− | 2002 12 02 | 704 | 0.6+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | (1.5− | 0.2−) | 2002 12 02 | 704 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2002 11 06 | 704 | 0.6+ | 0.0 | 2002 12 02 | 608 | 0.5+ | 0.8− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | 0.7− | 0.4− | 2002 12 02 | 608 | 1.2+ | 0.9− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2002 11 06 | 704 | 0.9− | 0.7+ | 2002 12 02 | 608 | 0.9+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2002 11 06 | 704 | 0.5− | 0.7+ | 2002 12 06 | 704 | 0.2+ | 0.6− | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2002 11 06 | 704 | 1.3− | 0.7− | 2002 12 06 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | (1.6+ | 1.0−) |
| 2002 11 06 | 704 | 0.3+ | 0.3+ | 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | (2.0− | 2.1−) |
| 2002 11 06 | 704 | 0.5− | 0.5− | 2002 12 06 | 704 | 1.0+ | 0.0 | 2006 11 11 | 703 | 0.2− | 1.3− |
| 2002 11 06 | 704 | 0.2− | 0.3+ | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.4− | 1.0− |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2002 12 06 | 704 | 0.8− | 0.6− | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2002 11 07 | 704 | 0.3− | 0.3− | 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 11 17 | 703 | (1.9+ | 0.4+) |
| 2002 11 07 | 704 | 0.3− | 0.1− | 2002 12 06 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 703 | (0.4+ | 1.5−) |
| 2002 11 07 | 704 | 1.0− | 0.5− | 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2002 11 07 | 704 | 0.3+ | 0.9+ | 2002 12 06 | 704 | 0.8− | 0.2+ | 2006 11 20 | G96 | 0.8+ | 0.7− |
| 2002 11 07 | 704 | 0.8+ | 0.2+ | 2002 12 06 | 704 | 0.4+ | 0.1− | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 11 07 | 704 | 0.4+ | 0.1+ | 2002 12 06 | 704 | 0.5+ | 0.0 | 2006 11 20 | G96 | 0.7+ | 0.2+ |
| 2002 11 07 | 704 | 0.4+ | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | 0.4− | 0.9+ | 2002 12 06 | 704 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.1+ |
| 2002 11 13 | 644 | 0.4− | 0.1+ | 2002 12 11 | 644 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2002 11 13 | 644 | 0.5− | 0.1+ | 2002 12 11 | 704 | 0.1− | 1.1+ | | | | |
| 2002 11 13 | 644 | 0.3− | 0.0 | 2002 12 11 | 644 | 0.2− | 0.1− | | | | |

### 2002 VZ$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.82035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23863963 | $\omega$ | 30.72900 | | +0.21982969 | −0.97248126 | |
| $a$ | 2.5741924 | $\Omega$ | 46.69508 | | +0.87210316 | +0.16045696 | |
| $e$ | 0.2134263 | $i$ | 6.08730 | | +0.43716242 | +0.16891942 | |
| $P$ | 4.13 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.1− | 0.1− | 2002 12 02 | 704 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 10 30 | 608 | 0.0 | 0.2− | 2002 12 02 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.5+ | 0.2− |
| 2002 10 30 | 608 | 0.0 | 0.1− | 2002 12 06 | 704 | 0.4+ | 1.0+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.5− | 0.7+ | 2002 12 06 | 704 | 0.5+ | 0.5− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 11 05 | 704 | 0.3− | 0.5+ | 2002 12 06 | 704 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.8− | 0.1+ |
| 2002 11 05 | 704 | 0.3− | 0.3+ | 2002 12 06 | 704 | 0.4+ | 0.5− | 2006 10 23 | 691 | 1.1− | 0.0 |
| 2002 11 05 | 704 | 0.5− | 0.3+ | 2002 12 06 | 704 | 0.5− | 0.2− | 2006 11 10 | 644 | 0.4+ | 0.5+ |
| 2002 11 06 | 704 | 0.0 | 0.2+ | 2002 12 11 | 704 | 0.9− | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 0.7− | 2002 12 11 | 704 | 0.6− | 0.4− | 2006 11 10 | 644 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.2+ | 0.2− | 2002 12 11 | 704 | 0.3+ | 0.2− | 2006 11 11 | 703 | (0.6+ | 1.7+) |
| 2002 11 06 | 704 | (0.3− | 2.0+) | 2002 12 11 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.2+ |
| 2002 11 07 | 695 | 0.0 | 1.2− | 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.1− | 0.9− | 2002 12 11 | 644 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2002 11 14 | 704 | 1.1+ | 0.0 | 2002 12 11 | 704 | 0.5+ | 0.3− | 2006 11 14 | G96 | 0.6+ | 0.2− |
| 2002 11 14 | 704 | (0.3− | 1.7+) | 2002 12 11 | 644 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2002 11 14 | 704 | (1.7+ | 2.3+) | 2002 12 27 | 644 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.6+ | 0.3− |
| 2002 11 14 | 704 | 0.8+ | 0.8+ | 2002 12 27 | 644 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 11 14 | 704 | (1.1+ | 1.9−) | 2002 12 27 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2002 11 24 | 644 | 0.5− | 0.2+ | 2002 12 28 | 699 | 0.3+ | 0.5− | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2002 12 28 | 699 | (1.0+ | 1.7+) | 2006 11 17 | 703 | 0.9+ | 0.2− |
| 2002 11 24 | 644 | 0.6− | 0.1+ | 2002 12 28 | 699 | (0.2− | 2.1+) | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2002 12 28 | 699 | 0.8− | 1.0+ | 2006 11 18 | 704 | 0.7− | 0.2− |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 1.4− | 0.2+ |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2002 11 27 | 699 | 1.3+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2002 11 27 | 699 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.7+ | 0.1+ | 2006 11 25 | 703 | 0.5+ | 0.5+ |
| 2002 11 27 | 699 | 1.1+ | 0.5− | 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 11 25 | 703 | 0.2− | 0.3+ |
| 2002 11 27 | 699 | 0.8+ | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 11 25 | 703 | 0.2+ | 0.0 |
| 2002 12 02 | 704 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 25 | 703 | 0.7+ | 0.7+ |
| 2002 12 02 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.0 | | | | |
| 2002 12 02 | 704 | 0.4− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | |

**2002 VT$_{25}$ = 2006 TB$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.41841 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24355248 | $\omega$ | 129.93451 | | +0.99793939 | −0.05973566 | |
| $a$ | 2.5394578 | $\Omega$ | 233.50270 | | +0.04629816 | +0.92312257 | |
| $e$ | 0.2323247 | $i$ | 1.66964 | | +0.04442346 | +0.37983729 | |
| $P$ | 4.05 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.1+ | 0.5− | 2005 05 09 | G96 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 1998 12 14 | 691 | 0.5+ | 0.3+ | 2005 05 09 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 1998 12 14 | 691 | 0.3+ | 0.1− | 2005 05 09 | G96 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2002 11 03 | 608 | 0.1+ | 0.4− | 2005 05 09 | G96 | 0.4− | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2002 11 03 | 608 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2002 11 03 | 608 | 0.6+ | 0.7− | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 11 05 | 644 | 0.5− | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.2− |
| 2002 11 05 | 704 | 0.4− | 0.1+ | 2006 10 19 | 291 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.6− |
| 2002 11 05 | 704 | 0.2+ | 0.0 | 2006 10 19 | 291 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2002 11 05 | 704 | 0.6− | 0.3− | 2006 10 19 | 291 | 0.5− | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2002 11 05 | 644 | 0.4− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2002 11 05 | 644 | 0.5− | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.2+ | 1.1+ |
| 2002 11 06 | 704 | (0.3+ | 1.6+) | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.5+ | 0.1+ |
| 2002 11 06 | 704 | 0.3− | 1.2+ | 2006 10 19 | 644 | 0.4+ | 0.5+ | 2006 11 17 | 703 | (1.6+ | 0.6−) |
| 2002 11 06 | 704 | 1.2− | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 703 | (0.7+ | 1.6+) |
| 2002 11 06 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.5+ | 2006 11 21 | 704 | (0.2+ | 1.9+) |
| 2002 11 07 | 695 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | (0.1+ | 1.7+) |
| 2002 11 07 | 695 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.8+ |
| 2002 11 14 | 704 | 0.7− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2002 11 14 | 704 | 0.4− | 0.4− | 2006 10 22 | 644 | 0.4+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.5+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2003 01 02 | 291 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.4+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2003 01 02 | 291 | 0.6− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2003 01 02 | 291 | 0.5− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1− | | | | |

**2002 VB$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.67529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22829282 | $\omega$ | 1.80588 | | +0.64903168 | −0.74167822 | |
| $a$ | 2.6513957 | $\Omega$ | 47.77204 | | +0.69508714 | +0.48766231 | |
| $e$ | 0.1709900 | $i$ | 13.21888 | | +0.30921149 | +0.46054195 | |
| $P$ | 4.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.3− | 1.8− | 2002 11 24 | 644 | 0.4+ | 0.0 | 2002 12 12 | 608 | 0.3− | 0.3+ |
| 1998 12 17 | 704 | (0.6+ | 3.3−) | 2002 11 24 | 644 | 0.0 | 0.1+ | 2002 12 12 | 608 | 0.1+ | 0.4+ |
| 1998 12 17 | 704 | (1.0+ | 2.8−) | 2002 11 27 | 699 | 0.1− | 0.4+ | 2002 12 27 | 644 | 0.7+ | 0.6− |
| 1998 12 17 | 704 | 0.2+ | 1.4− | 2002 11 27 | 699 | 0.3− | 0.7+ | 2002 12 27 | 644 | 0.7+ | 0.5− |
| 2002 09 08 | 599 | 0.4− | 0.3− | 2002 11 27 | 699 | 0.5+ | 0.1+ | 2002 12 27 | 644 | 0.3+ | 1.0− |
| 2002 09 08 | 599 | 0.8+ | 0.0 | 2002 11 27 | 699 | 0.0 | 0.7+ | 2006 09 19 | 703 | (0.8+ | 2.5+) |
| 2002 09 08 | 599 | 0.4− | 0.1− | 2002 11 28 | 699 | 0.0 | 0.3− | 2006 09 19 | 703 | (1.9+ | 1.0−) |
| 2002 10 03 | 704 | 0.1+ | 0.2+ | 2002 11 28 | 699 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.1− | 0.5− |
| 2002 10 03 | 704 | 0.3+ | 0.9+ | 2002 11 28 | 699 | 0.3+ | 0.2− | 2006 09 19 | 703 | 1.1+ | 1.4− |
| 2002 10 03 | 704 | 0.1− | 0.4+ | 2002 11 28 | 699 | 0.8+ | 0.0 | 2006 09 27 | 703 | 0.2+ | 1.0− |
| 2002 10 30 | 608 | 0.8− | 1.2− | 2002 12 01 | 608 | 0.9− | 0.1+ | 2006 09 27 | 703 | 0.3+ | 0.3+ |
| 2002 10 30 | 608 | 0.7− | 1.0− | 2002 12 01 | 608 | 0.7− | 0.3+ | 2006 09 27 | 703 | 1.0+ | 0.0 |
| 2002 10 30 | 608 | 1.0− | 1.3− | 2002 12 01 | 608 | 0.4− | 0.1− | 2006 09 27 | 703 | 0.4− | 0.4+ |
| 2002 11 05 | 704 | 0.9+ | 0.2+ | 2002 12 02 | 704 | 0.8− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 11 05 | 704 | 0.1− | 0.1− | 2002 12 02 | 704 | 0.0 | 1.3− | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2002 11 05 | 704 | 0.4+ | 0.2− | 2002 12 02 | 704 | 0.3+ | 1.1− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 11 05 | 704 | 0.8+ | 0.3+ | 2002 12 02 | 704 | 0.0 | 1.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.0 | 0.5+ | 2002 12 02 | 704 | (1.5− | 3.4−) | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.5+ | 0.1− | 2002 12 06 | 704 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.2− | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 11 06 | 704 | 0.3+ | 0.9− | 2002 12 06 | 704 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 1.0+ | 0.3+ | 2002 12 06 | 704 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2002 11 14 | 704 | 0.4+ | 0.3+ | 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.4− |
| 2002 11 14 | 704 | 1.5− | 1.2+ | 2002 12 11 | 644 | 0.5+ | 1.1+ | 2006 10 21 | 703 | 0.9− | 0.4+ |
| 2002 11 14 | 704 | 0.5− | 1.0+ | 2002 12 11 | 704 | 0.5− | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.1+ |
| 2002 11 14 | 704 | (0.7− | 2.6+) | 2002 12 11 | 644 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.0 |
| 2002 11 15 | 704 | 0.6− | 0.8+ | 2002 12 11 | 704 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.2+ | 0.1− |
| 2002 11 15 | 704 | 0.2− | 0.0 | 2002 12 11 | 644 | 0.3+ | 1.2+ | 2006 10 28 | 703 | 0.3+ | 0.5− |
| 2002 11 15 | 704 | 0.1− | 0.7+ | 2002 12 11 | 704 | 0.4− | 0.3+ | 2006 10 28 | 703 | 1.2+ | 0.2− |
| 2002 11 15 | 704 | 0.6− | 0.7+ | 2002 12 11 | 704 | 0.1− | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.8− |
| 2002 11 15 | 704 | 0.1+ | 1.1+ | 2002 12 11 | 704 | 0.1− | 0.5− | | | | |
| 2002 11 24 | 644 | 0.4+ | 0.2− | 2002 12 12 | 608 | 0.7− | 0.5− | | | | |

**2002 VL$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.84331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23529349 | $\omega$ | 204.22366 | | +0.21682001 | −0.97440814 | |
| $a$ | 2.5985402 | $\Omega$ | 233.30690 | | +0.90729596 | +0.22356436 | |
| $e$ | 0.2686028 | $i$ | 4.24197 | | +0.36028201 | +0.02340428 | |
| $P$ | 4.19 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 1.1+ | 0.2− | 2002 11 14 | 704 | 0.1+ | 0.4− | 2002 12 10 | 704 | 0.1+ | 0.6+ |
| 2002 11 05 | 704 | 0.6− | 0.6− | 2002 11 15 | 704 | 0.0 | 1.1− | 2002 12 10 | 704 | 0.2+ | 0.6− |
| 2002 11 05 | 704 | 0.2− | 0.3− | 2002 11 15 | 704 | 0.3+ | 0.2+ | 2002 12 10 | 704 | 1.4+ | 0.5− |
| 2002 11 05 | 704 | 0.7+ | 1.0− | 2002 11 15 | 704 | 0.1+ | 0.2+ | 2002 12 27 | 644 | 0.5+ | 0.0 |
| 2002 11 06 | 704 | 0.5− | 0.3− | 2002 11 15 | 704 | 0.2− | 0.6+ | 2002 12 27 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.5− | 0.1+ | 2002 11 15 | 704 | 0.8− | 0.2− | 2002 12 27 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.6− | 0.4− | 2002 11 15 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 0.4+ | 0.4− | 2002 11 15 | 704 | 0.6+ | 0.4− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.6− | 0.3− | 2002 11 15 | 704 | 0.1− | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2002 11 15 | 704 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 11 13 | 644 | 0.0 | 0.3+ | 2002 12 02 | 704 | 0.6− | 1.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2002 11 13 | 644 | 0.1− | 0.4+ | 2002 12 02 | 704 | 0.6− | 0.7+ | 2006 10 19 | G96 | 0.3− | 0.5− |
| 2002 11 14 | 704 | 0.7+ | 0.1− | 2002 12 02 | 704 | 0.3− | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.2+ | 0.1− | 2002 12 05 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.3− | 0.5− | 2002 12 05 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.5+ | 2002 12 05 | 704 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 |

**2002 VX$_{26}$ = 2006 RP$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.82050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21563947 | $\omega$ | 281.60707 | | +0.67821317 | +0.73270644 | |
| $a$ | 2.7541265 | $\Omega$ | 31.33089 | | −0.62499225 | +0.61540455 | |
| $e$ | 0.1089036 | $i$ | 6.21431 | | −0.38653795 | +0.29054864 | |
| $P$ | 4.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 608 | 1.2− | 0.6− | 2002 11 14 | 704 | 0.2− | 0.8+ | 2006 09 14 | 703 | 0.8− | 0.9− |
| 2002 10 28 | 608 | 0.1− | 0.5− | 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.9− |
| 2002 10 28 | 608 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | 0.5+ | 0.0 | 2005 04 02 | G96 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.6+ | 1.7+ |
| 2002 11 05 | 704 | 0.6+ | 0.5+ | 2005 04 02 | G96 | 0.2− | 0.3− | 2006 09 18 | 699 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 0.1+ | 1.1− | 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.9+ |
| 2002 11 06 | 704 | 0.5+ | 0.8+ | 2005 04 12 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.3+ | 0.4+ | 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 1.0+ | 2005 05 11 | G96 | 0.4− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2002 11 06 | 704 | 0.3− | 0.5+ | 2005 05 11 | G96 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 2002 11 12 | 704 | 1.1− | 0.2− | 2005 05 11 | G96 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.4− |
| 2002 11 12 | 704 | 0.4− | 0.4− | 2005 05 11 | G96 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.5− | 1.2− |
| 2002 11 12 | 704 | 0.8− | 0.6+ | 2006 08 20 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 1.2− | 0.2− |
| 2002 11 12 | 704 | 0.4− | 0.8+ | 2006 08 20 | 644 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 1.0+ |
| 2002 11 14 | 704 | 1.0+ | 0.3− | 2006 08 20 | 644 | 0.4+ | 0.1− | | | | |
| 2002 11 14 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | (0.8+ | 2.0−) | | | | |

## 2002 $VJ_{27}$ = 2000 $DT_1$ = 2286 T-2

Id. Minor Planet Center (*MPO* 38133; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.85492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27377027 | $\omega$ | 196.64172 | | +0.98809603 | −0.15383276 | |
| $a$ | 2.3489757 | $\Omega$ | 172.20704 | | +0.14221923 | +0.91019519 | |
| $e$ | 0.2135467 | $i$ | 0.55229 | | +0.05865081 | +0.38455195 | |
| $P$ | 3.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 20 | 675 | (3.5+ | 1.7−) | 2000 02 27 | 691 | 0.6− | 0.3+ | 2002 12 02 | 704 | 0.4− | 0.3+ |
| 1973 09 24 | 675 | 0.5− | 0.4+ | 2000 02 27 | 691 | 0.9− | 0.0 | 2002 12 02 | 704 | 0.3− | 0.3+ |
| 1973 09 24 | 675 | 1.1− | 0.2+ | 2000 02 27 | 691 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.3− | 0.4+ |
| 1973 09 25 | 675 | 0.8+ | 2.0− | 2001 05 24 | 291 | 0.1+ | 0.7+ | 2002 12 05 | 704 | 0.3− | 0.1− |
| 1973 09 25 | 675 | (0.9+ | 2.9−) | 2001 05 24 | 291 | 0.4− | 0.8+ | 2002 12 05 | 704 | 0.2+ | 0.7− |
| 1973 09 29 | 675 | 0.8+ | 0.8− | 2001 05 24 | 291 | 0.5− | 0.6+ | 2002 12 05 | 704 | 0.3− | 0.2− |
| 1973 09 29 | 675 | 0.2− | 1.1− | 2002 10 30 | 608 | 0.8+ | 0.2+ | 2002 12 05 | 704 | 0.2− | 0.3+ |
| 1973 09 30 | 675 | 0.3− | 1.7− | 2002 10 30 | 608 | 0.8+ | 0.1+ | 2002 12 07 | 644 | 0.6− | 0.2+ |
| 1973 09 30 | 675 | (0.9+ | 2.5−) | 2002 10 30 | 608 | 0.7+ | 0.3+ | 2002 12 07 | 644 | 0.5− | 0.2+ |
| 1973 10 04 | 675 | 2.0+ | 1.1− | 2002 11 05 | 704 | 0.0 | 0.5− | 2002 12 07 | 644 | 0.6− | 0.1+ |
| 1973 10 04 | 675 | 0.3− | 1.6− | 2002 11 05 | 704 | 0.6− | 0.1− | 2002 12 10 | 704 | 0.6+ | 0.6+ |
| 1973 10 05 | 675 | (0.2− | 3.2−) | 2002 11 05 | 704 | 0.5− | 0.7+ | 2002 12 10 | 704 | 0.5− | 0.4+ |
| 1973 10 05 | 675 | (0.2+ | 2.8−) | 2002 11 06 | 704 | 0.1− | 0.6+ | 2002 12 10 | 644 | 0.6− | 0.0 |
| 1991 10 06 | 691 | 0.1+ | 0.5− | 2002 11 06 | 704 | 0.1− | 1.0+ | 2002 12 10 | 704 | (0.5+ | 1.6+) |
| 1991 10 06 | 691 | 0.7+ | 0.8+ | 2002 11 06 | 704 | 0.4+ | 0.5+ | 2002 12 10 | 704 | (0.4+ | 1.9+) |
| 1998 08 17 | 704 | 1.6− | 0.7+ | 2002 11 06 | 704 | 0.1− | 0.5+ | 2002 12 10 | 644 | 0.4− | 0.4+ |
| 1998 08 17 | 704 | 0.7− | 0.7+ | 2002 11 06 | 704 | 0.3+ | 0.4+ | 2002 12 10 | 644 | 0.1+ | 0.4+ |
| 1998 08 17 | 704 | 0.4− | 0.9− | 2002 11 14 | 704 | 0.4− | 0.1+ | 2002 12 27 | 644 | 0.2− | 0.9+ |
| 1998 08 17 | 704 | 0.3+ | 1.9+ | 2002 11 14 | 704 | 0.5− | 0.0 | 2002 12 27 | 644 | 0.2− | 0.6+ |
| 1998 08 27 | 691 | 0.2+ | 0.4+ | 2002 11 14 | 704 | 0.4− | 0.5+ | 2002 12 27 | 644 | 0.3− | 0.6+ |
| 1998 08 27 | 691 | 0.1+ | 0.5+ | 2002 11 14 | 704 | (2.1− | 0.6+) | 2006 09 25 | G96 | 0.1− | 0.1− |
| 1998 08 27 | 691 | 0.3+ | 0.4+ | 2002 11 27 | 699 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.7− | 0.6− |
| 2000 02 02 | 691 | 0.0 | 0.2− | 2002 11 27 | 699 | 0.8− | 0.4− | 2006 09 25 | G96 | 0.7− | 0.5+ |
| 2000 02 02 | 691 | 0.1+ | 0.2− | 2002 11 27 | 699 | 0.5− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.4+ |
| 2000 02 02 | 691 | 0.4+ | 0.1+ | 2002 11 27 | 699 | 0.7− | 0.9+ | 2006 11 01 | G96 | 0.6− | 0.1− |
| 2000 02 26 | 691 | 0.7+ | 0.1+ | 2002 12 02 | 704 | 0.4− | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2000 02 26 | 691 | 0.8+ | 0.1− | 2002 12 02 | 704 | 0.5+ | 1.0+ | 2006 11 01 | G96 | 0.3+ | 0.6− |
| 2000 02 26 | 691 | 1.1+ | 0.4− | 2002 12 02 | 704 | 1.1− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.1− |

## 2002 $VZ_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.12181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22751277 | $\omega$ | 173.42353 | | +0.73324091 | −0.67080814 | |
| $a$ | 2.6574526 | $\Omega$ | 229.33849 | | +0.61698835 | +0.72512431 | |
| $e$ | 0.1658349 | $i$ | 8.43244 | | +0.28580264 | +0.15559941 | |
| $P$ | 4.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.7− | 0.3+ | 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 09 27 | 699 | 0.0 | 0.0 |
| 2002 10 30 | 608 | 0.7− | 0.6+ | 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 09 27 | 683 | 0.4− | 0.1− |
| 2002 10 30 | 608 | 0.5− | 0.0 | 2002 12 06 | 704 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.8− | 0.7+ |
| 2002 11 05 | 699 | 0.7− | 0.1+ | 2002 12 10 | 644 | 0.4− | 0.2+ | 2006 09 27 | 683 | 0.8+ | 0.1− |
| 2002 11 05 | 704 | 0.5+ | 0.9+ | 2002 12 10 | 644 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.3+ | 0.6+ |
| 2002 11 05 | 699 | 0.1− | 0.5− | 2002 12 10 | 644 | 0.8+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.3− |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2002 12 11 | 704 | (1.1+ | 2.1−) | 2006 09 27 | 683 | 0.2+ | 0.8+ |
| 2002 11 05 | 699 | 0.6+ | 0.6+ | 2002 12 11 | 704 | 0.1− | 0.6− | 2006 09 27 | 703 | 0.5− | 0.3− |
| 2002 11 05 | 704 | 0.3− | 0.7+ | 2002 12 11 | 704 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.2− | 0.7− |
| 2002 11 05 | 699 | 0.6+ | 0.0 | 2002 12 11 | 704 | 0.3− | 0.3− | 2006 09 27 | 703 | 0.4− | 0.3− |
| 2002 11 05 | 704 | 0.3− | 0.4− | 2002 12 11 | 704 | 0.1+ | 0.9− | 2006 09 27 | 703 | 0.0 | 0.5− |
| 2002 11 05 | 704 | (1.6+ | 0.3+) | 2002 12 27 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.8− |
| 2002 11 06 | 704 | 0.2+ | 0.1− | 2002 12 27 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 683 | 0.2− | 0.2− |
| 2002 11 06 | 704 | 0.4+ | 0.5+ | 2002 12 27 | 644 | 0.1− | 0.6+ | 2006 09 28 | 683 | 1.3+ | 0.5− |
| 2002 11 06 | 704 | 0.0 | 0.5− | 2002 12 31 | 699 | 0.3− | 0.4− | 2006 09 28 | 683 | 0.6− | 0.9+ |
| 2002 11 11 | 704 | 0.2− | 0.2− | 2002 12 31 | 699 | 1.1− | 0.1+ | 2006 09 29 | 683 | 0.1− | 0.4− |
| 2002 11 11 | 704 | 0.2− | 0.3− | 2002 12 31 | 699 | 0.3− | 0.4+ | 2006 09 29 | 683 | (1.2+ | 1.9−) |
| 2002 11 11 | 704 | 0.0 | 1.3+ | 2002 12 31 | 699 | 1.3− | 0.5+ | 2006 09 29 | 683 | 1.3+ | 0.3+ |
| 2002 11 11 | 704 | 0.5− | 0.0 | 2003 01 27 | 644 | 0.2− | 0.8− | 2006 09 30 | 683 | 0.7− | 0.5+ |
| 2002 11 11 | 704 | 0.3+ | 0.1+ | 2003 01 27 | 644 | 0.4+ | 0.8− | 2006 09 30 | 683 | (1.7− | 0.6+) |
| 2002 11 13 | 644 | 0.3− | 0.0 | 2003 01 27 | 644 | 0.2+ | 0.3− | 2006 09 30 | 683 | 1.0− | 1.3+ |
| 2002 11 13 | 644 | 0.2+ | 0.1+ | 2005 06 17 | G96 | 0.2+ | 0.1+ | 2006 10 03 | 704 | 0.2+ | 0.4+ |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2005 06 17 | G96 | 0.3+ | 0.5+ | 2006 10 03 | 704 | 0.6+ | 0.3− |
| 2002 11 14 | 704 | 0.8+ | 0.2− | 2005 06 17 | G96 | 0.8− | 1.0+ | 2006 10 03 | 704 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.3+ | 0.5− | 2005 06 17 | G96 | 0.2+ | 0.0 | 2006 10 03 | 704 | 0.6− | 1.2+ |
| 2002 11 14 | 704 | 1.2+ | 1.3+ | 2006 09 16 | 703 | 1.0− | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.6− |
| 2002 11 14 | 704 | 0.0 | 0.4+ | 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 17 | 703 | (0.1+ | 1.6−) |
| 2002 11 14 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.8− |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.5+ | 1.0+ | 2006 10 17 | 703 | (0.8− | 2.3−) |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.6− | 0.3− | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2002 12 01 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2002 12 01 | 704 | 0.3− | 0.3− | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 12 01 | 704 | 0.2− | 0.5− | 2006 09 21 | 106 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 12 01 | 704 | 0.8− | 0.1+ | 2006 09 21 | 106 | 0.1− | 0.7− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2002 12 02 | 704 | 0.2− | 0.1− | 2006 09 21 | 106 | 0.1− | 0.8− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 12 02 | 704 | 1.0+ | 0.2− | 2006 09 21 | 106 | 0.1+ | 0.5− | 2006 10 23 | 703 | 0.3− | 0.2+ |
| 2002 12 02 | 704 | 0.6+ | 0.7− | 2006 09 26 | 683 | 1.3+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 12 02 | 704 | 0.1+ | 0.0 | 2006 09 26 | 683 | (1.0+ | 1.7−) | 2006 10 23 | 703 | 0.1− | 0.6− |
| 2002 12 02 | 704 | 0.1− | 0.3+ | 2006 09 26 | 683 | (2.2+ | 0.3−) | 2006 10 23 | 703 | 0.6+ | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2006 09 27 | 699 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.8+ | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 699 | 0.3− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 699 | 0.6+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.1− | 0.4− | 2006 09 27 | 699 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 09 27 | 699 | 0.6+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.3− | 0.3+ | | | | |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.3− | 0.4− | | | | |

## 2002 $VF_{28}$ = 2006 $QE_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.87560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22734713 | $\omega$ | 131.11809 | | +0.96158901 | +0.26583745 | |
| $a$ | 2.6587432 | $\Omega$ | 213.63079 | | −0.27394275 | +0.91362639 | |
| $e$ | 0.2969260 | $i$ | 7.09306 | | −0.01737666 | +0.30759920 | |
| $P$ | 4.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 691 | 0.1− | 0.1+ | 2002 12 01 | 704 | 1.0+ | 0.6+ | 2006 08 31 | 734 | 0.3+ | 0.2− |
| 2001 05 14 | 691 | 0.0 | 0.7+ | 2006 08 17 | 644 | 0.0 | 0.3− | 2006 09 11 | 703 | 0.3− | 0.7+ |
| 2001 05 14 | 691 | 0.4+ | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 09 11 | 703 | 0.5+ | 0.9+ |
| 2002 10 11 | 704 | 1.3− | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 09 11 | 703 | 0.3+ | 0.8+ |
| 2002 10 11 | 704 | 1.1− | 0.1− | 2006 08 27 | 699 | 0.3− | 0.5+ | 2006 09 11 | 703 | 0.0 | 0.5+ |
| 2002 10 11 | 704 | (0.1+ | 1.9+) | 2006 08 27 | 699 | 0.4− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2002 11 05 | 699 | 1.2− | 1.0+ | 2006 08 27 | 699 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2002 11 05 | 699 | 0.1+ | 0.7− | 2006 08 27 | 699 | 0.4− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2002 11 05 | 699 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.4− | 0.3− | 2006 09 26 | 703 | 0.2− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 699 | (1.7− | 1.2−) | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.2+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.5− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.0 | 0.6− | | |
| 2002 11 06 | 704 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.0 | | |
| 2002 11 06 | 704 | 0.7+ | 0.5+ | 2006 08 29 | 704 | 0.3+ | 0.2− | 2006 09 26 | 704 | 0.9− | 0.9+ | | |
| 2002 11 06 | 704 | 0.6+ | 1.0+ | 2006 08 29 | 704 | 0.4− | 0.9− | 2006 09 26 | 704 | (2.0+ | 0.3+) | | |
| 2002 11 11 | 704 | 0.0 | 0.7+ | 2006 08 29 | 704 | 0.7− | 1.1+ | 2006 09 26 | 704 | 0.6+ | 0.3+ | | |
| 2002 11 11 | 704 | 0.1− | 0.2+ | 2006 08 30 | 734 | 0.0 | 0.3− | 2006 09 26 | 704 | 0.6+ | 0.2− | | |
| 2002 11 11 | 704 | 0.5− | 0.3+ | 2006 08 30 | 734 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.5+ | 1.1− | | |
| 2002 11 11 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 734 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.7+ | 0.5+ | | |
| 2002 12 01 | 704 | 0.3+ | 0.1− | 2006 08 31 | 734 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.1− | 0.9− | | |
| 2002 12 01 | 704 | 0.6+ | 1.2+ | 2006 08 31 | 734 | 0.0 | 0.1− | 2006 10 22 | 703 | 1.4− | 0.9− | | |
| 2002 12 01 | 704 | 0.1− | 0.3− | 2006 08 31 | 734 | 0.3+ | 0.3− | | | | | | |
| 2002 12 01 | 704 | 0.7+ | 0.0 | 2006 08 31 | 734 | 0.1+ | 0.1− | | | | | | |

### 2002 $VZ_{28}$ = 2002 $XM_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.41736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23651705 | $\omega$ | 185.95318 | | +0.63008364 | −0.77627661 | |
| $a$ | 2.5895705 | $\Omega$ | 224.99263 | | +0.71359614 | +0.58885300 | |
| $e$ | 0.1574178 | $i$ | 1.59904 | | +0.30622731 | +0.22504838 | |
| $P$ | 4.17 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 644 | 0.0 | 0.4+ | 2002 12 05 | 704 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.1+ | | |
| 2002 11 05 | 699 | 0.5− | 0.0 | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.6+ | 0.0 | | |
| 2002 11 05 | 644 | 0.0 | 0.4+ | 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.3− | | |
| 2002 11 05 | 699 | 0.1− | 0.4− | 2002 12 05 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 11 05 | 699 | 0.3− | 0.6+ | 2002 12 05 | 704 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2002 11 05 | 699 | (1.8− | 1.0+) | 2002 12 05 | 704 | 1.0− | 1.3− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2002 11 05 | 644 | 0.0 | 0.4+ | 2002 12 10 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 11 06 | 704 | 0.2− | 0.4+ | 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 06 | 704 | 0.4+ | 0.4− | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 11 06 | 704 | 0.1− | 0.4− | 2004 03 29 | 691 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1− | | |
| 2002 11 06 | 704 | 0.2+ | 0.6+ | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2002 11 06 | 704 | 0.2− | 0.2+ | 2004 03 29 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 11 12 | 644 | 0.3+ | 0.9+ | 2006 09 23 | 152 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2002 11 12 | 644 | 0.5+ | 0.0 | 2006 09 23 | 152 | 0.3+ | 0.9− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 11 12 | 644 | 0.4+ | 0.7+ | 2006 09 23 | 152 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.0 | | |
| 2002 11 14 | 704 | (0.0 | 2.1−) | 2006 09 23 | 152 | 0.9− | 0.7+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | | |
| 2002 11 14 | 704 | 0.1− | 0.2+ | 2006 09 23 | 152 | 1.2− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 14 | 704 | (1.8+ | 0.7+) | 2006 09 23 | 152 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.0 | | |
| 2002 11 14 | 704 | 0.6− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2002 11 14 | 704 | 0.8+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2− | | |
| 2002 11 25 | 291 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− | | |
| 2002 11 25 | 291 | 0.0 | 0.1− | 2006 10 13 | A50 | 0.5− | 0.4+ | 2006 11 11 | 703 | (1.6+ | 3.7−) | | |
| 2002 11 25 | 291 | 0.0 | 0.0 | 2006 10 13 | A50 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.7− | | |
| 2002 12 01 | 608 | 0.1− | 0.3− | 2006 10 13 | A50 | 0.5− | 0.5+ | 2006 11 11 | 703 | (0.3+ | 1.7−) | | |
| 2002 12 01 | 608 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.5− | | |
| 2002 12 01 | 608 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.3− | | |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.6− | 0.9− | | |
| 2002 12 05 | 704 | 1.0− | 0.6− | 2006 10 17 | G96 | 1.1+ | 0.5− | 2006 11 13 | G96 | 0.2− | 0.0 | | |
| 2002 12 05 | 704 | 0.6+ | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.1− | | | | | | |

### 2002 $VB_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.67088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23534096 | $\omega$ | 355.13788 | | +0.66674526 | −0.73487555 | |
| $a$ | 2.5981908 | $\Omega$ | 52.98247 | | +0.68892087 | +0.54417159 | |
| $e$ | 0.1885793 | $i$ | 8.94380 | | +0.28432164 | +0.40476562 | |
| $P$ | 4.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.4+ | 0.2+ | 2002 12 06 | 704 | 0.8+ | 0.6− | 2006 09 30 | 704 | 0.3+ | 0.2− | | |
| 2002 09 09 | 599 | 0.1+ | 0.3+ | 2002 12 06 | 704 | 0.5+ | 0.4− | 2006 09 30 | 704 | 0.2+ | 0.2+ | | |
| 2002 09 09 | 599 | 0.0 | 0.0 | 2002 12 10 | 644 | 0.0 | 0.8− | 2006 09 30 | 704 | 0.2− | 0.2− | | |
| 2002 10 31 | 699 | 0.9− | 0.3+ | 2002 12 10 | 644 | 0.0 | 0.7− | 2006 09 30 | 704 | 0.2− | 0.3− | | |
| 2002 10 31 | 699 | 0.1+ | 0.2+ | 2002 12 10 | 644 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.7− | 0.4− | | |
| 2002 10 31 | 699 | 0.3+ | 0.2+ | 2002 12 10 | 704 | 0.4− | 0.9− | 2006 10 16 | 703 | 0.6− | 0.1− | | |
| 2002 10 31 | 699 | 0.2+ | 0.1+ | 2002 12 10 | 704 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.1− | | |
| 2002 11 03 | 608 | 0.1− | 0.1− | 2002 12 10 | 704 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.3+ | | |
| 2002 11 03 | 608 | 0.1− | 0.0 | 2002 12 10 | 704 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2002 11 03 | 608 | 0.1− | 0.2− | 2002 12 12 | 608 | 0.8+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2002 11 05 | 644 | 0.0 | 0.0 | 2002 12 12 | 608 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 05 | 699 | 0.0 | 0.4− | 2002 12 12 | 608 | 0.8+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 05 | 644 | 0.7+ | 0.3− | 2002 12 27 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.0 | | |
| 2002 11 05 | 699 | 0.1− | 0.0 | 2002 12 27 | 644 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | | |
| 2002 11 05 | 699 | 0.0 | 0.3+ | 2002 12 27 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1− | | |
| 2002 11 05 | 699 | 0.2+ | 0.3+ | 2002 12 31 | 704 | (1.2− | 1.7+) | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2002 11 05 | 644 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2002 11 06 | 704 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.2− | 0.8+ | 2006 10 22 | 703 | 0.1− | 1.2+ | | |
| 2002 11 06 | 704 | 0.0 | 0.7− | 2002 12 31 | 704 | 0.8− | 1.2+ | 2006 10 22 | 703 | 0.1− | 0.4+ | | |
| 2002 11 06 | 704 | 0.7− | 0.5− | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.3− | | |
| 2002 11 06 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.0 | | |
| 2002 11 06 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1− | | |
| 2002 11 10 | 704 | 0.7− | 1.3− | 2006 09 18 | 703 | 0.3− | 0.4+ | 2006 11 10 | 704 | 0.0 | 0.1− | | |
| 2002 11 10 | 704 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.3− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.2+ | | |
| 2002 11 10 | 704 | 1.3+ | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.3+ | 2006 11 10 | 704 | 0.8− | 0.2+ | | |
| 2002 12 01 | 608 | 0.2− | 0.3− | 2006 09 21 | 699 | 0.5+ | 0.0 | 2006 11 10 | 644 | 0.5+ | 0.2+ | | |
| 2002 12 01 | 608 | 0.2− | 0.6− | 2006 09 21 | 699 | 0.4− | 0.3+ | 2006 11 10 | 704 | 0.2− | 1.0− | | |
| 2002 12 01 | 608 | 0.2− | 0.5− | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.8+ | 1.0− | | |
| 2002 12 02 | 704 | 0.2− | 0.9+ | 2006 09 25 | 699 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.2− | 0.2− | | |
| 2002 12 02 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 699 | 0.4− | 0.6+ | 2006 11 17 | 704 | 0.1+ | 0.0 | | |
| 2002 12 02 | 704 | 1.4− | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.0 | 0.6− | | |
| 2002 12 02 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.7− | | |
| 2002 12 02 | 704 | 0.8− | 0.5+ | 2006 09 26 | 703 | 0.6+ | 0.2− | 2006 11 21 | 682 | 0.6+ | 0.1− | | |
| 2002 12 05 | 704 | 0.7− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.3− | 2006 11 21 | 682 | 0.4+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.6− | 2006 11 21 | 682 | 0.9+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.7− | 0.1+ | 2006 09 29 | 699 | 1.1− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.1− | | |
| 2002 12 05 | 704 | 0.7− | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.6+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.5− | 0.6+ | 2006 09 29 | 699 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.1+ | | |
| 2002 12 06 | 704 | 1.0+ | 0.5− | 2006 09 29 | 699 | 0.4− | 0.1+ | | | | | | |

### 2002 $VG_{29}$ = 2006 $TR_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.12545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23725579 | $\omega$ | 253.77558 | | −0.34224194 | −0.90165300 | |
| $a$ | 2.5841924 | $\Omega$ | 219.63517 | | +0.93923758 | −0.33622584 | |
| $e$ | 0.2306677 | $i$ | 24.48422 | | −0.02651820 | −0.27198173 | |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.4− | 0.9− | 2002 11 12 | 644 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.4+ | | |
| 2002 10 31 | 644 | 0.1+ | 0.6− | 2002 11 12 | 644 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.5+ | | |
| 2002 10 31 | 644 | 0.1− | 0.6− | 2002 11 30 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.6+ | | |
| 2002 11 05 | 704 | (1.5− | 0.0 ) | 2002 11 30 | 704 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.6− | | |
| 2002 11 05 | 704 | 0.4− | 0.1− | 2002 11 30 | 704 | 0.2+ | 0.6− | 2006 11 11 | 703 | 0.1− | 0.4− | | |
| 2002 11 05 | 704 | (2.0− | 2.0+) | 2002 11 30 | 704 | 0.8− | 0.9+ | 2006 11 11 | 703 | 0.0 | 0.8− | | |
| 2002 11 05 | 704 | 0.7− | 0.2− | 2002 12 02 | 704 | 1.0+ | 0.4− | 2006 11 11 | 703 | 0.5− | 0.2− | | |
| 2002 11 05 | 704 | 0.6− | 0.3+ | 2002 12 02 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1− | | |
| 2002 11 06 | 704 | 0.3− | 0.9+ | 2002 12 02 | 704 | 0.4− | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.0 | | |
| 2002 11 06 | 704 | 0.5− | 0.3+ | 2002 12 02 | 704 | 0.1+ | 0.5− | 2006 11 13 | 644 | 0.2+ | 0.3− | | |
| 2002 11 06 | 704 | 1.0− | 0.1− | 2002 12 02 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2002 12 02 | 704 | 0.2− | 0.7− | 2006 11 17 | 703 | 1.0− | 0.3+ | | |
| 2002 11 06 | 704 | 0.0 | 0.0 | 2002 12 02 | 704 | 0.1− | 0.4− | 2006 11 17 | 703 | (2.4+ | 0.3+) | | |
| 2002 11 07 | 704 | 0.4− | 0.5− | 2002 12 02 | 704 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.5+ | | |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2002 12 02 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 704 | (1.6− | 0.6−) | | |
| 2002 11 07 | 704 | 0.3− | 0.4+ | 2002 12 02 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | (0.6− | 1.8+) | | |
| 2002 11 07 | 704 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.1+ | | |
| 2002 11 11 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 0.5+ | | |
| 2002 11 11 | 704 | 0.1− | 0.5− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 19 | G92 | 0.6+ | 0.4− | | |
| 2002 11 11 | 704 | 0.0 | 0.8− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 19 | G92 | 0.2− | 0.5− | | |
| 2002 11 11 | 704 | 0.8+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 19 | G92 | 0.1+ | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.7+ | 0.4− |
| 2002 11 12 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2002 11 12 | 704 | 1.1+ | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | 0.3− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.7− | 2006 11 21 | 704 | 0.8+ | 1.5+ |
| 2002 11 12 | 704 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.3− | | | | |
| 2002 11 12 | 644 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | | | | |

**2002 VK$_{29}$ = 2006 QR$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.01388 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23251026 | $\omega$ | 197.70745 | | +0.84784464 | −0.52809235 | |
| $a$ | 2.6192360 | $\Omega$ | 194.46547 | | +0.50667584 | +0.83340765 | |
| $e$ | 0.2027601 | $i$ | 11.01502 | | +0.15632994 | +0.16294220 | |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.3+ | 0.8+ | 2002 12 13 | 644 | 0.0 | 0.7− | 2006 09 29 | 704 | (1.1+ | 1.6−) |
| 2000 04 05 | 691 | 0.0 | 0.9+ | 2002 12 13 | 644 | 0.2− | 0.9− | 2006 09 29 | 704 | 0.5+ | 0.3− |
| 2000 04 05 | 691 | 0.3+ | 1.0+ | 2002 12 13 | 644 | 0.3− | 0.4− | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2002 11 05 | 704 | (0.5+ | 2.2−) | 2006 08 31 | 704 | 0.6+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.4+ |
| 2002 11 05 | 704 | (1.1+ | 2.4−) | 2006 08 31 | 704 | 0.9+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | (1.6+ | 2.5−) | 2006 08 31 | 704 | 0.3+ | 1.0+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.6− | 0.4− | 2006 08 31 | 704 | 0.3+ | 0.4− | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2002 11 06 | 704 | 0.7− | 1.1+ | 2006 09 14 | 703 | (1.6− | 0.3−) | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.3− | 0.6+ | 2006 09 14 | 703 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.6− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.8− | 0.3− | 2006 09 14 | 703 | 0.7− | 0.8+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.7+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.7− | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | 0.3+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2002 11 07 | 699 | 1.0− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2002 11 07 | 704 | 0.1− | 0.8+ | 2006 09 18 | 699 | 0.5− | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 699 | 0.7− | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 1.0+ | 0.2+ | 2006 09 18 | 699 | 0.8− | 0.2− | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 11 07 | 699 | 0.1+ | 0.9− | 2006 09 18 | 699 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | 1.0+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 699 | 0.4+ | 0.3− | 2006 09 20 | 704 | (0.6− | 1.6+) | 2006 10 20 | 644 | 0.1+ | 0.4− |
| 2002 11 12 | 704 | 1.3+ | 0.2− | 2006 09 20 | 704 | 0.0 | 1.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.9+ | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.5+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2002 11 12 | 704 | 0.7+ | 0.8+ | 2006 09 20 | 704 | 0.6− | 0.8+ | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2002 11 12 | 704 | (1.8+ | 0.4+) | 2006 09 21 | A50 | 0.7+ | 0.6− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 704 | (2.4+ | 1.0+) | 2006 09 22 | A50 | 0.7+ | 0.4+ | 2006 10 28 | 704 | 0.2− | 0.7+ |
| 2002 11 12 | 644 | 0.1− | 0.2− | 2006 09 24 | 621 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.9+ | 1.4+ |
| 2002 11 12 | 644 | 0.0 | 0.3− | 2006 09 24 | 621 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.6− | 0.1+ |
| 2002 11 12 | 644 | 0.3− | 0.3− | 2006 09 24 | 621 | 0.1+ | 0.3+ | 2006 10 28 | 704 | 0.2+ | 0.5+ |
| 2002 11 30 | 704 | 0.1+ | 0.5− | 2006 09 24 | 621 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 11 30 | 704 | 0.0 | 0.2− | 2006 09 24 | 621 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 11 30 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 621 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 12 03 | 608 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2002 12 03 | 608 | 0.4− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 | | | | |
| 2002 12 03 | 608 | 1.4− | 0.8+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | | | |

**2002 VC$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.60414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24334399 | $\omega$ | 216.03949 | | +0.15312245 | −0.98291811 | |
| $a$ | 2.5409081 | $\Omega$ | 225.40352 | | +0.93691046 | +0.17725390 | |
| $e$ | 0.0869287 | $i$ | 8.24420 | | +0.31424880 | −0.04952829 | |
| $P$ | 4.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.8− | 0.7+ | 2002 12 01 | 704 | (1.7− | 0.2−) | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.1− | 0.4+ | 2002 12 01 | 704 | (0.6− | 1.6−) | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2002 11 05 | 704 | 0.3− | 0.8+ | 2002 12 10 | 644 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2002 11 06 | 704 | 0.5− | 0.3− | 2002 12 10 | 644 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2002 11 06 | 704 | 1.5− | 1.2+ | 2002 12 10 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 1.1− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 1.0− | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3+ | 1.5− |
| 2002 11 06 | 704 | 0.5− | 0.6+ | 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 14 | 691 | 0.4− | 0.3− |
| 2002 11 06 | 704 | 0.1− | 1.0+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 14 | 691 | 0.3− | 0.3− |
| 2002 11 06 | 704 | 0.6+ | 1.2+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.7− |
| 2002 11 07 | 704 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.7− |
| 2002 11 07 | 704 | 0.2+ | 0.7− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 1.0+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.7+ |
| 2002 11 07 | 704 | 0.9+ | 0.7+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 2002 11 07 | 704 | 1.5+ | 1.3+ | 2006 10 20 | 644 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 2002 11 13 | 644 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.8− | 0.7− |
| 2002 11 13 | 644 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.5+ | 0.2+ | 2006 11 17 | 703 | (0.3+ | 1.8−) |
| 2002 11 13 | 644 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.3+ |
| 2002 11 14 | 704 | 0.4+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.7− |
| 2002 11 14 | 704 | 1.0+ | 1.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 1.0+ | 0.8+ |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2002 11 14 | 704 | 0.7+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2002 11 16 | 644 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2002 11 16 | 644 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2002 11 16 | 644 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2002 11 25 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2002 11 25 | 644 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.1− | 1.1− |
| 2002 11 25 | 644 | 0.5+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 1.0− | 1.1+ |
| 2002 12 01 | 704 | 0.2+ | 1.5− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 29 | 704 | 1.4− | 0.3+ |
| 2002 12 01 | 704 | 0.3− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.2+ | 1.1+ |
| 2002 12 01 | 704 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1− | | | | |

**2002 VZ$_{32}$ = 2006 WD$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.78089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27570254 | $\omega$ | 121.04580 | | +0.99064839 | −0.13551838 | |
| $a$ | 2.3379876 | $\Omega$ | 246.74687 | | +0.11857510 | +0.91251572 | |
| $e$ | 0.2208338 | $i$ | 0.98712 | | +0.06749602 | +0.38594018 | |
| $P$ | 3.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 14 | 691 | 0.1− | 0.1− | 2002 11 24 | 644 | 0.4− | 0.4− | 2002 12 10 | 704 | 0.4− | 0.5− |
| 1991 09 14 | 691 | 0.0 | 0.3− | 2002 11 24 | 644 | 0.4+ | 0.3− | 2002 12 10 | 704 | 0.3+ | 0.5− |
| 1991 09 14 | 691 | 0.2+ | 0.1+ | 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2002 11 26 | 291 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.8+ | 0.5− |
| 2002 11 05 | 704 | 0.1+ | 0.5− | 2002 11 26 | 291 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.4+ | 0.7− |
| 2002 11 05 | 704 | 0.5− | 0.4− | 2002 11 26 | 291 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.9− |
| 2002 11 05 | 704 | 0.6+ | 0.7+ | 2002 12 05 | 704 | 0.0 | 0.0 | 2006 11 24 | 291 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.0 | 0.0 | 2002 12 05 | 704 | 0.5+ | 0.3− | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2002 11 06 | 704 | 0.4+ | 0.3+ | 2002 12 05 | 704 | 0.3+ | 0.3− | 2006 11 24 | 291 | 0.6− | 0.5+ |
| 2002 11 06 | 704 | 0.4− | 0.1− | 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2002 11 06 | 704 | 0.4− | 0.7+ | 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 11 24 | 291 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.5− | 0.7+ | 2002 12 08 | 049 | 0.5+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2002 12 08 | 049 | 0.2+ | 0.8− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.4+ | 0.4− | 2002 12 08 | 049 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.5− | 0.6− | 2002 12 10 | 704 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | (2.1+ | 0.3+) | 2002 12 10 | 704 | 0.4+ | 0.8+ | 2006 11 27 | G96 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.4− | 0.6+ | 2002 12 10 | 704 | 0.4+ | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.2− |

**2002 VV$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.44426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22878941 | $\omega$ | 309.03416 | | +0.91642201 | −0.33025320 | |
| $a$ | 2.6475577 | $\Omega$ | 71.29979 | | +0.39916126 | +0.79516667 | |
| $e$ | 0.1849248 | $i$ | 13.80746 | | −0.02899983 | +0.50856935 | |
| $P$ | 4.31 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.1− | 1.1+ | 2002 12 05 | 704 | 0.3− | 0.3− | 2006 09 25 | 703 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.1− | 0.8+ | 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 1.3− | 0.4+ | 2002 12 10 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.6− |
| 2002 11 05 | 704 | 0.0 | 0.8+ | 2002 12 10 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.2− | 0.2− |
| 2002 11 06 | 704 | 0.7+ | 0.7+ | 2002 12 10 | 704 | 0.6+ | 0.5+ | 2006 10 04 | 703 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 1.1+ | 0.8+ | 2002 12 10 | 704 | 0.3+ | 0.4+ | 2006 10 04 | 703 | 0.5− | 0.3− |
| 2002 11 06 | 704 | 0.3+ | 0.1+ | 2002 12 10 | 704 | 0.7− | 0.2+ | 2006 10 04 | 703 | 0.8− | 0.2+ |
| 2002 11 07 | 704 | 0.2+ | 0.2− | 2002 12 11 | 333 | 0.5− | 0.3− | 2006 10 04 | 703 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.7− | 0.6− | 2002 12 11 | 333 | 0.8+ | 0.9− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.8− | 1.1− | 2002 12 11 | 333 | 0.2− | 0.5− | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.6− | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2002 11 12 | 049 | 0.6− | 0.4− | 2002 12 31 | 704 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.7+ | 0.3+ |
| 2002 11 12 | 049 | 0.9− | 0.3− | 2002 12 31 | 704 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2002 11 12 | 049 | 0.8− | 0.2− | 2002 12 31 | 704 | 0.0 | 1.1+ | 2006 10 21 | 703 | 0.3+ | 0.8+ |
| 2002 11 14 | 704 | 0.8+ | 0.2+ | 2002 12 31 | 704 | (2.2− | 0.0 ) | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 2002 11 14 | 704 | 0.5+ | 0.1+ | 2003 01 05 | 704 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.9+ | 0.2+ |
| 2002 11 14 | 704 | 0.0 | 0.5− | 2003 01 05 | 704 | 1.5+ | 0.6+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | 0.8+ | 0.1− | 2003 01 05 | 704 | 0.5+ | 0.3− | 2006 11 17 | 703 | 0.1− | 0.7+ |
| 2002 11 14 | 704 | 1.1+ | 0.5+ | 2003 01 05 | 704 | 0.5− | 0.5+ | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2002 11 28 | 608 | 0.2+ | 1.2− | 2003 01 05 | 704 | 0.5− | 0.4− | 2006 11 23 | 703 | 0.0 | 0.4− |
| 2002 11 28 | 608 | 0.2− | 1.0− | 2006 09 24 | 699 | 1.0+ | 0.2+ | 2006 11 23 | 703 | 0.9+ | 0.8− |
| 2002 11 28 | 608 | 0.5− | 1.0− | 2006 09 24 | 699 | 0.5− | 0.3− | 2006 11 23 | 703 | 0.2+ | 0.5− |
| 2002 12 05 | 704 | 0.3− | 0.2− | 2006 09 24 | 699 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.6+ | 0.2− |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2006 09 24 | 699 | 1.1− | 0.1+ | | | | |

**2002 VD$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.60647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22874813 | $\omega$ | 143.33410 | | +0.91010970 | −0.37025128 | |
| $a$ | 2.6478762 | $\Omega$ | 239.40724 | | +0.30992439 | +0.90626530 | |
| $e$ | 0.1153302 | $i$ | 12.48205 | | +0.27504037 | +0.20395393 | |
| $P$ | 4.31 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 1.0− |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2002 11 05 | 704 | 0.2− | 0.6+ | 2006 10 21 | 704 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.1− | 0.3+ |
| 2002 11 05 | 704 | 0.1− | 0.3− | 2006 10 21 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2006 10 21 | 704 | 0.4+ | 0.0 | 2006 11 14 | 703 | 0.2− | 0.6− |
| 2002 11 06 | 704 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 1.0− | 0.0 |
| 2002 11 06 | 704 | 0.5− | 0.4− | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.2− |
| 2002 11 14 | 704 | 1.4+ | 1.1− | 2006 10 23 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.4− |
| 2002 11 14 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.0 | 2006 11 18 | 185 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.2+ | 2006 11 18 | 185 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.6+ | 0.3− | 2006 10 24 | 400 | 0.1+ | 0.1− | 2006 11 18 | 185 | 0.3− | 0.1− |
| 2002 11 14 | 704 | 0.3+ | 0.5+ | 2006 10 24 | 400 | 1.3+ | 0.4− | 2006 11 18 | 185 | 0.3+ | 0.2+ |
| 2002 12 03 | 644 | 0.1− | 0.7− | 2006 10 25 | 106 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2002 12 03 | 644 | 0.1+ | 0.6− | 2006 10 25 | 106 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2002 12 03 | 644 | 0.0 | 0.4− | 2006 10 25 | 106 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.7− | 0.7+ |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2006 10 26 | 106 | 0.5− | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 12 10 | 644 | 0.1− | 0.0 | 2006 10 26 | 400 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2002 12 10 | 644 | 0.1− | 0.1− | 2006 10 26 | 400 | 0.1− | 0.9− | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2002 12 11 | 704 | 1.3− | 0.5+ | 2006 10 27 | 703 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 2002 12 11 | 704 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.6+ |
| 2002 12 11 | 704 | (0.3+ | 1.6+) | 2006 10 27 | 703 | 0.5− | 0.8− | 2006 11 22 | 704 | 0.7+ | 1.5+ |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.0 | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.1+ | 1.1+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2006 10 19 | 703 | 0.8+ | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2006 10 19 | 703 | 0.6− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.3− |

**2002 VJ$_{35}$ = 2006 UV$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.74726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23638860 | $\omega$ | 304.55605 | | +0.97743545 | −0.18124757 | |
| $a$ | 2.5905085 | $\Omega$ | 66.09991 | | +0.21068887 | +0.87339786 | |
| $e$ | 0.1445601 | $i$ | 6.81483 | | −0.01517048 | +0.45202378 | |
| $P$ | 4.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.5− | 0.2+ | 2002 11 24 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.4− | 0.1− | 2002 12 02 | 704 | 1.1− | 1.4− | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.2+ | 0.6− | 2002 12 02 | 704 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2002 11 05 | 704 | 0.4− | 0.0 | 2002 12 02 | 704 | 0.1− | 1.2− | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2002 11 06 | 704 | 0.7+ | 0.2− | 2002 12 02 | 704 | 1.0− | 0.9− | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2002 11 06 | 704 | 0.1− | 0.0 | 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.2− | 0.6− | 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2002 11 13 | 644 | 0.1+ | 0.1+ | 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2002 11 13 | 644 | 0.2+ | 0.2− | 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 11 13 | 703 | (0.5− | 2.0−) |
| 2002 11 13 | 644 | 0.1+ | 0.3+ | 2002 12 10 | 704 | 0.8+ | 0.6− | 2006 11 13 | 703 | 0.7− | 0.6− |
| 2002 11 14 | 704 | 0.0 | 0.9+ | 2002 12 10 | 704 | (1.7+ | 0.4+) | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2002 12 10 | 704 | 0.7− | 0.7− | 2006 11 13 | 703 | 0.1+ | 0.6− |
| 2002 11 14 | 704 | 0.0 | 0.0 | 2002 12 10 | 704 | 0.1− | 0.2+ | 2006 11 14 | 704 | 1.0− | 0.6− |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2002 12 10 | 704 | 0.2+ | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.4− |
| 2002 11 15 | 704 | 0.2+ | 0.6+ | 2002 12 11 | 704 | (2.2− | 0.2+) | 2006 11 14 | 704 | 1.1+ | 0.0 |
| 2002 11 15 | 704 | 0.5+ | 0.2+ | 2002 12 11 | 704 | 0.4− | 0.0 | 2006 11 17 | 704 | (2.0− | 0.0 ) |
| 2002 11 15 | 704 | 0.1− | 0.4+ | 2002 12 11 | 704 | 0.6+ | 0.4+ | 2006 11 17 | 704 | (2.9− | 1.9−) |
| 2002 11 15 | 704 | 0.7− | 0.5+ | 2002 12 11 | 704 | 0.4+ | 0.7+ | 2006 11 17 | 704 | 0.3− | 0.1− |
| 2002 11 15 | 704 | 0.1+ | 0.7+ | 2002 12 27 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.3− |
| 2002 11 23 | 644 | 0.1− | 0.0 | 2002 12 27 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.6+ | 1.3+ |
| 2002 11 23 | 644 | 0.5+ | 0.0 | 2002 12 27 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.4− |
| 2002 11 23 | 644 | 0.8+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.7+ | 2006 11 20 | 704 | 0.7+ | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.5− | 1.0− | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.4− | 0.7+ | 2006 11 20 | 704 | 0.5+ | 0.2+ |

**2002 VR$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.22650 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23497261 | $\omega$ | 229.22802 | | −0.17860310 | −0.97081522 | |
| $a$ | 2.6009054 | $\Omega$ | 231.78780 | | +0.95293026 | −0.13016707 | |
| $e$ | 0.2289294 | $i$ | 11.75388 | | +0.24499971 | −0.20143072 | |
| $P$ | 4.19 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 291 | 0.8− | 0.2− | 2002 12 11 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 10 28 | 291 | 0.4− | 0.0 | 2004 04 25 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 10 28 | 291 | (2.3− | 0.3−) | 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | 0.8+ | 0.6− | 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.0 | 0.8− | 2006 09 25 | 152 | 1.0− | 0.1− | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.9+ | 0.8− | 2006 09 25 | 152 | (2.2+ | 1.1+) | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 0.6− | 0.2+ | 2006 09 25 | 152 | 0.9+ | 1.4+ | 2006 10 31 | 703 | 0.7− | 0.4− |
| 2002 11 06 | 704 | 0.1+ | 0.6− | 2006 09 25 | 152 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 1.0+ | 0.4− |
| 2002 11 06 | 704 | 0.2+ | 0.9− | 2006 09 25 | 152 | 0.8− | 0.7− | 2006 10 31 | 703 | 1.2+ | 0.7− |
| 2002 11 06 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 152 | 0.1+ | 1.3+ | 2006 10 31 | 703 | 0.1− | 0.7− |
| 2002 11 13 | 644 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 09 | 644 | 1.2− | 0.4+ |
| 2002 11 13 | 644 | 0.5+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 11 13 | 644 | 0.7+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2002 11 14 | 704 | 1.0− | 1.1− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.0 | 0.3− |
| 2002 11 14 | 704 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.7+ |
| 2002 11 14 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.2− |
| 2002 12 01 | 704 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.6− |
| 2002 12 01 | 704 | 0.4+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.3− | 0.2− |
| 2002 12 01 | 704 | 1.0+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 12 01 | 704 | 0.6+ | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.3− |
| 2002 12 11 | 704 | (1.8+ | 0.4−) | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.4+ | 2006 10 21 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2002 12 11 | 704 | 0.2− | 0.9+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2002 12 11 | 704 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.2+ | | | | |

**2002 VU$_{35}$ = 2006 VC$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.15786 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23752189 | $\omega$ | 226.73249 | | −0.15434672 | −0.94381600 | |
| $a$ | 2.5822619 | $\Omega$ | 234.44668 | | +0.97818486 | −0.10435439 | |
| $e$ | 0.1554311 | $i$ | 21.04934 | | +0.13903768 | −0.31356264 | |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.0 | 1.0− | 2002 11 28 | 699 | 0.8− | 0.2+ | 2006 11 14 | 703 | 0.8− | 0.3− |
| 2002 11 05 | 704 | 0.7+ | 0.9− | 2002 11 28 | 699 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.7− |
| 2002 11 05 | 704 | 0.4− | 0.4+ | 2002 11 28 | 699 | 0.9− | 0.2− | 2006 11 14 | 703 | (0.6− | 1.7−) |
| 2002 11 05 | 704 | 0.7+ | 1.2− | 2002 12 01 | 704 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 2002 11 05 | 608 | 0.6+ | 0.7+ | 2002 12 01 | 704 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.8+ |
| 2002 11 05 | 608 | 1.2+ | 0.8+ | 2002 12 01 | 704 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.6+ |
| 2002 11 05 | 608 | 0.9+ | 0.7+ | 2002 12 01 | 704 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.9+ |
| 2002 11 06 | 704 | 0.4− | 0.0 | 2002 12 03 | 608 | 0.9− | 0.7− | 2006 11 16 | 704 | 0.3− | 0.9+ |
| 2002 11 06 | 704 | 0.1− | 0.3+ | 2002 12 03 | 608 | 0.1− | 1.0− | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2002 11 06 | 704 | 0.7− | 0.0 | 2002 12 03 | 608 | 0.1− | 0.9− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.1+ | 0.0 | 2004 05 28 | 291 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2002 11 07 | 695 | 0.1− | 0.1− | 2004 05 28 | 291 | 0.3+ | 0.7+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2002 11 07 | 695 | 0.3− | 0.2− | 2004 05 28 | 291 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.8+ | 0.0 |
| 2002 11 11 | 704 | 1.3+ | 0.2+ | 2006 10 19 | 703 | (0.3− | 1.7−) | 2006 11 19 | 704 | 0.9+ | 0.3− |
| 2002 11 11 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 703 | (1.8+ | 0.2−) | 2006 11 19 | 704 | 1.0+ | 0.0 |
| 2002 11 11 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | 0.6+ | 0.3− | 2006 10 19 | 703 | 0.3− | 0.5− | 2006 11 19 | 704 | 1.0+ | 0.3− |
| 2002 11 14 | 704 | 0.3− | 0.7− | 2006 10 27 | 703 | 0.8− | 0.3− | 2006 11 22 | 704 | (0.8− | 2.4+) |
| 2002 11 14 | 704 | 0.5− | 0.9+ | 2006 10 27 | 703 | 0.4− | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2002 11 14 | 704 | 0.2− | 0.9+ | 2006 10 27 | 703 | 0.6− | 0.9+ | 2006 11 22 | 704 | 1.2+ | 0.0 |
| 2002 11 27 | 608 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.3− | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2002 11 27 | 608 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.5+ |
| 2002 11 27 | 608 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.0 | 0.8+ |
| 2002 11 28 | 699 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.3− | 0.4+ | | | | |

**2002 VF$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.70656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23573737 | $\omega$ | 309.73102 | | +0.93275060 | −0.34948423 | |
| $a$ | 2.5952773 | $\Omega$ | 70.88729 | | +0.35276068 | +0.83404849 | |
| $e$ | 0.2716845 | $i$ | 5.37604 | | +0.07440579 | +0.42687690 | |
| $P$ | 4.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.4+ | 0.0 | 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 10 22 | 704 | 0.0 | 1.2+ |
| 2002 11 05 | 704 | 0.4− | 1.0− | 2002 12 10 | 704 | 0.2+ | 0.6− | 2006 10 22 | 704 | 0.3+ | 0.1+ |
| 2002 11 05 | 704 | 0.1+ | 0.6− | 2002 12 10 | 704 | 0.3+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.3− |
| 2002 11 05 | 704 | 0.2− | 0.3− | 2002 12 10 | 704 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.3+ | 2002 12 10 | 704 | 0.4+ | 1.0− | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2002 11 06 | 704 | 0.5+ | 1.2+ | 2002 12 13 | 704 | (0.1+ | 3.0−) | 2006 10 22 | 703 | 0.4− | 0.6− |
| 2002 11 06 | 704 | 0.2− | 0.1− | 2002 12 13 | 704 | (0.1+ | 2.6−) | 2006 10 27 | 704 | 0.5+ | 0.5+ |
| 2002 11 06 | 704 | 0.8− | 0.4− | 2002 12 13 | 704 | (0.6+ | 4.0−) | 2006 10 27 | 704 | 0.5+ | 0.6− |
| 2002 11 06 | 704 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 0.2− | 1.4+ | 2006 10 27 | 704 | 0.2+ | 0.6+ |
| 2002 11 14 | 704 | 0.3+ | 0.4− | 2002 12 31 | 704 | 0.1− | 0.5+ | 2006 10 27 | 704 | 1.0+ | 0.6− |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 0.6+ | 1.3+ | 2006 10 27 | 704 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.3+ | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.7+ | 2006 11 13 | 703 | 0.6+ | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 0.3− | 2002 12 31 | 704 | 0.8+ | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.2− |
| 2002 11 14 | 704 | 0.1− | 0.7+ | 2003 01 04 | 704 | 0.2− | 0.8− | 2006 11 13 | 703 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.7− | 0.4+ | 2003 01 04 | 704 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.5+ | 0.4− |
| 2002 12 05 | 704 | 0.2− | 0.3− | 2003 01 04 | 704 | 0.9− | 0.3− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.2− | 2003 01 04 | 704 | 1.1− | 0.3− | 2006 11 17 | 704 | 1.0− | 0.3− |
| 2002 12 05 | 704 | 0.1− | 0.6− | 2003 01 04 | 704 | 0.4− | 0.8− | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2002 12 05 | 704 | 0.3+ | 0.7− | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 17 | 704 | 0.7− | 0.9+ |
| 2002 12 10 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.8+ |
| 2002 12 10 | 704 | 1.3+ | 0.3+ | 2006 10 16 | 703 | 1.1+ | 0.1+ | 2006 11 20 | 704 | 0.9− | 1.2+ |
| 2002 12 10 | 704 | 0.5− | 0.9− | 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 11 20 | 704 | (1.3− | 2.4+) |
| 2002 12 10 | 704 | 0.1− | 0.6+ | 2006 10 22 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | (0.3− | 1.7+) |
| 2002 12 10 | 704 | 0.2− | 0.3− | 2006 10 22 | 704 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.9− | 1.3+ |

**2002 VT$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.55997 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27906325 | $\omega$ | 338.94729 | | +0.59257833 | −0.79072217 | |
| $a$ | 2.3191791 | $\Omega$ | 74.39669 | | +0.75996678 | +0.48557327 | |
| $e$ | 0.2173697 | $i$ | 9.17977 | | +0.26702325 | +0.37279627 | |
| $P$ | 3.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 09 | 691 | 0.2+ | 0.2+ | 2002 12 06 | 704 | 0.3+ | 0.5− | 2003 01 12 | 644 | 0.6+ | 0.3+ |
| 1997 05 09 | 691 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.7+ | 0.4+ | 2003 01 31 | 704 | 0.4+ | 0.0 |
| 1997 05 09 | 691 | 0.0 | 0.5+ | 2002 12 11 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 704 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 0.3− | 0.7+ | 2002 12 11 | 704 | 0.3+ | 0.1+ | 2003 01 31 | 704 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.4+ | 0.1+ | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2003 03 07 | 644 | 0.5− | 0.6− |
| 2002 11 05 | 704 | 1.0− | 0.7+ | 2002 12 14 | 704 | 0.0 | 0.0 | 2003 03 07 | 644 | 0.0 | 0.6+ |
| 2002 11 06 | 704 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.3− | 0.3+ | 2003 03 07 | 644 | 0.5− | 0.5− |
| 2002 11 06 | 704 | 0.8− | 0.0 | 2002 12 14 | 704 | 0.2+ | 0.2− | 2003 03 07 | 644 | 0.0 | 0.6+ |
| 2002 11 06 | 704 | 0.2− | 0.1+ | 2002 12 14 | 704 | 0.1− | 0.2− | 2003 03 07 | 644 | 0.7− | 0.3− |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2002 12 14 | 704 | 0.5− | 0.2+ | 2003 03 07 | 644 | 0.0 | 0.4+ |
| 2002 11 27 | 699 | 0.7− | 0.4+ | 2003 01 07 | 300 | 0.0 | 0.3+ | 2005 08 28 | E12 | 0.2− | 0.5+ |
| 2002 11 27 | 699 | 0.7+ | 0.5+ | 2003 01 07 | 300 | 0.3+ | 0.3− | 2005 08 28 | E12 | 0.6− | 0.3+ |
| 2002 11 27 | 699 | 0.5+ | 0.1− | 2003 01 07 | 300 | 0.2+ | 0.3− | 2005 08 28 | E12 | 0.4− | 0.6+ |
| 2002 11 27 | 699 | 0.4− | 0.1− | 2003 01 07 | 300 | 0.5+ | 0.3− | 2005 08 28 | E12 | 0.3+ | 0.6+ |
| 2002 12 06 | 704 | 0.2− | 0.4+ | 2003 01 12 | 644 | 0.1− | 0.0 | | | | |
| 2002 12 06 | 704 | 0.8− | 0.8+ | 2003 01 12 | 644 | 0.7+ | 0.0 | | | | |

**2002 VR$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.24253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22883858 | $\omega$ | 311.64961 | | +0.83223373 | −0.49964625 | |
| $a$ | 2.6471785 | $\Omega$ | 79.64577 | | +0.55292310 | +0.71609579 | |
| $e$ | 0.2814275 | $i$ | 14.13874 | | +0.04078066 | +0.48740174 | |
| $P$ | 4.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 1.0+ | 0.6+ | 2002 11 12 | 704 | 1.2− | 0.1− | 2002 12 12 | 608 | 0.6− | 0.1− |
| 2002 09 15 | 699 | 0.4− | 0.1− | 2002 11 12 | 704 | 0.3− | 0.2− | 2002 12 12 | 608 | 0.6− | 0.0 |
| 2002 09 15 | 699 | 0.3+ | 0.4+ | 2002 11 12 | 704 | 0.3− | 0.7− | 2002 12 12 | 608 | 0.5− | 0.3+ |
| 2002 09 15 | 699 | 1.3+ | 0.9− | 2002 11 12 | 704 | 0.7− | 0.3+ | 2002 12 22 | 608 | 0.7− | 0.7+ |
| 2002 10 09 | 644 | 0.2+ | 0.2− | 2002 11 12 | 704 | 1.8− | 0.8− | 2002 12 22 | 608 | 0.4− | 0.2− |
| 2002 10 09 | 644 | 0.1+ | 0.2− | 2002 12 01 | 704 | 0.3− | 0.1− | 2002 12 22 | 608 | 1.2− | 0.4+ |
| 2002 10 09 | 644 | 0.3+ | 0.1+ | 2002 12 01 | 704 | 0.4− | 0.3+ | 2003 01 04 | 704 | 0.3− | 1.4+ |
| 2002 10 31 | 683 | 1.3+ | 0.5− | 2002 12 01 | 704 | 0.1− | 0.6+ | 2003 01 04 | 704 | 0.6+ | 0.4+ |
| 2002 10 31 | 683 | 1.3+ | 1.2− | 2002 12 01 | 704 | 0.1− | 0.8+ | 2003 01 04 | 704 | 0.9+ | 0.1− |
| 2002 10 31 | 704 | 0.0 | 0.4− | 2002 12 01 | 704 | 0.5+ | 0.4+ | 2003 01 04 | 704 | 0.7+ | 1.1+ |
| 2002 10 31 | 683 | (3.0+ | 1.8−) | 2002 12 01 | 608 | 0.5+ | 0.4+ | 2003 01 04 | 704 | 0.1+ | 0.7+ |
| 2002 10 31 | 704 | 0.4+ | 0.5− | 2002 12 01 | 608 | 0.5+ | 0.2+ | 2003 01 27 | 608 | 0.3+ | 0.9− |
| 2002 10 31 | 704 | 0.0 | 0.5+ | 2002 12 01 | 608 | 0.6+ | 0.2+ | 2003 01 27 | 608 | 0.2+ | 0.5− |
| 2002 10 31 | 704 | 0.1− | 0.2+ | 2002 12 07 | 704 | 0.4− | 0.3− | 2003 01 27 | 608 | 0.5+ | 0.9− |
| 2002 10 31 | 704 | 0.5+ | 0.1− | 2002 12 07 | 704 | 0.2+ | 0.0 | 2006 08 25 | E12 | 0.6− | 0.7− |
| 2002 11 04 | 608 | 0.1− | 0.4+ | 2002 12 07 | 704 | 0.2− | 0.3− | 2006 08 25 | E12 | 1.0+ | 0.3+ |
| 2002 11 04 | 608 | 0.3− | 0.6+ | 2002 12 07 | 704 | 0.1− | 0.3+ | 2006 08 25 | E12 | 0.9+ | 1.5+ |
| 2002 11 04 | 608 | 0.6− | 0.0 | 2002 12 07 | 704 | 0.3+ | 0.3− | 2006 08 25 | E12 | 0.3+ | 0.5+ |
| 2002 11 06 | 699 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 0.7+ | 0.0 | 2006 09 12 | E12 | 1.0− | 0.8− |
| 2002 11 06 | 699 | 0.2− | 0.2+ | 2002 12 11 | 704 | 0.6− | 0.5− | 2006 09 12 | E12 | 0.1− | 0.1+ |
| 2002 11 06 | 699 | 0.9+ | 0.3+ | 2002 12 11 | 704 | 0.2− | 1.1− | 2006 09 12 | E12 | 0.1− | 0.2+ |
| 2002 11 06 | 699 | 0.5+ | 0.2+ | 2002 12 11 | 704 | 0.8− | 1.5− | 2006 09 12 | E12 | 0.8− | 0.1− |

**2002 VW$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 347.07348 | | (2000.0) | | | |
| $n$ | 0.22798303 | $\omega$ | 305.23452 | | +0.92154792 | −0.29835544 |
| $a$ | 2.6537970 | $\Omega$ | 73.26368 | | +0.38278096 | +0.80531830 |
| $e$ | 0.0891590 | $i$ | 15.03758 | | −0.06502435 | +0.51229530 |
| $P$ | 4.32 | $H$ | 15.4 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.8− | 0.1− | 2002 12 01 | 704 | 0.8+ | 0.5− | 2006 09 27 | 703 | 0.0 | 0.7+ |
| 2002 11 05 | 704 | 1.1+ | 1.0− | 2002 12 01 | 608 | (1.8− | 1.2+) | 2006 09 27 | 703 | 0.1+ | 0.2− |
| 2002 11 05 | 704 | 0.2+ | 0.1− | 2002 12 01 | 608 | 0.9− | 1.0+ | 2006 09 27 | 703 | 0.8+ | 0.0 |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2002 12 01 | 608 | 1.3− | 0.5− | 2006 09 27 | 703 | 0.3+ | 0.1− |
| 2002 11 05 | 704 | 0.4− | 0.6− | 2002 12 07 | 704 | 1.4+ | 0.2+ | 2006 09 27 | 703 | 0.4+ | 0.5− |
| 2002 11 06 | 699 | 0.1− | 0.0 | 2002 12 07 | 704 | 0.1+ | 0.7− | 2006 09 27 | 703 | 0.2− | 0.6− |
| 2002 11 06 | 699 | 0.2− | 0.4+ | 2002 12 07 | 704 | 0.3− | 0.3− | 2006 09 27 | 703 | 0.9− | 0.0 |
| 2002 11 06 | 699 | 0.4+ | 0.4+ | 2002 12 07 | 704 | 0.0 | 0.7+ | 2006 09 27 | 703 | 0.5+ | 0.0 |
| 2002 11 06 | 699 | 0.5− | 0.4+ | 2006 09 17 | 699 | 0.1+ | 1.3+ | 2006 09 27 | 703 | 0.2− | 0.9− |
| 2002 11 12 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 699 | 0.8− | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.5+ |
| 2002 11 12 | 704 | 1.0− | 0.1+ | 2006 09 17 | 699 | (2.2− | 2.3+) | 2006 09 28 | 703 | 0.4+ | 0.1+ |
| 2002 11 12 | 704 | 0.5− | 0.3+ | 2006 09 17 | 699 | 1.1+ | 0.2− | 2006 09 28 | 703 | 0.4− | 0.4+ |
| 2002 11 12 | 704 | 0.7+ | 0.6+ | 2006 09 22 | 703 | 0.5+ | 0.9+ | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2002 11 22 | 644 | 0.7+ | 0.0 | 2006 09 22 | 703 | 0.4+ | 0.2− | 2006 11 19 | 703 | 0.4+ | 0.0 |
| 2002 11 22 | 644 | 0.9+ | 0.2+ | 2006 09 22 | 703 | 0.2− | 0.2+ | 2006 11 19 | 703 | 1.0− | 0.9+ |
| 2002 11 22 | 644 | 0.6+ | 0.2+ | 2006 09 22 | 703 | 0.4− | 0.6− | 2006 11 19 | 703 | 1.0− | 0.3+ |
| 2002 12 01 | 704 | 0.7− | 0.8− | 2006 09 27 | 703 | 0.1+ | 0.3− | 2006 11 19 | 703 | 0.3− | 0.2− |
| 2002 12 01 | 704 | 0.1− | 0.5− | 2006 09 27 | 703 | 0.2+ | 0.3− | | | | |
| 2002 12 01 | 704 | 0.3− | 0.2− | 2006 09 27 | 703 | 0.6− | 0.2− | | | | |

**2002 VJ$_{39}$ = 2006 RA$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.65095 | | (2000.0) | | | |
| $n$ | 0.23779715 | $\omega$ | 324.80092 | | +0.90907925 | +0.41631371 |
| $a$ | 2.5802688 | $\Omega$ | 10.63304 | | −0.35951142 | +0.80335353 |
| $e$ | 0.1881356 | $i$ | 4.99218 | | −0.21053850 | +0.42580043 |
| $P$ | 4.14 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.3− | 0.9+ | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 05 | 704 | 0.5+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2002 11 06 | 699 | 0.5− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 11 06 | 699 | 0.7− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 11 06 | 699 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 699 | 0.5+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.2+ |
| 2002 11 12 | 704 | 0.5+ | 1.0+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2002 11 12 | 704 | (1.8+ | 0.7−) | 2006 09 29 | 704 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.4+ | 1.0− | 2006 09 29 | 704 | 0.6− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2002 11 12 | 704 | (0.5+ | 1.7−) | 2006 09 29 | 704 | 0.7− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.5+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 1.1− |
| 2002 11 14 | 704 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.5− | 1.0− | 2006 11 11 | 703 | 1.3+ | 1.1+ |
| 2002 11 14 | 704 | 0.3+ | 1.0− | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2002 11 14 | 704 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.8+ |
| 2002 11 14 | 704 | 0.1− | 0.4− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.6+ |
| 2004 02 13 | 691 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.6− | 1.0− | 2006 11 13 | 691 | 0.5− | 0.2+ |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2004 02 13 | 691 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.6+ | 0.4− |
| 2005 05 16 | G96 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2005 05 16 | G96 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2005 05 16 | G96 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.2+ | 1.3+ |
| 2006 09 14 | 703 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 2006 09 14 | 703 | 0.8+ | 0.4− | 2006 10 21 | 703 | (3.5− | 1.8+) | 2006 11 19 | 704 | (0.5− | 1.5−) |
| 2006 09 14 | 703 | 0.3+ | 0.2− | 2006 10 21 | 703 | (0.3+ | 2.0+) | | | | |
| 2006 09 14 | 703 | 0.7+ | 0.1− | 2006 10 21 | 703 | 0.2− | 0.1− | | | | |

**2002 VG$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.06615 | | (2000.0) | | | |
| $n$ | 0.24179535 | $\omega$ | 82.79059 | | +0.34925386 | −0.93660225 |
| $a$ | 2.5517459 | $\Omega$ | 346.66238 | | +0.80412713 | +0.31505850 |
| $e$ | 0.3086524 | $i$ | 7.03364 | | +0.48104189 | +0.15334396 |
| $P$ | 4.08 | $H$ | 16.6 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.4+ | 1.7− | 2002 11 25 | 644 | 0.4+ | 0.9− | 2006 09 20 | 699 | 0.7− | 0.6+ |
| 1998 12 14 | 704 | (1.4− | 3.0−) | 2002 12 03 | 644 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 1998 12 14 | 704 | 1.5− | 0.3+ | 2002 12 03 | 644 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 1998 12 14 | 704 | 0.3− | 0.7− | 2002 12 03 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1998 12 14 | 704 | 1.2+ | 1.7− | 2002 12 06 | 704 | 0.9− | 1.1+ | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2002 10 05 | 704 | 0.3− | 0.5+ | 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 10 05 | 704 | 0.2− | 0.4+ | 2002 12 06 | 704 | 0.6− | 1.0+ | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2002 10 05 | 704 | 0.4− | 0.3− | 2002 12 06 | 704 | 0.6− | 1.2+ | 2006 10 19 | 703 | 0.1+ | 0.5− |
| 2002 10 05 | 704 | 0.4+ | 0.2+ | 2002 12 06 | 704 | 0.6− | 1.0+ | 2006 10 19 | 703 | 0.4− | 0.0 |
| 2002 10 05 | 704 | 0.3− | 0.2− | 2002 12 06 | 699 | 0.2+ | 0.4+ | 2006 10 19 | 703 | (0.2+ | 2.3+) |
| 2002 10 10 | 704 | 0.4+ | 0.1+ | 2002 12 06 | 699 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2002 10 10 | 704 | 1.4− | 0.1− | 2002 12 06 | 699 | 0.3− | 0.7+ | 2006 10 21 | 704 | 0.7− | 0.6+ |
| 2002 10 10 | 704 | (2.0− | 0.2−) | 2002 12 06 | 699 | 0.5− | 0.8+ | 2006 10 21 | 704 | 0.1− | 0.1+ |
| 2002 11 05 | 678 | 0.2− | 0.3− | 2002 12 09 | 699 | 0.1+ | 0.1− | 2006 10 21 | 704 | 0.3+ | 0.6− |
| 2002 11 05 | 678 | 0.6+ | 0.6− | 2002 12 09 | 699 | 1.1+ | 0.1+ | 2006 10 21 | 704 | 0.6+ | 0.2− |
| 2002 11 05 | 678 | 0.6+ | 0.0 | 2002 12 09 | 699 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 1.4− | 2002 12 09 | 699 | 0.1− | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 11 07 | 699 | 0.3− | 0.2+ | 2002 12 10 | 704 | 0.6+ | 0.4− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 11 07 | 704 | (0.1− | 1.5−) | 2002 12 10 | 704 | 0.6+ | 0.7− | 2006 10 25 | 106 | 0.3+ | 0.1− |
| 2002 11 07 | 699 | 0.7− | 0.1+ | 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 10 25 | 106 | 0.2+ | 0.3− |
| 2002 11 07 | 704 | 0.5+ | 1.0− | 2002 12 10 | 704 | 0.8+ | 0.1− | 2006 10 25 | 106 | 0.8− | 0.9− |
| 2002 11 07 | 699 | 0.5+ | 0.9+ | 2002 12 10 | 704 | 0.0 | 0.4− | 2006 10 25 | 106 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | (0.7+ | 1.8−) | 2002 12 12 | 644 | 0.3+ | 0.8+ | 2006 10 27 | 703 | 1.1− | 0.9− |
| 2002 11 07 | 699 | 1.0− | 0.5+ | 2002 12 12 | 644 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.6− | 0.6+ |
| 2002 11 07 | 704 | (0.3+ | 1.6−) | 2002 12 12 | 644 | 0.7+ | 1.1+ | 2006 10 27 | 703 | 0.1− | 0.4− |
| 2002 11 11 | 678 | 0.1− | 0.1− | 2002 12 12 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2002 11 11 | 678 | 0.1− | 1.0− | 2002 12 12 | 644 | 0.6+ | 0.9+ | 2006 10 27 | 703 | 0.8+ | 0.9− |
| 2002 11 11 | 678 | 0.6− | 0.0 | 2002 12 12 | 644 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 2002 11 11 | 678 | 0.9− | 1.2− | 2003 01 04 | 704 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 11 13 | 644 | 0.3− | 1.0+ | 2003 01 04 | 704 | 0.4+ | 0.9− | 2006 11 07 | 644 | 0.2− | 0.2+ |
| 2002 11 13 | 644 | 0.4− | 0.8+ | 2003 01 04 | 704 | (1.9− | 1.0−) | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2002 11 13 | 644 | 0.5− | 0.8+ | 2003 01 04 | 704 | 0.3− | 1.4+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2002 11 15 | 704 | 0.3+ | 0.4− | 2003 01 22 | 644 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.0 | 0.6− |
| 2002 11 15 | 704 | 0.3+ | 0.3− | 2003 01 22 | 644 | 0.6− | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.8− |
| 2002 11 15 | 704 | 0.6+ | 0.2− | 2003 01 22 | 644 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | 0.0 | 0.1+ | 2006 09 20 | 699 | 1.0− | 0.6− | 2006 11 15 | 703 | 0.0 | 0.4− |
| 2002 11 25 | 644 | 0.6+ | 0.3− | 2006 09 20 | 699 | 0.8+ | 0.5+ | | | | |
| 2002 11 25 | 644 | 0.9+ | 0.6− | 2006 09 20 | 699 | 0.7+ | 0.5− | | | | |

**2002 VO$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.42652 | | (2000.0) | | | |
| $n$ | 0.22859603 | $\omega$ | 103.70828 | | +0.95478235 | −0.23706397 |
| $a$ | 2.6490506 | $\Omega$ | 270.23194 | | +0.15163505 | +0.90738733 |
| $e$ | 0.2156337 | $i$ | 10.33603 | | +0.25572930 | +0.34705750 |
| $P$ | 4.31 | $H$ | 15.9 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.1+ | 0.1− | 2002 11 15 | 704 | (1.7− | 0.1+) | 2003 01 05 | 704 | 0.1+ | 0.4+ |
| 2002 10 13 | 644 | 0.1+ | 0.5+ | 2002 12 02 | 704 | 0.2+ | 0.2+ | 2003 01 05 | 704 | 0.2+ | 0.1− |
| 2002 10 13 | 644 | 0.6− | 0.1− | 2002 12 02 | 704 | 0.9+ | 1.0+ | 2003 01 05 | 704 | 0.8− | 0.7+ |
| 2002 11 06 | 704 | 0.3+ | 0.1+ | 2002 12 02 | 704 | 0.2− | 0.5− | 2003 01 05 | 704 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.6− | 0.4+ | 2002 12 02 | 704 | 0.0 | 0.8+ | 2006 08 28 | 683 | 0.0 | 0.7− |
| 2002 11 06 | 704 | 0.3+ | 0.5+ | 2002 12 02 | 704 | (3.3+ | 0.5−) | 2006 08 28 | 683 | 0.6+ | 0.4+ |
| 2002 11 07 | 699 | 0.7− | 0.1+ | 2002 12 05 | 704 | 0.6− | 1.1− | 2006 08 31 | 704 | 0.5+ | 0.6− |
| 2002 11 07 | 699 | 0.7− | 0.4+ | 2002 12 05 | 704 | 0.6+ | 0.3+ | 2006 08 31 | 704 | 0.9+ | 0.2− |
| 2002 11 07 | 699 | 0.4+ | 0.9− | 2002 12 05 | 704 | 0.5+ | 1.1+ | 2006 08 31 | 704 | 0.7− | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 699 | 0.2+ | 0.3+ | 2002 12 05 | 704 | 0.1− | 0.4− | 2006 08 31 | 704 | 0.1+ | 0.3+ |
| 2002 11 14 | 644 | 0.4− | 0.9− | 2002 12 12 | 644 | 0.2− | 0.3− | 2006 08 31 | 704 | (1.9+ | 0.2−) |
| 2002 11 14 | 644 | 0.4− | 1.0− | 2002 12 12 | 644 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.1+ | 0.3− |
| 2002 11 14 | 644 | 0.3− | 0.8− | 2002 12 12 | 644 | 0.3− | 0.5− | 2006 09 21 | 699 | 0.3− | 0.2− |
| 2002 11 15 | 704 | 1.1+ | 0.3+ | 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 09 21 | 699 | 0.1− | 0.5+ |
| 2002 11 15 | 704 | 0.1− | 0.7− | 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 09 21 | 699 | 1.3− | 0.3+ |
| 2002 11 15 | 704 | 0.4− | 0.4− | 2002 12 31 | 704 | 0.6+ | 0.8+ | | | | |
| 2002 11 15 | 704 | 0.5+ | 0.0 | 2002 12 31 | 704 | 0.0 | 0.2− | | | | |

### 2002 VW$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.19488 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24631083 | $\omega$ | 159.73076 | | +0.48857874 | −0.86528825 | |
| $a$ | 2.5204633 | $\Omega$ | 260.87668 | | +0.78406141 | +0.49177569 | |
| $e$ | 0.1067872 | $i$ | 6.51938 | | +0.38280350 | +0.09712320 | |
| $P$ | 4.00 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.1− | 0.8+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 11 01 | 644 | 0.2+ | 0.4+ | 2002 12 11 | 704 | (1.6− | 0.2−) | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2002 11 01 | 644 | 0.0 | 0.6+ | 2002 12 27 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 644 | 0.3− | 0.3+ | 2002 12 27 | 644 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 11 05 | 644 | 0.3− | 0.2+ | 2002 12 27 | 644 | 0.6− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 644 | 0.1+ | 0.4+ | 2002 12 28 | 291 | 0.2+ | 0.1− | 2006 11 14 | 703 | (0.3− | 1.8−) |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2002 12 28 | 291 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.1+ | 0.7+ |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2002 12 28 | 291 | 0.1− | 0.3− | 2006 11 14 | 703 | 0.7− | 0.4− |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.6+ | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.6− | 0.6− | 2006 10 19 | 703 | 1.0+ | 0.5− | 2006 11 15 | 704 | 0.9+ | 0.6− |
| 2002 11 14 | 704 | 0.0 | 1.0− | 2006 10 19 | 703 | 0.9+ | 0.4− | 2006 11 15 | 704 | 0.2− | 0.0 |
| 2002 11 14 | 704 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.3+ | 2006 11 15 | 704 | 0.4+ | 0.0 |
| 2002 11 14 | 704 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.3+ | 1.1+ |
| 2002 11 28 | 699 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.7− | 0.4− |
| 2002 11 28 | 699 | 0.4− | 1.0+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.4− |
| 2002 11 28 | 699 | 0.2− | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2002 11 28 | 699 | 0.7− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2002 12 01 | 608 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2002 12 01 | 608 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.5− | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2002 12 01 | 608 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2002 12 02 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 1.1+ | 2006 11 22 | 704 | 0.6− | 0.4+ |
| 2002 12 02 | 704 | 0.4− | 0.0 | 2006 10 27 | 703 | 1.0+ | 0.7+ | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2002 12 02 | 704 | 0.6+ | 1.0− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2002 12 02 | 704 | 0.5− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9− | 0.7− |
| 2002 12 11 | 704 | 0.4+ | 0.8+ | 2006 10 27 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 1.2+ | 0.2+ | 2006 10 31 | 691 | 0.4+ | 0.2− | | | | |

### 2002 VZ$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.19089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21519273 | $\omega$ | 182.20342 | | −0.01253765 | −0.99616409 | |
| $a$ | 2.7579368 | $\Omega$ | 268.52323 | | +0.91872975 | +0.02270980 | |
| $e$ | 0.0937036 | $i$ | 4.96981 | | +0.39468780 | −0.08450660 | |
| $P$ | 4.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.5+ | 1.1+ | 2002 11 28 | 699 | 0.7+ | 0.4− | 2002 12 11 | 704 | 0.5− | 0.2+ |
| 2002 11 01 | 644 | 0.7+ | 1.0+ | 2002 11 28 | 699 | 0.8− | 0.6+ | 2002 12 11 | 644 | 0.3− | 0.5+ |
| 2002 11 01 | 644 | 0.8+ | 0.9+ | 2002 11 28 | 699 | 0.7+ | 0.6− | 2002 12 11 | 644 | 0.3− | 0.4+ |
| 2002 11 05 | 644 | 0.3− | 0.3− | 2002 11 28 | 699 | 0.6+ | 0.5− | 2002 12 11 | 704 | (0.6− | 1.6+) |
| 2002 11 05 | 644 | 0.1− | 0.2− | 2002 12 01 | 608 | 0.0 | 0.4− | 2002 12 11 | 704 | 0.7− | 0.4+ |
| 2002 11 05 | 644 | 0.3− | 0.0 | 2002 12 01 | 608 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.2+ | 0.2− |
| 2002 11 05 | 644 | 0.1+ | 0.1− | 2002 12 01 | 608 | 0.2− | 0.3− | 2006 08 29 | 703 | 0.0 | 0.0 |
| 2002 11 05 | 644 | 0.3+ | 0.1− | 2002 12 02 | 704 | (0.4− | 1.8−) | 2006 08 29 | 703 | 0.2− | 0.5− |
| 2002 11 05 | 644 | 0.2− | 0.2− | 2002 12 02 | 704 | 0.4− | 1.3+ | 2006 08 29 | 703 | 0.9− | 1.0− |
| 2002 11 08 | 704 | 0.4− | 0.2− | 2002 12 02 | 704 | (0.8− | 1.5+) | 2006 09 13 | 644 | 0.5+ | 0.2+ |
| 2002 11 08 | 704 | 0.5− | 0.6+ | 2002 12 05 | 704 | 1.1+ | 0.8− | 2006 09 13 | 644 | 0.2+ | 0.1+ |
| 2002 11 08 | 704 | 0.0 | 0.7− | 2002 12 05 | 704 | 0.7+ | 0.6+ | 2006 09 13 | 644 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 0.5− | 0.5+ | 2002 12 05 | 704 | (1.0+ | 2.0−) | 2006 09 13 | 644 | 0.0 | 0.2+ |
| 2002 11 12 | 704 | 0.5+ | 0.1+ | 2002 12 05 | 704 | 0.6+ | 0.4− | 2006 09 13 | 644 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 1.2− | 1.0− | 2002 12 06 | 704 | 1.4− | 0.9− | 2006 09 13 | 644 | 0.2+ | 0.2+ |
| 2002 11 12 | 704 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.8+ | 0.0 | 2006 10 19 | 695 | 0.1− | 0.3+ |
| 2002 11 14 | 704 | 0.9+ | 0.9+ | 2002 12 06 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 695 | 0.0 | 0.4+ |
| 2002 11 14 | 704 | 0.9− | 0.2− | 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 10 20 | 695 | 0.3− | 0.2+ |
| 2002 11 14 | 704 | 0.1+ | 1.0− | 2002 12 06 | 704 | 0.1+ | 0.5− | | | | |
| 2002 11 14 | 704 | 0.7− | 0.2− | 2002 12 11 | 644 | 0.1− | 0.1+ | | | | |

### 2002 VR$_{41}$ = 2006 RY$_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.70836 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23875777 | $\omega$ | 167.95996 | | +0.95091377 | −0.30908839 | |
| $a$ | 2.5733431 | $\Omega$ | 210.05772 | | +0.28136388 | +0.88384952 | |
| $e$ | 0.2542168 | $i$ | 1.72517 | | +0.12883079 | +0.35110453 | |
| $P$ | 4.13 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.0 | 1.4+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 10 31 | 644 | 0.2− | 1.1+ | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2002 10 31 | 644 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.9− | 1.2− |
| 2002 11 03 | 608 | 0.8+ | 0.9− | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.4+ |
| 2002 11 03 | 608 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.8− |
| 2002 11 03 | 608 | 0.6+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 11 05 | 644 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.8+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 11 05 | 644 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 11 05 | 644 | 0.4− | 0.1+ | 2006 09 29 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.0 | 0.9− | 2006 09 29 | 704 | 0.5− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 11 06 | 704 | 0.7+ | 0.4− | 2006 09 29 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.7+ | 1.2+ | 2006 10 10 | 644 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 1.3− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.6− | 0.4− | 2006 10 10 | 644 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.4− | 0.7− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.7− |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1− | | | | |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.1− | | | | |

### 2002 VT$_{41}$ = 2006 WS$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.27551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25675981 | $\omega$ | 138.37605 | | +0.97980611 | +0.19219072 | |
| $a$ | 2.4516098 | $\Omega$ | 210.67380 | | −0.19977629 | +0.92947002 | |
| $e$ | 0.1486429 | $i$ | 6.20734 | | −0.00833202 | +0.31487808 | |
| $P$ | 3.84 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.0 | 0.4+ | 2002 11 11 | 704 | 0.4− | 1.5+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 1993 04 21 | 691 | 0.2+ | 0.5+ | 2002 11 11 | 704 | 0.3− | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 1993 04 21 | 691 | 0.1+ | 0.3+ | 2002 11 11 | 704 | 0.1− | 1.1+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 06 11 | 691 | 0.0 | 0.6+ | 2002 11 12 | 704 | 0.7− | 1.5+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2001 06 11 | 691 | 0.0 | 0.4+ | 2002 11 12 | 704 | (0.0 | 2.0+) | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2001 06 11 | 691 | 0.1+ | 0.6+ | 2002 11 12 | 704 | 0.7− | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 11 05 | 644 | 0.1+ | 0.2+ | 2002 11 12 | 644 | 0.5− | 0.4+ | 2006 11 18 | 691 | 0.3− | 0.2− |
| 2002 11 05 | 644 | 0.0 | 0.8+ | 2002 11 12 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.4− | 1.0+ |
| 2002 11 05 | 644 | 0.7+ | 1.0+ | 2002 11 12 | 644 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 1.2+ |
| 2002 11 06 | 704 | (1.7+ | 1.9+) | 2002 11 22 | 644 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.3+ | 1.4+ |
| 2002 11 06 | 704 | 0.6+ | 0.7− | 2002 11 22 | 644 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2002 11 06 | 704 | 0.4− | 0.8+ | 2002 11 22 | 644 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.2+ | 2006 10 21 | D35 | 1.1+ | 0.5− | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2002 11 06 | 704 | 0.7+ | 0.1− | 2006 10 21 | D35 | 0.5+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2002 11 11 | 704 | 0.4− | 0.7+ | 2006 10 21 | D35 | 0.0 | 0.0 | | | | |

**2002 VF$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.90135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24310448 | $\omega$ | 15.68648 | | +0.97901237 | −0.20373350 | |
| $a$ | 2.5425768 | $\Omega$ | 356.05763 | | +0.17783157 | +0.86653552 | |
| $e$ | 0.2752434 | $i$ | 4.36973 | | +0.09955257 | +0.45564115 | |
| $P$ | 4.05 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.3− | 0.4+ | 2002 12 11 | 644 | 0.4+ | 0.7− | 2006 10 27 | 703 | 0.6− | 0.2− |
| 2002 10 10 | 704 | 0.3− | 0.8+ | 2002 12 11 | 644 | 0.1+ | 0.9− | 2006 10 27 | 703 | 0.4+ | 0.6− |
| 2002 10 10 | 704 | 1.5− | 0.3− | 2004 03 21 | 291 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.6− |
| 2002 10 10 | 704 | 0.8− | 0.5− | 2004 03 21 | 291 | 0.4+ | 0.3+ | 2006 10 29 | 704 | 0.4− | 0.7+ |
| 2002 11 05 | 644 | 0.2− | 0.4+ | 2004 03 21 | 291 | 0.7+ | 1.2+ | 2006 10 29 | 704 | 0.8− | 0.0 |
| 2002 11 05 | 644 | 0.3− | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 29 | 704 | 0.2− | 0.0 |
| 2002 11 05 | 644 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 29 | 704 | 1.4+ | 0.5− |
| 2002 11 06 | 699 | 0.3+ | 0.5− | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 11 06 | 699 | 0.1− | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 11 06 | 699 | 0.1+ | 0.4− | 2006 09 15 | 703 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 11 06 | 699 | 0.0 | 0.1+ | 2006 09 15 | 703 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.6+ | 0.9+ | 2006 09 15 | 703 | 0.5− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.7+ | 0.1+ | 2006 09 15 | 703 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 11 12 | 704 | (0.1+ | 2.0+) | 2006 09 20 | 699 | (0.9− | 1.6+) | 2006 11 10 | 644 | 0.4− | 0.5− |
| 2002 11 14 | 704 | 0.5+ | 1.4− | 2006 09 20 | 699 | 0.3− | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 1.1− | 2006 09 20 | 699 | 0.7− | 1.2+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2002 11 14 | 704 | 0.5+ | 0.8− | 2006 09 20 | 699 | (0.3+ | 1.9+) | 2006 11 10 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 704 | (0.2+ | 1.7−) | 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 644 | 0.0 | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.5+ | 0.1− |
| 2002 11 14 | 704 | 0.2− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2002 11 14 | 644 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.1+ |
| 2002 11 14 | 644 | 0.0 | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.5+ | 2006 11 14 | 703 | (1.6− | 1.4+) |
| 2002 11 24 | 644 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | 1.1− | 1.1− |
| 2002 11 24 | 644 | 0.2− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.3− |
| 2002 11 24 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.9+ | 0.3− |
| 2002 12 02 | 704 | 0.5+ | 0.2− | 2006 10 19 | 644 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.3− |
| 2002 12 02 | 704 | (2.2+ | 1.6−) | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 2002 12 02 | 704 | 1.1+ | 0.6− | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2002 12 02 | 704 | 0.8+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | (0.3+ | 1.9−) | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.6− |
| 2002 12 06 | 704 | 0.6− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.8+ | 2006 11 18 | G96 | 0.5+ | 0.5− |
| 2002 12 06 | 704 | 0.5+ | 0.2− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.2+ |
| 2002 12 06 | 704 | 0.6+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 1.2− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | (1.7+ | 0.2−) |
| 2002 12 06 | 704 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.8− |
| 2002 12 11 | 644 | 0.5+ | 0.6− | 2006 10 27 | 703 | (2.4+ | 6.1+) | 2006 11 19 | 704 | 0.1+ | 0.1− |

**2002 VS$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.27914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25468958 | $\omega$ | 261.17553 | | +0.61696518 | −0.78697128 | |
| $a$ | 2.4648771 | $\Omega$ | 150.72740 | | +0.72639328 | +0.56676019 | |
| $e$ | 0.2020573 | $i$ | 0.64364 | | +0.30283125 | +0.24384234 | |
| $P$ | 3.87 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.3+ | 0.2− | 2002 11 06 | 608 | 0.0 | 0.9− | 2006 11 21 | 704 | 0.8+ | 0.4− |
| 2002 10 02 | 704 | 0.5− | 0.5+ | 2002 11 07 | 699 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2002 10 02 | 704 | 0.5− | 0.0 | 2002 11 07 | 699 | 0.4− | 0.6− | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2002 10 11 | 704 | 0.2+ | 0.7+ | 2002 11 07 | 699 | 0.0 | 0.3+ | 2006 11 21 | 704 | 1.2+ | 0.3+ |
| 2002 10 11 | 704 | 0.1+ | 0.1− | 2002 11 07 | 699 | 1.2+ | 1.0+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.8+ | 0.1+ | 2002 11 10 | 704 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 10 16 | 644 | 0.2− | 0.2+ | 2002 11 10 | 704 | 0.5− | 0.9+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2002 10 16 | 644 | 0.1+ | 0.4+ | 2002 11 10 | 704 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 10 16 | 644 | 0.2− | 0.1+ | 2002 11 10 | 704 | 0.9+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 11 01 | 608 | 0.0 | 0.4− | 2002 11 22 | 644 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 11 01 | 608 | 0.1− | 1.2− | 2002 11 22 | 644 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2002 11 01 | 608 | 1.1− | 0.5+ | 2002 11 22 | 644 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.6+ |
| 2002 11 06 | 704 | 0.2+ | 1.1+ | 2006 11 15 | 703 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.4+ | 0.5− |
| 2002 11 06 | 704 | 0.5− | 0.2+ | 2006 11 15 | 703 | 1.3− | 1.0− | 2006 12 01 | 704 | (2.5− | 0.1−) |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2006 11 15 | 703 | (0.5− | 1.6−) | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.3+ | 0.3− | 2006 11 15 | 703 | (0.2+ | 1.8−) | 2006 12 01 | 704 | (0.7− | 2.0+) |
| 2002 11 06 | 704 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2002 11 06 | 608 | 0.0 | 1.2− | 2006 11 19 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.7− | 0.3+ |
| 2002 11 06 | 608 | 0.0 | 1.2− | 2006 11 19 | 691 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.1− | 0.3+ |

**2002 VC$_{43}$ = 2006 SN$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.67319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24428235 | $\omega$ | 218.69869 | | +0.45743993 | −0.88504480 | |
| $a$ | 2.5343970 | $\Omega$ | 204.44505 | | +0.85890174 | +0.46487680 | |
| $e$ | 0.0683273 | $i$ | 12.03438 | | +0.23029657 | +0.02419199 | |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 291 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2002 10 09 | 291 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.5+ |
| 2002 10 09 | 291 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.6+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2002 11 04 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.4− |
| 2002 11 04 | 644 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2002 11 04 | 644 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.4− |
| 2002 11 06 | 699 | (1.3+ | 1.7−) | 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 11 13 | 703 | (0.6− | 2.2+) |
| 2002 11 06 | 699 | 0.7− | 1.0+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.5+ | 0.7+ |
| 2002 11 06 | 699 | (0.8− | 2.2−) | 2006 10 16 | 683 | 0.8+ | 0.6+ | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2002 11 06 | 699 | 0.6− | 0.6+ | 2006 10 16 | 703 | (0.8+ | 1.8−) | 2006 11 13 | 703 | 1.0+ | 1.5+ |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | (1.8+ | 1.4−) | 2006 11 23 | G96 | 0.3+ | 0.6− |
| 2002 11 07 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.6− | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2002 11 07 | 704 | (0.3− | 1.6+) | 2006 10 16 | 683 | (6.1+ | 1.1−) | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2002 11 11 | 704 | 0.1− | 1.1− | 2006 10 16 | 703 | 1.4− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.7− |
| 2002 11 11 | 704 | 0.6+ | 1.0− | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2002 11 11 | 704 | 0.6+ | 1.3+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2002 12 03 | 460 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2002 12 03 | 460 | 0.5− | 0.5− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.2− |

**2002 VF$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.52361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23324284 | $\omega$ | 235.74165 | | +0.96665228 | −0.25154304 | |
| $a$ | 2.6137487 | $\Omega$ | 138.76873 | | +0.25233349 | +0.90350915 | |
| $e$ | 0.1737469 | $i$ | 4.18131 | | +0.04371693 | +0.34698317 | |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.3+ |
| 2002 09 09 | 599 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.6− | 0.2− | 2006 09 30 | 703 | 0.8+ | 1.1− |
| 2002 09 09 | 599 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.2+ | 1.1+ | 2006 10 02 | G96 | 0.6+ | 0.3− |
| 2002 11 04 | 644 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.1+ | 1.0− | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2002 11 04 | 644 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.6− |
| 2002 11 04 | 644 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.5+ | 1.1− | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 691 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2002 11 07 | 704 | 0.6− | 0.6− | 2006 09 20 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 2002 11 07 | 704 | 0.8+ | 1.4− | 2006 09 20 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 1.0+ | 0.0 | 2006 09 22 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.8− | 0.3+ |
| 2002 11 11 | 704 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.5− |
| 2002 11 11 | 704 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2002 11 11 | 704 | 0.1+ | 0.7− | 2006 09 22 | 704 | (1.6+ | 0.9+) | 2006 10 16 | 703 | 0.7− | 0.1+ |
| 2002 12 01 | 704 | 0.7− | 0.9+ | 2006 09 26 | 704 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 12 01 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 12 01 | 704 | 1.0− | 0.7+ | 2006 09 26 | 704 | 0.4− | 1.5+ | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2002 12 01 | 704 | (1.9− | 0.1+) | 2006 09 26 | 704 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2006 09 12 | 703 | (2.0+ | 0.2−) | 2006 09 30 | 703 | 1.0+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2006 09 12 | 703 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 1.1+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.3− |

**2002 VP$_{44}$ = 2006 QH$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.92246 | | $\omega$ | 136.58617 | +0.96632651 | +0.23648939 |
| $n$ | 0.24141916 | | $\Omega$ | 210.17679 | −0.25403200 | +0.93955558 |
| $a$ | 2.5543960 | | $i$ | 11.63995 | +0.04099769 | +0.24760467 |
| $e$ | 0.3242337 | | $H$ | 16.9 | $G$ 0.15 | $U$ 3 |
| $P$ | 4.08 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.5+ | 0.8− | 2006 09 15 | 703 | 0.5− | 0.2+ | 2006 10 23 | 704 | 1.0+ | 0.4+ |
| 2002 10 02 | 704 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.0 | 0.3+ | 2006 10 23 | 704 | (0.3+ | 2.2+) |
| 2002 10 02 | 704 | 1.0− | 0.1+ | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 10 23 | 683 | 1.1+ | 0.5+ |
| 2002 11 04 | 608 | 0.5− | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.3+ | 0.4− |
| 2002 11 04 | 608 | 0.4− | 0.2− | 2006 09 20 | 699 | 0.1− | 0.4+ | 2006 10 28 | 704 | 0.4− | 0.1+ |
| 2002 11 04 | 608 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.3− | 0.4+ |
| 2002 11 07 | 704 | 0.4− | 0.3+ | 2006 09 25 | 704 | 0.9− | 0.7+ | 2006 10 28 | 704 | 0.5− | 0.4+ |
| 2002 11 07 | 704 | 1.1+ | 0.6+ | 2006 09 25 | 704 | 0.1+ | 0.6− | 2006 10 28 | 704 | 0.3− | 0.2− |
| 2002 11 07 | 704 | 0.3− | 0.8− | 2006 09 25 | 704 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.3+ | 0.4− | 2006 09 25 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | (0.4− | 1.8−) | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 11 11 | 704 | (0.6− | 2.3+) | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2002 11 11 | 704 | 1.0+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2002 11 11 | 704 | 1.3− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2006 08 29 | 703 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.2+ | 0.7+ |
| 2006 08 29 | 703 | 0.8+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.1+ | 0.7+ |
| 2006 08 29 | 703 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2006 08 30 | 704 | 1.0− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.3+ |
| 2006 08 30 | 704 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.5− |
| 2006 08 30 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.4− | 0.1− |
| 2006 08 30 | 704 | (1.7+ | 0.4+) | 2006 10 23 | 704 | 0.3− | 0.7− | 2006 11 17 | 704 | 0.7+ | 0.1+ |
| 2006 09 15 | 703 | 1.1+ | 0.4+ | 2006 10 23 | 683 | (1.7+ | 1.1−) | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2006 09 15 | 703 | 0.6− | 0.8− | 2006 10 23 | 704 | (1.3− | 1.6+) | | | | |
| 2006 09 15 | 703 | 0.7+ | 0.0 | 2006 10 23 | 683 | 1.4+ | 1.3− | | | | |

**2002 VT$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.94004 | | $\omega$ | 329.10214 | +0.77135946 | −0.62476138 |
| $n$ | 0.26706937 | | $\Omega$ | 70.05789 | +0.60704482 | +0.66517256 |
| $a$ | 2.3881045 | | $i$ | 7.40487 | +0.19105282 | +0.40892381 |
| $e$ | 0.2385870 | | $H$ | 16.3 | $G$ 0.15 | $U$ 2 |
| $P$ | 3.69 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.1− | 0.2− | 2002 12 01 | 704 | 0.1− | 0.4− | 2002 12 31 | 704 | (1.7− | 0.1−) |
| 2002 10 02 | 704 | 0.2− | 0.8+ | 2002 12 01 | 704 | 0.0 | 0.2− | 2003 01 04 | 704 | (2.8− | 0.2+) |
| 2002 10 02 | 704 | 0.2+ | 0.3+ | 2002 12 01 | 704 | 0.1− | 0.1− | 2003 01 04 | 704 | (2.5− | 1.1+) |
| 2002 10 30 | 608 | 0.3− | 0.1+ | 2002 12 02 | 608 | 0.0 | 0.8− | 2003 01 04 | 704 | (1.9− | 1.3+) |
| 2002 10 30 | 608 | 0.3− | 0.2+ | 2002 12 02 | 608 | 0.1+ | 0.8− | 2003 01 04 | 704 | (1.9− | 2.1−) |
| 2002 10 30 | 608 | 0.1− | 0.1− | 2002 12 02 | 608 | 0.0 | 0.7− | 2003 01 04 | 704 | (3.1− | 1.6+) |
| 2002 11 04 | 608 | 0.2+ | 0.3− | 2002 12 05 | 704 | 0.3+ | 0.0 | 2003 01 08 | 704 | 0.2− | 0.5− |
| 2002 11 04 | 608 | 0.0 | 0.8− | 2002 12 05 | 704 | 0.4+ | 0.0 | 2003 01 08 | 704 | 0.1+ | 0.5− |
| 2002 11 04 | 608 | 0.1+ | 0.4− | 2002 12 05 | 704 | 0.6+ | 0.1− | 2003 01 08 | 704 | 0.1+ | 0.7+ |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2002 12 05 | 704 | 0.0 | 0.9− | 2003 01 08 | 704 | 0.2+ | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.3+ | 2002 12 05 | 704 | 0.5+ | 0.3− | 2003 01 28 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2002 12 10 | 644 | 0.3+ | 0.3− | 2003 01 28 | 644 | 0.4+ | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.5+ | 2002 12 10 | 704 | 0.9− | 0.9+ | 2003 01 28 | 644 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.3− | 0.7+ | 2002 12 10 | 644 | 0.2+ | 0.4− | 2003 02 01 | 644 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2002 12 10 | 704 | 0.9− | 0.8+ | 2003 02 01 | 644 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | 0.2− | 0.1− | 2002 12 10 | 644 | 0.5+ | 0.3− | 2003 02 01 | 644 | 0.0 | 0.0 |
| 2002 11 11 | 704 | 0.4+ | 0.3− | 2002 12 10 | 704 | 0.9− | 1.2+ | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | 0.2− | 0.0 | 2002 12 10 | 704 | (0.5− | 1.7+) | 2006 09 18 | 691 | 0.3+ | 0.1+ |
| 2002 11 11 | 704 | 0.0 | 0.0 | 2002 12 10 | 704 | (1.1− | 1.6+) | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2002 11 23 | 644 | 0.3+ | 0.2+ | 2002 12 27 | 644 | 0.5+ | 1.3+ | 2006 10 03 | G96 | 0.3− | 0.5− |
| 2002 11 23 | 644 | 0.8+ | 0.9− | 2002 12 27 | 644 | 0.6− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2002 11 23 | 644 | 0.6+ | 0.3+ | 2002 12 27 | 644 | 0.8+ | 1.2+ | 2006 10 03 | G96 | 0.1− | 0.5− |
| 2002 11 27 | 699 | 0.2+ | 0.2− | 2002 12 27 | 644 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.3− | 0.5− |
| 2002 11 27 | 699 | 0.6− | 0.1+ | 2002 12 27 | 644 | 1.0+ | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 11 27 | 699 | 0.0 | 0.2− | 2002 12 27 | 644 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.7− |
| 2002 11 27 | 699 | 0.1+ | 0.3− | 2002 12 31 | 704 | 1.4− | 0.5− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2002 12 01 | 704 | 0.1− | 0.1− | 2002 12 31 | 704 | 1.2− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2002 12 01 | 704 | 0.2− | 0.4− | 2002 12 31 | 704 | 0.9− | 0.5− | | | | |

**2002 VV$_{44}$ = 2006 UU$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.25219 | | $\omega$ | 297.70421 | +0.99700410 | −0.01429377 |
| $n$ | 0.21786925 | | $\Omega$ | 63.20118 | +0.04582052 | +0.90091962 |
| $a$ | 2.7353029 | | $i$ | 4.88542 | −0.06231612 | +0.43375053 |
| $e$ | 0.1075626 | | $H$ | 17.6 | $G$ 0.15 | $U$ 5 |
| $P$ | 4.52 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 950 | 0.1− | 0.2− | 2002 11 07 | 704 | 0.0 | 0.0 | 2002 11 12 | 644 | 0.3− | 0.0 |
| 2002 11 04 | 950 | 0.1− | 0.3− | 2002 11 11 | 291 | 0.1+ | 0.1− | 2006 10 23 | 568 | 0.0 | 0.1+ |
| 2002 11 04 | 950 | 0.0 | 0.3− | 2002 11 11 | 291 | 0.0 | 0.1− | 2006 10 23 | 568 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.5− | 2002 11 11 | 291 | 0.4+ | 0.0 | 2006 10 23 | 568 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.7+ | 0.1+ | 2002 11 12 | 644 | 0.5− | 0.3+ | 2006 10 27 | 568 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 1.3− | 1.6+ | 2002 11 12 | 644 | 0.5− | 0.2+ | 2006 10 27 | 568 | 0.0 | 0.2+ |

**2002 VJ$_{46}$ = 2006 TX$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.23615 | | $\omega$ | 263.99638 | +0.97916066 | −0.19455663 |
| $n$ | 0.24492835 | | $\Omega$ | 107.21158 | +0.20194973 | +0.90246784 |
| $a$ | 2.5299388 | | $i$ | 3.49563 | +0.02146422 | +0.38431695 |
| $e$ | 0.1993024 | | $H$ | 17.0 | $G$ 0.15 | $U$ 4 |
| $P$ | 4.02 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.5+ | 0.1− |
| 2002 10 31 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 2002 10 31 | 644 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.5+ | 0.2− |
| 2002 11 05 | 644 | 0.3− | 1.1+ | 2006 10 16 | 703 | 0.1+ | 1.1+ | 2006 11 10 | 644 | 0.2+ | 0.3− |
| 2002 11 05 | 644 | 0.1− | 1.1+ | 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 11 10 | 644 | 0.3+ | 0.1+ |
| 2002 11 05 | 644 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.8− | 0.3− | 2006 11 10 | 644 | 0.6+ | 0.0 |
| 2002 11 07 | 704 | 0.7− | 0.6+ | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.5− | 1.3− |
| 2002 11 07 | 704 | 0.8− | 1.5+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2002 11 07 | 704 | (0.5− | 1.7+) | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.2− | 1.0− |
| 2002 11 08 | 704 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.9− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2002 11 08 | 704 | 0.4− | 0.7+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2002 11 08 | 704 | 0.6+ | 0.2− | 2006 11 01 | 703 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2002 11 08 | 704 | 0.7+ | 1.2+ | 2006 11 01 | 703 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2002 11 11 | 704 | 0.2+ | 0.6− | 2006 11 01 | 703 | 0.1− | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.0 |
| 2002 11 11 | 704 | 0.3− | 1.0+ | 2006 11 01 | 703 | 0.1− | 0.4− | 2006 11 17 | 704 | 1.2− | 1.0− |
| 2002 11 11 | 704 | 0.6− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.1− |
| 2002 11 11 | 704 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2002 11 22 | 644 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 25 | 291 | 0.2+ | 0.1− |
| 2002 11 22 | 644 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 25 | 291 | 0.3+ | 0.1− |
| 2002 11 22 | 644 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 25 | 291 | 0.2+ | 0.2− |
| 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.3− | | | | |

**2002 VK$_{46}$ = 2006 SE$_{351}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 308.47516 | | $\omega$ | 303.02798 | +0.46828721 | −0.88192591 |
| $n$ | 0.22677521 | | $\Omega$ | 118.95820 | +0.82984960 | +0.41801289 |
| $a$ | 2.6632115 | | $i$ | 3.53697 | +0.30340852 | +0.21788048 |
| $e$ | 0.0781923 | | $H$ | 16.5 | $G$ 0.15 | $U$ 5 |
| $P$ | 4.35 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | 0.4+ | 0.4− | 2006 09 19 | 703 | (0.9− | 2.0−) | 2006 10 02 | G96 | 0.0 | 0.5− |
| 2002 11 03 | 608 | 0.1+ | 0.5− | 2006 09 19 | 703 | 0.6+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2002 11 03 | 608 | 0.6+ | 0.3− | 2006 09 19 | 703 | 0.2− | 1.3− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2002 11 05 | 644 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.8+ | 2006 11 25 | G96 | 0.1+ | 0.3+ |
| 2002 11 05 | 644 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2002 11 07 | 704 | (2.6+ | 0.3+) | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2002 11 07 | 704 | (2.1+ | 0.9+) | 2006 10 02 | G96 | 0.4+ | 0.6− | 2006 11 25 | G96 | 0.3+ | 0.3+ |
| 2002 11 07 | 704 | (1.8+ | 1.1+) | 2006 10 02 | G96 | 0.3− | 0.3− | | | | |
| 2006 09 19 | 703 | 0.7− | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.3− | | | | |

**2002 VL$_{46}$ = 2006 UG$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.31399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24460053 | $\omega$ | 317.20453 | | +0.89687472 | −0.37800152 | |
| $a$ | 2.5321987 | $\Omega$ | 66.34028 | | +0.44224272 | +0.75929536 | |
| $e$ | 0.1584770 | $i$ | 14.51920 | | +0.00609239 | +0.52970313 | |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | 0.6− | 0.3− | 2002 11 22 | 644 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2002 11 03 | 608 | 0.5− | 0.1+ | 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2002 11 03 | 608 | 0.5− | 0.2+ | 2002 12 01 | 704 | (0.5+ | 2.4−) | 2006 11 13 | 703 | 0.1+ | 0.1+ |
| 2002 11 05 | 644 | 0.2+ | 0.4+ | 2002 12 01 | 704 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2002 11 05 | 644 | 0.3+ | 0.5+ | 2002 12 01 | 704 | 0.5+ | 0.5+ | 2006 11 13 | 703 | 0.2− | 0.5+ |
| 2002 11 05 | 644 | 0.7+ | 0.0 | 2002 12 01 | 704 | 0.4+ | 0.7+ | 2006 11 13 | 703 | 0.6− | 0.5+ |
| 2002 11 07 | 704 | 0.6− | 0.2− | 2002 12 01 | 704 | 0.2− | 0.7− | 2006 11 13 | 644 | 0.4+ | 0.0 |
| 2002 11 07 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.8+ | 2006 11 13 | 644 | 0.4+ | 0.4− |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.5+ | 0.1− |
| 2002 11 07 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2002 11 07 | 704 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.1− | 0.4− | 2006 11 20 | 704 | 1.1− | 0.2− |
| 2002 11 11 | 704 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 1.0+ | 2006 11 20 | 704 | 0.3− | 1.4+ |
| 2002 11 11 | 704 | 0.3− | 0.8− | 2006 10 16 | 703 | 1.1− | 0.2− | 2006 11 20 | 704 | (2.3− | 0.5−) |
| 2002 11 11 | 704 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.6− |
| 2002 11 11 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2002 11 11 | 704 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.5− | 2006 11 23 | G96 | 0.3+ | 0.6− |
| 2002 11 22 | 644 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.6− |

**2002 VS$_{46}$ = 2006 SH$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.98813 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23259771 | $\omega$ | 240.84847 | | +0.31618883 | −0.94856668 | |
| $a$ | 2.6185795 | $\Omega$ | 190.75374 | | +0.89699745 | +0.30429919 | |
| $e$ | 0.2370071 | $i$ | 4.82072 | | +0.30890159 | +0.08731125 | |
| $P$ | 4.24 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 644 | 0.0 | 0.5+ | 2002 11 11 | 704 | 0.1− | 0.4− | 2006 09 23 | 691 | 0.2− | 0.2+ |
| 2002 11 05 | 644 | 0.0 | 0.4+ | 2002 11 11 | 704 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2002 11 05 | 644 | 0.1+ | 0.3+ | 2002 12 01 | 704 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 2002 11 07 | 704 | 0.8− | 0.1− | 2002 12 01 | 704 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.6+ | 0.3− |
| 2002 11 07 | 704 | 0.2+ | 0.5− | 2002 12 01 | 704 | 0.0 | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2002 11 07 | 704 | 0.4+ | 0.3+ | 2002 12 01 | 704 | 0.6− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2002 11 11 | 704 | 0.3+ | 0.8− | 2006 09 23 | 691 | 0.0 | 0.7− | 2006 09 27 | 691 | 0.5− | 0.5+ |

**2002 VW$_{46}$ = 2006 TP$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.84976 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23986572 | $\omega$ | 277.60149 | | −0.56494895 | −0.82018790 | |
| $a$ | 2.5654128 | $\Omega$ | 207.41277 | | +0.81299541 | −0.53464974 | |
| $e$ | 0.2515476 | $i$ | 11.29021 | | +0.14096504 | −0.20357176 | |
| $P$ | 4.11 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | 0.3+ | 0.6− | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 17 | 683 | (0.9+ | 2.8−) |
| 2002 11 03 | 608 | 0.3− | 0.8− | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.6− |
| 2002 11 03 | 608 | 0.1− | 0.9− | 2006 09 26 | G96 | 0.3− | 0.2+ | 2006 10 17 | 683 | (0.6+ | 1.9−) |
| 2002 11 05 | 644 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 17 | 683 | (1.7+ | 2.6−) |
| 2002 11 05 | 644 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.2− |
| 2002 11 05 | 644 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.3− | 1.0− | 2006 10 18 | 691 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.3+ | 1.3+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 1.1− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2002 11 07 | 704 | 0.0 | 1.1+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2002 11 11 | 704 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 2002 11 11 | 704 | 0.4− | 0.8+ | 2006 10 12 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.0 |
| 2002 11 11 | 704 | 0.1+ | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 11 15 | 704 | 0.2− | 0.7+ | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.7− |
| 2002 11 15 | 704 | 0.6+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.2− |
| 2002 11 15 | 704 | 0.4+ | 0.4− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.5− | 0.2− |
| 2002 11 22 | 644 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2002 11 22 | 644 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2002 11 22 | 644 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.0 | 0.1− | | | | |

**2002 VE$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.91908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27094518 | $\omega$ | 194.22242 | | +0.96711275 | −0.25434703 | |
| $a$ | 2.3652757 | $\Omega$ | 180.51416 | | +0.24052974 | +0.91549206 | |
| $e$ | 0.2550911 | $i$ | 4.62402 | | +0.08269452 | +0.31174006 | |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 16 | 691 | 0.1− | 0.0 | 2002 11 07 | 704 | 0.0 | 0.2+ | 2002 11 23 | 644 | 0.0 | 0.1+ |
| 2001 05 16 | 691 | 0.7+ | 0.5+ | 2002 11 07 | 704 | 0.7− | 0.6− | 2002 11 28 | 699 | 0.3+ | 0.5+ |
| 2001 05 16 | 691 | 0.5− | 0.2+ | 2002 11 11 | 704 | 0.3+ | 0.0 | 2002 11 28 | 699 | 1.0+ | 0.4+ |
| 2002 10 07 | 699 | 0.1− | 0.1− | 2002 11 11 | 704 | 0.3− | 0.5+ | 2002 11 28 | 699 | 0.2− | 0.7+ |
| 2002 10 07 | 699 | 0.1+ | 1.0+ | 2002 11 11 | 704 | 0.0 | 0.1− | 2002 11 28 | 699 | 0.1− | 0.3+ |
| 2002 10 07 | 699 | 0.9− | 1.1+ | 2002 11 11 | 704 | 0.2− | 0.1− | 2002 12 01 | 704 | 0.2+ | 0.3− |
| 2002 10 07 | 699 | 1.2+ | 0.0 | 2002 11 11 | 704 | 0.2− | 0.5− | 2002 12 01 | 704 | 0.3+ | 0.3− |
| 2002 10 30 | 608 | 0.3− | 0.4+ | 2002 11 12 | 704 | 0.5− | 0.3− | 2002 12 01 | 704 | 0.3+ | 0.2+ |
| 2002 10 30 | 608 | 0.2− | 0.1− | 2002 11 12 | 704 | 0.7− | 0.1− | 2002 12 01 | 704 | 0.2− | 0.6+ |
| 2002 10 30 | 608 | 0.3− | 0.2+ | 2002 11 12 | 704 | 0.2+ | 1.1+ | 2002 12 01 | 704 | 0.0 | 0.8+ |
| 2002 11 05 | 699 | 0.3− | 0.4− | 2002 11 12 | 704 | 0.4− | 0.3+ | 2002 12 11 | 704 | 1.1+ | 0.0 |
| 2002 11 05 | 699 | 0.6+ | 0.4+ | 2002 11 12 | 704 | 0.1− | 0.4− | 2002 12 11 | 704 | 0.3+ | 0.4− |
| 2002 11 05 | 699 | 0.4− | 0.2− | 2002 11 16 | 644 | 0.4− | 0.2− | 2002 12 11 | 704 | 0.4− | 1.2+ |
| 2002 11 05 | 699 | 1.1+ | 0.6+ | 2002 11 16 | 644 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.4+ | 1.1− |
| 2002 11 07 | 704 | 0.3− | 0.3− | 2002 11 16 | 644 | 1.2+ | 1.8− | 2004 03 17 | 691 | 0.3− | 0.4+ |
| 2002 11 07 | 704 | 0.8− | 0.3− | 2002 11 23 | 644 | 0.0 | 0.1− | 2004 03 17 | 691 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.4− | 0.1+ | 2002 11 23 | 644 | 0.2− | 0.3− | 2004 03 17 | 691 | 0.4+ | 0.2− |

**2002 VO$_{52}$ = 2006 SD$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.93938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23885669 | $\omega$ | 235.47197 | | +0.67649112 | +0.72828373 | |
| $a$ | 2.5726327 | $\Omega$ | 77.49327 | | −0.63363912 | +0.65128217 | |
| $e$ | 0.1712631 | $i$ | 6.43247 | | −0.37531484 | +0.21315335 | |
| $P$ | 4.13 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.1− | 1.0+ | 2006 09 30 | 704 | 0.3− | 0.8+ |
| 2002 10 31 | 704 | 0.6+ | 0.6− | 2006 09 18 | 703 | 0.2− | 0.6+ | 2006 09 30 | 704 | 0.2+ | 0.3− |
| 2002 10 31 | 704 | 0.4+ | 0.1− | 2006 09 18 | 703 | 0.7+ | 0.8− | 2006 09 30 | 704 | 0.4+ | 0.1− |
| 2002 10 31 | 704 | 0.7− | 0.7− | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.2− |
| 2002 10 31 | 704 | 0.2+ | 0.5− | 2006 09 21 | 699 | 0.8− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.2+ |
| 2002 10 31 | 608 | 0.9+ | 0.8+ | 2006 09 21 | 699 | (1.6− | 0.2+) | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2002 10 31 | 608 | 0.8+ | 0.3+ | 2006 09 21 | 699 | 1.0− | 0.7− | 2006 10 16 | 703 | 0.9− | 0.4+ |
| 2002 10 31 | 608 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.8+ | 1.0− | 2006 10 16 | 703 | 0.7− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.2+ | 1.4− | 2006 10 19 | 644 | 0.5+ | 0.1+ |
| 2002 11 06 | 699 | 0.3− | 0.7+ | 2006 09 25 | 699 | 0.9− | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 699 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2002 11 06 | 699 | 1.5− | 0.0 | 2006 09 25 | 699 | 1.0+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2002 11 07 | 704 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.8− | 0.0 | 2006 10 22 | 703 | 0.4+ | 1.0− |
| 2002 11 07 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.6+ |
| 2002 11 07 | 704 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2002 11 07 | 704 | 0.5− | 0.9− | 2006 09 26 | 703 | 0.6+ | 1.0+ | | | | |

**2002 VH$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.51129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22172177 | $\omega$ | 130.01375 | | +0.88088527 | −0.41969930 | |
| $a$ | 2.7035256 | $\Omega$ | 255.82168 | | +0.33550249 | +0.87978062 | |
| $e$ | 0.1037692 | $i$ | 13.04534 | | +0.33388505 | +0.22324553 | |
| $P$ | 4.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.6+ | 0.5+ | 2002 11 07 | 704 | 0.1+ | 0.1− | 2002 12 11 | 644 | 0.1− | 0.3+ |
| 2002 09 07 | 704 | 0.0 | 0.8+ | 2002 11 07 | 704 | 0.3− | 0.1+ | 2002 12 11 | 644 | 0.3+ | 0.2+ |
| 2002 09 07 | 704 | (1.9+ | 1.4+) | 2002 11 14 | 704 | 0.3+ | 0.4+ | 2002 12 27 | 644 | 0.1− | 0.2− |
| 2002 10 05 | 704 | 0.1+ | 0.2− | 2002 11 14 | 704 | 0.0 | 0.6− | 2002 12 27 | 644 | 0.5− | 0.2− |
| 2002 10 05 | 699 | 0.3− | 0.2+ | 2002 11 14 | 704 | 0.2+ | 1.1+ | 2002 12 27 | 644 | 0.1− | 0.0 |
| 2002 10 05 | 704 | 0.2+ | 0.4+ | 2002 11 14 | 704 | 0.3− | 0.8+ | 2002 12 31 | 704 | 0.1+ | 0.4+ |
| 2002 10 05 | 699 | 0.2+ | 0.3− | 2002 11 24 | 644 | 0.5+ | 0.2+ | 2002 12 31 | 704 | 0.6− | 0.3− |
| 2002 10 05 | 704 | 0.4+ | 0.5+ | 2002 11 24 | 644 | 0.4+ | 0.2+ | 2002 12 31 | 704 | 0.5− | 0.0 |
| 2002 10 05 | 704 | 1.0+ | 0.2− | 2002 11 24 | 644 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.0 | 1.2− |
| 2002 10 05 | 699 | 0.0 | 0.7− | 2002 11 27 | 699 | 0.3− | 0.2+ | 2002 12 31 | 704 | 0.8− | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2002 11 27 | 699 | 0.4+ | 0.2− | 2003 01 05 | 704 | 0.8+ | 0.3− |
| 2002 10 05 | 699 | 0.1− | 1.1+ | 2002 11 27 | 699 | 0.4+ | 0.0 | 2003 01 05 | 704 | 0.5+ | 0.1− |
| 2002 11 06 | 704 | 0.4− | 0.9− | 2002 11 27 | 699 | 1.3+ | 0.2− | 2003 01 05 | 704 | 0.5+ | 0.3− |
| 2002 11 06 | 704 | 0.6− | 1.0− | 2002 11 28 | 699 | 0.0 | 0.4− | 2003 01 05 | 704 | 0.9+ | 0.4+ |
| 2002 11 06 | 704 | 0.2− | 0.7− | 2002 11 28 | 699 | 0.4+ | 0.3+ | 2003 01 05 | 704 | 0.4+ | 0.1− |
| 2002 11 06 | 704 | 0.3− | 0.8− | 2002 11 28 | 699 | 0.5+ | 0.9+ | 2006 08 13 | 644 | 0.2+ | 0.5+ |
| 2002 11 07 | 704 | 0.3− | 0.9− | 2002 11 28 | 699 | 0.2− | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.4+ |
| 2002 11 07 | 704 | 1.4− | 0.6− | 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.3+ | 0.3+ |
| 2002 11 07 | 704 | 0.1− | 0.4− | 2002 12 06 | 704 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.6− | 0.5− |
| 2002 11 07 | 704 | (1.6+ | 0.0 ) | 2002 12 06 | 704 | 0.6− | 0.3+ | 2006 09 27 | 703 | (1.1+ | 2.1−) |
| 2002 11 07 | 704 | 1.1− | 0.1− | 2002 12 06 | 704 | 0.6− | 0.5+ | 2006 09 27 | 703 | 0.1− | 1.2− |
| 2002 11 07 | 704 | 0.5− | 0.2− | 2002 12 06 | 704 | 0.0 | 1.2+ | 2006 09 27 | 703 | 0.4+ | 0.0 |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2002 12 11 | 644 | 0.2+ | 0.0 | | | | |

**2002 VM$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.87489 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23307782 | $\omega$ | 315.42552 | | +0.95667901 | −0.20932322 | |
| $a$ | 2.6149823 | $\Omega$ | 57.68532 | | +0.28497685 | +0.81555660 | |
| $e$ | 0.1523450 | $i$ | 13.85363 | | −0.05961096 | +0.53949163 | |
| $P$ | 4.23 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.2+ | 1.0− | 2002 11 14 | 704 | 0.6− | 0.7− | 2006 09 26 | 703 | 1.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.1+ | 1.0− | 2002 11 14 | 704 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.1− |
| 2002 11 06 | 704 | (2.4− | 0.5+) | 2002 11 14 | 704 | 0.2− | 1.3− | 2006 09 26 | 703 | 0.4− | 0.8− |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2002 11 14 | 704 | (0.6− | 2.1−) | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | 0.4− | 0.8− | 2002 11 14 | 704 | 0.2− | 1.0− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2002 11 07 | 704 | 0.5− | 0.4− | 2002 12 05 | 704 | 0.4+ | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2002 11 07 | 704 | 0.2+ | 1.3+ | 2002 12 05 | 704 | 1.3+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2002 11 07 | 704 | 0.0 | 0.8+ | 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.6+ | 0.0 | 2002 12 05 | 704 | 1.0+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2002 12 10 | 704 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 11 13 | 704 | 0.4+ | 0.3− | 2002 12 10 | 704 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2002 11 13 | 704 | 0.5− | 0.3− | 2002 12 10 | 704 | 0.0 | 1.1− | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2002 11 13 | 704 | 0.3− | 0.5+ | 2002 12 10 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.2− | 1.3− |
| 2002 11 13 | 704 | 0.3+ | 0.5+ | 2006 09 24 | 699 | (1.1+ | 1.9+) | 2006 10 28 | 703 | 0.6− | 0.4+ |
| 2002 11 13 | 704 | 0.2− | 0.3+ | 2006 09 24 | 699 | (0.2− | 2.0+) | 2006 10 28 | 703 | 0.6− | 0.4− |
| 2002 11 13 | 704 | 1.0− | 0.6+ | 2006 09 24 | 699 | 0.9+ | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2002 11 13 | 704 | 0.3− | 0.1+ | 2006 09 24 | 699 | 0.3+ | 0.3+ | | | | |
| 2002 11 13 | 704 | 0.1+ | 1.1+ | 2006 09 26 | 703 | 0.5− | 0.9− | | | | |

**2002 VN$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.84157 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23898409 | $\omega$ | 252.16188 | | +0.97543409 | −0.21888219 | |
| $a$ | 2.5717183 | $\Omega$ | 120.47505 | | +0.21146514 | +0.89871487 | |
| $e$ | 0.1224367 | $i$ | 1.65412 | | +0.06173186 | +0.38000287 | |
| $P$ | 4.12 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.7− | 0.1− | 2002 11 15 | 704 | 0.4+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2002 10 30 | 608 | 1.1− | 0.0 | 2002 12 01 | 704 | 0.6− | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2002 10 30 | 608 | 0.5− | 0.9− | 2002 12 01 | 704 | 0.3− | 1.2− | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.4+ | 0.2− | 2002 12 01 | 704 | (0.6− | 2.2−) | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.3− | 0.3− | 2002 12 01 | 704 | (1.8− | 0.7−) | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2002 11 06 | 704 | 0.7+ | 0.4− | 2002 12 02 | 608 | 0.4+ | 1.3− | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2002 11 07 | 704 | 0.4+ | 0.9+ | 2002 12 02 | 608 | 0.4+ | 0.6− | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 11 07 | 704 | 0.8− | 0.6+ | 2002 12 02 | 608 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2002 11 07 | 704 | 0.4+ | 0.4− | 2002 12 05 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2002 11 07 | 704 | (1.9+ | 0.3−) | 2002 12 05 | 704 | 0.4− | 1.4+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2002 11 13 | 704 | 0.1− | 0.3− | 2002 12 05 | 704 | 0.2− | 1.0+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2002 11 13 | 704 | 0.2+ | 0.4+ | 2002 12 10 | 644 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.4− | 0.0 |
| 2002 11 13 | 704 | 0.2− | 0.6+ | 2002 12 10 | 644 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2002 11 13 | 704 | 0.0 | 0.3+ | 2002 12 10 | 644 | 0.4− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2002 11 13 | 704 | 0.2− | 0.1+ | 2002 12 10 | 704 | 0.5− | 0.4+ | 2006 11 13 | 644 | 0.3− | 0.2+ |
| 2002 11 13 | 704 | 0.6+ | 0.3+ | 2002 12 10 | 704 | 0.1− | 0.1− | 2006 11 15 | G92 | 0.1− | 0.4− |
| 2002 11 13 | 704 | 0.4+ | 0.0 | 2002 12 10 | 704 | 0.4− | 0.3− | 2006 11 15 | G92 | 0.0 | 0.7− |
| 2002 11 13 | 704 | 0.5+ | 0.6+ | 2002 12 10 | 704 | 0.6− | 0.0 | 2006 11 15 | G92 | 0.3− | 0.2− |
| 2002 11 14 | 704 | 1.0+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.8− | 0.5− |
| 2002 11 14 | 704 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.3− | 0.3− |
| 2002 11 14 | 704 | 0.7+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.0 |
| 2002 11 14 | 704 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.7+ |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 11 18 | 704 | (1.9+ | 0.8+) |
| 2002 11 14 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 1.2+ |
| 2002 11 14 | 704 | 0.7+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2002 11 14 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2002 11 14 | 704 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 19 | G92 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | (1.7− | 0.0 ) | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 19 | G92 | 0.5+ | 0.5+ |
| 2002 11 15 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 19 | G92 | 1.4+ | 0.7− |
| 2002 11 15 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | 0.6− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.5− |
| 2002 11 15 | 704 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2002 11 15 | 704 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.6− |
| 2002 11 15 | 704 | 0.3− | 0.5− | 2006 11 01 | G96 | 0.5− | 0.2− | | | | |
| 2002 11 15 | 704 | 0.3+ | 0.5+ | 2006 11 01 | G96 | 0.3− | 0.1− | | | | |

**2002 VO$_{56}$ = 2006 SQ$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.86101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23943669 | $\omega$ | 221.26748 | | +0.77328257 | −0.63405320 | |
| $a$ | 2.5684764 | $\Omega$ | 178.07351 | | +0.60419503 | +0.73529075 | |
| $e$ | 0.3082376 | $i$ | 5.55919 | | +0.19230816 | +0.23942443 | |
| $P$ | 4.12 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.2+ | 1.0− | 2002 12 01 | 608 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.7+ | 0.2− |
| 2002 11 06 | 699 | 0.3+ | 0.2+ | 2002 12 01 | 608 | 0.1− | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 11 06 | 699 | 0.1+ | 0.1+ | 2002 12 01 | 608 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 11 06 | 699 | 0.2+ | 0.9+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.1− | 0.8− | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.9− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 699 | (1.5− | 1.6+) | 2006 10 19 | 644 | 0.3+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 1.3− | 1.1+ | 2006 09 18 | 699 | 0.4− | 0.5− | 2006 10 19 | 644 | 0.1− | 0.2− | | |
| 2002 11 11 | 704 | 0.4+ | 0.5− | 2006 09 18 | 699 | (2.5+ | 2.1−) | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 11 11 | 704 | 0.2+ | 0.5− | 2006 09 25 | 691 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.7+ | 0.3+ | | |
| 2002 11 11 | 704 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | (0.8− | 1.6+) | | |
| 2002 11 11 | 704 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.8+ | | |
| 2002 11 22 | 644 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.8+ | | |
| 2002 11 22 | 644 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2002 11 22 | 644 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.2− | 0.2− | | |
| 2002 12 01 | 704 | 1.4+ | 0.6+ | 2006 10 01 | 704 | 1.3+ | 0.3− | 2006 11 23 | G96 | 0.3− | 0.2− | | |
| 2002 12 01 | 704 | 0.1− | 0.6+ | 2006 10 01 | 704 | 0.7− | 1.0+ | 2006 11 23 | G96 | 0.4− | 0.1− | | |
| 2002 12 01 | 704 | 0.4− | 0.5+ | 2006 10 01 | 704 | 0.7+ | 0.4+ | | | | | | |

**2002 VX$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.91724 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24358857 | $\omega$ | 254.51246 | | +0.84447827 | | +0.51599806 |
| $a$ | 2.5392071 | $\Omega$ | 74.23089 | | −0.41619484 | | +0.80089807 |
| $e$ | 0.2224333 | $i$ | 8.57760 | | −0.33710280 | | +0.30382276 |
| $P$ | 4.05 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 608 | (0.2− | 1.6−) | 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.7+ | | |
| 2002 10 06 | 608 | 0.3− | 1.2− | 2005 04 07 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.3− | | |
| 2002 10 06 | 608 | 0.5+ | 1.5− | 2006 09 30 | 703 | 0.1− | 0.8− | 2006 10 22 | 703 | 0.6− | 0.0 | | |
| 2002 10 18 | 644 | 0.6+ | 0.7+ | 2006 09 30 | 703 | 1.3− | 1.0− | 2006 10 22 | 703 | 0.3− | 0.3− | | |
| 2002 10 18 | 644 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.2− | 1.1− | 2006 10 22 | 703 | 0.5− | 0.1+ | | |
| 2002 10 18 | 644 | 0.1− | 0.4+ | 2006 09 30 | 703 | (1.8+ | 0.6−) | 2006 10 22 | 703 | 0.8− | 0.1+ | | |
| 2002 11 06 | 608 | 0.2+ | 1.2− | 2006 10 01 | 704 | 0.4+ | 0.1− | 2006 10 28 | 703 | 0.6+ | 1.2+ | | |
| 2002 11 06 | 608 | 0.0 | 1.1− | 2006 10 01 | 704 | 0.3+ | 1.0+ | 2006 10 28 | 703 | 0.4+ | 1.2+ | | |
| 2002 11 06 | 608 | 0.2− | 0.6− | 2006 10 01 | 704 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.4− | 1.0+ | | |
| 2002 11 07 | 704 | 0.9+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.9+ | 0.3− | | |
| 2002 11 07 | 704 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 1.4− | 0.3− | | |
| 2002 11 07 | 704 | 0.4+ | 0.7− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.0 | 0.1+ | | |
| 2002 11 07 | 704 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 1.3− | 0.6− | | |
| 2002 11 11 | 704 | 0.1− | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.9− | 0.3− | | |
| 2002 11 11 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.3− | | |
| 2002 11 11 | 704 | 0.0 | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2002 11 21 | 644 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.2− | | |
| 2002 11 21 | 644 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.1+ | | |
| 2002 11 21 | 644 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.6+ | | | | | | |
| 2005 04 07 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 1.2+ | | | | | | |

**2002 VA$_{58}$ = 2006 WX$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.57261 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25979512 | $\omega$ | 262.57462 | | +0.84062411 | | −0.53974770 |
| $a$ | 2.4324769 | $\Omega$ | 130.08020 | | +0.51722832 | | +0.77535181 |
| $e$ | 0.2043128 | $i$ | 3.37042 | | +0.16070459 | | +0.32787496 |
| $P$ | 3.79 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.0 | 0.4+ | 2002 11 07 | 704 | 0.6− | 0.5− | 2002 11 13 | 644 | 0.1+ | 1.0+ | | |
| 2001 05 24 | 807 | 0.1+ | 0.3+ | 2002 11 07 | 704 | 0.4− | 0.9− | 2002 11 22 | 644 | 0.1− | 0.7+ | | |
| 2002 10 09 | 704 | 0.7+ | 0.6− | 2002 11 07 | 704 | 0.1− | 0.9− | 2002 11 22 | 644 | 0.5− | 0.5+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2002 11 11 | 704 | 0.7+ | 0.5+ | 2002 11 22 | 644 | 0.1+ | 0.9+ | | |
| 2002 10 09 | 704 | 0.5− | 0.3− | 2002 11 11 | 704 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2002 11 06 | 608 | 0.0 | 0.7− | 2002 11 11 | 704 | 0.6+ | 0.9+ | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2002 11 06 | 608 | 0.0 | 0.3− | 2002 11 11 | 704 | 0.6+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.1− | | |
| 2002 11 06 | 608 | 0.3+ | 0.1+ | 2002 11 11 | 704 | 0.6+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2002 11 07 | 704 | 1.1− | 0.3− | 2002 11 13 | 644 | 0.0 | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.8− | 1.3− | 2002 11 13 | 644 | 0.3− | 1.2+ | 2006 11 27 | 691 | 0.1+ | 0.6− | | |

**2002 VM$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.72552 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26343230 | $\omega$ | 278.88806 | | +0.85060317 | | −0.52341595 |
| $a$ | 2.4100351 | $\Omega$ | 112.68775 | | +0.50124240 | | +0.77839047 |
| $e$ | 0.2187937 | $i$ | 3.11278 | | +0.15884048 | | +0.34661798 |
| $P$ | 3.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 608 | 0.3+ | 0.6− | 2002 11 14 | 704 | 0.7+ | 1.6+ | 2002 12 11 | 704 | 0.6+ | 0.6+ | | |
| 2002 10 31 | 608 | 0.6+ | 0.8− | 2002 11 18 | 644 | 0.4+ | 0.7+ | 2002 12 11 | 704 | 0.2− | 0.6+ | | |
| 2002 10 31 | 608 | 0.2+ | 0.8− | 2002 11 18 | 644 | 0.5+ | 0.2+ | 2002 12 11 | 704 | 0.1− | 0.5+ | | |
| 2002 11 06 | 608 | 0.7+ | 0.0 | 2002 11 18 | 644 | 0.3+ | 0.9+ | 2002 12 11 | 704 | 0.1+ | 0.3+ | | |
| 2002 11 06 | 608 | 0.8+ | 0.1− | 2002 11 18 | 644 | 0.1+ | 0.2+ | 2002 12 11 | 704 | 1.2+ | 0.5+ | | |
| 2002 11 06 | 608 | 0.1+ | 0.4+ | 2002 11 18 | 644 | 0.0 | 0.7+ | 2002 12 31 | 704 | 0.6+ | 0.4+ | | |
| 2002 11 07 | 704 | 0.6− | 0.7− | 2002 11 18 | 644 | 0.3+ | 0.2− | 2002 12 31 | 704 | 0.3− | 0.3+ | | |
| 2002 11 07 | 704 | (2.2− | 1.0−) | 2002 11 24 | 644 | 0.1− | 0.0 | 2002 12 31 | 704 | 0.9− | 1.7− | | |
| 2002 11 07 | 704 | 0.9− | 1.8− | 2002 11 24 | 644 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 2002 11 07 | 704 | 1.2− | 1.3− | 2002 11 24 | 644 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.5− | | |
| 2002 11 11 | 704 | 0.7− | 0.6− | 2002 12 02 | 704 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.2− | 0.5− | | |
| 2002 11 11 | 704 | 0.5+ | 0.0 | 2002 12 02 | 704 | 0.8− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.6− | | |
| 2002 11 11 | 704 | 0.6+ | 0.3− | 2002 12 02 | 704 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.8+ | 0.0 | | |
| 2002 11 11 | 704 | 0.0 | 0.8− | 2002 12 02 | 704 | 0.1+ | 0.9+ | 2006 10 22 | G96 | 0.2+ | 0.2+ | | |
| 2002 11 11 | 704 | 0.1− | 0.6+ | 2002 12 02 | 704 | 0.2− | 0.6− | 2006 10 22 | G96 | 1.0− | 0.5− | | |
| 2002 11 14 | 704 | 0.1+ | 1.1+ | 2002 12 10 | 644 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2002 11 14 | 704 | 1.8− | 0.4+ | 2002 12 10 | 644 | 0.3+ | 0.2+ | | | | | | |
| 2002 11 14 | 704 | 0.7− | 1.8+ | 2002 12 10 | 644 | 0.1+ | 0.5− | | | | | | |

**2002 VN$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.70737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24407549 | $\omega$ | 200.67154 | | +0.74704963 | | −0.66384480 |
| $a$ | 2.5358289 | $\Omega$ | 201.04509 | | +0.62279097 | | +0.71733157 |
| $e$ | 0.2775366 | $i$ | 5.59763 | | +0.23248281 | | +0.21153130 |
| $P$ | 4.04 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.1− | 1.1− | 2002 12 05 | 608 | 0.9+ | 0.1+ | 2006 11 19 | 704 | 1.3+ | 0.1− | | |
| 2002 10 02 | 704 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.3− | 0.1− | | |
| 2002 10 02 | 704 | 0.6− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.2+ | | |
| 2002 10 02 | 704 | 1.1+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.4− | | |
| 2002 10 31 | 608 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.1− | 0.5+ | | |
| 2002 10 31 | 608 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.3+ | 0.1− | | |
| 2002 10 31 | 608 | 0.5− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.5− | 0.4+ | | |
| 2002 11 06 | 608 | 0.1− | 0.1+ | 2006 10 16 | 703 | (1.2− | 7.5−) | 2006 11 20 | 704 | 0.3+ | 0.4+ | | |
| 2002 11 06 | 608 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.0 | | |
| 2002 11 06 | 608 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.5− | 0.0 | | |
| 2002 11 07 | 704 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.4− | | |
| 2002 11 07 | 704 | 1.1+ | 1.0+ | 2006 11 02 | 703 | 0.3− | 0.8− | 2006 11 22 | G96 | 0.4− | 0.5− | | |
| 2002 11 07 | 704 | (1.6− | 0.0 ) | 2006 11 02 | 703 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.5− | 0.3− | | |
| 2002 11 07 | 704 | 0.3+ | 0.8− | 2006 11 02 | 703 | 0.2− | 0.4− | 2006 11 22 | 683 | 0.4+ | 0.2− | | |
| 2002 11 11 | 704 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.1− | 1.0− | 2006 11 22 | G96 | 0.1+ | 0.4− | | |
| 2002 11 11 | 704 | 0.7+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 22 | 683 | 0.8+ | 0.4− | | |
| 2002 11 11 | 704 | 0.5+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 22 | 683 | 0.3+ | 0.0 | | |
| 2002 11 12 | 704 | (0.2− | 1.8−) | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 23 | 683 | 0.8− | 0.3− | | |
| 2002 11 12 | 704 | (0.9+ | 2.1−) | 2006 11 10 | 644 | 0.1− | 0.4− | 2006 11 23 | 683 | 0.9+ | 0.8− | | |
| 2002 11 12 | 704 | 0.7− | 1.2− | 2006 11 10 | 644 | 0.2− | 0.2− | 2006 11 23 | 683 | 0.4− | 0.5+ | | |
| 2002 11 12 | 704 | (1.8− | 0.8−) | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 25 | 704 | 0.9+ | 0.3+ | | |
| 2002 11 12 | 704 | 0.4− | 1.2− | 2006 11 13 | 703 | 0.1+ | 0.5+ | 2006 11 25 | 704 | (1.6+ | 0.3+) | | |
| 2002 11 18 | 644 | 0.3− | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.7+ | 2006 11 25 | 704 | 0.2+ | 0.1− | | |
| 2002 11 18 | 644 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.3+ | 2006 11 25 | 704 | 0.6+ | 0.4− | | |
| 2002 11 18 | 644 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.9+ | 2006 11 25 | 704 | (0.4+ | 1.6+) | | |
| 2002 11 28 | 699 | 1.3− | 0.3+ | 2006 11 14 | 704 | 0.5+ | 1.3+ | 2006 11 25 | 704 | (0.9− | 2.4−) | | |
| 2002 11 28 | 699 | 0.7− | 0.1+ | 2006 11 14 | 704 | (0.8+ | 1.9+) | 2006 11 25 | 704 | 0.3− | 0.3+ | | |
| 2002 11 28 | 699 | 0.5− | 0.2− | 2006 11 14 | 704 | 0.6− | 0.1+ | 2006 11 25 | 704 | 1.1+ | 0.5− | | |
| 2002 11 28 | 699 | 0.5− | 0.1+ | 2006 11 14 | 704 | (4.1+ | 0.7−) | 2006 11 25 | 704 | 0.5− | 1.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 1.3+ | 2006 11 28 | 683 | 0.5+ | 0.4− |
| 2002 12 01 | 704 | 0.6− | 1.3+ | 2006 11 16 | 691 | 0.2− | 0.0 | 2006 11 28 | 683 | (2.9+ | 0.9−) |
| 2002 12 01 | 704 | 0.3− | 0.6+ | 2006 11 16 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.1− |
| 2002 12 01 | 704 | (0.0 | 1.7+) | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 11 28 | 683 | 0.3+ | 0.2+ |
| 2002 12 04 | J95 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.6− | 1.3+ | 2006 11 28 | 704 | 0.6+ | 0.1+ |
| 2002 12 04 | J95 | 0.6− | 0.1− | 2006 11 17 | 704 | 0.5− | 0.8+ | 2006 11 28 | 704 | 0.1+ | 0.4− |
| 2002 12 04 | J95 | 1.0+ | 0.5− | 2006 11 17 | 704 | 0.5− | 0.6+ | 2006 11 28 | 704 | 0.3+ | 0.0 |
| 2002 12 05 | 608 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.8+ | 0.6− |
| 2002 12 05 | 608 | 0.9+ | 0.4+ | 2006 11 17 | 704 | 0.4− | 0.0 | | | | |

### 2002 $VB_{59}$ = 2006 $SX_{124}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.37168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22206877 | $\omega$ | 39.26667 | | +0.58255447 | −0.81274372 | |
| $a$ | 2.7007086 | $\Omega$ | 15.10959 | | +0.73693573 | +0.52357313 | |
| $e$ | 0.0552138 | $i$ | 1.94083 | | +0.34286442 | +0.25557548 | |
| $P$ | 4.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 691 | 0.0 | 0.2+ | 2002 11 13 | 291 | 0.2+ | 0.1+ | 2006 09 22 | D35 | 0.2+ | 0.2+ |
| 2000 05 01 | 691 | 0.4+ | 0.3+ | 2002 11 13 | 291 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.9+ | 0.5+ |
| 2000 05 01 | 691 | 0.2− | 0.1− | 2002 11 13 | 291 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.8− | 0.2+ |
| 2002 11 01 | 644 | 0.4− | 0.4− | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | (2.6− | 1.2−) |
| 2002 11 01 | 644 | 0.4− | 0.6+ | 2006 08 27 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.8− | 0.8− |
| 2002 11 01 | 644 | 0.3− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2002 11 06 | 735 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.5− | 0.4+ |
| 2002 11 06 | 735 | 0.2− | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2002 11 06 | 735 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2002 11 09 | 735 | 0.2− | 0.1− | 2006 09 20 | 704 | (1.7− | 1.8+) | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2002 11 09 | 735 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.6+ | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2002 11 09 | 735 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2002 11 13 | 735 | 0.4+ | 0.6− | 2006 09 20 | 704 | (1.8− | 0.3−) | 2006 11 21 | G96 | 0.6+ | 0.3− |
| 2002 11 13 | 735 | 0.4− | 0.1+ | 2006 09 22 | D35 | 0.3+ | 0.4+ | | | | |
| 2002 11 13 | 735 | 0.4− | 0.5+ | 2006 09 22 | D35 | 0.2− | 0.1− | | | | |

### 2002 $VL_{60}$ = 2002 $VX_{86}$

Id. Minor Planet Center (d, *MPO* 41953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.07570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23588938 | $\omega$ | 192.65846 | | −0.00672462 | −0.99784098 | |
| $a$ | 2.5941622 | $\Omega$ | 257.75428 | | +0.92319025 | +0.01891188 | |
| $e$ | 0.2289422 | $i$ | 3.83321 | | +0.38428444 | −0.06289444 | |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | 1.0+ | 0.7+ | 2002 11 23 | 644 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.4− | 0.9− |
| 2002 11 03 | 608 | 1.2+ | 0.4+ | 2002 11 27 | 699 | 0.6− | 0.8− | 2006 09 19 | 703 | 0.3+ | 0.2+ |
| 2002 11 03 | 608 | 0.3+ | 0.0 | 2002 11 27 | 699 | 0.7− | 1.1− | 2006 09 19 | 703 | 0.4+ | 0.5− |
| 2002 11 05 | 704 | 1.1+ | 0.7+ | 2002 11 27 | 699 | 0.9− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.8+ |
| 2002 11 05 | 704 | 0.2− | 0.2− | 2002 11 27 | 699 | 0.5− | 0.8− | 2006 09 19 | 703 | (1.9+ | 0.1+) |
| 2002 11 05 | 704 | 0.4+ | 0.8+ | 2002 11 28 | 699 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.4− |
| 2002 11 05 | 644 | 0.3+ | 0.6− | 2002 11 28 | 699 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.7− | 0.6+ |
| 2002 11 05 | 704 | 0.3− | 0.1+ | 2002 11 28 | 699 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.2− |
| 2002 11 05 | 704 | 0.7− | 0.3− | 2002 11 28 | 699 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.0 | 0.8− |
| 2002 11 05 | 644 | 0.7+ | 0.3+ | 2002 12 02 | 704 | 0.3+ | 0.6− | 2006 10 03 | G96 | 0.2− | 0.8− |
| 2002 11 05 | 644 | 0.7+ | 0.5− | 2002 12 02 | 704 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.6+ | 0.4− |
| 2002 11 08 | 704 | 0.5− | 0.2− | 2002 12 02 | 704 | 0.2− | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.5− |
| 2002 11 08 | 704 | 0.8− | 0.4− | 2002 12 02 | 704 | 0.4+ | 1.2+ | 2006 10 03 | G96 | 0.1+ | 0.2+ |
| 2002 11 08 | 704 | (1.3− | 2.5−) | 2002 12 05 | 704 | 1.4+ | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2002 11 12 | 704 | 0.3+ | 0.6− | 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | (2.2− | 0.2+) | 2002 12 05 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2002 11 12 | 704 | 0.4− | 0.4− | 2002 12 05 | 704 | (1.7+ | 0.1−) | 2006 10 17 | 703 | 1.0− | 0.4+ |
| 2002 11 12 | 704 | 0.5− | 0.6− | 2002 12 11 | 644 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.1+ | 1.1+ |
| 2002 11 12 | 704 | 0.1− | 0.1+ | 2002 12 11 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.9− | 0.1− | 2002 12 11 | 644 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.6+ |
| 2002 11 14 | 704 | 0.2− | 0.6− | 2003 01 04 | 704 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.3+ | 0.1+ | 2003 01 04 | 704 | 0.4+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 14 | 704 | 0.5+ | 0.3+ | 2003 01 04 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.3− | 0.3+ | 2003 01 04 | 704 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2002 11 14 | 704 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.8− | 0.9+ | 2006 11 18 | G96 | 0.2+ | 0.6− |
| 2002 11 23 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2002 11 23 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.9+ | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.3− |

### 2002 $VV_{60}$ = 2006 $SF_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.25309 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23872496 | $\omega$ | 129.23535 | | +0.91792977 | −0.39012432 | |
| $a$ | 2.5735789 | $\Omega$ | 253.83378 | | +0.33691716 | +0.86256106 | |
| $e$ | 0.2617939 | $i$ | 4.30911 | | +0.20950361 | +0.32216679 | |
| $P$ | 4.13 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2− | 0.4+ | 2002 11 14 | 704 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.3− |
| 2002 11 04 | 644 | 0.1+ | 0.2+ | 2002 11 14 | 704 | 0.4+ | 0.2− | 2006 10 03 | 704 | 0.5− | 0.5+ |
| 2002 11 04 | 644 | 0.4− | 0.3+ | 2002 11 14 | 704 | 0.1+ | 0.6+ | 2006 10 03 | 704 | 0.7+ | 1.0+ |
| 2002 11 04 | 644 | 0.1+ | 0.2+ | 2002 11 14 | 704 | 0.9− | 0.3− | 2006 10 03 | 704 | 0.1− | 1.4+ |
| 2002 11 04 | 644 | 0.1+ | 0.5+ | 2002 11 28 | 699 | 0.3+ | 0.4− | 2006 10 03 | 704 | 0.6− | 0.5+ |
| 2002 11 04 | 644 | 0.3+ | 0.4+ | 2002 11 28 | 699 | (0.1+ | 1.8+) | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.5+ | 0.1+ | 2002 11 28 | 699 | 0.2− | 0.5− | 2006 10 10 | 644 | 0.2+ | 0.3− |
| 2002 11 05 | 704 | 0.2+ | 0.3− | 2002 11 28 | 699 | 0.2+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.4− |
| 2002 11 05 | 704 | 0.5+ | 0.6− | 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.2− | 1.1− | 2002 12 05 | 704 | 0.8− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 699 | (0.6+ | 1.9−) | 2002 12 05 | 704 | 0.4+ | 0.8− | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2002 11 05 | 704 | 1.1− | 0.6− | 2002 12 05 | 704 | 0.3+ | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2002 11 05 | 699 | 0.4− | 0.7+ | 2006 09 16 | 703 | 1.0+ | 0.2− | 2006 10 17 | 703 | 0.9− | 0.8− |
| 2002 11 05 | 699 | 1.0+ | 1.2− | 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 10 17 | 703 | (0.8− | 1.7−) |
| 2002 11 05 | 699 | 1.0− | 0.5− | 2006 09 16 | 703 | 0.1− | 0.9− | 2006 10 17 | 703 | (0.6− | 2.4−) |
| 2002 11 08 | 704 | 0.2− | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2002 11 08 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 11 08 | 704 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2002 11 12 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.8+ | 2006 09 19 | 699 | 0.4+ | 0.7− | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2002 11 12 | 704 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 2002 11 12 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.9+ |
| 2002 11 14 | 704 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.6+ | | | | |

### 2002 $VW_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.40895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23855685 | $\omega$ | 173.93887 | | +0.26087173 | −0.95576016 | |
| $a$ | 2.5747879 | $\Omega$ | 260.88044 | | +0.87983151 | +0.29332263 | |
| $e$ | 0.1370736 | $i$ | 7.91122 | | +0.39729393 | −0.02200811 | |
| $P$ | 4.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2− | 0.0 | 2002 12 02 | 704 | 0.4+ | 0.2+ | 2003 01 05 | 704 | 0.2− | 0.2− |
| 2002 11 04 | 644 | 0.4− | 0.1+ | 2002 12 02 | 704 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.3+ | 0.5+ |
| 2002 11 04 | 644 | 0.0 | 0.1+ | 2002 12 02 | 704 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.6+ |
| 2002 11 08 | 704 | 0.3− | 0.2− | 2002 12 02 | 704 | 0.6− | 0.4+ | 2006 10 19 | 703 | 0.0 | 0.6+ |
| 2002 11 08 | 704 | 0.7+ | 0.0 | 2002 12 02 | 704 | 0.5+ | 0.9+ | 2006 10 19 | 703 | 0.2+ | 0.9+ |
| 2002 11 08 | 704 | 0.3+ | 0.7+ | 2002 12 05 | 695 | (1.3− | 1.7−) | 2006 10 19 | 703 | 0.6− | 0.0 |
| 2002 11 12 | 704 | 0.0 | 0.3+ | 2002 12 05 | 695 | 0.1− | 0.7− | 2006 10 21 | 704 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2002 12 06 | 704 | 0.5− | 0.1+ | 2006 10 21 | 704 | 0.5+ | 0.2− |
| 2002 11 12 | 704 | 0.4− | 0.3− | 2002 12 06 | 704 | 0.2+ | 0.7− | 2006 10 21 | 704 | 0.2− | 0.2− |
| 2002 11 12 | 704 | 1.1+ | 0.7+ | 2002 12 06 | 704 | 0.2− | 0.4− | 2006 10 27 | 703 | 0.6+ | 0.4− |
| 2002 11 12 | 704 | 0.2− | 0.1+ | 2002 12 06 | 704 | 0.5+ | 0.3− | 2006 10 27 | 703 | 0.5− | 0.6− |
| 2002 11 14 | 704 | 0.0 | 0.0 | 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.1− |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2002 12 11 | 644 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.3+ | 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.8+ |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2002 12 11 | 644 | 0.4+ | 0.1+ | 2006 11 07 | 644 | 0.4+ | 0.0 |
| 2002 11 14 | 704 | 0.6+ | 0.4+ | 2002 12 11 | 704 | 0.2+ | 0.8− | 2006 11 07 | 644 | 0.3+ | 0.0 |
| 2002 11 23 | 644 | 0.4− | 0.1+ | 2002 12 11 | 704 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.5+ | 0.3+ | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2002 11 23 | 644 | 0.6+ | 0.3+ | 2002 12 11 | 704 | 0.5− | 0.6− | 2006 11 14 | 703 | 0.8− | 1.4− |
| 2002 12 01 | 608 | 0.4− | 0.9− | 2003 01 05 | 704 | 0.2− | 0.9+ | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2002 12 01 | 608 | 0.3− | 0.5− | 2003 01 05 | 704 | 0.0 | 0.3− | | | | |
| 2002 12 01 | 608 | 0.1− | 0.4− | 2003 01 05 | 704 | 0.4− | 0.8+ | | | | |

**2002 VB$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.55086 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23127782 | $\omega$ | 134.89464 | | +0.87514586 | −0.47147625 | |
| $a$ | 2.6285327 | $\Omega$ | 253.51967 | | +0.40580646 | +0.83761163 | |
| $e$ | 0.1936857 | $i$ | 6.51279 | | +0.26351629 | +0.27589292 | |
| $P$ | 4.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.4+ | 0.0 | 2002 11 08 | 704 | 0.1− | 0.0 | 2002 11 14 | 704 | 0.5+ | 0.0 |
| 2002 10 04 | 704 | 0.2+ | 1.3− | 2002 11 08 | 704 | 0.5+ | 0.3+ | 2002 11 14 | 704 | 0.4+ | 0.5+ |
| 2002 10 04 | 704 | 0.1+ | 1.0− | 2002 11 08 | 704 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.6− | 1.2+ |
| 2002 10 04 | 704 | 0.6− | 0.4+ | 2002 11 08 | 704 | 0.3− | 0.9+ | 2006 08 30 | 699 | 0.0 | 0.0 |
| 2002 10 04 | 699 | 0.8+ | 0.6+ | 2002 11 08 | 704 | 0.3− | 0.5+ | 2006 08 30 | 699 | 0.2− | 0.8− |
| 2002 10 04 | 699 | 0.2+ | 0.0 | 2002 11 11 | 704 | 0.3+ | 0.3+ | 2006 08 30 | 699 | 1.0+ | 0.0 |
| 2002 10 04 | 699 | 0.2− | 0.9− | 2002 11 11 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 644 | 0.1+ | 0.0 |
| 2002 10 04 | 699 | 0.4+ | 0.9+ | 2002 11 11 | 704 | 0.6− | 0.1− | 2006 09 16 | 644 | 0.2+ | 0.2+ |
| 2002 10 10 | 704 | 0.2+ | 0.0 | 2002 11 11 | 704 | 0.8+ | 0.6− | 2006 09 16 | 644 | 0.1− | 0.0 |
| 2002 10 10 | 704 | 1.2− | 0.6− | 2002 11 11 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 699 | 0.3+ | 1.0+ |
| 2002 10 10 | 704 | 0.7+ | 1.3− | 2002 11 12 | 704 | 0.0 | 0.6+ | 2006 09 30 | 699 | 0.5− | 0.7+ |
| 2002 10 10 | 704 | 0.8− | 0.1− | 2002 11 12 | 704 | 0.1− | 0.9− | 2006 09 30 | 699 | (1.9+ | 0.7+) |
| 2002 10 26 | 608 | 1.0− | 0.2+ | 2002 11 12 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 699 | (1.4− | 1.8+) |
| 2002 10 26 | 608 | 1.3− | 0.0 | 2002 11 12 | 704 | 0.5+ | 0.2− | 2006 10 01 | 703 | 1.2− | 0.4− |
| 2002 10 26 | 608 | 0.5− | 0.1+ | 2002 11 12 | 704 | 0.9+ | 0.2+ | 2006 10 01 | 703 | 0.5+ | 0.1− |
| 2002 10 31 | 699 | 0.9− | 0.3− | 2002 11 13 | 704 | 0.0 | 0.4+ | 2006 10 01 | 703 | 0.5+ | 0.7− |
| 2002 10 31 | 699 | 0.3− | 0.6− | 2002 11 13 | 704 | 0.2+ | 0.4− | 2006 10 01 | 703 | 0.5− | 0.8− |
| 2002 10 31 | 699 | 1.0− | 0.9− | 2002 11 13 | 704 | 0.6+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2002 10 31 | 699 | 0.7− | 0.1+ | 2002 11 13 | 704 | 0.2+ | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.7+ | 0.1− | 2002 11 13 | 644 | 0.7− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 11 05 | 704 | 0.4+ | 0.5− | 2002 11 13 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.3+ | 0.2+ | 2002 11 13 | 644 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2002 11 14 | 704 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 11 05 | 704 | 0.3+ | 0.5+ | 2002 11 14 | 704 | 0.5+ | 0.5− | | | | |

**2002 VO$_{61}$ = 2006 SX$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.56666 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23603660 | $\omega$ | 137.17810 | | +0.67783643 | −0.73321195 | |
| $a$ | 2.5930834 | $\Omega$ | 270.06917 | | +0.65904160 | +0.63863501 | |
| $e$ | 0.2904374 | $i$ | 3.10715 | | +0.32588639 | +0.23354991 | |
| $P$ | 4.18 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 18 | 644 | 0.5+ | 0.3+ | 2002 11 08 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.1+ |
| 2002 10 18 | 644 | 0.4+ | 0.1+ | 2002 11 12 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 703 | 0.2− | 1.0− |
| 2002 10 18 | 644 | 0.4+ | 0.3+ | 2002 11 12 | 704 | 0.4+ | 0.1− | 2006 09 20 | 699 | 0.3− | 0.5+ |
| 2002 10 28 | 608 | 0.3− | 0.5− | 2002 11 12 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 703 | 0.4+ | 0.1+ |
| 2002 10 28 | 608 | 0.6− | 1.1− | 2002 11 12 | 704 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.0 | 0.0 |
| 2002 10 28 | 608 | 0.6− | 1.1− | 2002 11 12 | 704 | 0.4+ | 0.0 | 2006 09 20 | 703 | 1.1+ | 0.3− |
| 2002 11 05 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.8+ | 2006 09 22 | 703 | 0.6− | 0.2+ |
| 2002 11 05 | 704 | 0.8− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.9+ | 2006 09 22 | 703 | 0.6− | 0.7+ |
| 2002 11 05 | 704 | (1.6− | 3.6+) | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 09 22 | 703 | 0.1+ | 0.5+ |
| 2002 11 05 | 704 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.1+ | 2006 09 22 | 703 | 0.8− | 1.2− |
| 2002 11 05 | 704 | 0.6− | 0.5− | 2006 09 20 | 704 | 0.6+ | 0.9− | 2006 10 23 | G96 | (12.3− | 5.7−) |
| 2002 11 08 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 10 23 | G96 | (12.3− | 5.6−) |
| 2002 11 08 | 704 | 0.2− | 0.2− | 2006 09 20 | 699 | 0.0 | 0.7− | 2006 10 23 | G96 | (12.2− | 5.5−) |
| 2002 11 08 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.4+ | 2006 10 23 | G96 | (12.1− | 5.6−) |

**2002 VD$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.75659 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24012179 | $\omega$ | 345.47140 | | +0.90280680 | −0.39453304 | |
| $a$ | 2.5635886 | $\Omega$ | 39.19828 | | +0.41662602 | +0.70377304 | |
| $e$ | 0.1059168 | $i$ | 15.70973 | | +0.10659567 | +0.59080216 | |
| $P$ | 4.10 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 599 | 0.4+ | 0.1− | 2002 11 14 | 704 | 0.9− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 10 04 | 599 | 0.4+ | 0.3+ | 2002 11 14 | 704 | 1.2+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 10 04 | 599 | 0.3+ | 0.2+ | 2002 12 06 | 704 | 0.2− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | (1.9+ | 2.9+) | 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | (2.0+ | 0.2+) | 2002 12 06 | 704 | 0.7− | 1.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 10 11 | 704 | 1.3+ | 0.5− | 2002 12 06 | 704 | 0.1− | 0.8− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 11 05 | 704 | 0.1+ | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.5− | 0.2− |
| 2002 11 05 | 704 | 0.8− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2002 11 05 | 704 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2002 11 05 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.8− | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2002 11 08 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2002 11 08 | 704 | 0.1− | 0.8− | 2006 10 16 | 703 | 1.5+ | 0.6− | 2006 11 17 | 703 | (1.0− | 2.4−) |
| 2002 11 08 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.3+ | 2006 11 17 | 703 | 1.1− | 0.1− |
| 2002 11 10 | 561 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2002 11 10 | 561 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.7− | 0.2+ |
| 2002 11 10 | 561 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 1.1− | 0.1+ |
| 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 27 | 703 | (1.8− | 0.2+) |
| 2002 11 12 | 704 | 0.8− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.2+ | 0.5− |
| 2002 11 12 | 704 | 0.5− | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 1.0+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | | | | |
| 2002 11 14 | 704 | 1.2+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− | | | | |

**2002 VN$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.71464 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22623561 | $\omega$ | 112.09266 | | +0.36578313 | −0.93010782 | |
| $a$ | 2.6674446 | $\Omega$ | 316.40593 | | +0.83517414 | +0.34377193 | |
| $e$ | 0.2115698 | $i$ | 2.75960 | | +0.41071505 | +0.12930698 | |
| $P$ | 4.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.8+ | 1.0+ | 2002 12 11 | 704 | 0.6− | 0.5− | 2006 09 27 | 704 | 1.0+ | 0.1+ |
| 2002 11 01 | 644 | 1.3+ | 1.0+ | 2002 12 11 | 704 | 0.6− | 0.3+ | 2006 09 27 | 704 | 0.2− | 1.4+ |
| 2002 11 01 | 644 | 1.1+ | 0.6+ | 2002 12 11 | 644 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.4− | 0.3+ |
| 2002 11 06 | 699 | 0.2− | 0.8− | 2002 12 11 | 704 | 0.6− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.2+ |
| 2002 11 06 | 699 | 0.2+ | 0.5− | 2002 12 11 | 644 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 2002 11 06 | 699 | 0.1− | 0.3− | 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.7− |
| 2002 11 06 | 699 | 1.3+ | 0.4+ | 2002 12 11 | 644 | 0.1− | 0.5− | 2006 09 28 | G96 | 0.0 | 0.7− |
| 2002 11 08 | 704 | 0.3− | 1.1+ | 2002 12 27 | 644 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.3+ | 1.4+ |
| 2002 11 08 | 704 | 0.0 | 0.5+ | 2002 12 27 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.4− |
| 2002 11 08 | 704 | 1.0+ | 0.3+ | 2002 12 27 | 644 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2002 11 11 | 699 | 0.3− | 0.3− | 2006 08 19 | 691 | 0.3− | 1.0− | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2002 11 11 | 699 | 1.1− | 0.0 | 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.6+ | 0.3− |
| 2002 11 11 | 699 | 0.2− | 0.4− | 2006 08 19 | 691 | 0.1− | 0.1− | 2006 10 01 | 703 | 1.4− | 1.0− |
| 2002 11 11 | 699 | 0.2+ | 0.5− | 2006 09 16 | 699 | 0.5+ | 0.4− | 2006 10 01 | 703 | 1.3− | 0.4− |
| 2002 11 12 | 704 | 0.4− | 0.4− | 2006 09 16 | 699 | 0.6+ | 0.9+ | 2006 10 01 | 703 | 0.6− | 0.3− |
| 2002 11 12 | 704 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.9− | 1.0+ | 2006 10 01 | 703 | 1.0− | 0.2+ |
| 2002 11 12 | 704 | 0.6− | 0.0 | 2006 09 16 | 699 | 1.1+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.0 | 1.3− | 2006 09 18 | 704 | 1.2+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.2+ | 0.6− | 2006 09 18 | 704 | 0.2+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2002 11 14 | 704 | 1.0+ | 0.9− | 2006 09 18 | 704 | 0.7− | 1.4+ | 2006 10 16 | 703 | 0.9− | 0.4+ |
| 2002 11 14 | 704 | 1.0+ | 1.1− | 2006 09 18 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.2+ | 1.3+ |
| 2002 11 14 | 704 | (1.2− | 1.7−) | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 1.2+ |
| 2002 11 27 | 699 | 0.5− | 0.2− | 2006 09 19 | 699 | 1.3+ | 1.3+ | 2006 10 16 | 703 | 0.1− | 1.0+ |
| 2002 11 27 | 699 | 1.2− | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 27 | 699 | 0.8− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.8− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 11 27 | 699 | 0.9− | 0.4− | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.4− |
| 2002 12 02 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.8+ | 0.3− |
| 2002 12 02 | 704 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2002 12 02 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.9+ | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2002 12 02 | 704 | 0.3− | 0.1+ | 2006 09 20 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2002 12 02 | 704 | 0.2+ | 0.2− | 2006 09 20 | 691 | 0.4+ | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.2− |
| 2002 12 06 | 704 | 0.7− | 0.7+ | 2006 09 20 | 691 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2002 12 06 | 704 | (1.7− | 0.6+) | 2006 09 25 | 699 | (1.5− | 1.5+) | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2002 12 06 | 704 | (1.9+ | 1.3+) | 2006 09 25 | 699 | 1.2− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2002 12 06 | 704 | 0.5+ | 0.9+ | 2006 09 25 | 699 | (1.9+ | 0.1−) | | | | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.5+ | | | | |

**2002 VK$_{64}$ = 2006 UU$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.69658 | | (2000.0) | | | |
| $n$ | 0.24287113 | $\omega$ | 181.34144 | | +0.27185642 | −0.96130339 |
| $a$ | 2.5442051 | $\Omega$ | 252.88525 | | +0.88336177 | +0.26766802 |
| $e$ | 0.2232972 | $i$ | 2.67526 | | +0.38179324 | +0.06518922 |
| $P$ | 4.06 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.1− | 0.5+ | 2002 11 08 | 704 | 1.0+ | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.5+ |
| 2002 10 15 | 644 | 0.1+ | 0.6+ | 2002 11 09 | 695 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.6− | 1.5+ |
| 2002 10 15 | 644 | 0.1+ | 0.5+ | 2002 11 09 | 695 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.7− | 0.2− |
| 2002 10 31 | 699 | 0.3− | 0.1− | 2006 10 03 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2002 10 31 | 699 | 0.6− | 1.0+ | 2006 10 03 | 691 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 644 | 0.0 | 0.6− | 2006 10 03 | 691 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 2002 10 31 | 699 | 0.9− | 0.7+ | 2006 10 17 | 703 | 0.8− | 0.4− | 2006 11 10 | 691 | 0.3+ | 0.2− |
| 2002 10 31 | 699 | (0.7+ | 1.7+) | 2006 10 17 | 703 | 0.1− | 0.6− | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2002 10 31 | 644 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 2002 10 31 | 644 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.9− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 11 06 | 608 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.8+ | 1.1− |
| 2002 11 06 | 608 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 18 | 691 | 0.5− | 0.2− |
| 2002 11 06 | 608 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2002 11 08 | 704 | 0.4− | 1.0+ | 2006 10 21 | 703 | 0.4− | 0.4− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2002 11 08 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.9− | 0.3+ | | | | |

**2002 VL$_{64}$ = 2006 SJ$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.16951 | | (2000.0) | | | |
| $n$ | 0.23168444 | $\omega$ | 79.97689 | | +0.60698711 | −0.79460456 |
| $a$ | 2.6254564 | $\Omega$ | 332.63799 | | +0.71756208 | +0.55504455 |
| $e$ | 0.2086632 | $i$ | 1.62682 | | +0.34157183 | +0.24602672 |
| $P$ | 4.25 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.2+ | 0.1− | 2002 11 12 | 644 | 0.5+ | 1.0+ | 2006 09 19 | 703 | 0.3+ | 1.0− |
| 2002 10 16 | 644 | 0.1+ | 0.0 | 2002 11 12 | 704 | 0.4− | 0.8+ | 2006 09 27 | 704 | 0.6− | 0.0 |
| 2002 10 16 | 644 | 0.3+ | 0.0 | 2002 11 12 | 644 | 0.6+ | 0.8+ | 2006 09 27 | 704 | 0.2− | 0.7+ |
| 2002 11 01 | 608 | 0.5− | 0.2− | 2002 11 12 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.3+ |
| 2002 11 01 | 608 | 0.7− | 0.1− | 2002 11 12 | 644 | 1.4+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.6− |
| 2002 11 01 | 608 | 0.8− | 0.0 | 2006 09 16 | 699 | 0.4+ | 0.4− | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2002 11 06 | 608 | 0.1− | 0.4+ | 2006 09 16 | 699 | 0.6− | 1.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 11 06 | 608 | 0.1− | 0.5+ | 2006 09 16 | 699 | 1.1− | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 11 06 | 608 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.5− |
| 2002 11 08 | 704 | 0.2− | 0.7− | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.6+ | 0.5− |
| 2002 11 08 | 704 | 0.8− | 0.5− | 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2002 11 08 | 704 | 0.1− | 1.0+ | 2006 09 17 | 704 | 0.7+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2002 11 09 | 695 | 0.1− | 0.3− | 2006 09 17 | 704 | 1.1+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.8− |
| 2002 11 09 | 695 | 0.3− | 0.3− | 2006 09 19 | 703 | 1.5− | 0.7+ | 2006 11 13 | G96 | 0.6+ | 1.5− |
| 2002 11 12 | 704 | 0.3− | 1.2− | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.0 |
| 2002 11 12 | 704 | 0.3+ | 0.7− | 2006 09 19 | 703 | (0.2− | 1.5−) | 2006 11 13 | G96 | (0.2+ | 1.6−) |

**2002 VR$_{66}$ = 2006 TM$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.26795 | | (2000.0) | | | |
| $n$ | 0.24096869 | $\omega$ | 70.01821 | | +0.98700822 | +0.16027637 |
| $a$ | 2.5575785 | $\Omega$ | 280.75757 | | −0.15135695 | +0.90405927 |
| $e$ | 0.2397341 | $i$ | 0.65532 | | −0.05390583 | +0.39621752 |
| $P$ | 4.09 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | (0.9+ | 2.8+) | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.6− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2002 11 06 | 704 | (0.2− | 2.0+) | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2002 11 06 | 704 | (1.8+ | 0.9+) | 2006 10 21 | 703 | 0.2− | 0.7− | 2006 11 15 | 691 | 0.1+ | 0.5+ |
| 2002 11 10 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 11 10 | 704 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2002 11 10 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 1.1− | 0.3− | 2006 11 18 | 704 | 0.4− | 1.4+ |
| 2002 11 14 | 704 | 0.3− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2002 11 14 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 1.3+ | 1.0+ |
| 2002 11 14 | 704 | 0.8− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2006 10 23 | 704 | (0.7− | 1.7+) | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2002 11 14 | 704 | 0.1− | 0.7+ | 2006 10 23 | 704 | 0.1− | 1.0+ | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2006 10 03 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 704 | (1.8+ | 0.8−) | 2006 11 19 | 691 | 0.8+ | 1.1− |
| 2006 10 03 | 704 | 1.2+ | 0.7− | 2006 10 28 | 704 | 0.7+ | 1.2− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2006 10 03 | 704 | 0.5− | 0.3+ | 2006 10 28 | 704 | 0.1− | 0.6+ | 2006 11 20 | G96 | 0.3− | 0.4− |
| 2006 10 03 | 704 | 0.4− | 1.2− | 2006 10 28 | 704 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2006 10 03 | 704 | (1.8+ | 1.3−) | 2006 10 28 | 704 | 0.4+ | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.9− | 0.1− | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2006 10 11 | 644 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2006 10 12 | 644 | 0.5+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.6− | 1.4+ | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 1.0− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.9− | 0.5− | 2006 11 23 | 691 | 0.2− | 0.2− |
| 2006 10 19 | 644 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.6− | | | | |
| 2006 10 19 | 644 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.0 | 0.2− | | | | |

**2002 VZ$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.36868 | | (2000.0) | | | |
| $n$ | 0.23697570 | $\omega$ | 5.40125 | | −0.73807254 | −0.67116710 |
| $a$ | 2.5862282 | $\Omega$ | 132.19210 | | +0.61549691 | −0.71173709 |
| $e$ | 0.2243584 | $i$ | 5.35645 | | +0.27642807 | −0.20728008 |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 291 | 0.1+ | 0.1+ | 2002 12 05 | 608 | 0.7+ | 0.6− | 2006 11 08 | 644 | 0.5+ | 0.5− |
| 2002 11 06 | 291 | 0.1+ | 0.1+ | 2002 12 05 | 608 | 0.2+ | 1.0− | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 11 06 | 291 | 0.1+ | 0.0 | 2002 12 05 | 608 | 0.3+ | 1.3− | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2002 11 07 | 291 | 0.1− | 0.2− | 2002 12 10 | 644 | 0.5+ | 0.0 | 2006 11 11 | 703 | (0.8+ | 1.8+) |
| 2002 11 07 | 291 | 0.0 | 0.1+ | 2002 12 10 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.4− | 0.1+ |
| 2002 11 07 | 291 | 0.0 | 0.1− | 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.9− |
| 2002 11 11 | 291 | 0.2− | 0.1+ | 2002 12 11 | 704 | 0.4+ | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.4− |
| 2002 11 11 | 291 | 0.1− | 0.0 | 2002 12 11 | 704 | 0.5− | 0.0 | 2006 11 19 | 703 | 0.6− | 1.0+ |
| 2002 11 11 | 291 | 0.2− | 0.0 | 2002 12 11 | 704 | 0.5− | 0.3+ | 2006 11 19 | 703 | 0.0 | 1.0+ |
| 2002 11 18 | 644 | 0.4− | 0.1+ | 2002 12 11 | 704 | 0.3+ | 0.1− | 2006 11 19 | 703 | 0.5− | 0.7+ |
| 2002 11 18 | 644 | 0.3− | 0.2− | 2006 10 22 | 703 | (1.7+ | 2.3+) | 2006 11 20 | 704 | 0.9+ | 1.4+ |
| 2002 11 18 | 644 | 0.8− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 1.3− | 2006 11 20 | 704 | 0.3− | 0.1+ |
| 2002 11 24 | 644 | 0.5− | 0.1+ | 2006 10 22 | 703 | 1.0+ | 0.7+ | 2006 11 20 | 704 | 0.4− | 0.4+ |
| 2002 11 24 | 644 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.8− | 2006 11 20 | 704 | 1.2− | 1.4+ |
| 2002 11 24 | 644 | 0.5− | 0.6+ | 2006 11 01 | 703 | 0.3+ | 0.6+ | 2006 11 23 | G96 | 0.6+ | 0.4− |
| 2002 12 01 | 704 | 1.2+ | 0.7+ | 2006 11 01 | 703 | (2.3+ | 1.0−) | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2002 12 01 | 704 | 0.5+ | 0.6− | 2006 11 01 | 703 | (2.0− | 0.4−) | 2006 11 23 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.3+ | 0.0 | 2006 11 01 | 703 | 0.8− | 0.5− | 2006 11 23 | G96 | 0.4+ | 0.6− | | |
| 2002 12 01 | 704 | 0.5+ | 0.1+ | 2006 11 08 | 644 | 0.5+ | 0.4− | | | | | | |

**2002 VV$_{68}$ = 2006 SJ$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.35980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23064962 | $\omega$ | 258.87956 | | +0.97000887 | −0.02927600 | |
| $a$ | 2.6333033 | $\Omega$ | 102.46329 | | +0.11192945 | +0.93500495 | |
| $e$ | 0.2008958 | $i$ | 14.30737 | | −0.21576511 | +0.35342419 | |
| $P$ | 4.27 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.6+ | 0.4− | 2002 11 11 | 699 | 0.2+ | 0.0 | 2006 09 22 | 703 | 0.1− | 0.5− | | |
| 2002 10 31 | 704 | 0.9+ | 1.3− | 2002 11 30 | 704 | 0.3+ | 0.6− | 2006 09 27 | 703 | 0.2+ | 0.3− | | |
| 2002 10 31 | 704 | 0.2− | 0.1+ | 2002 11 30 | 704 | 0.2− | 0.5− | 2006 09 27 | 703 | 0.3− | 0.3− | | |
| 2002 11 07 | 699 | 0.4− | 0.3+ | 2002 11 30 | 704 | 0.8− | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.3− | | |
| 2002 11 07 | 699 | 0.5− | 0.4+ | 2005 05 15 | 644 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.4− | 0.1− | | |
| 2002 11 07 | 699 | 0.8+ | 0.5+ | 2005 05 15 | 644 | 0.1+ | 0.0 | 2006 10 11 | E12 | 0.1+ | 0.3+ | | |
| 2002 11 07 | 699 | 0.1− | 1.2− | 2005 05 15 | 644 | 0.1+ | 0.0 | 2006 10 11 | E12 | 0.4+ | 0.2+ | | |
| 2002 11 11 | 699 | 0.5− | 0.6+ | 2006 09 22 | 703 | 0.2− | 0.2+ | 2006 10 11 | E12 | 0.4− | 0.4+ | | |
| 2002 11 11 | 699 | 0.4+ | 1.1+ | 2006 09 22 | 703 | 0.1+ | 0.5− | 2006 10 11 | E12 | 0.7+ | 0.6+ | | |
| 2002 11 11 | 699 | 0.4− | 0.6+ | 2006 09 22 | 703 | 0.2− | 0.5+ | | | | | | |

**2002 VN$_{69}$ = 2006 RW$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.73072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22921453 | $\omega$ | 265.78209 | | +0.95794430 | −0.16162609 | |
| $a$ | 2.6442831 | $\Omega$ | 103.39394 | | +0.23660728 | +0.91240054 | |
| $e$ | 0.2980563 | $i$ | 14.10718 | | −0.16235677 | +0.37603491 | |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.2− | 0.8+ | 2002 12 06 | 704 | 1.4+ | 0.4− | 2006 09 12 | E12 | 0.0 | 0.1− | | |
| 2002 10 31 | 704 | 0.1+ | 1.0+ | 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 09 12 | E12 | 0.7− | 0.8+ | | |
| 2002 10 31 | 704 | 0.0 | 0.3− | 2002 12 06 | 704 | 0.3− | 0.3− | 2006 09 12 | E12 | 0.1+ | 0.1+ | | |
| 2002 10 31 | 704 | 0.4− | 0.0 | 2002 12 06 | 704 | 0.3− | 0.6− | 2006 09 12 | E12 | 0.5+ | 0.3+ | | |
| 2002 11 11 | 644 | 0.3+ | 0.0 | 2002 12 06 | 704 | 0.3− | 0.3− | 2006 09 28 | E12 | 0.1+ | 0.3− | | |
| 2002 11 11 | 644 | 0.0 | 0.2− | 2002 12 14 | 704 | 0.3+ | 0.3− | 2006 09 28 | E12 | 0.2+ | 0.1− | | |
| 2002 11 11 | 644 | 0.2+ | 0.1− | 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 09 28 | E12 | 0.3+ | 0.4− | | |
| 2002 11 12 | 673 | 0.3+ | 0.5− | 2002 12 14 | 704 | 0.4− | 0.4+ | 2006 09 28 | E12 | 0.1− | 0.1− | | |
| 2002 11 12 | 673 | 0.3+ | 0.3− | 2002 12 14 | 704 | 0.8− | 0.5+ | 2006 10 09 | E12 | 0.5− | 0.7− | | |
| 2002 11 12 | 673 | 0.0 | 0.3− | 2006 07 30 | E12 | 0.1− | 0.2+ | 2006 10 09 | E12 | 0.2− | 0.2− | | |
| 2002 12 01 | 704 | 0.3− | 0.1− | 2006 07 30 | E12 | 0.2− | 0.8+ | 2006 10 09 | E12 | 0.3− | 0.4− | | |
| 2002 12 01 | 704 | 0.3− | 0.9+ | 2006 07 30 | E12 | 0.4+ | 0.3+ | 2006 10 09 | E12 | 0.1+ | 0.2+ | | |
| 2002 12 01 | 704 | 0.4− | 0.5+ | 2006 07 30 | E12 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.7− | | |
| 2002 12 01 | 704 | 0.2− | 0.9+ | 2006 08 28 | E12 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.2− | | |
| 2002 12 01 | 704 | 0.4+ | 0.2+ | 2006 08 28 | E12 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5− | 0.4+ | | |
| 2002 12 01 | 704 | 0.3− | 0.3+ | 2006 08 28 | E12 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.5+ | 0.9− | | |
| 2002 12 01 | 704 | 0.1− | 0.5− | 2006 08 28 | E12 | 0.1− | 0.0 | | | | | | |

**2002 VZ$_{71}$ = 2006 SY$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.09252 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23900708 | $\omega$ | 261.54318 | | +0.95721205 | −0.27735190 | |
| $a$ | 2.5715534 | $\Omega$ | 114.52610 | | +0.28812078 | +0.88671320 | |
| $e$ | 0.1642582 | $i$ | 5.20850 | | +0.02704640 | +0.36988596 | |
| $P$ | 4.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.1− | | |
| 2002 11 07 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.8− | | |
| 2002 11 07 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.5− | | |
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.3− | | |
| 2002 11 07 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 699 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.6− | | |
| 2002 11 11 | 704 | 0.6− | 1.0− | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.0 | | |
| 2002 11 11 | 704 | 0.7− | 0.4− | 2006 09 25 | 699 | 0.8+ | 0.8+ | 2006 10 22 | 703 | 0.3− | 1.4+ | | |
| 2002 11 11 | 704 | 0.9+ | 0.3− | 2006 09 26 | 704 | 0.2− | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2002 11 11 | 704 | 1.0− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3− | | |
| 2002 11 11 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | (1.6− | 1.3+) | 2006 10 22 | 644 | 0.1+ | 0.5− | | |
| 2002 11 22 | 644 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.6− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.4− | | |
| 2002 11 22 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.3− | | |
| 2002 11 22 | 644 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2002 12 01 | 704 | (1.8+ | 0.4+) | 2006 09 26 | 703 | 0.8− | 0.7− | 2006 11 16 | 703 | 0.4+ | 0.6− | | |
| 2002 12 01 | 704 | 1.1− | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.6+ | 2006 11 16 | 703 | 0.1− | 0.5+ | | |
| 2002 12 01 | 704 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.1− | 0.5+ | | |
| 2002 12 01 | 704 | 0.1+ | 0.8+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 16 | 703 | 0.0 | 1.2− | | |
| 2006 09 18 | 703 | 0.4+ | 0.6+ | 2006 10 04 | G96 | 0.1− | 0.3− | | | | | | |

**2002 VC$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.50073 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23881249 | $\omega$ | 281.06528 | | +0.83837947 | −0.53885699 | |
| $a$ | 2.5729501 | $\Omega$ | 111.58809 | | +0.52823641 | +0.76598069 | |
| $e$ | 0.2250583 | $i$ | 5.07018 | | +0.13448480 | +0.35058056 | |
| $P$ | 4.13 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2002 11 07 | 704 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.2− | | |
| 2002 11 07 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.3+ | 0.2− | 2006 09 18 | 703 | (0.1+ | 1.6−) | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 11 | 704 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.7− | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 1.4+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2002 11 11 | 704 | 0.9+ | 0.5+ | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2002 11 11 | 704 | 0.2− | 0.9+ | 2006 09 25 | 699 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 11 14 | 644 | 0.5− | 0.5− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2002 11 14 | 644 | 0.4− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.4− | | |
| 2002 11 14 | 644 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.8− | | |
| 2002 11 22 | 644 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.4− | 0.1− | | |
| 2002 11 22 | 644 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.5− | 0.6− | | |
| 2002 11 22 | 644 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.1+ | | |
| 2002 12 07 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.3− | | |
| 2002 12 07 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1− | | |
| 2002 12 07 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.1+ | | | | | | |

**2002 VU$_{72}$ = 2006 UC$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.09974 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23499452 | $\omega$ | 235.86565 | | +0.93932363 | −0.33928571 | |
| $a$ | 2.6007437 | $\Omega$ | 143.89346 | | +0.33615650 | +0.88107984 | |
| $e$ | 0.1563394 | $i$ | 4.92195 | | +0.06833686 | +0.32952015 | |
| $P$ | 4.19 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | (2.5+ | 0.6+) | 2002 11 22 | 644 | 0.9+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− | | |
| 2002 11 07 | 704 | (4.0+ | 0.8+) | 2002 12 01 | 608 | 0.1+ | 0.9− | 2006 10 02 | G96 | 0.4+ | 0.7− | | |
| 2002 11 07 | 704 | (3.5+ | 0.1+) | 2002 12 01 | 608 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.5− | | |
| 2002 11 11 | 704 | 1.0− | 0.9− | 2002 12 01 | 608 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.4− | 0.4+ | | |
| 2002 11 11 | 704 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.5+ | 0.9− | 2006 10 16 | 703 | 0.5− | 0.1− | | |
| 2002 11 11 | 704 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 16 | 703 | 1.0+ | 0.3+ | | |
| 2002 11 11 | 704 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.5+ | 2006 10 16 | 703 | (3.2− | 3.1−) | | |
| 2002 11 11 | 704 | 1.0− | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.4− | | |
| 2002 11 14 | 644 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 1.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2002 11 14 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 699 | (1.7+ | 0.7+) | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2002 11 14 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2002 11 22 | 644 | 0.3+ | 0.4+ | 2006 09 25 | 699 | (0.8+ | 1.6−) | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2002 11 22 | 644 | 0.4+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.0 | | |

### 2002 VE$_{73}$ = 2006 VX$_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.62394 | | (2000.0) | | | |
| $n$ | 0.24279350 | $\omega$ | 200.59326 | | +0.77562361 | −0.63070895 |
| $a$ | 2.5447474 | $\Omega$ | 198.57595 | | +0.58945111 | +0.73781068 |
| $e$ | 0.2856416 | $i$ | 4.46203 | | +0.22573304 | +0.24050283 |
| $P$ | 4.06 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.5− | 1.1− | 2002 11 23 | 644 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.4− |
| 2002 11 07 | 704 | 0.2+ | 1.0− | 2002 11 23 | 644 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.3− | 2002 11 23 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | 0.3− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2002 11 11 | 704 | 0.9− | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.9+ | 0.0 | 2006 09 30 | 703 | (0.0 | 2.2+) | 2006 11 11 | 703 | 0.4+ | 0.7− |
| 2002 11 11 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.2+ |
| 2002 11 11 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 1.0− |
| 2002 11 11 | 704 | 0.6+ | 0.2− | 2006 09 30 | 703 | 1.3− | 1.4+ | 2006 11 13 | 703 | 0.5+ | 0.1− |
| 2002 11 11 | 704 | 0.0 | 0.7− | 2006 10 12 | 644 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.5+ | 1.2+ |
| 2002 11 11 | 704 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.4+ | 0.2+ | 2006 11 13 | 703 | (1.0+ | 1.5−) |
| 2002 11 11 | 704 | 1.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 13 | 703 | 1.1− | 0.4+ |

### 2002 VB$_{74}$ = 2006 SL$_{155}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.39382 | | (2000.0) | | | |
| $n$ | 0.23623855 | $\omega$ | 298.50794 | | +0.97243212 | +0.13611350 |
| $a$ | 2.5916054 | $\Omega$ | 54.28648 | | −0.02059389 | +0.85891771 |
| $e$ | 0.1944381 | $i$ | 13.48498 | | −0.23227496 | +0.49369371 |
| $P$ | 4.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 704 | 0.3− | 0.6− | 2002 11 22 | 644 | 0.0 | 0.2− | 2006 09 27 | 703 | 0.3+ | 0.4+ |
| 2002 11 01 | 704 | 0.2+ | 0.0 | 2002 11 22 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 1.1+ | 0.3+ |
| 2002 11 01 | 704 | 0.8+ | 0.0 | 2002 11 22 | 644 | 0.3− | 0.1+ | 2006 10 21 | 703 | 1.1− | 1.1+ |
| 2002 11 07 | 704 | 0.3− | 0.1− | 2006 09 22 | 703 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.2− | 0.9− |
| 2002 11 07 | 704 | 0.4+ | 0.6+ | 2006 09 22 | 703 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.6+ | 0.1+ |
| 2002 11 07 | 704 | 0.4− | 0.8+ | 2006 09 22 | 703 | 0.4− | 0.3− | 2006 10 28 | 703 | 0.5+ | 0.1− |
| 2002 11 11 | 704 | 0.7− | 0.3− | 2006 09 22 | 703 | 0.5− | 0.1− | 2006 10 28 | 703 | 0.1− | 0.4− |
| 2002 11 11 | 704 | 0.2− | 0.5− | 2006 09 27 | 703 | 0.4+ | 0.4+ | 2006 10 28 | 703 | (0.9+ | 2.1−) |
| 2002 11 11 | 704 | 0.8+ | 0.0 | 2006 09 27 | 703 | 0.5− | 0.2− | 2006 10 28 | 703 | 0.3− | 0.1− |
| 2002 11 11 | 704 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.2+ | | | | |

### 2002 VR$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 307.14343 | | (2000.0) | | | |
| $n$ | 0.23106704 | $\omega$ | 1.22738 | | +0.28633316 | −0.92621794 |
| $a$ | 2.6301310 | $\Omega$ | 72.17521 | | +0.87685787 | +0.15016068 |
| $e$ | 0.0618781 | $i$ | 14.92691 | | +0.38617821 | +0.34579200 |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.3− | 1.4+ | 2002 11 23 | 644 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.6− | 2002 11 23 | 644 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 1.2+ | 0.2+ | 2002 12 07 | 704 | 1.1+ | 0.7− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 0.9− | 0.0 | 2002 12 07 | 704 | 0.3+ | 0.0 | 2006 10 21 | 703 | (2.1− | 1.0−) |
| 2002 11 11 | 704 | 1.4− | 0.1− | 2002 12 07 | 704 | 0.2+ | 0.5− | 2006 10 21 | 703 | (2.1+ | 1.7−) |
| 2002 11 11 | 704 | 0.5+ | 0.8+ | 2002 12 07 | 704 | 1.0− | 0.2− | 2006 10 21 | 703 | (2.3+ | 4.0+) |
| 2002 11 11 | 704 | 0.4− | 0.5+ | 2003 01 03 | 291 | 0.7− | 0.5− | 2006 10 21 | 703 | (1.1+ | 2.1+) |
| 2002 11 11 | 704 | 0.6− | 0.1− | 2003 01 03 | 291 | 0.5+ | 0.5− | 2006 10 31 | 703 | 0.6− | 1.0− |
| 2002 11 11 | 704 | 0.4+ | 0.7− | 2003 01 03 | 291 | 0.3+ | 1.2+ | 2006 10 31 | 703 | (4.5+ | 2.4−) |
| 2002 11 11 | 704 | 0.8+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 31 | 703 | (1.6− | 0.2−) |
| 2002 11 11 | 704 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 31 | 703 | 0.8− | 0.2+ |
| 2002 11 23 | 644 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.4+ | 0.0 | | | | |

### 2002 VW$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.28305 | | (2000.0) | | | |
| $n$ | 0.23131044 | $\omega$ | 311.99792 | | +0.76169927 | −0.64133272 |
| $a$ | 2.6282856 | $\Omega$ | 88.10677 | | +0.61840527 | +0.67710567 |
| $e$ | 0.1060216 | $i$ | 5.29487 | | +0.19336271 | +0.36086042 |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.3− | 0.9− | 2004 02 17 | 704 | 1.1− | 0.7− | 2006 09 26 | 703 | 0.4+ | 0.6− |
| 2002 10 03 | 704 | 0.6− | 0.4+ | 2004 02 17 | 704 | 0.8+ | 0.1+ | 2006 09 27 | 703 | 0.4+ | 0.2+ |
| 2002 10 03 | 704 | 1.1− | 0.3+ | 2006 08 30 | 699 | (2.0− | 0.3−) | 2006 09 27 | 703 | 0.1− | 0.5+ |
| 2002 10 11 | 704 | 0.3+ | 0.3+ | 2006 08 30 | 699 | 0.4− | 0.3− | 2006 09 27 | 703 | 0.0 | 0.5+ |
| 2002 10 11 | 704 | 0.6+ | 1.1− | 2006 08 30 | 699 | 0.5+ | 0.3− | 2006 09 27 | 703 | 0.7+ | 0.3− |
| 2002 10 11 | 704 | 0.5+ | 0.7− | 2006 08 30 | 699 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.5− | 1.2+ |
| 2002 10 11 | 704 | 0.2+ | 0.7− | 2006 09 14 | 703 | 0.6− | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.9− | 2006 10 02 | 703 | (0.9+ | 2.3−) |
| 2002 10 31 | 704 | 0.1+ | 0.6− | 2006 09 14 | 703 | 0.3+ | 0.8− | 2006 10 02 | 703 | 0.3− | 0.8+ |
| 2002 10 31 | 704 | 0.1+ | 0.7− | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.5− | 0.4− | 2006 09 20 | 644 | 0.5− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2002 10 31 | 704 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 608 | 0.3+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 608 | 0.2+ | 0.1− | 2006 09 21 | 699 | 1.3+ | 0.3− | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 2002 10 31 | 608 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.8+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 11 07 | 704 | 0.0 | 0.3− | 2006 09 21 | 699 | (1.7− | 1.4+) | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2002 11 07 | 704 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2002 11 07 | 704 | 0.2− | 0.0 | 2006 09 26 | 703 | 1.0− | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 11 11 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 703 | 1.0+ | 0.8+ | 2006 10 19 | 703 | 0.5− | 0.4− |
| 2002 11 11 | 704 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.8+ | 2006 10 19 | 703 | 0.7− | 0.2− |
| 2002 11 11 | 704 | 0.2− | 1.0+ | 2006 09 26 | 703 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.5− | 2006 10 19 | 703 | 1.0− | 0.1+ |
| 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.1− | | | | |
| 2004 02 17 | 704 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.5+ | | | | |

### 2002 VU$_{76}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.80025 | | (2000.0) | | | |
| $n$ | 0.27271277 | $\omega$ | 345.92640 | | +0.26434578 | −0.96243959 |
| $a$ | 2.3550442 | $\Omega$ | 88.71781 | | +0.89072622 | +0.21903370 |
| $e$ | 0.1555322 | $i$ | 3.54965 | | +0.36976764 | +0.16041907 |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.6+ | 0.5+ | 2002 12 05 | 704 | 1.3+ | 1.0− | 2003 01 02 | 291 | 0.1− | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.0 | 2002 12 05 | 704 | 0.5− | 1.3+ | 2003 01 02 | 291 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.6+ | 0.2+ | 2002 12 05 | 704 | 0.1− | 0.9− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 11 11 | 704 | 0.3− | 0.6− | 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2002 11 11 | 704 | 0.8− | 1.0− | 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3+ |
| 2002 11 11 | 704 | 0.3− | 0.6− | 2002 12 10 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 12 02 | 608 | 0.3− | 0.8+ | 2002 12 10 | 644 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2002 12 02 | 608 | 0.1− | 0.3+ | 2002 12 10 | 644 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.1+ |
| 2002 12 02 | 608 | 0.9− | 0.3+ | 2002 12 10 | 644 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2003 01 02 | 291 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.2+ |

### 2002 VH$_{77}$ = 2006 QO$_{158}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.49249 | | (2000.0) | | | |
| $n$ | 0.22509276 | $\omega$ | 237.31463 | | +0.40173550 | −0.91570867 |
| $a$ | 2.6764658 | $\Omega$ | 189.01316 | | +0.85878609 | +0.38024467 |
| $e$ | 0.2470199 | $i$ | 3.39815 | | +0.31795447 | +0.12996780 |
| $P$ | 4.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2− | 0.0 | 2002 11 23 | 644 | 0.3− | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.5+ | 0.6+ | 2002 12 03 | 644 | 0.1− | 0.4+ | 2006 08 19 | 691 | 0.4− | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 1.0+ | 0.9+ | 2002 12 03 | 644 | 0.0 | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.0 | |
| 2002 11 07 | 704 | 0.5+ | 0.8+ | 2002 12 03 | 644 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.1+ | |
| 2002 11 11 | 704 | 0.5− | 0.3− | 2002 12 06 | 918 | 0.6+ | 0.6− | 2006 08 28 | 691 | 0.1+ | 0.2+ | |
| 2002 11 11 | 704 | 0.6− | 0.6+ | 2002 12 06 | 918 | 1.4+ | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.4+ | |
| 2002 11 11 | 704 | 1.0− | 0.8+ | 2002 12 06 | 918 | 0.4+ | 1.0− | 2006 09 27 | G96 | 0.0 | 0.1− | |
| 2002 11 11 | 704 | 0.1− | 0.1+ | 2002 12 06 | 918 | 1.0− | 1.4− | 2006 09 27 | G96 | 0.0 | 0.6− | |
| 2002 11 11 | 704 | 0.4− | 1.1+ | 2004 04 13 | 691 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.4− | |
| 2002 11 23 | 644 | 0.5− | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | | | | | |
| 2002 11 23 | 644 | 0.4− | 0.2+ | 2004 04 13 | 691 | 0.5+ | 0.5+ | | | | | |

**2002 VJ$_{78}$ = 2006 UH$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.42396 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23236430 | $\omega$ | 185.99873 | | +0.58814586 | −0.76101424 | |
| $a$ | 2.6203327 | $\Omega$ | 228.35938 | | +0.75641405 | +0.63740345 | |
| $e$ | 0.0575671 | $i$ | 21.48835 | | +0.28622060 | −0.12072350 | |
| $P$ | 4.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | (1.7− | 1.4−) | 2006 09 28 | 703 | 0.4+ | 0.1− | 2006 10 29 | 400 | 0.5+ | 1.0− | |
| 2002 10 10 | 704 | 0.6− | 0.3− | 2006 09 28 | 703 | 0.1+ | 0.5+ | 2006 11 07 | 644 | 0.3− | 0.2− | |
| 2002 10 10 | 704 | 0.6− | 0.6− | 2006 09 28 | 703 | 1.2− | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.0 | |
| 2002 11 07 | 704 | 0.6− | 0.3− | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.1− | 0.1+ | |
| 2002 11 07 | 704 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.8+ | |
| 2002 11 07 | 704 | 0.4+ | 1.3+ | 2006 10 12 | 644 | 0.6− | 0.0 | 2006 11 14 | 703 | (1.0− | 1.7−) | |
| 2002 11 07 | 704 | 1.2− | 0.7+ | 2006 10 19 | 703 | 0.2+ | 0.8+ | 2006 11 14 | 703 | 1.2− | 0.5− | |
| 2002 11 11 | 704 | (0.3− | 1.7−) | 2006 10 19 | 703 | (1.7− | 0.4−) | 2006 11 14 | 703 | 0.2− | 0.6+ | |
| 2002 11 11 | 704 | 1.0+ | 0.7− | 2006 10 19 | 703 | 0.6− | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.6− | |
| 2002 11 11 | 704 | (1.5+ | 1.0−) | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.4+ | |
| 2002 11 11 | 704 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.1+ | |
| 2002 11 11 | 704 | 0.1+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.4+ | |
| 2002 11 16 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.5+ | |
| 2002 11 16 | 644 | 0.1+ | 0.0 | 2006 10 26 | 400 | 0.2+ | 0.4+ | 2006 11 22 | 704 | (0.1− | 1.7+) | |
| 2002 11 16 | 644 | 0.2+ | 0.0 | 2006 10 26 | 400 | 0.1− | 0.4− | 2006 11 22 | 704 | (1.5+ | 2.0+) | |
| 2002 12 01 | 704 | 0.6+ | 0.2− | 2006 10 26 | 400 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.4+ | 1.3+ | |
| 2002 12 01 | 704 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.5− | 2006 11 25 | G96 | 0.0 | 0.4− | |
| 2002 12 01 | 704 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.2− | 0.8+ | 2006 11 25 | G96 | 0.2+ | 0.3− | |
| 2002 12 01 | 704 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.4− | |
| 2002 12 01 | 704 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.9− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.5− | |
| 2006 09 28 | 703 | 0.7+ | 0.7− | 2006 10 29 | 400 | 0.6+ | 0.0 | | | | | |

**2002 VO$_{79}$ = 2006 SU$_{356}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.54557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23906069 | $\omega$ | 286.05627 | | +0.75071181 | −0.65944118 | |
| $a$ | 2.5711689 | $\Omega$ | 115.21929 | | +0.62162273 | +0.68481613 | |
| $e$ | 0.2066591 | $i$ | 2.50952 | | +0.22364472 | +0.31010352 | |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.5+ | 1.2+ | 2002 12 27 | 644 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.6+ | 0.3− | |
| 2002 11 07 | 704 | 0.1+ | 1.5− | 2002 12 27 | 644 | 0.3+ | 0.6+ | 2006 11 01 | G96 | 0.5+ | 0.3− | |
| 2002 11 07 | 704 | 0.1− | 0.1+ | 2003 01 03 | 291 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.3− | |
| 2002 11 07 | 704 | 1.1− | 0.2+ | 2003 01 03 | 291 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.0 | |
| 2002 11 07 | 704 | 0.8− | 0.3+ | 2003 01 03 | 291 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 2002 11 11 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.1− | |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.0 | |
| 2002 11 11 | 704 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.1+ | |
| 2002 11 11 | 704 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.5− | 0.7− | 2006 11 13 | 644 | 0.4+ | 0.2− | |
| 2002 11 14 | 704 | (0.1− | 2.1+) | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.2+ | 0.2+ | |
| 2002 11 14 | 704 | (0.5+ | 2.3+) | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.7− | 0.2− | |
| 2002 11 14 | 704 | 0.9+ | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 13 | 703 | 1.3− | 0.1− | |
| 2002 11 14 | 704 | 0.8+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.1+ | |
| 2002 11 16 | 644 | 0.0 | 0.9− | 2006 10 16 | 703 | 0.4− | 0.8+ | 2006 11 13 | 644 | 0.0 | 0.3− | |
| 2002 11 16 | 644 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.6+ | |
| 2002 11 16 | 644 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.8− | 1.4+ | |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 14 | 704 | 0.7− | 0.6− | |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.0 | 1.2+ | |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.1+ | |
| 2002 12 01 | 704 | (0.1+ | 2.7+) | 2006 10 18 | 691 | 0.6− | 0.1− | 2006 11 14 | 704 | 0.2− | 0.3+ | |
| 2002 12 01 | 704 | (0.1+ | 2.2+) | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.7− | 0.1− | |
| 2002 12 01 | 704 | (0.0 | 2.7+) | 2006 10 19 | 644 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.5− | |
| 2002 12 10 | 704 | 0.8− | 0.4+ | 2006 10 19 | 644 | 0.7+ | 0.1+ | 2006 11 17 | 704 | 1.2− | 1.1+ | |
| 2002 12 10 | 704 | 0.1+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.3+ | 0.4+ | |
| 2002 12 10 | 704 | 1.0− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.5+ | 0.1− | |
| 2002 12 10 | 704 | 0.8+ | 1.0+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.6− | 0.2+ | |
| 2002 12 10 | 644 | 0.1− | 0.6− | 2006 10 21 | G96 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.7+ | |
| 2002 12 10 | 704 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.2− | |
| 2002 12 10 | 644 | 0.1− | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.2− | |
| 2002 12 10 | 644 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.8+ | |
| 2002 12 27 | 644 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.4− | | | | | |

**2002 VA$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.70409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23289196 | $\omega$ | 296.56956 | | −0.09597268 | −0.99477361 | |
| $a$ | 2.6163733 | $\Omega$ | 158.85089 | | +0.94416728 | −0.10206559 | |
| $e$ | 0.2431432 | $i$ | 5.54338 | | +0.31517836 | +0.00284253 | |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.2− | 0.3− | 2002 11 28 | 699 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1+ | |
| 2002 10 30 | 608 | 0.0 | 0.1+ | 2002 11 28 | 699 | 0.3− | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.0 | |
| 2002 10 30 | 608 | 0.2+ | 0.4− | 2002 11 28 | 699 | (2.1− | 0.8+) | 2006 09 27 | 691 | 0.2+ | 0.1− | |
| 2002 11 07 | 704 | 0.4+ | 0.1+ | 2002 11 28 | 699 | 0.3+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.1− | |
| 2002 11 07 | 704 | 0.5+ | 0.4+ | 2002 12 01 | 704 | 0.8− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | |
| 2002 11 07 | 704 | 0.0 | 0.8+ | 2002 12 01 | 704 | 0.6− | 1.0+ | 2006 10 01 | 691 | 0.4+ | 0.0 | |
| 2002 11 07 | 704 | 0.1+ | 0.3− | 2002 12 01 | 704 | 0.0 | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.2+ | |
| 2002 11 07 | 704 | 0.4+ | 0.8− | 2003 01 03 | 704 | 1.0+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | |
| 2002 11 11 | 704 | 0.9− | 0.5− | 2003 01 03 | 704 | 0.8+ | 0.9− | 2006 10 16 | 703 | 1.0− | 0.3− | |
| 2002 11 11 | 704 | 0.5− | 0.1+ | 2003 01 03 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.6+ | |
| 2002 11 11 | 704 | (1.0− | 1.6+) | 2003 01 03 | 704 | 0.7− | 1.2− | 2006 10 16 | 703 | 0.6− | 0.5+ | |
| 2002 11 12 | 644 | 0.7+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.4− | |
| 2002 11 12 | 644 | 0.3− | 0.2+ | 2006 09 14 | 703 | (1.5− | 1.6−) | 2006 10 22 | 703 | 0.3+ | 0.6− | |
| 2002 11 12 | 644 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.8− | 1.2− | 2006 10 22 | 703 | 1.1− | 0.1− | |
| 2002 11 23 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 703 | (1.0+ | 2.3−) | 2006 10 22 | 703 | 0.3+ | 0.0 | |
| 2002 11 23 | 644 | 0.0 | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.0 | | | | | |
| 2002 11 23 | 644 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.0 | | | | | |

**2002 VL$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.67868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24171061 | $\omega$ | 177.21196 | | +0.98356532 | −0.17835903 | |
| $a$ | 2.5523422 | $\Omega$ | 193.16318 | | +0.16317852 | +0.94463579 | |
| $e$ | 0.2710685 | $i$ | 7.07772 | | +0.07727896 | +0.27541110 | |
| $P$ | 4.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 608 | 0.0 | 1.1− | 2006 09 17 | 699 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.3− | |
| 2002 10 31 | 608 | 0.1− | 0.8− | 2006 09 20 | 644 | 0.5− | 0.3− | 2006 11 01 | 703 | 0.1− | 0.2− | |
| 2002 10 31 | 608 | 0.1+ | 0.7− | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 11 01 | 703 | 0.1− | 0.4+ | |
| 2002 11 07 | 704 | 1.1+ | 0.5− | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 11 01 | 703 | 0.1− | 0.0 | |
| 2002 11 07 | 704 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 11 01 | 703 | 0.7− | 0.5− | |
| 2002 11 07 | 704 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1− | |
| 2002 11 07 | 704 | 1.1+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 11 10 | 644 | 0.0 | 0.0 | |
| 2002 11 11 | 704 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 10 | 644 | 0.2− | 0.0 | |
| 2002 11 11 | 704 | 0.6− | 0.2− | 2006 10 03 | 704 | 0.4+ | 1.4+ | 2006 11 11 | 703 | 0.3+ | 0.3− | |
| 2002 11 11 | 704 | 0.2+ | 0.0 | 2006 10 03 | 704 | (0.5+ | 2.5+) | 2006 11 11 | 703 | 0.2+ | 0.1− | |
| 2002 11 11 | 704 | 0.1+ | 0.7− | 2006 10 03 | 704 | (0.1+ | 1.6+) | 2006 11 11 | 644 | 0.1− | 0.1− | |
| 2002 11 12 | 704 | (2.3− | 2.1+) | 2006 10 03 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 703 | 0.7+ | 0.7− | |
| 2002 11 12 | 704 | 0.5+ | 0.4− | 2006 10 03 | 704 | 0.4+ | 0.9+ | 2006 11 11 | 703 | 0.1+ | 0.4− | |
| 2002 11 12 | 704 | 0.3+ | 1.0− | 2006 10 16 | 703 | 0.8− | 0.2− | 2006 11 11 | 644 | 0.2− | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.7− | 0.4+ | 2006 10 16 | 683 | 1.3+ | 1.4− | 2006 11 11 | 644 | 0.3− | 0.1+ |
| 2002 11 28 | 699 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.1+ | 2006 11 14 | 704 | 0.6+ | 0.2− |
| 2002 11 28 | 699 | 0.8− | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.5+ | 0.1− |
| 2002 11 28 | 699 | 1.2− | 0.7+ | 2006 10 16 | 683 | 0.8+ | 0.9− | 2006 11 14 | 704 | 0.1− | 0.2− |
| 2002 11 28 | 699 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.8+ | 0.7+ |
| 2002 12 14 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 683 | (1.6+ | 1.5−) | 2006 11 14 | 704 | 0.6+ | 0.7+ |
| 2002 12 14 | 704 | 0.5+ | 0.1− | 2006 10 17 | 683 | 0.6+ | 0.8− | 2006 11 19 | 703 | 0.3− | 0.7− |
| 2002 12 14 | 704 | (2.3+ | 0.6+) | 2006 10 17 | 683 | 0.0 | 0.6+ | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2002 12 14 | 704 | (0.4+ | 1.9−) | 2006 10 17 | 683 | 0.5+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.2+ |
| 2006 08 28 | 703 | 0.6+ | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.2− | 0.4+ |
| 2006 08 28 | 703 | 1.2+ | 0.8− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2006 08 28 | 703 | 0.3− | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2006 08 28 | 703 | 0.7− | 0.7− | 2006 10 19 | 683 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2006 09 16 | 703 | 0.8+ | 0.4+ | 2006 10 19 | 683 | (0.6− | 2.0+) | 2006 11 20 | 704 | 1.2+ | 0.6+ |
| 2006 09 16 | 703 | 0.6+ | 0.3− | 2006 10 19 | 683 | 1.4− | 0.3− | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2006 09 16 | 703 | 0.5+ | 0.0 | 2006 10 22 | 704 | 0.7+ | 1.3+ | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2006 09 16 | 703 | 0.7− | 0.1− | 2006 10 22 | 704 | 0.9+ | 0.6+ | 2006 11 20 | 704 | 0.4+ | 0.9+ |
| 2006 09 17 | 699 | 1.0− | 0.3+ | 2006 10 22 | 704 | 0.5+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.5+ |
| 2006 09 17 | 699 | 0.1− | 1.2+ | 2006 10 22 | 691 | 0.6− | 0.2− | 2006 11 20 | 704 | 0.6− | 0.6− |
| 2006 09 17 | 699 | 1.1− | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.1− | 0.7+ |

**2002 VH$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.01245 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23386790 | $\omega$ | 228.05681 | | +0.58443765 | | −0.81141558 |
| $a$ | 2.6090894 | $\Omega$ | 186.18903 | | +0.76025400 | | +0.55019034 |
| $e$ | 0.2087530 | $i$ | 3.25130 | | +0.28363090 | | +0.19721902 |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 20 | 704 | 0.7+ | 0.1− | 2002 12 31 | 699 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 1999 01 20 | 704 | 0.7+ | 0.5+ | 2002 12 31 | 699 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.1− |
| 1999 01 20 | 704 | 0.9+ | 0.4+ | 2002 12 31 | 699 | 0.7− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1999 01 20 | 704 | 1.3− | 1.5+ | 2003 01 07 | 704 | 0.7+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 10 11 | 704 | (2.3+ | 0.1+) | 2003 01 07 | 704 | 0.1+ | 1.0− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 1.1+ | 0.4+ | 2003 01 07 | 704 | 0.6+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.6+ | 0.3− | 2003 01 07 | 704 | 1.3− | 0.5− | 2006 10 22 | 691 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.2+ | 0.1+ | 2003 01 19 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 704 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | 0.7+ | 0.5− | 2003 01 19 | 644 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.1− | 0.5+ |
| 2002 11 07 | 704 | 0.0 | 0.4− | 2003 01 19 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 704 | (0.3+ | 1.7+) |
| 2002 11 07 | 704 | 0.2+ | 1.0− | 2003 01 27 | 704 | 0.6+ | 0.9+ | 2006 10 23 | 704 | 0.5− | 0.5+ |
| 2002 11 07 | 704 | 1.3+ | 1.3− | 2003 01 27 | 704 | 0.2+ | 1.2+ | 2006 10 23 | 704 | 0.8+ | 0.9+ |
| 2002 11 07 | 704 | 0.4− | 1.1− | 2003 01 27 | 704 | 0.5− | 0.7+ | 2006 10 28 | 704 | 0.7− | 0.1− |
| 2002 11 11 | 704 | 0.1− | 0.4+ | 2003 02 02 | 704 | 0.0 | 0.8− | 2006 10 28 | 704 | 1.0− | 0.7+ |
| 2002 11 11 | 704 | 0.4− | 0.0 | 2003 02 02 | 704 | 0.3+ | 0.6+ | 2006 10 28 | 704 | 0.4− | 0.1+ |
| 2002 11 11 | 704 | 0.5+ | 0.1− | 2003 02 02 | 704 | 0.2− | 0.5+ | 2006 10 28 | 704 | 0.1− | 0.3+ |
| 2002 11 14 | 704 | 0.4− | 0.9+ | 2003 02 02 | 704 | (1.8+ | 0.8+) | 2006 10 28 | 704 | 1.3− | 0.1− |
| 2002 11 14 | 704 | 0.2+ | 0.2− | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2002 11 14 | 704 | 0.2+ | 0.8+ | 2006 07 22 | G96 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 11 14 | 704 | 0.6+ | 0.6+ | 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 11 14 | 704 | 0.4+ | 0.9+ | 2006 07 22 | G96 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 11 24 | 644 | 0.1+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2002 11 28 | 608 | 1.4− | 0.2− | 2006 09 24 | 691 | 0.5− | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.2+ |
| 2002 11 28 | 608 | 1.4− | 0.1− | 2006 09 24 | 691 | 0.4− | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2002 11 28 | 608 | 1.1− | 0.1+ | 2006 09 24 | 691 | 0.6− | 0.3+ | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2002 12 01 | 704 | 0.3− | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2002 12 01 | 704 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 12 01 | 704 | 0.5− | 0.6+ | 2006 10 02 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2002 12 01 | 704 | 0.6+ | 0.8− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.7− |
| 2002 12 03 | 644 | 0.0 | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2002 12 03 | 644 | 0.2+ | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2002 12 03 | 644 | 0.4+ | 0.8+ | 2006 10 15 | 691 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2002 12 05 | 608 | 0.5− | 0.5− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 608 | 0.5− | 0.6− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2002 12 05 | 608 | 0.7− | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.1− | 1.0− |
| 2002 12 11 | 704 | 0.3+ | 0.5− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.6− |
| 2002 12 11 | 704 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.4− |
| 2002 12 11 | 704 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.0+ | 0.3+ |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.2+ |
| 2002 12 28 | 699 | 0.4− | 0.8− | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.6− |
| 2002 12 28 | 699 | 0.4+ | 0.4− | 2006 10 21 | 703 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 12 28 | 699 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.7− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2002 12 28 | 699 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.4+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 699 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3− | | | | |

**2002 VY$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.43017 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23378969 | $\omega$ | 323.91175 | | +0.71692655 | | −0.64805995 |
| $a$ | 2.6096713 | $\Omega$ | 78.60167 | | +0.68515597 | | +0.58690431 |
| $e$ | 0.1983565 | $i$ | 15.19722 | | +0.12875406 | | +0.48534692 |
| $P$ | 4.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2002 12 21 | 608 | 0.8− | 1.1− | 2006 10 10 | 644 | 0.1+ | 0.6+ |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2002 12 21 | 608 | 0.7− | 0.8− | 2006 10 10 | 644 | 0.6+ | 0.6+ |
| 2002 11 07 | 704 | 0.2− | 0.2+ | 2002 12 21 | 608 | 0.5− | 1.1− | 2006 10 20 | 703 | 0.3− | 0.6− |
| 2002 11 07 | 704 | 0.4− | 0.4− | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.5− | 0.4− | 2002 12 31 | 704 | 0.5− | 1.3+ | 2006 10 20 | 703 | 0.3+ | 0.3− |
| 2002 11 11 | 704 | 0.3− | 1.0+ | 2002 12 31 | 704 | 0.2− | 0.1+ | 2006 10 20 | 703 | 0.2− | 0.6− |
| 2002 11 11 | 704 | 1.1+ | 0.9+ | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 1.0+ | 0.5+ | 2003 01 04 | 704 | 0.4+ | 0.1− | 2006 10 20 | 703 | 0.2− | 0.3− |
| 2002 11 11 | 704 | 0.8+ | 0.6+ | 2003 01 04 | 704 | 0.1+ | 0.6− | 2006 10 20 | 703 | 0.2+ | 0.4− |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2003 01 04 | 704 | 0.8+ | 0.0 | 2006 10 20 | 703 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2003 01 04 | 704 | 0.4+ | 0.3− | 2006 10 28 | 703 | 0.1− | 0.6− |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2003 01 04 | 704 | 0.4+ | 0.5− | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.4+ | 0.1+ | 2003 01 08 | 704 | 1.0+ | 0.9− | 2006 10 28 | 703 | 0.2− | 0.4− |
| 2002 12 05 | 704 | 0.2− | 0.0 | 2003 01 08 | 704 | 0.9+ | 0.6+ | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.4+ | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.6− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2003 01 08 | 704 | 1.1+ | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.6− |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2003 01 08 | 704 | 1.3+ | 0.4+ | 2006 11 07 | 644 | 0.5− | 0.5− |
| 2002 12 10 | 704 | 0.1− | 0.2− | 2003 02 01 | 704 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2002 12 10 | 704 | 0.5− | 0.0 | 2003 02 01 | 704 | 0.5− | 0.9+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2002 12 10 | 704 | 0.5− | 0.2+ | 2003 02 01 | 704 | 0.7+ | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.2+ |
| 2002 12 10 | 704 | 0.3− | 0.2+ | 2003 02 01 | 704 | 1.4+ | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.4+ |
| 2002 12 10 | 704 | 0.8− | 0.0 | 2006 10 02 | 703 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.7− |
| 2002 12 11 | 704 | 0.4− | 0.3+ | 2006 10 02 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.9− |
| 2002 12 11 | 704 | 0.7− | 0.0 | 2006 10 02 | 703 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 2002 12 11 | 704 | 1.0− | 0.6+ | 2006 10 02 | 703 | 0.3+ | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.9+ |
| 2002 12 11 | 704 | 0.7− | 0.5+ | 2006 10 10 | 644 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.5− |

**2002 VM$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.71310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23950185 | $\omega$ | 345.09025 | | +0.48203203 | | −0.83947940 |
| $a$ | 2.5680106 | $\Omega$ | 75.53389 | | +0.82803878 | | +0.34292312 |
| $e$ | 0.1663921 | $i$ | 15.01373 | | +0.28635101 | | +0.42151876 |
| $P$ | 4.12 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 608 | 0.5− | 0.2− | 2002 12 10 | 704 | 0.2+ | 0.4+ | 2004 03 29 | 691 | 0.2− | 0.0 |
| 2002 10 31 | 608 | 0.1− | 0.4− | 2002 12 10 | 704 | 0.2− | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.0 |
| 2002 10 31 | 608 | 0.2− | 0.4+ | 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 1.1+ | 1.2+ |
| 2002 11 07 | 704 | 0.5− | 0.7+ | 2002 12 10 | 704 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3+ |
| 2002 11 07 | 704 | 0.8− | 0.0 | 2002 12 10 | 704 | (1.6− | 1.4+) | 2006 10 16 | 703 | 0.4+ | 1.2+ |
| 2002 11 07 | 704 | 1.1− | 0.4+ | 2002 12 11 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.5+ |
| 2002 11 07 | 704 | 0.8+ | 1.0+ | 2002 12 11 | 704 | 0.9+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 11 11 | 704 | 0.5+ | 0.8− | 2002 12 11 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.9− |
| 2002 11 11 | 704 | 0.9− | 0.8− | 2002 12 11 | 704 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2002 11 11 | 704 | 0.2+ | 0.9− | 2002 12 31 | 699 | 0.0 | 0.7+ | 2006 10 22 | 703 | 0.1− | 1.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.3− | 0.7− | 2002 12 31 | 704 | 0.1− | 0.9+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.7− | 2002 12 31 | 699 | 0.2+ | 1.4− | 2006 11 08 | 644 | 0.1− | 0.2+ | | |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2002 12 31 | 704 | 0.9− | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.2− | | |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2002 12 31 | 699 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.3− | 0.6− | | |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.5− | | |
| 2002 11 27 | 699 | 0.6− | 0.4− | 2002 12 31 | 704 | 0.2− | 1.0+ | 2006 11 13 | 703 | 0.6− | 0.5− | | |
| 2002 11 27 | 699 | 0.8+ | 0.0 | 2002 12 31 | 699 | 0.8+ | 0.0 | 2006 11 13 | 703 | 0.1− | 1.3− | | |
| 2002 11 27 | 699 | 0.1+ | 0.4+ | 2002 12 31 | 704 | 0.0 | 1.3+ | 2006 11 19 | 703 | 0.1+ | 0.3+ | | |
| 2002 11 27 | 699 | 0.8+ | 0.2+ | 2003 01 04 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.9− | 0.3− | | |
| 2002 12 03 | 608 | 0.2− | 1.0− | 2003 01 04 | 704 | 0.7− | 0.1− | 2006 11 19 | 703 | 0.8+ | 0.7− | | |
| 2002 12 03 | 608 | 0.2− | 1.1− | 2003 01 04 | 704 | 0.8− | 0.1− | 2006 11 19 | 703 | 0.1− | 0.2− | | |
| 2002 12 03 | 608 | 0.2+ | 1.2− | 2004 03 29 | 691 | 0.0 | 0.1+ | | | | | | |

**2002 VH$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.84989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22445234 | $\omega$ | 326.19816 | | +0.34745043 | −0.91362936 | |
| $a$ | 2.6815545 | $\Omega$ | 102.68276 | | +0.90108465 | +0.26302171 | |
| $e$ | 0.2805994 | $i$ | 12.49596 | | +0.25946993 | +0.31000158 | |
| $P$ | 4.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.3− | 0.4− | 2002 12 31 | 704 | 0.7− | 0.6+ | 2006 09 27 | 703 | 0.9+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.2− | 0.5+ | 2003 01 04 | 704 | 0.8+ | 0.4+ | 2006 09 27 | 703 | 0.4+ | 0.0 | | |
| 2002 11 07 | 704 | 0.6− | 0.4− | 2003 01 04 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 703 | 0.0 | 0.6− | | |
| 2002 11 07 | 704 | 0.2− | 0.7− | 2003 01 04 | 704 | 0.8+ | 0.6+ | 2006 09 27 | 703 | (2.1+ | 0.1−) | | |
| 2002 11 11 | 704 | 0.4+ | 0.2− | 2003 01 04 | 704 | 1.0+ | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.1+ | | |
| 2002 11 11 | 704 | 0.2+ | 0.2+ | 2003 01 04 | 704 | 1.0+ | 0.3+ | 2006 09 27 | 703 | 0.7− | 0.4− | | |
| 2002 11 11 | 704 | 0.5+ | 0.3− | 2003 01 08 | 704 | 0.2− | 0.7− | 2006 10 31 | 703 | 0.4− | 0.6+ | | |
| 2002 11 11 | 704 | 0.7+ | 0.1− | 2003 01 08 | 704 | 0.2− | 0.8− | 2006 10 31 | 703 | 0.4− | 0.5− | | |
| 2002 12 11 | 704 | 0.4+ | 0.2− | 2003 01 08 | 704 | 0.7− | 1.2− | 2006 10 31 | 703 | (1.1− | 1.6+) | | |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2003 01 08 | 704 | 0.4− | 1.2− | 2006 10 31 | 703 | 0.1− | 0.1+ | | |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2003 01 31 | 704 | 0.2− | 0.4+ | 2006 11 09 | E12 | 0.2− | 0.3+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2003 01 31 | 704 | 0.0 | 0.3− | 2006 11 09 | E12 | 0.4− | 0.0 | | |
| 2002 12 31 | 704 | 0.6− | 0.8+ | 2003 01 31 | 704 | 1.1− | 0.0 | 2006 11 09 | E12 | 0.1+ | 0.3− | | |
| 2002 12 31 | 704 | 0.3− | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.1+ | 2006 11 09 | E12 | 0.6+ | 0.4+ | | |
| 2002 12 31 | 704 | 0.5− | 0.6+ | 2006 09 27 | 703 | 0.4+ | 0.3+ | | | | | | |

**2002 VW$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.23804 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22409190 | $\omega$ | 298.83969 | | +0.67344306 | −0.71339246 | |
| $a$ | 2.6844291 | $\Omega$ | 107.46181 | | +0.72907644 | +0.59764893 | |
| $e$ | 0.2549929 | $i$ | 11.71992 | | +0.12215564 | +0.36590566 | |
| $P$ | 4.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 10 | 644 | (1.5+ | 2.3−) | 2003 01 04 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 703 | 0.3+ | 0.1− | | |
| 2001 07 10 | 644 | (2.0+ | 2.3−) | 2003 01 08 | 704 | 0.0 | 0.3− | 2006 09 25 | 703 | (1.0− | 3.3−) | | |
| 2001 07 10 | 644 | (1.6+ | 2.1−) | 2003 01 08 | 704 | 0.1− | 0.4− | 2006 10 04 | 703 | 0.4+ | 0.0 | | |
| 2002 11 07 | 704 | 0.3− | 1.2− | 2003 01 08 | 704 | 0.1+ | 0.1− | 2006 10 04 | 703 | 0.0 | 0.1− | | |
| 2002 11 07 | 704 | 0.1+ | 0.2− | 2003 01 08 | 704 | 0.2− | 0.4− | 2006 10 04 | 703 | 0.4− | 0.7− | | |
| 2002 11 07 | 704 | 0.1− | 1.2− | 2003 01 08 | 704 | 0.1− | 0.1+ | 2006 10 04 | 703 | 0.2− | 0.4+ | | |
| 2002 11 11 | 704 | 0.7+ | 0.6+ | 2003 01 31 | 704 | 1.1− | 0.2− | 2006 10 21 | 703 | 0.3− | 1.2+ | | |
| 2002 11 11 | 704 | 1.3+ | 0.8− | 2003 01 31 | 704 | 0.9− | 0.1− | 2006 10 21 | 703 | 0.3− | 0.5+ | | |
| 2002 11 11 | 704 | (2.0+ | 1.2+) | 2003 01 31 | 704 | 1.0− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6+ | | |
| 2002 11 11 | 704 | 0.9+ | 1.2+ | 2003 01 31 | 704 | 0.8− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.2+ | | |
| 2002 11 11 | 704 | 0.6− | 0.1− | 2003 02 03 | 704 | 0.1+ | 1.3+ | 2006 10 31 | 703 | 0.0 | 0.5+ | | |
| 2002 12 08 | 608 | 0.4+ | 0.3+ | 2003 02 03 | 704 | 1.0+ | 1.4+ | 2006 10 31 | 703 | 0.2+ | 0.2+ | | |
| 2002 12 08 | 608 | 0.2+ | 0.5+ | 2003 02 03 | 704 | (1.8+ | 0.7+) | 2006 10 31 | 703 | 0.3− | 0.9+ | | |
| 2002 12 08 | 608 | 0.3+ | 0.1+ | 2003 02 04 | 704 | 0.1+ | 0.2− | 2006 10 31 | 703 | 0.2+ | 0.3+ | | |
| 2002 12 10 | 704 | (0.4+ | 2.2+) | 2003 02 04 | 704 | 0.5+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.1+ | | |
| 2002 12 10 | 704 | 0.1+ | 0.5− | 2003 02 04 | 704 | 0.9− | 0.4+ | 2006 11 06 | 644 | 0.0 | 0.2+ | | |
| 2002 12 10 | 704 | 0.3+ | 0.2− | 2003 02 04 | 704 | 0.3− | 0.4+ | 2006 11 06 | 644 | 0.1+ | 0.1+ | | |
| 2002 12 10 | 704 | 0.0 | 0.6− | 2003 02 04 | 704 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.9+ | 0.7− | | |
| 2002 12 31 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.5− | 2006 11 17 | 703 | 0.2− | 0.4− | | |
| 2002 12 31 | 704 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.4− | 0.6− | 2006 11 17 | 703 | 0.0 | 0.0 | | |
| 2002 12 31 | 704 | (1.9− | 0.5+) | 2006 09 19 | 703 | 0.6+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.2− | | |
| 2002 12 31 | 704 | 0.3+ | 0.7− | 2006 09 19 | 703 | 0.2− | 0.5− | 2006 11 23 | 703 | 0.0 | 0.1− | | |
| 2002 12 31 | 704 | 1.3− | 0.3− | 2006 09 24 | 699 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 0.1+ | 0.9− | | |
| 2003 01 04 | 704 | 0.0 | 0.1− | 2006 09 24 | 699 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.2+ | 0.1− | | |
| 2003 01 04 | 704 | 0.3+ | 0.0 | 2006 09 24 | 699 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.1− | 0.3− | | |
| 2003 01 04 | 704 | 0.2+ | 0.2+ | 2006 09 24 | 699 | 0.2− | 0.1+ | | | | | | |
| 2003 01 04 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 703 | 0.0 | 0.2+ | | | | | | |

**2002 VB$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.14117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23444885 | $\omega$ | 286.99359 | | +0.98932402 | −0.11256490 | |
| $a$ | 2.6047776 | $\Omega$ | 79.54318 | | +0.14095872 | +0.90035920 | |
| $e$ | 0.3252826 | $i$ | 5.40079 | | −0.03699495 | +0.42033612 | |
| $P$ | 4.20 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 1.1+ | 0.1− | 2002 11 12 | 704 | 0.3+ | 0.2− | 2006 08 16 | E12 | 0.3− | 0.5+ | | |
| 2002 10 09 | 704 | 0.2+ | 0.4− | 2002 11 12 | 704 | 0.2+ | 0.1+ | 2006 08 16 | E12 | (2.5+ | 2.1+) | | |
| 2002 10 09 | 704 | 0.6+ | 0.4+ | 2002 11 22 | 644 | 0.1− | 0.0 | 2006 08 16 | E12 | 0.5+ | 0.5+ | | |
| 2002 10 09 | 704 | 0.6+ | 0.5− | 2002 11 22 | 644 | 0.3+ | 0.3+ | 2006 08 28 | E12 | 0.3− | 0.7+ | | |
| 2002 10 28 | 608 | 0.4+ | 1.0− | 2002 11 22 | 644 | 0.2− | 0.0 | 2006 08 28 | E12 | 0.6− | 0.2− | | |
| 2002 10 28 | 608 | 0.6+ | 0.3+ | 2002 12 01 | 704 | 0.1− | 0.2− | 2006 08 28 | E12 | 0.3− | 0.3+ | | |
| 2002 10 28 | 608 | 0.6+ | 0.3− | 2002 12 01 | 704 | 0.2− | 0.5+ | 2006 08 28 | E12 | 0.3+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2002 12 01 | 704 | 0.2− | 0.6+ | 2006 09 13 | 734 | 0.5+ | 0.4− | | |
| 2002 11 07 | 704 | 0.6− | 0.0 | 2002 12 01 | 704 | 0.2− | 0.7+ | 2006 09 13 | 734 | 0.1− | 0.2− | | |
| 2002 11 07 | 704 | 1.0− | 0.2+ | 2002 12 01 | 704 | 0.1− | 0.7+ | 2006 09 13 | 734 | 0.2+ | 0.1+ | | |
| 2002 11 07 | 704 | 0.2− | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.8− | 2006 09 13 | 734 | 0.0 | 0.3− | | |
| 2002 11 07 | 704 | 0.5− | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.6− | 2006 09 13 | 734 | 0.4− | 0.4− | | |
| 2002 11 08 | 704 | 1.4− | 0.5+ | 2002 12 06 | 704 | 0.1+ | 0.5− | 2006 09 14 | 644 | 0.3+ | 0.2+ | | |
| 2002 11 08 | 704 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.3− | 0.8− | 2006 09 14 | 644 | 0.2− | 0.3+ | | |
| 2002 11 08 | 704 | 0.8− | 0.0 | 2002 12 07 | 734 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.1− | | |
| 2002 11 08 | 704 | (1.5− | 3.1+) | 2002 12 07 | 734 | 0.0 | 0.3− | 2006 09 17 | 699 | 1.4+ | 1.4− | | |
| 2002 11 09 | 734 | (0.5+ | 1.8+) | 2002 12 07 | 704 | 0.7− | 0.0 | 2006 09 17 | 699 | 0.5+ | 0.8− | | |
| 2002 11 09 | 734 | (0.2− | 2.4+) | 2002 12 07 | 704 | 0.3− | 0.0 | 2006 09 17 | 699 | 1.1− | 0.7+ | | |
| 2002 11 09 | 734 | (0.0 | 3.1+) | 2002 12 07 | 704 | 0.1− | 1.2+ | 2006 09 17 | 699 | (0.3− | 2.5+) | | |
| 2002 11 11 | 704 | 0.5+ | 1.3+ | 2002 12 07 | 704 | 1.1+ | 1.2+ | 2006 10 11 | E12 | 0.3− | 0.3− | | |
| 2002 11 11 | 704 | 0.3+ | 0.2+ | 2002 12 10 | 644 | 0.1+ | 0.0 | 2006 10 11 | E12 | 0.3+ | 0.3+ | | |
| 2002 11 11 | 704 | 0.4+ | 0.4− | 2002 12 10 | 644 | 0.0 | 0.1− | 2006 10 11 | E12 | 0.3+ | 0.1− | | |
| 2002 11 11 | 704 | 0.2+ | 1.0− | 2002 12 10 | 644 | 0.3− | 0.1− | 2006 10 11 | E12 | 0.1− | 0.3+ | | |
| 2002 11 11 | 704 | 0.3+ | 0.1− | 2002 12 26 | 734 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1− | | |
| 2002 11 12 | 704 | 1.1− | 0.6− | 2002 12 26 | 734 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2002 11 12 | 704 | 0.1+ | 0.6− | 2006 08 16 | E12 | 0.5− | 1.0+ | 2006 10 12 | 644 | 0.7− | 0.4− | | |

**2002 VD$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.95383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16824151 | $\omega$ | 65.55012 | | +0.95457537 | +0.21583479 | |
| $a$ | 3.2497300 | $\Omega$ | 281.45607 | | −0.28587633 | +0.85780472 | |
| $e$ | 0.2662533 | $i$ | 12.09922 | | +0.08402727 | +0.46646158 | |
| $P$ | 5.86 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.1+ | 0.7+ | 2002 11 15 | 704 | 1.2− | 0.1− | 2002 12 28 | 699 | 0.4+ | 0.1− | | |
| 2002 10 12 | 704 | 0.4+ | 0.2− | 2002 11 15 | 704 | 1.0− | 0.7+ | 2003 01 04 | 704 | 1.3− | 0.4− | | |
| 2002 10 12 | 704 | 0.3+ | 1.2− | 2002 11 15 | 704 | (1.7− | 0.3+) | 2003 01 04 | 704 | 0.7− | 1.1− | | |
| 2002 10 12 | 704 | 0.2− | 0.7− | 2002 11 15 | 704 | 1.3− | 1.0+ | 2003 01 04 | 704 | 0.7− | 0.9− | | |
| 2002 10 31 | 704 | 0.8− | 0.5− | 2002 11 17 | 704 | 0.4+ | 0.3− | 2003 01 20 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 31 | 704 | (0.2+ | 2.1−) | 2002 11 17 | 704 | 0.5+ | 0.2+ | 2003 01 20 | 644 | 0.0 | 0.1− | | |
| 2002 10 31 | 704 | (1.8− | 1.1−) | 2002 11 17 | 704 | 1.4+ | 0.0 | 2003 01 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 31 | 704 | 0.4− | 0.8− | 2002 11 26 | 644 | 0.1− | 1.1+ | 2003 01 20 | 644 | 0.1− | 0.2− | | |
| 2002 10 31 | 704 | 1.0− | 0.8− | 2002 11 26 | 644 | 0.5− | 0.9+ | 2003 01 20 | 644 | 0.2+ | 0.4− | | |
| 2002 11 07 | 704 | 0.1− | 0.1− | 2002 11 26 | 644 | 0.1+ | 0.7+ | 2003 01 20 | 644 | 0.5− | 0.1− | | |
| 2002 11 07 | 704 | 0.2+ | 0.1− | 2002 12 03 | 644 | 0.2+ | 0.4+ | 2003 02 01 | 704 | (1.3− | 2.3+) | | |
| 2002 11 07 | 704 | 0.0 | 0.3− | 2002 12 03 | 644 | 0.3+ | 0.2+ | 2003 02 01 | 704 | (1.7− | 0.1+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.6+ | 0.6− | 2002 12 03 | 644 | 0.2+ | 0.1+ | 2003 02 01 | 704 | 0.4− | 0.7+ | | |
| 2002 11 07 | 704 | (2.2− | 0.1−) | 2002 12 05 | 704 | 0.2+ | 0.2− | 2003 02 01 | 704 | 0.5− | 0.4+ | | |
| 2002 11 10 | 704 | 0.2+ | 0.2− | 2002 12 05 | 704 | 0.4+ | 0.4+ | 2003 02 04 | 704 | 0.5− | 0.1− | | |
| 2002 11 10 | 704 | 0.7− | 0.4− | 2002 12 05 | 704 | 0.5+ | 0.0 | 2003 02 04 | 704 | 0.3+ | 0.2− | | |
| 2002 11 10 | 704 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.8+ | 0.1+ | 2003 02 04 | 704 | 0.6+ | 0.4+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2002 12 09 | 699 | 0.7− | 0.5− | 2003 02 04 | 704 | 1.3+ | 0.3− | | |
| 2002 11 11 | 704 | 0.1− | 0.1− | 2002 12 09 | 699 | 0.4− | 0.2− | 2003 02 04 | 704 | 1.1+ | 1.3+ | | |
| 2002 11 11 | 704 | 0.1− | 0.1+ | 2002 12 09 | 699 | 0.4− | 0.2+ | 2004 01 23 | 704 | 0.1− | 0.7+ | | |
| 2002 11 11 | 704 | 0.1− | 0.3+ | 2002 12 09 | 699 | 0.6− | 0.2+ | 2004 01 23 | 704 | 0.3− | 1.4− | | |
| 2002 11 11 | 704 | 0.3− | 0.2+ | 2002 12 14 | 704 | 0.1− | 0.2+ | 2004 01 23 | 704 | 0.4− | 0.2− | | |
| 2002 11 12 | 644 | 0.9+ | 0.2+ | 2002 12 14 | 704 | 0.5+ | 0.1− | 2004 01 23 | 704 | 0.1− | 0.2+ | | |
| 2002 11 12 | 644 | 0.5+ | 0.1+ | 2002 12 14 | 704 | 0.1− | 0.3+ | 2006 05 22 | E12 | 0.8− | 0.0 | | |
| 2002 11 12 | 644 | 0.2+ | 0.0 | 2002 12 14 | 704 | 0.1− | 0.0 | 2006 05 22 | E12 | 0.5+ | 0.3− | | |
| 2002 11 13 | 644 | 0.4+ | 1.0+ | 2002 12 14 | 704 | 0.7+ | 0.0 | 2006 05 22 | E12 | 0.3+ | 1.1+ | | |
| 2002 11 13 | 644 | 0.3+ | 0.7+ | 2002 12 28 | 699 | 0.3+ | 0.4− | 2006 05 22 | E12 | 0.8+ | 1.3+ | | |
| 2002 11 13 | 644 | 0.1+ | 0.9+ | 2002 12 28 | 699 | 0.8+ | 0.7− | | | | | | |
| 2002 11 15 | 704 | 1.1− | 0.6+ | 2002 12 28 | 699 | 0.4+ | 0.3− | | | | | | |

**2002 VZ$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.89792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21273990 | $\omega$ | 157.88205 | | −0.47055157 | −0.83412432 | |
| $a$ | 2.7790951 | $\Omega$ | 318.58899 | | +0.73032753 | −0.18514347 | |
| $e$ | 0.2120542 | $i$ | 25.78986 | | +0.49517968 | −0.51957532 | |
| $P$ | 4.63 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.0 | 0.1− | 2003 01 11 | 704 | 0.5+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2002 11 11 | 704 | (0.7+ | 1.9−) | 2003 01 11 | 704 | 0.4+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2002 11 11 | 704 | (1.0− | 2.0−) | 2003 01 11 | 704 | 0.6+ | 0.2− | 2006 10 20 | 703 | 0.5+ | 0.0 |
| 2002 11 11 | 704 | 0.4− | 1.1− | 2003 01 11 | 704 | 0.7+ | 0.2+ | 2006 10 20 | 703 | 0.4− | 0.0 |
| 2002 11 12 | 704 | 0.2− | 0.2+ | 2003 01 11 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 703 | 0.2− | 0.5− |
| 2002 11 12 | 704 | 0.3+ | 0.3− | 2003 01 14 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 703 | (1.6− | 0.3−) |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2003 01 14 | 704 | (2.2+ | 0.1+) | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2002 11 12 | 704 | 0.2+ | 0.4+ | 2003 01 14 | 704 | 1.4+ | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.6− |
| 2002 11 17 | 704 | 0.2− | 0.9+ | 2003 01 21 | 704 | 0.4− | 0.2− | 2006 10 27 | 703 | 0.4+ | 0.3− |
| 2002 11 17 | 704 | 0.6− | 0.4+ | 2003 01 21 | 704 | 0.1+ | 0.8− | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2002 11 17 | 704 | 0.7− | 0.2+ | 2003 01 21 | 704 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.6− | 0.2+ |
| 2002 11 17 | 704 | 1.4− | 0.9+ | 2003 03 05 | 704 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.5− | 1.0+ |
| 2002 12 28 | 704 | 0.1− | 0.2− | 2003 03 05 | 704 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.1+ |
| 2002 12 28 | 704 | 0.3+ | 0.2− | 2003 03 05 | 704 | 1.4− | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.5+ |
| 2002 12 28 | 704 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.8+ | 0.2+ | | | | |
| 2002 12 28 | 704 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.2− | 0.1− | | | | |

**2002 VQ$_{86}$ = 2006 ST$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.63013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22021016 | $\omega$ | 25.47713 | | +0.51011463 | −0.84736891 | |
| $a$ | 2.7158836 | $\Omega$ | 34.41090 | | +0.73773119 | +0.34290513 | |
| $e$ | 0.0803997 | $i$ | 15.12710 | | +0.44219425 | +0.40544051 | |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 704 | 1.0− | 0.1− | 2002 11 14 | 704 | 0.5− | 0.9− | 2004 03 25 | 704 | 0.1− | 0.5+ |
| 2002 11 08 | 704 | 0.1+ | 0.5− | 2002 11 14 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 0.1− | 0.1− |
| 2002 11 08 | 704 | 0.1+ | 0.0 | 2002 11 24 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.3− | 0.3+ | 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 09 20 | 703 | (2.1+ | 0.1+) |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.7+ | 0.7− |
| 2002 11 12 | 704 | 0.3+ | 0.5+ | 2004 03 10 | 644 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.3+ | 0.6+ |
| 2002 11 12 | 704 | 0.8+ | 0.4− | 2004 03 10 | 644 | 0.0 | 0.7− | 2006 09 26 | 703 | 0.5− | 0.3+ |
| 2002 11 12 | 704 | 0.5− | 0.1− | 2004 03 10 | 644 | 0.4+ | 0.5− | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2002 11 14 | 704 | 0.6+ | 0.8+ | 2004 03 25 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.5+ |
| 2002 11 14 | 704 | 0.7− | 0.7− | 2004 03 25 | 704 | 0.3− | 1.5+ | | | | |
| 2002 11 14 | 704 | 0.8+ | 0.6+ | 2004 03 25 | 704 | 0.2+ | 0.3− | | | | |

**2002 VC$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.10341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23070171 | $\omega$ | 85.56618 | | −0.12378112 | −0.99204775 | |
| $a$ | 2.6329069 | $\Omega$ | 11.61869 | | +0.85963879 | −0.11867706 | |
| $e$ | 0.2595841 | $i$ | 6.49821 | | +0.49568074 | −0.04191685 | |
| $P$ | 4.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 22 | 699 | 0.0 | 0.4− | 2002 12 02 | 704 | 0.6+ | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.0 |
| 1999 01 22 | 699 | 1.3+ | 1.7+ | 2002 12 02 | 704 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 1999 01 22 | 699 | 0.8− | 0.5+ | 2002 12 05 | 704 | 0.8+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2002 11 08 | 704 | 0.3− | 0.0 | 2002 12 05 | 704 | 0.7− | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2002 11 08 | 704 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.1+ | 1.1− | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 2002 11 08 | 704 | 0.6+ | 0.3− | 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 691 | 0.4− | 0.2− |
| 2002 11 12 | 704 | 0.7+ | 0.2− | 2002 12 05 | 704 | 0.7+ | 0.8− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.3+ | 0.0 | 2002 12 12 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | (1.7+ | 0.6−) | 2002 12 12 | 644 | 0.7+ | 0.4+ | 2006 09 29 | 291 | 0.1+ | 0.3+ |
| 2002 11 13 | 644 | 0.5− | 0.1+ | 2002 12 12 | 644 | 0.8+ | 0.2+ | 2006 09 29 | 291 | 0.4+ | 0.4+ |
| 2002 11 13 | 644 | 0.5− | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.3− | 2006 09 29 | 291 | 0.2+ | 0.3+ |
| 2002 11 13 | 644 | 0.6− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.5− | 0.3+ |
| 2002 11 15 | 644 | 0.7− | 0.4− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.3− |
| 2002 11 15 | 644 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2002 11 15 | 644 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2+ |
| 2002 12 02 | 704 | 0.8− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2002 12 02 | 704 | 0.1− | 0.2− | 2006 09 24 | 691 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2002 12 02 | 704 | 0.5− | 0.3− | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− |

**2002 VU$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.14734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22217731 | $\omega$ | 213.69738 | | −0.40517770 | −0.89590901 | |
| $a$ | 2.6998289 | $\Omega$ | 260.79563 | | +0.87424395 | −0.32140145 | |
| $e$ | 0.1412284 | $i$ | 10.63341 | | +0.26744821 | −0.30667272 | |
| $P$ | 4.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 699 | 0.6+ | 0.8+ | 2002 11 24 | 644 | 0.3− | 1.2+ | 2002 12 11 | 644 | 0.9+ | 0.3+ |
| 1999 01 14 | 699 | 0.9+ | 0.0 | 2002 11 27 | 699 | 0.2+ | 0.1+ | 2002 12 11 | 704 | 1.1− | 0.0 |
| 1999 01 14 | 699 | 0.4− | 1.4+ | 2002 11 27 | 699 | 0.7+ | 0.3+ | 2002 12 11 | 644 | 1.2+ | 0.8+ |
| 2002 11 08 | 704 | 0.8+ | 0.3− | 2002 11 27 | 699 | 0.6− | 0.1− | 2002 12 27 | 644 | 0.3+ | 0.0 |
| 2002 11 08 | 704 | 0.1+ | 1.3− | 2002 11 27 | 699 | 0.4− | 0.2+ | 2002 12 27 | 644 | 0.3+ | 0.2− |
| 2002 11 08 | 704 | 0.7− | 0.1− | 2002 12 02 | 704 | 0.1− | 0.1− | 2002 12 27 | 644 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.4+ | 0.4− | 2002 12 02 | 704 | 0.3− | 0.0 | 2002 12 31 | 704 | 0.4+ | 0.2− |
| 2002 11 12 | 704 | 0.2− | 0.1− | 2002 12 02 | 704 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.7+ | 0.6− |
| 2002 11 12 | 704 | 0.2+ | 0.6− | 2002 12 06 | 704 | 0.6− | 0.7+ | 2002 12 31 | 704 | 0.5− | 0.1+ |
| 2002 11 12 | 704 | 0.0 | 0.4− | 2002 12 06 | 704 | 0.4+ | 0.3− | 2002 12 31 | 704 | 0.8+ | 0.1− |
| 2002 11 12 | 704 | 0.8− | 0.5− | 2002 12 06 | 704 | 0.0 | 0.5+ | 2006 09 22 | 699 | 0.7− | 0.1+ |
| 2002 11 14 | 704 | 0.8− | 0.4− | 2002 12 06 | 704 | 0.1− | 0.3− | 2006 09 22 | 699 | 0.6+ | 0.9+ |
| 2002 11 14 | 704 | 0.1+ | 0.8− | 2002 12 06 | 704 | 0.3− | 0.3+ | 2006 09 22 | 699 | 1.3+ | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.9− | 2002 12 11 | 704 | 0.2− | 0.2− | 2006 09 22 | 699 | 0.6− | 1.1+ |
| 2002 11 14 | 704 | 0.4+ | 0.2− | 2002 12 11 | 704 | 0.5− | 0.9− | 2006 09 28 | 703 | 0.8− | 0.0 |
| 2002 11 14 | 704 | 1.0− | 0.4− | 2002 12 11 | 704 | 0.8− | 0.5− | 2006 09 28 | 703 | 0.1− | 0.5+ |
| 2002 11 24 | 644 | 0.3− | 1.0+ | 2002 12 11 | 644 | 1.3+ | 0.7+ | 2006 09 28 | 703 | (2.8− | 0.5−) |
| 2002 11 24 | 644 | 0.0 | 1.1+ | 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 09 28 | 703 | 0.6− | 0.5+ |

**2002 VS$_{88}$ = 2006 RB$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.52175 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23751647 | $\omega$ | 33.91545 | | +0.71962870 | −0.69424344 | |
| $a$ | 2.5823012 | $\Omega$ | 10.08186 | | +0.61991674 | +0.63414906 | |
| $e$ | 0.2402312 | $i$ | 4.15121 | | +0.31279030 | +0.34041301 | |
| $P$ | 4.15 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 699 | 0.6− | 1.1− | 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 11 11 | 699 | 0.4− | 0.3− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 11 11 | 699 | 1.2+ | 0.4+ | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | 1.2+ | 0.2− |
| 2002 11 11 | 699 | 1.4+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.8− | 0.2+ |
| 2002 11 12 | 704 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.3+ | 1.4+ | 2006 10 21 | 703 | 0.4+ | 1.1− |
| 2002 11 12 | 704 | 0.6− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.9− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | (0.4+ | 1.9+) | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 0.3+ | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.2+ | 1.0+ | 2006 09 27 | 704 | (2.1+ | 0.4−) | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 06 | 704 | 0.4− | 0.0 | 2006 09 27 | 704 | 1.1+ | 0.2+ | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 1.1− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.9+ | 2006 09 30 | 691 | 0.5− | 0.2− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2002 12 10 | 704 | 0.4− | 1.0− | 2006 09 30 | 691 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2002 12 10 | 704 | 0.3+ | 1.3− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | 0.4+ | 1.2− | 2006 10 11 | 691 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.6− |
| 2002 12 11 | 704 | 0.3+ | 1.4+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2002 12 11 | 704 | 0.4− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 12 11 | 644 | (2.0+ | 1.1+) | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 12 11 | 644 | 0.7+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 644 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2− | | | | |

**2002 VQ$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.15840 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23187329 | $\omega$ | 309.48691 | | +0.37440736 | | −0.92304411 |
| $a$ | 2.6240306 | $\Omega$ | 118.31321 | | +0.87858864 | | +0.32266823 |
| $e$ | 0.2229580 | $i$ | 5.76075 | | +0.29648125 | | +0.20946306 |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.4− | 0.2+ | 2002 12 01 | 704 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.7+ | 0.6+ |
| 2002 10 30 | 644 | 0.5+ | 0.2+ | 2002 12 01 | 704 | 1.0+ | 0.8− | 2006 09 20 | 704 | 0.1− | 0.8+ |
| 2002 10 30 | 644 | 0.4+ | 0.0 | 2002 12 01 | 704 | (1.5+ | 0.1−) | 2006 09 20 | 704 | 0.7+ | 0.4+ |
| 2002 11 11 | 644 | 0.2− | 0.0 | 2002 12 11 | 704 | 0.5− | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.2− |
| 2002 11 11 | 644 | 0.3+ | 0.3− | 2002 12 11 | 704 | 0.9− | 0.7+ | 2006 09 20 | 704 | 0.3+ | 0.3+ |
| 2002 11 11 | 644 | 0.6+ | 0.6+ | 2002 12 11 | 704 | 0.4− | 0.7+ | 2006 10 02 | 703 | 0.6− | 0.0 |
| 2002 11 12 | 704 | 0.8− | 0.1+ | 2006 08 16 | 644 | 0.4+ | 0.3− | 2006 10 02 | 703 | 0.1+ | 0.8+ |
| 2002 11 12 | 704 | 0.3− | 0.5+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.9+ | 1.1− |
| 2002 11 12 | 704 | 0.5− | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.1+ | 0.8− |
| 2002 11 13 | 644 | 0.2+ | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.5− | 0.4− |
| 2002 11 13 | 644 | 0.2+ | 0.0 | 2006 08 29 | 691 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2002 11 13 | 644 | 0.2+ | 0.2− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.5+ | 0.4− |
| 2002 11 30 | 704 | 1.1+ | 0.6− | 2006 09 18 | 703 | 0.6+ | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.3− |
| 2002 11 30 | 704 | 0.7− | 0.7+ | 2006 09 18 | 703 | (1.9+ | 1.9−) | 2006 10 19 | 703 | 1.1− | 0.8− |
| 2002 11 30 | 704 | (0.6+ | 1.8−) | 2006 09 18 | 703 | (1.6+ | 0.5−) | 2006 10 19 | 703 | 0.2+ | 0.9− |
| 2002 11 30 | 704 | 0.1+ | 1.3− | 2006 09 18 | 703 | (0.2− | 2.1−) | 2006 10 19 | 703 | 0.1− | 0.7+ |

**2002 VM$_{90}$ = 2006 VW$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.17457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25500519 | $\omega$ | 337.98414 | | +0.85369633 | | −0.50981958 |
| $a$ | 2.4628428 | $\Omega$ | 53.10630 | | +0.49541676 | | +0.73217603 |
| $e$ | 0.1189617 | $i$ | 7.63369 | | +0.16051421 | | +0.45166610 |
| $P$ | 3.87 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.1− | 0.1+ | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 10 29 | G96 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.8− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.3− |
| 2002 11 11 | 291 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2002 11 11 | 291 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.5+ | 0.6− | 2006 11 14 | 691 | 0.5− | 0.1− |
| 2002 11 11 | 291 | 0.5+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2002 11 12 | 644 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.7− | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2002 11 12 | 644 | 0.5− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.6− | 2006 11 18 | 691 | 0.0 | 0.5+ |
| 2002 11 12 | 644 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2004 03 18 | 691 | 0.3+ | 0.3+ | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.4− | 2006 11 22 | 691 | 0.2− | 0.1− |

**2002 VN$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.79007 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24278265 | $\omega$ | 306.55411 | | +0.69824700 | | −0.71038761 |
| $a$ | 2.5448232 | $\Omega$ | 98.90447 | | +0.68203832 | | +0.62270398 |
| $e$ | 0.2583456 | $i$ | 5.12899 | | +0.21742781 | | +0.32800792 |
| $P$ | 4.06 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 11 | 699 | 0.8+ | 0.8− | 2002 11 06 | 644 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 1998 10 11 | 699 | 0.1+ | 0.6+ | 2002 11 06 | 644 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.0 |
| 1998 10 11 | 699 | 0.8− | 0.3+ | 2002 11 06 | 644 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2002 09 28 | 608 | 0.5− | 1.2− | 2006 09 19 | 699 | 0.3+ | 0.5+ | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2002 09 28 | 608 | 0.0 | 1.2− | 2006 09 19 | 699 | 0.6− | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2002 09 28 | 608 | 0.0 | 1.1− | 2006 09 19 | 699 | 1.1+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 1.3+ |
| 2002 10 08 | 699 | (0.9+ | 2.1+) | 2006 09 19 | 699 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.3− | 0.9+ |
| 2002 10 08 | 699 | 0.3− | 0.4+ | 2006 09 25 | 703 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.9+ | 0.2+ |
| 2002 10 08 | 699 | 0.2+ | 0.7+ | 2006 09 25 | 703 | 0.7+ | 1.1− | 2006 10 19 | 703 | 0.6+ | 1.4+ |
| 2002 10 08 | 699 | 0.4+ | 0.7+ | 2006 09 25 | 703 | 0.6− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 10 22 | 644 | 1.1+ | 0.8+ | 2006 09 25 | 703 | 0.5− | 0.7− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2002 10 22 | 644 | 0.7+ | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2002 10 22 | 644 | 1.2+ | 0.6+ | 2006 10 02 | 703 | 1.4− | 0.9+ | 2006 10 24 | 644 | 0.1− | 0.2− |
| 2002 11 02 | 608 | 0.6− | 1.0− | 2006 10 02 | 703 | 0.3+ | 0.4− | 2006 10 24 | 644 | 0.1− | 0.2− |
| 2002 11 02 | 608 | 0.7− | 0.5− | 2006 10 02 | 703 | 1.2− | 0.8− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 11 02 | 608 | 0.2− | 1.0− | 2006 10 09 | 644 | 0.5+ | 0.0 | | | | |

**2002 VV$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.42036 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23434709 | $\omega$ | 156.61896 | | +0.99777964 | | −0.04026798 |
| $a$ | 2.6055316 | $\Omega$ | 205.85930 | | +0.02290494 | | +0.95540598 |
| $e$ | 0.2000432 | $i$ | 6.98611 | | +0.06253930 | | +0.29253700 |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.3− | 0.5− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 704 | 0.9− | 0.3+ | 2006 09 14 | 703 | 0.2+ | 1.2− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.0 | 0.3+ | 2006 09 15 | 683 | 0.1− | 0.5− | 2006 10 15 | 703 | 0.4− | 0.1+ |
| 2002 10 30 | 608 | 1.1+ | 0.3− | 2006 09 15 | 683 | 0.4+ | 0.4+ | 2006 10 15 | 703 | 1.1− | 0.1+ |
| 2002 10 30 | 608 | 1.1+ | 0.2− | 2006 09 15 | 683 | (1.5− | 1.1+) | 2006 10 15 | 703 | 0.0 | 1.0+ |
| 2002 10 30 | 608 | 1.3+ | 0.6− | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.7− | 0.5+ |
| 2002 11 07 | 704 | 0.7− | 0.1− | 2006 09 16 | 644 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2− | 1.0− |
| 2002 11 07 | 704 | 0.9− | 0.5− | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2002 11 07 | 704 | 0.5− | 0.1+ | 2006 09 17 | 683 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.2+ | 0.2− | 2006 09 17 | 683 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | (2.8− | 0.1−) | 2006 09 17 | 683 | (2.0− | 1.1+) | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 11 11 | 704 | 0.6− | 0.5+ | 2006 09 17 | 691 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 11 11 | 704 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 11 | 704 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 11 11 | 704 | 0.0 | 1.1− | 2006 09 18 | 699 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 11 11 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.0 | 0.7− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 11 13 | 704 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 2002 11 13 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | (1.6+ | 0.4+) | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 11 13 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 11 13 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2002 11 15 | 644 | 0.1− | 1.1+ | 2006 09 25 | 704 | 0.7− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.1− | 0.9+ | 2006 09 25 | 704 | 0.3− | 0.8+ | 2006 11 11 | 703 | 0.6− | 1.1+ | | |
| 2002 11 15 | 644 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 1.1− | 1.3+ | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2002 12 01 | 704 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.7− | | |
| 2002 12 01 | 704 | 0.7− | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.7+ | | |
| 2002 12 01 | 704 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− | | |
| 2005 05 12 | G96 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.3− | 2006 11 11 | 703 | 0.9− | 0.1+ | | |
| 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.4+ | 0.7+ | 2006 11 14 | G96 | 0.3+ | 0.5− | | |
| 2005 05 12 | G96 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.2− | 1.0+ | 2006 11 14 | G96 | 0.4+ | 0.6− | | |
| 2006 09 14 | 703 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.9+ | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.4− | | |
| 2006 09 14 | 703 | 0.0 | 0.6− | 2006 10 01 | 691 | 0.2− | 0.1+ | | | | | | |

**2002 VE$_{93}$ = 2006 SF$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 307.86103 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.23548945 | | $\omega$ | 322.42470 | | | +0.01292236 | | | −0.99902351 | | | |
| $a$ | 2.5970984 | | $\Omega$ | 126.79591 | | | +0.92972849 | | | −0.00354676 | | | |
| $e$ | 0.1815127 | | $i$ | 3.02440 | | | +0.36801895 | | | +0.04403923 | | | |
| $P$ | 4.19 | | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 1.2− | 0.2+ | 2004 04 14 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 1.1− | 0.9− | | |
| 2002 11 11 | 704 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.4+ | | |
| 2002 11 11 | 704 | 0.6− | 0.1+ | 2006 09 19 | 691 | 0.6− | 0.4− | 2006 10 21 | 703 | 1.1− | 0.6+ | | |
| 2002 11 11 | 704 | 1.1− | 1.1− | 2006 09 19 | 691 | 0.7+ | 0.4+ | 2006 10 21 | 703 | 1.5− | 0.2− | | |
| 2002 11 13 | 704 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | (2.4− | 1.3−) | | |
| 2002 11 13 | 704 | 0.7+ | 0.5+ | 2006 09 23 | 691 | 0.3+ | 0.9+ | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2002 11 13 | 704 | 0.3− | 0.4− | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.0 | | |
| 2002 11 13 | 704 | 0.7+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.4− | | |
| 2002 11 23 | 644 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.4− | | |
| 2002 11 23 | 644 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 23 | 644 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2002 12 10 | 644 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | | |
| 2002 12 10 | 644 | 0.2+ | 1.1+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 21 | 460 | 0.4+ | 0.1− | | |
| 2002 12 10 | 644 | 0.5+ | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.6− | 2006 11 21 | 460 | 0.8+ | 0.4+ | | |
| 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.0 | 0.6− | | | | | | |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.8+ | 0.0 | | | | | | |

**2002 VX$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 297.71987 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.23107590 | | $\omega$ | 258.99807 | | | −0.62372653 | | | −0.70341637 | | | |
| $a$ | 2.6300638 | | $\Omega$ | 235.14826 | | | +0.77403557 | | | −0.61652934 | | | |
| $e$ | 0.5133851 | | $i$ | 24.54044 | | | −0.10878489 | | | −0.35369053 | | | |
| $P$ | 4.27 | | $H$ | 18.4 | $G$ | 0.15 | | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1− | 0.0 | 2002 12 02 | 557 | 0.5+ | 0.9− | 2002 12 24 | 413 | 0.3− | 0.2+ | | |
| 2002 11 13 | 644 | 0.0 | 0.2+ | 2002 12 02 | 246 | 0.0 | 0.6+ | 2002 12 27 | 413 | 0.0 | 0.4+ | | |
| 2002 11 13 | 644 | 0.2+ | 0.1− | 2002 12 02 | 557 | 0.0 | 0.0 | 2002 12 27 | 413 | 0.2+ | 0.0 | | |
| 2002 11 14 | 673 | 0.5+ | 0.6+ | 2002 12 02 | 557 | 0.1+ | 1.0− | 2003 01 08 | 246 | 1.3− | 0.8+ | | |
| 2002 11 14 | 673 | (1.0+ | 1.9+) | 2002 12 02 | 649 | 0.4− | 0.2− | 2003 01 08 | 246 | 0.9+ | 0.4+ | | |
| 2002 11 14 | 673 | 0.1+ | 0.1+ | 2002 12 02 | 649 | 0.0 | 0.3− | 2003 01 08 | 246 | 0.3+ | 0.6+ | | |
| 2002 11 23 | 644 | 0.2− | 0.1+ | 2002 12 02 | 649 | 0.1+ | 0.2− | 2003 01 10 | 413 | 0.3− | 0.1− | | |
| 2002 11 23 | 644 | 0.3− | 0.2− | 2002 12 02 | 704 | (0.3+ | 1.6−) | 2003 01 11 | 413 | 0.1− | 0.2+ | | |
| 2002 11 23 | 644 | 0.5− | 0.0 | 2002 12 02 | 704 | 0.2+ | 0.3− | 2003 01 11 | 413 | 0.4− | 0.0 | | |
| 2002 12 01 | 704 | 0.5− | 0.1− | 2002 12 02 | 704 | 0.3+ | 0.4− | 2003 01 11 | 413 | 0.0 | 0.1− | | |
| 2002 12 01 | 704 | 0.6− | 1.1+ | 2002 12 02 | 704 | 0.6+ | 0.6+ | 2003 03 10 | 474 | 0.0 | 0.2+ | | |
| 2002 12 01 | 704 | 0.0 | 0.2+ | 2002 12 02 | 446 | (1.6− | 0.5−) | 2003 03 10 | 474 | 0.6+ | 0.3− | | |
| 2002 12 01 | 704 | 0.1− | 0.4− | 2002 12 02 | 446 | 1.4− | 0.3− | 2003 03 10 | 474 | 0.3− | 0.5− | | |
| 2002 12 02 | 246 | 0.4+ | 0.1− | 2002 12 08 | 246 | 0.0 | 0.7− | 2003 03 10 | 474 | 0.4+ | 0.1+ | | |
| 2002 12 02 | 246 | 0.2+ | 0.1− | 2002 12 08 | 246 | 0.1+ | 0.3− | 2006 10 13 | 291 | 0.4− | 0.3− | | |
| 2002 12 02 | 246 | 1.0+ | 0.0 | 2002 12 08 | 246 | 0.9− | 0.2+ | 2006 10 13 | 291 | 0.7+ | 0.5− | | |
| 2002 12 02 | 246 | 0.2+ | 0.3− | 2002 12 13 | 413 | 0.2+ | 0.0 | 2006 10 13 | 291 | 0.4+ | 0.5+ | | |
| 2002 12 02 | 246 | 0.3− | 0.3+ | 2002 12 13 | 413 | 0.0 | 0.3− | 2006 10 18 | 291 | 0.4+ | 0.5− | | |
| 2002 12 02 | 246 | 0.7+ | 0.2+ | 2002 12 13 | 413 | 0.1+ | 0.1− | 2006 10 18 | 291 | 1.2− | 0.1+ | | |
| 2002 12 02 | 246 | 0.2+ | 0.4+ | 2002 12 24 | 413 | 0.4+ | 0.3− | 2006 10 18 | 291 | 0.1+ | 0.8+ | | |

**2002 VK$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 24.02224 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.23908296 | | $\omega$ | 287.99185 | | | +0.97331499 | | | −0.05241774 | | | |
| $a$ | 2.5710092 | | $\Omega$ | 75.47605 | | | +0.14871586 | | | +0.88552831 | | | |
| $e$ | 0.1435796 | | $i$ | 13.34307 | | | −0.17476134 | | | +0.46161888 | | | |
| $P$ | 4.12 | | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2+ | 0.8+ | 2002 12 31 | 704 | 0.5− | 0.1− | 2006 11 13 | 703 | 0.3− | 0.3− | | |
| 2002 11 07 | 704 | (1.3+ | 1.9+) | 2002 12 31 | 704 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.5+ | | |
| 2002 11 07 | 704 | 1.3+ | 1.3+ | 2002 12 31 | 704 | 0.5+ | 1.1+ | 2006 11 19 | 704 | 1.1+ | 0.7+ | | |
| 2002 11 11 | 704 | 0.3+ | 0.3− | 2002 12 31 | 704 | 0.2+ | 1.1− | 2006 11 19 | 704 | 0.1+ | 0.1− | | |
| 2002 11 11 | 704 | 0.1+ | 0.1+ | 2002 12 31 | 704 | 0.0 | 0.4+ | 2006 11 19 | 703 | 1.0− | 0.5− | | |
| 2002 11 11 | 704 | 0.3+ | 0.1− | 2003 01 04 | 704 | 1.1− | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.6+ | | |
| 2002 11 11 | 704 | 1.0− | 0.0 | 2003 01 04 | 704 | 0.4+ | 1.1+ | 2006 11 19 | 703 | 0.2− | 0.7− | | |
| 2002 11 14 | 704 | 0.3− | 0.2− | 2003 01 04 | 704 | (2.1− | 1.1+) | 2006 11 19 | 703 | 0.4− | 0.2− | | |
| 2002 11 14 | 704 | 0.6+ | 0.2+ | 2003 01 04 | 704 | 0.8+ | 0.7+ | 2006 11 19 | 704 | 0.9+ | 0.0 | | |
| 2002 11 14 | 704 | 0.6− | 0.2+ | 2006 10 16 | 703 | 1.0+ | 1.0+ | 2006 11 19 | 703 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 20 | 704 | 1.0− | 0.8− | | |
| 2002 11 14 | 704 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.0 | | |
| 2002 11 18 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.2− | | |
| 2002 11 18 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.1− | | |
| 2002 11 18 | 644 | 0.6− | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.5− | 2006 11 25 | 704 | 0.1− | 0.9+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.8− | 2006 10 22 | 703 | 0.4− | 0.1+ | 2006 11 25 | 704 | 0.4+ | 0.0 | | |
| 2002 12 05 | 704 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 25 | 704 | 0.3+ | 0.4+ | | |
| 2002 12 05 | 608 | 0.7− | 1.1− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.8− | 0.2− | | |
| 2002 12 05 | 608 | 0.2− | 1.1− | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.3− | | |
| 2002 12 05 | 608 | 0.2− | 1.1− | 2006 11 13 | 703 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.4+ | 0.5+ | | |
| 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.0 | 0.3+ | | |
| 2002 12 10 | 704 | 0.3− | 0.7− | 2006 11 13 | 703 | 0.3− | 0.6− | 2006 11 28 | 704 | 0.1+ | 0.3+ | | |
| 2002 12 10 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2− | 0.1+ | | |
| 2002 12 10 | 704 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 0.1+ | 1.0− | | | | | | |
| 2002 12 10 | 704 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.4− | 0.1− | | | | | | |

**2002 VU$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 294.43088 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.21122492 | | $\omega$ | 206.37849 | | | +0.14714306 | | | −0.98372505 | | | |
| $a$ | 2.7923677 | | $\Omega$ | 235.32712 | | | +0.92821504 | | | +0.17334824 | | | |
| $e$ | 0.3185286 | | $i$ | 7.20318 | | | +0.34171004 | | | −0.04728023 | | | |
| $P$ | 4.67 | | $H$ | 15.5 | $G$ | 0.15 | | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.5− | 0.7+ | 2003 01 01 | 704 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.4− | | |
| 2002 10 10 | 704 | 0.2− | 0.4− | 2003 01 01 | 704 | 0.2− | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.3− | | |
| 2002 10 10 | 704 | 0.2+ | 0.3− | 2003 01 01 | 704 | 0.2− | 0.1− | 2006 08 22 | 644 | 0.1− | 0.5− | | |
| 2002 11 11 | 704 | 0.6+ | 0.3+ | 2003 01 01 | 704 | 0.1− | 0.2− | 2006 09 22 | 691 | 0.2− | 0.0 | | |
| 2002 11 11 | 704 | 0.6+ | 0.5− | 2003 01 01 | 704 | 0.1+ | 0.7− | 2006 09 22 | 691 | 0.2− | 0.0 | | |
| 2002 11 11 | 704 | 0.5+ | 0.0 | 2003 01 07 | 704 | 0.2− | 0.1+ | 2006 09 22 | 691 | 0.1− | 0.1+ | | |
| 2002 11 11 | 704 | 0.4− | 0.3+ | 2003 01 07 | 704 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.2− | 0.0 | | |
| 2002 11 11 | 704 | 0.7+ | 0.2− | 2003 01 07 | 704 | 0.4− | 0.4− | 2006 09 25 | 691 | 0.0 | 0.1− | | |
| 2002 11 14 | 704 | 0.8+ | 1.0+ | 2003 01 07 | 704 | 0.2− | 0.5− | 2006 09 25 | 691 | 0.0 | 0.3+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.6+ | 2003 01 07 | 704 | 0.2− | 0.4− | 2006 09 27 | 691 | 0.2+ | 0.2+ | | |
| 2002 11 14 | 704 | 0.4− | 0.2+ | 2003 01 09 | 704 | 1.5− | 1.4− | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2002 11 14 | 704 | 0.3+ | 0.3− | 2003 01 09 | 704 | (1.1− | 1.6−) | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2003 01 09 | 704 | (3.0− | 1.4−) | 2006 09 30 | 691 | 0.4+ | 0.0 | | |
| 2002 12 11 | 704 | (2.4+ | 0.1+) | 2003 02 28 | 704 | 0.6+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.4− | | |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2003 02 28 | 704 | (0.8+ | 1.8−) | 2006 09 30 | 691 | 0.1+ | 0.2− | | |
| 2002 12 11 | 704 | 0.1+ | 0.2+ | 2003 02 28 | 704 | 0.1− | 0.1+ | | | | | | |
| 2002 12 11 | 704 | 0.1− | 0.6+ | 2003 02 28 | 704 | 0.1− | 0.4+ | | | | | | |

**2002 VE$_{102}$ = 2006 UB$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.04410 | | | (2000.0) | | |
| $n$ | 0.25343066 | $\omega$ | 85.01715 | | +0.87046507 | +0.47295023 |
| $a$ | 2.4730332 | $\Omega$ | 246.69932 | | −0.48958244 | +0.80316523 |
| $e$ | 0.1364250 | $i$ | 8.54158 | | −0.05098621 | +0.36227572 |
| $P$ | 3.89 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.9+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 20 | 703 | 0.6+ | 0.7− |
| 2002 11 05 | 704 | 0.6− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 20 | 703 | 0.8− | 0.0 |
| 2002 11 05 | 704 | 0.6− | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.6− | 0.7+ |
| 2002 11 05 | 704 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.6− |
| 2002 11 05 | 704 | 0.9− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 20 | 703 | 0.0 | 0.4+ |
| 2002 11 06 | 704 | (2.2− | 0.3−) | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2002 11 06 | 704 | 0.0 | 1.3− | 2006 10 27 | 691 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 1.2+ |
| 2002 11 06 | 704 | 1.2+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 1.1− | 0.1+ |
| 2002 11 06 | 704 | 0.8− | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2002 11 06 | 704 | 0.2− | 0.5− | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.7+ |
| 2002 11 11 | 049 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.9− |
| 2002 11 11 | 049 | 0.3+ | 0.7+ | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2002 11 11 | 049 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2002 11 14 | 704 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.7+ | 2006 11 22 | 691 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.7+ | 0.2+ |
| 2002 11 14 | 704 | 0.6+ | 0.4− | 2006 11 19 | 704 | 0.3− | 0.3− | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2002 11 14 | 704 | 1.1+ | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.1+ | 0.9+ | 2006 12 01 | G96 | 0.4+ | 0.6− |

**2002 VS$_{102}$ = 2006 SJ$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.18317 | | | (2000.0) | | |
| $n$ | 0.24077220 | $\omega$ | 71.00503 | | +0.99291632 | +0.11442205 |
| $a$ | 2.5589697 | $\Omega$ | 282.41483 | | −0.11756572 | +0.90715982 |
| $e$ | 0.2616246 | $i$ | 1.87841 | | −0.01718967 | +0.40493043 |
| $P$ | 4.09 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.9− | 0.0 | 2006 08 30 | 699 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.5− | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.7− | 2006 08 30 | 699 | 0.6+ | 0.6+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.2− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 1.2+ | 1.4+ | 2006 09 18 | 699 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.3+ | 0.0 |
| 2002 10 11 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.6− | 2006 10 17 | 691 | 0.2− | 0.1− |
| 2002 10 28 | 608 | 0.6− | 0.5+ | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2002 10 28 | 608 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2002 10 28 | 608 | 0.8− | 0.4− | 2006 09 25 | 704 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2002 11 05 | 704 | 0.4− | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.1− | 1.4− |
| 2002 11 05 | 704 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.4+ | 1.0+ | 2006 10 17 | 703 | 0.2+ | 0.7− |
| 2002 11 05 | 704 | 0.7+ | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2002 11 05 | 704 | 0.5+ | 0.4− | 2006 09 28 | 691 | 0.2− | 0.1− | 2006 10 19 | 704 | 1.4− | 1.1+ |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 19 | 704 | 0.6+ | 0.3+ |
| 2002 11 05 | 699 | 0.4+ | 1.3− | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 19 | 704 | 1.3+ | 0.3+ |
| 2002 11 05 | 699 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.9+ | 0.1− | 2006 10 19 | 704 | 0.0 | 0.2+ |
| 2002 11 05 | 699 | 0.2− | 1.2− | 2006 09 29 | 704 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 11 05 | 699 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.4+ | 0.8− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.7+ | 0.3− | 2006 09 29 | 704 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.8− | 0.8− | 2006 10 29 | 704 | 0.1+ | 0.5+ |
| 2002 11 12 | 704 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 29 | 704 | 0.2+ | 0.2+ |
| 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 10 02 | 691 | (0.5− | 1.8+) | 2006 10 29 | 704 | 0.9+ | 0.8+ |
| 2002 11 12 | 704 | 0.5− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.3+ | 0.1+ |
| 2002 11 14 | 704 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 683 | 0.7− | 1.3− |
| 2002 11 14 | 704 | 0.6− | 1.5+ | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 31 | 683 | (0.4− | 2.9−) |
| 2002 11 14 | 704 | 0.8+ | 1.2+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 683 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.6− | 1.3+ | 2006 10 03 | 704 | 0.3+ | 0.6+ | 2006 11 07 | 644 | 0.6+ | 0.6+ |
| 2002 11 14 | 704 | 0.1− | 1.1+ | 2006 10 03 | 704 | 0.3+ | 0.7+ | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2002 11 15 | 704 | 0.2+ | 0.5+ | 2006 10 03 | 704 | 0.5+ | 0.4+ | 2006 11 07 | 644 | 0.2+ | 0.0 |
| 2002 11 15 | 704 | 0.0 | 0.5− | 2006 10 03 | 704 | 0.7− | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2002 11 15 | 704 | 0.7− | 0.3− | 2006 10 03 | 704 | 0.0 | 0.5− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2002 11 15 | 704 | 0.3− | 0.8+ | 2006 10 10 | 644 | 0.5− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2002 11 15 | 704 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.5− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2002 12 01 | 608 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2002 12 01 | 608 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.3− |
| 2002 12 01 | 608 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.4− |
| 2002 12 05 | 695 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2002 12 05 | 695 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.4− | 0.2− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2006 08 30 | 699 | (1.7− | 2.0+) | 2006 10 12 | 644 | 0.4− | 0.1− | | | | |

**2002 VT$_{102}$ = 2006 QY$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.21660 | | | (2000.0) | | |
| $n$ | 0.21485170 | $\omega$ | 119.17482 | | +0.94908334 | −0.30810407 |
| $a$ | 2.7608545 | $\Omega$ | 258.83480 | | +0.26076349 | +0.88531518 |
| $e$ | 0.0608017 | $i$ | 3.83814 | | +0.17675752 | +0.34826559 |
| $P$ | 4.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 1.0− | 0.4− | 2002 11 14 | 704 | 0.5+ | 0.3+ | 2006 09 17 | 703 | 0.9− | 0.6− |
| 2002 11 05 | 704 | 0.2+ | 0.6− | 2002 11 14 | 704 | 0.2− | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.6+ |
| 2002 11 05 | 704 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.4− | 0.5− | 2006 09 17 | 703 | 1.3− | 0.4+ |
| 2002 11 05 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 699 | (2.0+ | 1.4−) | 2006 09 17 | 703 | (1.7+ | 1.6+) |
| 2002 11 05 | 704 | 0.7+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.4− | 1.1+ |
| 2002 11 12 | 704 | 0.7− | 0.7− | 2006 08 28 | 699 | 0.7− | 0.5− | 2006 09 20 | 699 | 0.3+ | 0.0 |
| 2002 11 12 | 704 | 0.0 | 0.1− | 2006 08 29 | 703 | 1.2+ | 0.3− | 2006 09 20 | 699 | 0.2+ | 0.5− |
| 2002 11 12 | 704 | 0.4− | 0.6+ | 2006 08 29 | 703 | (2.0+ | 0.1+) | 2006 09 20 | 699 | 0.3+ | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.2− | 2006 10 20 | 644 | (2.8+ | 0.6+) |
| 2002 11 12 | 704 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.6+ | 0.6− | 2006 10 20 | 644 | (2.9+ | 0.8+) |
| 2002 11 14 | 704 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | (2.7+ | 0.6+) |
| 2002 11 14 | 704 | 0.3− | 0.2− | 2006 09 13 | 644 | 0.3+ | 0.2+ | | | | |
| 2002 11 14 | 704 | 0.7+ | 0.1− | 2006 09 13 | 644 | 0.4+ | 0.7+ | | | | |

**2002 VF$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.10318 | | | (2000.0) | | |
| $n$ | 0.23173325 | $\omega$ | 313.86898 | | +0.95720235 | +0.28574521 |
| $a$ | 2.6250877 | $\Omega$ | 29.61639 | | −0.23163439 | +0.85159353 |
| $e$ | 0.3247709 | $i$ | 5.33753 | | −0.17351992 | +0.43947484 |
| $P$ | 4.25 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.7+ | 0.4− | 2002 12 02 | 704 | 0.1− | 0.7+ | 2006 09 20 | 703 | 0.1− | 0.4+ |
| 2002 10 03 | 704 | 0.4+ | 0.1+ | 2002 12 02 | 704 | 1.3− | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.5+ |
| 2002 10 03 | 704 | 0.5− | 0.5− | 2002 12 02 | 704 | 0.6− | 0.6− | 2006 09 25 | 699 | 0.3+ | 0.1− |
| 2002 10 03 | 704 | 0.8− | 0.7+ | 2006 08 28 | 699 | 1.3+ | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.4− |
| 2002 11 05 | 704 | 0.3+ | 0.5+ | 2006 08 28 | 699 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.4+ |
| 2002 11 05 | 704 | 0.4+ | 0.5+ | 2006 08 28 | 699 | 1.0− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.1+ |
| 2002 11 05 | 704 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.5+ |
| 2002 11 05 | 704 | 0.9+ | 0.2− | 2006 09 16 | 704 | 0.0 | 0.5− | 2006 09 26 | 704 | 0.1− | 0.2+ |
| 2002 11 12 | 704 | 0.4+ | 1.0− | 2006 09 16 | 704 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.1+ |
| 2002 11 12 | 704 | 0.5+ | 0.0 | 2006 09 16 | 704 | 0.6− | 0.9+ | 2006 09 30 | 703 | 0.8+ | 0.4− |
| 2002 11 12 | 704 | 0.6+ | 0.2− | 2006 09 16 | 704 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2002 11 12 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.6− |
| 2002 11 14 | 704 | 0.7− | 0.3− | 2006 09 18 | 699 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 2002 11 14 | 704 | 0.7+ | 0.0 | 2006 09 18 | 699 | 0.8− | 0.3− | 2006 10 19 | 703 | 0.2− | 0.8− |
| 2002 11 14 | 704 | 1.0− | 0.5− | 2006 09 18 | 699 | 0.2+ | 0.8+ | 2006 10 19 | 703 | 0.5− | 0.5+ |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2006 09 18 | 699 | (0.9+ | 2.0+) | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.3− | 0.3− | 2006 09 19 | 704 | 0.2− | 0.7− | 2006 10 19 | 703 | 0.1− | 1.1− |
| 2002 11 28 | 699 | 0.4− | 0.2+ | 2006 09 19 | 704 | 0.3− | 0.5− | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2002 11 28 | 699 | 0.8− | 0.3+ | 2006 09 19 | 704 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 11 28 | 699 | 0.2+ | 0.0 | 2006 09 19 | 704 | 0.6− | 0.9− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 11 28 | 699 | 0.7+ | 0.8+ | 2006 09 20 | 703 | 0.1− | 0.8+ | 2006 11 17 | G96 | 0.6+ | 0.1− |
| 2002 12 02 | 704 | 0.1− | 0.6+ | 2006 09 20 | 703 | 0.2+ | 0.4+ | | | | |

**2002 VM$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.30134 | | (2000.0) | | | |
| $n$ | 0.23452111 | $\omega$ | 346.69005 | | +0.96767190 | −0.24676149 |
| $a$ | 2.6042425 | $\Omega$ | 27.76446 | | +0.24044120 | +0.84013697 |
| $e$ | 0.2172509 | $i$ | 6.42796 | | +0.07615204 | +0.48298928 |
| $P$ | 4.20 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.9− | 0.2− | 2006 09 28 | 704 | 0.5− | 0.8+ |
| 2002 11 05 | 704 | 0.7− | 0.5+ | 2006 09 12 | 703 | 1.1− | 0.7− | 2006 09 28 | 704 | 0.5− | 1.0+ |
| 2002 11 05 | 704 | 0.1− | 0.3+ | 2006 09 12 | 703 | 1.1− | 0.9− | 2006 09 28 | 704 | 0.2+ | 1.3+ |
| 2002 11 12 | 704 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.1− | 1.5− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.5− | 1.0− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.5− | 1.1+ | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 09 30 | 691 | 0.3− | 0.2− |
| 2002 11 14 | 704 | 1.3+ | 0.6− | 2006 09 18 | 703 | 0.1− | 0.8− | 2006 10 01 | 704 | (1.0− | 1.6+) |
| 2002 11 14 | 704 | 0.7+ | 0.6− | 2006 09 18 | 703 | 0.7+ | 0.3− | 2006 10 01 | 704 | 0.9− | 1.2+ |
| 2002 11 14 | 704 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.7− | 0.3− | 2006 10 01 | 704 | 0.7+ | 0.5+ |
| 2002 11 14 | 704 | 0.6− | 0.6− | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 15 | 106 | 0.3+ | 0.3− |
| 2002 11 14 | 704 | 0.0 | 0.8− | 2006 09 18 | 699 | 0.3+ | 0.0 | 2006 10 15 | 106 | 0.8+ | 0.4+ |
| 2002 11 24 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.8+ | 0.2+ | 2006 10 15 | 106 | 0.2+ | 0.6− |
| 2002 11 24 | 644 | 0.4+ | 0.0 | 2006 09 22 | 704 | 0.6− | 1.0+ | 2006 10 15 | 106 | 0.7− | 0.9− |
| 2002 11 24 | 644 | 0.7+ | 0.3+ | 2006 09 22 | 704 | 0.6+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 12 01 | 246 | 0.5− | 0.2− | 2006 09 22 | 704 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 12 01 | 246 | 0.6+ | 0.1+ | 2006 09 22 | 704 | 1.3+ | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 12 01 | 246 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.7− |
| 2002 12 01 | 246 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2002 12 01 | 246 | 0.6+ | 0.2− | 2006 09 26 | 704 | 0.1+ | 1.1+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2002 12 01 | 246 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.8− |
| 2002 12 06 | 704 | 0.4+ | 1.1+ | 2006 09 26 | 704 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.1+ | 0.6− |
| 2002 12 06 | 704 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.6+ | 0.5− |
| 2002 12 06 | 704 | 1.0− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 1.0+ | 0.3− |
| 2002 12 06 | 704 | 0.4− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.7− | 0.0 | 2006 09 28 | 704 | 0.5+ | 0.7+ | | | | |

**2002 VM$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 288.84901 | | (2000.0) | | | |
| $n$ | 0.22899893 | $\omega$ | 207.38326 | | −0.27840155 | −0.93867675 |
| $a$ | 2.6459425 | $\Omega$ | 259.36634 | | +0.91473650 | −0.19456034 |
| $e$ | 0.1981756 | $i$ | 11.94493 | | +0.29283053 | −0.28466163 |
| $P$ | 4.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.1+ | 0.3− | 2002 12 06 | 704 | 0.2+ | 0.1− | 2003 01 04 | 704 | 0.7+ | 0.9+ |
| 2002 11 12 | 704 | 0.1− | 0.7− | 2002 12 06 | 704 | 0.2+ | 0.6− | 2003 01 04 | 704 | 0.2− | 0.2− |
| 2002 11 12 | 704 | 0.2+ | 0.3+ | 2002 12 06 | 704 | 0.6− | 0.7+ | 2003 01 04 | 704 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.3− | 0.3− | 2002 12 06 | 704 | 0.1− | 0.3+ | 2003 01 04 | 704 | 0.1− | 1.0+ |
| 2002 11 14 | 704 | 0.6+ | 0.0 | 2002 12 07 | 644 | 0.2− | 0.3− | 2003 01 04 | 704 | 1.2+ | 0.3+ |
| 2002 11 14 | 704 | 0.4− | 0.0 | 2002 12 07 | 644 | 0.0 | 0.1− | 2003 01 08 | 704 | (1.8+ | 1.4−) |
| 2002 11 14 | 704 | 0.5+ | 0.2+ | 2002 12 07 | 644 | 0.1+ | 0.1− | 2003 01 08 | 704 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.5+ | 0.7+ | 2002 12 11 | 704 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.1− | 0.2+ |
| 2002 11 16 | 644 | 0.0 | 0.4− | 2002 12 11 | 704 | 0.1− | 0.7− | 2003 01 08 | 704 | 0.3− | 0.9+ |
| 2002 11 16 | 644 | 0.2− | 0.0 | 2002 12 11 | 704 | 0.0 | 0.9− | 2004 04 14 | 644 | 0.1+ | 0.5− |
| 2002 11 16 | 644 | 0.5− | 0.0 | 2002 12 11 | 644 | 0.1− | 0.7+ | 2004 04 14 | 644 | 0.2− | 0.1+ |
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2002 12 11 | 704 | 0.3+ | 0.1− | 2004 04 14 | 644 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.2− | 0.4+ | 2002 12 11 | 644 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.1+ | 0.5+ | 2002 12 11 | 704 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 12 02 | 704 | 0.3+ | 1.2− | 2002 12 11 | 644 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2002 12 02 | 704 | 0.8+ | 0.9− | 2002 12 27 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 12 02 | 704 | 0.2− | 0.2− | 2002 12 27 | 644 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2002 12 02 | 704 | 0.0 | 0.8− | 2002 12 27 | 644 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 699 | 0.4− | 0.3− | 2002 12 31 | 704 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 699 | 0.4+ | 0.2− | 2002 12 31 | 704 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2002 12 05 | 699 | 1.0− | 0.7+ | 2002 12 31 | 704 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2002 12 05 | 699 | 0.6− | 0.1− | 2002 12 31 | 704 | 0.0 | 0.2− | | | | |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2002 12 31 | 704 | 0.1− | 0.4− | | | | |

**2002 VT$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.65787 | | (2000.0) | | | |
| $n$ | 0.23620147 | $\omega$ | 121.16894 | | +0.98311336 | +0.03931467 |
| $a$ | 2.5918766 | $\Omega$ | 237.14855 | | −0.08959904 | +0.95498883 |
| $e$ | 0.2856131 | $i$ | 12.28339 | | +0.15956233 | +0.29402497 |
| $P$ | 4.17 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | (2.0+ | 0.9+) | 2002 11 14 | 704 | 0.2− | 0.5+ | 2006 09 28 | 703 | 0.5− | 0.5+ |
| 2002 10 31 | 699 | 0.9− | 0.2− | 2002 11 27 | 699 | (2.1+ | 0.9+) | 2006 09 28 | 703 | 0.7− | 0.9+ |
| 2002 10 31 | 699 | 0.6− | 0.6+ | 2002 11 27 | 699 | 1.3+ | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.2+ |
| 2002 10 31 | 699 | 0.0 | 0.7− | 2002 11 27 | 699 | 1.4− | 1.0− | 2006 09 28 | 703 | 0.2+ | 0.4+ |
| 2002 11 05 | 704 | 0.4− | 0.2− | 2002 11 27 | 699 | 0.5− | 0.8− | 2006 09 28 | H06 | 1.3+ | 0.8− |
| 2002 11 05 | 704 | 0.8− | 1.0− | 2002 12 05 | 704 | 0.5+ | 0.4+ | 2006 09 28 | H06 | (1.6+ | 1.9−) |
| 2002 11 05 | 704 | 0.3− | 0.2− | 2002 12 05 | 704 | 0.2− | 0.0 | 2006 09 28 | H06 | 1.3+ | 1.3− |
| 2002 11 05 | 704 | 0.1+ | 0.0 | 2002 12 05 | 704 | 0.3− | 0.3− | 2006 09 29 | H06 | 0.8+ | 0.1− |
| 2002 11 12 | 704 | 0.2+ | 0.1+ | 2002 12 05 | 704 | 0.4+ | 0.5+ | 2006 09 29 | H06 | 0.5+ | 0.2− |
| 2002 11 12 | 704 | 0.6+ | 0.5+ | 2002 12 10 | 644 | 0.3− | 0.0 | 2006 09 29 | H06 | 0.0 | 0.4− |
| 2002 11 12 | 704 | 0.6+ | 0.1− | 2002 12 10 | 644 | 0.1− | 0.0 | 2006 11 25 | 703 | 0.1+ | 1.1+ |
| 2002 11 12 | 704 | 0.7+ | 0.1− | 2002 12 10 | 644 | 0.1− | 0.1+ | 2006 11 25 | 703 | 0.3− | 0.5− |
| 2002 11 14 | 704 | 0.0 | 0.6+ | 2006 09 22 | 699 | 0.0 | 0.2+ | 2006 11 25 | 703 | 0.6− | 1.1+ |
| 2002 11 14 | 704 | 0.8+ | 0.5+ | 2006 09 22 | 699 | 1.1− | 0.5+ | 2006 11 25 | 703 | 0.8+ | 0.8− |
| 2002 11 14 | 704 | 0.7+ | 0.6+ | 2006 09 22 | 699 | 0.6− | 0.1+ | | | | |
| 2002 11 14 | 704 | 0.2+ | 0.4− | 2006 09 22 | 699 | 0.6− | 0.4− | | | | |

**2002 VE$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 324.61815 | | (2000.0) | | | |
| $n$ | 0.23938901 | $\omega$ | 128.26117 | | +0.16514215 | −0.98541741 |
| $a$ | 2.5688175 | $\Omega$ | 312.18157 | | +0.88672764 | +0.16654396 |
| $e$ | 0.2758157 | $i$ | 3.17137 | | +0.43178948 | +0.03486610 |
| $P$ | 4.12 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.1− | 0.6− | 2002 12 11 | 704 | 0.3− | 0.7+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 1.0− | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.0 | 0.4− | 2002 12 11 | 704 | (0.7− | 1.9+) | 2006 10 17 | 691 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 1.1− | 0.8− | 2002 12 13 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2002 11 12 | 704 | 0.2− | 1.0+ | 2002 12 13 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2002 11 14 | 704 | 0.2− | 0.6+ | 2002 12 13 | 704 | 0.5+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.9+ | 0.4+ | 2002 12 13 | 704 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2002 11 14 | 704 | 0.0 | 1.4− | 2002 12 27 | 644 | 0.2− | 0.4− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.0 | 0.0 | 2002 12 27 | 644 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2002 11 27 | 699 | 0.1− | 0.1+ | 2002 12 27 | 644 | 0.1+ | 0.3− | 2006 10 29 | 704 | 0.3+ | 0.4+ |
| 2002 11 27 | 699 | 0.9+ | 0.4+ | 2003 01 05 | 704 | 0.5− | 0.2− | 2006 10 29 | 704 | 1.4− | 0.2+ |
| 2002 11 27 | 699 | 1.0+ | 0.7− | 2003 01 05 | 704 | 0.3− | 0.0 | 2006 10 29 | 704 | 1.5− | 0.1− |
| 2002 11 27 | 699 | 0.2− | 0.3− | 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 12 06 | 704 | 0.5+ | 0.3+ | 2003 01 05 | 704 | 1.0+ | 1.4+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.2− | 1.0− | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.6− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.4+ | 1.3− |
| 2002 12 11 | 704 | 0.9− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 1.4− |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ | | | | |

**2002 VL$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.33147 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24161738 | $\omega$ | 192.98044 | | −0.25746688 | | −0.96270723 |
| $a$ | 2.5529987 | $\Omega$ | 271.98547 | | +0.89381476 | | −0.20459726 |
| $e$ | 0.2163270 | $i$ | 4.76964 | | +0.36715933 | | −0.17701625 |
| $P$ | 4.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.5+ | 1.0− | 2002 12 31 | 704 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2002 11 12 | 704 | 0.8− | 0.1+ | 2002 12 31 | 704 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.9− | 0.8− | 2002 12 31 | 704 | 0.1+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2002 11 12 | 704 | (0.1− | 1.7−) | 2002 12 31 | 704 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.9− |
| 2002 11 14 | 704 | (0.5− | 1.9−) | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2002 11 14 | 704 | 0.8− | 1.1+ | 2006 10 20 | A50 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2002 11 14 | 704 | (2.0− | 1.7+) | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.7− |
| 2002 11 14 | 704 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2002 11 16 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2002 11 16 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 1.1+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2002 11 16 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.2+ | 2006 11 16 | 704 | (1.7+ | 1.7+) |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.3− | 0.1− | 2006 11 16 | 704 | (0.3− | 2.6+) |
| 2002 11 24 | 644 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.3− | 0.9+ |
| 2002 11 24 | 644 | 0.6+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.9+ | 0.5− |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 1.1+ |
| 2002 12 06 | 704 | 0.5+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2002 12 06 | 704 | 1.2+ | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 12 11 | 704 | 0.6− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 12 11 | 704 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.0 |
| 2002 12 11 | 704 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 1.4− | 0.1+ |
| 2002 12 11 | 704 | 0.5− | 0.6− | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 1.2− | 0.7+ |
| 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.9+ |

**2002 VW$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.41173 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23453993 | $\omega$ | 68.91154 | | +0.88834512 | | +0.43549587 |
| $a$ | 2.6041032 | $\Omega$ | 265.02652 | | −0.45651739 | | +0.80358817 |
| $e$ | 0.0994612 | $i$ | 8.40129 | | −0.04934394 | | +0.40569619 |
| $P$ | 4.20 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.1− | 0.6+ | 2003 01 05 | 704 | 0.4− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.3− | 0.2+ | 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 1.0− | 0.5+ | 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.2− | 0.0 | 2003 01 05 | 704 | 0.9− | 1.0+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 11 12 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.5− | 0.2+ |
| 2002 11 14 | 704 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.2− | 0.2+ |
| 2002 11 14 | 704 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2002 11 14 | 704 | 0.8− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.0 | 0.7− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.5+ | 0.8− | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.1− |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.7− | 0.1− |
| 2002 12 11 | 704 | 0.6+ | 1.1+ | 2006 10 19 | 703 | 0.2+ | 0.3− | 2006 11 14 | 703 | 0.9− | 0.3+ |
| 2002 12 11 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.9− |
| 2002 12 11 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.9+ |
| 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 17 | 704 | 1.0+ | 0.5+ |
| 2002 12 31 | 704 | 0.6− | 0.3+ | 2006 10 21 | 704 | 0.3− | 0.4− | 2006 11 17 | 704 | 0.4− | 0.3+ |
| 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 10 21 | 704 | 1.0+ | 0.7+ | 2006 11 23 | 703 | 0.3+ | 1.0− |
| 2002 12 31 | 704 | 0.5+ | 0.3− | 2006 10 21 | 704 | 0.3− | 0.6+ | 2006 11 23 | 703 | 0.5+ | 0.3− |
| 2002 12 31 | 704 | 1.0+ | 0.2+ | 2006 10 21 | 704 | (1.5− | 0.5+) | 2006 11 23 | 703 | 0.4− | 0.4− |
| 2002 12 31 | 704 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.3− | 0.3+ |
| 2003 01 05 | 704 | 0.0 | 1.1− | 2006 10 22 | 644 | 0.1− | 0.1− | | | | |

**2002 VA$_{106}$ = 2006 SF$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.57841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22973611 | $\omega$ | 54.12833 | | +0.49275239 | | −0.87013247 |
| $a$ | 2.6402793 | $\Omega$ | 6.36558 | | +0.77318321 | | +0.43357638 |
| $e$ | 0.1651117 | $i$ | 4.15622 | | +0.39922776 | | +0.23426697 |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.5+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.1+ | 0.3− | 2006 09 20 | 704 | 1.0− | 0.9+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.2− | 0.5− | 2006 09 20 | 704 | 0.2− | 1.4− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 11 12 | 704 | 0.6− | 0.7− | 2006 09 20 | 704 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 11 12 | 704 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.9+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2002 11 14 | 704 | 1.1+ | 0.2+ | 2006 09 27 | 704 | 1.2+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 704 | (1.8− | 0.3−) | 2006 09 29 | 704 | 0.1+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.2− | 1.4+ | 2006 09 29 | 704 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.6− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 12 06 | 704 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 12 06 | 704 | 0.1+ | 0.9+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 1.0− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.8− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 699 | 0.8− | 0.2− | 2006 10 17 | 703 | 0.1− | 0.6− | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2006 09 18 | 699 | 0.6− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.0 |

**2002 VM$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.86972 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24159151 | $\omega$ | 349.36442 | | +0.83143435 | | −0.54514790 |
| $a$ | 2.5531810 | $\Omega$ | 44.23064 | | +0.52040869 | | +0.69635030 |
| $e$ | 0.2703071 | $i$ | 8.85536 | | +0.19465793 | | +0.46680833 |
| $P$ | 4.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.4− | 1.0+ | 2006 09 30 | 703 | 1.0− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2002 10 02 | 704 | (1.7− | 0.8+) | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2002 10 02 | 704 | 1.1− | 1.1− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.4+ | 0.4− |
| 2002 11 12 | 704 | 0.0 | 1.0+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2002 11 12 | 704 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2002 11 12 | 704 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2002 11 12 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.9+ |
| 2002 11 14 | 704 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.8+ | 0.0 |
| 2002 11 14 | 704 | 0.5− | 1.1+ | 2006 10 28 | 704 | 0.4− | 0.5+ | 2006 11 17 | 703 | 0.0 | 0.9+ |
| 2002 11 14 | 704 | 0.2+ | 0.9+ | 2006 10 28 | 704 | 0.4+ | 0.3− | 2006 11 17 | 703 | 1.2− | 0.3+ |
| 2002 11 14 | 704 | 0.1− | 0.6+ | 2006 10 28 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | (2.0− | 0.2−) |
| 2002 11 14 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 704 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2002 12 06 | 704 | 0.4− | 0.7− | 2006 10 28 | 704 | 0.3+ | 0.4− | 2006 11 18 | 704 | (1.5− | 0.0 ) |
| 2002 12 06 | 704 | 0.5+ | 0.5− | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2002 12 06 | 704 | 0.5− | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.9− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.8− |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 10 29 | 291 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.7− |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 10 29 | 291 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 2002 12 11 | 704 | 0.4− | 0.3− | 2006 10 29 | 291 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.1− | 0.4− | 2006 11 01 | 203 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.8− | 0.7+ | | |
| 2002 12 11 | 704 | 0.0 | 0.6− | 2006 11 01 | 203 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.4+ | | |
| 2002 12 13 | 704 | 0.0 | 0.6− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.3− | | |
| 2002 12 13 | 704 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.3− | | |
| 2002 12 13 | 704 | 0.3+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.1+ | | |
| 2002 12 13 | 704 | 0.5− | 0.7− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.2+ | | |
| 2002 12 13 | 704 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.4− | | |
| 2002 12 14 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.5+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.3− | | |
| 2002 12 14 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.4− | | |
| 2002 12 14 | 704 | 0.2− | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.6+ | 2006 11 29 | 704 | 0.6− | 1.1− | | |
| 2006 09 30 | 703 | 0.9+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.1− | 0.2+ | | |
| 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.2+ | | |

**2002 VR$_{106}$ = 2006 SG$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.22574 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24027283 | $\omega$ | 347.40245 | | +0.95101070 | | −0.27775836 |
| $a$ | 2.5625142 | $\Omega$ | 29.82637 | | +0.30201816 | | +0.74086451 |
| $e$ | 0.1789874 | $i$ | 15.83931 | | +0.06605822 | | +0.61153093 |
| $P$ | 4.10 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.3− | 0.3− | 2006 09 16 | 699 | 0.2− | 1.4+ | 2006 10 15 | 703 | 0.6− | 0.6+ | | |
| 2002 11 05 | 704 | 0.2− | 0.3+ | 2006 09 16 | 699 | 0.3+ | 1.1− | 2006 10 17 | G96 | 0.3+ | 0.4− | | |
| 2002 11 05 | 704 | 0.2− | 0.4+ | 2006 09 18 | 703 | 1.2+ | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.2− | | |
| 2002 11 05 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.7− | 1.3− | 2006 10 17 | G96 | 0.3+ | 0.0 | | |
| 2002 11 05 | 704 | 0.5+ | 0.3− | 2006 09 18 | 703 | 0.8− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− | | |
| 2002 11 12 | 704 | 0.5+ | 0.9+ | 2006 09 18 | 703 | 1.1− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 11 12 | 704 | 1.0− | 0.6+ | 2006 09 20 | 699 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.5+ | 0.0 | | |
| 2002 11 12 | 704 | 1.2− | 0.0 | 2006 09 20 | 699 | 1.0− | 0.8+ | 2006 10 20 | 644 | 0.5+ | 0.4+ | | |
| 2002 11 12 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 699 | (2.2+ | 0.5−) | 2006 10 21 | 703 | 0.5+ | 0.0 | | |
| 2002 11 14 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.4+ | | |
| 2002 11 14 | 704 | 0.1− | 0.4− | 2006 09 30 | 703 | 1.1+ | 0.8− | 2006 10 21 | 703 | 0.6− | 0.3− | | |
| 2002 11 14 | 704 | 0.1+ | 0.8− | 2006 09 30 | 703 | 0.4+ | 0.2− | 2006 10 21 | 703 | 0.0 | 0.7+ | | |
| 2002 11 14 | 704 | 0.4+ | 0.7− | 2006 09 30 | 703 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.6− | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 11 24 | 644 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 24 | 644 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.6− | 2006 10 27 | 691 | 0.0 | 0.0 | | |
| 2002 12 03 | 644 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.8+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2002 12 03 | 644 | 0.2+ | 0.1− | 2006 09 30 | 703 | (1.9− | 0.5−) | 2006 10 27 | 691 | 0.2− | 0.1+ | | |
| 2002 12 03 | 644 | 0.4+ | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.2− | 2006 11 10 | 691 | 0.3− | 0.2− | | |
| 2006 09 16 | 699 | 1.3+ | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2006 09 16 | 699 | 0.6+ | 0.1+ | 2006 10 15 | 703 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.1− | | |

**2002 VF$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.68501 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24022136 | $\omega$ | 180.26344 | | +0.42286009 | | −0.88051813 |
| $a$ | 2.5628802 | $\Omega$ | 244.72875 | | +0.83185024 | | +0.47092825 |
| $e$ | 0.2312908 | $i$ | 13.70115 | | +0.35946421 | | −0.05398534 |
| $P$ | 4.10 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 644 | 0.1+ | 0.3+ | 2002 12 02 | 704 | 0.4+ | 0.7− | 2006 10 19 | 703 | (0.4− | 1.7−) | | |
| 2002 11 05 | 644 | 0.3+ | 0.4+ | 2002 12 02 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 703 | 0.8+ | 0.8+ | | |
| 2002 11 05 | 644 | 0.4+ | 0.2+ | 2002 12 02 | 704 | 0.8− | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.3− | | |
| 2002 11 12 | 704 | 0.0 | 0.1− | 2002 12 02 | 704 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2002 11 12 | 704 | 0.4+ | 0.1+ | 2002 12 10 | 644 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.5− | 0.3− | | |
| 2002 11 12 | 704 | 0.5− | 0.9+ | 2002 12 10 | 644 | 0.6+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2002 11 12 | 704 | 1.0− | 0.5− | 2002 12 10 | 644 | 0.3+ | 0.7+ | 2006 11 15 | 703 | 0.3− | 0.5− | | |
| 2002 11 14 | 704 | 0.3+ | 1.5− | 2006 10 12 | 644 | 0.3+ | 0.2− | 2006 11 15 | 703 | 1.2− | 0.8− | | |
| 2002 11 14 | 704 | 1.0− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.5− | | |
| 2002 11 14 | 704 | (2.1− | 0.3−) | 2006 10 12 | 644 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.3+ | 1.2+ | | |
| 2002 11 14 | 704 | (1.8− | 1.2−) | 2006 10 19 | 703 | 0.2+ | 0.2+ | | | | | | |

**2002 VM$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.55481 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23619987 | $\omega$ | 128.37186 | | +0.90319806 | | −0.41447659 |
| $a$ | 2.5918883 | $\Omega$ | 256.36577 | | +0.34925859 | | +0.86074278 |
| $e$ | 0.1977872 | $i$ | 6.59094 | | +0.24950290 | | +0.29551821 |
| $P$ | 4.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.4+ | 0.9− | 2002 12 06 | 704 | 0.9− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 11 12 | 704 | 0.1− | 1.0− | 2002 12 06 | 704 | 0.9− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 11 12 | 704 | 0.0 | 0.5− | 2002 12 06 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.4+ | | |
| 2002 11 12 | 704 | 0.1+ | 0.3− | 2002 12 06 | 704 | 0.8− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.5− | | |
| 2002 11 14 | 704 | 0.4+ | 1.1+ | 2002 12 06 | 704 | 0.3+ | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.7− | | |
| 2002 11 14 | 704 | 1.2+ | 0.4+ | 2002 12 28 | 291 | 0.8− | 0.1− | 2006 10 17 | 703 | 0.9+ | 0.5− | | |
| 2002 11 14 | 704 | 0.4+ | 0.9+ | 2002 12 28 | 291 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2002 11 14 | 704 | 0.2− | 1.4+ | 2002 12 28 | 291 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.1− | 0.5− | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2002 11 24 | 644 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2002 11 24 | 644 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.4− | 0.1+ | | | | | | |

**2002 VS$_{107}$ = 2006 RA$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.48600 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23437654 | $\omega$ | 45.61977 | | +0.33856089 | | −0.94035424 |
| $a$ | 2.6053133 | $\Omega$ | 24.64903 | | +0.83899291 | | +0.28565528 |
| $e$ | 0.2660863 | $i$ | 4.58284 | | +0.42598994 | | +0.18475652 |
| $P$ | 4.21 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.5− | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.7− | 2006 10 16 | G96 | 0.0 | 0.0 | | |
| 2002 11 12 | 704 | 0.7− | 1.3− | 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.1− | | |
| 2002 11 12 | 704 | 0.5− | 0.3+ | 2006 09 14 | 703 | 1.0− | 0.7− | 2006 10 17 | 703 | (1.0− | 2.1−) | | |
| 2002 11 12 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 1.3− | 0.6+ | 2006 10 17 | 703 | 0.5+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.6+ | 1.2− | 2006 09 14 | 703 | (2.9− | 3.1−) | 2006 10 17 | 703 | 0.1− | 0.7− | | |
| 2002 11 14 | 704 | 0.3+ | 0.6− | 2006 09 14 | 703 | (1.0− | 1.5−) | 2006 10 17 | 703 | 0.8− | 0.4+ | | |
| 2002 11 14 | 704 | 1.3+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2002 11 14 | 704 | 0.1− | 0.9− | 2006 09 18 | 691 | 0.9+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.1+ | | |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 11 24 | 644 | 0.0 | 0.5+ | 2006 09 18 | 699 | (3.8− | 0.2−) | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2002 11 24 | 644 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.7− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.5− | | |
| 2002 11 27 | 699 | 0.7+ | 0.4+ | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.3+ | | |
| 2002 11 27 | 699 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.8− | 0.9− | 2006 10 27 | G96 | 0.2+ | 0.1− | | |
| 2002 11 27 | 699 | 0.3− | 1.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.1+ | | |
| 2002 11 27 | 699 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.0 | | |
| 2002 12 05 | 699 | 0.7+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.1− | | |
| 2002 12 05 | 699 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 02 | G96 | 0.1+ | 0.2+ | | |
| 2002 12 05 | 699 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.6− | | |
| 2002 12 05 | 699 | 0.4− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.7− | | |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.1− | | |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 10 01 | 704 | (1.8+ | 0.2−) | 2006 11 13 | G96 | 0.5+ | 0.1+ | | |
| 2002 12 06 | 704 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.0 | | |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.9+ | 0.6− | 2006 11 15 | G96 | 0.5+ | 0.3− | | |
| 2002 12 11 | 704 | 1.0− | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1− | | |
| 2002 12 11 | 704 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.0 | | |
| 2002 12 11 | 704 | 1.3− | 0.7+ | 2006 10 16 | G96 | 0.0 | 0.0 | | | | | | |

**2002 VA$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.62865 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22637008 | $\omega$ | 139.10166 | | +0.86138599 | | −0.44831247 |
| $a$ | 2.6663881 | $\Omega$ | 249.04840 | | +0.37339645 | | +0.87759892 |
| $e$ | 0.1768782 | $i$ | 14.81608 | | +0.34436793 | | +0.16981185 |
| $P$ | 4.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 1.0− | 0.1− | 2002 12 05 | 704 | 0.4+ | 0.0 | 2003 01 08 | 704 | 0.3− | 0.7+ |
| 2002 11 12 | 704 | 1.0− | 0.4− | 2002 12 08 | 291 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.5+ |
| 2002 11 12 | 704 | 0.4+ | 0.4+ | 2002 12 08 | 291 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.5+ |
| 2002 11 12 | 704 | 1.0− | 0.6− | 2002 12 08 | 291 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.2+ |
| 2002 11 14 | 704 | 0.2+ | 0.2+ | 2002 12 10 | 704 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.1− |
| 2002 11 14 | 704 | 0.0 | 0.4− | 2002 12 10 | 704 | 0.0 | 0.3− | 2006 09 22 | 699 | 0.1+ | 0.5+ |
| 2002 11 14 | 704 | 0.6+ | 0.4− | 2002 12 10 | 704 | 0.0 | 0.4+ | 2006 09 22 | 699 | 0.3+ | 0.8− |
| 2002 11 14 | 704 | 0.0 | 0.5− | 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 09 22 | 699 | 0.6− | 0.7− |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2002 12 11 | 049 | 0.1+ | 0.8− | 2006 09 22 | 699 | 0.3+ | 0.3− |
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2002 12 11 | 049 | 0.1− | 0.6− | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2002 12 11 | 049 | 0.3+ | 1.3− | 2006 09 28 | 703 | 0.1− | 0.1− |
| 2002 11 28 | 699 | 0.6+ | 0.1+ | 2002 12 27 | 644 | 0.0 | 0.5− | 2006 09 28 | 703 | 0.3− | 0.4− |
| 2002 11 28 | 699 | 0.6+ | 0.3+ | 2002 12 27 | 644 | 0.3+ | 0.8− | 2006 09 28 | 703 | 0.1− | 0.9− |
| 2002 11 28 | 699 | 0.3+ | 0.4+ | 2002 12 27 | 644 | 0.1+ | 0.3− | 2006 10 16 | 106 | 0.0 | 0.1+ |
| 2002 11 28 | 699 | 0.6+ | 0.7+ | 2002 12 31 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 106 | 0.8+ | 0.0 |
| 2002 12 02 | 704 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.2− | 0.2+ | 2006 10 16 | 106 | 0.2− | 0.1+ |
| 2002 12 02 | 704 | 0.4− | 0.3+ | 2002 12 31 | 704 | 0.5− | 0.3− | 2006 10 16 | 106 | 0.5− | 0.2+ |
| 2002 12 02 | 704 | 0.3+ | 1.1+ | 2002 12 31 | 704 | 0.1− | 0.1− | 2006 10 20 | 703 | (0.2+ | 1.7−) |
| 2002 12 03 | 608 | 0.1− | 0.3− | 2003 01 04 | 704 | 0.1− | 0.7− | 2006 10 20 | 703 | (1.7+ | 1.4+) |
| 2002 12 03 | 608 | 0.2+ | 1.0− | 2003 01 04 | 704 | 0.2− | 0.3+ | 2006 10 20 | 703 | 0.3− | 0.9+ |
| 2002 12 03 | 608 | 0.3+ | 0.8− | 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 10 20 | 703 | 0.2+ | 0.6+ |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2003 01 04 | 704 | 0.8− | 0.1− | 2006 11 14 | 703 | 1.3− | 0.5+ |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2003 01 04 | 704 | 0.1+ | 0.6− | 2006 11 14 | 703 | 0.6− | 0.7− |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2003 01 08 | 704 | (2.5− | 1.2+) | 2006 11 14 | 703 | 1.9+ | 1.8− |
| 2002 12 05 | 704 | 0.4+ | 0.7+ | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.5+ | 1.1+ |

**2002 VZ**$_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.27029 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23542694 | $\omega$ | 79.01131 | | +0.46706690 | | −0.88412410 |
| $a$ | 2.5975581 | $\Omega$ | 343.12564 | | +0.79253177 | | +0.42518560 |
| $e$ | 0.1519307 | $i$ | 2.59777 | | +0.39209936 | | +0.19375702 |
| $P$ | 4.19 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.6+ | 0.2+ | 2002 12 15 | 704 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 1998 12 17 | 704 | 0.3− | 0.1− | 2002 12 15 | 704 | 0.2− | 0.4− | 2006 10 29 | 704 | 0.2− | 1.0+ |
| 1998 12 17 | 704 | 0.9− | 0.5+ | 2002 12 15 | 704 | 1.4− | 0.8− | 2006 10 29 | 704 | 0.2+ | 0.4+ |
| 1998 12 17 | 704 | 0.9+ | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.2− | 1.0+ |
| 2002 11 12 | 704 | 0.2− | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.3+ | 0.3+ |
| 2002 11 12 | 704 | 0.1− | 0.5− | 2003 01 05 | 704 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 11 12 | 704 | 0.0 | 0.5− | 2003 01 05 | 704 | 0.2+ | 0.8+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2003 01 05 | 704 | 0.8− | 0.9+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2002 11 14 | 704 | 0.8+ | 0.4− | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2002 11 14 | 704 | 0.9+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2002 11 14 | 704 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 12 03 | 644 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 12 03 | 644 | 0.3− | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 12 03 | 644 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 12 06 | 704 | 0.4+ | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.6− | 2006 11 19 | 704 | 0.8+ | 0.9− |
| 2002 12 06 | 704 | 0.6− | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.7− |
| 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.3− |
| 2002 12 06 | 704 | 0.0 | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.6− |
| 2002 12 06 | 704 | 0.2− | 1.1+ | 2006 10 15 | 691 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.9− |
| 2002 12 11 | 704 | 0.7+ | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2002 12 11 | 704 | 0.3+ | 0.4− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 1.0+ | 0.5− |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.3− | 2006 11 22 | 704 | 1.4+ | 0.4− |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.0− | 0.9+ |
| 2002 12 11 | 704 | 0.2− | 0.5− | 2006 10 19 | 644 | 0.2− | 0.9− | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.8+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 22 | 104 | 0.3+ | 0.5− |
| 2002 12 14 | 704 | 0.2+ | 0.4− | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 22 | 104 | 0.3− | 0.7+ |
| 2002 12 14 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 22 | 104 | 0.3+ | 0.0 |
| 2002 12 14 | 704 | 0.4− | 0.6− | 2006 10 21 | 644 | 0.3− | 0.1+ | | | | |
| 2002 12 14 | 704 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.2− | 0.1− | | | | |

**2002 VB**$_{109}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.06534 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26256094 | $\omega$ | 272.78420 | | −0.92797270 | | −0.18842869 |
| $a$ | 2.4153643 | $\Omega$ | 256.50964 | | +0.28977881 | | −0.90731477 |
| $e$ | 0.2731654 | $i$ | 19.30645 | | −0.23429664 | | −0.37586505 |
| $P$ | 3.75 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.5− | 0.5− | 2002 12 05 | 704 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.0 | 0.7− |
| 2002 11 12 | 704 | 0.7+ | 0.2− | 2002 12 10 | 704 | 0.2+ | 0.7+ | 2003 01 08 | 704 | 0.5− | 0.3− |
| 2002 11 12 | 704 | 0.4− | 0.4− | 2002 12 10 | 704 | 0.1− | 0.2− | 2003 01 19 | 644 | 0.5+ | 0.2+ |
| 2002 11 12 | 704 | 0.3+ | 0.1+ | 2002 12 10 | 704 | 0.2− | 0.2− | 2003 01 19 | 644 | 0.8+ | 0.2+ |
| 2002 11 12 | 704 | 0.9+ | 0.6− | 2002 12 10 | 704 | 0.2− | 0.1− | 2003 01 19 | 644 | 0.3+ | 0.4+ |
| 2002 11 14 | 704 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.5+ | 0.1+ | 2003 01 27 | 704 | (0.3+ | 1.6−) |
| 2002 11 14 | 704 | 0.1+ | 0.5− | 2002 12 10 | 704 | 0.6− | 0.1− | 2003 01 27 | 704 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.2+ | 0.1+ | 2002 12 10 | 704 | 0.1− | 0.3− | 2003 01 27 | 704 | 0.5+ | 0.6+ |
| 2002 11 14 | 704 | 0.3− | 0.1− | 2002 12 10 | 704 | 0.4− | 0.3+ | 2003 01 27 | 704 | 0.1+ | 0.2− |
| 2002 11 15 | 704 | 0.4− | 0.9− | 2002 12 10 | 704 | 0.1− | 0.4− | 2003 01 27 | 644 | 0.2+ | 0.1+ |
| 2002 11 15 | 704 | 1.5− | 0.2+ | 2002 12 10 | 704 | 0.8− | 0.7+ | 2003 01 27 | 644 | 0.2+ | 0.2+ |
| 2002 11 15 | 704 | 1.1+ | 1.3+ | 2002 12 11 | 704 | 0.0 | 0.4− | 2003 01 27 | 644 | 0.0 | 0.4+ |
| 2002 11 15 | 704 | 0.7+ | 1.5+ | 2002 12 11 | 704 | 0.6+ | 0.2+ | 2006 09 24 | 691 | 0.5− | 0.2+ |
| 2002 11 28 | 599 | 0.1+ | 0.2+ | 2002 12 11 | 704 | 0.6+ | 0.0 | 2006 09 24 | 691 | 0.2− | 0.1+ |
| 2002 11 28 | 599 | 0.4+ | 0.1+ | 2002 12 11 | 704 | 0.6+ | 0.6+ | 2006 09 24 | 691 | 0.2− | 0.2− |
| 2002 11 28 | 599 | 0.1+ | 0.5− | 2002 12 11 | 704 | 0.9+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2002 11 28 | 599 | 0.4+ | 0.2− | 2003 01 07 | 704 | 0.7− | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.1+ |
| 2002 11 28 | 599 | 0.2+ | 0.3+ | 2003 01 07 | 704 | 0.6− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 2002 11 28 | 599 | 0.3− | 0.1+ | 2003 01 07 | 704 | 0.2− | 0.3− | 2006 11 05 | 644 | 0.4− | 0.4− |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2003 01 08 | 704 | 1.3− | 0.6+ | 2006 11 05 | 644 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.6− | 0.5− | 2003 01 08 | 704 | 0.5− | 0.2− | 2006 11 05 | 644 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.6− | | | | |

**2002 VJ**$_{109}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.47375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24106531 | $\omega$ | 68.25051 | | −0.75285941 | | −0.62531977 |
| $a$ | 2.5568950 | $\Omega$ | 72.43223 | | +0.49570139 | | −0.74397068 |
| $e$ | 0.2122771 | $i$ | 12.44015 | | +0.43299288 | | −0.23554791 |
| $P$ | 4.09 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.8+ | 0.3− | 2002 12 14 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.3+ | 0.9+ | 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 11 06 | 704 | 0.2+ | 0.8+ | 2002 12 14 | 704 | 0.1+ | 0.3− | 2006 11 16 | 704 | 1.5+ | 1.2+ |
| 2002 11 06 | 704 | 0.0 | 0.5+ | 2002 12 14 | 704 | 0.0 | 0.1− | 2006 11 16 | 704 | 1.0+ | 1.4+ |
| 2002 11 12 | 704 | 0.4+ | 0.2− | 2002 12 14 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 2002 11 12 | 704 | 0.3− | 0.1+ | 2002 12 15 | 704 | (1.7− | 0.9+) | 2006 11 16 | 704 | 1.2+ | 0.4+ |
| 2002 11 12 | 704 | 0.9+ | 0.5− | 2002 12 15 | 704 | 0.3− | 0.2+ | 2006 11 16 | 704 | 1.0+ | 0.7+ |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2002 12 15 | 704 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2002 11 14 | 704 | 0.8− | 0.5+ | 2002 12 15 | 704 | 0.3− | 0.8+ | 2006 11 18 | 704 | 1.0+ | 0.3− |
| 2002 11 14 | 704 | 1.0− | 0.0 | 2002 12 15 | 704 | 0.2− | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.9+ |
| 2002 11 14 | 704 | 0.4+ | 0.1− | 2003 01 04 | 704 | 0.3− | 0.4− | 2006 11 18 | 704 | 1.0+ | 0.3+ |
| 2002 11 14 | 704 | 0.4+ | 0.2− | 2003 01 04 | 704 | 0.7− | 0.5− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.3− | 2003 01 04 | 704 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.5− |
| 2002 12 06 | 704 | 0.2− | 0.2− | 2003 01 04 | 704 | 1.0− | 0.7− | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.4− | 0.5− | 2003 01 04 | 704 | 0.4− | 0.3− | 2006 11 21 | 704 | 1.1+ | 1.4+ |
| 2002 12 06 | 704 | 0.8+ | 0.4+ | 2003 01 31 | 704 | 0.6+ | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.4− | 0.8− | 2003 01 31 | 704 | 0.8+ | 0.3+ | 2006 11 24 | 691 | 0.6− | 0.5− |
| 2002 12 11 | 704 | 0.5− | 0.6− | 2003 01 31 | 704 | 0.8+ | 0.8+ | 2006 11 24 | 691 | 0.6− | 0.6− |
| 2002 12 11 | 704 | 0.4− | 0.8− | 2003 01 31 | 704 | 1.2+ | 0.9+ | 2006 11 24 | 691 | 0.8− | 0.6− |
| 2002 12 11 | 704 | 0.5− | 0.5− | 2003 01 31 | 704 | 0.5+ | 0.9+ | | | | |
| 2002 12 11 | 704 | 0.4− | 0.6− | 2006 11 10 | 691 | 0.0 | 0.0 | | | | |

**2002 VV$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.98374 | | (2000.0) | | | |
| $n$ | 0.23916848 | $\omega$ | 109.05034 | | +0.78708112 | −0.61383755 |
| $a$ | 2.5703963 | $\Omega$ | 288.86362 | | +0.53900030 | +0.73238708 |
| $e$ | 0.2251836 | $i$ | 3.68889 | | +0.29996997 | +0.29463982 |
| $P$ | 4.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.6+ | 0.7− | 2003 01 05 | 704 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 2002 11 12 | 704 | 0.5− | 0.2− | 2003 01 05 | 704 | 0.4+ | 0.8− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.3+ | 0.7+ | 2003 01 05 | 704 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 11 12 | 704 | 0.9+ | 0.3+ | 2003 01 05 | 704 | 0.2− | 0.8− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 0.7− | 1.1+ | 2003 01 05 | 704 | 0.8− | 0.6− | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 0.8− | 0.9− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | 0.4− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.7− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 12 06 | 704 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 12 06 | 704 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.4+ | 0.1− |
| 2002 12 10 | 644 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.3− |
| 2002 12 10 | 644 | 0.1+ | 0.3− | 2006 10 21 | 704 | 0.7− | 0.2+ | 2006 11 16 | 704 | 1.2+ | 0.1− |
| 2002 12 10 | 644 | 0.3+ | 0.7− | 2006 10 21 | 704 | 1.3− | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.8+ |
| 2002 12 10 | 644 | 0.3+ | 0.1− | 2006 10 21 | 704 | 1.2+ | 0.6+ | 2006 11 16 | 704 | 0.7+ | 0.1+ |
| 2002 12 10 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 704 | (1.8+ | 1.3+) | 2006 11 17 | 704 | 0.6+ | 0.3+ |
| 2002 12 10 | 644 | 0.5+ | 0.4− | 2006 10 27 | 703 | 0.4− | 0.6+ | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.6− | 2006 11 17 | 704 | 0.9+ | 0.2− |
| 2002 12 11 | 704 | 0.2+ | 0.7− | 2006 10 27 | 703 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.7+ | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.8− | 0.1+ | 2006 11 17 | 704 | 0.2− | 1.0+ |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.8− | 0.2− |
| 2002 12 11 | 704 | 0.7+ | 0.4+ | 2006 10 29 | 704 | 1.1+ | 0.5− | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2002 12 14 | 704 | 0.4+ | 0.3+ | 2006 10 29 | 704 | 1.2+ | 0.1− | 2006 11 19 | 704 | 0.9− | 0.4+ |
| 2002 12 14 | 704 | 0.3− | 1.1+ | 2006 10 29 | 704 | 0.9+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 12 14 | 704 | 0.1− | 1.2+ | 2006 10 29 | 704 | 1.0− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2002 12 14 | 704 | 0.9− | 1.1+ | 2006 11 02 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2002 12 14 | 704 | 0.1+ | 0.7+ | 2006 11 02 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.0 | 1.5− |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2006 11 02 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.2+ | 0.7− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | (3.8− | 0.7−) |
| 2002 12 31 | 704 | 0.8− | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.0 | | | | |

**2002 VB$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.10687 | | (2000.0) | | | |
| $n$ | 0.25168546 | $\omega$ | 53.32135 | | +0.92874996 | −0.37001281 |
| $a$ | 2.4844521 | $\Omega$ | 328.37700 | | +0.32483069 | +0.84176161 |
| $e$ | 0.2270750 | $i$ | 2.47830 | | +0.17862963 | +0.39310040 |
| $P$ | 3.92 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.7+ | 0.1− | 2002 12 06 | 704 | 0.3+ | 0.0 | 2003 01 05 | 704 | 0.8+ | 0.5− |
| 2002 11 12 | 704 | 0.6− | 0.1+ | 2002 12 11 | 704 | 0.2− | 0.6+ | 2003 01 05 | 704 | 0.5− | 0.4+ |
| 2002 11 12 | 704 | 0.1+ | 0.8+ | 2002 12 11 | 704 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.3− | 0.9− |
| 2002 11 14 | 704 | 0.8− | 0.3− | 2002 12 11 | 704 | 0.2+ | 0.4− | 2003 01 05 | 704 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.4+ | 0.4− | 2002 12 11 | 704 | 0.5− | 0.8− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.1− | 0.3− | 2002 12 11 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2002 12 14 | 704 | 0.5+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.4+ | 0.6− | 2002 12 14 | 704 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.7+ | 0.3− | 2002 12 14 | 704 | 0.4− | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.2+ | 0.4− | 2002 12 14 | 704 | 0.7− | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.1+ |

**2002 VC$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 285.66769 | | (2000.0) | | | |
| $n$ | 0.22308402 | $\omega$ | 177.42788 | | +0.19565403 | −0.96376037 |
| $a$ | 2.6925084 | $\Omega$ | 261.24519 | | +0.89644283 | +0.25074268 |
| $e$ | 0.0869246 | $i$ | 10.57260 | | +0.39763017 | −0.09107174 |
| $P$ | 4.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | (1.5− | 2.5−) | 2002 11 14 | 704 | 0.2+ | 0.1− | 2002 12 11 | 704 | 0.6− | 0.1− |
| 1998 12 15 | 704 | (0.8− | 2.3−) | 2002 11 14 | 644 | 0.9+ | 0.5− | 2002 12 31 | 704 | 0.4− | 0.2+ |
| 1998 12 15 | 704 | 0.2− | 0.7− | 2002 11 14 | 704 | 0.5+ | 1.0+ | 2002 12 31 | 704 | 0.1+ | 0.1+ |
| 1998 12 15 | 704 | (6.5− | 0.5−) | 2002 11 24 | 644 | 0.2− | 0.4− | 2002 12 31 | 704 | (0.3− | 1.6−) |
| 2002 10 05 | 704 | 0.2− | 0.4+ | 2002 11 24 | 644 | 0.1− | 0.3− | 2004 03 27 | 699 | 0.3− | 0.6− |
| 2002 10 05 | 704 | (2.0+ | 0.9+) | 2002 11 24 | 644 | 0.2− | 0.3− | 2004 03 27 | 699 | 0.7+ | 1.2+ |
| 2002 10 05 | 704 | 0.1− | 0.5+ | 2002 12 02 | 704 | 0.8− | 0.4+ | 2004 03 27 | 699 | 1.2+ | 0.7+ |
| 2002 10 05 | 704 | 0.4+ | 0.7+ | 2002 12 02 | 704 | 0.5− | 0.3+ | 2004 03 27 | 699 | 1.2− | 0.5− |
| 2002 10 05 | 704 | 0.0 | 0.2− | 2002 12 02 | 704 | 0.8− | 0.8+ | 2006 09 14 | 703 | 0.1− | 1.4− |
| 2002 11 06 | 704 | 0.2− | 0.7+ | 2002 12 02 | 704 | 1.1− | 0.5+ | 2006 09 14 | 703 | 0.9+ | 0.6− |
| 2002 11 06 | 704 | 0.5− | 0.7+ | 2002 12 02 | 704 | 1.3− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.0 |
| 2002 11 06 | 699 | 0.9+ | 0.2+ | 2002 12 05 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.6+ |
| 2002 11 06 | 704 | 0.0 | 0.5− | 2002 12 05 | 704 | 0.9− | 1.2+ | 2006 09 27 | 703 | 0.3− | 0.5+ |
| 2002 11 06 | 699 | 0.5+ | 0.3− | 2002 12 05 | 704 | 0.4− | 0.6− | 2006 09 27 | 703 | 0.2− | 0.6− |
| 2002 11 06 | 704 | 0.1+ | 0.4− | 2002 12 05 | 704 | 0.6+ | 0.9+ | 2006 09 27 | 703 | 1.2− | 0.3− |
| 2002 11 06 | 699 | (1.6+ | 0.2+) | 2002 12 06 | 704 | 0.4+ | 0.3− | 2006 09 27 | 703 | (2.2− | 0.5+) |
| 2002 11 06 | 699 | 1.2+ | 0.8− | 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 2002 11 13 | 644 | 0.1− | 0.2− | 2002 12 06 | 704 | 0.8+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2002 11 13 | 644 | 0.2+ | 0.5− | 2002 12 06 | 704 | 0.9+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2002 11 13 | 644 | 0.0 | 0.3− | 2002 12 11 | 644 | 0.4− | 0.3− | 2006 10 17 | 703 | (3.6+ | 0.0 ) |
| 2002 11 14 | 704 | 0.1+ | 0.6+ | 2002 12 11 | 644 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.8− | 0.7+ |
| 2002 11 14 | 644 | 0.3+ | 0.6− | 2002 12 11 | 644 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.7+ | 0.1+ | 2002 12 11 | 704 | 0.4− | 0.9− | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2002 11 14 | 644 | 0.1+ | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.5− | | | | |

**2002 VF$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.37968 | | (2000.0) | | | |
| $n$ | 0.24275239 | $\omega$ | 177.67771 | | +0.31679602 | −0.94807443 |
| $a$ | 2.5450347 | $\Omega$ | 253.85201 | | +0.86975209 | +0.30222798 |
| $e$ | 0.2914791 | $i$ | 1.68225 | | +0.37838021 | +0.09906118 |
| $P$ | 4.06 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.2+ | 0.1+ | 2002 12 27 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2002 12 27 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2002 11 13 | 644 | 0.6+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.9− | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 1.2− | 0.4− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 11 14 | 704 | 0.9− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2002 11 23 | 644 | 0.5+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2002 11 23 | 644 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.2+ |
| 2002 11 23 | 644 | 0.5+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 1.3− | 0.5+ |
| 2002 12 02 | 704 | 0.6+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2002 12 02 | 704 | 1.1+ | 0.1− | 2006 10 23 | H07 | 0.3+ | 0.6+ | 2006 11 21 | 704 | 0.6+ | 0.3− |
| 2002 12 02 | 704 | 0.3− | 0.3− | 2006 10 23 | H07 | 0.6+ | 0.4+ | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2006 10 23 | H07 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2006 10 23 | H07 | 0.4− | 0.5− | 2006 11 22 | 104 | 0.1− | 0.6− |
| 2002 12 05 | 704 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 22 | 104 | 0.6+ | 0.2+ |
| 2002 12 05 | 704 | 0.1− | 0.5− | 2006 10 28 | 691 | 0.9− | 0.7− | 2006 11 22 | 104 | (3.7− | 1.9−) |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.5− |
| 2002 12 10 | 704 | 0.6− | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2002 12 10 | 704 | 1.3− | 1.3+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.6− |
| 2002 12 10 | 704 | 1.2− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2002 12 10 | 704 | 1.0+ | 1.0+ | 2006 11 08 | 644 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.7− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 644 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.9− |
| 2002 12 11 | 644 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.6+ | 2006 11 29 | 704 | 1.3+ | 1.0− |
| 2002 12 27 | 644 | 0.5+ | 0.4+ | 2006 11 11 | 703 | (0.6+ | 1.8+) | | | | |

**2002 VK$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.20148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23521618 | $\omega$ | 350.37217 | | +0.46521721 | | −0.88126384 |
| $a$ | 2.5991095 | $\Omega$ | 71.86390 | | +0.81787528 | | +0.39190935 |
| $e$ | 0.1553105 | $i$ | 5.03164 | | +0.33860444 | | +0.26416114 |
| $P$ | 4.19 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 1.1+ | 0.3+ | 2002 12 27 | 644 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 11 06 | 704 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.4− | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.8− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 11 06 | 704 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 13 | 644 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 1.0+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 11 13 | 644 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 11 14 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.6+ | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2002 11 14 | 704 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2002 11 14 | 704 | 0.6− | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 0.6− | 0.2− | 2006 10 01 | 704 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 2002 11 23 | 644 | 0.6− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.6− |
| 2002 11 23 | 644 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 2002 12 02 | 704 | 1.0+ | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 27 | 704 | 0.7+ | 1.4+ |
| 2002 12 02 | 704 | 0.5− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 27 | 704 | 0.1+ | 1.3+ |
| 2002 12 02 | 704 | 0.9+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 27 | 704 | 0.8− | 0.2+ |
| 2002 12 02 | 704 | 0.9+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2002 12 02 | 704 | 1.0+ | 0.7+ | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.5− | 2006 11 07 | 644 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.8− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.1− | 0.5− |
| 2002 12 05 | 704 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.4− | 0.4− |
| 2002 12 10 | 704 | 1.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2002 12 10 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.8+ | 2006 11 17 | 704 | 0.4− | 0.5+ |
| 2002 12 10 | 704 | (1.3+ | 1.9−) | 2006 10 16 | 703 | 0.5+ | 0.6+ | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2002 12 27 | 644 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.8+ | | | | |
| 2002 12 27 | 644 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 | | | | |

**2002 VA$_{114}$ = 2006 UT$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.74212 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23896804 | $\omega$ | 150.09961 | | +0.92445784 | | −0.34654864 |
| $a$ | 2.5718334 | $\Omega$ | 231.04910 | | +0.29655053 | | +0.91562737 |
| $e$ | 0.2432257 | $i$ | 11.79765 | | +0.23965702 | | +0.20379049 |
| $P$ | 4.12 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.6+ | 0.2+ | 2006 10 19 | A50 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2002 11 13 | 644 | 0.3+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 11 07 | 644 | 0.5− | 0.0 |
| 2002 11 13 | 644 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 14 | 703 | 1.3− | 0.4− |
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.4− | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.5+ | 0.4− | 2006 11 14 | 703 | (0.3− | 1.6+) |
| 2002 11 14 | 704 | 0.7− | 1.5− | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 11 14 | 703 | 0.4+ | 0.4− |
| 2002 11 14 | 704 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2002 11 24 | 644 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2002 11 24 | 644 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.8− | 0.1+ |
| 2002 11 25 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2002 11 25 | 644 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.8− | 0.6+ |
| 2002 11 25 | 644 | 0.4+ | 0.0 | 2006 10 29 | 704 | 1.0− | 1.3+ | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2006 10 19 | 703 | 0.3− | 0.2− | 2006 10 29 | 704 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2006 10 19 | 703 | 1.1− | 0.3+ | 2006 10 29 | 704 | 0.9− | 0.5+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2006 10 19 | 703 | 0.5− | 0.6− | 2006 10 29 | 704 | (1.3− | 1.5+) | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2006 10 19 | A50 | 0.3+ | 0.4− | 2006 11 07 | 644 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ |

**2002 VG$_{114}$ = 2006 TY$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.34609 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23616399 | $\omega$ | 125.70297 | | +0.22338299 | | −0.97472110 |
| $a$ | 2.5921508 | $\Omega$ | 311.38862 | | +0.89241954 | | +0.20630764 |
| $e$ | 0.1382785 | $i$ | 0.33135 | | +0.39202986 | | +0.08576679 |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2002 11 13 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 11 13 | 644 | 0.3+ | 1.3− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.1− | 1.2+ |
| 2002 11 14 | 704 | 0.5− | 0.4− | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | (2.4− | 1.0+) |
| 2002 11 14 | 704 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 2002 11 14 | 704 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | (1.5+ | 0.9+) |
| 2002 11 27 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2002 11 27 | 699 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.4− | 0.8− |
| 2002 11 27 | 699 | 0.3− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2002 11 27 | 699 | 0.5− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2002 12 02 | 704 | 0.5+ | 1.0− | 2006 10 21 | 644 | 0.3− | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2002 12 02 | 704 | 1.2+ | 1.4− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.0 |
| 2002 12 02 | 704 | 0.5− | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | (1.7− | 0.3−) |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.7+ | 0.4− |
| 2002 12 05 | 704 | 0.8− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.7− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.6− | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 24 | 291 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.5+ | 1.0− | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 24 | 291 | 0.1+ | 0.1+ |
| 2002 12 10 | 704 | 0.8+ | 0.9+ | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 24 | 291 | 0.3+ | 0.1+ |
| 2002 12 10 | 704 | 0.7+ | 0.8+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 10 12 | 691 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.2+ | | | | |

**2002 VD$_{115}$ = 2006 SJ$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.36200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24007114 | $\omega$ | 214.16404 | | +0.99617054 | | −0.07199187 |
| $a$ | 2.5639492 | $\Omega$ | 149.84763 | | +0.08407139 | | +0.94453312 |
| $e$ | 0.2333759 | $i$ | 5.66840 | | −0.02400545 | | +0.32042839 |
| $P$ | 4.11 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 05 | 704 | 1.0− | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2002 11 05 | 704 | (1.9− | 0.8−) | 2006 09 25 | 699 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 11 11 | 704 | 1.0+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 11 11 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 11 11 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2002 11 11 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 703 | (1.7− | 0.5+) | 2006 10 22 | 704 | 0.7+ | 0.6− |
| 2002 11 14 | 644 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 1.2+ | 0.6− | 2006 10 22 | 704 | 0.3+ | 0.4+ |
| 2002 11 14 | 644 | 0.7+ | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 704 | 0.5− | 0.5− |
| 2002 11 14 | 644 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.2− | 0.8− |
| 2002 12 01 | 704 | 0.2− | 0.2− | 2006 10 01 | 704 | 1.0+ | 0.7+ | 2006 10 22 | 703 | 0.9− | 0.7− |
| 2002 12 01 | 704 | 0.5− | 0.1− | 2006 10 03 | 704 | 0.7+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.9− |
| 2002 12 01 | 704 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.8− |
| 2002 12 01 | 704 | 0.7− | 0.8+ | 2006 10 03 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 12 01 | 608 | 0.8− | 1.2− | 2006 10 03 | 704 | 0.6+ | 0.5− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2002 12 01 | 608 | 0.4− | 0.9− | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 12 01 | 608 | 0.0 | 1.4− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.4− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.3− | 0.4+ | | |
| 2005 05 10 | 691 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.3+ | | |
| 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 10 | 644 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.4+ | 1.2+ | | |
| 2006 09 18 | 703 | 1.1− | 0.7− | 2006 10 10 | 644 | 0.3− | 0.3+ | 2006 10 28 | 703 | 1.0+ | 0.3+ | | |
| 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | (0.4− | 2.0+) | | |
| 2006 09 18 | 703 | 0.8− | 1.5− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.5+ | | |
| 2006 09 18 | 699 | (0.3+ | 1.5+) | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.6+ | | |
| 2006 09 18 | 699 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 11 16 | 703 | 0.9+ | 0.8+ | | |
| 2006 09 18 | 699 | 0.7− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.1+ | 0.6+ | | |
| 2006 09 18 | 699 | 0.9− | 1.2+ | 2006 10 16 | 703 | 0.6+ | 0.8− | | | | | | |
| 2006 09 25 | 699 | 1.3+ | 1.2− | 2006 10 16 | 703 | 0.4+ | 0.5− | | | | | | |

**2002 VM$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 295.29911 | | (2000.0) | | | |
| $n$ | 0.23879990 | $\omega$ | 170.22580 | | −0.26969903 | −0.95791600 |
| $a$ | 2.5730405 | $\Omega$ | 295.36642 | | +0.87597696 | −0.20167315 |
| $e$ | 0.1558725 | $i$ | 6.24435 | | +0.39990849 | −0.20426668 |
| $P$ | 4.13 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 699 | 0.1+ | 0.4− | 2006 10 13 | 850 | 0.8+ | 0.9− | 2006 10 19 | 703 | 0.0 | 0.3− | | |
| 2002 11 11 | 699 | 0.2− | 0.0 | 2006 10 13 | 850 | (0.9+ | 2.4−) | 2006 10 19 | 703 | 0.1− | 0.3− | | |
| 2002 11 11 | 699 | 0.6+ | 0.4− | 2006 10 14 | 850 | 0.3− | 1.2− | 2006 10 19 | 703 | (0.7− | 1.8−) | | |
| 2002 11 11 | 699 | 0.2− | 0.1− | 2006 10 14 | 850 | 0.8− | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | | |
| 2002 11 14 | 644 | 0.0 | 0.2− | 2006 10 14 | 850 | 0.6− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2002 11 14 | 644 | 0.0 | 0.4− | 2006 10 14 | 850 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2002 11 14 | 644 | 0.1+ | 0.3− | 2006 10 14 | 850 | 1.0+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.5+ | | |
| 2002 11 24 | 644 | 0.1− | 0.5+ | 2006 10 14 | 850 | 0.7− | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.3− | | |
| 2002 11 24 | 644 | 0.0 | 0.7+ | 2006 10 15 | 850 | 0.3− | 0.4+ | 2006 10 27 | 703 | 0.9− | 0.6+ | | |
| 2002 11 24 | 644 | 0.2− | 0.2+ | 2006 10 15 | 850 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.5+ | 1.5+ | | |
| 2002 12 27 | 644 | 0.1− | 0.3− | 2006 10 15 | 850 | (1.6+ | 1.0−) | 2006 11 07 | 644 | 0.3− | 0.5+ | | |
| 2002 12 27 | 644 | 0.2+ | 0.0 | 2006 10 15 | 850 | 0.9+ | 0.4− | 2006 11 07 | 644 | 0.2− | 0.1− | | |
| 2002 12 27 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.6− | 2006 11 07 | 644 | 0.0 | 0.3− | | |

**2002 VG$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.95785 | | (2000.0) | | | |
| $n$ | 0.23838233 | $\omega$ | 159.04881 | | +0.60776802 | −0.74415124 |
| $a$ | 2.5760444 | $\Omega$ | 252.45242 | | +0.68095849 | +0.66798096 |
| $e$ | 0.1546005 | $i$ | 16.90352 | | +0.40855057 | −0.00635412 |
| $P$ | 4.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 1.1+ | 0.5+ | 2002 12 02 | 704 | 0.5− | 0.7− | 2002 12 31 | 704 | 0.1+ | 0.8− | | |
| 2002 11 01 | 644 | 0.9+ | 1.0+ | 2002 12 02 | 704 | 0.6− | 0.0 | 2002 12 31 | 704 | 0.6− | 1.3+ | | |
| 2002 11 01 | 644 | 1.5+ | 0.9+ | 2002 12 02 | 704 | 0.4− | 0.0 | 2002 12 31 | 704 | 0.3− | 0.2− | | |
| 2002 11 06 | 704 | 0.2− | 0.2− | 2002 12 02 | 704 | 0.1− | 0.1− | 2002 12 31 | 704 | 0.1+ | 0.2− | | |
| 2002 11 06 | 704 | 0.1− | 0.2− | 2002 12 02 | 704 | 0.9− | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.1− | | |
| 2002 11 06 | 704 | 0.4− | 0.2− | 2002 12 06 | 704 | 0.8+ | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.2− | | |
| 2002 11 06 | 704 | 0.7− | 0.2+ | 2002 12 06 | 704 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2002 12 06 | 704 | 0.5+ | 0.6− | 2006 10 23 | 703 | 0.5− | 0.3− | | |
| 2002 11 12 | 704 | 1.4− | 1.0+ | 2002 12 06 | 704 | 0.3+ | 1.2− | 2006 10 23 | 703 | 0.6+ | 0.9+ | | |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 703 | 1.0− | 0.1− | | |
| 2002 11 12 | 704 | 0.3+ | 1.3− | 2002 12 11 | 704 | 0.1− | 0.2− | 2006 10 23 | 703 | 0.4− | 0.6− | | |
| 2002 11 12 | 704 | 0.9+ | 0.0 | 2002 12 11 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1− | | |
| 2002 11 15 | 644 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2002 11 15 | 644 | 0.1− | 0.1+ | 2002 12 11 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2002 11 15 | 644 | 0.2− | 0.0 | 2002 12 11 | 644 | 0.1− | 0.3+ | | | | | | |

**2002 VS$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.77688 | | (2000.0) | | | |
| $n$ | 0.23342579 | $\omega$ | 105.43351 | | +0.69607820 | −0.70863716 |
| $a$ | 2.6123829 | $\Omega$ | 299.85742 | | +0.59712726 | +0.66061628 |
| $e$ | 0.1411613 | $i$ | 7.64405 | | +0.39864041 | +0.24782958 |
| $P$ | 4.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.6+ | 0.8+ | 2002 12 09 | 699 | 0.3− | 0.9− | 2006 09 28 | 703 | (2.7+ | 3.2−) | | |
| 2002 11 07 | 704 | 0.6− | 0.5− | 2002 12 09 | 699 | (1.1+ | 1.9−) | 2006 09 28 | 703 | 0.3− | 0.3− | | |
| 2002 11 07 | 704 | 0.3+ | 0.9+ | 2002 12 09 | 699 | (2.1− | 0.7−) | 2006 09 28 | 703 | 0.2− | 0.0 | | |
| 2002 11 07 | 704 | 0.5+ | 0.4− | 2002 12 12 | 644 | 0.4− | 0.1+ | 2006 09 28 | 703 | 0.3+ | 0.5− | | |
| 2002 11 13 | 644 | 0.5− | 0.2+ | 2002 12 12 | 644 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.4+ | | |
| 2002 11 13 | 644 | 0.5− | 0.1+ | 2002 12 12 | 644 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.6+ | 0.3+ | | |
| 2002 11 13 | 644 | 0.7− | 0.1+ | 2006 08 29 | 699 | (0.7+ | 1.8−) | 2006 10 11 | 644 | 0.6+ | 0.2+ | | |
| 2002 11 14 | 644 | 0.5+ | 0.9+ | 2006 08 29 | 699 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ | | |
| 2002 11 14 | 644 | 1.0+ | 0.9+ | 2006 08 29 | 699 | 0.9+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.4+ | | |
| 2002 11 14 | 644 | 0.6+ | 0.7+ | 2006 08 29 | 699 | 1.2+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 11 17 | 446 | 0.8− | 1.1− | 2006 09 16 | 703 | 0.8− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2002 11 17 | 446 | 0.7− | 0.5− | 2006 09 16 | 703 | 1.2− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 17 | 446 | (0.8− | 2.2−) | 2006 09 16 | 703 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.7− | 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.4− | | |
| 2002 12 05 | 704 | 0.2− | 1.2− | 2006 09 25 | 703 | 0.5+ | 1.4− | 2006 10 22 | 644 | 0.4− | 0.3+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.0 | 2006 09 25 | 703 | 0.9− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2002 12 05 | 704 | 1.0+ | 0.1− | 2006 09 25 | 703 | 0.7− | 0.5+ | | | | | | |
| 2002 12 09 | 699 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.1− | 0.3− | | | | | | |

**2002 VB$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.23467 | | (2000.0) | | | |
| $n$ | 0.22959827 | $\omega$ | 144.09417 | | +0.60533785 | −0.76899028 |
| $a$ | 2.6413360 | $\Omega$ | 267.74571 | | +0.67388658 | +0.63250577 |
| $e$ | 0.1648761 | $i$ | 11.86663 | | +0.42360709 | +0.09268442 |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.2+ | 0.5+ | 2002 11 25 | 644 | 0.4+ | 0.1− | 2006 09 21 | 699 | (1.9+ | 0.4+) | | |
| 2002 10 13 | 644 | 0.4+ | 0.6+ | 2002 11 25 | 644 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.1− | 0.3+ | | |
| 2002 10 13 | 644 | 0.2+ | 0.8+ | 2002 11 25 | 644 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.0 | 0.3− | | |
| 2002 11 05 | 678 | (0.6− | 3.7+) | 2002 12 02 | 704 | 0.5− | 0.1+ | 2006 09 21 | 699 | 0.5+ | 0.0 | | |
| 2002 11 05 | 678 | 0.2− | 0.8− | 2002 12 02 | 704 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.9− | 0.2− | | |
| 2002 11 07 | 704 | 0.8− | 0.7− | 2002 12 02 | 704 | 0.3+ | 0.1− | 2006 09 28 | 703 | 0.8+ | 0.6+ | | |
| 2002 11 07 | 704 | 0.2− | 1.0− | 2002 12 02 | 704 | 1.0− | 0.0 | 2006 09 28 | 703 | 0.5+ | 0.2− | | |
| 2002 11 07 | 704 | 0.2− | 0.1− | 2002 12 05 | 704 | (2.2− | 1.2−) | 2006 09 28 | 703 | 0.2− | 1.1− | | |
| 2002 11 13 | 644 | 0.1+ | 0.3+ | 2002 12 05 | 704 | 0.6+ | 0.3− | 2006 10 20 | 703 | 0.3− | 0.5+ | | |
| 2002 11 13 | 644 | 0.1+ | 0.1− | 2002 12 05 | 704 | 0.2− | 0.6− | 2006 10 20 | 703 | 0.5+ | 0.7+ | | |
| 2002 11 13 | 644 | 0.0 | 0.2+ | 2002 12 05 | 704 | 0.7− | 0.1+ | 2006 10 20 | 703 | 0.2− | 0.5− | | |
| 2002 11 14 | 644 | 0.0 | 0.3+ | 2002 12 12 | 644 | 0.0 | 0.2+ | 2006 10 20 | 703 | 0.5− | 0.1+ | | |
| 2002 11 14 | 644 | 0.4+ | 0.1+ | 2002 12 12 | 644 | 0.5+ | 0.1+ | | | | | | |
| 2002 11 14 | 644 | 0.0 | 0.2+ | 2002 12 12 | 644 | 0.3+ | 0.1+ | | | | | | |

**2002 VC$_{117}$ = 2006 SP$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.54456 | | (2000.0) | | | |
| $n$ | 0.22246066 | $\omega$ | 0.25894 | | +0.64687315 | +0.75501282 |
| $a$ | 2.6975359 | $\Omega$ | 310.04989 | | −0.69992136 | +0.53194781 |
| $e$ | 0.1370339 | $i$ | 8.05695 | | −0.30276265 | +0.38338905 |
| $P$ | 4.43 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1− | 0.3+ | 2006 08 29 | 699 | 0.8+ | 0.9+ | 2006 09 27 | 703 | 0.0 | 0.6− | | |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 08 29 | 699 | 1.0− | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.5− | | |
| 2002 11 13 | 644 | 0.1+ | 0.4+ | 2006 08 29 | 699 | 0.2− | 0.9− | 2006 09 29 | 699 | (0.6+ | 1.8+) | | |
| 2002 11 14 | 644 | 0.3− | 0.6+ | 2006 09 17 | 703 | 0.7− | 1.0+ | 2006 09 29 | 699 | 0.0 | 1.0+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.8− | 0.1− | 2006 10 09 | 644 | 0.4− | 0.1− |
| 2002 11 14 | 644 | 0.2+ | 0.6+ | 2006 09 17 | 703 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2002 11 25 | 644 | 0.4− | 0.4− | 2006 09 17 | 703 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.4− |
| 2002 11 25 | 644 | 0.4+ | 1.1− | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2002 11 25 | 644 | 0.0 | 0.9− | 2006 09 19 | 699 | 1.2+ | 1.2+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.5− | 0.4− | 2006 09 19 | 699 | 0.7+ | 0.2− | 2006 10 10 | 644 | 0.3− | 0.3− |
| 2006 08 29 | 703 | 0.4+ | 0.3− | 2006 09 19 | 699 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.7+ | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2006 08 29 | 703 | (1.6− | 0.8−) | 2006 09 27 | 703 | 0.1− | 1.2− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2006 08 29 | 699 | (1.7+ | 0.5−) | 2006 09 27 | 703 | 0.1− | 0.0 | | | | |

**2002 VN$_{117}$ = 2006 RH$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.95421 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22898152 | $\omega$ | 142.53772 | | +0.98096565 | +0.19332597 | |
| $a$ | 2.6460767 | $\Omega$ | 206.33266 | | −0.18660959 | +0.91263584 | |
| $e$ | 0.2358578 | $i$ | 2.35226 | | −0.05369589 | +0.36016787 | |
| $P$ | 4.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 926 | 0.0 | 0.2− | 2006 09 16 | 699 | 0.3− | 0.3− | 2006 09 27 | 704 | 0.4+ | 0.1− |
| 2002 11 14 | 926 | 0.0 | 0.1+ | 2006 09 16 | 699 | (2.1+ | 0.5−) | 2006 09 27 | 704 | 1.3+ | 0.5+ |
| 2002 11 14 | 926 | 0.0 | 0.4+ | 2006 09 16 | 699 | (0.5− | 2.2+) | 2006 09 27 | 704 | 0.2+ | 0.8+ |
| 2002 11 15 | 926 | 0.4− | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.1+ |
| 2002 11 15 | 926 | 0.2− | 0.2+ | 2006 09 17 | 704 | 1.2− | 0.5− | 2006 09 29 | 704 | 1.0− | 0.9+ |
| 2002 11 16 | 926 | 0.5− | 0.2+ | 2006 09 17 | 704 | 0.8− | 0.6− | 2006 09 29 | 704 | 0.8− | 0.4+ |
| 2002 11 16 | 926 | 0.4+ | 0.1− | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.7+ | 0.4+ |
| 2002 11 16 | 926 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.6− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 11 16 | 926 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2006 08 27 | 699 | 1.3+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2006 08 27 | 699 | 0.9+ | 0.5− | 2006 09 19 | 699 | 0.4+ | 0.3− | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2006 08 27 | 699 | 0.8− | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2006 08 27 | 699 | 0.3− | 1.2− | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.8− |
| 2006 09 12 | 703 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.7+ | 0.1− | 2006 11 11 | G96 | 0.3− | 1.0− |
| 2006 09 12 | 703 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.6+ | 0.8− |
| 2006 09 12 | 703 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.1+ | | | | |
| 2006 09 16 | 699 | 0.6+ | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.6+ | | | | |

**2002 VO$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.74948 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23696219 | $\omega$ | 108.17024 | | +0.84282694 | −0.47089230 | |
| $a$ | 2.5863265 | $\Omega$ | 280.63680 | | +0.33613343 | +0.83872014 | |
| $e$ | 0.2160537 | $i$ | 15.37517 | | +0.42030592 | +0.27351230 | |
| $P$ | 4.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 704 | 0.2− | 0.1− | 2002 12 07 | 704 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.3− |
| 2002 10 01 | 704 | 0.2− | 0.2− | 2002 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 113 | 0.3+ | 0.2+ |
| 2002 10 01 | 704 | 0.7− | 0.2+ | 2002 12 07 | 704 | 0.2+ | 0.2− | 2006 09 17 | 113 | 0.2+ | 0.1+ |
| 2002 10 13 | 644 | 0.5− | 0.1− | 2006 08 23 | A35 | 0.3+ | 0.0 | 2006 09 17 | 113 | 0.2+ | 0.6− |
| 2002 10 13 | 644 | 0.6− | 0.1− | 2006 08 23 | A35 | 0.5+ | 0.1− | 2006 09 17 | 113 | 0.3+ | 0.4+ |
| 2002 10 13 | 644 | 0.4− | 0.1− | 2006 08 24 | 704 | 0.6− | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.2− |
| 2002 10 19 | 644 | 0.2− | 0.2− | 2006 08 24 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.4− |
| 2002 10 19 | 644 | 0.4− | 0.3− | 2006 08 24 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.6+ | 0.1− |
| 2002 10 19 | 644 | 0.3− | 0.2− | 2006 08 24 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.2− |
| 2002 10 30 | 704 | 0.8+ | 0.6+ | 2006 09 13 | 628 | 0.2− | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.6+ |
| 2002 10 30 | 704 | 1.2+ | 1.2+ | 2006 09 13 | 628 | 0.1+ | 0.1− | 2006 10 20 | 703 | 0.3+ | 0.4− |
| 2002 10 30 | 704 | 1.3+ | 0.9+ | 2006 09 15 | 703 | 0.7− | 0.1− | 2006 10 20 | 703 | 0.0 | 0.3− |
| 2002 10 30 | 704 | 1.3+ | 0.5+ | 2006 09 15 | 703 | 0.7− | 0.2+ | 2006 10 20 | 703 | 0.7+ | 0.3+ |
| 2002 10 30 | 704 | 0.7+ | 0.2+ | 2006 09 15 | 703 | 0.6− | 0.2− | 2006 10 21 | 704 | 0.0 | 0.5+ |
| 2002 11 12 | 699 | 0.5− | 0.5− | 2006 09 15 | 703 | 0.3− | 0.2+ | 2006 10 21 | 704 | 0.5+ | 0.4+ |
| 2002 11 12 | 699 | 0.1− | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 21 | 704 | 1.2+ | 0.2+ |
| 2002 11 12 | 699 | 0.3+ | 0.6− | 2006 09 16 | 703 | 0.0 | 0.3− | 2006 10 21 | 704 | 0.2+ | 1.1− |
| 2002 11 12 | 699 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.9− | 0.2− |
| 2002 11 15 | 704 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.2− | 0.7+ | 2006 11 15 | 703 | 1.3− | 0.8− |
| 2002 11 15 | 704 | 0.2− | 0.8− | 2006 09 16 | 703 | 0.6− | 0.3− | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2002 11 15 | 704 | 0.6− | 0.1− | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.7− | 0.3+ |
| 2002 11 15 | 704 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.5− | 0.2+ | 2006 11 23 | 703 | 1.4+ | 0.3+ |
| 2002 11 15 | 704 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.0 | 0.1+ |
| 2002 12 07 | 704 | 0.5− | 0.9+ | 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 11 23 | 703 | 0.8+ | 0.5− |
| 2002 12 07 | 704 | 0.9− | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.6+ | 0.6− |

**2002 VS$_{118}$ = 2006 QV$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.69906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23523861 | $\omega$ | 342.86287 | | +0.99867535 | +0.03810631 | |
| $a$ | 2.5989443 | $\Omega$ | 15.07971 | | −0.01504620 | +0.85886440 | |
| $e$ | 0.1991183 | $i$ | 7.63712 | | −0.04920516 | +0.51078356 | |
| $P$ | 4.19 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.3+ | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.7− | 2006 09 20 | 699 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.4− | 0.4− |
| 2002 10 12 | 704 | (0.9+ | 1.7−) | 2006 09 20 | 699 | (2.1− | 1.3−) | 2006 10 29 | 704 | 0.7− | 0.7+ |
| 2002 11 12 | 704 | 0.0 | 0.9+ | 2006 09 20 | 699 | 1.0+ | 0.9− | 2006 10 29 | 704 | 0.5− | 0.2− |
| 2002 11 12 | 704 | 0.1− | 0.3+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.1− | 0.2+ |
| 2002 11 12 | 704 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.1− | 0.2+ |
| 2002 11 12 | 704 | 1.1+ | 0.0 | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 11 12 | 644 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2002 11 12 | 644 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 11 12 | 644 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2002 11 15 | 704 | 0.6+ | 0.7− | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 11 15 | 704 | 0.5+ | 0.5− | 2006 09 29 | 704 | (2.6+ | 2.3+) | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2002 11 15 | 704 | 0.8+ | 0.3− | 2006 09 29 | 704 | 0.3− | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2002 11 15 | 704 | 0.5+ | 0.5− | 2006 09 29 | 704 | 0.4+ | 0.9+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2002 11 15 | 704 | 0.1− | 0.9− | 2006 09 29 | 704 | 1.1+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.3− | 0.7+ | 2006 10 03 | 704 | 0.7+ | 1.1+ | 2006 11 14 | 703 | (0.5+ | 2.1−) |
| 2002 12 05 | 704 | 1.0− | 0.2+ | 2006 10 03 | 704 | 1.0− | 0.0 | 2006 11 14 | 703 | 0.5− | 1.1− |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 10 03 | 704 | 0.8− | 0.9+ | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 1.2− | 0.5+ | 2006 10 03 | 704 | 0.7+ | 0.5+ | 2006 11 14 | 703 | (0.0 | 1.8−) |
| 2005 02 14 | 809 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.7− | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 2005 02 14 | 809 | 0.0 | 0.3+ | 2006 10 03 | 691 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2005 02 14 | 809 | 0.2+ | 0.4+ | 2006 10 03 | 691 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.9+ | 1.2+ |
| 2005 02 14 | 809 | 0.4+ | 0.3+ | 2006 10 03 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.6− |
| 2006 08 21 | 704 | (0.5− | 1.9+) | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.4+ | 0.7+ |
| 2006 08 21 | 704 | (0.0 | 1.8+) | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2006 08 21 | 704 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2006 08 25 | 704 | 0.6+ | 0.1− | 2006 10 19 | 644 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 2006 08 25 | 704 | 0.0 | 0.7− | 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | 1.1− | 0.4− |
| 2006 08 25 | 704 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2006 08 25 | 704 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2006 09 17 | 704 | 0.8− | 0.7− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6− | 1.2+ |
| 2006 09 17 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2006 09 17 | 704 | 1.0− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 | | | | |

**2002 VX$_{118}$ = 2006 TH$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.54917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22229387 | $\omega$ | 0.70360 | | +0.69332712 | −0.69541515 | |
| $a$ | 2.6988850 | $\Omega$ | 45.42724 | | +0.65985641 | +0.50727965 | |
| $e$ | 0.1101451 | $i$ | 15.38001 | | +0.28963256 | +0.50898441 | |
| $P$ | 4.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.1− | 0.2+ | 2002 12 05 | 704 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 12 | 704 | 0.7− | 0.3+ | 2002 12 05 | 704 | 1.1+ | 0.7− | 2006 10 11 | 644 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 1.4− | 0.2− | 2002 12 05 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2002 11 12 | 704 | 0.1+ | 0.6+ | 2002 12 05 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.1− | 0.1+ | 2002 12 05 | 704 | 0.7− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.5− |
| 2002 11 15 | 704 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.7− | 0.5+ |
| 2002 11 15 | 704 | 0.5+ | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.5+ | 0.4− |
| 2002 11 15 | 704 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.1− | 2006 10 28 | 703 | 0.2+ | 0.4+ |
| 2002 11 15 | 704 | 0.4− | 0.8− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.8− | 0.3+ |

**2002 VF$_{120}$ = 2006 SB$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.66293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22846273 | $\omega$ | 313.19915 | | +0.98273235 | −0.05628219 | |
| $a$ | 2.6500809 | $\Omega$ | 50.82527 | | +0.14138815 | +0.84291623 | |
| $e$ | 0.2460256 | $i$ | 13.14249 | | −0.11935876 | +0.53509303 | |
| $P$ | 4.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.2+ | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2002 11 12 | 704 | 1.2+ | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | (1.8+ | 0.9+) | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2002 11 15 | 704 | (0.9+ | 2.2−) | 2006 10 22 | 704 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2002 11 15 | 704 | 0.3− | 0.2− | 2006 10 22 | 704 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | 0.5− | 0.1+ | 2006 10 22 | 704 | 1.0+ | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2002 12 05 | 704 | 0.8− | 0.7− | 2006 10 22 | 704 | 0.6+ | 1.4+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2002 12 05 | 704 | 0.3+ | 0.4+ | 2006 10 27 | 704 | 0.7+ | 0.8+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2002 12 05 | 704 | (2.8+ | 0.5−) | 2006 10 27 | 704 | 0.3+ | 1.2+ | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 10 27 | 704 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2005 05 10 | G96 | 0.2+ | 0.3+ | 2006 10 27 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.8− | 0.1− |
| 2005 05 10 | G96 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5− | 1.0+ |
| 2005 05 10 | G96 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 2006 09 29 | 699 | 0.6+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2006 09 29 | 699 | 0.3+ | 0.9− | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2006 09 29 | 699 | 0.3− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2006 09 29 | 699 | 0.4− | 1.4+ | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2006 09 30 | 703 | 0.1− | 0.5− | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 1.4+ | 0.2− |
| 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 26 | 704 | 0.5− | 0.1− |
| 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.1− | 2006 11 26 | 704 | (2.0− | 0.4+) |
| 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.1− | 0.6+ |
| 2006 10 01 | 704 | 0.9− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 26 | 704 | 0.2− | 0.7+ |
| 2006 10 01 | 704 | 1.0− | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.4− | 2006 11 26 | 704 | 0.7− | 0.2+ |
| 2006 10 01 | 704 | 1.5− | 1.0− | 2006 11 14 | 704 | 0.6+ | 0.2− | 2006 11 28 | 704 | 0.5− | 0.1+ |
| 2006 10 01 | 704 | 0.5− | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.4− | 2006 11 28 | 704 | (2.0− | 0.3−) |
| 2006 10 01 | 704 | 0.7− | 0.3− | 2006 11 14 | 704 | 1.0+ | 0.8− | 2006 11 28 | 704 | 0.2− | 0.6− |
| 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.7+ | 0.2− | 2006 11 28 | 704 | 1.0− | 0.5− |
| 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.5− | 2006 11 28 | 704 | 0.9− | 0.4− |
| 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.6− | | | | |
| 2006 10 16 | 703 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.4+ | 0.5− | | | | |

**2002 VU$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.22240 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23103678 | $\omega$ | 327.07900 | | +0.98471848 | −0.05468199 | |
| $a$ | 2.6303607 | $\Omega$ | 37.16734 | | +0.14227284 | +0.80014666 | |
| $e$ | 0.0780217 | $i$ | 15.88375 | | −0.10043881 | +0.59730662 | |
| $P$ | 4.27 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 644 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 1.0+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 11 12 | 644 | 0.5+ | 0.4− | 2006 09 30 | 703 | 0.3+ | 0.8− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2002 11 15 | 704 | 0.6+ | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2002 11 15 | 704 | 0.1+ | 0.2− | 2006 10 01 | 704 | 1.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2002 11 15 | 704 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.1− | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2002 12 03 | 644 | 0.1+ | 0.6+ | 2006 10 01 | 704 | (2.1− | 0.9+) | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2002 12 03 | 644 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.6− | 0.5− | 2006 11 11 | 703 | 0.0 | 1.0− |
| 2002 12 03 | 644 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2002 12 05 | 704 | 0.9− | 1.1+ | 2006 10 02 | G96 | 0.1+ | 0.8− | 2006 11 11 | 703 | 1.3− | 1.1− |
| 2002 12 05 | 704 | 0.6− | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.8− | 0.2− |
| 2002 12 05 | 704 | 0.0 | 1.0+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 2002 12 05 | 704 | 0.4+ | 0.8− | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2002 12 09 | 699 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2002 12 09 | 699 | 1.0− | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.5− |
| 2002 12 09 | 699 | 0.4− | 1.0− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2002 12 09 | 699 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2002 12 14 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2002 12 14 | 704 | 0.7− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.4+ | 0.0 |
| 2002 12 14 | 704 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.5+ | 0.3+ |
| 2006 09 18 | 703 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.6+ | 0.1− |
| 2006 09 18 | 703 | (1.8+ | 0.8−) | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.4− |
| 2006 09 18 | 703 | 1.1+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 2006 09 20 | 699 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2006 09 20 | 699 | 0.9− | 0.7+ | 2006 10 21 | 703 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2006 09 20 | 699 | (0.9+ | 1.9−) | 2006 10 21 | 703 | 0.5− | 0.1+ | 2006 11 27 | 703 | 0.9+ | 0.9+ |
| 2006 09 20 | 699 | 0.2− | 0.7+ | 2006 10 21 | 703 | 0.8− | 0.0 | 2006 11 27 | 703 | 0.2− | 0.1− |
| 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.8− | 0.5+ |
| 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.4− | 1.3− |
| 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.6− | 0.3− | | | | |
| 2006 09 30 | 703 | 0.5− | 0.3− | 2006 10 21 | G96 | 0.3− | 0.1− | | | | |

**2002 VV$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.56831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23422005 | $\omega$ | 153.96178 | | +0.37429356 | −0.90130915 | |
| $a$ | 2.6064736 | $\Omega$ | 273.40221 | | +0.80808827 | +0.43236737 | |
| $e$ | 0.1656754 | $i$ | 12.61717 | | +0.45486006 | −0.02646262 | |
| $P$ | 4.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | (0.5− | 2.8+) | 2002 12 05 | 704 | 0.4− | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2002 10 31 | 704 | (0.9− | 3.0+) | 2002 12 05 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.3− |
| 2002 10 31 | 704 | (0.2+ | 2.9+) | 2002 12 05 | 704 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.2− | 0.7− |
| 2002 10 31 | 704 | (0.3− | 2.8+) | 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | (0.8− | 3.0+) | 2002 12 06 | 704 | 0.3− | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2002 11 07 | 704 | 0.1− | 0.7− | 2002 12 06 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 1.2− | 0.8− | 2002 12 06 | 704 | 0.3− | 1.3+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.3− | 0.2+ | 2002 12 06 | 704 | 0.0 | 1.1+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2002 11 12 | 644 | 0.1+ | 0.8− | 2002 12 09 | 699 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2002 11 12 | 644 | 0.0 | 1.0− | 2002 12 09 | 699 | 0.8− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 11 12 | 644 | 0.5+ | 1.2− | 2002 12 09 | 699 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2002 11 15 | 704 | 1.4− | 1.1− | 2002 12 09 | 699 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 11 15 | 704 | 1.0+ | 0.1− | 2002 12 11 | 644 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 11 15 | 704 | 0.3+ | 0.5+ | 2002 12 11 | 644 | 0.1+ | 0.5− | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2002 11 15 | 704 | 0.1+ | 0.2+ | 2002 12 11 | 644 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2002 12 03 | 644 | 0.1+ | 0.0 | 2003 01 05 | 704 | 0.6− | 1.1− | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2002 12 03 | 644 | 0.2+ | 0.2+ | 2003 01 05 | 704 | 0.5+ | 0.4+ | 2006 10 27 | 703 | 0.7− | 0.4− |
| 2002 12 03 | 644 | 0.2− | 0.5+ | 2003 01 05 | 704 | 0.4+ | 0.4− | 2006 10 27 | 703 | 0.8− | 1.1+ |
| 2002 12 05 | 704 | 0.4− | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.8− | 2006 10 27 | 703 | 1.3+ | 0.1− |
| 2002 12 05 | 704 | 0.9+ | 0.2− | 2003 01 05 | 704 | 0.7+ | 0.5− | 2006 10 27 | 703 | 0.7− | 0.5− |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.4+ | 1.3+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2003 01 05 | 704 | 0.7+ | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.6+ |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2003 01 05 | 704 | 0.9− | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2003 01 05 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2003 01 05 | 704 | 0.2− | 0.7− | | | | |

**2002 VL$_{121}$ = 2006 UT$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.13811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23118396 | $\omega$ | 107.02477 | | +0.80289860 | −0.58037976 | |
| $a$ | 2.6292442 | $\Omega$ | 288.65505 | | +0.47759674 | +0.76287630 | |
| $e$ | 0.1424343 | $i$ | 8.25668 | | +0.35672845 | +0.28491943 | |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 644 | 0.6+ | 0.1+ | 2002 12 05 | 704 | 0.6− | 0.2− | 2006 09 28 | 703 | 0.9− | 0.3+ |
| 2002 11 12 | 644 | 0.7+ | 0.0 | 2002 12 09 | 699 | 0.2− | 0.7+ | 2006 09 28 | 703 | 0.5− | 0.1− |
| 2002 11 12 | 644 | 0.2+ | 0.2− | 2002 12 09 | 699 | 0.4+ | 0.3+ | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2002 11 15 | 704 | 0.5− | 0.0 | 2002 12 09 | 699 | 0.7+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.1+ |
| 2002 11 15 | 704 | 1.0− | 0.1+ | 2002 12 09 | 699 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.7+ | 1.5+ |
| 2002 11 15 | 704 | 1.1− | 0.3− | 2002 12 11 | 704 | 1.2+ | 0.1+ | 2006 10 19 | 703 | 0.7+ | 0.4− |
| 2002 11 15 | 704 | 0.7− | 0.1+ | 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.6− |
| 2002 11 24 | 644 | 0.1+ | 0.2− | 2002 12 11 | 704 | 0.9+ | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.3− | 2006 08 29 | 699 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.2− | 0.2− | 2006 08 29 | 699 | 0.4− | 0.5− | 2006 10 31 | 703 | 0.7− | 0.7− |
| 2002 12 05 | 704 | (1.9− | 0.1+) | 2006 08 29 | 699 | 0.0 | 0.4− | 2006 10 31 | 703 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2006 08 29 | 699 | 1.4+ | 0.5+ | 2006 10 31 | 703 | 0.4+ | 0.6− |
| 2002 12 05 | 704 | 0.6− | 0.1− | 2006 09 28 | 703 | 0.9− | 0.2+ | 2006 10 31 | 703 | 0.3+ | 0.6− |

**2002 VW$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.34853 | | (2000.0) | | | |
| $n$ | 0.24015189 | $\omega$ | 42.42285 | | +0.97572565 | +0.19177161 |
| $a$ | 2.5633744 | $\Omega$ | 306.22082 | | −0.21899175 | +0.85757583 |
| $e$ | 0.2185607 | $i$ | 7.53215 | | +0.00143639 | +0.47727073 |
| $P$ | 4.10 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | 0.1− | 0.9+ | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 10 05 | 704 | (0.6+ | 1.6+) | 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 10 05 | 704 | 0.4+ | 1.2+ | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.4+ | 1.4+ | 2006 08 12 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.9− | 0.9− | 2006 08 12 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.2− | 2006 08 12 | 644 | 0.1− | 0.6+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 11 07 | 704 | 0.3+ | 0.5+ | 2006 09 17 | 703 | 0.4+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.7+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 703 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2002 11 13 | 644 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.9+ | 2006 10 27 | 703 | 0.3− | 0.1+ |
| 2002 11 13 | 644 | 0.1+ | 0.2− | 2006 09 21 | 704 | 0.7− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.2− |
| 2002 11 13 | 644 | 0.1+ | 0.1− | 2006 09 21 | 704 | 0.3+ | 0.3− | 2006 10 28 | 152 | (2.5− | 1.1−) |
| 2002 11 15 | 704 | 0.4− | 1.0− | 2006 09 21 | 704 | 0.0 | 0.7+ | 2006 10 28 | 152 | 1.1− | 0.3− |
| 2002 11 15 | 704 | 0.1+ | 0.3− | 2006 09 21 | 704 | 0.2+ | 0.5− | 2006 10 28 | 152 | 0.7− | 0.6− |
| 2002 11 15 | 704 | 0.0 | 1.0− | 2006 09 28 | 703 | 0.9− | 0.1− | 2006 10 28 | 152 | 1.3− | 0.4− |
| 2002 11 15 | 704 | 0.0 | 0.9− | 2006 09 28 | 703 | 0.2− | 0.1+ | 2006 10 28 | 152 | 0.7− | 0.6− |
| 2002 11 15 | 704 | 0.4− | 0.9− | 2006 09 28 | 703 | 0.2+ | 0.3− | 2006 10 28 | 152 | 0.0 | 0.2− |
| 2002 12 05 | 699 | (1.8+ | 2.0−) | 2006 09 28 | 703 | 0.5+ | 0.3− | 2006 10 28 | 152 | 0.3− | 0.2− |
| 2002 12 05 | 699 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 152 | (2.4− | 2.4−) |
| 2002 12 05 | 699 | 0.4+ | 0.6− | 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 10 28 | 152 | (2.7− | 1.7−) |
| 2002 12 05 | 699 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 28 | 152 | (2.8− | 1.8−) |
| 2002 12 05 | 704 | (0.0 | 1.7−) | 2006 10 19 | 703 | 0.5+ | 0.7+ | 2006 10 28 | 152 | (2.3− | 2.3−) |
| 2002 12 05 | 704 | (1.7− | 1.5−) | 2006 10 19 | 703 | 1.2+ | 1.1+ | 2006 10 28 | 152 | (2.9− | 2.2−) |
| 2002 12 05 | 704 | 0.3+ | 0.7− | 2006 10 19 | 703 | 0.5+ | 0.7+ | 2006 11 15 | 703 | 0.7− | 0.4− |
| 2002 12 05 | 704 | 0.3+ | 0.8− | 2006 10 19 | 703 | 0.3+ | 0.4− | 2006 11 15 | 703 | 0.1− | 0.7− |
| 2002 12 11 | 644 | 0.1+ | 0.2− | 2006 10 21 | 704 | 0.1+ | 0.4− | 2006 11 15 | 703 | 0.2− | 0.5− |
| 2002 12 11 | 644 | 0.2+ | 0.2− | 2006 10 21 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2002 12 11 | 644 | 0.4− | 0.0 | 2006 10 21 | 704 | 0.1− | 0.7− | 2006 11 17 | 704 | 0.4+ | 0.8+ |
| 2002 12 31 | 704 | 0.6− | 0.0 | 2006 10 21 | 704 | (1.1− | 1.5+) | 2006 11 17 | 704 | 0.1+ | 0.2− |
| 2002 12 31 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 704 | 0.8− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.3− |
| 2002 12 31 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.3+ |

**2002 VL$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.21758 | | (2000.0) | | | |
| $n$ | 0.23777957 | $\omega$ | 165.49988 | | +0.86333054 | −0.50291757 |
| $a$ | 2.5803960 | $\Omega$ | 224.77246 | | +0.45690865 | +0.81404149 |
| $e$ | 0.1950842 | $i$ | 3.38989 | | +0.21423088 | +0.29053463 |
| $P$ | 4.15 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | (2.3+ | 2.4+) | 2004 03 15 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2002 10 30 | 644 | (2.2+ | 2.3+) | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 11 01 | 644 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 11 01 | 644 | 0.8− | 0.3− | 2006 10 17 | 703 | 0.8− | 0.1− | 2006 10 22 | 683 | 0.3− | 0.6− |
| 2002 11 13 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.4+ | 2006 10 22 | 683 | (1.5+ | 2.1+) |
| 2002 11 13 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.4− | 2006 10 22 | 683 | 1.0− | 0.2+ |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2006 10 19 | 683 | (1.3+ | 1.7−) | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2002 11 15 | 704 | 0.4− | 0.1+ | 2006 10 19 | 683 | 1.0+ | 1.3− | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 2002 11 15 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 683 | 0.4+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2002 11 15 | 704 | 0.2− | 1.2+ | 2006 10 20 | 683 | 0.6− | 0.5− | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2002 11 23 | 644 | 0.4− | 0.2− | 2006 10 20 | G98 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2002 11 23 | 644 | 0.2− | 0.3− | 2006 10 20 | G98 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.6+ | 0.1− | 2006 10 20 | 683 | 0.2− | 0.3− | 2006 10 28 | G96 | 1.1− | 0.1− |
| 2002 12 05 | 704 | 0.5− | 0.1− | 2006 10 20 | G98 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 1.4+ | 0.7+ | 2006 10 20 | G98 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.4+ | 0.2− | 2006 10 20 | 683 | (3.2− | 1.0+) | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.9+ | 1.1+ | 2006 10 20 | G98 | 0.2+ | 0.3+ | 2006 11 11 | 703 | (0.6− | 1.6−) |
| 2002 12 10 | 644 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.8+ |
| 2002 12 10 | 644 | 0.0 | 0.9− | 2006 10 21 | 703 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 1.4− |
| 2002 12 10 | 644 | 0.2− | 1.0− | 2006 10 21 | 703 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.9− | 1.3+ |
| 2004 03 15 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.5− | 0.7+ | | | | |

**2002 VY$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.97813 | | (2000.0) | | | |
| $n$ | 0.23688027 | $\omega$ | 303.44275 | | +0.99560114 | +0.06559199 |
| $a$ | 2.5869227 | $\Omega$ | 52.88537 | | −0.02928150 | +0.89613095 |
| $e$ | 0.3182838 | $i$ | 4.81270 | | −0.08899977 | +0.43891571 |
| $P$ | 4.16 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.3+ | 0.9+ | 2002 12 10 | 644 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.7− | 0.1− |
| 2001 05 24 | 807 | 0.4+ | 0.9+ | 2002 12 10 | 644 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2002 10 16 | 699 | 0.3+ | 1.0+ | 2006 07 31 | E12 | 0.6+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.4− |
| 2002 10 16 | 699 | 0.3+ | 0.4− | 2006 07 31 | E12 | 0.8− | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.3− |
| 2002 10 16 | 699 | 0.8− | 0.8− | 2006 07 31 | E12 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.3− |
| 2002 10 16 | 699 | 0.3+ | 0.3+ | 2006 07 31 | E12 | 0.9+ | 1.0− | 2006 10 09 | 644 | 0.2+ | 0.3− |
| 2002 11 06 | 704 | (1.0− | 2.2−) | 2006 09 16 | 704 | 0.9− | 0.2− | 2006 10 09 | 644 | 0.2+ | 0.2− |
| 2002 11 06 | 704 | 0.0 | 0.4− | 2006 09 16 | 704 | 0.5− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2002 11 06 | 704 | 1.0− | 1.3+ | 2006 09 16 | 704 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.8− | 0.1− | 2006 09 16 | 704 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2002 11 14 | 291 | 0.4− | 0.4− | 2006 09 16 | 704 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 291 | 0.4− | 0.3− | 2006 09 17 | 608 | (0.8+ | 2.1−) | 2006 10 16 | 703 | 0.4+ | 0.6− |
| 2002 11 14 | 291 | 0.3− | 0.3− | 2006 09 17 | 608 | (0.9+ | 1.9−) | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2002 11 14 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 608 | (0.6+ | 1.6−) | 2006 10 16 | 703 | 0.6+ | 0.1+ |
| 2002 11 14 | 704 | 1.2+ | 0.4+ | 2006 09 18 | 699 | 1.0+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2002 11 14 | 704 | 1.4+ | 0.3− | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | 0.7+ | 1.2+ | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.9+ |
| 2002 11 14 | 704 | 1.0+ | 0.3+ | 2006 09 18 | 291 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2− | 1.1− |
| 2002 11 15 | 704 | 0.3+ | 0.3− | 2006 09 18 | 291 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.3+ |
| 2002 11 15 | 704 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 11 15 | 704 | 0.0 | 0.5− | 2006 09 18 | 291 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 11 15 | 704 | 0.2− | 0.2− | 2006 09 19 | 704 | (0.3+ | 1.8+) | 2006 10 22 | 644 | 0.4− | 0.2− |
| 2002 12 02 | 704 | 0.1− | 0.1+ | 2006 09 19 | 704 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2002 12 02 | 704 | 0.6− | 0.0 | 2006 09 19 | 704 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2002 12 02 | 704 | 0.1− | 0.1+ | 2006 09 19 | 704 | 1.0− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2002 12 02 | 704 | 0.4− | 0.1+ | 2006 09 19 | 704 | 0.8+ | 0.4+ | 2006 11 05 | 644 | 0.1− | 0.2+ |
| 2002 12 02 | 704 | 0.3− | 0.5+ | 2006 09 22 | 704 | 0.3+ | 1.1+ | 2006 11 05 | 644 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 09 22 | 704 | 0.4+ | 1.2+ | 2006 11 05 | 644 | 0.4+ | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 09 22 | 704 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | (0.5+ | 1.9+) | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 704 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.4− |
| 2002 12 10 | 644 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.4− | | | | |

**2002 VH$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.33556 | | | (2000.0) | | |
| $n$ | 0.25715224 | $\omega$ | 11.48016 | | +0.96750801 | +0.25234036 |
| $a$ | 2.4491150 | $\Omega$ | 333.88713 | | −0.23474148 | +0.87312115 |
| $e$ | 0.2083455 | $i$ | 2.06935 | | −0.09393978 | +0.41711365 |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 691 | 0.0 | 0.3+ | 2002 10 31 | 699 | 0.7− | 0.5+ | 2006 11 15 | 704 | 0.4+ | 0.7− |
| 2000 02 08 | 691 | 0.2+ | 0.1+ | 2002 10 31 | 699 | 0.7+ | 0.1− | 2006 11 15 | 704 | 0.4− | 0.1− |
| 2000 02 08 | 691 | 0.0 | 0.2+ | 2002 10 31 | 699 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.4− | 0.3+ |
| 2002 09 07 | 704 | 1.0+ | 0.1+ | 2002 11 06 | 446 | 1.4+ | 1.0− | 2006 11 15 | 704 | 0.2+ | 0.2+ |
| 2002 09 07 | 704 | 0.3+ | 0.0 | 2002 11 06 | 446 | (1.6− | 1.9−) | 2006 11 16 | 691 | 0.3− | 0.2− |
| 2002 09 07 | 704 | 0.6+ | 0.7− | 2002 11 06 | 446 | 0.6− | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2002 09 07 | 704 | 1.0+ | 1.0+ | 2002 11 11 | 446 | 0.1+ | 0.6− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2002 09 07 | 704 | 0.8− | 0.5+ | 2002 11 11 | 446 | 1.2− | 1.3− | 2006 11 16 | 704 | 1.2− | 0.6− |
| 2002 09 15 | 608 | 1.2− | 0.5− | 2002 11 11 | 446 | (1.9− | 1.0−) | 2006 11 16 | 704 | 0.8− | 0.4− |
| 2002 09 15 | 608 | 0.9− | 1.1− | 2002 11 22 | 644 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.7− | 0.2− |
| 2002 09 15 | 608 | 0.2− | 0.8− | 2002 11 22 | 644 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.7+ | 0.5− |
| 2002 09 28 | 608 | (2.6− | 1.4−) | 2002 11 22 | 644 | 0.1+ | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.9+ |
| 2002 09 28 | 608 | (2.0− | 1.2−) | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.9− | 0.3+ |
| 2002 09 28 | 608 | (2.6− | 0.9−) | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2002 10 04 | 704 | 0.1− | 0.8+ | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.5− |
| 2002 10 04 | 704 | 0.5+ | 0.9+ | 2006 10 17 | 691 | (0.6− | 2.8−) | 2006 11 19 | 704 | 0.5− | 1.2+ |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.7+ | 2.4− |
| 2002 10 04 | 704 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | (3.3+ | 1.2−) |
| 2002 10 04 | 704 | 0.2− | 1.1+ | 2006 11 09 | 691 | 1.1− | 0.3− | 2006 11 22 | 704 | 0.9− | 0.0 |
| 2002 10 04 | 644 | 0.2− | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 2.1+ | 1.0− |
| 2002 10 04 | 644 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 1.2− | 1.6+ |
| 2002 10 04 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.1− | 2006 11 22 | 704 | (3.2+ | 1.1−) |
| 2002 10 11 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.5+ | 2006 11 22 | 704 | 1.9− | 0.8+ |
| 2002 10 11 | 704 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.8+ | 2006 11 22 | 704 | 1.6+ | 0.8− |
| 2002 10 11 | 704 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.8− | 0.5+ |
| 2002 10 11 | 704 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 1.9+ | 0.8− |
| 2002 10 11 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2002 10 31 | 699 | 0.5+ | 0.7− | 2006 11 13 | 691 | 0.2+ | 0.2+ | | | | |

**2002 VC$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.61608 | | | (2000.0) | | |
| $n$ | 0.27031916 | $\omega$ | 33.68810 | | +0.45858979 | −0.88541071 |
| $a$ | 2.3689260 | $\Omega$ | 29.22716 | | +0.77723901 | +0.35829244 |
| $e$ | 0.2369167 | $i$ | 8.92892 | | +0.43080729 | +0.29609864 |
| $P$ | 3.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 699 | 0.7+ | 0.4− | 2002 12 06 | 704 | 0.3+ | 0.2+ | 2003 01 03 | 704 | 0.4− | 0.6− |
| 1998 10 17 | 699 | 0.9− | 1.0+ | 2002 12 06 | 704 | 0.8+ | 0.3+ | 2003 01 03 | 704 | 0.4+ | 0.8− |
| 1998 10 17 | 699 | 0.3− | 0.1+ | 2002 12 06 | 704 | 0.1− | 0.3+ | 2003 01 07 | 704 | 0.5− | 0.3+ |
| 2002 11 06 | 704 | 0.2+ | 0.8+ | 2002 12 06 | 704 | 0.7+ | 0.3− | 2003 01 07 | 704 | 0.0 | 0.5+ |
| 2002 11 06 | 704 | 1.3+ | 0.1− | 2002 12 15 | 704 | 0.2− | 0.2− | 2003 01 07 | 704 | 0.3− | 0.8+ |
| 2002 11 06 | 704 | 0.7+ | 0.2+ | 2002 12 15 | 704 | 0.5− | 0.2+ | 2003 01 07 | 704 | 0.4+ | 0.6+ |
| 2002 11 06 | 704 | 0.4+ | 0.2+ | 2002 12 15 | 704 | 0.4− | 0.6− | 2003 01 07 | 704 | 0.2+ | 0.4+ |
| 2002 11 15 | 644 | 0.5− | 0.1+ | 2002 12 15 | 704 | 0.6− | 0.1− | 2003 01 13 | 704 | 0.3− | 0.7+ |
| 2002 11 15 | 644 | 0.3− | 0.0 | 2002 12 15 | 704 | 0.5− | 0.3− | 2003 01 13 | 704 | 0.4− | 1.1+ |
| 2002 11 15 | 644 | 0.3− | 0.1+ | 2003 01 03 | 704 | 0.1+ | 0.4− | 2003 01 13 | 704 | 0.1+ | 0.5+ |
| 2002 11 15 | 704 | 0.0 | 0.3− | 2003 01 03 | 704 | 0.0 | 0.2− | 2003 01 13 | 704 | 0.5− | 1.1+ |
| 2002 11 15 | 704 | 0.8− | 0.9− | 2003 01 03 | 704 | 0.2− | 0.5− | 2003 01 13 | 704 | 1.3+ | 1.5+ |
| 2002 11 15 | 704 | 0.4+ | 0.7− | 2003 01 03 | 704 | 0.1+ | 0.4− | 2005 08 10 | E12 | 0.0 | 0.3− |
| 2002 11 15 | 704 | 0.0 | 0.8− | 2003 01 03 | 704 | 0.2− | 0.4− | 2005 08 10 | E12 | 0.4+ | 0.0 |
| 2002 11 16 | 673 | 0.2− | 0.1− | 2003 01 03 | 704 | 0.0 | 0.6− | 2005 08 10 | E12 | 0.0 | 0.7+ |
| 2002 11 16 | 673 | 0.3− | 0.2− | 2003 01 03 | 704 | 0.2− | 0.4− | 2005 08 10 | E12 | 0.4− | 0.2− |
| 2002 11 16 | 673 | 0.2− | 0.2− | 2003 01 03 | 704 | 0.3+ | 0.7− | | | | |

**2002 VT$_{126}$ = 2006 SD$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.82421 | | | (2000.0) | | |
| $n$ | 0.23561824 | $\omega$ | 280.74517 | | +0.94738890 | +0.23868373 |
| $a$ | 2.5961519 | $\Omega$ | 65.72410 | | −0.11294391 | +0.87271435 |
| $e$ | 0.2878140 | $i$ | 13.53021 | | −0.29949615 | +0.42591049 |
| $P$ | 4.18 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.2+ | 0.4+ | 2006 09 24 | 699 | 0.1− | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2006 09 24 | 699 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.5− |
| 2002 11 13 | 644 | 0.4+ | 0.1+ | 2006 09 24 | 699 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3− |
| 2002 11 16 | 644 | 0.1+ | 0.3− | 2006 09 25 | 703 | 0.8− | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2002 11 16 | 644 | 0.4+ | 0.2+ | 2006 09 25 | 703 | 0.8+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.4− |
| 2002 11 16 | 644 | 0.7+ | 0.1− | 2006 09 25 | 703 | 0.8− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 11 24 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 703 | 0.1+ | 1.0+ | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2002 11 24 | 644 | 0.2+ | 0.5+ | 2006 10 04 | 703 | 0.5− | 0.4+ | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2002 11 24 | 644 | 0.2+ | 0.3+ | 2006 10 04 | 703 | 0.3− | 0.3− | 2006 10 28 | 703 | (2.1− | 1.5+) |
| 2002 11 28 | 699 | 1.4− | 1.2− | 2006 10 04 | 703 | 0.1− | 0.9+ | 2006 10 28 | 703 | 0.9− | 0.6+ |
| 2002 11 28 | 699 | 0.7+ | 0.8− | 2006 10 04 | 703 | 0.8+ | 0.1− | 2006 11 16 | 703 | 0.9+ | 0.3+ |
| 2002 11 28 | 699 | 0.4− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.7+ | 0.1+ |
| 2002 11 28 | 699 | 1.5− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.8+ | 1.2− |
| 2006 09 24 | 699 | (1.7− | 0.4+) | 2006 10 10 | 644 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.0 | 0.3+ |

**2002 VR$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.00140 | | | (2000.0) | | |
| $n$ | 0.26304788 | $\omega$ | 320.01100 | | +0.64562499 | −0.73378057 |
| $a$ | 2.4123825 | $\Omega$ | 88.67636 | | +0.74352700 | +0.54084790 |
| $e$ | 0.2193349 | $i$ | 12.21389 | | +0.17417228 | +0.41115646 |
| $P$ | 3.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2002 12 02 | 704 | 0.7− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2002 10 31 | 704 | 0.1+ | 0.4− | 2002 12 02 | 704 | 0.1+ | 0.8+ | 2006 11 13 | G96 | 0.3− | 0.5− |
| 2002 10 31 | 704 | 0.0 | 0.1+ | 2002 12 02 | 704 | 0.4− | 0.5− | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2002 10 31 | 704 | 0.3+ | 0.3− | 2002 12 12 | 608 | 0.5+ | 0.3− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2002 10 31 | 704 | 0.4− | 0.2+ | 2002 12 12 | 608 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2002 11 11 | 683 | 0.7− | 1.1+ | 2002 12 12 | 608 | 0.8+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2002 11 11 | 683 | 0.3+ | 0.4+ | 2002 12 22 | 608 | 0.5− | 0.5− | 2006 11 17 | 703 | 1.5− | 0.0 |
| 2002 11 11 | 683 | 0.9− | 0.4− | 2002 12 22 | 608 | 0.3− | 0.9− | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2002 11 12 | 683 | 0.8+ | 0.3+ | 2002 12 22 | 608 | 0.1− | 0.7− | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2002 11 12 | 683 | 0.1+ | 0.1− | 2003 01 01 | 704 | 0.8+ | 0.6+ | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2002 11 12 | 683 | 0.9+ | 0.9− | 2003 01 01 | 704 | 0.3− | 0.8+ | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 2002 11 30 | 704 | 0.0 | 0.3+ | 2003 01 01 | 704 | 1.1− | 0.9+ | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2002 11 30 | 704 | 0.1− | 0.1− | 2003 01 05 | 699 | 1.0− | 0.9+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2002 11 30 | 704 | 0.6+ | 0.5+ | 2003 01 05 | 699 | 0.9− | 0.6+ | 2006 11 21 | 704 | 0.1+ | 0.7+ |
| 2002 11 30 | 704 | 0.1+ | 0.1+ | 2003 01 05 | 699 | 1.4+ | 0.1− | 2006 11 21 | 704 | 0.3− | 1.0+ |
| 2002 11 30 | 704 | 0.5+ | 0.5+ | 2003 01 05 | 699 | 0.4− | 0.6− | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2002 12 02 | 704 | 0.2− | 0.2+ | 2003 01 07 | 704 | (1.6+ | 0.6+) | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2002 12 02 | 704 | 0.4− | 0.2− | 2003 01 07 | 704 | 0.6+ | 0.3+ | 2006 12 01 | 704 | 1.4+ | 1.1− |
| 2002 12 02 | 704 | 0.1+ | 0.5+ | 2003 01 07 | 704 | (0.1+ | 1.8−) | 2006 12 01 | 704 | 0.3+ | 1.1− |
| 2002 12 02 | 704 | 0.4− | 0.4− | 2003 01 07 | 704 | 0.7− | 0.8+ | 2006 12 01 | 704 | 0.4− | 0.7− |
| 2002 12 02 | 704 | 0.2− | 0.4+ | 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.3− |
| 2002 12 02 | 704 | 0.3− | 0.5− | 2004 03 29 | 691 | 0.2+ | 0.3+ | | | | |
| 2002 12 02 | 704 | 0.3− | 0.4+ | 2004 03 29 | 691 | 0.2− | 0.2+ | | | | |

**2002 VK$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.23683 | | | (2000.0) | | |
| $n$ | 0.24418638 | $\omega$ | 282.67758 | | +0.71085373 | −0.70241096 |
| $a$ | 2.5350611 | $\Omega$ | 121.95678 | | +0.66070318 | +0.64926330 |
| $e$ | 0.2237956 | $i$ | 2.44101 | | +0.24116026 | +0.29167793 |
| $P$ | 4.04 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.3− | 0.7− | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.4− | 0.2+ |
| 2002 11 05 | 704 | 0.5− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.5− | 0.3− |
| 2002 11 05 | 704 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.4− | 1.0− |
| 2002 11 05 | 704 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.2− | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2002 11 05 | 704 | 0.5+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2002 11 14 | 704 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2− | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2002 11 14 | 704 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2002 11 14 | 704 | (1.2+ | 2.1−) | 2006 11 02 | 703 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 11 14 | 704 | 0.2+ | 0.3− | 2006 11 02 | 703 | 0.7− | 0.7− | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2002 11 18 | 644 | 0.2+ | 0.0 | 2006 11 02 | 703 | (2.4− | 0.9+) | 2006 11 20 | 704 | 0.3+ | 1.0+ |
| 2002 11 18 | 644 | 0.3+ | 0.2− | 2006 11 02 | 703 | (2.2− | 0.7+) | 2006 11 20 | 704 | 0.4− | 0.7− |
| 2002 11 18 | 644 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3+ | 2006 11 20 | 704 | 1.0+ | 1.1+ |
| 2002 11 24 | 644 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.9+ |
| 2002 11 24 | 644 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2002 12 05 | 608 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.3+ | 0.3+ | 2006 11 29 | 704 | 0.3+ | 0.5+ |
| 2002 12 05 | 608 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.3+ |
| 2002 12 05 | 608 | 0.0 | 0.7− | 2006 11 14 | 704 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.4+ |
| 2002 12 11 | 704 | 0.1− | 0.7− | 2006 11 14 | 704 | 0.8+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.7+ |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.3− | 0.5+ |
| 2002 12 11 | 704 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2002 12 11 | 704 | 1.3+ | 0.8− | 2006 11 15 | 691 | 0.7+ | 0.4− | 2006 12 01 | 691 | 0.4− | 0.0 |
| 2002 12 11 | 704 | 0.8− | 0.5− | 2006 11 17 | 704 | 0.4− | 0.1+ | | | | |
| 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.7− | | | | |

**2002 VP$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.51925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26422033 | $\omega$ | 281.90272 | | +0.98186797 | −0.16867736 | |
| $a$ | 2.4052408 | $\Omega$ | 87.85318 | | +0.18928838 | +0.89708530 | |
| $e$ | 0.2249736 | $i$ | 4.96611 | | −0.01025705 | +0.40839430 | |
| $P$ | 3.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 699 | 0.5− | 0.1+ | 2002 11 18 | 644 | 0.1+ | 0.0 | 2002 12 10 | 704 | 0.6− | 0.3− |
| 1998 09 24 | 699 | 0.0 | 0.5− | 2002 11 24 | 644 | 0.5+ | 0.1− | 2004 03 20 | 691 | 0.0 | 0.1+ |
| 1998 09 24 | 699 | 0.5+ | 0.3+ | 2002 11 24 | 644 | 0.1+ | 0.3+ | 2004 03 20 | 691 | 0.3+ | 0.2− |
| 2002 11 07 | 704 | 0.2+ | 0.2− | 2002 11 24 | 644 | 0.2+ | 0.6+ | 2004 03 20 | 691 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.7− | 2002 12 05 | 704 | 0.0 | 0.4− | 2006 09 24 | 691 | 0.4+ | 0.2+ |
| 2002 11 07 | 704 | 0.1+ | 0.4− | 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 09 24 | 691 | 0.2− | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.3+ | 2002 12 05 | 704 | 0.3− | 0.1− | 2006 09 24 | 691 | 0.3− | 0.1+ |
| 2002 11 07 | 704 | 0.0 | 0.9+ | 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.7− |
| 2002 11 14 | 704 | 0.3− | 0.1− | 2002 12 05 | 704 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2002 11 14 | 704 | 0.5+ | 0.9+ | 2002 12 10 | 704 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.7− |
| 2002 11 14 | 704 | 0.1− | 0.3− | 2002 12 10 | 704 | 0.2+ | 0.7− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2002 11 18 | 644 | 0.2− | 0.0 | 2002 12 10 | 704 | 0.0 | 0.4+ | | | | |
| 2002 11 18 | 644 | 0.1+ | 0.1− | 2002 12 10 | 704 | 0.6− | 0.4+ | | | | |

**2002 VZ$_{128}$ = 2006 SS$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.89713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22633118 | $\omega$ | 199.82748 | | +0.18081866 | −0.98304533 | |
| $a$ | 2.6666936 | $\Omega$ | 239.76567 | | +0.90704546 | +0.17864432 | |
| $e$ | 0.1179798 | $i$ | 2.01898 | | +0.38022775 | +0.04132898 | |
| $P$ | 4.35 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 644 | 0.4+ | 0.4− | 2003 01 02 | 291 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.5+ |
| 2002 11 05 | 644 | 0.1+ | 0.3− | 2003 01 02 | 291 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.4+ |
| 2002 11 05 | 644 | 0.3+ | 0.3− | 2003 01 02 | 291 | 0.4− | 0.8− | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2002 11 07 | 695 | 0.3+ | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2002 11 07 | 695 | 0.6+ | 0.1+ | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.3− | 0.6− |
| 2002 11 13 | 291 | 0.1− | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.7+ | 2006 10 02 | 691 | 0.1− | 0.5+ |
| 2002 11 13 | 291 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.1+ |
| 2002 11 13 | 291 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.3+ | | | | |

**2002 VS$_{129}$ = 2000 GV$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.09316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22766716 | $\omega$ | 85.74789 | | +0.02093782 | −0.99977726 | |
| $a$ | 2.6562510 | $\Omega$ | 3.05615 | | +0.89640503 | +0.01759740 | |
| $e$ | 0.0653765 | $i$ | 2.85305 | | +0.44274103 | +0.01165187 | |
| $P$ | 4.33 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.3+ | 0.4− | 2002 10 16 | 644 | 1.0+ | 0.3− | 2002 11 09 | 695 | 0.9+ | 0.2+ |
| 2000 04 05 | 704 | 0.0 | 0.4+ | 2002 10 31 | 291 | 0.8− | 0.5+ | 2006 10 16 | G96 | (2.2− | 3.9+) |
| 2000 04 05 | 704 | 0.4+ | 0.1+ | 2002 10 31 | 644 | 0.5+ | 0.8− | 2006 10 16 | G96 | (1.9− | 3.6+) |
| 2000 04 05 | 704 | 0.0 | 0.0 | 2002 10 31 | 291 | 0.4− | 0.2− | 2006 10 16 | G96 | (2.2− | 4.0+) |
| 2000 04 05 | 704 | 0.6− | 1.0+ | 2002 10 31 | 644 | 0.6+ | 0.6− | 2006 10 16 | G96 | (2.4− | 3.5+) |
| 2000 04 06 | 704 | 0.0 | 0.3− | 2002 10 31 | 291 | 0.7− | 0.0 | 2006 11 21 | G96 | (3.8+ | 5.8+) |
| 2000 04 06 | 704 | 0.7− | 0.5− | 2002 10 31 | 644 | 0.6+ | 0.5− | 2006 11 21 | G96 | (4.1+ | 5.9+) |
| 2000 04 06 | 704 | 0.4− | 0.1+ | 2002 11 06 | 608 | 0.2+ | 0.5+ | 2006 11 21 | G96 | (4.5+ | 5.8+) |
| 2000 04 06 | 704 | 0.9+ | 0.7− | 2002 11 06 | 608 | 0.5+ | 0.4+ | 2006 11 21 | G96 | (4.3+ | 5.8+) |
| 2002 10 16 | 644 | 0.7+ | 0.5− | 2002 11 06 | 608 | 1.1+ | 0.1+ | | | | |
| 2002 10 16 | 644 | 0.8+ | 0.3− | 2002 11 09 | 695 | 0.6+ | 0.0 | | | | |

**2002 VT$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.82613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24305119 | $\omega$ | 198.98053 | | +0.31937034 | −0.94445538 | |
| $a$ | 2.5429484 | $\Omega$ | 232.46925 | | +0.88158813 | +0.32611470 | |
| $e$ | 0.2207014 | $i$ | 5.60846 | | +0.34757006 | +0.04065996 | |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 1.1+ | 1.0+ | 2002 11 12 | 704 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 10 04 | 704 | 0.7+ | 0.8+ | 2002 11 12 | 704 | 0.3+ | 0.1− | 2006 10 22 | 683 | (0.0 | 1.5−) |
| 2002 10 04 | 704 | 0.8− | 0.7+ | 2002 11 22 | 644 | 0.3− | 0.6+ | 2006 10 22 | 683 | 0.5− | 1.0− |
| 2002 10 04 | 704 | 0.6+ | 0.6+ | 2002 11 22 | 644 | 0.4− | 0.8+ | 2006 10 23 | 683 | (1.2+ | 1.7−) |
| 2002 10 31 | 699 | 0.4+ | 1.0+ | 2002 11 22 | 644 | 0.0 | 0.6+ | 2006 10 23 | 683 | 0.3− | 1.1+ |
| 2002 10 31 | 699 | (2.0+ | 0.1+) | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 683 | 0.3− | 0.6− |
| 2002 10 31 | 699 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2002 10 31 | 699 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.9+ | 0.8− |
| 2002 10 31 | 608 | 0.9− | 0.7− | 2006 10 17 | 703 | 0.1− | 0.2− | 2006 11 13 | 703 | 1.0+ | 0.2− |
| 2002 10 31 | 608 | 0.8− | 0.8− | 2006 10 17 | 703 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.1+ | 1.0− |
| 2002 10 31 | 608 | 0.6− | 0.8− | 2006 10 17 | 703 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2002 11 09 | 695 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 11 09 | 695 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.6− |
| 2002 11 12 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− |

**2002 VJ$_{131}$ = 2006 ST$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.76609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24011062 | $\omega$ | 346.35721 | | +0.54220909 | +0.81981770 | |
| $a$ | 2.5636682 | $\Omega$ | 316.07755 | | −0.74385936 | +0.36642876 | |
| $e$ | 0.2451791 | $i$ | 15.39399 | | −0.39074615 | +0.44003285 | |
| $P$ | 4.10 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.0 | 0.8+ | 2002 11 13 | 446 | (1.9− | 0.2+) | 2006 09 24 | 699 | 1.0− | 0.1+ |
| 2002 10 07 | 704 | 0.2− | 0.9− | 2002 11 17 | 446 | (0.1+ | 1.5−) | 2006 09 28 | 703 | 0.6+ | 0.3− |
| 2002 10 07 | 704 | (0.1− | 2.0−) | 2002 11 17 | 446 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.7+ | 0.0 |
| 2002 10 11 | 644 | 0.0 | 0.2− | 2002 11 23 | 446 | 0.5− | 0.3− | 2006 09 28 | 703 | 0.6+ | 0.6+ |
| 2002 10 11 | 644 | 0.1− | 0.3− | 2002 11 23 | 446 | (0.0 | 3.5+) | 2006 09 28 | 703 | 0.2− | 0.4− |
| 2002 10 11 | 644 | 0.1+ | 0.4− | 2002 11 23 | 446 | (3.2− | 0.3+) | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 2002 10 31 | 704 | 0.9+ | 0.4+ | 2002 11 23 | 446 | 0.1+ | 1.1− | 2006 10 01 | 704 | 0.3+ | 0.2− |
| 2002 10 31 | 704 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.3+ |
| 2002 10 31 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2002 11 11 | 699 | 0.9− | 0.2+ | 2006 09 17 | 703 | 0.6+ | 0.9− | 2006 10 19 | 703 | 0.6− | 0.1− |
| 2002 11 11 | 699 | 0.3+ | 1.3+ | 2006 09 17 | 703 | 0.6− | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 699 | 0.1− | 0.6+ | 2006 09 24 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.1− | | |
| 2002 11 11 | 699 | (0.1+ | 1.6+) | 2006 09 24 | 699 | 0.4− | 0.6+ | | | | | | |
| 2002 11 13 | 446 | 0.0 | 0.9− | 2006 09 24 | 699 | 1.0− | 0.0 | | | | | | |

**2002 VM$_{131}$ = 5236 T-3**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.30689 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.08249169 | $\omega$ | 300.34417 | | +0.95229928 | | −0.23105147 |
| $a$ | 5.2263191 | $\Omega$ | 73.63854 | | +0.29788028 | | +0.84569522 |
| $e$ | 0.0924876 | $i$ | 11.99146 | | −0.06628291 | | +0.48105593 |
| $P$ | 11.95 | $H$ | 13.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.3− | 0.5+ | 2001 10 24 | 644 | 0.2− | 0.5+ | 2002 11 25 | 644 | 0.2− | 0.5− | | |
| 1977 10 11 | 675 | 1.5− | 0.3+ | 2001 12 28 | 608 | 0.6− | 0.1− | 2002 11 25 | 644 | 0.0 | 0.6− | | |
| 1977 10 12 | 675 | 1.4+ | 1.2− | 2001 12 28 | 608 | 0.1+ | 0.4+ | 2002 11 25 | 644 | 0.2− | 0.5− | | |
| 1977 10 12 | 675 | 1.6+ | 1.6− | 2002 10 30 | 644 | 0.2+ | 1.3+ | 2002 12 10 | 644 | 0.5+ | 0.1+ | | |
| 1977 10 17 | 675 | (2.4+ | 2.1−) | 2002 10 30 | 608 | 0.2− | 0.0 | 2002 12 10 | 644 | 0.5− | 0.0 | | |
| 1977 10 17 | 675 | (2.1+ | 0.8−) | 2002 10 30 | 644 | 1.5+ | 0.5+ | 2002 12 27 | 644 | 0.0 | 0.2− | | |
| 1977 10 21 | 675 | (0.1− | 2.4+) | 2002 10 30 | 608 | 0.0 | 0.4− | 2002 12 27 | 644 | 0.1− | 0.1− | | |
| 1977 10 21 | 675 | (0.7− | 2.0+) | 2002 10 30 | 608 | 0.4− | 0.3+ | 2002 12 27 | 644 | 0.0 | 0.4+ | | |
| 1997 06 03 | 566 | 0.4+ | 0.4+ | 2002 10 30 | 644 | 0.4+ | 0.5+ | 2003 01 19 | 644 | 0.2− | 0.1− | | |
| 1997 06 03 | 566 | 0.4+ | 0.4+ | 2002 11 13 | 644 | 0.6− | 0.4− | 2003 01 19 | 644 | 0.6− | 0.1+ | | |
| 1997 06 03 | 566 | 0.9− | 0.5+ | 2002 11 13 | 644 | 0.0 | 0.1− | 2003 12 28 | 704 | 0.2− | 0.3− | | |
| 2000 09 19 | 644 | 0.6+ | 0.4+ | 2002 11 13 | 644 | 0.3− | 0.4− | 2003 12 28 | 704 | 0.1− | 0.1− | | |
| 2000 09 19 | 644 | 1.0+ | 0.0 | 2002 11 16 | 644 | 0.3− | 0.0 | 2003 12 28 | 704 | 0.0 | 0.5+ | | |
| 2001 10 24 | 644 | 0.6− | 0.3+ | 2002 11 16 | 644 | 0.0 | 0.2+ | 2003 12 28 | 704 | 1.6+ | 0.1+ | | |
| 2001 10 24 | 644 | 1.4− | 0.7+ | 2002 11 16 | 644 | 0.1+ | 0.0 | | | | | | |

**2002 VO$_{131}$ = 2006 SL$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.68457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23558579 | $\omega$ | 149.25551 | | +0.91868162 | | −0.38937196 |
| $a$ | 2.5963904 | $\Omega$ | 233.80643 | | +0.34360206 | | +0.87072119 |
| $e$ | 0.2490232 | $i$ | 4.72195 | | +0.19483766 | | +0.30038989 |
| $P$ | 4.18 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.1− | 0.2+ | 2002 12 05 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.4+ | | |
| 2002 11 01 | 644 | 1.0− | 0.5+ | 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.5− | 0.1− | | |
| 2002 11 01 | 644 | 0.2+ | 0.6− | 2002 12 05 | 704 | 0.5− | 0.7+ | 2006 10 17 | 703 | 0.6+ | 0.2+ | | |
| 2002 11 13 | 644 | 0.1+ | 0.0 | 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.3− | | |
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2002 12 10 | 644 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2002 11 13 | 644 | 0.1+ | 0.3+ | 2002 12 10 | 644 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 11 23 | 644 | 0.0 | 0.4− | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.0 | | |
| 2002 11 23 | 644 | 0.1− | 0.7− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 11 23 | 644 | 0.1+ | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 2002 12 02 | 704 | (2.0+ | 0.7−) | 2006 09 23 | 104 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.7− | | |
| 2002 12 02 | 704 | 0.3+ | 0.3− | 2006 09 23 | 104 | 0.5+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.5− | | |
| 2002 12 02 | 704 | 0.9+ | 0.1+ | 2006 09 23 | 104 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.5− | | |
| 2002 12 02 | 704 | (1.1+ | 1.8−) | 2006 09 24 | 104 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.6− | | |
| 2002 12 05 | 704 | (0.4+ | 2.1−) | 2006 09 24 | 104 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 1.0− | | |
| 2002 12 05 | 704 | 0.5+ | 0.1+ | 2006 09 24 | 104 | 0.3− | 0.1+ | | | | | | |

**2002 VU$_{131}$ = 2006 UD$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.44344 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24468318 | $\omega$ | 315.30491 | | +0.99726006 | | −0.06261072 |
| $a$ | 2.5316284 | $\Omega$ | 48.32721 | | +0.07347639 | | +0.90012087 |
| $e$ | 0.0432229 | $i$ | 3.02353 | | −0.00857879 | | +0.43111752 |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 691 | 0.2− | 0.1− | 2002 11 14 | 291 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 1998 11 19 | 691 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 1998 11 19 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3+ | | |
| 1998 11 26 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.4− | | |
| 1998 11 26 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 1.0− | 1.3− | 2006 11 11 | G96 | 0.0 | 0.5− | | |
| 1998 11 26 | 691 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.7− | | |
| 2002 11 05 | 408 | (0.6− | 1.9+) | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2002 11 05 | 408 | (0.5− | 1.8+) | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2002 11 06 | 408 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.2− | 0.4− | | |
| 2002 11 06 | 408 | 0.9− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.6− | | |
| 2002 11 07 | 704 | 0.9+ | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.4− | | |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2002 11 07 | 704 | 0.3− | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.5− | 0.3− | | |
| 2002 11 14 | 291 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1− | | |
| 2002 11 14 | 291 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.5− | 0.4− | | |

**2002 VC$_{132}$ = 1993 BD$_{11}$ = 2004 EQ$_{97}$**

Id. Minor Planet Center; 1993 BD$_{11}$ = 1999 VO$_{152}$ (*MPO* 3117) is invalid.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.45001 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18751496 | $\omega$ | 10.34985 | | +0.47613044 | | −0.87852011 |
| $a$ | 3.0230507 | $\Omega$ | 51.22846 | | +0.80321621 | | +0.41653064 |
| $e$ | 0.2061169 | $i$ | 2.84950 | | +0.35797139 | | +0.23389022 |
| $P$ | 5.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.3− | 0.2− | 2002 11 06 | 704 | (1.6+ | 0.1−) | 2002 11 13 | 644 | 0.2+ | 0.2+ | | |
| 1993 01 22 | 691 | 0.1− | 0.4− | 2002 11 06 | 704 | (2.2+ | 1.7−) | 2002 12 10 | 704 | 0.0 | 0.1+ | | |
| 1993 01 22 | 691 | 0.0 | 0.5− | 2002 11 06 | 704 | (1.5+ | 0.7−) | 2002 12 10 | 704 | 0.3+ | 0.5+ | | |
| 1993 01 26 | 691 | 0.1+ | 0.2− | 2002 11 06 | 704 | 0.5+ | 1.3+ | 2002 12 10 | 704 | 0.6+ | 0.0 | | |
| 1993 01 26 | 691 | 0.0 | 0.2+ | 2002 11 06 | 408 | 0.1+ | 0.3− | 2002 12 10 | 704 | 0.8+ | 0.8+ | | |
| 2002 10 28 | 291 | (1.7− | 0.1+) | 2002 11 06 | 408 | 0.1+ | 0.2− | 2004 03 15 | 691 | 0.2+ | 0.4+ | | |
| 2002 10 28 | 291 | 0.3− | 0.2+ | 2002 11 13 | 644 | 0.5+ | 0.0 | 2004 03 15 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 28 | 291 | 0.9− | 0.3+ | 2002 11 13 | 644 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.1− | 0.0 | | |
| 2002 11 05 | 408 | 0.0 | 0.8+ | 2002 11 13 | 644 | 0.5+ | 0.1− | 2004 03 23 | 691 | 0.2+ | 0.2+ | | |
| 2002 11 05 | 408 | 0.0 | 0.2+ | 2002 11 13 | 644 | 0.1+ | 0.2+ | 2004 03 23 | 691 | 0.1+ | 0.3+ | | |
| 2002 11 06 | 704 | 0.2+ | 1.2− | 2002 11 13 | 644 | 0.0 | 0.3− | 2004 03 23 | 691 | 0.2+ | 0.2+ | | |

**2002 VT$_{132}$ = 2006 RS$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.67469 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22737546 | $\omega$ | 51.91988 | | +0.59130646 | | +0.78622806 |
| $a$ | 2.6585224 | $\Omega$ | 255.27483 | | −0.78576113 | | +0.51161875 |
| $e$ | 0.2064099 | $i$ | 10.69282 | | −0.18148311 | | +0.34654249 |
| $P$ | 4.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.4+ | 0.7− | 2006 08 29 | 699 | 0.5− | 0.2+ | 2006 09 15 | 704 | 0.8− | 1.0+ | | |
| 2002 10 05 | 704 | 0.0 | 0.0 | 2006 08 29 | 699 | 0.2− | 0.1− | 2006 09 15 | 704 | (2.0− | 0.2+) | | |
| 2002 10 05 | 704 | 0.2+ | 1.4− | 2006 08 29 | 699 | 0.4+ | 0.3+ | 2006 09 23 | 106 | 0.2+ | 0.1− | | |
| 2002 10 12 | 704 | 0.4+ | 0.2+ | 2006 08 31 | H06 | 0.2− | 0.5− | 2006 09 23 | 106 | 0.3+ | 0.7− | | |
| 2002 10 12 | 704 | 0.0 | 0.7+ | 2006 08 31 | H06 | 0.1− | 1.2− | 2006 09 23 | 106 | 0.8+ | 0.3− | | |
| 2002 10 12 | 704 | 0.2− | 1.5+ | 2006 08 31 | H06 | 0.3− | 0.8− | 2006 09 23 | 106 | 0.6− | 0.8+ | | |
| 2002 10 30 | 608 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.3+ | | |
| 2002 10 30 | 608 | 0.5− | 0.2− | 2006 09 11 | 703 | 0.7+ | 0.5− | 2006 10 17 | 703 | 0.2− | 1.3− | | |
| 2002 10 30 | 608 | 0.5− | 0.0 | 2006 09 11 | 703 | 1.2+ | 0.0 | 2006 10 17 | 703 | 0.1− | 1.4+ | | |
| 2002 11 05 | 704 | 0.8− | 1.0− | 2006 09 13 | H06 | 0.1− | 0.7+ | 2006 10 17 | 703 | 0.5+ | 0.4− | | |
| 2002 11 05 | 704 | (1.7− | 0.2−) | 2006 09 13 | H06 | 0.3+ | 0.2+ | 2006 10 23 | 703 | 0.7− | 0.3+ | | |
| 2002 11 05 | 704 | 1.4− | 0.8− | 2006 09 13 | H06 | 0.4+ | 0.0 | 2006 10 23 | 703 | 0.9+ | 0.4+ | | |
| 2002 11 05 | 704 | 1.3+ | 0.0 | 2006 09 14 | H06 | 0.2+ | 0.3+ | 2006 10 23 | 703 | 0.4− | 0.5+ | | |
| 2002 11 06 | 704 | 0.5+ | 0.4+ | 2006 09 14 | H06 | 0.2− | 0.1− | 2006 10 23 | 703 | 1.0− | 0.5+ | | |
| 2002 11 06 | 704 | 1.0+ | 1.0+ | 2006 09 14 | H06 | 0.1+ | 0.6+ | 2006 10 29 | 703 | 0.8− | 0.7− | | |
| 2002 11 06 | 704 | 0.1+ | 1.4− | 2006 09 15 | 704 | 0.5− | 0.7+ | 2006 10 29 | 703 | 0.1− | 0.8+ | | |
| 2002 11 06 | 704 | 0.3− | 1.1+ | 2006 09 15 | 704 | 0.2− | 1.3− | 2006 10 29 | 703 | 1.3+ | 0.5+ | | |
| 2006 08 29 | 699 | 0.8− | 0.2− | 2006 09 15 | 704 | 0.6− | 0.4− | 2006 10 29 | 703 | (0.4+ | 1.9+) | | |

**2002 VN$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.18096 | | | (2000.0) | +0.99694791 | +0.07314441 |
| $n$ | 0.23724663 | $\omega$ | 288.21165 | | −0.05569531 | +0.91131583 |
| $a$ | 2.5842589 | $\Omega$ | 67.60097 | | −0.05470737 | +0.40515843 |
| $e$ | 0.3039329 | $i$ | 1.69146 | | | |
| $P$ | 4.15 | $H$ | 17.5 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.4+ | 0.4− | 2006 09 27 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 1.1− | 0.3− |
| 2002 11 05 | 704 | 0.6− | 0.0 | 2006 09 27 | 704 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.8+ | 0.3− |
| 2002 11 05 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | (3.1+ | 0.1+) |
| 2002 11 07 | 291 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 291 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 07 | 291 | 0.2− | 0.3+ | 2006 10 02 | H06 | 0.8+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 28 | 734 | 0.0 | 0.1− | 2006 10 02 | H06 | 0.5+ | 0.9− | 2006 10 28 | 704 | 1.0− | 0.7+ |
| 2002 11 28 | 926 | (2.5+ | 0.3+) | 2006 10 02 | H06 | 0.7+ | 0.1− | 2006 10 28 | 704 | 0.7− | 0.7+ |
| 2002 11 28 | 734 | 1.1+ | 1.2+ | 2006 10 03 | H06 | 0.1+ | 0.9+ | 2006 10 28 | 704 | 1.1− | 0.8+ |
| 2002 11 28 | 926 | 0.1− | 0.3+ | 2006 10 03 | H06 | 0.2+ | 0.8+ | 2006 10 28 | 704 | 1.2− | 0.9+ |
| 2002 11 28 | 926 | 0.3− | 0.1+ | 2006 10 03 | H06 | 0.3− | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 11 28 | 734 | 0.1+ | 0.3+ | 2006 10 13 | D35 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 11 28 | 926 | 0.3− | 0.7− | 2006 10 13 | D35 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 11 28 | 608 | 0.2− | 0.9− | 2006 10 13 | D35 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 11 28 | 608 | 0.2+ | 0.6− | 2006 10 15 | 703 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2002 11 28 | 608 | 0.2− | 0.6− | 2006 10 15 | 703 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2002 11 29 | 734 | (1.7+ | 0.1+) | 2006 10 15 | 703 | 1.3− | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2002 11 29 | 734 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2002 11 29 | 734 | 0.7− | 0.3− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.7+ | 0.7+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.9+ | 0.7− |
| 2002 12 05 | 704 | 0.6+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 20 | G96 | 0.5+ | 0.2− |
| 2002 12 05 | 704 | (1.7+ | 0.3−) | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.7+ | 0.5− |
| 2006 09 27 | 704 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.5− |
| 2006 09 27 | 704 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.4+ | 0.2− |

**2002 VN$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.80587 | | | (2000.0) | +0.99148394 | +0.02412010 |
| $n$ | 0.23869004 | $\omega$ | 97.48908 | | −0.07103562 | +0.92379852 |
| $a$ | 2.5738300 | $\Omega$ | 261.19097 | | −0.10914916 | +0.38211846 |
| $e$ | 0.1854351 | $i$ | 7.44090 | | | |
| $P$ | 4.13 | $H$ | 16.7 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.6+ | 0.1+ | 2002 11 12 | 704 | 0.4− | 1.3− | 2006 10 12 | 595 | 0.5− | 0.3− |
| 2002 10 10 | 704 | 0.4− | 0.1− | 2002 11 12 | 704 | (0.1− | 1.7−) | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2002 10 10 | 704 | 0.1− | 0.6− | 2002 11 12 | 704 | 0.4− | 0.9− | 2006 10 17 | 703 | (0.4− | 1.7−) |
| 2002 11 01 | 644 | 0.1− | 1.3+ | 2002 11 24 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2002 11 01 | 644 | 0.1+ | 1.4+ | 2002 11 24 | 644 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.8− | 0.7+ |
| 2002 11 01 | 644 | 0.0 | 0.6+ | 2002 11 24 | 644 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.7+ |
| 2002 11 06 | 699 | 0.4+ | 0.1+ | 2006 10 10 | 595 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 11 06 | 699 | 0.5+ | 0.2+ | 2006 10 10 | 595 | 0.4+ | 1.1− | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 11 06 | 699 | 1.2− | 0.1− | 2006 10 11 | 595 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2002 11 06 | 699 | 0.4+ | 0.4+ | 2006 10 11 | 595 | 0.6+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 1.2+ | 1.3− | 2006 10 12 | 595 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1− |

**2002 VC$_{135}$ = 2006 UZ$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.28983 | | | (2000.0) | −0.38781081 | −0.91950810 |
| $n$ | 0.26756457 | $\omega$ | 41.41361 | | +0.82690014 | −0.37778656 |
| $a$ | 2.3851570 | $\Omega$ | 71.49393 | | +0.40723327 | −0.10854570 |
| $e$ | 0.1478981 | $i$ | 3.87533 | | | |
| $P$ | 3.68 | $H$ | 16.8 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.2+ | 0.0 | 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.6− | 0.2− |
| 2002 11 07 | 704 | 0.2+ | 0.3+ | 2002 12 05 | 704 | 0.1+ | 1.0+ | 2006 10 22 | G96 | 0.6− | 0.3− |
| 2002 11 07 | 704 | (1.6+ | 1.1−) | 2002 12 05 | 704 | 0.1− | 1.4+ | 2006 10 29 | G96 | 0.2− | 0.5− |
| 2002 11 07 | 704 | 0.6− | 0.6− | 2002 12 10 | 644 | 0.4+ | 0.1− | 2006 10 29 | G96 | 0.5+ | 0.2+ |
| 2002 11 13 | 704 | 0.0 | 0.4+ | 2002 12 10 | 644 | 0.3+ | 0.0 | 2006 10 29 | G96 | 0.5+ | 0.2− |
| 2002 11 13 | 704 | 0.3− | 0.2+ | 2002 12 10 | 644 | 0.2+ | 0.1− | 2006 10 29 | G96 | 0.2+ | 0.4− |
| 2002 11 13 | 704 | 1.0− | 0.3+ | 2004 04 28 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | (1.8+ | 0.3−) |
| 2002 11 13 | 704 | 0.5− | 0.2+ | 2004 04 28 | 691 | 0.0 | 0.6+ | 2006 11 21 | G96 | (2.1+ | 0.4−) |
| 2002 11 13 | 704 | 0.0 | 0.5+ | 2004 04 28 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | (1.9+ | 0.2−) |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | (1.7+ | 0.2−) |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.2− | | | | |

**2002 VG$_{135}$ = 2006 SN$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.59991 | | | (2000.0) | +0.94952597 | +0.31364972 |
| $n$ | 0.23326071 | $\omega$ | 155.92859 | | −0.29513755 | +0.88794048 |
| $a$ | 2.6136153 | $\Omega$ | 185.79872 | | −0.10627444 | +0.33643061 |
| $e$ | 0.2269261 | $i$ | 2.79571 | | | |
| $P$ | 4.23 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 27 | 691 | 0.0 | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.4− |
| 2001 05 27 | 691 | 0.1+ | 0.3+ | 2006 09 06 | 644 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.6+ |
| 2001 05 27 | 691 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.2− |
| 2002 10 30 | 608 | 0.9− | 0.7+ | 2006 09 17 | 704 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.1− | 0.2− |
| 2002 10 30 | 608 | 0.7− | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2002 10 30 | 608 | 0.7− | 0.5+ | 2006 09 17 | 704 | 0.7− | 0.9+ | 2006 09 29 | 291 | 0.2− | 0.0 |
| 2002 11 07 | 704 | 1.0− | 0.6− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 09 29 | 291 | 0.0 | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 29 | 291 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.9+ | 0.1− |
| 2002 11 07 | 704 | 1.1+ | 0.4− | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.1− |
| 2002 11 13 | 704 | 0.1− | 1.0+ | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.0 |
| 2002 11 13 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.7− | 2006 10 15 | 106 | 0.1− | 0.1− |
| 2002 11 13 | 704 | 0.1− | 1.2+ | 2006 09 20 | 704 | 0.5+ | 0.7+ | 2006 10 15 | 106 | 0.2− | 0.2+ |
| 2002 11 13 | 704 | (0.1+ | 1.8+) | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 15 | 106 | 0.6− | 0.3+ |
| 2002 11 13 | 704 | 0.3− | 1.0+ | 2006 09 20 | 704 | 0.7+ | 0.2− | 2006 10 15 | 106 | 0.5+ | 0.4− |
| 2004 02 13 | 691 | 0.5+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.5− |
| 2004 02 13 | 691 | 0.0 | 0.9− | 2006 09 20 | 704 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2004 02 13 | 691 | 0.3− | 0.2+ | 2006 09 24 | 958 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2005 05 14 | G96 | 0.6− | 0.3+ | 2006 09 24 | 958 | 0.4+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2005 05 14 | G96 | 0.5− | 0.5+ | 2006 09 24 | 958 | 0.7− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2005 05 14 | G96 | 0.1+ | 0.7+ | 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2006 07 22 | G96 | 0.1+ | 0.5− | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2006 07 22 | G96 | 0.1− | 0.2− | 2006 09 27 | 699 | 0.4+ | 1.1− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 07 22 | G96 | 0.1− | 0.1− | 2006 09 27 | 699 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.2+ | 0.8− | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2006 08 17 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.5+ |
| 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 09 27 | 699 | 1.0+ | 0.5− | | | | |

**2002 VW$_{135}$ = 2006 TN$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.60672 | | | (2000.0) | +0.91410996 | +0.39857712 |
| $n$ | 0.23676568 | $\omega$ | 66.64508 | | −0.39386739 | +0.82928294 |
| $a$ | 2.5877574 | $\Omega$ | 269.79696 | | −0.09628837 | +0.39169641 |
| $e$ | 0.3304717 | $i$ | 4.26828 | | | |
| $P$ | 4.16 | $H$ | 17.0 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.1+ | 0.1+ | 2002 12 09 | 291 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 695 | 0.2+ | 0.1+ | 2002 12 09 | 291 | 0.2− | 0.2+ | 2006 10 29 | 704 | 0.1+ | 0.4+ |
| 2002 11 07 | 291 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.6− | 0.0 | 2006 10 29 | 704 | 0.0 | 0.4+ |
| 2002 11 07 | 291 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.1+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 291 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.5+ | 0.1− |
| 2002 11 13 | 704 | (0.9− | 1.7−) | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4− | 0.6− |
| 2002 11 13 | 704 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2002 11 13 | 704 | 0.8+ | 1.2− | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.7− | 0.8+ |
| 2002 11 13 | 704 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.3+ |
| 2002 11 24 | 644 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 1.0+ | 0.3− |
| 2002 11 24 | 644 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.4− | 0.6− |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.5− | 0.6− |
| 2002 11 24 | 644 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2002 11 24 | 644 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.7+ | 0.2− |
| 2002 11 24 | 644 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.0 | | | | |
| 2002 12 09 | 291 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | | | |

**2002 VM$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.62977 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23546241 | $\omega$ | 258.58192 | | +0.32548207 | | +0.94470496 |
| $a$ | 2.5972973 | $\Omega$ | 30.50629 | | −0.83396998 | | +0.30671612 |
| $e$ | 0.1081378 | $i$ | 4.51088 | | −0.44559567 | | +0.11600762 |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 644 | 0.3− | 0.4+ | 2004 02 16 | 704 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 11 05 | 644 | 0.4− | 0.3+ | 2004 02 16 | 704 | 1.3+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2002 11 05 | 644 | 0.2− | 0.6+ | 2006 09 20 | 699 | (0.7− | 2.4+) | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2002 11 12 | 704 | 1.1+ | 0.3− | 2006 09 20 | 699 | 0.4+ | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.6+ |
| 2002 11 12 | 704 | (2.4− | 0.5−) | 2006 09 20 | 699 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2002 11 12 | 704 | 0.0 | 0.3− | 2006 09 20 | 699 | (1.5+ | 0.8−) | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 11 12 | 704 | (1.3− | 1.6+) | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2002 11 12 | 704 | 0.1− | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | (0.6+ | 1.6+) | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2002 11 12 | 704 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | (1.0− | 2.0+) | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2002 11 14 | 704 | (0.7− | 1.5+) | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.7+ | 0.6− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2002 11 14 | 704 | 0.7− | 1.3− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2002 11 14 | 704 | 0.6+ | 0.6− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2004 01 30 | 704 | 0.2+ | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2004 01 30 | 704 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2004 01 30 | 704 | 0.7+ | 0.9+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2004 02 11 | 644 | 0.4− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.5− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2004 02 11 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2004 02 11 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 1.1+ | 0.3+ |
| 2004 02 16 | 704 | 0.9− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2004 02 16 | 704 | 0.6− | 1.1− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 1.4+ | 1.4+ |

**2002 VC$_{139}$ = 2004 FA$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.22674 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23009409 | $\omega$ | 153.91837 | | −0.36001525 | | −0.92867583 |
| $a$ | 2.6375401 | $\Omega$ | 317.02472 | | +0.83145928 | | −0.27603442 |
| $e$ | 0.0369207 | $i$ | 7.51582 | | +0.42316013 | | −0.24772202 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.2− | 0.1+ | 2004 01 29 | 291 | 0.4− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.6− |
| 2002 11 13 | 644 | 0.2− | 0.0 | 2004 01 29 | 291 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.0 | 0.5+ |
| 2002 11 13 | 644 | 0.1+ | 0.1− | 2004 02 26 | 704 | (2.6+ | 0.1−) | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 644 | 0.1+ | 0.1− | 2004 02 26 | 704 | 1.4+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 644 | 0.1+ | 0.2− | 2004 02 26 | 704 | (2.1+ | 0.8−) | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 644 | 0.1+ | 0.2− | 2004 03 16 | 704 | 1.3+ | 0.4− | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2002 11 25 | 644 | 0.4+ | 0.5− | 2004 03 16 | 704 | 0.7+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2002 11 25 | 644 | 0.6− | 0.2+ | 2004 03 16 | 704 | 1.3+ | 0.2+ | 2006 10 17 | 703 | 0.8+ | 1.0+ |
| 2002 11 25 | 644 | 0.2+ | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 1.1− | 0.6− |
| 2002 12 11 | 644 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2002 12 11 | 644 | 0.0 | 0.4− | 2004 03 19 | 704 | 0.9− | 0.6+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 12 11 | 644 | 0.3+ | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2004 01 29 | 291 | 0.2− | 0.0 | 2006 09 28 | 703 | 1.5+ | 0.1− | | | | |

**2002 VG$_{139}$ = 2006 QM$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.20137 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22549105 | $\omega$ | 324.75687 | | +0.81360369 | | +0.58141915 |
| $a$ | 2.6733132 | $\Omega$ | 359.68837 | | −0.48804361 | | +0.68209371 |
| $e$ | 0.1352657 | $i$ | 9.55647 | | −0.31601024 | | +0.44350868 |
| $P$ | 4.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.5+ | 0.5− | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.2− |
| 2002 11 13 | 644 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.2− |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.4− | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2002 11 14 | 644 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.8− | 0.8− | 2006 09 29 | 704 | 0.1+ | 0.7+ |
| 2002 11 14 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.3+ | 0.6− |
| 2002 11 14 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | (3.2− | 0.1−) | 2006 10 01 | 704 | 0.4+ | 0.4− |
| 2002 11 25 | 644 | 0.6+ | 0.1+ | 2006 09 20 | 704 | 1.2− | 1.3+ | 2006 10 01 | 704 | 0.2− | 0.9− |
| 2002 11 25 | 644 | 0.0 | 0.2+ | 2006 09 20 | 704 | (0.3− | 1.6+) | 2006 10 01 | 704 | 0.6+ | 0.0 |
| 2002 11 25 | 644 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.4− | 1.4− |
| 2006 08 21 | 704 | 0.2− | 0.0 | 2006 09 26 | 704 | 1.5+ | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2006 08 21 | 704 | 0.6− | 0.0 | 2006 09 26 | 704 | (1.6+ | 1.3+) | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2006 08 21 | 704 | 0.4− | 0.5− | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2006 08 21 | 704 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.5− | 1.0− |
| 2006 08 25 | 704 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 22 | 703 | 0.7− | 1.1+ |
| 2006 08 25 | 704 | 0.7+ | 0.3− | 2006 09 26 | G96 | 0.9− | 0.5+ | 2006 10 22 | 703 | 0.2+ | 1.2+ |
| 2006 08 25 | 704 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2006 08 25 | 704 | 0.5+ | 1.2− | 2006 09 27 | 704 | 0.5− | 1.5+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2006 08 25 | 704 | 0.4− | 1.2+ | 2006 09 27 | 704 | (0.5+ | 2.1+) | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2006 09 12 | 703 | (0.2+ | 1.9+) | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2006 09 12 | 703 | (0.3− | 1.7+) | 2006 09 27 | 704 | 0.0 | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2006 09 12 | 703 | 1.4+ | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 09 12 | 703 | 0.1+ | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.6+ | 0.3− |
| 2006 09 16 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 16 | 691 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.1− |

**2002 VH$_{139}$ = 2006 QC$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.55370 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22728759 | $\omega$ | 43.95669 | | +0.88340155 | | −0.46800292 |
| $a$ | 2.6592075 | $\Omega$ | 343.89959 | | +0.40253384 | | +0.78403134 |
| $e$ | 0.3001834 | $i$ | 4.96024 | | +0.23993375 | | +0.40775989 |
| $P$ | 4.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.2+ | 1.1+ | 2002 11 06 | 704 | 0.5− | 0.7− | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.1+ | 0.3+ | 2002 11 06 | 704 | 0.5+ | 1.1− | 2006 08 17 | 644 | 0.2+ | 0.1+ |
| 2002 10 12 | 704 | 0.3− | 0.0 | 2002 11 14 | 644 | 0.8+ | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.5− | 1.2+ | 2002 11 14 | 644 | 0.8+ | 0.4+ | 2006 08 20 | 644 | 0.1+ | 0.3− |
| 2002 10 12 | 704 | 0.8− | 0.5+ | 2002 11 14 | 644 | 1.0+ | 0.3+ | 2006 08 20 | 644 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 1.0− | 0.3− | 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 08 20 | 644 | 0.2− | 0.4− |
| 2002 11 06 | 704 | 0.7− | 1.1− | 2002 11 24 | 644 | 0.2+ | 0.0 | | | | |
| 2002 11 06 | 704 | 0.1+ | 0.3− | 2002 11 24 | 644 | 0.0 | 0.3− | | | | |

**2002 VJ$_{139}$ = 1993 SN$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.69454 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22698863 | $\omega$ | 192.33599 | | +0.99995447 | | +0.00926630 |
| $a$ | 2.6615419 | $\Omega$ | 167.13243 | | −0.00765290 | | +0.92137142 |
| $e$ | 0.2263706 | $i$ | 0.58603 | | −0.00569963 | | +0.38857282 |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 17 | 809 | 0.1− | 1.2+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.6− | 0.5− | | | |
| 1993 09 17 | 809 | 0.3+ | 1.0+ | 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.0 | 0.2+ | | | |
| 1993 09 17 | 809 | 0.6− | 0.4− | 2006 08 28 | 691 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 0.2− | | | |
| 1993 09 18 | 809 | 0.6− | 0.8+ | 2006 08 28 | 691 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.5− | | | |
| 1993 09 18 | 809 | 1.3− | 0.0 | 2006 08 28 | 691 | 0.4− | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.5+ | | | |
| 1993 09 18 | 809 | 1.0− | 0.6+ | 2006 09 12 | 703 | (0.6− | 1.7+) | 2006 09 28 | G96 | 0.3+ | 0.6− | | | |
| 1993 09 18 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.5− | 1.4+ | 2006 09 28 | G96 | 0.0 | 0.5− | | | |
| 1993 09 18 | 691 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.2− | | | |
| 1993 09 18 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.5− | 1.3+ | 2006 09 29 | 704 | 0.5+ | 0.4− | | | |
| 2000 02 12 | 645 | 0.1− | 0.2+ | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.3+ | | | |
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2006 09 16 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.5+ | | | |
| 2000 03 03 | 645 | 0.3+ | 0.1+ | 2006 09 16 | 691 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.4− | | | |
| 2000 03 03 | 645 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.7+ | 1.1− | 2006 09 29 | 704 | 0.7+ | 0.3+ | | | |
| 2002 11 06 | 704 | 0.7− | 0.4− | 2006 09 17 | 704 | 1.0+ | 1.4− | 2006 09 29 | 704 | 0.1− | 0.4− | | | |
| 2002 11 06 | 704 | 0.3+ | 0.7− | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.0 | | | |
| 2002 11 06 | 704 | 0.3− | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.8− | 2006 09 29 | 704 | 0.1− | 0.3+ | | | |
| 2002 11 06 | 704 | 0.3+ | 1.2+ | 2006 09 18 | 699 | 0.4+ | 0.9+ | 2006 09 29 | 704 | 0.4+ | 0.3− | | | |
| 2002 11 06 | 704 | 1.3− | 1.1+ | 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.3− | | | |
| 2002 11 14 | 704 | 1.1− | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.4− | 0.8+ | | | |
| 2002 11 14 | 704 | 1.2+ | 0.8− | 2006 09 18 | 699 | 0.1− | 0.5− | 2006 09 30 | 704 | 0.2− | 0.6+ | | | |
| 2002 11 14 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.9− | 0.1+ | | | |
| 2002 11 14 | 704 | 0.6+ | 0.4− | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 704 | 0.0 | 0.3+ | | | |
| 2002 11 14 | 704 | 0.8− | 0.9− | 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.3− | | | |
| 2002 11 24 | 644 | 0.5+ | 1.2+ | 2006 09 20 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.3+ | | | |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.6+ | 2006 10 17 | 703 | 0.7+ | 0.3+ | | | |
| 2002 11 24 | 644 | 1.2+ | 0.7+ | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.5− | 0.3+ | | | |
| 2002 11 24 | 644 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ | | | |
| 2002 11 24 | 644 | 1.2+ | 0.9+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ | | | |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− | | | |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | | |
| 2002 12 05 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.6− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.1+ | | | |
| 2002 12 05 | 704 | 0.5− | 0.8+ | 2006 09 26 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | | |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.2− | | | |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.1− | 1.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | | | |
| 2004 02 29 | 291 | 0.5− | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | | |
| 2004 02 29 | 291 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.1− | 0.7+ | 2006 11 11 | G96 | 0.6− | 0.3− | | | |
| 2004 02 29 | 291 | 0.2− | 0.6+ | 2006 09 27 | 704 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.5+ | 0.3− | | | |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− | | | |
| 2005 04 17 | 691 | 0.1+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.5− | | | |
| 2005 04 17 | 691 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− | | | |
| 2005 05 03 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1− | | | |
| 2005 05 03 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− | | | |
| 2005 05 03 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 704 | (1.9− | 0.8+) | 2006 11 15 | G96 | 0.1− | 0.6− | | | |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.6+ | 0.8+ | | | | | | | |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 09 28 | 704 | 1.2− | 0.4− | | | | | | | |

## 2002 VK$_{139}$ = 2004 FA$_{159}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 11.72613 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24519737 | $\omega$ | 237.79095 | | +0.92382293 | | −0.35604123 | | |
| $a$ | 2.5280880 | $\Omega$ | 142.52854 | | +0.37972305 | | +0.89889271 | | |
| $e$ | 0.1820025 | $i$ | 13.36849 | | −0.04859624 | | +0.25539487 | | |
| $P$ | 4.02 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 644 | 0.0 | 0.5− | 2004 03 18 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 0.1+ | 0.5+ | | | |
| 2002 11 06 | 644 | 0.1+ | 0.9− | 2004 03 26 | 691 | 0.3− | 0.3− | 2006 11 10 | 704 | 1.3+ | 0.8+ | | | |
| 2002 11 06 | 644 | 0.1− | 0.9− | 2004 03 26 | 691 | 0.4− | 0.1+ | 2006 11 10 | 704 | 0.6+ | 0.2− | | | |
| 2002 11 16 | 644 | 0.6+ | 0.1− | 2004 03 26 | 691 | 0.4− | 0.4− | 2006 11 10 | 704 | 0.4+ | 1.3+ | | | |
| 2002 11 16 | 644 | 0.8− | 0.5+ | 2005 07 11 | 691 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.4− | 0.7+ | | | |
| 2002 11 16 | 644 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.3− | 0.2+ | | | |
| 2002 11 23 | 644 | 0.7− | 1.2+ | 2005 07 11 | 691 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.2− | | | |
| 2002 11 23 | 644 | 0.2− | 1.1+ | 2006 10 20 | 703 | 1.0+ | 0.8− | 2006 11 16 | 703 | 0.2+ | 0.4− | | | |
| 2002 11 23 | 644 | 0.2− | 1.3+ | 2006 10 20 | 703 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.6+ | | | |
| 2002 11 30 | 704 | 0.9− | 0.6− | 2006 10 20 | 703 | 0.1+ | 0.5− | 2006 11 22 | 703 | 0.7− | 0.2+ | | | |
| 2002 11 30 | 704 | 0.3+ | 0.1− | 2006 10 20 | 703 | 0.1− | 0.3− | 2006 11 22 | 703 | 0.0 | 0.5+ | | | |
| 2002 11 30 | 704 | 1.3+ | 0.5+ | 2006 10 28 | 703 | 0.3− | 0.4+ | 2006 11 22 | 703 | 0.2− | 0.0 | | | |
| 2004 03 18 | 691 | 0.7+ | 0.1+ | 2006 10 28 | 703 | 0.9− | 0.0 | | | | | | | |
| 2004 03 18 | 691 | 0.4+ | 0.4+ | 2006 10 28 | 703 | 1.1− | 0.4− | | | | | | | |

## 2002 VL$_{139}$ = 2000 EV$_{179}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 319.53932 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27636662 | $\omega$ | 70.34728 | | −0.71386506 | | −0.68771796 | | |
| $a$ | 2.3342408 | $\Omega$ | 65.94763 | | +0.57605343 | | −0.68392245 | | |
| $e$ | 0.0783068 | $i$ | 8.31528 | | +0.39819484 | | −0.24350378 | | |
| $P$ | 3.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.5− | 0.0 | 2002 11 13 | 644 | 0.2+ | 0.6+ | 2004 04 22 | 704 | 1.3− | 0.5+ | | | |
| 2000 03 04 | 704 | 0.3− | 0.0 | 2002 11 13 | 644 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.9+ | 0.5+ | | | |
| 2000 03 04 | 704 | 0.0 | 0.5− | 2002 11 23 | 644 | 0.0 | 0.4− | 2004 04 22 | 704 | 0.9+ | 0.3+ | | | |
| 2000 03 12 | 704 | 0.7+ | 0.2− | 2002 11 23 | 644 | 0.2− | 0.7− | 2004 04 22 | 704 | 0.0 | 0.4− | | | |
| 2000 03 12 | 704 | 0.6+ | 0.1− | 2002 11 23 | 644 | 0.0 | 0.8− | 2005 08 31 | 644 | 0.6− | 0.8+ | | | |
| 2000 03 12 | 704 | 0.1+ | 1.8+ | 2002 12 10 | 704 | 0.0 | 0.3+ | 2005 08 31 | 644 | 0.5− | 1.0+ | | | |
| 2000 03 12 | 704 | 0.0 | 1.1+ | 2002 12 10 | 704 | 0.4+ | 0.6+ | 2005 08 31 | 644 | 0.4− | 0.7+ | | | |
| 2002 11 13 | 644 | 0.3− | 0.1+ | 2002 12 10 | 704 | 0.1− | 1.2+ | | | | | | | |

## 2002 VS$_{139}$ = 2006 RQ$_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 283.44241 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22549744 | $\omega$ | 99.14482 | | −0.34100855 | | −0.93967922 | | |
| $a$ | 2.6732627 | $\Omega$ | 10.90799 | | +0.79738529 | | −0.30421271 | | |
| $e$ | 0.2635444 | $i$ | 8.12983 | | +0.49788540 | | −0.15638921 | | |
| $P$ | 4.37 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.0 | 0.8− | 2002 12 12 | 644 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.1− | | | |
| 2002 11 13 | 644 | 0.0 | 0.7− | 2002 12 12 | 644 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− | | | |
| 2002 11 14 | 644 | 0.1+ | 0.3+ | 2002 12 12 | 644 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.2− | | | |
| 2002 11 14 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | | | |
| 2002 11 14 | 644 | 0.3+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | | | |
| 2002 11 25 | 644 | 0.2− | 1.3+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.0 | | | |
| 2002 11 25 | 644 | (0.9+ | 2.4+) | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.3+ | | | |
| 2002 11 25 | 644 | (0.3+ | 2.5+) | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | | | |

## 2002 VT$_{139}$ = 2004 FA$_{3}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 32.85767 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24161690 | $\omega$ | 9.64387 | | +0.99250555 | | +0.10759512 | | |
| $a$ | 2.5530022 | $\Omega$ | 343.83311 | | −0.12132305 | | +0.81093931 | | |
| $e$ | 0.2785649 | $i$ | 12.00866 | | −0.01461024 | | +0.57515279 | | |
| $P$ | 4.08 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | (3.0+ | 0.9+) | 2002 12 28 | 704 | 0.8+ | 0.7+ | 2004 03 18 | 691 | 0.1− | 0.1+ | | | |
| 2000 03 03 | 704 | 0.7+ | 0.3− | 2002 12 28 | 704 | 0.6+ | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.0 | | | |
| 2000 03 03 | 704 | 0.4− | 0.1+ | 2002 12 28 | 704 | 0.5+ | 0.4− | 2004 03 18 | 691 | 0.1+ | 0.1+ | | | |
| 2002 11 07 | 704 | 0.1+ | 0.8− | 2003 01 07 | 704 | 0.8− | 0.7− | 2006 10 16 | 704 | 0.9+ | 0.4+ | | | |
| 2002 11 07 | 704 | 0.1+ | 0.4− | 2003 01 07 | 704 | 0.0 | 1.0− | 2006 10 16 | 704 | 1.1+ | 0.2+ | | | |
| 2002 11 07 | 704 | 1.2+ | 0.8− | 2003 01 07 | 704 | 0.4+ | 0.9− | 2006 10 16 | 704 | 0.2+ | 0.4+ | | | |
| 2002 12 07 | 704 | 0.8− | 0.7+ | 2003 01 07 | 704 | 0.5+ | 0.8− | 2006 10 16 | 704 | 1.0− | 1.1+ | | | |
| 2002 12 07 | 704 | 1.1− | 0.7+ | 2003 01 07 | 704 | 0.4+ | 0.1− | 2006 10 16 | 704 | 0.2+ | 0.5+ | | | |
| 2002 12 07 | 704 | 1.2− | 0.7+ | 2004 03 16 | 599 | 0.1+ | 0.3− | 2006 11 30 | A24 | 1.4− | 0.6+ | | | |
| 2002 12 07 | 704 | (2.5− | 0.2+) | 2004 03 16 | 599 | 0.1+ | 0.3+ | 2006 11 30 | A24 | 0.6+ | 0.6− | | | |
| 2002 12 07 | 704 | 0.7− | 0.1+ | 2004 03 16 | 599 | 0.3+ | 0.2+ | | | | | | | |

**2002 VU$_{139}$ = 2001 UG$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.42235 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21504949 | $\omega$ | 296.05766 | | −0.98313603 | | −0.02422272 |
| $a$ | 2.7591614 | $\Omega$ | 243.02330 | | +0.07958263 | | −0.94908248 |
| $e$ | 0.1374386 | $i$ | 11.73560 | | −0.16465159 | | −0.31409505 |
| $P$ | 4.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 21 | 699 | 1.6+ | 0.1− | 2002 12 05 | 608 | 0.8+ | 1.1+ | 2004 05 14 | 703 | 0.4+ | 0.7+ |
| 1999 02 21 | 699 | 0.4+ | 0.3− | 2002 12 10 | 704 | 0.3+ | 0.2+ | 2004 05 14 | 703 | 0.4+ | 0.7+ |
| 1999 02 21 | 699 | 0.7+ | 0.2− | 2002 12 10 | 704 | 0.1− | 0.3− | 2004 05 14 | 703 | 0.2+ | 0.4+ |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2002 12 10 | 704 | 0.1− | 0.2− | 2004 05 14 | 703 | 0.4+ | 1.2+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2002 12 10 | 704 | 0.0 | 0.8− | 2004 07 21 | E12 | 0.1− | 0.2+ |
| 2001 10 17 | 704 | (2.4− | 0.2−) | 2004 03 26 | 704 | 0.1+ | 0.0 | 2004 07 21 | E12 | 0.8− | 1.0+ |
| 2001 10 17 | 704 | 0.8− | 0.3− | 2004 03 26 | 704 | 0.3+ | 0.1+ | 2004 07 21 | E12 | 0.1+ | 1.2+ |
| 2001 10 17 | 704 | 0.2− | 0.5+ | 2004 03 26 | 704 | 0.2− | 0.6+ | 2004 07 21 | E12 | 0.4− | 0.4+ |
| 2001 10 21 | 291 | 0.6− | 0.5+ | 2004 03 26 | 704 | 0.6+ | 0.3− | 2005 07 29 | 644 | 0.5+ | 0.3+ |
| 2001 10 21 | 291 | 0.2+ | 0.3+ | 2004 03 26 | 704 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.4+ | 0.5+ |
| 2001 10 21 | 291 | 0.0 | 0.4+ | 2004 04 17 | 704 | 0.1− | 0.2− | 2005 07 29 | 644 | 0.2+ | 0.2+ |
| 2002 11 14 | 704 | 1.0− | 0.2+ | 2004 04 17 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.9+ | 0.6+ |
| 2002 11 14 | 704 | 0.2+ | 0.0 | 2004 04 17 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | 1.2− | 0.2+ |
| 2002 11 14 | 704 | 0.4+ | 0.3+ | 2004 04 17 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2− | 0.9+ |
| 2002 11 14 | 704 | 1.3− | 0.2− | 2004 04 17 | E12 | 0.5− | 1.1+ | 2006 09 18 | 703 | (0.8− | 1.7+) |
| 2002 11 14 | 704 | 0.5+ | 0.8+ | 2004 04 17 | E12 | (1.6− | 1.0+) | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2002 12 05 | 608 | 0.2+ | 1.5+ | 2004 04 17 | E12 | 0.0 | 1.0+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2002 12 05 | 608 | (0.1+ | 1.8+) | 2004 04 17 | E12 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |

**2002 VV$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.30529 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21846092 | $\omega$ | 312.40828 | | −0.24560372 | | +0.96347719 |
| $a$ | 2.7303619 | $\Omega$ | 303.07617 | | −0.84777688 | | −0.26687833 |
| $e$ | 0.1129829 | $i$ | 7.31745 | | −0.47005656 | | −0.02208310 |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 644 | 0.2+ | 0.5− | 2003 01 08 | 704 | 0.5+ | 0.4− | 2005 09 12 | 691 | 0.1+ | 0.1+ |
| 2001 10 20 | 644 | 0.1− | 0.4− | 2005 07 31 | 644 | 0.2− | 0.2− | 2005 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 10 20 | 644 | 0.2+ | 0.1− | 2005 07 31 | 644 | 0.2− | 0.1− | 2005 09 25 | 691 | 0.1− | 0.0 |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2005 07 31 | 644 | 0.0 | 0.3− | 2005 09 25 | 691 | 0.1− | 0.3+ |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2005 08 26 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2005 08 26 | 644 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2002 12 06 | 645 | 0.0 | 0.1+ | 2005 08 26 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2003 01 08 | 704 | 0.5− | 0.6− | 2005 09 12 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2003 01 08 | 704 | 0.5− | 0.5+ | 2005 09 12 | 691 | 0.1+ | 0.1+ | | | | |

**2002 VA$_{140}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.95017 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17623587 | $\omega$ | 116.43185 | | +0.80787759 | | −0.56564535 |
| $a$ | 3.1506961 | $\Omega$ | 278.44746 | | +0.46337630 | | +0.78312903 |
| $e$ | 0.0921140 | $i$ | 9.62978 | | +0.36416507 | | +0.25836847 |
| $P$ | 5.59 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1+ | 0.3− | 2002 11 24 | 644 | 0.0 | 0.9+ | 2004 01 28 | 645 | 0.2− | 0.0 |
| 2002 11 13 | 644 | 0.1+ | 0.3− | 2002 12 03 | 644 | 0.3− | 0.5− | 2004 02 11 | 644 | 0.1+ | 0.2+ |
| 2002 11 13 | 644 | 0.1+ | 0.5− | 2002 12 03 | 644 | 0.1− | 0.6− | 2004 02 11 | 644 | 0.3+ | 0.1− |
| 2002 11 24 | 644 | 0.0 | 0.8+ | 2002 12 03 | 644 | 0.1+ | 0.5− | 2004 02 11 | 644 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.0 | 1.0+ | 2004 01 28 | 645 | 0.2− | 0.0 | | | | |

**2002 VE$_{140}$ = 2005 NZ$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.14621 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28804142 | $\omega$ | 272.22950 | | +0.95970750 | | −0.27398796 |
| $a$ | 2.2707331 | $\Omega$ | 103.67686 | | +0.27652424 | | +0.88137634 |
| $e$ | 0.1555187 | $i$ | 3.68135 | | +0.04995863 | | +0.38484588 |
| $P$ | 3.42 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 10 | 691 | 0.0 | 0.7− | 2002 11 11 | 644 | 0.1+ | 1.5− | 2002 11 22 | 644 | 0.1+ | 0.1+ |
| 2000 01 10 | 691 | 0.2− | 0.3+ | 2002 11 13 | 644 | 0.1+ | 0.4+ | 2002 11 22 | 644 | 0.1− | 0.2− |
| 2000 01 10 | 691 | 0.2+ | 0.2+ | 2002 11 13 | 644 | 0.4+ | 1.0+ | 2005 07 09 | 691 | 0.0 | 0.1− |
| 2002 11 06 | 699 | 0.4− | 0.2− | 2002 11 13 | 644 | 0.1+ | 0.8+ | 2005 07 09 | 691 | 0.3+ | 0.0 |
| 2002 11 06 | 699 | 0.2− | 0.4− | 2002 11 21 | 644 | 0.1+ | 0.1− | 2005 07 09 | 691 | 0.3+ | 0.0 |
| 2002 11 06 | 699 | 0.0 | 0.3+ | 2002 11 21 | 644 | 0.4− | 0.1+ | 2005 07 16 | 691 | 0.1− | 0.1− |
| 2002 11 06 | 699 | 0.5+ | 0.2+ | 2002 11 21 | 644 | 0.0 | 0.4+ | 2005 07 16 | 691 | 0.1− | 0.1− |
| 2002 11 11 | 644 | 0.2+ | 1.2− | 2002 11 22 | 644 | 0.5− | 0.3+ | 2005 07 16 | 691 | 0.2− | 0.0 |

**2002 VF$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.43972 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18047414 | $\omega$ | 177.55702 | | −0.01224362 | | −0.98766396 |
| $a$ | 3.1011735 | $\Omega$ | 273.11451 | | +0.91474213 | | +0.05199121 |
| $e$ | 0.0179095 | $i$ | 8.99451 | | +0.40385261 | | −0.14770520 |
| $P$ | 5.46 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.4+ | 0.2+ | 2002 12 11 | 644 | 0.5− | 0.5− | 2005 04 15 | 703 | 0.8− | 0.4− |
| 2002 11 13 | 644 | 0.4+ | 0.1+ | 2002 12 11 | 644 | 0.0 | 0.0 | 2005 04 15 | 703 | (2.9− | 1.8−) |
| 2002 11 13 | 644 | 0.6+ | 0.3+ | 2004 02 11 | 644 | 0.1+ | 0.0 | 2005 05 16 | 644 | 0.1+ | 0.2+ |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2004 02 11 | 644 | 0.0 | 0.1+ | 2005 05 16 | 644 | 0.3+ | 0.1− |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2004 02 11 | 644 | 0.1− | 0.0 | 2005 05 16 | 644 | 0.5+ | 0.0 |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2005 04 15 | 703 | 0.1− | 0.9+ | | | | |
| 2002 12 11 | 644 | 0.5− | 0.3− | 2005 04 15 | 703 | 0.1− | 0.7− | | | | |

**2002 VG$_{140}$ = 2006 SU$_{128}$**

Id. Minor Planet Center, S. Foglia

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.53478 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22944024 | $\omega$ | 36.92967 | | +0.37678514 | | +0.89932869 |
| $a$ | 2.6425487 | $\Omega$ | 256.16330 | | −0.89509428 | | +0.29183286 |
| $e$ | 0.0990768 | $i$ | 13.21081 | | −0.23840971 | | +0.32564014 |
| $P$ | 4.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.3+ | 1.0+ | 2005 07 04 | 644 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.1+ |
| 2002 11 13 | 644 | 0.0 | 0.6+ | 2005 07 04 | 644 | 0.2+ | 0.7+ | 2006 09 28 | 703 | 1.0− | 0.3− |
| 2002 11 13 | 644 | 0.2− | 0.7+ | 2005 07 04 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 11 24 | 644 | 0.1+ | 0.8− | 2006 09 17 | 703 | 0.1+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.2+ | 0.6− | 2006 09 17 | 703 | 0.1− | 1.1+ | 2006 10 31 | 703 | 0.0 | 0.7− |
| 2002 12 11 | 644 | 0.3− | 0.3− | 2006 09 17 | 703 | 0.9+ | 0.3+ | 2006 10 31 | 703 | (0.4− | 2.2−) |
| 2002 12 11 | 644 | 0.0 | 0.4− | 2006 09 22 | 699 | 0.6+ | 1.1+ | 2006 10 31 | 703 | 0.1− | 0.6− |
| 2002 12 11 | 644 | 0.2− | 0.5− | 2006 09 22 | 699 | 0.2+ | 0.2− | 2006 10 31 | 703 | 0.0 | 1.3+ |
| 2004 01 18 | 703 | 0.1+ | 1.1+ | 2006 09 22 | 699 | 0.7+ | 0.5− | 2006 11 14 | 703 | 0.7− | 0.4+ |
| 2004 01 18 | 703 | (2.1+ | 0.2+) | 2006 09 22 | 699 | 0.5+ | 0.1+ | 2006 11 14 | 703 | 1.2− | 1.0+ |
| 2004 01 18 | 703 | 0.4− | 1.4+ | 2006 09 28 | 703 | 0.4− | 1.0− | 2006 11 14 | 703 | 0.4− | 0.3− |
| 2004 01 18 | 703 | 0.9+ | 1.1− | 2006 09 28 | 703 | 0.6− | 0.3− | 2006 11 14 | 703 | 0.3− | 0.2− |

**2002 WK**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.42506 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23292023 | $\omega$ | 109.50254 | | +0.76669601 | −0.45344323 | |
| $a$ | 2.6161617 | $\Omega$ | 279.87314 | | +0.26035561 | +0.86670007 | |
| $e$ | 0.4352907 | $i$ | 27.47285 | | +0.58684937 | +0.20789473 | |
| $P$ | 4.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 699 | 0.2+ | 0.4− | 2002 11 23 | 704 | 0.3+ | 0.3+ | 2003 01 28 | 644 | 0.3− | 0.6+ |
| 1998 12 16 | 699 | 0.3− | 1.0+ | 2002 12 12 | 704 | 0.6+ | 0.1− | 2003 02 01 | 704 | 0.5− | 0.6+ |
| 1998 12 16 | 699 | 1.0+ | 0.6+ | 2002 12 12 | 704 | 0.1+ | 0.6− | 2003 02 01 | 704 | 0.5+ | 0.3+ |
| 2002 11 17 | 704 | 0.5− | 0.2− | 2002 12 12 | 704 | 0.5+ | 0.1+ | 2003 02 01 | 704 | 0.1− | 0.3+ |
| 2002 11 17 | 704 | 0.2+ | 0.3− | 2002 12 12 | 704 | 0.7+ | 0.3+ | 2003 02 01 | 704 | 0.2− | 0.2− |
| 2002 11 17 | 704 | 0.2− | 0.7− | 2002 12 12 | 704 | 0.6+ | 0.8− | 2003 02 01 | 704 | 0.4+ | 1.4+ |
| 2002 11 17 | 704 | 0.3+ | 0.2− | 2002 12 29 | 704 | 0.8− | 0.9− | 2003 02 04 | 704 | 0.3− | 0.2− |
| 2002 11 17 | 704 | 0.2− | 0.5− | 2002 12 29 | 704 | 0.6+ | 0.5− | 2003 02 04 | 704 | 0.1− | 0.8− |
| 2002 11 19 | 926 | 0.2− | 0.1+ | 2002 12 29 | 704 | 0.9− | 0.4− | 2003 02 04 | 704 | 0.4− | 0.5− |
| 2002 11 19 | 926 | 0.7+ | 0.7+ | 2002 12 29 | 704 | 0.9− | 1.1+ | 2003 02 04 | 704 | 0.9− | 0.4+ |
| 2002 11 20 | 446 | 0.3− | 1.2− | 2003 01 25 | 699 | 0.6+ | 0.4+ | 2003 02 04 | 704 | 1.1− | 0.6− |
| 2002 11 20 | 446 | 0.9− | 0.5− | 2003 01 25 | 699 | 0.3+ | 0.5+ | 2006 05 30 | G96 | 0.7− | 0.7+ |
| 2002 11 20 | 446 | 0.4− | 1.9+ | 2003 01 25 | 699 | 1.3+ | 0.7+ | 2006 05 30 | G96 | 0.6− | 0.5+ |
| 2002 11 23 | 704 | 0.1− | 0.2+ | 2003 01 25 | 699 | 1.6+ | 0.6− | 2006 05 30 | G96 | 0.4− | 0.9+ |
| 2002 11 23 | 704 | 0.2+ | 0.1+ | 2003 01 28 | 644 | 0.6+ | 0.5+ | 2006 05 30 | G96 | 0.7− | 0.7+ |
| 2002 11 23 | 704 | 0.3− | 0.3+ | 2003 01 28 | 644 | 0.5+ | 0.3+ | | | | |

**2002 WS**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.13619 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23420389 | $\omega$ | 111.54365 | | −0.45767694 | −0.88734770 | |
| $a$ | 2.6065935 | $\Omega$ | 6.57671 | | +0.51938333 | −0.31802261 | |
| $e$ | 0.3911182 | $i$ | 29.32155 | | +0.72164588 | −0.33387974 | |
| $P$ | 4.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 704 | 0.5+ | 0.7+ | 2002 12 28 | 704 | 0.1− | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.4− |
| 1999 02 18 | 704 | 0.6+ | 1.2− | 2002 12 28 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.5+ | 0.0 |
| 1999 02 18 | 704 | 0.4− | 0.1− | 2002 12 28 | 704 | 0.0 | 0.3+ | 2006 09 28 | 703 | 1.4+ | 1.2+ |
| 1999 02 18 | 704 | 0.4+ | 1.1+ | 2003 01 23 | 704 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.1− | 0.8+ |
| 1999 02 18 | 704 | 0.9− | 0.5− | 2003 01 23 | 704 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.6− | 0.2− |
| 2002 11 20 | 704 | 0.7− | 0.9− | 2003 01 23 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.4− | 0.3+ |
| 2002 11 20 | 704 | 0.4− | 1.2− | 2003 01 23 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 11 20 | 704 | 0.4− | 0.0 | 2003 01 23 | 704 | 0.5+ | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 11 20 | 704 | 0.2+ | 0.5− | 2003 01 28 | 704 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.8− | 0.5+ |
| 2002 11 20 | 704 | 0.7+ | 0.5− | 2003 01 28 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 1.0− | 0.1− |
| 2002 11 20 | 046 | 0.5− | 0.9− | 2003 01 28 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.7+ |
| 2002 11 20 | 046 | 0.5− | 0.4− | 2003 01 28 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.9+ | 0.4+ |
| 2002 11 20 | 046 | 0.4+ | 0.1− | 2003 01 30 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.5− |
| 2002 11 20 | 046 | 0.0 | 0.4+ | 2003 01 30 | 704 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 11 20 | 046 | 0.1− | 0.4+ | 2003 01 30 | 704 | 0.2+ | 0.6− | 2006 10 22 | 644 | 0.3+ | 0.5+ |
| 2002 11 20 | 046 | 0.3− | 0.2− | 2003 02 22 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 11 20 | 046 | 0.5+ | 0.1− | 2003 02 22 | 704 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 11 21 | 926 | 0.5+ | 0.6− | 2003 02 22 | 704 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 11 21 | 926 | 0.2+ | 0.4− | 2003 02 22 | 704 | 0.8− | 0.0 | 2006 10 27 | 703 | 0.2− | 1.3− |
| 2002 11 21 | 926 | 0.5+ | 0.2− | 2003 02 22 | 704 | 0.9+ | 0.7+ | 2006 10 27 | 703 | 0.7+ | 0.1− |
| 2002 11 21 | 926 | 1.4− | 0.3+ | 2003 03 23 | 704 | 0.9+ | 0.6+ | 2006 10 27 | 703 | 0.6− | 0.7− |
| 2002 11 22 | 670 | 0.1− | 0.6+ | 2003 03 23 | 704 | (0.1+ | 1.6+) | 2006 10 27 | 703 | 0.9− | 1.4+ |
| 2002 11 22 | 926 | 0.4− | 0.3+ | 2003 03 23 | 704 | 0.3− | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2002 11 22 | 926 | 0.1− | 0.5+ | 2003 03 23 | 704 | 0.4− | 1.4+ | 2006 10 27 | 703 | 0.1+ | 0.3− |
| 2002 11 22 | 926 | 0.4+ | 0.4+ | 2003 03 23 | 704 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2002 11 22 | 649 | 0.0 | 0.7− | 2006 09 18 | 703 | (1.8− | 0.4−) | 2006 11 15 | 703 | 0.0 | 0.7+ |
| 2002 11 22 | 649 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.1− |
| 2002 11 22 | 649 | 0.1− | 1.0− | 2006 09 18 | 703 | 0.5− | 0.3− | 2006 11 15 | 703 | 0.7− | 0.1− |
| 2002 11 22 | 649 | 0.3+ | 1.0− | 2006 09 18 | 703 | 0.1+ | 1.3− | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2002 11 22 | 670 | 0.5+ | 0.1− | 2006 09 20 | 699 | 1.4+ | 1.1+ | 2006 11 22 | 703 | 0.7− | 0.3− |
| 2002 11 22 | 670 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.3− | 0.9− |
| 2002 12 28 | 704 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.4− | 0.1− | 2006 11 22 | 703 | 0.3− | 0.2+ |

**2002 WL$_1$ = 2006 PZ$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.01416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20954351 | $\omega$ | 278.98803 | | +0.74145182 | +0.65589345 | |
| $a$ | 2.8072855 | $\Omega$ | 40.21071 | | −0.49648510 | +0.67821963 | |
| $e$ | 0.1481665 | $i$ | 12.67050 | | −0.45138868 | +0.33139390 | |
| $P$ | 4.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.0 | 0.1− | 2002 11 24 | 644 | 0.3+ | 0.4+ | 2006 08 14 | E12 | 0.3− | 0.2− |
| 2002 11 01 | 644 | 0.3− | 0.3− | 2002 11 24 | 644 | 0.2− | 0.3+ | 2006 08 14 | E12 | 0.0 | 0.2− |
| 2002 11 01 | 644 | 0.2− | 0.0 | 2002 12 01 | 608 | 0.9− | 0.7− | 2006 08 14 | E12 | 0.7− | 0.5+ |
| 2002 11 05 | 644 | 0.2+ | 0.2− | 2002 12 01 | 608 | 0.6− | 0.4− | 2006 08 14 | E12 | 0.0 | 0.2− |
| 2002 11 05 | 644 | 0.4+ | 0.4− | 2002 12 01 | 608 | 1.0− | 0.8− | 2006 08 25 | E12 | 0.2+ | 0.4+ |
| 2002 11 05 | 644 | 0.3− | 0.4− | 2002 12 02 | 704 | 0.2− | 1.1+ | 2006 08 25 | E12 | 0.9− | 0.7+ |
| 2002 11 12 | 704 | 0.2+ | 0.7+ | 2002 12 02 | 704 | 0.4− | 0.5+ | 2006 08 25 | E12 | 0.1− | 0.4− |
| 2002 11 12 | 704 | 1.5+ | 0.8+ | 2002 12 02 | 704 | 0.2− | 1.3− | 2006 08 25 | E12 | 0.7− | 0.1+ |
| 2002 11 12 | 704 | 1.0+ | 0.3+ | 2002 12 11 | 644 | 0.2− | 0.0 | 2006 09 27 | E12 | 1.5+ | 0.1− |
| 2002 11 12 | 704 | 0.1+ | 1.0+ | 2002 12 11 | 644 | 0.0 | 0.3+ | 2006 09 27 | E12 | 0.1− | 0.1+ |
| 2002 11 23 | 644 | 0.3+ | 0.2− | 2002 12 11 | 644 | 0.1− | 0.2− | 2006 09 27 | E12 | 0.2+ | 0.1+ |
| 2002 11 23 | 644 | 0.1+ | 0.2− | 2006 07 18 | E12 | 0.6+ | 0.1− | 2006 09 27 | E12 | 0.1− | 0.8− |
| 2002 11 23 | 644 | 0.2+ | 0.4− | 2006 07 18 | E12 | 0.3+ | 0.1− | | | | |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 07 18 | E12 | 0.3+ | 0.1+ | | | | |

**2002 WR$_1$ = 2006 RF$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.90655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23175358 | $\omega$ | 144.23652 | | +0.84370909 | −0.53549796 | |
| $a$ | 2.6249342 | $\Omega$ | 248.18261 | | +0.48267241 | +0.78726160 | |
| $e$ | 0.1191080 | $i$ | 2.30728 | | +0.23490917 | +0.30571409 | |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | (0.1+ | 2.3−) | 2002 12 11 | 644 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2002 11 13 | 644 | 0.4+ | 0.6− | 2002 12 11 | 644 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.3+ |
| 2002 11 13 | 644 | 0.0 | 0.7− | 2002 12 11 | 644 | 0.5− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 11 23 | 644 | 0.1− | 0.4+ | 2002 12 11 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 11 23 | 644 | 0.7+ | 0.6+ | 2004 03 15 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2002 11 23 | 644 | 0.0 | 0.3+ | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 11 24 | 644 | 0.4− | 0.0 | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.1+ |
| 2002 11 24 | 644 | 0.6− | 0.2− | 2006 09 14 | 703 | 1.1+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.4− |
| 2002 11 24 | 644 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.4− |
| 2002 12 05 | 704 | 0.1− | 0.6− | 2006 09 14 | 703 | 0.7− | 1.1+ | 2006 10 21 | 703 | 0.5+ | 0.5+ |
| 2002 12 05 | 704 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2002 12 10 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2002 12 10 | 704 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.3− |
| 2002 12 10 | 704 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 12 11 | 704 | (1.7− | 0.8−) | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2002 12 11 | 704 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2002 12 11 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2002 12 11 | 644 | 0.5− | 0.4− | 2006 10 19 | 644 | 0.3− | 0.2+ | 2006 11 18 | 291 | 0.2+ | 0.1+ |
| 2002 12 11 | 644 | 0.8+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.3+ | 2006 11 18 | 291 | 0.1− | 0.1− |
| 2002 12 11 | 704 | (1.0− | 2.0−) | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 18 | 291 | 0.0 | 0.1+ |

### 2002 $WT_1$ = 2006 $TA_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.87803 | | (2000.0) | | | |
| $n$ | 0.24076793 | $\omega$ | 169.98786 | | +0.59201952 | −0.80502564 |
| $a$ | 2.5590000 | $\Omega$ | 243.70171 | | +0.73645552 | +0.55955448 |
| $e$ | 0.2510044 | $i$ | 2.43153 | | +0.32733187 | +0.19705966 |
| $P$ | 4.09 | $H$ | 18.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 11 23 | 644 | 1.4+ | 0.2+ | 2006 10 15 | 691 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.2− |
| 2002 11 23 | 644 | 0.5+ | 0.6+ | 2006 10 15 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2002 11 24 | 644 | 0.5− | 0.3− | 2006 10 17 | 691 | 1.3+ | 0.1− | 2006 11 01 | 691 | 0.5+ | 0.3+ |
| 2002 11 24 | 644 | 0.7− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2002 11 24 | 644 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.4+ | 0.0 |
| 2002 11 27 | 699 | 0.8+ | 0.4− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2002 11 27 | 699 | 1.3+ | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.1+ |
| 2002 11 27 | 699 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.4− |
| 2002 11 27 | 699 | (0.6+ | 2.1+) | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2002 11 28 | 699 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2002 11 28 | 699 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2002 11 28 | 699 | 0.1+ | 0.8− | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2002 11 28 | 699 | 0.2− | 0.6− | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 1.1− | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.4− | 0.2+ |
| 2002 12 05 | 704 | 0.1− | 1.1+ | 2006 10 26 | 104 | 0.0 | 0.7+ | 2006 11 22 | 691 | 0.3− | 0.2− |
| 2006 10 11 | 691 | 0.6− | 0.0 | 2006 10 26 | 104 | 0.0 | 1.4+ | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 10 26 | 104 | 0.6− | 0.1+ | | | | |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 | | | | |

### 2002 $WW_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 284.77001 | | (2000.0) | | | |
| $n$ | 0.21426022 | $\omega$ | 1.44357 | | +0.22106435 | −0.97289667 |
| $a$ | 2.7659332 | $\Omega$ | 75.78839 | | +0.89408007 | +0.17438615 |
| $e$ | 0.0521074 | $i$ | 4.01309 | | +0.38955280 | +0.15186025 |
| $P$ | 4.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.4− | 0.4− | 2002 12 05 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.0 | 0.2+ |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2002 12 05 | 704 | 1.1− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.4− |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2002 12 05 | 704 | 0.4+ | 0.5− | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2002 11 15 | 704 | 0.0 | 0.7− | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.1+ |
| 2002 11 15 | 704 | 0.2− | 0.3− | 2002 12 05 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 699 | (0.1+ | 2.3−) |
| 2002 11 15 | 704 | 0.4− | 0.8− | 2002 12 06 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.9− |
| 2002 11 15 | 704 | 0.1+ | 0.3+ | 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.5+ |
| 2002 11 23 | 644 | 0.0 | 0.7+ | 2002 12 06 | 704 | 0.5+ | 0.2− | 2006 09 22 | 704 | 0.3− | 0.1+ |
| 2002 11 23 | 644 | 0.0 | 0.7+ | 2002 12 06 | 704 | 0.3− | 0.7+ | 2006 09 22 | 704 | 1.0+ | 0.6+ |
| 2002 11 23 | 644 | 0.1+ | 0.8+ | 2002 12 06 | 704 | 0.3+ | 0.6+ | 2006 09 22 | 704 | (1.4+ | 1.8−) |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2002 12 10 | 704 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2002 11 24 | 644 | 0.1+ | 0.2− | 2002 12 10 | 704 | 1.2+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 11 24 | 644 | 0.2− | 0.4− | 2002 12 10 | 704 | 0.7− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.4− |
| 2002 11 28 | 699 | 0.6+ | 0.4+ | 2002 12 10 | 704 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.6− | 0.6− |
| 2002 11 28 | 699 | 1.4− | 0.4− | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.4+ | 0.3− |
| 2002 11 28 | 699 | (2.1− | 0.2−) | 2004 02 29 | 691 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2002 11 28 | 699 | 0.1− | 0.4− | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.9− | 0.5+ |
| 2002 12 05 | 704 | 0.4− | 0.5− | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.2− | 1.1+ |
| 2002 12 05 | 704 | (1.6+ | 1.3+) | 2006 08 29 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 10 19 | 703 | 1.5− | 0.9− |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.4+ | 1.0− | | | | |
| 2002 12 05 | 704 | 0.5+ | 0.5− | 2006 09 14 | 703 | 0.4− | 0.1− | | | | |

### 2002 $WA_2$ = 2006 $SA_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.46622 | | (2000.0) | | | |
| $n$ | 0.23521381 | $\omega$ | 170.26730 | | +0.99955976 | −0.02847446 |
| $a$ | 2.5991270 | $\Omega$ | 191.37435 | | +0.02357788 | +0.93288371 |
| $e$ | 0.2017285 | $i$ | 2.42238 | | +0.01801002 | +0.35905041 |
| $P$ | 4.19 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 11 23 | 644 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.3− |
| 2002 11 23 | 644 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.9+ | 0.9+ | 2006 10 20 | 703 | 0.1+ | 0.6− |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 09 27 | 704 | (2.2+ | 1.6+) | 2006 10 20 | 703 | 0.1− | 0.1− |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 20 | 703 | 0.4− | 0.5− |
| 2002 12 05 | 704 | 0.5+ | 0.4− | 2006 09 28 | 691 | 0.3− | 0.1− | 2006 10 20 | 703 | 0.3+ | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2002 12 05 | 704 | 0.1+ | 0.7− | 2006 10 02 | 691 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.7− |
| 2002 12 10 | 704 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.3− |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.0 |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.1− |
| 2002 12 10 | 704 | 0.6− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | (1.6+ | 0.8+) |
| 2002 12 10 | 644 | 0.3− | 0.5+ | 2006 10 15 | 691 | (2.6+ | 1.0+) | 2006 10 23 | 704 | 0.7+ | 0.2− |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 10 23 | 704 | 0.4+ | 0.4− |
| 2006 09 18 | 699 | 0.4+ | 0.9+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.5+ | 0.4+ |
| 2006 09 18 | 699 | 0.6− | 0.5− | 2006 10 16 | 185 | 0.8+ | 1.2− | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2006 09 18 | 699 | 0.6− | 1.1+ | 2006 10 16 | 185 | (1.6+ | 1.0−) | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 16 | 185 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 16 | 185 | 0.6+ | 0.9− | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2006 09 18 | 699 | 0.5− | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2006 09 21 | 224 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2006 09 21 | 224 | 0.8+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2006 09 21 | 224 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.0 | | | | |

### 2002 $WQ_3$ = 2006 $RC_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.84186 | | (2000.0) | | | |
| $n$ | 0.22939240 | $\omega$ | 223.68175 | | +0.88107377 | −0.47286856 |
| $a$ | 2.6429161 | $\Omega$ | 164.52971 | | +0.44379150 | +0.81904079 |
| $e$ | 0.0857622 | $i$ | 2.19474 | | +0.16357910 | +0.32491155 |
| $P$ | 4.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 691 | 0.0 | 0.0 | 2004 02 13 | 291 | 0.0 | 0.0 | 2006 10 17 | G96 | (0.4+ | 2.5−) |
| 2000 03 27 | 691 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.2+ | 0.5+ | 2006 10 17 | G96 | 0.5+ | 0.8− |
| 2000 03 27 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.7− |
| 2002 11 13 | 644 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.8− |
| 2002 11 13 | 644 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2002 11 13 | 644 | 0.2− | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.4− |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.9− |
| 2002 11 25 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 11 25 | 644 | 0.3+ | 0.2+ | 2006 10 15 | 703 | (2.2+ | 1.9−) | 2006 11 16 | G96 | 0.4+ | 0.5− |
| 2002 11 25 | 644 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.8− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2004 02 13 | 291 | 0.3+ | 0.3+ | 2006 10 15 | 703 | 0.6− | 0.1− | | | | |
| 2004 02 13 | 291 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.0 | 0.5− | | | | |

### 2002 $WT_3$ = 2006 $QA_{136}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.75555 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22788195 | $\omega$ | 131.11939 | | +0.98538978 | | +0.15855217 |
| $a$ | 2.6545817 | $\Omega$ | 219.87313 | | −0.17021348 | | +0.92936128 |
| $e$ | 0.2790074 | $i$ | 5.56726 | | +0.00586139 | | +0.33338988 |
| $P$ | 4.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 25 | 704 | 1.0− | 0.1+ |
| 2002 11 13 | 644 | 0.3+ | 0.2− | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.1+ |
| 2002 11 13 | 644 | 0.7− | 0.8− | 2006 08 29 | 703 | 1.0− | 0.7− | 2006 09 25 | 704 | 0.5− | 0.2+ |
| 2002 11 16 | 644 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.4+ | 0.8− | 2006 09 29 | 704 | (1.6+ | 0.1−) |
| 2002 11 16 | 644 | 0.1+ | 0.3− | 2006 09 12 | 703 | 0.6+ | 0.6− | 2006 09 29 | 704 | 1.2− | 0.3+ |
| 2002 11 16 | 644 | 0.5− | 0.4− | 2006 09 12 | 703 | 0.7+ | 0.4+ | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.1+ | 0.5+ | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.2+ |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 09 30 | 699 | 0.9+ | 1.0− |
| 2002 11 24 | 644 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.2+ | 0.2− | 2006 09 30 | 699 | 0.8+ | 0.8− |
| 2002 11 25 | 644 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.3+ | 0.3− | 2006 09 30 | 699 | 0.4− | 0.8+ |
| 2002 11 25 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.8− | 0.0 | 2006 09 30 | 699 | 0.4+ | 0.0 |
| 2002 11 25 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 01 | 704 | 1.5− | 0.1+ |
| 2002 12 10 | 644 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 10 01 | 704 | (1.6− | 0.4+) |
| 2002 12 10 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 1.1− | 0.1+ | 2006 10 01 | 704 | 0.0 | 1.1+ |
| 2002 12 10 | 644 | 0.4+ | 0.0 | 2006 09 20 | 699 | 0.5+ | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.1+ |
| 2006 08 28 | 704 | 1.0− | 0.5+ | 2006 09 20 | 699 | 0.7+ | 0.4− | 2006 11 14 | G96 | 0.5+ | 0.1− |
| 2006 08 28 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.9+ | 0.6− | 2006 11 14 | G96 | 0.4− | 0.2− |
| 2006 08 28 | 704 | 1.4+ | 0.3+ | 2006 09 20 | 699 | 0.5− | 0.4− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2006 08 28 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.4− | 0.2+ | | | | |
| 2006 08 29 | 703 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.4+ | 1.1+ | | | | |

### 2002 $WW_3$ = 2006 $SN_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.83706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22526987 | $\omega$ | 298.67025 | | +0.89424972 | | −0.43088035 |
| $a$ | 2.6750627 | $\Omega$ | 87.07779 | | +0.44118200 | | +0.80308609 |
| $e$ | 0.0613708 | $i$ | 6.96334 | | +0.07533846 | | +0.41157606 |
| $P$ | 4.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.1− | 0.2+ | 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.2− |
| 2000 05 05 | 645 | 0.1− | 0.0 | 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 1.4− |
| 2001 07 20 | 644 | 0.7+ | 1.2+ | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 1.7− | 1.0+ |
| 2001 07 20 | 644 | 0.8+ | 0.9+ | 2004 02 13 | 691 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 1.0+ | 0.5+ |
| 2001 07 20 | 644 | 0.3+ | 1.2+ | 2004 02 13 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.5+ | 0.2+ | 2004 02 29 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2002 11 24 | 644 | 1.2+ | 1.0+ | 2004 02 29 | 691 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 11 24 | 644 | 0.5+ | 0.5+ | 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 1.6− | 0.1+ |
| 2002 11 25 | 644 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.5+ | 0.5− | 2006 10 22 | 703 | 0.6+ | 0.8− |
| 2002 11 25 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 1.4+ | 0.8+ | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2002 11 25 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 1.3+ | 0.8− | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2002 12 10 | 704 | 0.3− | 0.4− | 2006 09 18 | 703 | (1.6− | 0.6−) | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2002 12 10 | 704 | 0.6− | 0.9− | 2006 09 20 | 644 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2002 12 10 | 704 | 0.8− | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 12 10 | 644 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1+ | | | | |

### 2002 $WA_4$ = 2006 $TU_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.93230 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23006802 | $\omega$ | 139.56691 | | +0.99709787 | | +0.05993697 |
| $a$ | 2.6377393 | $\Omega$ | 217.07685 | | −0.07235818 | | +0.93779081 |
| $e$ | 0.1512790 | $i$ | 4.46553 | | +0.02366691 | | +0.34198824 |
| $P$ | 4.28 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.0 |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 11 25 | 644 | 0.3− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.6+ |
| 2002 11 25 | 644 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2002 11 25 | 644 | 0.0 | 0.4− | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 25 | 106 | 0.2− | 0.1+ |
| 2002 12 10 | 644 | 0.5− | 1.3+ | 2006 10 15 | 691 | 0.5+ | 0.1+ | 2006 10 25 | 106 | 0.1− | 0.9+ |
| 2002 12 10 | 644 | 0.2− | 1.2+ | 2006 10 16 | 683 | 0.1− | 0.0 | 2006 10 25 | 106 | 0.0 | 0.1− |
| 2002 12 10 | 644 | 0.3− | 1.0+ | 2006 10 16 | 683 | 0.4+ | 1.4+ | 2006 10 25 | 106 | 0.2− | 0.1+ |
| 2002 12 13 | 704 | 1.1+ | 1.0+ | 2006 10 16 | 683 | 0.3− | 0.6+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2002 12 13 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 683 | 0.4+ | 0.6− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 12 13 | 704 | 0.6− | 0.2+ | 2006 10 17 | 683 | 0.0 | 1.2− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2002 12 13 | 704 | 0.3− | 0.9+ | 2006 10 17 | 683 | 0.3+ | 0.9− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2005 02 16 | 809 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.6− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2005 02 16 | 809 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.5− | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2005 02 16 | 809 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2005 06 03 | 703 | (3.8+ | 1.2+) | 2006 10 17 | 703 | 0.5− | 0.6− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2005 06 03 | 703 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2005 06 03 | 703 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2005 06 03 | 703 | 1.4− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2005 06 13 | 691 | 0.3+ | 0.6+ | 2006 10 19 | 683 | (2.0− | 1.3+) | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2005 06 13 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 683 | (1.3− | 2.0+) | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2005 06 13 | 691 | 0.0 | 0.4+ | 2006 10 19 | 683 | 1.0− | 1.1+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2006 09 01 | 224 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2006 09 01 | 224 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2006 09 01 | 224 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2006 10 10 | 644 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.6− |
| 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.7+ | 0.5− |
| 2006 10 10 | 644 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.0 | | | | |

### 2002 $WX_4$ = 2006 $RC_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.30621 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22643856 | $\omega$ | 83.20338 | | +0.74821578 | | +0.54535865 |
| $a$ | 2.6658505 | $\Omega$ | 243.06507 | | −0.63798188 | | +0.74770735 |
| $e$ | 0.2869536 | $i$ | 25.07510 | | +0.18207765 | | +0.37883724 |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.5− | 0.2− | 2002 12 27 | 644 | 0.7+ | 0.1+ | 2006 10 03 | 704 | 1.4+ | 0.1+ |
| 2002 11 24 | 644 | 0.7− | 0.0 | 2006 09 12 | 704 | 0.5+ | 0.6+ | 2006 10 03 | 704 | 0.7+ | 0.3+ |
| 2002 11 24 | 644 | 0.6− | 0.3+ | 2006 09 12 | 704 | (1.9+ | 0.7−) | 2006 10 03 | 704 | 0.4+ | 0.5+ |
| 2002 11 27 | 699 | 0.5+ | 0.2− | 2006 09 12 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 198 | 0.1+ | 0.2+ |
| 2002 11 27 | 699 | 0.8+ | 0.2+ | 2006 09 12 | 704 | 0.8+ | 0.4+ | 2006 10 16 | 198 | 0.1+ | 0.1+ |
| 2002 11 27 | 699 | 0.2+ | 0.0 | 2006 09 15 | 704 | 0.3+ | 1.3− | 2006 10 16 | 198 | 0.1+ | 0.1+ |
| 2002 11 27 | 699 | 0.7− | 0.7− | 2006 09 15 | 704 | 0.9+ | 0.3− | 2006 10 16 | 198 | 0.2+ | 0.2+ |
| 2002 11 27 | 608 | 0.7+ | 0.4+ | 2006 09 15 | 704 | 0.0 | 0.4− | 2006 10 16 | 198 | 0.1+ | 0.1+ |
| 2002 11 27 | 608 | 0.2+ | 0.2+ | 2006 09 15 | 704 | 0.1+ | 0.8− | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2002 11 27 | 608 | 0.6+ | 0.8+ | 2006 09 15 | 704 | 0.5+ | 0.5− | 2006 10 23 | 703 | 0.7− | 0.5− |
| 2002 12 02 | 704 | 0.3+ | 0.1− | 2006 09 17 | 704 | 1.4− | 0.7− | 2006 10 23 | 703 | 0.4− | 0.3− |
| 2002 12 02 | 704 | 0.4+ | 0.4− | 2006 09 17 | 704 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.3+ |
| 2002 12 02 | 704 | 1.2+ | 0.0 | 2006 09 17 | 704 | 0.4− | 0.8+ | 2006 11 15 | 703 | 0.8− | 0.1− |
| 2002 12 03 | 608 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.4− | 1.1+ | 2006 11 15 | 703 | 1.6− | 0.2− |
| 2002 12 03 | 608 | 0.3− | 0.3− | 2006 09 17 | 704 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.4− |
| 2002 12 03 | 608 | 0.7− | 0.3− | 2006 09 29 | 703 | 1.2− | 0.3− | 2006 11 22 | 703 | 0.0 | 0.6+ |
| 2002 12 05 | 704 | 0.2− | 0.3− | 2006 09 29 | 703 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.2+ | 0.4− |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2006 09 29 | 703 | 0.8− | 0.5− | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 0.8+ | 0.0 | 2006 11 22 | 703 | 0.0 | 1.0− |
| 2002 12 05 | 704 | 0.8− | 0.0 | 2006 10 02 | 703 | 0.1+ | 0.5+ | 2006 11 23 | 703 | 0.7+ | 0.2+ |
| 2002 12 05 | 704 | (0.0 | 1.9−) | 2006 10 02 | 703 | 0.7− | 0.2+ | 2006 11 23 | 703 | 0.8+ | 0.6+ |
| 2002 12 27 | 644 | 0.4− | 0.1+ | 2006 10 02 | 703 | 0.0 | 0.9+ | 2006 11 23 | 703 | 0.4− | 0.5− |
| 2002 12 27 | 644 | 0.6− | 0.1− | 2006 10 03 | 704 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.9+ | 0.5− |

**2002 WZ$_4$ = 2006 UX$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.42375 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24486333 | $\omega$ | 144.01907 | | +0.93265745 | −0.29757206 | |
| $a$ | 2.5303866 | $\Omega$ | 234.55720 | | +0.24372571 | +0.93655681 | |
| $e$ | 0.1247481 | $i$ | 14.49853 | | +0.26598471 | +0.18523555 | |
| $P$ | 4.03 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.0 | 1.0− | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2002 11 05 | 704 | 0.2− | 0.8− | 2006 10 21 | G96 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.1− |
| 2002 11 05 | 704 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.4+ | 2006 10 30 | G96 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.8− | 0.1− |
| 2002 11 24 | 644 | 0.0 | 0.6+ | 2006 10 30 | G96 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.9+ |
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2006 10 30 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2002 11 27 | 608 | 0.4+ | 0.5+ | 2006 10 30 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | (0.2+ | 1.7+) |
| 2002 11 27 | 608 | 0.2+ | 0.8+ | 2006 10 30 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 2002 11 27 | 608 | 0.1− | 0.0 | 2006 10 30 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.1− | 1.0+ |
| 2002 12 01 | 704 | 1.0− | 0.3− | 2006 10 30 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 2002 12 01 | 704 | 0.5− | 0.5− | 2006 10 30 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2002 12 01 | 704 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 12 01 | 704 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2002 12 27 | 644 | 0.4+ | 0.9− | 2006 11 11 | 691 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 12 27 | 644 | 0.4+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.3− |
| 2002 12 27 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.9− |
| 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.5− |
| 2006 10 17 | G96 | 0.4+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.9+ | 0.2− |
| 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | (1.0+ | 2.0+) | 2006 11 29 | 704 | 0.7− | 0.2+ |

**2002 WA$_5$ = 2006 SV$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.67490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22688741 | $\omega$ | 98.01545 | | +0.89223336 | +0.41631271 | |
| $a$ | 2.6623335 | $\Omega$ | 237.54353 | | −0.45068283 | +0.84527198 | |
| $e$ | 0.2271906 | $i$ | 11.96546 | | +0.02836592 | +0.33496120 | |
| $P$ | 4.34 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.2+ | 1.0− | 2002 12 10 | 644 | 1.1+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 11 05 | 704 | 0.2+ | 1.1− | 2006 09 17 | 703 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 11 05 | 704 | 0.3+ | 0.7− | 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.8− | 0.4+ | 2006 09 17 | 703 | 0.8− | 0.2− | 2006 10 17 | 703 | (2.8+ | 1.1−) |
| 2002 11 14 | 704 | 0.9− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.8+ |
| 2002 11 14 | 704 | 1.0− | 0.8+ | 2006 09 22 | 699 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2002 11 14 | 704 | 0.9− | 1.3+ | 2006 09 22 | 699 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.1+ | 0.6− | 2006 09 22 | 699 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2002 11 24 | 644 | 0.5+ | 0.8− | 2006 09 28 | 703 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2002 11 24 | 644 | 0.5+ | 0.5− | 2006 09 28 | 703 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.5+ | 0.3+ |
| 2002 11 27 | 608 | 0.1+ | 0.5+ | 2006 09 28 | 703 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2002 11 27 | 608 | 0.0 | 0.4+ | 2006 09 28 | 703 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.5+ | 0.2− |
| 2002 11 27 | 608 | 0.2+ | 0.2+ | 2006 09 30 | 704 | (2.1+ | 0.7+) | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2002 12 10 | 644 | 0.5+ | 0.3+ | 2006 09 30 | 704 | (2.8+ | 0.4+) | | | | |
| 2002 12 10 | 644 | (1.8+ | 0.5+) | 2006 09 30 | 704 | (2.9+ | 0.9+) | | | | |

**2002 WG$_5$ = 2006 SF$_{345}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.58642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23380500 | $\omega$ | 91.22436 | | +0.98993510 | +0.13287543 | |
| $a$ | 2.6095574 | $\Omega$ | 261.14134 | | −0.14132053 | +0.90976501 | |
| $e$ | 0.2442982 | $i$ | 2.82569 | | −0.00755073 | +0.39328330 | |
| $P$ | 4.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.6+ | 2006 09 20 | 699 | 1.0− | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2002 11 24 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 1.0− | 0.2− | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 2002 11 27 | 599 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2002 11 27 | 599 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.2− | 0.7− |
| 2002 11 28 | 599 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2002 11 28 | 599 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.5+ | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.7+ | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 12 05 | 704 | (0.3− | 1.7+) | 2006 10 03 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.6+ | 2006 10 03 | 704 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2006 10 03 | 704 | 0.6+ | 1.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2002 12 07 | 333 | 0.2− | 0.9− | 2006 10 03 | 704 | 0.5+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2002 12 07 | 333 | 1.2− | 0.6− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2002 12 07 | 333 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2002 12 08 | 333 | 0.1+ | 1.1− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2002 12 08 | 333 | 1.1− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2006 09 20 | 699 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.2− | 0.0 | | | | |

**2002 WM$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.40572 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22628090 | $\omega$ | 117.61716 | | +0.95950171 | −0.23152248 | |
| $a$ | 2.6670886 | $\Omega$ | 256.13446 | | +0.16251797 | +0.92026039 | |
| $e$ | 0.2475147 | $i$ | 9.51446 | | +0.23009643 | +0.31546498 | |
| $P$ | 4.36 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | (0.3+ | 1.9+) | 2003 01 27 | 291 | 0.0 | 0.4− | 2006 09 17 | 683 | (2.4+ | 0.1−) |
| 2002 11 24 | 644 | 0.3− | 0.3+ | 2003 01 27 | 291 | 0.2+ | 0.2− | 2006 09 17 | 683 | (1.6+ | 1.1−) |
| 2002 11 24 | 644 | 0.1− | 0.5+ | 2003 01 27 | 291 | 0.3− | 0.7+ | 2006 09 27 | 703 | 0.4+ | 0.7+ |
| 2002 11 27 | 599 | 0.1+ | 0.3− | 2006 08 29 | 699 | 0.9− | 1.2+ | 2006 09 27 | 703 | 0.3+ | 0.8+ |
| 2002 11 27 | 599 | 0.3− | 0.6+ | 2006 08 29 | 699 | 0.8+ | 0.7− | 2006 09 27 | 703 | 0.3+ | 1.0+ |
| 2002 11 28 | 599 | 0.0 | 0.1+ | 2006 08 29 | 699 | 0.1+ | 0.5− | 2006 09 27 | 703 | 0.2+ | 0.0 |
| 2002 11 28 | 599 | 0.1+ | 0.4+ | 2006 08 29 | 699 | 0.5− | 0.3+ | 2006 09 29 | 699 | 0.4− | 0.7− |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.0 | 0.3− |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | 1.2− | 0.2− |
| 2002 12 05 | 704 | 0.6− | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.8+ | 0.1− |
| 2002 12 05 | 704 | 0.7− | 0.4− | 2006 09 11 | 703 | 0.6− | 1.0− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 12 05 | 704 | 0.3+ | 0.4+ | 2006 09 11 | 703 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 1.1+ | 0.9− | 2006 09 11 | 703 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2002 12 10 | 704 | (1.3+ | 2.0−) | 2006 09 11 | 703 | 0.6+ | 0.2− | | | | |
| 2002 12 10 | 704 | 1.0+ | 1.2− | 2006 09 17 | 683 | (1.9+ | 0.7−) | | | | |

**2002 WT$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.57957 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25122880 | $\omega$ | 0.97878 | | +0.33711988 | −0.93047429 | |
| $a$ | 2.4874618 | $\Omega$ | 69.33121 | | +0.86272938 | +0.24433926 | |
| $e$ | 0.1716903 | $i$ | 8.81708 | | +0.37689282 | +0.27297606 | |
| $P$ | 3.92 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2002 12 02 | 704 | 0.4+ | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2002 12 02 | 704 | 0.1+ | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2002 11 14 | 704 | 0.5+ | 0.9+ | 2002 12 02 | 704 | 0.6− | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2002 11 14 | 704 | 0.2− | 0.5+ | 2002 12 07 | 644 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.5− |
| 2002 11 14 | 704 | 0.3+ | 0.4− | 2002 12 07 | 644 | 0.4+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.6− |
| 2002 11 14 | 704 | 0.6+ | 0.5+ | 2002 12 07 | 644 | (0.2+ | 2.2+) | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2002 11 23 | 644 | 0.1+ | 0.1+ | 2002 12 10 | 704 | 0.7− | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.6− |
| 2002 11 23 | 644 | 0.2+ | 0.4+ | 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | (1.4+ | 2.2−) |
| 2002 11 23 | 644 | 0.3+ | 0.2+ | 2002 12 10 | 704 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.6+ | 0.4− |
| 2002 11 27 | 699 | 0.2− | 0.6+ | 2002 12 10 | 704 | 0.2+ | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.7− |
| 2002 11 27 | 699 | 0.4− | 0.1+ | 2002 12 10 | 704 | (0.7− | 2.0+) | 2006 12 01 | 704 | 0.3+ | 0.2− |
| 2002 11 27 | 699 | 0.8− | 1.2+ | 2002 12 31 | 704 | 0.1+ | 0.2+ | 2006 12 01 | 704 | 0.5+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 27 | 699 | 0.6− | 0.1+ | 2002 12 31 | 704 | 0.2− | 0.2− | 2006 12 01 | 704 | 0.2+ | 0.3− | | |
| 2002 12 02 | 704 | (1.6− | 0.2−) | 2002 12 31 | 704 | 0.2− | 0.1+ | | | | | | |
| 2002 12 02 | 704 | 1.5− | 0.3+ | 2002 12 31 | 704 | 0.2+ | 0.4− | | | | | | |

**2002 WK$_6$ = 2006 ST$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.55842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23255338 | $\omega$ | 59.52952 | | +0.98957656 | −0.13244794 | |
| $a$ | 2.6189123 | $\Omega$ | 308.02203 | | +0.09471546 | +0.89431105 | |
| $e$ | 0.1802296 | $i$ | 4.11512 | | +0.10847682 | +0.42739361 | |
| $P$ | 4.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.7− | 0.0 | 2006 09 17 | 703 | 0.8− | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.1− | | |
| 2002 11 12 | 704 | 0.3− | 1.0− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.1+ | | |
| 2002 11 12 | 704 | 1.2+ | 0.7+ | 2006 09 18 | 703 | 0.9− | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.0 | | |
| 2002 11 12 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.4+ | 0.1+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2− | | |
| 2002 11 24 | 644 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1− | | |
| 2002 11 24 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 1.2− | 2006 10 11 | 644 | 0.4+ | 0.0 | | |
| 2002 11 27 | 699 | (0.3− | 2.1−) | 2006 09 19 | 703 | 0.6− | 0.7+ | 2006 10 17 | 703 | (1.7+ | 0.3+) | | |
| 2002 11 27 | 699 | (2.2− | 1.3−) | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.8− | | |
| 2002 11 27 | 699 | 1.0− | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.1− | | |
| 2002 11 27 | 699 | 0.7− | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.6+ | 2006 10 17 | 703 | 0.4− | 0.2− | | |
| 2006 09 16 | 703 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.6− | | |
| 2006 09 16 | 703 | 0.1+ | 1.0− | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2006 09 16 | 703 | 0.4− | 0.6− | 2006 09 19 | 699 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.6+ | 0.4− | | |
| 2006 09 16 | 703 | 0.4− | 0.1− | 2006 09 25 | 704 | 1.1+ | 0.6− | 2006 10 23 | G96 | 0.3+ | 0.4− | | |
| 2006 09 16 | 644 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.7− | 0.7+ | 2006 10 23 | G96 | (1.8+ | 0.2+) | | |
| 2006 09 16 | 644 | 0.4− | 0.2+ | 2006 09 25 | 704 | (1.0− | 1.6+) | 2006 10 23 | G96 | 0.4+ | 0.3− | | |
| 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.1− | | |
| 2006 09 17 | 703 | 1.2− | 1.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.3− | | |
| 2006 09 17 | 703 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.2− | | | | | | |

**2002 WW$_6$ = 2004 DJ$_{72}$ = 2006 TN$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.12644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23738897 | $\omega$ | 6.97464 | | +0.98139607 | +0.19183780 | |
| $a$ | 2.5832258 | $\Omega$ | 341.95969 | | −0.17733738 | +0.89027668 | |
| $e$ | 0.1258804 | $i$ | 1.43336 | | −0.07357449 | +0.41304442 | |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.3+ | 0.4− | 2004 02 29 | 291 | 0.5− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2002 11 24 | 644 | 0.4+ | 0.1− | 2004 02 29 | 291 | 0.5− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2002 11 27 | 699 | 0.5− | 0.5+ | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.2+ | | |
| 2002 11 27 | 699 | 0.1+ | 1.0− | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.3+ | | |
| 2002 11 27 | 699 | 0.0 | 1.2+ | 2006 10 15 | 691 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.6+ | 0.2− | | |
| 2002 11 27 | 699 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.3− | | |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.4− | | |
| 2002 12 05 | 704 | 0.1− | 0.5− | 2006 10 19 | 691 | 1.0− | 0.9+ | 2006 11 15 | G96 | 0.2− | 0.7− | | |
| 2002 12 05 | 704 | 0.4− | 1.2− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.7− | 1.3− | | |
| 2002 12 05 | 704 | (2.0+ | 1.0−) | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.8+ | | |
| 2004 02 16 | 691 | 0.2+ | 0.5− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.1− | | |
| 2004 02 16 | 691 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.1− | 1.0+ | | |
| 2004 02 16 | 691 | 0.6+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.2− | | | | | | |
| 2004 02 29 | 291 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.0 | | | | | | |

**2002 WZ$_6$ = 2006 TW$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.96117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23871410 | $\omega$ | 325.83309 | | +0.98186278 | −0.14558989 | |
| $a$ | 2.5736570 | $\Omega$ | 43.06042 | | +0.18758023 | +0.83906506 | |
| $e$ | 0.1075452 | $i$ | 10.24585 | | −0.02755255 | +0.52418833 | |
| $P$ | 4.13 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.4− | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.6− | | |
| 2002 11 24 | 644 | 0.8− | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.3− | | |
| 2002 11 24 | 644 | 0.6− | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.3− | | |
| 2002 11 27 | 699 | 0.1+ | 1.0+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.3− | | |
| 2002 11 27 | 699 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.4+ | | |
| 2002 11 27 | 699 | 0.4+ | 0.7− | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.4+ | | |
| 2002 11 27 | 699 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.4+ | | |
| 2002 12 02 | 704 | (2.2− | 1.1+) | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2+ | | |
| 2002 12 02 | 704 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2002 12 02 | 704 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.1+ | | |
| 2002 12 11 | 704 | 0.9− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.0 | | |
| 2002 12 11 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.4+ | | |
| 2002 12 11 | 704 | (1.9− | 1.0−) | 2006 10 21 | 644 | 0.7+ | 0.2− | 2006 11 17 | 703 | 0.3+ | 1.4− | | |
| 2006 09 30 | G96 | 0.4− | 0.8− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.4− | | |
| 2006 09 30 | G96 | 0.4− | 0.4− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 30 | G96 | 0.4− | 0.5− | 2006 10 23 | 691 | 0.6− | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.4+ | | |
| 2006 09 30 | G96 | 0.1+ | 0.7− | 2006 10 27 | 691 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.1− | 0.3+ | | |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.3+ | | |

**2002 WR$_7$ = 2006 UP$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.67629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24126523 | $\omega$ | 328.57414 | | +0.82555186 | −0.54584720 | |
| $a$ | 2.5554824 | $\Omega$ | 65.17461 | | +0.54495630 | +0.70518391 | |
| $e$ | 0.1990027 | $i$ | 9.08002 | | +0.14658364 | +0.45251132 | |
| $P$ | 4.09 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.4− | 0.5+ | 2002 12 08 | 291 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.0− | | |
| 2002 11 05 | 704 | 0.2+ | 0.2+ | 2002 12 08 | 291 | 0.7+ | 0.1− | 2006 11 11 | 703 | (2.7+ | 2.2−) | | |
| 2002 11 05 | 704 | 0.0 | 0.7− | 2002 12 09 | 291 | 0.0 | 0.0 | 2006 11 11 | 644 | 0.1− | 0.1− | | |
| 2002 11 05 | 704 | 0.3− | 0.6+ | 2002 12 09 | 291 | 0.6− | 0.0 | 2006 11 11 | 644 | 0.0 | 0.1− | | |
| 2002 11 14 | 704 | 0.0 | 0.1− | 2002 12 09 | 291 | 1.0− | 0.0 | 2006 11 11 | 644 | 0.2− | 0.3− | | |
| 2002 11 14 | 704 | 0.3− | 0.7− | 2002 12 10 | 704 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.5+ | 0.6+ | | |
| 2002 11 14 | 704 | 0.1− | 0.4− | 2002 12 10 | 704 | 0.5− | 0.2− | 2006 11 14 | 704 | 1.0+ | 0.6+ | | |
| 2002 11 14 | 704 | 0.1− | 0.4+ | 2002 12 10 | 704 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.6+ | 0.5+ | | |
| 2002 11 14 | 704 | 0.4+ | 0.9+ | 2002 12 10 | 704 | 0.2+ | 0.1− | 2006 11 14 | 704 | (1.8+ | 1.1+) | | |
| 2002 11 24 | 644 | 0.2+ | 0.2+ | 2002 12 10 | 704 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.6+ | | |
| 2002 11 24 | 644 | 0.0 | 0.6+ | 2002 12 27 | 644 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.7− | | |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2002 12 27 | 644 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.5− | | |
| 2002 11 27 | 699 | 0.2+ | 0.1− | 2002 12 27 | 644 | 0.8− | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.6− | | |
| 2002 11 27 | 699 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.6− | | |
| 2002 11 27 | 699 | 0.9+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.1+ | | |
| 2002 11 27 | 699 | 0.9+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.1− | | |
| 2002 11 28 | 699 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.7+ | 0.0 | | |
| 2002 11 28 | 699 | 0.1− | 0.6+ | 2006 10 28 | 224 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.0 | 0.1− | | |
| 2002 11 28 | 699 | 1.3− | 0.3+ | 2006 10 28 | 224 | 0.9− | 0.1− | 2006 11 17 | 704 | 0.4− | 0.0 | | |
| 2002 11 28 | 678 | 0.7+ | 0.9+ | 2006 10 28 | 224 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.9+ | 0.6+ | | |
| 2002 11 28 | 699 | 1.4+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.9+ | 0.4+ | | |
| 2002 11 28 | 678 | 0.1− | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.3− | | |
| 2002 11 28 | 678 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.8− | | |
| 2002 11 28 | 608 | 0.4− | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.1+ | 0.1+ | | |
| 2002 11 28 | 608 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.6+ | | |
| 2002 11 28 | 608 | 0.3− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.0 | | |
| 2002 12 02 | 704 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.2+ | | |
| 2002 12 02 | 704 | 1.0+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.8− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 02 | 704 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2002 12 02 | 704 | 0.7+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.0 | 0.0 |
| 2002 12 02 | 704 | (1.6+ | 2.0+) | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 1.1− | 0.6− | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.9+ | 0.9+ |
| 2002 12 05 | 704 | 0.2+ | 0.5− | 2006 11 10 | 224 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 0.2+ | 0.5− | 2006 11 10 | 224 | 0.2+ | 0.3+ | 2006 11 22 | 683 | 1.1− | 0.4− |
| 2002 12 05 | 704 | 0.1+ | 0.8− | 2006 11 10 | 224 | 0.0 | 0.2− | 2006 11 22 | 683 | 1.3− | 1.4+ |
| 2002 12 05 | 704 | 0.3+ | 0.9− | 2006 11 11 | 703 | 1.3− | 0.2+ | 2006 11 22 | 683 | 1.4− | 0.1+ |
| 2002 12 08 | 291 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.7+ | | | | |

**2002 WN$_8$ = 2006 VX$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.66307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24682655 | $\omega$ | 322.02747 | | +0.86735214 | −0.46525462 | |
| $a$ | 2.5169513 | $\Omega$ | 66.57957 | | +0.49063275 | +0.73969911 | |
| $e$ | 0.1747496 | $i$ | 11.10530 | | +0.08354503 | +0.48619273 | |
| $P$ | 3.99 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2002 12 31 | 704 | 1.0− | 0.7− | 2006 11 18 | 704 | 0.0 | 0.6− |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2003 01 01 | 333 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2002 11 27 | 699 | 0.1− | 0.0 | 2003 01 01 | 333 | 0.2+ | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2002 11 27 | 699 | 0.4+ | 0.7+ | 2003 01 01 | 333 | 0.1− | 0.9− | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2002 11 27 | 699 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 11 27 | 699 | 1.2+ | 1.0+ | 2006 10 23 | G96 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2002 12 03 | 608 | 0.1− | 1.1+ | 2006 10 23 | G96 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2002 12 03 | 608 | 0.5+ | 1.3+ | 2006 10 23 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.4− | 0.1− |
| 2002 12 03 | 608 | 0.3+ | 1.4+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2002 12 07 | 333 | 1.0− | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.6− | 0.3+ |
| 2002 12 07 | 333 | 1.1− | 0.0 | 2006 10 31 | G96 | 0.4− | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2002 12 07 | 333 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2006 11 11 | 703 | (2.3− | 0.5+) | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2002 12 10 | 704 | (0.2+ | 1.6−) | 2006 11 11 | 703 | 0.6+ | 0.5− | 2006 12 01 | 691 | 0.2− | 0.3− |
| 2002 12 10 | 704 | 0.9− | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.1+ | 2006 12 01 | 691 | 1.5+ | 1.1+ |
| 2002 12 10 | 704 | 0.4+ | 1.2− | 2006 11 11 | 703 | 0.8− | 0.4− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2002 12 10 | 704 | (0.6− | 1.6−) | 2006 11 15 | 691 | 0.0 | 0.0 | | | | |
| 2002 12 31 | 704 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.6− | | | | |

**2002 WR$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.36092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22576373 | $\omega$ | 311.16259 | | +0.51027522 | −0.85720416 | |
| $a$ | 2.6711602 | $\Omega$ | 108.02787 | | +0.80929611 | +0.45130438 | |
| $e$ | 0.2408988 | $i$ | 4.18702 | | +0.29096219 | +0.24804311 | |
| $P$ | 4.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.1− | 0.6− | 2002 12 01 | 704 | 0.1− | 0.3− | 2006 09 14 | 703 | (2.2− | 0.8+) |
| 2002 11 07 | 704 | 0.2+ | 0.0 | 2002 12 01 | 704 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.3− |
| 2002 11 07 | 704 | 0.2− | 0.0 | 2002 12 10 | 644 | 0.1− | 0.6− | 2006 09 14 | 703 | 0.3− | 0.7− |
| 2002 11 07 | 704 | 0.5+ | 0.4+ | 2002 12 10 | 644 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.3+ | 0.1+ |
| 2002 11 24 | 644 | 0.2+ | 0.2− | 2002 12 10 | 644 | 0.4− | 0.5− | 2006 09 19 | 699 | 0.9− | 0.4+ |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.0 | 0.4− | 2006 09 19 | 699 | 0.6− | 0.2− |
| 2002 11 24 | 644 | 0.2+ | 0.4− | 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 09 19 | 699 | 1.3+ | 0.4+ |
| 2002 11 27 | 699 | 0.6+ | 0.4+ | 2002 12 11 | 704 | 0.7− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.5+ |
| 2002 11 27 | 699 | 0.3+ | 0.1+ | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.4− | 0.2− |
| 2002 11 27 | 699 | 0.2− | 0.0 | 2002 12 11 | 704 | (0.1− | 1.6−) | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2002 11 27 | 699 | 0.2− | 0.1− | 2002 12 31 | 704 | 0.2− | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2002 12 01 | 704 | 0.1+ | 0.5+ | 2002 12 31 | 704 | 0.0 | 0.2+ | | | | |
| 2002 12 01 | 704 | 0.3− | 0.6+ | 2002 12 31 | 704 | 0.2+ | 0.5+ | | | | |

**2002 WD$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.32531 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21445049 | $\omega$ | 142.05646 | | +0.93872094 | −0.33705784 | |
| $a$ | 2.7642969 | $\Omega$ | 237.78894 | | +0.29172718 | +0.88831556 | |
| $e$ | 0.0671178 | $i$ | 4.88681 | | +0.18357082 | +0.31190939 | |
| $P$ | 4.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 23 | 691 | 0.3+ | 0.3− | 2002 11 28 | 699 | 0.3− | 0.3+ | 2006 09 19 | 703 | 1.3− | 0.5− |
| 1997 09 23 | 691 | 0.4+ | 0.9− | 2002 12 05 | 704 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.7− | 0.3− |
| 1997 09 23 | 691 | 0.1− | 0.4− | 2002 12 05 | 704 | 1.4+ | 0.1− | 2006 09 19 | 703 | 0.1+ | 1.4+ |
| 2002 11 07 | 291 | 0.3− | 0.1+ | 2002 12 05 | 704 | (1.6+ | 2.1−) | 2006 09 19 | 703 | 0.7− | 0.7− |
| 2002 11 07 | 291 | 0.0 | 0.1+ | 2002 12 10 | 704 | 0.6+ | 0.6+ | 2006 09 25 | 699 | 0.5+ | 0.9+ |
| 2002 11 07 | 291 | 0.1+ | 0.4+ | 2002 12 10 | 704 | 0.2− | 0.8− | 2006 09 25 | 699 | 0.1− | 0.2− |
| 2002 11 24 | 644 | 0.3+ | 0.7+ | 2002 12 10 | 704 | 0.3− | 0.7− | 2006 09 25 | 699 | 0.8− | 0.4+ |
| 2002 11 24 | 644 | 0.0 | 0.5+ | 2002 12 10 | 704 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.3+ | 1.1+ |
| 2002 11 24 | 644 | 0.4+ | 0.9+ | 2002 12 10 | 704 | 0.8− | 0.8+ | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2002 11 28 | 699 | 0.2− | 0.9− | 2006 08 18 | 644 | 0.3+ | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2002 11 28 | 699 | 0.5− | 0.4− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2002 11 28 | 699 | (0.9+ | 1.6−) | 2006 08 18 | 644 | 0.3+ | 0.2+ | | | | |

**2002 WJ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.95790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22794544 | $\omega$ | 355.89709 | | +0.04432275 | −0.98692205 | |
| $a$ | 2.6540887 | $\Omega$ | 91.51297 | | +0.92093636 | −0.01976200 | |
| $e$ | 0.1489461 | $i$ | 8.91906 | | +0.38718433 | +0.15998231 | |
| $P$ | 4.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 608 | 0.5− | 0.1+ | 2002 11 28 | 699 | 0.1+ | 0.6− | 2002 12 11 | 704 | 0.5+ | 0.9+ |
| 2002 11 06 | 608 | 0.6− | 0.2− | 2002 11 28 | 699 | 0.7+ | 1.4+ | 2002 12 11 | 704 | 1.4− | 1.6− |
| 2002 11 06 | 608 | 0.1+ | 0.4− | 2002 11 28 | 699 | 0.6− | 0.7− | 2003 01 27 | 291 | 0.9− | 0.2− |
| 2002 11 11 | 704 | 0.6+ | 0.1− | 2002 12 01 | 704 | 0.0 | 0.3− | 2003 01 27 | 291 | 0.4+ | 0.0 |
| 2002 11 11 | 704 | 0.3+ | 0.1+ | 2002 12 01 | 704 | 0.5+ | 1.1+ | 2003 01 27 | 291 | 0.6+ | 0.1+ |
| 2002 11 11 | 704 | 0.2− | 0.3+ | 2002 12 01 | 704 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2002 11 11 | 704 | 0.4− | 0.6− | 2002 12 01 | 704 | 0.1+ | 0.2− | 2006 10 17 | 703 | (1.2− | 2.9−) |
| 2002 11 11 | 704 | 0.9+ | 0.1− | 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.4+ |
| 2002 11 24 | 644 | 0.3+ | 0.4+ | 2002 12 10 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.7+ |
| 2002 11 24 | 644 | 0.2− | 0.9+ | 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2002 11 24 | 644 | 0.2+ | 0.2+ | 2002 12 11 | 704 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2002 11 28 | 699 | 0.2+ | 0.7− | 2002 12 11 | 704 | 0.7− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.5− |

**2002 WD$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.48150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23019062 | $\omega$ | 223.61885 | | −0.48559471 | −0.87152107 | |
| $a$ | 2.6368027 | $\Omega$ | 255.54132 | | +0.82013087 | −0.42718072 | |
| $e$ | 0.2630661 | $i$ | 4.03766 | | +0.30262706 | −0.24076473 | |
| $P$ | 4.28 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.5+ | 0.4+ | 2002 12 09 | 291 | 0.2+ | 0.2− | 2003 01 27 | 291 | 0.7− | 0.6+ |
| 2002 11 13 | 644 | 0.3+ | 0.2+ | 2002 12 09 | 291 | 0.4− | 0.4− | 2003 01 27 | 291 | 0.0 | 0.2+ |
| 2002 11 13 | 644 | 0.2+ | 0.3+ | 2002 12 09 | 291 | 0.5− | 0.1− | 2006 09 28 | 691 | 0.4+ | 0.7− |
| 2002 11 27 | 699 | 0.4+ | 0.6− | 2002 12 10 | 704 | 0.6+ | 0.5− | 2006 09 28 | 691 | 0.6− | 1.1+ |
| 2002 11 27 | 699 | 0.1− | 0.3− | 2002 12 10 | 704 | 0.5+ | 0.4− | 2006 09 28 | 691 | 0.5+ | 0.3+ |
| 2002 11 27 | 699 | 0.2− | 0.4+ | 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2002 11 27 | 699 | 0.0 | 0.1+ | 2002 12 10 | 704 | 0.6+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.0 |
| 2002 11 28 | 699 | 0.2+ | 0.0 | 2002 12 13 | 926 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2002 11 28 | 699 | 0.4+ | 1.2+ | 2002 12 13 | 926 | 0.1− | 0.5− | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2002 11 28 | 699 | 0.0 | 0.6+ | 2002 12 13 | 926 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 11 28 | 699 | 0.1− | 0.3− | 2002 12 14 | 926 | 0.8− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.4+ | 0.3− | 2002 12 14 | 926 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.4− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2002 12 14 | 926 | 0.6− | 0.1− | |
| 2002 12 05 | 704 | 0.7+ | 0.3+ | 2003 01 27 | 291 | 0.7+ | 0.0 | |

**2002 WR$_{11}$ = 2006 SM$_{19}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.26561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23581525 | $\omega$ | 294.47277 | | +0.84671407 | −0.17099557 | |
| $a$ | 2.5947058 | $\Omega$ | 78.74784 | | +0.41894966 | +0.79798404 | |
| $e$ | 0.3225327 | $i$ | 30.91030 | | −0.32795801 | +0.57791175 | |
| $P$ | 4.18 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.2+ | 0.4− | 2002 11 30 | 704 | 1.4− | 0.3− | 2006 09 19 | E12 | 0.4+ | 0.0 |
| 2002 10 30 | 704 | 0.2− | 0.4− | 2002 12 01 | 704 | 0.8+ | 1.0− | 2006 09 19 | E12 | 0.3+ | 0.2− |
| 2002 10 30 | 704 | 0.1+ | 1.0+ | 2002 12 01 | 704 | 1.6+ | 0.2+ | 2006 09 19 | E12 | 0.0 | 0.7+ |
| 2002 10 30 | 704 | 0.1− | 0.5− | 2002 12 01 | 704 | 0.5+ | 0.2− | 2006 09 19 | E12 | 0.6+ | 0.6+ |
| 2002 11 27 | 699 | 0.9− | 0.0 | 2002 12 01 | 704 | 0.2+ | 0.1+ | 2006 09 20 | E12 | 0.3− | 0.3− |
| 2002 11 27 | 699 | 0.4− | 0.2+ | 2006 09 18 | E12 | 0.1− | 0.2+ | 2006 09 20 | E12 | 0.1− | 0.3+ |
| 2002 11 27 | 699 | 1.5− | 0.3− | 2006 09 18 | E12 | 0.2+ | 0.6+ | 2006 10 02 | E12 | 0.6− | 0.9+ |
| 2002 11 27 | 699 | 0.7− | 0.8+ | 2006 09 18 | E12 | 0.3− | 0.9− | 2006 10 02 | E12 | 0.8+ | 0.8+ |
| 2002 11 30 | 704 | 0.5+ | 0.5+ | 2006 09 18 | E12 | 0.1+ | 0.2− | 2006 10 02 | E12 | 0.2+ | 0.3− |
| 2002 11 30 | 704 | (2.2+ | 0.9−) | 2006 09 18 | E12 | 0.0 | 1.0− | 2006 10 02 | E12 | 1.3− | 1.5− |
| 2002 11 30 | 704 | 1.3+ | 0.3+ | 2006 09 18 | E12 | 0.1− | 0.3+ | | | | |

**2002 WN$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.69724 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24024296 | $\omega$ | 272.77018 | | +0.81000131 | −0.52672407 | |
| $a$ | 2.5627266 | $\Omega$ | 119.14105 | | +0.58237375 | +0.77410899 | |
| $e$ | 0.2416371 | $i$ | 17.16699 | | −0.06883817 | +0.35116524 | |
| $P$ | 4.10 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | 0.5− | 0.4− | 2003 01 18 | 644 | 0.2+ | 0.8− | 2006 09 28 | 703 | (1.5+ | 0.7−) |
| 1998 12 22 | 704 | 0.4+ | 0.2− | 2003 01 18 | 644 | 0.3+ | 0.9− | 2006 09 28 | 703 | 1.3+ | 0.2− |
| 1998 12 22 | 704 | 0.5− | 2.0+ | 2003 01 25 | 699 | 0.2− | 0.5+ | 2006 09 28 | 703 | (2.6+ | 1.3−) |
| 1998 12 22 | 704 | 1.0− | 0.1− | 2003 01 25 | 699 | 0.2− | 0.1+ | 2006 10 03 | 703 | 0.6− | 0.4− |
| 2002 11 27 | 699 | 0.2− | 0.0 | 2003 01 25 | 699 | 0.5− | 1.2+ | 2006 10 03 | 703 | 0.2− | 0.3+ |
| 2002 11 27 | 699 | 0.1+ | 0.1− | 2003 01 25 | 699 | 0.4− | 0.7+ | 2006 10 03 | 703 | 0.1− | 1.2+ |
| 2002 11 27 | 699 | 0.1+ | 0.1+ | 2003 01 27 | 704 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 1.1− | 0.7+ |
| 2002 11 27 | 699 | (0.2− | 2.7+) | 2003 01 27 | 704 | 0.0 | 0.5+ | 2006 10 03 | 703 | 0.3− | 0.7+ |
| 2002 11 30 | 704 | 1.2− | 0.5− | 2003 01 27 | 704 | 0.3+ | 0.7− | 2006 10 03 | 703 | 0.9− | 0.1+ |
| 2002 11 30 | 704 | 0.6+ | 0.1− | 2003 01 27 | 704 | 1.1− | 0.9+ | 2006 10 03 | 703 | (0.7− | 2.2+) |
| 2002 11 30 | 704 | 0.1+ | 0.1− | 2003 01 27 | 644 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 12 08 | 644 | (0.4+ | 1.8−) | 2003 01 27 | 644 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 12 08 | 644 | 0.5+ | 0.4+ | 2003 01 27 | 644 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 12 08 | 644 | 0.5+ | 0.0 | 2006 08 25 | E12 | 0.7+ | 0.4+ | 2006 11 01 | 703 | 0.2− | 0.3− |
| 2002 12 16 | 608 | 0.9+ | 0.5− | 2006 08 25 | E12 | 0.0 | 0.3− | 2006 11 01 | 703 | 0.1− | 0.2− |
| 2002 12 16 | 608 | 0.7+ | 0.0 | 2006 08 25 | E12 | 0.3+ | 0.5− | 2006 11 01 | 703 | 0.1+ | 0.4− |
| 2002 12 16 | 608 | 0.4+ | 0.4− | 2006 08 25 | E12 | 0.1+ | 0.1+ | 2006 11 01 | 703 | 0.8− | 0.2+ |
| 2003 01 01 | 704 | 0.6+ | 0.7− | 2006 09 21 | 703 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.3− | 0.1− |
| 2003 01 01 | 704 | 0.1+ | 0.3− | 2006 09 21 | 703 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.6+ | 0.4− |
| 2003 01 01 | 704 | 0.7+ | 0.6− | 2006 09 21 | 703 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.2+ | 0.2− |
| 2003 01 01 | 704 | 0.3− | 0.3− | 2006 09 21 | 703 | 0.9− | 0.1+ | 2006 11 23 | 703 | 0.1− | 0.1− |
| 2003 01 18 | 644 | 0.5− | 0.4− | 2006 09 28 | 703 | 0.3+ | 0.5− | | | | |

**2002 WR$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.31039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23117322 | $\omega$ | 298.30124 | | +0.48411072 | −0.85559167 | |
| $a$ | 2.6293256 | $\Omega$ | 121.58749 | | +0.85912158 | +0.42503958 | |
| $e$ | 0.1892790 | $i$ | 12.42629 | | +0.16597265 | +0.29547292 | |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 23 | 691 | 0.2+ | 1.0+ | 2002 12 09 | 683 | (0.8− | 3.0+) | 2004 03 28 | 703 | (3.6+ | 1.8+) |
| 1996 06 23 | 691 | (1.8+ | 3.6−) | 2002 12 09 | 683 | 0.4+ | 0.0 | 2004 03 28 | 703 | (0.5+ | 2.2+) |
| 2002 10 31 | 704 | 0.0 | 0.0 | 2002 12 09 | 683 | 1.1+ | 0.0 | 2004 03 28 | 703 | 0.1− | 0.9+ |
| 2002 10 31 | 704 | 0.3+ | 0.0 | 2002 12 13 | 644 | 0.2− | 1.0+ | 2006 09 24 | 699 | 0.3+ | 0.6− |
| 2002 10 31 | 704 | 0.0 | 0.2+ | 2002 12 13 | 644 | 0.3− | 1.1+ | 2006 09 24 | 699 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.4− | 0.1+ | 2002 12 13 | 644 | 0.3− | 0.9+ | 2006 09 24 | 699 | 0.5− | 0.3− |
| 2002 11 11 | 699 | 0.2+ | 0.2+ | 2002 12 14 | 704 | 0.5− | 0.5− | 2006 09 24 | 699 | 0.8+ | 0.1+ |
| 2002 11 11 | 699 | 0.2+ | 0.0 | 2002 12 14 | 704 | 0.4− | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.1− |
| 2002 11 11 | 699 | 0.1− | 0.5+ | 2002 12 14 | 704 | 0.5− | 0.1− | 2006 09 25 | 703 | 0.3− | 1.0+ |
| 2002 11 11 | 699 | 0.9− | 0.2+ | 2002 12 14 | 704 | 0.3− | 0.5+ | 2006 09 25 | 703 | 0.0 | 0.3− |
| 2002 11 27 | 699 | 0.0 | 0.1+ | 2002 12 14 | 704 | 0.7− | 0.1+ | 2006 09 25 | 703 | 0.3− | 1.4+ |
| 2002 11 27 | 699 | 0.3− | 0.5− | 2002 12 15 | 608 | 0.4− | 0.3− | 2006 10 04 | 703 | 0.2− | 0.3− |
| 2002 11 27 | 699 | 0.1− | 0.5+ | 2002 12 15 | 608 | 0.5− | 0.1− | 2006 10 04 | 703 | 0.2+ | 0.5− |
| 2002 11 27 | 699 | 0.2− | 0.0 | 2002 12 15 | 608 | 0.6− | 0.5− | 2006 10 04 | 703 | 0.8+ | 0.6+ |
| 2002 11 30 | 704 | 0.2+ | 0.4− | 2003 01 05 | 704 | 1.0+ | 0.3+ | 2006 10 04 | 703 | 0.2+ | 1.4+ |
| 2002 11 30 | 704 | 0.0 | 0.5− | 2003 01 05 | 704 | 1.0+ | 0.3− | 2006 10 31 | 703 | 0.2− | 0.4+ |
| 2002 11 30 | 704 | 0.3+ | 0.2+ | 2003 01 05 | 704 | 0.5+ | 0.3− | 2006 10 31 | 703 | 0.5− | 0.1− |
| 2002 11 30 | 704 | 0.2+ | 0.5+ | 2003 01 05 | 704 | 0.3+ | 0.8− | 2006 10 31 | 703 | 1.5− | 1.0− |
| 2002 11 30 | 704 | 0.9+ | 0.6+ | 2004 03 28 | 703 | 1.3+ | 1.2+ | 2006 10 31 | 703 | 0.2+ | 0.2+ |

**2002 WH$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.97489 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22235760 | $\omega$ | 333.46893 | | +0.52034268 | −0.79004003 | |
| $a$ | 2.6983694 | $\Omega$ | 83.53196 | | +0.82996473 | +0.37852146 | |
| $e$ | 0.2707135 | $i$ | 19.04056 | | +0.20100260 | +0.48224293 | |
| $P$ | 4.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 608 | 0.6− | 0.4+ | 2002 12 05 | 608 | 0.0 | 0.6− | 2003 01 08 | 608 | 0.1− | 0.9− |
| 2002 10 07 | 608 | 0.9− | 0.8+ | 2002 12 10 | 644 | 0.3− | 0.3+ | 2003 01 08 | 608 | 0.1+ | 0.6− |
| 2002 10 07 | 608 | 0.8− | 0.3+ | 2002 12 10 | 644 | 0.3− | 0.3+ | 2003 01 08 | 608 | 0.2+ | 0.7− |
| 2002 11 05 | 704 | 0.1− | 0.5+ | 2002 12 10 | 644 | 0.2− | 0.4+ | 2005 06 17 | G96 | 0.0 | 0.3+ |
| 2002 11 05 | 704 | 0.1+ | 0.3− | 2002 12 11 | 704 | 0.2− | 0.5− | 2005 06 17 | G96 | 0.2+ | 0.3+ |
| 2002 11 05 | 704 | 0.4− | 0.6− | 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 08 25 | E12 | 0.0 | 0.2+ |
| 2002 11 05 | 704 | 0.6+ | 0.3− | 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 08 25 | E12 | 0.0 | 0.2+ |
| 2002 11 05 | 704 | 0.9+ | 0.2+ | 2002 12 11 | 704 | 0.5+ | 0.6+ | 2006 08 25 | E12 | 0.1+ | 0.8− |
| 2002 11 12 | 704 | (2.1− | 0.9+) | 2002 12 11 | 704 | 0.5+ | 0.0 | 2006 08 25 | E12 | 0.1+ | 0.4− |
| 2002 11 12 | 704 | 0.2+ | 0.1− | 2002 12 31 | 704 | 0.3+ | 0.3− | 2006 09 28 | E12 | 0.3− | 0.3+ |
| 2002 11 12 | 704 | 1.1− | 0.2− | 2002 12 31 | 704 | 0.5− | 0.1+ | 2006 09 28 | E12 | 0.3− | 0.3− |
| 2002 11 12 | 704 | 0.2− | 1.1− | 2002 12 31 | 704 | 0.6− | 0.4+ | 2006 09 28 | E12 | 0.4+ | 0.3+ |
| 2002 11 12 | 704 | 1.0− | 0.2− | 2002 12 31 | 704 | 1.1+ | 0.6+ | 2006 09 28 | E12 | 0.1− | 0.1+ |
| 2002 11 28 | 699 | 0.7+ | 0.4− | 2003 01 04 | 704 | 0.2− | 0.3− | 2006 10 24 | E12 | 1.0+ | 0.5+ |
| 2002 11 28 | 699 | 0.1+ | 0.6+ | 2003 01 04 | 704 | 0.3− | 0.2− | 2006 10 24 | E12 | 1.2− | 0.8− |
| 2002 11 28 | 699 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.0 | 0.0 | 2006 10 24 | E12 | 0.7+ | 0.1− |
| 2002 11 28 | 699 | 0.5+ | 0.7+ | 2003 01 04 | 704 | 0.5+ | 0.7+ | 2006 10 24 | E12 | 0.5− | 0.1+ |
| 2002 12 01 | 704 | 0.4+ | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 10 24 | E12 | 0.8+ | 0.3+ |
| 2002 12 01 | 704 | 0.1+ | 0.7+ | 2003 01 08 | 704 | 0.2− | 0.2− | 2006 10 24 | E12 | 0.1− | 0.4− |
| 2002 12 01 | 704 | 0.4+ | 0.2+ | 2003 01 08 | 704 | 0.3+ | 0.3+ | 2006 10 24 | E12 | 0.5+ | 0.1− |
| 2002 12 01 | 704 | 0.4+ | 0.1− | 2003 01 08 | 704 | (1.7+ | 1.1+) | 2006 10 24 | E12 | 0.8− | 0.1+ |
| 2002 12 05 | 608 | 0.2− | 0.2− | 2003 01 08 | 704 | 0.4− | 0.1− | | | | |
| 2002 12 05 | 608 | 0.1+ | 0.2− | 2003 01 08 | 704 | 0.1− | 0.0 | | | | |

**2002 WV$_{14}$ = 2006 WZ$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.25866 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24251527 | $\omega$ | 320.56744 | | +0.12901495 | −0.98824445 | |
| $a$ | 2.5466934 | $\Omega$ | 121.87414 | | +0.93247536 | +0.09275707 | |
| $e$ | 0.2471102 | $i$ | 5.54281 | | +0.33740901 | +0.12152795 | |
| $P$ | 4.06 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.3− | 0.3− | 2002 12 05 | 608 | 0.6+ | 0.6− | 2006 11 13 | 644 | 0.0 | 0.4+ |
| 2002 11 11 | 704 | 0.4+ | 0.6− | 2002 12 05 | 608 | 0.5+ | 0.1− | 2006 11 13 | 644 | 0.4+ | 0.5+ |
| 2002 11 11 | 704 | 0.7− | 0.8− | 2002 12 05 | 608 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.5− | 0.7− | 2002 12 10 | 644 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.1− | 0.1+ | | |
| 2002 11 11 | 704 | 0.1+ | 0.2+ | 2002 12 10 | 644 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.4− | 0.1− | | |
| 2002 11 28 | 699 | (0.4+ | 1.8−) | 2002 12 10 | 644 | 0.3− | 0.1− | 2006 11 19 | 703 | 1.0− | 0.4+ | | |
| 2002 11 28 | 699 | (2.4+ | 0.1−) | 2004 04 19 | 291 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.1− | 0.3+ | | |
| 2002 11 28 | 699 | 1.0+ | 0.2+ | 2004 04 19 | 291 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.0 | | |
| 2002 11 28 | 699 | 0.7+ | 0.2+ | 2004 04 19 | 291 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.1− | | |
| 2002 12 01 | 704 | 0.0 | 0.4+ | 2006 11 01 | 703 | 0.5− | 0.3− | 2006 11 25 | G96 | 0.4+ | 0.2− | | |
| 2002 12 01 | 704 | 1.1− | 0.2+ | 2006 11 01 | 703 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.1− | | |
| 2002 12 01 | 704 | 0.7− | 0.5+ | 2006 11 01 | 703 | 0.4− | 0.1+ | | | | | | |
| 2002 12 01 | 704 | 0.5+ | 0.5+ | 2006 11 01 | 703 | 0.4− | 0.6+ | | | | | | |

**2002 WB$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.13084 | | (2000.0) | | | |
| $n$ | 0.23424597 | $\omega$ | 169.38891 | | +0.93785549 | −0.33083015 |
| $a$ | 2.6062813 | $\Omega$ | 210.58241 | | +0.30139874 | +0.92618447 |
| $e$ | 0.1296902 | $i$ | 11.88462 | | +0.17200548 | +0.18092470 |
| $P$ | 4.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.9− | 0.5− | 2006 10 04 | 703 | (1.7+ | 0.8+) | 2006 10 28 | 704 | 0.3+ | 0.9+ | | |
| 2002 11 07 | 704 | 1.2− | 0.0 | 2006 10 04 | 703 | (1.6− | 0.7−) | 2006 10 28 | 704 | 0.4− | 0.3− | | |
| 2002 11 07 | 704 | 0.6− | 0.8− | 2006 10 04 | 703 | 1.0+ | 0.7+ | 2006 10 28 | 704 | 0.7+ | 0.7+ | | |
| 2002 11 07 | 704 | 0.7− | 0.1+ | 2006 10 04 | 703 | 0.8− | 0.4− | 2006 10 28 | 704 | 1.0− | 1.3+ | | |
| 2002 11 28 | 699 | 0.2− | 0.6− | 2006 10 04 | 703 | 0.3+ | 0.6− | 2006 10 28 | 704 | 0.2− | 0.5+ | | |
| 2002 11 28 | 699 | 0.3− | 0.8− | 2006 10 04 | 703 | 1.0− | 0.4− | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 2002 11 28 | 699 | 0.2− | 0.2+ | 2006 10 04 | 703 | 0.6+ | 1.1− | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2002 11 28 | 699 | 1.2+ | 0.3+ | 2006 10 04 | 703 | 0.2− | 0.7− | 2006 10 31 | G96 | 0.4− | 0.3− | | |
| 2002 12 01 | 704 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2002 12 01 | 704 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1− | | |
| 2002 12 01 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.5+ | 2006 11 10 | 644 | 0.2+ | 0.2− | | |
| 2002 12 14 | 704 | 0.3+ | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.2− | | |
| 2002 12 14 | 704 | 0.8+ | 1.1+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.7− | | |
| 2002 12 14 | 704 | 1.2+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.7− | | |
| 2006 09 20 | 699 | (0.0 | 1.6+) | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.8− | | |
| 2006 09 20 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.8− | | |
| 2006 09 20 | 699 | 0.9+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.2+ | | |
| 2006 09 20 | 699 | 0.9− | 0.0 | 2006 10 23 | 683 | (1.4− | 1.5−) | 2006 11 17 | 704 | 0.1− | 0.8+ | | |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 10 23 | 683 | (1.4− | 2.2−) | 2006 11 17 | 704 | 0.6+ | 0.6+ | | |
| 2006 09 27 | 704 | 0.6+ | 0.8+ | 2006 10 23 | 683 | (2.4− | 1.7−) | 2006 11 17 | 704 | 0.1− | 0.0 | | |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 10 27 | 683 | (1.8+ | 0.6−) | 2006 11 17 | 704 | 0.0 | 0.5+ | | |
| 2006 09 27 | 704 | 0.6− | 0.2+ | 2006 10 27 | 683 | (2.0+ | 0.3−) | 2006 11 20 | 704 | 0.1+ | 0.6− | | |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 27 | 683 | 0.9+ | 0.2+ | 2006 11 20 | 704 | 0.7− | 0.1− | | |
| 2006 09 27 | G96 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.4− | | |
| 2006 09 27 | 704 | 0.7+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.0 | 0.2+ | | |
| 2006 09 27 | 704 | 1.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.2− | 0.6− | | |

**2002 WN$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.70361 | | (2000.0) | | | |
| $n$ | 0.21863443 | $\omega$ | 214.56666 | | +0.31531304 | −0.93761087 |
| $a$ | 2.7289171 | $\Omega$ | 217.66311 | | +0.91579954 | +0.34110820 |
| $e$ | 0.1700503 | $i$ | 13.87304 | | +0.24877478 | −0.06731308 |
| $P$ | 4.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 19 | 704 | (3.2+ | 0.5+) | 2006 08 29 | 699 | 0.5− | 0.9+ | 2006 10 03 | 703 | (2.0− | 0.2−) | | |
| 1999 02 19 | 704 | 0.4− | 1.0+ | 2006 08 29 | 699 | 1.0+ | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.3+ | | |
| 1999 02 19 | 704 | 0.7+ | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.6+ | | |
| 1999 02 19 | 704 | (4.3− | 0.4−) | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 2002 11 06 | 608 | 0.5+ | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 | | |
| 2002 11 06 | 608 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.5− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.2+ | | |
| 2002 11 06 | 608 | 0.6+ | 1.4+ | 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.2+ | | |
| 2002 11 28 | 608 | 0.5+ | 0.1− | 2006 09 16 | 703 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.5− | | |
| 2002 11 28 | 608 | 0.2+ | 0.4+ | 2006 09 16 | 703 | (1.6− | 0.4+) | 2006 10 17 | 703 | 0.4− | 0.5− | | |
| 2002 11 28 | 608 | 0.4+ | 0.2− | 2006 09 21 | 699 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.0 | | |
| 2002 11 28 | 608 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.2− | | |
| 2002 11 28 | 608 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.3− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2002 11 28 | 608 | 0.1− | 0.4+ | 2006 09 21 | 699 | 0.3− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2002 12 01 | 704 | 0.3− | 0.1− | 2006 09 26 | 683 | (2.8+ | 1.6−) | 2006 10 19 | 691 | 0.1+ | 0.1+ | | |
| 2002 12 01 | 704 | 0.2+ | 0.0 | 2006 09 26 | 683 | 1.3+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2002 12 01 | 704 | 0.3− | 0.4− | 2006 09 27 | 683 | 0.8− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.0 | | |
| 2002 12 05 | 608 | 0.0 | 1.1− | 2006 09 27 | 703 | 0.3+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2002 12 05 | 608 | 0.2+ | 1.4− | 2006 09 27 | 683 | 0.6+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2002 12 05 | 608 | 0.6+ | 0.7− | 2006 09 27 | 703 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.1− | 0.1− | | |
| 2002 12 10 | 644 | 0.6+ | 0.0 | 2006 09 27 | 703 | 0.0 | 0.4− | 2006 10 22 | 691 | 0.2− | 0.2− | | |
| 2002 12 10 | 644 | 0.2− | 0.0 | 2006 09 27 | 683 | 0.2+ | 1.2− | 2006 10 23 | 703 | 0.3+ | 0.5− | | |
| 2002 12 10 | 644 | 0.4− | 0.1+ | 2006 09 27 | 703 | 0.4+ | 0.1− | 2006 10 23 | 703 | 0.1+ | 0.8− | | |
| 2002 12 14 | 704 | 0.2− | 0.1− | 2006 09 28 | 683 | 1.5+ | 0.1− | 2006 10 23 | 703 | 0.7− | 0.4+ | | |
| 2002 12 14 | 704 | 0.1+ | 0.4− | 2006 09 28 | 683 | 0.9+ | 0.1+ | 2006 10 23 | 703 | 0.6+ | 0.4− | | |
| 2002 12 14 | 704 | 0.4− | 0.3− | 2006 09 28 | 683 | 0.0 | 0.8+ | 2006 10 29 | 703 | 0.3+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.8− | 0.7− | 2006 09 29 | 699 | 0.3+ | 0.4− | 2006 10 29 | 703 | 0.6− | 0.3− | | |
| 2002 12 14 | 704 | 0.4− | 0.6+ | 2006 09 29 | 699 | 0.3− | 0.1+ | 2006 10 29 | 703 | 0.2− | 0.6− | | |
| 2003 01 28 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.2+ | 2006 10 29 | 703 | 0.5− | 0.5− | | |
| 2003 01 28 | 704 | 1.0− | 0.7+ | 2006 09 29 | 699 | 0.6+ | 0.3+ | 2006 11 13 | 703 | 1.0− | 0.3+ | | |
| 2003 01 28 | 704 | 0.1− | 0.6+ | 2006 10 03 | 703 | 0.6− | 0.5− | 2006 11 13 | 703 | 0.0 | 0.4+ | | |
| 2006 08 29 | 699 | (1.8− | 3.5+) | 2006 10 03 | 703 | 0.6− | 0.5− | 2006 11 13 | 703 | 0.0 | 0.6+ | | |
| 2006 08 29 | 699 | 0.9+ | 0.0 | 2006 10 03 | 703 | 1.0− | 0.2+ | 2006 11 13 | 703 | 0.6− | 0.2+ | | |

**2002 WU$_{16}$ = 2006 US$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.06537 | | (2000.0) | | | |
| $n$ | 0.23294887 | $\omega$ | 84.45451 | | +0.73469463 | +0.64869683 |
| $a$ | 2.6159472 | $\Omega$ | 234.92397 | | −0.67770534 | +0.68859040 |
| $e$ | 0.1376423 | $i$ | 14.03959 | | −0.03064772 | +0.32409209 |
| $P$ | 4.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 608 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.3+ | 0.1− | | |
| 2002 11 28 | 608 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.4+ | | |
| 2002 11 28 | 608 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.5+ | 0.9+ | | |
| 2002 11 28 | 608 | 0.6+ | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 2002 11 28 | 608 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.0 | | |
| 2002 11 28 | 608 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 1.1+ | 1.1+ | | |
| 2002 12 01 | 704 | 0.3+ | 0.7− | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.9+ | | |
| 2002 12 01 | 704 | 1.5− | 0.4− | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | (0.2+ | 2.3+) | | |
| 2002 12 01 | 704 | 0.7− | 0.6− | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.3− | 1.4+ | | |
| 2002 12 10 | 644 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | (1.5− | 2.2+) | | |
| 2002 12 10 | 644 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | (0.4+ | 1.8+) | | |
| 2002 12 10 | 644 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.0 | 0.4− | | |
| 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 11 | 703 | 1.3− | 0.1− | 2006 11 27 | 703 | 0.5− | 0.9− | | |
| 2006 10 19 | G96 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.6− | 2006 11 27 | 703 | 0.8− | 1.0− | | |
| 2006 10 19 | G96 | 0.0 | 0.2+ | 2006 11 11 | 703 | (1.6− | 0.3−) | 2006 11 27 | 703 | 0.4+ | 0.5− | | |
| 2006 10 19 | 703 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 1.0− | 2006 11 29 | 704 | 0.4+ | 0.2− | | |
| 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.6+ | 1.4+ | | |
| 2006 10 19 | G96 | 0.3− | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.3+ | 1.3+ | | |
| 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.6+ | 1.4+ | | |
| 2006 10 19 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.9− | 2006 12 01 | G96 | 0.2+ | 0.8− | | |
| 2006 10 20 | G96 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.4+ | 2006 12 01 | G96 | 0.5− | 0.9− | | |
| 2006 10 20 | G96 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.4− | 2006 12 01 | G96 | 0.2− | 1.2− | | |
| 2006 10 20 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.4+ | 2006 12 01 | G96 | 0.2+ | 0.8− | | |
| 2006 10 20 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.3+ | | | | | | |

**2002 WL$_{17}$ = 2006 QS$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.29144 | | (2000.0) | | | |
| $n$ | 0.23716078 | $\omega$ | 211.21220 | | +0.82319571 | −0.56758507 |
| $a$ | 2.5848825 | $\Omega$ | 183.46762 | | +0.55686306 | +0.81196153 |
| $e$ | 0.2822816 | $i$ | 13.38376 | | +0.11069037 | +0.13625585 |
| $P$ | 4.16 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.1+ |
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.1+ |
| 2002 11 30 | 704 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.4− | 0.5+ |
| 2002 11 30 | 704 | 0.5− | 0.8+ | 2006 09 19 | 699 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2002 11 30 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 11 30 | 704 | 0.9− | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 12 01 | 704 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 15 | 106 | 0.3+ | 0.3− |
| 2002 12 01 | 704 | 0.6− | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 10 15 | 106 | 0.2− | 0.2+ |
| 2002 12 01 | 704 | 0.9− | 0.4+ | 2006 09 20 | 704 | 0.8+ | 0.1− | 2006 10 15 | 106 | 0.4+ | 1.2+ |
| 2002 12 01 | 704 | 0.9− | 0.6+ | 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 10 15 | 106 | 0.5+ | 1.0+ |
| 2004 03 21 | 291 | 0.3− | 0.7+ | 2006 09 20 | 704 | 0.9+ | 0.7− | 2006 10 16 | 703 | (1.9+ | 1.9+) |
| 2004 03 21 | 291 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2004 03 21 | 291 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | (1.0+ | 1.7+) |
| 2006 08 29 | 703 | 0.8− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.8+ | 1.1+ |
| 2006 08 29 | 703 | 0.3+ | 0.8− | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2006 08 29 | 703 | (0.3+ | 1.5−) | 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.4− |
| 2006 08 30 | 704 | (2.0− | 0.6+) | 2006 09 24 | 691 | 0.3− | 0.1− | 2006 10 22 | 704 | 0.7− | 0.1+ |
| 2006 08 30 | 704 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.3− | 2006 10 22 | 704 | (1.8− | 0.9+) |
| 2006 08 30 | 704 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 10 22 | 704 | (0.5+ | 1.6+) |
| 2006 08 30 | 704 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.5− | 0.7+ | 2006 10 22 | 704 | 0.1− | 0.9+ |
| 2006 09 06 | 644 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 10 22 | 704 | 0.1+ | 0.5+ |
| 2006 09 06 | 644 | 0.4− | 0.1− | 2006 09 28 | 704 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.8+ | 0.3+ |
| 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.2− | 0.4+ | 2006 11 23 | 703 | 0.6− | 0.1+ |
| 2006 09 17 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.7− |
| 2006 09 17 | 704 | 0.2+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.8+ | 1.1+ |
| 2006 09 17 | 704 | 0.8+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.7− | 0.4− |
| 2006 09 17 | 704 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.7+ | 0.4+ | | | | |
| 2006 09 17 | 704 | 0.3− | 0.6+ | 2006 10 01 | 704 | 0.4+ | 0.6+ | | | | |

**2002 WD$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.80875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23896233 | $\omega$ | 291.77744 | | +0.71336846 | −0.63493820 | |
| $a$ | 2.5718744 | $\Omega$ | 108.96331 | | +0.70065644 | +0.65444906 | |
| $e$ | 0.2280580 | $i$ | 18.27624 | | −0.01363799 | +0.41054831 | |
| $P$ | 4.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | 0.9+ | 0.3− | 2002 11 30 | 704 | 1.4+ | 0.7+ | 2006 09 27 | 703 | 0.3− | 0.4− |
| 1998 12 22 | 704 | 1.2− | 0.9− | 2002 12 02 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.1+ |
| 1998 12 22 | 704 | 1.4+ | 1.2− | 2002 12 02 | 704 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.4+ | 0.1+ |
| 1998 12 22 | 704 | 0.5− | 1.6− | 2002 12 02 | 704 | 0.3− | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.7+ |
| 1998 12 22 | 704 | (4.3− | 0.3+) | 2002 12 02 | 704 | 0.3− | 0.2− | 2006 10 11 | E12 | 0.2+ | 0.4− |
| 2002 10 06 | 704 | 0.0 | 0.3− | 2002 12 02 | 704 | 0.5+ | 0.0 | 2006 10 11 | E12 | 0.6+ | 0.2+ |
| 2002 10 06 | 704 | 0.2+ | 0.4− | 2002 12 02 | 704 | 0.5− | 0.9+ | 2006 10 11 | E12 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.1− | 0.2− | 2002 12 02 | 704 | 0.0 | 0.4+ | 2006 10 11 | E12 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.3+ | 0.2− | 2002 12 02 | 704 | 0.1− | 0.1+ | 2006 10 25 | E12 | 0.6+ | 0.1+ |
| 2002 10 06 | 704 | 0.4+ | 1.0− | 2002 12 02 | 704 | 0.3+ | 0.6+ | 2006 10 25 | E12 | 0.6+ | 0.5+ |
| 2002 10 29 | 704 | 0.3− | 0.2− | 2002 12 02 | 704 | 0.2− | 1.2+ | 2006 10 25 | E12 | 0.1+ | 1.1+ |
| 2002 10 29 | 704 | 0.6+ | 0.5− | 2003 01 02 | 704 | 0.3− | 0.1− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2002 10 29 | 704 | 0.5− | 0.5− | 2003 01 02 | 704 | 0.4− | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2002 10 29 | 704 | 0.1+ | 0.7− | 2003 01 02 | 704 | 0.8− | 0.1− | 2006 11 06 | 644 | 0.1− | 0.4+ |
| 2002 10 29 | 704 | 0.1+ | 0.3− | 2003 01 02 | 704 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.8− | 1.3− |
| 2002 11 06 | 644 | 0.2− | 0.0 | 2003 01 26 | 644 | 0.9− | 0.9+ | 2006 11 19 | 703 | 0.6− | 0.2− |
| 2002 11 06 | 644 | 0.2− | 0.2+ | 2003 01 26 | 644 | 1.1− | 1.1+ | 2006 11 19 | 703 | 0.9− | 0.3− |
| 2002 11 06 | 644 | 0.0 | 0.2+ | 2003 01 26 | 644 | 0.7− | 1.0+ | 2006 11 19 | 703 | 0.0 | 0.7− |
| 2002 11 30 | 704 | 0.3+ | 0.6+ | 2006 09 24 | 703 | 0.1− | 0.1+ | 2006 11 24 | 703 | 0.3+ | 0.1+ |
| 2002 11 30 | 704 | 0.7+ | 0.5+ | 2006 09 24 | 703 | 0.4− | 0.1+ | 2006 11 24 | 703 | 0.4+ | 0.3− |
| 2002 11 30 | 704 | 0.5+ | 0.3+ | 2006 09 24 | 703 | 0.3− | 0.5+ | 2006 11 24 | 703 | 0.9− | 0.5− |
| 2002 11 30 | 704 | 0.3+ | 0.3+ | 2006 09 24 | 703 | 0.2− | 0.5+ | 2006 11 24 | 703 | 0.2− | 1.5− |

**2002 WS$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.77228 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24411965 | $\omega$ | 277.52168 | | −0.66113054 | −0.69210577 | |
| $a$ | 2.5355230 | $\Omega$ | 219.40364 | | +0.72910544 | −0.68372281 | |
| $e$ | 0.2544693 | $i$ | 27.14842 | | −0.17695103 | −0.23132817 | |
| $P$ | 4.04 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 1.0− | 0.8− | 2002 12 06 | 704 | 0.7+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 0.5− | 0.9− | 2002 12 07 | 704 | 1.2+ | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | 0.4+ | 0.3+ | 2002 12 07 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2002 10 31 | 644 | 0.6+ | 0.3− | 2002 12 07 | 704 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2002 10 31 | 644 | 0.1+ | 0.2− | 2002 12 07 | 704 | 0.7+ | 0.5− | 2006 10 22 | 691 | 0.4− | 1.0+ |
| 2002 10 31 | 644 | 0.4+ | 0.4− | 2002 12 08 | 644 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.4− | 0.7+ |
| 2002 11 12 | 704 | 0.7− | 1.1+ | 2002 12 08 | 644 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.8+ | 0.1− |
| 2002 11 12 | 704 | 0.5− | 0.3− | 2002 12 08 | 644 | 0.4− | 0.4− | 2006 11 02 | 703 | 1.2+ | 0.1− |
| 2002 11 12 | 704 | 0.3− | 0.2− | 2002 12 13 | 644 | 0.1+ | 0.3− | 2006 11 02 | 703 | (2.0− | 0.5−) |
| 2002 11 12 | 704 | 1.0− | 0.6+ | 2002 12 13 | 644 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2002 11 12 | 704 | 0.2− | 0.0 | 2002 12 13 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.5+ |
| 2002 11 30 | 704 | 0.6+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 2002 11 30 | 704 | 0.3+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.2− | 0.5− |
| 2002 11 30 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.6− | 2006 11 19 | 703 | 0.5+ | 0.2− |
| 2002 12 01 | 704 | 0.3− | 0.8+ | 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.5− | 0.3− |
| 2002 12 01 | 704 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.5− | 0.2− |
| 2002 12 01 | 704 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.4− | 0.2+ |
| 2002 12 01 | 704 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2002 12 01 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.3− |
| 2002 12 06 | 704 | 0.1+ | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.3− | 2006 11 20 | 704 | 1.0− | 0.7− |

**2002 WL$_{18}$ = 2006 SH$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.14001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23420374 | $\omega$ | 258.46240 | | +0.83461751 | −0.51829976 | |
| $a$ | 2.6065946 | $\Omega$ | 132.43548 | | +0.54993300 | +0.80336200 | |
| $e$ | 0.2459180 | $i$ | 14.63647 | | −0.03142141 | +0.29321470 | |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.3+ | 0.5− | 2002 12 02 | 704 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.3− | 0.5− |
| 2002 10 30 | 704 | 0.2− | 1.4− | 2002 12 02 | 704 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.2+ |
| 2002 10 30 | 704 | 0.2+ | 0.3+ | 2002 12 02 | 704 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.4− |
| 2002 10 30 | 704 | 0.1− | 0.5− | 2002 12 02 | 704 | 1.1+ | 1.0− | 2006 09 27 | 703 | 0.2− | 0.0 |
| 2002 11 06 | 644 | 0.6+ | 0.2+ | 2002 12 02 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.1− |
| 2002 11 06 | 644 | 0.5+ | 0.2+ | 2002 12 02 | 704 | 0.0 | 0.7− | 2006 09 27 | 703 | 0.6− | 0.2− |
| 2002 11 06 | 644 | 0.7+ | 0.2− | 2002 12 02 | 704 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2002 11 16 | 699 | 0.1+ | 0.9+ | 2002 12 02 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 2002 11 16 | 699 | (1.6− | 2.1+) | 2006 09 22 | 703 | 0.6+ | 1.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2002 11 16 | 644 | 0.1− | 0.2+ | 2006 09 22 | 703 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.1+ |
| 2002 11 16 | 699 | 1.4− | 0.8− | 2006 09 22 | 703 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2002 11 16 | 699 | 0.6− | 0.4+ | 2006 09 22 | 703 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2002 11 16 | 644 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.5+ | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.3− |
| 2002 11 16 | 644 | 0.3− | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.1− | 0.0 |
| 2002 11 30 | 704 | 0.4− | 0.6+ | 2006 09 27 | 703 | 0.3− | 0.2+ | 2006 10 12 | E12 | 0.1+ | 0.3+ |
| 2002 11 30 | 704 | 0.1− | 0.4+ | 2006 09 27 | 703 | 0.1+ | 0.1− | 2006 10 12 | E12 | 0.1+ | 0.0 |
| 2002 11 30 | 704 | 0.1+ | 1.0+ | 2006 09 27 | 703 | 0.1+ | 0.4+ | 2006 10 12 | E12 | 0.4− | 0.2− |
| 2002 12 02 | 704 | 0.5+ | 1.1− | 2006 09 27 | 703 | 0.1+ | 0.1− | 2006 10 12 | E12 | 0.3− | 0.2− |

**2002 WM$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.35259 | | (2000.0) | | | |
| $n$ | 0.23799015 | $\omega$ | 159.24797 | | +0.67121644 | −0.71029079 |
| $a$ | 2.5788736 | $\Omega$ | 247.91408 | | +0.64376385 | +0.70037574 |
| $e$ | 0.1633115 | $i$ | 13.22746 | | +0.36747325 | +0.07043306 |
| $P$ | 4.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 699 | (1.9− | 1.2+) | 2002 11 30 | 608 | 0.3− | 0.7− | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2002 09 16 | 699 | 0.9− | 0.9− | 2002 12 02 | 704 | 0.8− | 0.6− | 2006 10 10 | 644 | 0.5+ | 0.2+ |
| 2002 09 16 | 699 | 0.3+ | 0.8− | 2002 12 02 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.4+ |
| 2002 09 16 | 699 | 0.3+ | 1.2− | 2002 12 02 | 704 | 0.7− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2002 10 05 | 704 | 0.7+ | 1.1− | 2002 12 02 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 10 05 | 704 | 0.2+ | 0.3+ | 2002 12 02 | 704 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 0.8+ | 0.2+ | 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 0.6+ | 0.7+ | 2002 12 06 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 10 10 | 704 | 1.1− | 0.1+ | 2002 12 06 | 704 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2002 10 10 | 704 | 0.1− | 0.7+ | 2002 12 06 | 704 | 0.5− | 0.3+ | 2006 10 21 | 704 | 0.4+ | 0.4+ |
| 2002 10 10 | 704 | 0.6− | 0.4+ | 2002 12 06 | 704 | 0.6− | 0.4+ | 2006 10 21 | 704 | 0.2− | 1.0+ |
| 2002 10 10 | 704 | 0.7+ | 0.7− | 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 10 21 | 704 | 0.3− | 0.4+ |
| 2002 11 06 | 704 | 1.0+ | 0.3+ | 2002 12 11 | 644 | 0.1− | 0.1− | 2006 10 21 | 704 | 0.5− | 0.3− |
| 2002 11 06 | 704 | 0.2− | 0.3+ | 2002 12 11 | 644 | 0.1− | 0.1− | 2006 10 21 | 704 | 0.5+ | 0.1+ |
| 2002 11 06 | 704 | 0.9− | 0.0 | 2002 12 11 | 704 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2002 11 06 | 704 | 0.3− | 0.3+ | 2002 12 11 | 704 | 0.7+ | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.5− | 0.0 | 2002 12 11 | 704 | 0.5− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.8− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 11 14 | 704 | 1.4+ | 0.6+ | 2002 12 11 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 11 14 | 704 | 0.3+ | 0.2− | 2004 03 15 | 644 | 0.1+ | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.5− | 2004 03 15 | 644 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.8− |
| 2002 11 14 | 704 | 0.5− | 0.6− | 2004 03 15 | 644 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 10 27 | 703 | 1.1− | 0.5+ |
| 2002 11 24 | 644 | 0.6+ | 0.3+ | 2006 09 17 | 703 | 0.9− | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.6+ |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.3+ | 2006 11 25 | 703 | 0.9− | 0.9− |
| 2002 11 24 | 644 | 0.6+ | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.2+ | 2006 11 25 | 703 | 0.2+ | 0.7+ |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.6− | 2006 11 25 | 703 | 0.3− | 0.1− |
| 2002 11 24 | 644 | 0.6+ | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.3− | 2006 11 25 | 703 | 0.7− | 0.0 |
| 2002 11 30 | 608 | 0.2− | 0.6− | 2006 09 28 | 703 | 0.1+ | 0.1+ | | | | |
| 2002 11 30 | 608 | 0.2− | 0.5− | 2006 09 28 | 703 | 0.2− | 0.8− | | | | |

**2002 WP$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.29485 | | (2000.0) | | | |
| $n$ | 0.25149609 | $\omega$ | 290.20018 | | −0.05102532 | −0.99750986 |
| $a$ | 2.4856991 | $\Omega$ | 162.51089 | | +0.96608570 | −0.06165696 |
| $e$ | 0.1204862 | $i$ | 9.32355 | | +0.25313009 | +0.03424185 |
| $P$ | 3.92 | $H$ | 15.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 1.2− | 1.3− | 2002 11 12 | 704 | 0.6− | 0.4− | 2006 11 13 | 703 | 0.2+ | 0.0 |
| 2002 10 31 | 704 | 0.2− | 1.0+ | 2002 11 12 | 704 | 0.7− | 1.3+ | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2002 10 31 | 704 | 0.1− | 0.8+ | 2002 11 30 | 704 | 0.8+ | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.2− |
| 2002 10 31 | 704 | 0.6+ | 0.0 | 2002 11 30 | 704 | 0.0 | 0.6− | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 2002 10 31 | 644 | 0.1+ | 0.6− | 2002 11 30 | 704 | 0.3− | 0.5+ | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2002 10 31 | 644 | 0.3+ | 0.7− | 2002 11 30 | 704 | 0.4+ | 0.8− | 2006 11 19 | 703 | 0.1+ | 0.4− |
| 2002 10 31 | 644 | 0.1− | 0.5− | 2002 12 02 | 608 | 0.9+ | 0.5− | 2006 11 19 | 703 | 0.5− | 0.7− |
| 2002 11 04 | 608 | 0.6+ | 0.3+ | 2002 12 02 | 608 | 0.7+ | 0.6− | 2006 11 19 | 703 | 0.8− | 0.2− |
| 2002 11 04 | 608 | 0.5+ | 0.3+ | 2002 12 02 | 608 | 0.4− | 0.9− | 2006 12 01 | 703 | 0.3− | 0.4− |
| 2002 11 04 | 608 | 0.3+ | 0.3+ | 2002 12 13 | 644 | 0.5− | 0.4+ | 2006 12 01 | 703 | 0.6− | 0.0 |
| 2002 11 12 | 704 | 0.4− | 1.1+ | 2002 12 13 | 644 | 0.2− | 0.1+ | 2006 12 01 | 703 | 0.6+ | 1.3+ |
| 2002 11 12 | 704 | 0.3− | 0.7+ | 2002 12 13 | 644 | 0.3− | 0.4+ | 2006 12 01 | 703 | 0.9+ | 1.0+ |

**2002 WR$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.16547 | | (2000.0) | | | |
| $n$ | 0.23863936 | $\omega$ | 268.64018 | | +0.95654932 | −0.10263297 |
| $a$ | 2.5741944 | $\Omega$ | 97.19831 | | +0.19828568 | +0.91521410 |
| $e$ | 0.2466678 | $i$ | 15.96667 | | −0.21376667 | +0.38967887 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.0 | 0.2+ | 2002 12 13 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 703 | 0.7− | 0.6− |
| 2002 10 30 | 704 | 0.4− | 0.0 | 2006 09 22 | 703 | 0.6− | 0.3+ | 2006 11 01 | 703 | 0.0 | 0.4− |
| 2002 10 30 | 704 | 0.1− | 0.1+ | 2006 09 22 | 703 | 0.2− | 0.1− | 2006 11 01 | 703 | 0.1+ | 0.2+ |
| 2002 10 30 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 703 | 0.2+ | 0.1− | 2006 11 06 | 644 | 0.5+ | 0.2+ |
| 2002 10 30 | 704 | 0.1+ | 1.1+ | 2006 09 22 | 703 | 1.3− | 0.8− | 2006 11 06 | 644 | 0.6+ | 0.1+ |
| 2002 11 16 | 699 | 0.3− | 0.5+ | 2006 09 25 | 703 | 0.5− | 0.0 | 2006 11 06 | 644 | 0.7+ | 0.2+ |
| 2002 11 16 | 699 | 0.8+ | 0.8− | 2006 09 25 | 703 | 0.6− | 0.0 | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2002 11 16 | 699 | 0.7− | 0.5− | 2006 09 25 | 703 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2002 11 16 | 699 | 0.3+ | 0.1− | 2006 09 25 | 703 | 0.1− | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2002 11 30 | 704 | 0.4− | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.1+ | 2006 11 18 | 703 | 0.1+ | 0.8− |
| 2002 11 30 | 704 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.6+ | 0.5+ | 2006 11 18 | 703 | (2.0+ | 0.4+) |
| 2002 11 30 | 704 | 0.2− | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.2− | 2006 11 18 | 703 | 0.7+ | 0.2− |
| 2002 11 30 | 704 | 0.5− | 0.1− | 2006 09 27 | 703 | 0.4− | 0.2− | 2006 11 18 | 703 | 0.6+ | 0.7− |
| 2002 12 03 | 644 | 0.0 | 0.1− | 2006 10 25 | E12 | 0.3+ | 0.1− | 2006 11 24 | 703 | 0.4− | 0.3− |
| 2002 12 03 | 644 | 0.1− | 0.1− | 2006 10 25 | E12 | 0.0 | 0.1− | 2006 11 24 | 703 | 0.1+ | 0.4− |
| 2002 12 03 | 644 | 0.5+ | 0.1− | 2006 10 25 | E12 | 0.8+ | 0.3+ | 2006 11 24 | 703 | 0.4+ | 0.7− |
| 2002 12 13 | 644 | 0.0 | 0.1+ | 2006 10 25 | E12 | 0.5+ | 0.6+ | 2006 11 24 | 703 | 0.1− | 0.9+ |
| 2002 12 13 | 644 | 0.2− | 0.0 | 2006 11 01 | 703 | 0.8− | 0.2− | | | | |

**2002 WF$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.35369 | | (2000.0) | | | |
| $n$ | 0.24045597 | $\omega$ | 200.69130 | | +0.90943200 | −0.41584316 |
| $a$ | 2.5612129 | $\Omega$ | 183.88456 | | +0.38713129 | +0.84906987 |
| $e$ | 0.1135826 | $i$ | 2.37777 | | +0.15186442 | +0.32581410 |
| $P$ | 4.10 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.0 | 0.0 | 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.3− | 0.2+ |
| 2002 11 13 | 644 | 0.2− | 0.2+ | 2002 12 10 | 644 | 0.4+ | 0.3− | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2002 11 13 | 644 | 0.2− | 0.2− | 2002 12 10 | 644 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.0 |
| 2002 11 16 | 644 | 0.2− | 0.1− | 2002 12 10 | 644 | 0.7− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.3− |
| 2002 11 16 | 644 | 0.2− | 0.1− | 2002 12 27 | 644 | 0.2− | 1.1− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2002 11 16 | 644 | 0.2− | 0.4+ | 2002 12 27 | 644 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 11 23 | 644 | 0.5+ | 0.0 | 2006 10 17 | G96 | 1.3+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2002 11 23 | 644 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 11 23 | 644 | 0.3− | 0.8+ | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2002 11 24 | 644 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.4− | | | | |
| 2002 11 24 | 644 | 0.4+ | 0.7+ | 2006 10 18 | 691 | 0.2− | 0.0 | | | | |

**2002 WJ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.64732 | | (2000.0) | | | |
| $n$ | 0.24412843 | $\omega$ | 252.13062 | | −0.49808142 | −0.85983436 |
| $a$ | 2.5354622 | $\Omega$ | 228.27781 | | +0.84159897 | −0.44816810 |
| $e$ | 0.1587602 | $i$ | 8.64957 | | +0.20886854 | −0.24460221 |
| $P$ | 4.04 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | (1.7+ | 3.0+) | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.1+ |
| 2002 10 30 | 644 | (0.7+ | 2.2+) | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2002 10 30 | 644 | (0.2+ | 3.2+) | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2002 11 13 | 644 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2002 11 13 | 644 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.4+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2002 11 13 | 644 | 1.0+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2002 11 16 | 644 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 21 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.6− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.1+ | |
| 2002 11 16 | 644 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.1+ | |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3+ | |
| 2002 11 24 | 644 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.6+ | |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.8+ | 1.1+ | |
| 2002 11 25 | 644 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.4+ | |
| 2002 11 25 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.5− | 2006 11 29 | 704 | (2.0− | 0.4+) | |
| 2002 11 25 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | (2.5− | 1.6−) | 2006 11 29 | 704 | (1.8− | 0.2+) | |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.5− | |
| 2002 12 10 | 644 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.7− | 2006 11 29 | 704 | 0.2− | 1.3− | |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.5− | | | | | |
| 2006 10 17 | G96 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.2− | | | | | |

**2002 WD$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.13269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26985565 | $\omega$ | 315.27780 | | +0.99020942 | | −0.13282821 |
| $a$ | 2.3716379 | $\Omega$ | 52.40303 | | +0.13836579 | | +0.89335702 |
| $e$ | 0.1944791 | $i$ | 3.10509 | | +0.01844470 | | +0.42926671 |
| $P$ | 3.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.1− | 0.0 | 2002 11 16 | 644 | 0.7− | 0.6− | 2002 12 10 | 704 | 0.4− | 0.1+ | |
| 2001 05 22 | 807 | 0.1+ | 0.2− | 2002 11 24 | 644 | 0.2+ | 0.3− | 2002 12 10 | 704 | 0.5+ | 0.1+ | |
| 2002 10 02 | 704 | 0.8+ | 0.1+ | 2002 11 24 | 644 | 0.2+ | 0.2− | 2004 03 17 | 691 | 0.2− | 0.1− | |
| 2002 10 02 | 704 | 0.7+ | 0.5− | 2002 11 24 | 644 | 0.3+ | 0.2− | 2004 03 17 | 691 | 0.0 | 0.1+ | |
| 2002 10 02 | 704 | 0.7− | 0.3− | 2002 11 25 | 644 | 0.0 | 0.3− | 2004 03 17 | 691 | 0.1+ | 0.2− | |
| 2002 10 30 | 644 | (1.9+ | 3.5+) | 2002 11 25 | 644 | 0.0 | 0.3− | 2006 11 21 | G96 | (3.8+ | 1.2−) | |
| 2002 10 30 | 644 | (1.9+ | 3.1+) | 2002 11 25 | 644 | 0.0 | 0.2− | 2006 11 21 | G96 | (4.6+ | 0.8−) | |
| 2002 10 30 | 644 | (2.2+ | 3.1+) | 2002 12 10 | 704 | 0.1− | 0.2+ | 2006 11 21 | G96 | (3.8+ | 1.3−) | |
| 2002 11 16 | 644 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.7− | 0.9+ | 2006 11 21 | G96 | (4.1+ | 1.0−) | |
| 2002 11 16 | 644 | 0.1+ | 0.0 | 2002 12 10 | 704 | 0.1+ | 0.7+ | | | | | |

**2002 WZ$_{20}$ = 2006 VY$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.02778 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24501668 | $\omega$ | 139.53837 | | +0.93705051 | | −0.32233453 |
| $a$ | 2.5293307 | $\Omega$ | 239.75020 | | +0.26658346 | | +0.90875723 |
| $e$ | 0.2684739 | $i$ | 8.94408 | | +0.22554291 | | +0.26506744 |
| $P$ | 4.02 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | (0.1− | 1.9−) | |
| 2002 11 13 | 644 | 0.6+ | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | (2.0− | 0.7−) | |
| 2002 11 13 | 644 | 0.3+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.3+ | |
| 2002 11 24 | 644 | 0.6− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.4+ | |
| 2002 11 24 | 644 | 0.7− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1+ | |
| 2002 11 24 | 644 | 0.4− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.0 | |
| 2002 11 27 | 608 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.4− | 0.4− | 2006 11 24 | G96 | 0.2− | 0.1− | |
| 2002 11 27 | 608 | 0.4+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.2− | |
| 2002 11 27 | 608 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− | |
| 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.7+ | | | | | |

**2002 WN$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.34486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18499302 | $\omega$ | 177.41628 | | +0.34500530 | | −0.89938207 |
| $a$ | 3.0504634 | $\Omega$ | 252.29530 | | +0.85601679 | | +0.41882682 |
| $e$ | 0.0857232 | $i$ | 16.36956 | | +0.38497611 | | −0.12528362 |
| $P$ | 5.33 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.2+ | 0.6− | 2002 11 24 | 644 | 0.2+ | 0.3+ | 2004 03 13 | 644 | 0.2− | 0.0 | |
| 2002 11 06 | 699 | 0.7+ | 0.1+ | 2002 11 24 | 644 | 0.2+ | 0.1+ | 2004 03 13 | 644 | 0.2+ | 0.1− | |
| 2002 11 06 | 699 | 0.2− | 0.7+ | 2002 12 11 | 644 | 0.1+ | 0.1− | 2004 03 13 | 644 | 0.1− | 0.0 | |
| 2002 11 06 | 699 | 1.1− | 0.2+ | 2002 12 11 | 644 | 0.1− | 0.1+ | 2005 05 12 | 644 | 0.1+ | 0.5+ | |
| 2002 11 14 | 644 | 0.0 | 0.0 | 2002 12 11 | 644 | 0.1+ | 0.1+ | 2005 05 12 | 644 | 0.1− | 0.4+ | |
| 2002 11 14 | 644 | 0.3− | 0.0 | 2002 12 27 | 644 | 0.3+ | 0.3+ | 2005 05 12 | 644 | 0.2+ | 0.5+ | |
| 2002 11 14 | 644 | 0.1− | 0.0 | 2002 12 27 | 644 | 0.1− | 0.3− | | | | | |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2002 12 27 | 644 | 0.2+ | 0.1+ | | | | | |

**2002 WO$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.15079 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22929968 | $\omega$ | 48.64953 | | +0.99007533 | | −0.06945627 |
| $a$ | 2.6436284 | $\Omega$ | 314.93029 | | −0.00154164 | | +0.86391807 |
| $e$ | 0.1713251 | $i$ | 9.93736 | | +0.14052922 | | +0.49882000 |
| $P$ | 4.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 704 | 0.5− | 0.0 | 2002 12 12 | 644 | 0.2− | 0.0 | 2006 09 22 | 699 | 0.1− | 0.0 | |
| 2002 11 15 | 704 | 0.0 | 0.8+ | 2006 08 29 | 699 | 0.0 | 0.2− | 2006 09 22 | 699 | 0.3+ | 0.3− | |
| 2002 11 15 | 704 | 0.1− | 0.0 | 2006 08 29 | 699 | 0.6− | 0.7+ | 2006 09 22 | 699 | 0.6+ | 0.8+ | |
| 2002 11 26 | 644 | 0.3+ | 0.1+ | 2006 08 29 | 699 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.5− | |
| 2002 11 26 | 644 | 0.2+ | 1.3− | 2006 08 29 | 699 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.7− | 0.3+ | |
| 2002 12 03 | 644 | 0.5− | 0.3− | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.6− | 0.4− | |
| 2002 12 03 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.9− | 2006 09 28 | 703 | 0.2+ | 0.0 | |
| 2002 12 03 | 644 | 0.8+ | 0.2− | 2006 09 16 | 703 | 0.6− | 0.8− | 2006 10 23 | 644 | 0.2− | 0.2+ | |
| 2002 12 12 | 644 | 0.3− | 0.1+ | 2006 09 16 | 703 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.5+ | |
| 2002 12 12 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 699 | 0.8+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.4+ | |

**2002 WQ$_{21}$ = 2004 DK$_{73}$ = 2005 MB$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.58751 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25527113 | $\omega$ | 194.10664 | | +0.64038963 | | +0.76433710 |
| $a$ | 2.4611321 | $\Omega$ | 115.77181 | | −0.69630253 | | +0.61920838 |
| $e$ | 0.1845364 | $i$ | 4.80491 | | −0.32413563 | | +0.17991603 |
| $P$ | 3.86 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.1− | 0.1− | 2002 12 05 | 608 | 0.2+ | 0.2− | 2005 06 26 | 644 | 0.1+ | 0.3+ | |
| 1994 10 31 | 691 | 0.0 | 0.1+ | 2002 12 10 | 644 | 0.4− | 0.4+ | 2005 06 26 | 644 | 0.2+ | 0.4+ | |
| 1994 10 31 | 691 | 0.0 | 0.2− | 2002 12 10 | 644 | 0.6− | 0.7+ | 2005 07 03 | 704 | 0.4− | 0.4+ | |
| 2002 11 24 | 644 | 0.4+ | 0.5+ | 2002 12 10 | 644 | 0.2+ | 0.5+ | 2005 07 03 | 704 | 0.4− | 0.5+ | |
| 2002 11 24 | 644 | 0.2+ | 0.4+ | 2004 02 17 | 691 | 0.6+ | 0.2− | 2005 07 03 | 704 | 0.3+ | 0.6+ | |
| 2002 11 24 | 644 | 0.1+ | 0.2+ | 2004 02 17 | 691 | 0.1+ | 0.1− | 2005 07 03 | 704 | 0.1− | 0.2+ | |
| 2002 12 03 | 644 | 0.4+ | 0.7+ | 2004 02 17 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1− | 0.0 | |
| 2002 12 03 | 644 | (0.4+ | 1.7+) | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2+ | |
| 2002 12 03 | 644 | 0.1+ | 0.4+ | 2004 02 29 | 691 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.1+ | |
| 2002 12 05 | 608 | 0.4− | 0.5− | 2004 02 29 | 691 | 0.3− | 0.3+ | | | | | |
| 2002 12 05 | 608 | 0.3+ | 0.8− | 2005 06 26 | 644 | 0.2+ | 0.3+ | | | | | |

**2002 WS$_{21}$ = 2005 JP$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.78175 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18218975 | $\omega$ | 320.83460 | | +0.58676928 | | −0.78794929 |
| $a$ | 3.0816745 | $\Omega$ | 92.44731 | | +0.78193885 | | +0.49146098 |
| $e$ | 0.0792394 | $i$ | 10.76721 | | +0.21041255 | | +0.37094747 |
| $P$ | 5.41 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.5− | 0.5+ | 2002 12 10 | 644 | (1.0+ | 2.1+) | 2005 05 10 | 691 | 0.2+ | 0.2+ | |
| 2002 11 24 | 644 | 0.2− | 0.2− | 2002 12 10 | 644 | (0.2− | 2.3+) | 2005 05 10 | 691 | 0.0 | 0.1+ | |
| 2002 11 24 | 644 | 0.8+ | 0.4+ | 2003 12 25 | 645 | 0.0 | 0.0 | 2005 05 10 | 691 | 0.1+ | 0.1+ | |
| 2002 12 03 | 644 | 0.6− | 0.3+ | 2003 12 25 | 645 | 0.0 | 0.0 | 2005 05 16 | 691 | 0.1+ | 0.2+ | |
| 2002 12 03 | 644 | 0.8− | 0.3− | 2005 04 17 | 691 | 0.2− | 0.1+ | 2005 05 16 | 691 | 0.1+ | 0.2+ | |
| 2002 12 03 | 644 | 0.3− | 0.9+ | 2005 04 17 | 691 | 0.0 | 0.4− | 2005 05 16 | 691 | 0.0 | 0.2+ | |
| 2002 12 10 | 644 | 0.7+ | 1.0+ | 2005 04 17 | 691 | 0.2− | 0.1− | | | | | |

### 2002 $XA_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.96714 | | | (2000.0) | | |
| $n$ | 0.27210669 | $\omega$ | 69.37399 | | +0.77109929 | −0.63586821 |
| $a$ | 2.3585399 | $\Omega$ | 330.08214 | | +0.55693327 | +0.69856882 |
| $e$ | 0.1663189 | $i$ | 3.77361 | | +0.30859555 | +0.32813598 |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.5− | 0.0 | 2002 10 28 | 608 | 0.9− | 0.6− | 2004 04 21 | 691 | 0.3+ | 0.2+ |
| 2002 10 04 | 704 | 0.5− | 0.0 | 2002 10 28 | 608 | 0.6− | 1.3− | 2004 04 21 | 691 | 0.0 | 0.4+ |
| 2002 10 04 | 704 | 0.1+ | 0.4+ | 2002 12 01 | 460 | 0.4+ | 0.1− | 2006 11 18 | 460 | 0.2− | 0.8− |
| 2002 10 04 | 704 | 0.5+ | 0.4− | 2002 12 01 | 460 | 1.0− | 0.9− | 2006 11 18 | 460 | 0.6− | 0.6− |
| 2002 10 12 | 704 | 0.6+ | 0.9+ | 2002 12 02 | 460 | 0.6+ | 0.7+ | 2006 11 18 | 460 | 0.1+ | 0.2− |
| 2002 10 12 | 704 | 0.9+ | 0.6+ | 2002 12 02 | 460 | 0.4− | 1.1+ | 2006 11 21 | 460 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.2− | 0.8+ | 2002 12 06 | 460 | 0.7− | 1.4+ | 2006 11 21 | 460 | 0.4+ | 0.0 |
| 2002 10 12 | 704 | 0.3+ | 1.4+ | 2002 12 06 | 460 | 1.0− | 0.3+ | 2006 11 21 | 460 | 0.1+ | 0.2+ |
| 2002 10 28 | 608 | 0.0 | 0.5− | 2004 04 21 | 691 | 0.1+ | 0.3+ | | | | |

### 2002 $XQ_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.89805 | | | (2000.0) | | |
| $n$ | 0.23750002 | $\omega$ | 188.37540 | | +0.81742369 | −0.56556802 |
| $a$ | 2.5824205 | $\Omega$ | 206.99003 | | +0.54147896 | +0.81916502 |
| $e$ | 0.1064021 | $i$ | 13.93877 | | +0.19651729 | +0.09540169 |
| $P$ | 4.15 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.5− | 0.5− | 2006 10 16 | 703 | 0.8− | 0.7+ | 2006 11 10 | 644 | 0.3− | 0.2− |
| 2002 10 09 | 704 | 0.0 | 1.0− | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.1+ |
| 2002 10 09 | 704 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.2+ |
| 2002 11 05 | 704 | 0.8+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.6− | 0.2− |
| 2002 11 05 | 704 | 0.8− | 1.0+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.2− | 0.2− |
| 2002 11 05 | 704 | 0.4− | 0.7− | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.0 | 0.5+ |
| 2002 11 05 | 704 | (2.9− | 0.2+) | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 17 | 704 | 0.1+ | 1.5+ |
| 2002 12 01 | 704 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.3− | 0.6+ |
| 2002 12 01 | 704 | 0.4+ | 0.0 | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.1− | 0.8+ |
| 2002 12 01 | 704 | 1.2+ | 0.3+ | 2006 10 18 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2002 12 01 | 704 | 0.4+ | 0.3− | 2006 10 20 | 683 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.1− |
| 2002 12 01 | 704 | 0.8− | 0.1− | 2006 10 20 | 683 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.8− | 0.2− |
| 2002 12 03 | 608 | 0.3− | 0.0 | 2006 10 20 | 683 | 1.4− | 0.1+ | 2006 11 19 | 703 | 0.4− | 0.6− |
| 2002 12 03 | 608 | 0.8− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.5+ | 0.5− |
| 2002 12 03 | 608 | 0.8− | 1.2+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 20 | 704 | 1.3+ | 0.2+ |
| 2002 12 08 | 644 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2002 12 08 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.5− |
| 2002 12 08 | 644 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.0 | 0.0 |
| 2002 12 13 | 644 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2002 12 13 | 644 | 0.1+ | 0.2− | 2006 11 01 | 703 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.3+ | 1.1+ |
| 2002 12 13 | 644 | 0.3+ | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.2− | 2006 11 20 | 704 | 1.3+ | 0.5− |
| 2002 12 15 | 608 | 0.2− | 1.1− | 2006 11 01 | 703 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2002 12 15 | 608 | 0.0 | 0.4− | 2006 11 01 | 703 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.6+ |
| 2002 12 15 | 608 | 0.1− | 0.8− | 2006 11 09 | 644 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.8+ | 0.4+ |
| 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.6− |
| 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.0 | 0.6− |
| 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.6− |
| 2006 10 16 | 703 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.6− |

### 2002 $XK_2$ = 2006 $SQ_{97}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 326.21893 | | | (2000.0) | | |
| $n$ | 0.23616213 | $\omega$ | 242.44633 | | +0.27591305 | −0.96102664 |
| $a$ | 2.5921644 | $\Omega$ | 191.57678 | | +0.90949784 | +0.26686172 |
| $e$ | 0.2643239 | $i$ | 4.94955 | | +0.31094319 | +0.07219850 |
| $P$ | 4.17 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 18 | 644 | 0.0 | 0.3− | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2002 11 18 | 644 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.9+ |
| 2002 11 18 | 644 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 11 24 | 644 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2002 12 01 | 704 | 1.2− | 1.0+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 12 01 | 704 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2002 12 01 | 704 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 12 01 | 704 | 0.5+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.6− | 0.0 |
| 2002 12 03 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 12 03 | 644 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 12 03 | 644 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 12 05 | 608 | 0.4− | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 12 05 | 608 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.5+ | 0.8− |
| 2002 12 05 | 608 | 0.7− | 0.8− | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1+ | 1.1− |
| 2002 12 10 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2002 12 10 | 644 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.3− | 1.1− |
| 2002 12 10 | 644 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.7+ | 0.7+ | 2006 11 18 | G96 | 0.2− | 0.5− |
| 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.2− | | | | |

### 2002 $XT_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.85637 | | | (2000.0) | | |
| $n$ | 0.23284708 | $\omega$ | 341.41823 | | +0.73387018 | −0.67398147 |
| $a$ | 2.6167095 | $\Omega$ | 61.25946 | | +0.63484772 | +0.63610856 |
| $e$ | 0.1692502 | $i$ | 5.54711 | | +0.24166699 | +0.37565261 |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 711 | 0.5− | 1.6− | 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2000 05 02 | 711 | 0.5− | 0.5− | 2002 12 09 | 291 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 704 | (0.9− | 2.2−) | 2002 12 09 | 291 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 0.8+ | 0.9− | 2002 12 09 | 291 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 1.1+ | 0.5+ | 2002 12 27 | 644 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 11 13 | 644 | 0.1+ | 0.5+ | 2002 12 27 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.5+ |
| 2002 11 13 | 644 | 0.1− | 0.3+ | 2002 12 27 | 644 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2002 11 13 | 644 | 0.2− | 0.5+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 703 | (2.5− | 1.2+) |
| 2002 12 02 | 704 | 0.1+ | 0.7− | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 10 22 | 703 | (0.3− | 1.7+) |
| 2002 12 02 | 704 | 0.1− | 0.8− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | (1.5+ | 2.3+) |
| 2002 12 02 | 704 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.5− | 0.5+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2002 12 03 | 608 | 0.0 | 0.2+ | 2006 09 30 | 703 | 1.1− | 0.7− | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2002 12 03 | 608 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 12 03 | 608 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 12 05 | 704 | (0.8+ | 1.6+) | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.5− | 1.0+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.9+ | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.4+ | 0.6− |
| 2002 12 05 | 704 | 0.8+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.2− | 0.3− |

### 2002 $XY_3$ = 2006 $UN_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.14061 | | | (2000.0) | | |
| $n$ | 0.23664634 | $\omega$ | 260.82959 | | +0.18482650 | −0.98277087 |
| $a$ | 2.5886273 | $\Omega$ | 178.51875 | | +0.91284686 | +0.17138900 |
| $e$ | 0.1811094 | $i$ | 1.68788 | | +0.36407387 | +0.06918977 |
| $P$ | 4.16 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.2+ | 0.2+ | 2003 01 03 | 291 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2000 04 10 | 695 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2002 12 02 | 704 | 0.4+ | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2002 12 02 | 704 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.6+ | 0.2+ |
| 2002 12 02 | 704 | 0.6+ | 1.0+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.3− |
| 2002 12 03 | 608 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2002 12 03 | 608 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 2002 12 03 | 608 | (0.2− | 1.7+) | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2003 01 03 | 291 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.4− | 0.9+ | | | | |
| 2003 01 03 | 291 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1+ | | | | |

**2002 XZ$_3$ = 2004 EK$_{54}$ = 2006 TA$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.65489 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24039212 | $\omega$ | 341.12823 | | +0.64052184 | | −0.76633014 |
| $a$ | 2.5616664 | $\Omega$ | 69.00908 | | +0.71124273 | | +0.56758357 |
| $e$ | 0.0806824 | $i$ | 3.05132 | | +0.28959549 | | +0.30097675 |
| $P$ | 4.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 19 | 691 | 0.3+ | 0.4+ | 2004 03 17 | 704 | 0.2+ | 0.1+ | 2006 11 12 | 703 | 0.5+ | 0.1+ |
| 1996 04 19 | 691 | 0.8+ | 0.8+ | 2004 03 17 | 704 | 0.0 | 0.7+ | 2006 11 12 | 703 | 0.6− | 0.2+ |
| 1996 04 19 | 691 | 0.5− | 0.3+ | 2004 03 17 | 704 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.5− |
| 2000 04 06 | 699 | 0.9− | 0.2− | 2004 03 17 | 704 | 0.3+ | 0.7− | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2000 04 06 | 699 | 0.1+ | 0.0 | 2004 03 17 | 704 | 0.3− | 1.1− | 2006 11 12 | G96 | 0.0 | 0.5− |
| 2000 04 06 | 699 | 0.3− | 0.8− | 2004 03 17 | 704 | 0.2+ | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.5− |
| 2000 04 06 | 699 | 0.3+ | 1.5− | 2004 03 17 | 704 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2002 12 02 | 704 | 0.8− | 1.1+ | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2002 12 02 | 704 | 0.3− | 0.9+ | 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 2002 12 02 | 704 | 0.3− | 0.2+ | 2004 03 18 | 704 | 0.5− | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2002 12 02 | 704 | 0.4− | 0.7+ | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2002 12 03 | 608 | 0.4+ | 0.1+ | 2004 03 19 | 704 | 1.3− | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2002 12 03 | 608 | 0.4− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.3− |
| 2002 12 03 | 608 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.2+ | 1.3− | 2006 11 18 | 704 | 0.9+ | 0.5− |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2004 03 19 | 704 | 0.1+ | 0.7− | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.1+ | 0.5− | 2004 03 19 | 704 | 0.8− | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.6+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.6− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.6− |
| 2002 12 08 | 291 | 0.1− | 0.4− | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2002 12 08 | 291 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2002 12 08 | 291 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6− | 0.0 |
| 2002 12 10 | 704 | 0.6− | 1.4+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.9+ |
| 2002 12 10 | 704 | 0.3+ | 1.4+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.1+ |
| 2002 12 10 | 704 | 0.8+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.6− | 1.1+ |
| 2002 12 10 | 704 | (0.2+ | 1.6+) | 2006 11 11 | 703 | 0.8− | 0.1− | 2006 11 21 | 704 | (0.3+ | 2.7+) |
| 2004 03 12 | 644 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.6− |
| 2004 03 12 | 644 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.7− | 1.1+ | 2006 11 29 | 704 | 0.3− | 0.3+ |
| 2004 03 12 | 644 | 0.2− | 0.1− | 2006 11 12 | 703 | 0.3− | 0.7− | 2006 11 29 | 704 | 0.8− | 0.4+ |
| 2004 03 17 | 704 | 0.8+ | 0.0 | 2006 11 12 | 703 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.8+ | 0.2+ |

**2002 XE$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.70688 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23345059 | $\omega$ | 79.94045 | | −0.68239330 | | −0.64406622 |
| $a$ | 2.6121979 | $\Omega$ | 59.00455 | | +0.40511679 | | −0.72688529 |
| $e$ | 0.3230874 | $i$ | 23.78477 | | +0.60845688 | | −0.23836206 |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 608 | 0.5− | 0.8− | 2002 12 05 | 704 | 0.9− | 0.2− | 2002 12 11 | 704 | 0.9− | 0.6+ |
| 2002 11 04 | 608 | 0.6+ | 0.4− | 2002 12 05 | 704 | 0.2− | 0.5+ | 2002 12 31 | 704 | 0.0 | 0.1− |
| 2002 11 04 | 608 | 0.6− | 1.2− | 2002 12 05 | 704 | 0.0 | 0.7+ | 2002 12 31 | 704 | 0.3− | 0.6− |
| 2002 11 07 | 704 | 0.3− | 0.2− | 2002 12 05 | 704 | 0.2+ | 0.6+ | 2002 12 31 | 704 | 0.1+ | 0.4− |
| 2002 11 07 | 704 | 0.5− | 0.6+ | 2002 12 05 | 704 | 0.3− | 0.5+ | 2002 12 31 | 704 | 0.2− | 0.7+ |
| 2002 11 07 | 704 | 0.2− | 0.1− | 2002 12 05 | 704 | 0.3+ | 0.4+ | 2002 12 31 | 704 | 0.0 | 0.5− |
| 2002 11 07 | 704 | 0.1+ | 1.2+ | 2002 12 05 | 704 | 0.1+ | 0.7+ | 2006 11 16 | 703 | 0.3+ | 0.7− |
| 2002 12 02 | 704 | 0.5+ | 0.7+ | 2002 12 06 | 704 | 0.6+ | 0.1− | 2006 11 16 | 703 | 0.3+ | 1.1− |
| 2002 12 02 | 704 | 0.7+ | 0.1− | 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.7− | 1.2+ |
| 2002 12 02 | 704 | 1.2+ | 0.5− | 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.6+ | 0.1− |
| 2002 12 02 | 704 | 0.7+ | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.3− | 2006 11 16 | 703 | 0.8+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.2− | 0.6− | 2006 11 16 | 703 | 0.2− | 0.4+ |
| 2002 12 05 | 704 | 0.4+ | 0.3− | 2002 12 11 | 704 | 0.3− | 0.6− | 2006 11 16 | 703 | 1.1− | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.3− | 2002 12 11 | 704 | 0.6− | 0.3− | | | | |

**2002 XL$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.33999 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26677328 | $\omega$ | 300.28076 | | +0.84521875 | | −0.53280463 |
| $a$ | 2.3898712 | $\Omega$ | 91.94386 | | +0.50348778 | | +0.76783640 |
| $e$ | 0.1887858 | $i$ | 2.38138 | | +0.17917957 | | +0.35573373 |
| $P$ | 3.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1+ | 0.5+ | 2002 11 07 | 704 | 0.3− | 0.6+ | 2002 12 05 | 704 | 0.3− | 1.3− |
| 2001 05 24 | 807 | 0.1+ | 0.5+ | 2002 11 07 | 704 | 0.1− | 0.4+ | 2002 12 05 | 704 | 0.2− | 1.2− |
| 2002 09 07 | 704 | 0.3+ | 0.1+ | 2002 11 12 | 644 | 0.1+ | 0.4+ | 2002 12 05 | 704 | 0.0 | 0.0 |
| 2002 09 07 | 704 | 0.5− | 0.3− | 2002 11 12 | 644 | 0.1+ | 0.3+ | 2002 12 05 | 704 | 0.2− | 0.3− |
| 2002 09 07 | 704 | 0.0 | 0.4+ | 2002 11 12 | 644 | 0.0 | 0.3+ | 2002 12 10 | 704 | (0.7− | 2.2+) |
| 2002 10 11 | 704 | 0.8− | 0.1+ | 2002 11 22 | 644 | 0.3+ | 0.4+ | 2002 12 10 | 704 | 0.2+ | 0.2− |
| 2002 10 11 | 704 | 0.4− | 1.8+ | 2002 11 22 | 644 | 0.2+ | 0.3+ | 2002 12 10 | 704 | 0.4+ | 0.7− |
| 2002 10 11 | 704 | 0.9− | 0.2+ | 2002 11 22 | 644 | 0.1+ | 0.2+ | 2002 12 10 | 704 | 0.0 | 0.2− |
| 2002 10 11 | 704 | 0.7− | 0.4+ | 2002 12 01 | 608 | 0.8+ | 0.2− | 2004 04 19 | 691 | 0.2− | 0.4+ |
| 2002 11 07 | 704 | 0.1− | 0.3+ | 2002 12 01 | 608 | 0.1+ | 0.0 | 2004 04 19 | 691 | 0.3+ | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2002 12 01 | 608 | 0.3+ | 0.1− | 2004 04 19 | 691 | 0.3+ | 0.3+ |
| 2002 11 07 | 704 | 0.1− | 0.8+ | 2002 12 05 | 704 | 0.8+ | 0.0 | | | | |

**2002 XO$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.42783 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23039932 | $\omega$ | 165.77555 | | +0.39427228 | | −0.89499180 |
| $a$ | 2.6352102 | $\Omega$ | 260.66157 | | +0.82114256 | | +0.44504100 |
| $e$ | 0.2349787 | $i$ | 12.20808 | | +0.41264303 | | −0.03046617 |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 704 | (2.2− | 1.9−) | 2002 12 02 | 704 | 0.5+ | 0.2− | 2002 12 31 | 704 | 0.6− | 0.2− |
| 2002 10 15 | 704 | 0.4− | 0.3− | 2002 12 02 | 704 | 0.3− | 0.2+ | 2002 12 31 | 704 | 0.2+ | 0.5+ |
| 2002 10 15 | 704 | 0.8− | 0.3− | 2002 12 02 | 704 | 0.3+ | 0.3+ | 2003 01 05 | 704 | 0.3+ | 0.1− |
| 2002 10 15 | 704 | 0.4− | 0.1− | 2002 12 02 | 704 | 0.3+ | 0.2− | 2003 01 05 | 704 | 0.4− | 0.1+ |
| 2002 11 07 | 704 | 0.5− | 0.9+ | 2002 12 05 | 704 | 0.0 | 0.3− | 2003 01 05 | 704 | 1.7+ | 0.6− |
| 2002 11 07 | 704 | 0.0 | 0.5+ | 2002 12 05 | 704 | 1.3− | 0.3+ | 2003 01 05 | 704 | 0.1− | 0.1− |
| 2002 11 07 | 704 | 0.4− | 0.3+ | 2002 12 05 | 704 | 0.1+ | 0.2+ | 2003 01 05 | 704 | 0.2+ | 0.0 |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.5+ |
| 2002 11 13 | 644 | 0.7+ | 1.3− | 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.6+ |
| 2002 11 13 | 644 | 1.4+ | 0.1− | 2002 12 11 | 644 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.0 | 1.0+ |
| 2002 11 13 | 644 | 0.4+ | 0.2− | 2002 12 11 | 704 | 0.1+ | 0.3− | 2006 09 16 | 703 | 0.2− | 0.5− |
| 2002 11 24 | 644 | 0.2+ | 0.2− | 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.5+ | 0.6− |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2002 12 11 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.3− |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2002 12 31 | 704 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.6− |
| 2002 12 02 | 704 | 0.2+ | 0.4− | 2002 12 31 | 704 | 1.6− | 0.0 | 2006 09 17 | 703 | 0.4+ | 0.1+ |

**2002 XL$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.92960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27128290 | $\omega$ | 80.66309 | | +0.92345797 | | −0.37691543 |
| $a$ | 2.3633123 | $\Omega$ | 301.44926 | | +0.31063427 | | +0.84428912 |
| $e$ | 0.3297874 | $i$ | 4.83021 | | +0.22523704 | | +0.38093391 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.1− | 0.4− | 2002 12 02 | 704 | 0.7+ | 0.5− | 2002 12 28 | 699 | (0.1+ | 2.2−) |
| 2002 09 06 | 704 | 0.5− | 0.9+ | 2002 12 02 | 704 | 0.2+ | 0.0 | 2002 12 31 | 699 | 0.3+ | 0.0 |
| 2002 09 06 | 704 | 0.2+ | 0.7+ | 2002 12 02 | 704 | 0.6+ | 0.1− | 2002 12 31 | 699 | 0.1− | 0.0 |
| 2002 10 05 | 704 | 0.4+ | 0.1+ | 2002 12 02 | 704 | 0.0 | 0.5− | 2002 12 31 | 704 | 0.3− | 0.5+ |
| 2002 10 05 | 704 | 0.0 | 0.1+ | 2002 12 05 | 704 | 0.3− | 0.9− | 2002 12 31 | 704 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.3+ | 0.3− | 2002 12 05 | 704 | 0.6− | 0.9− | 2002 12 31 | 699 | 0.3− | 0.0 |
| 2002 10 05 | 704 | 0.1− | 0.2− | 2002 12 05 | 704 | 0.4− | 0.9− | 2002 12 31 | 704 | 0.3− | 0.3+ |
| 2002 10 05 | 704 | 0.3+ | 0.3− | 2002 12 05 | 704 | 0.4− | 0.5− | 2002 12 31 | 704 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.7− | 0.1− | 2002 12 05 | 704 | 0.5− | 1.1− | 2002 12 31 | 699 | 1.0− | 0.1+ |
| 2002 10 10 | 704 | 0.2+ | 0.5− | 2002 12 11 | 704 | 0.5+ | 0.2+ | 2002 12 31 | 704 | 0.0 | 1.0− |
| 2002 10 10 | 704 | 0.6+ | 0.4− | 2002 12 11 | 704 | 0.0 | 0.0 | 2003 01 05 | 704 | 0.4− | 0.9+ |
| 2002 10 10 | 704 | 0.3+ | 0.8− | 2002 12 11 | 704 | 0.1+ | 0.1+ | 2003 01 05 | 704 | 0.2+ | 0.1+ |
| 2002 10 10 | 704 | (2.7− | 1.0+) | 2002 12 11 | 704 | 0.3+ | 0.5− | 2003 01 05 | 704 | 0.0 | 0.9+ |
| 2002 10 12 | 704 | 0.2− | 0.7− | 2002 12 11 | 644 | 0.5+ | 0.5+ | 2003 01 05 | 704 | 0.3+ | 0.2− |
| 2002 10 12 | 704 | 0.8− | 0.3+ | 2002 12 11 | 704 | 0.6+ | 0.0 | 2003 01 05 | 704 | 0.5− | 0.8+ |
| 2002 10 12 | 704 | 0.5− | 0.8+ | 2002 12 11 | 644 | 0.2+ | 0.1− | 2003 01 05 | 704 | 0.1− | 0.4+ |
| 2002 10 12 | 704 | 0.1+ | 0.6− | 2002 12 11 | 644 | 0.4+ | 0.1+ | 2003 01 05 | 704 | 0.4− | 0.4+ |
| 2002 10 12 | 704 | 0.7+ | 0.1− | 2002 12 13 | 644 | 0.2+ | 0.3− | 2003 01 05 | 704 | 0.3− | 0.3+ |
| 2002 11 06 | 704 | 0.2+ | 0.6+ | 2002 12 13 | 644 | 0.1+ | 0.1+ | 2003 01 05 | 704 | 0.2− | 0.7+ |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2002 12 13 | 644 | 0.0 | 0.2− | 2003 01 05 | 704 | 0.6− | 0.3+ |
| 2002 11 06 | 704 | 0.1− | 0.4+ | 2002 12 14 | 704 | 0.5+ | 0.1− | 2006 10 23 | G96 | 0.4+ | 0.5− |
| 2002 11 06 | 704 | 0.1− | 0.9+ | 2002 12 14 | 704 | 0.7+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2002 11 06 | 704 | 0.8− | 0.7+ | 2002 12 14 | 704 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.5− | 0.4− |
| 2002 11 15 | 704 | 0.9− | 0.4− | 2002 12 27 | 644 | 0.5+ | 0.8+ | 2006 10 23 | G96 | 0.6− | 0.6− |
| 2002 11 15 | 704 | 0.2− | 0.1+ | 2002 12 27 | 644 | 0.8+ | 0.9+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 11 15 | 704 | 0.2− | 0.4+ | 2002 12 27 | 644 | 0.6+ | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.9− |
| 2002 11 15 | 704 | 0.4− | 0.1− | 2002 12 28 | 699 | 0.7− | 0.6− | 2006 10 27 | G96 | 0.4− | 0.7− |
| 2002 11 15 | 704 | 0.2− | 0.2− | 2002 12 28 | 699 | 0.7− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.7− |
| 2002 12 02 | 704 | 0.7+ | 0.2+ | 2002 12 28 | 699 | 0.7+ | 0.7+ | | | | |

**2002 XS$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.59366 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24527442 | $\omega$ | 30.59475 | | +0.05204039 | | −0.99212119 |
| $a$ | 2.5275585 | $\Omega$ | 56.65025 | | +0.88640115 | | −0.00667347 |
| $e$ | 0.2607003 | $i$ | 7.84117 | | +0.45998348 | | +0.12510395 |
| $P$ | 4.02 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 22 | 699 | 1.0− | 1.9− | 2003 01 07 | 704 | 1.1− | 1.0+ | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 1999 01 22 | 699 | 1.3+ | 1.9− | 2003 01 07 | 704 | (1.7− | 0.7+) | 2006 09 25 | 691 | 0.1− | 0.0 |
| 1999 01 22 | 699 | 0.5+ | 0.9+ | 2003 01 10 | 704 | 0.2+ | 0.0 | 2006 11 02 | G96 | 0.1− | 0.6− |
| 2002 12 02 | 704 | 0.7− | 0.3− | 2003 01 10 | 704 | 0.3+ | 0.1− | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2002 12 02 | 704 | 0.2− | 0.2+ | 2003 01 10 | 704 | 0.4+ | 0.0 | 2006 11 02 | G96 | 0.3− | 0.6− |
| 2002 12 02 | 704 | 0.1+ | 0.2− | 2003 01 10 | 704 | 0.3+ | 0.2+ | 2006 11 02 | G96 | 0.5− | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2003 01 10 | 704 | 0.5+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.8+ | 2003 01 31 | 699 | 0.2+ | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.6+ |
| 2002 12 05 | 704 | 0.1− | 1.0+ | 2003 01 31 | 699 | 0.5+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2003 01 31 | 699 | 0.7− | 0.4− | 2006 11 17 | 644 | 0.5− | 0.0 |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2003 01 31 | 699 | 0.0 | 0.1+ | 2006 11 17 | 644 | 0.5− | 0.1− |
| 2002 12 14 | 704 | 0.1− | 0.4− | 2003 02 06 | 699 | 0.2− | 0.2+ | 2006 11 17 | 644 | 0.6− | 0.0 |
| 2002 12 14 | 704 | 0.5+ | 1.1− | 2003 02 06 | 699 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2002 12 14 | 704 | 0.4+ | 1.0− | 2003 02 06 | 699 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.6− |
| 2002 12 14 | 704 | 0.6− | 0.0 | 2003 02 06 | 699 | 0.2− | 1.2+ | 2006 11 19 | 704 | 0.6− | 1.3− |
| 2002 12 31 | 699 | 0.2+ | 0.4+ | 2003 03 09 | 699 | 0.1− | 0.3− | 2006 11 22 | 704 | 1.1+ | 0.3+ |
| 2002 12 31 | 699 | 0.3+ | 0.5+ | 2003 03 09 | 699 | 1.3− | 0.4+ | 2006 11 22 | 704 | 0.3− | 0.4− |
| 2002 12 31 | 699 | 0.2− | 1.0+ | 2003 03 09 | 699 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2002 12 31 | 699 | 0.4+ | 0.0 | 2003 03 09 | 699 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.1+ | 0.7− |
| 2003 01 07 | 704 | 0.0 | 0.7+ | 2003 04 26 | 645 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.2− |
| 2003 01 07 | 704 | 0.2+ | 1.0+ | 2003 04 26 | 645 | 0.0 | 0.1− | | | | |
| 2003 01 07 | 704 | 1.0− | 0.7+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | | | | |

**2002 XH$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.39309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23020109 | $\omega$ | 91.33737 | | +0.87520820 | | +0.45310293 |
| $a$ | 2.6367228 | $\Omega$ | 241.74436 | | −0.48374641 | | +0.81967235 |
| $e$ | 0.2396312 | $i$ | 11.09029 | | −0.00013080 | | +0.35047821 |
| $P$ | 4.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.4− | 0.5− | 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.6− | 0.5− |
| 2002 10 10 | 704 | 0.2+ | 1.4− | 2002 12 05 | 704 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.7− | 0.2+ |
| 2002 10 10 | 704 | (0.2− | 3.0−) | 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2002 11 01 | 644 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.7− | 0.1− | 2006 09 30 | 704 | 0.2− | 0.3+ |
| 2002 11 01 | 644 | 0.0 | 0.1+ | 2002 12 10 | 704 | 0.1− | 1.1− | 2006 09 30 | 704 | 0.4− | 0.7− |
| 2002 11 01 | 644 | 0.0 | 0.2− | 2002 12 10 | 704 | 0.4+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.0 | 0.5+ | 2002 12 10 | 704 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2002 12 11 | 644 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.4+ | 0.2+ | 2002 12 11 | 644 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 06 | 704 | 1.0+ | 0.2+ | 2002 12 11 | 644 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 11 16 | 704 | 0.9− | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 11 16 | 704 | 0.3− | 0.9+ | 2006 09 17 | 703 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.6+ |
| 2002 11 16 | 704 | 0.8+ | 0.5− | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 10 19 | 703 | 0.4+ | 0.1− |
| 2002 11 23 | 644 | 0.2+ | 0.1− | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 0.4− | 0.1+ | 2006 09 21 | 704 | 0.0 | 0.4+ | 2006 10 22 | G92 | 1.1+ | 0.5+ |
| 2002 11 23 | 644 | 0.4+ | 0.3− | 2006 09 21 | 704 | 0.9− | 0.8+ | 2006 10 22 | G92 | 0.5+ | 0.4+ |
| 2002 11 28 | 699 | (1.4− | 1.7+) | 2006 09 21 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2002 11 28 | 699 | 0.7+ | 0.1+ | 2006 09 22 | 699 | 0.3− | 0.1+ | 2006 10 22 | G92 | 0.4+ | 0.6+ |
| 2002 11 28 | 699 | 0.7− | 0.5+ | 2006 09 22 | 699 | 0.1− | 1.3− | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2002 11 28 | 699 | 0.1+ | 0.2+ | 2006 09 22 | 699 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 12 02 | 608 | 0.1+ | 0.1+ | 2006 09 22 | 699 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.2− |
| 2002 12 02 | 608 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.6+ | 0.2− | 2006 11 14 | 703 | 0.0 | 0.3− |
| 2002 12 02 | 608 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.4+ | 0.4− | 2006 11 14 | 703 | 0.4− | 0.7− |
| 2002 12 05 | 704 | 0.6− | 0.2− | 2006 09 28 | 703 | 0.6+ | 0.6− | 2006 11 14 | 703 | 0.4− | 0.1− |

**2002 XS$_{10}$ = 2006 SA$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.54364 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23595234 | $\omega$ | 118.26037 | | +0.79689377 | | +0.60241555 |
| $a$ | 2.5937007 | $\Omega$ | 204.78009 | | −0.58523278 | | +0.75118298 |
| $e$ | 0.1235064 | $i$ | 6.21027 | | −0.14987631 | | +0.26985115 |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.2− |
| 2002 12 03 | 644 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 2002 12 03 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.5− | 0.4− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.7− |
| 2002 12 05 | 704 | 0.4− | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.3− | 0.7− | 2006 11 16 | G96 | 0.0 | 0.7− |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.7− |
| 2002 12 10 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.8− | 0.7+ | 2006 11 19 | 704 | 0.6− | 1.2+ |
| 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 1.0+ |
| 2002 12 10 | 644 | 0.5+ | 0.2+ | 2006 10 22 | 691 | 0.3+ | 0.3− | 2006 11 19 | 704 | 1.0+ | 0.7+ |
| 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 02 | 703 | 0.8+ | 0.5+ | 2006 11 20 | 704 | 0.1− | 1.0+ |
| 2006 09 26 | G96 | 0.4− | 0.6− | 2006 11 02 | 703 | 0.1− | 1.3− | 2006 11 20 | 704 | (1.7+ | 0.5+) |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 02 | 703 | 0.0 | 1.2− | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 11 02 | 703 | 0.7+ | 1.4− | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.1− |
| 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.6− | 2006 11 28 | 704 | 1.4− | 0.6− |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.6+ | 0.2− | 2006 11 28 | 704 | 0.5− | 0.0 |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.6− | 0.8+ |

**2002 XJ$_{11}$ = 2006 UP$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.54416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26201522 | $\omega$ | 4.19180 | | +0.20659133 | −0.96975868 | |
| $a$ | 2.4187169 | $\Omega$ | 73.92332 | | +0.89371140 | +0.13297087 | |
| $e$ | 0.1757475 | $i$ | 7.77270 | | +0.39824611 | +0.20466276 | |
| $P$ | 3.76 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.1+ | 0.4− | 2002 12 05 | 704 | 0.3+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 11 11 | 704 | 0.2− | 0.0 | 2002 12 05 | 704 | 0.3+ | 0.5− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.0 | 0.4+ | 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2002 11 11 | 704 | 0.4+ | 0.7− | 2002 12 10 | 704 | 0.6− | 0.1− | 2006 10 29 | G96 | 0.0 | 0.1− |
| 2002 11 11 | 704 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.3+ | 0.2− |
| 2002 12 03 | 644 | 0.4− | 0.0 | 2002 12 10 | 704 | 0.0 | 1.1+ | 2006 10 29 | G96 | 0.0 | 0.0 |
| 2002 12 03 | 644 | 0.0 | 0.1− | 2002 12 10 | 704 | 0.2+ | 0.2+ | 2006 10 29 | G96 | 0.5+ | 0.0 |
| 2002 12 03 | 644 | 0.4− | 0.0 | 2002 12 27 | 644 | 0.2+ | 0.5− | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2002 12 27 | 644 | 0.3+ | 0.5− | 2006 11 22 | G96 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.5− | 0.0 | 2002 12 27 | 644 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.2− | 0.5− | 2006 11 22 | G96 | 0.3+ | 0.5+ |

**2002 XV$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.88392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24732102 | $\omega$ | 338.45979 | | +0.99076287 | +0.12983957 | |
| $a$ | 2.5135953 | $\Omega$ | 14.24806 | | −0.08908825 | +0.84072989 | |
| $e$ | 0.2047753 | $i$ | 9.14648 | | −0.10223607 | +0.52565668 | |
| $P$ | 3.99 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.7+ | 0.5+ | 2002 12 05 | 704 | 0.4+ | 1.0+ | 2006 09 18 | 703 | 0.5− | 0.7+ |
| 2002 10 12 | 704 | 0.6− | 0.1+ | 2002 12 05 | 704 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.1+ | 0.2− |
| 2002 10 12 | 704 | 0.0 | 0.5− | 2002 12 12 | 644 | 0.1+ | 0.2− | 2006 10 19 | 703 | (2.1+ | 0.6−) |
| 2002 11 01 | 644 | 0.1− | 0.2+ | 2002 12 12 | 644 | 0.1− | 0.5− | 2006 10 19 | 703 | 0.3+ | 0.4+ |
| 2002 11 01 | 644 | 0.1+ | 0.4+ | 2002 12 12 | 644 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2002 11 01 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.9− | 0.1− | 2006 10 19 | 703 | 1.0− | 0.6+ |
| 2002 12 03 | 644 | 0.3− | 0.4− | 2006 08 29 | 703 | 1.3+ | 0.3− | 2006 11 22 | 703 | 0.3+ | 0.5− |
| 2002 12 03 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.6+ | 0.5− | 2006 11 22 | 703 | 0.2+ | 0.5− |
| 2002 12 03 | 644 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.0 | 0.4− | 2006 11 22 | 703 | 0.4+ | 0.6− |
| 2002 12 05 | 704 | 0.6− | 0.1− | 2006 09 18 | 703 | 1.3− | 0.6+ | 2006 11 22 | 703 | 0.3+ | 0.6− |
| 2002 12 05 | 704 | 0.2− | 1.4+ | 2006 09 18 | 703 | 0.6+ | 0.4− | | | | |

**2002 XK$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.74091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24304574 | $\omega$ | 156.70935 | | +0.27774212 | −0.96048582 | |
| $a$ | 2.5429864 | $\Omega$ | 277.16128 | | +0.87849618 | +0.26155224 | |
| $e$ | 0.1762728 | $i$ | 1.04318 | | +0.38872068 | +0.09517044 | |
| $P$ | 4.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.1− | 1.3+ | 2002 12 11 | 333 | 0.6− | 0.5− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2002 11 05 | 704 | 0.7− | 0.0 | 2002 12 11 | 704 | 1.0− | 0.1− | 2006 11 17 | 704 | 0.6+ | 0.4− |
| 2002 11 05 | 704 | 0.0 | 0.8− | 2002 12 11 | 333 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2002 11 05 | 704 | 0.8− | 0.4+ | 2002 12 11 | 704 | 1.0− | 0.6+ | 2006 11 17 | 704 | 0.7+ | 0.3+ |
| 2002 11 14 | 704 | 0.6+ | 0.8+ | 2002 12 11 | 704 | 1.0− | 0.4− | 2006 11 17 | 704 | 0.5− | 0.2− |
| 2002 11 14 | 704 | 0.6+ | 1.0+ | 2002 12 31 | 704 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.4+ | 0.5+ |
| 2002 11 14 | 704 | (0.3+ | 1.8+) | 2002 12 31 | 704 | 0.3+ | 1.1− | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | 0.0 | 1.1+ | 2002 12 31 | 704 | 0.4+ | 1.1− | 2006 11 18 | 691 | 0.2+ | 0.3− |
| 2002 11 24 | 644 | 1.1+ | 0.4+ | 2002 12 31 | 704 | 0.2− | 0.7− | 2006 11 18 | 691 | 0.2+ | 0.3− |
| 2002 11 24 | 644 | 0.5+ | 0.2+ | 2002 12 31 | 704 | 0.5+ | 0.6− | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2002 11 24 | 644 | 0.9+ | 0.2+ | 2004 03 23 | 291 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.5− |
| 2002 12 03 | 608 | 0.1− | 0.1+ | 2004 03 23 | 291 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2002 12 03 | 608 | 0.5+ | 0.9− | 2004 03 23 | 291 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2002 12 03 | 608 | 0.7+ | 0.9− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 0.2− | 0.9+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.7− | 0.6+ |
| 2002 12 05 | 704 | 0.1+ | 0.9+ | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2002 12 07 | 333 | (2.9− | 0.2−) | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2002 12 07 | 333 | 0.6− | 0.4− | 2006 10 31 | G96 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.4+ |
| 2002 12 07 | 333 | 0.3+ | 0.4− | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2002 12 10 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2002 12 10 | 704 | 0.3+ | 0.5+ | 2006 11 09 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 12 10 | 704 | 0.3− | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2002 12 10 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2002 12 11 | 704 | (1.6− | 1.3−) | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2002 12 11 | 333 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2002 12 11 | 704 | 0.8− | 0.4+ | 2006 11 13 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.3− |

**2002 XW$_{13}$ = 1993 TA$_{35}$ = 2006 SC$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.60889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22846190 | $\omega$ | 269.42511 | | +0.65996597 | −0.75042972 | |
| $a$ | 2.6500874 | $\Omega$ | 139.20164 | | +0.70938837 | +0.60663003 | |
| $e$ | 0.1051137 | $i$ | 3.16345 | | +0.24741272 | +0.26240281 | |
| $P$ | 4.31 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.0 | 1.3+ | 2002 12 05 | 608 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.7+ | 0.3− |
| 1993 10 09 | 809 | 0.4+ | 1.3+ | 2002 12 10 | 644 | 0.4− | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.8− |
| 1993 10 09 | 809 | (3.2+ | 2.3+) | 2002 12 10 | 644 | 0.5− | 0.7+ | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 1993 10 11 | 809 | 0.4− | 0.9+ | 2002 12 10 | 644 | 0.6− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 1993 10 11 | 809 | 1.3− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 1.1− |
| 1993 10 11 | 809 | (3.2− | 0.9−) | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.7− |
| 2000 04 10 | 695(51.6− | 17.6+) | | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.6− |
| 2000 04 10 | 695(51.6− | 17.4+) | | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2002 12 03 | 644 | 0.1− | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.5− |
| 2002 12 03 | 644 | 0.6+ | 0.6+ | 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 12 03 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2002 12 05 | 608 | 0.1− | 1.0− | 2006 10 20 | 644 | 0.3+ | 0.4− | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2002 12 05 | 608 | 0.7+ | 1.3− | 2006 10 20 | 644 | 0.1− | 0.5− | 2006 11 21 | 691 | 0.0 | 0.2+ |

**2002 XT$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.76789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17319090 | $\omega$ | 154.97850 | | +0.18203406 | −0.95288771 | |
| $a$ | 3.1875182 | $\Omega$ | 283.77335 | | +0.85490030 | +0.27528197 | |
| $e$ | 0.1806236 | $i$ | 14.46638 | | +0.48580766 | −0.12737680 | |
| $P$ | 5.69 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.0 | 0.4+ | 2002 11 15 | 644 | 0.1+ | 0.4− | 2002 12 06 | 704 | 0.6+ | 0.2− |
| 2001 08 18 | 644 | 0.5− | 0.6+ | 2002 11 15 | 644 | 0.0 | 0.4− | 2002 12 06 | 704 | 0.4+ | 0.5+ |
| 2001 08 18 | 644 | 0.1− | 0.2+ | 2002 11 15 | 704 | 0.2− | 0.2+ | 2002 12 12 | 644 | 0.4+ | 0.4− |
| 2002 10 13 | 644 | 0.0 | 0.9+ | 2002 11 15 | 704 | 0.8− | 0.4+ | 2002 12 12 | 644 | 1.0+ | 0.1− |
| 2002 10 13 | 644 | 0.3+ | 0.3+ | 2002 11 15 | 704 | 0.6− | 0.1+ | 2002 12 12 | 644 | 0.4+ | 0.1− |
| 2002 10 13 | 644 | 0.1− | 0.8+ | 2002 12 03 | 644 | 0.0 | 0.3− | 2004 01 16 | 644 | 0.0 | 0.5+ |
| 2002 10 13 | 644 | 0.2+ | 0.5− | 2002 12 03 | 644 | 0.1+ | 0.2− | 2004 01 16 | 644 | 0.3+ | 0.6+ |
| 2002 10 13 | 644 | 0.2+ | 1.0+ | 2002 12 03 | 644 | 0.2+ | 0.1− | 2004 01 16 | 644 | 0.7+ | 0.7+ |
| 2002 10 13 | 644 | 0.2+ | 0.2− | 2002 12 06 | 704 | 0.1+ | 0.4− | | | | |
| 2002 11 15 | 644 | 0.6− | 0.0 | 2002 12 06 | 704 | 1.6− | 0.5− | | | | |

**2002 XZ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.66736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23172910 | $\omega$ | 133.74913 | | −0.23488988 | −0.96781289 | |
| $a$ | 2.6251191 | $\Omega$ | 329.49108 | | +0.83283223 | −0.15244842 | |
| $e$ | 0.1407168 | $i$ | 10.25265 | | +0.50121574 | −0.20024408 | |
| $P$ | 4.25 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 0.1− | 0.2+ | 2002 11 15 | 704 | 0.3− | 0.0 | 2002 12 12 | 644 | 0.7− | 0.1+ | |
| 1995 02 05 | 691 | 0.1+ | 0.1− | 2002 11 15 | 704 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 0.4+ | 0.9+ | |
| 1995 02 05 | 691 | 0.1− | 0.3− | 2002 11 15 | 704 | 0.7− | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.7− | |
| 2002 10 31 | 704 | (0.4+ | 2.0+) | 2002 12 03 | 644 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.3− | |
| 2002 10 31 | 704 | 0.0 | 1.5+ | 2002 12 03 | 644 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.4− | |
| 2002 10 31 | 704 | (0.4+ | 1.9+) | 2002 12 03 | 644 | 0.5− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1+ | |
| 2002 10 31 | 704 | 0.1+ | 1.3+ | 2002 12 06 | 704 | (0.6+ | 1.5−) | 2006 10 23 | 644 | 0.3+ | 0.0 | |
| 2002 11 07 | 704 | 1.1+ | 0.1− | 2002 12 06 | 704 | 1.1+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.2− | |
| 2002 11 07 | 704 | 0.7+ | 0.4− | 2002 12 06 | 704 | 1.0+ | 1.1− | 2006 10 24 | 644 | 0.1− | 0.3+ | |
| 2002 11 07 | 704 | (1.5− | 0.4−) | 2002 12 06 | 704 | 1.0+ | 0.0 | 2006 10 24 | 644 | 0.1+ | 0.2+ | |
| 2002 11 07 | 704 | 0.7− | 0.8− | 2002 12 07 | 704 | 0.7+ | 0.7− | 2006 10 24 | 644 | 0.2+ | 0.3− | |
| 2002 11 15 | 644 | 0.3− | 0.2+ | 2002 12 07 | 704 | 0.3− | 0.3− | 2006 11 14 | 703 | 0.4+ | 0.9− | |
| 2002 11 15 | 644 | 0.4+ | 0.1− | 2002 12 07 | 704 | 0.5− | 0.6− | 2006 11 14 | 703 | 0.9+ | 0.8− | |
| 2002 11 15 | 644 | 0.1+ | 0.2+ | 2002 12 07 | 704 | 0.4− | 0.5− | 2006 11 14 | 703 | 0.7− | 0.1− | |
| 2002 11 15 | 704 | 0.3− | 1.0+ | 2002 12 12 | 644 | 0.6− | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.1− | |
| 2002 11 15 | 704 | 0.4− | 0.2+ | 2002 12 12 | 644 | 0.4− | 0.1+ | | | | | |

**2002 XM$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.88848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23489099 | $\omega$ | 56.85278 | | +0.97227800 | +0.12704579 | |
| $a$ | 2.6015078 | $\Omega$ | 295.16728 | | −0.20738230 | +0.85634490 | |
| $e$ | 0.1933428 | $i$ | 12.52658 | | +0.10801886 | +0.50053250 | |
| $P$ | 4.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.8+ | 1.3− | 2002 12 03 | 644 | 0.3+ | 0.1+ | 2006 10 02 | 704 | 0.3+ | 0.5+ | |
| 2002 10 06 | 704 | 0.8+ | 0.1+ | 2002 12 06 | 704 | 0.6+ | 0.5+ | 2006 10 02 | 704 | 0.2+ | 0.7+ | |
| 2002 10 06 | 704 | 0.5− | 0.5− | 2002 12 06 | 704 | 0.5+ | 0.5+ | 2006 10 02 | 704 | 0.2− | 0.7+ | |
| 2002 10 06 | 704 | 0.9− | 0.3+ | 2002 12 06 | 704 | 0.8+ | 0.0 | 2006 10 19 | 703 | 0.1− | 0.4+ | |
| 2002 10 06 | 704 | 0.5+ | 0.4− | 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.2− | |
| 2002 10 15 | 704 | 0.7− | 0.5− | 2002 12 06 | 704 | 0.8+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.3+ | |
| 2002 10 15 | 704 | 0.0 | 0.5− | 2002 12 28 | 699 | 0.6+ | 0.8+ | 2006 10 19 | 703 | 0.4+ | 0.3+ | |
| 2002 10 15 | 704 | 1.4− | 0.4− | 2002 12 28 | 699 | 0.8− | 0.1− | 2006 10 20 | 704 | 1.1− | 1.0− | |
| 2002 10 30 | 704 | (0.4+ | 1.7+) | 2002 12 28 | 699 | 0.1+ | 0.9+ | 2006 10 20 | 704 | (2.7− | 1.4−) | |
| 2002 10 30 | 704 | (0.3− | 1.8+) | 2002 12 28 | 699 | 0.8− | 0.9+ | 2006 10 20 | 704 | (2.6− | 2.7−) | |
| 2002 10 30 | 704 | 0.1+ | 0.1− | 2003 01 01 | 446 | 0.4− | 0.1+ | 2006 10 20 | 704 | (1.3− | 3.1−) | |
| 2002 10 30 | 704 | 0.7− | 0.4+ | 2003 01 01 | 446 | 0.3− | 0.0 | 2006 10 20 | 704 | (1.8− | 2.1−) | |
| 2002 10 30 | 704 | 0.4+ | 1.1+ | 2003 01 05 | 446 | 0.4− | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.0 | |
| 2002 11 15 | 644 | 0.2− | 0.1− | 2003 01 05 | 446 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.2+ | |
| 2002 11 15 | 644 | 0.4− | 0.3+ | 2003 01 05 | 446 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.3+ | 0.0 | |
| 2002 11 15 | 644 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.2+ | |
| 2002 11 15 | 704 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 11 15 | 703 | 1.0+ | 1.4− | |
| 2002 11 15 | 704 | 0.5− | 0.2− | 2006 09 19 | 703 | 0.6− | 0.5+ | 2006 11 15 | 703 | 0.9+ | 0.4− | |
| 2002 11 15 | 704 | 0.3− | 1.0+ | 2006 09 19 | 703 | 0.5− | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.4− | |
| 2002 11 15 | 704 | 0.2+ | 0.2− | 2006 09 25 | 703 | 0.3+ | 0.2+ | 2006 11 15 | 703 | (2.6− | 1.3+) | |
| 2002 11 15 | 704 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.5− | 2006 11 22 | 703 | 0.2+ | 0.3− | |
| 2002 12 03 | 644 | 0.3+ | 0.1− | 2006 09 25 | 703 | 0.4− | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.4− | |
| 2002 12 03 | 644 | 0.4+ | 0.3− | 2006 09 25 | 703 | 0.2− | 0.3− | 2006 11 22 | 703 | 0.3+ | 0.3− | |

**2002 XK$_{17}$ = 2006 SB$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.36018 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23828761 | $\omega$ | 53.96668 | | +0.94559639 | +0.27691247 | |
| $a$ | 2.5767270 | $\Omega$ | 289.40966 | | −0.32479946 | +0.83380013 | |
| $e$ | 0.2065463 | $i$ | 10.43235 | | +0.01878245 | +0.47759484 | |
| $P$ | 4.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.1+ | 0.3− | 2002 12 06 | 704 | (0.5− | 1.8−) | 2006 10 22 | 644 | 0.1+ | 0.1− | |
| 2002 11 07 | 704 | 0.0 | 0.4− | 2002 12 11 | 644 | 0.7+ | 0.7+ | 2006 10 23 | 703 | 0.2+ | 0.1− | |
| 2002 11 07 | 704 | 0.0 | 0.2− | 2002 12 11 | 644 | 0.8+ | 0.6+ | 2006 10 23 | 703 | 0.2− | 0.3+ | |
| 2002 11 07 | 704 | 0.8+ | 0.4+ | 2002 12 11 | 644 | 1.0+ | 0.8+ | 2006 10 23 | 703 | 1.2+ | 0.4+ | |
| 2002 11 07 | 704 | 0.1+ | 1.3− | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 23 | 703 | 0.3+ | 0.3− | |
| 2002 11 15 | 704 | 0.2+ | 1.2− | 2006 09 19 | 703 | 1.0− | 0.8− | 2006 10 23 | 644 | 0.4+ | 0.2− | |
| 2002 11 15 | 704 | 0.5− | 0.9− | 2006 09 19 | 703 | 0.3+ | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | |
| 2002 11 15 | 704 | 0.3− | 1.1+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.5+ | 0.1− | |
| 2002 11 15 | 704 | 0.1+ | 0.9+ | 2006 09 25 | 703 | 0.0 | 0.2− | 2006 10 29 | 703 | 0.2+ | 0.8− | |
| 2002 11 26 | 644 | 0.9− | 0.1− | 2006 09 25 | 703 | 1.0− | 0.5+ | 2006 10 29 | 703 | 0.0 | 0.2− | |
| 2002 11 26 | 644 | 0.5− | 0.4+ | 2006 09 25 | 703 | 0.0 | 0.8+ | 2006 10 29 | 703 | 0.5+ | 0.2− | |
| 2002 11 26 | 644 | 0.2− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.1− | 2006 10 29 | 703 | 0.6− | 0.0 | |
| 2002 12 05 | 704 | 0.5− | 0.1+ | 2006 10 02 | 704 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.4− | 0.4− | |
| 2002 12 05 | 704 | 1.1− | 0.5+ | 2006 10 02 | 704 | 0.3− | 1.0+ | 2006 11 15 | 703 | 0.2− | 0.7− | |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 10 02 | 704 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.5+ | 0.5− | |
| 2002 12 05 | 704 | 0.4+ | 0.8+ | 2006 10 02 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.2+ | 0.7− | |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 11 22 | 703 | 0.0 | 0.2− | |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 22 | 703 | 0.3+ | 0.5+ | |
| 2002 12 06 | 704 | 1.0+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 22 | 703 | 1.3− | 0.1− | |
| 2002 12 06 | 704 | 0.8− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.6+ | |
| 2002 12 06 | 704 | 1.1− | 0.9− | 2006 10 22 | 644 | 0.0 | 0.0 | | | | | |

**2002 XQ$_{17}$ = 2006 SD$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.24197 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22792699 | $\omega$ | 61.42738 | | +0.98238185 | +0.04168470 | |
| $a$ | 2.6542320 | $\Omega$ | 295.67323 | | −0.12422485 | +0.87392892 | |
| $e$ | 0.2824299 | $i$ | 11.66160 | | +0.13962123 | +0.48426298 | |
| $P$ | 4.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.4− | 0.8− | 2006 08 10 | 644 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.2− | 0.4− | |
| 2002 12 05 | 704 | 0.7− | 0.0 | 2006 08 10 | 644 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.3− | 0.4− | |
| 2002 12 05 | 704 | 0.4− | 0.2+ | 2006 09 01 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.5− | |
| 2002 12 05 | 704 | 0.7− | 0.3− | 2006 09 01 | 704 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.5− | 0.1+ | |
| 2002 12 05 | 704 | 0.2− | 0.8+ | 2006 09 01 | 704 | 0.2− | 0.8+ | 2006 10 18 | 106 | 0.3− | 0.3+ | |
| 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 10 18 | 106 | 0.2+ | 0.0 | |
| 2002 12 06 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.4− | 2006 10 18 | 106 | 0.1+ | 0.4− | |
| 2002 12 06 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 10 18 | 106 | 0.5+ | 0.4+ | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2006 09 16 | 703 | 0.9− | 0.4+ | 2006 10 20 | 703 | 0.6+ | 0.5− | |
| 2002 12 06 | 704 | 1.3+ | 0.8− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 20 | 703 | 0.2+ | 0.6− | |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.8+ | 0.3− | 2006 10 20 | 703 | 0.6− | 0.0 | |
| 2002 12 10 | 704 | 0.2+ | 0.4− | 2006 09 17 | 703 | 0.4+ | 0.6− | 2006 10 20 | 703 | 0.0 | 0.1− | |
| 2002 12 10 | 704 | 0.0 | 0.4− | 2006 09 21 | 699 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.7− | 0.2+ | |
| 2002 12 10 | 704 | 0.3+ | 0.0 | 2006 09 21 | 699 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.4+ | 0.8+ | |
| 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.4+ | 0.2+ | 2006 11 14 | 703 | (2.3+ | 4.0−) | |
| 2006 08 10 | 644 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.0 | 0.5+ | 2006 11 14 | 703 | (0.2+ | 1.8−) | |

**2002 XW$_{17}$ = 2006 RD$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.93167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20690455 | $\omega$ | 168.66073 | | +0.67282985 | −0.73953028 | |
| $a$ | 2.8311053 | $\Omega$ | 239.04992 | | +0.67692550 | +0.62626428 | |
| $e$ | 0.0626782 | $i$ | 1.32782 | | +0.29844908 | +0.24675497 | |
| $P$ | 4.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.4− | 2003 01 06 | 291 | 0.3− | 0.6− | 2006 09 13 | 644 | 0.5− | 0.4− |
| 2002 12 05 | 704 | 0.7+ | 0.5− | 2003 01 06 | 291 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2003 01 06 | 291 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 1.1− |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.5− | 0.3+ | 2006 09 19 | 703 | (1.7+ | 0.1−) |
| 2002 12 06 | 704 | 0.1− | 0.8+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.6+ | 0.2− |
| 2002 12 06 | 704 | (0.6− | 2.2+) | 2006 08 28 | 691 | 0.9+ | 1.0+ | 2006 09 28 | G96 | 0.7+ | 0.3− |
| 2002 12 06 | 704 | 0.7+ | 0.1− | 2006 08 28 | 691 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.7+ | 0.0 |
| 2002 12 06 | 704 | 0.5+ | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.8+ | 0.4− |
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2006 09 12 | 703 | (1.7+ | 0.4−) | 2006 10 19 | G96 | 0.5+ | 0.6− |
| 2002 12 06 | 704 | 0.5− | 0.7+ | 2006 09 12 | 703 | 0.1− | 0.7+ | 2006 10 19 | G96 | 0.6− | 0.6− |
| 2002 12 06 | 704 | 1.3+ | 0.0 | 2006 09 12 | 703 | 1.0− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 2002 12 10 | 704 | 0.8− | 1.3+ | 2006 09 12 | 703 | 1.1− | 0.3− | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.3− | | | | |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2006 09 13 | 644 | 0.3− | 0.5− | | | | |

**2002 XA$_{18}$ = 2006 SN$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.70575 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21715424 | $\omega$ | 269.52984 | | +0.97144402 | | +0.22782151 |
| $a$ | 2.7413039 | $\Omega$ | 77.30022 | | −0.18154547 | | +0.89357660 |
| $e$ | 0.0916671 | $i$ | 3.89617 | | −0.15276698 | | +0.38680515 |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.4− | 2005 02 16 | 809 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.5+ | 0.7+ | 2005 02 16 | 809 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.5+ | 0.2− | 2005 02 16 | 809 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2005 06 13 | G96 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.4− | 2005 06 13 | G96 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 12 06 | 704 | 0.3− | 0.5+ | 2005 06 13 | G96 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 1.5+ |
| 2002 12 06 | 704 | 0.2+ | 0.4+ | 2005 06 13 | G96 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2002 12 06 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 16 | 703 | 1.1+ | 0.2− |
| 2002 12 06 | 704 | 1.0+ | 0.2− | 2006 09 18 | 703 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.5− | 2006 10 22 | 703 | 0.3− | 0.8− |
| 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 703 | (1.6− | 1.5−) | 2006 10 22 | 703 | 1.0− | 1.3− |
| 2002 12 06 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 704 | 0.7+ | 1.2+ | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2002 12 06 | 704 | 0.7− | 0.0 | 2006 09 26 | 704 | (0.4+ | 1.7+) | 2006 10 22 | 703 | (1.5− | 0.6−) |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 1.0− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 12 11 | 704 | 0.7− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | (1.8− | 0.4+) | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | |

**2002 XK$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.01434 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23191296 | $\omega$ | 335.70045 | | +0.90450993 | | −0.39188537 |
| $a$ | 2.6237314 | $\Omega$ | 48.46231 | | +0.41873503 | | +0.74145859 |
| $e$ | 0.1947651 | $i$ | 12.98500 | | +0.08076369 | | +0.54466963 |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 10 27 | 704 | 0.3− | 0.4− |
| 2002 11 12 | 704 | (2.1− | 1.8+) | 2006 10 01 | 704 | 0.2+ | 0.1− | 2006 10 27 | 704 | 0.7− | 0.4+ |
| 2002 11 12 | 704 | 1.0− | 0.4− | 2006 10 01 | 704 | 0.5+ | 0.7+ | 2006 10 27 | 704 | (1.6− | 0.5+) |
| 2002 11 12 | 704 | 0.7+ | 0.7+ | 2006 10 01 | 704 | 0.5+ | 0.5+ | 2006 10 27 | 704 | 0.1− | 0.3− |
| 2002 11 12 | 704 | 0.9− | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.4− |
| 2002 12 05 | 704 | 0.7− | 0.5− | 2006 10 01 | 704 | 0.6− | 1.2+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2002 12 05 | 704 | 0.6− | 0.7− | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.6− | 1.2− |
| 2002 12 05 | 704 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.5+ | 2006 11 11 | 703 | 1.3− | 0.5− |
| 2002 12 05 | 704 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 14 | 704 | 0.3− | 0.1+ |
| 2002 12 06 | 704 | 0.1+ | 1.1− | 2006 10 16 | 703 | 0.6− | 0.5+ | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | 0.4− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.4+ |
| 2002 12 06 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.1− | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.5+ | 0.3− | 2006 11 14 | 704 | 0.0 | 0.3− |
| 2002 12 06 | 704 | 0.2− | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.6+ | 0.1− |
| 2002 12 06 | 704 | (0.1− | 1.6+) | 2006 10 19 | 644 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2002 12 06 | 704 | 0.1+ | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.5− |
| 2002 12 07 | 704 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.2− | 0.2− |
| 2002 12 07 | 704 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.4− | 1.1+ |
| 2002 12 07 | 704 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.1+ | 1.1+ |
| 2002 12 07 | 704 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.4+ |
| 2002 12 15 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 1.2+ | 0.0 |
| 2002 12 15 | 704 | (2.2+ | 0.3+) | 2006 10 22 | 704 | 0.2+ | 0.5+ | 2006 11 21 | 704 | (2.7− | 0.6+) |
| 2002 12 15 | 704 | 0.6+ | 0.2+ | 2006 10 22 | 704 | 0.0 | 0.6− | 2006 11 21 | 704 | (4.1− | 1.0−) |
| 2002 12 15 | 704 | 0.6+ | 1.4+ | 2006 10 22 | 704 | 0.5+ | 0.1− | 2006 11 21 | 704 | (3.4− | 0.1+) |
| 2006 09 29 | 699 | 0.3− | 0.5− | 2006 10 22 | 704 | 0.4− | 1.1− | 2006 11 21 | 704 | (2.3− | 0.4−) |
| 2006 09 29 | 699 | 0.1+ | 1.1− | 2006 10 22 | 704 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.6− | 1.4+ |
| 2006 09 29 | 699 | 0.7+ | 0.8− | 2006 10 22 | 703 | 0.6+ | 0.1− | 2006 11 26 | 704 | 0.0 | 0.2− |
| 2006 09 29 | 699 | (1.8+ | 0.2−) | 2006 10 22 | 703 | 0.2+ | 0.0 | 2006 11 26 | 704 | 0.2− | 0.1− |
| 2006 09 30 | 703 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.3+ | 2006 11 26 | 704 | 0.2− | 0.1+ |
| 2006 09 30 | 703 | 0.5− | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.0 | | | | |
| 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 10 27 | 704 | 0.5− | 0.7+ | | | | |

**2002 XN$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.22141 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22235710 | $\omega$ | 89.39034 | | +0.94593273 | | +0.22897818 |
| $a$ | 2.6983734 | $\Omega$ | 257.35556 | | −0.29835653 | | +0.89210649 |
| $e$ | 0.1900512 | $i$ | 13.61814 | | +0.12725818 | | +0.38950609 |
| $P$ | 4.43 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.1− | 0.3+ | 2002 12 11 | 704 | 0.8− | 0.8+ | 2006 09 01 | 704 | 0.8+ | 0.0 |
| 2002 11 06 | 699 | 0.1− | 0.3+ | 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 09 01 | 704 | 0.4+ | 0.7+ |
| 2002 11 06 | 699 | 0.9+ | 1.3+ | 2002 12 12 | 608 | 0.1+ | 0.7− | 2006 09 01 | 704 | 0.3− | 0.4+ |
| 2002 11 06 | 699 | 0.3− | 0.6− | 2002 12 12 | 608 | (0.2− | 1.6−) | 2006 09 01 | 704 | 0.4− | 0.2+ |
| 2002 11 12 | 704 | 0.1− | 0.5− | 2002 12 12 | 608 | 0.1+ | 0.9− | 2006 09 01 | 704 | 0.4+ | 0.2− |
| 2002 11 12 | 704 | 0.4+ | 0.8− | 2002 12 27 | 644 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.2− |
| 2002 11 12 | 704 | 0.3+ | 0.5− | 2002 12 27 | 644 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.5− | 0.8− |
| 2002 11 12 | 704 | 0.1+ | 0.5− | 2002 12 27 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.9− |
| 2002 11 12 | 704 | 0.2+ | 1.1− | 2002 12 31 | 704 | 0.7− | 0.9+ | 2006 09 27 | 703 | 0.5+ | 0.7− |
| 2002 11 12 | 644 | 0.0 | 0.1+ | 2002 12 31 | 704 | 0.6− | 0.1+ | 2006 10 03 | 704 | 0.0 | 0.8+ |
| 2002 11 12 | 644 | 0.0 | 0.2+ | 2002 12 31 | 704 | 0.3− | 0.6+ | 2006 10 03 | 704 | 0.7− | 0.9+ |
| 2002 11 12 | 644 | 0.3− | 0.2− | 2002 12 31 | 704 | 0.6+ | 1.4+ | 2006 10 03 | 704 | 0.4+ | 1.3+ |
| 2002 11 24 | 644 | 0.2− | 0.5+ | 2005 05 16 | 644 | 0.1+ | 0.4+ | 2006 10 03 | 704 | 0.1− | 0.1− |
| 2002 11 24 | 644 | 0.3− | 0.5+ | 2005 05 16 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.3− | 0.4+ | 2005 05 16 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2002 12 02 | 704 | 1.2+ | 0.6+ | 2006 06 21 | 703 | 0.9− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2002 12 02 | 704 | 0.7+ | 0.7+ | 2006 06 21 | 703 | 1.1− | 0.4− | 2006 10 17 | 703 | 0.7+ | 0.3− |
| 2002 12 02 | 704 | 0.6+ | 1.0− | 2006 06 21 | 703 | 0.9− | 0.6− | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2002 12 02 | 704 | 0.4+ | 0.3+ | 2006 06 21 | 703 | 0.7− | 0.2− | 2006 11 14 | 703 | (1.9+ | 0.7+) |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2006 08 10 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.7+ |
| 2002 12 06 | 704 | 0.4− | 1.2− | 2006 08 10 | 644 | 0.0 | 0.5+ | 2006 11 14 | 703 | 0.7− | 0.0 |
| 2002 12 06 | 704 | 0.1− | 0.2+ | 2006 08 10 | 644 | 0.4+ | 0.3+ | 2006 11 25 | 703 | 1.3− | 0.2− |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 08 29 | 699 | 0.7+ | 0.8+ | 2006 11 25 | 703 | 0.5− | 1.0− |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2006 08 29 | 699 | 1.3+ | 0.7+ | 2006 11 25 | 703 | 0.5− | 0.3− |
| 2002 12 11 | 704 | 0.5− | 0.3+ | 2006 08 29 | 699 | 0.4+ | 0.5+ | 2006 11 25 | 703 | 0.3+ | 1.9− |
| 2002 12 11 | 704 | 0.6− | 0.6+ | 2006 08 29 | 699 | (1.9+ | 2.9−) | | | | |

**2002 XO$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.45222 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22550474 | $\omega$ | 335.08404 | | +0.93484937 | | −0.30886574 |
| $a$ | 2.6732050 | $\Omega$ | 44.13358 | | +0.35304774 | | +0.75645357 |
| $e$ | 0.1328536 | $i$ | 14.56358 | | +0.03760245 | | +0.57652402 |
| $P$ | 4.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.4+ | 0.4+ | 2002 12 02 | 704 | 0.1− | 1.0− | 2006 09 17 | 699 | 0.3− | 0.7+ |
| 2002 11 01 | 644 | 0.2+ | 0.3+ | 2002 12 02 | 704 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.3− |
| 2002 11 01 | 644 | 0.0 | 0.2+ | 2002 12 05 | 704 | 1.0+ | 0.4− | 2006 09 19 | 703 | 0.2− | 0.8− |
| 2002 11 12 | 704 | 0.5+ | 0.4+ | 2002 12 05 | 704 | 0.5− | 1.0+ | 2006 09 19 | 703 | 0.4− | 0.8− |
| 2002 11 12 | 704 | 0.2− | 0.4+ | 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.6− | 1.0− |
| 2002 11 12 | 704 | 1.1+ | 0.6− | 2002 12 05 | 704 | (2.9− | 0.3−) | 2006 09 25 | 703 | 0.2+ | 0.4− |
| 2002 11 12 | 704 | 1.4− | 0.3− | 2002 12 06 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 703 | 0.7− | 0.5+ |
| 2002 11 12 | 704 | 0.6+ | 0.9− | 2002 12 06 | 704 | 0.8+ | 0.1+ | 2006 09 25 | 703 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | (1.0− | 1.9−) | 2002 12 06 | 704 | 0.3− | 0.6+ | 2006 09 25 | 703 | 0.3+ | 0.0 |
| 2002 11 14 | 704 | (2.6− | 0.1+) | 2002 12 06 | 704 | 0.3− | 0.1− | 2006 10 28 | 703 | (0.2− | 7.6+) |
| 2002 11 14 | 704 | (5.1− | 1.9+) | 2006 09 17 | 699 | 0.2− | 0.4+ | 2006 10 28 | 703 | (0.3− | 6.6+) |
| 2002 12 02 | 704 | 1.0− | 1.1− | 2006 09 17 | 699 | 0.8+ | 1.3+ | 2006 10 28 | 703 | (0.1+ | 6.3+) |
| 2002 12 02 | 704 | 0.3− | 0.1− | 2006 09 17 | 699 | 0.2+ | 0.3+ | 2006 10 28 | 703 | (0.0 | 8.0+) |

### 2002 $XZ_{19}$ = 2006 $SJ_{229}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.27804 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22174643 | $\omega$ | 171.67950 | | −0.42285528 | | −0.90461954 |
| $a$ | 2.7033252 | $\Omega$ | 303.31983 | | +0.82769437 | | −0.36153788 |
| $e$ | 0.1218620 | $i$ | 3.66741 | | +0.36893827 | | −0.22572958 |
| $P$ | 4.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 08 | 691 | 0.5+ | 0.0 | 2002 12 06 | 704 | 0.4− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 1999 01 08 | 691 | 0.3+ | 0.0 | 2002 12 11 | 704 | 0.5− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 1999 01 08 | 691 | 0.2+ | 0.1− | 2002 12 11 | 704 | 0.8+ | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 1999 01 19 | 691 | 0.6− | 0.2− | 2002 12 11 | 704 | 0.5− | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1999 01 19 | 691 | 0.5− | 0.2− | 2002 12 11 | 704 | (0.5+ | 1.9+) | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2002 12 02 | 704 | (0.3− | 1.8+) | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2002 12 02 | 704 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.7− |
| 2002 12 02 | 704 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.3− | 0.9+ | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2002 12 06 | 704 | 0.6+ | 0.4− | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2− | | | | |
| 2002 12 06 | 704 | 1.0− | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.2+ | | | | |

### 2002 $XA_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.19470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23740395 | $\omega$ | 118.38673 | | +0.50736512 | | −0.85868427 |
| $a$ | 2.5831171 | $\Omega$ | 300.94554 | | +0.75813938 | | +0.48473449 |
| $e$ | 0.2413865 | $i$ | 4.84255 | | +0.40964048 | | +0.16641455 |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.8− | 1.4− | 2002 12 10 | 704 | 1.3+ | 0.1− | 2002 12 31 | 704 | 0.4− | 0.6− |
| 2002 11 06 | 704 | 0.3− | 1.0− | 2002 12 10 | 704 | 0.7− | 0.0 | 2003 01 05 | 704 | 0.5+ | 0.1− |
| 2002 11 06 | 704 | 0.6− | 0.8− | 2002 12 10 | 704 | 0.5− | 0.4− | 2003 01 05 | 704 | 0.3+ | 0.6+ |
| 2002 11 06 | 704 | (0.2− | 1.8−) | 2002 12 10 | 704 | 0.2+ | 0.2+ | 2003 01 05 | 704 | 0.5− | 0.5+ |
| 2002 11 06 | 704 | (1.0− | 1.5−) | 2002 12 11 | 704 | 0.2− | 0.8+ | 2003 01 05 | 704 | (0.2− | 2.2+) |
| 2002 11 12 | 704 | 0.3+ | 0.5+ | 2002 12 11 | 704 | 0.8− | 0.5+ | 2006 08 06 | 699 | 1.3− | 0.3+ |
| 2002 11 12 | 704 | 0.1− | 0.7+ | 2002 12 11 | 704 | 0.2+ | 0.2+ | 2006 08 06 | 699 | 1.0− | 1.3+ |
| 2002 11 12 | 704 | 0.9+ | 0.9+ | 2002 12 11 | 704 | 0.1− | 0.2+ | 2006 08 06 | 699 | (1.7− | 1.2+) |
| 2002 11 12 | 704 | 0.0 | 0.2− | 2002 12 11 | 644 | 0.2− | 0.6− | 2006 08 06 | 699 | 1.0+ | 0.6− |
| 2002 11 12 | 704 | 1.1+ | 0.6+ | 2002 12 11 | 704 | 0.6+ | 0.3+ | 2006 09 23 | 152 | 1.1+ | 0.0 |
| 2002 11 12 | 644 | 0.4+ | 0.2− | 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 09 23 | 152 | 0.1− | 0.5+ |
| 2002 11 12 | 644 | 0.3+ | 0.6+ | 2002 12 11 | 644 | (0.4+ | 1.8−) | 2006 09 23 | 152 | 0.2+ | 1.0+ |
| 2002 11 12 | 644 | 0.5+ | 0.5+ | 2002 12 14 | 704 | 0.1− | 0.6+ | 2006 09 25 | 152 | 0.2+ | 0.4− |
| 2002 12 02 | 704 | 0.1+ | 0.2+ | 2002 12 14 | 704 | 0.6− | 0.2+ | 2006 09 26 | 152 | 0.2+ | 0.1+ |
| 2002 12 02 | 704 | 0.1+ | 0.1− | 2002 12 14 | 704 | (1.8− | 0.4−) | 2006 09 26 | 152 | 0.3+ | 0.0 |
| 2002 12 02 | 704 | 0.2+ | 0.3− | 2002 12 14 | 704 | 0.0 | 0.7− | 2006 10 17 | 703 | 0.0 | 0.9− |
| 2002 12 02 | 704 | 0.3− | 0.5+ | 2002 12 14 | 704 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2002 12 02 | 704 | 0.2+ | 0.3+ | 2002 12 27 | 644 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2002 12 06 | 704 | 0.4− | 0.2− | 2002 12 27 | 644 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2002 12 27 | 644 | 0.6+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.3− | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 1.1− | 1.3− | 2002 12 31 | 704 | 0.9− | 0.6− | | | | |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2002 12 31 | 704 | 0.1− | 0.3− | | | | |

### 2002 $XJ_{20}$ = 2006 $UZ_{229}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.66143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23310883 | $\omega$ | 148.74270 | | −0.76649616 | | −0.64217575 |
| $a$ | 2.6147504 | $\Omega$ | 351.28322 | | +0.57526461 | | −0.67976483 |
| $e$ | 0.1329485 | $i$ | 3.66681 | | +0.28557708 | | −0.35430224 |
| $P$ | 4.23 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.3− | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2002 11 24 | 644 | 0.4− | 0.4− | 2006 09 28 | G96 | 0.5− | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2002 12 02 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2002 12 02 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2002 12 02 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2002 12 06 | 704 | 0.9− | 1.0+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.6+ | 0.5− |
| 2002 12 06 | 704 | 0.1+ | 0.7− | 2006 10 23 | 691 | 0.5− | 1.4− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 1.3+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 17 | 691 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.5− | 0.2+ |
| 2002 12 11 | 704 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2+ | | | | |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.2+ | | | | |

### 2002 $XO_{20}$ = 2006 $SA_{127}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.58859 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23554486 | $\omega$ | 319.07707 | | +0.94339693 | | −0.25436585 |
| $a$ | 2.5966911 | $\Omega$ | 56.89316 | | +0.32941310 | | +0.79327645 |
| $e$ | 0.2789084 | $i$ | 14.71961 | | −0.03859071 | | +0.55318215 |
| $P$ | 4.18 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2002 12 05 | 695 | 0.4+ | 0.5− | 2006 09 22 | 703 | 0.3− | 0.3− |
| 2002 11 24 | 644 | 0.1+ | 0.5− | 2002 12 06 | 704 | 0.6+ | 0.2− | 2006 09 22 | 703 | 0.9− | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2002 12 06 | 704 | 0.0 | 0.3+ | 2006 09 22 | 703 | 0.5+ | 0.2+ |
| 2002 12 02 | 704 | 0.4− | 0.2+ | 2002 12 06 | 704 | 0.6− | 0.7− | 2006 09 22 | 703 | 1.3+ | 0.2− |
| 2002 12 02 | 704 | 0.0 | 0.2− | 2002 12 06 | 704 | 0.3+ | 0.6+ | 2006 09 24 | 699 | 0.1+ | 0.8− |
| 2002 12 02 | 704 | 0.3− | 0.3+ | 2002 12 11 | 704 | 0.7+ | 0.9+ | 2006 09 24 | 699 | 0.6+ | 0.0 |
| 2002 12 02 | 704 | 0.2+ | 0.7+ | 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 09 24 | 699 | 0.9− | 1.2+ |
| 2002 12 05 | 695 | 0.0 | 0.6− | 2002 12 11 | 704 | 1.1− | 0.6− | 2006 09 24 | 699 | 0.5− | 0.0 |

### 2002 $XA_{22}$ = 2006 $UK_{183}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.27300 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23660882 | $\omega$ | 148.72814 | | +0.60703486 | | −0.79136820 |
| $a$ | 2.5889009 | $\Omega$ | 263.79752 | | +0.71323194 | | +0.58274418 |
| $e$ | 0.2596371 | $i$ | 4.17765 | | +0.35044099 | | +0.18478525 |
| $P$ | 4.17 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.2+ | 0.3− | 2002 12 10 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | (1.7+ | 0.9−) |
| 2002 11 12 | 704 | 0.6+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.4− | 0.4+ |
| 2002 11 12 | 704 | 0.8− | 0.5− | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.6− | 0.6+ |
| 2002 11 12 | 704 | (2.0− | 1.0−) | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.7− | 0.3+ |
| 2002 12 02 | 608 | 0.3− | 0.2− | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 12 02 | 608 | 0.7− | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 12 02 | 608 | 0.9+ | 0.6− | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2002 12 10 | 704 | 0.6− | 0.8+ | 2006 10 17 | 703 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.2+ | | | | |
| 2002 12 10 | 704 | 0.0 | 0.9− | 2006 10 17 | 703 | 0.1− | 0.1− | | | | |

**2002 XM$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.48552 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22821084 | $\omega$ | 158.73747 | | +0.35353963 | | −0.90381111 |
| $a$ | 2.6520307 | $\Omega$ | 269.90179 | | +0.81969240 | | +0.42351964 |
| $e$ | 0.1336097 | $i$ | 13.95223 | | +0.45068182 | | −0.06129110 |
| $P$ | 4.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.5− | 0.4+ | 2002 12 10 | 704 | 0.7+ | 0.0 | 2003 01 08 | 704 | 0.6− | 0.1− |
| 2002 12 03 | 644 | 0.0 | 0.5+ | 2002 12 10 | 704 | 0.5− | 0.3− | 2003 01 08 | 704 | 0.8− | 1.2− |
| 2002 12 03 | 644 | 0.3+ | 0.4+ | 2002 12 10 | 704 | 0.8− | 0.0 | 2003 01 08 | 704 | 0.2− | 0.2+ |
| 2002 12 06 | 704 | 0.3− | 0.5+ | 2002 12 10 | 704 | 0.6+ | 1.1− | 2003 01 08 | 704 | 1.1− | 0.5+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2002 12 10 | 704 | 0.5+ | 0.5− | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2002 12 06 | 704 | 0.4+ | 0.4− | 2002 12 31 | 704 | 0.9+ | 0.5+ | 2006 10 19 | 703 | 0.8− | 0.4− |
| 2002 12 06 | 704 | 0.5− | 0.7+ | 2002 12 31 | 704 | 0.2− | 0.7+ | 2006 10 19 | 703 | 0.9− | 0.4+ |
| 2002 12 06 | 704 | 0.6− | 0.3+ | 2002 12 31 | 704 | 1.1+ | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 12 10 | 704 | 0.2− | 0.7− | 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2002 12 10 | 704 | 0.1+ | 0.2− | 2002 12 31 | 704 | 1.0+ | 0.7+ | 2006 10 23 | 644 | 0.4+ | 0.1− |
| 2002 12 10 | 704 | 0.4+ | 0.5+ | 2003 01 05 | 704 | 0.2− | 1.1− | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2002 12 10 | 704 | 0.4− | 0.7− | 2003 01 05 | 704 | 0.6+ | 0.1+ | 2006 10 24 | 644 | 0.5+ | 0.1+ |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2003 01 05 | 704 | 0.3+ | 0.6− | 2006 10 24 | 644 | 0.3+ | 0.0 |

**2002 XU$_{22}$ = 2006 VO$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.32089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24330412 | $\omega$ | 330.01103 | | +0.84430480 | | −0.50880381 |
| $a$ | 2.5411857 | $\Omega$ | 61.51338 | | +0.52178828 | | +0.70917447 |
| $e$ | 0.0605497 | $i$ | 11.02814 | | +0.12200982 | | +0.48804738 |
| $P$ | 4.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.2+ | 1.2− | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.2− |
| 2002 12 03 | 644 | 0.0 | 1.3− | 2006 10 20 | 695 | 0.1− | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2002 12 03 | 644 | 0.0 | 0.6− | 2006 10 20 | 695 | 0.0 | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2006 10 29 | G96 | 0.3+ | 0.4− | 2006 11 17 | 644 | 0.5− | 0.2− |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 10 29 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2002 12 06 | 704 | 0.0 | 0.2+ | 2006 10 29 | G96 | 0.4− | 0.2− | 2006 11 18 | 704 | 1.0+ | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 1.1+ | 2006 10 29 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 2002 12 06 | 704 | 0.5− | 1.2+ | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | (1.8+ | 0.5+) |
| 2002 12 11 | 704 | 0.9+ | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.5+ | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.7− | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.3− | 0.8− | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.1− | 0.6+ |
| 2006 09 28 | G96 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.4− |
| 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.4− | 0.7+ | 2006 12 01 | 704 | 0.4− | 0.5− |
| 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.8− | 0.5+ | | | | |

**2002 XE$_{23}$ = 2006 SQ$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.64699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23391162 | $\omega$ | 39.49276 | | +0.95609225 | | +0.29008053 |
| $a$ | 2.6087643 | $\Omega$ | 303.59614 | | −0.27996145 | | +0.86193938 |
| $e$ | 0.1712211 | $i$ | 2.87124 | | −0.08665566 | | +0.41582904 |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | (0.5+ | 2.1−) | 2002 12 11 | 704 | 0.1− | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | (1.9+ | 0.7−) | 2002 12 11 | 704 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | (1.0+ | 1.6−) | 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | (0.6+ | 1.7−) | 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2002 12 11 | 704 | 0.1− | 0.5− | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.5+ | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2002 11 24 | 644 | 0.2− | 0.3− | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 09 22 | 104 | 0.7− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2006 09 22 | 104 | 0.7− | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.5− | 2006 09 22 | 104 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2002 12 06 | 704 | 0.7− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.1− | | | | |
| 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1− | | | | |

**2002 XL$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.17998 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23389818 | $\omega$ | 312.51098 | | +0.97371190 | | +0.16097175 |
| $a$ | 2.6088643 | $\Omega$ | 39.04715 | | −0.04219811 | | +0.82275404 |
| $e$ | 0.2147173 | $i$ | 14.82273 | | −0.22384024 | | +0.54512740 |
| $P$ | 4.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.3− | 0.4− | 2006 09 26 | 704 | 0.2− | 1.4+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 1.2+ | 0.1− | 2006 09 26 | 704 | 0.3− | 0.4− | 2006 11 07 | 644 | 0.6+ | 0.2− |
| 2002 11 12 | 704 | 0.7+ | 0.5− | 2006 09 26 | 704 | (0.3− | 1.5+) | 2006 11 07 | 644 | 0.4+ | 0.1− |
| 2002 11 12 | 704 | 0.3− | 1.3− | 2006 09 29 | 699 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.5+ |
| 2002 11 12 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 699 | 0.6+ | 0.6+ | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.7− | 1.0− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 11 24 | 644 | 0.2+ | 0.0 | 2006 10 01 | 704 | 1.0− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2002 12 05 | 704 | 1.1− | 0.9− | 2006 10 01 | 704 | 0.8− | 0.9+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 1.0+ | 2006 10 01 | 704 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2002 12 05 | 704 | 0.6− | 0.7+ | 2006 10 01 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2002 12 05 | 704 | 1.3− | 1.1+ | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2002 12 06 | 704 | 0.5+ | 1.0− | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 2002 12 06 | 704 | 0.3− | 1.2+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 13 | 704 | 0.6+ | 0.2+ |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.3− | 2006 11 13 | 704 | 0.8+ | 0.6+ |
| 2002 12 06 | 704 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 11 13 | 704 | 0.7+ | 0.8+ |
| 2002 12 12 | 644 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 13 | 704 | 0.2+ | 0.7+ |
| 2002 12 12 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.9− | 0.3+ |
| 2002 12 12 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.2− | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2005 04 11 | G96 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.6− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2005 04 11 | G96 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2005 04 11 | G96 | 0.7+ | 0.8− | 2006 10 21 | 703 | 0.6+ | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2005 04 11 | G96 | 0.7− | 0.9+ | 2006 10 21 | 703 | 0.2− | 0.7+ | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2006 09 16 | 699 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.4− | 0.3− |
| 2006 09 16 | 699 | 0.9− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.6+ | 2006 11 20 | G96 | 0.4+ | 0.4− |
| 2006 09 16 | 699 | 0.0 | 0.7− | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2006 09 16 | 699 | 0.8+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2006 09 18 | 703 | 0.0 | 0.6− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.7− | 0.5− |
| 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2006 09 18 | 703 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2006 09 18 | 703 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.3− | 1.4− |
| 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.6− | 1.6− |
| 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 1.0+ | 0.8− |
| 2006 09 20 | 644 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.3− | 0.9+ |
| 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− | | | | |
| 2006 09 26 | 704 | 0.4− | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | | | |

### 2002 $XX_{23}$ = 2006 $WZ_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.95860 | | (2000.0) | | | |
| $n$ | 0.24024190 | $\omega$ | 102.11183 | | +0.83977817 | −0.51333089 |
| $a$ | 2.5627341 | $\Omega$ | 289.00808 | | +0.39629446 | +0.80215965 |
| $e$ | 0.1985839 | $i$ | 10.77856 | | +0.37111093 | +0.30501030 |
| $P$ | 4.10 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.8− | 1.1+ | 2006 09 19 | 703 | 0.5+ | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.6+ |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.6− | 0.0 | 2006 11 16 | 703 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.8+ | 2006 11 16 | 703 | 0.6− | 0.3− |
| 2002 12 06 | 704 | 0.3+ | 0.5− | 2006 09 19 | 703 | 0.4− | 0.1+ | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.7+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 0.5− | 0.3+ | 2006 10 23 | 703 | 0.3− | 0.4− | 2006 11 21 | 703 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2006 10 23 | 703 | 0.3− | 0.5− | 2006 11 21 | 703 | 0.3+ | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 10 23 | 703 | 0.6+ | 0.2+ | 2006 11 21 | 703 | 0.2+ | 0.6− |
| 2002 12 12 | 644 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.0 | 0.1− |
| 2002 12 12 | 644 | 0.7+ | 0.0 | 2006 11 16 | 703 | 0.4+ | 0.0 | | | | |
| 2002 12 12 | 644 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.2− | 0.9− | | | | |

### 2002 $XA_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 349.81541 | | (2000.0) | | | |
| $n$ | 0.23258673 | $\omega$ | 117.02848 | | +0.71902232 | −0.49816233 |
| $a$ | 2.6186619 | $\Omega$ | 276.71932 | | +0.32464095 | +0.85728440 |
| $e$ | 0.3299642 | $i$ | 29.20631 | | +0.61450400 | +0.12999137 |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.2− | 0.4+ | 2002 12 14 | 704 | 0.3+ | 1.4+ | 2006 09 12 | A74 | 0.3− | 0.3− |
| 2002 10 06 | 704 | 0.1+ | 0.6+ | 2002 12 14 | 704 | (0.5− | 1.8+) | 2006 09 19 | A74 | 0.1− | 0.2+ |
| 2002 10 06 | 704 | 0.2+ | 0.4+ | 2002 12 14 | 704 | 0.0 | 1.0+ | 2006 09 19 | A74 | 0.1− | 0.3+ |
| 2002 10 06 | 704 | 0.2+ | 1.3− | 2002 12 31 | 704 | 1.0− | 0.2− | 2006 09 19 | A74 | 0.3+ | 0.2− |
| 2002 11 07 | 704 | 1.0+ | 0.3− | 2002 12 31 | 704 | 0.2+ | 0.0 | 2006 09 19 | A74 | 0.0 | 0.1− |
| 2002 11 07 | 704 | (1.6+ | 0.2−) | 2002 12 31 | 704 | 0.1− | 0.0 | 2006 09 20 | A74 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.2− | 0.4− | 2002 12 31 | 704 | 0.2− | 0.1+ | 2006 09 20 | A74 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.9− | 2003 01 08 | 704 | 1.3+ | 1.2+ | 2006 09 20 | A74 | 0.4+ | 0.2− |
| 2002 12 05 | 704 | 1.0− | 0.0 | 2003 01 08 | 704 | 1.4+ | 0.8− | 2006 09 20 | A74 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.5− | 1.0− | 2003 01 08 | 704 | 0.2+ | 0.4− | 2006 09 20 | A74 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.9− | 0.3− | 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 09 20 | A74 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.8− | 0.7− | 2003 01 08 | 704 | 0.7+ | 1.0− | 2006 11 11 | 704 | 0.0 | 0.5+ |
| 2002 12 06 | 704 | 0.3− | 0.4+ | 2006 09 12 | A74 | 0.1− | 0.1− | 2006 11 11 | 704 | 0.4+ | 0.5+ |
| 2002 12 06 | 704 | 0.3− | 0.2+ | 2006 09 12 | A74 | 0.1+ | 0.3− | 2006 11 11 | 704 | 0.2+ | 0.2− |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 09 12 | A74 | 0.1− | 0.1+ | 2006 11 11 | 704 | 1.4− | 0.4+ |
| 2002 12 06 | 704 | 0.3+ | 1.0+ | 2006 09 12 | A74 | 0.3− | 0.0 | 2006 11 11 | 704 | 0.3+ | 1.1+ |

### 2002 $XB_{25}$ = 2006 $UZ_{220}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.09159 | | (2000.0) | | | |
| $n$ | 0.21865881 | $\omega$ | 175.61137 | | +0.26257770 | −0.96349498 |
| $a$ | 2.7287143 | $\Omega$ | 259.15924 | | +0.88366112 | +0.26186501 |
| $e$ | 0.0881616 | $i$ | 3.04972 | | +0.38755126 | +0.05571485 |
| $P$ | 4.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 1.0+ | 2002 12 11 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2002 12 13 | 291 | 1.2+ | 1.3− | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.6− | 0.3− | 2002 12 13 | 291 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.8− | 0.3+ | 2002 12 13 | 291 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.1− | 1.3− |
| 2002 12 06 | 704 | 0.6− | 0.5− | 2003 01 01 | 291 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.9− |
| 2002 12 06 | 704 | 0.7+ | 0.3+ | 2003 01 01 | 291 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2002 12 06 | 704 | 0.1− | 1.1+ | 2003 01 01 | 291 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2− |

### 2002 $XC_{25}$ = 2006 $UO_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.86118 | | (2000.0) | | | |
| $n$ | 0.23625744 | $\omega$ | 359.61712 | | +0.97895307 | +0.20408148 |
| $a$ | 2.5914672 | $\Omega$ | 348.60691 | | −0.18722759 | +0.89558372 |
| $e$ | 0.1977310 | $i$ | 0.37010 | | −0.08122014 | +0.39532335 |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 691 | 0.1+ | 0.4+ | 2003 01 05 | 291 | 0.4+ | 0.1− | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 1993 09 14 | 691 | 0.2− | 0.5+ | 2005 05 28 | 599 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 1993 09 14 | 691 | 0.2− | 0.1+ | 2005 05 28 | 599 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 1994 12 31 | 691 | 0.1− | 0.1− | 2005 05 28 | 599 | 0.1− | 1.2+ | 2006 11 18 | 704 | 1.0+ | 0.9+ |
| 1994 12 31 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | (1.6+ | 0.7+) |
| 1994 12 31 | 691 | 0.4− | 1.7+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.8+ | 1.5+ |
| 2000 04 03 | 691 | 0.1− | 0.5− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | (2.0+ | 1.9+) |
| 2000 04 03 | 691 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 1.3+ | 1.2+ |
| 2000 04 03 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.8− | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.6− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2002 12 05 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 1.3+ |
| 2002 12 05 | 704 | 0.8+ | 0.4+ | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 1.3+ | 2006 10 17 | G96 | 0.5+ | 0.2− | 2006 11 22 | 704 | (0.8+ | 1.6+) |
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 22 | 704 | 1.5+ | 1.0+ |
| 2002 12 06 | 704 | 0.2+ | 0.7+ | 2006 10 17 | G96 | 0.2− | 0.3+ | 2006 11 22 | 704 | (0.5+ | 1.8+) |
| 2002 12 06 | 704 | 0.1− | 0.9+ | 2006 10 17 | 691 | 0.2+ | 0.4− | 2006 11 22 | 704 | (1.7+ | 1.9+) |
| 2002 12 06 | 704 | 0.5+ | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2002 12 06 | 704 | (0.4+ | 1.9+) | 2006 10 17 | 691 | 0.2+ | 0.6− | 2006 11 27 | G96 | 0.2+ | 0.5− |
| 2002 12 09 | 333 | 0.4− | 0.4− | 2006 10 21 | 691 | 0.4− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2002 12 09 | 333 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.8− | 0.2+ |
| 2002 12 09 | 333 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.5+ |
| 2002 12 11 | 704 | 0.4− | 1.0− | 2006 11 09 | 691 | 0.2− | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.2− |
| 2002 12 11 | 704 | 1.0+ | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.4+ |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 0.4+ | 0.5− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2002 12 13 | 644 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2002 12 13 | 644 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.3− | 1.0− |
| 2002 12 13 | 644 | 0.4+ | 0.6− | 2006 11 11 | 703 | (0.2+ | 1.7−) | 2006 11 29 | 704 | 0.1− | 0.7− |
| 2003 01 05 | 291 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.2− | 0.5− | | | | |
| 2003 01 05 | 291 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.5− | 0.8− | | | | |

### 2002 $XN_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.65056 | | (2000.0) | | | |
| $n$ | 0.25929224 | $\omega$ | 80.73480 | | +0.96366996 | +0.24878608 |
| $a$ | 2.4356209 | $\Omega$ | 264.81423 | | −0.26688030 | +0.88226814 |
| $e$ | 0.1447957 | $i$ | 5.60032 | | −0.01072899 | +0.39963536 |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.4+ | 0.2+ | 2002 12 05 | 704 | 0.4− | 0.1− | 2002 12 10 | 704 | 0.6+ | 0.5+ |
| 2002 11 07 | 695 | 0.4+ | 0.1+ | 2002 12 05 | 704 | 0.7+ | 0.9− | 2002 12 10 | 704 | 0.4− | 0.5+ |
| 2002 11 12 | 704 | 0.2− | 0.3+ | 2002 12 08 | 333 | 0.7− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.4− | 2002 12 08 | 333 | 0.9− | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.0 | 1.1+ | 2002 12 08 | 333 | 1.2+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2002 11 12 | 704 | 0.8− | 0.1− | 2002 12 09 | 333 | (5.6− | 0.0 ) | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.5− | 0.7− | 2002 12 09 | 333 | 0.6− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 1.0+ | 0.2+ | 2002 12 10 | 704 | 0.8− | 0.5− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.8+ | 0.4− | 2002 12 10 | 704 | 1.0− | 0.1− | | | | |
| 2002 12 05 | 704 | 1.0+ | 1.0− | 2002 12 10 | 704 | 0.2+ | 1.3+ | | | | |

**2002 XR$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.83799 | | | | | |
| $n$ | 0.23748034 | $\omega$ | 110.08646 | | +0.55620084 | −0.81225401 |
| $a$ | 2.5825631 | $\Omega$ | 304.87784 | | +0.65976290 | +0.56016169 |
| $e$ | 0.1822676 | $i$ | 12.36965 | | +0.50532519 | +0.16267239 |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.9− | 0.8− | 2002 11 15 | 704 | 1.1− | 1.3− | 2006 09 17 | 703 | 0.1+ | 0.5− |
| 2002 10 06 | 704 | 0.5+ | 0.4− | 2002 11 15 | 704 | 0.8− | 0.0 | 2006 09 17 | 703 | 0.1− | 0.8+ |
| 2002 10 06 | 704 | 0.2− | 0.9+ | 2002 11 25 | 644 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.6− | 1.3− |
| 2002 10 06 | 704 | 0.3+ | 0.3+ | 2002 11 25 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | (1.3+ | 1.8−) |
| 2002 10 06 | 704 | 0.1+ | 0.8+ | 2002 11 25 | 644 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.7− |
| 2002 10 15 | 704 | 1.1+ | 0.1+ | 2002 12 03 | 644 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.3− | 0.4− |
| 2002 10 15 | 704 | 0.9+ | 0.2− | 2002 12 03 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.0 |
| 2002 10 15 | 704 | 0.0 | 0.5+ | 2002 12 03 | 644 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.2+ | 1.1− |
| 2002 10 30 | 704 | 0.3+ | 0.1− | 2002 12 07 | 704 | 0.8− | 0.2+ | 2006 10 19 | 703 | 1.2− | 0.2− |
| 2002 10 30 | 704 | 0.5− | 0.0 | 2002 12 07 | 704 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.7+ | 0.3+ |
| 2002 10 30 | 704 | 0.4+ | 0.8− | 2002 12 07 | 704 | 1.1− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 10 30 | 704 | 1.2− | 0.7− | 2002 12 07 | 704 | 0.7− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 11 08 | 704 | 0.5+ | 0.1− | 2002 12 12 | 644 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 11 08 | 704 | 0.7+ | 0.3+ | 2002 12 12 | 644 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.6+ |
| 2002 11 08 | 704 | 0.7+ | 0.2+ | 2002 12 12 | 644 | 0.2− | 0.2+ | 2006 10 27 | 703 | (2.0+ | 0.1−) |
| 2002 11 08 | 704 | 1.0+ | 0.8+ | 2003 01 07 | 704 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.9+ | 1.1+ |
| 2002 11 15 | 644 | 0.4+ | 0.5+ | 2003 01 07 | 704 | 0.6+ | 0.3− | 2006 10 27 | 703 | 0.7+ | 0.5+ |
| 2002 11 15 | 644 | 0.2+ | 0.6+ | 2003 01 07 | 704 | 1.1− | 0.7− | 2006 11 22 | 703 | 0.2− | 0.4+ |
| 2002 11 15 | 644 | 0.2− | 0.8+ | 2003 01 07 | 704 | 1.1+ | 0.6− | 2006 11 22 | 703 | 0.3− | 1.2+ |
| 2002 11 15 | 704 | 0.3+ | 0.4− | 2006 09 17 | 703 | 0.0 | 0.4− | 2006 11 22 | 703 | 0.8− | 0.4+ |
| 2002 11 15 | 704 | 1.3+ | 0.1− | 2006 09 17 | 703 | 0.1− | 0.1− | 2006 11 22 | 703 | 0.2− | 0.4+ |

**2002 XW$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.96920 | | | | | |
| $n$ | 0.23998932 | $\omega$ | 56.62862 | | +0.24833845 | −0.96569868 |
| $a$ | 2.5645319 | $\Omega$ | 19.42479 | | +0.79561804 | +0.15867648 |
| $e$ | 0.2449950 | $i$ | 13.18464 | | +0.55255764 | +0.20554280 |
| $P$ | 4.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.7+ | 0.4− | 2002 12 15 | 704 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.4− | 0.6− | 2002 12 15 | 704 | 0.4− | 0.5− | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2002 10 10 | 704 | 1.5+ | 0.2− | 2002 12 15 | 704 | 1.3− | 1.2− | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2002 10 10 | 704 | 0.8+ | 0.2− | 2002 12 15 | 704 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.3+ | 0.4− | 2002 12 15 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2002 10 31 | 704 | 0.5− | 0.0 | 2006 09 15 | 703 | (0.1+ | 2.1−) | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.3+ | 0.4− | 2006 09 15 | 703 | 0.9+ | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.6+ | 0.4− | 2006 09 15 | 703 | 0.6− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | 0.1+ | 0.6− | 2006 09 15 | 703 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2006 09 20 | 699 | (0.1+ | 2.0−) | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2002 11 07 | 704 | 0.7+ | 0.4− | 2006 09 20 | 699 | 1.2+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2002 11 15 | 644 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.4+ |
| 2002 11 15 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 15 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 11 15 | 704 | 0.8+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 11 15 | 704 | 0.4+ | 0.5− | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 11 14 | 703 | 0.5− | 0.8− |
| 2002 11 15 | 704 | 0.7+ | 0.1− | 2006 10 04 | 703 | 1.1+ | 0.7+ | 2006 11 14 | 703 | 0.5+ | 0.3+ |
| 2002 11 15 | 704 | 0.6+ | 1.0− | 2006 10 04 | 703 | 0.3− | 0.8− | 2006 11 14 | 703 | 0.6− | 0.2− |
| 2002 11 15 | 704 | 0.2+ | 1.2− | 2006 10 04 | 703 | 1.1− | 1.4+ | 2006 11 14 | 703 | 0.1− | 0.0 |
| 2002 12 03 | 644 | 0.1− | 0.3− | 2006 10 04 | 703 | 0.5− | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.0 |
| 2002 12 03 | 644 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.3+ | 0.5− |
| 2002 12 03 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.2− |
| 2002 12 07 | 704 | 1.0− | 0.9+ | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.2+ | 0.6+ |
| 2002 12 07 | 704 | 0.4− | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.0 | | | | |
| 2002 12 07 | 704 | 1.1− | 1.2+ | 2006 10 12 | 644 | 0.3+ | 0.1+ | | | | |

**2002 XX$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.57426 | | | | | |
| $n$ | 0.22857186 | $\omega$ | 141.34025 | | +0.53672525 | −0.80425671 |
| $a$ | 2.6492374 | $\Omega$ | 274.77840 | | +0.69647554 | +0.59298885 |
| $e$ | 0.1494498 | $i$ | 14.83470 | | +0.47628544 | +0.03918377 |
| $P$ | 4.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.0 | 1.1− | 2002 12 05 | 699 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.8+ |
| 2002 10 06 | 704 | 0.4− | 0.7+ | 2002 12 06 | 704 | 0.9+ | 0.2− | 2006 09 16 | 703 | (1.6− | 0.7+) |
| 2002 10 06 | 704 | 0.1− | 0.3− | 2002 12 06 | 704 | 1.2+ | 0.4− | 2006 09 16 | 703 | (0.7+ | 2.0+) |
| 2002 10 06 | 704 | 0.1+ | 0.4− | 2002 12 06 | 704 | 1.3+ | 0.6+ | 2006 09 28 | 703 | 0.5+ | 0.0 |
| 2002 10 20 | 644 | 0.2− | 0.4+ | 2002 12 09 | 699 | (1.9− | 1.5+) | 2006 09 28 | 703 | 0.2+ | 0.4+ |
| 2002 10 20 | 644 | 0.0 | 0.6+ | 2002 12 09 | 699 | 0.8− | 0.3+ | 2006 09 28 | 703 | 0.2+ | 0.3− |
| 2002 10 20 | 644 | 0.3− | 0.4+ | 2002 12 09 | 699 | 0.2− | 0.5− | 2006 09 28 | 703 | (0.3+ | 1.9−) |
| 2002 11 25 | 644 | 0.2− | 0.0 | 2002 12 09 | 699 | 0.6− | 1.0− | 2006 10 20 | 703 | 0.3− | 0.0 |
| 2002 11 25 | 644 | 0.0 | 0.0 | 2004 03 16 | E12 | 0.6+ | 0.2− | 2006 10 20 | 703 | 0.5+ | 0.4− |
| 2002 11 25 | 644 | 0.0 | 0.0 | 2004 03 16 | E12 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.2+ | 0.0 |
| 2002 12 05 | 699 | 0.3− | 1.4+ | 2004 03 16 | E12 | (2.3− | 0.1+) | 2006 10 20 | 703 | 0.6− | 2.0− |
| 2002 12 05 | 699 | 1.2− | 0.2− | 2004 03 16 | E12 | 0.4− | 0.0 | | | | |
| 2002 12 05 | 699 | 0.9+ | 0.0 | 2006 09 16 | 703 | 0.6− | 0.8+ | | | | |

**2002 XQ$_{27}$ = 2006 SX$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.93677 | | | | | |
| $n$ | 0.22793853 | $\omega$ | 339.04337 | | +0.55073142 | −0.83279928 |
| $a$ | 2.6541424 | $\Omega$ | 77.49990 | | +0.77374065 | +0.48418706 |
| $e$ | 0.2029457 | $i$ | 3.29051 | | +0.31308196 | +0.26834353 |
| $P$ | 4.32 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.0 | 0.1− | 2002 12 08 | 291 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.3− |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2002 12 08 | 291 | 0.9− | 0.2− | 2006 09 30 | 703 | (2.5− | 0.4−) |
| 2002 11 24 | 644 | 0.0 | 0.3− | 2006 09 18 | 703 | 1.2− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 1.1+ | 0.5− | 2006 09 18 | 703 | 0.8+ | 0.7+ | 2006 09 30 | 703 | 0.4− | 0.5+ |
| 2002 12 05 | 704 | 1.1+ | 0.4− | 2006 09 18 | 703 | 0.2+ | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 703 | (1.6− | 1.1+) | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 1.0+ | 0.1+ | 2006 09 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2006 09 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2002 12 08 | 291 | 0.0 | 0.2+ | 2006 09 20 | 691 | 0.3+ | 0.3− | | | | |

**2002 XH$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.26873 | | | | | |
| $n$ | 0.23263021 | $\omega$ | 330.22892 | | +0.61863131 | −0.78408629 |
| $a$ | 2.6183356 | $\Omega$ | 81.50894 | | +0.73047296 | +0.55054049 |
| $e$ | 0.0916198 | $i$ | 2.90009 | | +0.28931738 | +0.28655516 |
| $P$ | 4.24 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5+ | 1.1− | 2002 12 14 | 291 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.7+ | 1.1− | 2002 12 14 | 291 | 0.6− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.6+ | 0.7− | 2003 01 04 | 291 | 0.3+ | 0.9+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 1.1− | 2003 01 04 | 291 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.1− | 1.1− | 2003 01 04 | 291 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2002 12 07 | 704 | 0.1+ | 0.3− | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.8+ | 1.3+ |
| 2002 12 07 | 704 | 0.3− | 0.1− | 2004 03 14 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2002 12 07 | 704 | 0.6− | 0.1+ | 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2002 12 07 | 704 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 12 07 | 704 | 1.2− | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.0 | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | (0.7+ | 1.8−) |
| 2002 12 11 | 704 | 0.5− | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.8+ | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 2002 12 14 | 291 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.9− |

**2002 XU$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.69740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24544994 | $\omega$ | 118.06321 | | +0.96527796 | −0.18684647 | |
| $a$ | 2.5263534 | $\Omega$ | 253.18803 | | +0.11636877 | +0.93324538 | |
| $e$ | 0.1735326 | $i$ | 10.99407 | | +0.23387340 | +0.30682481 | |
| $P$ | 4.02 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.8+ | 0.0 | 2002 12 10 | 704 | 1.2+ | 0.8+ | 2006 11 21 | 704 | 0.3− | 0.3− |
| 2002 11 06 | 704 | 0.6+ | 0.5+ | 2002 12 10 | 704 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2002 11 06 | 704 | 0.3+ | 0.9+ | 2002 12 11 | 333 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.6− | 0.4+ | 2002 12 11 | 333 | 0.5+ | 0.7− | 2006 11 21 | 704 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2002 12 11 | 333 | 0.1+ | 0.4− | 2006 11 30 | 691 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.8+ | 2003 01 04 | 704 | 0.0 | 0.0 | 2006 11 30 | 691 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2003 01 04 | 704 | 0.8− | 0.3+ | 2006 11 30 | 691 | 0.2+ | 0.2− |
| 2002 12 07 | 333 | 0.4+ | 0.1− | 2003 01 04 | 704 | 0.2− | 0.7− | 2006 12 01 | 704 | 0.5+ | 0.9+ |
| 2002 12 07 | 333 | 0.3+ | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.2+ | 1.4+ |
| 2002 12 07 | 333 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.2− |
| 2002 12 08 | 333 | 1.4− | 1.1− | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.5+ | 0.0 |
| 2002 12 08 | 333 | 0.8− | 0.1− | 2006 11 10 | 691 | (0.5+ | 2.2−) | 2006 12 01 | 691 | 0.1+ | 0.2− |
| 2002 12 08 | 333 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.3− |
| 2002 12 10 | 704 | (0.5− | 1.8+) | 2006 11 20 | 691 | 0.0 | 0.0 | | | | |
| 2002 12 10 | 704 | 1.1− | 0.7+ | 2006 11 20 | 691 | 1.0− | 0.1− | | | | |

**2002 XW$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.31435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23964640 | $\omega$ | 22.16527 | | −0.28316871 | −0.95674189 | |
| $a$ | 2.5669778 | $\Omega$ | 84.33472 | | +0.86955085 | −0.28549161 | |
| $e$ | 0.1430120 | $i$ | 3.84826 | | +0.40459461 | −0.05603114 | |
| $P$ | 4.11 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2002 12 11 | 704 | 0.3− | 0.9− | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.7− | 0.6+ | 2002 12 31 | 704 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 858 | 0.8+ | 0.1− | 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2002 12 06 | 858 | 0.8− | 0.1+ | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.5− |
| 2002 12 06 | 858 | 0.5− | 0.4− | 2003 01 08 | 704 | 0.5+ | 0.4− | 2006 11 18 | 704 | 0.7− | 0.8− |
| 2002 12 07 | 858 | 0.2+ | 0.4− | 2003 01 08 | 704 | 0.2+ | 0.4− | 2006 11 18 | 704 | 1.0− | 1.2− |
| 2002 12 07 | 858 | 0.6+ | 0.3− | 2003 01 08 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2002 12 07 | 704 | 0.8− | 0.4+ | 2004 05 09 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2002 12 07 | 333 | 0.7− | 0.2− | 2004 05 09 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2002 12 07 | 704 | 0.5+ | 0.5+ | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.7+ |
| 2002 12 07 | 704 | 0.5− | 1.0− | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.7− | 1.4+ |
| 2002 12 07 | 333 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2002 12 07 | 704 | 0.9+ | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2002 12 07 | 704 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 12 10 | 858 | 0.3+ | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2002 12 10 | 858 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2002 12 10 | 704 | 0.6− | 0.7− | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2002 12 10 | 704 | 0.8− | 0.4− | 2006 10 22 | G96 | 0.6− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.6+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.2− | 0.8+ | 2006 10 22 | G96 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2002 12 10 | 704 | 0.3− | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.3− | 0.1− |
| 2002 12 10 | 704 | 0.9+ | 0.6− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 1.5− | 0.2− |
| 2002 12 10 | 704 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.6+ | 0.4− |
| 2002 12 10 | 704 | 0.4− | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.7− | 0.0 |
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.5− | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2002 12 10 | 704 | 0.7+ | 0.7− | 2006 11 11 | 703 | 0.6+ | 0.3− | 2006 11 29 | 704 | 0.4− | 0.2− |
| 2002 12 10 | 704 | 1.3+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.4− | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.3− | 0.5− | 2006 11 29 | 704 | 0.7− | 0.2− |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.3− | 2006 12 01 | 691 | 0.9+ | 0.5+ |
| 2002 12 11 | 704 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.5− | 2006 12 01 | 691 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.6− | 2006 12 01 | 691 | 0.7− | 0.3+ |

**2002 XL$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.17271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26510464 | $\omega$ | 87.46918 | | −0.91093728 | −0.16446590 | |
| $a$ | 2.3998890 | $\Omega$ | 82.87229 | | −0.00618119 | −0.91155387 | |
| $e$ | 0.3140244 | $i$ | 22.41365 | | +0.41249857 | −0.37685610 | |
| $P$ | 3.72 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 644 | 0.2− | 0.5+ | 2003 01 04 | 704 | 0.1− | 0.1− | 2003 02 01 | 704 | 0.1+ | 0.1− |
| 2002 12 05 | 644 | 0.4+ | 0.3+ | 2003 01 04 | 704 | 0.1− | 0.0 | 2003 02 01 | 704 | 1.3− | 0.6− |
| 2002 12 05 | 644 | 0.1+ | 0.5+ | 2003 01 04 | 704 | 0.6+ | 0.4+ | 2003 02 04 | 704 | 0.1+ | 0.1− |
| 2002 12 07 | 704 | 0.3+ | 0.4+ | 2003 01 05 | 291 | 0.0 | 0.1+ | 2003 02 04 | 704 | 0.3− | 0.5− |
| 2002 12 07 | 704 | 0.4− | 0.5− | 2003 01 05 | 291 | 0.3− | 0.1+ | 2003 02 04 | 704 | 1.2+ | 1.0− |
| 2002 12 07 | 704 | 0.6+ | 0.3− | 2003 01 05 | 291 | 0.3− | 0.1+ | 2003 02 04 | 704 | 0.1+ | 0.1− |
| 2002 12 07 | 704 | 0.2+ | 0.2− | 2003 01 08 | 704 | 0.8+ | 0.2+ | 2003 02 04 | 704 | 0.1− | 0.1− |
| 2002 12 07 | 704 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 0.8+ | 0.3− | 2006 09 28 | G96 | 0.6+ | 0.0 |
| 2002 12 10 | 644 | 0.4+ | 1.0+ | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 2002 12 10 | 644 | 0.4+ | 1.0+ | 2003 01 08 | 704 | 0.8− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2002 12 10 | 644 | 0.4+ | 1.0+ | 2003 01 08 | 704 | 0.7+ | 0.4− | 2006 09 28 | G96 | 0.9− | 0.4− |
| 2002 12 11 | 704 | 1.0− | 1.0− | 2003 01 08 | 704 | 0.6− | 0.7+ | 2006 10 03 | G96 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 1.3− | 0.6− | 2003 01 08 | 704 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.4− | 0.6− | 2003 01 08 | 704 | 0.3− | 0.4+ | 2006 10 03 | G96 | 0.3− | 0.1− |
| 2002 12 11 | 704 | 0.9− | 1.4− | 2003 01 08 | 704 | 0.3− | 0.4− | 2006 10 03 | G96 | 0.2− | 0.0 |
| 2002 12 16 | 608 | 0.0 | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.6+ | 2006 11 06 | 644 | 0.3− | 0.2+ |
| 2002 12 16 | 608 | 0.7+ | 0.8− | 2003 01 08 | 608 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.4+ | 0.2+ |
| 2002 12 16 | 608 | 0.4+ | 0.7− | 2003 01 08 | 608 | 0.1− | 0.6+ | 2006 11 06 | 644 | 0.2+ | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.4+ | 2003 01 08 | 608 | 0.3+ | 0.2− | 2006 11 23 | 703 | (1.1− | 2.5+) |
| 2002 12 31 | 704 | 0.5+ | 0.0 | 2003 02 01 | 704 | 0.5+ | 0.1− | 2006 11 23 | 703 | 0.2+ | 0.7+ |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2003 02 01 | 704 | 0.9+ | 0.4+ | 2006 11 23 | 703 | 0.5+ | 0.7+ |
| 2003 01 04 | 704 | 0.0 | 0.2+ | 2003 02 01 | 704 | 0.0 | 0.7− | 2006 11 23 | 703 | 0.1− | 0.5− |

**2002 XD$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.26296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23246161 | $\omega$ | 68.56519 | | +0.96828066 | −0.19727141 | |
| $a$ | 2.6196015 | $\Omega$ | 302.51210 | | +0.10129191 | +0.87094883 | |
| $e$ | 0.2103628 | $i$ | 10.47760 | | +0.22841303 | +0.45003570 | |
| $P$ | 4.24 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.3− | 0.3− | 2002 12 07 | 704 | 0.8+ | 0.3+ | 2006 09 16 | 703 | 0.3+ | 0.3+ |
| 2002 10 30 | 704 | (1.7− | 0.4+) | 2002 12 07 | 704 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.9− | 0.2+ |
| 2002 10 30 | 704 | 0.1+ | 0.6+ | 2002 12 10 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.4+ |
| 2002 10 30 | 704 | 0.3− | 0.0 | 2002 12 10 | 704 | 0.2+ | 0.7+ | 2006 09 21 | 106 | 0.1− | 0.2− |
| 2002 11 04 | 644 | 0.2+ | 0.4+ | 2002 12 10 | 704 | 0.5− | 1.1+ | 2006 09 21 | 106 | 0.1+ | 0.5− |
| 2002 11 04 | 644 | 0.3+ | 0.4+ | 2002 12 10 | 704 | 0.3− | 0.7− | 2006 09 21 | 106 | 0.8+ | 0.4− |
| 2002 11 04 | 644 | 0.0 | 0.3+ | 2002 12 10 | 704 | 0.7− | 0.7− | 2006 09 22 | 106 | 0.4+ | 0.1+ |
| 2002 11 15 | 704 | 0.5+ | 0.6+ | 2002 12 11 | 704 | 1.0+ | 0.2− | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2002 11 15 | 704 | 0.4− | 0.3+ | 2002 12 11 | 704 | 0.5− | 0.2− | 2006 09 28 | 703 | 0.1− | 0.2+ |
| 2002 11 15 | 704 | 0.6+ | 0.5+ | 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.4− | 0.1− |
| 2002 11 15 | 704 | (1.8+ | 0.3+) | 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.5− |
| 2002 11 15 | 704 | 0.8+ | 0.8− | 2002 12 12 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2002 12 12 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 703 | 0.1− | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2002 12 12 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 1.1− | 0.8− | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 1.0− | 0.8− | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.6− | 0.5− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.1− |
| 2002 12 07 | 704 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.3+ | 0.2− |

**2002 XT$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.66737 | | (2000.0) | | | |
| $n$ | 0.23064830 | $\omega$ | 30.51642 | | +0.10029533 | −0.97248869 |
| $a$ | 2.6333133 | $\Omega$ | 54.53411 | | +0.85275589 | −0.02484937 |
| $e$ | 0.2138280 | $i$ | 14.96036 | | +0.51258974 | +0.23162095 |
| $P$ | 4.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 1.0− | 0.4+ | 2002 12 07 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.8+ | 0.5+ |
| 2002 11 12 | 704 | 0.0 | 0.5− | 2002 12 10 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.9− |
| 2002 11 12 | 704 | 0.2+ | 0.3+ | 2002 12 10 | 704 | 0.3− | 0.5− | 2006 10 16 | 703 | (0.2+ | 1.6−) |
| 2002 11 12 | 704 | 0.6− | 0.4− | 2002 12 10 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2002 12 06 | 704 | 0.7− | 0.6+ | 2002 12 15 | 704 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.4+ | 0.1− |
| 2002 12 06 | 704 | 0.0 | 0.1+ | 2002 12 15 | 704 | 1.1− | 0.5− | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 0.4+ | 0.1+ | 2002 12 15 | 704 | 0.4− | 1.0− | 2006 10 22 | 703 | 0.3+ | 0.6− |
| 2002 12 06 | 704 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 12 07 | 704 | 0.4+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2002 12 07 | 704 | 0.9+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 12 07 | 704 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.0 | 0.0 |
| 2002 12 07 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.1+ |
| 2002 12 07 | 704 | 0.7+ | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.7+ |
| 2002 12 07 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 11 16 | 703 | 0.4− | 0.3− |

**2002 XW$_{31}$ = 2006 RB$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.55399 | | (2000.0) | | | |
| $n$ | 0.22608304 | $\omega$ | 32.98064 | | +0.84615373 | −0.53293800 |
| $a$ | 2.6686445 | $\Omega$ | 359.22156 | | +0.47215393 | +0.75048975 |
| $e$ | 0.1532854 | $i$ | 4.10472 | | +0.24717307 | +0.39082250 |
| $P$ | 4.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 15 | 691 | 0.0 | 0.1+ | 2004 03 17 | 691 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 1993 10 15 | 691 | 0.0 | 0.1− | 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 1993 10 15 | 691 | 0.0 | 0.1+ | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 1993 10 15 | 691 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 1993 10 15 | 691 | 0.4− | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 1993 10 15 | 691 | 0.3− | 0.7+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 12 03 | 644 | 0.5− | 0.7+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.7− | 1.3− |
| 2002 12 03 | 644 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2002 12 03 | 644 | (1.1+ | 2.9+) | 2006 09 14 | 703 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.6+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.7− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.7− | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 12 06 | 704 | 1.1+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2002 12 06 | 704 | 0.8− | 1.0− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 0.3+ | 0.7− | 2006 09 15 | 691 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.4− | 0.3− |
| 2002 12 07 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 12 07 | 704 | 0.5− | 1.2− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.7− | 0.2− |
| 2002 12 07 | 704 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 12 10 | 704 | (1.6+ | 1.2−) | 2006 09 20 | 704 | 0.9+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2002 12 10 | 704 | 0.2− | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 12 10 | 704 | 1.0+ | 0.2+ | 2006 09 20 | 704 | 0.4− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2002 12 10 | 704 | 0.3− | 0.6− | 2006 09 20 | 704 | 0.7+ | 0.5− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.0 |
| 2002 12 10 | 704 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.6+ |
| 2002 12 10 | 704 | 0.2− | 0.9− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2002 12 10 | 704 | 0.7− | 0.2− | 2006 10 17 | 703 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 1.1+ |
| 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.7− | 0.2− | | | | |
| 2002 12 10 | 704 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.0 | | | | |

**2002 XG$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.16856 | | (2000.0) | | | |
| $n$ | 0.23251150 | $\omega$ | 150.49388 | | +0.46993471 | −0.85743766 |
| $a$ | 2.6192267 | $\Omega$ | 270.76301 | | +0.76321961 | +0.51403010 |
| $e$ | 0.2416527 | $i$ | 12.10418 | | +0.44346049 | +0.02395223 |
| $P$ | 4.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.6+ | 0.5+ | 2002 12 14 | 704 | 0.2+ | 0.7− | 2006 09 17 | 703 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.6+ | 0.3+ | 2002 12 14 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.2− | 0.0 |
| 2002 11 06 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 0.1+ | 0.2− | 2006 09 24 | 699 | 0.3+ | 1.2+ |
| 2002 11 15 | 704 | 0.5− | 0.4+ | 2002 12 31 | 704 | 0.5+ | 0.2− | 2006 09 24 | 699 | 0.4+ | 0.8+ |
| 2002 11 15 | 704 | 1.1− | 0.3+ | 2002 12 31 | 704 | 0.2− | 0.6+ | 2006 09 24 | 699 | 0.5+ | 0.1+ |
| 2002 11 15 | 704 | 1.0− | 0.2− | 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 09 24 | 699 | 0.4+ | 0.3− |
| 2002 11 15 | 704 | (2.0− | 0.9+) | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.3− |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2003 01 04 | 704 | 0.4− | 0.7− | 2006 09 28 | 703 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 0.4− | 0.4− | 2003 01 04 | 704 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.2− |
| 2002 12 06 | 704 | 0.5− | 0.6+ | 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.5+ |
| 2002 12 07 | 704 | 0.1− | 0.6− | 2003 01 08 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 2002 12 07 | 704 | 0.1− | 0.2− | 2003 01 08 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.3+ |
| 2002 12 07 | 704 | 0.2− | 0.0 | 2003 01 08 | 704 | 0.2− | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.6− |
| 2002 12 07 | 704 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2002 12 07 | 704 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.5− | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.7+ | 0.3+ | 2003 01 31 | 704 | 0.6− | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.6− |
| 2002 12 11 | 704 | 0.9+ | 0.2− | 2003 01 31 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 1.0+ | 0.0 | 2003 01 31 | 704 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.5− | 0.4− |
| 2002 12 11 | 704 | 0.5+ | 0.6− | 2003 01 31 | 704 | 0.6− | 1.2− | 2006 11 15 | 703 | 0.4+ | 0.0 |
| 2002 12 14 | 704 | 0.3− | 0.2− | 2003 01 31 | 704 | 1.1+ | 0.3+ | | | | |
| 2002 12 14 | 704 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.5− | 0.4+ | | | | |

**2002 XU$_{32}$ = 2000 GA$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.75343 | | (2000.0) | | | |
| $n$ | 0.22383333 | $\omega$ | 358.89034 | | +0.98490965 | −0.17257469 |
| $a$ | 2.6864961 | $\Omega$ | 11.07313 | | +0.15930783 | +0.87448089 |
| $e$ | 0.2373195 | $i$ | 3.90368 | | +0.06763139 | +0.45332234 |
| $P$ | 4.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.5+ | 0.1− | 2002 12 30 | 704 | 0.2+ | 1.0+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 1993 12 14 | 691 | 0.5− | 0.0 | 2002 12 30 | 704 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 1993 12 14 | 691 | 0.2+ | 0.1− | 2003 01 05 | 704 | 0.6+ | 0.6+ | 2006 09 27 | 691 | 0.3− | 0.2− |
| 2000 03 27 | 691 | 0.4+ | 0.3+ | 2003 01 05 | 704 | 0.3− | 1.4+ | 2006 09 27 | 704 | 0.2+ | 0.4+ |
| 2000 03 27 | 691 | 0.3+ | 0.3+ | 2003 01 05 | 704 | 0.3+ | 0.9+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2000 03 27 | 691 | 0.1+ | 0.3+ | 2003 01 05 | 704 | 0.8+ | 1.1+ | 2006 09 27 | 704 | 0.3+ | 0.3+ |
| 2000 03 27 | 691 | 0.0 | 0.3+ | 2003 01 05 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.3+ |
| 2000 03 27 | 691 | 0.1− | 0.1− | 2005 05 19 | 644 | 0.5+ | 0.1+ | 2006 09 28 | 704 | 0.3− | 0.2+ |
| 2000 03 27 | 691 | 0.1− | 0.3+ | 2005 05 19 | 644 | 0.6+ | 0.2− | 2006 09 28 | 704 | 0.2− | 0.6+ |
| 2000 04 05 | 691 | 0.1+ | 0.5+ | 2005 05 19 | 644 | 0.4+ | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.2+ |
| 2000 04 05 | 691 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.3+ |
| 2000 04 05 | 691 | 0.1+ | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 29 | A41 | 0.4+ | 0.3+ |
| 2000 04 05 | 704 | 1.4+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 29 | A41 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 29 | A41 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.9+ | 0.6+ | 2006 08 17 | 644 | 0.5+ | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 2000 04 08 | 691 | 0.0 | 0.3− | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.6+ | 0.2+ |
| 2000 04 08 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 1.3− | 1.4− | 2006 10 01 | 704 | 0.1− | 0.6+ |
| 2000 04 08 | 691 | 0.2− | 0.2+ | 2006 09 12 | 703 | (3.3− | 0.9+) | 2006 10 01 | 704 | 0.2+ | 0.5+ |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 09 12 | 703 | (2.4− | 0.7−) | 2006 10 01 | 704 | 0.5+ | 0.1+ |
| 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 09 12 | 703 | (1.7− | 0.7−) | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.0 | 1.4− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2002 12 07 | 704 | 0.4− | 0.4− | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 12 07 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.6+ | 0.9− | 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 12 07 | 704 | 0.6+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 2002 12 07 | 704 | 0.1− | 0.8− | 2006 09 17 | 704 | 0.3− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2002 12 07 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2002 12 07 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.5− |
| 2002 12 07 | 704 | 0.9+ | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 12 07 | 704 | 0.6+ | 0.9− | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 12 07 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.4− | 0.9− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 12 10 | 704 | 0.7− | 0.6− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.4− | 1.0− | 2006 09 20 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.5− | 0.2− | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | (1.3+ | 1.7−) | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2002 12 11 | 704 | (0.5+ | 2.1−) | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 12 11 | 704 | 0.8− | 0.6− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 23 | 704 | 1.5− | 0.4+ |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 23 | 704 | (0.5− | 1.6+) |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 23 | 704 | 0.2+ | 1.3+ |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 23 | 704 | 0.5− | 0.7− |
| 2002 12 14 | 704 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2002 12 14 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2002 12 14 | 704 | 0.5− | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2002 12 14 | 704 | 0.2− | 0.5+ | 2006 09 26 | 704 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1+ | 1.5+ |
| 2002 12 14 | 704 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.9− | 1.0+ |
| 2002 12 14 | 704 | 1.2− | 0.5− | 2006 09 27 | 691 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2002 12 14 | 704 | 0.1− | 0.7+ | 2006 09 27 | 704 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.9+ |
| 2002 12 30 | 704 | 0.1+ | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4− | 0.2+ |

### 2002 XD$_{33}$ = 2006 UJ$_{127}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 279.59524 | | (2000.0) | | −0.61335372 | −0.78980465 |
| $n$ | 0.23139549 | $\omega$ | 125.29886 | | −0.61335372 | −0.78980465 |
| $a$ | 2.6276415 | $\Omega$ | 2.53744 | | +0.70577599 | −0.54946517 |
| $e$ | 0.1622381 | $i$ | 3.12663 | | +0.35451017 | −0.27257411 |
| $P$ | 4.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.5− | 0.9+ | 2004 05 16 | 291 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2002 12 06 | 704 | 0.1− | 1.3+ | 2004 05 16 | 291 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.4− |
| 2002 12 06 | 704 | 0.2− | 0.7+ | 2004 05 16 | 291 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2002 12 07 | 704 | 0.8+ | 0.7− | 2004 05 16 | 291 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.3− | 0.6+ |
| 2002 12 07 | 704 | 0.4+ | 0.2+ | 2004 05 16 | 291 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2002 12 07 | 704 | 0.0 | 1.0+ | 2006 09 28 | G96 | 1.0+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 12 07 | 704 | 0.4+ | 0.4− | 2006 09 28 | G96 | 0.7+ | 0.4− | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2002 12 11 | 704 | 0.7− | 1.0− | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.4− | 0.5+ |
| 2002 12 11 | 704 | 0.6− | 0.7− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.4+ | 0.6− |
| 2002 12 11 | 704 | 0.1− | 1.1− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.6+ | 0.6− |
| 2004 05 16 | 291 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.5+ | 0.4+ |

### 2002 XM$_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.84141 | | (2000.0) | | +0.11826081 | −0.96533786 |
| $n$ | 0.23681549 | $\omega$ | 341.66799 | | +0.11826081 | −0.96533786 |
| $a$ | 2.5873945 | $\Omega$ | 101.03226 | | +0.93812980 | +0.03181638 |
| $e$ | 0.2041687 | $i$ | 13.71278 | | +0.32546406 | +0.25905700 |
| $P$ | 4.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 645 | 0.0 | 0.2+ | 2002 11 16 | 644 | 0.3− | 0.6+ | 2003 01 02 | 704 | 0.3+ | 0.8+ |
| 2000 05 10 | 645 | 0.1+ | 0.2+ | 2002 11 16 | 644 | 0.3− | 0.3− | 2003 01 02 | 704 | 0.1− | 0.3+ |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2002 11 16 | 644 | 0.2− | 0.1− | 2003 01 02 | 704 | 0.5+ | 1.0+ |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2002 11 30 | 704 | 0.9− | 1.0+ | 2003 02 02 | 644 | 0.0 | 0.1+ |
| 2002 09 15 | 699 | 1.4+ | 0.4+ | 2002 11 30 | 704 | (1.5− | 2.5+) | 2003 02 02 | 644 | 0.2+ | 0.0 |
| 2002 09 15 | 699 | 1.2+ | 1.1+ | 2002 11 30 | 704 | (2.5− | 1.4+) | 2003 02 02 | 644 | 0.2+ | 0.7+ |
| 2002 09 15 | 699 | 0.7− | 0.1− | 2002 12 07 | 644 | 0.1− | 0.6+ | 2004 04 20 | 704 | 0.6+ | 0.6+ |
| 2002 09 15 | 699 | 0.2+ | 1.3+ | 2002 12 07 | 644 | 0.1− | 0.7+ | 2004 04 20 | 704 | 1.4+ | 0.3+ |
| 2002 10 05 | 699 | (1.8+ | 0.8−) | 2002 12 07 | 644 | 0.3+ | 0.7+ | 2004 04 20 | 704 | (1.6+ | 0.7+) |
| 2002 10 05 | 699 | 0.9+ | 1.1+ | 2002 12 08 | 644 | 0.2+ | 0.2+ | 2004 04 20 | 704 | (2.4+ | 0.1+) |
| 2002 10 05 | 699 | (1.6+ | 0.7−) | 2002 12 08 | 644 | 0.3+ | 0.1+ | 2004 04 20 | 704 | 0.9+ | 0.7+ |
| 2002 10 05 | 699 | 0.1+ | 0.1− | 2002 12 08 | 644 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.9+ | 0.5+ |
| 2002 10 10 | 644 | 0.0 | 0.1− | 2002 12 22 | 608 | 0.1− | 0.8− | 2006 09 25 | 703 | 0.2− | 0.0 |
| 2002 10 10 | 644 | 0.1+ | 0.0 | 2002 12 22 | 608 | 0.2− | 0.5− | 2006 09 25 | 703 | 0.4− | 0.5+ |
| 2002 10 10 | 644 | 0.1− | 0.1− | 2002 12 22 | 608 | 0.3− | 0.4− | 2006 09 25 | 703 | 0.0 | 0.1− |
| 2002 10 30 | 704 | 0.6− | 0.5+ | 2002 12 30 | 608 | 0.1+ | 0.8− | 2006 10 25 | E12 | 0.5+ | 0.2+ |
| 2002 10 30 | 704 | 0.1+ | 0.5+ | 2002 12 30 | 608 | 0.1− | 0.9− | 2006 10 25 | E12 | 1.3− | 0.3+ |
| 2002 10 30 | 704 | 0.0 | 0.7− | 2002 12 30 | 608 | 0.2+ | 1.1− | 2006 10 25 | E12 | 0.6− | 1.0+ |
| 2002 10 30 | 704 | 0.2− | 0.3+ | 2002 12 31 | 608 | 0.1− | 0.5− | 2006 10 25 | E12 | 0.2+ | 0.4+ |
| 2002 10 30 | 704 | 0.2− | 1.0+ | 2002 12 31 | 608 | 0.1− | 0.5− | 2006 10 31 | 703 | 1.4+ | 0.1− |
| 2002 11 06 | 644 | (0.5+ | 1.5+) | 2002 12 31 | 608 | 0.2+ | 0.2− | 2006 10 31 | 703 | 1.0− | 1.5− |
| 2002 11 06 | 644 | (0.5+ | 1.6+) | 2003 01 02 | 704 | 0.3− | 0.0 | 2006 10 31 | 703 | 0.3− | 1.0− |
| 2002 11 06 | 644 | 0.5+ | 1.5+ | 2003 01 02 | 704 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 0.5− | 0.4− |

### 2002 XQ$_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.26591 | | (2000.0) | | +0.42189321 | −0.90276306 |
| $n$ | 0.23358454 | $\omega$ | 101.48008 | | +0.42189321 | −0.90276306 |
| $a$ | 2.6111991 | $\Omega$ | 323.20026 | | +0.76771880 | +0.40489342 |
| $e$ | 0.1745442 | $i$ | 8.04325 | | +0.48230069 | +0.14519016 |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.3+ | 0.8+ | 2002 11 25 | 644 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.7− | 0.6− | 2002 11 25 | 644 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 10 05 | 704 | 0.0 | 0.3+ | 2002 11 25 | 644 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2002 10 13 | 644 | 0.3+ | 0.2+ | 2002 12 06 | 704 | 0.4− | 0.3− | 2006 10 17 | 703 | 1.0+ | 0.2− |
| 2002 10 13 | 644 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2002 10 13 | 644 | 1.1− | 0.5+ | 2002 12 06 | 704 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2002 10 31 | 704 | 0.8+ | 0.8+ | 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 10 31 | 704 | 1.0+ | 0.9− | 2002 12 06 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 10 31 | 704 | 0.7+ | 0.1+ | 2002 12 09 | 699 | 0.3− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.1+ | 0.4+ | 2002 12 09 | 699 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 704 | (1.9+ | 0.0 ) | 2002 12 09 | 699 | 0.1− | 0.5− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.6− | 0.2− | 2002 12 09 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2002 11 07 | 704 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.5− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 11 07 | 704 | 0.1+ | 0.6− | 2006 09 28 | 703 | 1.2+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | 1.4+ | 1.0− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 11 15 | 704 | 0.3− | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 11 15 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 11 15 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 11 15 | 704 | 0.6+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | | | | |
| 2002 11 15 | 704 | 0.3− | 1.2− | 2006 10 12 | 644 | 0.2− | 0.1+ | | | | |

### 2002 XJ$_{36}$ = 2006 WH$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.08437 | | (2000.0) | | +0.84623487 | −0.50304490 |
| $n$ | 0.24115653 | $\omega$ | 321.14284 | | +0.84623487 | −0.50304490 |
| $a$ | 2.5562502 | $\Omega$ | 69.91750 | | +0.52350817 | +0.72370071 |
| $e$ | 0.0661941 | $i$ | 10.77535 | | +0.09912482 | +0.47244377 |
| $P$ | 4.09 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 26 | 291 | 0.4+ | 0.0 | 2002 12 11 | 333 | 0.4+ | 0.4− | 2006 11 20 | 704 | 0.8+ | 0.5− |
| 2002 11 26 | 291 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.3− | 0.3− | 2006 11 20 | 704 | 1.2+ | 0.0 |
| 2002 11 26 | 291 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2002 12 05 | 608 | 1.3+ | 1.2+ | 2006 10 23 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2002 12 05 | 608 | 0.9+ | 1.0+ | 2006 10 23 | G96 | 0.3− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 12 05 | 608 | 0.6+ | 0.6+ | 2006 11 02 | 703 | (1.8− | 0.4−) | 2006 11 23 | 691 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 08 | 333 | 0.2− | 0.5− | 2006 11 02 | 703 | 0.7+ | 0.3− | 2006 11 27 | 691 | 0.7+ | 0.4+ | | |
| 2002 12 08 | 333 | 0.3− | 0.3− | 2006 11 02 | 703 | 0.8− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1− | | |
| 2002 12 08 | 333 | 0.3− | 0.1− | 2006 11 02 | 703 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2− | | |
| 2002 12 10 | 704 | 0.5− | 0.7− | 2006 11 17 | 704 | 1.1+ | 0.9+ | 2006 11 27 | 703 | 0.6− | 0.5− | | |
| 2002 12 10 | 704 | 0.8− | 0.3+ | 2006 11 17 | 704 | 0.3− | 1.1+ | 2006 11 27 | 703 | 0.7− | 0.6− | | |
| 2002 12 10 | 704 | 0.5− | 0.2− | 2006 11 17 | 704 | (0.6− | 2.1+) | 2006 11 27 | 703 | 0.9− | 1.1− | | |
| 2002 12 10 | 704 | 1.4− | 0.5− | 2006 11 17 | 704 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.5− | | |
| 2002 12 10 | 704 | 0.7− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.5− | 0.1+ | | |
| 2002 12 11 | 333 | 0.4+ | 0.3− | 2006 11 19 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.4+ | | |
| 2002 12 11 | 333 | 0.2+ | 0.4− | 2006 11 19 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.4+ | | |

**2002 XV$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.51472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21458045 | $\omega$ | 103.86202 | | +0.83958438 | −0.52552099 | |
| $a$ | 2.7631806 | $\Omega$ | 288.00283 | | +0.42559548 | +0.79371369 | |
| $e$ | 0.0869646 | $i$ | 8.31718 | | +0.33758934 | +0.30634338 | |
| $P$ | 4.59 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 1.1− | 0.6+ | 2002 12 14 | 704 | 0.8+ | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.1− | | |
| 2002 11 12 | 704 | 1.3− | 0.4+ | 2002 12 14 | 704 | 0.7+ | 0.1+ | 2006 09 20 | 699 | 0.6+ | 0.7+ | | |
| 2002 11 12 | 704 | 0.8− | 0.2+ | 2002 12 14 | 704 | 1.2+ | 0.2+ | 2006 09 20 | 699 | 0.2+ | 0.7− | | |
| 2002 11 12 | 704 | 0.0 | 0.6+ | 2002 12 14 | 704 | 0.7+ | 0.7+ | 2006 09 22 | 703 | 0.6− | 0.4+ | | |
| 2002 11 12 | 704 | 0.0 | 0.4+ | 2003 01 05 | 704 | 0.2− | 0.3− | 2006 09 22 | 703 | 1.2− | 0.6− | | |
| 2002 12 06 | 704 | 0.3+ | 0.4− | 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 09 22 | 703 | 0.7− | 0.1+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.5− | 2003 01 05 | 704 | 0.5+ | 0.2− | 2006 09 22 | 703 | 1.1− | 1.2− | | |
| 2002 12 06 | 704 | 0.5+ | 0.2− | 2003 01 05 | 704 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.6+ | 0.0 | | |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2003 01 05 | 704 | 0.8+ | 0.7− | 2006 09 27 | 703 | 0.7− | 0.8+ | | |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2003 02 01 | 644 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.2+ | 0.5+ | | |
| 2002 12 09 | 644 | 0.5− | 0.3− | 2003 02 01 | 644 | 0.4− | 0.7+ | 2006 09 27 | 703 | 0.1+ | 0.6− | | |
| 2002 12 09 | 644 | 0.6− | 0.1− | 2003 02 01 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.6+ | | |
| 2002 12 09 | 644 | 0.4− | 0.3− | 2006 09 15 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 699 | (0.8− | 1.9−) | | |
| 2002 12 11 | 704 | 0.4− | 0.3+ | 2006 09 15 | 704 | 0.8− | 0.4− | 2006 09 29 | 699 | 1.0+ | 0.7+ | | |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 09 15 | 704 | 0.5+ | 0.0 | 2006 09 29 | 699 | 0.5+ | 0.3− | | |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 09 15 | 704 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.2− | | |
| 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 09 15 | 704 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1− | | |
| 2002 12 11 | 704 | 0.0 | 0.5− | 2006 09 20 | 699 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.0 | | |

**2002 XA$_{37}$ = 2006 VX$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.11099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22839787 | $\omega$ | 130.84895 | | +0.60673489 | −0.73810928 | |
| $a$ | 2.6505827 | $\Omega$ | 279.29325 | | +0.60920058 | +0.67022389 | |
| $e$ | 0.1859306 | $i$ | 17.39733 | | +0.51063435 | +0.07742502 | |
| $P$ | 4.32 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.9− | 0.3+ | 2002 12 31 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.4+ | 0.2− | | |
| 2002 12 06 | 704 | 0.5− | 0.4+ | 2002 12 31 | 704 | 0.5− | 0.4+ | 2003 01 08 | 704 | 0.3+ | 0.8+ | | |
| 2002 12 06 | 704 | 0.5− | 1.1+ | 2002 12 31 | 704 | 0.5− | 0.2+ | 2006 11 13 | 704 | 0.0 | 0.4− | | |
| 2002 12 07 | 704 | 0.5+ | 0.4+ | 2003 01 04 | 704 | 0.0 | 0.2− | 2006 11 13 | 704 | 0.2− | 0.3+ | | |
| 2002 12 07 | 704 | 0.5− | 0.5− | 2003 01 04 | 704 | 0.4+ | 0.3− | 2006 11 13 | 704 | 0.0 | 0.3− | | |
| 2002 12 07 | 704 | 0.7+ | 0.4− | 2003 01 04 | 704 | 0.1+ | 0.2− | 2006 11 13 | 704 | 0.2− | 0.0 | | |
| 2002 12 07 | 704 | 0.7+ | 0.7− | 2003 01 04 | 704 | 0.2− | 0.2− | 2006 11 20 | 703 | 0.0 | 0.2− | | |
| 2002 12 10 | 704 | 0.7+ | 0.0 | 2003 01 04 | 704 | 0.6− | 0.6− | 2006 11 20 | 703 | 0.2+ | 0.3+ | | |
| 2002 12 10 | 704 | 0.0 | 0.4− | 2003 01 08 | 704 | 0.7+ | 0.1− | 2006 11 20 | 703 | 0.0 | 0.3+ | | |
| 2002 12 10 | 704 | 0.0 | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.0 | 2006 11 20 | 703 | 0.1+ | 0.1− | | |
| 2002 12 31 | 704 | 0.5− | 0.1+ | 2003 01 08 | 704 | 0.5+ | 0.3+ | | | | | | |

**2002 XC$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.51090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21708917 | $\omega$ | 100.07800 | | +0.23898542 | −0.96550176 | |
| $a$ | 2.7418516 | $\Omega$ | 335.33795 | | +0.76526035 | +0.25282240 | |
| $e$ | 0.1774137 | $i$ | 14.34813 | | +0.59771445 | +0.06234730 | |
| $P$ | 4.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.5− | 0.2− | 2003 01 10 | 704 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2002 12 07 | 704 | 0.4+ | 0.5+ | 2003 01 10 | 704 | 0.2− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2002 12 07 | 704 | 0.8+ | 0.0 | 2003 01 10 | 704 | 0.9+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.3− | | |
| 2002 12 07 | 704 | 0.1− | 0.7+ | 2003 01 10 | 644 | 0.1− | 0.6− | 2006 10 12 | 644 | 0.3− | 0.1− | | |
| 2002 12 07 | 704 | 0.6− | 0.7+ | 2003 01 10 | 644 | 0.1+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 09 | 699 | 0.2− | 0.6− | 2003 01 10 | 644 | 0.2+ | 0.7− | 2006 10 22 | 644 | 1.3+ | 0.2− | | |
| 2002 12 09 | 699 | 0.1− | 1.0− | 2003 01 14 | 704 | 1.4− | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 12 09 | 699 | 0.0 | 0.4+ | 2003 01 14 | 704 | (1.6− | 0.6+) | 2006 10 22 | 644 | 0.3− | 0.2+ | | |
| 2002 12 09 | 699 | 0.2− | 0.0 | 2003 01 14 | 704 | (1.8− | 0.5+) | 2006 10 31 | 703 | (0.6− | 1.8−) | | |
| 2002 12 28 | 704 | 0.3+ | 0.1− | 2003 01 14 | 704 | (1.6− | 2.4+) | 2006 10 31 | 703 | 0.0 | 0.3+ | | |
| 2002 12 28 | 704 | 0.3− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 31 | 703 | 1.3− | 0.2− | | |
| 2002 12 28 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 10 31 | 703 | (1.1− | 1.6+) | | |
| 2002 12 28 | 704 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.0 | | | | | | |
| 2003 01 10 | 704 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | | | | | | |

**2002 XK$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.55766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22729529 | $\omega$ | 176.84454 | | +0.64427899 | −0.76455936 | |
| $a$ | 2.6591475 | $\Omega$ | 233.04291 | | +0.70116537 | +0.60031895 | |
| $e$ | 0.2069700 | $i$ | 1.34835 | | +0.30540416 | +0.23466174 | |
| $P$ | 4.34 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 333 | 0.4− | 0.1− | 2003 01 06 | 291 | 1.0− | 0.6− | 2006 09 28 | 691 | 0.1− | 0.1− | | |
| 2002 12 07 | 333 | 0.2+ | 0.3− | 2003 01 11 | 291 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.5− | | |
| 2002 12 07 | 333 | 0.2− | 0.3− | 2003 01 11 | 291 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.1+ | | |
| 2002 12 10 | 704 | 0.1− | 1.1+ | 2003 01 11 | 291 | 0.8+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.9+ | 0.1+ | 2006 09 15 | 691 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2002 12 10 | 704 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.3− | | |
| 2002 12 10 | 704 | 0.3+ | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 10 | 291 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.4− | | |
| 2002 12 10 | 291 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2002 12 10 | 291 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2002 12 11 | 333 | 0.3+ | 0.6− | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.5− | | |
| 2002 12 11 | 333 | 0.8− | 0.1+ | 2006 09 24 | 691 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | |
| 2002 12 11 | 333 | 0.2+ | 0.5− | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2003 01 06 | 291 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.5− | | |
| 2003 01 06 | 291 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.4− | | |

**2002 XQ$_{37}$ = 2006 TK$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.34564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23914545 | $\omega$ | 210.72631 | | +0.35670720 | −0.92010078 | |
| $a$ | 2.5705613 | $\Omega$ | 219.03640 | | +0.90083339 | +0.38464446 | |
| $e$ | 0.1612604 | $i$ | 14.88490 | | +0.24750592 | −0.07391339 | |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 1.0+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 14 | 704 | (0.2− | 2.5+) | | |
| 2002 12 01 | 704 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− | 2006 11 14 | 704 | (1.3+ | 1.8+) | | |
| 2002 12 01 | 704 | 0.6+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 14 | 704 | (0.9+ | 1.9+) | | |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1− | | |
| 2002 12 06 | 704 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.1− | 0.0 | | |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.0 | | |
| 2002 12 06 | 704 | 0.0 | 0.8+ | 2006 10 28 | 691 | 0.3+ | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2002 12 10 | 644 | 0.4− | 0.2− | 2006 11 02 | 703 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 12 10 | 644 | 0.2− | 0.3− | 2006 11 02 | 703 | 0.3− | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.1− | 0.3− | 2006 11 02 | 703 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.8− | 0.2+ |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.8− |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 704 | (1.1− | 1.5−) |
| 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.9− | 1.5− |
| 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 1.1− | 0.2+ |
| 2006 10 20 | 691 | 1.5+ | 1.1+ | 2006 11 11 | 644 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.9− |
| 2006 10 20 | 691 | 0.1− | 0.4− | 2006 11 11 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.6− | 1.0− |
| 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 11 | 644 | 0.2+ | 0.1+ | | | | |
| 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 14 | 704 | (1.2+ | 1.5+) | | | | |

### 2002 XR$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.36275 | | (2000.0) | | | |
| $n$ | 0.24134420 | $\omega$ | 333.25740 | | +0.32163604 | −0.91446595 |
| $a$ | 2.5549249 | $\Omega$ | 97.13810 | | +0.90699854 | +0.22309240 |
| $e$ | 0.2602214 | $i$ | 14.32864 | | +0.27185271 | +0.33761193 |
| $P$ | 4.08 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 699 | 1.4+ | 0.8− | 2002 12 08 | 644 | 0.2+ | 0.0 | 2006 10 04 | 703 | 0.3+ | 0.1+ |
| 1998 11 19 | 699 | 0.7− | 0.3+ | 2002 12 08 | 644 | 0.6− | 0.4− | 2006 10 21 | 703 | 0.8+ | 0.8− |
| 1998 11 19 | 699 | 0.5− | 1.0− | 2002 12 08 | 644 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.6− | 0.5− |
| 1998 12 16 | 699 | 0.6+ | 1.1− | 2002 12 10 | 644 | 0.3− | 1.0+ | 2006 10 21 | 703 | 0.1+ | 0.8− |
| 1998 12 16 | 699 | 0.5− | 0.7− | 2002 12 10 | 644 | 0.5+ | 1.1+ | 2006 10 21 | 703 | 0.7− | 0.4− |
| 1998 12 16 | 699 | 0.6+ | 0.7+ | 2002 12 10 | 644 | 0.2+ | 1.3+ | 2006 10 31 | 703 | 0.6− | 1.0− |
| 2002 10 10 | 644 | 0.6+ | 0.0 | 2002 12 13 | 644 | 0.0 | 0.0 | 2006 10 31 | 703 | 0.1− | 0.6− |
| 2002 10 10 | 644 | 0.3+ | 0.1+ | 2002 12 13 | 644 | 0.3− | 0.2+ | 2006 10 31 | 703 | 1.4+ | 0.8− |
| 2002 10 10 | 644 | 0.5+ | 0.4+ | 2002 12 13 | 644 | 0.4− | 0.4+ | 2006 10 31 | 703 | 0.9+ | 1.3− |
| 2002 11 06 | 644 | 0.1− | 0.1− | 2003 01 27 | 644 | 0.8− | 0.2− | 2006 11 18 | 703 | 0.7− | 0.3− |
| 2002 11 06 | 644 | 0.3− | 0.1+ | 2003 01 27 | 644 | 0.8− | 0.2− | 2006 11 18 | 703 | 0.1− | 0.1+ |
| 2002 11 06 | 644 | 0.4− | 0.1− | 2003 01 27 | 644 | 0.3+ | 0.3+ | 2006 11 18 | 703 | 0.3− | 0.3+ |
| 2002 11 16 | 644 | 1.3− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.2+ | 2006 11 18 | 703 | 0.7+ | 0.2− |
| 2002 11 16 | 644 | 0.5− | 0.1+ | 2006 09 25 | 703 | 0.5− | 0.3+ | 2006 11 24 | 703 | 2.3− | 1.1− |
| 2002 11 16 | 644 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.7+ | 0.4+ | 2006 11 24 | 703 | 0.9− | 1.1+ |
| 2002 11 30 | 704 | 1.4+ | 0.6− | 2006 09 25 | 703 | 0.7− | 0.7+ | 2006 11 24 | 703 | 1.6+ | 0.6+ |
| 2002 11 30 | 704 | (1.6+ | 1.6+) | 2006 10 04 | 703 | 0.2+ | 0.2+ | 2006 11 24 | 703 | 0.4+ | 2.2+ |
| 2002 11 30 | 704 | (1.6+ | 0.9−) | 2006 10 04 | 703 | 0.8+ | 0.6+ | | | | |
| 2002 11 30 | 704 | 0.3+ | 0.1+ | 2006 10 04 | 703 | 0.2− | 0.4+ | | | | |

### 2002 XT$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.26677 | | (2000.0) | | | |
| $n$ | 0.23997363 | $\omega$ | 295.86709 | | +0.80007456 | −0.31090530 |
| $a$ | 2.5646437 | $\Omega$ | 86.02591 | | +0.53432658 | +0.75811382 |
| $e$ | 0.3313729 | $i$ | 30.94967 | | −0.27271928 | +0.57323758 |
| $P$ | 4.11 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 08 | 608 | 0.6− | 0.5− | 2002 12 31 | 704 | 0.3+ | 0.9+ | 2006 10 23 | E12 | 0.1− | 0.5− |
| 2002 12 08 | 608 | 0.3− | 0.5− | 2002 12 31 | 704 | 0.4+ | 0.9+ | 2006 10 23 | E12 | 0.7+ | 0.3+ |
| 2002 12 08 | 608 | 0.4− | 0.1+ | 2003 01 04 | 704 | 0.2− | 0.4− | 2006 11 18 | 703 | 1.1+ | 0.3+ |
| 2002 12 10 | 644 | 0.3+ | 0.1− | 2003 01 04 | 704 | 0.2− | 0.2− | 2006 11 18 | 703 | 0.1− | 1.0− |
| 2002 12 10 | 644 | 0.4+ | 0.2+ | 2003 01 04 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 703 | 0.2+ | 0.7+ |
| 2002 12 10 | 644 | 0.5+ | 0.1− | 2003 01 04 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 703 | 0.1+ | 0.7+ |
| 2002 12 12 | 644 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.4+ |
| 2002 12 12 | 644 | 0.3− | 0.1− | 2003 01 10 | 291 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.5− | 0.2− |
| 2002 12 12 | 644 | 0.4− | 0.0 | 2003 01 10 | 291 | 0.1− | 0.2− | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2002 12 31 | 704 | 0.2+ | 0.2+ | 2003 01 10 | 291 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.7− | 1.1− |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 10 23 | E12 | 0.4+ | 0.5+ | | | | |
| 2002 12 31 | 704 | 0.2− | 0.8+ | 2006 10 23 | E12 | 0.5− | 0.0 | | | | |

### 2002 XF$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.28599 | | (2000.0) | | | |
| $n$ | 0.23286901 | $\omega$ | 104.74387 | | +0.76040859 | −0.49224898 |
| $a$ | 2.6165453 | $\Omega$ | 286.41054 | | +0.27900038 | +0.83664870 |
| $e$ | 0.2464623 | $i$ | 26.20791 | | +0.58646190 | +0.24022882 |
| $P$ | 4.23 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 21 | 644 | 0.0 | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.4+ | 2003 02 01 | 704 | 0.3+ | 1.8− |
| 2002 10 21 | 644 | 0.0 | 0.2+ | 2002 12 11 | 704 | 0.4− | 0.2− | 2003 02 01 | 704 | 0.3+ | 1.1− |
| 2002 10 21 | 644 | 0.2− | 0.0 | 2002 12 12 | 704 | 0.2+ | 0.2+ | 2003 02 01 | 704 | 0.2− | 0.5− |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2002 12 12 | 704 | 0.5+ | 0.0 | 2003 02 01 | 704 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 0.1− | 2002 12 12 | 704 | 0.6+ | 0.1− | 2003 02 03 | 704 | 0.9− | 1.1+ |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2002 12 12 | 704 | 0.2+ | 0.7+ | 2003 02 03 | 704 | 0.3− | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2002 12 15 | 704 | 0.1− | 0.4− | 2003 02 03 | 704 | 0.5+ | 0.5+ |
| 2002 12 06 | 704 | 0.4+ | 0.1− | 2002 12 15 | 704 | 0.1− | 0.8− | 2003 02 03 | 704 | 0.2− | 1.7+ |
| 2002 12 10 | 704 | 0.3+ | 0.4− | 2002 12 15 | 704 | 0.2− | 0.3− | 2006 11 11 | 704 | 0.7− | 0.0 |
| 2002 12 10 | 704 | 0.1+ | 0.4− | 2002 12 15 | 704 | 0.0 | 0.1− | 2006 11 11 | 704 | 0.7+ | 0.1− |
| 2002 12 10 | 704 | 0.1− | 0.0 | 2002 12 15 | 704 | 1.6− | 0.4− | 2006 11 11 | 704 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.4+ | 0.4− | 2002 12 29 | 704 | 0.5+ | 0.8+ | 2006 11 27 | 113 | 0.4+ | 0.6+ |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2002 12 29 | 704 | 0.1− | 0.6+ | 2006 11 27 | 113 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.5+ | 2002 12 29 | 704 | 0.2− | 0.6+ | | | | |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 02 01 | 704 | 1.3+ | 0.7− | | | | |

### 2002 XG$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.13768 | | (2000.0) | | | |
| $n$ | 0.24395920 | $\omega$ | 42.12852 | | +0.33109920 | −0.93830468 |
| $a$ | 2.5366346 | $\Omega$ | 28.95881 | | +0.80139786 | +0.22379858 |
| $e$ | 0.2023522 | $i$ | 11.89370 | | +0.49813130 | +0.26362572 |
| $P$ | 4.04 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 1.0+ | 1.1+ | 2002 12 06 | 704 | 0.4+ | 0.6+ | 2002 12 28 | 704 | 0.2+ | 0.5− |
| 2002 10 31 | 704 | 0.1− | 0.2+ | 2002 12 06 | 704 | 0.0 | 0.0 | 2002 12 28 | 704 | 0.2+ | 0.3− |
| 2002 10 31 | 704 | 0.7− | 0.6− | 2002 12 06 | 704 | 0.1− | 0.3− | 2003 01 14 | 704 | 0.8− | 0.3− |
| 2002 10 31 | 704 | 0.7− | 0.7− | 2002 12 10 | 704 | 0.9+ | 0.1+ | 2003 01 14 | 704 | 0.3− | 0.5− |
| 2002 11 06 | 704 | 0.4− | 0.8+ | 2002 12 10 | 704 | 0.9+ | 0.0 | 2003 01 14 | 704 | 0.4− | 0.5− |
| 2002 11 06 | 704 | 0.3− | 0.7+ | 2002 12 10 | 704 | 0.6+ | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 1.6− | 1.0+ | 2002 12 10 | 704 | 1.4+ | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.5− | 1.2+ | 2002 12 10 | 704 | 0.8+ | 0.5+ | 2004 04 24 | 691 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 1.3− | 1.3+ | 2002 12 28 | 704 | 0.2− | 0.5− | 2006 11 26 | 628 | 0.5+ | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2002 12 28 | 704 | 0.5− | 0.2− | 2006 11 26 | 628 | 0.4− | 1.0− |
| 2002 12 06 | 704 | 0.4+ | 0.1− | 2002 12 28 | 704 | 0.0 | 0.6− | | | | |

### 2002 XJ$_{38}$ = 2006 TV$_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.20788 | | (2000.0) | | | |
| $n$ | 0.23188558 | $\omega$ | 133.97840 | | +0.68643159 | −0.70386365 |
| $a$ | 2.6239379 | $\Omega$ | 271.71066 | | +0.60385463 | +0.69172200 |
| $e$ | 0.1838019 | $i$ | 10.53315 | | +0.40518052 | +0.16154457 |
| $P$ | 4.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 03 | 645 | 0.0 | 0.1+ | 2002 12 11 | 704 | 0.5− | 0.5− | 2006 09 28 | 703 | 0.1− | 0.0 |
| 2000 05 03 | 645 | 0.0 | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.9− | 2006 09 28 | 703 | 0.2− | 0.6+ |
| 2002 12 06 | 704 | 0.3− | 0.0 | 2002 12 11 | 704 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.2+ | 0.1− | 2002 12 11 | 704 | 0.7− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.1+ | 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2002 12 06 | 704 | 0.9− | 0.5− | 2002 12 14 | 704 | 1.4− | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.0 | 0.1+ | 2002 12 14 | 704 | 0.2− | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | 0.4+ | 0.8+ | 2002 12 14 | 704 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 12 10 | 704 | (1.8+ | 0.8+) | 2002 12 14 | 704 | 0.3+ | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.8+ | 0.3+ | 2002 12 14 | 704 | 0.7− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 1.3+ | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 1.4+ | 0.2+ | 2006 09 28 | 703 | 0.8− | 0.2+ | | | | |

**2002 XW$_{38}$ = 2006 TN$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.89311 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24227531 | $\omega$ | 79.16424 | | +0.99453901 | | +0.09295924 |
| $a$ | 2.5483746 | $\Omega$ | 275.48965 | | −0.10420180 | | +0.90990824 |
| $e$ | 0.2906840 | $i$ | 2.73179 | | +0.00584399 | | +0.40425928 |
| $P$ | 4.07 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.3− | 0.8+ | 2002 12 10 | 557 | 0.4+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 11 01 | 644 | 0.1− | 0.6+ | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2002 11 01 | 644 | 0.2− | 0.7+ | 2006 10 13 | 691 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2002 11 12 | 704 | 1.0+ | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | (1.6− | 0.4−) |
| 2002 11 12 | 704 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | (0.5+ | 3.7+) |
| 2002 11 12 | 704 | 0.9+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2002 11 12 | 704 | 0.6+ | 0.9+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2002 12 02 | 704 | 0.2+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2002 12 02 | 704 | 1.4− | 0.7+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 12 02 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2002 12 02 | 704 | (1.5+ | 0.8−) | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 704 | (0.3− | 1.5+) |
| 2002 12 09 | 291 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.8− | 0.0 |
| 2002 12 09 | 291 | 0.5+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2002 12 09 | 291 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.5− | 1.4+ |
| 2002 12 09 | 557 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2002 12 09 | 557 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.5+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2002 12 09 | 557 | 0.0 | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2002 12 10 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 1.0− | 0.8+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.2+ | 0.3− | 2006 10 29 | 704 | 0.2− | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2002 12 10 | 704 | 0.1+ | 0.5− | 2006 10 29 | 704 | 0.8− | 0.5+ | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2002 12 10 | 704 | 0.6+ | 0.4+ | 2006 10 29 | 704 | 0.8+ | 0.7+ | 2006 11 19 | 704 | 0.6+ | 0.8+ |
| 2002 12 10 | 704 | 0.8− | 0.6− | 2006 10 29 | 704 | 0.8+ | 1.1+ | 2006 11 19 | 704 | 0.8+ | 0.7+ |
| 2002 12 10 | 704 | 0.6+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.6+ |
| 2002 12 10 | 704 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 22 | 704 | 1.0− | 0.7+ |
| 2002 12 10 | 704 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 1.1+ |
| 2002 12 10 | 704 | 0.5+ | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.7− | 0.7− |
| 2002 12 10 | 291 | 0.7− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.8+ | 0.6− |
| 2002 12 10 | 291 | 0.9− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | (2.0− | 1.0+) |
| 2002 12 10 | 291 | (0.3− | 1.6−) | 2006 11 08 | 644 | 0.0 | 0.1+ | | | | |
| 2002 12 10 | 557 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1− | | | | |

**2002 XH$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.81623 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26581936 | $\omega$ | 150.09893 | | +0.68349476 | | −0.72517963 |
| $a$ | 2.3955853 | $\Omega$ | 256.64357 | | +0.65158359 | | +0.65760005 |
| $e$ | 0.1895048 | $i$ | 4.91517 | | +0.32904975 | | +0.20414868 |
| $P$ | 3.71 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.4− | 0.5− | 2002 12 09 | 291 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2002 11 14 | 704 | 0.3− | 0.6− | 2002 12 11 | 333 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.4+ | 1.1− |
| 2002 11 14 | 704 | 1.5+ | 1.9+ | 2002 12 11 | 333 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.7− | 0.3− |
| 2002 12 05 | 704 | 0.7− | 0.5+ | 2002 12 11 | 333 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.5− | 0.6− |
| 2002 12 05 | 704 | 0.1− | 0.5− | 2002 12 31 | 704 | 1.3− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 1.0− | 0.7+ | 2002 12 31 | 704 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.6− | 0.4+ | 2002 12 31 | 704 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2002 12 05 | 704 | 0.5− | 0.3− | 2003 01 29 | 291 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2002 12 09 | 291 | 0.2− | 0.2− | 2003 01 29 | 291 | 0.7− | 0.3+ | | | | |
| 2002 12 09 | 291 | 0.1+ | 0.1− | 2003 01 29 | 291 | 0.6+ | 0.4+ | | | | |

**2002 XJ$_{39}$ = 2006 UB$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.49817 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23080247 | $\omega$ | 79.02251 | | −0.61338747 | | −0.78743436 |
| $a$ | 2.6321405 | $\Omega$ | 48.98758 | | +0.68946960 | | −0.57146754 |
| $e$ | 0.2412967 | $i$ | 4.62561 | | +0.38521096 | | −0.23102374 |
| $P$ | 4.27 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.0 | 0.3+ | 2002 12 11 | 704 | 0.0 | 0.8− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 0.1− | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.6− | 2006 10 28 | 691 | 0.4+ | 0.1+ |
| 2002 12 06 | 704 | 0.2+ | 0.7+ | 2002 12 31 | 704 | 0.8− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.6+ | 0.7+ | 2002 12 31 | 704 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.9+ | 0.3− | 2002 12 31 | 704 | 0.2+ | 0.9+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2002 12 09 | 333 | 0.0 | 0.5− | 2002 12 31 | 704 | 1.1+ | 0.7− | 2006 11 14 | G96 | 0.5+ | 0.6− |
| 2002 12 09 | 333 | 0.3− | 0.9− | 2002 12 31 | 704 | 0.5− | 0.8+ | 2006 11 14 | G96 | 0.3+ | 0.9− |
| 2002 12 09 | 333 | 0.5+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 333 | 0.6− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 333 | 0.7− | 1.3+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2002 12 11 | 333 | 0.3− | 0.5− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.4+ | 0.3+ |
| 2002 12 11 | 333 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.7+ | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2002 12 11 | 333 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2002 12 11 | 333 | 0.8− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.7+ | 2006 10 28 | 691 | 0.3− | 0.1+ | | | | |

**2002 XQ$_{41}$ = 2006 VY$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.00975 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24211212 | $\omega$ | 90.27701 | | +0.97681873 | | −0.20351269 |
| $a$ | 2.5495197 | $\Omega$ | 281.46608 | | +0.15936401 | | +0.89841151 |
| $e$ | 0.2531379 | $i$ | 3.88436 | | +0.14292752 | | +0.38915209 |
| $P$ | 4.07 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.2+ | 0.8+ | 2006 11 16 | 704 | (0.3+ | 1.7−) | 2006 11 23 | 703 | 0.2− | 0.5− |
| 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.7+ | 0.3− | 2006 11 23 | 703 | 0.4+ | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.4+ | 2006 11 23 | 703 | 0.5− | 0.3− |
| 2002 12 10 | 704 | 0.8+ | 1.2+ | 2006 11 19 | 704 | 0.2− | 0.3+ | 2006 11 24 | 703 | 0.1+ | 0.9− |
| 2002 12 10 | 704 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.6+ | 2006 11 24 | 703 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 1.0+ | 1.1− | 2006 11 19 | 704 | 0.7− | 0.2+ | 2006 11 24 | 703 | 0.4− | 0.2+ |
| 2002 12 11 | 704 | 0.5− | 0.0 | 2006 11 19 | 704 | 1.1− | 0.8− | 2006 11 24 | 703 | 0.2+ | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.6− | 2006 11 22 | 704 | 0.4+ | 0.2+ | 2006 11 28 | 704 | 0.6+ | 1.0+ |
| 2002 12 11 | 704 | 0.8− | 0.7− | 2006 11 22 | 704 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.4− | 0.3+ |
| 2006 11 13 | 691 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.5− |
| 2006 11 13 | 691 | 0.2− | 0.7+ | 2006 11 22 | 704 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.6+ | 0.6+ |
| 2006 11 13 | 691 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.1+ | | | | |
| 2006 11 16 | 704 | 0.3+ | 0.6− | 2006 11 23 | 703 | 0.3− | 0.1− | | | | |

**2002 XT$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.10631 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29016558 | $\omega$ | 312.61775 | | +0.99506288 | | +0.00420845 |
| $a$ | 2.2596376 | $\Omega$ | 47.40140 | | +0.04390206 | | +0.87736906 |
| $e$ | 0.2466441 | $i$ | 7.74149 | | −0.08900830 | | +0.47979769 |
| $P$ | 3.40 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.4− | 0.9+ | 2002 12 11 | 704 | 0.8+ | 0.1+ | 2005 08 13 | E12 | 0.0 | 0.4+ |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.6− | 0.8− | 2005 08 24 | E12 | 0.1− | 0.3− |
| 2002 12 06 | 704 | 0.1− | 0.5+ | 2005 07 10 | E12 | 0.0 | 0.3− | 2005 08 24 | E12 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.0 | 1.0+ | 2005 07 10 | E12 | 0.4+ | 0.0 | 2005 08 24 | E12 | 0.4− | 0.3− |
| 2002 12 06 | 704 | 0.8− | 0.8+ | 2005 07 10 | E12 | 0.2− | 0.0 | 2005 08 24 | E12 | 0.7− | 0.9+ |
| 2002 12 10 | 704 | 0.0 | 0.6− | 2005 07 10 | E12 | 0.1− | 0.2+ | 2005 09 05 | E12 | 0.9+ | 0.4+ |
| 2002 12 10 | 704 | 1.2+ | 0.1− | 2005 08 13 | E12 | 0.7− | 0.2+ | 2005 09 05 | E12 | 0.7+ | 2.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.4− | 0.5+ | 2005 08 13 | E12 | 0.3− | 0.5+ | 2005 09 05 | E12 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.1− | 0.9− | 2005 08 13 | E12 | 0.0 | 0.2+ | 2005 09 05 | E12 | 0.2+ | 0.3− |
| 2002 12 11 | 704 | 0.5+ | 0.9− | 2005 08 13 | E12 | 0.1+ | 0.7+ | | | | |

**2002 XO$_{42}$ = 2006 QN$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.12341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23559598 | $\omega$ | 53.70034 | | +0.97321818 | −0.22555852 | |
| $a$ | 2.5963155 | $\Omega$ | 319.28276 | | +0.18301531 | +0.87705241 | |
| $e$ | 0.3553965 | $i$ | 3.90118 | | +0.13911061 | +0.42414906 | |
| $P$ | 4.18 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 599 | 0.1+ | 0.1− | 2006 08 30 | 704 | 1.3+ | 0.6+ | 2006 09 27 | 699 | 0.2+ | 0.3− |
| 2002 11 28 | 599 | 1.0− | 0.4− | 2006 08 30 | 704 | 0.2+ | 0.5− | 2006 09 27 | 699 | 0.2− | 0.1+ |
| 2002 11 28 | 599 | 0.6− | 0.9− | 2006 08 30 | 704 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2002 12 07 | 704 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.8− | 2006 10 02 | G96 | 0.2+ | 0.4− |
| 2002 12 07 | 704 | 0.3+ | 0.4− | 2006 08 30 | 704 | 1.0+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2002 12 07 | 704 | 0.3− | 0.2+ | 2006 09 16 | 644 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2002 12 07 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 644 | 0.4− | 0.2− | 2006 10 03 | 704 | 0.2+ | 0.0 |
| 2002 12 07 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 644 | 0.2− | 0.1− | 2006 10 03 | 704 | 0.1− | 0.4+ |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 1.1− | 0.5− | 2006 10 03 | 704 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 703 | (0.5+ | 3.3+) | 2006 10 03 | 704 | 0.2+ | 0.0 |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.4+ | 2006 10 03 | 704 | 0.7− | 0.0 |
| 2002 12 10 | 704 | 0.0 | 0.5+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2002 12 10 | 704 | 0.7− | 0.5− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.5− | 1.0− | 2006 09 18 | 704 | (1.6+ | 0.1+) | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 09 18 | 704 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.2+ | 0.8− | 2006 09 18 | 704 | 0.1− | 0.7+ | 2006 11 16 | 704 | (1.7− | 0.7−) |
| 2002 12 14 | 704 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.5− | 0.5− |
| 2002 12 14 | 704 | 0.8+ | 0.9− | 2006 09 19 | 699 | 0.7− | 0.1− | 2006 11 16 | 704 | 0.2+ | 1.0+ |
| 2002 12 14 | 704 | 0.3− | 1.2− | 2006 09 19 | 699 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.7+ |
| 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.4− | 0.3+ |
| 2003 01 05 | 704 | 0.0 | 1.0+ | 2006 09 21 | 704 | 1.0− | 1.1+ | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2003 01 05 | 704 | 0.9+ | 0.4+ | 2006 09 21 | 704 | 0.5+ | 0.4− | 2006 11 19 | 704 | (0.9+ | 3.5+) |
| 2003 01 05 | 704 | 0.3− | 0.0 | 2006 09 21 | 704 | 0.8− | 0.2+ | 2006 11 19 | 704 | 1.0+ | 0.5+ |
| 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 09 25 | 704 | 1.4+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 2006 07 22 | G96 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.5− | 0.5− |
| 2006 07 22 | G96 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.9+ | 0.1− | 2006 11 22 | 704 | 0.4− | 1.3+ |
| 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 1.1− | 0.5− |
| 2006 08 26 | 704 | 0.6+ | 0.8− | 2006 09 25 | 704 | 0.5+ | 0.8+ | 2006 11 22 | 704 | 0.6− | 0.8− |
| 2006 08 26 | 704 | 1.0+ | 0.5− | 2006 09 27 | 699 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2006 08 26 | 704 | 0.7+ | 0.5− | 2006 09 27 | 699 | 0.1+ | 0.3− | | | | |

**2002 XS$_{42}$ = 2000 GG$_{169}$ = 2006 SN$_{344}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.95842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22938592 | $\omega$ | 124.11507 | | +0.98293208 | −0.17989775 | |
| $a$ | 2.6429658 | $\Omega$ | 246.27518 | | +0.15189456 | +0.91163346 | |
| $e$ | 0.1059533 | $i$ | 2.40947 | | +0.10379095 | +0.36954192 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 11 | 691 | 0.3+ | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.6− | 0.2+ |
| 2000 04 11 | 691 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.2− | 0.2− |
| 2000 04 11 | 691 | 0.5− | 0.3+ | 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.6+ |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.8− | 0.0 |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.4− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 1.3− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2002 12 05 | 704 | (2.8+ | 2.3+) | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.4− | 0.4+ |
| 2002 12 08 | 291 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2002 12 08 | 291 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 1.0+ |
| 2002 12 08 | 291 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2002 12 10 | 704 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.3+ | 0.3− |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2002 12 10 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.5+ | 0.1− | 2006 11 17 | 703 | 1.3+ | 0.7+ |
| 2002 12 10 | 704 | 0.4− | 0.6− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.0+ | 1.0+ |
| 2002 12 10 | 704 | 0.5+ | 0.6− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | (1.6+ | 0.8+) |
| 2002 12 10 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.7+ | 1.1+ |
| 2002 12 10 | 704 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 12 10 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.4+ | 0.1− |

**2002 XH$_{43}$ = 2006 UV$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.84664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24082011 | $\omega$ | 145.51312 | | +0.92043507 | −0.35175067 | |
| $a$ | 2.5586304 | $\Omega$ | 235.97831 | | +0.29601461 | +0.91208962 | |
| $e$ | 0.2617048 | $i$ | 11.87133 | | +0.25529324 | +0.21062761 | |
| $P$ | 4.09 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.8− | 1.0+ |
| 2002 12 05 | 644 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 12 10 | 644 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2002 12 10 | 644 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2002 12 10 | 644 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.3− | 2006 11 21 | 691 | (2.1− | 2.3+) |
| 2002 12 12 | 644 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 11 21 | 691 | 0.3+ | 0.2+ |
| 2002 12 12 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2002 12 13 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.0+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 1.3+ |
| 2002 12 13 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2002 12 13 | 644 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2006 09 18 | 703 | 0.4− | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.4− | 1.4− |
| 2006 09 18 | 703 | 0.8− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.1− |
| 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.3+ | 0.7− |
| 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.2− | 1.0+ | 2006 11 27 | 703 | 0.3+ | 0.3− |
| 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.8+ | 2006 11 29 | 704 | 1.8− | 1.2− |
| 2006 10 31 | 691 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.7− |
| 2006 10 31 | 691 | 0.4+ | 0.7+ | 2006 11 18 | 704 | 0.1+ | 0.6+ | 2006 11 29 | 704 | 0.6+ | 0.3+ |
| 2006 10 31 | 691 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.2− | 0.5+ | | | | |
| 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 1.1− | 1.0+ | | | | |

**2002 XV$_{43}$ = 2006 UK$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.41387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23725056 | $\omega$ | 17.91365 | | +0.90206582 | −0.43151630 | |
| $a$ | 2.5842303 | $\Omega$ | 7.66626 | | +0.38785853 | +0.80193258 | |
| $e$ | 0.2582547 | $i$ | 3.61968 | | +0.18932252 | +0.41315592 | |
| $P$ | 4.15 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.5− | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 0.9− | 0.3+ | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.5− |
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.7+ | 0.2− | 2006 10 19 | 691 | 0.7− | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.2+ | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2002 12 10 | 644 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.8− | 0.7+ | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2002 12 10 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 13 | 691 | 0.4+ | 0.1− |
| 2002 12 11 | 704 | 0.5− | 0.6− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2002 12 11 | 704 | 0.8+ | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.5− |
| 2006 09 27 | G96 | 0.6+ | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.0 | 0.3+ | |
| 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 10 29 | 704 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.5+ | |
| 2006 09 27 | G96 | 0.8+ | 0.2− | 2006 10 29 | 704 | 0.8− | 0.4− | 2006 11 19 | 704 | (1.1+ | 3.0+) | |
| 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.3− | 0.7− | | | | | |
| 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.2− | | | | | |

**2002 XW$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.98828 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24540737 | $\omega$ | 98.06922 | | +0.82481781 | −0.55981135 | |
| $a$ | 2.5266455 | $\Omega$ | 296.00755 | | +0.47776920 | +0.76508518 | |
| $e$ | 0.2118075 | $i$ | 5.06141 | | +0.30234446 | +0.31820736 | |
| $P$ | 4.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3− | 1.2+ | 2002 12 14 | 704 | 0.3+ | 0.8+ | 2006 11 16 | 704 | 0.5+ | 0.4+ | |
| 2002 10 04 | 704 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.1− | 0.0 | 2006 11 17 | 691 | 1.0+ | 0.1+ | |
| 2002 10 04 | 704 | 1.0+ | 0.9+ | 2003 01 05 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.1− | |
| 2002 10 04 | 704 | 0.3− | 0.2+ | 2003 01 05 | 704 | 1.2+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.0 | |
| 2002 11 12 | 704 | 1.1− | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.7+ | 2006 11 19 | 704 | 0.6− | 0.5+ | |
| 2002 11 12 | 704 | 0.5− | 0.2− | 2006 11 13 | 691 | 0.1+ | 1.1− | 2006 11 19 | 704 | 0.3− | 0.7+ | |
| 2002 11 12 | 704 | 0.3− | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.8− | 0.1− | |
| 2002 11 12 | 704 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.5+ | |
| 2002 11 12 | 704 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.2+ | |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.7− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.8+ | |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.7− | 0.6+ | |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2006 11 14 | 703 | 1.0− | 0.6− | 2006 11 22 | 704 | 0.5− | 0.5+ | |
| 2002 12 06 | 704 | 0.5+ | 0.3− | 2006 11 15 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.8− | 0.6+ | |
| 2002 12 06 | 704 | 1.5+ | 0.2+ | 2006 11 15 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.7− | 0.3+ | |
| 2002 12 10 | 644 | 0.6− | 0.2− | 2006 11 15 | 704 | 0.5+ | 0.5+ | 2006 11 25 | 691 | 0.2− | 0.2− | |
| 2002 12 10 | 644 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.2− | 1.0+ | 2006 11 25 | 691 | 0.2− | 0.3− | |
| 2002 12 10 | 644 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.2+ | 0.7− | 2006 11 25 | 691 | 0.1− | 0.3− | |
| 2002 12 11 | 704 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.7+ | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.7− | |
| 2002 12 11 | 704 | 0.4− | 0.2+ | 2006 11 15 | 704 | 0.5− | 0.9+ | 2006 11 27 | 704 | 0.0 | 0.5− | |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.1+ | 0.5+ | 2006 11 27 | 704 | 0.3− | 0.3− | |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.4+ | |
| 2002 12 14 | 704 | (1.7+ | 0.0 ) | 2006 11 16 | 704 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.2− | |
| 2002 12 14 | 704 | 1.0− | 1.1+ | 2006 11 16 | 704 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.3− | |
| 2002 12 14 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 1.0− | |
| 2002 12 14 | 704 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.6− | |

**2002 XE$_{44}$ = 2006 SL$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.90538 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21181052 | $\omega$ | 336.87875 | | +0.82949143 | −0.54932146 | |
| $a$ | 2.7872186 | $\Omega$ | 56.82783 | | +0.52942362 | +0.71575657 | |
| $e$ | 0.0737764 | $i$ | 6.92667 | | +0.17791738 | +0.43120584 | |
| $P$ | 4.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 599 | 0.5+ | 1.0− | 2006 09 18 | 703 | 1.0+ | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | |
| 2002 11 28 | 599 | 0.4+ | 0.8− | 2006 09 18 | 703 | 0.3+ | 1.0− | 2006 10 09 | 644 | 0.1− | 0.0 | |
| 2002 11 28 | 599 | (1.6+ | 0.8−) | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.4− | 0.2+ | |
| 2002 12 06 | 704 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.8+ | 1.5+ | |
| 2002 12 06 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.7− | 0.5+ | 2006 10 19 | 644 | 0.4− | 0.8+ | |
| 2002 12 06 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 699 | 0.3+ | 0.7+ | 2006 10 19 | 703 | 0.6+ | 1.1+ | |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.3− | 0.9+ | 2006 10 19 | 703 | 0.0 | 0.4− | |
| 2002 12 06 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 1.5− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1+ | |
| 2002 12 10 | 644 | 0.4− | 0.4− | 2006 09 25 | 703 | 1.1− | 0.1+ | 2006 10 19 | 703 | (2.0+ | 0.0 ) | |
| 2002 12 10 | 644 | 0.2− | 0.3− | 2006 09 25 | 703 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.3− | |
| 2002 12 10 | 644 | 0.1− | 0.3− | 2006 09 25 | 703 | 0.9− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2002 12 11 | 704 | 0.5− | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.6− | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2002 12 11 | 704 | 0.8− | 0.3+ | 2006 10 02 | 703 | 1.3+ | 0.5− | 2006 10 22 | 644 | 0.4+ | 0.2− | |
| 2002 12 11 | 704 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.5+ | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.0 | |
| 2002 12 11 | 704 | 0.0 | 0.9+ | 2006 10 02 | 703 | 0.1+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.2− | |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.3+ | 0.4− | 2006 10 23 | 644 | 0.1− | 0.0 | |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.3+ | 0.9− | 2006 10 23 | 644 | 0.2− | 0.0 | |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1− | |
| 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.3− | 2006 10 24 | 644 | 0.0 | 0.0 | |
| 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.8− | 0.2− | 2006 10 24 | 644 | 0.2+ | 0.3+ | |
| 2006 08 17 | 644 | 0.0 | 0.5+ | 2006 10 09 | 644 | 0.4+ | 0.1− | 2006 10 24 | 644 | 0.4+ | 0.2+ | |

**2002 XK$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.06064 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24297038 | $\omega$ | 85.85113 | | +0.38751458 | −0.92151019 | |
| $a$ | 2.5435122 | $\Omega$ | 341.28589 | | +0.81109530 | +0.35397958 | |
| $e$ | 0.1884442 | $i$ | 4.56262 | | +0.43812881 | +0.15974175 | |
| $P$ | 4.06 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.2− | 0.1− | 2002 12 15 | 704 | (2.1+ | 1.4−) | 2006 11 19 | 704 | 0.7− | 0.7− | |
| 2001 07 19 | 644 | 0.1− | 0.2− | 2002 12 15 | 704 | 0.2− | 1.1− | 2006 11 19 | 704 | 1.0− | 0.2− | |
| 2001 07 19 | 644 | 0.4+ | 0.2+ | 2003 01 05 | 704 | 0.4− | 1.0+ | 2006 11 19 | 704 | 0.6− | 0.0 | |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2003 01 05 | 704 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.1+ | 0.1− | |
| 2002 12 06 | 704 | 1.0+ | 0.2− | 2003 01 05 | 704 | 0.7− | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.2− | |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.0 | 0.1− | |
| 2002 12 10 | 644 | 0.2− | 0.5+ | 2006 11 13 | 691 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.1− | 0.7+ | |
| 2002 12 10 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.3− | 1.4+ | |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 704 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.9+ | 0.6+ | |
| 2002 12 13 | 704 | 0.8+ | 0.7− | 2006 11 15 | 704 | 0.7− | 0.0 | 2006 11 22 | 704 | 0.8+ | 1.0+ | |
| 2002 12 13 | 704 | 0.5− | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.7+ | |
| 2002 12 13 | 704 | 0.1+ | 0.7+ | 2006 11 15 | 704 | 0.2+ | 0.6+ | 2006 11 25 | 691 | 0.1− | 0.1− | |
| 2002 12 13 | 704 | 0.5− | 0.6− | 2006 11 16 | 704 | 0.0 | 0.8+ | 2006 11 25 | 691 | 0.3+ | 0.2− | |
| 2002 12 15 | 704 | (1.2+ | 1.9−) | 2006 11 16 | 704 | 0.3− | 0.7+ | 2006 11 25 | 691 | 0.0 | 0.2− | |
| 2002 12 15 | 704 | 0.3+ | 1.4− | 2006 11 16 | 704 | 0.5− | 0.7+ | | | | | |
| 2002 12 15 | 704 | 0.3− | 0.5− | 2006 11 16 | 704 | 1.0+ | 0.7+ | | | | | |

**2002 XA$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.09579 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23031326 | $\omega$ | 355.66024 | | −0.12261799 | −0.96009471 | |
| $a$ | 2.6358665 | $\Omega$ | 101.23991 | | +0.91809883 | −0.20591947 | |
| $e$ | 0.1985776 | $i$ | 14.84931 | | +0.37690764 | +0.18924938 | |
| $P$ | 4.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 0.4− | 1.4− | 2002 11 30 | 704 | 0.9− | 0.3+ | 2003 01 05 | 704 | 0.3− | 0.7− | |
| 1998 12 15 | 704 | 0.6− | 2.2− | 2002 12 08 | 644 | 0.0 | 0.0 | 2003 01 05 | 704 | 0.8− | 0.4+ | |
| 1998 12 15 | 704 | 0.8+ | 0.2− | 2002 12 08 | 644 | 0.0 | 0.2+ | 2003 01 05 | 704 | 0.2+ | 0.1− | |
| 1998 12 15 | 704 | 1.3+ | 0.2− | 2002 12 08 | 644 | 0.0 | 0.3+ | 2003 01 10 | 608 | 0.4− | 1.2+ | |
| 1998 12 15 | 704 | 0.2− | 0.9− | 2002 12 10 | 644 | 0.5− | 0.0 | 2003 01 10 | 608 | 0.3− | 0.8+ | |
| 2002 09 05 | 645 | 0.2+ | 0.3− | 2002 12 10 | 644 | 0.2− | 0.2− | 2003 01 10 | 608 | 0.2− | 0.3+ | |
| 2002 09 05 | 645 | 0.2+ | 0.3− | 2002 12 10 | 644 | 0.2+ | 1.0+ | 2006 09 22 | 703 | 0.4+ | 0.2+ | |
| 2002 10 05 | 699 | 0.5+ | 0.8+ | 2002 12 10 | 644 | 0.1+ | 0.1− | 2006 09 22 | 703 | 1.4− | 0.1− | |
| 2002 10 05 | 699 | 1.3− | 1.3+ | 2002 12 10 | 644 | 0.8− | 0.3− | 2006 09 22 | 703 | 1.5− | 0.7− | |
| 2002 10 05 | 699 | 0.8− | 1.2+ | 2002 12 10 | 644 | 0.4− | 0.2− | 2006 09 22 | 703 | 0.8− | 0.0 | |
| 2002 10 05 | 699 | 0.5+ | 0.4+ | 2002 12 10 | 644 | 0.0 | 1.0+ | 2006 09 27 | 703 | 0.2+ | 0.4− | |
| 2002 10 10 | 644 | 0.0 | 0.1− | 2002 12 10 | 644 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.7+ | 0.3− | |
| 2002 10 10 | 644 | 0.2− | 0.0 | 2002 12 10 | 644 | 0.8− | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.8− | |
| 2002 10 10 | 644 | 0.1− | 0.0 | 2002 12 10 | 644 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.1− | 0.3+ | |
| 2002 10 30 | 704 | 0.2− | 0.4+ | 2002 12 10 | 644 | 0.0 | 1.1+ | 2006 09 27 | 703 | (1.1+ | 3.6+) | |
| 2002 10 30 | 704 | 0.0 | 0.3− | 2002 12 10 | 644 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.2− | 0.5− | |
| 2002 10 30 | 704 | 0.5− | 0.0 | 2002 12 13 | 644 | 0.3− | 0.1+ | 2006 09 27 | 703 | 0.5+ | 0.2+ | |
| 2002 10 30 | 704 | 0.3− | 0.5+ | 2002 12 13 | 644 | 0.4− | 0.2− | 2006 09 27 | 703 | 1.3− | 0.5− | |
| 2002 10 30 | 704 | 0.2− | 0.1− | 2002 12 13 | 644 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.1+ | 0.3− | |
| 2002 11 06 | 644 | 0.3− | 0.4+ | 2002 12 31 | 608 | 0.4+ | 1.2− | 2006 09 27 | 703 | 0.5+ | 0.0 | |
| 2002 11 06 | 644 | 0.2− | 0.3+ | 2002 12 31 | 608 | 0.9+ | 1.0− | 2006 09 27 | 703 | (1.9+ | 0.2+) | |
| 2002 11 06 | 644 | 0.4− | 0.3+ | 2002 12 31 | 608 | 0.2+ | 0.8+ | 2006 09 27 | 703 | 0.8+ | 0.8+ | |
| 2002 11 16 | 644 | 0.1+ | 0.5+ | 2003 01 02 | 704 | 0.8+ | 0.3+ | 2006 10 12 | E12 | 0.7+ | 0.8+ | |
| 2002 11 16 | 644 | 0.1+ | 0.6+ | 2003 01 02 | 704 | 0.6+ | 1.0+ | 2006 10 12 | E12 | 0.0 | 0.2+ | |
| 2002 11 16 | 644 | 0.6+ | 0.6+ | 2003 01 02 | 704 | 0.3+ | 1.0+ | 2006 10 12 | E12 | 0.7+ | 1.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.6− | 0.6− | 2003 01 02 | 704 | 1.2+ | 0.2+ | 2006 10 12 | E12 | 0.4+ | 0.0 | | |
| 2002 11 30 | 704 | 0.2− | 0.0 | 2003 01 05 | 704 | 0.8− | 0.3+ | | | | | | |

**2002 XE$_{45}$ = 2006 SY$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.02788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21015772 | $\omega$ | 209.19282 | | +0.93250285 | +0.33216143 | |
| $a$ | 2.8018131 | $\Omega$ | 130.69615 | | −0.28432992 | +0.91727182 | |
| $e$ | 0.2153481 | $i$ | 10.77935 | | −0.22269920 | +0.21972983 | |
| $P$ | 4.69 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.1+ | 0.4+ | 2002 12 11 | 644 | 0.2− | 0.0 | 2006 08 23 | 704 | 0.6− | 0.7+ | | |
| 2001 06 15 | 704 | 0.4+ | 0.9+ | 2002 12 14 | 704 | 1.1+ | 0.6− | 2006 09 17 | 699 | 0.6− | 0.5− | | |
| 2001 06 15 | 704 | 0.2+ | 0.3− | 2002 12 14 | 704 | 0.2− | 0.6+ | 2006 09 17 | 699 | 0.7− | 0.4− | | |
| 2001 06 24 | 704 | 0.1− | 0.9+ | 2002 12 14 | 704 | (0.2+ | 2.1+) | 2006 09 17 | 699 | 0.6− | 0.4+ | | |
| 2001 06 24 | 704 | 0.6+ | 0.4+ | 2002 12 14 | 704 | 0.2+ | 1.0+ | 2006 09 17 | 699 | 0.5− | 0.6− | | |
| 2001 06 24 | 704 | 0.9− | 0.7+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 703 | 0.5+ | 0.0 | | |
| 2001 06 24 | 704 | 0.2− | 0.1− | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.2+ | 0.2+ | | |
| 2002 12 08 | 608 | 0.3− | 0.5− | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.1+ | 0.4− | | |
| 2002 12 08 | 608 | 0.3− | 0.2− | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 09 20 | 703 | 0.5+ | 0.3− | | |
| 2002 12 08 | 608 | 0.5− | 0.4− | 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 1.1+ | 1.3− | | |
| 2002 12 10 | 644 | 0.1− | 0.1+ | 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.9+ | 0.6+ | | |
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2006 08 23 | 704 | 0.3− | 0.5+ | 2006 09 26 | 703 | 1.5+ | 0.4+ | | |
| 2002 12 10 | 644 | 0.2+ | 0.8+ | 2006 08 23 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.8+ | | |
| 2002 12 11 | 644 | 0.4− | 0.6+ | 2006 08 23 | 704 | 0.6− | 0.7+ | | | | | | |
| 2002 12 11 | 644 | 0.1− | 1.0+ | 2006 08 23 | 704 | 0.6− | 0.9+ | | | | | | |

**2002 XS$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.98294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23092427 | $\omega$ | 50.82743 | | +0.99481941 | −0.05071543 | |
| $a$ | 2.6312150 | $\Omega$ | 311.89002 | | +0.00366400 | +0.88399395 | |
| $e$ | 0.0992202 | $i$ | 6.79694 | | +0.10159187 | +0.46473932 | |
| $P$ | 4.27 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.6− | 0.2+ | 2002 12 11 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.1+ | 0.5− | 2003 01 05 | 704 | 0.8− | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.5+ | | |
| 2002 12 05 | 704 | 0.8− | 0.1+ | 2003 01 05 | 704 | 1.2− | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.2− | | |
| 2002 12 05 | 704 | 0.7+ | 0.7− | 2003 01 05 | 704 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.0 | 0.9+ | | |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2003 01 05 | 704 | 0.1+ | 0.8− | 2006 10 27 | 703 | 0.1− | 0.7+ | | |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.7− | 2006 10 27 | 703 | 0.8+ | 0.4+ | | |
| 2002 12 10 | 704 | 0.2− | 0.7+ | 2006 10 19 | 703 | 0.3− | 0.4− | 2006 11 15 | 703 | 0.1+ | 0.1− | | |
| 2002 12 10 | 704 | 0.7+ | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.4− | 2006 11 15 | 703 | 0.6− | 0.3− | | |
| 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.9− | 0.9− | 2006 11 15 | 703 | 0.2+ | 0.2− | | |
| 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.2− | | |
| 2002 12 11 | 704 | 0.8+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 22 | 703 | 0.5+ | 0.2− | | |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.8+ | 0.5− | | |
| 2002 12 11 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.4+ | 2006 11 22 | 703 | (4.0+ | 0.9+) | | |

**2002 XN$_{48}$ = 2006 UV$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.34141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22668346 | $\omega$ | 295.93657 | | +0.90218486 | −0.42142189 | |
| $a$ | 2.6639301 | $\Omega$ | 89.10511 | | +0.42132177 | +0.81520235 | |
| $e$ | 0.1347603 | $i$ | 5.27997 | | +0.09246863 | +0.39730180 | |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.3+ | 0.4+ | 2002 12 10 | 644 | 0.9+ | 0.4− | 2006 10 19 | 644 | 0.7− | 0.3− | | |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2002 12 10 | 644 | 0.7+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.3+ | | |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2002 12 10 | 644 | 0.2+ | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 2002 12 05 | 704 | 0.8+ | 1.3− | 2002 12 11 | 704 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.2− | | |
| 2002 12 05 | 704 | (2.5+ | 1.6−) | 2002 12 11 | 704 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.2− | | |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.5+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.5− | 0.1− | 2002 12 11 | 704 | 0.8+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 12 05 | 704 | (0.6+ | 1.8−) | 2002 12 11 | 704 | 0.8− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 12 10 | 704 | 0.3+ | 0.5− | 2006 10 16 | 703 | 1.2− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 12 10 | 704 | 0.6− | 1.1+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2002 12 10 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 12 10 | 704 | 0.9− | 0.3− | 2006 10 16 | 703 | 1.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |

**2002 XR$_{48}$ = 2006 SK$_{289}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.49853 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21632956 | $\omega$ | 85.03853 | | −0.85954844 | −0.47186278 | |
| $a$ | 2.7482662 | $\Omega$ | 66.68686 | | +0.34155732 | −0.81609284 | |
| $e$ | 0.0256350 | $i$ | 12.34039 | | +0.38015137 | −0.33367348 | |
| $P$ | 4.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 704 | 1.4− | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.4− | 2006 09 26 | 703 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.5− | 0.2− | 2006 09 26 | 703 | 0.6+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 12 10 | 704 | 0.5+ | 0.4− | 2006 09 26 | 703 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 12 10 | 704 | 0.3+ | 0.8− | 2006 10 02 | 703 | 0.4− | 1.0+ | 2006 10 11 | 644 | 0.4+ | 0.3+ | | |
| 2002 12 10 | 704 | 0.0 | 0.8− | 2006 10 02 | 703 | 0.1+ | 0.7− | 2006 10 17 | 703 | 0.1− | 1.5+ | | |
| 2002 12 10 | 704 | (0.9+ | 2.0−) | 2006 10 02 | 703 | 0.4− | 0.8− | 2006 10 17 | 703 | 1.1+ | 0.5− | | |
| 2002 12 11 | 704 | 0.3− | 0.2− | 2006 10 02 | 703 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.5− | | |
| 2002 12 11 | 704 | 0.3− | 1.0+ | 2006 10 10 | 644 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.0 | | |
| 2002 12 11 | 704 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.6− | 0.2+ | | | | | | |

**2002 XY$_{48}$ = 2004 GK$_{45}$ = 2006 SE$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.44081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21545449 | $\omega$ | 219.36872 | | +0.04703474 | −0.99815644 | |
| $a$ | 2.7557026 | $\Omega$ | 227.97146 | | +0.92900351 | +0.05782348 | |
| $e$ | 0.0950940 | $i$ | 2.96014 | | +0.36706976 | −0.01844387 | |
| $P$ | 4.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.6− | 2002 12 11 | 704 | 0.6− | 0.4+ | 2004 04 19 | 691 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2002 12 11 | 704 | 1.0− | 0.4− | 2006 09 19 | 699 | 1.4+ | 0.6+ | | |
| 2002 12 05 | 704 | 0.0 | 0.4+ | 2002 12 11 | 704 | 0.2+ | 1.2+ | 2006 09 19 | 699 | 1.0− | 1.1+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.2+ | 2003 01 27 | 291 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.0 | | |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2003 01 27 | 291 | 0.0 | 0.2+ | 2006 09 19 | 699 | (0.0 | 1.9+) | | |
| 2002 12 10 | 704 | 0.2+ | 0.3− | 2003 01 27 | 291 | 0.1− | 0.9− | 2006 09 25 | 691 | 0.3− | 0.1− | | |
| 2002 12 10 | 704 | 0.5+ | 0.3− | 2004 04 12 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1− | | |
| 2002 12 10 | 704 | 0.3+ | 0.6+ | 2004 04 12 | 691 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1+ | | |
| 2002 12 10 | 704 | 0.8+ | 0.7+ | 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1− | | |
| 2002 12 11 | 704 | (0.2+ | 1.6−) | 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.6− | 0.4+ | | |
| 2002 12 11 | 704 | 0.4− | 0.4+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.0 | | |

**2002 XF$_{50}$ = 2006 RN$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.44675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23193920 | $\omega$ | 141.12287 | | +0.97757047 | −0.20999819 | |
| $a$ | 2.6235335 | $\Omega$ | 231.00692 | | +0.18771750 | +0.90328700 | |
| $e$ | 0.2352971 | $i$ | 1.18128 | | +0.09548882 | +0.37413013 | |
| $P$ | 4.25 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.9+ | 1.0+ | | |
| 2002 12 05 | 704 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | (0.4− | 1.8+) | | |
| 2002 12 05 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 704 | 1.1+ | 0.9+ | 2006 10 15 | 703 | 0.9+ | 0.0 | | |
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2006 09 20 | 704 | 0.8+ | 0.8− | 2006 10 15 | 703 | 1.4+ | 1.1+ | | |
| 2002 12 05 | 608 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.3+ | 0.6− | 2006 10 17 | G96 | 1.3+ | 0.9− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 608 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2002 12 05 | 608 | 0.6+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.4− | 0.7− |
| 2002 12 10 | 704 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 12 10 | 704 | 0.8+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2002 12 10 | 704 | 0.5− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.8+ | 2006 09 27 | 704 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.9− | 0.0 | 2006 11 06 | 644 | 0.2+ | 0.5+ |
| 2002 12 11 | 704 | 1.1− | 0.6− | 2006 09 29 | 691 | 0.1+ | 0.3− | 2006 11 06 | 644 | 0.7− | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 691 | 0.0 | 0.3− | 2006 11 06 | 644 | 0.7− | 0.2+ |
| 2006 09 14 | 691 | 0.1− | 0.5+ | 2006 09 29 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 1.0+ | 0.5− |
| 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 03 | 691 | (0.2− | 1.9−) | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 03 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.0 | 1.2− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.7− |

### 2002 $XL_{50}$ = 2006 $SY_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.75120 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21974046 | $\omega$ | 312.42953 | | +0.97759124 | | −0.19225430 |
| $a$ | 2.7197523 | $\Omega$ | 58.82460 | | +0.21024905 | | +0.87132801 |
| $e$ | 0.1266582 | $i$ | 5.75228 | | +0.01052170 | | +0.45147069 |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.4+ | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 09 28 | 699 | 1.0− | 0.8+ |
| 2002 12 05 | 704 | 0.6− | 0.8− | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 699 | 1.0− | 1.3+ |
| 2002 12 05 | 704 | 0.8− | 0.1+ | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 09 28 | 699 | 0.8− | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2005 06 14 | G96 | 0.1+ | 0.5− | 2006 09 28 | 699 | 0.0 | 1.0+ |
| 2002 12 05 | 704 | 0.1− | 0.5− | 2005 06 14 | G96 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.5− | 0.7− | 2005 06 14 | G96 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 1.0+ |
| 2002 12 10 | 704 | 1.1+ | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.4+ |
| 2002 12 10 | 704 | 1.1− | 0.4+ | 2006 09 18 | 703 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.2− |
| 2002 12 10 | 704 | 0.8+ | 0.5− | 2006 09 18 | 703 | 0.1+ | 1.3− | 2006 10 16 | 703 | 0.6+ | 0.3+ |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 1.4+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 2002 12 10 | 704 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | (2.3− | 0.8−) | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2002 12 10 | 704 | 0.7+ | 0.2− | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2002 12 11 | 704 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2002 12 11 | 704 | 0.4+ | 0.5− | 2006 09 26 | 704 | 0.7+ | 0.6− | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2004 02 29 | 691 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.6− | | | | |

### 2002 $XG_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.20144 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25938836 | $\omega$ | 85.67918 | | −0.96846712 | | −0.17609293 |
| $a$ | 2.4350192 | $\Omega$ | 84.10953 | | +0.09088593 | | −0.90837197 |
| $e$ | 0.1481345 | $i$ | 10.20565 | | +0.23197239 | | −0.37927778 |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 699 | 0.1− | 1.4+ | 2002 12 10 | 704 | 0.6+ | 1.6+ | 2002 12 31 | 704 | 0.1− | 0.9+ |
| 2000 04 28 | 699 | 1.0+ | 0.3+ | 2002 12 10 | 704 | 0.2+ | 0.3+ | 2002 12 31 | 704 | (1.9+ | 0.9+) |
| 2000 04 28 | 699 | 0.4− | 0.1+ | 2002 12 10 | 704 | 0.5+ | 0.2− | 2003 01 05 | 291 | 0.1− | 0.2− |
| 2000 04 28 | 699 | 0.2+ | 0.1+ | 2002 12 10 | 704 | 0.5− | 0.2+ | 2003 01 05 | 291 | 0.1+ | 0.1− |
| 2002 11 05 | 291 | 0.4− | 0.1+ | 2002 12 10 | 704 | 0.5− | 0.7+ | 2003 01 05 | 291 | 0.1+ | 0.0 |
| 2002 11 05 | 291 | 0.8− | 1.2− | 2002 12 10 | 704 | 0.8+ | 0.9+ | 2005 08 27 | 644 | 0.1− | 0.3+ |
| 2002 11 05 | 291 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.4− | 0.5+ | 2005 08 27 | 644 | 0.5− | 0.7+ |
| 2002 12 05 | 704 | 0.4+ | 0.2− | 2002 12 11 | 704 | 0.4+ | 0.6+ | 2005 08 27 | 644 | 0.1− | 0.4+ |
| 2002 12 05 | 704 | 0.7+ | 0.2− | 2002 12 11 | 704 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.7− |
| 2002 12 05 | 704 | 0.3+ | 0.8+ | 2002 12 11 | 704 | 0.6+ | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.8− |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2002 12 11 | 704 | 0.1− | 1.3+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2002 12 31 | 704 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.6− | 0.8− |

### 2002 $XJ_{51}$ = 2006 $WC_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.95765 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24187063 | $\omega$ | 301.59279 | | +0.76694020 | | −0.64014573 |
| $a$ | 2.5512164 | $\Omega$ | 98.24972 | | +0.60306950 | | +0.69506657 |
| $e$ | 0.1533004 | $i$ | 2.60048 | | +0.21933972 | | +0.32725512 |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.2− | 2002 12 31 | 704 | 0.2− | 0.7− | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2002 12 05 | 704 | 0.6− | 0.1+ | 2002 12 31 | 704 | 1.2+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.5− |
| 2002 12 05 | 704 | (1.9− | 0.2+) | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.5− |
| 2002 12 05 | 704 | 0.2+ | 0.7− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 2002 12 10 | 704 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2002 12 10 | 704 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 1.1+ |
| 2002 12 10 | 704 | 0.1− | 1.2− | 2006 10 22 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.3− | 0.5− | 2006 11 29 | 704 | 0.0 | 0.4− |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 0.4+ | 1.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.1− | 0.6+ |
| 2002 12 31 | 704 | 0.4+ | 0.5− | 2006 11 18 | 704 | 0.8− | 0.4+ | 2006 11 29 | 704 | 0.0 | 1.4+ |

### 2002 $XR_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.16121 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23960367 | $\omega$ | 316.73425 | | +0.70967026 | | −0.70325988 |
| $a$ | 2.5672830 | $\Omega$ | 88.00759 | | +0.65740110 | | +0.63937862 |
| $e$ | 0.2429165 | $i$ | 2.42877 | | +0.25336124 | | +0.31083842 |
| $P$ | 4.11 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 291 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.6− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2002 12 05 | 291 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2002 12 05 | 291 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.9− |
| 2002 12 05 | 704 | 0.0 | 1.3− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2002 12 05 | 704 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.3− | 2006 10 28 | 691 | 1.0+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2002 12 05 | 704 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2002 12 10 | 704 | 0.2− | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 2002 12 10 | 704 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 2002 12 10 | 704 | 0.6− | 0.3− | 2006 11 02 | 703 | 1.3− | 0.3− | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 2002 12 11 | 704 | 1.3+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 11 02 | 703 | 0.5− | 0.3+ | 2006 11 18 | 704 | 1.5− | 0.9− |
| 2002 12 11 | 704 | 0.7+ | 0.5+ | 2006 11 02 | 703 | 0.3− | 1.2+ | 2006 11 18 | 704 | 0.3− | 0.1− |
| 2002 12 11 | 704 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.3− | 1.0+ |
| 2002 12 11 | 704 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2003 01 04 | 704 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 2003 01 04 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2003 01 04 | 704 | 1.3− | 0.3− | 2006 11 09 | 644 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2003 01 08 | 704 | 1.2+ | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.8+ | 0.3− |
| 2003 01 08 | 704 | 0.8− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.7+ | 0.4− |
| 2003 01 08 | 704 | (2.2− | 0.6+) | 2006 11 11 | 703 | 0.7− | 0.6+ | 2006 11 29 | 704 | 0.3+ | 0.9− |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.7+ | 2006 11 29 | 704 | 0.5+ | 0.6+ |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.9− | 0.3+ | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.4− | | | | |

**2002 XK$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.39542 | | (2000.0) | | | |
| $n$ | 0.24184956 | $\omega$ | 125.54917 | | +0.87477210 | −0.38983092 |
| $a$ | 2.5513645 | $\Omega$ | 258.96429 | | +0.29206426 | +0.89810022 |
| $e$ | 0.3086275 | $i$ | 17.04850 | | +0.38661640 | +0.20358743 |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.0 | 0.4+ | 2002 12 31 | 704 | 0.6+ | 0.5− | 2006 11 15 | 704 | 0.4+ | 0.5+ |
| 2002 11 14 | 704 | (2.0+ | 1.1+) | 2002 12 31 | 704 | 0.6+ | 0.4− | 2006 11 15 | 704 | 0.3+ | 0.1− |
| 2002 11 14 | 704 | 0.7+ | 0.2+ | 2003 01 07 | 704 | (2.0− | 0.9−) | 2006 11 15 | 704 | 0.0 | 0.6+ |
| 2002 11 14 | 704 | 0.8+ | 0.4+ | 2003 01 07 | 704 | 1.0− | 0.4+ | 2006 11 15 | 704 | 0.4+ | 0.3+ |
| 2002 12 05 | 704 | 0.6+ | 1.1+ | 2003 01 07 | 704 | 0.6− | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2003 01 07 | 704 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2003 01 07 | 704 | 0.6− | 0.9+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2002 12 05 | 704 | (1.5− | 0.6−) | 2003 01 08 | 704 | 0.0 | 0.3+ | 2006 11 23 | 644 | 0.0 | 0.0 |
| 2002 12 10 | 704 | 0.6− | 0.5− | 2003 01 08 | 704 | 0.3− | 0.8+ | 2006 11 23 | 644 | 0.1+ | 0.0 |
| 2002 12 10 | 704 | 0.6− | 0.6− | 2003 01 08 | 704 | 0.2− | 0.5− | 2006 11 23 | 644 | 0.0 | 0.0 |
| 2002 12 10 | 704 | 0.6− | 0.7− | 2003 01 11 | 644 | 0.4− | 0.2+ | 2006 11 26 | 628 | 0.0 | 0.2− |
| 2002 12 10 | 704 | 0.5− | 0.5− | 2003 01 11 | 644 | 0.4− | 0.1+ | 2006 11 26 | 628 | 0.6+ | 0.0 |
| 2002 12 10 | 704 | 0.4− | 1.2− | 2003 01 11 | 644 | 0.8− | 0.2+ | 2006 11 26 | 628 | 0.3+ | 0.3− |
| 2002 12 11 | 704 | 0.8+ | 0.0 | 2003 01 28 | 704 | (3.0+ | 0.2−) | 2006 11 27 | 704 | 0.9+ | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2003 01 28 | 704 | (2.8+ | 0.2+) | 2006 11 27 | 704 | 0.8+ | 0.0 |
| 2002 12 11 | 704 | 0.6+ | 0.1− | 2003 01 28 | 704 | (2.6+ | 0.7−) | 2006 11 27 | 704 | 0.4+ | 0.4+ |
| 2002 12 11 | 704 | 0.7+ | 0.0 | 2006 11 02 | 703 | 0.9− | 0.5− | 2006 11 29 | 704 | 0.5− | 0.1− |
| 2002 12 11 | 704 | 0.8+ | 0.2+ | 2006 11 02 | 703 | 0.8− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.5+ |
| 2002 12 31 | 704 | 1.1+ | 0.6− | 2006 11 02 | 703 | 0.2− | 0.8− | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 11 02 | 703 | 0.5− | 0.3− | 2006 11 29 | 704 | 0.3− | 0.6+ |
| 2002 12 31 | 704 | 0.4+ | 0.7− | 2006 11 15 | 704 | 0.8− | 0.2− | 2006 11 29 | 704 | 1.3− | 0.3+ |

**2002 XW$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.33855 | | (2000.0) | | | |
| $n$ | 0.23197801 | $\omega$ | 107.40316 | | +0.90785200 | −0.41364288 |
| $a$ | 2.6232409 | $\Omega$ | 277.07539 | | +0.35366961 | +0.84331902 |
| $e$ | 0.2812139 | $i$ | 3.96312 | | +0.22521669 | +0.34309269 |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 1.1− | 0.3− | 2006 08 30 | 704 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.4− | 0.6+ | 2006 08 30 | 699 | 0.2− | 0.7+ | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 1.2+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.0 | 0.5− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.4− | 2006 08 30 | 699 | 0.5+ | 1.1+ | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2002 12 10 | 704 | (2.5+ | 1.2−) | 2006 09 18 | 704 | 0.9+ | 0.7− | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.4+ | 0.2− | 2006 09 18 | 704 | 0.4+ | 0.6− | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2002 12 10 | 704 | 1.0+ | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.7+ | 0.1+ |
| 2002 12 11 | 735 | 0.6− | 0.4− | 2006 09 18 | 704 | 0.5+ | 0.9− | 2006 11 14 | 703 | 0.3− | 0.1− |
| 2002 12 11 | 735 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.5− | 0.5+ |
| 2002 12 11 | 704 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.1− | 1.2+ |
| 2002 12 11 | 735 | (2.5+ | 0.1+) | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.4− | 0.2− | 2006 10 19 | 704 | 1.3+ | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.7+ |
| 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 704 | 0.7− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 1.2+ | 1.0− | 2006 10 19 | 704 | (2.0− | 0.1−) | 2006 11 16 | 704 | 0.2− | 0.4+ |
| 2002 12 11 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 0.4− | 2006 10 19 | 703 | 0.6− | 0.6− | 2006 11 16 | 704 | 0.5− | 0.1− |
| 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 10 19 | 703 | (4.8− | 1.3+) | 2006 11 17 | 704 | 0.4− | 0.6+ |
| 2002 12 11 | 704 | 0.7+ | 0.7− | 2006 10 19 | 644 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.5− | 0.3+ |
| 2002 12 11 | 704 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.8+ |
| 2002 12 13 | 735 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.4− | 0.3+ |
| 2002 12 13 | 735 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2002 12 15 | 735 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2002 12 15 | 735 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2002 12 28 | 735 | 0.1− | 0.0 | 2006 10 21 | 704 | 0.9− | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2002 12 28 | 735 | 1.4− | 0.5+ | 2006 10 21 | 704 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.4− | 0.4− |
| 2002 12 28 | 735 | 0.0 | 0.3− | 2006 10 21 | 704 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.2− | 0.3+ |
| 2002 12 31 | 704 | 0.2+ | 0.3− | 2006 10 21 | 704 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2006 10 21 | 704 | 0.1+ | 0.9− | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2002 12 31 | 704 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.3+ |
| 2002 12 31 | 704 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2003 01 04 | 704 | 0.2− | 1.1+ | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.3− | 0.7+ |
| 2003 01 04 | 704 | 0.5− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2003 01 04 | 704 | 0.2+ | 1.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5− | 0.1− |
| 2003 01 04 | 704 | 0.3+ | 1.4+ | 2006 10 22 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.1+ |
| 2003 01 08 | 704 | 0.2− | 0.7− | 2006 10 23 | 644 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2003 01 08 | 704 | 0.2+ | 0.7− | 2006 10 23 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2003 01 08 | 704 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2003 01 08 | 704 | 0.1+ | 1.1− | 2006 10 27 | 703 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2006 08 29 | 703 | (1.8+ | 0.8+) | 2006 10 27 | 703 | (2.6− | 2.5+) | 2006 11 29 | 704 | 0.7+ | 0.5+ |
| 2006 08 29 | 703 | 0.9+ | 0.3+ | 2006 10 27 | 703 | (0.1− | 4.2+) | 2006 11 29 | 704 | 0.5+ | 0.5+ |
| 2006 08 29 | 703 | 0.5− | 0.1+ | 2006 10 29 | 704 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.2+ |
| 2006 08 29 | 703 | 1.4− | 0.4− | 2006 10 29 | 704 | 0.6+ | 0.3+ | 2006 11 29 | 704 | 0.6+ | 0.1− |
| 2006 08 30 | 704 | 0.5− | 0.1+ | 2006 10 29 | 704 | 0.3− | 0.4+ | 2006 11 29 | 704 | 1.1+ | 0.1− |
| 2006 08 30 | 704 | 0.3− | 0.4− | 2006 10 29 | 704 | 0.4+ | 0.2+ | | | | |
| 2006 08 30 | 704 | 0.8− | 0.1− | 2006 10 29 | 704 | 0.4+ | 0.2+ | | | | |

**2002 XF$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 337.07124 | | (2000.0) | | | |
| $n$ | 0.24173586 | $\omega$ | 168.54972 | | +0.22833273 | −0.97051154 |
| $a$ | 2.5521645 | $\Omega$ | 268.21639 | | +0.88702901 | +0.24009357 |
| $e$ | 0.2560902 | $i$ | 4.43413 | | +0.40130251 | +0.02150395 |
| $P$ | 4.08 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3+ | 0.1− | 2003 01 02 | 704 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.0 | 1.2+ |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2003 01 02 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 1.2+ | 0.7+ |
| 2002 12 05 | 704 | 0.2− | 0.0 | 2003 01 02 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2003 01 02 | 704 | 0.1+ | 0.7− | 2006 11 17 | 691 | 0.4− | 0.1− |
| 2002 12 10 | 704 | 0.5+ | 0.1− | 2003 01 04 | 704 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2002 12 10 | 704 | 0.7− | 0.2+ | 2003 01 04 | 704 | 0.3− | 0.7− | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2002 12 10 | 704 | 0.5+ | 0.2+ | 2003 01 04 | 704 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.4− | 0.1− |
| 2002 12 11 | 704 | 1.1− | 0.0 | 2003 01 04 | 704 | 0.3− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2003 01 08 | 704 | 0.5− | 0.4− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2003 01 08 | 704 | 0.4− | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 1.0+ | 0.3+ | 2003 01 08 | 704 | 0.7− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.3− |
| 2002 12 11 | 704 | (1.6+ | 0.3+) | 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.5+ |
| 2002 12 28 | 291 | 0.1− | 0.4+ | 2003 01 08 | 704 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.5− | 0.6+ |
| 2002 12 28 | 291 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2002 12 28 | 291 | 0.0 | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 12 31 | 704 | 0.8+ | 0.2− | 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.4+ | 1.3+ |
| 2002 12 31 | 704 | 0.2− | 0.9+ | 2006 10 04 | G96 | 0.3+ | 0.7− | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2002 12 31 | 704 | 1.1+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2002 12 31 | 704 | 0.8+ | 0.4− | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2002 12 31 | 704 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.6− | 0.2− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2003 01 01 | 557 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | (0.5− | 2.0+) |
| 2003 01 01 | 557 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | (2.1+ | 1.2+) |
| 2003 01 01 | 926 | 0.4+ | 1.2− | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2003 01 01 | 926 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.9+ | 0.6+ | 2006 11 22 | 704 | (2.3+ | 0.6+) |
| 2003 01 01 | 926 | 0.5− | 0.7− | 2006 11 15 | 704 | 0.6+ | 1.1+ | 2006 11 22 | 704 | 0.3− | 0.6− |
| 2003 01 02 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.6− | 0.6+ | 2006 11 25 | 691 | 0.9+ | 1.2− |
| 2003 01 02 | 704 | 0.0 | 0.7− | 2006 11 15 | 704 | 0.1− | 0.8− | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2003 01 02 | 704 | 0.4− | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.6+ | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2003 01 02 | 704 | 0.2+ | 0.0 | 2006 11 16 | 704 | (2.6+ | 0.2−) | 2006 11 27 | 704 | 0.0 | 0.3− |
| 2003 01 02 | 704 | 0.5− | 0.1+ | 2006 11 16 | 704 | 0.9+ | 1.0+ | 2006 11 27 | 704 | 0.0 | 0.4− |
| 2003 01 02 | 704 | 0.9+ | 0.4− | 2006 11 16 | 704 | 1.2+ | 1.3+ | 2006 11 27 | 704 | 0.1+ | 0.1− |
| 2003 01 02 | 704 | 0.7− | 0.6− | 2006 11 16 | 704 | (0.5− | 1.5+) | 2006 12 01 | 704 | 0.5+ | 0.2+ |
| 2003 01 02 | 704 | 1.0+ | 0.6+ | 2006 11 16 | 704 | 1.0− | 1.0+ | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2003 01 02 | 704 | 1.1− | 0.8− | 2006 11 16 | 704 | 0.1− | 1.2+ | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2003 01 02 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.6+ | 2006 12 01 | 704 | 0.8+ | 0.6+ |

**2002 XS$_{53}$ = 2006 SM$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.27289 | | (2000.0) | | | |
| $n$ | 0.22229187 | $\omega$ | 174.72166 | | +0.79696432 | −0.59886218 |
| $a$ | 2.6989013 | $\Omega$ | 222.39680 | | +0.54981808 | +0.77326538 |
| $e$ | 0.0304901 | $i$ | 6.71279 | | +0.25009590 | +0.20838606 |
| $P$ | 4.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 704 | 0.1− | 1.4+ | 2002 12 11 | 704 | 1.1− | 0.5− | 2006 10 10 | 644 | 0.5− | 0.4+ | |
| 2000 05 10 | 704 | 0.7+ | 0.6+ | 2002 12 11 | 704 | 1.3− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.3+ | |
| 2000 05 10 | 704 | 0.4+ | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.1+ | |
| 2000 05 10 | 704 | 0.1+ | 1.9+ | 2004 04 24 | 691 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.2+ | |
| 2002 11 13 | 644 | 0.4+ | 0.5+ | 2004 04 24 | 691 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 1.1+ | 0.6+ | |
| 2002 11 13 | 644 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.9+ | 0.5− | 2006 10 17 | 703 | (0.5+ | 1.9+) | |
| 2002 11 13 | 644 | 0.5+ | 0.7+ | 2006 09 16 | 703 | 1.3+ | 0.2− | 2006 10 17 | 703 | 1.3+ | 1.5+ | |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 1.5+ | 0.0 | 2006 10 17 | 703 | 0.4− | 1.0+ | |
| 2002 11 24 | 644 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.6− | 0.4+ | |
| 2002 11 24 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.3− | 0.1+ | |
| 2002 12 05 | 608 | 0.1+ | 0.5− | 2006 09 19 | 703 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.3+ | |
| 2002 12 05 | 608 | 0.5+ | 0.6− | 2006 09 19 | 703 | 0.3− | 0.6− | 2006 11 11 | 703 | 0.4− | 1.2+ | |
| 2002 12 05 | 608 | 0.1− | 0.4− | 2006 09 19 | 703 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.8+ | |
| 2002 12 10 | 644 | 0.0 | 0.5− | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3− | 1.8+ | |
| 2002 12 10 | 644 | 0.0 | 0.4− | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 2.0− | 1.2− | |
| 2002 12 10 | 644 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.5− | 0.2+ | |
| 2002 12 11 | 704 | (2.7− | 0.3−) | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.0 | |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.1+ | |

**2002 XN$_{54}$ = 2006 SD$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.62653 | | (2000.0) | | | |
| $n$ | 0.21936777 | $\omega$ | 114.73467 | | +0.96855114 | +0.22047454 |
| $a$ | 2.7228319 | $\Omega$ | 232.73479 | | −0.24608401 | +0.91729275 |
| $e$ | 0.0459937 | $i$ | 8.33198 | | +0.03676072 | +0.33160969 |
| $P$ | 4.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 608 | 0.3− | 0.1+ | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | |
| 2002 11 28 | 608 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.6− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.2+ | |
| 2002 11 28 | 608 | 0.4− | 0.1− | 2006 09 28 | 703 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.2− | |
| 2002 12 10 | 644 | 0.7+ | 0.4+ | 2006 09 28 | 703 | 0.8+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.2− | |
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.7− | 2006 10 17 | 703 | 0.7− | 0.5+ | |
| 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 10 17 | 703 | 1.5− | 1.1− | |
| 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | |
| 2002 12 11 | 704 | 0.2− | 0.9− | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.1+ | |
| 2002 12 11 | 704 | 0.4− | 1.2− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.1+ | |
| 2006 09 16 | 703 | 0.0 | 1.0− | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.2+ | |
| 2006 09 16 | 703 | 0.0 | 0.9+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.2+ | |
| 2006 09 16 | 703 | 0.6− | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.4+ | | | | | |

**2002 XA$_{55}$ = 2006 SE$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.07665 | | (2000.0) | | | |
| $n$ | 0.21836061 | $\omega$ | 259.57091 | | +0.97465066 | −0.19497542 |
| $a$ | 2.7311980 | $\Omega$ | 111.60367 | | +0.22165576 | +0.90815844 |
| $e$ | 0.0590370 | $i$ | 6.77788 | | −0.03041068 | +0.37044951 |
| $P$ | 4.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.4+ | |
| 2002 12 01 | 704 | 0.6− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.8+ | |
| 2002 12 01 | 704 | 0.0 | 0.8+ | 2006 09 20 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.1+ | |
| 2002 12 10 | 644 | 0.3− | 0.3− | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2002 12 10 | 644 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 2002 12 10 | 644 | 0.3− | 0.5− | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.6− | |
| 2002 12 11 | 704 | 0.2+ | 0.5− | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.3− | |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.3− | |
| 2002 12 11 | 704 | 0.4+ | 0.4− | 2006 09 21 | 699 | 0.0 | 0.9− | 2006 10 22 | 703 | 1.0+ | 1.0− | |
| 2002 12 11 | 704 | 0.8+ | 0.7+ | 2006 09 21 | 699 | 0.2− | 0.9+ | 2006 10 23 | 644 | 0.2+ | 0.1− | |
| 2006 09 18 | 703 | 1.3+ | 0.8− | 2006 09 21 | 699 | 0.6+ | 1.2− | 2006 10 23 | 644 | 0.6− | 0.1− | |
| 2006 09 18 | 703 | 0.7− | 0.3− | 2006 09 21 | 699 | 0.7+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.4+ | |
| 2006 09 18 | 703 | 0.6+ | 0.5− | 2006 09 25 | 699 | (0.5+ | 1.8+) | 2006 10 28 | 703 | 0.8− | 0.2− | |
| 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.6− | |
| 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.8− | 0.4+ | 2006 10 28 | 703 | (2.1− | 0.9−) | |
| 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.6+ | 1.1+ | 2006 10 28 | 703 | 0.4+ | 0.8− | |
| 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.5− | | | | | |
| 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.8− | | | | | |

**2002 XK$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.83046 | | (2000.0) | | | |
| $n$ | 0.24086661 | $\omega$ | 10.23171 | | −0.46530651 | −0.87711891 |
| $a$ | 2.5583011 | $\Omega$ | 107.58407 | | +0.80303661 | −0.47484346 |
| $e$ | 0.2033875 | $i$ | 7.16888 | | +0.37231982 | −0.07201460 |
| $P$ | 4.09 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 08 | 691 | 0.2− | 0.1− | 2002 12 12 | 644 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.1+ | |
| 1994 12 08 | 691 | 0.0 | 0.8− | 2002 12 12 | 644 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.9+ | 0.2+ | |
| 1994 12 08 | 691 | 0.3− | 0.1− | 2003 01 07 | 704 | 0.4+ | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.7− | |
| 2002 11 19 | 644 | 0.2− | 0.1+ | 2003 01 07 | 704 | (0.2+ | 2.1+) | 2006 11 20 | 704 | 0.9− | 1.2− | |
| 2002 11 19 | 644 | 0.3− | 0.1+ | 2003 01 07 | 704 | 0.3+ | 1.5+ | 2006 11 20 | 704 | 1.1− | 0.2+ | |
| 2002 11 19 | 644 | 0.2− | 0.1+ | 2004 04 30 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.6− | |
| 2002 12 01 | 704 | 0.1+ | 0.1+ | 2004 04 30 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.3− | |
| 2002 12 01 | 704 | 0.0 | 0.2+ | 2004 04 30 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.4− | |
| 2002 12 01 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.1+ | |
| 2002 12 01 | 704 | 0.8+ | 0.9+ | 2006 10 20 | 644 | 0.4+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.4− | |
| 2002 12 05 | 644 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.7− | 2006 11 22 | G96 | 0.3− | 0.5− | |
| 2002 12 05 | 644 | 0.0 | 0.5+ | 2006 11 15 | 703 | 1.0− | 0.5− | 2006 11 25 | 704 | 0.7− | 0.6+ | |
| 2002 12 05 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | (0.5− | 1.7−) | 2006 11 25 | 704 | 0.8− | 1.3− | |
| 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.7+ | 0.4− | 2006 11 25 | 704 | 0.1+ | 0.9+ | |
| 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.8+ | 2006 11 25 | 704 | 2.6+ | 1.0− | |
| 2002 12 10 | 644 | 0.4+ | 0.1+ | 2006 11 15 | 703 | 0.7− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.5+ | |
| 2002 12 11 | 704 | 0.4+ | 1.0+ | 2006 11 15 | 703 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.5− | 0.8+ | |
| 2002 12 11 | 704 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1+ | 0.2+ | |
| 2002 12 11 | 704 | 0.3− | 0.6+ | 2006 11 15 | 703 | 0.8− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.6+ | |
| 2002 12 11 | 704 | 0.6− | 0.5+ | 2006 11 19 | 703 | 1.5+ | 0.5+ | 2006 11 28 | 704 | 1.0− | 1.2+ | |
| 2002 12 12 | 644 | 0.1− | 0.3+ | 2006 11 19 | 703 | 1.0+ | 0.2+ | | | | | |

**2002 XQ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.73379 | | (2000.0) | | | |
| $n$ | 0.23407317 | $\omega$ | 189.95473 | | +0.77930109 | −0.62598897 |
| $a$ | 2.6075639 | $\Omega$ | 208.86220 | | +0.57896031 | +0.73680178 |
| $e$ | 0.2863257 | $i$ | 3.41675 | | +0.23978065 | +0.25546221 |
| $P$ | 4.21 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 29 | 291 | 0.1+ | 0.1+ | 2002 12 31 | 704 | 0.5− | 0.3− | 2006 10 15 | 703 | 0.3+ | 0.1+ | |
| 2002 10 29 | 291 | 0.2− | 0.4+ | 2002 12 31 | 704 | 0.1− | 0.7− | 2006 10 15 | 703 | 0.1+ | 0.4+ | |
| 2002 10 29 | 291 | 0.4− | 0.3+ | 2002 12 31 | 704 | 0.1− | 0.5− | 2006 10 15 | 703 | 0.1− | 0.0 | |
| 2002 11 05 | 704 | 0.7+ | 1.2− | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.6+ | 0.7− | |
| 2002 11 05 | 704 | 1.0+ | 1.2− | 2006 09 16 | 644 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− | |
| 2002 11 05 | 704 | 0.4+ | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.4− | |
| 2002 11 05 | 704 | 1.0+ | 0.6− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.3− | |
| 2002 11 11 | 704 | (4.3+ | 2.0−) | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.3+ | |
| 2002 11 11 | 704 | (3.9+ | 1.7−) | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 | |
| 2002 11 11 | 704 | (3.1+ | 0.3−) | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.3− | 0.0 | |
| 2002 11 14 | 704 | (0.7− | 2.8+) | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.2+ | 0.6− | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 11 14 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.2− | 1.1+ |
| 2002 11 14 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 23 | 704 | 0.5+ | 0.3+ |
| 2002 12 05 | 644 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 23 | 704 | 0.4− | 0.1− |
| 2002 12 05 | 644 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 23 | 704 | 0.1+ | 0.4+ |
| 2002 12 05 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 28 | 704 | 0.7+ | 1.4+ |
| 2002 12 10 | 644 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 28 | 704 | (0.7+ | 2.0+) |
| 2002 12 10 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.6− | 1.2+ | 2006 10 28 | 704 | 0.8+ | 0.5+ |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.5− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.5+ | 0.9+ | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 1.0− | 0.6+ | 2006 09 27 | 704 | 0.2− | 0.3− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.4− | 0.9+ | 2006 09 29 | 704 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2002 12 16 | 608 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.3− | 0.5− |
| 2002 12 16 | 608 | 0.6− | 0.5− | 2006 09 29 | 704 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2002 12 16 | 608 | 0.4− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.3− | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2002 12 31 | 704 | 0.9+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.1− | 0.5− |
| 2002 12 31 | 704 | 0.5+ | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.3− | | | | |

### 2002 XB$_{56}$ = 2006 SM$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.28649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22370167 | $\omega$ | 254.99253 | | +0.93658996 | −0.30254077 | |
| $a$ | 2.6875501 | $\Omega$ | 122.32676 | | +0.34303927 | +0.89462567 | |
| $e$ | 0.2055605 | $i$ | 12.07908 | | −0.07157722 | +0.32880692 | |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.7− | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.8+ |
| 2002 12 01 | 704 | 0.5− | 0.4+ | 2003 01 05 | 704 | 0.4− | 0.4+ | 2006 09 27 | 703 | 0.3− | 0.6− |
| 2002 12 01 | 704 | 0.2+ | 0.6+ | 2003 01 05 | 704 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.2+ |
| 2002 12 08 | 608 | 0.1− | 1.1− | 2003 01 05 | 704 | 1.0+ | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.0 |
| 2002 12 08 | 608 | 0.0 | 0.9− | 2003 01 27 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 703 | 0.0 | 0.1+ |
| 2002 12 08 | 608 | 0.0 | 1.1− | 2003 01 27 | 644 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 12 11 | 644 | 0.1+ | 0.1+ | 2003 01 27 | 644 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2002 12 11 | 644 | 0.4+ | 0.0 | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.5+ | 0.1− |
| 2002 12 11 | 644 | 0.1+ | 0.3− | 2005 06 05 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 12 13 | 644 | 0.3+ | 0.1+ | 2005 06 05 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 12 13 | 644 | 0.4+ | 0.0 | 2006 09 17 | 699 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2002 12 13 | 644 | 0.2+ | 0.2− | 2006 09 17 | 699 | 0.2+ | 1.0+ | 2006 11 19 | 703 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 699 | 0.2− | 0.9+ | 2006 11 19 | 703 | 0.8− | 0.6− |
| 2002 12 14 | 704 | 0.3− | 0.5+ | 2006 09 17 | 699 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.6+ | 0.9− |
| 2002 12 14 | 704 | 0.2− | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.3+ | 2006 11 19 | 703 | 1.1− | 2.5− |
| 2002 12 14 | 704 | 1.0− | 0.5+ | 2006 09 20 | 703 | 0.1+ | 0.4+ | | | | |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.3− | | | | |

### 2002 XS$_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.84325 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23798217 | $\omega$ | 28.09148 | | +0.98646562 | +0.10541941 | |
| $a$ | 2.5789313 | $\Omega$ | 325.14660 | | −0.15785698 | +0.81774529 | |
| $e$ | 0.2827324 | $i$ | 12.69492 | | +0.04434822 | +0.56584396 | |
| $P$ | 4.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.2+ | 0.1− | 2002 12 12 | 644 | 0.5− | 1.1+ | 2006 09 22 | 699 | 0.3− | 0.1− |
| 2002 10 06 | 704 | 0.1+ | 0.2− | 2002 12 12 | 644 | 0.1+ | 0.3+ | 2006 09 22 | 699 | 0.1+ | 0.3− |
| 2002 10 06 | 704 | 0.0 | 1.2− | 2002 12 12 | 644 | 0.0 | 1.2+ | 2006 09 28 | 703 | 0.2+ | 0.5− |
| 2002 10 06 | 704 | 0.6+ | 0.9− | 2002 12 12 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.4− |
| 2002 10 06 | 704 | 0.3− | 1.2− | 2002 12 12 | 644 | 0.1− | 1.1+ | 2006 09 28 | 703 | 0.4+ | 0.1− |
| 2002 10 15 | 704 | 0.6− | 0.4− | 2002 12 12 | 644 | 0.0 | 0.0 | 2006 09 30 | 704 | 1.3− | 1.0+ |
| 2002 10 15 | 704 | 0.4+ | 0.5− | 2006 08 29 | 699 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.7− | 0.1+ |
| 2002 10 15 | 704 | 0.0 | 0.0 | 2006 08 29 | 699 | 0.0 | 0.4− | 2006 09 30 | 704 | 1.2− | 0.4+ |
| 2002 10 15 | 704 | 0.3+ | 0.1− | 2006 08 29 | 699 | 0.3− | 0.1− | 2006 09 30 | 704 | 1.3− | 0.2+ |
| 2002 10 30 | 704 | 0.8− | 0.4+ | 2006 08 29 | 699 | 0.3+ | 0.9+ | 2006 10 21 | 704 | 0.2− | 0.8+ |
| 2002 10 30 | 704 | 0.4− | 0.4− | 2006 08 29 | 699 | 0.4+ | 0.3− | 2006 10 21 | 704 | 0.0 | 1.4+ |
| 2002 10 30 | 704 | 0.1− | 0.3− | 2006 08 29 | 699 | 0.7+ | 0.1+ | 2006 10 21 | 704 | (0.7− | 2.5+) |
| 2002 10 30 | 704 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.2− | 0.0 | 2006 10 21 | 704 | 0.2+ | 0.0 |
| 2002 10 30 | 704 | 0.1− | 0.4− | 2006 08 29 | 699 | 0.1− | 0.0 | 2006 10 21 | 704 | 0.2− | 1.1+ |
| 2002 11 15 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.5− | 0.7− | 2006 10 27 | 703 | 0.4+ | 0.0 |
| 2002 11 15 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.2+ | 0.3− | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2002 11 15 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2002 11 15 | 704 | 1.0+ | 0.2+ | 2006 09 17 | 703 | 0.7− | 0.5− | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2002 11 15 | 704 | 1.3+ | 0.3+ | 2006 09 21 | 704 | 0.8+ | 0.9+ | 2006 10 31 | 703 | 1.0+ | 0.3+ |
| 2002 12 10 | 704 | (1.6− | 0.3−) | 2006 09 21 | 704 | 0.3− | 0.0 | 2006 10 31 | 703 | (1.9+ | 1.5−) |
| 2002 12 10 | 704 | 1.0− | 0.2− | 2006 09 21 | 704 | 0.5+ | 0.3− | 2006 11 22 | 703 | 0.5− | 0.7− |
| 2002 12 10 | 704 | (1.7− | 0.1+) | 2006 09 21 | 704 | 1.0+ | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2002 12 10 | 704 | 0.7− | 0.6− | 2006 09 22 | 699 | 0.5+ | 0.6− | 2006 11 22 | 703 | 0.5+ | 0.1− |
| 2002 12 10 | 704 | 0.2− | 1.3− | 2006 09 22 | 699 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.5− |

### 2002 XR$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.19105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22990573 | $\omega$ | 329.10821 | | +0.24089330 | −0.96456633 | |
| $a$ | 2.6389806 | $\Omega$ | 106.76855 | | +0.91184327 | +0.18694527 | |
| $e$ | 0.2904418 | $i$ | 6.45369 | | +0.33243387 | +0.18618071 | |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 291 | 0.2+ | 0.0 | 2003 01 25 | 699 | 0.7+ | 0.2+ | 2006 09 18 | 703 | (1.5− | 3.2−) |
| 2002 10 31 | 291 | 0.3+ | 0.1− | 2003 01 25 | 699 | 0.1− | 1.0− | 2006 11 01 | 703 | 0.4− | 0.7+ |
| 2002 10 31 | 291 | 0.0 | 0.1+ | 2003 01 27 | 699 | 0.6+ | 0.4− | 2006 11 01 | 703 | 0.2− | 0.1− |
| 2002 12 10 | 644 | 0.4+ | 0.0 | 2003 01 27 | 699 | 0.3− | 0.7− | 2006 11 01 | 703 | 0.6− | 0.1+ |
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2003 01 27 | 699 | 0.3+ | 0.0 | 2006 11 01 | 703 | 0.0 | 0.4− |
| 2002 12 10 | 644 | 0.1+ | 0.5+ | 2003 01 27 | 699 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2002 12 13 | 291 | 0.3− | 0.1− | 2003 01 27 | 608 | 0.8+ | 0.7+ | 2006 11 08 | 644 | 0.5+ | 0.0 |
| 2002 12 13 | 291 | 0.4− | 0.0 | 2003 01 27 | 608 | 0.6+ | 0.1+ | 2006 11 08 | 644 | 0.4+ | 0.1+ |
| 2002 12 13 | 291 | 0.5− | 0.1+ | 2003 01 27 | 608 | 0.6+ | 0.5+ | 2006 11 11 | 644 | 0.2+ | 0.2− |
| 2002 12 13 | 291 | 0.5− | 0.2− | 2003 01 30 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 644 | 0.2+ | 0.1+ |
| 2002 12 13 | 291 | 0.3− | 0.1+ | 2003 01 30 | 644 | 0.8+ | 0.1− | 2006 11 11 | 644 | 0.2+ | 0.0 |
| 2002 12 13 | 291 | 0.0 | 0.7+ | 2003 01 30 | 644 | 0.5+ | 0.3− | 2006 11 13 | 703 | 0.0 | 0.1− |
| 2002 12 28 | 699 | 0.3+ | 0.7− | 2003 02 01 | 704 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.1− |
| 2002 12 28 | 699 | 0.8+ | 0.3− | 2003 02 01 | 704 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.3− |
| 2002 12 28 | 699 | 0.6+ | 0.1− | 2003 02 01 | 704 | 0.4+ | 0.6+ | 2006 11 13 | 703 | 0.4+ | 0.1+ |
| 2002 12 28 | 699 | 0.6+ | 1.4+ | 2003 02 04 | 644 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.5+ | 0.5− |
| 2002 12 31 | 704 | 0.2+ | 0.4− | 2003 02 04 | 704 | (1.8− | 0.6+) | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.6+ | 0.3+ | 2003 02 04 | 704 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2002 12 31 | 704 | (0.1+ | 1.7−) | 2003 02 04 | 704 | 0.1− | 0.3− | 2006 11 19 | 703 | 0.2+ | 0.6− |
| 2002 12 31 | 704 | 0.3+ | 0.5− | 2003 02 04 | 704 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.7− | 0.0 |
| 2002 12 31 | 704 | 0.4− | 0.2− | 2003 02 04 | 644 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.5+ |
| 2003 01 04 | 704 | 0.4+ | 0.2− | 2003 02 04 | 644 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.2− |
| 2003 01 04 | 704 | 0.4+ | 0.3+ | 2003 02 07 | 704 | 0.9− | 0.1− | 2006 11 20 | 704 | 0.5− | 0.5− |
| 2003 01 04 | 704 | 0.0 | 0.7+ | 2003 02 07 | 704 | 1.2− | 0.4− | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2003 01 04 | 704 | 0.1− | 0.1+ | 2003 02 07 | 704 | 0.2− | 0.8− | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2003 01 09 | 704 | 0.2+ | 1.0− | 2003 02 07 | 704 | 0.6− | 0.6− | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2003 01 09 | 704 | 0.3− | 0.6− | 2003 02 07 | 704 | 0.7− | 0.3− | 2006 11 25 | G96 | 0.3− | 2.0+ |
| 2003 01 09 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 703 | (0.3− | 1.7−) | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2003 01 25 | 699 | (2.2− | 0.1+) | 2006 09 18 | 703 | 0.5− | 0.5− | | | | |
| 2003 01 25 | 699 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.5− | 0.2+ | | | | |

### 2002 XU$_{57}$ = 2006 VA$_{151}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.73066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24349692 | $\omega$ | 160.35262 | | −0.61824906 | −0.78398052 | |
| $a$ | 2.5398442 | $\Omega$ | 327.76340 | | +0.70633959 | −0.52290329 | |
| $e$ | 0.1844338 | $i$ | 6.03263 | | +0.34474988 | −0.33458436 | |
| $P$ | 4.05 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1− | 0.2− | 2002 12 12 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 11 13 | 644 | 0.0 | 0.1− | 2002 12 12 | 644 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 11 13 | 644 | 0.3+ | 0.2+ | 2002 12 12 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.5+ |
| 2002 12 05 | 704 | (0.1− | 1.7−) | 2006 10 19 | D35 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.3− | 0.3+ |
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 10 19 | D35 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.3− | 2006 10 19 | D35 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.5+ | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.6− | 2006 10 27 | 703 | 0.4+ | 0.5− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.6− | 0.2+ | 2006 11 27 | G96 | 0.4− | 0.4+ |
| 2002 12 11 | 644 | 0.4+ | 0.2+ | 2006 10 27 | 703 | (0.9+ | 3.0−) | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2002 12 11 | 644 | 0.0 | 0.1− | 2006 10 27 | 703 | (1.5+ | 2.4−) | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2002 12 11 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2− | | | | |

**2002 XR$_{58}$ = 2006 UE$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.30383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23503193 | $\omega$ | 1.43262 | | +0.46934195 | −0.87345097 | |
| $a$ | 2.6004678 | $\Omega$ | 60.59152 | | +0.80866486 | +0.36620848 | |
| $e$ | 0.3723491 | $i$ | 8.55706 | | +0.35465375 | +0.32089680 | |
| $P$ | 4.19 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.9− | 0.2+ | 2002 12 15 | 704 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 1.1+ | 1.0− | 2002 12 15 | 704 | 0.0 | 0.4− | 2006 10 17 | 703 | 1.2+ | 0.4− |
| 2002 12 11 | 704 | 0.6− | 0.0 | 2002 12 15 | 704 | 0.9+ | 0.3− | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2002 12 11 | 704 | 0.6− | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2002 12 12 | 704 | 0.8− | 1.1+ | 2006 10 02 | 703 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 12 12 | 704 | 0.6+ | 0.9+ | 2006 10 02 | 703 | 0.3− | 0.4− | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2002 12 12 | 704 | 0.5+ | 0.6+ | 2006 10 02 | 703 | 0.1− | 0.7+ | 2006 10 24 | 644 | 0.5− | 0.3− |
| 2002 12 15 | 704 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.6+ | 0.7− | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2002 12 15 | 704 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.6+ | | | | |

**2002 XS$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.58693 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18157924 | $\omega$ | 301.36306 | | +0.89111574 | −0.35567597 | |
| $a$ | 3.0885781 | $\Omega$ | 80.78832 | | +0.44812335 | +0.78748164 | |
| $e$ | 0.3744504 | $i$ | 16.58722 | | −0.07140165 | +0.50335601 | |
| $P$ | 5.43 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.1− | 0.7− | 2002 12 11 | 704 | 0.4+ | 0.4− | 2003 01 05 | 704 | 0.1+ | 0.2− |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2002 12 11 | 704 | 0.5+ | 0.4− | 2003 01 05 | 704 | 0.2+ | 0.2+ |
| 2002 10 11 | 704 | 0.3+ | 0.5− | 2002 12 11 | 704 | 0.7+ | 0.1− | 2003 01 05 | 704 | 0.4+ | 0.3+ |
| 2002 10 11 | 704 | 1.2− | 0.4+ | 2002 12 11 | 704 | (2.2+ | 0.5−) | 2003 01 09 | 704 | 1.1+ | 1.3− |
| 2002 11 05 | 704 | 0.4+ | 0.1− | 2002 12 12 | 704 | 0.3+ | 0.8− | 2003 01 09 | 704 | 0.2− | 1.1− |
| 2002 11 05 | 704 | 1.5+ | 0.6+ | 2002 12 12 | 704 | 0.2− | 0.1− | 2003 01 09 | 704 | 1.6+ | 0.3− |
| 2002 11 05 | 704 | 0.1− | 0.7+ | 2002 12 12 | 704 | 0.3− | 0.0 | 2003 01 09 | 704 | (0.7+ | 2.2−) |
| 2002 11 05 | 704 | 0.5+ | 0.6+ | 2002 12 14 | 704 | 0.7+ | 0.2− | 2003 01 09 | 704 | 0.6+ | 0.2− |
| 2002 11 05 | 704 | 0.0 | 0.0 | 2002 12 14 | 704 | 0.1+ | 0.1− | 2006 05 06 | G96 | 0.2+ | 0.2− |
| 2002 11 14 | 704 | (3.4− | 0.7+) | 2002 12 14 | 704 | 0.4+ | 0.3− | 2006 05 06 | G96 | 0.0 | 0.3+ |
| 2002 11 14 | 704 | (3.3− | 1.0+) | 2002 12 14 | 704 | 0.1− | 0.5− | 2006 05 06 | G96 | 0.1− | 0.0 |
| 2002 11 14 | 704 | (3.2− | 1.2+) | 2002 12 14 | 704 | 0.1− | 0.1+ | 2006 05 06 | G96 | 0.2− | 0.2− |
| 2002 11 14 | 704 | (3.4− | 1.1+) | 2002 12 15 | 704 | 0.1− | 0.2+ | 2006 05 06 | G96 | 0.1− | 0.2− |
| 2002 11 14 | 704 | (3.1− | 1.6+) | 2002 12 15 | 704 | 0.2− | 1.1+ | 2006 05 06 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2002 12 15 | 704 | 0.2+ | 0.2+ | 2006 05 06 | G96 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2002 12 15 | 704 | 0.1− | 0.3+ | 2006 05 06 | G96 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2002 12 15 | 704 | 0.4− | 0.1+ | 2006 05 26 | G96 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2002 12 15 | 704 | 0.5+ | 0.8+ | 2006 05 26 | G96 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2002 12 15 | 704 | 0.1− | 0.3+ | 2006 05 26 | G96 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.3− | 0.3− | 2002 12 15 | 704 | 0.1+ | 0.2+ | 2006 05 26 | G96 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.2+ | 1.2− | 2002 12 15 | 704 | 0.0 | 0.7+ | 2006 06 21 | 691 | 0.0 | 0.3+ |
| 2002 12 11 | 704 | 0.4− | 0.8− | 2002 12 30 | 704 | 0.9− | 1.3+ | 2006 06 21 | 691 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 1.1− | 0.1+ | 2002 12 30 | 704 | 1.8− | 0.2+ | 2006 06 21 | 691 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 1.6− | 0.1+ | 2002 12 30 | 704 | 1.2− | 1.2+ | | | | |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 01 05 | 704 | 0.1− | 0.0 | | | | |

**2002 XO$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.09916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23848025 | $\omega$ | 157.98675 | | +0.53764465 | −0.83221481 | |
| $a$ | 2.5753392 | $\Omega$ | 259.25040 | | +0.75157840 | +0.54584872 | |
| $e$ | 0.1298605 | $i$ | 7.92676 | | +0.38218861 | +0.09730203 | |
| $P$ | 4.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 28 | 691 | 0.1− | 0.1− | 2003 01 11 | 291 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.1+ | 0.3− |
| 1997 06 28 | 691 | 0.3− | 0.2+ | 2003 01 11 | 291 | 0.5− | 0.1+ | 2006 11 15 | 704 | 0.2− | 0.9− |
| 1997 06 28 | 691 | 0.2+ | 0.3+ | 2003 01 11 | 291 | 0.2− | 0.3− | 2006 11 15 | 704 | 0.0 | 0.8− |
| 2002 11 06 | 704 | 0.0 | 0.8+ | 2003 01 31 | 704 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.2− | 0.1+ |
| 2002 11 06 | 704 | (0.1+ | 1.8+) | 2003 01 31 | 704 | 0.6+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.4− |
| 2002 11 06 | 704 | 0.5− | 0.7+ | 2003 01 31 | 704 | 0.4+ | 0.3− | 2006 11 16 | 704 | (0.4+ | 1.9−) |
| 2002 11 06 | 704 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.3− | 2006 11 16 | 704 | (0.2+ | 1.6−) |
| 2002 11 14 | 704 | 0.1+ | 0.7+ | 2006 10 22 | 644 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.6+ | 1.4− |
| 2002 11 14 | 704 | (1.8− | 0.4+) | 2006 10 22 | 644 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.5− |
| 2002 11 14 | 704 | (0.4− | 1.6−) | 2006 10 23 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | (0.1+ | 1.9−) |
| 2002 11 14 | 704 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.6− | 0.7− |
| 2002 11 14 | 704 | 0.8− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.8− | 0.3+ |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.9+ | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 1.0− | 0.4+ | 2006 11 17 | 704 | 1.1− | 0.2+ |
| 2002 12 05 | 704 | 1.3+ | 0.7+ | 2006 10 27 | 703 | 0.9− | 0.1− | 2006 11 17 | 704 | 0.5+ | 1.0− |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 1.3+ |
| 2002 12 10 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.9+ | 0.3− |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2002 12 10 | 704 | 0.0 | 0.8+ | 2006 11 11 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2002 12 10 | 704 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.2− | 1.0+ | 2006 11 19 | 704 | 0.3− | 0.9+ |
| 2002 12 13 | 704 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.9+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2002 12 13 | 704 | 1.4+ | 1.0− | 2006 11 11 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 12 13 | 704 | 1.3+ | 0.1− | 2006 11 11 | 644 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.5− | 0.3− |
| 2002 12 13 | 704 | 0.6− | 0.5− | 2006 11 14 | 703 | 0.2− | 0.2− | 2006 11 22 | 704 | (1.7− | 0.2−) |
| 2002 12 13 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.7− | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.8− | 0.2− |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.2+ | 2006 11 22 | 704 | 1.0− | 1.1+ |
| 2002 12 31 | 704 | 0.7− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− | 2006 12 01 | 691 | 0.3+ | 0.2− |
| 2002 12 31 | 704 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.2− | 2006 12 01 | 691 | 0.7+ | 0.5− |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.0 | 0.3+ |
| 2003 01 04 | 704 | 0.5− | 1.1+ | 2006 11 15 | G96 | 0.3+ | 0.5− | 2006 12 01 | 704 | 0.2+ | 1.1− |
| 2003 01 04 | 704 | 0.1− | 0.5+ | 2006 11 15 | 691 | (1.9− | 1.0−) | 2006 12 01 | 704 | 0.5− | 0.1+ |
| 2003 01 04 | 704 | 0.2− | 1.2+ | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.8− | 1.6+ |
| 2003 01 04 | 704 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.3+ | 0.1− | | | | |
| 2003 01 04 | 704 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.5− | 0.8− | | | | |

**2002 XW$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.68923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22319957 | $\omega$ | 106.86165 | | +0.99634293 | −0.00658277 | |
| $a$ | 2.6915791 | $\Omega$ | 253.57852 | | −0.02577990 | +0.92740497 | |
| $e$ | 0.0933085 | $i$ | 5.09535 | | +0.08146264 | +0.37400092 | |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 06 | 691 | 0.2+ | 0.6− | 2006 09 20 | 699 | (1.6− | 0.9+) | 2006 10 19 | G96 | 0.2− | 0.4− |
| 1997 10 06 | 691 | 0.2+ | 0.3− | 2006 09 20 | 699 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1997 10 06 | 691 | 0.1+ | 0.4− | 2006 09 20 | 699 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 12 05 | 291 | 0.4− | 0.0 | 2006 09 20 | 699 | 1.1− | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 12 05 | 291 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.4− | 0.9+ | 2006 10 21 | 691 | 0.3− | 0.2− |
| 2002 12 05 | 291 | 0.4+ | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.8+ | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 1.4− | 0.0 | 2006 09 25 | 704 | 0.6+ | 1.0+ | 2006 10 21 | 703 | 0.3+ | 1.0+ |
| 2002 12 05 | 704 | 1.0− | 0.7+ | 2006 09 25 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 2002 12 11 | 704 | 0.1− | 1.0− | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.7+ |
| 2002 12 11 | 704 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.8+ | 0.5− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 25 | 106 | 0.1+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 10 25 | 106 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.6+ | 0.8− | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 10 25 | 106 | 0.1− | 0.9− |
| 2002 12 13 | 704 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.6+ | 2006 10 25 | 106 | 0.1+ | 0.3− |
| 2002 12 13 | 704 | 0.5+ | 0.7− | 2006 09 30 | 703 | 0.6+ | 0.5+ | 2006 10 29 | 691 | 0.4+ | 0.3+ |
| 2002 12 13 | 704 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.2+ |
| 2002 12 13 | 704 | 0.3− | 0.0 | 2006 09 30 | 691 | (1.7+ | 0.8+) | 2006 10 29 | 691 | 0.4+ | 0.3+ |
| 2002 12 31 | 704 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 1.0− | 0.0 | 2006 10 15 | 104 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2002 12 31 | 704 | 0.2− | 1.2+ | 2006 10 15 | 104 | 1.0− | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.6+ |
| 2002 12 31 | 704 | 0.7− | 0.5− | 2006 10 15 | 104 | 0.0 | 0.8+ | 2006 11 14 | 703 | 0.8− | 1.2− |
| 2002 12 31 | 704 | 0.9− | 1.2+ | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.9− |
| 2003 01 06 | 291 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.5− |
| 2003 01 06 | 291 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.5− | 1.4− |
| 2003 01 06 | 291 | 0.2− | 0.2− | 2006 10 17 | 703 | (0.4− | 3.0+) | 2006 11 19 | 704 | 1.4+ | 0.5+ |
| 2003 01 11 | 291 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 1.0− | 2006 11 19 | 704 | 0.9+ | 0.8+ |
| 2003 01 11 | 291 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2003 01 11 | 291 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 1.1+ | 0.9− | 2006 11 25 | G96 | 0.4− | 0.4− |
| 2006 09 20 | 699 | 0.5− | 0.3− | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2006 09 20 | 699 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2006 09 20 | 699 | 0.4− | 1.2+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 25 | G96 | 0.3+ | 0.2− |

**2002 XF$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.89413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22474560 | $\omega$ | 132.93784 | | +0.12266242 | −0.99072857 | |
| $a$ | 2.6792212 | $\Omega$ | 309.92224 | | +0.88693960 | +0.13583581 | |
| $e$ | 0.1348947 | $i$ | 4.36742 | | +0.44529998 | +0.00235124 | |
| $P$ | 4.39 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.1− | 0.1− | 2002 12 11 | 704 | 0.2+ | 0.5− | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 1999 02 09 | 691 | 0.0 | 0.0 | 2002 12 13 | 704 | 1.0+ | 0.8+ | 2006 09 30 | 703 | 0.3+ | 0.4+ |
| 1999 02 09 | 691 | 0.1+ | 0.1− | 2002 12 13 | 704 | 0.4+ | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2002 11 12 | 704 | 0.2− | 0.9+ | 2002 12 13 | 704 | 0.1− | 0.5− | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2002 11 12 | 704 | 0.6− | 0.3− | 2002 12 13 | 704 | 0.3− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.8+ | 0.2− | 2003 01 05 | 704 | 0.5− | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.4− |
| 2002 12 06 | 704 | 0.3+ | 0.2+ | 2003 01 05 | 704 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 0.0 | 0.6+ | 2003 01 05 | 704 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1− |
| 2002 12 06 | 704 | 0.7− | 0.5+ | 2006 09 25 | 683 | (0.6− | 2.2−) | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.5− | 0.7+ | 2006 09 25 | 683 | (1.0+ | 1.7−) | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2006 09 25 | 683 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2002 12 11 | 704 | 0.4− | 0.7− | 2006 09 30 | 703 | 0.7+ | 0.5− | | | | |

**2002 XN$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.04233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24129544 | $\omega$ | 334.85588 | | +0.99936848 | −0.01837475 | |
| $a$ | 2.5552691 | $\Omega$ | 26.25128 | | +0.03017720 | +0.89078775 | |
| $e$ | 0.2947325 | $i$ | 3.94286 | | −0.01876086 | +0.45404796 | |
| $P$ | 4.08 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.7− | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.4+ |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.6+ |
| 2002 12 06 | 704 | 0.7− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 2002 12 06 | 704 | 0.1+ | 0.7+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.1− | 1.2+ |
| 2002 12 11 | 704 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2002 12 13 | 704 | 0.5+ | 0.8− | 2006 10 20 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2002 12 13 | 704 | 0.1+ | 1.1− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.4− | 0.4− |
| 2002 12 13 | 704 | 0.3− | 1.3− | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | (0.8+ | 1.6−) |
| 2002 12 13 | 704 | 0.3− | 0.9− | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.4+ | 1.1− |
| 2002 12 13 | 704 | 0.3+ | 1.0− | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.8− |
| 2002 12 14 | 704 | 0.8− | 0.4− | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2002 12 14 | 704 | 0.5− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 27 | 704 | 0.1+ | 0.6+ |
| 2002 12 14 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 1.0+ | 0.2− | 2006 11 27 | 704 | 0.5+ | 0.6+ |
| 2002 12 14 | 704 | 0.5− | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.0 | 2006 11 27 | 704 | 0.5− | 0.9+ |
| 2003 01 05 | 704 | 0.6+ | 0.9− | 2006 11 14 | 703 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.9− | 0.8+ |
| 2003 01 05 | 704 | 1.2+ | 0.8− | 2006 11 14 | 703 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3+ | 2.9+ |
| 2003 01 05 | 704 | (0.4+ | 2.1−) | 2006 11 15 | 704 | 0.2− | 0.8+ | 2006 11 28 | 704 | 1.3− | 1.4− |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 1.0− | 0.4− |
| 2003 01 05 | 704 | 0.4+ | 0.6− | 2006 11 15 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.6− | 1.5+ |
| 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.1− | 1.1+ |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.2+ | | | | |

**2002 XV$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.78902 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21238181 | $\omega$ | 156.55728 | | +0.01318990 | −0.97771489 | |
| $a$ | 2.7822181 | $\Omega$ | 292.13964 | | +0.87788351 | +0.11163737 | |
| $e$ | 0.1602959 | $i$ | 13.07349 | | +0.47869256 | −0.17779396 | |
| $P$ | 4.64 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.1− | 2002 12 15 | 704 | 0.4− | 0.4+ | 2006 09 16 | 703 | 0.1+ | 0.8+ |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.6+ | 0.3− | 2006 09 16 | 703 | (0.3− | 2.1−) |
| 2002 12 06 | 704 | 0.2− | 0.2− | 2003 01 05 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.6− | 0.5− |
| 2002 12 06 | 704 | 0.3+ | 0.3− | 2003 01 05 | 704 | 0.6+ | 0.5− | 2006 09 16 | 703 | 0.4− | 1.0− |
| 2002 12 11 | 704 | 0.0 | 0.3− | 2003 01 09 | 704 | 0.6− | 0.0 | 2006 09 21 | 699 | 0.1+ | 0.2+ |
| 2002 12 11 | 704 | 0.2− | 0.5− | 2003 01 09 | 704 | 1.0− | 0.7+ | 2006 09 21 | 699 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.1− | 2003 01 09 | 704 | 0.9− | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.7+ |
| 2002 12 11 | 704 | 0.1+ | 0.0 | 2003 01 09 | 704 | 0.7− | 0.6+ | 2006 09 21 | 699 | 0.5+ | 0.3− |
| 2002 12 11 | 704 | 0.0 | 0.6+ | 2003 01 09 | 704 | 0.8− | 1.0+ | 2006 09 28 | 703 | 0.3− | 0.8+ |
| 2002 12 13 | 704 | 0.2+ | 0.1− | 2003 01 31 | 704 | 0.3+ | 0.3− | 2006 09 28 | 703 | 1.3− | 0.2− |
| 2002 12 13 | 704 | 0.3+ | 0.5− | 2003 01 31 | 704 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.8− | 0.2+ |
| 2002 12 13 | 704 | 1.4+ | 1.0− | 2003 01 31 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.0 |
| 2002 12 13 | 704 | 0.4+ | 0.4− | 2003 01 31 | 704 | 0.3+ | 0.1− | 2006 10 16 | 106 | 0.1+ | 0.1+ |
| 2002 12 13 | 704 | 0.9+ | 0.1− | 2003 02 03 | 704 | 0.9+ | 0.7− | 2006 10 16 | 106 | 1.1+ | 0.8+ |
| 2002 12 15 | 704 | 0.5+ | 0.1− | 2003 02 03 | 704 | 0.4− | 0.3− | 2006 10 16 | 106 | 1.0+ | 0.3− |
| 2002 12 15 | 704 | 0.8− | 0.6+ | 2003 02 03 | 704 | 0.0 | 0.4− | 2006 10 16 | 106 | 1.1+ | 0.9− |
| 2002 12 15 | 704 | 0.0 | 0.6+ | 2003 02 03 | 704 | 0.2+ | 0.0 | | | | |
| 2002 12 15 | 704 | 1.2− | 0.6+ | 2003 02 03 | 704 | 0.6− | 0.4+ | | | | |

**2002 XA$_{64}$ = 2006 SV$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.98302 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23909545 | $\omega$ | 137.87853 | | +0.99587425 | +0.05542005 | |
| $a$ | 2.5709197 | $\Omega$ | 219.11921 | | −0.07533094 | +0.94638872 | |
| $e$ | 0.2746783 | $i$ | 6.53936 | | +0.05059367 | +0.31824048 | |
| $P$ | 4.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 691 | 0.0 | 0.3+ | 2006 09 28 | J75 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.6− |
| 2001 06 16 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.6− |
| 2001 06 16 | 691 | 0.0 | 0.8+ | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2002 12 01 | 704 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2002 12 01 | 704 | 1.3+ | 0.7− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2002 12 01 | 704 | 1.3+ | 1.3− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2002 12 11 | 704 | (1.7− | 1.2+) | 2006 10 28 | 704 | 0.0 | 0.7+ | 2006 11 18 | 704 | 0.2+ | 1.4+ |
| 2002 12 13 | 704 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2002 12 13 | 704 | 0.4+ | 0.1+ | 2006 10 28 | 704 | 0.1+ | 1.1+ | 2006 11 18 | 704 | 0.4+ | 1.1+ |
| 2002 12 13 | 704 | 0.3− | 0.4+ | 2006 10 28 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2002 12 13 | 704 | 0.7− | 1.0+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2005 05 08 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 1.2− | 0.4+ |
| 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2005 05 08 | 691 | 0.0 | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2006 09 16 | 703 | 0.4− | 1.5− | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 703 | 0.4+ | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2006 09 16 | 703 | 0.8− | 0.2− | 2006 11 10 | 644 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2006 09 16 | 703 | (1.9− | 0.9−) | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2006 09 27 | J75 | 0.6− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2006 09 27 | J75 | 1.2+ | 0.7− | 2006 11 13 | 703 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.8+ |
| 2006 09 27 | J75 | 0.9+ | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.5+ |
| 2006 09 27 | J75 | 1.2+ | 0.0 | 2006 11 13 | 703 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.8+ |
| 2006 09 27 | J75 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.9− | 0.3− | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.4− | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.1+ |
| 2006 09 28 | J75 | 0.6+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.3+ |

## 2002 $XQ_{65}$ = 2006 $RL_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.07501 | | (2000.0) | | | |
| $n$ | 0.22097144 | $\omega$ | 80.52943 | | +0.54695510 | −0.83713542 |
| $a$ | 2.7096422 | $\Omega$ | 336.30847 | | +0.76142723 | +0.50076700 |
| $e$ | 0.2697635 | $i$ | 0.95029 | | +0.34794926 | +0.22008340 |
| $P$ | 4.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.6+ | 0.7+ |
| 2002 12 05 | 704 | 0.5− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.9− |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 16 | 699 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.5+ | 0.5− |
| 2002 12 05 | 704 | 0.6− | 0.3+ | 2006 09 16 | 699 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 2002 12 12 | 704 | 0.5− | 0.2+ | 2006 09 16 | 699 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2002 12 12 | 704 | 0.8+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.1− | 0.7− |
| 2002 12 12 | 704 | 0.6+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.9+ | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 2002 12 13 | 704 | 1.0+ | 0.6− | 2006 09 17 | 704 | 0.8− | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 2002 12 13 | 704 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.5+ | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 2002 12 13 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 699 | 0.6+ | 0.4+ | 2006 11 18 | 703 | 1.0+ | 1.4− |
| 2006 08 27 | 699 | 0.1− | 0.5+ | 2006 09 19 | 699 | 1.3+ | 0.9+ | 2006 11 18 | 703 | 0.6− | 0.1− |
| 2006 08 27 | 699 | 0.3− | 1.3− | 2006 09 19 | 699 | 0.6+ | 0.3+ | 2006 11 18 | 703 | 0.6+ | 0.8+ |
| 2006 08 27 | 699 | (2.1− | 0.2+) | 2006 09 19 | 699 | 0.5+ | 0.7+ | 2006 11 18 | 703 | 0.5+ | 0.7+ |
| 2006 08 27 | 699 | 0.7− | 0.1+ | 2006 09 23 | 691 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2006 09 14 | 644 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.6− |
| 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2006 09 15 | 691 | 0.4− | 0.3− | 2006 09 25 | 699 | 0.4+ | 0.3− | | | | |

## 2002 $XR_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.24279 | | (2000.0) | | | |
| $n$ | 0.28300409 | $\omega$ | 172.05855 | | −0.66160046 | −0.71688995 |
| $a$ | 2.2975990 | $\Omega$ | 318.96441 | | +0.66826145 | −0.43065838 |
| $e$ | 0.1479271 | $i$ | 19.56863 | | +0.34016388 | −0.54827198 |
| $P$ | 3.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.3− | 0.4+ | 2002 12 13 | 704 | 0.5− | 0.2− | 2002 12 28 | 704 | 0.7− | 0.8+ |
| 2001 07 25 | 608 | 0.3− | 0.1+ | 2002 12 13 | 704 | 0.4+ | 0.4+ | 2002 12 28 | 704 | 0.1+ | 0.0 |
| 2001 07 25 | 608 | 0.2− | 0.3+ | 2002 12 13 | 704 | 0.4− | 0.2− | 2003 01 14 | 704 | 0.2+ | 0.7+ |
| 2002 11 11 | 704 | 0.1− | 0.7− | 2002 12 14 | 704 | 0.2− | 0.3− | 2003 01 14 | 704 | 0.0 | 0.1+ |
| 2002 11 11 | 704 | 0.2+ | 0.5− | 2002 12 14 | 704 | 0.0 | 0.3− | 2003 01 14 | 704 | 0.1− | 0.6+ |
| 2002 11 11 | 704 | 0.5+ | 0.7− | 2002 12 14 | 704 | 0.9+ | 0.2− | 2005 09 01 | 644 | 0.3− | 0.5+ |
| 2002 12 12 | 704 | 0.4− | 0.1− | 2002 12 14 | 704 | 0.2+ | 0.1+ | 2005 09 01 | 644 | 0.7− | 0.2+ |
| 2002 12 12 | 704 | 0.4− | 0.1+ | 2002 12 14 | 704 | 0.0 | 0.1− | 2005 09 01 | 644 | 0.1− | 0.7+ |
| 2002 12 12 | 704 | 0.1− | 0.5+ | 2002 12 28 | 704 | 0.3− | 1.1− | 2006 11 09 | 691 | 0.3+ | 0.2+ |
| 2002 12 13 | 704 | 0.1− | 0.2− | 2002 12 28 | 704 | 0.3+ | 0.2+ | 2006 11 09 | 691 | 0.5+ | 0.4+ |
| 2002 12 13 | 704 | 0.3− | 0.1+ | 2002 12 28 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.1+ |

## 2002 $XM_{66}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.01157 | | (2000.0) | | | |
| $n$ | 0.22696168 | $\omega$ | 88.94976 | | +0.98274393 | +0.15924454 |
| $a$ | 2.6617526 | $\Omega$ | 261.88242 | | −0.18339774 | +0.90507977 |
| $e$ | 0.1655648 | $i$ | 5.45456 | | +0.02407557 | +0.39429911 |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 699 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2002 11 06 | 704 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.8+ |
| 2002 11 06 | 704 | 1.2+ | 0.5+ | 2006 09 20 | 699 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 1.0+ | 0.7+ |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.7− | 2006 10 17 | 703 | 0.7+ | 0.1+ |
| 2002 12 05 | 704 | 0.5+ | 0.9− | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2002 12 05 | 608 | 1.4+ | 0.0 | 2006 09 30 | 703 | 1.0− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 12 05 | 608 | 0.7+ | 0.1− | 2006 10 04 | 703 | 0.9− | 0.1+ | 2006 11 15 | 704 | 0.9+ | 0.9+ |
| 2002 12 05 | 608 | 0.9+ | 0.1− | 2006 10 04 | 703 | 0.7+ | 0.4+ | 2006 11 15 | 704 | 0.9− | 0.2+ |
| 2002 12 10 | 704 | 0.4− | 0.8− | 2006 10 04 | 703 | 0.8+ | 0.4− | 2006 11 15 | 704 | 0.8+ | 0.3+ |
| 2002 12 10 | 704 | 0.1− | 0.8+ | 2006 10 04 | 703 | 0.4+ | 0.4− | 2006 11 15 | 704 | 0.1+ | 0.3− |
| 2002 12 10 | 704 | 0.7− | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | (1.8+ | 0.5+) |
| 2002 12 10 | 704 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.9− | 0.8+ |
| 2002 12 10 | 704 | 0.5− | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2002 12 11 | 333 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2002 12 11 | 333 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2003 01 04 | 704 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | (2.3+ | 0.2+) |
| 2003 01 04 | 704 | 1.3− | 0.6− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | (2.2+ | 0.5−) |
| 2003 01 04 | 704 | 1.0− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2006 09 20 | 699 | 0.7+ | 0.6− | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.4+ |

## 2002 $XS_{66}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.49930 | | (2000.0) | | | |
| $n$ | 0.24026653 | $\omega$ | 67.37274 | | +0.77850908 | +0.62425498 |
| $a$ | 2.5625589 | $\Omega$ | 253.93754 | | −0.59783082 | +0.70600082 |
| $e$ | 0.3150340 | $i$ | 3.88047 | | −0.19110708 | +0.33446759 |
| $P$ | 4.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 608 | 0.6+ | 0.2+ | 2005 05 09 | 703 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 2002 11 28 | 608 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.3− | 0.6− | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2002 11 28 | 608 | 0.4+ | 1.2+ | 2006 08 29 | 703 | 1.1− | 1.2+ | 2006 11 11 | 703 | 1.1+ | 1.1− |
| 2002 12 05 | 704 | (0.2+ | 2.2+) | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.4+ | 0.7− | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2002 12 05 | 608 | 0.2− | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.9+ | 2006 11 18 | 704 | 0.7− | 0.9+ |
| 2002 12 05 | 608 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.6+ | 1.0− | 2006 11 18 | 704 | 1.2− | 0.5+ |
| 2002 12 05 | 608 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.5+ |
| 2002 12 11 | 333 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.6+ | 2006 11 18 | 704 | 0.4− | 0.6+ |
| 2002 12 11 | 333 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 20 | 703 | 0.5− | 0.2− |
| 2002 12 11 | 333 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 20 | 703 | 0.5+ | 0.6− |
| 2002 12 11 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.7+ | 2006 11 20 | 703 | 0.0 | 0.7− |
| 2002 12 11 | 704 | 0.6− | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2002 12 11 | 704 | 0.5− | 0.2− | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 20 | 703 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.8− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2002 12 11 | 704 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.6− | 0.2+ |
| 2005 04 06 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2005 04 06 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2005 04 06 | 691 | 0.5+ | 0.1− | 2006 10 28 | 291 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2005 04 11 | 699 | 0.3− | 1.5+ | 2006 10 28 | 291 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2005 04 11 | 699 | 1.0+ | 1.4+ | 2006 10 28 | 291 | 0.0 | 0.5− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 04 11 | 699 | 0.2− | 0.9− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 04 11 | 699 | 0.8+ | 1.0− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2005 04 15 | 691 | 0.9− | 1.0− | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2005 04 15 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.5− | | |
| 2005 05 01 | 644 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.4− | 0.0 | | |
| 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 11 09 | D35 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 1.3− | 0.8− | | |
| 2005 05 09 | 703 | 0.2+ | 0.7− | 2006 11 09 | D35 | 0.3+ | 0.1+ | 2006 12 01 | 704 | 0.0 | 0.7− | | |
| 2005 05 09 | 703 | 1.3− | 0.6+ | 2006 11 09 | D35 | 0.3+ | 0.1− | 2006 12 01 | 704 | 0.6+ | 0.1− | | |
| 2005 05 09 | 703 | 1.5− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.7+ | | | | | | |

**2002 XV$_{66}$ = 2002 XH$_{66}$**

Id. Minor Planet Center (d, *MPO* 41953)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.74421 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21175682 | $\omega$ | 160.59667 | | +0.54164926 | | −0.83233229 |
| $a$ | 2.7876898 | $\Omega$ | 256.44544 | | +0.75436594 | | +0.54304162 |
| $e$ | 0.2129874 | $i$ | 6.95039 | | +0.37087479 | | +0.11103496 |
| $P$ | 4.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.0 | 0.4+ | 2002 12 10 | 704 | 0.8+ | 0.4+ | 2002 12 31 | 699 | 0.5+ | 0.0 |
| 2002 10 12 | 704 | 0.1+ | 0.8+ | 2002 12 10 | 333 | 0.0 | 0.1+ | 2002 12 31 | 699 | 0.7− | 0.1+ |
| 2002 10 12 | 704 | 0.7− | 1.3+ | 2002 12 10 | 704 | 0.2− | 0.2+ | 2002 12 31 | 699 | 1.0+ | 0.3− |
| 2002 10 12 | 704 | 0.5+ | 1.0+ | 2002 12 10 | 704 | 0.3+ | 0.2+ | 2002 12 31 | 704 | 0.1+ | 0.3− |
| 2002 11 14 | 704 | 0.4− | 0.3− | 2002 12 10 | 704 | 0.0 | 0.5+ | 2002 12 31 | 704 | 0.9− | 0.5− |
| 2002 11 14 | 704 | 0.8− | 0.4− | 2002 12 10 | 333 | 0.1+ | 0.3− | 2002 12 31 | 704 | 0.7+ | 0.5− |
| 2002 11 14 | 704 | 0.1+ | 0.3+ | 2002 12 10 | 704 | 0.2+ | 0.5+ | 2002 12 31 | 704 | 0.3− | 0.1− |
| 2002 11 14 | 704 | 0.3− | 0.2− | 2002 12 11 | 333 | 0.4+ | 0.0 | 2003 01 04 | 704 | 0.7− | 0.1+ |
| 2002 11 14 | 704 | 0.8+ | 0.5− | 2002 12 11 | 333 | 0.4+ | 0.4+ | 2003 01 04 | 704 | 0.8+ | 0.3+ |
| 2002 11 28 | 608 | 0.2− | 0.1+ | 2002 12 11 | 333 | 0.5+ | 0.1+ | 2003 01 04 | 704 | 0.5− | 0.2− |
| 2002 11 28 | 608 | 0.2− | 0.1+ | 2002 12 14 | 291 | 0.1− | 0.6− | 2003 01 04 | 704 | 0.6− | 0.2− |
| 2002 11 28 | 608 | 0.1+ | 0.3+ | 2002 12 14 | 291 | 0.1− | 0.4− | 2003 01 19 | 644 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.1− | 2002 12 14 | 291 | 0.1− | 0.5− | 2003 01 19 | 644 | 0.3− | 0.3+ |
| 2002 12 05 | 704 | 0.6+ | 0.3− | 2002 12 27 | 644 | 0.2− | 0.6+ | 2003 01 19 | 644 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.3− | 2002 12 27 | 644 | 0.5− | 0.6+ | 2006 08 16 | 644 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.5+ | 0.2− | 2002 12 27 | 644 | 0.3− | 1.6+ | 2006 08 16 | 644 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2002 12 28 | 699 | 0.6+ | 1.2+ | 2006 08 16 | 644 | 0.2− | 0.0 |
| 2002 12 05 | 608 | 0.0 | 0.5− | 2002 12 28 | 699 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.5+ | 0.0 |
| 2002 12 05 | 608 | 0.0 | 0.1− | 2002 12 28 | 699 | 0.8− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2002 12 05 | 608 | 0.1− | 0.1+ | 2002 12 28 | 699 | 0.4− | 1.5+ | 2006 09 18 | 691 | 0.1− | 0.1− |
| 2002 12 10 | 333 | 0.1− | 0.1− | 2002 12 31 | 699 | 0.3− | 0.5− | | | | |

**2002 XU$_{67}$ = 2006 UA$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.20743 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26033181 | $\omega$ | 274.71218 | | +0.06072022 | | −0.99812795 |
| $a$ | 2.4291326 | $\Omega$ | 171.79590 | | +0.93493305 | | +0.05430282 |
| $e$ | 0.1621177 | $i$ | 2.94205 | | +0.34959011 | | +0.02813882 |
| $P$ | 3.79 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5+ | 0.3− | 2002 12 11 | 704 | 0.3− | 0.8+ | 2006 10 27 | 291 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2002 12 13 | 644 | 0.1+ | 0.3− | 2006 10 27 | 291 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2002 12 13 | 644 | 0.2+ | 0.6− | 2006 10 28 | 291 | 0.6+ | 0.2+ |
| 2002 12 11 | 704 | 0.4− | 0.2− | 2002 12 13 | 644 | 0.1− | 0.3− | 2006 10 28 | 291 | 0.5− | 0.3− |
| 2002 12 11 | 704 | 0.3+ | 0.8+ | 2006 10 27 | 291 | 0.2+ | 0.1− | 2006 10 28 | 291 | 0.1− | 0.1+ |

**2002 XC$_{68}$ = 2006 UJ$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.72818 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23244686 | $\omega$ | 235.60912 | | −0.00008868 | | −0.99638791 |
| $a$ | 2.6197123 | $\Omega$ | 214.69712 | | +0.95947113 | | +0.02384579 |
| $e$ | 0.1991033 | $i$ | 8.57934 | | +0.28180693 | | −0.08150156 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 644 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 17 | G92 | 0.1− | 0.1− |
| 2002 12 11 | 644 | 0.5+ | 0.8+ | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 17 | G92 | 0.1+ | 0.3− |
| 2002 12 11 | 644 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 12 13 | 644 | 0.5− | 1.2+ | 2006 10 29 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4− | 0.6+ |
| 2002 12 13 | 644 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.5− | 0.4− |
| 2002 12 13 | 644 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 1.1− | 0.7− |
| 2002 12 14 | 704 | 0.8− | 0.5− | 2006 11 09 | 644 | 0.3+ | 0.7+ | 2006 11 18 | G92 | 0.8− | 0.3− |
| 2002 12 14 | 704 | 0.4+ | 1.2− | 2006 11 09 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G92 | 0.4+ | 0.0 |
| 2002 12 14 | 704 | 0.2− | 1.0− | 2006 11 09 | 691 | 0.2+ | 0.1− | 2006 11 18 | G92 | 0.4+ | 0.0 |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 19 | G92 | 0.7+ | 0.2− |
| 2006 09 27 | G96 | 0.5− | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 19 | G92 | 0.4− | 0.7+ |
| 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.3+ | 2006 11 19 | G92 | 0.1+ | 0.7+ |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 17 | G92 | 0.6+ | 0.1− | | | | |

**2002 XG$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.55740 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22127906 | $\omega$ | 111.70273 | | −0.56373081 | | −0.81741331 |
| $a$ | 2.7071303 | $\Omega$ | 14.54892 | | +0.46795957 | | −0.43431085 |
| $e$ | 0.2683055 | $i$ | 28.14712 | | +0.68060371 | | −0.37843041 |
| $P$ | 4.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 704 | 0.3+ | 0.4− | 2002 12 31 | 704 | 0.2+ | 0.3− | 2003 03 10 | 644 | 0.1− | 1.0+ |
| 2002 12 13 | 704 | 0.2+ | 0.2+ | 2002 12 31 | 704 | 1.1+ | 0.9− | 2003 03 10 | 644 | 0.0 | 0.9+ |
| 2002 12 13 | 704 | 0.8+ | 0.0 | 2003 01 15 | 704 | 0.7− | 0.3+ | 2003 03 10 | 644 | 0.2− | 0.7+ |
| 2002 12 14 | 704 | 0.2− | 0.0 | 2003 01 15 | 704 | 1.0− | 0.1− | 2003 03 24 | 704 | (0.4− | 2.4+) |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2003 01 15 | 704 | 1.6− | 0.6+ | 2003 03 24 | 704 | 0.2+ | 0.5− |
| 2002 12 14 | 704 | 0.1+ | 0.0 | 2003 01 15 | 704 | 0.1+ | 1.1+ | 2003 03 24 | 704 | 0.3+ | 1.1− |
| 2002 12 14 | 704 | 0.7+ | 0.4− | 2003 02 10 | 699 | 0.2+ | 0.6− | 2003 03 24 | 704 | 1.1+ | 0.3− |
| 2002 12 14 | 704 | 0.9− | 0.1+ | 2003 02 10 | 699 | 0.2+ | 0.8− | 2006 09 28 | 703 | 0.3− | 0.2+ |
| 2002 12 28 | 704 | 0.9+ | 0.0 | 2003 02 10 | 699 | 0.1− | 0.8− | 2006 09 28 | 703 | 0.4− | 0.1+ |
| 2002 12 28 | 704 | 0.4+ | 0.3+ | 2003 02 10 | 699 | 0.1− | 0.3− | 2006 09 28 | 703 | 0.6− | 0.6− |
| 2002 12 28 | 704 | 1.0+ | 0.7+ | 2003 02 23 | 704 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.1+ |
| 2002 12 28 | 704 | 0.1− | 0.1+ | 2003 02 23 | 704 | 0.2− | 0.0 | 2006 11 20 | 703 | 0.6− | 0.1+ |
| 2002 12 31 | 704 | 0.2− | 0.2+ | 2003 02 23 | 704 | 0.2− | 0.0 | 2006 11 20 | 703 | 0.9+ | 0.8+ |
| 2002 12 31 | 704 | 0.2− | 0.2+ | 2003 02 23 | 704 | 0.2− | 0.0 | 2006 11 20 | 703 | 1.6+ | 1.9− |
| 2002 12 31 | 704 | 0.1− | 0.2− | 2003 02 23 | 704 | 0.4− | 0.0 | 2006 11 20 | 703 | 0.3− | 1.2+ |

**2002 XO$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.06520 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21986819 | $\omega$ | 161.26773 | | +0.63223570 | | −0.77259612 |
| $a$ | 2.7186989 | $\Omega$ | 249.47419 | | +0.70268594 | | +0.60337183 |
| $e$ | 0.2508553 | $i$ | 3.55559 | | +0.32635944 | | +0.19757953 |
| $P$ | 4.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 049 | 0.1− | 0.7− | 2002 12 08 | 049 | 0.4+ | 0.0 | 2006 09 14 | 691 | 0.2− | 0.2+ |
| 2002 11 05 | 049 | 0.5+ | 0.8− | 2002 12 08 | 049 | 0.3+ | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.2− |
| 2002 11 05 | 049 | 0.6− | 0.8− | 2002 12 08 | 049 | 0.5+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.2+ |
| 2002 11 26 | 291 | 0.7− | 0.1+ | 2002 12 10 | 704 | 0.7+ | 1.2+ | 2006 09 17 | 691 | 0.4+ | 0.1+ |
| 2002 11 26 | 291 | 0.3− | 0.2+ | 2002 12 10 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 11 26 | 291 | 0.3− | 0.1+ | 2002 12 10 | 704 | 0.2− | 0.5− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2002 12 10 | 704 | 1.0+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.7− | 2006 08 28 | 703 | 0.7− | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 0.3− | 2006 08 28 | 703 | 0.9− | 0.0 | | | | |
| 2002 12 05 | 704 | 0.7+ | 0.2− | 2006 08 28 | 703 | 0.5− | 0.0 | | | | |

**2002 XW$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.29832 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23937874 | $\omega$ | 343.75132 | | +0.36642186 | | −0.92565828 |
| $a$ | 2.5688909 | $\Omega$ | 84.67644 | | +0.86386453 | | +0.30080042 |
| $e$ | 0.2753039 | $i$ | 5.43432 | | +0.34564879 | | +0.22951221 |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2003 01 09 | 704 | 0.3+ | 0.7− | 2006 11 17 | 704 | 0.5− | 0.2− |
| 2002 12 05 | 704 | 0.3+ | 1.2+ | 2003 01 09 | 704 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.7+ | 0.3+ | 2003 01 09 | 704 | 0.6+ | 1.0− | 2006 11 27 | 704 | 0.2− | 0.0 |
| 2002 12 09 | 049 | 1.1− | 0.2+ | 2003 02 01 | 704 | 0.7− | 0.0 | 2006 11 27 | 704 | 0.4− | 0.2+ |
| 2002 12 09 | 049 | 0.6+ | 0.9+ | 2003 02 01 | 704 | 0.7− | 0.3+ | 2006 11 27 | 704 | 0.4+ | 0.0 |
| 2002 12 09 | 049 | 0.9− | 0.1− | 2003 02 01 | 704 | 0.4− | 0.3+ | 2006 12 01 | 704 | 0.3+ | 0.1− |
| 2002 12 10 | 704 | 0.0 | 0.4+ | 2003 02 01 | 704 | 0.3− | 1.3+ | 2006 12 01 | 704 | 0.4+ | 0.1+ |
| 2002 12 10 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.5− | 0.3− | 2006 12 01 | 704 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.8− | 0.5+ | 2006 12 01 | 704 | 0.8+ | 0.8− |
| 2003 01 05 | 704 | 1.1+ | 0.1− | 2006 11 14 | 704 | 0.5− | 0.7+ | 2006 12 01 | 704 | 0.1+ | 0.4+ |
| 2003 01 05 | 704 | 0.4− | 0.5− | 2006 11 14 | 704 | 1.3− | 0.2− | 2006 12 01 | 691 | 0.3+ | 0.2− |
| 2003 01 05 | 704 | 0.4− | 0.3− | 2006 11 17 | 704 | 0.3+ | 1.3+ | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2003 01 05 | 704 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.7− | 0.5− | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2003 01 09 | 704 | 0.6+ | 1.2− | 2006 11 17 | 704 | 0.0 | 0.1+ | | | | |

**2002 XK$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.38380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23719178 | $\omega$ | 63.52997 | | −0.34060060 | −0.93958153 | |
| $a$ | 2.5846573 | $\Omega$ | 46.42787 | | +0.84487947 | −0.32187779 | |
| $e$ | 0.1701144 | $i$ | 2.71503 | | +0.41251656 | −0.11653859 | |
| $P$ | 4.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.3− | 2006 11 18 | 704 | 1.2− | 0.2+ |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 10 23 | 701 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.4− |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 10 23 | 701 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.1+ |
| 2002 12 05 | 704 | 0.8− | 0.5+ | 2006 10 23 | 701 | 0.2− | 0.1+ | 2006 11 18 | 704 | 1.1− | 0.3− |
| 2002 12 10 | 704 | 0.6− | 0.0 | 2006 10 23 | 701 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2002 12 10 | 704 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.0 |
| 2002 12 10 | 704 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.4+ |
| 2002 12 10 | 704 | 0.8− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.5+ | 0.8+ |
| 2002 12 10 | 704 | 0.7− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.8+ |
| 2002 12 10 | 704 | 1.4+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.2+ |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 1.0+ | 1.2+ |
| 2002 12 14 | 704 | 1.1+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.7− | 0.1+ |
| 2002 12 14 | 704 | 0.8− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 1.2− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.4− | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.0− | 0.1+ | 2006 11 21 | 704 | 1.0− | 0.2+ |
| 2002 12 14 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 1.0− | 0.2− |
| 2003 01 05 | 704 | 1.0+ | 0.6− | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.8− |
| 2003 01 05 | 704 | 1.1+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.3+ |
| 2003 01 05 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 704 | (0.2− | 1.9+) | 2006 12 01 | G96 | 0.2− | 0.8− |
| 2003 01 05 | 704 | 0.4+ | 0.4− | 2006 11 17 | 704 | (1.7− | 0.5+) | 2006 12 01 | G96 | 0.0 | 0.7− |
| 2003 01 05 | 704 | (1.9+ | 0.3−) | 2006 11 17 | 704 | 1.3− | 0.5− | | | | |
| 2006 10 21 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | (2.1− | 0.2+) | | | | |

**2002 XN$_{70}$ = 2006 UL$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.40270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22914670 | $\omega$ | 330.71286 | | +0.72259859 | −0.66846620 | |
| $a$ | 2.6448049 | $\Omega$ | 72.34825 | | +0.66473609 | +0.60205137 | |
| $e$ | 0.1033868 | $i$ | 10.64831 | | +0.18967659 | +0.43667732 | |
| $P$ | 4.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.7− | 0.9− |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.2− | 0.8− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 13 | 703 | 0.2+ | 0.9− |
| 2002 12 05 | 704 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.6− | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.2− | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 12 10 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.3− |
| 2002 12 10 | 704 | 0.2+ | 1.0− | 2006 10 22 | 703 | 0.2+ | 0.1+ | 2006 11 17 | 704 | (0.7− | 1.9+) |
| 2002 12 10 | 704 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.3− | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.6+ |
| 2002 12 10 | 704 | 0.7+ | 0.1+ | 2006 11 01 | 703 | 0.9− | 0.4+ | 2006 11 17 | 704 | (1.7+ | 0.8+) |
| 2002 12 14 | 704 | 0.4− | 0.1+ | 2006 11 01 | 703 | 0.5+ | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.9+ |
| 2002 12 14 | 704 | 0.4+ | 0.5+ | 2006 11 01 | 703 | 0.2− | 0.6− | 2006 11 20 | 704 | 0.6+ | 0.6− |
| 2002 12 14 | 704 | 0.6+ | 0.0 | 2006 11 01 | 703 | (0.1+ | 2.0−) | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2002 12 14 | 704 | 0.7+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.4− | 0.4+ |
| 2003 01 05 | 704 | 1.0− | 1.0+ | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2003 01 05 | 704 | 0.4− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | | | |
| 2003 01 05 | 704 | 0.4+ | 1.3− | 2006 11 13 | 703 | 1.1+ | 0.8+ | | | | |

**2002 XM$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.14413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22858519 | $\omega$ | 1.19296 | | +0.03444492 | −0.97272038 | |
| $a$ | 2.6491344 | $\Omega$ | 86.86498 | | +0.91502441 | −0.06162034 | |
| $e$ | 0.1508406 | $i$ | 13.28254 | | +0.40192522 | +0.22364706 | |
| $P$ | 4.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | (1.6− | 0.9−) | 2003 01 05 | 704 | 1.0+ | 0.4− | 2004 04 23 | 691 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 0.9− | 1.0− | 2003 01 08 | 704 | 0.4− | 0.5+ | 2004 04 23 | 691 | 0.0 | 0.0 |
| 2002 11 14 | 704 | (1.7− | 0.1+) | 2003 01 08 | 704 | 0.8− | 0.5+ | 2004 04 23 | 691 | 0.2− | 0.1+ |
| 2002 11 14 | 704 | 0.2− | 0.5+ | 2003 01 08 | 704 | 0.9− | 0.2+ | 2006 10 17 | 703 | 0.2+ | 1.5+ |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2003 01 09 | 704 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.9− | 0.6+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2003 01 09 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.6+ | 0.1− | 2003 01 09 | 704 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.2+ | 1.1+ |
| 2002 12 10 | 704 | 1.2− | 0.7− | 2003 01 09 | 704 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.8− | 0.8− |
| 2002 12 10 | 704 | 0.1− | 0.3− | 2003 01 09 | 704 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.0 | 0.3− |
| 2002 12 10 | 704 | 0.0 | 0.4− | 2003 01 09 | 704 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2002 12 10 | 704 | 0.5+ | 0.1− | 2003 01 09 | 704 | 0.6+ | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.9− |
| 2002 12 14 | 704 | 0.3− | 0.8+ | 2003 01 09 | 704 | 0.0 | 0.7− | 2006 11 13 | 703 | 0.1+ | 0.7− |
| 2002 12 14 | 704 | 0.2+ | 1.5+ | 2003 01 09 | 704 | (1.7+ | 0.5+) | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2002 12 14 | 704 | 0.2− | 0.2+ | 2003 01 10 | 704 | (1.2− | 1.9−) | 2006 11 13 | 703 | 0.8+ | 1.1+ |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2003 01 10 | 704 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.6− |
| 2002 12 14 | 704 | 0.4− | 0.2− | 2003 01 10 | 704 | 0.2− | 0.1− | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2003 01 05 | 704 | 0.8+ | 0.0 | 2003 01 10 | 704 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.6− | 0.3− |
| 2003 01 05 | 704 | 0.8+ | 0.5+ | 2003 01 14 | 644 | 0.5+ | 0.1+ | 2006 11 19 | 703 | 0.4+ | 1.0− |
| 2003 01 05 | 704 | 0.1− | 0.4− | 2003 01 14 | 644 | 0.5+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.1+ | 0.3− | 2003 01 14 | 644 | 0.5+ | 0.1+ | | | | |

**2002 XN$_{71}$ = 2006 RM$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.43084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22703740 | $\omega$ | 120.46503 | | +0.83641423 | −0.52329611 | |
| $a$ | 2.6611608 | $\Omega$ | 271.54584 | | +0.43014351 | +0.81103217 | |
| $e$ | 0.2619600 | $i$ | 9.38512 | | +0.33968779 | +0.26151099 | |
| $P$ | 4.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.4+ | 0.6+ | 2003 01 08 | 704 | 0.5+ | 0.9− | 2006 09 28 | 703 | 0.3+ | 0.2− |
| 2002 12 10 | 704 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.7+ | 0.2− | 2003 01 08 | 704 | 0.4+ | 0.6+ | 2006 09 28 | 703 | 0.8+ | 0.9− |
| 2002 12 14 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 699 | 0.2+ | 0.2− | 2006 10 16 | 106 | 0.5− | 0.9− |
| 2002 12 14 | 704 | 0.8− | 0.0 | 2006 08 29 | 699 | 0.7− | 0.4+ | 2006 10 16 | 106 | 0.2+ | 0.5+ |
| 2002 12 14 | 704 | 0.4+ | 0.3− | 2006 08 29 | 699 | 0.3− | 0.1+ | 2006 10 16 | 106 | (0.4− | 1.6−) |
| 2002 12 14 | 704 | 0.4− | 0.3+ | 2006 08 29 | 699 | 0.1− | 1.1+ | 2006 10 16 | 106 | 0.8− | 0.1− |
| 2002 12 14 | 704 | 0.8− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 20 | 703 | 0.0 | 0.7+ |
| 2002 12 31 | 704 | 0.8− | 0.6− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.2+ | 0.4− |
| 2002 12 31 | 704 | 0.5− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.1− | 0.4− |
| 2002 12 31 | 704 | 0.6− | 0.0 | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 10 20 | 703 | 0.4− | 0.3+ |
| 2002 12 31 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 703 | 1.0− | 0.6− | 2006 11 14 | 703 | 0.3+ | 0.8− |
| 2003 01 04 | 704 | 0.5− | 0.4− | 2006 09 16 | 703 | 0.8− | 0.1− | 2006 11 14 | 703 | 0.7+ | 1.1+ |
| 2003 01 04 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 11 14 | 703 | 0.5+ | 0.6− |
| 2003 01 04 | 704 | 0.0 | 1.0+ | 2006 09 21 | 699 | 1.0+ | 1.0+ | 2006 11 14 | 703 | 0.8+ | 0.5− |
| 2003 01 04 | 704 | 0.1− | 0.4+ | 2006 09 21 | 699 | 0.1− | 0.9+ | 2006 11 25 | 703 | 0.6− | 0.6− |
| 2003 01 05 | 291 | 0.0 | 0.3− | 2006 09 21 | 699 | 0.6+ | 0.6+ | 2006 11 25 | 703 | 0.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 291 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.5+ | 0.6+ | 2006 11 25 | 703 | (0.1− | 1.7−) |
| 2003 01 05 | 291 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.8+ | 0.2+ | 2006 11 25 | 703 | 0.9− | 0.5− |

**2002 XP$_{71}$ = 2006 WS$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.29003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24014802 | $\omega$ | 26.76586 | | −0.81139508 | −0.57730404 | |
| $a$ | 2.5634020 | $\Omega$ | 117.67601 | | +0.51607449 | −0.78102670 | |
| $e$ | 0.2129325 | $i$ | 5.92540 | | +0.27441782 | −0.23815401 | |
| $P$ | 4.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.2+ | 0.2− | 2002 12 14 | 704 | 0.6− | 0.0 | 2006 11 19 | 291 | 0.4− | 0.2− |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2002 12 14 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 291 | 0.2+ | 0.0 |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2002 12 10 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.4+ | 1.5+ |
| 2002 12 10 | 644 | 0.5+ | 0.1+ | 2006 11 19 | 703 | 0.8+ | 1.1− | 2006 11 20 | 704 | 0.3+ | 0.1− |
| 2002 12 10 | 644 | 0.4+ | 0.3− | 2006 11 19 | 703 | 0.7+ | 0.6− | 2006 11 20 | 704 | 1.0+ | 0.3+ |
| 2002 12 14 | 704 | 0.8− | 0.5− | 2006 11 19 | 291 | 0.5− | 0.1− | | | | |

**2002 XC$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.98196 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24254547 | $\omega$ | 97.86992 | | −0.46659101 | −0.88388495 | |
| $a$ | 2.5464819 | $\Omega$ | 20.04097 | | +0.76988331 | −0.42382143 | |
| $e$ | 0.2254917 | $i$ | 5.40041 | | +0.43539927 | −0.19779482 | |
| $P$ | 4.06 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.3+ | 0.1+ | 2003 01 04 | 704 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.2+ | 0.3− |
| 2002 10 12 | 704 | 0.1+ | 1.1− | 2003 01 04 | 704 | 0.4− | 1.2− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 0.0 | 0.3− | 2003 02 01 | 704 | 1.0+ | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2002 11 12 | 704 | 1.1− | 0.6+ | 2003 02 01 | 704 | 0.1− | 0.8+ | 2006 11 15 | 704 | 0.6− | 0.4+ |
| 2002 11 12 | 704 | 0.1− | 0.9− | 2003 02 01 | 704 | 0.3− | 0.8+ | 2006 11 15 | 704 | 0.4+ | 0.3+ |
| 2002 11 12 | 704 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 11 15 | 704 | 0.9− | 0.8+ |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.4− | 0.2+ |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.6− |
| 2002 12 06 | 704 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1− | 0.6− | 2006 11 16 | 704 | 0.8+ | 0.5+ |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.4+ | 0.3− | 2006 11 16 | 704 | 0.3+ | 1.1+ |
| 2002 12 06 | 704 | 0.5− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2002 12 11 | 704 | 0.2− | 0.6+ | 2006 10 19 | 691 | 0.4+ | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2002 12 11 | 704 | 0.6+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.4+ | 0.5− | 2006 10 23 | 691 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2002 12 14 | 704 | 0.0 | 1.1+ | 2006 10 27 | 703 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.7− | 0.5− |
| 2002 12 14 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.5− |
| 2002 12 14 | 704 | (0.1− | 1.6+) | 2006 10 27 | 703 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2002 12 14 | 704 | (0.6− | 1.7+) | 2006 10 27 | 703 | 0.2− | 0.8− | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2003 01 04 | 704 | (1.0− | 1.6−) | 2006 10 27 | 691 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.5− |
| 2003 01 04 | 704 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.2− | 0.5+ | 2006 11 22 | 704 | 0.9− | 0.3− |
| 2003 01 04 | 704 | 0.5− | 1.3− | 2006 11 13 | 691 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.7− | 0.3− |

**2002 XP$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.51593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23233389 | $\omega$ | 80.77603 | | −0.80677102 | −0.58345091 | |
| $a$ | 2.6205614 | $\Omega$ | 63.47515 | | +0.49287433 | −0.75162278 | |
| $e$ | 0.1811164 | $i$ | 5.98569 | | +0.32587638 | −0.30764951 | |
| $P$ | 4.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.9+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.4− | 0.6− |
| 2002 12 05 | 704 | 1.0− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2002 12 11 | 704 | 0.7− | 0.9− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.6+ |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2002 12 11 | 704 | 0.7− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 12 11 | 704 | 0.8− | 0.5+ | 2006 11 09 | 644 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2002 12 11 | 704 | 0.3− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 12 14 | 704 | 0.7+ | 1.1− | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.1+ |
| 2002 12 14 | 704 | 0.8+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2002 12 14 | 704 | 0.8+ | 0.9− | 2006 11 11 | 703 | 0.3− | 1.4+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2002 12 14 | 704 | 1.2+ | 0.8− | 2006 11 11 | 703 | 0.9+ | 0.6− | 2006 11 21 | 704 | 0.6+ | 1.3− |
| 2003 01 05 | 704 | 0.3+ | 0.1+ | 2006 11 12 | 703 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 11 12 | 703 | 0.3+ | 0.4− | 2006 11 29 | 704 | (0.7− | 2.1+) |
| 2003 01 05 | 704 | 0.2− | 0.2+ | 2006 11 12 | 703 | 0.7+ | 0.3− | 2006 11 29 | 704 | (0.3+ | 1.7+) |
| 2003 01 05 | 704 | 0.4− | 0.5+ | 2006 11 12 | 703 | 0.3− | 0.6− | 2006 11 29 | 704 | 0.5+ | 0.9+ |
| 2003 01 05 | 704 | 0.1− | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 29 | 704 | 0.3− | 0.6− |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.4− | 0.2− | 2006 11 29 | 704 | 1.4+ | 0.2− |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.5+ | 0.2− |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.8− | 0.6+ | 2006 12 01 | G96 | 0.2+ | 0.1+ |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.1− | | | | |

**2002 XH$_{73}$ = 2006 UM$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.46343 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23958120 | $\omega$ | 91.94027 | | +0.98224028 | +0.00696787 | |
| $a$ | 2.5674435 | $\Omega$ | 267.69493 | | −0.07978639 | +0.91996850 | |
| $e$ | 0.2069956 | $i$ | 10.81566 | | +0.16981804 | +0.39193037 | |
| $P$ | 4.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 599 | 0.1+ | 0.3− | 2002 12 14 | 704 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2002 11 28 | 599 | 0.2− | 0.2+ | 2002 12 31 | 704 | 0.1− | 0.6+ | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2002 11 28 | 599 | 0.1− | 0.7− | 2002 12 31 | 704 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2002 12 31 | 704 | (4.0+ | 0.5−) | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2002 12 06 | 704 | 0.7+ | 1.0+ | 2002 12 31 | 704 | 1.1+ | 0.7+ | 2006 11 15 | 703 | 0.4+ | 0.8− |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2002 12 31 | 704 | 0.3− | 0.4− | 2006 11 15 | 703 | 0.6+ | 0.2− |
| 2002 12 06 | 704 | 0.6+ | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.2− | 2006 11 15 | 703 | 0.1− | 0.4− |
| 2002 12 06 | 704 | 1.0− | 0.6+ | 2003 01 04 | 704 | 0.3− | 0.2+ | 2006 11 15 | 704 | 0.4+ | 0.6− |
| 2002 12 10 | 644 | 0.1− | 0.4− | 2003 01 04 | 704 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.9− | 0.3+ |
| 2002 12 10 | 644 | 0.2+ | 0.6+ | 2003 01 04 | 704 | 1.1+ | 0.7− | 2006 11 15 | 704 | 0.9− | 0.2− |
| 2002 12 10 | 644 | 0.0 | 0.6− | 2003 01 04 | 704 | 1.1− | 0.1+ | 2006 11 15 | 704 | 0.0 | 0.5+ |
| 2002 12 11 | 704 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.8− | 0.1− | 2006 11 21 | 703 | 0.3− | 0.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.3− | 0.2+ | 2006 11 21 | 703 | 0.6+ | 0.8− |
| 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 10 23 | 703 | 0.0 | 0.1− | 2006 11 21 | 703 | 0.6− | 0.1− |
| 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 703 | 0.5− | 0.4+ | 2006 11 21 | 703 | 0.1− | 0.1+ |
| 2002 12 14 | 704 | 0.8− | 0.5− | 2006 10 29 | 703 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.5− |
| 2002 12 14 | 704 | 0.4+ | 1.1− | 2006 10 29 | 703 | 0.6+ | 0.2+ | 2006 11 28 | 704 | 0.5− | 0.7+ |
| 2002 12 14 | 704 | 0.3− | 0.3− | 2006 10 29 | 703 | 0.6+ | 0.8+ | 2006 11 28 | 704 | 0.4+ | 1.4+ |
| 2002 12 14 | 704 | (0.9− | 1.6−) | 2006 10 29 | 703 | 0.1− | 0.3− | | | | |

**2002 XQ$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.25730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23814850 | $\omega$ | 107.97485 | | +0.90489625 | −0.40529627 | |
| $a$ | 2.5777304 | $\Omega$ | 276.10000 | | +0.32400846 | +0.85397934 | |
| $e$ | 0.1762873 | $i$ | 7.51186 | | +0.27600960 | +0.32627322 | |
| $P$ | 4.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.1− | 2003 01 04 | 704 | 0.4− | 0.3− | 2006 11 14 | 703 | 0.4+ | 0.5+ |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.5− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2002 12 06 | 704 | 0.5− | 0.3− | 2003 01 08 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2003 01 08 | 704 | 0.8+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 12 06 | 704 | 0.2+ | 0.4− | 2003 01 08 | 704 | 1.0+ | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.3+ |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 01 08 | 704 | 0.5− | 0.6− | 2006 11 16 | 704 | (0.8+ | 2.6+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.1− | 1.2+ | | |
| 2002 12 11 | 704 | 0.5− | 0.6− | 2006 10 27 | 703 | 0.4+ | 0.5− | 2006 11 16 | 704 | 0.7+ | 1.4+ | | |
| 2002 12 11 | 704 | 0.7− | 0.8− | 2006 10 27 | 703 | 1.1− | 0.0 | 2006 11 22 | 703 | 0.1− | 0.5− | | |
| 2002 12 14 | 704 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.4− | 0.2+ | 2006 11 22 | 703 | 0.1− | 0.1+ | | |
| 2002 12 14 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.9+ | 0.1+ | 2006 11 22 | 703 | 0.5− | 0.5− | | |
| 2002 12 14 | 704 | 0.3+ | 0.6+ | 2006 11 02 | 703 | 0.1− | 0.5− | 2006 11 22 | 703 | 0.0 | 0.2− | | |
| 2002 12 14 | 704 | 0.8+ | 0.0 | 2006 11 02 | 703 | 0.2+ | 0.1− | 2006 11 22 | 703 | 0.7− | 0.2− | | |
| 2002 12 14 | 704 | 0.1− | 0.2− | 2006 11 02 | 703 | 0.0 | 0.5− | 2006 11 22 | 703 | 0.4− | 0.3− | | |
| 2002 12 31 | 704 | 0.6− | 0.6− | 2006 11 02 | 703 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.4− | 0.3+ | | |
| 2002 12 31 | 704 | 0.4+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 703 | 0.1+ | 0.5− | | |
| 2002 12 31 | 704 | 0.7− | 1.3+ | 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.4− | 0.2+ | | |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.6− | | |
| 2002 12 31 | 704 | 0.4+ | 1.0+ | 2006 11 14 | 703 | 0.3− | 0.1− | 2006 11 23 | 703 | 0.2− | 0.1− | | |
| 2003 01 04 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.5+ | 0.6+ | 2006 11 23 | 703 | 0.3+ | 0.0 | | |
| 2003 01 04 | 704 | 0.4+ | 0.9− | 2006 11 14 | 703 | 0.5+ | 0.2+ | | | | | | |

### 2002 XY$_{73}$ = 2006 WH$_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.60040 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24402167 | $\omega$ | 349.89069 | | +0.62633254 | −0.77233593 | |
| $a$ | 2.5362017 | $\Omega$ | 61.24646 | | +0.72339442 | +0.52522104 | |
| $e$ | 0.1480157 | $i$ | 6.93482 | | +0.29053065 | +0.35726750 | |
| $P$ | 4.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.2− | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.3− | 0.6− | | |
| 2002 12 06 | 704 | 0.2+ | 0.4− | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 06 | 704 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.2+ | | |
| 2002 12 06 | 704 | 0.3+ | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.2− | 0.0 | | |
| 2002 12 11 | 704 | 0.8− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 24 | 691 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.4+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1− | 0.0 | | |
| 2002 12 11 | 704 | 0.1+ | 1.0+ | 2006 11 11 | 691 | 0.1+ | 1.1− | 2006 11 28 | 704 | 0.5+ | 0.9− | | |
| 2002 12 14 | 704 | 0.1+ | 1.4− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.8+ | | |
| 2002 12 14 | 704 | 0.3− | 0.0 | 2006 11 18 | 704 | (0.6+ | 2.3+) | 2006 11 28 | 704 | 0.2− | 1.0− | | |
| 2002 12 14 | 704 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.5+ | 2006 11 30 | 691 | 0.1− | 0.4+ | | |
| 2002 12 14 | 704 | 1.4+ | 0.2− | 2006 11 18 | 704 | 1.1− | 1.3− | 2006 11 30 | 691 | 0.1− | 0.1+ | | |
| 2002 12 14 | 704 | 0.6− | 1.0− | 2006 11 18 | 704 | 0.9+ | 0.1+ | 2006 11 30 | 691 | 0.0 | 0.1− | | |
| 2003 01 05 | 704 | 0.7− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.6+ | 2006 12 01 | 704 | 0.6+ | 0.2+ | | |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.0 | | |
| 2003 01 05 | 704 | 0.4+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.6+ | 0.7− | | |
| 2003 01 05 | 704 | 0.4− | 0.8− | 2006 11 21 | 704 | 1.4+ | 0.4+ | 2006 12 01 | 704 | 0.2− | 0.2+ | | |
| 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.8+ | 2006 12 01 | 704 | 0.0 | 0.7− | | |
| 2006 09 28 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 1.1+ | 0.1+ | | | | | | |

### 2002 XE$_{74}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.05549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24186486 | $\omega$ | 334.51373 | | +0.94229878 | −0.32887207 | |
| $a$ | 2.5512570 | $\Omega$ | 44.83906 | | +0.32033391 | +0.83145591 | |
| $e$ | 0.2387265 | $i$ | 5.09171 | | +0.09725836 | +0.44779932 | |
| $P$ | 4.08 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.2− | 0.8+ | 2006 10 17 | G96 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.4+ | | |
| 2002 11 06 | 704 | 0.2− | 0.6+ | 2006 10 29 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.4− | 0.9+ | | |
| 2002 11 06 | 704 | (1.8− | 0.5+) | 2006 10 29 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.4− | 0.5+ | | |
| 2002 11 06 | 704 | 0.7− | 0.7+ | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | (0.5− | 2.2+) | | |
| 2002 11 06 | 704 | 0.2− | 0.8+ | 2006 10 29 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.7− | 0.6+ | | |
| 2002 12 06 | 704 | 0.7+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2+ | 1.0− | | |
| 2002 12 06 | 704 | 0.7+ | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.5+ | | |
| 2002 12 06 | 704 | 0.8+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.2− | | |
| 2002 12 11 | 704 | 0.2+ | 1.1− | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.2− | | |
| 2002 12 11 | 704 | 0.4+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.1+ | 0.5− | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.6+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.4+ | 0.0 | | |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.2− | 1.3− | | |
| 2002 12 14 | 704 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 27 | 704 | 0.7+ | 0.0 | | |
| 2002 12 14 | 704 | 1.0− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.6− | 2006 11 27 | 704 | 0.0 | 0.5+ | | |
| 2002 12 14 | 704 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.6− | 1.0+ | 2006 11 27 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 14 | 704 | 1.1− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 27 | 704 | 0.1− | 0.0 | | |
| 2003 01 05 | 704 | 0.6+ | 0.7− | 2006 11 14 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.6+ | 0.6+ | | |
| 2003 01 05 | 704 | 0.5+ | 0.6+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 1.0− | 0.8− | | |
| 2003 01 05 | 704 | 0.2+ | 0.6− | 2006 11 16 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.8− | 0.6− | | |
| 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.7+ | 2006 11 28 | 704 | 0.4− | 0.4− | | |
| 2003 01 05 | 704 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.3+ | 1.3− | 2006 11 28 | 704 | 0.3− | 0.9+ | | |
| 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 17 | 644 | 0.3− | 0.2+ | 2006 12 01 | 704 | 0.2+ | 0.5+ | | |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 17 | 644 | 0.2− | 0.3+ | 2006 12 01 | 704 | 0.1− | 0.5+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 17 | 644 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.1+ | 0.4+ | | |
| 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.2+ | | |
| 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.8− | 0.0 | 2006 12 01 | 704 | 0.4+ | 0.6+ | | |
| 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | | | | | |

### 2002 XW$_{74}$ = 2006 UF$_{253}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.32432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23734720 | $\omega$ | 118.53662 | | +0.62536091 | −0.77822308 | |
| $a$ | 2.5835288 | $\Omega$ | 292.63943 | | +0.69246213 | +0.58733712 | |
| $e$ | 0.2069295 | $i$ | 3.56446 | | +0.35974982 | +0.22226997 | |
| $P$ | 4.15 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 09 | 327 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.9− | 0.0 | | |
| 1999 01 09 | 327 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.1− | 0.3+ | | |
| 1999 01 09 | 327 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.1− | 0.7+ | 2006 11 14 | 703 | 0.1+ | 0.2− | | |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 11 14 | 703 | 0.2+ | 0.2− | | |
| 2002 12 06 | 704 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.4− | | |
| 2002 12 06 | 704 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.3− | 0.3− | 2006 11 14 | 703 | 0.2+ | 0.7− | | |
| 2002 12 11 | 704 | 0.5+ | 0.7− | 2006 10 27 | 703 | 0.5− | 0.5− | 2006 11 15 | 704 | 0.6+ | 0.2− | | |
| 2002 12 11 | 704 | 0.3− | 0.7− | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 15 | 704 | 0.7+ | 0.3− | | |
| 2002 12 11 | 704 | 1.0− | 1.1− | 2006 10 27 | 703 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.1− | 0.4− | | |
| 2002 12 11 | 704 | 0.4+ | 1.3− | 2006 10 27 | 703 | 0.3− | 0.5− | 2006 11 16 | 704 | 0.4+ | 0.9+ | | |
| 2002 12 11 | 704 | 0.8+ | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.7− | 0.7+ | | |
| 2002 12 14 | 704 | 0.5− | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.8− | 0.3+ | | |
| 2002 12 14 | 704 | 0.8− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.7+ | | |
| 2002 12 14 | 704 | 0.3− | 0.7+ | 2006 10 29 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 704 | 0.7− | 0.2+ | | |
| 2002 12 14 | 704 | 0.3− | 0.9+ | 2006 10 29 | 704 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.8− | 1.1+ | | |
| 2002 12 14 | 704 | 0.3+ | 0.1− | 2006 10 29 | 704 | (1.1− | 2.0−) | 2006 11 19 | 704 | 0.3− | 0.2− | | |
| 2003 01 04 | 704 | 0.1+ | 1.0+ | 2006 10 29 | 704 | 0.6+ | 1.1− | 2006 11 19 | 704 | 0.1+ | 0.7+ | | |
| 2003 01 04 | 704 | 0.7− | 0.2+ | 2006 10 31 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.9+ | | |
| 2003 01 04 | 704 | 0.5+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.8− | 0.0 | | |
| 2003 01 04 | 704 | 0.9− | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.7− | 0.1+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 1.3+ | | |
| 2003 01 08 | 704 | 0.9+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.5− | 0.1− | | |
| 2003 01 08 | 704 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.0 | 1.3+ | | |
| 2003 01 08 | 704 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.1− | | | | | | |
| 2006 10 19 | 703 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.2− | | | | | | |

### 2002 XH$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.07595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22609100 | $\omega$ | 16.24356 | | +0.01700485 | −0.98525364 | |
| $a$ | 2.6685819 | $\Omega$ | 73.02692 | | +0.89640498 | −0.06040572 | |
| $e$ | 0.2083651 | $i$ | 10.25367 | | +0.44290964 | +0.16008251 | |
| $P$ | 4.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2003 01 05 | 704 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.4− | | |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 04 26 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.4− | | |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2004 04 26 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.5− | | |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2004 04 26 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.9− | 0.4+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.3− | 2006 09 18 | 703 | 0.9+ | 0.2− | 2006 10 22 | 703 | 1.0− | 0.9+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2− | 0.2− | 2006 09 18 | 703 | 1.2− | 0.2+ | 2006 10 22 | 703 | 1.0− | 0.5+ | | |
| 2002 12 11 | 704 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.2− | | |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2002 12 14 | 704 | 0.3− | 0.8− | 2006 09 21 | 699 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.3− | | |
| 2002 12 14 | 704 | 0.0 | 0.8− | 2006 09 21 | 699 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.3− | | |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2006 09 21 | 699 | 0.3− | 1.2− | 2006 10 23 | 644 | 0.1+ | 0.3− | | |
| 2002 12 14 | 704 | 0.4+ | 0.5− | 2006 09 25 | 699 | 0.4− | 1.3+ | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2002 12 15 | 704 | 0.6− | 0.3+ | 2006 09 25 | 699 | 1.0− | 0.1− | 2006 10 28 | 703 | 1.0+ | 0.8+ | | |
| 2002 12 15 | 704 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.5− | 0.1− | 2006 10 28 | 703 | 0.8+ | 0.6+ | | |
| 2002 12 15 | 704 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.2− | 2006 10 28 | 703 | 1.2+ | 0.3+ | | |
| 2002 12 15 | 704 | 0.3− | 0.4− | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 10 28 | 703 | 0.5+ | 0.2− | | |
| 2002 12 30 | 704 | 0.3− | 0.4− | 2006 09 26 | 703 | 0.3− | 0.4− | 2006 11 07 | 644 | 0.4− | 0.4− | | |
| 2002 12 30 | 704 | 0.4− | 0.4− | 2006 09 26 | 703 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.3− | 0.1− | | |
| 2002 12 30 | 704 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.1− | | |
| 2003 01 05 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | (2.2+ | 1.0+) | 2006 11 16 | 703 | 0.2− | 0.3− | | |
| 2003 01 05 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 1.0+ | 1.0+ | 2006 11 16 | 703 | 0.1− | 0.1− | | |
| 2003 01 05 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | (0.8+ | 1.7+) | 2006 11 16 | 703 | 0.0 | 0.2− | | |
| 2003 01 05 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 703 | (1.7+ | 2.1+) | 2006 11 16 | 703 | 0.0 | 0.1− | | |

### 2002 $XL_{75}$ = 2006 $VU_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.76527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24214617 | $\omega$ | 313.36246 | | +0.97508020 | −0.20207586 | |
| $a$ | 2.5492806 | $\Omega$ | 58.49406 | | +0.22158151 | +0.86667205 | |
| $e$ | 0.2618352 | $i$ | 6.16520 | | +0.01096570 | +0.45611939 | |
| $P$ | 4.07 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2003 01 05 | 704 | 0.5− | 0.0 | 2006 11 18 | 704 | 1.3− | 0.5+ | | |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.1− | 0.4− | 2006 11 20 | 691 | 0.1− | 0.0 | | |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1− | | |
| 2002 12 06 | 704 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 1.0+ | 0.2+ | | |
| 2002 12 06 | 704 | 0.6+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 1.1+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.1− | | |
| 2002 12 11 | 704 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.4− | 0.0 | 2006 11 24 | 691 | 0.2− | 0.1− | | |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 11 15 | 703 | 0.7− | 0.5+ | 2006 11 24 | 691 | 0.2+ | 0.2− | | |
| 2002 12 11 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.2− | 0.2− | | |
| 2002 12 14 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.8− | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.2− | | |
| 2002 12 14 | 704 | 0.7− | 0.9+ | 2006 11 16 | 691 | 0.4− | 0.2− | 2006 11 28 | 704 | 0.1+ | 1.2+ | | |
| 2002 12 14 | 704 | 0.4− | 0.9+ | 2006 11 16 | 691 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.2− | | |
| 2002 12 30 | 704 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.3− | 0.8+ | | |
| 2002 12 30 | 704 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.2− | 0.3− | | |
| 2002 12 30 | 704 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.6+ | 2006 11 28 | 704 | 0.9+ | 0.1− | | |
| 2003 01 05 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.6− | | | | | | |
| 2003 01 05 | 704 | 0.1− | 0.4− | 2006 11 18 | 704 | 1.2+ | 0.3− | | | | | | |

### 2002 $XO_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.20114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21978533 | $\omega$ | 134.97975 | | +0.31699195 | −0.93970388 | |
| $a$ | 2.7193822 | $\Omega$ | 296.14459 | | +0.82497577 | +0.33995592 | |
| $e$ | 0.1258584 | $i$ | 8.22001 | | +0.46790072 | +0.03723688 | |
| $P$ | 4.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.2+ | 0.2− | 2002 12 14 | 704 | (1.7+ | 3.3−) | 2006 09 28 | 703 | 0.4+ | 0.8+ | | |
| 2001 08 14 | 608 | 0.2+ | 0.2− | 2003 01 05 | 704 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.1− | 0.0 | | |
| 2001 08 14 | 608 | 0.4− | 0.3+ | 2003 01 05 | 704 | (0.4+ | 1.9+) | 2006 10 19 | 703 | 0.3+ | 0.1+ | | |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2003 01 05 | 704 | 0.1+ | 1.2+ | 2006 10 19 | 703 | 0.0 | 0.5− | | |
| 2002 12 06 | 704 | 1.2+ | 0.9− | 2003 01 05 | 704 | 0.4− | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.4− | | |
| 2002 12 06 | 704 | 0.6+ | 0.1+ | 2003 01 31 | 704 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.0 | | |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2003 01 31 | 704 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2002 12 11 | 704 | 0.9− | 0.7− | 2003 01 31 | 704 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2002 12 11 | 704 | 0.4− | 0.1+ | 2006 09 16 | 703 | 0.2+ | 1.2+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.6− | 0.1+ | 2006 09 16 | 703 | (0.2− | 1.9+) | 2006 11 14 | 703 | 0.5− | 0.8+ | | |
| 2002 12 11 | 704 | 0.6− | 0.5+ | 2006 09 16 | 703 | 0.6− | 0.0 | 2006 11 14 | 703 | 0.9+ | 1.3− | | |
| 2002 12 14 | 704 | (0.3+ | 1.6−) | 2006 09 16 | 703 | 1.0− | 0.6+ | 2006 11 14 | 703 | 0.6+ | 0.0 | | |
| 2002 12 14 | 704 | (0.9+ | 2.1−) | 2006 09 28 | 703 | (1.7+ | 0.1−) | 2006 11 14 | 703 | 0.4+ | 0.7− | | |
| 2002 12 14 | 704 | (0.5+ | 2.7−) | 2006 09 28 | 703 | 0.1+ | 0.5− | | | | | | |

### 2002 $XX_{75}$ = 2006 $OM_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.19490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21236583 | $\omega$ | 326.25421 | | +0.79892567 | −0.58156231 | |
| $a$ | 2.7823577 | $\Omega$ | 70.04684 | | +0.58154333 | +0.68198341 | |
| $e$ | 0.3148894 | $i$ | 9.38673 | | +0.15337903 | +0.44349059 | |
| $P$ | 4.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 1.0− | 0.9+ | 2002 12 14 | 704 | 0.4+ | 0.4− | 2006 07 31 | E12 | 0.4− | 0.5+ | | |
| 2002 12 06 | 704 | 0.9− | 0.4+ | 2002 12 14 | 704 | 0.7+ | 0.0 | 2006 07 31 | E12 | 0.0 | 0.0 | | |
| 2002 12 06 | 704 | 0.6− | 1.0+ | 2003 01 05 | 704 | 0.5+ | 0.1− | 2006 07 31 | E12 | 0.4+ | 0.6+ | | |
| 2002 12 11 | 704 | 0.7− | 0.2+ | 2003 01 05 | 704 | 0.5+ | 0.0 | 2006 07 31 | E12 | 0.2− | 0.0 | | |
| 2002 12 11 | 704 | 0.9+ | 0.6+ | 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 08 12 | 644 | 0.5+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.5− | 0.4− | 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 08 12 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.7− | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 08 12 | 644 | 0.4+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.5− | 2005 05 08 | G96 | 0.1+ | 0.3+ | 2006 08 26 | E12 | 0.5− | 0.1− | | |
| 2002 12 14 | 704 | 0.0 | 0.4− | 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 08 26 | E12 | 0.2+ | 0.7− | | |
| 2002 12 14 | 704 | 0.3+ | 0.5− | 2005 05 08 | G96 | 0.7+ | 0.1− | 2006 08 26 | E12 | 0.0 | 0.3− | | |
| 2002 12 14 | 704 | 0.2+ | 0.2− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 08 26 | E12 | 0.6− | 0.1+ | | |

### 2002 $XT_{76}$ = 2006 $SC_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.37796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23090316 | $\omega$ | 346.95143 | | +0.95537764 | −0.29279305 | |
| $a$ | 2.6313753 | $\Omega$ | 30.16260 | | +0.27751541 | +0.84439286 | |
| $e$ | 0.2199939 | $i$ | 4.45875 | | +0.10118683 | +0.44863452 | |
| $P$ | 4.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.9+ | 0.6− | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 1.1− | 0.1+ | | |
| 2002 11 24 | 644 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.5− | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.3+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ | | |
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1+ | | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.7+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.1+ | 0.8− | 2006 09 18 | 699 | 1.2− | 0.5− | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2002 12 11 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.5− | | |
| 2002 12 11 | 704 | 0.7− | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2002 12 14 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.5− | 2006 10 21 | G96 | 0.4+ | 0.1− | | |
| 2002 12 14 | 704 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 12 14 | 704 | (2.0− | 1.7−) | 2006 09 20 | 644 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 14 | 704 | 1.2− | 0.4− | 2006 09 20 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2004 03 23 | 691 | 0.6+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2004 03 23 | 691 | 0.1− | 1.2+ | 2006 10 01 | 704 | 1.0+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2004 03 23 | 691 | 0.2+ | 0.0 | 2006 10 01 | 704 | 1.1+ | 0.7+ | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2006 09 14 | 691 | (2.3+ | 0.3+) | 2006 10 01 | 704 | 0.5+ | 0.7+ | 2006 11 27 | G96 | 0.8+ | 0.1+ | | |
| 2006 09 14 | 691 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.5+ | 0.5+ | 2006 11 27 | G96 | 0.5+ | 0.2− | | |
| 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.7− | 0.4+ | 2006 11 27 | G96 | 0.4+ | 0.2+ | | |
| 2006 09 17 | 704 | 0.0 | 0.4+ | 2006 10 15 | 703 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.1− | | |

### 2002 $XB_{77}$ = 2006 $TH_{68}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.91854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22831156 | $\omega$ | 128.29287 | | +0.21420423 | −0.97574177 | |
| $a$ | 2.6512506 | $\Omega$ | 309.27743 | | +0.87696241 | +0.21249332 | |
| $e$ | 0.2055086 | $i$ | 3.34871 | | +0.43017843 | +0.05267433 | |
| $P$ | 4.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1+ | 0.4+ | 2002 12 14 | 704 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.9− |
| 2002 12 06 | 704 | 0.3+ | 0.8+ | 2002 12 14 | 704 | (0.9− | 2.0−) | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2002 12 06 | 704 | 0.3− | 0.2+ | 2002 12 14 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2002 12 06 | 704 | 0.4− | 0.1+ | 2002 12 14 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 12 06 | 704 | 0.7− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 12 06 | 704 | 1.4+ | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.6+ | 0.8− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.8− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.8+ | | | | |

### 2002 XT$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.64037 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23293767 | $\omega$ | 128.19203 | | −0.87424591 | | −0.48488277 |
| $a$ | 2.6160311 | $\Omega$ | 22.83362 | | +0.42370873 | | −0.78633390 |
| $e$ | 0.2148231 | $i$ | 3.56670 | | +0.23699157 | | −0.38284162 |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.5− | 2003 01 05 | 704 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.8+ |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 1.3+ |
| 2002 12 06 | 704 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.3+ | 0.5− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | (1.5− | 0.3−) |
| 2002 12 11 | 704 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 1.0− | 1.2+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.7+ | 0.4+ |
| 2002 12 11 | 704 | 0.7+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 1.4− |
| 2002 12 14 | 704 | 0.4− | 0.2− | 2006 11 09 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.2+ |
| 2002 12 14 | 704 | 0.1+ | 0.7− | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.1− | 0.5− | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.5− | 0.2− |
| 2003 01 05 | 704 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1− | 0.2+ | | | | |
| 2003 01 05 | 704 | 0.4+ | 0.7+ | 2006 11 13 | 691 | 0.2− | 0.0 | | | | |

### 2002 XF$_{78}$ = 2006 UZ$_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.45061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23784088 | $\omega$ | 1.68378 | | +0.83519419 | | −0.54848259 |
| $a$ | 2.5799525 | $\Omega$ | 31.68488 | | +0.50367481 | | +0.73349831 |
| $e$ | 0.2594167 | $i$ | 4.39145 | | +0.22082199 | | +0.40143130 |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.7− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2002 12 06 | 704 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.9− | 0.1− | 2006 11 23 | 703 | 0.2− | 0.7− |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.4− | 2006 11 23 | 703 | 0.0 | 0.8− |
| 2002 12 06 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.1+ | 2006 11 23 | 703 | 0.3+ | 0.5− |
| 2002 12 11 | 704 | 0.1+ | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.1− | 0.6− |
| 2002 12 11 | 704 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 24 | 703 | 0.2+ | 0.6− |
| 2002 12 11 | 704 | 0.1+ | 1.0+ | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 24 | 703 | 0.2− | 0.6− |
| 2002 12 14 | 704 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.0 | 0.4+ | 2006 11 24 | 703 | 0.1+ | 0.3− |
| 2002 12 14 | 704 | 0.0 | 0.2+ | 2006 11 15 | 704 | (0.8+ | 1.5+) | 2006 11 24 | 703 | 0.4− | 0.6− |
| 2002 12 14 | 704 | 0.5− | 0.5+ | 2006 11 15 | 704 | 0.7− | 1.3+ | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2002 12 14 | 704 | 0.6+ | 0.2− | 2006 11 15 | 704 | 0.7− | 0.2+ | 2006 11 25 | 691 | 0.1− | 0.1+ |
| 2003 01 05 | 704 | 0.4+ | 0.8− | 2006 11 16 | 704 | 0.2+ | 0.2+ | 2006 11 25 | 691 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | 0.2− | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.8+ | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.3+ | 1.0+ | 2006 11 16 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.1+ |
| 2003 01 05 | 704 | 0.6− | 0.5− | 2006 11 16 | 704 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.8+ | 0.8+ |
| 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.5+ |
| 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.7+ | 0.0 |
| 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.3+ | 2.8+ |
| 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.6− | 1.3− |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.8+ |
| 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.7− | 0.7+ | 2006 11 28 | 704 | 1.5+ | 0.3− |
| 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.7+ | 0.4+ |
| 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.1− | 0.3− |
| 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.2− |
| 2006 10 31 | 691 | 0.6+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.4+ | 2006 12 01 | 704 | 1.9+ | 1.6− |
| 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.6− | 0.7− | | | | |
| 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.6− | 0.1− | | | | |

### 2002 XG$_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.15699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21398744 | $\omega$ | 345.36088 | | +0.52574271 | | −0.84595969 |
| $a$ | 2.7682833 | $\Omega$ | 72.84989 | | +0.78952920 | | +0.44627902 |
| $e$ | 0.2006342 | $i$ | 5.35309 | | +0.31660424 | | +0.29186853 |
| $P$ | 4.61 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.9+ | 0.3− | 2003 01 05 | 704 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.6+ | 0.8+ |
| 2002 12 05 | 704 | 0.0 | 0.8+ | 2003 01 05 | 704 | 0.7− | 0.2− | 2006 10 02 | 703 | 0.8− | 0.8+ |
| 2002 12 05 | 704 | 0.4+ | 0.0 | 2003 01 05 | 704 | 0.5+ | 1.4+ | 2006 10 02 | 703 | 0.3− | 0.9+ |
| 2002 12 05 | 704 | 0.1+ | 0.7− | 2003 01 05 | 704 | 0.9− | 0.3+ | 2006 10 02 | 703 | 0.3+ | 0.4+ |
| 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.0 | 0.5− | 2006 10 02 | 703 | 0.3+ | 1.4+ |
| 2002 12 11 | 704 | 0.4− | 0.1− | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.4− | 0.4− |
| 2002 12 11 | 704 | 0.0 | 1.4− | 2006 09 14 | 644 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.4− |
| 2002 12 11 | 704 | 0.8− | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.5− |
| 2002 12 14 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.2− |
| 2002 12 14 | 704 | 0.6+ | 1.0− | 2006 09 14 | 703 | 0.6+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2002 12 14 | 704 | 0.0 | 0.5− | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 12 14 | 704 | 0.7+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.4− |
| 2002 12 14 | 704 | 0.5− | 1.1+ | 2006 09 26 | 703 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.4− |
| 2003 01 05 | 704 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.6+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.7− |

### 2002 XY$_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.82357 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23280005 | $\omega$ | 345.20878 | | +0.68800293 | | −0.71912401 |
| $a$ | 2.6170620 | $\Omega$ | 61.20916 | | +0.67661517 | | +0.58704995 |
| $e$ | 0.2722626 | $i$ | 6.38968 | | +0.26238116 | | +0.37179700 |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.9− | 1.2+ | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.3− | 0.3− |
| 2002 11 14 | 704 | 0.8− | 0.8− | 2006 09 18 | 703 | 0.5+ | 0.4+ | 2006 11 02 | 703 | 0.2− | 0.3− |
| 2002 11 14 | 704 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 11 02 | 703 | 0.0 | 0.5− |
| 2002 11 14 | 704 | 0.8− | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.7− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 11 11 | 644 | 0.3+ | 0.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.1− | 1.3+ | 2006 11 11 | 644 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 11 | 644 | 0.1+ | 0.2− |
| 2002 12 14 | 704 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2002 12 14 | 704 | 0.3− | 0.7− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 12 14 | 704 | (0.4− | 1.6−) | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2002 12 14 | 704 | 0.6− | 0.6− | 2006 10 15 | D35 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 0.0 | 0.1− | 2006 10 15 | D35 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.9+ |
| 2003 01 05 | 704 | 0.5+ | 0.0 | 2006 10 15 | D35 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.6− | 1.0+ |
| 2003 01 05 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2003 01 05 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2003 01 05 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.1− | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2003 01 08 | 704 | 0.7+ | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2003 01 08 | 704 | 0.8+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2003 01 08 | 704 | 0.1+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2003 01 09 | 704 | 0.4+ | 0.4− | 2006 10 22 | 704 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2003 01 09 | 704 | 1.2− | 0.8− | 2006 10 22 | 704 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2003 01 09 | 704 | 0.1− | 0.0 | 2006 10 22 | 704 | 0.6+ | 1.4− | 2006 11 21 | 704 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 09 | 704 | 0.4− | 0.1+ | 2006 10 22 | 704 | 0.7+ | 1.4− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2003 02 01 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 704 | (0.1− | 1.6−) | 2006 11 21 | 704 | 0.8+ | 0.1− |
| 2003 02 01 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2003 02 01 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 26 | 704 | 0.1− | 0.5+ |
| 2003 02 01 | 704 | 0.0 | 1.5− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 26 | 704 | 0.3+ | 0.3+ |
| 2004 04 14 | 691 | 0.2+ | 0.8+ | 2006 10 27 | 704 | 1.4+ | 0.5+ | 2006 11 26 | 704 | 0.5− | 0.5+ |
| 2004 04 14 | 691 | 0.4+ | 0.5+ | 2006 10 27 | 704 | (0.2+ | 1.6−) | 2006 11 27 | 703 | 0.5− | 0.6+ |
| 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 704 | 0.1− | 0.5+ | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2006 09 14 | 703 | 0.1− | 1.0+ | 2006 10 27 | 704 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 27 | 704 | 0.9− | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.1− |
| 2006 09 14 | 703 | 0.4− | 0.0 | 2006 11 02 | 704 | 0.4+ | 0.8− | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2006 09 14 | 703 | 0.4− | 0.5+ | 2006 11 02 | 704 | 0.4− | 1.2+ | 2006 11 29 | 704 | 0.7+ | 0.2+ |
| 2006 09 15 | 683 | (1.5+ | 1.7−) | 2006 11 02 | 704 | 1.3− | 0.3+ | 2006 11 29 | 704 | 0.6+ | 0.3+ |
| 2006 09 15 | 683 | (1.8+ | 1.6−) | 2006 11 02 | 704 | 1.2− | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2006 09 15 | 683 | 1.4+ | 0.5− | 2006 11 02 | 703 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.2+ |

### 2002 XO$_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.92602 | | (2000.0) | | | |
| $n$ | 0.23346564 | $\omega$ | 328.15155 | | +0.41782382 | −0.70835572 |
| $a$ | 2.6120855 | $\Omega$ | 91.08078 | | +0.90615586 | +0.27969461 |
| $e$ | 0.2553099 | $i$ | 34.68111 | | +0.06561105 | +0.64807646 |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.6+ | 0.5− | 2003 01 07 | 704 | 0.3+ | 0.6− | 2003 01 31 | 644 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 0.0 | 0.5− | 2003 01 07 | 704 | 0.3− | 0.2+ | 2003 01 31 | 644 | 0.4− | 1.0− |
| 2002 12 11 | 704 | 0.4+ | 0.4− | 2003 01 07 | 704 | 0.2+ | 0.5+ | 2003 01 31 | 644 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.0 | 0.3+ | 2003 01 07 | 704 | 0.1+ | 0.1+ | 2003 01 31 | 644 | 0.2− | 1.0− |
| 2002 12 14 | 704 | 0.6− | 1.2+ | 2003 01 10 | 704 | 1.2− | 0.9+ | 2003 01 31 | 644 | 0.1+ | 0.2+ |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2003 01 10 | 704 | 0.0 | 0.6+ | 2003 02 10 | 644 | 0.3+ | 1.1+ |
| 2002 12 14 | 704 | 0.1+ | 0.6+ | 2003 01 10 | 704 | (1.9− | 0.5+) | 2003 02 10 | 644 | 0.3+ | 0.9+ |
| 2002 12 14 | 704 | 0.7− | 0.7+ | 2003 01 10 | 704 | 0.0 | 0.5+ | 2003 02 10 | 644 | 0.5+ | 0.8+ |
| 2002 12 14 | 704 | 0.5− | 1.3+ | 2003 01 14 | 704 | 0.1− | 1.0− | 2006 11 23 | 703 | 0.4+ | 0.4− |
| 2002 12 15 | 704 | 0.8− | 0.7− | 2003 01 14 | 704 | 0.2− | 0.4− | 2006 11 23 | 703 | 0.1+ | 0.1+ |
| 2002 12 15 | 704 | 0.2− | 0.2− | 2003 01 14 | 704 | 0.3− | 0.3− | 2006 11 23 | 703 | 0.1− | 0.1+ |
| 2002 12 15 | 704 | 0.3+ | 1.0− | 2003 01 14 | 704 | 0.2− | 0.5− | 2006 11 23 | 703 | 0.1+ | 0.6− |
| 2002 12 31 | 699 | 0.5+ | 0.5+ | 2003 01 22 | 644 | 0.1+ | 0.0 | 2006 12 01 | 703 | 0.0 | 0.8+ |
| 2002 12 31 | 699 | 0.4+ | 0.5− | 2003 01 22 | 644 | 0.5+ | 0.2+ | 2006 12 01 | 703 | (0.0 | 1.9+) |
| 2002 12 31 | 699 | 0.7+ | 0.6− | 2003 01 22 | 644 | 0.1+ | 0.2+ | 2006 12 01 | 703 | 0.5− | 0.2+ |
| 2002 12 31 | 699 | 0.8+ | 0.7− | 2003 01 31 | 644 | 0.5− | 1.1− | 2006 12 01 | 703 | 0.1+ | 0.2− |

### 2002 XU$_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.49207 | | (2000.0) | | | |
| $n$ | 0.22301686 | $\omega$ | 174.05593 | | −0.67259871 | −0.73398829 |
| $a$ | 2.6930490 | $\Omega$ | 318.15845 | | +0.67299445 | −0.55378566 |
| $e$ | 0.2118852 | $i$ | 8.11742 | | +0.30771652 | −0.39316998 |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2− | 1.2+ | 2003 01 07 | 704 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.4+ | 0.2− |
| 2002 12 11 | 704 | 0.8+ | 0.1+ | 2003 01 07 | 704 | 0.5− | 0.3− | 2006 10 27 | 703 | 0.5+ | 1.4+ |
| 2002 12 11 | 704 | 0.3+ | 0.4− | 2003 01 07 | 704 | 0.6− | 0.6− | 2006 10 27 | 703 | 0.1− | 0.2+ |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2003 01 07 | 704 | 0.2− | 1.0− | 2006 10 27 | 703 | 0.5+ | 0.4+ |
| 2002 12 11 | 704 | 0.5+ | 0.1− | 2003 02 01 | 704 | 1.0− | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.5− |
| 2002 12 14 | 704 | 0.3− | 0.1+ | 2003 02 01 | 704 | 0.1− | 0.8+ | 2006 10 27 | 703 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | 0.1+ | 0.2+ | 2003 02 01 | 704 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 1.2+ | 0.1− |
| 2002 12 14 | 704 | 0.6+ | 0.2+ | 2003 02 01 | 704 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.5+ |
| 2002 12 14 | 704 | 0.6+ | 0.3− | 2003 02 01 | 704 | 0.9+ | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.4− |
| 2002 12 30 | 704 | 0.5− | 0.3+ | 2003 02 04 | 704 | 0.8+ | 0.8− | 2006 11 15 | 703 | 0.8− | 0.3− |
| 2002 12 30 | 704 | 0.9− | 0.8− | 2003 02 04 | 704 | 0.2− | 0.7− | 2006 11 21 | 703 | 0.0 | 0.5− |
| 2002 12 30 | 704 | 1.1− | 0.2+ | 2003 02 04 | 704 | (1.7− | 0.7−) | 2006 11 21 | 703 | 0.2− | 0.5− |
| 2003 01 05 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.8− | 0.1+ | 2006 11 21 | 703 | 0.1+ | 1.4− |
| 2003 01 05 | 704 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.7+ | 0.1+ | 2006 11 21 | 703 | 0.8+ | 0.0 |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | (1.8+ | 1.4+) | 2006 11 22 | 703 | 0.2− | 0.0 |
| 2003 01 05 | 704 | 0.8+ | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.1+ | 2006 11 22 | 703 | 0.9− | 1.1+ |
| 2003 01 05 | 704 | 0.6− | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.3− | 2006 11 22 | 703 | 0.0 | 0.0 |
| 2003 01 07 | 704 | 0.8+ | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.7− | 0.9− |

### 2002 XP$_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.94011 | | (2000.0) | | | |
| $n$ | 0.21246400 | $\omega$ | 140.13425 | | +0.33563724 | −0.93143237 |
| $a$ | 2.7815006 | $\Omega$ | 289.84165 | | +0.82165100 | +0.36249827 |
| $e$ | 0.1942065 | $i$ | 8.59928 | | +0.46069217 | +0.03207417 |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.7− | 0.1− | 2003 01 08 | 704 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2003 01 31 | 704 | 1.3+ | 0.8− | 2006 09 27 | 703 | 0.3+ | 0.5− |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2003 01 31 | 704 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.1− | 0.5+ |
| 2002 12 06 | 704 | 0.7− | 0.5− | 2003 01 31 | 704 | 0.6+ | 0.5+ | 2006 09 29 | 699 | 0.8+ | 0.6+ |
| 2002 12 11 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.8− | 0.2− | 2006 09 29 | 699 | 1.0+ | 0.3− |
| 2002 12 11 | 704 | 0.9− | 0.3+ | 2006 09 16 | 703 | 0.9− | 1.0− | 2006 09 29 | 699 | 0.7+ | 1.4+ |
| 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2002 12 11 | 704 | 1.0− | 0.5− | 2006 09 16 | 703 | 0.8− | 0.6− | 2006 10 17 | 703 | 0.3+ | 0.6− |
| 2002 12 14 | 704 | 1.2+ | 0.2− | 2006 09 20 | G92 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.2+ |
| 2002 12 14 | 704 | 1.1+ | 0.8+ | 2006 09 20 | G92 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.6− | 1.1− |
| 2002 12 14 | 704 | 0.6+ | 0.1+ | 2006 09 20 | G92 | 0.0 | 0.5+ | 2006 10 26 | 703 | 0.7+ | 0.5+ |
| 2002 12 14 | 704 | 0.7− | 1.2− | 2006 09 23 | G92 | 0.1+ | 0.5− | 2006 10 26 | 703 | 0.8+ | 1.1− |
| 2003 01 08 | 704 | 0.4− | 0.0 | 2006 09 23 | G92 | 0.8+ | 0.5+ | 2006 10 26 | 703 | 0.9− | 1.5+ |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2006 09 23 | G92 | 0.7+ | 0.3+ | 2006 10 26 | 703 | 0.1+ | 0.2+ |
| 2003 01 08 | 704 | 0.5− | 0.5+ | 2006 09 27 | 703 | 0.5− | 0.6+ | | | | |
| 2003 01 08 | 704 | 0.0 | 0.7+ | 2006 09 27 | 703 | 1.3− | 1.2− | | | | |

### 2002 XE$_{82}$ = 2006 SQ$_{266}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.05534 | | (2000.0) | | | |
| $n$ | 0.22752692 | $\omega$ | 211.15291 | | +0.33430077 | −0.93273261 |
| $a$ | 2.6573425 | $\Omega$ | 219.77023 | | +0.90232568 | +0.35814735 |
| $e$ | 0.1233728 | $i$ | 12.19235 | | +0.27212380 | −0.04171749 |
| $P$ | 4.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 645 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.6+ | 0.9− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2001 06 15 | 645 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2002 12 05 | 644 | 0.2+ | 1.0− | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 21 | 701 | 0.1− | 0.2− |
| 2002 12 05 | 644 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 21 | 701 | 0.3− | 0.4− |
| 2002 12 06 | 644 | 0.1+ | 1.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 21 | 701 | 0.3− | 0.0 |
| 2002 12 06 | 644 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 22 | 701 | 0.0 | 0.6− |
| 2002 12 06 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 22 | 701 | 0.2− | 0.2− |
| 2002 12 11 | 644 | 0.3+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 701 | 0.0 | 0.1− |
| 2002 12 11 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 11 22 | 701 | 0.3+ | 0.3− |
| 2002 12 11 | 644 | 0.1+ | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 11 23 | 701 | 0.2− | 0.2− |
| 2002 12 13 | 644 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 23 | 701 | 0.1+ | 0.2+ |
| 2002 12 13 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | (1.9− | 0.8−) | 2006 11 23 | 701 | 0.1− | 0.1− |
| 2002 12 13 | 644 | 0.6− | 0.5− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 23 | 701 | 0.6− | 0.3+ |
| 2002 12 14 | 704 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 23 | 701 | 0.3− | 0.1+ |
| 2002 12 14 | 704 | 0.5− | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 23 | 701 | 0.3+ | 0.2+ |
| 2002 12 14 | 704 | 0.7+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.1− | 2006 11 23 | 701 | 0.3+ | 0.1− |
| 2002 12 14 | 704 | (1.7+ | 0.7+) | 2006 11 07 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 1.4− | 0.6− |
| 2006 09 20 | 699 | 0.3+ | 0.8+ | 2006 11 07 | 644 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.7+ | 0.6− |
| 2006 09 20 | 699 | (1.7− | 0.3+) | 2006 11 07 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 1.0− | 0.3+ |
| 2006 09 20 | 699 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 27 | 703 | 1.0− | 0.4+ |

**2002 $XO_{83}$ = 2006 $UC_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.07096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24000793 | $\omega$ | 311.90406 | | +0.97437434 | −0.20568508 | |
| $a$ | 2.5643993 | $\Omega$ | 60.15296 | | +0.22459981 | +0.86767264 | |
| $e$ | 0.2406404 | $i$ | 6.02501 | | +0.01222996 | +0.45259013 | |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.0 | 0.8− |
| 2002 12 06 | 704 | 0.6− | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.5− | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 12 13 | 704 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.3+ |
| 2002 12 13 | 704 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.6− |
| 2002 12 13 | 704 | 0.3− | 1.3+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.7+ |
| 2002 12 14 | 704 | 0.6+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.5− | 0.4− |
| 2002 12 14 | 704 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2002 12 14 | 704 | 0.5+ | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2004 03 18 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.9+ | 0.8− |
| 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.8+ |
| 2006 09 28 | G96 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.5+ |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 1.8− | 2.0+ |
| 2006 10 19 | 695 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.3− | 2006 12 01 | 691 | 0.0 | 0.4− |
| 2006 10 20 | 695 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 12 01 | 691 | 0.3− | 0.4− |
| 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.3− |
| 2006 10 20 | 695 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.7− | 2006 12 01 | 704 | 1.1+ | 1.1− |
| 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 15 | 703 | (0.0 | 1.9−) | 2006 12 01 | 704 | 0.2+ | 0.3− |
| 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.6+ | 2006 12 01 | 704 | 0.2+ | 0.5+ |

**2002 $XT_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.24436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22763903 | $\omega$ | 246.22217 | | −0.19301656 | −0.97449828 | |
| $a$ | 2.6564699 | $\Omega$ | 215.51572 | | +0.95661534 | −0.16095295 | |
| $e$ | 0.2783682 | $i$ | 11.36186 | | +0.21824687 | −0.15635617 | |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 645 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 11 | 683 | 0.9+ | 0.2− |
| 2002 11 13 | 645 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2002 12 01 | 608 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 12 01 | 608 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2002 12 01 | 608 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 12 13 | 699 | 0.2+ | 0.6+ | 2006 11 02 | 703 | 0.4− | 0.5− | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2002 12 13 | 699 | 0.2+ | 0.1− | 2006 11 02 | 703 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.7+ | 0.4+ |
| 2002 12 13 | 699 | (2.1+ | 0.0 ) | 2006 11 02 | 703 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.6+ | 0.6+ |
| 2002 12 13 | 699 | (1.8+ | 0.3−) | 2006 11 02 | 703 | 0.9− | 0.2+ | 2006 11 14 | 704 | 0.9+ | 1.4+ |
| 2002 12 14 | 704 | 0.8+ | 0.2− | 2006 11 02 | 703 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 2002 12 14 | 704 | 0.1− | 0.6+ | 2006 11 02 | 703 | 0.1− | 0.6− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2002 12 14 | 704 | 0.5+ | 0.4− | 2006 11 02 | 703 | 0.4− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2002 12 14 | 704 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.3− | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 12 14 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 1.3− | 0.7− |
| 2002 12 18 | 608 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.7− | 1.1+ |
| 2002 12 18 | 608 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.6+ | 1.2+ |
| 2002 12 18 | 608 | 0.5+ | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.8+ |
| 2003 01 02 | 704 | 0.7− | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 17 | 704 | (0.7+ | 2.5+) |
| 2003 01 02 | 704 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.9− | 0.3+ |
| 2003 01 02 | 704 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.7− | 0.3− |
| 2003 01 02 | 704 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.4− |
| 2003 01 29 | 704 | 1.1+ | 0.9+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2003 01 29 | 704 | 0.7− | 1.4+ | 2006 11 10 | 683 | (2.0− | 1.4−) | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2003 01 29 | 704 | 0.1− | 0.4+ | 2006 11 10 | 683 | (0.7− | 2.8−) | 2006 11 20 | 704 | 0.1− | 0.3− |
| 2003 01 29 | 704 | 0.0 | 0.3+ | 2006 11 10 | 683 | (1.6− | 0.0 ) | 2006 11 20 | 704 | 0.5− | 0.4+ |
| 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.7+ | 0.3− |
| 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 11 | 683 | 0.3+ | 0.8− | | | | |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 683 | 0.8+ | 0.5+ | | | | |

**2002 $XU_{83}$ = 2006 $QT_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.78047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23421103 | $\omega$ | 201.59624 | | +0.98965514 | −0.13561989 | |
| $a$ | 2.6065406 | $\Omega$ | 165.95342 | | +0.14262557 | +0.96531176 | |
| $e$ | 0.2438743 | $i$ | 11.11681 | | −0.01551317 | +0.22311532 | |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.7− | 1.3+ | 2006 09 16 | 704 | 1.0− | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.4+ |
| 2002 11 30 | 704 | 0.4− | 0.0 | 2006 09 16 | 704 | 0.6+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2002 11 30 | 704 | 1.0+ | 0.4− | 2006 09 18 | 703 | 1.3− | 0.5+ | 2006 10 17 | 703 | 0.5+ | 0.8+ |
| 2002 12 13 | 644 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.9− | 0.9+ | 2006 10 17 | 703 | 0.6+ | 0.6+ |
| 2002 12 13 | 644 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.5+ | 1.3− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2002 12 13 | 644 | 0.4− | 0.7+ | 2006 09 19 | 704 | 0.7+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 12 14 | 704 | 0.8+ | 0.1− | 2006 09 19 | 704 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2006 09 19 | 704 | 0.3+ | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 12 14 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 704 | (1.5+ | 0.1−) | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2003 01 26 | 644 | 0.4− | 0.7+ | 2006 09 21 | 699 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2003 01 26 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2003 01 26 | 644 | 0.2− | 0.4+ | 2006 09 21 | 699 | 0.0 | 1.0+ | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2005 04 16 | 691 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2006 07 22 | G96 | 0.5− | 0.2− | 2006 09 22 | 704 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2006 07 22 | G96 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.2− | 0.9+ | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2006 07 22 | G96 | 0.0 | 0.4− | 2006 09 26 | 704 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2006 08 19 | 699 | 0.4− | 0.5+ | 2006 09 26 | 704 | 0.0 | 0.2− | 2006 10 25 | D35 | 0.3+ | 0.2− |
| 2006 08 19 | 699 | 0.4+ | 0.8+ | 2006 09 26 | 704 | 0.0 | 0.1+ | 2006 10 25 | D35 | 0.1− | 0.1− |
| 2006 08 19 | 699 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.3− | 0.4− | 2006 10 25 | D35 | 0.1+ | 0.0 |
| 2006 08 19 | 699 | 0.6+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.9− |
| 2006 08 24 | 644 | 0.5− | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.3− | 2006 10 28 | 703 | 0.5− | 0.5− |
| 2006 08 24 | 644 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.6+ | 0.5− |
| 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.1+ | 0.6− |
| 2006 09 16 | 704 | 0.2− | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.1− | | | | |

**2002 $XN_{84}$ = 2006 $VG_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.51785 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23597325 | $\omega$ | 123.65797 | | −0.55010074 | −0.83509411 | |
| $a$ | 2.5935475 | $\Omega$ | 359.67812 | | +0.52044181 | −0.34034787 | |
| $e$ | 0.2036733 | $i$ | 28.11004 | | +0.65309226 | −0.43218185 | |
| $P$ | 4.18 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 07 | 699 | 0.4− | 0.9+ | 2002 12 29 | 704 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 1999 01 07 | 699 | 1.0+ | 0.5− | 2002 12 29 | 704 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.2+ | 1.3+ |
| 1999 01 07 | 699 | 0.4− | 0.1− | 2002 12 29 | 704 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.9+ | 0.5+ |
| 2002 12 13 | 704 | 0.9+ | 0.1− | 2002 12 29 | 704 | 0.7− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2002 12 13 | 704 | 0.8+ | 0.5+ | 2002 12 29 | 704 | 0.1− | 0.6− | 2006 11 18 | 704 | 0.5+ | 1.3− |
| 2002 12 13 | 704 | 1.1+ | 0.7− | 2002 12 29 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.9+ |
| 2002 12 13 | 704 | (2.2+ | 0.4−) | 2002 12 29 | 704 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.5− |
| 2002 12 13 | 704 | (1.1+ | 1.6+) | 2002 12 29 | 704 | 0.9− | 0.7+ | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2002 12 15 | 704 | 0.1− | 0.5− | 2006 10 03 | 703 | 1.3− | 1.5− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 12 15 | 704 | 0.4− | 0.2− | 2006 10 03 | 703 | 0.5− | 0.9− | 2006 11 21 | 704 | 0.8− | 0.1− |
| 2002 12 15 | 704 | 0.2+ | 0.3+ | 2006 10 03 | 703 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2002 12 28 | 704 | 0.1+ | 0.3− | 2006 10 03 | 703 | 0.5− | 0.7+ | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2002 12 28 | 704 | 0.2− | 0.2− | 2006 11 13 | 704 | 1.0− | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 28 | 704 | 0.0 | 0.4+ | 2006 11 13 | 704 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2002 12 28 | 704 | 0.2− | 0.8+ | 2006 11 13 | 704 | 0.5− | 0.4+ | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2002 12 29 | 704 | 0.3+ | 0.7− | 2006 11 13 | 704 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.8+ | 0.1+ |
| 2002 12 29 | 704 | 0.5− | 0.3− | 2006 11 13 | 704 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.7+ | 0.0 |

**2002 XX$_{85}$ = 2006 VQ$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.25351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24324300 | $\omega$ | 74.25821 | | +0.63966245 | −0.76821846 | |
| $a$ | 2.5416114 | $\Omega$ | 335.91595 | | +0.67866498 | +0.58029058 | |
| $e$ | 0.3031539 | $i$ | 3.64310 | | +0.36089582 | +0.27037611 | |
| $P$ | 4.05 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.5− |
| 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.9− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 11 15 | 704 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.0 |
| 2002 12 11 | 704 | 0.5+ | 0.6− | 2006 11 15 | 704 | 1.3− | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.7− | 0.1+ | 2006 11 16 | 704 | 0.5+ | 1.1+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2002 12 15 | 704 | 0.6+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.8+ | 2006 11 22 | 704 | 0.5+ | 0.6− |
| 2002 12 15 | 704 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.6+ | 2006 11 22 | G96 | 0.5− | 0.6− |
| 2002 12 15 | 704 | 0.2− | 0.7− | 2006 11 19 | 704 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.7− |
| 2002 12 15 | 704 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.4− | 0.6− |
| 2002 12 15 | 704 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.6− |
| 2006 11 15 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.2+ | 0.2− | | | | |

**2002 XC$_{86}$ = 2006 VT$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.62190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23865004 | $\omega$ | 349.45401 | | +0.55471903 | −0.79447077 | |
| $a$ | 2.5741176 | $\Omega$ | 66.42551 | | +0.78167004 | +0.39581250 | |
| $e$ | 0.1731628 | $i$ | 15.64636 | | +0.28509428 | +0.46059599 | |
| $P$ | 4.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.3− | 0.0 | 2006 11 02 | 703 | 0.3+ | 1.2− | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2002 12 06 | 704 | 0.2− | 1.0+ | 2006 11 02 | 703 | 0.4− | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.6+ | 2006 11 05 | 644 | 0.2+ | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2002 12 06 | 704 | 0.7− | 0.6− | 2006 11 05 | 644 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2002 12 06 | 704 | 0.4+ | 0.1+ | 2006 11 05 | 644 | 0.5+ | 0.1− | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2002 12 11 | 704 | (1.9+ | 0.1+) | 2006 11 11 | G96 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2002 12 11 | 704 | 0.8+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.2+ | 0.6− |
| 2002 12 11 | 704 | 0.2− | 1.1− | 2006 11 11 | G96 | 0.1− | 0.6− | 2006 11 27 | 703 | (0.8+ | 3.5−) |
| 2002 12 15 | 704 | 0.1− | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2002 12 15 | 704 | 0.2− | 0.4− | 2006 11 17 | 704 | 0.5+ | 0.5+ | 2006 11 27 | 703 | 0.5− | 0.4− |
| 2002 12 15 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.5+ | 0.5+ | 2006 11 27 | 704 | 0.7− | 0.1+ |
| 2002 12 15 | 704 | 0.8+ | 0.8− | 2006 11 17 | 704 | 0.2− | 0.1+ | 2006 11 27 | 704 | 0.0 | 0.3− |
| 2006 10 01 | 703 | 0.2− | 0.2− | 2006 11 18 | 704 | (0.6+ | 2.1+) | 2006 11 27 | 704 | 0.7+ | 0.8− |
| 2006 10 01 | 703 | 0.6− | 0.6+ | 2006 11 18 | 704 | (0.7− | 1.9+) | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2006 10 01 | 703 | (2.1+ | 0.3+) | 2006 11 18 | 704 | 0.2− | 0.5+ | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2006 10 01 | 703 | 0.6+ | 0.5+ | 2006 11 18 | 704 | 0.1− | 0.8+ | 2006 12 01 | 704 | 1.0+ | 0.0 |
| 2006 10 23 | G96 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.9+ | 0.6+ | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2006 10 23 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.2+ | 2006 12 01 | 704 | 0.1+ | 0.1− |
| 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.6+ | 0.2− |
| 2006 10 23 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.1− | 0.4+ |
| 2006 11 02 | 703 | 1.4− | 0.9− | 2006 11 21 | 704 | 1.0+ | 0.8+ | | | | |
| 2006 11 02 | 703 | (0.4+ | 2.7−) | 2006 11 23 | 691 | 0.1+ | 0.5+ | | | | |

**2002 XE$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.50245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21924084 | $\omega$ | 11.42096 | | +0.50685536 | −0.84149410 | |
| $a$ | 2.7238828 | $\Omega$ | 48.43661 | | +0.76990274 | +0.34430218 | |
| $e$ | 0.1673255 | $i$ | 14.47657 | | +0.38774659 | +0.41634563 | |
| $P$ | 4.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.3− | 0.6− | 2006 09 25 | 699 | 0.4− | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.4− |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 0.5+ | 0.1− | 2006 10 28 | 703 | 0.7+ | 0.6− |
| 2002 12 12 | 644 | 0.4+ | 0.1− | 2006 09 26 | 703 | 0.9− | 0.4+ | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2002 12 12 | 644 | 0.5+ | 0.3− | 2006 09 26 | 703 | 0.5+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2002 12 12 | 644 | 0.3+ | 1.0− | 2006 09 29 | 699 | 0.9+ | 0.3− | 2006 11 10 | 704 | (0.5+ | 1.7−) |
| 2002 12 15 | 704 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2002 12 15 | 704 | (1.7− | 0.2+) | 2006 09 29 | 699 | 0.0 | 0.2− | 2006 11 10 | 704 | 0.9+ | 0.2− |
| 2002 12 15 | 704 | 0.5+ | 0.2− | 2006 09 30 | 704 | 0.3− | 0.3+ | 2006 11 10 | 704 | (0.7+ | 1.6−) |
| 2002 12 15 | 704 | 0.8− | 0.2+ | 2006 09 30 | 704 | 0.5− | 1.1+ | 2006 11 10 | 644 | 0.1+ | 0.4− |
| 2002 12 28 | 704 | 0.8+ | 0.1− | 2006 09 30 | 704 | 0.3− | 0.4+ | 2006 11 10 | 704 | 0.2− | 0.3− |
| 2002 12 28 | 704 | 0.6+ | 0.1− | 2006 09 30 | 704 | 0.6− | 0.5+ | 2006 11 17 | 704 | 0.7− | 0.8+ |
| 2002 12 28 | 704 | 0.4+ | 0.1− | 2006 09 30 | 704 | 1.1− | 0.2+ | 2006 11 17 | 704 | 1.4+ | 1.0+ |
| 2002 12 28 | 704 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.1− | 1.1− | 2006 11 17 | 704 | 1.4+ | 0.3− |
| 2002 12 28 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.6− | 0.1+ | 2006 11 17 | 704 | 0.1− | 1.4+ |
| 2003 01 07 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 17 | 704 | 1.1− | 0.9+ |
| 2003 01 07 | 704 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2003 01 07 | 704 | 0.8− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2003 01 07 | 704 | 0.7− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.6− |
| 2003 01 07 | 704 | 0.9− | 0.1+ | 2006 10 21 | 644 | 0.8+ | 0.3+ | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.6− |
| 2006 09 18 | 703 | 0.5− | 0.3− | 2006 10 22 | 703 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.6− |
| 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2006 09 25 | 699 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.2− | | | | |
| 2006 09 25 | 699 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | | | |

**2002 XT$_{92}$ = 1993 RD$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.35273 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22981711 | $\omega$ | 23.85738 | | +0.99708837 | +0.07419114 | |
| $a$ | 2.6396589 | $\Omega$ | 331.87057 | | −0.07458660 | +0.90082050 | |
| $e$ | 0.1784722 | $i$ | 2.14175 | | −0.01586228 | +0.42780616 | |
| $P$ | 4.29 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 809 | (1.3+ | 3.0+) | 2002 12 06 | 704 | 0.9− | 0.1− | 2006 09 17 | 691 | 0.3− | 0.0 |
| 1993 09 14 | 809 | (0.7− | 3.2+) | 2002 12 11 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 1993 09 14 | 809 | 0.6− | 1.4+ | 2002 12 11 | 704 | 0.1− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2002 11 07 | 291 | 0.2− | 0.2− | 2002 12 11 | 704 | 0.8+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2002 11 07 | 291 | 0.3− | 0.1− | 2004 02 29 | 291 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.7+ | 0.6− |
| 2002 11 07 | 291 | 0.2+ | 0.2− | 2004 02 29 | 291 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2002 11 24 | 644 | 0.1+ | 0.2− | 2004 02 29 | 291 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.9+ | 0.0 | 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.2+ | 0.2+ | 2006 07 22 | G96 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 12 05 | 695 | 0.1+ | 0.3− | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2002 12 05 | 695 | 0.2+ | 0.2− | 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 12 06 | 704 | 0.2+ | 0.6− | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2002 12 06 | 704 | 0.4− | 0.0 | 2006 09 17 | 691 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2− |

**2002 XV$_{92}$ = 2006 UA$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.32359 | | | (2000.0) | | |
| $n$ | 0.24088318 | $\omega$ | 359.88503 | | +0.34095360 | −0.93284421 |
| $a$ | 2.5581838 | $\Omega$ | 70.17911 | | +0.86260540 | +0.26121799 |
| $e$ | 0.1919467 | $i$ | 7.10831 | | +0.37371456 | +0.24812665 |
| $P$ | 4.09 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 1.0− | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.9− | 0.2− |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2002 12 06 | 695 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.4− |
| 2002 12 06 | 695 | 0.3+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.2+ |
| 2002 12 10 | 704 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 1.2+ |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2002 12 10 | 704 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.3− | | | | |
| 2006 10 18 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.1− | | | | |

**2002 XD$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.82024 | | | (2000.0) | | |
| $n$ | 0.21170056 | $\omega$ | 197.59544 | | +0.77146686 | −0.63534155 |
| $a$ | 2.7881837 | $\Omega$ | 201.96178 | | +0.59425438 | +0.73876661 |
| $e$ | 0.0658687 | $i$ | 5.27008 | | +0.22737767 | +0.22486666 |
| $P$ | 4.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | (2.4+ | 0.5+) | 2002 12 03 | 644 | 0.0 | 0.6− | 2006 09 01 | 152 | 0.9− | 0.1− |
| 2002 10 30 | 644 | (2.1+ | 0.3+) | 2002 12 03 | 644 | 0.1− | 0.5+ | 2006 09 02 | 152 | 1.0+ | 0.3− |
| 2002 10 30 | 644 | (2.5+ | 0.5−) | 2002 12 03 | 644 | 0.3+ | 0.2− | 2006 09 02 | 152 | 1.1+ | 1.2− |
| 2002 11 23 | 644 | 0.3+ | 0.8+ | 2006 08 29 | 703 | 0.5− | 1.2− | 2006 11 16 | G96 | 0.4− | 0.3+ |
| 2002 11 23 | 644 | 0.5+ | 0.0 | 2006 08 29 | 703 | 0.7− | 1.0+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 0.5− | 0.3− | 2006 08 29 | 703 | 0.0 | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.4+ |
| 2002 11 24 | 644 | 0.5− | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2002 11 24 | 644 | 0.1− | 0.2− | 2006 09 01 | 152 | 1.0+ | 0.2+ | 2006 11 18 | 122 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.2+ | 0.0 | 2006 09 01 | 152 | 0.7− | 0.5+ | 2006 11 18 | 122 | 0.2+ | 0.0 |

**2002 XM$_{94}$ = 2006 RG$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.16666 | | | (2000.0) | | |
| $n$ | 0.23748546 | $\omega$ | 56.24577 | | +0.68740730 | −0.72621794 |
| $a$ | 2.5825260 | $\Omega$ | 350.31365 | | +0.64768834 | +0.61850964 |
| $e$ | 0.1828716 | $i$ | 3.02247 | | +0.32858943 | +0.30008888 |
| $P$ | 4.15 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.6+ | 0.1+ |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.7− | 1.0+ |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.4+ |
| 2002 12 01 | 608 | 0.6+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 2002 12 01 | 608 | 0.6+ | 0.1− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2002 12 01 | 608 | 0.9+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2002 12 02 | 704 | 0.4− | 1.0+ | 2006 10 10 | 644 | 0.3− | 0.3− | 2006 11 13 | 691 | 0.1− | 0.4− |
| 2002 12 02 | 704 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2002 12 02 | 704 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2002 12 02 | 704 | 0.8− | 1.3+ | 2006 10 11 | 644 | 0.2− | 0.3− | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2002 12 02 | 704 | 0.5− | 0.9− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2002 12 05 | 695 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2002 12 05 | 695 | 0.2− | 0.5− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2002 12 11 | 644 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.4− | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2002 12 11 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 12 11 | 644 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.5+ | | | | |

**2002 XR$_{95}$ = 2006 SN$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.85867 | | | (2000.0) | | |
| $n$ | 0.21746568 | $\omega$ | 264.40196 | | +0.97708600 | +0.20112540 |
| $a$ | 2.7386859 | $\Omega$ | 83.98133 | | −0.15678537 | +0.90142962 |
| $e$ | 0.1203675 | $i$ | 4.01623 | | −0.14394896 | +0.38337085 |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1+ | 0.1+ | 2002 12 10 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.7− |
| 2000 05 04 | 645 | 0.1+ | 0.2+ | 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.4+ |
| 2002 11 23 | 644 | 0.6+ | 0.2+ | 2002 12 10 | 704 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2002 11 23 | 644 | 0.4+ | 0.7+ | 2002 12 10 | 704 | 0.6− | 0.6− | 2006 09 26 | 704 | 0.4+ | 0.9+ |
| 2002 11 23 | 644 | 0.4+ | 0.5+ | 2002 12 10 | 644 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.5+ | 0.9+ |
| 2002 12 05 | 704 | 0.8− | 0.5+ | 2002 12 10 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.2− |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2004 02 16 | 691 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.9− | 0.8− | 2004 02 16 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.2− | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.7− | 1.0+ | 2006 09 14 | 703 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.5+ |

**2002 XT$_{95}$ = 2006 VG$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.40989 | | | (2000.0) | | |
| $n$ | 0.23766845 | $\omega$ | 122.47878 | | +0.66242630 | −0.74806604 |
| $a$ | 2.5812002 | $\Omega$ | 285.98268 | | +0.67264887 | +0.61737653 |
| $e$ | 0.1216895 | $i$ | 2.37615 | | +0.32974974 | +0.24339972 |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 26 | 691 | 0.4+ | 0.2− | 2002 12 10 | 704 | 0.5+ | 0.2+ | 2006 11 14 | 703 | (0.7+ | 1.7−) |
| 1993 07 26 | 691 | 0.2+ | 0.5− | 2002 12 10 | 704 | 0.5− | 0.0 | 2006 11 14 | 703 | 0.4− | 0.6− |
| 1993 07 26 | 691 | 0.7− | 0.8+ | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 11 14 | 703 | 1.3+ | 0.9− |
| 1994 12 03 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 1994 12 03 | 691 | 0.2+ | 0.5− | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 1994 12 03 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 11 12 | 704 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 1.3− | 0.1− |
| 2002 11 12 | 704 | 0.9+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.7− | 1.1+ |
| 2002 12 05 | 704 | 0.8− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.7+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.3+ | 0.7+ |
| 2002 12 05 | 704 | 0.1− | 1.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | | | |
| 2002 12 10 | 704 | 1.1− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.9+ | | | | |

**2002 XV$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.86232 | | | (2000.0) | | |
| $n$ | 0.22427563 | $\omega$ | 115.44949 | | +0.97476965 | −0.14179704 |
| $a$ | 2.6829628 | $\Omega$ | 253.09201 | | +0.07549719 | +0.93622708 |
| $e$ | 0.1792678 | $i$ | 10.38006 | | +0.21005786 | +0.32151586 |
| $P$ | 4.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 608 | 0.7− | 0.8− | 2002 12 31 | 699 | 0.2+ | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.0 |
| 2002 11 28 | 608 | 0.6− | 0.4− | 2002 12 31 | 699 | 0.6+ | 0.3− | 2006 09 28 | 703 | 0.1+ | 0.5+ |
| 2002 11 28 | 608 | 0.7− | 0.7− | 2006 08 29 | 699 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.5+ | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 699 | 0.4− | 0.7− | 2006 10 04 | 703 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2006 08 29 | 699 | 1.5− | 0.0 | 2006 10 04 | 703 | 0.4+ | 0.8+ |
| 2002 12 05 | 704 | 0.6− | 0.3+ | 2006 08 29 | 699 | 0.3− | 0.0 | 2006 10 04 | 703 | 0.3− | 0.8− |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2006 09 04 | 958 | (4.3− | 0.8−) | 2006 10 04 | 703 | 0.0 | 0.5− |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 09 04 | 958 | (4.6− | 0.4−) | 2006 10 18 | 106 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.1+ | 1.0+ | 2006 09 04 | 958 | (4.7− | 0.1+) | 2006 10 18 | 106 | 0.4+ | 0.3− |
| 2002 12 10 | 704 | 0.0 | 0.4+ | 2006 09 04 | 958 | 0.4+ | 0.4+ | 2006 10 18 | 106 | 0.9+ | 0.3+ |
| 2002 12 10 | 704 | 0.4+ | 0.6− | 2006 09 04 | 958 | 0.3+ | 0.1+ | 2006 10 18 | 106 | 0.9+ | 0.7− |
| 2002 12 10 | 704 | 0.1− | 0.1− | 2006 09 04 | 958 | 0.4− | 0.1+ | 2006 10 20 | 703 | 0.4+ | 1.1+ |
| 2002 12 10 | 704 | 0.1+ | 0.5− | 2006 09 14 | 644 | 0.3− | 0.1− | 2006 10 20 | 703 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | (0.0 | 1.7+) | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.5− | 0.1− | | |
| 2002 12 11 | 704 | 1.1+ | 1.3− | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.7− | 0.0 | | |
| 2002 12 11 | 704 | 0.1+ | 1.0+ | 2006 09 22 | 699 | 0.4+ | 0.5− | 2006 11 25 | 703 | 0.4− | 0.2+ | | |
| 2002 12 11 | 704 | 0.6− | 0.1+ | 2006 09 22 | 699 | 0.2+ | 0.2+ | 2006 11 25 | 703 | 0.3+ | 0.1− | | |
| 2002 12 11 | 704 | (1.8+ | 0.4−) | 2006 09 22 | 699 | 0.6+ | 0.2− | 2006 11 25 | 703 | 0.0 | 0.6+ | | |
| 2002 12 31 | 699 | 0.7+ | 0.1− | 2006 09 22 | 699 | 0.1− | 0.2+ | 2006 11 25 | 703 | 0.5− | 0.1+ | | |
| 2002 12 31 | 699 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.7+ | | | | | | |

### 2002 XA$_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.80626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24404475 | $\omega$ | 343.59753 | | +0.52601354 | −0.83805557 | |
| $a$ | 2.5360418 | $\Omega$ | 74.45750 | | +0.79620853 | +0.42540560 | |
| $e$ | 0.2235295 | $i$ | 8.64524 | | +0.29893433 | +0.34160349 | |
| $P$ | 4.04 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.3+ | 0.3− | 2002 12 10 | 644 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.1− |
| 2002 11 07 | 704 | 0.8+ | 0.3+ | 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2002 11 07 | 704 | 0.6− | 0.1+ | 2002 12 10 | 644 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2002 11 23 | 644 | 0.2− | 0.5+ | 2002 12 10 | 704 | 1.1+ | 1.3+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 11 23 | 644 | 0.7− | 0.5+ | 2002 12 10 | 644 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2002 11 23 | 644 | 0.6− | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.5− |
| 2002 12 05 | 704 | 0.4− | 0.9− | 2006 10 22 | 703 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.8− | 0.4− |
| 2002 12 10 | 704 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2002 12 10 | 704 | 1.3+ | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.7− | 0.0 |

### 2002 XE$_{98}$ = 2006 VT$_{151}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.85798 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23910042 | $\omega$ | 137.50886 | | −0.34081748 | −0.93891250 | |
| $a$ | 2.5708841 | $\Omega$ | 332.31628 | | +0.83253394 | −0.27779206 | |
| $e$ | 0.1263840 | $i$ | 5.90789 | | +0.43672725 | −0.20316221 | |
| $P$ | 4.12 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.8− | 0.6+ | 2002 12 15 | 704 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2002 12 15 | 704 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2003 01 05 | 704 | 0.5− | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.6− | 0.1+ | 2003 01 05 | 704 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 0.5− | 0.0 | 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2003 01 05 | 704 | 0.1− | 0.5+ | 2006 11 15 | 703 | 1.1+ | 0.2+ |
| 2002 12 10 | 704 | 0.0 | 0.2− | 2003 01 05 | 704 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.5− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 12 10 | 704 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.4− | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 12 10 | 704 | 0.4+ | 0.3− | 2006 10 19 | 703 | 0.9− | 0.2+ | 2006 11 15 | G96 | 0.8− | 0.2− |
| 2002 12 15 | 704 | 0.4+ | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.1− | | | | |
| 2002 12 15 | 704 | 1.1+ | 0.9− | 2006 11 09 | 644 | 0.3+ | 0.3+ | | | | |

### 2002 XC$_{99}$ = 2006 WU$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.59996 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24297872 | $\omega$ | 60.90516 | | +0.83765244 | +0.54134559 | |
| $a$ | 2.5434540 | $\Omega$ | 266.23168 | | −0.52303699 | +0.75664461 | |
| $e$ | 0.2622877 | $i$ | 4.17736 | | −0.15738709 | +0.36665227 | |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 11 22 | 704 | (2.0+ | 0.8+) |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.5− | 2006 11 22 | 704 | 1.1− | 1.5− |
| 2002 12 05 | 704 | 0.1+ | 0.5− | 2006 10 20 | G96 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 0.5− | 0.5− | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.8+ | 0.4− |
| 2002 12 10 | 704 | 0.0 | 0.5− | 2006 10 20 | G96 | 0.1+ | 0.4− | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.6+ | 0.7+ | 2006 11 17 | 691 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.3+ | 0.1− |
| 2002 12 10 | 704 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.5− | 0.6+ | 2006 11 25 | 691 | (3.1+ | 2.2−) |
| 2002 12 10 | 704 | 0.4+ | 0.9− | 2006 11 17 | 691 | 0.2+ | 0.2− | 2006 12 01 | 704 | 0.5+ | 0.5+ |
| 2004 02 18 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.2+ | 2006 12 01 | 704 | (2.0+ | 0.7−) |
| 2004 02 18 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.6+ | 2006 12 01 | 704 | 0.1+ | 0.3+ |
| 2004 02 18 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.8− | 0.7+ | 2006 12 01 | 704 | 0.4+ | 0.8+ |
| 2006 09 18 | 703 | (1.5− | 0.4+) | 2006 11 19 | 704 | 1.0− | 0.2+ | 2006 12 01 | 704 | (0.5− | 1.6+) |

### 2002 XE$_{102}$ = 2006 QY$_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.78023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21733245 | $\omega$ | 109.59935 | | +0.96684430 | −0.25037114 | |
| $a$ | 2.7398051 | $\Omega$ | 264.92532 | | +0.21128966 | +0.89485749 | |
| $e$ | 0.1145426 | $i$ | 2.89244 | | +0.14341821 | +0.36951911 | |
| $P$ | 4.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2005 06 14 | G96 | 0.3− | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2005 06 14 | G96 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2005 06 14 | G96 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 0.5+ | 0.7+ |
| 2002 12 05 | 704 | 0.3+ | 0.8+ | 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.5− | 1.1+ |
| 2002 12 10 | 704 | 0.4− | 0.3− | 2006 08 24 | 644 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.6+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.4− | 0.2− | 2006 08 28 | 703 | 1.0− | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.3− | 0.5− | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.1− | 0.8+ | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.4− | 0.4− |
| 2002 12 10 | 704 | 0.4+ | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.1+ | 0.6− |
| 2002 12 10 | 704 | 0.5+ | 0.6+ | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 704 | (1.1− | 1.5+) |
| 2002 12 10 | 704 | 0.1+ | 0.9− | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 10 17 | 703 | (1.8− | 0.2+) |
| 2002 12 31 | 704 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.2− | 0.7− | 2006 10 17 | 703 | 0.7− | 1.4+ |
| 2002 12 31 | 704 | 0.9− | 0.6+ | 2006 09 17 | 703 | 0.8− | 0.4− | 2006 10 17 | 703 | 0.1− | 1.3+ |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.6− | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2003 01 01 | 291 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2003 01 01 | 291 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2003 01 01 | 291 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2005 06 14 | G96 | (0.6− | 1.7+) | 2006 09 25 | 691 | 0.2+ | 0.1− | | | | |

### 2002 XU$_{103}$ = 2006 UJ$_{291}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.40653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23620943 | $\omega$ | 326.82011 | | +0.56910983 | −0.81083538 | |
| $a$ | 2.5918184 | $\Omega$ | 88.13328 | | +0.78103518 | +0.48112077 | |
| $e$ | 0.1557283 | $i$ | 7.85543 | | +0.25709539 | +0.33326984 | |
| $P$ | 4.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.4+ | 0.7+ | 2006 10 30 | 703 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 10 30 | 703 | 0.6− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.4− | 0.1− | 2006 10 30 | 703 | 0.4+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 12 10 | 704 | 0.0 | 0.2− | 2006 11 05 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 11 05 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2006 11 05 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.8+ | 0.8+ |
| 2002 12 10 | 704 | 0.5+ | 0.4− | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.7+ | 0.4+ |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 644 | 0.7− | 0.1− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.0 | 1.2+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.6+ | 0.2+ | 2006 11 14 | 704 | 0.4+ | 0.6+ | 2006 11 24 | 691 | 0.1− | 0.4− |
| 2002 12 31 | 704 | 0.2+ | 0.4− | 2006 11 14 | 704 | 0.5+ | 0.0 | 2006 11 28 | 704 | 1.1− | 0.6+ |
| 2003 01 08 | 704 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.7− | 0.5+ |
| 2003 01 08 | 704 | 0.3− | 0.2− | 2006 11 16 | 691 | (1.5+ | 1.9+) | 2006 11 28 | 704 | 0.6− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.5+ | 0.2− | 2006 11 28 | 704 | 0.7− | 0.6+ |
| 2003 01 08 | 704 | 0.8− | 0.2− | 2006 11 16 | 691 | 0.5+ | 0.2− | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2003 01 08 | 704 | 0.1− | 0.4+ | 2006 11 17 | 704 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.6− |
| 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.4− | 0.6+ | 2006 11 29 | 704 | 0.1− | 1.1− |
| 2006 10 20 | 644 | 0.4− | 0.2− | 2006 11 17 | 704 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.0 | 1.2− |
| 2006 10 20 | 644 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1− | 1.2− |
| 2006 10 30 | 703 | 0.0 | 0.7− | 2006 11 17 | 704 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.7+ | 0.0 |

**2002 XA$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 346.27899 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.24192413 | $\omega$ | 331.18475 | | +0.53772851 | −0.83599549 |
| $a$ | 2.5508402 | $\Omega$ | 86.08898 | | +0.79304123 | +0.45748089 |
| $e$ | 0.1310506 | $i$ | 6.29313 | | +0.28624057 | +0.30302274 |
| $P$ | 4.07 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 608 | 0.2+ | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 1.0− | 0.0 |
| 2002 11 28 | 608 | 0.1+ | 0.4− | 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.8− | 0.7+ |
| 2002 11 28 | 608 | 0.0 | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.2− |
| 2002 12 05 | 704 | 1.2− | 0.5− | 2006 11 09 | 644 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.8− | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.8− | 2006 11 27 | 691 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 704 | 0.1+ | 0.7+ | 2006 11 27 | 691 | 0.4− | 0.0 |
| 2002 12 10 | 704 | 0.5− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.8+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2002 12 10 | 704 | 0.3+ | 0.8− | 2006 11 14 | 704 | 0.8+ | 0.8+ | 2006 11 29 | 704 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 11 14 | 704 | 1.0+ | 0.9+ | 2006 11 29 | 704 | 1.0+ | 0.6+ |
| 2002 12 10 | 704 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 1.7+ | 0.5+ |
| 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.3− |
| 2003 01 04 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2003 01 04 | 704 | (0.1+ | 1.9+) | 2006 11 16 | G96 | 0.3+ | 0.5− | 2006 12 01 | 691 | 0.3+ | 0.1− |
| 2006 10 23 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.3− | 0.6− | 2006 12 01 | 691 | 0.1− | 0.3− |
| 2006 10 23 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.5− | | | | |

**2002 XD$_{104}$ = 2002 WX$_{20}$ = 2006 SU$_{119}$**

Id. Minor Planet Center (d, *MPO* 102378; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 338.56123 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22615853 | $\omega$ | 306.95424 | | +0.78671195 | −0.60799703 |
| $a$ | 2.6680506 | $\Omega$ | 90.73954 | | +0.59490966 | +0.70047366 |
| $e$ | 0.1498420 | $i$ | 6.13616 | | +0.16482355 | +0.37373289 |
| $P$ | 4.36 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 18 | 644 | 0.5− | 0.0 | 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.8− |
| 2002 11 18 | 644 | 0.1+ | 0.5+ | 2002 12 10 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2002 11 18 | 644 | 0.1− | 0.0 | 2002 12 10 | 704 | 0.6− | 0.3+ | 2006 09 26 | 703 | 0.6− | 1.5+ |
| 2002 11 24 | 644 | 0.3+ | 0.1− | 2004 03 20 | 691 | 0.0 | 0.1− | 2006 09 29 | 699 | 1.2− | 0.4+ |
| 2002 11 24 | 644 | 0.5− | 0.2+ | 2004 03 20 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.4+ |
| 2002 11 24 | 644 | 0.3+ | 0.2+ | 2004 03 20 | 691 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.8+ | 0.7+ |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.6− | 1.0− | 2006 09 29 | 699 | 0.2+ | 0.8− |
| 2002 12 05 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | (0.8− | 1.7+) | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.9+ | 0.1− | 2006 09 18 | 703 | (2.1− | 0.5+) | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 05 | 608 | 0.2− | 0.7− | 2006 09 25 | 699 | 0.0 | 0.6− | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2002 12 05 | 608 | 0.0 | 0.6− | 2006 09 25 | 699 | 0.1− | 0.9− | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2002 12 05 | 608 | 0.2− | 0.8− | 2006 09 25 | 699 | 0.6− | 0.6+ | 2006 10 22 | 703 | 0.8+ | 0.5+ |
| 2002 12 10 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2002 12 10 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | | | | |

**2002 XQ$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 326.94955 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22468095 | $\omega$ | 341.97355 | | +0.43964038 | −0.89186945 |
| $a$ | 2.6797352 | $\Omega$ | 81.83260 | | +0.83670546 | +0.36367532 |
| $e$ | 0.1333218 | $i$ | 6.16087 | | +0.32655828 | +0.26890360 |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.2− | 2003 01 05 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2002 12 05 | 704 | 0.5+ | 0.2− | 2003 01 05 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.8+ | 0.3− | 2006 10 11 | 644 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2002 12 10 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.5+ | 0.3+ |
| 2002 12 10 | 704 | 1.0− | 0.1− | 2006 10 11 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.2− | 1.1− | 2006 10 22 | 703 | 1.0− | 0.1+ |
| 2003 01 05 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.3− | 0.1− |

**2002 XM$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 27.00567 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.24459051 | $\omega$ | 348.08983 | | +0.99382602 | −0.11029386 |
| $a$ | 2.5322679 | $\Omega$ | 18.25549 | | +0.10469058 | +0.89626332 |
| $e$ | 0.2222302 | $i$ | 2.20389 | | +0.03673873 | +0.42958971 |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.2− | 0.1− | 2003 01 05 | 704 | 0.7− | 0.6− | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2000 04 10 | 695 | 0.2+ | 0.2− | 2003 01 05 | 704 | (1.8− | 0.1+) | 2006 11 20 | 691 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2005 02 15 | 809 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2005 02 15 | 809 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.6+ |
| 2002 12 05 | 704 | 1.0+ | 1.1+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2002 12 11 | 704 | 0.6+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2002 12 11 | 704 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 2002 12 11 | 704 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.4+ | 1.4+ | 2006 11 27 | 704 | 0.4− | 0.3− |
| 2002 12 11 | 704 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.1− | 0.5+ | 2006 11 27 | 704 | 0.4+ | 0.4− |
| 2003 01 05 | 704 | 0.9− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.7+ | 2006 11 27 | 704 | 0.6+ | 0.6− |
| 2003 01 05 | 704 | 0.8− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.4+ | | | | |

**2002 XJ$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 349.01058 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23402595 | $\omega$ | 137.05007 | | +0.84441083 | −0.46432512 |
| $a$ | 2.6079146 | $\Omega$ | 252.44063 | | +0.38326997 | +0.87207716 |
| $e$ | 0.1867335 | $i$ | 16.27292 | | +0.37426526 | +0.15454326 |
| $P$ | 4.21 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.1− | 0.1+ | 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 09 24 | 699 | (2.0+ | 0.2+) |
| 2002 11 01 | 644 | 0.0 | 0.1− | 2002 12 06 | 704 | 0.1+ | 0.1− | 2006 09 24 | 699 | 0.2+ | 0.2+ |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2002 12 06 | 704 | 0.4− | 0.6− | 2006 09 24 | 699 | (4.4+ | 0.0 ) |
| 2002 11 12 | 704 | 0.2+ | 0.7+ | 2002 12 06 | 704 | 0.3− | 0.3− | 2006 09 25 | 703 | 0.4+ | 0.7− |
| 2002 11 12 | 704 | 0.5− | 0.0 | 2002 12 06 | 704 | 0.7− | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.0 | 0.4− | 2002 12 11 | 704 | 0.3+ | 0.3− | 2006 09 25 | 703 | 0.1− | 0.1− |
| 2002 11 12 | 704 | (2.1− | 0.1+) | 2002 12 11 | 704 | 0.4− | 0.0 | 2006 09 25 | 703 | (2.2− | 0.1+) |
| 2002 11 12 | 704 | 0.2− | 0.0 | 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 10 02 | 703 | 0.3− | 0.6+ |
| 2002 11 12 | 644 | 0.4+ | 0.0 | 2002 12 11 | 704 | 0.3+ | 0.5− | 2006 10 02 | 703 | 0.3− | 0.5− |
| 2002 11 12 | 644 | 0.1+ | 0.4+ | 2002 12 11 | 704 | 0.0 | 1.1+ | 2006 10 02 | 703 | 1.0− | 0.4+ |
| 2002 11 12 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.0 | 2006 10 02 | 703 | 0.4− | 0.2+ |
| 2002 11 27 | 699 | 0.4− | 0.4− | 2006 09 19 | 703 | 0.7+ | 1.0+ | 2006 10 27 | 703 | 0.8+ | 1.1− |
| 2002 11 27 | 699 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.8+ | 1.2+ | 2006 10 27 | 703 | 0.3+ | 0.0 |
| 2002 11 27 | 699 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 1.5− | 2006 10 27 | 703 | 0.6− | 1.4+ |
| 2002 11 27 | 699 | 0.7+ | 0.1− | 2006 09 24 | 699 | 0.6− | 0.3− | 2006 10 27 | 703 | 0.1− | 0.9− |

**2002 XJ$_{109}$ = 2006 VJ$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.15859 | | (2000.0) | | | |
| $n$ | 0.24280382 | $\omega$ | 112.32028 | | +0.88899325 | −0.42810431 |
| $a$ | 2.5446753 | $\Omega$ | 273.34819 | | +0.33684702 | +0.85180843 |
| $e$ | 0.1284994 | $i$ | 9.37022 | | +0.31020170 | +0.30190909 |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.9+ | 0.0 | 2006 10 23 | 703 | 0.4+ | 0.2− | 2006 11 15 | 703 | 0.6− | 0.4+ |
| 2002 11 12 | 704 | 1.1+ | 0.1+ | 2006 10 23 | 703 | 0.3+ | 0.5+ | 2006 11 15 | 703 | 0.1+ | 0.1+ |
| 2002 11 12 | 704 | 0.4− | 0.2+ | 2006 10 23 | 703 | 1.1− | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.4+ |
| 2002 11 12 | 704 | 0.5− | 0.3− | 2006 10 23 | 703 | (1.1− | 1.9−) | 2006 11 20 | G96 | 0.3+ | 0.1+ |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2006 10 29 | 703 | 0.2− | 0.8− | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.5− | 0.9− | 2006 10 29 | 703 | 1.0− | 0.4+ | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 10 29 | 703 | 0.5+ | 0.7− | 2006 11 20 | G96 | 0.4+ | 0.0 |
| 2002 12 06 | 704 | 0.7+ | 0.7+ | 2006 10 29 | 703 | 0.1+ | 0.0 | 2006 11 21 | 703 | 0.6+ | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.5+ | 0.4+ | 2006 11 21 | 703 | 0.4− | 0.2+ |
| 2002 12 11 | 704 | 0.2+ | 0.5− | 2006 11 13 | 644 | 0.1+ | 0.0 | 2006 11 21 | 703 | 0.3− | 0.5− |
| 2002 12 11 | 704 | 0.6− | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.3+ | | | | |
| 2002 12 11 | 704 | 0.3− | 0.9+ | 2006 11 15 | 703 | 0.2− | 0.5− | | | | |

**2002 XM$_{109}$ = 2006 TP$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 57.21548 | | (2000.0) | | | |
| $n$ | 0.23291856 | $\omega$ | 283.92081 | | +0.81675804 | +0.57517115 |
| $a$ | 2.6161741 | $\Omega$ | 40.99438 | | −0.49885644 | +0.74371302 |
| $e$ | 0.0755037 | $i$ | 3.99095 | | −0.28991130 | +0.34068915 |
| $P$ | 4.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 691 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.6+ |
| 1996 04 20 | 691 | 0.5+ | 0.6+ | 2006 10 11 | 691 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.4− | 0.2+ |
| 1996 04 20 | 691 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2001 07 19 | 644 | 0.2− | 0.5+ | 2006 10 11 | 691 | 0.4+ | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 07 19 | 644 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2001 07 19 | 644 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 11 24 | 644 | 0.4− | 0.6+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2002 12 06 | 704 | (0.2− | 1.6+) | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.6− | 0.7+ |
| 2002 12 06 | 704 | (0.2+ | 1.7+) | 2006 10 19 | 691 | 1.3+ | 0.4+ | 2006 11 17 | 703 | 0.5+ | 0.0 |
| 2002 12 06 | 704 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.3− | 2006 11 17 | 703 | 1.0+ | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 0.4+ | 0.6− | 2006 10 23 | 691 | 0.7− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.7+ | 0.3− | 2006 10 27 | 691 | 0.8− | 0.7+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.5− | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.3− |

**2002 XA$_{112}$ = 2006 SF$_{293}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 268.86151 | | (2000.0) | | | |
| $n$ | 0.21178153 | $\omega$ | 171.52151 | | −0.35991616 | −0.93146396 |
| $a$ | 2.7874729 | $\Omega$ | 299.55877 | | +0.85236657 | −0.30507299 |
| $e$ | 0.1606856 | $i$ | 3.50950 | | +0.37938316 | −0.19825580 |
| $P$ | 4.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2002 12 11 | 704 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.3− | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2002 12 11 | 704 | 0.3− | 0.6+ | 2006 09 25 | 691 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.5+ | 2003 01 27 | 291 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2003 01 27 | 291 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 0.1+ | 2003 01 27 | 291 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.7+ |
| 2002 12 11 | 704 | 0.5+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.4− | | | | |

**2002 XF$_{115}$ = 2006 RR$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.44431 | | (2000.0) | | | |
| $n$ | 0.22474983 | $\omega$ | 222.98459 | | +0.78540112 | −0.61892517 |
| $a$ | 2.6791877 | $\Omega$ | 175.22843 | | +0.59263311 | +0.74780169 |
| $e$ | 0.0518902 | $i$ | 6.04402 | | +0.17869269 | +0.24025874 |
| $P$ | 4.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.5− | 0.2− | 2002 12 10 | 621 | (1.7− | 0.2+) | 2006 09 19 | 703 | 0.4− | 0.5− |
| 2002 11 15 | 644 | 0.2− | 0.3− | 2002 12 10 | 621 | 0.8+ | 0.6− | 2006 09 19 | 703 | 0.0 | 1.4− |
| 2002 11 15 | 644 | 0.4+ | 0.1+ | 2004 02 17 | 291 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.8− |
| 2002 11 23 | 644 | 0.2+ | 0.3+ | 2004 02 17 | 291 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 11 23 | 644 | 0.3− | 0.2− | 2004 02 17 | 291 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2002 11 23 | 644 | 0.7− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2002 12 08 | 621 | 0.7+ | 0.6+ | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2002 12 08 | 621 | (2.1+ | 0.2+) | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 12 08 | 621 | (3.3− | 0.0 ) | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 12 09 | 621 | (1.1− | 1.7−) | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 12 09 | 621 | 1.1+ | 0.8− | 2006 09 19 | 691 | 0.1− | 0.0 | | | | |
| 2002 12 09 | 621 | 1.1− | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.2+ | | | | |

**2002 XK$_{115}$ = 2004 EM$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 302.81102 | | (2000.0) | | | |
| $n$ | 0.21034396 | $\omega$ | 228.04664 | | +0.72013919 | −0.69375369 |
| $a$ | 2.8001590 | $\Omega$ | 175.84252 | | +0.67108701 | +0.69270124 |
| $e$ | 0.2308743 | $i$ | 8.13955 | | +0.17618674 | +0.19715682 |
| $P$ | 4.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 14 | 327 | 0.1− | 0.4− | 2002 11 06 | 699 | 0.1− | 0.3+ | 2002 12 02 | 608 | 0.6− | 1.5− |
| 2002 10 14 | 327 | 0.6− | 0.2+ | 2002 11 06 | 699 | 0.4+ | 0.1− | 2002 12 02 | 608 | 1.4− | 1.8− |
| 2002 10 14 | 327 | 0.7− | 0.5− | 2002 12 01 | 704 | 0.7+ | 0.9+ | 2004 03 15 | 691 | 0.1+ | 0.1+ |
| 2002 10 14 | 327 | 0.5− | 0.2+ | 2002 12 01 | 704 | 0.6+ | 0.8+ | 2004 03 15 | 691 | 0.0 | 0.0 |
| 2002 10 14 | 327 | 0.4+ | 0.5− | 2002 12 01 | 704 | 0.9+ | 1.3+ | 2004 03 15 | 691 | 0.4+ | 0.2+ |
| 2002 10 14 | 327 | 0.3+ | 0.9− | 2002 12 01 | 704 | 0.3+ | 0.4+ | 2004 03 27 | 291 | 0.2− | 0.2− |
| 2002 11 06 | 699 | 0.5+ | 0.7+ | 2002 12 01 | 704 | 0.5− | 0.8+ | 2004 03 27 | 291 | 0.3− | 0.1− |
| 2002 11 06 | 699 | 1.1+ | 1.0+ | 2002 12 02 | 608 | 0.7− | 1.2− | 2004 03 27 | 291 | 0.2− | 0.0 |

**2002 XL$_{115}$ = 2005 KP$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 88.93442 | | (2000.0) | | | |
| $n$ | 0.26737255 | $\omega$ | 305.82150 | | +0.81634842 | +0.57671908 |
| $a$ | 2.3862989 | $\Omega$ | 19.01962 | | −0.49427804 | +0.72551798 |
| $e$ | 0.1670326 | $i$ | 5.48503 | | −0.29877162 | +0.37552465 |
| $P$ | 3.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.2+ | 0.3+ | 2002 11 12 | 704 | 0.5+ | 0.2+ | 2004 02 18 | 691 | 0.5+ | 0.3+ |
| 1993 02 26 | 691 | 0.1− | 0.0 | 2002 11 12 | 704 | (0.2+ | 1.6+) | 2004 02 18 | 691 | 0.0 | 0.3− |
| 1997 05 03 | 691 | 0.1+ | 0.4− | 2002 11 12 | 704 | 0.1− | 1.0+ | 2004 02 18 | 691 | 0.6− | 0.2+ |
| 1997 05 03 | 691 | 0.1− | 0.2+ | 2002 12 02 | 704 | 0.4− | 0.0 | 2004 02 23 | 704 | (2.1− | 1.6+) |
| 1998 09 25 | 699 | 0.6+ | 0.2+ | 2002 12 02 | 704 | 0.2+ | 0.0 | 2004 02 23 | 704 | (0.3− | 2.3+) |
| 1998 09 25 | 699 | 0.3+ | 0.9+ | 2002 12 02 | 704 | 0.4− | 0.1− | 2004 02 23 | 704 | (0.1− | 2.4+) |
| 1998 09 25 | 699 | 0.8+ | 0.8+ | 2002 12 02 | 704 | 0.1− | 0.8− | 2004 02 23 | 704 | (0.4+ | 2.1+) |
| 1998 11 18 | 691 | 0.3− | 0.2− | 2002 12 06 | 704 | (0.6+ | 1.9+) | 2005 05 20 | 644 | 0.2− | 0.4+ |
| 1998 11 18 | 691 | 0.3− | 0.1+ | 2002 12 06 | 704 | 0.3+ | 0.4+ | 2005 05 20 | 644 | 0.0 | 0.5+ |
| 1998 11 18 | 691 | 0.1− | 0.3− | 2002 12 06 | 704 | (0.9+ | 2.0−) | 2005 05 20 | 644 | 0.1− | 0.6+ |
| 2001 06 17 | 644 | 0.2− | 0.3− | 2004 02 17 | 704 | 0.7+ | 0.5− | 2005 05 21 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 17 | 644 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.2+ | 0.7+ | 2005 05 21 | 644 | 0.0 | 0.4+ |
| 2001 06 17 | 644 | 0.0 | 0.2− | 2004 02 17 | 704 | 0.4+ | 0.8+ | 2005 05 21 | 644 | 0.4− | 0.5+ |

**2002 XO$_{115}$ = 2001 UU$_{193}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.90224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22636615 | $\omega$ | 290.43753 | | −0.12758751 | −0.99177824 | |
| $a$ | 2.6664190 | $\Omega$ | 166.88106 | | +0.92541856 | −0.12261763 | |
| $e$ | 0.0776827 | $i$ | 2.49136 | | +0.35682197 | −0.03661738 | |
| $P$ | 4.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.5− | 0.3− | 2002 12 07 | 645 | 0.0 | 0.1− | 2003 02 22 | 644 | 0.1+ | 0.7+ |
| 2001 10 18 | 644 | 0.3− | 0.4− | 2002 12 07 | 645 | 0.0 | 0.4− | 2003 02 22 | 644 | 0.2+ | 0.6+ |
| 2001 10 18 | 644 | 1.0− | 0.2+ | 2003 01 28 | 645 | 0.1− | 0.1+ | 2003 02 22 | 644 | 0.3+ | 0.8+ |
| 2001 10 20 | 704 | 0.8+ | 0.2+ | 2003 01 28 | 645 | 0.1− | 0.1+ | 2003 03 08 | 291 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.6+ | 0.6− | 2003 02 11 | 608 | 0.1+ | 0.5− | 2003 03 08 | 291 | 0.5− | 0.7+ |
| 2001 10 20 | 704 | 0.9− | 0.1+ | 2003 02 11 | 608 | 0.2− | 0.8− | 2003 03 08 | 291 | 0.5+ | 0.0 |
| 2001 10 20 | 704 | 1.1+ | 1.0+ | 2003 02 11 | 608 | 0.4− | 1.0− | | | | |

**2002 XP$_{115}$ = 2005 LO$_{34}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.39435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17969613 | $\omega$ | 331.51957 | | +0.09936048 | −0.97463573 | |
| $a$ | 3.1101182 | $\Omega$ | 112.17443 | | +0.94908806 | +0.03228387 | |
| $e$ | 0.1365456 | $i$ | 12.50630 | | +0.29893035 | +0.22145642 | |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.1− | 0.1− | 2003 01 08 | 704 | 0.4+ | 0.7− | 2005 06 10 | 691 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.0 | 0.8− | 2003 01 08 | 704 | 0.6+ | 0.3− | 2005 06 10 | 691 | 0.1+ | 0.3+ |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2003 01 08 | 704 | 0.8+ | 0.5− | 2005 06 10 | 691 | 0.0 | 0.3+ |
| 2002 12 11 | 704 | 0.0 | 0.4+ | 2003 02 02 | 704 | 0.5− | 0.6− | 2005 06 10 | 691 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2003 02 02 | 704 | 0.2− | 0.1− | 2005 06 14 | 691 | 0.1+ | 0.1− |
| 2002 12 31 | 704 | 0.3− | 0.8+ | 2003 02 02 | 704 | 0.4+ | 0.3− | 2005 06 14 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2003 02 02 | 704 | 0.1− | 1.1+ | 2005 06 14 | 691 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.7− | 0.6+ | 2005 06 10 | 691 | 0.1− | 0.3− | | | | |
| 2002 12 31 | 704 | 0.7− | 0.3+ | 2005 06 10 | 691 | 0.3− | 0.2− | | | | |

**2002 XQ$_{115}$ = 1998 XX$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.00846 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26223826 | $\omega$ | 353.98227 | | +0.80143860 | −0.59365170 | |
| $a$ | 2.4173452 | $\Omega$ | 42.71085 | | +0.55309305 | +0.68947416 | |
| $e$ | 0.2146022 | $i$ | 6.14608 | | +0.22756155 | +0.41497354 | |
| $P$ | 3.76 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 0.6+ | 0.0 | 2002 12 28 | 699 | 1.5+ | 0.7+ | 2003 01 31 | 699 | 0.7+ | 0.6− |
| 1998 12 14 | 704 | 0.4+ | 0.7+ | 2002 12 28 | 699 | 0.2− | 0.5+ | 2003 01 31 | 704 | 1.9− | 0.8+ |
| 1998 12 14 | 704 | (0.6+ | 2.8+) | 2002 12 28 | 699 | 0.0 | 0.5+ | 2003 01 31 | 704 | 0.8− | 0.4− |
| 1998 12 17 | 704 | 1.3− | 0.3+ | 2003 01 10 | 704 | 0.3− | 0.2− | 2003 03 07 | 644 | 0.2− | 0.5+ |
| 1998 12 17 | 704 | 1.9− | 1.0− | 2003 01 10 | 704 | 0.2+ | 0.1+ | 2003 03 07 | 644 | 0.4− | 0.4+ |
| 1998 12 17 | 704 | 0.7+ | 1.1− | 2003 01 10 | 704 | 0.1− | 0.4+ | 2003 03 07 | 644 | 0.2− | 0.5+ |
| 1998 12 17 | 704 | 1.3+ | 0.2− | 2003 01 10 | 704 | 0.2− | 0.3+ | 2005 07 26 | 644 | 0.2− | 0.3+ |
| 1998 12 17 | 704 | 0.5+ | 0.1− | 2003 01 10 | 704 | 0.2− | 0.3+ | 2005 07 26 | 644 | 0.2− | 0.2+ |
| 2002 12 14 | 704 | 0.4+ | 1.0+ | 2003 01 31 | 699 | 0.3+ | 0.3− | 2005 07 26 | 644 | 0.2− | 0.6+ |
| 2002 12 14 | 704 | 2.4+ | 0.2+ | 2003 01 31 | 699 | 0.7+ | 0.3− | 2005 08 04 | 644 | 0.2− | 0.5+ |
| 2002 12 14 | 704 | 1.5+ | 0.3+ | 2003 01 31 | 704 | 1.5− | 1.1+ | 2005 08 04 | 644 | 0.1− | 0.5+ |
| 2002 12 14 | 704 | 0.5+ | 1.1− | 2003 01 31 | 699 | 0.4+ | 0.2− | 2005 08 04 | 644 | 0.1− | 0.6+ |
| 2002 12 28 | 699 | 0.5+ | 0.0 | 2003 01 31 | 704 | 1.9− | 0.7− | | | | |

**2002 XR$_{115}$ = 1997 WY$_{10}$ = 2000 KW$_{28}$**

Id. Minor Planet Center; 1997 WY$_{10}$ = 1999 ES$_{8}$ (*MPO* 6761) is invalid

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.36583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25923513 | $\omega$ | 298.51606 | | +0.44270876 | +0.89666527 | |
| $a$ | 2.4359786 | $\Omega$ | 357.76052 | | −0.81726012 | +0.40323099 | |
| $e$ | 0.1803066 | $i$ | 0.87258 | | −0.36891036 | +0.18274619 | |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 07 | 691 | 0.1− | 0.3− | 2000 05 29 | 704 | 0.3+ | 0.6+ | 2004 07 16 | 704 | 0.3+ | 0.4+ |
| 1995 01 07 | 691 | 0.0 | 0.2− | 2000 05 29 | 704 | 0.1− | 1.1+ | 2004 07 16 | 704 | 0.3+ | 0.2− |
| 1995 01 07 | 691 | 0.0 | 0.1− | 2001 11 12 | 691 | 0.8− | 0.6+ | 2004 07 16 | 704 | 2.1+ | 0.8+ |
| 1997 11 22 | 691 | 0.2+ | 0.1+ | 2001 11 12 | 691 | 0.9− | 0.6+ | 2004 08 08 | 704 | 0.1− | 0.3− |
| 1997 11 22 | 691 | 0.1+ | 0.2− | 2001 11 12 | 691 | 0.8− | 0.7+ | 2004 08 08 | 704 | 0.8− | 0.0 |
| 1997 11 22 | 691 | 0.1+ | 0.0 | 2002 12 14 | 645 | 0.1− | 0.1− | 2004 08 08 | 704 | 0.1+ | 0.7− |
| 1997 11 28 | 691 | 0.8− | 0.3− | 2002 12 14 | 645 | 0.2− | 0.3− | 2005 11 26 | G96 | 0.0 | 0.0 |
| 1997 11 28 | 691 | 1.3− | 0.1+ | 2003 01 26 | 291 | 0.6+ | 0.5+ | 2005 11 26 | G96 | 0.5− | 0.2− |
| 1997 11 28 | 691 | 1.1− | 0.3+ | 2003 01 26 | 291 | 0.2− | 0.1+ | 2005 11 26 | G96 | 0.4+ | 0.3+ |
| 1997 12 04 | 691 | 0.1+ | 0.3+ | 2003 01 26 | 291 | 0.0 | 1.4+ | 2005 11 26 | G96 | 0.1+ | 0.3+ |
| 1997 12 04 | 691 | 0.4+ | 0.6+ | 2003 01 28 | 645 | 0.0 | 0.3− | 2005 12 07 | 691 | 0.0 | 0.4+ |
| 1997 12 04 | 691 | (5.0+ | 4.5−) | 2003 01 28 | 645 | 0.0 | 0.3− | 2005 12 07 | 691 | 0.1+ | 0.5+ |
| 2000 05 28 | 704 | 0.3− | 0.0 | 2003 02 21 | 644 | 0.2+ | 0.5+ | 2005 12 07 | 691 | 0.4+ | 0.2+ |
| 2000 05 28 | 704 | 0.4+ | 0.6− | 2003 02 21 | 644 | 0.4+ | 0.6+ | 2005 12 25 | 691 | 0.1− | 0.8+ |
| 2000 05 28 | 704 | 0.8+ | 0.5+ | 2003 02 21 | 644 | 0.5+ | 0.8+ | 2005 12 25 | 691 | 0.3+ | 0.3+ |
| 2000 05 28 | 704 | 0.1+ | 0.2− | 2004 06 20 | 691 | 0.5− | 0.0 | 2005 12 25 | 691 | 0.2+ | 0.5+ |
| 2000 05 28 | 704 | 0.1− | 0.4+ | 2004 06 20 | 691 | 0.1+ | 0.1− | 2006 01 23 | G96 | 0.4− | 0.5+ |
| 2000 05 29 | 704 | 0.4+ | 1.2− | 2004 06 20 | 691 | 0.0 | 0.1− | 2006 01 23 | G96 | 0.3+ | 0.3+ |
| 2000 05 29 | 704 | 1.4− | 0.3− | 2004 07 16 | 704 | 0.2− | 0.1− | 2006 01 23 | G96 | 0.0 | 0.2+ |
| 2000 05 29 | 704 | 0.1− | 0.7+ | 2004 07 16 | 704 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.7+ | 0.0 |

**2002 XS$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.28310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27190993 | $\omega$ | 195.52180 | | −0.04359756 | −0.99861729 | |
| $a$ | 2.3596776 | $\Omega$ | 256.98375 | | +0.91978890 | −0.02864469 | |
| $e$ | 0.1379715 | $i$ | 1.72757 | | +0.38998415 | −0.04407926 | |
| $P$ | 3.62 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.1− | 2002 12 14 | 704 | 0.5+ | 0.4− | 2005 08 29 | 691 | 0.0 | 0.3− |
| 2002 12 05 | 704 | 0.9+ | 0.1− | 2002 12 14 | 704 | 0.1− | 0.1− | 2005 08 29 | 691 | 0.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.8+ | 0.2− | 2002 12 14 | 704 | 0.4+ | 0.5− | 2005 08 29 | 691 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2003 01 02 | 704 | 0.4+ | 0.6+ | 2005 09 13 | 691 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 1.1+ | 0.1− | 2003 01 02 | 704 | 1.3+ | 0.3+ | 2005 09 13 | 691 | 0.2− | 0.1+ |
| 2002 12 08 | 291 | 0.1− | 0.1+ | 2003 01 02 | 704 | 0.3− | 0.5+ | 2005 09 13 | 691 | 0.2− | 0.1− |
| 2002 12 08 | 291 | 0.5− | 0.1− | 2003 01 02 | 704 | 0.1− | 0.7− | 2005 09 25 | 691 | 0.3+ | 0.1− |
| 2002 12 08 | 291 | 0.9− | 0.1+ | 2005 08 10 | 807 | 0.6− | 0.5− | 2005 09 25 | 691 | 0.2+ | 0.1+ |
| 2002 12 14 | 704 | 1.2+ | 0.2+ | 2005 08 10 | 807 | 0.3− | 0.4− | 2005 09 25 | 691 | 0.1− | 0.1− |

**2002 XT$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.73095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21997242 | $\omega$ | 255.64819 | | −0.88142854 | +0.47127719 | |
| $a$ | 2.7178401 | $\Omega$ | 312.45833 | | −0.41533122 | −0.80496090 | |
| $e$ | 0.0132255 | $i$ | 2.43381 | | −0.22490820 | −0.36046604 | |
| $P$ | 4.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.0 | 0.2+ | 2003 03 06 | 644 | 0.5+ | 0.6+ | 2005 09 26 | 703 | 0.5+ | 0.4− |
| 2001 10 26 | 644 | 0.1− | 0.2+ | 2003 03 06 | 644 | 0.2+ | 0.6+ | 2005 09 26 | 703 | 0.3− | 0.7− |
| 2001 10 26 | 644 | 0.0 | 0.0 | 2003 03 30 | 645 | 0.0 | 0.1+ | 2005 09 26 | 703 | 1.0+ | 0.6+ |
| 2002 12 07 | 645 | 0.1− | 0.1− | 2003 03 30 | 645 | 0.1− | 0.1+ | 2005 10 13 | 691 | 0.1+ | 0.1+ |
| 2002 12 07 | 645 | 0.0 | 0.1− | 2005 08 29 | 691 | 0.2+ | 0.5+ | 2005 10 13 | 691 | 0.1− | 0.3+ |
| 2003 02 22 | 644 | 0.2+ | 0.1− | 2005 08 29 | 691 | 0.0 | 0.5+ | 2005 10 13 | 691 | 0.2+ | 0.5+ |
| 2003 02 22 | 644 | 0.4+ | 0.0 | 2005 08 29 | 691 | 0.3− | 0.1+ | 2005 12 04 | G96 | 0.3+ | 0.0 |
| 2003 02 22 | 644 | 0.0 | 0.1+ | 2005 09 23 | 703 | (0.6− | 2.1−) | 2005 12 04 | G96 | 1.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 26 | 209 | 0.6+ | 0.5+ | 2005 09 23 | 703 | 1.4− | 1.1− | 2005 12 04 | G96 | 0.6− | 1.0− |
| 2003 02 26 | 209 | 0.5+ | 0.1+ | 2005 09 23 | 703 | 1.2− | 0.5− | 2005 12 04 | G96 | 0.0 | 0.7− |
| 2003 02 26 | 209 | 0.4+ | 0.9+ | 2005 09 23 | 703 | 0.1+ | 0.1+ | | | | |
| 2003 03 06 | 644 | 0.5+ | 0.4+ | 2005 09 26 | 703 | 0.7+ | 1.2− | | | | |

**2002 XU$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.43914 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21290360 | $\omega$ | 219.16092 | | −0.99895016 | | −0.00222278 |
| $a$ | 2.7776704 | $\Omega$ | 320.63830 | | +0.02250540 | | −0.89379122 |
| $e$ | 0.0943639 | $i$ | 4.13728 | | −0.03990094 | | −0.44847778 |
| $P$ | 4.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.2− | 0.2+ | 2003 02 10 | 291 | 0.2+ | 0.3+ | 2005 08 31 | 691 | 0.5+ | 0.6+ |
| 2000 08 31 | 691 | 0.3− | 0.3+ | 2003 02 10 | 291 | 0.4+ | 0.6+ | 2005 10 30 | G96 | 0.2+ | 0.1+ |
| 2000 08 31 | 691 | 0.1− | 0.6+ | 2003 02 10 | 291 | 0.2− | 0.3+ | 2005 10 30 | G96 | 0.1− | 0.0 |
| 2002 12 07 | 645 | 0.0 | 0.1− | 2003 02 22 | 644 | 0.5+ | 0.4+ | 2005 10 30 | G96 | 0.0 | 0.4− |
| 2002 12 07 | 645 | 0.1+ | 0.0 | 2003 02 22 | 644 | 0.8+ | 0.3+ | 2005 10 30 | G96 | 0.4− | 0.4− |
| 2003 01 25 | 291 | 0.1+ | 0.2+ | 2003 02 22 | 644 | 0.8+ | 0.2+ | 2006 11 26 | 691 | 0.0 | 0.3− |
| 2003 01 25 | 291 | 0.1+ | 0.4+ | 2005 08 31 | 691 | 0.1+ | 0.3+ | 2006 11 26 | 691 | 0.2+ | 0.0 |
| 2003 01 25 | 291 | 0.5− | 0.5+ | 2005 08 31 | 691 | 0.7− | 0.3+ | 2006 11 26 | 691 | 0.4− | 0.0 |

**2002 XV$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.33436 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23093710 | $\omega$ | 47.34839 | | −0.98043684 | | −0.13416605 |
| $a$ | 2.6311175 | $\Omega$ | 124.44443 | | +0.08574521 | | −0.94975024 |
| $e$ | 0.1606874 | $i$ | 10.05794 | | +0.17717607 | | −0.28279667 |
| $P$ | 4.27 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.3− | 0.1+ | 2002 12 11 | 645 | 0.0 | 0.0 | 2003 02 28 | 704 | 0.5− | 0.9+ |
| 2000 07 31 | 807 | 0.4− | 0.2+ | 2003 02 09 | 608 | 0.3− | 0.0 | 2003 02 28 | 704 | 0.2− | 0.9+ |
| 2000 08 26 | 807 | 0.4+ | 0.2+ | 2003 02 09 | 608 | 0.3+ | 0.4− | 2003 02 28 | 704 | 0.4+ | 1.0+ |
| 2000 08 26 | 807 | 0.1+ | 0.1+ | 2003 02 09 | 608 | 0.1− | 0.3− | 2003 02 28 | 106 | 0.4+ | 0.3− |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2003 02 23 | 106 | 0.0 | 0.1− | 2003 02 28 | 106 | 0.0 | 0.3− |
| 2001 11 11 | 645 | 0.1− | 0.0 | 2003 02 23 | 106 | 0.4− | 0.1− | 2003 03 26 | 704 | 0.1− | 0.6+ |
| 2001 12 18 | 645 | 0.1+ | 0.0 | 2003 02 23 | 106 | 0.1− | 0.0 | 2003 03 26 | 704 | 1.1+ | 0.3+ |
| 2001 12 18 | 645 | 0.1+ | 0.0 | 2003 02 28 | 704 | 0.2− | 0.2− | 2003 03 26 | 704 | 0.6− | 0.0 |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2003 02 28 | 704 | 0.0 | 0.0 | 2003 03 26 | 704 | 0.0 | 0.1+ |

**2002 XW$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.99524 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18297971 | $\omega$ | 85.86696 | | −0.92223086 | | +0.35037434 |
| $a$ | 3.0727985 | $\Omega$ | 114.57794 | | −0.38560594 | | −0.86439437 |
| $e$ | 0.0296857 | $i$ | 10.35669 | | +0.02825425 | | −0.36063859 |
| $P$ | 5.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.0 | 0.0 | 2003 03 23 | 644 | 0.3+ | 0.7+ | 2005 08 04 | 644 | 0.3− | 0.6+ |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2003 03 23 | 644 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.6+ | 0.4− |
| 2001 12 11 | 704 | 0.4+ | 0.1+ | 2003 04 06 | 699 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.7− |
| 2001 12 11 | 704 | 0.2− | 0.1− | 2003 04 06 | 699 | 0.8+ | 0.7− | 2006 10 16 | 703 | 0.8− | 1.1− |
| 2001 12 11 | 704 | 0.0 | 0.4− | 2003 04 06 | 699 | (1.9− | 0.3−) | 2006 10 16 | 703 | 0.2+ | 1.2+ |
| 2002 12 11 | 645 | 0.0 | 0.1− | 2003 04 06 | 699 | 0.1− | 0.1− | 2006 10 31 | A50 | 0.6+ | 0.4− |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2003 04 10 | 691 | 0.2− | 0.3+ | 2006 10 31 | A50 | 0.2− | 0.1+ |
| 2003 02 09 | 608 | 0.8+ | 0.5− | 2003 04 10 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.8− |
| 2003 02 09 | 608 | 0.3+ | 0.0 | 2003 04 10 | 691 | 0.7− | 0.0 | 2006 11 13 | 703 | 0.5− | 1.3+ |
| 2003 02 09 | 608 | 0.6+ | 0.4− | 2005 08 04 | 644 | 0.1− | 0.5+ | 2006 11 13 | 703 | 0.4+ | 1.2+ |
| 2003 03 23 | 644 | 0.3+ | 0.6+ | 2005 08 04 | 644 | 0.0 | 0.8+ | 2006 11 13 | 703 | 0.8− | 0.6+ |

**2002 XX$_{115}$ = 2006 SM$_{312}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.55218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18241931 | $\omega$ | 4.82501 | | +0.81444917 | | −0.57677388 |
| $a$ | 3.0790886 | $\Omega$ | 30.67477 | | +0.52811892 | | +0.69170063 |
| $e$ | 0.0913625 | $i$ | 7.12531 | | +0.24033927 | | +0.43460572 |
| $P$ | 5.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.0 | 0.1− | 2006 07 22 | G96 | 0.4− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.6+ |
| 1995 10 27 | 691 | 0.0 | 0.1− | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 1995 10 27 | 691 | 0.0 | 0.2− | 2006 07 22 | G96 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2001 12 09 | 704 | 0.8+ | 0.7− | 2006 07 22 | G96 | 0.3+ | 0.2− | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 2001 12 09 | 704 | 0.9+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2001 12 09 | 704 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.0+ | 0.1+ |
| 2002 12 11 | 645 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.6− |
| 2003 03 26 | 691 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2003 03 26 | 691 | 1.0− | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2003 03 26 | 691 | 0.3− | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2003 03 31 | 645 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2003 03 31 | 645 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2003 04 08 | 691 | 0.3− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2003 04 08 | 691 | 0.6− | 0.0 | 2006 10 12 | 691 | 0.5− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2003 04 08 | 691 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.1− |
| 2003 04 09 | 291 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | (1.2+ | 1.6+) |
| 2003 04 09 | 291 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2003 04 09 | 291 | 0.5+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2005 07 17 | 644 | 0.2− | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2005 07 17 | 644 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.4− | 0.3+ | 2006 11 21 | H55 | 0.1− | 0.3+ |
| 2005 07 17 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 21 | H55 | 0.2− | 0.1+ |

**2002 XY$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.77470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24047085 | $\omega$ | 1.39252 | | −0.89874195 | | +0.43807960 |
| $a$ | 2.5611072 | $\Omega$ | 204.61562 | | −0.40272806 | | −0.84157031 |
| $e$ | 0.0947233 | $i$ | 2.57123 | | −0.17341573 | | −0.31598366 |
| $P$ | 4.10 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 645 | 0.0 | 0.1− | 2005 10 07 | 691 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.6+ | 0.4− |
| 2002 12 14 | 645 | 0.1− | 0.0 | 2005 10 07 | 691 | 0.1+ | 0.3+ | 2005 11 25 | G96 | 0.2− | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 10 07 | 691 | 0.5+ | 0.1− | 2005 12 02 | G96 | 0.1− | 0.2+ |
| 2003 01 28 | 645 | 0.1+ | 0.0 | 2005 10 11 | 691 | 0.2− | 0.2+ | 2005 12 02 | G96 | 0.0 | 0.2− |
| 2003 02 22 | 644 | 0.0 | 1.3+ | 2005 10 11 | 691 | 0.2− | 0.2+ | 2005 12 02 | G96 | 0.2+ | 0.4− |
| 2003 02 22 | 644 | 0.9+ | 1.3+ | 2005 10 11 | 691 | 0.3+ | 0.5+ | 2005 12 02 | G96 | 1.3+ | 0.2− |
| 2003 02 22 | 644 | (0.7+ | 1.5+) | 2005 10 25 | 691 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2005 09 29 | G96 | 0.2+ | 0.2+ | 2005 10 25 | 691 | 0.4− | 0.5− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2005 09 29 | G96 | 0.1+ | 0.3+ | 2005 10 25 | 691 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2005 09 29 | G96 | 0.0 | 0.3+ | 2005 11 25 | G96 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2005 09 29 | G96 | 0.3+ | 0.0 | 2005 11 25 | G96 | 0.9+ | 0.9+ | | | | |

**2002 XA$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.56472 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22373452 | $\omega$ | 225.47191 | | +0.44967935 | | −0.89277254 |
| $a$ | 2.6872870 | $\Omega$ | 197.86067 | | +0.84266207 | | +0.43417952 |
| $e$ | 0.1670999 | $i$ | 5.10802 | | +0.29615726 | | +0.12018873 |
| $P$ | 4.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 644 | 0.1− | 0.6− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.6+ | 0.6+ |
| 2002 12 05 | 644 | 0.0 | 0.8− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 2002 12 05 | 644 | 0.7− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.1− | | |
| 2002 12 12 | 644 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.1+ | | |
| 2002 12 13 | 644 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.4− | | |
| 2002 12 13 | 644 | 0.4+ | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.8− | 0.5− | | |
| 2002 12 13 | 644 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.3+ | 0.1+ | | | | | | |
| 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.4− | 0.1+ | | | | | | |

**2002 XB$_{116}$ = 6388 P-L = 2006 VW$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.85745 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23701831 | $\omega$ | 173.83654 | | +0.99952152 | | +0.03020646 |
| $a$ | 2.5859182 | $\Omega$ | 184.44879 | | −0.03075519 | | +0.94765049 |
| $e$ | 0.2487963 | $i$ | 4.92219 | | −0.00329323 | | +0.31787753 |
| $P$ | 4.16 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.9+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 1960 09 24 | 675 | 1.1− | 1.7+ | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.6+ | 0.3− |
| 1960 09 26 | 675 | 0.3+ | 0.6− | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 1960 09 26 | 675 | 0.3+ | 1.6− | 2006 10 18 | 691 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 1960 09 28 | 675 | 0.2− | 0.9− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 1960 09 28 | 675 | 0.4+ | 0.6− | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.6− | 0.8− |
| 2002 12 05 | 644 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.3+ | 1.5− |
| 2002 12 05 | 644 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 1.5+ | 0.7+ |
| 2002 12 05 | 644 | 0.8+ | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.4+ | 0.9− |
| 2002 12 10 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.7+ | 0.1+ |
| 2002 12 10 | 644 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.6+ | 0.2− | 2006 11 28 | 704 | 1.8− | 0.7+ |
| 2002 12 10 | 644 | 0.9+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.3+ | 2006 11 28 | 704 | 0.9− | 0.1− |
| 2002 12 13 | 644 | 0.6− | 0.7− | 2006 11 11 | 703 | 0.5− | 0.5− | 2006 11 28 | 704 | 1.6− | 0.5+ |
| 2002 12 13 | 644 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.1− | 0.6− |
| 2002 12 13 | 644 | 0.3− | 0.7− | 2006 11 17 | G96 | 0.3+ | 0.2− | | | | |
| 2006 09 30 | G96 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− | | | | |

**2002 XD$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.90673 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21581954 | $\omega$ | 153.04299 | | +0.42709580 | | −0.89421313 |
| $a$ | 2.7525943 | $\Omega$ | 271.41396 | | +0.80353493 | | +0.44333695 |
| $e$ | 0.1978839 | $i$ | 7.70662 | | +0.41463332 | | +0.06192928 |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.2− | 1.0+ | 2003 01 07 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.8+ | 0.3+ | 2003 01 07 | 704 | 0.6+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | 1.3− | 0.0 | 2003 01 27 | 704 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.2− | 0.6+ | 2003 01 27 | 704 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.4+ | 0.3+ | 2003 01 27 | 704 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2003 01 27 | 704 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2003 01 27 | 704 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.6+ | 2006 08 29 | 699 | 0.2− | 0.6− | 2006 10 17 | 703 | 1.0+ | 0.5− |
| 2002 12 05 | 704 | 1.0+ | 0.3+ | 2006 08 29 | 699 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.8+ | 0.6+ |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 08 29 | 699 | 0.8+ | 0.0 | 2006 10 17 | 703 | 1.1− | 0.4+ |
| 2002 12 10 | 644 | 0.3− | 0.1− | 2006 08 29 | 699 | (0.9− | 1.9+) | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 12 10 | 644 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 12 27 | 699 | 1.1− | 1.0− | 2006 09 16 | 703 | 0.9− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2002 12 27 | 699 | 0.3+ | 0.4+ | 2006 09 16 | 703 | (0.6− | 1.8+) | 2006 10 31 | 703 | 0.3− | 0.3− |
| 2002 12 27 | 699 | 0.8+ | 0.8+ | 2006 09 16 | 703 | (0.2− | 2.8+) | 2006 10 31 | 703 | 1.0− | 0.4− |
| 2002 12 27 | 699 | 0.7+ | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.8+ | 2006 10 31 | 703 | 0.1− | 1.1− |
| 2003 01 07 | 704 | 0.5+ | 0.4− | 2006 09 20 | 699 | 0.7+ | 1.0− | 2006 10 31 | 703 | 0.2− | 0.0 |
| 2003 01 07 | 704 | 0.4+ | 0.0 | 2006 09 20 | 699 | (1.9+ | 1.4−) | | | | |
| 2003 01 07 | 704 | 0.1− | 0.1− | 2006 09 20 | 699 | 0.4− | 0.6+ | | | | |

**2002 XE$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.59417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28415510 | $\omega$ | 48.66427 | | −0.99589517 | | +0.07140404 |
| $a$ | 2.2913903 | $\Omega$ | 135.34672 | | −0.08627774 | | −0.93467621 |
| $e$ | 0.0629778 | $i$ | 4.53958 | | +0.02736729 | | −0.34825543 |
| $P$ | 3.47 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 645 | 0.0 | 0.2− | 2003 02 22 | 644 | 0.5+ | 1.1+ | 2004 07 17 | 807 | 0.1− | 0.6+ |
| 2002 12 07 | 645 | 0.0 | 0.1− | 2003 02 22 | 644 | 0.1− | 0.4+ | 2004 07 17 | 807 | 0.1− | 0.5+ |
| 2003 01 26 | 608 | 0.5+ | 0.5− | 2003 02 26 | 599 | 0.4− | 0.3− | 2005 12 08 | 691 | 0.1+ | 0.3+ |
| 2003 01 26 | 608 | 1.0+ | 0.6− | 2003 02 26 | 599 | 0.3− | 0.3− | 2005 12 08 | 691 | 0.0 | 0.0 |
| 2003 01 26 | 608 | 0.9+ | 1.1− | 2003 02 26 | 599 | 0.3− | 0.3− | 2005 12 08 | 691 | 0.2− | 0.2+ |
| 2003 02 22 | 644 | 0.1− | 1.2+ | 2003 03 06 | 699 | 0.4− | 1.4+ | 2006 01 31 | G96 | 0.2− | 0.1− |
| 2003 02 22 | 644 | 0.1+ | 0.3+ | 2003 03 06 | 699 | 0.3− | 0.1+ | 2006 01 31 | G96 | 0.1− | 0.1+ |
| 2003 02 22 | 644 | 0.0 | 1.0+ | 2003 03 06 | 699 | (1.7− | 0.2−) | 2006 01 31 | G96 | 0.0 | 0.1+ |
| 2003 02 22 | 644 | 0.7+ | 0.1+ | 2003 03 06 | 699 | 1.1− | 0.4+ | 2006 01 31 | G96 | 0.2+ | 0.1− |

**2002 XJ$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.48757 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18928729 | $\omega$ | 337.20716 | | −0.31428007 | | −0.93504074 |
| $a$ | 3.0041509 | $\Omega$ | 130.69057 | | +0.90093948 | | −0.34825309 |
| $e$ | 0.1403944 | $i$ | 12.49849 | | +0.29922581 | | +0.06647250 |
| $P$ | 5.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 645 | 0.1+ | 0.0 | 2003 02 28 | 704 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 12 11 | 645 | 0.1− | 0.0 | 2003 02 28 | 704 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2003 02 01 | 704 | 1.0+ | 0.3− | 2003 02 28 | 704 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.5− |
| 2003 02 01 | 704 | 0.1+ | 0.3+ | 2003 03 08 | 704 | 0.6− | 1.0− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2003 02 01 | 704 | 0.1+ | 0.6+ | 2003 03 08 | 704 | 0.3+ | 1.2− | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2003 02 11 | 608 | 0.2− | 0.1− | 2003 03 08 | 704 | 0.5+ | 0.7− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2003 02 11 | 608 | 0.5− | 0.6− | 2003 03 08 | 704 | 1.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2003 02 11 | 608 | 0.2− | 0.2− | 2003 03 23 | 644 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 02 28 | 704 | 0.1+ | 0.3− | 2003 03 23 | 644 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2003 02 28 | 704 | 0.1− | 0.7+ | 2003 03 23 | 644 | 0.2+ | 0.6+ | | | | |

**2002 XL$_{116}$ = 2006 SD$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.87063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17094521 | $\omega$ | 104.73252 | | −0.77665720 | | −0.62726540 |
| $a$ | 3.2153735 | $\Omega$ | 36.47152 | | +0.53405316 | | −0.70434223 |
| $e$ | 0.1207631 | $i$ | 5.58083 | | +0.33405212 | | −0.33232537 |
| $P$ | 5.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 645 | 0.1+ | 0.1− | 2003 04 11 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2002 12 11 | 645 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.2− |
| 2003 03 10 | 599 | 0.8+ | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2003 03 10 | 599 | 0.6+ | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2003 03 31 | 645 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.6− |
| 2003 03 31 | 645 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.6− |
| 2003 04 04 | 691 | (0.5− | 2.4+) | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2003 04 04 | 691 | (0.5− | 3.1+) | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.6− | 0.6− |
| 2003 04 04 | 691 | (1.3− | 2.7+) | 2006 09 28 | 691 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2003 04 11 | 691 | 0.8+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2003 04 11 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.5− | | | | |

## 2002 YB

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.36636 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23443055 | $\omega$ | 274.65521 | | +0.40185897 | −0.88198840 | |
| $a$ | 2.6049132 | $\Omega$ | 147.82916 | | +0.90930415 | +0.41608335 | |
| $e$ | 0.4385566 | $i$ | 27.53962 | | −0.10805242 | +0.22129415 | |
| $P$ | 4.20 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 19 | 608 | 0.3+ | 0.2+ | 2003 01 25 | 644 | 0.0 | 0.6+ | 2003 02 28 | 704 | 0.0 | 0.5− |
| 2002 12 19 | 608 | 0.2− | 0.8+ | 2003 01 25 | 644 | 0.2+ | 0.2− | 2003 03 01 | 608 | 0.6− | 0.7+ |
| 2002 12 19 | 608 | 0.1− | 0.2+ | 2003 01 28 | 704 | 0.0 | 0.2+ | 2003 03 01 | 608 | 0.2− | 0.7+ |
| 2002 12 21 | 608 | 0.0 | 1.2− | 2003 01 28 | 704 | 0.4+ | 0.5+ | 2003 03 01 | 608 | 0.2− | 0.4+ |
| 2002 12 21 | 608 | 0.2− | 1.4− | 2003 01 28 | 704 | 0.3+ | 0.2+ | 2003 03 06 | 704 | 0.4+ | 0.2− |
| 2002 12 21 | 608 | 0.3− | 1.0− | 2003 01 28 | 704 | 0.1+ | 0.4+ | 2003 03 06 | 704 | 0.6+ | 0.6− |
| 2002 12 23 | G72 | (2.7+ | 0.3+) | 2003 01 28 | 704 | (0.9+ | 2.3+) | 2003 03 06 | 704 | 0.6+ | 0.1+ |
| 2002 12 23 | G72 | (1.7+ | 0.2−) | 2003 01 30 | 704 | 0.7− | 0.3+ | 2003 03 06 | 704 | 0.5+ | 0.3+ |
| 2002 12 23 | G72 | (1.9+ | 0.2+) | 2003 01 30 | 704 | 0.6− | 0.6+ | 2003 03 06 | 704 | 0.1+ | 0.1+ |
| 2002 12 23 | G72 | (3.9+ | 0.7+) | 2003 01 30 | 704 | 0.6− | 0.0 | 2003 03 08 | 704 | 0.2− | 0.2+ |
| 2002 12 23 | G72 | (3.0+ | 1.1+) | 2003 01 30 | 704 | 0.1− | 0.1− | 2003 03 08 | 704 | 0.5− | 0.6− |
| 2002 12 23 | G72 | (2.1+ | 0.3+) | 2003 01 30 | 704 | 0.1+ | 0.2+ | 2003 03 08 | 704 | 0.2− | 0.4+ |
| 2002 12 23 | G72 | (1.7+ | 1.4+) | 2003 01 30 | 704 | 0.1− | 0.6+ | 2003 03 08 | 704 | 0.3− | 0.3+ |
| 2002 12 23 | G72 | (1.1+ | 2.1+) | 2003 01 30 | 704 | 0.1− | 0.4− | 2003 03 08 | 704 | 0.5− | 0.1− |
| 2002 12 24 | 413 | 0.0 | 0.1− | 2003 01 30 | 704 | 0.2− | 1.1+ | 2003 03 12 | 644 | 0.0 | 0.7− |
| 2002 12 24 | 413 | 0.2+ | 0.3− | 2003 01 30 | 704 | 0.8− | 0.1− | 2003 03 12 | 644 | 0.2− | 0.6− |
| 2002 12 24 | 413 | 0.2+ | 0.2− | 2003 01 30 | 704 | 0.6− | 0.7+ | 2003 03 12 | 644 | 0.1− | 0.7− |
| 2002 12 26 | 046 | 0.4− | 0.2+ | 2003 02 01 | 699 | 0.8+ | 0.8− | 2003 03 26 | 704 | 1.1+ | 0.4+ |
| 2002 12 26 | 046 | 0.0 | 0.1+ | 2003 02 01 | 699 | 0.7+ | 0.8− | 2003 03 26 | 704 | 0.9− | 0.1− |
| 2002 12 26 | 046 | 0.2− | 0.2− | 2003 02 01 | 699 | 0.4+ | 0.6− | 2003 03 26 | 704 | 1.3+ | 0.8+ |
| 2002 12 26 | 046 | 0.3− | 0.2+ | 2003 02 01 | 699 | 0.2− | 0.7− | 2003 03 26 | 704 | 1.1+ | 0.5− |
| 2002 12 26 | 046 | 0.4− | 0.2+ | 2003 02 03 | 683 | (0.7− | 2.4+) | 2003 03 26 | 704 | 0.4+ | 0.1+ |
| 2002 12 26 | 046 | 0.4+ | 0.1− | 2003 02 03 | 683 | 0.4− | 0.3+ | 2006 09 26 | E12 | 0.1+ | 0.2− |
| 2002 12 26 | 734 | 0.8+ | 0.5− | 2003 02 03 | 683 | (1.2− | 1.9+) | 2006 09 26 | E12 | 0.1− | 0.1− |
| 2002 12 26 | 734 | 0.9+ | 0.6+ | 2003 02 03 | 608 | 0.6+ | 0.0 | 2006 09 26 | E12 | 0.6+ | 0.2− |
| 2002 12 26 | 734 | 0.1− | 0.3+ | 2003 02 03 | 608 | 0.3+ | 0.0 | 2006 09 26 | E12 | 0.5+ | 0.3+ |
| 2003 01 03 | 704 | 0.3+ | 0.9+ | 2003 02 03 | 608 | 0.5+ | 0.1+ | 2006 10 24 | E12 | 0.0 | 0.2− |
| 2003 01 03 | 704 | 0.4− | 0.7+ | 2003 02 09 | 608 | 0.3+ | 1.0+ | 2006 10 24 | E12 | 0.4− | 0.1− |
| 2003 01 03 | 704 | 0.8− | 0.9+ | 2003 02 09 | 608 | 0.6+ | 1.0+ | 2006 10 24 | E12 | 0.2− | 0.5− |
| 2003 01 03 | 704 | 0.5− | 1.0+ | 2003 02 09 | 608 | 0.5+ | 0.7+ | 2006 10 24 | E12 | 0.1− | 0.2− |
| 2003 01 03 | 704 | (0.9− | 1.9+) | 2003 02 19 | 644 | 0.3− | 0.7− | 2006 11 09 | E12 | 0.2− | 1.1− |
| 2003 01 08 | 699 | 0.9− | 0.2− | 2003 02 19 | 644 | 0.3− | 0.8− | 2006 11 09 | E12 | 0.5− | 0.0 |
| 2003 01 08 | 699 | 0.7− | 0.3− | 2003 02 19 | 644 | 0.2− | 0.8− | 2006 11 09 | E12 | 0.5− | 0.8+ |
| 2003 01 08 | 699 | 0.2− | 0.0 | 2003 02 23 | 608 | 0.3− | 0.5− | 2006 11 09 | E12 | 0.3+ | 0.9+ |
| 2003 01 08 | 699 | 0.0 | 0.3− | 2003 02 23 | 608 | 0.3− | 0.4− | 2006 11 22 | E12 | 0.1+ | 0.1− |
| 2003 01 14 | 644 | 0.2− | 0.3− | 2003 02 23 | 608 | 0.2− | 1.3− | 2006 11 22 | E12 | 0.2+ | 0.1+ |
| 2003 01 14 | 644 | 0.3+ | 0.2− | 2003 02 28 | 704 | 0.7+ | 0.8+ | 2006 11 22 | E12 | 0.3+ | 0.0 |
| 2003 01 14 | 644 | 0.1− | 0.3− | 2003 02 28 | 704 | 0.3+ | 0.1− | 2006 11 22 | E12 | 0.3+ | 0.1− |
| 2003 01 25 | 644 | 0.0 | 0.3− | 2003 02 28 | 704 | 0.3+ | 0.5− | | | | |

## 2002 YO

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.80470 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22677982 | $\omega$ | 340.30369 | | +0.21882634 | −0.96945641 | |
| $a$ | 2.6631754 | $\Omega$ | 96.93349 | | +0.90953996 | +0.16154911 | |
| $e$ | 0.1483684 | $i$ | 6.40657 | | +0.35334415 | +0.18454311 | |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.4− | 0.1+ | 2003 01 08 | 704 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.0 | 0.9− | 2003 01 08 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.2− | 0.3− | 2003 01 08 | 704 | 0.7+ | 0.2− | 2006 11 19 | 704 | 0.7− | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.0 | 2003 01 08 | 704 | 0.4+ | 0.1+ | 2006 11 22 | 683 | (0.7− | 1.6−) |
| 2002 12 27 | 699 | 0.4+ | 0.4+ | 2003 01 08 | 704 | 0.0 | 0.8+ | 2006 11 22 | 683 | (0.1+ | 2.3−) |
| 2002 12 27 | 699 | 0.7− | 0.9− | 2003 02 01 | 704 | 0.2− | 1.3− | 2006 11 22 | 683 | 0.2− | 0.5− |
| 2002 12 27 | 699 | 0.3+ | 0.6+ | 2003 02 01 | 704 | 0.4− | 0.3+ | 2006 11 23 | 683 | 0.8+ | 1.1− |
| 2002 12 27 | 699 | 0.6− | 0.7− | 2003 02 01 | 704 | 0.1− | 0.6− | 2006 11 23 | 683 | 1.4+ | 0.9− |
| 2002 12 28 | 699 | 0.1− | 0.3+ | 2003 02 01 | 704 | 0.0 | 0.1− | 2006 11 23 | 683 | 0.6+ | 1.0+ |
| 2002 12 28 | 699 | 0.1− | 0.3+ | 2003 02 01 | 704 | 0.1− | 0.1− | 2006 11 25 | 683 | 0.0 | 0.5− |
| 2002 12 28 | 699 | (0.2− | 1.9+) | 2006 11 09 | 644 | 0.3− | 0.6− | 2006 11 25 | 683 | (1.6+ | 1.1−) |
| 2002 12 28 | 699 | 0.3− | 1.1+ | 2006 11 09 | 644 | 0.2− | 0.7− | 2006 11 25 | 683 | 0.7+ | 0.4− |
| 2002 12 31 | 704 | 0.7+ | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.6− | 2006 11 28 | 704 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2006 11 14 | 704 | (1.8+ | 0.3−) | 2006 11 28 | 704 | 0.7+ | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.6+ | 2006 11 14 | 704 | 0.4+ | 0.8+ | 2006 11 28 | 704 | 0.2− | 0.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 704 | 0.1− | 0.9+ | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2003 01 04 | 704 | 0.9+ | 0.2− | 2006 11 14 | 704 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.2− | 0.5+ |
| 2003 01 04 | 704 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.4+ | 1.1+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2003 01 04 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.8− | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2003 01 04 | 704 | 0.6− | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.2− | 0.2+ |

## 2002 $YC_2$ = 2006 $WE_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.55422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22604583 | $\omega$ | 113.17330 | | −0.89080360 | −0.27470176 | |
| $a$ | 2.6689374 | $\Omega$ | 52.90906 | | −0.00063244 | −0.79581490 | |
| $e$ | 0.2341020 | $i$ | 26.98479 | | +0.45438810 | −0.53964580 | |
| $P$ | 4.36 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 17 | 644 | 0.2− | 0.2+ | 2002 12 28 | 704 | 0.5+ | 0.8− | 2006 11 17 | 704 | 0.6− | 0.0 |
| 2002 11 17 | 644 | 0.3+ | 0.2+ | 2003 01 08 | 699 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.7− | 0.3− |
| 2002 11 17 | 644 | 0.1− | 0.1− | 2003 01 08 | 699 | 0.3+ | 0.8+ | 2006 11 17 | 704 | 0.4+ | 0.4+ |
| 2002 12 27 | 704 | 0.5+ | 0.1+ | 2003 01 08 | 699 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2002 12 27 | 704 | 1.1− | 0.0 | 2003 01 08 | 699 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2002 12 27 | 704 | (1.2− | 1.9+) | 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2002 12 28 | 704 | (2.0+ | 1.2−) | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.1− |
| 2002 12 28 | 704 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2002 12 28 | 704 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.5− | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.7− |

## 2002 $YM_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.02256 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25947332 | $\omega$ | 346.03521 | | −0.50012178 | −0.86331858 | |
| $a$ | 2.4344876 | $\Omega$ | 133.92221 | | +0.80322594 | −0.49161776 | |
| $e$ | 0.2553097 | $i$ | 5.37904 | | +0.32358354 | −0.11398691 | |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.2+ | 0.9− | 2003 01 31 | 704 | 0.2+ | 0.1− |
| 2002 12 10 | 644 | 0.1+ | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.4− | 2003 01 31 | 704 | 0.1+ | 0.5+ |
| 2002 12 10 | 644 | 0.0 | 0.2+ | 2003 01 11 | 941 | 0.4+ | 0.1+ | 2003 01 31 | 704 | 0.5− | 0.2− |
| 2002 12 28 | 941 | 1.0− | 0.4− | 2003 01 11 | 941 | 0.5− | 0.0 | 2003 01 31 | 704 | 0.3+ | 0.0 |
| 2002 12 28 | 941 | 0.5− | 0.1+ | 2003 01 11 | 941 | 0.1− | 0.3− | 2003 01 31 | 704 | 0.5− | 0.1− |
| 2002 12 28 | 941 | 0.5+ | 1.0− | 2003 01 11 | 941 | 0.8− | 0.4− | 2003 02 03 | 704 | 0.5− | 0.6+ |
| 2002 12 28 | 941 | 0.4− | 0.3− | 2003 01 23 | 941 | 0.3− | 0.2+ | 2003 02 03 | 704 | 0.3+ | 0.4− |
| 2002 12 28 | 941 | 0.4− | 0.2+ | 2003 01 23 | 941 | 0.3− | 0.2+ | 2003 02 03 | 704 | 0.6− | 0.3− |
| 2002 12 28 | 699 | (2.1+ | 1.8−) | 2003 01 23 | 941 | 0.5− | 0.1+ | 2003 02 03 | 704 | 0.7+ | 0.4− |
| 2002 12 28 | 699 | 0.4− | 0.1− | 2003 01 23 | 941 | 0.4− | 0.1− | 2003 02 03 | 704 | 0.8− | 0.6− |
| 2002 12 28 | 699 | 0.8+ | 0.1− | 2003 01 25 | 699 | 1.2+ | 0.7+ | 2003 02 06 | 608 | 0.4− | 0.2+ |
| 2002 12 28 | 699 | 0.1+ | 0.2+ | 2003 01 25 | 699 | 0.2+ | 0.6+ | 2003 02 06 | 608 | 0.7− | 0.1− |
| 2002 12 29 | 941 | 1.4+ | 0.9− | 2003 01 25 | 699 | 0.4+ | 0.6+ | 2003 02 06 | 608 | 0.5− | 0.4− |
| 2002 12 29 | 941 | 0.0 | 0.9− | 2003 01 25 | 699 | 0.9+ | 0.8− | 2003 02 07 | 704 | 1.2+ | 0.7− |
| 2002 12 29 | 941 | 0.9− | 0.8− | 2003 01 26 | 608 | 0.2− | 1.0+ | 2003 02 07 | 704 | 0.8+ | 0.1+ |
| 2002 12 29 | 941 | 0.9+ | 0.7− | 2003 01 26 | 608 | 0.5− | 0.9+ | 2003 02 07 | 704 | 0.9+ | 0.2− |
| 2002 12 29 | 941 | 1.0− | 0.6− | 2003 01 26 | 608 | 0.5− | 0.7+ | 2003 03 10 | 699 | 0.8− | 0.0 |
| 2002 12 29 | 941 | 0.1− | 0.7− | 2003 01 27 | 704 | 0.5− | 0.7+ | 2003 03 10 | 699 | 1.0− | 0.4− |
| 2003 01 04 | 941 | 0.1− | 0.8+ | 2003 01 27 | 704 | 0.9− | 0.3+ | 2003 03 10 | 699 | 0.3− | 0.4+ |
| 2003 01 04 | 941 | 0.8− | 0.4+ | 2003 01 27 | 704 | 0.5− | 0.2+ | 2003 03 10 | 699 | 0.8+ | 0.4− |
| 2003 01 04 | 941 | 0.1+ | 0.1− | 2003 01 27 | 704 | 0.0 | 0.5+ | 2005 12 02 | 695 | 0.2− | 0.9+ |
| 2003 01 04 | 941 | 0.5− | 0.2− | 2003 01 27 | 704 | 0.2− | 0.5+ | 2005 12 02 | 695 | 0.3− | 0.7+ |
| 2003 01 07 | 704 | 0.5+ | 0.3+ | 2003 01 29 | 644 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2003 01 07 | 704 | 0.5+ | 0.2+ | 2003 01 29 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2003 01 07 | 704 | 0.1+ | 0.3− | 2003 01 29 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.6− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 1.2+ | 0.8+ | 2003 01 30 | 699 | 1.0+ | 0.1− | 2006 11 16 | G96 | 0.9− | 0.9− |
| 2003 01 07 | 704 | 0.1+ | 0.2+ | 2003 01 30 | 699 | 0.6+ | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2003 01 08 | 704 | 0.7+ | 0.6+ | 2003 01 30 | 699 | (1.7+ | 0.0 ) | 2006 11 25 | 691 | 0.1+ | 0.5+ |
| 2003 01 08 | 704 | 0.9+ | 0.1+ | 2003 01 30 | 699 | 0.4− | 0.1− | 2006 11 25 | 691 | 0.5+ | 0.1+ |

**2002 YJ$_4$ = 2000 ES$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.13554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27599698 | $\omega$ | 340.81531 | | −0.08666309 | | −0.99489949 |
| $a$ | 2.3363245 | $\Omega$ | 114.12874 | | +0.92126444 | | −0.09975333 |
| $e$ | 0.1125313 | $i$ | 3.24241 | | +0.37915873 | | +0.01497562 |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.1+ | 0.0 | 2002 12 01 | 704 | 0.6+ | 0.1+ | 2005 08 31 | 691 | 0.1− | 0.0 |
| 2000 03 11 | 699 | 1.1+ | 0.6+ | 2002 12 01 | 704 | 0.3− | 0.3+ | 2005 08 31 | 691 | 0.3− | 0.1+ |
| 2000 03 11 | 699 | 0.4+ | 0.8+ | 2002 12 10 | 644 | 0.3+ | 0.4− | 2005 08 31 | 691 | 0.1− | 0.2+ |
| 2000 03 11 | 699 | 0.1+ | 1.4+ | 2002 12 10 | 644 | 0.3+ | 0.4− | 2005 09 14 | 691 | 0.0 | 0.2+ |
| 2000 03 12 | 704 | 0.1+ | 0.1+ | 2002 12 10 | 644 | 0.6+ | 0.2− | 2005 09 14 | 691 | 0.0 | 0.3+ |
| 2000 03 12 | 704 | 0.0 | 0.0 | 2002 12 28 | 699 | 0.4+ | 1.3+ | 2005 09 14 | 691 | 0.1− | 0.5+ |
| 2000 03 12 | 704 | 0.2+ | 0.8+ | 2002 12 28 | 699 | 0.5+ | 0.8− | 2006 10 27 | 691 | 0.1+ | 0.6− |
| 2000 03 12 | 704 | 0.2− | 1.0+ | 2002 12 28 | 699 | 0.7− | 0.9+ | 2006 10 27 | 691 | 0.3− | 0.7+ |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2002 12 28 | 699 | 0.9− | 0.3+ | 2006 10 27 | 691 | 0.4+ | 0.5+ |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2002 12 31 | 699 | (0.5+ | 1.8+) | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2002 12 31 | 699 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 12 01 | 704 | 0.1− | 0.3+ | 2002 12 31 | 699 | 1.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2002 12 01 | 704 | 0.2− | 0.3+ | 2002 12 31 | 699 | 0.7− | 0.6− | 2006 11 16 | G96 | 0.2− | 0.1− |

**2002 YN$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.57539 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22028762 | $\omega$ | 277.89534 | | −0.71158126 | | −0.65254159 |
| $a$ | 2.7152469 | $\Omega$ | 221.91801 | | +0.69213463 | | −0.71478918 |
| $e$ | 0.3448325 | $i$ | 22.94688 | | −0.12083776 | | −0.25152715 |
| $P$ | 4.47 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 608 | 0.6+ | 0.1+ | 2003 04 07 | 704 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2002 12 12 | 608 | 0.3+ | 0.3− | 2003 04 07 | 704 | 1.0+ | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 12 12 | 608 | 0.1+ | 0.0 | 2003 04 08 | 704 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 12 30 | 704 | 0.2+ | 0.1+ | 2003 04 08 | 704 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2002 12 30 | 704 | 0.4+ | 0.9− | 2003 04 08 | 704 | 0.6+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 12 30 | 704 | (1.8− | 0.1−) | 2003 04 08 | 704 | 0.8+ | 1.0− | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.6− |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2− | 1.2− |
| 2002 12 31 | 704 | 0.0 | 0.6− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.4− | 1.0− |
| 2002 12 31 | 704 | 0.6+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 1.2− | 0.8− |
| 2002 12 31 | 704 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.5+ |
| 2003 01 12 | 704 | 0.9− | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.6− | 0.4+ |
| 2003 01 12 | 704 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.8+ | 0.3+ |
| 2003 01 12 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2003 01 12 | 704 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.7+ | 1.0− |
| 2003 01 12 | 704 | 0.4+ | 0.4+ | 2006 10 28 | 691 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.9− | 0.6+ |
| 2003 01 13 | 704 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2003 01 13 | 704 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2003 01 13 | 704 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2003 01 13 | 704 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.3− | 0.5− |
| 2003 03 12 | 704 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2003 03 12 | 704 | 0.6− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2003 03 12 | 704 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.8+ |
| 2003 03 12 | 704 | 0.2− | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2003 03 12 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.9+ |
| 2003 04 07 | 704 | 0.4− | 1.3+ | 2006 11 11 | 703 | (1.9− | 1.1−) | | | | |
| 2003 04 07 | 704 | 0.2− | 0.8− | 2006 11 11 | 703 | 0.1+ | 1.2+ | | | | |

**2002 YP$_9$ = 2006 TW$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.56730 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21955320 | $\omega$ | 149.77784 | | +0.75877956 | | −0.64789578 |
| $a$ | 2.7212986 | $\Omega$ | 250.76003 | | +0.58249964 | | +0.72098595 |
| $e$ | 0.1211874 | $i$ | 4.06735 | | +0.29145796 | | +0.24578509 |
| $P$ | 4.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.0 | 0.4− |
| 2002 12 31 | 704 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.5+ | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.6+ |
| 2002 12 31 | 704 | 0.4− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.7− | 0.7− |
| 2003 01 01 | 704 | 0.5− | 0.8+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.4− | 1.2− |
| 2003 01 01 | 704 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 1.3− | 0.9− |
| 2003 01 01 | 704 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.7− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2003 01 02 | 704 | 0.7+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2003 01 02 | 704 | 0.4− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2003 01 02 | 704 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2003 01 02 | 704 | 0.7+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2003 01 04 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.4− | 0.7+ |
| 2003 01 04 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2003 01 04 | 704 | 0.3− | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | (0.3+ | 1.6+) |
| 2003 01 04 | 704 | 0.4+ | 1.1− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 22 | 704 | (1.7+ | 1.7+) |
| 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | (0.6+ | 1.9+) |
| 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | (0.9+ | 2.1+) |
| 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.5− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.2+ |

**2002 YF$_{10}$ = 2001 SH$_{302}$ = 2006 VF$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.97659 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23005278 | $\omega$ | 242.92984 | | −0.95155394 | | −0.30405360 |
| $a$ | 2.6378559 | $\Omega$ | 279.33983 | | +0.29598628 | | −0.86542915 |
| $e$ | 0.1385030 | $i$ | 2.65965 | | +0.08329004 | | −0.39822581 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.8+ | 0.2− | 2003 01 04 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.5+ | 2003 01 05 | 704 | 0.2− | 0.6− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.5+ | 0.7− | 2003 01 05 | 704 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.2− | 1.3− |
| 2001 09 20 | 704 | 0.5− | 0.0 | 2003 01 05 | 704 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2003 01 05 | 704 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2001 09 23 | 704 | 0.6+ | 0.1− | 2003 01 05 | 704 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2001 09 23 | 704 | 0.8− | 0.2+ | 2003 01 08 | 704 | (1.3− | 3.4−) | 2006 11 20 | 691 | 0.6+ | 0.4+ |
| 2001 09 23 | 704 | 1.4− | 0.5+ | 2003 01 08 | 704 | (0.9− | 2.9−) | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.2− | 1.5+ | 2003 01 08 | 704 | (1.3− | 3.5−) | 2006 11 22 | 704 | 0.3− | 1.2− |
| 2002 12 31 | 704 | 0.5+ | 1.0+ | 2003 01 08 | 704 | (0.6− | 3.1−) | 2006 11 22 | 704 | 0.8+ | 0.0 |
| 2002 12 31 | 704 | 0.7+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.4− | 2006 11 22 | 704 | 1.0+ | 0.4+ |
| 2002 12 31 | 704 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.8+ | 1.0+ |
| 2003 01 01 | 704 | 0.8+ | 1.0+ | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2003 01 01 | 704 | 0.1+ | 0.4− | 2006 11 15 | 703 | 0.4− | 0.2+ | 2006 11 24 | 691 | 0.2− | 0.1− |
| 2003 01 01 | 704 | 1.0− | 1.0− | 2006 11 15 | 703 | 1.7− | 0.9+ | 2006 11 24 | 691 | 0.2− | 0.1− |
| 2003 01 01 | 704 | 0.2− | 0.2− | 2006 11 15 | 703 | 1.5+ | 0.5− | 2006 11 24 | 691 | 0.3− | 0.4− |
| 2003 01 04 | 704 | 0.1+ | 0.6− | 2006 11 15 | 703 | 0.4− | 0.7+ | | | | |
| 2003 01 04 | 704 | 0.4− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.0 | | | | |

**2002 YM$_{10}$ = 2006 TS$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.57633 | | (2000.0) | | | |
| $n$ | 0.22782050 | $\omega$ | 101.28973 | | +0.90628469 | −0.40937073 |
| $a$ | 2.6550590 | $\Omega$ | 282.94558 | | +0.33333522 | +0.84526151 |
| $e$ | 0.2852864 | $i$ | 6.19584 | | +0.25987631 | +0.34343644 |
| $P$ | 4.33 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 910 | 0.0 | 0.1− | 2003 01 03 | 735 | (2.3+ | 0.6−) | 2006 10 19 | 703 | 0.2+ | 0.3− |
| 1997 09 08 | 910 | 0.1− | 0.4+ | 2003 01 03 | 735 | 0.9+ | 0.8− | 2006 10 19 | 703 | 0.5− | 0.5+ |
| 1997 09 08 | 910 | 0.0 | 0.1− | 2003 01 03 | 735 | 1.1+ | 0.8− | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 1.1− | 0.2− | 2003 01 04 | 704 | 0.9+ | 1.3+ | 2006 10 19 | 703 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.8− | 0.1+ | 2003 01 04 | 704 | 1.4+ | 0.2+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2003 01 04 | 704 | 0.9+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 12 06 | 645 | 0.1− | 0.1− | 2003 01 04 | 704 | 0.1− | 1.2+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 12 06 | 645 | 0.1− | 0.1− | 2003 01 05 | 704 | 0.5+ | 0.7+ | 2006 11 15 | 703 | 0.1− | 0.2+ |
| 2002 12 25 | 461 | 0.5− | 0.1+ | 2003 01 05 | 704 | 0.0 | 0.5+ | 2006 11 15 | 703 | 0.5− | 0.5− |
| 2002 12 25 | 461 | 0.2− | 0.0 | 2003 01 05 | 704 | 0.4+ | 0.7+ | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 2002 12 25 | 461 | 0.7− | 0.1+ | 2003 01 08 | 704 | 1.0− | 0.8− | 2006 11 15 | 703 | 0.6− | 0.7+ |
| 2002 12 31 | 704 | 0.1− | 0.9+ | 2003 01 08 | 704 | (0.9− | 2.2−) | 2006 11 16 | 704 | 0.2− | 0.3− |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2003 01 08 | 704 | 0.9+ | 1.4− | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2002 12 31 | 704 | 0.5− | 0.4+ | 2003 01 08 | 704 | 1.3+ | 0.8− | 2006 11 16 | 704 | 0.8+ | 0.0 |
| 2002 12 31 | 704 | (1.0+ | 1.6+) | 2006 09 18 | 703 | 1.0− | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.2+ |
| 2003 01 01 | 704 | 0.0 | 1.1+ | 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 11 22 | 703 | 0.3+ | 0.7− |
| 2003 01 01 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.5+ | 0.2+ | 2006 11 22 | 703 | 0.4+ | 0.1+ |
| 2003 01 01 | 704 | 0.2+ | 1.1+ | 2006 10 12 | 644 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2003 01 01 | 704 | 0.4+ | 1.3+ | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 22 | 703 | 0.2+ | 0.1− |

**2002 YZ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 321.61889 | | (2000.0) | | | |
| $n$ | 0.23185472 | $\omega$ | 5.48341 | | −0.07084651 | −0.99219521 |
| $a$ | 2.6241707 | $\Omega$ | 88.60819 | | +0.91123086 | −0.10622281 |
| $e$ | 0.2468315 | $i$ | 5.89140 | | +0.40575742 | +0.06530980 |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 699 | 0.3− | 0.1− | 2003 01 05 | 704 | 0.7− | 0.3− | 2006 11 14 | 704 | (0.5+ | 1.6+) |
| 1999 02 18 | 699 | 0.3+ | 0.3− | 2003 01 05 | 704 | 0.6− | 0.6− | 2006 11 14 | 704 | 0.3− | 0.2+ |
| 1999 02 18 | 699 | 0.2+ | 1.2+ | 2003 01 05 | 704 | 0.3− | 0.1− | 2006 11 14 | 704 | 0.9+ | 1.0+ |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2003 02 01 | 704 | 0.1− | 0.5− | 2006 11 14 | 704 | 1.2+ | 1.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.4− | 2003 02 01 | 704 | 0.8+ | 0.0 | 2006 11 14 | 704 | 0.6− | 0.2− |
| 2002 12 05 | 704 | 0.4+ | 0.4− | 2003 02 01 | 704 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 0.8+ | 1.3+ |
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2003 02 01 | 704 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.7+ | 0.4+ |
| 2002 12 10 | 704 | 0.2+ | 0.7+ | 2003 02 01 | 704 | 0.7− | 1.0− | 2006 11 17 | 704 | 0.7+ | 0.5+ |
| 2002 12 10 | 704 | 0.6+ | 0.0 | 2003 02 04 | 704 | (1.6− | 0.7−) | 2006 11 17 | 704 | 0.1+ | 0.9+ |
| 2002 12 10 | 704 | 0.1− | 0.2+ | 2003 02 04 | 704 | 0.6− | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.5− |
| 2002 12 31 | 704 | 0.2− | 0.1+ | 2003 02 04 | 704 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 12 31 | 704 | 0.3− | 0.2+ | 2003 02 04 | 704 | 1.1− | 1.4+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2002 12 31 | 704 | 0.0 | 0.3+ | 2003 03 07 | 644 | 0.7+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 12 31 | 704 | 0.2+ | 0.6+ | 2003 03 07 | 644 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2003 01 01 | 946 | 1.5− | 0.9+ | 2003 03 07 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2003 01 01 | 946 | 0.2+ | 0.0 | 2006 10 17 | 683 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.6− | 1.0− |
| 2003 01 01 | 946 | 0.1− | 0.5+ | 2006 10 17 | 683 | 0.8− | 1.2+ | 2006 11 19 | 704 | 0.6− | 1.2+ |
| 2003 01 01 | 704 | 0.5+ | 0.3− | 2006 10 17 | 683 | 0.5− | 0.5+ | 2006 11 19 | 704 | 1.4+ | 1.2− |
| 2003 01 01 | 704 | 0.4+ | 0.3− | 2006 10 20 | 683 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.1− | 0.1− | 2006 10 20 | 683 | 0.7+ | 0.3+ | 2006 11 20 | 704 | 0.6+ | 0.4− |
| 2003 01 01 | 704 | 0.3+ | 0.3− | 2006 10 20 | 683 | 0.6− | 0.4+ | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2003 01 01 | 704 | 1.1+ | 0.6− | 2006 10 22 | 683 | 1.5+ | 1.0− | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2003 01 01 | 946 | 0.4− | 1.2+ | 2006 10 22 | 683 | 0.5+ | 0.4− | 2006 11 20 | 704 | 0.8+ | 0.2− |
| 2003 01 01 | 946 | (0.6+ | 2.3+) | 2006 10 22 | 683 | (1.9+ | 0.7+) | 2006 11 25 | 704 | 1.0− | 0.9− |
| 2003 01 01 | 946 | (1.3+ | 3.0+) | 2006 11 02 | 703 | 0.3− | 0.1+ | 2006 11 25 | 704 | 1.6− | 0.5− |
| 2003 01 02 | 704 | 0.2+ | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.7− | 2006 11 25 | 704 | 1.2− | 1.0+ |
| 2003 01 02 | 704 | 0.1− | 0.6− | 2006 11 02 | 703 | 0.1+ | 0.2− | 2006 11 28 | 704 | 1.2+ | 0.3+ |
| 2003 01 02 | 704 | 0.0 | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.7− | 0.3+ |
| 2003 01 02 | 704 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 1.4− | 2006 11 28 | 704 | 0.4+ | 0.7+ |
| 2003 01 02 | 704 | 1.0+ | 0.6− | 2006 11 11 | 703 | 0.6− | 0.4+ | 2006 11 28 | 704 | 0.5− | 1.5− |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 1.2− | 0.0 | 2006 11 28 | 704 | 1.1− | 1.0− |
| 2003 01 05 | 704 | 0.2− | 0.7− | 2006 11 11 | 703 | (0.0 | 2.9+) | | | | |

**2002 YD$_{11}$ = 2006 VD$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.52890 | | (2000.0) | | | |
| $n$ | 0.22483620 | $\omega$ | 296.82212 | | +0.77026535 | −0.44782241 |
| $a$ | 2.6785015 | $\Omega$ | 92.98539 | | +0.61279911 | +0.71685346 |
| $e$ | 0.0717270 | $i$ | 27.04245 | | −0.17654615 | +0.53439330 |
| $P$ | 4.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.4+ | 0.7+ | 2003 01 01 | 704 | 0.1+ | 0.8− | 2006 11 01 | 703 | 0.5+ | 0.7+ |
| 2002 12 11 | 704 | (1.5+ | 0.1−) | 2003 01 01 | 704 | 0.2+ | 0.6+ | 2006 11 01 | 703 | (1.3− | 1.8−) |
| 2002 12 11 | 704 | (2.2+ | 0.1+) | 2003 01 04 | 704 | 0.1+ | 1.4+ | 2006 11 01 | 703 | 1.0+ | 0.5− |
| 2002 12 11 | 704 | 0.6+ | 0.1− | 2003 01 04 | 704 | 0.5− | 0.4− | 2006 11 01 | 703 | 0.1+ | 0.5+ |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.3+ | 0.9− | 2006 11 19 | 703 | 0.7− | 0.4− |
| 2002 12 31 | 704 | 0.2+ | 0.1+ | 2003 01 04 | 704 | 0.4+ | 0.5− | 2006 11 19 | 703 | 0.3− | 0.4− |
| 2002 12 31 | 704 | 0.2+ | 0.6+ | 2003 01 04 | 704 | (1.4+ | 1.7−) | 2006 11 19 | 703 | 0.5− | 0.1− |
| 2002 12 31 | 704 | 0.4+ | 0.1+ | 2003 01 08 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2002 12 31 | 704 | 0.5+ | 0.3+ | 2003 01 08 | 704 | 0.8+ | 0.3+ | 2006 11 24 | 703 | 0.5+ | 0.7− |
| 2002 12 31 | 291 | 0.3− | 0.2− | 2003 01 08 | 704 | 0.4+ | 0.3− | 2006 11 24 | 703 | 0.4+ | 1.0+ |
| 2002 12 31 | 291 | 0.3− | 0.1− | 2003 01 08 | 704 | 0.1+ | 1.0+ | 2006 11 24 | 703 | 0.2− | 0.4− |
| 2002 12 31 | 291 | 0.6− | 0.3− | 2003 01 08 | 704 | 1.2+ | 0.1+ | 2006 11 24 | 703 | 0.3− | 0.2+ |
| 2003 01 01 | 704 | 0.4− | 0.2− | 2004 05 23 | 645 | 0.0 | 0.0 | | | | |
| 2003 01 01 | 704 | 0.2− | 0.1− | 2004 05 23 | 645 | 0.0 | 0.0 | | | | |

**2002 YE$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 260.31278 | | (2000.0) | | | |
| $n$ | 0.22990770 | $\omega$ | 99.94860 | | −0.93721489 | +0.26763883 |
| $a$ | 2.6389655 | $\Omega$ | 95.83688 | | −0.33529986 | −0.86784706 |
| $e$ | 0.1041901 | $i$ | 12.98918 | | +0.09592838 | −0.41858207 |
| $P$ | 4.29 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 699 | 0.5+ | 0.4− | 2002 12 31 | 704 | 1.0− | 0.2+ | 2005 10 03 | 703 | 0.2− | 0.3+ |
| 1999 03 21 | 699 | 0.2+ | 0.2− | 2003 01 01 | 704 | 0.3+ | 0.3− | 2005 10 03 | 703 | 0.1− | 0.6− |
| 1999 03 21 | 699 | 1.8+ | 1.0+ | 2003 01 01 | 704 | 0.2+ | 0.2+ | 2005 10 31 | 703 | 0.2+ | 0.6− |
| 1999 04 10 | 704 | (2.2+ | 0.7+) | 2003 01 01 | 704 | 0.6+ | 0.5+ | 2005 10 31 | 703 | (1.4+ | 2.4+) |
| 1999 04 10 | 704 | 1.5− | 0.5+ | 2003 01 01 | 704 | 0.4− | 0.7− | 2005 10 31 | 703 | 0.6− | 1.0+ |
| 1999 04 10 | 704 | 0.4− | 0.9− | 2003 01 01 | 704 | 0.2− | 0.7+ | 2005 10 31 | 703 | (1.6− | 2.1+) |
| 1999 04 10 | 704 | (0.6− | 2.4−) | 2003 02 02 | 704 | 0.2− | 0.4− | 2006 09 26 | 691 | 0.4+ | 0.2− |
| 1999 04 10 | 704 | 0.3− | 0.5+ | 2003 02 02 | 704 | 0.5− | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 2001 10 15 | 644 | 0.2+ | 0.4+ | 2003 02 02 | 704 | 0.3− | 0.4+ | 2006 09 26 | 691 | 0.3+ | 0.0 |
| 2001 10 15 | 644 | 0.0 | 0.4+ | 2003 02 21 | 644 | 0.1+ | 1.0− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 10 15 | 644 | 0.2− | 0.5+ | 2003 02 21 | 644 | 0.4+ | 0.7− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2001 10 23 | 644 | 0.4− | 0.4+ | 2003 02 21 | 644 | 0.3+ | 0.6− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2001 10 23 | 644 | 0.8− | 0.2+ | 2003 02 26 | 704 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2001 10 23 | 644 | 0.2− | 0.2+ | 2003 02 26 | 704 | 0.4+ | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.3− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2003 02 26 | 704 | 0.4− | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.4− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2003 02 26 | 704 | 0.2+ | 0.4− | 2006 10 29 | G96 | 0.0 | 0.2− |
| 2001 12 07 | 704 | 0.1− | 1.1+ | 2003 02 26 | 704 | 0.7− | 0.7+ | 2006 10 29 | G96 | 0.1− | 0.2− |
| 2001 12 07 | 704 | 0.2− | 0.3+ | 2003 03 03 | 644 | 0.2− | 0.9+ | 2006 11 13 | G96 | 0.4+ | 1.1− |
| 2001 12 07 | 704 | 0.3+ | 0.8+ | 2003 03 03 | 644 | 0.5+ | 1.3+ | 2006 11 13 | G96 | 0.2− | 0.6− |
| 2001 12 07 | 704 | (0.3+ | 2.5+) | 2003 03 03 | 644 | 0.8+ | 0.9+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 03 08 | 644 | 0.0 | 0.6+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 03 08 | 644 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.5− | 0.2− |
| 2002 12 31 | 704 | 0.7+ | 0.4+ | 2003 03 08 | 644 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.3+ | 0.5+ | 2005 10 03 | 703 | (1.3− | 2.4−) | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2002 12 31 | 704 | 0.7− | 0.7− | 2005 10 03 | 703 | (0.9+ | 2.1−) | 2006 12 01 | G96 | 0.2− | 0.2− |

**2002 YF$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.66206 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23077247 | $\omega$ | 358.84521 | −0.46660810 | | −0.85719277 | |
| $a$ | 2.6323687 | $\Omega$ | 118.93315 | +0.81346326 | | −0.51264958 | |
| $e$ | 0.2041106 | $i$ | 14.41957 | +0.34720945 | | +0.04910152 | |
| $P$ | 4.27 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 699 | 0.4+ | 0.4− | 2003 01 08 | 608 | 0.4− | 0.8+ | 2003 02 07 | 644 | 0.0 | 0.9+ |
| 1999 03 21 | 699 | 1.2− | 0.1+ | 2003 01 08 | 608 | 0.7− | 0.9+ | 2003 02 07 | 704 | 0.2+ | 0.2+ |
| 1999 03 21 | 699 | 0.7+ | 0.1− | 2003 01 09 | 704 | 0.5+ | 0.2+ | 2003 02 07 | 704 | 0.9+ | 0.4− |
| 2002 12 05 | 704 | 0.6− | 1.4− | 2003 01 09 | 704 | 0.3+ | 0.4− | 2003 02 07 | 704 | 1.1+ | 0.9− |
| 2002 12 05 | 704 | 1.4+ | 0.1− | 2003 01 09 | 704 | 0.4+ | 0.5− | 2003 02 19 | 644 | 0.4− | 0.3+ |
| 2002 12 05 | 704 | 1.6+ | 1.1− | 2003 01 09 | 704 | 0.4+ | 0.2− | 2003 02 19 | 644 | 0.3− | 0.4+ |
| 2002 12 16 | 644 | 0.1+ | 0.5+ | 2003 01 18 | 644 | 0.3+ | 0.4+ | 2003 02 19 | 644 | 0.4− | 0.2+ |
| 2002 12 16 | 644 | 0.1− | 0.3+ | 2003 01 18 | 644 | 0.2+ | 0.1+ | 2003 02 20 | 636 | 0.3− | 0.1− |
| 2002 12 16 | 644 | 0.2− | 0.0 | 2003 01 18 | 644 | 0.3+ | 0.4+ | 2003 02 20 | 636 | 0.6− | 0.2− |
| 2002 12 31 | 704 | 0.2− | 0.0 | 2003 01 27 | 699 | 0.8− | 0.8− | 2003 02 20 | 636 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.5− | 0.1− | 2003 01 27 | 699 | 0.1+ | 0.7− | 2003 02 26 | 704 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.2− | 1.1− | 2003 01 27 | 699 | 0.6− | 1.0− | 2003 02 26 | 704 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.1+ | 0.6+ | 2003 01 27 | 699 | 0.5− | 0.4− | 2003 02 26 | 704 | 0.2− | 0.2− |
| 2002 12 31 | 704 | 0.6+ | 0.1− | 2003 02 01 | 704 | 0.2− | 0.3+ | 2003 02 26 | 704 | 0.1+ | 0.2− |
| 2003 01 01 | 704 | 1.8− | 2.0− | 2003 02 01 | 704 | 0.1− | 0.0 | 2003 02 26 | 704 | 0.2+ | 0.4− |
| 2003 01 01 | 704 | 0.9+ | 0.0 | 2003 02 01 | 704 | 0.1+ | 0.2+ | 2003 03 03 | 644 | 0.0 | 0.0 |
| 2003 01 01 | 704 | 1.1− | 0.1− | 2003 02 01 | 704 | 0.1− | 0.6+ | 2003 03 03 | 644 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.3+ | 0.2+ | 2003 02 01 | 704 | 0.1− | 0.8+ | 2003 03 03 | 644 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.4− | 0.4− | 2003 02 02 | 644 | 0.1+ | 0.2+ | 2003 03 03 | 704 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.3+ | 0.2− | 2003 02 02 | 644 | 0.1− | 0.4+ | 2003 03 03 | 704 | 0.1− | 0.9+ |
| 2003 01 05 | 704 | 0.7+ | 0.6+ | 2003 02 02 | 644 | 0.1+ | 0.2− | 2003 03 03 | 704 | 0.4− | 0.9+ |
| 2003 01 05 | 704 | 0.7+ | 0.4+ | 2003 02 07 | 644 | 0.2− | 0.9+ | 2005 09 01 | 644 | 0.1− | 0.8+ |
| 2003 01 05 | 704 | 0.5+ | 0.8+ | 2003 02 07 | 644 | 0.0 | 0.8+ | 2005 09 01 | 644 | 0.2− | 0.9+ |
| 2003 01 05 | 704 | 0.9+ | 0.2+ | 2003 02 07 | 704 | 0.0 | 0.4− | 2005 09 01 | 644 | 0.0 | 0.7+ |
| 2003 01 08 | 608 | 0.5− | 0.6+ | 2003 02 07 | 704 | 0.3− | 0.1+ | | | | |

**2002 YY$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.11521 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21479041 | $\omega$ | 295.49421 | +0.39405439 | | −0.79825809 | |
| $a$ | 2.7613796 | $\Omega$ | 123.43028 | +0.90783094 | | +0.41538937 | |
| $e$ | 0.3397905 | $i$ | 33.08150 | −0.14340196 | | +0.43616016 | |
| $P$ | 4.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 645 | 0.1+ | 0.0 | 2003 01 08 | 608 | 0.7− | 0.7− | 2003 01 31 | 704 | 0.8− | 0.6− |
| 2002 12 07 | 645 | 0.1+ | 0.0 | 2003 01 08 | 608 | 0.1− | 0.5− | 2003 01 31 | 704 | 0.1− | 0.1+ |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2003 01 09 | 704 | 1.1+ | 0.7+ | 2006 07 28 | E12 | 0.2− | 0.3− |
| 2002 12 14 | 645 | 0.2− | 0.1− | 2003 01 09 | 704 | 0.6+ | 0.7− | 2006 07 28 | E12 | 0.3− | 0.8+ |
| 2002 12 31 | 704 | 1.5− | 0.1− | 2003 01 09 | 704 | 1.3+ | 0.4+ | 2006 07 28 | E12 | 0.3+ | 0.1− |
| 2002 12 31 | 704 | 0.4+ | 0.8− | 2003 01 09 | 704 | 0.0 | 0.6− | 2006 07 28 | E12 | (0.3+ | 1.8−) |
| 2002 12 31 | 704 | 0.1− | 0.2− | 2003 01 10 | 704 | 0.2+ | 0.4+ | 2006 08 14 | E12 | 0.1− | 0.3− |
| 2002 12 31 | 704 | 0.4− | 0.2+ | 2003 01 10 | 704 | 0.1+ | 0.5+ | 2006 08 14 | E12 | 0.0 | 0.3+ |
| 2002 12 31 | 704 | 0.1+ | 1.2+ | 2003 01 10 | 704 | 0.0 | 0.1− | 2006 08 14 | E12 | 0.4+ | 0.1− |
| 2003 01 01 | 704 | 0.1− | 0.6− | 2003 01 10 | 704 | 0.4+ | 0.2+ | 2006 08 14 | E12 | 0.1− | 0.0 |
| 2003 01 01 | 704 | 0.5− | 0.6+ | 2003 01 10 | 704 | 0.3+ | 0.2− | 2006 10 23 | E12 | 0.4+ | 0.7− |
| 2003 01 01 | 704 | 0.0 | 1.0+ | 2003 01 17 | 644 | 0.0 | 0.5+ | 2006 10 23 | E12 | 0.4+ | 0.6+ |
| 2003 01 01 | 704 | 0.3+ | 0.2+ | 2003 01 17 | 644 | 0.2+ | 0.2+ | 2006 10 23 | E12 | 0.7+ | 1.0− |
| 2003 01 05 | 704 | 0.5+ | 0.2+ | 2003 01 17 | 644 | 0.1− | 0.3+ | 2006 10 23 | E12 | 0.1− | 0.3+ |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2003 01 28 | 644 | 0.3+ | 0.1− | 2006 11 11 | E12 | 0.2− | 0.6− |
| 2003 01 05 | 704 | 0.3− | 0.1+ | 2003 01 28 | 644 | 0.1+ | 0.2− | 2006 11 11 | E12 | 0.8− | 0.3+ |
| 2003 01 05 | 704 | 0.2− | 0.6− | 2003 01 28 | 644 | 0.0 | 0.0 | 2006 11 11 | E12 | 0.1+ | 0.7+ |
| 2003 01 05 | 704 | 0.1− | 0.1+ | 2003 01 31 | 704 | 0.3+ | 0.2+ | 2006 11 11 | E12 | 0.5− | 0.2+ |
| 2003 01 08 | 608 | 0.3− | 0.9− | 2003 01 31 | 704 | 0.1+ | 0.1− | | | | |

**2002 YG$_{12}$ = 2002 XP$_{93}$ = 2006 SB$_{282}$**

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Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.09356 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22911334 | $\omega$ | 146.43295 | +0.54476150 | | −0.81368727 | |
| $a$ | 2.6450617 | $\Omega$ | 269.76974 | +0.71786537 | | +0.57752538 | |
| $e$ | 0.2552442 | $i$ | 11.70374 | +0.43347920 | | +0.06616241 | |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 695 | 0.3− | 0.0 | 2003 01 02 | 291 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.4+ | 0.5− |
| 2002 12 06 | 695 | 0.3− | 0.1− | 2003 01 08 | 704 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.0 |
| 2002 12 10 | 704 | 0.1+ | 0.0 | 2003 01 08 | 704 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.0 | 0.7+ |
| 2002 12 10 | 704 | 0.4− | 0.2− | 2003 01 08 | 704 | 0.7+ | 0.1− | 2006 10 19 | 703 | 1.0− | 0.6− |
| 2002 12 10 | 704 | 0.4+ | 0.0 | 2003 01 08 | 704 | 0.5+ | 1.1+ | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2002 12 10 | 704 | 0.4− | 0.3− | 2006 09 24 | 699 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.6+ | 0.3+ |
| 2002 12 31 | 704 | 0.2+ | 1.2+ | 2006 09 24 | 699 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 09 24 | 699 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2002 12 31 | 704 | 0.3− | 0.5+ | 2006 09 24 | 699 | 0.4− | 0.6− | 2006 10 27 | 703 | 0.8+ | 0.4− |
| 2002 12 31 | 704 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.1+ | 0.8+ | 2006 10 27 | 703 | 0.1+ | 0.2− |
| 2003 01 02 | 291 | 0.5− | 0.3− | 2006 09 28 | 703 | 0.2− | 0.1− | 2006 10 27 | 703 | 1.0− | 0.0 |
| 2003 01 02 | 291 | 0.1+ | 0.1− | 2006 09 28 | 703 | (1.2+ | 2.7−) | 2006 10 27 | 703 | 0.7− | 0.2− |

**2002 YP$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.17012 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18080840 | $\omega$ | 154.33832 | +0.42094443 | | −0.90143106 | |
| $a$ | 3.0973502 | $\Omega$ | 270.62712 | +0.81384264 | | +0.42455520 | |
| $e$ | 0.2698839 | $i$ | 5.80475 | +0.40058200 | | +0.08470491 | |
| $P$ | 5.45 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.1− | 0.8+ | 2002 12 05 | 704 | 0.3− | 0.3+ | 2003 01 04 | 704 | 0.6− | 0.2− |
| 2001 08 18 | 644 | 0.5− | 0.7+ | 2002 12 05 | 704 | 0.1− | 0.4+ | 2003 01 04 | 704 | 1.4+ | 1.3+ |
| 2001 08 18 | 644 | 0.4+ | 0.9+ | 2002 12 10 | 704 | 0.2+ | 0.3− | 2003 01 04 | 704 | 0.6− | 0.6− |
| 2001 08 18 | 644 | 0.4− | 0.6+ | 2002 12 10 | 704 | 0.3+ | 0.4− | 2003 01 08 | 704 | 0.9+ | 0.6+ |
| 2001 08 18 | 644 | 0.7− | 0.6+ | 2002 12 10 | 704 | 0.3+ | 0.2− | 2003 01 08 | 704 | 0.2− | 0.2+ |
| 2001 08 18 | 644 | 0.2− | 0.1+ | 2002 12 10 | 704 | 0.2− | 0.3− | 2003 01 08 | 704 | 0.9+ | 0.3− |
| 2002 10 04 | 704 | 0.8+ | 0.4− | 2002 12 31 | 704 | 0.2− | 0.1+ | 2003 01 08 | 704 | 0.4+ | 0.4− |
| 2002 10 04 | 704 | 0.6+ | 0.3+ | 2002 12 31 | 704 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.5+ | 0.9− |
| 2002 10 04 | 704 | 0.7− | 0.7+ | 2002 12 31 | 704 | 0.1− | 0.3+ | 2003 02 04 | 704 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.3+ | 0.1− | 2002 12 31 | 704 | 0.6− | 0.5+ | 2003 02 04 | 704 | 0.5− | 0.0 |
| 2002 10 12 | 704 | 0.1− | 0.0 | 2002 12 31 | 704 | 0.4− | 0.5+ | 2003 02 04 | 704 | 0.2+ | 0.3+ |
| 2002 10 12 | 704 | 0.7− | 0.9− | 2003 01 02 | 704 | 0.2+ | 0.3+ | 2003 02 04 | 704 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2003 01 02 | 704 | 0.2− | 0.0 | 2004 03 14 | 644 | 0.5+ | 0.5+ |
| 2002 10 12 | 704 | 0.3− | 0.3− | 2003 01 02 | 704 | 0.2+ | 0.3+ | 2004 03 14 | 644 | 0.4+ | 1.1+ |
| 2002 12 05 | 704 | 0.7− | 0.7+ | 2003 01 02 | 704 | 0.3− | 0.3+ | 2004 03 14 | 644 | 0.2+ | 1.0+ |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2003 01 02 | 704 | 0.1− | 0.3+ | | | | |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2003 01 04 | 704 | 0.2+ | 0.1+ | | | | |

**2002 YQ$_{12}$ = 2006 VX$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.40778 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22753555 | $\omega$ | 279.38728 | −0.97125133 | | +0.13894914 | |
| $a$ | 2.6572752 | $\Omega$ | 268.77782 | −0.05479365 | | −0.92066530 | |
| $e$ | 0.1474912 | $i$ | 11.14786 | −0.23166463 | | −0.36478562 | |
| $P$ | 4.33 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.3+ | 0.5− | 2006 11 15 | 703 | 0.4− | 0.5− |
| 2002 12 31 | 704 | 0.4+ | 0.7+ | 2003 01 08 | 704 | 0.3+ | 0.3− | 2006 11 15 | 703 | 1.1+ | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.8− | 2005 08 30 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.5+ | 0.0 |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2005 08 30 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.0 | 0.4− |
| 2002 12 31 | 704 | 0.3− | 0.8+ | 2005 08 30 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2003 01 02 | 704 | 0.2− | 0.5+ | 2005 11 04 | G96 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2003 01 02 | 704 | 0.2− | 0.3+ | 2005 11 04 | G96 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2003 01 02 | 704 | 0.5+ | 0.2+ | 2005 11 04 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.3− | 0.4+ | 2005 11 04 | G96 | 0.0 | 0.4− | 2006 11 22 | 703 | 0.1+ | 1.1+ |
| 2003 01 02 | 704 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.2− | 2006 11 22 | 703 | 0.8− | 0.4+ |
| 2003 01 04 | 704 | 0.7− | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.7− | 2006 11 22 | 703 | 0.2− | 0.0 |
| 2003 01 04 | 704 | 0.8− | 0.5+ | 2006 11 02 | G96 | 0.3− | 0.1− | 2006 11 22 | 703 | 0.1− | 0.2+ |
| 2003 01 04 | 704 | 0.2+ | 0.2+ | 2006 11 02 | G96 | 0.3− | 0.4− | 2006 11 22 | 703 | 0.4+ | 0.3+ |
| 2003 01 04 | 704 | 0.3+ | 0.2− | 2006 11 02 | G96 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.2− | 0.7+ |
| 2003 01 04 | 704 | 0.0 | 0.4− | 2006 11 02 | G96 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.3+ |
| 2003 01 08 | 704 | 0.7− | 0.8− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.6− | 0.2− |
| 2003 01 08 | 704 | 0.8+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.3+ | | | | |
| 2003 01 08 | 704 | 0.4+ | 0.6− | 2006 11 09 | 644 | 0.3− | 0.3+ | | | | |

### 2002 $YX_{13}$ = 2006 $WR_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.19432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23678219 | $\omega$ | 315.24661 | | +0.34664973 | −0.93711328 | |
| $a$ | 2.5876371 | $\Omega$ | 114.43180 | | +0.87261470 | +0.30628723 | |
| $e$ | 0.1556788 | $i$ | 2.55918 | | +0.34406037 | +0.16735240 | |
| $P$ | 4.16 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.1+ | 1.0+ | 2003 01 08 | 704 | 0.1− | 0.3− | 2006 11 20 | G96 | 0.4+ | 0.0 |
| 2002 12 31 | 704 | 0.2− | 0.2− | 2003 01 08 | 704 | 0.1− | 0.1− | 2006 11 20 | G96 | 1.1− | 0.6+ |
| 2002 12 31 | 704 | 0.5− | 0.0 | 2005 07 06 | 291 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2005 07 06 | 291 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 01 02 | 704 | 0.3+ | 0.1− | 2005 07 06 | 291 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2003 01 02 | 704 | 0.2− | 0.4− | 2006 11 15 | 691 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2003 01 02 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.5− |
| 2003 01 08 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2003 01 08 | 704 | 0.0 | 1.3+ | 2006 11 20 | G96 | 0.2+ | 0.2− | | | | |

### 2002 $YZ_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.40530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23879088 | $\omega$ | 127.01925 | | +0.65966093 | −0.74860754 | |
| $a$ | 2.5731053 | $\Omega$ | 281.56868 | | +0.66615842 | +0.62342164 | |
| $e$ | 0.1628124 | $i$ | 3.89744 | | +0.34796610 | +0.22568167 | |
| $P$ | 4.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.7− | 1.0+ |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.1+ |
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2002 12 11 | 704 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.6+ |
| 2002 12 11 | 704 | (0.6+ | 1.8−) | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.3− |
| 2002 12 11 | 704 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.7+ |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 16 | 704 | 1.1+ | 0.5+ |
| 2002 12 11 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.3− | 0.6+ |
| 2002 12 11 | 704 | 0.8− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.6− |
| 2002 12 11 | 704 | 0.9− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 11 17 | 704 | (0.6+ | 1.9−) |
| 2002 12 11 | 704 | 1.0− | 0.9+ | 2006 11 11 | 703 | 1.2+ | 1.1− | 2006 11 17 | 704 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.2+ | 1.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.0 | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 17 | 704 | (1.7− | 1.0−) |
| 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.7− |
| 2002 12 31 | 704 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.1− | 1.0− |
| 2002 12 31 | 704 | 0.7+ | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.9− |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.9+ | 1.0− |
| 2002 12 31 | 704 | 0.6+ | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.9− |
| 2003 01 04 | 704 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.5− | 1.3− |
| 2003 01 04 | 704 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.3− | 1.2+ |
| 2003 01 04 | 704 | 0.7+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 1.2− |
| 2003 01 04 | 704 | 0.9− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.5− | 0.8+ |
| 2003 01 04 | 704 | 0.3+ | 0.7+ | 2006 11 15 | 704 | 0.3− | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.6− |
| 2003 01 10 | 291 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2003 01 10 | 291 | 0.2+ | 0.4− | 2006 11 15 | 704 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 1.4− |
| 2003 01 10 | 291 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.2+ |
| 2006 10 18 | A50 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.3− | 1.4− |
| 2006 10 18 | A50 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2006 10 19 | 691 | 0.7+ | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 1.2− | 0.5− |
| 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 1.3− | 0.0 |
| 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.5− | 2006 11 22 | 704 | 0.5− | 0.4− |
| 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.5+ | 1.2+ | 2006 11 22 | 704 | 1.0− | 0.1− |
| 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 1.4− | 0.1− |
| 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.2+ | | | | |

### 2002 $YS_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.42613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23057294 | $\omega$ | 17.26702 | | +0.14133017 | −0.98856445 | |
| $a$ | 2.6338871 | $\Omega$ | 64.63447 | | +0.90126222 | +0.10650514 | |
| $e$ | 0.1876635 | $i$ | 3.33680 | | +0.40957563 | +0.10675665 | |
| $P$ | 4.27 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 29 | 691 | 0.3+ | 0.1− | 2003 01 04 | 704 | 0.7− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 1995 03 29 | 691 | 0.4− | 0.0 | 2003 02 04 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 1995 03 29 | 691 | 0.0 | 0.2− | 2003 02 04 | 704 | (1.3+ | 1.6+) | 2006 11 11 | 703 | 1.5− | 0.5− |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2003 02 04 | 704 | (0.2+ | 2.7+) | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2004 04 24 | 691 | 0.4+ | 0.6+ | 2006 11 17 | 703 | 0.6+ | 0.2− |
| 2002 12 05 | 704 | 0.2− | 0.0 | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.9+ | 0.8− |
| 2002 12 05 | 704 | 0.4− | 0.3− | 2004 04 24 | 691 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2002 12 10 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.8− | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2002 12 10 | 704 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.1− | 2006 11 18 | 704 | 0.4− | 1.0+ |
| 2002 12 10 | 704 | 0.4− | 1.4+ | 2006 09 30 | 703 | 0.5− | 0.9+ | 2006 11 18 | 704 | 0.9− | 0.4+ |
| 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 10 02 | G96 | 1.0+ | 0.5+ | 2006 11 18 | 704 | 0.4− | 0.7+ |
| 2002 12 10 | 704 | 0.1+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | (0.2− | 1.8+) |
| 2002 12 31 | 704 | 1.1+ | 0.2− | 2006 10 02 | G96 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.8+ |
| 2002 12 31 | 704 | 0.0 | 0.6+ | 2006 10 23 | 704 | 1.2− | 0.4− | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.1+ | 1.1+ | 2006 11 21 | 704 | (0.0 | 1.5+) |
| 2002 12 31 | 704 | 1.4+ | 1.2− | 2006 10 23 | 704 | 0.3− | 0.9+ | 2006 11 25 | 703 | 0.9− | 0.0 |
| 2002 12 31 | 704 | 0.8+ | 0.2+ | 2006 10 23 | 704 | 0.1− | 0.4+ | 2006 11 25 | 703 | 0.6+ | 0.2+ |
| 2003 01 04 | 704 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 25 | 703 | 0.4+ | 0.2− |
| 2003 01 04 | 704 | 0.6− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 25 | 703 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.5− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.1+ | | | | |
| 2003 01 04 | 704 | 0.3+ | 0.7− | 2006 11 11 | 703 | 0.0 | 0.5− | | | | |

### 2002 $YD_{18}$ = 2006 $RV_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.33985 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22038619 | $\omega$ | 281.40946 | | +0.94649688 | −0.30438333 | |
| $a$ | 2.7144372 | $\Omega$ | 96.38063 | | +0.32179995 | +0.86523895 | |
| $e$ | 0.1769927 | $i$ | 6.19314 | | +0.02425786 | +0.39838719 | |
| $P$ | 4.47 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.4− | 0.4+ | 2003 01 09 | 704 | 0.3+ | 0.7− | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2002 12 31 | 704 | 0.8− | 0.6− | 2003 01 09 | 704 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 2002 12 31 | 704 | 0.8− | 0.1− | 2003 01 09 | 704 | 0.5+ | 0.1+ | 2006 10 02 | 703 | 0.3+ | 0.4+ |
| 2002 12 31 | 704 | 0.6− | 0.4+ | 2004 03 26 | 691 | 0.4− | 0.2− | 2006 10 02 | 703 | 0.3− | 0.1+ |
| 2003 01 04 | 704 | 0.0 | 0.1+ | 2004 03 26 | 691 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.3− | 0.5+ |
| 2003 01 04 | 704 | 0.9+ | 0.6+ | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.1+ |
| 2003 01 04 | 704 | 0.6+ | 0.7− | 2006 08 28 | 699 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2003 01 04 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2003 01 04 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 699 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2003 01 04 | 704 | 0.1− | 0.5− | 2006 09 12 | 703 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.9+ | 1.3− |
| 2003 01 04 | 704 | 0.9+ | 0.1+ | 2006 09 12 | 703 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2003 01 04 | 704 | 0.6+ | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 01 04 | 704 | 0.1− | 1.2+ | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.6+ | 0.6− |
| 2003 01 04 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.6− | 2006 10 22 | 703 | 0.7+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.7− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2003 01 04 | 704 | (2.1+ | 0.4−) | 2006 09 18 | 703 | (1.8− | 0.3−) | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2003 01 05 | 704 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2003 01 05 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.4− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.5+ | 2006 10 28 | 703 | 0.2− | 1.0− |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | (1.8− | 0.0 ) | 2006 10 28 | 703 | 0.6− | 0.9− |
| 2003 01 08 | 704 | 0.2− | 0.6− | 2006 09 19 | 703 | 0.7+ | 0.6+ | 2006 10 28 | 703 | 0.2+ | 0.6− |
| 2003 01 08 | 704 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 10 28 | 703 | 0.3+ | 0.2− |
| 2003 01 08 | 704 | 0.1+ | 0.7− | 2006 09 26 | 703 | 0.3+ | 0.4+ | | | | |
| 2003 01 08 | 704 | 1.1− | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.2+ | | | | |

## 2002 $YP_{18}$ = 2003 $AL_8$ = 2006 $SZ_{367}$

Id. Minor Planet Center (d, *MPO* 43525; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.73447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23118529 | $\omega$ | 307.23605 | | +0.73108819 | −0.67964436 | |
| $a$ | 2.6292340 | $\Omega$ | 95.66528 | | +0.64351158 | +0.65768026 | |
| $e$ | 0.1630046 | $i$ | 3.45364 | | +0.22672208 | +0.32486954 | |
| $P$ | 4.26 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.8− | 0.8+ | 2003 01 08 | 704 | (0.3− | 2.0+) | 2006 10 22 | 704 | 0.4+ | 1.0+ |
| 2002 12 31 | 704 | 0.8− | 0.6− | 2003 01 08 | 704 | 0.2+ | 0.0 | 2006 10 22 | 704 | 0.5+ | 0.4− |
| 2002 12 31 | 704 | 1.3− | 1.1+ | 2003 01 08 | 704 | 0.8− | 1.2+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 12 31 | 704 | 0.7− | 1.5+ | 2006 09 30 | 703 | 0.9+ | 0.3− | 2006 11 14 | 704 | 0.5+ | 0.8+ |
| 2002 12 31 | 704 | 0.9− | 1.0+ | 2006 09 30 | 703 | 0.5− | 0.7+ | 2006 11 14 | 704 | 0.2+ | 0.5+ |
| 2003 01 03 | 291 | 0.7+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 11 14 | 704 | 0.1− | 1.1+ |
| 2003 01 03 | 291 | 0.9+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.3− |
| 2003 01 03 | 291 | 0.9+ | 0.1+ | 2006 10 03 | 704 | (0.7+ | 2.0+) | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2003 01 03 | 291 | 0.0 | 0.4− | 2006 10 03 | 704 | (0.7+ | 1.5+) | 2006 11 16 | G96 | 0.2+ | 0.9− |
| 2003 01 03 | 291 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2003 01 03 | 291 | 0.7+ | 0.2− | 2006 10 03 | G96 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.9+ | 0.4+ |
| 2003 01 04 | 704 | 0.2− | 1.0− | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2003 01 04 | 704 | 0.0 | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2003 01 04 | 704 | 0.3− | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.3− |
| 2003 01 04 | 704 | 1.1− | 0.5− | 2006 10 14 | D35 | 0.5+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.1− |
| 2003 01 04 | 704 | 1.1− | 1.4− | 2006 10 14 | D35 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.4− |
| 2003 01 04 | 704 | 0.2− | 0.4+ | 2006 10 14 | D35 | 0.5+ | 0.1+ | 2006 11 17 | 703 | (0.8− | 1.5−) |
| 2003 01 04 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.5− | 2006 11 17 | 703 | 1.1+ | 0.7− |
| 2003 01 04 | 704 | 1.1− | 0.6− | 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 17 | 703 | 0.3− | 1.1− |
| 2003 01 04 | 704 | 0.8− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2003 01 04 | 704 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.7− | 0.6− | 2006 11 19 | 704 | (1.3+ | 2.3+) |
| 2003 01 04 | 704 | 0.9− | 0.3− | 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 1.1− |
| 2003 01 04 | 704 | 1.2− | 0.5+ | 2006 10 18 | 691 | 0.6+ | 0.7+ | 2006 11 19 | 704 | (1.9− | 0.3−) |
| 2003 01 04 | 704 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 20 | 704 | 1.0− | 0.5+ |
| 2003 01 04 | 704 | 0.7− | 0.1− | 2006 10 22 | 704 | 0.3− | 0.4+ | 2006 11 20 | 704 | 0.7+ | 0.8+ |
| 2003 01 04 | 704 | 0.4− | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.7− | 1.3+ |
| 2003 01 08 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 704 | 1.2− | 1.0− | 2006 11 20 | 704 | 0.9− | 1.1− |
| 2003 01 08 | 704 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.4+ |

## 2002 $YX_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.90116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21347316 | $\omega$ | 328.83271 | | +0.32624202 | −0.93220947 | |
| $a$ | 2.7727275 | $\Omega$ | 101.73012 | | +0.89689281 | +0.25290137 | |
| $e$ | 0.2182860 | $i$ | 9.20874 | | +0.29857901 | +0.25889457 | |
| $P$ | 4.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.6+ | 0.1+ | 2003 01 04 | 704 | 0.1− | 0.2− | 2006 08 30 | 699 | 1.1− | 0.1+ |
| 2002 11 11 | 704 | 0.3+ | 0.2+ | 2003 01 04 | 704 | 0.7− | 0.3− | 2006 08 30 | 699 | 0.2− | 0.4+ |
| 2002 11 11 | 704 | 0.3+ | 0.8+ | 2003 01 04 | 704 | 1.3+ | 0.6+ | 2006 08 30 | 699 | 0.3+ | 0.6− |
| 2002 11 11 | 704 | 0.5− | 0.3+ | 2003 01 08 | 704 | (1.7+ | 0.8−) | 2006 09 20 | 703 | 0.5+ | 0.9+ |
| 2002 12 11 | 704 | 0.4+ | 0.4− | 2003 01 08 | 704 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.8− | 2003 01 08 | 704 | 0.7− | 0.3+ | 2006 09 20 | 703 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 1.2+ | 0.3+ |
| 2002 12 11 | 704 | 0.1− | 1.0− | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2002 12 11 | 704 | 0.5− | 0.9− | 2003 01 31 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2002 12 31 | 704 | 0.2+ | 0.2+ | 2003 01 31 | 704 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.5− | 0.3+ |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 704 | 0.0 | 0.8− | 2006 09 26 | 703 | 0.8− | 0.4− |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2003 01 31 | 704 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2002 12 31 | 704 | 0.4− | 0.2+ | 2003 02 03 | 704 | 0.5+ | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.2− | 0.0 | 2003 02 03 | 704 | 0.7− | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.1+ |
| 2003 01 04 | 704 | 0.0 | 0.0 | 2003 02 03 | 704 | 1.0− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2003 01 04 | 704 | 0.0 | 0.0 | 2006 08 30 | 699 | (2.0+ | 1.6+) | | | | |

## 2002 $YM_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.35744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22180905 | $\omega$ | 75.99350 | | +0.79544244 | −0.60600197 | |
| $a$ | 2.7028164 | $\Omega$ | 321.30702 | | +0.55241777 | +0.72893651 | |
| $e$ | 0.2515665 | $i$ | 0.52599 | | +0.24921063 | +0.31845435 | |
| $P$ | 4.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.2+ | 2006 09 16 | 699 | 0.8+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.8− | 1.0+ | 2006 09 26 | 704 | 0.3− | 0.3+ |
| 2002 12 05 | 704 | 0.6− | 0.0 | 2006 09 17 | 704 | 0.3− | 0.3− | 2006 09 26 | 704 | 0.4− | 0.5+ |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 09 17 | 704 | 0.2− | 0.2− | 2006 09 27 | 704 | 1.3+ | 0.1+ |
| 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.3− | 0.6− | 2006 09 27 | 704 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 1.0− | 0.3+ | 2006 09 17 | 704 | 0.8− | 0.4− | 2006 09 27 | 704 | 0.8+ | 0.3+ |
| 2002 12 31 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.5− | 0.5+ | 2006 09 27 | 704 | 0.4+ | 0.3− |
| 2002 12 31 | 704 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.4+ | 0.1− | 2006 09 27 | 704 | 0.5− | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 09 30 | 704 | (1.6+ | 0.2−) |
| 2003 01 04 | 704 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.3+ | 0.6+ |
| 2003 01 04 | 704 | 0.7+ | 0.6− | 2006 09 20 | 704 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.7+ | 1.1+ |
| 2003 01 04 | 704 | 0.5+ | 1.1− | 2006 09 20 | 704 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 2003 01 04 | 704 | 0.5+ | 0.5− | 2006 09 20 | 704 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.4− | 0.4− |
| 2003 01 08 | 704 | 0.3+ | 0.3− | 2006 09 20 | 704 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2003 01 08 | 704 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 2003 01 08 | 704 | 0.0 | 0.3− | 2006 09 23 | 691 | 0.6+ | 0.9+ | 2006 10 17 | 106 | 0.0 | 0.8+ |
| 2003 01 08 | 704 | 0.7− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 17 | 106 | 0.0 | 0.0 |
| 2003 01 08 | 704 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 17 | 106 | 0.1+ | 0.5+ |
| 2006 09 01 | 704 | 0.5− | 0.4+ | 2006 09 24 | 106 | 0.4− | 0.5− | 2006 10 17 | 106 | 0.0 | 0.2− |
| 2006 09 01 | 704 | 0.8− | 0.2+ | 2006 09 24 | 106 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2006 09 01 | 704 | 0.3− | 0.9+ | 2006 09 24 | 106 | 0.6+ | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2006 09 01 | 704 | 0.1− | 0.3− | 2006 09 24 | 106 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.5− |
| 2006 09 12 | 703 | 0.3− | 0.2− | 2006 09 25 | 699 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.7+ |
| 2006 09 12 | 703 | 0.2− | 0.5− | 2006 09 25 | 699 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.8− |
| 2006 09 12 | 703 | 0.6− | 0.8− | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | 1.3+ | 0.7+ |
| 2006 09 12 | 703 | 0.2− | 0.8− | 2006 09 25 | G96 | 0.7+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2006 09 13 | 644 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.8+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2006 09 13 | 644 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2006 09 13 | 644 | 0.2+ | 0.3− | 2006 09 25 | 699 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2006 09 16 | 699 | 0.5+ | 0.4− | 2006 09 26 | 704 | 0.2− | 0.2− | | | | |

## 2002 $YQ_{19}$ = 2006 $TE_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.03285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22810323 | $\omega$ | 9.34009 | | −0.07033635 | −0.99586329 | |
| $a$ | 2.6528647 | $\Omega$ | 84.70871 | | +0.91143981 | −0.08759473 | |
| $e$ | 0.1108218 | $i$ | 3.31188 | | +0.40537669 | +0.02415515 | |
| $P$ | 4.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2001 08 24 | 644 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 08 24 | 644 | 0.3− | 0.5+ | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.4+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (3.1− | 2.4−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.2+ | 1.2− |
| 2002 12 05 | 704 | 0.6− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2002 12 31 | 704 | 0.2+ | 1.1+ | 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2002 12 31 | 704 | 0.6+ | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 12 31 | 704 | 1.4− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 12 31 | 704 | (0.5+ | 1.9+) | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2002 12 31 | 704 | 0.7− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2003 01 04 | 704 | 0.5+ | 0.8− | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.7− |
| 2003 01 04 | 704 | 0.1− | 0.6+ | 2006 10 27 | 691 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 2003 01 04 | 704 | 0.5+ | 0.3− | 2006 10 27 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2003 01 04 | 704 | 0.7+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2005 07 07 | 691 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.2− |
| 2005 07 07 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.6+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2005 07 07 | 691 | 0.4+ | 0.1− | 2006 11 08 | 644 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.7− | 0.7− |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.0 |
| 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |

**2002 YW$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.25910 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27487610 | $\omega$ | 43.12654 | | −0.74235526 | | −0.52458883 |
| $a$ | 2.3426715 | $\Omega$ | 100.55560 | | +0.43894212 | | −0.85076929 |
| $e$ | 0.2287448 | $i$ | 25.08524 | | +0.50620004 | | −0.03159383 |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 23 | 691 | 0.1+ | 0.2+ | 2003 01 04 | 704 | 0.8+ | 0.5+ | 2003 02 01 | 704 | 0.5− | 0.3+ |
| 1995 11 23 | 691 | 0.4+ | 0.1+ | 2003 01 04 | 704 | 0.7+ | 0.2+ | 2003 02 01 | 704 | 0.4− | 0.2− |
| 1995 11 23 | 691 | 0.5− | 0.5− | 2003 01 04 | 704 | 1.8+ | 0.2− | 2003 02 01 | 704 | 0.8− | 0.1− |
| 2002 12 31 | 704 | 0.7− | 0.2+ | 2003 01 08 | 704 | 1.0− | 0.6− | 2003 02 04 | 704 | 1.0+ | 0.1− |
| 2002 12 31 | 704 | 0.3− | 0.1+ | 2003 01 08 | 704 | 0.5− | 0.5− | 2003 02 04 | 704 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 1.1− | 0.1− | 2003 01 08 | 704 | 0.1− | 0.4− | 2003 02 04 | 704 | 0.1+ | 0.6+ |
| 2002 12 31 | 704 | 0.2− | 0.4+ | 2003 01 08 | 704 | 0.6− | 0.6− | 2003 02 04 | 704 | 0.9+ | 0.5− |
| 2002 12 31 | 704 | 0.2− | 0.4+ | 2003 01 08 | 704 | 0.0 | 0.6− | 2006 10 27 | 703 | 0.5− | 0.8− |
| 2003 01 04 | 704 | 1.1+ | 0.4+ | 2003 02 01 | 704 | 0.4− | 0.5+ | 2006 10 27 | 703 | 0.7+ | 0.3+ |
| 2003 01 04 | 704 | 1.0+ | 0.2+ | 2003 02 01 | 704 | 0.9− | 0.6+ | 2006 10 27 | 703 | 0.6− | 0.3+ |

**2002 YE$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.06505 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21757001 | $\omega$ | 130.21552 | | +0.81968100 | | −0.55532862 |
| $a$ | 2.7378104 | $\Omega$ | 263.96256 | | +0.47324261 | | +0.79468353 |
| $e$ | 0.1449113 | $i$ | 8.12067 | | +0.32274525 | | +0.24512898 |
| $P$ | 4.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | (1.9+ | 0.0 ) | 2003 01 04 | 704 | 0.5− | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.6+ |
| 2002 12 05 | 704 | 0.7− | 1.0− | 2003 01 04 | 704 | 0.3− | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 09 01 | 224 | (2.1− | 0.2−) | 2006 09 27 | 703 | 1.0+ | 0.7− |
| 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 09 01 | 224 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 09 01 | 224 | (2.6− | 1.0−) | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.4− | 2006 10 13 | 941 | 0.7+ | 0.1+ |
| 2002 12 10 | 704 | 0.5− | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.4+ | 2006 10 13 | 941 | 0.3+ | 0.1− |
| 2002 12 31 | 704 | 0.3+ | 0.5− | 2006 09 16 | 703 | 0.3+ | 0.4− | 2006 10 13 | 941 | 0.2+ | 0.2− |
| 2002 12 31 | 704 | (1.8+ | 1.5+) | 2006 09 19 | 699 | 0.2− | 1.0+ | 2006 10 17 | 703 | 0.4− | 0.5− |
| 2002 12 31 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 1.1+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 1.1− |
| 2002 12 31 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 699 | 1.1+ | 0.8+ | 2006 10 17 | 703 | 0.6− | 0.7− |
| 2003 01 04 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 1.4− | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2003 01 04 | 704 | 0.4+ | 0.1− | 2006 09 27 | 703 | (0.7+ | 2.2+) | | | | |

**2002 YH$_{21}$ = 2006 SM$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.22649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22010695 | $\omega$ | 336.98450 | | +0.40648069 | | −0.88516615 |
| $a$ | 2.7167325 | $\Omega$ | 88.39309 | | +0.86954315 | | +0.29872236 |
| $e$ | 0.1694439 | $i$ | 13.09011 | | +0.28047846 | | +0.35671534 |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.0 | 0.5− | 2003 01 04 | 704 | 0.9+ | 0.1− | 2006 09 22 | 703 | 0.1− | 0.6+ |
| 2002 12 11 | 704 | 0.7+ | 0.2− | 2003 01 04 | 704 | 0.2− | 0.5− | 2006 09 27 | 703 | 0.4+ | 0.3+ |
| 2002 12 11 | 704 | 0.6− | 0.6+ | 2003 01 08 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.6− | 0.8− |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2003 01 08 | 704 | 0.1+ | 1.0+ | 2006 09 27 | 703 | 0.0 | 1.0− |
| 2002 12 31 | 704 | 0.3− | 0.0 | 2003 01 08 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 703 | 0.3− | 0.3− |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2003 01 08 | 704 | 0.6− | 0.3− | 2006 09 27 | 703 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.2− | 0.3− | 2006 09 22 | 703 | 0.2− | 0.6− | 2006 09 27 | 703 | 0.5+ | 0.7+ |
| 2002 12 31 | 704 | 0.2+ | 0.1− | 2006 09 22 | 703 | 0.1+ | 0.7− | 2006 09 27 | 703 | 0.8+ | 1.5+ |
| 2003 01 04 | 704 | 0.7− | 0.6− | 2006 09 22 | 703 | 0.5− | 0.6− | 2006 09 27 | 703 | 0.4− | 0.8+ |

**2002 YH$_{22}$ = 2006 TP$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.47045 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23147749 | $\omega$ | 71.27008 | | −0.65316227 | | −0.75667333 |
| $a$ | 2.6270209 | $\Omega$ | 59.54466 | | +0.68158218 | | −0.60401796 |
| $e$ | 0.2566971 | $i$ | 1.90892 | | +0.32988602 | | −0.25021548 |
| $P$ | 4.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.9− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 12 31 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2002 12 31 | 704 | 0.4+ | 0.8− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2003 01 04 | 704 | 0.3− | 0.8− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.7− | 0.2− |
| 2003 01 04 | 704 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | (1.4− | 5.6+) |
| 2003 01 04 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2003 01 05 | 704 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 1.3+ |
| 2003 01 05 | 704 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2003 01 05 | 704 | 0.3+ | 1.1+ | 2006 10 20 | 691 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2003 01 08 | 704 | 0.8+ | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2003 01 08 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2003 01 08 | 704 | 0.3− | 0.6− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | | | |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1− | 0.3+ | | | | |

**2002 YM$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.94709 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21115215 | $\omega$ | 50.20754 | | +0.76877090 | | +0.60965417 |
| $a$ | 2.7930093 | $\Omega$ | 271.35124 | | −0.62977789 | | +0.66916352 |
| $e$ | 0.0812624 | $i$ | 11.14074 | | −0.11122555 | | +0.42490232 |
| $P$ | 4.67 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.3+ | 0.2− | 2003 01 04 | 704 | 1.0+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2001 08 22 | 704 | 0.0 | 0.1− | 2003 01 04 | 704 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2001 08 22 | 704 | 0.4+ | 0.0 | 2003 01 04 | 704 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2001 08 22 | 704 | 0.6+ | 0.4+ | 2003 01 04 | 704 | 0.6+ | 0.7− | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 2001 08 22 | 704 | 0.4+ | 1.0− | 2003 01 08 | 704 | 0.0 | 1.3+ | 2006 10 27 | 703 | 0.9+ | 0.2+ |
| 2001 09 10 | 704 | 0.2− | 0.1+ | 2003 01 08 | 704 | 0.7− | 0.1+ | 2006 10 27 | 703 | 0.7+ | 0.1+ |
| 2001 09 10 | 704 | 0.4− | 0.2+ | 2003 01 08 | 704 | 0.6− | 0.2− | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2001 09 10 | 704 | 0.2− | 0.2+ | 2004 03 17 | 703 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.7+ |
| 2001 09 10 | 704 | 0.5− | 0.9+ | 2004 03 17 | 703 | 0.9+ | 1.0+ | 2006 11 15 | 703 | 0.4+ | 0.4+ |
| 2001 09 10 | 704 | 0.0 | 0.1+ | 2004 03 17 | 703 | 0.3+ | 0.8+ | 2006 11 15 | 703 | 0.7+ | 1.2+ |
| 2001 09 23 | 608 | 0.1+ | 0.3− | 2004 03 17 | 703 | 0.1+ | 1.2+ | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2001 09 23 | 608 | 0.2− | 0.4− | 2006 09 28 | 703 | 0.5+ | 0.4− | 2006 11 15 | 703 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 608 | 0.3− | 0.2− | 2006 09 28 | 703 | 0.5− | 0.5− | 2006 11 15 | 703 | 0.7+ | 0.3+ |
| 2001 09 29 | 644 | 0.3− | 1.0+ | 2006 09 28 | 703 | 0.0 | 0.4− | 2006 11 15 | 703 | 0.3− | 0.4+ |
| 2001 09 29 | 644 | 0.2− | 1.0+ | 2006 09 28 | 703 | 0.5− | 0.7+ | 2006 11 22 | 703 | 0.7− | 0.3− |
| 2001 09 29 | 644 | 0.6− | 1.2+ | 2006 10 19 | 703 | 0.7− | 0.1− | 2006 11 22 | 703 | 0.2− | 1.3− |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.9− | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.3− | 2006 11 22 | 703 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 1.1− | 1.4− | 2006 10 19 | 703 | 0.6− | 0.2− | | | | |

**2002 YJ$_{23}$ = 2005 TR$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.61576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27001293 | $\omega$ | 285.31513 | | +0.77176694 | | −0.62504397 |
| $a$ | 2.3707168 | $\Omega$ | 113.51581 | | +0.62136128 | | +0.70209957 |
| $e$ | 0.1003168 | $i$ | 7.33259 | | +0.13522554 | | +0.34113959 |
| $P$ | 3.65 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.3+ | 0.4− | 2003 01 08 | 704 | 0.3− | 0.3+ | 2005 10 03 | 703 | 1.0− | 0.5− |
| 2002 12 31 | 704 | 0.6− | 0.3− | 2003 01 08 | 704 | 0.1+ | 1.0+ | 2005 10 03 | 703 | 0.5− | 0.1+ |
| 2002 12 31 | 704 | 0.0 | 0.2− | 2003 01 08 | 704 | 0.1− | 0.1+ | 2005 10 07 | 699 | 0.4+ | 0.9− |
| 2002 12 31 | 704 | 0.2− | 0.3− | 2004 04 26 | 691 | 0.0 | 0.1− | 2005 10 07 | 699 | 0.1− | 1.0+ |
| 2003 01 04 | 704 | 0.5+ | 0.5− | 2004 04 26 | 691 | 0.0 | 0.1+ | 2005 10 07 | 699 | 0.9+ | 0.7− |
| 2003 01 04 | 704 | 0.2+ | 0.4+ | 2004 04 26 | 691 | 0.0 | 0.0 | 2005 10 07 | 699 | 1.0+ | 1.0+ |
| 2003 01 04 | 704 | 0.5+ | 0.8− | 2005 10 03 | 703 | 0.6− | 0.2+ | | | | |
| 2003 01 08 | 704 | 0.5− | 0.8+ | 2005 10 03 | 703 | (0.9+ | 1.7+) | | | | |

**2002 YG$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.59292 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23885918 | $\omega$ | 77.01462 | | −0.98296794 | | −0.15034720 |
| $a$ | 2.5726148 | $\Omega$ | 94.26519 | | +0.09839458 | | −0.91626279 |
| $e$ | 0.1463422 | $i$ | 6.08366 | | +0.15521769 | | −0.37129262 |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.5− | 2002 12 31 | 704 | 1.0+ | 0.1+ | 2003 01 08 | 704 | 0.9+ | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.2+ | 2003 01 04 | 704 | 0.3− | 0.2+ | 2003 01 08 | 704 | 0.6+ | 0.2+ |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2003 01 04 | 704 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2003 01 04 | 704 | 0.7− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.5− |
| 2002 12 31 | 704 | 0.1+ | 0.4+ | 2003 01 04 | 704 | 1.1− | 1.3− | 2006 11 10 | 691 | 0.1− | 0.5+ |
| 2002 12 31 | 704 | 0.3+ | 0.5+ | 2003 01 08 | 704 | 1.0− | 0.3− | 2006 11 16 | D35 | 0.2+ | 0.7− |
| 2002 12 31 | 704 | 0.6+ | 0.7+ | 2003 01 08 | 704 | 0.2− | 0.2− | 2006 11 16 | D35 | 0.2+ | 0.5− |
| 2002 12 31 | 704 | 0.1+ | 0.7+ | 2003 01 08 | 704 | 0.2+ | 0.2− | 2006 11 16 | D35 | 0.0 | 0.2− |

**2002 YV$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.23192 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21674091 | $\omega$ | 72.93872 | | −0.95937054 | | −0.07518841 |
| $a$ | 2.7447879 | $\Omega$ | 102.09858 | | −0.01914071 | | −0.94427523 |
| $e$ | 0.2496900 | $i$ | 16.14827 | | +0.28149919 | | −0.32045435 |
| $P$ | 4.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 15 | 033 | 0.4+ | 0.7− | 2003 01 04 | 704 | 0.0 | 0.5− | 2003 02 01 | 704 | 0.2+ | 0.1+ |
| 1994 01 15 | 033 | 0.4− | 0.4− | 2003 01 04 | 704 | 0.4+ | 0.1+ | 2003 02 04 | 704 | 0.8+ | 0.4+ |
| 2002 12 05 | 704 | 1.4+ | 1.3+ | 2003 01 04 | 704 | 0.6+ | 0.0 | 2003 02 04 | 704 | 0.1+ | 1.1+ |
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2003 01 08 | 704 | 0.1− | 0.8+ | 2003 02 04 | 704 | 0.1+ | 0.5+ |
| 2002 12 05 | 704 | 0.9+ | 0.6+ | 2003 01 08 | 704 | 0.3+ | 0.5+ | 2003 02 04 | 704 | 1.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.4− | 0.7+ | 2003 01 08 | 704 | 0.3− | 0.4+ | 2003 02 26 | 704 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.7− | 1.1− | 2003 01 08 | 704 | 0.4+ | 0.4+ | 2003 02 26 | 704 | 0.5− | 0.5− |
| 2002 12 06 | 645 | 0.1− | 0.1− | 2003 01 09 | 704 | 0.1+ | 0.5+ | 2003 02 26 | 704 | 0.5− | 1.4− |
| 2002 12 06 | 645 | 0.1− | 0.1− | 2003 01 09 | 704 | 0.8+ | 0.5+ | 2003 02 26 | 704 | 1.0− | 0.2+ |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2003 01 09 | 704 | 1.0+ | 0.4− | 2003 02 26 | 704 | 1.2− | 0.4− |
| 2002 12 31 | 704 | 0.3− | 0.0 | 2003 01 09 | 704 | 0.7+ | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.3− |
| 2002 12 31 | 704 | 0.4− | 0.3+ | 2003 02 01 | 704 | 0.5+ | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.9− |
| 2002 12 31 | 704 | 0.2− | 0.1− | 2003 02 01 | 704 | 0.3− | 0.2− | 2006 11 19 | 703 | 0.5− | 0.9+ |
| 2002 12 31 | 704 | 0.6− | 0.5− | 2003 02 01 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 703 | 0.4+ | 0.1+ |
| 2003 01 04 | 704 | 0.0 | 0.5− | 2003 02 01 | 704 | 0.5− | 0.1− | | | | |

**2002 YT$_{27}$ = 2006 UB$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.68294 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22494313 | $\omega$ | 306.40360 | | +0.56288178 | | −0.79231657 |
| $a$ | 2.6776525 | $\Omega$ | 107.67684 | | +0.81515400 | | +0.48504730 |
| $e$ | 0.2482310 | $i$ | 14.30200 | | +0.13670426 | | +0.37008589 |
| $P$ | 4.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 27 | 699 | 0.0 | 0.3+ | 2003 01 08 | 704 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.3− | 0.5− |
| 2002 12 27 | 699 | 0.6− | 0.3− | 2003 01 08 | 704 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 2002 12 27 | 699 | 0.4+ | 0.5− | 2003 01 09 | 704 | 0.5− | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.1− |
| 2002 12 27 | 699 | 0.1− | 0.5+ | 2003 01 09 | 704 | 0.8+ | 0.1+ | 2006 10 31 | 703 | 0.4+ | 0.3+ |
| 2002 12 28 | 699 | 0.4− | 1.1− | 2003 01 09 | 704 | 0.5+ | 0.4− | 2006 10 31 | 703 | 0.4+ | 0.7− |
| 2002 12 28 | 699 | 0.9− | 0.1+ | 2003 01 09 | 704 | 0.6+ | 0.4+ | 2006 10 31 | 703 | 0.4+ | 0.4− |
| 2002 12 28 | 699 | 1.4− | 0.2− | 2003 01 10 | 704 | 0.2− | 0.0 | 2006 10 31 | 703 | 0.5+ | 0.3− |
| 2002 12 28 | 699 | (0.3+ | 2.6+) | 2003 01 10 | 704 | 0.3− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.8+ | 1.1+ | 2003 01 10 | 704 | 0.3− | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.6+ | 2003 01 10 | 704 | 0.1− | 0.3− | 2006 11 06 | 644 | 0.1− | 0.3+ |
| 2002 12 31 | 704 | 0.7− | 0.1+ | 2003 01 10 | 704 | 0.6+ | 0.3+ | 2006 11 18 | 703 | 0.6− | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2003 01 10 | 704 | 0.3+ | 0.4− | 2006 11 18 | 703 | 0.9− | 0.9+ |
| 2002 12 31 | 704 | 0.0 | 0.0 | 2003 01 10 | 704 | 0.1− | 0.1− | 2006 11 18 | 703 | 0.6− | 0.2− |
| 2003 01 04 | 704 | 0.1+ | 0.5+ | 2003 01 10 | 704 | 0.4+ | 0.1− | 2006 11 18 | 703 | 0.3+ | 1.0− |
| 2003 01 04 | 704 | 1.3+ | 0.3+ | 2003 01 10 | 704 | 0.2− | 1.1− | 2006 11 24 | 703 | 0.8− | 0.2+ |
| 2003 01 04 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 703 | 0.0 | 0.6+ | 2006 11 24 | 703 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 703 | 0.2+ | 0.8− | 2006 11 24 | 703 | 0.6+ | 1.1+ |
| 2003 01 08 | 704 | 0.2− | 0.6− | 2006 09 25 | 703 | 0.6− | 0.2− | 2006 11 24 | 703 | 0.1− | 0.1− |
| 2003 01 08 | 704 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.6+ | 0.6+ | | | | |

**2002 YW$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.18416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22304329 | $\omega$ | 314.17909 | | +0.45838006 | | −0.85670355 |
| $a$ | 2.6928363 | $\Omega$ | 107.15461 | | +0.86960181 | | +0.37737055 |
| $e$ | 0.2443904 | $i$ | 14.33218 | | +0.18352223 | | +0.35163972 |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.5− | 2003 01 09 | 704 | (1.7+ | 0.2+) | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2003 01 09 | 704 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.3− | 0.5− | 2003 01 09 | 704 | (0.9− | 1.6−) | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 1.1+ | 2003 01 09 | 704 | 0.8+ | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2003 02 01 | 704 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2002 12 10 | 644 | 0.6+ | 0.1+ | 2003 02 01 | 704 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.6− |
| 2002 12 10 | 644 | 0.0 | 0.2+ | 2003 02 01 | 704 | 0.0 | 1.1+ | 2006 10 31 | 703 | 0.7− | 0.5− |
| 2002 12 10 | 644 | 0.3+ | 0.1− | 2003 02 01 | 704 | 0.4− | 0.7+ | 2006 10 31 | 703 | (2.6+ | 0.2−) |
| 2002 12 31 | 704 | 0.2+ | 0.3+ | 2003 02 01 | 704 | 0.2+ | 0.1− | 2006 10 31 | 703 | 1.0+ | 0.1+ |
| 2002 12 31 | 704 | 0.1− | 0.9− | 2004 03 28 | 691 | 0.3− | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.5− | 0.3− | 2004 03 28 | 691 | 0.3+ | 0.0 | 2006 11 06 | 644 | 0.6+ | 0.1+ |
| 2002 12 31 | 704 | 0.5+ | 0.4− | 2004 03 28 | 691 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.5+ | 0.5− |
| 2003 01 04 | 704 | 0.3+ | 0.5− | 2006 09 25 | 703 | 0.3− | 0.4+ | 2006 11 18 | 703 | 0.6+ | 0.2+ |
| 2003 01 04 | 704 | 0.1+ | 0.4− | 2006 09 25 | 703 | 0.2+ | 0.5+ | 2006 11 18 | 703 | 0.4− | 0.2+ |
| 2003 01 04 | 704 | 0.3− | 0.8− | 2006 09 25 | 703 | 0.6+ | 0.7− | 2006 11 18 | 703 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.2− | 0.4+ | 2006 09 25 | 703 | 0.4− | 0.5− | 2006 11 18 | 703 | 0.7− | 0.4− |
| 2003 01 08 | 704 | 0.2− | 0.4− | 2006 10 04 | 703 | 0.2− | 0.8− | 2006 11 24 | 703 | 0.6− | 0.2+ |
| 2003 01 08 | 704 | 0.0 | 0.1− | 2006 10 04 | 703 | 0.0 | 0.4+ | 2006 11 24 | 703 | 0.5− | 1.0+ |
| 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 10 04 | 703 | 0.4+ | 0.3+ | 2006 11 24 | 703 | 0.4− | 0.1+ |
| 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 10 04 | 703 | 0.3− | 0.6+ | 2006 11 24 | 703 | 0.3− | 0.6+ |
| 2003 01 08 | 704 | 0.5− | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.4+ | | | | |

**2002 YS$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.86669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22878515 | $\omega$ | 133.78666 | | +0.02786365 | −0.99692971 | |
| $a$ | 2.6475906 | $\Omega$ | 314.46103 | | +0.88516618 | +0.05861973 | |
| $e$ | 0.2790354 | $i$ | 5.88470 | | +0.46443994 | −0.05191222 | |
| $P$ | 4.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.4+ | 0.1+ | 2003 01 27 | 699 | 0.4+ | 0.4+ | 2003 02 21 | 699 | 0.1+ | 1.2− |
| 2002 12 31 | 704 | 0.0 | 0.8− | 2003 01 27 | 704 | 0.1+ | 0.2− | 2003 02 21 | 644 | 0.4+ | 0.0 |
| 2002 12 31 | 704 | 0.2+ | 0.2+ | 2003 01 27 | 699 | 0.4+ | 0.5− | 2003 02 21 | 699 | 0.5− | 0.4+ |
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2003 01 27 | 704 | 0.0 | 0.2− | 2003 02 21 | 699 | 0.4+ | 1.0− |
| 2003 01 04 | 704 | 0.3− | 0.4+ | 2003 01 27 | 699 | 0.8+ | 0.1+ | 2003 02 21 | 699 | 0.7+ | 0.2− |
| 2003 01 04 | 704 | 0.0 | 0.3+ | 2003 01 27 | 699 | 0.4+ | 0.3+ | 2003 02 21 | 049 | 0.6− | 0.2+ |
| 2003 01 04 | 704 | 0.6− | 0.8+ | 2003 01 28 | 608 | 0.7+ | 0.0 | 2003 02 21 | 049 | 1.1− | 0.2+ |
| 2003 01 04 | 704 | 0.9− | 0.2− | 2003 01 28 | 608 | 0.6+ | 0.2− | 2003 02 21 | 049 | 0.9− | 0.2+ |
| 2003 01 08 | 704 | 1.0+ | 0.7− | 2003 01 28 | 608 | 0.2+ | 0.2− | 2003 03 06 | 644 | 0.3− | 0.1+ |
| 2003 01 08 | 704 | 0.6+ | 0.6− | 2003 01 30 | 699 | 0.5− | 0.1− | 2003 03 06 | 644 | 0.0 | 0.4+ |
| 2003 01 08 | 704 | (2.3+ | 0.8−) | 2003 01 30 | 699 | 0.5− | 0.2+ | 2003 03 06 | 644 | 0.1+ | 0.1− |
| 2003 01 08 | 608 | 0.5− | 0.0 | 2003 01 30 | 699 | 0.3− | 0.3− | 2006 11 13 | 644 | 0.6+ | 0.4− |
| 2003 01 08 | 608 | 0.3− | 0.3+ | 2003 01 30 | 699 | 0.4− | 0.5− | 2006 11 13 | 644 | 0.5+ | 0.1− |
| 2003 01 08 | 608 | 0.2− | 0.3+ | 2003 02 03 | 704 | 0.1+ | 0.5+ | 2006 11 13 | 644 | 0.5+ | 0.2+ |
| 2003 01 17 | 644 | 0.3− | 0.2+ | 2003 02 03 | 704 | 0.5− | 0.5+ | 2006 11 15 | 704 | 0.5− | 0.9+ |
| 2003 01 17 | 644 | 0.4+ | 0.3+ | 2003 02 03 | 704 | 0.9− | 0.6− | 2006 11 15 | 704 | 0.6− | 1.5− |
| 2003 01 17 | 644 | 0.6+ | 0.3+ | 2003 02 03 | 704 | 0.4+ | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.3+ |
| 2003 01 27 | 704 | 0.1− | 0.0 | 2003 02 03 | 704 | 0.3− | 0.3+ | 2006 11 15 | 704 | 0.8− | 0.4+ |
| 2003 01 27 | 704 | 0.3− | 0.2+ | 2003 02 21 | 644 | 0.5+ | 0.2+ | | | | |
| 2003 01 27 | 704 | 0.0 | 0.0 | 2003 02 21 | 644 | 0.2+ | 0.0 | | | | |

**2002 YX$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.99678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22902482 | $\omega$ | 349.38953 | | −0.32308021 | −0.94295367 | |
| $a$ | 2.6457431 | $\Omega$ | 119.41837 | | +0.87489607 | −0.32997309 | |
| $e$ | 0.2234554 | $i$ | 5.29332 | | +0.36079916 | −0.04422825 | |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 333 | 1.3− | 0.3− | 2003 01 30 | 644 | 0.3− | 0.3+ | 2003 02 08 | 704 | 0.1− | 0.4+ |
| 2002 12 14 | 333 | 0.7− | 0.6− | 2003 01 30 | 699 | 0.8+ | 0.0 | 2003 02 08 | 704 | 0.1− | 0.1+ |
| 2002 12 27 | 699 | 0.9− | 1.0+ | 2003 01 30 | 699 | 1.0+ | 0.1− | 2003 02 08 | 704 | 0.5− | 1.0− |
| 2002 12 27 | 699 | 0.3+ | 0.0 | 2003 01 30 | 699 | 0.0 | 0.2+ | 2003 02 23 | 587 | 0.3− | 0.2− |
| 2002 12 27 | 699 | (1.7− | 0.1+) | 2003 01 30 | 644 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.4− | 0.0 |
| 2002 12 27 | 699 | 0.0 | 0.0 | 2003 01 30 | 644 | 0.4− | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.6+ | 0.3+ | 2003 01 31 | 704 | 0.7− | 0.6− | 2006 11 16 | 691 | 0.4+ | 0.1− |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2003 01 31 | 704 | 0.5− | 0.5− | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.3+ | 1.1+ | 2003 01 31 | 704 | 0.7− | 0.5− | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.5+ | 0.2+ | 2003 01 31 | 704 | 0.5− | 0.2− | 2006 11 17 | 644 | 0.2+ | 0.1+ |
| 2003 01 04 | 704 | 0.7+ | 0.6+ | 2003 01 31 | 704 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2003 01 04 | 704 | 0.4+ | 0.5+ | 2003 02 02 | 608 | (0.4+ | 2.0−) | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.3− | 1.2+ | 2003 02 02 | 608 | 0.1+ | 1.3− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 0.8+ | 0.3− | 2003 02 02 | 608 | (0.2+ | 1.6−) | 2006 11 20 | 704 | 0.4+ | 0.5− |
| 2003 01 08 | 704 | 1.0+ | 1.0− | 2003 02 02 | 608 | (0.3+ | 2.0−) | 2006 11 20 | 704 | 0.3+ | 0.1− |
| 2003 01 08 | 704 | 0.8+ | 0.6+ | 2003 02 02 | 608 | 1.4+ | 1.4− | 2006 11 20 | 704 | 0.5− | 0.2− |
| 2003 01 08 | 704 | 0.5+ | 0.4− | 2003 02 02 | 608 | (1.3+ | 1.5−) | 2006 11 24 | 691 | 0.2− | 0.2+ |
| 2003 01 08 | 704 | 0.3+ | 0.1− | 2003 02 03 | 704 | 0.9+ | 0.0 | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2003 01 14 | 608 | 0.9− | 0.2+ | 2003 02 03 | 704 | 1.3+ | 0.3+ | 2006 11 24 | 691 | 0.2− | 0.2+ |
| 2003 01 14 | 608 | 0.5− | 0.6+ | 2003 02 03 | 704 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2003 01 14 | 608 | 1.0− | 0.7+ | 2003 02 03 | 704 | 0.7+ | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2003 01 28 | 704 | 1.1− | 0.4− | 2003 02 03 | 704 | 0.8+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2003 01 28 | 704 | 1.0− | 0.2− | 2003 02 07 | 704 | 0.1− | 0.8+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2003 01 28 | 704 | 0.5− | 0.5− | 2003 02 07 | 704 | 1.0− | 0.2+ | 2006 11 28 | 704 | 0.9+ | 0.7+ |
| 2003 01 28 | 704 | 0.2− | 0.7− | 2003 02 07 | 704 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.3+ | 1.4− |
| 2003 01 28 | 704 | 0.8− | 0.4− | 2003 02 07 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4− | 0.4− |
| 2003 01 30 | 699 | 0.6+ | 0.8− | 2003 02 08 | 704 | 0.9+ | 0.6+ | 2006 11 28 | 704 | 0.8+ | 0.2+ |

**2002 YE$_{32}$ = 2006 RH$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.79791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22515982 | $\omega$ | 244.62130 | | +0.39633913 | −0.91806685 | |
| $a$ | 2.6759344 | $\Omega$ | 182.08305 | | +0.90277078 | +0.39134519 | |
| $e$ | 0.2730345 | $i$ | 13.16630 | | +0.16709341 | +0.06326292 | |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 30 | 608 | 0.2+ | 0.7− | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2002 12 30 | 608 | 0.2+ | 0.7− | 2006 09 17 | 704 | 0.2− | 0.5− | 2006 09 25 | 699 | 0.3− | 0.3− |
| 2002 12 30 | 608 | 0.6+ | 0.2− | 2006 09 17 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 1.1+ | 0.4+ |
| 2003 01 02 | 704 | 0.0 | 0.6− | 2006 09 17 | 704 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.2+ |
| 2003 01 02 | 704 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.6− | 2006 09 27 | 704 | 1.0+ | 0.5− |
| 2003 01 02 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.6+ | 2006 09 27 | 704 | 0.1− | 0.3− |
| 2003 01 02 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.5− | 2006 09 27 | 704 | 0.6− | 0.4− |
| 2003 01 02 | 704 | 0.1+ | 0.0 | 2006 09 19 | 699 | (0.9+ | 1.6+) | 2006 10 01 | 703 | 0.4− | 0.7− |
| 2003 01 25 | 644 | 0.5+ | 1.1+ | 2006 09 19 | 703 | 0.4+ | 1.0− | 2006 10 01 | 703 | 1.1− | 0.1+ |
| 2003 01 25 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.7− | 0.1− |
| 2003 01 25 | 644 | 0.2+ | 1.2+ | 2006 09 19 | 699 | 1.0− | 0.7+ | 2006 10 01 | 703 | 0.5− | 0.1+ |
| 2003 01 28 | 704 | 1.1− | 0.5− | 2006 09 19 | 703 | 0.7+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2003 01 28 | 704 | 0.7− | 0.0 | 2006 09 19 | 699 | 0.4− | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2003 01 28 | 704 | 0.5− | 0.2+ | 2006 09 20 | 704 | 1.1− | 0.4+ | 2006 10 12 | 644 | 0.7− | 0.3+ |
| 2006 08 28 | 703 | 0.2− | 0.8+ | 2006 09 20 | 704 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.6− |
| 2006 08 28 | 703 | 1.4+ | 0.1− | 2006 09 20 | 704 | 0.2− | 1.0+ | 2006 10 20 | G96 | 0.2+ | 0.6− |
| 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 09 20 | 704 | 0.4− | 0.8+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2006 08 28 | 703 | (2.3− | 1.3+) | 2006 09 23 | A55 | 0.5+ | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.6− |
| 2006 09 06 | 644 | 0.5− | 0.2− | 2006 09 23 | A55 | 0.6+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2006 09 06 | 644 | 0.2− | 0.2− | 2006 09 23 | A55 | 0.6+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2006 09 06 | 644 | 0.1+ | 0.4− | 2006 09 23 | A55 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2006 09 14 | 644 | 0.1− | 0.2− | 2006 09 23 | A55 | 0.3+ | 0.4+ | | | | |
| 2006 09 14 | 644 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.1− | | | | |

**2002 YY$_{32}$ = 2006 RM$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.36104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18058025 | $\omega$ | 232.34649 | | −0.70317126 | −0.69351894 | |
| $a$ | 3.0999585 | $\Omega$ | 263.13585 | | +0.69191668 | −0.61666340 | |
| $e$ | 0.0684491 | $i$ | 9.08603 | | +0.16371159 | −0.37250200 | |
| $P$ | 5.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.2+ | 0.8− | 2002 12 28 | 291 | 0.8+ | 0.5− | 2006 09 14 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.7+ | 0.1+ | 2002 12 28 | 291 | 0.0 | 0.4− | 2006 09 14 | 691 | 0.1− | 0.1+ |
| 2001 08 25 | 704 | 0.5− | 0.5− | 2002 12 28 | 291 | 0.4− | 0.3+ | 2006 09 18 | 691 | 0.4+ | 0.1+ |
| 2002 12 05 | 704 | 1.0+ | 0.4+ | 2003 01 02 | 291 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 0.9+ | 2003 01 02 | 291 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.0 |
| 2002 12 05 | 704 | 0.9+ | 0.1− | 2003 01 02 | 291 | 0.5− | 0.3+ | | | | |
| 2002 12 05 | 704 | (0.9+ | 1.8+) | 2006 09 14 | 691 | 0.3+ | 0.1+ | | | | |

**2002 YG$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.91440 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23837916 | $\omega$ | 269.34493 | | +0.92874168 | −0.26434456 | |
| $a$ | 2.5760673 | $\Omega$ | 105.95876 | | +0.34029293 | +0.88607057 | |
| $e$ | 0.2363970 | $i$ | 15.68472 | | −0.14710407 | +0.38078982 | |
| $P$ | 4.13 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 01 | 327 | 1.2− | 0.2+ | 2004 03 11 | 644 | 0.0 | 0.2− | 2005 07 27 | 644 | 0.3+ | 0.4+ |
| 1998 11 01 | 327 | 0.2+ | 0.5+ | 2004 03 19 | 644 | 0.3− | 0.0 | 2005 07 27 | 644 | 1.0+ | 0.8+ |
| 1998 11 01 | 327 | 0.6− | 0.5+ | 2004 03 19 | 644 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.2− |
| 2000 04 30 | 699 | 0.9+ | 0.3+ | 2004 03 19 | 644 | 0.0 | 0.0 | 2006 09 20 | 699 | (0.8+ | 2.2+) |
| 2000 04 30 | 699 | 0.7+ | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.5− | 2006 09 20 | 699 | 0.1− | 0.1+ |
| 2000 04 30 | 699 | 0.5+ | 1.2+ | 2004 03 28 | 704 | 1.1− | 0.2− | 2006 09 20 | 699 | 0.4+ | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 30 | 699 | 1.8+ | 0.8+ | 2004 03 28 | 704 | 0.7− | 0.2− | 2006 10 31 | 704 | 0.3+ | 0.4+ |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.0 | 0.2− | 2006 10 31 | 704 | 0.4− | 1.2− |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2004 03 28 | 704 | 0.4+ | 0.9+ | 2006 10 31 | 704 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2005 06 03 | E12 | 0.4− | 0.1− | 2006 10 31 | 704 | 0.8− | 0.6+ |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2005 06 03 | E12 | 0.7+ | 0.6+ | 2006 11 13 | 703 | 0.0 | 0.7+ |
| 2002 12 31 | 704 | 0.6− | 0.1− | 2005 06 03 | E12 | 0.4+ | 0.9+ | 2006 11 13 | 703 | 0.3+ | 0.1+ |
| 2002 12 31 | 704 | 0.6− | 0.1+ | 2005 06 03 | E12 | 0.9− | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.4+ |
| 2002 12 31 | 704 | 0.5− | 0.3− | 2005 06 09 | 703 | 0.8− | 0.4+ | 2006 11 13 | 703 | 0.9− | 0.2− |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2005 06 09 | 703 | 0.6− | 0.4− | 2006 11 20 | 704 | 0.3− | 0.5+ |
| 2002 12 31 | 704 | 0.5− | 0.1− | 2005 06 09 | 703 | 0.7+ | 0.3+ | 2006 11 20 | 704 | 0.7− | 0.5+ |
| 2003 01 07 | 704 | 0.1+ | 0.1+ | 2005 06 09 | 703 | 0.7+ | 0.5− | 2006 11 20 | 704 | 0.7− | 0.8+ |
| 2003 01 07 | 704 | 1.3+ | 0.4+ | 2005 07 04 | 703 | (1.6− | 0.8+) | 2006 11 20 | 704 | 0.4− | 0.3+ |
| 2003 01 07 | 704 | 0.9+ | 1.3− | 2005 07 04 | 703 | 0.4+ | 0.9+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2003 01 07 | 704 | 0.4+ | 0.0 | 2005 07 04 | 703 | 1.0− | 0.8+ | 2006 12 01 | 703 | 0.0 | 0.2− |
| 2004 02 17 | 704 | 0.2+ | 0.3− | 2005 07 04 | 703 | 0.4− | 0.4+ | 2006 12 01 | 703 | 0.3+ | 1.2+ |
| 2004 02 17 | 704 | 0.2+ | 0.0 | 2005 07 27 | 644 | 0.0 | 0.0 | 2006 12 01 | 703 | 1.0+ | 0.3+ |
| 2004 02 17 | 704 | 0.5+ | 0.1− | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2006 12 01 | 703 | 0.3− | 0.2+ |
| 2004 03 11 | 644 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.1+ | 0.4+ | | | | |
| 2004 03 11 | 644 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.2+ | 0.1+ | | | | |

**2002 YO$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.69101 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18448716 | $\omega$ | 140.78613 | | −0.98360654 | | −0.09897717 |
| $a$ | 3.0560370 | $\Omega$ | 34.44546 | | −0.00804967 | | −0.81097287 |
| $e$ | 0.2529893 | $i$ | 15.45600 | | +0.18014819 | | −0.57665113 |
| $P$ | 5.34 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 566 | 0.8− | 0.1− | 2003 01 13 | 704 | 1.3+ | 0.5+ | 2003 03 09 | 644 | 0.0 | 0.5+ |
| 1998 03 25 | 566 | 0.6− | 0.5− | 2003 01 25 | 704 | (0.6− | 1.7+) | 2003 03 09 | 644 | 0.0 | 0.7+ |
| 1998 03 25 | 566 | 1.0− | 0.4− | 2003 01 25 | 704 | 1.5+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.3− |
| 1998 04 20 | 704 | (2.1− | 2.1−) | 2003 01 25 | 704 | 1.0+ | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 1998 04 20 | 704 | 0.6+ | 1.2+ | 2003 01 25 | 704 | 1.3+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.4+ |
| 1998 04 20 | 704 | 1.4+ | 0.1− | 2003 01 25 | 704 | 1.0+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 1998 04 20 | 704 | 0.5− | 1.0− | 2003 02 07 | 699 | 1.4+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 1998 04 20 | 704 | (0.3− | 2.3−) | 2003 02 07 | 699 | 0.3+ | 0.5− | 2006 10 21 | G96 | 0.1− | 0.7− |
| 2001 11 14 | 691 | 0.2− | 0.0 | 2003 02 07 | 699 | (1.8+ | 1.4+) | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 11 14 | 691 | 0.3+ | 0.4− | 2003 02 07 | 699 | 0.5+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2001 11 14 | 691 | 0.2+ | 0.3+ | 2003 02 25 | 704 | 0.0 | 1.1− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 12 31 | 645 | 0.2− | 0.1− | 2003 02 25 | 704 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2002 12 31 | 645 | 0.2− | 0.1− | 2003 02 25 | 704 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2003 01 13 | 704 | (2.1+ | 0.6−) | 2003 02 25 | 704 | 0.4− | 1.1+ | | | | |
| 2003 01 13 | 704 | 0.8+ | 0.4+ | 2003 03 09 | 644 | 0.1+ | 0.6+ | | | | |

**2002 YP$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.26114 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19119367 | $\omega$ | 337.47244 | | +0.93182024 | | +0.36290057 |
| $a$ | 2.9841481 | $\Omega$ | 1.26750 | | −0.30156364 | | +0.78002156 |
| $e$ | 0.0075015 | $i$ | 9.81335 | | −0.20191683 | | +0.50977402 |
| $P$ | 5.16 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2− | 0.8− | 2003 02 26 | 704 | 0.0 | 0.0 | 2005 08 12 | E12 | 0.0 | 0.7+ |
| 2001 10 14 | 704 | 0.1+ | 0.5− | 2003 02 26 | 704 | 0.1+ | 0.2− | 2005 08 12 | E12 | 0.2− | 0.9+ |
| 2001 10 14 | 704 | 0.4− | 0.9− | 2003 02 26 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 703 | 0.2+ | 0.3+ |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2003 02 26 | 704 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.1+ |
| 2001 10 14 | 704 | 0.0 | 0.0 | 2003 03 07 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.2− | 0.2− |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.5+ |
| 2001 11 12 | 704 | 0.1+ | 1.2+ | 2003 03 07 | 644 | 0.1+ | 0.0 | 2006 10 19 | A50 | 0.5+ | 0.0 |
| 2001 11 12 | 704 | 0.5− | 0.7+ | 2004 04 16 | 699 | 0.6+ | 0.5+ | 2006 10 19 | A50 | 0.8− | 0.6+ |
| 2001 11 12 | 704 | 0.5+ | 0.9+ | 2004 04 16 | 699 | 1.4+ | 0.6− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | (0.2+ | 1.6+) | 2004 04 16 | 699 | 1.0+ | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.1+ |
| 2002 12 31 | 704 | 1.0+ | 0.4− | 2004 04 16 | 699 | 1.2+ | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.6+ | 0.6+ | 2004 04 16 | E12 | 0.4+ | 0.9+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.8+ | 0.6+ | 2004 04 16 | E12 | 1.1− | 1.2+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2002 12 31 | 704 | 0.4+ | 0.6+ | 2004 04 16 | E12 | 1.2− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 01 10 | 704 | 0.0 | 0.3− | 2004 04 16 | E12 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2003 01 10 | 704 | 0.4− | 0.8+ | 2004 05 15 | 704 | 0.8+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2003 01 10 | 704 | 0.7− | 0.2+ | 2004 05 15 | 704 | 0.7− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2003 01 10 | 704 | 1.1− | 0.3− | 2004 05 15 | 704 | 0.9+ | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2003 01 28 | 644 | 0.2+ | 0.7+ | 2005 07 10 | E12 | 0.9− | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.4− |
| 2003 01 28 | 644 | 0.2+ | 0.6+ | 2005 07 10 | E12 | 0.4− | 0.2+ | 2006 10 27 | 703 | 1.1− | 0.0 |
| 2003 01 28 | 644 | 0.0 | 0.8+ | 2005 07 10 | E12 | 0.5− | 0.9+ | 2006 10 27 | 703 | 0.0 | 0.2+ |
| 2003 02 02 | 644 | 0.2− | 0.6+ | 2005 07 10 | E12 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.2+ |
| 2003 02 02 | 644 | 0.1− | 0.1− | 2005 08 12 | E12 | 0.3+ | 0.1+ | | | | |
| 2003 02 02 | 644 | 0.5+ | 0.0 | 2005 08 12 | E12 | 0.9− | 1.1+ | | | | |

**2002 YQ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.10428 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23660021 | $\omega$ | 301.91404 | | +0.80248764 | | −0.55562458 |
| $a$ | 2.5889637 | $\Omega$ | 92.71715 | | +0.59402456 | | +0.70969807 |
| $e$ | 0.1178024 | $i$ | 12.57508 | | +0.05611069 | | +0.43313968 |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 09 | 644 | 0.6− | 0.3+ | 2003 01 29 | 645 | 0.0 | 0.0 | 2005 08 08 | E12 | 0.1− | 0.0 |
| 2001 09 09 | 644 | 0.5− | 0.9+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2005 09 08 | E12 | (0.0 | 1.6+) |
| 2001 09 09 | 644 | 0.5− | 0.6+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2005 09 08 | E12 | 0.0 | 0.4− |
| 2001 09 11 | 704 | 1.2+ | 0.9− | 2003 02 06 | 699 | 0.2− | 0.3+ | 2005 09 08 | E12 | 0.2− | 0.6+ |
| 2001 09 11 | 704 | 0.1− | 1.3− | 2003 02 06 | 699 | 0.5− | 1.1+ | 2005 09 08 | E12 | 0.5+ | 0.3+ |
| 2001 09 11 | 704 | (0.8+ | 2.0+) | 2003 02 06 | 699 | 0.7+ | 0.9− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2001 09 11 | 704 | 0.6+ | 0.4+ | 2003 02 06 | 699 | (1.3+ | 1.5+) | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 09 11 | 704 | (0.4− | 3.2+) | 2004 03 30 | 291 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2002 12 31 | 704 | 0.5− | 0.2− | 2004 03 30 | 291 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.5+ | 0.2+ | 2004 03 30 | 291 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.5− | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.7+ | 2005 08 08 | E12 | 0.1− | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2002 12 31 | 704 | 0.2+ | 0.8+ | 2005 08 08 | E12 | 0.8− | 0.8+ | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2005 08 08 | E12 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.1+ |

**2003 AB**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.14980 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23930431 | $\omega$ | 79.20680 | | −0.83048994 | | −0.54041596 |
| $a$ | 2.5694235 | $\Omega$ | 67.95502 | | +0.43698216 | | −0.78241449 |
| $e$ | 0.1090775 | $i$ | 8.37762 | | +0.34544617 | | −0.30948047 |
| $P$ | 4.12 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 291 | 0.1− | 0.2+ | 2003 01 05 | 704 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2002 11 14 | 291 | 0.2− | 0.9− | 2003 01 10 | 858 | 0.4− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2002 11 14 | 291 | 0.6+ | 0.3+ | 2003 01 10 | 858 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2003 01 10 | 858 | 0.8+ | 0.7− | 2006 11 27 | 703 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.5− | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.5− | 1.0+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.6+ |
| 2003 01 01 | 858 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.6− |
| 2003 01 01 | 858 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2003 01 02 | 858 | 0.5− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.1− | 0.4− |
| 2003 01 02 | 858 | 0.9− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.4− | 0.5+ | 2006 11 20 | J75 | 1.3+ | 0.7− | 2006 12 01 | 691 | 0.6− | 0.0 |
| 2003 01 05 | 704 | 0.7+ | 0.2+ | 2006 11 20 | J75 | 0.8+ | 1.0− | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 0.5+ | 0.2− | 2006 11 20 | J75 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.0 |

### 2003 AR = 2006 SJ$_{126}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.81716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21750451 | $\omega$ | 265.66417 | | +0.63533184 | −0.77119941 | |
| $a$ | 2.7383600 | $\Omega$ | 144.78806 | | +0.73321662 | +0.58613279 | |
| $e$ | 0.1950001 | $i$ | 3.98405 | | +0.24237747 | +0.24839449 | |
| $P$ | 4.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.2− | 0.1+ | 2003 01 07 | 704 | 0.4+ | 0.4− | 2006 10 01 | 704 | 0.0 | 0.5+ |
| 2003 01 01 | 704 | 0.9− | 0.4− | 2006 09 21 | 699 | (1.8− | 1.1−) | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2003 01 01 | 704 | 0.5− | 0.6+ | 2006 09 21 | 699 | (1.8+ | 0.9+) | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 2003 01 01 | 704 | 0.9+ | 0.5+ | 2006 09 21 | 699 | 1.0+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2003 01 02 | 704 | 0.7− | 0.7− | 2006 09 21 | 699 | 0.4− | 0.2+ | 2006 10 16 | 703 | (0.2− | 1.7−) |
| 2003 01 02 | 704 | 0.4− | 0.6+ | 2006 09 25 | 699 | 0.2− | 0.3+ | 2006 10 16 | 703 | (1.4− | 2.1−) |
| 2003 01 02 | 704 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.7− | 0.7+ | 2006 10 16 | 703 | (0.3− | 2.4−) |
| 2003 01 02 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 699 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.7− |
| 2003 01 04 | 704 | 0.8+ | 0.0 | 2006 09 25 | 699 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.4− |
| 2003 01 04 | 704 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.7− |
| 2003 01 04 | 704 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1− | 1.1− |
| 2003 01 04 | 704 | 1.2− | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.5+ |
| 2003 01 07 | 704 | 0.8+ | 1.1− | 2006 10 01 | 704 | 0.1+ | 1.0− | 2006 10 22 | 703 | 0.0 | 0.6+ |
| 2003 01 07 | 704 | 0.9+ | 0.5− | 2006 10 01 | 704 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2003 01 07 | 704 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.6+ | 1.0− | 2006 10 22 | 703 | 0.6+ | 0.5+ |

### 2003 AS = 2006 US$_{215}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.70646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22735092 | $\omega$ | 192.93025 | | +0.16694150 | −0.96397143 | |
| $a$ | 2.6587137 | $\Omega$ | 247.76470 | | +0.92335431 | +0.22651068 | |
| $e$ | 0.2175716 | $i$ | 12.92854 | | +0.34575621 | −0.13947043 | |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 645 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.0− | 1.4− | 2006 11 16 | 704 | 0.9+ | 0.5+ |
| 2002 12 14 | 645 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.6− |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.3+ | 2.5+) | 2006 11 16 | 704 | (1.8− | 0.5+) |
| 2002 12 14 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5− | 2006 11 16 | 704 | 0.4− | 0.2+ |
| 2002 12 14 | 704 | 0.6− | 1.0− | 2006 11 14 | 703 | 0.7+ | 0.9+ | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2002 12 14 | 704 | 1.0+ | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2003 01 01 | 704 | (2.0− | 0.5−) | 2006 11 14 | 703 | 0.2− | 1.2+ | 2006 11 16 | 704 | (2.1− | 1.4+) |
| 2003 01 01 | 704 | 0.0 | 0.2+ | 2006 11 14 | 703 | 1.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2003 01 01 | 704 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2003 01 02 | 704 | 1.0+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.1+ |
| 2003 01 02 | 704 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2003 01 02 | 704 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.5− |
| 2003 01 02 | 704 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.4− | 0.2+ |
| 2006 10 19 | 703 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 10 19 | 703 | 1.3− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2006 10 19 | 703 | 0.1− | 0.8− | 2006 11 15 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.6− |
| 2006 10 19 | 703 | 1.1+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2006 10 26 | D35 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.3+ |
| 2006 10 26 | D35 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.0 |
| 2006 10 26 | D35 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 2006 10 27 | D35 | 0.7+ | 0.5+ | 2006 11 15 | 704 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2006 10 27 | D35 | 0.3+ | 0.1− | 2006 11 15 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2006 10 27 | D35 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2006 11 02 | 703 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2006 11 02 | 703 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− | 2006 11 22 | 704 | (1.8− | 1.5−) |
| 2006 11 02 | 703 | 0.7− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2006 11 02 | 703 | 0.8− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.6− | 0.4+ |
| 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 16 | 704 | (0.4− | 1.8+) | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.1− | | | | |

### 2003 AE$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.62487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27397025 | $\omega$ | 285.84115 | | +0.77148981 | −0.51640515 | |
| $a$ | 2.3478325 | $\Omega$ | 106.63052 | | +0.62123400 | +0.73753501 | |
| $e$ | 0.3550210 | $i$ | 22.82280 | | −0.13737463 | +0.43516414 | |
| $P$ | 3.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 699 | 0.4− | 0.8+ | 2003 01 03 | 649 | 0.0 | 0.1− | 2003 01 26 | 699 | 0.2+ | 0.6− |
| 2002 11 24 | 699 | 0.3+ | 1.2+ | 2003 01 03 | 651 | 0.2+ | 0.0 | 2003 01 26 | 699 | 0.3+ | 0.2+ |
| 2002 11 24 | 699 | 0.1− | 0.8+ | 2003 01 03 | 651 | 0.5+ | 0.3− | 2003 01 26 | 699 | 0.7+ | 0.2+ |
| 2002 11 24 | 699 | 0.5+ | 0.3+ | 2003 01 03 | 651 | 0.4+ | 0.3− | 2003 01 28 | 704 | 0.0 | 0.6+ |
| 2003 01 02 | 704 | 0.1+ | 0.1− | 2003 01 03 | E14 | 0.3+ | 0.3− | 2003 01 28 | 704 | 0.1− | 0.3+ |
| 2003 01 02 | 704 | 0.7− | 0.0 | 2003 01 03 | E14 | 0.1+ | 0.1+ | 2003 01 28 | 704 | 0.3− | 0.4− |
| 2003 01 02 | 704 | 0.3− | 0.3+ | 2003 01 03 | E14 | 0.4− | 0.2− | 2003 01 28 | 704 | 0.6+ | 0.3+ |
| 2003 01 02 | 704 | 0.6− | 0.0 | 2003 01 03 | 204 | (0.3+ | 1.5−) | 2003 01 28 | 608 | 0.7+ | 0.5− |
| 2003 01 02 | 704 | 0.5− | 0.4− | 2003 01 03 | 204 | 0.6− | 1.2− | 2003 01 28 | 608 | 0.8+ | 0.2− |
| 2003 01 03 | 704 | 0.3− | 0.0 | 2003 01 03 | 204 | (0.8− | 1.6−) | 2003 01 28 | 608 | 0.9+ | 0.6+ |
| 2003 01 03 | 704 | 0.4+ | 0.4− | 2003 01 04 | 704 | 0.5− | 1.1− | 2003 01 30 | 704 | 0.1+ | 0.7+ |
| 2003 01 03 | 704 | 0.2− | 0.3− | 2003 01 04 | 704 | 0.9− | 1.0− | 2003 01 30 | 704 | 0.0 | 0.1+ |
| 2003 01 03 | 704 | 0.5+ | 0.6− | 2003 01 04 | 704 | 0.3− | 0.1+ | 2003 01 30 | 704 | 0.8+ | 1.0+ |
| 2003 01 03 | 734 | 0.4+ | 0.3+ | 2003 01 04 | 704 | 0.6− | 0.5− | 2003 01 30 | 704 | 0.3− | 0.5− |
| 2003 01 03 | 734 | 0.0 | 0.5− | 2003 01 04 | 704 | 0.9− | 0.2− | 2003 02 02 | 704 | 0.4+ | 0.6+ |
| 2003 01 03 | 734 | 0.2+ | 0.1+ | 2003 01 04 | 704 | 0.6− | 0.8− | 2003 02 02 | 704 | 0.3− | 0.8+ |
| 2003 01 03 | 704 | 0.2+ | 0.1− | 2003 01 04 | 704 | 0.4− | 0.1− | 2003 02 02 | 704 | 0.1− | 0.7+ |
| 2003 01 03 | 704 | 0.0 | 1.0− | 2003 01 04 | 704 | 0.6− | 0.8− | 2003 02 02 | 704 | 0.8− | 1.0+ |
| 2003 01 03 | 858 | 0.1+ | 0.0 | 2003 01 04 | 704 | 0.2− | 0.0 | 2003 02 02 | 704 | 0.3− | 1.0+ |
| 2003 01 03 | 704 | 0.2− | 0.1− | 2003 01 05 | 704 | 0.1− | 0.2− | 2005 07 04 | 644 | 0.4+ | 0.5+ |
| 2003 01 03 | 704 | 0.3− | 0.2− | 2003 01 05 | 704 | 0.1+ | 0.4− | 2005 07 04 | 644 | 0.1− | 0.7+ |
| 2003 01 03 | 858 | 0.6− | 0.0 | 2003 01 05 | 704 | 0.9− | 0.1+ | 2005 07 04 | 644 | 0.3+ | 0.4+ |
| 2003 01 03 | 858 | 0.4+ | 0.4+ | 2003 01 05 | 704 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.5+ | 0.0 |
| 2003 01 03 | 704 | 0.1+ | 0.2− | 2003 01 05 | 704 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.5+ | 0.3+ |
| 2003 01 03 | 704 | 0.2− | 0.2− | 2003 01 07 | 704 | 0.3+ | 1.0+ | 2006 10 20 | 691 | 0.4+ | 0.1+ |
| 2003 01 03 | 448 | 0.1+ | 0.1+ | 2003 01 07 | 704 | 0.7+ | 1.0+ | 2006 10 27 | 691 | 0.5− | 0.2− |
| 2003 01 03 | 448 | 0.1+ | 0.1+ | 2003 01 07 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2003 01 03 | 448 | 0.3+ | 0.1+ | 2003 01 07 | 704 | 1.1+ | 0.4− | 2006 10 27 | 691 | 0.5− | 0.1+ |
| 2003 01 03 | 446 | 0.1+ | 0.1− | 2003 01 16 | 644 | 0.2− | 1.2+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2003 01 03 | 446 | 0.2− | 0.5− | 2003 01 16 | 644 | 0.0 | 0.9+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2003 01 03 | 926 | 0.7+ | 0.1− | 2003 01 16 | 644 | 0.1− | 0.9+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2003 01 03 | 926 | 0.0 | 0.0 | 2003 01 26 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | (0.0 | 1.8+) |
| 2003 01 03 | 926 | 0.1− | 0.3+ | 2003 01 26 | 644 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.5− |
| 2003 01 03 | 649 | 0.1+ | 0.1− | 2003 01 26 | 644 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2003 01 03 | 649 | 0.1+ | 0.0 | 2003 01 26 | 699 | 0.2+ | 0.0 | | | | |

### 2003 AK$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.58024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22304003 | $\omega$ | 138.75462 | | +0.71399341 | −0.66607154 | |
| $a$ | 2.6928625 | $\Omega$ | 264.39236 | | +0.57198584 | +0.73264079 | |
| $e$ | 0.2557107 | $i$ | 12.52234 | | +0.40378907 | +0.13995063 | |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.4+ | 0.4+ | 2006 08 12 | 644 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2002 11 14 | 704 | 0.1− | 0.7+ | 2006 08 12 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.8− |
| 2002 11 14 | 704 | 1.0+ | 0.2− | 2006 10 15 | 628 | 0.5+ | 0.1− | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2002 11 14 | 704 | 0.6+ | 0.1− | 2006 10 15 | 628 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.3+ | 0.4− |
| 2002 11 14 | 704 | 0.7+ | 0.6+ | 2006 10 15 | 628 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.4− |
| 2003 01 01 | 704 | 0.7+ | 0.3− | 2006 10 16 | B03 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2003 01 01 | 704 | 0.2− | 0.9+ | 2006 10 16 | B03 | 0.4+ | 0.4− | 2006 10 27 | 703 | 0.1+ | 0.1+ |
| 2003 01 01 | 704 | 0.4+ | 0.3− | 2006 10 16 | B03 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2003 01 01 | 704 | 0.0 | 0.3+ | 2006 10 16 | B03 | 0.5+ | 0.3− | 2006 10 29 | H51 | 0.4+ | 0.3− |
| 2003 01 01 | 704 | 0.5+ | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.0 | 2006 10 29 | H51 | 0.2+ | 0.5− |
| 2003 01 03 | 704 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.3+ | 2006 10 29 | H51 | 0.0 | 0.0 |
| 2003 01 03 | 704 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.6+ | 0.9+ | 2006 11 15 | 703 | 0.8− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 03 | 704 | 0.8− | 0.4− | 2006 10 19 | 703 | (2.0− | 1.0+) | 2006 11 15 | 703 | 0.4− | 0.8− |
| 2003 01 03 | 704 | 0.7− | 0.2− | 2006 10 20 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.5+ | 0.6− |
| 2003 01 07 | 704 | 0.1+ | 0.2− | 2006 10 20 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.1− | 1.9+ |
| 2003 01 07 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 704 | 0.5+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2003 01 07 | 704 | 0.1− | 0.5− | 2006 10 20 | 704 | 0.6− | 0.4+ | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2003 01 07 | 704 | 0.0 | 0.5− | 2006 10 20 | 704 | 1.4− | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.4− |
| 2003 01 27 | 704 | 0.0 | 1.4− | 2006 10 24 | A24 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2003 01 27 | 704 | (2.0− | 1.4−) | 2006 10 24 | A24 | 0.4− | 1.3+ | 2006 11 23 | 703 | 0.2+ | 0.1− |
| 2003 01 27 | 704 | 0.0 | 0.9+ | 2006 10 25 | A24 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.3− | 0.4− |
| 2003 01 27 | 704 | 1.3− | 0.5+ | 2006 10 25 | A24 | 0.9− | 0.5− | 2006 11 23 | 703 | 0.1− | 0.5− |
| 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 10 25 | A24 | 0.9− | 0.2+ | 2006 11 23 | 703 | 0.5+ | 0.1+ |

### 2003 AS$_1$ = 2006 RJ$_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.04280 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23102006 | $\omega$ | 214.98851 | | +0.75258103 | | −0.65836641 |
| $a$ | 2.6304875 | $\Omega$ | 186.23746 | | +0.62855571 | | +0.72421064 |
| $e$ | 0.2545698 | $i$ | 7.00286 | | +0.19631484 | | +0.20511611 |
| $P$ | 4.27 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.2− | 0.7− | 2006 09 18 | 699 | 0.5− | 0.9+ | 2006 10 15 | 703 | 1.1− | 0.2− |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2002 12 14 | 704 | 0.6+ | 0.4− | 2006 09 18 | 699 | (1.6− | 0.4−) | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 0.0 | 1.4− | 2006 09 18 | 699 | 0.6+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2003 01 02 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 01 02 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2003 01 02 | 704 | 1.2+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2003 01 02 | 704 | 0.7− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 01 02 | 704 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 01 03 | 704 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 01 03 | 704 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2003 01 03 | 704 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 1.0− | 1.0+ |
| 2003 01 03 | 704 | 0.8− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.9+ |
| 2006 09 14 | 703 | 0.3+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 22 | 703 | 1.3+ | 0.8+ |
| 2006 09 14 | 703 | 0.6+ | 1.3− | 2006 09 27 | 704 | 0.0 | 1.0+ | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2006 09 14 | 703 | 1.0− | 0.3+ | 2006 09 27 | 704 | 0.7− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2006 09 14 | 703 | 0.3+ | 0.2− | 2006 09 27 | 704 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.3+ | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.0 | 0.1− | | | | |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | (1.8− | 1.3−) | | | | |

### 2003 AJ$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.70114 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21676221 | $\omega$ | 354.15725 | | +0.01828499 | | −0.97422257 |
| $a$ | 2.7446081 | $\Omega$ | 94.64516 | | +0.92622144 | | −0.06818634 |
| $e$ | 0.1644389 | $i$ | 13.03744 | | +0.37653620 | | +0.21503724 |
| $P$ | 4.55 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.4− | 0.7− | 2003 02 01 | 644 | 0.8− | 0.5− | 2006 11 13 | 703 | 0.5− | 0.5− |
| 2003 01 02 | 704 | 0.3− | 0.3− | 2003 02 19 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.3− | 0.0 |
| 2003 01 02 | 704 | 0.3− | 0.8+ | 2003 02 19 | 644 | 0.6+ | 0.7− | 2006 11 13 | 703 | 0.9+ | 0.1− |
| 2003 01 03 | 704 | 0.2− | 0.8+ | 2003 02 19 | 644 | 0.5+ | 0.2− | 2006 11 13 | 703 | 0.0 | 0.8− |
| 2003 01 03 | 704 | 0.2− | 0.6+ | 2003 03 03 | 644 | 0.2− | 0.4− | 2006 11 19 | 703 | 0.8+ | 0.0 |
| 2003 01 03 | 704 | 0.3+ | 0.5+ | 2003 03 03 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.2− | 0.6+ |
| 2003 01 03 | 704 | 0.6− | 1.2+ | 2003 03 03 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2003 01 03 | 704 | 0.0 | 0.5+ | 2003 03 08 | 644 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.6− | 0.2− |
| 2003 01 04 | 704 | 1.0− | 0.2− | 2003 03 08 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.9+ |
| 2003 01 04 | 704 | 1.3+ | 0.6− | 2003 03 08 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.9− | 0.8+ |
| 2003 01 04 | 704 | 0.3− | 0.1− | 2005 07 17 | 644 | 0.6− | 0.0 | 2006 11 20 | 704 | 1.4− | 0.4+ |
| 2003 01 04 | 704 | 0.4+ | 0.5− | 2005 07 17 | 644 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2003 01 28 | 644 | 0.2+ | 0.6+ | 2005 07 17 | 644 | 0.4+ | 0.6+ | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2003 01 28 | 644 | 0.5+ | 0.6+ | 2006 10 30 | 703 | 0.5+ | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2003 01 28 | 644 | 0.3+ | 0.7+ | 2006 10 30 | 703 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2003 02 01 | 644 | 0.1+ | 0.5− | 2006 10 30 | 703 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.5+ | 0.4− |
| 2003 02 01 | 644 | 0.1− | 0.4− | 2006 10 30 | 703 | 0.6+ | 0.2− | | | | |

### 2003 AK$_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.03935 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21530622 | $\omega$ | 346.56583 | | −0.44224118 | | −0.86508102 |
| $a$ | 2.7569676 | $\Omega$ | 129.13301 | | +0.84851810 | | −0.48907332 |
| $e$ | 0.2358645 | $i$ | 17.77224 | | +0.29058522 | | +0.11154425 |
| $P$ | 4.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 645 | 0.2+ | 0.1− | 2003 01 27 | 704 | 0.5− | 0.5+ | 2003 03 03 | 644 | 0.0 | 0.2+ |
| 2002 12 07 | 645 | 0.2+ | 0.2− | 2003 01 27 | 704 | 0.3− | 0.9+ | 2003 03 03 | 644 | 0.0 | 0.3+ |
| 2002 12 14 | 645 | 0.0 | 0.2− | 2003 01 27 | 704 | 0.8− | 0.2− | 2003 03 03 | 644 | 0.1+ | 0.2+ |
| 2002 12 14 | 645 | 0.0 | 0.2− | 2003 01 27 | 704 | 0.0 | 0.4+ | 2006 10 21 | 703 | 1.6+ | 0.3+ |
| 2003 01 01 | 704 | 0.9− | 0.2− | 2003 01 27 | 704 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.5+ |
| 2003 01 01 | 704 | (1.5− | 0.6−) | 2003 02 01 | 704 | 1.0+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2003 01 01 | 704 | 0.9− | 0.6− | 2003 02 01 | 704 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.6− |
| 2003 01 01 | 704 | 0.2− | 0.3− | 2003 02 01 | 704 | 0.9+ | 0.2− | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2003 01 04 | 704 | 0.1− | 0.9− | 2003 02 01 | 704 | 0.8− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2003 01 04 | 704 | 1.0+ | 0.1− | 2003 02 01 | 608 | 0.9− | 0.3− | 2006 10 21 | 703 | 0.5+ | 0.6+ |
| 2003 01 04 | 704 | 0.0 | 0.7+ | 2003 02 01 | 608 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.6− | 0.0 |
| 2003 01 04 | 704 | 0.3− | 0.2+ | 2003 02 01 | 608 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.4− | 0.1− |
| 2003 01 04 | 699 | 0.2− | 0.7+ | 2003 02 04 | 699 | (1.9− | 0.4−) | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2003 01 04 | 699 | 0.3+ | 0.9+ | 2003 02 04 | 699 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.7− | 0.8− |
| 2003 01 04 | 704 | 0.2− | 1.1− | 2003 02 04 | 699 | 0.7+ | 1.0+ | 2006 10 21 | 703 | 0.7− | 0.2+ |
| 2003 01 04 | 699 | 1.1− | 0.1+ | 2003 02 04 | 699 | 0.2− | 0.8− | 2006 11 18 | 703 | 0.3+ | 0.8+ |
| 2003 01 04 | 699 | 0.1− | 1.0− | 2003 02 04 | 704 | 0.4− | 0.8+ | 2006 11 18 | 703 | 0.2+ | 2.0+ |
| 2003 01 26 | 699 | 0.1+ | 0.1+ | 2003 02 04 | 704 | 0.8− | 0.7+ | 2006 11 18 | 703 | 0.6− | 0.0 |
| 2003 01 26 | 699 | (1.7+ | 0.2+) | 2003 02 04 | 704 | 1.1− | 1.3+ | 2006 11 18 | 703 | 0.4+ | 0.2− |
| 2003 01 26 | 699 | (1.6+ | 1.2+) | 2003 02 04 | 704 | 0.7− | 1.4+ | 2006 11 24 | 703 | 0.2+ | 0.1+ |
| 2003 01 26 | 699 | 0.1+ | 0.3+ | 2003 02 04 | 704 | 0.1+ | 1.3+ | 2006 11 24 | 703 | 2.2− | 0.8+ |
| 2003 01 26 | 608 | 0.2+ | 0.3+ | 2003 02 12 | 608 | 0.3+ | 0.2+ | 2006 11 24 | 703 | 0.3+ | 0.2+ |
| 2003 01 26 | 608 | 0.1+ | 0.4+ | 2003 02 12 | 608 | 0.6+ | 0.1+ | 2006 11 24 | 703 | 0.2+ | 0.2+ |
| 2003 01 26 | 608 | 0.0 | 1.2+ | 2003 02 12 | 608 | 0.0 | 0.3+ | | | | |

### 2003 AQ$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.47270 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23670375 | $\omega$ | 37.21797 | | +0.87467009 | | +0.42801918 |
| $a$ | 2.5882087 | $\Omega$ | 295.95392 | | −0.48284790 | | +0.72818090 |
| $e$ | 0.2305980 | $i$ | 14.65552 | | −0.04254569 | | +0.53530567 |
| $P$ | 4.16 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.2+ | 0.7+ | 2002 12 28 | 699 | 0.6+ | 0.7− | 2006 09 19 | 704 | 0.3− | 0.3− |
| 2002 10 07 | 704 | 0.9+ | 0.7+ | 2002 12 28 | 699 | 0.0 | 1.0+ | 2006 09 19 | 704 | 0.5+ | 0.0 |
| 2002 10 07 | 704 | (0.5+ | 1.6+) | 2002 12 28 | 699 | 0.5− | 0.7+ | 2006 09 28 | 703 | 0.0 | 0.2− |
| 2002 10 07 | 704 | 0.6− | 0.2+ | 2002 12 28 | 699 | 0.1+ | 1.2− | 2006 09 28 | 703 | 0.1− | 0.4− |
| 2002 10 30 | 704 | 0.2+ | 0.1+ | 2003 01 01 | 446 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2002 10 30 | 704 | 0.8+ | 0.4− | 2003 01 01 | 446 | 0.2− | 0.5− | 2006 09 28 | 703 | 0.7− | 0.3− |
| 2002 10 30 | 704 | 0.0 | 0.1+ | 2003 01 05 | 446 | 0.1+ | 0.4+ | 2006 10 02 | 704 | 0.1+ | 0.0 |
| 2002 10 30 | 704 | 0.7+ | 0.2− | 2003 01 05 | 446 | 1.2− | 1.3− | 2006 10 02 | 704 | 0.5+ | 0.2− |
| 2002 10 30 | 704 | 0.2+ | 0.8+ | 2003 01 05 | 446 | 0.5+ | 1.2− | 2006 10 02 | 704 | 0.8+ | 0.6+ |
| 2002 11 15 | 644 | 0.2− | 0.1− | 2006 07 24 | 704 | 0.7− | 0.2− | 2006 10 02 | 704 | 0.5+ | 0.1− |
| 2002 11 15 | 644 | 0.3− | 0.0 | 2006 07 24 | 704 | 0.5− | 0.2+ | 2006 10 02 | 704 | 0.5+ | 0.1− |
| 2002 11 15 | 644 | 0.5− | 0.0 | 2006 07 24 | 704 | 0.1− | 0.0 | 2006 10 10 | 628 | 0.2− | 0.9− |
| 2002 11 15 | 704 | 0.4− | 0.1+ | 2006 09 12 | 628 | 0.3− | 0.1− | 2006 10 10 | 628 | 0.3+ | 0.3− |
| 2002 11 15 | 704 | 0.4− | 0.4+ | 2006 09 12 | 628 | (0.4− | 1.5−) | 2006 10 10 | 628 | 0.1+ | 0.2− |
| 2002 11 15 | 704 | 0.6+ | 0.0 | 2006 09 12 | 628 | 0.1+ | 0.7− | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2002 11 15 | 704 | 0.8+ | 0.6+ | 2006 09 17 | 703 | 0.4− | 0.7− | 2006 10 27 | 703 | 0.0 | 0.2+ |
| 2002 11 15 | 704 | 0.3− | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.1− | 0.1− |
| 2002 11 25 | 644 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2002 11 25 | 644 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 1.0− | 0.0 |
| 2002 11 25 | 644 | 0.2− | 0.0 | 2006 09 17 | 113 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.8− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.3− | 0.7− | 2006 09 17 | 113 | (1.6+ | 0.5+) | 2006 11 15 | 703 | 0.1− | 0.7+ |
| 2002 12 07 | 704 | 0.2+ | 0.0 | 2006 09 17 | 113 | 0.7+ | 1.2+ | 2006 11 15 | 703 | 0.9− | 0.1− |
| 2002 12 07 | 704 | 0.3− | 1.0+ | 2006 09 17 | 113 | 0.2− | 1.2+ | 2006 11 22 | 703 | 0.1− | 0.1+ |
| 2002 12 12 | 644 | 0.5− | 0.1+ | 2006 09 19 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 703 | 0.3+ | 1.0− |
| 2002 12 12 | 644 | 0.3+ | 0.2− | 2006 09 19 | 704 | 0.2+ | 0.7+ | 2006 11 22 | 703 | 1.2+ | 0.7+ |
| 2002 12 12 | 644 | 0.1− | 0.2− | 2006 09 19 | 704 | 0.4+ | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.3− |

**2003 AY$_4$ = 2006 QF$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.19764 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18357555 | $\omega$ | 72.95854 | | +0.96932907 | +0.04667835 | |
| $a$ | 3.0661459 | $\Omega$ | 283.85386 | | −0.15212290 | +0.88507135 | |
| $e$ | 0.1296985 | $i$ | 14.39010 | | +0.19302791 | +0.46310889 | |
| $P$ | 5.37 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.2+ | 0.6+ | 2002 12 31 | 704 | 0.3+ | 0.5+ | 2003 01 09 | 704 | 1.1− | 0.0 |
| 2001 08 16 | 644 | 0.4+ | 0.1+ | 2003 01 01 | 735 | 0.8− | 0.6+ | 2003 01 09 | 704 | 1.0− | 0.4+ |
| 2001 08 16 | 644 | 0.3+ | 0.6+ | 2003 01 01 | 735 | 0.3+ | 1.4+ | 2003 01 09 | 704 | 0.0 | 0.1− |
| 2001 09 10 | 704 | 0.3+ | 0.2− | 2003 01 01 | 735 | 0.5+ | 0.5+ | 2003 01 09 | 704 | 0.8− | 0.2− |
| 2001 09 10 | 704 | 1.2− | 0.0 | 2003 01 04 | 704 | 0.9+ | 0.9+ | 2004 03 14 | 644 | 0.4+ | 0.6+ |
| 2001 09 10 | 704 | 0.8− | 0.5− | 2003 01 04 | 704 | 0.4+ | 1.2− | 2004 03 14 | 644 | 0.6+ | 0.7+ |
| 2001 09 10 | 704 | 1.0− | 0.4− | 2003 01 04 | 704 | 0.8+ | 0.1+ | 2004 03 14 | 644 | 0.6+ | 0.6+ |
| 2001 09 22 | 699 | 0.8+ | 0.7− | 2003 01 04 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 644 | 0.6− | 0.1+ |
| 2001 09 22 | 699 | (1.9+ | 0.9−) | 2003 01 04 | 704 | 0.3+ | 0.6+ | 2006 08 23 | 644 | 0.3− | 0.1+ |
| 2001 09 22 | 699 | 1.4+ | 0.6+ | 2003 01 04 | 704 | 0.1− | 0.4+ | 2006 08 23 | 644 | 0.0 | 0.3+ |
| 2001 09 22 | 699 | 0.8+ | 0.4+ | 2003 01 04 | 704 | 0.3+ | 0.6+ | 2006 08 27 | 699 | 0.1+ | 0.8− |
| 2001 09 30 | 644 | 0.3− | 0.1− | 2003 01 04 | 704 | (0.2+ | 1.6−) | 2006 08 27 | 699 | 0.1+ | 0.6− |
| 2001 09 30 | 644 | 0.2+ | 0.0 | 2003 01 05 | 704 | 0.4+ | 0.6+ | 2006 08 27 | 699 | 0.7− | 0.2− |
| 2001 09 30 | 644 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.6+ | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.2+ |
| 2001 10 18 | 704 | 0.8− | 0.2− | 2003 01 05 | 704 | 0.4+ | 0.1+ | 2006 08 28 | 704 | 0.1+ | 0.4+ |
| 2001 10 18 | 704 | 1.0− | 0.1− | 2003 01 05 | 704 | 0.3− | 0.6− | 2006 08 28 | 704 | 0.4− | 0.0 |
| 2001 10 18 | 704 | 0.3− | 0.1− | 2003 01 05 | 704 | 0.7+ | 0.0 | 2006 08 28 | 704 | 0.4− | 0.1− |
| 2001 10 18 | 704 | 0.8− | 0.3+ | 2003 01 08 | 735 | 0.7− | 0.4− | 2006 08 28 | 704 | 0.5− | 0.3+ |
| 2001 12 10 | 704 | 1.0+ | 0.1− | 2003 01 08 | 735 | 0.4− | 0.5− | 2006 08 28 | 704 | 0.3+ | 0.7+ |
| 2001 12 10 | 704 | 0.5+ | 0.2+ | 2003 01 08 | 735 | 0.6− | 0.5− | 2006 09 11 | 703 | 0.0 | 0.5+ |
| 2001 12 10 | 704 | 0.9+ | 0.4− | 2003 01 08 | 704 | 0.1+ | 0.7− | 2006 09 11 | 703 | 0.2+ | 0.6+ |
| 2001 12 10 | 704 | 0.3+ | 0.1+ | 2003 01 08 | 704 | 0.1− | 0.6− | 2006 09 11 | 703 | 0.2− | 0.9+ |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2003 01 08 | 704 | 0.3− | 0.8− | 2006 09 11 | 703 | 0.4+ | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.3− | 2003 01 08 | 704 | 1.0+ | 0.0 | | | | |
| 2002 12 31 | 704 | 0.0 | 0.9+ | 2003 01 09 | 704 | 1.2− | 0.8− | | | | |

**2003 AC$_5$ = 2006 ST$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.37956 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23401361 | $\omega$ | 276.04055 | | +0.51571607 | −0.85467096 | |
| $a$ | 2.6080063 | $\Omega$ | 142.71722 | | +0.81992854 | +0.47210243 | |
| $e$ | 0.3484982 | $i$ | 5.66426 | | +0.24850376 | +0.21600193 | |
| $P$ | 4.21 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.5+ | 0.4− | 2006 09 18 | 703 | 1.1+ | 0.3− | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2002 12 14 | 704 | 0.3+ | 0.9− | 2006 09 18 | 703 | 0.6− | 0.4− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 12 14 | 704 | 0.0 | 0.6− | 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 12 14 | 704 | 0.4+ | 0.5− | 2006 09 26 | 703 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 12 14 | 704 | 0.8+ | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.4+ | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2003 01 01 | 704 | 0.8− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.9− |
| 2003 01 01 | 704 | 1.0− | 0.8− | 2006 09 26 | 703 | 1.3− | 0.7− | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2003 01 01 | 704 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.4+ | 1.1+ | 2006 10 28 | 703 | 0.3− | 1.0− |
| 2003 01 04 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.3+ | 0.6+ | 2006 11 23 | 703 | 0.1− | 0.0 |
| 2003 01 04 | 704 | (0.1− | 1.7+) | 2006 09 30 | 704 | 1.5+ | 0.2+ | 2006 11 23 | 703 | 0.3+ | 1.1− |
| 2003 01 04 | 704 | 0.8− | 1.2+ | 2006 09 30 | 704 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.6+ | 0.0 |
| 2003 01 04 | 704 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 1.3− | 0.0 | 2006 11 23 | 703 | 0.0 | 0.5+ |
| 2003 01 04 | 704 | 0.2− | 1.4+ | 2006 10 17 | 703 | 0.2+ | 0.6+ | | | | |
| 2006 09 18 | 703 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.2+ | 1.0+ | | | | |

**2003 AJ$_5$ = 2006 UH$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.06753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22538893 | $\omega$ | 248.64392 | | +0.63990355 | −0.76786218 | |
| $a$ | 2.6741206 | $\Omega$ | 161.47161 | | +0.73554602 | +0.60065495 | |
| $e$ | 0.2546908 | $i$ | 5.45064 | | +0.22247584 | +0.22271350 | |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2003 01 27 | 704 | 0.9+ | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.3− |
| 2002 12 10 | 644 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2002 12 10 | 644 | 0.4− | 0.5+ | 2003 01 27 | 704 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2003 01 01 | 704 | 0.4+ | 1.1+ | 2003 02 04 | 644 | 0.1− | 0.2+ | 2006 11 14 | 644 | 0.0 | 0.2+ |
| 2003 01 01 | 704 | 0.6+ | 0.0 | 2003 02 04 | 644 | 0.3+ | 0.6+ | 2006 11 14 | 704 | (0.6+ | 1.7+) |
| 2003 01 01 | 704 | 0.7− | 0.3− | 2003 02 04 | 644 | 0.4+ | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.8+ |
| 2003 01 04 | 704 | (3.2+ | 0.6−) | 2006 10 16 | 703 | 1.1+ | 0.3− | 2006 11 14 | 644 | 0.3+ | 0.0 |
| 2003 01 04 | 704 | (3.4+ | 1.0−) | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.0 | 1.3+ |
| 2003 01 04 | 704 | (3.2+ | 0.2+) | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 14 | 644 | 0.1− | 0.2+ |
| 2003 01 04 | 704 | (2.2+ | 1.1−) | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 14 | 704 | 0.6− | 1.1+ |
| 2003 01 04 | 699 | 0.9− | 0.4− | 2006 10 22 | 703 | 0.4− | 0.4− | 2006 11 14 | 704 | 0.2− | 0.2+ |
| 2003 01 04 | 699 | (1.6+ | 1.2−) | 2006 10 22 | 703 | 0.8− | 0.7− | 2006 11 19 | 703 | 0.5+ | 0.2+ |
| 2003 01 04 | 699 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.5− | 2006 11 19 | 703 | 0.8+ | 0.3− |
| 2003 01 07 | 704 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.5+ | 0.0 | 2006 11 19 | 703 | 0.4+ | 0.4− |
| 2003 01 07 | 704 | 0.6+ | 0.4− | 2006 10 27 | 704 | 0.6− | 1.3+ | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2003 01 07 | 704 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 1.1+ | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.2− |
| 2003 01 07 | 704 | 1.0+ | 0.2+ | 2006 10 27 | 704 | 0.7− | 0.8+ | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2003 01 07 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 704 | 0.6− | 0.2− | 2006 11 20 | 704 | 0.7+ | 1.1− |
| 2003 01 26 | 699 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.9+ | 0.9+ |
| 2003 01 26 | 699 | 0.9− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.4− |
| 2003 01 26 | 699 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2003 01 26 | 699 | (1.3− | 2.8−) | 2006 11 11 | 703 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2003 01 26 | 608 | 0.8− | 0.8− | 2006 11 11 | 703 | 0.5− | 0.5− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2003 01 26 | 608 | 0.9− | 0.8− | 2006 11 11 | 703 | 0.8− | 0.8− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2003 01 26 | 608 | 1.0− | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.6− | | | | |

**2003 AO$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.42914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22705715 | $\omega$ | 336.80349 | | −0.01191968 | −0.98947714 | |
| $a$ | 2.6610065 | $\Omega$ | 113.62177 | | +0.94031098 | −0.06014147 | |
| $e$ | 0.2466413 | $i$ | 9.05513 | | +0.34010761 | +0.13159787 | |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 291 | 0.3− | 0.2+ | 2003 01 27 | 699 | 0.9+ | 0.3+ | 2003 02 07 | 704 | 0.9+ | 0.4− |
| 2002 12 05 | 291 | 0.3− | 0.3− | 2003 01 27 | 699 | 0.7+ | 0.7− | 2003 02 23 | 699 | 0.4− | 0.2− |
| 2002 12 05 | 291 | 0.4− | 0.5+ | 2003 01 27 | 699 | 0.8+ | 0.3− | 2003 02 23 | 699 | 0.2− | 0.7− |
| 2002 12 10 | 644 | 0.7+ | 0.0 | 2003 01 27 | 699 | 0.1− | 0.0 | 2003 02 23 | 699 | 1.2− | 0.2− |
| 2002 12 10 | 644 | 0.8+ | 0.2+ | 2003 01 27 | 608 | 0.1+ | 0.5− | 2003 02 23 | 699 | 0.5+ | 0.6− |
| 2002 12 10 | 644 | 0.7+ | 0.4+ | 2003 01 27 | 608 | 0.0 | 0.2− | 2005 08 08 | 807 | 0.1− | 0.3+ |
| 2003 01 01 | 291 | 0.3− | 0.3+ | 2003 01 27 | 608 | 0.2− | 0.5− | 2005 08 08 | 807 | 0.0 | 0.5+ |
| 2003 01 01 | 291 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.5− | 0.1− |
| 2003 01 01 | 291 | 1.3− | 0.6+ | 2003 02 01 | 704 | 0.6+ | 0.1− | 2006 10 28 | 703 | 0.0 | 0.3− |
| 2003 01 04 | 704 | (1.2+ | 1.7+) | 2003 02 01 | 704 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 1.0− | 0.0 |
| 2003 01 04 | 704 | 0.8+ | 0.5+ | 2003 02 01 | 704 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2003 01 04 | 704 | 1.2+ | 1.1+ | 2003 02 01 | 704 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.9+ | 0.9− |
| 2003 01 08 | 704 | 0.8+ | 0.7− | 2003 02 04 | 704 | 0.3+ | 1.4+ | 2006 11 13 | 703 | 0.3+ | 0.2− |
| 2003 01 08 | 704 | 0.5+ | 0.1− | 2003 02 04 | 704 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.3− | 0.1− |
| 2003 01 08 | 704 | 0.1− | 1.0− | 2003 02 04 | 704 | 0.1+ | 0.9− | 2006 11 13 | 703 | 0.3− | 0.8+ |
| 2003 01 08 | 704 | 0.5+ | 0.9− | 2003 02 04 | 704 | 0.2− | 0.4− | 2006 11 19 | 703 | 0.9+ | 0.2− |
| 2003 01 08 | 704 | 0.0 | 1.0− | 2003 02 04 | 704 | 0.2− | 0.8− | 2006 11 19 | 703 | 0.3+ | 0.4− |
| 2003 01 14 | 608 | 0.1− | 1.1+ | 2003 02 07 | 704 | 0.3− | 1.0− | 2006 11 19 | 703 | 0.3− | 0.3− |
| 2003 01 14 | 608 | 0.2− | 0.8+ | 2003 02 07 | 704 | 0.8+ | 0.5− | 2006 11 19 | 703 | 0.5+ | 0.5− |
| 2003 01 14 | 608 | 0.1− | 1.0+ | 2003 02 07 | 704 | 0.9+ | 0.1+ | | | | |

**2003 AT$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.08579 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23954653 | $\omega$ | 228.94660 | | +0.72039823 | +0.68793854 | |
| $a$ | 2.5676912 | $\Omega$ | 87.38396 | | −0.60693179 | +0.68680225 | |
| $e$ | 0.1399738 | $i$ | 5.06135 | | −0.33564891 | +0.23461295 | |
| $P$ | 4.11 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.8+ | 0.4− | 2006 11 02 | 703 | 0.4− | 0.5− | 2006 11 18 | 704 | (2.2− | 0.9+) | |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.2+ | 1.1+ | 2006 11 18 | 704 | 0.5− | 0.7+ | |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.6+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.8+ | |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.6− | 2006 11 20 | 704 | 0.4+ | 0.3+ | |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.3− | 0.8+ | |
| 2002 12 10 | 704 | 0.7− | 0.4+ | 2006 11 12 | G96 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.3+ | 0.6+ | |
| 2002 12 10 | 704 | 0.1− | 0.7+ | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.3− | 0.1+ | |
| 2002 12 10 | 704 | 0.5− | 1.2− | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2− | |
| 2003 01 02 | 704 | 0.5+ | 1.2− | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.0 | 0.1− | |
| 2003 01 02 | 704 | 0.7+ | 0.2− | 2006 11 13 | 703 | 0.4− | 0.7+ | 2006 11 23 | 691 | 0.2− | 0.0 | |
| 2003 01 02 | 704 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.3− | |
| 2003 01 04 | 704 | 0.7− | 0.8+ | 2006 11 13 | 703 | 0.1+ | 1.1− | 2006 11 23 | G96 | 0.2− | 0.3− | |
| 2003 01 04 | 704 | 0.7− | 0.7+ | 2006 11 13 | 703 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.5− | |
| 2003 01 04 | 704 | 0.5+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.2− | |
| 2006 10 16 | 703 | 0.5+ | 1.4− | 2006 11 16 | 691 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2− | |
| 2006 10 16 | 703 | 0.3+ | 0.6− | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.3− | |
| 2006 10 16 | 703 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.1− | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.3− | |
| 2006 10 16 | 703 | 1.3− | 0.9+ | 2006 11 17 | 704 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.4+ | 1.3+ | |
| 2006 10 20 | 703 | 0.5+ | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.4+ | 2006 11 29 | 704 | 0.6− | 0.7+ | |
| 2006 10 20 | 703 | 0.1− | 1.2+ | 2006 11 17 | 704 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.1− | 0.5+ | |
| 2006 10 20 | 703 | 0.4+ | 1.0+ | 2006 11 17 | 704 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.6+ | |
| 2006 10 20 | 703 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.3− | |
| 2006 11 02 | 703 | 0.2− | 0.0 | 2006 11 18 | 704 | 1.0− | 0.2− | 2006 12 01 | 691 | 0.1− | 0.0 | |
| 2006 11 02 | 703 | 0.6− | 1.3− | 2006 11 18 | 704 | (1.8+ | 1.5−) | 2006 12 01 | 691 | 0.1+ | 0.1− | |

**2003 AX$_6$ = 2006 VV$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.24624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24407976 | $\omega$ | 131.47850 | | +0.73226272 | −0.63617942 | |
| $a$ | 2.5357992 | $\Omega$ | 269.51999 | | +0.52964516 | +0.75632939 | |
| $e$ | 0.1230319 | $i$ | 14.06637 | | +0.42809732 | +0.15245196 | |
| $P$ | 4.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.1− | 0.1+ | 2003 01 02 | 704 | 0.4+ | 0.2− | 2006 11 13 | 691 | 0.5+ | 0.0 | |
| 2002 12 14 | 704 | 1.5+ | 0.4− | 2003 01 02 | 704 | 0.1+ | 1.5+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | |
| 2002 12 14 | 704 | 0.2− | 0.7+ | 2003 01 04 | 704 | 0.6+ | 1.0− | 2006 11 13 | 691 | 0.1− | 0.0 | |
| 2002 12 14 | 704 | 1.2− | 0.4+ | 2003 01 04 | 704 | 0.3− | 0.3− | 2006 11 17 | 691 | 0.3− | 0.1− | |
| 2003 01 02 | 704 | 0.5− | 0.1+ | 2003 01 04 | 704 | 0.5+ | 0.5− | 2006 11 17 | 691 | 0.1− | 0.1− | |
| 2003 01 02 | 704 | 0.3− | 0.1+ | 2003 01 04 | 704 | 0.5− | 0.2− | 2006 11 17 | 691 | 0.2− | 0.0 | |

**2003 AS$_7$ = 2006 VL$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.82115 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23193077 | $\omega$ | 310.29656 | | +0.78943564 | −0.60646181 | |
| $a$ | 2.6235970 | $\Omega$ | 87.24817 | | +0.58805539 | +0.70289465 | |
| $e$ | 0.2451229 | $i$ | 5.44866 | | +0.17601769 | +0.37167617 | |
| $P$ | 4.25 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.5− | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.3− | |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.8− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.1+ | |
| 2003 01 02 | 704 | 0.4+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.7− | |
| 2003 01 02 | 704 | 0.0 | 0.6+ | 2006 11 13 | 703 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.1− | |
| 2003 01 02 | 704 | 0.7+ | 0.3− | 2006 11 13 | 703 | 0.0 | 0.8− | 2006 11 20 | 691 | 0.2+ | 0.1+ | |
| 2003 01 02 | 704 | 0.4− | 0.2− | 2006 11 13 | 703 | 0.1− | 0.6− | 2006 11 20 | 691 | 0.1+ | 0.0 | |
| 2003 01 04 | 704 | 0.7− | 0.6+ | 2006 11 13 | 703 | 0.3− | 1.3− | 2006 11 20 | 691 | 0.0 | 0.1+ | |
| 2003 01 04 | 704 | 0.7+ | 0.5+ | 2006 11 14 | 704 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.3+ | 0.1+ | |
| 2003 01 04 | 704 | 0.8+ | 0.4+ | 2006 11 14 | 704 | 0.4− | 0.5+ | 2006 11 20 | 704 | 0.3+ | 0.2− | |
| 2003 01 07 | 704 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.3+ | |
| 2003 01 07 | 704 | 0.8− | 1.1− | 2006 11 14 | 704 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.0 | |
| 2003 01 07 | 704 | 0.4− | 0.5− | 2006 11 14 | 704 | 0.5+ | 0.8+ | 2006 11 20 | 704 | 0.0 | 0.1+ | |
| 2003 01 07 | 704 | 0.1+ | 1.1− | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.2+ | |
| 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.3− | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.2+ | |
| 2006 10 03 | G96 | 0.6+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.2+ | 2006 11 24 | 691 | 0.2− | 0.3+ | |
| 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.5− | |
| 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.6+ | |
| 2006 10 23 | G96 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.2− | |
| 2006 10 23 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.8+ | |
| 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.5− | 0.1+ | |
| 2006 10 23 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.1+ | | | | | |
| 2006 11 02 | 703 | 0.3− | 0.7− | 2006 11 17 | 704 | (0.8+ | 2.0+) | | | | | |

**2003 AB$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.80176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22661684 | $\omega$ | 191.26293 | | +0.05297178 | −0.99214096 | |
| $a$ | 2.6644522 | $\Omega$ | 255.77513 | | +0.92503974 | +0.09151376 | |
| $e$ | 0.1201376 | $i$ | 6.71582 | | +0.37615883 | −0.08533203 | |
| $P$ | 4.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1− | 0.4− | 2003 01 03 | 704 | 0.7− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3+ | |
| 2002 11 24 | 644 | 0.0 | 0.6− | 2003 01 04 | 704 | 0.7− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.2+ | |
| 2002 11 24 | 644 | 0.0 | 0.9− | 2003 01 04 | 704 | 1.1+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.1+ | |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2003 01 04 | 704 | 0.4+ | 1.0− | 2006 10 12 | 644 | 0.3+ | 0.0 | |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2003 01 04 | 704 | 0.5+ | 0.9− | 2006 10 17 | 703 | 0.0 | 0.5+ | |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.7− | |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2006 09 28 | 703 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.2+ | 1.0+ | |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 09 28 | 703 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 1.0− | 0.6+ | |
| 2002 12 10 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.2+ | 0.1− | |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2006 10 04 | 703 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.0 | |
| 2002 12 10 | 704 | 0.0 | 0.2− | 2006 10 04 | 703 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2002 12 10 | 704 | 0.1− | 1.2+ | 2006 10 04 | 703 | 1.0− | 1.1− | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2002 12 10 | 704 | 1.3+ | 0.2+ | 2006 10 04 | 703 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2003 01 03 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.0 | |
| 2003 01 03 | 704 | 0.1− | 1.0+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | | | | |

**2003 AE$_{10}$ = 1969 TV$_1$ = 2004 EQ$_{92}$**

Id. Minor Planet Center (*MPO* 69427; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.41171 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24091679 | $\omega$ | 178.10486 | | +0.98802992 | −0.15286354 | |
| $a$ | 2.5579458 | $\Omega$ | 190.75496 | | +0.14003169 | +0.94511807 | |
| $e$ | 0.3004717 | $i$ | 6.37708 | | +0.06471471 | +0.28876387 | |
| $P$ | 4.09 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1969 10 08 | 095 | (3.3+ | 0.0 | ) | 2005 06 12 | 691 | 0.1+ | 0.5+ | 2006 10 30 | 703 | 0.8+ | 0.2+ |
| 2000 04 10 | 695 | 0.1+ | 0.1− | | 2005 06 12 | 691 | 0.3+ | 0.3+ | 2006 10 30 | 703 | 0.1+ | 0.5+ |
| 2000 04 10 | 695 | 0.1− | 0.1− | | 2006 08 21 | 704 | 0.8− | 1.2+ | 2006 10 30 | 703 | 0.0 | 0.3− |
| 2002 10 11 | 704 | (2.0+ | 0.2+) | | 2006 08 21 | 704 | 0.0 | 0.6+ | 2006 11 02 | 704 | 0.0 | 0.5− |
| 2002 10 11 | 704 | (1.9+ | 0.4+) | | 2006 08 21 | 704 | 0.4− | 0.4+ | 2006 11 02 | 704 | 0.2+ | 1.0− |
| 2002 10 11 | 704 | (3.5+ | 0.2+) | | 2006 08 21 | 704 | 0.0 | 0.1+ | 2006 11 02 | 704 | 0.4− | 0.5− |
| 2002 11 11 | 704 | 0.2+ | 0.6− | | 2006 08 21 | 704 | 0.8− | 0.9− | 2006 11 02 | 704 | 1.1+ | 0.9− |
| 2002 11 11 | 704 | 0.5− | 0.4− | | 2006 09 16 | 704 | 1.1+ | 0.6+ | 2006 11 10 | 683 | 1.1+ | 0.3− |
| 2002 11 11 | 704 | 0.1+ | 1.0− | | 2006 09 16 | 704 | 0.0 | 0.7+ | 2006 11 10 | 683 | 0.5+ | 0.2+ |
| 2002 11 11 | 704 | 0.6− | 0.4− | | 2006 09 16 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 683 | 0.4+ | 0.0 |
| 2002 11 11 | 704 | 0.9+ | 0.5− | | 2006 09 16 | 704 | 1.2+ | 0.3+ | 2006 11 11 | 683 | 0.2+ | 0.8+ |
| 2002 12 14 | 704 | 0.2+ | 0.3+ | | 2006 09 16 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 683 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | 0.5− | 0.1− | | 2006 09 19 | 704 | 0.4+ | 0.8− | 2006 11 13 | 683 | 1.2+ | 0.8− |
| 2002 12 14 | 704 | 0.2+ | 0.4+ | | 2006 09 19 | 704 | (1.4− | 1.9+) | 2006 11 13 | 683 | (2.1+ | 0.5−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.5− | 0.2+ | 2006 09 19 | 704 | 0.2− | 0.8+ | 2006 11 13 | 683 | 0.6+ | 0.5− |
| 2002 12 14 | 704 | 0.2− | 0.1− | 2006 09 19 | 704 | (0.6− | 1.9+) | 2006 11 14 | 683 | 0.4− | 0.2+ |
| 2003 01 01 | 704 | 0.6+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.6+ | 2006 11 14 | 683 | 0.8− | 1.1+ |
| 2003 01 01 | 704 | 0.6+ | 1.0− | 2006 09 19 | 699 | 0.9− | 0.1− | 2006 11 14 | 683 | 1.0− | 1.1+ |
| 2003 01 01 | 704 | 1.0+ | 1.3− | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 11 15 | 703 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.3− | 0.6− |
| 2003 01 05 | 704 | 0.7− | 0.3+ | 2006 10 01 | 703 | 0.4+ | 0.8+ | 2006 11 15 | 703 | 0.1+ | 0.2− |
| 2003 01 05 | 704 | 0.5− | 0.7+ | 2006 10 01 | 703 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2003 01 05 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 703 | 0.5− | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2006 10 01 | 703 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.1− | 0.5− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 03 21 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2005 05 16 | G96 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.5− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2005 05 16 | G96 | 0.4− | 0.2+ | 2006 10 22 | 704 | 0.0 | 0.6+ | 2006 11 25 | 704 | 0.4+ | 1.1+ |
| 2005 05 16 | G96 | 0.1− | 0.0 | 2006 10 22 | 704 | 0.1− | 1.0+ | 2006 11 25 | 704 | 0.6+ | 1.4+ |
| 2005 05 16 | G96 | 0.3− | 0.3+ | 2006 10 22 | 704 | 0.1− | 0.1+ | 2006 11 25 | 704 | 0.1− | 1.2+ |
| 2005 05 19 | G96 | 0.4− | 0.2− | 2006 10 22 | 704 | 0.0 | 0.4+ | 2006 11 25 | 704 | 0.3+ | 1.1+ |
| 2005 05 19 | G96 | 0.5− | 0.1− | 2006 10 22 | 704 | 0.7− | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.8+ |
| 2005 05 19 | G96 | 0.7− | 0.0 | 2006 10 27 | 704 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.8− | 0.4+ |
| 2005 05 19 | G96 | 0.5− | 0.0 | 2006 10 27 | 704 | 0.1− | 0.3+ | 2006 11 28 | 704 | 1.3− | 0.5+ |
| 2005 06 08 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 704 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.8− | 0.5− |
| 2005 06 08 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 704 | 0.5− | 0.4− | 2006 11 28 | 704 | 1.2− | 0.5+ |
| 2005 06 08 | 691 | 0.0 | 0.4+ | 2006 10 27 | 704 | 0.5− | 0.2− | | | | |
| 2005 06 12 | 691 | 0.3+ | 1.0+ | 2006 10 30 | 703 | 0.8+ | 0.5+ | | | | |

### 2003 $AV_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.68450 | | (2000.0) | | | |
| $n$ | 0.24226315 | $\omega$ | 66.05934 | | +0.63512024 | −0.77235185 |
| $a$ | 2.5484599 | $\Omega$ | 344.49972 | | +0.69476373 | +0.57673816 |
| $e$ | 0.2169220 | $i$ | 2.08898 | | +0.33752871 | +0.26616859 |
| $P$ | 4.07 | $H$ | 16.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.1+ | 0.7− | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2002 12 06 | 704 | 0.5− | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2002 12 06 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2002 12 06 | 704 | 1.0− | 0.3+ | 2006 11 15 | 704 | 0.4+ | 0.5− | 2006 11 22 | 704 | 0.7− | 1.4+ |
| 2002 12 11 | 704 | (2.2− | 0.9+) | 2006 11 15 | 704 | 0.6− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.9+ |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2002 12 11 | 704 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.9− | 2006 11 22 | 704 | 0.2+ | 0.9+ |
| 2002 12 11 | 704 | 0.9+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 0.7+ | 1.3+ |
| 2003 01 01 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.6− | 2006 11 27 | 704 | 0.5− | 0.2+ |
| 2003 01 01 | 704 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.2− | 1.1− | 2006 11 27 | 704 | 0.2+ | 0.1+ |
| 2003 01 01 | 704 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.4− | 2006 11 27 | 704 | 0.7− | 0.0 |
| 2003 01 05 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.5− | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 0.4− | 2006 11 16 | 704 | 0.6+ | 0.4− | 2006 11 28 | 704 | 1.2− | 0.1+ |
| 2003 01 05 | 704 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.7− | 0.7+ |
| 2003 01 05 | 704 | 0.4+ | 0.6− | 2006 11 19 | 704 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 1.0+ | 1.5− |
| 2003 01 05 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.2− | | | | |

### 2003 $AO_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 284.84010 | | (2000.0) | | | |
| $n$ | 0.21506176 | $\omega$ | 292.94220 | | −0.57351406 | −0.81875851 |
| $a$ | 2.7590564 | $\Omega$ | 192.16341 | | +0.79042183 | −0.54449243 |
| $e$ | 0.2609802 | $i$ | 7.29672 | | +0.21520911 | −0.18210573 |
| $P$ | 4.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 608 | 0.7− | 0.2− | 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 09 23 | 691 | 0.3+ | 0.0 |
| 2002 12 01 | 608 | 1.1− | 0.2− | 2003 01 28 | 704 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.5− | 0.6+ |
| 2002 12 01 | 608 | 1.2− | 0.1+ | 2003 01 28 | 704 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.3− | 0.1− |
| 2003 01 01 | 704 | 0.6− | 0.2− | 2003 01 28 | 704 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2003 01 01 | 704 | 0.8+ | 0.2− | 2003 01 28 | 704 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2003 01 01 | 704 | 0.8+ | 0.3+ | 2003 02 01 | 704 | 0.8− | 0.5− | 2006 10 01 | 691 | 0.3+ | 0.1− |
| 2003 01 01 | 704 | 0.5+ | 0.1+ | 2003 02 01 | 704 | 0.5− | 1.0− | 2006 10 01 | 691 | 0.4+ | 0.1− |
| 2003 01 05 | 704 | 1.2+ | 0.2− | 2003 02 01 | 704 | 0.6− | 0.6− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 1.3+ | 0.1+ | 2003 03 07 | 704 | 1.1− | 0.7+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2003 01 05 | 704 | 0.9+ | 0.1+ | 2003 03 07 | 704 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2003 01 05 | 704 | 0.9+ | 0.4− | 2003 03 07 | 704 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2003 01 05 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.5− | 0.3− |
| 2003 01 09 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2003 01 09 | 704 | 0.5− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2003 01 09 | 704 | 0.0 | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.3+ |

### 2003 $AV_{11}$ = 2006 $SZ_{301}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.23756 | | (2000.0) | | | |
| $n$ | 0.24482190 | $\omega$ | 255.14300 | | −0.85620791 | −0.47638084 |
| $a$ | 2.5306721 | $\Omega$ | 256.05934 | | +0.51658460 | −0.78421962 |
| $e$ | 0.1351003 | $i$ | 11.88749 | | +0.00695543 | −0.39756871 |
| $P$ | 4.03 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.3+ | 0.9+ | 2003 01 05 | 704 | 0.5− | 1.0− | 2006 09 26 | 691 | 0.5+ | 0.4− |
| 2003 01 01 | 704 | 1.0− | 1.4+ | 2003 01 09 | 704 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.0 |
| 2003 01 01 | 704 | 1.6+ | 0.2− | 2003 01 09 | 704 | 0.3+ | 0.4− | 2006 09 26 | 691 | 0.8− | 0.5+ |
| 2003 01 01 | 704 | 1.3+ | 0.5+ | 2003 01 09 | 704 | 0.6+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2003 01 05 | 704 | 0.5− | 0.4− | 2003 01 09 | 704 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.3+ | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 0.5− | 2003 01 28 | 704 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 1.3− | 0.2− | 2003 01 28 | 704 | 0.2− | 0.4+ | | | | |
| 2003 01 05 | 704 | 0.5− | 0.7− | 2003 01 28 | 704 | 0.1+ | 0.2+ | | | | |

### 2003 $AB_{12}$ = 2005 $SG_{53}$ = 2005 $UV_{507}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.86436 | | (2000.0) | | | |
| $n$ | 0.27081635 | $\omega$ | 123.52520 | | −0.34736363 | −0.93770494 |
| $a$ | 2.3660257 | $\Omega$ | 346.79560 | | +0.84998499 | −0.31173226 |
| $e$ | 0.1004181 | $i$ | 1.73733 | | +0.39606064 | −0.15340289 |
| $P$ | 3.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.1− | 0.5+ | 2003 01 09 | 704 | 0.7− | 0.9+ | 2005 09 25 | A50 | (2.0+ | 1.2+) |
| 1994 09 11 | 691 | (4.3+ | 2.6+) | 2003 01 09 | 704 | 0.0 | 0.3+ | 2005 09 29 | 699 | 0.4− | 0.4− |
| 1994 09 11 | 691 | 0.1+ | 0.4+ | 2003 01 09 | 704 | 0.5− | 0.7+ | 2005 09 29 | 699 | 1.1− | 0.9+ |
| 1996 02 15 | 691 | 0.0 | 0.2+ | 2003 01 09 | 704 | 0.5− | 0.4+ | 2005 09 29 | 699 | 0.5− | 0.8+ |
| 1996 02 15 | 691 | 0.1+ | 0.3+ | 2003 01 09 | 704 | 0.1+ | 0.8+ | 2005 09 29 | 699 | 0.3− | 1.0+ |
| 1996 02 15 | 691 | 0.0 | 0.1+ | 2005 09 23 | 703 | (4.0− | 0.3+) | 2005 10 30 | G96 | 0.1+ | 0.1− |
| 1998 11 17 | 691 | 0.3− | 0.3− | 2005 09 23 | 703 | 1.2− | 0.7+ | 2005 10 30 | G96 | 0.2+ | 0.0 |
| 1998 11 17 | 691 | 0.6− | 0.6− | 2005 09 23 | 703 | 0.7− | 0.6+ | 2005 10 30 | G96 | 0.3+ | 0.1+ |
| 1998 11 17 | 691 | 0.1− | 0.2− | 2005 09 23 | 703 | (1.8− | 0.9+) | 2005 10 30 | G96 | 0.0 | 0.2− |
| 1998 11 24 | 691 | 0.1+ | 0.5− | 2005 09 23 | 703 | (1.6− | 0.1−) | 2005 12 04 | G96 | 0.3+ | 0.5+ |
| 1998 11 24 | 691 | 0.4+ | 0.4− | 2005 09 23 | 703 | 0.6− | 0.2− | 2005 12 04 | G96 | 0.5+ | 0.3+ |
| 1998 11 24 | 691 | 0.6+ | 0.0 | 2005 09 23 | 703 | 0.4− | 0.6− | 2005 12 04 | G96 | 0.3+ | 0.0 |
| 2003 01 01 | 704 | 0.2+ | 1.1+ | 2005 09 23 | 703 | 0.6+ | 0.7+ | 2005 12 04 | G96 | (0.1− | 1.8+) |
| 2003 01 01 | 704 | 0.8+ | 1.0+ | 2005 09 24 | 644 | 0.6+ | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2003 01 01 | 704 | 0.1+ | 0.1− | 2005 09 24 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2003 01 01 | 704 | (2.5+ | 1.0+) | 2005 09 24 | 644 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2003 01 01 | 704 | 0.8+ | 0.7− | 2005 09 25 | 703 | (2.0+ | 1.7+) | 2006 11 16 | G96 | 0.6+ | 0.0 |
| 2003 01 05 | 704 | (1.6+ | 0.2−) | 2005 09 25 | 703 | (2.5+ | 1.7+) | 2006 11 24 | G96 | 1.0− | 0.6− |
| 2003 01 05 | 704 | 0.7+ | 0.1− | 2005 09 25 | 703 | (2.3+ | 2.1+) | 2006 11 24 | G96 | 1.0− | 0.3− |
| 2003 01 05 | 704 | 0.8+ | 0.0 | 2005 09 25 | 703 | (1.6+ | 2.4+) | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2003 01 05 | 704 | 1.4+ | 0.3+ | 2005 09 25 | A50 | (2.3+ | 1.3+) | 2006 11 24 | G96 | 0.4+ | 0.7+ |

**2003 AC$_{12}$ = 2006 SS$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.24443 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23851264 | $\omega$ | 182.05191 | +0.81603062 | | −0.57479654 | |
| $a$ | 2.5751060 | $\Omega$ | 213.27070 | +0.53187989 | | +0.78794599 | |
| $e$ | 0.2876898 | $i$ | 6.36855 | +0.22626934 | | +0.22079414 | |
| $P$ | 4.13 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.7− | 0.4+ | 2006 09 27 | 704 | 0.6− | 0.9+ | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2002 10 11 | 704 | 0.7+ | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 10 11 | 704 | 0.1− | 0.7− | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2002 10 11 | 704 | 1.1+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2002 11 11 | 704 | 0.9− | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 11 11 | 704 | 0.6− | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | 0.6− | 0.1− | 2006 09 30 | 704 | 0.8+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.2− |
| 2002 11 11 | 704 | 0.6− | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.6+ |
| 2003 01 01 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 704 | 0.8+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2003 01 01 | 704 | 0.2− | 0.2− | 2006 09 30 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2003 01 01 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2003 01 01 | 704 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2003 01 01 | 704 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.3− |
| 2003 01 05 | 704 | 0.8+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2003 01 05 | 704 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2003 01 05 | 704 | 1.1+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.9+ | 0.3− | 2006 10 27 | 704 | 0.5− | 0.7− | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.6+ | 0.3− | 2006 10 27 | 704 | 1.1− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2003 01 09 | 704 | 0.6− | 0.2− | 2006 10 27 | 704 | 1.0− | 0.4+ | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2003 01 09 | 704 | 0.0 | 0.6− | 2006 11 05 | 644 | 0.4− | 0.0 | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2003 01 09 | 704 | 0.7− | 0.6+ | 2006 11 05 | 644 | 0.4− | 0.0 | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2005 06 27 | G96 | 0.2− | 0.3+ | 2006 11 05 | 644 | 0.4− | 0.2+ | 2006 11 25 | 704 | 0.1− | 0.9+ |
| 2005 06 27 | G96 | 0.3− | 0.0 | 2006 11 14 | 104 | 0.1+ | 0.3− | 2006 11 25 | 704 | 0.4+ | 0.1+ |
| 2005 06 27 | G96 | 0.2+ | 0.3− | 2006 11 14 | 104 | 0.2− | 0.2− | 2006 11 25 | 704 | 0.3− | 0.5+ |
| 2005 06 27 | G96 | 0.2+ | 0.1+ | 2006 11 14 | 104 | 0.3+ | 0.5− | 2006 11 25 | 704 | 0.3+ | 1.0+ |
| 2006 09 17 | 704 | 0.3− | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.6− | 2006 11 28 | 704 | 0.3− | 0.4+ |
| 2006 09 17 | 704 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.8+ | 0.4− |
| 2006 09 17 | 704 | 0.1− | 0.5+ | 2006 11 14 | 704 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.2− | 0.2+ |
| 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.5− | 0.5− | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2006 09 20 | 704 | 0.8+ | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2006 09 20 | 704 | 0.7+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.4− | 2006 12 01 | 704 | 0.2+ | 0.9+ |
| 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.2− | 0.3− |
| 2006 09 20 | 704 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.9+ | 2006 12 01 | 704 | 0.2+ | 0.9+ |
| 2006 09 27 | 704 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.4+ | 0.7+ | 2006 12 01 | 704 | 0.0 | 0.5− |
| 2006 09 27 | 704 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.6+ | 2006 12 01 | 704 | 0.5− | 0.5− |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.6+ | 0.8+ | | | | |

**2003 AC$_{13}$ = 2001 SY$_{342}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.90690 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21764779 | $\omega$ | 259.45487 | +0.60254363 | | −0.79349746 | |
| $a$ | 2.7371581 | $\Omega$ | 152.91947 | +0.78579301 | | +0.57113033 | |
| $e$ | 0.1722437 | $i$ | 10.81966 | +0.13953683 | | +0.21017118 | |
| $P$ | 4.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 644 | 0.1+ | 0.3+ | 2003 01 09 | 704 | (1.6+ | 0.3+) | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 07 17 | 644 | 0.3+ | 0.4− | 2003 01 09 | 704 | 0.7+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 07 17 | 644 | 0.5+ | 0.2+ | 2003 01 09 | 704 | 1.5+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2001 08 16 | 704 | 1.5− | 1.3− | 2006 09 16 | 699 | 0.4+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 08 16 | 704 | 0.5− | 0.9− | 2006 09 16 | 699 | 0.8+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.3− |
| 2001 08 16 | 704 | 1.1− | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 08 16 | 704 | (2.1− | 0.1+) | 2006 09 16 | 699 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2001 08 16 | 704 | 1.1− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 08 24 | 699 | 0.7+ | 0.1− | 2006 09 18 | 703 | 1.0+ | 1.1− | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 2001 08 24 | 699 | 1.3+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 1.0− | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2001 08 24 | 699 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2001 08 24 | 699 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2001 09 22 | 691 | 0.4− | 0.1− | 2006 09 25 | 699 | 1.1+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2001 09 22 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.5+ |
| 2001 09 22 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.9− | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.4+ |
| 2001 09 23 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.6− |
| 2001 09 23 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.4− |
| 2001 09 23 | 691 | (2.4+ | 0.4+) | 2006 09 26 | 703 | 0.2− | 0.4− | 2006 10 28 | 703 | 0.1+ | 0.6+ |
| 2003 01 01 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.5+ | 2006 10 28 | 703 | 0.9+ | 0.0 |
| 2003 01 01 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.6+ |
| 2003 01 01 | 704 | 0.3− | 0.5− | 2006 09 29 | 699 | 0.5+ | 0.6− | 2006 10 28 | 703 | 1.0− | 0.2+ |
| 2003 01 01 | 704 | 0.6+ | 0.4+ | 2006 09 29 | 699 | (0.9− | 2.2+) | 2006 11 07 | 644 | 0.5− | 0.4− |
| 2003 01 05 | 704 | 0.9− | 0.5− | 2006 09 30 | 704 | 0.6− | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 1.1− | 0.1+ | 2006 09 30 | 704 | 0.4+ | 0.5+ | 2006 11 07 | 644 | 0.2− | 0.2− |
| 2003 01 05 | 704 | 1.1− | 0.0 | 2006 09 30 | 704 | 0.1− | 0.4+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2003 01 05 | 704 | (1.7− | 0.2−) | 2006 09 30 | 704 | (2.0− | 0.1+) | 2006 11 07 | 644 | 0.1− | 0.2− |
| 2003 01 09 | 704 | (2.3+ | 0.3+) | 2006 09 30 | 704 | 0.7+ | 0.4− | 2006 11 07 | 644 | 0.1− | 0.2− |

**2003 AD$_{13}$ = 2006 SP$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.59752 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21546970 | $\omega$ | 245.73548 | +0.10056693 | | −0.99427636 | |
| $a$ | 2.7555729 | $\Omega$ | 198.60010 | +0.94892307 | | +0.10674947 | |
| $e$ | 0.2854848 | $i$ | 6.49264 | +0.29905068 | | −0.00436621 | |
| $P$ | 4.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 17 | 691 | 0.6− | 0.7− | 2003 01 09 | 704 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.7− |
| 1994 01 17 | 691 | 0.1− | 0.4− | 2003 01 09 | 704 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.3− | 1.2− |
| 1994 01 17 | 691 | 0.3+ | 0.7− | 2006 08 29 | 703 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 1999 04 15 | 691 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.4+ | 0.4+ |
| 1999 04 15 | 691 | 0.0 | 0.3− | 2006 08 29 | 703 | 0.5+ | 1.1− | 2006 10 10 | 644 | 0.5+ | 0.3+ |
| 1999 04 15 | 691 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.2+ | 1.1− | 2006 10 12 | 644 | 0.7+ | 0.5+ |
| 2002 12 14 | 704 | (1.8+ | 0.2−) | 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 2002 12 14 | 704 | 1.0+ | 0.6+ | 2006 09 19 | 703 | 1.1− | 0.7− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 12 14 | 704 | 1.1+ | 0.6+ | 2006 09 19 | 703 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.1− |
| 2002 12 14 | 704 | 1.3+ | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.1− | 2006 10 16 | 703 | 1.0+ | 0.1+ |
| 2003 01 01 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2003 01 01 | 704 | 0.3− | 0.0 | 2006 09 20 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2003 01 01 | 704 | 0.0 | 0.6+ | 2006 09 20 | 691 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2003 01 01 | 704 | 0.3+ | 0.9+ | 2006 10 01 | 703 | 0.5− | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2003 01 01 | 704 | 0.2+ | 0.7+ | 2006 10 01 | 703 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 10 01 | 703 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.5− |
| 2003 01 05 | 704 | 0.3− | 0.2− | 2006 10 01 | 703 | 0.3− | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.4− | 0.4+ | 2006 10 01 | 704 | (2.4+ | 0.6+) | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2003 01 05 | 704 | 1.0− | 0.4− | 2006 10 01 | 704 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.8+ | 0.1+ |
| 2003 01 05 | 704 | 0.8− | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2003 01 09 | 704 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.4− | 0.5− | | | | |
| 2003 01 09 | 704 | 0.1− | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.4− | | | | |

**2003 AE$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.09043 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21592926 | $\omega$ | 178.50066 | +0.58789032 | | −0.79954906 | |
| $a$ | 2.7516618 | $\Omega$ | 235.47481 | +0.74062721 | | +0.59310407 | |
| $e$ | 0.1591548 | $i$ | 8.57952 | +0.32535567 | | +0.09459843 | |
| $P$ | 4.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | (2.4− | 2.1−) | 2006 09 20 | 699 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 1997 10 29 | 704 | 1.8− | 1.9− | 2006 09 20 | 699 | 0.5− | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 1997 10 29 | 704 | 1.0− | 1.7− | 2006 09 20 | 699 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.4− |
| 1997 10 29 | 704 | 0.5− | 1.2− | 2006 09 20 | 699 | 0.4+ | 0.2− | 2006 11 14 | 703 | 0.3− | 0.3− |
| 1997 10 31 | 704 | 0.7+ | 0.8− | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.2− | 0.5− |
| 1997 10 31 | 704 | 0.9− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.7− | 0.2− |
| 1997 10 31 | 704 | 1.7− | 1.2+ | 2006 09 30 | 703 | 1.0− | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.5+ |
| 1997 10 31 | 704 | 1.8− | 1.7+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 0.6+ | 1.1+ | 2006 10 10 | 644 | 0.5+ | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.1− | | |
| 1997 11 06 | 704 | 1.4+ | 1.5− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1− | 1.1− | | |
| 1997 11 06 | 704 | 1.2+ | 0.6− | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 1.3− | 0.3+ | | |
| 1997 11 06 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.5+ | | |
| 1997 12 07 | 910 | 1.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.6+ | | |
| 1997 12 07 | 910 | 1.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.8+ | | |
| 1997 12 07 | 910 | 1.1+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.3+ | | |
| 2001 08 25 | 704 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.3+ | | |
| 2001 08 25 | 704 | (1.5+ | 1.8−) | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.7+ | | |
| 2001 08 25 | 704 | 0.6+ | 0.7− | 2006 10 17 | 703 | 1.0− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.7+ | | |
| 2001 08 25 | 704 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.6− | 2006 11 19 | 704 | 0.3− | 0.1+ | | |
| 2003 01 01 | 704 | 1.2− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 1.0+ | | |
| 2003 01 01 | 704 | 0.9− | 1.2− | 2006 10 17 | 703 | 0.5− | 0.1− | 2006 11 22 | 704 | (4.1− | 2.7+) | | |
| 2003 01 01 | 704 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.7− | 0.6+ | | |
| 2003 01 01 | 704 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 1.0− | 0.2+ | | |
| 2003 01 01 | 704 | (0.4− | 1.6−) | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.3− | 0.0 | | |
| 2003 01 05 | 704 | 0.1+ | 0.6− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.3+ | 0.7− | | |
| 2003 01 05 | 704 | 1.0+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 28 | 704 | 1.9+ | 0.8+ | | |
| 2003 01 05 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.3+ | | |
| 2003 01 09 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.1− | | |
| 2003 01 09 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.3− | 0.3+ | | |
| 2003 01 09 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.3− | | |
| 2003 01 09 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.3− | | |
| 2006 08 12 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.4− | 0.6− | | |
| 2006 08 12 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 | | | | | | |
| 2006 08 12 | 644 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1− | | | | | | |

**2003 AK$_{13}$ = 2006 VM$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.58582 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22962535 | $\omega$ | 185.97942 | | +0.00637456 | −0.97406932 | |
| $a$ | 2.6411283 | $\Omega$ | 263.81092 | | +0.92663207 | +0.09077439 | |
| $e$ | 0.2060109 | $i$ | 13.14910 | | +0.37591537 | −0.20724132 | |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.8− | 0.1+ | 2003 01 09 | 704 | 0.4+ | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.1+ | | |
| 2003 01 01 | 704 | 0.2− | 0.3− | 2003 01 09 | 704 | 0.4+ | 0.5− | 2006 11 13 | 644 | 0.4+ | 0.0 | | |
| 2003 01 01 | 704 | 0.5+ | 0.9− | 2003 01 09 | 704 | 0.5+ | 0.2− | 2006 11 15 | 703 | (2.2− | 2.1−) | | |
| 2003 01 01 | 704 | 1.1+ | 0.0 | 2006 10 23 | 703 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.8− | | |
| 2003 01 05 | 704 | 1.0− | 0.6+ | 2006 10 23 | 703 | 0.7− | 0.2− | 2006 11 15 | 703 | 0.9− | 1.1− | | |
| 2003 01 05 | 704 | 0.6− | 0.8+ | 2006 10 23 | 703 | 0.6+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.8+ | | |
| 2003 01 05 | 704 | 0.5− | 0.5+ | 2006 10 23 | 703 | 0.6− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.5+ | | |
| 2003 01 09 | 704 | (2.8+ | 0.1+) | 2006 11 13 | 644 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.5+ | | |

**2003 AC$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.31876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23932227 | $\omega$ | 164.37378 | | +0.54620026 | −0.81004216 | |
| $a$ | 2.5692950 | $\Omega$ | 252.07216 | | +0.74251299 | +0.58607097 | |
| $e$ | 0.2926760 | $i$ | 12.95499 | | +0.38773667 | +0.01877544 | |
| $P$ | 4.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.1− | 0.6+ | 2003 01 09 | 704 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.3− | | |
| 2002 10 04 | 704 | 0.3− | 0.7− | 2003 01 09 | 704 | 1.1− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2006 10 15 | H51 | 0.3+ | 0.6− | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2002 10 11 | 704 | 0.4+ | 0.3− | 2006 10 15 | H51 | 0.2+ | 0.7− | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2002 10 11 | 704 | 0.7− | 0.4+ | 2006 10 15 | H51 | 0.5+ | 0.5− | 2006 11 17 | G96 | 0.1− | 0.3− | | |
| 2002 10 11 | 704 | 0.3+ | 0.1+ | 2006 11 01 | 628 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.5+ | | |
| 2002 11 06 | 704 | 0.0 | 0.3+ | 2006 11 01 | 628 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.7+ | | |
| 2002 11 06 | 704 | 0.0 | 0.6+ | 2006 11 01 | 628 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.6− | 1.1+ | | |
| 2002 11 06 | 704 | 0.2+ | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.0 | 0.4+ | | |
| 2002 11 14 | 704 | 0.6+ | 0.6+ | 2006 11 10 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.6+ | | |
| 2002 11 14 | 704 | 0.6+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2002 11 14 | 704 | 0.7+ | 0.4− | 2006 11 13 | 644 | 0.5− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2002 12 11 | 704 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.1− | | |
| 2002 12 11 | 704 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.5− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2002 12 11 | 704 | 0.7+ | 0.6+ | 2006 11 14 | 703 | 1.0− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.3+ | | |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.6+ | 2006 11 22 | 704 | 0.2− | 0.5+ | | |
| 2002 12 11 | 704 | 0.8+ | 0.9− | 2006 11 14 | 703 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.5+ | | |
| 2003 01 03 | 704 | 1.3− | 0.0 | 2006 11 14 | 703 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.5+ | | |
| 2003 01 03 | 704 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.1− | 0.3+ | | |
| 2003 01 03 | 704 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.2− | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.1+ | | |
| 2003 01 03 | 704 | 0.4− | 0.8− | 2006 11 15 | 704 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.3+ | 0.1+ | | |
| 2003 01 03 | 704 | 0.6+ | 0.3− | 2006 11 15 | 704 | 0.7− | 0.4+ | 2006 11 25 | 691 | 0.2+ | 0.1+ | | |
| 2003 01 03 | 704 | 0.2− | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.4− | 2006 11 27 | 704 | 0.2+ | 0.1+ | | |
| 2003 01 03 | 704 | 0.1+ | 0.5− | 2006 11 16 | 704 | 0.7− | 0.2+ | 2006 11 27 | 704 | 0.8+ | 0.6− | | |
| 2003 01 03 | 704 | 1.1− | 0.3− | 2006 11 16 | 704 | 0.4− | 0.6− | 2006 11 27 | 704 | 0.4+ | 0.1+ | | |
| 2003 01 03 | 704 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.3− | 0.1− | 2006 11 27 | 704 | 0.7+ | 0.9+ | | |
| 2003 01 05 | 704 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.1− | 0.6− | 2006 12 01 | 704 | 0.1− | 0.3+ | | |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.3− | 0.4− | 2006 12 01 | 704 | 0.3+ | 0.6− | | |
| 2003 01 05 | 704 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.3− | 2006 12 01 | 704 | 0.3+ | 0.6− | | |
| 2003 01 05 | 704 | 0.6− | 0.1− | 2006 11 16 | 704 | 0.3− | 0.3− | 2006 12 01 | 704 | 0.2+ | 0.1− | | |
| 2003 01 09 | 704 | 0.8+ | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.3− | 2006 12 01 | 704 | 0.6+ | 0.6− | | |

**2003 AZ$_{17}$ = 2006 VQ$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.81259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23038474 | $\omega$ | 47.85585 | | −0.60413173 | −0.75068879 | |
| $a$ | 2.6353213 | $\Omega$ | 81.30157 | | +0.62781634 | −0.65501342 | |
| $e$ | 0.1126668 | $i$ | 15.69340 | | +0.49078661 | −0.08616125 | |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 699 | 0.2− | 0.4− | 2003 01 25 | 704 | 0.6− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.9+ | | |
| 2003 01 05 | 699 | 0.6− | 0.6− | 2003 01 25 | 704 | 0.0 | 0.8+ | 2006 11 17 | 691 | 0.2− | 0.3+ | | |
| 2003 01 05 | 699 | 0.1+ | 0.4− | 2003 01 25 | 704 | 0.3− | 0.5− | 2006 11 17 | 703 | 0.8− | 0.4− | | |
| 2003 01 05 | 699 | 0.6+ | 0.7− | 2003 01 25 | 704 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.1− | 1.1+ | | |
| 2003 01 07 | 704 | 0.6− | 0.0 | 2003 01 31 | 699 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.2− | 0.0 | | |
| 2003 01 07 | 704 | 1.0+ | 0.9+ | 2003 01 31 | 699 | 0.5− | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.2+ | | |
| 2003 01 07 | 704 | 1.0+ | 0.2− | 2003 01 31 | 699 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.0 | | |
| 2003 01 07 | 704 | 0.6+ | 0.2+ | 2003 01 31 | 699 | 0.7+ | 0.6+ | 2006 11 21 | 704 | 0.1− | 0.3− | | |
| 2003 01 10 | 704 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | 1.3+ | 0.6− | | |
| 2003 01 10 | 704 | 0.5− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.7− | | |
| 2003 01 10 | 704 | 0.2− | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.0 | | | | | | |
| 2003 01 25 | 704 | 1.1− | 0.9− | 2006 11 17 | 703 | 0.2+ | 0.5− | | | | | | |

**2003 AY$_{18}$ = 2006 SY$_{306}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.74783 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20637280 | $\omega$ | 200.75304 | | −0.07580028 | −0.99364656 | |
| $a$ | 2.8359664 | $\Omega$ | 253.66773 | | +0.92662707 | −0.03938238 | |
| $e$ | 0.1010088 | $i$ | 4.97320 | | +0.36826159 | −0.10543025 | |
| $P$ | 4.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | (1.8+ | 0.6−) | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1− | | |
| 2003 01 02 | 704 | 0.7− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.5− | | |
| 2003 01 02 | 704 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 2003 01 02 | 704 | (0.3− | 1.9+) | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.2− | | |
| 2003 01 04 | 704 | 0.5− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.4− | | |
| 2003 01 04 | 704 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2003 01 04 | 704 | 0.4− | 0.5+ | 2006 09 30 | 703 | 1.1− | 1.0− | 2006 10 11 | 644 | 0.3+ | 0.4+ | | |
| 2003 01 04 | 704 | 0.4− | 0.3+ | 2006 09 30 | 703 | (0.1− | 3.2−) | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2003 01 07 | 704 | 0.2− | 0.4+ | 2006 09 30 | 703 | (1.7+ | 0.3−) | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 2003 01 07 | 704 | 0.9+ | 1.3− | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 10 17 | 703 | (0.4− | 1.9−) | | |
| 2003 01 07 | 704 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.1− | 0.0 | | |
| 2003 01 07 | 704 | 1.0+ | 0.5− | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.1+ | 0.8− | | |

**2003 AB$_{20}$ = 2006 SB$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.15543 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23233727 | $\omega$ | 228.59282 | | +0.13962863 | −0.98772000 | |
| $a$ | 2.6205360 | $\Omega$ | 213.57434 | | +0.94211206 | +0.15430616 | |
| $e$ | 0.3670143 | $i$ | 7.28163 | | +0.30484210 | −0.02447074 | |
| $P$ | 4.24 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1− | 2003 01 07 | 704 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.3− | |
| 1999 03 21 | 645 | 0.1− | 0.2− | 2003 01 07 | 704 | 0.3− | 0.9− | 2006 09 30 | 691 | 0.1+ | 0.0 | |
| 2002 12 14 | 704 | 0.7− | 0.2− | 2003 01 08 | 704 | 0.7+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.0 | |
| 2002 12 14 | 704 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ | |
| 2002 12 14 | 704 | 0.1+ | 0.1+ | 2003 01 08 | 704 | 1.2− | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.2− | |
| 2002 12 14 | 704 | 0.1− | 0.1+ | 2003 01 08 | 704 | 0.4− | 0.4− | 2006 10 22 | G96 | 0.1− | 0.3− | |
| 2002 12 14 | 704 | 0.2− | 0.7+ | 2003 01 08 | 704 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.5− | |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2003 01 11 | 644 | 1.2+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.4− | |
| 2003 01 05 | 704 | 0.0 | 0.4− | 2003 01 11 | 644 | 1.1+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.2− | |
| 2003 01 05 | 704 | 0.2− | 0.2+ | 2003 01 11 | 644 | 1.0+ | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.5− | |
| 2003 01 05 | 704 | 1.1− | 0.1− | 2006 09 26 | 691 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.4− | |
| 2003 01 07 | 704 | 0.8+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− | |

**2003 AF$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.86288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22820583 | $\omega$ | 354.09749 | | +0.51458997 | −0.84949111 | |
| $a$ | 2.6520695 | $\Omega$ | 64.88077 | | +0.79185022 | +0.41872787 | |
| $e$ | 0.1405628 | $i$ | 7.38986 | | +0.32889268 | +0.32098571 | |
| $P$ | 4.32 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.6− | 0.2− | 2006 10 22 | 683 | 1.0+ | 0.9+ | 2006 11 15 | 683 | 0.3− | 1.1+ | |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 15 | 683 | (4.1+ | 1.1+) | |
| 2002 12 06 | 704 | 1.2− | 1.4+ | 2006 10 22 | 683 | 0.5+ | 1.3− | 2006 11 15 | G96 | 0.4+ | 0.4− | |
| 2002 12 11 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− | |
| 2002 12 11 | 704 | 0.6+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− | |
| 2002 12 11 | 704 | 0.0 | 0.5− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.5+ | |
| 2003 01 05 | 704 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | 1.4+ | 0.1+ | |
| 2003 01 05 | 704 | 0.8− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 1.1− | 0.7− | |
| 2003 01 05 | 704 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.4− | 0.6− | |
| 2003 01 05 | 704 | 0.9− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.5− | 0.8− | |
| 2003 01 07 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.1− | |
| 2003 01 07 | 704 | 1.4+ | 1.0− | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.1− | |
| 2003 01 07 | 704 | 0.0 | 0.9− | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.1− | |
| 2003 01 07 | 704 | 0.3+ | 0.5− | 2006 11 11 | 683 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.1+ | |
| 2003 01 08 | 704 | 0.5+ | 0.4− | 2006 11 11 | 683 | 0.1+ | 1.2+ | 2006 11 20 | 704 | 0.1+ | 0.6− | |
| 2003 01 08 | 704 | 0.9+ | 0.6+ | 2006 11 11 | 683 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.7− | 0.2+ | |
| 2003 01 08 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.0 | |
| 2003 01 08 | 704 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.1− | |
| 2006 10 16 | 703 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.1+ | |
| 2006 10 16 | 703 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.6− | |
| 2006 10 16 | 703 | 0.9− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.0 | |
| 2006 10 16 | 703 | 0.4− | 0.7− | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.8+ | |
| 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.1− | |
| 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.0 | 2006 11 22 | 683 | 0.3− | 0.2+ | |
| 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 22 | 683 | (2.1+ | 2.4−) | |
| 2006 10 22 | 683 | 0.6+ | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.0 | 2006 11 22 | 683 | 0.8+ | 0.2+ | |
| 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 15 | 683 | 0.3+ | 0.1− | | | | | |

**2003 AR$_{20}$ = 2006 VA$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.52918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23427788 | $\omega$ | 355.48987 | | +0.94083130 | −0.33683562 | |
| $a$ | 2.6060447 | $\Omega$ | 24.29617 | | +0.31366613 | +0.82413711 | |
| $e$ | 0.1973650 | $i$ | 5.17673 | | +0.12825766 | +0.45534579 | |
| $P$ | 4.21 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.2− | 1.2− | 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | (0.0 | 3.0+) | |
| 2003 01 05 | 704 | 0.0 | 1.3− | 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.2− | |
| 2003 01 05 | 704 | 0.0 | 1.2− | 2004 04 14 | 691 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.4+ | 1.5+ | |
| 2003 01 05 | 704 | 0.1+ | 1.1− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | (0.0 | 1.6+) | |
| 2003 01 05 | 704 | 1.0+ | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.8+ | |
| 2003 01 07 | 704 | 0.4+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.7+ | |
| 2003 01 07 | 704 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.8+ | |
| 2003 01 07 | 704 | 0.7− | 0.1− | 2006 11 13 | G96 | 0.5− | 0.1− | 2006 11 19 | 704 | 1.1− | 0.3+ | |
| 2003 01 08 | 704 | 0.2+ | 0.8− | 2006 11 13 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.1− | 1.1+ | |
| 2003 01 08 | 704 | 0.6− | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.1− | 1.3+ | |
| 2003 01 08 | 704 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.1+ | 2.1+ | 2006 11 22 | 704 | 0.3+ | 0.5+ | |
| 2003 01 08 | 704 | 0.6− | 0.1− | 2006 11 15 | 704 | 0.2− | 0.6+ | 2006 11 22 | 704 | 0.4+ | 0.1+ | |
| 2003 01 09 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 704 | 2.4+ | 0.4− | 2006 11 22 | 704 | 0.2− | 1.4+ | |
| 2003 01 09 | 704 | 0.7− | 0.0 | 2006 11 15 | 704 | 0.4− | 0.4− | 2006 11 25 | 691 | 0.3− | 0.2− | |
| 2003 01 09 | 704 | (2.0− | 0.3+) | 2006 11 15 | 704 | 1.0− | 0.7+ | 2006 11 25 | 691 | 0.1− | 0.3− | |
| 2003 01 09 | 704 | 0.7+ | 0.3+ | 2006 11 15 | 704 | 0.9+ | 0.2+ | 2006 11 25 | 691 | 0.2− | 0.2− | |
| 2004 03 19 | 291 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.2− | 1.1− | 2006 11 27 | 704 | 0.2− | 0.3− | |
| 2004 03 19 | 291 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.4− | 1.2− | 2006 11 27 | 704 | 0.2+ | 0.1− | |
| 2004 03 19 | 291 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.5+ | 2006 11 27 | 704 | 0.5− | 0.3− | |

**2003 AD$_{22}$ = 2006 SC$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.71332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22264865 | $\omega$ | 83.38533 | | +0.71500482 | −0.68931461 | |
| $a$ | 2.6960173 | $\Omega$ | 320.09316 | | +0.54778185 | +0.65606967 | |
| $e$ | 0.1988412 | $i$ | 10.47867 | | +0.43439976 | +0.30727506 | |
| $P$ | 4.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 566 | 0.2− | 0.1+ | 2003 01 09 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3− | |
| 1997 10 29 | 566 | 0.1− | 0.0 | 2003 01 09 | 704 | 0.6+ | 0.3− | 2006 10 23 | 703 | 0.2− | 0.5− | |
| 1997 10 29 | 566 | 0.2+ | 0.1+ | 2003 01 09 | 704 | 0.8+ | 0.2+ | 2006 10 23 | 703 | 0.6− | 0.0 | |
| 2001 08 19 | 807 | 1.0− | 0.1+ | 2003 01 24 | 644 | 0.0 | 0.1+ | 2006 10 23 | 703 | 0.1− | 0.5+ | |
| 2001 08 19 | 807 | 1.1− | 0.2+ | 2003 01 24 | 644 | 0.2+ | 0.0 | 2006 10 23 | 703 | 0.1− | 0.0 | |
| 2001 08 19 | 704 | 0.1− | 0.2− | 2003 01 24 | 644 | 0.1+ | 0.1− | 2006 10 29 | 703 | 0.7+ | 0.2− | |
| 2001 08 19 | 704 | 0.1+ | 1.0+ | 2003 02 01 | 704 | 0.2− | 1.2− | 2006 10 29 | 703 | 0.5+ | 0.7− | |
| 2001 08 19 | 704 | 1.3+ | 0.5+ | 2003 02 01 | 704 | 0.6+ | 0.2− | 2006 10 29 | 703 | 0.3+ | 0.4+ | |
| 2002 12 31 | 699 | 0.4− | 0.5− | 2003 02 01 | 704 | 0.7− | 0.2− | 2006 10 29 | 703 | 0.6+ | 0.5+ | |
| 2002 12 31 | 699 | (2.4− | 0.7+) | 2006 09 19 | 703 | 0.3− | 0.7+ | 2006 10 29 | 703 | 0.4− | 0.3+ | |
| 2002 12 31 | 699 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.6+ | 0.1+ | 2006 10 29 | 703 | 0.2+ | 0.2− | |
| 2002 12 31 | 699 | 0.6− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.0 | 2006 10 29 | 703 | 0.9+ | 0.3+ | |
| 2003 01 05 | 704 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.5+ | 0.1− | 2006 10 29 | 703 | 1.0+ | 0.5+ | |
| 2003 01 05 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 703 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.2− | 0.4− | |
| 2003 01 05 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.2+ | 0.1− | |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.4− | 0.7− | 2006 11 16 | 703 | 0.1− | 0.5− | |
| 2003 01 07 | 704 | 0.5− | 1.0+ | 2006 10 02 | 703 | 0.1+ | 0.4− | 2006 11 16 | 703 | 0.0 | 0.6− | |
| 2003 01 07 | 704 | 0.4− | 1.5+ | 2006 10 02 | 703 | 0.4− | 0.2+ | 2006 11 21 | 703 | 0.4− | 0.7− | |
| 2003 01 07 | 704 | 0.6+ | 0.0 | 2006 10 02 | 703 | 0.5− | 0.3− | 2006 11 21 | 703 | 0.5+ | 0.7+ | |
| 2003 01 07 | 704 | 0.1+ | 1.5+ | 2006 10 02 | 703 | 0.6− | 1.1+ | 2006 11 21 | 703 | 0.6− | 0.2− | |
| 2003 01 09 | 704 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 21 | 703 | 1.1− | 0.3− | |
| 2003 01 09 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3− | | | | | |

**2003 AO$_{23}$ = 2006 TA$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.13527 | | (2000.0) | | +0.94316633 | −0.32725670 |
| $n$ | 0.23481020 | $\omega$ | 313.00365 | | +0.32031623 | +0.84891858 |
| $a$ | 2.6021046 | $\Omega$ | 66.17430 | | +0.08851438 | +0.41501843 |
| $e$ | 0.2480669 | $i$ | 3.62236 | | | |
| $P$ | 4.20 | $H$ | 16.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 15 | 683 | 0.4+ | 0.4− |
| 2002 12 05 | 704 | 1.0+ | 0.1− | 2006 10 19 | 691 | 0.4+ | 1.1+ | 2006 11 15 | 683 | 0.5− | 0.0 |
| 2002 12 05 | 704 | 0.7− | 0.4+ | 2006 10 22 | 704 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2002 12 10 | 704 | 0.1+ | 0.2− | 2006 10 22 | 704 | 0.9+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 12 10 | 704 | 0.0 | 0.4− | 2006 10 22 | 704 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2002 12 10 | 704 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 12 10 | 704 | 0.8− | 0.4+ | 2006 10 23 | 691 | 1.2− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2003 01 04 | 704 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.8− | 0.3− |
| 2003 01 04 | 704 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.5+ | 0.4− | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2003 01 04 | 704 | 0.1− | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.7+ |
| 2003 01 08 | 704 | 0.2+ | 0.8+ | 2006 10 28 | 704 | 0.1+ | 0.6− | 2006 11 18 | 704 | 0.2− | 0.4− |
| 2003 01 08 | 704 | 0.2− | 0.6+ | 2006 10 28 | 704 | 0.6+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2003 01 08 | 704 | 1.2+ | 0.7+ | 2006 10 28 | 704 | 0.4− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2003 01 08 | 704 | 0.0 | 0.1+ | 2006 10 31 | 683 | (1.8− | 1.8−) | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 683 | (0.2− | 2.0−) | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 683 | 0.9− | 0.4+ | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2006 10 11 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2006 10 14 | 621 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2006 10 14 | 621 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2006 10 14 | 621 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.6+ |
| 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.3+ |
| 2006 10 15 | 691 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2006 10 16 | 621 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 22 | 683 | 0.1− | 0.6+ |
| 2006 10 16 | 621 | 0.1+ | 0.6− | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 22 | 683 | 0.1− | 0.3− |
| 2006 10 16 | 621 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.0 | 0.3− | 2006 11 22 | 683 | (1.0− | 2.1+) |
| 2006 10 16 | 703 | 0.4+ | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.4− | 2006 11 23 | 683 | 0.4+ | 0.8− |
| 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 11 23 | 683 | 1.1+ | 0.3− |
| 2006 10 16 | 703 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.0 | 0.5− | 2006 11 23 | 683 | 0.6− | 0.5+ |
| 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 13 | 683 | 0.2− | 0.6− | 2006 11 28 | 704 | 0.3+ | 0.3+ |
| 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 13 | 683 | 1.1+ | 0.4− | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2006 10 17 | G96 | 0.3− | 0.1− | 2006 11 13 | 683 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 14 | 683 | 0.4+ | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.6+ |
| 2006 10 17 | G96 | 0.5− | 0.2− | 2006 11 14 | 683 | 1.3− | 0.2+ | | | | |
| 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 683 | 0.2− | 1.1− | | | | |

**2003 AJ$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.69467 | | (2000.0) | | +0.97991363 | −0.19280065 |
| $n$ | 0.24502045 | $\omega$ | 258.74213 | | +0.19761720 | +0.90449337 |
| $a$ | 2.5293047 | $\Omega$ | 112.35813 | | +0.02677179 | +0.38042037 |
| $e$ | 0.1178625 | $i$ | 3.15890 | | | |
| $P$ | 4.02 | $H$ | 16.4 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 23 | 691 | 0.4− | 0.9− | 2002 12 05 | 704 | 0.7+ | 0.6− | 2003 01 08 | 704 | 0.3+ | 0.1+ |
| 1996 03 23 | 691 | 0.1+ | 0.2+ | 2002 12 05 | 704 | 1.0+ | 0.1+ | 2003 01 08 | 704 | 0.5+ | 0.0 |
| 1996 03 23 | 691 | 0.1− | 1.2− | 2002 12 10 | 704 | 0.4− | 0.6+ | 2006 11 18 | 704 | 0.1+ | 1.3− |
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2002 12 10 | 704 | 0.3− | 0.1+ | 2006 11 18 | 704 | 1.2+ | 0.3− |
| 2000 02 12 | 645 | 0.1+ | 0.2+ | 2002 12 10 | 704 | 0.0 | 0.6− | 2006 11 18 | 704 | 0.3− | 0.1− |
| 2002 11 04 | 291 | 0.2− | 0.0 | 2003 01 04 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.2+ |
| 2002 11 04 | 291 | 0.5− | 0.3− | 2003 01 04 | 704 | 1.0+ | 0.6− | 2006 11 29 | 704 | 0.1− | 0.5+ |
| 2002 11 04 | 291 | 0.7− | 0.0 | 2003 01 04 | 704 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.0 | 0.8+ |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2003 01 04 | 704 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 0.7+ | 0.7+ |
| 2002 12 05 | 704 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.4− | 0.6− | | | | |
| 2002 12 05 | 704 | 0.5+ | 0.1− | 2003 01 08 | 704 | 0.6+ | 0.8+ | | | | |

**2003 AP$_{24}$ = 2006 QF$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.97184 | | (2000.0) | | +0.19477445 | −0.98025414 |
| $n$ | 0.21356570 | $\omega$ | 189.25793 | | +0.90222583 | +0.19270278 |
| $a$ | 2.7719265 | $\Omega$ | 249.51637 | | +0.38477455 | +0.04435594 |
| $e$ | 0.2430395 | $i$ | 2.08784 | | | |
| $P$ | 4.62 | $H$ | 16.2 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.3+ | 0.2− | 2003 01 08 | 704 | 0.5+ | 0.5− | 2006 09 13 | 644 | 0.7− | 0.6+ |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2003 01 08 | 704 | 0.0 | 0.6− | 2006 09 13 | 644 | 0.5− | 0.1+ |
| 2002 10 11 | 704 | 0.5+ | 0.1+ | 2004 04 16 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 703 | (1.1− | 1.8+) |
| 2002 10 11 | 704 | (0.7+ | 1.7+) | 2004 04 16 | 691 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.4+ | 1.4+ |
| 2002 12 05 | 704 | (0.2− | 1.6+) | 2004 04 16 | 691 | 0.4− | 0.2+ | 2006 09 17 | 703 | 1.4− | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 1.3+ | 2004 05 13 | 691 | 0.6+ | 0.2+ | 2006 09 17 | 703 | 0.7− | 0.6+ |
| 2002 12 05 | 704 | 0.3− | 1.2+ | 2004 05 13 | 691 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.2− | 1.0+ | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2002 12 05 | 704 | 0.1+ | 0.9+ | 2006 08 28 | 703 | (1.7+ | 0.9−) | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.2+ | 2006 08 28 | 703 | 1.0+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2003 01 04 | 704 | 0.0 | 0.3+ | 2006 08 28 | 703 | (1.6− | 1.3+) | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2003 01 04 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1− | 1.0+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2003 01 04 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2003 01 08 | 704 | 0.4− | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | (1.9+ | 0.5−) |
| 2003 01 08 | 704 | 0.3− | 0.9− | 2006 08 29 | 691 | 0.1− | 0.0 | | | | |
| 2003 01 08 | 704 | 0.2− | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.2+ | | | | |

**2003 AX$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.75097 | | (2000.0) | | +0.88000119 | −0.46318764 |
| $n$ | 0.27913653 | $\omega$ | 115.92765 | | +0.38941253 | +0.83032809 |
| $a$ | 2.3187732 | $\Omega$ | 271.82222 | | +0.27194812 | +0.30985879 |
| $e$ | 0.1242435 | $i$ | 6.03849 | | | |
| $P$ | 3.53 | $H$ | 17.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.6+ | 1.3+ | 2003 01 08 | 704 | 0.3− | 0.2+ | 2005 08 31 | 699 | 0.4− | 0.2− |
| 1998 09 25 | 699 | 1.0− | 0.9+ | 2003 01 08 | 704 | 0.6+ | 0.2+ | 2005 09 11 | 704 | 0.2+ | 0.8+ |
| 1998 09 25 | 699 | 0.2+ | 0.6− | 2003 01 08 | 704 | 0.3− | 0.7+ | 2005 09 11 | 704 | 0.3+ | 0.0 |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.1− | 0.5+ | 2005 09 11 | 704 | 0.5− | 0.4+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2004 05 28 | 291 | 0.5+ | 0.5+ | 2005 10 01 | 703 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 1.0+ | 1.0+ | 2004 05 28 | 291 | 0.2+ | 0.9+ | 2005 10 01 | 703 | 0.7− | 0.3+ |
| 2002 12 11 | 704 | 0.9+ | 0.2− | 2004 05 28 | 291 | 0.4+ | 0.2+ | 2005 10 01 | 699 | 0.2+ | 0.5+ |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2005 08 29 | 644 | 0.0 | 0.2+ | 2005 10 01 | 703 | 0.7− | 0.3+ |
| 2002 12 11 | 704 | 0.7+ | 0.2+ | 2005 08 29 | 644 | 0.1− | 0.3+ | 2005 10 01 | 703 | 0.3− | 0.5− |
| 2003 01 04 | 704 | 0.1− | 0.6+ | 2005 08 29 | 644 | (2.3− | 1.3+) | 2005 10 01 | 699 | 0.2− | 0.1+ |
| 2003 01 04 | 704 | 0.1+ | 0.4+ | 2005 08 31 | 699 | (0.0 | 1.6+) | 2005 10 01 | 699 | 0.3+ | 0.1+ |
| 2003 01 04 | 704 | 0.6− | 0.4+ | 2005 08 31 | 699 | 0.4− | 1.2+ | 2005 10 01 | 699 | 0.7+ | 0.9− |
| 2003 01 04 | 704 | 0.7− | 0.5+ | 2005 08 31 | 699 | 0.2− | 0.4− | | | | |

**2003 AY$_{26}$ = 2004 LX$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.82199 | | (2000.0) | | +0.81938082 | −0.56876580 |
| $n$ | 0.28663989 | $\omega$ | 294.33361 | | +0.54878675 | +0.74220243 |
| $a$ | 2.2781289 | $\Omega$ | 100.40544 | | +0.16567492 | +0.35445877 |
| $e$ | 0.1029908 | $i$ | 4.17221 | | | |
| $P$ | 3.44 | $H$ | 17.0 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.1+ | 0.7− | 2004 06 11 | 691 | 0.1− | 0.1− | 2005 10 22 | 703 | 0.3− | 0.3+ |
| 2003 01 04 | 704 | 0.3+ | 0.1+ | 2004 06 17 | 691 | 0.1+ | 0.4+ | 2005 10 22 | 703 | 0.4+ | 0.5− |
| 2003 01 04 | 704 | 1.0+ | 0.8− | 2004 06 17 | 691 | 0.1− | 0.1− | 2005 11 03 | 703 | 0.7− | 0.7− |
| 2003 01 04 | 704 | 0.8+ | 0.1+ | 2004 06 17 | 691 | 0.1+ | 0.1− | 2005 11 03 | 703 | 0.7+ | 0.1− |
| 2003 01 08 | 704 | 0.6− | 0.1+ | 2005 10 01 | 703 | 0.4− | 1.3+ | 2005 11 03 | 703 | 0.7− | 0.7+ |
| 2003 01 08 | 704 | 0.6− | 0.5+ | 2005 10 01 | 703 | 0.6+ | 0.0 | 2005 11 03 | 703 | 0.4− | 0.8− |
| 2003 01 08 | 704 | 0.4− | 0.2+ | 2005 10 01 | 703 | 0.1+ | 0.2− | 2005 11 09 | 703 | 0.2+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.5− | 0.5+ | 2005 10 01 | 703 | 0.0 | 0.4− | 2005 11 09 | 703 | 0.5+ | 0.2+ |
| 2004 06 11 | 691 | 0.1− | 0.1+ | 2005 10 22 | 703 | 0.3+ | 0.3+ | 2005 11 09 | 703 | 0.5− | 0.7− |
| 2004 06 11 | 691 | 0.1+ | 0.3− | 2005 10 22 | 703 | 0.0 | 0.1+ | 2005 11 09 | 703 | 0.4+ | 0.1+ |

**2003 AK$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.22606 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24502864 | $\omega$ | 126.23206 | | +0.62506845 | | −0.76145975 |
| $a$ | 2.5292484 | $\Omega$ | 284.16794 | | +0.64726256 | | +0.62854785 |
| $e$ | 0.0661048 | $i$ | 10.19794 | | +0.43628043 | | +0.15845078 |
| $P$ | 4.02 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.6− | 0.6+ | 2001 09 16 | 704 | 0.2+ | 0.3+ | 2003 01 08 | 704 | 0.9− | 0.8+ |
| 2001 08 24 | 699 | 0.9+ | 0.1− | 2001 09 16 | 704 | 1.1+ | 0.4− | 2003 01 08 | 704 | 1.0− | 0.4+ |
| 2001 08 24 | 699 | 1.4− | 0.5+ | 2001 09 16 | 704 | 0.1+ | 0.1− | 2003 01 27 | 704 | 0.1+ | 0.4− |
| 2001 08 24 | 699 | 0.5− | 0.9+ | 2003 01 04 | 704 | 1.0− | 0.5+ | 2003 01 27 | 704 | 1.2+ | 0.2− |
| 2001 09 09 | 699 | 0.9− | 0.5+ | 2003 01 04 | 704 | 0.3+ | 0.6+ | 2003 01 27 | 704 | 0.5+ | 0.8− |
| 2001 09 09 | 699 | 0.5− | 0.6− | 2003 01 04 | 704 | 0.1+ | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2001 09 09 | 699 | 0.3+ | 0.3+ | 2003 01 04 | 704 | (0.8+ | 1.7−) | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2001 09 09 | 699 | 0.6+ | 1.5− | 2003 01 08 | 704 | 1.0+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 09 16 | 704 | 0.6+ | 0.1− | 2003 01 08 | 704 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2− |

**2003 AM$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.41154 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23695139 | $\omega$ | 210.77868 | | −0.83737786 | | −0.51709977 |
| $a$ | 2.5864051 | $\Omega$ | 297.05345 | | +0.53324436 | | −0.70146608 |
| $e$ | 0.1732932 | $i$ | 11.47795 | | +0.12020308 | | −0.49046219 |
| $P$ | 4.16 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 566 | 0.5− | 0.6− | 2003 01 27 | 699 | 0.1+ | 0.3− | 2003 02 22 | 699 | 0.3+ | 0.3− |
| 1999 02 18 | 566 | 0.1− | 0.8− | 2003 01 27 | 644 | 0.1+ | 0.5− | 2003 02 22 | 699 | 0.1− | 0.2− |
| 1999 02 18 | 566 | 0.8− | 0.9− | 2003 01 28 | 704 | 0.4− | 0.4− | 2003 02 22 | 699 | 0.3− | 0.1+ |
| 2002 11 12 | 704 | 0.2− | 0.1+ | 2003 01 28 | 704 | 0.1+ | 0.1+ | 2003 02 28 | 704 | 0.2+ | 1.0+ |
| 2002 11 12 | 704 | 0.1− | 0.2+ | 2003 01 28 | 704 | 0.4− | 0.2+ | 2003 02 28 | 704 | 0.5+ | 0.7+ |
| 2002 11 12 | 704 | 0.7− | 0.1+ | 2003 01 28 | 704 | 0.0 | 0.1+ | 2003 02 28 | 704 | 0.5+ | 0.4+ |
| 2002 11 21 | 644 | 0.3+ | 0.5− | 2003 01 28 | 704 | 0.1− | 0.0 | 2003 02 28 | 704 | 0.1+ | 0.2+ |
| 2002 11 21 | 644 | 0.2+ | 0.5− | 2003 01 28 | 704 | 0.2− | 0.4+ | 2003 02 28 | 704 | 0.2− | 0.3+ |
| 2002 11 21 | 644 | 0.4− | 0.0 | 2003 01 28 | 704 | 0.8− | 0.1+ | 2003 02 28 | 608 | 0.4+ | 1.2− |
| 2003 01 04 | 704 | 0.5+ | 0.5− | 2003 01 28 | 704 | 0.4− | 0.6+ | 2003 02 28 | 608 | 0.1− | 1.0− |
| 2003 01 04 | 704 | 0.9+ | 1.1− | 2003 01 28 | 704 | 0.6− | 0.4+ | 2003 02 28 | 608 | 0.2− | 0.7− |
| 2003 01 04 | 704 | 0.4+ | 0.2− | 2003 01 28 | 704 | 0.3− | 0.4+ | 2003 03 07 | 704 | 0.6− | 0.1+ |
| 2003 01 04 | 704 | 0.1+ | 0.1− | 2003 01 29 | 704 | 0.5− | 0.2+ | 2003 03 07 | 704 | 0.5+ | 0.4+ |
| 2003 01 04 | 704 | 0.2+ | 0.0 | 2003 01 29 | 704 | 0.3+ | 0.2− | 2003 03 07 | 704 | 0.5− | 0.2+ |
| 2003 01 04 | 704 | (1.7+ | 1.5−) | 2003 01 29 | 704 | 0.7− | 0.2− | 2003 03 07 | 704 | 0.6+ | 0.2+ |
| 2003 01 04 | 704 | 0.1− | 0.6+ | 2003 01 29 | 704 | 0.1+ | 0.2− | 2003 03 07 | 704 | 0.2− | 0.4+ |
| 2003 01 04 | 704 | 0.1+ | 0.5− | 2003 01 29 | 704 | 1.0+ | 0.5+ | 2003 03 07 | 704 | 0.1+ | 0.1+ |
| 2003 01 04 | 704 | 0.7+ | 0.3+ | 2003 01 29 | 704 | 0.6+ | 0.4+ | 2003 03 07 | 704 | 0.2− | 0.6+ |
| 2003 01 04 | 704 | 1.2+ | 1.4− | 2003 01 29 | 704 | 0.3− | 0.3+ | 2003 03 07 | 704 | 0.1− | 0.4+ |
| 2003 01 08 | 704 | 0.0 | 0.4+ | 2003 01 29 | 704 | 0.1− | 0.4+ | 2003 03 07 | 704 | 0.5− | 0.6− |
| 2003 01 08 | 704 | 0.2− | 0.5+ | 2003 01 29 | 704 | 0.3− | 0.3+ | 2003 03 07 | 704 | 0.6− | 0.3− |
| 2003 01 08 | 704 | 0.1+ | 0.2+ | 2003 01 29 | 704 | 0.2− | 0.4+ | 2003 03 31 | 699 | 0.5+ | 0.3− |
| 2003 01 08 | 704 | 0.1+ | 0.4− | 2003 01 29 | 704 | 0.1+ | 0.7+ | 2003 03 31 | 699 | 0.0 | 0.7− |
| 2003 01 08 | 704 | 0.2− | 0.4− | 2003 01 29 | 704 | 0.2+ | 0.3+ | 2003 03 31 | 699 | 0.6− | 0.0 |
| 2003 01 27 | 704 | 0.4− | 0.4+ | 2003 01 29 | 704 | 0.6− | 0.4− | 2003 03 31 | 699 | 1.0− | 0.6− |
| 2003 01 27 | 704 | 0.2− | 0.3+ | 2003 02 02 | 704 | 0.4+ | 0.2− | 2003 03 31 | 704 | 0.5− | 1.4− |
| 2003 01 27 | 699 | 0.7+ | 0.3− | 2003 02 02 | 704 | 0.0 | 0.4− | 2003 03 31 | 704 | (1.8+ | 0.9−) |
| 2003 01 27 | 704 | 0.1− | 0.6+ | 2003 02 02 | 704 | 0.6+ | 0.4− | 2003 03 31 | 704 | 0.6+ | 0.6+ |
| 2003 01 27 | 704 | 0.1− | 0.7+ | 2003 02 02 | 704 | 0.3+ | 0.5− | 2003 03 31 | 704 | 0.5− | 0.7+ |
| 2003 01 27 | 699 | 0.1+ | 0.4− | 2003 02 02 | 704 | 0.5+ | 0.0 | 2005 10 01 | 703 | 0.1+ | 1.5− |
| 2003 01 27 | 644 | 0.2+ | 0.4− | 2003 02 19 | 644 | 0.3− | 0.4+ | 2005 10 01 | 703 | 0.8+ | 1.2− |
| 2003 01 27 | 704 | 0.2− | 0.5+ | 2003 02 19 | 644 | 0.1+ | 0.5+ | 2005 10 01 | 703 | 0.5+ | 0.4+ |
| 2003 01 27 | 699 | 0.4+ | 0.4− | 2003 02 19 | 644 | 0.1− | 0.5+ | 2005 10 01 | 703 | 0.4− | 0.5+ |
| 2003 01 27 | 644 | 0.1+ | 0.4− | 2003 02 22 | 699 | 0.1− | 0.3+ | | | | |

**2003 AR$_{29}$ = 2006 WZ$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.11071 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23542223 | $\omega$ | 190.32774 | | −0.26411141 | | −0.96161801 |
| $a$ | 2.5975928 | $\Omega$ | 275.01606 | | +0.89014535 | | −0.21332606 |
| $e$ | 0.2581170 | $i$ | 4.28342 | | +0.37133060 | | −0.17257691 |
| $P$ | 4.19 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.4+ | 0.1− | 2003 02 21 | 608 | 0.3− | 1.0+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 01 27 | 704 | 0.5+ | 0.1− | 2003 02 21 | 608 | 0.2− | 1.1+ |
| 2002 12 07 | 291 | 0.3− | 0.1+ | 2003 01 27 | 699 | 0.3+ | 0.4+ | 2003 02 21 | 608 | 0.5− | 0.6+ |
| 2002 12 07 | 291 | 0.1− | 0.1− | 2003 01 27 | 699 | 0.5+ | 0.3+ | 2003 02 22 | 699 | 0.1+ | 0.5+ |
| 2002 12 07 | 291 | 0.1− | 0.1− | 2003 01 27 | 699 | 0.6+ | 0.5+ | 2003 02 22 | 699 | 0.2− | 1.3− |
| 2003 01 04 | 704 | 0.3− | 1.1+ | 2003 01 27 | 699 | 0.7− | 0.9+ | 2003 02 22 | 699 | 0.5− | 1.0+ |
| 2003 01 04 | 704 | 0.5− | 0.9+ | 2003 01 30 | 699 | 0.5+ | 0.4+ | 2003 02 22 | 699 | 0.9− | 0.5− |
| 2003 01 04 | 704 | 0.5− | 0.8+ | 2003 01 30 | 699 | 0.9+ | 0.2+ | 2006 11 21 | 704 | 0.8+ | 1.4− |
| 2003 01 08 | 704 | 1.2+ | 0.8− | 2003 01 30 | 699 | 0.8− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2003 01 08 | 704 | 1.1+ | 1.5− | 2003 01 30 | 699 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2003 01 08 | 704 | (1.9+ | 0.6−) | 2003 02 01 | 608 | 0.3+ | 1.0− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2003 01 08 | 704 | (0.8+ | 1.8−) | 2003 02 01 | 608 | 0.4− | 1.4− | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2003 01 08 | 704 | (1.4+ | 1.7−) | 2003 02 01 | 608 | (0.2− | 1.8−) | 2006 11 24 | 691 | 0.2− | 0.2− |
| 2003 01 27 | 704 | 0.9+ | 0.4− | 2003 02 03 | 644 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2003 01 27 | 704 | 0.6+ | 0.2− | 2003 02 03 | 644 | 0.3− | 0.0 | 2006 11 24 | 691 | 0.2− | 0.2− |
| 2003 01 27 | 704 | 0.5+ | 0.3− | 2003 02 03 | 644 | 0.3− | 0.3+ | | | | |

**2003 AY$_{30}$ = 2006 VC$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.16019 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22952205 | $\omega$ | 152.18435 | | +0.03994489 | | −0.99890639 |
| $a$ | 2.6419207 | $\Omega$ | 295.51762 | | +0.91167964 | | +0.04638821 |
| $e$ | 0.1819685 | $i$ | 1.54288 | | +0.40895554 | | −0.00584412 |
| $P$ | 4.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.1+ | 0.2− | 2003 01 31 | 291 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 1997 10 04 | 691 | 0.1− | 0.3+ | 2003 01 31 | 291 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1− |
| 1997 10 04 | 691 | 0.1− | 0.2+ | 2003 01 31 | 291 | 0.3− | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2003 01 04 | 291 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2003 01 04 | 291 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.6− | 2006 11 15 | 703 | 1.0− | 0.1− |
| 2003 01 04 | 291 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.4− | 0.0 |
| 2003 01 08 | 704 | 0.9+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.8− | 2006 11 15 | 703 | 0.3− | 0.4+ |
| 2003 01 08 | 704 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.6+ | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2003 01 08 | 704 | 0.7+ | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2003 01 08 | 704 | 0.0 | 1.1+ | 2006 11 01 | G96 | 0.2+ | 0.7− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2003 01 08 | 704 | 0.0 | 0.7+ | 2006 11 01 | G96 | 0.2− | 0.2− | | | | |

**2003 AT$_{31}$ = 2006 WV$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.64160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23216587 | $\omega$ | 346.91950 | | −0.07874875 | | −0.99415749 |
| $a$ | 2.6218256 | $\Omega$ | 107.55992 | | +0.92146202 | | −0.10084708 |
| $e$ | 0.0974194 | $i$ | 4.44079 | | +0.38040291 | | +0.03848051 |
| $P$ | 4.25 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.0 | 0.0 | 2003 01 08 | 704 | 0.6− | 1.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 12 31 | 645 | 0.0 | 0.1− | 2003 01 08 | 704 | 0.5− | 0.6+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2003 01 05 | 291 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2003 01 05 | 291 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2003 01 05 | 291 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.3− | 0.1− |
| 2003 01 08 | 704 | 0.2− | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2003 01 08 | 704 | 0.8− | 0.4+ | 2006 11 18 | 691 | 0.3+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2003 01 08 | 704 | 0.7− | 0.6+ | 2006 11 18 | 691 | 0.3+ | 0.1+ | | | | |

**2003 AN$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.29984 | | (2000.0) | | | |
| $n$ | 0.22787552 | $\omega$ | 46.87280 | | −0.33694651 | −0.93773843 |
| $a$ | 2.6546316 | $\Omega$ | 62.99595 | | +0.83402033 | −0.33884213 |
| $e$ | 0.2066461 | $i$ | 5.43195 | | +0.43689488 | −0.07637184 |
| $P$ | 4.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.0 | 0.2− | 2006 10 15 | D35 | 0.1+ | 0.4+ | 2006 11 11 | 644 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 10 15 | D35 | 0.3+ | 0.2+ | 2006 11 11 | 644 | 0.3+ | 0.3+ |
| 2002 12 11 | 704 | 0.4+ | 0.8− | 2006 10 15 | D35 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.2− | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 11 02 | 703 | 0.3− | 0.4− | 2006 11 12 | G96 | 0.5+ | 0.5− |
| 2003 01 05 | 704 | 0.4+ | 0.0 | 2006 11 02 | 703 | 0.1− | 0.7− | 2006 11 17 | 703 | (1.6+ | 0.7+) |
| 2003 01 05 | 704 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 1.5+ | 0.2− |
| 2003 01 05 | 704 | 1.0− | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | (1.5+ | 1.9+) |
| 2003 01 08 | 704 | 0.9− | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | (0.5+ | 2.2+) |
| 2003 01 08 | 704 | 0.1− | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 1.2− | 0.4− |
| 2003 01 08 | 704 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2003 01 08 | 704 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.9+ |
| 2003 01 09 | 704 | 0.7+ | 0.2− | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2003 01 09 | 704 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2003 01 09 | 704 | 0.6+ | 0.3− | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | (2.0+ | 0.9+) |
| 2003 01 09 | 704 | 0.5+ | 0.6− | 2006 11 11 | 703 | 0.5+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.4− |
| 2003 02 01 | 704 | 0.0 | 0.8− | 2006 11 11 | 703 | 0.6+ | 0.8− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2003 02 01 | 704 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.8− | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2003 02 01 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 1.1− | 0.6− | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2003 02 01 | 704 | 0.1− | 0.2− | 2006 11 11 | 644 | 0.0 | 0.5+ | | | | |

**2003 AV$_{32}$ = 2006 SH$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 337.01531 | | (2000.0) | | | |
| $n$ | 0.22522779 | $\omega$ | 124.51384 | | +0.50079288 | −0.84668284 |
| $a$ | 2.6753960 | $\Omega$ | 294.45042 | | +0.71523090 | +0.52178882 |
| $e$ | 0.2179917 | $i$ | 11.39275 | | +0.48749488 | +0.10423341 |
| $P$ | 4.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 27 | 699 | 1.0+ | 0.9+ | 2003 01 05 | 704 | 0.1+ | 0.4− | 2006 10 02 | 703 | 0.5− | 0.3+ |
| 2002 12 27 | 699 | 0.2− | 0.3+ | 2003 01 05 | 704 | 0.0 | 0.7− | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 12 27 | 699 | 0.3+ | 0.3+ | 2003 01 08 | 704 | 0.5− | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2002 12 27 | 699 | 0.4− | 0.0 | 2003 01 08 | 704 | 0.4− | 1.3+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 12 31 | 704 | 0.1− | 0.3− | 2003 01 08 | 704 | 1.2− | 0.8+ | 2006 10 23 | 703 | 0.8− | 1.3− |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2006 09 25 | 703 | 0.2− | 0.2− | 2006 10 23 | 703 | 0.3+ | 0.6− |
| 2002 12 31 | 704 | 0.9− | 1.1− | 2006 09 25 | 703 | 0.6− | 0.3+ | 2006 10 23 | 703 | 0.6+ | 1.0+ |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.9+ | 0.5− | 2006 10 23 | 703 | 0.6− | 0.2+ |
| 2002 12 31 | 704 | 0.9+ | 0.8+ | 2006 09 25 | 703 | 0.3− | 0.2− | 2006 11 22 | 703 | 0.2− | 0.8+ |
| 2003 01 05 | 704 | 0.1+ | 0.8− | 2006 10 02 | 703 | 0.2+ | 0.0 | 2006 11 22 | 703 | 0.0 | 0.6− |
| 2003 01 05 | 704 | 0.6+ | 0.8− | 2006 10 02 | 703 | 0.3+ | 0.6+ | 2006 11 22 | 703 | 0.7+ | 0.1+ |
| 2003 01 05 | 704 | 0.3+ | 0.6− | 2006 10 02 | 703 | 0.3+ | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.4− |

**2003 AW$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.27410 | | (2000.0) | | | |
| $n$ | 0.23626096 | $\omega$ | 70.90161 | | −0.10103655 | −0.99379365 |
| $a$ | 2.5914415 | $\Omega$ | 25.03694 | | +0.86645985 | −0.11088599 |
| $e$ | 0.2993361 | $i$ | 6.31339 | | +0.48891609 | −0.00885882 |
| $P$ | 4.17 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 07 | 691 | 0.2− | 0.1+ | 2003 01 10 | 704 | (1.9+ | 1.1−) | 2006 10 27 | 703 | 0.3+ | 0.6− |
| 1995 04 07 | 691 | 0.0 | 0.4− | 2003 01 10 | 704 | (1.6+ | 0.6−) | 2006 10 27 | 703 | 0.6+ | 0.5+ |
| 1995 04 07 | 691 | 0.1− | 0.4− | 2003 01 11 | 704 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 1.0− | 1.4+ | 2003 01 11 | 704 | 1.1+ | 0.8+ | 2006 11 15 | 704 | 0.0 | 0.2− |
| 2002 12 05 | 704 | 0.3− | 0.8+ | 2003 01 11 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.9− |
| 2002 12 05 | 704 | 0.4+ | 0.9+ | 2003 01 11 | 704 | 0.8+ | 0.5+ | 2006 11 15 | 704 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.6+ | 0.6+ | 2003 01 11 | 704 | 0.7+ | 0.9+ | 2006 11 15 | 704 | 0.4− | 0.4− |
| 2002 12 05 | 704 | 0.6+ | 0.1+ | 2003 01 13 | 704 | 0.6− | 0.6+ | 2006 11 15 | 704 | 0.3− | 0.5− |
| 2002 12 14 | 704 | 0.4+ | 0.0 | 2003 01 13 | 704 | 0.5+ | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.3− |
| 2002 12 14 | 704 | 1.0+ | 0.1+ | 2003 01 13 | 704 | 0.5− | 0.0 | 2006 11 15 | 704 | 0.5− | 0.3− |
| 2002 12 14 | 704 | (1.7+ | 1.0−) | 2003 01 13 | 704 | 0.8− | 0.7+ | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2003 01 05 | 699 | 0.2+ | 0.4+ | 2003 01 13 | 704 | 0.7− | 0.9+ | 2006 11 16 | 704 | 0.2− | 0.4− |
| 2003 01 05 | 699 | 0.9+ | 0.4+ | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1− | 1.0− |
| 2003 01 05 | 699 | 0.4+ | 0.3+ | 2003 01 25 | 645 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.3− | 0.4− |
| 2003 01 05 | 699 | 0.4+ | 0.5+ | 2003 01 25 | 645 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.7− |
| 2003 01 08 | 704 | 0.3+ | 0.2+ | 2003 01 25 | 645 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.2+ |
| 2003 01 08 | 704 | 0.8+ | 0.4+ | 2003 01 31 | 704 | (0.2+ | 1.7+) | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2003 01 08 | 704 | 0.6+ | 0.3+ | 2003 01 31 | 704 | (0.1+ | 1.9+) | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2003 01 08 | 704 | 0.0 | 0.4+ | 2003 01 31 | 704 | 0.1− | 1.4+ | 2006 11 19 | 704 | 0.6+ | 1.2+ |
| 2003 01 08 | 704 | 0.2− | 0.4+ | 2003 01 31 | 704 | 1.4+ | 1.3+ | 2006 11 19 | 704 | 0.0 | 1.1+ |
| 2003 01 09 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 704 | (0.7+ | 2.1+) | 2006 11 29 | 704 | 0.2− | 0.3− |
| 2003 01 09 | 704 | 0.1− | 0.5+ | 2003 03 07 | 644 | 0.7+ | 0.6+ | 2006 11 29 | 704 | 0.1− | 0.9− |
| 2003 01 09 | 704 | 0.2− | 0.5− | 2003 03 07 | 644 | 0.4+ | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.8− |
| 2003 01 10 | 704 | (2.2+ | 1.4−) | 2003 03 07 | 644 | 0.4+ | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.4− |
| 2003 01 10 | 704 | (1.6+ | 0.4−) | 2006 10 27 | 703 | 0.5+ | 0.5− | | | | |
| 2003 01 10 | 704 | (2.3+ | 0.4+) | 2006 10 27 | 703 | 0.5+ | 0.1− | | | | |

**2003 AA$_{33}$ = 2006 VY$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 253.07896 | | (2000.0) | | | |
| $n$ | 0.21772719 | $\omega$ | 81.79159 | | −0.99504250 | −0.05322208 |
| $a$ | 2.7364925 | $\Omega$ | 95.12849 | | +0.01637634 | −0.92090544 |
| $e$ | 0.2432484 | $i$ | 4.83856 | | +0.09809296 | −0.38613545 |
| $P$ | 4.53 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.0 | 0.1− | 2003 01 08 | 704 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 645 | 0.0 | 0.1− | 2003 01 08 | 704 | 0.1− | 1.4+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2002 12 31 | 704 | 1.0+ | 0.5+ | 2003 01 08 | 704 | 0.4+ | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 12 31 | 704 | 0.8+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2002 12 31 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.5− | 0.4− | 2006 11 23 | G96 | 0.4− | 0.7− |
| 2003 01 05 | 704 | 1.3− | 0.9+ | 2006 11 12 | G96 | 0.7+ | 0.0 | 2006 11 23 | G96 | 0.4− | 0.3− |
| 2003 01 05 | 704 | 1.1− | 0.7+ | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.6− |
| 2003 01 05 | 704 | (1.8− | 0.3+) | 2006 11 12 | G96 | 0.6+ | 0.5− | 2006 11 23 | G96 | 0.3− | 0.8− |
| 2003 01 05 | 704 | 1.0− | 1.2+ | 2006 11 12 | G96 | 0.2+ | 0.2− | | | | |
| 2003 01 08 | 704 | 0.6+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.4+ | | | | |

**2003 AB$_{35}$ = 2006 VE$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 307.07386 | | (2000.0) | | | |
| $n$ | 0.23984065 | $\omega$ | 292.67582 | | −0.59915172 | −0.80039573 |
| $a$ | 2.5655916 | $\Omega$ | 194.18517 | | +0.76078892 | −0.56153810 |
| $e$ | 0.2406327 | $i$ | 4.58588 | | +0.24943424 | −0.20986098 |
| $P$ | 4.11 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.4− | 0.0 | 2003 01 08 | 704 | (1.2+ | 2.1−) | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 1993 09 15 | 691 | 0.2+ | 0.1+ | 2003 01 08 | 704 | 0.8+ | 1.3− | 2006 11 24 | 703 | 0.2− | 0.2+ |
| 1993 09 15 | 691 | 0.2+ | 0.2− | 2006 10 21 | D35 | 0.1− | 0.1+ | 2006 11 24 | 703 | 0.5+ | 0.0 |
| 2002 12 11 | 704 | 0.8+ | 0.7+ | 2006 10 21 | D35 | 0.2+ | 0.6− | 2006 11 24 | 703 | 0.9− | 0.1− |
| 2002 12 11 | 704 | 0.9+ | 0.8+ | 2006 10 21 | D35 | 0.1− | 0.0 | 2006 11 24 | 703 | 0.1− | 0.2+ |
| 2002 12 11 | 704 | 1.3+ | 0.1− | 2006 11 02 | G96 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2002 12 11 | 704 | 0.4+ | 0.9+ | 2006 11 02 | G96 | 0.4− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.8+ | 0.5+ | 2006 11 02 | G96 | 0.3− | 0.2− | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.3− | 0.2+ | 2006 11 02 | G96 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2002 12 31 | 704 | (1.8− | 0.7−) | 2006 11 14 | 704 | 0.2− | 0.6+ | 2006 11 29 | 704 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | 0.6− | 0.6+ | 2006 11 14 | 704 | 0.5− | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.1− |
| 2002 12 31 | 704 | (1.2− | 1.6+) | 2006 11 14 | 704 | 0.9+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 1.4− | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.6+ | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2003 01 07 | 704 | 1.0− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.2− | 0.2− |
| 2003 01 07 | 704 | 1.5− | 0.6− | 2006 11 17 | G96 | 0.1− | 0.4− | 2006 12 01 | 704 | 0.0 | 0.5+ |
| 2003 01 07 | 704 | 0.9− | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.4− | 2006 12 01 | 704 | 0.3− | 0.2+ |
| 2003 01 07 | 704 | (1.7− | 0.3−) | 2006 11 17 | G96 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.2+ | 0.5+ |
| 2003 01 08 | 704 | (0.1− | 1.9−) | 2006 11 18 | 704 | 1.0+ | 0.1+ | 2006 12 01 | 704 | 0.1+ | 0.9+ |
| 2003 01 08 | 704 | 1.0+ | 1.3− | 2006 11 18 | 704 | 0.8− | 0.3− | 2006 12 01 | 704 | 0.1+ | 0.3+ |
| 2003 01 08 | 704 | (1.5+ | 1.9−) | 2006 11 18 | 704 | 0.1− | 0.3− | | | | |

### 2003 AL$_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.38065 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23828991 | $\omega$ | 304.86714 | | −0.20957332 | | −0.97723574 |
| $a$ | 2.5767104 | $\Omega$ | 157.16263 | | +0.92257455 | | −0.20880821 |
| $e$ | 0.2755049 | $i$ | 4.87826 | | +0.32393707 | | −0.03754248 |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.5+ | 0.2− | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.5+ |
| 2003 01 01 | 704 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.3− | 2006 11 17 | 704 | 1.2+ | 0.1+ |
| 2003 01 01 | 704 | 1.1+ | 0.5− | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 11 17 | 704 | (3.4− | 1.1−) |
| 2003 01 07 | 704 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.7− | 0.3− |
| 2003 01 07 | 704 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.3− | 2006 11 19 | 704 | (1.9− | 0.1+) |
| 2003 01 07 | 704 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.6− | 0.2− |
| 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2003 01 07 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.6− | 0.0 |
| 2003 01 08 | 704 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 19 | 703 | 0.0 | 0.1+ |
| 2003 01 08 | 704 | 0.1− | 0.5+ | 2006 10 30 | 703 | 0.4− | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.4+ |
| 2003 01 08 | 704 | 0.4− | 0.2− | 2006 10 30 | 703 | 0.2− | 0.6+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2003 01 08 | 704 | 0.1− | 0.8+ | 2006 10 30 | 703 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2003 01 08 | 704 | 0.2− | 0.4− | 2006 10 30 | 703 | 0.5+ | 0.6− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 0.3+ | 0.1+ | 2006 11 05 | 644 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2003 01 08 | 704 | 0.0 | 0.2− | 2006 11 05 | 644 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2003 01 08 | 704 | 0.5− | 0.4− | 2006 11 05 | 644 | 0.4− | 0.7− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2003 01 08 | 704 | 0.3+ | 0.3− | 2006 11 14 | 704 | (0.4+ | 1.7+) | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2003 02 02 | 704 | (1.1+ | 4.7+) | 2006 11 14 | 704 | 0.4− | 1.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2003 02 02 | 704 | (0.5+ | 4.3+) | 2006 11 14 | 704 | 1.0+ | 1.4+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2003 02 02 | 704 | (0.4− | 3.7+) | 2006 11 14 | 704 | (0.1+ | 2.3+) | 2006 11 28 | 704 | 0.5− | 0.1+ |
| 2006 09 30 | 703 | 0.5− | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.3− | 2006 11 28 | 704 | 0.0 | 0.1+ |
| 2006 09 30 | 703 | 1.0+ | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.4− | 0.0 |
| 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.4+ | 0.3− | 2006 11 28 | 704 | 0.7+ | 0.5+ |
| 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 11 17 | 704 | (1.2− | 2.4+) | | | | |

### 2003 AA$_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.01789 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23993769 | $\omega$ | 247.78773 | | −0.74429839 | | −0.63751931 |
| $a$ | 2.5648998 | $\Omega$ | 252.01096 | | +0.66344575 | | −0.67166787 |
| $e$ | 0.2107504 | $i$ | 12.07526 | | +0.07654833 | | −0.37740086 |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2002 12 05 | 704 | 0.4+ | 0.2− | 2006 11 15 | 704 | 0.6+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.1− | 0.8+ | 2006 11 15 | 704 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.7− |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2006 11 15 | 704 | 0.1+ | 0.8− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2006 11 15 | 703 | (2.1+ | 2.5−) | 2006 11 22 | 704 | 0.8+ | 0.3+ |
| 2002 12 10 | 704 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.9− | 0.2+ | 2006 11 22 | 704 | 0.1− | 1.2+ |
| 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 11 15 | 703 | 1.4− | 0.4− | 2006 11 22 | 704 | 0.7+ | 0.2− |
| 2002 12 10 | 704 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.0 | 0.7− | 2006 11 22 | 704 | 0.3+ | 0.4− |
| 2002 12 10 | 704 | 0.4+ | 0.8+ | 2006 11 16 | 704 | 1.0− | 0.6+ | 2006 11 22 | 704 | 1.5+ | 0.0 |
| 2003 01 07 | 704 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.6− | 2006 11 27 | 704 | 0.7+ | 0.4+ |
| 2003 01 07 | 704 | 0.6− | 0.5+ | 2006 11 16 | 704 | (0.3+ | 1.7+) | 2006 11 27 | 704 | 0.2+ | 0.3+ |
| 2003 01 07 | 704 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.6+ | 0.1− | 2006 11 27 | 704 | 0.6+ | 0.1+ |
| 2003 01 07 | 704 | 0.1+ | 0.4− | 2006 11 16 | 704 | 1.2− | 1.4+ | 2006 11 27 | 704 | (2.4+ | 0.2−) |
| 2003 01 08 | 704 | 0.2+ | 0.6− | 2006 11 16 | 704 | 0.5− | 0.0 | 2006 11 28 | 704 | (0.4− | 2.0−) |
| 2003 01 08 | 704 | 0.5− | 0.3+ | 2006 11 16 | 704 | 0.6− | 1.4+ | 2006 11 28 | 704 | 0.2− | 0.9+ |
| 2003 01 08 | 704 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.0 |
| 2003 01 27 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.2− | 2006 11 28 | 704 | (1.4+ | 2.0+) |
| 2003 01 27 | 644 | 0.4− | 0.1+ | 2006 11 17 | 691 | 0.3− | 0.2+ | 2006 12 01 | 704 | 0.6+ | 0.6− |
| 2003 01 27 | 644 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.2− | 0.1+ | 2006 12 01 | 704 | 0.0 | 0.1− |
| 2006 11 13 | 691 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.4− | 0.0 | 2006 12 01 | 704 | 0.0 | 0.3− |
| 2006 11 13 | 691 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.5− | 2006 12 01 | 704 | 0.2+ | 0.7− |

### 2003 AB$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.61143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22768947 | $\omega$ | 197.66507 | | +0.04325705 | | −0.99375151 |
| $a$ | 2.6560775 | $\Omega$ | 249.95406 | | +0.92933657 | | +0.07782439 |
| $e$ | 0.2735196 | $i$ | 6.28807 | | +0.36669111 | | −0.08000818 |
| $P$ | 4.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2− | 1.3+ | 2006 10 19 | 703 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 1.0+ | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.3− | 1.1+ | 2006 10 19 | 703 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 1.2+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2003 01 01 | 704 | (2.5+ | 1.9−) | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 10 | 644 | 0.3− | 0.0 |
| 2003 01 01 | 704 | 0.4− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.0 |
| 2003 01 01 | 704 | 0.1+ | 1.2− | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 14 | 703 | 0.4− | 0.1+ |
| 2003 01 01 | 704 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.5− | 2006 11 14 | 703 | 0.5+ | 0.9− |
| 2003 01 07 | 704 | 0.4− | 0.6− | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 14 | 703 | 1.1− | 0.2− |
| 2003 01 07 | 704 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.8+ | 0.5− |
| 2003 01 07 | 704 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2003 01 07 | 704 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2003 01 07 | 704 | 0.6− | 0.0 | 2006 10 27 | 703 | 0.2− | 1.4− | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2003 01 08 | 704 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.7− | 1.1− | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2003 01 08 | 704 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.3− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2003 01 08 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.5− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2003 01 08 | 704 | 0.5− | 0.2− | 2006 10 29 | 704 | 0.5− | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2003 01 12 | 704 | 0.5+ | 0.2+ | 2006 10 29 | 704 | (1.9+ | 1.7+) | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2003 01 12 | 704 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.9+ | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.5+ |
| 2003 01 12 | 704 | 0.2+ | 0.3+ | 2006 10 29 | 704 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2003 01 12 | 704 | 0.4+ | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | | | | |
| 2003 01 12 | 704 | 0.7+ | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.4+ | | | | |

### 2003 AU$_{39}$ = 2000 KB$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.33982 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25863205 | $\omega$ | 79.37419 | | −0.57546578 | | +0.81698444 |
| $a$ | 2.4397640 | $\Omega$ | 155.37957 | | −0.78083886 | | −0.53539037 |
| $e$ | 0.0682021 | $i$ | 5.10756 | | −0.24316622 | | −0.21422787 |
| $P$ | 3.81 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 14 | 691 | 0.1+ | 1.1+ | 2001 10 07 | 644 | 0.1− | 0.5− | 2005 09 25 | 691 | 0.0 | 0.3+ |
| 1993 08 14 | 691 | 0.6− | 0.0 | 2001 10 07 | 644 | 0.4− | 0.2− | 2005 10 22 | 703 | 0.2− | 0.7+ |
| 1993 08 14 | 691 | 0.2+ | 0.3+ | 2001 10 14 | 645 | 0.1+ | 0.1− | 2005 10 22 | 703 | 0.3+ | 0.1+ |
| 1996 04 21 | 691 | 0.2− | 0.2+ | 2001 10 14 | 645 | 0.2+ | 0.1− | 2005 10 22 | 703 | 0.8+ | 0.7− |
| 1996 04 21 | 691 | 0.2− | 0.1− | 2003 01 07 | 704 | 0.1− | 0.2− | 2005 10 22 | 703 | 0.2+ | 1.3− |
| 2000 05 27 | 704 | 0.4+ | 0.1+ | 2003 01 07 | 704 | 0.4− | 0.3− | 2005 10 28 | 703 | 0.1− | 0.0 |
| 2000 05 27 | 704 | 0.6+ | 0.1+ | 2003 01 07 | 704 | 0.7− | 0.4+ | 2005 10 28 | 703 | 0.6− | 0.5+ |
| 2000 05 27 | 704 | 0.2− | 0.5− | 2003 01 08 | 704 | 0.5+ | 0.3+ | 2005 10 28 | 703 | 0.0 | 0.4+ |
| 2000 05 27 | 704 | 0.0 | 0.3− | 2003 01 08 | 704 | 0.3− | 0.9+ | 2005 10 28 | 703 | 1.1− | 0.5− |
| 2000 06 06 | 699 | 0.3+ | 1.2+ | 2003 01 08 | 704 | 0.9+ | 0.7+ | 2005 11 06 | 699 | 0.0 | 0.6− |
| 2000 06 06 | 699 | 0.4+ | 0.3+ | 2003 01 08 | 704 | 1.6+ | 0.9+ | 2005 11 06 | 699 | 0.4− | 0.3+ |
| 2000 06 06 | 699 | 0.1− | 1.2+ | 2003 01 08 | 704 | 0.7+ | 1.1+ | 2005 11 06 | 699 | 1.7− | 0.8+ |
| 2000 06 06 | 699 | 0.2+ | 0.3+ | 2003 01 27 | 704 | 0.2− | 0.9+ | 2005 11 06 | 699 | 0.4+ | 0.0 |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2003 01 27 | 704 | 0.5− | 1.1+ | 2005 12 23 | 291 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.2− | 0.6+ | 2003 01 27 | 704 | 0.3+ | 0.3− | 2005 12 23 | 291 | 0.3+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.6− | 0.4+ | 2003 01 27 | 704 | 0.4+ | 0.1− | 2005 12 23 | 291 | 0.2− | 0.2+ | | |
| 2001 09 21 | 704 | 0.9− | 0.1− | 2005 09 25 | 691 | 0.3− | 0.4+ | | | | | | |
| 2001 10 07 | 644 | 0.3− | 0.1− | 2005 09 25 | 691 | 0.2− | 0.3+ | | | | | | |

**2003 AX$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.54940 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23742607 | $\omega$ | 240.16116 | | −0.48102873 | | −0.87459235 |
| $a$ | 2.5829566 | $\Omega$ | 238.71438 | | +0.82692202 | | −0.42957468 |
| $e$ | 0.2618390 | $i$ | 4.08140 | | +0.29122384 | | −0.22484178 |
| $P$ | 4.15 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 02 | 291 | 0.2− | 0.1+ | 2003 01 08 | 704 | 0.4− | 0.6+ | 2003 01 30 | 699 | 0.1+ | 0.3+ | | |
| 2002 11 02 | 291 | 0.2− | 0.1− | 2003 01 08 | 704 | 0.4− | 1.1+ | 2003 01 30 | 699 | 0.6− | 0.2− | | |
| 2002 11 02 | 291 | 0.4+ | 0.1− | 2003 01 08 | 704 | 0.5− | 1.0+ | 2003 01 30 | 699 | 0.1+ | 0.5− | | |
| 2002 12 06 | 644 | 0.3− | 0.2+ | 2003 01 26 | 699 | 0.4+ | 0.1− | 2003 02 01 | 608 | (1.1− | 2.1−) | | |
| 2002 12 06 | 644 | 0.2− | 0.4+ | 2003 01 26 | 699 | 0.2+ | 0.3+ | 2003 02 01 | 608 | 0.2− | 1.3− | | |
| 2002 12 06 | 644 | 0.5− | 0.5+ | 2003 01 26 | 699 | 0.1− | 0.1− | 2003 02 01 | 608 | 0.5− | 1.2− | | |
| 2002 12 10 | 644 | 0.3+ | 0.3+ | 2003 01 26 | 699 | 0.1− | 0.2− | 2003 02 02 | 704 | 0.6+ | 0.8+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.1+ | 2003 01 26 | 608 | 0.1− | 0.9− | 2003 02 02 | 704 | 0.7− | 0.1+ | | |
| 2002 12 10 | 644 | 0.7+ | 0.1− | 2003 01 26 | 608 | 0.1− | 0.5− | 2003 02 02 | 704 | 0.9+ | 0.2+ | | |
| 2002 12 27 | 699 | 0.7+ | 0.3+ | 2003 01 26 | 608 | 0.1+ | 0.6− | 2006 11 17 | 691 | 0.1+ | 0.1− | | |
| 2002 12 27 | 699 | 1.4+ | 0.8− | 2003 01 27 | 704 | 0.5+ | 0.9+ | 2006 11 17 | 691 | 0.1+ | 0.0 | | |
| 2002 12 27 | 699 | (1.4+ | 1.5−) | 2003 01 27 | 704 | 0.9+ | 1.1+ | 2006 11 17 | 691 | 0.0 | 0.2− | | |
| 2002 12 27 | 699 | 0.3+ | 0.3− | 2003 01 27 | 704 | 0.0 | 1.4+ | 2006 11 21 | 704 | 0.3− | 0.1+ | | |
| 2003 01 01 | 704 | 0.7− | 0.1+ | 2003 01 27 | 704 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2003 01 01 | 704 | 0.2+ | 0.1+ | 2003 01 27 | 644 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.2− | 1.0+ | | |
| 2003 01 01 | 704 | 0.4+ | 0.9− | 2003 01 27 | 699 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.7− | 0.3− | | |
| 2003 01 01 | 704 | 0.6− | 1.4− | 2003 01 27 | 699 | 0.5− | 1.4− | 2006 12 01 | 704 | 0.2+ | 0.0 | | |
| 2003 01 07 | 704 | 0.3− | 0.7+ | 2003 01 27 | 699 | 0.2+ | 0.3+ | 2006 12 01 | 704 | (0.9+ | 1.8+) | | |
| 2003 01 07 | 704 | 0.4+ | 0.5− | 2003 01 27 | 644 | 0.1+ | 0.4− | 2006 12 01 | 704 | 0.5+ | 0.1− | | |
| 2003 01 07 | 704 | 0.5+ | 0.4− | 2003 01 27 | 699 | 1.1− | 0.2+ | 2006 12 01 | 704 | 0.1+ | 0.3− | | |
| 2003 01 08 | 704 | 0.0 | 0.7+ | 2003 01 27 | 644 | 0.1− | 0.3− | | | | | | |
| 2003 01 08 | 704 | 0.6− | 0.9+ | 2003 01 30 | 699 | 0.3− | 0.1+ | | | | | | |

**2003 AG$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.71394 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23199226 | $\omega$ | 237.46179 | | +0.05433398 | | −0.99815681 |
| $a$ | 2.6231334 | $\Omega$ | 209.45954 | | +0.93357248 | | +0.06038599 |
| $e$ | 0.2363581 | $i$ | 3.15100 | | +0.35424602 | | −0.00604347 |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.6− | 0.4− | 2003 01 27 | 699 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.1+ | | |
| 2003 01 01 | 704 | 0.7+ | 0.2+ | 2003 01 27 | 704 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.7− | | |
| 2003 01 01 | 704 | 0.1− | 0.4+ | 2003 01 27 | 704 | 0.6+ | 0.1+ | 2006 11 17 | 704 | 0.9+ | 0.7+ | | |
| 2003 01 01 | 704 | 0.0 | 0.6+ | 2003 01 27 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.1− | | |
| 2003 01 07 | 704 | 0.4+ | 0.8− | 2003 01 27 | 699 | 0.0 | 0.1− | 2006 11 17 | 704 | (1.8+ | 0.4+) | | |
| 2003 01 07 | 704 | 0.5+ | 0.5− | 2003 01 27 | 699 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.5+ | | |
| 2003 01 07 | 704 | (0.6− | 1.8−) | 2003 01 27 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.5− | 1.2+ | | |
| 2003 01 07 | 704 | 1.1− | 0.9− | 2003 01 27 | 644 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2003 01 08 | 704 | 1.4+ | 1.3+ | 2003 01 27 | 644 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2003 01 08 | 704 | 0.6− | 0.3− | 2003 02 02 | 704 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.2+ | | |
| 2003 01 08 | 704 | 0.4− | 0.6+ | 2003 02 02 | 704 | 0.6− | 0.7+ | 2006 11 22 | 691 | 0.2+ | 0.1+ | | |
| 2003 01 08 | 704 | 0.6− | 0.4+ | 2003 02 02 | 704 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.6− | 1.3− | | |
| 2003 01 26 | 699 | 0.1− | 0.2− | 2003 02 02 | 704 | 0.1− | 0.5+ | 2006 11 22 | 691 | 0.2+ | 0.1+ | | |
| 2003 01 26 | 699 | 0.6+ | 1.3− | 2003 02 02 | 608 | 0.6− | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.9− | | |
| 2003 01 26 | 699 | 0.1− | 0.7− | 2003 02 02 | 608 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.6− | 0.3− | | |
| 2003 01 26 | 699 | 0.3+ | 0.4− | 2003 02 02 | 608 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.8+ | | |
| 2003 01 27 | 704 | 0.1+ | 0.2− | 2003 02 03 | 644 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.7+ | | |
| 2003 01 27 | 699 | 0.8+ | 0.2− | 2003 02 03 | 644 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.3− | | |
| 2003 01 27 | 704 | 0.6+ | 0.4+ | 2003 02 03 | 644 | 0.1− | 0.0 | 2006 12 03 | 644 | 0.5− | 0.5+ | | |
| 2003 01 27 | 644 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.6+ | 2006 12 03 | 644 | 0.1+ | 0.6− | | |
| 2003 01 27 | 644 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.8+ | 0.3+ | 2006 12 03 | 644 | 0.4+ | 0.2− | | |

**2003 AU$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.59282 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21665747 | $\omega$ | 294.58380 | | +0.16200337 | | −0.95391436 |
| $a$ | 2.7454925 | $\Omega$ | 143.13473 | | +0.98673433 | | +0.15387322 |
| $e$ | 0.2385804 | $i$ | 24.89967 | | +0.01050113 | | +0.25762458 |
| $P$ | 4.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.1− | 0.0 | 2003 01 31 | 704 | 0.4− | 0.8+ | 2003 03 01 | 608 | 0.8+ | 1.2− | | |
| 2003 01 02 | 704 | 0.6+ | 0.6+ | 2003 01 31 | 704 | 0.2− | 0.5+ | 2003 03 01 | 608 | 0.4− | 1.3− | | |
| 2003 01 02 | 704 | 0.1− | 0.1+ | 2003 02 02 | 704 | 0.6+ | 0.9+ | 2003 03 06 | 704 | 0.1− | 0.4+ | | |
| 2003 01 02 | 704 | 0.3+ | 0.3+ | 2003 02 02 | 704 | 0.2+ | 0.6− | 2003 03 06 | 704 | 0.1− | 0.8+ | | |
| 2003 01 02 | 704 | 0.3+ | 0.3+ | 2003 02 02 | 704 | 1.0+ | 0.7+ | 2003 03 06 | 704 | 0.1+ | 0.8+ | | |
| 2003 01 07 | 704 | 0.0 | 0.6− | 2003 02 02 | 704 | 0.5+ | 0.3− | 2003 03 06 | 704 | 0.3+ | 1.2+ | | |
| 2003 01 07 | 704 | 0.1− | 0.3− | 2003 02 02 | 704 | 1.3+ | 0.7+ | 2003 03 06 | 704 | (0.4+ | 1.5+) | | |
| 2003 01 07 | 704 | 0.1+ | 0.1− | 2003 02 03 | 704 | 0.1− | 1.1+ | 2003 03 08 | 704 | 0.2− | 0.4− | | |
| 2003 01 07 | 704 | 0.6+ | 0.2− | 2003 02 03 | 704 | 0.6− | 0.6+ | 2003 03 08 | 704 | 0.3− | 0.7− | | |
| 2003 01 07 | 704 | 1.0+ | 0.2+ | 2003 02 03 | 704 | 0.8− | 0.2− | 2003 03 08 | 704 | 0.4− | 0.1+ | | |
| 2003 01 08 | 704 | 0.1+ | 0.1− | 2003 02 03 | 704 | 0.0 | 0.2+ | 2003 03 08 | 704 | 0.3− | 0.1+ | | |
| 2003 01 08 | 704 | 0.3− | 0.5− | 2003 02 03 | 704 | 1.2− | 1.3+ | 2003 03 09 | 704 | 1.1+ | 0.1− | | |
| 2003 01 08 | 704 | 0.4+ | 0.9− | 2003 02 03 | 704 | 0.4+ | 0.4+ | 2003 03 09 | 704 | 0.4+ | 0.0 | | |
| 2003 01 08 | 704 | 0.6+ | 0.3− | 2003 02 03 | 704 | 0.6+ | 0.1+ | 2003 03 09 | 704 | 0.6+ | 0.3− | | |
| 2003 01 08 | 704 | 0.1+ | 1.1− | 2003 02 03 | 704 | 0.1− | 0.8+ | 2003 03 09 | 704 | 0.8+ | 0.5− | | |
| 2003 01 16 | 644 | 0.3+ | 0.2+ | 2003 02 03 | 704 | 0.8+ | 0.2+ | 2003 03 09 | 704 | 0.9+ | 0.5− | | |
| 2003 01 16 | 644 | 0.1+ | 0.1− | 2003 02 03 | 608 | 0.7− | 0.6+ | 2003 03 13 | 608 | 0.2+ | 1.3− | | |
| 2003 01 16 | 644 | 0.4+ | 0.0 | 2003 02 03 | 608 | 0.4− | 0.6+ | 2003 03 13 | 608 | 0.7+ | 1.0− | | |
| 2003 01 26 | 644 | 0.6− | 0.2+ | 2003 02 03 | 608 | 0.2− | 0.6+ | 2003 03 13 | 608 | 0.2+ | 0.4− | | |
| 2003 01 26 | 644 | 0.1+ | 0.5+ | 2003 02 04 | 704 | 0.4+ | 0.5+ | 2006 09 24 | 703 | 0.8+ | 0.4+ | | |
| 2003 01 26 | 644 | 0.4+ | 0.2+ | 2003 02 04 | 704 | 0.5+ | 0.4+ | 2006 09 24 | 703 | 0.1+ | 0.3− | | |
| 2003 01 27 | 704 | 0.2+ | 0.1− | 2003 02 04 | 704 | 0.1+ | 0.1+ | 2006 09 24 | 703 | 0.4+ | 0.5− | | |
| 2003 01 27 | 704 | 0.1+ | 0.1− | 2003 02 04 | 704 | 0.7+ | 1.0+ | 2006 09 24 | 703 | 0.0 | 0.0 | | |
| 2003 01 27 | 704 | 0.5+ | 0.2+ | 2003 02 04 | 704 | 0.4+ | 0.4+ | 2006 10 11 | E12 | 0.2− | 0.2+ | | |
| 2003 01 27 | 704 | 0.5+ | 0.2+ | 2003 02 08 | 704 | 0.5+ | 0.1− | 2006 10 11 | E12 | 0.1+ | 0.2− | | |
| 2003 01 28 | 645 | 0.2− | 0.3− | 2003 02 08 | 704 | 0.1+ | 0.2+ | 2006 10 11 | E12 | 0.7− | 0.2+ | | |
| 2003 01 28 | 645 | 0.3− | 0.1− | 2003 02 08 | 704 | 0.4+ | 0.1− | 2006 10 11 | E12 | 0.0 | 0.4+ | | |
| 2003 01 29 | 608 | 0.2+ | 1.0− | 2003 02 08 | 704 | 0.3+ | 0.4+ | 2006 10 22 | E12 | 0.2− | 1.2− | | |
| 2003 01 29 | 608 | 0.2− | 0.6− | 2003 02 08 | 704 | 0.2+ | 0.3+ | 2006 10 22 | E12 | 0.2+ | 0.3− | | |
| 2003 01 29 | 608 | 0.3+ | 0.6− | 2003 02 21 | 699 | 0.1+ | 0.8− | 2006 10 22 | E12 | 0.4− | 0.2+ | | |
| 2003 01 30 | 699 | 0.1+ | 0.3+ | 2003 02 21 | 699 | 1.0− | 0.8+ | 2006 10 22 | E12 | 0.5+ | 0.3− | | |
| 2003 01 30 | 699 | 0.1+ | 0.7+ | 2003 02 21 | 644 | 0.1− | 0.4+ | 2006 11 18 | E12 | 0.3− | 0.5+ | | |
| 2003 01 30 | 699 | 0.0 | 0.1+ | 2003 02 21 | 699 | 0.7− | 0.3+ | 2006 11 18 | E12 | 0.7− | 0.8+ | | |
| 2003 01 30 | 699 | 0.1+ | 0.1− | 2003 02 21 | 644 | 0.0 | 0.4+ | 2006 11 18 | E12 | 0.5+ | 0.3+ | | |
| 2003 01 31 | 704 | 0.5+ | 0.1+ | 2003 02 21 | 699 | 0.9− | 0.3+ | 2006 11 18 | E12 | 0.1+ | 0.2− | | |
| 2003 01 31 | 704 | 0.4+ | 0.0 | 2003 02 21 | 644 | 0.1− | 0.4+ | | | | | | |
| 2003 01 31 | 704 | 0.0 | 0.3+ | 2003 03 01 | 608 | (0.2− | 3.0−) | | | | | | |

**2003 AV$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.20213 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23746911 | $\omega$ | 353.11872 | | −0.76375324 | | −0.63272364 |
| $a$ | 2.5826445 | $\Omega$ | 146.51806 | | +0.60273783 | | −0.76991096 |
| $e$ | 0.2283619 | $i$ | 13.39847 | | +0.23105864 | | −0.08305366 |
| $P$ | 4.15 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 0.3+ | 0.5+ | 2003 02 02 | 735 | 0.0 | 0.4− | 2003 02 22 | 644 | 0.5− | 0.0 | | |
| 1999 02 23 | 699 | 0.9− | 0.5+ | 2003 02 02 | 735 | 0.2− | 0.2− | 2003 02 24 | 608 | 0.6− | 0.7− | | |
| 1999 02 23 | 699 | 0.9+ | 0.3+ | 2003 02 02 | 735 | 0.5− | 0.2− | 2003 02 24 | 608 | 0.1+ | 0.9− | | |
| 2003 01 07 | 704 | 0.6+ | 0.0 | 2003 02 03 | 704 | 0.7+ | 0.1+ | 2003 02 24 | 608 | 0.2− | 1.5− | | |
| 2003 01 07 | 704 | 0.1+ | 0.1+ | 2003 02 03 | 704 | 0.7− | 0.7− | 2003 03 03 | 608 | 0.8− | 0.7+ | | |
| 2003 01 07 | 704 | 1.2+ | 0.1+ | 2003 02 03 | 704 | 0.5− | 0.6− | 2003 03 03 | 608 | 0.5− | 1.2+ | | |
| 2003 01 07 | 704 | 0.6+ | 0.2+ | 2003 02 03 | 704 | 0.1+ | 0.8− | 2003 03 03 | 608 | 0.7− | 0.8+ | | |
| 2003 01 08 | 704 | 0.2− | 0.2+ | 2003 02 08 | 704 | 1.1+ | 1.6+ | 2003 03 06 | 704 | 0.5+ | 1.0+ | | |
| 2003 01 08 | 704 | 0.3− | 0.5− | 2003 02 08 | 704 | 0.5+ | 1.4+ | 2003 03 06 | 704 | 0.2− | 0.1− | | |
| 2003 01 08 | 704 | 0.2− | 1.1− | 2003 02 08 | 704 | 0.9+ | 0.2+ | 2003 03 06 | 704 | 0.3− | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 16 | 644 | 0.4− | 0.0 | 2003 02 08 | 704 | 0.4+ | 0.5+ | 2003 03 06 | 704 | 0.1− | 0.5+ | 2003 01 07 | 704 | 0.5− | 1.2+ | 2003 01 26 | 699 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.5+ | 0.5+ |
| 2003 01 16 | 644 | 0.4− | 0.0 | 2003 02 08 | 704 | 0.9+ | 0.3+ | 2003 03 06 | 704 | 0.1− | 0.8+ | 2003 01 07 | 704 | 0.4+ | 0.1− | 2003 01 26 | 608 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2003 01 16 | 644 | 0.1− | 0.0 | 2003 02 19 | 608 | 0.1+ | 0.3+ | 2003 03 08 | 704 | 0.1− | 0.6+ | 2003 01 08 | 704 | 0.1− | 0.1− | 2003 01 26 | 608 | 0.9+ | 0.8− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2003 01 29 | 608 | 1.1+ | 1.2+ | 2003 02 19 | 608 | 0.3− | 0.2− | 2003 03 08 | 704 | 1.5+ | 0.7+ | 2003 01 08 | 704 | 0.1− | 0.6− | 2003 01 26 | 608 | 0.1+ | 0.8− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2003 01 29 | 608 | 1.0+ | 1.1+ | 2003 02 19 | 608 | 0.1− | 0.2− | 2003 03 08 | 704 | 0.8− | 0.2− | 2003 01 08 | 704 | 0.3+ | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.3− | 0.0 |
| 2003 01 29 | 608 | 1.0+ | 1.6+ | 2003 02 22 | 644 | 0.5− | 0.0 | 2003 03 13 | 608 | 0.3− | 0.6− | 2003 01 08 | 704 | 0.4− | 0.3+ | 2006 11 14 | 704 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.4− | 0.2+ |
| 2003 01 31 | 704 | 0.4− | 0.4− | 2003 02 22 | 699 | 0.1+ | 0.0 | 2003 03 13 | 608 | 0.0 | 0.6− | 2003 01 08 | 704 | 0.1− | 0.4− | 2006 11 14 | 704 | 0.3− | 0.6− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2003 01 31 | 704 | 0.5− | 1.6− | 2003 02 22 | 699 | 0.0 | 0.2− | 2003 03 13 | 608 | 0.4− | 0.4− | 2003 01 08 | 704 | 0.1− | 0.9− | 2006 11 14 | 704 | 0.5− | 1.1− | 2006 11 29 | 704 | 0.6+ | 1.0+ |
| 2003 01 31 | 704 | 0.7− | 0.9− | 2003 02 22 | 699 | 0.5+ | 0.2+ | 2005 09 01 | 691 | 0.1− | 0.1+ | 2003 01 08 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.1+ | 0.6+ |
| 2003 01 31 | 704 | 0.3− | 0.6− | 2003 02 22 | 699 | 0.1+ | 0.1− | 2005 09 01 | 691 | 0.3+ | 0.4+ | 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.2− | 2006 11 29 | 704 | 0.0 | 0.3+ |
| 2003 01 31 | 704 | 0.5− | 0.9− | 2003 02 22 | 644 | 0.5− | 0.1+ | 2005 09 01 | 691 | 0.4− | 0.2+ | 2003 01 08 | 704 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.5+ | 2006 11 29 | 704 | 0.9+ | 0.1+ |
| | | | | | | | | | | | | 2003 01 14 | 608 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.8− |

**2003 AY$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.01015 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21484048 | $\omega$ | 341.06260 | | −0.61275640 | | −0.77212411 |
| $a$ | 2.7609506 | $\Omega$ | 146.11635 | | +0.75845162 | | −0.63443300 |
| $e$ | 0.1778770 | $i$ | 17.57979 | | +0.22199263 | | +0.03631986 |
| $P$ | 4.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 0.3+ | 0.9+ | 2003 02 03 | 699 | 0.1− | 0.4+ | 2003 03 06 | 704 | 0.5+ | 1.1− | 2002 12 11 | 704 | 0.9+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.4+ | 0.4+ |
| 2003 01 07 | 704 | 0.0 | 0.2+ | 2003 02 03 | 699 | 0.6+ | 0.6+ | 2003 03 06 | 704 | 0.4− | 0.6− | 2002 12 11 | 704 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2003 01 07 | 704 | 0.2− | 0.6+ | 2003 02 03 | 699 | 0.7− | 0.7+ | 2003 03 07 | 699 | 0.5− | 0.2+ | 2002 12 11 | 704 | (2.2− | 0.8+) | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2003 01 07 | 704 | 0.1+ | 0.1+ | 2003 02 08 | 704 | 0.0 | 0.4+ | 2003 03 07 | 699 | 0.3+ | 0.1− | 2003 01 05 | 704 | 0.1− | 0.9− | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 1.4− | 0.7− |
| 2003 01 08 | 704 | 0.2+ | 0.3− | 2003 02 08 | 704 | 0.0 | 0.5+ | 2003 03 07 | 699 | 0.8− | 0.7+ | 2003 01 05 | 704 | 0.4− | 0.7− | 2006 10 19 | G96 | 0.5− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 01 08 | 704 | 0.7− | 0.0 | 2003 02 08 | 704 | 0.4+ | 0.0 | 2003 03 07 | 699 | 0.4+ | 0.6+ | 2003 01 05 | 704 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 01 08 | 704 | 0.2− | 0.0 | 2003 02 08 | 704 | 0.3+ | 0.5+ | 2003 03 07 | 644 | 0.2− | 0.1+ | 2003 01 05 | 704 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 0.2+ | 0.2+ | 2003 02 08 | 704 | 0.3+ | 0.8+ | 2003 03 07 | 644 | 0.0 | 0.2+ | 2003 01 09 | 704 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.4− | 0.2+ | 2006 12 01 | 704 | 0.3+ | 1.2+ |
| 2003 01 25 | 291 | 0.3− | 0.2− | 2003 02 12 | 608 | 0.0 | 1.1− | 2003 03 07 | 644 | 0.1+ | 0.1+ | 2003 01 09 | 704 | 0.9+ | 0.5+ | 2006 11 11 | G96 | 0.7+ | 0.4− | 2006 12 01 | 704 | 0.6+ | 0.6+ |
| 2003 01 25 | 291 | 0.5− | 0.1− | 2003 02 12 | 608 | 0.4+ | 1.1− | 2003 03 08 | 704 | 0.7+ | 0.1+ | 2003 01 09 | 704 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 12 01 | 704 | (1.5+ | 1.6+) |
| 2003 01 25 | 291 | 0.8− | 0.3− | 2003 02 12 | 608 | 0.3+ | 0.8− | 2003 03 08 | 704 | 0.3− | 0.2− | 2003 01 09 | 704 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.6+ | 0.7+ |
| 2003 01 26 | 699 | 0.3− | 0.4+ | 2003 02 21 | 644 | 0.1− | 0.2− | 2003 03 08 | 704 | 0.4+ | 0.7− | 2006 09 28 | G96 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.8+ | 0.2− | 2006 12 01 | 704 | 1.2+ | 0.8+ |
| 2003 01 26 | 699 | 0.1− | 0.3+ | 2003 02 21 | 644 | 0.2+ | 0.2+ | 2003 03 08 | 704 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.3+ | 2006 11 15 | 691 | (1.9− | 0.9+) | | | | |
| 2003 01 26 | 699 | 0.1+ | 0.3− | 2003 02 21 | 644 | 0.1− | 0.2+ | 2003 03 08 | 704 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | | | | |
| 2003 01 26 | 699 | 0.4− | 0.4+ | 2003 02 22 | 699 | 0.5− | 0.2+ | 2003 03 13 | 644 | 0.0 | 0.1+ | | | | | | | | | | | | |
| 2003 01 28 | 704 | 0.6+ | 0.1+ | 2003 02 22 | 699 | 0.0 | 0.2+ | 2003 03 13 | 644 | 0.0 | 0.0 | | | | | | | | | | | | |
| 2003 01 28 | 704 | 0.7+ | 0.1+ | 2003 02 22 | 699 | 0.2+ | 0.4+ | 2003 03 13 | 644 | 0.0 | 0.1+ | | | | | | | | | | | | |
| 2003 01 28 | 704 | 0.3+ | 0.2− | 2003 02 22 | 699 | 0.9+ | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.2+ | | | | | | | | | | | | |
| 2003 01 28 | 704 | 0.5+ | 0.3+ | 2003 02 26 | 608 | 0.2+ | 0.0 | 2005 08 27 | 644 | 0.1− | 0.4+ | | | | | | | | | | | | |
| 2003 01 30 | 699 | 0.1+ | 0.4+ | 2003 02 26 | 608 | 0.1− | 0.7+ | 2005 08 27 | 644 | 0.0 | 0.6+ | | | | | | | | | | | | |
| 2003 01 30 | 699 | 0.1+ | 0.5+ | 2003 02 26 | 608 | 0.1− | 0.8− | 2006 11 17 | 703 | 0.7− | 0.1+ | | | | | | | | | | | | |
| 2003 01 30 | 699 | 0.4+ | 0.0 | 2003 02 27 | 608 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.1− | 0.6− | | | | | | | | | | | | |
| 2003 01 30 | 699 | 0.3− | 0.6+ | 2003 02 27 | 608 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.0 | 0.3+ | | | | | | | | | | | | |
| 2003 01 31 | 704 | 0.3− | 0.3+ | 2003 02 27 | 608 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.3+ | | | | | | | | | | | | |
| 2003 01 31 | 704 | 0.3+ | 0.2+ | 2003 02 28 | 704 | 0.5− | 0.2− | 2006 11 23 | 703 | 0.7− | 0.1− | | | | | | | | | | | | |
| 2003 01 31 | 704 | 0.0 | 0.3− | 2003 02 28 | 704 | 0.2+ | 0.4+ | 2006 11 23 | 703 | 0.1+ | 0.4− | | | | | | | | | | | | |
| 2003 02 01 | 608 | 0.1− | 0.4− | 2003 02 28 | 704 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.3+ | 0.6− | | | | | | | | | | | | |
| 2003 02 01 | 608 | 0.3+ | 0.7− | 2003 03 06 | 704 | (0.7− | 2.1+) | 2006 11 23 | 703 | 0.5+ | 0.6+ | | | | | | | | | | | | |
| 2003 02 01 | 608 | 0.0 | 0.9− | 2003 03 06 | 704 | 0.7+ | 0.5+ | | | | | | | | | | | | | | | | |
| 2003 02 03 | 699 | 0.8+ | 0.2+ | 2003 03 06 | 704 | 0.9+ | 1.0− | | | | | | | | | | | | | | | | |

**2003 AF$_{42}$ = 2006 VE$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.03105 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23621894 | $\omega$ | 202.06924 | | +0.56500855 | | −0.82377133 |
| $a$ | 2.5917488 | $\Omega$ | 213.57904 | | +0.76902127 | | +0.54621655 |
| $e$ | 0.3127427 | $i$ | 4.82709 | | +0.29895086 | | +0.15181659 |
| $P$ | 4.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 291 | 0.3+ | 0.4+ | 2003 01 14 | 608 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.4− |
| 2002 12 07 | 291 | 0.1+ | 0.1+ | 2003 01 14 | 608 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2002 12 07 | 291 | 0.2− | 0.0 | 2003 01 26 | 699 | (0.5− | 2.2−) | 2006 11 20 | 704 | 0.1− | 0.1− |
| 2003 01 07 | 704 | 0.5+ | 0.3+ | 2003 01 26 | 699 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2003 01 07 | 704 | 0.3+ | 0.1+ | 2003 01 26 | 699 | (1.1+ | 2.4−) | 2006 11 20 | 704 | 0.5+ | 0.1+ |

**2003 AJ$_{43}$ = 2006 WM$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.83143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23442122 | $\omega$ | 79.75940 | | −0.81559501 | | −0.56353864 |
| $a$ | 2.6049822 | $\Omega$ | 65.82260 | | +0.45841687 | | −0.76773391 |
| $e$ | 0.1405490 | $i$ | 8.27243 | | +0.35307045 | | −0.30497349 |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.9+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.4+ | 0.4+ |
| 2002 12 11 | 704 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2002 12 11 | 704 | (2.2− | 0.8+) | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.1− | 0.9− | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 1.4− | 0.7− |
| 2003 01 05 | 704 | 0.4− | 0.7− | 2006 10 19 | G96 | 0.5− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2003 01 09 | 704 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.4− | 0.2+ | 2006 12 01 | 704 | 0.3+ | 1.2+ |
| 2003 01 09 | 704 | 0.9+ | 0.5+ | 2006 11 11 | G96 | 0.7+ | 0.4− | 2006 12 01 | 704 | 0.6+ | 0.6+ |
| 2003 01 09 | 704 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 12 01 | 704 | (1.5+ | 1.6+) |
| 2003 01 09 | 704 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.6+ | 0.7+ |
| 2006 09 28 | G96 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.8+ | 0.2− | 2006 12 01 | 704 | 1.2+ | 0.8+ |
| 2006 09 28 | G96 | 0.2+ | 0.3+ | 2006 11 15 | 691 | (1.9− | 0.9+) | | | | |
| 2006 09 28 | G96 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | | | | |

**2003 AN$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.76269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28328333 | $\omega$ | 206.82375 | | −0.99929590 | | −0.00057248 |
| $a$ | 2.2960889 | $\Omega$ | 333.06388 | | +0.01793222 | | −0.88557542 |
| $e$ | 0.0918768 | $i$ | 4.75042 | | −0.03295676 | | −0.46449527 |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 703 | 1.4− | 0.1− | 2002 12 11 | 704 | 0.3+ | 0.1− | 2005 10 08 | 704 | 0.2+ | 0.7− |
| 2000 03 03 | 703 | 0.4+ | 0.5+ | 2002 12 11 | 704 | 0.8+ | 0.5− | 2005 10 08 | 704 | 1.0+ | 1.1− |
| 2000 03 03 | 703 | 0.5− | 0.0 | 2002 12 11 | 704 | 0.4+ | 0.4+ | 2005 10 08 | 704 | 0.1− | 1.4− |
| 2000 03 03 | 703 | 0.8− | 1.2+ | 2002 12 11 | 704 | 0.5+ | 0.8− | 2005 10 30 | 704 | 0.2+ | 0.6+ |
| 2000 03 09 | 704 | 1.7+ | 0.4− | 2003 01 05 | 704 | 0.2− | 0.0 | 2005 10 30 | 704 | 0.4+ | 0.5+ |
| 2000 03 09 | 704 | 1.0+ | 0.1− | 2003 01 05 | 704 | 0.3+ | 0.0 | 2005 10 30 | 704 | 0.6+ | 0.6+ |
| 2000 03 09 | 704 | 0.9− | 0.1+ | 2003 01 05 | 704 | 0.5+ | 0.2− | 2005 10 30 | 704 | 0.2+ | 0.3+ |
| 2000 03 09 | 704 | 0.5+ | 0.7+ | 2003 01 05 | 704 | 1.2+ | 0.2− | 2005 11 10 | 291 | 0.2+ | 0.1− |
| 2000 04 07 | 699 | 0.4− | 0.1+ | 2003 01 09 | 704 | 0.9− | 0.5− | 2005 11 10 | 291 | 0.2+ | 0.1− |
| 2000 04 07 | 699 | 0.1+ | 0.5− | 2003 01 09 | 704 | 0.8− | 0.2+ | 2005 11 10 | 291 | 0.1− | 0.1− |
| 2000 04 07 | 699 | 0.6+ | 0.0 | 2003 01 09 | 704 | 1.1− | 0.1− | 2005 12 02 | 704 | 0.5− | 1.2+ |
| 2000 04 07 | 699 | 0.6+ | 0.0 | 2003 01 09 | 704 | 1.3− | 0.2− | 2005 12 02 | 704 | 1.7− | 1.4+ |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2005 10 08 | 704 | 1.2− | 1.8+ | 2005 12 02 | 704 | 1.6− | 0.0 |

**2003 AR$_{43}$ = 2006 QO$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.61863 | | (2000.0) | | | |
| $n$ | 0.21893117 | $\omega$ | 13.57813 | | +0.82507266 | −0.56404439 |
| $a$ | 2.7264507 | $\Omega$ | 20.86314 | | +0.50927785 | +0.71684547 |
| $e$ | 0.1690625 | $i$ | 5.36553 | | +0.24472675 | +0.40986156 |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.4− | 0.3+ |
| 1995 03 27 | 691 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.3+ |
| 1995 03 27 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.6− | 0.2+ |
| 2001 07 22 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.2− | 2006 09 28 | 704 | 0.6+ | 1.0+ |
| 2001 07 22 | 644 | 0.4+ | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.4+ | 0.7+ |
| 2001 07 22 | 644 | 0.4+ | 0.0 | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.2− | 0.5+ |
| 2001 08 12 | 644 | 0.4− | 0.6+ | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.5− |
| 2001 08 12 | 644 | 0.1− | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.2− |
| 2001 08 12 | 644 | 0.3− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.6− | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.7− | 0.3− |
| 2002 12 11 | 704 | 0.5− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.2− | 0.7− | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2003 01 05 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2003 01 05 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2003 01 05 | 704 | 0.5+ | 0.5− | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2003 01 05 | 704 | 0.3+ | 0.8+ | 2006 09 20 | 704 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2003 01 09 | 704 | 0.2+ | 0.8− | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2003 01 09 | 704 | 0.2+ | 1.2+ | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 01 09 | 704 | 0.6− | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 01 09 | 704 | 0.3− | 0.9+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2004 03 19 | 291 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.8+ |
| 2004 03 19 | 291 | 0.3+ | 0.4+ | 2006 09 20 | 608 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2004 03 19 | 291 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 608 | 1.0+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 09 20 | 608 | 0.6+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2006 08 24 | 644 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.7− |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2006 09 14 | 703 | 0.7− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.2− | | | | |

**2003 AY$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.55952 | | (2000.0) | | | |
| $n$ | 0.23620108 | $\omega$ | 5.63005 | | +0.44107381 | −0.89529228 |
| $a$ | 2.5918794 | $\Omega$ | 58.21194 | | +0.82051763 | +0.37406359 |
| $e$ | 0.2168590 | $i$ | 4.21639 | | +0.36359967 | +0.24192596 |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.3− | 1.3+ | 2003 02 01 | 704 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.5− |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2003 02 01 | 704 | 0.4+ | 0.9+ | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2002 12 14 | 704 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.1− | 1.0+ |
| 2002 12 30 | 704 | 1.1+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2002 12 30 | 704 | 0.6+ | 0.6− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.6− | 1.3+ |
| 2002 12 30 | 704 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2003 01 05 | 704 | 0.3+ | 0.8− | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 28 | 704 | 1.3+ | 0.1− |
| 2003 01 05 | 704 | 0.2+ | 0.8− | 2006 10 28 | G96 | 0.1− | 0.6− | 2006 11 28 | 704 | 0.5+ | 0.3− |
| 2003 01 05 | 704 | 0.2+ | 0.5− | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 1.4+ | 0.1− |
| 2003 01 09 | 704 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.4− | 2006 12 01 | 704 | 1.3− | 0.2+ |
| 2003 01 09 | 704 | 0.6− | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.3− | 2006 12 01 | 704 | 0.1+ | 0.1+ |
| 2003 01 09 | 704 | 0.2− | 0.7− | 2006 11 18 | 704 | 0.1+ | 0.5+ | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2003 01 09 | 704 | 0.9− | 0.8− | 2006 11 18 | 704 | 0.1− | 0.4+ | | | | |
| 2003 02 01 | 704 | 0.6− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.2− | | | | |

**2003 AZ$_{46}$ = 2006 VH$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 271.45562 | | (2000.0) | | | |
| $n$ | 0.23371249 | $\omega$ | 81.84799 | | −0.95443425 | −0.28574151 |
| $a$ | 2.6102460 | $\Omega$ | 81.51702 | | +0.22787929 | −0.88406448 |
| $e$ | 0.1250129 | $i$ | 4.99198 | | +0.19268185 | −0.36984022 |
| $P$ | 4.22 | $H$ | 16.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.0 | 0.5+ | 2003 01 05 | 704 | 0.8− | 1.1− | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 2002 12 31 | 704 | 0.5+ | 0.1− | 2003 01 09 | 704 | 0.3+ | 0.6− | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 1.3+ | 1.2+ | 2003 01 09 | 704 | 0.1− | 0.4+ | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.7+ | 0.7+ | 2003 01 09 | 704 | 0.3+ | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.4− | 0.9− | 2003 01 09 | 704 | 0.4+ | 0.5+ | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 0.6− | 0.3− | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2003 01 05 | 704 | 1.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ | | | | |
| 2003 01 05 | 704 | 0.4− | 0.6− | 2006 11 11 | 691 | 0.2− | 0.0 | | | | |

**2003 AW$_{47}$ = 2006 VA$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.36778 | | (2000.0) | | | |
| $n$ | 0.23812347 | $\omega$ | 42.67312 | | +0.19261752 | −0.98037296 |
| $a$ | 2.5779109 | $\Omega$ | 36.28047 | | +0.88006145 | +0.15364153 |
| $e$ | 0.1939165 | $i$ | 4.07400 | | +0.43403956 | +0.12354410 |
| $P$ | 4.14 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.5− | 0.5+ | 2003 01 09 | 704 | 0.1+ | 0.1− | 2006 11 15 | 704 | (0.7+ | 2.8+) |
| 2002 12 11 | 704 | 0.1+ | 0.5+ | 2003 01 09 | 704 | 0.1− | 0.5− | 2006 11 15 | 704 | (1.2+ | 2.1+) |
| 2002 12 11 | 704 | 0.1− | 0.7+ | 2003 01 09 | 704 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.7+ | 0.2+ |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2003 01 09 | 704 | 0.5− | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2002 12 28 | 699 | 0.4+ | 1.1− | 2003 01 09 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2002 12 28 | 699 | 1.1− | 0.9+ | 2003 01 09 | 704 | 0.5− | 0.1+ | 2006 11 17 | 691 | 0.2− | 0.6− |
| 2002 12 28 | 699 | 0.9− | 0.8− | 2003 01 09 | 704 | 0.2− | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2002 12 28 | 699 | 0.3+ | 0.6+ | 2003 01 09 | 704 | 0.5− | 0.4− | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2003 01 05 | 704 | 0.7+ | 0.3− | 2003 01 09 | 704 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.8− | 0.0 |
| 2003 01 05 | 704 | 0.8+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.6+ |
| 2003 01 05 | 704 | 0.5+ | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 25 | 691 | 0.4− | 0.2− |
| 2003 01 05 | 704 | 1.3+ | 0.7+ | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2003 01 09 | 704 | 0.3− | 0.4− | 2006 11 12 | G96 | 0.2− | 0.0 | | | | |

**2003 AS$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.39440 | | (2000.0) | | | |
| $n$ | 0.23694024 | $\omega$ | 352.02840 | | +0.09673300 | −0.96195483 |
| $a$ | 2.5864862 | $\Omega$ | 92.15528 | | +0.92670481 | −0.00661207 |
| $e$ | 0.1270970 | $i$ | 14.81456 | | +0.36312659 | +0.27312850 |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2003 01 09 | 704 | 0.2+ | 0.9+ | 2006 11 17 | 704 | 0.5− | 0.0 |
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2003 01 09 | 704 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2002 12 06 | 645 | 0.1− | 0.1− | 2003 01 09 | 704 | 0.5− | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2002 12 06 | 645 | 0.0 | 0.1− | 2003 01 09 | 704 | 0.3− | 1.3+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2003 01 09 | 704 | 0.1+ | 1.0+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2003 01 31 | 704 | 0.4+ | 0.3+ | 2006 11 24 | 691 | 0.0 | 0.3+ |
| 2002 12 11 | 704 | 0.1− | 0.3− | 2003 01 31 | 704 | 0.0 | 1.4− | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.4− | 0.1− | 2003 01 31 | 704 | 0.4+ | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2003 01 31 | 704 | 0.1+ | 0.1− | 2006 11 28 | 691 | 0.1+ | 0.2− |
| 2002 12 28 | 699 | 0.5− | 0.3− | 2003 03 07 | 644 | 0.3+ | 0.8− | 2006 11 28 | 691 | 0.0 | 0.2− |
| 2002 12 28 | 699 | 0.4− | 0.3+ | 2003 03 07 | 644 | 0.7− | 0.8− | 2006 11 28 | 691 | 0.1+ | 0.1− |
| 2002 12 28 | 699 | 0.3+ | 0.2+ | 2003 03 07 | 644 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.8− | 1.0+ |
| 2002 12 28 | 699 | 0.2− | 1.2+ | 2005 08 04 | 644 | 0.1− | 0.2+ | 2006 11 29 | 704 | (0.5− | 1.8+) |
| 2003 01 05 | 704 | 0.6+ | 1.3+ | 2005 08 04 | 644 | 0.0 | 0.4+ | 2006 11 29 | 704 | (0.6+ | 1.9+) |
| 2003 01 05 | 704 | 0.2− | 0.8+ | 2005 08 04 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.8− | 1.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.2− | 0.5+ | 2006 11 17 | 704 | 0.2+ | 1.1− | 2006 11 29 | 704 | 0.1− | 1.1+ |
| 2003 01 05 | 704 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.1+ | | | | |

**2003 AV$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.24609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22456801 | $\omega$ | 322.59007 | | +0.87359003 | −0.47108910 | |
| $a$ | 2.6806336 | $\Omega$ | 65.93908 | | +0.47255805 | +0.76114694 | |
| $e$ | 0.2309866 | $i$ | 7.68637 | | +0.11631576 | +0.44579187 | |
| $P$ | 4.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.6− | 0.8− | 2006 10 22 | 704 | (0.5− | 2.2+) | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2002 12 11 | 704 | 0.1− | 0.5− | 2006 10 22 | 704 | 0.1− | 1.4+ | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 704 | 0.0 | 0.6+ | 2006 11 13 | 644 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.3+ | 0.7− | 2006 10 22 | 704 | (0.1− | 2.0+) | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 12 28 | 699 | 0.2− | 0.9+ | 2006 10 23 | 644 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2002 12 28 | 699 | 0.8− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.1− | 0.8+ |
| 2002 12 28 | 699 | 0.3+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.3+ | 0.3+ |
| 2002 12 28 | 699 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.0 | 0.4+ |
| 2003 01 05 | 704 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.4+ | 0.9+ |
| 2003 01 05 | 704 | 1.0+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.7+ | 0.8+ |
| 2003 01 05 | 704 | 1.2+ | 0.4− | 2006 10 27 | 704 | 0.8− | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2003 01 05 | 704 | 0.9+ | 0.7− | 2006 10 27 | 704 | 0.4− | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2003 01 05 | 704 | 1.2+ | 0.3− | 2006 10 27 | 704 | 1.1− | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2003 01 09 | 704 | 0.6− | 0.4− | 2006 10 27 | 704 | 0.9− | 1.2− | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2003 01 09 | 704 | 0.9− | 0.4+ | 2006 11 01 | 703 | 1.0+ | 0.3+ | 2006 11 17 | 704 | 0.7− | 0.2+ |
| 2003 01 09 | 704 | 1.1− | 1.5− | 2006 11 01 | 703 | 0.5− | 0.3+ | 2006 11 17 | 704 | 0.4− | 0.1− |
| 2003 01 09 | 704 | 1.0− | 0.3− | 2006 11 01 | 703 | 0.2+ | 0.6+ | 2006 11 17 | 704 | 0.7− | 0.2+ |
| 2003 03 07 | 644 | 0.4− | 0.2+ | 2006 11 01 | 703 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.9− | 0.2+ |
| 2003 03 07 | 644 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.8− | 0.9+ |
| 2003 03 07 | 644 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.4− | 1.2+ |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.3+ | 0.3− | 2006 11 19 | 704 | 1.0− | 0.8+ |
| 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.2− | 2006 11 19 | 704 | (2.2− | 0.6−) |
| 2004 03 18 | 691 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.6− | 0.8+ |
| 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.6+ | 0.3+ |
| 2006 10 12 | 644 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.4+ | 0.5− | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2006 10 12 | 644 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2006 10 16 | 703 | 0.2− | 0.4− | 2006 11 10 | 644 | 0.4+ | 0.2− | 2006 11 20 | 704 | 1.3− | 0.4− |
| 2006 10 16 | 703 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.8+ | 0.8+ | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.2− |
| 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.8+ | 2006 11 28 | 704 | 0.2+ | 0.4+ |
| 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.9+ | 0.1+ | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.3− | 1.1− | 2006 11 28 | 704 | 0.3− | 0.4+ |

**2003 AW$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.41767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16983877 | $\omega$ | 135.84168 | | −0.88891491 | −0.45797990 | |
| $a$ | 3.2293230 | $\Omega$ | 16.90822 | | +0.41101737 | −0.80631086 | |
| $e$ | 0.3046540 | $i$ | 1.81337 | | +0.20222514 | −0.37432234 | |
| $P$ | 5.80 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 23 | 691 | 0.5− | 0.2+ | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2003 02 08 | 704 | 1.2+ | 1.1− |
| 1992 04 23 | 691 | 0.1+ | 0.2− | 2003 01 05 | 704 | 0.0 | 0.0 | 2003 02 08 | 704 | 0.8+ | 0.5+ |
| 1992 04 23 | 691 | 0.4+ | 0.1+ | 2003 01 05 | 704 | 0.1+ | 0.0 | 2003 02 08 | 704 | 0.9+ | 0.4− |
| 1995 10 26 | 691 | 0.1− | 0.2− | 2003 01 05 | 704 | 0.3− | 0.6+ | 2003 02 08 | 704 | (1.7+ | 0.2−) |
| 1995 10 26 | 691 | 0.2+ | 0.1− | 2003 01 09 | 704 | 0.8− | 0.6− | 2003 03 05 | 704 | 0.4− | 0.9− |
| 1995 10 26 | 691 | 0.2+ | 0.1− | 2003 01 09 | 704 | 1.4− | 0.8− | 2003 03 05 | 704 | 0.4+ | 0.6+ |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2003 01 09 | 704 | 1.0− | 0.4+ | 2003 03 05 | 704 | 0.2+ | 1.2+ |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2003 01 09 | 704 | 0.8− | 0.9+ | 2003 03 05 | 704 | 0.2− | 0.9− |
| 2002 12 11 | 704 | 0.4+ | 0.3+ | 2003 01 09 | 704 | 1.1− | 0.2+ | 2003 03 05 | 704 | 1.1+ | 0.4− |
| 2002 12 11 | 704 | 0.8+ | 1.1+ | 2003 01 31 | 704 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.2+ |
| 2002 12 11 | 704 | 0.0 | 0.8+ | 2003 01 31 | 704 | 1.0+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.7+ |
| 2002 12 11 | 704 | 0.1− | 1.2+ | 2003 01 31 | 704 | 1.4− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.4− | 0.4+ | 2003 01 31 | 704 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.5− | 0.3+ |
| 2002 12 27 | 699 | 0.2− | 1.4+ | 2003 02 03 | 704 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.4− | 0.7+ |
| 2002 12 27 | 699 | 0.1+ | 0.9+ | 2003 02 03 | 704 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.4− | 0.1+ |
| 2002 12 27 | 699 | 0.8− | 0.6+ | 2003 02 03 | 704 | 0.9+ | 0.0 | 2006 10 20 | G96 | 0.6− | 0.3+ |
| 2002 12 27 | 699 | 0.6+ | 0.0 | 2003 02 03 | 704 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.8+ |
| 2003 01 05 | 704 | 0.6+ | 0.0 | 2003 02 03 | 704 | 0.7+ | 0.8+ | | | | |

**2003 AD$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.38060 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22802163 | $\omega$ | 359.45280 | | −0.11496590 | −0.96415150 | |
| $a$ | 2.6534976 | $\Omega$ | 97.13274 | | +0.91231179 | −0.19773225 | |
| $e$ | 0.1357961 | $i$ | 13.94672 | | +0.39302676 | +0.17695720 | |
| $P$ | 4.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 608 | 0.5+ | 0.4− | 2003 01 09 | 704 | 0.6− | 1.2+ | 2006 11 19 | 703 | 1.0− | 0.1+ |
| 2002 12 01 | 608 | 0.4+ | 0.1− | 2003 02 01 | 704 | (4.4− | 0.5−) | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2002 12 01 | 608 | 0.4+ | 0.3+ | 2003 02 01 | 704 | (3.0− | 1.0+) | 2006 11 20 | 704 | 0.0 | 0.6− |
| 2003 01 05 | 704 | 0.2− | 0.7− | 2003 02 01 | 704 | (2.5− | 0.0 ) | 2006 11 20 | 704 | 0.4+ | 0.0 |
| 2003 01 05 | 704 | 0.2− | 0.5− | 2003 02 01 | 704 | (5.5− | 0.9+) | 2006 11 20 | 704 | 1.2+ | 0.5+ |
| 2003 01 05 | 704 | 0.1− | 0.5− | 2005 07 17 | 644 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.1+ | 1.8+ |
| 2003 01 05 | 704 | 0.4+ | 0.4− | 2005 07 17 | 644 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2005 07 17 | 644 | 0.3+ | 0.8+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2003 01 09 | 704 | 0.2− | 0.4+ | 2006 11 19 | 703 | 0.7− | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.0 |
| 2003 01 09 | 704 | 0.2− | 0.7+ | 2006 11 19 | 703 | 0.5− | 1.0− | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2003 01 09 | 704 | 0.4− | 0.6+ | 2006 11 19 | 703 | 0.1+ | 0.7− | | | | |

**2003 AX$_{51}$ = 2006 VK$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.08311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22222048 | $\omega$ | 313.48018 | | +0.64553949 | −0.74441653 | |
| $a$ | 2.6994792 | $\Omega$ | 95.50656 | | +0.74083195 | +0.55605293 | |
| $e$ | 0.2330285 | $i$ | 9.87186 | | +0.18559845 | +0.36966089 | |
| $P$ | 4.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 10 | 691 | 0.2+ | 0.2+ | 2003 02 01 | 704 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.0 |
| 1993 12 10 | 691 | 0.1+ | 0.2− | 2003 02 01 | 704 | 1.3− | 0.5− | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1993 12 10 | 691 | 0.2− | 0.5− | 2003 02 01 | 704 | 0.6+ | 1.1+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.8+ | 0.2− | 2003 02 01 | 704 | 0.7− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 0.3+ | 2003 02 03 | 644 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.1− | 0.4+ |
| 2002 12 31 | 704 | 0.5+ | 0.4− | 2003 02 03 | 644 | 0.0 | 0.7− | 2006 11 10 | 704 | 0.2+ | 0.7+ |
| 2002 12 31 | 704 | 1.4+ | 1.4− | 2003 02 03 | 644 | 0.3− | 0.2− | 2006 11 10 | 704 | 0.0 | 0.8+ |
| 2003 01 05 | 704 | 0.4+ | 0.3+ | 2003 02 04 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 704 | 0.4+ | 0.1− |
| 2003 01 05 | 704 | 0.2+ | 0.6+ | 2003 02 04 | 704 | 0.6+ | 0.3− | 2006 11 10 | 704 | 0.1+ | 0.4+ |
| 2003 01 05 | 704 | 0.3+ | 0.7+ | 2003 02 04 | 704 | 0.3+ | 0.5− | 2006 11 16 | 703 | 0.4− | 0.3+ |
| 2003 01 05 | 704 | 0.0 | 0.8+ | 2006 10 17 | 703 | 0.1+ | 0.1− | 2006 11 16 | 703 | 1.0− | 0.4− |
| 2003 01 05 | 704 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 0.5+ | 0.4+ | 2006 11 16 | 703 | 0.1− | 0.4− |
| 2003 01 09 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.2− | 2006 11 16 | 703 | 0.3+ | 0.6− |
| 2003 01 09 | 704 | 1.4− | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.6− | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2003 01 09 | 704 | (0.1+ | 1.6−) | 2006 10 28 | 703 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.1− | 0.3+ |
| 2003 01 09 | 704 | 1.1− | 0.6+ | 2006 10 28 | 703 | 0.4− | 0.4− | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2003 01 09 | 704 | 0.5− | 0.6− | 2006 10 28 | 703 | 0.3− | 0.1− | | | | |

**2003 AE$_{52}$ = 2006 UC$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.94647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24512760 | $\omega$ | 340.66678 | | +0.28862880 | −0.95042284 | |
| $a$ | 2.5285676 | $\Omega$ | 92.42409 | | +0.89298226 | +0.22362850 | |
| $e$ | 0.1598885 | $i$ | 6.65081 | | +0.34536373 | +0.21607108 | |
| $P$ | 4.02 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.0 | 0.4+ | 2003 01 10 | 704 | 0.8+ | 0.2− | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2002 12 31 | 704 | 0.3− | 0.6+ | 2003 02 01 | 704 | 0.8− | 1.0− | 2006 10 28 | G96 | 0.2+ | 0.6− |
| 2002 12 31 | 704 | 0.4+ | 0.3+ | 2003 02 01 | 704 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.6− |
| 2002 12 31 | 704 | 0.2− | 0.6+ | 2003 02 01 | 704 | 0.6− | 0.5− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2002 12 31 | 704 | 0.3− | 0.3+ | 2003 02 01 | 704 | 0.9+ | 0.9+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2003 01 05 | 704 | (2.1+ | 0.6+) | 2003 02 01 | 704 | 0.7− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2003 01 05 | 704 | (1.8+ | 0.2−) | 2005 08 05 | 644 | 0.5− | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2003 01 05 | 704 | 0.9+ | 0.7+ | 2005 08 05 | 644 | 0.0 | 0.7+ | 2006 11 27 | 703 | 0.3+ | 0.0 |
| 2003 01 05 | 704 | (3.2+ | 0.3−) | 2005 08 05 | 644 | 0.0 | 0.5+ | 2006 11 27 | 703 | 0.5− | 0.6− |
| 2003 01 05 | 704 | (2.0+ | 0.2−) | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.6+ |
| 2003 01 09 | 704 | 0.1− | 0.7+ | 2006 10 01 | 691 | 0.4+ | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.7− |
| 2003 01 09 | 704 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.7+ | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2003 01 09 | 704 | (1.5− | 0.8+) | 2006 10 21 | G96 | 0.4− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2003 01 09 | 704 | 0.7+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.4− | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2003 01 09 | 704 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2003 01 10 | 704 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.4− | | | | |
| 2003 01 10 | 704 | 0.0 | 0.9+ | 2006 10 28 | G96 | 0.1− | 0.2− | | | | |

### 2003 AB$_{54}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.47132 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23113237 | $\omega$ | 26.15175 | | +0.54091969 | | −0.83997158 |
| $a$ | 2.6296353 | $\Omega$ | 31.15585 | | +0.75634681 | | +0.46340073 |
| $e$ | 0.2557760 | $i$ | 4.77350 | | +0.36789317 | | +0.28232518 |
| $P$ | 4.26 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.8− | 0.8+ | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2002 12 31 | 645 | 0.1− | 0.3− | 2006 11 16 | 704 | (1.6+ | 1.4+) | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 11 16 | 704 | (0.7+ | 1.7+) | 2006 11 22 | 704 | 1.4+ | 0.6+ |
| 2003 01 05 | 704 | 0.9+ | 0.0 | 2006 11 16 | 704 | (1.8+ | 2.0+) | 2006 11 23 | 644 | 0.2− | 0.1− |
| 2003 01 05 | 704 | 0.9+ | 0.7+ | 2006 11 16 | 704 | (0.3+ | 2.0+) | 2006 11 23 | 644 | 0.3− | 0.2− |
| 2003 01 05 | 704 | 1.4+ | 0.9+ | 2006 11 16 | 704 | (1.6+ | 1.5+) | 2006 11 23 | 644 | 0.1− | 0.2− |
| 2003 01 09 | 704 | 0.1− | 0.3− | 2006 11 17 | 691 | 0.7+ | 0.1− | 2006 11 25 | 691 | 0.1− | 0.3− |
| 2003 01 09 | 704 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.3+ | 0.3− | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2003 01 09 | 704 | 0.6− | 1.3+ | 2006 11 17 | 691 | 0.2+ | 0.2− | 2006 11 25 | 691 | 0.2− | 0.2− |
| 2003 01 09 | 704 | 0.1− | 0.4+ | 2006 11 17 | 644 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.2− | 0.8+ |
| 2003 01 26 | 644 | 0.1+ | 1.2+ | 2006 11 17 | 644 | 0.1+ | 0.4− | 2006 11 27 | 704 | 0.3− | 0.4+ |
| 2003 01 26 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 644 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.4− | 0.6+ |
| 2003 01 26 | 644 | 0.1− | 1.4+ | 2006 11 19 | 704 | 0.8− | 0.6− | 2006 11 27 | 704 | 0.4− | 0.8+ |
| 2003 02 01 | 704 | 0.3+ | 0.9+ | 2006 11 19 | 704 | 0.1+ | 0.3− | 2006 11 28 | 704 | 0.3+ | 1.2+ |
| 2003 02 01 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.5− | 0.2+ |
| 2003 02 01 | 704 | 0.3+ | 1.0+ | 2006 11 19 | 704 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.2− | 0.7+ |
| 2006 11 13 | 691 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.2− | 0.8+ | 2006 11 28 | 704 | 0.7− | 0.9+ |
| 2006 11 13 | 691 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.4− | 0.5+ |

### 2003 AL$_{54}$ = 2006 WJ$_{178}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.53934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26525615 | $\omega$ | 47.83525 | | −0.86020129 | | −0.47757963 |
| $a$ | 2.3989751 | $\Omega$ | 102.91071 | | +0.39684990 | | −0.84711452 |
| $e$ | 0.0929367 | $i$ | 10.57038 | | +0.32025598 | | −0.23305513 |
| $P$ | 3.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 1.2− | 0.2− | 2003 01 16 | 644 | 0.1− | 0.3+ | 2003 02 01 | 704 | 1.0+ | 0.3− |
| 2002 12 31 | 704 | 0.3− | 0.0 | 2003 01 16 | 644 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.5+ | 0.1− |
| 2002 12 31 | 704 | 0.1+ | 0.6− | 2003 01 16 | 644 | 0.2− | 0.4+ | 2003 02 04 | 704 | 0.4− | 0.5− |
| 2003 01 05 | 704 | 0.3+ | 0.3+ | 2003 01 27 | 644 | 0.1− | 0.1+ | 2003 02 04 | 704 | 1.2+ | 0.6− |
| 2003 01 05 | 704 | 0.3− | 0.2+ | 2003 01 27 | 644 | 0.3− | 0.3+ | 2003 02 04 | 704 | 1.0+ | 1.0− |
| 2003 01 05 | 704 | 0.6+ | 0.1+ | 2003 01 27 | 644 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.6+ |
| 2003 01 05 | 704 | 0.3− | 0.8+ | 2003 01 31 | 699 | 1.0− | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.4− |
| 2003 01 09 | 704 | 0.1+ | 0.5− | 2003 01 31 | 699 | 0.8− | 0.3+ | 2006 11 23 | 691 | 0.7− | 0.2+ |
| 2003 01 09 | 704 | 0.3+ | 0.1− | 2003 01 31 | 699 | 0.3+ | 0.6− | 2006 11 28 | 691 | 0.0 | 0.3− |
| 2003 01 09 | 704 | 0.0 | 0.2− | 2003 01 31 | 699 | 0.9− | 0.5+ | 2006 11 28 | 691 | 0.0 | 0.2+ |
| 2003 01 09 | 704 | 0.5− | 0.0 | 2003 02 01 | 704 | 0.7+ | 0.3+ | 2006 11 28 | 691 | 0.4+ | 0.1− |
| 2003 01 09 | 704 | 0.4+ | 0.1+ | 2003 02 01 | 704 | 0.2+ | 0.1− | | | | |

### 2003 AN$_{56}$ = 2006 VC$_{68}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.33215 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22905367 | $\omega$ | 59.30388 | | −0.47856624 | | −0.87600370 |
| $a$ | 2.6455210 | $\Omega$ | 59.40520 | | +0.77990693 | | −0.45544038 |
| $e$ | 0.1307587 | $i$ | 3.99244 | | +0.40338510 | | −0.15871852 |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.5− |
| 2002 12 31 | 704 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 1.0+ | 0.1− |
| 2003 01 05 | 704 | 0.5+ | 0.6− | 2006 10 28 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2003 01 05 | 704 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2003 01 05 | 704 | 0.0 | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2003 01 09 | 704 | 0.6+ | 0.1− | 2006 10 28 | G96 | 0.9− | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2003 01 09 | 704 | 0.3+ | 0.5− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 30 | 691 | 0.0 | 0.1+ |
| 2003 01 09 | 704 | 0.7− | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 30 | 691 | 0.1+ | 0.2− |
| 2003 01 09 | 704 | 0.2+ | 0.4− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 30 | 691 | 0.3− | 0.2+ |
| 2003 01 09 | 704 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.0 | 0.1− | | | | |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.0 | | | | |

### 2003 AR$_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.11477 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22925491 | $\omega$ | 316.40927 | | +0.67961687 | | −0.71296490 |
| $a$ | 2.6439726 | $\Omega$ | 89.96309 | | +0.71146310 | | +0.58329161 |
| $e$ | 0.1822976 | $i$ | 9.94091 | | +0.17872092 | | +0.38916829 |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.1− | 0.5+ | 2003 01 26 | 644 | 0.4+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.3+ | 2003 01 26 | 644 | (0.9+ | 1.6−) | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2003 01 05 | 704 | 0.5− | 0.1+ | 2003 02 04 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2003 01 09 | 704 | 0.8− | 0.2− | 2003 02 04 | 644 | 0.1+ | 0.0 | 2006 11 25 | 704 | 0.2− | 0.0 |
| 2003 01 09 | 704 | 0.5− | 0.1+ | 2003 02 04 | 644 | 0.2+ | 0.0 | 2006 11 25 | 704 | 0.8+ | 1.4+ |
| 2003 01 09 | 704 | (1.7− | 1.0+) | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 25 | 704 | 0.2− | 0.1+ |
| 2003 01 09 | 704 | 0.7− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.3− | 2006 11 25 | 704 | 0.5+ | 0.0 |
| 2003 01 16 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2003 01 16 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2003 01 16 | 644 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.0 | 0.1− |
| 2003 01 26 | 644 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2003 01 26 | 644 | 0.5+ | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.6− | 0.2− |
| 2003 01 26 | 644 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− | | | | |
| 2003 01 26 | 644 | 0.7+ | 0.9− | 2006 11 18 | G96 | 0.1+ | 0.2− | | | | |

### 2003 AV$_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.37710 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24076346 | $\omega$ | 337.76312 | | +0.31880864 | | −0.94324141 |
| $a$ | 2.5590317 | $\Omega$ | 93.54654 | | +0.88303718 | | +0.25991604 |
| $e$ | 0.2754475 | $i$ | 5.34887 | | +0.34439278 | | +0.20673485 |
| $P$ | 4.09 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.3+ | 0.8+ | 2003 02 04 | 704 | 0.8+ | 0.3+ | 2003 02 26 | 185 | 0.7+ | 0.5− |
| 2002 12 31 | 704 | 0.2+ | 0.6+ | 2003 02 04 | 704 | 0.3+ | 0.2− | 2003 02 26 | 185 | 0.0 | 0.8− |
| 2002 12 31 | 704 | 0.3− | 0.7+ | 2003 02 04 | 704 | 0.6+ | 0.7+ | 2003 02 26 | 185 | 0.2+ | 0.5− |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2003 02 07 | 704 | 0.0 | 0.7− | 2003 02 26 | 185 | 0.1− | 0.4− |
| 2002 12 31 | 704 | 0.5− | 0.2− | 2003 02 07 | 704 | 0.8+ | 0.0 | 2003 02 26 | 185 | 0.1− | 1.2− |
| 2003 01 05 | 704 | 0.3− | 0.3+ | 2003 02 07 | 704 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2003 01 05 | 704 | 0.0 | 0.9+ | 2003 02 23 | 699 | 0.4− | 0.8− | 2006 11 16 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.7− | 0.7+ | 2003 02 23 | 699 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2003 02 23 | 699 | 0.6− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 01 05 | 704 | 0.4− | 0.5+ | 2003 02 23 | 699 | 0.8− | 0.5− | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2003 01 09 | 704 | 0.1− | 0.3− | 2003 02 23 | 185 | 0.5− | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2003 01 09 | 704 | 0.1− | 0.2− | 2003 02 23 | 185 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2003 01 09 | 704 | 0.2+ | 0.0 | 2003 02 23 | 185 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2003 01 09 | 704 | 0.2− | 0.2− | 2003 02 23 | 185 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.8− | 0.5+ |
| 2003 01 09 | 704 | 0.5− | 0.1− | 2003 02 24 | 185 | 0.4− | 0.3+ | 2006 11 23 | 644 | 0.3− | 0.2− |
| 2003 02 01 | 704 | (2.0+ | 0.3+) | 2003 02 24 | 185 | 0.7− | 0.4+ | 2006 11 23 | 644 | 0.4− | 0.0 |
| 2003 02 01 | 704 | (1.6+ | 0.2+) | 2003 02 24 | 185 | 0.4− | 0.1+ | 2006 11 23 | 644 | 0.2− | 0.1− |
| 2003 02 01 | 704 | 1.1+ | 0.2+ | 2003 02 24 | 185 | 0.7− | 0.2+ | 2006 12 01 | 704 | 1.0− | 0.4− |
| 2003 02 01 | 704 | 1.3+ | 0.3+ | 2003 02 24 | 185 | 0.4− | 0.4+ | 2006 12 01 | 704 | 0.3− | 0.3− |
| 2003 02 01 | 704 | 1.3+ | 0.1− | 2003 02 24 | 185 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.7+ | 0.2− |
| 2003 02 04 | 704 | 0.4+ | 0.1+ | 2003 02 26 | 185 | 1.2+ | 0.0 | 2006 12 01 | 704 | 1.4+ | 0.9+ |

**2003 AT$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.18341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22362694 | $\omega$ | 332.49540 | | +0.19302742 | −0.96794527 | |
| $a$ | 2.6881487 | $\Omega$ | 106.01006 | | +0.92814690 | +0.12700630 | |
| $e$ | 0.2075261 | $i$ | 9.62376 | | +0.31825109 | +0.21668259 | |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3− | 0.8+ | 2003 01 31 | 699 | 0.1+ | 0.1+ | 2003 02 26 | 704 | 0.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2003 01 31 | 699 | 0.1− | 0.7+ | 2005 07 07 | 691 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | (1.6+ | 1.7+) | 2003 01 31 | 699 | 0.1+ | 0.1− | 2005 07 07 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.5+ | 2003 02 01 | 704 | 0.2− | 0.0 | 2005 07 07 | 691 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.8+ | 0.7− | 2003 02 01 | 704 | 0.9− | 0.2+ | 2006 09 18 | 703 | (2.2− | 1.8+) |
| 2002 12 17 | 608 | 0.6− | 1.0− | 2003 02 01 | 704 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.5+ |
| 2002 12 17 | 608 | 0.4− | 1.0− | 2003 02 01 | 704 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.8− | 0.4+ |
| 2002 12 17 | 608 | 0.0 | 0.6− | 2003 02 01 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | 1.0+ | 1.1+ |
| 2002 12 31 | 704 | 0.1+ | 0.2+ | 2003 02 02 | 644 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.5+ |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2003 02 02 | 644 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.8+ |
| 2002 12 31 | 704 | 0.6− | 0.4− | 2003 02 02 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.4+ |
| 2002 12 31 | 704 | 0.2− | 0.0 | 2003 02 04 | 699 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.7+ |
| 2002 12 31 | 704 | 0.2+ | 0.6− | 2003 02 04 | 699 | 0.2− | 0.1+ | 2006 10 30 | 703 | 0.4+ | 0.0 |
| 2003 01 05 | 704 | 0.7+ | 0.3+ | 2003 02 04 | 699 | 0.6+ | 0.2− | 2006 10 30 | 703 | 0.3+ | 0.6+ |
| 2003 01 05 | 704 | 0.3+ | 0.0 | 2003 02 04 | 699 | 0.1+ | 0.7+ | 2006 10 30 | 703 | 0.2+ | 1.1− |
| 2003 01 05 | 704 | 1.2+ | 0.1− | 2003 02 04 | 704 | 0.2− | 0.6− | 2006 10 30 | 703 | 1.0− | 0.2− |
| 2003 01 05 | 704 | 0.0 | 0.2+ | 2003 02 04 | 704 | 0.4− | 0.1− | 2006 11 13 | 703 | 1.3− | 0.0 |
| 2003 01 09 | 704 | 0.2+ | 0.2+ | 2003 02 04 | 704 | 0.2+ | 0.6− | 2006 11 13 | 703 | 0.5− | 0.4− |
| 2003 01 09 | 704 | 0.2+ | 0.6+ | 2003 02 04 | 704 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.3− | 0.2− |
| 2003 01 09 | 704 | 0.4+ | 0.9+ | 2003 02 04 | 704 | 0.0 | 0.3+ | 2006 11 13 | 703 | 1.3− | 1.1− |
| 2003 01 09 | 704 | 0.4+ | 0.2− | 2003 02 10 | 644 | 0.3− | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2003 01 09 | 704 | 0.4+ | 0.0 | 2003 02 10 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.2− | 0.5− |
| 2003 01 27 | 699 | 0.7+ | 0.3− | 2003 02 10 | 644 | 0.5− | 0.2+ | 2006 11 19 | 703 | 0.8− | 1.0− |
| 2003 01 27 | 699 | 1.0+ | 0.3+ | 2003 02 26 | 704 | 0.5− | 0.4− | 2006 11 19 | 703 | 0.5+ | 0.3− |
| 2003 01 27 | 699 | 0.7− | 0.2+ | 2003 02 26 | 704 | 0.5+ | 0.3− | 2006 11 20 | 704 | (3.9+ | 0.8+) |
| 2003 01 27 | 699 | 1.0− | 1.0+ | 2003 02 26 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2003 01 31 | 699 | 0.4− | 0.3− | 2003 02 26 | 704 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 1.0− | 0.1+ |

**2003 AA$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.49668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22050238 | $\omega$ | 342.58046 | | −0.09867692 | −0.96616221 | |
| $a$ | 2.7134835 | $\Omega$ | 112.54368 | | +0.94097602 | −0.16851034 | |
| $e$ | 0.1539702 | $i$ | 14.95323 | | +0.32376999 | +0.19528147 | |
| $P$ | 4.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.2− | 0.0 | 2003 01 31 | 644 | 0.1+ | 0.9− | 2004 04 19 | 691 | 0.0 | 0.2− |
| 2002 11 14 | 644 | 0.5+ | 0.0 | 2003 02 01 | 704 | 0.1− | 0.0 | 2004 04 19 | 691 | 0.1− | 0.0 |
| 2002 11 14 | 644 | 0.1− | 0.4+ | 2003 02 01 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.5+ |
| 2002 11 14 | 644 | 0.1− | 0.2+ | 2003 02 01 | 704 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.6+ | 0.6− |
| 2002 11 14 | 644 | 0.2+ | 0.6+ | 2003 02 01 | 704 | 0.4− | 0.5− | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 2002 11 14 | 644 | 0.1− | 0.1+ | 2003 02 01 | 704 | 0.4− | 0.8+ | 2006 10 01 | 704 | 0.2− | 0.5− |
| 2002 12 05 | 704 | 0.1− | 0.4− | 2003 02 02 | 644 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.6+ | 0.5− |
| 2002 12 05 | 704 | 0.5− | 0.9− | 2003 02 02 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.4− | 0.3− | 2003 02 02 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.4+ | 0.8+ | 2003 02 04 | 699 | 0.5− | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.3+ | 0.2+ | 2003 02 04 | 699 | 0.5+ | 0.1+ | 2006 11 10 | 704 | 0.4+ | 0.5+ |
| 2002 12 31 | 704 | 1.0+ | 0.3+ | 2003 02 04 | 699 | 0.2+ | 0.6− | 2006 11 10 | 704 | 0.3− | 0.4+ |
| 2002 12 31 | 704 | (0.9− | 1.5+) | 2003 02 04 | 699 | 0.2+ | 0.3+ | 2006 11 10 | 704 | 0.6− | 0.3− |
| 2003 01 05 | 704 | 0.9+ | 1.3+ | 2003 02 04 | 704 | 0.2− | 0.1− | 2006 11 10 | 704 | 0.6+ | 0.7+ |
| 2003 01 05 | 704 | 0.5− | 0.1− | 2003 02 04 | 704 | 0.6− | 1.1− | 2006 11 16 | 703 | 0.6− | 0.1− |
| 2003 01 05 | 704 | 0.8+ | 0.6− | 2003 02 04 | 704 | 0.3− | 0.3+ | 2006 11 16 | 703 | (2.3+ | 0.1−) |
| 2003 01 09 | 704 | 0.7+ | 0.4+ | 2003 02 04 | 704 | 0.9+ | 0.5− | 2006 11 16 | 703 | 0.3− | 0.0 |
| 2003 01 09 | 704 | 0.2− | 0.5− | 2003 02 04 | 704 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.5+ |
| 2003 01 09 | 704 | 0.7+ | 1.3− | 2003 02 26 | 704 | (1.8− | 0.0 ) | 2006 11 23 | G92 | 0.2− | 0.4− |
| 2003 01 09 | 704 | 1.2− | 1.2− | 2003 02 26 | 704 | 0.7+ | 0.2− | 2006 11 23 | G92 | 0.0 | 0.1− |
| 2003 01 31 | 644 | 0.9− | 0.1+ | 2003 02 26 | 704 | 0.7+ | 0.6+ | 2006 11 23 | G92 | 0.1− | 0.0 |
| 2003 01 31 | 699 | 0.2− | 0.5+ | 2003 02 26 | 704 | 0.8+ | 1.3+ | 2006 11 25 | G92 | 0.2− | 0.2+ |
| 2003 01 31 | 699 | 0.2− | 0.2+ | 2003 03 07 | 644 | 0.2− | 0.2− | 2006 11 25 | G92 | 0.2+ | 0.1+ |
| 2003 01 31 | 699 | 0.4− | 0.1− | 2003 03 07 | 644 | 0.1− | 0.0 | 2006 11 25 | G92 | 0.2− | 0.0 |
| 2003 01 31 | 644 | 0.3− | 0.1+ | 2003 03 07 | 644 | 0.1− | 0.0 | | | | |
| 2003 01 31 | 699 | 0.6− | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | | | | |

**2003 AF$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.07355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22390953 | $\omega$ | 118.96168 | | −0.56606011 | −0.82432112 | |
| $a$ | 2.6858866 | $\Omega$ | 5.53657 | | +0.72277994 | −0.50118354 | |
| $e$ | 0.1994919 | $i$ | 4.99772 | | +0.39644056 | −0.26326744 | |
| $P$ | 4.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.6− | 0.4− | 2003 01 31 | 699 | 0.4+ | 0.2− | 2003 02 07 | 704 | 0.0 | 0.2+ |
| 2002 12 31 | 704 | 0.9+ | 0.7+ | 2003 01 31 | 644 | 0.1+ | 0.9+ | 2003 02 07 | 704 | 0.4− | 0.3+ |
| 2002 12 31 | 704 | 0.2− | 0.2− | 2003 01 31 | 699 | 0.1+ | 0.1− | 2003 03 06 | 704 | 1.1+ | 1.4+ |
| 2002 12 31 | 704 | 0.0 | 0.9+ | 2003 01 31 | 644 | 0.2+ | 0.6+ | 2003 03 06 | 704 | 0.0 | 0.5+ |
| 2003 01 05 | 704 | 0.4+ | 0.4+ | 2003 02 01 | 704 | 0.5− | 0.4− | 2003 03 06 | 704 | 0.1+ | 0.7+ |
| 2003 01 05 | 704 | 0.6− | 0.2− | 2003 02 01 | 704 | 0.9− | 0.3− | 2003 03 06 | 704 | 0.2+ | 0.3+ |
| 2003 01 05 | 704 | 0.1− | 1.3− | 2003 02 01 | 704 | 0.1+ | 1.1+ | 2003 03 07 | 644 | 0.5+ | 0.5− |
| 2003 01 05 | 704 | 0.1− | 1.0− | 2003 02 01 | 704 | 0.8− | 0.9+ | 2003 03 07 | 644 | 0.2+ | 0.3− |
| 2003 01 09 | 704 | 0.1− | 0.8+ | 2003 02 01 | 704 | 0.1− | 0.4+ | 2003 03 07 | 644 | 0.1+ | 0.2− |
| 2003 01 09 | 704 | 0.4+ | 0.6+ | 2003 02 02 | 644 | 0.2− | 0.4− | 2006 10 20 | G96 | 0.4+ | 0.3+ |
| 2003 01 09 | 704 | 0.2+ | 0.6− | 2003 02 02 | 644 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2003 01 09 | 704 | 0.3+ | 0.7+ | 2003 02 02 | 644 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2003 01 09 | 704 | 0.0 | 0.1− | 2003 02 04 | 704 | 0.3+ | 0.5− | 2006 10 20 | G96 | 0.3+ | 0.2+ |
| 2003 01 28 | 644 | 0.4− | 0.3− | 2003 02 04 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2003 01 28 | 644 | 0.4− | 0.2− | 2003 02 04 | 704 | 0.4+ | 1.1− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2003 01 28 | 644 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2003 01 31 | 644 | 0.4+ | 0.8+ | 2003 02 04 | 704 | 0.3+ | 1.3− | 2006 11 22 | 704 | 0.4+ | 0.9− |
| 2003 01 31 | 699 | 0.2+ | 0.6− | 2003 02 07 | 704 | 0.8− | 0.6+ | 2006 11 22 | 704 | 0.7− | 0.2− |
| 2003 01 31 | 699 | 0.0 | 0.9− | 2003 02 07 | 704 | 0.2− | 0.8− | 2006 11 22 | 704 | 0.2− | 0.0 |

**2003 AA$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.50341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24169749 | $\omega$ | 343.63605 | | +0.02806569 | −0.99212930 | |
| $a$ | 2.5524346 | $\Omega$ | 104.63092 | | +0.93067533 | −0.01861352 | |
| $e$ | 0.2588950 | $i$ | 7.24553 | | +0.36476808 | +0.12382644 | |
| $P$ | 4.08 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.4− | 0.6+ | 2003 02 04 | 608 | 0.2− | 0.9− | 2003 03 07 | 644 | 0.2+ | 0.2+ |
| 2002 12 31 | 704 | 0.4+ | 0.6+ | 2003 02 04 | 608 | 0.1+ | 0.8− | 2003 03 13 | 644 | 0.5+ | 0.2+ |
| 2002 12 31 | 704 | 0.2− | 0.4+ | 2003 02 04 | 608 | 0.0 | 0.3− | 2003 03 13 | 644 | 0.4+ | 0.0 |
| 2003 01 05 | 704 | 0.7− | 0.4+ | 2003 02 07 | 644 | 0.7− | 0.5− | 2003 03 13 | 644 | 0.2+ | 0.0 |
| 2003 01 05 | 704 | 0.4− | 0.5+ | 2003 02 07 | 644 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2003 01 05 | 704 | 0.5+ | 0.1+ | 2003 02 07 | 704 | 0.6− | 1.2+ | 2006 11 01 | G96 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.9+ | 0.2− | 2003 02 07 | 644 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.6− |
| 2003 01 05 | 704 | (0.5+ | 1.6+) | 2003 02 07 | 704 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2003 01 09 | 704 | 1.1− | 0.2− | 2003 02 07 | 704 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2003 01 09 | 704 | 0.3+ | 0.1− | 2003 02 19 | 644 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.4− | 0.1+ |
| 2003 01 09 | 704 | 0.5+ | 0.4+ | 2003 02 19 | 644 | 0.2+ | 0.6− | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2003 01 09 | 704 | 0.3− | 0.3+ | 2003 02 19 | 644 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.4− | 0.0 |
| 2003 02 01 | 704 | 0.6+ | 1.1+ | 2003 03 05 | 704 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.2+ | 0.7+ |
| 2003 02 01 | 704 | 0.0 | 0.2+ | 2003 03 05 | 704 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.1− |
| 2003 02 01 | 704 | 0.7+ | 0.4+ | 2003 03 05 | 704 | 0.4− | 1.0− | 2006 11 27 | 703 | 0.6− | 0.2+ |
| 2003 02 01 | 704 | 0.1− | 0.8+ | 2003 03 05 | 704 | 0.2− | 0.8− | 2006 11 27 | 703 | (1.9− | 1.8+) |
| 2003 02 01 | 704 | 1.0+ | 1.5+ | 2003 03 07 | 644 | 0.3+ | 0.0 | 2006 11 27 | G96 | 0.9+ | 0.5− |
| 2003 02 04 | 699 | 0.2+ | 0.2+ | 2003 03 07 | 644 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.7− | 0.6− |
| 2003 02 04 | 699 | 0.1+ | 0.2− | 2003 03 07 | 644 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2003 02 04 | 699 | 0.5− | 0.2− | 2003 03 07 | 644 | 0.0 | 0.1− | | | | |
| 2003 02 04 | 699 | 0.1− | 0.3− | 2003 03 07 | 644 | 0.1+ | 0.0 | | | | |

**2003 AA$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 321.49191 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23339679 | $\omega$ | 35.65194 | | −0.39178307 | −0.91450225 |
| $a$ | 2.6125992 | $\Omega$ | 77.60358 | | +0.81836000 | −0.39651828 |
| $e$ | 0.2707177 | $i$ | 5.93289 | | +0.42046752 | −0.08036720 |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1+ | 0.6+ | 2003 01 31 | 704 | 1.0− | 0.0 | 2003 03 13 | 644 | 0.3+ | 0.6+ |
| 2002 12 06 | 704 | 0.1− | 1.0+ | 2003 01 31 | 704 | 0.8− | 0.4− | 2003 03 23 | 246 | 0.1+ | 0.6− |
| 2002 12 06 | 704 | 0.0 | 0.6+ | 2003 01 31 | 704 | 0.8− | 0.2− | 2003 03 23 | 246 | 0.6+ | 0.5− |
| 2002 12 06 | 704 | 0.5− | 0.1+ | 2003 01 31 | 704 | 0.9− | 0.1+ | 2003 03 23 | 246 | 0.8+ | 0.1− |
| 2002 12 06 | 608 | 0.2− | 0.6− | 2003 01 31 | 704 | 0.5− | 0.4− | 2003 03 23 | 246 | 0.3+ | 0.4− |
| 2002 12 06 | 608 | 0.2+ | 0.9− | 2003 02 02 | 644 | 0.1− | 0.1− | 2003 03 23 | 246 | 0.2+ | 0.1− |
| 2002 12 06 | 608 | 0.0 | 0.5− | 2003 02 02 | 644 | 0.3− | 0.6− | 2003 03 23 | 246 | 0.9+ | 0.2+ |
| 2002 12 11 | 704 | 0.3− | 0.5+ | 2003 02 02 | 644 | 0.0 | 0.0 | 2003 03 25 | 704 | 0.2+ | 0.9+ |
| 2002 12 11 | 704 | 1.0+ | 0.0 | 2003 02 04 | 699 | 0.4− | 0.1− | 2003 03 25 | 704 | 1.1− | 0.1− |
| 2002 12 11 | 704 | 0.8+ | 0.0 | 2003 02 04 | 699 | 0.1− | 0.1− | 2003 03 25 | 704 | 0.2− | 0.0 |
| 2002 12 11 | 704 | 0.6+ | 0.1− | 2003 02 04 | 699 | 0.4− | 0.2+ | 2003 03 25 | 704 | 0.2+ | 0.3− |
| 2002 12 31 | 704 | 0.1+ | 0.3− | 2003 02 04 | 699 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2002 12 31 | 704 | 0.0 | 0.3− | 2003 02 07 | 704 | 0.9− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.5− |
| 2002 12 31 | 704 | 0.0 | 0.6− | 2003 02 07 | 704 | 0.7− | 0.4− | 2006 11 18 | 704 | 0.1− | 0.4+ |
| 2002 12 31 | 704 | 0.3− | 0.3− | 2003 02 07 | 704 | 0.7− | 0.5− | 2006 11 18 | 704 | 0.5+ | 0.7+ |
| 2002 12 31 | 704 | 0.5− | 0.4− | 2003 02 07 | 704 | 0.6− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.2+ |
| 2003 01 05 | 704 | 0.0 | 0.3+ | 2003 02 19 | 644 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2003 01 05 | 704 | 0.4+ | 0.5− | 2003 02 19 | 644 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.5− | 0.2− | 2003 02 19 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.4− |
| 2003 01 05 | 704 | 0.2− | 0.2− | 2003 02 26 | 704 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2003 01 08 | 608 | 0.8+ | 0.1+ | 2003 02 26 | 704 | 0.7+ | 0.6− | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2003 01 08 | 608 | 0.7+ | 0.1− | 2003 02 26 | 704 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2003 01 08 | 608 | 0.8+ | 0.0 | 2003 02 26 | 704 | 0.6+ | 0.0 | 2006 11 21 | 704 | (2.0+ | 0.8+) |
| 2003 01 09 | 704 | 0.0 | 0.1+ | 2003 02 26 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2003 01 09 | 704 | 0.1+ | 0.4+ | 2003 03 03 | 644 | 0.1− | 0.3+ | 2006 11 27 | 691 | (2.3− | 0.8−) |
| 2003 01 09 | 704 | 0.0 | 0.1− | 2003 03 03 | 644 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2003 01 09 | 704 | 0.8+ | 0.2+ | 2003 03 03 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.4+ |
| 2003 01 09 | 704 | 0.3− | 0.7+ | 2003 03 05 | 704 | 0.5+ | 0.2− | 2006 12 01 | 704 | 0.1− | 0.5+ |
| 2003 01 10 | 704 | 0.4+ | 0.3+ | 2003 03 05 | 704 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.6+ | 0.1− |
| 2003 01 10 | 704 | 0.1+ | 0.2− | 2003 03 05 | 704 | 0.6− | 0.3− | 2006 12 01 | 704 | 1.0− | 0.1+ |
| 2003 01 10 | 704 | 0.1− | 0.5+ | 2003 03 05 | 704 | 0.3− | 0.7− | 2006 12 01 | 704 | 0.5+ | 0.6− |
| 2003 01 10 | 704 | 0.2+ | 0.1− | 2003 03 07 | 644 | 0.6+ | 1.1+ | 2006 12 01 | 704 | 0.3+ | 1.2− |
| 2003 01 10 | 704 | 0.5− | 0.3+ | 2003 03 07 | 644 | 0.3+ | 0.6+ | 2006 12 01 | 691 | 0.2− | 0.2− |
| 2003 01 28 | 644 | 0.1+ | 0.6+ | 2003 03 07 | 644 | 0.3+ | 0.6+ | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2003 01 28 | 644 | 0.4+ | 0.5+ | 2003 03 13 | 644 | 0.3+ | 0.7+ | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2003 01 28 | 644 | 0.1+ | 0.5+ | 2003 03 13 | 644 | 0.1+ | 0.7+ | | | | |

**2003 AY$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 287.11449 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.21604520 | $\omega$ | 247.04545 | | −0.44904428 | −0.88965549 |
| $a$ | 2.7506772 | $\Omega$ | 229.90326 | | +0.85434445 | −0.40034154 |
| $e$ | 0.2792670 | $i$ | 6.22144 | | +0.26163867 | −0.21963550 |
| $P$ | 4.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2+ | 0.8+ | 2003 01 09 | 704 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 12 11 | 704 | 0.9+ | 0.5+ | 2003 01 09 | 704 | 1.4− | 1.0− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2002 12 11 | 704 | 0.6+ | 0.2+ | 2003 01 27 | 704 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.5+ | 1.1+ | 2003 01 27 | 704 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.4+ | 0.9+ | 2003 01 27 | 704 | 0.6+ | 0.6− | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.2+ | 0.6− | 2003 01 27 | 704 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2003 01 01 | 704 | (1.7+ | 2.3−) | 2003 01 27 | 704 | 0.2− | 0.5− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2003 01 01 | 704 | 0.0 | 1.1− | 2006 09 16 | 850 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.1+ | 0.8− |
| 2003 01 01 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 850 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.9− |
| 2003 01 01 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 850 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2003 01 07 | 704 | 0.1+ | 0.0 | 2006 09 17 | 850 | 0.9− | 0.8− | 2006 11 11 | 703 | (1.8− | 0.8+) |
| 2003 01 07 | 704 | 0.3− | 0.9+ | 2006 09 17 | 850 | 0.9+ | 0.6− | 2006 11 20 | G96 | 1.0+ | 1.3+ |
| 2003 01 07 | 704 | (0.4+ | 1.8+) | 2006 09 17 | 850 | 0.5+ | 0.9− | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2003 01 07 | 704 | 1.3− | 0.5+ | 2006 09 17 | 850 | 0.1− | 0.8− | 2006 11 20 | G96 | 0.3− | 0.2+ |
| 2003 01 07 | 704 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.5+ | 0.1− |
| 2003 01 09 | 704 | 0.9− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.1+ | | | | |

**2003 AZ$_{60}$ = 2006 VW$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 331.62251 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23832770 | $\omega$ | 234.49740 | | −0.03356808 | −0.99810684 |
| $a$ | 2.5764381 | $\Omega$ | 217.52820 | | +0.94218150 | −0.01440071 |
| $e$ | 0.2772414 | $i$ | 4.85315 | | +0.33341746 | −0.05979426 |
| $P$ | 4.14 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 12 | 691 | 0.1− | 0.2+ | 2003 01 28 | 704 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.5− |
| 1997 08 12 | 691 | 0.1− | 0.1− | 2003 01 28 | 704 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.7− |
| 1997 08 12 | 691 | 0.1+ | 0.0 | 2003 01 28 | 704 | 0.2+ | 0.8+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2003 01 01 | 704 | 0.2+ | 0.0 | 2003 01 28 | 704 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.9− | 0.6− |
| 2003 01 01 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.4+ | 0.7+ |
| 2003 01 01 | 704 | 0.2+ | 0.9+ | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.5− | 0.3+ |
| 2003 01 01 | 704 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.7+ | 0.8+ |
| 2003 01 01 | 704 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.1− | 0.8+ |
| 2003 01 07 | 704 | 0.2+ | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.6+ | 0.3− |
| 2003 01 07 | 704 | 0.7− | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2003 01 07 | 704 | 0.3− | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2003 01 07 | 704 | 0.2− | 0.5+ | 2006 11 12 | G96 | 0.5− | 0.6− | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2003 01 07 | 704 | 0.6− | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2003 01 09 | 704 | (0.0 | 1.6−) | 2006 11 12 | G96 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.0 |
| 2003 01 09 | 704 | 0.5+ | 1.1− | 2006 11 12 | G96 | 0.1− | 0.5− | 2006 11 20 | 704 | 1.1− | 0.2+ |
| 2003 01 09 | 704 | 0.5+ | 1.0− | 2006 11 12 | D35 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2003 01 27 | 704 | 0.1+ | 0.6− | 2006 11 12 | D35 | 0.0 | 0.0 | 2006 11 29 | 704 | 1.7+ | 1.4+ |
| 2003 01 27 | 704 | 0.2− | 0.3− | 2006 11 12 | D35 | 0.1+ | 0.1− | 2006 11 29 | 704 | 1.8− | 0.5+ |
| 2003 01 27 | 704 | 0.0 | 1.1− | 2006 11 14 | 704 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.5+ |
| 2003 01 27 | 704 | 0.2− | 0.3− | 2006 11 14 | 704 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.2− | 1.0+ |
| 2003 01 27 | 704 | 0.9− | 1.0− | 2006 11 14 | 704 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.0 | 1.3+ |

**2003 AL$_{63}$ = 2006 VM$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 296.40171 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22584647 | $\omega$ | 220.78820 | | −0.53326646 | −0.84577515 |
| $a$ | 2.6705078 | $\Omega$ | 261.44474 | | +0.78055740 | −0.48416819 |
| $e$ | 0.0835929 | $i$ | 0.98892 | | +0.32612426 | −0.22415523 |
| $P$ | 4.36 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 691 | 0.1− | 0.1− | 2003 01 09 | 704 | 0.8+ | 1.2+ | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 1997 11 02 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.7− |
| 1997 11 02 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 645 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2002 12 31 | 645 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.4− | 0.4− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2002 12 31 | 704 | 0.3+ | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2002 12 31 | 704 | 0.5+ | 0.2− | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.5+ | 2006 10 29 | G96 | 0.6+ | 0.0 | 2006 11 19 | 691 | 0.4− | 0.0 |
| 2003 01 08 | 704 | 0.5+ | 0.6+ | 2006 10 29 | G96 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.6− | 0.2− |
| 2003 01 08 | 704 | 1.3+ | 0.9+ | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2003 01 08 | 704 | 1.3+ | 1.4+ | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2003 01 09 | 704 | 1.4+ | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.6+ | 0.4+ |
| 2003 01 09 | 704 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 12 01 | 691 | 0.4+ | 0.3− |
| 2003 01 09 | 704 | 0.1+ | 1.2+ | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 12 01 | 691 | 0.3+ | 0.1− |

## 2003 $AR_{63}$ = 2006 $VX_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.16832 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22292427 | $\omega$ | 1.35297 | | −0.31238560 | | −0.94629704 |
| $a$ | 2.6937946 | $\Omega$ | 106.85526 | | +0.87074760 | | −0.32028598 |
| $e$ | 0.1805764 | $i$ | 4.99267 | | +0.37975498 | | −0.04403187 |
| $P$ | 4.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.2− | 0.9− | 2003 01 09 | 704 | 0.2+ | 0.8+ | 2006 11 01 | 703 | 0.5− | 0.0 |
| 2002 12 31 | 704 | 0.5− | 0.1+ | 2003 01 31 | 704 | 1.1+ | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2003 01 31 | 704 | 0.5+ | 0.6− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 12 31 | 704 | 0.3+ | 0.0 | 2003 01 31 | 704 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2003 01 08 | 704 | 0.8+ | 1.2+ | 2003 01 31 | 704 | 0.2− | 0.9− | 2006 11 13 | 703 | 1.2− | 0.3+ |
| 2003 01 08 | 704 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 13 | 703 | (1.7− | 1.2+) |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.4+ | 2006 11 13 | 703 | 0.6+ | 0.4− |
| 2003 01 08 | 704 | 0.2− | 0.8− | 2006 10 21 | G96 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.1+ |
| 2003 01 09 | 704 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2003 01 09 | 704 | 0.3− | 0.7+ | 2006 11 01 | 703 | (1.7− | 0.3−) | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2003 01 09 | 704 | 0.8− | 0.8+ | 2006 11 01 | 703 | (0.4− | 1.6−) | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2003 01 09 | 704 | 0.2+ | 0.3+ | 2006 11 01 | 703 | 0.8+ | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.5− |

## 2003 $AE_{65}$ = 2006 $QY_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.50776 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22388860 | $\omega$ | 335.13620 | | +0.93868702 | | −0.32199324 |
| $a$ | 2.6860539 | $\Omega$ | 44.25067 | | +0.33843434 | | +0.79234875 |
| $e$ | 0.2922039 | $i$ | 10.17215 | | +0.06579427 | | +0.51817353 |
| $P$ | 4.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.8− | 1.2− | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.1− | 1.1+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.7− | 0.9+ | 2006 09 22 | 704 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 1.1− | 0.1+ | 2006 09 22 | 704 | 0.5+ | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.5− | 0.2− | 2006 09 22 | 704 | 0.9+ | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2002 12 31 | 699 | 0.3+ | 0.6+ | 2006 09 22 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2002 12 31 | 699 | 0.9+ | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2002 12 31 | 699 | 0.3+ | 0.3− | 2006 09 26 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2002 12 31 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2003 01 07 | 704 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.5+ | 0.5− |
| 2003 01 07 | 704 | 0.7− | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2003 01 07 | 704 | 0.5− | 0.1+ | 2006 09 28 | 704 | 0.4+ | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2003 01 10 | 704 | 0.4+ | 0.2− | 2006 09 28 | 704 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2003 01 10 | 704 | 1.0+ | 0.2+ | 2006 09 28 | 704 | 0.1− | 1.0+ | 2006 11 17 | 703 | 0.6+ | 0.1+ |
| 2003 01 10 | 704 | 0.4+ | 0.3− | 2006 09 29 | 699 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2003 01 10 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.9+ | 1.1+ |
| 2003 01 10 | 704 | 0.8− | 0.0 | 2006 09 29 | 699 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.7+ | 1.3+ |
| 2003 01 10 | 704 | 0.7+ | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 1.1− |
| 2003 01 10 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.4− | 0.6− | 2006 11 18 | 704 | 0.0 | 0.9− |
| 2003 01 10 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.7− |
| 2003 01 10 | 704 | 1.0+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.3− | 0.7− |
| 2003 01 10 | 704 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.8− |
| 2003 01 10 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2003 01 10 | 704 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.8− | 0.1+ | 2006 11 19 | 704 | 0.9− | 0.6+ |
| 2003 01 10 | 704 | 0.7+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2003 01 10 | 704 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 19 | 704 | 1.0− | 0.9+ |
| 2003 01 10 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2003 01 10 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2003 01 10 | 704 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2003 01 10 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2003 01 10 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.5− | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2003 01 13 | 704 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2003 01 13 | 704 | 0.4− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.5− | 2006 11 24 | G96 | 0.6+ | 0.3− |
| 2003 01 13 | 704 | 0.2− | 0.8− | 2006 10 21 | G96 | 0.3+ | 0.5− | 2006 11 24 | G96 | 0.5+ | 0.4− |
| 2003 01 13 | 704 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.5+ | 0.4− |
| 2006 08 23 | 704 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 25 | 704 | 0.2+ | 0.0 |
| 2006 08 23 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 25 | 704 | 0.4+ | 0.4+ |
| 2006 08 23 | 704 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 25 | 704 | 0.1− | 0.7+ |
| 2006 08 23 | 704 | 1.4+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.3− | 2006 11 25 | 704 | (3.3− | 1.0+) |
| 2006 08 28 | 704 | 0.9− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.2+ | 0.2+ |
| 2006 08 28 | 704 | (0.9− | 1.6+) | 2006 10 22 | 704 | 0.2+ | 0.4− | 2006 11 25 | 703 | 0.0 | 0.3+ |
| 2006 08 28 | 704 | 0.8− | 1.0+ | 2006 10 22 | 704 | 0.6+ | 0.4− | 2006 11 25 | 703 | 0.3− | 0.2− |
| 2006 08 28 | 704 | (2.0− | 1.2+) | 2006 10 22 | 704 | 0.0 | 0.3− | 2006 11 25 | 703 | 0.5+ | 0.1− |
| 2006 08 28 | 704 | 0.6− | 0.6+ | 2006 10 22 | 704 | 0.3+ | 0.3+ | 2006 11 26 | 704 | 0.3− | 0.5+ |
| 2006 08 31 | 704 | 0.6+ | 0.6− | 2006 10 22 | 704 | 0.0 | 0.5− | 2006 11 26 | 704 | 0.9− | 0.6+ |
| 2006 08 31 | 704 | 1.0+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 26 | 704 | 0.5− | 0.2+ |
| 2006 08 31 | 704 | 0.7+ | 0.8− | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 26 | 704 | 1.1− | 0.7+ |
| 2006 08 31 | 704 | 0.6+ | 1.1− | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 26 | 704 | 0.2+ | 1.2− |
| 2006 09 15 | 644 | 0.3− | 0.0 | 2006 10 27 | 704 | 0.5+ | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2006 09 15 | 644 | 0.3− | 0.3− | 2006 10 27 | 704 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2006 09 15 | 644 | 0.1− | 0.0 | 2006 10 27 | 704 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 1.0+ |
| 2006 09 16 | 704 | 0.1+ | 0.4− | 2006 10 27 | 704 | 0.5+ | 0.3− | 2006 11 28 | 704 | 0.0 | 0.4+ |
| 2006 09 16 | 704 | 0.6− | 0.3− | 2006 10 27 | 704 | 0.9+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.4+ |
| 2006 09 16 | 704 | (2.0+ | 0.4−) | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.7+ |
| 2006 09 16 | 704 | 0.1− | 1.0+ | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.4+ |

## 2003 $AK_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.88716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22397175 | $\omega$ | 9.02403 | | +0.10859312 | | −0.95860449 |
| $a$ | 2.6853891 | $\Omega$ | 75.07201 | | +0.89421730 | | −0.02147356 |
| $e$ | 0.2011749 | $i$ | 15.80798 | | +0.43426138 | | +0.28393012 |
| $P$ | 4.40 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2003 01 31 | 699 | 0.4+ | 0.4+ | 2006 10 29 | 106 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2006 10 04 | 448 | 0.6+ | 0.3− | 2006 10 29 | 106 | 1.2+ | 0.6+ |
| 2002 12 05 | 704 | 0.7− | 0.4+ | 2006 10 04 | 448 | 0.0 | 0.3+ | 2006 10 29 | 106 | 0.5+ | 0.4+ |
| 2002 12 05 | 704 | 0.9− | 0.2+ | 2006 10 04 | 448 | 0.3− | 0.2− | 2006 10 29 | 106 | 1.5+ | 0.3+ |
| 2002 12 05 | 704 | (1.6− | 0.7+) | 2006 10 12 | 448 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.1− | 0.1+ |
| 2002 12 15 | 704 | 0.3+ | 0.5+ | 2006 10 12 | 448 | 0.2+ | 0.4− | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2002 12 15 | 704 | 0.1− | 0.2− | 2006 10 12 | 448 | 0.5+ | 0.2+ | 2006 11 16 | 703 | 0.4+ | 0.3− |
| 2002 12 15 | 704 | 1.1+ | 0.1− | 2006 10 13 | 448 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.0 | 0.4− |
| 2003 01 07 | 704 | 0.4− | 0.2+ | 2006 10 13 | 448 | 0.4+ | 0.0 | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2003 01 07 | 704 | 0.1+ | 1.0− | 2006 10 13 | 448 | 0.4+ | 0.1− | 2006 11 17 | 644 | 0.3− | 0.2− |
| 2003 01 07 | 704 | 0.7− | 1.0− | 2006 10 14 | 448 | 0.0 | 0.2− | 2006 11 17 | 644 | 0.3− | 0.1− |
| 2003 01 07 | 704 | 0.7− | 0.1− | 2006 10 14 | 448 | 0.9− | 0.9+ | 2006 11 17 | E14 | 1.0+ | 0.4+ |
| 2003 01 10 | 704 | 0.6− | 0.7− | 2006 10 17 | 703 | 0.4− | 0.3+ | 2006 11 17 | E14 | 0.4− | 0.3+ |
| 2003 01 10 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.6− | 0.5+ | 2006 11 17 | E14 | 0.4+ | 0.3+ |
| 2003 01 10 | 704 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.7− | 2006 11 17 | E14 | 1.1− | 0.5+ |
| 2003 01 10 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.5− | 2006 11 17 | E14 | 0.1− | 0.2− |
| 2003 01 13 | 704 | 0.3+ | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.4+ | 2006 11 17 | E14 | 0.7− | 0.1− |
| 2003 01 13 | 704 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2003 01 13 | 704 | 1.4+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 13 | 704 | 0.5+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.3− | 2006 11 21 | 704 | 1.0− | 0.4− | | |
| 2003 01 13 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.8− | 0.2+ | | |
| 2003 01 31 | 699 | (2.5+ | 0.5+) | 2006 10 28 | 703 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.3− | | |
| 2003 01 31 | 699 | 0.2− | 0.7− | 2006 10 28 | 703 | 0.6− | 0.2− | | | | | | |
| 2003 01 31 | 699 | 0.6+ | 0.8+ | 2006 10 28 | 703 | 0.3− | 0.3− | | | | | | |

**2003 AR$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.08290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17901900 | $\omega$ | 188.91954 | | −0.91453014 | −0.38006699 | |
| $a$ | 3.1179559 | $\Omega$ | 327.62294 | | +0.38526162 | −0.71396653 | |
| $e$ | 0.1309886 | $i$ | 14.99010 | | +0.12332118 | −0.58804837 | |
| $P$ | 5.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 699 | 0.3+ | 1.1+ | 2003 01 10 | 704 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ | | |
| 2002 12 31 | 699 | 1.0+ | 0.3− | 2003 01 10 | 704 | 0.6− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.3− | | |
| 2002 12 31 | 699 | 0.1− | 0.4+ | 2003 01 10 | 704 | 1.0− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2− | | |
| 2002 12 31 | 699 | (0.1+ | 1.7+) | 2003 01 31 | 704 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2003 01 07 | 704 | 0.3+ | 0.7− | 2003 01 31 | 704 | 0.6− | 1.5+ | 2006 10 28 | 291 | 0.1+ | 0.1− | | |
| 2003 01 07 | 704 | 0.6+ | 0.2− | 2003 01 31 | 704 | 0.8− | 0.0 | 2006 10 28 | 291 | 0.1+ | 0.1− | | |
| 2003 01 07 | 704 | 1.1+ | 0.3+ | 2003 01 31 | 704 | 0.0 | 0.1− | 2006 10 28 | 291 | 0.2+ | 0.2− | | |
| 2003 01 07 | 704 | 0.2+ | 1.1− | 2006 10 18 | 691 | 0.1+ | 0.5+ | | | | | | |
| 2003 01 10 | 704 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.0 | 0.1+ | | | | | | |

**2003 AT$_{65}$ = 2006 SK$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.31987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21948752 | $\omega$ | 79.48489 | | −0.46759402 | −0.87826992 | |
| $a$ | 2.7218415 | $\Omega$ | 38.90508 | | +0.73591771 | −0.44945473 | |
| $e$ | 0.2543948 | $i$ | 9.16103 | | +0.48967433 | −0.16319432 | |
| $P$ | 4.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 0.1− | 0.2+ | 2003 01 13 | 704 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.8+ | 0.1+ | | |
| 2003 01 07 | 704 | 0.1− | 0.3+ | 2003 01 13 | 704 | (1.0− | 1.8+) | 2006 10 15 | 691 | 0.3− | 0.7+ | | |
| 2003 01 07 | 704 | 0.4+ | 0.6− | 2006 09 19 | 691 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.3− | | |
| 2003 01 10 | 704 | 0.7− | 1.0− | 2006 09 19 | 691 | 0.2+ | 0.6− | 2006 10 17 | G96 | 0.6− | 0.4− | | |
| 2003 01 10 | 704 | 1.0+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.0 | 0.9− | | |
| 2003 01 10 | 704 | 0.5− | 0.4− | 2006 09 23 | 691 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.6+ | 0.3− | | |
| 2003 01 10 | 704 | 0.7− | 0.1− | 2006 09 23 | 691 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1+ | | |
| 2003 01 11 | 704 | 1.3+ | 0.6− | 2006 09 23 | 691 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2+ | | |
| 2003 01 11 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.1+ | | |
| 2003 01 11 | 704 | (1.1− | 1.8+) | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.2− | | |
| 2003 01 11 | 704 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 1.0+ | 0.1− | | |
| 2003 01 11 | 704 | 0.8+ | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.1− | | |
| 2003 01 12 | 704 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.4+ | | |
| 2003 01 12 | 704 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1− | | |
| 2003 01 12 | 704 | 1.1− | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2003 01 13 | 704 | 0.6− | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.3− | | |
| 2003 01 13 | 704 | 0.0 | 0.7+ | 2006 10 11 | 691 | 0.5− | 0.1− | | | | | | |
| 2003 01 13 | 704 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.6+ | 0.1+ | | | | | | |

**2003 AB$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.91975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22585494 | $\omega$ | 337.89587 | | +0.79316417 | −0.58902001 | |
| $a$ | 2.6704410 | $\Omega$ | 59.12112 | | +0.58226327 | +0.65897136 | |
| $e$ | 0.3168780 | $i$ | 10.38736 | | +0.17849392 | +0.46777364 | |
| $P$ | 4.36 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 1.4+ | 0.1− | 2006 09 23 | B14 | 0.3+ | 0.3− | 2006 10 31 | 704 | 0.2+ | 0.1− | | |
| 2002 11 14 | 704 | (1.8+ | 0.5−) | 2006 09 23 | B14 | 0.3+ | 0.1− | 2006 10 31 | 704 | 0.3+ | 0.1+ | | |
| 2002 11 14 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 10 31 | 704 | 0.2+ | 0.2− | | |
| 2002 11 14 | 704 | 0.2+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 10 31 | 704 | 0.3+ | 0.0 | | |
| 2002 11 16 | 699 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 10 31 | 300 | 0.2− | 0.6+ | | |
| 2002 11 16 | 699 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 10 31 | 300 | 0.0 | 1.5+ | | |
| 2002 11 16 | 699 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 1.1+ | 0.3+ | 2006 10 31 | 300 | 0.5+ | 0.4+ | | |
| 2002 11 16 | 699 | (3.3+ | 2.6+) | 2006 10 01 | 704 | 0.7− | 0.2− | 2006 10 31 | 300 | 0.6+ | 0.5− | | |
| 2002 12 05 | 704 | 0.4− | 0.5− | 2006 10 01 | 704 | 0.5− | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.1− | | |
| 2002 12 05 | 704 | 0.6− | 0.2− | 2006 10 01 | 704 | 0.1− | 1.2+ | 2006 11 13 | 644 | 0.3− | 0.0 | | |
| 2002 12 05 | 704 | 0.3− | 0.8− | 2006 10 01 | 704 | (0.5− | 1.7+) | 2006 11 13 | 703 | 0.2+ | 0.3− | | |
| 2002 12 15 | 704 | 1.0+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.2− | | |
| 2002 12 15 | 704 | 1.0− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2− | 0.1− | | |
| 2002 12 15 | 704 | (1.6− | 1.6+) | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.2− | | |
| 2002 12 31 | 699 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.4− | | |
| 2002 12 31 | 699 | (0.1+ | 2.6−) | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.4+ | | |
| 2002 12 31 | 699 | 0.8− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.2+ | 0.7+ | | |
| 2002 12 31 | 699 | 0.5− | 0.4− | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.7+ | | |
| 2003 01 07 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.6+ | | |
| 2003 01 07 | 704 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.4+ | | |
| 2003 01 07 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.9− | 0.0 | | |
| 2003 01 07 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.0 | | |
| 2003 01 10 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.2− | 0.3+ | | |
| 2003 01 10 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.1+ | | |
| 2003 01 10 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.2+ | | |
| 2003 01 10 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 1.2− | | |
| 2003 01 10 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.5− | | |
| 2003 01 13 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.4− | | |
| 2003 01 13 | 704 | 0.2− | 0.7− | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.5− | | |
| 2003 01 13 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.6− | | |
| 2003 01 13 | 704 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.3+ | | |
| 2003 01 31 | 699 | 0.8+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.1+ | | |
| 2003 01 31 | 699 | 0.3+ | 0.4+ | 2006 10 24 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.1− | | |
| 2003 01 31 | 699 | 0.4+ | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.7+ | 0.2− | | |
| 2003 01 31 | 699 | 0.1+ | 0.1− | 2006 10 27 | 704 | 1.2− | 0.4− | 2006 11 20 | 704 | 0.7+ | 0.7+ | | |
| 2004 03 20 | 704 | 0.0 | 0.7− | 2006 10 27 | 704 | 0.7− | 0.2− | 2006 11 26 | 704 | 0.1+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.3− | 0.1+ | 2006 10 27 | 704 | 0.5− | 0.3+ | 2006 11 26 | 704 | 0.2− | 0.0 | | |
| 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 10 27 | 704 | 0.2− | 0.5− | 2006 11 26 | 704 | 0.2− | 0.2+ | | |
| 2006 09 22 | B14 | 0.4+ | 0.2− | 2006 10 27 | 704 | 0.7− | 0.2+ | 2006 11 26 | 704 | 0.5+ | 0.0 | | |
| 2006 09 22 | B14 | 0.3+ | 0.3− | 2006 10 31 | 704 | 0.2+ | 0.0 | 2006 11 26 | 704 | 0.4− | 0.4− | | |

**2003 AM$_{66}$ = 2006 TG$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.01356 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21760483 | $\omega$ | 90.91588 | | −0.21746785 | −0.97554755 | |
| $a$ | 2.7375183 | $\Omega$ | 11.79114 | | +0.82203270 | −0.20064787 | |
| $e$ | 0.1548966 | $i$ | 8.96818 | | +0.52627936 | −0.08970735 | |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 0.6− | 0.3+ | 2003 01 22 | 644 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1− | | |
| 2003 01 07 | 704 | 0.3+ | 1.2− | 2003 01 22 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.2+ | 0.9− | 2003 01 22 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.6− | 0.2+ | | |
| 2003 01 10 | 704 | 0.4+ | 0.1− | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2003 01 10 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 10 29 | 691 | 0.3− | 0.1+ | | |
| 2003 01 10 | 704 | 0.2− | 1.0+ | 2006 10 12 | 691 | 0.7+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.2+ | | |
| 2003 01 10 | 704 | 0.5− | 1.2+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1− | | |
| 2003 01 13 | 704 | 0.7− | 0.4− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.0 | | |
| 2003 01 13 | 704 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.5+ | 0.0 | | |
| 2003 01 13 | 704 | 0.4− | 0.8− | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2003 01 13 | 704 | 1.2+ | 0.5− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.1− | | |

**2003 AV$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.15119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24085543 | $\omega$ | 55.78144 | | +0.73959404 | −0.67170920 | |
| $a$ | 2.5583802 | $\Omega$ | 346.25118 | | +0.54358000 | +0.63337544 | |
| $e$ | 0.2872778 | $i$ | 10.30452 | | +0.39688971 | +0.38424250 | |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2003 01 10 | 704 | 0.0 | 0.5+ | 2003 03 07 | 644 | 0.3+ | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2003 01 10 | 704 | 0.2− | 0.1+ | 2003 03 07 | 644 | 0.3+ | 0.0 |
| 2002 12 31 | 699 | 0.2+ | 0.0 | 2003 01 13 | 704 | 0.4+ | 0.9− | 2003 03 07 | 644 | 0.4+ | 0.4+ |
| 2002 12 31 | 699 | 0.8+ | 0.6+ | 2003 01 13 | 704 | 0.5+ | 1.0− | 2006 10 27 | 703 | 0.0 | 0.9− |
| 2002 12 31 | 699 | 1.8+ | 0.8+ | 2003 01 13 | 704 | 0.4+ | 1.0− | 2006 10 27 | 703 | 0.6+ | 0.0 |
| 2002 12 31 | 699 | 0.4− | 0.7− | 2003 01 13 | 704 | 0.7+ | 1.3− | 2006 10 27 | 703 | 0.9+ | 1.5− |
| 2003 01 07 | 704 | 0.2− | 0.3− | 2003 01 31 | 704 | 0.6− | 0.9+ | 2006 11 13 | 704 | 1.4− | 0.6− |
| 2003 01 07 | 704 | 0.2− | 0.3− | 2003 01 31 | 704 | 1.2− | 0.1+ | 2006 11 13 | 704 | 0.2+ | 0.3+ |
| 2003 01 07 | 704 | 0.0 | 0.4− | 2003 01 31 | 704 | 1.0− | 0.0 | 2006 11 13 | 704 | 0.4− | 1.5+ |
| 2003 01 10 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 704 | 0.2+ | 0.7+ | | | | |
| 2003 01 10 | 704 | 0.0 | 0.4− | 2003 01 31 | 704 | 1.7− | 0.2+ | | | | |

**2003 AH$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.01862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19631470 | $\omega$ | 24.64613 | | −0.46224640 | | −0.85941254 |
| $a$ | 2.9320239 | $\Omega$ | 93.54028 | | +0.77294383 | | −0.51126028 |
| $e$ | 0.2791439 | $i$ | 12.64495 | | +0.43461029 | | −0.00479712 |
| $P$ | 5.02 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 27 | 688 | 0.2− | 0.6− | 2003 01 19 | 644 | 0.2− | 0.1+ | 2003 03 22 | 644 | 0.5+ | 0.9+ |
| 1997 12 27 | 688 | 0.5− | 1.1− | 2003 01 26 | 699 | 0.1− | 0.3− | 2003 03 25 | 704 | 0.6+ | 0.8+ |
| 2002 12 05 | 704 | 1.4+ | 0.2− | 2003 01 26 | 699 | 0.0 | 0.4+ | 2003 03 25 | 704 | 0.0 | 0.7+ |
| 2002 12 05 | 704 | 0.3+ | 0.6− | 2003 01 26 | 699 | 0.1− | 0.4+ | 2003 03 25 | 704 | 0.1+ | 0.4+ |
| 2002 12 05 | 704 | 0.7+ | 0.2− | 2003 01 26 | 699 | 1.0− | 0.6+ | 2003 03 25 | 704 | 0.2− | 0.4− |
| 2002 12 05 | 704 | (1.6+ | 0.4−) | 2003 02 06 | 704 | (0.4− | 1.6−) | 2003 04 02 | 644 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2003 02 06 | 704 | 0.9− | 1.4− | 2003 04 02 | 644 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 0.2− | 0.5+ | 2003 02 06 | 704 | (0.1− | 1.8−) | 2003 04 02 | 644 | 0.2− | 0.1+ |
| 2002 12 31 | 704 | 0.2+ | 0.4+ | 2003 02 07 | 644 | 0.2+ | 0.1+ | 2003 04 08 | 644 | 0.1− | 0.5+ |
| 2002 12 31 | 704 | 0.4− | 0.6+ | 2003 02 07 | 644 | 0.1+ | 0.2+ | 2003 04 08 | 644 | 0.2− | 0.7+ |
| 2002 12 31 | 704 | 0.2+ | 0.1+ | 2003 02 07 | 644 | 0.3+ | 0.2+ | 2003 04 08 | 644 | 0.1− | 0.6+ |
| 2002 12 31 | 704 | 0.2+ | 0.1+ | 2003 02 26 | 704 | 0.1− | 0.2− | 2006 09 27 | 703 | (1.5− | 0.9+) |
| 2003 01 07 | 704 | 1.3− | 0.9+ | 2003 02 26 | 704 | 0.5+ | 0.7− | 2006 09 27 | 703 | 0.1+ | 0.2+ |
| 2003 01 07 | 704 | 0.4− | 0.6+ | 2003 02 26 | 704 | 0.3+ | 1.3− | 2006 09 27 | 703 | 0.5+ | 0.2+ |
| 2003 01 07 | 704 | 0.0 | 0.4+ | 2003 02 26 | 704 | 0.6+ | 1.1− | 2006 09 27 | 703 | 1.0− | 0.2+ |
| 2003 01 07 | 704 | 0.2+ | 0.5+ | 2003 03 07 | 447 | 1.2− | 0.4+ | 2006 09 27 | 703 | 0.4+ | 0.9− |
| 2003 01 10 | 704 | 0.7+ | 0.7− | 2003 03 07 | 447 | 1.0− | 1.5− | 2006 09 27 | 703 | 0.1− | 1.0+ |
| 2003 01 10 | 704 | 0.4+ | 0.9− | 2003 03 08 | 699 | 0.7+ | 0.8+ | 2006 09 27 | 703 | 0.6− | 1.1+ |
| 2003 01 10 | 704 | 0.1+ | 0.4− | 2003 03 08 | 699 | 0.2− | 0.1+ | 2006 09 27 | 703 | (0.4+ | 1.9+) |
| 2003 01 10 | 704 | 0.4+ | 0.7− | 2003 03 08 | 699 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2003 01 10 | 704 | 0.2− | 0.3− | 2003 03 08 | 699 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2003 01 19 | 644 | 0.0 | 0.3+ | 2003 03 22 | 644 | 0.2+ | 1.0+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2003 01 19 | 644 | 0.1− | 0.1+ | 2003 03 22 | 644 | 0.5+ | 1.0+ | | | | |

**2003 AR$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.92214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21443458 | $\omega$ | 119.03806 | | −0.06182741 | | −0.99151707 |
| $a$ | 2.7644336 | $\Omega$ | 333.75241 | | +0.80203176 | | +0.01882517 |
| $e$ | 0.1944249 | $i$ | 14.98211 | | +0.59407274 | | −0.12860600 |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 699 | 0.0 | 0.5+ | 2003 01 10 | 704 | 1.3− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 28 | 699 | 0.9+ | 0.1− | 2003 01 10 | 704 | 0.8− | 0.7− | 2006 10 19 | 703 | 0.1− | 0.8− |
| 2002 11 28 | 699 | 0.3+ | 0.2+ | 2003 01 13 | 704 | 0.0 | 1.0− | 2006 10 19 | 703 | 0.4+ | 0.0 |
| 2002 11 28 | 699 | 0.5+ | 0.5+ | 2003 01 13 | 704 | 0.9− | 1.4− | 2006 10 19 | 703 | 0.1− | 1.1− |
| 2002 12 31 | 699 | 0.0 | 0.2− | 2003 01 13 | 704 | (3.0+ | 1.1−) | 2006 10 19 | 703 | 0.2− | 0.1+ |
| 2002 12 31 | 699 | 0.1− | 0.1− | 2003 01 13 | 704 | (1.7+ | 0.9−) | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 12 31 | 699 | 0.1+ | 0.8+ | 2003 01 31 | 699 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 12 31 | 699 | 0.5+ | 0.5+ | 2003 01 31 | 699 | 0.7+ | 0.5− | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2003 01 08 | 704 | 0.5+ | 0.5+ | 2003 01 31 | 699 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2003 01 08 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 699 | 0.8+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2003 01 08 | 704 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2003 01 08 | 704 | 0.1+ | 0.5+ | 2006 10 10 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.8+ | 0.8− |
| 2003 01 08 | 704 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.7+ | 1.0− |
| 2003 01 10 | 704 | 0.9− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 1.5− | 0.0 |
| 2003 01 10 | 704 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.5+ |

**2003 AZ$_{67}$ = 2006 UH$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.62022 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22038696 | $\omega$ | 222.61301 | | −0.76082757 | | −0.64728303 |
| $a$ | 2.7144309 | $\Omega$ | 276.98951 | | +0.60731885 | | −0.68490688 |
| $e$ | 0.1131664 | $i$ | 2.68757 | | +0.22870335 | | −0.33455528 |
| $P$ | 4.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.2− | 0.0 | 2003 01 31 | 704 | 0.8+ | 1.1+ | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2003 01 08 | 704 | 0.1+ | 0.9+ | 2003 01 31 | 704 | 0.9+ | 1.4+ | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 2003 01 08 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 704 | (0.5+ | 3.7+) | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2003 01 08 | 704 | 0.3− | 0.1− | 2003 01 31 | 704 | (0.4− | 3.5+) | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2003 01 08 | 704 | 1.0+ | 0.1+ | 2006 10 19 | 695 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2003 01 10 | 291 | 0.4+ | 0.2+ | 2006 10 19 | 695 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.4+ |
| 2003 01 10 | 291 | 0.2− | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2003 01 10 | 291 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.4− | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2003 01 25 | 645 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.4+ | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2003 01 25 | 645 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.3− | 2006 12 01 | G96 | 0.6+ | 0.3− |
| 2003 01 30 | 608 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.9− |
| 2003 01 30 | 608 | 0.5+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2003 01 30 | 608 | 0.2+ | 0.6+ | 2006 10 31 | 691 | 0.9− | 0.4− | 2006 12 01 | G96 | 0.5+ | 0.4− |

**2003 AS$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.38219 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23816920 | $\omega$ | 74.52411 | | −0.87869149 | | −0.46935333 |
| $a$ | 2.5775809 | $\Omega$ | 77.41591 | | +0.39654615 | | −0.81933699 |
| $e$ | 0.1288344 | $i$ | 5.12765 | | +0.26580522 | | −0.32923298 |
| $P$ | 4.14 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.2− | 2003 01 09 | 704 | 0.3− | 0.2− | 2006 11 27 | B01 | 1.3− | 0.2− |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2003 01 09 | 704 | 0.2− | 0.1+ | 2006 11 27 | B01 | 0.4+ | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2003 01 10 | 704 | 0.1+ | 0.1+ | 2006 11 28 | B01 | 0.3+ | 0.5+ |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2003 01 10 | 704 | 0.3− | 0.2+ | 2006 11 28 | B01 | 1.2+ | 0.4− |
| 2003 01 09 | 704 | 0.4+ | 0.1+ | 2003 01 10 | 704 | 0.7+ | 0.2− | | | | |
| 2003 01 09 | 704 | 0.6− | 0.1− | 2006 11 27 | B01 | 0.6− | 0.3+ | | | | |

**2003 AR$_{69}$ = 1977 RV$_{14}$ = 1999 CR$_{144}$**

Id. Minor Planet Center (*MPO* 56740; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.80517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19966286 | $\omega$ | 208.35617 | | +0.71979156 | | −0.69418105 |
| $a$ | 2.8991533 | $\Omega$ | 195.60749 | | +0.63939160 | | +0.66496898 |
| $e$ | 0.4209908 | $i$ | 0.76149 | | +0.27033035 | | +0.27555205 |
| $P$ | 4.94 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 09 09 | 675 | 0.1+ | 0.4− | 2002 12 31 | 645 | 0.2− | 0.5− | 2003 01 08 | 704 | 0.3− | 0.5+ |
| 1977 09 10 | 675 | (0.6− | 2.7−) | 2002 12 31 | 704 | 0.6+ | 0.4− | 2003 01 08 | 704 | 0.3− | 0.0 |
| 1999 02 08 | 568 | 0.1+ | 0.4− | 2002 12 31 | 704 | 0.4− | 0.6− | 2003 01 11 | 704 | 0.4− | 0.8+ |
| 1999 02 08 | 568 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.2+ | 0.8+ | 2003 01 11 | 704 | 1.1+ | 0.3+ |
| 1999 02 09 | 568 | 0.0 | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.8+ | 2003 01 11 | 704 | 0.0 | 0.9− |
| 1999 02 09 | 568 | 0.4− | 0.0 | 2003 01 08 | 704 | 0.3− | 0.3− | 2003 01 11 | 704 | 0.1+ | 0.2+ |
| 2002 12 31 | 645 | 0.2− | 0.5− | 2003 01 08 | 704 | 0.4− | 0.4− | | | | |

**2003 AS$_{69}$ = 2006 VS$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.58593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22855443 | $\omega$ | 269.43240 | | −0.93168690 | −0.36272630 | |
| $a$ | 2.6493721 | $\Omega$ | 249.29975 | | +0.34111278 | −0.85491448 | |
| $e$ | 0.1446021 | $i$ | 1.20837 | | +0.12490637 | −0.37087849 | |
| $P$ | 4.31 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.6+ | 0.3− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2002 12 31 | 645 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.4+ | 0.4− |
| 2002 12 31 | 645 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.5+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2003 01 08 | 704 | 0.3− | 1.1+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2003 01 08 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.4+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2003 01 08 | 704 | 0.6− | 0.4− | 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2003 01 08 | 704 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.4− | 1.0+ |
| 2003 01 08 | 704 | 0.9+ | 0.8+ | 2006 11 15 | 691 | 0.4− | 0.4− | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2003 01 11 | 704 | 0.9+ | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.1− | 2006 12 01 | 691 | 0.5− | 0.1+ |
| 2003 01 11 | 704 | 0.7+ | 0.7+ | 2006 11 19 | 691 | 0.3− | 0.1− | | | | |
| 2003 01 11 | 704 | 1.1+ | 0.7− | 2006 11 19 | 691 | 0.0 | 0.2− | | | | |

**2003 AD$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.63330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23264378 | $\omega$ | 108.39854 | | −0.79823092 | −0.59059365 | |
| $a$ | 2.6182338 | $\Omega$ | 35.67418 | | +0.44694944 | −0.71254345 | |
| $e$ | 0.2332778 | $i$ | 11.71737 | | +0.40381133 | −0.37878882 | |
| $P$ | 4.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 0.2+ | 0.9+ | 2002 12 15 | 704 | 0.2+ | 0.4+ | 2003 01 21 | 704 | 0.1− | 0.5+ |
| 1999 02 23 | 699 | 0.4− | 0.0 | 2003 01 10 | 704 | 0.6− | 0.4+ | 2003 01 21 | 704 | 0.0 | 0.9+ |
| 1999 02 23 | 699 | 1.1+ | 0.3+ | 2003 01 10 | 704 | 0.3− | 0.6+ | 2003 01 21 | 704 | (2.0− | 1.1−) |
| 2001 10 24 | 644 | 0.2− | 0.4+ | 2003 01 10 | 704 | 0.2− | 0.1+ | 2003 01 21 | 704 | 0.0 | 0.8− |
| 2001 10 24 | 644 | 0.2− | 0.3+ | 2003 01 10 | 704 | 0.1+ | 0.3+ | 2003 01 21 | 704 | 0.5− | 0.0 |
| 2001 10 24 | 644 | 0.3− | 0.3+ | 2003 01 12 | 699 | 0.3+ | 0.2− | 2003 02 07 | 699 | 0.4+ | 0.1+ |
| 2002 11 28 | 699 | 0.1+ | 0.6+ | 2003 01 12 | 699 | 0.0 | 0.4− | 2003 02 07 | 699 | 0.6+ | 0.5− |
| 2002 11 28 | 699 | 0.4+ | 0.4− | 2003 01 12 | 699 | 0.0 | 0.5+ | 2003 02 07 | 699 | 0.3− | 0.4+ |
| 2002 11 28 | 699 | 0.6+ | 0.5− | 2003 01 12 | 699 | 0.3+ | 0.4− | 2003 02 07 | 699 | 0.0 | 0.1− |
| 2002 11 28 | 699 | 0.1− | 0.4+ | 2003 01 14 | 704 | 0.3+ | 0.4− | 2006 11 22 | 703 | (1.8+ | 1.0−) |
| 2002 12 15 | 704 | 0.1+ | 0.4− | 2003 01 14 | 704 | 0.1− | 0.4− | 2006 11 22 | 703 | 0.2− | 0.0 |
| 2002 12 15 | 704 | 0.6+ | 0.0 | 2003 01 14 | 704 | 0.2+ | 0.3− | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2002 12 15 | 704 | 0.1+ | 0.0 | 2003 01 14 | 704 | 0.8− | 1.2− | | | | |
| 2002 12 15 | 704 | 0.3− | 0.6+ | 2003 01 14 | 704 | 0.6− | 0.2− | | | | |

**2003 AW$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.18549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22904218 | $\omega$ | 64.11608 | | −0.58196446 | −0.66968496 | |
| $a$ | 2.6456095 | $\Omega$ | 69.60769 | | +0.44965388 | −0.73769117 | |
| $e$ | 0.3793407 | $i$ | 29.48472 | | +0.67759041 | −0.08563750 | |
| $P$ | 4.30 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 704 | 0.4− | 1.0+ | 2003 03 26 | 704 | 0.0 | 0.4− | 2003 06 04 | 704 | 0.7− | 0.5− |
| 2003 01 11 | 704 | 0.1+ | 0.2− | 2003 04 09 | 644 | 0.2+ | 0.1+ | 2003 06 07 | 704 | 0.4+ | 0.7+ |
| 2003 01 11 | 704 | 0.3+ | 0.5− | 2003 04 09 | 644 | 0.2+ | 0.1+ | 2003 06 07 | 704 | 0.0 | 0.3+ |
| 2003 01 11 | 704 | 0.4+ | 0.3+ | 2003 04 09 | 644 | 0.2+ | 0.0 | 2003 06 07 | 704 | 0.6− | 0.4+ |
| 2003 01 11 | 704 | 1.2+ | 0.1− | 2003 04 11 | 699 | 0.4− | 0.2+ | 2003 06 07 | 704 | 0.3+ | 0.0 |
| 2003 01 12 | 704 | 0.2− | 0.5− | 2003 04 11 | 699 | 0.8− | 0.1− | 2003 06 21 | 699 | 0.1+ | 0.4− |
| 2003 01 12 | 704 | 0.2− | 0.2+ | 2003 04 11 | 699 | 1.0+ | 0.0 | 2003 06 21 | 699 | 0.6+ | 0.1− |
| 2003 01 12 | 704 | 0.1+ | 0.1+ | 2003 04 11 | 333 | 0.4− | 0.1+ | 2003 06 21 | 699 | (2.0− | 1.7+) |
| 2003 01 12 | 704 | 0.1− | 0.2+ | 2003 04 11 | 699 | 0.3− | 0.2− | 2003 06 21 | 699 | 1.4− | 1.4+ |
| 2003 01 12 | 704 | 0.5− | 0.2− | 2003 04 11 | 333 | 1.3− | 0.1+ | 2006 10 21 | 704 | (4.2− | 1.3−) |
| 2003 01 17 | 699 | 0.0 | 0.4− | 2003 04 11 | 333 | 0.9− | 0.4+ | 2006 10 21 | 704 | (3.9− | 0.9−) |
| 2003 01 17 | 699 | 0.6− | 0.5− | 2003 04 11 | 333 | 0.4+ | 0.9+ | 2006 10 21 | 704 | (2.0− | 0.5−) |
| 2003 01 17 | 699 | 0.1+ | 0.1+ | 2003 04 11 | 333 | 0.3− | 0.4− | 2006 10 21 | 704 | (2.2− | 0.9+) |
| 2003 01 17 | 699 | 0.8− | 0.3− | 2003 04 24 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 704 | 0.8+ | 0.4+ |
| 2003 01 26 | 704 | 0.0 | 0.1+ | 2003 04 24 | 704 | 0.0 | 0.1+ | 2006 10 23 | 704 | (3.3+ | 1.0−) |
| 2003 01 26 | 704 | 0.8+ | 0.2− | 2003 04 24 | 704 | 0.2+ | 0.0 | 2006 10 23 | 704 | (0.3+ | 2.2−) |
| 2003 01 26 | 704 | 0.1− | 0.2+ | 2003 04 24 | 704 | 0.2+ | 0.1− | 2006 10 23 | 704 | 1.1− | 0.0 |
| 2003 01 26 | 704 | 0.1− | 0.2− | 2003 04 24 | 704 | 0.5+ | 0.5+ | 2006 10 23 | 704 | (1.7− | 0.4−) |
| 2003 01 26 | 704 | 0.4+ | 0.4− | 2003 04 29 | 333 | 1.2− | 0.0 | 2006 11 15 | 704 | 1.0− | 1.1− |
| 2003 01 27 | 704 | 0.1+ | 0.2+ | 2003 04 29 | 333 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.2− | 0.7+ |
| 2003 01 27 | 704 | 0.6− | 0.1− | 2003 04 29 | 333 | 0.3+ | 0.3− | 2006 11 15 | 704 | 0.2+ | 0.1− |
| 2003 01 27 | 704 | 0.1+ | 0.2− | 2003 04 29 | 333 | 0.5− | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.4+ |
| 2003 01 27 | 704 | 0.1− | 0.5− | 2003 05 11 | 704 | 1.4+ | 0.3+ | 2006 11 15 | 704 | 0.3+ | 0.2+ |
| 2003 01 27 | 704 | 0.1− | 0.6− | 2003 05 11 | 704 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.0 |
| 2003 02 07 | 704 | 0.2+ | 0.1+ | 2003 05 11 | 704 | 0.5+ | 0.3− | 2006 11 15 | 704 | 0.1+ | 0.2− |
| 2003 02 07 | 704 | 0.4+ | 0.3+ | 2003 05 11 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.3+ |
| 2003 02 07 | 704 | 0.1+ | 0.0 | 2003 05 31 | 608 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.1− |
| 2003 02 07 | 704 | 0.4+ | 0.4+ | 2003 05 31 | 608 | 0.8− | 0.4− | 2006 12 02 | 704 | 0.2− | 0.1+ |
| 2003 02 07 | 704 | 0.5+ | 0.5+ | 2003 05 31 | 608 | 0.4+ | 0.1− | 2006 12 02 | 704 | 0.2+ | 0.0 |
| 2003 03 26 | 704 | 0.3+ | 0.0 | 2003 06 04 | 704 | 0.6+ | 1.3− | 2006 12 02 | 704 | 0.0 | 0.4− |
| 2003 03 26 | 704 | 0.2+ | 0.3+ | 2003 06 04 | 704 | 0.3+ | 0.7− | 2006 12 02 | 704 | 0.1− | 0.4− |
| 2003 03 26 | 704 | 0.1+ | 0.5+ | 2003 06 04 | 704 | 0.0 | 0.8− | | | | |
| 2003 03 26 | 704 | 0.3+ | 0.1+ | 2003 06 04 | 704 | 0.2+ | 0.5− | | | | |

**2003 AX$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.05587 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22382548 | $\omega$ | 336.35735 | | +0.50764010 | −0.82741802 | |
| $a$ | 2.6865589 | $\Omega$ | 82.34484 | | +0.82408613 | +0.38498070 | |
| $e$ | 0.1332640 | $i$ | 14.02400 | | +0.25136345 | +0.40886341 | |
| $P$ | 4.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.3− | 0.8+ | 2003 01 31 | 704 | 0.2+ | 0.4− | 2006 11 14 | 958 | 0.6− | 0.3− |
| 2001 08 17 | 644 | 0.1+ | 0.4+ | 2003 01 31 | 704 | 1.3+ | 0.6− | 2006 11 15 | 958 | 0.7+ | 0.8− |
| 2001 08 17 | 644 | 0.3− | 0.4+ | 2003 01 31 | 704 | 0.3+ | 0.3− | 2006 11 15 | 958 | 0.6− | 0.6− |
| 2002 12 06 | 645 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.1− | 2006 11 18 | 958 | 0.5− | 0.6− |
| 2002 12 06 | 645 | 0.1+ | 0.0 | 2006 09 18 | 703 | 1.0− | 0.5+ | 2006 11 18 | 958 | 0.6− | 0.4− |
| 2003 01 10 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.6+ | 0.6− | 2006 11 18 | 958 | 0.2− | 0.4+ |
| 2003 01 10 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 1.5− | 0.7+ | 2006 11 19 | 703 | 0.3− | 0.3− |
| 2003 01 10 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.4− | 2006 11 19 | 703 | 0.3+ | 0.1− |
| 2003 01 10 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 19 | 703 | 0.2− | 0.2− |
| 2003 01 10 | 704 | 0.7− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.4− | 2006 11 19 | 703 | 1.2− | 0.4− |
| 2003 01 12 | 704 | 0.7− | 0.3+ | 2006 10 30 | 703 | 0.5− | 0.5− | 2006 11 20 | 704 | 1.0− | 0.4+ |
| 2003 01 12 | 704 | 0.8− | 0.6+ | 2006 10 30 | 703 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.8+ |
| 2003 01 12 | 704 | 0.6− | 0.6+ | 2006 10 30 | 703 | 0.5+ | 0.8+ | 2006 11 20 | 704 | 1.2+ | 0.2+ |
| 2003 01 13 | 704 | 0.2− | 0.5+ | 2006 10 30 | 703 | 0.3+ | 0.4− | 2006 11 25 | G96 | 0.7− | 2.8+ |
| 2003 01 13 | 704 | 1.1− | 0.1− | 2006 11 13 | 703 | 0.0 | 0.2− | 2006 11 25 | G96 | (3.9+ | 1.6+) |
| 2003 01 13 | 704 | 0.4− | 0.4+ | 2006 11 13 | 703 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2003 01 31 | 704 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 1.2− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2003 01 31 | 704 | 0.9− | 0.7− | 2006 11 13 | 703 | 0.3+ | 1.0− | | | | |

**2003 AZ$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.95475 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19053879 | $\omega$ | 152.96922 | | −0.94596739 | −0.32406067 | |
| $a$ | 2.9909818 | $\Omega$ | 8.14696 | | +0.28103581 | −0.83692142 | |
| $e$ | 0.1749246 | $i$ | 4.62143 | | +0.16175464 | −0.44107508 | |
| $P$ | 5.17 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 11 | 691 | 0.3− | 0.4− | 2003 01 10 | 704 | 0.0 | 0.5+ | 2006 09 14 | 691 | 0.1+ | 0.6− |
| 1991 11 11 | 691 | 0.5+ | 0.1+ | 2003 01 10 | 704 | 0.5− | 1.0+ | 2006 09 14 | 691 | 0.1− | 0.5+ |
| 1991 11 11 | 691 | 0.0 | 0.2− | 2003 01 10 | 704 | 0.7− | 1.1+ | 2006 09 14 | 691 | 0.4+ | 0.1+ |
| 2002 12 06 | 645 | 0.1+ | 0.1− | 2003 01 12 | 704 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.4+ |
| 2002 12 06 | 645 | 0.1+ | 0.1− | 2003 01 12 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.6+ | 0.1− | 2003 01 12 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | | |
| 2003 01 05 | 704 | 0.3− | 0.5+ | 2003 02 01 | 704 | (3.4− | 1.2−) | 2006 09 30 | 691 | 0.3− | 0.1+ | | |
| 2003 01 05 | 704 | 0.7− | 0.3+ | 2003 02 01 | 704 | (2.1− | 0.8−) | 2006 09 30 | 691 | 0.1− | 0.4+ | | |
| 2003 01 05 | 704 | 0.2+ | 0.5+ | 2003 02 01 | 704 | 1.2− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2003 01 10 | 704 | 0.5− | 0.3+ | 2003 02 01 | 704 | (2.6− | 0.7−) | | | | | | |

**2003 AC$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.40826 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22941478 | $\omega$ | 76.92861 | | −0.15977116 | | −0.98659791 |
| $a$ | 2.6427442 | $\Omega$ | 22.34679 | | +0.86857704 | | −0.15644934 |
| $e$ | 0.2474624 | $i$ | 4.99916 | | +0.46909178 | | −0.04634827 |
| $P$ | 4.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 645 | 0.2− | 0.3− | 2003 01 12 | 246 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.3− | 0.2− | | |
| 2002 12 13 | 645 | 0.2− | 0.3− | 2003 01 12 | 704 | 1.2+ | 0.8− | 2006 09 30 | G96 | 0.4+ | 0.2− | | |
| 2003 01 10 | 704 | 0.6+ | 0.0 | 2003 01 12 | 704 | 0.4+ | 0.4− | 2006 10 13 | 691 | 0.1− | 0.1+ | | |
| 2003 01 10 | 704 | 0.5− | 0.2+ | 2003 01 12 | 704 | (1.2+ | 1.6−) | 2006 10 13 | 691 | 0.0 | 0.0 | | |
| 2003 01 10 | 704 | 0.0 | 0.8+ | 2003 01 12 | 704 | 0.0 | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.2+ | | |
| 2003 01 10 | 704 | 0.2+ | 0.4+ | 2003 01 12 | 704 | 0.1+ | 0.5− | 2006 10 17 | 691 | 0.4− | 0.1− | | |
| 2003 01 10 | 704 | 0.4+ | 0.9+ | 2003 01 12 | 704 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.5− | 0.0 | | |
| 2003 01 10 | 704 | 0.2+ | 0.6+ | 2003 01 12 | 704 | (1.9+ | 0.8−) | 2006 10 17 | 691 | 0.1− | 0.1− | | |
| 2003 01 10 | 704 | 0.9+ | 1.2− | 2003 01 12 | 704 | 1.0+ | 0.8− | 2006 11 11 | 703 | (1.8− | 0.3+) | | |
| 2003 01 10 | 704 | 0.2+ | 0.3+ | 2003 01 12 | 704 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2− | | |
| 2003 01 10 | 704 | 0.3+ | 0.2+ | 2003 01 13 | 704 | 0.6− | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.0 | | |
| 2003 01 10 | 704 | (0.1− | 1.6−) | 2003 01 13 | 704 | 0.7− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.0 | | |
| 2003 01 11 | 704 | 0.3− | 0.1+ | 2003 01 13 | 704 | 0.6− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2003 01 11 | 704 | 0.1− | 0.3− | 2003 01 31 | 704 | 0.8− | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.6− | | |
| 2003 01 11 | 704 | 0.8+ | 0.6+ | 2003 01 31 | 704 | 0.4+ | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.6− | | |
| 2003 01 11 | 704 | 0.3+ | 0.2− | 2003 01 31 | 704 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.6− | | |
| 2003 01 11 | 704 | 1.2+ | 0.3+ | 2003 01 31 | 704 | 0.8− | 0.9+ | 2006 11 19 | 704 | 0.2+ | 0.3+ | | |
| 2003 01 11 | 704 | 0.0 | 0.2+ | 2003 01 31 | 704 | 0.8− | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.0 | | |
| 2003 01 11 | 704 | 0.8+ | 0.5+ | 2003 02 03 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.5+ | | |
| 2003 01 11 | 704 | 0.2+ | 0.0 | 2003 02 03 | 644 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 0.9− | 0.8+ | | |
| 2003 01 11 | 704 | 0.4+ | 0.6+ | 2003 02 03 | 644 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 1.4+ | | |
| 2003 01 11 | 704 | 1.0+ | 0.9+ | 2003 03 06 | 704 | 0.6− | 1.2+ | 2006 11 22 | 704 | 1.3− | 0.7+ | | |
| 2003 01 12 | 246 | 1.0+ | 0.5− | 2003 03 06 | 704 | 1.0− | 0.9+ | 2006 11 22 | 704 | 1.2+ | 1.2+ | | |
| 2003 01 12 | 246 | 0.3− | 0.2+ | 2003 03 06 | 704 | 0.0 | 0.9+ | 2006 11 22 | 704 | 0.7+ | 0.8− | | |
| 2003 01 12 | 246 | 0.2− | 0.5− | 2003 03 06 | 704 | 0.3+ | 1.3+ | 2006 11 22 | 704 | 0.5+ | 0.8+ | | |
| 2003 01 12 | 246 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.4+ | 1.3+ | | |
| 2003 01 12 | 246 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | | | | | | |

**2003 AF$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.99715 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19385720 | $\omega$ | 178.17542 | | +0.29984743 | | −0.94229267 |
| $a$ | 2.9567510 | $\Omega$ | 254.35399 | | +0.87329585 | | +0.33395148 |
| $e$ | 0.0994652 | $i$ | 8.89629 | | +0.38398681 | | −0.02368417 |
| $P$ | 5.08 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.4+ | 0.6+ | 2001 09 25 | 704 | 0.9− | 0.1+ | 2006 09 16 | 703 | (0.6− | 1.6−) | | |
| 2001 09 10 | 704 | 0.4+ | 0.4− | 2001 09 29 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.3+ | 0.7− | | |
| 2001 09 10 | 704 | 0.8− | 0.2− | 2001 09 29 | 644 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.8+ | 1.2− | | |
| 2001 09 10 | 704 | 0.7+ | 0.8+ | 2001 09 29 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.5− | 0.3− | | |
| 2001 09 10 | 704 | 0.1+ | 0.3+ | 2003 01 11 | 704 | 0.3− | 0.1− | 2006 09 16 | 644 | 0.1− | 0.3+ | | |
| 2001 09 25 | 704 | (0.1− | 1.8+) | 2003 01 11 | 704 | 0.6+ | 0.7+ | 2006 09 16 | 644 | 0.2+ | 0.5+ | | |
| 2001 09 25 | 704 | 0.0 | 0.3+ | 2003 01 11 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 644 | 0.6− | 0.5+ | | |
| 2001 09 25 | 704 | 0.4− | 0.1+ | 2003 01 12 | 704 | 0.2− | 1.0− | 2006 09 20 | G92 | 0.8− | 0.3+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.4+ | 2003 01 12 | 704 | 0.5− | 0.3− | 2006 09 20 | G92 | 0.2− | 0.0 | | |
| 2001 09 25 | 704 | 0.7− | 0.2+ | 2003 01 12 | 704 | 0.1− | 0.7− | 2006 09 20 | G92 | 0.9+ | 0.9− | | |
| 2001 09 25 | 704 | (0.5− | 1.7+) | 2003 01 24 | 644 | 0.3+ | 0.3+ | 2006 10 17 | 118 | 0.3+ | 0.5− | | |
| 2001 09 25 | 704 | 0.3+ | 0.7− | 2003 01 24 | 644 | 0.2− | 0.2+ | 2006 10 17 | 118 | 0.6+ | 0.1− | | |
| 2001 09 25 | 704 | 0.7− | 0.5+ | 2003 01 24 | 644 | 0.2− | 0.2+ | | | | | | |

**2003 AK$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.05329 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25659052 | $\omega$ | 195.62748 | | +0.98130549 | | −0.19237698 |
| $a$ | 2.4526881 | $\Omega$ | 175.45317 | | +0.18321248 | | +0.92497753 |
| $e$ | 0.6936291 | $i$ | 4.00416 | | +0.05892989 | | +0.32773110 |
| $P$ | 3.84 | $H$ | 19.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 644 | 0.1− | 0.1+ | 2003 01 11 | 246 | 1.4+ | 1.3− | 2003 01 18 | 715 | 0.1− | 0.1− | | |
| 2003 01 11 | 644 | 0.2− | 0.2+ | 2003 01 12 | 644 | 0.2+ | 0.1+ | 2003 01 18 | 715 | 0.3+ | 0.7+ | | |
| 2003 01 11 | 644 | 0.6− | 0.1− | 2003 01 12 | 644 | 0.2+ | 0.2− | 2003 01 23 | 448 | 0.6+ | 0.4+ | | |
| 2003 01 11 | 557 | 1.4+ | 1.0− | 2003 01 12 | 858 | 0.8+ | 0.2+ | 2003 01 23 | 448 | 0.0 | 0.1+ | | |
| 2003 01 11 | 557 | 0.1− | 0.5− | 2003 01 12 | 858 | 0.7+ | 0.4+ | 2003 01 23 | 448 | 0.2− | 0.4+ | | |
| 2003 01 11 | 557 | 0.4− | 1.7+ | 2003 01 12 | 858 | 0.5− | 0.6− | 2003 01 23 | J95 | 0.2− | 0.2− | | |
| 2003 01 11 | 557 | 1.0− | 0.7+ | 2003 01 13 | 448 | 0.2+ | 0.2+ | 2003 01 23 | J95 | 0.3+ | 0.2+ | | |
| 2003 01 11 | 946 | 0.6− | 0.0 | 2003 01 13 | 649 | 0.3+ | 0.3− | 2003 01 23 | J95 | 0.0 | 0.1+ | | |
| 2003 01 11 | 557 | 0.2− | 0.5+ | 2003 01 13 | 448 | 0.0 | 0.3+ | 2003 01 29 | 413 | 0.4+ | 0.4− | | |
| 2003 01 11 | 946 | 0.0 | 0.1+ | 2003 01 13 | 649 | 0.6− | 0.3+ | 2003 02 07 | 715 | 1.0+ | 0.5− | | |
| 2003 01 11 | 946 | 0.1+ | 0.6− | 2003 01 13 | 649 | 0.2+ | 0.2− | 2003 02 07 | 715 | 0.4− | 0.1+ | | |
| 2003 01 11 | 946 | 0.2+ | 0.2+ | 2003 01 13 | 448 | 0.3+ | 0.1+ | 2003 02 07 | 715 | 0.2− | 0.1+ | | |
| 2003 01 11 | 966 | 0.2+ | 0.6+ | 2003 01 17 | 246 | 0.6− | 0.4− | 2006 10 30 | G96 | 0.3− | 0.2+ | | |
| 2003 01 11 | 246 | (2.4+ | 1.2+) | 2003 01 17 | 246 | 1.3− | 0.1+ | 2006 10 30 | G96 | 0.3+ | 0.1+ | | |
| 2003 01 11 | 246 | (2.2+ | 0.1−) | 2003 01 17 | 246 | 1.2− | 0.1− | 2006 10 30 | G96 | 0.1+ | 0.0 | | |
| 2003 01 11 | 246 | 0.3+ | 0.4− | 2003 01 17 | 246 | 0.8− | 1.4− | 2006 10 30 | G96 | 0.1+ | 0.3− | | |
| 2003 01 11 | 246 | (2.4+ | 1.6−) | 2003 01 18 | 715 | 0.3+ | 0.1+ | | | | | | |

**2003 AL$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.11878 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24280413 | $\omega$ | 336.39192 | | −0.96759173 | | +0.23115048 |
| $a$ | 2.5446731 | $\Omega$ | 217.43536 | | −0.19674096 | | −0.94245112 |
| $e$ | 0.6935252 | $i$ | 9.62787 | | −0.15830110 | | −0.24156849 |
| $P$ | 4.06 | $H$ | 19.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 12 | 704 | 0.1+ | 0.1+ | 2003 01 13 | 413 | 0.1+ | 0.0 | 2003 01 29 | 809 | 0.3+ | 0.1− | | |
| 2003 01 12 | 704 | 0.0 | 0.1+ | 2003 01 13 | 428 | 0.8+ | 0.9− | 2003 01 29 | 809 | 0.4+ | 0.5+ | | |
| 2003 01 12 | 704 | 0.5− | 0.2+ | 2003 01 13 | 428 | 0.9+ | 0.5− | 2003 01 29 | 809 | 0.3+ | 0.0 | | |
| 2003 01 12 | 704 | 0.2− | 0.2+ | 2003 01 13 | 428 | 0.8− | 0.4− | 2003 01 30 | 413 | 0.2+ | 0.4− | | |
| 2003 01 13 | 649 | 0.3− | 0.2+ | 2003 01 13 | 413 | 0.2+ | 0.2+ | 2003 01 30 | 413 | 0.3+ | 0.3− | | |
| 2003 01 13 | 649 | 0.5− | 0.3+ | 2003 01 13 | 413 | 0.4− | 0.2− | 2003 01 30 | 413 | 0.3+ | 0.1− | | |
| 2003 01 13 | 649 | 0.6− | 0.6− | 2003 01 17 | 448 | 0.5− | 0.1+ | 2003 03 31 | 809 | 0.3− | 0.5+ | | |
| 2003 01 13 | 704 | (2.3− | 1.2−) | 2003 01 17 | 448 | 0.2− | 0.1+ | 2003 03 31 | 809 | 0.4− | 0.4+ | | |
| 2003 01 13 | 704 | 0.4− | 0.6− | 2003 01 17 | 448 | 0.0 | 0.5+ | 2003 05 26 | 696 | 0.6+ | 0.0 | | |
| 2003 01 13 | 704 | 0.8− | 0.8− | 2003 01 17 | 413 | 0.5+ | 0.2+ | 2003 05 26 | 696 | 0.1+ | 0.4+ | | |
| 2003 01 13 | 704 | 0.4− | 0.1− | 2003 01 17 | 413 | 0.3− | 0.2+ | 2006 12 01 | 291 | 0.1− | 0.9+ | | |
| 2003 01 13 | 413 | 0.1+ | 0.5+ | 2003 01 17 | 413 | 0.2+ | 0.1+ | 2006 12 01 | 291 | 1.0+ | 0.6− | | |
| 2003 01 13 | 413 | 0.1+ | 0.2+ | 2003 01 29 | 809 | 0.3+ | 0.6+ | 2006 12 01 | 291 | 0.8− | 0.1+ | | |

**2003 AY$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.41415 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23143650 | $\omega$ | 42.21108 | | −0.19493162 | | −0.96483436 |
| $a$ | 2.6273311 | $\Omega$ | 59.74453 | | +0.83648002 | | −0.25741807 |
| $e$ | 0.1023903 | $i$ | 11.77970 | | +0.51215509 | | +0.05320332 |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 09 28 | G96 | 1.1− | 0.8+ | 2006 11 16 | 704 | 0.2− | 0.6+ | | |
| 2002 12 05 | 704 | 1.1+ | 0.1− | 2006 09 28 | G96 | 0.8+ | 0.5− | 2006 11 16 | 704 | 0.2− | 1.2− | | |
| 2002 12 05 | 704 | 1.1+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 16 | 704 | 1.2+ | 1.5+ | | |
| 2002 12 05 | 704 | 1.0+ | 0.7− | 2006 10 19 | G96 | 0.2− | 0.6− | 2006 11 16 | 704 | 1.0− | 0.1+ | | |
| 2002 12 15 | 704 | 0.2+ | 0.4− | 2006 10 19 | G96 | 0.3− | 0.1− | 2006 11 16 | 704 | 1.2+ | 1.5+ | | |
| 2002 12 15 | 704 | 0.9+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.8+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 15 | 704 | 1.2− | 0.8− | 2006 10 28 | G96 | 0.4− | 0.3− | 2006 11 18 | J75 | 0.8+ | 0.6− |
| 2003 01 10 | 704 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 18 | J75 | 0.6+ | 0.4+ |
| 2003 01 10 | 704 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.2− |
| 2003 01 10 | 704 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2003 01 10 | 704 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.8− | 0.1− |
| 2003 01 10 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2003 01 13 | 704 | 0.6− | 0.5− | 2006 11 11 | 691 | 0.5− | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2003 01 13 | 704 | 0.8− | 0.3− | 2006 11 14 | J75 | 0.5+ | 1.2− | 2006 11 19 | 691 | 1.3− | 0.4+ |
| 2003 01 13 | 704 | 0.1− | 0.2− | 2006 11 14 | J75 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2003 01 13 | 704 | 0.4− | 0.3− | 2006 11 14 | J75 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2003 01 13 | 704 | 0.6− | 0.1− | 2006 11 15 | 703 | 0.5− | 0.5+ | 2006 11 21 | 704 | 1.0+ | 0.0 |
| 2004 05 19 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.6− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2004 05 19 | 691 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.6− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 05 19 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.9+ | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2006 09 28 | G96 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.0 | | | | |

### 2003 $AE_{75}$ = 2006 $WK_{177}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.09978 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22089911 | $\omega$ | 60.71717 | | −0.83069706 | | −0.49436133 |
| $a$ | 2.7102337 | $\Omega$ | 88.57443 | | +0.37901060 | | −0.83903081 |
| $e$ | 0.1241197 | $i$ | 14.83908 | | +0.40779083 | | −0.22723153 |
| $P$ | 4.46 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.6− | 1.0+ | 2003 01 13 | 704 | 0.4+ | 0.9− | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2003 01 31 | 704 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2002 12 11 | 704 | 0.0 | 0.7+ | 2003 01 31 | 704 | 0.2− | 1.1+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2002 12 27 | 699 | 0.3+ | 0.1+ | 2003 01 31 | 704 | 0.5− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2002 12 27 | 699 | (0.7+ | 1.7−) | 2003 01 31 | 704 | 0.7− | 0.6− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2002 12 27 | 699 | 0.2− | 0.9− | 2003 02 06 | 699 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2002 12 27 | 699 | 0.4+ | 0.7− | 2003 02 06 | 699 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.2+ |
| 2003 01 10 | 704 | 0.6− | 0.3− | 2003 02 06 | 699 | 0.9+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.3+ |
| 2003 01 10 | 704 | 0.3− | 0.3− | 2003 02 06 | 699 | 1.0− | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.1+ |
| 2003 01 10 | 704 | 0.3+ | 0.3+ | 2006 10 30 | 703 | 0.9+ | 0.8+ | 2006 11 25 | G96 | 0.1+ | 0.2+ |
| 2003 01 10 | 704 | 0.1+ | 0.2+ | 2006 10 30 | 703 | 1.1− | 0.6− | 2006 11 25 | G96 | 0.4+ | 0.3+ |
| 2003 01 10 | 704 | 0.5+ | 0.1+ | 2006 10 30 | 703 | 0.5− | 0.8− | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2003 01 13 | 704 | 0.0 | 0.7− | 2006 10 30 | 703 | (1.9+ | 1.3−) | 2006 11 25 | G96 | 0.1− | 0.2+ |
| 2003 01 13 | 704 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.2+ | 1.3− | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2003 01 13 | 704 | 1.1+ | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.2+ | | | | |

### 2003 $AC_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.10364 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23363198 | $\omega$ | 83.26299 | | −0.87192486 | | −0.44061175 |
| $a$ | 2.6108456 | $\Omega$ | 70.41032 | | +0.30939442 | | −0.83383806 |
| $e$ | 0.2468249 | $i$ | 13.10180 | | +0.37950248 | | −0.33252876 |
| $P$ | 4.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.3− | 0.5+ | 2003 02 19 | 644 | 0.4− | 0.2− | 2003 03 13 | 704 | 1.0+ | 1.1+ |
| 2002 12 14 | 704 | 0.2− | 1.4− | 2003 02 25 | 704 | 1.4+ | 0.8− | 2003 03 13 | 704 | 0.1− | 0.7− |
| 2002 12 14 | 704 | 0.0 | 0.6− | 2003 02 25 | 704 | 1.1+ | 0.2+ | 2003 03 13 | 704 | 0.1+ | 0.6+ |
| 2003 01 10 | 704 | 0.3− | 0.5+ | 2003 02 25 | 704 | 1.1+ | 1.4− | 2003 03 21 | 644 | 0.2− | 0.4+ |
| 2003 01 10 | 704 | 0.2− | 0.1− | 2003 02 25 | 704 | 0.8+ | 0.1− | 2003 03 21 | 644 | 0.0 | 0.2+ |
| 2003 01 10 | 704 | 0.3− | 0.1+ | 2003 03 03 | 644 | 0.5− | 1.0− | 2003 03 21 | 644 | 0.5− | 0.1+ |
| 2003 01 10 | 704 | 0.0 | 0.1+ | 2003 03 03 | 644 | 0.2+ | 0.2+ | 2003 03 24 | 704 | 0.2− | 1.5+ |
| 2003 01 10 | 704 | 0.3− | 1.6− | 2003 03 03 | 644 | 0.3− | 1.0− | 2003 03 24 | 704 | 0.3− | 0.6+ |
| 2003 01 13 | 704 | 0.4+ | 0.2− | 2003 03 03 | 644 | 0.4+ | 0.1+ | 2003 03 24 | 704 | 1.2− | 0.7+ |
| 2003 01 13 | 704 | 0.8+ | 0.2+ | 2003 03 03 | 644 | 0.3− | 0.9− | 2003 03 24 | 704 | 0.5− | 0.1− |
| 2003 01 13 | 704 | 0.5+ | 0.7+ | 2003 03 03 | 644 | 0.0 | 0.3+ | 2003 04 23 | 704 | 0.3+ | 0.9− |
| 2003 01 13 | 704 | 1.8+ | 0.6− | 2003 03 09 | 644 | 0.3− | 0.1+ | 2003 04 23 | 704 | 0.8− | 0.0 |
| 2003 01 25 | 704 | 0.4− | 0.5+ | 2003 03 09 | 644 | 0.1− | 0.3+ | 2003 04 23 | 704 | 0.4− | 0.2− |
| 2003 01 25 | 704 | 1.0− | 0.3− | 2003 03 09 | 644 | 0.3− | 0.2+ | 2003 04 23 | 704 | 0.2+ | 0.3− |
| 2003 01 25 | 704 | 0.9− | 1.1+ | 2003 03 09 | 644 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2003 01 25 | 704 | 1.2− | 0.7+ | 2003 03 09 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.8+ | 0.6− |
| 2003 02 11 | 704 | 0.0 | 0.7+ | 2003 03 09 | 644 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2003 02 11 | 704 | 0.8− | 0.2+ | 2003 03 13 | 704 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.8− | 0.4− |
| 2003 02 11 | 704 | 0.3+ | 0.7+ | 2003 03 13 | 704 | 0.3+ | 0.5− | 2006 11 27 | 704 | 0.3− | 0.7+ |
| 2003 02 11 | 704 | 0.6+ | 0.1+ | 2003 03 13 | 704 | 1.6+ | 1.5− | 2006 11 27 | 704 | 0.3+ | 0.6+ |
| 2003 02 19 | 644 | 0.2− | 0.1+ | 2003 03 13 | 704 | 0.1− | 0.2− | 2006 11 27 | 704 | 0.2+ | 0.1+ |
| 2003 02 19 | 644 | 0.1− | 0.0 | 2003 03 13 | 704 | 0.6− | 0.3− | | | | |

### 2003 $AG_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.76579 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22074759 | $\omega$ | 105.56368 | | +0.22380449 | | −0.95344052 |
| $a$ | 2.7114738 | $\Omega$ | 329.14095 | | +0.67256244 | | +0.30119117 |
| $e$ | 0.2733642 | $i$ | 23.20991 | | +0.70538735 | | +0.01533116 |
| $P$ | 4.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | 0.1− | 0.0 | 2003 02 26 | 704 | 0.4− | 1.1− | 2006 09 24 | 699 | 0.2+ | 0.3+ |
| 2001 08 10 | 644 | 0.3+ | 0.1+ | 2003 02 26 | 704 | 0.2− | 1.1− | 2006 09 24 | 699 | 0.6+ | 0.1− |
| 2001 08 10 | 644 | 0.3+ | 0.0 | 2003 02 26 | 704 | 0.4+ | 0.1− | 2006 09 24 | 699 | 0.2+ | 0.2+ |
| 2001 08 10 | 644 | 0.3− | 0.1+ | 2003 02 26 | 704 | 1.1− | 0.3− | 2006 09 24 | 699 | 1.0+ | 0.1− |
| 2001 08 10 | 644 | 0.4+ | 0.0 | 2003 02 26 | 704 | 0.0 | 0.8+ | 2006 09 25 | 703 | 0.2− | 0.1− |
| 2001 08 10 | 644 | 0.3− | 0.3− | 2003 03 05 | 704 | (0.6+ | 1.9+) | 2006 09 25 | 703 | 0.1− | 0.5− |
| 2002 12 28 | 704 | 0.1+ | 0.7+ | 2003 03 05 | 704 | 0.6+ | 0.8+ | 2006 09 25 | 703 | 0.2+ | 0.4− |
| 2002 12 28 | 704 | 0.3+ | 0.2+ | 2003 03 05 | 704 | 0.0 | 1.3+ | 2006 09 25 | 703 | 0.4+ | 0.4− |
| 2002 12 28 | 704 | 0.2+ | 0.4+ | 2003 03 05 | 704 | 0.5− | 1.1+ | 2006 09 25 | 703 | 0.2+ | 0.3− |
| 2002 12 28 | 704 | 0.7+ | 0.2− | 2003 03 05 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 2002 12 28 | 704 | 0.4− | 1.3+ | 2003 03 07 | 644 | 0.3+ | 0.4+ | 2006 09 25 | 703 | 0.2− | 0.2− |
| 2003 01 05 | 699 | 0.2− | 0.3− | 2003 03 07 | 644 | 0.6+ | 0.4+ | 2006 09 25 | 703 | 0.4+ | 0.0 |
| 2003 01 05 | 699 | 0.7+ | 0.8− | 2003 03 07 | 644 | 0.3+ | 0.5+ | 2006 10 02 | 704 | 0.7+ | 1.1− |
| 2003 01 05 | 699 | 0.3+ | 0.1− | 2003 03 10 | 699 | 0.2+ | 0.8+ | 2006 10 02 | 704 | 0.5+ | 0.7+ |
| 2003 01 05 | 699 | 0.5+ | 0.0 | 2003 03 10 | 699 | 0.3− | 0.2− | 2006 10 02 | 704 | 0.3− | 0.2− |
| 2003 01 11 | 704 | 0.2− | 0.1− | 2003 03 10 | 699 | 0.0 | 0.1+ | 2006 10 02 | 704 | 0.4+ | 0.0 |
| 2003 01 11 | 704 | 0.4+ | 0.6− | 2003 03 10 | 699 | 0.3− | 0.5− | 2006 10 02 | 704 | 0.3− | 0.3+ |
| 2003 01 11 | 704 | 0.2+ | 1.0− | 2003 03 26 | 704 | 1.2+ | 0.3− | 2006 10 02 | 704 | 0.1− | 0.9− |
| 2003 01 13 | 704 | 0.5+ | 0.1+ | 2003 03 26 | 704 | 0.1− | 0.3− | 2006 10 02 | 704 | 0.4− | 1.2+ |
| 2003 01 13 | 704 | 0.2− | 0.4− | 2003 03 26 | 704 | 0.4− | 0.3− | 2006 10 02 | 703 | 1.0− | 1.0− |
| 2003 01 13 | 704 | 0.4+ | 0.5− | 2003 03 26 | 704 | 0.5− | 0.9− | 2006 10 02 | 703 | 0.5− | 0.6− |
| 2003 01 13 | 704 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.4− |
| 2003 01 13 | 704 | 0.1− | 0.6− | 2006 09 17 | 703 | 0.6− | 0.5+ | 2006 10 02 | 703 | 0.3+ | 0.1− |
| 2003 01 25 | 704 | 0.3− | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.5+ | 2006 10 23 | 703 | 0.4− | 0.0 |
| 2003 01 25 | 704 | 0.5− | 0.0 | 2006 09 19 | 704 | 0.5+ | 0.3− | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2003 01 25 | 704 | 1.0− | 0.4+ | 2006 09 19 | 704 | 0.0 | 0.5+ | 2006 10 23 | 703 | 0.6− | 0.0 |
| 2003 01 25 | 704 | 0.7− | 0.7+ | 2006 09 19 | 704 | 0.2− | 0.8+ | 2006 10 23 | 703 | 0.4+ | 0.4+ |
| 2003 01 25 | 704 | 0.8− | 0.7+ | 2006 09 19 | 704 | 0.3− | 0.7+ | 2006 11 01 | 703 | 0.8+ | 0.1− |
| 2003 02 06 | 699 | 0.0 | 0.6− | 2006 09 19 | 704 | 0.1+ | 0.3+ | 2006 11 01 | 703 | 0.3− | 0.3+ |
| 2003 02 06 | 699 | 0.2+ | 0.1+ | 2006 09 24 | 699 | 0.3− | 0.4+ | 2006 11 01 | 703 | 0.3− | 0.4− |
| 2003 02 06 | 699 | 0.1+ | 0.4− | 2006 09 24 | 699 | 0.7+ | 0.8+ | 2006 11 01 | 703 | 0.8− | 1.7− |
| 2003 02 06 | 699 | 0.2+ | 0.2− | 2006 09 24 | 699 | 0.2+ | 0.7+ | | | | |

### 2003 $AE_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.09805 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21872349 | $\omega$ | 44.51523 | | −0.63666813 | | −0.75864466 |
| $a$ | 2.7281763 | $\Omega$ | 85.53215 | | +0.66318829 | | −0.63015117 |
| $e$ | 0.2505145 | $i$ | 7.97074 | | +0.39349077 | | −0.16543210 |
| $P$ | 4.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 12 | 291 | 0.1+ | 0.0 | 2003 03 12 | 704 | 1.0− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2003 01 12 | 291 | 0.1− | 0.4+ | 2003 03 12 | 704 | 0.6− | 0.7+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2003 01 12 | 291 | 0.1− | 0.2− | 2003 03 12 | 704 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5− | 0.1+ |
| 2003 01 13 | 291 | 0.2− | 0.1+ | 2003 03 12 | 704 | 1.0− | 0.7+ | 2006 11 17 | 704 | 0.1− | 1.3− |
| 2003 01 13 | 291 | 0.1+ | 0.1+ | 2003 03 12 | 704 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.2− | 0.2− |
| 2003 01 13 | 291 | 0.0 | 0.0 | 2003 03 12 | 704 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2003 02 26 | 608 | 1.3+ | 1.0+ | 2003 03 12 | 704 | 0.5+ | 0.6− | 2006 11 17 | 704 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 26 | 608 | 1.1+ | 0.7+ | 2003 03 12 | 704 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.7− | | |
| 2003 02 26 | 608 | 0.8+ | 0.7+ | 2003 03 20 | 644 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.0 | | |
| 2003 02 28 | 704 | 1.2− | 0.5− | 2003 03 20 | 644 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2003 02 28 | 704 | 0.4− | 0.1+ | 2003 03 20 | 644 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2+ | | |
| 2003 02 28 | 704 | 0.4− | 0.9− | 2003 03 24 | 644 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.9+ | 0.8− | | |
| 2003 02 28 | 704 | 0.7+ | 0.7− | 2003 03 24 | 644 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.6− | | |
| 2003 02 28 | 704 | 0.4+ | 1.3− | 2003 04 04 | 704 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.7+ | | |
| 2003 03 03 | 704 | 0.1+ | 0.9− | 2003 04 04 | 704 | 0.7+ | 1.1− | 2006 11 18 | 704 | 0.8+ | 0.0 | | |
| 2003 03 03 | 704 | 0.0 | 0.2+ | 2003 04 04 | 704 | 0.6+ | 1.3− | 2006 11 20 | 704 | 1.1+ | 0.1− | | |
| 2003 03 03 | 704 | 0.5+ | 0.3− | 2003 04 04 | 704 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.4+ | 0.1+ | | |
| 2003 03 03 | 704 | 0.2− | 0.5+ | 2003 04 09 | 644 | 0.3− | 0.7+ | 2006 11 20 | 704 | 0.4+ | 0.5− | | |
| 2003 03 03 | 704 | 0.1+ | 0.2+ | 2003 04 09 | 644 | 0.4− | 0.7+ | 2006 11 20 | 704 | 0.8+ | 0.4+ | | |
| 2003 03 08 | 699 | 0.0 | 0.1− | 2003 04 09 | 644 | 0.5− | 0.6+ | 2006 11 22 | 691 | 0.5− | 0.2+ | | |
| 2003 03 08 | 699 | 0.3− | 0.4− | 2006 11 02 | G96 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.5− | 0.2+ | | |
| 2003 03 08 | 699 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.4+ | 0.4+ | 2006 11 22 | 691 | 0.4− | 0.2+ | | |
| 2003 03 08 | 699 | 0.4− | 0.2+ | 2006 11 14 | 704 | 1.5− | 0.7− | 2006 11 29 | 704 | 0.5+ | 0.4− | | |
| 2003 03 08 | 644 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.9− | | |
| 2003 03 08 | 644 | 0.3+ | 0.2− | 2006 11 14 | 704 | (0.8− | 1.6+) | 2006 11 29 | 704 | 0.8+ | 0.3− | | |
| 2003 03 08 | 644 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.4− | 0.8+ | 2006 11 29 | 704 | 0.9+ | 0.4− | | |
| 2003 03 12 | 704 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.1+ | 2006 11 29 | 704 | 1.0+ | 0.2− | | |

### 2003 AF$_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.44938 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22692203 | $\omega$ | 11.03095 | | −0.65715749 | | −0.72410549 |
| $a$ | 2.6620627 | $\Omega$ | 120.42872 | | +0.67176435 | | −0.68859479 |
| $e$ | 0.1144309 | $i$ | 14.04941 | | +0.34187233 | | −0.03883883 |
| $P$ | 4.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 644 | 0.2− | 0.0 | 2003 03 08 | 704 | 1.0+ | 0.1+ | 2003 04 06 | 699 | 0.7− | 1.3− | | |
| 2001 10 22 | 644 | 0.2− | 0.9+ | 2003 03 08 | 704 | 0.4+ | 0.0 | 2003 04 09 | 644 | 0.1+ | 0.7+ | | |
| 2001 10 22 | 644 | 0.3− | 0.6+ | 2003 03 08 | 704 | 0.3− | 0.5− | 2003 04 09 | 644 | 0.0 | 0.5+ | | |
| 2002 12 11 | 645 | 0.1+ | 0.2− | 2003 03 08 | 704 | 0.4+ | 0.1− | 2003 04 09 | 644 | 0.0 | 0.6+ | | |
| 2002 12 11 | 645 | 0.2+ | 0.2− | 2003 03 08 | 704 | 0.9+ | 0.1+ | 2003 04 10 | 704 | 0.6+ | 1.5+ | | |
| 2003 01 12 | 291 | 0.3− | 0.2+ | 2003 03 08 | 644 | 0.4+ | 0.3− | 2003 04 10 | 704 | 1.0+ | 1.0+ | | |
| 2003 01 12 | 291 | 0.4− | 0.4+ | 2003 03 08 | 644 | 0.4+ | 0.7− | 2003 04 10 | 704 | 0.0 | 1.1+ | | |
| 2003 01 12 | 291 | 0.4− | 0.6+ | 2003 03 08 | 644 | 0.1+ | 0.5− | 2005 08 27 | 699 | 1.4+ | 0.6+ | | |
| 2003 01 13 | 291 | 0.4− | 0.2+ | 2003 03 26 | 704 | 0.7− | 0.2+ | 2005 08 27 | 699 | 1.5− | 0.4+ | | |
| 2003 01 13 | 291 | 0.5− | 0.0 | 2003 03 26 | 704 | 0.2+ | 0.0 | 2005 08 27 | 699 | 0.1− | 0.2+ | | |
| 2003 01 13 | 291 | 0.3− | 0.2+ | 2003 03 26 | 704 | 0.5− | 0.2+ | 2005 08 27 | 699 | 0.1+ | 0.0 | | |
| 2003 02 06 | 704 | 0.4+ | 0.2+ | 2003 03 26 | 704 | 0.3+ | 0.3+ | 2005 08 27 | 644 | 0.0 | 0.1+ | | |
| 2003 02 06 | 704 | 0.8+ | 0.5+ | 2003 04 06 | 699 | 0.5− | 0.8− | 2005 08 27 | 644 | 0.0 | 0.1+ | | |
| 2003 02 06 | 704 | 0.3+ | 0.1+ | 2003 04 06 | 699 | 0.0 | 0.3− | 2005 08 27 | 644 | 0.4− | 0.2+ | | |
| 2003 02 06 | 704 | 0.2− | 0.1+ | 2003 04 06 | 699 | 0.8− | 0.5+ | | | | | | |

### 2003 AO$_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.01034 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22367680 | $\omega$ | 77.93600 | | +0.25410853 | | −0.96712321 |
| $a$ | 2.6877493 | $\Omega$ | 357.28051 | | +0.78404384 | | +0.21208339 |
| $e$ | 0.2510169 | $i$ | 12.26262 | | +0.56630744 | | +0.14033294 |
| $P$ | 4.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 28 | 704 | 0.0 | 0.3− | 2003 01 31 | 699 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.3− | | |
| 2002 12 28 | 704 | 0.1− | 0.1− | 2003 01 31 | 699 | 1.0− | 0.4− | 2006 10 17 | 703 | 0.2+ | 1.3+ | | |
| 2002 12 28 | 704 | 0.6− | 0.3+ | 2006 10 10 | 644 | 0.7+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2002 12 28 | 704 | 0.2− | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2003 01 10 | 704 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.4− | 0.1+ | | |
| 2003 01 10 | 704 | 1.0+ | 0.8− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 10 | 106 | 1.1− | 0.6+ | | |
| 2003 01 10 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 10 | 106 | 0.7+ | 0.1− | | |
| 2003 01 10 | 704 | 1.2+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 10 | 106 | 0.1+ | 0.1− | | |
| 2003 01 14 | 704 | 0.7− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 10 | 106 | 0.1+ | 0.8− | | |
| 2003 01 14 | 704 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.4+ | 1.1+ | | |
| 2003 01 14 | 704 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.0 | 1.0− | | |
| 2003 01 31 | 699 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.1− | | |
| 2003 01 31 | 699 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.4− | 2006 11 14 | 703 | 0.1− | 0.1+ | | |

### 2003 AX$_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.85634 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21971920 | $\omega$ | 45.75853 | | −0.27413004 | | −0.93534881 |
| $a$ | 2.7199278 | $\Omega$ | 61.39077 | | +0.79375020 | | −0.35130399 |
| $e$ | 0.2162579 | $i$ | 14.75237 | | +0.54296716 | | +0.04132921 |
| $P$ | 4.49 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 15 | 704 | (1.2+ | 2.2−) | 2006 10 16 | 703 | 1.0+ | 0.9+ | 2006 11 13 | 703 | 0.3+ | 0.2+ | | |
| 2002 12 15 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.8− | 1.2+ | 2006 11 13 | 703 | 0.2+ | 0.0 | | |
| 2002 12 15 | 704 | 0.2− | 0.7− | 2006 10 22 | 703 | 0.8− | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.6+ | | |
| 2002 12 15 | 704 | 0.3− | 0.6− | 2006 10 22 | 703 | 0.4− | 0.9− | 2006 11 13 | 703 | (2.7− | 1.7−) | | |
| 2002 12 31 | 704 | 0.0 | 1.0− | 2006 10 22 | 703 | 0.0 | 0.4− | 2006 11 13 | 703 | (1.6+ | 0.3−) | | |
| 2002 12 31 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.2− | 0.2− | 2006 11 14 | 704 | 1.2+ | 1.1− | | |
| 2002 12 31 | 704 | 0.5+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.5− | 2006 11 14 | 704 | 0.3− | 1.4− | | |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.1+ | 1.1− | | |
| 2003 01 05 | 699 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.1− | 1.2+ | | |
| 2003 01 05 | 699 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | (0.7− | 1.7+) | | |
| 2003 01 05 | 699 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.3− | 0.4+ | | |
| 2003 01 05 | 699 | 0.6− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | 1.1− | 1.4+ | | |
| 2003 01 13 | 704 | 0.1+ | 0.9+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.8+ | 0.7+ | | |
| 2003 01 13 | 704 | 0.8− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.5− | 2006 11 20 | 704 | 1.5+ | 0.7+ | | |
| 2003 01 13 | 704 | 0.5+ | 1.2+ | 2006 11 08 | 644 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.9+ | 0.2+ | | |
| 2003 01 13 | 704 | 0.3− | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 1.0+ | 0.6+ | | |
| 2003 01 14 | 704 | 0.4+ | 0.6− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.2+ | | |
| 2003 01 14 | 704 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2003 01 14 | 704 | 0.2− | 0.9− | 2006 11 13 | 703 | 1.1− | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2006 10 16 | 703 | 0.1+ | 0.8− | 2006 11 13 | 703 | 0.5+ | 1.0+ | 2006 11 23 | G96 | 0.2+ | 0.4− | | |
| 2006 10 16 | 703 | 1.1− | 0.3+ | 2006 11 13 | 703 | 0.8− | 0.4− | 2006 11 23 | G96 | 0.1− | 0.3− | | |

### 2003 AK$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.17769 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21907127 | $\omega$ | 248.98706 | | −0.15055777 | | −0.98541889 |
| $a$ | 2.7252882 | $\Omega$ | 210.01423 | | +0.95565056 | | −0.12454464 |
| $e$ | 0.2242997 | $i$ | 9.11692 | | +0.25310940 | | −0.11592344 |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 08 | 644 | 0.2+ | 0.1− | 2006 09 20 | 699 | 0.7− | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2002 12 08 | 644 | 0.6− | 0.0 | 2006 09 26 | 291 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1− | | |
| 2002 12 08 | 644 | 0.1− | 0.3+ | 2006 09 26 | 291 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2002 12 14 | 704 | 0.6− | 0.7+ | 2006 09 26 | 291 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2002 12 14 | 704 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2002 12 14 | 704 | 0.3− | 0.4− | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 07 | 644 | 0.0 | 0.0 | | |
| 2003 01 02 | 704 | 0.4− | 0.1+ | 2006 10 19 | 683 | 0.3+ | 0.1− | 2006 11 07 | 644 | 0.2− | 0.5+ | | |
| 2003 01 02 | 704 | 0.4− | 0.4+ | 2006 10 19 | 683 | 0.2+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.0 | | |
| 2003 01 02 | 704 | 0.1− | 0.3+ | 2006 10 19 | 683 | 0.9− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.2− | | |
| 2003 01 02 | 704 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.1− | | |
| 2003 01 11 | 683 | 1.3+ | 1.1+ | 2006 10 21 | 703 | 0.3− | 0.6+ | 2006 11 11 | 703 | 1.2+ | 0.4− | | |
| 2003 01 11 | 683 | (2.8− | 0.9+) | 2006 10 21 | 703 | 0.4− | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.2− | | |
| 2003 01 11 | 683 | 1.0+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2003 01 12 | 683 | 0.0 | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− | | |
| 2003 01 12 | 683 | 1.0− | 1.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4− | | |
| 2003 01 12 | 683 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2003 01 13 | 683 | 1.2+ | 1.0− | 2006 10 22 | 683 | (1.7+ | 1.0−) | 2006 11 17 | 703 | 0.3+ | 0.8+ | | |
| 2003 01 13 | 683 | 0.1− | 1.2− | 2006 10 22 | 683 | (3.8+ | 1.4−) | 2006 11 17 | 703 | 1.0− | 0.2+ | | |
| 2003 01 13 | 683 | (1.6+ | 1.0−) | 2006 10 22 | 683 | (2.4+ | 1.6−) | 2006 11 17 | 703 | 0.5+ | 1.3+ | | |
| 2003 01 28 | 704 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.7− | 1.3+ | | |
| 2003 01 28 | 704 | 0.1− | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 18 | 704 | 1.2+ | 0.4+ | | |
| 2003 01 28 | 704 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.9+ | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 704 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 1.3+ | 0.3− | | |
| 2006 09 20 | 699 | (0.5− | 1.9+) | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.7+ | 0.9+ | | |
| 2006 09 20 | 699 | (1.8− | 0.7+) | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 1.4+ | 0.6− | | |
| 2006 09 20 | 699 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | | | | | |

**2003 AA$_{85}$ = 2006 QC$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 322.21720 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.21169563 | $\omega$ | 169.36248 | | +0.67386524 | −0.72729013 |
| $a$ | 2.7882270 | $\Omega$ | 238.12751 | | +0.66612944 | +0.67427219 |
| $e$ | 0.1145917 | $i$ | 8.81985 | | +0.31965168 | +0.12808624 |
| $P$ | 4.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 566 | 1.8+ | 0.1+ | 2004 04 12 | 644 | 0.1− | 1.0+ | 2006 09 27 | 703 | 0.8− | 0.3− | | |
| 1997 10 29 | 566 | (2.3+ | 0.0 ) | 2006 08 29 | 699 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.3+ | 0.5+ | | |
| 1997 10 29 | 566 | (2.4+ | 0.0 ) | 2006 08 29 | 699 | 0.3− | 0.4+ | 2006 09 27 | 703 | 0.8− | 0.1+ | | |
| 1997 11 06 | 704 | (2.6− | 2.5−) | 2006 08 29 | 699 | 0.6+ | 0.4− | 2006 09 29 | 699 | 0.1+ | 0.1− | | |
| 1997 11 06 | 704 | (2.1− | 1.7−) | 2006 08 29 | 699 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.3+ | 0.3+ | | |
| 1997 11 06 | 704 | 1.7− | 1.2− | 2006 08 31 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.6+ | 0.3+ | | |
| 1997 11 06 | 704 | 0.9− | 0.6− | 2006 08 31 | 704 | 0.7− | 1.5− | 2006 09 29 | 699 | 0.3+ | 0.1+ | | |
| 1997 11 06 | 704 | 1.6− | 0.0 | 2006 08 31 | 704 | 0.6− | 0.0 | 2006 10 03 | 703 | 1.3− | 0.3− | | |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.1− | 0.7+ | 2006 10 03 | 703 | 0.9− | 0.4+ | | |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 08 31 | 704 | 0.3− | 1.2− | 2006 10 03 | 703 | 0.1− | 0.5+ | | |
| 2001 08 18 | 644 | 0.8+ | 1.2+ | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 03 | 703 | 0.1+ | 0.2+ | | |
| 2001 08 18 | 644 | 1.3+ | 0.8+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2001 08 18 | 644 | 0.9+ | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1− | | |
| 2002 11 14 | 704 | 1.2+ | 0.9+ | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2002 11 14 | 704 | 0.5+ | 0.5− | 2006 09 14 | 644 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.6− | 0.5− | | |
| 2002 11 14 | 704 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.0 | 0.5+ | | |
| 2002 11 14 | 704 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.8− | 0.5− | 2006 10 17 | 703 | 0.1− | 0.8− | | |
| 2003 01 07 | 704 | 0.1+ | 0.8+ | 2006 09 16 | 703 | 0.6− | 0.7− | 2006 10 17 | 703 | 0.3+ | 1.4− | | |
| 2003 01 07 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.3+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.5+ | 0.3+ | 2006 09 17 | 683 | 1.2+ | 0.7− | 2006 10 21 | 691 | 0.2+ | 0.1+ | | |
| 2003 01 07 | 704 | 0.8+ | 0.2+ | 2006 09 17 | 683 | 1.5+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.3− | | |
| 2003 01 11 | 644 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.4− | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.2− | | |
| 2003 01 11 | 644 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.9+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.3− | | |
| 2003 01 11 | 644 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.4− | 0.7− | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2004 04 12 | 644 | 0.3− | 1.3+ | 2006 09 19 | 699 | 0.5+ | 1.0+ | 2006 10 27 | 691 | 0.1− | 0.4+ | | |
| 2004 04 12 | 644 | 0.2− | 0.7+ | 2006 09 27 | 703 | 0.9− | 0.7− | 2006 10 27 | 691 | 0.1+ | 0.0 | | |

**2003 AC$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 319.33991 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22072048 | $\omega$ | 78.92555 | | +0.11748737 | −0.99300588 |
| $a$ | 2.7116958 | $\Omega$ | 4.37808 | | +0.84104005 | +0.09324872 |
| $e$ | 0.2757856 | $i$ | 8.78836 | | +0.52806094 | +0.07241540 |
| $P$ | 4.47 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 1.0+ | 0.5− | 2003 01 13 | 704 | (2.1+ | 0.9+) | 2006 09 19 | 691 | 0.2− | 0.1+ | | |
| 2003 01 07 | 704 | 0.7+ | 0.3+ | 2003 01 13 | 704 | (1.7+ | 1.1+) | 2006 09 19 | 691 | 0.1+ | 0.1+ | | |
| 2003 01 07 | 704 | (1.8+ | 0.1−) | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 | | |
| 2003 01 07 | 704 | 0.7+ | 0.3− | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2− | | |
| 2003 01 10 | 704 | 0.3− | 1.4− | 2003 01 25 | 645 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1− | | |
| 2003 01 10 | 704 | 0.0 | 0.3+ | 2003 01 25 | 645 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.2− | | |
| 2003 01 10 | 704 | 0.2− | 1.0+ | 2003 01 31 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.0 | | |
| 2003 01 10 | 704 | 0.4+ | 1.5+ | 2003 01 31 | 699 | 0.7− | 1.1+ | 2006 10 17 | 703 | 0.9+ | 0.9+ | | |
| 2003 01 10 | 644 | 0.4+ | 0.6+ | 2003 01 31 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.4+ | | |
| 2003 01 10 | 644 | 0.3+ | 0.6+ | 2003 01 31 | 699 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.1+ | 0.3+ | | |
| 2003 01 10 | 644 | 0.1+ | 0.5+ | 2003 03 07 | 644 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2003 01 13 | 704 | 0.5+ | 0.2+ | 2003 03 07 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2003 01 13 | 704 | (1.6+ | 1.4+) | 2003 03 07 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.7− | 0.3− | | |

**2003 AQ$_{85}$ = 2006 SJ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 324.17646 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22736401 | $\omega$ | 209.65539 | | +0.49051798 | −0.86843655 |
| $a$ | 2.6586116 | $\Omega$ | 211.13455 | | +0.82448223 | +0.48931697 |
| $e$ | 0.2869468 | $i$ | 8.02478 | | +0.28217222 | +0.07991785 |
| $P$ | 4.33 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.0 | 0.7− | 2006 09 17 | 703 | 0.3+ | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | |
| 2002 12 14 | 704 | 0.7+ | 0.6− | 2006 09 17 | 703 | 0.9− | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.2− | | |
| 2002 12 14 | 704 | (2.0− | 1.2+) | 2006 09 17 | 703 | 0.6+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2002 12 14 | 704 | 0.2− | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.3+ | | |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 09 20 | 699 | 1.0+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.3− | | |
| 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.1− | | |
| 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.9+ | 2006 10 23 | G96 | 0.1− | 0.3− | | |
| 2003 01 05 | 704 | 0.9+ | 0.2− | 2006 09 20 | 699 | (1.6+ | 1.2+) | 2006 10 23 | G96 | 0.4− | 0.5− | | |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2003 01 05 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.4− | | |
| 2003 01 11 | 644 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.4+ | 0.5+ | 2006 10 23 | G96 | 0.4+ | 0.5− | | |
| 2003 01 11 | 644 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 23 | 691 | 1.4− | 1.2− | | |
| 2003 01 11 | 644 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2003 01 12 | 644 | 0.7− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | | |
| 2003 01 12 | 644 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.6− | 1.5− | 2006 10 27 | 691 | 0.3+ | 0.5+ | | |
| 2003 01 12 | 644 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.5− | | |
| 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.3− | | |
| 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.1− | 0.3+ | 2006 11 15 | G96 | 0.6− | 0.6− | | |
| 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1− | | |

**2003 AP$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 2.53827 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.24337288 | $\omega$ | 234.40555 | | +0.88445641 | −0.45498119 |
| $a$ | 2.5407070 | $\Omega$ | 152.22249 | | +0.46659264 | +0.85980970 |
| $e$ | 0.3166981 | $i$ | 12.84167 | | +0.00530752 | +0.23177447 |
| $P$ | 4.05 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.8− | 0.3− | 2003 02 04 | 644 | 0.2+ | 0.6− | 2006 10 20 | 703 | 0.2− | 0.2+ | | |
| 2002 11 30 | 704 | 0.4+ | 0.3− | 2003 02 04 | 644 | 0.1+ | 0.5− | 2006 10 20 | 703 | 0.3− | 0.2− | | |
| 2002 11 30 | 704 | 0.3− | 0.2+ | 2003 02 04 | 644 | 0.3+ | 0.7− | 2006 10 20 | 703 | 0.1+ | 0.1− | | |
| 2002 11 30 | 704 | 0.3+ | 1.1− | 2006 09 19 | 703 | 0.6+ | 0.5− | 2006 10 28 | 703 | 0.1− | 0.5+ | | |
| 2002 11 30 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.9− | 2006 10 28 | 703 | 0.4+ | 0.2+ | | |
| 2002 12 01 | 704 | 0.1+ | 0.6− | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.9+ | 0.5+ | | |
| 2002 12 01 | 704 | 1.0+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.7+ | 0.4+ | | |
| 2002 12 01 | 704 | 0.1+ | 0.4− | 2006 09 20 | 699 | 0.6− | 1.0+ | 2006 10 28 | G96 | 0.1+ | 0.3+ | | |
| 2002 12 01 | 704 | (1.9− | 5.6+) | 2006 09 20 | 699 | 0.7− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.3+ | | |
| 2003 01 02 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.8+ | | |
| 2003 01 02 | 704 | 0.4− | 0.2− | 2006 09 20 | 699 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1+ | | |
| 2003 01 02 | 704 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.5− | 0.4− | 2006 11 10 | 704 | 0.2+ | 0.1− | | |
| 2003 01 02 | 704 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 10 | 704 | 1.1− | 0.8− | | |
| 2003 01 02 | 704 | 0.5− | 0.4− | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 11 10 | 704 | 0.2− | 0.1− | | |
| 2003 01 08 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.7− | 2006 11 10 | 704 | 0.5− | 0.0 | | |
| 2003 01 08 | 699 | 0.8− | 0.8+ | 2006 10 01 | 704 | 1.2+ | 0.3+ | 2006 11 23 | 703 | 0.5+ | 0.1+ | | |
| 2003 01 08 | 699 | 0.3+ | 1.1+ | 2006 10 01 | 704 | 0.0 | 1.0+ | 2006 11 23 | 703 | 0.6− | 0.2+ | | |
| 2003 01 08 | 699 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.8+ | 1.2− | 2006 11 23 | 703 | 0.4− | 0.4+ | | |
| 2003 01 26 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.6+ | 0.8− | 2006 11 23 | 703 | 0.6+ | 0.0 | | |
| 2003 01 26 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 704 | (1.2+ | 2.3+) | | | | | | |
| 2003 01 26 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 703 | 0.9− | 0.2+ | | | | | | |

**2003 AW$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.34341 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17487852 | $\omega$ | 264.34015 | | −0.91751385 | | −0.00366826 |
| $a$ | 3.1669782 | $\Omega$ | 274.98168 | | +0.17546705 | | −0.90110425 |
| $e$ | 0.2296300 | $i$ | 23.52785 | | −0.35690285 | | −0.43358698 |
| $P$ | 5.64 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 18 | 644 | 0.0 | 0.1+ | 2003 01 03 | 704 | (0.1+ | 2.0−) | 2003 03 11 | 704 | 0.1+ | 0.5− |
| 2002 11 18 | 644 | 0.1+ | 0.2+ | 2003 01 08 | 699 | 0.6− | 0.5− | 2003 03 11 | 704 | 0.2+ | 0.3− |
| 2002 11 18 | 644 | 0.3+ | 0.3+ | 2003 01 08 | 699 | 1.0+ | 0.2− | 2003 03 11 | 704 | 0.0 | 0.4− |
| 2002 12 06 | 608 | 0.3+ | 0.8− | 2003 01 08 | 699 | 0.2− | 0.5− | 2003 03 11 | 704 | 0.2− | 0.6− |
| 2002 12 06 | 608 | 0.3+ | 0.1+ | 2003 01 08 | 699 | 0.2− | 0.7+ | 2005 08 29 | 644 | 0.4− | 0.2+ |
| 2002 12 06 | 608 | 0.1+ | 0.8− | 2003 01 14 | 644 | 0.0 | 0.1+ | 2005 08 29 | 644 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | 0.2− | 0.6+ | 2003 01 14 | 644 | 0.2+ | 0.3+ | 2005 08 29 | 644 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | 0.4− | 1.1+ | 2003 01 14 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.2− | 0.6+ |
| 2002 12 14 | 704 | 0.6+ | 1.0+ | 2003 02 07 | 644 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | (0.1− | 1.8+) | 2003 02 07 | 644 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2003 01 03 | 704 | 1.2+ | 0.3− | 2003 02 07 | 644 | 0.1+ | 0.2− | 2006 10 23 | 703 | 0.5− | 0.1+ |
| 2003 01 03 | 704 | 0.1+ | 0.8− | 2003 02 20 | 608 | 0.5− | 0.4+ | 2006 10 23 | 703 | 0.8− | 0.5− |
| 2003 01 03 | 704 | 0.0 | 0.5− | 2003 02 20 | 608 | 0.3− | 0.8+ | 2006 10 23 | 703 | 2.1+ | 0.8− |
| 2003 01 03 | 704 | 0.3− | 0.1− | 2003 02 20 | 608 | 0.0 | 1.5+ | 2006 10 23 | 703 | 0.5− | 1.1− |

**2003 AP$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.58849 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28428147 | $\omega$ | 322.06674 | | +0.76525202 | | −0.63226159 |
| $a$ | 2.2907112 | $\Omega$ | 77.59053 | | +0.61675430 | | +0.66628759 |
| $e$ | 0.1951109 | $i$ | 7.11537 | | +0.18440034 | | +0.39535569 |
| $P$ | 3.47 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.4− | 0.2− | 2005 08 06 | E12 | 0.4+ | 0.4− | 2005 09 25 | 703 | 0.5− | 0.4+ |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2005 08 06 | E12 | 0.0 | 0.6+ | 2005 09 25 | 703 | 0.6− | 0.9+ |
| 2002 12 11 | 704 | 0.8− | 0.1− | 2005 08 06 | E12 | 0.0 | 0.3− | 2005 09 25 | 703 | 1.2− | 0.2+ |
| 2002 12 11 | 704 | 0.4+ | 0.1+ | 2005 08 28 | 699 | 0.2+ | 0.4+ | 2005 09 26 | 704 | 0.0 | 0.4+ |
| 2003 01 05 | 704 | 0.6− | 0.0 | 2005 08 28 | 699 | 0.5+ | 0.2+ | 2005 09 26 | 704 | 0.3+ | 0.4− |
| 2003 01 05 | 704 | 0.4− | 0.2+ | 2005 08 28 | 699 | 0.9− | 0.2+ | 2005 09 26 | 704 | 0.8+ | 0.2+ |
| 2003 01 05 | 704 | 0.3− | 0.4+ | 2005 08 28 | 699 | 0.5− | 0.1− | 2005 09 26 | 704 | 0.8+ | 0.2+ |
| 2003 01 05 | 704 | 0.1− | 0.9+ | 2005 09 13 | 703 | 0.5− | 0.5− | 2005 10 10 | 703 | 0.6+ | 0.4− |
| 2003 01 10 | 704 | 0.7+ | 0.1− | 2005 09 13 | 703 | 0.7+ | 0.7− | 2005 10 10 | 703 | 0.1+ | 0.1− |
| 2003 01 10 | 704 | 0.6+ | 0.4+ | 2005 09 13 | 703 | 0.2− | 0.5− | 2005 10 10 | 703 | 0.1+ | 0.4+ |
| 2003 01 10 | 704 | 1.2+ | 1.2− | 2005 09 13 | 703 | 1.0− | 1.6− | 2005 10 10 | 703 | 0.6+ | 0.9− |
| 2005 08 06 | E12 | 0.2− | 0.3+ | 2005 09 25 | 703 | 0.6+ | 1.4+ | | | | |

**2003 AZ$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.46563 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24218544 | $\omega$ | 80.94555 | | +0.71539289 | | −0.68364367 |
| $a$ | 2.5490051 | $\Omega$ | 321.97188 | | +0.51281671 | | +0.65406684 |
| $e$ | 0.1560709 | $i$ | 13.55377 | | +0.47458617 | | +0.32377138 |
| $P$ | 4.07 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 1.4− | 1.1+ | 2002 10 29 | 704 | (0.9+ | 3.2+) | 2003 01 07 | 704 | 0.2− | 0.8− |
| 1998 12 17 | 704 | 0.3− | 1.8− | 2002 11 08 | 704 | 0.5− | 0.2+ | 2003 01 07 | 704 | 0.1− | 1.2− |
| 1998 12 17 | 704 | 0.5+ | 1.5− | 2002 11 08 | 704 | 0.5+ | 0.1+ | 2003 01 07 | 704 | (0.3− | 1.9−) |
| 1998 12 17 | 704 | 0.8+ | 0.5− | 2002 11 08 | 704 | 0.3+ | 0.6+ | 2003 01 13 | 704 | 0.4− | 0.4− |
| 1998 12 17 | 704 | 0.2− | 0.5− | 2002 11 08 | 704 | 0.1+ | 0.2+ | 2003 01 13 | 704 | 1.0− | 0.5− |
| 2001 07 17 | 644 | 0.2+ | 0.0 | 2002 12 07 | 704 | 0.1− | 0.0 | 2003 01 13 | 704 | 0.9− | 0.4− |
| 2001 07 17 | 644 | 0.2+ | 0.1+ | 2002 12 07 | 704 | 0.1− | 0.1− | 2003 01 13 | 704 | 0.9− | 0.1− |
| 2001 07 17 | 644 | 0.2− | 0.2+ | 2002 12 07 | 704 | 0.1− | 0.4+ | 2003 01 13 | 704 | 0.5− | 0.4− |
| 2002 10 14 | 704 | 0.1− | 1.0− | 2002 12 07 | 704 | 0.4+ | 0.3+ | 2004 03 26 | 704 | 0.8− | 0.8+ |
| 2002 10 14 | 704 | 0.8+ | 0.4− | 2002 12 07 | 704 | 0.0 | 0.3+ | 2004 03 26 | 704 | 1.1+ | 0.7+ |
| 2002 10 14 | 704 | 0.1+ | 0.7− | 2002 12 28 | 704 | 0.2− | 0.4− | 2004 03 26 | 704 | 1.3+ | 0.6+ |
| 2002 10 29 | 704 | 1.0+ | 2.2+ | 2002 12 28 | 704 | 0.0 | 0.1− | 2004 03 26 | 704 | 0.3+ | 0.9+ |
| 2002 10 29 | 704 | 0.6+ | 1.5+ | 2002 12 28 | 704 | 0.3+ | 0.1+ | | | | |
| 2002 10 29 | 704 | 1.5+ | 2.4+ | 2002 12 28 | 704 | 0.2+ | 0.1+ | | | | |

**2003 AF$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.58509 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23896369 | $\omega$ | 355.61390 | | +0.42952894 | | −0.87796435 |
| $a$ | 2.5718646 | $\Omega$ | 68.83059 | | +0.83527819 | | +0.29728395 |
| $e$ | 0.1695433 | $i$ | 13.10180 | | +0.34324223 | | +0.37523440 |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 691 | 0.1+ | 0.1+ | 2003 01 13 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2000 05 02 | 691 | 0.2− | 0.0 | 2003 01 13 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 1.5+ | 1.2+ |
| 2000 05 02 | 691 | 0.1+ | 0.2− | 2003 01 13 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2002 11 07 | 645 | 0.1+ | 0.2− | 2003 01 13 | 704 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2003 01 31 | 699 | 0.5− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2003 01 31 | 699 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.1− | 1.3+ | 2003 01 31 | 699 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2003 01 31 | 699 | 0.3− | 0.9− | 2006 11 22 | 704 | 0.3− | 0.6− |
| 2003 01 07 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.4− |
| 2003 01 07 | 704 | 0.7− | 0.4− | 2006 11 16 | 704 | 0.6− | 0.8− | 2006 11 27 | 704 | 0.1+ | 0.0 |
| 2003 01 07 | 704 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.8+ | 2006 11 27 | 704 | 0.8− | 0.3+ |
| 2003 01 07 | 704 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.8+ | 0.4+ | 2006 11 27 | 704 | 0.6− | 0.1+ |
| 2003 01 13 | 704 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.1− | 1.2+ | 2006 11 27 | 704 | 0.1+ | 0.1+ |

**2003 AY$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.85889 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18267288 | $\omega$ | 184.41825 | | +0.38997335 | | −0.89637838 |
| $a$ | 3.0762384 | $\Omega$ | 242.75036 | | +0.85194045 | | +0.43808816 |
| $e$ | 0.2176244 | $i$ | 13.71475 | | +0.34945422 | | −0.06770943 |
| $P$ | 5.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.8+ | 0.3+ | 2001 09 21 | 699 | 0.8+ | 0.3+ | 2002 12 08 | 644 | 0.4+ | 0.3+ |
| 2001 08 22 | 704 | 0.5− | 0.2+ | 2001 09 21 | 699 | 0.6+ | 0.5+ | 2002 12 08 | 644 | 0.6+ | 0.1+ |
| 2001 08 22 | 704 | 0.1− | 0.1+ | 2001 09 21 | 699 | 0.9+ | 1.8+ | 2002 12 08 | 644 | 0.2+ | 0.3+ |
| 2001 09 10 | 704 | 0.8+ | 0.2− | 2001 09 29 | 644 | 0.6− | 0.1− | 2003 01 15 | 644 | 0.4− | 0.1+ |
| 2001 09 10 | 704 | 1.4− | 2.0− | 2001 09 29 | 644 | 0.4− | 0.1+ | 2003 01 15 | 644 | 0.3− | 0.1+ |
| 2001 09 10 | 704 | 0.6− | 0.2− | 2001 09 29 | 644 | 0.3− | 0.2− | 2003 01 25 | 644 | 0.1+ | 0.2− |
| 2001 09 10 | 704 | 0.2+ | 0.7− | 2002 11 13 | 645 | 0.0 | 0.0 | 2003 01 25 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 699 | 0.3− | 0.0 | 2002 11 13 | 645 | 0.0 | 0.0 | 2003 01 25 | 644 | 0.1− | 0.1− |

**2003 AZ$_{93}$ = 1999 CM$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.84095 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22855602 | $\omega$ | 305.71332 | | −0.76842085 | | −0.63783650 |
| $a$ | 2.6493598 | $\Omega$ | 194.88569 | | +0.63277346 | | −0.74519828 |
| $e$ | 0.1475848 | $i$ | 11.65659 | | +0.09553606 | | −0.19453566 |
| $P$ | 4.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.9− | 0.7+ | 2003 01 10 | 704 | (0.7+ | 1.7+) | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 1999 02 12 | 704 | 0.1+ | 1.8− | 2003 01 10 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 703 | 0.7+ | 1.1− |
| 1999 02 12 | 704 | 0.0 | 0.7− | 2003 01 10 | 704 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.5+ |
| 1999 02 16 | 704 | 0.1− | 0.0 | 2003 01 10 | 704 | 0.8− | 0.9+ | 2006 10 16 | 703 | 0.8− | 0.3+ |
| 1999 02 16 | 704 | 0.4− | 0.9− | 2003 01 28 | 704 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.2+ | 0.3− |
| 1999 02 16 | 704 | 0.2− | 0.0 | 2003 01 28 | 704 | 0.9− | 0.1− | 2006 10 22 | 703 | 0.9− | 1.4+ |
| 1999 02 16 | 704 | 1.4+ | 0.1+ | 2003 01 28 | 704 | 0.5− | 0.3− | 2006 10 22 | 703 | 0.6+ | 0.8− |
| 1999 02 16 | 704 | 1.0− | 0.6− | 2003 01 28 | 704 | (0.4− | 2.3−) | 2006 10 22 | 703 | 0.5− | 0.7+ |
| 2001 09 16 | 704 | (1.7− | 1.8+) | 2004 04 14 | 644 | 0.7+ | 0.7+ | 2006 10 30 | 703 | 0.3+ | 0.2− |
| 2001 09 16 | 704 | (2.3− | 1.5+) | 2004 04 14 | 644 | 0.2+ | 0.4+ | 2006 10 30 | 703 | 0.1− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | (2.6− | 1.5+) | 2004 04 14 | 644 | 0.5+ | 0.2+ | 2006 10 30 | 703 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | (2.4− | 1.4+) | 2004 05 09 | 608 | 0.2− | 0.5− | 2006 10 30 | 703 | 0.3− | 0.4+ |
| 2001 09 16 | 704 | (1.7− | 1.5+) | 2004 05 09 | 608 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.0 | 0.4+ |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2004 05 09 | 608 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.8− | 1.3+ |
| 2001 10 14 | 645 | 0.0 | 0.2− | 2004 06 14 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 1.2+ | 0.1+ |
| 2003 01 02 | 704 | 1.0+ | 0.5− | 2004 06 14 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.0 |
| 2003 01 02 | 704 | 0.5+ | 0.2+ | 2004 06 14 | 691 | 0.2− | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.6+ |
| 2003 01 02 | 704 | 0.2+ | 0.7+ | 2005 07 31 | 644 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.8− | 0.5− |
| 2003 01 02 | 704 | 0.3+ | 0.2+ | 2005 07 31 | 644 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.6− | 0.3− |
| 2003 01 10 | 704 | 0.6+ | 1.3+ | 2005 07 31 | 644 | 0.3− | 0.4+ | 2006 11 19 | 703 | 1.2+ | 0.2− |

**2003 AA$_{94}$ = 1999 CA$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.19823 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24706384 | $\omega$ | 356.01543 | | +0.32486048 | −0.91529196 | |
| $a$ | 2.5153394 | $\Omega$ | 74.90184 | | +0.87439457 | +0.19471758 | |
| $e$ | 0.1578151 | $i$ | 14.27906 | | +0.36041615 | +0.35259849 | |
| $P$ | 3.99 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 11 | 704 | 0.1+ | 0.5− | 2003 01 10 | 704 | 0.6− | 0.7+ | 2003 03 09 | 644 | 0.2− | 0.2− |
| 1999 02 11 | 704 | 0.8− | 1.2− | 2003 01 10 | 704 | 1.2− | 0.4+ | 2003 03 09 | 644 | 0.2− | 0.2+ |
| 1999 02 11 | 704 | 0.4− | 1.0+ | 2003 01 10 | 704 | 1.2− | 0.1− | 2003 03 24 | 704 | 0.2+ | 0.1+ |
| 1999 02 11 | 704 | (0.0 | 2.2−) | 2003 01 25 | 704 | 0.2− | 0.6− | 2003 03 24 | 704 | 0.4+ | 1.5− |
| 1999 02 11 | 704 | (5.6− | 0.3−) | 2003 01 25 | 704 | 0.4+ | 0.7− | 2003 03 24 | 704 | 0.3+ | 1.0− |
| 1999 02 18 | 704 | 1.2+ | 0.0 | 2003 01 25 | 704 | 0.4− | 0.3+ | 2003 03 24 | 704 | 0.4− | 0.2− |
| 1999 02 18 | 704 | 1.1+ | 0.2+ | 2003 01 25 | 704 | 0.5+ | 0.3− | 2005 07 27 | 644 | 0.2− | 0.8+ |
| 1999 02 18 | 704 | 1.9+ | 1.5− | 2003 02 01 | 644 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.0 | 0.9+ |
| 1999 02 18 | 704 | (3.5+ | 3.1−) | 2003 02 01 | 644 | 0.1+ | 0.0 | 2005 07 27 | 644 | 0.1− | 0.9+ |
| 1999 02 18 | 704 | (2.7+ | 2.1−) | 2003 02 01 | 644 | 0.2+ | 0.1− | 2005 08 10 | E12 | 0.6+ | 2.2+ |
| 2001 08 18 | 644 | 0.1− | 0.6− | 2003 02 11 | 704 | 0.3− | 0.2+ | 2005 08 10 | E12 | 0.6− | 1.0+ |
| 2001 08 18 | 644 | 0.1− | 0.4− | 2003 02 11 | 704 | 0.5+ | 0.2+ | 2005 08 10 | E12 | 0.9+ | 0.1+ |
| 2001 08 18 | 644 | 0.1− | 0.8− | 2003 02 11 | 704 | 0.1+ | 0.3+ | 2005 08 10 | E12 | 0.7+ | 0.5− |
| 2001 08 26 | 644 | 0.4− | 1.8− | 2003 02 11 | 704 | 0.3+ | 0.9+ | 2005 08 27 | E12 | 0.1+ | 0.2− |
| 2001 08 26 | 644 | 0.3− | 1.5− | 2003 03 03 | 644 | 0.3− | 0.5+ | 2005 08 27 | E12 | 0.1+ | 1.4+ |
| 2001 08 26 | 644 | 0.5− | 1.6− | 2003 03 03 | 644 | 0.2− | 0.9+ | 2005 08 27 | E12 | 0.4− | 0.9+ |
| 2003 01 10 | 704 | 0.8− | 0.5+ | 2003 03 03 | 644 | 0.0 | 0.7+ | 2005 08 27 | E12 | 0.1+ | 0.0 |
| 2003 01 10 | 704 | 0.3− | 0.5+ | 2003 03 09 | 644 | 0.1+ | 0.4+ | | | | |

**2003 AB$_{94}$ = 1999 FQ$_{66}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.67375 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23050444 | $\omega$ | 101.76710 | | +0.09164858 | −0.99354896 | |
| $a$ | 2.6344089 | $\Omega$ | 342.54998 | | +0.80471372 | +0.11340348 | |
| $e$ | 0.2667979 | $i$ | 12.86940 | | +0.58654613 | −0.00034095 | |
| $P$ | 4.28 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 01 10 | 644 | 0.1+ | 0.1+ | 2003 01 31 | 699 | 0.3− | 0.4+ |
| 1999 03 20 | 645 | 0.0 | 0.1− | 2003 01 10 | 644 | 0.3− | 0.1+ | 2003 01 31 | 699 | 0.0 | 0.2+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2003 01 29 | 645 | 0.2+ | 0.4− | 2003 01 31 | 699 | 0.4− | 1.3+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 01 29 | 645 | 0.2+ | 0.4− | 2003 02 01 | 645 | 0.2+ | 0.2− |
| 2003 01 10 | 644 | 0.2+ | 0.1− | 2003 01 31 | 699 | 0.1− | 0.9− | 2003 02 01 | 645 | 0.2+ | 0.2− |

**2003 AC$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.56573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17596543 | $\omega$ | 315.79961 | | +0.45952579 | +0.88801568 | |
| $a$ | 3.1539234 | $\Omega$ | 341.53813 | | −0.79997915 | +0.40588021 | |
| $e$ | 0.0744911 | $i$ | 2.94216 | | −0.38583599 | +0.21607730 | |
| $P$ | 5.60 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 699 | 0.6− | 1.0+ | 2004 06 12 | E12 | (1.4− | 2.4+) | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2000 09 25 | 699 | 0.4+ | 0.2− | 2004 06 13 | 644 | 0.2− | 0.8+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2000 09 25 | 699 | 0.9− | 1.0+ | 2004 06 13 | 644 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2000 09 25 | 699 | 0.0 | 0.2− | 2004 06 13 | 644 | 0.1− | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2000 11 26 | 691 | 0.2+ | 0.3− | 2004 06 13 | 644 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2000 11 26 | 691 | 0.1+ | 0.6− | 2004 06 13 | 644 | 0.1− | 0.5+ | 2006 10 23 | 691 | (2.5− | 0.9+) |
| 2000 11 26 | 691 | 0.2+ | 0.3− | 2004 06 13 | 644 | 0.5+ | 0.9+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2003 01 01 | 291 | 0.1− | 0.2+ | 2005 07 12 | G96 | 0.1+ | 0.8+ | 2006 11 09 | 691 | 0.1− | 0.1− |
| 2003 01 01 | 291 | 0.5− | 0.5+ | 2005 07 12 | G96 | 0.6− | 0.7+ | 2006 11 09 | 691 | 0.1− | 0.0 |
| 2003 01 01 | 291 | 0.0 | 0.8+ | 2005 07 12 | G96 | 0.6− | 0.7+ | 2006 11 11 | 703 | 1.3− | 0.8+ |
| 2003 02 10 | 291 | 0.2− | 0.3+ | 2005 07 12 | G96 | 0.3− | 1.0+ | 2006 11 11 | 703 | (2.4+ | 1.1−) |
| 2003 02 10 | 291 | 0.3− | 0.6+ | 2005 08 04 | 644 | 0.1+ | 1.0+ | 2006 11 11 | 703 | (1.3− | 2.3+) |
| 2003 02 10 | 291 | 0.2+ | 0.3− | 2005 08 04 | 644 | 0.4+ | 1.0+ | 2006 11 11 | 703 | 0.9+ | 0.3− |
| 2003 02 23 | 699 | (3.0+ | 0.3+) | 2005 08 04 | 644 | 0.2+ | 1.0+ | 2006 11 14 | 703 | (1.0− | 1.7−) |
| 2003 02 23 | 699 | 0.0 | 0.6+ | 2005 08 29 | 704 | (0.3− | 2.4+) | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2003 02 23 | 699 | (1.4+ | 1.6+) | 2005 08 29 | 704 | 0.6− | 0.1+ | 2006 11 14 | 703 | (1.4+ | 1.7−) |
| 2003 02 23 | 699 | (1.7+ | 0.8−) | 2005 08 29 | 704 | 0.0 | 0.8+ | 2006 11 14 | 703 | (0.3− | 1.8−) |
| 2003 03 11 | 291 | 0.0 | 0.6− | 2005 08 29 | 704 | (0.3+ | 1.8+) | 2006 11 16 | 691 | 0.7− | 0.6+ |
| 2003 03 11 | 291 | 0.0 | 0.5− | 2005 08 29 | 699 | 0.0 | 1.3+ | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2003 03 11 | 291 | 0.3+ | 0.7− | 2005 08 29 | 699 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2003 03 24 | 691 | 0.3+ | 0.5+ | 2005 08 29 | 699 | 1.2− | 0.3− | 2006 11 16 | 704 | 0.1− | 0.7+ |
| 2003 03 24 | 691 | 0.1− | 0.5+ | 2005 08 29 | 699 | (1.3+ | 2.0+) | 2006 11 16 | 704 | 0.7+ | 0.8+ |
| 2003 03 24 | 691 | 0.0 | 0.1+ | 2005 09 22 | 644 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 0.8+ | 0.8+ |
| 2003 04 05 | 691 | 0.8+ | 0.6+ | 2005 09 22 | 644 | 0.0 | 1.0+ | 2006 11 19 | 704 | 0.7+ | 1.3+ |
| 2003 04 05 | 691 | 1.0+ | 0.7+ | 2005 09 22 | 644 | 0.3− | 1.1+ | 2006 11 19 | 704 | 0.4+ | 1.0+ |
| 2003 04 05 | 691 | 0.6+ | 0.3+ | 2005 11 25 | G96 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.7− | 0.8+ |
| 2004 06 12 | E12 | 0.1− | 1.0+ | 2005 11 25 | G96 | 0.4− | 0.7+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2004 06 12 | E12 | (0.3− | 1.7+) | 2005 11 25 | G96 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2004 06 12 | E12 | 1.2− | 1.2+ | 2005 11 25 | G96 | 0.1− | 0.5+ | | | | |

**2003 AD$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.60393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17300256 | $\omega$ | 341.65829 | | −0.66615977 | −0.70198845 | |
| $a$ | 3.1898312 | $\Omega$ | 148.56373 | | +0.73036154 | −0.68241293 | |
| $e$ | 0.1606363 | $i$ | 28.87790 | | +0.15100721 | +0.20377635 | |
| $P$ | 5.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.9− | 0.4+ | 2003 02 02 | 699 | 0.5− | 0.3+ | 2003 03 05 | 704 | 0.2− | 0.6+ |
| 2003 01 02 | 704 | 0.4− | 0.1− | 2003 02 02 | 699 | 0.8+ | 1.1− | 2003 03 05 | 704 | 0.1+ | 0.0 |
| 2003 01 02 | 704 | 1.2+ | 0.0 | 2003 02 09 | 608 | 0.9+ | 1.4− | 2004 04 22 | 645 | 0.1− | 0.0 |
| 2003 01 28 | 704 | 0.7+ | 0.7+ | 2003 02 09 | 608 | 1.1+ | 0.6− | 2004 04 22 | 645 | 0.1− | 0.0 |
| 2003 01 28 | 704 | 0.4− | 0.3+ | 2003 02 09 | 608 | 0.7+ | 1.2− | 2004 04 25 | 645 | 0.0 | 0.0 |
| 2003 01 28 | 704 | 0.4+ | 0.0 | 2003 02 22 | 644 | 0.7− | 0.6+ | 2004 04 25 | 645 | 0.1+ | 0.1− |
| 2003 01 28 | 704 | 0.9+ | 0.3− | 2003 02 22 | 644 | 0.6− | 0.5+ | 2004 06 12 | 645 | 0.0 | 0.0 |
| 2003 02 02 | 699 | 0.7− | 0.8+ | 2003 02 22 | 644 | 0.6− | 0.6+ | 2004 06 12 | 645 | 0.1+ | 0.0 |
| 2003 02 02 | 699 | (2.1− | 0.1+) | 2003 03 05 | 704 | 1.9− | 0.3+ | | | | |

**2003 AE$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.87610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28390600 | $\omega$ | 191.90340 | | −0.94871133 | +0.31578945 | |
| $a$ | 2.2927305 | $\Omega$ | 6.56319 | | −0.27825710 | −0.81161913 | |
| $e$ | 0.1564493 | $i$ | 7.52126 | | −0.15006596 | −0.49147880 | |
| $P$ | 3.47 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 704 | 0.3+ | 0.2− | 2003 01 05 | 699 | 0.2+ | 0.4+ | 2003 01 31 | 699 | 0.3+ | 0.8− |
| 2000 05 10 | 704 | 0.3+ | 1.2+ | 2003 01 05 | 699 | 0.5+ | 1.4+ | 2003 02 01 | 645 | 0.1− | 0.1− |
| 2000 05 10 | 704 | 0.3+ | 1.2+ | 2003 01 05 | 699 | 0.0 | 0.0 | 2003 02 01 | 645 | 0.1− | 0.1− |
| 2000 05 10 | 704 | 0.2− | 0.2− | 2003 01 05 | 699 | 0.1− | 1.3+ | 2003 03 07 | 644 | 0.2+ | 0.0 |
| 2001 09 23 | 691 | 0.4− | 0.7+ | 2003 01 10 | 644 | 0.2+ | 0.7+ | 2003 03 07 | 644 | 0.0 | 0.0 |
| 2001 09 23 | 691 | 0.4− | 0.5+ | 2003 01 10 | 644 | 0.2+ | 0.5+ | 2003 03 07 | 644 | 0.1− | 0.3− |
| 2001 09 23 | 691 | 0.6− | 0.4+ | 2003 01 10 | 644 | 0.1+ | 0.5+ | 2003 03 07 | 644 | 0.0 | 0.2+ |
| 2001 10 14 | 691 | 0.4+ | 0.4− | 2003 01 31 | 699 | 1.1+ | 0.2+ | 2003 03 07 | 644 | 0.3+ | 0.3− |
| 2001 10 14 | 691 | 0.5+ | 0.5− | 2003 01 31 | 699 | 1.1+ | 1.0+ | 2003 03 07 | 644 | 0.0 | 0.2+ |
| 2001 10 14 | 691 | 0.4+ | 0.2− | 2003 01 31 | 699 | 0.3+ | 0.7+ | | | | |

**2003 AF$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.28438 | | | (2000.0) | | |
| $n$ | 0.27925355 | $\omega$ | 159.04054 | | −0.87523356 | −0.48355840 |
| $a$ | 2.3181253 | $\Omega$ | 352.01110 | | +0.43091711 | −0.76848344 |
| $e$ | 0.0924932 | $i$ | 4.83979 | | +0.21971951 | −0.41905189 |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 699 | 0.8+ | 0.8+ | 2003 02 01 | 645 | 0.1+ | 0.1− | 2005 10 23 | 703 | 0.4+ | 0.8− |
| 2000 05 01 | 699 | 0.4+ | 0.5− | 2003 02 01 | 704 | 0.0 | 0.5+ | 2005 10 25 | 691 | 0.8− | 0.5− |
| 2000 05 01 | 699 | 0.7+ | 0.2+ | 2003 02 01 | 704 | 0.1+ | 0.6+ | 2005 10 25 | 691 | 0.3+ | 0.8+ |
| 2000 05 01 | 699 | 1.5− | 0.4+ | 2003 02 01 | 704 | 0.4− | 0.7+ | 2005 10 25 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.9+ | 0.9+ | 2003 02 01 | 704 | 0.0 | 0.9+ | 2005 11 02 | 704 | 0.3− | 0.3− |
| 2001 09 19 | 704 | 0.9− | 1.6+ | 2003 02 01 | 704 | 0.2− | 0.5+ | 2005 11 02 | 704 | 0.4+ | 0.3+ |
| 2001 09 19 | 704 | 1.4− | 1.0+ | 2003 02 23 | 699 | 0.1+ | 0.5+ | 2005 11 02 | 704 | 0.4+ | 0.6+ |
| 2001 09 19 | 704 | 0.7− | 0.4+ | 2003 02 23 | 699 | 0.6− | 0.2+ | 2005 11 02 | 704 | 0.3− | 0.7− |
| 2003 01 05 | 704 | 0.1− | 0.2+ | 2003 02 23 | 699 | 0.3− | 0.2+ | 2005 11 12 | 691 | 0.6+ | 0.4− |
| 2003 01 05 | 704 | 0.2− | 0.4+ | 2003 02 23 | 699 | 0.7+ | 0.7+ | 2005 11 12 | 691 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 0.8+ | 0.1− | 2005 10 23 | 703 | 0.4− | 0.8− | 2005 11 12 | 691 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.3− | 0.6+ | 2005 10 23 | 703 | 0.3− | 0.4+ | | | | |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2005 10 23 | 703 | 0.3+ | 0.4− | | | | |

**2003 AG$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.79567 | | | (2000.0) | | |
| $n$ | 0.22696288 | $\omega$ | 26.21022 | | +0.74679382 | −0.66300080 |
| $a$ | 2.6617432 | $\Omega$ | 15.67006 | | +0.57114352 | +0.59911544 |
| $e$ | 0.2712985 | $i$ | 11.15177 | | +0.34072580 | +0.44887708 |
| $P$ | 4.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.5− | 0.1− | 2003 01 24 | 644 | 0.2+ | 0.5+ | 2003 03 08 | 644 | 0.1+ | 0.5+ |
| 1997 10 30 | 704 | 0.8− | 0.2+ | 2003 01 24 | 644 | 0.1− | 0.5+ | 2006 08 29 | 703 | 0.0 | 0.3+ |
| 1997 10 30 | 704 | 0.5+ | 1.0− | 2003 01 24 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 1.4+ |
| 1997 10 30 | 704 | 1.1+ | 0.7+ | 2003 02 01 | 644 | 0.0 | 0.2− | 2006 08 29 | 703 | 0.8− | 0.6+ |
| 2001 07 14 | 644 | 0.9− | 0.8+ | 2003 02 01 | 644 | 0.2− | 0.4− | 2006 08 29 | 703 | 0.7− | 0.0 |
| 2001 07 14 | 644 | 0.4− | 0.8+ | 2003 02 01 | 644 | 0.2− | 0.3− | 2006 11 13 | 704 | 0.1− | 0.2+ |
| 2001 07 14 | 644 | 0.0 | 1.1+ | 2003 03 03 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 704 | 0.1− | 0.4+ |
| 2003 01 07 | 704 | 0.0 | 0.1− | 2003 03 03 | 644 | 0.4− | 0.4+ | 2006 11 13 | 704 | 1.1+ | 1.4− |
| 2003 01 07 | 704 | 0.6+ | 0.1+ | 2003 03 03 | 644 | 0.3+ | 0.9+ | 2006 11 13 | 704 | 0.0 | 0.3+ |
| 2003 01 07 | 704 | 0.3+ | 0.4− | 2003 03 08 | 644 | 0.1− | 0.4+ | | | | |
| 2003 01 07 | 704 | (2.1+ | 1.3+) | 2003 03 08 | 644 | 0.0 | 0.8+ | | | | |

**2003 AH$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 288.02010 | | | (2000.0) | | |
| $n$ | 0.18881661 | $\omega$ | 26.13434 | | −0.16902896 | −0.96744262 |
| $a$ | 3.0091413 | $\Omega$ | 74.07443 | | +0.86648625 | −0.23694338 |
| $e$ | 0.0739626 | $i$ | 11.29674 | | +0.46971352 | +0.08895287 |
| $P$ | 5.22 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.6+ | 0.1− | 2003 03 08 | 699 | 0.6− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 01 10 | 704 | 0.0 | 0.1+ | 2003 03 08 | 644 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2003 01 10 | 704 | 0.9+ | 1.2+ | 2003 03 08 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2003 02 21 | 644 | 0.3− | 0.0 | 2003 03 08 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2003 02 21 | 644 | 0.1− | 0.1− | 2004 04 23 | 599 | 0.1− | 0.1+ | 2006 10 16 | 703 | 1.2− | 0.7+ |
| 2003 02 21 | 644 | 0.2− | 0.0 | 2004 04 23 | 599 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2003 02 26 | 704 | 0.3+ | 0.8− | 2004 04 23 | 599 | 0.1+ | 0.1+ | 2006 10 16 | 703 | (1.1− | 1.8−) |
| 2003 02 26 | 704 | 0.2− | 0.4− | 2004 04 23 | 599 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.7− |
| 2003 02 26 | 704 | 0.6− | 0.0 | 2004 05 17 | 704 | 1.1+ | 0.5+ | 2006 10 22 | 703 | 0.5+ | 0.1+ |
| 2003 03 03 | 644 | 0.1+ | 0.0 | 2004 05 17 | 704 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2003 03 03 | 644 | 0.3− | 0.1− | 2004 05 17 | 704 | (0.4+ | 2.0+) | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2003 03 03 | 644 | 0.0 | 0.3− | 2004 05 17 | 704 | 0.4− | 0.5− | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2003 03 08 | 699 | 0.0 | 0.8− | 2006 10 10 | 644 | 0.4+ | 0.5+ | 2006 10 28 | 703 | 0.4− | 0.3− |
| 2003 03 08 | 699 | 0.9+ | 0.8+ | 2006 10 10 | 644 | 0.4+ | 0.4− | 2006 10 28 | 703 | (1.8− | 1.2+) |
| 2003 03 08 | 699 | (0.3+ | 1.7−) | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1− | 0.1− |

**2003 AJ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 294.57940 | | | (2000.0) | | |
| $n$ | 0.26410018 | $\omega$ | 144.06077 | | −0.67025958 | +0.71952358 |
| $a$ | 2.4059702 | $\Omega$ | 83.08705 | | −0.71645798 | −0.56350992 |
| $e$ | 0.2199174 | $i$ | 10.55005 | | −0.19349434 | −0.40588470 |
| $P$ | 3.73 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.9+ | 0.4+ | 2003 02 26 | 704 | 0.4− | 0.6+ | 2005 11 01 | G96 | 0.0 | 0.3− |
| 2003 01 10 | 704 | 0.9+ | 0.6− | 2003 02 26 | 704 | 0.2+ | 1.4+ | 2005 11 01 | G96 | 0.1− | 0.1− |
| 2003 01 10 | 704 | 0.4+ | 0.0 | 2003 03 08 | 644 | 0.3− | 0.3− | 2005 11 01 | G96 | 0.0 | 0.2− |
| 2003 01 10 | 704 | 0.3− | 0.2+ | 2003 03 08 | 644 | 0.1− | 0.3− | 2005 11 01 | G96 | 0.3+ | 0.1− |
| 2003 01 10 | 704 | 1.0+ | 0.9+ | 2003 03 08 | 644 | 0.1− | 0.3− | 2005 12 07 | 291 | 0.1− | 0.1+ |
| 2003 01 26 | 699 | 0.6+ | 0.2− | 2003 04 23 | 704 | 0.2+ | 0.5− | 2005 12 07 | 291 | 0.1+ | 0.1+ |
| 2003 01 26 | 699 | 0.0 | 0.0 | 2003 04 23 | 704 | 0.2+ | 1.0+ | 2005 12 07 | 291 | 0.2− | 0.0 |
| 2003 01 26 | 699 | 0.6− | 0.2+ | 2003 04 23 | 704 | 0.5− | 1.0+ | 2006 01 06 | G96 | 0.5+ | 0.1+ |
| 2003 01 26 | 699 | 0.3− | 0.5+ | 2003 04 23 | 704 | 0.3− | 0.4− | 2006 01 06 | G96 | 0.4+ | 0.5− |
| 2003 02 21 | 644 | 0.1− | 0.3− | 2003 04 23 | 704 | 0.5− | 0.3+ | 2006 01 06 | G96 | 0.2− | 0.3− |
| 2003 02 21 | 644 | 0.2+ | 0.6− | 2004 09 04 | 644 | 0.3+ | 0.5+ | 2006 01 06 | G96 | 0.6+ | 0.2− |
| 2003 02 21 | 644 | 0.3+ | 0.4− | 2004 09 04 | 644 | 1.0− | 0.9+ | | | | |
| 2003 02 26 | 704 | 0.1− | 0.2+ | 2004 09 04 | 644 | 0.6− | 1.1+ | | | | |

**2003 AK$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.34477 | | | (2000.0) | | |
| $n$ | 0.23139783 | $\omega$ | 56.85016 | | +0.09489735 | −0.97851887 |
| $a$ | 2.6276239 | $\Omega$ | 29.40731 | | +0.74317010 | −0.05268397 |
| $e$ | 0.1998105 | $i$ | 21.88424 | | +0.66233881 | +0.19931188 |
| $P$ | 4.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 19 | 327 | 0.3− | 0.1+ | 2003 02 26 | 704 | 0.2+ | 0.6+ | 2005 08 28 | E12 | 0.2− | 0.4+ |
| 1997 11 19 | 327 | 0.4− | 0.4− | 2003 03 09 | 644 | 0.3− | 0.6− | 2005 08 28 | E12 | 1.2− | 0.4+ |
| 1997 11 19 | 327 | 0.4+ | 0.3+ | 2003 03 09 | 644 | 0.0 | 0.1− | 2005 08 28 | E12 | 0.1+ | 1.0+ |
| 2001 10 15 | 644 | 0.2− | 0.4+ | 2003 03 09 | 644 | 0.1− | 0.2− | 2005 08 28 | E12 | 1.3− | 0.4+ |
| 2001 10 15 | 644 | 0.3− | 0.6+ | 2003 03 22 | 644 | 0.3− | 0.2− | 2006 11 19 | 703 | 0.1− | 0.2− |
| 2001 10 15 | 644 | 0.2+ | 0.8+ | 2003 03 22 | 644 | 0.6+ | 1.0+ | 2006 11 19 | 703 | 0.1+ | 0.4− |
| 2003 01 11 | 704 | 1.5+ | 0.5− | 2003 03 22 | 644 | 0.5− | 0.2− | 2006 11 19 | 703 | 0.8+ | 0.7+ |
| 2003 01 11 | 704 | 0.4+ | 0.2+ | 2003 03 22 | 644 | 0.8+ | 0.9+ | 2006 11 19 | 703 | 0.9+ | 0.4+ |
| 2003 01 11 | 704 | 1.4+ | 0.5− | 2003 03 22 | 644 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.5− | 0.7− |
| 2003 01 11 | 704 | 0.6+ | 1.1+ | 2003 03 22 | 644 | 1.0+ | 0.7+ | 2006 11 27 | 703 | 0.0 | 0.8− |
| 2003 02 26 | 704 | 0.0 | 0.2+ | 2003 04 07 | 644 | 0.2− | 0.5+ | 2006 11 27 | 703 | 0.8− | 0.6+ |
| 2003 02 26 | 704 | 0.2− | 0.4− | 2003 04 07 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.2− | 0.0 |
| 2003 02 26 | 704 | 0.7− | 1.0+ | 2003 04 07 | 644 | 0.1+ | 0.1+ | | | | |

**2003 AL$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 250.00567 | | | (2000.0) | | |
| $n$ | 0.22506089 | $\omega$ | 133.57047 | | −0.91931439 | +0.31678951 |
| $a$ | 2.6767185 | $\Omega$ | 66.16455 | | −0.39226206 | −0.78515300 |
| $e$ | 0.1062277 | $i$ | 14.78739 | | +0.03148869 | −0.53214582 |
| $P$ | 4.38 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 19 | 703 | 0.1+ | 0.2− | 2003 01 13 | 704 | 0.7+ | 0.0 | 2003 03 09 | 644 | 0.0 | 0.1+ |
| 1999 04 19 | 703 | 0.2+ | 1.7+ | 2003 01 13 | 704 | 0.3− | 0.2− | 2003 03 24 | 704 | 0.5+ | 0.4− |
| 1999 04 19 | 703 | 1.6+ | 1.5+ | 2003 02 11 | 704 | 0.4+ | 1.5+ | 2003 03 24 | 704 | 0.1− | 0.5+ |
| 1999 04 19 | 703 | 0.5+ | 1.1+ | 2003 02 11 | 704 | 0.4+ | 0.1+ | 2003 03 24 | 704 | 0.1+ | 0.1+ |
| 2001 11 18 | 608 | 0.5− | 0.5− | 2003 02 11 | 704 | 0.0 | 0.6− | 2003 03 24 | 704 | 0.5− | 0.4+ |
| 2001 11 18 | 608 | 0.2+ | 0.4− | 2003 02 19 | 644 | 0.3+ | 0.7− | 2003 04 26 | 645 | 0.2− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 608 | 0.1− | 0.9− | 2003 02 19 | 644 | 0.1+ | 0.2− | 2003 04 26 | 645 | 0.1− | 0.2− |
| 2001 12 18 | 704 | 0.3− | 0.8+ | 2003 02 19 | 644 | 0.0 | 0.4− | 2005 10 22 | 644 | 0.3− | 0.3− |
| 2001 12 18 | 704 | 0.5+ | 0.4+ | 2003 03 03 | 644 | 0.3+ | 1.0+ | 2005 10 22 | 644 | 0.2− | 0.4− |
| 2001 12 18 | 704 | 0.5+ | 0.4+ | 2003 03 03 | 644 | 0.7+ | 1.0+ | 2005 10 22 | 291 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.3− | 0.9+ | 2003 03 03 | 644 | 0.6+ | 1.2+ | 2005 10 22 | 291 | 0.0 | 0.1+ |
| 2003 01 13 | 704 | 0.9+ | 0.1+ | 2003 03 09 | 644 | 0.1+ | 0.1+ | 2005 10 22 | 291 | 0.0 | 0.4+ |
| 2003 01 13 | 704 | 0.0 | 0.4+ | 2003 03 09 | 644 | 0.0 | 0.4+ | 2005 10 22 | 644 | 0.2− | 0.4− |

**2003 AM$_{94}$ = 2006 UX$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.75865 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21777761 | $\omega$ | 71.10504 | | −0.48593245 | −0.86350088 | |
| $a$ | 2.7360702 | $\Omega$ | 48.72997 | | +0.71894641 | −0.48278396 | |
| $e$ | 0.1064790 | $i$ | 10.35044 | | +0.49697657 | −0.14589681 | |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 699 | 0.4− | 0.9+ | 2003 03 08 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2003 01 05 | 699 | 0.2− | 0.9+ | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2003 01 05 | 699 | 1.1+ | 0.4− | 2003 04 26 | 645 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2003 01 05 | 699 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2003 01 10 | 644 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.8+ | 2006 11 13 | 691 | 0.3+ | 0.3− |
| 2003 01 10 | 644 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2003 01 10 | 644 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2003 01 31 | 699 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.4− | 0.5− |
| 2003 01 31 | 699 | 0.5+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2003 01 31 | 699 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 27 | 291 | 0.7− | 0.1+ |
| 2003 01 31 | 699 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.2+ | 2006 11 27 | 291 | 0.1+ | 0.1+ |
| 2003 03 08 | 644 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 27 | 291 | 0.3+ | 0.1+ |
| 2003 03 08 | 644 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.1− | | | | |

**2003 AN$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.06521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21096674 | $\omega$ | 91.47619 | | −0.81535860 | −0.56181686 | |
| $a$ | 2.7946454 | $\Omega$ | 54.36389 | | +0.43878812 | −0.75722378 | |
| $e$ | 0.0983436 | $i$ | 9.90690 | | +0.37769742 | −0.33312753 | |
| $P$ | 4.67 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.6− | 0.6− | 2003 02 01 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2003 01 10 | 704 | 0.3− | 0.1− | 2003 02 01 | 644 | 0.0 | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2003 01 10 | 704 | 0.4+ | 0.4+ | 2003 02 19 | 644 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2003 01 24 | 644 | 0.3+ | 0.2+ | 2003 02 19 | 644 | 0.2− | 0.6− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2003 01 24 | 644 | 0.4+ | 0.0 | 2003 02 19 | 644 | 0.2− | 0.8− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2003 01 24 | 644 | 0.2+ | 0.1+ | 2003 03 08 | 644 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2003 02 01 | 644 | 0.3+ | 0.2+ | 2003 03 08 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2003 02 01 | 644 | 0.0 | 0.2+ | 2003 03 08 | 644 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2003 02 01 | 644 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.5+ | 1.3+ |
| 2003 02 01 | 644 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.5− |

**2003 BD**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.28971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21885663 | $\omega$ | 187.43484 | | −0.70864264 | −0.69712633 | |
| $a$ | 2.7270698 | $\Omega$ | 307.76888 | | +0.65422459 | −0.59146046 | |
| $e$ | 0.2831907 | $i$ | 7.91213 | | +0.26422679 | −0.40520291 | |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 11 | 691 | 0.0 | 0.4− | 2003 01 30 | 699 | 1.1− | 0.9− | 2003 02 21 | 644 | 0.5− | 0.1+ |
| 1994 02 11 | 691 | 0.3− | 0.4− | 2003 01 31 | 704 | 0.3+ | 0.7+ | 2003 02 22 | 644 | 0.3− | 0.6− |
| 1994 02 11 | 691 | 0.3− | 0.3− | 2003 01 31 | 704 | 0.5− | 0.3− | 2003 02 22 | 644 | 0.2− | 0.7− |
| 2003 01 02 | 704 | 0.2+ | 0.1− | 2003 01 31 | 704 | 0.7+ | 0.2+ | 2003 02 22 | 644 | 0.1− | 0.7− |
| 2003 01 02 | 704 | 0.4− | 0.5− | 2003 01 31 | 704 | 0.1+ | 0.4− | 2003 02 23 | 608 | 0.4− | 0.9− |
| 2003 01 02 | 704 | 0.2+ | 0.8− | 2003 01 31 | 704 | 0.0 | 0.6− | 2003 02 23 | 608 | 0.1+ | 0.3− |
| 2003 01 02 | 704 | 1.2− | 0.7− | 2003 02 02 | 704 | 0.1+ | 0.6− | 2003 02 23 | 608 | 0.2+ | 0.3+ |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2003 02 02 | 704 | 0.3+ | 0.7− | 2003 03 06 | 704 | 0.6+ | 1.0+ |
| 2003 01 08 | 704 | 0.1+ | 0.3+ | 2003 02 02 | 704 | 0.1− | 0.1− | 2003 03 06 | 704 | 1.0+ | 0.4− |
| 2003 01 08 | 704 | 0.3+ | 0.3+ | 2003 02 02 | 704 | 0.1+ | 0.5− | 2003 03 06 | 704 | 0.6+ | 0.3− |
| 2003 01 08 | 704 | 0.4− | 0.5+ | 2003 02 02 | 704 | 0.2+ | 0.1+ | 2003 03 06 | 704 | 0.6+ | 0.3+ |
| 2003 01 08 | 704 | 0.2− | 0.8− | 2003 02 03 | 704 | 0.3− | 0.2− | 2003 03 06 | 704 | 0.5+ | 0.4+ |
| 2003 01 08 | 608 | 1.0+ | 0.2− | 2003 02 03 | 704 | 0.4− | 0.0 | 2003 03 07 | 704 | 0.3− | 0.7+ |
| 2003 01 08 | 608 | 0.6+ | 0.0 | 2003 02 03 | 699 | 0.3+ | 0.1+ | 2003 03 07 | 704 | 0.2− | 0.6+ |
| 2003 01 08 | 608 | 0.7+ | 0.3− | 2003 02 03 | 704 | 0.4− | 0.1− | 2003 03 07 | 704 | 0.2+ | 0.0 |
| 2003 01 17 | 644 | 0.1− | 0.9+ | 2003 02 03 | 704 | 0.4− | 0.2+ | 2003 03 07 | 704 | 0.5− | 0.5+ |
| 2003 01 17 | 644 | 0.3+ | 0.9+ | 2003 02 03 | 699 | 0.1− | 0.1− | 2003 03 07 | 704 | 0.2− | 0.9+ |
| 2003 01 17 | 644 | 0.4+ | 0.7+ | 2003 02 03 | 699 | 1.2− | 0.0 | 2003 03 07 | 608 | 1.1+ | 0.7− |
| 2003 01 18 | 673 | 0.1+ | 0.5+ | 2003 02 03 | 699 | 0.9− | 0.7+ | 2003 03 07 | 608 | 1.1+ | 0.6− |
| 2003 01 18 | 673 | 0.2+ | 0.4+ | 2003 02 03 | 608 | (1.3+ | 1.6+) | 2003 03 07 | 608 | 1.4+ | 0.4+ |
| 2003 01 18 | 673 | 0.3− | 0.5+ | 2003 02 03 | 608 | 1.4+ | 1.3+ | 2006 10 19 | 703 | 0.8− | 0.9− |
| 2003 01 18 | 673 | 0.4− | 0.3+ | 2003 02 03 | 608 | 1.0+ | 1.1+ | 2006 10 19 | 703 | (1.6− | 1.1+) |
| 2003 01 27 | 704 | 0.1+ | 0.1+ | 2003 02 08 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 703 | (2.8− | 3.9−) |
| 2003 01 27 | 704 | 0.1+ | 0.2+ | 2003 02 08 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.5− | 1.1− |
| 2003 01 27 | 704 | 0.1+ | 0.2− | 2003 02 08 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2003 01 27 | 704 | 0.3+ | 0.5+ | 2003 02 08 | 704 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.3− | 1.1+ |
| 2003 01 27 | 644 | 0.1− | 0.1− | 2003 02 08 | 704 | 0.3+ | 0.9+ | 2006 10 27 | 703 | (2.1+ | 0.4+) |
| 2003 01 27 | 644 | 0.0 | 0.0 | 2003 02 19 | 644 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.9+ |
| 2003 01 27 | 644 | 0.1− | 0.1− | 2003 02 19 | 644 | 0.5− | 0.1+ | 2006 11 17 | 644 | 0.2+ | 0.3+ |
| 2003 01 30 | 699 | 0.3− | 0.5− | 2003 02 19 | 644 | 0.6− | 0.1+ | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 2003 01 30 | 699 | 0.5− | 0.5− | 2003 02 21 | 644 | 0.4− | 0.3+ | 2006 11 17 | 644 | 0.6+ | 0.1− |
| 2003 01 30 | 699 | 0.6− | 0.2− | 2003 02 21 | 644 | 0.7− | 0.2+ | | | | |

**2003 BT**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.83530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22392571 | $\omega$ | 96.98511 | | −0.21719941 | −0.97592965 | |
| $a$ | 2.6857572 | $\Omega$ | 5.67430 | | +0.79869115 | −0.18924921 | |
| $e$ | 0.2479734 | $i$ | 11.45749 | | +0.56117454 | −0.10837924 | |
| $P$ | 4.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.2+ | 0.7− | 2003 02 02 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.3− | 0.7+ |
| 2002 11 23 | 644 | 0.1− | 1.0− | 2003 02 07 | 644 | 0.3+ | 1.2+ | 2006 09 18 | 703 | 0.4− | 0.1+ |
| 2002 11 23 | 644 | 0.0 | 0.5− | 2003 02 07 | 644 | 0.1− | 1.2+ | 2006 10 27 | 703 | 0.6− | 0.7+ |
| 2003 01 10 | 704 | 0.0 | 0.1+ | 2003 02 07 | 644 | 0.2+ | 1.2+ | 2006 10 27 | 703 | 0.5+ | 0.0 |
| 2003 01 10 | 704 | 0.8+ | 0.7+ | 2003 02 19 | 644 | (1.6+ | 0.7+) | 2006 10 27 | 703 | 0.4− | 0.1+ |
| 2003 01 10 | 704 | 0.4− | 1.2+ | 2003 02 19 | 644 | (1.6+ | 0.8+) | 2006 10 27 | 703 | 0.7− | 0.3+ |
| 2003 01 24 | 644 | 0.1+ | 0.6− | 2003 02 19 | 644 | 1.0+ | 0.5+ | 2006 11 02 | 703 | 0.4+ | 0.5+ |
| 2003 01 24 | 644 | 0.0 | 0.5− | 2003 02 19 | 636 | 0.3+ | 0.5+ | 2006 11 02 | 703 | 0.5+ | 0.2− |
| 2003 01 24 | 644 | 0.5+ | 0.4− | 2003 02 19 | 636 | (0.6+ | 2.4+) | 2006 11 02 | 703 | 0.1− | 1.5+ |
| 2003 01 25 | 704 | (1.7− | 0.1+) | 2003 02 19 | 636 | 1.0− | 0.7− | 2006 11 02 | 703 | 0.5+ | 0.4− |
| 2003 01 25 | 704 | (2.6− | 0.3+) | 2003 02 26 | 704 | 0.6+ | 0.3− | 2006 11 14 | 644 | 0.2+ | 0.0 |
| 2003 01 25 | 704 | (2.0− | 0.8+) | 2003 02 26 | 704 | 0.1− | 0.0 | 2006 11 14 | 644 | 0.0 | 0.3− |
| 2003 01 25 | 704 | 1.1− | 0.5− | 2003 02 26 | 704 | 0.4+ | 0.7− | 2006 11 14 | 644 | 0.4+ | 0.2+ |
| 2003 01 29 | 644 | 0.3+ | 0.6− | 2003 02 26 | 704 | 0.6+ | 0.6− | 2006 11 15 | 704 | 0.4+ | 0.3+ |
| 2003 01 29 | 644 | 0.0 | 0.6− | 2003 02 26 | 704 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.3− | 0.3− |
| 2003 01 29 | 644 | 0.2+ | 0.6− | 2003 03 03 | 644 | 0.6+ | 1.3+ | 2006 11 15 | 704 | 0.2+ | 0.0 |
| 2003 02 01 | 644 | 0.0 | 0.5+ | 2003 03 03 | 644 | (0.4+ | 1.6+) | 2006 11 15 | 704 | 0.9+ | 0.3− |
| 2003 02 01 | 644 | 0.1− | 0.5+ | 2003 03 03 | 644 | 0.3+ | 1.4+ | 2006 11 21 | 703 | 0.0 | 1.1− |
| 2003 02 01 | 644 | 0.1− | 0.6+ | 2003 03 07 | 645 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.3+ | 0.5− |
| 2003 02 02 | 704 | 0.3+ | 0.4− | 2003 03 07 | 645 | 0.1− | 0.1− | 2006 11 21 | 703 | 1.8− | 0.6+ |
| 2003 02 02 | 704 | 0.7+ | 1.2+ | 2006 09 18 | 703 | 0.8+ | 0.9− | 2006 11 21 | 703 | 0.3− | 0.6− |
| 2003 02 02 | 704 | 1.2+ | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.8− | | | | |

**2003 $BX_2$ = 2006 $UC_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.99569 | | (2000.0) | | | |
| $n$ | 0.23509906 | $\omega$ | 73.06031 | | +0.04346651 | −0.99022198 |
| $a$ | 2.5999727 | $\Omega$ | 16.27599 | | +0.63725743 | −0.07470444 |
| $e$ | 0.3784325 | $i$ | 28.22710 | | +0.76942422 | +0.11781205 |
| $P$ | 4.19 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 23 | 704 | 0.3+ | 0.0 | 2003 01 30 | 704 | 0.7− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2003 01 23 | 704 | 0.3+ | 0.9− | 2003 01 30 | 704 | 0.9− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2003 01 23 | 704 | 1.0+ | 0.2+ | 2006 10 19 | 703 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.4− |
| 2003 01 23 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2003 01 27 | 704 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.0 |
| 2003 01 27 | 704 | 1.0+ | 0.7+ | 2006 10 23 | 703 | 1.0− | 0.7− | 2006 11 20 | 703 | 0.4+ | 0.1− |
| 2003 01 27 | 704 | 0.2+ | 0.3− | 2006 10 23 | 703 | 0.1+ | 0.2− | 2006 11 20 | 703 | 0.5+ | 0.8− |
| 2003 01 27 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 0.1− | 1.1+ | 2006 11 20 | 703 | 0.6− | 1.1+ |
| 2003 01 28 | 651 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.8− | 0.4− |
| 2003 01 28 | 651 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 0.5− | 0.2+ | 2006 11 20 | 703 | 0.3+ | 0.3+ |
| 2003 01 28 | 704 | 0.0 | 1.3− | 2006 10 31 | 703 | 0.3− | 0.9− | 2006 11 20 | 704 | 0.4+ | 0.4− |
| 2003 01 28 | 704 | 0.1− | 0.5− | 2006 10 31 | 703 | 0.4+ | 0.5− | 2006 11 20 | 704 | 1.2− | 0.3+ |
| 2003 01 28 | 704 | 0.4− | 0.3− | 2006 10 31 | 703 | (2.3+ | 1.0−) | 2006 11 20 | 704 | 0.6− | 0.0 |
| 2003 01 28 | 704 | 0.1− | 0.2− | 2006 11 18 | 704 | 1.3+ | 0.0 | 2006 11 20 | 703 | 0.8+ | 0.2+ |
| 2003 01 29 | 926 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.1− | 2006 11 20 | 703 | 0.1− | 1.1− |
| 2003 01 29 | 926 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.1+ | 2006 11 20 | 703 | 0.1+ | 0.1− |
| 2003 01 29 | 926 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | 2006 11 20 | 703 | 0.4+ | 0.1+ |
| 2003 01 30 | 704 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.3+ | | | | |

**2003 $BD_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 318.78703 | | (2000.0) | | | |
| $n$ | 0.21935625 | $\omega$ | 299.69994 | | +0.13633175 | −0.97811700 |
| $a$ | 2.7229272 | $\Omega$ | 141.45115 | | +0.97355441 | +0.10292377 |
| $e$ | 0.3004097 | $i$ | 14.60759 | | +0.18331791 | +0.18081434 |
| $P$ | 4.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 645 | 0.1+ | 0.1− | 2003 01 30 | 704 | 0.4+ | 0.1− | 2003 02 03 | 644 | 0.2− | 0.4+ |
| 2002 11 13 | 645 | 0.0 | 0.1− | 2003 01 30 | 699 | 0.2+ | 0.2− | 2003 02 03 | 644 | 0.1− | 0.0 |
| 2003 01 23 | 809 | 0.2− | 0.0 | 2003 01 30 | 704 | 0.5+ | 0.3+ | 2003 02 03 | 644 | 0.1− | 0.2+ |
| 2003 01 23 | 809 | 0.2− | 0.0 | 2003 01 30 | 699 | 0.3− | 0.3− | 2003 02 21 | 644 | 0.1− | 0.5− |
| 2003 01 23 | 809 | 0.2− | 0.0 | 2003 01 30 | 704 | 0.8+ | 0.8+ | 2003 02 21 | 644 | 0.2− | 0.7− |
| 2003 01 24 | 809 | 0.3− | 0.4+ | 2003 01 30 | 699 | 0.3− | 0.5+ | 2003 02 21 | 644 | 0.2− | 0.6− |
| 2003 01 24 | 809 | 0.3− | 0.3+ | 2003 01 30 | 704 | 1.0+ | 0.3+ | 2003 03 06 | 644 | 0.0 | 0.8+ |
| 2003 01 24 | 809 | 0.2− | 0.3+ | 2003 02 02 | 704 | 0.3− | 0.3+ | 2003 03 06 | 644 | 0.2− | 1.0+ |
| 2003 01 27 | 704 | 0.3+ | 0.0 | 2003 02 02 | 608 | 0.8− | 1.0− | 2003 03 06 | 644 | 0.0 | 1.0+ |
| 2003 01 27 | 704 | 0.2+ | 0.7+ | 2003 02 02 | 608 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.3+ | 0.1− |
| 2003 01 27 | 704 | 1.0+ | 0.4− | 2003 02 02 | 704 | 0.2+ | 0.0 | 2006 09 25 | 703 | 0.2+ | 0.3+ |
| 2003 01 27 | 704 | 0.6+ | 0.2− | 2003 02 02 | 608 | 1.2− | 0.6− | 2006 09 25 | 703 | 0.0 | 1.0+ |
| 2003 01 30 | 809 | 0.6− | 0.3+ | 2003 02 02 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.7+ |
| 2003 01 30 | 699 | 0.3+ | 0.4+ | 2003 02 02 | 704 | 0.3− | 0.1− | 2006 11 11 | F84 | 0.5− | 0.2+ |
| 2003 01 30 | 704 | 0.1+ | 0.2− | 2003 02 02 | 704 | 0.1+ | 0.1+ | 2006 11 11 | F84 | 0.1+ | 0.2− |

**2003 $BU_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.96166 | | (2000.0) | | | |
| $n$ | 0.25867849 | $\omega$ | 191.86229 | | −0.98176995 | −0.18312272 |
| $a$ | 2.4394720 | $\Omega$ | 337.39267 | | +0.18342232 | −0.84251372 |
| $e$ | 0.1785427 | $i$ | 7.61332 | | +0.04983990 | −0.50659322 |
| $P$ | 3.81 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 13 | 106 | 0.9− | 0.5+ | 2003 02 04 | 699 | 0.1− | 0.0 | 2003 03 06 | 644 | 0.3+ | 0.4+ |
| 2003 01 13 | 106 | 0.9− | 0.2+ | 2003 02 04 | 704 | 0.5+ | 0.5− | 2003 03 08 | 704 | 0.3− | 0.1− |
| 2003 01 13 | 106 | 0.2− | 0.1− | 2003 02 04 | 699 | 0.1− | 0.2+ | 2003 03 08 | 704 | 1.1− | 0.1− |
| 2003 01 26 | 699 | 0.3+ | 0.2+ | 2003 02 04 | 704 | 0.1+ | 0.7− | 2003 03 08 | 704 | 0.2+ | 0.5− |
| 2003 01 26 | 699 | 0.4+ | 0.3+ | 2003 02 04 | 704 | 0.6− | 0.4− | 2003 03 08 | 704 | 0.1− | 0.5− |
| 2003 01 26 | 699 | 0.2+ | 0.4− | 2003 02 04 | 704 | 1.0− | 0.0 | 2003 03 08 | 704 | 0.7− | 0.1− |
| 2003 01 26 | 699 | 0.5+ | 0.0 | 2003 02 04 | 704 | 0.3+ | 0.7− | 2003 03 12 | 644 | 0.1+ | 0.0 |
| 2003 01 27 | 699 | 0.3− | 0.0 | 2003 02 04 | 608 | 0.3+ | 0.3+ | 2003 03 12 | 644 | 0.1+ | 0.1+ |
| 2003 01 27 | 699 | 0.3+ | 0.0 | 2003 02 04 | 608 | 0.3− | 0.4+ | 2003 03 12 | 644 | 0.2+ | 0.0 |
| 2003 01 27 | 699 | 0.3− | 0.5− | 2003 02 04 | 608 | 0.2+ | 0.5+ | 2003 04 04 | 704 | 0.6+ | 0.1− |
| 2003 01 27 | 699 | 0.0 | 0.3− | 2003 02 07 | 644 | 0.4− | 0.1− | 2003 04 04 | 704 | 0.3− | 0.1+ |
| 2003 01 27 | 704 | 0.4+ | 0.8+ | 2003 02 07 | 644 | 0.3− | 0.0 | 2003 04 04 | 704 | 0.7+ | 0.7+ |
| 2003 01 27 | 704 | 0.3− | 0.1+ | 2003 02 07 | 644 | 0.2− | 0.1− | 2003 04 04 | 704 | 0.5+ | 0.1+ |
| 2003 01 27 | 704 | 0.2− | 0.7+ | 2003 02 19 | 644 | 0.0 | 0.0 | 2005 10 29 | 703 | 0.1− | 0.3− |
| 2003 01 27 | 704 | 0.2− | 0.0 | 2003 02 19 | 644 | 0.4+ | 0.3+ | 2005 10 29 | 703 | 0.4+ | 1.3+ |
| 2003 01 27 | 704 | 0.5+ | 0.6+ | 2003 02 19 | 644 | 0.3+ | 0.0 | 2005 10 29 | 703 | 0.4+ | 0.7+ |
| 2003 02 01 | 704 | 0.3+ | 0.6− | 2003 03 06 | 704 | 0.3− | 0.1− | 2005 10 29 | 703 | 1.1− | 1.1− |
| 2003 02 01 | 704 | 0.3+ | 0.3+ | 2003 03 06 | 704 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2003 02 01 | 704 | 1.1+ | 0.1− | 2003 03 06 | 704 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.7− |
| 2003 02 01 | 704 | 0.7+ | 0.0 | 2003 03 06 | 704 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.4− | 0.3− |
| 2003 02 01 | 704 | 0.4+ | 0.0 | 2003 03 06 | 704 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.5− | 0.6− |
| 2003 02 04 | 699 | 0.2− | 0.3− | 2003 03 06 | 644 | 0.4+ | 0.4+ | | | | |
| 2003 02 04 | 699 | 0.3+ | 0.4− | 2003 03 06 | 644 | 0.1+ | 0.6+ | | | | |

**2003 $BL_{11}$ = 2006 $SZ_{290}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.25760 | | (2000.0) | | | |
| $n$ | 0.21144303 | $\omega$ | 108.44640 | | +0.33969167 | −0.89472749 |
| $a$ | 2.7904471 | $\Omega$ | 317.83990 | | +0.61370623 | +0.44446759 |
| $e$ | 0.3119602 | $i$ | 25.59378 | | +0.71272311 | +0.04371816 |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.3− | 0.5− | 2003 02 02 | 644 | 0.1− | 0.2+ | 2003 02 09 | 608 | 0.0 | 0.2− |
| 2002 12 31 | 704 | 0.1+ | 0.1− | 2003 02 02 | 644 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.8+ | 0.1− |
| 2002 12 31 | 704 | 0.9− | 0.0 | 2003 02 03 | 704 | 0.5+ | 0.1− | 2006 09 06 | 644 | 0.6+ | 0.0 |
| 2002 12 31 | 704 | 0.3− | 0.7+ | 2003 02 03 | 704 | 0.4+ | 0.1+ | 2006 09 06 | 644 | 0.6+ | 0.2− |
| 2003 01 26 | 699 | (1.9− | 0.9−) | 2003 02 03 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | 0.6+ | 0.7+ |
| 2003 01 26 | 699 | 0.1+ | 1.3+ | 2003 02 03 | 704 | 0.4− | 0.6− | 2006 09 16 | 703 | 1.0− | 0.8+ |
| 2003 01 26 | 699 | 0.4− | 0.4− | 2003 02 03 | 704 | 0.5− | 0.4− | 2006 09 16 | 703 | 1.1− | 0.7− |
| 2003 01 26 | 699 | 0.5+ | 0.9− | 2003 02 08 | 704 | 0.2+ | 0.5− | 2006 09 16 | 703 | 0.4+ | 1.1+ |
| 2003 01 27 | 704 | 0.5+ | 0.4− | 2003 02 08 | 704 | (1.6+ | 1.1+) | 2006 09 28 | 703 | 1.2− | 0.5+ |
| 2003 01 27 | 704 | 0.0 | 0.5− | 2003 02 08 | 704 | 0.1− | 0.9+ | 2006 09 28 | 703 | 0.7+ | 1.2− |
| 2003 01 27 | 704 | 0.2+ | 0.6− | 2003 02 08 | 704 | 0.5− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.2− |
| 2003 01 27 | 704 | 0.8+ | 1.0+ | 2003 02 08 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.7− | 0.6− |
| 2003 01 27 | 704 | 0.5+ | 0.8+ | 2003 02 09 | 608 | 0.1+ | 0.0 | | | | |
| 2003 02 02 | 644 | 0.2− | 0.2+ | 2003 02 09 | 608 | 0.3− | 0.0 | | | | |

**2003 $BX_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.70149 | | (2000.0) | | | |
| $n$ | 0.18511180 | $\omega$ | 163.24003 | | −0.58546135 | −0.79325909 |
| $a$ | 3.0491584 | $\Omega$ | 322.12370 | | +0.70905452 | −0.40101769 |
| $e$ | 0.0465532 | $i$ | 15.80859 | | +0.39303524 | −0.45817554 |
| $P$ | 5.32 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 691 | 0.2− | 0.3+ | 2003 01 30 | 699 | 1.3+ | 1.0+ | 2003 02 22 | 699 | 0.5− | 0.5+ |
| 2000 10 03 | 691 | 0.3+ | 0.4+ | 2003 01 30 | 699 | 0.2− | 0.8+ | 2003 02 22 | 699 | 0.4+ | 0.4+ |
| 2000 10 03 | 691 | 0.8− | 0.3+ | 2003 01 30 | 699 | 0.1− | 1.4+ | 2003 02 22 | 699 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 1.1+ | 0.2− | 2003 01 30 | 699 | 0.7− | 0.2+ | 2003 02 22 | 699 | 1.0− | 0.3+ |
| 2003 01 08 | 704 | 0.0 | 0.4+ | 2003 01 31 | 704 | 0.7+ | 1.3− | 2003 03 07 | 460 | (2.4+ | 1.1−) |
| 2003 01 08 | 704 | 0.3− | 0.3+ | 2003 01 31 | 704 | 1.3+ | 0.7− | 2003 03 07 | 460 | 0.5+ | 1.0− |
| 2003 01 26 | 699 | 0.5− | 0.3+ | 2003 01 31 | 704 | 0.5− | 0.0 | 2003 03 12 | 644 | 0.2− | 0.1− |
| 2003 01 26 | 699 | 0.5+ | 1.0+ | 2003 02 03 | 644 | 0.4− | 0.3+ | 2003 03 12 | 644 | 0.1+ | 0.6+ |
| 2003 01 26 | 699 | 0.3+ | 1.4− | 2003 02 03 | 704 | 0.6− | 0.3− | 2003 03 12 | 644 | 0.1+ | 0.5+ |
| 2003 01 26 | 699 | 1.2+ | 0.7+ | 2003 02 03 | 644 | 0.8− | 0.4+ | 2006 09 17 | 703 | 0.1+ | 0.2− |
| 2003 01 27 | 704 | 0.1− | 0.1− | 2003 02 03 | 704 | (0.4− | 1.6+) | 2006 09 17 | 703 | 0.1+ | 0.9− |
| 2003 01 27 | 704 | 0.3+ | 0.2− | 2003 02 03 | 704 | 0.3+ | 1.2+ | 2006 09 17 | 703 | 0.5− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 704 | 0.1+ | 0.3− | 2003 02 03 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 703 | (1.8+ | 0.1−) | | |
| 2003 01 27 | 704 | 1.0+ | 0.4+ | 2003 02 08 | 704 | 0.4− | 0.8− | 2006 10 19 | 703 | 0.5+ | 0.6− | | |
| 2003 01 27 | 704 | 0.6− | 0.1− | 2003 02 08 | 704 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.6+ | 0.0 | | |
| 2003 01 30 | 699 | 1.3+ | 0.5+ | 2003 02 08 | 704 | 0.6− | 0.0 | 2006 10 19 | 703 | (2.5+ | 0.5−) | | |
| 2003 01 30 | 699 | 0.8− | 0.4+ | 2003 02 11 | 608 | 0.2− | 1.2− | 2006 10 19 | 703 | (3.4+ | 0.3−) | | |
| 2003 01 30 | 699 | 1.0+ | 0.3+ | 2003 02 11 | 608 | 0.1− | 1.2− | | | | | | |
| 2003 01 30 | 699 | 1.1− | 0.7+ | 2003 02 11 | 608 | 0.1− | 0.9− | | | | | | |

### 2003 BA$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.96157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21697361 | $\omega$ | 347.01423 | | −0.27300884 | | −0.96022847 |
| $a$ | 2.7428251 | $\Omega$ | 118.80296 | | +0.88849260 | | −0.27501057 |
| $e$ | 0.2523972 | $i$ | 3.83079 | | +0.36884560 | | −0.04827495 |
| $P$ | 4.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 699 | 0.3+ | 0.3+ | 2003 02 04 | 699 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.2− | 0.3+ | | |
| 2003 01 26 | 699 | 0.1+ | 0.4+ | 2003 02 04 | 704 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.1− | 0.1+ | | |
| 2003 01 26 | 699 | 1.2− | 0.3+ | 2003 02 04 | 704 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.3+ | | |
| 2003 01 26 | 699 | 0.4− | 0.3+ | 2003 02 04 | 704 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.1+ | | |
| 2003 01 27 | 704 | 0.6+ | 0.2+ | 2003 02 04 | 704 | 0.8− | 0.2− | 2006 10 04 | G96 | 0.4+ | 0.4+ | | |
| 2003 01 27 | 704 | 1.1+ | 0.7+ | 2003 02 21 | 644 | 0.1− | 1.1+ | 2006 10 04 | G96 | 0.3+ | 0.1+ | | |
| 2003 01 27 | 704 | 0.5+ | 0.8+ | 2003 02 21 | 644 | 0.0 | 0.8+ | 2006 10 04 | G96 | 0.3+ | 0.0 | | |
| 2003 01 27 | 704 | 1.1+ | 0.6+ | 2003 02 21 | 644 | 0.1+ | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.2+ | | |
| 2003 01 27 | 704 | 1.1+ | 0.1+ | 2003 02 23 | 699 | (0.3− | 1.7−) | 2006 10 16 | 703 | (0.7+ | 2.5+) | | |
| 2003 01 27 | 644 | 0.5− | 1.3− | 2003 02 23 | 699 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.7− | | |
| 2003 01 27 | 644 | 0.1+ | 0.9− | 2003 02 23 | 699 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.6− | | |
| 2003 01 27 | 644 | 0.3− | 0.9− | 2003 02 23 | 699 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.1− | | |
| 2003 01 30 | 699 | 0.8− | 1.4− | 2003 02 24 | 608 | 0.1+ | 0.5− | 2006 10 22 | 703 | (1.9− | 0.8+) | | |
| 2003 01 30 | 699 | 0.3− | 0.3+ | 2003 02 24 | 608 | 0.2+ | 0.6− | 2006 10 22 | 703 | (0.0 | 1.9+) | | |
| 2003 01 30 | 699 | 1.1− | 0.0 | 2003 02 24 | 608 | 0.4+ | 1.1− | 2006 10 22 | 703 | (1.2+ | 1.9+) | | |
| 2003 01 30 | 699 | 0.2+ | 0.2+ | 2003 03 06 | 704 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.7+ | | |
| 2003 01 31 | 704 | 0.6− | 0.2+ | 2003 03 06 | 704 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.6+ | 0.2+ | | |
| 2003 01 31 | 704 | 0.4− | 0.2+ | 2003 03 06 | 704 | 0.2+ | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.2+ | | |
| 2003 01 31 | 704 | 0.0 | 0.8− | 2003 03 06 | 704 | 0.4− | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.1+ | | |
| 2003 01 31 | 704 | 0.3+ | 0.2− | 2003 03 06 | 704 | 1.1+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.0 | | |
| 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 11 13 | 703 | 0.3− | 0.3+ | | |
| 2003 02 03 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 1.0− | 2006 11 13 | 703 | (1.7− | 2.9+) | | |
| 2003 02 03 | 644 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.5− | 1.1− | 2006 11 13 | 703 | 0.8− | 1.1− | | |
| 2003 02 03 | 644 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.4+ | | |
| 2003 02 04 | 699 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 1.4+ | | |
| 2003 02 04 | 699 | 1.1+ | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.4− | | |
| 2003 02 04 | 699 | 1.3− | 0.4− | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.4+ | | |
| 2003 02 04 | 704 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 20 | 704 | 1.0− | 0.5+ | | |

### 2003 BL$_{13}$ = 2006 UM$_{54}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.50422 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21445245 | $\omega$ | 196.15962 | | +0.19188871 | | −0.97339848 |
| $a$ | 2.7642800 | $\Omega$ | 242.92105 | | +0.91528260 | | +0.22353185 |
| $e$ | 0.2135764 | $i$ | 8.08315 | | +0.35417014 | | −0.05028834 |
| $P$ | 4.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 14 | 608 | 0.2− | 0.2+ | 2003 02 02 | 704 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.4− | | |
| 2003 01 14 | 608 | 0.5− | 0.3− | 2003 02 02 | 704 | 0.2− | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2003 01 14 | 608 | 0.2− | 0.2− | 2003 02 02 | 704 | 0.8+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2003 01 26 | 644 | 0.1+ | 0.1+ | 2003 02 02 | 704 | 0.3+ | 1.0+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2003 01 26 | 644 | 0.1+ | 0.1− | 2003 02 02 | 704 | 1.0− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2003 01 26 | 644 | 0.4+ | 0.6+ | 2003 02 02 | 704 | (2.0− | 0.6−) | 2006 10 20 | 644 | 0.5+ | 0.6+ | | |
| 2003 01 27 | 608 | 0.4+ | 0.5− | 2003 02 02 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.5+ | 0.3− | | |
| 2003 01 27 | 608 | 0.0 | 0.3− | 2003 02 02 | 704 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.3+ | | |
| 2003 01 27 | 608 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.9− | 1.2+ | | |
| 2003 01 28 | 704 | (0.3+ | 1.9−) | 2006 10 17 | 703 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.4− | 0.3− | | |
| 2003 01 28 | 704 | 0.2+ | 0.7− | 2006 10 17 | 703 | 0.8− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.4− | | |
| 2003 01 28 | 704 | 0.5+ | 1.0− | 2006 10 17 | 703 | 0.5− | 0.0 | 2006 11 25 | G96 | 0.5+ | 0.2− | | |
| 2003 01 28 | 704 | 0.0 | 0.6− | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 25 | G96 | 0.1− | 0.2− | | |
| 2003 02 02 | 704 | 0.3− | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 25 | G96 | 0.3+ | 0.4− | | |
| 2003 02 02 | 704 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.4− | | | | | | |

### 2003 BF$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.78622 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21313333 | $\omega$ | 347.78357 | | +0.22496036 | | −0.96504507 |
| $a$ | 2.7756741 | $\Omega$ | 89.10284 | | +0.90490328 | | +0.15575060 |
| $e$ | 0.3472812 | $i$ | 7.72864 | | +0.36130720 | | +0.21078367 |
| $P$ | 4.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2003 01 27 | 699 | 0.7− | 1.2+ | 2003 03 03 | 644 | 0.4− | 0.1+ | | |
| 2002 12 31 | 704 | 0.5− | 0.4− | 2003 01 27 | 699 | 0.3− | 0.2+ | 2003 03 03 | 644 | 0.4− | 0.3+ | | |
| 2002 12 31 | 704 | 0.0 | 0.2+ | 2003 01 28 | 644 | 0.1− | 0.1+ | 2003 03 03 | 644 | 0.1+ | 0.3+ | | |
| 2002 12 31 | 704 | 0.2− | 0.4− | 2003 01 28 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | (1.0− | 1.8−) | | |
| 2002 12 31 | 704 | 0.2− | 0.2+ | 2003 01 28 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.2− | | |
| 2003 01 05 | 704 | 0.5+ | 0.3− | 2003 01 31 | 704 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.2+ | | |
| 2003 01 05 | 704 | 0.5− | 0.3− | 2003 01 31 | 704 | 0.5− | 0.2+ | 2006 09 14 | 703 | (2.0− | 1.2−) | | |
| 2003 01 05 | 704 | 0.4+ | 0.3+ | 2003 01 31 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 703 | (0.4+ | 2.2−) | | |
| 2003 01 05 | 704 | 1.1+ | 0.4− | 2003 02 02 | 644 | 0.1− | 0.2− | 2006 09 20 | 703 | 0.2− | 1.0− | | |
| 2003 01 10 | 704 | 0.0 | 0.3+ | 2003 02 02 | 644 | 0.7− | 0.4− | 2006 09 20 | 703 | 0.2− | 1.1+ | | |
| 2003 01 10 | 704 | 0.2+ | 0.2− | 2003 02 02 | 644 | 0.0 | 0.1− | 2006 09 20 | 703 | 1.2− | 0.2+ | | |
| 2003 01 10 | 704 | 0.6+ | 0.6+ | 2003 02 19 | 644 | 0.3+ | 0.0 | 2006 09 26 | 703 | (0.5− | 1.6+) | | |
| 2003 01 10 | 704 | 0.5+ | 0.4− | 2003 02 19 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | (0.9+ | 1.9+) | | |
| 2003 01 10 | 704 | 0.0 | 0.3+ | 2003 02 19 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | (2.8+ | 1.2−) | | |
| 2003 01 26 | 699 | 1.5+ | 0.3− | 2003 02 23 | 699 | 0.2+ | 0.1+ | 2006 09 26 | 703 | (2.1+ | 0.6−) | | |
| 2003 01 26 | 699 | 1.2+ | 0.2− | 2003 02 23 | 699 | 0.6+ | 1.3− | 2006 09 26 | 703 | 0.6+ | 0.5+ | | |
| 2003 01 26 | 699 | 1.4− | 0.2+ | 2003 02 23 | 699 | 0.1+ | 0.4− | 2006 09 26 | 703 | 1.0+ | 0.6+ | | |
| 2003 01 26 | 699 | 0.2− | 0.1− | 2003 02 23 | 699 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.4− | 0.4− | | |
| 2003 01 26 | 608 | 0.6− | 0.6− | 2003 02 26 | 704 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.6− | 0.3− | | |
| 2003 01 26 | 608 | 0.3− | 1.1− | 2003 02 26 | 704 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.4− | | |
| 2003 01 26 | 608 | 0.4− | 0.7− | 2003 02 26 | 704 | 0.8+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.5− | | |
| 2003 01 27 | 699 | 0.2+ | 0.3+ | 2003 02 26 | 704 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.8+ | 0.5+ | | |
| 2003 01 27 | 699 | (0.4− | 2.0+) | 2003 02 26 | 704 | 0.6− | 0.7+ | 2006 09 26 | 703 | 0.3+ | 0.1+ | | |

### 2003 BN$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.59041 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21297643 | $\omega$ | 267.27872 | | −0.69331673 | | −0.71577943 |
| $a$ | 2.7770371 | $\Omega$ | 226.99554 | | +0.69820082 | | −0.63852641 |
| $e$ | 0.2527588 | $i$ | 6.55609 | | +0.17840273 | | −0.28274340 |
| $P$ | 4.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 16 | 644 | 0.2+ | 0.3+ | 2003 02 22 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.6− | 0.2+ | | |
| 2003 01 16 | 644 | 0.4− | 0.4+ | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.6− | 0.1− | | |
| 2003 01 16 | 644 | 0.1− | 0.0 | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.7− | 0.1+ | | |
| 2003 01 26 | 644 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.5+ | 0.6− | 2006 10 28 | 691 | 0.3+ | 0.1− | | |
| 2003 01 26 | 644 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.6− | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2003 01 26 | 644 | 0.8− | 0.4− | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2003 01 27 | 608 | 0.2− | 0.9− | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2003 01 27 | 608 | 0.1+ | 0.8− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.2+ | | |
| 2003 01 27 | 608 | 0.3− | 0.7− | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2003 01 28 | 704 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1+ | | |
| 2003 01 28 | 704 | 0.7+ | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.3− | 0.1− | | |
| 2003 01 28 | 704 | 0.4+ | 0.6+ | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 2003 01 28 | 704 | 0.7+ | 1.0+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.2− | | |
| 2003 01 28 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2003 02 22 | 644 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3− | | |
| 2003 02 22 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | | | | | | |

**2003 BO$_{18}$ = 2006 QN$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.62294 | | (2000.0) | | | |
| $n$ | 0.17783780 | $\omega$ | 271.46741 | | +0.65134790 | −0.72836640 |
| $a$ | 3.1317470 | $\Omega$ | 135.35282 | | +0.75877884 | +0.62552465 |
| $e$ | 0.1335894 | $i$ | 17.61560 | | −0.00076864 | +0.27964496 |
| $P$ | 5.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 05 | 691 | 0.0 | 0.6+ | 2003 01 28 | 291 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.0 | 0.5+ |
| 2000 07 05 | 691 | 0.0 | 1.0+ | 2003 01 28 | 291 | 0.4− | 0.8+ | 2006 08 30 | 699 | 0.2− | 0.5+ |
| 2000 07 05 | 691 | 0.1+ | 0.9+ | 2003 01 31 | 704 | 0.2− | 0.7+ | 2006 08 30 | 699 | 0.0 | 0.3− |
| 2001 10 14 | 699 | 1.1+ | 0.8− | 2003 01 31 | 704 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.4+ | 1.3+ |
| 2001 10 14 | 699 | 0.2+ | 1.5+ | 2003 01 31 | 704 | (2.4+ | 1.9+) | 2006 09 20 | 703 | 0.2+ | 0.2− |
| 2001 10 14 | 699 | 1.1− | 0.0 | 2003 01 31 | 704 | 0.2+ | 0.8+ | 2006 09 20 | 703 | 0.5− | 1.0− |
| 2001 10 14 | 699 | 0.6+ | 1.0+ | 2003 02 03 | 704 | 1.0+ | 0.7+ | 2006 09 20 | 703 | 0.3− | 0.6+ |
| 2001 11 19 | 608 | 0.5− | 0.1− | 2003 02 03 | 704 | 0.5+ | 0.9+ | 2006 09 20 | 703 | 0.5+ | 0.2+ |
| 2001 11 19 | 608 | 0.2− | 0.3− | 2003 02 03 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 2001 11 19 | 608 | 0.8− | 0.2− | 2003 02 03 | 704 | 1.1+ | 1.6+ | 2006 09 26 | 703 | 0.7− | 0.7+ |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 0.4− | 0.6+ | 2006 09 26 | 703 | 0.7− | 0.3− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2003 02 04 | 699 | 1.1− | 0.2− | 2006 09 26 | 703 | 0.1+ | 1.0+ |
| 2003 01 27 | 704 | 0.4+ | 0.4+ | 2003 02 04 | 699 | 0.2− | 0.6− | 2006 09 26 | 703 | 0.1+ | 0.5− |
| 2003 01 27 | 704 | 0.1− | 0.3+ | 2003 02 04 | 699 | 1.1− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2003 01 27 | 704 | 1.1+ | 0.7+ | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.7+ |
| 2003 01 27 | 704 | 0.4+ | 0.2+ | 2006 08 23 | 644 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.2+ | 1.2− |
| 2003 01 28 | 291 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.3+ | 0.1+ | | | | |

**2003 BY$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 321.46134 | | (2000.0) | | | |
| $n$ | 0.23776124 | $\omega$ | 217.40369 | | −0.51962106 | −0.82089288 |
| $a$ | 2.5805286 | $\Omega$ | 265.07462 | | +0.83006634 | −0.41932574 |
| $e$ | 0.1210145 | $i$ | 13.75634 | | +0.20244463 | −0.38768648 |
| $P$ | 4.15 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 645 | 0.0 | 0.0 | 2003 01 28 | 704 | 0.5− | 0.7− | 2006 10 21 | G96 | 0.5− | 0.1− |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2003 01 30 | 644 | 0.8+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 0.4− | 0.3− | 2003 01 30 | 644 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2003 01 05 | 704 | 0.1− | 0.3− | 2003 01 30 | 644 | 0.6+ | 0.3+ | 2006 11 14 | G96 | 0.7− | 0.0 |
| 2003 01 05 | 704 | 1.4− | 0.4+ | 2003 02 10 | 636 | 0.5− | 0.9+ | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2003 01 25 | 644 | 0.4+ | 0.4+ | 2003 02 10 | 636 | 0.5− | 1.4− | 2006 11 18 | 704 | (0.2+ | 2.3+) |
| 2003 01 25 | 644 | 0.7+ | 0.3+ | 2003 02 21 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 1.2+ |
| 2003 01 25 | 644 | 0.8+ | 0.5+ | 2003 02 21 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2003 01 28 | 704 | 0.2− | 0.3− | 2003 02 21 | 644 | 0.2+ | 0.3+ | 2006 11 28 | 185 | 0.5+ | 0.1+ |
| 2003 01 28 | 704 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 11 28 | 185 | 1.4+ | 0.1− |
| 2003 01 28 | 704 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.5− | | | | |
| 2003 01 28 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− | | | | |

**2003 BT$_{23}$ = 2006 VK$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.82606 | | (2000.0) | | | |
| $n$ | 0.22748491 | $\omega$ | 167.86128 | | +0.54124409 | −0.81961250 |
| $a$ | 2.6576696 | $\Omega$ | 249.09650 | | +0.75368272 | +0.57192727 |
| $e$ | 0.2617412 | $i$ | 11.60083 | | +0.37285010 | +0.03368302 |
| $P$ | 4.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 644 | 0.5+ | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.6− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2003 01 25 | 644 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.5+ | 0.1− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2003 01 25 | 644 | 0.5+ | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 11 24 | 691 | 0.6− | 0.3+ |
| 2003 01 28 | 704 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2003 01 28 | 704 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.6+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2003 01 28 | 704 | (2.2+ | 0.2+) | 2006 11 18 | 704 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2003 01 28 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 1.1+ | 0.2+ | 2006 12 01 | 704 | 0.1+ | 1.1+ |
| 2003 02 01 | 699 | 1.1− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.4+ | 2006 12 01 | 704 | 0.3− | 0.1− |
| 2003 02 01 | 699 | 1.0− | 1.1− | 2006 11 18 | 704 | 0.1− | 0.4+ | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2003 02 01 | 699 | (0.5+ | 2.8−) | 2006 11 21 | 704 | 0.6− | 0.3− | 2006 12 01 | 704 | 0.5+ | 0.5− |
| 2003 02 01 | 699 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 1.4− | 1.3+ | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2006 11 15 | 703 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.3+ | 2006 12 01 | 704 | 0.1− | 0.4+ |
| 2006 11 15 | 703 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.4+ | 0.0 |
| 2006 11 15 | 703 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.7− | 0.3+ | | | | |

**2003 BU$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 173.99138 | | (2000.0) | | | |
| $n$ | 0.22354047 | $\omega$ | 64.15021 | | −0.17907491 | +0.98212367 |
| $a$ | 2.6888419 | $\Omega$ | 195.86015 | | −0.96145949 | −0.18720162 |
| $e$ | 0.0549032 | $i$ | 12.25535 | | −0.20863324 | +0.01971436 |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1− | 0.3− | 2004 04 14 | 691 | 0.0 | 0.2+ | 2005 08 29 | 644 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2004 04 23 | 704 | 0.5+ | 0.3+ | 2005 08 29 | 699 | 0.4− | 1.0+ |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2004 04 23 | 704 | 0.1− | 0.7+ | 2005 08 29 | 644 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.4− | 0.5+ | 2004 04 23 | 704 | 0.1+ | 0.5+ | 2005 08 29 | 644 | 0.1+ | 0.4+ |
| 2003 01 25 | 644 | 0.2+ | 0.5+ | 2004 04 23 | 704 | 0.1+ | 0.4+ | 2005 08 29 | 699 | 1.1+ | 0.2+ |
| 2003 01 25 | 644 | 0.3+ | 0.5+ | 2004 04 23 | 704 | 1.2− | 0.4− | 2005 08 29 | 699 | 0.2+ | 0.4+ |
| 2003 01 25 | 644 | 0.4+ | 0.8+ | 2004 05 14 | 704 | 0.3+ | 0.7+ | 2005 10 01 | 703 | 0.1− | 0.6− |
| 2003 01 28 | 704 | 0.2− | 0.6− | 2004 05 14 | 704 | 0.7− | 1.0− | 2005 10 01 | 703 | 0.5− | 0.6− |
| 2003 01 28 | 704 | 1.5− | 0.5− | 2004 05 14 | 704 | 0.0 | 0.0 | 2005 10 01 | 703 | 1.0− | 0.5− |
| 2003 01 28 | 704 | 0.1− | 1.0− | 2004 05 14 | 704 | 0.2+ | 0.8− | 2005 10 01 | 703 | 0.3− | 0.2+ |
| 2003 01 28 | 704 | 0.4− | 1.3− | 2004 05 23 | 704 | 0.1+ | 0.0 | 2005 10 30 | G96 | 0.0 | 0.1+ |
| 2003 02 01 | 699 | 0.1− | 0.9+ | 2004 05 23 | 704 | 0.5+ | 0.1− | 2005 10 30 | G96 | 0.3− | 0.0 |
| 2003 02 01 | 699 | 0.8+ | 1.1− | 2004 05 23 | 704 | 0.4− | 0.0 | 2005 10 30 | G96 | 0.2+ | 0.0 |
| 2003 02 01 | 699 | 1.6+ | 0.4+ | 2004 05 23 | 704 | 0.2+ | 0.4+ | 2005 10 30 | G96 | 0.0 | 0.1+ |
| 2003 02 01 | 699 | 0.6− | 0.8+ | 2004 05 23 | 704 | 1.1+ | 0.1− | 2005 12 04 | G96 | 0.3− | 0.5+ |
| 2003 03 30 | 645 | 0.0 | 0.2+ | 2005 08 29 | 644 | 0.3+ | 0.3+ | 2005 12 04 | G96 | 0.2− | 0.2+ |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2005 08 29 | 644 | 0.5+ | 0.1+ | 2005 12 04 | G96 | 0.7− | 0.9+ |
| 2004 04 14 | 691 | 0.0 | 0.1+ | 2005 08 29 | 644 | 0.1+ | 0.2+ | 2005 12 04 | G96 | 0.4+ | 0.6+ |
| 2004 04 14 | 691 | 0.2− | 0.2+ | 2005 08 29 | 699 | 0.3− | 0.2+ | | | | |

**2003 BY$_{23}$ = 1998 BV$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.78760 | | (2000.0) | | | |
| $n$ | 0.22560473 | $\omega$ | 161.48063 | | +0.68596699 | −0.69885305 |
| $a$ | 2.6724151 | $\Omega$ | 244.62939 | | +0.63605191 | +0.71115530 |
| $e$ | 0.0970658 | $i$ | 12.95845 | | +0.35339391 | +0.07656735 |
| $P$ | 4.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 26 | 691 | 0.4− | 0.6− | 2001 09 21 | 699 | 0.1+ | 0.5− | 2003 01 25 | 644 | 0.5+ | 0.8+ |
| 1998 01 26 | 691 | 0.2+ | 0.6− | 2001 09 21 | 699 | 0.5− | 0.7+ | 2003 01 25 | 644 | 0.2+ | 0.8+ |
| 1998 01 26 | 691 | 0.1− | 0.4− | 2001 09 21 | 699 | 0.2− | 0.6+ | 2003 01 28 | 704 | 0.5+ | 0.9+ |
| 2001 08 20 | 644 | 0.2− | 1.4+ | 2001 10 26 | 644 | 0.4− | 0.0 | 2003 01 28 | 704 | 0.1+ | 2.1+ |
| 2001 08 20 | 644 | 0.1+ | 1.0+ | 2001 10 26 | 644 | 0.3− | 0.1+ | 2003 01 28 | 704 | (0.2− | 2.6+) |
| 2001 08 20 | 644 | 0.3− | 1.0+ | 2001 10 26 | 644 | 0.3− | 0.0 | 2004 05 13 | 644 | 0.2+ | 0.1− |
| 2001 09 10 | 699 | 1.5+ | 0.3− | 2001 11 17 | 704 | 0.0 | 0.5+ | 2004 05 13 | 644 | 0.3+ | 0.2+ |
| 2001 09 10 | 699 | 0.8+ | 0.3+ | 2001 11 17 | 704 | 0.1+ | 0.2− | 2004 05 13 | 644 | 0.4+ | 0.2+ |
| 2001 09 10 | 699 | 0.5+ | 0.8+ | 2001 11 17 | 704 | 0.5+ | 0.3+ | 2005 08 26 | 644 | 0.2− | 0.2− |
| 2001 09 10 | 699 | 0.3− | 0.2− | 2001 11 17 | 704 | 0.7+ | 1.9+ | 2005 08 26 | 644 | 0.5− | 0.5− |
| 2001 09 21 | 699 | 1.5− | 0.6− | 2003 01 25 | 644 | 0.3+ | 0.7+ | 2005 08 26 | 644 | 0.3− | 0.6− |

**2003 BE$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.56926 | | (2000.0) | | | |
| $n$ | 0.21150399 | $\omega$ | 246.25973 | | −0.02013454 | −0.99789430 |
| $a$ | 2.7899109 | $\Omega$ | 205.13002 | | +0.96202055 | −0.00254505 |
| $e$ | 0.2886617 | $i$ | 8.34806 | | +0.27223347 | −0.06481110 |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 645 | 0.1− | 0.1− | 2003 02 03 | 608 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2002 11 13 | 645 | 0.1− | 0.1− | 2003 02 04 | 704 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2003 01 02 | 704 | 0.3− | 0.6+ | 2003 02 04 | 704 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2003 01 02 | 704 | 0.8− | 1.5+ | 2003 02 04 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2003 01 02 | 704 | 0.3− | 0.1− | 2003 02 04 | 704 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2003 01 25 | 644 | 0.2− | 0.4− | 2003 02 04 | 704 | 0.8− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2003 01 25 | 644 | 0.6+ | 0.8+ | 2003 02 08 | 608 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.5+ |
| 2003 01 25 | 644 | 0.1− | 0.6− | 2003 02 08 | 608 | 0.4+ | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2003 01 25 | 644 | 0.5+ | 0.9+ | 2003 02 08 | 608 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2− |
| 2003 01 25 | 644 | 0.4− | 0.4− | 2003 02 22 | 644 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2003 01 25 | 644 | 0.4+ | 0.7+ | 2003 02 22 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2003 01 28 | 704 | (0.2− | 1.7+) | 2003 02 22 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2003 01 28 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 703 | 0.8+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2003 01 28 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 703 | 0.6+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2003 01 28 | 704 | 0.2+ | 0.8+ | 2006 09 17 | 703 | 1.2− | 1.0− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2003 01 28 | 704 | 0.2+ | 1.0+ | 2006 09 17 | 703 | 0.4− | 1.4− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2003 01 28 | 608 | (1.9+ | 0.3+) | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2003 01 28 | 608 | (1.7+ | 0.7+) | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2003 01 28 | 608 | 1.5+ | 0.4− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2003 02 03 | 608 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2− | | | | |
| 2003 02 03 | 608 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.1+ | | | | |

### 2003 BH$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.14622 | | (2000.0) | | | |
| $n$ | 0.21570070 | $\omega$ | 272.74904 | | −0.72984005 | −0.67659717 |
| $a$ | 2.7536053 | $\Omega$ | 224.69811 | | +0.66934941 | −0.67821393 |
| $e$ | 0.2032508 | $i$ | 7.98623 | | +0.13894194 | −0.28677889 |
| $P$ | 4.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 691 | 0.2− | 0.0 | 2003 01 25 | 644 | 0.2+ | 0.6+ | 2003 02 22 | 644 | 0.1− | 0.1+ |
| 1999 05 17 | 691 | 0.0 | 0.3− | 2003 01 25 | 644 | 0.3+ | 0.2+ | 2003 02 22 | 644 | 0.2+ | 0.2+ |
| 1999 05 17 | 691 | 0.2+ | 0.4+ | 2003 01 28 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2002 11 13 | 645 | 0.1− | 0.1− | 2003 01 28 | 704 | 0.5− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.4+ |
| 2002 11 13 | 645 | 0.1− | 0.1− | 2003 01 28 | 704 | 0.6+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2003 01 02 | 699 | 1.3− | 1.2+ | 2003 01 28 | 704 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2003 01 02 | 699 | 0.1+ | 0.7− | 2003 01 28 | 704 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2003 01 02 | 699 | 0.5− | 0.7− | 2003 02 03 | 608 | 0.7+ | 0.9+ | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2003 01 02 | 699 | 1.2+ | 1.0− | 2003 02 03 | 608 | 1.0+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2003 01 02 | 704 | 0.6− | 0.1+ | 2003 02 03 | 608 | 1.0+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2003 01 02 | 704 | 0.4− | 0.1+ | 2003 02 09 | 608 | 0.4− | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2003 01 02 | 704 | 0.6− | 0.3+ | 2003 02 09 | 608 | 0.4− | 0.4− | 2006 11 12 | G96 | 0.4− | 0.0 |
| 2003 01 02 | 704 | (2.1− | 0.1+) | 2003 02 09 | 608 | 0.3− | 0.6− | 2006 11 12 | G96 | 0.4− | 0.1− |
| 2003 01 25 | 644 | 0.1+ | 0.4+ | 2003 02 22 | 644 | 0.5+ | 0.2+ | | | | |

### 2003 BA$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.91745 | | (2000.0) | | | |
| $n$ | 0.17350546 | $\omega$ | 315.93139 | | +0.17396945 | −0.89256178 |
| $a$ | 3.1836644 | $\Omega$ | 119.72223 | | +0.98273863 | +0.13036653 |
| $e$ | 0.2114163 | $i$ | 28.62253 | | +0.06292383 | +0.43166890 |
| $P$ | 5.68 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 29 | 691 | 0.2− | 0.6− | 2002 12 05 | 704 | 0.3+ | 0.5+ | 2003 01 28 | 704 | 0.4− | 0.2− |
| 1992 01 29 | 691 | 0.0 | 0.1− | 2002 12 05 | 704 | 0.1+ | 0.6+ | 2003 01 28 | 704 | 0.4− | 0.3− |
| 1992 01 29 | 691 | 0.5+ | 0.4− | 2002 12 05 | 704 | 0.4+ | 0.4+ | 2003 01 28 | 704 | 0.2− | 0.5− |
| 2001 08 16 | 644 | 0.4+ | 0.5+ | 2002 12 05 | 704 | 0.2+ | 0.4+ | 2003 01 28 | 704 | 0.1− | 0.7+ |
| 2001 08 16 | 644 | 0.5− | 0.4+ | 2003 01 02 | 704 | 0.2− | 0.1+ | 2003 02 28 | 704 | 0.5+ | 0.8+ |
| 2001 08 16 | 644 | 0.0 | 0.7+ | 2003 01 02 | 704 | 0.4− | 0.0 | 2003 02 28 | 704 | 0.2+ | 0.4+ |
| 2002 11 30 | 704 | 0.7− | 1.2− | 2003 01 02 | 704 | 0.3− | 0.5+ | 2003 02 28 | 704 | 0.4− | 1.0+ |
| 2002 11 30 | 704 | 0.3− | 0.9− | 2003 01 02 | 704 | 0.1+ | 0.1+ | 2003 02 28 | 704 | 0.9− | 1.2+ |
| 2002 11 30 | 704 | 0.1+ | 0.3− | 2003 01 02 | 704 | 0.1+ | 0.8+ | 2004 04 13 | 645 | 0.0 | 0.1+ |
| 2002 11 30 | 704 | 0.5+ | 0.6− | 2003 01 26 | 644 | 0.4+ | 0.2+ | 2004 04 13 | 645 | 0.0 | 0.1+ |
| 2002 11 30 | 704 | 0.8− | 0.1+ | 2003 01 26 | 644 | 0.2+ | 0.3+ | | | | |
| 2002 12 05 | 704 | 0.1+ | 0.7+ | 2003 01 26 | 644 | 0.1− | 0.5+ | | | | |

### 2003 BB$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.74514 | | (2000.0) | | | |
| $n$ | 0.23359168 | $\omega$ | 275.69447 | | −0.53801039 | −0.83674910 |
| $a$ | 2.6111459 | $\Omega$ | 207.62476 | | +0.83390765 | −0.51068073 |
| $e$ | 0.2397242 | $i$ | 12.70273 | | +0.12305626 | −0.19762626 |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.4− | 0.2+ | 2006 10 15 | D35 | 0.0 | 0.3− | 2006 11 19 | 703 | 0.0 | 0.2+ |
| 2002 11 30 | 704 | 0.9+ | 0.1+ | 2006 10 15 | D35 | 0.5+ | 0.2+ | 2006 11 19 | 703 | 0.6+ | 0.4+ |
| 2002 11 30 | 704 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 1.2− | 0.2+ |
| 2003 01 02 | 704 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2003 01 02 | 704 | 0.4+ | 0.6− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.4+ | 0.0 |
| 2003 01 02 | 704 | 0.3− | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.9− | 0.5+ |
| 2003 01 26 | 644 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2003 01 26 | 644 | 0.7+ | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2003 01 26 | 644 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2003 01 28 | 704 | 1.5− | 0.3+ | 2006 11 11 | 703 | 1.3+ | 0.9− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2003 01 28 | 704 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.2− | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2003 01 28 | 704 | 0.6− | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.8− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 01 28 | 704 | (0.5− | 1.6−) | 2006 11 19 | 703 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2006 10 15 | D35 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.5− |

### 2003 BS$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.88058 | | (2000.0) | | | |
| $n$ | 0.21901126 | $\omega$ | 153.97757 | | −0.28203444 | −0.95615202 |
| $a$ | 2.7257860 | $\Omega$ | 312.29348 | | +0.86056642 | −0.21575275 |
| $e$ | 0.2538176 | $i$ | 6.12534 | | +0.42412499 | −0.19805064 |
| $P$ | 4.50 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.1− | 0.1+ | 2003 02 27 | 608 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.9+ | 1.0− |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2003 02 27 | 608 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.5− |
| 2003 01 26 | 699 | 0.1− | 0.5+ | 2003 02 27 | 608 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.8− |
| 2003 01 26 | 699 | 0.0 | 0.7+ | 2003 03 06 | 699 | 0.3+ | 0.1− | 2006 11 02 | 703 | 0.3+ | 0.3+ |
| 2003 01 26 | 699 | 0.5+ | 0.1+ | 2003 03 06 | 699 | 0.5− | 0.5+ | 2006 11 02 | 703 | 0.3+ | 0.0 |
| 2003 01 26 | 699 | 0.1− | 1.0+ | 2003 03 06 | 699 | 0.1+ | 0.5− | 2006 11 02 | 703 | 0.5+ | 0.1− |
| 2003 01 28 | 704 | 0.1− | 0.2− | 2003 03 06 | 704 | 0.6− | 1.1− | 2006 11 02 | 703 | 0.5+ | 1.0+ |
| 2003 01 28 | 704 | 0.2+ | 0.3− | 2003 03 06 | 699 | 0.6− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2003 01 28 | 704 | (1.6+ | 1.9−) | 2003 03 06 | 704 | 0.0 | 0.9− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2003 02 12 | 608 | 0.4+ | 0.0 | 2003 03 06 | 704 | 0.5+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2003 02 12 | 608 | 0.1− | 0.1− | 2003 03 07 | 704 | 0.3+ | 0.9+ | 2006 11 15 | 703 | 0.4− | 0.5+ |
| 2003 02 12 | 608 | 0.4+ | 0.1− | 2003 03 07 | 704 | 0.0 | 0.9+ | 2006 11 15 | 703 | 0.3+ | 0.4− |
| 2003 02 22 | 644 | 0.2+ | 0.4+ | 2003 03 07 | 704 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.7− |
| 2003 02 22 | 644 | 0.0 | 0.1+ | 2003 03 07 | 704 | 0.8+ | 0.2+ | 2006 11 22 | 703 | 1.0− | 0.5+ |
| 2003 02 22 | 644 | 0.6+ | 0.5+ | 2003 03 07 | 704 | 1.3− | 0.8+ | 2006 11 22 | 703 | 0.3− | 0.7− |
| 2003 02 26 | 608 | 0.3− | 0.6− | 2005 12 01 | 695 | 0.1+ | 0.2+ | 2006 11 22 | 703 | (1.7+ | 0.6−) |
| 2003 02 26 | 608 | 0.0 | 0.7− | 2005 12 01 | 695 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.0 |
| 2003 02 26 | 608 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.3− | 0.4− | | | | |

### 2003 BB$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.56022 | | (2000.0) | | | |
| $n$ | 0.23012093 | $\omega$ | 200.21970 | | −0.84113617 | −0.51336563 |
| $a$ | 2.6373350 | $\Omega$ | 307.72489 | | +0.52105723 | −0.68497877 |
| $e$ | 0.1158034 | $i$ | 12.42134 | | +0.14487688 | −0.51697177 |
| $P$ | 4.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.3− | 0.5+ | 2003 02 02 | 704 | 1.1+ | 0.0 | 2003 03 07 | 704 | 0.4− | 0.1− |
| 2000 07 30 | 807 | 0.2− | 0.5+ | 2003 02 02 | 704 | 0.1+ | 0.2+ | 2003 03 07 | 704 | 0.5− | 0.6+ |
| 2003 01 04 | 704 | 0.2+ | 0.9+ | 2003 02 09 | 644 | 0.3+ | 0.4+ | 2003 03 07 | 608 | 0.2− | 0.1− |
| 2003 01 04 | 704 | 0.1− | 1.2− | 2003 02 09 | 644 | 0.3+ | 0.4+ | 2003 03 07 | 608 | 0.7− | 0.5− |
| 2003 01 04 | 704 | 1.2+ | 1.4− | 2003 02 09 | 644 | 0.1− | 0.1− | 2003 03 07 | 608 | 0.3− | 0.1+ |
| 2003 01 04 | 704 | 0.3+ | 0.5− | 2003 02 19 | 608 | 1.0− | 1.7+ | 2003 03 09 | 704 | 0.0 | 0.2− |
| 2003 01 26 | 699 | 0.2+ | 0.1− | 2003 02 19 | 608 | 0.8− | 1.3+ | 2003 03 09 | 704 | 0.4+ | 0.1− |
| 2003 01 26 | 699 | 0.9− | 0.5+ | 2003 02 19 | 608 | 0.8− | 1.6+ | 2003 03 09 | 704 | 0.3+ | 0.1− |
| 2003 01 26 | 699 | 0.6− | 0.2+ | 2003 03 07 | 704 | 0.4− | 0.2− | 2003 03 09 | 704 | 0.2+ | 0.0 |
| 2003 01 26 | 699 | 0.3+ | 1.0+ | 2003 03 07 | 704 | 0.0 | 0.5− | 2003 03 09 | 704 | 0.6+ | 0.1+ |
| 2003 01 28 | 704 | 0.6− | 0.8− | 2003 03 07 | 704 | 0.1− | 0.5− | 2003 03 10 | 599 | 0.1− | 0.9− |
| 2003 01 28 | 704 | 0.1+ | 0.2− | 2003 03 07 | 704 | 0.3+ | 0.3− | 2003 03 10 | 599 | 0.2+ | 0.3− |
| 2003 01 28 | 704 | 0.7+ | 0.5+ | 2003 03 07 | 704 | 0.2+ | 0.6+ | 2003 03 10 | 599 | 0.2− | 0.4− |
| 2003 01 28 | 704 | 0.2− | 1.0− | 2003 03 07 | 704 | 0.1− | 0.0 | 2003 03 10 | 599 | 0.2− | 0.2+ |
| 2003 01 28 | 704 | 0.4+ | 0.5+ | 2003 03 07 | 704 | 0.1− | 0.2+ | 2005 10 06 | 703 | 0.8+ | 0.2+ |
| 2003 02 02 | 704 | 0.8+ | 0.4+ | 2003 03 07 | 704 | 0.0 | 0.0 | 2005 10 06 | 703 | 0.1+ | 0.2+ |
| 2003 02 02 | 704 | 0.6+ | 0.4+ | 2003 03 07 | 704 | 0.3− | 0.7− | 2005 10 06 | 703 | 0.1− | 0.3− |
| 2003 02 02 | 704 | 0.1+ | 0.1+ | 2003 03 07 | 704 | 0.4+ | 1.4− | 2005 10 06 | 703 | 0.8− | 0.1− |

**2003 BO$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.76259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23302645 | $\omega$ | 247.20397 | | −0.77536867 | −0.62821771 | |
| $a$ | 2.6153666 | $\Omega$ | 253.81559 | | +0.60120240 | −0.70310446 | |
| $e$ | 0.1820542 | $i$ | 3.84434 | | +0.19328503 | −0.33314654 | |
| $P$ | 4.23 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.9− | 0.7+ | 2003 02 03 | 699 | 0.5+ | 0.7− | 2003 03 26 | 699 | 0.0 | 0.2+ |
| 2001 09 28 | 644 | 0.0 | 0.9+ | 2003 02 03 | 699 | 0.2+ | 0.2+ | 2003 04 03 | 460 | 0.7− | 0.9+ |
| 2001 09 28 | 644 | 0.4− | 0.2+ | 2003 02 03 | 699 | 0.4+ | 0.3+ | 2003 04 03 | 460 | 0.5− | 0.0 |
| 2003 01 26 | 699 | 0.4− | 0.1− | 2003 02 22 | 683 | 0.1− | 0.7+ | 2005 11 01 | G96 | 0.2+ | 0.5+ |
| 2003 01 26 | 699 | 1.0− | 0.5+ | 2003 02 22 | 683 | 0.1+ | 0.4− | 2005 11 01 | G96 | 0.3+ | 0.1+ |
| 2003 01 26 | 699 | 0.6− | 1.0− | 2003 02 22 | 683 | 0.5− | 0.3− | 2005 11 01 | G96 | 0.1+ | 0.4− |
| 2003 01 26 | 699 | 1.0− | 0.4+ | 2003 02 23 | 683 | (2.3+ | 3.3+) | 2005 11 01 | G96 | 0.3− | 0.2+ |
| 2003 01 28 | 704 | 0.4+ | 0.6− | 2003 02 23 | 683 | (1.9+ | 0.2−) | 2006 09 28 | 691 | 0.5+ | 0.2− |
| 2003 01 28 | 704 | 0.4− | 0.4+ | 2003 02 23 | 683 | 1.0+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2003 01 28 | 704 | (1.7+ | 1.3−) | 2003 03 07 | 704 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.3− |
| 2003 01 28 | 704 | 0.8+ | 0.9+ | 2003 03 07 | 704 | 0.9+ | 0.2+ | 2006 11 16 | G96 | 0.8− | 0.1− |
| 2003 02 02 | 704 | 0.2+ | 1.1+ | 2003 03 07 | 704 | 0.8− | 0.4− | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2003 02 02 | 704 | 0.0 | 0.7+ | 2003 03 26 | 699 | 1.1+ | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.2+ |
| 2003 02 02 | 704 | 0.6+ | 0.0 | 2003 03 26 | 699 | 0.3− | 0.4− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2003 02 03 | 699 | 1.4+ | 0.8− | 2003 03 26 | 699 | 0.2− | 0.1− | | | | |

**2003 BX$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.96586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19119651 | $\omega$ | 333.68072 | | −0.91957704 | +0.37252767 | |
| $a$ | 2.9841186 | $\Omega$ | 228.77006 | | −0.32480965 | −0.89963179 | |
| $e$ | 0.2061445 | $i$ | 9.56005 | | −0.22108089 | −0.22778451 | |
| $P$ | 5.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 645 | 0.2− | 0.1− | 2003 02 03 | 683 | (0.6+ | 1.6−) | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2002 11 13 | 645 | 0.1− | 0.1− | 2003 02 04 | 683 | (2.1+ | 0.5−) | 2006 10 28 | 691 | 0.6− | 0.0 |
| 2003 01 02 | 704 | 0.5+ | 1.0− | 2003 02 04 | 683 | 1.4+ | 0.8− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2003 01 02 | 704 | 0.5− | 0.0 | 2003 02 04 | 683 | (1.7+ | 0.1−) | 2006 10 28 | 691 | 0.4− | 0.1+ |
| 2003 01 02 | 704 | 0.0 | 1.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 2003 01 02 | 704 | (0.7− | 1.5+) | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 1.2− | 1.2− |
| 2003 01 02 | 704 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2003 01 26 | 644 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2003 01 26 | 644 | 0.5+ | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.5− | 2006 11 12 | G96 | 0.6+ | 0.1− |
| 2003 01 26 | 644 | 0.1+ | 0.4− | 2006 10 03 | G96 | 0.5+ | 0.6− | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2003 01 28 | 704 | 0.1+ | 0.6+ | 2006 10 03 | G96 | 0.1+ | 1.0− | 2006 11 12 | G96 | 0.5+ | 0.1− |
| 2003 01 28 | 704 | 0.6− | 1.0+ | 2006 10 03 | G96 | 0.1+ | 0.7− | 2006 11 12 | G96 | 0.1+ | 0.2+ |
| 2003 01 28 | 704 | 0.0 | 0.4+ | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.5− |
| 2003 01 28 | 704 | 0.6− | 0.5+ | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2003 01 31 | 683 | 1.4+ | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2003 01 31 | 683 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.7+ | 0.0 |
| 2003 01 31 | 683 | (2.3+ | 1.1−) | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2003 02 02 | 683 | 1.1+ | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2003 02 02 | 683 | 0.1− | 0.8− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2003 02 02 | 683 | 0.2− | 0.4+ | 2006 10 20 | 691 | 1.2+ | 0.7+ | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2003 02 03 | 683 | 0.8+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.1+ | | | | |
| 2003 02 03 | 683 | 0.7− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.3+ | | | | |

**2003 BA$_{31}$ = 2006 QY$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.76692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21055996 | $\omega$ | 118.56260 | | +0.61572759 | −0.78156518 | |
| $a$ | 2.7982436 | $\Omega$ | 293.08237 | | +0.67954900 | +0.59106020 | |
| $e$ | 0.3120458 | $i$ | 6.25161 | | +0.39886425 | +0.19950868 | |
| $P$ | 4.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.9+ | 0.6+ | 2003 01 31 | 704 | 0.2− | 0.5+ | 2006 08 27 | 699 | 0.4− | 0.1+ |
| 2003 01 08 | 704 | 0.2− | 0.9− | 2003 01 31 | 644 | 0.1− | 0.5+ | 2006 08 29 | 703 | 1.7− | 0.7− |
| 2003 01 08 | 704 | 0.9+ | 0.5− | 2003 01 31 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.0 |
| 2003 01 08 | 704 | 0.1+ | 0.7− | 2003 01 31 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.9− | 0.8+ |
| 2003 01 08 | 704 | 0.5+ | 0.4+ | 2003 01 31 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 1.1− | 0.2− |
| 2003 01 27 | 704 | 0.7− | 0.0 | 2003 01 31 | 644 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 1.0− | 1.3+ |
| 2003 01 27 | 704 | 0.7+ | 0.9+ | 2003 02 03 | 704 | (2.7+ | 2.5−) | 2006 08 30 | 704 | 1.0+ | 0.2− |
| 2003 01 27 | 704 | 0.7− | 1.2+ | 2003 02 03 | 704 | (3.0+ | 2.5−) | 2006 08 30 | 704 | 0.7+ | 0.2+ |
| 2003 01 27 | 704 | 0.9− | 0.1− | 2003 02 03 | 704 | (3.0+ | 2.3−) | 2006 09 13 | 644 | 0.1− | 0.1− |
| 2003 01 27 | 644 | 0.3+ | 0.3+ | 2003 02 03 | 704 | (2.5+ | 2.8−) | 2006 09 13 | 644 | 0.1− | 0.4− |
| 2003 01 27 | 704 | 0.3− | 1.1+ | 2003 02 03 | 704 | (2.8+ | 2.4−) | 2006 09 13 | 644 | 0.1− | 0.2− |
| 2003 01 27 | 644 | 0.1+ | 0.2+ | 2003 02 03 | 644 | 0.6− | 1.1− | 2006 09 18 | 703 | 0.4+ | 0.2− |
| 2003 01 27 | 644 | 0.2+ | 0.4+ | 2003 02 03 | 644 | 0.3− | 1.3− | 2006 09 18 | 703 | 0.4− | 0.1+ |
| 2003 01 28 | 704 | 0.4+ | 0.4− | 2003 02 03 | 644 | 0.5− | 0.4− | 2006 09 18 | 703 | 0.8− | 0.8− |
| 2003 01 28 | 704 | 0.4− | 0.9− | 2006 08 24 | 704 | 1.3+ | 0.9+ | 2006 09 18 | 703 | 0.0 | 0.3− |
| 2003 01 28 | 704 | 0.7+ | 0.6− | 2006 08 24 | 704 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.4− | 0.6− |
| 2003 01 28 | 704 | 0.0 | 0.6− | 2006 08 24 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.6+ | 0.3− |
| 2003 01 28 | 704 | 0.1− | 0.8− | 2006 08 27 | 699 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.2− | 0.3+ |
| 2003 01 31 | 644 | 0.0 | 0.3+ | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.6+ | 0.8− |
| 2003 01 31 | 704 | 0.2− | 0.4+ | 2006 08 27 | 699 | 1.5+ | 0.7+ | 2006 09 25 | 704 | 1.1+ | 0.6+ |

**2003 BA$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.97170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27664187 | $\omega$ | 276.45520 | | +0.68249491 | −0.72195201 | |
| $a$ | 2.3326922 | $\Omega$ | 129.83989 | | +0.71544763 | +0.62802374 | |
| $e$ | 0.2003690 | $i$ | 8.53489 | | +0.14945028 | +0.29046767 | |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 13 | 291 | 0.2− | 0.1+ | 2003 01 30 | 644 | 0.0 | 0.1+ | 2005 09 13 | 703 | 0.1+ | 1.1+ |
| 2003 01 13 | 291 | 0.1+ | 0.1+ | 2003 01 30 | 644 | 0.6− | 0.0 | 2005 09 13 | 703 | 0.3+ | 0.5+ |
| 2003 01 13 | 291 | 0.3+ | 0.1− | 2003 01 30 | 644 | 0.1− | 0.1+ | 2005 09 27 | 704 | 0.8+ | 0.4− |
| 2003 01 27 | 704 | 0.4− | 0.2− | 2003 01 30 | 644 | 0.4− | 0.3− | 2005 09 27 | 704 | 1.0+ | 0.3+ |
| 2003 01 27 | 704 | 0.3− | 0.3+ | 2003 01 30 | 644 | 0.2− | 0.0 | 2005 09 27 | 704 | 0.7− | 0.0 |
| 2003 01 27 | 704 | 0.0 | 0.3− | 2003 01 31 | 704 | 0.0 | 0.2− | 2005 09 27 | 704 | 0.8− | 0.6+ |
| 2003 01 27 | 704 | 0.4+ | 1.5− | 2003 01 31 | 704 | 0.4+ | 0.2− | 2005 09 27 | 704 | 0.1− | 0.4− |
| 2003 01 27 | 608 | 0.1+ | 0.4+ | 2003 01 31 | 704 | 0.2− | 0.5− | 2005 09 27 | 704 | 0.3+ | 0.4+ |
| 2003 01 27 | 608 | 0.6− | 0.7+ | 2003 01 31 | 704 | 0.1+ | 0.0 | 2005 09 27 | 704 | 0.4+ | 0.4+ |
| 2003 01 27 | 608 | 0.0 | 1.2+ | 2005 08 26 | 644 | 0.0 | 0.1− | 2005 10 03 | 703 | 0.5− | 0.7− |
| 2003 01 28 | 704 | 0.6+ | 0.6− | 2005 08 26 | 644 | 0.1+ | 0.5− | 2005 10 03 | 703 | 0.7− | 0.7− |
| 2003 01 28 | 704 | 0.9+ | 0.3+ | 2005 08 26 | 644 | 0.0 | 0.5− | 2005 10 03 | 703 | 0.4− | 0.1+ |
| 2003 01 28 | 704 | 0.3− | 0.3+ | 2005 09 13 | 703 | 1.1− | 0.4+ | 2005 10 03 | 703 | 0.5+ | 0.5− |
| 2003 01 30 | 644 | 0.0 | 0.0 | 2005 09 13 | 703 | 0.7+ | 0.1− | | | | |

**2003 BF$_{32}$ = 1999 FH$_{83}$ = 2006 TH$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.95362 | | | (2000.0) | | |
| $n$ | 0.19065593 | $\omega$ | 224.45923 | | +0.98996344 | −0.01166645 |
| $a$ | 2.9897567 | $\Omega$ | 135.62326 | | +0.04801679 | +0.96506689 |
| $e$ | 0.0939190 | $i$ | 11.61780 | | −0.13291644 | +0.26174376 |
| $P$ | 5.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 01 29 | 291 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.2− |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 01 31 | 704 | 0.6− | 0.8− | 2006 10 17 | 703 | (1.6+ | 1.8−) |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 01 31 | 704 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.6+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2003 01 31 | 704 | 0.3− | 0.7− | 2006 10 17 | 703 | 1.1+ | 1.0+ |
| 2003 01 27 | 704 | 0.1− | 0.2− | 2003 01 31 | 704 | 0.0 | 0.7− | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2003 01 27 | 704 | 1.2+ | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 10 28 | 703 | (2.0+ | 1.5+) |
| 2003 01 27 | 704 | 0.5− | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 10 28 | 703 | 0.5− | 1.2+ |
| 2003 01 27 | 704 | 0.6+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.4− | 2006 10 28 | 703 | 0.3+ | 1.3− |
| 2003 01 28 | 704 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.0 | 0.0 |
| 2003 01 28 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.9− | 1.0− |
| 2003 01 28 | 704 | 0.7+ | 0.5+ | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.7− |
| 2003 01 29 | 291 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2003 01 29 | 291 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.2− | 1.3+ |

**2003 BR$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.57458 | | | (2000.0) | | |
| $n$ | 0.20811897 | $\omega$ | 25.56479 | | +0.90989112 | +0.41054270 |
| $a$ | 2.8200811 | $\Omega$ | 310.06444 | | −0.39273259 | +0.80616385 |
| $e$ | 0.0416948 | $i$ | 4.46691 | | −0.13363854 | +0.42609217 |
| $P$ | 4.74 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 291 | 0.0 | 0.4+ | 2005 07 03 | G96 | 0.7− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 291 | 0.4+ | 0.7+ | 2005 07 03 | G96 | 0.7− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 291 | 1.1+ | 0.9+ | 2005 07 03 | G96 | 0.7− | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2003 01 11 | 291 | 0.1− | 0.3+ | 2005 07 11 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2003 01 11 | 291 | 0.0 | 0.1+ | 2005 07 11 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.6+ | 0.0 |
| 2003 01 11 | 291 | 0.0 | 0.3+ | 2005 07 11 | 691 | 0.1− | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2003 01 27 | 291 | 0.2− | 0.0 | 2005 07 18 | 644 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2003 01 27 | 291 | 0.1− | 0.1+ | 2005 07 18 | 644 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2003 01 27 | 291 | 0.2− | 0.2+ | 2005 07 18 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2003 01 28 | 704 | 0.2− | 0.6+ | 2005 08 31 | 691 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2003 01 28 | 704 | 1.1+ | 0.6− | 2005 08 31 | 691 | 0.1+ | 0.9+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2003 01 28 | 704 | 0.5+ | 1.3+ | 2005 08 31 | 691 | 0.1− | 0.6+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2003 01 28 | 704 | 1.2− | 1.1− | 2006 11 11 | 691 | 0.1− | 0.4− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2005 07 03 | G96 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.0 | | | | |

**2003 BC$_{35}$ = 2006 VV$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 237.00520 | | | (2000.0) | | |
| $n$ | 0.21589409 | $\omega$ | 345.41531 | | −0.96980188 | +0.24342966 |
| $a$ | 2.7519606 | $\Omega$ | 208.68722 | | −0.22051213 | −0.90151225 |
| $e$ | 0.1862739 | $i$ | 1.79594 | | −0.10420520 | −0.35779556 |
| $P$ | 4.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 05 | 691 | 0.1+ | 0.2− | 2003 01 29 | 644 | 0.4+ | 0.7− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 1999 05 05 | 691 | 0.1− | 0.3− | 2003 01 31 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 1999 05 05 | 691 | 0.1+ | 0.7+ | 2003 01 31 | 704 | 0.4− | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 691 | 0.1+ | 0.1− | 2003 01 31 | 704 | 0.0 | 1.2+ | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2001 11 21 | 691 | 0.2− | 0.4+ | 2003 01 31 | 704 | 0.6− | 0.8+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 691 | 0.2− | 0.5+ | 2003 02 03 | 704 | 0.3− | 1.0+ | 2006 11 24 | H07 | 0.7− | 0.2− |
| 2003 01 27 | 699 | (1.8+ | 0.4−) | 2003 02 03 | 704 | 0.5+ | 0.6+ | 2006 11 24 | H07 | 0.0 | 0.1− |
| 2003 01 27 | 699 | 0.1− | 0.8− | 2003 02 03 | 704 | 0.4− | 0.7+ | 2006 11 24 | H07 | 0.5− | 0.6+ |
| 2003 01 27 | 704 | 0.2− | 0.9− | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.6− |
| 2003 01 27 | 704 | 0.3− | 0.7− | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2003 01 27 | 699 | 0.3− | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2003 01 27 | 704 | 0.2+ | 0.4− | 2006 11 15 | 691 | 0.4+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2003 01 27 | 699 | 1.3+ | 1.0− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2003 01 29 | 644 | 0.3− | 0.5− | 2006 11 15 | 691 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 01 29 | 644 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.3− | 0.5− | 2006 11 27 | 691 | 0.1− | 0.4+ |

**2003 BL$_{35}$ = 2006 SH$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.56595 | | | (2000.0) | | |
| $n$ | 0.21860216 | $\omega$ | 274.23950 | | +0.77245885 | −0.61705005 |
| $a$ | 2.7291856 | $\Omega$ | 123.93535 | | +0.63043277 | +0.71656103 |
| $e$ | 0.3001638 | $i$ | 10.42931 | | +0.07656262 | +0.32525302 |
| $P$ | 4.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 699 | 1.2+ | 0.0 | 2006 08 28 | 699 | 1.3+ | 0.5+ | 2006 10 04 | 703 | 1.2− | 0.4− |
| 2003 01 27 | 699 | (1.9− | 0.5+) | 2006 08 28 | 699 | 0.8− | 0.9+ | 2006 10 04 | 703 | 0.5+ | 0.7+ |
| 2003 01 27 | 699 | 1.0+ | 1.0+ | 2006 08 28 | 699 | 0.7− | 0.2− | 2006 10 04 | 703 | 0.4+ | 0.3+ |
| 2003 01 27 | 699 | 1.4+ | 0.2− | 2006 08 28 | 699 | 0.3+ | 1.0+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2003 01 27 | 291 | 0.3+ | 0.0 | 2006 09 24 | 699 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2003 01 27 | 291 | 0.2− | 0.0 | 2006 09 24 | 699 | 1.0+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2003 01 27 | 291 | 0.6− | 0.1− | 2006 09 24 | 699 | 0.8+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2003 01 29 | 644 | 0.3+ | 0.2+ | 2006 09 24 | 699 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 01 29 | 644 | 0.3+ | 0.0 | 2006 09 25 | 703 | 1.2− | 1.2− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 01 29 | 644 | 0.0 | 0.3− | 2006 09 25 | 703 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2003 02 10 | 291 | 0.1− | 0.2− | 2006 09 25 | 703 | 0.3− | 1.2− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2003 02 10 | 291 | 0.3− | 0.0 | 2006 09 25 | 703 | 1.1+ | 0.5− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2003 02 10 | 291 | 0.3− | 0.1+ | 2006 10 04 | 703 | 0.1− | 0.2− | | | | |

**2003 BY$_{38}$ = 2006 QU$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.50217 | | | (2000.0) | | |
| $n$ | 0.17817935 | $\omega$ | 61.53741 | | +0.98216706 | −0.01048202 |
| $a$ | 3.1277435 | $\Omega$ | 298.50928 | | −0.08284212 | +0.87216691 |
| $e$ | 0.1821829 | $i$ | 12.33467 | | +0.16877512 | +0.48909612 |
| $P$ | 5.53 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.3+ | 0.4− | 2006 07 24 | 704 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1− |
| 2001 08 23 | 704 | 0.3+ | 0.4+ | 2006 07 24 | 704 | 0.7− | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.3+ |
| 2001 08 23 | 704 | 0.8+ | 0.2+ | 2006 07 24 | 704 | 1.1− | 0.5− | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2001 08 23 | 704 | 0.8+ | 0.5− | 2006 08 27 | 699 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2001 09 22 | 699 | 1.2− | 0.3+ | 2006 08 27 | 699 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.3+ |
| 2001 09 22 | 699 | 0.3+ | 0.7− | 2006 08 27 | 699 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.7+ | 1.6+ |
| 2001 09 22 | 699 | 0.0 | 0.3+ | 2006 08 29 | 703 | 1.1− | 0.5− | 2006 09 19 | 699 | 1.1+ | 0.7+ |
| 2001 09 22 | 699 | 0.1− | 0.3− | 2006 08 29 | 704 | 0.1+ | 1.0− | 2006 09 22 | 691 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.2− | 0.6− | 2006 08 29 | 703 | 0.8− | 0.2+ | 2006 09 22 | 691 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.4− | 1.0− | 2006 08 29 | 703 | 0.9− | 0.1− | 2006 09 22 | 691 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 0.5− | 0.9− | 2006 08 29 | 704 | 0.4− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2001 11 11 | 704 | 0.3− | 0.7− | 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 2001 11 11 | 704 | 0.2− | 1.0− | 2006 08 29 | 704 | 0.5− | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2001 12 23 | 704 | 0.1+ | 1.2+ | 2006 08 30 | 699 | 0.5− | 0.3− | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2001 12 23 | 704 | 0.6− | 1.0+ | 2006 08 30 | 699 | 0.2− | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2001 12 23 | 704 | 0.3+ | 0.7+ | 2006 08 30 | 699 | (1.6− | 2.8+) | 2006 09 26 | 703 | 0.4− | 0.1− |
| 2001 12 23 | 704 | 0.8+ | 0.6+ | 2006 08 30 | 699 | 1.0+ | 1.0+ | 2006 09 26 | 703 | 0.4− | 0.4− |
| 2001 12 23 | 704 | 0.2+ | 1.5+ | 2006 08 30 | 699 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.0 | 0.5− | 2006 08 30 | 699 | 0.9− | 1.3+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.2+ | 0.4− | 2006 08 30 | 699 | 0.2+ | 0.8+ | 2006 09 28 | 691 | 0.2+ | 0.1− |
| 2002 01 08 | 704 | 0.2+ | 0.2− | 2006 08 30 | 699 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.3+ | 0.1− |
| 2003 01 13 | 291 | 0.4− | 0.4+ | 2006 09 11 | 703 | 0.4− | 0.3− | 2006 09 29 | 699 | 1.2+ | 1.2+ |
| 2003 01 13 | 291 | 0.2+ | 0.4+ | 2006 09 11 | 703 | 0.8− | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.2− |
| 2003 01 13 | 291 | 0.5+ | 0.1− | 2006 09 11 | 703 | 0.7− | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.4+ |
| 2003 01 27 | 704 | 0.7+ | 0.4− | 2006 09 11 | 703 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2003 01 27 | 704 | 0.1− | 0.7+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2003 01 27 | 704 | 0.4− | 1.2− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.6− | 0.4− | | |
| 2003 01 30 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.1− | 0.4+ | | |
| 2003 01 30 | 644 | 0.0 | 0.2+ | 2006 09 16 | 691 | 0.5+ | 0.5− | 2006 10 01 | 704 | 0.5− | 0.7− | | |
| 2003 01 30 | 644 | 0.2+ | 0.2+ | 2006 09 16 | 691 | 0.1− | 0.1− | | | | | | |

### 2003 $BH_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 318.51404 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19554987 | $\omega$ | 278.06674 | | +0.54762045 | | −0.82136527 | | |
| $a$ | 2.9396640 | $\Omega$ | 137.42501 | | +0.83007292 | | +0.50928476 | | |
| $e$ | 0.1433198 | $i$ | 13.64442 | | +0.10531285 | | +0.25688156 | | |
| $P$ | 5.04 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.3− | 1.1− | 2003 01 27 | 644 | 0.1+ | 1.0+ | 2003 03 06 | 644 | 0.1− | 0.6− | | |
| 2003 01 01 | 704 | 0.7− | 0.4− | 2003 01 27 | 699 | 0.6− | 0.1+ | 2003 03 06 | 644 | 0.1− | 0.5− | | |
| 2003 01 01 | 704 | 0.8+ | 1.0− | 2003 01 27 | 644 | 0.3+ | 0.9+ | 2003 03 06 | 644 | 0.6− | 0.1− | | |
| 2003 01 01 | 704 | 1.0+ | 0.6+ | 2003 01 30 | 644 | 0.2− | 0.7+ | 2006 09 19 | 703 | 0.7+ | 0.5− | | |
| 2003 01 01 | 704 | 0.4− | 0.5+ | 2003 01 30 | 699 | 0.2− | 0.8− | 2006 09 19 | 703 | 1.3+ | 0.0 | | |
| 2003 01 27 | 704 | 0.7+ | 1.3− | 2003 01 30 | 644 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.1+ | | |
| 2003 01 27 | 704 | 0.4+ | 1.2− | 2003 01 30 | 699 | 0.8− | 0.0 | 2006 09 19 | 703 | 0.6− | 0.4− | | |
| 2003 01 27 | 704 | (0.3− | 1.8−) | 2003 01 30 | 699 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2003 01 27 | 699 | 0.9+ | 0.9+ | 2003 01 30 | 699 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2− | | |
| 2003 01 27 | 704 | (0.8+ | 1.7−) | 2003 01 30 | 644 | 0.0 | 0.8+ | 2006 10 12 | 644 | 0.5− | 0.2+ | | |
| 2003 01 27 | 699 | 0.3− | 0.6− | 2003 01 31 | 704 | 0.6+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.3− | | |
| 2003 01 27 | 644 | 0.2+ | 0.9+ | 2003 01 31 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.0 | | |
| 2003 01 27 | 704 | (1.0+ | 2.2−) | 2003 01 31 | 704 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.8+ | | |
| 2003 01 27 | 699 | 0.7− | 0.4− | 2003 01 31 | 704 | 0.2+ | 0.2+ | | | | | | |

### 2003 $BC_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 215.35494 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24166496 | $\omega$ | 122.03361 | | −0.50566190 | | +0.85802076 | | |
| $a$ | 2.5526637 | $\Omega$ | 117.33321 | | −0.82178257 | | −0.44726033 | | |
| $e$ | 0.0460936 | $i$ | 5.81700 | | −0.26263940 | | −0.25250460 | | |
| $P$ | 4.08 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.5− | 0.1+ | 2003 01 27 | 291 | 0.2− | 0.0 | 2003 01 31 | 704 | 1.0+ | 0.3+ | | |
| 2001 10 10 | 644 | 0.5− | 0.7+ | 2003 01 27 | 291 | 0.4− | 0.1+ | 2003 01 31 | 704 | 0.2+ | 0.7+ | | |
| 2001 10 10 | 644 | 0.8− | 0.3+ | 2003 01 27 | 291 | 0.2− | 0.1+ | 2005 10 10 | 703 | 0.2+ | 0.1+ | | |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2003 01 30 | 644 | 0.4+ | 0.8− | 2005 10 10 | 703 | 1.4− | 0.7− | | |
| 2001 10 14 | 645 | 0.1+ | 0.1− | 2003 01 30 | 644 | 0.1+ | 0.8− | 2005 10 10 | 703 | 1.1+ | 0.3− | | |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 01 30 | 644 | 0.6+ | 0.6− | 2005 10 10 | 703 | 0.1+ | 1.0+ | | |
| 2001 10 25 | 645 | 0.1− | 0.0 | 2003 01 31 | 704 | 1.2+ | 0.4+ | | | | | | |

### 2003 $BG_{42}$ = 2006 $WT_{156}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 296.31545 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22710979 | $\omega$ | 318.16026 | | −0.79070619 | | −0.61214608 | | |
| $a$ | 2.6605953 | $\Omega$ | 184.11785 | | +0.58656329 | | −0.75388784 | | |
| $e$ | 0.2300155 | $i$ | 6.23918 | | +0.17529183 | | −0.23860074 | | |
| $P$ | 4.34 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 608 | 0.3− | 0.2− | 2003 02 02 | 704 | 0.5+ | 0.4+ | 2003 02 26 | 599 | 0.1+ | 0.0 | | |
| 2003 01 27 | 608 | 0.4+ | 0.4− | 2003 02 04 | 644 | 0.3+ | 1.3+ | 2003 02 26 | 599 | 0.0 | 0.1− | | |
| 2003 01 27 | 608 | 0.1− | 0.3− | 2003 02 04 | 644 | 0.2− | 0.6+ | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2003 02 04 | 644 | 0.1+ | 1.2+ | 2006 11 22 | G96 | 0.5− | 0.0 | | |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2003 02 19 | 644 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.0 | | |
| 2003 01 30 | 704 | 0.4+ | 0.5+ | 2003 02 19 | 644 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.0 | | |
| 2003 01 30 | 704 | 0.3+ | 0.1− | 2003 02 19 | 644 | 0.2− | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.0 | | |
| 2003 01 30 | 704 | 0.7− | 0.6− | 2003 02 24 | 599 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.2− | | |
| 2003 01 30 | 704 | 0.3+ | 0.4− | 2003 02 24 | 599 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.3− | | |
| 2003 01 30 | 704 | 0.6+ | 0.3+ | 2003 02 24 | 599 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.1+ | | |
| 2003 02 02 | 704 | 0.4− | 0.1+ | 2003 02 24 | 599 | 0.1+ | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.1+ | | |
| 2003 02 02 | 704 | 0.2+ | 0.2+ | 2003 02 26 | 599 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.1− | 0.1+ | | |
| 2003 02 02 | 608 | 0.3+ | 0.2− | 2003 02 26 | 599 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.2− | 0.3+ | | |
| 2003 02 02 | 704 | 1.2+ | 1.0+ | 2003 02 26 | 599 | 0.4+ | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.4+ | | |
| 2003 02 02 | 608 | 0.1− | 0.5− | 2003 02 26 | 599 | 0.2− | 0.0 | | | | | | |
| 2003 02 02 | 608 | 0.0 | 0.2+ | 2003 02 26 | 599 | 0.1+ | 0.1+ | | | | | | |

### 2003 $BU_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 310.24446 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21483263 | $\omega$ | 36.31363 | | −0.23923922 | | −0.95920153 | | |
| $a$ | 2.7610179 | $\Omega$ | 67.95913 | | +0.84816358 | | −0.28197947 | | |
| $e$ | 0.1685079 | $i$ | 9.35400 | | +0.47263424 | | +0.02049385 | | |
| $P$ | 4.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.0 | 0.3+ | 2003 02 19 | 644 | 0.3+ | 1.2+ | 2006 11 12 | G96 | 0.0 | 0.4− | | |
| 2001 10 15 | 644 | 0.2+ | 0.1− | 2003 02 19 | 644 | 0.4+ | 1.2+ | 2006 11 12 | G96 | 0.2− | 0.5− | | |
| 2001 10 15 | 644 | 0.4− | 0.2+ | 2003 02 19 | 644 | 0.1+ | 0.8+ | 2006 11 14 | 704 | (2.1+ | 3.1+) | | |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2003 02 26 | 704 | 0.3− | 0.6− | 2006 11 14 | 704 | (0.5+ | 2.0+) | | |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2003 02 26 | 704 | 0.3+ | 0.8− | 2006 11 14 | 704 | (0.9+ | 1.9+) | | |
| 2002 12 31 | 704 | 0.4+ | 0.7+ | 2003 02 26 | 704 | 0.1+ | 0.6− | 2006 11 14 | 704 | 0.1+ | 0.8+ | | |
| 2002 12 31 | 704 | 0.5+ | 0.2+ | 2003 02 26 | 704 | 0.0 | 0.3− | 2006 11 14 | 704 | (3.8+ | 0.8−) | | |
| 2003 01 29 | 644 | 0.1− | 0.2+ | 2003 02 26 | 704 | 0.2− | 0.5− | 2006 11 17 | 704 | 0.3+ | 1.0+ | | |
| 2003 01 29 | 644 | 0.0 | 0.1− | 2003 03 08 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.6+ | 1.2+ | | |
| 2003 01 29 | 644 | 0.1− | 0.2+ | 2003 03 08 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.9− | 1.0+ | | |
| 2003 01 30 | 704 | 0.2− | 0.4+ | 2003 03 08 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 704 | (0.3+ | 1.8+) | | |
| 2003 01 30 | 704 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.1− | | |
| 2003 01 30 | 704 | 0.6− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.7− | | |
| 2003 01 31 | 704 | 0.7+ | 0.8+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.6− | | |
| 2003 01 31 | 704 | 0.1+ | 0.9− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.4+ | | |
| 2003 01 31 | 704 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2003 01 31 | 704 | 0.7− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.5− | | |
| 2003 01 31 | 704 | 0.1− | 0.5− | 2006 11 02 | 703 | 0.7+ | 0.9+ | 2006 11 23 | G96 | 0.0 | 0.5− | | |
| 2003 02 02 | 704 | 0.1+ | 0.6+ | 2006 11 02 | 703 | 0.4+ | 0.6− | 2006 11 23 | G96 | 0.0 | 0.5− | | |
| 2003 02 02 | 704 | (2.3− | 1.3+) | 2006 11 02 | 703 | (1.6+ | 0.8+) | 2006 11 28 | 704 | 0.4− | 0.1+ | | |
| 2003 02 02 | 704 | 0.4− | 0.3+ | 2006 11 02 | 703 | (0.7+ | 1.9+) | 2006 11 28 | 704 | 0.3− | 0.2− | | |
| 2003 02 02 | 704 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.0 | | |
| 2003 02 08 | 699 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.3+ | | |
| 2003 02 08 | 699 | 0.6− | 0.7− | 2006 11 09 | 644 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.3− | | |
| 2003 02 08 | 699 | 0.1− | 0.4− | 2006 11 12 | G96 | 0.2− | 0.6− | | | | | | |
| 2003 02 08 | 699 | 1.1+ | 0.7− | 2006 11 12 | G96 | 0.2+ | 0.7− | | | | | | |

### 2003 $BQ_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 47.02198 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26658878 | $\omega$ | 46.92984 | | +0.49492908 | | −0.86888994 | | |
| $a$ | 2.3909737 | $\Omega$ | 13.41292 | | +0.78595257 | | +0.44337845 | | |
| $e$ | 0.2038188 | $i$ | 2.14635 | | +0.37057222 | | +0.22010410 | | |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 704 | 2.2+ | 0.1+ | 2003 01 31 | 644 | 0.1+ | 0.2+ | 2005 09 08 | 704 | 0.5− | 0.2+ | | |
| 1998 12 14 | 704 | 0.2− | 0.4+ | 2003 02 01 | 704 | 0.2− | 0.3− | 2005 09 08 | 704 | 0.5− | 0.0 | | |
| 1998 12 14 | 704 | 1.0− | 1.2− | 2003 02 01 | 704 | 0.1+ | 0.6+ | 2005 09 23 | 703 | 1.8+ | 0.2+ | | |
| 1998 12 14 | 704 | (3.8− | 0.8−) | 2003 02 01 | 704 | 0.5− | 0.3+ | 2005 09 23 | 703 | 0.2+ | 0.5− | | |
| 1998 12 17 | 704 | 0.7+ | 0.1+ | 2003 02 01 | 704 | 0.3− | 0.0 | 2005 09 23 | 703 | 0.4+ | 0.4− | | |
| 1998 12 17 | 704 | 1.5+ | 0.1− | 2003 02 04 | 704 | 0.1+ | 0.9+ | 2005 09 23 | 703 | 0.5+ | 0.6+ | | |
| 1998 12 17 | 704 | 0.3− | 0.5− | 2003 02 04 | 704 | 0.6+ | 0.6+ | 2005 10 01 | 704 | 1.2− | 0.3− | | |
| 1998 12 17 | 704 | 0.8+ | 0.7+ | 2003 02 04 | 704 | 0.2+ | 1.7+ | 2005 10 01 | G96 | 0.2− | 0.0 | | |
| 1998 12 17 | 704 | 0.4+ | 0.9− | 2003 02 04 | 704 | 1.1+ | 0.6− | 2005 10 01 | G96 | 0.3− | 0.1− | | |
| 2003 01 27 | 704 | 0.1− | 0.6+ | 2003 02 09 | 608 | 0.8+ | 0.6− | 2005 10 01 | 704 | 0.7− | 0.3+ | | |
| 2003 01 27 | 704 | 0.4+ | 0.1− | 2003 02 09 | 608 | 0.1+ | 1.1− | 2005 10 01 | G96 | 0.2+ | 0.0 | | |
| 2003 01 27 | 704 | 0.6− | 0.3+ | 2003 02 09 | 608 | 0.3+ | 0.8− | 2005 10 01 | G96 | 0.1+ | 0.1− | | |
| 2003 01 27 | 704 | 0.1− | 0.2+ | 2005 08 30 | 691 | 0.2− | 0.2+ | 2005 10 01 | 704 | 0.1− | 0.5+ | | |
| 2003 01 28 | 608 | 0.5− | 1.2+ | 2005 08 30 | 691 | 0.1− | 0.1+ | 2005 10 01 | 704 | 0.3− | 0.2− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 608 | 0.0 | 1.0+ | 2005 08 30 | 691 | 0.2− | 0.3+ | 2005 10 29 | G96 | 0.8+ | 0.1+ |
| 2003 01 28 | 608 | 0.0 | 0.7+ | 2005 09 08 | 704 | 0.1+ | 0.1+ | 2005 10 29 | G96 | 0.9+ | 0.1− |
| 2003 01 31 | 644 | 0.1+ | 0.3+ | 2005 09 08 | 704 | 1.2− | 1.7+ | 2005 10 29 | G96 | 0.3+ | 0.0 |
| 2003 01 31 | 644 | 0.4+ | 0.3+ | 2005 09 08 | 704 | 0.4− | 0.6− | 2005 10 29 | G96 | 0.5+ | 0.1+ |

**2003 BK$_{45}$ = 2006 VC$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.12756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22916294 | $\omega$ | 116.15922 | | +0.78824319 | −0.58896420 | |
| $a$ | 2.6446800 | $\Omega$ | 280.43544 | | +0.47975208 | +0.76963112 | |
| $e$ | 0.3039936 | $i$ | 10.44591 | | +0.38537075 | +0.24655447 | |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 16 | 644 | 0.3− | 0.7+ | 2003 02 24 | 599 | 0.3+ | 0.2− | 2006 11 15 | 704 | 0.4− | 0.4+ |
| 2003 01 16 | 644 | 0.5+ | 0.2+ | 2003 02 24 | 599 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.0 |
| 2003 01 16 | 644 | 0.3+ | 0.1− | 2003 02 24 | 599 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.2+ | 0.6− |
| 2003 01 28 | 608 | 0.6− | 0.1+ | 2003 02 24 | 599 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2003 01 28 | 608 | 0.1− | 0.3+ | 2003 02 26 | 599 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2003 01 28 | 608 | 0.2+ | 0.6− | 2003 02 26 | 599 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2003 01 29 | 644 | 0.2− | 0.0 | 2003 02 26 | 599 | 0.1− | 0.2− | 2006 11 27 | 704 | (0.8− | 1.7−) |
| 2003 01 29 | 644 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.1− | 0.3+ | 2006 11 27 | 704 | 0.4− | 0.3− |
| 2003 01 29 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.6+ | 0.7+ | 2006 11 27 | 704 | 0.4− | 0.6− |

**2003 BL$_{46}$ = 2006 SX$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.37190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23822522 | $\omega$ | 219.08609 | | +0.66372372 | −0.74595380 | |
| $a$ | 2.5771769 | $\Omega$ | 189.77013 | | +0.74142803 | +0.66583910 | |
| $e$ | 0.2895838 | $i$ | 18.90755 | | +0.09876889 | +0.01453359 | |
| $P$ | 4.14 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 704 | (0.3− | 2.6−) | 2003 02 01 | 704 | 0.2+ | 0.1− | 2006 09 19 | 699 | 1.1+ | 0.1+ |
| 1999 01 23 | 704 | (0.1− | 2.7−) | 2003 02 01 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.6+ | 1.2− |
| 1999 01 23 | 704 | 0.2+ | 0.6− | 2003 02 01 | 704 | 0.1+ | 0.5− | 2006 09 19 | 699 | 0.4− | 0.4− |
| 1999 01 23 | 704 | 0.9− | 1.8− | 2003 02 01 | 704 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.7− | 0.5− |
| 1999 01 23 | 704 | (1.7− | 2.9−) | 2003 02 01 | 704 | 0.1+ | 0.3− | 2006 10 02 | 703 | 0.3− | 0.1− |
| 1999 02 17 | 704 | 1.6− | 0.5− | 2003 02 01 | 704 | 0.2− | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 1999 02 17 | 704 | (2.4− | 0.3−) | 2003 02 01 | 704 | 0.2− | 0.4− | 2006 10 02 | 703 | 0.8+ | 1.4− |
| 1999 02 17 | 704 | 1.3+ | 0.2− | 2003 02 01 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 1999 02 17 | 704 | 0.3− | 0.3+ | 2003 02 01 | 704 | (0.0 | 1.6+) | 2006 10 28 | 703 | 0.2+ | 0.4+ |
| 2003 01 29 | 704 | 0.4+ | 0.9+ | 2003 02 01 | 704 | (0.2+ | 1.5+) | 2006 10 28 | 703 | 0.0 | 0.1− |
| 2003 01 29 | 704 | 0.2+ | 0.7+ | 2003 02 04 | 704 | 0.1+ | 0.4− | 2006 10 28 | 703 | 0.5− | 0.3− |
| 2003 01 29 | 704 | 1.1+ | 0.1+ | 2003 02 04 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.2+ | 1.3+ |
| 2003 01 29 | 704 | 0.0 | 0.0 | 2003 02 04 | 704 | 0.1+ | 0.7+ | 2006 11 17 | 703 | 0.5+ | 0.6+ |
| 2003 01 31 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2003 01 31 | 704 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.9− | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.2− |
| 2003 01 31 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.6+ | 2006 11 23 | 703 | 0.5+ | 0.0 |
| 2003 01 31 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 11 23 | 703 | 0.1− | 0.1− |
| 2003 01 31 | 704 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.3− | 0.3− |

**2003 BO$_{50}$ = 2006 QZ$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.05816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18458596 | $\omega$ | 274.38020 | | +0.72696698 | −0.66425419 | |
| $a$ | 3.0549465 | $\Omega$ | 127.35793 | | +0.68416012 | +0.67900103 | |
| $e$ | 0.1417768 | $i$ | 12.64680 | | +0.05868507 | +0.31260834 | |
| $P$ | 5.34 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.1+ | 0.8+ | 2003 01 31 | 644 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.5+ | 0.4+ |
| 2001 10 11 | 704 | 0.1+ | 0.4+ | 2003 01 31 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 291 | 0.3− | 0.0 |
| 2001 10 11 | 704 | 0.7− | 0.3− | 2003 01 31 | 644 | 0.2− | 0.4+ | 2006 09 19 | 291 | 0.0 | 0.1+ |
| 2003 01 27 | 704 | 0.2+ | 0.6− | 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 09 19 | 291 | 0.3+ | 0.1+ |
| 2003 01 27 | 704 | 0.6+ | 0.5+ | 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.8+ | 0.7− |
| 2003 01 27 | 704 | 0.3− | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.8− | 0.7+ |
| 2003 01 27 | 704 | 0.9+ | 0.0 | 2006 08 16 | 644 | 0.5− | 0.2+ | 2006 09 20 | 703 | 1.4− | 0.9+ |
| 2003 01 27 | 704 | 1.2− | 0.6+ | 2006 08 16 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.1+ | 0.5− |
| 2003 01 30 | 699 | 0.8− | 1.0+ | 2006 08 16 | 644 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.7+ | 0.3− |
| 2003 01 30 | 699 | 0.9+ | 0.4+ | 2006 08 30 | 699 | 0.3− | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.9+ |
| 2003 01 30 | 699 | 0.5+ | 0.8+ | 2006 08 30 | 699 | 0.9− | 1.2+ | 2006 09 26 | 703 | (0.3+ | 2.4+) |
| 2003 01 30 | 699 | (0.6+ | 1.9+) | 2006 08 30 | 699 | 0.5+ | 0.8+ | 2006 09 26 | 703 | (1.9− | 1.0+) |

**2003 BH$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.97592 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18040724 | $\omega$ | 270.44072 | | +0.68846667 | −0.70133954 | |
| $a$ | 3.1019401 | $\Omega$ | 134.10881 | | +0.72448699 | +0.65321649 | |
| $e$ | 0.2924685 | $i$ | 14.91109 | | +0.03364874 | +0.28536131 | |
| $P$ | 5.46 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.0 | 2001 09 17 | 699 | 0.5+ | 0.4− | 2003 01 29 | 049 | 0.3− | 0.0 |
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2002 12 14 | 645 | 0.1+ | 0.1− | 2003 01 30 | 699 | 0.9− | 0.2+ |
| 2001 07 20 | 644 | 0.3− | 0.6− | 2002 12 14 | 645 | 0.1+ | 0.2− | 2003 01 30 | 699 | 0.3+ | 0.3− |
| 2001 07 20 | 644 | 0.2− | 0.3− | 2003 01 27 | 704 | 1.1+ | 0.7+ | 2003 01 30 | 699 | 1.1+ | 0.4+ |
| 2001 07 20 | 644 | 0.5− | 0.3− | 2003 01 27 | 699 | 0.5+ | 0.6− | 2003 01 30 | 699 | 1.5− | 0.2+ |
| 2001 08 23 | 608 | 0.2− | 0.4+ | 2003 01 27 | 704 | 0.2− | 0.4+ | 2003 02 03 | 704 | 0.2+ | 0.6− |
| 2001 08 23 | 608 | 0.3− | 1.0+ | 2003 01 27 | 699 | 0.6+ | 0.6+ | 2003 02 03 | 704 | 0.6− | 0.2+ |
| 2001 08 23 | 608 | 0.5− | 0.3+ | 2003 01 27 | 704 | 1.6+ | 0.7− | 2003 02 03 | 704 | 0.6− | 0.2− |
| 2001 09 11 | 704 | 0.2+ | 0.9− | 2003 01 27 | 699 | 0.6− | 0.7− | 2003 02 08 | 704 | 0.0 | 0.2− |
| 2001 09 11 | 704 | 0.4− | 0.1− | 2003 01 27 | 704 | 1.0+ | 0.3+ | 2003 02 08 | 704 | 1.3− | 0.1− |
| 2001 09 11 | 704 | 0.1+ | 0.1+ | 2003 01 27 | 699 | 0.3− | 0.5− | 2003 02 08 | 704 | 0.0 | 0.2+ |
| 2001 09 11 | 704 | 0.3− | 0.6+ | 2003 01 27 | 644 | 0.5+ | 0.4+ | 2003 02 08 | 704 | 0.4+ | 0.7+ |
| 2001 09 11 | 704 | 0.5− | 1.1+ | 2003 01 27 | 644 | 0.3+ | 1.1+ | 2003 02 10 | 291 | 0.1− | 0.0 |
| 2001 09 17 | 699 | 1.3+ | 0.6− | 2003 01 27 | 644 | 0.7+ | 1.0+ | 2003 02 10 | 291 | 0.6− | 0.1+ |
| 2001 09 17 | 699 | 0.1− | 0.0 | 2003 01 29 | 049 | 0.7+ | 0.7+ | 2003 02 10 | 291 | 0.6− | 0.3+ |
| 2001 09 17 | 699 | 0.9+ | 0.0 | 2003 01 29 | 049 | 0.3− | 0.4− | | | | |

**2003 BD$_{55}$ = 2006 TU$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.80880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18853937 | $\omega$ | 347.98954 | | +0.00626565 | −0.99396699 | |
| $a$ | 3.0120905 | $\Omega$ | 101.57827 | | +0.92646785 | −0.03543891 | |
| $e$ | 0.0269239 | $i$ | 6.41764 | | +0.37632176 | +0.10379643 | |
| $P$ | 5.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.1− | 0.1− | 2003 02 04 | 704 | (1.7− | 0.7+) | 2006 10 16 | 703 | 1.0− | 1.2+ |
| 2002 12 31 | 704 | 0.5+ | 0.3+ | 2003 02 04 | 704 | (1.0+ | 2.1+) | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2003 02 04 | 704 | 0.8+ | 1.3+ | 2006 10 22 | 703 | 1.1+ | 0.9− |
| 2002 12 31 | 704 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.2− | 0.5− |
| 2003 01 27 | 608 | 0.4+ | 0.7− | 2006 10 04 | G96 | 0.4− | 0.0 | 2006 10 22 | 703 | 1.0− | 0.8+ |
| 2003 01 27 | 608 | 0.8+ | 0.7− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2003 01 27 | 608 | 0.7+ | 1.0− | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.8− |
| 2003 01 30 | 699 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.4+ |
| 2003 01 30 | 699 | 1.0− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.6+ | 0.6− |
| 2003 01 30 | 699 | 1.1− | 1.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.6− |
| 2003 01 30 | 699 | 0.2− | 1.1+ | 2006 10 16 | 703 | 0.2− | 0.6− | | | | |
| 2003 02 04 | 704 | (0.2+ | 2.4+) | 2006 10 16 | 703 | 0.3+ | 0.1+ | | | | |

**2003 BS$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.33854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21952033 | $\omega$ | 156.37669 | | −0.35875816 | −0.92533583 | |
| $a$ | 2.7215702 | $\Omega$ | 314.38662 | | +0.82671790 | −0.25397404 | |
| $e$ | 0.2563187 | $i$ | 9.88341 | | +0.43339369 | −0.28151517 | |
| $P$ | 4.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 291 | 0.5− | 0.2+ | 2003 02 03 | 704 | 1.2− | 0.9− | 2003 03 07 | 704 | 0.1− | 0.3+ |
| 2003 01 05 | 291 | 0.5− | 0.1+ | 2003 02 03 | 704 | 0.1+ | 1.1+ | 2003 03 09 | 704 | 0.1− | 0.1− |
| 2003 01 05 | 291 | 0.4− | 0.1− | 2003 02 03 | 704 | 0.0 | 0.5+ | 2003 03 09 | 704 | 0.1+ | 0.0 |
| 2003 01 28 | 704 | 0.2+ | 0.5− | 2003 02 03 | 704 | 1.2+ | 0.5+ | 2003 03 09 | 704 | 0.5+ | 0.8+ |
| 2003 01 28 | 704 | 0.2+ | 0.1+ | 2003 02 22 | 644 | 0.3+ | 0.2+ | 2003 03 09 | 704 | 0.1+ | 0.6+ |
| 2003 01 28 | 704 | 0.1− | 0.2− | 2003 02 22 | 644 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.1+ | 0.1− |
| 2003 01 28 | 704 | 0.6− | 0.4− | 2003 02 22 | 644 | 0.1+ | 0.3− | 2006 10 23 | 703 | 0.5− | 0.6+ |
| 2003 01 28 | 704 | 0.6− | 0.3+ | 2003 03 06 | 699 | 0.1+ | 0.1− | 2006 10 23 | 703 | 0.2− | 0.6− |
| 2003 01 30 | 699 | 0.6+ | 0.4− | 2003 03 06 | 699 | 0.3+ | 0.6+ | 2006 10 23 | 703 | 0.0 | 0.4+ |
| 2003 01 30 | 699 | 0.5+ | 0.4− | 2003 03 06 | 699 | 0.1− | 0.2+ | 2006 10 29 | 703 | 0.3− | 0.3+ |
| 2003 01 30 | 699 | 1.1+ | 0.1− | 2003 03 06 | 704 | 0.3+ | 0.4− | 2006 10 29 | 703 | 0.9+ | 0.7+ |
| 2003 01 30 | 699 | 1.0+ | 0.4+ | 2003 03 06 | 699 | 0.1− | 0.1+ | 2006 10 29 | 703 | 0.6− | 0.2− |
| 2003 01 31 | 704 | 0.6− | 0.2− | 2003 03 06 | 704 | 0.7− | 0.3− | 2006 10 29 | 703 | 0.4− | 0.4− |
| 2003 01 31 | 704 | 0.6+ | 0.4− | 2003 03 06 | 704 | 0.8− | 1.0+ | 2006 11 14 | 704 | 0.0 | 0.5+ |
| 2003 01 31 | 704 | 0.8+ | 0.8− | 2003 03 07 | 704 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.1− | 0.0 |
| 2003 01 31 | 704 | 0.3+ | 1.3− | 2003 03 07 | 704 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.7+ | 0.2− |
| 2003 01 31 | 704 | 1.0+ | 0.4− | 2003 03 07 | 704 | 0.1+ | 0.1+ | | | | |

**2003 BM$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.86456 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20993203 | $\omega$ | 83.82551 | | −0.81793327 | | −0.57347188 |
| $a$ | 2.8038207 | $\Omega$ | 61.17272 | | +0.50490218 | | −0.75385260 |
| $e$ | 0.1687559 | $i$ | 3.00921 | | +0.27578787 | | −0.32068093 |
| $P$ | 4.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 608 | 0.6− | 0.1+ | 2003 03 10 | 699 | 0.2− | 1.0+ | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 2003 01 28 | 608 | 0.8− | 0.2− | 2003 03 10 | 699 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.4+ |
| 2003 01 28 | 608 | 0.9− | 0.2+ | 2003 03 10 | 699 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2003 01 30 | 699 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2003 01 30 | 699 | 1.2+ | 0.5+ | 2006 10 12 | 691 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.7− |
| 2003 01 30 | 699 | (1.9+ | 0.0 ) | 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2003 01 30 | 699 | 0.5− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2003 02 01 | 704 | 1.0+ | 0.8− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.5− | 0.2− |
| 2003 02 01 | 704 | 0.2+ | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.9− |
| 2003 02 01 | 704 | (0.1− | 1.9−) | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.9− | 1.2+ |
| 2003 02 04 | 704 | (0.9− | 2.2−) | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | (1.8− | 0.6−) |
| 2003 02 04 | 704 | (2.0− | 2.0−) | 2006 10 28 | G96 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.7+ |
| 2003 02 04 | 704 | (0.7− | 1.7+) | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 1.4+ | 0.5+ |
| 2003 02 04 | 704 | (0.4− | 1.7−) | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2003 03 07 | 644 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2003 03 07 | 644 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.4− | 0.6− |
| 2003 03 07 | 644 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.3+ | | | | |
| 2003 03 10 | 699 | (1.0− | 1.6+) | 2006 11 01 | 691 | 0.3+ | 0.1− | | | | |

**2003 BD$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.36178 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22356620 | $\omega$ | 91.96188 | | −0.57828626 | | −0.81403260 |
| $a$ | 2.6886356 | $\Omega$ | 33.55529 | | +0.70412581 | | −0.53154737 |
| $e$ | 0.1758069 | $i$ | 5.62564 | | +0.41205806 | | −0.23411177 |
| $P$ | 4.41 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 1.0+ | 0.4− | 2003 02 26 | 704 | 0.5− | 0.1− | 2006 11 16 | 704 | 1.5− | 0.6+ |
| 2002 12 31 | 704 | (0.4+ | 1.9−) | 2003 03 03 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.9− | 0.5+ |
| 2002 12 31 | 704 | 0.2− | 0.2− | 2003 03 03 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 2002 12 31 | 704 | 0.5+ | 0.8+ | 2003 03 03 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.0− | 0.4+ |
| 2003 01 10 | 704 | 1.1+ | 1.0+ | 2003 03 07 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2003 01 10 | 704 | 1.3− | 0.9− | 2003 03 07 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.7+ |
| 2003 01 10 | 704 | 0.7− | 0.8− | 2003 03 07 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.9+ |
| 2003 01 10 | 704 | (1.6+ | 0.1−) | 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.9+ |
| 2003 01 10 | 704 | 0.4− | 0.2+ | 2003 03 07 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2003 01 28 | 644 | 0.1+ | 1.1− | 2003 03 07 | 644 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2003 01 28 | 644 | 0.1− | 1.1− | 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.9− | 0.7+ |
| 2003 01 28 | 644 | 0.3− | 0.8− | 2006 09 28 | G96 | 0.3− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2003 01 31 | 704 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.8+ | 0.7+ |
| 2003 01 31 | 704 | 1.1− | 0.9+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2003 01 31 | 704 | 1.1− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.8− | 0.5+ |
| 2003 01 31 | 704 | 0.6− | 0.7− | 2006 11 10 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.9− | 0.1− |
| 2003 01 31 | 704 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.5− | 0.1+ |
| 2003 02 02 | 644 | 0.1+ | 0.6+ | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.6− | 0.4− |
| 2003 02 02 | 644 | 0.1+ | 0.8+ | 2006 11 14 | 691 | 1.4+ | 0.6− | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2003 02 02 | 644 | 0.4+ | 1.1+ | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 25 | 691 | 0.3− | 0.5− |
| 2003 02 04 | 699 | 0.9+ | 0.2+ | 2006 11 16 | 704 | 0.9+ | 1.4− | 2006 11 25 | 691 | 0.1+ | 0.4− |
| 2003 02 04 | 699 | 0.0 | 1.2+ | 2006 11 16 | 704 | 1.4+ | 0.9+ | 2006 11 25 | 691 | 0.1− | 0.3− |
| 2003 02 04 | 699 | 1.1+ | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.3+ | 2006 11 27 | 704 | 0.2+ | 0.3− |
| 2003 02 04 | 699 | 1.1+ | 0.2+ | 2006 11 16 | 704 | (1.1+ | 1.6+) | 2006 11 27 | 704 | 0.0 | 0.5− |
| 2003 02 26 | 704 | 0.4− | 0.7− | 2006 11 16 | 704 | 0.2+ | 0.4+ | 2006 11 27 | 704 | 0.1− | 0.6− |
| 2003 02 26 | 704 | 0.3− | 0.7− | 2006 11 16 | 704 | 0.1+ | 0.8+ | 2006 11 27 | 704 | (2.2+ | 2.4−) |
| 2003 02 26 | 704 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.1+ | | | | |
| 2003 02 26 | 704 | 0.1+ | 0.8− | 2006 11 16 | 704 | 1.2+ | 0.1+ | | | | |

**2003 BK$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.67306 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21099440 | $\omega$ | 138.22853 | | −0.64030468 | | −0.76780474 |
| $a$ | 2.7944012 | $\Omega$ | 351.50390 | | +0.65928277 | | −0.53462683 |
| $e$ | 0.2384411 | $i$ | 8.57961 | | +0.39415244 | | −0.35305810 |
| $P$ | 4.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.6+ | 0.3− | 2003 02 02 | 644 | 0.3− | 0.5− | 2003 02 23 | 699 | 0.2+ | 0.1+ |
| 2003 01 10 | 704 | 0.2− | 0.0 | 2003 02 02 | 644 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2003 01 10 | 704 | 0.5+ | 0.3− | 2003 02 04 | 699 | 0.5− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2003 01 10 | 704 | 0.4+ | 0.9+ | 2003 02 04 | 699 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2003 01 28 | 644 | 0.1− | 0.3− | 2003 02 04 | 699 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2003 01 28 | 644 | 0.2− | 0.2− | 2003 02 04 | 699 | (0.4+ | 1.6+) | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2003 01 28 | 644 | 0.0 | 0.4− | 2003 02 19 | 644 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2003 01 31 | 704 | 1.2− | 0.1+ | 2003 02 19 | 644 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2003 01 31 | 704 | 0.0 | 0.3− | 2003 02 19 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2003 01 31 | 704 | 0.3− | 0.1− | 2003 02 23 | 699 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2003 01 31 | 704 | 1.2+ | 0.4+ | 2003 02 23 | 699 | 0.4+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2003 02 02 | 644 | 0.1− | 0.6− | 2003 02 23 | 699 | 0.4+ | 0.6− | | | | |

**2003 BL$_{62}$ = 2006 VQ$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.38661 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21391601 | $\omega$ | 61.87415 | | −0.82210768 | | −0.54862446 |
| $a$ | 2.7688995 | $\Omega$ | 84.47442 | | +0.45387204 | | −0.79288780 |
| $e$ | 0.1662636 | $i$ | 8.79283 | | +0.34371374 | | −0.26521715 |
| $P$ | 4.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.4+ | 0.3+ | 2003 02 02 | 644 | 0.3+ | 0.6+ | 2006 10 30 | 703 | 0.6+ | 0.0 |
| 2002 12 31 | 704 | 1.1+ | 0.7− | 2003 02 02 | 644 | 1.3+ | 0.8+ | 2006 10 30 | 703 | 0.5+ | 0.3− |
| 2002 12 31 | 704 | 0.3− | 0.2+ | 2003 02 02 | 644 | 1.4+ | 0.4+ | 2006 10 30 | 703 | 0.2− | 0.1− |
| 2002 12 31 | 704 | 0.3− | 0.3− | 2003 02 08 | 699 | 0.8+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2002 12 31 | 704 | 0.3− | 0.5− | 2003 02 08 | 699 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2003 01 10 | 704 | 0.5− | 0.2− | 2003 02 08 | 699 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.1− | 0.5− | 2003 02 08 | 699 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.6+ |
| 2003 01 10 | 704 | 0.2− | 0.3+ | 2003 02 19 | 644 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.7+ | 0.2− |
| 2003 01 10 | 704 | 0.5− | 0.2+ | 2003 02 19 | 644 | 0.0 | 0.2+ | 2006 11 13 | 703 | 1.3− | 0.4− |
| 2003 01 10 | 704 | 0.1− | 0.7+ | 2003 02 19 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 703 | (0.4− | 2.3−) |
| 2003 01 28 | 644 | 0.1− | 0.2+ | 2003 02 26 | 704 | 0.8+ | 0.8− | 2006 11 14 | 704 | 0.2+ | 0.2− |
| 2003 01 28 | 644 | 0.5− | 0.1+ | 2003 02 26 | 704 | 0.9− | 0.5− | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2003 01 28 | 644 | 0.0 | 0.0 | 2003 02 26 | 704 | 0.5− | 0.4− | 2006 11 14 | 704 | 0.7+ | 1.0+ |
| 2003 01 31 | 704 | 0.9− | 0.2+ | 2003 02 26 | 704 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.3+ | 1.2− |
| 2003 01 31 | 704 | 0.4− | 0.0 | 2003 02 26 | 704 | 0.1− | 0.7− | 2006 11 20 | 704 | 0.7− | 0.0 |
| 2003 01 31 | 704 | 0.3− | 0.4− | 2006 10 22 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.8+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2003 02 01 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.7− | 0.7+ |
| 2003 02 01 | 644 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.3+ | 0.3+ | | | | |

### 2003 $BP_{64}$ = 2006 RA

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.67748 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18982041 | $\omega$ | 295.87507 | | +0.32929006 | −0.93739289 | |
| $a$ | 2.9985234 | $\Omega$ | 134.40386 | | +0.91315966 | +0.28559140 | |
| $e$ | 0.1325848 | $i$ | 9.13422 | | +0.24022382 | +0.19932917 | |
| $P$ | 5.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 291 | 0.1− | 0.1− | 2003 02 10 | 291 | 0.2+ | 0.2+ | 2006 09 03 | A55 | 0.3− | 0.5+ |
| 2003 01 29 | 291 | 0.3− | 0.0 | 2003 02 10 | 291 | 0.2+ | 0.1+ | 2006 09 18 | A55 | 0.1+ | 0.3− |
| 2003 01 29 | 291 | 0.4− | 0.2− | 2006 09 01 | A55 | 0.8− | 0.1− | 2006 09 18 | A55 | 0.3+ | 0.3+ |
| 2003 01 31 | 704 | 1.3− | 0.1+ | 2006 09 01 | A55 | 0.1− | 0.2− | 2006 09 18 | A55 | 0.0 | 0.2− |
| 2003 01 31 | 704 | 1.2− | 0.1− | 2006 09 01 | A55 | 0.0 | 0.5+ | 2006 09 19 | A55 | 0.5+ | 0.1+ |
| 2003 01 31 | 704 | 0.2+ | 0.8+ | 2006 09 02 | A55 | 0.0 | 0.1− | 2006 10 17 | A55 | 0.1+ | 0.0 |
| 2003 02 02 | 608 | 1.3+ | 0.3+ | 2006 09 02 | A55 | 0.8− | 1.0+ | 2006 10 17 | A55 | 0.5+ | 0.4− |
| 2003 02 02 | 608 | 0.9+ | 0.2− | 2006 09 02 | A55 | 0.1− | 0.1− | 2006 10 17 | A55 | 0.3− | 0.1− |
| 2003 02 02 | 608 | 0.7+ | 0.1− | 2006 09 03 | A55 | 0.3+ | 0.7− | | | | |
| 2003 02 10 | 291 | 0.2+ | 0.1− | 2006 09 03 | A55 | 0.5+ | 0.1− | | | | |

### 2003 $BH_{65}$ = 2006 $QN_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.98827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18512085 | $\omega$ | 79.24853 | | +0.95659737 | −0.27189026 | |
| $a$ | 3.0490589 | $\Omega$ | 296.45980 | | +0.19985785 | +0.87399905 | |
| $e$ | 0.1466226 | $i$ | 6.72695 | | +0.21208090 | +0.40274228 | |
| $P$ | 5.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | 0.1+ | 0.5+ | 2003 01 31 | 704 | 0.8− | 0.1− | 2006 09 12 | 703 | 0.8− | 0.5− |
| 2001 08 22 | 704 | 0.2+ | 0.7− | 2006 07 21 | D35 | 0.6− | 1.0+ | 2006 09 15 | 704 | 0.1− | 0.4− |
| 2001 08 22 | 704 | (1.8+ | 0.1−) | 2006 07 21 | D35 | 0.0 | 0.9+ | 2006 09 15 | 704 | 0.4− | 1.4+ |
| 2001 09 25 | 704 | (2.0+ | 1.8−) | 2006 07 21 | D35 | 0.1− | 0.8+ | 2006 09 15 | 704 | 0.4+ | 0.3− |
| 2001 09 25 | 704 | 0.4+ | 0.2− | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 09 15 | 704 | 0.4− | 0.4− |
| 2001 09 25 | 704 | 1.1+ | 0.6− | 2006 08 18 | 644 | 0.2+ | 0.4+ | 2006 09 15 | 704 | 0.3− | 0.1− |
| 2001 09 25 | 704 | 1.1+ | 0.5− | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 09 16 | 644 | 0.2+ | 0.2− |
| 2001 09 25 | 704 | (1.8+ | 1.7−) | 2006 08 21 | 691 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.4− |
| 2001 10 18 | 704 | 0.2− | 0.1+ | 2006 08 21 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 644 | 0.2+ | 0.0 |
| 2001 10 18 | 704 | 0.1− | 0.2− | 2006 08 21 | 691 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.7− | 0.4− |
| 2001 10 18 | 704 | 0.1− | 0.5− | 2006 08 27 | 699 | 0.1+ | 0.6− | 2006 09 19 | 703 | 0.5+ | 0.4+ |
| 2001 10 18 | 704 | 0.6− | 0.6− | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.4+ |
| 2001 10 18 | 704 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.8− | 0.7+ |
| 2001 11 11 | 699 | 0.3+ | 0.6+ | 2006 08 27 | 699 | 0.8− | 0.8+ | 2006 09 20 | 699 | 0.3− | 0.0 |
| 2001 11 11 | 699 | 1.0− | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.5− | 2006 09 20 | 699 | 0.3+ | 0.3− |
| 2001 11 11 | 699 | 0.1+ | 0.8− | 2006 08 29 | 703 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.2− | 0.2+ |
| 2001 11 11 | 699 | 0.5− | 0.1− | 2006 08 29 | 703 | 0.7− | 1.0− | 2006 09 29 | 699 | 0.6+ | 0.9− |
| 2001 11 11 | 699 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.9− | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.9+ |
| 2001 11 11 | 699 | 0.6+ | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 699 | 0.8− | 0.4− |
| 2001 11 11 | 699 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.4+ | 0.7+ | 2006 09 29 | 699 | 0.2− | 0.7+ |
| 2001 11 11 | 699 | 0.2+ | 0.9− | 2006 08 30 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2003 01 13 | 291 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 01 13 | 291 | 0.6+ | 0.4+ | 2006 08 30 | 704 | 0.9+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2003 01 13 | 291 | 0.3+ | 0.7+ | 2006 09 06 | 644 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2003 01 30 | 644 | 0.3− | 0.2+ | 2006 09 06 | 644 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.4− | 0.2− |
| 2003 01 30 | 644 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2003 01 30 | 644 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.7− | 0.5− | 2006 11 22 | 291 | 0.4+ | 0.3− |
| 2003 01 31 | 704 | 0.6− | 0.3+ | 2006 09 12 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 291 | 0.1+ | 0.2− |
| 2003 01 31 | 704 | 0.4+ | 0.0 | 2006 09 12 | 703 | 0.0 | 0.1− | 2006 11 22 | 291 | 0.1+ | 0.3− |

### 2003 $BX_{65}$ = 2005 $VC_{122}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.92588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26756174 | $\omega$ | 307.16907 | | −0.14482823 | −0.98931323 | |
| $a$ | 2.3851739 | $\Omega$ | 151.14467 | | +0.91852065 | −0.14075973 | |
| $e$ | 0.1455005 | $i$ | 2.00160 | | +0.36789210 | −0.03802683 | |
| $P$ | 3.68 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 28 | 691 | 0.0 | 0.9− | 2003 01 31 | 704 | 0.4+ | 0.3+ | 2005 10 28 | G96 | 0.1+ | 0.5− |
| 1992 02 28 | 691 | 0.7− | 0.6− | 2003 02 21 | 644 | 0.5+ | 0.7+ | 2005 10 28 | G96 | 0.2− | 0.9− |
| 1992 02 28 | 691 | 0.0 | 0.4− | 2003 02 21 | 644 | 0.0 | 0.6+ | 2005 10 28 | G96 | 0.5+ | 0.2− |
| 2001 08 21 | 691 | 0.0 | 0.1+ | 2003 02 21 | 644 | 0.2+ | 0.5+ | 2005 10 28 | G96 | 0.1− | 0.4− |
| 2001 08 21 | 691 | 0.1− | 0.3+ | 2005 09 24 | 691 | 0.0 | 0.3− | 2005 11 03 | 691 | 0.6− | 0.3+ |
| 2001 08 21 | 691 | 0.1− | 0.1+ | 2005 09 24 | 691 | 0.2+ | 0.4− | 2005 11 03 | 691 | 0.7− | 0.4+ |
| 2003 01 30 | 699 | 0.2− | 0.3+ | 2005 09 24 | 691 | 0.1+ | 0.4− | 2005 11 03 | 691 | 0.1− | 0.1− |
| 2003 01 30 | 699 | 0.2+ | 1.2+ | 2005 10 13 | 291 | 0.3+ | 0.4+ | 2005 11 30 | G96 | 0.2− | 1.2− |
| 2003 01 30 | 699 | 1.3+ | 0.8+ | 2005 10 13 | 291 | 0.3+ | 0.0 | 2005 11 30 | G96 | 0.5− | 0.1− |
| 2003 01 30 | 699 | 0.3− | 1.3+ | 2005 10 13 | 291 | 0.2+ | 0.5+ | 2005 11 30 | G96 | 0.1− | 0.3− |
| 2003 01 31 | 704 | 0.9− | 1.1+ | 2005 10 13 | 291 | 0.3+ | 0.0 | 2005 11 30 | G96 | 0.7+ | 0.9− |
| 2003 01 31 | 704 | 0.2− | 0.6+ | 2005 10 13 | 291 | 0.0 | 0.0 | | | | |
| 2003 01 31 | 704 | 0.9+ | 0.5− | 2005 10 13 | 291 | 0.2+ | 0.1− | | | | |

### 2003 $BN_{67}$ = 2006 $TR_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.18790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21190329 | $\omega$ | 344.02786 | | +0.21737817 | −0.97330376 | |
| $a$ | 2.7864051 | $\Omega$ | 93.37308 | | +0.90342601 | +0.17204928 | |
| $e$ | 0.1743257 | $i$ | 4.23186 | | +0.36955131 | +0.15191719 | |
| $P$ | 4.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 699 | 0.5− | 1.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2003 01 27 | 699 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2003 01 27 | 699 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2003 01 27 | 699 | 0.8+ | 0.8− | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2003 01 31 | 644 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2003 01 31 | 644 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2003 01 31 | 644 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 13 | 703 | 1.2+ | 0.8+ |
| 2003 02 02 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.5− | 2006 11 13 | 703 | 1.2− | 1.0+ |
| 2003 02 02 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.4− | 2006 11 13 | 703 | 0.8− | 0.2− |
| 2003 02 02 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 13 | 703 | (0.9− | 1.9+) |
| 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2006 10 03 | G96 | 0.5+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.6+ | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2006 10 03 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.0 |

### 2003 $BU_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.62123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27994824 | $\omega$ | 6.29080 | | −0.40215200 | −0.91352738 | |
| $a$ | 2.3142888 | $\Omega$ | 107.43544 | | +0.83720253 | −0.39395172 | |
| $e$ | 0.1050428 | $i$ | 3.67596 | | +0.37062879 | −0.10133990 | |
| $P$ | 3.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 704 | 0.6− | 1.1+ | 2003 02 04 | 704 | 0.5− | 0.5+ | 2005 10 30 | 703 | 0.5+ | 0.3− |
| 2003 01 27 | 704 | 0.6+ | 0.2− | 2003 02 04 | 704 | 0.8− | 0.8+ | 2005 10 30 | 703 | 0.6− | 0.9+ |
| 2003 01 27 | 699 | 0.5+ | 0.4+ | 2003 02 07 | 704 | 0.2− | 0.1− | 2005 10 30 | 703 | 0.4+ | 0.9+ |
| 2003 01 27 | 704 | 0.1− | 0.3− | 2003 02 07 | 704 | 0.4+ | 1.3− | 2005 10 30 | 703 | 0.3+ | 1.1+ |
| 2003 01 27 | 699 | 0.0 | 0.3− | 2003 02 07 | 704 | 0.9+ | 0.3− | 2005 11 05 | 703 | 0.4− | 0.4+ |
| 2003 01 27 | 704 | 0.5− | 0.6− | 2003 02 07 | 704 | 0.7− | 0.2+ | 2005 11 05 | 703 | 0.0 | 0.7− |
| 2003 01 27 | 699 | 0.8− | 0.0 | 2003 02 09 | 608 | 0.2+ | 0.1− | 2005 11 05 | 703 | 0.7− | 0.4− |
| 2003 01 27 | 704 | 0.2+ | 1.1− | 2003 02 09 | 608 | 0.2− | 0.2− | 2005 11 05 | 703 | 0.1+ | 0.7− |
| 2003 01 27 | 699 | 0.8+ | 0.5− | 2003 02 09 | 608 | 0.2− | 0.2− | 2005 11 10 | 703 | 1.2+ | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 644 | 0.6+ | 0.0 | 2005 10 10 | 703 | 0.1− | 0.2+ | 2005 11 10 | 703 | 0.8− | 0.7− |
| 2003 01 31 | 644 | 0.3+ | 0.6+ | 2005 10 10 | 703 | 1.2− | 0.2+ | 2005 11 10 | 703 | 0.4+ | 0.7+ |
| 2003 01 31 | 644 | 0.3+ | 0.5+ | 2005 10 10 | 703 | 1.5+ | 1.0− | 2005 11 10 | 703 | 0.6− | 0.1+ |
| 2003 02 04 | 704 | 0.3− | 1.1+ | 2005 10 10 | 703 | (0.0 | 2.2+) | | | | |

**2003 BK$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.62611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23218665 | $\omega$ | 63.88055 | | +0.14372283 | −0.98930399 | |
| $a$ | 2.6216692 | $\Omega$ | 17.90873 | | +0.87654516 | +0.11556865 | |
| $e$ | 0.2487466 | $i$ | 4.64973 | | +0.45936079 | +0.08900287 | |
| $P$ | 4.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 809 | 0.5+ | 0.6+ | 2003 01 31 | 644 | 0.0 | 0.5− | 2003 03 07 | 644 | 0.1+ | 0.0 |
| 1993 10 12 | 809 | 0.3− | 0.7− | 2003 02 01 | 704 | 0.3− | 0.3− | 2003 03 07 | 644 | 0.3+ | 0.5+ |
| 1993 10 12 | 809 | 0.2− | 0.1+ | 2003 02 01 | 704 | 0.9− | 0.3+ | 2006 11 16 | 704 | 0.5− | 0.3+ |
| 2002 12 31 | 704 | 0.3− | 0.4− | 2003 02 01 | 704 | 0.6− | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.6− |
| 2002 12 31 | 704 | 0.2− | 1.3+ | 2003 02 01 | 704 | 0.8− | 0.8− | 2006 11 16 | 704 | 1.2+ | 0.1+ |
| 2002 12 31 | 704 | 0.0 | 0.3− | 2003 02 01 | 704 | 0.3− | 0.6+ | 2006 11 16 | 704 | 0.0 | 0.0 |
| 2002 12 31 | 704 | 0.4− | 0.3− | 2003 02 02 | 644 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.4− |
| 2003 01 08 | 608 | 0.3+ | 0.2+ | 2003 02 02 | 644 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2003 01 08 | 608 | 0.1+ | 0.5+ | 2003 02 02 | 644 | 0.6+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2003 01 08 | 608 | 0.4+ | 0.3+ | 2003 02 04 | 699 | (1.4+ | 2.1+) | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2003 01 17 | 644 | 0.2+ | 0.6− | 2003 02 04 | 699 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2003 01 17 | 644 | 0.3+ | 0.5− | 2003 02 04 | 699 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2003 01 17 | 644 | 0.6+ | 0.5− | 2003 02 04 | 699 | 0.7− | 0.5− | 2006 11 22 | 704 | 0.2− | 0.4+ |
| 2003 01 28 | 644 | 0.4+ | 0.2+ | 2003 02 04 | 704 | 1.0+ | 0.6− | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2003 01 28 | 644 | 0.5+ | 0.4+ | 2003 02 04 | 704 | 0.8− | 0.9+ | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2003 01 28 | 644 | 0.5+ | 0.3+ | 2003 02 04 | 704 | 1.1− | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2003 01 31 | 644 | 0.2+ | 0.5− | 2003 02 04 | 704 | 0.8+ | 0.7− | 2006 11 29 | 704 | 0.0 | 1.5− |
| 2003 01 31 | 699 | (1.7+ | 0.7−) | 2003 02 07 | 704 | 0.6− | 0.2− | 2006 11 29 | 704 | 0.5− | 0.3+ |
| 2003 01 31 | 699 | 0.1− | 0.3+ | 2003 02 07 | 704 | 0.3+ | 0.6+ | 2006 11 29 | 704 | 0.5− | 0.2+ |
| 2003 01 31 | 699 | 0.1+ | 0.5+ | 2003 02 07 | 704 | 0.6− | 0.0 | 2006 11 29 | 704 | 1.2− | 0.4+ |
| 2003 01 31 | 699 | 0.4+ | 0.4− | 2003 02 07 | 704 | 0.2− | 0.1+ | | | | |
| 2003 01 31 | 644 | 0.1+ | 0.4− | 2003 03 07 | 644 | 0.3+ | 0.2+ | | | | |

**2003 BZ$_{68}$ = 2006 SQ$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.43244 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18531178 | $\omega$ | 108.28184 | | −0.23785194 | −0.97105893 | |
| $a$ | 3.0469643 | $\Omega$ | 355.31360 | | +0.76025088 | −0.17221695 | |
| $e$ | 0.1361981 | $i$ | 15.40464 | | +0.60452051 | −0.16548680 | |
| $P$ | 5.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 644 | 0.6+ | 1.4+ | 2003 02 02 | 704 | 1.0+ | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.5− |
| 2003 01 29 | 644 | 0.6+ | 0.9+ | 2003 02 02 | 704 | 0.8− | 0.7− | 2006 09 25 | G96 | 0.6+ | 0.5− |
| 2003 01 29 | 644 | 0.1+ | 1.0+ | 2003 02 02 | 704 | 0.6− | 0.4− | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2003 01 31 | 699 | 0.4+ | 0.1− | 2003 02 06 | 699 | 1.2− | 0.7− | 2006 10 19 | G96 | 0.0 | 0.2+ |
| 2003 01 31 | 699 | 1.1+ | 0.0 | 2003 02 06 | 699 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.4+ | 0.3+ |
| 2003 01 31 | 699 | 0.3+ | 0.2− | 2003 02 06 | 699 | 0.7− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.4+ |
| 2003 01 31 | 699 | 1.0+ | 0.1− | 2003 02 06 | 699 | 0.6− | 0.1− | 2006 10 19 | G96 | 0.6+ | 0.1+ |
| 2003 02 01 | 644 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.5− | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.4+ |
| 2003 02 01 | 644 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2003 02 01 | 644 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.3+ |
| 2003 02 02 | 704 | 0.6− | 0.4+ | 2006 09 25 | G96 | 0.5+ | 0.5− | | | | |
| 2003 02 02 | 704 | 0.4− | 1.3− | 2006 09 25 | G96 | 0.5+ | 0.4− | | | | |

**2003 BJ$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.67181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26312333 | $\omega$ | 318.17649 | | +0.04170054 | −0.99827557 | |
| $a$ | 2.4119214 | $\Omega$ | 129.39129 | | +0.93028065 | +0.02370934 | |
| $e$ | 0.1645677 | $i$ | 3.06447 | | +0.36447082 | +0.05370057 | |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 704 | 1.0− | 1.8− | 2003 01 27 | 704 | (0.6− | 1.7+) | 2005 08 10 | 807 | 0.0 | 0.0 |
| 1998 12 15 | 704 | 1.7+ | 0.6− | 2003 01 27 | 704 | 0.5+ | 0.1+ | 2005 08 30 | 691 | 0.1− | 0.3− |
| 1998 12 15 | 704 | 0.5− | 1.0+ | 2003 01 27 | 704 | (0.9− | 3.6+) | 2005 08 30 | 691 | 0.1− | 0.1− |
| 1998 12 15 | 704 | 1.0− | 0.7+ | 2003 01 29 | 049 | (2.3− | 1.4+) | 2005 08 30 | 691 | 0.0 | 0.0 |
| 2001 08 26 | 691 | 0.0 | 0.3+ | 2003 01 29 | 049 | (1.8− | 0.4+) | 2005 09 13 | 691 | 0.2+ | 0.1− |
| 2001 08 26 | 691 | 0.1− | 0.8+ | 2003 01 29 | 049 | (2.2− | 0.4+) | 2005 09 13 | 691 | 0.0 | 0.0 |
| 2001 08 26 | 691 | 0.3− | 0.5+ | 2003 01 31 | 704 | 0.2− | 1.4+ | 2005 09 13 | 691 | 0.2+ | 0.2+ |
| 2003 01 23 | 049 | 0.8+ | 0.3− | 2003 01 31 | 704 | 0.1+ | 1.4+ | 2006 11 23 | G96 | 0.4− | 0.6− |
| 2003 01 23 | 049 | 0.1+ | 0.2− | 2003 01 31 | 704 | 0.6+ | 0.3− | 2006 11 23 | G96 | 0.7− | 0.3+ |
| 2003 01 23 | 049 | 0.6+ | 0.1− | 2003 01 31 | 704 | 0.4− | 1.4+ | 2006 11 23 | G96 | 1.0− | 0.1+ |
| 2003 01 23 | 049 | 1.3+ | 0.5+ | 2005 08 09 | 807 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.9− | 0.7+ |
| 2003 01 27 | 704 | 0.1− | 0.5+ | 2005 08 10 | 807 | 0.0 | 0.5− | | | | |

**2003 BA$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.40181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21683405 | $\omega$ | 34.06638 | | +0.98903727 | −0.07740344 | |
| $a$ | 2.7440018 | $\Omega$ | 329.61720 | | −0.01037771 | +0.81306814 | |
| $e$ | 0.2768289 | $i$ | 14.39680 | | +0.14730101 | +0.57699993 | |
| $P$ | 4.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 28 | 699 | 0.8− | 0.6− | 2001 10 08 | 704 | 0.1− | 0.8+ | 2001 12 22 | 704 | 0.7+ | 0.3+ |
| 2001 07 28 | 699 | (2.3− | 0.1−) | 2001 10 25 | 704 | 0.1+ | 0.3− | 2001 12 22 | 704 | 0.9− | 0.1+ |
| 2001 07 28 | 699 | 0.0 | 0.2+ | 2001 10 25 | 704 | 0.1+ | 0.8− | 2001 12 22 | 704 | 0.9+ | 0.2+ |
| 2001 07 28 | 699 | 0.7− | 0.1+ | 2001 10 25 | 704 | 0.3+ | 0.9− | 2002 01 08 | 704 | 0.2+ | 0.6− |
| 2001 08 22 | 704 | 1.2− | 1.3+ | 2001 10 25 | 704 | 0.3− | 0.7− | 2002 01 08 | 704 | 0.9− | 0.7+ |
| 2001 08 22 | 704 | 1.0+ | 0.4+ | 2001 10 25 | 704 | 0.1− | 0.6− | 2002 01 08 | 704 | 0.5− | 1.2− |
| 2001 08 22 | 704 | 0.8+ | 0.5+ | 2001 11 11 | 704 | 1.1+ | 0.8+ | 2002 01 08 | 704 | 0.1− | 0.5− |
| 2001 08 22 | 704 | 0.8− | 0.8+ | 2001 11 11 | 704 | 0.1− | 0.0 | 2002 12 14 | 645 | 0.0 | 0.2− |
| 2001 09 28 | 704 | 0.1+ | 0.6+ | 2001 11 11 | 704 | 0.2+ | 0.6− | 2002 12 14 | 645 | 0.0 | 0.1− |
| 2001 09 28 | 704 | 0.1− | 0.5− | 2001 11 11 | 704 | 0.1+ | 0.8− | 2003 01 28 | 645 | 0.0 | 0.0 |
| 2001 09 28 | 704 | 0.1+ | 0.1+ | 2001 11 11 | 704 | 0.1+ | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.1− |
| 2001 09 28 | 704 | 0.3− | 0.1+ | 2001 12 09 | 704 | 0.0 | 0.6− | 2003 01 31 | 291 | 0.2− | 0.4+ |
| 2001 09 28 | 704 | 0.5− | 0.7+ | 2001 12 09 | 704 | 0.1+ | 0.1− | 2003 01 31 | 291 | 0.1− | 0.5+ |
| 2001 10 08 | 704 | 0.3+ | 0.1+ | 2001 12 09 | 704 | 0.2+ | 0.4+ | 2003 01 31 | 291 | 0.1+ | 0.4+ |
| 2001 10 08 | 704 | 0.1+ | 0.4+ | 2001 12 09 | 704 | 0.2− | 0.2− | 2003 02 01 | 291 | 0.1+ | 0.4+ |
| 2001 10 08 | 704 | 0.1+ | 0.6+ | 2001 12 22 | 704 | 0.3− | 0.7+ | 2003 02 01 | 291 | 0.0 | 0.3+ |
| 2001 10 08 | 704 | 0.1− | 0.7+ | 2001 12 22 | 704 | 0.2+ | 0.1− | 2003 02 01 | 291 | 0.3+ | 0.3+ |

**2003 BY$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.23479 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27962894 | $\omega$ | 318.14408 | | −0.59714105 | −0.80167544 | |
| $a$ | 2.3160502 | $\Omega$ | 168.43314 | | +0.76723603 | −0.58072012 | |
| $e$ | 0.1479963 | $i$ | 7.79223 | | +0.23403297 | −0.14170617 | |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 691 | 0.1− | 0.5− | 2003 02 02 | 704 | 0.0 | 0.5+ | 2003 03 07 | 704 | 0.5+ | 0.9+ |
| 2000 05 01 | 691 | 0.1+ | 0.3− | 2003 02 02 | 704 | 0.7+ | 0.6− | 2003 03 07 | 704 | 0.2− | 0.5− |
| 2000 05 01 | 691 | 0.2− | 0.1− | 2003 02 02 | 704 | 0.2− | 0.0 | 2003 04 06 | 291 | 0.4+ | 0.0 |
| 2003 01 28 | 608 | 0.2+ | 0.6− | 2003 02 03 | 699 | 0.1+ | 0.3− | 2003 04 06 | 291 | 0.5− | 0.6+ |
| 2003 01 28 | 608 | 0.2+ | 0.3− | 2003 02 03 | 699 | 0.5− | 0.0 | 2003 04 06 | 291 | 0.0 | 0.4− |
| 2003 01 28 | 608 | 0.1+ | 0.1+ | 2003 02 03 | 699 | 1.0− | 0.1− | 2005 11 03 | 703 | 0.4− | 1.0− |
| 2003 02 01 | 699 | 0.3+ | 1.1− | 2003 02 03 | 699 | 0.2+ | 0.7− | 2005 11 03 | 703 | 1.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 699 | 1.4+ | 0.2− | 2003 02 19 | 644 | 0.2− | 0.3− | 2005 11 03 | 703 | 0.9+ | 0.3− |
| 2003 02 01 | 699 | (2.9+ | 0.3−) | 2003 02 19 | 644 | 0.2− | 0.1+ | 2005 11 03 | 703 | 1.3+ | 1.4− |
| 2003 02 01 | 699 | 0.3+ | 1.2+ | 2003 02 19 | 644 | 0.1+ | 0.0 | | | | |
| 2003 02 02 | 704 | 1.5− | 0.4+ | 2003 03 07 | 704 | 0.0 | 0.6+ | | | | |

**2003 BA$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.45233 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23022204 | $\omega$ | 218.37386 | | −0.93806469 | | +0.34492382 |
| $a$ | 2.6365628 | $\Omega$ | 341.72205 | | −0.28665118 | | −0.82552060 |
| $e$ | 0.2342033 | $i$ | 5.96477 | | −0.19459118 | | −0.44670270 |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 691 | 0.1− | 0.1+ | 2003 02 23 | 608 | 0.0 | 0.3− | 2003 03 06 | 644 | 0.1+ | 0.3+ |
| 2000 09 19 | 691 | 0.2+ | 0.1− | 2003 02 23 | 608 | 0.3− | 0.1+ | 2003 03 06 | 644 | 0.1− | 0.3+ |
| 2000 09 19 | 691 | 0.1− | 0.0 | 2003 02 25 | 608 | 1.7+ | 1.6+ | 2003 03 06 | 644 | 0.0 | 0.3+ |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2003 02 25 | 608 | 1.3+ | 1.3+ | 2003 03 07 | 291 | 0.3− | 0.1− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2003 02 25 | 608 | 1.4+ | 1.1+ | 2003 03 07 | 291 | 0.7− | 0.2− |
| 2003 01 28 | 644 | 0.2+ | 0.1+ | 2003 02 27 | 246 | 0.3− | 0.4− | 2003 03 07 | 291 | 0.8− | 0.2− |
| 2003 01 28 | 644 | 0.2+ | 0.5+ | 2003 02 27 | 246 | 0.3+ | 0.4− | 2003 03 14 | 608 | 0.1− | 1.3− |
| 2003 01 28 | 644 | 0.3+ | 0.2+ | 2003 02 27 | 246 | 0.2+ | 0.4− | 2003 03 14 | 608 | 0.4− | 1.1− |
| 2003 02 01 | 704 | 0.1+ | 0.2+ | 2003 02 27 | 246 | 0.2+ | 0.4− | 2003 03 14 | 608 | 0.4− | 1.3− |
| 2003 02 01 | 704 | 0.7+ | 0.3− | 2003 02 27 | 246 | 0.3+ | 0.5− | 2003 03 27 | 704 | 0.5− | 0.0 |
| 2003 02 01 | 704 | 0.2+ | 0.2+ | 2003 02 27 | 246 | 0.3+ | 0.4− | 2003 03 27 | 704 | 0.4− | 0.1− |
| 2003 02 01 | 704 | 0.4+ | 0.3+ | 2003 02 28 | 704 | 0.5+ | 0.2+ | 2003 03 27 | 704 | (0.8− | 3.1+) |
| 2003 02 08 | 608 | 0.2+ | 0.9− | 2003 02 28 | 704 | 0.3+ | 0.0 | 2003 04 03 | 699 | 1.7+ | 0.7+ |
| 2003 02 08 | 608 | 0.1− | 0.9− | 2003 02 28 | 704 | 0.2+ | 0.2+ | 2003 04 03 | 699 | 0.8− | 0.0 |
| 2003 02 08 | 608 | 0.0 | 1.1− | 2003 02 28 | 704 | 0.2− | 0.1+ | 2003 04 03 | 699 | 0.5− | 1.3− |
| 2003 02 22 | 644 | 0.5+ | 0.2− | 2003 03 05 | 704 | 0.7− | 2.5+ | 2003 04 03 | 699 | 0.1+ | 0.8− |
| 2003 02 22 | 644 | 0.3+ | 0.1− | 2003 03 05 | 704 | 0.6− | 1.2+ | 2003 04 24 | 699 | 0.1+ | 0.1− |
| 2003 02 22 | 644 | 0.3+ | 0.2− | 2003 03 05 | 704 | 0.0 | 1.1+ | 2003 04 24 | 699 | 0.4+ | 0.2+ |
| 2003 02 23 | 699 | 0.3+ | 0.1− | 2003 03 05 | 704 | 0.1− | 0.5+ | 2003 04 24 | 699 | 0.6− | 0.2+ |
| 2003 02 23 | 699 | 0.0 | 0.2− | 2003 03 06 | 699 | 0.3+ | 0.4+ | 2003 04 24 | 699 | 0.4− | 0.4+ |
| 2003 02 23 | 699 | 0.8+ | 0.1+ | 2003 03 06 | 699 | 0.3+ | 0.6− | 2004 08 08 | 644 | 0.4− | 0.8+ |
| 2003 02 23 | 699 | 0.8+ | 0.3− | 2003 03 06 | 699 | 0.5+ | 0.3− | 2004 08 08 | 644 | 0.3− | 0.5+ |
| 2003 02 23 | 608 | 0.1− | 0.0 | 2003 03 06 | 699 | 0.2+ | 0.4− | 2004 08 08 | 644 | 0.3− | 0.7+ |

**2003 BL$_{73}$ = 2006 WY$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.39585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23352011 | $\omega$ | 323.50759 | | +0.30350810 | | −0.94607741 |
| $a$ | 2.6116793 | $\Omega$ | 108.58110 | | +0.90002873 | | +0.24564960 |
| $e$ | 0.2431369 | $i$ | 6.86058 | | +0.31277968 | | +0.21117248 |
| $P$ | 4.22 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.8+ | 0.0 | 2003 02 01 | 704 | 1.2+ | 1.0+ | 2006 11 25 | 703 | 0.9− | 0.7− |
| 2003 01 08 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 0.5− | 0.0 | 2006 11 25 | 703 | 0.2+ | 0.5+ |
| 2003 01 08 | 704 | 0.2+ | 0.8+ | 2006 11 20 | 704 | 0.7+ | 0.3+ | 2006 11 25 | 703 | 0.6+ | 0.4+ |
| 2003 01 08 | 704 | 0.4+ | 0.7− | 2006 11 20 | 704 | 0.7+ | 0.4+ | 2006 11 25 | 703 | 0.2− | 0.1+ |
| 2003 01 25 | 645 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.6− | 1.0+ | 2006 11 25 | 703 | 0.4− | 0.0 |
| 2003 01 25 | 645 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.1− | 2006 11 25 | 703 | 0.2− | 0.5+ |
| 2003 01 29 | 644 | 0.3+ | 0.6+ | 2006 11 22 | G96 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.4+ | 0.5+ |
| 2003 01 29 | 644 | 0.5+ | 0.7+ | 2006 11 22 | G96 | 0.1+ | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.5− |
| 2003 01 29 | 644 | 0.2+ | 0.6+ | 2006 11 22 | G96 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.7+ | 0.3− |
| 2003 02 01 | 704 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.3− | 0.4− |
| 2003 02 01 | 704 | 0.5+ | 0.4− | 2006 11 25 | 703 | 0.2− | 0.5− | | | | |
| 2003 02 01 | 704 | 0.5+ | 0.3+ | 2006 11 25 | 703 | 0.7− | 0.0 | | | | |

**2003 BU$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.10535 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22296579 | $\omega$ | 36.94980 | | −0.55056207 | | −0.81688780 |
| $a$ | 2.6934602 | $\Omega$ | 87.07349 | | +0.71882302 | | −0.56865839 |
| $e$ | 0.2626112 | $i$ | 9.91579 | | +0.42447011 | | −0.09655024 |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.1+ | 0.7− | 2003 01 29 | 644 | 0.0 | 0.5− | 2006 11 11 | 644 | 0.1+ | 0.1− |
| 2002 12 31 | 704 | 0.1+ | 0.3+ | 2003 01 29 | 644 | 0.1+ | 0.2− | 2006 11 11 | 644 | 0.4+ | 0.3− |
| 2002 12 31 | 704 | 0.2+ | 0.0 | 2003 02 01 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.5− | 0.4+ |
| 2002 12 31 | 704 | 0.1+ | 0.1+ | 2003 02 01 | 644 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.1− |
| 2002 12 31 | 704 | 0.3+ | 0.2+ | 2003 02 01 | 644 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.4+ | 0.4− |
| 2003 01 05 | 699 | 0.5− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.3− |
| 2003 01 05 | 699 | 0.6− | 0.5− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.1− | 0.4− |
| 2003 01 05 | 699 | 0.2+ | 0.5− | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 19 | 703 | 1.3− | 0.4− |
| 2003 01 05 | 699 | 0.2− | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.9− | 0.8+ |
| 2003 01 10 | 704 | 0.1− | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.3− |
| 2003 01 10 | 704 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2003 01 10 | 704 | 0.1+ | 0.8+ | 2006 11 09 | 644 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2003 01 10 | 704 | 0.4+ | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2003 01 10 | 704 | (0.0 | 1.8+) | 2006 11 09 | 644 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2003 01 29 | 644 | 0.1− | 0.0 | 2006 11 11 | 644 | 0.1− | 0.2+ | | | | |

**2003 BC$_{74}$ = 2006 VO$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.48203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22410610 | $\omega$ | 318.73428 | | +0.86489562 | | −0.47064282 |
| $a$ | 2.6843157 | $\Omega$ | 70.14183 | | +0.49531271 | | +0.74386704 |
| $e$ | 0.3166393 | $i$ | 10.69229 | | +0.08136886 | | +0.47450728 |
| $P$ | 4.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2003 01 10 | 704 | 1.2+ | 0.0 | 2006 11 14 | 704 | 0.9− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2003 01 10 | 704 | 0.6+ | 0.9+ | 2006 11 14 | 704 | 0.7+ | 0.8+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2003 01 24 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.1− | 0.7+ | 2006 11 24 | G96 | 1.3− | 0.1− |
| 2003 01 24 | 644 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.6+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 01 24 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2003 01 29 | 644 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.6+ | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2003 01 29 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2003 01 29 | 644 | 0.2− | 0.2+ | 2006 11 17 | 704 | (1.6+ | 0.2+) | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2003 02 01 | 644 | 0.4− | 0.1− | 2006 11 17 | 704 | 1.1− | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 02 01 | 644 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2003 02 01 | 644 | 0.5− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.3− | 2006 11 27 | 704 | 0.1− | 0.6+ |
| 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 11 18 | 704 | (2.2+ | 0.6−) | 2006 11 27 | 704 | 0.4− | 1.0+ |
| 2006 09 18 | 703 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.2+ | 2006 11 27 | 704 | 0.1+ | 0.9+ |
| 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 11 18 | 704 | 0.9− | 0.9+ | 2006 11 27 | 704 | 0.0 | 0.9+ |
| 2006 09 18 | 703 | 0.3− | 0.6+ | 2006 11 18 | 704 | 0.7− | 0.7+ | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2006 10 01 | 703 | 0.3− | 0.8− | 2006 11 21 | 704 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2006 10 01 | 703 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2006 10 01 | 703 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.5− | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2006 10 01 | 703 | 0.6+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.5− | 2006 12 01 | 704 | 0.5− | 0.0 |
| 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.7− | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2006 11 02 | 703 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.4+ | 0.3− | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2006 11 02 | 703 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.4+ | 2006 12 01 | 704 | 0.0 | 0.2+ |
| 2006 11 02 | 703 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3− | 0.4− | 2006 12 01 | 704 | 0.4+ | 0.3− |
| 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.3− | 2006 12 01 | 704 | 0.0 | 0.0 |
| 2006 11 12 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.2+ |
| 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.0 | | | | |
| 2006 11 12 | G96 | 0.3− | 0.3− | 2006 11 23 | 691 | 0.0 | 0.0 | | | | |

**2003 BD$_{74}$ = 2006 SY$_{351}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 213.03779 | | $\omega$ | 166.86536 | −0.95618586 | −0.29226413 |
| $n$ | 0.18156256 | | $\Omega$ | 356.01724 | +0.24151625 | −0.75458912 |
| $a$ | 3.0887673 | | $i$ | 14.19931 | +0.16546448 | −0.58751761 |
| $e$ | 0.0607286 | | $H$ | 15.7 | $G$ 0.15 | $U$ 1 |
| $P$ | 5.43 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.1− | 0.9− | 2003 01 29 | 644 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 1998 03 29 | 704 | 1.1+ | 0.1− | 2003 01 29 | 644 | 0.3+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 1998 03 29 | 704 | 0.7− | 1.1+ | 2003 02 01 | 644 | 0.5+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 1998 03 29 | 704 | 0.5+ | 0.2− | 2003 02 01 | 644 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.0 |
| 2001 10 15 | 704 | 0.6− | 0.1+ | 2003 02 01 | 644 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 10 15 | 704 | 0.8− | 0.5+ | 2004 04 21 | E12 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2001 10 15 | 704 | (1.6− | 1.7+) | 2004 04 21 | E12 | 0.1+ | 1.2+ | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 2003 01 24 | 644 | 0.1+ | 0.2+ | 2004 04 21 | E12 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 01 24 | 644 | 0.3+ | 0.2+ | 2004 04 21 | E12 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2003 01 24 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2003 01 29 | 645 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2003 01 29 | 645 | 0.1− | 0.0 | 2006 09 30 | 703 | 1.1+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 01 29 | 644 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.4+ |

**2003 BD$_{75}$ = 2006 UD$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.48636 | | $\omega$ | 26.04352 | +0.46253903 | −0.88086104 |
| $n$ | 0.21555316 | | $\Omega$ | 36.64792 | +0.78112935 | +0.35114746 |
| $a$ | 2.7548616 | | $i$ | 9.71307 | +0.41939789 | +0.31745754 |
| $e$ | 0.1484148 | | $H$ | 16.3 | $G$ 0.15 | $U$ 3 |
| $P$ | 4.57 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 24 | 644 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.5− | 1.0− |
| 2003 01 24 | 644 | 0.2− | 0.2− | 2006 11 02 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.9+ |
| 2003 01 24 | 644 | 0.1− | 0.3+ | 2006 11 02 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.9+ |
| 2003 01 29 | 644 | 0.2+ | 0.1− | 2006 11 02 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.6− |
| 2003 01 29 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.9+ | 0.4− |
| 2003 01 29 | 644 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.3− |
| 2003 02 01 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 704 | (1.6+ | 0.1+) |
| 2003 02 01 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.6− | 2006 11 22 | 704 | 0.7+ | 0.1− |
| 2003 02 01 | 644 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.9+ | 0.1+ |
| 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.8− | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.8+ |
| 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.5− | 0.9+ | 2006 11 22 | 704 | (2.0+ | 0.1−) |
| 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.5− |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 15 | 704 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 15 | 704 | 1.0− | 0.6+ | | | | |
| 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.0 | 0.4− | | | | |

**2003 BG$_{75}$ = 2005 QX$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.53230 | | $\omega$ | 157.52641 | −0.93110552 | −0.36472562 |
| $n$ | 0.23711234 | | $\Omega$ | 1.10925 | +0.29276076 | −0.75417403 |
| $a$ | 2.5852345 | | $i$ | 12.56463 | +0.21756299 | −0.54607395 |
| $e$ | 0.0855116 | | $H$ | 16.0 | $G$ 0.15 | $U$ 3 |
| $P$ | 4.16 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.7− | 1.0− | 2003 01 29 | 644 | 0.1− | 0.0 | 2005 09 25 | 703 | 2.0− | 0.7+ |
| 2001 09 20 | 704 | 0.2− | 0.1+ | 2003 01 29 | 644 | 0.5− | 0.1+ | 2005 09 25 | 703 | 0.3− | 1.6+ |
| 2001 09 20 | 704 | 0.2+ | 0.9− | 2003 02 01 | 644 | 0.0 | 0.1− | 2005 10 13 | 691 | 0.6+ | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2003 02 01 | 644 | 0.1+ | 0.1+ | 2005 10 13 | 691 | 0.1+ | 0.2− |
| 2001 09 20 | 704 | 0.9+ | 0.7+ | 2003 02 01 | 644 | 0.3+ | 0.0 | 2005 10 13 | 691 | 0.1+ | 0.3− |
| 2001 10 14 | 704 | 0.2+ | 1.6+ | 2005 08 30 | 691 | 0.3− | 0.1+ | 2005 10 27 | G96 | 0.0 | 0.6− |
| 2001 10 14 | 704 | 0.2− | 0.9− | 2005 08 30 | 691 | 0.5− | 0.1− | 2005 10 27 | G96 | 0.2+ | 0.4− |
| 2001 10 14 | 704 | 0.6− | 0.5+ | 2005 08 30 | 691 | 0.2+ | 0.2+ | 2005 10 27 | G96 | 0.2− | 0.7− |
| 2001 10 14 | 704 | 0.4− | 0.3+ | 2005 09 13 | 691 | 0.1− | 0.2− | 2005 10 27 | G96 | 0.1− | 0.7− |
| 2003 01 24 | 644 | 0.3+ | 0.2+ | 2005 09 13 | 691 | 0.3− | 0.2− | 2005 11 26 | 291 | 0.2+ | 0.4− |
| 2003 01 24 | 644 | 0.4+ | 0.3+ | 2005 09 13 | 691 | 0.2− | 0.0 | 2005 11 26 | 291 | 0.2+ | 0.2− |
| 2003 01 24 | 644 | 0.2+ | 0.3+ | 2005 09 25 | 703 | 1.4− | 0.1+ | 2005 11 26 | 291 | 1.6+ | 0.8+ |
| 2003 01 29 | 644 | 0.2− | 0.0 | 2005 09 25 | 703 | 0.4− | 1.2+ | | | | |

**2003 BH$_{75}$ = 2005 XD$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.78400 | | $\omega$ | 254.08155 | +0.55423998 | +0.82447985 |
| $n$ | 0.28255922 | | $\Omega$ | 50.14456 | −0.69537456 | +0.53407844 |
| $a$ | 2.3000100 | | $i$ | 8.55835 | −0.45746286 | +0.18706467 |
| $e$ | 0.1370976 | | $H$ | 16.4 | $G$ 0.15 | $U$ 2 |
| $P$ | 3.49 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 1.2− | 0.2+ | 2001 10 24 | 644 | 0.8− | 0.3+ | 2003 02 01 | 644 | 0.1+ | 0.3+ |
| 2001 09 16 | 704 | (2.3− | 0.2+) | 2001 11 12 | 645 | 0.1+ | 0.0 | 2003 03 07 | 645 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 1.3− | 0.6− | 2001 11 12 | 645 | 0.1+ | 0.0 | 2003 03 07 | 645 | 0.0 | 0.1+ |
| 2001 09 16 | 704 | 1.0− | 0.5− | 2001 11 18 | 645 | 0.1+ | 0.0 | 2005 12 02 | 691 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 1.5− | 0.4+ | 2001 11 18 | 645 | 0.1+ | 0.0 | 2005 12 02 | 691 | 0.2− | 0.2+ |
| 2001 10 10 | 644 | 0.1+ | 0.2+ | 2003 01 29 | 644 | 0.1+ | 0.5+ | 2005 12 02 | 691 | 0.2− | 0.1+ |
| 2001 10 10 | 644 | 0.0 | 0.2+ | 2003 01 29 | 644 | 0.1− | 0.8+ | 2005 12 06 | 691 | 0.1− | 0.0 |
| 2001 10 10 | 644 | 0.1− | 0.1+ | 2003 01 29 | 644 | 0.0 | 0.8+ | 2005 12 06 | 691 | 0.2− | 0.2+ |
| 2001 10 24 | 644 | 0.9− | 0.4+ | 2003 02 01 | 644 | 0.3+ | 0.2+ | 2005 12 06 | 691 | 0.9+ | 0.7− |
| 2001 10 24 | 644 | 0.8− | 0.3+ | 2003 02 01 | 644 | 0.0 | 0.6+ | | | | |

**2003 BJ$_{75}$ = 2006 WE$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.98128 | | $\omega$ | 3.49554 | +0.10174748 | −0.97364322 |
| $n$ | 0.22909919 | | $\Omega$ | 80.73959 | +0.90763131 | +0.00685686 |
| $a$ | 2.6451706 | | $i$ | 11.93599 | +0.40725036 | +0.22797340 |
| $e$ | 0.2282389 | | $H$ | 17.2 | $G$ 0.15 | $U$ 4 |
| $P$ | 4.30 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 24 | 644 | 0.1− | 0.3− | 2003 02 01 | 644 | 0.1− | 0.8− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2003 01 24 | 644 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2003 01 24 | 644 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2003 01 29 | 644 | 0.2+ | 1.2+ | 2006 11 16 | G96 | 0.9− | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.0 |
| 2003 01 29 | 644 | 0.5− | 1.3+ | 2006 11 16 | G96 | 1.3+ | 0.4− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2003 01 29 | 644 | 0.1− | 0.7+ | 2006 11 17 | 704 | 0.1− | 1.0+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2003 02 01 | 644 | 0.1+ | 1.0− | 2006 11 17 | 704 | 0.1− | 0.5+ | | | | |
| 2003 02 01 | 644 | 0.0 | 0.9− | 2006 11 17 | 704 | 0.2+ | 0.8+ | | | | |

**2003 BT$_{75}$ = 2006 VJ$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.96058 | | $\omega$ | 341.21784 | +0.83647304 | −0.53289442 |
| $n$ | 0.22018107 | | $\Omega$ | 51.65801 | +0.52134860 | +0.70197264 |
| $a$ | 2.7161228 | | $i$ | 9.37880 | +0.16884457 | +0.47250179 |
| $e$ | 0.2050248 | | $H$ | 15.6 | $G$ 0.15 | $U$ 4 |
| $P$ | 4.48 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 24 | 644 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.9− | 2006 11 16 | 704 | 0.0 | 0.7− |
| 2003 01 24 | 644 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.9− | 2006 11 16 | 704 | 0.1− | 1.1+ |
| 2003 01 24 | 644 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.4− | 0.9− | 2006 11 16 | 704 | (0.2− | 3.2−) |
| 2003 01 29 | 644 | 0.3+ | 0.0 | 2006 11 15 | 704 | 0.1− | 1.1+ | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2003 01 29 | 644 | 0.4+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2003 01 29 | 644 | 0.5+ | 0.0 | 2006 11 15 | 704 | 1.0+ | 1.0+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2003 02 01 | 644 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2003 02 01 | 644 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 0.1+ | 0.1− |
| 2003 02 01 | 644 | 1.5− | 0.8− | 2006 11 16 | 704 | 1.1− | 1.4+ | 2006 11 22 | 704 | 0.0 | 0.4− |
| 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.7− | 0.2− | 2006 11 22 | 704 | 0.5− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 21 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | (4.8+ | 0.2−) | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2004 05 21 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2006 11 12 | G96 | 0.2− | 0.9− | 2006 11 16 | 704 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.3− |

**2003 BP$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.53716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22364132 | $\omega$ | 334.12531 | | +0.42664552 | −0.86569429 | |
| $a$ | 2.6880335 | $\Omega$ | 89.65154 | | +0.86858936 | +0.31152590 | |
| $e$ | 0.2353087 | $i$ | 15.17806 | | +0.25204388 | +0.39182268 | |
| $P$ | 4.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 24 | 644 | 0.0 | 0.3− | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.0 | 0.6− |
| 2003 01 24 | 644 | 0.1+ | 0.2− | 2003 04 26 | 645 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.1+ | 0.5− |
| 2003 01 24 | 644 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.3+ | 2006 11 25 | 704 | (0.1− | 2.1+) |
| 2003 01 29 | 644 | 0.2+ | 0.8+ | 2006 11 15 | 703 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.4+ | 1.1+ |
| 2003 01 29 | 644 | 0.3+ | 0.3+ | 2006 11 15 | 703 | (0.2− | 1.6−) | 2006 11 25 | 703 | 0.9+ | 1.3+ |
| 2003 01 29 | 644 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.4+ | 0.0 | 2006 11 25 | 703 | 0.5+ | 0.6− |
| 2003 02 01 | 644 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.6− | 0.3− | 2006 11 25 | 703 | 0.0 | 0.2− |
| 2003 02 01 | 644 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 1.3− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.9− |
| 2003 02 01 | 644 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 1.2− | 1.4+ | 2006 11 28 | 704 | 0.2− | 0.6− |
| 2003 02 08 | 699 | 0.7− | 0.7− | 2006 11 19 | 704 | 0.6− | 0.4+ | 2006 11 28 | 704 | 0.2+ | 1.0− |
| 2003 02 08 | 699 | 1.0− | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.7− |
| 2003 02 08 | 699 | 0.6+ | 0.4− | 2006 11 25 | 704 | 0.0 | 0.7+ | 2006 11 28 | 704 | 0.0 | 0.6− |
| 2003 02 08 | 699 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.6+ | 0.2− | | | | |

**2003 BS$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.69602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22763932 | $\omega$ | 39.62169 | | −0.26154602 | −0.94841420 | |
| $a$ | 2.6564676 | $\Omega$ | 66.21179 | | +0.82843157 | −0.31584250 | |
| $e$ | 0.1887145 | $i$ | 11.29217 | | +0.49527247 | +0.02745952 | |
| $P$ | 4.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 24 | 644 | 0.0 | 0.1− | 2003 02 26 | 704 | (1.9+ | 0.4−) | 2006 11 18 | 704 | 0.3− | 0.4+ |
| 2003 01 24 | 644 | 0.3− | 0.1− | 2003 02 26 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.2+ |
| 2003 01 24 | 644 | 0.2− | 0.1+ | 2003 02 26 | 704 | 1.3+ | 0.2− | 2006 11 18 | 704 | 0.2− | 1.1+ |
| 2003 01 29 | 644 | 0.2− | 0.5− | 2003 02 26 | 704 | 0.9− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.3+ |
| 2003 01 29 | 644 | 0.0 | 0.3− | 2003 03 07 | 645 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2003 01 29 | 644 | 0.3+ | 0.3− | 2003 03 07 | 645 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2003 02 01 | 644 | 0.1− | 0.1− | 2003 03 08 | 644 | 0.5+ | 1.1+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2003 02 01 | 644 | 0.2− | 0.4+ | 2003 03 08 | 644 | 1.1+ | 1.4+ | 2006 11 21 | 704 | 0.9+ | 0.6+ |
| 2003 02 01 | 644 | 0.0 | 0.2+ | 2003 03 08 | 644 | 0.9+ | 0.5+ | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2003 02 08 | 699 | 0.1+ | 0.7+ | 2006 11 10 | 691 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2003 02 08 | 699 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2003 02 08 | 699 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2003 02 08 | 699 | 1.3+ | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.5− | 0.6+ |
| 2003 02 19 | 644 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.6+ | 1.0− |
| 2003 02 19 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.0 | 0.4+ |
| 2003 02 19 | 644 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.2− | 1.0+ | 2006 11 28 | 704 | 0.7− | 0.5+ |

**2003 BX$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.55095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17980902 | $\omega$ | 157.30360 | | −0.98560097 | −0.15176030 | |
| $a$ | 3.1088163 | $\Omega$ | 14.57143 | | +0.06879045 | −0.76270901 | |
| $e$ | 0.0340464 | $i$ | 17.23960 | | +0.15446231 | −0.62868417 | |
| $P$ | 5.48 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 644 | 0.8+ | 1.1+ | 2005 07 04 | E12 | 0.0 | 1.0+ | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2003 01 29 | 644 | 0.5+ | 0.9+ | 2005 07 04 | E12 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2− |
| 2003 01 29 | 644 | 0.9+ | 1.2+ | 2005 07 04 | E12 | 0.4− | 0.7− | 2006 10 11 | 691 | 0.0 | 0.1− |
| 2003 02 01 | 644 | 0.1+ | 0.2− | 2005 07 04 | E12 | 0.4+ | 1.0− | 2006 10 11 | 691 | 0.1+ | 0.1− |
| 2003 02 01 | 644 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.2− |
| 2003 02 01 | 644 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.1− |
| 2003 02 08 | 699 | (1.0+ | 4.3−) | 2006 09 18 | 699 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.1− |
| 2003 02 08 | 699 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1− |
| 2003 02 08 | 699 | 0.1− | 0.9+ | 2006 09 18 | 699 | 0.2+ | 0.8− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2003 02 08 | 699 | 1.1+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.6+ |
| 2003 02 19 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.1+ | 1.0− | 2006 10 19 | 644 | 0.7− | 0.2+ |
| 2003 02 19 | 644 | 0.4+ | 0.1+ | 2006 09 23 | 152 | 1.5+ | 0.8− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 02 19 | 644 | 0.2+ | 0.0 | 2006 09 23 | 152 | (2.4+ | 0.8−) | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 03 03 | 644 | 0.4+ | 0.1− | 2006 09 23 | 152 | 0.7+ | 1.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2003 03 03 | 644 | 0.3+ | 0.3+ | 2006 09 23 | 152 | 0.4− | 1.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 03 03 | 644 | 0.1+ | 0.1+ | 2006 09 23 | 152 | 1.1+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2003 03 07 | 645 | 0.1− | 0.2− | 2006 09 23 | 152 | (2.0+ | 1.0+) | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 03 07 | 645 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.6+ | 0.5− |
| 2003 03 08 | 644 | 0.1+ | 0.7+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.6− |
| 2003 03 08 | 644 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.8− | 0.3+ | 2006 11 18 | G96 | 0.4+ | 0.5− |
| 2003 03 08 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 691 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.5− |

**2003 BC$_{77}$ = 2006 UN$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.86208 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21356488 | $\omega$ | 53.47393 | | −0.24097839 | −0.96832475 | |
| $a$ | 2.7719336 | $\Omega$ | 50.60191 | | +0.86120488 | −0.24441607 | |
| $e$ | 0.1712755 | $i$ | 4.85456 | | +0.44749924 | −0.05106830 | |
| $P$ | 4.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 09 | 704 | 0.5− | 0.8− | 2003 02 04 | 644 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2003 01 09 | 704 | 0.5+ | 0.4+ | 2003 02 04 | 644 | 0.7+ | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 2003 01 09 | 704 | 0.6+ | 1.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2003 01 30 | 644 | 0.5− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.5+ |
| 2003 01 30 | 644 | 0.6− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2003 01 30 | 644 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2003 02 01 | 704 | 0.4− | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2003 02 01 | 704 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2003 02 01 | 704 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2003 02 01 | 704 | 1.1+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.3− | | | | |
| 2003 02 04 | 644 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.0 | | | | |

**2003 BE$_{77}$ = 2005 SR$_{242}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.00949 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27044340 | $\omega$ | 176.60843 | | −0.80019520 | −0.59767503 | |
| $a$ | 2.3682004 | $\Omega$ | 326.52762 | | +0.54810716 | −0.69513491 | |
| $e$ | 0.1571421 | $i$ | 5.17228 | | +0.24344648 | −0.39946467 | |
| $P$ | 3.64 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 645 | 0.1+ | 0.9− | 2003 02 01 | 704 | 0.7− | 0.2+ | 2005 09 30 | 691 | 0.5+ | 0.2− |
| 2003 01 29 | 645 | 0.1+ | 0.9− | 2003 02 01 | 704 | 0.8+ | 1.5+ | 2005 09 30 | 691 | 0.4− | 0.1− |
| 2003 01 30 | 699 | 0.1− | 0.4− | 2003 02 01 | 704 | 0.8+ | 1.2+ | 2005 09 30 | 691 | 0.4+ | 0.1− |
| 2003 01 30 | 699 | 0.7+ | 0.4+ | 2003 02 06 | 608 | 0.8− | 0.6− | 2005 10 06 | 691 | 0.2− | 0.2+ |
| 2003 01 30 | 699 | 0.3+ | 0.4− | 2003 02 06 | 608 | 0.4− | 0.5− | 2005 10 06 | 691 | 0.1− | 0.0 |
| 2003 01 30 | 699 | 0.7− | 0.6+ | 2003 02 06 | 608 | 0.0 | 0.3− | 2005 10 06 | 691 | 0.3− | 0.1+ |

**2003 BE$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.84316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21710929 | $\omega$ | 143.69160 | | −0.76243314 | −0.64700692 | |
| $a$ | 2.7416822 | $\Omega$ | 355.95854 | | +0.56029985 | −0.65331847 | |
| $e$ | 0.2188929 | $i$ | 7.18729 | | +0.32366616 | −0.39313742 | |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 608 | 0.3− | 0.2− | 2003 02 21 | 644 | 0.1+ | 1.1+ | 2003 03 07 | 699 | 1.4− | 0.1− |
| 2003 01 26 | 608 | 0.0 | 0.1− | 2003 02 21 | 644 | 0.7+ | 0.7+ | 2003 03 07 | 699 | 0.4+ | 0.3+ |
| 2003 01 26 | 608 | 0.4− | 0.1− | 2003 02 22 | 947 | 0.0 | 0.5− | 2003 03 07 | 699 | 0.8+ | 0.3+ |
| 2003 01 30 | 608 | 0.6− | 1.8− | 2003 02 22 | 947 | 0.3− | 0.1− | 2003 03 07 | 644 | 0.4− | 0.2+ |
| 2003 01 30 | 608 | (0.3− | 2.1−) | 2003 02 22 | 947 | 0.3− | 0.2+ | 2003 03 07 | 644 | 0.4− | 0.1+ |
| 2003 01 30 | 608 | (0.6− | 2.1−) | 2003 02 22 | 947 | 0.3+ | 0.1− | 2003 03 07 | 644 | 0.3− | 0.5+ |
| 2003 02 01 | 704 | (5.8− | 2.3+) | 2003 02 23 | 599 | 0.7− | 0.3− | 2003 03 08 | 704 | 0.0 | 0.2+ |
| 2003 02 01 | 704 | (5.0− | 0.7+) | 2003 02 23 | 599 | 0.6− | 0.1− | 2003 03 08 | 704 | 0.3− | 0.2+ |
| 2003 02 01 | 704 | (3.6− | 5.4+) | 2003 02 23 | 599 | 0.7− | 0.3− | 2003 03 08 | 704 | 0.3− | 0.0 |
| 2003 02 01 | 704 | (3.0− | 2.7+) | 2003 02 23 | 599 | 0.4− | 0.3− | 2003 03 08 | 704 | 0.6− | 0.0 |
| 2003 02 02 | 704 | 0.7+ | 0.6+ | 2003 02 24 | 608 | 0.0 | 1.6− | 2003 03 08 | 704 | 0.5− | 0.2− |
| 2003 02 02 | 704 | 1.6− | 0.6+ | 2003 02 24 | 608 | 0.1− | 1.1− | 2006 11 20 | G96 | 0.2+ | 0.2+ |
| 2003 02 02 | 704 | 1.0− | 0.6+ | 2003 02 24 | 608 | 0.1− | 1.4− | 2006 11 20 | G96 | 0.3− | 0.2+ |
| 2003 02 04 | 704 | 1.8+ | 0.7+ | 2003 03 06 | 704 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.3− | 0.1+ |
| 2003 02 04 | 704 | 1.4+ | 0.6+ | 2003 03 06 | 704 | 0.8+ | 0.2+ | 2006 11 20 | G96 | 0.4− | 0.2+ |
| 2003 02 04 | 704 | 1.0+ | 0.3− | 2003 03 06 | 704 | 0.3+ | 0.1+ | 2006 11 21 | 703 | 0.2− | 1.5− |
| 2003 02 04 | 704 | 1.3+ | 0.6+ | 2003 03 06 | 704 | 0.7+ | 0.3+ | 2006 11 21 | 703 | 0.4+ | 0.0 |
| 2003 02 04 | 704 | 1.3+ | 0.3+ | 2003 03 06 | 704 | 0.1+ | 0.1− | 2006 11 21 | 703 | 0.2− | 1.2+ |
| 2003 02 21 | 644 | 0.2− | 1.0+ | 2003 03 07 | 699 | 0.2− | 0.8− | 2006 11 21 | 703 | 0.9+ | 0.8− |

**2003 BE$_{79}$ = 2006 SA$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.57001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22205894 | $\omega$ | 357.75567 | | +0.69652486 | −0.71553369 | |
| $a$ | 2.7007883 | $\Omega$ | 48.08945 | | +0.65943861 | +0.60894599 | |
| $e$ | 0.2037104 | $i$ | 4.12431 | | +0.28283183 | +0.34233948 | |
| $P$ | 4.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 608 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2001 08 23 | 608 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2001 08 23 | 608 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2003 01 31 | 699 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2003 01 31 | 699 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.0 |
| 2003 01 31 | 699 | (2.4+ | 0.8−) | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.0 |
| 2003 01 31 | 699 | 1.2+ | 0.7− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2003 02 01 | 704 | 0.1− | 0.0 | 2006 10 29 | J75 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.3− |
| 2003 02 01 | 704 | 0.2+ | 0.3− | 2006 10 29 | J75 | 0.5+ | 0.8+ | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2003 02 01 | 704 | 0.0 | 0.3− | 2006 10 29 | J75 | 0.2+ | 0.0 | 2006 11 27 | 704 | 1.1− | 0.0 |
| 2003 02 01 | 704 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 27 | 704 | 1.3− | 1.2+ |
| 2003 02 04 | 699 | 0.6− | 0.6− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 704 | 0.7− | 0.8+ |
| 2003 02 04 | 699 | 1.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 27 | 704 | 0.1− | 0.6+ |
| 2003 02 04 | 699 | 0.0 | 0.9− | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.3− |
| 2003 02 04 | 699 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.1− | 1.1+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2003 02 04 | 704 | 0.3− | 1.0+ | 2006 11 11 | 703 | 0.4+ | 0.3− | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2003 02 04 | 704 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2003 02 04 | 704 | 0.0 | 1.3+ | 2006 11 14 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.8+ |
| 2003 02 04 | 704 | 0.9+ | 0.7+ | 2006 11 14 | 691 | 0.2+ | 0.2− | 2006 12 01 | 704 | 0.9− | 0.2− |
| 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.2+ |
| 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.3+ | 2006 12 01 | 704 | 0.0 | 0.1− |

**2003 BK$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.73954 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22467926 | $\omega$ | 149.04856 | | −0.49983705 | −0.85886004 | |
| $a$ | 2.6797486 | $\Omega$ | 330.50324 | | +0.74088342 | −0.35705909 | |
| $e$ | 0.1971971 | $i$ | 13.13656 | | +0.44861418 | −0.36724410 | |
| $P$ | 4.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.7− | 0.2+ | 2003 02 01 | 704 | 0.0 | 0.6− | 2003 03 08 | 704 | 0.0 | 0.6+ |
| 2001 09 16 | 704 | 0.4− | 0.6+ | 2003 02 01 | 704 | 0.4− | 1.4− | 2003 03 08 | 704 | 0.2+ | 0.5+ |
| 2001 09 16 | 704 | 0.0 | 0.4+ | 2003 02 02 | 644 | 0.2− | 0.6− | 2003 03 08 | 704 | 0.3+ | 1.4+ |
| 2001 09 16 | 704 | 0.1− | 0.4− | 2003 02 02 | 644 | 0.2− | 0.8− | 2003 03 08 | 704 | 1.1− | 0.6+ |
| 2001 09 16 | 704 | 1.0− | 0.7+ | 2003 02 02 | 644 | 0.2− | 0.8− | 2003 03 08 | 704 | 0.7+ | 0.6+ |
| 2002 11 22 | 644 | 0.4+ | 0.3+ | 2003 02 04 | 699 | 0.5+ | 0.1− | 2003 03 10 | 699 | 0.0 | 0.2+ |
| 2002 11 22 | 644 | 0.2+ | 0.1+ | 2003 02 04 | 699 | 0.0 | 0.5− | 2003 03 10 | 699 | 0.2− | 0.1+ |
| 2002 11 22 | 644 | 0.5+ | 0.3+ | 2003 02 04 | 699 | 0.4+ | 0.1+ | 2003 03 10 | 704 | 0.2− | 0.8+ |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2003 02 04 | 699 | 0.2+ | 0.0 | 2003 03 10 | 699 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.9− | 0.1− | 2003 02 04 | 704 | 0.4− | 0.4− | 2003 03 10 | 704 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 1.0− | 2003 02 04 | 704 | 0.5− | 0.1− | 2003 03 10 | 699 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 0.8− | 0.1+ | 2003 02 04 | 704 | 0.0 | 0.1+ | 2003 03 10 | 704 | 0.8+ | 1.2+ |
| 2003 01 05 | 699 | 0.4− | 0.4+ | 2003 02 04 | 704 | 0.3− | 0.1− | 2003 03 10 | 704 | 0.3− | 0.1− |
| 2003 01 05 | 699 | 0.4− | 0.7+ | 2003 02 04 | 704 | 0.7− | 0.1− | 2003 03 10 | 704 | 0.9− | 0.5+ |
| 2003 01 05 | 699 | 0.3− | 0.6+ | 2003 02 07 | 704 | 0.8+ | 0.0 | 2003 03 26 | 704 | 0.7+ | 0.2− |
| 2003 01 05 | 699 | 0.5− | 0.3− | 2003 02 07 | 704 | 0.1− | 0.3− | 2003 03 26 | 704 | 0.8+ | 0.3− |
| 2003 01 10 | 704 | (1.5− | 0.2−) | 2003 02 07 | 704 | 0.4+ | 0.7− | 2003 03 26 | 704 | 0.5+ | 0.7− |
| 2003 01 10 | 704 | 0.8− | 0.2+ | 2003 02 07 | 704 | 0.2+ | 0.3− | 2003 03 26 | 704 | 0.4+ | 0.7+ |
| 2003 01 10 | 704 | 1.2− | 0.4+ | 2003 02 07 | 704 | 0.1+ | 0.5− | 2003 03 26 | 704 | 1.3+ | 0.0 |
| 2003 01 10 | 704 | 1.1− | 0.2+ | 2003 02 23 | 699 | 0.4+ | 0.3+ | 2003 04 29 | 704 | 0.3+ | 1.0+ |
| 2003 01 10 | 704 | 1.1− | 0.5+ | 2003 02 23 | 699 | 0.2− | 0.0 | 2003 04 29 | 704 | 0.5− | 0.1− |
| 2003 01 31 | 699 | 0.8+ | 0.2− | 2003 02 23 | 699 | 0.3− | 0.4+ | 2003 04 29 | 704 | 0.6+ | 0.1+ |
| 2003 01 31 | 704 | 0.2+ | 0.7− | 2003 02 23 | 699 | 0.5+ | 1.1+ | 2003 04 29 | 704 | 0.2+ | 1.0+ |
| 2003 01 31 | 699 | 0.1+ | 0.1− | 2003 02 24 | 636 | 0.5− | 0.2− | 2005 08 22 | 644 | 0.1− | 0.9+ |
| 2003 01 31 | 704 | 0.1+ | 0.4− | 2003 02 24 | 636 | 0.5− | 1.0− | 2005 08 22 | 644 | 0.1− | 0.6+ |
| 2003 01 31 | 699 | 0.2+ | 0.1− | 2003 02 24 | 636 | 0.8+ | 1.3+ | 2005 08 22 | 644 | 0.1+ | 0.7+ |
| 2003 01 31 | 704 | 0.3+ | 0.7− | 2003 03 06 | 704 | (1.1+ | 1.9+) | 2006 10 03 | 703 | 0.7+ | 0.8+ |
| 2003 01 31 | 699 | 0.5+ | 0.3− | 2003 03 06 | 704 | 0.3+ | 1.1+ | 2006 10 03 | 703 | 0.6− | 0.5− |
| 2003 01 31 | 704 | 0.5+ | 0.4− | 2003 03 06 | 704 | 0.7+ | 0.8+ | 2006 10 03 | 703 | 0.1+ | 0.5− |
| 2003 01 31 | 704 | 0.2+ | 0.4− | 2003 03 08 | 704 | 0.3+ | 0.5+ | 2006 10 03 | 703 | 0.8− | 1.1+ |
| 2003 02 01 | 704 | 0.1+ | 0.3− | 2003 03 08 | 704 | 0.9− | 0.2+ | 2006 11 13 | 704 | 0.4− | 0.3+ |
| 2003 02 01 | 704 | 0.1− | 0.5− | 2003 03 08 | 704 | 0.6+ | 1.2+ | 2006 11 13 | 704 | 0.1+ | 0.3+ |
| 2003 02 01 | 704 | 0.2+ | 0.7− | 2003 03 08 | 704 | 0.6+ | 0.6+ | 2006 11 13 | 704 | (1.7− | 0.3+) |

**2003 BN$_{79}$ = 2006 TD$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.27799 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20619274 | $\omega$ | 29.68120 | | −0.08169554 | −0.99230381 | |
| $a$ | 2.8376171 | $\Omega$ | 65.14104 | | +0.89302711 | −0.11433654 | |
| $e$ | 0.0739293 | $i$ | 5.88637 | | +0.44252505 | +0.04754268 | |
| $P$ | 4.78 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 699 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2003 01 31 | 699 | 0.8− | 0.6− | 2006 10 02 | G96 | 0.1− | 0.8− | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2003 01 31 | 699 | 0.2− | 0.5− | 2006 10 02 | G96 | 0.0 | 0.9− | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2003 01 31 | 699 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.6− | 2006 11 11 | 703 | 0.8− | 0.8− |
| 2003 02 01 | 704 | 0.3− | 0.8− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2003 02 01 | 704 | (2.1+ | 2.6−) | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.1− | 0.8+ |
| 2003 02 01 | 704 | 0.2− | 0.8− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.3− | 0.4+ |
| 2003 02 01 | 704 | 1.1+ | 0.7+ | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 2003 02 02 | 644 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 02 02 | 644 | 0.1+ | 0.8+ | 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 02 02 | 644 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2003 02 04 | 699 | (0.1+ | 2.0−) | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 02 04 | 699 | 0.0 | 0.9− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2003 02 04 | 699 | 0.2+ | 0.8+ | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2003 02 04 | 699 | (1.6+ | 0.0 ) | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 1.3+ | 1.5+ |
| 2004 04 12 | 691 | 0.5+ | 0.4− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | (2.1+ | 0.7+) |
| 2004 04 28 | 691 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1− | 1.2+ |
| 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1− | | | | |
| 2004 04 28 | 691 | 0.1− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.3− | | | | |

**2003 BK$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.69713 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24337755 | $\omega$ | 21.99775 | | −0.87537394 | | −0.47198565 |
| $a$ | 2.5406745 | $\Omega$ | 129.40914 | | +0.42092527 | | −0.85056165 |
| $e$ | 0.2029417 | $i$ | 7.78384 | | +0.23778643 | | −0.23189315 |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 0.5+ | 1.0− | 2003 02 22 | 644 | 0.6+ | 1.0+ | 2003 04 01 | 704 | 1.2− | 0.2+ |
| 1999 02 23 | 699 | 0.1+ | 0.2− | 2003 02 22 | 644 | 0.4+ | 1.1+ | 2003 04 01 | 704 | 0.2+ | 0.3+ |
| 1999 02 23 | 699 | 0.1− | 0.9+ | 2003 02 22 | 644 | 0.0 | 1.3+ | 2003 04 01 | 704 | (1.1− | 1.7+) |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2003 02 28 | 704 | 0.6+ | 0.6+ | 2003 04 01 | 704 | 0.1− | 0.5+ |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2003 02 28 | 704 | 0.1+ | 0.9+ | 2003 04 01 | 704 | 1.5− | 0.3− |
| 2003 01 31 | 699 | 0.7+ | 0.5− | 2003 02 28 | 704 | 0.5+ | 0.3− | 2003 04 05 | 049 | (1.8− | 0.4−) |
| 2003 01 31 | 699 | 1.1− | 0.2− | 2003 02 28 | 704 | 0.7+ | 0.1− | 2003 04 05 | 049 | (1.9− | 0.2−) |
| 2003 01 31 | 699 | 1.3+ | 0.5+ | 2003 02 28 | 704 | 0.5− | 0.1− | 2003 04 05 | 049 | 1.4− | 0.1+ |
| 2003 01 31 | 699 | 0.3+ | 0.4− | 2003 03 11 | 644 | 0.2+ | 0.3− | 2003 04 25 | 699 | 0.1− | 1.0+ |
| 2003 02 01 | 704 | 0.1− | 0.0 | 2003 03 11 | 644 | 0.1+ | 0.3− | 2003 04 25 | 699 | (2.5− | 0.3−) |
| 2003 02 01 | 704 | 0.3+ | 1.2+ | 2003 03 11 | 644 | 0.1− | 0.3− | 2003 04 25 | 699 | 1.1− | 1.0− |
| 2003 02 01 | 704 | 0.2+ | 0.2+ | 2003 03 15 | 608 | 0.1+ | 0.2− | 2003 04 25 | 699 | 0.0 | 0.7+ |
| 2003 02 01 | 704 | 0.1− | 0.4+ | 2003 03 15 | 608 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.7+ | 0.1− |
| 2003 02 03 | 608 | 0.1− | 0.0 | 2003 03 15 | 608 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2003 02 03 | 608 | 0.0 | 0.2− | 2003 03 25 | 608 | 0.0 | 0.7− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2003 02 03 | 608 | 0.1+ | 0.1+ | 2003 03 25 | 608 | 0.3+ | 1.3− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2003 02 04 | 704 | 0.1+ | 0.3+ | 2003 03 25 | 608 | 0.4− | 1.3− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2003 02 04 | 704 | 0.5+ | 0.5+ | 2003 03 26 | 691 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2003 02 04 | 704 | 1.2+ | 0.5− | 2003 03 26 | 691 | 0.5+ | 0.6+ | 2006 11 23 | G96 | 0.5− | 0.2− |
| 2003 02 09 | 608 | 0.6− | 0.2− | 2003 03 26 | 691 | 0.4+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2003 02 09 | 608 | 0.1− | 0.4− | 2003 03 28 | 691 | 0.3− | 0.4− | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2003 02 09 | 608 | 0.2− | 0.2− | 2003 03 28 | 691 | 0.5− | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2003 02 20 | 185 | 0.3− | 0.3− | 2003 03 28 | 691 | 0.3+ | 0.4− | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2003 02 20 | 185 | 0.3− | 0.5− | 2003 04 01 | 704 | 1.2− | 0.6− | 2006 12 01 | G96 | 0.2+ | 0.0 |
| 2003 02 20 | 185 | 0.2− | 0.3− | 2003 04 01 | 704 | 1.0+ | 0.6+ | | | | |
| 2003 02 20 | 185 | 1.1− | 1.3− | 2003 04 01 | 704 | 1.1− | 0.2+ | | | | |

**2003 BH$_{82}$ = 2006 VT$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.05991 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22673938 | $\omega$ | 28.83123 | | −0.61019543 | | −0.78980342 |
| $a$ | 2.6634921 | $\Omega$ | 98.84084 | | +0.71426203 | | −0.58241063 |
| $e$ | 0.1185274 | $i$ | 3.61056 | | +0.34277003 | | −0.19237573 |
| $P$ | 4.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 23 | 691 | 0.2+ | 0.9+ | 2005 08 04 | 644 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 1995 04 23 | 691 | 0.2+ | 0.1+ | 2005 08 04 | 644 | 0.4− | 0.9+ | 2006 11 17 | 704 | 0.5− | 0.2− |
| 1995 04 23 | 691 | 0.2+ | 0.5+ | 2005 08 04 | 644 | 0.1− | 0.5+ | 2006 11 27 | 703 | 0.2+ | 0.3− |
| 2002 12 31 | 704 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.3+ |
| 2002 12 31 | 704 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.3+ | 2006 11 27 | 703 | 0.1+ | 0.2− |
| 2002 12 31 | 704 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.3− | 0.8− |
| 2003 01 31 | 704 | 0.5+ | 0.7− | 2006 10 22 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.9− | 1.7+ |
| 2003 01 31 | 704 | 0.2− | 0.3− | 2006 11 12 | 703 | 0.6− | 0.9− | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2003 01 31 | 704 | (2.3− | 0.0 ) | 2006 11 12 | 703 | 0.6+ | 0.0 | 2006 11 29 | 704 | 0.9+ | 0.0 |
| 2003 01 31 | 704 | 0.4+ | 0.3− | 2006 11 12 | 703 | 0.2+ | 0.0 | 2006 11 29 | 704 | 1.0+ | 0.5+ |
| 2003 02 04 | 704 | 0.2+ | 0.5− | 2006 11 12 | 703 | 0.6− | 0.1+ | 2006 11 29 | 704 | 0.3− | 1.4+ |
| 2003 02 04 | 704 | 0.2+ | 0.8− | 2006 11 17 | 704 | 0.4− | 0.7+ | 2006 12 01 | 691 | 0.0 | 0.5+ |
| 2003 02 04 | 704 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.8− | 0.3+ | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2003 02 04 | 704 | 0.1+ | 0.5− | 2006 11 17 | 704 | 0.7− | 0.4+ | 2006 12 01 | 691 | 0.2− | 0.1+ |

**2003 BV$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.99057 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23800270 | $\omega$ | 101.77784 | | −0.94013840 | | +0.30707484 |
| $a$ | 2.5787830 | $\Omega$ | 96.24102 | | −0.34061639 | | −0.86063827 |
| $e$ | 0.1993226 | $i$ | 8.55050 | | +0.01096636 | | −0.40621030 |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 699 | 0.1+ | 0.4+ | 2003 02 04 | 699 | 0.0 | 0.9+ | 2004 08 07 | E12 | 0.1− | 1.1+ |
| 2003 01 05 | 699 | 0.9− | 0.4− | 2003 02 04 | 699 | 0.4+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2003 01 05 | 699 | (0.7− | 2.1+) | 2003 02 04 | 699 | 0.6− | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.5+ |
| 2003 01 05 | 699 | 1.0− | 1.0+ | 2003 03 07 | 644 | 0.4+ | 1.0− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2003 01 31 | 699 | 0.0 | 0.2+ | 2003 03 07 | 644 | 0.5+ | 0.8− | 2006 10 21 | G96 | 0.6+ | 0.2− |
| 2003 01 31 | 699 | 0.5− | 0.6+ | 2003 03 07 | 644 | 0.2+ | 1.1− | 2006 11 27 | G96 | 0.9− | 0.9− |
| 2003 01 31 | 699 | 0.5+ | 0.6+ | 2004 08 07 | E12 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.7− | 0.1− |
| 2003 01 31 | 699 | 0.1− | 0.5+ | 2004 08 07 | E12 | 0.0 | 0.6+ | 2006 11 27 | G96 | 0.8+ | 0.1+ |
| 2003 02 04 | 699 | 1.3+ | 0.3− | 2004 08 07 | E12 | 0.1− | 1.0− | 2006 11 27 | G96 | 0.1+ | 0.2− |

**2003 BD$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.88777 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21251686 | $\omega$ | 75.63731 | | +0.25648821 | | −0.96654672 |
| $a$ | 2.7810393 | $\Omega$ | 359.49686 | | +0.83096927 | | +0.22109657 |
| $e$ | 0.2131251 | $i$ | 7.25789 | | +0.49366371 | | +0.13001439 |
| $P$ | 4.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 704 | 0.5− | 0.2+ | 2006 07 22 | G96 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2003 01 31 | 704 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2003 01 31 | 704 | 0.5− | 0.0 | 2006 09 28 | 691 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2003 02 02 | 644 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.7+ |
| 2003 02 02 | 644 | 0.4+ | 0.5− | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 10 17 | 703 | 1.3− | 0.3− |
| 2003 02 02 | 644 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.1− | 1.0+ |
| 2003 02 04 | 699 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2003 02 04 | 699 | (1.6− | 0.2+) | 2006 10 02 | 691 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.8− | 0.1− |
| 2003 02 04 | 699 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.4− | 0.5− |
| 2003 02 04 | 699 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.9+ | 0.4− |
| 2003 03 07 | 644 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 14 | 703 | 1.3+ | 0.7− |
| 2003 03 07 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2003 03 07 | 644 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2006 07 22 | G96 | 0.7− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2006 07 22 | G96 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.4+ | | | | |

**2003 BO$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.56382 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26717467 | $\omega$ | 230.44875 | | −0.05867711 | | −0.99800129 |
| $a$ | 2.3874770 | $\Omega$ | 222.93302 | | +0.92614118 | | −0.04565065 |
| $e$ | 0.1696532 | $i$ | 1.97386 | | +0.37258489 | | −0.04369711 |
| $P$ | 3.69 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.1− | 0.1− | 2003 03 06 | 644 | 0.8+ | 1.3+ | 2005 09 29 | 699 | 1.3− | 0.4+ |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2005 08 31 | 691 | 0.2− | 0.2− | 2005 09 29 | 699 | 0.5+ | 0.6+ |
| 2003 01 31 | 704 | 0.7+ | 0.0 | 2005 08 31 | 691 | 0.2+ | 0.0 | 2005 09 29 | 699 | 1.0− | 0.9+ |
| 2003 01 31 | 704 | 0.9+ | 0.0 | 2005 08 31 | 691 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.7+ | 0.0 |
| 2003 01 31 | 704 | 1.0+ | 0.2+ | 2005 09 14 | 691 | 0.1+ | 0.1+ | 2005 10 27 | G96 | 0.4+ | 0.3− |
| 2003 02 03 | 699 | 0.8+ | 0.1+ | 2005 09 14 | 691 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.4+ | 0.0 |
| 2003 02 03 | 699 | 0.6+ | 0.0 | 2005 09 14 | 691 | 0.0 | 0.1− | 2005 10 27 | G96 | 0.4+ | 0.1+ |
| 2003 02 03 | 699 | (0.5− | 2.1−) | 2005 09 22 | 644 | 0.3− | 0.2+ | 2005 12 04 | G96 | 0.1− | 0.4+ |
| 2003 02 03 | 699 | 0.6− | 0.6+ | 2005 09 22 | 644 | 0.0 | 0.5+ | 2005 12 04 | G96 | 0.3− | 0.3− |
| 2003 03 06 | 644 | 0.6+ | 1.0+ | 2005 09 22 | 644 | 0.2+ | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.5+ |
| 2003 03 06 | 644 | 0.6+ | 0.9+ | 2005 09 29 | 699 | 0.5− | 1.5− | 2005 12 04 | G96 | 0.3+ | 0.0 |

**2003 BR$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 247.95478 | | (2000.0) | | | |
| $n$ | 0.20383037 | $\omega$ | 119.42526 | | −0.97596524 | −0.20144911 |
| $a$ | 2.8595002 | $\Omega$ | 49.08479 | | +0.14147059 | −0.87580671 |
| $e$ | 0.0988087 | $i$ | 6.31549 | | +0.16576465 | −0.43861243 |
| $P$ | 4.84 | $H$ | 15.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 30 | 608 | 0.9− | 0.9− | 2003 03 13 | 644 | 0.4+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1+ | |
| 2003 01 30 | 608 | 0.5− | 0.5− | 2003 03 13 | 644 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.3+ | |
| 2003 01 30 | 608 | 0.1− | 0.5− | 2006 10 17 | G96 | 0.5+ | 0.9− | 2006 11 20 | 691 | 0.0 | 0.3+ | |
| 2003 02 02 | 644 | 0.9+ | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 20 | 691 | 0.1− | 0.3+ | |
| 2003 02 02 | 644 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 20 | 691 | 0.0 | 0.2+ | |
| 2003 02 02 | 644 | 0.1− | 0.8+ | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 20 | 703 | 0.4+ | 0.6− | |
| 2003 02 04 | 699 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.5+ | 0.7+ | 2006 11 20 | 703 | 0.2+ | 0.7− | |
| 2003 02 04 | 699 | 0.9− | 0.2− | 2006 10 17 | 691 | 0.4+ | 0.2+ | 2006 11 20 | 703 | 0.0 | 0.8− | |
| 2003 02 04 | 699 | 0.4− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.8− | 0.7+ | |
| 2003 02 04 | 699 | 0.9− | 1.2− | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.3− | |
| 2003 02 12 | 608 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.3− | 2006 11 20 | 703 | 0.2+ | 1.3− | |
| 2003 02 12 | 608 | 0.1+ | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.6− | 0.4+ | |
| 2003 02 12 | 608 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.5− | 2006 11 20 | 704 | 0.3+ | 0.2+ | |
| 2003 02 19 | 644 | 0.7+ | 1.0+ | 2006 11 09 | 691 | 0.2− | 0.4− | 2006 11 20 | 704 | (1.1+ | 1.7+) | |
| 2003 02 19 | 644 | 0.5+ | 1.4+ | 2006 11 09 | 691 | 0.4− | 0.4− | 2006 11 20 | 704 | 0.8+ | 0.6+ | |
| 2003 02 19 | 644 | 0.6+ | 0.7+ | 2006 11 09 | 691 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.2+ | |
| 2003 03 07 | 644 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.1− | |
| 2003 03 07 | 644 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.5− | 0.8− | |
| 2003 03 07 | 644 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.7+ | |
| 2003 03 13 | 644 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.3+ | 0.1+ | | | | | |

**2003 BX$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 242.76298 | | (2000.0) | | | |
| $n$ | 0.18759662 | $\omega$ | 296.35354 | | −0.84700085 | −0.53149913 |
| $a$ | 3.0221733 | $\Omega$ | 211.54248 | | +0.49423008 | −0.78046846 |
| $e$ | 0.1895250 | $i$ | 1.08561 | | +0.19577077 | −0.32920762 |
| $P$ | 5.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.3− | 0.6+ | 2003 02 08 | 704 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.3+ | |
| 1993 04 21 | 691 | 0.5+ | 0.2+ | 2003 03 06 | 644 | 0.1+ | 0.7+ | 2006 10 02 | 291 | 0.3− | 0.4+ | |
| 1993 04 21 | 691 | 0.3+ | 0.4+ | 2003 03 06 | 644 | 0.1− | 0.0 | 2006 10 02 | 291 | 0.3− | 0.8+ | |
| 2000 07 30 | 807 | 0.3+ | 1.0+ | 2003 03 06 | 644 | 0.0 | 0.5+ | 2006 10 02 | 291 | 0.4− | 0.6+ | |
| 2000 07 30 | 807 | 0.2+ | 0.3+ | 2004 07 16 | 807 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.5− | |
| 2003 01 31 | 704 | 0.8− | 0.5+ | 2004 07 16 | 807 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.6− | |
| 2003 01 31 | 704 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.3− | 0.5− | |
| 2003 01 31 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.5− | |
| 2003 02 02 | 644 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.7− | 1.3− | |
| 2003 02 02 | 644 | 0.6+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.4− | |
| 2003 02 02 | 644 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.5− | |
| 2003 02 08 | 704 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− | |
| 2003 02 08 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.1+ | | | | | |
| 2003 02 08 | 704 | 1.1− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.5+ | | | | | |

**2003 BZ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 251.41181 | | (2000.0) | | | |
| $n$ | 0.18171546 | $\omega$ | 119.78498 | | −0.50588402 | −0.86260002 |
| $a$ | 3.0870343 | $\Omega$ | 0.61203 | | +0.73061207 | −0.42946323 |
| $e$ | 0.1052009 | $i$ | 8.62195 | | +0.45857099 | −0.26736218 |
| $P$ | 5.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.3+ | 0.1− | 2003 03 07 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.6− | 0.7+ | |
| 2002 12 31 | 704 | 0.1− | 0.6− | 2003 03 07 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 | |
| 2002 12 31 | 704 | 0.1− | 0.1+ | 2003 03 07 | 644 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.3− | |
| 2003 01 10 | 704 | (1.7+ | 1.2−) | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.4− | |
| 2003 01 10 | 704 | 0.8+ | 0.6+ | 2006 09 16 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.3− | |
| 2003 01 10 | 704 | 0.2− | 0.5− | 2006 09 16 | 691 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.5− | |
| 2003 01 31 | 704 | 0.8− | 0.9+ | 2006 09 27 | 704 | (1.5− | 2.8−) | 2006 09 30 | J75 | (0.5+ | 1.7−) | |
| 2003 01 31 | 704 | 0.8− | 0.4+ | 2006 09 27 | 704 | 0.5− | 0.2− | 2006 09 30 | J75 | 1.3+ | 0.4− | |
| 2003 01 31 | 704 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.8− | 1.1+ | 2006 10 20 | G96 | 0.1− | 0.4− | |
| 2003 02 02 | 644 | 0.3+ | 0.8− | 2006 09 27 | J75 | 1.4+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.7− | |
| 2003 02 02 | 644 | 0.3− | 0.1− | 2006 09 27 | J75 | 0.6+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.3− | |
| 2003 02 02 | 644 | 0.9+ | 0.7− | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1− | 0.5− | |

**2003 BB$_{87}$ = 2006 SL$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.68449 | | (2000.0) | | | |
| $n$ | 0.17867658 | $\omega$ | 194.09130 | | +0.98921154 | +0.14598876 |
| $a$ | 3.1219381 | $\Omega$ | 157.50331 | | −0.13114103 | +0.91947046 |
| $e$ | 0.0910356 | $i$ | 1.82081 | | −0.06528825 | +0.36504981 |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.3+ | 1.4+ | |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2006 09 20 | 704 | 1.1− | 0.6+ | 2006 10 20 | 644 | 0.4− | 0.0 | |
| 2001 11 21 | 704 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.2− | |
| 2001 12 20 | 704 | 0.7+ | 0.6− | 2006 09 20 | 704 | 0.7− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.3+ | |
| 2001 12 20 | 704 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.0 | |
| 2001 12 20 | 704 | 0.4+ | 0.5− | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2003 01 26 | 291 | 0.3− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 2003 01 26 | 291 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.3− | 0.0 | |
| 2003 01 26 | 291 | 0.9− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | |
| 2003 01 28 | 645 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.3− | 0.4− | 2006 11 11 | 691 | 0.0 | 0.1+ | |
| 2003 01 28 | 645 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.5− | |
| 2003 01 31 | 291 | 0.5+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.0 | 0.5− | |
| 2003 01 31 | 291 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.4− | |
| 2003 01 31 | 291 | 0.0 | 0.2+ | 2006 10 13 | D35 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.5− | |
| 2004 05 23 | 691 | 0.4+ | 0.6+ | 2006 10 13 | D35 | 0.5− | 0.8+ | 2006 11 27 | 703 | 0.3+ | 0.7− | |
| 2004 05 23 | 691 | 0.1+ | 0.5+ | 2006 10 13 | D35 | 0.1+ | 0.9+ | 2006 11 27 | 703 | 0.4− | 0.1− | |
| 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 10 15 | 703 | 1.4+ | 1.1+ | 2006 11 27 | 703 | 1.0− | 0.2+ | |
| 2006 09 19 | 691 | 0.3+ | 0.2+ | 2006 10 15 | 703 | 0.5+ | 1.2+ | 2006 11 27 | 703 | 1.0− | 0.4− | |
| 2006 09 19 | 691 | 0.3+ | 0.3+ | 2006 10 15 | 703 | (0.2+ | 1.7+) | | | | | |

**2003 BB$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 230.32176 | | (2000.0) | | | |
| $n$ | 0.17285667 | $\omega$ | 330.24190 | | −0.78228820 | −0.62241043 |
| $a$ | 3.1916257 | $\Omega$ | 171.13476 | | +0.59884495 | −0.76254355 |
| $e$ | 0.1808086 | $i$ | 9.37659 | | +0.17149312 | −0.17644429 |
| $P$ | 5.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 704 | 0.0 | 0.2− | 2003 03 07 | 704 | 0.9+ | 0.3− | 2006 09 26 | 691 | 0.4− | 0.1+ | |
| 2003 01 28 | 704 | 0.7− | 0.3+ | 2003 03 07 | 704 | 0.8+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.2− | |
| 2003 01 28 | 704 | 0.8− | 0.3+ | 2003 03 07 | 704 | 0.3− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.4− | |
| 2003 01 28 | 704 | 0.5− | 1.0− | 2003 03 07 | 704 | 1.0+ | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.2− | |
| 2003 02 02 | 704 | 1.1− | 0.3− | 2003 03 07 | 704 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.5− | |
| 2003 02 02 | 704 | 1.3+ | 0.3− | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.3− | 0.4+ | |
| 2003 02 02 | 704 | 0.3− | 0.3− | 2003 03 30 | 645 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3+ | |
| 2003 02 02 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.0 | |
| 2003 02 02 | 704 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.6+ | 0.5− | |
| 2003 02 11 | 608 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.1− | |
| 2003 02 11 | 608 | 0.6+ | 0.4− | 2006 09 26 | 691 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.6+ | 0.1− | |
| 2003 02 11 | 608 | 0.0 | 0.4− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.5+ | 0.5− | |

**2003 BT$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.93602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21091380 | $\omega$ | 74.02234 | | −0.33106486 | −0.94040407 | |
| $a$ | 2.7951131 | $\Omega$ | 35.61526 | | +0.80668874 | −0.32478151 | |
| $e$ | 0.1452540 | $i$ | 7.66702 | | +0.48953991 | −0.10078270 | |
| $P$ | 4.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 08 | 809 | (4.5+ | 2.2+) | 2003 03 07 | 644 | 0.0 | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1994 02 08 | 809 | (3.6+ | 2.4+) | 2003 03 07 | 644 | 0.2− | 1.5+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1994 02 08 | 809 | (1.7+ | 2.9+) | 2004 04 28 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2002 11 07 | 645 | 0.0 | 0.2− | 2004 04 28 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2002 11 07 | 645 | 0.0 | 0.3− | 2004 04 28 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2002 12 31 | 699 | 0.3+ | 1.0+ | 2006 09 19 | 691 | 0.5− | 0.3+ | 2006 10 21 | 703 | 1.4+ | 1.0− |
| 2002 12 31 | 699 | 0.5− | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 1.2− | 0.6− |
| 2002 12 31 | 699 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.4− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2002 12 31 | 699 | 0.6+ | 0.2− | 2006 09 23 | 691 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2003 01 10 | 704 | 0.2+ | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2003 01 10 | 704 | 0.0 | 0.6− | 2006 09 23 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2003 01 10 | 704 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2003 01 10 | 704 | 0.4− | 0.8− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2003 01 10 | 704 | 0.5− | 0.4− | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5+ |
| 2003 01 31 | 699 | 0.8+ | 1.4+ | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.7+ |
| 2003 01 31 | 699 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.5+ |
| 2003 01 31 | 704 | 0.8+ | 0.8+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | (2.6− | 3.4−) |
| 2003 01 31 | 699 | 0.4− | 1.4+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.9− |
| 2003 01 31 | 704 | 0.4+ | 0.8+ | 2006 10 11 | 691 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2003 01 31 | 699 | 0.0 | 0.8+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2003 01 31 | 704 | 0.9+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.0 | 1.7+ |
| 2003 01 31 | 704 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.2− |
| 2003 02 06 | 699 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2003 02 06 | 699 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.2− | 1.6+ |
| 2003 02 06 | 699 | 1.1− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.4− |
| 2003 02 06 | 699 | 0.6− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2003 03 07 | 644 | 0.2− | 1.4+ | 2006 10 20 | 644 | 0.4+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.2− |

**2003 BX$_{91}$ = 2004 HR$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.28844 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12552083 | $\omega$ | 70.37492 | | −0.25156299 | −0.96003844 | |
| $a$ | 3.9505617 | $\Omega$ | 34.93728 | | +0.78823454 | −0.27676047 | |
| $e$ | 0.2295853 | $i$ | 12.36644 | | +0.56160695 | −0.04159133 | |
| $P$ | 7.85 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 691 | 0.1− | 0.3+ | 2003 01 24 | 644 | 0.0 | 1.1+ | 2003 04 26 | 645 | 0.1− | 0.1− |
| 2001 11 11 | 691 | 0.1+ | 0.1+ | 2003 01 24 | 644 | 0.7+ | 1.2+ | 2004 04 19 | 691 | 0.1+ | 0.6+ |
| 2001 11 11 | 691 | 0.1+ | 0.4+ | 2003 01 29 | 645 | 0.0 | 0.1− | 2004 04 19 | 691 | 0.2+ | 0.4+ |
| 2001 11 19 | 704 | 0.1− | 1.2+ | 2003 01 29 | 645 | 0.1− | 0.2− | 2004 04 19 | 691 | 0.1+ | 0.1+ |
| 2001 11 19 | 704 | 0.9− | 0.0 | 2003 02 01 | 644 | 0.4+ | 1.1+ | 2004 04 25 | 691 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.5− | 0.3+ | 2003 02 01 | 644 | 0.3+ | 1.2+ | 2004 04 25 | 691 | 0.1+ | 0.1+ |
| 2001 11 19 | 704 | 1.2− | 1.2− | 2003 02 01 | 644 | 0.7+ | 1.4+ | 2004 04 25 | 691 | 0.2+ | 0.2− |
| 2003 01 24 | 644 | 0.2+ | 1.3+ | 2003 04 26 | 645 | 0.0 | 0.1− | | | | |

**2003 BY$_{91}$ = 1995 SU$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.95327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18139920 | $\omega$ | 183.04168 | | −0.95319307 | +0.29767679 | |
| $a$ | 3.0906214 | $\Omega$ | 14.61443 | | −0.27278765 | −0.77099065 | |
| $e$ | 0.1031277 | $i$ | 12.13116 | | −0.13042193 | −0.56299374 | |
| $P$ | 5.43 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1+ | 0.1+ | 2000 08 20 | 691 | 0.2− | 0.3+ | 2003 02 01 | 644 | 0.3+ | 0.1− |
| 1995 09 17 | 691 | 0.1− | 0.0 | 2000 09 26 | 645 | 0.0 | 0.0 | 2003 02 01 | 644 | 0.1− | 0.2− |
| 1995 09 17 | 691 | 0.1+ | 0.1− | 2000 09 26 | 645 | 0.0 | 0.1+ | 2003 02 01 | 644 | 0.0 | 0.2− |
| 1995 09 22 | 691 | (0.1+ | 2.4+) | 2003 01 24 | 644 | 0.5+ | 1.1+ | 2003 04 26 | 645 | 0.1+ | 0.0 |
| 1995 09 22 | 691 | 0.6+ | 0.0 | 2003 01 24 | 644 | 0.6+ | 1.5+ | 2003 04 26 | 645 | 0.0 | 0.0 |
| 1995 09 22 | 691 | 0.6− | 0.0 | 2003 01 24 | 644 | 0.5+ | 1.3+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2000 08 20 | 691 | 0.2− | 0.2− | 2003 01 29 | 645 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.3− |
| 2000 08 20 | 691 | 0.2+ | 0.2+ | 2003 01 29 | 645 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.3+ |

**2003 BZ$_{91}$ = 2001 XM$_{242}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.49087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17600782 | $\omega$ | 149.79450 | | −0.65204106 | +0.73114640 | |
| $a$ | 3.1534171 | $\Omega$ | 78.71617 | | −0.73012745 | −0.53418809 | |
| $e$ | 0.1478324 | $i$ | 11.80742 | | −0.20434375 | −0.42434423 | |
| $P$ | 5.60 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.2− | 0.1− | 2001 12 14 | 704 | 0.4− | 0.7− | 2003 02 26 | 704 | 0.2+ | 0.1− |
| 1995 11 30 | 691 | 0.3+ | 0.4− | 2001 12 14 | 704 | 0.6− | 0.1+ | 2003 02 26 | 704 | 0.1+ | 0.7+ |
| 1995 11 30 | 691 | 0.1+ | 0.2+ | 2001 12 14 | 704 | 0.2− | 0.7+ | 2003 02 26 | 704 | 0.5− | 0.9+ |
| 1998 04 21 | 704 | 0.0 | 0.7− | 2001 12 14 | 704 | 0.1+ | 0.3+ | 2003 03 08 | 644 | 0.3+ | 0.1− |
| 1998 04 21 | 704 | 1.8− | 0.5+ | 2001 12 19 | 704 | 0.2+ | 0.4− | 2003 03 08 | 644 | 0.5+ | 0.0 |
| 1998 04 21 | 704 | 0.8− | 0.3+ | 2001 12 19 | 704 | 0.1− | 0.8− | 2003 03 08 | 644 | 0.2+ | 0.1− |
| 1998 04 21 | 704 | 0.8+ | 1.1− | 2001 12 19 | 704 | (0.3− | 1.7−) | 2003 03 22 | 644 | 0.2+ | 0.1+ |
| 1998 05 23 | 704 | 1.2− | 1.1+ | 2003 01 26 | 699 | 1.0− | 0.2− | 2003 03 22 | 644 | 0.2+ | 0.0 |
| 1998 05 23 | 704 | 0.5+ | 0.4+ | 2003 01 26 | 699 | 0.4− | 0.1− | 2003 03 22 | 644 | 0.1+ | 0.1− |
| 1998 05 23 | 704 | 0.8+ | 0.3− | 2003 01 26 | 699 | 0.7− | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 1998 05 23 | 704 | 0.5+ | 1.0− | 2003 01 26 | 699 | 0.7+ | 1.2+ | 2006 11 18 | G96 | 0.4− | 0.2− |
| 1998 05 23 | 704 | (4.1− | 0.7+) | 2003 02 21 | 644 | 0.6+ | 0.4− | 2006 11 18 | G96 | 0.5− | 0.2− |
| 2000 10 01 | 645 | 0.0 | 0.1+ | 2003 02 21 | 644 | 0.4+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2000 10 01 | 645 | 0.0 | 0.0 | 2003 02 21 | 644 | 0.7+ | 0.1− | | | | |

**2003 BA$_{92}$ = 2005 UO$_{376}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.02319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24501503 | $\omega$ | 312.56888 | | −0.30360048 | +0.95137710 | |
| $a$ | 2.5293421 | $\Omega$ | 299.68803 | | −0.85568952 | −0.29627403 | |
| $e$ | 0.0927227 | $i$ | 3.43438 | | −0.41907302 | −0.08428116 | |
| $P$ | 4.02 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 30 | 699 | 0.5+ | 0.4+ | 2003 03 06 | 644 | 0.2+ | 0.3+ | 2004 07 16 | 704 | 0.6+ | 1.0+ |
| 2003 01 30 | 699 | 0.6+ | 0.7− | 2003 03 12 | 644 | 0.1+ | 0.1+ | 2005 10 27 | 691 | 0.0 | 0.1+ |
| 2003 01 30 | 699 | 1.0− | 0.0 | 2003 03 12 | 644 | 0.3+ | 0.4+ | 2005 10 27 | 691 | 0.0 | 0.3+ |
| 2003 01 30 | 699 | 0.0 | 0.8+ | 2003 03 12 | 644 | 0.2+ | 0.4+ | 2005 10 27 | 691 | 0.1− | 0.2+ |
| 2003 02 22 | 644 | 0.1+ | 0.6+ | 2004 07 15 | 599 | 0.3− | 0.2+ | 2005 10 31 | 691 | 0.1− | 0.1− |
| 2003 02 22 | 644 | 0.3+ | 0.3+ | 2004 07 15 | 599 | 0.4− | 0.8+ | 2005 10 31 | 691 | 0.1+ | 0.0 |
| 2003 02 22 | 644 | 0.1+ | 0.5+ | 2004 07 15 | 599 | 0.6− | 0.6+ | 2005 10 31 | 691 | 0.0 | 0.2+ |
| 2003 03 06 | 644 | 0.2− | 0.3+ | 2004 07 16 | 704 | 0.1− | 1.2+ | | | | |
| 2003 03 06 | 644 | 0.5+ | 0.2+ | 2004 07 16 | 704 | (0.3+ | 2.2+) | | | | |

**2003 BC$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.66910 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29035262 | $\omega$ | 282.77411 | | +0.24966748 | −0.96755798 | |
| $a$ | 2.2586671 | $\Omega$ | 152.67373 | | +0.91792294 | +0.22375458 | |
| $e$ | 0.1746299 | $i$ | 4.83600 | | +0.30835634 | +0.11732625 | |
| $P$ | 3.39 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2003 03 08 | 291 | 0.1+ | 0.2+ | 2005 11 26 | 703 | 0.3+ | 0.1− |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2005 10 26 | 691 | 0.2− | 0.1+ | 2005 12 06 | 703 | 0.0 | 0.3− |
| 2003 01 25 | 291 | 0.4+ | 0.1− | 2005 10 26 | 691 | 0.0 | 0.3+ | 2005 12 06 | 703 | 0.5− | 0.9− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 291 | 0.5− | 0.3+ | 2005 10 26 | 691 | 0.2+ | 0.0 | 2005 12 06 | 703 | 0.5− | 0.8− |
| 2003 01 25 | 291 | 0.7− | 0.2− | 2005 11 10 | 703 | 0.2+ | 0.2− | 2005 12 06 | 703 | 0.5+ | 0.0 |
| 2003 02 26 | 599 | 0.6+ | 0.2− | 2005 11 10 | 703 | 0.0 | 1.9+ | 2006 02 02 | G96 | 0.4+ | 0.0 |
| 2003 02 26 | 599 | 0.4+ | 0.6− | 2005 11 10 | 703 | 1.3− | 0.9+ | 2006 02 02 | G96 | 1.0+ | 0.4− |
| 2003 02 26 | 599 | 0.4+ | 0.4− | 2005 11 10 | 703 | 0.9− | 1.5− | 2006 02 02 | G96 | 0.5+ | 0.4− |
| 2003 02 26 | 599 | 0.4− | 0.0 | 2005 11 26 | 703 | 1.0+ | 0.0 | 2006 02 02 | G96 | 0.5+ | 0.1+ |
| 2003 03 08 | 291 | 0.7+ | 0.7+ | 2005 11 26 | 703 | 0.0 | 0.8− | | | | |
| 2003 03 08 | 291 | 0.0 | 0.3+ | 2005 11 26 | 703 | 0.2− | 0.1+ | | | | |

### 2003 $BD_{92}$ = 2004 $SF_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.03168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27725979 | $\omega$ | 238.08846 | | −0.67218227 | +0.74029183 | |
| $a$ | 2.3292251 | $\Omega$ | 349.65037 | | −0.65520567 | −0.60218912 | |
| $e$ | 0.1993558 | $i$ | 3.76282 | | −0.34478476 | −0.29889173 | |
| $P$ | 3.55 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.1− | 0.0 | 2003 02 21 | 644 | 0.5+ | 0.1+ | 2004 09 11 | 691 | 0.3− | 0.4+ |
| 1996 03 11 | 691 | 0.0 | 0.1− | 2003 02 21 | 049 | 1.2− | 1.4+ | 2004 09 11 | 691 | 0.3+ | 0.0 |
| 1996 03 11 | 691 | 0.0 | 0.2− | 2003 02 21 | 049 | 0.4− | 0.2+ | 2004 09 11 | 691 | 0.2− | 0.4+ |
| 2003 01 26 | 608 | 0.4+ | 0.2− | 2003 02 21 | 049 | 0.3− | 0.4+ | 2004 09 23 | 691 | 0.3− | 0.4+ |
| 2003 01 26 | 608 | 0.7+ | 0.0 | 2003 03 06 | 644 | 0.9+ | 1.7+ | 2004 09 23 | 691 | 0.3+ | 0.1+ |
| 2003 01 26 | 608 | 0.2+ | 0.2− | 2003 03 06 | 644 | 0.8+ | 1.3+ | 2004 09 23 | 691 | 0.3− | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2003 03 06 | 644 | 1.1+ | 1.5+ | 2005 12 30 | G96 | 0.6− | 0.4− |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2003 03 12 | 644 | 0.2+ | 0.6+ | 2005 12 30 | G96 | 0.2+ | 0.4− |
| 2003 02 21 | 644 | 0.1− | 0.4+ | 2003 03 12 | 644 | 0.2+ | 0.6+ | 2005 12 30 | G96 | 0.0 | 0.2− |
| 2003 02 21 | 644 | 0.1+ | 0.4+ | 2003 03 12 | 644 | 0.6+ | 0.5+ | 2005 12 30 | G96 | 0.4+ | 0.3− |

### 2003 $BE_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.78319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17811112 | $\omega$ | 329.00143 | | +0.45737972 | +0.88339069 | |
| $a$ | 3.1285423 | $\Omega$ | 327.88877 | | −0.77147763 | +0.33706547 | |
| $e$ | 0.0515142 | $i$ | 11.07401 | | −0.44229634 | +0.32558831 | |
| $P$ | 5.53 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.2+ | 0.9+ | 2003 02 21 | 644 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.6− | 0.3− |
| 2000 09 28 | 704 | 0.8+ | 0.7− | 2003 02 21 | 644 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2000 09 28 | 704 | 0.1+ | 0.3− | 2003 03 12 | 644 | 0.4+ | 0.5+ | 2006 10 19 | 703 | 1.3+ | 0.1+ |
| 2000 09 28 | 704 | 0.5− | 0.0 | 2003 03 12 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.9+ | 0.0 |
| 2000 09 28 | 704 | 0.6− | 0.1+ | 2003 03 12 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.0 | 1.0+ |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2005 10 05 | G96 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 0.1− | 0.0 | 2005 10 05 | G96 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.1− | 0.3+ | 2005 10 05 | G96 | 0.4− | 0.6+ | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2001 12 19 | 704 | 0.1+ | 0.2+ | 2005 10 05 | G96 | 0.1+ | 0.7+ | 2006 10 27 | 703 | (0.4+ | 1.7−) |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.1− |
| 2003 01 27 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 703 | 0.8− | 0.9− | 2006 10 27 | 703 | 0.3− | 0.6+ |
| 2003 01 27 | 704 | 1.1− | 0.1− | 2006 09 17 | 703 | 0.8− | 0.8− | 2006 11 22 | 703 | 0.0 | 0.9+ |
| 2003 01 27 | 704 | 0.9+ | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2003 01 27 | 704 | 0.8− | 0.7− | 2006 09 28 | 703 | (1.0− | 2.3−) | 2006 11 22 | 703 | 1.2+ | 0.2+ |
| 2003 02 09 | 333 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.5− | 0.2− | 2006 11 22 | 703 | 0.4+ | 0.3+ |
| 2003 02 09 | 333 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.5− | 0.3− | | | | |
| 2003 02 21 | 644 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.3− | 1.3− | | | | |

### 2003 $BF_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.79105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25156006 | $\omega$ | 114.74974 | | −0.38403916 | −0.92329493 | |
| $a$ | 2.4852777 | $\Omega$ | 357.80445 | | +0.77584297 | −0.31896014 | |
| $e$ | 0.1479129 | $i$ | 9.54955 | | +0.50058127 | −0.21398809 | |
| $P$ | 3.92 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7− | 0.0 | 2003 02 21 | 644 | 0.3+ | 0.4+ | 2005 08 30 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.7+ | 2003 02 21 | 644 | 0.4+ | 0.2+ | 2005 08 30 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.7− | 1.1+ | 2003 03 03 | 644 | 0.2+ | 0.7+ | 2005 09 14 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2003 03 03 | 644 | 0.0 | 0.3+ | 2005 09 14 | 691 | 0.1+ | 0.1− |
| 2003 01 27 | 704 | 0.6− | 0.0 | 2003 03 03 | 644 | 0.1+ | 0.4+ | 2005 09 14 | 691 | 0.1+ | 0.2+ |
| 2003 01 27 | 704 | 0.1− | 0.7− | 2003 03 08 | 704 | 0.2+ | 0.7+ | 2005 11 01 | G96 | 0.2+ | 0.5− |
| 2003 01 27 | 704 | 0.0 | 0.4− | 2003 03 08 | 704 | 1.0− | 0.6+ | 2005 11 01 | G96 | 0.2+ | 0.6− |
| 2003 01 27 | 704 | 0.7+ | 0.4+ | 2003 03 08 | 704 | 0.7− | 0.4− | 2005 11 01 | G96 | 0.2+ | 0.3− |
| 2003 01 27 | 704 | 0.5+ | 0.3− | 2003 03 08 | 704 | 0.2+ | 1.3− | 2005 11 01 | G96 | 0.3− | 0.1− |
| 2003 02 21 | 644 | 0.2+ | 0.1+ | 2005 08 30 | 691 | 0.1+ | 0.1− | | | | |

### 2003 $BH_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.88363 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19095893 | $\omega$ | 117.13123 | | −0.93851112 | −0.30180743 | |
| $a$ | 2.9865931 | $\Omega$ | 45.84617 | | +0.17012053 | −0.82682854 | |
| $e$ | 0.0838532 | $i$ | 13.51374 | | +0.30042618 | −0.47462284 | |
| $P$ | 5.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 699 | 0.3− | 0.8+ | 2003 02 26 | 704 | (1.8− | 0.9+) | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2003 01 26 | 699 | 0.9− | 1.2+ | 2003 03 03 | 644 | 0.4+ | 0.7− | 2006 10 31 | 691 | 0.4− | 0.1− |
| 2003 01 26 | 699 | 0.8+ | 1.5− | 2003 03 03 | 644 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2003 01 26 | 699 | 0.4+ | 0.7− | 2003 03 03 | 644 | 0.2+ | 0.7− | 2006 10 31 | 691 | 0.2− | 0.3− |
| 2003 02 01 | 644 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2003 02 01 | 644 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2003 02 01 | 644 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.7+ |
| 2003 02 21 | 644 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2003 02 21 | 644 | 0.6+ | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2003 02 21 | 644 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2003 02 26 | 704 | 1.0− | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2003 02 26 | 704 | 1.2− | 0.3− | 2006 10 27 | 691 | 1.1+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1+ |

### 2003 $BL_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.94281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21666009 | $\omega$ | 90.67542 | | −0.90569317 | −0.39607456 | |
| $a$ | 2.7454704 | $\Omega$ | 66.00083 | | +0.29230603 | −0.84167117 | |
| $e$ | 0.2295206 | $i$ | 9.52325 | | +0.30704569 | −0.36703484 | |
| $P$ | 4.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 704 | 0.4− | 0.1− | 2003 03 08 | 704 | 0.5+ | 0.4− | 2003 04 10 | 644 | 0.2+ | 0.0 |
| 2003 01 27 | 704 | 0.3− | 0.5+ | 2003 03 08 | 704 | (0.3+ | 1.9+) | 2006 11 11 | 691 | 0.3− | 0.2− |
| 2003 01 27 | 704 | 0.2+ | 0.2− | 2003 03 08 | 704 | 1.3− | 0.4+ | 2006 11 11 | 691 | 0.5− | 0.1+ |
| 2003 01 27 | 704 | 0.1− | 0.4+ | 2003 03 08 | 704 | 0.2+ | 1.4+ | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2003 02 04 | 644 | 0.1− | 0.4− | 2003 03 08 | 704 | 0.6− | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2003 02 04 | 644 | 0.2− | 0.4− | 2003 03 08 | 644 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2003 02 04 | 644 | 0.2+ | 0.4− | 2003 03 08 | 644 | 0.0 | 0.6− | 2006 11 11 | G96 | 0.3+ | 0.7− |
| 2003 02 12 | 608 | 0.7+ | 0.3− | 2003 03 08 | 644 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2003 02 12 | 608 | 0.4− | 0.3+ | 2003 03 21 | 608 | 0.3− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2003 02 12 | 608 | 0.8+ | 0.6− | 2003 03 21 | 608 | 0.6+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2003 02 12 | 608 | 0.4− | 0.5+ | 2003 03 21 | 608 | 0.5+ | 0.6− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2003 02 12 | 608 | 0.9+ | 0.7− | 2003 03 26 | 704 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2003 02 12 | 608 | 0.3− | 0.3+ | 2003 03 26 | 704 | 0.1+ | 0.6− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2003 03 08 | 704 | (0.3− | 1.9+) | 2003 03 26 | 704 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2003 03 08 | 704 | 0.5− | 0.6+ | 2003 03 26 | 704 | 0.2+ | 0.6+ | 2006 11 30 | 691 | 0.4+ | 0.5− |
| 2003 03 08 | 704 | (0.1+ | 1.9+) | 2003 03 26 | 704 | 0.4+ | 0.7+ | 2006 11 30 | 691 | 0.1+ | 0.5− |
| 2003 03 08 | 704 | 0.4− | 0.5+ | 2003 04 10 | 644 | 0.1+ | 0.0 | 2006 11 30 | 691 | 0.2+ | 0.8+ |
| 2003 03 08 | 704 | 0.0 | 1.4+ | 2003 04 10 | 644 | 0.3− | 0.1+ | | | | |

**2003 BN$_{92}$ = 2006 SG$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.35176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18580512 | $\omega$ | 101.55531 | | −0.30958843 | −0.95077674 | |
| $a$ | 3.0415685 | $\Omega$ | 6.52567 | | +0.82015457 | −0.27411442 | |
| $e$ | 0.1528993 | $i$ | 6.75288 | | +0.48114601 | −0.14451598 | |
| $P$ | 5.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | (2.3− | 1.8−) | 2003 02 02 | 608 | 0.3− | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1998 03 24 | 704 | 0.4− | 0.1+ | 2003 02 08 | 608 | 0.5+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 1998 03 24 | 704 | 0.3− | 0.6+ | 2003 02 08 | 608 | 0.7+ | 0.9− | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 1998 03 24 | 704 | (5.1− | 0.6+) | 2003 02 08 | 608 | 0.5+ | 0.7− | 2006 10 17 | 703 | (2.6+ | 1.5−) |
| 1998 04 01 | 704 | 0.2+ | 1.4+ | 2003 02 28 | 608 | 0.3+ | 0.8+ | 2006 10 17 | 703 | 0.9− | 0.5− |
| 1998 04 01 | 704 | (2.9+ | 2.5+) | 2003 02 28 | 608 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 1.3− | 1.3− |
| 1998 04 01 | 704 | 1.5+ | 0.8+ | 2003 02 28 | 608 | 0.5+ | 0.7+ | 2006 10 19 | G96 | 0.6+ | 0.1− |
| 1998 04 01 | 704 | 1.1+ | 0.8+ | 2003 03 07 | 699 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 2001 10 19 | 644 | 0.1− | 0.4+ | 2003 03 07 | 699 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2001 10 19 | 644 | 0.5− | 0.2+ | 2003 03 07 | 699 | 0.2+ | 0.5− | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2001 10 19 | 644 | 0.2− | 0.1+ | 2003 03 07 | 699 | 0.7+ | 1.1+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2001 10 26 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.6− | 0.6− | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2001 10 26 | 644 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.0 |
| 2001 10 26 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.3− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.6+ |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 1.0+ | 0.1+ |
| 2003 02 02 | 608 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.7+ | 0.1− |
| 2003 02 02 | 608 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.9− |

**2003 BP$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.27176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20967643 | $\omega$ | 114.07155 | | −0.80315813 | −0.59169704 | |
| $a$ | 2.8060989 | $\Omega$ | 29.79243 | | +0.48308467 | −0.71508487 | |
| $e$ | 0.1571349 | $i$ | 8.04197 | | +0.34866346 | −0.37222069 | |
| $P$ | 4.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.2− | 0.2+ | 2003 02 28 | 704 | 0.3+ | 0.2− | 2003 04 10 | 691 | 0.0 | 0.9+ |
| 2001 10 13 | 691 | 0.2− | 0.4+ | 2003 02 28 | 704 | 0.4+ | 0.4− | 2003 04 10 | 691 | 1.0+ | 0.2− |
| 2001 10 13 | 691 | 0.3− | 0.6+ | 2003 03 11 | 644 | 0.4+ | 0.2+ | 2003 04 10 | 691 | 0.0 | 0.2+ |
| 2003 01 28 | 645 | 0.3− | 0.2− | 2003 03 11 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2003 01 28 | 645 | 0.3− | 0.2− | 2003 03 11 | 644 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2003 02 09 | 608 | 0.8− | 0.5− | 2003 03 26 | 691 | 0.4+ | 1.0+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2003 02 09 | 608 | 0.2+ | 1.1− | 2003 03 26 | 691 | 0.3+ | 1.2+ | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2003 02 09 | 608 | 0.9− | 0.3+ | 2003 03 26 | 691 | 0.3+ | 0.7+ | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2003 02 28 | 704 | (1.0− | 1.7−) | 2003 04 10 | 691 | 0.3+ | 0.5− | 2006 11 25 | 691 | 0.3− | 0.5+ |
| 2003 02 28 | 704 | 0.0 | 0.7− | 2003 04 10 | 691 | 0.2+ | 0.5+ | | | | |
| 2003 02 28 | 704 | 0.7+ | 0.6− | 2003 04 10 | 691 | 0.7+ | 0.2− | | | | |

**2003 CB$_1$ = 2003 BN$_{40}$ = 2006 WB$_{28}$**

Id. Minor Planet Center (d, *MPO* 87831; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.32110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21792162 | $\omega$ | 76.97552 | | −0.97941658 | −0.19566640 | |
| $a$ | 2.7348646 | $\Omega$ | 91.72463 | | +0.16058614 | −0.90413550 | |
| $e$ | 0.1205531 | $i$ | 2.84298 | | +0.12229171 | −0.37980739 | |
| $P$ | 4.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 29 | 688 | 0.0 | 0.2− | 2005 09 14 | 691 | 0.0 | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 1997 12 29 | 688 | 0.5+ | 0.4− | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 23 | H07 | 0.0 | 1.0− |
| 2001 10 24 | 691 | 0.3+ | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.9− | 2006 11 23 | H07 | 0.0 | 0.0 |
| 2001 10 24 | 691 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 23 | H07 | 0.6− | 0.1+ |
| 2001 10 24 | 691 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.6− | 2006 11 23 | H07 | 0.0 | 0.0 |
| 2003 01 27 | 608 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.7− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2003 01 27 | 608 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2003 01 27 | 608 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2003 02 01 | 704 | (1.0− | 1.8+) | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 12 01 | 691 | 0.5− | 0.0 |
| 2003 02 01 | 704 | 0.8− | 1.1+ | 2006 11 15 | 691 | 0.4− | 0.2− | 2006 12 01 | 691 | 0.3− | 0.2+ |
| 2003 02 01 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 691 | 0.9+ | 0.5+ | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2003 02 02 | 608 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.9+ | 2.5+ |
| 2003 02 02 | 608 | 0.1− | 0.1+ | 2006 11 22 | H07 | 0.1− | 0.5− | 2006 12 01 | 704 | 1.0+ | 0.5+ |
| 2003 02 02 | 608 | 0.5− | 0.8− | 2006 11 22 | H07 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 1.2+ | 0.1− |
| 2005 09 14 | 691 | 0.4− | 0.5+ | 2006 11 23 | 691 | 0.2+ | 0.3+ | | | | |
| 2005 09 14 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1− | | | | |

**2003 CF$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.46007 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23523366 | $\omega$ | 33.68338 | | −0.73441530 | −0.67010658 | |
| $a$ | 2.5989808 | $\Omega$ | 103.85554 | | +0.59567048 | −0.71243624 | |
| $e$ | 0.1690597 | $i$ | 6.36660 | | +0.32528579 | −0.20830695 | |
| $P$ | 4.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.2− | 0.1− | 2003 02 04 | 704 | 0.4− | 0.6+ | 2003 03 31 | 644 | 0.0 | 0.0 |
| 1994 01 08 | 691 | 0.3+ | 0.1− | 2003 02 04 | 704 | 0.7− | 0.4+ | 2003 03 31 | 644 | 0.1+ | 0.3− |
| 1994 01 08 | 691 | 0.2− | 0.4+ | 2003 02 04 | 608 | 0.4+ | 0.5+ | 2003 04 05 | 049 | 0.4+ | 0.3− |
| 2003 02 01 | 704 | 0.3+ | 0.3− | 2003 02 04 | 608 | 0.5+ | 0.9+ | 2003 04 05 | 049 | 0.1+ | 0.5− |
| 2003 02 01 | 704 | 0.6+ | 0.0 | 2003 02 04 | 608 | 0.7+ | 1.2+ | 2003 04 05 | 049 | 0.0 | 0.3− |
| 2003 02 01 | 704 | 0.1− | 0.7+ | 2003 02 28 | 704 | 0.3− | 1.0+ | 2006 11 01 | G96 | 0.3− | 0.1− |
| 2003 02 01 | 704 | 0.9− | 0.8− | 2003 02 28 | 704 | 0.5− | 0.5− | 2006 11 01 | G96 | 0.2− | 0.0 |
| 2003 02 01 | 704 | 0.0 | 0.1+ | 2003 02 28 | 704 | 0.4− | 0.7− | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2003 02 02 | 699 | 1.0+ | 1.2− | 2003 02 28 | 704 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2003 02 02 | 699 | 0.5− | 0.1+ | 2003 02 28 | 704 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 02 02 | 699 | 0.2+ | 0.5+ | 2003 03 13 | 049 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2003 02 02 | 699 | 0.5− | 0.8+ | 2003 03 13 | 049 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2003 02 04 | 704 | 0.9− | 0.5− | 2003 03 13 | 049 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2003 02 04 | 704 | 0.2+ | 0.5+ | 2003 03 31 | 644 | 0.2+ | 0.0 | | | | |

**2003 CG$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.46564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22944408 | $\omega$ | 80.75312 | | +0.12737699 | −0.99183237 | |
| $a$ | 2.6425192 | $\Omega$ | 1.96547 | | +0.81749022 | +0.10120973 | |
| $e$ | 0.2798301 | $i$ | 11.10784 | | +0.56168038 | +0.07762182 | |
| $P$ | 4.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 19 | 644 | 0.5+ | 0.1+ | 2003 02 22 | 644 | 0.6+ | 0.0 | 2003 03 25 | 644 | 0.6+ | 0.2+ |
| 2003 01 19 | 644 | 0.5+ | 0.2− | 2003 02 28 | 704 | 1.0− | 0.1+ | 2003 03 25 | 699 | 0.3− | 0.8− |
| 2003 01 19 | 644 | 0.4+ | 0.0 | 2003 02 28 | 704 | 0.5− | 0.6+ | 2003 03 25 | 699 | 0.0 | 0.2− |
| 2003 02 01 | 704 | 0.5− | 0.5+ | 2003 02 28 | 704 | 0.4− | 0.0 | 2003 03 25 | 608 | 0.0 | 0.8+ |
| 2003 02 01 | 704 | 0.2− | 0.5− | 2003 02 28 | 704 | 0.1− | 0.9+ | 2003 03 25 | 608 | 0.0 | 0.9+ |
| 2003 02 01 | 704 | 1.0− | 0.4− | 2003 02 28 | 704 | 0.4+ | 0.2+ | 2003 03 25 | 608 | 0.1+ | 0.2+ |
| 2003 02 01 | 704 | 0.1− | 0.0 | 2003 02 28 | 704 | 0.1+ | 0.8+ | 2003 03 28 | 691 | 0.2+ | 0.0 |
| 2003 02 01 | 704 | 0.4− | 0.4− | 2003 03 06 | 704 | 0.6− | 0.1+ | 2003 03 28 | 691 | 0.1+ | 0.1+ |
| 2003 02 02 | 699 | 0.6− | 0.4− | 2003 03 06 | 704 | (1.7+ | 0.1+) | 2003 03 28 | 691 | 0.0 | 0.2+ |
| 2003 02 02 | 699 | 0.1− | 0.2− | 2003 03 06 | 704 | 0.4+ | 0.0 | 2003 03 31 | 645 | 0.1− | 0.1− |
| 2003 02 02 | 699 | 0.5+ | 0.1− | 2003 03 06 | 704 | 0.1− | 0.9+ | 2003 03 31 | 645 | 0.1− | 0.1− |
| 2003 02 02 | 699 | 0.2− | 0.4− | 2003 03 07 | 699 | 0.8+ | 0.3− | 2006 10 27 | 703 | 0.2− | 0.1+ |
| 2003 02 04 | 704 | 0.5+ | 0.3+ | 2003 03 07 | 699 | 0.6− | 0.9+ | 2006 10 27 | 703 | 0.4+ | 0.7+ |
| 2003 02 04 | 704 | 0.8+ | 0.1− | 2003 03 07 | 699 | 0.8+ | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2003 02 04 | 704 | 0.1− | 0.4+ | 2003 03 07 | 699 | 0.1− | 0.2+ | 2006 11 13 | 704 | 0.5+ | 0.4− |
| 2003 02 04 | 704 | 0.0 | 0.7+ | 2003 03 10 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 704 | 0.5+ | 0.3− |
| 2003 02 04 | 608 | 0.4+ | 0.5+ | 2003 03 10 | 644 | 0.8+ | 0.4+ | 2006 11 13 | 704 | 0.2+ | 0.4− |
| 2003 02 04 | 608 | 0.1+ | 0.7+ | 2003 03 10 | 644 | 0.5+ | 0.3+ | 2006 11 13 | 704 | 0.3+ | 0.3− |
| 2003 02 04 | 608 | 0.1+ | 0.8+ | 2003 03 23 | 645 | 0.0 | 0.1− | 2006 11 20 | 703 | 0.6− | 0.2− |
| 2003 02 09 | 608 | 0.0 | 1.3− | 2003 03 23 | 645 | 0.0 | 0.1− | 2006 11 20 | 703 | 0.9− | 0.1− |
| 2003 02 09 | 608 | 0.4+ | 1.0− | 2003 03 25 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 703 | 0.4+ | 0.9+ |
| 2003 02 09 | 608 | 0.0 | 1.2− | 2003 03 25 | 644 | 0.2+ | 0.5+ | 2006 11 20 | 703 | 0.6− | 0.2− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 02 22 | 644 | 1.2+ | 0.4− | 2003 03 25 | 699 | 0.7− | 0.1+ | |
| 2003 02 22 | 644 | 0.5+ | 0.3− | 2003 03 25 | 699 | 0.3+ | 0.1+ | |

**2003 CN$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 319.31784 | (2000.0) | **P** | **Q** | |
| $n$ | 0.21187227 | $\omega$ | 2.21834 | −0.00356335 | −0.97658785 |
| $a$ | 2.7866770 | $\Omega$ | 88.03777 | +0.91413072 | −0.09038037 |
| $e$ | 0.2830136 | $i$ | 12.42818 | +0.40540391 | +0.19521159 |
| $P$ | 4.65 | $H$ | 15.3 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 704 | 0.2+ | 0.2+ | 2003 03 13 | 704 | 1.0− | 0.4+ | 2006 10 17 | 703 | 0.7+ | 0.4− |
| 2003 01 26 | 704 | 0.4+ | 0.5− | 2003 03 13 | 704 | 0.4− | 1.3+ | 2006 10 28 | 703 | 0.6− | 0.2− |
| 2003 01 26 | 704 | 1.0+ | 0.9− | 2003 03 13 | 704 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2003 01 26 | 704 | 0.0 | 0.3+ | 2003 04 07 | 644 | 0.0 | 0.5− | 2006 10 28 | 703 | 0.6− | 0.0 |
| 2003 02 01 | 644 | 0.3+ | 0.2+ | 2003 04 07 | 644 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.7− | 0.1+ |
| 2003 02 01 | 644 | 0.4+ | 0.1− | 2003 04 07 | 644 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.5− | 0.0 |
| 2003 02 01 | 644 | 0.3+ | 0.1− | 2004 04 21 | 204 | 0.2− | 1.0+ | 2006 11 08 | 644 | 0.9− | 0.3− |
| 2003 02 02 | 699 | 0.5− | 0.2− | 2004 04 21 | 204 | 0.8+ | 0.5+ | 2006 11 08 | 644 | 0.4− | 0.1− |
| 2003 02 02 | 699 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2003 02 02 | 699 | (1.9+ | 1.1+) | 2006 09 26 | 703 | 0.7− | 0.6− | 2006 11 08 | 644 | 0.5− | 0.1− |
| 2003 02 02 | 699 | 0.9− | 0.4− | 2006 09 26 | 703 | 0.1− | 0.6− | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2003 02 24 | 636 | 0.5− | 0.3− | 2006 09 26 | 703 | 0.8− | 0.9− | 2006 11 10 | 704 | 1.2+ | 0.5+ |
| 2003 02 24 | 636 | (0.4+ | 1.7−) | 2006 09 29 | 699 | 0.2− | 0.2+ | 2006 11 10 | 704 | 0.8+ | 0.1− |
| 2003 02 24 | 636 | (3.0+ | 0.1−) | 2006 09 29 | 699 | 0.0 | 0.5+ | 2006 11 10 | 704 | 0.8+ | 1.4+ |
| 2003 02 25 | 636 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.8+ | 0.2− | 2006 11 10 | 704 | 1.0+ | 0.6+ |
| 2003 02 25 | 636 | 0.1+ | 0.8− | 2006 09 29 | 699 | 0.4+ | 0.4− | 2006 11 10 | 704 | 0.9+ | 0.5+ |
| 2003 02 25 | 636 | 0.3+ | 0.7− | 2006 10 17 | 703 | (2.5− | 2.0−) | 2006 11 17 | 644 | 0.3− | 0.3+ |
| 2003 03 13 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | (2.2− | 1.8−) | 2006 11 17 | 644 | 0.4− | 0.3+ |
| 2003 03 13 | 704 | 0.0 | 1.0+ | 2006 10 17 | 703 | (0.5+ | 1.8−) | 2006 11 17 | 644 | 0.4− | 0.1+ |

**2003 CL$_2$ = 2006 SE$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 234.88467 | (2000.0) | **P** | **Q** | |
| $n$ | 0.18916906 | $\omega$ | 343.38100 | −0.86799232 | −0.49632990 |
| $a$ | 3.0054025 | $\Omega$ | 166.82734 | +0.46307244 | −0.82042755 |
| $e$ | 0.1718527 | $i$ | 3.94621 | +0.17931326 | −0.28382258 |
| $P$ | 5.21 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.3+ | 0.9− | 2003 02 01 | 608 | 0.3− | 0.7− | 2005 07 06 | 691 | 0.4+ | 0.6+ |
| 1995 09 20 | 691 | 0.1+ | 0.6− | 2003 02 02 | 704 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.2− | 0.5+ |
| 1995 09 20 | 691 | 0.5+ | 0.4− | 2003 02 02 | 704 | 0.9− | 1.2− | 2006 09 18 | 691 | 0.2− | 0.7+ |
| 1998 03 04 | 809 | 0.9+ | 1.5+ | 2003 02 02 | 704 | 1.2+ | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.5+ |
| 1998 03 04 | 809 | 0.2+ | 0.2+ | 2003 02 02 | 704 | 0.4− | 0.5− | 2006 09 25 | 691 | 0.4− | 0.3+ |
| 1998 03 04 | 809 | 0.1− | 1.0+ | 2003 02 03 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.5− | 0.2+ |
| 1998 03 04 | 704 | 0.7− | 0.7+ | 2003 02 03 | 644 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 1998 03 04 | 704 | 0.4+ | 1.1+ | 2003 02 03 | 644 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 1998 03 04 | 704 | 0.5− | 1.1+ | 2003 02 08 | 704 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.6− | 0.1− |
| 1998 03 04 | 704 | (2.4− | 0.6+) | 2003 02 08 | 704 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2003 01 27 | 704 | 1.0+ | 0.2− | 2003 02 08 | 704 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2003 01 27 | 704 | 1.0+ | 0.9+ | 2004 06 22 | 691 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2003 01 27 | 704 | (1.9+ | 1.7−) | 2004 06 22 | 691 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.3+ |
| 2003 01 27 | 704 | 0.8+ | 0.9+ | 2004 06 22 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2003 02 01 | 608 | 0.5− | 0.3+ | 2005 07 06 | 691 | 0.0 | 0.8+ | 2006 11 16 | G96 | 0.3+ | 0.4+ |
| 2003 02 01 | 608 | 0.5− | 0.1− | 2005 07 06 | 691 | 0.0 | 0.5+ | | | | |

**2003 CU$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 85.22281 | (2000.0) | **P** | **Q** | |
| $n$ | 0.26727878 | $\omega$ | 250.68624 | +0.89500797 | −0.42102277 |
| $a$ | 2.3868570 | $\Omega$ | 133.89542 | +0.44572502 | +0.85678156 |
| $e$ | 0.2023195 | $i$ | 11.79593 | −0.01702752 | +0.29776701 |
| $P$ | 3.69 | $H$ | 16.9 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 608 | 0.4− | 0.3+ | 2003 02 04 | 608 | 0.2+ | 0.0 | 2005 10 08 | 699 | 1.1+ | 0.2+ |
| 2001 07 14 | 608 | 0.3− | 0.0 | 2003 02 04 | 608 | 0.2+ | 0.6− | 2005 10 08 | 699 | 0.7− | 0.1− |
| 2001 07 14 | 608 | 1.1− | 0.5+ | 2003 02 04 | 608 | 0.2+ | 0.1− | 2005 10 25 | 704 | 0.3− | 1.7− |
| 2001 08 26 | 691 | 0.2+ | 0.2+ | 2005 09 14 | 703 | 0.0 | 1.8− | 2005 10 25 | 704 | 0.7+ | 0.2− |
| 2001 08 26 | 691 | 0.1+ | 0.0 | 2005 09 14 | 703 | 0.2− | 0.4− | 2005 10 25 | 704 | 1.6− | 0.1+ |
| 2001 08 26 | 691 | 0.2+ | 0.1+ | 2005 09 14 | 703 | 0.2+ | 0.5− | 2005 10 25 | 704 | 0.7− | 0.1+ |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2005 09 14 | 703 | 1.2+ | 0.0 | 2005 11 06 | 699 | 0.2− | 1.5+ |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2005 09 27 | 704 | 0.0 | 1.0+ | 2005 11 06 | 699 | 0.5+ | 0.5− |
| 2003 01 28 | 291 | 0.3− | 0.3+ | 2005 09 27 | 704 | 0.6− | 0.3+ | 2005 11 06 | 699 | 0.0 | 0.2+ |
| 2003 01 28 | 291 | 0.1− | 0.3+ | 2005 09 27 | 704 | 0.4− | 0.4+ | 2005 11 06 | 699 | 0.6+ | 0.9+ |
| 2003 01 28 | 291 | 0.2− | 0.2+ | 2005 09 27 | 704 | 0.4− | 1.0+ | 2005 11 17 | 644 | 0.4− | 0.1− |
| 2003 02 02 | 644 | 0.2+ | 0.2+ | 2005 09 27 | 704 | 0.9+ | 0.4+ | 2005 11 17 | 644 | 0.2− | 0.2+ |
| 2003 02 02 | 644 | 0.4+ | 0.2+ | 2005 10 08 | 699 | 0.5+ | 0.2− | 2005 11 17 | 644 | 0.0 | 0.0 |
| 2003 02 02 | 644 | 0.5+ | 0.4+ | 2005 10 08 | 699 | 0.2− | 0.5− | | | | |

**2003 CL$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 329.78922 | (2000.0) | **P** | **Q** | |
| $n$ | 0.22830395 | $\omega$ | 207.43050 | +0.28120909 | −0.95636898 |
| $a$ | 2.6513095 | $\Omega$ | 226.35678 | +0.89930778 | +0.29144704 |
| $e$ | 0.3445287 | $i$ | 6.28693 | +0.33491337 | +0.02042040 |
| $P$ | 4.32 | $H$ | 17.6 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.9+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 01 05 | 704 | 0.2+ | 0.1− | 2006 09 20 | 699 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2003 01 05 | 704 | 0.5− | 0.3− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2003 01 05 | 704 | 0.6+ | 0.9− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2003 01 28 | 645 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2003 02 01 | 608 | 0.9+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2003 02 01 | 608 | 1.3+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.7+ | 0.5− |
| 2003 02 01 | 608 | 1.4+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2003 02 04 | 644 | 1.0+ | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2003 02 04 | 644 | 0.6+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2003 02 04 | 644 | 0.4+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2006 09 20 | 699 | (0.9− | 1.6+) | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2006 09 20 | 699 | 0.8+ | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.3− |

**2003 CM$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 285.59560 | (2000.0) | **P** | **Q** | |
| $n$ | 0.21156047 | $\omega$ | 226.92764 | −0.66646309 | −0.73714915 |
| $a$ | 2.7894143 | $\Omega$ | 265.21946 | +0.71241240 | −0.58558990 |
| $e$ | 0.2767144 | $i$ | 6.42574 | +0.21976242 | −0.33718777 |
| $P$ | 4.66 | $H$ | 16.9 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 645 | 0.1− | 0.1− | 2003 02 02 | 704 | 0.1+ | 0.1+ | 2003 03 09 | 704 | 0.3+ | 0.1− |
| 2002 12 07 | 645 | 0.1− | 0.2− | 2003 02 02 | 704 | 0.7+ | 0.6− | 2003 03 09 | 704 | 0.0 | 0.4+ |
| 2003 01 28 | 704 | 0.2− | 0.4− | 2003 02 02 | 704 | 0.5− | 0.1+ | 2003 03 09 | 704 | 0.2+ | 0.4− |
| 2003 01 28 | 704 | 0.1− | 0.3+ | 2003 02 02 | 704 | 0.6+ | 0.1− | 2003 03 09 | 704 | 0.1+ | 0.0 |
| 2003 01 28 | 704 | 0.4+ | 0.5+ | 2003 02 02 | 704 | 0.1+ | 0.2− | 2003 03 10 | 699 | 0.6+ | 0.1+ |
| 2003 01 28 | 704 | 0.3− | 0.3+ | 2003 02 04 | 644 | 0.2+ | 0.1+ | 2003 03 10 | 699 | 0.8+ | 1.3+ |
| 2003 01 28 | 704 | 0.4+ | 0.6+ | 2003 02 04 | 644 | 0.2− | 0.2− | 2003 03 10 | 699 | 1.0− | 1.1+ |
| 2003 01 30 | 683 | (1.3− | 2.4+) | 2003 02 04 | 644 | 0.1+ | 0.1+ | 2003 03 10 | 699 | 0.3+ | 0.0 |
| 2003 01 30 | 683 | (0.7− | 2.4+) | 2003 02 22 | 333 | 0.2− | 0.3− | 2006 10 19 | 703 | (2.4− | 0.5−) |
| 2003 01 30 | 683 | (1.8− | 1.7+) | 2003 02 22 | 333 | 0.7− | 0.4− | 2006 10 19 | 703 | (2.1− | 0.9+) |
| 2003 01 31 | 683 | (1.8− | 0.3−) | 2003 02 22 | 683 | 0.8+ | 0.7+ | 2006 10 20 | G96 | 0.4− | 0.3+ |
| 2003 01 31 | 683 | 0.1+ | 0.5+ | 2003 02 22 | 683 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.3+ |
| 2003 01 31 | 683 | 1.1− | 1.2+ | 2003 02 22 | 683 | (0.9+ | 1.5−) | 2006 10 20 | G96 | 0.4− | 0.4+ |
| 2003 02 01 | 683 | (1.1+ | 2.6+) | 2003 02 23 | 683 | 1.3− | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.3+ |
| 2003 02 01 | 683 | 0.9− | 0.7+ | 2003 02 23 | 683 | 0.3− | 1.1− | 2006 11 25 | G96 | 0.4+ | 0.4+ |
| 2003 02 01 | 683 | 0.5− | 0.8+ | 2003 02 23 | 683 | (1.8− | 0.3−) | 2006 11 25 | G96 | 0.3− | 0.4+ |
| 2003 02 02 | 699 | 0.7+ | 0.0 | 2003 03 07 | 608 | 0.8+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 02 | 699 | 1.0+ | 0.1− | 2003 03 07 | 608 | 0.3+ | 0.4− | 2006 11 25 | G96 | 0.0 | 0.3+ | | |
| 2003 02 02 | 699 | 1.5+ | 0.5− | 2003 03 07 | 608 | 0.5+ | 0.2− | | | | | | |
| 2003 02 02 | 699 | 0.5− | 0.2+ | 2003 03 09 | 704 | 0.8+ | 0.0 | | | | | | |

**2003 $CZ_9$ = 2006 $UL_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.53241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23311820 | $\omega$ | 244.69451 | | −0.80815615 | | −0.58693509 |
| $a$ | 2.6146803 | $\Omega$ | 259.32885 | | +0.55668238 | | −0.73410831 |
| $e$ | 0.1720077 | $i$ | 2.85203 | | +0.19232358 | | −0.34145598 |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.1− | 0.6+ | 2003 02 12 | 608 | 0.7− | 0.0 | 2005 11 01 | G96 | 0.3+ | 0.4− | | |
| 2001 09 28 | 644 | 0.5− | 0.6+ | 2003 02 12 | 608 | 0.5− | 0.1− | 2005 11 01 | G96 | 0.0 | 0.1− | | |
| 2001 09 28 | 644 | 0.1+ | 0.0 | 2003 02 12 | 608 | 0.5− | 0.1− | 2005 11 01 | G96 | 0.2− | 0.2+ | | |
| 2003 01 28 | 704 | 0.3− | 0.8+ | 2003 02 19 | 608 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− | | |
| 2003 01 28 | 704 | 1.2+ | 0.5− | 2003 02 19 | 608 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2003 01 28 | 704 | 0.2+ | 0.4+ | 2003 02 19 | 608 | 0.5− | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2003 01 28 | 704 | 0.5+ | 0.4+ | 2003 02 22 | 644 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.3− | | |
| 2003 02 02 | 704 | 0.7− | 0.4+ | 2003 02 22 | 644 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2003 02 02 | 704 | 0.8− | 0.2− | 2003 02 22 | 644 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.1− | | |
| 2003 02 02 | 704 | 0.4− | 0.5+ | 2003 03 07 | 704 | 0.4+ | 0.8− | 2006 10 28 | G96 | 0.3− | 0.2− | | |
| 2003 02 02 | 704 | 1.2+ | 0.2+ | 2003 03 07 | 704 | 0.6+ | 0.6− | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2003 02 03 | 699 | (0.8− | 1.8+) | 2003 03 07 | 704 | 0.4+ | 0.5− | 2006 11 14 | G96 | 0.5− | 0.1− | | |
| 2003 02 03 | 699 | (1.6− | 0.2+) | 2003 03 07 | 704 | 0.3+ | 0.6− | 2006 11 14 | G96 | 0.1+ | 0.1+ | | |
| 2003 02 03 | 699 | 0.1+ | 0.3+ | 2003 03 07 | 704 | 0.9+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.0 | | |
| 2003 02 03 | 699 | 0.2− | 0.3+ | 2005 11 01 | G96 | 0.1− | 0.3+ | | | | | | |

**2003 $CW_{11}$ = 2006 $SX_{349}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.24661 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19170291 | $\omega$ | 142.01052 | | −0.48826461 | | −0.87040593 |
| $a$ | 2.9788610 | $\Omega$ | 337.00844 | | +0.75585486 | | −0.38559927 |
| $e$ | 0.1829848 | $i$ | 9.30804 | | +0.43621221 | | −0.30611554 |
| $P$ | 5.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 704 | 0.8− | 0.5− | 2003 02 07 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1− | | |
| 2003 02 01 | 704 | 0.9− | 1.0− | 2003 02 07 | 644 | 0.7+ | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.1− | | |
| 2003 02 01 | 704 | 0.3− | 0.5+ | 2003 02 07 | 644 | 1.1+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 2003 02 01 | 704 | 0.5+ | 0.2− | 2003 02 21 | 049 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.2− | 0.4− | | |
| 2003 02 02 | 644 | 0.1+ | 0.1+ | 2003 02 21 | 049 | 0.5− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.1− | | |
| 2003 02 02 | 644 | 0.0 | 0.0 | 2003 02 21 | 049 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.4− | | |
| 2003 02 02 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.5+ | | | | | | |

**2003 $CJ_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.82909 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18002987 | $\omega$ | 2.64770 | | −0.83197638 | | −0.55459215 |
| $a$ | 3.1062734 | $\Omega$ | 143.65558 | | +0.50854479 | | −0.77352522 |
| $e$ | 0.1518751 | $i$ | 1.50677 | | +0.22180509 | | −0.30673486 |
| $P$ | 5.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.0+ | 1.1− | 2003 02 21 | 644 | 0.0 | 0.4+ | 2006 09 23 | 691 | 0.8− | 0.6+ | | |
| 1998 03 29 | 704 | 0.2− | 1.6+ | 2003 02 21 | 644 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.5− | | |
| 1998 03 29 | 704 | 0.5+ | 0.0 | 2003 03 06 | 644 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.4− | | |
| 1998 03 29 | 704 | 0.9− | 0.5+ | 2003 03 06 | 644 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 2003 01 27 | 704 | 0.2+ | 0.0 | 2003 03 06 | 644 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.4+ | 0.1− | | |
| 2003 01 27 | 704 | 0.3− | 0.1− | 2003 03 12 | 644 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.5+ | | |
| 2003 01 27 | 704 | 0.1+ | 0.1+ | 2003 03 12 | 644 | 0.6− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.2+ | | |
| 2003 01 27 | 704 | 0.5+ | 0.2− | 2003 03 12 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.0 | | |
| 2003 01 27 | 704 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2003 02 08 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.3− | 0.1− | | |
| 2003 02 08 | 704 | 1.1− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.8− | 1.1− | | |
| 2003 02 08 | 704 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.2− | | |
| 2003 02 09 | 608 | 0.5− | 1.4− | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 10 27 | 291 | 0.1+ | 0.4+ | | |
| 2003 02 09 | 608 | 0.5+ | 0.8− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 291 | 0.3+ | 0.2− | | |
| 2003 02 09 | 608 | 0.2+ | 0.9− | 2006 09 23 | 691 | 0.5− | 0.1+ | 2006 10 27 | 291 | 0.3+ | 0.5− | | |
| 2003 02 21 | 644 | 0.6+ | 0.5+ | 2006 09 23 | 691 | 0.3+ | 0.5+ | | | | | | |

**2003 $CZ_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.15872 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23546818 | $\omega$ | 340.51806 | | +0.74215287 | | −0.63442084 |
| $a$ | 2.5972548 | $\Omega$ | 60.78576 | | +0.64309119 | | +0.58321236 |
| $e$ | 0.1572313 | $i$ | 14.33832 | | +0.18879312 | | +0.50731996 |
| $P$ | 4.19 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.4+ | 0.8− | 2003 02 19 | 644 | 0.8+ | 0.6+ | 2005 08 08 | E12 | 1.2+ | 0.3− | | |
| 2001 08 19 | 704 | 0.9+ | 0.6− | 2003 02 19 | 644 | 0.4+ | 0.4+ | 2005 08 15 | E12 | 0.6− | 0.6+ | | |
| 2001 08 19 | 704 | 1.3+ | 0.1− | 2004 04 20 | 704 | 0.9− | 0.3+ | 2005 08 15 | E12 | 0.0 | 0.7+ | | |
| 2001 09 11 | 704 | 0.4− | 0.8+ | 2004 04 20 | 704 | 1.1− | 1.1+ | 2005 08 15 | E12 | 0.1+ | 0.5+ | | |
| 2001 09 11 | 704 | 0.0 | 0.5+ | 2004 04 20 | 704 | 0.2+ | 0.3− | 2005 08 15 | E12 | 0.4+ | 0.5+ | | |
| 2001 09 11 | 704 | 0.4− | 0.5− | 2004 04 20 | 704 | 0.0 | 1.3+ | 2006 10 21 | 703 | 0.1+ | 0.9− | | |
| 2001 09 11 | 704 | 0.9− | 0.2+ | 2004 05 15 | 704 | 0.2+ | 0.9+ | 2006 10 21 | 703 | 0.0 | 0.4+ | | |
| 2001 09 11 | 704 | 0.7− | 0.6− | 2004 05 15 | 704 | 1.2+ | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.8− | | |
| 2001 10 14 | 644 | 0.3− | 1.1+ | 2004 05 15 | 704 | (2.2+ | 1.2−) | 2006 10 21 | 703 | (0.5− | 1.6+) | | |
| 2001 10 14 | 644 | 0.5− | 0.4+ | 2005 07 03 | 644 | 0.2− | 0.3+ | 2006 11 15 | 703 | (4.1− | 2.9+) | | |
| 2001 10 14 | 644 | 0.8− | 0.5+ | 2005 07 03 | 644 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.7+ | | |
| 2003 02 08 | 699 | 0.5− | 0.1+ | 2005 07 03 | 644 | 0.0 | 0.4+ | 2006 11 15 | 703 | 1.5+ | 1.2+ | | |
| 2003 02 08 | 699 | 0.5+ | 0.1+ | 2005 07 27 | E12 | 0.4− | 0.3+ | 2006 11 15 | 703 | 1.2+ | 0.4+ | | |
| 2003 02 08 | 699 | 0.3+ | 0.0 | 2005 07 27 | E12 | 0.4+ | 0.1+ | 2006 11 21 | 703 | 0.0 | 0.5− | | |
| 2003 02 08 | 699 | 0.5+ | 0.4− | 2005 07 27 | E12 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.3+ | 0.6− | | |
| 2003 02 11 | 704 | 0.5− | 0.8+ | 2005 07 27 | E12 | 0.0 | 0.1+ | 2006 11 21 | 703 | 0.1+ | 0.3+ | | |
| 2003 02 11 | 704 | 0.1− | 0.2+ | 2005 08 08 | E12 | 0.4+ | 0.3+ | 2006 11 21 | 703 | 0.7− | 0.6− | | |
| 2003 02 11 | 704 | (0.8− | 1.8+) | 2005 08 08 | E12 | 0.1+ | 0.4+ | | | | | | |
| 2003 02 19 | 644 | 1.3+ | 0.6+ | 2005 08 08 | E12 | 0.6− | 0.0 | | | | | | |

**2003 $CD_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.42713 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27129975 | $\omega$ | 300.35157 | | +0.09175175 | | −0.99273827 |
| $a$ | 2.3632144 | $\Omega$ | 144.12643 | | +0.95311625 | | +0.06492822 |
| $e$ | 0.0840765 | $i$ | 7.62907 | | +0.28835921 | | +0.10126722 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 645 | 0.0 | 0.1− | 2003 02 09 | 333 | 0.4− | 0.3− | 2005 10 28 | 703 | 0.6+ | 0.2− | | |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2003 02 09 | 333 | 0.2− | 0.3− | 2005 10 28 | 703 | 0.4− | 0.4− | | |
| 2003 01 28 | 704 | 0.0 | 0.1− | 2003 02 11 | 704 | 0.2+ | 0.1− | 2005 11 03 | 703 | 0.5− | 1.7+ | | |
| 2003 01 28 | 704 | 0.2− | 1.1+ | 2003 02 11 | 704 | 0.5+ | 0.6+ | 2005 11 03 | 703 | 0.7− | 0.2+ | | |
| 2003 01 28 | 704 | 0.4− | 0.1− | 2003 02 11 | 704 | 0.8+ | 0.1− | 2005 11 03 | 703 | 1.3+ | 2.0− | | |
| 2003 02 02 | 644 | 0.2− | 0.5+ | 2005 10 01 | 703 | 0.3+ | 0.4+ | 2005 11 03 | 703 | 0.4+ | 0.6− | | |
| 2003 02 02 | 644 | 0.1− | 0.2+ | 2005 10 01 | 703 | 0.8+ | 0.2− | 2005 11 06 | 699 | 1.1− | 1.5+ | | |
| 2003 02 02 | 644 | 0.4+ | 0.2+ | 2005 10 01 | 703 | 1.3− | 0.4− | 2005 11 06 | 699 | 0.7− | 0.2+ | | |
| 2003 02 08 | 704 | 1.2− | 0.5− | 2005 10 01 | 703 | 0.2− | 0.2− | 2005 11 06 | 699 | 0.3+ | 0.6+ | | |
| 2003 02 08 | 704 | 0.6+ | 0.4− | 2005 10 28 | 703 | 0.9+ | 0.3+ | 2005 11 06 | 699 | 0.7+ | 0.0 | | |
| 2003 02 08 | 704 | 0.0 | 0.6+ | 2005 10 28 | 703 | 0.6− | 0.6− | | | | | | |

**2003 $CP_{21}$ = 2001 $WR_{80}$ = 2006 $WZ_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.54184 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20273272 | $\omega$ | 313.55268 | | −0.31643554 | | −0.94842687 |
| $a$ | 2.8698122 | $\Omega$ | 154.87651 | | +0.88262979 | | −0.30164517 |
| $e$ | 0.0220118 | $i$ | 2.54357 | | +0.34761071 | | −0.09745084 |
| $P$ | 4.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.4− | 0.5+ | 2001 11 20 | 704 | 0.3+ | 0.5+ | 2003 02 06 | 291 | 0.3+ | 0.2+ |
| 2000 07 29 | 807 | 0.3− | 0.5+ | 2001 11 20 | 704 | 0.5− | 0.0 | 2003 04 05 | 691 | 0.7+ | 0.2+ |
| 2000 08 20 | 691 | 0.5+ | 0.1− | 2001 11 21 | 704 | (1.3− | 1.9+) | 2003 04 05 | 691 | 0.1+ | 0.1− |
| 2000 08 20 | 691 | 0.5+ | 0.0 | 2001 11 21 | 704 | 0.4+ | 1.5+ | 2003 04 05 | 691 | 0.2+ | 0.1− |
| 2000 08 20 | 691 | 0.1+ | 0.0 | 2001 11 21 | 704 | 0.2+ | 0.4+ | 2006 11 17 | G96 | (2.2− | 1.0+) |
| 2000 08 31 | 691 | 0.5− | 0.2+ | 2001 11 21 | 704 | 1.1− | 0.0 | 2006 11 17 | G96 | 0.1+ | 1.3+ |
| 2000 08 31 | 691 | 0.3− | 0.3+ | 2003 02 01 | 291 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.7− | 0.2+ |
| 2000 08 31 | 691 | 0.4− | 0.4+ | 2003 02 01 | 291 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.5− | 0.3+ |
| 2001 11 20 | 704 | 0.2− | 0.9+ | 2003 02 01 | 291 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.5− | 0.0 |
| 2001 11 20 | 704 | 0.4+ | 0.3+ | 2003 02 06 | 291 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.5+ | 0.3− |
| 2001 11 20 | 704 | 0.3− | 0.1− | 2003 02 06 | 291 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.4+ | 0.9− |

**2003 CD$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.78099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23341069 | $\omega$ | 138.87339 | | +0.81484277 | −0.57722460 | |
| $a$ | 2.6124955 | $\Omega$ | 256.45956 | | +0.51646827 | +0.76467607 | |
| $e$ | 0.2723578 | $i$ | 3.14393 | | +0.26323334 | +0.28650003 | |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 26 | 644 | (0.1− | 2.2−) | 2003 01 17 | 644 | 0.3+ | 0.1− | 2003 02 08 | 608 | 0.5− | 0.6− |
| 2001 06 26 | 644 | (0.3+ | 2.2−) | 2003 01 27 | 704 | 1.2+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 06 26 | 644 | (0.2− | 2.5−) | 2003 01 27 | 704 | (2.4+ | 0.9−) | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2001 07 14 | 644 | 0.2+ | 0.0 | 2003 01 27 | 704 | 0.3− | 0.5− | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2001 07 14 | 644 | 0.0 | 0.3+ | 2003 01 27 | 704 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2001 07 14 | 644 | 0.5+ | 0.1+ | 2003 01 27 | 644 | 0.0 | 0.2+ | 2006 12 01 | 704 | 0.9+ | 0.2+ |
| 2001 07 14 | 644 | 0.0 | 0.2+ | 2003 01 27 | 644 | 0.2+ | 0.5+ | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2001 07 14 | 644 | 0.3− | 0.1+ | 2003 01 27 | 644 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.0 | 0.1− |
| 2001 07 14 | 644 | 0.7− | 0.1+ | 2003 02 03 | 699 | 0.4− | 0.3− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2003 01 01 | 704 | 0.6+ | 0.8+ | 2003 02 03 | 699 | 0.6− | 1.0+ | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2003 01 01 | 704 | 0.4+ | 0.6+ | 2003 02 03 | 699 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2003 01 01 | 704 | 0.9− | 0.8− | 2003 02 03 | 699 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.2− | 0.2+ |
| 2003 01 17 | 644 | 0.2+ | 0.4+ | 2003 02 08 | 608 | 0.4− | 0.7− | 2006 12 01 | 704 | 0.2− | 0.4− |
| 2003 01 17 | 644 | 0.3+ | 0.2+ | 2003 02 08 | 608 | (0.3+ | 1.5−) | | | | |

**2003 CA$_{25}$ = 2001 RF$_{125}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.06904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22335111 | $\omega$ | 78.41592 | | +0.05063854 | −0.99828916 | |
| $a$ | 2.6903615 | $\Omega$ | 8.83915 | | +0.82608176 | +0.02541836 | |
| $e$ | 0.1683186 | $i$ | 10.96645 | | +0.56127059 | +0.05265600 | |
| $P$ | 4.41 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.8− | 0.9− | 2001 09 19 | 644 | 0.1− | 0.5+ | 2003 02 19 | 644 | 0.5− | 0.3− |
| 2001 09 12 | 704 | 0.1+ | 0.2+ | 2001 09 19 | 704 | 0.1+ | 1.1− | 2003 02 19 | 644 | 0.6− | 0.5− |
| 2001 09 12 | 704 | 0.2+ | 0.1+ | 2001 09 19 | 644 | 0.4+ | 0.2− | 2003 02 26 | 704 | 0.2− | 0.3− |
| 2001 09 12 | 704 | 0.4− | 1.4+ | 2001 09 19 | 644 | 0.3+ | 0.3− | 2003 02 26 | 704 | 0.3− | 0.6+ |
| 2001 09 12 | 704 | 0.2− | 0.4+ | 2003 02 02 | 644 | 0.1+ | 0.2+ | 2003 02 26 | 704 | 0.8+ | 0.6+ |
| 2001 09 19 | 704 | 0.6+ | 0.6− | 2003 02 02 | 644 | 0.5+ | 0.2+ | 2003 03 07 | 644 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.7+ | 2003 02 02 | 644 | 0.3+ | 0.4− | 2003 03 07 | 644 | 0.4− | 0.5+ |
| 2001 09 19 | 704 | 0.0 | 0.2+ | 2003 02 19 | 644 | 0.3− | 0.5− | 2003 03 07 | 644 | 0.2+ | 0.0 |

**2003 CB$_{25}$ = 2005 XT$_{38}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.98782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27722897 | $\omega$ | 96.18894 | | −0.89737984 | +0.43156276 | |
| $a$ | 2.3293977 | $\Omega$ | 109.40863 | | −0.43352267 | −0.82340593 | |
| $e$ | 0.1908512 | $i$ | 5.59738 | | −0.08226485 | −0.36845116 | |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 04 | 704 | 0.6+ | 0.9− | 2003 02 28 | 704 | 0.7− | 0.7+ | 2003 03 25 | 699 | 0.5+ | 0.4− |
| 2003 02 04 | 704 | 0.7+ | 0.0 | 2003 03 06 | 704 | 0.2− | 0.0 | 2003 03 25 | 699 | 0.6− | 0.3+ |
| 2003 02 04 | 704 | 0.3− | 0.1− | 2003 03 06 | 704 | 0.7+ | 0.1− | 2005 12 05 | 691 | 0.6+ | 0.0 |
| 2003 02 09 | 608 | 0.7− | 0.0 | 2003 03 06 | 704 | 0.7+ | 0.5− | 2005 12 05 | 691 | 0.5− | 0.2− |
| 2003 02 09 | 608 | 0.1+ | 0.7− | 2003 03 06 | 704 | (2.4+ | 1.3−) | 2005 12 05 | 691 | 0.1− | 0.1− |
| 2003 02 09 | 608 | 0.5− | 0.5− | 2003 03 23 | 644 | 0.1+ | 0.3+ | 2005 12 08 | 691 | 0.1+ | 0.4+ |
| 2003 02 28 | 704 | 0.5− | 0.5+ | 2003 03 23 | 644 | 0.1+ | 0.2+ | 2005 12 08 | 691 | 0.0 | 0.2+ |
| 2003 02 28 | 704 | 0.0 | 0.7+ | 2003 03 23 | 644 | 0.0 | 0.4+ | 2005 12 08 | 691 | 0.1− | 0.1− |
| 2003 02 28 | 704 | 0.0 | 0.6+ | 2003 03 25 | 699 | 0.1+ | 0.2+ | | | | |
| 2003 02 28 | 704 | 0.7+ | 0.6+ | 2003 03 25 | 699 | 0.9− | 1.5− | | | | |

**2003 CC$_{25}$ = 2001 WJ$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.31009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24083781 | $\omega$ | 161.44732 | | −0.80564185 | +0.55661072 | |
| $a$ | 2.5585050 | $\Omega$ | 54.07870 | | −0.57027431 | −0.63600121 | |
| $e$ | 0.1817937 | $i$ | 14.50228 | | −0.16040080 | −0.53449693 | |
| $P$ | 4.09 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.0+ | 0.1+ | 2003 02 11 | 704 | 0.6− | 0.3+ | 2003 03 09 | 644 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.1− | 0.1− | 2003 02 11 | 704 | 0.1+ | 0.4− | 2004 08 09 | E12 | 0.4− | 0.9+ |
| 2001 11 20 | 704 | 0.4− | 0.3− | 2003 02 19 | 644 | 0.1+ | 0.1+ | 2004 08 09 | E12 | 0.5− | 0.6+ |
| 2001 11 20 | 704 | 0.4− | 0.4+ | 2003 02 19 | 644 | 0.0 | 0.3− | 2004 08 09 | E12 | 0.2− | 1.0+ |
| 2001 11 21 | 704 | 0.9+ | 0.1− | 2003 02 19 | 644 | 0.3+ | 0.8+ | 2004 08 09 | E12 | 0.4− | 1.2+ |
| 2001 11 21 | 704 | 0.3+ | 0.5− | 2003 03 03 | 644 | 0.5+ | 0.8+ | 2005 10 30 | 703 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 0.0 | 0.2− | 2003 03 03 | 644 | 0.6+ | 1.1+ | 2005 10 30 | 703 | 0.2+ | 0.6− |
| 2001 11 21 | 704 | 0.2+ | 0.0 | 2003 03 03 | 644 | 0.1+ | 0.7+ | 2005 10 30 | 703 | 0.3− | 0.8+ |
| 2001 11 21 | 704 | 1.2− | 0.8+ | 2003 03 09 | 644 | 0.0 | 0.4− | 2005 10 30 | 703 | 0.1+ | 0.7+ |
| 2003 02 11 | 704 | 0.1+ | 1.5+ | 2003 03 09 | 644 | 0.1− | 0.2− | | | | |

**2003 CD$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.53141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26325811 | $\omega$ | 145.05379 | | −0.73656473 | +0.63616093 | |
| $a$ | 2.4110981 | $\Omega$ | 76.15139 | | −0.66187854 | −0.60801781 | |
| $e$ | 0.1759786 | $i$ | 13.68586 | | −0.13924510 | −0.47498802 | |
| $P$ | 3.74 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.4+ | 0.4+ | 2003 03 09 | 644 | 0.0 | 0.1+ | 2005 11 03 | G96 | 0.4− | 0.2− |
| 2003 02 01 | 644 | 0.1+ | 0.4+ | 2005 11 03 | G96 | 0.0 | 0.0 | 2005 11 03 | G96 | 0.1+ | 0.3− |
| 2003 02 01 | 644 | 0.6+ | 0.8+ | 2005 11 03 | G96 | 0.5+ | 0.2+ | 2005 12 01 | G96 | 0.0 | 0.1− |
| 2003 02 19 | 644 | 0.2− | 0.1− | 2005 11 03 | G96 | 0.3+ | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.2+ |
| 2003 02 19 | 644 | 0.2− | 0.2+ | 2005 11 03 | G96 | 0.1− | 0.1+ | 2005 12 01 | G96 | 0.2+ | 0.0 |
| 2003 02 19 | 644 | 0.3− | 0.0 | 2005 11 03 | G96 | 0.4+ | 0.2+ | 2005 12 01 | G96 | 0.1− | 0.2− |
| 2003 03 03 | 644 | 0.3+ | 0.6− | 2005 11 03 | G96 | 0.3+ | 0.2− | 2006 01 21 | G96 | 0.3− | 0.7− |
| 2003 03 03 | 644 | 0.1− | 0.5− | 2005 11 03 | G96 | 0.7+ | 0.3+ | 2006 01 21 | G96 | 0.1− | 0.1− |
| 2003 03 03 | 644 | 0.1− | 1.1− | 2005 11 03 | G96 | 0.2+ | 0.1+ | 2006 01 21 | G96 | 1.1− | 0.3+ |
| 2003 03 09 | 644 | 0.1− | 0.1− | 2005 11 03 | G96 | 0.3− | 0.1+ | 2006 01 21 | G96 | 0.5− | 0.1− |
| 2003 03 09 | 644 | 0.2− | 0.3+ | 2005 11 03 | G96 | 0.2+ | 0.2− | | | | |

**2003 CE$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.98611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21899232 | $\omega$ | 36.54107 | | −0.24533862 | −0.94238135 | |
| $a$ | 2.7259431 | $\Omega$ | 68.65515 | | +0.82155084 | −0.32665509 | |
| $e$ | 0.0877533 | $i$ | 14.13360 | | +0.51464859 | +0.07220699 | |
| $P$ | 4.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.6− | 0.1+ | 2003 02 19 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.5+ | 0.3+ |
| 2001 10 15 | 644 | 0.1+ | 0.1− | 2003 02 19 | 644 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.7+ | 0.1− |
| 2001 10 15 | 644 | 0.1− | 0.0 | 2003 03 03 | 644 | 0.3+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.1+ | 0.2+ | 2003 03 03 | 644 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 10 23 | 644 | 0.3+ | 0.3− | 2003 03 03 | 644 | 0.3+ | 0.2− | 2006 11 18 | 704 | 2.1− | 0.6+ |
| 2001 10 23 | 644 | 0.0 | 0.0 | 2003 03 09 | 644 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2003 02 01 | 644 | 0.1+ | 0.3+ | 2003 03 09 | 644 | 0.2− | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.8+ |
| 2003 02 01 | 644 | 0.2+ | 1.0− | 2003 03 09 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2003 02 01 | 644 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2003 02 19 | 644 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.2− |

**2003 CF$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.09783 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26215036 | $\omega$ | 116.39441 | | +0.13442328 | −0.99036244 | |
| $a$ | 2.4178855 | $\Omega$ | 325.82897 | | +0.88668346 | +0.13524287 | |
| $e$ | 0.2083622 | $i$ | 3.40467 | | +0.44240571 | +0.02985981 | |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 2.4+ | 0.4+ | 2003 02 22 | 699 | 0.7+ | 1.1+ | 2003 03 30 | 645 | 0.1+ | 0.1+ |
| 1998 12 17 | 704 | 0.0 | 0.1− | 2003 02 22 | 699 | 0.5− | 0.2+ | 2005 09 14 | 691 | 0.1+ | 0.4+ |
| 1998 12 17 | 704 | 1.2+ | 0.4− | 2003 02 22 | 699 | 0.9+ | 0.1− | 2005 09 14 | 691 | 0.3− | 0.4+ |
| 1998 12 17 | 704 | 0.4− | 0.8− | 2003 02 22 | 644 | 0.4+ | 0.3+ | 2005 09 14 | 691 | 0.1− | 0.3+ |
| 1998 12 17 | 704 | (3.8− | 1.7−) | 2003 02 22 | 644 | 0.9+ | 0.2+ | 2005 09 22 | 644 | 0.4− | 0.5+ |
| 2001 08 25 | 691 | 0.1− | 0.1+ | 2003 02 22 | 644 | 0.6+ | 0.2+ | 2005 09 22 | 644 | 0.3− | 0.4+ |
| 2001 08 25 | 691 | 0.2+ | 0.1+ | 2003 02 26 | 209 | 0.1− | 0.1− | 2005 09 22 | 644 | 0.5− | 0.8+ |
| 2001 08 25 | 691 | 0.1− | 0.0 | 2003 02 26 | 209 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.1+ | 0.1+ |
| 2003 02 03 | 699 | 0.6+ | 0.1− | 2003 02 26 | 209 | 1.0− | 0.2− | 2005 10 01 | 703 | 1.6− | 0.1+ |
| 2003 02 03 | 699 | 1.9− | 0.2− | 2003 03 06 | 644 | 0.4+ | 0.2+ | 2005 10 01 | 703 | 1.1− | 1.0+ |
| 2003 02 03 | 699 | 0.2− | 0.6+ | 2003 03 06 | 644 | 0.6+ | 0.5+ | 2005 10 01 | 703 | 0.4+ | 0.6+ |
| 2003 02 03 | 699 | 0.1− | 1.6+ | 2003 03 06 | 644 | 0.4+ | 0.1+ | | | | |
| 2003 02 22 | 699 | 0.6− | 1.7+ | 2003 03 30 | 645 | 0.1+ | 0.1+ | | | | |

**2003 CG$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.83536 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17904597 | $\omega$ | 115.94989 | | −0.04241500 | +0.98823074 | |
| $a$ | 3.1176428 | $\Omega$ | 150.46263 | | −0.98967630 | −0.02140091 | |
| $e$ | 0.0650604 | $i$ | 17.34499 | | −0.13690069 | −0.15146622 | |
| $P$ | 5.50 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 08 | 566 | 0.3+ | 0.8− | 2003 02 05 | 608 | 0.5+ | 0.6− | 2003 04 01 | 608 | 0.8− | 0.4− |
| 1997 02 08 | 566 | 0.0 | 0.6− | 2003 02 05 | 608 | 0.2+ | 0.7+ | 2003 04 01 | 608 | 0.0 | 0.1− |
| 1997 02 08 | 566 | 0.5− | 0.7− | 2003 03 09 | 704 | 0.6+ | 0.8+ | 2005 09 14 | 703 | 0.3− | 0.7− |
| 2002 02 11 | 704 | 0.4− | 0.4− | 2003 03 09 | 704 | 1.1− | 0.1+ | 2005 09 14 | 703 | 0.2− | 0.8+ |
| 2002 02 11 | 704 | 0.2− | 0.2+ | 2003 03 09 | 704 | 0.6− | 0.6+ | 2005 09 14 | 703 | 0.3+ | 0.2− |
| 2002 02 11 | 704 | 0.4+ | 0.2− | 2003 03 09 | 704 | 1.8+ | 0.2+ | 2005 09 14 | 703 | 0.3+ | 0.5− |
| 2002 02 17 | 644 | 0.1− | 0.5+ | 2003 03 24 | 608 | 0.1− | 0.4− | 2005 10 08 | 699 | 0.2− | 0.2− |
| 2002 02 17 | 644 | 0.0 | 0.7+ | 2003 03 24 | 608 | 0.1− | 0.1+ | 2005 10 08 | 699 | 0.5+ | 0.8+ |
| 2002 02 17 | 644 | 0.1+ | 0.5+ | 2003 03 24 | 608 | 0.2− | 0.0 | 2005 10 08 | 699 | 1.3+ | 0.9+ |
| 2003 02 05 | 608 | 0.5+ | 0.2+ | 2003 04 01 | 608 | 0.1− | 0.1+ | 2005 10 08 | 699 | 1.7− | 0.6− |

**2003 CH$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.74454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21210388 | $\omega$ | 113.02206 | | −0.11097240 | −0.99283026 | |
| $a$ | 2.7846480 | $\Omega$ | 343.16749 | | +0.84640848 | −0.07099251 | |
| $e$ | 0.0483075 | $i$ | 8.82402 | | +0.52084337 | −0.09616729 | |
| $P$ | 4.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.0 | 0.1+ | 2003 03 08 | 699 | 1.6+ | 1.2+ | 2005 09 13 | 691 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.2− | 0.0 | 2003 03 09 | 704 | 0.2− | 0.3+ | 2005 09 13 | 691 | 0.3− | 0.5+ |
| 2001 11 12 | 704 | 0.6+ | 1.5− | 2003 03 09 | 704 | 0.3+ | 0.7+ | 2005 09 13 | 691 | 0.3− | 0.4+ |
| 2003 02 07 | 291 | 0.5+ | 0.1+ | 2003 03 09 | 704 | 0.3− | 0.4− | 2005 10 01 | 691 | 0.0 | 0.1+ |
| 2003 02 07 | 291 | 0.3+ | 0.1+ | 2003 03 09 | 704 | 0.0 | 1.6− | 2005 10 01 | 691 | 0.1+ | 0.2+ |
| 2003 02 07 | 291 | 0.5+ | 0.6+ | 2003 04 09 | 691 | 0.1+ | 0.1+ | 2005 10 01 | 691 | 0.3− | 0.2+ |
| 2003 02 22 | 291 | 0.3− | 0.8+ | 2003 04 09 | 691 | 0.0 | 0.1+ | 2005 10 07 | G96 | 0.1+ | 0.0 |
| 2003 02 22 | 291 | 0.0 | 0.2+ | 2003 04 09 | 691 | 0.1+ | 0.2+ | 2005 10 07 | G96 | 0.2− | 0.5+ |
| 2003 02 22 | 291 | 0.0 | 0.0 | 2005 08 30 | 599 | 0.8− | 0.4+ | 2005 10 07 | G96 | 0.0 | 0.0 |
| 2003 03 08 | 699 | 0.2+ | 0.3+ | 2005 08 30 | 599 | 0.1− | 0.7+ | 2005 10 07 | G96 | 0.2+ | 0.3− |
| 2003 03 08 | 699 | 0.3− | 0.9+ | 2005 08 30 | 599 | 0.1− | 0.1+ | | | | |
| 2003 03 08 | 699 | 0.6− | 1.5− | 2005 08 30 | 599 | 0.3− | 0.0 | | | | |

**2003 CJ$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.68560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18055761 | $\omega$ | 33.52121 | | −0.78864637 | +0.61427216 | |
| $a$ | 3.1002177 | $\Omega$ | 184.64968 | | −0.61112258 | −0.78788766 | |
| $e$ | 0.1739821 | $i$ | 19.14271 | | −0.06757293 | −0.04362051 | |
| $P$ | 5.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 14 | 691 | 0.6− | 1.0+ | 2003 03 25 | 699 | 0.4− | 0.3+ | 2005 08 31 | 691 | 0.0 | 0.5+ |
| 1994 09 14 | 691 | 0.5+ | 0.7+ | 2003 03 25 | 644 | 0.0 | 0.2+ | 2005 08 31 | 691 | 0.1+ | 0.6+ |
| 1994 09 14 | 691 | 0.0 | 0.8+ | 2003 03 25 | 699 | 0.1+ | 0.1+ | 2005 10 01 | G96 | 0.3− | 0.3+ |
| 2003 02 11 | 608 | 0.1+ | 0.1− | 2003 03 25 | 699 | 0.7− | 0.8+ | 2005 10 01 | G96 | 0.1+ | 0.3− |
| 2003 02 11 | 608 | 0.3+ | 0.2+ | 2003 03 25 | 699 | 0.6− | 1.1− | 2005 10 01 | G96 | 0.0 | 0.0 |
| 2003 02 11 | 608 | 0.1− | 0.4+ | 2003 03 30 | 644 | 0.4− | 0.2+ | 2005 10 01 | G96 | 0.3− | 0.1− |
| 2003 03 07 | 704 | 1.6− | 0.8+ | 2003 03 30 | 644 | 0.1− | 0.3− | 2005 10 29 | G96 | 0.5− | 0.3− |
| 2003 03 07 | 704 | 0.5− | 1.0− | 2003 03 30 | 644 | 0.8− | 0.4+ | 2005 10 29 | G96 | 1.0− | 0.2− |
| 2003 03 07 | 704 | 0.1+ | 0.1+ | 2003 04 07 | 691 | 0.6+ | 0.9+ | 2005 10 29 | G96 | 0.3+ | 0.4− |
| 2003 03 07 | 704 | 0.4+ | 0.2− | 2003 04 07 | 691 | 0.4+ | 1.0+ | 2005 10 29 | G96 | 0.4+ | 0.7− |
| 2003 03 25 | 644 | 0.1+ | 0.3+ | 2003 04 07 | 691 | 0.3+ | 1.0+ | | | | |
| 2003 03 25 | 644 | 0.1− | 0.2+ | 2005 08 31 | 691 | 0.1+ | 0.4+ | | | | |

**2003 CS$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.78380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24227662 | $\omega$ | 207.86854 | | −0.96483836 | +0.26077045 | |
| $a$ | 2.5483655 | $\Omega$ | 347.11882 | | −0.20519158 | −0.82561298 | |
| $e$ | 0.0712650 | $i$ | 8.49975 | | −0.16426611 | −0.50036185 | |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 12 | 608 | 0.3+ | 0.0 | 2003 03 28 | 691 | 0.5− | 0.0 | 2004 06 27 | E12 | 0.6− | 0.2− |
| 2003 02 12 | 608 | 0.4− | 0.3− | 2003 03 28 | 691 | 0.3− | 0.3+ | 2004 08 22 | E12 | 0.7+ | 0.1+ |
| 2003 02 12 | 608 | 0.1− | 0.4− | 2003 03 28 | 691 | 0.4− | 0.3+ | 2004 08 22 | E12 | 0.2+ | 0.1− |
| 2003 03 07 | 704 | 0.4+ | 0.3+ | 2003 04 06 | 291 | 0.0 | 0.0 | 2004 08 22 | E12 | 0.5− | 0.6− |
| 2003 03 07 | 704 | 1.0+ | 0.7− | 2003 04 06 | 291 | 0.2− | 0.1+ | 2004 08 22 | E12 | 0.7+ | 0.2− |
| 2003 03 07 | 704 | 1.3+ | 0.1− | 2003 04 06 | 291 | 0.5+ | 0.7− | 2006 11 12 | G96 | (6.3− | 4.9+) |
| 2003 03 25 | 644 | 0.2+ | 0.3+ | 2004 06 27 | E12 | 0.3− | 0.1− | 2006 11 12 | G96 | (6.5− | 4.5+) |
| 2003 03 25 | 644 | 0.3+ | 0.0 | 2004 06 27 | E12 | 0.1− | 0.3− | 2006 11 12 | G96 | (7.6− | 4.2+) |
| 2003 03 25 | 644 | 0.2+ | 0.4+ | 2004 06 27 | E12 | 0.4− | 1.1+ | 2006 11 12 | G96 | (8.0− | 4.1+) |

**2003 DD$_1$ = 2006 QW$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.32766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17883467 | $\omega$ | 87.95668 | | +0.62708026 | −0.75689304 | |
| $a$ | 3.1200980 | $\Omega$ | 321.14813 | | +0.54545195 | +0.59537155 | |
| $e$ | 0.1079331 | $i$ | 17.06368 | | +0.55610477 | +0.26952856 | |
| $P$ | 5.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.5− | 0.2+ | 2003 02 22 | 644 | 0.2+ | 0.6− | 2006 09 16 | 703 | 0.2− | 0.5+ |
| 2001 12 09 | 704 | 0.0 | 0.9− | 2003 02 22 | 644 | 0.0 | 0.4− | 2006 09 16 | 703 | 0.9− | 0.2− |
| 2001 12 09 | 704 | 0.5+ | 0.0 | 2003 02 22 | 644 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.2− | 0.8− |
| 2001 12 09 | 704 | 0.4+ | 0.2− | 2003 02 22 | 644 | 0.1+ | 0.5− | 2006 09 16 | 703 | 0.3− | 0.2+ |
| 2003 01 30 | 291 | 0.1− | 0.1+ | 2003 02 22 | 644 | 0.9+ | 0.2− | 2006 09 18 | 703 | 0.3− | 0.7− |
| 2003 01 30 | 291 | 0.4− | 0.5+ | 2003 02 22 | 644 | 1.1+ | 0.2− | 2006 09 18 | 703 | 0.2− | 0.3+ |
| 2003 01 30 | 291 | 0.2− | 0.3+ | 2006 08 29 | 699 | (0.4− | 1.6+) | 2006 09 18 | 703 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 30 | 699 | 0.1− | 0.1− | 2006 08 29 | 699 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.2+ |
| 2003 01 30 | 699 | 0.2− | 0.8+ | 2006 08 29 | 699 | 0.4+ | 0.0 | 2006 09 18 | G92 | 0.2+ | 0.3+ |
| 2003 01 30 | 699 | 0.9+ | 0.3− | 2006 08 29 | 699 | 1.1+ | 0.7+ | 2006 09 18 | G92 | 0.4− | 0.4+ |
| 2003 01 30 | 699 | 0.7− | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.1+ | 2006 09 18 | G92 | 0.2− | 0.4+ |
| 2003 02 21 | 644 | 0.4+ | 0.3− | 2006 09 16 | 703 | 0.6− | 0.0 | 2006 09 19 | G92 | 0.2+ | 0.6− |
| 2003 02 21 | 644 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.8− | 0.1+ | 2006 09 19 | G92 | 0.2+ | 0.0 |
| 2003 02 21 | 644 | 0.4+ | 0.3− | 2006 09 16 | 703 | 0.3− | 0.2+ | 2006 09 19 | G92 | 0.6+ | 0.4+ |

### 2003 DS$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.21687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24278781 | $\omega$ | 90.53317 | | −0.49234686 | −0.86937451 | |
| $a$ | 2.5447872 | $\Omega$ | 29.08277 | | +0.76004039 | −0.45305511 | |
| $e$ | 0.1985984 | $i$ | 4.98296 | | +0.42418531 | −0.19730440 | |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 04 | 691 | 0.5− | 0.8− | 2003 02 08 | 608 | 0.1+ | 0.7+ | 2003 03 06 | 699 | 0.8− | 0.7− |
| 1995 03 04 | 691 | 0.0 | 0.2− | 2003 02 08 | 608 | 0.5+ | 0.8+ | 2003 03 06 | 699 | 0.3+ | 1.1− |
| 2003 01 27 | 704 | 0.1− | 0.8+ | 2003 02 21 | 644 | 0.2− | 0.1+ | 2003 03 06 | 699 | 0.8− | 0.6+ |
| 2003 01 27 | 704 | 0.3+ | 0.0 | 2003 02 21 | 644 | 0.3+ | 0.5+ | 2003 03 06 | 699 | 0.4+ | 0.1+ |
| 2003 01 27 | 704 | 0.6− | 1.9+ | 2003 02 21 | 644 | 0.1+ | 0.6+ | 2003 03 31 | 291 | 0.3+ | 0.4+ |
| 2003 01 27 | 704 | 0.6+ | 0.5+ | 2003 02 22 | 644 | 0.3+ | 0.6+ | 2003 03 31 | 291 | 0.3+ | 0.3+ |
| 2003 01 28 | 645 | 0.1− | 0.2− | 2003 02 22 | 644 | 0.2− | 0.6+ | 2003 03 31 | 291 | 0.3+ | 0.4+ |
| 2003 01 28 | 645 | 0.1− | 0.2− | 2003 02 22 | 644 | 0.4− | 0.3+ | 2005 08 28 | 691 | 0.0 | 0.6+ |
| 2003 02 04 | 704 | 0.9− | 0.8+ | 2003 03 05 | 704 | 0.5+ | 0.2+ | 2005 08 28 | 691 | 0.3− | 0.2− |
| 2003 02 04 | 704 | 0.8+ | 1.0+ | 2003 03 05 | 704 | 0.2+ | 0.1+ | 2005 08 28 | 691 | 0.2+ | 0.3− |
| 2003 02 04 | 704 | 1.1+ | 1.0− | 2003 03 05 | 704 | 0.0 | 0.3+ | | | | |
| 2003 02 08 | 608 | 0.7− | 0.6+ | 2003 03 05 | 704 | 0.3+ | 0.3+ | | | | |

### 2003 DY$_1$ = 2006 WY$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.97941 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21541960 | $\omega$ | 71.31766 | | −0.63654093 | −0.75776687 | |
| $a$ | 2.7560001 | $\Omega$ | 59.07324 | | +0.62943896 | −0.61797834 | |
| $e$ | 0.1001764 | $i$ | 9.63293 | | +0.44567054 | −0.20950451 | |
| $P$ | 4.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.6− | 0.9+ | 2003 02 26 | 704 | 0.4+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.4− |
| 2001 10 16 | 644 | 0.2− | 1.0+ | 2003 03 08 | 644 | 0.2− | 0.3− | 2006 11 16 | 408 | 1.2− | 0.4+ |
| 2001 10 16 | 644 | 0.2− | 0.6+ | 2003 03 08 | 644 | 0.1− | 0.1− | 2006 11 16 | 408 | 1.3− | 0.2+ |
| 2003 02 21 | 644 | 0.5+ | 0.0 | 2003 03 08 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2003 02 21 | 644 | 0.4+ | 0.5+ | 2005 09 01 | 644 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2003 02 21 | 644 | 0.1− | 0.2+ | 2005 09 01 | 644 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.9+ | 0.2− |
| 2003 02 22 | 644 | 0.1+ | 0.2+ | 2005 09 01 | 644 | 0.2− | 0.7+ | 2006 11 24 | 691 | 0.2+ | 1.4+ |
| 2003 02 22 | 644 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.9− | 2006 11 24 | 691 | 0.1+ | 0.5− |
| 2003 02 22 | 644 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.5+ | 0.6+ | 2006 11 24 | 691 | 0.0 | 0.3− |
| 2003 02 26 | 704 | 0.2− | 0.8+ | 2006 11 16 | 704 | 0.2+ | 0.1− | 2006 11 24 | 408 | 0.0 | 0.1− |
| 2003 02 26 | 704 | 0.5− | 0.3+ | 2006 11 16 | 704 | 0.5− | 0.1+ | 2006 11 24 | 408 | 0.1+ | 0.6− |
| 2003 02 26 | 704 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 11 25 | 408 | 0.8− | 0.5− |
| 2003 02 26 | 704 | 0.6+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.4− | 2006 11 25 | 408 | 0.7− | 0.7− |

### 2003 DA$_4$ = 2006 BV$_{23}$ = 2006 BD$_{274}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.36269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29948635 | $\omega$ | 135.25155 | | +0.17582228 | +0.98344947 | |
| $a$ | 2.2125072 | $\Omega$ | 144.80684 | | −0.92311325 | +0.18014659 | |
| $e$ | 0.1824094 | $i$ | 4.35311 | | −0.34197726 | +0.01934813 | |
| $P$ | 3.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 699 | 0.7− | 0.5+ | 2003 02 23 | 291 | 0.5− | 0.3+ | 2004 10 18 | 704 | 1.0− | 0.2+ |
| 2000 04 04 | 699 | 0.7+ | 1.3+ | 2003 02 23 | 291 | 0.3− | 0.1+ | 2006 01 06 | G96 | 1.0+ | 0.1− |
| 2000 04 04 | 699 | 2.6+ | 0.2− | 2003 03 30 | 645 | 0.1− | 0.2− | 2006 01 06 | 691 | 0.1+ | 0.3+ |
| 2000 04 04 | 699 | 0.3− | 1.3+ | 2003 03 30 | 645 | 0.1− | 0.2− | 2006 01 06 | G96 | 0.1− | 0.7− |
| 2000 04 05 | 699 | 0.3+ | 0.9+ | 2004 09 12 | 704 | 1.3− | 0.4+ | 2006 01 06 | G96 | 0.3+ | 0.1− |
| 2000 04 05 | 699 | 0.2+ | 0.8+ | 2004 09 12 | 704 | 1.0− | 0.4+ | 2006 01 06 | G96 | 0.4− | 0.6− |
| 2000 04 05 | 699 | 0.9+ | 0.1+ | 2004 09 12 | 704 | 0.7− | 0.2+ | 2006 01 06 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 699 | 0.0 | 0.1+ | 2004 09 17 | 699 | 1.4+ | 0.7+ | 2006 01 06 | 691 | 0.0 | 0.4+ |
| 2000 05 26 | 699 | 0.4+ | 0.5+ | 2004 09 17 | 699 | 0.4− | 2.3+ | 2006 01 23 | G96 | 0.5+ | 0.7− |
| 2000 05 26 | 699 | 0.5+ | 0.6+ | 2004 09 17 | 699 | 0.0 | 0.5+ | 2006 01 23 | G96 | 0.1+ | 0.5− |
| 2000 05 26 | 699 | 0.3+ | 1.0+ | 2004 09 17 | 699 | 0.1+ | 0.5− | 2006 01 23 | G96 | 0.1+ | 0.5− |
| 2000 05 26 | 699 | 0.1− | 0.0 | 2004 10 07 | 704 | 1.1+ | 1.5− | 2006 01 23 | G96 | 0.1+ | 0.6− |
| 2001 12 20 | 691 | 0.2+ | 0.6+ | 2004 10 07 | 704 | 0.0 | 1.9− | 2006 01 27 | 691 | 0.4+ | 0.0 |
| 2001 12 20 | 691 | 0.2− | 0.6+ | 2004 10 07 | 704 | 0.5+ | 1.1− | 2006 01 27 | 691 | 0.2+ | 0.1− |
| 2001 12 20 | 691 | 0.4− | 0.3+ | 2004 10 07 | 704 | 0.5+ | 1.3− | 2006 01 27 | 691 | 0.3+ | 0.1− |
| 2003 02 22 | 644 | 0.2+ | 0.5+ | 2004 10 07 | 704 | 0.8+ | 0.6− | 2006 02 24 | G96 | 0.2− | 0.2+ |
| 2003 02 22 | 644 | 0.4+ | 0.5+ | 2004 10 18 | 704 | 0.5− | 1.4+ | 2006 02 24 | G96 | 0.2− | 0.2− |
| 2003 02 22 | 644 | 0.1+ | 0.4+ | 2004 10 18 | 704 | 0.7− | 1.9+ | 2006 02 24 | G96 | 0.0 | 0.0 |
| 2003 02 23 | 291 | 0.2− | 0.5+ | 2004 10 18 | 704 | 0.5− | 0.2− | 2006 02 24 | G96 | 0.4− | 0.3− |

### 2003 DT$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.94532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22842844 | $\omega$ | 22.60321 | | −0.99363913 | −0.09748861 | |
| $a$ | 2.6503462 | $\Omega$ | 151.62391 | | +0.07634266 | −0.95112276 | |
| $e$ | 0.1894160 | $i$ | 6.81150 | | +0.08278327 | −0.29302126 | |
| $P$ | 4.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 21 | 691 | 0.2+ | 0.4+ | 2003 02 26 | 608 | 0.9+ | 1.8+ | 2003 03 08 | 704 | 0.7− | 0.7+ |
| 1996 09 21 | 691 | 0.1− | 0.1− | 2003 02 26 | 608 | 0.9+ | 1.9+ | 2003 03 09 | 704 | 1.9− | 0.6+ |
| 1996 09 21 | 691 | 0.3− | 0.4+ | 2003 02 28 | 704 | 0.2+ | 0.4− | 2003 03 09 | 704 | 1.5− | 0.0 |
| 2003 01 31 | 704 | 0.4+ | 1.0− | 2003 02 28 | 704 | 0.6− | 0.1+ | 2003 03 09 | 704 | 0.3+ | 0.8+ |
| 2003 01 31 | 704 | 0.3+ | 0.7− | 2003 02 28 | 704 | (2.2− | 0.9+) | 2003 03 09 | 704 | 0.5+ | 0.7− |
| 2003 01 31 | 704 | 0.1− | 0.1+ | 2003 03 06 | 644 | 0.2+ | 0.4− | 2003 03 23 | 113 | 0.8− | 0.1− |
| 2003 01 31 | 704 | 0.5+ | 0.7− | 2003 03 06 | 644 | 0.2+ | 0.1− | 2003 03 23 | 113 | 0.6− | 0.3− |
| 2003 02 10 | 291 | 0.2− | 0.2+ | 2003 03 06 | 644 | 0.0 | 0.1+ | 2003 03 23 | 113 | 0.2− | 0.3+ |
| 2003 02 10 | 291 | 0.1− | 0.0 | 2003 03 07 | 699 | 0.0 | 0.2− | 2003 03 23 | 113 | 0.7− | 0.3+ |
| 2003 02 10 | 291 | 0.0 | 0.1+ | 2003 03 07 | 699 | 0.1− | 0.5+ | 2003 03 25 | 113 | 0.3− | 0.1+ |
| 2003 02 22 | 636 | 0.4+ | 1.4− | 2003 03 07 | 699 | 0.3− | 0.3− | 2003 03 25 | 113 | 0.9− | 0.0 |
| 2003 02 22 | 636 | 0.5− | 1.0− | 2003 03 07 | 699 | 0.3− | 0.6+ | 2003 03 25 | 113 | 1.2− | 0.6− |
| 2003 02 22 | 636 | 1.1+ | 0.8− | 2003 03 07 | 699 | 0.7− | 1.4+ | 2003 03 25 | 113 | 0.5− | 0.3− |
| 2003 02 22 | 636 | 0.8+ | 0.3− | 2003 03 07 | 699 | (2.5+ | 0.1−) | 2003 03 25 | 113 | 1.5− | 0.4− |
| 2003 02 24 | 636 | (2.3− | 0.4+) | 2003 03 07 | 699 | 1.2+ | 0.1− | 2003 03 30 | 113 | 0.5+ | 0.2+ |
| 2003 02 24 | 636 | (0.7− | 2.2+) | 2003 03 07 | 699 | 1.9+ | 0.2+ | 2003 03 30 | 113 | 0.9+ | 0.3+ |
| 2003 02 24 | 636 | 1.2− | 0.0 | 2003 03 07 | 636 | 0.7+ | 1.0+ | 2003 03 30 | 113 | 0.9+ | 0.3+ |
| 2003 02 24 | 636 | 0.6+ | 0.7+ | 2003 03 07 | 636 | (1.5− | 2.4+) | 2003 04 20 | 113 | (1.1− | 3.1+) |
| 2003 02 24 | 636 | 0.6+ | 1.9− | 2003 03 07 | 636 | 0.6− | 1.1− | 2003 04 20 | 113 | 0.2− | 0.5+ |
| 2003 02 24 | 636 | 0.5− | 0.5− | 2003 03 08 | 704 | 1.1+ | 0.6+ | 2005 10 06 | 691 | 0.2+ | 0.0 |
| 2003 02 24 | 636 | 0.8+ | 0.3− | 2003 03 08 | 704 | 0.4+ | 1.4+ | 2005 10 06 | 691 | 0.1− | 0.1+ |
| 2003 02 26 | 608 | (1.4+ | 2.1+) | 2003 03 08 | 704 | 0.9+ | 0.0 | 2005 10 06 | 691 | 0.2− | 0.1− |

### 2003 DL$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.26160 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21252781 | $\omega$ | 219.41390 | | +0.26188294 | −0.96433822 | |
| $a$ | 2.7809437 | $\Omega$ | 215.45207 | | +0.90131391 | +0.25858027 | |
| $e$ | 0.2327327 | $i$ | 3.78899 | | +0.34503703 | +0.05646272 | |
| $P$ | 4.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.0 | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.2+ | 0.6+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.4− |
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2003 02 01 | 699 | 0.4+ | 0.2+ | 2006 10 16 | 683 | (0.9+ | 2.3−) | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2003 02 01 | 699 | 0.6+ | 0.1− | 2006 10 16 | 683 | 1.3+ | 0.8− | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2003 02 01 | 699 | 0.5+ | 0.9+ | 2006 10 16 | 683 | 0.9− | 0.9− | 2006 11 09 | 644 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 699 | 0.9− | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.8− |
| 2003 02 19 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 2003 02 19 | 644 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2003 02 19 | 644 | 0.0 | 0.1+ | 2006 10 19 | 644 | 1.0+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2003 02 22 | 644 | 0.7+ | 0.2+ | 2006 10 19 | 644 | 0.6+ | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2003 02 22 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.7+ | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2003 02 22 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2006 09 24 | 691 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | (1.8+ | 0.1−) |
| 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.5+ | 0.8+ | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2006 09 24 | 691 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 0.0 | 2006 11 17 | 703 | 1.0− | 1.0− |
| 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.7− | 1.1− | 2006 11 21 | 691 | 0.2+ | 0.4− |
| 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 21 | 691 | 0.2+ | 0.2− |
| 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 21 | 691 | 0.3+ | 0.1+ |
| 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1− | | | | |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2+ | | | | |

### 2003 $DT_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.06545 | | | (2000.0) | | |
| $n$ | 0.19934126 | $\omega$ | 146.34700 | | +0.22479436 | −0.96334595 |
| $a$ | 2.9022707 | $\Omega$ | 290.28736 | | +0.85606624 | +0.26701456 |
| $e$ | 0.0250418 | $i$ | 8.97940 | | +0.46542248 | −0.02584193 |
| $P$ | 4.94 | $H$ | 15.9 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.1+ | 0.0 | 2005 06 30 | 644 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.6+ | 1.4+ |
| 2001 11 18 | 704 | 0.7− | 0.4+ | 2005 06 30 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.9− |
| 2001 11 18 | 704 | 0.0 | 1.1+ | 2005 07 09 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.8+ | 0.4− |
| 2003 01 28 | 645 | 0.1+ | 0.1+ | 2005 07 09 | 691 | 0.1+ | 0.4+ | 2006 10 30 | 850 | 0.3− | 0.5− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 10 30 | 850 | 0.1+ | 0.3− |
| 2003 02 23 | 599 | 0.2− | 0.2+ | 2005 07 18 | 644 | 0.2− | 0.2+ | 2006 10 30 | 850 | 0.2− | 0.3− |
| 2003 02 23 | 599 | 0.3− | 0.4+ | 2005 07 18 | 644 | 0.1− | 0.3+ | 2006 10 30 | 850 | 0.4− | 0.0 |
| 2003 02 23 | 599 | 0.4+ | 0.5+ | 2005 07 18 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.1+ |
| 2003 02 24 | 599 | 0.1+ | 0.4+ | 2005 07 28 | 644 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.5− |
| 2003 02 24 | 599 | 0.3+ | 0.5+ | 2005 07 28 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 1.0+ | 1.4+ |
| 2005 06 18 | G96 | 0.3− | 0.0 | 2005 07 28 | 644 | 0.1+ | 0.5+ | 2006 11 14 | 703 | (1.6− | 0.7+) |
| 2005 06 18 | G96 | 0.5− | 0.2+ | 2005 08 05 | 644 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.7− |
| 2005 06 18 | G96 | 0.3− | 0.1+ | 2005 08 05 | 644 | 0.5− | 0.1+ | 2006 11 22 | 703 | 0.8− | 0.3+ |
| 2005 06 18 | G96 | 0.5− | 0.0 | 2005 08 05 | 644 | 0.4− | 0.0 | 2006 11 22 | 703 | 0.1− | 0.7+ |
| 2005 06 30 | 644 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 1.3− | 2006 11 22 | 703 | 1.0− | 0.1+ |

### 2003 $DA_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.96969 | | | (2000.0) | | |
| $n$ | 0.18311097 | $\omega$ | 149.31425 | | −0.93196381 | −0.36172324 |
| $a$ | 3.0713300 | $\Omega$ | 9.57545 | | +0.29552789 | −0.79706931 |
| $e$ | 0.0267006 | $i$ | 8.46597 | | +0.21001600 | −0.48356677 |
| $P$ | 5.38 | $H$ | 15.3 | $G$ 0.15 | | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 608 | 0.3+ | 0.1+ | 2003 02 24 | 599 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 01 26 | 608 | 0.4− | 0.0 | 2003 03 07 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2003 01 26 | 608 | 0.1+ | 0.4− | 2003 03 07 | 644 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2003 02 23 | 599 | 0.5− | 0.1+ | 2003 03 07 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2003 02 23 | 599 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2003 02 23 | 599 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.1− |
| 2003 02 23 | 599 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2003 02 24 | 599 | 0.2− | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2003 02 24 | 599 | 0.3− | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 02 24 | 599 | 0.3− | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.0 | | | | |

### 2003 $DM_8$ = 2006 $UL_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.51823 | | | (2000.0) | | |
| $n$ | 0.17994391 | $\omega$ | 5.80495 | | +0.99691936 | −0.07841126 |
| $a$ | 3.1072625 | $\Omega$ | 358.68797 | | +0.06829490 | +0.87947910 |
| $e$ | 0.0738865 | $i$ | 4.66199 | | +0.03856937 | +0.46943389 |
| $P$ | 5.48 | $H$ | 15.1 | $G$ 0.15 | | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 22 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.3− | 1.1+ |
| 2003 02 22 | 644 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 14 | 703 | 1.1+ | 0.6− |
| 2003 02 22 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.9− | 1.1+ |
| 2003 02 25 | 599 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.7− | 1.4+ |
| 2003 02 25 | 599 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.8− |
| 2003 02 25 | 599 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.7+ | 0.5+ |
| 2003 02 25 | 599 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.8− | 2006 11 14 | 703 | 0.4+ | 0.3+ |
| 2003 02 26 | 599 | 0.1− | 0.1− | 2006 10 27 | 408 | 0.5− | 0.2− | 2006 11 16 | 408 | 0.1+ | 0.0 |
| 2003 02 26 | 599 | 0.1+ | 0.1− | 2006 10 27 | 408 | 0.7− | 0.6− | 2006 11 16 | 408 | 0.0 | 0.3− |
| 2003 02 26 | 599 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.3− | 0.8+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2003 02 27 | 599 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.7+ | 0.9+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2003 03 07 | 699 | (1.9− | 0.9+) | 2006 10 29 | 704 | 1.1+ | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2003 03 07 | 699 | 0.3− | 0.7+ | 2006 10 29 | 704 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2003 03 07 | 699 | (0.7+ | 2.4+) | 2006 10 30 | 408 | 1.4− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2003 03 07 | 699 | (0.4− | 1.8+) | 2006 10 30 | 408 | 1.2− | 0.0 | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2004 04 16 | E12 | (0.9+ | 1.8+) | 2006 10 31 | 408 | (1.8− | 0.1−) | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 04 16 | E12 | (0.3+ | 2.7+) | 2006 10 31 | 408 | (2.0− | 0.2+) | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2004 04 16 | E12 | 1.2+ | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 17 | 408 | 0.9+ | 1.2+ |
| 2004 04 16 | E12 | 0.6− | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 17 | 408 | (1.3+ | 1.6+) |
| 2006 10 13 | 691 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2006 10 13 | 691 | 0.1+ | 1.0+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2006 10 20 | 408 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2006 10 20 | 408 | 0.4− | 0.7+ | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2006 10 21 | 408 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2006 10 21 | 408 | 0.2+ | 0.9− | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.0 |
| 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 24 | 408 | 0.2+ | 0.2− |
| 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.3− | 1.5+ | 2006 11 24 | 408 | 0.3− | 0.1− |
| 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 25 | 408 | 0.3+ | 1.0− |
| 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 25 | 408 | 0.2+ | 0.9− |
| 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.7− | | | | |

### 2003 $DV_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.10479 | | | (2000.0) | | |
| $n$ | 0.17759275 | $\omega$ | 239.92525 | | +0.75932217 | −0.64738514 |
| $a$ | 3.1346272 | $\Omega$ | 160.17754 | | +0.64357082 | +0.73221278 |
| $e$ | 0.0627687 | $i$ | 11.17902 | | +0.09615837 | +0.21155833 |
| $P$ | 5.55 | $H$ | 15.2 | $G$ 0.15 | | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.9+ | 0.3+ | 2003 03 24 | 691 | 0.7+ | 1.0+ | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.7− | 0.5+ | 2003 03 24 | 691 | 0.5+ | 0.7+ | 2006 10 03 | G96 | 0.6+ | 0.0 |
| 2001 12 19 | 704 | 0.4− | 1.2+ | 2003 03 24 | 691 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2003 01 28 | 291 | 0.2− | 0.2− | 2006 09 18 | 703 | (2.0− | 0.1−) | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2003 01 28 | 291 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.6+ | 0.0 |
| 2003 01 28 | 291 | 0.7− | 0.1+ | 2006 09 18 | 703 | 1.0− | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2003 02 25 | 599 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.4− |
| 2003 02 25 | 599 | 0.1+ | 0.6− | 2006 09 21 | 699 | 0.7− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2003 02 25 | 599 | 0.2− | 0.5− | 2006 09 21 | 699 | 0.8+ | 0.8+ | 2006 10 28 | 703 | 0.2+ | 1.2− |
| 2003 02 25 | 599 | 0.1+ | 0.4− | 2006 09 21 | 699 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.9− | 0.3− |
| 2003 02 26 | 599 | 0.2+ | 0.4− | 2006 09 21 | 699 | (0.2+ | 1.7+) | 2006 10 28 | 703 | 0.3+ | 0.9+ |
| 2003 02 26 | 599 | 0.0 | 0.5− | 2006 09 26 | 703 | 1.3− | 0.2− | 2006 10 28 | 703 | 0.8+ | 0.9− |
| 2003 02 26 | 599 | 0.1+ | 0.6− | 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.7− |
| 2003 02 27 | 599 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.5− | 0.2− |
| 2003 03 10 | 291 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.8− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 291 | 0.2− | 0.7− | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.1+ | 1.0− |
| 2003 03 10 | 291 | 0.4− | 0.6− | 2006 10 03 | G96 | 0.4+ | 0.1− | | | | |

**2003 DZ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.51687 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20954806 | $\omega$ | 61.79470 | | −0.79241844 | | +0.60916809 |
| $a$ | 2.8072448 | $\Omega$ | 155.69367 | | −0.58298880 | | −0.74119880 |
| $e$ | 0.0357793 | $i$ | 4.37792 | | −0.17943545 | | −0.28202584 |
| $P$ | 4.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 04 | 691 | 0.2+ | 0.6+ | 2003 02 27 | 599 | 0.2+ | 0.5+ | 2005 09 23 | 703 | 0.1+ | 1.0+ |
| 1991 10 04 | 691 | 0.2− | 0.2− | 2003 02 28 | 704 | (1.8+ | 0.7−) | 2005 09 23 | 703 | (0.4− | 2.3+) |
| 1991 10 04 | 691 | 0.2+ | 0.1+ | 2003 02 28 | 704 | 1.5+ | 0.9− | 2005 09 23 | 703 | (1.6+ | 1.4+) |
| 2001 11 17 | 704 | 1.3− | 0.3− | 2003 02 28 | 704 | 1.5+ | 0.1− | 2005 09 23 | 703 | (3.4+ | 1.5+) |
| 2001 11 17 | 704 | 1.2− | 0.8− | 2003 02 28 | 704 | (0.5+ | 1.6+) | 2005 09 24 | 644 | 0.1− | 0.2+ |
| 2001 11 17 | 704 | 0.9− | 1.3− | 2003 03 06 | 699 | 0.1+ | 0.0 | 2005 09 24 | 644 | 0.5− | 0.6+ |
| 2003 02 23 | 699 | (1.8+ | 1.5+) | 2003 03 06 | 699 | 0.1+ | 0.1+ | 2005 09 24 | 644 | 0.6− | 0.2+ |
| 2003 02 23 | 699 | 1.2+ | 0.4+ | 2003 03 06 | 699 | 1.3− | 0.5+ | 2005 09 30 | 699 | 0.0 | 1.4+ |
| 2003 02 23 | 699 | 1.2+ | 1.0+ | 2003 03 06 | 699 | 0.8− | 0.6+ | 2005 09 30 | 699 | 0.2+ | 1.4− |
| 2003 02 23 | 699 | 0.7+ | 0.7+ | 2003 03 31 | 645 | 0.1− | 0.1+ | 2005 09 30 | 699 | 0.4+ | 0.5+ |
| 2003 02 25 | 599 | 0.2+ | 0.3+ | 2003 03 31 | 645 | 0.1− | 0.2+ | 2005 09 30 | 699 | 0.2− | 1.5+ |
| 2003 02 25 | 599 | 0.3− | 0.5+ | 2005 08 27 | 691 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.0 |
| 2003 02 25 | 599 | 0.3+ | 0.2+ | 2005 08 27 | 691 | 0.1− | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.5− |
| 2003 02 25 | 599 | 0.2+ | 0.2+ | 2005 08 27 | 691 | 0.0 | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2003 02 26 | 599 | 0.2+ | 0.4+ | 2005 09 11 | 691 | 0.2− | 0.4+ | 2006 11 28 | 691 | 0.1+ | 0.1− |
| 2003 02 26 | 599 | 0.1+ | 0.5+ | 2005 09 11 | 691 | 0.1− | 0.4+ | 2006 11 28 | 691 | 0.2+ | 0.1− |
| 2003 02 26 | 599 | 0.3+ | 0.5+ | 2005 09 11 | 691 | 0.2− | 0.4+ | 2006 11 28 | 691 | 0.1+ | 0.0 |

**2003 DC$_{13}$ = 2006 QE$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.93020 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17048587 | $\omega$ | 85.36319 | | +0.94266249 | | −0.26238768 |
| $a$ | 3.2211463 | $\Omega$ | 289.73882 | | +0.14465416 | | +0.87814034 |
| $e$ | 0.1568508 | $i$ | 12.65783 | | +0.30077002 | | +0.40002780 |
| $P$ | 5.78 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 11 | 809 | 0.6− | 2.0+ | 2001 12 09 | 704 | 0.1− | 0.7+ | 2006 07 21 | 703 | 0.1+ | 0.6+ |
| 1994 07 11 | 809 | 1.5− | 1.9+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 07 21 | 703 | 0.6− | 0.8− |
| 1994 07 11 | 809 | 0.1+ | 1.5+ | 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 07 21 | 703 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.2+ | 0.1− | 2003 02 26 | 246 | 0.5+ | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.8+ | 0.1+ | 2003 02 26 | 246 | 1.0+ | 0.2+ | 2006 08 21 | 644 | 0.3+ | 0.1+ |
| 2001 09 25 | 704 | 0.3+ | 0.5− | 2003 02 26 | 246 | 1.2+ | 0.6+ | 2006 08 21 | 644 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.5+ | 0.6− | 2003 02 26 | 246 | 0.4+ | 0.3+ | 2006 08 30 | 704 | (2.0+ | 1.2+) |
| 2001 11 11 | 704 | 0.5− | 0.3− | 2003 02 27 | 246 | 0.4− | 0.2+ | 2006 08 30 | 704 | 0.7+ | 0.3+ |
| 2001 11 11 | 704 | 0.6− | 0.1+ | 2003 02 27 | 246 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.6+ | 0.8+ |
| 2001 11 11 | 704 | 0.5− | 0.4+ | 2003 02 27 | 246 | 0.3− | 0.4+ | 2006 08 30 | 704 | 0.4− | 0.5− |
| 2001 11 11 | 704 | 1.1− | 0.2+ | 2003 02 27 | 246 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.5+ | 0.4+ |
| 2001 11 11 | 704 | 0.7− | 0.9+ | 2003 02 27 | 246 | 0.3+ | 0.1− | 2006 11 10 | 704 | 0.8− | 1.0+ |
| 2001 12 09 | 704 | 0.3+ | 0.4+ | 2003 02 27 | 246 | 0.2− | 1.0+ | 2006 11 10 | 704 | (2.5− | 1.3+) |
| 2001 12 09 | 704 | 0.6+ | 0.0 | 2003 02 27 | 246 | 0.4+ | 0.2+ | 2006 11 10 | 704 | 0.9− | 0.5− |
| 2001 12 09 | 704 | 0.3+ | 0.6+ | 2006 07 21 | 703 | 0.9− | 0.7− | 2006 11 10 | 704 | 0.3+ | 0.6+ |

**2003 DK$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.23131 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18716422 | $\omega$ | 210.17170 | | −0.84157391 | | −0.53967428 |
| $a$ | 3.0268263 | $\Omega$ | 297.15013 | | +0.50048286 | | −0.76345923 |
| $e$ | 0.1843806 | $i$ | 1.44721 | | +0.20315084 | | −0.35479809 |
| $P$ | 5.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 291 | 0.1− | 0.2− | 2003 03 09 | 704 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.2+ | 0.4+ |
| 2003 01 31 | 291 | 0.1− | 0.1− | 2003 03 09 | 704 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2003 01 31 | 291 | 0.2− | 0.0 | 2003 03 09 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2003 02 27 | 246 | 0.6− | 0.7− | 2003 03 09 | 704 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.3+ | 0.0 |
| 2003 02 27 | 246 | 0.1+ | 1.0− | 2003 03 26 | 644 | 0.5+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2003 02 27 | 246 | 0.4− | 0.4− | 2003 03 26 | 644 | 0.5+ | 0.8+ | 2006 10 20 | 691 | 0.3+ | 0.1+ |
| 2003 02 27 | 246 | 0.5− | 0.5− | 2003 03 26 | 644 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2003 02 27 | 246 | 0.2− | 0.2− | 2003 03 31 | 691 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2003 02 27 | 246 | 0.2− | 0.7− | 2003 03 31 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2003 02 27 | 246 | 0.0 | 0.4+ | 2003 03 31 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2003 02 27 | 246 | 0.3+ | 0.2+ | 2003 04 01 | 695 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2003 02 27 | 246 | 0.2+ | 0.1+ | 2003 04 01 | 695 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2003 02 27 | 246 | 0.4+ | 0.1− | 2003 04 09 | 691 | 0.1− | 0.4− | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2003 02 27 | 246 | 0.0 | 0.2+ | 2003 04 09 | 691 | 0.2− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.2− |
| 2003 02 27 | 246 | 0.4+ | 0.2+ | 2003 04 09 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2003 02 27 | 246 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2003 02 27 | 246 | 0.6+ | 0.3+ | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.6− | 0.2+ |

**2003 DM$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.53468 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17794934 | $\omega$ | 133.30517 | | −0.79353197 | | −0.60570406 |
| $a$ | 3.1304381 | $\Omega$ | 9.92031 | | +0.41170307 | | −0.60524415 |
| $e$ | 0.0975884 | $i$ | 19.87271 | | +0.44811561 | | −0.51652890 |
| $P$ | 5.54 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.5+ | 0.7+ | 2003 02 28 | 704 | 0.8+ | 0.3+ | 2003 04 08 | 691 | 0.9+ | 0.2− |
| 2001 12 23 | 704 | 0.2− | 0.3− | 2003 02 28 | 704 | 0.1− | 0.6+ | 2003 04 08 | 691 | 0.8+ | 0.1+ |
| 2001 12 23 | 704 | 0.3+ | 0.1+ | 2003 02 28 | 704 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2001 12 23 | 704 | 1.0− | 0.2− | 2003 03 20 | 644 | (0.2+ | 2.1+) | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2003 01 28 | 645 | 0.3− | 0.0 | 2003 03 20 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2003 01 28 | 645 | 0.4− | 0.0 | 2003 03 20 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 1.0− | 0.5− |
| 2003 02 24 | 608 | 1.1+ | 1.0+ | 2003 03 25 | 644 | 0.1− | 0.6− | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 2003 02 24 | 608 | 1.1+ | 1.0+ | 2003 03 25 | 644 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.8− | 0.6+ |
| 2003 02 24 | 608 | 1.2+ | 1.1+ | 2003 03 25 | 644 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.1− | 0.9+ |
| 2003 02 28 | 704 | 0.9+ | 0.4+ | 2003 04 08 | 691 | 0.5+ | 0.1− | | | | |

**2003 DZ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.91554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21109431 | $\omega$ | 64.99656 | | −0.87866581 | | −0.46928703 |
| $a$ | 2.7935194 | $\Omega$ | 86.90920 | | +0.40017710 | | −0.82425026 |
| $e$ | 0.1336906 | $i$ | 5.04678 | | +0.26039331 | | −0.31682992 |
| $P$ | 4.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 691 | 0.2+ | 0.2− | 2003 02 28 | 608 | 0.0 | 0.7− | 2003 03 25 | 699 | 0.0 | 0.9− |
| 1998 01 07 | 691 | 0.1− | 0.0 | 2003 02 28 | 608 | 0.2+ | 0.6− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 1998 01 07 | 691 | 0.1− | 0.3− | 2003 03 05 | 704 | 0.7− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2003 03 05 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2003 03 05 | 704 | 0.2+ | 1.2+ | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 2003 02 08 | 608 | 0.1+ | 0.8− | 2003 03 05 | 704 | 0.1− | 0.5− | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2003 02 08 | 608 | 0.1+ | 0.2− | 2003 03 06 | 699 | (0.7+ | 2.0+) | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2003 02 08 | 608 | 0.4+ | 0.4− | 2003 03 06 | 699 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2003 02 21 | 644 | 0.2− | 0.3+ | 2003 03 06 | 699 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2003 02 21 | 644 | 0.2+ | 0.4+ | 2003 03 06 | 699 | 1.1− | 0.8+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2003 02 21 | 644 | 0.1+ | 0.2+ | 2003 03 06 | 704 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2003 02 25 | 599 | 0.6+ | 0.0 | 2003 03 06 | 704 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2003 02 25 | 599 | 0.2+ | 0.1− | 2003 03 06 | 704 | 0.8− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2003 02 25 | 599 | 0.2− | 0.4− | 2003 03 06 | 704 | (0.4+ | 2.1+) | 2006 11 24 | G96 | 0.3− | 0.5− |
| 2003 02 25 | 599 | 0.3+ | 0.1+ | 2003 03 23 | 644 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2003 02 28 | 704 | 0.3− | 0.7+ | 2003 03 23 | 644 | 0.1+ | 0.6+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2003 02 28 | 704 | 0.4− | 0.9+ | 2003 03 23 | 644 | 0.2+ | 0.5+ | 2006 12 01 | 691 | 0.2− | 0.2− |
| 2003 02 28 | 704 | 0.2− | 0.5+ | 2003 03 25 | 699 | 0.1− | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 28 | 704 | 0.8+ | 0.8+ | 2003 03 25 | 699 | 0.4− | 0.9− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2003 02 28 | 608 | 0.2+ | 0.8− | 2003 03 25 | 699 | (0.6− | 1.6−) | | | | |

### 2003 $DX_{16}$ = 2006 $RQ_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.34937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17883693 | $\omega$ | 51.41475 | | −0.91025540 | −0.41235825 | |
| $a$ | 3.1200718 | $\Omega$ | 104.20393 | | +0.36689121 | −0.84511596 | |
| $e$ | 0.1238515 | $i$ | 2.20863 | | +0.19190087 | −0.34020536 | |
| $P$ | 5.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 645 | 0.0 | 0.0 | 2003 03 06 | 699 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1− |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2003 03 06 | 699 | 0.0 | 1.4+ | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2003 02 21 | 644 | 0.0 | 0.3− | 2003 03 06 | 699 | 1.1+ | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 2003 02 21 | 644 | 0.1+ | 0.2− | 2003 03 06 | 699 | 1.0+ | 0.0 | 2006 09 18 | 691 | 0.4− | 0.2+ |
| 2003 02 21 | 644 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.3− | 0.4+ | 2006 11 16 | G96 | (7.5+ | 2.2+) |
| 2003 02 22 | 699 | 1.4− | 0.5+ | 2006 09 14 | 691 | 0.3− | 0.1+ | 2006 11 16 | G96 | (7.1+ | 1.6+) |
| 2003 02 22 | 699 | 0.2− | 0.3− | 2006 09 14 | 691 | 0.4+ | 0.3− | 2006 11 16 | G96 | (7.2+ | 2.0+) |
| 2003 02 22 | 699 | 0.5+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | (7.4+ | 2.3+) |
| 2003 02 22 | 699 | 1.3− | 0.0 | 2006 09 17 | 691 | 0.5+ | 0.3− | | | | |

### 2003 $DF_{17}$ = 2006 $SX_{285}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.81719 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17762601 | $\omega$ | 111.61326 | | +0.39925882 | −0.90828604 | |
| $a$ | 3.1342359 | $\Omega$ | 314.21580 | | +0.76347367 | +0.40482103 | |
| $e$ | 0.0763902 | $i$ | 10.03885 | | +0.50764194 | +0.10552914 | |
| $P$ | 5.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.0 | 0.0 | 2003 03 20 | 735 | 1.0− | 0.2− | 2006 09 29 | 699 | 0.2+ | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2003 03 20 | 735 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2003 03 20 | 735 | 0.9+ | 0.9− | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.3+ | 0.2+ |
| 2003 02 24 | 735 | 1.3+ | 0.6− | 2006 09 16 | 703 | 0.3− | 1.1− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2003 02 24 | 735 | (3.3+ | 0.5−) | 2006 09 16 | 703 | 1.1+ | 1.1− | 2006 10 21 | 691 | 0.1− | 0.2− |
| 2003 02 24 | 735 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.9− | 2006 10 21 | 691 | 0.1− | 0.3− |
| 2003 02 28 | 735 | 1.1− | 0.3+ | 2006 09 27 | 703 | 1.3− | 0.2+ | 2006 10 21 | 691 | 0.2+ | 0.2− |
| 2003 02 28 | 735 | 0.1− | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.9+ | 2006 10 24 | 644 | 0.3+ | 0.5+ |
| 2003 02 28 | 735 | 0.4− | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.7− | 2006 10 24 | 644 | 0.4− | 0.1+ |
| 2003 03 07 | 735 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.2− | 1.8+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2003 03 07 | 735 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.6+ | 1.3+ | | | | |
| 2003 03 07 | 735 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 1.4− | 0.1+ | | | | |

### 2003 $DL_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.92642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19101570 | $\omega$ | 116.68680 | | −0.38734552 | −0.92177179 | |
| $a$ | 2.9860014 | $\Omega$ | 355.98186 | | +0.73333108 | −0.29666028 | |
| $e$ | 0.1773601 | $i$ | 14.31608 | | +0.55873873 | −0.24965866 | |
| $P$ | 5.16 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 809 | 2.4+ | 2.7+ | 2003 02 23 | 699 | 0.2− | 0.4− | 2006 09 17 | 703 | 0.1+ | 0.4+ |
| 1998 02 26 | 809 | 1.9+ | 2.2+ | 2003 03 05 | 704 | 1.0+ | 0.2+ | 2006 09 17 | 703 | 1.1+ | 0.2− |
| 1998 02 26 | 809 | 1.2+ | 2.3+ | 2003 03 05 | 704 | 0.3− | 1.0+ | 2006 09 17 | 703 | 0.2− | 0.2− |
| 2001 10 20 | 644 | 0.8+ | 1.1− | 2003 03 05 | 704 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.4− | 0.0 |
| 2001 10 20 | 644 | 0.8+ | 1.1− | 2003 03 05 | 704 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2001 10 20 | 644 | 0.6+ | 1.1− | 2003 03 07 | 644 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.6− | 0.4− | 2003 03 07 | 644 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2003 01 10 | 704 | 0.6− | 0.1+ | 2003 03 07 | 644 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2003 01 10 | 704 | 0.1− | 0.3+ | 2003 03 08 | 704 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.2− | 0.1− |
| 2003 01 10 | 704 | 0.7− | 0.8− | 2003 03 08 | 704 | 0.7+ | 1.4+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2003 01 10 | 704 | 0.2+ | 0.8− | 2003 03 08 | 704 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2003 01 28 | 644 | 0.4− | 0.2− | 2003 03 08 | 704 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.3− | 0.4+ |
| 2003 01 28 | 644 | 0.4− | 0.5− | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2003 01 28 | 644 | 0.4− | 0.6− | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2003 02 19 | 644 | 0.1+ | 0.3− | 2006 07 21 | G96 | 0.6− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2003 02 19 | 644 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.2+ |
| 2003 02 19 | 644 | 0.2− | 0.5− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2003 02 23 | 699 | 0.5+ | 0.6− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2003 02 23 | 699 | 0.6− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.3+ | | | | |
| 2003 02 23 | 699 | 0.7+ | 0.2− | 2006 09 17 | 703 | 0.3− | 1.0− | | | | |

### 2003 $DZ_{18}$ = 2006 $QD_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.08071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17727721 | $\omega$ | 275.05275 | | +0.57361048 | −0.79825478 | |
| $a$ | 3.1383456 | $\Omega$ | 138.12761 | | +0.81724910 | +0.54252603 | |
| $e$ | 0.1456068 | $i$ | 15.97849 | | +0.05545204 | +0.26163872 | |
| $P$ | 5.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.0 | 2003 02 21 | 644 | 0.4− | 0.1+ | 2006 08 23 | 644 | 0.1− | 0.1+ |
| 2001 09 19 | 645 | 0.1+ | 0.0 | 2003 02 21 | 644 | 0.6− | 0.0 | 2006 08 23 | 644 | 0.1− | 0.2+ |
| 2001 10 11 | 704 | 0.7− | 1.1− | 2003 02 23 | 699 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 0.6+ | 0.7+ |
| 2001 10 11 | 704 | 1.4+ | 1.1− | 2003 02 23 | 699 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.7− | 0.5+ |
| 2001 10 11 | 704 | (1.5+ | 0.2−) | 2003 02 23 | 699 | 0.5− | 0.9− | 2006 08 30 | 699 | 0.5+ | 0.8+ |
| 2001 10 11 | 704 | 0.8+ | 0.2+ | 2003 02 23 | 699 | 0.2+ | 0.8+ | 2006 09 20 | 703 | 0.9+ | 0.5+ |
| 2001 10 14 | 699 | 1.0− | 0.5+ | 2003 03 06 | 699 | (0.5+ | 1.7+) | 2006 09 20 | 703 | 0.1− | 0.3− |
| 2001 10 14 | 699 | 0.1+ | 0.4+ | 2003 03 06 | 699 | (2.2+ | 1.9+) | 2006 09 20 | 703 | 0.2+ | 0.3− |
| 2001 10 14 | 699 | 0.6− | 0.4− | 2003 03 06 | 699 | (2.0+ | 2.3+) | 2006 09 20 | 703 | 0.2+ | 0.1+ |
| 2001 10 14 | 699 | 0.0 | 0.5+ | 2003 03 06 | 699 | 1.3+ | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.6− |
| 2001 12 14 | 644 | 0.1+ | 0.3+ | 2006 08 21 | 644 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2001 12 14 | 644 | 0.0 | 0.8+ | 2006 08 21 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.4− |
| 2001 12 14 | 644 | 0.3− | 0.3+ | 2006 08 21 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 1.2− | 0.0 |
| 2003 02 21 | 644 | 0.3− | 0.2+ | 2006 08 23 | 644 | 0.3+ | 0.4+ | | | | |

### 2003 $DB_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.85625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21841470 | $\omega$ | 56.30952 | | −0.26858125 | −0.95345116 | |
| $a$ | 2.7307471 | $\Omega$ | 49.88441 | | +0.81377878 | −0.30074366 | |
| $e$ | 0.2151089 | $i$ | 10.32715 | | +0.51539132 | −0.02200326 | |
| $P$ | 4.51 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 28 | 704 | 0.7+ | 0.1− | 2003 03 12 | 704 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.7− |
| 2003 02 28 | 704 | 0.8+ | 0.5+ | 2003 03 12 | 704 | 0.5− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2003 02 28 | 704 | 0.4+ | 0.2− | 2003 03 12 | 704 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2003 02 28 | 704 | 0.0 | 0.2+ | 2003 03 12 | 704 | 0.9− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2003 02 28 | 704 | 0.7+ | 0.4− | 2003 03 30 | 291 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2003 03 03 | 704 | 1.4− | 0.2− | 2003 03 30 | 291 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2003 03 03 | 704 | 0.0 | 0.1− | 2003 03 30 | 291 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2003 03 03 | 704 | 0.4− | 0.9− | 2003 04 06 | 699 | 0.2− | 0.7+ | 2006 11 25 | 691 | 0.0 | 0.1− |
| 2003 03 08 | 699 | 0.5+ | 0.5+ | 2003 04 06 | 699 | 0.4+ | 0.3− | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2003 03 08 | 699 | 0.1− | 0.3− | 2003 04 06 | 699 | 0.5− | 0.7+ | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2003 03 08 | 699 | 0.7+ | 0.2− | 2003 04 06 | 699 | 0.3− | 0.3− | 2006 11 27 | 704 | 0.1+ | 0.1− |
| 2003 03 08 | 699 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.3− | 0.9+ | 2006 11 27 | 704 | 0.4− | 0.0 |
| 2003 03 08 | 644 | 0.9+ | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.5+ | 2006 11 27 | 704 | 0.0 | 0.4− |
| 2003 03 08 | 644 | 0.7+ | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.3+ | | | | |
| 2003 03 08 | 644 | 1.0+ | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.3+ | | | | |

**2003 DM$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.35886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18285932 | $\omega$ | 298.73593 | | +0.15530649 | −0.97478211 | |
| $a$ | 3.0741471 | $\Omega$ | 141.26656 | | +0.97194871 | +0.12177695 | |
| $e$ | 0.0940971 | $i$ | 14.83951 | | +0.17662274 | +0.18700326 | |
| $P$ | 5.39 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 291 | 0.0 | 0.3+ | 2003 02 25 | 608 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 2003 01 05 | 291 | 0.1+ | 0.1+ | 2003 02 25 | 608 | 0.8+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2003 01 05 | 291 | 0.0 | 0.0 | 2003 02 26 | 608 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.2− | |
| 2003 02 12 | 608 | 0.2+ | 1.0− | 2003 02 26 | 608 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.6+ | 0.2+ | |
| 2003 02 12 | 608 | 0.0 | 0.9− | 2003 02 26 | 608 | 0.1+ | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.9− | |
| 2003 02 12 | 608 | 0.4− | 0.9− | 2003 03 07 | 644 | 0.2+ | 0.6+ | 2006 10 21 | 703 | (0.6+ | 2.0−) | |
| 2003 02 21 | 644 | 0.2− | 0.1− | 2003 03 07 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.2+ | |
| 2003 02 21 | 644 | 0.6− | 0.0 | 2003 03 07 | 644 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.6+ | |
| 2003 02 21 | 644 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2+ | 2006 10 24 | 644 | 0.5− | 0.1− | |
| 2003 02 21 | 049 | (1.8− | 0.1+) | 2006 10 09 | 644 | 0.0 | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.6− | |
| 2003 02 21 | 049 | 1.5− | 0.2− | 2006 10 09 | 644 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.3− | 0.1− | |
| 2003 02 21 | 049 | (1.7− | 0.1−) | 2006 10 12 | 644 | 0.1+ | 0.1+ | | | | | |
| 2003 02 25 | 608 | 0.8+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1− | | | | | |

**2003 DW$_{23}$ = 1995 TZ$_{10}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.41116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17508371 | $\omega$ | 115.92770 | | −0.58571529 | −0.80608375 | |
| $a$ | 3.1645033 | $\Omega$ | 11.17354 | | +0.49414293 | −0.43792705 | |
| $e$ | 0.2217365 | $i$ | 25.90386 | | +0.64246429 | −0.39805639 | |
| $P$ | 5.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.4− | 0.2− | 2003 02 21 | 644 | 0.1− | 0.0 | 2003 02 28 | 704 | 0.4+ | 0.4− | |
| 1995 10 15 | 691 | 0.4− | 0.8+ | 2003 02 21 | 644 | 0.1+ | 0.3+ | 2003 02 28 | 704 | 0.1+ | 1.1+ | |
| 1995 10 15 | 691 | 0.2− | 0.2+ | 2003 02 26 | 704 | 0.4− | 0.6+ | 2003 02 28 | 704 | 1.4− | 1.0+ | |
| 1995 10 21 | 691 | 0.2+ | 0.0 | 2003 02 26 | 704 | 0.0 | 0.0 | 2003 03 26 | 704 | 1.5+ | 0.9+ | |
| 1995 10 21 | 691 | 0.6+ | 0.4− | 2003 02 26 | 704 | 0.6− | 0.6− | 2003 03 26 | 704 | 0.2− | 0.2− | |
| 1995 10 21 | 691 | 0.0 | 0.2− | 2003 02 26 | 704 | 0.4− | 0.1+ | 2003 03 26 | 704 | 0.2− | 0.9− | |
| 2003 02 21 | 644 | 0.1+ | 0.0 | 2003 02 28 | 704 | 1.2+ | 1.9− | | | | | |

**2003 DX$_{23}$ = 2000 GL$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.21846 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30916327 | $\omega$ | 72.51188 | | −0.38761170 | −0.92137183 | |
| $a$ | 2.1660948 | $\Omega$ | 40.33218 | | +0.82795779 | −0.36172202 | |
| $e$ | 0.0896142 | $i$ | 2.55299 | | +0.40526913 | −0.14223618 | |
| $P$ | 3.19 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 1.0+ | 0.2+ | 2003 03 23 | 645 | 0.0 | 0.0 | 2006 01 05 | 703 | 0.6+ | 0.8− | |
| 2000 04 05 | 704 | 0.1− | 0.3+ | 2003 03 23 | 645 | 0.0 | 0.1− | 2006 01 05 | 703 | 1.3− | 0.2− | |
| 2000 04 05 | 704 | 0.4+ | 0.7− | 2003 03 30 | 645 | 0.0 | 0.1− | 2006 01 05 | 703 | (4.2− | 2.5−) | |
| 2000 04 05 | 704 | 1.2+ | 0.6− | 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 02 02 | 703 | 0.4+ | 1.9+ | |
| 2000 04 12 | 691 | 0.4− | 0.1− | 2003 04 05 | 691 | 0.2− | 0.1+ | 2006 02 02 | 703 | 0.5− | 0.9+ | |
| 2000 04 12 | 691 | 0.0 | 0.0 | 2003 04 05 | 691 | 0.1− | 0.4+ | 2006 02 02 | 703 | 0.0 | 0.6+ | |
| 2000 04 12 | 691 | 0.4− | 0.3− | 2003 04 05 | 691 | 0.4− | 0.1+ | 2006 02 02 | 703 | 0.4+ | 0.1− | |
| 2003 02 22 | 644 | 0.5+ | 0.3+ | 2004 08 13 | 807 | 0.1+ | 0.4+ | 2006 02 06 | 691 | 0.2+ | 0.1− | |
| 2003 02 22 | 644 | 0.6+ | 0.3+ | 2004 08 13 | 807 | 0.2− | 0.1+ | 2006 02 06 | 691 | 0.6+ | 0.0 | |
| 2003 02 22 | 644 | 0.4+ | 0.5+ | 2006 01 05 | 703 | 1.1+ | 0.8− | 2006 02 06 | 691 | 0.0 | 0.2+ | |

**2003 DY$_{23}$ = 2004 PM$_{41}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.81123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26476553 | $\omega$ | 52.15153 | | −0.71916283 | +0.69474755 | |
| $a$ | 2.4019378 | $\Omega$ | 171.83306 | | −0.66010757 | −0.67798447 | |
| $e$ | 0.1007754 | $i$ | 4.61525 | | −0.21693965 | −0.24013098 | |
| $P$ | 3.72 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 23 | 699 | 0.2+ | 0.1− | 2003 03 06 | 699 | 1.1− | 0.8− | 2004 08 06 | 644 | 0.0 | 0.0 | |
| 2003 02 23 | 699 | 0.3+ | 0.3+ | 2003 03 06 | 699 | 0.1+ | 0.2+ | 2004 08 06 | 644 | 0.2+ | 0.2+ | |
| 2003 02 23 | 699 | 1.6+ | 0.0 | 2003 03 06 | 699 | 0.3+ | 1.7− | 2004 08 06 | 644 | 0.1− | 0.0 | |
| 2003 02 23 | 699 | 0.2− | 1.7+ | 2003 03 06 | 699 | (1.4− | 3.0−) | 2004 08 10 | 599 | 0.1− | 0.1− | |
| 2003 02 28 | 608 | 0.6− | 0.1− | 2003 04 01 | 291 | 0.0 | 0.1+ | 2004 08 10 | 599 | 0.2− | 0.1− | |
| 2003 02 28 | 608 | 0.5− | 0.2+ | 2003 04 01 | 291 | 0.4+ | 0.2+ | 2004 08 10 | 599 | 0.1+ | 0.1+ | |
| 2003 02 28 | 608 | 0.5− | 0.2− | 2003 04 01 | 291 | 0.2+ | 0.2+ | | | | | |

**2003 DZ$_{23}$ = 2000 TD$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.05920 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19525127 | $\omega$ | 208.74730 | | +0.54375542 | +0.83248011 | |
| $a$ | 2.9426604 | $\Omega$ | 94.37926 | | −0.74814942 | +0.53823731 | |
| $e$ | 0.0767649 | $i$ | 6.12197 | | −0.38026633 | +0.13144377 | |
| $P$ | 5.05 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 699 | 0.3− | 0.0 | 2003 02 28 | 704 | 0.3− | 0.5+ | 2005 08 31 | 644 | 0.2− | 0.3+ | |
| 2000 10 01 | 699 | 0.1− | 0.4− | 2003 03 07 | 615 | 1.1− | 0.4− | 2005 08 31 | 644 | 0.0 | 0.2+ | |
| 2000 10 01 | 699 | 0.7− | 0.5+ | 2003 03 07 | 615 | 1.5− | 0.0 | 2005 09 13 | 703 | 0.3− | 1.0− | |
| 2000 10 01 | 699 | 1.1+ | 0.1− | 2003 03 07 | 615 | 1.2− | 0.2+ | 2005 09 13 | 703 | 0.1− | 0.6− | |
| 2000 10 02 | 704 | 0.4+ | 0.1+ | 2003 03 26 | 691 | 0.2+ | 0.2− | 2005 09 13 | 703 | 0.5+ | 0.3+ | |
| 2000 10 02 | 704 | 0.4− | 0.6+ | 2003 03 26 | 691 | 0.3− | 0.3− | 2005 09 13 | 703 | 0.6+ | 0.3+ | |
| 2000 10 02 | 704 | 0.8− | 0.2+ | 2003 03 26 | 691 | 0.0 | 0.3− | 2005 10 05 | 703 | 0.4− | 1.0+ | |
| 2000 10 02 | 704 | 1.1+ | 1.8− | 2003 04 08 | 691 | 0.2+ | 0.2+ | 2005 10 05 | 703 | 0.1+ | 0.1− | |
| 2003 02 28 | 704 | 0.3+ | 0.3+ | 2003 04 08 | 691 | 0.6+ | 0.0 | 2005 10 05 | 703 | 0.5− | 0.0 | |
| 2003 02 28 | 704 | 0.9+ | 0.6+ | 2003 04 08 | 691 | 0.1+ | 0.2+ | 2005 10 05 | 703 | 0.1+ | 0.2+ | |
| 2003 02 28 | 704 | 0.2+ | 1.0+ | 2005 08 31 | 644 | 0.2− | 0.1+ | | | | | |

**2003 DA$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.43792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23782009 | $\omega$ | 64.83885 | | −0.63976374 | +0.76826818 | |
| $a$ | 2.5801029 | $\Omega$ | 165.32470 | | −0.73227890 | −0.60078035 | |
| $e$ | 0.1051718 | $i$ | 4.88998 | | −0.23338803 | −0.22096827 | |
| $P$ | 4.14 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 07 | 608 | 0.1+ | 1.1− | 2003 03 06 | 699 | 0.1+ | 1.0− | 2004 07 14 | 704 | 0.7− | 0.6+ | |
| 2000 08 07 | 608 | 0.2+ | 1.1− | 2003 03 06 | 644 | 0.3+ | 0.5+ | 2004 07 14 | 704 | 1.0+ | 0.9+ | |
| 2000 08 07 | 608 | 0.3− | 0.9− | 2003 03 06 | 644 | 0.7+ | 0.3+ | 2004 07 18 | 704 | (2.6+ | 7.0+) | |
| 2003 02 22 | 644 | 0.2+ | 0.0 | 2003 03 06 | 644 | 0.4+ | 0.5+ | 2004 07 18 | 704 | (2.1+ | 4.6+) | |
| 2003 02 22 | 644 | 0.5+ | 0.1+ | 2003 03 12 | 644 | 0.3+ | 0.5+ | 2004 07 18 | 704 | (0.9+ | 3.9+) | |
| 2003 02 22 | 644 | 0.3+ | 0.1+ | 2003 03 12 | 644 | 0.4+ | 0.4+ | 2005 11 03 | 691 | 0.0 | 0.1+ | |
| 2003 02 26 | 209 | 0.5− | 0.1− | 2003 03 12 | 644 | 0.3+ | 0.6+ | 2005 11 03 | 691 | 0.0 | 0.2+ | |
| 2003 02 26 | 209 | 0.9− | 0.5− | 2003 03 30 | 645 | 0.0 | 0.1− | 2005 11 03 | 691 | 0.0 | 0.1+ | |
| 2003 02 26 | 209 | 0.4− | 0.1− | 2003 03 30 | 645 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.4− | 0.0 | |
| 2003 03 06 | 699 | 0.4− | 1.1+ | 2004 07 14 | 704 | (0.3− | 2.0+) | 2006 11 23 | G96 | 0.2− | 0.0 | |
| 2003 03 06 | 699 | 0.4+ | 0.4+ | 2004 07 14 | 704 | 0.2− | 1.2+ | 2006 11 23 | G96 | 0.5− | 0.4+ | |
| 2003 03 06 | 699 | 1.1+ | 0.5+ | 2004 07 14 | 704 | 0.1− | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.3− | |

### 2003 $DB_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.74321 | | (2000.0) | | | |
| $n$ | 0.27221774 | $\omega$ | 341.06289 | | −0.45354236 | −0.89039850 |
| $a$ | 2.3578985 | $\Omega$ | 135.88595 | | +0.82468331 | −0.43570259 |
| $e$ | 0.1391057 | $i$ | 3.17871 | | +0.33793013 | −0.13173369 |
| $P$ | 3.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 22 | 644 | 0.7+ | 0.0 | 2003 03 06 | 699 | 0.1+ | 0.2+ | 2005 10 30 | G96 | 0.2+ | 0.3+ |
| 2003 02 22 | 644 | 1.1+ | 0.2− | 2003 03 06 | 699 | 0.7− | 0.1+ | 2005 10 30 | G96 | 0.5+ | 0.1+ |
| 2003 02 22 | 644 | 0.8+ | 0.2− | 2003 03 06 | 699 | 0.8+ | 0.4− | 2005 10 30 | G96 | 0.7+ | 0.0 |
| 2003 02 28 | 704 | 0.3+ | 0.4− | 2003 03 06 | 699 | 0.4− | 0.6+ | 2005 10 30 | G96 | 0.5+ | 0.0 |
| 2003 02 28 | 704 | 0.7− | 1.6− | 2003 03 24 | 691 | 0.5− | 0.9+ | 2005 11 10 | 703 | 0.3+ | 0.1+ |
| 2003 02 28 | 704 | 1.0− | 1.2− | 2003 03 24 | 691 | 0.2− | 0.8+ | 2005 11 10 | 703 | 0.8− | 0.4+ |
| 2003 02 28 | 704 | 0.7− | 1.4− | 2003 03 24 | 691 | 0.3− | 0.9+ | 2005 11 10 | 703 | 0.3− | 0.7+ |
| 2003 02 28 | 704 | 0.2+ | 0.3− | 2003 03 24 | 608 | 0.7+ | 1.0− | 2005 11 10 | 703 | 1.4− | 0.8− |
| 2003 02 28 | 704 | 1.0+ | 0.8− | 2003 03 24 | 608 | 0.8+ | 1.7− | | | | |
| 2003 02 28 | 704 | 0.2+ | 0.2− | 2003 03 24 | 608 | 0.8+ | 1.3− | | | | |

### 2003 $DC_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.14322 | | (2000.0) | | | |
| $n$ | 0.27312153 | $\omega$ | 263.12059 | | −0.18635996 | +0.98244870 |
| $a$ | 2.3526939 | $\Omega$ | 356.11134 | | −0.84815516 | −0.16500168 |
| $e$ | 0.0845806 | $i$ | 6.80222 | | −0.49588586 | −0.08700000 |
| $P$ | 3.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.1+ | 0.1− | 2003 03 06 | 704 | 0.4− | 0.3+ | 2004 08 11 | 704 | 0.4− | 0.4+ |
| 2001 11 12 | 704 | 0.4− | 0.4+ | 2003 03 06 | 704 | 0.9+ | 0.6− | 2004 08 11 | 704 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.3− | 0.7+ | 2003 03 06 | 704 | 0.3− | 0.6+ | 2004 08 11 | 704 | 0.8− | 0.2+ |
| 2001 11 12 | 704 | 0.6− | 0.4− | 2003 03 06 | 704 | 0.3+ | 0.6+ | 2004 08 22 | E12 | 0.4− | 0.6+ |
| 2003 02 22 | 644 | 0.2+ | 0.0 | 2003 03 24 | 691 | 0.2− | 0.1+ | 2004 08 22 | E12 | 0.5+ | 1.0+ |
| 2003 02 22 | 644 | 0.0 | 0.1− | 2003 03 24 | 691 | 0.2+ | 0.0 | 2004 08 22 | E12 | 0.4+ | 1.2+ |
| 2003 02 22 | 644 | 0.0 | 0.1+ | 2003 03 24 | 691 | 0.2+ | 0.0 | 2004 08 22 | E12 | 1.4− | 1.3+ |
| 2003 03 06 | 699 | 1.0− | 0.9+ | 2003 04 05 | 691 | 0.0 | 0.4+ | 2005 12 24 | 704 | 0.7+ | 1.1+ |
| 2003 03 06 | 699 | 0.2+ | 0.4− | 2003 04 05 | 691 | 0.2+ | 0.0 | 2005 12 24 | 704 | 0.9− | 0.8+ |
| 2003 03 06 | 699 | 1.0+ | 0.1− | 2003 04 05 | 691 | 0.1+ | 0.4+ | 2005 12 24 | 704 | 0.2+ | 0.3− |
| 2003 03 06 | 699 | 0.2− | 0.1+ | 2004 08 11 | 704 | 0.2− | 0.1+ | | | | |

### 2003 $DD_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.74305 | | (2000.0) | | | |
| $n$ | 0.23840800 | $\omega$ | 224.30826 | | −0.53734489 | +0.84295403 |
| $a$ | 2.5758595 | $\Omega$ | 13.26015 | | −0.73849026 | −0.45526703 |
| $e$ | 0.1432792 | $i$ | 6.57105 | | −0.40729916 | −0.28663642 |
| $P$ | 4.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 699 | 0.6− | 0.3+ | 2003 03 06 | 704 | 1.3− | 1.5− | 2004 08 08 | 704 | 0.3− | 0.5+ |
| 1999 03 22 | 699 | 0.1+ | 0.8− | 2003 03 06 | 704 | 0.2+ | 1.3+ | 2004 08 08 | 704 | 1.3+ | 1.6+ |
| 1999 03 22 | 699 | 0.7+ | 0.9+ | 2003 03 06 | 704 | 0.2− | 1.1− | 2004 08 08 | 704 | 0.7− | 1.1+ |
| 2003 02 22 | 644 | 0.4+ | 1.0+ | 2003 03 25 | 699 | 0.1− | 0.6− | 2004 08 22 | E12 | 1.2+ | 1.5− |
| 2003 02 22 | 644 | 0.7+ | 1.2+ | 2003 03 25 | 699 | 1.8− | 0.2+ | 2004 08 22 | E12 | 0.1− | 0.3+ |
| 2003 02 22 | 644 | 0.8+ | 1.0+ | 2003 03 25 | 699 | 1.4− | 0.4− | 2004 08 22 | E12 | 0.3− | 0.1+ |
| 2003 02 28 | 704 | 0.5+ | 0.4+ | 2003 03 25 | 699 | 0.3+ | 0.4+ | 2004 08 22 | E12 | 1.2− | 0.6− |
| 2003 02 28 | 704 | 1.4− | 1.2− | 2003 04 05 | 691 | 0.7+ | 0.3+ | 2004 09 07 | 704 | 0.4+ | 0.9+ |
| 2003 02 28 | 704 | 0.3+ | 0.2− | 2003 04 05 | 691 | 0.2+ | 0.6+ | 2004 09 07 | 704 | 1.1− | 0.2+ |
| 2003 02 28 | 704 | 0.2− | 0.6− | 2003 04 05 | 691 | 0.5+ | 0.4+ | 2004 09 07 | 704 | 0.2− | 0.9+ |
| 2003 02 28 | 704 | 0.6− | 0.2+ | 2004 07 09 | 644 | 0.1+ | 0.2+ | 2005 12 02 | 704 | 0.6− | 2.4+ |
| 2003 02 28 | 704 | 0.4− | 0.0 | 2004 07 09 | 644 | 0.1− | 0.1− | 2005 12 02 | 704 | 0.1− | 0.3+ |
| 2003 03 06 | 704 | 0.4− | 0.1− | 2004 07 09 | 644 | 0.0 | 0.0 | 2005 12 02 | 704 | 0.1− | 0.2− |
| 2003 03 06 | 704 | 1.1+ | 0.7− | 2004 08 08 | 704 | 0.8− | 0.2+ | | | | |

### 2003 $DE_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.85641 | | (2000.0) | | | |
| $n$ | 0.27164084 | $\omega$ | 319.32156 | | −0.91815805 | +0.39297663 |
| $a$ | 2.3612357 | $\Omega$ | 243.88559 | | −0.34736117 | −0.85974184 |
| $e$ | 0.1123012 | $i$ | 3.22720 | | −0.19059386 | −0.32621057 |
| $P$ | 3.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 23 | 699 | 0.8− | 1.4− | 2004 08 10 | 599 | 0.4− | 0.4+ | 2005 11 25 | G96 | 0.1− | 0.1+ |
| 2003 02 23 | 699 | 0.9− | 0.0 | 2004 08 10 | 599 | 0.3− | 0.5+ | 2005 11 25 | G96 | 0.2+ | 0.2+ |
| 2003 02 23 | 699 | 0.2+ | 0.6− | 2004 08 11 | 704 | 1.1− | 0.4+ | 2005 11 25 | G96 | 0.0 | 0.1− |
| 2003 02 23 | 699 | 0.7+ | 0.1+ | 2004 08 11 | 704 | 1.0+ | 1.2− | 2005 11 25 | G96 | 0.1− | 0.2+ |
| 2003 03 06 | 699 | 1.0− | 0.8+ | 2004 08 11 | 704 | 0.2+ | 0.2+ | 2005 12 25 | G96 | 0.0 | 0.6− |
| 2003 03 06 | 699 | 0.3− | 0.8+ | 2004 08 11 | 704 | 1.2+ | 0.7− | 2005 12 25 | G96 | 0.0 | 0.0 |
| 2003 03 06 | 699 | 0.2+ | 0.5+ | 2005 10 27 | G96 | 0.3+ | 0.2+ | 2005 12 25 | G96 | 0.5− | 0.3− |
| 2003 03 06 | 699 | 1.1+ | 0.3+ | 2005 10 27 | G96 | 0.1− | 0.2− | 2005 12 25 | G96 | 0.1+ | 0.1− |
| 2003 03 07 | 704 | 0.7+ | 0.2+ | 2005 10 27 | G96 | 0.1− | 0.2+ | 2006 01 06 | G96 | 0.9+ | 0.0 |
| 2003 03 07 | 704 | 0.2+ | 0.3− | 2005 10 27 | G96 | 0.4+ | 0.2+ | 2006 01 06 | G96 | 0.0 | 0.3− |
| 2003 03 07 | 704 | 0.1+ | 0.3− | 2005 11 10 | G96 | 0.2− | 0.4+ | 2006 01 06 | G96 | 0.3− | 0.1+ |
| 2003 03 07 | 704 | 0.0 | 0.2+ | 2005 11 10 | G96 | 0.1+ | 0.2+ | 2006 01 06 | G96 | 0.0 | 0.0 |
| 2004 08 10 | 599 | 0.2− | 0.2+ | 2005 11 10 | G96 | 0.4− | 0.2− | | | | |
| 2004 08 10 | 599 | 0.5− | 0.5+ | 2005 11 10 | G96 | 0.1− | 0.1+ | | | | |

### 2003 $DF_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.56905 | | (2000.0) | | | |
| $n$ | 0.26510869 | $\omega$ | 348.03460 | | −0.96240103 | −0.27153183 |
| $a$ | 2.3998646 | $\Omega$ | 176.18593 | | +0.25749018 | −0.92062903 |
| $e$ | 0.0884611 | $i$ | 6.38535 | | +0.08650474 | −0.28055776 |
| $P$ | 3.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 09 | 691 | 0.3− | 0.3+ | 2003 03 06 | 699 | 0.3− | 0.4+ | 2003 04 03 | 699 | 1.7− | 0.9+ |
| 1997 10 09 | 691 | 0.1− | 0.8+ | 2003 03 06 | 699 | 0.7+ | 0.0 | 2003 04 05 | 691 | 0.1− | 0.7+ |
| 1997 10 09 | 691 | 0.1− | 0.3+ | 2003 03 06 | 699 | 0.0 | 0.7+ | 2003 04 05 | 691 | 0.4− | 0.2+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 03 06 | 644 | 0.6+ | 0.2+ | 2003 04 05 | 691 | 0.4− | 0.1− |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 03 06 | 644 | 0.1+ | 0.0 | 2005 10 25 | 703 | 0.9− | 0.2+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2003 03 06 | 644 | 0.2+ | 0.3+ | 2005 10 25 | 703 | 0.6− | 2.5− |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2003 03 24 | 691 | 0.5+ | 0.2+ | 2005 10 25 | 703 | 1.3+ | 0.3+ |
| 2003 02 23 | 699 | 0.1+ | 0.1+ | 2003 03 24 | 691 | 0.4+ | 0.3+ | 2005 10 25 | 703 | 1.5− | 1.3− |
| 2003 02 23 | 699 | 0.4− | 0.4− | 2003 03 24 | 691 | 0.4+ | 0.2+ | 2005 11 10 | 703 | 0.1+ | 0.6+ |
| 2003 02 23 | 699 | 1.0− | 0.5+ | 2003 04 03 | 699 | 0.1+ | 0.7− | 2005 11 10 | 703 | 0.5− | 1.6+ |
| 2003 02 23 | 699 | 0.2− | 0.6− | 2003 04 03 | 699 | 1.0+ | 0.6− | 2005 11 10 | 703 | 1.4+ | 0.4+ |
| 2003 03 06 | 699 | 0.4− | 0.6− | 2003 04 03 | 699 | 0.6+ | 1.4− | 2005 11 10 | 703 | 0.4+ | 0.4− |

### 2003 $DG_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 182.14242 | | (2000.0) | | | |
| $n$ | 0.17847577 | $\omega$ | 206.85210 | | −0.61634929 | +0.77864764 |
| $a$ | 3.1242795 | $\Omega$ | 25.63104 | | −0.66482843 | −0.43451232 |
| $e$ | 0.1148407 | $i$ | 15.77014 | | −0.42203876 | −0.45266643 |
| $P$ | 5.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 28 | 704 | 1.0+ | 0.1− | 2003 04 01 | 704 | 0.5+ | 0.6− | 2005 09 13 | 703 | 0.4+ | 0.2+ |
| 2003 02 28 | 704 | 0.0 | 1.4+ | 2003 04 01 | 704 | 0.9+ | 0.7+ | 2005 09 13 | 703 | 1.1+ | 0.4+ |
| 2003 02 28 | 704 | 1.1+ | 0.2− | 2003 04 01 | 704 | 1.1+ | 0.4+ | 2005 09 28 | 644 | 0.8+ | 0.1+ |
| 2003 02 28 | 704 | 0.3− | 0.7− | 2003 04 01 | 704 | 0.2+ | 0.4+ | 2005 09 28 | 644 | 0.9+ | 0.1+ |
| 2003 02 28 | 704 | 0.3+ | 0.6+ | 2005 08 27 | 699 | 0.4+ | 0.4− | 2005 09 28 | 644 | 1.0+ | 0.3+ |
| 2003 03 07 | 699 | 0.7− | 0.1− | 2005 08 27 | 699 | 1.2− | 0.4− | 2005 10 05 | 703 | 0.5+ | 1.9− |
| 2003 03 07 | 699 | 0.3− | 0.6+ | 2005 08 27 | 699 | 0.2− | 0.3− | 2005 10 05 | 703 | 0.2− | 0.0 |
| 2003 03 07 | 699 | 0.8− | 1.0− | 2005 08 27 | 699 | 0.8+ | 1.2+ | 2005 10 05 | 703 | 1.5− | 1.5− |
| 2003 03 07 | 699 | 0.9+ | 1.4+ | 2005 09 03 | 703 | 0.5− | 0.7− | 2005 10 05 | 703 | 1.1− | 0.5+ |
| 2003 03 25 | 644 | 0.2+ | 0.3+ | 2005 09 03 | 703 | 0.7+ | 0.6− | 2005 10 25 | G96 | 0.7+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 25 | 644 | 0.0 | 0.2+ | 2005 09 03 | 703 | 0.7− | 1.0+ | 2005 10 25 | G96 | 0.7+ | 0.2+ |
| 2003 03 25 | 644 | 0.0 | 0.1+ | 2005 09 03 | 703 | 0.5− | 0.9− | 2005 10 25 | G96 | 0.6+ | 0.2+ |
| 2003 03 31 | 645 | 0.1− | 0.1− | 2005 09 13 | 703 | 1.2− | 0.1− | 2005 10 25 | G96 | 0.6+ | 0.3+ |
| 2003 03 31 | 645 | 0.1− | 0.1− | 2005 09 13 | 703 | 0.4− | 0.2+ | | | | |

**2003 DH$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.45395 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26127810 | $\omega$ | 137.87965 | | −0.87622326 | +0.46733539 | |
| $a$ | 2.4232639 | $\Omega$ | 70.33680 | | −0.46872748 | −0.76981595 | |
| $e$ | 0.0823550 | $i$ | 7.17413 | | −0.11192562 | −0.43471949 | |
| $P$ | 3.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.7+ | 0.2− | 2003 03 23 | 644 | 0.0 | 0.4+ | 2005 11 25 | G96 | 0.2+ | 0.0 |
| 2001 11 20 | 704 | 0.6− | 0.1− | 2005 10 25 | G96 | 0.1+ | 0.2− | 2005 12 02 | G96 | 0.4+ | 0.3+ |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2005 10 25 | G96 | 0.1+ | 0.5− | 2005 12 02 | G96 | 0.6+ | 0.0 |
| 2001 11 20 | 704 | 0.2+ | 0.3− | 2005 10 25 | G96 | 0.3− | 0.6− | 2005 12 02 | G96 | 0.2+ | 0.1+ |
| 2003 02 28 | 704 | 0.4− | 0.2+ | 2005 10 25 | G96 | 0.3+ | 0.8− | 2005 12 02 | G96 | 0.0 | 0.2+ |
| 2003 02 28 | 704 | 0.7+ | 0.2+ | 2005 11 05 | 691 | 0.3− | 0.1+ | 2005 12 28 | G96 | 0.5+ | 0.1+ |
| 2003 02 28 | 704 | 0.7− | 0.6+ | 2005 11 05 | 691 | 0.0 | 0.1− | 2005 12 28 | G96 | 0.1+ | 0.1− |
| 2003 02 28 | 704 | 0.9+ | 0.1− | 2005 11 05 | 691 | 0.0 | 0.1+ | 2005 12 28 | G96 | 0.4+ | 0.3− |
| 2003 03 11 | 704 | 1.2+ | 0.6− | 2005 11 22 | 691 | 0.0 | 0.3+ | 2005 12 28 | G96 | 0.3− | 0.4− |
| 2003 03 11 | 704 | 0.6− | 1.3− | 2005 11 22 | 691 | 0.2− | 0.4+ | 2006 01 23 | G96 | 0.1+ | 0.2− |
| 2003 03 11 | 704 | 1.0− | 0.1− | 2005 11 22 | 691 | 0.1+ | 0.2+ | 2006 01 23 | G96 | 0.2+ | 0.6− |
| 2003 03 23 | 644 | 0.2+ | 0.3+ | 2005 11 25 | G96 | 0.3− | 0.2− | 2006 01 23 | G96 | 0.2− | 0.0 |
| 2003 03 23 | 644 | 0.2− | 0.5+ | 2005 11 25 | G96 | 0.2− | 0.1− | 2006 01 23 | G96 | 0.0 | 0.4− |

**2003 DK$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.97872 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23253125 | $\omega$ | 111.73353 | | −0.76156902 | +0.59460294 | |
| $a$ | 2.6190784 | $\Omega$ | 105.68417 | | −0.64800909 | −0.69260231 | |
| $e$ | 0.2421653 | $i$ | 15.53151 | | −0.00984105 | −0.40834958 | |
| $P$ | 4.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 10 | 704 | 0.9− | 1.0+ | 2003 02 21 | 644 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.7+ | 0.3− |
| 1999 04 10 | 704 | 0.1− | 0.3+ | 2003 02 26 | 704 | (2.0− | 1.2+) | 2006 10 21 | G96 | 1.1+ | 0.1+ |
| 1999 04 10 | 704 | 0.5− | 0.1− | 2003 02 26 | 704 | (2.2− | 0.6+) | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 1999 04 10 | 704 | 0.6− | 0.8+ | 2003 02 26 | 704 | (2.1− | 1.4+) | 2006 11 15 | G96 | 0.7+ | 0.4− |
| 1999 04 10 | 704 | 0.2+ | 0.1+ | 2003 03 09 | 644 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 1999 05 14 | 704 | 0.0 | 0.3− | 2003 03 09 | 644 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 1999 05 14 | 704 | 0.8+ | 0.4− | 2003 03 09 | 644 | 0.1+ | 0.0 | 2006 11 28 | G96 | 0.4− | 0.3− |
| 1999 05 14 | 704 | 0.9+ | 1.6− | 2003 03 21 | 644 | 0.3+ | 0.3+ | 2006 11 28 | G96 | 0.9− | 0.3+ |
| 1999 05 14 | 704 | 0.0 | 1.0− | 2003 03 21 | 644 | 0.0 | 0.2− | 2006 11 28 | G96 | 0.4− | 0.1+ |
| 1999 05 14 | 704 | 0.2+ | 1.0+ | 2003 03 21 | 644 | 0.2− | 0.0 | 2006 11 28 | G96 | 0.5− | 0.5+ |
| 2003 02 21 | 644 | 0.0 | 0.2− | 2003 04 01 | 644 | 0.1− | 0.3− | 2006 11 28 | G96 | 0.1− | 0.2+ |
| 2003 02 21 | 644 | 0.0 | 0.0 | 2003 04 01 | 644 | 0.2− | 0.1− | 2006 11 28 | G96 | 0.6− | 0.5+ |
| 2003 02 21 | 644 | 0.2+ | 0.0 | 2003 04 01 | 644 | 0.2− | 0.1− | 2006 11 28 | G96 | 0.1− | 0.1− |
| 2003 02 21 | 644 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2+ | 2006 11 28 | G96 | 0.2− | 0.2+ |
| 2003 02 21 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 1.1− | | | | |

**2003 DL$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.83822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17703332 | $\omega$ | 104.67192 | | −0.77032745 | +0.57662718 | |
| $a$ | 3.1412274 | $\Omega$ | 111.26690 | | −0.63685107 | −0.71708082 | |
| $e$ | 0.1704105 | $i$ | 16.98365 | | +0.03187987 | −0.39153058 | |
| $P$ | 5.57 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 704 | 0.7+ | 0.6− | 2003 02 21 | 644 | 0.2− | 0.0 | 2003 03 22 | 644 | 0.3+ | 0.6+ |
| 1998 04 28 | 704 | 0.6+ | 0.5− | 2003 02 26 | 704 | 0.4+ | 0.3+ | 2003 03 22 | 644 | 0.1− | 0.6+ |
| 1998 04 28 | 704 | 0.5+ | 0.9− | 2003 02 26 | 704 | 0.3+ | 0.1− | 2003 04 02 | 644 | 0.0 | 0.0 |
| 1998 04 28 | 704 | 0.1+ | 1.2+ | 2003 02 26 | 704 | 0.4+ | 0.4− | 2003 04 02 | 644 | 0.1− | 0.1− |
| 1998 04 28 | 704 | 0.4− | 0.2− | 2003 03 08 | 699 | 0.5− | 1.0− | 2003 04 02 | 644 | 0.2− | 0.0 |
| 1998 05 23 | 704 | 0.2+ | 0.2− | 2003 03 08 | 699 | 0.5− | 0.1+ | 2003 04 08 | 644 | 0.4− | 0.6− |
| 1998 05 23 | 704 | 0.7− | 1.5− | 2003 03 08 | 699 | 0.1+ | 0.3− | 2003 04 08 | 644 | 0.0 | 1.1+ |
| 1998 05 23 | 704 | 0.8− | 0.8+ | 2003 03 08 | 699 | 0.2+ | 0.2+ | 2003 04 08 | 644 | 0.2− | 0.7− |
| 1998 05 23 | 704 | 1.4− | 0.5+ | 2003 03 08 | 644 | 0.2− | 0.8− | 2003 04 08 | 644 | 0.2+ | 1.1+ |
| 1998 05 23 | 704 | 1.1+ | 1.2+ | 2003 03 08 | 644 | 0.2− | 0.8− | 2003 04 08 | 644 | 0.1+ | 0.4− |
| 2003 02 21 | 644 | 0.1+ | 0.2+ | 2003 03 08 | 644 | 0.0 | 0.8− | 2003 04 08 | 644 | 0.1− | 1.1+ |
| 2003 02 21 | 644 | 0.4+ | 0.3+ | 2003 03 22 | 644 | 0.0 | 0.8+ | | | | |

**2003 DM$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.07420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26052817 | $\omega$ | 143.31212 | | −0.85681611 | −0.51561848 | |
| $a$ | 2.4279119 | $\Omega$ | 5.65009 | | +0.46828544 | −0.77971978 | |
| $e$ | 0.1334318 | $i$ | 1.12503 | | +0.21581220 | −0.35521069 | |
| $P$ | 3.78 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.1− | 0.3+ | 2003 03 08 | 291 | 0.7− | 0.1− | 2003 04 09 | 691 | 0.1− | 0.8+ |
| 2001 09 12 | 695 | 0.4+ | 0.4+ | 2003 03 08 | 291 | 0.6− | 0.2+ | 2005 10 05 | 691 | 0.3+ | 0.1+ |
| 2001 09 19 | 691 | 0.2− | 0.1− | 2003 03 09 | 704 | (2.6+ | 0.1+) | 2005 10 05 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 691 | 0.5− | 0.6+ | 2003 03 09 | 704 | 0.8+ | 0.1− | 2005 10 05 | 691 | 0.0 | 0.4+ |
| 2001 09 19 | 691 | 0.0 | 0.2− | 2003 03 09 | 704 | 0.3− | 0.1− | 2005 10 27 | G96 | 0.2+ | 0.6− |
| 2001 10 15 | 291 | 0.2+ | 0.1+ | 2003 03 09 | 704 | 1.1+ | 0.4+ | 2005 10 27 | G96 | 0.1+ | 0.0 |
| 2001 10 15 | 291 | 0.1+ | 0.3+ | 2003 03 09 | 704 | (1.6+ | 1.0−) | 2005 10 27 | G96 | 0.3− | 0.6− |
| 2001 10 15 | 291 | 0.2− | 0.0 | 2003 03 31 | 691 | 0.8+ | 0.0 | 2005 10 27 | G96 | 0.3− | 0.4− |
| 2003 02 22 | 291 | 0.2− | 0.2− | 2003 03 31 | 691 | 0.3+ | 0.2+ | 2005 10 28 | G96 | 0.3+ | 0.1− |
| 2003 02 22 | 291 | 0.0 | 0.4− | 2003 03 31 | 691 | 0.7+ | 0.1+ | 2005 10 28 | G96 | 0.7− | 0.0 |
| 2003 02 22 | 291 | 0.2+ | 0.1− | 2003 04 09 | 691 | 0.3+ | 0.3+ | 2005 10 28 | G96 | 0.3− | 0.3+ |
| 2003 03 08 | 291 | 0.6− | 0.2− | 2003 04 09 | 691 | 0.1− | 0.3+ | 2005 10 28 | G96 | 0.3− | 0.1− |

**2003 DN$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.51842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27997341 | $\omega$ | 170.97383 | | −0.93270173 | −0.35978357 | |
| $a$ | 2.3141501 | $\Omega$ | 347.84912 | | +0.32304626 | −0.80267548 | |
| $e$ | 0.0775921 | $i$ | 6.81172 | | +0.16033901 | −0.47567621 | |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.2+ | 0.4+ | 2003 02 22 | 644 | 0.0 | 0.3+ | 2003 03 07 | 699 | 0.0 | 0.8+ |
| 2001 09 28 | 644 | 0.2+ | 0.3− | 2003 02 28 | 704 | 0.6− | 0.1+ | 2003 03 07 | 699 | 0.3− | 1.1− |
| 2001 09 28 | 644 | 0.1− | 0.6+ | 2003 02 28 | 704 | 0.1− | 0.2− | 2003 03 07 | 699 | 0.9+ | 0.8− |
| 2001 10 21 | 704 | 0.3− | 1.1− | 2003 02 28 | 704 | 0.6+ | 0.1+ | 2003 03 31 | 645 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.2− | 0.0 | 2003 02 28 | 704 | 0.6− | 0.0 | 2003 03 31 | 645 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.2+ | 0.6+ | 2003 03 06 | 644 | 0.4+ | 0.4+ | 2003 04 01 | 291 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.2− | 0.2− | 2003 03 06 | 644 | 0.2+ | 0.4+ | 2003 04 01 | 291 | 0.2+ | 0.3+ |
| 2003 02 22 | 644 | 0.1+ | 0.3+ | 2003 03 06 | 644 | 0.1+ | 0.4+ | 2003 04 01 | 291 | 0.4+ | 0.3+ |
| 2003 02 22 | 644 | 0.2+ | 0.2+ | 2003 03 07 | 699 | 1.0− | 1.5− | | | | |

**2003 DO$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.27461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24213467 | $\omega$ | 67.26526 | | −0.80951529 | +0.56940323 | |
| $a$ | 2.5493613 | $\Omega$ | 146.93083 | | −0.58702914 | −0.78877636 | |
| $e$ | 0.0538188 | $i$ | 15.19913 | | +0.00904407 | −0.23154225 | |
| $P$ | 4.07 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2003 03 10 | 644 | 0.2+ | 0.0 | 2003 04 04 | 691 | 0.2− | 0.5+ |
| 2002 01 13 | 645 | 0.1− | 0.1+ | 2003 03 10 | 644 | 0.1+ | 0.1+ | 2003 04 10 | 644 | 0.1+ | 0.3+ |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2003 03 10 | 644 | 0.3+ | 0.1− | 2003 04 10 | 644 | 0.4+ | 0.1− |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2003 03 20 | 644 | 1.0+ | 0.0 | 2003 04 10 | 644 | 0.2+ | 0.2+ |
| 2003 02 22 | 644 | 0.2+ | 0.5+ | 2003 03 20 | 644 | 0.5+ | 0.2− | 2004 06 22 | 691 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 22 | 644 | 0.3+ | 0.3+ | 2003 03 20 | 644 | 0.5+ | 0.4+ | 2004 06 22 | 691 | 0.1+ | 0.4+ | | |
| 2003 02 22 | 644 | 0.4− | 0.4+ | 2003 03 25 | 644 | 0.4+ | 0.3− | 2004 06 22 | 691 | 0.3+ | 0.5+ | | |
| 2003 03 06 | 699 | 0.9− | 0.6+ | 2003 03 25 | 644 | 0.1− | 0.2− | 2004 08 12 | 704 | 0.5− | 1.1+ | | |
| 2003 03 06 | 699 | 0.5− | 1.3− | 2003 03 25 | 644 | 0.5+ | 0.2− | 2004 08 12 | 704 | 0.6− | 0.7+ | | |
| 2003 03 06 | 699 | 0.2− | 0.5+ | 2003 04 04 | 691 | 0.2− | 0.3+ | 2004 08 12 | 704 | 0.9− | 0.9+ | | |
| 2003 03 06 | 699 | (2.0+ | 2.5−) | 2003 04 04 | 691 | 0.1− | 0.5+ | | | | | | |

**2003 DP$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.66372 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17779359 | $\omega$ | 355.96421 | | −0.68124592 | −0.72840373 | |
| $a$ | 3.1322661 | $\Omega$ | 136.95530 | | +0.67460640 | −0.66338792 | |
| $e$ | 0.0978604 | $i$ | 6.14120 | | +0.28427135 | −0.17130230 | |
| $P$ | 5.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 807 | 0.3− | 0.8+ | 2003 02 27 | 599 | 0.3− | 0.2− | 2003 04 04 | 691 | 0.3+ | 0.2+ | | |
| 2000 08 25 | 807 | 0.3− | 0.7+ | 2003 02 27 | 599 | 0.2− | 0.1− | 2003 04 04 | 691 | 0.2− | 0.0 | | |
| 2001 11 17 | 704 | 1.0+ | 0.5+ | 2003 03 06 | 699 | 0.4+ | 1.0+ | 2006 10 03 | G96 | 0.4− | 0.3+ | | |
| 2001 11 17 | 704 | 0.3+ | 0.7− | 2003 03 06 | 699 | (1.6+ | 2.0+) | 2006 10 03 | G96 | 0.4− | 0.2+ | | |
| 2001 11 17 | 704 | 0.2− | 0.2+ | 2003 03 06 | 699 | 0.4− | 0.6+ | 2006 10 03 | G96 | 0.1− | 0.1+ | | |
| 2001 11 17 | 704 | 0.6− | 0.5− | 2003 03 06 | 699 | 0.5+ | 1.1− | 2006 10 03 | G96 | 0.1− | 0.1+ | | |
| 2001 12 18 | 704 | 0.6+ | 0.7− | 2003 03 11 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | (3.4+ | 0.8−) | | |
| 2001 12 18 | 704 | 0.0 | 0.2− | 2003 03 11 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | (1.7− | 1.6+) | | |
| 2001 12 18 | 704 | 0.7− | 0.1+ | 2003 03 11 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | (2.8− | 2.3−) | | |
| 2003 02 22 | 644 | 0.1+ | 0.4+ | 2003 03 26 | 699 | 0.1+ | 0.3− | 2006 10 16 | 703 | (1.9− | 1.8+) | | |
| 2003 02 22 | 644 | 0.0 | 0.2+ | 2003 03 26 | 699 | (1.1+ | 1.6−) | 2006 11 24 | G96 | 0.0 | 0.3+ | | |
| 2003 02 22 | 644 | 0.1+ | 0.7+ | 2003 03 26 | 699 | 0.5+ | 0.6− | 2006 11 24 | G96 | 0.1+ | 0.3+ | | |
| 2003 02 27 | 599 | 0.2− | 0.1+ | 2003 03 26 | 699 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.2+ | | |
| 2003 02 27 | 599 | 0.2− | 0.1− | 2003 04 04 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.5+ | | |

**2003 DU$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.41861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27697037 | $\omega$ | 241.96313 | | −0.77438245 | +0.63261782 | |
| $a$ | 2.3308474 | $\Omega$ | 337.27470 | | −0.56980561 | −0.70500212 | |
| $e$ | 0.1401827 | $i$ | 1.66847 | | −0.27505160 | −0.32057247 | |
| $P$ | 3.56 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 23 | 291 | 0.6+ | 0.1− | 2003 03 07 | 291 | 0.2− | 0.3+ | 2005 12 27 | G96 | 0.0 | 0.2− | | |
| 2003 02 23 | 291 | 0.1+ | 0.3− | 2003 03 07 | 291 | 0.3− | 0.7+ | 2006 01 25 | G96 | 0.4− | 0.0 | | |
| 2003 02 23 | 291 | 0.3− | 0.7− | 2003 03 31 | 645 | 0.0 | 0.1− | 2006 01 25 | G96 | 0.6+ | 0.0 | | |
| 2003 02 28 | 608 | 0.0 | 0.1− | 2003 03 31 | 645 | 0.0 | 0.0 | 2006 01 25 | G96 | 0.3+ | 0.1− | | |
| 2003 02 28 | 608 | 0.2− | 0.6+ | 2005 12 27 | G96 | 0.1− | 0.1+ | 2006 01 25 | G96 | 0.2− | 0.6− | | |
| 2003 02 28 | 608 | 0.2+ | 0.1+ | 2005 12 27 | G96 | 0.6− | 0.2+ | | | | | | |
| 2003 03 07 | 291 | 0.3+ | 0.6+ | 2005 12 27 | G96 | 0.4+ | 0.4+ | | | | | | |

**2003 EY**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.47377 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27344995 | $\omega$ | 161.07676 | | −0.99181023 | +0.11496297 | |
| $a$ | 2.3508097 | $\Omega$ | 25.72019 | | −0.12733696 | −0.85633645 | |
| $e$ | 0.2160428 | $i$ | 7.36636 | | −0.00988793 | −0.50345943 | |
| $P$ | 3.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 691 | 0.0 | 0.4+ | 2003 03 26 | 699 | 0.4− | 0.1− | 2003 04 09 | 704 | 0.4− | 0.5+ | | |
| 2001 11 12 | 691 | 0.2− | 0.2+ | 2003 03 26 | 699 | 0.6− | 0.2− | 2003 04 09 | 704 | 0.1− | 0.1− | | |
| 2001 11 12 | 691 | 0.2− | 0.3+ | 2003 03 26 | 152 | 0.6− | 0.4+ | 2003 04 09 | 704 | 0.1+ | 0.1+ | | |
| 2003 01 28 | 704 | 1.5− | 1.3+ | 2003 03 26 | 152 | 0.8− | 0.4− | 2003 04 09 | 704 | 0.4− | 0.1+ | | |
| 2003 01 28 | 704 | 1.0− | 0.6+ | 2003 03 26 | 152 | 0.9− | 0.1− | 2003 04 09 | 704 | 0.6− | 0.1+ | | |
| 2003 01 28 | 704 | 0.7− | 1.4+ | 2003 03 26 | 152 | 1.3− | 0.1− | 2003 04 22 | 703 | 0.7+ | 0.4− | | |
| 2003 01 28 | 704 | 0.6− | 0.1+ | 2003 03 27 | 704 | 0.8+ | 0.0 | 2003 04 22 | 703 | 0.6− | 0.3+ | | |
| 2003 03 05 | 704 | 0.0 | 0.0 | 2003 03 27 | 704 | 0.2+ | 0.1− | 2003 04 22 | 703 | 0.5+ | 0.1+ | | |
| 2003 03 05 | 704 | 0.3− | 1.4− | 2003 03 27 | 704 | 1.1+ | 0.3− | 2003 04 22 | 703 | 0.3− | 0.0 | | |
| 2003 03 05 | 704 | 0.8− | 0.4+ | 2003 03 27 | 704 | 0.4+ | 0.0 | 2003 04 26 | 704 | 1.4+ | 0.6+ | | |
| 2003 03 05 | 704 | 1.5+ | 0.6− | 2003 03 27 | 704 | 0.1− | 0.5+ | 2003 04 26 | 699 | 0.9− | 0.6− | | |
| 2003 03 05 | 704 | 0.3+ | 0.3+ | 2003 03 27 | 152 | 0.7+ | 0.0 | 2003 04 26 | 704 | 0.8+ | 0.9+ | | |
| 2003 03 06 | 704 | 1.3− | 0.8+ | 2003 03 27 | 152 | 1.2− | 0.3− | 2003 04 26 | 699 | 0.7− | 0.2− | | |
| 2003 03 06 | 704 | 1.2+ | 0.5+ | 2003 03 27 | 152 | 1.1− | 0.1− | 2003 04 26 | 699 | 0.3+ | 0.5− | | |
| 2003 03 06 | 704 | 0.1− | 0.4− | 2003 03 27 | 152 | (3.1+ | 4.0+) | 2003 04 26 | 704 | 0.3+ | 0.1− | | |
| 2003 03 06 | 704 | 0.3+ | 0.2− | 2003 03 27 | 152 | 0.6− | 0.0 | 2003 04 26 | 699 | 0.1− | 0.6− | | |
| 2003 03 06 | 704 | 0.3− | 1.1− | 2003 03 27 | 152 | (2.4+ | 4.4+) | 2003 04 26 | 704 | (0.0 | 2.0−) | | |
| 2003 03 09 | 704 | 0.1− | 1.8− | 2003 03 27 | 636 | 0.0 | 0.2− | 2003 04 29 | 704 | 0.1+ | 0.9+ | | |
| 2003 03 09 | 704 | 0.4− | 2.0− | 2003 03 27 | 636 | 0.0 | 0.2− | 2003 04 29 | 704 | 0.0 | 0.3− | | |
| 2003 03 09 | 704 | (0.2− | 2.4−) | 2003 03 30 | 704 | 0.2+ | 0.2+ | 2003 04 29 | 704 | 0.3− | 0.0 | | |
| 2003 03 09 | 704 | 0.1− | 1.9− | 2003 03 30 | 704 | 0.7+ | 0.1− | 2003 04 29 | 704 | 0.2+ | 0.3− | | |
| 2003 03 09 | 704 | (0.1+ | 2.1−) | 2003 03 30 | 704 | 0.1+ | 0.6− | 2003 04 29 | 704 | 0.4− | 0.2− | | |
| 2003 03 11 | 644 | 0.1+ | 0.1+ | 2003 03 30 | 704 | 0.4− | 0.2− | 2003 05 01 | 691 | 0.8+ | 0.6+ | | |
| 2003 03 11 | 644 | 0.0 | 0.1+ | 2003 03 30 | 704 | 0.5+ | 1.1− | 2003 05 01 | 691 | 0.4+ | 0.7+ | | |
| 2003 03 11 | 644 | 0.3+ | 0.1+ | 2003 03 31 | 704 | 0.9+ | 0.9+ | 2003 05 01 | 691 | 0.5+ | 0.6+ | | |
| 2003 03 12 | 644 | 0.0 | 0.1+ | 2003 03 31 | 704 | 1.0+ | 0.3+ | 2005 12 01 | 644 | 0.2− | 0.2+ | | |
| 2003 03 12 | 644 | 0.0 | 0.2+ | 2003 03 31 | 704 | 0.3+ | 0.7+ | 2005 12 01 | 644 | 0.2− | 0.3+ | | |
| 2003 03 12 | 644 | 0.1+ | 0.2+ | 2003 03 31 | 704 | 0.5+ | 0.7+ | 2005 12 01 | 644 | 0.3− | 0.1− | | |
| 2003 03 16 | 608 | 0.7+ | 0.1− | 2003 03 31 | 704 | 0.4+ | 0.3+ | 2005 12 01 | 644 | 0.3− | 0.6+ | | |
| 2003 03 16 | 608 | 0.8+ | 0.1− | 2003 04 05 | 699 | 0.6− | 0.4− | 2005 12 01 | 644 | 0.2− | 0.0 | | |
| 2003 03 16 | 608 | 0.6+ | 0.1− | 2003 04 05 | 699 | 0.3− | 0.6+ | 2005 12 01 | 644 | 0.7+ | 0.7+ | | |
| 2003 03 26 | 699 | 0.4− | 0.1+ | 2003 04 05 | 699 | 1.4− | 1.3+ | | | | | | |
| 2003 03 26 | 699 | 0.1− | 0.4− | 2003 04 05 | 699 | 0.6− | 0.5− | | | | | | |

**2003 EW$_1$ = 2006 SB$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.12904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17855936 | $\omega$ | 111.18458 | | −0.46839652 | −0.88320858 | |
| $a$ | 3.1233043 | $\Omega$ | 6.88514 | | +0.72085331 | −0.39733612 | |
| $e$ | 0.0547599 | $i$ | 11.25358 | | +0.51085732 | −0.24913172 | |
| $P$ | 5.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 03 | 644 | 0.1− | 0.1+ | 2003 03 08 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2003 03 03 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.3− | | |
| 2003 03 03 | 644 | 0.2− | 0.7− | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.3− | | |
| 2003 03 07 | 644 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2+ | | |
| 2003 03 07 | 644 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 1.0− | 1.4+ | | |
| 2003 03 07 | 644 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2003 03 08 | 704 | 0.4− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2003 03 08 | 704 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.2+ | | |
| 2003 03 08 | 704 | 0.3− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1− | 0.2− | | |

**2003 EO$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.17049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23368916 | $\omega$ | 95.87003 | | −0.37357901 | −0.91629178 | |
| $a$ | 2.6104197 | $\Omega$ | 18.25096 | | +0.55732640 | −0.34615075 | |
| $e$ | 0.4074149 | $i$ | 27.45430 | | +0.74150253 | −0.20146718 | |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 809 | 1.2− | 1.3+ | 2003 03 08 | 734 | 0.3+ | 0.5+ | 2003 04 06 | 691 | 0.3− | 0.6+ | | |
| 1993 10 12 | 809 | 1.5− | 1.5+ | 2003 03 08 | 850 | 0.3+ | 0.5+ | 2003 04 06 | 691 | 0.0 | 0.5+ | | |
| 1993 10 12 | 809 | 1.8− | 1.0+ | 2003 03 08 | 850 | 0.9− | 0.2− | 2003 04 07 | 704 | 0.4+ | 0.6+ | | |
| 2003 01 29 | 683 | (0.5− | 2.4+) | 2003 03 08 | 704 | 0.6+ | 0.4+ | 2003 04 07 | 333 | 0.0 | 0.5− | | |
| 2003 01 29 | 683 | 0.2+ | 0.2− | 2003 03 08 | 704 | 0.2+ | 1.3+ | 2003 04 07 | 704 | 0.3+ | 0.6+ | | |
| 2003 01 29 | 683 | 0.3+ | 0.7− | 2003 03 08 | 704 | 0.5− | 0.4− | 2003 04 07 | 704 | 0.3+ | 0.2+ | | |
| 2003 02 06 | 704 | 1.3+ | 0.4+ | 2003 03 08 | 734 | 0.6− | 0.3− | 2003 04 07 | 704 | (2.1+ | 0.3−) | | |
| 2003 02 06 | 704 | 0.7+ | 0.7− | 2003 03 08 | 850 | 0.8+ | 0.2+ | 2003 04 07 | 333 | 0.7− | 0.9− | | |
| 2003 02 06 | 704 | 1.1+ | 0.6+ | 2003 03 08 | 704 | 0.3+ | 1.2+ | 2003 04 07 | 704 | 0.2+ | 0.7+ | | |
| 2003 02 06 | 704 | 1.4− | 0.4− | 2003 03 08 | 704 | 0.2+ | 0.4− | 2003 04 08 | 704 | 0.2+ | 0.4+ | | |
| 2003 03 06 | 704 | 1.3− | 0.9+ | 2003 03 08 | 704 | 0.1− | 0.2− | 2003 04 08 | 704 | 0.0 | 0.2+ | | |
| 2003 03 06 | 704 | 0.3− | 0.2+ | 2003 03 08 | 704 | 0.2− | 0.1− | 2003 04 08 | 704 | 0.6+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 704 | 0.8− | 0.5− | 2003 03 08 | 704 | 0.3+ | 0.4+ | 2003 04 08 | 704 | 0.4+ | 0.1+ | | |
| 2003 03 06 | 704 | 0.5− | 0.2+ | 2003 03 08 | 926 | 0.0 | 0.0 | 2003 04 08 | 704 | 0.2+ | 0.7+ | | |
| 2003 03 06 | 704 | 0.1+ | 0.7+ | 2003 03 08 | 926 | 0.3+ | 0.2− | 2003 04 09 | 644 | 0.3+ | 1.0− | | |
| 2003 03 07 | 615 | 0.3− | 0.3− | 2003 03 08 | 926 | 0.1+ | 1.1+ | 2003 04 09 | 644 | 0.1+ | 0.9− | | |
| 2003 03 07 | 615 | 0.0 | 0.5− | 2003 03 10 | 704 | 0.7+ | 0.2+ | 2003 04 09 | 644 | 0.1+ | 1.0− | | |
| 2003 03 07 | 615 | 0.1− | 0.3− | 2003 03 10 | 704 | 0.1− | 0.6+ | 2003 04 20 | 608 | 0.1+ | 0.2− | | |
| 2003 03 07 | 615 | 0.1− | 0.4− | 2003 03 10 | 704 | 0.7+ | 0.4+ | 2003 04 20 | 608 | 0.7+ | 0.6− | | |
| 2003 03 07 | 734 | 0.4+ | 0.2− | 2003 03 10 | 704 | 0.1− | 0.8+ | 2003 04 20 | 608 | 0.3+ | 0.4− | | |
| 2003 03 07 | 734 | 0.2+ | 0.1− | 2003 03 10 | 704 | 0.4+ | 0.5+ | 2003 04 26 | 608 | 0.5+ | 0.1− | | |
| 2003 03 07 | 704 | 0.6+ | 0.1− | 2003 03 12 | 704 | 0.7+ | 1.0+ | 2003 04 26 | 608 | 0.6+ | 0.1+ | | |
| 2003 03 07 | 446 | 0.2− | 0.1+ | 2003 03 12 | 704 | 0.2+ | 1.1+ | 2003 04 26 | 608 | 0.8+ | 0.4− | | |
| 2003 03 07 | 704 | 0.2+ | 0.6+ | 2003 03 12 | 704 | 0.5+ | 0.9+ | 2003 04 28 | 699 | 0.1− | 0.5− | | |
| 2003 03 07 | 446 | 0.1− | 0.1− | 2003 03 12 | 704 | 0.0 | 0.8+ | 2003 04 28 | 704 | 0.4− | 0.1− | | |
| 2003 03 07 | 446 | 0.4− | 0.3− | 2003 03 12 | 704 | 0.1+ | 1.0+ | 2003 04 28 | 699 | 0.3+ | 0.8− | | |
| 2003 03 07 | 704 | 0.6+ | 0.1+ | 2003 03 13 | 608 | 0.1+ | 0.4+ | 2003 04 28 | 704 | 0.3− | 0.1− | | |
| 2003 03 07 | 333 | 0.5− | 0.8− | 2003 03 13 | 608 | 0.1+ | 0.8+ | 2003 04 28 | 704 | 0.2− | 0.6− | | |
| 2003 03 07 | 333 | 0.3− | 1.4− | 2003 03 13 | 608 | 0.2+ | 0.2+ | 2003 04 28 | 699 | 0.3− | 0.7− | | |
| 2003 03 07 | 333 | 0.1+ | 0.2− | 2003 03 17 | 608 | 0.2− | 0.0 | 2003 04 28 | 704 | 0.1− | 0.3− | | |
| 2003 03 07 | 446 | 0.1+ | 0.3− | 2003 03 17 | 608 | 0.5− | 0.1− | 2003 04 28 | 704 | 1.5+ | 0.8− | | |
| 2003 03 07 | 333 | 0.3+ | 1.2− | 2003 03 17 | 608 | 0.5− | 0.0 | 2003 04 28 | 699 | 0.0 | 0.3− | | |
| 2003 03 07 | 704 | 0.6+ | 0.5+ | 2003 03 26 | 699 | 0.1− | 0.4− | 2003 05 01 | 704 | (1.7+ | 0.2−) | | |
| 2003 03 07 | 711 | 0.2− | 0.2− | 2003 03 26 | 699 | 0.1− | 0.8− | 2003 05 01 | 704 | (1.7+ | 0.5−) | | |
| 2003 03 07 | 711 | 0.2− | 0.1+ | 2003 03 26 | 699 | 1.0− | 0.2− | 2003 05 01 | 704 | (2.4+ | 0.1−) | | |
| 2003 03 07 | 711 | 0.5− | 0.2− | 2003 03 26 | 699 | 0.4− | 0.9− | 2003 05 01 | 704 | (1.8+ | 0.7+) | | |
| 2003 03 07 | 926 | 0.4− | 0.6− | 2003 03 27 | 644 | 0.0 | 0.1− | 2003 05 01 | 704 | (2.7+ | 0.6+) | | |
| 2003 03 07 | 926 | 0.3− | 0.0 | 2003 03 27 | 644 | 0.3− | 0.0 | 2003 05 03 | 691 | 0.4+ | 0.2+ | | |
| 2003 03 07 | 926 | 0.4− | 0.2− | 2003 03 27 | 644 | 0.2+ | 0.1+ | 2003 05 03 | 691 | 0.7+ | 0.3+ | | |
| 2003 03 07 | 474 | 0.2− | 0.1− | 2003 04 01 | 704 | 0.7+ | 0.0 | 2003 05 03 | 691 | 0.5+ | 0.3+ | | |
| 2003 03 07 | 474 | 0.2− | 0.1− | 2003 04 01 | 704 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.3+ | | |
| 2003 03 07 | 474 | 0.7− | 0.1− | 2003 04 01 | 704 | 0.1− | 0.6− | 2006 10 21 | 703 | 0.1− | 0.3+ | | |
| 2003 03 07 | 474 | 0.5− | 0.2+ | 2003 04 01 | 704 | 0.4+ | 0.3− | 2006 10 21 | 703 | 0.7+ | 0.4+ | | |
| 2003 03 07 | 428 | 1.4− | 1.0− | 2003 04 01 | 704 | 0.5+ | 0.1− | 2006 10 21 | 703 | 0.5− | 0.4+ | | |
| 2003 03 07 | 428 | 0.7+ | 0.5− | 2003 04 06 | 333 | 0.4− | 0.8− | 2006 11 23 | 703 | 0.4− | 0.2+ | | |
| 2003 03 07 | 428 | 0.4+ | 0.3+ | 2003 04 06 | 333 | 0.5− | 0.7− | 2006 11 23 | 703 | 0.1− | 0.4− | | |
| 2003 03 08 | J95 | 0.0 | 0.0 | 2003 04 06 | 333 | 0.8− | 0.7− | 2006 11 23 | 703 | 0.1+ | 0.0 | | |
| 2003 03 08 | J95 | 0.2− | 0.1− | 2003 04 06 | 333 | 0.9− | 0.8− | 2006 11 23 | 703 | 0.0 | 0.1− | | |
| 2003 03 08 | 734 | 0.4− | 0.4− | 2003 04 06 | 691 | 0.4− | 0.8+ | | | | | | |

**2003 EB$_7$ = 1997 ER$_{23}$ = 2006 SD$_{266}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.62039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17182541 | $\omega$ | 300.17998 | | −0.85899507 | +0.50848948 | |
| $a$ | 3.2043833 | $\Omega$ | 270.44300 | | −0.44680791 | −0.80147595 | |
| $e$ | 0.0766402 | $i$ | 3.42358 | | −0.24998033 | −0.31476142 | |
| $P$ | 5.74 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.2− | 0.0 | 2003 03 06 | 699 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.0 | | |
| 1997 03 04 | 691 | 0.3− | 0.3− | 2003 03 07 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.5− | | |
| 1997 03 04 | 691 | 0.5− | 0.1− | 2003 03 07 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.2− | | |
| 1997 03 12 | 691 | 0.3+ | 0.3+ | 2003 03 07 | 704 | 0.8+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ | | |
| 1997 03 12 | 691 | 0.4+ | 0.1− | 2003 03 07 | 704 | 0.6+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− | | |
| 1997 03 12 | 691 | 0.2+ | 0.1− | 2003 03 07 | 704 | 1.1+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.4+ | | |
| 2003 02 23 | 699 | 0.8+ | 0.8+ | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.5+ | | |
| 2003 02 23 | 699 | 0.1− | 0.5− | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | | |
| 2003 02 23 | 699 | 0.3− | 0.6+ | 2006 09 26 | 691 | 0.6− | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.3− | | |
| 2003 02 23 | 699 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.0 | | |
| 2003 03 06 | 699 | 1.0− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.3− | | |
| 2003 03 06 | 699 | (1.6− | 1.2−) | 2006 09 30 | 691 | 0.3− | 0.1− | | | | | | |
| 2003 03 06 | 699 | 1.4− | 1.2− | 2006 10 17 | 691 | 0.0 | 0.0 | | | | | | |

**2003 EP$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.43273 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23606599 | $\omega$ | 359.79815 | | +0.82957649 | +0.54348728 | |
| $a$ | 2.5928682 | $\Omega$ | 326.25169 | | −0.51199184 | +0.64873486 | |
| $e$ | 0.1666000 | $i$ | 13.33759 | | −0.22286143 | +0.53269566 | |
| $P$ | 4.18 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1− | 0.2− | 2003 03 07 | 704 | 0.3− | 0.2+ | 2005 12 04 | 703 | 0.6− | 0.2− | | |
| 2001 09 25 | 704 | 0.9+ | 0.7− | 2003 03 07 | 704 | 0.2− | 0.1− | 2005 12 04 | 703 | 0.8− | 0.1+ | | |
| 2001 09 25 | 704 | 0.1+ | 0.9+ | 2003 03 07 | 704 | 0.6− | 0.5− | 2005 12 04 | 703 | 0.2− | 0.1+ | | |
| 2001 09 25 | 704 | 0.7+ | 0.6− | 2003 03 07 | 704 | 0.8− | 0.2+ | 2005 12 04 | 703 | 0.5− | 0.3+ | | |
| 2001 12 23 | 704 | 0.4− | 0.1+ | 2003 03 07 | 704 | 0.3− | 0.2− | 2005 12 24 | 704 | 0.6− | 0.6− | | |
| 2001 12 23 | 704 | 0.2− | 0.4+ | 2005 11 11 | 704 | 0.4+ | 0.1+ | 2005 12 24 | 704 | 0.1− | 0.6+ | | |
| 2001 12 23 | 704 | 0.7− | 0.7+ | 2005 11 11 | 704 | 0.2+ | 0.3+ | 2005 12 24 | 704 | 0.6+ | 0.2− | | |
| 2003 01 01 | 291 | 0.7− | 0.4+ | 2005 11 11 | 704 | 0.0 | 0.1+ | 2005 12 24 | 704 | 0.8+ | 0.5− | | |
| 2003 01 01 | 291 | 0.2− | 0.1− | 2005 11 11 | 704 | 0.3+ | 0.2+ | 2005 12 24 | 704 | 0.3+ | 0.4− | | |
| 2003 01 01 | 291 | 0.3− | 0.1− | 2005 11 11 | 704 | 0.5+ | 0.4+ | 2006 01 28 | 699 | 0.4− | 0.3− | | |
| 2003 02 23 | 699 | 0.1− | 0.6− | 2005 11 26 | 703 | 1.0+ | 0.4+ | 2006 01 28 | 699 | 0.6− | 1.3+ | | |
| 2003 02 23 | 699 | 1.2+ | 0.9+ | 2005 11 26 | 703 | 0.3− | 0.6+ | 2006 01 28 | 699 | (0.6+ | 2.0+) | | |
| 2003 02 23 | 699 | 0.6+ | 0.1− | 2005 11 26 | 703 | 0.0 | 0.1+ | 2006 01 28 | 699 | (0.5− | 3.0+) | | |
| 2003 02 23 | 699 | 0.9+ | 0.9+ | 2005 11 26 | 704 | 0.0 | 0.9− | 2006 11 27 | G96 | 0.3− | 0.8− | | |
| 2003 03 06 | 699 | 0.6+ | 0.3− | 2005 11 26 | 704 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.5− | | |
| 2003 03 06 | 699 | 1.4+ | 0.8+ | 2005 11 26 | 704 | 0.7− | 0.8− | 2006 11 27 | G96 | 0.2− | 0.3− | | |
| 2003 03 06 | 699 | 0.9+ | 0.6− | 2005 11 26 | 704 | 0.6+ | 0.3− | 2006 11 27 | G96 | 0.3− | 0.3− | | |
| 2003 03 06 | 699 | 0.8+ | 0.5− | 2005 11 26 | 704 | 0.2+ | 0.1− | | | | | | |

**2003 EJ$_{13}$ = 2005 YC$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.46411 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28224190 | $\omega$ | 102.84749 | | +0.58173059 | −0.81001582 | |
| $a$ | 2.3017336 | $\Omega$ | 311.32929 | | +0.70287480 | +0.54635042 | |
| $e$ | 0.0954642 | $i$ | 5.64911 | | +0.40933671 | +0.21301544 | |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.1+ | 0.2+ | 2001 09 12 | 704 | 0.5− | 0.5+ | 2005 12 28 | 703 | 0.9− | 0.3− | | |
| 2001 08 22 | 691 | 0.0 | 0.1− | 2003 03 06 | 644 | 0.3+ | 0.3+ | 2005 12 28 | 703 | 0.1+ | 0.7− | | |
| 2001 08 22 | 691 | 0.0 | 0.2+ | 2003 03 06 | 644 | 0.2− | 0.7+ | 2005 12 28 | 703 | 0.2+ | 0.4+ | | |
| 2001 08 27 | 699 | 0.9+ | 0.3+ | 2003 03 06 | 644 | 0.0 | 0.2+ | 2005 12 29 | 644 | 0.3− | 0.3+ | | |
| 2001 08 27 | 699 | 0.2− | 3.0− | 2003 03 07 | 704 | 0.6+ | 1.2− | 2005 12 29 | 644 | 0.2− | 0.1+ | | |
| 2001 08 27 | 699 | 2.1+ | 0.2+ | 2003 03 07 | 704 | 0.0 | 0.5− | 2005 12 29 | 644 | 0.0 | 0.1− | | |
| 2001 08 27 | 699 | 0.0 | 0.8− | 2003 03 07 | 704 | 0.1+ | 0.2− | 2006 03 04 | G96 | 0.1− | 0.1+ | | |
| 2001 09 12 | 704 | 0.8− | 0.4+ | 2003 03 12 | 644 | 0.3− | 0.3+ | 2006 03 04 | G96 | 0.2+ | 0.6+ | | |
| 2001 09 12 | 704 | 0.9− | 0.5+ | 2003 03 12 | 644 | 0.3− | 0.4+ | 2006 03 04 | G96 | 1.1+ | 0.1− | | |
| 2001 09 12 | 704 | 0.2+ | 0.2+ | 2003 03 12 | 644 | 0.5− | 0.2+ | 2006 03 04 | G96 | 1.9+ | 0.0 | | |
| 2001 09 12 | 704 | 1.2− | 0.7+ | 2005 12 28 | 703 | 0.5− | 0.4− | | | | | | |

**2003 EE$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.09510 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17838473 | $\omega$ | 83.74025 | | +0.11529907 | −0.99333032 | |
| $a$ | 3.1253423 | $\Omega$ | 359.63439 | | +0.83847404 | +0.09786183 | |
| $e$ | 0.1028051 | $i$ | 8.97825 | | +0.53260437 | +0.06097483 | |
| $P$ | 5.53 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 608 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.3− | 0.6+ | | |
| 2003 01 26 | 608 | 0.6+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | (1.0+ | 1.8−) | | |
| 2003 01 26 | 608 | 0.3+ | 0.2− | 2006 09 20 | 704 | 1.1+ | 0.1+ | 2006 09 30 | 703 | 0.8− | 0.3+ | | |
| 2003 02 23 | 699 | 1.2+ | 1.1+ | 2006 09 20 | 704 | (0.3− | 1.6+) | 2006 09 30 | 703 | 1.0− | 0.9+ | | |
| 2003 02 23 | 699 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.2− | | |
| 2003 02 23 | 699 | 1.1− | 1.1− | 2006 09 22 | A50 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.1− | | |
| 2003 02 23 | 699 | 1.0− | 0.9+ | 2006 09 22 | A50 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 644 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2003 03 07 | 644 | 0.4− | 0.1− | 2006 09 25 | 699 | 1.1+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2003 03 07 | 644 | 0.4− | 0.1− | 2006 09 25 | 699 | (1.5+ | 1.2+) | 2006 10 16 | 703 | 1.4− | 0.1− |
| 2003 03 08 | 644 | 0.5+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.0 | 2006 10 16 | 703 | 1.4+ | 0.4+ |
| 2003 03 08 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.6− | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2003 03 08 | 644 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.6− |
| 2006 08 19 | 691 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2006 08 19 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1+ | | | | |

**2003 EP$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.50377 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18754069 | $\omega$ | 45.85197 | | −0.97252005 | | −0.17314926 |
| $a$ | 3.0227742 | $\Omega$ | 123.58217 | | +0.12132253 | | −0.94746326 |
| $e$ | 0.0915613 | $i$ | 10.76743 | | +0.19870981 | | −0.26894741 |
| $P$ | 5.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 645 | 0.1+ | 0.0 | 2003 03 06 | 699 | 0.7− | 1.0+ | 2003 03 08 | 704 | 0.1− | 0.6+ |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2003 03 06 | 699 | 0.0 | 0.1− | 2003 03 23 | 644 | 0.4+ | 0.4+ |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2003 03 06 | 699 | 0.9− | 1.2+ | 2003 03 23 | 644 | 0.3+ | 0.6+ |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2003 03 07 | 699 | 0.5− | 0.1− | 2003 03 23 | 644 | 0.2+ | 0.6+ |
| 2003 02 21 | 644 | 0.1− | 0.7+ | 2003 03 07 | 699 | 0.2+ | 0.1+ | 2005 08 31 | 644 | 0.4− | 0.3+ |
| 2003 02 21 | 644 | 0.0 | 0.7+ | 2003 03 07 | 699 | 0.3− | 0.8− | 2005 08 31 | 644 | 0.3+ | 0.2+ |
| 2003 02 21 | 644 | 0.5+ | 0.6+ | 2003 03 07 | 699 | 1.0− | 1.0− | 2005 08 31 | 644 | 0.1− | 0.0 |
| 2003 02 28 | 608 | 0.4+ | 0.9− | 2003 03 08 | 704 | 0.2+ | 1.1+ | 2006 11 13 | 703 | 1.0+ | 0.5− |
| 2003 02 28 | 608 | 0.1− | 1.2− | 2003 03 08 | 704 | 0.4− | 0.0 | 2006 11 13 | 703 | 1.7− | 0.2− |
| 2003 02 28 | 608 | 0.5+ | 1.3− | 2003 03 08 | 704 | 0.3+ | 0.6+ | 2006 11 13 | 703 | 0.1+ | 1.1+ |
| 2003 03 06 | 699 | 0.8+ | 0.1− | 2003 03 08 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 0.5+ | 0.1− |

**2003 EA$_{18}$ = 2006 ST$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.51669 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17643535 | $\omega$ | 139.94262 | | −0.66633839 | | −0.74522582 |
| $a$ | 3.1483208 | $\Omega$ | 351.73310 | | +0.63154583 | | −0.54613199 |
| $e$ | 0.1777808 | $i$ | 10.06645 | | +0.39641269 | | −0.38259420 |
| $P$ | 5.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 645 | 0.0 | 0.1− | 2003 03 06 | 704 | 0.2+ | 0.3+ | 2003 04 05 | 691 | (1.0+ | 1.7+) |
| 2002 12 14 | 645 | 0.2− | 0.0 | 2003 03 06 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 691 | 0.4+ | 0.4+ |
| 2003 02 28 | 704 | 0.7+ | 1.1+ | 2003 03 06 | 704 | (0.5+ | 1.9+) | 2006 09 17 | 691 | 0.3+ | 0.2+ |
| 2003 02 28 | 704 | 0.7+ | 1.2+ | 2003 03 07 | 699 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2003 02 28 | 704 | 1.0+ | 0.9+ | 2003 03 07 | 699 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.3+ |
| 2003 03 06 | 699 | 0.0 | 0.6− | 2003 03 07 | 699 | 0.6− | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.2− |
| 2003 03 06 | 699 | 0.8+ | 0.0 | 2003 03 07 | 699 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.4− |
| 2003 03 06 | 699 | (2.0+ | 0.1−) | 2003 03 31 | 645 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.5− | 0.0 |
| 2003 03 06 | 699 | 0.6+ | 0.3− | 2003 03 31 | 645 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.6− | 0.3− |
| 2003 03 06 | 704 | 0.1− | 0.5− | 2003 04 05 | 691 | (1.1+ | 1.8+) | 2006 10 02 | 691 | 0.3− | 0.6+ |
| 2003 03 06 | 704 | (1.0+ | 2.5+) | 2003 04 05 | 691 | 1.4+ | 1.5+ | | | | |

**2003 EF$_{19}$ = 2006 SU$_{364}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.75575 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17638039 | $\omega$ | 272.58263 | | +0.16783428 | | −0.98475635 |
| $a$ | 3.1489747 | $\Omega$ | 167.47288 | | +0.96731715 | | +0.15557390 |
| $e$ | 0.0665990 | $i$ | 12.15743 | | +0.19007679 | | +0.07779263 |
| $P$ | 5.59 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 699 | 1.0+ | 0.1− | 2003 03 27 | 691 | 0.2+ | 0.2− | 2006 09 29 | 699 | 0.3− | 0.7+ |
| 2003 03 06 | 699 | 0.7− | 0.4+ | 2003 03 27 | 691 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.1− | 0.5+ |
| 2003 03 06 | 699 | 0.8+ | 0.0 | 2003 04 05 | 291 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.2+ |
| 2003 03 06 | 699 | 0.2− | 0.4− | 2003 04 05 | 291 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.0 |
| 2003 03 09 | 704 | 0.1+ | 0.8+ | 2003 04 05 | 291 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.7+ | 0.5− |
| 2003 03 09 | 704 | 0.7− | 0.3− | 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.5− |
| 2003 03 09 | 704 | 0.3+ | 0.3− | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2003 03 09 | 704 | 1.3− | 0.1+ | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2003 03 09 | 704 | 0.7+ | 0.4− | 2006 09 29 | 699 | 0.5− | 1.0+ | 2006 10 16 | 703 | 1.3− | 0.6+ |
| 2003 03 27 | 691 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.7+ | 1.1+ | 2006 10 16 | 703 | 0.0 | 0.4− |

**2003 EP$_{21}$ = 2006 WH$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.13663 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23331681 | $\omega$ | 126.97511 | | +0.14066715 | | −0.98953098 |
| $a$ | 2.6131963 | $\Omega$ | 314.90444 | | +0.89326813 | | +0.14090271 |
| $e$ | 0.2836186 | $i$ | 2.61115 | | +0.42694824 | | +0.03122299 |
| $P$ | 4.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 699 | 0.1+ | 0.7+ | 2003 03 27 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2003 03 06 | 699 | 1.4+ | 0.2− | 2003 04 07 | 691 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2003 03 06 | 699 | 0.9+ | 0.3+ | 2003 04 07 | 691 | 0.3− | 0.6− | 2006 11 22 | G96 | 0.5+ | 0.1− |
| 2003 03 06 | 699 | 0.9− | 0.1− | 2003 04 07 | 691 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.1− | 0.4+ |
| 2003 03 07 | 699 | (1.6+ | 0.6+) | 2006 10 23 | G96 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2003 03 07 | 699 | 0.5+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.7− | 0.7+ |
| 2003 03 07 | 699 | 0.1− | 0.7+ | 2006 10 23 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 1.0− | 0.7+ |
| 2003 03 07 | 699 | 0.0 | 0.6− | 2006 10 23 | G96 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2003 03 25 | 644 | 1.0+ | 1.2+ | 2006 11 16 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2003 03 25 | 644 | 0.7+ | 1.0+ | 2006 11 16 | G96 | 0.5− | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.6− |
| 2003 03 25 | 644 | 0.6+ | 1.0+ | 2006 11 16 | G96 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2003 03 27 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.4− | | | | |
| 2003 03 27 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.2− | | | | |

**2003 EQ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.79555 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23670238 | $\omega$ | 109.76400 | | −0.60946848 | | −0.79259244 |
| $a$ | 2.5882186 | $\Omega$ | 17.82550 | | +0.70277087 | | −0.55095305 |
| $e$ | 0.2378365 | $i$ | 3.48064 | | +0.36696222 | | −0.26124312 |
| $P$ | 4.16 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 691 | 0.1− | 0.2+ | 2003 02 28 | 704 | 0.2+ | 0.1+ | 2003 03 07 | 699 | 0.3− | 0.3+ |
| 2001 09 23 | 691 | 0.3− | 0.2+ | 2003 02 28 | 704 | 0.6− | 0.4+ | 2003 03 07 | 699 | 0.2+ | 0.2+ |
| 2001 09 23 | 691 | 0.1+ | 0.1+ | 2003 02 28 | 608 | 0.9+ | 0.9− | 2003 03 07 | 699 | 0.6− | 0.3+ |
| 2003 02 01 | 704 | 0.6+ | 1.2− | 2003 02 28 | 608 | 0.7+ | 0.6− | 2003 03 23 | 645 | 0.2− | 0.2− |
| 2003 02 01 | 704 | (1.0+ | 2.1+) | 2003 02 28 | 608 | 0.6+ | 1.3− | 2003 03 23 | 645 | 0.2− | 0.2− |
| 2003 02 01 | 704 | (0.7+ | 1.8−) | 2003 03 06 | 699 | 0.3+ | 0.5− | 2003 03 24 | 291 | 0.7− | 0.5+ |
| 2003 02 01 | 704 | 0.3− | 0.9+ | 2003 03 06 | 699 | 0.9+ | 0.3+ | 2003 03 24 | 291 | 0.3− | 0.2+ |
| 2003 02 08 | 608 | 0.1+ | 0.2− | 2003 03 06 | 699 | 1.3+ | 0.3− | 2003 03 24 | 291 | 0.1− | 0.6+ |
| 2003 02 08 | 608 | 0.1+ | 0.3− | 2003 03 06 | 699 | 0.3− | 1.1+ | 2003 04 05 | 691 | 0.6+ | 0.3+ |
| 2003 02 08 | 608 | 0.1− | 0.3− | 2003 03 06 | 704 | 0.8+ | 0.3+ | 2003 04 05 | 691 | 0.7+ | 0.5+ |
| 2003 02 22 | 644 | 0.1− | 0.3+ | 2003 03 06 | 704 | 0.0 | 0.3+ | 2003 04 05 | 691 | 0.6+ | 0.3+ |
| 2003 02 22 | 644 | 0.5− | 0.1+ | 2003 03 06 | 704 | 0.9+ | 1.0− | 2005 10 06 | G96 | 0.4− | 0.5+ |
| 2003 02 22 | 644 | 0.3− | 0.0 | 2003 03 06 | 704 | 0.4− | 0.4− | 2005 10 06 | G96 | 0.2− | 0.0 |
| 2003 02 28 | 704 | 0.5− | 1.1+ | 2003 03 06 | 704 | 1.2+ | 1.1+ | 2005 10 06 | G96 | 0.0 | 0.1+ |
| 2003 02 28 | 704 | 0.5− | 0.4+ | 2003 03 07 | 699 | 0.3+ | 0.0 | 2005 10 06 | G96 | 0.2+ | 0.1+ |

**2003 EA$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.28277 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18099231 | $\omega$ | 160.84789 | | −0.95554398 | | −0.29478873 |
| $a$ | 3.0952517 | $\Omega$ | 2.03559 | | +0.24395811 | | −0.80177626 |
| $e$ | 0.1861450 | $i$ | 9.63049 | | +0.16559030 | | −0.51986002 |
| $P$ | 5.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.4− | 0.4+ | 2003 03 07 | 699 | 0.8− | 1.5− | 2003 03 31 | 695 | 0.3− | 0.1− |
| 2000 09 27 | 691 | 0.5− | 0.7+ | 2003 03 09 | 704 | 0.5+ | 0.2− | 2003 03 31 | 695 | 0.0 | 0.4− |
| 2000 09 27 | 691 | 0.0 | 0.2+ | 2003 03 09 | 704 | 0.6− | 0.4− | 2003 04 01 | 645 | 0.1− | 0.1− |
| 2002 12 11 | 645 | 0.2− | 0.1− | 2003 03 09 | 704 | 0.2+ | 0.2− | 2003 04 01 | 645 | 0.1− | 0.1− |
| 2002 12 11 | 645 | 0.1− | 0.1− | 2003 03 09 | 704 | 0.3+ | 0.1− | 2003 04 11 | 691 | 0.5+ | 0.9+ |
| 2003 02 24 | 608 | 1.2+ | 0.3+ | 2003 03 09 | 704 | 0.4+ | 0.8+ | 2003 04 11 | 691 | 0.3+ | 0.9+ |
| 2003 02 24 | 608 | 0.8+ | 0.3+ | 2003 03 15 | 608 | 1.3+ | 1.2+ | 2003 04 11 | 691 | 0.2+ | 1.0+ |
| 2003 02 24 | 608 | 0.4+ | 0.7+ | 2003 03 15 | 608 | (1.5+ | 2.1+) | 2006 09 25 | 691 | 0.4− | 0.0 |
| 2003 03 06 | 704 | 0.5+ | 0.3− | 2003 03 15 | 608 | 1.2+ | 0.8+ | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2003 03 06 | 704 | 1.4+ | 0.2+ | 2003 03 26 | 644 | 0.4+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2003 03 06 | 704 | 0.0 | 0.1− | 2003 03 26 | 644 | 0.3+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.4− |
| 2003 03 06 | 704 | 0.2− | 0.7− | 2003 03 26 | 644 | 0.2+ | 0.5− | 2006 10 17 | 691 | 0.0 | 0.4+ |
| 2003 03 06 | 699 | 0.6+ | 0.8− | 2003 03 27 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2− |
| 2003 03 06 | 699 | 0.8− | 1.1+ | 2003 03 27 | 691 | 0.6+ | 0.3+ | 2006 10 26 | 104 | 0.6− | 0.1+ |
| 2003 03 06 | 699 | 0.5− | 0.4− | 2003 03 27 | 691 | 0.3+ | 0.1− | 2006 10 26 | 104 | 0.0 | 0.2− |
| 2003 03 06 | 699 | 0.9− | 1.2+ | 2003 03 30 | 704 | 0.3− | 0.1− | 2006 10 26 | 104 | 0.3− | 0.0 |
| 2003 03 07 | 699 | 0.6+ | 0.9− | 2003 03 30 | 704 | (0.3− | 1.6+) | 2006 10 29 | 691 | 0.2+ | 0.4+ |
| 2003 03 07 | 699 | 0.3− | 0.1+ | 2003 03 30 | 704 | 1.0− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2003 03 07 | 699 | 0.3− | 0.1+ | 2003 03 30 | 704 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 |

**2003 EX$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.96236 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26367912 | $\omega$ | 319.65352 | | −0.97036516 | | −0.24149803 |
| $a$ | 2.4085309 | $\Omega$ | 206.37507 | | +0.22627559 | | −0.89594393 |
| $e$ | 0.1941744 | $i$ | 1.08030 | | +0.08479863 | | −0.37277765 |
| $P$ | 3.74 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 645 | 0.0 | 0.1− | 2003 03 06 | 699 | 0.6+ | 0.6− | 2004 07 16 | 807 | 0.1− | 0.3+ |
| 2002 12 14 | 645 | 0.1− | 0.2− | 2003 03 06 | 699 | 0.5− | 0.9+ | 2004 07 16 | 807 | 0.1− | 0.3+ |
| 2003 01 25 | 291 | 0.2− | 0.1+ | 2003 03 06 | 699 | 0.7− | 0.9+ | 2005 10 22 | 691 | 0.2− | 0.0 |
| 2003 01 25 | 291 | 0.2− | 0.1+ | 2003 03 06 | 699 | 1.0+ | 0.1− | 2005 10 22 | 691 | 0.4− | 0.3+ |
| 2003 01 25 | 291 | 0.2− | 0.1+ | 2003 03 06 | 644 | 0.2+ | 0.4+ | 2005 10 22 | 691 | 0.2+ | 0.3+ |
| 2003 02 12 | 608 | 0.5+ | 0.8− | 2003 03 06 | 644 | 0.2− | 0.2+ | 2005 11 25 | G96 | 0.1+ | 0.3− |
| 2003 02 12 | 608 | 0.3+ | 0.0 | 2003 03 06 | 644 | 0.1+ | 0.5+ | 2005 11 25 | G96 | 0.5+ | 0.1− |
| 2003 02 12 | 608 | 0.8+ | 0.0 | 2003 03 07 | 699 | 1.3+ | 0.3+ | 2005 11 25 | G96 | 0.3− | 0.5+ |
| 2003 02 22 | 644 | 0.6+ | 0.5+ | 2003 03 07 | 699 | 1.1− | 0.4+ | 2005 11 25 | G96 | 0.1+ | 0.3+ |
| 2003 02 22 | 644 | 0.7+ | 0.4+ | 2003 03 07 | 699 | 0.6− | 0.6− | | | | |
| 2003 02 22 | 644 | 0.3+ | 0.7+ | 2003 03 07 | 699 | 0.1+ | 0.6+ | | | | |

**2003 ED$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.71843 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21913814 | $\omega$ | 226.84577 | | −0.87020552 | | +0.49233850 |
| $a$ | 2.7247337 | $\Omega$ | 342.62259 | | −0.43206109 | | −0.78070169 |
| $e$ | 0.2433444 | $i$ | 3.56634 | | −0.23678167 | | −0.38484759 |
| $P$ | 4.50 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.4− | 0.4− | 2003 03 08 | 683 | 0.6− | 0.1+ | 2003 03 25 | 699 | 1.3− | 0.3− |
| 1994 03 10 | 691 | (6.6− | 0.9−) | 2003 03 08 | 683 | 0.7+ | 1.0− | 2003 03 31 | 691 | 0.3+ | 0.3+ |
| 1994 03 10 | 691 | 0.2− | 0.7− | 2003 03 09 | 704 | 1.2+ | 0.2− | 2003 03 31 | 691 | 0.1+ | 0.2+ |
| 2003 02 01 | 291 | 0.1+ | 0.2+ | 2003 03 09 | 704 | 1.0+ | 0.4+ | 2003 03 31 | 691 | 0.1+ | 0.4+ |
| 2003 02 01 | 291 | 0.0 | 0.0 | 2003 03 09 | 704 | 1.1+ | 0.2− | 2003 03 31 | 695 | 0.1− | 0.4− |
| 2003 02 01 | 291 | 0.5+ | 0.4+ | 2003 03 09 | 704 | 0.7+ | 0.2+ | 2003 03 31 | 695 | 0.2− | 0.4− |
| 2003 03 06 | 683 | (2.1− | 1.7+) | 2003 03 09 | 704 | 1.4+ | 0.9+ | 2003 04 09 | 704 | 0.8− | 0.5− |
| 2003 03 06 | 683 | 0.7− | 0.2− | 2003 03 10 | 683 | 1.5− | 0.0 | 2003 04 09 | 704 | (0.8+ | 2.1−) |
| 2003 03 06 | 683 | 1.8− | 1.4+ | 2003 03 10 | 683 | 1.5− | 0.4− | 2003 04 09 | 704 | 0.7+ | 0.8− |
| 2003 03 06 | 644 | 0.4+ | 0.1+ | 2003 03 10 | 683 | 0.6− | 0.4− | 2003 04 09 | 704 | 0.4− | 0.3− |
| 2003 03 06 | 644 | 0.4+ | 0.4+ | 2003 03 11 | 704 | 0.6+ | 0.7+ | 2003 04 11 | 691 | 0.0 | 0.5− |
| 2003 03 06 | 644 | 0.4+ | 0.4+ | 2003 03 11 | 704 | 1.7+ | 0.4+ | 2003 04 11 | 691 | 0.4− | 0.2− |
| 2003 03 07 | 699 | 0.1− | 1.0+ | 2003 03 11 | 704 | 0.4+ | 1.2+ | 2003 04 11 | 691 | 0.3− | 0.2+ |
| 2003 03 07 | 699 | 0.3+ | 0.3+ | 2003 03 11 | 704 | (1.3+ | 4.2+) | 2004 08 20 | 691 | 0.0 | 0.1+ |
| 2003 03 07 | 699 | 0.2− | 0.4+ | 2003 03 25 | 699 | 0.5+ | 0.7+ | 2004 08 20 | 691 | 0.3− | 0.2+ |
| 2003 03 07 | 699 | 0.2− | 0.6+ | 2003 03 25 | 699 | 0.1+ | 0.8− | 2004 08 20 | 691 | 0.0 | 0.4+ |
| 2003 03 08 | 683 | 0.3+ | 0.3+ | 2003 03 25 | 699 | 0.2− | 1.0− | | | | |

**2003 EP$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.99879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21899920 | $\omega$ | 213.42446 | | −0.77013193 | | −0.62864190 |
| $a$ | 2.7258861 | $\Omega$ | 287.24647 | | +0.60726315 | | −0.67061725 |
| $e$ | 0.1727212 | $i$ | 6.50493 | | +0.19526463 | | −0.39380434 |
| $P$ | 4.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 02 | 704 | 1.4− | 0.5− | 2003 03 07 | 704 | 0.5+ | 0.4− | 2006 11 13 | 691 | 0.3− | 0.1+ |
| 2003 02 02 | 704 | 0.2+ | 0.3+ | 2003 03 07 | 704 | 0.6+ | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2003 02 02 | 704 | 0.2− | 1.0− | 2003 03 07 | 704 | 0.2− | 0.7+ | 2006 11 13 | 691 | 0.8+ | 0.1+ |
| 2003 02 02 | 704 | 0.3+ | 0.3+ | 2003 03 07 | 608 | 0.1+ | 0.3− | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2003 02 02 | 704 | 0.0 | 0.5+ | 2003 03 07 | 608 | 0.4+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2003 02 22 | 644 | 0.1− | 0.2− | 2003 03 07 | 608 | 0.6+ | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.3− |
| 2003 02 22 | 644 | 0.4− | 0.5+ | 2003 03 09 | 704 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.2− | 0.2− |
| 2003 02 22 | 644 | 0.3+ | 0.3− | 2003 03 09 | 704 | 0.0 | 0.3− | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2003 03 07 | 704 | 0.6− | 0.3+ | 2003 03 09 | 704 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.2− | 0.2+ |

**2003 ED$_{32}$ = 2006 VF$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.86720 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20488863 | $\omega$ | 108.01624 | | −0.50933214 | | −0.86056000 |
| $a$ | 2.8496453 | $\Omega$ | 12.60561 | | +0.78218316 | | −0.46494584 |
| $e$ | 0.1236995 | $i$ | 1.09059 | | +0.35884575 | | −0.20799484 |
| $P$ | 4.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 691 | 0.3− | 0.2+ | 2003 03 09 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 691 | 0.2+ | 0.0 | 2003 03 09 | 704 | 0.8− | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2001 11 21 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2002 12 07 | 645 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 12 07 | 645 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2003 02 22 | 644 | 0.4+ | 0.5+ | 2006 10 31 | G96 | 0.4+ | 0.4− | 2006 11 16 | 703 | 0.4− | 0.5− |
| 2003 02 22 | 644 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.9− | 0.6+ |
| 2003 02 22 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 16 | 703 | 0.8− | 0.0 |
| 2003 03 07 | 704 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.4− | 2006 11 16 | 703 | 0.2− | 0.0 |
| 2003 03 07 | 704 | 1.0+ | 1.3+ | 2006 11 13 | 691 | 0.3+ | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.9− |
| 2003 03 07 | 704 | 0.6+ | 0.9+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.7+ | 0.5− |
| 2003 03 07 | 704 | 0.2+ | 0.9+ | 2006 11 13 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2003 03 09 | 704 | 0.2+ | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.4− |

**2003 ES$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.01386 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22299032 | $\omega$ | 77.77899 | | −0.28111193 | | −0.95365435 |
| $a$ | 2.6932626 | $\Omega$ | 29.24527 | | +0.77275811 | | −0.29125565 |
| $e$ | 0.3049021 | $i$ | 12.69075 | | +0.56905271 | | −0.07558781 |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.2− | 0.4+ | 2006 09 22 | 621 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2002 12 07 | 704 | 0.9+ | 0.1+ | 2006 09 22 | 621 | 1.1− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2002 12 07 | 704 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2002 12 07 | 704 | 1.0− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.4− | 0.1− |
| 2002 12 07 | 704 | 1.2− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.3− | 0.4− |
| 2002 12 28 | 704 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2002 12 28 | 704 | 0.2− | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2002 12 28 | 704 | 0.5− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 12 28 | 704 | 0.3− | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2002 12 28 | 704 | 0.6+ | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.7+ |
| 2003 01 14 | 704 | 0.5− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 14 | 704 | 0.5− | 0.7− | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.2− | | |
| 2003 01 14 | 704 | 0.4− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.0 | | |
| 2003 01 14 | 704 | 0.3− | 0.9− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.0 | | |
| 2003 01 21 | 704 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.3+ | 0.1− | | |
| 2003 01 21 | 704 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.4+ | 0.2− | | |
| 2003 01 21 | 704 | 1.4+ | 1.1− | 2006 10 20 | 703 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.2− | | |
| 2003 01 21 | 704 | 0.4− | 1.3− | 2006 10 20 | 703 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.5− | | |
| 2003 02 07 | 699 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.2− | | |
| 2003 02 07 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 703 | 0.6+ | 0.1− | 2006 11 17 | 703 | 0.6− | 0.3+ | | |
| 2003 02 07 | 699 | 0.5+ | 0.4− | 2006 10 20 | 703 | 0.1− | 0.5− | 2006 11 19 | 691 | 0.1− | 0.4+ | | |
| 2003 02 07 | 699 | 0.7+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2003 03 08 | 644 | 0.5− | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.7− | 2006 11 19 | 691 | 0.2− | 0.3+ | | |
| 2003 03 08 | 644 | 0.2− | 0.5− | 2006 10 21 | 703 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.3+ | 1.4− | | |
| 2003 03 08 | 644 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.9+ | 1.1+ | | |
| 2003 03 09 | 644 | 0.1− | 0.6+ | 2006 10 21 | 703 | 0.6− | 0.1− | 2006 11 19 | 704 | 1.0+ | 1.0+ | | |
| 2003 03 09 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.3+ | | |
| 2003 03 09 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.7+ | | |
| 2003 03 09 | 699 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.4+ | | |
| 2003 03 09 | 699 | 0.6+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.9− | | |
| 2003 03 09 | 699 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.1− | | |
| 2003 03 09 | 699 | 0.5+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.1− | 1.2+ | | |
| 2006 09 19 | 691 | 0.5− | 0.7+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.2+ | | |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.4+ | | |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.2− | | |
| 2006 09 22 | 621 | 0.1+ | 0.9− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 1.1+ | 0.2− | | |

**2003 EW$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.34069 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17781644 | $\omega$ | 142.07870 | | −0.97674344 | | +0.04079770 |
| $a$ | 3.1319978 | $\Omega$ | 41.80342 | | −0.16082288 | | −0.78868097 |
| $e$ | 0.1323426 | $i$ | 18.40814 | | +0.14180358 | | −0.61344753 |
| $P$ | 5.54 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 704 | (2.2+ | 3.0−) | 2003 03 10 | 704 | 0.5− | 0.8− | 2006 10 15 | 691 | 0.1− | 0.4+ | | |
| 2003 01 11 | 704 | (2.6+ | 1.7−) | 2003 03 10 | 704 | (0.0 | 1.8−) | 2006 10 15 | 691 | 0.0 | 0.1+ | | |
| 2003 01 11 | 704 | (2.0+ | 1.0−) | 2003 03 10 | 704 | 0.6+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 2003 03 08 | 699 | 0.2+ | 0.3+ | 2003 03 10 | 644 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2003 03 08 | 699 | 1.0+ | 0.8− | 2003 03 10 | 644 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2003 03 08 | 699 | 0.1− | 0.1− | 2003 03 10 | 644 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2003 03 08 | 699 | 0.1− | 0.4− | 2003 03 13 | 704 | 0.1− | 0.9− | 2006 10 31 | 691 | 0.2− | 0.0 | | |
| 2003 03 08 | 704 | 0.5− | 0.0 | 2003 03 13 | 704 | (1.8− | 0.6−) | 2006 10 31 | 691 | 0.1+ | 0.0 | | |
| 2003 03 08 | 704 | 0.3− | 0.2+ | 2003 03 13 | 704 | 0.9− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.7− | | |
| 2003 03 08 | 704 | 0.2+ | 0.3− | 2003 03 13 | 704 | 0.1− | 0.6+ | 2006 11 08 | 644 | 0.4+ | 0.1− | | |
| 2003 03 08 | 704 | 0.4− | 0.4+ | 2003 03 13 | 704 | 1.0− | 0.6− | 2006 11 08 | 644 | 0.0 | 0.5+ | | |
| 2003 03 08 | 704 | 0.1− | 0.8+ | 2003 03 13 | 608 | 0.5+ | 0.8+ | 2006 11 11 | 703 | 1.0+ | 0.8+ | | |
| 2003 03 08 | 704 | 0.3+ | 0.2+ | 2003 03 13 | 608 | 0.5+ | 1.1+ | 2006 11 11 | G96 | 0.2− | 0.2− | | |
| 2003 03 08 | 704 | (1.6− | 0.4+) | 2003 03 13 | 608 | 0.5+ | 1.4+ | 2006 11 11 | 703 | 0.6− | 0.2+ | | |
| 2003 03 08 | 704 | 0.7+ | 0.1− | 2003 03 26 | 704 | (1.9+ | 0.3−) | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2003 03 08 | 704 | 0.5− | 0.4− | 2003 03 26 | 704 | (3.2+ | 0.1−) | 2006 11 11 | G96 | 0.2− | 0.1+ | | |
| 2003 03 09 | 704 | 0.0 | 0.4− | 2003 03 26 | 704 | (2.3+ | 0.4−) | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2003 03 09 | 704 | 0.1− | 0.4+ | 2003 04 06 | 699 | 0.4− | 0.1+ | 2006 11 11 | 703 | (0.3+ | 3.0+) | | |
| 2003 03 09 | 704 | 0.1+ | 0.2− | 2003 04 06 | 699 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.3− | 1.0− | | |
| 2003 03 09 | 704 | 0.1+ | 0.3+ | 2003 04 06 | 699 | 0.2− | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.0 | | |
| 2003 03 09 | 704 | 0.3− | 0.6− | 2003 04 06 | 699 | 0.2+ | 0.6− | 2006 11 14 | G96 | 0.0 | 0.2+ | | |
| 2003 03 09 | 644 | 0.2+ | 0.0 | 2003 04 09 | 644 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1+ | | |
| 2003 03 09 | 644 | 0.1− | 0.4− | 2003 04 09 | 644 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.1+ | | |
| 2003 03 09 | 644 | 0.2− | 0.2− | 2003 04 09 | 644 | 0.0 | 0.4− | 2006 11 27 | G96 | 0.5+ | 0.3+ | | |
| 2003 03 10 | 704 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.6− | 2006 11 27 | G96 | 0.1+ | 0.1+ | | |
| 2003 03 10 | 704 | 0.6+ | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.7− | 2006 11 27 | G96 | 0.3+ | 0.0 | | |
| 2003 03 10 | 704 | (0.5− | 1.6−) | 2006 09 30 | G96 | 0.1− | 0.7− | 2006 11 27 | G96 | 0.0 | 0.2+ | | |
| 2003 03 10 | 704 | (1.1+ | 1.5+) | 2006 09 30 | G96 | 0.1+ | 0.5− | | | | | | |
| 2003 03 10 | 704 | 0.3+ | 0.9+ | 2006 10 15 | 691 | 0.1− | 0.7+ | | | | | | |

**2003 EA$_{42}$ = 2006 TA$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.43066 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18622582 | $\omega$ | 83.82963 | | +0.08101405 | | −0.99669954 |
| $a$ | 3.0369859 | $\Omega$ | 1.55201 | | +0.82218933 | | +0.06389399 |
| $e$ | 0.0932066 | $i$ | 11.01030 | | +0.56341940 | | +0.05007585 |
| $P$ | 5.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 21 | 644 | 0.6− | 0.0 | 2003 03 11 | 291 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.4+ | | |
| 2003 02 21 | 644 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.0 | | |
| 2003 02 21 | 644 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3− | | |
| 2003 03 07 | 699 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2003 03 07 | 699 | 0.7+ | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.5− | | |
| 2003 03 07 | 699 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2003 03 07 | 699 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2003 03 11 | 291 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.9− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.5+ | | |
| 2003 03 11 | 291 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.6− | 0.7+ | | | | | | |

**2003 EK$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.37690 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17848679 | $\omega$ | 126.89208 | | −0.82997441 | | −0.54825475 |
| $a$ | 3.1241509 | $\Omega$ | 20.49249 | | +0.37086643 | | −0.67998630 |
| $e$ | 0.1455998 | $i$ | 17.06901 | | +0.41665401 | | −0.48686277 |
| $P$ | 5.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 599 | 0.1+ | 0.2+ | 2003 04 03 | 699 | 0.6− | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.0 | | |
| 2003 03 10 | 599 | 0.4+ | 0.0 | 2003 04 03 | 699 | 0.1− | 0.4− | 2006 10 17 | 691 | 0.3− | 0.2− | | |
| 2003 03 10 | 599 | 0.4+ | 0.1− | 2003 04 03 | 699 | 0.7− | 0.7+ | 2006 10 17 | 691 | 0.2− | 0.4− | | |
| 2003 03 10 | 599 | 0.2+ | 0.3+ | 2003 04 08 | 704 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.2− | | |
| 2003 03 11 | 599 | 0.3+ | 0.1+ | 2003 04 08 | 704 | 0.3− | 0.2+ | 2006 10 21 | 691 | 0.5− | 0.2− | | |
| 2003 03 11 | 599 | 0.7+ | 0.2+ | 2003 04 08 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2003 03 11 | 599 | 0.4+ | 0.3− | 2003 04 08 | 704 | 1.2+ | 1.0+ | 2006 10 21 | 691 | 0.3− | 0.2+ | | |
| 2003 03 14 | 012 | 0.4− | 0.1+ | 2003 04 08 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.4+ | 0.0 | | |
| 2003 03 14 | 012 | 0.7− | 0.4+ | 2003 04 09 | 608 | 0.9− | 1.4+ | 2006 10 21 | 644 | 0.4+ | 0.1− | | |
| 2003 03 14 | 012 | 0.2− | 0.2− | 2003 04 09 | 608 | 1.2− | 1.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2003 03 14 | 012 | 0.5− | 1.0− | 2003 04 09 | 608 | (0.5− | 1.7+) | 2006 10 27 | 703 | 0.1+ | 1.1+ | | |
| 2003 03 14 | 012 | 0.1+ | 0.7− | 2003 04 26 | 608 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.7+ | 0.0 | | |
| 2003 03 25 | 703 | (2.7− | 2.7+) | 2003 04 26 | 608 | 0.2+ | 0.9− | 2006 10 27 | 703 | 0.1+ | 1.1+ | | |
| 2003 03 25 | 703 | (2.8− | 2.4+) | 2003 04 26 | 608 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.2+ | | |
| 2003 03 25 | 703 | (2.9− | 3.9+) | 2003 04 27 | 704 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2− | | |
| 2003 03 25 | 703 | (5.5− | 4.2+) | 2003 04 27 | 704 | 0.8+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | | |
| 2003 03 27 | 644 | 0.4+ | 1.1+ | 2003 04 27 | 699 | 0.9− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.3− | | |
| 2003 03 27 | 699 | 0.1+ | 0.4− | 2003 04 27 | 704 | 0.7− | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.6− | | |
| 2003 03 27 | 644 | 0.7+ | 0.9+ | 2003 04 27 | 699 | 0.8+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.5− | | |
| 2003 03 27 | 699 | 0.4+ | 0.2− | 2003 04 27 | 704 | 1.2+ | 1.2− | 2006 11 01 | G96 | 0.2+ | 0.3− | | |
| 2003 03 27 | 691 | 0.1− | 0.1− | 2003 04 27 | 699 | 0.5− | 0.5− | 2006 11 01 | G96 | 0.3+ | 0.4− | | |
| 2003 03 27 | 699 | 0.2− | 0.7− | 2003 04 27 | 699 | 0.1+ | 0.3− | 2006 11 13 | 644 | 0.0 | 0.5+ | | |
| 2003 03 27 | 644 | 0.5+ | 1.0+ | 2003 04 29 | 704 | 0.4+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.1− | | |
| 2003 03 27 | 699 | 0.1+ | 1.3+ | 2003 04 29 | 704 | 0.6+ | 0.1− | 2006 11 13 | 644 | 0.5+ | 0.2− | | |
| 2003 03 27 | 691 | 0.2+ | 0.3− | 2003 04 29 | 704 | 0.1+ | 1.2− | 2006 11 14 | 703 | 1.3− | 0.7+ | | |
| 2003 03 27 | 691 | 0.2− | 0.4− | 2003 04 29 | 704 | 0.5+ | 0.6+ | 2006 11 14 | 703 | 1.1+ | 0.3− | | |
| 2003 03 30 | 704 | 0.5− | 0.6− | 2003 04 29 | 704 | 0.5− | 0.2+ | 2006 11 14 | 703 | 1.0− | 1.2− | | |
| 2003 03 30 | 704 | 0.2− | 0.7− | 2003 04 30 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6− | 1.0+ | | |
| 2003 03 30 | 704 | 0.0 | 0.5− | 2003 04 30 | 691 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.1+ | 0.1− | | |
| 2003 03 30 | 704 | 0.1+ | 0.4+ | 2003 04 30 | 691 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.1+ | | |
| 2003 03 30 | 704 | 0.1+ | 0.9− | 2006 10 13 | 691 | 0.3+ | 0.9+ | 2006 11 17 | 644 | 0.1− | 0.0 | | |
| 2003 04 03 | 699 | 0.8− | 0.0 | 2006 10 13 | 691 | 0.0 | 0.1+ | | | | | | |

**2003 ET$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 238.08972 | | (2000.0) | | | |
| $n$ | 0.17759975 | $\omega$ | 133.99320 | | −0.90194757 | −0.41461154 |
| $a$ | 3.1345448 | $\Omega$ | 22.36943 | | +0.24548829 | −0.72236048 |
| $e$ | 0.1319493 | $i$ | 18.50338 | | +0.35528309 | −0.55343708 |
| $P$ | 5.55 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 699 | 0.6− | 0.0 | 2003 04 06 | 699 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2003 03 08 | 699 | 0.0 | 0.6− | 2003 04 06 | 699 | 0.8− | 0.4+ | 2006 10 17 | 703 | 1.0+ | 0.7− |
| 2003 03 08 | 699 | 0.9− | 1.3− | 2003 04 06 | 699 | 0.5− | 0.4− | 2006 10 17 | 703 | 1.0+ | 0.9− |
| 2003 03 08 | 699 | 1.3+ | 0.8− | 2003 04 06 | 699 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2003 03 08 | 704 | 0.1− | 0.5− | 2003 04 10 | 644 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2003 03 08 | 704 | 0.7+ | 0.3− | 2003 04 10 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2003 03 08 | 704 | 0.2− | 0.7− | 2003 04 10 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2003 03 08 | 704 | 0.3+ | 0.7− | 2003 04 25 | 699 | (1.6− | 0.1−) | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2003 03 08 | 704 | 0.5+ | 0.1− | 2003 04 25 | 699 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2003 03 08 | 644 | 0.2+ | 0.1− | 2003 04 25 | 699 | 1.1+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 03 08 | 644 | 0.1+ | 0.1− | 2003 04 25 | 699 | 0.7− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2003 03 08 | 644 | 0.3+ | 0.4− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 03 12 | 704 | 1.4− | 1.0+ | 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 03 12 | 704 | 0.3− | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 03 12 | 704 | (0.1+ | 1.6+) | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2003 03 12 | 704 | 0.3− | 0.6+ | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2003 03 12 | 704 | 0.1− | 0.9+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.3+ |
| 2003 03 20 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2003 03 20 | 644 | 0.1− | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2003 03 20 | 644 | 1.1+ | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.4+ | 0.2− |
| 2003 03 31 | 644 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.5− | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2003 03 31 | 644 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.5+ |
| 2003 03 31 | 644 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.2− | 0.3+ |
| 2003 04 04 | 704 | 0.6+ | 1.0+ | 2006 10 17 | 683 | 0.7− | 0.1− | 2006 11 16 | 691 | 0.4− | 0.1+ |
| 2003 04 04 | 704 | 0.3+ | 0.2+ | 2006 10 17 | 683 | (0.0 | 1.8−) | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2003 04 04 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 683 | (0.2+ | 1.8+) | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2003 04 04 | 704 | (1.7+ | 0.8+) | 2006 10 17 | 703 | 0.7− | 0.8− | 2006 11 18 | 691 | 0.1− | 0.0 |

**2003 EK$_{57}$ = 2006 WV$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.35018 | | (2000.0) | | | |
| $n$ | 0.23756931 | $\omega$ | 15.25345 | | −0.83393122 | −0.51707545 |
| $a$ | 2.5819183 | $\Omega$ | 131.95263 | | +0.47530803 | −0.85053129 |
| $e$ | 0.1361285 | $i$ | 15.02938 | | +0.28043002 | −0.09607036 |
| $P$ | 4.15 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 699 | 0.9+ | 0.1+ | 2003 04 06 | 699 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2003 03 09 | 699 | 0.5− | 0.5− | 2003 04 06 | 699 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2003 03 09 | 699 | 0.2+ | 0.3+ | 2003 04 06 | 699 | 1.1+ | 0.1+ | 2006 11 22 | 691 | 0.7+ | 0.1+ |
| 2003 03 09 | 699 | 0.3+ | 0.9− | 2003 04 10 | 704 | 0.5− | 0.8+ | 2006 11 22 | 691 | 0.2− | 0.4+ |
| 2003 03 13 | 704 | 0.0 | 0.8− | 2003 04 10 | 704 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.3− | 0.6+ |
| 2003 03 13 | 704 | 0.3− | 1.3+ | 2003 04 10 | 704 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.2+ | 0.7− |
| 2003 03 13 | 704 | 0.2+ | 1.3− | 2003 04 10 | 704 | (0.0 | 1.9+) | 2006 11 24 | G96 | 0.3− | 0.7− |
| 2003 03 13 | 704 | (0.8− | 1.9−) | 2006 10 22 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.7− |
| 2003 04 06 | 699 | 0.8− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.3− | 0.9− |

**2003 EA$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 282.46435 | | (2000.0) | | | |
| $n$ | 0.23124279 | $\omega$ | 98.08995 | | −0.63666762 | +0.73850828 |
| $a$ | 2.6287982 | $\Omega$ | 129.90840 | | −0.77082540 | −0.60128122 |
| $e$ | 0.2169993 | $i$ | 16.81855 | | −0.02196715 | −0.30506788 |
| $P$ | 4.26 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 704 | 1.2− | 0.2− | 2003 05 05 | 608 | 0.3+ | 0.2− | 2003 05 30 | 699 | 0.1− | 0.2+ |
| 2003 03 09 | 704 | 0.3− | 0.7− | 2003 05 09 | 608 | 1.1+ | 0.2+ | 2003 06 02 | 704 | 0.0 | 0.7+ |
| 2003 03 09 | 704 | 0.1+ | 0.0 | 2003 05 09 | 608 | 0.7+ | 0.3− | 2003 06 02 | 704 | 0.4+ | 0.6+ |
| 2003 03 09 | 704 | 1.4− | 0.3+ | 2003 05 09 | 608 | 1.1+ | 0.4− | 2003 06 02 | 704 | 0.2+ | 0.1+ |
| 2003 03 09 | 704 | 0.9− | 0.4+ | 2003 05 11 | 699 | 0.3+ | 0.3+ | 2003 06 02 | 704 | 0.1+ | 0.6+ |
| 2003 03 13 | 704 | 0.1+ | 0.0 | 2003 05 11 | 699 | 1.1− | 0.3+ | 2003 06 02 | 704 | 0.1− | 0.2+ |
| 2003 03 13 | 704 | 0.2− | 0.1− | 2003 05 11 | 699 | 0.7− | 0.2+ | 2003 06 17 | 699 | 0.6− | 0.1+ |
| 2003 03 13 | 704 | 0.2− | 0.3+ | 2003 05 11 | 699 | 0.6− | 0.0 | 2003 06 17 | 699 | 0.6− | 0.3+ |
| 2003 03 13 | 704 | 0.6+ | 0.1+ | 2003 05 11 | 704 | 0.1− | 0.0 | 2003 06 17 | 699 | 0.2− | 0.2− |
| 2003 03 13 | 704 | 0.7− | 0.7+ | 2003 05 11 | 704 | 1.0− | 1.3− | 2003 06 17 | 699 | 0.7− | 0.3− |
| 2003 03 14 | 704 | 0.3− | 0.3+ | 2003 05 11 | 704 | 0.4+ | 0.9− | 2003 06 23 | 699 | 0.4− | 0.4+ |
| 2003 03 14 | 704 | 0.2+ | 0.4+ | 2003 05 11 | 704 | 0.1− | 0.5− | 2003 06 23 | 699 | 0.1− | 0.5− |
| 2003 03 14 | 704 | 0.1+ | 0.4− | 2003 05 11 | 704 | 0.1− | 0.5− | 2003 06 23 | 699 | 0.0 | 0.4− |
| 2003 03 14 | 704 | 0.3+ | 0.3− | 2003 05 12 | 704 | 0.3+ | 0.3+ | 2003 06 23 | 699 | 0.1− | 0.4− |
| 2003 03 14 | 704 | 0.3+ | 0.3− | 2003 05 12 | 704 | 0.5+ | 0.6+ | 2006 11 19 | 691 | 0.2− | 0.3− |
| 2003 03 27 | 704 | 0.9+ | 0.1+ | 2003 05 12 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.3− |
| 2003 03 27 | 704 | 0.6+ | 0.1+ | 2003 05 12 | 704 | 0.3+ | 0.3− | 2006 11 19 | 691 | 0.0 | 0.3− |
| 2003 03 27 | 704 | 1.4+ | 0.0 | 2003 05 12 | 704 | 1.0+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2003 03 27 | 704 | 0.7+ | 0.0 | 2003 05 21 | 608 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2003 03 27 | 704 | 1.1+ | 0.3+ | 2003 05 21 | 608 | 0.1+ | 0.8− | 2006 11 21 | G96 | 0.6− | 0.3− |
| 2003 04 25 | 704 | 0.3− | 0.0 | 2003 05 21 | 608 | 0.2− | 0.9− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2003 04 25 | 704 | 0.6− | 0.1+ | 2003 05 24 | 106 | 0.0 | 1.1+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2003 04 25 | 704 | 0.8− | 0.1− | 2003 05 24 | 106 | 0.5+ | 0.8+ | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2003 04 25 | 704 | 0.8− | 0.4+ | 2003 05 24 | 106 | (0.0 | 1.7+) | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2003 04 25 | 704 | 1.1− | 0.2+ | 2003 05 30 | 699 | 0.3− | 0.2− | 2006 11 26 | 691 | 0.1+ | 0.5+ |
| 2003 05 05 | 608 | 0.4+ | 0.3− | 2003 05 30 | 699 | 0.3− | 0.2+ | 2006 11 26 | 691 | 0.0 | 0.3+ |
| 2003 05 05 | 608 | 0.3+ | 0.3− | 2003 05 30 | 699 | 0.6+ | 0.2+ | 2006 11 26 | 691 | 0.3− | 0.1+ |

**2003 EA$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.99300 | | (2000.0) | | | |
| $n$ | 0.17787032 | $\omega$ | 34.78396 | | +0.60580971 | −0.78045856 |
| $a$ | 3.1313652 | $\Omega$ | 19.47350 | | +0.58327088 | +0.30357376 |
| $e$ | 0.1429569 | $i$ | 27.61533 | | +0.54110043 | +0.54655961 |
| $P$ | 5.54 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 699 | 0.1+ | 1.0− | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.2+ |
| 2000 09 28 | 699 | 0.3− | 1.3+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 2000 09 28 | 699 | 0.2+ | 0.8+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2000 09 28 | 699 | 0.6− | 0.5− | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 17 | 683 | 0.0 | 0.6− |
| 2001 11 27 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 691 | 0.3− | 0.1− | 2006 10 17 | 683 | 0.8− | 0.9− |
| 2001 11 27 | 704 | 0.5+ | 0.1− | 2006 09 17 | 704 | 0.7− | 0.3− | 2006 10 17 | 683 | 0.4− | 0.0 |
| 2001 11 27 | 704 | 0.5− | 1.1− | 2006 09 17 | 704 | 0.7− | 0.4− | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2001 11 27 | 704 | 0.0 | 1.3− | 2006 09 17 | 704 | 0.2− | 0.9− | 2006 10 17 | 703 | 0.8+ | 0.3− |
| 2003 02 28 | 704 | 0.2+ | 0.9+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2003 02 28 | 704 | 0.2− | 0.8+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.8− |
| 2003 02 28 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.0 | 2006 10 19 | 683 | 0.2+ | 0.7− |
| 2003 02 28 | 704 | 0.8− | 0.3+ | 2006 09 18 | 699 | 1.2+ | 0.7+ | 2006 10 19 | 683 | 0.9+ | 0.9− |
| 2003 03 12 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 19 | 683 | 0.7+ | 0.2− |
| 2003 03 12 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.3+ | 2006 10 20 | 683 | (1.0− | 1.6−) |
| 2003 03 12 | 644 | 0.5+ | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 683 | (1.2− | 2.4−) |
| 2003 03 13 | 608 | 0.3− | 0.5− | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 20 | 683 | (1.7− | 1.3−) |
| 2003 03 13 | 608 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.3− |
| 2003 03 13 | 608 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2003 03 23 | 049 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2003 03 23 | 049 | 0.4+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.5+ | 0.3+ |
| 2003 03 23 | 049 | 0.0 | 0.4− | 2006 09 27 | 704 | 1.2− | 1.2− | 2006 10 29 | 704 | 0.3− | 0.8+ |
| 2003 03 26 | 049 | 0.3+ | 0.7+ | 2006 09 27 | 704 | (1.9− | 0.2−) | 2006 10 29 | 704 | 0.6+ | 0.6+ |
| 2003 03 26 | 049 | 0.0 | 0.3− | 2006 09 27 | 704 | 1.1− | 0.9+ | 2006 10 29 | 704 | 0.0 | 0.1+ |
| 2003 03 26 | 049 | 0.9+ | 0.3− | 2006 09 29 | 704 | 0.5− | 0.8+ | 2006 10 29 | 704 | 1.1− | 0.5+ |
| 2003 04 01 | 703 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.2+ |
| 2003 04 01 | 703 | 0.1+ | 0.9+ | 2006 09 29 | 704 | 0.6+ | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.6+ |
| 2003 04 01 | 703 | 1.5+ | 0.2+ | 2006 09 29 | 704 | 1.1+ | 0.9− | 2006 11 14 | 703 | 0.6− | 1.0+ |
| 2003 04 05 | 699 | 0.7+ | 0.5− | 2006 09 29 | 704 | 0.4+ | 0.4− | 2006 11 14 | 703 | (0.2− | 1.5+) |
| 2003 04 05 | 699 | 0.3− | 0.4− | 2006 10 03 | 704 | 0.6− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 699 | 0.4+ | 0.4+ | 2006 10 03 | 704 | 0.6− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.2+ |
| 2003 04 05 | 699 | 0.4− | 0.7+ | 2006 10 03 | 704 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 10 03 | 704 | (0.1− | 1.6+) | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 03 | 704 | 0.0 | 1.0+ | 2006 11 29 | 704 | 0.1− | 0.6+ |

**2003 EL$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.64751 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22175677 | $\omega$ | 23.40528 | | −0.19192638 | | −0.97624030 |
| $a$ | 2.7032412 | $\Omega$ | 77.78035 | | +0.88338043 | | −0.21650007 |
| $e$ | 0.2241183 | $i$ | 5.90768 | | +0.42755501 | | +0.00908809 |
| $P$ | 4.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 28 | 704 | 0.1+ | 0.5− | 2003 04 03 | 049 | 0.8+ | 1.1− | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2003 02 28 | 704 | 0.2− | 1.3+ | 2003 04 03 | 049 | 0.4+ | 0.2− | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2003 02 28 | 704 | 0.4− | 1.0+ | 2003 04 03 | 049 | 0.4+ | 0.6− | 2006 11 25 | 691 | 0.3+ | 0.5− |
| 2003 02 28 | 704 | 0.2− | 0.2− | 2003 04 10 | 691 | 0.3− | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2003 02 28 | 704 | 0.7+ | 0.4− | 2003 04 10 | 691 | 0.4− | 0.1+ | 2006 11 27 | B01 | 0.2− | 0.1+ |
| 2003 03 10 | 644 | 1.0+ | 0.7+ | 2003 04 10 | 691 | 0.3+ | 0.0 | 2006 11 27 | B01 | 0.7− | 0.5− |
| 2003 03 10 | 644 | 0.8+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.6+ | 1.0+ |
| 2003 03 10 | 644 | 0.7+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 12 01 | 704 | (1.4+ | 1.6+) |
| 2003 03 13 | 049 | 1.4− | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | (2.1+ | 1.2−) |
| 2003 03 13 | 049 | 1.0− | 0.9− | 2006 11 17 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.7+ | 0.2+ |
| 2003 03 13 | 049 | (1.9− | 0.2−) | 2006 11 17 | 691 | 0.2− | 0.1+ | | | | |

**2003 ET$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.92913 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17550930 | $\omega$ | 148.88681 | | −0.93248147 | | +0.26525556 |
| $a$ | 3.1593856 | $\Omega$ | 48.60269 | | −0.36013483 | | −0.73522504 |
| $e$ | 0.1569872 | $i$ | 19.07813 | | +0.02795000 | | −0.62376568 |
| $P$ | 5.62 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 704 | 0.2+ | 0.2+ | 2003 04 10 | 704 | 1.2− | 0.1+ | 2006 11 11 | 703 | 1.4+ | 0.5− |
| 2003 03 08 | 704 | 0.1− | 0.7+ | 2003 04 24 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2003 03 08 | 704 | 0.3+ | 1.1+ | 2003 04 24 | 704 | (1.2+ | 2.0+) | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2003 03 08 | 704 | 0.5+ | 1.0+ | 2003 04 24 | 704 | 1.2+ | 1.4+ | 2006 11 11 | 703 | 1.3− | 0.4+ |
| 2003 03 08 | 704 | 0.3+ | 0.4+ | 2003 04 24 | 704 | 0.3+ | 0.8+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2003 03 13 | 704 | 0.5− | 1.3− | 2003 04 24 | 704 | (0.7− | 3.2+) | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2003 03 13 | 704 | 1.1− | 0.4− | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2003 03 13 | 704 | 1.4− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 11 17 | 703 | 0.3− | 1.0+ |
| 2003 03 13 | 704 | 0.5− | 1.2− | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.6− | 0.2+ |
| 2003 03 13 | 704 | 0.1+ | 1.1− | 2006 10 17 | G96 | 0.6+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 2003 03 14 | 608 | 0.8+ | 1.1+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 2003 03 14 | 608 | 0.7+ | 1.3+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2003 03 14 | 608 | 0.7+ | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2003 03 23 | 608 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2003 03 23 | 608 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2003 03 23 | 608 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | (1.2+ | 2.6+) |
| 2003 04 02 | 608 | 1.0+ | 0.9− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.1+ | 0.8+ |
| 2003 04 02 | 608 | 1.0+ | 0.3− | 2006 10 28 | G96 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2003 04 02 | 608 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 1.3+ |
| 2003 04 05 | 699 | 0.9− | 0.0 | 2006 10 28 | G96 | 0.5− | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2003 04 05 | 699 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2003 04 05 | 699 | 0.7− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2003 04 05 | 699 | 0.5− | 0.5− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2003 04 09 | 644 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.4+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 04 09 | 644 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2003 04 09 | 644 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2003 04 10 | 704 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.4− | 0.7+ | 2006 11 22 | G96 | 0.3+ | 0.1+ |
| 2003 04 10 | 704 | 1.2+ | 1.1− | 2006 11 10 | 644 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2003 04 10 | 704 | 1.3− | 1.0− | 2006 11 10 | 644 | 0.4− | 0.5+ | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2003 04 10 | 704 | 0.4− | 0.4− | 2006 11 10 | 644 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2003 04 10 | 704 | 0.6+ | 1.1− | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2003 04 10 | 704 | 0.6− | 0.2+ | 2006 11 10 | 644 | 0.6− | 0.7− | | | | |
| 2003 04 10 | 704 | 0.5+ | 1.4− | 2006 11 11 | 703 | 0.7− | 1.0− | | | | |

**2003 EV$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.82050 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17914159 | $\omega$ | 142.94221 | | −0.96237367 | | +0.11549722 |
| $a$ | 3.1165333 | $\Omega$ | 45.70120 | | −0.24378086 | | −0.76682573 |
| $e$ | 0.0940221 | $i$ | 20.10019 | | +0.12003253 | | −0.63137840 |
| $P$ | 5.50 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 704 | 0.4+ | 0.8− | 2003 04 02 | 608 | 0.3− | 0.6− | 2006 10 16 | 691 | 0.4+ | 0.3− |
| 2003 03 08 | 704 | 0.2− | 0.4− | 2003 04 02 | 608 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2003 03 08 | 704 | 0.1+ | 0.4− | 2003 04 02 | 608 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2003 03 08 | 704 | 0.6+ | 0.1− | 2003 04 09 | 644 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.4− |
| 2003 03 08 | 704 | 0.4− | 0.8− | 2003 04 09 | 644 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2003 03 13 | 704 | (0.7+ | 2.0+) | 2003 04 09 | 644 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2003 03 13 | 704 | 0.5− | 0.4+ | 2003 04 10 | 704 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2003 03 13 | 704 | 0.2+ | 0.4+ | 2003 04 10 | 704 | 0.7− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2003 03 13 | 704 | 0.4+ | 0.4+ | 2003 04 10 | 704 | 0.6+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2003 03 14 | 608 | (0.5− | 1.8−) | 2003 04 10 | 704 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2003 03 14 | 608 | 0.0 | 0.8− | 2003 04 10 | 704 | 0.7− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2003 03 14 | 608 | 0.2− | 1.1− | 2003 04 10 | 704 | 0.4+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2003 03 23 | 608 | 0.2+ | 0.1+ | 2003 04 10 | 704 | 0.6− | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 2003 03 23 | 608 | 0.5+ | 0.3+ | 2003 04 10 | 704 | 0.9− | 0.5− | 2006 11 16 | 691 | 0.3− | 0.2− |
| 2003 03 23 | 608 | 0.7+ | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2003 03 26 | 704 | 0.3− | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2003 03 26 | 704 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2003 03 26 | 704 | 0.4− | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2003 03 26 | 704 | 0.1+ | 0.8+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2003 03 26 | 704 | 0.4+ | 0.7+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.9+ |

**2003 ER$_{61}$ = 1995 WL$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.24890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17892013 | $\omega$ | 345.23127 | | −0.94664617 | | −0.32214436 |
| $a$ | 3.1191044 | $\Omega$ | 175.94117 | | +0.30725901 | | −0.91075572 |
| $e$ | 0.0532941 | $i$ | 7.44193 | | +0.09722622 | | −0.25835447 |
| $P$ | 5.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.8− | 0.3+ | 2003 03 06 | 699 | 1.3+ | 0.8− | 2003 03 27 | 691 | 0.4+ | 0.7+ |
| 1995 11 19 | 691 | 0.2− | 0.3− | 2003 03 06 | 699 | 0.5+ | 0.5− | 2003 04 05 | 691 | 0.5− | 0.4− |
| 1995 11 25 | 691 | 0.4+ | 0.3− | 2003 03 06 | 699 | 1.4− | 0.6− | 2003 04 05 | 691 | 0.4− | 0.2+ |
| 1995 11 25 | 691 | 0.6+ | 0.3− | 2003 03 09 | 644 | 0.4+ | 0.7+ | 2003 04 05 | 691 | 0.4− | 0.4− |
| 1995 11 25 | 691 | 0.2+ | 0.2− | 2003 03 09 | 644 | 0.2+ | 0.6+ | 2006 11 22 | G96 | (9.5− | 1.9−) |
| 2000 10 02 | 645 | 0.1− | 0.3+ | 2003 03 09 | 644 | 0.3+ | 0.5+ | 2006 11 22 | G96 | (9.2− | 2.4−) |
| 2000 10 02 | 645 | 0.0 | 0.2+ | 2003 03 27 | 691 | 0.5+ | 0.8+ | 2006 11 22 | G96 | (9.6− | 3.0−) |
| 2003 03 06 | 699 | (0.6− | 1.8+) | 2003 03 27 | 691 | 0.4+ | 0.8+ | 2006 11 22 | G96 | (9.5− | 2.5−) |

**2003 ES$_{61}$ = 1998 BR$_{19}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.79203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21849181 | $\omega$ | 83.17553 | | −0.90864902 | | +0.40791781 |
| $a$ | 2.7301045 | $\Omega$ | 120.86390 | | −0.41227036 | | −0.84251442 |
| $e$ | 0.0504286 | $i$ | 5.96597 | | −0.06625789 | | −0.35181318 |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 22 | 691 | 0.4+ | 0.3− | 2003 03 06 | 704 | 0.3− | 0.4− | 2003 03 23 | 645 | 0.4− | 0.0 |
| 1998 01 22 | 691 | 0.5+ | 0.5− | 2003 03 06 | 704 | 0.1+ | 0.7− | 2003 03 23 | 645 | 0.3− | 0.1− |
| 1998 01 22 | 691 | 0.1+ | 0.2− | 2003 03 06 | 699 | 0.5− | 0.6+ | 2003 03 31 | 645 | 0.1− | 0.0 |
| 1998 01 29 | 691 | 0.4− | 0.3+ | 2003 03 06 | 704 | 1.0− | 0.2+ | 2003 03 31 | 645 | 0.1− | 0.0 |
| 1998 01 29 | 691 | 0.3− | 0.3+ | 2003 03 06 | 699 | 0.1+ | 1.0+ | 2003 04 08 | 691 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 29 | 691 | 0.4− | 0.4+ | 2003 03 06 | 699 | 0.6+ | 1.0− | 2003 04 08 | 691 | 0.3+ | 0.2− |
| 2003 03 06 | 704 | 0.0 | 0.2+ | 2003 03 06 | 699 | 1.6+ | 0.3+ | 2003 04 08 | 691 | 0.1+ | 0.4+ |

**2003 ET$_{61}$ = 2001 XW$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.18030 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21528851 | $\omega$ | 11.25582 | | −0.24120381 | | −0.95701934 |
| $a$ | 2.7571188 | $\Omega$ | 92.85243 | | +0.87740539 | | −0.28595949 |
| $e$ | 0.0660938 | $i$ | 9.27901 | | +0.41470533 | | +0.04838542 |
| $P$ | 4.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2003 03 08 | 644 | 0.2+ | 0.1+ | 2005 09 24 | 644 | 0.0 | 0.6+ |
| 2001 12 11 | 704 | 1.1+ | 0.4− | 2003 03 08 | 644 | 0.0 | 0.0 | 2005 09 24 | 644 | 0.5− | 0.5+ |
| 2001 12 11 | 704 | 0.3− | 0.4− | 2003 03 08 | 644 | 0.4+ | 0.2+ | 2005 09 24 | 644 | 0.4− | 0.4+ |
| 2001 12 11 | 704 | 0.4+ | 0.4+ | 2003 03 23 | 644 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2001 12 11 | 704 | 0.2− | 0.2− | 2003 03 23 | 644 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2001 12 17 | 704 | 0.2+ | 0.1− | 2003 03 23 | 644 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.5− | 0.6+ | 2003 04 04 | 704 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.6− | 0.2+ | 2003 04 04 | 704 | 0.0 | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2003 03 08 | 699 | 0.2− | 0.2− | 2003 04 04 | 704 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2003 03 08 | 699 | (0.3+ | 2.7+) | 2005 08 29 | 644 | 0.4− | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2003 03 08 | 699 | 0.4+ | 0.4+ | 2005 08 29 | 644 | 0.2− | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.4+ |
| 2003 03 08 | 699 | 0.4− | 1.1+ | 2005 08 29 | 644 | 0.0 | 0.6+ | | | | |

**2003 EU$_{61}$ = 2004 RD$_{281}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.90403 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26495987 | $\omega$ | 33.10397 | | −0.82904457 | | +0.55918213 |
| $a$ | 2.4007631 | $\Omega$ | 180.89610 | | −0.52181877 | | −0.77407507 |
| $e$ | 0.1386733 | $i$ | 2.43227 | | −0.20097331 | | −0.29685541 |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 695 | 0.1+ | 0.2− | 2003 05 05 | 691 | 0.4− | 0.3− | 2003 05 10 | 691 | 0.2+ | 0.1+ |
| 2003 03 08 | 695 | 0.0 | 0.3+ | 2003 05 05 | 704 | 0.3+ | 0.5− | 2004 09 15 | 691 | 0.1+ | 0.1− |
| 2003 03 08 | 695 | 0.1− | 0.0 | 2003 05 05 | 704 | 0.5− | 0.4+ | 2004 09 15 | 691 | 0.0 | 0.2+ |
| 2003 03 08 | 695 | 0.2+ | 0.0 | 2003 05 05 | 691 | 0.1− | 0.2− | 2004 09 15 | 691 | 0.2+ | 0.2+ |
| 2003 03 08 | 695 | 0.3− | 0.2− | 2003 05 05 | 704 | 0.2+ | 0.5+ | 2004 09 16 | 691 | 0.0 | 0.0 |
| 2003 04 29 | 704 | 0.9+ | 0.9+ | 2003 05 05 | 691 | 0.1− | 0.2− | 2004 09 16 | 691 | 0.1+ | 0.2− |
| 2003 04 29 | 704 | 0.4− | 0.4+ | 2003 05 10 | 691 | 0.1− | 0.2+ | 2004 09 16 | 691 | 0.4− | 0.2− |
| 2003 04 29 | 704 | 0.1+ | 1.4− | 2003 05 10 | 691 | 0.2− | 0.2+ | | | | |

**2003 EV$_{61}$ = 1998 HC$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.61819 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18650691 | $\omega$ | 101.00619 | | −0.98859390 | | +0.10607486 |
| $a$ | 3.0339338 | $\Omega$ | 85.14619 | | −0.14066453 | | −0.90396385 |
| $e$ | 0.0287219 | $i$ | 6.15952 | | +0.05381062 | | −0.41424327 |
| $P$ | 5.28 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.1− | 0.2+ | 2003 03 09 | 704 | 0.6+ | 0.2+ | 2005 10 10 | 703 | 0.1− | 0.6− |
| 1992 01 31 | 691 | 0.2+ | 0.9− | 2003 03 09 | 704 | 0.6+ | 0.4− | 2005 10 10 | 703 | 0.9− | 0.4− |
| 1992 01 31 | 691 | 0.9− | 0.4− | 2003 03 09 | 704 | 0.0 | 0.7− | 2005 10 10 | 703 | 0.0 | 0.5− |
| 1995 10 26 | 691 | 0.4+ | 0.3− | 2003 03 09 | 704 | 0.7+ | 0.5− | 2006 11 12 | G96 | 0.0 | 0.2+ |
| 1995 10 26 | 691 | 0.6− | 0.0 | 2003 03 26 | 644 | 1.2+ | 0.8+ | 2006 11 12 | G96 | 0.6− | 0.0 |
| 1995 10 26 | 691 | 0.2+ | 0.4− | 2003 03 26 | 644 | 0.7+ | 0.9+ | 2006 11 12 | G96 | 0.3− | 0.2+ |
| 1995 11 14 | 691 | 0.4+ | 0.4+ | 2003 03 26 | 644 | 0.7+ | 0.9+ | 2006 11 12 | G96 | 0.5− | 0.1− |
| 1995 11 14 | 691 | 0.2+ | 0.1− | 2003 03 27 | 704 | 0.2+ | 1.1+ | 2006 11 16 | 691 | 0.3− | 0.2+ |
| 1995 11 14 | 691 | 0.3+ | 0.1+ | 2003 03 27 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 691 | 0.5− | 0.2+ |
| 1996 12 08 | 691 | 0.0 | 0.1− | 2003 03 27 | 704 | 0.5− | 1.2+ | 2006 11 16 | 691 | 0.2− | 0.5+ |
| 1996 12 08 | 691 | 0.2− | 0.3− | 2003 03 27 | 704 | (2.6− | 0.4+) | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 1996 12 08 | 691 | 0.4− | 0.0 | 2003 04 08 | 644 | 0.1− | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 1998 04 21 | 704 | 0.2+ | 1.6− | 2003 04 08 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 1998 04 21 | 704 | 0.9− | 1.0− | 2003 04 08 | 644 | 0.5+ | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.4+ |
| 1998 04 21 | 704 | (0.8− | 2.4−) | 2005 08 28 | 699 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 1998 04 21 | 704 | (4.4− | 0.1−) | 2005 08 28 | 699 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.5− |
| 1998 04 22 | 704 | (2.1+ | 0.9+) | 2005 08 28 | 699 | (1.3− | 1.6+) | 2006 11 21 | 704 | 1.1+ | 1.0− |
| 1998 04 22 | 704 | 2.0− | 0.1− | 2005 08 28 | 699 | (2.7+ | 0.3+) | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 1998 04 22 | 704 | 1.0+ | 1.0− | 2005 09 01 | 644 | 0.1+ | 0.4+ | 2006 11 24 | 691 | 0.2− | 0.0 |
| 1998 04 22 | 704 | 1.6− | 0.1+ | 2005 09 01 | 644 | 0.3− | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.8+ | 0.4+ | 2005 09 01 | 644 | 0.2+ | 0.6+ | 2006 11 28 | 704 | 0.1+ | 1.1− |
| 2001 12 14 | 704 | (2.6+ | 0.7+) | 2005 09 26 | 703 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.3+ | 0.3− |
| 2001 12 14 | 704 | 0.7+ | 1.0+ | 2005 09 26 | 703 | 0.3+ | 1.0+ | 2006 11 28 | 704 | 0.8− | 0.6− |
| 2001 12 14 | 704 | 0.7+ | 0.8+ | 2005 09 26 | 703 | 1.3+ | 0.8− | 2006 11 28 | 704 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 1.2+ | 1.3+ | 2005 09 26 | 703 | 0.4− | 0.1− | | | | |
| 2003 03 09 | 704 | 0.8+ | 0.1+ | 2005 10 10 | 703 | 1.4− | 0.5+ | | | | |

**2003 EW$_{61}$ = 2001 XK$_{167}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.91657 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20074315 | $\omega$ | 119.36979 | | −0.71748793 | | +0.68876973 |
| $a$ | 2.8887429 | $\Omega$ | 104.38025 | | −0.67050735 | | −0.64246402 |
| $e$ | 0.0418434 | $i$ | 6.16089 | | −0.18876165 | | −0.33591105 |
| $P$ | 4.91 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4− | 0.2+ | 2001 12 17 | 704 | 0.1− | 0.4+ | 2003 03 26 | 691 | 0.6− | 1.3+ |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2001 12 17 | 704 | 0.4+ | 0.8− | 2003 03 26 | 644 | 0.4+ | 1.3− |
| 2001 12 14 | 704 | 0.4− | 0.8+ | 2003 03 09 | 704 | 0.2+ | 0.1+ | 2003 03 26 | 644 | 0.3+ | 1.1− |
| 2001 12 14 | 704 | 0.1− | 0.6+ | 2003 03 09 | 704 | 0.1− | 0.2+ | 2003 03 26 | 644 | 0.3+ | 1.2− |
| 2001 12 17 | 704 | 0.6+ | 0.5− | 2003 03 09 | 704 | 0.5+ | 0.2− | 2003 04 01 | 645 | 0.0 | 0.5− |
| 2001 12 17 | 704 | 0.1+ | 0.3− | 2003 03 26 | 691 | 0.4− | 1.3+ | 2003 04 01 | 645 | 0.0 | 0.5− |
| 2001 12 17 | 704 | 0.0 | 0.7− | 2003 03 26 | 691 | 0.5− | 1.9+ | | | | |

**2003 EX$_{61}$ = 2004 TV$_{252}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.24672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29270849 | $\omega$ | 263.18133 | | +0.01113298 | | +0.99989976 |
| $a$ | 2.2465314 | $\Omega$ | 7.47331 | | −0.88881063 | | +0.01390382 |
| $e$ | 0.1819054 | $i$ | 3.85673 | | −0.45813942 | | −0.00267603 |
| $P$ | 3.37 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 12 | 291 | 0.3− | 0.2− | 2003 04 05 | 691 | 0.8+ | 0.9+ | 2004 10 09 | 691 | 0.3− | 0.3+ |
| 2003 03 12 | 291 | 0.1+ | 0.2− | 2003 04 05 | 691 | 0.6+ | 0.7+ | 2004 10 09 | 691 | 0.2− | 0.0 |
| 2003 03 12 | 291 | 0.6− | 0.3− | 2003 04 27 | 696 | 0.1− | 0.1− | 2004 10 13 | 691 | 0.1+ | 0.0 |
| 2003 03 23 | 645 | 0.2− | 0.5− | 2003 04 27 | 696 | 0.1+ | 0.2+ | 2004 10 13 | 691 | 0.0 | 0.1− |
| 2003 03 23 | 645 | 0.3− | 0.5− | 2003 04 27 | 696 | 0.4+ | 0.7− | 2004 10 13 | 691 | 0.2+ | 0.1+ |
| 2003 04 05 | 691 | 0.1− | 1.0+ | 2004 10 09 | 691 | 0.0 | 0.1+ | | | | |

**2003 EY$_{61}$ = 2005 YJ$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.06161 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24367861 | $\omega$ | 189.75064 | | +0.13153231 | | +0.98982998 |
| $a$ | 2.5385815 | $\Omega$ | 87.82189 | | −0.90581898 | | +0.14221453 |
| $e$ | 0.1182457 | $i$ | 3.10826 | | −0.40272973 | | +0.00341173 |
| $P$ | 4.04 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.0 | 0.4− | 2003 04 05 | 691 | 0.3+ | 0.1+ | 2004 09 17 | 704 | 0.0 | 0.8+ |
| 1995 04 26 | 691 | 0.0 | 0.4+ | 2003 04 28 | 691 | 0.1+ | 0.3+ | 2004 09 17 | 704 | 1.4− | 1.5+ |
| 1995 04 26 | 691 | 0.1− | 0.2− | 2003 04 28 | 691 | 0.1+ | 0.4− | 2005 12 25 | 691 | 0.1+ | 0.1+ |
| 2003 03 12 | 291 | 0.6− | 0.1+ | 2003 04 28 | 691 | 0.0 | 0.4+ | 2005 12 25 | 691 | 0.2− | 0.0 |
| 2003 03 12 | 291 | 0.5− | 0.1− | 2003 05 06 | 691 | 0.4+ | 0.0 | 2005 12 25 | 691 | 0.4+ | 0.2+ |
| 2003 03 12 | 291 | 0.4− | 0.0 | 2003 05 06 | 691 | 0.4+ | 0.2− | 2006 01 05 | 691 | 0.3− | 0.1+ |
| 2003 04 05 | 691 | 0.4+ | 0.4+ | 2003 05 06 | 691 | 0.1+ | 0.2+ | 2006 01 05 | 691 | 0.1− | 0.1+ |
| 2003 04 05 | 691 | 0.1+ | 0.2+ | 2004 09 17 | 704 | 0.1− | 0.8+ | 2006 01 05 | 691 | 0.1+ | 0.0 |

**2003 EZ$_{61}$ = 2006 SN$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.99199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18087124 | $\omega$ | 289.50137 | | −0.57443577 | −0.81732989 | |
| $a$ | 3.0966328 | $\Omega$ | 195.80251 | | +0.79898954 | −0.54801472 | |
| $e$ | 0.0698160 | $i$ | 9.44108 | | +0.17787428 | −0.17790929 | |
| $P$ | 5.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 19 | 691 | 0.2− | 0.3+ | 2003 03 26 | 699 | 0.3− | 0.2+ | 2006 10 16 | 621 | 0.1− | 0.3− |
| 1993 05 19 | 691 | 0.1− | 0.7+ | 2003 03 26 | 699 | 1.0− | 1.2+ | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 1993 05 19 | 691 | 0.1− | 0.3+ | 2003 03 26 | 699 | (2.4− | 0.9−) | 2006 10 17 | G96 | 0.4− | 0.1− |
| 1995 09 30 | 691 | 0.0 | 0.3− | 2003 04 11 | 691 | 0.6+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.2− |
| 1995 09 30 | 691 | 0.3− | 0.6− | 2003 04 11 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.1− |
| 1995 09 30 | 691 | (2.1+ | 3.0−) | 2003 04 11 | 691 | 0.5− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2000 09 21 | 695 | 0.0 | 0.5+ | 2004 05 23 | 704 | 1.2− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2000 09 21 | 695 | 0.1− | 0.6+ | 2004 05 23 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2000 10 02 | 645 | 0.2+ | 0.1− | 2004 05 23 | 704 | 0.0 | 0.7− | 2006 10 21 | 703 | 0.1+ | 0.3+ |
| 2000 10 02 | 645 | 0.2+ | 0.1− | 2005 07 08 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 1.2− | 0.1+ |
| 2001 12 11 | 704 | 0.7− | 0.9+ | 2005 07 08 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.5− |
| 2001 12 11 | 704 | (2.0− | 1.3+) | 2005 07 08 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.4− |
| 2001 12 11 | 704 | (1.9− | 0.6+) | 2005 07 30 | 644 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 03 07 | 704 | 0.0 | 0.1− | 2005 07 30 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2003 03 07 | 704 | 1.2+ | 0.6+ | 2005 07 30 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 03 07 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.4− |
| 2003 03 07 | 704 | 0.6+ | 1.0+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2003 03 07 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2003 03 07 | 704 | (1.4+ | 1.7+) | 2006 09 24 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.7− |
| 2003 03 07 | 704 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2003 03 07 | 704 | 0.8+ | 0.3+ | 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.1+ |
| 2003 03 07 | 704 | 0.5+ | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.8+ | 1.3− |
| 2003 03 07 | 704 | 0.6+ | 0.7− | 2006 10 15 | 691 | 0.2− | 0.7+ | 2006 11 17 | 703 | 0.9− | 0.6+ |
| 2003 03 07 | 704 | 0.3+ | 0.4+ | 2006 10 15 | 691 | 0.4− | 0.5+ | 2006 11 17 | 703 | 0.5+ | 0.7− |
| 2003 03 07 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 621 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.7− | 1.3+ |
| 2003 03 26 | 699 | 1.1− | 0.3− | 2006 10 16 | 621 | 0.0 | 0.2+ | 2006 11 17 | 703 | (1.1− | 1.6−) |

**2003 EA$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.62930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27675218 | $\omega$ | 257.70157 | | +0.12563855 | +0.99159666 | |
| $a$ | 2.3320723 | $\Omega$ | 19.59624 | | −0.87073664 | +0.12511528 | |
| $e$ | 0.2489655 | $i$ | 5.27571 | | −0.47542893 | +0.03289726 | |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.4+ | 0.2+ | 2003 03 07 | 291 | 0.2− | 0.3+ | 2003 05 10 | 691 | 0.6+ | 0.5+ |
| 2000 09 24 | 704 | 1.1− | 1.6+ | 2003 04 07 | 704 | 0.2+ | 0.5− | 2003 05 10 | 691 | 0.4+ | 0.5+ |
| 2000 09 24 | 704 | 0.1− | 1.0+ | 2003 04 07 | 704 | 0.8+ | 0.2+ | 2003 05 10 | 691 | 0.6+ | 0.8+ |
| 2000 09 24 | 704 | 0.3+ | 1.8+ | 2003 04 07 | 704 | 1.2+ | 0.5+ | 2004 10 07 | 691 | 0.2+ | 0.3+ |
| 2000 09 24 | 704 | 0.5+ | 1.1+ | 2003 04 07 | 704 | 0.4+ | 0.0 | 2004 10 07 | 691 | 0.4− | 0.1+ |
| 2000 10 01 | 699 | 1.4− | 0.2+ | 2003 04 29 | 691 | 0.5− | 0.2+ | 2004 10 07 | 691 | 0.1+ | 0.2+ |
| 2000 10 01 | 699 | 2.3− | 0.4− | 2003 04 29 | 691 | 0.5− | 0.2+ | 2004 11 11 | 691 | 0.0 | 0.4+ |
| 2000 10 01 | 699 | 0.8− | 0.3+ | 2003 04 29 | 691 | 0.8− | 0.1+ | 2004 11 11 | 691 | 0.5− | 0.9+ |
| 2000 10 01 | 699 | 0.5+ | 1.0+ | 2003 05 05 | 691 | 0.4+ | 0.0 | 2004 11 11 | 691 | 0.2− | 1.0+ |
| 2003 03 07 | 291 | 0.3− | 0.5+ | 2003 05 05 | 691 | 0.9+ | 0.0 | | | | |
| 2003 03 07 | 291 | 0.2− | 0.6+ | 2003 05 05 | 691 | 0.8+ | 0.0 | | | | |

**2003 EB$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.82338 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19141366 | $\omega$ | 249.91412 | | +0.66197828 | −0.74616328 | |
| $a$ | 2.9818613 | $\Omega$ | 158.14407 | | +0.73894968 | +0.63388447 | |
| $e$ | 0.1077967 | $i$ | 10.97724 | | +0.12545174 | +0.20354565 | |
| $P$ | 5.15 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 27 | 691 | 0.1− | 0.5− | 2003 03 10 | 699 | 0.8+ | 0.0 | 2005 08 06 | 644 | 0.4+ | 0.3+ |
| 1992 01 27 | 691 | 0.4+ | 0.3− | 2003 03 10 | 699 | 0.3− | 0.6+ | 2005 08 24 | 644 | 0.0 | 0.1+ |
| 1992 01 27 | 691 | 0.0 | 0.6+ | 2003 03 26 | 644 | 0.2+ | 0.7+ | 2005 08 24 | 644 | 0.2+ | 0.2+ |
| 2000 08 29 | 106 | 0.8− | 0.1− | 2003 03 26 | 699 | (3.0− | 3.9+) | 2005 08 24 | 644 | 0.1+ | 0.0 |
| 2000 08 29 | 106 | 0.8− | 0.0 | 2003 03 26 | 644 | 0.1− | 0.8+ | 2005 08 26 | 699 | 0.8− | 0.4+ |
| 2000 08 29 | 106 | 0.3+ | 1.1+ | 2003 03 26 | 699 | (0.2− | 2.0+) | 2005 08 26 | 699 | 0.0 | 0.1+ |
| 2000 09 24 | 699 | (2.6− | 3.2+) | 2003 03 26 | 699 | 0.5− | 1.4+ | 2005 08 26 | 699 | (2.6+ | 1.3+) |
| 2000 09 24 | 699 | (1.2− | 2.0+) | 2003 03 26 | 644 | 0.1+ | 0.7+ | 2005 08 26 | 699 | (1.6+ | 0.3−) |
| 2000 09 24 | 699 | 0.5− | 1.2+ | 2003 03 26 | 699 | 1.4− | 1.1+ | 2005 10 26 | G96 | 0.0 | 0.1− |
| 2000 09 24 | 699 | 0.4+ | 1.0+ | 2003 03 26 | 644 | 0.4+ | 0.7+ | 2005 10 26 | G96 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.1− | 0.5+ | 2003 03 26 | 644 | 0.3+ | 0.4+ | 2005 10 26 | G96 | 0.2− | 0.2+ |
| 2000 09 24 | 704 | 0.4− | 0.5+ | 2003 03 26 | 644 | 0.4+ | 0.3+ | 2005 10 26 | G96 | 0.1+ | 0.3+ |
| 2000 09 24 | 704 | 0.4− | 0.2− | 2004 06 17 | 691 | 0.3+ | 0.1+ | 2006 10 02 | D35 | 0.2− | 0.4+ |
| 2000 09 24 | 704 | 0.8− | 0.6+ | 2004 06 17 | 691 | 0.0 | 0.1+ | 2006 10 02 | D35 | 0.0 | 0.4+ |
| 2003 03 09 | 704 | 0.5+ | 0.5+ | 2004 06 17 | 691 | 0.0 | 0.2− | 2006 10 02 | D35 | 0.0 | 0.4+ |
| 2003 03 09 | 704 | 0.5− | 0.1− | 2005 07 29 | 644 | 0.6+ | 0.2− | 2006 10 02 | D35 | 0.1+ | 1.1+ |
| 2003 03 09 | 704 | 0.6− | 0.9+ | 2005 07 29 | 644 | 0.3+ | 0.0 | 2006 10 02 | D35 | 0.2+ | 1.0+ |
| 2003 03 09 | 704 | 0.5+ | 0.3+ | 2005 07 29 | 644 | 0.1+ | 0.1− | 2006 10 02 | D35 | 0.0 | 0.3+ |
| 2003 03 10 | 699 | (2.5+ | 3.0+) | 2005 08 06 | 644 | 0.4+ | 0.3+ | | | | |
| 2003 03 10 | 699 | (0.2+ | 1.6+) | 2005 08 06 | 644 | 0.3+ | 0.1+ | | | | |

**2003 EC$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.60878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23164780 | $\omega$ | 355.61565 | | +0.88542729 | +0.45948300 | |
| $a$ | 2.6257332 | $\Omega$ | 336.62996 | | −0.42088308 | +0.72881849 | |
| $e$ | 0.0756493 | $i$ | 10.15780 | | −0.19716986 | +0.50764060 | |
| $P$ | 4.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.0 | 0.7+ | 2003 03 26 | 699 | 1.1− | 0.8+ | 2005 10 29 | 703 | 0.5+ | 0.8+ |
| 2001 12 09 | 704 | 0.8+ | 0.3+ | 2003 03 26 | 699 | 0.9− | 1.6− | 2005 10 29 | 703 | 1.4+ | 0.2+ |
| 2001 12 09 | 704 | 1.0− | 0.3+ | 2003 04 05 | 691 | 0.1+ | 0.7+ | 2005 11 03 | 704 | 0.2− | 0.0 |
| 2003 03 09 | 644 | 0.2+ | 0.6+ | 2003 04 05 | 691 | 0.1− | 0.3+ | 2005 11 03 | 704 | 0.4− | 0.4− |
| 2003 03 09 | 644 | 0.4+ | 0.6+ | 2003 04 05 | 691 | 0.2− | 0.0 | 2005 11 03 | 704 | 1.1+ | 0.3− |
| 2003 03 09 | 644 | 0.3+ | 0.3+ | 2005 09 29 | 703 | 0.5+ | 0.4− | 2005 11 03 | 704 | 0.9− | 0.1+ |
| 2003 03 24 | 691 | 0.1+ | 0.0 | 2005 09 29 | 703 | 0.5− | 1.7− | 2005 11 21 | 703 | 0.1+ | 0.7− |
| 2003 03 24 | 691 | 0.5− | 0.4− | 2005 09 29 | 703 | 1.5− | 0.6− | 2005 11 21 | 703 | 1.3− | 1.2− |
| 2003 03 24 | 691 | 0.3+ | 0.7− | 2005 09 29 | 703 | 0.6− | 0.2− | 2005 11 21 | 703 | 0.1+ | 0.5+ |
| 2003 03 26 | 699 | 1.7+ | 1.0− | 2005 10 29 | 703 | 0.6+ | 1.5+ | 2005 11 21 | 703 | 0.5+ | 0.1− |
| 2003 03 26 | 699 | (2.3+ | 0.0 ) | 2005 10 29 | 703 | 1.0+ | 0.9+ | | | | |

**2003 ED$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.95159 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26078480 | $\omega$ | 221.92640 | | +0.54454059 | +0.80755962 | |
| $a$ | 2.4263188 | $\Omega$ | 82.27311 | | −0.69588885 | +0.58578568 | |
| $e$ | 0.1741549 | $i$ | 13.21594 | | −0.46820321 | +0.06857549 | |
| $P$ | 3.78 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 644 | 0.2+ | 0.0 | 2003 03 24 | 608 | 0.8+ | 0.5− | 2004 09 21 | 699 | 0.1+ | 0.2− |
| 2001 12 18 | 644 | 0.1+ | 0.0 | 2003 03 31 | 645 | 0.1− | 0.0 | 2004 09 21 | 704 | 0.3+ | 0.0 |
| 2001 12 18 | 644 | 0.2− | 0.2− | 2003 03 31 | 645 | 0.0 | 0.0 | 2004 09 21 | 704 | 0.1− | 0.5− |
| 2002 01 08 | 644 | 0.0 | 0.0 | 2003 04 06 | 699 | 0.3+ | 0.3+ | 2004 09 21 | 699 | 0.7− | 0.9− |
| 2002 01 08 | 644 | 0.0 | 0.0 | 2003 04 06 | 699 | 0.5+ | 0.3+ | 2004 09 21 | 704 | 0.7+ | 0.4+ |
| 2002 01 08 | 644 | 0.0 | 0.0 | 2003 04 06 | 699 | 0.6+ | 0.2− | 2004 09 21 | 704 | 0.1+ | 0.5+ |
| 2003 03 09 | 699 | 1.0+ | 0.5+ | 2003 04 06 | 699 | 0.6+ | 0.3+ | 2004 10 06 | 704 | 0.4+ | 0.2+ |
| 2003 03 09 | 699 | 0.8+ | 0.2− | 2004 09 07 | 704 | 0.1− | 0.4− | 2004 10 06 | 704 | 0.0 | 0.4− |
| 2003 03 09 | 699 | 0.3− | 0.6+ | 2004 09 07 | 704 | 0.4+ | 0.2− | 2004 10 06 | 704 | 0.4+ | 1.4+ |
| 2003 03 09 | 699 | 0.8+ | 0.4+ | 2004 09 07 | 704 | 0.2− | 0.6+ | 2004 10 06 | 704 | 0.8− | 0.0 |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2004 09 07 | 704 | 0.2− | 0.2− | 2004 12 03 | 644 | 0.1− | 0.2− |
| 2003 03 23 | 645 | 0.2− | 0.0 | 2004 09 21 | 699 | 0.3+ | 0.0 | 2004 12 03 | 644 | 0.3+ | 0.4+ |
| 2003 03 24 | 608 | 0.8+ | 0.0 | 2004 09 21 | 699 | 1.6− | 0.2− | 2004 12 03 | 644 | 0.4+ | 0.5+ |
| 2003 03 24 | 608 | 0.9+ | 0.4+ | 2004 09 21 | 704 | 0.3+ | 0.1− | | | | |

**2003 EE$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.09929 | | (2000.0) | | | |
| $n$ | 0.18328629 | $\omega$ | 298.14124 | | +0.01312436 | −0.99161777 |
| $a$ | 3.0693710 | $\Omega$ | 150.25086 | | +0.98400546 | −0.01003081 |
| $e$ | 0.1273016 | $i$ | 15.01325 | | +0.17765420 | +0.12881608 |
| $P$ | 5.38 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 0.1− | 1.1+ | 2003 04 04 | 699 | 0.6− | 0.3+ | 2006 09 19 | 703 | (2.7+ | 0.8+) |
| 2000 10 02 | 699 | 0.6− | 1.3+ | 2003 04 04 | 699 | 0.5+ | 0.5+ | 2006 10 28 | 703 | 0.1+ | 0.6+ |
| 2000 10 02 | 699 | 0.1+ | 0.4+ | 2003 04 04 | 699 | 0.2− | 1.3+ | 2006 10 28 | 703 | 0.3+ | 0.7+ |
| 2000 10 02 | 699 | 0.0 | 0.3+ | 2003 04 27 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.5− | 0.3− |
| 2003 03 09 | 704 | 0.1− | 0.1+ | 2003 04 27 | 645 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.2− | 0.4+ |
| 2003 03 09 | 704 | 0.3+ | 0.1− | 2005 07 29 | 644 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.4− | 0.1− |
| 2003 03 09 | 704 | 0.2− | 0.2− | 2005 07 29 | 644 | 0.3− | 0.6+ | 2006 11 16 | 703 | 0.1− | 0.2+ |
| 2003 03 09 | 704 | 0.3+ | 0.1+ | 2005 07 29 | 644 | 0.4+ | 0.4+ | 2006 11 16 | 703 | 0.9− | 0.0 |
| 2003 03 09 | 704 | 0.0 | 0.3+ | 2005 08 29 | 699 | (2.1− | 0.0 ) | 2006 11 16 | 703 | 0.1− | 0.3+ |
| 2003 03 26 | 644 | 0.4+ | 0.5+ | 2005 08 29 | 699 | (0.6+ | 1.9+) | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2003 03 26 | 644 | 0.5+ | 0.5+ | 2005 08 29 | 699 | 0.7− | 0.5+ | 2006 11 21 | 704 | 0.0 | 1.4+ |
| 2003 03 26 | 644 | 0.3+ | 0.6+ | 2005 08 29 | 699 | 0.6− | 1.0+ | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.9+ | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.7+ |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.7+ | | | | |
| 2003 04 04 | 699 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.6+ | 0.4+ | | | | |

**2003 EF$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 159.53977 | | (2000.0) | | | |
| $n$ | 0.18811392 | $\omega$ | 242.94471 | | +0.30077942 | +0.94453745 |
| $a$ | 3.0166304 | $\Omega$ | 45.22171 | | −0.79594345 | +0.32476844 |
| $e$ | 0.0571294 | $i$ | 10.70352 | | −0.52536252 | +0.04872847 |
| $P$ | 5.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 0.3− | 0.5− | 2005 09 23 | 691 | 0.2− | 0.4+ | 2005 11 01 | G96 | 0.7− | 0.2− |
| 2000 11 21 | 704 | 0.2− | 0.7− | 2005 09 23 | 691 | 0.2− | 0.3+ | 2005 11 01 | G96 | 0.6− | 0.1+ |
| 2000 11 21 | 704 | 0.1− | 1.1+ | 2005 10 01 | 704 | 0.1− | 0.8+ | 2005 11 09 | 703 | 0.2+ | 1.5+ |
| 2002 02 08 | 645 | 0.0 | 0.1− | 2005 10 01 | 704 | 0.2+ | 1.2+ | 2005 11 09 | 703 | 0.2+ | 0.8+ |
| 2002 02 08 | 645 | 0.0 | 0.1− | 2005 10 01 | 704 | 0.5− | 1.3+ | 2005 11 09 | 703 | 0.6+ | 0.8+ |
| 2003 03 10 | 291 | 0.5− | 0.7+ | 2005 10 01 | 704 | 0.2− | 0.1+ | 2005 11 09 | 703 | 0.5+ | 1.7+ |
| 2003 03 10 | 291 | 0.1− | 0.7+ | 2005 10 12 | 691 | 0.3− | 0.3+ | 2005 12 04 | G96 | 0.1− | 0.0 |
| 2003 03 10 | 291 | 0.2− | 0.6+ | 2005 10 12 | 691 | 0.5− | 0.5+ | 2005 12 04 | G96 | 0.1+ | 0.0 |
| 2003 03 26 | 291 | 0.2+ | 0.2+ | 2005 10 12 | 691 | 0.1− | 0.2+ | 2005 12 04 | G96 | 0.3− | 0.1− |
| 2003 03 26 | 291 | 0.9+ | 0.3+ | 2005 10 24 | 699 | 0.5− | 0.2− | 2005 12 04 | G96 | 0.0 | 0.1− |
| 2003 03 26 | 291 | 0.4+ | 0.3+ | 2005 10 24 | 699 | 1.8− | 1.2+ | 2006 01 04 | G96 | 0.4− | 0.1+ |
| 2003 04 10 | 691 | 0.3+ | 0.7+ | 2005 10 24 | 699 | 1.2+ | 0.4+ | 2006 01 04 | G96 | 0.5− | 0.1+ |
| 2003 04 10 | 691 | 0.7+ | 0.6+ | 2005 10 24 | 699 | 0.4+ | 0.5+ | 2006 01 04 | G96 | 1.1− | 0.5− |
| 2003 04 10 | 691 | 0.6+ | 0.5+ | 2005 11 01 | G96 | 0.3− | 0.1+ | 2006 01 04 | G96 | 0.7− | 0.7+ |
| 2005 09 23 | 691 | 0.3− | 0.1− | 2005 11 01 | G96 | 0.2− | 0.2+ | | | | |

**2003 EQ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 311.01157 | | (2000.0) | | | |
| $n$ | 0.19267993 | $\omega$ | 322.52262 | | −0.26918818 | −0.94790949 |
| $a$ | 2.9687826 | $\Omega$ | 142.22102 | | +0.93716454 | −0.29856703 |
| $e$ | 0.1391562 | $i$ | 16.14106 | | +0.22194674 | +0.11101945 |
| $P$ | 5.12 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 704 | 0.2+ | 0.3+ | 2003 03 25 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2001 12 07 | 704 | 0.3− | 0.2− | 2003 03 25 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.4− | 1.2− |
| 2001 12 07 | 704 | 0.2+ | 0.4− | 2003 04 08 | 608 | 1.5− | 0.4− | 2006 09 30 | 703 | 1.2+ | 1.4+ |
| 2001 12 07 | 704 | 1.0+ | 0.6+ | 2003 04 08 | 608 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 1.1+ |
| 2001 12 07 | 704 | 0.8− | 0.3+ | 2003 04 08 | 608 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.6− | 1.3+ |
| 2001 12 14 | 644 | 0.1− | 0.1− | 2003 04 30 | 608 | 0.1+ | 1.3− | 2006 09 30 | 703 | 0.8+ | 1.1+ |
| 2001 12 14 | 644 | 0.2− | 0.5+ | 2003 04 30 | 608 | 0.2+ | 0.9− | 2006 10 20 | 703 | 0.2− | 0.0 |
| 2001 12 14 | 644 | 0.3− | 0.2+ | 2003 04 30 | 608 | 0.7− | 0.6− | 2006 10 20 | 703 | 1.0+ | 0.7− |
| 2003 03 12 | 704 | 1.0+ | 0.6+ | 2003 05 30 | 645 | 0.0 | 0.1+ | 2006 10 20 | 703 | 0.6+ | 0.0 |
| 2003 03 12 | 704 | (1.0+ | 1.5+) | 2003 05 30 | 645 | 0.0 | 0.1+ | 2006 10 20 | 703 | 0.6+ | 0.4− |
| 2003 03 12 | 704 | (1.1+ | 1.6+) | 2005 08 04 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1+ | 1.0− |
| 2003 03 12 | 704 | 0.5+ | 0.0 | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2003 03 15 | 608 | 0.3+ | 0.6− | 2005 08 04 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.8− | 0.7− |
| 2003 03 15 | 608 | 0.6+ | 0.5− | 2005 08 30 | 644 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.2+ | 0.5− |
| 2003 03 15 | 608 | 0.5+ | 0.2− | 2005 08 30 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.4− |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2005 08 30 | 644 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.2− |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.4− | 2006 11 16 | 703 | 0.7− | 0.0 |
| 2003 03 25 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 1.0− | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.7+ |

**2003 FF = 2006 RZ$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 240.52034 | | (2000.0) | | | |
| $n$ | 0.17232404 | $\omega$ | 109.71735 | | −0.74522903 | −0.66475371 |
| $a$ | 3.1981989 | $\Omega$ | 28.69313 | | +0.56370834 | −0.66996511 |
| $e$ | 0.1364818 | $i$ | 6.25476 | | +0.35618338 | −0.33052875 |
| $P$ | 5.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.1− | 2003 03 23 | 448 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2000 09 26 | 645 | 0.0 | 0.1+ | 2003 03 24 | 448 | 0.6+ | 0.7− | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2003 03 22 | 448 | 0.5− | 0.1+ | 2003 03 24 | 448 | 0.7+ | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.1− |
| 2003 03 22 | 448 | 0.0 | 0.1+ | 2003 03 24 | 448 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2003 03 22 | 448 | 0.7− | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2003 03 23 | 448 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2003 03 23 | 448 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1− | | | | |

**2003 FR$_1$ = 2006 WK$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.32151 | | (2000.0) | | | |
| $n$ | 0.24172490 | $\omega$ | 108.79384 | | −0.51013859 | +0.75938098 |
| $a$ | 2.5522416 | $\Omega$ | 123.67941 | | −0.84985564 | −0.51727190 |
| $e$ | 0.2154030 | $i$ | 29.03302 | | +0.13230272 | −0.39467746 |
| $P$ | 4.08 | $H$ | 15.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 704 | 1.7− | 0.9− | 2003 03 20 | 644 | 0.4− | 0.4− | 2003 04 01 | 644 | 0.8− | 0.7− |
| 2003 01 26 | 704 | 0.2− | 1.0+ | 2003 03 20 | 644 | 0.1+ | 1.2− | 2003 04 01 | 644 | 0.7− | 0.7− |
| 2003 01 26 | 704 | 0.1− | 0.4+ | 2003 03 24 | 704 | 0.3+ | 1.1+ | 2006 11 25 | G96 | 0.3− | 0.8− |
| 2003 02 01 | 644 | 0.9+ | 0.3− | 2003 03 24 | 704 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.8− |
| 2003 02 01 | 644 | 0.7+ | 0.4− | 2003 03 24 | 704 | 1.9+ | 0.8+ | 2006 11 25 | G96 | 0.8− | 1.1− |
| 2003 02 01 | 644 | 0.8+ | 0.5− | 2003 03 25 | 704 | 0.4+ | 0.8+ | 2006 11 25 | G96 | 0.2+ | 0.7− |
| 2003 03 10 | 644 | 0.0 | 0.5+ | 2003 03 25 | 704 | 0.7− | 0.3+ | 2006 11 28 | 291 | 0.0 | 0.2+ |
| 2003 03 10 | 644 | 0.0 | 0.5+ | 2003 03 25 | 704 | 0.2− | 0.8− | 2006 11 28 | 291 | 0.2+ | 0.4+ |
| 2003 03 10 | 644 | 0.2− | 0.4+ | 2003 03 25 | 704 | 0.2+ | 0.8+ | 2006 11 28 | 291 | 0.1− | 0.3+ |
| 2003 03 20 | 644 | 0.2− | 0.7− | 2003 04 01 | 644 | 0.8− | 0.6− | | | | |

**2003 FK$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 253.55347 | | (2000.0) | | | |
| $n$ | 0.18507321 | $\omega$ | 126.60555 | | −0.82312941 | −0.55931580 |
| $a$ | 3.0495822 | $\Omega$ | 19.97690 | | +0.38444853 | −0.67603966 |
| $e$ | 0.1121114 | $i$ | 16.68718 | | +0.41792022 | −0.47972513 |
| $P$ | 5.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 12 | 608 | 0.0 | 1.4− | 2003 03 23 | 557 | 0.8− | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 2003 02 12 | 608 | 0.4+ | 1.0− | 2003 03 23 | 557 | 0.7− | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.1+ |
| 2003 02 12 | 608 | 1.1+ | 0.5− | 2003 03 24 | 557 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.7+ |
| 2003 03 08 | 704 | 0.4+ | 0.2+ | 2003 03 24 | 557 | 0.1+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2003 03 08 | 704 | 0.1+ | 0.1− | 2003 03 25 | 557 | 0.6+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2003 03 08 | 704 | 0.8+ | 0.6+ | 2003 03 25 | 557 | 0.2+ | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 704 | 0.3+ | 0.2+ | 2003 03 26 | 691 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1− | | |
| 2003 03 08 | 704 | 0.3− | 0.4+ | 2003 03 26 | 691 | 0.5− | 0.4+ | 2006 11 25 | G96 | 0.4− | 0.5− | | |
| 2003 03 23 | 644 | 0.1+ | 0.6+ | 2003 03 26 | 691 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.5− | | |
| 2003 03 23 | 644 | 0.2+ | 0.8+ | 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 25 | G96 | 0.1− | 0.2− | | |
| 2003 03 23 | 644 | 0.0 | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.4− | 0.7− | | |

**2003 FF$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.71269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22489648 | $\omega$ | 56.71048 | | −0.87915055 | −0.39888170 | |
| $a$ | 2.6780228 | $\Omega$ | 98.57541 | | +0.29995920 | −0.88835931 | |
| $e$ | 0.0268047 | $i$ | 15.28927 | | +0.37029555 | −0.22740082 | |
| $P$ | 4.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.1− | 0.2+ | 2003 03 22 | 644 | 0.5− | 0.9− | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2003 02 01 | 644 | 0.0 | 0.3+ | 2003 03 22 | 644 | 0.2− | 1.0− | 2006 11 21 | G96 | 0.0 | 0.2− | | |
| 2003 02 01 | 644 | 0.1− | 0.3− | 2003 04 07 | 644 | 0.0 | 1.1+ | 2006 11 21 | G96 | 0.2− | 0.2+ | | |
| 2003 02 26 | 704 | (0.6+ | 2.8+) | 2003 04 07 | 644 | 0.1+ | 0.8+ | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2003 02 26 | 704 | 1.0+ | 0.4+ | 2003 04 07 | 644 | 0.1− | 1.3+ | 2006 11 25 | G96 | 0.1+ | 0.2− | | |
| 2003 02 26 | 704 | 0.5+ | 0.1+ | 2005 10 04 | 644 | 0.1+ | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.3+ | | |
| 2003 03 09 | 644 | 0.0 | 0.1− | 2005 10 04 | 644 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.0 | | |
| 2003 03 09 | 644 | 0.1− | 0.4− | 2005 10 04 | 644 | 0.1− | 0.5− | 2006 11 25 | G96 | 0.3− | 0.2+ | | |
| 2003 03 09 | 644 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.1+ | | |
| 2003 03 21 | 644 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.1+ | | |
| 2003 03 21 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.3+ | | |
| 2003 03 21 | 644 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.2+ | | | | | | |
| 2003 03 22 | 644 | 0.4− | 1.0− | 2006 11 21 | G96 | 0.3− | 0.2− | | | | | | |

**2003 FU$_9$ = 2006 WQ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.82139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20320276 | $\omega$ | 48.13784 | | −0.63229742 | −0.72489036 | |
| $a$ | 2.8653850 | $\Omega$ | 83.22873 | | +0.60389923 | −0.68220760 | |
| $e$ | 0.0977953 | $i$ | 15.97962 | | +0.48528928 | −0.09553407 | |
| $P$ | 4.85 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 644 | 0.4+ | 0.3− | 2003 03 23 | 644 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.1− | | |
| 2003 03 09 | 644 | 0.0 | 0.9− | 2003 03 23 | 644 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.1− | | |
| 2003 03 09 | 644 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.0 | 0.5− | 2006 11 18 | 691 | 0.0 | 0.4+ | | |
| 2003 03 22 | 644 | 0.4− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.3+ | | |
| 2003 03 22 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2003 03 22 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.3− | | | | | | |
| 2003 03 23 | 644 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | | | | | |

**2003 FF$_{10}$ = 2006 UR$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.52061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17792966 | $\omega$ | 34.22669 | | −0.98894422 | +0.14689149 | |
| $a$ | 3.1306690 | $\Omega$ | 154.19745 | | −0.14434134 | −0.92218064 | |
| $e$ | 0.0369956 | $i$ | 2.67351 | | −0.03398382 | −0.35777891 | |
| $P$ | 5.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 691 | (0.8+ | 3.4−) | 2003 03 24 | 691 | 0.7+ | 0.9+ | 2006 10 16 | 621 | 0.3− | 0.5+ | | |
| 1997 01 10 | 691 | (3.4+ | 4.4−) | 2003 03 24 | 691 | 0.3+ | 0.5+ | 2006 10 16 | 621 | 0.6+ | 0.1− | | |
| 1997 01 10 | 691 | 2.0− | 0.9+ | 2003 04 06 | 691 | 0.4− | 0.9+ | 2006 10 17 | 621 | 0.1+ | 0.4+ | | |
| 1997 01 17 | 691 | 0.9− | 0.8+ | 2003 04 06 | 691 | 0.4+ | 1.0+ | 2006 10 17 | 621 | 0.1+ | 1.1+ | | |
| 1997 01 17 | 691 | 0.7− | 0.2+ | 2003 04 06 | 691 | 0.2+ | 0.7+ | 2006 10 17 | 621 | 0.3− | 0.7+ | | |
| 1997 01 17 | 691 | 0.8− | 0.6+ | 2005 08 28 | 691 | 0.1− | 0.8− | 2006 10 18 | 691 | 0.3+ | 0.7+ | | |
| 1999 08 03 | 691 | 0.9− | 0.2+ | 2005 08 28 | 691 | 0.2+ | 0.5− | 2006 10 18 | 691 | 0.0 | 0.4+ | | |
| 1999 08 03 | 691 | 0.6+ | 0.4+ | 2005 08 28 | 691 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.4− | 0.4+ | | |
| 1999 08 03 | 691 | 1.0− | 0.3+ | 2005 09 11 | 691 | 0.8+ | 0.2− | 2006 10 22 | 691 | 0.7− | 0.6+ | | |
| 2000 09 03 | 691 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.6+ | | |
| 2000 09 03 | 691 | 0.5− | 0.1− | 2005 09 11 | 691 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.5− | 0.8+ | | |
| 2000 09 03 | 691 | 0.1− | 0.3+ | 2005 10 01 | G96 | 0.8+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.5+ | | |
| 2003 03 23 | 691 | (0.4+ | 2.5+) | 2005 10 01 | G96 | 0.7+ | 0.2− | 2006 11 12 | G96 | 0.6− | 0.6+ | | |
| 2003 03 23 | 691 | (0.3− | 2.1+) | 2005 10 01 | G96 | 0.7+ | 0.6− | 2006 11 12 | G96 | 0.4− | 0.1+ | | |
| 2003 03 23 | 691 | (0.1+ | 2.2+) | 2005 10 01 | G96 | 0.7+ | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.3+ | | |
| 2003 03 24 | 691 | 0.0 | 0.6+ | 2006 10 16 | 621 | (1.4+ | 1.8+) | | | | | | |

**2003 FG$_{13}$ = 2006 QG$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.33258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17504986 | $\omega$ | 95.37989 | | +0.10479244 | −0.99402206 | |
| $a$ | 3.1649113 | $\Omega$ | 348.46941 | | +0.84092500 | +0.10501497 | |
| $e$ | 0.2475452 | $i$ | 8.81667 | | +0.53090837 | +0.02986633 | |
| $P$ | 5.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 699 | (2.0+ | 6.2+) | 2003 04 06 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.5− | | |
| 2001 11 11 | 699 | (3.1+ | 6.1+) | 2003 04 06 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.1− | 0.1− | | |
| 2001 11 11 | 699 | (2.8+ | 4.9+) | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.2− | | |
| 2001 11 11 | 699 | (1.8+ | 6.8+) | 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.5+ | 0.4− | | |
| 2003 03 23 | 691 | 0.6− | 0.2− | 2006 08 21 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.4− | 0.3+ | | |
| 2003 03 23 | 691 | 0.2− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.5− | 0.3+ | | |
| 2003 03 23 | 691 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.2+ | | |
| 2003 03 25 | 644 | 0.3− | 0.3− | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.5− | | |
| 2003 03 25 | 644 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.5+ | | |
| 2003 03 25 | 644 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.2− | | | | | | |
| 2003 04 06 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− | | | | | | |

**2003 FU$_{16}$ = 1995 UY$_{66}$ = 2005 TN$_{192}$ = 2006 UL$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.40194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18123329 | $\omega$ | 152.65004 | | −0.78194809 | +0.60083803 | |
| $a$ | 3.0925073 | $\Omega$ | 65.26008 | | −0.60009336 | −0.65355612 | |
| $e$ | 0.0543249 | $i$ | 10.53049 | | −0.16865688 | −0.46028042 | |
| $P$ | 5.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1− | 0.2− | 2005 10 03 | 703 | 0.9− | 0.7− | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 1995 10 17 | 691 | 0.1+ | 0.4− | 2005 10 03 | 703 | 0.4+ | 0.5− | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 1995 10 17 | 691 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.5− | | |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.3+ | | |
| 2003 03 23 | 049 | 1.1− | 2.7− | 2006 10 19 | 695 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.0 | | |
| 2003 03 23 | 049 | (0.9− | 3.3−) | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.0 | | |
| 2003 03 23 | 049 | (1.1− | 3.1−) | 2006 10 19 | 695 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 2003 03 25 | 644 | 0.0 | 1.7+ | 2006 10 22 | G96 | 0.3+ | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2003 03 25 | 644 | 0.0 | 1.8+ | 2006 10 22 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.2− | | |
| 2003 03 25 | 644 | 0.2− | 1.4+ | 2006 10 22 | G96 | 0.4+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1− | | |
| 2003 04 04 | 704 | 0.1− | 0.9+ | 2006 10 22 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2003 04 04 | 704 | 0.7+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.2− | | |
| 2003 04 04 | 704 | 0.5− | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.2− | | |
| 2003 04 04 | 704 | 0.7+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.6− | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2003 04 04 | 704 | 0.9+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1− | | |
| 2003 04 04 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1− | | |
| 2003 04 04 | 704 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2005 08 31 | 644 | 0.6− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.6+ | 0.3− | | |
| 2005 08 31 | 644 | 0.5− | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.7− | 0.2+ | | |
| 2005 08 31 | 644 | 0.5+ | 1.1+ | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.4− | 0.7− | | |
| 2005 10 03 | 703 | 1.3− | 0.1− | 2006 11 19 | 691 | 0.7− | 1.3+ | 2006 11 27 | 703 | 0.6− | 0.8+ | | |
| 2005 10 03 | 703 | 1.5+ | 1.6+ | 2006 11 19 | 691 | 0.0 | 1.3+ | | | | | | |

**2003 FN$_{19}$ = 2006 UF$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.43906 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17839413 | $\omega$ | 147.74046 | | −0.97488924 | | +0.18538812 |
| $a$ | 3.1252326 | $\Omega$ | 43.49350 | | −0.22255380 | | −0.83048791 |
| $e$ | 0.0370591 | $i$ | 10.32655 | | +0.00779649 | | −0.52528191 |
| $P$ | 5.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 28 | 704 | 0.6+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 12 | 703 | 0.6− | 1.1+ |
| 2003 02 28 | 704 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 12 | 703 | 0.3− | 0.1− |
| 2003 02 28 | 704 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2003 03 25 | 644 | 0.2+ | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2003 03 25 | 644 | 0.7+ | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2003 03 25 | 644 | 0.4+ | 0.9+ | 2006 10 28 | 691 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2003 03 26 | 049 | 0.1− | 1.3− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 1.2− | 1.1− |
| 2003 03 27 | 049 | 0.9− | 0.8− | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 1.0+ | 0.6+ |
| 2003 03 27 | 049 | 0.7− | 0.6− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.9+ | 0.9− |
| 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.1+ |
| 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 12 | 703 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 12 | 703 | 0.5− | 0.7+ | | | | |

**2003 FR$_{19}$ = 1995 UY$_{77}$ = 2006 VA$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.92135 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17982515 | $\omega$ | 25.59197 | | +0.55456502 | | −0.81703048 |
| $a$ | 3.1086305 | $\Omega$ | 31.45148 | | +0.70201710 | | +0.35749639 |
| $e$ | 0.0830430 | $i$ | 17.61009 | | +0.44679933 | | +0.45239089 |
| $P$ | 5.48 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.5− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.8− |
| 1995 10 22 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 14 | 703 | (1.5− | 1.2+) |
| 1995 10 22 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.2+ | 1.3+ |
| 1995 10 23 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.5− | 0.0 |
| 1995 10 23 | 691 | 0.4+ | 0.2− | 2006 10 29 | 704 | 1.4− | 0.4+ | 2006 11 14 | 703 | 0.2+ | 0.3− |
| 1995 10 23 | 691 | 0.4− | 0.3− | 2006 10 29 | 704 | 0.6− | 0.4− | 2006 11 16 | 704 | (1.2− | 1.6+) |
| 2003 03 25 | 644 | 0.5− | 0.0 | 2006 10 29 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.9− | 0.2+ |
| 2003 03 25 | 644 | 0.4− | 0.0 | 2006 10 29 | 704 | (3.2− | 2.9+) | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2003 03 25 | 644 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 16 | 704 | 0.4− | 0.1+ |
| 2003 03 28 | 049 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 2003 03 28 | 049 | 1.1+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2003 03 28 | 049 | 0.5+ | 0.8− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2003 04 06 | 699 | 0.6+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2003 04 06 | 699 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 1.0− | 0.1− |
| 2003 04 06 | 699 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2003 04 06 | 699 | 1.4− | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.0 | 0.5− |
| 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.5− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.7+ |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.9+ | 1.0+ |
| 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2006 10 21 | 691 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.5− | 0.0 | 2006 11 22 | 704 | 1.3+ | 0.4+ |
| 2006 10 21 | G96 | 0.8+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.5− | 0.5− |
| 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.4+ | 0.4− | 2006 11 23 | G96 | 0.1− | 0.7− |
| 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.7+ | 0.7− | 2006 11 23 | G96 | 0.3− | 0.6− |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.7− | 2006 11 23 | G96 | 0.2− | 0.7− |

**2003 FU$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.37551 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28631012 | $\omega$ | 352.51553 | | −0.90713851 | | −0.42001183 |
| $a$ | 2.2798779 | $\Omega$ | 162.57687 | | +0.39050837 | | −0.86339323 |
| $e$ | 0.1478759 | $i$ | 5.03206 | | +0.15685322 | | −0.27953924 |
| $P$ | 3.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.0 | 0.0 | 2003 03 26 | 691 | 0.0 | 1.1+ | 2003 04 01 | 649 | 0.1+ | 0.4+ |
| 1996 03 26 | 691 | 0.1+ | 0.2− | 2003 03 26 | 649 | 0.0 | 0.0 | 2003 04 09 | 704 | 0.2+ | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.4− | 2003 03 26 | 691 | 0.0 | 1.3+ | 2003 04 09 | 704 | 0.7+ | 0.4+ |
| 2001 09 21 | 704 | 0.8− | 1.3+ | 2003 03 27 | 703 | 1.2+ | 1.3− | 2003 04 09 | 704 | 0.6+ | 0.8+ |
| 2001 09 21 | 704 | 0.4− | 0.2+ | 2003 03 27 | 699 | 0.3+ | 0.0 | 2003 04 09 | 704 | 0.4+ | 0.6+ |
| 2001 09 21 | 704 | 0.6− | 0.7+ | 2003 03 27 | 703 | 0.6+ | 1.2− | 2003 04 09 | 704 | 0.7+ | 0.6+ |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2003 03 27 | 703 | 1.1+ | 0.1+ | 2003 04 10 | 691 | 0.6− | 0.3+ |
| 2001 10 14 | 645 | 0.0 | 0.2+ | 2003 03 27 | 699 | 0.4+ | 0.2+ | 2003 04 10 | 691 | 0.6− | 0.2+ |
| 2001 10 14 | 645 | 0.1− | 0.2+ | 2003 03 27 | 703 | 1.3+ | 0.0 | 2003 04 10 | 691 | 0.5− | 0.2+ |
| 2001 10 25 | 645 | 0.1− | 0.2+ | 2003 03 27 | 699 | 0.1+ | 0.7+ | 2004 08 11 | 704 | 0.7− | 1.1+ |
| 2001 10 25 | 645 | 0.1− | 0.3+ | 2003 03 27 | 699 | 0.2+ | 0.4+ | 2004 08 11 | 704 | 0.8+ | 0.4+ |
| 2003 03 23 | 691 | 0.1− | 0.1+ | 2003 03 30 | 704 | 1.0+ | 0.2+ | 2004 08 11 | 704 | 0.7− | 1.5+ |
| 2003 03 23 | 691 | 0.2− | 0.0 | 2003 03 30 | 704 | 0.7+ | 0.1+ | 2004 08 11 | 704 | 0.1+ | 1.2+ |
| 2003 03 23 | 691 | 0.2− | 0.1+ | 2003 03 30 | 704 | 1.2+ | 0.3+ | 2004 08 20 | 691 | 0.1+ | 0.1+ |
| 2003 03 23 | 608 | 0.7+ | 0.5− | 2003 03 31 | 703 | (6.9+ | 3.9+) | 2004 08 20 | 691 | 0.0 | 0.1+ |
| 2003 03 23 | 608 | 0.7+ | 0.8− | 2003 03 31 | 703 | 0.1+ | 0.0 | 2004 08 20 | 691 | 0.1− | 0.1+ |
| 2003 03 23 | 608 | 0.7+ | 0.6− | 2003 03 31 | 703 | 0.1+ | 0.1+ | 2006 02 03 | G96 | 0.3+ | 0.1+ |
| 2003 03 26 | 691 | 0.3+ | 1.2+ | 2003 03 31 | 703 | 0.1+ | 0.4+ | 2006 02 03 | G96 | 0.1− | 0.0 |
| 2003 03 26 | 649 | 0.6− | 0.5+ | 2003 04 01 | 649 | 0.2+ | 0.9+ | 2006 02 03 | G96 | 0.7+ | 0.4+ |
| 2003 03 26 | 649 | 0.1+ | 0.3+ | 2003 04 01 | 649 | 0.4+ | 0.4+ | 2006 02 03 | G96 | 0.3+ | 0.5+ |

**2003 FX$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.79620 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21806389 | $\omega$ | 41.47884 | | −0.31406802 | | −0.91591620 |
| $a$ | 2.7336750 | $\Omega$ | 68.20102 | | +0.78464700 | | −0.39861100 |
| $e$ | 0.2454671 | $i$ | 15.61458 | | +0.53450011 | | +0.04697649 |
| $P$ | 4.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 704 | 0.4+ | 0.4+ | 2003 04 09 | 644 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.4− | 1.0+ |
| 2003 01 27 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3− | 0.7+ |
| 2003 01 27 | 704 | 0.4+ | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2003 02 07 | 704 | 0.8− | 0.8− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2003 02 07 | 704 | (2.7+ | 0.3−) | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2003 02 07 | 704 | 1.1+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2003 02 07 | 704 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.2− | 0.6− |
| 2003 03 22 | 644 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2003 03 22 | 644 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.3+ | 0.9− | 2006 11 24 | 691 | 0.2+ | 0.3− |
| 2003 03 22 | 644 | 0.5− | 0.2− | 2006 11 15 | 703 | 0.2− | 0.5+ | 2006 11 24 | 691 | 0.1+ | 0.3− |
| 2003 03 26 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 703 | 0.3+ | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.3− |
| 2003 03 26 | 704 | 0.2− | 0.3− | 2006 11 15 | 703 | 1.2− | 1.0+ | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2003 03 26 | 704 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.4− |
| 2003 03 26 | 704 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.6+ |
| 2003 03 26 | 704 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.1− |
| 2003 04 09 | 644 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.8+ | 2006 11 28 | 704 | (0.3− | 2.2−) |
| 2003 04 09 | 644 | 0.2− | 0.2− | 2006 11 18 | 704 | (2.8− | 1.1−) | | | | |

**2003 FU$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.23876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27466722 | $\omega$ | 76.46013 | | −0.38041195 | | +0.92462966 |
| $a$ | 2.3438590 | $\Omega$ | 171.11281 | | −0.88827653 | | −0.35970350 |
| $e$ | 0.0722117 | $i$ | 6.92280 | | −0.25739376 | | −0.12519337 |
| $P$ | 3.59 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.3− | 0.2− | 2003 03 26 | 291 | 0.1− | 0.1+ | 2004 09 11 | 691 | 0.3− | 0.3+ |
| 1996 03 26 | 691 | 0.1− | 0.1− | 2003 03 26 | 291 | 0.1+ | 0.2+ | 2004 09 23 | 691 | 0.2+ | 0.2− |
| 1996 03 26 | 691 | 0.2+ | 0.4− | 2003 03 27 | 152 | 0.9− | 0.5− | 2004 09 23 | 691 | 0.1+ | 0.2− |
| 2003 03 25 | 291 | 0.2+ | 0.4+ | 2003 03 27 | 152 | 0.5− | 0.1+ | 2004 09 23 | 691 | 0.3− | 0.2+ |
| 2003 03 25 | 291 | 0.0 | 0.4+ | 2003 03 27 | 152 | 0.6+ | 0.1+ | 2004 10 10 | 695 | 0.3+ | 0.3− |
| 2003 03 25 | 291 | 0.1+ | 0.1+ | 2004 09 11 | 691 | 0.1− | 0.3+ | 2004 10 10 | 695 | 0.6+ | 0.2+ |
| 2003 03 26 | 291 | 0.2+ | 0.0 | 2004 09 11 | 691 | 0.1− | 0.3+ | | | | |

### 2003 FY$_{25}$ = 2006 UA$_{198}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.17158 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18438644 | $\omega$ | 341.17096 | | −0.96237779 | −0.27171264 | |
| $a$ | 3.0571499 | $\Omega$ | 183.06348 | | +0.25187583 | −0.89057583 | |
| $e$ | 0.1133274 | $i$ | 1.18619 | | +0.10191932 | −0.36475598 | |
| $P$ | 5.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.0 | 0.4+ | 2003 04 07 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 1995 10 15 | 691 | 0.1− | 0.2− | 2003 04 07 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.8+ |
| 1995 10 15 | 691 | 0.3+ | 0.2− | 2005 08 28 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.9+ | 0.2+ |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2005 08 28 | 691 | 0.0 | 0.7+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2005 08 28 | 691 | 0.2− | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2003 03 24 | 691 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2003 03 24 | 691 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 2003 03 24 | 691 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.7− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2003 03 26 | 644 | 0.4+ | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.9− |
| 2003 03 26 | 644 | 0.5+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.6− |
| 2003 03 26 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.3+ | | | | |
| 2003 04 07 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.2+ | | | | |

### 2003 FS$_{29}$ = 2006 SO$_{97}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.09860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17354733 | $\omega$ | 115.56844 | | −0.77094593 | −0.62820555 | |
| $a$ | 3.1831524 | $\Omega$ | 25.91841 | | +0.46346193 | −0.66629840 | |
| $e$ | 0.1525026 | $i$ | 13.88382 | | +0.43685857 | −0.40175146 | |
| $P$ | 5.68 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 691 | 0.7− | 0.9+ | 2003 04 09 | 608 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2000 10 07 | 691 | 0.5− | 0.7+ | 2003 04 09 | 608 | 0.2− | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.5+ |
| 2000 10 07 | 691 | 0.5− | 0.4+ | 2003 04 09 | 608 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.5+ |
| 2003 03 25 | 703 | 0.2− | 0.2+ | 2003 04 20 | 699 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.2− | 0.3+ |
| 2003 03 25 | 703 | 0.6+ | 0.4− | 2003 04 20 | 699 | 0.4− | 0.0 | 2006 10 15 | 691 | 0.4− | 0.3+ |
| 2003 03 25 | 703 | 0.2− | 0.0 | 2003 04 20 | 699 | 0.1+ | 0.8− | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 2003 03 25 | 703 | 0.5+ | 1.2− | 2003 04 20 | 699 | 0.5+ | 0.5− | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2003 03 25 | 608 | 0.2+ | 0.5− | 2003 04 30 | 691 | 0.6+ | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2003 03 25 | 608 | 0.7− | 0.1− | 2003 04 30 | 691 | 0.9+ | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2003 03 25 | 608 | 0.0 | 0.6− | 2003 04 30 | 691 | 0.7+ | 1.1+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2003 03 26 | 644 | 0.3+ | 0.1+ | 2003 05 05 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2003 03 26 | 644 | 0.2+ | 0.1− | 2003 05 05 | 704 | 0.0 | 0.9+ | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2003 03 26 | 644 | 0.3+ | 0.1− | 2003 05 05 | 704 | (0.0 | 1.9+) | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2003 03 27 | 699 | 0.7− | 0.8− | 2003 05 05 | 691 | 0.3− | 0.7+ | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2003 03 27 | 699 | 1.2+ | 0.7+ | 2003 05 05 | 704 | (0.2+ | 2.2+) | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2003 03 27 | 699 | 1.2− | 0.4− | 2003 05 05 | 704 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2003 03 27 | 699 | 0.3− | 0.9− | 2003 05 05 | 691 | 0.3− | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2003 04 03 | 699 | 0.9− | 0.5− | 2006 09 18 | 691 | 0.3− | 0.8+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2003 04 03 | 699 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.2− |
| 2003 04 03 | 699 | 1.0+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.6+ | 0.1− |
| 2003 04 03 | 699 | 0.5− | 0.4− | 2006 09 24 | 691 | 0.0 | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2003 04 07 | 644 | 0.7+ | 0.0 | 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2003 04 07 | 644 | 0.6+ | 0.3− | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2003 04 07 | 644 | 0.6+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.5+ | 0.3− |
| 2003 04 09 | 691 | 0.5+ | 0.8+ | 2006 09 25 | G96 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.8− |
| 2003 04 09 | 691 | 0.6+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2003 04 09 | 691 | 0.7+ | 0.8+ | 2006 09 25 | G96 | 0.3+ | 0.2+ | | | | |

### 2003 FN$_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.15456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18512177 | $\omega$ | 42.75270 | | −0.91216198 | +0.40947521 | |
| $a$ | 3.0490489 | $\Omega$ | 161.39816 | | −0.38896548 | −0.85187242 | |
| $e$ | 0.0897461 | $i$ | 3.06328 | | −0.12909833 | −0.32656305 | |
| $P$ | 5.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 691 | 0.2− | 0.3− | 2003 04 07 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2003 03 23 | 691 | 0.2− | 0.1− | 2003 04 07 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.3− |
| 2003 03 23 | 691 | 0.3− | 0.6− | 2003 04 07 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.9+ | 0.6+ |
| 2003 03 26 | 691 | 0.3− | 0.0 | 2003 04 26 | 691 | 0.4+ | 0.5− | 2006 11 18 | 691 | 0.2+ | 0.4− |
| 2003 03 26 | 691 | 0.3− | 0.3+ | 2003 04 26 | 691 | 0.3+ | 0.3− | 2006 11 22 | 691 | 0.4− | 0.1− |
| 2003 03 26 | 691 | 0.2+ | 0.1+ | 2003 04 26 | 691 | 0.0 | 0.3− | 2006 11 22 | 691 | 0.4− | 0.2+ |
| 2003 03 31 | 291 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.3− | 2006 11 22 | 691 | 0.3− | 0.2+ |
| 2003 03 31 | 291 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.1+ | | | | |
| 2003 03 31 | 291 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.8− | | | | |

### 2003 FU$_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.09667 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28830736 | $\omega$ | 327.18254 | | −0.68057735 | −0.73216397 | |
| $a$ | 2.2693365 | $\Omega$ | 165.64195 | | +0.69378365 | −0.65601914 | |
| $e$ | 0.0793272 | $i$ | 6.34214 | | +0.23553920 | −0.18323428 | |
| $P$ | 3.42 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 01 | 688 | 1.3+ | 1.1+ | 2003 03 25 | 608 | 0.3+ | 1.0+ | 2003 04 08 | 608 | 0.4+ | 0.5− |
| 1997 08 01 | 688 | 1.0+ | 1.3+ | 2003 03 26 | 691 | 1.5+ | 0.8+ | 2004 08 20 | 691 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.9− | 0.7+ | 2003 03 26 | 691 | 0.1+ | 1.0+ | 2004 08 20 | 691 | 0.2− | 0.5+ |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2003 03 26 | 691 | 0.1+ | 1.0+ | 2004 08 20 | 691 | 0.1− | 0.3+ |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2003 03 27 | 644 | 0.5− | 0.9+ | 2006 01 04 | G96 | 2.2+ | 0.4− |
| 2001 09 21 | 704 | 0.3− | 0.4− | 2003 03 27 | 644 | 0.3− | 0.7+ | 2006 01 04 | G96 | 0.0 | 0.1− |
| 2001 10 10 | 644 | 0.9− | 0.7+ | 2003 03 27 | 644 | 0.7− | 0.6+ | 2006 01 04 | G96 | 0.1+ | 0.1− |
| 2001 10 10 | 644 | 0.7− | 0.7+ | 2003 04 03 | 699 | 1.7− | 1.0+ | 2006 01 04 | G96 | 0.1+ | 0.1+ |
| 2001 10 10 | 644 | 0.6− | 0.6+ | 2003 04 03 | 699 | 1.0− | 0.9+ | 2006 01 23 | 704 | 0.4− | 0.4+ |
| 2001 10 24 | 644 | 0.4− | 1.3+ | 2003 04 03 | 699 | 0.5+ | 1.0+ | 2006 01 23 | 704 | 1.0+ | 0.9+ |
| 2001 10 24 | 644 | 0.3− | 1.1+ | 2003 04 03 | 699 | 1.3− | 0.5+ | 2006 01 23 | 704 | 0.3− | 0.5+ |
| 2001 10 24 | 644 | 0.5− | 0.7+ | 2003 04 05 | 704 | 1.5+ | 0.6+ | 2006 02 04 | G96 | 0.3+ | 0.0 |
| 2001 10 25 | 645 | 0.1− | 0.2+ | 2003 04 05 | 704 | 0.1+ | 0.3+ | 2006 02 04 | G96 | 0.0 | 0.1+ |
| 2001 10 25 | 645 | 0.0 | 0.2+ | 2003 04 05 | 704 | 0.3+ | 0.2+ | 2006 02 04 | G96 | 0.3− | 0.5+ |
| 2003 03 25 | 608 | 1.1− | 0.3− | 2003 04 08 | 608 | 0.1+ | 0.4− | 2006 02 04 | G96 | 0.3+ | 0.2+ |
| 2003 03 25 | 608 | 0.1− | 0.2− | 2003 04 08 | 608 | 0.2− | 0.2− | | | | |

### 2003 FV$_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.82552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18511911 | $\omega$ | 147.75509 | | −0.93785653 | −0.34649492 | |
| $a$ | 3.0490781 | $\Omega$ | 12.01737 | | +0.29567941 | −0.82675386 | |
| $e$ | 0.2216340 | $i$ | 5.27499 | | +0.18165579 | −0.44319220 | |
| $P$ | 5.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 704 | (1.6+ | 0.1+) | 2003 04 03 | 699 | 0.1+ | 0.3+ | 2003 05 05 | 691 | 0.6− | 0.3− |
| 2003 03 10 | 704 | 0.8+ | 0.5+ | 2003 04 03 | 699 | 0.3− | 0.4+ | 2003 05 05 | 691 | 0.0 | 0.4+ |
| 2003 03 10 | 704 | 0.2− | 0.4− | 2003 04 03 | 699 | 0.6+ | 0.6− | 2003 05 05 | 691 | 0.2+ | 0.5+ |
| 2003 03 10 | 704 | 0.4− | 0.2− | 2003 04 08 | 691 | 0.3− | 0.4+ | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 2003 03 23 | 703 | 1.4− | 0.5+ | 2003 04 08 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 2003 03 23 | 703 | (1.7− | 0.3+) | 2003 04 08 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2003 03 23 | 703 | 1.4− | 0.6− | 2003 04 25 | 691 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2003 03 23 | 703 | 0.5− | 0.4+ | 2003 04 25 | 691 | 0.2+ | 0.6− | 2006 10 23 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 644 | 0.3+ | 0.1+ | 2003 04 25 | 691 | 0.4+ | 0.4− | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2003 03 27 | 644 | 0.3+ | 0.0 | 2003 04 27 | 704 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.2− |
| 2003 03 27 | 644 | 0.5+ | 0.5− | 2003 04 27 | 704 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2003 04 01 | 704 | 0.3+ | 0.4+ | 2003 04 27 | 704 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2003 04 01 | 704 | 1.1− | 0.8+ | 2003 04 27 | 704 | 0.3+ | 0.4+ | 2006 11 20 | A44 | 0.6− | 0.1− |
| 2003 04 01 | 704 | 1.4+ | 1.5− | 2003 04 29 | 704 | 0.9− | 0.3+ | 2006 11 20 | A44 | 0.1− | 0.7− |
| 2003 04 01 | 704 | (2.2− | 1.2+) | 2003 04 29 | 704 | 0.0 | 0.5+ | | | | |
| 2003 04 03 | 699 | 0.7+ | 0.3− | 2003 04 29 | 704 | 0.5− | 0.3− | | | | |

**2003 FE$_{45}$ = 2006 UD$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.48043 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21682425 | $\omega$ | 109.65063 | | −0.22302494 | | −0.97465711 |
| $a$ | 2.7440845 | $\Omega$ | 353.16520 | | +0.83055848 | | −0.18063688 |
| $e$ | 0.3366497 | $i$ | 8.41614 | | +0.51032586 | | −0.13196148 |
| $P$ | 4.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 291 | 1.0+ | 0.3+ | 2003 03 31 | 703 | 0.4− | 1.2− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 09 19 | 291 | 0.9+ | 0.4+ | 2003 03 31 | 703 | 0.4− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 09 19 | 645 | 0.3− | 0.0 | 2003 04 01 | 704 | 1.0+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2001 09 19 | 645 | 0.3− | 0.1− | 2003 04 01 | 704 | 0.5− | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 09 19 | 291 | 0.4+ | 0.6+ | 2003 04 01 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2003 03 07 | 699 | 0.5+ | 0.3− | 2003 04 01 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2003 03 07 | 699 | 0.3+ | 1.2+ | 2003 04 01 | 704 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2003 03 07 | 699 | 0.3+ | 0.7+ | 2003 04 07 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2003 03 07 | 699 | 0.2+ | 1.2+ | 2003 04 07 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2003 03 24 | 691 | 0.3+ | 0.1+ | 2003 04 07 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2003 03 24 | 691 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.4− | 2006 10 27 | 703 | 0.2− | 0.2− |
| 2003 03 24 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.1+ |
| 2003 03 25 | 699 | 0.2+ | 0.6− | 2006 10 19 | 703 | 0.7− | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.2+ |
| 2003 03 25 | 699 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.3− | 0.2− |
| 2003 03 25 | 699 | 0.8− | 0.2+ | 2006 10 19 | A50 | 0.9+ | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.4− |
| 2003 03 25 | 699 | 0.3− | 0.5− | 2006 10 19 | A50 | 0.4+ | 0.8+ | 2006 11 15 | 703 | (1.3− | 2.2+) |
| 2003 03 27 | 703 | 1.3− | 0.6− | 2006 10 21 | 704 | 0.0 | 0.7+ | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2003 03 27 | 703 | 1.3− | 0.2− | 2006 10 21 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.2− |
| 2003 03 27 | 703 | 1.0− | 0.3− | 2006 10 21 | 704 | 0.6+ | 1.1− | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2003 03 27 | 703 | (1.6− | 0.7−) | 2006 10 21 | 704 | 1.3− | 0.7− | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2003 03 31 | 703 | (0.1− | 3.4−) | 2006 10 21 | 644 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2003 03 31 | 703 | (2.6+ | 1.3+) | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.2− |

**2003 FK$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.92274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17552864 | $\omega$ | 145.49964 | | −0.88988247 | | +0.37984780 |
| $a$ | 3.1591535 | $\Omega$ | 58.78692 | | −0.45593297 | | −0.72196324 |
| $e$ | 0.1201771 | $i$ | 17.18125 | | −0.01530752 | | −0.57834655 |
| $P$ | 5.62 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 608 | 0.3+ | 0.7− | 2003 04 04 | 699 | 0.5+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.4+ |
| 2003 03 24 | 608 | 0.2+ | 0.6+ | 2003 04 04 | 699 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2003 03 24 | 608 | 0.5+ | 0.2− | 2003 04 27 | 645 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2003 03 27 | 704 | 0.6− | 0.2− | 2003 04 27 | 645 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.4− | 0.2+ |
| 2003 03 27 | 704 | 0.7− | 0.3− | 2003 05 07 | 703 | 1.0+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2003 03 27 | 704 | 1.4+ | 0.6+ | 2003 05 07 | 703 | (1.0+ | 1.6+) | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2003 04 01 | 608 | 0.7+ | 0.4− | 2003 05 07 | 703 | (3.0+ | 0.4+) | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2003 04 01 | 608 | 0.7+ | 0.2− | 2003 05 07 | 703 | 1.0+ | 1.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2003 04 01 | 608 | 0.6+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2003 04 04 | 699 | 0.3− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2003 04 04 | 699 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1− |

**2003 FZ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.44692 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24329089 | $\omega$ | 52.52707 | | −0.49999004 | | +0.86596772 |
| $a$ | 2.5412778 | $\Omega$ | 187.49574 | | −0.81777762 | | −0.47608079 |
| $e$ | 0.1625042 | $i$ | 4.60883 | | −0.28504338 | | −0.15312413 |
| $P$ | 4.05 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.3− | 0.7− | 2003 03 26 | 644 | 0.2+ | 0.5+ | 2004 09 22 | 691 | 0.4− | 0.3+ |
| 1999 03 19 | 691 | 0.3− | 0.5− | 2003 03 27 | 691 | 0.2− | 0.8+ | 2004 09 22 | 691 | 0.3− | 0.7+ |
| 1999 03 19 | 691 | 0.6− | 0.5− | 2003 03 27 | 691 | 0.1+ | 0.8+ | 2005 11 06 | G96 | 0.1+ | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 03 27 | 691 | 0.2+ | 0.7+ | 2005 11 06 | G96 | 0.2− | 0.4+ |
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2004 09 09 | 705 | 0.1− | 0.3− | 2005 11 06 | G96 | 0.0 | 0.2+ |
| 2003 03 08 | 704 | 1.1+ | 0.9+ | 2004 09 09 | 705 | 0.4+ | 0.4− | 2005 11 06 | G96 | 0.3− | 0.1+ |
| 2003 03 08 | 704 | 0.7+ | 0.7+ | 2004 09 09 | 705 | 0.1+ | 0.3+ | 2006 01 31 | G96 | 0.3+ | 0.4+ |
| 2003 03 08 | 704 | 0.2+ | 1.9+ | 2004 09 13 | 691 | 0.1− | 0.5+ | 2006 01 31 | G96 | 0.2+ | 0.0 |
| 2003 03 08 | 704 | 1.5+ | 0.3+ | 2004 09 13 | 691 | 0.8+ | 0.0 | 2006 01 31 | G96 | 0.4− | 0.4+ |
| 2003 03 26 | 644 | 0.3+ | 0.6+ | 2004 09 13 | 691 | 0.4− | 0.5+ | 2006 01 31 | G96 | 0.0 | 0.3+ |
| 2003 03 26 | 644 | 0.5+ | 0.4+ | 2004 09 22 | 691 | 0.5− | 0.3+ | | | | |

**2003 FV$_{61}$ = 2006 VK$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.92971 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18497577 | $\omega$ | 116.53485 | | −0.98462608 | | +0.14804474 |
| $a$ | 3.0506531 | $\Omega$ | 72.09596 | | −0.17355470 | | −0.88918049 |
| $e$ | 0.1115585 | $i$ | 5.59080 | | +0.01975483 | | −0.43294435 |
| $P$ | 5.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 644 | 0.4+ | 0.4+ | 2003 04 01 | 645 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.3− |
| 2003 03 26 | 644 | 0.1− | 0.8+ | 2003 04 10 | 691 | 0.9+ | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2003 03 26 | 644 | 0.5+ | 0.1+ | 2003 04 10 | 691 | 1.0+ | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2003 03 27 | 644 | 0.0 | 0.3+ | 2003 04 10 | 691 | 0.7+ | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.7+ |
| 2003 03 27 | 644 | 0.7+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.5+ | 0.1− |
| 2003 03 27 | 644 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.6+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.5− |
| 2003 03 27 | 644 | 0.2+ | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.3− | 0.3+ |
| 2003 03 27 | 644 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.7− |
| 2003 03 27 | 644 | 0.4+ | 0.6+ | 2006 11 11 | 691 | 0.6− | 0.6+ | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2003 04 01 | 645 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.7+ | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2003 04 01 | 645 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.4− | 0.1− |
| 2003 04 01 | 645 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.3− | | | | |

**2003 FC$_{65}$ = 2006 VD$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.65037 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17922116 | $\omega$ | 122.51025 | | −0.96021790 | | −0.24508538 |
| $a$ | 3.1156107 | $\Omega$ | 43.71809 | | +0.14285748 | | −0.84295558 |
| $e$ | 0.0730577 | $i$ | 11.16692 | | +0.23994443 | | −0.47891444 |
| $P$ | 5.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 644 | 0.3+ | 0.6+ | 2003 04 03 | 608 | 0.2+ | 1.2− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2003 03 26 | 644 | 0.1+ | 0.3+ | 2003 04 03 | 608 | 0.4+ | 1.2− | 2006 11 11 | 703 | 1.2− | 1.3− |
| 2003 03 26 | 644 | 0.3− | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2003 03 27 | 644 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.0+ | 0.1+ |
| 2003 03 27 | 644 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.1− | 0.7− |
| 2003 03 27 | 644 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.4+ | 0.1+ |
| 2003 03 31 | 699 | 0.4− | 0.5− | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2003 03 31 | 699 | 0.4− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.3+ |
| 2003 03 31 | 699 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2003 03 31 | 699 | 0.0 | 0.9+ | 2006 10 31 | G96 | 0.7+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2003 04 03 | 608 | 0.4+ | 0.5− | 2006 10 31 | G96 | 0.6+ | 0.6− | 2006 11 16 | 691 | 0.0 | 0.1− |

**2003 FY$_{69}$ = 2006 WU$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.31946 | | | (2000.0) | | |
| $n$ | 0.18018298 | $\omega$ | 83.08671 | | −0.97622545 | +0.18950680 |
| $a$ | 3.1045134 | $\Omega$ | 107.79633 | | −0.21515765 | −0.90606506 |
| $e$ | 0.0959297 | $i$ | 6.34453 | | +0.02628783 | −0.37832958 |
| $P$ | 5.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.1− | 0.6− | 2003 03 31 | 699 | 0.3− | 0.9− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 1997 02 03 | 691 | 0.1− | 0.4− | 2003 03 31 | 699 | 0.6− | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 1997 02 03 | 691 | 0.1− | 0.5− | 2003 03 31 | 699 | 1.4− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1998 06 18 | 691 | (0.1− | 3.6−) | 2003 04 09 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 1998 06 18 | 691 | 0.3− | 1.4+ | 2003 04 09 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 1998 06 18 | 691 | 0.1− | 0.7+ | 2003 04 09 | 704 | 0.6+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2003 03 26 | 691 | 0.1+ | 0.1+ | 2003 04 09 | 691 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2003 03 26 | 691 | 0.1+ | 0.1+ | 2003 04 09 | 704 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2003 03 26 | 691 | 0.5+ | 0.1+ | 2003 04 09 | 704 | 0.8+ | 1.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2003 03 27 | 644 | 0.3+ | 0.7+ | 2003 04 09 | 704 | 0.6+ | 0.2+ | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 2003 03 27 | 644 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2003 03 27 | 644 | 0.2+ | 1.1+ | 2006 10 23 | G96 | 0.6+ | 0.8− | | | | |
| 2003 03 31 | 699 | 0.6− | 0.9+ | 2006 10 23 | G96 | 0.1− | 0.2− | | | | |

**2003 FT$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 196.91291 | | | (2000.0) | | |
| $n$ | 0.17350712 | $\omega$ | 123.04974 | | −0.73455859 | +0.67605309 |
| $a$ | 3.1836441 | $\Omega$ | 99.55894 | | −0.64054700 | −0.66262428 |
| $e$ | 0.1573469 | $i$ | 3.37786 | | −0.22388215 | −0.32230620 |
| $P$ | 5.68 | $H$ | 15.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 691 | 0.3− | 0.3− | 2003 04 03 | 699 | 0.8− | 0.1− | 2003 04 25 | 691 | 0.1− | 0.1+ |
| 2003 03 26 | 691 | 0.3− | 0.2− | 2003 04 03 | 699 | 0.8− | 0.6+ | 2006 11 13 | 291 | 0.1− | 0.1− |
| 2003 03 26 | 691 | 0.2− | 0.3− | 2003 04 03 | 699 | 0.1+ | 0.9− | 2006 11 13 | 291 | 0.2− | 0.1− |
| 2003 03 27 | 644 | 0.2− | 0.0 | 2003 04 08 | 704 | 0.1+ | 0.3− | 2006 11 13 | 291 | 0.1− | 0.0 |
| 2003 03 27 | 699 | 0.4+ | 0.7− | 2003 04 08 | 704 | 0.7− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2003 03 27 | 644 | 0.0 | 0.5+ | 2003 04 08 | 704 | 1.2− | 1.0+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2003 03 27 | 699 | 0.3+ | 0.2+ | 2003 04 08 | 704 | 1.1+ | 0.8+ | 2006 11 15 | 691 | 0.6+ | 0.3− |
| 2003 03 27 | 699 | 0.7+ | 0.5− | 2003 04 08 | 608 | 0.5+ | 0.7− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2003 03 27 | 644 | 0.0 | 0.4+ | 2003 04 08 | 608 | 0.1+ | 1.3− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2003 03 27 | 699 | 1.1− | 0.9− | 2003 04 08 | 608 | 0.1+ | 1.0− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2003 03 30 | 704 | (0.3− | 2.0+) | 2003 04 09 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2003 03 30 | 704 | 0.1+ | 0.2+ | 2003 04 09 | 691 | 0.4+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2003 03 30 | 704 | 0.3+ | 0.1+ | 2003 04 09 | 691 | 0.5+ | 0.5+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2003 03 30 | 704 | 1.0+ | 0.2− | 2003 04 25 | 691 | 0.2− | 0.2+ | | | | |
| 2003 04 03 | 699 | (1.5+ | 0.3−) | 2003 04 25 | 691 | 0.1+ | 0.4+ | | | | |

**2003 FD$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 218.63670 | | | (2000.0) | | |
| $n$ | 0.17290713 | $\omega$ | 166.82571 | | −0.95640933 | +0.26042446 |
| $a$ | 3.1910047 | $\Omega$ | 29.32174 | | −0.28638569 | −0.74789124 |
| $e$ | 0.1983787 | $i$ | 15.65392 | | −0.05713525 | −0.61060446 |
| $P$ | 5.70 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 608 | 1.3+ | 0.2+ | 2003 04 08 | 704 | 0.7− | 0.6− | 2003 05 05 | 704 | (1.5− | 2.1−) |
| 2003 03 26 | 608 | 0.7+ | 0.3+ | 2003 04 08 | 704 | 0.2− | 1.1− | 2003 05 05 | 704 | (1.3− | 1.7−) |
| 2003 03 26 | 608 | 0.7+ | 0.2+ | 2003 04 08 | 704 | 0.8− | 1.3− | 2003 05 05 | 704 | (1.5− | 2.0−) |
| 2003 03 29 | 699 | 0.5− | 0.2− | 2003 04 20 | 608 | 0.5− | 1.3− | 2003 05 05 | 704 | (2.1− | 2.1−) |
| 2003 03 29 | 699 | 0.8− | 0.4+ | 2003 04 20 | 608 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.5+ | 0.1− |
| 2003 03 29 | 699 | 0.1+ | 0.3− | 2003 04 20 | 608 | 0.3− | 0.7− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2003 03 29 | 699 | 0.7− | 0.1+ | 2003 04 26 | 691 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.8+ | 0.5− |
| 2003 03 30 | 704 | 0.3− | 0.9+ | 2003 04 26 | 691 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.6+ | 0.1− |
| 2003 03 30 | 704 | 0.1+ | 0.3+ | 2003 04 26 | 691 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.4+ |
| 2003 03 30 | 704 | 1.2+ | 0.3+ | 2003 04 27 | 704 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.7− | 0.0 |
| 2003 03 30 | 704 | 0.5+ | 0.0 | 2003 04 27 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2003 03 30 | 704 | 1.2+ | 0.7+ | 2003 04 27 | 699 | 0.8− | 0.6− | 2006 10 27 | 691 | 0.4+ | 0.1− |
| 2003 03 31 | 699 | 0.9− | 0.1+ | 2003 04 27 | 704 | 0.6− | 0.7− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2003 03 31 | 699 | 0.5− | 0.9− | 2003 04 27 | 699 | 0.5+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2003 03 31 | 699 | 0.9− | 0.4+ | 2003 04 27 | 704 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2003 03 31 | 699 | 0.3− | 0.0 | 2003 04 27 | 699 | 0.4+ | 1.0− | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2003 04 08 | 704 | 1.4+ | 0.0 | 2003 04 27 | 704 | 0.8− | 0.5− | 2006 11 25 | G96 | 0.8+ | 0.8+ |
| 2003 04 08 | 704 | 0.2+ | 1.0− | 2003 04 27 | 699 | (2.0− | 1.2+) | 2006 11 25 | G96 | 0.1− | 0.2− |

**2003 FH$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.87555 | | | (2000.0) | | |
| $n$ | 0.17491925 | $\omega$ | 114.17340 | | −0.52688421 | −0.84864733 |
| $a$ | 3.1664865 | $\Omega$ | 8.11426 | | +0.60839320 | −0.41503107 |
| $e$ | 0.1921789 | $i$ | 19.36626 | | +0.59350716 | −0.32794347 |
| $P$ | 5.63 | $H$ | 14.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 599 | 0.8+ | 0.2+ | 2003 03 31 | 704 | 0.8+ | 1.2+ | 2006 09 17 | 691 | 0.3+ | 0.2+ |
| 2003 03 27 | 599 | 0.6+ | 0.2− | 2003 03 31 | 704 | (2.7+ | 0.7+) | 2006 09 19 | 703 | 0.2− | 0.9− |
| 2003 03 27 | 599 | 0.8+ | 0.4+ | 2003 04 28 | 699 | 0.4− | 1.3− | 2006 09 19 | 703 | 0.5− | 0.0 |
| 2003 03 27 | 599 | 0.6+ | 0.2+ | 2003 04 28 | 699 | (1.7− | 1.6−) | 2006 09 19 | 703 | (1.8+ | 0.2+) |
| 2003 03 27 | 699 | 0.0 | 0.8+ | 2003 04 28 | 699 | (1.9− | 1.7−) | 2006 09 19 | 703 | 1.3− | 0.7− |
| 2003 03 27 | 699 | 0.0 | 0.3+ | 2003 04 28 | 699 | 1.3− | 0.2− | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 2003 03 27 | 699 | 0.3+ | 0.3− | 2003 05 01 | 704 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2003 03 27 | 699 | 1.0− | 1.3+ | 2003 05 01 | 704 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.9+ | 1.0+ |
| 2003 03 29 | 699 | 0.1+ | 0.9+ | 2003 05 01 | 704 | 0.9+ | 0.0 | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2003 03 29 | 699 | 0.8+ | 0.6+ | 2003 05 03 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 2003 03 29 | 699 | 0.2− | 0.1+ | 2003 05 03 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.6− | 0.1+ |
| 2003 03 29 | 699 | 0.7+ | 0.5− | 2003 05 03 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2003 03 31 | 699 | 0.6+ | 1.0+ | 2006 07 21 | G96 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.5− | 0.2− |
| 2003 03 31 | 699 | 0.4− | 0.6− | 2006 07 21 | G96 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.5− | 0.1+ |
| 2003 03 31 | 699 | 0.5+ | 0.6− | 2006 07 21 | G96 | 0.6− | 0.6+ | 2006 10 17 | 703 | 1.3− | 0.2+ |
| 2003 03 31 | 699 | 0.3+ | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2003 03 31 | 704 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.3− |
| 2003 03 31 | 704 | 0.6+ | 1.0+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.6− |

**2003 FH$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.84698 | | | (2000.0) | | |
| $n$ | 0.23370513 | $\omega$ | 341.07645 | | −0.70799410 | +0.70350572 |
| $a$ | 2.6103007 | $\Omega$ | 243.79544 | | −0.63872692 | −0.67522945 |
| $e$ | 0.1117033 | $i$ | 3.95211 | | −0.30128438 | −0.22168646 |
| $P$ | 4.22 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 695 | 0.2− | 0.5+ | 2003 03 29 | 699 | 0.0 | 0.9+ | 2004 09 17 | 691 | 0.2+ | 0.3+ |
| 2000 09 21 | 695 | 0.0 | 0.6+ | 2003 03 29 | 699 | 0.9− | 0.3+ | 2004 09 17 | 691 | 0.1+ | 0.1+ |
| 2000 09 29 | 691 | 0.1+ | 0.0 | 2003 03 29 | 699 | 0.0 | 0.2− | 2005 10 25 | G96 | 0.3− | 0.0 |
| 2000 09 29 | 691 | 0.4− | 0.1− | 2003 03 31 | 699 | 1.0+ | 0.0 | 2005 10 25 | G96 | 0.3+ | 0.3+ |
| 2000 09 29 | 691 | 0.2− | 0.3− | 2003 03 31 | 699 | 1.0+ | 1.2+ | 2005 10 25 | G96 | 0.9− | 1.1+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2003 03 31 | 699 | (1.2+ | 1.6−) | 2005 10 25 | G96 | 0.1− | 0.2+ |
| 2000 10 02 | 645 | 0.1+ | 0.0 | 2003 03 31 | 699 | 1.6+ | 0.8+ | 2005 11 25 | G96 | 0.4+ | 0.5+ |
| 2003 03 27 | 644 | 0.0 | 0.5+ | 2004 08 22 | 691 | 0.2− | 0.0 | 2005 11 25 | G96 | 0.1− | 0.4+ |
| 2003 03 27 | 644 | 1.1− | 0.4+ | 2004 08 22 | 691 | 0.3− | 0.2+ | 2005 11 25 | G96 | 0.0 | 0.8+ |
| 2003 03 27 | 644 | 0.0 | 0.8+ | 2004 08 22 | 691 | 0.2− | 0.2+ | 2005 11 25 | G96 | 0.1+ | 0.6+ |
| 2003 03 29 | 699 | (2.4− | 0.9+) | 2004 09 17 | 691 | 0.1+ | 0.1+ | | | | |

**2003 FF$_{86}$ = 1995 WT$_{24}$ = 2006 UO$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 250.65065 | | (2000.0) | | −0.87844664 | −0.47481625 |
| $n$ | 0.17583428 | $\omega$ | 202.06476 | | +0.44814507 | −0.77966039 |
| $a$ | 3.1554915 | $\Omega$ | 309.47507 | | +0.16582368 | −0.40826364 |
| $e$ | 0.1252936 | $i$ | 3.98736 | | | |
| $P$ | 5.61 | $H$ | 15.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.2+ | 0.3− | 2003 03 31 | 704 | 1.5+ | 0.2− | 2006 10 21 | 691 | 0.3+ | 0.3+ |
| 1995 11 18 | 691 | 0.3− | 0.1− | 2003 03 31 | 704 | 0.8+ | 0.9+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 1995 11 18 | 691 | 0.3− | 0.2− | 2003 03 31 | 704 | 1.0+ | 0.2− | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 1995 11 24 | 691 | 0.2+ | 0.2− | 2003 03 31 | 704 | (1.6+ | 0.2−) | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 1995 11 24 | 691 | 0.2+ | 0.3− | 2003 04 01 | 644 | 0.6+ | 0.4− | 2006 11 18 | G96 | (1.5+ | 2.1+) |
| 1995 11 24 | 691 | 0.2+ | 0.3− | 2003 04 01 | 644 | 0.8+ | 0.4− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2000 09 22 | 691 | 0.5− | 0.5+ | 2003 04 01 | 644 | 0.6+ | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2000 09 22 | 691 | 0.0 | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2000 09 22 | 691 | 0.2− | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2003 03 28 | 691 | 0.1− | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2003 03 28 | 691 | 0.0 | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.2+ | 0.6− |
| 2003 03 28 | 691 | 0.2− | 0.8+ | 2006 10 21 | 691 | 0.6− | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.0 |

**2003 FT$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.06332 | | (2000.0) | | −0.95945622 | −0.24402009 |
| $n$ | 0.17366771 | $\omega$ | 132.36774 | | +0.12114205 | −0.80889738 |
| $a$ | 3.1816812 | $\Omega$ | 34.22297 | | +0.25449629 | −0.53491982 |
| $e$ | 0.0591995 | $i$ | 14.52553 | | | |
| $P$ | 5.68 | $H$ | 15.5 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 691 | 0.3+ | 0.2− | 2003 03 31 | 699 | 0.6+ | 0.6+ | 2006 11 15 | 703 | 0.5− | 0.0 |
| 2000 11 02 | 691 | 0.6+ | 0.1− | 2003 03 31 | 699 | 0.9+ | 0.7− | 2006 11 15 | 703 | 0.7− | 0.7− |
| 2000 11 02 | 691 | 0.3+ | 0.2− | 2003 03 31 | 699 | 0.6+ | 0.5− | 2006 11 15 | 703 | 1.0− | 0.2− |
| 2000 11 30 | 645 | 0.1− | 0.0 | 2003 03 31 | 699 | 0.5− | 0.7+ | 2006 11 15 | 703 | 0.6− | 0.6− |
| 2000 11 30 | 645 | 0.1− | 0.0 | 2003 04 07 | 691 | 0.1− | 0.3− | 2006 11 20 | G96 | 0.1+ | 0.2+ |
| 2001 11 21 | 645 | 0.1− | 0.1− | 2003 04 07 | 691 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.1+ |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2003 04 07 | 691 | 0.4− | 0.3− | 2006 11 20 | G96 | 0.2+ | 0.1+ |
| 2003 03 28 | 691 | 0.1− | 0.1+ | 2003 05 05 | 704 | (1.9+ | 0.0 ) | 2006 11 20 | G96 | 0.4− | 0.1+ |
| 2003 03 28 | 691 | 0.1+ | 0.5+ | 2003 05 05 | 704 | 0.2+ | 0.6+ | 2006 11 21 | G96 | 0.9+ | 0.8+ |
| 2003 03 28 | 691 | 0.5+ | 0.2+ | 2003 05 05 | 704 | 1.2+ | 1.0+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2003 03 29 | 699 | 0.4− | 0.2+ | 2003 05 05 | 704 | (1.7+ | 0.2+) | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2003 03 29 | 699 | 0.2+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.4+ |
| 2003 03 29 | 699 | 0.9− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.6+ | | | | |
| 2003 03 29 | 699 | 0.6+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.6+ | | | | |

**2003 FV$_{89}$ = 2006 WX$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 206.86470 | | (2000.0) | | −0.81704792 | +0.56295280 |
| $n$ | 0.17986041 | $\omega$ | 347.83172 | | −0.51372595 | −0.80888450 |
| $a$ | 3.1082241 | $\Omega$ | 227.15403 | | −0.26176009 | −0.16967619 |
| $e$ | 0.0762719 | $i$ | 9.78189 | | | |
| $P$ | 5.48 | $H$ | 14.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 29 | 699 | 0.2− | 0.1− | 2005 08 30 | 644 | 0.4+ | 0.2− | 2006 11 16 | 691 | 1.1− | 0.0 |
| 2003 03 29 | 699 | 0.4+ | 0.3− | 2005 09 30 | 644 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2003 03 29 | 699 | 0.8− | 0.0 | 2005 09 30 | 644 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2003 03 29 | 699 | (1.9− | 0.5−) | 2005 09 30 | 644 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2003 03 30 | 691 | 0.1+ | 0.0 | 2005 09 30 | 644 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 03 30 | 691 | 0.0 | 0.1+ | 2005 09 30 | 644 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.5+ | 0.3+ |
| 2003 03 30 | 691 | 0.1+ | 0.2+ | 2005 09 30 | 644 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.3+ | 0.0 |
| 2003 04 07 | 704 | 0.4+ | 1.4+ | 2005 10 07 | 703 | 0.8+ | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2003 04 07 | 704 | 0.4− | 1.1+ | 2005 10 07 | 703 | 1.4− | 0.8− | 2006 11 24 | 691 | 0.4+ | 0.2− |
| 2003 04 07 | 704 | 0.4+ | 1.2− | 2005 10 07 | 703 | 0.1− | 0.3+ | 2006 11 24 | 691 | 0.3+ | 0.1− |
| 2003 04 07 | 704 | 0.1+ | 0.1+ | 2005 10 07 | 703 | 0.9− | 0.9+ | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2003 04 11 | 699 | 1.3− | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.4+ | 0.1− |
| 2003 04 11 | 699 | 0.5+ | 1.4− | 2006 09 28 | G96 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2003 04 11 | 699 | 0.6− | 1.0− | 2006 09 28 | G96 | 0.4+ | 0.7+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2003 04 11 | 699 | 0.7+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 1.2+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2005 08 30 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.4− | 0.1+ | | | | |
| 2005 08 30 | 644 | 0.5+ | 0.0 | 2006 11 16 | 691 | 0.3− | 0.2+ | | | | |

**2003 FO$_{92}$ = 1992 EE$_{15}$**

Id. Minor Planet Center; 1992 EE$_{15}$ = 1982 JL$_3$ (*MPO* 14729) is invalid.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 205.13567 | | (2000.0) | | +0.61638764 | +0.78740578 |
| $n$ | 0.18500607 | $\omega$ | 54.52858 | | −0.76575058 | −0.59711682 |
| $a$ | 3.0503199 | $\Omega$ | 177.38046 | | −0.18355471 | −0.15311313 |
| $e$ | 0.0713646 | $i$ | 9.62659 | | | |
| $P$ | 5.33 | $H$ | 14.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 26 | 675 | 0.3+ | 2.1− | 2003 04 02 | 704 | (2.2+ | 0.3−) | 2005 09 24 | 644 | 0.3− | 0.4+ |
| 1971 03 26 | 675 | 0.7− | 1.4+ | 2003 04 02 | 704 | 0.7+ | 0.9+ | 2005 09 30 | 699 | (1.7+ | 0.3+) |
| 1992 03 01 | 809 | 0.0 | 0.8− | 2003 04 08 | 704 | 0.7+ | 0.1− | 2005 09 30 | 699 | 1.3− | 0.8+ |
| 1992 03 03 | 809 | 0.2− | 0.3− | 2003 04 08 | 704 | 0.7+ | 0.5+ | 2005 09 30 | 699 | (1.6+ | 2.0+) |
| 1992 03 06 | 809 | 1.1+ | 0.5− | 2003 04 08 | 704 | 0.1+ | 0.0 | 2005 09 30 | 699 | 0.4+ | 0.3+ |
| 1994 08 31 | 691 | 0.1+ | 0.5− | 2003 04 08 | 704 | 0.6+ | 0.5− | 2005 10 01 | 704 | 0.0 | 0.8+ |
| 1994 08 31 | 691 | 0.0 | 0.4− | 2003 04 08 | 704 | 0.1− | 0.3+ | 2005 10 01 | 704 | 0.6+ | 0.5+ |
| 1994 08 31 | 691 | 0.1− | 0.0 | 2003 04 11 | 691 | 0.4+ | 0.7+ | 2005 10 01 | 704 | (0.7− | 1.5+) |
| 2000 10 30 | 704 | 0.7− | 0.3+ | 2003 04 11 | 691 | 0.2+ | 0.2+ | 2005 10 01 | 704 | 0.2+ | 0.3+ |
| 2000 10 30 | 704 | 0.7− | 0.1+ | 2003 04 11 | 691 | 0.6+ | 0.4+ | 2005 10 01 | 704 | 0.1+ | 0.5+ |
| 2000 10 30 | 704 | 0.7+ | 0.2− | 2003 04 21 | 608 | 0.2− | 0.8+ | 2005 10 11 | A50 | (0.2+ | 1.8+) |
| 2000 10 30 | 704 | 0.4− | 1.8+ | 2003 04 21 | 608 | 0.2− | 0.8+ | 2005 10 11 | A50 | 0.3− | 0.1− |
| 2003 03 10 | 704 | 0.2− | 0.2+ | 2003 04 21 | 608 | 0.2− | 1.2+ | 2005 10 22 | 703 | 0.1+ | 0.1− |
| 2003 03 10 | 704 | 0.7+ | 0.5− | 2003 04 27 | 704 | (0.2− | 3.3+) | 2005 10 22 | 703 | 0.2− | 0.0 |
| 2003 03 10 | 704 | 0.0 | 0.2− | 2003 04 27 | 704 | 0.0 | 0.9+ | 2005 10 22 | 703 | 0.5− | 0.1+ |
| 2003 03 17 | 608 | 1.0+ | 1.4− | 2003 04 27 | 704 | 0.7+ | 1.0+ | 2005 10 22 | 703 | 1.3− | 0.5+ |
| 2003 03 17 | 608 | 0.9+ | 0.8− | 2003 04 27 | 704 | (0.6+ | 1.8+) | 2005 10 27 | 699 | 0.1− | 0.0 |
| 2003 03 17 | 608 | 1.1+ | 0.5− | 2003 05 01 | 704 | 0.8+ | 0.3− | 2005 10 27 | 704 | 0.7+ | 0.7+ |
| 2003 03 27 | 644 | 0.3+ | 0.3+ | 2003 05 01 | 704 | 0.0 | 0.0 | 2005 10 27 | 699 | 0.6+ | 0.2+ |
| 2003 03 27 | 644 | 0.1+ | 0.1− | 2003 05 01 | 704 | 0.4+ | 0.2+ | 2005 10 27 | 644 | 0.1+ | 0.2+ |
| 2003 03 27 | 644 | 0.4+ | 0.1+ | 2003 05 01 | 704 | 0.2− | 0.1+ | 2005 10 27 | 704 | 0.3− | 0.5+ |
| 2003 03 28 | 691 | 0.4− | 0.5+ | 2003 05 01 | 704 | 0.2+ | 0.4+ | 2005 10 27 | 644 | 0.0 | 0.4+ |
| 2003 03 28 | 691 | 0.1− | 0.5+ | 2003 05 08 | 704 | 0.4− | 0.9+ | 2005 10 27 | 699 | 0.3+ | 0.3+ |
| 2003 03 28 | 691 | 0.4− | 0.3+ | 2003 05 08 | 704 | 0.6− | 1.4+ | 2005 10 27 | 704 | 0.3− | 0.9+ |
| 2003 03 29 | 699 | 0.5− | 0.9− | 2003 05 08 | 704 | 0.1+ | 0.8+ | 2005 10 27 | 704 | 0.3− | 0.7+ |
| 2003 03 29 | 699 | 0.7− | 0.0 | 2003 05 08 | 704 | 0.9− | 1.5+ | 2005 10 27 | 644 | 0.3+ | 0.4+ |
| 2003 03 29 | 699 | 0.8− | 0.3+ | 2003 05 08 | 704 | 0.1+ | 1.1+ | 2005 10 27 | 699 | 0.2− | 0.1− |
| 2003 03 29 | 699 | 0.9− | 0.1− | 2005 09 09 | 704 | 1.2− | 0.7+ | 2005 10 28 | 704 | (2.2− | 0.5+) |
| 2003 03 30 | 704 | (0.5− | 2.4+) | 2005 09 09 | 704 | 0.5− | 0.3− | 2005 10 28 | 704 | 0.3+ | 0.7+ |
| 2003 03 30 | 704 | 0.5− | 0.8+ | 2005 09 09 | 704 | 0.3− | 0.8+ | 2005 10 28 | 704 | 0.7− | 0.4+ |
| 2003 03 30 | 704 | (0.7− | 1.9+) | 2005 09 23 | 691 | 0.1− | 1.3+ | 2005 10 28 | 704 | 0.1− | 0.7+ |
| 2003 03 30 | 704 | (0.0 | 2.0+) | 2005 09 23 | 691 | 0.0 | 0.2+ | 2005 10 31 | 704 | 0.5+ | 1.1+ |
| 2003 03 30 | 704 | 0.8− | 1.3+ | 2005 09 23 | 691 | 0.0 | 0.1+ | 2005 10 31 | 704 | 0.8+ | 0.6+ |
| 2003 03 31 | 699 | 0.6+ | 0.3− | 2005 09 24 | 703 | (5.3+ | 1.8−) | 2005 10 31 | 704 | 0.0 | 0.0 |
| 2003 03 31 | 699 | 0.2− | 0.5+ | 2005 09 24 | 703 | 0.9+ | 0.3+ | 2006 01 13 | G96 | 0.4+ | 0.3+ |
| 2003 03 31 | 699 | 0.0 | 0.0 | 2005 09 24 | 703 | 1.2− | 0.2+ | 2006 01 13 | G96 | 0.3− | 0.5+ |
| 2003 03 31 | 699 | 0.6− | 0.2− | 2005 09 24 | 703 | 0.8− | 0.1− | 2006 01 13 | G96 | 0.2+ | 0.4+ |
| 2003 04 02 | 704 | 0.9+ | 0.7+ | 2005 09 24 | 644 | 0.3+ | 0.2+ | 2006 01 13 | G96 | 0.1+ | 0.3+ |
| 2003 04 02 | 704 | 0.7− | 0.4− | 2005 09 24 | 644 | 0.2+ | 0.2+ | | | | |

**2003 FG$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 227.40054 | | (2000.0) | | −0.92117430 | +0.34838410 |
| $n$ | 0.17674553 | $\omega$ | 140.56607 | | −0.38795535 | −0.78725231 |
| $a$ | 3.1446363 | $\Omega$ | 60.64716 | | −0.03047207 | −0.50878514 |
| $e$ | 0.0777041 | $i$ | 11.47479 | | | |
| $P$ | 5.58 | $H$ | 15.5 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 29 | 699 | 0.7− | 0.3+ | 2003 03 31 | 699 | 1.2− | 1.0− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2003 03 29 | 699 | 1.0+ | 0.1+ | 2003 04 30 | 608 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2003 03 29 | 699 | 0.3+ | 0.1+ | 2003 04 30 | 608 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2003 03 29 | 699 | 0.1+ | 0.2− | 2003 04 30 | 608 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2003 03 31 | 699 | 0.7− | 0.3+ | 2003 05 02 | 704 | 0.1+ | 0.8− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2003 03 31 | 699 | 0.4+ | 0.5− | 2003 05 02 | 704 | 0.3− | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2003 03 31 | 699 | 1.0+ | 0.7+ | 2003 05 02 | 704 | 0.0 | 0.0 | | | | |

### 2003 FN$_{95}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.35047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18280016 | $\omega$ | 12.01451 | | −0.54055860 | +0.83379228 | |
| $a$ | 3.0748104 | $\Omega$ | 225.38984 | | −0.78434540 | −0.54769268 | |
| $e$ | 0.0411017 | $i$ | 9.06724 | | −0.30430035 | −0.06944901 | |
| $P$ | 5.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 699 | 1.4− | 0.6− | 2003 05 05 | 699 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2003 03 30 | 699 | 1.0− | 0.2− | 2005 10 01 | 703 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2003 03 30 | 699 | 1.1− | 0.7− | 2005 10 01 | 703 | (0.2+ | 2.6+) | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2003 03 30 | 699 | 0.6− | 0.2− | 2005 10 01 | 703 | 0.0 | 0.8+ | 2006 11 18 | 691 | 0.3+ | 0.3+ |
| 2003 03 31 | 691 | 0.1− | 0.3+ | 2005 10 01 | 703 | 0.5− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2003 03 31 | 691 | 0.1− | 0.2+ | 2006 10 21 | D35 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2003 03 31 | 691 | 0.2+ | 0.2+ | 2006 10 21 | D35 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2003 04 05 | 608 | 0.6+ | 0.6+ | 2006 10 21 | D35 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2003 04 05 | 608 | 0.7+ | 0.2+ | 2006 11 13 | 291 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.1− |
| 2003 04 05 | 608 | 0.8+ | 0.1− | 2006 11 13 | 291 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.1+ |
| 2003 05 05 | 699 | 1.4+ | 0.0 | 2006 11 13 | 291 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.7− |
| 2003 05 05 | 699 | 0.9+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− | | | | |
| 2003 05 05 | 699 | 0.2+ | 0.8− | 2006 11 16 | G96 | 0.0 | 0.5− | | | | |

### 2003 FP$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.22328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18064760 | $\omega$ | 339.02885 | | −0.99371761 | +0.06171919 | |
| $a$ | 3.0991880 | $\Omega$ | 205.06803 | | −0.04148889 | −0.97790766 | |
| $e$ | 0.0915118 | $i$ | 12.72942 | | −0.10394220 | −0.19971816 | |
| $P$ | 5.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 11 | 704 | 0.2− | 0.4+ | 2003 03 31 | 704 | 0.1+ | 1.3− | 2003 04 26 | 691 | 0.2+ | 0.1+ |
| 2003 03 11 | 704 | 0.2+ | 1.0+ | 2003 03 31 | 704 | 0.8+ | 1.1− | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2003 03 11 | 704 | 0.4+ | 0.8+ | 2003 03 31 | 704 | 0.2− | 1.1− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2003 03 27 | 699 | 0.3+ | 0.9+ | 2003 04 01 | 644 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.4+ |
| 2003 03 27 | 699 | 1.0+ | 0.3− | 2003 04 01 | 644 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 03 27 | 699 | 0.6− | 0.5+ | 2003 04 01 | 644 | 0.7+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.2+ |
| 2003 03 27 | 699 | 0.7+ | 1.1+ | 2003 04 08 | 691 | 0.5− | 0.4− | 2006 11 19 | 703 | 0.1+ | 0.1+ |
| 2003 03 30 | 691 | 0.1− | 0.1− | 2003 04 08 | 691 | 0.7− | 0.0 | 2006 11 19 | 703 | 0.9− | 0.1+ |
| 2003 03 30 | 691 | 0.0 | 0.0 | 2003 04 08 | 691 | 0.3− | 0.2− | 2006 11 19 | 703 | 0.0 | 0.4− |
| 2003 03 30 | 691 | 0.1+ | 0.0 | 2003 04 26 | 691 | 0.2+ | 0.1+ | | | | |
| 2003 03 31 | 704 | 0.1− | 1.2− | 2003 04 26 | 691 | 0.2+ | 0.3+ | | | | |

### 2003 FV$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.72393 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29989735 | $\omega$ | 259.81552 | | −0.03894158 | −0.99923749 | |
| $a$ | 2.2104853 | $\Omega$ | 192.41729 | | +0.92185668 | −0.03483395 | |
| $e$ | 0.0730689 | $i$ | 0.75332 | | +0.38556947 | −0.01763619 | |
| $P$ | 3.29 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 27 | 691 | (1.4+ | 3.5+) | 2001 10 14 | 645 | 0.0 | 0.1− | 2006 01 05 | G96 | 0.7− | 0.8− |
| 1998 11 27 | 691 | 1.2− | 0.6− | 2003 03 11 | 291 | 0.4+ | 0.2+ | 2006 01 05 | G96 | 0.1+ | 0.6− |
| 1998 11 27 | 691 | 0.8− | 0.6− | 2003 03 11 | 291 | 0.4+ | 0.1+ | 2006 01 05 | G96 | 0.8− | 0.5− |
| 2000 04 28 | 691 | 0.1− | 0.1− | 2003 03 11 | 291 | 0.5+ | 0.2+ | 2006 01 22 | G96 | 0.9− | 0.8− |
| 2000 04 28 | 691 | 0.9− | 0.3− | 2003 03 30 | 291 | 0.1+ | 0.1+ | 2006 01 22 | G96 | 0.5− | 1.1− |
| 2000 04 28 | 691 | 0.2− | 0.0 | 2003 03 30 | 291 | 0.1+ | 0.6+ | 2006 01 22 | G96 | 0.3− | 0.9− |
| 2001 09 12 | 691 | 0.2− | 0.5+ | 2003 03 30 | 291 | 0.0 | 0.3+ | 2006 01 22 | G96 | 0.2− | 0.7− |
| 2001 09 12 | 691 | 0.2− | 0.2+ | 2003 03 31 | 291 | 0.4+ | 0.5+ | 2006 02 04 | 691 | 0.0 | 0.1− |
| 2001 09 12 | 691 | 0.5− | 0.7+ | 2003 03 31 | 291 | 0.1+ | 0.5+ | 2006 02 04 | 691 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.3− | 1.0+ | 2003 03 31 | 291 | 0.3+ | 0.5+ | 2006 02 04 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.5+ | 1.0+ | 2003 04 07 | 691 | 0.1+ | 0.6+ | 2006 02 23 | G96 | 0.6− | 0.4− |
| 2001 09 21 | 704 | 0.7+ | 1.2+ | 2003 04 07 | 691 | 0.5+ | 0.2+ | 2006 02 23 | G96 | 0.7− | 0.0 |
| 2001 09 21 | 704 | 0.2− | 1.1+ | 2003 04 07 | 691 | 0.5+ | 0.7+ | 2006 02 23 | G96 | 0.6− | 0.3− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 01 05 | G96 | 0.4− | 0.8− | 2006 02 23 | G96 | 0.7− | 0.3− |

### 2003 FW$_{97}$ = 2006 RC$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.23129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17342895 | $\omega$ | 261.54537 | | +0.11540091 | −0.99330149 | |
| $a$ | 3.1846007 | $\Omega$ | 181.85872 | | +0.96782651 | +0.11377363 | |
| $e$ | 0.1574913 | $i$ | 10.47527 | | +0.22359444 | +0.02019173 | |
| $P$ | 5.68 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 13 | 691 | 0.3− | 0.7− | 2003 03 31 | 291 | 0.2+ | 0.9+ | 2006 10 01 | 704 | 0.1+ | 0.7+ |
| 1997 04 13 | 691 | 0.0 | 0.6− | 2003 04 03 | 699 | 0.8+ | 0.2− | 2006 10 01 | 704 | 1.4− | 1.0+ |
| 1997 04 13 | 691 | 0.1− | 0.7− | 2003 04 03 | 699 | 1.1+ | 1.5+ | 2006 10 01 | 704 | 0.5− | 0.6+ |
| 2003 03 11 | 291 | 0.3− | 0.4+ | 2003 04 03 | 699 | 0.3− | 0.4− | 2006 10 01 | 704 | (1.6− | 1.1+) |
| 2003 03 11 | 291 | 0.1− | 0.1− | 2003 04 03 | 699 | 0.2− | 1.2+ | 2006 10 02 | 691 | 0.3− | 0.6+ |
| 2003 03 11 | 291 | 0.0 | 0.3+ | 2006 07 22 | G96 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.7+ |
| 2003 03 24 | 691 | 0.1+ | 0.2+ | 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2003 03 24 | 691 | 0.2+ | 0.5+ | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2003 03 24 | 691 | 0.0 | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2003 03 30 | 291 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.5− | 0.4+ |
| 2003 03 30 | 291 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 1.0+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2003 03 30 | 291 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2003 03 31 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2003 03 31 | 704 | (1.1− | 1.8+) | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.8− |
| 2003 03 31 | 704 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.3+ | 1.1− |
| 2003 03 31 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.6− |
| 2003 03 31 | 291 | 0.2+ | 1.0+ | 2006 09 28 | 691 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 0.9+ | 0.3+ |
| 2003 03 31 | 704 | (1.7+ | 0.4−) | 2006 09 28 | 691 | 0.0 | 0.3+ | | | | |
| 2003 03 31 | 291 | 0.4+ | 1.1+ | 2006 09 28 | 691 | 0.1+ | 0.8+ | | | | |

### 2003 FB$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.31326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17057188 | $\omega$ | 131.90126 | | −0.99081756 | +0.10558314 | |
| $a$ | 3.2200634 | $\Omega$ | 54.32892 | | −0.13250483 | −0.88250944 | |
| $e$ | 0.0929802 | $i$ | 5.96732 | | +0.02688940 | −0.45828952 | |
| $P$ | 5.78 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 12 | 691 | 0.4− | 0.4− | 2003 03 31 | 699 | 0.9+ | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 1997 03 12 | 691 | 0.2− | 0.7− | 2003 04 02 | 608 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 1997 03 12 | 691 | 0.2− | 0.4− | 2003 04 02 | 608 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.2− | 0.4+ | 2003 04 02 | 608 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.4+ | 0.6+ | 2003 04 09 | 704 | (0.2− | 1.6+) | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.6+ | 0.3+ | 2003 04 09 | 704 | (0.6− | 2.5+) | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2003 03 09 | 704 | 0.1+ | 0.4− | 2003 04 09 | 704 | (0.1+ | 2.2+) | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2003 03 09 | 704 | 0.5+ | 0.2+ | 2003 04 09 | 704 | 1.4+ | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2003 03 09 | 704 | 0.0 | 0.6+ | 2003 04 09 | 704 | 0.1+ | 0.9+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2003 03 09 | 704 | 0.0 | 0.0 | 2003 04 26 | 699 | 0.6− | 0.3− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2003 03 09 | 704 | 0.7+ | 0.6+ | 2003 04 26 | 699 | 0.5− | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.3− |
| 2003 03 30 | 704 | 0.9+ | 0.8+ | 2003 04 26 | 699 | (0.1− | 1.6+) | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2003 03 30 | 704 | 0.7− | 0.5+ | 2003 04 26 | 699 | 0.4+ | 1.0+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2003 03 30 | 704 | 0.9+ | 1.2+ | 2005 08 27 | 644 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2003 03 30 | 704 | 0.4+ | 0.9+ | 2005 08 27 | 644 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2003 03 31 | 699 | 0.4− | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 699 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.0 | |
| 2003 03 31 | 699 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.0 | | | | | |

**2003 FZ$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.69438 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17650380 | $\omega$ | 113.89369 | | −0.46006207 | | −0.88785506 |
| $a$ | 3.1475068 | $\Omega$ | 3.52454 | | +0.76377432 | | −0.40004768 |
| $e$ | 0.1251204 | $i$ | 7.01025 | | +0.45276007 | | −0.22732192 |
| $P$ | 5.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 1.5− | 1.9+ | 2003 04 03 | 699 | 0.9− | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.2+ | |
| 2000 10 01 | 704 | 0.0 | 0.2+ | 2003 04 29 | 691 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.5− | 0.1+ | |
| 2000 10 01 | 704 | 0.4− | 1.0+ | 2003 04 29 | 691 | 0.6+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.3+ | |
| 2001 12 22 | 704 | 0.5+ | 0.6− | 2003 04 29 | 691 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.5− | 0.1+ | |
| 2001 12 22 | 704 | 0.4+ | 0.6− | 2006 09 24 | 291 | 0.8+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.4+ | |
| 2001 12 22 | 704 | 0.0 | 1.4− | 2006 09 24 | 291 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.7− | 0.2+ | |
| 2001 12 22 | 704 | 0.3− | 0.7− | 2006 09 24 | 291 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.0 | |
| 2003 03 10 | 699 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | |
| 2003 03 10 | 699 | 1.0− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 | |
| 2003 03 10 | 699 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.6− | 0.5− | |
| 2003 03 10 | 699 | 0.2− | 0.7+ | 2006 09 28 | 691 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.7− | |
| 2003 03 24 | 691 | 0.4+ | 1.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.5− | 0.6− | |
| 2003 03 24 | 691 | 0.4+ | 1.1+ | 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.4− | 0.2+ | |
| 2003 03 24 | 691 | 0.6+ | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− | |
| 2003 03 31 | 699 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 | |
| 2003 03 31 | 699 | 1.1− | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.4− | |
| 2003 03 31 | 699 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | (1.0− | 2.6−) | |
| 2003 03 31 | 699 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.9− | |
| 2003 04 01 | 704 | 0.9− | 1.2− | 2006 10 12 | 644 | 0.6− | 0.1+ | 2006 11 19 | 704 | (0.2+ | 1.7−) | |
| 2003 04 01 | 704 | 0.5+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | (0.6+ | 2.1−) | |
| 2003 04 01 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.0 | 0.6− | |
| 2003 04 01 | 704 | 0.1− | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.5− | |
| 2003 04 01 | 704 | 0.6+ | 0.7− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.1− | 0.7− | |
| 2003 04 03 | 699 | 0.9− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.4− | |
| 2003 04 03 | 699 | (1.5− | 1.0−) | 2006 10 20 | 691 | 0.2− | 0.1+ | | | | | |
| 2003 04 03 | 699 | 0.6− | 0.9− | 2006 10 21 | 703 | 0.1+ | 0.5+ | | | | | |

**2003 FW$_{118}$ = 2006 DU$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.24482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30413755 | $\omega$ | 91.73693 | | −0.66564192 | | −0.74497709 |
| $a$ | 2.1898920 | $\Omega$ | 40.10984 | | +0.65471714 | | −0.61121807 |
| $e$ | 0.0980538 | $i$ | 3.91000 | | +0.35814285 | | −0.26724821 |
| $P$ | 3.24 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 27 | 691 | 0.0 | 0.2+ | 2003 03 27 | 644 | 0.1− | 0.3+ | 2006 02 28 | 703 | 0.1− | 1.1− | |
| 1998 11 27 | 691 | 0.0 | 0.3+ | 2003 04 08 | 691 | 0.1+ | 0.0 | 2006 02 28 | 703 | 0.2+ | 1.0− | |
| 1998 11 27 | 691 | 0.2− | 0.2+ | 2003 04 08 | 691 | 0.1+ | 0.2+ | 2006 02 28 | 703 | 1.1− | 0.6+ | |
| 2003 03 26 | 699 | 1.4− | 0.6+ | 2003 04 08 | 691 | 0.3+ | 0.3+ | 2006 05 30 | G96 | 0.6+ | 0.2+ | |
| 2003 03 26 | 699 | 1.2+ | 1.2− | 2006 02 22 | 699 | 0.1+ | 0.5− | 2006 05 30 | G96 | 0.0 | 0.2− | |
| 2003 03 26 | 699 | 0.6− | 1.3+ | 2006 02 22 | 699 | 0.2+ | 0.9+ | 2006 05 30 | G96 | 0.5− | 0.1− | |
| 2003 03 26 | 699 | 0.5+ | 0.1+ | 2006 02 22 | 699 | 0.0 | 0.4+ | 2006 05 30 | G96 | 0.5− | 0.1− | |
| 2003 03 27 | 644 | 0.3− | 0.6+ | 2006 02 22 | 699 | 0.9+ | 0.7− | | | | | |
| 2003 03 27 | 644 | 0.0 | 0.0 | 2006 02 28 | 703 | 0.9− | 0.6− | | | | | |

**2003 FG$_{123}$ = 2006 UX$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.73322 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17934811 | $\omega$ | 97.43343 | | +0.03758209 | | −0.99879744 |
| $a$ | 3.1141403 | $\Omega$ | 350.24499 | | +0.82781999 | | +0.04876556 |
| $e$ | 0.0970206 | $i$ | 10.70890 | | +0.55973355 | | −0.00505993 |
| $P$ | 5.50 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 291 | 0.0 | 0.1+ | 2003 03 26 | 699 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.5+ | |
| 2003 03 07 | 291 | 0.0 | 0.0 | 2003 03 26 | 699 | 1.2+ | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.5+ | |
| 2003 03 07 | 291 | 0.1− | 0.2+ | 2003 03 26 | 699 | (1.1− | 1.9−) | 2006 10 17 | 703 | 1.3− | 0.2+ | |
| 2003 03 07 | 699 | 0.7− | 0.2+ | 2003 03 26 | 699 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.7+ | 0.6+ | |
| 2003 03 07 | 699 | 1.3− | 0.3− | 2003 03 30 | 695 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 1.2− | |
| 2003 03 07 | 699 | 0.1+ | 0.7− | 2003 03 30 | 695 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 1.3− | |
| 2003 03 07 | 699 | 1.3+ | 1.5− | 2003 04 09 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.4+ | |
| 2003 03 26 | 644 | 0.3+ | 1.0+ | 2003 04 09 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | |
| 2003 03 26 | 644 | 0.7+ | 0.9+ | 2003 04 09 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2003 03 26 | 644 | 0.6+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.4+ | | | | | |

**2003 FC$_{130}$ = 1995 WH$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.61664 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18595734 | $\omega$ | 241.34135 | | +0.93665725 | | +0.35023286 |
| $a$ | 3.0399084 | $\Omega$ | 98.15694 | | −0.32021204 | | +0.85998389 |
| $e$ | 0.0777709 | $i$ | 0.18437 | | −0.14190648 | | +0.37116661 |
| $P$ | 5.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 20 | 691 | 0.0 | 0.0 | 2003 03 24 | 691 | 0.3+ | 0.1− | 2005 09 29 | 699 | 1.8+ | 0.8+ | |
| 1995 11 20 | 691 | 0.0 | 0.3+ | 2003 03 30 | 291 | 0.2+ | 0.7+ | 2005 09 29 | 699 | 0.4+ | 1.1+ | |
| 1995 11 20 | 691 | 0.1+ | 0.1+ | 2003 03 30 | 291 | 0.1+ | 0.1+ | 2005 09 29 | G96 | 0.3− | 0.8+ | |
| 1995 11 27 | 691 | 0.4+ | 0.4− | 2003 03 30 | 291 | 0.1− | 0.4+ | 2005 09 29 | G96 | 0.1+ | 0.7+ | |
| 1995 11 27 | 691 | 0.2+ | 0.1− | 2003 04 07 | 691 | 0.3+ | 0.6+ | 2005 09 29 | G96 | 0.2− | 0.7+ | |
| 2000 10 07 | 691 | 0.2− | 0.1+ | 2003 04 07 | 691 | 0.1+ | 0.7+ | 2005 09 29 | G96 | 0.3− | 0.6+ | |
| 2000 10 07 | 691 | 0.5− | 0.1− | 2003 04 07 | 691 | 0.3+ | 0.2+ | 2005 10 13 | 691 | 0.0 | 0.7+ | |
| 2000 10 07 | 691 | 0.3− | 0.2− | 2003 05 06 | 291 | 0.2+ | 0.4+ | 2005 10 13 | 691 | 0.5− | 0.2+ | |
| 2002 01 13 | 291 | 0.4− | 0.3+ | 2003 05 06 | 291 | 0.3− | 0.3− | 2005 10 13 | 691 | 0.6− | 0.1+ | |
| 2002 01 13 | 291 | 0.2− | 0.4+ | 2003 05 06 | 291 | 0.3+ | 0.1+ | 2005 11 25 | G96 | 1.3− | 0.1− | |
| 2002 01 13 | 291 | 0.1− | 0.4+ | 2005 08 31 | 691 | 0.0 | 0.3+ | 2005 11 25 | G96 | 0.3− | 0.2− | |
| 2002 01 13 | 704 | 0.1+ | 0.9− | 2005 08 31 | 691 | 0.1− | 0.3+ | 2005 11 25 | G96 | 1.0− | 0.3− | |
| 2002 01 13 | 704 | 0.1+ | 0.1− | 2005 08 31 | 691 | 0.1− | 0.3+ | 2005 11 25 | G96 | 0.0 | 0.2− | |
| 2002 01 13 | 704 | 0.4− | 0.7− | 2005 09 14 | 691 | 0.1+ | 0.4+ | 2005 12 02 | G96 | 0.8+ | 0.4− | |
| 2002 01 14 | 645 | 0.1+ | 0.0 | 2005 09 14 | 691 | 0.1− | 0.4+ | 2005 12 02 | G96 | 0.8− | 1.0− | |
| 2002 01 14 | 645 | 0.1+ | 0.1− | 2005 09 14 | 691 | 0.2− | 0.2+ | 2005 12 02 | G96 | 0.3− | 0.2+ | |
| 2003 03 24 | 691 | 0.1− | 0.6+ | 2005 09 29 | 699 | 2.3+ | 0.4− | 2005 12 02 | G96 | 0.2− | 0.2+ | |
| 2003 03 24 | 691 | 0.3+ | 0.3+ | 2005 09 29 | 699 | 0.2+ | 1.0− | | | | | |

**2003 FD$_{130}$ = 2005 UO$_{302}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.82398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22708763 | $\omega$ | 103.56227 | | −0.83708737 | | +0.53272358 |
| $a$ | 2.6607684 | $\Omega$ | 108.75791 | | −0.53887001 | | −0.76367928 |
| $e$ | 0.1305020 | $i$ | 7.55290 | | −0.09436021 | | −0.36469103 |
| $P$ | 4.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 23 | 691 | 0.0 | 0.1+ | 2003 04 08 | 704 | 0.5− | 1.7+ | 2003 05 02 | 704 | 0.1+ | 0.1− | |
| 1998 01 23 | 691 | 0.0 | 0.1+ | 2003 04 08 | 704 | 0.8+ | 1.2+ | 2003 05 02 | 704 | 1.4− | 0.1− | |
| 1998 01 23 | 691 | 0.0 | 0.1+ | 2003 04 08 | 704 | 0.6+ | 0.2+ | 2005 10 26 | 691 | 0.2+ | 0.2− | |
| 2003 03 24 | 691 | 0.5− | 0.0 | 2003 04 08 | 704 | 0.2− | 0.4− | 2005 10 26 | 691 | 0.3− | 0.4− | |
| 2003 03 24 | 691 | 0.4− | 0.3− | 2003 04 26 | 608 | 1.4+ | 0.0 | 2005 10 26 | 691 | 0.0 | 0.0 | |
| 2003 03 24 | 691 | 0.2− | 0.4− | 2003 04 26 | 608 | 1.5+ | 0.2− | 2005 10 30 | 691 | 0.0 | 0.2+ | |
| 2003 03 31 | 699 | 0.4+ | 0.2+ | 2003 04 26 | 608 | 1.2+ | 0.3− | 2005 10 30 | 691 | 0.0 | 0.0 | |
| 2003 03 31 | 699 | 0.6− | 0.0 | 2003 05 02 | 704 | 0.7+ | 0.1+ | 2005 10 30 | 691 | 0.1+ | 0.0 | |
| 2003 03 31 | 699 | 0.5− | 0.5+ | 2003 05 02 | 704 | 0.1+ | 0.8− | | | | | |
| 2003 03 31 | 699 | 0.0 | 0.9− | 2003 05 02 | 704 | 0.2− | 0.1+ | | | | | |

**2003 FE$_{130}$ = 2005 UR$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.03337 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22223985 | $\omega$ | 83.53649 | | −0.13180517 | −0.99100699 | |
| $a$ | 2.6993224 | $\Omega$ | 14.10035 | | +0.86792853 | −0.12661955 | |
| $e$ | 0.0320194 | $i$ | 5.43550 | | +0.47888147 | −0.04327400 | |
| $P$ | 4.43 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.0 | 0.1+ | 2003 04 05 | 691 | 0.8+ | 1.0+ | 2003 05 06 | 691 | 0.0 | 0.4+ |
| 1996 10 05 | 691 | 0.4− | 0.1+ | 2003 04 05 | 691 | 0.7+ | 0.7+ | 2005 10 26 | 691 | 0.3− | 0.3+ |
| 1996 10 05 | 691 | 0.3+ | 0.2+ | 2003 04 05 | 691 | 0.9+ | 1.0+ | 2005 10 26 | 691 | 0.1− | 0.2+ |
| 2000 09 03 | 645 | 0.1− | 0.2+ | 2003 04 24 | 691 | 0.5− | 0.4+ | 2005 10 26 | 691 | 0.5− | 1.0+ |
| 2000 09 03 | 645 | 0.1− | 0.2+ | 2003 04 24 | 691 | 0.0 | 0.3− | 2005 10 27 | 691 | 0.1+ | 0.6+ |
| 2003 03 26 | 291 | 0.1− | 0.1+ | 2003 04 24 | 691 | 0.3− | 0.2+ | 2005 10 27 | 691 | 0.3− | 0.8+ |
| 2003 03 26 | 291 | 0.7+ | 0.3+ | 2003 05 06 | 691 | 0.2+ | 0.1+ | 2005 10 27 | 691 | 0.2− | 0.6+ |
| 2003 03 26 | 291 | 0.2+ | 0.6+ | 2003 05 06 | 691 | 0.2+ | 0.7+ | | | | |

**2003 FF$_{130}$ = 2004 RG$_{209}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.94401 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.17466896 | $\omega$ | 64.31026 | | −0.09956002 | +0.98943898 | |
| $a$ | 3.1695108 | $\Omega$ | 200.80470 | | −0.98569020 | −0.11254445 | |
| $e$ | 0.1819932 | $i$ | 17.25368 | | −0.13602439 | +0.09134686 | |
| $P$ | 5.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 291 | 0.4− | 0.3− | 2003 05 05 | 704 | (2.1+ | 0.7−) | 2003 05 27 | 691 | 0.6− | 0.0 |
| 2003 03 26 | 291 | 0.4− | 0.2− | 2003 05 05 | 699 | 0.6+ | 0.5− | 2003 05 27 | 691 | 0.8− | 0.4− |
| 2003 03 26 | 291 | 0.5− | 0.4− | 2003 05 05 | 704 | 0.3+ | 0.4− | 2004 09 11 | 704 | 0.0 | 0.2− |
| 2003 04 11 | 691 | 0.3− | 0.2+ | 2003 05 05 | 699 | 0.1− | 1.4+ | 2004 09 11 | 704 | 0.6− | 0.3+ |
| 2003 04 11 | 691 | 0.1− | 0.2− | 2003 05 05 | 704 | 0.5+ | 1.0− | 2004 09 11 | 704 | 0.6− | 0.1− |
| 2003 04 11 | 691 | 0.1− | 0.3+ | 2003 05 05 | 699 | 0.7+ | 0.3− | 2004 09 14 | 704 | 0.2+ | 0.5− |
| 2003 04 29 | 691 | 0.9+ | 0.5+ | 2003 05 05 | 704 | 0.0 | 0.8− | 2004 09 14 | 704 | 0.4+ | 0.1− |
| 2003 04 29 | 691 | 0.5+ | 0.4+ | 2003 05 05 | 699 | 0.3− | 1.3+ | 2004 09 14 | 704 | 0.7− | 1.1+ |
| 2003 04 29 | 691 | 0.7+ | 0.6+ | 2003 05 27 | 691 | 0.8− | 0.5− | 2004 09 14 | 704 | 1.2+ | 0.6− |

**2003 FG$_{130}$ = 1994 SY**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.77690 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.17248605 | $\omega$ | 318.34505 | | −0.87869924 | −0.47524469 | |
| $a$ | 3.1961959 | $\Omega$ | 193.49313 | | +0.47291027 | −0.85371396 | |
| $e$ | 0.0806052 | $i$ | 11.13405 | | +0.06514232 | −0.21287311 | |
| $P$ | 5.71 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 27 | 691 | 0.0 | 0.1− | 2003 04 07 | 291 | 0.3− | 1.0+ | 2006 09 30 | 703 | 0.1− | 1.2− |
| 1994 09 27 | 691 | 0.1+ | 0.1− | 2003 04 20 | 699 | 0.9− | 0.1− | 2006 09 30 | 703 | 1.4− | 0.1− |
| 1994 09 27 | 691 | 0.2− | 0.1− | 2003 04 20 | 699 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.5− | 1.0+ |
| 1994 10 11 | 691 | 0.2− | 0.4− | 2003 04 20 | 699 | 0.7− | 0.4− | 2006 10 22 | 703 | 0.5+ | 0.6+ |
| 1994 10 11 | 691 | 0.2− | 0.0 | 2003 04 20 | 699 | 1.3− | 0.5− | 2006 10 22 | 703 | 1.2− | 0.8+ |
| 1994 10 11 | 691 | 0.2+ | 0.7− | 2003 05 05 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.2+ | 0.2+ |
| 2000 10 01 | 704 | 0.6+ | 0.5+ | 2003 05 05 | 704 | 0.9+ | 0.1+ | 2006 11 01 | 703 | 0.4− | 0.4− |
| 2000 10 01 | 704 | 1.2+ | 0.3+ | 2003 05 05 | 704 | (0.7+ | 1.6+) | 2006 11 01 | 703 | 0.0 | 0.7+ |
| 2000 10 01 | 704 | 0.7+ | 1.1+ | 2005 08 26 | 644 | 0.1− | 0.1+ | 2006 11 01 | 703 | 1.0− | 0.0 |
| 2000 10 01 | 704 | 0.3+ | 1.0+ | 2005 08 26 | 644 | 0.2− | 0.2+ | 2006 11 01 | 703 | 0.6+ | 1.4− |
| 2000 10 01 | 704 | 0.4− | 0.4− | 2005 08 26 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.2− | 1.0+ |
| 2001 12 19 | 704 | 0.5+ | 0.7− | 2005 09 12 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.9+ |
| 2001 12 19 | 704 | 0.4+ | 0.5+ | 2005 09 12 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 1.2+ |
| 2001 12 19 | 704 | 1.3+ | 1.2− | 2005 09 12 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.5+ | 1.3+ |
| 2003 03 27 | 644 | 0.2+ | 0.4+ | 2005 09 25 | 691 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 0.2− | 1.0+ |
| 2003 03 27 | 644 | 0.3+ | 0.2+ | 2005 09 25 | 691 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.1+ | 1.3+ |
| 2003 03 27 | 691 | 0.4+ | 0.2+ | 2005 09 25 | 691 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.7− | 1.3+ |
| 2003 03 27 | 644 | 0.1+ | 0.4+ | 2005 10 07 | 691 | 0.3− | 0.3+ | 2006 11 19 | 703 | 0.0 | 0.4+ |
| 2003 03 27 | 691 | 0.3+ | 0.5+ | 2005 10 07 | 691 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2003 03 27 | 691 | 0.2+ | 0.4+ | 2005 10 07 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.2+ |
| 2003 04 07 | 291 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.9+ | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2003 04 07 | 291 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3+ |

**2003 FH$_{130}$ = 2004 SX$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.35313 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.26251119 | $\omega$ | 95.01611 | | −0.39563653 | +0.91814933 | |
| $a$ | 2.4156694 | $\Omega$ | 151.64721 | | −0.85973805 | −0.36192579 | |
| $e$ | 0.1310983 | $i$ | 2.62636 | | −0.32298951 | −0.16128091 | |
| $P$ | 3.75 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 691 | 0.3− | 0.3− | 2003 04 20 | 699 | 1.0+ | 1.8− | 2004 09 17 | 691 | 0.3− | 0.4+ |
| 2000 09 02 | 691 | 0.2− | 0.0 | 2003 04 30 | 691 | 0.2− | 1.6+ | 2004 09 21 | 691 | 0.3− | 0.6+ |
| 2000 09 02 | 691 | 0.4+ | 0.4+ | 2003 04 30 | 691 | 0.2− | 1.3+ | 2004 09 21 | 691 | 0.2− | 0.6+ |
| 2003 03 27 | 691 | 0.1− | 0.6− | 2003 04 30 | 691 | 0.4+ | 1.4+ | 2004 09 21 | 691 | 0.2− | 0.3+ |
| 2003 03 27 | 691 | 0.3+ | 0.4− | 2003 05 05 | 691 | 0.2− | 0.2− | 2006 01 24 | 691 | 0.2− | 0.2+ |
| 2003 03 27 | 691 | 0.1+ | 0.4− | 2003 05 05 | 691 | 0.6+ | 0.0 | 2006 01 24 | 691 | 0.0 | 0.8+ |
| 2003 04 20 | 699 | 0.4+ | 0.5+ | 2003 05 05 | 691 | 0.1+ | 0.2+ | 2006 01 24 | 691 | 0.2+ | 0.7+ |
| 2003 04 20 | 699 | 0.3+ | 0.4+ | 2004 09 17 | 691 | 0.3− | 0.4+ | | | | |
| 2003 04 20 | 699 | 0.8− | 1.2+ | 2004 09 17 | 691 | 0.0 | 0.5+ | | | | |

**2003 FJ$_{130}$ = 2000 VR$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.36190 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.17192024 | $\omega$ | 296.98735 | | −0.98999479 | −0.01364107 | |
| $a$ | 3.2032048 | $\Omega$ | 242.52192 | | +0.05921306 | −0.94360091 | |
| $e$ | 0.0321177 | $i$ | 9.10832 | | −0.12807862 | −0.33080395 | |
| $P$ | 5.73 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.8+ | 0.2+ | 2003 05 03 | 691 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2000 11 01 | 704 | 1.0− | 0.7+ | 2003 05 03 | 691 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.3+ |
| 2000 11 01 | 704 | 1.4− | 1.1+ | 2003 05 03 | 691 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.8+ |
| 2000 11 03 | 704 | 0.3+ | 0.3− | 2005 08 29 | 644 | 0.2+ | 0.6+ | 2006 11 10 | 691 | 0.2− | 0.3− |
| 2000 11 03 | 704 | 0.4+ | 0.7+ | 2005 08 29 | 644 | 0.6− | 0.6+ | 2006 11 10 | 691 | 0.2− | 0.2− |
| 2000 11 03 | 704 | 0.5+ | 0.1+ | 2005 08 29 | 644 | 1.2− | 0.9+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2003 03 29 | 699 | 0.2− | 0.4− | 2005 09 11 | 704 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.2− |
| 2003 03 29 | 699 | 0.8− | 0.1− | 2005 09 11 | 704 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.4+ | 0.2− |
| 2003 03 29 | 699 | 1.0+ | 0.1− | 2005 09 11 | 704 | 1.0+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2003 03 29 | 699 | 0.7+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.3+ |
| 2003 03 31 | 699 | (2.0+ | 0.3+) | 2006 10 17 | G96 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2003 03 31 | 699 | 0.0 | 0.6− | 2006 10 17 | G96 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2003 03 31 | 699 | (0.2+ | 1.6+) | 2006 10 17 | G96 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2003 03 31 | 699 | 1.2− | 0.5− | 2006 10 29 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2003 04 07 | 704 | 1.3+ | 0.8+ | 2006 10 29 | G96 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2003 04 07 | 704 | 0.0 | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.1+ | | | | |
| 2003 04 07 | 704 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.2+ | 0.1− | | | | |

**2003 FK$_{130}$ = 2001 XO$_{41}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.38235 | | | (2000.0) | **P** | **Q** | |
| $n$ | 0.21337175 | $\omega$ | 92.24760 | | −0.81500998 | −0.54064870 | |
| $a$ | 2.7736060 | $\Omega$ | 55.09651 | | +0.37680327 | −0.76781083 | |
| $e$ | 0.1077604 | $i$ | 14.72556 | | +0.44020225 | −0.34375211 | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.5− | 0.7− | 2003 03 31 | 691 | 0.1+ | 0.5− | 2003 05 11 | 691 | 0.7+ | 0.3− |
| 2001 12 09 | 704 | 0.4+ | 0.1+ | 2003 03 31 | 691 | 0.1− | 0.1− | 2003 05 24 | 691 | 0.4+ | 0.2− |
| 2001 12 09 | 704 | 0.1− | 0.5− | 2003 04 27 | 699 | 0.4− | 1.1+ | 2003 05 24 | 691 | 0.3+ | 0.3− |
| 2001 12 09 | 704 | 0.1+ | 0.4− | 2003 04 27 | 699 | 0.7− | 0.4+ | 2003 05 24 | 691 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.2− | 0.1− | 2003 04 27 | 699 | 0.9+ | 1.4+ | 2003 06 01 | 691 | 0.5− | 0.2− |
| 2001 12 14 | 704 | 0.7+ | 1.0+ | 2003 04 27 | 699 | 1.2− | 0.9− | 2003 06 01 | 691 | 0.4− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4− | 0.5+ | 2003 05 11 | 691 | 0.7+ | 0.3− | 2003 06 01 | 691 | 0.6− | 0.1+ |
| 2003 03 31 | 691 | 0.0 | 0.1− | 2003 05 11 | 691 | 0.6+ | 0.3− | | | | |

**2003 FL$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.37382 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23434478 | $\omega$ | 93.06754 | | +0.29705318 | | +0.95336836 |
| $a$ | 2.6055487 | $\Omega$ | 194.55689 | | −0.93853707 | | +0.28122800 |
| $e$ | 0.2616439 | $i$ | 12.25919 | | −0.17580553 | | +0.10954264 |
| $P$ | 4.21 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 691 | 0.7+ | 0.0 | 2003 04 07 | 691 | 0.1+ | 0.1− | 2003 05 06 | 291 | 0.3− | 0.5+ |
| 2003 03 24 | 691 | 0.5+ | 0.4− | 2003 04 07 | 691 | 0.1− | 0.1− | 2004 10 13 | 691 | 0.3− | 0.3− |
| 2003 03 24 | 691 | 0.6+ | 0.6− | 2003 04 29 | 691 | 0.3− | 0.0 | 2004 10 13 | 691 | 0.2− | 0.5− |
| 2003 04 01 | 644 | 0.3− | 0.3+ | 2003 04 29 | 691 | 0.6− | 0.1+ | 2004 10 13 | 691 | 0.2− | 0.3− |
| 2003 04 01 | 644 | 0.0 | 0.4+ | 2003 04 29 | 691 | 0.6− | 0.2+ | 2004 11 05 | 691 | 0.6+ | 0.2+ |
| 2003 04 01 | 644 | 0.3+ | 0.4+ | 2003 05 06 | 291 | 0.1− | 0.2− | 2004 11 05 | 691 | 0.0 | 0.5+ |
| 2003 04 07 | 691 | 0.0 | 0.2+ | 2003 05 06 | 291 | 0.2− | 0.1+ | 2004 11 05 | 691 | 0.1+ | 0.3+ |

**2003 FM$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.40115 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18137223 | $\omega$ | 39.17154 | | −0.09847390 | | +0.99505982 |
| $a$ | 3.0909278 | $\Omega$ | 225.18124 | | −0.91742881 | | −0.09568309 |
| $e$ | 0.1139252 | $i$ | 1.01805 | | −0.38552208 | | −0.02647058 |
| $P$ | 5.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.1+ | 0.1+ | 2003 03 24 | 691 | 0.5+ | 0.1+ | 2005 09 30 | 691 | 0.1− | 0.0 |
| 1994 11 01 | 691 | 0.2− | 0.1+ | 2003 04 04 | 691 | 0.4− | 0.2+ | 2005 10 11 | 691 | 0.4− | 0.4+ |
| 1994 11 01 | 691 | 0.1+ | 0.7+ | 2003 04 04 | 691 | 0.2− | 0.1+ | 2005 10 11 | 691 | 0.1− | 0.2+ |
| 1998 06 01 | 691 | 0.1+ | 0.5+ | 2003 04 04 | 691 | 0.3− | 0.3+ | 2005 10 11 | 691 | 0.4− | 0.3+ |
| 1998 06 01 | 691 | 0.1+ | 0.3+ | 2003 04 25 | 691 | 0.1− | 0.4+ | 2005 10 22 | 703 | 0.2+ | 0.7− |
| 1998 06 01 | 691 | 0.6+ | 0.0 | 2003 04 25 | 691 | 0.2− | 0.7+ | 2005 10 22 | 703 | 0.7+ | 0.3+ |
| 1998 06 20 | 691 | 0.5− | 0.5− | 2003 04 25 | 691 | 0.4+ | 0.3+ | 2005 10 22 | 703 | 0.4− | 2.6+ |
| 1998 06 20 | 691 | 0.3− | 0.0 | 2004 07 21 | E12 | 0.2− | 0.6+ | 2005 10 22 | 703 | 0.8− | 0.7− |
| 1998 06 20 | 691 | 0.4− | 0.1− | 2004 07 21 | E12 | 0.4− | 0.6+ | 2005 10 27 | G96 | 0.0 | 0.2+ |
| 2001 12 14 | 291 | 0.7− | 0.0 | 2004 07 21 | E12 | 0.0 | 0.6+ | 2005 10 27 | G96 | 0.2− | 0.1+ |
| 2001 12 14 | 291 | 1.0− | 0.3− | 2004 07 21 | E12 | 0.3− | 0.2+ | 2005 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 12 14 | 291 | 0.7− | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.2+ | 2005 10 27 | G96 | 0.1− | 0.1− |
| 2002 01 19 | 691 | 0.3+ | 0.1+ | 2005 09 30 | G96 | 0.1+ | 0.3+ | 2005 11 26 | G96 | 0.1− | 0.4+ |
| 2002 01 19 | 691 | 0.6+ | 0.2+ | 2005 09 30 | G96 | 0.2− | 0.1+ | 2005 11 26 | G96 | 0.5+ | 0.3− |
| 2002 01 19 | 691 | 0.8+ | 0.3+ | 2005 09 30 | G96 | 0.2+ | 0.2+ | 2005 11 26 | G96 | 0.6− | 0.2+ |
| 2003 03 24 | 691 | 1.4+ | 0.3+ | 2005 09 30 | 691 | 0.3+ | 0.2+ | 2005 11 26 | G96 | 0.0 | 0.2+ |
| 2003 03 24 | 691 | 0.5+ | 0.2+ | 2005 09 30 | 691 | 0.0 | 0.2+ | | | | |

**2003 FN$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.53109 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21761235 | $\omega$ | 261.83135 | | −0.23734707 | | −0.96954217 |
| $a$ | 2.7374553 | $\Omega$ | 202.18320 | | +0.94236450 | | −0.21469331 |
| $e$ | 0.1054963 | $i$ | 9.21306 | | +0.23582943 | | −0.11787604 |
| $P$ | 4.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.1+ | 0.7− | 2003 04 25 | 691 | 0.1+ | 0.6+ | 2005 09 29 | 699 | 1.4+ | 1.0+ |
| 1994 04 06 | 691 | 0.2− | 0.3+ | 2003 05 05 | 691 | 0.0 | 0.5+ | 2005 09 29 | 699 | 1.8− | 1.7+ |
| 1994 04 06 | 691 | 0.0 | 0.3+ | 2003 05 05 | 691 | 0.1− | 1.0+ | 2005 09 29 | 699 | 0.4+ | 0.9− |
| 2001 12 11 | 704 | 0.5+ | 0.7+ | 2003 05 05 | 691 | 0.3+ | 0.7+ | 2005 09 29 | 699 | 0.7− | 1.4− |
| 2001 12 11 | 704 | 0.5− | 1.5+ | 2005 09 01 | 691 | 0.2− | 0.5+ | 2005 10 04 | 644 | 0.1− | 0.0 |
| 2001 12 11 | 704 | 0.5+ | 0.7+ | 2005 09 01 | 691 | 0.0 | 0.5+ | 2005 10 04 | 644 | 0.1+ | 0.7+ |
| 2001 12 11 | 704 | 0.7− | 0.8+ | 2005 09 01 | 691 | 0.1− | 0.4+ | 2005 10 04 | 644 | 0.2+ | 0.5+ |
| 2003 03 24 | 691 | 0.0 | 0.0 | 2005 09 23 | 703 | 0.2+ | 0.5+ | 2005 10 25 | 699 | 0.6− | 0.7+ |
| 2003 03 24 | 691 | 0.1+ | 0.1+ | 2005 09 23 | 703 | 2.4− | 0.8− | 2005 10 25 | 699 | 0.2+ | 0.0 |
| 2003 03 24 | 691 | 0.0 | 0.3+ | 2005 09 23 | 703 | 0.8− | 0.3− | 2005 10 25 | 699 | 0.1− | 0.6− |
| 2003 04 01 | 644 | 0.5+ | 0.6− | 2005 09 23 | 703 | 0.7− | 0.6− | 2005 10 25 | 699 | 1.8+ | 0.9+ |
| 2003 04 01 | 644 | 0.7+ | 0.4− | 2005 09 25 | 703 | 0.7− | 1.2+ | 2005 10 30 | G96 | 0.2+ | 0.2− |
| 2003 04 01 | 644 | 0.1+ | 0.5− | 2005 09 25 | 703 | 0.4+ | 1.6+ | 2005 10 30 | G96 | 0.3+ | 0.0 |
| 2003 04 25 | 691 | 0.0 | 0.4+ | 2005 09 25 | 703 | 0.2+ | 1.2+ | 2005 10 30 | G96 | 0.2+ | 0.1− |
| 2003 04 25 | 691 | 0.1+ | 0.5+ | 2005 09 25 | 703 | 0.0 | 0.7+ | 2005 10 30 | G96 | 0.2+ | 0.0 |

**2003 FO$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.02417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28056578 | $\omega$ | 160.46211 | | −0.63590034 | | +0.76270059 |
| $a$ | 2.3108917 | $\Omega$ | 69.86609 | | −0.72375157 | | −0.53624653 |
| $e$ | 0.0562400 | $i$ | 7.21862 | | −0.26798212 | | −0.36156255 |
| $P$ | 3.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.3− | 1.4+ | 2003 03 25 | 644 | 0.4+ | 0.5+ | 2005 10 30 | G96 | 0.4+ | 0.6− |
| 2001 11 11 | 704 | 0.3− | 0.1+ | 2003 03 25 | 644 | 0.2+ | 0.6+ | 2005 10 30 | G96 | 0.2− | 0.4− |
| 2001 11 11 | 704 | 0.1− | 0.3+ | 2003 03 31 | 645 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.3− | 0.6− |
| 2001 11 11 | 704 | 0.8− | 0.0 | 2003 03 31 | 645 | 0.1− | 0.1− | 2005 10 30 | G96 | 0.9− | 0.6− |
| 2001 11 11 | 704 | 1.2− | 0.1+ | 2003 04 03 | 704 | 0.4+ | 1.2+ | 2005 11 10 | G96 | 0.3+ | 0.7− |
| 2001 11 20 | 704 | 1.6+ | 0.1− | 2003 04 03 | 704 | 0.2+ | 0.1+ | 2005 11 10 | G96 | 0.4+ | 0.4− |
| 2001 11 20 | 704 | 0.2− | 0.4− | 2003 04 03 | 704 | 0.8+ | 1.4+ | 2005 11 10 | G96 | 0.0 | 0.8− |
| 2001 11 20 | 704 | 0.4+ | 0.1+ | 2003 04 05 | 699 | 0.3− | 0.6− | 2005 11 10 | G96 | 0.1− | 0.6− |
| 2001 11 20 | 704 | 0.3+ | 0.5− | 2003 04 05 | 699 | 0.7+ | 0.2+ | 2006 01 07 | 691 | 0.3− | 0.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.2+ | 2003 04 05 | 699 | 0.2− | 0.4− | 2006 01 07 | 691 | 0.2− | 0.2+ |
| 2003 03 25 | 644 | 0.4+ | 0.6+ | 2003 04 05 | 699 | 0.7− | 0.6− | 2006 01 07 | 691 | 0.5+ | 0.4+ |

**2003 FP$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.34052 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21387262 | $\omega$ | 232.48229 | | −0.02981334 | | +0.99925942 |
| $a$ | 2.7692740 | $\Omega$ | 35.83227 | | −0.90346506 | | −0.01652749 |
| $e$ | 0.0493085 | $i$ | 2.38157 | | −0.42762374 | | −0.03474842 |
| $P$ | 4.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 30 | 809 | 0.7− | 1.2− | 2003 05 25 | 691 | 0.4+ | 0.0 | 2005 11 12 | 691 | 0.0 | 0.7+ |
| 2000 10 01 | 704 | 0.2+ | 1.5+ | 2003 05 25 | 691 | 0.3+ | 0.4+ | 2005 11 12 | 691 | 0.1− | 0.5+ |
| 2000 10 01 | 704 | 0.5+ | 0.9+ | 2003 06 06 | 691 | 0.5+ | 0.4+ | 2005 11 12 | 691 | 0.1− | 0.4+ |
| 2000 10 01 | 704 | 0.0 | 0.1− | 2003 06 06 | 691 | 0.4+ | 1.0+ | 2005 11 29 | G96 | 0.3− | 0.4+ |
| 2002 01 14 | 704 | 0.0 | 0.6+ | 2003 06 06 | 691 | 0.6+ | 0.5+ | 2005 11 29 | G96 | 0.2− | 0.3+ |
| 2002 01 14 | 704 | 0.3+ | 0.4+ | 2004 08 08 | 704 | 0.8− | 0.2− | 2005 11 29 | G96 | 0.6− | 0.5+ |
| 2002 01 14 | 704 | 0.0 | 0.2+ | 2004 08 08 | 704 | 0.4+ | 0.2− | 2005 11 29 | G96 | 0.4− | 0.4+ |
| 2002 01 14 | 704 | 1.1+ | 1.0− | 2004 08 08 | 704 | 0.2+ | 0.1− | 2006 01 02 | G96 | 0.2− | 0.2+ |
| 2003 03 25 | 291 | 0.2− | 0.2+ | 2004 08 08 | 704 | 0.0 | 0.8+ | 2006 01 02 | G96 | 0.3+ | 0.1+ |
| 2003 03 25 | 291 | 0.2− | 0.0 | 2004 08 20 | 691 | 0.1+ | 0.4+ | 2006 01 02 | G96 | 0.7− | 0.6+ |
| 2003 03 25 | 291 | 0.1+ | 0.1− | 2004 08 20 | 691 | 0.1− | 0.3+ | 2006 01 02 | G96 | 0.2+ | 0.0 |
| 2003 04 24 | 699 | 1.6+ | 1.0+ | 2004 08 20 | 691 | 0.1− | 0.3+ | 2006 01 25 | G96 | 0.7− | 0.2+ |
| 2003 04 24 | 699 | 1.7− | 1.8+ | 2005 10 27 | G96 | 0.2+ | 0.6+ | 2006 01 25 | G96 | 0.1− | 0.3+ |
| 2003 04 24 | 699 | 1.9− | 1.9− | 2005 10 27 | G96 | 0.1+ | 0.9+ | 2006 01 25 | G96 | 0.3− | 0.4+ |
| 2003 04 24 | 699 | 1.3− | 0.0 | 2005 10 27 | G96 | 0.6− | 0.5+ | 2006 01 25 | G96 | 0.3− | 0.2− |
| 2003 05 25 | 691 | 0.3+ | 0.5+ | 2005 10 27 | G96 | 0.5− | 0.0 | | | | |

**2003 FQ$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.49290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28259764 | $\omega$ | 188.07008 | | −0.46972408 | | +0.87703519 |
| $a$ | 2.2998015 | $\Omega$ | 53.97102 | | −0.80284322 | | −0.37687292 |
| $e$ | 0.1201592 | $i$ | 7.16285 | | −0.36715400 | | −0.29795314 |
| $P$ | 3.49 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.1+ | 0.0 | 2003 03 26 | 691 | 0.0 | 0.4+ | 2003 04 10 | 691 | 0.4− | 0.1+ |
| 2001 11 17 | 291 | 0.4− | 0.1+ | 2003 03 26 | 691 | 0.0 | 0.2+ | 2003 04 10 | 691 | 0.1− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.5− | 0.2+ | 2003 03 26 | 691 | 0.2− | 0.6+ | 2003 04 21 | 291 | 0.1− | 0.1+ | | |
| 2001 12 07 | 691 | 0.6+ | 0.3− | 2003 04 01 | 645 | 0.1+ | 0.2− | 2003 04 21 | 291 | 0.3− | 0.1+ | | |
| 2001 12 07 | 691 | 0.0 | 0.2+ | 2003 04 01 | 645 | 0.1+ | 0.2− | 2003 04 21 | 291 | 0.1+ | 0.1+ | | |
| 2001 12 07 | 691 | 0.2+ | 0.2− | 2003 04 10 | 691 | 0.3− | 0.0 | | | | | | |

**2003 FR$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.69426 | | (2000.0) | | −0.94363697 | +0.30458745 |
| $n$ | 0.23707439 | $\omega$ | 342.03459 | | −0.27065264 | −0.93534965 |
| $a$ | 2.5855104 | $\Omega$ | 216.51702 | | −0.19051617 | −0.17985418 |
| $e$ | 0.0956184 | $i$ | 12.57164 | | | |
| $P$ | 4.16 | $H$ | 16.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 703 | 1.1− | 0.9− | 2003 04 04 | 699 | 0.8+ | 0.7− | 2003 05 26 | 291 | 0.3+ | 0.4+ |
| 1999 05 17 | 703 | 0.5− | 0.7+ | 2003 04 04 | 699 | 1.1− | 1.6− | 2004 07 12 | 644 | 0.1− | 0.3+ |
| 1999 05 17 | 703 | 1.0+ | 0.6− | 2003 04 24 | 699 | 0.3+ | 1.1− | 2004 07 12 | 644 | 0.1− | 0.0 |
| 1999 05 17 | 703 | 0.3+ | 0.1− | 2003 04 24 | 699 | 1.4− | 1.0+ | 2004 07 12 | 644 | 0.0 | 0.2+ |
| 2001 12 11 | 704 | 0.6+ | 0.3− | 2003 04 24 | 699 | 0.1+ | 0.5− | 2005 11 06 | G96 | 0.2+ | 0.3+ |
| 2001 12 11 | 704 | 0.0 | 0.0 | 2003 04 24 | 699 | 0.3− | 0.2− | 2005 11 06 | G96 | 0.3− | 0.1+ |
| 2001 12 11 | 704 | 0.0 | 1.3+ | 2003 04 29 | 699 | 0.2+ | 0.5+ | 2005 11 06 | G96 | 0.1− | 0.3+ |
| 2003 03 26 | 608 | 0.4+ | 0.1+ | 2003 04 29 | 699 | 0.0 | 0.1− | 2005 11 06 | G96 | 0.1+ | 0.2+ |
| 2003 03 26 | 608 | 0.2− | 1.0− | 2003 04 29 | 699 | 1.6− | 0.1− | 2005 11 25 | 703 | 0.0 | 0.4− |
| 2003 03 26 | 608 | 0.3− | 0.7− | 2003 04 29 | 699 | 0.1− | 0.8+ | 2005 11 25 | 703 | 0.8− | 0.2+ |
| 2003 04 04 | 699 | 1.1+ | 0.5+ | 2003 05 26 | 291 | 0.2+ | 0.4+ | 2005 11 25 | 703 | 0.7+ | 0.0 |
| 2003 04 04 | 699 | 0.3+ | 0.9+ | 2003 05 26 | 291 | 0.2+ | 0.3+ | 2005 11 25 | 703 | 0.1− | 0.2− |

**2003 FS$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.25040 | | (2000.0) | | −0.53532636 | +0.84464498 |
| $n$ | 0.21108595 | $\omega$ | 58.01936 | | −0.80720711 | −0.51133984 |
| $a$ | 2.7935932 | $\Omega$ | 179.61225 | | −0.24868125 | −0.15845009 |
| $e$ | 0.1736848 | $i$ | 6.28969 | | | |
| $P$ | 4.67 | $H$ | 16.0 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 644 | 0.5+ | 0.9+ | 2003 04 20 | 699 | 0.2− | 0.3+ | 2004 09 09 | 704 | 0.4+ | 0.7+ |
| 2003 03 27 | 699 | 0.5− | 0.1+ | 2003 04 20 | 699 | 0.7− | 0.1− | 2004 09 09 | 704 | 0.3+ | 1.2+ |
| 2003 03 27 | 644 | 0.1+ | 0.8+ | 2003 04 20 | 699 | 0.8− | 1.1− | 2004 09 09 | 704 | 0.2− | 1.3+ |
| 2003 03 27 | 699 | 0.3+ | 0.5+ | 2003 04 20 | 699 | 0.4+ | 0.8− | 2004 09 22 | 691 | 0.3+ | 0.1− |
| 2003 03 27 | 699 | 1.9− | 0.4+ | 2003 04 30 | 691 | 0.2+ | 0.5+ | 2004 09 22 | 691 | 0.3+ | 0.2+ |
| 2003 03 27 | 699 | (0.2− | 2.0−) | 2003 04 30 | 691 | 0.4+ | 0.6+ | 2004 09 22 | 691 | 0.4+ | 0.2+ |
| 2003 03 27 | 644 | 0.1+ | 0.7+ | 2003 04 30 | 691 | 0.8+ | 0.7+ | 2005 10 27 | 691 | 0.6− | 0.7+ |
| 2003 04 08 | 704 | 0.3+ | 1.2+ | 2004 08 11 | 704 | (2.4− | 0.5+) | 2005 10 27 | 691 | 0.2− | 0.3+ |
| 2003 04 08 | 704 | 0.0 | 0.7+ | 2004 08 11 | 704 | 1.4− | 0.7+ | 2005 10 27 | 691 | 0.8− | 0.4+ |
| 2003 04 08 | 704 | 0.2+ | 0.7+ | 2004 08 11 | 704 | 1.8− | 0.7+ | 2005 11 04 | 691 | 0.5+ | 0.6+ |
| 2003 04 08 | 704 | 0.9+ | 0.7+ | 2004 08 11 | 704 | 1.8− | 1.0+ | 2005 11 04 | 691 | 0.5+ | 0.5+ |
| 2003 04 08 | 704 | 0.2− | 1.2+ | 2004 09 09 | 704 | 1.4− | 0.8+ | 2005 11 04 | 691 | 0.1+ | 0.5+ |

**2003 FT$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.55862 | | (2000.0) | | −0.74867291 | +0.63289573 |
| $n$ | 0.17637362 | $\omega$ | 194.50958 | | −0.55853262 | −0.44184938 |
| $a$ | 3.1490553 | $\Omega$ | 27.94945 | | −0.35711369 | −0.63577679 |
| $e$ | 0.1789097 | $i$ | 24.89667 | | | |
| $P$ | 5.59 | $H$ | 15.7 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 29 | 699 | 0.1+ | 0.5+ | 2003 04 25 | 699 | 0.0 | 0.5+ | 2005 10 31 | G96 | 0.0 | 0.1+ |
| 2003 03 29 | 699 | 0.4− | 0.2+ | 2003 04 25 | 699 | 0.6− | 0.6− | 2005 10 31 | G96 | 0.3+ | 0.2+ |
| 2003 03 29 | 699 | 0.1− | 0.3− | 2003 04 25 | 699 | 1.0+ | 0.2− | 2005 10 31 | G96 | 0.6− | 0.0 |
| 2003 03 29 | 699 | 0.3− | 0.3− | 2003 04 25 | 699 | 0.7− | 1.0− | 2005 10 31 | G96 | 0.2+ | 0.2+ |
| 2003 04 02 | 608 | 0.6+ | 0.1− | 2003 05 05 | 291 | 0.2− | 0.2+ | 2005 12 01 | 695 | 0.1+ | 0.3− |
| 2003 04 02 | 608 | 0.6+ | 0.5− | 2003 05 05 | 291 | 0.1+ | 0.1+ | 2005 12 01 | 695 | 0.1+ | 0.3− |
| 2003 04 02 | 608 | 0.5+ | 0.2+ | 2003 05 05 | 291 | 0.0 | 0.1+ | | | | |

**2003 FU$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.64456 | | (2000.0) | | −0.84438082 | −0.52761606 |
| $n$ | 0.27333066 | $\omega$ | 55.24472 | | +0.45608591 | −0.79896859 |
| $a$ | 2.3514937 | $\Omega$ | 92.74391 | | +0.28108125 | −0.28856625 |
| $e$ | 0.1697108 | $i$ | 5.34029 | | | |
| $P$ | 3.61 | $H$ | 17.3 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 04 25 | 699 | 0.9− | 0.4+ | 2006 01 05 | 704 | 1.3+ | 0.3− |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2003 04 25 | 699 | (1.7− | 0.5+) | 2006 01 05 | 704 | 0.0 | 0.4+ |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2003 04 25 | 699 | 0.2− | 0.1+ | 2006 01 05 | 704 | 0.2+ | 0.0 |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2003 05 01 | 704 | 0.3+ | 1.0+ | 2006 01 05 | 704 | 0.5− | 0.3+ |
| 2003 03 29 | 699 | (0.1− | 2.2+) | 2003 05 01 | 704 | 0.5− | 0.4+ | 2006 01 21 | G96 | 0.3− | 0.1+ |
| 2003 03 29 | 699 | 0.1− | 0.8+ | 2003 05 01 | 704 | 0.1− | 1.5+ | 2006 01 21 | G96 | 0.0 | 0.2+ |
| 2003 03 29 | 699 | 0.3− | 0.6− | 2005 12 04 | 704 | 0.2+ | 0.5− | 2006 01 21 | G96 | 0.4+ | 0.3− |
| 2003 03 29 | 699 | 0.6+ | 0.3+ | 2005 12 04 | 704 | 0.3− | 0.5− | 2006 01 21 | G96 | 0.2− | 0.5− |
| 2003 04 08 | 704 | 0.4+ | 0.6− | 2005 12 04 | 704 | 0.2+ | 0.4+ | 2006 03 05 | G96 | 0.4+ | 0.2+ |
| 2003 04 08 | 704 | 1.2+ | 0.1+ | 2005 12 04 | 704 | 0.1− | 0.3− | 2006 03 05 | G96 | 0.3+ | 0.2− |
| 2003 04 08 | 704 | 0.3− | 0.4− | 2005 12 22 | 291 | 0.3− | 0.2+ | 2006 03 05 | G96 | 0.0 | 0.1− |
| 2003 04 08 | 704 | 0.2− | 0.1− | 2005 12 22 | 291 | 0.2− | 0.1+ | 2006 03 05 | G96 | 0.5+ | 0.1+ |
| 2003 04 08 | 704 | 0.5+ | 0.4− | 2005 12 22 | 291 | 0.2− | 0.2+ | | | | |
| 2003 04 25 | 699 | 0.6+ | 0.0 | 2006 01 05 | 704 | 1.3+ | 0.9− | | | | |

**2003 FV$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 293.16271 | | (2000.0) | | −0.84042687 | −0.53389997 |
| $n$ | 0.18982563 | $\omega$ | 357.05023 | | +0.50094268 | −0.83077419 |
| $a$ | 2.9984685 | $\Omega$ | 150.08751 | | +0.20673440 | −0.15736922 |
| $e$ | 0.0490013 | $i$ | 10.73848 | | | |
| $P$ | 5.19 | $H$ | 15.6 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.1+ | 0.1− | 2000 10 02 | 645 | 0.1+ | 0.0 | 2003 04 08 | 608 | 0.2+ | 0.4+ |
| 1997 03 02 | 691 | 0.0 | 0.4− | 2002 01 14 | 704 | 1.2− | 0.5+ | 2003 04 08 | 608 | 0.2+ | 0.4− |
| 1997 03 02 | 691 | 0.0 | 0.1+ | 2002 01 14 | 704 | 0.3+ | 0.7+ | 2003 04 28 | 683 | 1.3− | 0.2− |
| 1998 04 18 | 691 | 0.2− | 0.1+ | 2002 01 14 | 704 | 0.1− | 0.7− | 2003 04 28 | 683 | 0.9− | 0.4+ |
| 1998 04 18 | 691 | 0.1+ | 0.3− | 2003 03 29 | 699 | 1.0+ | 0.7+ | 2003 04 28 | 683 | 0.5+ | 0.9+ |
| 1998 04 18 | 691 | 0.2− | 0.6− | 2003 03 29 | 699 | 0.3+ | 0.1+ | 2003 04 29 | 683 | 0.9+ | 0.2− |
| 2000 10 01 | 645 | 0.1− | 0.0 | 2003 03 29 | 699 | 0.4− | 0.3− | 2003 04 29 | 683 | 0.2+ | 0.6+ |
| 2000 10 01 | 645 | 0.0 | 0.1− | 2003 03 29 | 699 | 0.2− | 0.5− | 2003 04 29 | 683 | 0.3+ | 0.8− |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2003 04 08 | 608 | 0.1+ | 0.0 | | | | |

**2003 FW$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.72525 | | (2000.0) | | −0.66997807 | +0.74237823 |
| $n$ | 0.26524404 | $\omega$ | 229.49071 | | −0.65715864 | −0.59430983 |
| $a$ | 2.3990481 | $\Omega$ | 358.43966 | | −0.34535765 | −0.30930630 |
| $e$ | 0.0948161 | $i$ | 4.18290 | | | |
| $P$ | 3.72 | $H$ | 17.1 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 699 | 0.1+ | 0.9+ | 2003 04 24 | 691 | 0.2− | 0.6+ | 2005 12 02 | 691 | 0.1+ | 0.0 |
| 2003 03 31 | 699 | 0.5− | 0.1+ | 2003 04 24 | 691 | 0.2− | 0.6+ | 2005 12 02 | 691 | 0.0 | 0.2+ |
| 2003 03 31 | 699 | 0.2+ | 0.0 | 2003 04 24 | 691 | 0.0 | 0.4+ | 2005 12 10 | 691 | 0.2− | 0.4− |
| 2003 03 31 | 699 | 0.3+ | 0.0 | 2003 04 29 | 691 | 0.0 | 0.4− | 2005 12 10 | 691 | 0.1− | 0.3+ |
| 2003 04 07 | 691 | 0.1+ | 0.3− | 2003 04 29 | 691 | 0.2+ | 0.2− | 2005 12 10 | 691 | 0.1+ | 0.3+ |
| 2003 04 07 | 691 | 0.0 | 0.2− | 2003 04 29 | 691 | 0.0 | 0.5− | | | | |
| 2003 04 07 | 691 | 0.1+ | 0.3− | 2005 12 02 | 691 | 0.1+ | 0.3− | | | | |

**2003 FX$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 246.64122 | | | (2000.0) | | |
| $n$ | 0.25090003 | $\omega$ | 188.02363 | | +0.48761955 | +0.86308378 |
| $a$ | 2.4896344 | $\Omega$ | 111.24616 | | −0.79297092 | +0.50088738 |
| $e$ | 0.2287495 | $i$ | 8.11593 | | −0.36527290 | +0.06479374 |
| $P$ | 3.93 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 01 | 691 | 0.6− | 0.2+ | 2003 03 31 | 699 | 0.0 | 0.5+ | 2006 01 04 | 691 | 0.3− | 0.3+ |
| 1998 01 01 | 691 | 0.5+ | 0.0 | 2003 03 31 | 699 | 1.1− | 0.7+ | 2006 01 04 | 691 | 0.3− | 0.2− |
| 1998 01 01 | 691 | 0.1− | 0.5− | 2003 04 09 | 704 | 0.9+ | 0.7+ | 2006 01 04 | 691 | 0.2+ | 0.2+ |
| 2000 10 01 | 645 | 0.1− | 0.1+ | 2003 04 09 | 704 | 0.3+ | 0.7+ | 2006 01 27 | G96 | 0.1− | 0.1− |
| 2000 10 01 | 645 | 0.1− | 0.1+ | 2003 04 09 | 704 | 0.8+ | 0.6+ | 2006 01 27 | G96 | 0.0 | 0.1− |
| 2000 10 02 | 699 | 0.1− | 0.5+ | 2003 04 09 | 704 | (2.2+ | 0.6+) | 2006 01 27 | G96 | 0.3− | 0.2− |
| 2000 10 02 | 699 | 1.2+ | 0.2+ | 2003 04 09 | 704 | 1.0+ | 1.1+ | 2006 01 27 | G96 | 0.6− | 0.1− |
| 2000 10 02 | 699 | 0.3− | 0.9+ | 2003 04 25 | 699 | 0.4− | 1.3− | 2006 02 06 | 691 | 0.1+ | 0.2+ |
| 2000 10 02 | 699 | 0.3− | 0.5+ | 2003 04 25 | 699 | 1.8+ | 1.8+ | 2006 02 06 | 691 | 0.2− | 0.4− |
| 2002 01 14 | 704 | 0.5+ | 0.3− | 2003 04 25 | 699 | 0.9− | 0.0 | 2006 02 06 | 691 | 0.1− | 0.4+ |
| 2002 01 14 | 704 | 0.4+ | 0.4+ | 2003 04 25 | 699 | 0.3− | 0.9+ | 2006 02 20 | 691 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.7+ | 1.2− | 2005 12 27 | 691 | 0.5+ | 0.5− | 2006 02 20 | 691 | 0.1− | 0.0 |
| 2003 03 31 | 699 | (2.5− | 1.0−) | 2005 12 27 | 691 | 0.6+ | 0.0 | 2006 02 20 | 691 | 0.2+ | 0.1− |
| 2003 03 31 | 699 | 0.3− | 0.2− | 2005 12 27 | 691 | 0.6− | 0.7+ | | | | |

**2003 FY$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 318.58109 | | | (2000.0) | | |
| $n$ | 0.30182227 | $\omega$ | 312.67166 | | +0.34923030 | +0.93676898 |
| $a$ | 2.2010768 | $\Omega$ | 337.73877 | | −0.84148947 | +0.30301057 |
| $e$ | 0.2141104 | $i$ | 3.39090 | | −0.41223013 | +0.17506704 |
| $P$ | 3.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 12 | 568 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.1− | 0.2− | 2006 03 25 | G96 | 0.1− | 0.3+ |
| 1999 01 12 | 568 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.0 | 0.0 | 2006 04 07 | G96 | 0.1− | 0.1− |
| 2003 03 31 | 704 | 0.4+ | 0.1− | 2006 01 23 | G96 | 0.6− | 0.3− | 2006 04 07 | G96 | 0.0 | 0.2− |
| 2003 03 31 | 704 | 1.9+ | 0.9− | 2006 02 06 | G96 | 0.4+ | 0.1+ | 2006 04 07 | G96 | 1.2− | 0.2+ |
| 2003 03 31 | 704 | 0.7+ | 0.9+ | 2006 02 06 | G96 | 0.3+ | 0.2+ | 2006 04 07 | G96 | 0.0 | 0.3− |
| 2003 03 31 | 704 | 0.9+ | 0.5+ | 2006 02 06 | G96 | 0.3+ | 0.1+ | 2006 05 04 | G96 | 0.3+ | 0.0 |
| 2003 04 07 | 704 | 1.4− | 0.1+ | 2006 02 06 | G96 | 0.3− | 0.2− | 2006 05 04 | G96 | 0.2+ | 0.3− |
| 2003 04 07 | 704 | 0.8− | 0.1− | 2006 02 20 | G96 | 0.3+ | 0.3+ | 2006 05 04 | G96 | 0.0 | 0.1+ |
| 2003 04 07 | 704 | 0.7+ | 0.7− | 2006 02 20 | G96 | 0.1+ | 0.0 | 2006 05 04 | G96 | 0.3− | 0.3− |
| 2003 05 01 | 704 | 0.8− | 0.5+ | 2006 02 20 | G96 | 0.3− | 0.2+ | 2006 05 26 | G96 | 0.4− | 0.1− |
| 2003 05 01 | 704 | 1.0− | 0.3− | 2006 02 20 | G96 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.4+ | 0.5− |
| 2003 05 01 | 704 | 0.3+ | 1.0+ | 2006 03 25 | G96 | 0.5+ | 0.1+ | 2006 05 26 | G96 | 0.6− | 0.7− |
| 2003 05 01 | 704 | 0.4− | 0.1− | 2006 03 25 | G96 | 0.4+ | 0.1+ | 2006 05 26 | G96 | 0.2+ | 0.1− |
| 2006 01 23 | G96 | 0.1− | 0.0 | 2006 03 25 | G96 | 0.1+ | 0.2− | | | | |

**2003 FZ$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 283.27461 | | | (2000.0) | | |
| $n$ | 0.18531949 | $\omega$ | 280.04630 | | −0.72663867 | −0.66631474 |
| $a$ | 3.0468798 | $\Omega$ | 218.47719 | | +0.68695959 | −0.70145133 |
| $e$ | 0.1769079 | $i$ | 15.60686 | | +0.00909753 | −0.25296384 |
| $P$ | 5.32 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.0 | 0.3− | 2003 04 25 | 691 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.3− | 0.1+ |
| 2001 12 19 | 704 | 0.1− | 0.5− | 2003 04 25 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.9− | 0.4− | 2003 04 25 | 691 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.4− | 0.4− | 2003 05 05 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2002 01 14 | 209 | 1.0+ | 0.4+ | 2003 05 05 | 691 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 01 14 | 209 | 0.4+ | 0.0 | 2003 05 05 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2002 01 14 | 209 | 0.1+ | 0.2− | 2003 05 10 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.5+ |
| 2003 03 31 | 644 | 0.0 | 0.5− | 2003 05 10 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.6+ |
| 2003 03 31 | 644 | 0.1+ | 0.5− | 2003 05 10 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2003 03 31 | 644 | 0.0 | 0.5− | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.6+ |
| 2003 04 07 | 704 | 0.1+ | 0.8− | 2006 10 12 | 691 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2003 04 07 | 704 | 0.1+ | 0.9+ | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2003 04 07 | 704 | (1.6+ | 0.1−) | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2003 04 07 | 704 | 0.6+ | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.0 |

**2003 FA$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.24797 | | | (2000.0) | | |
| $n$ | 0.26218560 | $\omega$ | 133.10781 | | −0.99650033 | −0.01906022 |
| $a$ | 2.4176689 | $\Omega$ | 45.98099 | | −0.02126732 | −0.88380172 |
| $e$ | 0.1682469 | $i$ | 6.49849 | | +0.08083802 | −0.46747324 |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 22 | 644 | 0.2+ | 0.4+ | 2003 04 08 | 644 | 0.0 | 0.2+ | 2003 05 02 | 691 | 0.1+ | 0.1− |
| 2003 03 22 | 644 | 0.2+ | 0.5+ | 2003 04 08 | 644 | 0.0 | 0.2+ | 2005 10 28 | G96 | 0.1− | 0.1+ |
| 2003 03 22 | 644 | 0.3+ | 0.3+ | 2003 04 27 | 699 | 0.8+ | 0.2− | 2005 10 28 | G96 | 0.3− | 0.4+ |
| 2003 04 03 | 699 | 0.1− | 0.4− | 2003 04 27 | 699 | 0.6− | 0.5− | 2005 10 28 | G96 | 0.2+ | 0.0 |
| 2003 04 03 | 699 | 0.4− | 0.3− | 2003 04 27 | 699 | 0.6+ | 1.1− | 2005 10 28 | G96 | 0.4− | 0.3− |
| 2003 04 03 | 699 | 0.7− | 0.2− | 2003 04 27 | 699 | 0.4− | 0.0 | 2005 11 25 | 691 | 0.1− | 0.0 |
| 2003 04 03 | 699 | (1.2+ | 2.3+) | 2003 05 02 | 691 | 0.3− | 0.3+ | 2005 11 25 | 691 | 0.0 | 0.1+ |
| 2003 04 08 | 644 | 0.9+ | 0.4− | 2003 05 02 | 691 | 0.1− | 0.1+ | 2005 11 25 | 691 | 0.3+ | 0.2− |

**2003 FB$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 105.36024 | | | (2000.0) | | |
| $n$ | 0.23654791 | $\omega$ | 348.93969 | | +0.90006658 | −0.39793610 |
| $a$ | 2.5893453 | $\Omega$ | 36.19541 | | +0.41922118 | +0.67960190 |
| $e$ | 0.1784609 | $i$ | 17.49790 | | +0.11888544 | +0.61626952 |
| $P$ | 4.17 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 22 | 644 | 0.1+ | 0.6+ | 2003 04 09 | 644 | 0.0 | 0.8+ | 2005 11 26 | 704 | 0.4− | 0.1− |
| 2003 03 22 | 644 | 0.1+ | 0.5+ | 2003 04 11 | 691 | 0.2+ | 0.0 | 2005 11 26 | 704 | 1.1+ | 0.2+ |
| 2003 03 22 | 644 | 0.1+ | 0.7+ | 2003 04 11 | 691 | 0.5+ | 0.1− | 2005 12 22 | 704 | 0.1+ | 0.1+ |
| 2003 03 31 | 699 | 0.1+ | 1.6− | 2003 04 11 | 691 | 0.1+ | 0.4+ | 2005 12 22 | 704 | 0.2+ | 0.2+ |
| 2003 03 31 | 699 | 1.8− | 0.7− | 2003 05 02 | 691 | 0.2− | 0.1− | 2005 12 22 | 704 | 0.0 | 0.2− |
| 2003 03 31 | 699 | 0.1− | 1.1− | 2003 05 02 | 691 | 0.3+ | 0.1− | 2005 12 22 | 704 | 0.2− | 0.2+ |
| 2003 03 31 | 699 | 1.1− | 1.0− | 2003 05 02 | 691 | 0.4− | 0.0 | 2005 12 22 | 704 | 0.2+ | 0.1− |
| 2003 04 09 | 644 | 0.3+ | 0.7+ | 2005 11 26 | 704 | 0.4− | 0.3− | | | | |
| 2003 04 09 | 644 | 0.2+ | 0.8+ | 2005 11 26 | 704 | 0.6− | 0.1− | | | | |

**2003 FC$_{131}$ = 2006 SM$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.19591 | | | (2000.0) | | |
| $n$ | 0.18007874 | $\omega$ | 87.55298 | | −0.11160227 | −0.99273299 |
| $a$ | 3.1057114 | $\Omega$ | 9.22628 | | +0.76310803 | −0.11462674 |
| $e$ | 0.2033237 | $i$ | 16.30457 | | +0.63656192 | −0.03663222 |
| $P$ | 5.47 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1− | 0.0 | 2003 04 03 | 699 | 0.9− | 1.1− | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 2001 09 25 | 704 | 1.2+ | 0.1− | 2003 04 03 | 699 | 0.7− | 0.1− | 2006 10 01 | 704 | (0.9− | 2.0+) |
| 2001 09 25 | 704 | 0.4− | 0.5+ | 2003 04 03 | 699 | 0.8− | 0.8− | 2006 10 01 | 704 | (1.2− | 1.6+) |
| 2001 09 25 | 704 | 0.5− | 0.2+ | 2003 04 03 | 699 | 0.3− | 0.8− | 2006 10 01 | 704 | 0.7− | 1.1+ |
| 2001 10 19 | 704 | 0.2− | 0.8+ | 2003 04 07 | 691 | 0.6+ | 1.1+ | 2006 10 02 | 691 | 0.5− | 0.8+ |
| 2001 10 19 | 704 | 0.9− | 0.7+ | 2003 04 07 | 691 | 1.0+ | 1.2+ | 2006 10 02 | 691 | 0.4− | 0.9+ |
| 2001 10 19 | 704 | 1.0− | 0.6+ | 2003 04 07 | 691 | 0.5+ | 0.6+ | 2006 10 02 | 691 | 0.6− | 0.9+ |
| 2001 10 19 | 704 | 0.7− | 1.2+ | 2003 04 24 | 691 | 0.4+ | 0.1− | 2006 10 17 | 703 | 1.2+ | 1.3− |
| 2001 10 25 | 704 | 0.0 | 0.8− | 2003 04 24 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 1.4+ | 1.0− |
| 2001 10 25 | 704 | 0.0 | 0.2− | 2003 04 24 | 691 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2001 10 25 | 704 | 0.0 | 1.0+ | 2003 04 29 | 691 | 0.4+ | 0.9+ | 2006 10 17 | 703 | (0.9− | 1.7+) |
| 2001 11 11 | 704 | 0.3+ | 0.5+ | 2003 04 29 | 691 | 0.6+ | 1.0+ | 2006 10 20 | 644 | 0.2− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.6− | 0.0 | 2003 04 29 | 691 | 0.4+ | 1.0+ | 2006 10 20 | 644 | 0.7− | 0.3+ |
| 2001 11 11 | 704 | (1.9− | 0.3−) | 2006 09 17 | H07 | 1.2− | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 1.0− | 0.2− | 2006 09 17 | H07 | 1.2− | 1.3+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2001 11 11 | 704 | 0.5− | 0.2+ | 2006 09 17 | H07 | 0.9− | 0.2+ | 2006 10 28 | G96 | 0.4− | 0.3− |
| 2001 12 09 | 704 | 1.1+ | 0.5− | 2006 09 19 | 703 | 0.8− | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.1+ |
| 2001 12 09 | 704 | 1.0+ | 0.7− | 2006 09 19 | 703 | 1.1− | 1.1+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.4+ | 0.7− | 2006 09 19 | 703 | 1.1− | 1.0+ | 2006 10 31 | G96 | 0.1+ | 0.5+ |
| 2001 12 09 | 704 | 1.0+ | 0.6− | 2006 09 19 | 703 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.6+ |
| 2001 12 09 | 704 | 0.8+ | 0.8− | 2006 09 25 | G96 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4+ |
| 2003 03 22 | 608 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.8+ |
| 2003 03 22 | 608 | 1.2+ | 0.1+ | 2006 09 25 | G96 | 0.6− | 0.2+ | | | | |
| 2003 03 22 | 608 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.7− | 0.2+ | | | | |

**2003 FE**$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.64634 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26326132 | $\omega$ | 155.60993 | | −0.94602340 | | +0.31234705 |
| $a$ | 2.4110785 | $\Omega$ | 42.89409 | | −0.31430263 | | −0.81905770 |
| $e$ | 0.0203482 | $i$ | 7.29963 | | −0.07907966 | | −0.48123155 |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.3− | 0.3+ | 2003 04 02 | 704 | 0.6+ | 1.3− | 2003 04 25 | 691 | 0.5− | 1.0+ |
| 1997 11 23 | 691 | 0.0 | 0.0 | 2003 04 02 | 704 | 0.1+ | 0.3+ | 2003 04 25 | 691 | 0.1− | 0.3+ |
| 1997 11 23 | 691 | 0.6+ | 0.9− | 2003 04 02 | 704 | 1.6+ | 0.3− | 2003 04 29 | 699 | 0.5− | 0.7− |
| 1997 12 05 | 691 | 0.1− | 0.3+ | 2003 04 02 | 704 | 0.9+ | 0.5+ | 2003 04 29 | 699 | 0.2+ | 0.4− |
| 1997 12 05 | 691 | 0.3− | 0.3+ | 2003 04 02 | 704 | 0.9+ | 0.2− | 2003 04 29 | 699 | 0.7− | 0.8− |
| 1997 12 05 | 691 | 0.1+ | 0.1+ | 2003 04 08 | 608 | 1.1+ | 0.5− | 2003 04 29 | 699 | (0.1+ | 2.2+) |
| 2003 03 23 | 291 | 0.3− | 0.1− | 2003 04 08 | 608 | 1.3+ | 0.4− | 2003 05 25 | 291 | 0.2− | 0.1− |
| 2003 03 23 | 291 | 0.5− | 0.1− | 2003 04 08 | 608 | 1.2+ | 0.0 | 2003 05 25 | 291 | 0.1− | 0.1+ |
| 2003 03 23 | 291 | 0.3− | 0.1− | 2003 04 25 | 691 | 0.3− | 0.2+ | 2003 05 25 | 291 | 0.6+ | 0.3− |

**2003 FF**$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.28289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27141829 | $\omega$ | 111.32990 | | −0.96417221 | | +0.26345889 |
| $a$ | 2.3625262 | $\Omega$ | 83.95594 | | −0.25347676 | | −0.88049561 |
| $e$ | 0.1570587 | $i$ | 1.78673 | | −0.07823994 | | −0.39410264 |
| $P$ | 3.63 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 691 | 0.1− | 0.3− | 2003 04 09 | 704 | 1.0− | 0.3+ | 2005 11 25 | G96 | 0.2− | 0.1+ |
| 2003 03 24 | 691 | 0.3+ | 0.1− | 2003 04 09 | 704 | 1.4− | 0.6+ | 2005 11 25 | G96 | 0.0 | 0.1+ |
| 2003 03 24 | 691 | 0.1− | 0.2− | 2003 04 24 | 691 | 0.2− | 0.0 | 2005 11 25 | G96 | 0.2+ | 0.0 |
| 2003 03 31 | 699 | 0.6− | 0.2+ | 2003 04 24 | 691 | 0.2+ | 0.1+ | 2005 12 25 | G96 | 0.4+ | 0.2+ |
| 2003 03 31 | 699 | 0.6− | 0.2+ | 2003 04 24 | 691 | 0.6− | 0.0 | 2005 12 25 | G96 | 0.2+ | 0.0 |
| 2003 03 31 | 699 | 1.7+ | 0.3− | 2003 04 29 | 691 | 0.4+ | 0.4+ | 2005 12 25 | G96 | 0.4− | 0.4+ |
| 2003 03 31 | 699 | 1.0+ | 0.5+ | 2003 04 29 | 691 | 0.4+ | 0.1+ | 2005 12 25 | G96 | 0.2− | 0.1+ |
| 2003 04 09 | 704 | 1.0− | 0.7− | 2003 04 29 | 691 | 0.3+ | 0.4+ | | | | |
| 2003 04 09 | 704 | 0.5− | 1.2− | 2005 11 25 | G96 | 0.0 | 0.0 | | | | |

**2003 FJ**$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.32614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22799984 | $\omega$ | 345.27055 | | −0.66518942 | | −0.73766635 |
| $a$ | 2.6536666 | $\Omega$ | 146.18974 | | +0.70436052 | | −0.67131602 |
| $e$ | 0.1203881 | $i$ | 11.99404 | | +0.24778881 | | −0.07199421 |
| $P$ | 4.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.3+ | 0.6+ | 2003 03 24 | 608 | 0.4+ | 0.2− | 2003 04 04 | 699 | 1.3+ | 0.1− |
| 2000 08 31 | 691 | 0.1− | 0.5− | 2003 03 24 | 608 | 0.3+ | 0.4− | 2003 04 09 | 704 | 1.2+ | 0.4+ |
| 2000 08 31 | 691 | 0.3− | 0.2+ | 2003 03 24 | 608 | 0.3+ | 0.2− | 2003 04 09 | 704 | 1.4+ | 0.1+ |
| 2001 12 07 | 704 | 0.5− | 0.3− | 2003 04 01 | 645 | 0.1− | 0.1+ | 2003 04 09 | 704 | 0.5+ | 0.1+ |
| 2001 12 07 | 704 | 0.6− | 0.6+ | 2003 04 01 | 645 | 0.2− | 0.1+ | 2003 04 09 | 704 | 0.8+ | 0.7+ |
| 2001 12 07 | 704 | 0.3+ | 1.2+ | 2003 04 04 | 699 | 0.5+ | 0.4+ | 2003 04 09 | 704 | 0.7+ | 0.5+ |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 04 04 | 699 | 0.8+ | 0.7− | 2003 04 27 | 645 | 0.1− | 0.1− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 04 04 | 699 | 1.0+ | 0.3+ | 2003 04 27 | 645 | 0.1− | 0.1− |

**2003 FK**$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.43187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25726904 | $\omega$ | 316.33012 | | −0.89471649 | | −0.44596440 |
| $a$ | 2.4483737 | $\Omega$ | 197.23164 | | +0.42910378 | | −0.84311747 |
| $e$ | 0.0641194 | $i$ | 4.73570 | | +0.12390458 | | −0.30044746 |
| $P$ | 3.83 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 699 | 0.1+ | 0.6+ | 2003 03 25 | 699 | 1.4+ | 0.5+ | 2003 04 29 | 699 | 0.7− | 0.8+ |
| 1999 03 24 | 699 | 1.0+ | 0.2− | 2003 04 06 | 807 | 1.5+ | 0.5− | 2003 05 05 | 704 | 0.1− | 0.9+ |
| 1999 03 24 | 699 | 0.7+ | 0.7+ | 2003 04 06 | 807 | 1.4+ | 0.1+ | 2003 05 05 | 704 | 1.1+ | 0.9+ |
| 1999 04 19 | 691 | 0.3− | 0.5− | 2003 04 06 | 807 | (2.3+ | 0.7−) | 2003 05 05 | 704 | 0.6− | 0.7+ |
| 1999 04 19 | 691 | 0.2− | 0.5− | 2003 04 06 | 807 | 1.2+ | 0.1− | 2003 05 05 | 704 | 0.5+ | 0.7+ |
| 1999 04 19 | 691 | 0.3− | 0.1− | 2003 04 06 | 807 | 0.2− | 0.8+ | 2003 05 29 | 691 | 0.3+ | 0.6− |
| 2003 03 25 | 699 | 1.8− | 0.8+ | 2003 04 29 | 699 | 1.5− | 0.1− | 2003 05 29 | 691 | 0.2+ | 0.3− |
| 2003 03 25 | 699 | 0.1− | 1.7+ | 2003 04 29 | 699 | 0.5− | 1.1+ | 2003 05 29 | 691 | 0.1+ | 0.6− |
| 2003 03 25 | 699 | 1.4− | 0.6− | 2003 04 29 | 699 | 1.2− | 0.8+ | | | | |

**2003 FN**$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.22069 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28040992 | $\omega$ | 88.80899 | | −0.28416693 | | +0.95867375 |
| $a$ | 2.3117479 | $\Omega$ | 164.66005 | | −0.89926060 | | −0.26146386 |
| $e$ | 0.1549156 | $i$ | 3.01640 | | −0.33253501 | | −0.11216631 |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 644 | 0.5+ | 0.5+ | 2003 04 20 | 699 | 0.1+ | 0.8− | 2006 01 05 | 691 | 0.0 | 0.4+ |
| 2003 03 27 | 699 | 1.0− | 1.1− | 2003 04 20 | 699 | 0.2+ | 0.4− | 2006 01 05 | 691 | 0.1− | 0.1+ |
| 2003 03 27 | 644 | 0.3+ | 0.0 | 2003 04 20 | 699 | 1.2− | 0.2+ | 2006 01 05 | 691 | 0.1− | 0.0 |
| 2003 03 27 | 699 | 0.9− | 0.2+ | 2003 04 20 | 699 | 1.2+ | 0.2+ | 2006 02 04 | G96 | 0.0 | 0.7− |
| 2003 03 27 | 699 | 0.3− | 0.0 | 2003 04 27 | 699 | (1.7− | 1.6−) | 2006 02 04 | G96 | 0.2+ | 0.2− |
| 2003 03 27 | 644 | 0.1+ | 0.4+ | 2003 04 27 | 699 | 0.3− | 0.2− | 2006 02 04 | G96 | 0.7− | 0.4− |
| 2003 03 27 | 699 | 0.7− | 0.7− | 2003 04 27 | 699 | 0.7− | 0.1− | 2006 02 04 | G96 | 0.4− | 0.2− |
| 2003 04 01 | 704 | 1.1+ | 0.8− | 2003 04 27 | 699 | 0.7+ | 0.8+ | 2006 02 27 | G96 | 0.1− | 0.1+ |
| 2003 04 01 | 704 | 0.1− | 0.0 | 2003 05 05 | 691 | 0.2− | 0.1+ | 2006 02 27 | G96 | 0.8+ | 0.2− |
| 2003 04 01 | 704 | 0.2− | 0.0 | 2003 05 05 | 691 | 0.2+ | 0.1+ | 2006 02 27 | G96 | 0.7+ | 0.1+ |
| 2003 04 01 | 704 | (0.2+ | 1.8+) | 2003 05 05 | 691 | 0.3+ | 0.3+ | 2006 02 27 | G96 | 0.4+ | 0.0 |

**2003 GA**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.76519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.67938882 | $\omega$ | 66.70470 | | −0.17952340 | | +0.98363861 |
| $a$ | 1.2815153 | $\Omega$ | 192.98029 | | −0.92528531 | | −0.17402869 |
| $e$ | 0.1912317 | $i$ | 3.84135 | | −0.33409347 | | −0.04657367 |
| $P$ | 1.45 | $H$ | 21.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 704 | 0.2+ | 0.4+ | 2003 04 27 | 704 | 0.0 | 1.2+ | 2003 05 26 | 118 | 1.0+ | 0.5+ |
| 2003 04 01 | 704 | 0.1− | 0.6+ | 2003 04 27 | 704 | (0.5+ | 1.5+) | 2003 05 26 | 118 | 0.4+ | 0.2+ |
| 2003 04 01 | 704 | (0.2− | 2.6+) | 2003 04 27 | 704 | (0.1− | 1.6+) | 2003 05 26 | 118 | 0.2− | 0.2− |
| 2003 04 02 | 809 | 0.1+ | 0.1+ | 2003 04 27 | 704 | 0.5− | 0.9+ | 2003 05 26 | 118 | 0.2− | 0.0 |
| 2003 04 02 | 809 | 0.1+ | 0.1+ | 2003 04 28 | 941 | 0.7+ | 0.4+ | 2003 06 08 | 118 | 0.1+ | 0.2+ |
| 2003 04 02 | 809 | 0.1+ | 0.2+ | 2003 04 28 | 941 | 0.7+ | 0.4+ | 2003 06 08 | 118 | 0.5+ | 0.3+ |
| 2003 04 02 | 711 | 0.2− | 0.2+ | 2003 04 28 | 941 | 0.7+ | 0.6+ | 2003 06 08 | 118 | 0.2+ | 0.0 |
| 2003 04 02 | 711 | 0.4+ | 0.2+ | 2003 04 28 | 941 | 0.4+ | 0.2+ | 2003 06 08 | 118 | 0.4+ | 0.2+ |
| 2003 04 02 | 711 | 0.4+ | 0.5+ | 2003 04 28 | 941 | 0.4+ | 0.0 | 2003 06 25 | 670 | 0.4+ | 0.6− |
| 2003 04 02 | 474 | 0.3+ | 0.4+ | 2003 04 28 | 941 | 0.2+ | 0.1− | 2003 06 27 | A14 | 0.4+ | 0.4− |
| 2003 04 02 | 474 | (2.3− | 0.6+) | 2003 05 03 | H72 | 0.0 | 0.1− | 2003 06 27 | A14 | 0.1+ | 0.0 |
| 2003 04 02 | 474 | 0.6− | 0.3+ | 2003 05 03 | H72 | 0.2+ | 0.5+ | 2003 07 09 | 461 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 02 | 474 | 0.1+ | 0.0 | 2003 05 03 | H72 | 0.7− | 0.3+ | 2003 07 09 | 461 | 0.3− | 0.1+ | 2003 04 27 | 170 | 0.1− | 0.1+ |
| 2003 04 03 | 699 | 0.5− | 0.5− | 2003 05 03 | H72 | 1.3− | 0.6− | 2003 07 09 | 461 | 0.5+ | 0.3− | 2003 04 27 | 170 | 1.0− | 0.6− |
| 2003 04 03 | 699 | 0.3+ | 0.1− | 2003 05 03 | H72 | 0.4+ | 0.4+ | 2003 07 20 | 704 | 0.3− | 0.8+ | 2003 04 27 | 170 | 0.2− | 0.0 |
| 2003 04 03 | 699 | 0.4− | 0.8− | 2003 05 03 | H72 | 0.3+ | 0.5− | 2003 07 20 | 704 | 0.6− | 0.2+ | 2003 04 27 | 704 | 0.2+ | 1.5+ |
| 2003 04 03 | 699 | 0.2− | 0.1− | 2003 05 03 | H72 | 0.5− | 0.6− | 2003 07 20 | 704 | 0.2− | 0.5+ | | | | |
| 2003 04 05 | 448 | 0.4+ | 0.2+ | 2003 05 03 | H72 | 0.4+ | 0.5− | 2003 07 22 | 704 | 1.0− | 0.8+ | | | | |
| 2003 04 05 | 448 | 0.4+ | 0.2+ | 2003 05 03 | H72 | 0.4+ | 0.1− | 2003 07 22 | 704 | 0.5+ | 0.4+ | | | | |
| 2003 04 05 | 448 | 0.3+ | 0.2+ | 2003 05 03 | H72 | 1.0− | 0.1+ | 2003 07 22 | 704 | 0.0 | 0.4− | | | | |
| 2003 04 06 | 704 | (1.5− | 0.4−) | 2003 05 04 | 632 | 0.5− | 0.1+ | 2003 07 25 | 170 | 0.5+ | 0.0 | | | | |
| 2003 04 06 | 704 | 0.0 | 0.6− | 2003 05 04 | 632 | 0.1− | 0.3+ | 2003 07 25 | 170 | 1.0+ | 0.0 | | | | |
| 2003 04 06 | 704 | 0.6− | 0.4− | 2003 05 04 | 941 | 0.1+ | 0.1− | 2003 07 25 | 170 | 0.8+ | 0.1− | | | | |
| 2003 04 06 | 704 | 0.3+ | 0.1− | 2003 05 04 | 941 | 0.0 | 0.1− | 2003 08 02 | 151 | 0.5− | 0.6− | | | | |
| 2003 04 06 | 704 | 0.6+ | 0.7− | 2003 05 04 | 941 | 0.1+ | 0.0 | 2003 08 02 | 151 | 0.7− | 0.1− | | | | |
| 2003 04 07 | 704 | 0.7+ | 0.2+ | 2003 05 04 | 941 | 0.3+ | 0.1+ | 2003 08 02 | 151 | 0.1− | 0.3− | | | | |
| 2003 04 07 | 670 | 0.9+ | 0.5− | 2003 05 04 | 941 | 0.2+ | 0.1− | 2003 08 02 | 151 | 0.1+ | 0.3− | | | | |
| 2003 04 07 | 704 | 0.3+ | 0.3+ | 2003 05 04 | H72 | 0.1− | 0.8− | 2003 08 03 | 198 | 0.2− | 0.4− | | | | |
| 2003 04 07 | 704 | 0.3+ | 0.3+ | 2003 05 04 | H72 | 0.1+ | 0.7− | 2003 08 03 | 198 | 0.2− | 0.5− | | | | |
| 2003 04 07 | 704 | 0.7+ | 0.1+ | 2003 05 04 | H72 | 0.4− | 0.7− | 2003 08 03 | 198 | 0.4− | 0.3− | | | | |
| 2003 04 07 | 704 | 0.8+ | 0.1− | 2003 05 04 | H72 | 0.1− | 0.6− | 2003 08 03 | 198 | 0.5− | 0.2− | | | | |
| 2003 04 07 | 670 | 0.3+ | 0.9− | 2003 05 04 | H72 | 0.8− | 0.2− | 2003 08 18 | 170 | 0.7− | 0.1− | | | | |
| 2003 04 07 | 670 | 0.5− | 0.1+ | 2003 05 04 | H72 | 0.9− | 0.9− | 2003 08 18 | 170 | 0.7− | 0.1− | | | | |
| 2003 04 08 | 941 | 0.9+ | 0.4+ | 2003 05 04 | H72 | 0.1+ | 0.4− | 2003 08 18 | 170 | 0.7− | 0.1+ | | | | |
| 2003 04 08 | 941 | 0.8+ | 0.3+ | 2003 05 04 | H72 | 0.2− | 1.2− | 2003 08 20 | 859 | 0.5+ | 0.1− | | | | |
| 2003 04 08 | 941 | 0.9+ | 0.3+ | 2003 05 04 | H72 | 0.1− | 0.5− | 2003 08 20 | 859 | 1.3+ | 0.3+ | | | | |
| 2003 04 08 | 941 | 1.2+ | 0.2+ | 2003 05 04 | H72 | 0.7− | 0.2+ | 2003 08 20 | 859 | 0.9+ | 1.0+ | | | | |
| 2003 04 08 | 941 | 1.3+ | 0.2+ | 2003 05 04 | H72 | 0.9+ | 1.4− | 2003 08 23 | 859 | (0.7− | 1.5+) | | | | |
| 2003 04 09 | 246 | 0.1− | 0.5+ | 2003 05 04 | H72 | (0.4+ | 1.9−) | 2003 08 23 | 859 | 0.5− | 0.1− | | | | |
| 2003 04 09 | 246 | 0.5− | 0.8+ | 2003 05 04 | H72 | 0.2+ | 0.6− | 2003 08 23 | 859 | 1.0+ | 0.0 | | | | |
| 2003 04 09 | 246 | 0.2− | 0.5+ | 2003 05 04 | 552 | 0.7+ | 0.0 | 2003 08 27 | 204 | 0.9+ | 0.7+ | | | | |
| 2003 04 09 | 246 | 0.3− | 0.1+ | 2003 05 04 | 552 | 0.1+ | 0.1+ | 2003 08 27 | 204 | 0.8+ | 1.2− | | | | |
| 2003 04 12 | 474 | 0.2+ | 0.1+ | 2003 05 04 | 552 | 0.2+ | 0.1− | 2003 08 27 | 204 | (0.7− | 1.9+) | | | | |
| 2003 04 12 | 474 | 0.3+ | 0.3+ | 2003 05 04 | 552 | 0.2+ | 0.3+ | 2003 08 30 | 941 | 0.8− | 0.3+ | | | | |
| 2003 04 12 | 474 | 0.2+ | 0.0 | 2003 05 04 | 552 | 0.1− | 0.0 | 2003 08 30 | 941 | 0.7− | 0.1+ | | | | |
| 2003 04 14 | 413 | 0.3− | 0.1+ | 2003 05 04 | 552 | 0.1+ | 0.7+ | 2003 08 30 | 941 | 0.7− | 0.0 | | | | |
| 2003 04 14 | 413 | 0.3− | 0.4+ | 2003 05 04 | 552 | 0.1+ | 0.6+ | 2003 08 30 | 941 | 0.8− | 0.2− | | | | |
| 2003 04 14 | 413 | 0.0 | 0.1+ | 2003 05 04 | 552 | 0.4+ | 0.2+ | 2003 09 03 | 704 | 0.5+ | 0.3− | | | | |
| 2003 04 15 | 649 | 0.8− | 0.5− | 2003 05 04 | 552 | 0.5+ | 0.5+ | 2003 09 03 | 704 | 0.3− | 0.2+ | | | | |
| 2003 04 15 | 649 | 1.3− | 0.7− | 2003 05 05 | 240 | 0.6+ | 0.0 | 2003 09 03 | 704 | 0.5− | 0.5+ | | | | |
| 2003 04 15 | 649 | 0.5− | 1.0− | 2003 05 05 | 240 | 0.1+ | 0.0 | 2003 09 03 | 704 | 0.5− | 0.0 | | | | |
| 2003 04 15 | 413 | 0.1− | 0.2+ | 2003 05 05 | 240 | 0.0 | 0.2+ | 2003 09 03 | 704 | 0.3− | 0.0 | | | | |
| 2003 04 15 | 413 | 0.1+ | 0.0 | 2003 05 05 | 240 | 0.0 | 0.1− | 2003 09 18 | 704 | 1.0+ | 0.4− | | | | |
| 2003 04 15 | 413 | 0.1− | 0.1+ | 2003 05 05 | 240 | 0.3− | 0.4+ | 2003 09 18 | 704 | 0.0 | 0.3− | | | | |
| 2003 04 21 | 170 | 0.6+ | 0.2− | 2003 05 05 | 240 | 0.2− | 0.4+ | 2003 09 18 | 704 | 0.2+ | 0.9+ | | | | |
| 2003 04 21 | 170 | 0.4+ | 0.1− | 2003 05 05 | 240 | 0.4− | 0.3+ | 2003 09 18 | 704 | 1.3− | 0.8− | | | | |
| 2003 04 21 | 170 | 0.5+ | 0.0 | 2003 05 08 | H72 | 1.0− | 0.8− | 2003 09 18 | 113 | 0.2+ | 0.2− | | | | |
| 2003 04 21 | 170 | 0.4+ | 0.0 | 2003 05 08 | H72 | 0.9− | 0.3+ | 2003 09 18 | 113 | 0.6+ | 0.3+ | | | | |
| 2003 04 21 | 413 | 0.1+ | 0.1− | 2003 05 08 | H72 | 1.3− | 0.5+ | 2003 09 18 | 113 | 0.2+ | 0.5+ | | | | |
| 2003 04 21 | 413 | 0.1+ | 0.2− | 2003 05 08 | H72 | (28.3+ | 17.4+) | 2003 09 18 | 113 | 0.4− | 0.1+ | | | | |
| 2003 04 21 | 413 | 0.0 | 0.2− | 2003 05 08 | H72 | (16.3+ | 4.3+) | 2003 09 27 | 691 | 0.1− | 0.3+ | | | | |
| 2003 04 22 | 413 | 0.2+ | 0.2+ | 2003 05 11 | 941 | 0.5− | 0.3− | 2003 09 27 | 691 | 0.1+ | 0.2+ | | | | |
| 2003 04 22 | 413 | 0.1+ | 0.1+ | 2003 05 11 | 941 | 0.7− | 0.1− | 2003 09 27 | 691 | 0.1+ | 0.1− | | | | |
| 2003 04 22 | 413 | 0.2+ | 0.1+ | 2003 05 11 | 941 | 0.2− | 0.3+ | 2006 09 26 | 693 | 0.2− | 0.3+ | | | | |
| 2003 04 23 | 587 | 0.9− | 1.0+ | 2003 05 11 | 941 | 0.2− | 0.7− | 2006 09 26 | 693 | 0.5+ | 0.2+ | | | | |
| 2003 04 23 | 587 | 0.3− | 0.4+ | 2003 05 12 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 693 | 0.1+ | 0.2+ | | | | |
| 2003 04 23 | 587 | 0.3+ | 0.6+ | 2003 05 12 | 704 | 0.3+ | 0.0 | 2006 09 26 | 693 | 0.4− | 0.3+ | | | | |
| 2003 04 25 | 118 | 0.3+ | 0.9+ | 2003 05 12 | 704 | 0.5+ | 0.5+ | 2006 09 27 | 291 | 0.7− | 0.1+ | | | | |
| 2003 04 25 | 118 | 0.6+ | 0.1+ | 2003 05 12 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 291 | 0.4− | 0.9+ | | | | |
| 2003 04 25 | 118 | 0.2− | 0.2− | 2003 05 12 | 704 | 0.3+ | 0.5+ | 2006 09 27 | 291 | 0.2− | 0.2+ | | | | |
| 2003 04 25 | 118 | 0.1+ | 0.2+ | 2003 05 13 | 938 | 0.5− | 0.2− | 2006 09 27 | 693 | 0.2− | 0.2+ | | | | |
| 2003 04 25 | 699 | 0.6− | 0.0 | 2003 05 13 | 938 | 0.1+ | 0.5+ | 2006 09 27 | 693 | 0.2− | 0.3+ | | | | |
| 2003 04 25 | 699 | 0.2− | 0.4+ | 2003 05 13 | 938 | (1.6− | 0.4−) | 2006 09 27 | 693 | 0.4− | 0.1+ | | | | |
| 2003 04 25 | 699 | 0.6− | 0.2+ | 2003 05 13 | 938 | 1.4+ | 0.3− | 2006 10 16 | 693 | 0.0 | 0.2+ | | | | |
| 2003 04 25 | 699 | 0.4− | 0.2+ | 2003 05 13 | 938 | 0.0 | 0.6+ | 2006 10 16 | 693 | 0.2− | 0.1+ | | | | |
| 2003 04 25 | 246 | 0.6− | 0.4− | 2003 05 18 | 859 | (2.0− | 0.1+) | 2006 10 16 | 693 | 0.8+ | 0.3+ | | | | |
| 2003 04 26 | 246 | 0.2− | 0.2− | 2003 05 18 | 859 | 0.3+ | 0.8− | 2006 10 16 | 693 | 0.3− | 0.3+ | | | | |
| 2003 04 26 | 246 | 0.5− | 0.2− | 2003 05 21 | 649 | 0.6− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.2− | | | | |
| 2003 04 26 | 246 | 0.6− | 0.1− | 2003 05 21 | 649 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.8+ | 0.4+ | | | | |
| 2003 04 26 | 246 | 0.1− | 0.2+ | 2003 05 21 | 649 | 0.2− | 0.6+ | 2006 10 19 | 691 | 0.3− | 0.9+ | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 27 | 170 | 0.1− | 0.1+ | 2003 05 24 | 118 | 1.0+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.1− | | |
| 2003 04 27 | 170 | 1.0− | 0.6− | 2003 05 24 | 118 | 1.1+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.9+ | | |
| 2003 04 27 | 170 | 0.2− | 0.0 | 2003 05 24 | 118 | 1.1− | 0.9− | | | | | | |
| 2003 04 27 | 704 | 0.2+ | 1.5+ | 2003 05 24 | 118 | 0.3+ | 0.9+ | | | | | | |

## 2003 $GM_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.77446 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17100799 | $\omega$ | 166.63080 | | −0.96953447 | +0.19494873 | |
| $a$ | 3.2145864 | $\Omega$ | 26.07970 | | −0.24407088 | −0.71743011 | |
| $e$ | 0.0911700 | $i$ | 19.71699 | | −0.02079214 | −0.66879671 | |
| $P$ | 5.76 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.5− | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 2001 12 18 | 704 | 0.9+ | 0.7− | 2006 09 23 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2001 12 18 | 704 | 0.0 | 0.6− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2003 02 01 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.4− | | |
| 2003 02 01 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.3− | 2006 10 27 | 691 | 0.3− | 0.3− | | |
| 2003 02 01 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.5− | | |
| 2003 02 21 | 644 | 0.5+ | 1.1+ | 2006 09 27 | 704 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2003 02 21 | 644 | 0.2− | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1+ | | |
| 2003 02 21 | 644 | 0.6+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2003 03 09 | 644 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.5+ | | |
| 2003 03 09 | 644 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2− | 0.7+ | | |
| 2003 03 09 | 644 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.2+ | | |
| 2003 03 22 | 644 | 0.4+ | 0.6− | 2006 10 01 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.6− | 0.4− | | |
| 2003 03 22 | 644 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.2+ | | |
| 2003 03 22 | 644 | 0.1− | 0.8− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.4− | | |
| 2003 04 02 | 644 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 1.5− | | |
| 2003 04 02 | 644 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.0 | 0.0 | | |
| 2003 04 02 | 644 | 0.1− | 0.5− | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.5− | | |
| 2003 04 02 | 644 | 0.2+ | 0.6+ | 2006 10 15 | 691 | 0.4+ | 0.4− | 2006 11 13 | G96 | 0.6+ | 0.2+ | | |
| 2003 04 02 | 644 | 0.0 | 1.0− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2003 04 02 | 644 | 0.3+ | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.2+ | | |
| 2003 04 05 | 704 | (1.2− | 2.0+) | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.5− | 0.6+ | | |
| 2003 04 05 | 704 | (0.3− | 2.2+) | 2006 10 21 | 703 | 0.8+ | 0.8− | 2006 11 16 | 691 | 0.2+ | 0.2+ | | |
| 2003 04 05 | 704 | (1.5− | 2.0+) | 2006 10 21 | 703 | 1.2+ | 0.6− | 2006 11 20 | G96 | 0.6− | 0.1− | | |
| 2003 04 08 | 644 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.5− | 0.1− | 2006 11 20 | G96 | 0.1− | 0.1− | | |
| 2003 04 08 | 644 | 0.2− | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.8+ | 2006 11 20 | G96 | 0.2+ | 0.2+ | | |
| 2003 04 08 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.4− | 0.2− | | |
| 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | | | | | |
| 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | | | | | |

## 2003 $GE_{18}$ = 2000 $TE_{23}$ = 2006 $VP_{100}$

Id. Minor Planet Center (*MPO* 47519, unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.14111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17508317 | $\omega$ | 248.56471 | | +0.13879921 | −0.98960255 | |
| $a$ | 3.1645098 | $\Omega$ | 193.62049 | | +0.95753593 | +0.14382207 | |
| $e$ | 0.0863116 | $i$ | 9.21318 | | +0.25270482 | −0.00141962 | |
| $P$ | 5.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.1+ | 0.1− | 2003 04 07 | 291 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.4+ | 0.0 | | |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2003 04 08 | 691 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.5+ | | |
| 2000 10 01 | 704 | 0.3− | 0.5+ | 2003 04 08 | 691 | 0.2− | 0.6− | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2000 10 01 | 704 | 0.2+ | 0.3+ | 2003 04 08 | 691 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.8− | 0.0 | | |
| 2000 10 01 | 704 | 0.6− | 0.7+ | 2003 04 25 | 691 | 0.7− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2000 10 03 | 704 | 0.4− | 1.1+ | 2003 04 25 | 691 | 0.5− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2000 10 03 | 704 | 0.6+ | 1.9+ | 2003 04 25 | 691 | 1.0− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2000 10 03 | 704 | 0.9− | 1.6+ | 2003 05 05 | 691 | 1.5+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 2000 10 03 | 704 | 0.8− | 0.8+ | 2003 05 05 | 691 | 0.9+ | 0.4− | 2006 11 11 | 703 | 0.7− | 0.2+ | | |
| 2000 10 03 | 704 | 0.0 | 0.0 | 2003 05 05 | 691 | 1.2+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.2+ | | |
| 2000 10 03 | 704 | 0.1− | 0.6+ | 2005 08 24 | 644 | 0.3− | 0.8+ | 2006 11 11 | 703 | 0.3+ | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.3+ | 0.1− | 2005 08 24 | 644 | 0.0 | 1.0+ | 2006 11 17 | G96 | 0.0 | 0.4+ | | |
| 2003 03 27 | 644 | 0.2− | 0.2+ | 2005 08 24 | 644 | 0.1+ | 1.1+ | 2006 11 17 | G96 | 0.1− | 0.4+ | | |
| 2003 03 27 | 644 | 0.0 | 0.0 | 2005 11 01 | G96 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.4+ | | |
| 2003 03 27 | 644 | 0.7− | 0.3+ | 2005 11 01 | G96 | 0.5− | 0.5+ | 2006 11 17 | G96 | 0.5+ | 0.4+ | | |
| 2003 04 04 | 691 | 0.0 | 1.4+ | 2005 11 01 | G96 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1+ | | |
| 2003 04 04 | 691 | 0.3− | 0.8+ | 2005 11 01 | G96 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.0 | | |
| 2003 04 04 | 691 | 0.1− | 0.9+ | 2006 10 03 | G96 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.1+ | | |
| 2003 04 07 | 291 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.0 | | |
| 2003 04 07 | 291 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.6+ | 0.1+ | | | | | | |

**2003 GZ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.17173 | | | (2000.0) | | |
| $n$ | 0.29624751 | $\omega$ | 160.20523 | | −0.97935849 | −0.20207541 |
| $a$ | 2.2286040 | $\Omega$ | 8.14079 | | +0.18065041 | −0.88556102 |
| $e$ | 0.1153420 | $i$ | 1.91830 | | +0.09067728 | −0.41826692 |
| $P$ | 3.33 | $H$ | 18.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 691 | 0.2− | 0.3+ | 2006 01 20 | 291 | 0.1+ | 0.1− | 2006 01 28 | G96 | 0.1+ | 0.3− | |
| 2003 04 04 | 691 | 0.1− | 0.5+ | 2006 01 20 | 291 | 0.0 | 0.0 | 2006 02 06 | 691 | 0.1− | 0.1− | |
| 2003 04 04 | 691 | 0.1− | 0.2+ | 2006 01 20 | 291 | 0.1− | 0.2− | 2006 02 06 | 691 | 0.0 | 0.2+ | |
| 2003 04 07 | 291 | 0.3+ | 0.3− | 2006 01 20 | 291 | 0.1+ | 0.2+ | 2006 02 06 | 691 | 0.4− | 0.1+ | |
| 2003 04 07 | 291 | 0.3+ | 0.2− | 2006 01 20 | 291 | 0.1+ | 0.2+ | 2006 02 20 | 691 | 0.3+ | 0.4− | |
| 2003 04 07 | 291 | 0.2+ | 0.2− | 2006 01 20 | 291 | 0.2+ | 0.1+ | 2006 02 20 | 691 | 0.1− | 0.0 | |
| 2003 04 25 | 691 | 0.4− | 0.4− | 2006 01 28 | G96 | 0.1− | 0.1+ | 2006 02 20 | 691 | 0.0 | 0.1+ | |
| 2003 04 25 | 691 | 0.2− | 0.2+ | 2006 01 28 | G96 | 0.1+ | 0.2− | | | | | |
| 2003 04 25 | 691 | 0.3+ | 0.1− | 2006 01 28 | G96 | 0.2− | 0.4− | | | | | |

**2003 GM$_{27}$ = 2006 TJ$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 289.96036 | | | (2000.0) | | |
| $n$ | 0.18024705 | $\omega$ | 277.19245 | | −0.42017162 | −0.90654993 |
| $a$ | 3.1037777 | $\Omega$ | 197.81993 | | +0.87584874 | −0.39352882 |
| $e$ | 0.1330400 | $i$ | 7.56468 | | +0.23737060 | −0.15265091 |
| $P$ | 5.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 07 | 291 | 0.0 | 0.2+ | 2003 04 26 | 291 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.1− | |
| 2003 04 07 | 291 | 0.1− | 0.0 | 2003 04 26 | 291 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.0 | |
| 2003 04 07 | 291 | 0.2− | 0.3+ | 2006 10 14 | D35 | 0.5+ | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.3− | |
| 2003 04 08 | 691 | 0.1− | 0.2− | 2006 10 14 | D35 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3− | |
| 2003 04 08 | 691 | 0.4− | 0.2+ | 2006 10 14 | D35 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.0 | |
| 2003 04 08 | 691 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− | |
| 2003 04 25 | 691 | 0.1+ | 0.4− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.3− | |
| 2003 04 25 | 691 | 0.2+ | 0.4− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.6+ | 0.0 | |
| 2003 04 25 | 691 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.1− | |
| 2003 04 26 | 291 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− | | | | | |

**2003 GD$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.16395 | | | (2000.0) | | |
| $n$ | 0.30444573 | $\omega$ | 258.43932 | | −0.22204288 | +0.97503350 |
| $a$ | 2.1884139 | $\Omega$ | 358.72303 | | −0.84346114 | −0.19340457 |
| $e$ | 0.1146765 | $i$ | 6.63967 | | −0.48915259 | −0.10910709 |
| $P$ | 3.24 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 704 | 0.6+ | 0.6− | 2006 01 23 | 691 | 0.4− | 0.2+ | 2006 03 03 | 699 | 1.1+ | 0.5− | |
| 2003 03 31 | 704 | 0.1+ | 0.2− | 2006 02 01 | 691 | 0.2+ | 0.1+ | 2006 05 04 | G96 | 0.1− | 0.6− | |
| 2003 03 31 | 704 | 0.4+ | 0.7+ | 2006 02 01 | 691 | 0.1+ | 0.1− | 2006 05 04 | G96 | 0.5− | 0.4− | |
| 2003 04 07 | 704 | 0.3+ | 0.0 | 2006 02 01 | 691 | 0.1+ | 0.2− | 2006 05 04 | G96 | 1.2+ | 1.1− | |
| 2003 04 07 | 704 | 0.5− | 0.7− | 2006 02 20 | 703 | 0.9− | 0.5− | 2006 05 04 | G96 | 0.4− | 0.4+ | |
| 2003 04 07 | 704 | 0.5+ | 0.4− | 2006 02 20 | 703 | 0.3− | 0.2+ | 2006 05 24 | G96 | 0.6− | 0.1+ | |
| 2003 04 08 | 691 | 0.1− | 0.5+ | 2006 02 20 | 703 | 0.1− | 0.2− | 2006 05 24 | G96 | 0.3− | 0.1+ | |
| 2003 04 08 | 691 | 0.0 | 0.0 | 2006 02 20 | 703 | 1.0− | 0.2− | 2006 05 24 | G96 | 0.1− | 0.2− | |
| 2003 04 08 | 691 | 0.1− | 0.0 | 2006 03 03 | 699 | 0.8− | 0.6+ | 2006 05 24 | G96 | 0.4− | 0.3− | |
| 2006 01 23 | 691 | 0.0 | 0.1− | 2006 03 03 | 699 | 1.7+ | 1.1+ | | | | | |
| 2006 01 23 | 691 | 0.0 | 0.3+ | 2006 03 03 | 699 | 0.2+ | 0.6− | | | | | |

**2003 GO$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 101.91459 | | | (2000.0) | | |
| $n$ | 0.17720093 | $\omega$ | 138.96892 | | +0.93214913 | +0.35846588 |
| $a$ | 3.1392463 | $\Omega$ | 200.20024 | | −0.35863029 | +0.89470066 |
| $e$ | 0.1079093 | $i$ | 8.49216 | | −0.04982281 | +0.26648253 |
| $P$ | 5.56 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 03 | 807 | 0.3− | 0.1+ | 2003 04 06 | 807 | 0.2− | 0.3+ | 2005 10 29 | G96 | 0.2− | 0.1− | |
| 2003 04 03 | 807 | 0.1− | 0.3+ | 2005 10 11 | 691 | 0.1+ | 0.1− | 2005 10 29 | G96 | 0.2+ | 0.2+ | |
| 2003 04 04 | 807 | 0.0 | 0.1− | 2005 10 11 | 691 | 0.2+ | 0.0 | 2005 10 29 | G96 | 0.1+ | 0.6− | |
| 2003 04 04 | 807 | 1.0− | 0.6+ | 2005 10 11 | 691 | 0.1− | 0.0 | 2005 10 29 | G96 | 0.1− | 0.1− | |
| 2003 04 04 | 807 | 1.3− | 0.3− | 2005 10 22 | 703 | 0.2− | 0.4+ | 2005 10 29 | G96 | 0.2+ | 0.0 | |
| 2003 04 04 | 807 | 0.3+ | 0.3− | 2005 10 22 | 703 | 1.0− | 0.1+ | 2005 10 29 | G96 | 0.3+ | 0.0 | |
| 2003 04 06 | 807 | 0.9+ | 0.3− | 2005 10 22 | 703 | 0.2+ | 0.4− | 2005 10 29 | G96 | 0.2− | 0.1+ | |
| 2003 04 06 | 807 | 1.8+ | 0.6− | 2005 10 22 | 703 | 0.0 | 1.0+ | | | | | |
| 2003 04 06 | 807 | 0.2− | 0.4+ | 2005 10 29 | G96 | 0.1− | 0.3− | | | | | |

**2003 GM$_{35}$ = 2006 WP$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 257.03596 | | | (2000.0) | | |
| $n$ | 0.19245868 | $\omega$ | 132.74914 | | −0.98152082 | −0.14902184 |
| $a$ | 2.9710574 | $\Omega$ | 39.13347 | | +0.06445363 | −0.84811698 |
| $e$ | 0.1599709 | $i$ | 10.96429 | | +0.18017381 | −0.50841919 |
| $P$ | 5.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 644 | 0.1+ | 0.2− | 2003 04 09 | 704 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− | |
| 2003 03 26 | 644 | 0.3+ | 0.1− | 2003 04 09 | 691 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.1− | 0.1+ | |
| 2003 03 26 | 644 | 0.1− | 0.2− | 2003 04 09 | 704 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.0 | 0.1− | |
| 2003 04 07 | 644 | 0.2− | 0.2+ | 2003 04 09 | 704 | 0.7− | 0.9+ | 2006 11 17 | G96 | 0.8− | 0.3+ | |
| 2003 04 07 | 644 | 0.3− | 0.2+ | 2003 04 09 | 704 | 0.7− | 1.3+ | 2006 11 21 | G96 | 0.3− | 0.2− | |
| 2003 04 07 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.2− | |
| 2003 04 09 | 691 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.2+ | |
| 2003 04 09 | 691 | 0.1+ | 0.5− | 2006 10 20 | G96 | 0.6+ | 0.1+ | | | | | |
| 2003 04 09 | 704 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.5− | 0.4+ | | | | | |

**2003 GV$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 219.76147 | | | (2000.0) | | |
| $n$ | 0.23745185 | $\omega$ | 197.50828 | | +0.24131465 | +0.95139696 |
| $a$ | 2.5827697 | $\Omega$ | 86.78480 | | −0.86586142 | +0.30011868 |
| $e$ | 0.1867667 | $i$ | 11.04862 | | −0.43823650 | −0.06908407 |
| $P$ | 4.15 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 23 | 691 | 0.2− | 0.7− | 2003 04 05 | 699 | 0.4− | 0.7+ | 2004 09 15 | E12 | 0.7− | 0.3− | |
| 1992 10 23 | 691 | 0.3+ | 0.2+ | 2003 04 05 | 699 | 0.9− | 0.3+ | 2004 09 15 | E12 | 0.1+ | 0.2+ | |
| 1992 10 23 | 691 | 0.0 | 0.2− | 2003 04 09 | 644 | 0.2+ | 0.5+ | 2004 09 17 | 699 | 0.3− | 0.4+ | |
| 2000 09 30 | 699 | 0.2− | 0.9+ | 2003 04 09 | 644 | 0.8+ | 0.0 | 2004 09 17 | 699 | 0.2+ | 1.2+ | |
| 2000 09 30 | 699 | 0.6− | 0.2+ | 2003 04 09 | 644 | 0.4+ | 0.2− | 2004 09 17 | 699 | 0.9− | 1.0+ | |
| 2000 09 30 | 699 | 0.6+ | 0.7+ | 2004 08 15 | 644 | 0.0 | 0.3− | 2004 09 17 | 699 | 0.2+ | 0.9+ | |
| 2000 09 30 | 699 | 1.3+ | 0.7+ | 2004 08 15 | 644 | 0.0 | 0.6− | 2004 10 09 | 644 | 0.7− | 0.2+ | |
| 2003 03 12 | 644 | 0.2+ | 0.2+ | 2004 08 15 | 644 | 0.3− | 0.3− | 2004 10 09 | 644 | 0.5− | 0.2+ | |
| 2003 03 12 | 644 | 1.0+ | 0.8+ | 2004 09 07 | 704 | 0.7+ | 0.3− | 2004 10 09 | 644 | 0.5− | 0.7+ | |
| 2003 03 12 | 644 | 0.3+ | 0.2− | 2004 09 07 | 704 | 0.3− | 0.4− | 2006 01 25 | G96 | 0.1+ | 0.2+ | |
| 2003 03 12 | 644 | 0.8+ | 1.1+ | 2004 09 07 | 704 | 0.4+ | 0.3− | 2006 01 25 | G96 | 0.5+ | 0.2+ | |
| 2003 03 12 | 644 | 0.5+ | 0.4+ | 2004 09 07 | 704 | 0.2− | 0.1− | 2006 01 25 | G96 | 0.2− | 0.6+ | |
| 2003 03 12 | 644 | 0.8+ | 0.9+ | 2004 09 07 | 704 | 0.1+ | 0.7+ | 2006 01 25 | G96 | 0.3− | 0.8+ | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 699 | 1.2− | 1.4− | 2004 09 15 | E12 | 0.0 | 0.4+ | |
| 2003 04 05 | 699 | 1.0− | 0.6+ | 2004 09 15 | E12 | 0.2− | 0.0 | |

**2003 GM$_{37}$ = 2006 RF$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.09137 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17895124 | $\omega$ | 105.35778 | | −0.49412844 | | −0.86052149 |
| $a$ | 3.1187429 | $\Omega$ | 16.12445 | | +0.52217603 | | −0.40766059 |
| $e$ | 0.2053313 | $i$ | 26.48480 | | +0.69510379 | | −0.30547603 |
| $P$ | 5.51 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 27 | 704 | 0.6− | 0.4+ | 2003 04 09 | 644 | 0.6+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2001 11 27 | 704 | 0.4+ | 0.3− | 2003 04 09 | 644 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.4+ |
| 2001 11 27 | 704 | 0.0 | 0.1+ | 2003 04 20 | 608 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2003 03 31 | 704 | (0.1+ | 2.3+) | 2003 04 20 | 608 | 0.5+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2003 03 31 | 704 | 0.8+ | 0.2+ | 2003 04 20 | 608 | 0.6+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2003 03 31 | 704 | 0.3− | 0.1− | 2003 04 28 | 699 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.3− |
| 2003 03 31 | 704 | 0.3+ | 0.6+ | 2003 04 28 | 699 | 0.9+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2003 04 06 | 691 | 0.2− | 0.1− | 2003 04 28 | 699 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2003 04 06 | 691 | 0.2− | 0.1+ | 2003 04 28 | 699 | 1.1+ | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2003 04 06 | 691 | 0.4+ | 0.1+ | 2003 04 29 | 704 | 0.3− | 1.2+ | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2003 04 07 | 704 | 0.8+ | 1.2− | 2003 04 29 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2003 04 07 | 704 | 0.3− | 0.1− | 2003 04 29 | 704 | (2.3+ | 0.1−) | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2003 04 07 | 704 | 0.3− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.6+ | 0.2− |
| 2003 04 07 | 704 | 0.1− | 0.3− | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.5− | 0.0 |
| 2003 04 07 | 704 | 0.1− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 1.1− | 0.0 |
| 2003 04 09 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.1+ | | | | |

**2003 GO$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.47168 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18001415 | $\omega$ | 82.28755 | | −0.95503669 | | +0.16885790 |
| $a$ | 3.1064542 | $\Omega$ | 107.18739 | | −0.24269751 | | −0.91737938 |
| $e$ | 0.1366049 | $i$ | 14.77929 | | +0.17030220 | | −0.36041933 |
| $P$ | 5.48 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 03 | 608 | 0.6+ | 0.1+ | 2003 04 09 | 644 | 0.2− | 0.1+ | 2003 04 24 | 704 | 0.0 | 0.2− |
| 2003 02 03 | 608 | 0.0 | 0.4− | 2003 04 09 | 644 | 0.2− | 0.0 | 2003 04 24 | 704 | 0.8+ | 0.1− |
| 2003 02 03 | 608 | 0.9+ | 0.3+ | 2003 04 09 | 644 | 0.2− | 0.1+ | 2003 04 24 | 704 | 0.1+ | 0.1− |
| 2003 02 28 | 704 | 0.1+ | 0.4+ | 2003 04 09 | 608 | 0.4− | 0.2+ | 2003 04 24 | 704 | 0.3+ | 0.2+ |
| 2003 02 28 | 704 | 0.3− | 1.4− | 2003 04 09 | 608 | 0.4− | 0.2+ | 2006 10 30 | 703 | 0.4+ | 0.0 |
| 2003 02 28 | 704 | 0.2− | 1.1− | 2003 04 09 | 608 | 1.2− | 0.0 | 2006 10 30 | 703 | 1.1− | 1.1+ |
| 2003 03 27 | 106 | 0.2+ | 0.4+ | 2003 04 10 | 704 | 0.3+ | 0.5+ | 2006 10 30 | 703 | 0.0 | 1.2+ |
| 2003 03 27 | 106 | 0.2− | 0.0 | 2003 04 10 | 704 | 0.1− | 0.1− | 2006 10 30 | 703 | 0.2− | 0.7− |
| 2003 03 27 | 106 | 0.5− | 1.1+ | 2003 04 10 | 704 | 0.6− | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.6− |
| 2003 04 04 | 608 | 0.5+ | 0.4− | 2003 04 10 | 704 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2003 04 04 | 608 | 0.5+ | 0.1− | 2003 04 10 | 704 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2003 04 04 | 608 | 1.0+ | 0.1− | 2003 04 24 | 704 | 0.6− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.2− |

**2003 GQ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.83752 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23386462 | $\omega$ | 80.68273 | | −0.95117451 | | +0.19087052 |
| $a$ | 2.6091138 | $\Omega$ | 110.02003 | | −0.26121790 | | −0.91642326 |
| $e$ | 0.1718501 | $i$ | 14.96092 | | +0.16441489 | | −0.35176250 |
| $P$ | 4.21 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 291 | 0.4+ | 0.1+ | 2003 03 26 | 704 | 0.0 | 0.1+ | 2003 04 24 | 704 | 0.3− | 0.2+ |
| 2001 10 21 | 291 | 0.6− | 0.9− | 2003 04 09 | 644 | 0.3− | 0.3− | 2003 04 24 | 704 | 0.1+ | 0.2− |
| 2001 10 21 | 291 | 0.3+ | 0.4+ | 2003 04 09 | 644 | 0.0 | 0.1− | 2003 04 24 | 704 | 0.0 | 0.3− |
| 2002 12 11 | 645 | 0.0 | 0.1+ | 2003 04 09 | 644 | 0.2+ | 0.1− | 2003 04 24 | 704 | 0.2+ | 0.4+ |
| 2002 12 11 | 645 | 0.1− | 0.2+ | 2003 04 09 | 608 | 0.4+ | 0.9− | 2006 10 22 | 691 | 0.4+ | 0.2− |
| 2003 03 08 | 704 | 0.1+ | 0.2+ | 2003 04 09 | 608 | 0.1− | 1.3− | 2006 10 22 | 691 | 0.5+ | 0.2+ |
| 2003 03 08 | 704 | 1.0− | 0.4+ | 2003 04 09 | 608 | 0.5+ | 1.0− | 2006 10 22 | 691 | 0.2+ | 0.5− |
| 2003 03 08 | 704 | 0.0 | 1.1− | 2003 04 10 | 704 | 1.3+ | 0.2+ | 2006 11 25 | G96 | 1.6− | 0.4+ |
| 2003 03 08 | 704 | 0.5− | 0.3+ | 2003 04 10 | 704 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.5− | 0.1+ |
| 2003 03 26 | 704 | 0.1− | 0.3− | 2003 04 10 | 704 | 0.2+ | 0.5− | 2006 11 25 | G96 | 0.9− | 0.2− |
| 2003 03 26 | 704 | 0.2+ | 0.2− | 2003 04 10 | 704 | 0.4+ | 0.1− | 2006 11 25 | G96 | 0.4− | 0.2+ |
| 2003 03 26 | 704 | 0.4− | 0.4− | 2003 04 10 | 704 | 0.4− | 0.0 | | | | |
| 2003 03 26 | 704 | 0.1+ | 0.1− | 2003 04 24 | 704 | 0.2+ | 1.0+ | | | | |

**2003 GL$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.38588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18000725 | $\omega$ | 334.73943 | | −0.42367763 | | −0.86083333 |
| $a$ | 3.1065335 | $\Omega$ | 138.63477 | | +0.88652006 | | −0.45795072 |
| $e$ | 0.1535269 | $i$ | 25.24919 | | +0.18595550 | | +0.22191691 |
| $P$ | 5.48 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 704 | 0.1+ | 0.1+ | 2003 04 01 | 699 | (1.8− | 0.1+) | 2006 09 22 | 703 | (2.5− | 0.7+) |
| 2003 03 08 | 704 | 0.8+ | 0.7− | 2003 04 01 | 699 | 0.8− | 0.7+ | 2006 09 22 | 703 | 0.8− | 0.0 |
| 2003 03 08 | 704 | 1.1+ | 0.2− | 2003 04 01 | 699 | 0.3+ | 0.5+ | 2006 09 22 | 703 | 0.1− | 0.8+ |
| 2003 03 26 | 704 | 0.1+ | 0.9− | 2003 04 08 | 644 | 0.1+ | 0.7+ | 2006 09 22 | 703 | 0.5+ | 1.2− |
| 2003 03 26 | 704 | 0.1+ | 1.1− | 2003 04 08 | 644 | 0.5+ | 0.7+ | 2006 09 27 | 703 | (1.3+ | 1.5+) |
| 2003 03 26 | 704 | 0.5− | 1.1− | 2003 04 08 | 644 | 0.2− | 0.6+ | 2006 09 27 | 703 | 0.4− | 0.3− |
| 2003 03 26 | 704 | 0.2+ | 0.4− | 2005 08 03 | 735 | 0.3− | 0.6− | 2006 09 27 | 703 | 1.0+ | 0.5+ |
| 2003 03 26 | 704 | 1.3− | 0.4− | 2005 08 03 | 735 | 0.2− | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.7− |
| 2003 04 01 | 699 | 0.7− | 0.4+ | 2005 08 03 | 735 | 0.5+ | 0.2− | | | | |

**2003 GS$_{55}$ = 2004 TM$_{180}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.20092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23396971 | $\omega$ | 51.59590 | | −0.60188296 | | +0.79857661 |
| $a$ | 2.6083325 | $\Omega$ | 181.41332 | | −0.76984721 | | −0.58138625 |
| $e$ | 0.1586533 | $i$ | 8.17586 | | −0.21230208 | | −0.15577365 |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 691 | 0.7− | 0.1+ | 2003 05 25 | 691 | 0.4− | 1.4+ | 2004 10 07 | 691 | 0.2− | 0.0 |
| 2003 04 05 | 691 | 0.7+ | 0.4+ | 2003 05 25 | 691 | 0.5− | 1.2+ | 2004 10 07 | 691 | 0.2− | 0.3− |
| 2003 04 05 | 691 | 0.6− | 0.2+ | 2003 05 25 | 691 | (3.7− | 1.1+) | 2004 10 07 | 691 | 0.2− | 0.0 |
| 2003 05 09 | 704 | 0.5+ | 0.2− | 2003 05 30 | 704 | 0.1+ | 0.1− | 2004 10 11 | 691 | 0.0 | 0.2+ |
| 2003 05 09 | 704 | 0.1+ | 0.7− | 2003 05 30 | 704 | 0.1− | 0.2− | 2004 10 11 | 691 | 0.4+ | 0.1+ |
| 2003 05 09 | 704 | 0.7+ | 0.6− | 2003 05 30 | 704 | 0.1+ | 0.4− | 2004 10 11 | 691 | 0.3+ | 0.1+ |
| 2003 05 09 | 704 | 0.5+ | 0.5− | 2003 05 30 | 704 | 0.5− | 0.6− | | | | |

**2003 GT$_{55}$ = 2005 YM$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.92431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28937100 | $\omega$ | 320.74795 | | −0.99875384 | | −0.00763469 |
| $a$ | 2.2637721 | $\Omega$ | 218.90067 | | +0.02399821 | | −0.93994897 |
| $e$ | 0.1606338 | $i$ | 4.50459 | | −0.04375913 | | −0.34122962 |
| $P$ | 3.41 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 13 | 691 | 0.4− | 0.6− | 2003 05 05 | 691 | 0.3− | 0.2+ | 2003 05 25 | 291 | 0.3− | 0.2− |
| 1996 03 13 | 691 | 0.0 | 1.1− | 2003 05 05 | 691 | 0.1− | 0.3+ | 2003 05 25 | 291 | 0.5− | 0.4− |
| 1996 03 13 | 691 | 0.5− | 0.8− | 2003 05 10 | 691 | 0.8+ | 0.9+ | 2005 12 27 | 691 | 0.1− | 0.2+ |
| 2003 04 07 | 704 | 0.2+ | 0.9+ | 2003 05 10 | 291 | 0.1− | 0.0 | 2005 12 27 | 691 | 0.1+ | 0.3+ |
| 2003 04 07 | 704 | 1.2+ | 0.8+ | 2003 05 10 | 691 | 0.3+ | 0.7+ | 2005 12 27 | 691 | 0.1+ | 0.2+ |
| 2003 04 07 | 704 | 1.8+ | 0.2+ | 2003 05 10 | 291 | 0.3− | 0.3− | 2006 01 04 | 691 | 0.2− | 0.6+ |
| 2003 04 07 | 704 | 1.4+ | 1.2− | 2003 05 10 | 691 | 0.4+ | 0.7+ | 2006 01 04 | 691 | 0.4+ | 0.3+ |
| 2003 04 07 | 704 | 0.8+ | 0.4+ | 2003 05 10 | 291 | 0.0 | 0.1− | 2006 01 04 | 691 | 0.1+ | 0.4+ |
| 2003 05 05 | 691 | 0.5− | 0.3+ | 2003 05 25 | 291 | 0.3− | 0.3− | | | | |

**2003 GU$_{55}$ = 2000 TG$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.61930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17663267 | $\omega$ | 263.15496 | | −0.04912505 | −0.99778597 | |
| $a$ | 3.1459757 | $\Omega$ | 189.99631 | | +0.98765987 | −0.04184545 | |
| $e$ | 0.1209932 | $i$ | 14.96747 | | +0.14871015 | −0.05169257 | |
| $P$ | 5.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.1+ | 1.9+ | 2003 04 11 | 691 | 0.6− | 1.9+ | 2005 09 12 | 691 | 0.3+ | 0.1+ |
| 2000 10 02 | 704 | 0.2+ | 0.8+ | 2003 04 11 | 691 | 0.8− | 2.4+ | 2005 09 12 | 691 | 0.6+ | 0.5− |
| 2000 10 02 | 704 | 0.3− | 0.5+ | 2003 04 29 | 691 | 0.1+ | 0.0 | 2005 09 12 | 691 | 0.3+ | 0.3+ |
| 2000 10 02 | 704 | 0.0 | 0.1− | 2003 04 29 | 691 | 0.1− | 0.1− | 2005 09 26 | 691 | 0.0 | 0.2+ |
| 2000 10 06 | 691 | 0.1− | 0.6+ | 2003 04 29 | 691 | 0.2+ | 0.2+ | 2005 09 26 | 691 | 0.0 | 0.2+ |
| 2000 10 06 | 691 | 0.1− | 0.5+ | 2003 05 06 | 691 | 0.2− | 0.1− | 2005 09 26 | 691 | 0.2− | 0.1+ |
| 2000 10 06 | 691 | 0.0 | 0.4+ | 2003 05 06 | 691 | 0.3− | 0.3− | 2005 09 30 | 703 | 2.0− | 0.6+ |
| 2002 02 07 | 608 | 1.5− | 0.8+ | 2003 05 06 | 691 | 0.5− | 0.3− | 2005 09 30 | 703 | 0.6− | 0.9+ |
| 2002 02 07 | 608 | 1.0− | 1.3+ | 2003 05 29 | 691 | 0.9+ | 0.7− | 2005 09 30 | 703 | 0.4− | 0.5+ |
| 2002 02 07 | 608 | 0.9− | 0.5+ | 2003 05 29 | 691 | 1.2+ | 1.0− | 2005 09 30 | 703 | 0.5− | 1.1+ |
| 2002 02 15 | 704 | 1.0+ | 0.1− | 2003 05 29 | 691 | 0.9+ | 0.7− | 2005 11 30 | G96 | 0.2+ | 0.0 |
| 2002 02 15 | 704 | 1.1+ | 0.2+ | 2005 08 08 | 807 | 0.2+ | 0.1− | 2005 11 30 | G96 | 0.2− | 0.2+ |
| 2002 02 15 | 704 | 0.0 | 0.8+ | 2005 08 08 | 807 | 0.2+ | 0.0 | 2005 11 30 | G96 | 0.0 | 0.4+ |
| 2002 02 15 | 704 | 0.7+ | 1.1+ | 2005 08 29 | 691 | 0.2− | 0.3+ | 2005 11 30 | G96 | 0.5− | 0.1− |
| 2002 02 15 | 704 | 1.3+ | 1.1+ | 2005 08 29 | 691 | 0.1− | 0.1+ | | | | |
| 2003 04 11 | 691 | 0.3− | 1.9+ | 2005 08 29 | 691 | 0.2− | 0.3+ | | | | |

**2003 GV$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.84616 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23064482 | $\omega$ | 153.11374 | | +0.65877237 | +0.74592989 | |
| $a$ | 2.6333398 | $\Omega$ | 157.65148 | | −0.72829442 | +0.66495664 | |
| $e$ | 0.2260590 | $i$ | 14.93839 | | −0.18869608 | +0.03769969 | |
| $P$ | 4.27 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 049 | 0.3− | 0.1+ | 2003 04 28 | 645 | 0.0 | 0.1− | 2004 10 13 | 699 | 1.1+ | 0.0 |
| 2003 04 04 | 049 | 0.5+ | 0.9+ | 2004 10 07 | 704 | 0.7− | 0.8+ | 2004 10 18 | 704 | 0.4+ | 0.1− |
| 2003 04 04 | 049 | 0.4+ | 0.4+ | 2004 10 07 | 704 | 0.5− | 0.7− | 2004 10 18 | 704 | 0.1+ | 0.8− |
| 2003 04 09 | 704 | 0.4+ | 1.1+ | 2004 10 07 | 704 | 0.3− | 1.0+ | 2004 10 18 | 704 | 0.0 | 1.2− |
| 2003 04 09 | 704 | 0.5− | 0.9+ | 2004 10 07 | 704 | 0.9+ | 1.6+ | 2004 12 09 | 291 | 0.2+ | 0.1− |
| 2003 04 09 | 704 | 0.8+ | 0.3− | 2004 10 13 | 699 | 0.1+ | 0.2− | 2004 12 09 | 291 | 0.2+ | 0.1− |
| 2003 04 09 | 704 | 0.8+ | 0.6+ | 2004 10 13 | 699 | 1.4− | 0.5+ | 2004 12 09 | 291 | 0.2− | 0.1+ |
| 2003 04 28 | 645 | 0.0 | 0.0 | 2004 10 13 | 699 | 0.6− | 0.3+ | | | | |

**2003 GW$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.34570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18617657 | $\omega$ | 95.02782 | | −0.36020763 | −0.93195250 | |
| $a$ | 3.0375216 | $\Omega$ | 16.27350 | | +0.78660995 | −0.32729680 | |
| $e$ | 0.0596799 | $i$ | 8.49853 | | +0.50149302 | −0.15601711 | |
| $P$ | 5.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 1.6+ | 0.4+ | 2003 04 24 | 699 | 0.9− | 1.2+ | 2005 09 22 | 644 | 0.3+ | 0.5+ |
| 2000 10 01 | 704 | 0.1+ | 0.6+ | 2003 04 24 | 691 | 0.0 | 0.4+ | 2005 09 22 | 644 | 0.1+ | 0.2+ |
| 2000 10 01 | 704 | 0.3+ | 0.8+ | 2003 04 24 | 699 | 0.2− | 0.2− | 2005 09 23 | 703 | 1.2+ | 0.0 |
| 2000 10 01 | 704 | 1.8+ | 0.7+ | 2003 04 24 | 699 | (0.3− | 2.9−) | 2005 09 23 | 703 | 0.4− | 1.2+ |
| 2000 11 17 | 691 | 0.8− | 0.2+ | 2003 04 24 | 691 | 0.0 | 0.4+ | 2005 09 23 | 703 | 0.4− | 0.8+ |
| 2000 11 17 | 691 | 0.6− | 0.0 | 2003 05 08 | 691 | 0.5+ | 0.6+ | 2005 09 23 | 703 | 0.6+ | 2.7− |
| 2000 11 17 | 691 | 1.1− | 1.4+ | 2003 05 08 | 691 | 0.6+ | 0.7+ | 2005 10 11 | 691 | 0.7− | 0.2+ |
| 2002 02 03 | 644 | 0.1− | 1.1+ | 2003 05 08 | 691 | 0.6+ | 0.4+ | 2005 10 11 | 691 | 0.1− | 0.2+ |
| 2002 02 03 | 644 | 0.0 | 0.7+ | 2005 08 25 | 644 | 0.3− | 0.1− | 2005 10 11 | 691 | 0.3− | 0.7+ |
| 2002 02 03 | 644 | 0.0 | 1.2+ | 2005 08 25 | 644 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.0 | 0.5− |
| 2003 04 06 | 691 | 0.4+ | 0.4+ | 2005 08 25 | 644 | 0.3− | 0.2+ | 2005 12 01 | G96 | 0.3− | 0.3− |
| 2003 04 06 | 691 | 0.3+ | 0.3+ | 2005 08 29 | 691 | 0.3+ | 0.2+ | 2005 12 01 | G96 | 0.0 | 0.4− |
| 2003 04 06 | 691 | 0.1+ | 0.5− | 2005 08 29 | 691 | 0.1− | 0.3+ | 2005 12 01 | G96 | 0.2− | 0.3+ |
| 2003 04 24 | 691 | 0.1+ | 0.5+ | 2005 08 29 | 691 | 0.1− | 0.2− | | | | |
| 2003 04 24 | 699 | 0.8− | 0.1+ | 2005 09 22 | 644 | 0.2+ | 0.3+ | | | | |

**2003 HN**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.42629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.34159033 | $\omega$ | 64.26125 | | +0.12219340 | +0.98720324 | |
| $a$ | 2.0267445 | $\Omega$ | 213.25987 | | −0.96436279 | +0.09368410 | |
| $e$ | 0.5092525 | $i$ | 10.76761 | | −0.23467675 | +0.12904669 | |
| $P$ | 2.89 | $H$ | 19.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 644 | 0.5+ | 0.2− | 2003 05 03 | 151 | 0.6+ | 0.3− | 2003 05 16 | 118 | 1.0− | 0.7− |
| 2003 03 23 | 644 | 0.2+ | 0.2− | 2003 05 03 | 151 | 0.1+ | 0.3− | 2003 05 18 | 941 | 0.5− | 0.4− |
| 2003 03 23 | 644 | 0.2+ | 0.5− | 2003 05 03 | 170 | 1.0− | 0.3− | 2003 05 18 | 941 | 0.5− | 0.1− |
| 2003 03 30 | 644 | 0.1− | 0.0 | 2003 05 03 | 170 | 0.6− | 0.5− | 2003 05 18 | 941 | 0.3− | 0.5+ |
| 2003 03 30 | 644 | 0.4+ | 0.5− | 2003 05 03 | 170 | 0.2+ | 0.4− | 2003 05 18 | 941 | 0.2− | 1.0+ |
| 2003 04 23 | 608 | 0.9− | 0.8− | 2003 05 03 | 170 | 0.5+ | 0.0 | 2003 05 18 | 941 | 0.1+ | 0.8+ |
| 2003 04 23 | 608 | 0.1+ | 0.7− | 2003 05 03 | 204 | (0.6+ | 2.7−) | 2003 05 19 | 127 | 0.2− | 0.2− |
| 2003 04 23 | 608 | (0.4− | 1.8−) | 2003 05 03 | 204 | 1.5+ | 0.1+ | 2003 05 19 | 127 | 0.2− | 0.7− |
| 2003 04 23 | 413 | 0.0 | 0.2+ | 2003 05 04 | 118 | 0.2− | 0.3+ | 2003 05 19 | 127 | 0.3+ | 0.4− |
| 2003 04 23 | 413 | 0.2+ | 0.0 | 2003 05 04 | 118 | 0.2+ | 0.2+ | 2003 05 20 | 785 | 1.3+ | 1.4− |
| 2003 04 23 | 587 | 0.2+ | 0.0 | 2003 05 04 | 118 | 0.5+ | 0.3+ | 2003 05 20 | 785 | (0.0 | 2.2−) |
| 2003 04 23 | 587 | 0.1+ | 0.0 | 2003 05 04 | 118 | 0.5+ | 0.1− | 2003 05 21 | 649 | 0.8− | 0.3+ |
| 2003 04 23 | 587 | 0.2− | 0.2+ | 2003 05 04 | H72 | 1.5− | 1.3− | 2003 05 21 | 649 | 0.8− | 0.2+ |
| 2003 04 23 | 151 | 0.4− | 1.0+ | 2003 05 04 | H72 | 0.3− | 0.6− | 2003 05 21 | 649 | 0.5− | 0.0 |
| 2003 04 23 | 151 | (1.7− | 0.7−) | 2003 05 04 | H72 | 0.1+ | 1.0− | 2003 05 21 | 204 | 0.3− | 0.8+ |
| 2003 04 23 | 151 | 0.6+ | 0.4+ | 2003 05 04 | H72 | 0.6− | 1.4− | 2003 05 21 | 204 | 0.4− | 0.1− |
| 2003 04 23 | 151 | 0.4− | 1.0+ | 2003 05 04 | H72 | 0.4+ | 1.1− | 2003 05 21 | 204 | 0.0 | 0.6− |
| 2003 04 23 | 151 | 0.1+ | 0.6+ | 2003 05 04 | H72 | 1.2− | 1.3− | 2003 05 21 | 204 | 0.1− | 0.1− |
| 2003 04 23 | 151 | 0.3+ | 0.9− | 2003 05 04 | H72 | 0.7+ | 0.0 | 2003 05 21 | 204 | 0.3− | 0.1+ |
| 2003 04 23 | 151 | 0.5+ | 0.3+ | 2003 05 04 | H72 | 0.0 | 0.9− | 2003 05 22 | 750 | 0.0 | 0.0 |
| 2003 04 23 | 151 | 0.0 | 0.8+ | 2003 05 04 | H72 | 1.1− | 0.2+ | 2003 05 22 | 750 | 0.5+ | 0.1+ |
| 2003 04 23 | 246 | 0.2+ | 0.2+ | 2003 05 04 | H72 | 0.9− | 0.9− | 2003 05 22 | 750 | 0.3+ | 0.2+ |
| 2003 04 23 | 246 | 0.2− | 0.3+ | 2003 05 04 | H72 | 0.8− | 0.5− | 2003 05 22 | 750 | 0.2+ | 0.1+ |
| 2003 04 23 | 246 | 0.0 | 0.2+ | 2003 05 04 | E14 | 0.3+ | 0.1− | 2003 05 22 | 560 | 0.3+ | 0.4− |
| 2003 04 23 | 246 | 0.1+ | 0.3+ | 2003 05 04 | E14 | 0.1+ | 0.1+ | 2003 05 22 | 560 | 0.6− | 0.7+ |
| 2003 04 23 | 246 | 0.1+ | 0.1− | 2003 05 04 | E14 | 0.2+ | 0.1+ | 2003 05 22 | 560 | 0.2− | 0.1+ |
| 2003 04 23 | 246 | 0.1+ | 0.1+ | 2003 05 04 | 632 | 0.3+ | 0.0 | 2003 05 23 | 118 | 0.2− | 0.4− |
| 2003 04 23 | 620 | 0.7− | 1.1+ | 2003 05 04 | 632 | 0.4+ | 0.6− | 2003 05 23 | 118 | 0.2− | 0.3+ |
| 2003 04 23 | 620 | 1.1− | 1.5+ | 2003 05 04 | 632 | 0.5+ | 0.1+ | 2003 05 23 | 118 | 0.1− | 0.6+ |
| 2003 04 23 | 620 | 0.5− | 0.2+ | 2003 05 04 | A28 | (0.6+ | 2.3+) | 2003 05 23 | 118 | 0.1+ | 0.2+ |
| 2003 04 23 | 620 | 1.0+ | 0.1− | 2003 05 04 | A28 | 0.0 | 0.7+ | 2003 05 23 | 560 | 0.2− | 1.0− |
| 2003 04 23 | 620 | 0.1+ | 0.2− | 2003 05 04 | A28 | 0.4+ | 0.4− | 2003 05 23 | 560 | 0.2− | 1.0− |
| 2003 04 23 | J95 | 0.1+ | 0.3+ | 2003 05 04 | A28 | 0.8+ | 0.3+ | 2003 05 23 | 560 | 0.3− | 0.7− |
| 2003 04 23 | J95 | 0.3− | 0.4+ | 2003 05 04 | A28 | 0.3+ | 0.4+ | 2003 05 24 | 151 | 0.2− | 0.8+ |
| 2003 04 23 | 557 | 0.3− | 0.3+ | 2003 05 04 | 118 | 0.2− | 0.2+ | 2003 05 24 | 151 | 0.0 | 1.3+ |
| 2003 04 23 | 557 | 0.1+ | 0.3+ | 2003 05 04 | 118 | 0.1− | 0.3+ | 2003 05 24 | 151 | 0.1− | 0.4+ |
| 2003 04 23 | J95 | 0.7− | 0.7+ | 2003 05 04 | 560 | 0.2+ | 0.1+ | 2003 05 24 | 151 | 0.5− | 0.1+ |
| 2003 04 23 | 557 | 0.9− | 0.2− | 2003 05 04 | 118 | 0.0 | 0.3+ | 2003 05 24 | 151 | 0.2+ | 0.4− |
| 2003 04 24 | 599 | 0.0 | 0.0 | 2003 05 04 | 118 | 0.3+ | 0.5+ | 2003 05 24 | 151 | 0.6+ | 0.3+ |
| 2003 04 24 | 599 | 0.3+ | 0.1+ | 2003 05 04 | 118 | 0.4+ | 0.1− | 2003 05 24 | 151 | 0.8− | 0.6− |
| 2003 04 24 | 599 | 0.3+ | 0.1− | 2003 05 04 | 560 | 0.8+ | 0.2+ | 2003 05 24 | 151 | 0.4+ | 0.1− |
| 2003 04 24 | 599 | 0.4+ | 0.8+ | 2003 05 05 | 704 | 1.2+ | 0.1+ | 2003 05 24 | 151 | 0.1− | 0.2+ |
| 2003 04 24 | 854 | 0.2− | 0.1+ | 2003 05 05 | 704 | 0.2+ | 0.3+ | 2003 05 24 | 151 | 0.1+ | 0.8− |
| 2003 04 24 | 854 | 0.4− | 0.1+ | 2003 05 05 | 704 | 0.6+ | 0.4− | 2003 05 24 | 118 | 1.2+ | 0.2− |
| 2003 04 24 | 854 | 0.1− | 0.2+ | 2003 05 05 | 704 | (9.1− | 25.5+) | 2003 05 24 | 118 | 0.5+ | 0.5+ |
| 2003 04 24 | 926 | 0.6− | 0.5− | 2003 05 05 | 704 | 0.0 | 1.3+ | 2003 05 24 | 118 | 0.2+ | 0.5+ |
| 2003 04 24 | 926 | 0.9− | 0.0 | 2003 05 05 | 704 | 1.0+ | 0.4+ | 2003 05 25 | 118 | 0.7− | 0.0 |
| 2003 04 24 | 608 | 0.2− | 0.6− | 2003 05 05 | 704 | 0.1+ | 0.0 | 2003 05 25 | 118 | 0.4− | 0.5− |
| 2003 04 24 | 608 | 0.2+ | 0.8− | 2003 05 05 | 704 | 0.9+ | 0.7+ | 2003 05 25 | 118 | 0.4− | 0.6− |
| 2003 04 24 | 608 | 0.2+ | 0.6− | 2003 05 05 | 704 | 0.2+ | 0.1+ | 2003 05 25 | 118 | 0.5− | 0.1− |
| 2003 04 26 | 446 | 0.0 | 0.1− | 2003 05 05 | 561 | (0.4+ | 3.0+) | 2003 05 25 | 118 | 0.0 | 0.2+ |
| 2003 04 26 | 926 | 0.2+ | 0.3+ | 2003 05 05 | 561 | (0.4+ | 2.6−) | 2003 05 27 | 670 | 0.1− | 0.4− |
| 2003 04 26 | 446 | 0.0 | 0.2− | 2003 05 05 | 561 | (0.5− | 3.8+) | 2003 05 27 | 670 | 0.1+ | 0.3− |
| 2003 04 26 | 926 | 0.5− | 0.8− | 2003 05 05 | 561 | (0.6− | 2.7+) | 2003 05 27 | 670 | 0.7− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 926 | 0.5+ | 0.8− | 2003 05 05 | 561 | 0.7+ | 0.9− | 2003 05 27 | 118 | 0.2− | 0.3+ |
| 2003 04 26 | 446 | 0.2+ | 0.2− | 2003 05 05 | 561 | (2.1− | 1.2−) | 2003 05 27 | 118 | 0.3− | 0.1+ |
| 2003 04 27 | 734 | 0.0 | 0.1− | 2003 05 05 | 561 | (0.2+ | 2.2−) | 2003 05 27 | 118 | 0.1− | 0.6+ |
| 2003 04 27 | 734 | 0.1− | 0.1+ | 2003 05 06 | 649 | 0.3+ | 0.0 | 2003 05 27 | 118 | 0.4+ | 0.4+ |
| 2003 04 27 | 734 | 0.2− | 0.2− | 2003 05 06 | 649 | 0.2+ | 0.1+ | 2003 05 28 | 170 | 0.7+ | 0.0 |
| 2003 04 27 | 474 | 0.1+ | 0.0 | 2003 05 06 | 649 | 0.1+ | 0.2+ | 2003 05 28 | 170 | 0.5+ | 0.1+ |
| 2003 04 27 | 474 | 0.2+ | 0.1− | 2003 05 06 | 926 | (0.1− | 2.0+) | 2003 05 28 | 170 | 0.3+ | 0.1+ |
| 2003 04 27 | 474 | 0.2+ | 0.1− | 2003 05 06 | 926 | 0.2− | 0.4+ | 2003 05 28 | 170 | 0.2+ | 0.1+ |
| 2003 04 28 | 658 | 0.3− | 0.1+ | 2003 05 06 | 926 | (0.7− | 1.7−) | 2003 05 28 | 170 | 0.3+ | 0.0 |
| 2003 04 28 | 658 | 0.1+ | 0.5− | 2003 05 06 | 246 | 0.3+ | 0.4− | 2003 05 31 | 071 | 0.0 | 0.8− |
| 2003 04 28 | 658 | 0.4− | 0.1+ | 2003 05 06 | 246 | 0.2− | 0.4− | 2003 05 31 | 071 | 0.2+ | 1.2− |
| 2003 04 28 | 658 | 0.1+ | 0.2− | 2003 05 06 | 246 | 0.1+ | 0.4− | 2003 05 31 | 071 | 0.1− | 0.1+ |
| 2003 04 28 | 704 | 0.1+ | 0.2− | 2003 05 06 | 246 | 0.6+ | 0.6− | 2003 05 31 | 071 | 0.1− | 0.8− |
| 2003 04 28 | 658 | 0.6− | 0.1+ | 2003 05 06 | 246 | 0.3+ | 0.4− | 2003 05 31 | 071 | 0.7− | 0.6− |
| 2003 04 28 | 704 | 0.4− | 0.2− | 2003 05 07 | 046 | 0.1− | 0.3+ | 2003 05 31 | 071 | 0.5− | 0.6− |
| 2003 04 28 | 658 | 0.8− | 0.4− | 2003 05 07 | 046 | (1.7− | 0.9+) | 2003 06 04 | 699 | 0.0 | 0.4+ |
| 2003 04 28 | 704 | 0.0 | 0.7− | 2003 05 07 | 046 | 0.6+ | 0.6+ | 2003 06 04 | 699 | 0.1− | 0.2+ |
| 2003 04 28 | 704 | 0.7− | 0.4− | 2003 05 08 | H72 | (1.7+ | 1.0−) | 2003 06 04 | 699 | 0.5+ | 0.2+ |
| 2003 04 28 | 704 | 0.2+ | 0.6− | 2003 05 08 | H72 | (4.2+ | 0.3−) | 2003 06 04 | 699 | 0.6− | 0.2− |
| 2003 04 28 | 926 | (0.2− | 2.7−) | 2003 05 08 | H72 | (1.4+ | 3.2−) | 2003 06 04 | 118 | 0.1+ | 0.0 |
| 2003 04 28 | 926 | 0.6+ | 0.5− | 2003 05 08 | 587 | 0.3+ | 0.3+ | 2003 06 04 | 118 | 0.6+ | 0.4+ |
| 2003 04 28 | 926 | 0.1− | 0.4− | 2003 05 08 | 587 | 0.0 | 0.5− | 2003 06 04 | 118 | 0.1+ | 0.1− |
| 2003 04 28 | 474 | 0.1− | 0.0 | 2003 05 08 | 587 | (0.5+ | 3.6+) | 2003 06 04 | 118 | 0.6+ | 0.4− |
| 2003 04 28 | 474 | 0.2− | 0.2− | 2003 05 08 | 560 | 0.1− | 0.1+ | 2003 06 07 | 118 | 0.1+ | 0.3+ |
| 2003 04 28 | 474 | 0.1− | 0.0 | 2003 05 08 | 560 | 0.4+ | 0.8+ | 2003 06 07 | 118 | 0.2+ | 0.3− |
| 2003 04 28 | 170 | 0.2+ | 0.2+ | 2003 05 09 | 704 | 0.1+ | 0.6+ | 2003 06 16 | 118 | 0.9− | 0.2− |
| 2003 04 28 | 170 | 0.0 | 0.1+ | 2003 05 09 | 704 | 0.1+ | 0.2+ | 2003 06 16 | 118 | 0.0 | 0.5+ |
| 2003 04 28 | 170 | 0.0 | 0.1+ | 2003 05 09 | 704 | 0.1+ | 0.4+ | 2003 06 16 | 118 | 0.4+ | 0.7+ |
| 2003 04 28 | 170 | 0.1+ | 0.0 | 2003 05 09 | 704 | 0.2+ | 0.6+ | 2003 08 02 | 673 | 0.2+ | 0.6− |
| 2003 04 28 | 170 | 0.0 | 0.2+ | 2003 05 09 | 704 | 0.2− | 0.5+ | 2003 08 02 | 673 | 0.1+ | 0.1− |
| 2003 04 28 | J95 | 0.0 | 0.1− | 2003 05 09 | 926 | 1.1+ | 0.3− | 2003 08 02 | 673 | 0.2+ | 0.0 |
| 2003 04 28 | J95 | 0.2− | 0.2+ | 2003 05 09 | 926 | 0.1+ | 0.2− | 2003 08 02 | 673 | 0.3+ | 0.8− |
| 2003 04 28 | J95 | 0.4+ | 0.2− | 2003 05 09 | 170 | 0.1+ | 0.2+ | 2003 08 03 | 673 | 0.8+ | 0.8− |
| 2003 04 29 | 691 | 0.3− | 0.5− | 2003 05 09 | 170 | 0.1+ | 0.4+ | 2003 08 03 | 673 | 0.4+ | 0.6− |
| 2003 04 29 | 704 | 0.2+ | 0.4+ | 2003 05 09 | 170 | 0.0 | 0.5+ | 2003 08 03 | 673 | 0.1+ | 0.5+ |
| 2003 04 29 | 704 | 0.2+ | 0.3+ | 2003 05 09 | 170 | 0.1+ | 0.4+ | 2003 08 23 | 151 | 0.1+ | 0.4− |
| 2003 04 29 | 691 | 0.5− | 0.6− | 2003 05 10 | 670 | 0.3+ | 0.3− | 2003 08 23 | 151 | 0.1− | 0.3+ |
| 2003 04 29 | 704 | 0.0 | 0.6+ | 2003 05 10 | 670 | 0.4+ | 0.2+ | 2003 08 23 | 151 | 0.2− | 0.1+ |
| 2003 04 29 | 704 | 0.0 | 0.0 | 2003 05 10 | 670 | 0.3+ | 0.0 | 2003 08 23 | 151 | 0.3− | 0.3+ |
| 2003 04 29 | 691 | 0.4− | 0.5− | 2003 05 10 | E14 | 0.4+ | 0.6− | 2003 09 03 | 198 | 0.4− | 0.1+ |
| 2003 04 29 | 704 | 0.1+ | 0.1− | 2003 05 10 | E14 | 0.0 | 0.2− | 2003 09 04 | 198 | 0.4− | 0.2+ |
| 2003 05 01 | 704 | 0.2− | 0.4− | 2003 05 10 | E14 | 0.3+ | 0.6− | 2003 09 04 | 198 | 0.2− | 0.1+ |
| 2003 05 01 | 704 | 0.4− | 0.5− | 2003 05 13 | J95 | 0.5+ | 0.2+ | 2003 09 04 | 198 | 0.4− | 0.4− |
| 2003 05 01 | 704 | 0.4− | 0.7− | 2003 05 13 | J95 | 0.6− | 0.3− | 2003 09 18 | 113 | 0.2+ | 0.1− |
| 2003 05 01 | 926 | 1.0+ | 1.1− | 2003 05 13 | J95 | 0.1+ | 0.4+ | 2003 09 18 | 113 | 0.2+ | 0.0 |
| 2003 05 01 | 926 | (0.0 | 2.1+) | 2003 05 15 | 552 | 1.0+ | 1.0+ | 2003 09 18 | 113 | 0.2+ | 0.1+ |
| 2003 05 01 | 926 | 0.4+ | 0.1− | 2003 05 15 | 552 | 0.3+ | 0.6+ | 2003 09 20 | 644 | 0.1− | 0.4+ |
| 2003 05 01 | 704 | 0.2− | 0.2− | 2003 05 15 | 552 | 0.3+ | 0.0 | 2003 09 20 | 644 | 0.3− | 0.1− |
| 2003 05 01 | 704 | 0.4− | 0.4− | 2003 05 15 | 552 | 0.5+ | 0.1+ | 2003 09 20 | 644 | 0.2− | 0.2+ |
| 2003 05 02 | E14 | 0.0 | 0.1− | 2003 05 15 | 552 | 0.0 | 0.4+ | 2006 09 17 | 291 | 0.0 | 0.0 |
| 2003 05 02 | E14 | 0.2+ | 0.3+ | 2003 05 15 | 552 | 0.1− | 0.6+ | 2006 09 17 | 291 | 0.2− | 0.4+ |
| 2003 05 02 | E14 | 0.3+ | 0.1+ | 2003 05 15 | 552 | 0.2− | 0.8+ | 2006 09 17 | 291 | 0.3+ | 0.3+ |
| 2003 05 03 | H72 | 0.3− | 0.3+ | 2003 05 15 | 552 | 0.6+ | 0.3− | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2003 05 03 | H72 | 0.8+ | 0.0 | 2003 05 15 | 552 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2003 05 03 | H72 | 0.8− | 0.8+ | 2003 05 15 | 552 | 0.4− | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.3+ |
| 2003 05 03 | H72 | 1.0+ | 0.2+ | 2003 05 15 | 552 | 0.1− | 0.6− | 2006 10 02 | G96 | 0.6− | 0.0 |
| 2003 05 03 | H72 | 0.3− | 0.3− | 2003 05 15 | 552 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.9− |
| 2003 05 03 | H72 | 1.0+ | 0.6+ | 2003 05 15 | 552 | 0.3+ | 0.2− | 2006 10 16 | 691 | 1.0− | 0.6− |
| 2003 05 03 | H72 | 0.7+ | 0.1− | 2003 05 16 | 540 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 2003 05 03 | 151 | 0.0 | 0.0 | 2003 05 16 | 540 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.9+ | 0.3+ |
| 2003 05 03 | 151 | 0.0 | 0.1+ | 2003 05 16 | 540 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2003 05 03 | 151 | 0.2+ | 0.0 | 2003 05 16 | 540 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.5+ | 0.4− |
| 2003 05 03 | 151 | 0.2− | 0.0 | 2003 05 16 | J87 | 0.8− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 2003 05 03 | 151 | 0.4+ | 0.2+ | 2003 05 16 | J87 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2003 05 03 | 151 | 0.2+ | 0.2− | 2003 05 16 | J87 | 0.7+ | 0.5+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2003 05 03 | 151 | 0.0 | 0.2− | 2003 05 16 | 118 | 0.5− | 0.3+ | | | | |
| 2003 05 03 | 151 | 0.1− | 0.3+ | 2003 05 16 | 118 | 0.7− | 0.2− | | | | |

## 2003 $HH_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.61515 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16834846 | $\omega$ | 134.33019 | | −0.93680771 | | −0.32982865 |
| $a$ | 3.2483535 | $\Omega$ | 27.05522 | | +0.20035220 | | −0.77911533 |
| $e$ | 0.2191408 | $i$ | 14.85845 | | +0.28679315 | | −0.53309695 |
| $P$ | 5.85 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 699 | 0.5− | 0.6+ | 2003 04 28 | 704 | 0.8+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2003 03 26 | 699 | 0.5+ | 1.0+ | 2003 04 28 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.6+ |
| 2003 03 26 | 699 | 0.6+ | 1.3+ | 2003 04 28 | 704 | 0.9+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.4+ |
| 2003 03 26 | 699 | 0.5+ | 1.1+ | 2003 04 28 | 704 | (0.4+ | 1.7+) | 2006 10 23 | 691 | 0.2− | 0.4+ |
| 2003 04 24 | 699 | 0.8+ | 0.7+ | 2003 05 05 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.4− | 0.3− |
| 2003 04 24 | 699 | 0.3+ | 0.2+ | 2003 05 05 | 691 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2003 04 24 | 699 | 0.6− | 0.4+ | 2003 05 05 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.4− | 0.3− |
| 2003 04 24 | 699 | 0.0 | 0.6− | 2003 05 10 | 691 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2003 04 25 | 691 | 0.2− | 0.0 | 2003 05 10 | 691 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.3+ | 0.2− |
| 2003 04 25 | 691 | 0.3− | 0.0 | 2003 05 10 | 691 | 0.5+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2003 04 25 | 691 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.5+ |
| 2003 04 28 | 704 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.0 | | | | |

## 2003 $HS_5$ = 2006 $UR_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.58130 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18095480 | $\omega$ | 65.73089 | | −0.28124429 | | −0.94926438 |
| $a$ | 3.0956794 | $\Omega$ | 41.42908 | | +0.78518569 | | −0.31192838 |
| $e$ | 0.1252887 | $i$ | 12.27763 | | +0.55171105 | | −0.03997288 |
| $P$ | 5.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 21 | 691 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2003 04 21 | 691 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.3− | 0.2− |
| 2003 04 21 | 691 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 13 | 644 | 0.2− | 0.3− |
| 2003 04 25 | 699 | 0.7+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2003 04 25 | 699 | 0.3− | 0.9− | 2006 11 01 | G96 | 0.3+ | 0.5− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2003 04 25 | 699 | 0.2− | 1.2+ | 2006 11 09 | 691 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2003 04 25 | 699 | 1.1− | 0.5+ | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.6− |
| 2003 05 02 | 691 | 0.3− | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.5− |
| 2003 05 02 | 691 | 0.4+ | 0.1− | 2006 11 11 | 703 | 1.2− | 0.3+ | 2006 11 19 | 704 | 0.9+ | 0.0 |
| 2003 05 02 | 691 | 0.8+ | 0.2− | 2006 11 11 | 703 | 1.3− | 1.1+ | 2006 11 19 | 704 | 0.8− | 0.2− |
| 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.0 | 2006 11 19 | 704 | 1.1− | 0.2− |
| 2006 10 17 | 691 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3− | 1.2− | 2006 11 22 | 704 | 0.7− | 0.2− |
| 2006 10 17 | 691 | 0.4+ | 0.4+ | 2006 11 13 | 691 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.5+ | 0.2− | 2006 11 22 | 704 | 0.1− | 1.2+ |

## 2003 $HP_6$ = 2005 $TO_{190}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.15003 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18288784 | $\omega$ | 232.94422 | | +0.00059422 | | +0.99592049 |
| $a$ | 3.0738275 | $\Omega$ | 37.39803 | | −0.86384761 | | +0.04596645 |
| $e$ | 0.0499129 | $i$ | 8.54401 | | −0.50375286 | | −0.07764962 |
| $P$ | 5.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 704 | 0.3+ | 0.1+ | 2003 05 25 | 691 | 0.6+ | 0.3+ | 2005 10 28 | G96 | 0.2+ | 0.7+ |
| 2002 02 12 | 704 | 0.8+ | 0.7+ | 2003 05 25 | 691 | 0.8+ | 0.4+ | 2005 10 28 | G96 | 0.3− | 0.2+ |
| 2002 02 12 | 704 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.3− | 0.2+ | 2005 10 28 | G96 | 0.4− | 0.3+ |
| 2002 02 12 | 704 | 0.6− | 0.7+ | 2005 10 01 | G96 | 0.0 | 0.3+ | 2005 11 06 | 291 | 0.0 | 0.1− |
| 2003 04 25 | 691 | 1.0+ | 0.1+ | 2005 10 01 | G96 | 0.3− | 0.5+ | 2005 11 06 | 291 | 0.1− | 0.1+ |
| 2003 04 25 | 691 | 0.8+ | 0.1− | 2005 10 01 | G96 | 0.3− | 0.3+ | 2005 11 06 | 291 | 0.1+ | 0.1+ |
| 2003 04 25 | 691 | 0.8+ | 0.2− | 2005 10 01 | G96 | 0.3− | 0.6+ | 2005 11 25 | G96 | 0.4− | 0.4+ |
| 2003 04 26 | 291 | 1.1− | 0.5+ | 2005 10 01 | G96 | 0.0 | 0.5+ | 2005 11 25 | G96 | 0.1− | 0.2+ |
| 2003 04 26 | 291 | 1.0− | 0.6+ | 2005 10 01 | G96 | 0.2− | 0.6+ | 2005 11 25 | G96 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 291 | 1.3− | 0.5+ | 2005 10 01 | G96 | 0.4− | 0.5+ | 2005 11 25 | G96 | 0.5− | 0.6+ |
| 2003 04 26 | 608 | 0.8+ | 1.1+ | 2005 10 11 | 691 | 0.2− | 0.6+ | 2006 01 04 | G96 | 0.5− | 0.4+ |
| 2003 04 26 | 608 | 1.1+ | 0.6+ | 2005 10 11 | 691 | 0.3− | 0.5+ | 2006 01 04 | G96 | 1.4− | 1.1+ |
| 2003 04 26 | 608 | 1.5+ | 1.4+ | 2005 10 11 | 691 | 0.2− | 0.4+ | 2006 01 04 | G96 | 0.1+ | 0.5+ |
| 2003 05 25 | 691 | 0.4+ | 0.5+ | 2005 10 28 | G96 | 0.1+ | 0.1+ | 2006 01 04 | G96 | 0.2− | 0.6+ |

**2003 HZ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.01989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22754467 | $\omega$ | 97.48025 | | −0.63317396 | +0.75494065 | |
| $a$ | 2.6572043 | $\Omega$ | 131.76574 | | −0.76920574 | −0.58920205 | |
| $e$ | 0.2187434 | $i$ | 13.23380 | | −0.08610038 | −0.28793326 | |
| $P$ | 4.33 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 699 | 0.1− | 0.0 | 2003 05 27 | 683 | 1.4− | 0.0 | 2003 07 24 | 644 | 0.2+ | 0.2+ |
| 2003 04 25 | 699 | 0.1+ | 0.8+ | 2003 05 27 | 683 | 0.7− | 1.5+ | 2003 07 24 | 644 | 0.4+ | 0.2+ |
| 2003 04 25 | 699 | 0.7− | 0.2− | 2003 05 29 | 683 | (1.8+ | 1.3+) | 2004 10 20 | 703 | 1.0− | 0.4+ |
| 2003 04 25 | 699 | 0.6− | 1.4+ | 2003 05 29 | 683 | 1.1+ | 1.1+ | 2004 10 20 | 703 | 0.2+ | 0.6+ |
| 2003 04 27 | 704 | 0.4− | 0.8− | 2003 05 29 | 683 | 0.1+ | 0.1+ | 2004 10 20 | 703 | 0.8+ | 1.2− |
| 2003 04 27 | 704 | 1.4− | 0.3− | 2003 06 29 | 704 | 0.7− | 0.9+ | 2004 10 20 | 703 | 0.2+ | 0.6− |
| 2003 04 27 | 704 | 1.1− | 0.8− | 2003 06 29 | 704 | 0.5+ | 0.0 | 2006 11 01 | G96 | 1.0− | 0.1+ |
| 2003 04 27 | 704 | 0.4− | 0.3− | 2003 06 29 | 704 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.7− | 0.1− |
| 2003 05 05 | 691 | 0.5− | 0.2+ | 2003 06 29 | 704 | 0.1+ | 0.7+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2003 05 05 | 691 | 0.7− | 0.1+ | 2003 06 29 | 704 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.8− | 0.4− |
| 2003 05 05 | 691 | 0.2− | 0.2− | 2003 07 03 | 691 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2003 05 10 | 691 | 0.6+ | 1.0− | 2003 07 03 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2003 05 10 | 691 | 0.9+ | 0.2− | 2003 07 03 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.3− | 0.4+ |
| 2003 05 10 | 691 | 0.6+ | 0.5− | 2003 07 22 | 608 | 0.3− | 0.6+ | 2006 11 26 | 691 | 0.4+ | 0.2− |
| 2003 05 25 | 683 | 0.3+ | 1.3+ | 2003 07 22 | 608 | 0.0 | 0.7− | 2006 11 26 | 691 | 0.4+ | 0.4+ |
| 2003 05 25 | 683 | 1.4+ | 0.1+ | 2003 07 22 | 608 | 0.6− | 0.6− | 2006 11 26 | 691 | 0.1+ | 0.1− |
| 2003 05 25 | 683 | 0.5− | 0.1+ | 2003 07 24 | 644 | 0.0 | 0.2− | | | | |

**2003 HJ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.61074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17867889 | $\omega$ | 141.28037 | | −0.91299480 | +0.38884859 | |
| $a$ | 3.1219112 | $\Omega$ | 62.02381 | | −0.40038750 | −0.79595643 | |
| $e$ | 0.0759261 | $i$ | 8.03470 | | −0.07829654 | −0.46395057 | |
| $P$ | 5.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 28 | 691 | 0.6− | 1.5− | 2003 05 01 | 691 | 0.3+ | 0.2+ | 2004 08 19 | E12 | 0.0 | 0.0 |
| 1992 04 28 | 691 | 0.4− | 0.5− | 2003 05 01 | 691 | 0.9+ | 1.3+ | 2004 08 19 | E12 | 0.2+ | 0.0 |
| 1992 04 28 | 691 | 0.6− | 1.3− | 2003 05 25 | 691 | 1.0+ | 0.5+ | 2004 08 19 | E12 | 0.4+ | 0.3+ |
| 2003 04 26 | 608 | 0.0 | 0.8− | 2003 05 25 | 691 | 0.8+ | 0.7+ | 2004 08 19 | E12 | 0.7− | 1.0+ |
| 2003 04 26 | 608 | 0.1+ | 0.6− | 2003 05 25 | 691 | 0.5+ | 1.0+ | 2006 11 16 | 691 | 0.1+ | 0.4+ |
| 2003 04 26 | 608 | 0.6+ | 0.5− | 2003 05 30 | 807 | 0.5− | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2003 04 27 | 699 | (0.8− | 1.8−) | 2003 05 30 | 807 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2003 04 27 | 699 | (2.2− | 0.7+) | 2003 05 31 | 807 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2003 04 27 | 699 | 0.1− | 0.4− | 2003 06 06 | 691 | 1.1− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2003 04 27 | 699 | 1.0− | 0.4+ | 2003 06 06 | 691 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2003 05 01 | 691 | 0.1+ | 0.4+ | 2003 06 06 | 691 | 0.4− | 0.1+ | | | | |

**2003 HL$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.03354 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22569907 | $\omega$ | 276.60807 | | −0.83602879 | −0.40316014 | |
| $a$ | 2.6716703 | $\Omega$ | 240.21878 | | +0.48674684 | −0.85802226 | |
| $e$ | 0.4287155 | $i$ | 25.39231 | | −0.25324567 | −0.31821329 | |
| $P$ | 4.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 735 | 0.0 | 0.0 | 2003 05 18 | 735 | 0.5− | 0.3+ | 2003 07 19 | 735 | 0.6− | 0.9− |
| 2003 04 26 | 735 | 0.1− | 0.2− | 2003 05 18 | 735 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3+ |
| 2003 04 26 | 735 | 0.2+ | 0.0 | 2003 05 22 | 699 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2003 04 27 | 735 | 0.0 | 0.2− | 2003 05 22 | 699 | 0.5− | 0.6+ | 2006 11 17 | G96 | 0.3+ | 0.3+ |
| 2003 04 27 | 735 | 0.2+ | 0.5+ | 2003 05 22 | 699 | 0.1− | 0.9+ | 2006 11 17 | G96 | 0.4+ | 0.1+ |
| 2003 04 27 | 735 | 0.0 | 0.4− | 2003 05 22 | 699 | 0.4− | 0.2+ | 2006 11 19 | 735 | 0.1− | 0.2− |
| 2003 05 01 | 735 | 0.4+ | 0.5+ | 2003 05 23 | 735 | 0.3+ | 0.9− | 2006 11 19 | 735 | 1.1+ | 0.6− |
| 2003 05 01 | 735 | 0.1− | 0.2− | 2003 05 23 | 735 | (1.7+ | 0.3−) | 2006 11 19 | 735 | 1.3+ | 0.4− |
| 2003 05 01 | 735 | 0.6− | 0.3+ | 2003 05 23 | 735 | 1.4+ | 0.9− | 2006 11 25 | 735 | 0.1+ | 0.1− |
| 2003 05 04 | 735 | 0.1+ | 0.3+ | 2003 06 20 | 735 | 0.3+ | 0.2+ | 2006 11 25 | 735 | 0.1− | 0.2+ |
| 2003 05 04 | 735 | 1.0− | 0.0 | 2003 06 20 | 735 | 1.0+ | 0.1+ | 2006 11 25 | 735 | 0.0 | 0.0 |
| 2003 05 04 | 735 | 0.2− | 0.2+ | 2003 06 20 | 735 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.0 | 0.2− |
| 2003 05 08 | 704 | 0.3− | 0.2+ | 2003 06 23 | 735 | 0.2+ | 0.8+ | 2006 11 28 | 704 | 1.2− | 0.3− |
| 2003 05 08 | 704 | 0.3+ | 0.6− | 2003 06 23 | 735 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.4− | 0.0 |
| 2003 05 08 | 704 | 0.2+ | 0.5− | 2003 06 23 | 735 | 0.4+ | 0.7− | 2006 11 28 | 704 | 0.7− | 0.1− |
| 2003 05 08 | 704 | 0.3+ | 0.1+ | 2003 07 19 | 735 | 0.2− | 0.4+ | 2006 11 28 | 704 | 0.9− | 0.3+ |
| 2003 05 18 | 735 | 0.2− | 0.2− | 2003 07 19 | 735 | 0.5− | 0.3− | | | | |

**2003 HF$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.79525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24176676 | $\omega$ | 193.36216 | | +0.73538569 | −0.67242415 | |
| $a$ | 2.5519470 | $\Omega$ | 209.43908 | | +0.63638250 | +0.72786799 | |
| $e$ | 0.2012350 | $i$ | 9.83885 | | +0.23286304 | +0.13436500 | |
| $P$ | 4.08 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 09 | 691 | 0.4− | 0.7− | 2001 12 26 | 608 | 0.6− | 1.0− | 2003 04 26 | 608 | 0.2+ | 0.0 |
| 1999 04 09 | 691 | 0.1− | 0.6− | 2001 12 26 | 608 | 0.8+ | 1.3− | 2003 04 26 | 608 | 1.0+ | 0.7− |
| 1999 04 09 | 691 | 0.1− | 0.7− | 2001 12 26 | 608 | 1.3+ | 1.2− | 2003 04 26 | 608 | 0.4+ | 0.2− |
| 2001 12 13 | 644 | 0.0 | 0.1+ | 2002 02 16 | 704 | 0.1− | 0.6− | 2003 04 28 | 691 | 0.4+ | 1.1+ |
| 2001 12 13 | 644 | 0.4+ | 0.3+ | 2002 02 16 | 704 | 0.4− | 0.1− | 2003 04 28 | 691 | 0.7+ | 1.0+ |
| 2001 12 13 | 644 | 0.2+ | 0.1− | 2002 02 16 | 704 | 0.4+ | 1.1− | 2003 04 28 | 691 | 0.7+ | 1.3+ |
| 2001 12 19 | 704 | 1.0− | 0.2+ | 2002 02 16 | 704 | 0.2− | 0.0 | 2005 12 07 | 704 | 1.2+ | 0.7+ |
| 2001 12 19 | 704 | 0.0 | 0.3+ | 2003 03 25 | 291 | 0.4− | 0.5− | 2005 12 07 | 704 | 0.2− | 1.4+ |
| 2001 12 19 | 704 | 0.4− | 0.4+ | 2003 03 25 | 291 | 0.5− | 0.0 | 2005 12 07 | 704 | 0.9− | 2.4+ |
| 2001 12 19 | 704 | 0.4− | 0.1+ | 2003 03 25 | 291 | 0.5− | 0.3− | | | | |

**2003 HH$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.68396 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28924630 | $\omega$ | 72.83246 | | −0.73980189 | +0.67152775 | |
| $a$ | 2.2644227 | $\Omega$ | 149.31359 | | −0.64422036 | −0.68908088 | |
| $e$ | 0.0960955 | $i$ | 4.69330 | | −0.19409610 | −0.27242985 | |
| $P$ | 3.41 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 691 | 0.3+ | 0.3− | 2006 01 08 | G96 | 0.1+ | 0.2− | 2006 02 23 | G96 | 0.1+ | 0.2− |
| 2003 04 04 | 691 | 0.2+ | 0.0 | 2006 01 08 | G96 | 0.2− | 0.1− | 2006 02 23 | G96 | 0.2− | 0.2− |
| 2003 04 04 | 691 | 0.5+ | 0.5− | 2006 01 08 | G96 | 0.2+ | 0.4− | 2006 02 23 | G96 | 0.3− | 0.1+ |
| 2003 04 11 | 644 | 0.4− | 0.1+ | 2006 01 08 | G96 | 0.1+ | 0.0 | 2006 03 05 | G96 | 0.3− | 0.1+ |
| 2003 04 11 | 644 | 0.3− | 0.4+ | 2006 02 01 | G96 | 0.3+ | 0.1− | 2006 03 05 | G96 | 0.1− | 0.9+ |
| 2003 04 11 | 644 | 0.7− | 0.2+ | 2006 02 01 | G96 | 0.6+ | 0.1− | 2006 03 05 | G96 | 0.3− | 0.3+ |
| 2003 04 26 | 291 | 0.5− | 0.1+ | 2006 02 01 | G96 | 0.2+ | 0.1− | 2006 03 05 | G96 | 0.6− | 0.5+ |
| 2003 04 26 | 291 | 0.1− | 0.1+ | 2006 02 01 | G96 | 0.4+ | 0.0 | | | | |
| 2003 04 26 | 291 | 0.1+ | 0.3+ | 2006 02 23 | G96 | 0.2− | 0.1− | | | | |

**2003 HB$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.21487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23532777 | $\omega$ | 329.47796 | | −0.86353271 | −0.50429269 | |
| $a$ | 2.5982878 | $\Omega$ | 180.23859 | | +0.47884962 | −0.81973314 | |
| $e$ | 0.2116236 | $i$ | 5.12499 | | +0.15815908 | −0.27152619 | |
| $P$ | 4.19 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.6− | 1.0+ | 2003 04 27 | 699 | 0.5+ | 0.0 | 2005 10 10 | 691 | 0.5+ | 0.0 |
| 2001 11 20 | 704 | 0.7+ | 0.1+ | 2003 04 30 | 691 | 0.1− | 0.0 | 2005 10 26 | 691 | 0.8− | 0.1+ |
| 2001 11 20 | 704 | 0.2− | 0.5− | 2003 04 30 | 691 | 0.0 | 0.0 | 2005 10 26 | 691 | 0.5− | 0.0 |
| 2003 04 07 | 291 | 0.1− | 0.0 | 2003 04 30 | 691 | 0.1+ | 0.1+ | 2005 10 26 | 691 | 0.2− | 0.3− |
| 2003 04 07 | 291 | 0.1− | 0.2+ | 2005 10 01 | 691 | 0.2+ | 0.1+ | 2005 12 01 | G96 | 0.3+ | 0.1− |
| 2003 04 07 | 291 | 0.1− | 0.2+ | 2005 10 01 | 691 | 0.1− | 0.4+ | 2005 12 01 | G96 | 0.0 | 0.1− |
| 2003 04 27 | 699 | 0.1+ | 1.7+ | 2005 10 01 | 691 | 0.5+ | 0.2− | 2005 12 01 | G96 | 0.4+ | 0.4− |
| 2003 04 27 | 699 | 0.2− | 1.6− | 2005 10 10 | 691 | 0.1− | 0.2+ | 2005 12 01 | G96 | 0.1+ | 0.6− |
| 2003 04 27 | 699 | 0.6+ | 0.5− | 2005 10 10 | 691 | 0.1+ | 0.2+ | | | | |

**2003 HK$_{45}$ = 2006 VS$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.04788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17266502 | $\omega$ | 127.23872 | | −0.99692391 | −0.01767759 | |
| $a$ | 3.1939870 | $\Omega$ | 51.87717 | | −0.01870912 | −0.89239131 | |
| $e$ | 0.1383731 | $i$ | 5.56988 | | +0.07610967 | −0.45091602 | |
| $P$ | 5.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 691 | 0.1− | 0.2− | 2003 05 05 | 704 | 0.4− | 0.6− | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2000 11 29 | 691 | 0.0 | 0.3− | 2003 05 05 | 704 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.5+ |
| 2000 11 29 | 691 | 0.7+ | 0.1− | 2003 05 06 | 291 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2002 01 05 | 644 | 0.3− | 0.2+ | 2003 05 06 | 291 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.7− | 0.1+ |
| 2002 01 05 | 644 | 0.7− | 0.6+ | 2003 05 06 | 291 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.2+ |
| 2002 01 05 | 644 | 0.2+ | 0.5+ | 2003 06 01 | 291 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.4− | 0.0 |
| 2003 04 29 | 704 | 1.2+ | 0.1+ | 2003 06 01 | 291 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.7+ |
| 2003 04 29 | 704 | 0.3+ | 0.2− | 2003 06 01 | 291 | 0.8− | 0.0 | 2006 11 11 | 691 | 0.5− | 0.3+ |
| 2003 04 29 | 704 | (1.7+ | 0.6−) | 2005 08 28 | 691 | 0.8− | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.5+ |
| 2003 04 29 | 704 | 0.6+ | 0.4+ | 2005 08 28 | 691 | 0.2− | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.5+ |
| 2003 05 01 | 691 | 0.4+ | 1.1+ | 2005 08 28 | 691 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.5+ |
| 2003 05 01 | 691 | 0.4+ | 0.6+ | 2006 09 27 | G96 | 0.7− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2003 05 01 | 691 | 0.4+ | 1.3+ | 2006 09 27 | G96 | 0.5− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 05 05 | 704 | 0.8+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.0 |

**2003 HQ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.82342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38128983 | $\omega$ | 100.28988 | | +0.58803756 | +0.78979483 | |
| $a$ | 1.8835012 | $\Omega$ | 208.09932 | | −0.80745848 | +0.58579188 | |
| $e$ | 0.0876760 | $i$ | 21.74030 | | +0.04714471 | +0.18185707 | |
| $P$ | 2.58 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 704 | 0.4+ | 0.6− | 2006 09 24 | H55 | 0.2+ | 0.5− | 2006 10 17 | 683 | (0.3− | 1.9+) |
| 2001 09 26 | 704 | 0.4+ | 0.1+ | 2006 09 26 | H55 | (1.6− | 1.2−) | 2006 10 17 | 683 | 0.8− | 1.2+ |
| 2001 09 26 | 704 | (1.0− | 1.8+) | 2006 09 26 | H55 | 0.0 | 0.8− | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2001 09 26 | 704 | 0.7− | 0.6+ | 2006 09 26 | H55 | 0.1− | 1.2− | 2006 10 17 | 703 | 0.3− | 0.9+ |
| 2003 04 21 | 291 | 0.1+ | 0.3− | 2006 09 28 | 703 | 0.6+ | 0.3− | 2006 10 17 | 703 | 0.8+ | 0.8− |
| 2003 04 21 | 291 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.4− |
| 2003 04 21 | 291 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.1− | 0.6− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2003 05 02 | 691 | 0.0 | 0.5+ | 2006 09 28 | 703 | 0.2+ | 1.0− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2003 05 02 | 691 | 0.2+ | 0.6+ | 2006 09 29 | H55 | 0.7+ | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2003 05 02 | 691 | 0.3+ | 0.3+ | 2006 09 29 | H55 | 0.6+ | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2003 05 10 | 691 | 0.1− | 0.4+ | 2006 09 29 | H55 | 0.6+ | 1.2+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2003 05 10 | 691 | 0.1− | 0.4+ | 2006 10 02 | H55 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2003 05 10 | 691 | 0.1− | 0.4+ | 2006 10 02 | H55 | 0.3− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 05 11 | 291 | 0.1− | 0.0 | 2006 10 02 | H55 | 0.1− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 05 11 | 291 | 0.2− | 0.0 | 2006 10 04 | 703 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2003 05 11 | 291 | 0.2− | 0.2− | 2006 10 04 | 703 | 0.4− | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2003 05 22 | 291 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.5− | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2003 05 22 | 291 | 0.1− | 0.0 | 2006 10 04 | 703 | 1.0− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2003 05 22 | 291 | 0.0 | 0.1+ | 2006 10 16 | 683 | (1.9+ | 0.9−) | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2003 05 30 | 645 | 0.0 | 0.1− | 2006 10 16 | 683 | (1.7+ | 0.2+) | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2003 05 30 | 645 | 0.0 | 0.1− | 2006 10 16 | 683 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.6+ |
| 2006 09 24 | H55 | 0.3+ | 0.1+ | 2006 10 17 | 683 | 0.1− | 0.6− | 2006 11 21 | G96 | 0.4− | 0.0 |

**2003 HJ$_{54}$ = 2006 UQ$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.62576 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17663815 | $\omega$ | 281.84559 | | −0.75263053 | −0.65016950 | |
| $a$ | 3.1459106 | $\Omega$ | 217.73781 | | +0.65068835 | −0.71023891 | |
| $e$ | 0.1436850 | $i$ | 9.78821 | | +0.10075693 | −0.26988944 | |
| $P$ | 5.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 24 | 699 | 0.5− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 2003 04 24 | 699 | 0.6− | 0.3− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2003 04 24 | 699 | 1.4− | 0.1+ | 2006 10 16 | 691 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 2003 04 24 | 699 | 1.0− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 2003 04 29 | 691 | 0.4− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2003 04 29 | 691 | 0.4− | 0.7− | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2003 04 29 | 691 | 0.7− | 0.5− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2003 05 05 | 691 | 0.7+ | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2003 05 05 | 691 | 0.8+ | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2003 05 05 | 691 | 0.9+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2006 09 25 | G96 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2006 09 25 | G96 | 0.5− | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2006 09 25 | G96 | 0.5− | 0.6− | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.1+ | 0.6− |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.5+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.0 | | | | |

**2003 HS$_{57}$ = 2004 VK$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.53701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30656558 | $\omega$ | 70.09253 | | +0.18506562 | +0.98234650 | |
| $a$ | 2.1783139 | $\Omega$ | 210.61262 | | −0.92050659 | +0.16354886 | |
| $e$ | 0.1297146 | $i$ | 3.07471 | | −0.34411965 | +0.09081364 | |
| $P$ | 3.21 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | 0.1− | 0.2− | 2003 05 10 | 291 | 0.1+ | 0.0 | 2004 11 10 | 691 | 0.1+ | 0.6− |
| 2003 04 25 | 691 | 0.2+ | 0.3− | 2003 05 25 | 291 | 0.2− | 0.3+ | 2004 11 10 | 691 | 0.1− | 0.4+ |
| 2003 04 25 | 691 | 0.2+ | 0.2− | 2003 05 25 | 291 | 0.1+ | 0.1− | 2006 03 05 | 691 | 0.4+ | 0.0 |
| 2003 05 10 | 691 | 0.2− | 0.2+ | 2003 05 25 | 291 | 0.2+ | 0.1+ | 2006 03 05 | 691 | 0.2− | 0.1− |
| 2003 05 10 | 291 | 0.1+ | 0.2+ | 2004 11 04 | 691 | 0.1+ | 0.1+ | 2006 03 05 | 691 | 0.0 | 0.1+ |
| 2003 05 10 | 691 | 0.3− | 0.0 | 2004 11 04 | 691 | 0.1− | 0.0 | 2006 04 08 | 691 | 0.2+ | 0.0 |
| 2003 05 10 | 291 | 0.4− | 0.0 | 2004 11 04 | 691 | 0.1+ | 0.0 | 2006 04 08 | 691 | 0.3− | 0.1+ |
| 2003 05 10 | 691 | 0.3+ | 0.2− | 2004 11 10 | 691 | 0.2− | 0.1+ | 2006 04 08 | 691 | 0.1+ | 0.1+ |

**2003 HT$_{57}$ = 2002 CU**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.27521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22030442 | $\omega$ | 113.34306 | | +0.05998280 | +0.99342367 | |
| $a$ | 2.7151088 | $\Omega$ | 159.37047 | | −0.98674365 | +0.07377034 | |
| $e$ | 0.2306454 | $i$ | 16.06990 | | −0.15079464 | −0.08756337 | |
| $P$ | 4.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | (0.0 | 2.2+) | 2003 04 25 | 645 | 0.1− | 0.0 | 2003 06 07 | 704 | 0.3− | 0.4+ |
| 1999 09 07 | 704 | 0.5− | 0.2+ | 2003 04 25 | 645 | 0.1− | 0.0 | 2003 06 22 | 645 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 0.2+ | 0.3− | 2003 05 11 | 704 | 1.1+ | 0.1− | 2003 06 22 | 645 | 0.1− | 0.1− |
| 1999 09 07 | 704 | 0.4+ | 0.2− | 2003 05 11 | 704 | 0.9+ | 0.4+ | 2003 06 23 | 699 | 0.6− | 0.5+ |
| 2002 02 02 | 209 | 0.1− | 0.4− | 2003 05 11 | 704 | 1.0+ | 0.4− | 2003 06 23 | 699 | 0.3− | 0.0 |
| 2002 02 02 | 209 | 0.4− | 0.5− | 2003 05 11 | 704 | 0.5+ | 1.0+ | 2003 06 23 | 699 | 0.8− | 0.3+ |
| 2002 02 02 | 209 | 0.2− | 0.1+ | 2003 05 11 | 704 | 1.0+ | 1.0+ | 2003 06 23 | 699 | 0.2− | 0.3+ |
| 2002 02 03 | 209 | 0.4+ | 0.4+ | 2003 06 07 | 704 | 0.2+ | 1.0− | 2003 07 05 | 608 | 0.2+ | 0.6+ |
| 2002 02 03 | 209 | 0.2− | 0.2+ | 2003 06 07 | 704 | 1.0+ | 0.2− | 2003 07 05 | 608 | 0.1+ | 1.0+ |
| 2002 02 03 | 209 | 0.4+ | 0.1− | 2003 06 07 | 704 | 0.1+ | 0.2+ | 2003 07 05 | 608 | 0.5+ | 0.5+ |

**2003 HU$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.52829 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17896581 | $\omega$ | 331.97468 | +0.92152109 | | −0.35436237 | |
| $a$ | 3.1185737 | $\Omega$ | 49.68705 | +0.38371353 | | +0.76805790 | |
| $e$ | 0.0462695 | $i$ | 12.02230 | +0.05968928 | | +0.53339889 | |
| $P$ | 5.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.4+ | 0.3− | 2003 05 01 | 704 | 0.6+ | 0.0 | 2005 10 20 | 644 | 0.3+ | 0.1− |
| 2000 11 20 | 704 | 0.7− | 0.6+ | 2003 05 22 | 691 | 0.1+ | 0.4+ | 2005 10 20 | 644 | 0.5− | 0.6+ |
| 2000 11 20 | 704 | 0.4− | 0.4+ | 2003 05 22 | 691 | 0.1+ | 0.3+ | 2005 10 27 | 704 | 0.8− | 1.1+ |
| 2000 11 20 | 704 | 0.2+ | 0.1− | 2003 05 22 | 691 | 0.0 | 0.4+ | 2005 10 27 | 704 | 0.2− | 1.1+ |
| 2002 02 12 | 644 | 0.5+ | 0.6+ | 2005 08 31 | 644 | 0.1+ | 0.3+ | 2005 10 27 | 704 | 0.2− | 0.4+ |
| 2002 02 12 | 644 | 0.7+ | 0.9+ | 2005 08 31 | 644 | 0.2+ | 0.1+ | 2005 10 27 | 704 | 0.8− | 0.1+ |
| 2002 02 12 | 644 | 0.4+ | 0.7+ | 2005 08 31 | 644 | 0.3+ | 0.3+ | 2006 02 06 | G96 | 0.8− | 0.1− |
| 2003 04 24 | 691 | 0.0 | 0.1+ | 2005 10 03 | 703 | 0.3− | 2.0+ | 2006 02 06 | G96 | 0.1+ | 0.2+ |
| 2003 04 24 | 691 | 0.1+ | 0.2+ | 2005 10 03 | 703 | 0.3− | 0.6+ | 2006 02 06 | G96 | 0.0 | 0.1− |
| 2003 04 24 | 691 | 0.3+ | 0.3+ | 2005 10 03 | 703 | 0.1− | 0.2+ | 2006 02 06 | G96 | 0.3− | 0.4− |
| 2003 05 01 | 704 | 0.6+ | 1.0+ | 2005 10 03 | 703 | 1.2− | 0.7+ | | | | |
| 2003 05 01 | 704 | 0.1+ | 0.1− | 2005 10 20 | 644 | 0.2− | 0.2− | | | | |

**2003 HV$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.54479 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26243751 | $\omega$ | 304.77970 | +0.81325695 | | −0.56209542 | |
| $a$ | 2.4161215 | $\Omega$ | 89.87267 | +0.57087893 | | +0.72056561 | |
| $e$ | 0.1058545 | $i$ | 8.65816 | +0.11274031 | | +0.40599745 | |
| $P$ | 3.76 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 05 28 | 691 | 0.1− | 0.1+ | 2004 09 17 | 699 | 0.7− | 0.7+ |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2003 05 28 | 691 | 0.3− | 0.7+ | 2004 09 17 | 699 | 2.4+ | 0.2− |
| 2002 01 08 | 704 | 0.6− | 0.2− | 2003 05 28 | 691 | 0.4+ | 0.3+ | 2004 09 21 | 704 | 0.3− | 0.3− |
| 2002 01 08 | 704 | 0.3− | 0.5− | 2003 06 08 | 291 | 0.2+ | 0.1− | 2004 09 21 | 704 | 0.5− | 0.3+ |
| 2002 01 08 | 704 | 0.7− | 0.4− | 2003 06 08 | 291 | 0.3+ | 0.2− | 2004 09 21 | 704 | 1.0+ | 0.0 |
| 2002 02 06 | 704 | 0.3+ | 0.7+ | 2003 06 08 | 291 | 0.1− | 0.0 | 2004 09 21 | 704 | 0.8+ | 0.2+ |
| 2002 02 06 | 704 | 0.2+ | 1.1+ | 2004 08 27 | 699 | 0.8− | 0.8− | 2004 09 21 | 704 | 1.2+ | 0.2+ |
| 2002 02 06 | 704 | 0.9+ | 1.9+ | 2004 08 27 | 699 | 0.5− | 0.5+ | 2004 10 06 | 704 | 0.4− | 0.8+ |
| 2002 02 06 | 704 | 0.5+ | 1.3+ | 2004 08 27 | 699 | 0.5− | 0.4+ | 2004 10 06 | 704 | 0.4− | 1.1+ |
| 2003 04 25 | 691 | 0.2+ | 0.1− | 2004 08 27 | 699 | 0.2− | 1.2+ | 2004 10 06 | 704 | 0.1+ | 0.7− |
| 2003 04 25 | 691 | 0.2− | 0.3+ | 2004 09 17 | 699 | 0.5− | 0.4− | 2004 10 06 | 704 | 1.2− | 0.4+ |
| 2003 04 25 | 691 | 0.0 | 0.1+ | 2004 09 17 | 699 | 0.9− | 0.4− | | | | |

**2003 HX$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.58561 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25545387 | $\omega$ | 190.49254 | +0.30905261 | | +0.94235864 | |
| $a$ | 2.4599582 | $\Omega$ | 97.60103 | −0.86292670 | | +0.33454366 | |
| $e$ | 0.1689817 | $i$ | 7.43385 | −0.39980495 | | +0.00638247 | |
| $P$ | 3.86 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 16 | 703 | 0.8+ | 0.6− | 2003 04 28 | 704 | 0.3+ | 0.7+ | 2003 05 30 | 704 | (2.4+ | 0.4+) |
| 1999 04 16 | 703 | 0.1− | 0.3+ | 2003 05 05 | 704 | 0.3− | 0.1− | 2003 05 30 | 704 | 0.9+ | 0.7+ |
| 1999 04 16 | 703 | 0.3− | 0.5− | 2003 05 05 | 704 | 0.6− | 0.7− | 2003 05 30 | 704 | 0.4− | 0.9+ |
| 1999 04 16 | 703 | 0.6− | 0.2− | 2003 05 05 | 704 | 0.1+ | 0.2− | 2003 05 30 | 704 | 0.1+ | 0.3− |
| 2002 01 14 | 704 | 0.3− | 0.2− | 2003 05 05 | 704 | 0.6− | 0.1− | 2003 06 22 | 699 | 0.6− | 0.2+ |
| 2002 01 14 | 704 | 0.2+ | 0.1+ | 2003 05 05 | 704 | 0.7+ | 0.1− | 2003 06 22 | 699 | 0.3− | 0.8− |
| 2002 01 14 | 704 | 0.6+ | 0.4− | 2003 05 05 | 704 | 0.3− | 0.4+ | 2003 06 22 | 699 | 0.0 | 0.4− |
| 2002 01 14 | 704 | 1.4+ | 1.4+ | 2003 05 05 | 704 | 0.3− | 0.3+ | 2003 06 22 | 699 | 0.8− | 0.7− |
| 2002 01 14 | 704 | 0.6+ | 0.4+ | 2003 05 05 | 704 | 0.3+ | 0.1− | 2006 01 26 | 703 | 0.6− | 0.6− |
| 2002 02 08 | 645 | 0.1− | 0.1− | 2003 05 05 | 704 | 0.2− | 0.1− | 2006 01 26 | 703 | 0.5+ | 2.0+ |
| 2002 02 08 | 645 | 0.1− | 0.1− | 2003 05 22 | 691 | 0.0 | 0.1− | 2006 01 26 | 703 | 0.6+ | 0.6+ |
| 2003 04 28 | 704 | 0.7− | 0.5− | 2003 05 22 | 691 | 1.0+ | 0.4+ | 2006 01 26 | 703 | 0.4+ | 1.4+ |
| 2003 04 28 | 704 | 0.6− | 0.6+ | 2003 05 22 | 691 | 0.2− | 0.1− | | | | |

**2003 HY$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.01128 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17970273 | $\omega$ | 242.10863 | +0.75378200 | | +0.63026155 | |
| $a$ | 3.1100421 | $\Omega$ | 78.20380 | −0.51609558 | | +0.74298605 | |
| $e$ | 0.0803663 | $i$ | 10.95147 | −0.40676536 | | +0.22526007 | |
| $P$ | 5.48 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 30 | 691 | 0.2− | 0.3+ | 2003 05 28 | 291 | 0.1+ | 0.2− | 2005 11 03 | 703 | 0.3− | 1.1+ |
| 2003 04 30 | 691 | 0.0 | 0.5+ | 2003 05 28 | 291 | 0.4− | 0.7+ | 2005 11 03 | 703 | 0.4+ | 0.1+ |
| 2003 04 30 | 691 | 0.1+ | 0.4+ | 2004 07 27 | E12 | 0.4− | 0.4+ | 2005 11 03 | 703 | 0.6+ | 0.0 |
| 2003 05 11 | 691 | 0.1+ | 0.2− | 2004 07 27 | E12 | 0.5+ | 0.7− | 2005 11 03 | 703 | 1.0− | 1.9+ |
| 2003 05 11 | 691 | 0.6+ | 0.0 | 2004 07 27 | E12 | 0.6+ | 0.3− | 2005 11 04 | 703 | 1.3− | 0.1− |
| 2003 05 11 | 691 | 0.6+ | 0.1− | 2004 07 27 | E12 | 0.6− | 0.0 | 2005 11 04 | 703 | 0.6− | 1.0+ |
| 2003 05 27 | 691 | 0.2− | 0.2− | 2004 08 19 | E12 | 0.6− | 0.3− | 2005 11 04 | 703 | 0.3+ | 0.5+ |
| 2003 05 27 | 691 | 0.0 | 0.0 | 2004 08 19 | E12 | 0.1+ | 0.0 | 2005 11 04 | 703 | 0.5− | 0.7+ |
| 2003 05 27 | 691 | 0.3− | 0.2+ | 2004 08 19 | E12 | 0.4+ | 0.5+ | | | | |
| 2003 05 28 | 291 | 0.2+ | 0.1− | 2004 08 19 | E12 | 0.3− | 0.7+ | | | | |

**2003 JS$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.37979 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23799096 | $\omega$ | 13.37488 | −0.87773643 | | +0.47712287 | |
| $a$ | 2.5788678 | $\Omega$ | 195.35609 | −0.45346647 | | −0.85682654 | |
| $e$ | 0.1383445 | $i$ | 9.55553 | −0.15474794 | | −0.19545343 | |
| $P$ | 4.14 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 01 | 704 | 1.0+ | 0.0 | 2003 05 05 | 699 | 0.7+ | 0.4− | 2004 09 12 | 691 | 0.2− | 0.2− |
| 2003 05 01 | 704 | 1.1+ | 0.4+ | 2003 05 05 | 699 | 1.8− | 0.3+ | 2004 09 16 | 649 | 0.7+ | 0.3+ |
| 2003 05 01 | 704 | 1.6+ | 0.1+ | 2003 05 05 | 699 | 0.4+ | 0.2+ | 2004 09 16 | 649 | 1.8− | 1.7+ |
| 2003 05 01 | 704 | 1.4+ | 0.4− | 2003 05 26 | 691 | 0.0 | 0.0 | 2004 09 16 | 649 | 0.7− | 0.7− |
| 2003 05 02 | 691 | 0.7− | 0.2− | 2003 05 26 | 691 | 0.0 | 0.1+ | 2004 09 23 | 691 | 0.8+ | 0.3− |
| 2003 05 02 | 691 | 0.3− | 0.1+ | 2003 05 26 | 691 | 0.0 | 0.0 | 2004 09 23 | 691 | 0.4− | 0.0 |
| 2003 05 02 | 691 | 0.2− | 0.1+ | 2004 09 12 | 691 | 0.2− | 0.2+ | 2004 09 23 | 691 | 0.1+ | 0.0 |
| 2003 05 05 | 699 | 0.0 | 0.5− | 2004 09 12 | 691 | 0.4+ | 0.1− | | | | |

**2003 JS$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.10352 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18083099 | $\omega$ | 10.47114 | −0.03006454 | | −0.98016439 | |
| $a$ | 3.0970922 | $\Omega$ | 81.45585 | +0.90215188 | | −0.11099133 | |
| $e$ | 0.0440959 | $i$ | 11.42535 | +0.43036974 | | +0.16419102 | |
| $P$ | 5.45 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 704 | 0.2+ | 0.0 | 2002 02 10 | 704 | 0.1+ | 0.5+ | 2005 09 13 | 703 | 0.3+ | 0.9+ |
| 2000 11 03 | 704 | 0.3+ | 0.0 | 2002 02 10 | 704 | 0.6− | 0.8+ | 2005 09 13 | 703 | 0.2− | 1.1+ |
| 2000 11 03 | 704 | 0.3− | 0.1+ | 2002 02 10 | 704 | 0.1− | 0.1− | 2005 09 27 | 704 | 1.4− | 1.1+ |
| 2000 11 03 | 704 | 0.0 | 1.1+ | 2002 02 10 | 704 | 0.2− | 0.3+ | 2005 09 27 | 704 | 0.5− | 0.1+ |
| 2002 01 11 | 699 | 0.7+ | 0.2− | 2003 04 24 | 691 | 0.1− | 0.0 | 2005 09 27 | 704 | 1.0− | 1.1+ |
| 2002 01 11 | 699 | 0.1+ | 1.0+ | 2003 04 24 | 691 | 0.3− | 0.1+ | 2005 09 27 | 704 | 0.4− | 0.2+ |
| 2002 01 11 | 699 | 0.5+ | 0.9− | 2003 04 24 | 691 | 0.2− | 0.2+ | 2005 09 27 | 704 | 0.7− | 0.5+ |
| 2002 01 11 | 699 | 0.9+ | 0.3+ | 2003 05 02 | 704 | 0.4+ | 1.2+ | 2005 10 05 | 703 | 0.5+ | 0.1− |
| 2002 01 21 | 704 | 0.5− | 1.0+ | 2003 05 02 | 704 | 0.1+ | 0.5+ | 2005 10 05 | 703 | 0.6− | 0.4+ |
| 2002 01 21 | 704 | 0.6− | 0.2− | 2003 05 02 | 704 | (0.3− | 1.6+) | 2005 10 05 | 703 | 0.6− | 0.8+ |
| 2002 01 21 | 704 | 0.2− | 0.4+ | 2003 05 02 | 704 | (1.8+ | 0.2−) | 2005 10 05 | 703 | 0.2− | 0.9+ |
| 2002 01 21 | 704 | 0.0 | 0.4− | 2003 05 02 | 704 | 1.4+ | 1.1+ | 2006 11 17 | 691 | 0.2− | 0.1+ |
| 2002 01 21 | 704 | 0.0 | 0.1+ | 2003 05 06 | 691 | 0.4+ | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2002 02 03 | 644 | 0.3+ | 0.1+ | 2003 05 06 | 691 | 0.4+ | 0.8+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2002 02 03 | 644 | 0.1− | 0.3+ | 2003 05 06 | 691 | 0.6+ | 0.4+ | 2006 11 21 | 691 | 0.3+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 03 | 644 | 0.3+ | 0.2+ | 2005 09 13 | 703 | 0.7− | 0.7+ | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2002 02 10 | 704 | 0.2− | 0.4+ | 2005 09 13 | 703 | 0.2− | 1.4+ | 2006 11 21 | 691 | 0.1− | 0.0 | | |

**2003 JB$_{18}$ = 2004 SX$_{44}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 198.64656 | | | (2000.0) | | |
| $n$ | 0.22869028 | $\omega$ | 121.43686 | | +0.81663945 | +0.57002339 |
| $a$ | 2.6483228 | $\Omega$ | 204.17791 | | −0.57545194 | +0.79218706 |
| $e$ | 0.1146939 | $i$ | 12.75218 | | −0.04421617 | +0.21797477 |
| $P$ | 4.31 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 02 | 291 | 0.4− | 0.0 | 2003 05 27 | 691 | 0.2+ | 0.2+ | 2004 09 18 | 704 | 0.1− | 0.1− | |
| 2003 05 02 | 291 | 0.0 | 0.1− | 2003 05 27 | 691 | 0.0 | 0.2+ | 2004 09 18 | 704 | 0.2− | 0.3− | |
| 2003 05 02 | 291 | 0.2+ | 0.3+ | 2003 05 27 | 691 | 0.4− | 0.2+ | 2004 09 22 | 704 | 0.7+ | 0.2− | |
| 2003 05 11 | 691 | 0.4+ | 0.1− | 2004 09 18 | 704 | 1.0− | 0.1− | 2004 09 22 | 704 | 0.0 | 0.2− | |
| 2003 05 11 | 691 | 0.3+ | 0.2− | 2004 09 18 | 704 | 0.4+ | 0.7+ | 2004 09 22 | 704 | 0.7+ | 0.1+ | |
| 2003 05 11 | 691 | 0.2− | 0.6− | 2004 09 18 | 704 | 0.3− | 0.2+ | 2004 09 22 | 704 | 0.3− | 0.1− | |

**2003 JC$_{18}$ = 1998 ML$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 221.68689 | | | (2000.0) | | |
| $n$ | 0.18696134 | $\omega$ | 129.09827 | | −0.14848938 | +0.97677395 |
| $a$ | 3.0290155 | $\Omega$ | 131.63596 | | −0.95910165 | −0.10417836 |
| $e$ | 0.1786231 | $i$ | 11.92861 | | −0.24098739 | −0.18724185 |
| $P$ | 5.27 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 19 | 910 | 0.1+ | 0.9+ | 2003 05 09 | 608 | 0.4− | 0.8− | 2003 07 25 | 704 | 0.1− | 0.9+ | |
| 1998 06 19 | 910 | 0.0 | 0.8+ | 2003 06 03 | 704 | 0.4+ | 0.3+ | 2003 07 25 | 704 | 0.3+ | 1.0+ | |
| 1998 06 19 | 910 | 0.2− | 0.8+ | 2003 06 03 | 704 | 0.5+ | 0.1+ | 2003 07 25 | 704 | 0.3+ | 0.4+ | |
| 1998 06 20 | 910 | 0.1+ | 0.5+ | 2003 06 03 | 704 | 0.1− | 0.0 | 2003 07 31 | 608 | 0.6+ | 1.4− | |
| 1998 06 20 | 910 | 0.0 | 0.3+ | 2003 06 03 | 704 | 0.9+ | 0.9+ | 2003 07 31 | 608 | 0.0 | 1.0− | |
| 1998 06 20 | 910 | 0.2− | 0.8+ | 2003 06 03 | 704 | 0.6+ | 0.7+ | 2003 07 31 | 608 | 0.1+ | 0.9− | |
| 2002 04 02 | 644 | 0.2+ | 1.0+ | 2003 06 25 | 644 | 0.2− | 0.5− | 2003 08 23 | 644 | 0.1+ | 0.3+ | |
| 2002 04 02 | 644 | 0.5+ | 1.1+ | 2003 06 25 | 644 | 0.2− | 0.5− | 2003 08 23 | 644 | 0.0 | 0.3+ | |
| 2002 04 02 | 644 | 0.4+ | 1.2+ | 2003 06 25 | 644 | 0.3− | 0.4− | 2003 08 23 | 644 | 0.4+ | 0.2+ | |
| 2003 05 09 | 704 | 1.6− | 0.2− | 2003 07 01 | 704 | 0.8+ | 0.7+ | 2005 12 01 | 703 | 0.6− | 1.1+ | |
| 2003 05 09 | 704 | 0.1− | 0.3+ | 2003 07 01 | 704 | 0.0 | 0.8+ | 2005 12 01 | 703 | 0.9− | 0.8+ | |
| 2003 05 09 | 704 | 1.5− | 0.1− | 2003 07 01 | 704 | 0.4+ | 0.1+ | 2005 12 01 | 703 | 0.0 | 1.8+ | |
| 2003 05 09 | 704 | 1.8− | 1.1+ | 2003 07 01 | 704 | 0.2+ | 0.2+ | 2005 12 01 | 703 | 0.2− | 1.4+ | |
| 2003 05 09 | 608 | 0.1+ | 0.6− | 2003 07 01 | 704 | 0.2− | 0.2+ | | | | | |
| 2003 05 09 | 608 | 0.1+ | 0.6− | 2003 07 25 | 704 | 1.3+ | 0.2− | | | | | |

**2003 JD$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.85519 | | | (2000.0) | | |
| $n$ | 0.26654180 | $\omega$ | 165.47487 | | −0.01724853 | +0.99230858 |
| $a$ | 2.3912547 | $\Omega$ | 103.42535 | | −0.92945990 | +0.02927381 |
| $e$ | 0.1755911 | $i$ | 7.23996 | | −0.36851972 | −0.12027768 |
| $P$ | 3.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.0 | 2003 05 27 | 699 | 0.3− | 0.7− | 2006 03 05 | G96 | 0.0 | 0.2+ | |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2003 05 27 | 699 | 0.1− | 0.4+ | 2006 03 05 | G96 | 0.3− | 0.5+ | |
| 2003 05 02 | 704 | 0.3+ | 0.0 | 2003 05 27 | 691 | 0.0 | 0.4+ | 2006 03 05 | G96 | 0.2+ | 0.2+ | |
| 2003 05 02 | 704 | 0.8+ | 0.0 | 2003 05 27 | 699 | 0.2+ | 0.8− | 2006 03 05 | G96 | 0.1− | 0.4+ | |
| 2003 05 02 | 704 | 0.1+ | 0.6− | 2003 05 27 | 699 | 0.1+ | 0.7− | 2006 03 05 | G96 | 0.4+ | 0.4+ | |
| 2003 05 09 | 704 | 0.3− | 0.7− | 2003 05 27 | 691 | 0.1+ | 0.6+ | 2006 03 05 | G96 | 0.1+ | 0.2+ | |
| 2003 05 09 | 704 | 0.8− | 2.0− | 2006 01 28 | G96 | 0.3+ | 0.4− | 2006 03 05 | G96 | 0.0 | 0.0 | |
| 2003 05 09 | 704 | 0.2− | 0.4+ | 2006 01 28 | G96 | 0.3− | 0.1− | 2006 03 05 | G96 | 0.1− | 0.3+ | |
| 2003 05 09 | 704 | 0.2+ | 0.6+ | 2006 01 28 | G96 | 0.0 | 0.3− | | | | | |
| 2003 05 27 | 691 | 0.1− | 0.2+ | 2006 01 28 | G96 | 0.2− | 0.0 | | | | | |

**2003 JE$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 210.18620 | | | (2000.0) | | |
| $n$ | 0.19989460 | $\omega$ | 60.20856 | | +0.14671399 | +0.96442534 |
| $a$ | 2.8969122 | $\Omega$ | 220.17544 | | −0.98369082 | +0.11886330 |
| $e$ | 0.1738819 | $i$ | 19.92996 | | −0.10405463 | +0.23612554 |
| $P$ | 4.93 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 01 | 704 | 0.3− | 0.7− | 2003 05 27 | 699 | 0.8− | 0.5+ | 2004 09 11 | 704 | 0.4+ | 0.0 | |
| 2003 05 01 | 704 | 0.1− | 1.4− | 2003 05 27 | 699 | 0.9− | 0.9− | 2004 09 11 | 704 | 0.2+ | 0.2+ | |
| 2003 05 01 | 704 | 0.4+ | 0.5− | 2003 05 27 | 699 | 1.4+ | 0.3+ | 2004 09 14 | 704 | 0.5− | 0.1+ | |
| 2003 05 01 | 704 | 1.3+ | 0.0 | 2003 06 16 | 644 | 0.2+ | 0.5− | 2004 09 14 | 704 | 0.4+ | 0.1+ | |
| 2003 05 05 | 704 | 0.0 | 0.9+ | 2003 06 16 | 644 | 0.7+ | 0.1+ | 2004 09 14 | 704 | 0.4− | 0.3− | |
| 2003 05 05 | 704 | 0.7− | 0.0 | 2003 06 16 | 644 | 0.7+ | 0.0 | 2004 09 14 | 704 | (1.8+ | 0.2+) | |
| 2003 05 05 | 704 | 0.3− | 0.2+ | 2003 06 22 | 699 | 1.0− | 0.7− | 2004 10 06 | 644 | 0.1− | 0.2− | |
| 2003 05 05 | 704 | 0.1− | 0.4+ | 2003 06 22 | 699 | 0.9+ | 0.2+ | 2004 10 06 | 644 | 0.0 | 0.2+ | |
| 2003 05 05 | 704 | 0.3− | 0.2+ | 2003 06 22 | 699 | 0.3+ | 0.1+ | 2004 10 06 | 644 | 0.0 | 0.0 | |
| 2003 05 11 | 691 | 0.2+ | 0.0 | 2003 06 22 | 699 | 1.3− | 0.6+ | 2004 10 06 | 644 | 0.1+ | 0.0 | |
| 2003 05 11 | 691 | 0.2− | 0.1+ | 2004 09 11 | 704 | 0.6+ | 0.6+ | 2004 10 06 | 644 | 0.1+ | 0.1− | |
| 2003 05 11 | 691 | 0.1− | 0.3+ | 2004 09 11 | 704 | 0.8− | 0.4− | 2004 10 06 | 644 | 0.1+ | 0.1+ | |
| 2003 05 27 | 699 | 0.1+ | 0.5− | 2004 09 11 | 704 | 0.0 | 0.1− | | | | | |

**2003 KF$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.18882 | | | (2000.0) | | |
| $n$ | 0.22823179 | $\omega$ | 58.67945 | | −0.43305483 | +0.90107371 |
| $a$ | 2.6518684 | $\Omega$ | 185.80301 | | −0.88486432 | −0.42985095 |
| $e$ | 0.2388225 | $i$ | 13.15724 | | −0.17169347 | −0.05739618 |
| $P$ | 4.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 04 | 691 | 0.1− | 0.0 | 2003 05 10 | 704 | 0.1+ | 0.0 | 2003 06 01 | 608 | 0.2+ | 0.4− | |
| 1994 05 04 | 691 | 0.2+ | 0.1− | 2003 05 10 | 704 | 0.8+ | 0.2− | 2003 06 23 | 699 | 0.7+ | 0.3− | |
| 1994 05 04 | 691 | 0.1− | 0.1− | 2003 05 10 | 704 | 0.3− | 0.7+ | 2003 06 23 | 699 | 0.4− | 0.5− | |
| 2003 04 27 | 704 | 1.5+ | 0.5+ | 2003 05 22 | 691 | 0.3− | 0.0 | 2003 06 23 | 699 | 1.1+ | 0.3− | |
| 2003 04 27 | 704 | 0.9+ | 1.0+ | 2003 05 22 | 691 | 0.3− | 0.2+ | 2003 06 23 | 699 | 0.1+ | 0.2− | |
| 2003 04 27 | 704 | 1.1+ | 0.6+ | 2003 05 22 | 691 | 0.6− | 0.0 | 2003 07 23 | 644 | 0.5+ | 0.5− | |
| 2003 04 27 | 704 | 0.3+ | 1.0+ | 2003 05 23 | 691 | 0.4− | 0.0 | 2003 07 23 | 644 | 0.8+ | 0.2+ | |
| 2003 05 01 | 691 | 0.0 | 0.3− | 2003 05 23 | 691 | 0.5− | 0.1− | 2003 07 23 | 644 | 0.7+ | 0.0 | |
| 2003 05 01 | 691 | 0.3+ | 0.1+ | 2003 05 23 | 691 | 0.2− | 0.2− | 2004 09 09 | 691 | 0.4− | 0.0 | |
| 2003 05 01 | 691 | 0.3+ | 0.1− | 2003 06 01 | 608 | 0.3− | 0.2+ | 2004 09 09 | 691 | 0.3+ | 0.3− | |
| 2003 05 10 | 704 | 0.0 | 0.1+ | 2003 06 01 | 608 | 0.0 | 0.4− | 2004 09 09 | 691 | 0.0 | 0.4+ | |

**2003 KX$_1$ = 2005 UC$_{501}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.72949 | | | (2000.0) | | |
| $n$ | 0.19142163 | $\omega$ | 314.02644 | | +0.16555655 | −0.97262321 |
| $a$ | 2.9817785 | $\Omega$ | 125.75176 | | +0.95253061 | +0.11486295 |
| $e$ | 0.0551518 | $i$ | 11.59237 | | +0.25549258 | +0.20201632 |
| $P$ | 5.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 644 | 0.2+ | 0.0 | 2003 05 22 | 691 | 0.2+ | 0.1− | 2005 10 27 | 703 | 0.4− | 0.1− | |
| 2002 03 11 | 644 | 0.0 | 0.3+ | 2003 05 23 | 691 | 0.1− | 0.7+ | 2005 10 27 | 703 | 0.2+ | 0.8+ | |
| 2002 03 11 | 644 | 0.1− | 0.2+ | 2003 05 23 | 691 | 0.2+ | 1.0+ | 2005 10 27 | 703 | 0.1+ | 0.2− | |
| 2003 05 01 | 691 | 0.0 | 0.6− | 2003 05 23 | 691 | 0.3− | 0.9+ | 2005 11 01 | 703 | 0.6+ | 0.4− | |
| 2003 05 01 | 691 | 0.4− | 0.7− | 2003 05 26 | 691 | 0.5+ | 0.0 | 2005 11 01 | 703 | 0.8+ | 0.2− | |
| 2003 05 01 | 691 | 0.6+ | 0.3− | 2003 05 26 | 691 | 0.2+ | 0.3− | 2005 11 01 | 703 | 0.6− | 0.3+ | |
| 2003 05 22 | 691 | 0.6− | 0.1− | 2003 05 26 | 691 | 0.1− | 0.4− | 2005 11 01 | 703 | 1.0− | 0.5+ | |
| 2003 05 22 | 691 | 0.3− | 0.2− | 2005 10 27 | 703 | 0.2+ | 0.3− | | | | | |

**2003 $KQ_{25}$ = 2004 $TD_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 121.12828 | | | (2000.0) | | |
| $n$ | 0.16891348 | $\omega$ | 329.19446 | | +0.92821882 | −0.37172905 |
| $a$ | 3.2411056 | $\Omega$ | 52.63541 | | +0.34508324 | +0.84512396 |
| $e$ | 0.0345653 | $i$ | 1.08698 | | +0.13902293 | +0.38416533 |
| $P$ | 5.83 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 01 | 691 | 0.7− | 0.1+ | 2004 10 08 | 691 | 0.3+ | 0.4− | 2005 12 08 | 691 | 0.1+ | 0.2+ |
| 1998 09 01 | 691 | 0.1− | 0.1− | 2004 10 08 | 691 | 0.3− | 0.2− | 2005 12 08 | 691 | 0.1+ | 0.2− |
| 1998 09 01 | 691 | 0.1+ | 0.4+ | 2004 10 08 | 691 | 0.1− | 0.0 | 2005 12 08 | 691 | 0.5+ | 0.1+ |
| 1998 10 01 | 691 | 0.0 | 0.2− | 2004 10 10 | 291 | 0.2− | 0.3+ | 2005 12 28 | 691 | 0.3+ | 0.1− |
| 1998 10 01 | 691 | 0.8+ | 0.1− | 2004 10 10 | 291 | 0.1− | 0.3+ | 2005 12 28 | 691 | 0.5+ | 0.3+ |
| 1998 10 01 | 691 | 0.0 | 0.4− | 2004 10 10 | 291 | 0.2+ | 0.2+ | 2005 12 28 | 691 | 0.1− | 0.3+ |
| 2003 05 31 | 807 | 0.2− | 0.4+ | 2005 12 04 | 691 | 0.5− | 0.4+ | 2005 12 30 | 691 | 0.9− | 1.1− |
| 2003 05 31 | 807 | 0.0 | 0.3+ | 2005 12 04 | 691 | 0.0 | 0.3+ | 2005 12 30 | 691 | 0.2− | 0.2+ |
| 2003 06 01 | 807 | 0.1− | 0.2+ | 2005 12 04 | 691 | 0.0 | 0.3− | 2005 12 30 | 691 | 0.1+ | 0.1+ |

**2003 $KN_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 32.47531 | | | (2000.0) | | |
| $n$ | 0.18097289 | $\omega$ | 273.08421 | | +0.38271805 | −0.91968752 |
| $a$ | 3.0954731 | $\Omega$ | 153.86566 | | +0.90688021 | +0.35585198 |
| $e$ | 0.0678244 | $i$ | 11.49238 | | +0.17633824 | +0.16596455 |
| $P$ | 5.45 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 645 | 0.0 | 0.0 | 2003 05 27 | 291 | 0.3− | 0.1+ | 2004 09 17 | 291 | 0.1+ | 0.0 |
| 2002 03 05 | 645 | 0.1− | 0.1− | 2003 06 01 | 691 | 0.5− | 0.3− | 2005 10 27 | 703 | 1.4− | 0.6+ |
| 2002 03 12 | 645 | 0.0 | 0.1+ | 2003 06 01 | 691 | 0.1− | 0.2+ | 2005 10 27 | 703 | 0.3+ | 0.3+ |
| 2002 03 12 | 645 | 0.1+ | 0.2+ | 2003 06 01 | 691 | 0.5+ | 0.1+ | 2005 10 27 | 703 | 0.2− | 0.2− |
| 2002 03 16 | 704 | 0.6− | 1.0+ | 2003 07 03 | 691 | 0.2+ | 0.3− | 2005 10 27 | 703 | 0.3+ | 0.9− |
| 2002 03 16 | 704 | 0.1+ | 0.1− | 2003 07 03 | 691 | 0.2− | 0.3− | 2005 11 01 | 703 | 0.1+ | 0.0 |
| 2002 03 16 | 704 | 0.1− | 0.9− | 2003 07 03 | 691 | 0.2+ | 0.3+ | 2005 11 01 | 703 | 0.4+ | 0.3− |
| 2003 05 27 | 291 | 0.0 | 0.1− | 2004 09 17 | 291 | 0.1− | 0.5+ | 2005 11 01 | 703 | 0.0 | 0.7+ |
| 2003 05 27 | 291 | 0.1+ | 0.2+ | 2004 09 17 | 291 | 0.0 | 0.2+ | 2005 11 01 | 703 | 0.1+ | 1.4+ |

**2003 $LT_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 219.54716 | | | (2000.0) | | |
| $n$ | 0.21580838 | $\omega$ | 225.78418 | | +0.04469394 | +0.99712940 |
| $a$ | 2.7526892 | $\Omega$ | 46.88281 | | −0.89103967 | +0.06745273 |
| $e$ | 0.0645101 | $i$ | 4.80290 | | −0.45171978 | −0.03439615 |
| $P$ | 4.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 645 | 0.0 | 0.2− | 2003 06 07 | 291 | 0.4+ | 0.2− | 2005 12 02 | 691 | 0.1+ | 0.6+ |
| 2002 02 08 | 645 | 0.1− | 0.2− | 2003 06 08 | 291 | 0.0 | 0.2+ | 2005 12 02 | 691 | 1.8− | 0.5− |
| 2003 05 03 | 691 | 0.2+ | 0.1+ | 2003 06 08 | 291 | 0.2− | 0.4+ | 2005 12 02 | 691 | 0.2+ | 0.3+ |
| 2003 05 03 | 691 | 0.8+ | 0.1+ | 2003 06 08 | 291 | 0.2+ | 0.6+ | 2005 12 10 | 691 | 0.3+ | 0.5+ |
| 2003 05 03 | 691 | 0.5+ | 0.3− | 2005 11 25 | 691 | 0.4− | 0.8+ | 2005 12 10 | 691 | 0.8+ | 0.7+ |
| 2003 05 10 | 691 | 0.8− | 0.8+ | 2005 11 25 | 691 | 0.3− | 0.3+ | 2005 12 10 | 691 | 0.9+ | 0.5+ |
| 2003 05 10 | 691 | 0.6− | 0.5+ | 2005 11 25 | 691 | 0.0 | 0.4+ | 2006 01 02 | G96 | 0.3+ | 0.5− |
| 2003 05 10 | 691 | 0.2− | 0.8+ | 2005 12 02 | 691 | 0.2− | 0.4+ | 2006 01 02 | G96 | 0.3+ | 0.3− |
| 2003 06 07 | 291 | 0.6+ | 0.0 | 2005 12 02 | 691 | 0.1− | 0.8+ | 2006 01 02 | G96 | 0.1+ | 0.5− |
| 2003 06 07 | 291 | 0.7+ | 0.1+ | 2005 12 02 | 691 | 0.7− | 0.1+ | 2006 01 02 | G96 | 1.0+ | 0.5− |

**2003 MB**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 211.71637 | | | (2000.0) | | |
| $n$ | 0.22948553 | $\omega$ | 208.10089 | | +0.90634744 | +0.41489914 |
| $a$ | 2.6422009 | $\Omega$ | 127.16258 | | −0.36643590 | +0.86603327 |
| $e$ | 0.1485779 | $i$ | 5.75824 | | −0.21037834 | +0.27900731 |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.3− | 0.1+ | 2003 06 23 | J86 | 0.1+ | 0.2+ | 2006 01 28 | G96 | 0.3− | 0.2− |
| 1999 07 14 | 704 | 0.1− | 1.1+ | 2004 11 03 | 644 | 0.1− | 0.5+ | 2006 01 28 | G96 | 0.6− | 0.3− |
| 1999 07 14 | 704 | 0.7+ | 1.0+ | 2004 11 03 | 644 | 0.1− | 0.5+ | 2006 01 28 | G96 | 0.2+ | 0.2− |
| 1999 07 14 | 704 | 0.5− | 0.5+ | 2004 11 03 | 644 | 0.3− | 0.5+ | 2006 02 07 | 691 | 0.2+ | 0.3+ |
| 2003 06 18 | J86 | 0.5− | 0.1− | 2005 10 07 | 568 | 0.2− | 0.1− | 2006 02 07 | 691 | 0.3+ | 0.5+ |
| 2003 06 18 | J86 | 0.2+ | 0.0 | 2005 10 07 | 568 | 0.2− | 0.2+ | 2006 02 07 | 691 | 0.1− | 0.1+ |
| 2003 06 19 | J86 | 0.5− | 0.3− | 2005 10 07 | 568 | 0.2− | 0.3+ | 2006 02 25 | G96 | 0.1+ | 0.0 |
| 2003 06 19 | J86 | 0.0 | 0.2− | 2006 01 07 | G96 | 0.9+ | 0.2+ | 2006 02 25 | G96 | 0.1+ | 0.1+ |
| 2003 06 21 | J86 | 0.2+ | 0.2+ | 2006 01 07 | G96 | 0.6− | 0.4+ | 2006 02 25 | G96 | 0.1+ | 0.1+ |
| 2003 06 21 | J86 | 0.1+ | 0.2+ | 2006 01 07 | G96 | 0.1+ | 0.1+ | 2006 02 25 | G96 | 0.4− | 0.2+ |
| 2003 06 22 | J86 | 0.3+ | 0.2+ | 2006 01 07 | G96 | 0.2+ | 0.4− | | | | |
| 2003 06 23 | J86 | 0.1+ | 0.0 | 2006 01 28 | G96 | 0.1− | 0.3− | | | | |

**2003 $MB_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 302.06796 | | | (2000.0) | | |
| $n$ | 0.26812861 | $\omega$ | 31.49125 | | +0.95238908 | +0.26386750 |
| $a$ | 2.3818109 | $\Omega$ | 312.39866 | | −0.30455070 | +0.79989060 |
| $e$ | 0.4240242 | $i$ | 11.93667 | | −0.01427999 | +0.53902594 |
| $P$ | 3.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 691 | 0.4+ | 0.6+ | 2003 07 03 | 704 | 0.0 | 1.2+ | 2003 09 25 | 127 | 0.2− | 0.0 |
| 2001 01 04 | 691 | 0.2+ | 0.4+ | 2003 07 03 | 704 | 1.2− | 0.2+ | 2003 09 29 | 704 | 1.3+ | 2.0− |
| 2001 01 04 | 691 | 0.3+ | 0.8+ | 2003 07 03 | 704 | 0.4− | 0.8+ | 2003 09 29 | 704 | 1.7+ | 1.9− |
| 2003 06 28 | 704 | 0.8+ | 0.2− | 2003 07 03 | 704 | 0.0 | 0.8+ | 2003 09 29 | 704 | 0.2+ | 1.6− |
| 2003 06 28 | 704 | 0.1− | 0.2− | 2003 07 04 | 704 | 0.4− | 0.2+ | 2003 09 29 | 127 | 0.1− | 0.1+ |
| 2003 06 28 | 704 | 0.2− | 0.5− | 2003 07 04 | 704 | 0.7− | 0.1− | 2003 09 29 | 127 | 0.1− | 0.1− |
| 2003 06 28 | 704 | 0.3− | 0.6− | 2003 07 04 | 704 | 0.3− | 0.4− | 2003 09 29 | 127 | 0.2− | 0.3− |
| 2003 06 28 | 704 | 0.6− | 0.3− | 2003 07 04 | 704 | 0.0 | 0.4+ | 2003 09 29 | 127 | 0.1− | 0.0 |
| 2003 06 29 | J95 | 0.5+ | 0.0 | 2003 07 04 | 704 | 0.2− | 0.9− | 2003 09 30 | 699 | 0.1− | 0.1− |
| 2003 06 29 | J95 | 0.4− | 0.1− | 2003 07 30 | 704 | 0.6− | 0.3+ | 2003 09 30 | 699 | 0.3− | 0.1− |
| 2003 06 29 | J95 | 0.1− | 1.3− | 2003 07 30 | 704 | 0.6− | 0.4+ | 2003 09 30 | 699 | 0.3− | 0.0 |
| 2003 06 29 | J95 | 0.5− | 0.2+ | 2003 07 30 | 704 | 0.7− | 0.0 | 2003 09 30 | 699 | 0.2− | 0.2− |
| 2003 06 29 | 941 | 0.2+ | 0.2+ | 2003 07 30 | 704 | 0.8− | 0.6+ | 2003 10 23 | 704 | 0.2+ | 0.5+ |
| 2003 06 29 | 941 | 0.2+ | 0.1+ | 2003 07 30 | 704 | 0.7− | 0.2+ | 2003 10 23 | 704 | 0.2+ | 0.0 |
| 2003 06 29 | 941 | 0.2+ | 0.2− | 2003 08 09 | 608 | 0.4− | 0.7+ | 2003 10 23 | 704 | 0.1+ | 0.4+ |
| 2003 06 29 | 941 | 0.0 | 0.3− | 2003 08 09 | 608 | 0.6− | 0.7+ | 2003 10 23 | 704 | 0.2+ | 0.9+ |
| 2003 06 29 | 704 | 0.0 | 0.6+ | 2003 08 09 | 608 | 0.5− | 0.3+ | 2003 10 23 | 704 | 0.4+ | 0.0 |
| 2003 06 29 | 704 | 0.4+ | 0.2− | 2003 08 22 | 196 | 0.4− | 0.4+ | 2003 10 23 | 127 | 0.2+ | 0.1+ |
| 2003 06 29 | 704 | 0.5− | 0.2+ | 2003 08 22 | 196 | 0.1− | 0.0 | 2003 10 23 | 127 | 0.2+ | 0.0 |
| 2003 06 29 | 704 | 0.3+ | 0.4− | 2003 08 23 | 196 | 0.4+ | 0.1+ | 2003 10 23 | 127 | 0.4+ | 0.1− |
| 2003 06 29 | 704 | 0.9+ | 0.9− | 2003 08 23 | 196 | 0.3− | 0.2− | 2003 11 03 | 704 | 1.0+ | 0.4+ |
| 2003 06 29 | 926 | 0.1+ | 0.5− | 2003 08 23 | 196 | 0.6+ | 0.3+ | 2003 11 03 | 704 | 0.9+ | 0.6+ |
| 2003 06 29 | 926 | 0.2+ | 0.3− | 2003 08 23 | 196 | 0.6+ | 0.0 | 2003 11 03 | 704 | 1.0+ | 0.0 |
| 2003 06 29 | 704 | 0.2− | 0.3− | 2003 08 24 | 196 | 0.1+ | 0.3− | 2003 11 03 | 704 | 1.1+ | 0.6+ |
| 2003 06 29 | 926 | 0.2− | 0.4− | 2003 08 24 | 196 | 0.2+ | 0.2− | 2003 11 03 | 704 | 0.9+ | 0.4+ |
| 2003 06 29 | 704 | 0.5+ | 0.1− | 2003 09 07 | 704 | 0.4− | 0.6− | 2003 11 24 | 704 | 0.5− | 0.3+ |
| 2003 06 30 | 246 | 0.5− | 2.0+ | 2003 09 07 | 704 | 0.3− | 0.2+ | 2003 11 24 | 704 | 0.5− | 0.8+ |
| 2003 06 30 | 246 | 0.4+ | 0.9+ | 2003 09 07 | 704 | 0.2+ | 0.7− | 2003 11 24 | 704 | 0.4− | 0.1+ |
| 2003 06 30 | 246 | 0.0 | 1.2+ | 2003 09 07 | 704 | 0.9+ | 0.2− | 2003 11 24 | 704 | 0.2− | 0.3+ |
| 2003 06 30 | 246 | 0.4+ | 0.6+ | 2003 09 07 | 704 | 0.9+ | 0.5− | 2003 11 24 | 704 | 0.4− | 0.3+ |
| 2003 06 30 | 246 | 0.2+ | 1.3+ | 2003 09 17 | 196 | 0.3+ | 0.4+ | 2003 12 04 | 704 | 0.5− | 0.3+ |
| 2003 06 30 | 246 | 0.1+ | 1.4+ | 2003 09 17 | 196 | 0.6+ | 0.6+ | 2003 12 04 | 704 | 0.1− | 0.3+ |
| 2003 06 30 | 704 | 1.1+ | 0.0 | 2003 09 18 | 196 | 0.1+ | 0.2+ | 2003 12 04 | 704 | 0.2− | 0.3+ |
| 2003 06 30 | 704 | 0.8+ | 0.1+ | 2003 09 18 | 196 | 0.2+ | 0.2+ | 2003 12 04 | 704 | 0.4− | 0.2+ |
| 2003 06 30 | 704 | 0.4+ | 0.1− | 2003 09 19 | 196 | 0.1+ | 0.2+ | 2003 12 09 | 185 | 0.5− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 01 | 704 | 0.4+ | 0.1+ | 2003 09 19 | 644 | 0.3− | 0.3+ | 2003 12 09 | 185 | (5.2+ | 1.3−) |
| 2003 07 01 | 704 | 0.3− | 0.7+ | 2003 09 19 | 644 | 0.1+ | 0.0 | 2003 12 18 | 704 | 0.7− | 0.1+ |
| 2003 07 01 | 704 | 0.1+ | 0.0 | 2003 09 19 | 644 | 0.4− | 0.3+ | 2003 12 18 | 704 | 0.9− | 0.2− |
| 2003 07 01 | 704 | 0.2− | 0.2+ | 2003 09 19 | 644 | 0.1− | 0.0 | 2003 12 18 | 704 | 0.3− | 0.9− |
| 2003 07 02 | 704 | 0.8− | 0.6+ | 2003 09 19 | 644 | 0.3− | 0.3+ | 2003 12 18 | 704 | 0.2− | 0.0 |
| 2003 07 02 | 704 | 1.1− | 1.2+ | 2003 09 19 | 644 | 0.0 | 0.1− | 2003 12 18 | 704 | 0.2− | 0.4− |
| 2003 07 02 | 704 | 0.7− | 0.7+ | 2003 09 22 | 951 | (4.6+ | 1.8−) | 2003 12 29 | 704 | 0.2+ | 0.1− |
| 2003 07 02 | 704 | 0.1− | 0.1+ | 2003 09 22 | 951 | 0.0 | 0.2− | 2003 12 29 | 704 | 0.3+ | 0.1+ |
| 2003 07 02 | 704 | 0.6− | 0.3+ | 2003 09 23 | 951 | 1.2− | 0.2− | 2003 12 29 | 704 | 1.0+ | 1.0+ |
| 2003 07 02 | 704 | 0.1− | 0.1− | 2003 09 23 | 951 | 1.1− | 0.7− | 2003 12 29 | 704 | 0.4− | 0.2+ |
| 2003 07 02 | 704 | 0.2+ | 0.3− | 2003 09 23 | 951 | 0.9− | 0.5+ | 2003 12 29 | 704 | 0.9+ | 0.3+ |
| 2003 07 02 | 704 | 0.0 | 0.2+ | 2003 09 24 | 951 | 0.2− | 1.0− | 2005 03 17 | G96 | 0.2+ | 0.3+ |
| 2003 07 02 | 704 | 1.0+ | 0.2− | 2003 09 25 | 127 | 0.3− | 0.1− | 2005 03 17 | G96 | 0.1− | 0.3+ |
| 2003 07 02 | 704 | 0.1+ | 0.3+ | 2003 09 25 | 127 | 0.2− | 0.1+ | 2005 03 17 | G96 | 0.0 | 0.4+ |
| 2003 07 03 | 704 | 0.1− | 0.7+ | 2003 09 25 | 127 | 0.2− | 0.3+ | 2005 03 17 | G96 | 0.6− | 0.3+ |

### 2003 ML$_{10}$ = 2006 RY$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.76697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37326201 | $\omega$ | 79.58914 | | +0.01712063 | | +0.99666756 |
| $a$ | 1.9104112 | $\Omega$ | 192.26761 | | −0.99937560 | | +0.01459218 |
| $e$ | 0.0803002 | $i$ | 22.04599 | | −0.03090783 | | +0.08025488 |
| $P$ | 2.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 08 | 699 | 0.7− | 0.3+ | 2006 08 29 | 699 | 1.2+ | 0.9+ | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2003 06 08 | 699 | 0.8+ | 1.1− | 2006 09 06 | 644 | 0.0 | 0.3− | 2006 10 01 | 704 | (0.6+ | 1.6+) |
| 2003 06 08 | 699 | 0.3− | 0.9− | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 1.0− | 0.1− |
| 2003 06 08 | 699 | 0.4+ | 0.2− | 2006 09 06 | 644 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2003 06 21 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.8− | 0.4− | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2003 06 21 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2003 06 21 | 704 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.6− | 0.7− |
| 2003 06 21 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2003 06 21 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 683 | 0.4+ | 1.3+ | 2006 10 22 | 703 | 0.1+ | 0.6− |
| 2003 06 21 | 699 | 0.2− | 0.5+ | 2006 09 16 | 683 | (0.7+ | 2.1+) | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2003 06 21 | 699 | 0.1+ | 0.5+ | 2006 09 16 | 683 | (1.4− | 1.9+) | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2003 06 21 | 699 | (1.6− | 0.2+) | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2003 06 21 | 699 | 0.0 | 1.2+ | 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.4+ |
| 2003 06 26 | 699 | 0.2− | 1.0− | 2006 09 16 | 644 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.2+ |
| 2003 06 26 | 699 | 0.6− | 0.9− | 2006 09 29 | 699 | 0.3− | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2003 06 26 | 699 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.5+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2003 06 26 | 699 | 0.8− | 0.9+ | 2006 09 29 | 699 | 0.0 | 0.8+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 08 29 | 699 | 1.0− | 0.4− | 2006 09 29 | 699 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2006 08 29 | 699 | 0.7+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.4+ | | | | |
| 2006 08 29 | 699 | 0.2− | 1.1− | 2006 10 01 | 704 | 0.1+ | 1.0+ | | | | |

### 2003 MY$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.54425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22060352 | $\omega$ | 189.32407 | | +0.70232799 | | +0.69422694 |
| $a$ | 2.7126542 | $\Omega$ | 125.49072 | | −0.64001896 | | +0.71263379 |
| $e$ | 0.2064833 | $i$ | 11.14857 | | −0.31162657 | | +0.10100513 |
| $P$ | 4.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 18 | 691 | 0.0 | 0.3− | 2003 07 05 | 691 | 0.2+ | 0.3+ | 2003 09 05 | 608 | 0.0 | 0.9− |
| 1998 04 18 | 691 | 0.1− | 0.1+ | 2003 07 05 | 691 | 0.2+ | 0.2+ | 2003 09 05 | 608 | 1.1+ | 0.7− |
| 1998 04 18 | 691 | 0.0 | 0.4− | 2003 07 05 | 691 | 0.2+ | 0.2+ | 2003 09 05 | 608 | 0.8+ | 0.7− |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2003 08 17 | 608 | 1.4− | 1.6+ | 2006 01 23 | 691 | 0.4+ | 0.1+ |
| 2002 03 12 | 645 | 0.0 | 0.1+ | 2003 08 17 | 608 | 1.2− | 1.6+ | 2006 01 23 | 691 | 0.3− | 0.2− |
| 2003 06 22 | 699 | 0.1+ | 0.1+ | 2003 08 17 | 608 | 1.0− | 1.5+ | 2006 01 23 | 691 | 0.3+ | 0.4+ |
| 2003 06 22 | 699 | 0.2− | 0.1− | 2003 08 23 | 704 | 0.7− | 0.1− | 2006 02 01 | 691 | 0.2+ | 0.3+ |
| 2003 06 22 | 699 | 0.2− | 1.0− | 2003 08 23 | 704 | 0.2+ | 0.5+ | 2006 02 01 | 691 | 0.0 | 0.5+ |
| 2003 06 22 | 699 | 0.3+ | 0.8+ | 2003 08 23 | 704 | 0.4− | 0.0 | 2006 02 01 | 691 | 0.1− | 0.3+ |

### 2003 MZ$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.75910 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17698068 | $\omega$ | 272.29066 | | +0.79437452 | | −0.51746189 |
| $a$ | 3.1418502 | $\Omega$ | 119.03200 | | +0.59107862 | | +0.77919715 |
| $e$ | 0.3121796 | $i$ | 21.33622 | | −0.13998285 | | +0.35367356 |
| $P$ | 5.57 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 13 | 691 | 0.7+ | 0.7+ | 2003 07 02 | 704 | 0.6− | 1.6− | 2004 12 18 | 704 | 0.2+ | 0.2− |
| 1994 01 13 | 691 | 1.0− | 0.3+ | 2003 07 02 | 704 | 0.6+ | 0.5− | 2004 12 18 | 704 | 0.7+ | 0.1+ |
| 1994 01 13 | 691 | 0.2+ | 0.8− | 2003 07 23 | 704 | 0.1+ | 1.6+ | 2004 12 18 | 704 | 0.8− | 0.0 |
| 2003 06 24 | 599 | 0.5+ | 0.6+ | 2003 07 23 | 704 | 0.8− | 0.2+ | 2004 12 18 | 704 | 0.8− | 0.1+ |
| 2003 06 24 | 599 | 0.2+ | 1.1+ | 2003 07 23 | 704 | 0.3− | 0.3− | 2004 12 18 | 704 | 0.7− | 0.2− |
| 2003 06 24 | 599 | 0.2− | 0.6+ | 2003 08 04 | 704 | 0.3+ | 0.2− | 2005 02 02 | 704 | 0.3+ | 0.1+ |
| 2003 07 02 | 704 | 0.7+ | 0.1+ | 2003 08 04 | 704 | 0.1+ | 0.9− | 2005 02 02 | 704 | 1.2+ | 0.0 |
| 2003 07 02 | 704 | 0.5− | 0.6− | 2003 08 04 | 704 | 0.0 | 0.4+ | 2005 02 02 | 704 | 0.2+ | 0.0 |

### 2003 MA$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.02769 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24303213 | $\omega$ | 73.58411 | | +0.98097956 | | −0.01903083 |
| $a$ | 2.5430814 | $\Omega$ | 287.18676 | | −0.07018206 | | +0.89308554 |
| $e$ | 0.3177081 | $i$ | 11.66593 | | +0.18097952 | | +0.44948420 |
| $P$ | 4.06 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.3− | 0.5− | 2003 06 25 | 704 | 0.2+ | 0.2− | 2003 08 23 | 704 | 0.2+ | 0.5+ |
| 1999 07 13 | 704 | 0.1− | 0.5+ | 2003 07 10 | 608 | 0.4− | 0.2− | 2003 08 23 | 704 | 0.2− | 0.5+ |
| 1999 07 13 | 704 | 0.4+ | 0.4+ | 2003 07 10 | 608 | 0.1− | 0.0 | 2003 08 23 | 704 | 0.3+ | 0.6+ |
| 1999 07 13 | 704 | 0.3+ | 0.4+ | 2003 07 10 | 608 | 0.1− | 0.2− | 2003 08 23 | 704 | 0.4− | 0.8+ |
| 1999 07 13 | 704 | 0.0 | 0.3+ | 2003 07 25 | 704 | (1.2− | 2.8+) | 2003 10 18 | 704 | 0.4− | 0.3+ |
| 1999 10 08 | 704 | 0.5− | 0.2+ | 2003 07 25 | 704 | 0.6+ | 0.3+ | 2003 10 18 | 704 | 0.7− | 0.3− |
| 1999 10 08 | 704 | 0.4+ | 0.5− | 2003 07 25 | 704 | 0.5− | 0.6− | 2003 10 18 | 704 | 0.6− | 0.1− |
| 1999 10 08 | 704 | 0.6− | 0.2+ | 2003 07 25 | 704 | (1.1+ | 2.3−) | 2003 10 18 | 704 | 0.5+ | 0.8+ |
| 1999 10 08 | 704 | 0.3+ | 0.5− | 2003 08 05 | 704 | 0.0 | 0.2+ | 2005 01 13 | 691 | 0.1+ | 0.3+ |
| 1999 10 08 | 704 | 0.2+ | 1.0− | 2003 08 05 | 704 | 0.1− | 0.0 | 2005 01 13 | 691 | 0.2+ | 0.2+ |
| 2003 06 25 | 704 | 0.0 | 0.1− | 2003 08 05 | 704 | 0.0 | 0.6+ | 2005 01 13 | 691 | 0.1+ | 0.3+ |
| 2003 06 25 | 704 | 0.2+ | 0.7− | 2003 08 05 | 704 | 0.0 | 0.4+ | | | | |

### 2003 MC$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.44508 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28485903 | $\omega$ | 1.61591 | | +0.19702507 | | +0.97863949 |
| $a$ | 2.2876139 | $\Omega$ | 279.75002 | | −0.90016478 | | +0.15685357 |
| $e$ | 0.1866264 | $i$ | 3.41466 | | −0.38843854 | | +0.13289737 |
| $P$ | 3.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 28 | 691 | 0.1+ | 0.2+ | 2003 06 25 | 699 | 0.5+ | 1.0+ | 2003 08 04 | 704 | (0.7− | 3.1+) |
| 1994 12 28 | 691 | 0.2− | 0.6− | 2003 06 25 | 699 | 0.6− | 0.2+ | 2003 08 04 | 704 | (0.2− | 3.3+) |
| 1994 12 28 | 691 | 0.0 | 0.1− | 2003 06 25 | 699 | 1.3− | 0.0 | 2003 08 04 | 704 | (0.8− | 3.3+) |
| 2000 11 01 | 704 | 0.3− | 0.0 | 2003 07 02 | 704 | 0.1− | 0.5+ | 2003 08 04 | 704 | (0.7− | 3.5+) |
| 2000 11 01 | 704 | 0.1− | 0.7+ | 2003 07 02 | 704 | 0.3− | 0.3− | 2003 08 25 | 704 | 0.6+ | 0.9− |
| 2000 11 01 | 704 | 1.4− | 0.0 | 2003 07 02 | 704 | 0.3− | 0.8+ | 2003 08 25 | 704 | 0.3+ | 0.4+ |
| 2000 11 30 | 645 | 0.1+ | 0.0 | 2003 07 02 | 704 | 0.3− | 1.1+ | 2003 08 25 | 704 | 0.1− | 1.0+ |
| 2000 11 30 | 645 | 0.0 | 0.0 | 2003 07 25 | 704 | 0.2− | 0.2+ | 2004 12 20 | 691 | 0.0 | 0.2+ |
| 2002 02 11 | 704 | 0.6+ | 1.6+ | 2003 07 25 | 704 | 0.1+ | 0.1− | 2004 12 20 | 691 | 0.1+ | 0.2+ |
| 2002 02 11 | 704 | 0.2− | 1.6+ | 2003 07 25 | 704 | 0.2+ | 0.4+ | 2004 12 20 | 691 | 0.1+ | 0.0 |
| 2002 02 11 | 704 | 0.1+ | 1.3+ | 2003 07 25 | 704 | 0.4+ | 0.3− | | | | |
| 2003 06 25 | 699 | 0.3+ | 1.1− | 2003 08 04 | 704 | (0.4− | 2.7+) | | | | |

### 2003 $MD_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 275.88302 | | (2000.0) | | | |
| $n$ | 0.23626326 | $\omega$ | 106.61997 | | +0.38263436 | +0.92388379 |
| $a$ | 2.5914247 | $\Omega$ | 185.88559 | | −0.86662759 | +0.35686451 |
| $e$ | 0.1997236 | $i$ | 3.04607 | | −0.32023049 | +0.13815379 |
| $P$ | 4.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 26 | 704 | 0.1+ | 1.6− | 2003 07 11 | 608 | 0.0 | 0.8+ | 2003 08 05 | 704 | 0.5+ | 0.8− |
| 2003 06 26 | 704 | 0.0 | 0.5+ | 2003 07 11 | 608 | 1.6− | 0.8− | 2003 08 05 | 704 | 0.1− | 1.0− |
| 2003 06 26 | 704 | 0.7− | 0.8+ | 2003 07 25 | 704 | 0.9− | 0.6+ | 2006 02 02 | 691 | 0.4− | 0.2− |
| 2003 07 01 | 704 | 0.7+ | 0.1+ | 2003 07 25 | 704 | 0.1+ | 0.3− | 2006 02 02 | 691 | 0.4+ | 0.3− |
| 2003 07 01 | 704 | 0.3+ | 0.0 | 2003 07 25 | 704 | 0.1− | 0.2+ | 2006 02 02 | 691 | 0.3− | 0.0 |
| 2003 07 01 | 704 | 0.1+ | 0.0 | 2003 07 25 | 704 | 0.6+ | 0.3+ | 2006 03 03 | 691 | 0.2+ | 0.1− |
| 2003 07 01 | 704 | 0.5+ | 0.0 | 2003 08 05 | 704 | 0.8+ | 0.5− | 2006 03 03 | 691 | 0.2+ | 0.0 |
| 2003 07 11 | 608 | 0.0 | 0.7+ | 2003 08 05 | 704 | 0.1+ | 0.4+ | 2006 03 03 | 691 | 0.2− | 0.5+ |

### 2003 $NQ_{1}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 238.60470 | | (2000.0) | | | |
| $n$ | 0.20057669 | $\omega$ | 4.36286 | | +0.41266554 | +0.90282672 |
| $a$ | 2.8903409 | $\Omega$ | 290.04690 | | −0.83956383 | +0.32551689 |
| $e$ | 0.2872399 | $i$ | 7.39287 | | −0.35332665 | +0.28096739 |
| $P$ | 4.91 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 26 | 809 | 0.3− | 0.4+ | 2003 07 02 | 704 | 0.5+ | 0.2− | 2003 07 25 | 704 | 0.4+ | 0.6− |
| 1998 06 26 | 809 | 0.0 | 0.7− | 2003 07 02 | 704 | 0.3− | 1.0+ | 2003 07 25 | 704 | (2.2− | 0.0 ) |
| 1998 06 26 | 809 | 0.6+ | 0.6− | 2003 07 02 | 704 | 0.1+ | 0.6− | 2003 07 25 | 704 | 0.1+ | 0.7+ |
| 2002 02 19 | 291 | 0.2+ | 0.4+ | 2003 07 03 | 699 | 0.5+ | 0.6− | 2003 08 05 | 704 | 0.0 | 0.6+ |
| 2002 02 19 | 291 | 0.5+ | 0.3+ | 2003 07 03 | 699 | 0.0 | 0.4+ | 2003 08 05 | 704 | 0.2− | 0.4+ |
| 2002 02 19 | 291 | 0.1− | 0.4+ | 2003 07 03 | 699 | 0.8+ | 0.3− | 2003 08 05 | 704 | 0.4− | 0.8+ |
| 2003 06 25 | 704 | 0.3+ | 0.4+ | 2003 07 03 | 699 | 0.3+ | 0.5− | 2003 08 05 | 704 | 0.5− | 0.2+ |
| 2003 06 25 | 704 | 0.4− | 0.2− | 2003 07 24 | 644 | 0.0 | 0.4+ | 2003 08 05 | 704 | 1.2− | 0.7+ |
| 2003 06 25 | 704 | 1.3− | 0.5+ | 2003 07 24 | 644 | 0.4− | 0.5+ | 2003 11 20 | 691 | 0.0 | 0.5+ |
| 2003 06 25 | 704 | 1.1+ | 0.3− | 2003 07 24 | 644 | 0.3+ | 0.1+ | 2003 11 20 | 691 | 0.2− | 0.1+ |
| 2003 07 02 | 704 | 0.3+ | 0.6− | 2003 07 25 | 704 | 0.2+ | 0.0 | 2003 11 20 | 691 | 0.4− | 0.2+ |
| 2003 07 02 | 704 | 0.1+ | 0.8− | 2003 07 25 | 704 | 0.2− | 0.1+ | | | | |

### 2003 $NR_{12}$ = 2006 $EB_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 299.50462 | | (2000.0) | | | |
| $n$ | 0.25503645 | $\omega$ | 347.12759 | | +0.55329853 | +0.83028912 |
| $a$ | 2.4626416 | $\Omega$ | 316.41612 | | −0.75538509 | +0.46626341 |
| $e$ | 0.1651854 | $i$ | 5.57185 | | −0.35107564 | +0.30531690 |
| $P$ | 3.86 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 704 | 0.7+ | 1.0+ | 2003 07 25 | 704 | 0.5+ | 0.9− | 2003 08 04 | 704 | 1.6+ | 1.2− |
| 2002 03 13 | 704 | 0.4+ | 1.5+ | 2003 07 25 | 704 | 0.1− | 0.5+ | 2003 08 25 | 704 | 0.3− | 0.5− |
| 2002 03 13 | 704 | 0.5+ | 0.6+ | 2003 07 25 | 644 | 0.1− | 0.2+ | 2003 08 25 | 704 | 0.4+ | 1.4+ |
| 2003 07 08 | 644 | 0.2+ | 0.2+ | 2003 07 25 | 704 | 0.2− | 0.9+ | 2003 08 25 | 704 | 0.1+ | 0.3+ |
| 2003 07 08 | 644 | 0.1− | 0.3+ | 2003 07 25 | 704 | 0.1− | 0.1+ | 2003 08 25 | 704 | 0.0 | 0.4+ |
| 2003 07 08 | 644 | 0.0 | 0.2+ | 2003 07 25 | 644 | 0.1− | 0.1+ | 2006 03 05 | 691 | 0.1− | 0.2− |
| 2003 07 08 | 644 | 0.1− | 0.1+ | 2003 08 04 | 704 | 1.1− | 0.4− | 2006 03 05 | 691 | 0.3− | 0.3− |
| 2003 07 08 | 644 | 0.1− | 0.3+ | 2003 08 04 | 704 | 0.7− | 0.5+ | 2006 03 05 | 691 | 0.5− | 0.5− |
| 2003 07 08 | 644 | 0.0 | 0.1+ | 2003 08 04 | 704 | 0.5+ | 0.6− | 2006 03 09 | 691 | 0.5+ | 0.4+ |
| 2003 07 25 | 704 | 0.4− | 0.4+ | 2003 08 04 | 704 | 0.7− | 0.1+ | 2006 03 09 | 691 | 0.1− | 0.2− |
| 2003 07 25 | 644 | 0.3− | 0.2+ | 2003 08 04 | 704 | 0.8+ | 1.9− | 2006 03 09 | 691 | 0.1+ | 0.1+ |

### 2003 $NS_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 227.18785 | | (2000.0) | | | |
| $n$ | 0.23792466 | $\omega$ | 86.11724 | | +0.89762219 | −0.40224471 |
| $a$ | 2.5793468 | $\Omega$ | 297.52296 | | +0.27843441 | +0.83441616 |
| $e$ | 0.2093251 | $i$ | 11.72424 | | +0.34168506 | +0.37676103 |
| $P$ | 4.14 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 03 | 691 | 0.1− | 0.0 | 2003 08 05 | 704 | 0.6− | 0.1+ | 2005 01 17 | 691 | 0.2+ | 0.0 |
| 2003 07 03 | 691 | 0.2− | 0.1− | 2003 08 05 | 704 | 0.3− | 0.3+ | 2005 01 17 | 691 | 0.1+ | 0.1+ |
| 2003 07 03 | 691 | 0.0 | 0.0 | 2003 08 05 | 704 | 0.2− | 0.5+ | 2005 01 17 | 691 | 0.2+ | 0.0 |
| 2003 07 24 | 644 | 0.1− | 0.1+ | 2003 08 24 | 704 | 0.5− | 0.5+ | 2005 02 02 | 703 | 0.3+ | 0.2+ |
| 2003 07 24 | 644 | 0.2− | 0.5+ | 2003 08 24 | 704 | 0.1− | 0.2− | 2005 02 02 | 703 | 0.1+ | 0.2+ |
| 2003 07 24 | 644 | 0.9+ | 1.2+ | 2003 08 24 | 704 | 1.0− | 0.2− | 2005 02 02 | 703 | 1.4− | 0.0 |
| 2003 08 05 | 704 | 0.8+ | 0.3− | 2003 08 24 | 704 | 0.4+ | 0.8− | 2005 02 02 | 703 | 0.1+ | 0.8+ |
| 2003 08 05 | 704 | 0.2− | 0.4+ | 2003 08 24 | 704 | 1.1+ | 0.4− | | | | |

### 2003 $NT_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 195.99480 | | (2000.0) | | | |
| $n$ | 0.17642411 | $\omega$ | 194.56728 | | +0.79179118 | +0.60164104 |
| $a$ | 3.1484545 | $\Omega$ | 127.95298 | | −0.54617753 | +0.77461830 |
| $e$ | 0.1819551 | $i$ | 7.67665 | | −0.27341695 | +0.19492191 |
| $P$ | 5.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 0.1− | 0.1− | 2003 07 08 | 644 | 0.4+ | 0.4+ | 2003 08 04 | 704 | 0.2− | 0.2− |
| 1995 02 05 | 691 | 0.2+ | 0.1− | 2003 07 08 | 644 | 0.0 | 0.1+ | 2003 08 04 | 704 | 0.9− | 0.3− |
| 1995 02 05 | 691 | 0.0 | 0.5+ | 2003 07 08 | 644 | 0.0 | 0.0 | 2003 08 04 | 704 | 0.6− | 0.5− |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2003 07 25 | 644 | 0.3+ | 0.8+ | 2006 01 21 | 691 | 0.2− | 0.6+ |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2003 07 25 | 644 | 0.2+ | 0.8+ | 2006 01 21 | 691 | 0.1+ | 0.7+ |
| 2003 07 05 | 691 | 0.3− | 0.1+ | 2003 07 25 | 644 | 0.4+ | 0.7+ | 2006 01 21 | 691 | 0.2+ | 0.6− |
| 2003 07 05 | 691 | 0.2+ | 0.4+ | 2003 08 04 | 704 | 0.0 | 0.6− | | | | |
| 2003 07 05 | 691 | 0.1+ | 0.3+ | 2003 08 04 | 704 | 0.3− | 0.6− | | | | |

### 2003 $NU_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.00453 | | (2000.0) | | | |
| $n$ | 0.27603381 | $\omega$ | 66.88628 | | −0.21711985 | +0.97606904 |
| $a$ | 2.3361167 | $\Omega$ | 190.59557 | | −0.91807245 | −0.20842445 |
| $e$ | 0.2454460 | $i$ | 3.79608 | | −0.33166542 | −0.06203606 |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 01 | 704 | 0.0 | 0.5+ | 2003 08 05 | 704 | 0.3− | 0.0 | 2006 02 22 | 699 | 1.0+ | 0.2− |
| 2003 07 01 | 704 | 0.5+ | 0.3+ | 2003 08 05 | 704 | 0.7− | 0.2+ | 2006 02 22 | 699 | 0.2+ | 1.2+ |
| 2003 07 01 | 704 | 0.0 | 0.1+ | 2003 08 05 | 704 | 0.1− | 0.1+ | 2006 03 23 | 703 | 0.1+ | 0.6+ |
| 2003 07 06 | 691 | 0.0 | 0.0 | 2003 08 05 | 704 | 0.2− | 0.2+ | 2006 03 23 | 703 | 0.1− | 1.0− |
| 2003 07 06 | 691 | 0.0 | 0.1− | 2003 08 05 | 704 | 1.0+ | 0.3+ | 2006 03 23 | 703 | 0.2+ | 0.2+ |
| 2003 07 06 | 691 | 0.0 | 0.0 | 2006 02 02 | G96 | 0.4− | 0.4− | 2006 03 23 | 703 | 0.2− | 1.4+ |
| 2003 07 10 | 608 | 0.6− | 0.9− | 2006 02 02 | 691 | 0.3+ | 0.1+ | 2006 04 02 | G96 | 0.3+ | 0.2− |
| 2003 07 10 | 608 | 0.3− | 0.4− | 2006 02 02 | G96 | 0.5− | 0.3− | 2006 04 02 | G96 | 0.2− | 0.3− |
| 2003 07 10 | 608 | 0.3− | 0.5− | 2006 02 02 | G96 | 0.2− | 0.2− | 2006 04 02 | G96 | 0.1− | 0.3− |
| 2003 07 25 | 704 | 0.5+ | 0.5+ | 2006 02 02 | 691 | 0.5+ | 0.3+ | 2006 05 24 | G96 | 0.5+ | 0.6− |
| 2003 07 25 | 704 | 0.5+ | 0.1+ | 2006 02 02 | G96 | 0.4− | 0.3− | 2006 05 24 | G96 | 0.2− | 0.3− |
| 2003 07 25 | 704 | 0.7− | 0.6+ | 2006 02 02 | 691 | 0.7− | 0.2+ | 2006 05 24 | G96 | 0.2+ | 0.5− |
| 2003 07 25 | 704 | 0.7+ | 0.5+ | 2006 02 22 | 699 | (1.6+ | 0.1−) | 2006 05 24 | G96 | 0.3− | 0.5− |
| 2003 07 25 | 704 | 0.1+ | 0.1− | 2006 02 22 | 699 | (0.3− | 1.6−) | | | | |

**2003 NV$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.60359 | | | (2000.0) | | |
| $n$ | 0.27094352 | $\omega$ | 281.91211 | | +0.53176185 | +0.84553521 |
| $a$ | 2.3652853 | $\Omega$ | 20.43179 | | −0.71369740 | +0.47789193 |
| $e$ | 0.2604719 | $i$ | 7.89548 | | −0.45592254 | +0.23809559 |
| $P$ | 3.64 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 01 | 608 | 0.2− | 0.5− | 2003 08 31 | 704 | 0.4− | 0.2+ | 2006 04 07 | G96 | 0.1− | 0.5+ |
| 2003 07 01 | 608 | 0.6− | 0.7− | 2003 08 31 | 704 | 0.4− | 1.2+ | 2006 04 07 | G96 | 0.1− | 0.6− |
| 2003 07 01 | 608 | 1.0+ | 1.2− | 2003 08 31 | 704 | 0.2− | 0.5+ | 2006 04 26 | 807 | 0.5+ | 0.4+ |
| 2003 07 08 | 644 | 0.1+ | 0.4+ | 2003 08 31 | 704 | 0.2− | 0.5+ | 2006 04 26 | 807 | 0.4+ | 0.3+ |
| 2003 07 08 | 644 | 0.2+ | 0.5+ | 2003 09 13 | 608 | 0.7+ | 0.2− | 2006 05 21 | G96 | 0.0 | 0.5+ |
| 2003 07 08 | 644 | 0.3+ | 0.3+ | 2003 09 13 | 608 | 0.0 | 0.3− | 2006 05 21 | G96 | 0.1+ | 0.1− |
| 2003 08 23 | 644 | 0.0 | 0.0 | 2003 09 13 | 608 | 0.0 | 0.4− | 2006 05 21 | G96 | 0.0 | 0.2+ |
| 2003 08 23 | 644 | 0.1− | 0.1− | 2006 04 07 | G96 | 0.1+ | 0.3+ | 2006 05 21 | G96 | 0.0 | 0.3− |
| 2003 08 23 | 644 | 0.1− | 0.0 | 2006 04 07 | G96 | 0.3− | 0.3− | | | | |

**2003 NZ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 294.71862 | | | (2000.0) | | |
| $n$ | 0.29494485 | $\omega$ | 90.90273 | | +0.94138407 | −0.32471495 |
| $a$ | 2.2351612 | $\Omega$ | 288.04978 | | +0.25842793 | +0.86836689 |
| $e$ | 0.1928580 | $i$ | 5.51716 | | +0.21682029 | +0.37483215 |
| $P$ | 3.34 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 704 | 0.1− | 0.2+ | 2003 07 07 | 691 | 0.3− | 0.0 | 2003 08 05 | 704 | 0.2+ | 0.4+ |
| 2000 11 19 | 704 | 0.4− | 0.6+ | 2003 07 07 | 691 | 0.1+ | 0.1− | 2003 08 24 | 704 | 0.2− | 0.4− |
| 2000 11 19 | 704 | 0.4− | 1.0− | 2003 07 24 | 644 | 0.4− | 0.4+ | 2003 08 24 | 704 | 0.3− | 0.9+ |
| 2000 11 19 | 704 | 0.0 | 0.5+ | 2003 07 24 | 644 | 0.4− | 0.6+ | 2003 08 24 | 704 | 0.0 | 0.2+ |
| 2000 11 30 | 704 | 0.1+ | 0.5+ | 2003 07 24 | 644 | 0.2+ | 1.2+ | 2003 08 24 | 704 | 0.1+ | 0.6− |
| 2000 11 30 | 704 | 0.1+ | 0.1− | 2003 08 05 | 704 | 0.5+ | 0.0 | 2003 09 01 | 704 | 1.2+ | 1.6− |
| 2000 11 30 | 704 | 0.7+ | 0.8+ | 2003 08 05 | 704 | 0.7− | 0.6+ | 2003 09 01 | 704 | 0.4+ | 0.1− |
| 2000 11 30 | 704 | 0.1− | 1.0− | 2003 08 05 | 704 | 0.6+ | 0.3+ | 2003 09 01 | 704 | 0.4+ | 0.2− |
| 2003 07 07 | 691 | 0.1+ | 0.2− | 2003 08 05 | 704 | 1.3− | 0.7− | | | | |

**2003 OT$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 303.17245 | | | (2000.0) | | |
| $n$ | 0.26328213 | $\omega$ | 164.61711 | | +0.71902356 | +0.69380762 |
| $a$ | 2.4109515 | $\Omega$ | 151.31948 | | −0.64620010 | +0.68883858 |
| $e$ | 0.2210852 | $i$ | 4.83472 | | −0.25579398 | +0.21007712 |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 10 | 608 | 0.8− | 0.2− | 2003 08 04 | 704 | 0.8+ | 0.0 | 2003 08 25 | 704 | 0.1− | 0.7+ |
| 2003 07 10 | 608 | 1.2− | 0.7− | 2003 08 04 | 704 | 0.0 | 0.4+ | 2003 08 25 | 704 | 0.2+ | 1.4+ |
| 2003 07 10 | 608 | 0.2− | 1.6− | 2003 08 04 | 704 | 0.3− | 0.3+ | 2003 09 25 | 644 | 0.2+ | 0.3+ |
| 2003 07 22 | 599 | 0.1+ | 0.1+ | 2003 08 04 | 704 | 0.4+ | 0.4+ | 2003 09 25 | 644 | 0.0 | 0.4+ |
| 2003 07 22 | 599 | 0.1+ | 0.1− | 2003 08 04 | 704 | 0.0 | 0.1+ | 2003 09 25 | 644 | 0.1+ | 0.3+ |
| 2003 07 22 | 599 | 1.8+ | 0.1− | 2003 08 20 | 608 | 0.1− | 0.3− | 2006 04 21 | 461 | 0.5+ | 0.8− |
| 2003 07 22 | 599 | 0.2+ | 0.1− | 2003 08 20 | 608 | 0.4− | 0.6− | 2006 04 21 | 461 | 0.2− | 0.1− |
| 2003 07 23 | 608 | 0.0 | 0.5− | 2003 08 20 | 608 | 0.6− | 0.3− | 2006 04 21 | 461 | 0.2− | 0.3+ |
| 2003 07 23 | 608 | 0.2− | 0.6− | 2003 08 22 | 644 | 0.2− | 0.1− | 2006 04 22 | 461 | 0.3+ | 1.4+ |
| 2003 07 24 | 599 | 0.1− | 0.1− | 2003 08 22 | 644 | 0.2− | 0.1− | 2006 04 22 | 461 | 0.7+ | 0.0 |
| 2003 07 24 | 599 | 0.3+ | 0.0 | 2003 08 22 | 644 | 0.1− | 0.0 | 2006 04 22 | 461 | 0.0 | 0.6+ |
| 2003 07 25 | 599 | 0.6+ | 0.6+ | 2003 08 25 | 704 | 0.2+ | 0.7+ | 2006 04 23 | 461 | 0.2− | 0.1− |
| 2003 07 31 | 608 | 0.4− | 0.1− | 2003 08 25 | 704 | 0.0 | 0.7+ | 2006 04 23 | 461 | 0.2+ | 0.3+ |
| 2003 07 31 | 608 | 0.2− | 0.1− | 2003 08 25 | 704 | (1.8− | 2.2+) | 2006 04 23 | 461 | 0.4− | 0.1+ |

**2003 OH$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 296.01387 | | | (2000.0) | | |
| $n$ | 0.26514831 | $\omega$ | 18.53761 | | +0.82999416 | +0.55731931 |
| $a$ | 2.3996255 | $\Omega$ | 307.57094 | | −0.51526426 | +0.75069281 |
| $e$ | 0.2071201 | $i$ | 1.62452 | | −0.21357070 | +0.35476118 |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 08 | 644 | 0.1+ | 0.2− | 2003 08 04 | 704 | 0.3+ | 0.3+ | 2003 11 16 | 291 | 0.4− | 0.8+ |
| 2003 07 08 | 644 | 0.0 | 0.2− | 2003 08 04 | 704 | 0.0 | 0.4+ | 2003 11 16 | 291 | 0.3− | 1.2+ |
| 2003 07 08 | 644 | 0.2+ | 0.2− | 2003 08 04 | 704 | 0.2+ | 0.4+ | 2003 11 16 | 291 | 0.1− | 0.4+ |
| 2003 07 25 | 704 | 1.1+ | 0.3− | 2003 08 25 | 704 | 0.1+ | 0.8+ | 2004 12 19 | G96 | 0.4− | 0.3− |
| 2003 07 25 | 704 | 0.1− | 0.8+ | 2003 08 25 | 704 | 0.0 | 0.1− | 2004 12 19 | G96 | 0.8+ | 0.2− |
| 2003 07 25 | 704 | 0.9− | 0.8+ | 2003 08 25 | 704 | 0.7+ | 0.1− | 2004 12 19 | G96 | 0.8− | 0.4+ |
| 2003 07 25 | 704 | 0.8+ | 1.0− | 2003 08 25 | 704 | 0.4− | 0.5− | 2004 12 19 | G96 | 0.5+ | 0.7+ |
| 2003 07 26 | 644 | 0.3+ | 0.5− | 2003 08 25 | 704 | 1.2+ | 0.3+ | 2006 04 19 | 691 | 0.1+ | 0.6+ |
| 2003 07 26 | 644 | 0.2+ | 0.5− | 2003 08 31 | 704 | 0.4− | 0.9− | 2006 04 19 | 691 | 0.4+ | 0.7+ |
| 2003 07 26 | 644 | 0.0 | 0.3− | 2003 08 31 | 704 | 0.5− | 0.2− | 2006 04 19 | 691 | 0.1+ | 0.1+ |
| 2003 08 04 | 704 | 0.0 | 0.1+ | 2003 08 31 | 704 | 0.4− | 0.5− | | | | |
| 2003 08 04 | 704 | 0.1− | 0.4− | 2003 08 31 | 704 | 1.8− | 0.4− | | | | |

**2003 OQ$_{11}$ = 2003 SW$_{282}$ = 2006 SE$_{198}$**

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Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 110.10097 | | | (2000.0) | | |
| $n$ | 0.35838096 | $\omega$ | 58.92782 | | −0.20030187 | +0.97146711 |
| $a$ | 1.9629358 | $\Omega$ | 200.69770 | | −0.97581056 | −0.20940651 |
| $e$ | 0.0346912 | $i$ | 21.06018 | | −0.08759509 | +0.11135781 |
| $P$ | 2.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 20 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.8+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2003 07 20 | 644 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.2− | 0.6+ | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2003 07 20 | 644 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.5+ | 0.6− | 2006 10 16 | G96 | 0.3− | 0.2− |
| 2003 07 20 | 644 | 0.6+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.5− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2003 07 20 | 644 | 0.1+ | 0.2+ | 2006 09 16 | 703 | (0.2− | 1.9−) | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2003 07 20 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2003 07 26 | 644 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2003 07 26 | 644 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.9− |
| 2003 07 26 | 644 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.3− | 2006 10 21 | 703 | 0.3− | 0.9+ |
| 2003 09 20 | 704 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 703 | 0.7+ | 1.2+ |
| 2003 09 20 | 704 | 0.9− | 0.4− | 2006 09 29 | 704 | 0.5+ | 0.2− | 2006 10 21 | 703 | 0.3− | 0.6+ |
| 2003 09 20 | 704 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 2003 09 20 | 704 | 0.1− | 0.5− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 09 20 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2003 09 21 | 644 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 09 21 | 644 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2003 09 21 | 644 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.6+ | 0.8+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2006 08 30 | 699 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2006 08 30 | 699 | 1.1− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.0 | 0.5− |

**2003 OO$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 278.98614 | | | (2000.0) | | |
| $n$ | 0.23135283 | $\omega$ | 53.09810 | | +0.38831623 | +0.90490420 |
| $a$ | 2.6279646 | $\Omega$ | 240.62939 | | −0.89625898 | +0.32688473 |
| $e$ | 0.1238984 | $i$ | 11.53326 | | −0.21431365 | +0.27257064 |
| $P$ | 4.26 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.3+ | 0.1− | 2003 06 29 | 704 | 0.8+ | 0.1− | 2003 07 30 | 644 | 0.5− | 0.6− |
| 2002 04 08 | 644 | 0.3− | 0.3+ | 2003 06 29 | 704 | 0.5+ | 0.8+ | 2003 08 01 | 704 | 0.2+ | 0.5− |
| 2002 04 08 | 644 | 0.2+ | 0.5+ | 2003 07 26 | 644 | 0.1+ | 0.4− | 2003 08 01 | 704 | 1.6+ | 0.5+ |
| 2003 06 02 | 691 | 0.2− | 0.5+ | 2003 07 26 | 644 | 0.1− | 0.4− | 2003 08 01 | 704 | 0.4+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 02 | 691 | 0.2− | 0.2+ | 2003 07 26 | 644 | 0.1+ | 0.3− | 2003 08 01 | 704 | 0.9− | 0.2+ | | |
| 2003 06 02 | 691 | 0.1− | 0.0 | 2003 07 30 | 644 | 0.7− | 0.3− | 2004 11 10 | 695 | 0.1+ | 0.9+ | | |
| 2003 06 29 | 704 | 0.6+ | 0.3− | 2003 07 30 | 644 | 0.6− | 0.1− | 2004 11 10 | 695 | 0.0 | 0.8+ | | |

### 2003 $OJ_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.47005 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21800668 | $\omega$ | 30.95268 | | +0.98589426 | −0.10531299 | |
| $a$ | 2.7341532 | $\Omega$ | 334.11354 | | +0.00077978 | +0.78010505 | |
| $e$ | 0.4346862 | $i$ | 17.33474 | | +0.16736756 | +0.61672140 | |
| $P$ | 4.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.2− | 0.4− | 2003 08 20 | 644 | 0.4− | 0.2+ | 2003 09 25 | 196 | 0.4+ | 0.1+ | | |
| 1996 02 15 | 691 | 0.0 | 0.1+ | 2003 08 20 | 644 | 0.3− | 0.1+ | 2003 09 25 | 196 | 0.5+ | 0.4+ | | |
| 1996 02 15 | 691 | 0.1− | 0.0 | 2003 08 24 | 704 | 0.1− | 0.0 | 2003 09 30 | 106 | 0.1+ | 0.6− | | |
| 2003 07 25 | 704 | 0.6+ | 0.9+ | 2003 08 24 | 704 | 0.1− | 0.4+ | 2003 09 30 | 106 | 0.1+ | 0.5− | | |
| 2003 07 25 | 704 | 1.5+ | 1.1+ | 2003 08 24 | 704 | 0.2− | 0.2+ | 2003 09 30 | 106 | 0.0 | 0.1− | | |
| 2003 07 25 | 704 | 1.0+ | 0.5+ | 2003 08 24 | 704 | 0.3− | 0.3+ | 2003 10 14 | 644 | 0.3− | 0.3+ | | |
| 2003 07 25 | 704 | 0.2+ | 1.4+ | 2003 08 24 | 704 | 0.1+ | 0.4+ | 2003 10 14 | 644 | 0.1+ | 0.1− | | |
| 2003 07 31 | 608 | 0.7− | 0.2+ | 2003 08 25 | 704 | 0.2− | 0.1− | 2003 10 14 | 644 | 0.3− | 0.1+ | | |
| 2003 07 31 | 608 | 0.2− | 0.5+ | 2003 08 25 | 704 | 0.2− | 0.2− | 2003 10 14 | 644 | 0.1+ | 0.0 | | |
| 2003 07 31 | 608 | 0.6− | 0.1− | 2003 08 25 | 704 | 0.1− | 0.1− | 2003 10 14 | 644 | 0.2− | 0.0 | | |
| 2003 08 01 | A50 | 0.1− | 0.3− | 2003 08 25 | 704 | 0.2− | 0.1− | 2003 10 14 | 644 | 0.0 | 0.0 | | |
| 2003 08 01 | A50 | 0.2+ | 0.2− | 2003 08 25 | 704 | 0.1− | 0.0 | 2003 10 19 | 699 | 0.0 | 0.3− | | |
| 2003 08 01 | A50 | 0.0 | 0.3− | 2003 08 28 | 704 | 0.4+ | 0.2+ | 2003 10 19 | 699 | 0.0 | 0.1+ | | |
| 2003 08 01 | A50 | 0.6+ | 0.4− | 2003 08 28 | 704 | 0.3+ | 0.1+ | 2003 10 19 | 699 | 0.2+ | 0.3− | | |
| 2003 08 01 | A50 | 0.0 | 0.5− | 2003 08 28 | 704 | 0.4+ | 0.1+ | 2003 10 19 | 699 | 0.1− | 0.3− | | |
| 2003 08 01 | A50 | 0.3+ | 0.3− | 2003 08 28 | 704 | 0.4+ | 0.2− | 2003 10 22 | 704 | 0.2+ | 0.4− | | |
| 2003 08 02 | 026 | 0.1+ | 0.3− | 2003 08 28 | 704 | 0.4+ | 0.4− | 2003 10 22 | 704 | 0.2− | 0.5− | | |
| 2003 08 02 | 026 | 0.0 | 0.5− | 2003 09 03 | 704 | 0.4− | 0.3+ | 2003 10 22 | 704 | 1.9− | 0.2− | | |
| 2003 08 02 | 176 | 0.2+ | 0.1+ | 2003 09 03 | 704 | 0.4− | 0.4+ | 2003 10 22 | 704 | 1.1+ | 2.3− | | |
| 2003 08 02 | 557 | 0.4− | 0.2− | 2003 09 03 | 704 | 0.3− | 0.1+ | 2003 11 02 | 704 | 0.1− | 0.0 | | |
| 2003 08 02 | 176 | 0.0 | 0.0 | 2003 09 03 | 704 | 0.2− | 0.1− | 2003 11 02 | 704 | 0.4+ | 0.2+ | | |
| 2003 08 02 | 176 | 0.2− | 0.1− | 2003 09 03 | 704 | 0.7− | 0.2+ | 2003 11 02 | 704 | 0.1+ | 0.1− | | |
| 2003 08 02 | 557 | 0.3− | 0.6− | 2003 09 15 | 644 | 0.4− | 0.1− | 2003 11 02 | 704 | 0.1− | 0.1+ | | |
| 2003 08 02 | 176 | 0.2− | 0.1− | 2003 09 15 | 644 | 0.2− | 0.0 | 2003 11 02 | 704 | 0.4+ | 0.1+ | | |
| 2003 08 02 | 557 | 0.6− | 0.7− | 2003 09 15 | 644 | 0.3− | 0.1− | 2003 11 24 | 704 | 0.4+ | 1.1+ | | |
| 2003 08 02 | 850 | 0.7− | 0.0 | 2003 09 17 | 196 | 0.3+ | 0.3− | 2003 11 24 | 704 | 0.3− | 0.2+ | | |
| 2003 08 02 | 850 | 1.1+ | 0.7+ | 2003 09 17 | 196 | 0.6+ | 0.3− | 2003 11 24 | 704 | 0.2− | 0.3+ | | |
| 2003 08 02 | 673 | 0.3+ | 0.1+ | 2003 09 18 | 196 | 0.5+ | 0.1− | 2003 11 24 | 704 | 0.6− | 0.2− | | |
| 2003 08 02 | 850 | 0.5+ | 0.5− | 2003 09 19 | 608 | 0.7+ | 0.5− | 2003 11 24 | 704 | 0.6+ | 0.1+ | | |
| 2003 08 02 | 673 | 0.2+ | 0.2+ | 2003 09 19 | 608 | 0.7+ | 0.6− | 2003 12 18 | 704 | 1.3+ | 0.1− | | |
| 2003 08 02 | 673 | 0.3+ | 0.3+ | 2003 09 19 | 608 | 0.6+ | 0.5− | 2003 12 18 | 704 | 0.1+ | 0.1+ | | |
| 2003 08 02 | 673 | 0.4+ | 0.6− | 2003 09 21 | 644 | 0.6+ | 0.1+ | 2003 12 18 | 704 | 0.4− | 0.1+ | | |
| 2003 08 02 | 673 | 0.3+ | 0.7+ | 2003 09 21 | 644 | 0.2+ | 0.3− | 2003 12 18 | 704 | 0.8+ | 0.1+ | | |
| 2003 08 02 | 850 | 0.1+ | 0.6+ | 2003 09 21 | 704 | 0.5− | 0.9+ | 2003 12 18 | 704 | 0.3+ | 0.3+ | | |
| 2003 08 02 | 673 | 0.1+ | 1.3− | 2003 09 21 | 704 | 0.9− | 0.7+ | 2004 01 11 | 699 | 0.0 | 1.3+ | | |
| 2003 08 02 | 608 | 1.2− | 0.8− | 2003 09 21 | 644 | 0.3+ | 0.4− | 2004 01 11 | 699 | 0.2+ | 0.2− | | |
| 2003 08 02 | 608 | 0.8− | 0.8− | 2003 09 21 | 704 | 0.5− | 0.8+ | 2004 01 11 | 699 | 0.4− | 0.5− | | |
| 2003 08 02 | 608 | 0.8− | 0.8− | 2003 09 21 | 704 | 0.7− | 0.9+ | 2004 01 11 | 699 | 0.8− | 1.1+ | | |
| 2003 08 03 | 673 | 0.2+ | 0.3+ | 2003 09 21 | 704 | 0.6− | 0.8+ | 2005 02 09 | G96 | 0.4+ | 0.2+ | | |
| 2003 08 03 | 673 | 0.2+ | 0.6+ | 2003 09 24 | 196 | 0.2+ | 0.2− | 2005 02 09 | G96 | 0.2+ | 0.1− | | |
| 2003 08 03 | 673 | 0.4+ | 0.0 | 2003 09 24 | 196 | 0.3+ | 0.1− | 2005 02 09 | G96 | 0.6− | 0.2+ | | |
| 2003 08 20 | 644 | 0.4− | 0.1+ | 2003 09 25 | 196 | 0.0 | 0.0 | 2005 02 09 | G96 | 0.2+ | 0.3+ | | |

### 2003 $OQ_{27}$ = 2006 $DX_{185}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.54384 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22222328 | $\omega$ | 218.59757 | | +0.99247070 | −0.10102852 | |
| $a$ | 2.6994566 | $\Omega$ | 147.00191 | | +0.11717842 | +0.94775139 | |
| $e$ | 0.1376407 | $i$ | 7.30490 | | −0.03565279 | +0.30258973 | |
| $P$ | 4.44 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 24 | 644 | 0.5+ | 0.1− | 2003 08 04 | 704 | 0.3+ | 0.0 | 2003 09 04 | 691 | 0.1− | 0.0 | | |
| 2003 07 24 | 644 | 0.3+ | 0.2− | 2003 08 04 | 704 | 0.5+ | 0.0 | 2006 02 27 | 691 | 0.1+ | 0.1− | | |
| 2003 07 24 | 644 | 0.6+ | 0.3− | 2003 08 04 | 704 | 0.5− | 0.1+ | 2006 02 27 | 691 | 0.2+ | 0.1+ | | |
| 2003 07 25 | 704 | 1.3− | 1.2− | 2003 08 04 | 704 | 0.3+ | 1.2+ | 2006 02 27 | 691 | 0.2− | 0.0 | | |
| 2003 07 25 | 704 | 0.4− | 0.7+ | 2003 08 04 | 704 | 0.1+ | 0.2+ | 2006 03 03 | 691 | 0.3− | 0.1+ | | |
| 2003 07 25 | 704 | 0.2− | 0.2− | 2003 09 04 | 691 | 0.1− | 0.1− | 2006 03 03 | 691 | 0.1− | 0.1− | | |
| 2003 07 25 | 704 | 0.1− | 0.1+ | 2003 09 04 | 691 | 0.1+ | 0.0 | 2006 03 03 | 691 | 0.3+ | 0.1+ | | |

### 2003 $OU_{32}$ = 2004 $XT_{55}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.35037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23063452 | $\omega$ | 34.30601 | | +0.77201713 | +0.59694118 | |
| $a$ | 2.6334183 | $\Omega$ | 287.53406 | | −0.62233505 | +0.64012199 | |
| $e$ | 0.0633035 | $i$ | 13.23391 | | −0.12918453 | +0.48363733 | |
| $P$ | 4.27 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 22 | 644 | 0.1− | 0.1+ | 2003 09 14 | 644 | 0.3− | 0.2+ | 2004 12 10 | 691 | 0.1+ | 0.1− | | |
| 2003 07 22 | 644 | 0.1− | 0.2+ | 2003 09 14 | 644 | 0.4− | 0.1+ | 2004 12 10 | 691 | 0.1− | 0.0 | | |
| 2003 07 22 | 644 | 0.3+ | 0.1− | 2003 09 14 | 644 | 0.0 | 0.1+ | 2004 12 10 | 691 | 0.0 | 0.1+ | | |
| 2003 08 20 | 644 | 0.3+ | 0.5− | 2003 09 21 | 691 | 0.3+ | 0.2− | 2004 12 14 | 691 | 0.1+ | 0.1− | | |
| 2003 08 20 | 644 | 0.0 | 0.1+ | 2003 09 21 | 691 | 0.2+ | 0.1+ | 2004 12 14 | 691 | 0.2− | 0.2+ | | |
| 2003 08 20 | 644 | 0.1− | 0.0 | 2003 09 21 | 691 | 0.0 | 0.1− | 2004 12 14 | 691 | 0.0 | 0.0 | | |

### 2003 $OV_{32}$ = 2000 $WO_{131}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.33903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29906119 | $\omega$ | 218.06551 | | +0.99179225 | −0.11993373 | |
| $a$ | 2.2146037 | $\Omega$ | 148.73664 | | +0.12784480 | +0.93551175 | |
| $e$ | 0.2274234 | $i$ | 4.89871 | | −0.00195887 | +0.33231562 | |
| $P$ | 3.30 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 699 | 0.0 | 1.3+ | 2003 07 24 | 644 | 0.2+ | 0.5+ | 2003 08 25 | 704 | 0.7+ | 0.0 | | |
| 2000 11 20 | 699 | 0.6− | 0.4+ | 2003 07 24 | 644 | 0.2+ | 0.0 | 2003 08 25 | 704 | 1.5+ | 1.5+ | | |
| 2000 11 20 | 699 | 0.2− | 0.0 | 2003 08 04 | 704 | 0.6− | 0.3+ | 2003 08 31 | 704 | 0.3− | 0.4+ | | |
| 2000 11 20 | 699 | 0.4− | 0.6− | 2003 08 04 | 704 | 0.2− | 0.3− | 2003 08 31 | 704 | 0.7− | 0.4− | | |
| 2000 11 21 | 704 | 0.1+ | 0.5− | 2003 08 04 | 704 | 0.6− | 0.2− | 2003 08 31 | 704 | 0.1− | 1.0− | | |
| 2000 11 21 | 704 | 0.5+ | 0.3+ | 2003 08 04 | 704 | 0.0 | 0.1− | 2003 08 31 | 704 | 0.3− | 0.2+ | | |
| 2000 11 21 | 704 | 0.6+ | 0.2− | 2003 08 25 | 704 | 0.3− | 0.4− | 2003 09 25 | 644 | 0.1− | 0.0 | | |
| 2000 11 21 | 704 | 0.1− | 0.4− | 2003 08 25 | 704 | 0.5+ | 0.1− | 2003 09 25 | 644 | 0.2− | 0.4− | | |
| 2003 07 24 | 644 | 0.2+ | 0.1+ | 2003 08 25 | 704 | 0.3− | 0.1− | 2003 09 25 | 644 | 0.1+ | 0.3− | | |

### 2003 $OW_{32}$ = 2004 $VS_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.20017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21014540 | $\omega$ | 353.50180 | | +0.35928662 | +0.93226834 | |
| $a$ | 2.8019226 | $\Omega$ | 297.54758 | | −0.85405748 | +0.31020095 | |
| $e$ | 0.0740490 | $i$ | 2.73423 | | −0.37616345 | +0.18614808 | |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 24 | 644 | 0.6− | 0.3+ | 2004 11 04 | 691 | 0.2− | 0.3− | 2006 01 23 | G96 | 0.2+ | 0.2+ | | |
| 2003 07 24 | 644 | 0.3− | 0.2+ | 2004 11 10 | 695 | 0.1+ | 0.3+ | 2006 01 23 | G96 | 0.3+ | 0.2− | | |
| 2003 07 24 | 644 | 0.4− | 0.4+ | 2004 11 10 | 695 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.2− | 0.3− | | |
| 2003 08 22 | 644 | 0.8− | 0.3+ | 2005 10 24 | 568 | 0.0 | 0.2+ | 2006 01 30 | 691 | 0.4+ | 0.1+ | | |
| 2003 08 22 | 644 | 0.6− | 0.3+ | 2005 10 24 | 568 | 0.2+ | 0.3+ | 2006 01 30 | 691 | 0.1− | 0.1+ | | |
| 2003 08 22 | 644 | 0.5− | 0.1+ | 2005 10 24 | 568 | 0.3+ | 0.3+ | 2006 01 30 | 691 | 0.4+ | 0.0 | | |
| 2003 09 29 | 291 | 0.5+ | 0.1+ | 2006 01 07 | G96 | 0.1− | 0.2+ | 2006 02 07 | 691 | 0.3− | 0.2+ | | |
| 2003 09 29 | 291 | 0.1− | 0.1+ | 2006 01 07 | G96 | 0.5− | 0.2+ | 2006 02 07 | 691 | 0.1+ | 0.3+ | | |
| 2003 09 29 | 291 | 0.1+ | 0.1+ | 2006 01 07 | G96 | 0.2− | 0.0 | 2006 02 07 | 691 | 0.1+ | 0.0 | | |
| 2004 11 04 | 691 | 0.1+ | 0.1− | 2006 01 07 | G96 | 0.0 | 0.2+ | | | | | | |
| 2004 11 04 | 691 | 0.1+ | 0.2+ | 2006 01 23 | G96 | 0.4− | 0.3+ | | | | | | |

**2003 OX$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.68399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17966709 | $\omega$ | 186.32302 | | +0.95069371 | −0.30771539 | |
| $a$ | 3.1104533 | $\Omega$ | 191.81879 | | +0.29216466 | +0.93042696 | |
| $e$ | 0.1813363 | $i$ | 10.87310 | | +0.10402537 | +0.19903999 | |
| $P$ | 5.49 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 691 | 0.2− | 0.6+ | 2001 04 26 | 691 | 0.2+ | 0.4+ | 2003 08 22 | 644 | 0.3− | 0.3− |
| 1996 04 17 | 691 | 0.3+ | 0.1+ | 2001 04 26 | 691 | 0.2+ | 0.5+ | 2003 08 22 | 644 | 0.2− | 0.3− |
| 1998 11 11 | 704 | 0.8− | 0.3+ | 2003 07 23 | 644 | 0.2− | 0.0 | 2003 09 02 | 704 | (0.4− | 2.0−) |
| 1998 11 11 | 704 | 0.4+ | 1.0+ | 2003 07 23 | 644 | 0.6− | 0.0 | 2003 09 02 | 704 | 0.0 | 0.1− |
| 1998 11 11 | 704 | 1.4+ | 0.6+ | 2003 07 23 | 644 | 0.3− | 0.1− | 2003 09 02 | 704 | 0.0 | 0.3− |
| 1998 11 11 | 704 | 0.0 | 0.2+ | 2003 08 01 | 704 | 0.1+ | 0.3− | 2003 09 02 | 704 | 0.2− | 0.3+ |
| 1998 11 11 | 704 | 1.6− | 0.2− | 2003 08 01 | 704 | 0.7+ | 0.6− | 2003 09 02 | 704 | 0.5+ | 1.0+ |
| 1998 11 19 | 699 | 0.1+ | 2.1+ | 2003 08 01 | 704 | 0.4− | 0.3+ | 2003 09 27 | 704 | 0.2− | 0.7+ |
| 1998 11 19 | 699 | 0.6− | 0.9+ | 2003 08 01 | 704 | 0.2− | 0.3+ | 2003 09 27 | 704 | 1.0+ | 0.9+ |
| 1998 11 19 | 699 | 0.2+ | 0.3+ | 2003 08 01 | 704 | 0.1+ | 0.1+ | 2003 09 27 | 704 | 0.1− | 0.5+ |
| 2001 04 26 | 691 | 0.0 | 0.4+ | 2003 08 22 | 644 | 0.5− | 0.2− | 2003 09 27 | 704 | 0.1+ | 0.5+ |

**2003 OY$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.88248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22594300 | $\omega$ | 255.93269 | | +0.52668222 | −0.84086798 | |
| $a$ | 2.6697471 | $\Omega$ | 160.67684 | | +0.84953008 | +0.52584888 | |
| $e$ | 0.0466989 | $i$ | 22.13665 | | −0.03007447 | +0.12815614 | |
| $P$ | 4.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 17 | 608 | 0.3− | 0.5+ | 2003 08 22 | 608 | 0.8− | 0.9+ | 2003 09 19 | 291 | 0.3+ | 0.3+ |
| 2001 01 17 | 608 | 0.6− | 0.4+ | 2003 08 22 | 608 | 0.2− | 0.0 | 2003 09 24 | 644 | 0.3+ | 0.1− |
| 2001 01 17 | 608 | 0.3− | 0.4+ | 2003 08 22 | 608 | 0.1+ | 0.6+ | 2003 09 24 | 644 | 0.1− | 0.1+ |
| 2001 02 20 | 608 | 0.5+ | 0.3+ | 2003 09 01 | 704 | 0.5− | 0.5+ | 2003 09 24 | 644 | 0.4− | 0.2+ |
| 2001 02 20 | 608 | 0.1+ | 1.0+ | 2003 09 01 | 704 | 0.8− | 0.0 | 2006 04 02 | 703 | 0.6− | 0.6+ |
| 2001 02 20 | 608 | 0.4+ | 0.4+ | 2003 09 01 | 704 | 0.5− | 0.5− | 2006 04 02 | 703 | 0.9+ | 0.1− |
| 2003 07 23 | 644 | 0.6− | 0.0 | 2003 09 01 | 704 | 0.6− | 0.2+ | 2006 04 02 | 703 | 0.8− | 0.1− |
| 2003 07 23 | 644 | 0.6− | 0.1− | 2003 09 19 | 291 | 0.4+ | 0.2+ | 2006 04 02 | 703 | 0.7+ | 1.4+ |
| 2003 07 23 | 644 | 0.2− | 0.2− | 2003 09 19 | 291 | 0.5+ | 0.1+ | | | | |

**2003 OZ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.34795 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17816932 | $\omega$ | 138.03917 | | +0.13652344 | +0.97564599 | |
| $a$ | 3.1278609 | $\Omega$ | 138.92567 | | −0.96414161 | +0.17067570 | |
| $e$ | 0.2288204 | $i$ | 15.14745 | | −0.22757922 | −0.13778500 | |
| $P$ | 5.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 645 | 0.0 | 0.0 | 2003 07 30 | 608 | 0.2+ | 0.4− | 2003 08 25 | 704 | 0.4+ | 0.4− |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2003 07 30 | 608 | 0.0 | 0.4− | 2003 08 25 | 704 | 0.3+ | 0.2+ |
| 2002 04 13 | 644 | 0.9+ | 0.4− | 2003 07 30 | 608 | 0.1+ | 0.7− | 2003 08 25 | 704 | 0.4+ | 0.7− |
| 2002 04 13 | 644 | 0.0 | 0.1+ | 2003 08 04 | 704 | 0.0 | 0.1+ | 2003 09 04 | 691 | 0.1− | 0.1+ |
| 2002 04 13 | 644 | 0.1− | 0.4− | 2003 08 04 | 704 | 0.2+ | 0.3+ | 2003 09 04 | 691 | 0.2− | 0.1− |
| 2003 07 24 | 644 | 0.0 | 0.0 | 2003 08 04 | 704 | 0.2+ | 0.5+ | 2003 09 04 | 691 | 0.1− | 0.0 |
| 2003 07 24 | 644 | 0.0 | 0.1+ | 2003 08 04 | 704 | 0.0 | 0.7+ | | | | |
| 2003 07 24 | 644 | 0.1+ | 0.1+ | 2003 08 04 | 704 | 0.4− | 0.8+ | | | | |

**2003 OA$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.13711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29406255 | $\omega$ | 221.41217 | | +0.99809293 | +0.04195743 | |
| $a$ | 2.2396298 | $\Omega$ | 136.11947 | | −0.02326091 | +0.93505818 | |
| $e$ | 0.1841610 | $i$ | 3.74528 | | −0.05717887 | +0.35200251 | |
| $P$ | 3.35 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 24 | 644 | 0.5− | 0.0 | 2003 08 25 | 704 | 0.5− | 0.5+ | 2005 03 04 | G96 | 0.2+ | 0.7+ |
| 2003 07 24 | 644 | 0.6− | 0.1− | 2003 08 25 | 704 | 0.0 | 0.1+ | 2005 03 04 | G96 | 0.9+ | 0.2− |
| 2003 07 24 | 644 | 0.5− | 0.1− | 2003 08 25 | 704 | 0.6− | 0.4+ | 2005 03 04 | G96 | 0.1+ | 0.0 |
| 2003 08 04 | 704 | 0.0 | 0.7− | 2003 08 25 | 704 | 0.6− | 1.4+ | 2005 03 04 | G96 | 0.3+ | 0.2+ |
| 2003 08 04 | 704 | 0.8+ | 0.1− | 2003 08 31 | 704 | 0.3+ | 0.3+ | 2005 03 14 | G96 | 1.8− | 0.5+ |
| 2003 08 04 | 704 | 0.0 | 0.1− | 2003 08 31 | 704 | 0.7+ | 0.1− | 2005 03 14 | G96 | 0.5− | 0.1+ |
| 2003 08 04 | 704 | 0.3+ | 0.5− | 2003 08 31 | 704 | 0.7+ | 0.2− | 2005 03 14 | G96 | 1.5+ | 1.0+ |
| 2003 08 25 | 704 | 0.5− | 0.8+ | 2003 08 31 | 704 | 0.1+ | 0.5+ | 2005 03 14 | G96 | 0.0 | 0.7+ |

**2003 OB$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.67025 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21337877 | $\omega$ | 168.74876 | | +0.55678116 | +0.82915125 | |
| $a$ | 2.7735452 | $\Omega$ | 135.06086 | | −0.76750645 | +0.53655160 | |
| $e$ | 0.1786442 | $i$ | 4.06152 | | −0.31769259 | +0.15690950 | |
| $P$ | 4.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 15 | 691 | 0.4+ | 0.1− | 2002 03 10 | 291 | 0.0 | 0.4+ | 2003 08 25 | 704 | 0.4− | 0.2+ |
| 1997 02 15 | 691 | 0.3+ | 0.2− | 2003 07 25 | 704 | 0.0 | 0.2+ | 2004 11 10 | 691 | 0.4+ | 0.1+ |
| 1997 02 15 | 691 | 0.6+ | 0.5− | 2003 07 25 | 704 | 0.4+ | 0.0 | 2004 11 10 | 691 | 0.3+ | 0.3+ |
| 1999 10 09 | 704 | 1.4− | 0.1+ | 2003 07 25 | 704 | 0.8− | 0.4+ | 2004 11 10 | 691 | 0.4+ | 0.0 |
| 1999 10 09 | 704 | 0.3+ | 0.1+ | 2003 08 04 | 704 | 0.6+ | 0.2+ | 2006 01 21 | G96 | 0.6− | 0.1− |
| 1999 10 09 | 704 | 2.0− | 0.5− | 2003 08 04 | 704 | 0.4+ | 0.4+ | 2006 01 21 | G96 | 0.2− | 0.3− |
| 1999 10 09 | 704 | 0.0 | 0.3− | 2003 08 04 | 704 | 0.6+ | 0.2+ | 2006 01 21 | G96 | 0.1− | 0.2− |
| 1999 10 19 | 704 | 0.2− | 0.0 | 2003 08 04 | 704 | 0.4+ | 0.6+ | 2006 01 21 | G96 | 0.3+ | 0.0 |
| 1999 10 19 | 704 | 0.4+ | 1.7+ | 2003 08 04 | 704 | 0.5+ | 0.8+ | 2006 02 24 | 691 | 0.1− | 0.1+ |
| 1999 10 19 | 704 | 0.2− | 0.2+ | 2003 08 06 | 291 | 0.1+ | 0.7+ | 2006 02 24 | 691 | 0.7+ | 0.5+ |
| 1999 10 19 | 704 | 0.4+ | 1.1− | 2003 08 06 | 291 | 0.2− | 0.1− | 2006 02 24 | 691 | 0.1+ | 0.3+ |
| 2000 12 22 | 691 | 0.8− | 0.4+ | 2003 08 06 | 291 | 0.2− | 0.1− | 2006 03 24 | G96 | 0.6− | 0.4+ |
| 2000 12 22 | 691 | 0.6− | 0.3+ | 2003 08 25 | 704 | 0.9− | 0.1+ | 2006 03 24 | G96 | 0.3− | 0.5+ |
| 2000 12 22 | 691 | 0.1+ | 0.1− | 2003 08 25 | 704 | 0.2− | 0.1+ | 2006 03 24 | G96 | 0.0 | 0.3+ |
| 2002 03 10 | 291 | 0.3− | 0.2+ | 2003 08 25 | 704 | 0.1+ | 0.4+ | 2006 03 24 | G96 | 0.4− | 0.1− |
| 2002 03 10 | 291 | 0.2− | 0.4+ | 2003 08 25 | 704 | 0.2− | 0.2− | | | | |

**2003 OC$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.58021 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31391001 | $\omega$ | 3.23913 | | +0.89658964 | +0.43992523 | |
| $a$ | 2.1442032 | $\Omega$ | 330.49352 | | −0.40860654 | +0.77741105 | |
| $e$ | 0.1134483 | $i$ | 5.93416 | | −0.17078558 | +0.44955294 | |
| $P$ | 3.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 08 20 | 608 | 0.3+ | 1.0− | 2003 08 25 | 704 | 0.2− | 0.8+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 08 20 | 608 | 0.3+ | 1.2− | 2003 08 25 | 704 | 0.2− | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 08 25 | 704 | 0.4− | 0.1+ | 2003 08 25 | 704 | 0.3− | 0.8+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 08 25 | 704 | 0.2− | 0.3+ | 2003 08 31 | 704 | 0.2+ | 0.2− |
| 2003 07 25 | 704 | (0.6− | 2.5+) | 2003 08 25 | 704 | 0.5− | 0.2+ | 2003 08 31 | 704 | 0.1+ | 0.0 |
| 2003 07 25 | 704 | 0.1− | 1.3+ | 2003 08 25 | 704 | 0.5− | 0.5+ | 2003 08 31 | 704 | 0.9+ | 0.5− |
| 2003 07 25 | 704 | 0.9+ | 1.6− | 2003 08 25 | 704 | 0.5− | 0.1+ | 2003 08 31 | 704 | 0.2+ | 0.4− |
| 2003 07 25 | 704 | 0.2− | 0.4+ | 2003 08 25 | 704 | 0.4− | 0.6+ | | | | |
| 2003 08 20 | 608 | 0.2+ | 0.5− | 2003 08 25 | 704 | 0.3+ | 0.2+ | | | | |

**2003 OD$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.34052 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23747204 | $\omega$ | 238.47632 | +0.94379262 | | −0.29413582 | |
| $a$ | 2.5826233 | $\Omega$ | 138.08969 | +0.32311464 | | +0.91713511 | |
| $e$ | 0.0835814 | $i$ | 13.04726 | −0.06965926 | | +0.26897456 | |
| $P$ | 4.15 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.5− | 0.2+ | 2003 07 25 | 704 | 0.1+ | 0.6+ | 2003 08 31 | 704 | 1.1+ | 0.1− |
| 2001 02 19 | 704 | 0.3− | 1.1+ | 2003 08 04 | 704 | 0.5− | 0.2+ | 2003 08 31 | 704 | 0.2+ | 1.1− |
| 2001 02 19 | 704 | 0.2+ | 0.4+ | 2003 08 04 | 704 | 1.3− | 0.8+ | 2003 09 22 | 699 | 0.1− | 0.5+ |
| 2001 02 19 | 704 | 0.5+ | 0.3+ | 2003 08 04 | 704 | 0.9− | 0.3+ | 2003 09 22 | 699 | 1.1+ | 1.4+ |
| 2002 05 05 | 644 | 0.3+ | 0.1− | 2003 08 04 | 704 | 0.2− | 0.1− | 2003 09 22 | 699 | 0.7− | 0.2− |
| 2002 05 05 | 644 | 0.2− | 0.1− | 2003 08 26 | 704 | 0.2− | 0.4+ | 2003 09 22 | 699 | 1.4− | 1.0− |
| 2002 05 05 | 644 | 0.1− | 0.1− | 2003 08 26 | 704 | 0.7+ | 0.7+ | 2006 04 23 | 699 | 0.7+ | 0.8+ |
| 2003 07 25 | 704 | 0.3+ | 0.0 | 2003 08 26 | 704 | 0.6− | 0.6+ | 2006 04 23 | 699 | 0.0 | 0.7− |
| 2003 07 25 | 704 | 0.2+ | 0.3+ | 2003 08 31 | 704 | 1.1+ | 0.3− | 2006 04 23 | 699 | 1.0+ | 0.1− |
| 2003 07 25 | 704 | 0.1+ | 0.5+ | 2003 08 31 | 704 | 0.7+ | 1.4− | 2006 04 23 | 699 | 1.5− | 0.7+ |

**2003 OG$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.14494 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18331304 | $\omega$ | 114.93479 | −0.09240201 | | +0.97491075 | |
| $a$ | 3.0690725 | $\Omega$ | 147.68073 | −0.99411005 | | −0.07875713 | |
| $e$ | 0.3254509 | $i$ | 22.25834 | −0.05663104 | | −0.20819783 | |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 695 | 0.3− | 0.4− | 2003 08 05 | 704 | 0.7+ | 0.1− | 2003 08 25 | 704 | 0.4− | 0.5− |
| 2002 02 07 | 695 | 0.4− | 0.3− | 2003 08 05 | 704 | 0.0 | 0.1− | 2003 08 25 | 704 | 0.1+ | 0.1+ |
| 2002 02 20 | 704 | 1.0− | 0.6+ | 2003 08 05 | 704 | 0.1+ | 0.3− | 2003 08 25 | 704 | 0.3− | 0.0 |
| 2002 02 20 | 704 | 0.2+ | 0.0 | 2003 08 05 | 704 | 0.2+ | 0.2+ | 2003 08 25 | 704 | 0.1− | 0.4+ |
| 2002 02 20 | 704 | 0.7+ | 0.4− | 2003 08 05 | 704 | 0.6+ | 0.5+ | 2003 08 31 | 704 | 0.1+ | 0.7+ |
| 2002 02 20 | 704 | 0.8+ | 0.2+ | 2003 08 15 | 608 | 0.0 | 0.9− | 2003 08 31 | 704 | 0.1+ | 0.1− |
| 2003 07 24 | 644 | 0.3− | 0.2+ | 2003 08 15 | 608 | 0.1− | 0.7− | 2003 08 31 | 704 | 0.2+ | 1.0+ |
| 2003 07 24 | 644 | 0.1− | 0.6+ | 2003 08 15 | 608 | 0.5− | 1.0− | | | | |
| 2003 07 24 | 644 | 0.4− | 0.2+ | 2003 08 25 | 704 | 0.1+ | 0.4− | | | | |

**2003 OM$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.72032 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24377836 | $\omega$ | 318.16235 | +0.88184293 | | −0.44068105 | |
| $a$ | 2.5378889 | $\Omega$ | 68.71161 | +0.46614024 | | +0.76097231 | |
| $e$ | 0.2826940 | $i$ | 10.37424 | +0.07117811 | | +0.47615267 | |
| $P$ | 4.04 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 10 | 691 | 0.0 | 0.7− | 2003 08 31 | 608 | 0.5+ | 0.6+ | 2003 10 17 | 644 | 0.0 | 0.2− |
| 1992 01 10 | 691 | 0.2+ | 0.2+ | 2003 09 16 | 704 | 0.0 | 0.0 | 2003 10 24 | 699 | 0.3+ | 0.4− |
| 1992 01 10 | 691 | 0.5− | 1.0+ | 2003 09 16 | 704 | 0.3− | 0.3− | 2003 10 24 | 699 | 0.6+ | 0.2+ |
| 2003 07 25 | 704 | 0.2+ | 0.8+ | 2003 09 16 | 704 | 0.2− | 1.0− | 2003 10 24 | 699 | 0.2− | 0.8− |
| 2003 07 25 | 704 | 0.1− | 0.7+ | 2003 09 16 | 704 | 0.1− | 0.1+ | 2003 10 24 | 699 | 1.2− | 0.4+ |
| 2003 07 25 | 704 | 0.1− | 0.6+ | 2003 09 16 | 704 | 0.7+ | 0.1+ | 2003 12 22 | 291 | 0.1+ | 0.1+ |
| 2003 07 25 | 704 | 0.2− | 1.1+ | 2003 09 28 | 608 | 0.2− | 0.7− | 2003 12 22 | 291 | 0.2+ | 0.0 |
| 2003 08 31 | 704 | 0.0 | 0.1− | 2003 09 28 | 608 | 0.1− | 0.6− | 2003 12 22 | 291 | 0.3− | 0.0 |
| 2003 08 31 | 704 | 0.1− | 0.1+ | 2003 09 28 | 608 | 0.2− | 0.5− | 2006 05 24 | G96 | 0.6− | 0.1− |
| 2003 08 31 | 704 | 0.2+ | 0.2+ | 2003 10 17 | 704 | 0.0 | 0.1− | 2006 05 24 | G96 | 0.9+ | 0.2− |
| 2003 08 31 | 704 | 0.6+ | 0.3+ | 2003 10 17 | 704 | 0.8− | 1.0− | 2006 05 24 | G96 | 0.3− | 0.1+ |
| 2003 08 31 | 704 | 0.2+ | 1.0+ | 2003 10 17 | 704 | 0.1+ | 1.0− | 2006 05 24 | G96 | 0.4− | 0.2+ |
| 2003 08 31 | 608 | 0.3+ | 0.7+ | 2003 10 17 | 644 | 0.2− | 0.4− | | | | |
| 2003 08 31 | 608 | 0.5+ | 0.5+ | 2003 10 17 | 644 | 0.1− | 0.3− | | | | |

**2003 PD$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.13086 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27646598 | $\omega$ | 176.81274 | +0.78902112 | | +0.61103778 | |
| $a$ | 2.3336815 | $\Omega$ | 145.26278 | −0.56611959 | | +0.76349945 | |
| $e$ | 0.2211222 | $i$ | 6.43508 | −0.23865097 | | +0.20904885 | |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 291 | 0.2+ | 0.6+ | 2003 08 05 | 704 | 0.4− | 0.3+ | 2003 08 31 | 704 | 0.2+ | 0.3− |
| 2002 02 13 | 291 | 0.1+ | 0.5+ | 2003 08 05 | 704 | 0.0 | 0.1+ | 2003 08 31 | 704 | (2.3− | 2.2+) |
| 2002 02 13 | 291 | 0.2+ | 0.6+ | 2003 08 05 | 704 | 1.1− | 0.2+ | 2003 08 31 | 704 | 0.9+ | 1.2+ |
| 2003 07 24 | 644 | 0.1− | 0.0 | 2003 08 05 | 704 | 0.5− | 0.1+ | 2003 08 31 | 704 | 0.1− | 0.5− |
| 2003 07 24 | 644 | 0.1+ | 0.3+ | 2003 08 05 | 704 | 0.4− | 0.1− | 2003 09 04 | 691 | 0.2− | 0.0 |
| 2003 07 24 | 644 | 0.1+ | 0.2+ | 2003 08 22 | 704 | 0.8+ | 0.2+ | 2003 09 04 | 691 | 0.2− | 0.3+ |
| 2003 07 25 | 704 | 0.1+ | 0.5+ | 2003 08 22 | 704 | 0.2+ | 0.6+ | 2003 09 04 | 691 | 0.0 | 0.2+ |
| 2003 07 25 | 704 | 0.1− | 0.3− | 2003 08 22 | 704 | 0.0 | 1.1+ | 2003 09 22 | 699 | 0.7− | 0.8− |
| 2003 07 25 | 704 | 0.2+ | 0.2− | 2003 08 22 | 704 | 0.7+ | 0.5− | 2003 09 22 | 699 | 0.2+ | 0.3− |
| 2003 07 25 | 704 | 0.1− | 0.1+ | 2003 08 25 | 704 | 0.6− | 0.5+ | 2003 09 22 | 699 | 0.1+ | 0.4− |
| 2003 08 04 | 704 | 0.3+ | 0.7+ | 2003 08 25 | 704 | 0.5− | 0.0 | 2003 09 22 | 699 | 0.1+ | 0.3− |
| 2003 08 04 | 704 | 0.4+ | 0.1− | 2003 08 25 | 704 | 0.0 | 0.5+ | 2005 01 16 | 691 | 0.3+ | 0.7+ |
| 2003 08 04 | 704 | 0.0 | 0.3− | 2003 08 25 | 704 | 0.1− | 1.1+ | 2005 01 16 | 691 | 0.2− | 0.4+ |
| 2003 08 04 | 704 | 0.7+ | 0.2− | 2003 08 25 | 704 | 0.0 | 0.6+ | 2005 01 16 | 691 | 0.1+ | 0.2+ |
| 2003 08 04 | 704 | 0.0 | 0.5+ | 2003 08 31 | 704 | 0.7− | 1.3+ | | | | |

**2003 PZ$_{11}$ = 2003 OH$_{32}$ = 2000 TE$_{9}$ = 2004 XH$_{168}$ = 2006 KM$_{125}$**

Id. Minor Planet Center (d, *MPO* 58141; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.66913 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29276832 | $\omega$ | 139.97286 | +0.55094066 | | +0.83445091 | |
| $a$ | 2.2462254 | $\Omega$ | 163.44661 | −0.77646001 | | +0.51802474 | |
| $e$ | 0.0544281 | $i$ | 2.51314 | −0.30589905 | | +0.18799483 | |
| $P$ | 3.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 1.0+ | 1.0− | 2002 02 11 | 704 | 0.9+ | 0.3+ | 2004 12 03 | 691 | 0.4+ | 0.2+ |
| 1999 03 24 | 691 | 0.0 | 0.5+ | 2002 02 19 | 049 | (3.7− | 0.2−) | 2004 12 03 | 691 | 0.0 | 0.5− |
| 1999 03 24 | 691 | 0.0 | 0.4+ | 2002 02 19 | 049 | 1.7− | 0.6+ | 2004 12 03 | 691 | 0.5+ | 0.1− |
| 1999 03 24 | 691 | 0.5+ | 0.5+ | 2002 02 20 | 049 | 0.8+ | 0.0 | 2004 12 18 | 691 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.1− | 0.4+ | 2002 03 13 | 704 | 0.3− | 0.9+ | 2004 12 18 | 691 | 0.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.9− | 0.0 | 2002 03 13 | 704 | 0.4+ | 2.6+ | 2004 12 18 | 691 | 0.1− | 0.3+ |
| 2000 10 01 | 704 | 0.5− | 0.4+ | 2002 03 13 | 704 | 0.0 | 1.9+ | 2006 05 24 | 644 | 0.3− | 0.1− |
| 2000 10 01 | 704 | 0.6− | 0.7+ | 2003 07 30 | 599 | 0.5− | 1.0+ | 2006 05 24 | 644 | 0.2+ | 0.2− |
| 2000 10 01 | 704 | 0.6− | 0.7+ | 2003 07 30 | 599 | 0.3− | 0.5+ | 2006 05 24 | 644 | 0.2− | 0.3− |
| 2000 10 02 | 704 | 0.7+ | 1.4+ | 2003 07 30 | 599 | 0.2− | 0.1+ | 2006 05 28 | 703 | 0.6+ | 0.5+ |
| 2000 10 02 | 704 | 0.8− | 1.5+ | 2003 08 04 | 704 | 0.9− | 0.0 | 2006 05 28 | 703 | 1.3− | 0.5− |
| 2000 10 02 | 704 | 1.5− | 1.7+ | 2003 08 04 | 704 | 0.7+ | 0.2− | 2006 05 28 | 703 | 0.6− | 0.9− |
| 2000 10 02 | 704 | 0.3− | 1.0+ | 2003 08 04 | 704 | 0.1+ | 0.2− | 2006 05 28 | 703 | 0.5+ | 0.9− |
| 2002 02 11 | 704 | 0.2+ | 0.7+ | 2003 08 04 | 704 | (0.8+ | 2.3+) | 2006 06 21 | 691 | 0.3+ | 0.3+ |
| 2002 02 11 | 704 | 0.7+ | 1.1+ | 2003 08 05 | 691 | 0.1+ | 0.3+ | 2006 06 21 | 691 | 0.1+ | 0.2+ |
| 2002 02 11 | 704 | 1.4+ | 0.1+ | 2003 08 05 | 691 | 0.1+ | 0.4+ | 2006 06 21 | 691 | 0.0 | 0.5+ |
| 2002 02 11 | 704 | 0.3+ | 0.6+ | 2003 08 05 | 691 | 0.0 | 0.3+ | | | | |

**2003 PT$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.93248 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25948140 | $\omega$ | 95.14788 | +0.44625773 | | −0.87128278 | |
| $a$ | 2.4344371 | $\Omega$ | 325.86597 | +0.60645638 | | +0.46227671 | |
| $e$ | 0.2448693 | $i$ | 21.34649 | +0.65807651 | | +0.16482281 | |
| $P$ | 3.80 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 691 | 0.1+ | 0.1+ | 2001 02 19 | 699 | 0.7− | 1.0+ | 2003 09 18 | 699 | (0.5− | 2.3+) |
| 1999 09 05 | 691 | 0.2+ | 0.1− | 2001 02 19 | 699 | 0.2+ | 1.6+ | 2003 09 18 | 699 | 0.0 | 0.1− |
| 1999 09 05 | 691 | 0.1− | 0.1− | 2003 08 01 | 704 | 1.5− | 0.2+ | 2003 09 18 | 699 | 0.5+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.5+ | 0.2− | 2003 08 01 | 704 | 0.3+ | 0.0 | 2003 09 18 | 699 | 0.4− | 0.6− |
| 1999 10 06 | 704 | 0.3+ | 0.0 | 2003 08 01 | 704 | 0.5− | 0.8+ | 2003 09 20 | 704 | 0.2+ | 0.3− |
| 1999 10 06 | 704 | 0.8− | 0.2+ | 2003 08 01 | 704 | 0.3+ | 0.4− | 2003 09 20 | 704 | 0.2+ | 0.1− |
| 1999 10 06 | 704 | 0.2+ | 0.5− | 2003 08 23 | 644 | 0.2− | 0.2+ | 2003 09 20 | 704 | 0.6+ | 0.3+ |
| 2001 01 26 | 704 | 0.1+ | 1.1− | 2003 08 23 | 644 | 0.2− | 0.3+ | 2003 09 20 | 704 | 0.5− | 1.5+ |
| 2001 01 26 | 704 | 0.1− | 0.6− | 2003 08 23 | 644 | 0.1− | 0.2+ | 2003 09 20 | 704 | (2.2+ | 0.8+) |
| 2001 01 26 | 704 | 0.4+ | 0.6− | 2003 09 03 | 704 | 0.3− | 0.2− | 2003 09 30 | 699 | 0.0 | 0.6− |
| 2001 01 26 | 704 | 0.5+ | 0.3+ | 2003 09 03 | 704 | 0.3+ | 0.1+ | 2003 09 30 | 699 | 0.7+ | 0.3− |
| 2001 02 19 | 699 | 0.3− | 0.9+ | 2003 09 03 | 704 | 0.2− | 0.1− | 2003 09 30 | 699 | 0.4− | 0.2+ |
| 2001 02 19 | 699 | 1.0+ | 0.7− | 2003 09 03 | 704 | 0.4− | 0.9+ | 2003 09 30 | 699 | 0.1− | 0.2− |

**2003 PU$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.51411 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26060065 | $\omega$ | 254.33691 | | +0.79430250 | | +0.60555209 |
| $a$ | 2.4274617 | $\Omega$ | 68.36950 | | −0.53530760 | | +0.73566930 |
| $e$ | 0.2272679 | $i$ | 3.01477 | | −0.28727916 | | +0.30347544 |
| $P$ | 3.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 291 | 0.0 | 0.2+ | 2003 08 23 | 704 | 1.3+ | 0.0 | 2003 10 18 | 704 | 0.1− | 0.7+ |
| 2002 03 10 | 291 | 0.1+ | 0.2+ | 2003 08 31 | 608 | 0.9− | 0.3− | 2003 10 18 | 704 | 0.7− | 1.4+ |
| 2002 03 10 | 291 | 0.3− | 0.3+ | 2003 08 31 | 608 | 0.9− | 0.6− | 2003 10 18 | 704 | 0.1− | 0.8− |
| 2002 03 16 | 704 | 1.1+ | 0.5+ | 2003 08 31 | 608 | 1.0− | 0.6− | 2006 03 29 | 704 | 0.8− | 0.8− |
| 2002 03 16 | 704 | 0.0 | 0.6+ | 2003 09 21 | 608 | 0.3− | 0.2− | 2006 03 29 | 704 | 0.1+ | 0.5− |
| 2002 03 16 | 704 | 1.2+ | 0.3− | 2003 09 21 | 608 | 0.2− | 0.0 | 2006 03 29 | 704 | 1.4+ | 0.6+ |
| 2003 08 02 | 608 | 0.6− | 0.3− | 2003 09 21 | 608 | 0.0 | 0.1− | 2006 04 08 | 691 | 0.3+ | 0.3+ |
| 2003 08 02 | 608 | 0.7− | 0.4− | 2003 09 25 | 644 | 0.0 | 0.6+ | 2006 04 08 | 691 | 0.3− | 0.4− |
| 2003 08 02 | 608 | 0.7− | 0.3− | 2003 09 25 | 644 | 0.1+ | 0.2+ | 2006 04 08 | 691 | 0.3+ | 0.2+ |
| 2003 08 23 | 704 | 1.4+ | 0.6+ | 2003 09 25 | 644 | 0.2+ | 1.2+ | 2006 04 25 | 691 | 0.1− | 0.0 |
| 2003 08 23 | 704 | 1.7+ | 0.8+ | 2003 10 18 | 704 | 0.2+ | 0.8+ | 2006 04 25 | 691 | 0.2− | 0.1+ |
| 2003 08 23 | 704 | (2.1+ | 0.8+) | 2003 10 18 | 704 | 0.4− | 1.3+ | 2006 04 25 | 691 | 0.2− | 0.1+ |

**2003 QH**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.25316 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27735972 | $\omega$ | 14.70076 | | +0.87566233 | | +0.47718028 |
| $a$ | 2.3286656 | $\Omega$ | 316.54398 | | −0.45325898 | | +0.75903395 |
| $e$ | 0.1306203 | $i$ | 6.19814 | | −0.16664868 | | +0.44290681 |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 30 | 691 | 0.0 | 0.1+ | 2003 08 22 | 704 | 0.1− | 0.5+ | 2003 09 01 | 704 | 0.0 | 0.3− |
| 1998 01 30 | 691 | 0.0 | 0.3− | 2003 08 22 | 704 | 0.0 | 0.7− | 2003 09 24 | 644 | 0.2− | 0.1− |
| 1998 01 30 | 691 | 0.3− | 0.4− | 2003 08 22 | 704 | 0.6− | 0.9+ | 2003 09 24 | 644 | 0.0 | 0.1− |
| 2003 07 24 | 644 | 0.1+ | 0.2− | 2003 08 22 | 599 | 0.4− | 0.0 | 2003 09 24 | 644 | 0.3+ | 0.5− |
| 2003 07 24 | 644 | 0.3− | 0.2+ | 2003 08 22 | 599 | 0.1− | 0.1+ | 2003 09 24 | 644 | 0.2+ | 0.2− |
| 2003 07 24 | 644 | 0.2− | 0.0 | 2003 08 22 | 599 | 0.2+ | 0.0 | 2003 09 24 | 644 | 0.1+ | 0.2− |
| 2003 08 01 | 608 | 0.3+ | 0.5− | 2003 08 22 | 599 | 0.1+ | 0.0 | 2003 09 24 | 644 | 0.3+ | 0.3− |
| 2003 08 01 | 608 | 0.1+ | 0.4− | 2003 08 25 | 704 | (4.7− | 3.0+) | 2003 10 02 | 291 | 0.2− | 0.2− |
| 2003 08 01 | 608 | 0.2+ | 0.2− | 2003 08 25 | 704 | 1.4+ | 0.3+ | 2003 10 02 | 291 | 0.1+ | 0.1+ |
| 2003 08 18 | 599 | 0.0 | 0.3− | 2003 08 25 | 704 | 0.4− | 0.4− | 2003 10 02 | 291 | 0.1+ | 0.1+ |
| 2003 08 18 | 599 | 0.0 | 0.1− | 2003 08 25 | 704 | 1.8+ | 0.7− | 2005 01 18 | 691 | 0.1− | 0.4+ |
| 2003 08 18 | 599 | 0.4+ | 0.0 | 2003 09 01 | 704 | 0.8+ | 0.7− | 2005 01 18 | 691 | 0.3+ | 0.1+ |
| 2003 08 19 | 599 | 0.2+ | 0.1+ | 2003 09 01 | 704 | 0.4+ | 0.2− | 2005 01 18 | 691 | 0.0 | 0.0 |
| 2003 08 19 | 599 | 0.1+ | 0.0 | 2003 09 01 | 704 | 0.4− | 0.2+ | | | | |
| 2003 08 19 | 599 | 0.1+ | 0.1− | 2003 09 01 | 704 | 0.7+ | 0.1+ | | | | |

**2003 QE$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.08770 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28022611 | $\omega$ | 83.01223 | | +0.40788053 | | +0.91284041 |
| $a$ | 2.3127587 | $\Omega$ | 211.08101 | | −0.85145965 | | +0.37283256 |
| $e$ | 0.2143871 | $i$ | 2.09413 | | −0.32962091 | | +0.16648806 |
| $P$ | 3.52 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.2− | 0.3− | 2003 08 20 | 599 | 0.1− | 0.3− | 2003 10 24 | 695 | 0.2− | 0.1+ |
| 2000 11 24 | 691 | 0.3+ | 0.1− | 2003 08 20 | 599 | 0.1− | 0.1− | 2003 10 24 | 695 | 0.2− | 0.0 |
| 2000 11 24 | 691 | 0.1− | 0.4+ | 2003 08 22 | 644 | 0.4− | 0.1+ | 2006 03 26 | G96 | 0.1− | 0.3+ |
| 2003 08 19 | 599 | 0.2+ | 0.4− | 2003 08 22 | 644 | 0.1− | 0.1+ | 2006 03 26 | G96 | 1.3+ | 0.5+ |
| 2003 08 19 | 599 | 0.2+ | 0.3− | 2003 08 22 | 644 | 0.1+ | 0.2− | 2006 03 26 | G96 | 0.5− | 0.2+ |
| 2003 08 19 | 599 | 0.3+ | 0.4− | 2003 10 01 | 691 | 0.1− | 0.4+ | 2006 03 26 | G96 | 0.1− | 0.6+ |
| 2003 08 19 | 599 | 0.1− | 0.3− | 2003 10 01 | 691 | 0.1− | 0.4+ | | | | |
| 2003 08 20 | 599 | 0.1+ | 0.2− | 2003 10 01 | 691 | 0.2+ | 0.1+ | | | | |

**2003 QL$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.88583 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22021035 | $\omega$ | 348.15816 | | +0.56807586 | | +0.82263680 |
| $a$ | 2.7158820 | $\Omega$ | 316.45221 | | −0.75223823 | | +0.50738571 |
| $e$ | 0.2828479 | $i$ | 1.96577 | | −0.33380753 | | +0.25657054 |
| $P$ | 4.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.1− | 0.1− | 2003 08 25 | 704 | 0.1+ | 0.7− | 2003 09 01 | 704 | 0.8− | 0.1+ |
| 1999 12 07 | 691 | 0.2− | 0.0 | 2003 08 26 | 106 | 0.4− | 0.2− | 2003 09 01 | 704 | 0.6− | 0.5+ |
| 1999 12 07 | 691 | 0.1+ | 0.2+ | 2003 08 26 | 106 | 0.3− | 0.4− | 2003 09 03 | 106 | 0.1− | 1.0− |
| 2002 03 12 | 291 | 0.2− | 0.9+ | 2003 08 26 | 106 | 0.1− | 0.3− | 2003 09 03 | 106 | 0.2− | 0.5− |
| 2002 03 12 | 291 | 0.0 | 0.7+ | 2003 08 27 | 106 | 0.2+ | 0.3+ | 2003 09 03 | 106 | 0.0 | 0.4− |
| 2002 03 12 | 291 | 1.5+ | 0.6+ | 2003 08 27 | 106 | 0.1− | 0.3− | 2003 09 04 | 608 | 0.5+ | 1.0+ |
| 2003 08 02 | 608 | 0.1+ | 0.4− | 2003 08 27 | 106 | 0.0 | 0.2− | 2003 09 04 | 608 | 0.6+ | 0.3+ |
| 2003 08 02 | 608 | 0.2− | 0.3− | 2003 08 27 | 106 | 0.5+ | 0.2− | 2003 09 04 | 608 | 0.7+ | 0.7+ |
| 2003 08 02 | 608 | 0.5− | 0.1− | 2003 08 27 | 106 | 0.1− | 0.3− | 2003 09 24 | 644 | 0.1+ | 0.5+ |
| 2003 08 21 | 644 | 0.3− | 0.1− | 2003 08 27 | 106 | 0.1− | 0.5− | 2003 09 24 | 644 | 0.1− | 0.5+ |
| 2003 08 21 | 644 | 0.1+ | 0.1− | 2003 08 29 | 704 | 0.2− | 0.9+ | 2003 09 24 | 644 | 0.2+ | 0.7+ |
| 2003 08 21 | 644 | 0.1+ | 0.1− | 2003 08 29 | 704 | 0.9− | 0.5+ | 2003 10 01 | 291 | 0.2+ | 0.6+ |
| 2003 08 22 | 704 | 0.8+ | 0.1+ | 2003 08 29 | 704 | 0.6− | 1.2+ | 2003 10 01 | 291 | 0.1+ | 0.6+ |
| 2003 08 22 | 704 | 0.1+ | 0.1− | 2003 08 31 | 291 | 0.6− | 0.5+ | 2003 10 01 | 291 | 0.2+ | 0.6+ |
| 2003 08 22 | 704 | 0.0 | 0.2+ | 2003 08 31 | 291 | 0.0 | 0.1+ | 2006 03 04 | 691 | 1.0+ | 0.5+ |
| 2003 08 22 | 704 | 0.1+ | 0.2+ | 2003 08 31 | 291 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.1− | 0.3+ |
| 2003 08 25 | 704 | 0.1− | 0.7− | 2003 09 01 | 704 | 0.8− | 0.3+ | 2006 03 04 | 691 | 0.5− | 0.6+ |
| 2003 08 25 | 704 | 0.1− | 0.3− | 2003 09 01 | 704 | 0.4− | 0.1− | | | | |
| 2003 08 25 | 704 | 0.3+ | 0.2− | 2003 09 01 | 704 | 0.5− | 0.5+ | | | | |

**2003 QV$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.13823 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29427981 | $\omega$ | 234.90284 | | +0.90901670 | | +0.39177409 |
| $a$ | 2.2385274 | $\Omega$ | 101.66046 | | −0.31928938 | | +0.87385292 |
| $e$ | 0.1623444 | $i$ | 8.34468 | | −0.26784871 | | +0.28791343 |
| $P$ | 3.35 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 08 20 | 428 | 0.1+ | 0.1+ | 2003 08 29 | 428 | 1.3+ | 0.5+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2003 08 20 | 428 | 0.6− | 0.2+ | 2003 09 19 | 428 | 0.4− | 0.1− |
| 2003 07 08 | 644 | 0.2− | 0.1− | 2003 08 22 | 428 | 1.4− | 0.3− | 2006 05 08 | G96 | 0.2− | 0.2− |
| 2003 07 08 | 644 | 0.2− | 0.2− | 2003 08 22 | 428 | 0.0 | 0.0 | 2006 05 08 | G96 | 0.0 | 0.1− |
| 2003 07 08 | 644 | 0.1− | 0.3− | 2003 08 29 | 428 | 1.3+ | 0.3+ | 2006 05 08 | G96 | 0.1+ | 0.2+ |

**2003 QA$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.67748 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26510049 | $\omega$ | 340.46478 | | +0.91176656 | | +0.41034246 |
| $a$ | 2.3999141 | $\Omega$ | 355.20119 | | −0.34383476 | | +0.73952945 |
| $e$ | 0.2031770 | $i$ | 11.96552 | | −0.22463171 | | +0.53358716 |
| $P$ | 3.72 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.5+ | 0.6+ | 2003 09 17 | 704 | 1.0− | 0.1+ | 2003 09 29 | 704 | 0.1+ | 0.1+ |
| 2002 04 04 | 644 | 0.5+ | 0.7+ | 2003 09 17 | 699 | 0.9+ | 0.2+ | 2003 10 14 | 699 | 0.4− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.2+ | 0.4+ | 2003 09 17 | 704 | 0.4− | 0.3+ | 2003 10 14 | 699 | 1.5− | 0.2+ |
| 2003 08 20 | 608 | 0.1− | 0.5+ | 2003 09 17 | 704 | 0.7− | 1.0+ | 2003 10 14 | 699 | 0.2+ | 0.2− |
| 2003 08 20 | 608 | 0.4− | 0.2+ | 2003 09 17 | 704 | 0.8− | 0.8+ | 2003 10 14 | 699 | 0.4+ | 0.1+ |
| 2003 08 20 | 608 | 0.1− | 0.3+ | 2003 09 17 | 704 | 1.1− | 0.7+ | 2003 10 19 | 704 | 0.6+ | 0.8− |
| 2003 08 23 | 704 | 0.1+ | 0.2+ | 2003 09 18 | 699 | 0.7+ | 0.1+ | 2003 10 19 | 704 | 0.5+ | 0.7+ |
| 2003 08 23 | 704 | 0.6+ | 0.8− | 2003 09 18 | 699 | 0.1+ | 0.2+ | 2003 10 19 | 704 | 0.2+ | 0.7− |
| 2003 08 23 | 644 | 0.3+ | 0.2− | 2003 09 18 | 699 | 0.5+ | 0.2+ | 2003 10 19 | 704 | 0.9− | 0.4− |
| 2003 08 23 | 704 | 0.1+ | 0.2+ | 2003 09 18 | 699 | 0.6− | 0.3− | 2003 10 19 | 704 | 1.3− | 0.7− |
| 2003 08 23 | 644 | 0.3+ | 0.1− | 2003 09 18 | 608 | 0.1− | 0.1− | 2003 10 19 | 704 | 0.4+ | 0.4+ |
| 2003 08 23 | 644 | 0.3+ | 0.0 | 2003 09 18 | 608 | 0.4− | 0.2− | 2003 10 19 | 704 | 0.3+ | 0.2+ |
| 2003 08 26 | 704 | 0.5− | 0.4+ | 2003 09 18 | 608 | 0.2− | 0.1− | 2003 10 19 | 704 | 0.4+ | 0.1− |
| 2003 08 26 | 704 | 0.4− | 0.0 | 2003 09 21 | 691 | 0.2+ | 0.0 | 2003 10 19 | 704 | 0.6− | 0.3− |
| 2003 08 26 | 704 | 0.7− | 0.2− | 2003 09 21 | 691 | 0.1+ | 0.0 | 2003 10 19 | 704 | 0.0 | 0.1+ |
| 2003 08 26 | 704 | 0.7− | 0.2− | 2003 09 21 | 691 | 0.2+ | 0.1+ | 2003 10 23 | 704 | 0.4− | 0.1+ |
| 2003 09 01 | 704 | 0.0 | 0.1− | 2003 09 23 | 608 | 0.7+ | 0.5− | 2003 10 23 | 704 | 0.2− | 0.8+ |
| 2003 09 01 | 704 | 0.5+ | 0.3+ | 2003 09 23 | 608 | 1.3+ | 1.1− | 2003 10 23 | 704 | 0.1− | 0.2− |
| 2003 09 01 | 704 | 0.2− | 0.2+ | 2003 09 23 | 608 | 0.1+ | 1.4− | 2003 10 23 | 704 | 0.1− | 0.1+ |
| 2003 09 01 | 704 | 0.3− | 0.3+ | 2003 09 26 | 704 | 0.0 | 0.6+ | 2003 10 23 | 704 | 0.1+ | 0.3+ |
| 2003 09 01 | 704 | 0.1− | 0.4+ | 2003 09 26 | 704 | 0.4+ | 0.5+ | 2003 10 24 | 704 | 1.2+ | 0.3+ |
| 2003 09 13 | 608 | 0.1+ | 0.4− | 2003 09 26 | 704 | 0.4+ | 0.6− | 2003 10 24 | 704 | 0.6+ | 1.1+ |
| 2003 09 13 | 608 | 0.1+ | 0.3− | 2003 09 29 | 699 | 0.6− | 0.5− | 2003 10 24 | 704 | 0.9+ | 2.0+ |
| 2003 09 13 | 608 | 0.0 | 0.2− | 2003 09 29 | 699 | 0.4+ | 0.1− | 2003 11 20 | 704 | 0.0 | 0.2+ |
| 2003 09 14 | 644 | 0.4+ | 0.2+ | 2003 09 29 | 699 | 0.0 | 0.3− | 2003 11 20 | 704 | 1.3− | 0.2+ |
| 2003 09 14 | 644 | 0.3+ | 0.3+ | 2003 09 29 | 699 | 0.3− | 0.2+ | 2003 11 20 | 704 | 0.3+ | 0.7− |
| 2003 09 14 | 644 | 0.3+ | 0.3+ | 2003 09 29 | 704 | 0.3− | 1.7− | 2006 05 24 | 644 | 0.3− | 0.1− |
| 2003 09 17 | 699 | 0.3− | 0.7− | 2003 09 29 | 704 | 0.8− | 0.2+ | 2006 05 24 | 644 | 0.1+ | 0.3− |
| 2003 09 17 | 699 | 0.4+ | 0.5− | 2003 09 29 | 704 | 0.2− | 0.2+ | 2006 05 24 | 644 | 0.3− | 0.4− |
| 2003 09 17 | 699 | 0.3− | 0.1− | 2003 09 29 | 704 | 0.1− | 0.0 | | | | |

**2003 QL$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.36155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27323422 | $\omega$ | 254.21851 | | +0.93818217 | −0.34062459 | |
| $a$ | 2.3520470 | $\Omega$ | 125.65773 | | +0.33945469 | +0.87060483 | |
| $e$ | 0.2176753 | $i$ | 4.34487 | | +0.06771070 | +0.35499594 | |
| $P$ | 3.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 28 | 691 | 0.1+ | 0.3+ | 2003 09 02 | 704 | 0.5− | 1.0+ | 2003 09 28 | 704 | 0.0 | 0.0 |
| 2000 12 28 | 691 | 0.3− | 0.7+ | 2003 09 02 | 704 | (0.0 | 1.5+) | 2003 09 28 | 704 | 0.4+ | 0.1+ |
| 2000 12 28 | 691 | 0.4+ | 0.0 | 2003 09 16 | 699 | 0.5− | 0.4+ | 2003 09 28 | 704 | 0.4+ | 0.1+ |
| 2003 08 01 | 704 | 0.5− | 0.5+ | 2003 09 16 | 699 | 0.3+ | 0.5− | 2003 09 28 | 704 | 0.1+ | 0.2− |
| 2003 08 01 | 704 | 1.1− | 0.1− | 2003 09 16 | 699 | 0.0 | 0.2+ | 2003 10 16 | 644 | 0.4+ | 0.6− |
| 2003 08 01 | 704 | 0.2+ | 0.7− | 2003 09 16 | 699 | 0.4− | 0.1− | 2003 10 16 | 644 | 0.4+ | 0.6− |
| 2003 08 22 | 644 | 0.1− | 0.2+ | 2003 09 17 | 644 | 0.4− | 0.2+ | 2003 10 16 | 644 | 0.5+ | 0.4− |
| 2003 08 22 | 644 | 0.1+ | 0.5+ | 2003 09 17 | 644 | 0.3− | 0.0 | 2003 11 22 | 704 | 0.1+ | 0.2− |
| 2003 08 22 | 644 | 0.0 | 0.5+ | 2003 09 17 | 644 | 0.3− | 0.0 | 2003 11 22 | 704 | 0.2+ | 0.6− |
| 2003 08 23 | 704 | 0.1− | 1.0+ | 2003 09 18 | 704 | 0.8+ | 1.1+ | 2003 11 22 | 704 | 0.5+ | 0.9− |
| 2003 08 23 | 704 | 0.1+ | 0.2+ | 2003 09 18 | 704 | 0.6− | 0.1− | 2003 12 21 | 704 | 0.8− | 0.4− |
| 2003 08 23 | 704 | 0.5− | 0.6+ | 2003 09 18 | 704 | 0.2+ | 0.2+ | 2003 12 21 | 704 | 0.6+ | 0.1− |
| 2003 08 23 | 704 | 0.4− | 0.8+ | 2003 09 18 | 704 | 0.3+ | 0.1+ | 2003 12 21 | 704 | 0.2+ | 1.0− |
| 2003 08 23 | 704 | 0.5− | 0.1+ | 2003 09 18 | 704 | 0.1+ | 0.6+ | 2003 12 21 | 704 | 0.2− | 0.4+ |
| 2003 08 26 | 704 | 0.4− | 0.4+ | 2003 09 20 | 699 | 0.0 | 0.6− | 2003 12 21 | 704 | 0.2− | 0.6+ |
| 2003 08 26 | 704 | 0.3− | 0.6+ | 2003 09 20 | 699 | 0.0 | 0.3− | 2005 03 08 | 699 | 0.5− | 1.8− |
| 2003 08 26 | 704 | 0.3− | 0.4+ | 2003 09 20 | 699 | 0.2+ | 0.0 | 2005 03 08 | 699 | 0.1+ | 0.3− |
| 2003 08 26 | 704 | 0.6− | 0.5+ | 2003 09 20 | 699 | 0.1− | 0.3− | 2005 03 08 | 699 | 0.7+ | 0.1− |
| 2003 08 26 | 704 | 0.5− | 0.1− | 2003 09 22 | 106 | 0.2+ | 0.7− | 2005 03 08 | 699 | (2.8− | 3.3+) |
| 2003 09 02 | 704 | 0.2− | 1.1+ | 2003 09 22 | 106 | 0.3− | 0.6− | 2005 04 10 | 691 | 0.3+ | 0.4+ |
| 2003 09 02 | 704 | 0.3+ | 1.0+ | 2003 09 22 | 106 | 0.2+ | 0.3− | 2005 04 10 | 691 | 0.5+ | 0.5+ |
| 2003 09 02 | 704 | 0.1+ | 0.8+ | 2003 09 28 | 704 | 0.6+ | 0.2+ | 2005 04 10 | 691 | 0.4+ | 0.2+ |

**2003 QF$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.86630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28297865 | $\omega$ | 62.17094 | | +0.99181148 | −0.09398686 | |
| $a$ | 2.2977367 | $\Omega$ | 303.10187 | | +0.04563849 | +0.89318288 | |
| $e$ | 0.1528443 | $i$ | 5.92456 | | +0.11927749 | +0.43976222 | |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.0 | 0.2− | 2003 09 02 | 704 | 0.2− | 0.3+ | 2003 09 27 | 704 | 0.2+ | 1.0+ |
| 2002 04 08 | 644 | 0.1+ | 0.5+ | 2003 09 02 | 704 | 0.0 | 0.3+ | 2003 09 27 | 699 | 0.1+ | 0.2+ |
| 2002 04 08 | 644 | 0.1+ | 0.0 | 2003 09 02 | 704 | 0.2+ | 0.3+ | 2003 09 27 | 704 | 0.6− | 1.2+ |
| 2003 08 05 | 704 | 0.0 | 0.2+ | 2003 09 02 | 704 | 0.0 | 0.9+ | 2003 09 27 | 704 | 0.3+ | 0.1− |
| 2003 08 05 | 704 | 0.1+ | 0.2− | 2003 09 16 | 699 | 0.3− | 1.1+ | 2003 09 27 | 699 | 0.2− | 0.5− |
| 2003 08 05 | 704 | 0.7− | 0.6− | 2003 09 16 | 699 | 0.2+ | 0.5− | 2003 09 27 | 704 | 0.2− | 0.1− |
| 2003 08 05 | 704 | 0.3− | 1.2+ | 2003 09 16 | 699 | 0.1+ | 0.2− | 2003 09 27 | 699 | 0.4− | 0.6+ |
| 2003 08 20 | 644 | 0.3+ | 0.2+ | 2003 09 16 | 699 | 0.1− | 0.0 | 2003 09 27 | 704 | 0.3+ | 0.4+ |
| 2003 08 20 | 644 | 0.1+ | 0.0 | 2003 09 17 | 608 | 0.2+ | 1.0− | 2003 10 01 | 699 | 0.6− | 0.5− |
| 2003 08 20 | 644 | 0.2+ | 0.1− | 2003 09 17 | 608 | 0.1+ | 1.2− | 2003 10 01 | 699 | 0.4− | 0.3− |
| 2003 08 20 | 644 | 0.1+ | 0.1+ | 2003 09 17 | 608 | 0.3+ | 1.9− | 2003 10 01 | 699 | 0.3− | 1.5− |
| 2003 08 20 | 644 | 0.3+ | 0.1+ | 2003 09 18 | 644 | 0.3− | 0.2+ | 2003 10 01 | 699 | 0.5− | 0.1− |
| 2003 08 20 | 644 | 0.1+ | 0.2+ | 2003 09 18 | 644 | 0.1+ | 0.3+ | 2003 11 20 | 704 | 1.0+ | 0.0 |
| 2003 08 24 | 704 | 0.1− | 0.2− | 2003 09 18 | 644 | 0.2− | 0.0 | 2003 11 20 | 704 | 0.5− | 0.9+ |
| 2003 08 24 | 704 | 0.2+ | 0.4+ | 2003 09 21 | 608 | 0.3+ | 0.0 | 2003 11 20 | 704 | 0.4− | 0.9+ |
| 2003 08 24 | 704 | 0.1− | 0.6+ | 2003 09 21 | 608 | 0.6+ | 0.3− | 2005 03 13 | G96 | 0.0 | 0.0 |
| 2003 08 24 | 704 | 0.3− | 0.1− | 2003 09 21 | 608 | 0.7+ | 0.1+ | 2005 03 13 | G96 | 0.1+ | 0.2+ |
| 2003 08 28 | 704 | 0.2+ | 0.6+ | 2003 09 23 | 644 | 0.6− | 0.3− | 2005 03 13 | G96 | 0.2+ | 0.0 |
| 2003 08 28 | 704 | 0.2− | 0.9− | 2003 09 23 | 644 | 0.6− | 0.1− | 2005 03 13 | G96 | 0.1− | 0.3+ |
| 2003 08 28 | 704 | 1.4+ | 0.6− | 2003 09 23 | 644 | 0.4− | 0.1− | | | | |
| 2003 09 02 | 704 | 0.4+ | 0.7+ | 2003 09 27 | 699 | 0.2− | 0.2− | | | | |

**2003 QX$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.08078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26056078 | $\omega$ | 157.30991 | | +0.99032130 | +0.13841613 | |
| $a$ | 2.4277093 | $\Omega$ | 194.74487 | | −0.13271241 | +0.92276765 | |
| $e$ | 0.2117589 | $i$ | 2.30416 | | −0.04063432 | +0.35963987 | |
| $P$ | 3.78 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 19 | 291 | 0.1− | 0.1+ | 2003 08 21 | 644 | 0.2− | 0.4+ | 2003 09 18 | 699 | 0.8− | 1.0− |
| 2002 04 19 | 291 | 0.4+ | 0.2+ | 2003 08 25 | 704 | 0.5− | 1.0+ | 2003 09 18 | 699 | 0.0 | 1.1− |
| 2002 04 19 | 291 | 0.2+ | 0.6+ | 2003 08 25 | 704 | 0.0 | 1.9+ | 2003 10 01 | 691 | 0.2+ | 0.2+ |
| 2003 07 24 | 644 | 0.5− | 0.0 | 2003 08 25 | 704 | 0.4− | 1.0+ | 2003 10 01 | 691 | 0.1+ | 0.4+ |
| 2003 07 24 | 644 | 0.1− | 0.1+ | 2003 08 25 | 704 | 0.5+ | 1.5+ | 2003 10 01 | 691 | 0.0 | 0.1+ |
| 2003 07 24 | 644 | 0.1− | 0.2− | 2003 08 25 | 704 | 0.2− | 1.5+ | 2005 02 04 | 691 | 0.0 | 0.4+ |
| 2003 08 05 | 704 | 0.0 | 0.5− | 2003 09 01 | 704 | 0.4+ | 0.8+ | 2005 02 04 | 691 | 0.1+ | 1.1+ |
| 2003 08 05 | 704 | 0.2− | 0.4− | 2003 09 01 | 704 | 0.5− | 0.4+ | 2005 02 04 | 691 | 0.4+ | 0.6+ |
| 2003 08 05 | 704 | 0.2− | 0.9− | 2003 09 01 | 704 | 0.2− | 0.5− | 2006 04 26 | 691 | 0.0 | 0.0 |
| 2003 08 05 | 704 | 0.7− | 0.0 | 2003 09 01 | 704 | 0.2− | 0.4− | 2006 04 26 | 691 | 0.1+ | 0.2+ |
| 2003 08 05 | 704 | 0.1− | 0.1+ | 2003 09 01 | 704 | 0.2− | 0.8+ | 2006 04 26 | 691 | 0.0 | 0.2− |
| 2003 08 21 | 644 | 0.3− | 0.2+ | 2003 09 18 | 699 | 0.2+ | 0.5− | | | | |
| 2003 08 21 | 644 | 0.2− | 0.3+ | 2003 09 18 | 699 | 0.4+ | 0.6+ | | | | |

**2003 QL$_{38}$ = 2006 KV$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.74752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26853492 | $\omega$ | 226.17962 | | +0.98460491 | −0.17349206 | |
| $a$ | 2.3794077 | $\Omega$ | 143.79583 | | +0.16893388 | +0.91321012 | |
| $e$ | 0.1979754 | $i$ | 2.06657 | | +0.04488342 | +0.36871096 | |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.4+ | 0.4+ | 2003 08 25 | 704 | 0.1+ | 0.2− | 2005 03 01 | 691 | 0.3+ | 0.5+ |
| 2002 04 08 | 644 | 0.1− | 0.0 | 2003 08 25 | 704 | 0.3+ | 0.3+ | 2005 03 01 | 691 | 0.1− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.1+ | 0.6+ | 2003 08 27 | 106 | 0.2+ | 0.0 | 2005 03 01 | 691 | 0.3+ | 0.6+ | | |
| 2003 07 24 | 644 | 0.5− | 0.2+ | 2003 08 27 | 106 | 0.2− | 0.2− | 2006 05 21 | 691 | 0.6+ | 0.2+ | | |
| 2003 07 24 | 644 | 0.5− | 0.3+ | 2003 08 27 | 106 | 0.0 | 0.3− | 2006 05 21 | 691 | 0.2− | 0.2+ | | |
| 2003 07 24 | 644 | 0.4− | 0.2+ | 2003 08 29 | 704 | 0.2− | 0.7+ | 2006 05 21 | 691 | 0.0 | 0.0 | | |
| 2003 08 22 | 704 | 1.7− | 0.6+ | 2003 08 29 | 704 | 0.3− | 0.7+ | 2006 05 25 | 691 | 0.3+ | 0.2− | | |
| 2003 08 22 | 704 | (2.0− | 0.4+) | 2003 08 29 | 704 | 0.3+ | 0.8+ | 2006 05 25 | 691 | 0.1− | 0.1− | | |
| 2003 08 22 | 704 | (1.8− | 0.0 ) | 2003 09 01 | 704 | (1.7+ | 0.4−) | 2006 05 25 | 691 | 0.2− | 0.5− | | |
| 2003 08 22 | 704 | (1.9− | 0.5+) | 2003 09 01 | 704 | 0.3− | 0.1− | 2006 06 02 | 691 | 0.1− | 0.2− | | |
| 2003 08 25 | 704 | 0.5+ | 1.2+ | 2003 09 01 | 704 | 0.2+ | 0.2+ | 2006 06 02 | 691 | 0.0 | 0.3+ | | |
| 2003 08 25 | 704 | 0.5− | 0.5+ | 2003 09 01 | 704 | 0.4− | 0.4+ | 2006 06 02 | 691 | 0.2− | 0.1+ | | |
| 2003 08 25 | 704 | 0.9+ | 0.3− | 2003 09 01 | 704 | 0.2+ | 0.9+ | | | | | | |

**2003 QM$_{43}$ = 1978 RJ$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 290.97565 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.27620784 | $\omega$ | 48.52338 | | +0.97397783 | | −0.22609960 | | |
| $a$ | 2.3351353 | $\Omega$ | 324.53590 | | +0.19904961 | | +0.88644786 | | |
| $e$ | 0.2545375 | $i$ | 1.54955 | | +0.10838097 | | +0.40384298 | | |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 09 02 | 809 | 0.1− | 0.7− | 2003 09 18 | 704 | 0.6− | 0.1+ | 2003 09 28 | 333 | 0.4− | 0.1+ | | |
| 1978 09 02 | 809 | 0.0 | 0.6− | 2003 09 18 | 704 | 0.4− | 0.2+ | 2003 09 28 | 333 | 0.4− | 0.3− | | |
| 1978 09 02 | 809 | 0.6+ | 0.7− | 2003 09 18 | 704 | 0.1+ | 0.0 | 2003 09 28 | 333 | 0.3− | 0.0 | | |
| 1978 09 02 | 809 | 0.6+ | 0.5− | 2003 09 18 | 704 | 0.0 | 0.2+ | 2003 09 28 | 333 | 0.6− | 0.3− | | |
| 2000 12 30 | 691 | 0.1+ | 0.1+ | 2003 09 18 | 644 | 0.1− | 0.2+ | 2003 09 29 | 333 | 0.2− | 0.0 | | |
| 2000 12 30 | 691 | 0.3− | 0.2− | 2003 09 18 | 644 | 0.0 | 0.3+ | 2003 09 29 | 333 | 0.3+ | 0.0 | | |
| 2000 12 30 | 691 | 0.0 | 0.1− | 2003 09 18 | 644 | 0.1− | 0.3+ | 2003 09 29 | 333 | 0.0 | 0.0 | | |
| 2003 08 22 | 644 | 0.1+ | 0.0 | 2003 09 19 | 691 | 0.2+ | 0.0 | 2003 09 29 | 704 | 0.2+ | 0.2+ | | |
| 2003 08 22 | 644 | 0.2− | 0.2+ | 2003 09 19 | 691 | 0.2+ | 0.1+ | 2003 09 29 | 704 | 0.4− | 0.2+ | | |
| 2003 08 22 | 644 | 0.2+ | 0.1+ | 2003 09 19 | 691 | 0.2+ | 0.1+ | 2003 09 29 | 704 | 0.5− | 0.2+ | | |
| 2003 08 25 | 704 | 0.3− | 0.5+ | 2003 09 22 | 699 | 0.3− | 0.2− | 2003 09 29 | 704 | 0.4− | 0.2+ | | |
| 2003 08 25 | 704 | 0.3− | 0.2+ | 2003 09 22 | 699 | 0.0 | 0.4+ | 2003 09 29 | 704 | 0.1− | 0.2+ | | |
| 2003 08 25 | 704 | 0.3− | 0.8+ | 2003 09 22 | 699 | 0.4+ | 0.4− | 2003 10 05 | 608 | 0.6+ | 0.1− | | |
| 2003 08 25 | 704 | 0.1− | 0.4+ | 2003 09 22 | 699 | 0.1− | 0.3− | 2003 10 05 | 608 | 0.0 | 0.3+ | | |
| 2003 08 25 | 704 | 0.1− | 0.2+ | 2003 09 23 | 644 | 0.1+ | 0.2+ | 2003 10 05 | 608 | 0.5+ | 0.2+ | | |
| 2003 08 29 | 704 | 0.2− | 0.2− | 2003 09 23 | 644 | 0.2+ | 0.2+ | 2003 10 24 | 704 | 0.4− | 0.3− | | |
| 2003 08 29 | 704 | 0.1+ | 0.0 | 2003 09 23 | 644 | 0.1+ | 0.2+ | 2003 10 24 | 704 | 0.4+ | 0.9− | | |
| 2003 08 29 | 704 | 0.0 | 0.2+ | 2003 09 23 | 608 | 1.1− | 0.1− | 2003 10 24 | 704 | 0.9+ | 0.5− | | |
| 2003 08 29 | 704 | 0.0 | 0.6+ | 2003 09 23 | 608 | 0.6+ | 0.2+ | 2003 10 24 | 704 | 0.4+ | 0.7+ | | |
| 2003 09 02 | 704 | 0.3+ | 1.0− | 2003 09 23 | 608 | 0.3− | 0.5+ | 2003 10 24 | 704 | 1.4+ | 0.5+ | | |
| 2003 09 02 | 704 | 0.4+ | 0.6− | 2003 09 24 | 608 | 0.6− | 0.2+ | 2005 03 08 | G96 | 0.1+ | 0.1+ | | |
| 2003 09 02 | 704 | 0.3+ | 0.4− | 2003 09 24 | 608 | 0.1− | 0.0 | 2005 03 08 | G96 | 0.3− | 0.3− | | |
| 2003 09 02 | 704 | 0.1− | 0.0 | 2003 09 24 | 608 | 0.3− | 0.1+ | 2005 03 08 | G96 | 0.0 | 0.2+ | | |
| 2003 09 02 | 704 | 0.2+ | 0.3− | 2003 09 26 | 704 | 0.5+ | 0.9+ | 2005 03 08 | G96 | 0.7+ | 0.1− | | |
| 2003 09 15 | 699 | 0.3+ | 0.4− | 2003 09 26 | 704 | 0.1− | 0.3+ | 2005 03 08 | G96 | 0.1+ | 0.2+ | | |
| 2003 09 15 | 699 | 0.5+ | 0.9+ | 2003 09 26 | 704 | 1.3− | 0.2− | 2005 03 08 | G96 | 0.0 | 0.1+ | | |
| 2003 09 15 | 699 | 0.3+ | 0.6− | 2003 09 26 | 704 | 0.7− | 0.3+ | 2005 03 08 | G96 | 0.1− | 0.2+ | | |
| 2003 09 15 | 699 | 0.3− | 0.2− | 2003 09 28 | 333 | 0.2− | 0.1+ | 2005 03 08 | G96 | 0.0 | 0.0 | | |
| 2003 09 18 | 704 | 0.5− | 2.0− | 2003 09 28 | 333 | 0.4− | 0.3− | | | | | | |

**2003 QS$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 105.75339 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.22044788 | $\omega$ | 323.17498 | | −0.50110460 | | −0.86307346 | | |
| $a$ | 2.7139308 | $\Omega$ | 156.69649 | | +0.82720483 | | −0.49917966 | | |
| $e$ | 0.0131404 | $i$ | 9.19758 | | +0.25421713 | | −0.07696669 | | |
| $P$ | 4.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.5+ | 0.1− | 2002 06 08 | 644 | 1.5+ | 1.4+ | 2004 12 18 | 704 | 0.2− | 0.3+ | | |
| 2001 01 21 | 704 | 1.0+ | 0.6+ | 2002 06 08 | 644 | 0.0 | 0.1+ | 2004 12 18 | 704 | 0.9− | 0.9+ | | |
| 2001 01 21 | 704 | 0.3− | 0.3− | 2002 06 08 | 644 | 0.6− | 0.1+ | 2005 02 04 | 691 | 0.1− | 0.4+ | | |
| 2001 01 21 | 704 | 0.4− | 1.1+ | 2003 08 23 | 644 | 0.6− | 0.5+ | 2005 02 04 | 691 | 0.0 | 0.4+ | | |
| 2001 01 21 | 704 | 0.1+ | 0.8+ | 2003 08 23 | 644 | 0.5− | 0.6+ | 2005 02 04 | 691 | 0.2+ | 0.1+ | | |
| 2002 05 18 | 291 | 0.0 | 0.0 | 2003 08 23 | 644 | 0.6− | 0.8+ | 2006 03 04 | G96 | 0.2− | 0.1+ | | |
| 2002 05 18 | 704 | 0.2− | 0.8− | 2003 08 25 | 704 | 0.0 | 0.5+ | 2006 03 04 | G96 | 0.3− | 0.6+ | | |
| 2002 05 18 | 704 | 0.6+ | 0.4+ | 2003 08 25 | 704 | 0.3− | 0.3+ | 2006 03 04 | G96 | 0.4+ | 0.4− | | |
| 2002 05 18 | 291 | 0.2− | 0.1+ | 2003 08 25 | 704 | 0.4+ | 1.0+ | 2006 03 26 | 699 | 0.5− | 0.7+ | | |
| 2002 05 18 | 704 | 0.4− | 0.1+ | 2003 08 25 | 704 | 0.7− | 1.2+ | 2006 03 26 | 699 | 0.6− | 0.7+ | | |
| 2002 05 18 | 291 | 0.1− | 0.1+ | 2003 09 01 | 704 | 0.2− | 1.1+ | 2006 03 26 | 699 | 0.2+ | 0.9+ | | |
| 2002 05 18 | 704 | 0.1− | 0.5− | 2003 09 01 | 704 | 0.9− | 0.5+ | 2006 03 26 | 699 | 0.4− | 1.1+ | | |
| 2002 05 18 | 704 | 1.0+ | 1.9+ | 2003 09 01 | 704 | 0.8+ | 1.0+ | 2006 04 26 | 699 | 1.6+ | 0.5+ | | |
| 2002 06 01 | 644 | 0.4− | 0.4+ | 2003 09 01 | 704 | 0.7+ | 1.1+ | 2006 04 26 | 699 | 1.0+ | 0.3+ | | |
| 2002 06 01 | 644 | 0.0 | 0.0 | 2004 12 18 | 704 | 0.1+ | 0.6+ | 2006 04 26 | 699 | 0.6+ | 0.1+ | | |
| 2002 06 01 | 644 | 0.3− | 0.2+ | 2004 12 18 | 704 | 0.7− | 1.2+ | 2006 04 26 | 699 | 0.0 | 0.0 | | |

**2003 QJ$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 348.75689 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.36176926 | $\omega$ | 245.72184 | | +0.66321110 | | −0.73761145 | | |
| $a$ | 1.9506601 | $\Omega$ | 160.92079 | | +0.74585407 | | +0.66542228 | | |
| $e$ | 0.1076769 | $i$ | 22.82649 | | −0.06207044 | | +0.11464093 | | |
| $P$ | 2.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.2− | 0.5+ | 2002 04 02 | 644 | 0.1− | 0.7+ | 2003 08 28 | 608 | 0.3+ | 0.3+ | | |
| 2002 02 11 | 704 | (0.5+ | 2.6+) | 2002 04 02 | 644 | 0.1− | 0.6+ | 2003 08 28 | 608 | 0.0 | 0.5+ | | |
| 2002 02 11 | 704 | 0.6− | 1.2+ | 2002 04 02 | 644 | 0.1− | 0.7+ | 2003 08 28 | 608 | 0.4− | 0.3+ | | |
| 2002 02 11 | 704 | 0.6+ | 0.4+ | 2003 08 23 | 644 | 0.1− | 0.1+ | 2003 09 01 | 704 | 0.4+ | 1.1+ | | |
| 2002 02 11 | 704 | 0.6+ | 0.9+ | 2003 08 23 | 644 | 0.1+ | 0.0 | 2003 09 01 | 704 | 0.3+ | 0.4+ | | |
| 2002 03 12 | 644 | 0.1+ | 0.5+ | 2003 08 23 | 644 | 0.2+ | 0.4+ | 2003 09 01 | 704 | 0.4− | 0.8+ | | |
| 2002 03 12 | 644 | 0.0 | 0.0 | 2003 08 25 | 704 | 0.1− | 0.1+ | 2003 09 01 | 704 | 0.2+ | 0.3+ | | |
| 2002 03 12 | 644 | 0.1− | 0.0 | 2003 08 25 | 704 | 0.3+ | 1.5+ | 2006 11 25 | 703 | 1.3+ | 0.5+ | | |
| 2002 03 22 | 644 | 0.3+ | 1.3+ | 2003 08 25 | 704 | 0.2− | 0.0 | 2006 11 25 | 703 | 0.8− | 0.1+ | | |
| 2002 03 22 | 644 | 0.2− | 0.9+ | 2003 08 25 | 704 | 0.1− | 0.6+ | 2006 11 25 | 703 | 0.0 | 0.1+ | | |
| 2002 03 22 | 644 | 0.1− | 0.8+ | 2003 08 25 | 704 | 0.7− | 0.6+ | 2006 11 25 | 703 | 0.7− | 0.6+ | | |

**2003 QV$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 221.94948 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.21913856 | $\omega$ | 98.14492 | | +0.97578928 | | −0.17027347 | | |
| $a$ | 2.7247303 | $\Omega$ | 271.73683 | | +0.10311731 | | +0.91164705 | | |
| $e$ | 0.1505338 | $i$ | 7.89338 | | +0.19287847 | | +0.37404090 | | |
| $P$ | 4.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 20 | 644 | 0.1− | 0.0 | 2003 09 18 | 644 | 0.4+ | 0.3+ | 2003 10 19 | 645 | 0.1+ | 0.1− | | |
| 2003 08 20 | 644 | 0.2+ | 0.5+ | 2003 09 18 | 644 | 0.5+ | 0.3+ | 2003 10 19 | 645 | 0.1+ | 0.1− | | |
| 2003 08 20 | 644 | 0.2− | 0.0 | 2003 09 19 | 704 | 0.2− | 0.1+ | 2003 10 22 | 645 | 0.1− | 0.0 | | |
| 2003 08 20 | 644 | 0.2+ | 0.5+ | 2003 09 19 | 704 | 0.5+ | 0.5+ | 2003 10 22 | 645 | 0.0 | 0.0 | | |
| 2003 08 20 | 644 | 0.4+ | 0.1+ | 2003 09 19 | 704 | 1.1+ | 1.2+ | 2003 10 24 | 645 | 0.0 | 0.1− | | |
| 2003 08 20 | 644 | 0.1+ | 0.2+ | 2003 09 22 | 704 | 1.1+ | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.1− | | |
| 2003 08 23 | 644 | 0.4− | 0.0 | 2003 09 22 | 704 | 0.2− | 0.2+ | 2004 12 12 | 599 | 0.1+ | 0.5− | | |
| 2003 08 23 | 644 | 0.2− | 0.1+ | 2003 09 22 | 704 | 0.2− | 0.7− | 2004 12 12 | 599 | 0.5+ | 0.4− | | |
| 2003 08 23 | 644 | 0.1− | 0.2+ | 2003 09 22 | 704 | 0.9+ | 0.1+ | 2005 01 13 | 703 | 0.2− | 0.0 | | |
| 2003 08 25 | 704 | 0.6− | 0.6+ | 2003 09 22 | 704 | 0.9+ | 0.2+ | 2005 01 13 | 704 | 0.5− | 0.0 | | |
| 2003 08 25 | 704 | 0.9− | 1.2+ | 2003 09 23 | 644 | 0.3+ | 0.5+ | 2005 01 13 | 703 | 0.2+ | 0.6+ | | |
| 2003 08 25 | 704 | 1.9− | 0.0 | 2003 09 23 | 644 | 0.5+ | 0.6+ | 2005 01 13 | 704 | 0.8+ | 0.2+ | | |
| 2003 08 25 | 704 | 1.7− | 0.7− | 2003 09 23 | 644 | 0.3+ | 0.3+ | 2005 01 13 | 703 | 0.6− | 0.2+ | | |
| 2003 09 18 | 683 | 0.4− | 0.1+ | 2003 09 27 | 699 | 0.2− | 0.2− | 2005 01 13 | 703 | 0.8− | 0.4+ | | |
| 2003 09 18 | 644 | 0.1+ | 0.3+ | 2003 09 27 | 699 | 0.6+ | 0.1− | 2005 01 13 | 704 | 0.6+ | 0.7+ | | |
| 2003 09 18 | 683 | 0.3− | 0.0 | 2003 09 27 | 699 | 0.3+ | 0.7+ | 2005 01 13 | 704 | 0.6+ | 0.5+ | | |
| 2003 09 18 | 683 | 0.0 | 0.1− | 2003 09 27 | 699 | 0.2− | 0.5− | | | | | | |

**2003 QT$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.59464 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22520856 | $\omega$ | 349.91477 | | +0.88776233 | +0.45487841 | |
| $a$ | 2.6755482 | $\Omega$ | 342.49678 | | −0.40432162 | +0.69745148 | |
| $e$ | 0.1805455 | $i$ | 13.54751 | | −0.22000472 | +0.55375723 | |
| $P$ | 4.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 25 | 644 | 0.7− | 0.0 | 2003 08 31 | 704 | 0.2− | 0.8+ | 2003 09 29 | 704 | 0.3− | 0.7+ |
| 2003 07 25 | 644 | 0.5− | 0.0 | 2003 08 31 | 704 | 1.2− | 0.1− | 2003 10 15 | 699 | 1.1+ | 0.9− |
| 2003 07 25 | 644 | 0.6− | 0.1− | 2003 08 31 | 704 | 0.4+ | 0.2− | 2003 10 15 | 699 | 0.3− | 0.4− |
| 2003 08 02 | 608 | 0.6− | 0.4− | 2003 08 31 | 704 | 0.9+ | 0.5+ | 2003 10 15 | 699 | 1.2− | 0.5− |
| 2003 08 02 | 608 | 0.4+ | 0.6− | 2003 09 22 | 699 | 0.2− | 0.9+ | 2003 10 15 | 699 | 0.7− | 0.6+ |
| 2003 08 02 | 608 | 0.1+ | 0.8− | 2003 09 22 | 699 | 0.4+ | 0.4+ | 2005 12 03 | 568 | 0.1+ | 0.1+ |
| 2003 08 22 | 608 | 0.3+ | 0.3+ | 2003 09 22 | 699 | 0.8− | 0.2− | 2005 12 03 | 568 | 0.1+ | 0.0 |
| 2003 08 22 | 608 | 0.4+ | 0.1− | 2003 09 22 | 699 | 0.6+ | 0.1+ | 2005 12 03 | 568 | 0.1+ | 0.1+ |
| 2003 08 22 | 608 | 0.2+ | 0.5− | 2003 09 28 | 608 | 0.0 | 0.2+ | 2006 01 26 | G96 | 0.5− | 0.4− |
| 2003 08 26 | 704 | 0.8− | 1.5+ | 2003 09 28 | 608 | 0.3+ | 0.2− | 2006 01 26 | G96 | 0.7− | 0.6− |
| 2003 08 26 | 704 | 0.2− | 1.2+ | 2003 09 28 | 608 | 0.1+ | 0.5− | 2006 01 26 | G96 | 0.9− | 0.1+ |
| 2003 08 26 | 704 | 0.2− | 1.2+ | 2003 09 29 | 704 | 0.5− | 1.2+ | 2006 01 26 | G96 | 1.3− | 0.1+ |
| 2003 08 31 | 704 | 0.4− | 0.7+ | 2003 09 29 | 704 | 0.2+ | 0.4+ | | | | |

**2003 QT$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.36101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26751472 | $\omega$ | 198.46056 | | +0.09093700 | +0.99502948 | |
| $a$ | 2.3854533 | $\Omega$ | 76.77237 | | −0.90834960 | +0.09958079 | |
| $e$ | 0.1705153 | $i$ | 2.38917 | | −0.40820517 | +0.00007551 | |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 23 | 691 | 0.2+ | 0.4− | 2002 02 15 | 291 | 0.3− | 0.4+ | 2003 08 26 | 704 | 0.4− | 0.8+ |
| 1998 01 23 | 691 | 0.2− | 0.4− | 2002 02 20 | 704 | 1.0− | 0.1+ | 2003 08 31 | 704 | 0.1− | 1.2+ |
| 1998 01 23 | 691 | 0.2− | 0.5− | 2002 02 20 | 704 | 0.5− | 0.1− | 2003 08 31 | 704 | 0.7+ | 1.0+ |
| 2002 02 10 | 704 | 1.2+ | 1.4+ | 2002 02 20 | 704 | 0.2− | 0.0 | 2003 08 31 | 704 | 0.1+ | 0.3+ |
| 2002 02 10 | 704 | 1.1+ | 0.3+ | 2002 02 20 | 704 | 0.4− | 0.0 | 2003 08 31 | 704 | 0.7+ | 0.7+ |
| 2002 02 10 | 704 | 0.9+ | 0.5+ | 2003 08 23 | 704 | 0.5− | 0.0 | 2003 08 31 | 704 | 0.3− | 1.0+ |
| 2002 02 10 | 704 | 1.3+ | 0.0 | 2003 08 23 | 704 | 0.9− | 0.1− | 2004 12 15 | 691 | 0.1− | 0.3+ |
| 2002 02 10 | 704 | 1.0+ | 0.9+ | 2003 08 23 | 704 | 0.2− | 0.4− | 2004 12 15 | 691 | 0.0 | 0.2+ |
| 2002 02 15 | 291 | 0.2− | 0.3+ | 2003 08 26 | 704 | 0.5− | 0.9+ | 2004 12 15 | 691 | 0.2+ | 0.2+ |
| 2002 02 15 | 291 | 0.5+ | 1.0+ | 2003 08 26 | 704 | 0.6− | 0.2+ | | | | |

**2003 QK$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.55858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28883012 | $\omega$ | 310.92076 | | +0.96218129 | +0.27008442 | |
| $a$ | 2.2665975 | $\Omega$ | 33.45459 | | −0.22654199 | +0.86574918 | |
| $e$ | 0.2511095 | $i$ | 3.69412 | | −0.15128084 | +0.42134636 | |
| $P$ | 3.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 691 | 0.5+ | 0.8+ | 2003 09 17 | 699 | 0.4+ | 0.1+ | 2003 09 28 | 704 | 0.1− | 0.4− |
| 2002 03 13 | 691 | 0.5+ | 0.9+ | 2003 09 17 | 699 | 0.2− | 1.3− | 2003 09 28 | 704 | 0.3+ | 0.0 |
| 2002 03 13 | 691 | 0.4+ | 1.1+ | 2003 09 17 | 704 | 0.3+ | 0.7+ | 2003 09 28 | 704 | 0.3− | 0.0 |
| 2003 08 23 | 704 | 0.3+ | 0.0 | 2003 09 17 | 699 | 0.2− | 0.4− | 2003 09 28 | 704 | 0.4− | 0.1+ |
| 2003 08 23 | 704 | 0.4+ | 0.1+ | 2003 09 17 | 704 | 0.0 | 0.9+ | 2003 10 18 | 704 | 0.9+ | 1.9+ |
| 2003 08 23 | 704 | 0.3+ | 0.1− | 2003 09 17 | 704 | 0.1+ | 0.9+ | 2003 10 18 | 704 | 0.3− | 1.3+ |
| 2003 08 23 | 644 | 0.1+ | 0.3+ | 2003 09 17 | 704 | 0.4− | 0.9+ | 2003 10 18 | 704 | 0.3− | 0.1+ |
| 2003 08 23 | 704 | 0.4+ | 0.5− | 2003 09 17 | 704 | 1.4+ | 0.5− | 2003 10 18 | 704 | 0.8− | 1.3+ |
| 2003 08 23 | 644 | 0.0 | 0.3+ | 2003 09 18 | 699 | 0.2+ | 0.4− | 2003 10 24 | 704 | 0.2+ | 0.2+ |
| 2003 08 23 | 644 | 0.1+ | 0.3+ | 2003 09 18 | 699 | 0.3− | 1.0− | 2003 10 24 | 704 | 0.5− | 0.2+ |
| 2003 08 26 | 704 | 0.1− | 0.1+ | 2003 09 18 | 699 | 0.1− | 0.6+ | 2003 10 24 | 704 | 0.4+ | 0.6+ |
| 2003 08 26 | 704 | 0.5− | 0.5+ | 2003 09 18 | 699 | 0.4− | 0.1− | 2003 10 24 | 704 | 0.5− | 0.1+ |
| 2003 08 26 | 704 | 0.3− | 0.2+ | 2003 09 23 | 608 | 0.2+ | 0.1+ | 2003 10 24 | 704 | 0.4+ | 1.2+ |
| 2003 08 26 | 704 | 0.2− | 0.3+ | 2003 09 23 | 608 | 0.8− | 0.6+ | 2005 02 09 | G96 | 0.2− | 0.2+ |
| 2003 08 31 | 704 | 0.8− | 1.9− | 2003 09 23 | 608 | 0.3− | 0.5+ | 2005 02 09 | G96 | 0.5+ | 0.1+ |
| 2003 08 31 | 704 | 1.5− | 1.1+ | 2003 09 24 | 644 | 0.1− | 0.3+ | 2005 02 09 | G96 | 0.0 | 0.2− |
| 2003 08 31 | 704 | 0.1− | 0.3+ | 2003 09 24 | 644 | 0.1− | 0.3+ | 2005 02 09 | G96 | 0.2− | 0.2+ |
| 2003 08 31 | 704 | 0.3+ | 0.2+ | 2003 09 24 | 644 | 0.1− | 0.3+ | 2006 05 23 | G96 | 0.1+ | 0.0 |
| 2003 09 07 | 608 | 0.0 | 0.3+ | 2003 09 24 | 644 | 0.3− | 0.3+ | 2006 05 23 | G96 | 0.2− | 0.0 |
| 2003 09 07 | 608 | 0.1+ | 0.7− | 2003 09 24 | 644 | 0.2− | 0.2+ | 2006 05 23 | G96 | 0.0 | 0.1− |
| 2003 09 07 | 608 | 0.0 | 0.4− | 2003 09 24 | 644 | 0.0 | 0.4+ | 2006 05 23 | G96 | 0.2+ | 0.2+ |
| 2003 09 17 | 699 | 0.5− | 0.4− | 2003 09 28 | 704 | 0.3+ | 0.8− | | | | |

**2003 QQ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.67581 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27900815 | $\omega$ | 138.33026 | | +0.84811861 | +0.52495744 | |
| $a$ | 2.3194844 | $\Omega$ | 190.72053 | | −0.52745029 | +0.84933534 | |
| $e$ | 0.2168906 | $i$ | 22.60989 | | +0.04991005 | +0.05521921 | |
| $P$ | 3.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 21 | 691 | 0.3− | 0.4+ | 2003 09 20 | 704 | 0.3+ | 0.6+ | 2003 09 27 | 704 | 0.6− | 0.2− |
| 1999 05 21 | 691 | 0.1− | 0.3+ | 2003 09 20 | 704 | 0.5+ | 0.4− | 2003 09 30 | 699 | 0.2+ | 0.4− |
| 1999 05 21 | 691 | 0.2+ | 0.4+ | 2003 09 20 | 704 | 0.6+ | 0.1+ | 2003 09 30 | 699 | 0.7+ | 0.0 |
| 2003 08 25 | 644 | 0.5− | 0.1+ | 2003 09 20 | 704 | 0.5+ | 0.1+ | 2003 09 30 | 699 | 0.6+ | 0.3− |
| 2003 08 25 | 644 | 0.4− | 0.1− | 2003 09 20 | 704 | 0.1− | 0.1+ | 2003 09 30 | 699 | 0.1− | 0.2− |
| 2003 08 25 | 644 | 0.3− | 0.0 | 2003 09 20 | 704 | 0.4+ | 0.3− | 2003 10 19 | 704 | 0.5+ | 0.1− |
| 2003 08 27 | 608 | 0.2− | 0.4− | 2003 09 20 | 704 | 0.0 | 0.2+ | 2003 10 19 | 704 | 0.7+ | 0.5+ |
| 2003 08 27 | 608 | 0.6− | 0.1− | 2003 09 20 | 704 | 0.6+ | 0.3− | 2003 10 19 | 704 | 0.2+ | 0.2+ |
| 2003 08 27 | 608 | 0.5− | 0.1− | 2003 09 21 | 644 | 0.1+ | 0.2− | 2003 10 19 | 704 | 0.3+ | 0.2+ |
| 2003 09 04 | 599 | 0.2+ | 0.4− | 2003 09 21 | 644 | 0.3+ | 0.4− | 2003 10 19 | 704 | 1.3+ | 0.6+ |
| 2003 09 04 | 599 | 0.8+ | 0.7+ | 2003 09 21 | 644 | 0.2+ | 0.3− | 2003 10 24 | 704 | 0.7− | 0.7− |
| 2003 09 04 | 599 | 0.2− | 0.9− | 2003 09 21 | 608 | 0.2+ | 0.6+ | 2003 10 24 | 704 | 0.7− | 0.7− |
| 2003 09 04 | 599 | 0.6− | 0.1− | 2003 09 21 | 608 | 0.3+ | 0.6+ | 2003 10 24 | 704 | 1.2− | 0.4+ |
| 2003 09 17 | 644 | 0.0 | 0.4− | 2003 09 21 | 608 | 0.1+ | 0.4+ | 2006 05 28 | 291 | 0.1− | 0.2− |
| 2003 09 17 | 644 | 0.0 | 0.3− | 2003 09 27 | 704 | 0.9− | 0.2+ | 2006 05 28 | 291 | 0.5+ | 0.3− |
| 2003 09 17 | 644 | 0.2+ | 0.2− | 2003 09 27 | 704 | 1.2− | 0.8+ | 2006 05 28 | 291 | 0.2− | 0.7− |
| 2003 09 20 | 704 | 0.4+ | 0.2+ | 2003 09 27 | 704 | 1.0− | 0.3+ | | | | |
| 2003 09 20 | 704 | 0.3+ | 0.0 | 2003 09 27 | 704 | 1.3− | 0.3+ | | | | |

**2003 QO$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.18566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27850099 | $\omega$ | 142.85507 | | +0.93637935 | −0.34372401 | |
| $a$ | 2.3222995 | $\Omega$ | 237.39488 | | +0.29836209 | +0.88611092 | |
| $e$ | 0.2469222 | $i$ | 4.83790 | | +0.18486148 | +0.31090392 | |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 06 | 691 | 0.1− | 0.8− | 2003 10 23 | 608 | (4.3+ | 1.9+) | 2003 11 24 | 691 | 0.1− | 0.0 |
| 1996 11 06 | 691 | 0.1+ | 0.7− | 2003 10 23 | 608 | (2.6+ | 0.4−) | 2003 11 24 | 704 | 0.3+ | 0.8+ |
| 1996 11 06 | 691 | 0.4+ | 0.7− | 2003 10 23 | 608 | (2.7+ | 0.6−) | 2003 11 24 | 704 | 0.3+ | 0.2+ |
| 2002 04 09 | 807 | 0.1− | 0.0 | 2003 10 24 | 608 | 0.7− | 0.1+ | 2003 11 24 | 704 | 1.0+ | 0.5+ |
| 2002 04 09 | 807 | 0.2− | 0.1+ | 2003 10 24 | 608 | 0.6− | 0.1+ | 2003 11 24 | 704 | 1.1+ | 0.6+ |
| 2003 08 24 | 704 | 1.1+ | 1.4+ | 2003 10 24 | 608 | 0.6− | 0.2− | 2003 11 24 | 704 | 0.8+ | 0.7− |
| 2003 08 24 | 704 | 0.1+ | 0.2− | 2003 10 25 | 704 | 0.8+ | 1.0+ | 2003 11 26 | 699 | 0.2+ | 0.0 |
| 2003 08 24 | 704 | 1.4− | 0.2+ | 2003 10 25 | 704 | 0.7+ | 0.8+ | 2003 11 26 | 699 | 0.9− | 0.4+ |
| 2003 08 24 | 704 | 0.5+ | 0.5+ | 2003 10 25 | 704 | 0.3+ | 0.0 | 2003 11 26 | 699 | 0.4+ | 0.5+ |
| 2003 08 28 | 704 | 0.8− | 0.6+ | 2003 10 25 | 704 | 0.2− | 0.0 | 2003 11 26 | 699 | 0.6+ | 0.9− |
| 2003 08 28 | 704 | 0.3− | 0.2− | 2003 10 25 | 704 | 0.1+ | 0.0 | 2003 11 30 | 704 | 1.2− | 0.8+ |
| 2003 08 28 | 704 | 0.1− | 0.7+ | 2003 10 30 | 704 | 0.4+ | 0.2+ | 2003 11 30 | 704 | 1.1− | 0.8+ |
| 2003 08 28 | 704 | 0.5− | 0.2− | 2003 10 30 | 704 | 0.3+ | 0.2− | 2003 11 30 | 704 | 1.2− | 0.8+ |
| 2003 09 05 | 704 | 0.6− | 0.0 | 2003 10 30 | 704 | 1.0+ | 0.4− | 2003 11 30 | 704 | 0.5− | 0.3+ |
| 2003 09 05 | 704 | 0.3+ | 0.3+ | 2003 10 30 | 704 | 0.9+ | 0.7− | 2003 12 10 | 644 | 0.1− | 0.4+ |
| 2003 09 05 | 704 | 0.1− | 0.7− | 2003 10 30 | 704 | 0.9+ | 0.4− | 2003 12 10 | 644 | 0.2− | 0.4+ |
| 2003 09 05 | 704 | 0.1− | 0.5+ | 2003 11 01 | 704 | 0.0 | 0.3− | 2003 12 10 | 644 | 0.4− | 0.5+ |
| 2003 09 27 | 704 | 0.5− | 1.1+ | 2003 11 01 | 704 | 0.5+ | 0.0 | 2003 12 13 | 703 | 0.7− | 0.5+ |
| 2003 09 27 | 704 | 0.5+ | 0.6+ | 2003 11 01 | 704 | 0.3+ | 0.4+ | 2003 12 13 | 703 | 0.0 | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 704 | 0.4+ | 1.0+ | 2003 11 01 | 704 | 0.6+ | 0.3− | 2003 12 13 | 703 | 0.5− | 0.8− |
| 2003 09 27 | 704 | 0.2− | 0.5+ | 2003 11 01 | 704 | 0.4+ | 0.0 | 2003 12 13 | 703 | 0.4− | 0.5− |
| 2003 09 27 | 704 | 0.5− | 0.1+ | 2003 11 02 | 691 | 0.0 | 0.0 | 2003 12 17 | 699 | 0.3− | 0.5+ |
| 2003 10 05 | 608 | 0.3+ | 1.0− | 2003 11 02 | 691 | 0.0 | 0.1− | 2003 12 17 | 699 | 0.5− | 0.6+ |
| 2003 10 05 | 608 | 0.3+ | 0.4− | 2003 11 02 | 691 | 0.0 | 0.0 | 2003 12 17 | 699 | 0.2− | 1.1+ |
| 2003 10 05 | 608 | 0.0 | 0.5− | 2003 11 18 | 644 | 0.1+ | 0.1+ | 2003 12 17 | 699 | 0.6+ | 0.8+ |
| 2003 10 17 | 691 | 0.2− | 0.1− | 2003 11 18 | 644 | 0.0 | 0.3+ | 2003 12 21 | 704 | 0.0 | 1.4+ |
| 2003 10 17 | 691 | 0.2− | 0.2− | 2003 11 18 | 644 | 0.1− | 0.1+ | 2003 12 21 | 704 | 0.9− | 0.7+ |
| 2003 10 17 | 691 | 0.1− | 0.3− | 2003 11 20 | 704 | 0.6+ | 0.3+ | 2003 12 21 | 704 | 0.2− | 0.2+ |
| 2003 10 17 | 644 | 0.3− | 0.3− | 2003 11 20 | 704 | 0.0 | 0.8+ | 2003 12 21 | 704 | 0.4+ | 0.9+ |
| 2003 10 17 | 644 | 0.3− | 0.2− | 2003 11 20 | 704 | 0.0 | 0.8+ | 2003 12 21 | 704 | 0.4− | 1.0+ |
| 2003 10 17 | 644 | 0.2− | 0.0 | 2003 11 20 | 704 | 0.4+ | 0.3+ | 2005 03 08 | 691 | 0.1− | 0.2+ |
| 2003 10 21 | 704 | 0.4− | 0.1+ | 2003 11 20 | 704 | 0.5− | 0.2− | 2005 03 08 | 691 | 0.1+ | 0.2+ |
| 2003 10 21 | 704 | 0.5− | 0.2+ | 2003 11 24 | 691 | 0.3− | 0.1+ | 2005 03 08 | 691 | 0.2+ | 0.1+ |
| 2003 10 21 | 704 | 0.0 | 0.4− | 2003 11 24 | 691 | 0.1− | 0.0 | | | | |

**2003 QE$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.68908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22865695 | $\omega$ | 2.84358 | | +0.99987769 | −0.01234811 | |
| $a$ | 2.6485801 | $\Omega$ | 357.79433 | | +0.00385575 | +0.78940333 | |
| $e$ | 0.2621765 | $i$ | 14.44235 | | +0.01515738 | +0.61375069 | |
| $P$ | 4.31 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.1− | 0.3+ | 2003 08 28 | 704 | 1.2− | 0.7− | 2003 11 21 | 704 | 0.4+ | 0.2− |
| 1999 12 13 | 704 | 0.4+ | 0.1+ | 2003 08 28 | 704 | 0.3− | 0.1− | 2003 11 21 | 704 | 0.2+ | 0.0 |
| 1999 12 13 | 704 | 0.7− | 0.8− | 2003 11 04 | 704 | 0.2+ | 0.2− | 2003 12 17 | 704 | 0.0 | 0.1+ |
| 1999 12 13 | 704 | 0.6+ | 1.1+ | 2003 11 04 | 704 | 0.8− | 0.1+ | 2003 12 17 | 704 | 0.6+ | 0.1+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2003 11 04 | 704 | 0.0 | 0.5− | 2003 12 17 | 704 | 0.3+ | 0.1− |
| 2001 04 16 | 645 | 0.1− | 0.1− | 2003 11 04 | 704 | 0.9− | 0.4− | 2003 12 17 | 704 | 0.5− | 0.1+ |
| 2003 08 24 | 704 | 0.3− | 0.2+ | 2003 11 14 | 644 | 0.1− | 0.0 | 2003 12 17 | 704 | 0.3+ | 0.4− |
| 2003 08 24 | 704 | 0.7+ | 0.3+ | 2003 11 14 | 644 | 0.3− | 0.1− | 2003 12 30 | 704 | 0.4+ | 0.7+ |
| 2003 08 24 | 704 | 2.0+ | 0.1+ | 2003 11 14 | 644 | 0.2− | 0.0 | 2003 12 30 | 704 | 0.1− | 1.5+ |
| 2003 08 24 | 704 | 0.0 | 0.1+ | 2003 11 21 | 704 | 0.3+ | 0.1+ | 2003 12 30 | 704 | 0.2− | 0.1− |
| 2003 08 28 | 704 | 0.7+ | 0.5− | 2003 11 21 | 704 | 0.1+ | 0.3− | | | | |
| 2003 08 28 | 704 | 0.1− | 0.7− | 2003 11 21 | 704 | 0.1+ | 0.2− | | | | |

**2003 QE$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.05421 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00350171 | $\omega$ | 286.19576 | | +0.49963211 | +0.86611684 | |
| $a$ | 42.9486451 | $\Omega$ | 13.80779 | | −0.76980136 | +0.45160672 | |
| $e$ | 0.0491322 | $i$ | 3.47581 | | −0.39720728 | +0.21422650 | |
| $P$ | 281 | $H$ | 7.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 23 | 807 | 0.1− | 0.0 | 2004 07 17 | 807 | 0.4− | 0.1+ | 2006 08 23 | 807 | 0.0 | 0.1− |
| 2003 08 23 | 807 | 0.6− | 0.3+ | 2004 07 17 | 807 | 0.4+ | 0.3+ | 2006 10 19 | 695 | 0.2+ | 0.6− |
| 2003 08 24 | 807 | 0.1+ | 0.3+ | 2006 08 21 | 807 | 0.0 | 0.0 | 2006 10 19 | 695 | 0.2− | 0.1− |
| 2003 10 23 | 304 | 0.3+ | 0.5− | 2006 08 22 | 807 | 0.3− | 0.4+ | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 2003 10 23 | 304 | 0.3+ | 0.5− | 2006 08 23 | 807 | 0.3+ | 0.1+ | | | | |

**2003 QJ$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.04579 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00333726 | $\omega$ | 340.05374 | | +0.44175021 | −0.89610329 | |
| $a$ | 44.3482164 | $\Omega$ | 83.71031 | | +0.82887719 | +0.38929661 | |
| $e$ | 0.0492325 | $i$ | 2.48387 | | +0.34324824 | +0.21318312 | |
| $P$ | 295 | $H$ | 6.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 24 | 807 | 0.0 | 0.2+ | 2003 10 01 | 568 | 0.1+ | 0.1− | 2006 08 21 | 807 | 0.1+ | 0.1− |
| 2003 08 25 | 807 | 0.1− | 0.1+ | 2003 10 02 | 568 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.0 | 0.1+ |
| 2003 08 25 | 807 | 0.1− | 0.1+ | 2003 10 02 | 568 | 0.0 | 0.4− | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2003 08 26 | 807 | 0.1+ | 0.1+ | 2006 08 21 | 807 | 0.0 | 0.1− | 2006 10 20 | 695 | 0.0 | 0.0 |

**2003 QR$_{98}$ = 2004 WK$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.49950 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18089164 | $\omega$ | 115.97325 | | −0.21543756 | −0.97633172 | |
| $a$ | 3.0964000 | $\Omega$ | 346.42709 | | +0.86439899 | −0.18158847 | |
| $e$ | 0.1209089 | $i$ | 4.65677 | | +0.45431382 | −0.11748188 | |
| $P$ | 5.45 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.0 | 0.3+ | 2006 01 07 | G96 | 0.1+ | 0.5− | 2006 03 03 | 691 | 0.3+ | 0.3+ |
| 2000 01 04 | 704 | 0.2− | 0.8+ | 2006 01 07 | G96 | 0.2+ | 0.0 | 2006 03 03 | 691 | 0.6+ | 0.4+ |
| 2000 01 04 | 704 | 0.6+ | 1.0+ | 2006 01 07 | G96 | 0.1+ | 0.3− | 2006 03 23 | G96 | 0.0 | 0.1+ |
| 2003 08 23 | 644 | 0.3− | 0.1+ | 2006 02 06 | G96 | 0.2− | 0.1− | 2006 03 23 | G96 | 0.1+ | 0.1− |
| 2003 08 23 | 644 | 0.2− | 0.3+ | 2006 02 06 | G96 | 0.1− | 0.1− | 2006 03 23 | G96 | 0.0 | 0.2+ |
| 2003 08 23 | 644 | 0.1+ | 0.5+ | 2006 02 06 | G96 | 0.1− | 0.0 | 2006 03 23 | G96 | 1.0− | 1.1+ |
| 2003 08 30 | 291 | 0.4− | 0.4+ | 2006 02 06 | G96 | 0.1+ | 0.0 | 2006 04 07 | G96 | 0.2+ | 0.1− |
| 2003 08 30 | 291 | 0.3− | 0.5+ | 2006 02 20 | 703 | 0.7− | 1.2+ | 2006 04 07 | G96 | 0.2+ | 0.2+ |
| 2003 08 30 | 291 | 0.3− | 0.4+ | 2006 02 20 | 703 | 0.6− | 2.9+ | 2006 04 07 | G96 | 0.3+ | 0.6+ |
| 2003 08 31 | 691 | 0.1− | 0.3+ | 2006 02 20 | 703 | 0.6+ | 0.4− | 2006 04 07 | G96 | 0.3+ | 0.3+ |
| 2003 08 31 | 691 | 0.2− | 0.4+ | 2006 02 20 | 703 | 0.3+ | 0.7− | 2006 04 21 | G96 | 0.4+ | 0.2− |
| 2003 08 31 | 691 | 0.0 | 0.5+ | 2006 02 20 | G96 | 0.1− | 0.1− | 2006 04 21 | G96 | 0.1− | 0.1− |
| 2004 11 19 | 704 | 0.6− | 0.5+ | 2006 02 20 | G96 | 0.1− | 0.1+ | 2006 04 21 | G96 | 0.4+ | 0.0 |
| 2004 11 19 | 704 | 0.8+ | 0.2− | 2006 02 20 | G96 | 0.1+ | 0.4+ | 2006 04 21 | G96 | 0.0 | 0.3− |
| 2004 11 19 | 704 | 0.2− | 0.0 | 2006 02 20 | G96 | 0.1− | 0.2+ | | | | |
| 2006 01 07 | G96 | 0.2− | 0.3− | 2006 03 03 | 691 | 0.4+ | 0.5+ | | | | |

**2003 QC$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.65109 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25604897 | $\omega$ | 195.45454 | | +0.93914767 | +0.34252271 | |
| $a$ | 2.4561451 | $\Omega$ | 144.48040 | | −0.31021956 | +0.87827537 | |
| $e$ | 0.1992807 | $i$ | 2.57223 | | −0.14753127 | +0.33363238 | |
| $P$ | 3.85 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 807 | 0.0 | 0.2+ | 2003 08 30 | 291 | 0.0 | 0.0 | 2003 09 18 | 699 | 0.4+ | 0.1+ |
| 2002 04 09 | 807 | 0.3+ | 0.4+ | 2003 08 30 | 291 | 0.1+ | 0.1− | 2003 09 18 | 699 | 1.1− | 0.1− |
| 2003 07 25 | 644 | 0.3+ | 0.2− | 2003 08 30 | 291 | 0.1− | 0.0 | 2003 09 18 | 699 | 1.9+ | 1.3+ |
| 2003 07 25 | 644 | 0.1+ | 0.2− | 2003 09 01 | 704 | 0.1− | 0.5− | 2003 11 24 | 695 | 0.6+ | 0.4+ |
| 2003 07 25 | 644 | 0.2+ | 0.5− | 2003 09 01 | 704 | 0.3− | 0.9+ | 2003 11 24 | 695 | 0.6− | 0.0 |
| 2003 08 22 | 704 | 0.5− | 0.3− | 2003 09 01 | 704 | 0.4− | 0.4− | 2006 03 26 | G96 | 0.0 | 0.1+ |
| 2003 08 22 | 704 | 0.5+ | 0.5+ | 2003 09 01 | 704 | 0.8− | 0.0 | 2006 03 26 | G96 | 0.2− | 0.3+ |
| 2003 08 22 | 704 | 1.0− | 0.0 | 2003 09 01 | 704 | 0.5− | 0.2+ | 2006 03 26 | G96 | 0.1− | 0.2− |
| 2003 08 22 | 704 | 1.0+ | 0.2+ | 2003 09 18 | 699 | 0.5+ | 0.1+ | 2006 03 26 | G96 | 0.4+ | 0.1+ |

**2003 QV$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.70773 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21899543 | $\omega$ | 191.92137 | | +0.98672266 | +0.13486816 | |
| $a$ | 2.7259173 | $\Omega$ | 159.64928 | | −0.11923357 | +0.97985091 | |
| $e$ | 0.2120589 | $i$ | 15.08267 | | −0.11028034 | +0.14731859 | |
| $P$ | 4.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 0.0 | 0.1+ | 2003 09 02 | 704 | 0.5− | 1.4+ | 2003 10 18 | 699 | 0.3+ | 0.8− |
| 2001 03 16 | 691 | 0.1+ | 0.5+ | 2003 09 18 | 704 | 0.3+ | 0.0 | 2003 10 18 | 704 | 0.6+ | 0.0 |
| 2001 03 16 | 691 | 0.0 | 0.1− | 2003 09 18 | 704 | 0.2+ | 0.1+ | 2003 10 18 | 699 | 0.2− | 0.0 |
| 2002 05 13 | 644 | 0.1+ | 0.9+ | 2003 09 18 | 704 | 0.1+ | 0.4− | 2003 10 18 | 699 | 0.0 | 0.3− |
| 2002 05 13 | 644 | 0.1+ | 0.7+ | 2003 09 18 | 704 | 0.2− | 0.1+ | 2003 10 18 | 699 | 0.6+ | 0.2+ |
| 2002 05 13 | 644 | 0.1+ | 0.5+ | 2003 09 18 | 704 | 0.1+ | 0.1+ | 2003 10 29 | 699 | 0.5+ | 0.6− |
| 2003 08 29 | 608 | 0.3− | 0.1+ | 2003 10 16 | 644 | 0.1− | 0.2+ | 2003 10 29 | 699 | 0.8+ | 0.1+ |
| 2003 08 29 | 608 | 0.7− | 0.1+ | 2003 10 16 | 644 | 0.0 | 0.1+ | 2003 10 29 | 699 | 0.4+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 29 | 608 | 0.3− | 0.4− | 2003 10 16 | 644 | 0.0 | 0.1+ | 2003 10 29 | 699 | 0.6− | 1.3+ | | |
| 2003 09 02 | 704 | 0.1− | 0.1− | 2003 10 18 | 704 | 0.9− | 0.5+ | 2003 11 20 | 644 | 0.2+ | 0.8+ | | |
| 2003 09 02 | 704 | 2.0− | 0.1− | 2003 10 18 | 704 | 0.0 | 0.6+ | 2003 11 20 | 644 | 0.1+ | 0.6+ | | |
| 2003 09 02 | 704 | (0.1+ | 2.3+) | 2003 10 18 | 704 | 0.6+ | 0.8− | 2003 11 20 | 644 | 0.2+ | 0.6+ | | |

**2003 QJ$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.05855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17478873 | $\omega$ | 191.85605 | | +0.90197225 | −0.42562135 | |
| $a$ | 3.1680626 | $\Omega$ | 194.02838 | | +0.41663033 | +0.90211324 | |
| $e$ | 0.2140131 | $i$ | 17.46479 | | +0.11342496 | +0.07098004 | |
| $P$ | 5.64 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 20 | 691 | 0.3− | 0.1− | 2003 09 18 | 644 | 0.0 | 0.2+ | 2003 09 27 | 699 | 0.1+ | 0.1− | | |
| 1996 06 20 | 691 | 0.2− | 0.0 | 2003 09 18 | 644 | 0.1− | 0.4+ | 2003 09 30 | 704 | 0.5− | 0.5− | | |
| 1996 06 20 | 691 | 0.5+ | 0.1+ | 2003 09 18 | 644 | 0.2− | 0.4+ | 2003 09 30 | 704 | 0.2− | 0.9− | | |
| 1998 11 13 | 704 | 1.4+ | 0.8− | 2003 09 18 | 644 | 0.2+ | 0.4+ | 2003 09 30 | 704 | 0.8+ | 0.1+ | | |
| 1998 11 13 | 704 | 1.1− | 0.0 | 2003 09 18 | 644 | 0.1− | 0.0 | 2003 09 30 | 704 | 0.2− | 0.2+ | | |
| 1998 11 13 | 704 | 1.5− | 0.7+ | 2003 09 19 | 704 | 0.0 | 0.8− | 2003 09 30 | 704 | 0.1− | 0.6− | | |
| 1998 11 13 | 704 | 1.2+ | 0.1+ | 2003 09 19 | 704 | 0.5− | 0.2− | 2003 10 19 | 704 | (1.7+ | 0.5+) | | |
| 2003 08 20 | 644 | 0.2+ | 0.1− | 2003 09 19 | 704 | 0.4+ | 0.7− | 2003 10 19 | 704 | 1.3+ | 0.3+ | | |
| 2003 08 20 | 644 | 0.1+ | 0.0 | 2003 09 19 | 704 | 0.2− | 0.3− | 2003 10 19 | 704 | 0.4+ | 0.1+ | | |
| 2003 08 20 | 644 | 0.2+ | 0.1− | 2003 09 19 | 704 | 0.0 | 0.8− | 2003 10 19 | 704 | 0.6− | 0.1+ | | |
| 2003 08 31 | 704 | 0.0 | 1.3+ | 2003 09 23 | 644 | 0.2+ | 0.0 | 2003 11 20 | 704 | 0.5− | 0.2+ | | |
| 2003 08 31 | 704 | (2.5− | 0.7−) | 2003 09 23 | 644 | 0.1− | 0.1+ | 2003 11 20 | 704 | 0.2− | 0.0 | | |
| 2003 08 31 | 704 | 0.8− | 0.5− | 2003 09 23 | 644 | 0.1− | 0.4+ | 2003 11 20 | 704 | 1.0− | 0.2+ | | |
| 2003 08 31 | 704 | 0.3− | 1.0+ | 2003 09 27 | 699 | 0.3+ | 0.1− | 2003 11 20 | 704 | 0.2+ | 0.9+ | | |
| 2003 09 03 | 704 | 0.2− | 0.1+ | 2003 09 27 | 683 | 0.4+ | 0.1− | 2006 02 06 | G96 | 0.1+ | 0.1+ | | |
| 2003 09 03 | 704 | 0.3+ | 0.1− | 2003 09 27 | 699 | 0.3+ | 0.4+ | 2006 02 06 | G96 | 0.3− | 0.4+ | | |
| 2003 09 03 | 704 | 0.5+ | 0.0 | 2003 09 27 | 683 | 0.3− | 0.3+ | 2006 02 06 | G96 | 0.2− | 0.4+ | | |
| 2003 09 18 | 644 | 0.1+ | 0.4+ | 2003 09 27 | 699 | 0.2+ | 0.1− | 2006 02 06 | G96 | 0.6+ | 0.4+ | | |

**2003 QP$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.34385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18501730 | $\omega$ | 243.12070 | | +0.68685535 | +0.70482634 | |
| $a$ | 3.0501966 | $\Omega$ | 71.44942 | | −0.58264245 | +0.67984221 | |
| $e$ | 0.0806138 | $i$ | 10.78121 | | −0.43446231 | +0.20256950 | |
| $P$ | 5.33 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 644 | 0.4− | 0.2+ | 2003 08 31 | 704 | 0.2− | 0.8+ | 2004 12 10 | 704 | 0.6− | 0.5+ | | |
| 2002 05 12 | 644 | 0.6+ | 1.3+ | 2003 09 03 | 608 | 0.2+ | 0.7− | 2004 12 10 | 704 | 0.1− | 0.4− | | |
| 2002 05 12 | 644 | 0.0 | 0.3+ | 2003 09 03 | 608 | 0.2− | 0.2− | 2004 12 14 | 704 | 1.6+ | 0.8+ | | |
| 2002 05 12 | 644 | 0.5+ | 1.3+ | 2003 09 03 | 608 | 0.2− | 0.5− | 2004 12 14 | 704 | 0.4− | 1.7+ | | |
| 2002 05 12 | 644 | 0.0 | 0.3+ | 2004 11 11 | 691 | 0.1− | 0.0 | 2004 12 14 | 704 | 0.1− | 2.7+ | | |
| 2002 05 12 | 644 | 0.8+ | 1.0+ | 2004 11 11 | 691 | 0.1− | 0.1+ | 2004 12 14 | 704 | 1.9− | 1.8+ | | |
| 2003 08 23 | 644 | 0.7− | 0.6+ | 2004 11 11 | 691 | 0.1+ | 0.1− | 2006 02 24 | 699 | 0.3− | 0.5+ | | |
| 2003 08 23 | 644 | 0.5− | 1.0+ | 2004 11 20 | 691 | 0.2+ | 0.4− | 2006 02 24 | 699 | 0.2+ | 1.9+ | | |
| 2003 08 23 | 644 | 0.2− | 1.0+ | 2004 11 20 | 691 | 0.0 | 0.3− | 2006 02 24 | 699 | 0.9+ | 2.1+ | | |
| 2003 08 31 | 704 | 0.1− | 0.8+ | 2004 11 20 | 691 | 0.1+ | 0.4− | 2006 02 24 | 699 | 0.0 | 0.6− | | |
| 2003 08 31 | 704 | 0.0 | 0.3− | 2004 12 10 | 704 | 0.6+ | 0.2+ | | | | | | |
| 2003 08 31 | 704 | 0.4− | 1.6+ | 2004 12 10 | 704 | 0.3− | 0.1+ | | | | | | |

**2003 QH$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.52631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26565139 | $\omega$ | 170.59011 | | +0.83975785 | +0.53796080 | |
| $a$ | 2.3965950 | $\Omega$ | 156.40714 | | −0.50934061 | +0.82741097 | |
| $e$ | 0.1520895 | $i$ | 10.58464 | | −0.18809280 | +0.16121188 | |
| $P$ | 3.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 05 | 691 | 0.1+ | 0.5− | 2003 08 25 | 704 | 0.2+ | 0.8+ | 2003 09 14 | 608 | 1.0+ | 0.5− | | |
| 1997 12 05 | 691 | 0.2− | 0.6− | 2003 08 25 | 704 | 0.2+ | 0.8+ | 2003 09 14 | 608 | 0.1− | 0.5− | | |
| 1997 12 05 | 691 | 0.1− | 0.0 | 2003 08 25 | 704 | 0.0 | 0.5+ | 2003 09 23 | 608 | 0.3+ | 0.1− | | |
| 2003 07 22 | 608 | 0.2+ | 0.6− | 2003 08 25 | 704 | 0.0 | 0.4+ | 2003 09 23 | 608 | 0.0 | 0.3+ | | |
| 2003 07 22 | 608 | 0.1+ | 0.9− | 2003 08 31 | 704 | 1.0+ | 1.4− | 2003 09 23 | 608 | 0.5+ | 0.0 | | |
| 2003 07 22 | 608 | 0.2− | 0.2− | 2003 08 31 | 704 | 0.7+ | 0.3− | 2003 09 24 | 608 | 0.3+ | 0.4+ | | |
| 2003 08 05 | 704 | 0.2− | 0.6− | 2003 08 31 | 704 | (2.5+ | 0.3+) | 2003 09 24 | 608 | 0.2+ | 0.6− | | |
| 2003 08 05 | 704 | 0.3+ | 0.2− | 2003 08 31 | 704 | 0.2− | 0.7+ | 2003 09 24 | 608 | 0.7+ | 0.4+ | | |
| 2003 08 05 | 704 | 0.1+ | 0.4+ | 2003 09 04 | 691 | 1.8− | 1.3− | 2006 04 26 | 699 | 1.0− | 0.2+ | | |
| 2003 08 05 | 704 | 0.4− | 0.0 | 2003 09 04 | 691 | 0.3+ | 0.5+ | 2006 04 26 | 699 | 0.7− | 0.4− | | |
| 2003 08 05 | 704 | 0.3+ | 0.1− | 2003 09 04 | 691 | 0.3+ | 0.3+ | 2006 04 26 | 699 | (3.1+ | 2.5−) | | |
| 2003 08 25 | 704 | 0.3+ | 0.8+ | 2003 09 14 | 608 | 0.4+ | 0.7− | 2006 04 26 | 699 | 1.5+ | 0.3− | | |

**2003 QB$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.34282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00338265 | $\omega$ | 316.73083 | | +0.86633781 | +0.49728264 | |
| $a$ | 43.9505818 | $\Omega$ | 13.67135 | | −0.38745222 | +0.72796853 | |
| $e$ | 0.1070185 | $i$ | 11.36371 | | −0.31518180 | +0.47198706 | |
| $P$ | 291 | $H$ | 7.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 26 | 807 | 0.2+ | 0.2− | 2003 10 22 | 695 | 0.1+ | 0.2− | 2006 08 22 | 807 | 0.1− | 0.1− | | |
| 2003 08 26 | 807 | 0.3− | 0.1− | 2003 10 22 | 695 | 0.1− | 0.0 | 2006 10 19 | 695 | 0.3+ | 0.2+ | | |
| 2003 09 03 | 304 | 0.0 | 0.3+ | 2006 08 21 | 807 | 0.1+ | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.4− | | |
| 2003 09 03 | 304 | 0.1+ | 0.2+ | 2006 08 21 | 807 | 0.0 | 0.1− | 2006 10 20 | 695 | 0.2− | 0.3+ | | |

**2003 QW$_{112}$ = 2006 SK$_{369}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.94397 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36686751 | $\omega$ | 33.91169 | | −0.14277320 | +0.95536234 | |
| $a$ | 1.9325462 | $\Omega$ | 229.34538 | | −0.96681742 | −0.19055247 | |
| $e$ | 0.0455473 | $i$ | 19.93362 | | −0.21184874 | +0.22577103 | |
| $P$ | 2.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 25 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 2003 08 25 | 644 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.2− | | |
| 2003 08 25 | 644 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | (1.8− | 1.5+) | | |
| 2003 09 16 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.5− | 0.8+ | 2006 11 17 | 703 | 1.1− | 0.6+ | | |
| 2003 09 16 | 644 | 0.2− | 0.2+ | 2006 11 02 | 691 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.1− | | |
| 2003 09 16 | 644 | 0.1− | 0.1+ | 2006 11 02 | 691 | 0.5+ | 0.4− | 2006 11 17 | 703 | 0.8− | 1.0+ | | |
| 2003 09 22 | 704 | 0.1− | 0.8+ | 2006 11 02 | 691 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.4+ | | |
| 2003 09 22 | 704 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.5+ | | |
| 2003 09 22 | 704 | 0.1− | 0.6− | 2006 11 14 | 703 | 0.8+ | 1.2− | 2006 11 21 | 704 | 0.1+ | 0.2+ | | |
| 2003 09 22 | 704 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.6+ | | |
| 2006 09 28 | 703 | 1.3− | 0.8+ | 2006 11 14 | 703 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.0 | 1.1+ | | |
| 2006 09 28 | 703 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.3− | 0.1− | | | | | | |
| 2006 09 28 | 703 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.1− | | | | | | |

**2003 QB$_{114}$ = 2006 KA$_{30}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.35910 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26797356 | $\omega$ | 139.11251 | | +0.96542630 | −0.25402210 | |
| $a$ | 2.3827295 | $\Omega$ | 235.69611 | | +0.21690458 | +0.90732996 | |
| $e$ | 0.2053644 | $i$ | 4.06252 | | +0.14458378 | +0.33500018 | |
| $P$ | 3.68 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 22 | 644 | 0.7+ | 0.3+ | 2003 09 02 | 704 | 0.1+ | 1.4+ | 2003 09 29 | 691 | 0.3+ | 0.3− | | |
| 2003 08 22 | 644 | 0.1+ | 0.0 | 2003 09 18 | 644 | 0.3+ | 0.2+ | 2003 09 29 | 691 | 0.1+ | 0.4− | | |
| 2003 08 22 | 644 | 0.4+ | 0.1− | 2003 09 18 | 644 | 0.3+ | 0.3+ | 2006 05 20 | 691 | 0.3+ | 0.1− | | |
| 2003 08 28 | 608 | 0.2− | 0.5− | 2003 09 18 | 644 | 0.3+ | 0.0 | 2006 05 20 | 691 | 0.1+ | 0.1− | | |
| 2003 08 28 | 608 | 0.3+ | 1.0− | 2003 09 23 | 644 | 0.3− | 0.3+ | 2006 05 20 | 691 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 28 | 608 | 0.5− | 0.6− | 2003 09 23 | 644 | 0.6− | 0.0 | 2006 05 24 | 691 | 0.2+ | 0.4+ | | |
| 2003 09 02 | 704 | 0.9− | 0.4+ | 2003 09 23 | 644 | 0.2− | 0.3+ | 2006 05 24 | 691 | 0.2− | 0.1− | | |
| 2003 09 02 | 704 | 0.4− | 0.0 | 2003 09 29 | 691 | 0.2+ | 0.2− | 2006 05 24 | 691 | 0.2− | 0.1+ | | |

**2003 QC$_{114}$ = 2006 HK$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.99055 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25417945 | $\omega$ | 9.85896 | | +0.91457777 | | −0.40424646 |
| $a$ | 2.4681739 | $\Omega$ | 14.00184 | | +0.36772590 | | +0.81944278 |
| $e$ | 0.1873750 | $i$ | 2.72489 | | +0.16830084 | | +0.40632293 |
| $P$ | 3.88 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 22 | 644 | 0.0 | 0.3− | 2003 09 16 | 691 | 0.0 | 0.1+ | 2003 10 17 | 691 | 0.1− | 0.1+ | | |
| 2003 08 22 | 644 | 0.3+ | 0.4− | 2003 09 16 | 691 | 0.1− | 0.0 | 2003 10 17 | 691 | 0.0 | 0.1+ | | |
| 2003 08 22 | 644 | 0.3+ | 0.5− | 2003 09 18 | 644 | 0.4− | 0.3+ | 2005 03 16 | G96 | 0.2+ | 0.2+ | | |
| 2003 08 22 | 644 | 0.1+ | 0.2− | 2003 09 18 | 644 | 0.3− | 0.3+ | 2005 03 16 | G96 | 0.2+ | 0.0 | | |
| 2003 08 22 | 644 | 0.4+ | 0.8− | 2003 09 18 | 644 | 0.1− | 0.5+ | 2005 03 16 | G96 | 0.0 | 0.3− | | |
| 2003 08 22 | 644 | 0.3+ | 0.4− | 2003 09 29 | 704 | 0.5+ | 0.1− | 2005 03 16 | G96 | 0.1− | 0.8+ | | |
| 2003 09 02 | 704 | 0.0 | 0.3+ | 2003 09 29 | 704 | 0.3+ | 0.3+ | 2006 04 26 | 807 | 0.1− | 0.1+ | | |
| 2003 09 02 | 704 | 0.1+ | 0.0 | 2003 09 29 | 704 | 0.0 | 0.6− | 2006 04 26 | 807 | 0.1+ | 0.4+ | | |
| 2003 09 02 | 704 | 0.9+ | 0.3+ | 2003 09 29 | 704 | 0.7− | 0.3− | 2006 04 27 | 807 | 0.2+ | 0.4+ | | |
| 2003 09 02 | 704 | 0.2− | 0.5+ | 2003 09 29 | 704 | 0.3− | 0.0 | | | | | | |
| 2003 09 16 | 691 | 0.2− | 0.1+ | 2003 10 17 | 691 | 0.1− | 0.1+ | | | | | | |

**2003 QD$_{114}$ = 2004 XZ$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.73819 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18279010 | $\omega$ | 132.73139 | | +0.78285841 | | −0.61232884 |
| $a$ | 3.0749231 | $\Omega$ | 265.32888 | | +0.53359420 | | +0.75197486 |
| $e$ | 0.1000554 | $i$ | 6.35904 | | +0.32001552 | | +0.24410490 |
| $P$ | 5.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 327 | 0.0 | 0.2+ | 2003 09 03 | 704 | 0.0 | 0.4+ | 2004 12 14 | 704 | 0.8− | 0.5+ | | |
| 1998 10 14 | 327 | 0.6+ | 1.0− | 2003 09 03 | 704 | 0.2− | 0.3− | 2004 12 14 | 704 | 0.4+ | 0.2− | | |
| 1998 10 14 | 327 | 0.4− | 0.2+ | 2003 09 23 | 644 | 0.1− | 0.4+ | 2004 12 14 | 704 | 0.2− | 1.0+ | | |
| 2003 08 22 | 599 | 0.2+ | 0.1+ | 2003 09 23 | 644 | 0.3+ | 0.3+ | 2004 12 16 | 704 | 0.1+ | 0.2+ | | |
| 2003 08 22 | 599 | 0.0 | 0.6+ | 2003 09 23 | 644 | 0.2+ | 0.6+ | 2004 12 16 | 704 | 0.3+ | 0.2− | | |
| 2003 08 23 | 599 | 0.7− | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | 2004 12 16 | 704 | 0.1− | 0.3+ | | |
| 2003 08 23 | 599 | 0.1− | 0.5+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 02 24 | 644 | 0.2− | 0.4+ | | |
| 2003 08 23 | 644 | 0.0 | 0.4+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 02 24 | 644 | 0.4+ | 0.7+ | | |
| 2003 08 23 | 644 | 0.1+ | 0.5+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 02 24 | 644 | 0.7+ | 0.8+ | | |
| 2003 08 23 | 644 | 0.3+ | 0.6+ | 2004 12 14 | 704 | 0.1+ | 0.7− | | | | | | |
| 2003 09 03 | 704 | 1.4− | 1.6+ | 2004 12 14 | 704 | 0.2+ | 0.2+ | | | | | | |

**2003 QE$_{114}$ = 2004 YW$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.26900 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18234932 | $\omega$ | 299.64187 | | −0.65709069 | | −0.75279396 |
| $a$ | 3.0798764 | $\Omega$ | 191.68930 | | +0.74103382 | | −0.63555735 |
| $e$ | 0.0726711 | $i$ | 11.14287 | | +0.13820526 | | −0.17137129 |
| $P$ | 5.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 03 | 691 | 0.3+ | 0.1+ | 2003 09 17 | 644 | 0.5+ | 0.5+ | 2004 12 18 | 704 | 0.7+ | 0.2+ | | |
| 1997 07 03 | 691 | 0.3− | 0.2+ | 2003 09 29 | 691 | 0.1− | 0.1+ | 2004 12 19 | 703 | 0.6− | 1.0+ | | |
| 1997 07 03 | 691 | 0.1− | 0.2+ | 2003 09 29 | 704 | 2.1− | 0.5− | 2004 12 19 | 703 | 0.4− | 0.6+ | | |
| 2000 01 08 | 704 | 0.8+ | 0.5+ | 2003 09 29 | 691 | 0.0 | 0.0 | 2004 12 19 | 703 | 0.4+ | 0.5+ | | |
| 2000 01 08 | 704 | 0.5+ | 1.0− | 2003 09 29 | 704 | 0.5− | 0.3+ | 2004 12 19 | 703 | 0.4− | 0.9+ | | |
| 2000 01 08 | 704 | 1.1− | 0.2+ | 2003 09 29 | 704 | 0.3+ | 0.7+ | 2006 05 04 | G96 | 0.2+ | 0.2+ | | |
| 2003 08 23 | 599 | 0.5+ | 0.3+ | 2003 09 29 | 704 | 0.2+ | 0.9+ | 2006 05 04 | G96 | 0.1+ | 0.2+ | | |
| 2003 08 23 | 599 | 0.7− | 0.1+ | 2003 09 29 | 691 | 0.0 | 0.2+ | 2006 05 04 | G96 | 0.1+ | 0.3+ | | |
| 2003 08 23 | 599 | 0.3+ | 0.6+ | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 05 04 | G96 | 0.1+ | 0.3+ | | |
| 2003 08 23 | 599 | 0.1+ | 0.5+ | 2003 10 18 | 645 | 0.0 | 0.2− | 2006 05 26 | G96 | 0.4+ | 0.0 | | |
| 2003 09 17 | 691 | 0.0 | 0.1− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.1+ | 0.2− | | |
| 2003 09 17 | 691 | 0.3+ | 0.2− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.5− | 0.0 | | |
| 2003 09 17 | 644 | 0.4+ | 0.6+ | 2004 12 18 | 704 | 0.4− | 0.8− | 2006 05 26 | G96 | 0.2− | 0.0 | | |
| 2003 09 17 | 691 | 0.0 | 0.1+ | 2004 12 18 | 704 | 0.0 | 0.0 | | | | | | |
| 2003 09 17 | 644 | 0.5+ | 0.7+ | 2004 12 18 | 704 | 0.4+ | 0.2− | | | | | | |

**2003 QF$_{114}$ = 1998 HQ$_{157}$ = 1999 RE$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.34048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25225478 | $\omega$ | 226.86900 | | +0.74994619 | | −0.66141373 |
| $a$ | 2.4807126 | $\Omega$ | 174.50798 | | +0.63453986 | | +0.71475756 |
| $e$ | 0.1233415 | $i$ | 6.36513 | | +0.18692210 | | +0.22727408 |
| $P$ | 3.91 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 691 | 0.2− | 0.6+ | 2003 08 25 | 704 | 1.0− | 0.6+ | 2003 09 29 | 691 | 0.4+ | 0.2− | | |
| 1998 04 22 | 691 | 0.0 | 0.3− | 2003 08 25 | 704 | 1.5− | 0.1− | 2003 09 29 | 704 | 0.1+ | 0.2+ | | |
| 1998 04 22 | 691 | 0.2+ | 0.0 | 2003 08 25 | 704 | 0.8− | 0.8+ | 2003 09 29 | 691 | 0.2+ | 0.1− | | |
| 1999 09 07 | 704 | 0.4+ | 0.4− | 2003 08 25 | 704 | 0.9− | 0.4− | 2003 10 24 | 691 | 0.3+ | 0.3+ | | |
| 1999 09 07 | 704 | 0.9+ | 0.2− | 2003 09 21 | 608 | 0.6+ | 0.5− | 2003 10 24 | 691 | 0.2+ | 0.3+ | | |
| 1999 09 07 | 704 | 0.0 | 0.7− | 2003 09 21 | 608 | 0.3+ | 0.1− | 2003 10 24 | 691 | 0.4+ | 0.3+ | | |
| 1999 09 07 | 704 | 0.0 | 0.4+ | 2003 09 21 | 608 | 0.6+ | 0.9− | 2003 10 24 | 704 | 1.4− | 0.7+ | | |
| 1999 09 07 | 704 | 0.2− | 0.6+ | 2003 09 29 | 691 | 0.1+ | 0.1− | 2003 10 24 | 704 | 1.7− | 0.4+ | | |
| 1999 09 14 | 704 | 0.9− | 0.3+ | 2003 09 29 | 704 | 0.0 | 0.8− | 2003 10 24 | 704 | 0.8− | 0.1+ | | |
| 1999 09 14 | 704 | 0.4+ | 0.2+ | 2003 09 29 | 704 | 0.2+ | 0.3+ | 2003 10 24 | 704 | 1.3− | 0.7+ | | |
| 1999 09 14 | 704 | 0.1+ | 0.6− | 2003 09 29 | 704 | 0.4− | 0.5− | | | | | | |
| 1999 09 14 | 704 | 0.6− | 0.4− | 2003 09 29 | 704 | 0.5+ | 0.0 | | | | | | |

**2003 QG$_{114}$ = 2004 XN$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.76631 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21124249 | $\omega$ | 339.50916 | | +0.99122175 | | +0.13107213 |
| $a$ | 2.7922129 | $\Omega$ | 12.99540 | | −0.10803814 | | +0.87848134 |
| $e$ | 0.0832291 | $i$ | 4.41403 | | −0.07620495 | | +0.45944600 |
| $P$ | 4.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 26 | 704 | 0.7− | 0.8+ | 2004 12 14 | 691 | 0.0 | 0.0 | 2006 03 24 | 691 | 0.2+ | 0.2+ | | |
| 2003 08 26 | 704 | 0.3− | 0.9+ | 2004 12 14 | 691 | 0.0 | 0.1+ | 2006 03 24 | 691 | 0.2− | 0.9+ | | |
| 2003 08 26 | 704 | 0.2+ | 0.2+ | 2004 12 14 | 691 | 0.3+ | 0.1− | 2006 03 24 | 691 | 0.4+ | 0.2+ | | |
| 2003 09 01 | 704 | 1.2− | 0.3+ | 2004 12 19 | 691 | 0.1− | 0.3+ | 2006 03 24 | G96 | 0.1− | 0.4+ | | |
| 2003 09 01 | 704 | 0.9− | 0.7+ | 2004 12 19 | 691 | 0.1+ | 0.0 | 2006 03 24 | G96 | 0.1− | 0.3+ | | |
| 2003 09 01 | 704 | 0.7− | 0.9+ | 2004 12 19 | 691 | 0.2− | 0.2+ | 2006 03 24 | G96 | 0.3− | 0.3+ | | |
| 2003 09 21 | 691 | 0.1− | 0.6+ | 2006 02 27 | 691 | 0.5+ | 0.3+ | 2006 03 24 | G96 | 0.1− | 0.2+ | | |
| 2003 09 21 | 691 | 0.1+ | 0.2+ | 2006 02 27 | 691 | 0.2+ | 0.0 | 2006 04 25 | G96 | 0.1− | 0.3− | | |
| 2003 09 21 | 691 | 0.2− | 0.4+ | 2006 02 27 | 691 | 0.4+ | 0.0 | 2006 04 25 | G96 | 0.6− | 0.8− | | |
| 2003 09 24 | 644 | 0.3− | 0.2+ | 2006 03 03 | 691 | 0.1+ | 0.4+ | 2006 04 25 | G96 | 0.1− | 0.3− | | |
| 2003 09 24 | 644 | 0.3− | 0.5+ | 2006 03 03 | 691 | 0.1+ | 0.3+ | 2006 04 25 | G96 | 0.6− | 0.3− | | |
| 2003 09 24 | 644 | 0.0 | 0.8+ | 2006 03 03 | 691 | 0.1+ | 0.4+ | | | | | | |

**2003 QH$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.53062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22410262 | $\omega$ | 47.95149 | | +0.83100175 | | +0.50484174 |
| $a$ | 2.6843435 | $\Omega$ | 280.46803 | | −0.55419484 | | +0.71512294 |
| $e$ | 0.1193886 | $i$ | 13.74245 | | −0.04800172 | | +0.48346043 |
| $P$ | 4.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 17 | 645 | 0.0 | 0.1− | 2003 10 22 | 704 | 0.2− | 0.4+ | 2005 02 02 | 704 | 1.2+ | 1.1+ | | |
| 2001 04 17 | 645 | 0.0 | 0.1− | 2003 10 22 | 704 | 0.2− | 0.4+ | 2005 02 02 | 704 | 0.5− | 1.0+ | | |
| 2003 08 21 | 704 | 1.4+ | 0.2− | 2003 10 22 | 704 | 0.0 | 0.6+ | 2005 02 02 | 704 | 0.4+ | 0.3+ | | |
| 2003 08 21 | 704 | 0.6+ | 0.4+ | 2003 10 22 | 704 | 0.3− | 0.2+ | 2005 02 02 | 704 | 0.4− | 0.4− | | |
| 2003 08 21 | 704 | 0.0 | 0.2+ | 2003 10 22 | 704 | 0.1− | 0.3+ | 2006 04 07 | E12 | 0.4− | 0.7+ | | |
| 2003 09 07 | 704 | 1.1+ | 0.3− | 2003 11 03 | 704 | 1.2− | 0.9− | 2006 04 07 | E12 | 0.2− | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 07 | 704 | 0.2+ | 0.7+ | 2003 11 03 | 704 | 0.9− | 0.5− | 2006 04 07 | E12 | 0.5+ | 0.5+ |
| 2003 09 07 | 704 | 0.2− | 0.4− | 2003 11 03 | 704 | 0.4− | 0.0 | 2006 04 07 | E12 | 0.8+ | 0.1− |
| 2003 09 07 | 704 | 0.3− | 0.3+ | 2003 11 03 | 704 | 0.2− | 0.1− | 2006 05 06 | E12 | 1.0+ | 0.1− |
| 2003 09 30 | 699 | 0.2− | 0.4+ | 2003 11 03 | 704 | 0.8− | 0.3− | 2006 05 06 | E12 | 1.2+ | 0.8+ |
| 2003 09 30 | 699 | 0.1− | 0.2+ | 2003 11 21 | 704 | (3.0− | 4.7−) | 2006 05 06 | E12 | 0.1+ | 0.0 |
| 2003 09 30 | 699 | 0.2− | 0.2− | 2003 11 21 | 704 | 0.7+ | 0.8+ | 2006 05 06 | E12 | 0.5− | 0.6+ |
| 2003 09 30 | 699 | 0.2− | 0.1− | 2003 11 21 | 704 | 0.1+ | 1.0+ | 2006 05 25 | E12 | 0.3− | 0.6− |
| 2003 10 02 | 704 | 1.4− | 0.3− | 2003 12 19 | 704 | 0.4+ | 0.1− | 2006 05 25 | E12 | 0.2− | 1.6+ |
| 2003 10 02 | 704 | 0.9+ | 0.5− | 2003 12 19 | 704 | 0.7+ | 0.0 | 2006 05 25 | E12 | 0.0 | 0.1+ |
| 2003 10 02 | 704 | 0.5+ | 0.5− | 2003 12 19 | 704 | 0.8+ | 0.1− | 2006 05 25 | E12 | 0.8− | 0.5− |

**2003 QJ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.82170 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17453880 | $\omega$ | 195.88947 | | +0.88168358 | | +0.43547346 |
| $a$ | 3.1710863 | $\Omega$ | 136.78346 | | −0.39885679 | | +0.89354044 |
| $e$ | 0.2040983 | $i$ | 15.38343 | | −0.25208597 | | +0.10930846 |
| $P$ | 5.65 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 22 | 608 | 0.2+ | 0.3− | 2003 08 31 | 704 | 0.7− | 0.5+ | 2003 09 28 | 608 | 0.9+ | 0.4− |
| 2003 08 22 | 608 | 0.1+ | 1.1− | 2003 08 31 | 704 | 1.0− | 1.7+ | 2003 09 28 | 608 | 0.4+ | 0.3+ |
| 2003 08 22 | 608 | 1.1+ | 0.9− | 2003 08 31 | 704 | 0.9+ | 0.1− | 2005 10 24 | 568 | 0.5− | 0.2+ |
| 2003 08 23 | 644 | 0.2+ | 0.4− | 2003 08 31 | 704 | 1.5− | 0.4+ | 2005 10 24 | 568 | 0.2− | 0.2+ |
| 2003 08 23 | 644 | 0.4+ | 0.3− | 2003 08 31 | 704 | 0.7+ | 0.8− | 2005 10 24 | 568 | 0.3− | 0.1+ |
| 2003 08 23 | 644 | 0.4+ | 0.1− | 2003 09 25 | 644 | 0.5− | 0.4− | 2005 11 07 | 568 | 0.3+ | 0.1− |
| 2003 08 31 | 704 | 1.5− | 1.8+ | 2003 09 25 | 644 | 0.3− | 0.7− | 2005 11 07 | 568 | 0.3+ | 0.1− |
| 2003 08 31 | 704 | 0.1− | 0.5+ | 2003 09 25 | 644 | 0.4− | 0.6− | 2005 11 07 | 568 | 0.3+ | 0.0 |
| 2003 08 31 | 704 | 0.2− | 0.7+ | 2003 09 28 | 608 | 1.1+ | 0.1+ | | | | |

**2003 QK$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.98413 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27716489 | $\omega$ | 16.99956 | | +0.25202173 | | +0.96672741 |
| $a$ | 2.3297567 | $\Omega$ | 267.61429 | | −0.89289356 | | +0.21482256 |
| $e$ | 0.2353236 | $i$ | 2.51563 | | −0.37313018 | | +0.13888620 |
| $P$ | 3.56 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 704 | 1.9+ | 0.6+ | 2003 09 17 | 691 | 0.2− | 0.3+ | 2003 10 19 | 645 | 0.1− | 0.1− |
| 1999 05 18 | 704 | 0.5− | 1.0+ | 2003 09 22 | 699 | 0.9− | 0.4− | 2003 10 24 | 645 | 0.1+ | 0.0 |
| 1999 05 18 | 704 | 0.4+ | 1.4+ | 2003 09 22 | 699 | 0.2− | 0.0 | 2003 10 24 | 645 | 0.2+ | 0.0 |
| 1999 05 18 | 704 | 1.1− | 0.4+ | 2003 09 22 | 699 | 0.5+ | 1.0+ | 2003 11 20 | 645 | 0.1− | 0.1+ |
| 2002 02 21 | 691 | 0.3+ | 0.1+ | 2003 09 22 | 699 | 0.4− | 0.5− | 2003 11 20 | 645 | 0.2− | 0.2+ |
| 2002 02 21 | 691 | 0.1+ | 0.6+ | 2003 09 27 | 704 | 0.5+ | 0.2+ | 2006 05 07 | G96 | 0.2+ | 0.2− |
| 2002 02 21 | 691 | 0.1+ | 0.5+ | 2003 09 27 | 704 | 0.3− | 0.6+ | 2006 05 07 | G96 | 0.5− | 0.2+ |
| 2003 08 23 | 599 | 0.0 | 0.0 | 2003 09 27 | 704 | 0.1− | 0.4+ | 2006 05 07 | G96 | 0.5− | 0.0 |
| 2003 08 23 | 599 | 0.1+ | 0.1+ | 2003 09 27 | 704 | 0.1+ | 1.0+ | 2006 05 07 | G96 | 0.0 | 0.2− |
| 2003 08 23 | 599 | 0.2+ | 0.1+ | 2003 09 27 | 704 | 0.5+ | 0.5+ | 2006 05 31 | G96 | 0.2− | 0.3− |
| 2003 08 23 | 599 | 0.5+ | 0.1+ | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 05 31 | G96 | 0.4+ | 0.1− |
| 2003 09 17 | 691 | 0.0 | 0.4+ | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 05 31 | G96 | 0.1+ | 0.0 |
| 2003 09 17 | 691 | 0.1− | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 05 31 | G96 | 0.1+ | 0.3− |

**2003 QL$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.97137 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18209408 | $\omega$ | 335.90061 | | +0.71704481 | | +0.69561330 |
| $a$ | 3.0827537 | $\Omega$ | 339.81435 | | −0.61680698 | | +0.60358414 |
| $e$ | 0.0857315 | $i$ | 7.38818 | | −0.32464732 | | +0.38962588 |
| $P$ | 5.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 23 | 599 | 0.6+ | 0.0 | 2003 09 22 | 699 | 1.4+ | 0.2+ | 2006 01 23 | 691 | 0.2− | 0.1− |
| 2003 08 23 | 599 | 0.2− | 0.1+ | 2003 09 22 | 699 | 1.0− | 0.6− | 2006 01 23 | 691 | 0.3+ | 0.1− |
| 2003 08 23 | 599 | 0.4− | 0.2− | 2003 09 27 | 691 | 0.1+ | 0.2+ | 2006 01 23 | 691 | 0.1+ | 0.2− |
| 2003 09 17 | 691 | 0.2− | 0.2− | 2003 09 27 | 691 | 0.0 | 0.1+ | 2006 02 01 | 691 | 0.4+ | 0.2+ |
| 2003 09 17 | 691 | 0.1− | 0.1− | 2003 09 27 | 691 | 0.1+ | 0.1+ | 2006 02 01 | 691 | 0.6− | 0.2+ |
| 2003 09 17 | 691 | 0.0 | 0.1+ | 2003 10 20 | 691 | 0.3+ | 0.1− | 2006 02 01 | 691 | 0.0 | 0.0 |
| 2003 09 22 | 699 | 1.2− | 1.0+ | 2003 10 20 | 691 | 0.2− | 0.0 | | | | |
| 2003 09 22 | 699 | 1.1+ | 0.6− | 2003 10 20 | 691 | 0.2− | 0.0 | | | | |

**2003 QM$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.84897 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24064639 | $\omega$ | 63.92616 | | +0.59617301 | | −0.80177542 |
| $a$ | 2.5598615 | $\Omega$ | 349.17726 | | +0.63434066 | | +0.50219733 |
| $e$ | 0.1717692 | $i$ | 12.81249 | | +0.49212769 | | +0.32396608 |
| $P$ | 4.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.3− | 0.1− | 1999 09 09 | 704 | 1.0+ | 0.9+ | 2003 09 23 | 608 | 0.5− | 0.7− |
| 1997 02 03 | 691 | 0.1+ | 0.0 | 1999 09 09 | 704 | 0.9− | 1.3− | 2003 09 23 | 608 | 0.8− | 0.1− |
| 1997 02 03 | 691 | 0.1+ | 0.1− | 1999 10 09 | 704 | 0.3− | 0.0 | 2003 09 29 | 704 | 0.1+ | 1.0+ |
| 1999 09 09 | 704 | 1.4+ | 0.8− | 1999 10 09 | 704 | 0.2+ | 0.2+ | 2003 09 29 | 704 | 1.0− | 0.4+ |
| 1999 09 09 | 704 | 0.2− | 0.5+ | 1999 10 09 | 704 | 0.0 | 0.7+ | 2003 09 29 | 704 | 0.7− | 0.8+ |
| 1999 09 09 | 704 | 0.6+ | 0.9− | 1999 10 09 | 704 | 0.0 | 0.6+ | 2003 10 24 | 704 | 0.5+ | 0.3+ |
| 1999 09 09 | 704 | 0.6+ | 0.4− | 1999 10 09 | 704 | 0.1+ | 0.2+ | 2003 10 24 | 704 | 0.5+ | 0.3+ |
| 1999 09 09 | 704 | 0.0 | 0.2+ | 2003 08 23 | 807 | 0.1+ | 0.2− | 2003 10 24 | 704 | 0.2+ | 0.2+ |
| 1999 09 09 | 704 | 0.0 | 0.2+ | 2003 08 23 | 807 | 0.0 | 0.2− | 2005 03 09 | 704 | 0.6+ | 1.2+ |
| 1999 09 09 | 704 | 1.3+ | 2.3− | 2003 09 01 | 704 | 0.3− | 1.1+ | 2005 03 09 | 704 | 0.6+ | 0.7− |
| 1999 09 09 | 704 | 0.7− | 0.6− | 2003 09 01 | 704 | 0.3− | 1.3+ | 2005 03 09 | 704 | 0.6− | 1.3+ |
| 1999 09 09 | 704 | 0.5− | 1.1− | 2003 09 01 | 704 | 0.5− | 0.5+ | 2005 03 09 | 704 | 0.4+ | 0.3+ |
| 1999 09 09 | 704 | 0.3− | 0.2+ | 2003 09 01 | 704 | 0.3+ | 0.9+ | | | | |
| 1999 09 09 | 704 | 0.1− | 0.1+ | 2003 09 23 | 608 | 0.5− | 0.6− | | | | |

**2003 QN$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.76152 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23274427 | $\omega$ | 90.59354 | | +0.76440076 | | −0.62616160 |
| $a$ | 2.6174801 | $\Omega$ | 308.18550 | | +0.48593068 | | +0.71615779 |
| $e$ | 0.1813496 | $i$ | 11.27394 | | +0.42374858 | | +0.30828507 |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 1.2+ | 1.2− | 2003 08 23 | 644 | 0.1− | 0.1+ | 2003 09 20 | 704 | 0.6− | 0.6+ |
| 1999 10 14 | 704 | 0.2+ | 0.2− | 2003 08 28 | 644 | 0.3− | 0.1+ | 2003 09 30 | 704 | 0.8− | 0.3+ |
| 1999 10 14 | 704 | 0.1− | 0.1+ | 2003 08 28 | 644 | 0.2− | 0.1− | 2003 09 30 | 704 | 0.6− | 0.3− |
| 1999 10 14 | 704 | 0.1− | 0.8+ | 2003 08 28 | 644 | 0.3− | 0.1− | 2003 09 30 | 704 | 0.2+ | 0.4− |
| 1999 11 10 | 703 | 0.8− | 0.1+ | 2003 09 03 | 704 | 0.0 | 0.1+ | 2005 01 19 | 691 | 0.1− | 0.2+ |
| 1999 11 10 | 703 | 0.1− | 1.5− | 2003 09 03 | 704 | 0.7+ | 0.3− | 2005 01 19 | 691 | 0.1+ | 0.1+ |
| 1999 11 10 | 703 | 0.1− | 0.6+ | 2003 09 03 | 704 | 0.2− | 0.4+ | 2005 01 19 | 691 | 0.5+ | 0.4+ |
| 1999 11 10 | 703 | 0.4+ | 0.2− | 2003 09 03 | 704 | 0.7+ | 0.5+ | 2005 02 14 | 691 | 0.0 | 0.0 |
| 2003 08 23 | 644 | 0.2− | 0.1+ | 2003 09 20 | 704 | 0.4+ | 0.9+ | 2005 02 14 | 691 | 0.2− | 0.1− |
| 2003 08 23 | 644 | 0.2− | 0.2+ | 2003 09 20 | 704 | (0.6− | 2.2−) | 2005 02 14 | 691 | 0.0 | 0.2− |

**2003 QO$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.98281 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27130103 | $\omega$ | 293.80679 | | +0.99322578 | | −0.10076152 |
| $a$ | 2.3632069 | $\Omega$ | 72.01720 | | +0.11572458 | | +0.90276429 |
| $e$ | 0.2117501 | $i$ | 3.48853 | | −0.01050554 | | +0.41816713 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 691 | 0.2+ | 0.3− | 2003 09 17 | 699 | 0.4− | 1.1− | 2003 09 28 | 704 | (0.1+ | 2.3−) |
| 1997 01 10 | 691 | 0.2− | 0.0 | 2003 09 17 | 699 | 0.6− | 0.4+ | 2003 09 28 | 704 | 0.4+ | 0.3− |
| 1997 01 10 | 691 | 0.0 | 0.3+ | 2003 09 17 | 699 | 1.3− | 0.7− | 2003 09 28 | 704 | 0.2+ | 0.4+ |
| 2000 12 31 | 691 | 0.4+ | 0.2+ | 2003 09 17 | 699 | 0.3− | 0.3+ | 2003 10 17 | 644 | 0.1− | 0.0 |
| 2000 12 31 | 691 | 0.5+ | 0.3+ | 2003 09 17 | 704 | 0.3+ | 0.1+ | 2003 10 17 | 644 | 0.1− | 0.3+ |
| 2000 12 31 | 691 | 0.4+ | 0.3+ | 2003 09 17 | 704 | 0.2− | 0.8+ | 2003 10 17 | 644 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 645 | 0.1− | 0.0 | 2003 09 17 | 704 | 0.3+ | 0.6+ | 2006 05 20 | 691 | 0.0 | 0.4+ |
| 2001 02 21 | 645 | 0.2− | 0.0 | 2003 09 17 | 704 | 0.2− | 0.3+ | 2006 05 20 | 691 | 0.3− | 0.5+ |
| 2003 08 23 | 704 | 1.1+ | 0.1+ | 2003 09 17 | 704 | 0.1+ | 0.6+ | 2006 05 20 | 691 | 0.2+ | 0.1− |
| 2003 08 23 | 704 | 0.6+ | 0.8− | 2003 09 24 | 644 | 0.1− | 0.1+ | 2006 05 28 | 691 | 0.0 | 0.0 |
| 2003 08 23 | 704 | 0.3+ | 0.4+ | 2003 09 24 | 644 | 0.2− | 0.0 | 2006 05 28 | 691 | 0.2+ | 0.1+ |
| 2003 08 23 | 704 | 0.4− | 0.2+ | 2003 09 24 | 644 | 0.1− | 0.0 | 2006 05 28 | 691 | 0.3+ | 0.0 |

**2003 QP$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 270.36473 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23480776 | $\omega$ | 228.86994 | | +0.87189232 | +0.48092247 |
| $a$ | 2.6021226 | $\Omega$ | 102.19651 | | −0.41623564 | +0.82709848 |
| $e$ | 0.2726106 | $i$ | 5.41798 | | −0.25797609 | +0.29089805 |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 13 | 691 | 0.2+ | 0.1+ | 2001 01 02 | 691 | 0.9− | 0.7+ | 2003 09 27 | 699 | 0.7− | 0.0 |
| 1994 05 13 | 691 | 0.3+ | 0.3+ | 2003 08 23 | 644 | 0.1+ | 0.2+ | 2003 09 27 | 699 | 0.4− | 0.6+ |
| 1994 05 13 | 691 | 0.0 | 0.0 | 2003 08 23 | 644 | 0.1+ | 0.2+ | 2003 10 17 | 644 | 0.3− | 0.3+ |
| 1994 05 13 | 691 | 0.1− | 0.3+ | 2003 08 23 | 644 | 0.2+ | 0.2+ | 2003 10 17 | 644 | 0.1− | 0.2+ |
| 1995 12 16 | 691 | 0.3− | 0.1+ | 2003 09 01 | 704 | 0.4− | 0.2− | 2003 10 17 | 644 | 0.1− | 0.4+ |
| 1995 12 16 | 691 | 0.5− | 0.1− | 2003 09 01 | 704 | 0.5− | 0.3+ | 2003 10 27 | 699 | 0.7− | 0.3+ |
| 1995 12 16 | 691 | 0.1− | 0.3− | 2003 09 01 | 704 | 0.3− | 0.4+ | 2003 10 27 | 699 | 0.2− | 0.9− |
| 1999 09 18 | 691 | 0.5+ | 0.0 | 2003 09 01 | 704 | 0.0 | 0.6+ | 2003 10 27 | 699 | 0.9− | 0.5− |
| 1999 09 18 | 691 | 0.3+ | 0.0 | 2003 09 01 | 704 | 0.1+ | 0.7− | 2003 10 27 | 699 | 0.1− | 0.4+ |
| 1999 09 18 | 691 | 0.4+ | 0.1− | 2003 09 17 | 704 | 0.1+ | 0.1+ | 2003 10 27 | 608 | 0.1− | 1.0+ |
| 1999 10 04 | 703 | 0.9+ | 0.6+ | 2003 09 17 | 704 | 0.1− | 0.5− | 2003 10 27 | 608 | 0.9− | 1.0+ |
| 1999 10 04 | 703 | 0.5− | 0.2− | 2003 09 17 | 704 | 0.1− | 0.0 | 2003 10 27 | 608 | 0.6− | 1.4+ |
| 1999 10 04 | 703 | 0.1+ | 0.3− | 2003 09 17 | 704 | 0.4+ | 0.5+ | 2004 12 18 | G96 | 0.7+ | 0.1+ |
| 1999 10 04 | 703 | 0.7+ | 0.0 | 2003 09 17 | 704 | 0.3+ | 0.1− | 2004 12 18 | G96 | 0.1− | 0.3+ |
| 2001 01 02 | 691 | 0.5+ | 0.1− | 2003 09 27 | 699 | 0.6+ | 0.0 | 2004 12 18 | G96 | 0.7+ | 0.1+ |
| 2001 01 02 | 691 | 0.8+ | 0.5+ | 2003 09 27 | 699 | 0.3− | 0.2+ | 2004 12 18 | G96 | 0.3− | 0.4+ |

**2003 QQ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 238.42802 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.24531967 | $\omega$ | 176.33010 | | +0.87926009 | −0.47557431 |
| $a$ | 2.5272476 | $\Omega$ | 212.11136 | | +0.43573022 | +0.82592966 |
| $e$ | 0.1747717 | $i$ | 2.91502 | | +0.19246005 | +0.30276934 |
| $P$ | 4.02 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 13 | 691 | 0.1+ | 0.1+ | 2003 08 28 | 704 | 0.7− | 0.6+ | 2003 11 21 | 704 | 0.2+ | 0.8+ |
| 1991 09 13 | 691 | 0.5− | 0.4+ | 2003 08 28 | 704 | 0.3− | 0.1+ | 2003 11 21 | 704 | 0.0 | 0.6+ |
| 1991 09 13 | 691 | 0.1− | 0.0 | 2003 09 02 | 704 | 0.3− | 0.1− | 2003 11 21 | 704 | 0.1+ | 0.8− |
| 1999 09 14 | 704 | 0.3− | 2.4+ | 2003 09 02 | 704 | 0.1+ | 0.3− | 2003 11 21 | 704 | 0.1+ | 0.7+ |
| 1999 09 14 | 704 | 0.6− | 0.0 | 2003 09 02 | 704 | 0.1− | 0.1− | 2005 01 19 | 691 | 0.4+ | 0.6+ |
| 1999 09 14 | 704 | 0.7− | 1.0+ | 2003 09 02 | 704 | 0.4− | 0.1+ | 2005 01 19 | 691 | 0.4+ | 0.6+ |
| 1999 10 06 | 704 | 1.3+ | 0.2− | 2003 09 27 | 699 | 0.4+ | 1.7− | 2005 01 19 | 691 | 0.5+ | 0.5+ |
| 1999 10 06 | 704 | 1.1+ | 0.3+ | 2003 09 27 | 704 | 0.7− | 0.8+ | 2005 02 02 | 703 | 0.1+ | 0.6+ |
| 1999 10 06 | 704 | 0.9+ | 0.3− | 2003 09 27 | 699 | 0.1− | 0.1+ | 2005 02 02 | 703 | 1.0− | 0.4+ |
| 1999 10 06 | 704 | 1.2+ | 0.3− | 2003 09 27 | 704 | 0.0 | 1.0+ | 2005 02 02 | 703 | 0.2− | 0.3− |
| 1999 10 06 | 704 | 0.7+ | 0.2− | 2003 09 27 | 699 | 0.1− | 0.5− | 2005 02 02 | 703 | 0.8+ | 0.4− |
| 2003 08 24 | 704 | 0.8− | 1.9+ | 2003 09 27 | 704 | 0.3− | 1.2+ | 2005 03 09 | 691 | 0.0 | 0.5+ |
| 2003 08 24 | 704 | 0.1− | 0.0 | 2003 09 27 | 699 | 0.4− | 0.1+ | 2005 03 09 | 691 | 0.1− | 0.6+ |
| 2003 08 24 | 704 | 1.2+ | 0.7− | 2003 09 27 | 704 | 0.1+ | 0.0 | 2005 03 09 | 691 | 0.1− | 0.6+ |
| 2003 08 28 | 704 | 0.3− | 0.0 | 2003 10 03 | 608 | 0.9− | 1.2+ | 2006 04 21 | 291 | 0.1+ | 0.5+ |
| 2003 08 28 | 704 | 0.7− | 1.0+ | 2003 10 03 | 608 | 1.2− | 1.0+ | 2006 04 21 | 291 | 0.3+ | 0.5+ |
| 2003 08 28 | 704 | 0.0 | 0.6+ | 2003 10 03 | 608 | 1.0− | 1.3+ | 2006 04 21 | 291 | 0.2+ | 0.6+ |

**2003 QR$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 316.00452 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23753281 | $\omega$ | 7.93027 | | +0.41304328 | +0.88289780 |
| $a$ | 2.5821828 | $\Omega$ | 286.69529 | | −0.84783704 | +0.28323789 |
| $e$ | 0.1240343 | $i$ | 13.48454 | | −0.33251708 | +0.37452340 |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 1.2− | 1.2+ | 2003 08 27 | 608 | 0.1+ | 1.1− | 2003 09 22 | 704 | 0.6+ | 0.3− |
| 1999 10 14 | 704 | 0.7+ | 0.6+ | 2003 08 27 | 608 | 0.4+ | 0.9− | 2003 09 28 | 699 | 1.1− | 1.3+ |
| 1999 10 14 | 704 | 0.9− | 0.5+ | 2003 09 15 | 644 | 0.1+ | 0.0 | 2003 09 28 | 699 | 0.4+ | 0.8− |
| 1999 10 14 | 704 | 0.5+ | 0.7+ | 2003 09 15 | 644 | 0.0 | 0.1+ | 2003 09 28 | 699 | 1.0− | 1.0− |
| 1999 10 14 | 704 | 0.6− | 0.6+ | 2003 09 15 | 644 | 0.0 | 0.0 | 2003 09 28 | 699 | 0.2+ | 0.4+ |
| 2001 01 16 | 691 | 0.0 | 0.1+ | 2003 09 15 | 644 | 0.2+ | 0.2+ | 2003 10 20 | 644 | 0.1+ | 0.2+ |
| 2001 01 16 | 691 | 0.0 | 0.1+ | 2003 09 15 | 644 | 0.0 | 0.0 | 2003 10 20 | 644 | 0.1+ | 0.1− |
| 2001 01 16 | 691 | 0.1+ | 0.0 | 2003 09 15 | 644 | 0.4+ | 0.1+ | 2003 10 20 | 644 | 0.1+ | 0.2− |
| 2003 08 25 | 644 | 0.1+ | 0.3− | 2003 09 22 | 704 | 0.0 | 0.0 | 2004 12 15 | 691 | 0.1+ | 0.2− |
| 2003 08 25 | 644 | 0.1+ | 0.1− | 2003 09 22 | 704 | 0.9+ | 0.0 | 2004 12 15 | 691 | 0.3− | 0.3− |
| 2003 08 25 | 644 | 0.1+ | 0.3− | 2003 09 22 | 704 | 0.1− | 0.2+ | 2004 12 15 | 691 | 0.0 | 0.2− |
| 2003 08 27 | 608 | 0.5− | 0.7− | 2003 09 22 | 704 | 0.4+ | 0.2− | | | | |

**2003 QS$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 199.79433 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.19110967 | $\omega$ | 299.80350 | | +0.97930806 | −0.17852017 |
| $a$ | 2.9850225 | $\Omega$ | 70.61986 | | +0.20222114 | +0.88158939 |
| $e$ | 0.0903600 | $i$ | 5.79949 | | −0.00789500 | +0.43695617 |
| $P$ | 5.16 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 21 | 809 | 2.6+ | 1.5+ | 2003 08 26 | 704 | 0.4+ | 1.4+ | 2003 09 24 | 644 | 0.2− | 0.3+ |
| 1993 10 21 | 809 | 0.7+ | 0.1− | 2003 08 26 | 704 | 0.2+ | 0.4+ | 2003 09 24 | 644 | 0.2− | 0.5+ |
| 1993 10 21 | 809 | 1.0+ | 0.6− | 2003 08 26 | 704 | 0.3+ | 0.5+ | 2003 09 24 | 644 | 0.1− | 0.3+ |
| 1996 04 24 | 691 | 0.4− | 0.3− | 2003 09 01 | 704 | 0.8+ | 0.9+ | 2003 10 27 | 699 | 0.2− | 0.6+ |
| 1996 04 24 | 691 | 0.3− | 0.9− | 2003 09 01 | 704 | 1.0+ | 1.8+ | 2003 10 27 | 699 | 0.7− | 0.8− |
| 1996 04 24 | 691 | 0.1− | 0.4− | 2003 09 01 | 704 | 0.2+ | 0.2+ | 2003 10 27 | 699 | 0.0 | 0.1+ |
| 1998 09 19 | 645 | 0.0 | 0.3− | 2003 09 01 | 704 | 0.1− | 0.7+ | 2003 10 27 | 699 | 0.1− | 0.7− |
| 1998 09 19 | 645 | 0.1− | 0.3− | 2003 09 19 | 699 | 0.3− | 0.9+ | 2004 12 12 | 691 | 0.1− | 0.0 |
| 1998 09 20 | 327 | 0.6− | 0.1− | 2003 09 19 | 699 | 1.1+ | 0.5− | 2004 12 12 | 691 | 0.1+ | 0.1+ |
| 1998 09 20 | 327 | 0.6− | 0.7− | 2003 09 19 | 699 | 0.0 | 0.9− | 2004 12 12 | 691 | 0.0 | 0.0 |
| 1998 09 20 | 327 | 0.8− | 0.2− | 2003 09 19 | 699 | 0.1+ | 0.0 | | | | |

**2003 QT$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 210.18610 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22031514 | $\omega$ | 37.15978 | | +0.91764608 | −0.37903322 |
| $a$ | 2.7150207 | $\Omega$ | 343.79575 | | +0.17413243 | +0.65361622 |
| $e$ | 0.1209583 | $i$ | 25.33490 | | +0.35721642 | +0.65507225 |
| $P$ | 4.47 | $H$ | 15.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.1+ | 0.1− | 2003 09 17 | 704 | 0.5− | 0.8+ | 2003 09 29 | 704 | 0.7+ | 1.1+ |
| 2001 02 17 | 704 | 0.2− | 0.6+ | 2003 09 17 | 704 | 1.5− | 0.7− | 2003 09 29 | 704 | 1.9− | 1.4+ |
| 2001 02 17 | 704 | 0.1− | 0.3+ | 2003 09 17 | 704 | 0.4− | 0.2− | 2003 10 17 | 699 | 0.9− | 0.9− |
| 2001 02 17 | 704 | 0.8+ | 0.4− | 2003 09 17 | 704 | 0.4− | 0.1+ | 2003 10 17 | 699 | 0.1+ | 0.0 |
| 2001 03 19 | 608 | 0.2+ | 0.0 | 2003 09 17 | 704 | 1.3+ | 0.5+ | 2003 10 17 | 699 | 0.9+ | 0.6− |
| 2001 03 19 | 608 | 0.2+ | 0.3+ | 2003 09 21 | 608 | 0.0 | 1.3− | 2003 10 17 | 699 | 0.7− | 0.7− |
| 2001 03 19 | 608 | 0.0 | 0.2+ | 2003 09 21 | 608 | 0.1− | 0.9− | 2003 10 24 | 704 | 0.5+ | 0.2+ |
| 2003 08 31 | 608 | 0.3+ | 0.0 | 2003 09 21 | 608 | 0.1+ | 0.9− | 2003 10 24 | 704 | 0.2+ | 0.2− |
| 2003 08 31 | 608 | 0.2+ | 0.9+ | 2003 09 29 | 704 | 0.9+ | 0.5+ | 2003 10 24 | 704 | 0.7+ | 0.8− |
| 2003 08 31 | 608 | 0.1− | 0.3+ | 2003 09 29 | 704 | 0.1− | 0.5+ | 2003 10 24 | 704 | 0.1− | 1.7+ |

**2003 QK$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 254.58570 | | (2000.0) | | | |
| $n$ | 0.22888041 | $\omega$ | 234.81920 | | +0.97571709 | +0.09581620 |
| $a$ | 2.6468559 | $\Omega$ | 118.93738 | | −0.03591494 | +0.95705918 |
| $e$ | 0.3128216 | $i$ | 13.00671 | | −0.21607006 | +0.27360005 |
| $P$ | 4.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.3− | 1.5− | 2003 09 25 | 644 | 0.5− | 0.1− | 2003 10 25 | 699 | 0.8− | 0.4− |
| 1999 12 05 | 704 | (1.2+ | 2.4−) | 2003 09 25 | 644 | 0.4− | 0.2− | 2003 11 26 | 704 | 0.4+ | 0.2− |
| 1999 12 05 | 704 | 1.1+ | 0.6− | 2003 09 25 | 644 | 0.3− | 0.0 | 2003 11 26 | 704 | 0.8+ | 0.1− |
| 1999 12 05 | 704 | 0.3− | 0.2+ | 2003 09 28 | 699 | 0.0 | 0.1− | 2003 11 26 | 704 | 0.0 | 0.0 |
| 2003 08 31 | 704 | 0.1+ | 0.2+ | 2003 09 28 | 699 | 0.2− | 0.2+ | 2003 11 26 | 704 | 0.5+ | 0.3− |
| 2003 08 31 | 704 | 0.2+ | 0.1+ | 2003 09 28 | 699 | 0.3− | 0.1+ | 2003 11 26 | 704 | 0.8− | 0.7− |
| 2003 08 31 | 704 | 0.3− | 0.0 | 2003 09 28 | 699 | 0.1+ | 0.1+ | 2003 12 18 | 704 | 0.2− | 0.7+ |
| 2003 08 31 | 704 | 0.3− | 0.1+ | 2003 10 17 | 704 | 0.6+ | 0.6+ | 2003 12 18 | 704 | 0.4− | 0.5+ |
| 2003 08 31 | 704 | 0.4− | 0.3+ | 2003 10 17 | 704 | 0.2+ | 0.8− | 2003 12 18 | 704 | 0.2− | 0.8+ |
| 2003 09 16 | 704 | 0.5+ | 0.1+ | 2003 10 17 | 704 | 0.5+ | 1.1+ | 2005 01 15 | 691 | 0.1+ | 0.1+ |
| 2003 09 16 | 704 | 0.2+ | 0.2− | 2003 10 17 | 704 | 0.1− | 0.5− | 2005 01 15 | 691 | 0.2+ | 0.1+ |
| 2003 09 16 | 704 | 0.4− | 0.3− | 2003 10 25 | 699 | 0.8+ | 0.3+ | 2005 01 15 | 691 | 0.2− | 0.4+ |
| 2003 09 16 | 704 | 0.1+ | 0.4+ | 2003 10 25 | 699 | 0.2− | 0.1+ | | | | |
| 2003 09 16 | 704 | 0.0 | 0.5− | 2003 10 25 | 699 | 0.2+ | 1.1+ | | | | |

**2003 RE**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 274.91864 | | (2000.0) | | | |
| $n$ | 0.25686440 | $\omega$ | 70.73382 | | +0.97557446 | −0.02986860 |
| $a$ | 2.4509443 | $\Omega$ | 290.49305 | | −0.07589337 | +0.88387818 |
| $e$ | 0.1388510 | $i$ | 13.43441 | | +0.20614237 | +0.46676250 |
| $P$ | 3.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 1.1− | 0.8+ | 2003 09 01 | 704 | (0.3− | 2.0+) | 2003 09 21 | 704 | 0.1− | 0.0 |
| 1999 09 09 | 704 | 0.1− | 0.7+ | 2003 09 01 | 704 | 0.2+ | 1.1+ | 2003 09 21 | 704 | 0.1− | 0.1+ |
| 1999 09 09 | 704 | 0.2− | 0.6+ | 2003 09 01 | 704 | (1.1+ | 1.6+) | 2003 10 04 | 608 | 0.2+ | 1.3− |
| 2001 01 21 | 691 | 0.1+ | 0.1+ | 2003 09 02 | 704 | (5.5− | 0.1+) | 2003 10 04 | 608 | 0.1− | 1.3− |
| 2001 01 21 | 691 | 0.1− | 0.1+ | 2003 09 02 | 704 | (5.0− | 0.5−) | 2003 10 04 | 608 | 0.6− | 1.2− |
| 2001 01 21 | 691 | 0.1+ | 0.1− | 2003 09 02 | 704 | (5.5− | 0.6−) | 2003 11 20 | 704 | 0.2− | 0.8+ |
| 2003 07 29 | 704 | 0.0 | 1.1+ | 2003 09 02 | 704 | (5.7− | 0.6−) | 2003 11 20 | 704 | 0.7+ | 1.1+ |
| 2003 07 29 | 704 | 0.2− | 0.6+ | 2003 09 19 | 106 | 0.3+ | 0.5− | 2003 11 20 | 704 | 0.2− | 0.5+ |
| 2003 07 29 | 704 | 0.2+ | 0.5+ | 2003 09 19 | 106 | 0.2+ | 0.7− | 2003 11 20 | 704 | 0.0 | 0.2+ |
| 2003 07 29 | 704 | 1.1+ | 0.7+ | 2003 09 19 | 106 | 0.3+ | 0.7− | 2005 01 13 | 691 | 0.3+ | 0.4+ |
| 2003 07 29 | 704 | 0.1− | 0.1+ | 2003 09 21 | 704 | 0.1− | 0.1− | 2005 01 13 | 691 | 0.2− | 0.2− |
| 2003 09 01 | 704 | (1.8+ | 1.9+) | 2003 09 21 | 704 | 0.9− | 0.4− | 2005 01 13 | 691 | 0.1+ | 0.2+ |
| 2003 09 01 | 704 | (0.2+ | 1.8+) | 2003 09 21 | 704 | 0.4+ | 0.1− | | | | |

**2003 RE$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.17793 | | (2000.0) | | | |
| $n$ | 0.27077750 | $\omega$ | 298.44771 | | +0.56646627 | −0.82282012 |
| $a$ | 2.3662520 | $\Omega$ | 116.97659 | | +0.77286496 | +0.51122226 |
| $e$ | 0.2078176 | $i$ | 2.93554 | | +0.28599951 | +0.24823144 |
| $P$ | 3.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.4+ | 0.2− | 2001 02 03 | 691 | 0.0 | 0.1− | 2003 08 23 | 644 | 0.4+ | 0.4− |
| 2000 12 30 | 704 | 0.7− | 0.3− | 2001 02 03 | 691 | 0.0 | 0.3− | 2003 09 01 | 704 | 0.3− | 0.0 |
| 2000 12 30 | 704 | 0.3+ | 0.3+ | 2001 02 03 | 691 | 0.1+ | 0.4− | 2003 09 01 | 704 | 0.9+ | 0.4+ |
| 2001 01 21 | 704 | 1.1− | 0.3− | 2001 02 19 | 691 | 0.4+ | 0.1− | 2003 09 01 | 704 | 0.4− | 0.1− |
| 2001 01 21 | 704 | 0.4+ | 0.5+ | 2001 02 19 | 691 | 0.3− | 0.3+ | 2003 09 04 | 691 | 0.2+ | 0.0 |
| 2001 01 21 | 704 | 0.4+ | 0.8+ | 2001 02 19 | 691 | 0.3− | 0.5+ | 2003 09 04 | 691 | 0.2− | 0.0 |
| 2001 01 21 | 704 | 0.0 | 0.0 | 2003 08 23 | 644 | 0.5− | 0.1+ | 2003 09 04 | 691 | 0.0 | 0.0 |
| 2001 01 21 | 704 | 0.6+ | 0.1− | 2003 08 23 | 644 | 0.3− | 0.2+ | | | | |

**2003 RQ$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.55590 | | (2000.0) | | | |
| $n$ | 0.35644400 | $\omega$ | 92.82048 | | +0.49786755 | +0.83845052 |
| $a$ | 1.9700406 | $\Omega$ | 210.46565 | | −0.86117003 | +0.50817430 |
| $e$ | 0.2142174 | $i$ | 25.92284 | | +0.10253823 | +0.19687458 |
| $P$ | 2.77 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 21 | 699 | 0.0 | 0.1− | 2003 09 08 | 854 | 0.8− | 1.5+ | 2003 11 01 | 704 | 0.2− | 0.1− |
| 2000 07 21 | 699 | 1.3+ | 0.6− | 2003 09 08 | 854 | 0.5+ | 0.9− | 2003 11 20 | 695 | 0.1− | 0.0 |
| 2000 07 21 | 699 | 0.7+ | 0.1− | 2003 09 08 | 448 | 0.2+ | 0.1+ | 2003 11 20 | 683 | 0.4− | 0.1− |
| 2000 07 21 | 699 | 1.9− | 0.3+ | 2003 09 08 | 448 | 0.0 | 0.1+ | 2003 11 20 | 683 | 0.1− | 1.3− |
| 2003 09 07 | 704 | 0.2− | 0.7− | 2003 09 08 | 448 | 0.1− | 0.0 | 2003 11 20 | 683 | 1.2+ | 1.1+ |
| 2003 09 07 | 704 | 0.0 | 0.1− | 2003 09 19 | 644 | 0.0 | 0.4+ | 2003 11 20 | 695 | 0.1+ | 0.5− |
| 2003 09 07 | 704 | 0.1− | 0.0 | 2003 09 19 | 644 | 0.0 | 0.3+ | 2003 11 21 | 704 | 0.1+ | 0.1+ |
| 2003 09 07 | 704 | 0.2+ | 0.2− | 2003 09 19 | 644 | 0.0 | 0.4+ | 2003 11 21 | 704 | 0.0 | 0.5+ |
| 2003 09 07 | 461 | 0.6− | 0.1− | 2003 10 21 | 704 | 0.5+ | 0.6+ | 2003 11 21 | 704 | 0.4− | 0.5+ |
| 2003 09 07 | 461 | 0.1+ | 0.7− | 2003 10 21 | 704 | 0.7+ | 0.3− | 2003 11 21 | 704 | 0.6− | 0.2+ |
| 2003 09 07 | 461 | 0.3− | 0.1+ | 2003 10 21 | 704 | 0.5+ | 0.2+ | 2003 11 21 | 704 | 0.6− | 0.2+ |
| 2003 09 07 | 461 | 0.6+ | 0.2+ | 2003 10 21 | 704 | 0.5+ | 0.3− | 2006 10 20 | 703 | 0.8+ | 0.0 |
| 2003 09 07 | 461 | 0.5− | 0.3+ | 2003 10 21 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 703 | 0.4+ | 0.7+ |
| 2003 09 07 | J95 | 0.3+ | 0.4+ | 2003 10 22 | 691 | 0.0 | 0.2− | 2006 10 20 | 703 | 1.3− | 0.1+ |
| 2003 09 07 | J95 | 0.4+ | 0.5+ | 2003 10 22 | 691 | 0.2− | 0.4− | 2006 10 20 | 703 | 0.0 | 0.7− |
| 2003 09 07 | J95 | 0.6− | 0.8− | 2003 10 22 | 691 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.9− | 0.4− |
| 2003 09 08 | 557 | 0.0 | 0.0 | 2003 10 30 | 704 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.9+ | 0.3+ |
| 2003 09 08 | 557 | 0.2+ | 0.2+ | 2003 10 30 | 704 | 0.4− | 0.0 | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2003 09 08 | 557 | 0.4+ | 0.2+ | 2003 10 30 | 704 | 0.2− | 0.1+ | 2006 10 28 | 703 | (0.8+ | 2.4−) |
| 2003 09 08 | 557 | 0.2+ | 0.4+ | 2003 10 30 | 704 | 0.5− | 0.5+ | 2006 11 22 | 703 | 0.1+ | 0.9+ |
| 2003 09 08 | G90 | 0.2− | 0.2+ | 2003 11 01 | 704 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.1+ | 0.2+ |
| 2003 09 08 | G90 | 0.3− | 0.3+ | 2003 11 01 | 704 | 0.4+ | 0.0 | 2006 11 22 | 703 | 0.2+ | 1.1− |
| 2003 09 08 | G90 | 0.5+ | 0.4− | 2003 11 01 | 704 | 0.1− | 0.1+ | | | | |
| 2003 09 08 | 854 | 0.6+ | 0.4− | 2003 11 01 | 704 | 0.2+ | 0.2+ | | | | |

**2003 RQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 247.73405 | | (2000.0) | | | |
| $n$ | 0.21173141 | $\omega$ | 46.47596 | | +0.95939231 | +0.26242297 |
| $a$ | 2.7879128 | $\Omega$ | 298.06124 | | −0.28058000 | +0.85011199 |
| $e$ | 0.2323057 | $i$ | 6.73191 | | −0.02900442 | +0.45655645 |
| $P$ | 4.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 16 | 691 | 0.1− | 0.0 | 2003 09 25 | 608 | 0.4− | 0.2+ | 2003 10 17 | 699 | 0.1+ | 0.3+ |
| 1998 07 16 | 691 | (4.5− | 6.0−) | 2003 09 25 | 608 | 0.4− | 0.3+ | 2003 10 21 | 704 | 0.3− | 0.0 |
| 1998 07 16 | 691 | 0.0 | 0.2+ | 2003 09 25 | 608 | 0.4− | 0.3+ | 2003 10 21 | 704 | 0.3− | 1.4+ |
| 2002 05 10 | 644 | 0.1− | 0.3+ | 2003 09 29 | 699 | 0.4+ | 0.5− | 2003 10 21 | 704 | 0.6− | 0.0 |
| 2002 05 10 | 644 | 0.3+ | 0.8+ | 2003 09 29 | 699 | 0.0 | 0.3− | 2003 10 21 | 704 | 0.2− | 0.1+ |
| 2002 05 10 | 644 | 0.1+ | 0.2+ | 2003 09 29 | 699 | 0.3+ | 0.8− | 2003 10 21 | 704 | 0.0 | 0.1− |
| 2003 07 29 | 704 | 0.2+ | 1.4+ | 2003 09 29 | 699 | 0.1− | 0.0 | 2003 10 26 | 691 | 0.2+ | 0.0 |
| 2003 07 29 | 704 | 0.8+ | 1.1+ | 2003 09 30 | 704 | 0.1+ | 0.3+ | 2003 10 26 | 691 | 0.0 | 0.1− |
| 2003 07 29 | 704 | 0.5− | 1.5+ | 2003 09 30 | 704 | 0.0 | 0.2+ | 2003 10 26 | 691 | 0.2+ | 0.0 |
| 2003 09 08 | 608 | 0.9+ | 1.4− | 2003 09 30 | 704 | 0.2− | 0.1− | 2003 11 01 | 704 | 0.0 | 0.3+ |
| 2003 09 08 | 608 | 0.5+ | 1.3− | 2003 09 30 | 704 | 0.1− | 0.1− | 2003 11 01 | 704 | 0.5− | 0.9+ |
| 2003 09 08 | 608 | 0.3+ | 0.6− | 2003 09 30 | 704 | 0.5− | 0.1+ | 2003 11 01 | 704 | 0.6+ | 0.4− |
| 2003 09 10 | 608 | 0.3+ | 1.4− | 2003 10 01 | 691 | 0.1+ | 0.2+ | 2003 11 01 | 704 | 0.6− | 0.9+ |
| 2003 09 10 | 608 | 0.4+ | 1.1− | 2003 10 01 | 691 | 0.1+ | 0.1+ | 2003 11 01 | 704 | 0.4− | 0.0 |
| 2003 09 10 | 608 | 0.3+ | 1.6− | 2003 10 01 | 691 | 0.0 | 0.1+ | 2003 11 28 | 699 | 0.5+ | 0.1+ |
| 2003 09 16 | 644 | 0.0 | 0.0 | 2003 10 06 | 608 | 0.3+ | 0.8− | 2003 11 28 | 699 | 0.5− | 0.8+ |
| 2003 09 16 | 644 | 0.0 | 0.0 | 2003 10 06 | 608 | 0.4+ | 0.9− | 2003 11 28 | 699 | 0.5+ | 0.7− |
| 2003 09 16 | 644 | 0.0 | 0.2+ | 2003 10 06 | 608 | 0.3+ | 0.6− | 2003 11 28 | 699 | 0.6+ | 0.3+ |
| 2003 09 21 | 704 | 0.1− | 0.4+ | 2003 10 14 | 644 | 0.1− | 0.1− | 2003 12 28 | 704 | 0.3+ | 1.9+ |
| 2003 09 21 | 704 | 0.7− | 0.5+ | 2003 10 14 | 644 | 0.1+ | 0.1− | 2003 12 28 | 704 | 0.1− | 0.7+ |
| 2003 09 21 | 704 | 0.2− | 0.4+ | 2003 10 14 | 644 | 0.0 | 0.0 | 2003 12 28 | 704 | 0.5− | 1.2+ |
| 2003 09 21 | 704 | 0.7− | 0.3+ | 2003 10 16 | 691 | 0.0 | 0.2− | 2003 12 28 | 704 | 0.4− | 0.1+ |
| 2003 09 21 | 704 | 1.2− | 0.1+ | 2003 10 16 | 691 | 0.1+ | 0.2− | 2005 01 19 | 691 | 0.5− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 704 | 0.2− | 0.4+ | 2003 10 16 | 691 | 0.1+ | 0.2− | 2005 01 19 | 691 | 0.4+ | 0.4+ |
| 2003 09 22 | 704 | 0.0 | 0.2− | 2003 10 17 | 699 | 0.0 | 0.0 | 2005 01 19 | 691 | 0.1+ | 0.2+ |
| 2003 09 22 | 704 | 0.2− | 0.7+ | 2003 10 17 | 699 | 0.0 | 0.2− | | | | |
| 2003 09 22 | 704 | 0.8− | 0.7+ | 2003 10 17 | 699 | 0.1− | 0.1− | | | | |

**2003 RO$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.82074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21355806 | $\omega$ | 138.00925 | | +0.58329012 | | +0.81216254 |
| $a$ | 2.7719926 | $\Omega$ | 167.65485 | | −0.76029752 | | +0.55146425 |
| $e$ | 0.0802135 | $i$ | 3.44066 | | −0.28586765 | | +0.19047097 |
| $P$ | 4.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 15 | 673 | 0.9− | 0.7+ | 2003 09 28 | 691 | 0.0 | 0.0 | 2006 02 20 | G96 | 0.2+ | 0.3+ |
| 2003 09 15 | 673 | 0.4− | 0.8+ | 2006 02 07 | G96 | 0.6+ | 0.2− | 2006 03 02 | 691 | 0.1+ | 0.6+ |
| 2003 09 15 | 673 | 0.2− | 0.8+ | 2006 02 07 | G96 | 0.6− | 0.1− | 2006 03 02 | 691 | 0.2+ | 0.1+ |
| 2003 09 16 | 673 | 0.2+ | 0.7+ | 2006 02 07 | G96 | 0.9+ | 0.2− | 2006 03 02 | 691 | 0.0 | 0.2+ |
| 2003 09 16 | 673 | 0.3+ | 0.4+ | 2006 02 07 | G96 | 0.1− | 0.2− | 2006 03 23 | G96 | 0.6− | 0.3+ |
| 2003 09 16 | 673 | 0.2− | 0.5+ | 2006 02 20 | G96 | 0.0 | 0.2− | 2006 03 23 | G96 | 0.4− | 0.2+ |
| 2003 09 28 | 691 | 0.0 | 0.3− | 2006 02 20 | G96 | 0.6− | 0.2− | 2006 03 23 | G96 | 0.7+ | 0.2− |
| 2003 09 28 | 691 | 0.1− | 0.2+ | 2006 02 20 | G96 | 0.2− | 0.3+ | 2006 03 23 | G96 | 0.3+ | 0.3+ |

**2003 RX$_{19}$ = 2006 FR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.46290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25756792 | $\omega$ | 145.20003 | | +0.73595485 | | +0.67701998 |
| $a$ | 2.4464792 | $\Omega$ | 172.18537 | | −0.62732883 | | +0.68402506 |
| $e$ | 0.1535977 | $i$ | 1.59968 | | −0.25461539 | | +0.27157625 |
| $P$ | 3.83 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 691 | 0.6+ | 0.4− | 2003 09 16 | 691 | 0.3− | 0.2− | 2006 04 09 | 691 | 0.2+ | 0.4+ |
| 2002 03 21 | 691 | 0.1+ | 1.0+ | 2003 09 28 | 691 | 0.2+ | 0.4+ | 2006 04 09 | 691 | 0.1+ | 0.0 |
| 2002 03 21 | 691 | 0.1− | 1.0+ | 2003 09 28 | 691 | 0.0 | 0.2+ | 2006 05 02 | G96 | 0.8− | 0.6− |
| 2003 09 02 | 704 | 0.6+ | 0.5+ | 2003 09 28 | 691 | 0.1− | 0.0 | 2006 05 02 | G96 | 0.3− | 0.8− |
| 2003 09 02 | 704 | 0.7+ | 0.5− | 2006 03 23 | G96 | 0.5− | 0.3− | 2006 05 02 | G96 | 0.3− | 0.3− |
| 2003 09 02 | 704 | 1.2+ | 0.6+ | 2006 03 23 | G96 | 0.0 | 0.6− | 2006 05 02 | G96 | 0.3− | 0.7− |
| 2003 09 15 | 699 | 0.1+ | 0.8+ | 2006 03 23 | G96 | 0.3− | 0.2+ | 2006 05 24 | G96 | 0.2− | 0.1− |
| 2003 09 15 | 699 | 0.8− | 0.5+ | 2006 03 23 | G96 | 0.3− | 0.5− | 2006 05 24 | G96 | 0.3− | 0.3− |
| 2003 09 15 | 699 | 1.3− | 1.0+ | 2006 03 25 | 691 | 0.7− | 0.2− | 2006 05 24 | G96 | 0.6− | 0.6− |
| 2003 09 15 | 699 | 0.3+ | 0.3+ | 2006 03 25 | 691 | 0.4+ | 0.1− | 2006 05 24 | G96 | 0.1− | 0.1− |
| 2003 09 16 | 691 | 0.3− | 0.3− | 2006 03 25 | 691 | 0.5+ | 0.4+ | | | | |
| 2003 09 16 | 691 | 0.0 | 0.1+ | 2006 04 09 | 691 | 0.3+ | 0.1+ | | | | |

**2003 RM$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.11230 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27399932 | $\omega$ | 175.99560 | | +0.90662009 | | −0.41926589 |
| $a$ | 2.3476665 | $\Omega$ | 208.93985 | | +0.38435184 | | +0.86703969 |
| $e$ | 0.2392472 | $i$ | 5.63321 | | +0.17410822 | | +0.26918076 |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 04 | 291 | 0.1+ | 0.1+ | 2003 09 16 | 699 | 0.5+ | 1.3+ | 2003 09 27 | 704 | 0.2− | 0.0 |
| 2002 05 04 | 291 | 0.1− | 0.1+ | 2003 09 16 | 699 | 0.5− | 0.3+ | 2003 09 27 | 699 | 0.0 | 0.4− |
| 2002 05 04 | 291 | 0.1+ | 0.3+ | 2003 09 16 | 699 | 0.4+ | 0.8+ | 2003 09 27 | 704 | 0.0 | 0.3− |
| 2003 08 01 | 704 | 0.3+ | 0.6− | 2003 09 16 | 699 | 0.6+ | 0.7− | 2003 09 27 | 699 | 0.2+ | 0.2− |
| 2003 08 01 | 704 | 0.5− | 0.1+ | 2003 09 18 | 704 | 1.2− | 0.8+ | 2003 09 27 | 704 | 0.5+ | 0.0 |
| 2003 08 01 | 704 | 0.6− | 0.9+ | 2003 09 18 | 704 | 0.3+ | 0.4+ | 2003 09 27 | 699 | 0.2+ | 0.1− |
| 2003 08 20 | 644 | 0.2+ | 0.2+ | 2003 09 18 | 704 | 0.3− | 0.1− | 2003 09 27 | 704 | 0.5+ | 0.1− |
| 2003 08 20 | 644 | 0.1+ | 0.3+ | 2003 09 18 | 704 | 0.2− | 1.6+ | 2003 09 27 | 704 | 0.4− | 0.2− |
| 2003 08 20 | 644 | 0.0 | 0.7+ | 2003 09 18 | 704 | 0.3+ | 0.4+ | 2003 10 17 | 699 | 0.4− | 0.8− |
| 2003 09 02 | 704 | 0.4+ | 0.4+ | 2003 09 21 | 608 | 0.2+ | 0.7− | 2003 10 17 | 699 | 1.4− | 0.3+ |
| 2003 09 02 | 704 | 0.2+ | 0.3+ | 2003 09 21 | 608 | 0.2− | 0.1− | 2003 10 17 | 699 | 0.3− | 0.0 |
| 2003 09 02 | 704 | 0.7− | 0.1+ | 2003 09 21 | 608 | 0.2− | 0.5− | 2003 10 17 | 699 | 0.4+ | 1.8− |
| 2003 09 02 | 704 | 0.7+ | 0.2+ | 2003 09 23 | 644 | 0.1− | 0.4+ | 2006 05 26 | G96 | 0.2+ | 0.6− |
| 2003 09 13 | 608 | 0.4+ | 0.9− | 2003 09 23 | 644 | 0.1+ | 0.7+ | 2006 05 26 | G96 | 0.0 | 0.1− |
| 2003 09 13 | 608 | 0.1+ | 1.2− | 2003 09 23 | 644 | 0.1− | 0.5+ | 2006 05 26 | G96 | 0.0 | 0.9− |
| 2003 09 13 | 608 | 0.0 | 1.1− | 2003 09 27 | 699 | 0.0 | 0.5− | 2006 05 26 | G96 | 0.4− | 0.8− |

**2003 RU$_{21}$ = 2003 SY$_{49}$**

Id. Minor Planet Center (d, *MPO* 53872)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.16546 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29063808 | $\omega$ | 113.98738 | | +0.97661855 | | −0.20356709 |
| $a$ | 2.2571879 | $\Omega$ | 257.81645 | | +0.16242823 | | +0.90931757 |
| $e$ | 0.2516505 | $i$ | 4.05453 | | +0.14083070 | | +0.36290769 |
| $P$ | 3.39 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 691 | 0.0 | 0.3+ | 2003 09 16 | 699 | 0.5− | 0.5+ | 2003 09 29 | 683 | 0.2+ | 0.3+ |
| 2000 12 29 | 691 | 0.1+ | 0.3+ | 2003 09 16 | 699 | 0.3+ | 0.2+ | 2003 09 30 | 683 | 0.7+ | 0.4+ |
| 2000 12 29 | 691 | 0.1+ | 0.2+ | 2003 09 18 | 644 | 0.4− | 0.4+ | 2003 09 30 | 683 | 1.7− | 0.6− |
| 2003 08 05 | 704 | 0.5− | 0.2+ | 2003 09 18 | 644 | 0.4− | 0.4+ | 2003 09 30 | 683 | 1.6− | 1.1+ |
| 2003 08 05 | 704 | 0.8+ | 0.1− | 2003 09 18 | 644 | 0.4− | 0.6+ | 2003 10 17 | 645 | 0.1− | 0.0 |
| 2003 08 05 | 704 | 0.5+ | 1.3+ | 2003 09 19 | 704 | 0.6+ | 0.5− | 2003 10 17 | 645 | 0.1− | 0.0 |
| 2003 08 23 | 704 | 0.1− | 0.4− | 2003 09 19 | 704 | 1.2+ | 0.4− | 2003 10 20 | 704 | 0.0 | 0.6− |
| 2003 08 23 | 704 | 0.5+ | 0.6− | 2003 09 19 | 704 | 0.3− | 0.1+ | 2003 10 20 | 704 | 0.2− | 0.0 |
| 2003 08 23 | 704 | (0.1+ | 2.1−) | 2003 09 19 | 704 | 0.2+ | 0.1− | 2003 10 20 | 704 | 0.4+ | 0.1− |
| 2003 08 28 | 704 | 1.1− | 0.4+ | 2003 09 19 | 704 | 0.2+ | 0.3− | 2003 10 20 | 704 | 0.4− | 0.3− |
| 2003 08 28 | 704 | 0.0 | 1.5+ | 2003 09 27 | 704 | 0.4− | 0.0 | 2003 10 21 | 699 | 0.0 | 0.4+ |
| 2003 08 28 | 644 | 0.0 | 0.3+ | 2003 09 27 | 704 | 0.1− | 0.0 | 2003 10 21 | 699 | 0.1− | 0.8+ |
| 2003 08 28 | 704 | 0.1− | 1.2+ | 2003 09 27 | 704 | 0.5− | 0.0 | 2003 10 21 | 699 | 0.4− | 0.5+ |
| 2003 08 28 | 704 | 0.0 | 1.1+ | 2003 09 27 | 704 | 0.2+ | 0.3+ | 2003 10 21 | 699 | 0.2− | 0.0 |
| 2003 08 28 | 704 | 0.2− | 1.9+ | 2003 09 27 | 683 | (0.1− | 3.0+) | 2003 10 23 | 645 | 0.1− | 0.1− |
| 2003 08 28 | 644 | 0.0 | 0.3+ | 2003 09 27 | 704 | 0.3− | 0.1+ | 2003 10 23 | 645 | 0.1− | 0.1− |
| 2003 08 28 | 644 | 0.1+ | 0.4+ | 2003 09 27 | 683 | 1.3+ | 0.1+ | 2003 10 30 | 704 | 0.7+ | 0.9+ |
| 2003 09 03 | 704 | 0.3− | 0.0 | 2003 09 28 | 683 | 0.7− | 1.1− | 2003 10 30 | 704 | 0.5+ | 0.5+ |
| 2003 09 03 | 704 | 0.6− | 0.4+ | 2003 09 28 | 683 | 0.8+ | 0.4− | 2003 10 30 | 704 | 0.9+ | 0.6+ |
| 2003 09 03 | 704 | 0.5− | 0.3+ | 2003 09 28 | 683 | 1.0+ | 0.2+ | 2003 10 30 | 704 | 1.7+ | 0.8− |
| 2003 09 03 | 704 | 0.6− | 0.2+ | 2003 09 29 | 699 | 1.7+ | 0.1+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 13 | 608 | 0.7− | 1.0− | 2003 09 29 | 699 | 0.1+ | 0.2− | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 13 | 608 | 0.6+ | 1.0− | 2003 09 29 | 699 | 0.2− | 0.1− | 2005 03 08 | 691 | 0.0 | 0.4+ |
| 2003 09 13 | 608 | 0.3+ | 1.8− | 2003 09 29 | 699 | 0.3+ | 0.3+ | 2005 03 08 | 691 | 0.0 | 0.5+ |
| 2003 09 16 | 699 | 0.0 | 0.5+ | 2003 09 29 | 683 | 0.7+ | 0.7+ | 2005 03 08 | 691 | 0.3+ | 0.1− |
| 2003 09 16 | 699 | 0.3+ | 0.2− | 2003 09 29 | 683 | 0.8+ | 0.7+ | | | | |

**2003 RY$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.16203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28166232 | $\omega$ | 102.57912 | | +0.91546240 | | +0.39322037 |
| $a$ | 2.3048901 | $\Omega$ | 234.32703 | | −0.39782258 | | +0.85242694 |
| $e$ | 0.1379223 | $i$ | 6.03989 | | −0.06054572 | | +0.34459548 |
| $P$ | 3.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 644 | 0.5+ | 1.1+ | 2003 09 23 | 608 | 0.4− | 0.2+ | 2003 10 16 | 683 | 0.8− | 0.4+ |
| 2002 04 05 | 644 | 0.5+ | 1.3+ | 2003 09 23 | 608 | 0.4− | 0.3+ | 2003 10 17 | 683 | 0.0 | 0.6+ |
| 2002 04 05 | 644 | 0.3+ | 1.1+ | 2003 09 23 | 608 | 0.5− | 0.1+ | 2003 10 17 | 683 | 0.5− | 0.8+ |
| 2003 09 03 | 704 | 0.2− | 0.1− | 2003 09 24 | 608 | 0.3+ | 0.3− | 2003 10 17 | 683 | 0.1− | 1.1+ |
| 2003 09 03 | 704 | 0.1− | 0.6+ | 2003 09 24 | 608 | 0.4− | 0.2− | 2003 10 18 | 683 | 0.3+ | 0.7+ |
| 2003 09 03 | 704 | 0.7− | 0.3+ | 2003 09 24 | 608 | 0.2− | 1.0− | 2003 10 18 | 683 | 0.9+ | 0.6+ |
| 2003 09 03 | 704 | 0.3− | 0.3+ | 2003 09 25 | 644 | 0.0 | 0.2+ | 2003 10 18 | 683 | 1.0− | 0.2− |
| 2003 09 14 | 608 | 0.2− | 1.1− | 2003 09 25 | 644 | 0.0 | 0.2+ | 2003 10 20 | 704 | 1.8− | 0.1+ |
| 2003 09 14 | 608 | 0.1− | 0.3− | 2003 09 25 | 644 | 0.3+ | 0.0 | 2003 10 20 | 704 | 0.3+ | 0.4+ |
| 2003 09 14 | 608 | 0.1+ | 0.9− | 2003 09 29 | 699 | 0.7+ | 1.5+ | 2003 10 20 | 704 | 0.2+ | 0.1+ |
| 2003 09 18 | 608 | 0.6− | 0.0 | 2003 09 29 | 699 | 1.2− | 0.6+ | 2003 10 20 | 704 | 0.5− | 0.3+ |
| 2003 09 18 | 608 | 0.1− | 0.1− | 2003 09 29 | 699 | 0.5+ | 0.7+ | 2003 10 20 | 704 | 0.1− | 0.8− |
| 2003 09 18 | 608 | 0.3− | 0.1− | 2003 09 29 | 699 | 1.3− | 0.8+ | 2003 10 21 | 699 | 0.1− | 0.2− |
| 2003 09 19 | 704 | 1.0+ | 0.6+ | 2003 09 30 | 704 | 0.1+ | 0.4+ | 2003 10 21 | 699 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 704 | 0.9+ | 0.2+ | 2003 09 30 | 704 | 0.3+ | 0.4+ | 2003 10 21 | 699 | 0.2− | 1.2− |
| 2003 09 19 | 704 | 1.3+ | 0.3+ | 2003 09 30 | 704 | 0.4+ | 0.4+ | 2003 10 21 | 699 | 0.5− | 0.3− |
| 2003 09 19 | 704 | 0.7+ | 0.9+ | 2003 09 30 | 704 | 0.0 | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.1− |
| 2003 09 19 | 704 | 1.0+ | 0.3+ | 2003 09 30 | 704 | 0.4− | 0.2+ | 2003 10 24 | 645 | 0.1+ | 0.1− |
| 2003 09 21 | 644 | 0.3+ | 0.1+ | 2003 10 12 | 699 | 0.5+ | 0.7− | 2003 11 19 | 645 | 0.0 | 0.1− |
| 2003 09 21 | 644 | 0.1+ | 0.3+ | 2003 10 12 | 699 | 0.9+ | 0.5+ | 2003 11 19 | 645 | 0.1− | 0.2− |
| 2003 09 21 | 644 | 0.1+ | 0.1+ | 2003 10 12 | 699 | 1.0− | 1.4+ | 2006 05 28 | 704 | 0.4+ | 0.6− |
| 2003 09 21 | 644 | 0.1− | 0.1+ | 2003 10 12 | 699 | 0.6− | 0.6+ | 2006 05 28 | 704 | 0.1− | 0.5+ |
| 2003 09 21 | 644 | 0.3+ | 0.1− | 2003 10 16 | 683 | 0.2+ | 0.6+ | 2006 05 28 | 704 | 0.4+ | 0.7− |
| 2003 09 21 | 644 | 0.0 | 0.1+ | 2003 10 16 | 683 | 0.0 | 0.3+ | 2006 05 28 | 704 | 0.9− | 1.5− |

### 2003 RL$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.45268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29812489 | $\omega$ | 10.88450 | | +0.99020145 | +0.13913912 | |
| $a$ | 2.2192381 | $\Omega$ | 341.10505 | | −0.13072311 | +0.89361128 | |
| $e$ | 0.1476108 | $i$ | 2.10439 | | −0.04911788 | +0.42673081 | |
| $P$ | 3.31 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.3− | 0.1+ | 2003 09 22 | 699 | 1.1+ | 0.4+ | 2003 09 29 | 704 | 0.4+ | 0.1+ |
| 1995 02 01 | 691 | 0.8+ | 0.1− | 2003 09 22 | 699 | 0.4− | 0.7+ | 2003 09 29 | 704 | 0.4+ | 0.1+ |
| 1995 02 01 | 691 | 0.2− | 0.4+ | 2003 09 22 | 699 | 0.0 | 0.5+ | 2003 09 29 | 645 | 0.0 | 0.1− |
| 2002 04 13 | 291 | 0.2+ | 0.1+ | 2003 09 22 | 699 | 0.4− | 0.3+ | 2003 09 29 | 691 | 0.3+ | 0.4+ |
| 2002 04 13 | 291 | 0.1− | 1.0+ | 2003 09 26 | 704 | 0.5+ | 0.4− | 2003 09 29 | 645 | 0.0 | 0.1− |
| 2002 04 13 | 291 | 0.2+ | 0.7+ | 2003 09 26 | 704 | 0.1− | 0.2+ | 2003 10 19 | 645 | 0.1− | 0.2− |
| 2003 09 15 | 699 | (4.5− | 0.9+) | 2003 09 26 | 704 | 0.3+ | 0.2+ | 2003 10 19 | 645 | 0.1− | 0.1− |
| 2003 09 15 | 699 | 0.2− | 0.1− | 2003 09 26 | 704 | 0.4− | 0.3− | 2003 10 23 | 645 | 0.1− | 0.2− |
| 2003 09 15 | 699 | 0.9+ | 0.9+ | 2003 09 26 | 704 | 0.5− | 0.6− | 2003 10 23 | 645 | 0.1− | 0.2− |
| 2003 09 15 | 699 | 1.0+ | 0.3+ | 2003 09 27 | 704 | 1.6+ | 1.3+ | 2003 10 24 | 691 | 0.0 | 0.2+ |
| 2003 09 17 | 691 | 0.2+ | 0.1+ | 2003 09 27 | 704 | 0.3− | 1.0+ | 2003 10 24 | 691 | 0.3− | 0.7+ |
| 2003 09 17 | 691 | 0.3+ | 0.0 | 2003 09 27 | 704 | 0.1− | 1.0+ | 2003 10 24 | 691 | 0.5− | 0.2+ |
| 2003 09 17 | 691 | 0.0 | 0.1+ | 2003 09 27 | 704 | 0.1+ | 0.7+ | 2003 11 20 | 645 | 0.1− | 0.1+ |
| 2003 09 19 | 704 | (2.4− | 0.9−) | 2003 09 29 | 691 | 0.1+ | 0.3+ | 2003 11 20 | 645 | 0.1− | 0.1+ |
| 2003 09 19 | 704 | 0.2− | 0.2+ | 2003 09 29 | 704 | 0.4+ | 0.7+ | 2005 04 02 | G96 | 0.3+ | 0.5− |
| 2003 09 19 | 704 | 0.2− | 0.8+ | 2003 09 29 | 704 | 0.7+ | 1.2+ | 2005 04 02 | G96 | 0.4+ | 0.1− |
| 2003 09 19 | 704 | 0.4− | 0.0 | 2003 09 29 | 691 | 0.1+ | 0.3+ | 2005 04 02 | G96 | 0.3+ | 0.1− |
| 2003 09 19 | 704 | 1.1+ | 0.6+ | 2003 09 29 | 704 | 0.7+ | 1.1+ | 2005 04 02 | G96 | 0.3+ | 0.1+ |

### 2003 RX$_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.83664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21489648 | $\omega$ | 138.68779 | | +0.98949028 | +0.00638499 | |
| $a$ | 2.7604709 | $\Omega$ | 221.63051 | | −0.04117230 | +0.97011236 | |
| $e$ | 0.2298288 | $i$ | 12.55940 | | +0.13861395 | +0.24257212 | |
| $P$ | 4.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.0 | 0.1− | 2003 09 21 | 704 | 0.0 | 0.0 | 2003 11 01 | 704 | 0.4− | 0.3+ |
| 1994 10 28 | 691 | 0.0 | 0.1− | 2003 09 21 | 704 | 0.4+ | 0.3+ | 2003 11 20 | 704 | 0.6+ | 0.2+ |
| 1994 10 28 | 691 | 0.0 | 0.1− | 2003 10 21 | 704 | 0.2+ | 0.1− | 2003 11 20 | 704 | 0.3− | 0.1+ |
| 2002 05 17 | 644 | 0.0 | 0.3− | 2003 10 21 | 704 | 0.8+ | 0.5− | 2003 11 20 | 704 | 0.1− | 0.5+ |
| 2002 05 17 | 644 | 0.4− | 0.4− | 2003 10 21 | 704 | 0.2+ | 0.1− | 2003 11 20 | 704 | 0.5− | 0.7− |
| 2002 05 17 | 644 | 0.3+ | 0.1− | 2003 10 21 | 704 | 0.1+ | 0.1− | 2003 11 20 | 704 | 0.1− | 0.3− |
| 2003 07 28 | 644 | 0.2− | 0.1− | 2003 10 21 | 704 | 1.2+ | 0.4+ | 2003 11 21 | 699 | 0.4+ | 0.3+ |
| 2003 07 28 | 644 | 0.1− | 0.0 | 2003 10 29 | 691 | 0.1− | 0.1− | 2003 11 21 | 699 | 0.9+ | 1.6+ |
| 2003 07 28 | 644 | 0.1− | 0.2− | 2003 10 29 | 691 | 0.1− | 0.2− | 2003 11 21 | 699 | 0.3− | 0.0 |
| 2003 09 04 | 599 | 1.9+ | 0.4+ | 2003 10 29 | 691 | 0.1− | 0.1− | 2003 11 21 | 699 | 0.7− | 0.3− |
| 2003 09 04 | 599 | 0.5− | 0.0 | 2003 10 30 | 704 | 1.3− | 0.5− | 2003 11 28 | 699 | 0.2+ | 0.6+ |
| 2003 09 04 | 599 | 0.5+ | 0.2− | 2003 10 30 | 704 | 1.1− | 0.1+ | 2003 11 28 | 699 | 1.0+ | 0.0 |
| 2003 09 15 | 644 | 0.0 | 0.0 | 2003 10 30 | 704 | 0.7− | 0.5− | 2003 11 28 | 699 | 0.2+ | 0.2− |
| 2003 09 15 | 644 | 0.1− | 0.1+ | 2003 10 30 | 704 | 1.3− | 0.1+ | 2003 11 28 | 699 | 1.2+ | 0.1− |
| 2003 09 15 | 644 | 0.1− | 0.5+ | 2003 11 01 | 704 | 0.0 | 0.2− | 2003 12 27 | 704 | 0.1+ | 0.3− |
| 2003 09 21 | 704 | 0.2− | 0.3+ | 2003 11 01 | 704 | 0.1− | 0.5+ | 2003 12 27 | 704 | 0.0 | 0.2− |
| 2003 09 21 | 704 | 0.5+ | 0.1+ | 2003 11 01 | 704 | 0.6− | 0.2− | 2003 12 27 | 704 | 0.5− | 1.7− |
| 2003 09 21 | 704 | 0.1+ | 0.1+ | 2003 11 01 | 704 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.1− | 1.5+ |

### 2003 RZ$_{26}$ = 2004 XN$_{170}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.90335 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19714435 | $\omega$ | 167.61448 | | +0.88206730 | +0.47099962 | |
| $a$ | 2.9237921 | $\Omega$ | 164.27266 | | −0.43557544 | +0.82403311 | |
| $e$ | 0.0906526 | $i$ | 2.28339 | | −0.17953080 | +0.31484725 | |
| $P$ | 5.00 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 691 | 0.1− | 0.0 | 2003 09 22 | 699 | 0.1+ | 0.5+ | 2004 12 18 | 691 | 0.2− | 0.6− |
| 2001 01 19 | 691 | 0.1− | 0.4+ | 2003 09 22 | 699 | 0.1+ | 0.2+ | 2004 12 18 | 691 | 0.1− | 0.1+ |
| 2001 01 19 | 691 | 0.1− | 0.3+ | 2003 09 22 | 699 | 0.1− | 0.8− | 2004 12 18 | 691 | 0.5− | 0.2+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2003 09 22 | 699 | 0.3− | 0.8− | 2006 01 22 | 691 | 0.1− | 0.4+ |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2003 09 29 | 704 | 0.6+ | 2.2+ | 2006 01 22 | 691 | 0.3+ | 0.3+ |
| 2003 09 02 | 704 | 0.5− | 0.9+ | 2003 09 29 | 704 | 0.2+ | 0.9+ | 2006 01 22 | 691 | 0.3+ | 0.2+ |
| 2003 09 02 | 704 | 0.4− | 0.2+ | 2003 09 29 | 704 | 0.1− | 0.7+ | 2006 01 22 | G96 | 0.1− | 0.0 |
| 2003 09 02 | 704 | 1.1+ | 0.7+ | 2003 09 29 | 704 | 0.4− | 0.7+ | 2006 01 22 | G96 | 0.2− | 0.0 |
| 2003 09 16 | 691 | 0.3− | 0.3+ | 2004 12 09 | 691 | 0.4+ | 0.1− | 2006 01 22 | G96 | 0.0 | 0.6+ |
| 2003 09 16 | 691 | 0.3− | 0.3+ | 2004 12 09 | 691 | 0.3+ | 0.2− | 2006 01 22 | G96 | 0.1− | 0.9+ |
| 2003 09 16 | 691 | 0.3− | 0.3+ | 2004 12 09 | 691 | 0.2+ | 0.0 | | | | |

### 2003 RA$_{27}$ = 2006 BL$_{251}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.99899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17455881 | $\omega$ | 7.83679 | | +0.87906444 | +0.46867171 | |
| $a$ | 3.1708439 | $\Omega$ | 323.79902 | | −0.44497860 | +0.74117173 | |
| $e$ | 0.0851107 | $i$ | 8.48392 | | −0.17099636 | +0.48063634 | |
| $P$ | 5.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 04 | 599 | 0.8+ | 0.1+ | 2003 09 27 | 704 | 1.2+ | 1.1+ | 2006 01 31 | 691 | 0.2+ | 0.1+ |
| 2003 09 04 | 599 | 0.7− | 0.8− | 2003 09 27 | 704 | 0.3− | 0.0 | 2006 01 31 | 691 | 0.4+ | 0.3+ |
| 2003 09 04 | 599 | 0.5− | 0.8− | 2003 09 27 | 704 | 0.1− | 0.3+ | 2006 01 31 | 691 | 0.2+ | 0.2+ |
| 2003 09 17 | 644 | 0.1+ | 0.3+ | 2003 09 27 | 704 | 0.4− | 0.6+ | 2006 02 04 | G96 | 0.1− | 0.1− |
| 2003 09 17 | 644 | 0.1− | 0.2− | 2003 10 29 | 691 | 0.2− | 0.3− | 2006 02 04 | G96 | 0.6− | 0.0 |
| 2003 09 17 | 644 | 0.1+ | 0.4+ | 2003 10 29 | 691 | 0.0 | 0.3− | 2006 02 04 | G96 | 0.0 | 0.3− |
| 2003 09 27 | 704 | 0.2+ | 0.6− | 2003 10 29 | 691 | 0.2− | 0.1− | 2006 02 04 | G96 | 0.1− | 0.1− |

### 2003 RB$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.10943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27462369 | $\omega$ | 281.67183 | | +0.78262838 | +0.61897132 | |
| $a$ | 2.3441067 | $\Omega$ | 40.13723 | | −0.52370896 | +0.71210164 | |
| $e$ | 0.1341225 | $i$ | 5.88423 | | −0.33648438 | +0.33133934 | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 19 | 691 | 0.1+ | 0.1+ | 2003 09 18 | 704 | 0.2− | 0.2+ | 2003 10 06 | 699 | 0.8+ | 0.2− |
| 1996 11 19 | 691 | 0.2− | 0.1− | 2003 09 18 | 704 | 0.1− | 1.1+ | 2003 10 06 | 699 | 0.5− | 0.4− |
| 1996 11 19 | 691 | 0.1− | 0.1− | 2003 09 18 | 704 | 0.3− | 0.7+ | 2003 10 06 | 699 | 1.3− | 0.9− |
| 2002 03 05 | 291 | 0.4− | 0.0 | 2003 09 18 | 704 | 0.1+ | 0.7+ | 2003 10 16 | 644 | 0.1+ | 0.2+ |
| 2002 03 05 | 291 | 0.6+ | 0.5+ | 2003 09 28 | 704 | 0.4+ | 0.2+ | 2003 10 16 | 644 | 0.3+ | 0.3+ |
| 2002 03 05 | 291 | 0.6+ | 0.8+ | 2003 09 28 | 704 | 0.2+ | 0.1− | 2003 10 16 | 644 | 0.3+ | 0.2+ |
| 2003 09 01 | 704 | 0.1+ | 1.3− | 2003 09 28 | 704 | 0.3+ | 0.7+ | 2006 05 17 | E12 | 0.9− | 1.0+ |
| 2003 09 01 | 704 | 0.2− | 0.8+ | 2003 09 28 | 704 | 0.1+ | 0.0 | 2006 05 17 | E12 | 0.5− | 0.3− |
| 2003 09 01 | 704 | 1.5− | 1.2+ | 2003 09 28 | 704 | 0.3+ | 0.1− | 2006 05 17 | E12 | 0.8+ | 0.4− |
| 2003 09 18 | 704 | 0.9− | 1.3+ | 2003 10 06 | 699 | 0.0 | 0.1− | 2006 05 17 | E12 | 0.3− | 1.0− |

**2003 RC$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.43903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22547506 | $\omega$ | 267.91328 | | +0.75219224 | −0.63700578 | |
| $a$ | 2.6734396 | $\Omega$ | 131.60353 | | +0.65775504 | +0.71047521 | |
| $e$ | 0.2799729 | $i$ | 13.03182 | | +0.03956188 | +0.29907961 | |
| $P$ | 4.37 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 28 | 691 | 0.1− | 0.2− | 2003 09 17 | 704 | 0.2+ | 0.5+ | 2003 10 26 | 699 | 0.1+ | 0.2− |
| 1996 01 28 | 691 | 0.0 | 0.1− | 2003 09 17 | 704 | 0.2+ | 0.3+ | 2003 11 12 | 608 | 0.7− | 0.2+ |
| 1996 01 28 | 691 | 0.1− | 0.4− | 2003 09 17 | 704 | 0.8+ | 0.1+ | 2003 11 12 | 608 | 0.2− | 0.3+ |
| 2000 01 07 | 704 | 0.1+ | 0.1− | 2003 09 28 | 608 | 0.5+ | 1.1− | 2003 11 12 | 608 | 0.5− | 0.8− |
| 2000 01 07 | 704 | 0.1− | 0.3+ | 2003 09 28 | 608 | 0.7+ | 0.4− | 2003 11 26 | 704 | 0.1+ | 0.3+ |
| 2000 01 07 | 704 | 0.4+ | 0.4+ | 2003 09 28 | 608 | 0.3+ | 0.5− | 2003 11 26 | 704 | 0.1+ | 0.6− |
| 2000 01 07 | 704 | 0.4+ | 0.0 | 2003 10 17 | 704 | 0.1+ | 0.3+ | 2003 11 26 | 704 | 0.1− | 0.2+ |
| 2003 09 01 | 704 | 0.0 | 0.3− | 2003 10 17 | 704 | 0.6− | 0.4+ | 2003 11 26 | 704 | 0.3− | 0.1− |
| 2003 09 01 | 704 | 0.0 | 0.6− | 2003 10 17 | 704 | 1.7− | 0.3+ | 2003 11 26 | 704 | 0.4− | 0.5+ |
| 2003 09 01 | 704 | 0.2+ | 0.5+ | 2003 10 17 | 704 | 0.4− | 0.0 | 2005 03 17 | 703 | 0.8− | 0.6+ |
| 2003 09 01 | 704 | 0.1+ | 0.3− | 2003 10 26 | 699 | 0.1+ | 0.3− | 2005 03 17 | 703 | 0.7− | 1.9+ |
| 2003 09 17 | 704 | 0.0 | 0.4+ | 2003 10 26 | 699 | 0.1+ | 0.5+ | 2005 03 17 | 703 | 2.1+ | 1.0+ |
| 2003 09 17 | 704 | 0.1+ | 0.1− | 2003 10 26 | 699 | 0.8+ | 0.9+ | 2005 03 17 | 703 | 0.2+ | 0.9− |

**2003 RD$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.45045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24074206 | $\omega$ | 149.18316 | | +0.81913841 | +0.57322957 | |
| $a$ | 2.5591834 | $\Omega$ | 175.67062 | | −0.56588541 | +0.81345055 | |
| $e$ | 0.2152370 | $i$ | 15.75463 | | −0.09373351 | +0.09851933 | |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 06 | 644 | 0.1+ | 0.1+ | 2003 09 03 | 704 | 0.3− | 0.6+ | 2003 09 30 | 645 | 0.0 | 0.1− |
| 2002 05 06 | 644 | 0.1+ | 0.4+ | 2003 09 03 | 704 | 0.0 | 0.1+ | 2003 09 30 | 645 | 0.0 | 0.1− |
| 2002 05 06 | 644 | 0.1+ | 0.1+ | 2003 09 03 | 704 | (0.6− | 3.2+) | 2003 10 19 | 704 | 0.2− | 0.4+ |
| 2002 05 12 | 644 | 0.3+ | 0.2+ | 2003 09 28 | 699 | 0.3− | 0.2− | 2003 10 19 | 704 | 0.3+ | 0.4+ |
| 2002 05 12 | 644 | 0.1− | 0.1− | 2003 09 28 | 699 | 0.3− | 0.1− | 2003 10 19 | 704 | 0.9+ | 1.3+ |
| 2002 05 12 | 644 | 0.4− | 0.2+ | 2003 09 28 | 699 | 0.3− | 0.4+ | 2003 10 19 | 704 | 0.6+ | 0.4+ |
| 2003 09 03 | 704 | 1.4− | 0.3+ | 2003 09 28 | 699 | 0.3− | 0.0 | 2003 10 19 | 704 | 0.1+ | 0.7+ |

**2003 RE$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.12669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28300568 | $\omega$ | 289.93028 | | +0.99475154 | +0.01700593 | |
| $a$ | 2.2975904 | $\Omega$ | 69.20197 | | +0.02825500 | +0.90209364 | |
| $e$ | 0.2096577 | $i$ | 6.19599 | | −0.09834143 | +0.43120513 | |
| $P$ | 3.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.2+ | 0.1− | 2003 09 18 | 704 | 0.1− | 0.6+ | 2003 11 16 | 703 | 0.9+ | 0.0 |
| 2001 01 04 | 704 | 0.3− | 0.9+ | 2003 09 18 | 704 | 0.8− | 0.4− | 2003 11 16 | 703 | (2.6+ | 1.6−) |
| 2001 01 04 | 704 | 0.2− | 0.0 | 2003 09 18 | 704 | 0.2+ | 0.1− | 2003 11 16 | 703 | 1.7− | 1.6− |
| 2001 01 04 | 704 | 0.8− | 0.0 | 2003 09 18 | 704 | 0.4+ | 0.4− | 2003 11 22 | 704 | 0.1+ | 0.7+ |
| 2001 01 19 | 704 | 0.1− | 0.4− | 2003 09 25 | 608 | 0.5− | 0.4+ | 2003 11 22 | 704 | 0.6+ | 0.3+ |
| 2001 01 19 | 704 | 1.3+ | 0.7− | 2003 09 25 | 608 | 0.4− | 0.5+ | 2003 11 22 | 704 | 0.2+ | 1.2+ |
| 2001 01 19 | 704 | 0.0 | 0.5− | 2003 09 25 | 608 | 0.2− | 0.7+ | 2003 11 22 | 704 | 0.1+ | 0.1+ |
| 2001 01 19 | 704 | 0.1+ | 0.3+ | 2003 10 18 | 699 | 0.2− | 0.0 | 2003 11 22 | 704 | 1.1+ | 0.4+ |
| 2003 09 03 | 704 | 0.2+ | 0.8+ | 2003 10 18 | 699 | 0.3− | 0.0 | 2003 12 19 | 644 | 0.2− | 0.0 |
| 2003 09 03 | 704 | 0.4+ | 0.0 | 2003 10 18 | 699 | 1.2+ | 0.6− | 2003 12 19 | 644 | 0.0 | 0.4− |
| 2003 09 03 | 704 | 0.5+ | 0.4− | 2003 10 18 | 699 | 0.2+ | 0.1− | 2003 12 19 | 644 | 0.3− | 0.1+ |
| 2003 09 03 | 704 | 0.6+ | 0.5− | 2003 10 19 | 704 | 0.1+ | 0.1+ | 2005 03 11 | 703 | 0.5+ | 0.8+ |
| 2003 09 03 | 704 | 0.0 | 0.9− | 2003 10 19 | 704 | 0.1+ | 0.1+ | 2005 03 11 | 703 | 0.3− | 0.1− |
| 2003 09 08 | 608 | 0.1− | 0.3+ | 2003 10 19 | 704 | 0.4− | 0.0 | 2005 03 11 | 703 | 1.2− | 1.0− |
| 2003 09 08 | 608 | 0.6− | 0.5− | 2003 10 19 | 704 | 0.1− | 0.2− | 2005 03 11 | 703 | 1.5+ | 1.3+ |
| 2003 09 08 | 608 | 0.7− | 0.3− | 2003 10 19 | 704 | 0.3− | 0.3− | | | | |
| 2003 09 18 | 704 | 0.1− | 1.5+ | 2003 11 16 | 703 | 0.1− | 0.5− | | | | |

**2003 RF$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.63058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29688899 | $\omega$ | 94.51841 | | +0.57523519 | +0.81771479 | |
| $a$ | 2.2253927 | $\Omega$ | 210.62834 | | −0.76598496 | +0.52941624 | |
| $e$ | 0.1932115 | $i$ | 2.37840 | | −0.28700438 | +0.22596673 | |
| $P$ | 3.32 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 04 | 049 | 0.7− | 0.4− | 2003 09 20 | 608 | 0.2− | 0.7− | 2003 10 19 | 691 | 0.0 | 0.2+ |
| 2003 09 04 | 049 | 0.6− | 0.3+ | 2003 09 26 | 704 | 0.0 | 0.3+ | 2003 10 19 | 691 | 0.1+ | 0.0 |
| 2003 09 04 | 049 | 0.1− | 0.3+ | 2003 09 26 | 704 | 1.1− | 0.2− | 2005 01 17 | 691 | 0.3− | 0.1− |
| 2003 09 20 | 704 | 0.4− | 0.8+ | 2003 09 26 | 704 | 0.5+ | 0.3+ | 2005 01 17 | 691 | 0.5+ | 0.0 |
| 2003 09 20 | 704 | 0.2+ | 0.0 | 2003 09 26 | 704 | 0.2+ | 0.5+ | 2005 01 17 | 691 | 0.1+ | 0.1− |
| 2003 09 20 | 704 | 0.7+ | 0.0 | 2003 09 26 | 704 | 0.0 | 0.5+ | 2005 03 11 | G96 | 0.4− | 0.1+ |
| 2003 09 20 | 608 | 0.1− | 0.7− | 2003 09 30 | 691 | 0.0 | 0.2+ | 2005 03 11 | G96 | 1.0− | 0.0 |
| 2003 09 20 | 704 | 0.2− | 1.1− | 2003 09 30 | 691 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.2− | 0.0 |
| 2003 09 20 | 608 | 0.4+ | 2.0− | 2003 09 30 | 691 | 0.0 | 0.2+ | 2005 03 11 | G96 | 0.1+ | 0.0 |
| 2003 09 20 | 704 | 0.8+ | 1.4− | 2003 10 19 | 691 | 0.1− | 0.1+ | | | | |

**2003 SK$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.01017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27909878 | $\omega$ | 18.82289 | | +0.97863474 | +0.20394160 | |
| $a$ | 2.3189823 | $\Omega$ | 329.37246 | | −0.19460731 | +0.87779777 | |
| $e$ | 0.2330047 | $i$ | 2.93803 | | −0.06634785 | +0.43345001 | |
| $P$ | 3.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 16 | 566 | 0.1+ | 0.4− | 2003 09 20 | 704 | 0.6− | 0.3− | 2003 10 06 | 699 | 0.4+ | 0.1+ |
| 1996 10 16 | 566 | 0.1− | 0.3− | 2003 09 20 | 704 | 0.3+ | 0.4+ | 2003 10 06 | 699 | 0.8− | 0.1− |
| 1996 10 16 | 566 | 0.4+ | 0.3− | 2003 09 21 | 699 | 0.3+ | 0.4− | 2003 10 20 | 691 | 0.3− | 0.0 |
| 2003 08 30 | 691 | 0.0 | 0.0 | 2003 09 21 | 699 | 0.4+ | 0.4+ | 2003 10 20 | 691 | 0.3− | 0.1+ |
| 2003 08 30 | 691 | 0.1+ | 0.1− | 2003 09 21 | 699 | 0.0 | 0.5− | 2003 10 20 | 691 | 0.3− | 0.1+ |
| 2003 08 30 | 691 | 0.0 | 0.0 | 2003 09 21 | 699 | 0.0 | 0.7− | 2003 10 21 | 704 | 0.6+ | 0.7+ |
| 2003 09 04 | 704 | 0.3+ | 0.4− | 2003 09 21 | 644 | 0.2− | 0.0 | 2003 10 21 | 704 | 0.4+ | 0.1− |
| 2003 09 04 | 704 | 0.0 | 0.3+ | 2003 09 21 | 644 | 0.1− | 0.1+ | 2003 10 21 | 704 | 0.5+ | 0.5+ |
| 2003 09 04 | 704 | 0.3− | 0.3+ | 2003 09 21 | 644 | 0.1+ | 0.2− | 2003 10 21 | 704 | 0.4+ | 0.8+ |
| 2003 09 04 | 704 | 0.3+ | 0.0 | 2003 09 22 | 699 | 0.4+ | 0.2− | 2003 10 21 | 704 | 0.1+ | 0.4+ |
| 2003 09 04 | 704 | 0.6− | 0.1− | 2003 09 22 | 699 | 0.3+ | 0.3− | 2003 10 25 | 704 | 0.2+ | 0.0 |
| 2003 09 16 | 644 | 0.0 | 0.1− | 2003 09 22 | 699 | 0.3+ | 0.1− | 2003 10 25 | 704 | 0.1− | 0.1− |
| 2003 09 16 | 644 | 0.1− | 0.1+ | 2003 09 22 | 699 | 1.1+ | 0.2+ | 2003 10 25 | 704 | 0.1− | 0.1− |
| 2003 09 16 | 644 | 0.1− | 0.1− | 2003 09 25 | 608 | 0.1− | 0.8+ | 2003 10 25 | 704 | 0.0 | 0.2+ |
| 2003 09 17 | 691 | 0.0 | 0.1− | 2003 09 25 | 608 | 0.4− | 1.2+ | 2003 10 25 | 704 | 0.3− | 0.0 |
| 2003 09 17 | 691 | 0.2+ | 0.0 | 2003 09 25 | 608 | 0.4− | 1.2+ | 2003 10 30 | 704 | 1.0+ | 0.6+ |
| 2003 09 17 | 691 | 0.2+ | 0.0 | 2003 09 27 | 704 | 0.1+ | 1.5− | 2003 10 30 | 704 | 0.3+ | 1.0− |
| 2003 09 18 | 644 | 0.1+ | 0.1+ | 2003 09 27 | 704 | 0.8− | 1.3− | 2003 10 30 | 704 | 0.8− | 0.4− |
| 2003 09 18 | 644 | 0.1+ | 0.1+ | 2003 09 27 | 704 | 1.1− | 1.9− | 2003 11 20 | 704 | 0.1+ | 0.6− |
| 2003 09 18 | 644 | 0.1+ | 0.3+ | 2003 09 27 | 704 | (0.8− | 2.1−) | 2003 11 20 | 704 | 0.2− | 1.0+ |
| 2003 09 19 | 608 | 0.2− | 1.9+ | 2003 09 27 | 704 | (0.7+ | 3.1−) | 2003 11 20 | 704 | 0.1+ | 0.9− |
| 2003 09 19 | 608 | 0.1− | 0.7− | 2003 09 27 | 691 | 0.0 | 0.0 | 2003 11 20 | 704 | 0.2+ | 0.0 |
| 2003 09 19 | 608 | 0.4+ | 0.5− | 2003 09 27 | 691 | 0.2+ | 0.0 | 2005 03 08 | G96 | 0.4+ | 0.2+ |
| 2003 09 20 | 704 | 2.0− | 0.5+ | 2003 09 27 | 691 | 0.2+ | 0.0 | 2005 03 08 | G96 | 0.1− | 0.3+ |
| 2003 09 20 | 704 | 0.8− | 1.2+ | 2003 10 06 | 699 | 0.3− | 0.0 | 2005 03 08 | G96 | 0.1− | 0.0 |
| 2003 09 20 | 704 | 0.4+ | 0.0 | 2003 10 06 | 699 | 0.2+ | 0.2+ | 2005 03 08 | G96 | 0.1− | 0.2− |

**2003 SZ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.54923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27390713 | $\omega$ | 17.49338 | | +0.99481953 | −0.09971716 | |
| $a$ | 2.3481932 | $\Omega$ | 348.17704 | | +0.07786029 | +0.87240393 | |
| $e$ | 0.2776933 | $i$ | 5.53532 | | +0.06535961 | +0.47850587 | |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 807 | 1.0+ | 0.6+ | 2003 09 21 | 608 | 0.2+ | 0.6− | 2003 10 16 | 644 | 0.3− | 0.1− |
| 2002 04 09 | 807 | 0.2+ | 0.8+ | 2003 09 22 | 644 | 0.1+ | 0.3+ | 2003 10 16 | 644 | 0.2− | 0.0 |
| 2002 04 09 | 807 | 0.1+ | 0.7+ | 2003 09 22 | 644 | 0.1+ | 0.1+ | 2003 10 20 | 446 | 0.6− | 0.4+ |
| 2002 04 09 | 807 | 0.1+ | 0.9+ | 2003 09 22 | 644 | 0.4+ | 0.3+ | 2003 10 20 | 446 | (2.0+ | 0.5−) |
| 2003 08 25 | 704 | 0.1+ | 0.2− | 2003 09 26 | 012 | 0.5− | 1.4− | 2003 10 21 | 704 | 0.0 | 0.8+ |
| 2003 08 25 | 704 | 0.0 | 0.1+ | 2003 09 26 | 012 | 0.5− | 0.7− | 2003 10 21 | 704 | 0.4− | 0.3+ |
| 2003 08 25 | 704 | 0.6− | 0.8+ | 2003 09 27 | 704 | 0.1− | 0.1+ | 2003 10 21 | 704 | 0.1− | 0.3+ |
| 2003 08 25 | 704 | 0.9− | 0.9+ | 2003 09 27 | 704 | 0.3+ | 0.2+ | 2003 10 21 | 704 | 0.2− | 0.1+ |
| 2003 08 25 | 704 | 0.1− | 0.2− | 2003 09 27 | 704 | 0.0 | 0.1+ | 2003 10 21 | 704 | 0.1+ | 0.6+ |
| 2003 09 04 | 704 | 0.5− | 0.0 | 2003 09 27 | 704 | 0.1+ | 0.3+ | 2003 10 27 | 691 | 0.2+ | 0.1+ |
| 2003 09 04 | 704 | 0.1+ | 0.3+ | 2003 09 27 | 704 | 0.0 | 0.1+ | 2003 10 27 | 691 | 0.2+ | 0.1+ |
| 2003 09 04 | 704 | 0.4− | 0.1+ | 2003 09 27 | 106 | 0.1− | 0.0 | 2003 10 27 | 691 | 0.2+ | 0.2+ |
| 2003 09 04 | 704 | 0.7+ | 0.1− | 2003 09 27 | 106 | 0.6+ | 0.4− | 2003 10 29 | 699 | 0.5− | 0.4− |
| 2003 09 16 | 691 | 0.1+ | 0.3+ | 2003 09 27 | 106 | 0.5+ | 0.1+ | 2003 10 29 | 699 | 0.3− | 0.4+ |
| 2003 09 16 | 691 | 0.1+ | 0.1+ | 2003 09 27 | 106 | 0.0 | 0.3− | 2003 10 29 | 699 | 0.1+ | 0.6+ |
| 2003 09 16 | 691 | 0.2+ | 0.2+ | 2003 09 27 | 106 | 0.8+ | 0.0 | 2003 10 29 | 699 | 1.1− | 0.1− |
| 2003 09 17 | 644 | 0.2− | 0.3+ | 2003 09 27 | 106 | 0.1− | 0.2− | 2003 10 30 | 704 | 0.6− | 0.0 |
| 2003 09 17 | 644 | 0.0 | 0.3+ | 2003 09 30 | 106 | 0.1− | 0.2− | 2003 10 30 | 704 | 0.6− | 0.3+ |
| 2003 09 17 | 644 | 0.0 | 0.3+ | 2003 09 30 | 106 | 0.0 | 0.2− | 2003 10 30 | 704 | 0.6− | 0.1+ |
| 2003 09 19 | 699 | 1.0− | 0.6− | 2003 09 30 | 106 | 0.4+ | 0.5− | 2003 11 01 | 704 | 0.6+ | 0.7− |
| 2003 09 19 | 699 | 0.0 | 0.3+ | 2003 09 30 | 106 | 0.1− | 0.2− | 2003 11 01 | 704 | 0.1− | 0.6+ |
| 2003 09 19 | 699 | 0.0 | 0.2− | 2003 09 30 | 106 | 0.1+ | 0.1− | 2003 11 01 | 704 | 0.6+ | 0.1− |
| 2003 09 19 | 699 | 0.0 | 1.0− | 2003 09 30 | 106 | 0.2− | 0.5− | 2003 11 01 | 704 | 0.5+ | 0.8− |
| 2003 09 20 | 644 | 0.1+ | 0.2+ | 2003 10 02 | 185 | 0.2+ | 0.9− | 2003 11 01 | 704 | 0.4− | 0.4+ |
| 2003 09 20 | 644 | 0.1+ | 0.3+ | 2003 10 02 | 185 | 0.7− | 0.1− | 2003 11 27 | 703 | 0.3+ | 0.3− |
| 2003 09 20 | 644 | 0.5+ | 0.1+ | 2003 10 02 | 185 | 0.2− | 0.2− | 2003 11 27 | 703 | 0.0 | 1.0− |
| 2003 09 21 | 704 | 0.6+ | 0.2+ | 2003 10 03 | 691 | 0.4− | 0.1+ | 2003 11 27 | 703 | (2.0− | 0.1−) |
| 2003 09 21 | 704 | 0.9+ | 0.2− | 2003 10 03 | 691 | 0.2− | 0.0 | 2003 11 27 | 703 | (4.5− | 1.8−) |
| 2003 09 21 | 704 | 0.9+ | 0.4− | 2003 10 03 | 691 | 0.1− | 0.2+ | 2005 04 02 | G96 | 0.3+ | 0.8+ |
| 2003 09 21 | 704 | 0.1+ | 0.3+ | 2003 10 16 | 644 | 0.3− | 0.1− | 2005 04 02 | G96 | (2.4+ | 0.3+) |
| 2003 09 21 | 704 | 0.3+ | 0.4+ | 2003 10 16 | 644 | 0.5− | 0.1+ | 2005 04 02 | G96 | 0.2+ | 0.0 |
| 2003 09 21 | 608 | 0.2+ | 0.5− | 2003 10 16 | 644 | 0.3− | 0.0 | 2005 04 02 | G96 | 0.2+ | 0.7+ |
| 2003 09 21 | 608 | 0.2+ | 0.2− | 2003 10 16 | 644 | 0.3− | 0.0 | | | | |

**2003 SN$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.37529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27923162 | $\omega$ | 147.41011 | | +0.99750378 | +0.01217082 | |
| $a$ | 2.3182467 | $\Omega$ | 212.11317 | | −0.03206890 | +0.95567349 | |
| $e$ | 0.3236873 | $i$ | 7.51842 | | +0.06291098 | +0.29417690 | |
| $P$ | 3.53 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 566 | 0.2+ | 0.0 | 2003 09 18 | 448 | 0.5− | 0.5− | 2003 10 20 | 704 | 0.1+ | 0.4+ |
| 1996 10 11 | 566 | 0.1− | 0.3− | 2003 09 20 | 704 | 0.2− | 0.5− | 2003 10 20 | 704 | 0.4− | 0.3− |
| 1996 10 11 | 566 | 0.0 | 0.2− | 2003 09 20 | 704 | 0.0 | 0.5− | 2003 10 20 | 704 | 0.2− | 0.2+ |
| 2003 07 29 | 704 | 0.3+ | 0.4+ | 2003 09 20 | 704 | 0.3− | 0.5− | 2003 10 20 | 704 | 0.4+ | 0.0 |
| 2003 07 29 | 704 | 1.0+ | 0.3+ | 2003 09 20 | 704 | 0.0 | 0.5− | 2003 10 25 | 704 | 0.2+ | 0.0 |
| 2003 07 29 | 704 | 0.6+ | 0.2+ | 2003 09 20 | 704 | 0.0 | 0.4− | 2003 10 25 | 704 | 0.4− | 0.1+ |
| 2003 08 07 | 608 | 0.4+ | 0.8− | 2003 09 21 | 699 | 0.6− | 0.1+ | 2003 10 25 | 704 | 0.2− | 0.5+ |
| 2003 08 07 | 608 | 0.5− | 1.4− | 2003 09 21 | 699 | 0.0 | 0.8− | 2003 10 25 | 704 | 0.2− | 0.4+ |
| 2003 08 07 | 608 | 0.0 | 0.3− | 2003 09 21 | 699 | 0.2+ | 0.1− | 2003 10 25 | 704 | 0.1+ | 0.4+ |
| 2003 09 04 | 704 | 1.6+ | 1.1+ | 2003 09 21 | 699 | 0.2+ | 0.2− | 2003 10 26 | 703 | 0.6− | 0.6+ |
| 2003 09 04 | 704 | 1.3+ | 0.7+ | 2003 09 22 | 704 | 0.3− | 0.1+ | 2003 10 26 | 703 | 0.8− | 1.2+ |
| 2003 09 04 | 704 | (2.2+ | 0.4+) | 2003 09 22 | 704 | 1.0− | 0.4+ | 2003 10 26 | 703 | 0.4− | 1.4+ |
| 2003 09 04 | 704 | 1.8+ | 0.4+ | 2003 09 22 | 704 | 0.6− | 0.1+ | 2003 10 26 | 703 | 0.8− | 1.0+ |
| 2003 09 04 | 704 | 0.9+ | 1.0− | 2003 09 22 | 704 | 1.3− | 0.4+ | 2003 10 29 | 704 | 0.1− | 0.7+ |
| 2003 09 17 | 644 | 0.0 | 0.1+ | 2003 09 30 | 704 | 0.1− | 0.3− | 2003 10 29 | 704 | 0.1− | 0.1− |
| 2003 09 17 | 644 | 0.0 | 0.1+ | 2003 09 30 | 704 | 0.4− | 0.2− | 2003 10 29 | 704 | 0.0 | 1.4+ |
| 2003 09 17 | 644 | 0.0 | 0.1+ | 2003 09 30 | 704 | 0.0 | 0.2− | 2003 11 16 | 645 | 0.1+ | 0.1− |
| 2003 09 18 | 691 | 0.1− | 0.1− | 2003 09 30 | 704 | 0.2− | 0.2− | 2003 11 16 | 645 | 0.1+ | 0.1− |
| 2003 09 18 | G90 | 0.1− | 0.2− | 2003 09 30 | 704 | 0.2− | 0.1+ | 2003 11 20 | 645 | 0.1+ | 0.0 |
| 2003 09 18 | G90 | 0.1+ | 0.0 | 2003 10 03 | 691 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.0 |
| 2003 09 18 | G90 | 0.1+ | 0.1− | 2003 10 03 | 691 | 0.1+ | 0.0 | 2003 11 21 | 704 | 0.4− | 0.9+ |
| 2003 09 18 | 691 | 0.1+ | 0.1− | 2003 10 03 | 691 | 0.0 | 0.0 | 2003 11 21 | 704 | 0.9+ | 1.2+ |
| 2003 09 18 | 854 | 0.5− | 0.2− | 2003 10 15 | 644 | 0.2− | 0.2+ | 2003 11 21 | 704 | 0.3+ | 0.7+ |
| 2003 09 18 | 854 | 0.0 | 0.1+ | 2003 10 15 | 644 | 0.2− | 0.3+ | 2003 11 21 | 704 | 0.4− | 1.5+ |
| 2003 09 18 | 854 | 0.3− | 0.1+ | 2003 10 15 | 644 | 0.2− | 0.3+ | 2003 11 21 | 704 | 0.2+ | 0.6+ |
| 2003 09 18 | 691 | 0.0 | 0.2− | 2003 10 17 | 699 | 1.2+ | 0.2+ | 2006 05 25 | 691 | 0.2− | 0.3+ |
| 2003 09 18 | 448 | 0.5− | 0.0 | 2003 10 17 | 699 | 0.5− | 0.1+ | 2006 05 25 | 691 | 0.3+ | 0.4+ |
| 2003 09 18 | 448 | 0.1− | 0.3+ | 2003 10 17 | 699 | 0.6− | 0.2− | 2006 05 25 | 691 | 0.0 | 0.6+ |
| 2003 09 18 | 448 | 0.3− | 0.1− | 2003 10 17 | 699 | 1.0− | 0.2− | | | | |
| 2003 09 18 | 448 | 0.2− | 0.0 | 2003 10 20 | 704 | 0.0 | 0.0 | | | | |

**2003 SG$_6$ = 2005 EN$_{241}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.56103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27739746 | $\omega$ | 359.95248 | | +0.41506543 | −0.90288837 | |
| $a$ | 2.3284544 | $\Omega$ | 65.52372 | | +0.83475798 | +0.32904820 | |
| $e$ | 0.0982427 | $i$ | 7.05997 | | +0.36180078 | +0.27662225 | |
| $P$ | 3.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 608 | 0.0 | 0.8− | 2003 09 25 | 644 | 0.3+ | 0.1+ | 2005 03 11 | 699 | 1.5+ | 0.4+ |
| 2003 09 16 | 608 | 0.2− | 0.2− | 2005 03 02 | 703 | 0.4+ | 0.6− | 2005 03 11 | 699 | 0.6− | 0.1− |
| 2003 09 16 | 608 | 0.1+ | 1.0− | 2005 03 02 | 703 | 0.9− | 0.1− | 2005 03 11 | 699 | 0.0 | 0.2+ |
| 2003 09 17 | 704 | 0.1− | 1.2+ | 2005 03 02 | 703 | 0.1+ | 0.1− | 2005 03 11 | 699 | 0.1+ | 0.1+ |
| 2003 09 17 | 704 | 0.2− | 0.6+ | 2005 03 02 | 703 | 0.4− | 0.1− | 2005 03 16 | 703 | 1.6− | 0.3+ |
| 2003 09 17 | 704 | 0.2+ | 0.7+ | 2005 03 11 | 703 | 0.1+ | 0.9+ | 2005 03 16 | 703 | 0.2+ | 0.1− |
| 2003 09 17 | 704 | 0.5− | 0.5− | 2005 03 11 | 703 | 0.4+ | 0.1− | 2005 03 16 | 703 | 0.4− | 0.1− |
| 2003 09 25 | 644 | 0.3+ | 0.1− | 2005 03 11 | 703 | 1.4+ | 0.6+ | 2005 03 16 | 703 | 0.2− | 1.3− |
| 2003 09 25 | 644 | 0.2+ | 0.1+ | 2005 03 11 | 703 | 0.1− | 0.2+ | | | | |

**2003 SR$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.50647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23560572 | $\omega$ | 341.69747 | | −0.99106930 | −0.13248803 | |
| $a$ | 2.5962439 | $\Omega$ | 190.72290 | | +0.13023347 | −0.93732201 | |
| $e$ | 0.0796666 | $i$ | 4.66074 | | +0.02865109 | −0.32229548 | |
| $P$ | 4.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.4+ | 0.0 | 2003 09 16 | 291 | 0.1− | 0.4− | 2003 10 19 | 645 | 0.0 | 0.0 |
| 1993 03 24 | 809 | 0.7+ | 1.5− | 2003 09 18 | 691 | 0.5+ | 0.2− | 2003 10 22 | 645 | 0.0 | 0.0 |
| 1993 04 18 | 691 | 0.2− | 0.4− | 2003 09 18 | 691 | 0.5+ | 0.2− | 2003 10 22 | 645 | 0.2− | 0.0 |
| 1993 04 18 | 691 | 0.7− | 0.1− | 2003 09 18 | 691 | 0.3+ | 0.1− | 2003 10 23 | 645 | 0.1− | 0.0 |
| 1993 04 18 | 691 | 0.1+ | 0.4− | 2003 09 29 | 691 | 0.3+ | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.0 |
| 1997 04 07 | 691 | (4.7+ | 0.8−) | 2003 09 29 | 691 | 0.2+ | 0.2− | 2003 10 24 | 691 | 0.1− | 0.2− |
| 1997 04 07 | 691 | 0.4− | 0.6− | 2003 09 29 | 691 | 0.2+ | 0.0 | 2003 10 24 | 691 | 0.1− | 0.0 |
| 1997 04 07 | 691 | 0.1+ | 0.1− | 2003 10 18 | 645 | 0.0 | 0.0 | 2003 10 24 | 691 | 0.2+ | 0.1− |
| 2003 09 16 | 291 | 0.2+ | 0.4− | 2003 10 18 | 645 | 0.0 | 0.1− | | | | |
| 2003 09 16 | 291 | 0.1− | 0.2− | 2003 10 19 | 645 | 0.0 | 0.1+ | | | | |

### 2003 SY$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 231.94417 | | (2000.0) | | | |
| $n$ | 0.21349472 | $\omega$ | 238.61388 | | +0.99780821 | +0.06563047 |
| $a$ | 2.7725409 | $\Omega$ | 117.62186 | | −0.05701183 | +0.91746847 |
| $e$ | 0.0849708 | $i$ | 0.54647 | | −0.03359198 | +0.39235730 |
| $P$ | 4.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 691 | 0.0 | 0.3+ | 2003 09 19 | 246 | 0.4+ | 1.3+ | 2005 12 01 | 695 | 0.2− | 0.3+ |
| 2000 01 08 | 691 | 0.1+ | 0.1− | 2003 09 19 | 246 | 0.5− | 1.3+ | 2006 02 24 | 691 | 0.2+ | 0.1− |
| 2000 01 08 | 691 | 0.1− | 0.0 | 2003 09 19 | 246 | 0.9− | 0.6+ | 2006 02 24 | 691 | 0.0 | 0.1+ |
| 2001 02 21 | 691 | 0.4+ | 0.2+ | 2003 09 19 | 246 | 0.1+ | 1.0+ | 2006 02 24 | 691 | 0.3+ | 1.0+ |
| 2001 02 21 | 691 | 0.1+ | 0.1+ | 2003 09 20 | 246 | 1.5− | 0.2+ | 2006 03 06 | 691 | 0.0 | 0.3+ |
| 2001 02 21 | 691 | 0.3− | 0.4+ | 2003 09 20 | 246 | 0.5− | 0.4+ | 2006 03 06 | 691 | 0.4+ | 0.2+ |
| 2003 09 16 | 691 | 0.5− | 0.3+ | 2003 09 20 | 246 | 1.4− | 0.3+ | 2006 03 06 | 691 | 0.4+ | 0.2+ |
| 2003 09 16 | 691 | 0.8+ | 0.2− | 2003 09 20 | 246 | 0.4− | 0.2+ | 2006 03 24 | G96 | 0.4+ | 0.0 |
| 2003 09 16 | 691 | 0.1+ | 0.3+ | 2003 09 20 | 246 | 0.6− | 0.4+ | 2006 03 24 | G96 | 0.1− | 0.1+ |
| 2003 09 18 | 704 | 0.9− | 0.3+ | 2003 09 20 | 246 | 0.2− | 0.1+ | 2006 03 24 | G96 | 0.3− | 0.4+ |
| 2003 09 18 | 704 | 0.1+ | 0.4+ | 2003 09 22 | 699 | (0.0 | 3.2−) | 2006 03 24 | G96 | 0.3− | 0.2− |
| 2003 09 18 | 704 | 0.5+ | 0.1+ | 2003 09 22 | 699 | 2.1+ | 0.2− | 2006 04 08 | G96 | 0.1+ | 0.4+ |
| 2003 09 18 | 704 | 0.7− | 0.1+ | 2003 09 22 | 699 | 0.5+ | 0.0 | 2006 04 08 | G96 | 0.2− | 0.1+ |
| 2003 09 19 | 246 | 0.2− | 1.3+ | 2003 09 22 | 699 | 1.3− | 1.4+ | 2006 04 08 | G96 | 0.7− | 0.2+ |
| 2003 09 19 | 246 | 0.1+ | 1.5+ | 2005 12 01 | 695 | 0.1+ | 0.1+ | 2006 04 08 | G96 | 0.1− | 0.2+ |

### 2003 SB$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 180.83304 | | (2000.0) | | | |
| $n$ | 0.20186738 | $\omega$ | 239.05784 | | +0.65752593 | −0.75235939 |
| $a$ | 2.8780077 | $\Omega$ | 169.53640 | | +0.74446344 | +0.64056881 |
| $e$ | 0.1332690 | $i$ | 12.78432 | | +0.11590447 | +0.15371061 |
| $P$ | 4.88 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.0 | 0.4− | 2003 08 25 | 704 | 0.4+ | 0.7− | 2003 09 28 | 704 | 0.5− | 0.7+ |
| 1996 03 12 | 691 | 0.1− | 0.1− | 2003 08 25 | 704 | 0.3+ | 0.6+ | 2003 09 28 | 704 | 0.2− | 0.2+ |
| 1996 03 12 | 691 | 0.0 | 0.2− | 2003 09 02 | 704 | 0.4+ | 0.2+ | 2003 09 28 | 704 | 0.2− | 0.3− |
| 1998 09 27 | 691 | 0.1− | 0.3− | 2003 09 02 | 704 | 0.4+ | 0.1− | 2003 09 28 | 704 | 0.3− | 0.7+ |
| 1998 09 27 | 691 | 0.3+ | 0.0 | 2003 09 02 | 704 | 0.3+ | 0.1− | 2003 10 16 | 699 | 1.2+ | 1.4− |
| 1998 09 27 | 691 | 0.1− | 0.4− | 2003 09 02 | 704 | 0.3+ | 0.2+ | 2003 10 16 | 699 | 0.9+ | 1.4− |
| 2003 07 26 | 599 | 0.1− | 0.6+ | 2003 09 17 | 691 | 0.3− | 0.2+ | 2003 10 16 | 699 | 0.1+ | 0.9+ |
| 2003 07 26 | 599 | 0.8+ | 0.3+ | 2003 09 17 | 691 | 0.3− | 0.0 | 2003 10 16 | 699 | 0.5− | 0.8+ |
| 2003 07 26 | 599 | 0.3− | 0.4+ | 2003 09 17 | 691 | 0.3− | 0.0 | 2005 01 16 | 703 | 0.6+ | 0.1+ |
| 2003 07 26 | 599 | 1.1− | 0.2+ | 2003 09 18 | 704 | (1.8− | 0.9−) | 2005 01 16 | 703 | 0.3− | 0.2− |
| 2003 08 25 | 704 | 0.4− | 0.4+ | 2003 09 18 | 704 | 0.6+ | 1.4− | 2005 01 16 | 703 | 0.9− | 0.3+ |
| 2003 08 25 | 704 | 0.2+ | 0.7− | 2003 09 18 | 704 | 0.2− | 0.3− | 2005 01 16 | 703 | 0.4+ | 0.6− |
| 2003 08 25 | 704 | 0.8+ | 0.5+ | 2003 09 18 | 704 | 1.2+ | 0.4− | | | | |

### 2003 SP$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 234.15437 | | (2000.0) | | | |
| $n$ | 0.19607317 | $\omega$ | 138.99374 | | +0.91988580 | +0.38975164 |
| $a$ | 2.9344312 | $\Omega$ | 198.21084 | | −0.38630965 | +0.88128947 |
| $e$ | 0.1659354 | $i$ | 8.02565 | | −0.06763846 | +0.26724993 |
| $P$ | 5.03 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 03 | 644 | 0.3− | 0.4− | 2003 09 24 | 608 | 0.3+ | 0.9− | 2003 10 21 | 644 | 0.3− | 0.2+ |
| 2002 06 03 | 644 | 0.5+ | 0.3− | 2003 09 24 | 608 | 0.4+ | 0.4+ | 2003 10 21 | 644 | 0.1− | 0.4+ |
| 2002 06 03 | 644 | 0.3− | 0.1− | 2003 09 24 | 608 | 0.3− | 1.0− | 2003 10 21 | 644 | 0.0 | 0.4+ |
| 2003 09 16 | 699 | 0.9+ | 1.3+ | 2003 09 24 | 608 | 0.4− | 0.7+ | 2003 10 22 | 683 | 1.9− | 1.5+ |
| 2003 09 16 | 699 | 0.6+ | 1.3+ | 2003 09 24 | 608 | 0.1+ | 1.0− | 2003 10 22 | 683 | 0.6+ | 1.2+ |
| 2003 09 16 | 699 | 1.0− | 0.5+ | 2003 09 27 | 704 | 0.7− | 0.3− | 2003 10 22 | 683 | 0.3− | 0.3− |
| 2003 09 16 | 699 | 1.4− | 0.1+ | 2003 09 27 | 704 | 0.7+ | 0.2+ | 2003 10 24 | 691 | 0.2− | 0.0 |
| 2003 09 17 | 049 | 0.1− | 0.0 | 2003 09 27 | 704 | 0.4+ | 0.1− | 2003 10 24 | 704 | 0.3− | 0.1− |
| 2003 09 17 | 049 | 0.1+ | 0.3+ | 2003 09 27 | 291 | 0.1+ | 0.4− | 2003 10 24 | 691 | 0.3+ | 0.3+ |
| 2003 09 17 | 049 | 0.0 | 0.1− | 2003 09 27 | 704 | 0.3− | 0.8− | 2003 10 24 | 704 | 0.3− | 0.2+ |
| 2003 09 18 | 691 | 0.5+ | 0.2+ | 2003 09 27 | 291 | 0.2+ | 0.4− | 2003 10 24 | 704 | 0.6− | 0.6+ |
| 2003 09 18 | 691 | 0.0 | 0.1+ | 2003 09 27 | 291 | 0.2+ | 0.2− | 2003 10 24 | 691 | 0.1− | 0.1+ |
| 2003 09 18 | 691 | 0.0 | 0.0 | 2003 09 27 | 704 | 0.2− | 0.1− | 2003 10 24 | 704 | 0.1− | 0.7+ |
| 2003 09 21 | 644 | 0.0 | 0.0 | 2003 09 29 | 691 | 0.2+ | 0.1+ | 2003 10 24 | 704 | 0.3− | 0.1− |
| 2003 09 21 | 644 | 0.1− | 0.1+ | 2003 09 29 | 691 | 0.0 | 0.1+ | 2003 11 16 | 645 | 0.0 | 0.1− |
| 2003 09 21 | 644 | 0.1+ | 0.4+ | 2003 09 29 | 691 | 0.8+ | 0.3+ | 2003 11 16 | 645 | 0.0 | 0.1− |
| 2003 09 23 | 608 | 0.5− | 0.2+ | 2003 10 01 | 699 | 1.4− | 0.2+ | 2003 11 19 | 645 | 0.0 | 0.1− |
| 2003 09 23 | 608 | 0.4− | 0.3+ | 2003 10 01 | 699 | 0.2+ | 0.2+ | 2003 11 19 | 645 | 0.0 | 0.1− |
| 2003 09 23 | 608 | 0.6− | 0.2− | 2003 10 01 | 699 | 0.3− | 1.2− | 2006 04 25 | G96 | 0.1− | 0.5+ |
| 2003 09 24 | 049 | 0.5− | 0.4− | 2003 10 01 | 699 | 0.4+ | 0.3− | 2006 04 25 | G96 | 0.1+ | 0.0 |
| 2003 09 24 | 049 | 1.2− | 0.9− | 2003 10 15 | 644 | 0.1− | 0.4+ | 2006 04 25 | G96 | 0.1− | 0.3− |
| 2003 09 24 | 049 | 0.8− | 0.0 | 2003 10 15 | 644 | 0.1+ | 0.5+ | 2006 04 25 | G96 | 0.2+ | 0.1+ |
| 2003 09 24 | 608 | 0.2+ | 0.0 | 2003 10 15 | 644 | 0.6+ | 0.4+ | | | | |

### 2003 ST$_{22}$ = 2006 QE$_{44}$ = 2006 QM$_{64}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.58558 | | (2000.0) | | | |
| $n$ | 0.30612395 | $\omega$ | 59.21246 | | +0.92586947 | +0.37715325 |
| $a$ | 2.1804084 | $\Omega$ | 278.62173 | | −0.35407674 | +0.84495649 |
| $e$ | 0.1237799 | $i$ | 1.32305 | | −0.13189154 | +0.37921492 |
| $P$ | 3.22 | $H$ | 18.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.1− | 0.3− | 2005 04 09 | G96 | 0.3− | 0.5− | 2006 08 22 | 644 | 0.1− | 0.3− |
| 2003 09 16 | 691 | 0.0 | 0.2− | 2005 04 09 | G96 | 0.5+ | 0.3+ | 2006 08 22 | 644 | 0.7− | 0.0 |
| 2003 09 16 | 691 | 0.1− | 0.2+ | 2005 04 09 | G96 | 0.0 | 0.3+ | 2006 08 23 | A50 | 0.3+ | 0.8+ |
| 2003 09 19 | 291 | 0.2− | 0.2− | 2005 04 09 | G96 | 0.1− | 0.3+ | 2006 08 23 | A50 | 0.9+ | 1.2+ |
| 2003 09 19 | 291 | 0.2+ | 0.0 | 2006 06 20 | G96 | 0.0 | 0.4− | 2006 08 23 | A50 | 1.0+ | 0.5+ |
| 2003 09 19 | 291 | 0.2+ | 0.0 | 2006 06 20 | G96 | 0.3+ | 0.2− | 2006 08 23 | A50 | 1.1+ | 0.4+ |
| 2003 10 18 | 691 | 0.2− | 0.3− | 2006 06 20 | G96 | 0.0 | 0.4− | 2006 08 23 | A50 | (2.0+ | 0.1−) |
| 2003 10 18 | 691 | 0.3− | 0.2− | 2006 06 20 | G96 | 0.2+ | 0.6− | 2006 10 19 | G96 | 0.4− | 0.5− |
| 2003 10 18 | 691 | 0.6+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2003 11 02 | 291 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.7+ | 0.6− |
| 2003 11 02 | 291 | 0.2− | 0.3+ | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2003 11 02 | 291 | 0.0 | 0.2+ | 2006 08 22 | 644 | 0.5− | 0.4− | | | | |

### 2003 SY$_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.92717 | | (2000.0) | | | |
| $n$ | 0.26228133 | $\omega$ | 278.13803 | | +0.78330449 | +0.62008391 |
| $a$ | 2.4170806 | $\Omega$ | 43.55420 | | −0.54228837 | +0.71615947 |
| $e$ | 0.2441631 | $i$ | 3.65556 | | −0.30390360 | +0.32033039 |
| $P$ | 3.76 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 26 | 704 | 0.0 | 0.1− | 2003 09 22 | 608 | 0.8− | 1.4− | 2003 10 24 | 704 | 0.5+ | 0.0 |
| 2003 08 26 | 704 | 0.7+ | 0.1+ | 2003 09 22 | 608 | 0.1− | 0.3+ | 2003 10 27 | 699 | 1.2− | 0.6− |
| 2003 08 26 | 704 | 0.1+ | 0.6− | 2003 09 28 | 704 | 0.7− | 0.4+ | 2003 10 27 | 699 | 0.1− | 0.5+ |
| 2003 08 26 | 704 | 0.0 | 0.4− | 2003 09 28 | 704 | 0.1− | 0.0 | 2003 10 27 | 699 | 0.7− | 0.2+ |
| 2003 08 26 | 704 | 0.0 | 0.8− | 2003 09 28 | 704 | 0.3− | 0.2+ | 2003 10 27 | 699 | 0.2− | 0.8+ |
| 2003 09 02 | 704 | 0.4+ | 0.2+ | 2003 09 28 | 704 | 0.2+ | 1.0+ | 2006 03 24 | 691 | 0.0 | 0.2+ |
| 2003 09 02 | 704 | 0.2− | 0.0 | 2003 09 28 | 704 | 0.7− | 0.3+ | 2006 03 24 | 691 | 0.1− | 0.2+ |
| 2003 09 02 | 704 | 0.2+ | 0.1− | 2003 10 04 | 608 | 0.3− | 0.1+ | 2006 03 24 | 691 | 0.3+ | 0.3+ |
| 2003 09 02 | 704 | 1.3− | 0.9+ | 2003 10 04 | 608 | 0.4− | 0.2− | 2006 05 03 | 691 | 0.1− | 0.1+ |
| 2003 09 18 | 704 | 0.7+ | 1.1+ | 2003 10 04 | 608 | 0.6+ | 1.0− | 2006 05 03 | 691 | 0.5+ | 0.2− |
| 2003 09 18 | 704 | 1.3+ | 0.7+ | 2003 10 15 | 699 | 0.3+ | 0.9+ | 2006 05 03 | 691 | 0.1+ | 0.2+ |
| 2003 09 18 | 704 | 0.1+ | 1.6+ | 2003 10 15 | 699 | 1.2+ | 0.5− | 2006 06 19 | G96 | 0.1− | 0.9− |
| 2003 09 19 | 599 | 0.1− | 0.4− | 2003 10 15 | 699 | 1.1+ | 0.1+ | 2006 06 19 | G96 | 0.5− | 0.1+ |
| 2003 09 19 | 599 | 0.0 | 0.1− | 2003 10 15 | 699 | 0.2+ | 0.1− | 2006 06 19 | G96 | 1.0− | 0.5− |
| 2003 09 19 | 599 | 0.2− | 0.0 | 2003 10 24 | 704 | 0.4+ | 0.4− | 2006 06 19 | G96 | 0.8− | 0.5+ |
| 2003 09 19 | 599 | 0.2− | 0.2− | 2003 10 24 | 704 | 0.4− | 0.6+ | | | | |
| 2003 09 22 | 608 | 0.8− | 0.8− | 2003 10 24 | 704 | 0.1− | 0.4− | | | | |

**2003 SG$_{35}$ = 2003 SQ$_{271}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.17675 | | $\omega$ | 21.17390 | +0.78978706 | −0.61323423 |
| $n$ | 0.26612801 | | $\Omega$ | 16.67109 | +0.55582986 | +0.70625819 |
| $a$ | 2.3937327 | | $i$ | 2.68185 | +0.25940233 | +0.35375577 |
| $e$ | 0.1890634 | | | | | |
| $P$ | 3.70 | | $H$ | 18.2 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.2− | 0.1+ | 2003 09 26 | 645 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.1− | 0.0 |
| 2003 09 18 | 691 | 0.1− | 0.0 | 2003 09 26 | 645 | 0.1+ | 0.2− | 2005 03 10 | G96 | 0.3− | 0.3+ |
| 2003 09 18 | 691 | 0.2− | 0.4+ | 2003 10 19 | 645 | 0.1− | 0.1− | 2005 03 10 | G96 | 0.5− | 0.1− |
| 2003 09 19 | 599 | 0.4+ | 0.6+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2005 04 04 | G96 | 0.6+ | 0.6− |
| 2003 09 19 | 599 | 0.2− | 0.6+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2005 04 04 | G96 | 0.3− | 0.3− |
| 2003 09 19 | 599 | 0.9+ | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2005 04 04 | G96 | 0.4+ | 0.2− |
| 2003 09 26 | 704 | 0.2− | 1.6+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2005 04 04 | G96 | 0.1− | 0.0 |
| 2003 09 26 | 704 | 0.6− | 0.8+ | 2003 11 20 | 645 | 0.0 | 0.1+ | | | | |
| 2003 09 26 | 704 | 0.2+ | 1.0+ | 2005 03 10 | G96 | 0.2− | 0.0 | | | | |

**2003 SS$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 209.21307 | | $\omega$ | 148.20477 | +0.97443883 | +0.20820761 |
| $n$ | 0.17959346 | | $\Omega$ | 200.29608 | −0.22026449 | +0.95933490 |
| $a$ | 3.1113035 | | $i$ | 14.07759 | +0.04418725 | +0.19059415 |
| $e$ | 0.2050417 | | | | | |
| $P$ | 5.49 | | $H$ | 15.4 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 691 | 0.3+ | 0.3+ | 2003 09 22 | 699 | 0.3+ | 0.3+ | 2003 10 20 | 704 | 1.9− | 2.0− |
| 1996 04 17 | 691 | 0.2+ | 0.2− | 2003 09 22 | 699 | 0.1− | 0.6− | 2003 10 20 | 691 | 0.1+ | 0.1− |
| 1996 04 17 | 691 | 0.4− | 0.7+ | 2003 09 25 | 608 | 0.9− | 0.5− | 2003 10 20 | 704 | 0.2− | 0.4+ |
| 2002 06 13 | 644 | 0.0 | 0.4− | 2003 09 25 | 608 | 0.6− | 1.1− | 2003 10 20 | 704 | 1.2− | 0.7− |
| 2002 06 13 | 644 | 0.1+ | 0.7− | 2003 09 25 | 608 | 0.6− | 0.7− | 2003 10 20 | 704 | 0.3− | 0.4− |
| 2002 06 13 | 644 | 0.0 | 0.4− | 2003 09 27 | 704 | 0.1+ | 0.1+ | 2003 10 20 | 704 | 0.1− | 0.5− |
| 2003 09 04 | 704 | 0.1+ | 0.7+ | 2003 09 27 | 704 | 0.2+ | 0.5+ | 2003 10 20 | 704 | 0.3− | 0.7+ |
| 2003 09 04 | 704 | 1.3+ | 0.6+ | 2003 09 27 | 704 | 0.2+ | 0.1− | 2003 10 20 | 704 | 0.8+ | 0.6+ |
| 2003 09 04 | 704 | 1.2+ | 0.2+ | 2003 09 27 | 704 | 0.2+ | 0.7+ | 2003 10 21 | 644 | 0.2+ | 0.2+ |
| 2003 09 16 | 644 | 0.2+ | 0.1− | 2003 09 27 | 704 | 0.3− | 0.1+ | 2003 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 09 16 | 644 | 0.3+ | 0.1− | 2003 09 27 | 691 | 0.1− | 0.1− | 2003 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 09 16 | 644 | 0.4+ | 0.1+ | 2003 09 27 | 691 | 0.3+ | 0.0 | 2003 10 24 | 704 | 0.3− | 0.2− |
| 2003 09 20 | 704 | 1.0− | 0.3+ | 2003 09 27 | 691 | 0.0 | 0.1− | 2003 10 24 | 704 | 0.1+ | 0.1− |
| 2003 09 20 | 704 | 0.3− | 0.6+ | 2003 10 06 | 699 | 0.2− | 0.1+ | 2003 10 24 | 704 | 0.0 | 0.1− |
| 2003 09 20 | 704 | 0.5+ | 0.1+ | 2003 10 06 | 699 | 0.9+ | 0.2+ | 2003 10 24 | 704 | 0.2+ | 0.3+ |
| 2003 09 20 | 704 | 0.3− | 1.2+ | 2003 10 06 | 699 | 0.2+ | 0.2+ | 2003 10 24 | 704 | 0.8− | 0.2+ |
| 2003 09 21 | 644 | 0.1− | 0.1+ | 2003 10 06 | 699 | 0.8− | 0.9+ | 2003 11 21 | 704 | 0.2+ | 0.5+ |
| 2003 09 21 | 644 | 0.1− | 0.3+ | 2003 10 20 | 691 | 0.2+ | 0.2− | 2003 11 21 | 704 | 0.2− | 0.6+ |
| 2003 09 21 | 644 | 0.1+ | 0.2+ | 2003 10 20 | 704 | 0.5+ | 1.0+ | 2003 11 21 | 704 | 1.0− | 0.7− |
| 2003 09 22 | 699 | 0.1− | 0.5− | 2003 10 20 | 691 | 0.2+ | 0.1− | 2003 11 21 | 704 | 0.1+ | 0.2+ |
| 2003 09 22 | 699 | 0.6− | 0.6− | 2003 10 20 | 704 | 0.7+ | 0.9+ | | | | |

**2003 SC$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 219.95413 | | $\omega$ | 357.20960 | +0.82780253 | +0.54245468 |
| $n$ | 0.17473191 | | $\Omega$ | 328.56463 | −0.50926502 | +0.61954346 |
| $a$ | 3.1687495 | | $i$ | 15.92847 | −0.23535527 | +0.56737010 |
| $e$ | 0.2668852 | | | | | |
| $P$ | 5.64 | | $H$ | 14.4 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 26 | 910 | 0.0 | 0.3− | 2003 10 02 | 704 | 0.1+ | 0.2− | 2003 11 21 | 644 | 0.0 | 0.2+ |
| 1997 09 26 | 910 | 0.2+ | 0.2− | 2003 10 02 | 704 | 0.2− | 0.0 | 2003 11 21 | 644 | 0.1+ | 0.2− |
| 1997 09 26 | 910 | 0.7+ | 0.8− | 2003 10 05 | 704 | 0.5+ | 0.0 | 2003 11 21 | 644 | 0.1− | 0.1− |
| 2003 08 22 | 608 | 0.6− | 0.1+ | 2003 10 05 | 704 | 0.5− | 0.7+ | 2003 11 21 | 704 | 0.5+ | 0.1− |
| 2003 08 22 | 608 | 0.6− | 0.1+ | 2003 10 05 | 704 | 0.2− | 0.1− | 2003 11 21 | 704 | 0.6+ | 0.4+ |
| 2003 08 22 | 608 | 0.3− | 1.0+ | 2003 10 05 | 704 | 0.3+ | 0.6− | 2003 11 21 | 704 | 0.2+ | 0.4− |
| 2003 09 16 | 644 | 0.3− | 0.1− | 2003 10 05 | 704 | 0.2+ | 0.7− | 2003 12 19 | 704 | 0.9+ | 1.1+ |
| 2003 09 16 | 644 | 0.1− | 0.2+ | 2003 10 18 | 644 | 0.3− | 0.3− | 2003 12 19 | 704 | 0.1− | 0.4+ |
| 2003 09 16 | 644 | 0.2− | 0.0 | 2003 10 18 | 644 | 0.3− | 0.2− | 2003 12 19 | 704 | 0.3− | 0.8+ |
| 2003 09 16 | 644 | 0.1− | 0.1+ | 2003 10 18 | 644 | 0.1− | 0.3− | 2003 12 19 | 704 | 0.3− | 0.9− |
| 2003 09 16 | 644 | 0.0 | 0.0 | 2003 10 22 | 704 | 0.1− | 0.5+ | 2003 12 19 | 704 | 1.0+ | 1.1+ |
| 2003 09 16 | 644 | 0.0 | 0.0 | 2003 10 22 | 704 | 0.2− | 0.1+ | 2003 12 29 | 704 | 0.1− | 0.5− |
| 2003 09 19 | 644 | 0.1+ | 0.0 | 2003 10 22 | 704 | 0.3− | 0.1+ | 2003 12 29 | 704 | 0.3− | 0.1− |
| 2003 09 19 | 644 | 0.2− | 0.1− | 2003 10 22 | 704 | 0.3− | 0.0 | 2003 12 29 | 704 | 0.1+ | 0.2− |
| 2003 09 19 | 644 | 0.1− | 0.0 | 2003 10 22 | 704 | 0.1− | 0.1− | 2003 12 29 | 704 | 0.2+ | 0.8− |
| 2003 09 29 | 699 | 0.8+ | 0.4− | 2003 11 02 | 704 | 0.2+ | 0.3− | 2006 01 27 | G96 | 0.5− | 0.2− |
| 2003 09 29 | 699 | 0.1+ | 0.3− | 2003 11 02 | 704 | 0.9+ | 0.5− | 2006 01 27 | G96 | 0.2+ | 0.1− |
| 2003 09 29 | 699 | 0.0 | 0.1− | 2003 11 02 | 704 | 0.6+ | 0.3+ | 2006 01 27 | G96 | 0.0 | 0.1+ |
| 2003 09 29 | 699 | 0.6− | 0.8+ | 2003 11 02 | 704 | 0.3− | 0.3+ | 2006 01 27 | G96 | 0.3− | 0.4− |
| 2003 10 02 | 704 | 0.2− | 0.0 | 2003 11 02 | 704 | 0.0 | 0.4+ | | | | |

**2003 SF$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 280.15938 | | $\omega$ | 311.04850 | +0.91130162 | −0.40447671 |
| $n$ | 0.26860127 | | $\Omega$ | 72.93766 | +0.39779088 | +0.81663931 |
| $a$ | 2.3790159 | | $i$ | 4.61949 | +0.10626271 | +0.41170236 |
| $e$ | 0.1867407 | | | | | |
| $P$ | 3.67 | | $H$ | 16.2 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 20 | 327 | 0.0 | 0.4+ | 2003 09 30 | 691 | 0.5− | 0.2+ | 2003 10 19 | 704 | 0.6− | 0.0 |
| 1996 11 20 | 327 | 0.6− | 0.2− | 2003 09 30 | 691 | 0.5− | 0.1+ | 2003 10 24 | 608 | 0.8− | 1.0− |
| 1996 11 20 | 327 | 0.6+ | 0.4− | 2003 09 30 | 691 | 0.3− | 0.2+ | 2003 10 24 | 608 | 0.4− | 1.4− |
| 2003 09 02 | 704 | 1.7+ | 0.2− | 2003 10 05 | 608 | 0.4+ | 0.2− | 2003 10 24 | 608 | 0.5− | 0.8− |
| 2003 09 02 | 704 | 0.2− | 0.6+ | 2003 10 05 | 608 | 0.4+ | 0.7− | 2003 10 27 | 704 | 0.6+ | 0.0 |
| 2003 09 02 | 704 | 0.1+ | 0.1− | 2003 10 05 | 608 | 0.8+ | 0.3− | 2003 10 27 | 704 | 0.7− | 0.9+ |
| 2003 09 17 | 599 | 0.1− | 0.1+ | 2003 10 06 | 699 | 0.5+ | 0.3− | 2003 10 27 | 704 | 0.0 | 1.9+ |
| 2003 09 17 | 599 | 0.0 | 0.0 | 2003 10 06 | 699 | 0.2− | 0.1+ | 2003 10 27 | 704 | 0.3− | 1.3+ |
| 2003 09 18 | 599 | 0.0 | 0.1+ | 2003 10 06 | 699 | 0.5+ | 0.8− | 2003 10 27 | 704 | 1.0− | 1.2+ |
| 2003 09 18 | 599 | 0.1+ | 0.0 | 2003 10 06 | 699 | 0.6+ | 0.3+ | 2003 10 29 | 608 | 1.0+ | 0.0 |
| 2003 09 18 | 704 | 0.8+ | 0.4+ | 2003 10 14 | 644 | 0.0 | 0.3+ | 2003 10 29 | 608 | 0.1− | 0.7− |
| 2003 09 18 | 704 | 0.4+ | 0.7+ | 2003 10 14 | 644 | 0.0 | 0.2+ | 2003 10 29 | 608 | 0.0 | 1.0− |
| 2003 09 18 | 704 | 0.6+ | 0.0 | 2003 10 14 | 644 | 0.4+ | 0.5+ | 2003 11 16 | 703 | 0.8+ | 0.6− |
| 2003 09 18 | 704 | 1.1+ | 0.6− | 2003 10 16 | 699 | 0.3+ | 0.5+ | 2003 11 16 | 703 | 1.4− | 0.4+ |
| 2003 09 18 | 704 | 1.7+ | 1.2− | 2003 10 16 | 699 | 0.1− | 0.1− | 2003 11 16 | 703 | 1.0− | 1.0− |
| 2003 09 18 | 644 | 0.2− | 0.1− | 2003 10 16 | 699 | 0.1+ | 0.4− | 2003 11 16 | 703 | 1.6− | 0.8− |
| 2003 09 18 | 644 | 0.1− | 0.0 | 2003 10 16 | 699 | 0.1+ | 0.2+ | 2003 11 21 | 699 | 0.9+ | 0.4+ |
| 2003 09 18 | 644 | 0.1− | 0.0 | 2003 10 18 | 699 | 0.2+ | 0.3− | 2003 11 21 | 699 | 0.9+ | 0.1− |
| 2003 09 19 | 644 | 0.3− | 0.0 | 2003 10 18 | 699 | 0.1− | 0.1+ | 2003 11 21 | 699 | 1.0+ | 0.3− |
| 2003 09 19 | 644 | 0.2− | 0.0 | 2003 10 18 | 699 | 0.1+ | 0.2+ | 2003 11 21 | 699 | 0.2+ | 1.7+ |
| 2003 09 19 | 644 | 0.0 | 0.1+ | 2003 10 18 | 699 | 0.3+ | 0.1− | 2005 03 16 | 703 | 0.6− | 0.4− |
| 2003 09 22 | 699 | 0.5+ | 0.6− | 2003 10 19 | 704 | 0.4− | 0.3+ | 2005 03 16 | 703 | 0.4+ | 0.1− |
| 2003 09 22 | 699 | 0.0 | 0.3− | 2003 10 19 | 704 | 0.7+ | 0.3− | 2005 03 16 | 703 | 1.1+ | 0.4− |
| 2003 09 22 | 699 | 0.2− | 0.1− | 2003 10 19 | 704 | 0.2− | 0.3+ | 2005 03 16 | 703 | 1.7− | 0.9− |
| 2003 09 22 | 699 | 0.7+ | 1.0− | 2003 10 19 | 704 | 1.1− | 0.0 | | | | |

**2003 SM$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 116.72631 | | $\omega$ | 126.98588 | −0.95030421 | −0.29788389 |
| $n$ | 0.24269457 | | $\Omega$ | 35.93678 | +0.21334913 | −0.83479125 |
| $a$ | 2.5454389 | | $i$ | 8.86880 | +0.22672462 | −0.46302133 |
| $e$ | 0.1133291 | | | | | |
| $P$ | 4.06 | | $H$ | 15.6 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 699 | 1.5+ | 0.5− | 2001 02 16 | 704 | 0.2− | 1.0+ | 2004 12 21 | 703 | 0.7− | 0.5+ |
| 2000 12 29 | 699 | 1.1+ | 0.3+ | 2003 09 18 | 644 | 0.3+ | 0.0 | 2004 12 21 | 703 | 0.0 | 0.1− |
| 2000 12 29 | 699 | 0.1− | 0.0 | 2003 09 18 | 644 | 0.2+ | 0.3+ | 2005 01 07 | 703 | 0.3− | 1.0− |
| 2000 12 29 | 699 | 0.5+ | 0.9− | 2003 09 18 | 644 | 0.0 | 0.1− | 2005 01 07 | 703 | 0.4− | 0.2− |
| 2001 01 18 | 704 | 0.4− | 0.6+ | 2003 09 19 | 644 | 0.0 | 0.0 | 2005 01 07 | 703 | 0.0 | 0.6− |
| 2001 01 18 | 704 | 0.4− | 0.2− | 2003 09 19 | 644 | 0.2+ | 0.2+ | 2005 01 07 | 703 | 0.2− | 0.8− |
| 2001 01 18 | 704 | 0.6− | 1.2− | 2003 09 19 | 644 | 0.3+ | 0.1+ | 2005 01 17 | 704 | 0.7+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.6− | 0.0 | 2003 09 28 | 704 | 0.2+ | 0.5− | 2005 01 17 | 704 | 0.0 | 0.0 |
| 2001 01 18 | 704 | 0.2− | 0.6+ | 2003 09 28 | 704 | 0.0 | 0.5+ | 2005 01 17 | 704 | 0.3+ | 0.4− |
| 2001 02 16 | 699 | 0.1+ | 0.6− | 2003 09 28 | 704 | 0.1+ | 0.8− | 2005 01 31 | 704 | 0.4− | 0.2− |
| 2001 02 16 | 699 | 0.0 | 0.6+ | 2003 09 28 | 704 | 0.6+ | 0.1+ | 2005 01 31 | 704 | 0.4+ | 0.5+ |
| 2001 02 16 | 699 | 0.6− | 0.4+ | 2003 10 02 | 691 | 0.3− | 0.1+ | 2005 01 31 | 704 | 0.4− | 0.0 |
| 2001 02 16 | 699 | 0.9− | 0.0 | 2003 10 02 | 691 | 0.3− | 0.1+ | 2005 03 13 | 699 | 0.6− | 2.0+ |
| 2001 02 16 | 704 | 0.5+ | 1.0+ | 2003 10 02 | 691 | 0.1− | 0.1+ | 2005 03 13 | 699 | 1.0+ | 1.2+ |
| 2001 02 16 | 704 | 0.1+ | 0.3− | 2004 12 21 | 703 | 0.5− | 0.2+ | 2005 03 13 | 699 | 0.4+ | 0.6+ |
| 2001 02 16 | 704 | 0.5+ | 0.6− | 2004 12 21 | 703 | 0.2− | 0.2+ | 2005 03 13 | 699 | 0.6+ | 1.3− |

**2003 SK$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.32070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17512221 | $\omega$ | 120.75245 | | +0.95326242 | +0.27460330 | |
| $a$ | 3.1640395 | $\Omega$ | 223.66232 | | −0.29931926 | +0.91517438 | |
| $e$ | 0.0817846 | $i$ | 10.51808 | | +0.04121575 | +0.29504046 | |
| $P$ | 5.63 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.1+ | 0.1− | 2003 09 20 | 608 | 1.0+ | 0.1− | 2003 10 11 | 599 | 0.2− | 0.2− |
| 1998 11 14 | 691 | 0.0 | 0.0 | 2003 09 20 | 704 | 0.5− | 0.5+ | 2003 10 11 | 599 | 0.1− | 0.0 |
| 1998 11 14 | 691 | 0.1− | 0.2− | 2003 09 20 | 608 | 0.7+ | 1.0− | 2003 10 11 | 599 | 0.0 | 0.3− |
| 2003 08 25 | 644 | 0.0 | 0.1+ | 2003 09 21 | 644 | 0.4− | 0.2− | 2003 10 17 | 699 | 0.6− | 0.7− |
| 2003 08 25 | 644 | 0.0 | 0.2− | 2003 09 21 | 644 | 0.7− | 0.4− | 2003 10 17 | 699 | 0.3− | 0.4− |
| 2003 08 25 | 644 | 0.0 | 0.3− | 2003 09 21 | 644 | 0.4− | 0.2− | 2003 10 17 | 699 | 0.1+ | 0.2− |
| 2003 09 04 | 704 | 0.1− | 0.2− | 2003 09 22 | 704 | 0.2+ | 0.9+ | 2003 10 17 | 699 | 2.2− | 0.3+ |
| 2003 09 04 | 704 | 0.4− | 0.1− | 2003 09 22 | 704 | 0.1− | 1.3− | 2003 10 20 | 704 | 0.1− | 0.9+ |
| 2003 09 04 | 704 | 0.4+ | 0.5+ | 2003 09 22 | 704 | 0.9+ | 1.0+ | 2003 10 20 | 704 | 0.9+ | 0.8+ |
| 2003 09 04 | 704 | 0.3+ | 0.4+ | 2003 09 22 | 704 | 2.1+ | 1.8− | 2003 10 20 | 704 | 1.2+ | 0.3+ |
| 2003 09 04 | 704 | 0.0 | 0.1+ | 2003 09 22 | 704 | 0.8− | 0.0 | 2003 11 20 | 704 | 0.4− | 0.2− |
| 2003 09 16 | 699 | 0.7− | 0.6− | 2003 09 30 | 699 | 0.0 | 0.3+ | 2003 11 20 | 704 | 0.8− | 0.2− |
| 2003 09 16 | 699 | 0.5− | 0.1+ | 2003 09 30 | 699 | 0.3− | 0.4− | 2003 11 20 | 704 | 0.7− | 0.7+ |
| 2003 09 16 | 699 | 0.6− | 0.7+ | 2003 09 30 | 699 | 0.1+ | 0.3− | 2003 11 20 | 704 | 0.8+ | 0.2+ |
| 2003 09 16 | 699 | 0.3+ | 0.4− | 2003 09 30 | 699 | 0.3+ | 1.3+ | 2006 02 22 | 703 | 0.3− | 0.9+ |
| 2003 09 20 | 704 | 0.0 | 0.0 | 2003 09 30 | 704 | 0.2− | 1.6+ | 2006 02 22 | 703 | 0.6− | 0.3+ |
| 2003 09 20 | 704 | 0.3− | 0.1+ | 2003 09 30 | 704 | 0.8+ | 0.2+ | 2006 02 22 | 703 | 1.0+ | 0.6+ |
| 2003 09 20 | 704 | 0.3− | 0.3− | 2003 09 30 | 704 | 0.8+ | 0.3− | 2006 02 22 | 703 | 0.3+ | 0.3− |
| 2003 09 20 | 608 | 0.9+ | 0.2− | 2003 09 30 | 704 | 0.2− | 0.7+ | | | | |
| 2003 09 20 | 704 | 0.5− | 0.0 | 2003 09 30 | 704 | 0.4− | 0.5+ | | | | |

**2003 ST$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.73257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25372166 | $\omega$ | 142.34424 | | +0.99536725 | +0.00426541 | |
| $a$ | 2.4711419 | $\Omega$ | 217.75524 | | −0.03104154 | +0.95977232 | |
| $e$ | 0.1938075 | $i$ | 9.02540 | | +0.09099708 | +0.28074705 | |
| $P$ | 3.88 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 04 | 704 | 0.8+ | 0.4+ | 2003 09 30 | 691 | 0.0 | 0.2− | 2006 05 03 | G96 | 0.8+ | 0.4− |
| 2003 09 04 | 704 | 0.6+ | 1.2+ | 2003 09 30 | 691 | 0.1− | 0.0 | 2006 05 03 | G96 | 0.1− | 0.1− |
| 2003 09 04 | 704 | 0.8+ | 0.7+ | 2003 10 17 | 645 | 0.0 | 0.1− | 2006 05 03 | G96 | 0.2− | 0.0 |
| 2003 09 17 | 699 | 0.1+ | 1.0+ | 2003 10 17 | 645 | 0.0 | 0.0 | 2006 05 03 | G96 | 0.3− | 0.3− |
| 2003 09 17 | 699 | 0.2+ | 1.5+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 03 | G96 | 0.8− | 0.2− |
| 2003 09 17 | 699 | (0.9+ | 2.1+) | 2003 10 23 | 645 | 0.1− | 0.1− | 2006 05 03 | G96 | 0.2− | 0.0 |
| 2003 09 17 | 699 | 1.2+ | 0.1− | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 05 03 | G96 | 0.4+ | 0.7− |
| 2003 09 19 | 704 | 0.2+ | 0.4− | 2003 10 24 | 645 | 0.1+ | 0.0 | 2006 05 22 | G96 | 0.6− | 0.6+ |
| 2003 09 19 | 704 | 0.1− | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 22 | G96 | 0.1− | 0.2+ |
| 2003 09 19 | 704 | 1.6− | 0.8+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 22 | G96 | 0.1− | 0.5− |
| 2003 09 30 | 691 | 0.0 | 0.0 | 2006 05 03 | G96 | 0.3+ | 0.4− | 2006 05 22 | G96 | 0.5+ | 0.4− |

**2003 SA$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.22606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21729502 | $\omega$ | 313.97620 | | +0.86177396 | +0.50361904 | |
| $a$ | 2.7401197 | $\Omega$ | 16.09581 | | −0.37931013 | +0.71946075 | |
| $e$ | 0.1825718 | $i$ | 12.69735 | | −0.33685231 | +0.47827199 | |
| $P$ | 4.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 291 | 0.0 | 0.0 | 2003 09 17 | 699 | 1.5− | 0.2+ | 2003 09 28 | 704 | 0.3− | 0.3− |
| 2002 03 13 | 291 | 0.3+ | 0.4+ | 2003 09 17 | 704 | 2.0− | 0.7− | 2003 09 28 | 704 | 0.0 | 0.2− |
| 2002 03 13 | 291 | 0.1− | 0.0 | 2003 09 17 | 704 | 0.4− | 1.3+ | 2003 09 28 | 704 | 0.2− | 0.0 |
| 2003 08 22 | 608 | 0.7+ | 0.1+ | 2003 09 17 | 704 | 1.0+ | 1.3+ | 2003 09 28 | 704 | 0.1− | 0.2− |
| 2003 08 22 | 608 | 0.5+ | 0.7− | 2003 09 17 | 704 | 1.4+ | 0.4+ | 2003 09 28 | 704 | 0.0 | 0.1− |
| 2003 08 22 | 608 | 0.5+ | 1.1− | 2003 09 18 | 699 | 0.2− | 0.1+ | 2003 10 22 | 291 | 0.4− | 0.1+ |
| 2003 09 04 | 608 | 0.2+ | 0.0 | 2003 09 18 | 699 | 0.1+ | 0.5− | 2003 10 22 | 291 | 0.4− | 0.1+ |
| 2003 09 04 | 608 | 0.2+ | 0.4− | 2003 09 18 | 699 | 0.9+ | 0.2+ | 2003 10 22 | 291 | 0.2− | 0.1− |
| 2003 09 04 | 608 | 0.8+ | 0.0 | 2003 09 18 | 699 | 0.6− | 0.1− | 2006 05 05 | G96 | 0.7+ | 0.3+ |
| 2003 09 17 | 699 | 0.0 | 0.1+ | 2003 09 24 | 644 | 0.1+ | 0.4+ | 2006 05 05 | G96 | 0.0 | 0.3+ |
| 2003 09 17 | 699 | 0.2− | 0.1+ | 2003 09 24 | 644 | 0.2+ | 0.5+ | 2006 05 05 | G96 | 0.0 | 0.2+ |
| 2003 09 17 | 699 | 1.2+ | 0.4+ | 2003 09 24 | 644 | 0.1+ | 0.4+ | 2006 05 05 | G96 | 0.1− | 0.1+ |

**2003 SF$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.76858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21240725 | $\omega$ | 62.69835 | | +0.90773124 | +0.41573933 | |
| $a$ | 2.7819960 | $\Omega$ | 272.68965 | | −0.40213541 | +0.82378854 | |
| $e$ | 0.0747333 | $i$ | 3.23872 | | −0.11962901 | +0.38540012 | |
| $P$ | 4.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.2− | 0.0 | 2003 09 19 | 704 | 1.4− | 0.1− | 2003 10 22 | 691 | 0.1− | 0.2+ |
| 1996 01 13 | 691 | 0.3+ | 0.3− | 2003 09 19 | 704 | 0.1− | 0.6− | 2003 10 22 | 691 | 0.0 | 0.0 |
| 1996 01 13 | 691 | 0.2− | 0.1− | 2003 09 19 | 704 | 0.1− | 0.0 | 2003 10 22 | 691 | 0.2+ | 0.4+ |
| 1999 12 14 | 691 | 0.4− | 0.5+ | 2003 09 22 | 699 | 0.6− | 0.8+ | 2003 10 23 | 645 | 0.0 | 0.1− |
| 1999 12 14 | 691 | 0.3+ | 0.1− | 2003 09 22 | 699 | 0.8+ | 0.2− | 2003 10 23 | 645 | 0.1− | 0.2− |
| 1999 12 14 | 691 | 0.0 | 0.4+ | 2003 09 22 | 699 | 0.4+ | 0.1+ | 2003 11 16 | 645 | 0.1+ | 0.1− |
| 2003 09 18 | 691 | 0.1+ | 0.0 | 2003 09 22 | 699 | 0.3+ | 1.0+ | 2003 11 16 | 645 | 0.0 | 0.1− |
| 2003 09 18 | 691 | 0.1− | 0.3+ | 2003 09 30 | 691 | 0.2+ | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.1− |
| 2003 09 18 | 691 | 0.1+ | 0.1+ | 2003 09 30 | 691 | 0.0 | 0.3+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 19 | 704 | 0.1+ | 1.1+ | 2003 09 30 | 691 | 0.1+ | 0.2+ | | | | |

**2003 SD$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.76901 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23212369 | $\omega$ | 122.57294 | | +0.39063026 | +0.92046734 | |
| $a$ | 2.6221432 | $\Omega$ | 170.39750 | | −0.86714035 | +0.37236921 | |
| $e$ | 0.0476326 | $i$ | 4.18066 | | −0.30899128 | +0.11866360 | |
| $P$ | 4.25 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 691 | 0.1+ | 0.5− | 2003 10 24 | 704 | 0.2+ | 1.4+ | 2006 05 06 | 691 | 0.0 | 0.2+ |
| 2003 09 19 | 691 | 0.1+ | 1.0− | 2006 04 20 | 691 | 0.3+ | 0.2+ | 2006 05 06 | 691 | 0.2− | 0.1− |
| 2003 09 19 | 691 | 0.3+ | 0.8− | 2006 04 20 | 691 | 0.4+ | 0.0 | 2006 05 30 | G96 | 0.2− | 0.6− |
| 2003 09 20 | 291 | 0.3− | 0.6+ | 2006 04 20 | 691 | 0.1+ | 0.3+ | 2006 05 30 | G96 | 0.0 | 0.4− |
| 2003 09 20 | 291 | 0.0 | 0.8+ | 2006 04 24 | 691 | 0.3− | 0.0 | 2006 05 30 | G96 | 0.8− | 0.6− |
| 2003 09 20 | 291 | 0.2− | 1.0+ | 2006 04 24 | 691 | 0.1− | 0.2− | 2006 05 30 | G96 | 0.0 | 0.3− |
| 2003 10 24 | 704 | 0.2− | 1.0− | 2006 04 24 | 691 | 0.3− | 0.1+ | | | | |
| 2003 10 24 | 704 | 0.4− | 0.3− | 2006 05 06 | 691 | 0.4+ | 0.3+ | | | | |

**2003 SE$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.58966 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26055446 | $\omega$ | 156.85484 | | +0.75298099 | +0.65799916 | |
| $a$ | 2.4277485 | $\Omega$ | 161.99128 | | −0.60748753 | +0.69948702 | |
| $e$ | 0.1990113 | $i$ | 1.39615 | | −0.25293978 | +0.27884585 | |
| $P$ | 3.78 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 691 | 0.2− | 0.5− | 2003 09 24 | 608 | 1.1− | 0.6− | 2003 10 23 | 645 | 0.1+ | 0.0 |
| 1999 10 11 | 691 | 0.3+ | 0.6− | 2003 09 26 | 704 | 0.8− | 0.6+ | 2003 10 23 | 645 | 0.1+ | 0.0 |
| 1999 10 11 | 691 | 0.3+ | 0.2− | 2003 09 26 | 704 | 1.0− | 0.6+ | 2003 10 24 | 691 | 0.2− | 0.1+ |
| 2003 09 18 | 691 | 0.1+ | 0.2+ | 2003 09 26 | 704 | 0.3− | 0.4+ | 2003 10 24 | 691 | 0.1− | 0.1+ |
| 2003 09 18 | 691 | 0.1+ | 0.1+ | 2003 09 26 | 704 | 0.5− | 0.3+ | 2003 10 24 | 691 | 0.1+ | 0.1+ |
| 2003 09 18 | 691 | 0.1+ | 0.1+ | 2003 09 29 | 704 | 0.2+ | 0.9+ | 2003 11 19 | 645 | 0.0 | 0.0 |
| 2003 09 19 | 599 | 0.2− | 0.1+ | 2003 09 29 | 704 | 0.8− | 1.1+ | 2003 11 19 | 645 | 0.0 | 0.0 |
| 2003 09 19 | 599 | 0.2+ | 0.2− | 2003 09 29 | 704 | 0.0 | 0.5+ | 2006 04 09 | 691 | 0.6+ | 0.3+ |
| 2003 09 19 | 599 | 0.0 | 0.1+ | 2003 09 29 | 704 | 0.4+ | 0.2+ | 2006 04 09 | 691 | 0.6− | 0.3+ |
| 2003 09 19 | 599 | 0.3+ | 0.1+ | 2003 10 01 | 699 | (1.6− | 2.1+) | 2006 04 09 | 691 | 0.4+ | 0.3+ |
| 2003 09 22 | 683 | 0.6− | 0.7− | 2003 10 01 | 699 | (0.6− | 2.5+) | 2006 04 26 | 807 | 0.2+ | 0.1− |
| 2003 09 22 | 683 | 1.1+ | 1.0+ | 2003 10 01 | 699 | (2.7+ | 0.0 ) | 2006 04 26 | 807 | 0.7+ | 1.6− |
| 2003 09 22 | 683 | 1.3− | 0.4− | 2003 10 01 | 699 | 1.0+ | 1.6+ | 2006 05 06 | 691 | 0.3+ | 0.5+ |
| 2003 09 24 | 608 | 0.2− | 0.8− | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 05 06 | 691 | 0.4− | 0.2+ |
| 2003 09 24 | 608 | 1.0− | 1.0− | 2003 10 18 | 645 | 0.1− | 0.0 | 2006 05 06 | 691 | 0.1− | 0.1+ |

**2003 SC$_{85}$ = 2006 TA$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.19324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35719881 | $\omega$ | 176.64635 | | +0.79879245 | −0.56013328 | |
| $a$ | 1.9672643 | $\Omega$ | 220.12348 | | +0.54373470 | +0.82832284 | |
| $e$ | 0.0874543 | $i$ | 19.91412 | | +0.25745525 | −0.01148797 | |
| $P$ | 2.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.7− | 0.6− | 2006 11 17 | 704 | 0.1− | 0.7+ |
| 2003 09 16 | 644 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | (0.5+ | 1.8+) |
| 2003 09 16 | 644 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.6− | 0.3− |
| 2003 09 20 | 644 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.8+ |
| 2003 09 20 | 644 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 1.0+ | 0.6− |
| 2003 09 20 | 644 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2003 09 22 | 704 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.7− | 2006 11 17 | 703 | 0.8+ | 0.4− |
| 2003 09 22 | 704 | 0.7+ | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2003 09 22 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.2− | 1.0− |
| 2003 09 22 | 704 | 0.2− | 0.8+ | 2006 11 11 | 703 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.6+ |
| 2003 09 22 | 704 | 0.7− | 0.5− | 2006 11 14 | 704 | (0.4− | 2.1+) | 2006 11 20 | 704 | 0.0 | 1.1+ |
| 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 704 | (0.7+ | 1.5+) | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 14 | 704 | (1.7+ | 1.3−) | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2006 10 12 | 644 | 0.4+ | 0.1+ | 2006 11 14 | 704 | (1.4+ | 2.0+) | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 1.0+ | 1.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | (0.9+ | 2.5+) | 2006 11 23 | G96 | 0.2+ | 0.1+ |

**2003 SG$_{85}$ = 2006 UY$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.25620 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.34969694 | $\omega$ | 227.08633 | | +0.06434837 | −0.97226947 | |
| $a$ | 1.9952998 | $\Omega$ | 220.89718 | | +0.98606978 | +0.09657791 | |
| $e$ | 0.0906173 | $i$ | 20.08519 | | +0.15338082 | −0.21299011 | |
| $P$ | 2.82 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 26 | 644 | 0.1+ | 0.1− | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.1+ |
| 2003 07 26 | 644 | 0.0 | 0.1− | 2005 05 14 | G96 | 0.3− | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.1− |
| 2003 07 26 | 644 | 0.1− | 0.0 | 2005 05 14 | G96 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2003 09 16 | 644 | 0.3+ | 0.2+ | 2005 05 14 | G96 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.7− |
| 2003 09 16 | 644 | 0.1− | 0.3+ | 2005 05 14 | G96 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.2− | 0.6− |
| 2003 09 16 | 644 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.7− | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2003 09 20 | 644 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2003 09 20 | 644 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.7+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 09 20 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.8− | 0.9− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2005 05 01 | 644 | 0.4+ | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.3− | | | | |
| 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.2+ | | | | |

**2003 SQ$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.93296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22898703 | $\omega$ | 264.79604 | | −0.16980153 | −0.98417620 | |
| $a$ | 2.6460343 | $\Omega$ | 195.26503 | | +0.96310973 | −0.15484134 | |
| $e$ | 0.2648931 | $i$ | 11.08986 | | +0.20877522 | −0.08614732 | |
| $P$ | 4.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 644 | 0.4+ | 0.5+ | 2003 10 20 | 691 | 0.1− | 0.1+ | 2005 03 13 | 691 | 0.3+ | 0.2+ |
| 2003 09 18 | 644 | 0.6+ | 0.2+ | 2003 11 16 | 645 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.1− | 0.1− |
| 2003 09 18 | 644 | 0.4+ | 0.1− | 2003 11 16 | 645 | 0.0 | 0.1− | 2005 04 09 | G96 | 0.1+ | 0.3+ |
| 2003 09 21 | 691 | 0.0 | 0.2+ | 2003 11 19 | 645 | 0.0 | 0.0 | 2005 04 09 | G96 | 0.3− | 0.2+ |
| 2003 09 21 | 691 | 0.1+ | 0.1+ | 2003 11 19 | 645 | 0.0 | 0.0 | 2005 04 09 | G96 | 0.2− | 0.3+ |
| 2003 09 21 | 691 | 0.2− | 0.1+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2005 04 09 | G96 | 1.2− | 0.2− |
| 2003 10 20 | 691 | 0.2+ | 0.1+ | 2003 11 20 | 645 | 0.0 | 0.0 | | | | |
| 2003 10 20 | 691 | 0.1+ | 0.0 | 2005 03 13 | 691 | 0.3+ | 0.4+ | | | | |

**2003 SG$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.34848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28809298 | $\omega$ | 38.33915 | | +0.81828529 | +0.56946684 | |
| $a$ | 2.2704621 | $\Omega$ | 286.77268 | | −0.54548237 | +0.72640373 | |
| $e$ | 0.1981642 | $i$ | 4.68539 | | −0.18126821 | +0.38476634 | |
| $P$ | 3.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 21 | 691 | 0.2− | 0.0 | 2003 09 22 | 699 | 0.0 | 0.1+ | 2003 10 26 | 691 | 0.2+ | 0.3+ |
| 2000 12 21 | 691 | 0.0 | 0.0 | 2003 09 25 | 608 | 0.5− | 0.8− | 2003 10 26 | 691 | 0.2− | 0.2+ |
| 2000 12 21 | 691 | 0.2+ | 0.3− | 2003 09 25 | 608 | 0.6− | 1.0− | 2003 10 26 | 691 | 0.1+ | 0.4+ |
| 2003 08 24 | 704 | 1.5+ | 0.8+ | 2003 09 25 | 608 | 0.3− | 1.3− | 2003 10 26 | 608 | 0.6+ | 0.5+ |
| 2003 08 24 | 704 | 0.1+ | 0.4+ | 2003 09 30 | 704 | 0.1− | 0.1+ | 2003 10 26 | 608 | 0.4+ | 0.9− |
| 2003 08 24 | 704 | 0.2− | 0.7+ | 2003 09 30 | 704 | 0.3− | 0.0 | 2003 10 26 | 608 | 1.0+ | 0.4− |
| 2003 09 19 | 644 | 0.4+ | 0.2− | 2003 09 30 | 704 | 0.2− | 0.1+ | 2003 11 21 | 695 | 0.2− | 0.3+ |
| 2003 09 19 | 644 | 0.2+ | 0.2− | 2003 09 30 | 704 | 0.2+ | 0.5+ | 2003 11 21 | 695 | 0.2− | 0.3+ |
| 2003 09 19 | 644 | 0.4+ | 0.5− | 2003 09 30 | 704 | 0.0 | 0.7+ | 2003 11 28 | 699 | 0.4− | 0.2− |
| 2003 09 19 | 608 | 0.1+ | 0.6− | 2003 10 01 | 691 | 0.1− | 0.1− | 2003 11 28 | 699 | 0.8+ | 0.4− |
| 2003 09 19 | 608 | 0.2+ | 1.1− | 2003 10 01 | 691 | 0.0 | 0.0 | 2003 11 28 | 699 | 1.1− | 0.9− |
| 2003 09 19 | 608 | 0.2+ | 0.8− | 2003 10 01 | 691 | 0.3− | 0.1− | 2003 11 28 | 699 | 0.3− | 0.3+ |
| 2003 09 21 | 704 | 0.3+ | 0.6+ | 2003 10 17 | 699 | 0.1+ | 0.7− | 2003 11 30 | 704 | 0.1− | 0.4+ |
| 2003 09 21 | 704 | 0.9− | 0.1+ | 2003 10 17 | 699 | 0.2− | 0.3− | 2003 11 30 | 704 | 0.6− | 0.5+ |
| 2003 09 21 | 704 | 0.0 | 0.1− | 2003 10 17 | 699 | 0.2− | 0.1+ | 2003 11 30 | 704 | 1.1+ | 0.7+ |
| 2003 09 21 | 704 | 0.5− | 0.0 | 2003 10 17 | 699 | 0.1+ | 0.2+ | 2005 03 13 | G96 | 0.2+ | 0.2+ |
| 2003 09 22 | 699 | 0.6− | 0.6+ | 2003 10 21 | 704 | 0.4+ | 0.3+ | 2005 03 13 | G96 | 0.1+ | 0.2+ |
| 2003 09 22 | 699 | 0.1− | 0.4− | 2003 10 21 | 704 | 0.0 | 0.7+ | 2005 03 13 | G96 | 0.1+ | 0.2+ |
| 2003 09 22 | 699 | 0.1− | 0.4− | 2003 10 21 | 704 | 0.7+ | 1.0+ | 2005 03 13 | G96 | 0.1+ | 0.5+ |

**2003 SF$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 292.02173 | | | (2000.0) | | |
| $n$ | 0.26564046 | $\omega$ | 154.17034 | | +0.99630443 | −0.08475692 |
| $a$ | 2.3966607 | $\Omega$ | 210.70153 | | +0.07332257 | +0.92366430 |
| $e$ | 0.1953241 | $i$ | 1.56221 | | +0.04473567 | +0.37371181 |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 704 | 0.2+ | 0.2− | 2003 09 30 | 704 | 0.1− | 0.1+ | 2003 10 21 | 644 | 0.5+ | 0.1− |
| 2003 09 20 | 704 | 0.6+ | 0.1+ | 2003 09 30 | 704 | 0.7− | 0.0 | 2003 10 21 | 644 | 0.4+ | 0.2− |
| 2003 09 20 | 704 | 0.3+ | 0.0 | 2003 09 30 | 704 | 0.5− | 0.0 | 2003 10 23 | 704 | 0.4+ | 0.1− |
| 2003 09 20 | 704 | 0.1+ | 0.0 | 2003 09 30 | 704 | 0.1− | 0.8− | 2003 10 23 | 704 | 0.2+ | 0.1+ |
| 2003 09 20 | 704 | 0.0 | 0.1− | 2003 09 30 | 704 | 0.1+ | 0.6− | 2003 10 23 | 704 | 0.6+ | 0.2− |
| 2003 09 21 | 691 | 0.4− | 0.1+ | 2003 10 01 | 699 | 0.7+ | 1.6− | 2003 10 23 | 704 | 0.3+ | 0.1− |
| 2003 09 21 | 691 | 0.3− | 0.1− | 2003 10 01 | 699 | 0.6− | 0.2− | 2003 10 23 | 704 | 0.3+ | 0.1− |
| 2003 09 21 | 644 | 0.5− | 0.0 | 2003 10 01 | 699 | 0.5− | 0.7− | 2003 10 28 | 704 | 0.6− | 1.1+ |
| 2003 09 21 | 691 | 0.4− | 0.1+ | 2003 10 01 | 699 | 0.6− | 0.0 | 2003 10 28 | 704 | 0.4− | 0.6+ |
| 2003 09 21 | 644 | 0.3− | 0.1+ | 2003 10 15 | 644 | 0.0 | 0.0 | 2003 10 28 | 704 | 0.1+ | 0.6+ |
| 2003 09 21 | 644 | 0.4− | 0.1+ | 2003 10 15 | 644 | 0.4+ | 0.2− | 2003 10 28 | 704 | 0.1− | 0.8+ |
| 2003 09 22 | 699 | 0.4+ | 0.2+ | 2003 10 15 | 644 | 0.2+ | 0.2− | 2003 10 28 | 704 | 0.4− | 0.3+ |
| 2003 09 22 | 699 | 1.0− | 0.0 | 2003 10 15 | 106 | 0.3+ | 0.9− | 2003 11 19 | 701 | 0.2− | 0.7+ |
| 2003 09 22 | 699 | 0.8+ | 1.8+ | 2003 10 15 | 106 | 0.4+ | 0.3− | 2003 11 19 | 701 | 0.2− | 0.1− |
| 2003 09 22 | 699 | 1.0+ | 0.3− | 2003 10 15 | 106 | 0.3+ | 0.4− | 2003 11 19 | 701 | 0.1− | 0.3+ |
| 2003 09 25 | 608 | 1.6+ | 1.6− | 2003 10 18 | 608 | 0.4− | 1.0+ | 2005 03 11 | G96 | 0.2+ | 0.1+ |
| 2003 09 25 | 608 | 0.4+ | 0.6− | 2003 10 18 | 608 | 0.1+ | 1.3+ | 2005 03 11 | G96 | 0.1− | 0.4+ |
| 2003 09 25 | 608 | 0.7+ | 1.0− | 2003 10 18 | 608 | 0.3− | 1.0+ | 2005 03 11 | G96 | 0.3+ | 0.3+ |
| 2003 09 26 | 704 | 0.4− | 0.7+ | 2003 10 19 | 704 | 0.8− | 0.6+ | 2005 03 11 | G96 | 0.1− | 0.0 |
| 2003 09 26 | 704 | 0.2− | 0.7− | 2003 10 19 | 704 | 1.0− | 0.5− | 2006 05 19 | G96 | 0.1+ | 0.1+ |
| 2003 09 26 | 704 | 0.0 | 0.8+ | 2003 10 19 | 704 | 0.7+ | 0.1+ | 2006 05 19 | G96 | 0.3− | 0.2+ |
| 2003 09 26 | 704 | 0.2− | 0.1+ | 2003 10 19 | 704 | 0.1− | 0.2+ | 2006 05 19 | G96 | 0.2− | 0.0 |
| 2003 09 26 | 704 | (1.6+ | 2.1−) | 2003 10 20 | 704 | 0.1− | 0.1− | 2006 05 19 | G96 | 0.3− | 0.2+ |
| 2003 09 29 | 704 | 0.5+ | 0.2+ | 2003 10 20 | 704 | 0.0 | 0.2− | 2006 06 20 | 691 | 0.0 | 0.1− |
| 2003 09 29 | 704 | 0.3+ | 0.1+ | 2003 10 20 | 704 | 0.6− | 0.3− | 2006 06 20 | 691 | 0.1+ | 0.3+ |
| 2003 09 29 | 704 | 0.5+ | 0.3− | 2003 10 20 | 704 | 0.4− | 0.1− | 2006 06 20 | 691 | 0.1+ | 0.1+ |
| 2003 09 29 | 704 | 0.6+ | 0.5+ | 2003 10 20 | 704 | 0.1+ | 0.0 | | | | |
| 2003 09 29 | 704 | 0.4+ | 0.3+ | 2003 10 21 | 644 | 0.4+ | 0.0 | | | | |

**2003 ST$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.69914 | | | (2000.0) | | |
| $n$ | 0.27313681 | $\omega$ | 214.22074 | | +0.32029223 | −0.94512587 |
| $a$ | 2.3526062 | $\Omega$ | 217.21565 | | +0.89123580 | +0.32368352 |
| $e$ | 0.0935292 | $i$ | 6.11429 | | +0.32111000 | +0.04434037 |
| $P$ | 3.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 29 | 608 | 0.0 | 0.2+ | 2003 09 27 | 704 | 0.1− | 0.6+ | 2003 10 24 | 704 | 0.3− | 0.1− |
| 2001 01 29 | 608 | 0.2− | 0.1+ | 2003 10 17 | 699 | 0.1+ | 0.1− | 2003 10 24 | 704 | 0.6− | 0.1+ |
| 2001 01 29 | 608 | 0.3+ | 0.2− | 2003 10 17 | 699 | 0.3− | 0.2− | 2003 11 19 | 644 | 0.3− | 0.1− |
| 2003 09 20 | 644 | 0.2− | 0.4+ | 2003 10 17 | 699 | 0.3− | 0.9− | 2003 11 19 | 644 | 0.4− | 0.3− |
| 2003 09 20 | 644 | 0.0 | 0.3+ | 2003 10 17 | 699 | 0.1− | 0.6+ | 2003 11 19 | 644 | 0.6− | 0.6− |
| 2003 09 20 | 644 | 0.0 | 0.0 | 2003 10 21 | 699 | 0.4− | 0.4− | 2003 11 19 | 644 | 0.3− | 0.9− |
| 2003 09 21 | 644 | 0.3− | 0.2+ | 2003 10 21 | 699 | 0.4− | 0.8+ | 2003 11 19 | 644 | 0.2− | 0.0 |
| 2003 09 21 | 704 | 0.2− | 0.4− | 2003 10 21 | 699 | 1.0− | 0.7+ | 2003 11 19 | 644 | 0.6− | 0.3− |
| 2003 09 21 | 704 | 1.2+ | 0.5+ | 2003 10 21 | 704 | 0.7+ | 0.1− | 2003 11 21 | 704 | 0.3− | 0.7+ |
| 2003 09 21 | 704 | 1.7+ | 0.3+ | 2003 10 21 | 699 | 0.6+ | 0.9− | 2003 11 21 | 704 | 0.7+ | 0.9+ |
| 2003 09 21 | 644 | 0.5− | 0.0 | 2003 10 21 | 704 | 0.6− | 0.2− | 2003 11 21 | 704 | 1.0+ | 0.4− |
| 2003 09 21 | 644 | 0.2− | 0.5+ | 2003 10 21 | 704 | 0.3+ | 0.1− | 2003 11 21 | 704 | 0.6+ | 0.0 |
| 2003 09 27 | 704 | 1.1+ | 1.4− | 2003 10 21 | 704 | 0.8− | 0.2− | 2005 03 13 | 703 | 0.7+ | 0.7+ |
| 2003 09 27 | 704 | 0.3− | 0.4− | 2003 10 24 | 704 | 0.6− | 0.2− | 2005 03 13 | 703 | 1.6− | 0.1− |
| 2003 09 27 | 704 | 1.1+ | 0.8+ | 2003 10 24 | 704 | 0.1+ | 0.4+ | 2005 03 13 | 703 | 1.5+ | 0.8− |
| 2003 09 27 | 704 | 1.1+ | 1.1+ | 2003 10 24 | 704 | 0.1− | 0.1− | 2005 03 13 | 703 | 0.3− | 0.9+ |

**2003 SS$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 234.76077 | | | (2000.0) | | |
| $n$ | 0.21850770 | $\omega$ | 230.86278 | | +0.93314661 | −0.33310775 |
| $a$ | 2.7299722 | $\Omega$ | 147.92502 | | +0.35416620 | +0.91634653 |
| $e$ | 0.2794639 | $i$ | 14.74890 | | −0.06167422 | +0.22214470 |
| $P$ | 4.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.3− | 0.1− | 2003 09 22 | 608 | 1.2+ | 0.7+ | 2003 10 26 | 699 | 0.0 | 0.0 |
| 1996 02 15 | 691 | 0.1+ | 0.2− | 2003 09 22 | 608 | 1.1+ | 0.5+ | 2003 10 26 | 699 | 0.6− | 1.5− |
| 1996 02 15 | 691 | 0.2+ | 0.2− | 2003 09 22 | 608 | 1.4+ | 0.1+ | 2003 11 26 | 704 | 0.1− | 1.0+ |
| 2003 09 01 | 704 | 0.7− | 0.1− | 2003 10 01 | 699 | 0.1+ | 0.1+ | 2003 11 26 | 704 | 0.1+ | 0.4+ |
| 2003 09 01 | 704 | 0.6− | 0.3+ | 2003 10 01 | 699 | 0.4+ | 0.6− | 2003 11 26 | 704 | 0.6+ | 0.2+ |
| 2003 09 01 | 704 | 0.1+ | 0.1+ | 2003 10 01 | 699 | 0.5+ | 0.1+ | 2003 11 26 | 704 | 0.6+ | 0.1+ |
| 2003 09 01 | 704 | 1.2+ | 0.2+ | 2003 10 01 | 699 | 0.2− | 0.3− | 2003 11 26 | 704 | 0.5+ | 0.7− |
| 2003 09 17 | 704 | 0.6+ | 0.1− | 2003 10 18 | 704 | 0.2− | 0.8+ | 2005 03 16 | G96 | 0.3+ | 0.3+ |
| 2003 09 17 | 704 | 1.9− | 1.8− | 2003 10 18 | 704 | 1.3− | 0.4+ | 2005 03 16 | G96 | 0.0 | 0.2+ |
| 2003 09 17 | 704 | 0.1− | 0.4− | 2003 10 18 | 704 | 0.8− | 0.1+ | 2005 03 16 | G96 | 0.0 | 0.8+ |
| 2003 09 17 | 704 | 0.0 | 0.1− | 2003 10 26 | 699 | 0.9− | 0.6+ | 2005 03 16 | G96 | 0.1− | 0.0 |
| 2003 09 17 | 704 | 0.2− | 0.3+ | 2003 10 26 | 699 | 0.4− | 0.5− | | | | |

**2003 SX$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.27837 | | | (2000.0) | | |
| $n$ | 0.29264404 | $\omega$ | 350.80374 | | +0.49897079 | +0.86583817 |
| $a$ | 2.2468613 | $\Omega$ | 309.11897 | | −0.79206351 | +0.43841406 |
| $e$ | 0.1404400 | $i$ | 2.71687 | | −0.35165829 | +0.24107545 |
| $P$ | 3.37 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | 0.1− | 0.1+ | 2003 09 22 | 699 | 0.2+ | 0.4+ | 2004 12 19 | G96 | 0.3+ | 0.6− |
| 1995 01 31 | 691 | 0.2+ | 0.0 | 2003 09 22 | 699 | 1.1+ | 0.6+ | 2004 12 19 | G96 | 0.4− | 0.1+ |
| 1995 01 31 | 691 | 0.4− | 0.7− | 2003 10 18 | 645 | 0.0 | 0.1− | 2004 12 19 | G96 | 0.4− | 0.2− |
| 2003 09 19 | 704 | 1.3+ | 0.5− | 2003 10 18 | 645 | 0.1− | 0.0 | 2004 12 19 | G96 | 0.3− | 0.8− |
| 2003 09 19 | 704 | 0.2+ | 0.5− | 2003 10 19 | 645 | 0.1− | 0.0 | 2005 01 16 | 691 | 0.2+ | 0.4+ |
| 2003 09 19 | 704 | 0.4+ | 0.3+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2005 01 16 | 691 | 0.2+ | 0.0 |
| 2003 09 19 | 704 | 0.4− | 1.1− | 2003 10 24 | 645 | 0.1+ | 0.1− | 2005 01 16 | 691 | 0.0 | 0.4+ |
| 2003 09 21 | 106 | 0.1+ | 1.0+ | 2003 10 24 | 645 | 0.1+ | 0.1− | 2005 03 08 | G96 | 0.4− | 0.1− |
| 2003 09 21 | 106 | 0.1− | 1.1+ | 2003 11 19 | 645 | 0.0 | 0.0 | 2005 03 08 | G96 | 0.1− | 0.3+ |
| 2003 09 21 | 106 | 0.5− | 0.3− | 2003 11 19 | 645 | 0.1− | 0.1+ | 2005 03 08 | G96 | 0.2− | 0.0 |
| 2003 09 22 | 699 | 0.7+ | 0.2+ | 2003 11 20 | 645 | 0.1+ | 0.0 | 2005 03 08 | G96 | 0.1− | 0.4+ |
| 2003 09 22 | 699 | 0.1+ | 0.1+ | 2003 11 20 | 645 | 0.0 | 0.0 | | | | |

**2003 SL$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 229.43120 | | | (2000.0) | | |
| $n$ | 0.21206815 | $\omega$ | 234.93737 | | +0.97486833 | −0.12762809 |
| $a$ | 2.7849608 | $\Omega$ | 131.64404 | | +0.16958820 | +0.95665608 |
| $e$ | 0.2084007 | $i$ | 14.14346 | | −0.14447000 | +0.26176368 |
| $P$ | 4.65 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 17 | 691 | 0.0 | 0.1+ | 2003 09 16 | 704 | 0.3− | 0.2+ | 2003 10 17 | 704 | 0.6+ | 0.4− |
| 1996 02 17 | 691 | 0.2− | 0.4− | 2003 09 16 | 704 | 0.4− | 0.1− | 2003 10 17 | 704 | 0.1+ | 0.3− |
| 1996 02 17 | 691 | 0.1− | 0.4− | 2003 09 16 | 704 | 0.1+ | 0.5+ | 2003 10 17 | 704 | 0.8− | 0.4+ |
| 1998 07 18 | 910 | 0.3+ | 0.9+ | 2003 09 16 | 704 | 0.2− | 0.5+ | 2003 11 26 | 704 | 0.6+ | 0.5− |
| 1998 07 18 | 910 | 0.2+ | 1.1+ | 2003 09 19 | 699 | 0.6+ | 0.6− | 2003 11 26 | 704 | 0.1+ | 0.4− |
| 1998 07 18 | 910 | 0.0 | 0.7+ | 2003 09 19 | 699 | 0.2+ | 0.2+ | 2003 11 26 | 704 | 0.1− | 0.2− |
| 2003 08 31 | 704 | 0.4− | 0.1+ | 2003 09 19 | 699 | 0.4+ | 0.3− | 2003 11 26 | 704 | 0.2+ | 0.7+ |
| 2003 08 31 | 704 | 0.2− | 0.3− | 2003 09 19 | 699 | 0.3− | 0.1− | 2003 11 26 | 704 | 0.8+ | 1.2− |
| 2003 08 31 | 704 | 0.2− | 0.4+ | 2003 09 25 | 644 | 0.1− | 0.1− | 2005 01 16 | 691 | 0.1+ | 0.6+ |
| 2003 08 31 | 704 | 1.1− | 0.0 | 2003 09 25 | 644 | 0.0 | 0.2+ | 2005 01 16 | 691 | 0.1− | 0.4+ |
| 2003 08 31 | 704 | 0.0 | 0.4− | 2003 09 25 | 644 | 0.1+ | 0.1+ | 2005 01 16 | 691 | 0.1+ | 0.5+ |
| 2003 09 16 | 704 | 0.3− | 0.3− | 2003 10 17 | 704 | 0.6+ | 1.0+ | | | | |

**2003 SB$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 258.01457 | | | (2000.0) | | |
| $n$ | 0.26239897 | $\omega$ | 325.71938 | | +0.88535807 | −0.45615076 |
| $a$ | 2.4163581 | $\Omega$ | 61.66434 | | +0.44613721 | +0.77925563 |
| $e$ | 0.1873381 | $i$ | 5.85704 | | +0.13077720 | +0.42975244 |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 807 | 0.2+ | 0.2+ | 2003 08 31 | 608 | 0.7+ | 0.4− | 2003 09 22 | 608 | (2.6+ | 2.5+) |
| 2002 04 09 | 807 | 0.0 | 0.3+ | 2003 08 31 | 608 | 0.7+ | 0.7− | 2003 09 22 | 608 | (2.4+ | 1.8+) |
| 2003 07 08 | 644 | 0.1− | 0.3+ | 2003 08 31 | 608 | 0.4+ | 0.9− | 2003 09 25 | 644 | 0.1− | 0.3+ |
| 2003 07 08 | 644 | 0.2− | 0.1+ | 2003 09 14 | 644 | 0.3− | 0.1+ | 2003 09 25 | 644 | 0.1+ | 0.4+ |
| 2003 07 08 | 644 | 0.2− | 0.5+ | 2003 09 14 | 644 | 0.1− | 0.1− | 2003 09 25 | 644 | 0.2+ | 0.1+ |
| 2003 07 25 | 644 | 0.1+ | 0.4+ | 2003 09 14 | 644 | 0.2− | 0.1− | 2006 05 19 | G96 | 0.1− | 0.0 |
| 2003 07 25 | 644 | 0.1− | 0.6+ | 2003 09 19 | 699 | 0.0 | 0.6− | 2006 05 19 | G96 | 0.1− | 0.2− |
| 2003 07 25 | 644 | 0.1− | 0.2+ | 2003 09 19 | 699 | 1.2− | 0.4− | 2006 05 19 | G96 | 0.2+ | 0.3− |
| 2003 08 23 | 644 | 0.1+ | 0.4+ | 2003 09 19 | 699 | 0.6− | 0.3− | 2006 05 19 | G96 | 0.3− | 0.2− |
| 2003 08 23 | 644 | 0.4+ | 0.2− | 2003 09 19 | 699 | 0.3− | 1.0+ | | | | |
| 2003 08 23 | 644 | 0.3+ | 0.1+ | 2003 09 22 | 608 | (2.4+ | 2.4+) | | | | |

**2003 ST$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 236.27673 | | | (2000.0) | | |
| $n$ | 0.21398919 | $\omega$ | 347.71539 | | +0.99860987 | +0.04460421 |
| $a$ | 2.7682682 | $\Omega$ | 9.85810 | | −0.02235529 | +0.84093603 |
| $e$ | 0.1818714 | $i$ | 9.44163 | | −0.04773441 | +0.53929311 |
| $P$ | 4.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 699 | (2.5− | 2.0−) | 2003 09 28 | 704 | 0.1− | 0.0 | 2003 10 19 | 704 | 0.4− | 0.9+ |
| 2003 09 16 | 699 | 0.7− | 0.7+ | 2003 09 28 | 704 | 0.3+ | 0.4− | 2003 10 19 | 704 | 0.3+ | 1.3+ |
| 2003 09 16 | 699 | 1.9− | 1.1− | 2003 09 28 | 704 | 0.4− | 0.3− | 2003 10 23 | 704 | 1.1+ | 1.7+ |
| 2003 09 16 | 699 | 0.2− | 0.2+ | 2003 09 29 | 704 | 0.4+ | 0.1+ | 2003 10 23 | 704 | 0.2− | 0.7− |
| 2003 09 20 | 333 | 0.3− | 0.3− | 2003 09 29 | 704 | 0.2+ | 0.2− | 2003 10 23 | 704 | 0.0 | 1.1+ |
| 2003 09 20 | 333 | 0.8− | 0.1− | 2003 09 29 | 704 | 0.6+ | 0.1+ | 2003 10 23 | 704 | 0.0 | 0.4+ |
| 2003 09 20 | 699 | 0.1− | 0.0 | 2003 09 29 | 704 | 0.2+ | 0.6− | 2003 11 16 | 645 | 0.0 | 0.0 |
| 2003 09 20 | 699 | 0.2− | 0.4+ | 2003 09 29 | 704 | 0.4− | 0.2− | 2003 11 16 | 645 | 0.0 | 0.0 |
| 2003 09 20 | 333 | 0.3− | 0.3− | 2003 10 03 | 608 | 0.7+ | 0.5+ | 2003 11 19 | 645 | 0.0 | 0.0 |
| 2003 09 20 | 699 | 0.1+ | 0.1+ | 2003 10 03 | 608 | 0.3+ | 0.4+ | 2003 11 19 | 645 | 0.0 | 0.0 |
| 2003 09 20 | 699 | 0.2+ | 0.4− | 2003 10 03 | 608 | 0.4+ | 0.4+ | 2006 02 24 | 691 | 0.0 | 0.3+ |
| 2003 09 22 | 699 | 0.6− | 0.5− | 2003 10 15 | 699 | 0.7+ | 0.2− | 2006 02 24 | 691 | 0.1+ | 0.4+ |
| 2003 09 22 | 699 | 0.4− | 0.5− | 2003 10 15 | 699 | 0.4+ | 0.4+ | 2006 02 24 | 691 | 0.4+ | 0.0 |
| 2003 09 22 | 699 | 0.0 | 0.1− | 2003 10 15 | 699 | 0.4+ | 0.2− | 2006 03 23 | G96 | 0.1− | 0.4+ |
| 2003 09 22 | 699 | 0.0 | 0.2+ | 2003 10 15 | 699 | 0.4+ | 0.3− | 2006 03 23 | G96 | 0.3+ | 0.2− |
| 2003 09 28 | 704 | 0.1− | 0.2+ | 2003 10 19 | 704 | 0.1− | 0.8+ | 2006 03 23 | G96 | 0.2− | 0.2+ |
| 2003 09 28 | 704 | 0.2− | 0.5− | 2003 10 19 | 704 | 1.4+ | 1.2+ | 2006 03 23 | G96 | 0.0 | 0.4− |

**2003 SB$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 260.63706 | | | (2000.0) | | |
| $n$ | 0.21323876 | $\omega$ | 128.39676 | | +0.96730694 | +0.25170135 |
| $a$ | 2.7747591 | $\Omega$ | 217.05445 | | −0.24577424 | +0.90018639 |
| $e$ | 0.1029725 | $i$ | 2.95309 | | −0.06254835 | +0.35540245 |
| $P$ | 4.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 644 | 0.0 | 0.5− | 2003 10 21 | 699 | 0.2+ | 0.3+ | 2003 10 24 | 704 | 1.0− | 0.4− |
| 2003 09 17 | 644 | 0.0 | 0.4− | 2003 10 21 | 699 | 0.1+ | 0.1− | 2003 10 24 | 704 | 1.0− | 0.7− |
| 2003 09 17 | 644 | 0.2+ | 0.5− | 2003 10 21 | 704 | 0.3+ | 0.6+ | 2003 10 25 | 106 | 0.1− | 0.4− |
| 2003 09 18 | 691 | 0.1− | 0.7− | 2003 10 21 | 704 | 0.2− | 0.3+ | 2003 10 25 | 106 | 0.5+ | 0.0 |
| 2003 09 18 | 691 | 0.1− | 0.5− | 2003 10 21 | 704 | 0.0 | 0.5+ | 2003 10 25 | 106 | 0.4+ | 0.1+ |
| 2003 09 18 | 691 | 0.0 | 0.5− | 2003 10 21 | 704 | 0.0 | 0.2+ | 2003 10 26 | 691 | 0.4− | 0.5− |
| 2003 09 20 | 699 | 1.2+ | 1.1− | 2003 10 21 | 704 | 0.5+ | 0.5+ | 2003 10 26 | 691 | 0.1+ | 0.3− |
| 2003 09 20 | 699 | 0.7− | 1.1− | 2003 10 21 | 291 | 0.1− | 0.1+ | 2003 10 26 | 691 | 0.4− | 0.1− |
| 2003 09 20 | 699 | 0.5+ | 0.7− | 2003 10 21 | 291 | 0.0 | 0.1+ | 2003 11 19 | 644 | 2.0+ | 1.1+ |
| 2003 09 20 | 699 | 0.9+ | 0.0 | 2003 10 21 | 291 | 0.2+ | 0.1+ | 2003 11 19 | 644 | (2.3+ | 0.9+) |
| 2003 09 26 | 704 | 0.7+ | 0.8+ | 2003 10 22 | 704 | 0.2+ | 0.3+ | 2003 11 19 | 644 | (2.2+ | 1.2+) |
| 2003 09 26 | 704 | 1.3+ | 0.8+ | 2003 10 22 | 704 | 0.6− | 1.0+ | 2003 11 24 | 701 | (2.9+ | 0.8+) |
| 2003 09 26 | 704 | 0.5+ | 1.1+ | 2003 10 22 | 704 | 0.1− | 0.0 | 2003 11 24 | 701 | (3.0+ | 1.9+) |
| 2003 09 26 | 704 | 0.9+ | 0.6+ | 2003 10 22 | 704 | 0.2− | 0.4+ | 2003 11 24 | 701 | (3.1+ | 1.3+) |
| 2003 09 26 | 704 | 0.8+ | 0.3+ | 2003 10 22 | 704 | 0.5− | 0.4+ | 2005 03 13 | G96 | 0.8+ | 0.3+ |
| 2003 09 29 | 704 | 0.4+ | 0.0 | 2003 10 22 | 704 | 0.1+ | 0.2+ | 2005 03 13 | G96 | 0.1− | 0.4− |
| 2003 09 29 | 704 | 0.8+ | 0.4− | 2003 10 22 | 704 | 1.0− | 0.1− | 2005 03 13 | G96 | 0.1− | 0.7− |
| 2003 09 29 | 704 | 0.2+ | 0.2− | 2003 10 22 | 704 | 0.5− | 0.4+ | 2005 03 13 | G96 | 1.0− | 1.4− |
| 2003 09 29 | 704 | 1.4+ | 0.5+ | 2003 10 22 | 704 | 0.1− | 0.8+ | 2006 05 22 | G96 | 0.2− | 0.8− |
| 2003 10 20 | 704 | 0.0 | 0.9+ | 2003 10 22 | 704 | 0.5− | 0.8+ | 2006 05 22 | G96 | 0.4− | 1.1− |
| 2003 10 20 | 704 | 0.8+ | 0.6+ | 2003 10 22 | 608 | 0.2− | 0.8− | 2006 05 22 | G96 | 0.5− | 0.6− |
| 2003 10 20 | 704 | 1.6− | 0.3− | 2003 10 22 | 608 | 0.4− | 1.1− | 2006 05 22 | G96 | 0.1− | 0.8− |
| 2003 10 20 | 704 | 0.1+ | 1.0+ | 2003 10 22 | 608 | 0.5− | 0.9− | 2006 06 19 | G96 | (5.2− | 0.7−) |
| 2003 10 20 | 704 | 0.7+ | 1.3+ | 2003 10 24 | 704 | 1.2− | 0.5− | 2006 06 19 | G96 | (4.7− | 0.9−) |
| 2003 10 21 | 699 | 0.7+ | 0.6+ | 2003 10 24 | 704 | 1.0− | 0.4− | 2006 06 19 | G96 | (5.3− | 0.8−) |
| 2003 10 21 | 699 | 0.6+ | 0.3− | 2003 10 24 | 704 | 1.1− | 0.3− | 2006 06 19 | G96 | (4.9− | 0.8−) |

**2003 ST$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 239.98335 | | | (2000.0) | | |
| $n$ | 0.18908291 | $\omega$ | 305.58064 | | +0.77855619 | +0.62546113 |
| $a$ | 3.0063153 | $\Omega$ | 15.91126 | | −0.49775812 | +0.66537256 |
| $e$ | 0.1418968 | $i$ | 10.82011 | | −0.38221343 | +0.40752635 |
| $P$ | 5.21 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 691 | 0.1− | 0.4+ | 2003 09 24 | 608 | 1.0+ | 0.1− | 2003 10 01 | 699 | 0.5+ | 0.8+ |
| 1998 09 27 | 691 | 0.2+ | 0.0 | 2003 09 24 | 608 | 0.9+ | 0.7+ | 2003 10 01 | 699 | 1.3− | 0.4− |
| 1998 09 27 | 691 | 0.3− | 0.0 | 2003 09 24 | 608 | 1.1+ | 0.1− | 2003 10 01 | 699 | 0.7− | 0.6− |
| 2003 08 26 | 704 | 1.2− | 0.4− | 2003 09 26 | 645 | 0.0 | 0.1− | 2003 10 01 | 699 | 0.0 | 0.3− |
| 2003 08 26 | 704 | 0.5+ | 0.4+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.1− | 0.1− |
| 2003 08 26 | 704 | 0.5− | 1.4+ | 2003 09 27 | 333 | 0.1+ | 0.0 | 2003 10 19 | 645 | 0.1− | 0.0 |
| 2003 08 26 | 704 | 1.2+ | 1.0+ | 2003 09 27 | 333 | 0.2− | 0.3+ | 2003 10 23 | 645 | 0.0 | 0.1− |
| 2003 09 21 | 699 | 0.3− | 0.4− | 2003 09 27 | 333 | 0.0 | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.0 |
| 2003 09 21 | 699 | 0.8+ | 0.8+ | 2003 09 28 | 333 | 0.4+ | 0.2+ | 2003 10 24 | 704 | 0.4+ | 0.3+ |
| 2003 09 21 | 699 | 0.5− | 0.1+ | 2003 09 28 | 333 | 0.2+ | 0.2+ | 2003 10 24 | 704 | 0.5− | 1.2+ |
| 2003 09 21 | 699 | 0.1− | 1.0− | 2003 09 28 | 704 | 0.5+ | 0.7+ | 2003 10 24 | 704 | 0.2− | 0.3+ |
| 2003 09 22 | 699 | 0.2− | 0.2− | 2003 09 28 | 704 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.6− | 1.2+ |
| 2003 09 22 | 699 | 1.0− | 0.8+ | 2003 09 28 | 333 | 0.1+ | 0.3+ | 2003 11 16 | 645 | 0.1+ | 0.0 |
| 2003 09 22 | 699 | 0.1− | 0.0 | 2003 09 28 | 704 | 0.0 | 0.7+ | 2003 11 16 | 645 | 0.2+ | 0.0 |
| 2003 09 22 | 699 | 0.3− | 0.2+ | 2003 09 28 | 704 | 0.3+ | 0.3+ | 2006 02 28 | 703 | 0.4− | 0.0 |
| 2003 09 23 | 608 | 0.1− | 0.3+ | 2003 09 28 | 704 | 0.1− | 0.2+ | 2006 02 28 | 703 | 1.1+ | 0.7− |
| 2003 09 23 | 608 | 0.4− | 0.8+ | 2003 09 29 | 645 | 0.1+ | 0.2− | 2006 02 28 | 703 | 0.5− | 0.3− |
| 2003 09 23 | 608 | 0.3− | 0.2+ | 2003 09 29 | 645 | 0.0 | 0.2− | 2006 02 28 | 703 | 0.0 | 1.3+ |

**2003 SB$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.51124 | | | (2000.0) | | |
| $n$ | 0.34830271 | $\omega$ | 74.78980 | | +0.97124774 | −0.04819231 |
| $a$ | 2.0006210 | $\Omega$ | 287.53700 | | −0.06470018 | +0.88900714 |
| $e$ | 0.1253970 | $i$ | 14.15266 | | +0.22911068 | +0.45535020 |
| $P$ | 2.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 28 | 644 | 0.3− | 0.1− | 2003 09 24 | 704 | 0.4+ | 0.0 | 2003 10 22 | 704 | 0.0 | 1.0− |
| 2003 07 28 | 644 | 0.1− | 0.2+ | 2003 09 24 | 704 | 0.1− | 0.6+ | 2003 10 22 | 704 | 0.5+ | 1.2+ |
| 2003 07 28 | 644 | 0.1− | 0.3+ | 2003 09 24 | 704 | 0.5+ | 0.1+ | 2003 10 22 | 704 | 0.5− | 0.6− |
| 2003 08 27 | 644 | 0.0 | 0.1− | 2003 09 24 | 704 | 0.1− | 0.2− | 2003 10 22 | 704 | 0.2− | 1.2+ |
| 2003 08 27 | 644 | 0.1+ | 0.1− | 2003 09 26 | 704 | 1.0− | 0.5− | 2006 11 13 | 704 | 0.8+ | 0.4− |
| 2003 08 27 | 644 | 0.2+ | 0.2− | 2003 09 26 | 704 | 1.6− | 1.9− | 2006 11 13 | 704 | 0.6+ | 0.9− |
| 2003 09 15 | 644 | 0.7+ | 0.4− | 2003 09 26 | 704 | 0.1+ | 0.6+ | 2006 11 13 | 704 | 0.4+ | 0.5− |
| 2003 09 15 | 644 | 0.3+ | 0.5− | 2003 09 26 | 704 | 0.2− | 1.1+ | 2006 11 20 | 703 | 0.4− | 0.5+ |
| 2003 09 15 | 644 | 0.6+ | 0.3− | 2003 09 30 | 113 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.9− | 0.2+ |
| 2003 09 22 | 644 | 0.4+ | 0.0 | 2003 09 30 | 113 | 0.8− | 0.3+ | 2006 11 20 | 703 | 0.7− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 644 | 0.3+ | 0.1+ | 2003 09 30 | 113 | 0.2+ | 0.2− | 2006 11 20 | 703 | 0.2+ | 0.5+ |
| 2003 09 22 | 644 | 0.3+ | 0.1− | 2003 10 22 | 704 | 0.2− | 0.8+ | | | | |

**2003 SA$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.05668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22477041 | $\omega$ | 210.67820 | | +0.93321228 | −0.35671425 | |
| $a$ | 2.6790241 | $\Omega$ | 169.93403 | | +0.35887385 | +0.91923398 | |
| $e$ | 0.1082321 | $i$ | 14.32367 | | +0.01801101 | +0.16662484 | |
| $P$ | 4.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 691 | 0.1− | 0.2+ | 2003 09 18 | 644 | 0.3− | 0.1− | 2003 09 28 | 691 | 0.3− | 0.0 |
| 2002 04 14 | 691 | 0.1− | 0.2+ | 2003 09 18 | 644 | 0.3− | 0.4+ | 2003 09 29 | 704 | 0.1+ | 0.4+ |
| 2002 04 14 | 691 | 0.2+ | 0.1− | 2003 09 18 | 644 | 0.3− | 0.1+ | 2003 09 29 | 704 | 0.5− | 1.0+ |
| 2003 08 18 | 097 | 0.9− | 0.7+ | 2003 09 22 | 699 | 0.4− | 0.5− | 2003 09 29 | 704 | 0.4+ | 1.4+ |
| 2003 08 18 | 097 | 0.1− | 0.3− | 2003 09 22 | 699 | 0.1+ | 0.3+ | 2003 10 22 | 291 | 0.0 | 0.2+ |
| 2003 08 19 | 097 | 0.3− | 0.9− | 2003 09 22 | 699 | 0.2− | 0.7− | 2003 10 22 | 291 | 0.2+ | 0.0 |
| 2003 09 02 | 704 | 0.6+ | 0.1+ | 2003 09 22 | 699 | 0.1− | 0.1− | 2003 10 22 | 291 | 0.2− | 0.2+ |
| 2003 09 02 | 704 | 0.2+ | 0.0 | 2003 09 25 | 608 | 0.2+ | 0.2+ | 2005 02 04 | 703 | 0.1+ | 1.3− |
| 2003 09 02 | 704 | 0.0 | 0.9+ | 2003 09 25 | 608 | 0.6+ | 0.2− | 2005 02 04 | 703 | 0.0 | 0.8+ |
| 2003 09 16 | 608 | 0.2− | 1.1− | 2003 09 25 | 608 | 1.1+ | 0.2− | 2005 02 04 | 703 | 0.1+ | 0.3+ |
| 2003 09 16 | 608 | 0.1+ | 0.7− | 2003 09 28 | 691 | 0.1+ | 0.2− | 2005 02 04 | 703 | 0.1− | 1.0+ |
| 2003 09 16 | 608 | 0.1+ | 0.7− | 2003 09 28 | 691 | 0.2+ | 0.0 | | | | |

**2003 ST$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.84771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27688284 | $\omega$ | 357.20305 | | +0.80618269 | +0.59147084 | |
| $a$ | 2.3313386 | $\Omega$ | 326.52059 | | −0.54230655 | +0.72839409 | |
| $e$ | 0.2094704 | $i$ | 1.58128 | | −0.23658631 | +0.34583853 | |
| $P$ | 3.56 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 704 | 0.2− | 0.2− | 2003 09 27 | 704 | 0.3− | 0.6− | 2003 10 15 | 699 | 0.9− | 1.5+ |
| 2003 09 19 | 704 | 0.4+ | 0.4+ | 2003 09 27 | 691 | 0.0 | 0.2+ | 2003 10 15 | 699 | 0.1+ | 0.0 |
| 2003 09 19 | 704 | 0.8+ | 0.4+ | 2003 09 27 | 704 | 0.4− | 0.6− | 2003 10 18 | 645 | 0.0 | 0.1− |
| 2003 09 19 | 704 | 0.1+ | 0.1+ | 2003 09 27 | 691 | 0.2− | 0.4+ | 2003 10 18 | 645 | 0.0 | 0.1− |
| 2003 09 22 | 699 | 0.8+ | 1.4− | 2003 09 27 | 691 | 0.3− | 0.2+ | 2006 04 07 | 691 | 0.4+ | 0.2− |
| 2003 09 22 | 699 | 0.5+ | 0.4+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2006 04 07 | 691 | 0.0 | 0.2+ |
| 2003 09 22 | 699 | 1.8+ | 0.7+ | 2003 09 28 | 645 | 0.1+ | 0.1− | 2006 04 07 | 691 | 0.2+ | 0.3+ |
| 2003 09 22 | 699 | 1.2+ | 1.1+ | 2003 09 29 | 704 | 1.2− | 0.7− | 2006 05 06 | G96 | 0.6− | 0.4− |
| 2003 09 26 | 704 | 0.8+ | 1.0+ | 2003 09 29 | 704 | 0.4− | 0.4+ | 2006 05 06 | G96 | 0.1+ | 0.2− |
| 2003 09 26 | 704 | 0.2+ | 0.4+ | 2003 09 29 | 704 | 1.2− | 0.4− | 2006 05 06 | G96 | 0.0 | 0.3− |
| 2003 09 26 | 704 | 0.1− | 0.3− | 2003 09 29 | 704 | 0.3+ | 0.7− | 2006 05 06 | G96 | 0.1+ | 0.1+ |
| 2003 09 26 | 704 | 0.2− | 0.6+ | 2003 09 29 | 704 | 0.8+ | 1.4+ | 2006 05 20 | 691 | 0.1− | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 09 29 | 704 | 0.7− | 0.5+ | 2006 05 20 | 691 | 0.5− | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 09 29 | 704 | 0.1− | 0.2+ | 2006 05 20 | 691 | 0.0 | 0.2− |
| 2003 09 26 | 704 | 0.9− | 0.6+ | 2003 09 29 | 704 | 0.4− | 0.1+ | 2006 06 02 | G96 | 0.2+ | 0.0 |
| 2003 09 27 | 704 | 0.0 | 0.3− | 2003 09 29 | 704 | 0.8− | 0.2+ | 2006 06 02 | G96 | 0.2− | 0.2− |
| 2003 09 27 | 704 | 0.5− | 0.0 | 2003 10 15 | 699 | 0.3+ | 0.2− | 2006 06 02 | G96 | 0.7+ | 0.6+ |
| 2003 09 27 | 704 | 0.1− | 0.2+ | 2003 10 15 | 699 | 0.0 | 1.1+ | 2006 06 02 | G96 | 0.2− | 0.2− |

**2003 SN$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.44588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22708298 | $\omega$ | 145.61537 | | −0.64106869 | −0.76433909 | |
| $a$ | 2.6608046 | $\Omega$ | 343.88545 | | +0.63595967 | −0.47841065 | |
| $e$ | 0.0621719 | $i$ | 14.48021 | | +0.42963500 | −0.43232973 | |
| $P$ | 4.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 704 | 1.8+ | 1.5+ | 2003 09 22 | 699 | 0.3+ | 1.5+ | 2005 01 07 | 703 | 0.1+ | 0.6− |
| 2001 02 22 | 704 | 1.0+ | 1.0+ | 2003 09 22 | 699 | 0.1+ | 0.5+ | 2005 01 07 | 703 | 0.2− | 0.2− |
| 2001 02 22 | 704 | 0.5+ | 1.4+ | 2003 09 26 | 704 | 0.4+ | 0.3+ | 2005 01 17 | 704 | 0.2+ | 0.2− |
| 2001 02 22 | 691 | 0.3+ | 0.0 | 2003 09 26 | 704 | 0.2+ | 0.2− | 2005 01 17 | 704 | 0.1+ | 2.2+ |
| 2001 02 22 | 704 | 0.2− | 0.7+ | 2003 09 26 | 704 | 0.4+ | 0.1− | 2005 01 17 | 704 | 0.8− | 0.4+ |
| 2001 02 22 | 691 | 0.2+ | 0.1+ | 2003 09 26 | 704 | 0.1− | 0.7− | 2005 01 17 | 704 | 0.3− | 0.8− |
| 2001 02 22 | 691 | 0.2+ | 0.1+ | 2003 09 30 | 704 | 0.0 | 0.9+ | 2005 02 28 | 703 | 0.6− | 0.1− |
| 2001 03 02 | 699 | 0.0 | 0.0 | 2003 09 30 | 704 | 0.4− | 0.5+ | 2005 02 28 | 703 | 0.6− | 1.8− |
| 2001 03 02 | 699 | 0.5− | 0.4+ | 2003 09 30 | 704 | 0.5+ | 0.6+ | 2005 02 28 | 703 | 0.5+ | 0.6− |
| 2001 03 02 | 699 | 0.3− | 0.1− | 2003 09 30 | 704 | 0.7+ | 1.0+ | 2005 02 28 | 703 | 1.4− | 1.3− |
| 2001 03 02 | 699 | 0.0 | 0.4+ | 2004 12 21 | 703 | 0.3− | 0.6− | 2005 03 13 | 699 | 0.5+ | 0.2+ |
| 2003 09 19 | 691 | 0.4− | 0.0 | 2004 12 21 | 703 | 0.4+ | 0.6+ | 2005 03 13 | 699 | 0.1− | 0.3+ |
| 2003 09 19 | 691 | 0.2− | 0.1− | 2004 12 21 | 703 | 1.6+ | 0.5− | 2005 03 13 | 699 | 1.3+ | 1.1− |
| 2003 09 19 | 691 | 0.4− | 0.0 | 2004 12 21 | 703 | 0.5− | 0.6+ | 2005 03 13 | 699 | 0.8− | 0.6+ |
| 2003 09 22 | 699 | 0.6− | 0.4− | 2005 01 07 | 703 | 0.6− | 0.9− | | | | |
| 2003 09 22 | 699 | 0.7− | 1.0+ | 2005 01 07 | 703 | 0.0 | 0.4− | | | | |

**2003 SF$_{186}$ = 2006 PE$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.05489 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30077670 | $\omega$ | 221.27120 | | −0.00511965 | +0.99849603 | |
| $a$ | 2.2061748 | $\Omega$ | 48.51073 | | −0.89729002 | +0.01950786 | |
| $e$ | 0.1379726 | $i$ | 4.17878 | | −0.44141184 | −0.05123596 | |
| $P$ | 3.28 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 19 | 691 | 0.0 | 0.4− | 2003 09 22 | 699 | 1.1+ | 0.9+ | 2005 01 17 | 691 | 0.5+ | 0.5+ |
| 2000 10 19 | 691 | 0.1− | 0.1− | 2003 09 22 | 699 | 0.2− | 0.4− | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2000 10 19 | 691 | 0.7− | 0.0 | 2003 09 22 | 699 | 0.5− | 0.4− | 2006 08 14 | 644 | 0.3− | 0.2+ |
| 2000 11 20 | 691 | 0.3+ | 0.2− | 2003 09 22 | 699 | 0.7− | 0.2− | 2006 08 14 | 644 | 0.1− | 0.5+ |
| 2000 11 20 | 691 | 0.3+ | 0.2− | 2003 09 24 | 644 | 0.2− | 0.5+ | 2006 08 20 | 644 | 0.2− | 0.2+ |
| 2000 11 20 | 691 | 0.5+ | 0.1− | 2003 09 24 | 644 | 0.2− | 0.8+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2003 09 17 | 644 | 0.2− | 0.9+ | 2003 09 24 | 644 | 0.3+ | 0.9+ | 2006 08 20 | 644 | 0.2− | 0.0 |
| 2003 09 17 | 644 | 0.2+ | 0.5+ | 2005 01 17 | 691 | 0.2− | 0.2+ | | | | |
| 2003 09 17 | 644 | 0.1− | 0.4+ | 2005 01 17 | 691 | 0.0 | 0.4+ | | | | |

**2003 SU$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.28330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27681783 | $\omega$ | 349.66194 | | +0.73461272 | −0.67322253 | |
| $a$ | 2.3317036 | $\Omega$ | 52.99581 | | +0.62979646 | +0.63035606 | |
| $e$ | 0.2295583 | $i$ | 6.06337 | | +0.25238972 | +0.38655228 | |
| $P$ | 3.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 02 | 327 | 0.4− | 0.3− | 2003 09 22 | 699 | 0.5+ | 0.2− | 2003 10 19 | 704 | 0.0 | 0.3+ |
| 1996 11 02 | 327 | 0.2− | 0.2− | 2003 09 22 | 699 | 0.4− | 0.6− | 2003 10 19 | 704 | 0.1− | 0.0 |
| 1996 11 02 | 327 | 0.5+ | 0.5+ | 2003 09 22 | 699 | 0.3− | 0.2− | 2003 10 27 | 704 | 1.3+ | 0.1+ |
| 2002 05 10 | 291 | 0.1+ | 0.3+ | 2003 09 22 | 699 | 0.4− | 0.7− | 2003 10 27 | 704 | 0.7+ | 0.1+ |
| 2002 05 10 | 291 | 0.4− | 0.4+ | 2003 09 24 | 608 | 1.0+ | 0.3+ | 2003 10 27 | 704 | 1.3+ | 0.1+ |
| 2002 05 10 | 291 | 0.5+ | 0.0 | 2003 09 24 | 608 | 0.9+ | 0.5+ | 2003 11 22 | 704 | 1.1− | 1.1+ |
| 2003 09 18 | 704 | 0.1− | 0.2+ | 2003 09 24 | 608 | 0.9+ | 0.6+ | 2003 11 22 | 704 | 0.8− | 1.3+ |
| 2003 09 18 | 704 | 0.0 | 0.6− | 2003 10 18 | 699 | 0.7− | 0.2+ | 2003 11 22 | 704 | 0.4+ | 0.7+ |
| 2003 09 18 | 704 | 0.8− | 0.5− | 2003 10 18 | 699 | 0.4+ | 0.4− | 2003 12 21 | 704 | 0.3− | 0.1+ |
| 2003 09 18 | 704 | 0.8− | 0.1− | 2003 10 18 | 699 | 0.6− | 0.6+ | 2003 12 21 | 704 | 0.2+ | 0.0 |
| 2003 09 18 | 704 | 0.0 | 0.4+ | 2003 10 18 | 699 | 0.3+ | 0.2+ | 2003 12 21 | 704 | 0.3− | 0.3+ |
| 2003 09 18 | 608 | 0.1− | 0.7− | 2003 10 19 | 704 | 0.2− | 0.2+ | 2003 12 21 | 704 | 0.0 | 0.5− |
| 2003 09 18 | 608 | 0.2− | 0.6− | 2003 10 19 | 704 | 0.2+ | 0.1+ | 2003 12 21 | 704 | 1.2− | 0.2+ |
| 2003 09 18 | 608 | 0.2− | 0.7− | 2003 10 19 | 704 | 1.0− | 0.4+ | | | | |

**2003 ST$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.29453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22136137 | $\omega$ | 151.55817 | | +0.98958260 | −0.06399356 | |
| $a$ | 2.7064592 | $\Omega$ | 212.89544 | | +0.03675324 | +0.97839032 | |
| $e$ | 0.1339425 | $i$ | 13.73616 | | +0.13919580 | +0.19661435 | |
| $P$ | 4.45 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 644 | 0.1− | 0.0 | 2003 10 21 | 704 | 0.1− | 0.2+ | 2003 10 28 | 704 | 0.6− | 1.1+ |
| 2003 09 20 | 644 | 0.2− | 0.1− | 2003 10 21 | 644 | 0.1− | 0.1+ | 2003 10 28 | 704 | 0.6+ | 0.8+ |
| 2003 09 20 | 644 | 0.2− | 0.4+ | 2003 10 21 | 644 | 0.2− | 0.2+ | 2003 11 01 | 704 | 1.5− | 0.6+ |
| 2003 09 21 | 699 | 1.6− | 0.9+ | 2003 10 21 | 644 | 0.3+ | 0.1+ | 2003 11 01 | 704 | 1.1− | 0.2+ |
| 2003 09 21 | 699 | 0.1+ | 0.0 | 2003 10 23 | 608 | 0.7+ | 1.7− | 2003 11 01 | 704 | 0.4− | 0.1− |
| 2003 09 21 | 699 | 0.7+ | 0.8+ | 2003 10 23 | 608 | 1.3+ | 1.7− | 2003 11 01 | 704 | 0.4− | 0.5− |
| 2003 09 21 | 699 | 0.2+ | 0.4+ | 2003 10 23 | 608 | 0.3+ | 0.8− | 2003 11 01 | 704 | 1.1− | 0.2+ |
| 2003 09 22 | 691 | 0.0 | 0.2− | 2003 10 24 | 704 | 0.7− | 0.2+ | 2003 11 18 | 699 | 0.7− | 0.4+ |
| 2003 09 22 | 691 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.3− | 0.5+ | 2003 11 18 | 699 | 0.6− | 0.7+ |
| 2003 09 22 | 691 | 0.2+ | 0.0 | 2003 10 24 | 704 | 0.5− | 0.1+ | 2003 11 18 | 699 | 0.1− | 0.8+ |
| 2003 09 27 | 704 | 0.2+ | 0.5− | 2003 10 24 | 704 | 0.1+ | 0.1+ | 2003 11 18 | 699 | 0.0 | 0.1− |
| 2003 09 27 | 704 | 0.3+ | 0.4− | 2003 10 24 | 704 | 0.2− | 0.3+ | 2003 11 28 | 691 | 0.1+ | 0.3− |
| 2003 09 27 | 704 | 1.1− | 0.4− | 2003 10 25 | 691 | 0.2− | 0.0 | 2003 11 28 | 691 | 0.0 | 0.0 |
| 2003 09 27 | 704 | 0.4+ | 0.3+ | 2003 10 25 | 691 | 0.0 | 0.1− | 2003 11 28 | 691 | 0.0 | 0.1+ |
| 2003 09 27 | 691 | 0.1+ | 0.1− | 2003 10 25 | 691 | 0.0 | 0.1− | 2006 03 26 | 691 | 0.2+ | 0.0 |
| 2003 09 27 | 691 | 0.1+ | 0.1+ | 2003 10 25 | 291 | 0.0 | 0.1− | 2006 03 26 | 691 | 0.0 | 0.4+ |
| 2003 09 27 | 691 | 0.2+ | 0.1+ | 2003 10 25 | 291 | 0.1− | 0.0 | 2006 03 26 | 691 | 0.3+ | 0.3+ |
| 2003 10 21 | 704 | 0.3+ | 0.1+ | 2003 10 25 | 291 | 0.0 | 0.0 | 2006 05 08 | G96 | 0.5− | 0.1− |
| 2003 10 21 | 704 | 0.6+ | 0.9+ | 2003 10 28 | 704 | 0.9+ | 0.2+ | 2006 05 08 | G96 | 0.5− | 0.2− |
| 2003 10 21 | 704 | 0.2+ | 0.6+ | 2003 10 28 | 704 | 1.5+ | 0.0 | 2006 05 08 | G96 | 0.3− | 0.3+ |
| 2003 10 21 | 704 | 1.5+ | 0.5− | 2003 10 28 | 704 | 0.3− | 1.1+ | 2006 05 08 | G96 | 0.3− | 0.0 |

**2003 ST**$_{198}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.17886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21240350 | $\omega$ | 154.28043 | | +0.97365138 | −0.16926327 | |
| $a$ | 2.7820287 | $\Omega$ | 216.51165 | | +0.13819315 | +0.97101176 | |
| $e$ | 0.1905579 | $i$ | 14.88269 | | +0.18139915 | +0.16877828 | |
| $P$ | 4.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 13 | 644 | 0.1+ | 0.4− | 2003 10 21 | 699 | 0.2+ | 1.0− | 2003 11 01 | 704 | 0.3− | 0.1+ |
| 2002 06 13 | 644 | 0.3+ | 0.5− | 2003 10 21 | 704 | 0.4+ | 0.1+ | 2003 11 01 | 704 | 0.3+ | 0.3− |
| 2002 06 13 | 644 | 0.3− | 0.6− | 2003 10 21 | 644 | 0.2− | 0.1− | 2003 11 01 | 704 | 0.8+ | 0.6− |
| 2003 09 18 | 608 | 1.0− | 0.1− | 2003 10 21 | 704 | 0.4+ | 0.2+ | 2003 11 03 | 704 | 0.7+ | 0.5+ |
| 2003 09 18 | 608 | 0.0 | 0.4+ | 2003 10 21 | 704 | 1.3+ | 0.1+ | 2003 11 03 | 704 | 0.0 | 0.3+ |
| 2003 09 18 | 608 | 0.4− | 0.4+ | 2003 10 21 | 644 | 0.3− | 0.1+ | 2003 11 03 | 704 | 0.8− | 0.4+ |
| 2003 09 21 | 699 | 1.1− | 0.3+ | 2003 10 21 | 704 | 0.5+ | 0.4− | 2003 11 03 | 704 | 0.2+ | 0.1− |
| 2003 09 21 | 699 | 0.3− | 0.3− | 2003 10 21 | 704 | 0.4+ | 0.5+ | 2003 11 21 | 704 | 0.1+ | 0.2+ |
| 2003 09 21 | 699 | 0.2− | 0.2+ | 2003 10 21 | 644 | 0.3− | 0.0 | 2003 11 21 | 704 | 0.8− | 0.0 |
| 2003 09 21 | 699 | 1.1+ | 0.6+ | 2003 10 25 | 704 | 0.2− | 0.3− | 2003 11 21 | 699 | 0.1− | 0.2+ |
| 2003 09 22 | 704 | 0.0 | 1.2+ | 2003 10 25 | 704 | 0.3− | 0.0 | 2003 11 21 | 704 | 0.8− | 0.3+ |
| 2003 09 22 | 704 | 1.0− | 1.4+ | 2003 10 25 | 704 | 0.7− | 0.1− | 2003 11 21 | 699 | 0.1− | 0.1− |
| 2003 09 22 | 704 | 0.8− | 0.2+ | 2003 10 25 | 704 | 0.3+ | 0.0 | 2003 11 21 | 704 | 0.6− | 0.1+ |
| 2003 09 22 | 704 | 0.0 | 0.0 | 2003 10 25 | 704 | 0.0 | 0.1− | 2003 11 21 | 699 | 0.4− | 0.2+ |
| 2003 09 22 | 704 | 0.7− | 0.2− | 2003 10 25 | 704 | 0.1− | 0.0 | 2003 11 21 | 704 | 0.2− | 0.1− |
| 2003 09 27 | 704 | 1.5+ | 0.5+ | 2003 10 25 | 704 | 0.6− | 0.2+ | 2003 11 21 | 699 | 0.0 | 0.4+ |
| 2003 09 27 | 704 | 0.3+ | 0.2+ | 2003 10 25 | 704 | 0.3− | 0.0 | 2003 12 17 | 699 | (2.2− | 2.2+) |
| 2003 09 27 | 704 | 0.7+ | 0.0 | 2003 10 25 | 704 | 0.2− | 0.0 | 2003 12 17 | 699 | 0.6+ | 0.4− |
| 2003 09 27 | 704 | 0.8+ | 0.5+ | 2003 10 25 | 704 | 0.2− | 0.1− | 2003 12 17 | 699 | 1.5− | 1.3− |
| 2003 09 27 | 704 | 0.4+ | 0.1− | 2003 11 01 | 704 | 0.0 | 0.3+ | 2003 12 17 | 699 | 0.9− | 0.3− |
| 2003 10 18 | 691 | 0.1+ | 0.4− | 2003 11 01 | 704 | 0.0 | 0.3+ | 2006 05 23 | G96 | 0.1− | 0.1+ |
| 2003 10 18 | 691 | 0.3+ | 0.4− | 2003 11 01 | 704 | 0.2− | 0.0 | 2006 05 23 | G96 | 0.1− | 0.6+ |
| 2003 10 18 | 691 | 0.3+ | 0.1− | 2003 11 01 | 704 | 0.5− | 0.5− | 2006 05 23 | G96 | 0.1+ | 0.5+ |
| 2003 10 21 | 699 | 0.1+ | 0.0 | 2003 11 01 | 704 | 0.7− | 0.1− | 2006 05 23 | G96 | 0.2+ | 0.6+ |
| 2003 10 21 | 699 | 0.1+ | 0.6− | 2003 11 01 | 704 | 1.1+ | 0.8+ | | | | |
| 2003 10 21 | 699 | 0.2− | 0.3− | 2003 11 01 | 704 | 0.7+ | 0.1+ | | | | |

**2003 SY**$_{198}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.04977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30205761 | $\omega$ | 56.18403 | | +0.79440792 | +0.59783342 | |
| $a$ | 2.1999333 | $\Omega$ | 266.87078 | | −0.58672316 | +0.70963627 | |
| $e$ | 0.1410507 | $i$ | 6.16838 | | −0.15707319 | +0.37284255 | |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 704 | 0.3− | 1.2+ | 2003 09 30 | 691 | 0.1+ | 0.0 | 2003 11 19 | 704 | 0.2+ | 1.3+ |
| 2000 11 29 | 704 | 0.1− | 1.1+ | 2003 09 30 | 691 | 0.1+ | 0.1− | 2006 07 21 | 703 | 0.5+ | 0.1+ |
| 2000 11 29 | 704 | 0.6− | 0.4− | 2003 09 30 | 691 | 0.1− | 0.0 | 2006 07 21 | 703 | 0.1+ | 0.4− |
| 2000 11 29 | 704 | 0.8+ | 0.1− | 2003 10 17 | 691 | 0.1+ | 0.1− | 2006 07 21 | 703 | 0.4− | 0.4− |
| 2000 11 29 | 704 | 0.2+ | 0.2− | 2003 10 17 | 691 | 0.1+ | 0.2− | 2006 07 21 | 703 | 0.7+ | 0.1+ |
| 2003 09 21 | 699 | 0.5− | 0.5− | 2003 10 17 | 691 | 0.2+ | 0.2− | 2006 08 29 | 703 | 0.1− | 1.9+ |
| 2003 09 21 | 699 | 0.2− | 0.2+ | 2003 10 30 | 704 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.1− | 0.1+ |
| 2003 09 21 | 699 | 0.8− | 0.3+ | 2003 10 30 | 704 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.4+ | 0.1+ |
| 2003 09 21 | 699 | 0.2− | 0.1− | 2003 10 30 | 704 | 0.9− | 1.0+ | 2006 08 29 | 703 | 0.7− | 0.4+ |
| 2003 09 24 | 608 | 0.7+ | 1.0− | 2003 11 02 | 704 | 0.3+ | 0.9− | 2006 09 11 | 703 | 1.3− | 0.3− |
| 2003 09 24 | 608 | 0.2+ | 1.3− | 2003 11 02 | 704 | 0.3− | 0.1+ | 2006 09 11 | 703 | 0.1+ | 0.1+ |
| 2003 09 24 | 608 | 0.0 | 0.6− | 2003 11 02 | 704 | 0.2− | 1.3+ | 2006 09 11 | 703 | 0.3+ | 0.8− |
| 2003 09 30 | 704 | (1.5+ | 0.9+) | 2003 11 02 | 704 | (0.4− | 1.6+) | 2006 09 11 | 703 | 0.0 | 0.4− |
| 2003 09 30 | 704 | 0.7+ | 0.0 | 2003 11 19 | 704 | 0.9+ | 0.3− | 2006 09 19 | 699 | 0.2− | 1.1+ |
| 2003 09 30 | 704 | 0.9− | 0.3+ | 2003 11 19 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 2003 09 30 | 704 | 0.1− | 0.4+ | 2003 11 19 | 704 | 0.4+ | 0.1− | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2003 09 30 | 704 | 0.1+ | 0.5− | 2003 11 19 | 704 | 0.2+ | 0.8− | 2006 09 19 | 699 | 0.4+ | 0.1− |

**2003 SL**$_{199}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.44273 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18179891 | $\omega$ | 208.66595 | | −0.03865645 | −0.99666201 | |
| $a$ | 3.0860896 | $\Omega$ | 243.62895 | | +0.93143003 | −0.00988021 | |
| $e$ | 0.2162337 | $i$ | 4.60342 | | +0.36186155 | −0.08103843 | |
| $P$ | 5.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | 0.6+ | 0.7− | 2003 10 16 | 691 | 0.2− | 0.3− | 2003 11 24 | 691 | 0.0 | 0.0 |
| 1998 12 22 | 704 | 0.1+ | 0.6− | 2003 10 25 | 704 | 0.6− | 0.4+ | 2003 11 24 | 691 | 0.0 | 0.1+ |
| 1998 12 22 | 704 | (2.0+ | 2.7−) | 2003 10 25 | 704 | 0.4− | 0.3+ | 2003 11 24 | 691 | 0.0 | 0.1+ |
| 1998 12 22 | 704 | 0.8− | 1.4− | 2003 10 25 | 704 | 0.4+ | 0.4+ | 2003 11 24 | 704 | 1.2− | 0.5+ |
| 2003 09 21 | 699 | (0.8+ | 1.6−) | 2003 10 25 | 704 | 0.0 | 0.2+ | 2003 11 24 | 704 | (1.7− | 0.3+) |
| 2003 09 21 | 699 | 0.9+ | 0.2+ | 2003 10 29 | 704 | (1.8+ | 0.3+) | 2003 11 24 | 704 | 1.3− | 0.9+ |
| 2003 09 21 | 699 | 0.3+ | 0.8− | 2003 10 29 | 704 | 0.0 | 0.3+ | 2003 11 24 | 704 | 0.1+ | 0.0 |
| 2003 09 21 | 699 | 1.3− | 0.6− | 2003 10 29 | 704 | 1.0+ | 0.0 | 2005 03 03 | 703 | 0.3− | 0.0 |
| 2003 09 22 | 691 | 0.4+ | 0.1− | 2003 10 29 | 704 | 0.0 | 1.0+ | 2005 03 03 | 703 | 0.2+ | 0.1+ |
| 2003 09 22 | 691 | 0.1+ | 0.0 | 2003 11 01 | 704 | 0.4+ | 0.4+ | 2005 03 03 | 703 | 0.3+ | 0.1− |
| 2003 09 22 | 691 | 0.1+ | 0.1− | 2003 11 01 | 704 | 0.7+ | 0.4− | 2005 03 03 | 703 | 0.3− | 0.1+ |
| 2003 09 30 | 691 | 0.2+ | 0.1+ | 2003 11 01 | 704 | 0.2− | 0.6− | 2005 03 10 | 703 | 0.1+ | 1.2+ |
| 2003 09 30 | 691 | 0.1− | 0.1+ | 2003 11 01 | 704 | 0.6− | 0.3+ | 2005 03 10 | 703 | 0.3− | 0.5+ |
| 2003 09 30 | 691 | 0.1+ | 0.2+ | 2003 11 03 | 704 | (0.4+ | 1.9+) | 2005 03 10 | 703 | 0.6+ | 0.3+ |
| 2003 10 16 | 691 | 0.1+ | 0.2− | 2003 11 03 | 704 | (0.1+ | 2.1+) | 2005 03 10 | 703 | 0.6+ | 0.1+ |
| 2003 10 16 | 691 | 0.1− | 0.1− | 2003 11 03 | 704 | 1.0− | 1.5+ | | | | |

**2003 SY**$_{203}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.36042 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27044730 | $\omega$ | 260.53292 | | +0.42872627 | −0.90340713 | |
| $a$ | 2.3681777 | $\Omega$ | 164.07470 | | +0.83860665 | +0.39505763 | |
| $e$ | 0.1621910 | $i$ | 1.46712 | | +0.33605456 | +0.16668844 | |
| $P$ | 3.64 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.0 | 0.3+ | 2003 09 26 | 704 | 0.4+ | 1.0+ | 2003 10 24 | 691 | 0.1+ | 0.6− |
| 2001 01 26 | 691 | 0.1+ | 0.0 | 2003 09 27 | 691 | 0.2− | 0.5+ | 2003 10 24 | 691 | 0.2− | 0.4+ |
| 2001 01 26 | 691 | 0.0 | 0.2+ | 2003 09 27 | 691 | 0.0 | 0.4+ | 2003 10 24 | 645 | 0.0 | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.4− | 0.0 | 2003 09 27 | 691 | 0.3+ | 0.4+ | 2003 10 24 | 645 | 0.0 | 0.1− |
| 2003 09 17 | 691 | 0.1+ | 0.1+ | 2003 09 29 | 704 | 0.4+ | 0.1− | 2003 10 24 | 691 | 0.3+ | 0.1− |
| 2003 09 17 | 691 | 0.1− | 0.4− | 2003 09 29 | 704 | 0.0 | 0.7+ | 2003 11 20 | 645 | 0.0 | 0.1− |
| 2003 09 22 | 699 | 0.8+ | 0.3− | 2003 09 29 | 704 | 0.2+ | 0.3+ | 2003 11 20 | 645 | 0.0 | 0.2− |
| 2003 09 22 | 699 | 0.8− | 0.4+ | 2003 09 29 | 704 | 0.2− | 0.4+ | 2005 04 04 | G96 | 0.3− | 0.4− |
| 2003 09 22 | 699 | 0.2− | 0.9− | 2003 10 18 | 291 | 0.1− | 0.3+ | 2005 04 04 | G96 | 0.2+ | 0.4+ |
| 2003 09 22 | 699 | 0.3+ | 0.1+ | 2003 10 18 | 291 | 0.1− | 0.4+ | 2005 04 04 | G96 | 0.3− | 0.5− |
| 2003 09 26 | 704 | 1.1+ | 0.7+ | 2003 10 18 | 291 | 0.1+ | 0.4+ | 2005 04 04 | G96 | 0.0 | 0.2− |
| 2003 09 26 | 704 | (1.1− | 2.6+) | 2003 10 23 | 645 | 0.1− | 0.0 | | | | |
| 2003 09 26 | 704 | 1.3− | 1.2− | 2003 10 23 | 645 | 0.0 | 0.0 | | | | |

**2003 SE$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 265.69161 | | (2000.0) | | | |
| $n$ | 0.24024251 | $\omega$ | 293.64177 | | +0.99937586 | −0.03438017 |
| $a$ | 2.5627297 | $\Omega$ | 68.32928 | | +0.03475105 | +0.91554067 |
| $e$ | 0.1544525 | $i$ | 0.50049 | | +0.00634484 | +0.40075340 |
| $P$ | 4.10 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 699 | 1.0− | 0.0 | 2003 09 29 | 704 | 1.1+ | 1.9+ | 2003 10 24 | 645 | 0.1+ | 0.0 |
| 2003 09 21 | 699 | 0.6+ | 1.1− | 2003 09 29 | 704 | 0.2+ | 0.7+ | 2003 10 24 | 691 | 0.2+ | 0.3+ |
| 2003 09 21 | 699 | 0.8+ | 0.3+ | 2003 09 29 | 704 | 0.0 | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.1− |
| 2003 09 21 | 699 | 0.6− | 1.0+ | 2003 10 01 | 699 | 1.5+ | 0.9− | 2003 11 20 | 645 | 0.1+ | 0.1− |
| 2003 09 26 | 704 | 0.2+ | 0.7+ | 2003 10 01 | 699 | 0.4− | 1.0− | 2006 04 19 | 691 | 0.4− | 0.0 |
| 2003 09 26 | 704 | 0.8+ | 0.2+ | 2003 10 01 | 699 | 0.9− | 0.6− | 2006 04 19 | 691 | 0.3+ | 0.8− |
| 2003 09 26 | 704 | 0.1+ | 0.7+ | 2003 10 01 | 699 | (0.8− | 2.2+) | 2006 04 19 | 691 | 0.2− | 0.2+ |
| 2003 09 26 | 704 | 0.2− | 0.4+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 05 04 | G96 | 0.2+ | 0.3− |
| 2003 09 27 | 691 | 0.4− | 0.0 | 2003 10 22 | 645 | 0.2− | 0.1− | 2006 05 04 | G96 | 0.3+ | 0.0 |
| 2003 09 27 | 691 | 0.3− | 0.0 | 2003 10 24 | 691 | 0.0 | 0.4+ | 2006 05 04 | G96 | 0.2+ | 0.2+ |
| 2003 09 27 | 691 | 0.1− | 0.1+ | 2003 10 24 | 691 | 0.2− | 0.3+ | 2006 05 04 | G96 | 0.2− | 0.1+ |
| 2003 09 29 | 704 | 1.0+ | 0.2+ | 2003 10 24 | 645 | 0.1+ | 0.1− | | | | |

**2003 SW$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 245.02251 | | (2000.0) | | | |
| $n$ | 0.19781482 | $\omega$ | 309.36153 | | +0.97963188 | +0.15749512 |
| $a$ | 2.9171819 | $\Omega$ | 42.00703 | | −0.07123715 | +0.85257745 |
| $e$ | 0.2501059 | $i$ | 10.72734 | | −0.18774090 | +0.49830410 |
| $P$ | 4.98 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 20 | 699 | 0.5− | 0.2+ | 2003 10 29 | 704 | 0.2+ | 0.6− | 2003 11 20 | 704 | 0.8− | 0.9+ |
| 1998 11 20 | 699 | 0.7+ | 0.6− | 2003 11 02 | 704 | 0.6− | 0.6− | 2003 11 21 | 695 | 0.0 | 0.3− |
| 1998 11 20 | 699 | 0.5+ | 1.0− | 2003 11 02 | 704 | 0.2+ | 0.4+ | 2003 11 21 | 695 | 0.3− | 0.2− |
| 2003 09 28 | 333 | 0.6+ | 0.6+ | 2003 11 02 | 704 | 0.8− | 0.6+ | 2003 11 24 | 704 | 0.1+ | 0.1− |
| 2003 09 28 | 333 | 0.3+ | 0.2− | 2003 11 02 | 704 | 0.6− | 1.1− | 2003 11 24 | 704 | 0.3+ | 0.6− |
| 2003 09 28 | 333 | 0.3+ | 0.5− | 2003 11 02 | 704 | 0.9− | 0.2− | 2003 11 24 | 704 | 0.5+ | 0.4− |
| 2003 09 29 | 333 | 0.1+ | 0.0 | 2003 11 05 | 699 | 1.0− | 0.1+ | 2003 11 24 | 704 | 0.3+ | 1.4− |
| 2003 09 29 | 333 | 0.5+ | 0.4− | 2003 11 05 | 699 | 0.2− | 0.3− | 2003 11 24 | 703 | 1.7+ | 0.1+ |
| 2003 09 29 | 333 | 0.4+ | 0.4− | 2003 11 05 | 699 | 0.7− | 0.1+ | 2003 11 24 | 703 | 0.7− | 0.7+ |
| 2003 10 20 | 691 | 0.1+ | 0.1+ | 2003 11 05 | 699 | 0.2− | 0.3+ | 2003 11 24 | 703 | 0.2+ | 0.6+ |
| 2003 10 20 | 691 | 0.1+ | 0.2+ | 2003 11 16 | 691 | 0.1+ | 0.2− | 2003 11 24 | 703 | 0.4− | 0.4+ |
| 2003 10 20 | 691 | 0.1+ | 0.1+ | 2003 11 16 | 691 | 0.1+ | 0.2− | 2003 12 13 | 703 | 1.3− | 0.5+ |
| 2003 10 24 | 704 | 0.4− | 0.1− | 2003 11 16 | 691 | 0.1+ | 0.2− | 2003 12 13 | 703 | 0.8+ | 0.1− |
| 2003 10 24 | 704 | 0.1− | 0.0 | 2003 11 19 | 699 | 0.5− | 0.1+ | 2003 12 13 | 703 | 0.2− | 0.3+ |
| 2003 10 24 | 704 | 1.0+ | 0.6+ | 2003 11 19 | 699 | 0.3− | 0.2+ | 2003 12 13 | 703 | 0.9− | 0.6+ |
| 2003 10 24 | 704 | 0.7+ | 0.5+ | 2003 11 19 | 699 | 0.3− | 0.6− | 2006 04 07 | 691 | 0.5− | 0.0 |
| 2003 10 24 | 704 | 0.1+ | 0.2+ | 2003 11 19 | 699 | 0.2+ | 0.5− | 2006 04 07 | 691 | 0.6+ | 0.0 |
| 2003 10 29 | 704 | 0.5− | 0.2+ | 2003 11 20 | 704 | 0.4+ | 1.5+ | 2006 04 07 | 691 | 0.2− | 0.1− |
| 2003 10 29 | 704 | 0.0 | 0.0 | 2003 11 20 | 704 | 0.9− | 0.8+ | | | | |
| 2003 10 29 | 704 | 0.3+ | 0.0 | 2003 11 20 | 704 | (0.7+ | 2.6+) | | | | |

**2003 SY$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.79086 | | (2000.0) | | | |
| $n$ | 0.29222549 | $\omega$ | 52.96461 | | +0.18015833 | −0.97221503 |
| $a$ | 2.2490062 | $\Omega$ | 27.79831 | | +0.76963963 | +0.04470059 |
| $e$ | 0.3277750 | $i$ | 18.69319 | | +0.61253392 | +0.22978204 |
| $P$ | 3.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 704 | 0.4+ | 0.7− | 2003 12 04 | 704 | 0.6− | 0.3− | 2006 08 22 | 644 | 0.1− | 0.2− |
| 2003 09 30 | 704 | 0.2+ | 0.5− | 2003 12 05 | 704 | 1.1− | 0.6+ | 2006 08 22 | 644 | 0.2+ | 0.3+ |
| 2003 09 30 | 704 | 0.2− | 0.0 | 2003 12 05 | 704 | 0.4+ | 0.2+ | 2006 09 28 | E12 | 0.1− | 0.3+ |
| 2003 09 30 | 704 | 0.9+ | 0.2− | 2003 12 05 | 704 | 0.2− | 0.4− | 2006 09 28 | E12 | 0.3+ | 0.1− |
| 2003 10 01 | G90 | 0.7+ | 0.5− | 2003 12 05 | 704 | 0.4− | 0.3− | 2006 09 28 | E12 | 0.5− | 0.7+ |
| 2003 10 01 | G90 | 0.1− | 0.5+ | 2004 02 02 | 703 | 0.1− | 0.3− | 2006 09 28 | E12 | 0.2+ | 0.9− |
| 2003 10 01 | G90 | 0.0 | 0.1− | 2004 02 02 | 703 | 0.2− | 0.6+ | 2006 10 12 | E12 | 0.1− | 0.1+ |
| 2003 10 02 | G90 | 0.1+ | 0.2− | 2004 02 02 | 703 | 0.2− | 0.5+ | 2006 10 12 | E12 | 0.2+ | 0.0 |
| 2003 10 02 | G90 | 0.3+ | 0.5− | 2004 02 02 | 703 | 0.2+ | 0.1− | 2006 10 12 | E12 | 0.7− | 0.2+ |
| 2003 10 02 | 854 | 0.7− | 0.7+ | 2004 02 03 | 704 | 0.3− | 0.2− | 2006 10 12 | E12 | 0.1− | 0.2− |
| 2003 10 02 | 704 | 0.1+ | 0.6− | 2004 02 03 | 704 | 0.1− | 0.6+ | 2006 10 21 | 703 | 0.8− | 0.7− |
| 2003 10 02 | 704 | 0.4− | 0.4+ | 2004 02 03 | 704 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.4+ | 0.6+ |
| 2003 10 02 | 704 | 0.2+ | 0.7+ | 2004 02 03 | 704 | 0.4+ | 1.2− | 2006 10 21 | 703 | 0.3− | 0.2− |
| 2003 10 02 | 333 | 0.1+ | 0.4− | 2004 02 03 | 704 | 0.6− | 0.7− | 2006 10 21 | 703 | 0.4− | 0.8− |
| 2003 10 02 | 333 | 0.3+ | 0.4− | 2004 02 10 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2003 10 25 | 699 | 0.5− | 0.8− | 2004 02 10 | 704 | 0.5− | 0.4+ | 2006 10 28 | 703 | 1.0− | 0.6+ |
| 2003 10 25 | 699 | 0.1+ | 0.7+ | 2004 02 10 | 704 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.6− | 0.8+ |
| 2003 10 25 | 699 | 0.2− | 0.2+ | 2004 02 10 | 704 | 0.2− | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2003 10 25 | 699 | 0.0 | 0.4− | 2004 02 10 | 704 | 0.4− | 0.4+ | 2006 11 17 | 704 | (2.1+ | 0.9+) |
| 2003 11 04 | 704 | 0.1+ | 0.9+ | 2004 03 01 | 704 | 0.6+ | 0.8+ | 2006 11 17 | 704 | (2.0+ | 2.2+) |
| 2003 11 04 | 704 | 0.0 | 0.3− | 2004 03 01 | 704 | 0.9+ | 0.0 | 2006 11 17 | 704 | (1.7+ | 0.8+) |
| 2003 11 04 | 704 | 0.2− | 1.1+ | 2004 03 01 | 704 | 1.3+ | 0.5− | 2006 11 20 | 704 | 0.9− | 0.6+ |
| 2003 11 05 | 704 | 0.1+ | 0.2+ | 2004 03 01 | 704 | 0.3+ | 0.7+ | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2003 11 05 | 704 | 0.3+ | 0.2− | 2004 03 01 | 704 | 0.4+ | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.2− |
| 2003 11 05 | 704 | 0.0 | 0.1− | 2004 03 23 | 703 | (1.1+ | 2.2+) | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2003 11 05 | 704 | 0.3− | 0.1− | 2004 03 23 | 703 | 0.2+ | 0.6+ | 2006 11 25 | G96 | 0.6+ | 0.2+ |
| 2003 12 04 | 704 | 0.1+ | 0.5− | 2004 03 23 | 703 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.6+ | 1.0+ |
| 2003 12 04 | 704 | 0.3− | 0.1− | 2004 03 23 | 703 | 1.2+ | 1.1+ | 2006 11 25 | G96 | 0.3− | 0.7− |
| 2003 12 04 | 704 | 0.6− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.7+ | 0.3+ |

**2003 SO$_{238}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 176.31960 | | (2000.0) | | | |
| $n$ | 0.18421926 | $\omega$ | 184.03439 | | +0.87961926 | −0.47219738 |
| $a$ | 3.0589992 | $\Omega$ | 204.40312 | | +0.44022507 | +0.85384837 |
| $e$ | 0.0611264 | $i$ | 7.99190 | | +0.18019946 | +0.21902647 |
| $P$ | 5.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 691 | 0.0 | 0.1− | 2003 09 19 | 691 | 0.1+ | 0.4+ | 2003 10 24 | 704 | 0.5+ | 1.6+ |
| 1998 09 25 | 691 | 0.0 | 0.1+ | 2003 09 27 | 704 | 0.4− | 0.5− | 2003 10 24 | 704 | 0.4+ | 1.7− |
| 1998 09 25 | 691 | 0.1+ | 0.5− | 2003 09 27 | 704 | 0.2+ | 0.9+ | 2003 10 24 | 704 | (2.0+ | 3.7−) |
| 2001 04 28 | 691 | 0.2− | 0.2+ | 2003 09 27 | 704 | 1.3− | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2001 04 28 | 691 | 0.1+ | 0.1− | 2003 09 27 | 704 | 0.7− | 0.3+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2001 04 28 | 691 | 0.1+ | 0.2− | 2003 09 29 | 691 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.6+ | 0.7− |
| 2003 08 23 | 599 | 0.9+ | 0.1+ | 2003 09 29 | 691 | 0.0 | 0.2+ | 2003 11 16 | 645 | 0.0 | 0.0 |
| 2003 08 23 | 599 | 0.1+ | 0.2+ | 2003 09 29 | 691 | 0.0 | 0.1+ | 2003 11 16 | 645 | 0.1− | 0.0 |
| 2003 08 23 | 599 | 0.6− | 0.0 | 2003 10 24 | 691 | 0.1+ | 0.3+ | 2006 03 05 | 691 | 0.2+ | 0.5+ |
| 2003 09 19 | 691 | 0.0 | 0.4+ | 2003 10 24 | 691 | 0.5− | 0.1+ | 2006 03 05 | 691 | 0.1− | 0.6+ |
| 2003 09 19 | 691 | 0.0 | 0.3+ | 2003 10 24 | 691 | 0.0 | 0.2+ | 2006 03 05 | 691 | 0.3+ | 0.4+ |

**2003 SX$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 180.54138 | | (2000.0) | | | |
| $n$ | 0.18414507 | $\omega$ | 350.99477 | | +0.80222085 | −0.59678979 |
| $a$ | 3.0598208 | $\Omega$ | 45.65954 | | +0.54921765 | +0.72662451 |
| $e$ | 0.2028930 | $i$ | 1.34935 | | +0.23409757 | +0.34038033 |
| $P$ | 5.35 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 691 | 0.1− | 0.6− | 2003 09 28 | 291 | 0.1− | 0.5+ | 2003 10 22 | 645 | 0.0 | 0.0 |
| 1998 11 23 | 691 | 0.1+ | 0.6− | 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 22 | 645 | 0.1+ | 0.1− |
| 1998 11 23 | 691 | 0.5+ | 0.4− | 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2003 09 18 | 691 | 0.5− | 0.3+ | 2003 09 28 | 291 | 0.1− | 0.4+ | 2003 10 24 | 645 | 0.0 | 0.1− |
| 2003 09 18 | 691 | 0.5− | 0.4+ | 2003 09 29 | 691 | 0.1− | 0.3+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 18 | 691 | 0.2− | 0.4+ | 2003 09 29 | 691 | 0.5− | 0.2+ | 2003 11 20 | 645 | 0.1+ | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 09 29 | 691 | 0.1− | 0.2+ | 2005 01 15 | 691 | 0.2+ | 0.5+ |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 19 | 645 | 0.0 | 0.1− | 2005 01 15 | 691 | 0.0 | 0.4+ |
| 2003 09 28 | 291 | 0.2− | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 01 15 | 691 | 0.4+ | 1.1+ |

**2003 ST$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.71267 | | (2000.0) | | | |
| $n$ | 0.26266823 | $\omega$ | 105.19865 | | +0.47316132 | +0.88077456 |
| $a$ | 2.4147065 | $\Omega$ | 193.09027 | | −0.83683426 | +0.44267007 |
| $e$ | 0.2292665 | $i$ | 4.76893 | | −0.27536666 | +0.16816479 |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.4− | 0.8+ | 2003 09 26 | 704 | (1.0− | 1.5+) | 2003 10 22 | 645 | 0.1+ | 0.0 |
| 1999 07 13 | 704 | 0.4− | 0.3+ | 2003 09 26 | 704 | 0.9− | 0.7+ | 2003 10 23 | 704 | 0.6− | 0.9+ |
| 1999 07 13 | 704 | 0.4+ | 1.1+ | 2003 09 26 | 704 | 0.8− | 1.1+ | 2003 10 23 | 645 | 0.0 | 0.0 |
| 1999 07 13 | 704 | 0.1− | 0.7+ | 2003 09 26 | 704 | (0.7− | 1.7+) | 2003 10 23 | 645 | 0.0 | 0.0 |
| 2002 02 20 | 291 | 0.3+ | 0.8+ | 2003 09 26 | 704 | (1.2− | 3.2+) | 2003 10 23 | 704 | 0.2− | 1.3+ |
| 2002 02 20 | 291 | 0.0 | 0.6+ | 2003 09 29 | 704 | 0.2+ | 0.3+ | 2003 10 23 | 704 | 0.6− | 0.0 |
| 2002 02 20 | 291 | 0.4+ | 0.8+ | 2003 09 29 | 704 | (1.8− | 0.0 ) | 2003 10 23 | 704 | 1.2+ | 1.1− |
| 2003 08 20 | 599 | 0.0 | 0.3+ | 2003 09 29 | 704 | 0.1+ | 0.3+ | 2003 11 19 | 645 | 0.0 | 0.1+ |
| 2003 08 20 | 599 | 0.1+ | 0.3+ | 2003 09 29 | 704 | 0.0 | 0.8+ | 2003 11 19 | 645 | 0.1− | 0.0 |
| 2003 08 20 | 599 | 0.2+ | 0.6+ | 2003 10 04 | 608 | 0.4− | 0.2− | 2006 05 19 | G96 | 0.1− | 0.2+ |
| 2003 09 18 | 608 | 0.1+ | 0.6− | 2003 10 04 | 608 | 0.2− | 0.4− | 2006 05 19 | G96 | 0.0 | 0.0 |
| 2003 09 18 | 608 | 0.4+ | 0.8− | 2003 10 04 | 608 | 0.3− | 0.2+ | 2006 05 19 | G96 | 0.1+ | 0.1− |
| 2003 09 18 | 608 | 0.8+ | 1.1− | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.2+ | 0.0 |
| 2003 09 19 | 704 | (0.7+ | 2.7+) | 2003 10 18 | 645 | 0.1− | 0.0 | 2006 05 19 | G96 | 0.6− | 0.1+ |
| 2003 09 19 | 704 | (0.3+ | 1.9+) | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.1+ | 0.2− |
| 2003 09 19 | 704 | (0.5+ | 2.9+) | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.3+ | 0.2+ |
| 2003 09 19 | 704 | (0.2− | 2.4+) | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.3+ | 0.4+ |

**2003 SZ$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 238.41668 | | (2000.0) | | | |
| $n$ | 0.21053307 | $\omega$ | 340.15362 | | +0.99430813 | +0.10333664 |
| $a$ | 2.7984819 | $\Omega$ | 13.99065 | | −0.07737067 | +0.86771601 |
| $e$ | 0.0739923 | $i$ | 6.15940 | | −0.07324701 | +0.48620003 |
| $P$ | 4.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.3− | 0.1− | 2003 09 29 | 704 | 0.3+ | 1.1+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 1999 12 12 | 704 | 0.2+ | 0.7− | 2003 09 29 | 645 | 0.1+ | 0.0 | 2003 10 24 | 645 | 0.1− | 0.0 |
| 1999 12 12 | 704 | 0.1− | 1.3+ | 2003 09 29 | 645 | 0.1+ | 0.0 | 2003 11 20 | 645 | 0.1− | 0.1− |
| 2003 09 18 | 691 | 0.2− | 0.4+ | 2003 10 01 | 699 | 0.2+ | 1.1+ | 2003 11 20 | 645 | 0.1− | 0.1− |
| 2003 09 18 | 691 | 0.3− | 0.2+ | 2003 10 01 | 699 | 0.7− | 0.4+ | 2003 11 21 | 695 | 0.2+ | 0.3+ |
| 2003 09 18 | 691 | 0.2− | 0.3+ | 2003 10 01 | 699 | (0.4+ | 1.5−) | 2003 11 22 | 695 | 0.0 | 0.1+ |
| 2003 09 26 | 704 | 0.0 | 0.0 | 2003 10 01 | 699 | 1.4− | 1.1+ | 2004 12 14 | 691 | 0.0 | 0.2− |
| 2003 09 26 | 704 | 0.2− | 0.1+ | 2003 10 19 | 704 | 0.3+ | 0.6+ | 2004 12 14 | 691 | 0.2+ | 0.0 |
| 2003 09 26 | 704 | 0.5− | 0.5− | 2003 10 19 | 704 | 0.7+ | 0.1− | 2004 12 14 | 691 | 0.1− | 0.3+ |
| 2003 09 26 | 704 | 1.0− | 0.7+ | 2003 10 19 | 645 | 0.1+ | 0.1− | 2006 03 23 | G96 | 0.2− | 0.1+ |
| 2003 09 26 | 704 | 0.2+ | 0.2− | 2003 10 19 | 645 | 0.1+ | 0.2− | 2006 03 23 | G96 | 0.1+ | 0.2+ |
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 10 19 | 704 | 0.8+ | 0.3+ | 2006 03 23 | G96 | 0.1− | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2003 10 19 | 704 | 0.5+ | 0.1− | 2006 03 23 | G96 | 0.4+ | 0.2+ |
| 2003 09 29 | 704 | 0.3− | 0.6+ | 2003 10 23 | 704 | 0.8+ | 0.1− | 2006 05 06 | G96 | 0.1− | 0.3+ |
| 2003 09 29 | 704 | 0.1− | 0.3+ | 2003 10 23 | 704 | 1.3− | 0.1+ | 2006 05 06 | G96 | 0.1+ | 0.1− |
| 2003 09 29 | 704 | 0.1+ | 0.7+ | 2003 10 23 | 704 | 0.6+ | 0.5+ | 2006 05 06 | G96 | 0.3− | 0.0 |
| 2003 09 29 | 704 | 0.2+ | 0.9+ | 2003 10 23 | 704 | 1.2− | 0.1+ | 2006 05 06 | G96 | 0.3+ | 0.0 |

**2003 SW$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.36574 | | (2000.0) | | | |
| $n$ | 0.27192368 | $\omega$ | 209.01855 | | +0.62361927 | −0.78071177 |
| $a$ | 2.3595980 | $\Omega$ | 202.47455 | | +0.73583501 | +0.60345494 |
| $e$ | 0.1115038 | $i$ | 5.98388 | | +0.26390498 | +0.16226915 |
| $P$ | 3.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 28 | 608 | 0.0 | 0.1+ | 2003 10 19 | 701 | 0.4+ | 0.6+ | 2003 10 28 | 106 | 1.0+ | 0.4+ |
| 2001 01 28 | 608 | 0.2− | 0.3+ | 2003 10 19 | 701 | 0.4+ | 0.4+ | 2003 10 28 | 106 | 0.1− | 0.1+ |
| 2001 01 28 | 608 | 0.2+ | 0.4− | 2003 10 19 | 701 | 0.0 | 0.7+ | 2003 10 28 | 704 | 0.6+ | 0.3+ |
| 2003 09 20 | 644 | 0.3− | 0.1− | 2003 10 21 | 699 | 0.8− | 0.4+ | 2003 10 28 | 704 | 0.5+ | 0.4+ |
| 2003 09 20 | 644 | 0.3− | 0.1+ | 2003 10 21 | 699 | 0.3− | 0.6+ | 2003 10 28 | 704 | 0.5+ | 1.0+ |
| 2003 09 20 | 644 | 0.3− | 0.1− | 2003 10 21 | 699 | 0.2− | 0.1− | 2003 10 28 | 704 | 0.5+ | 0.4+ |
| 2003 09 20 | 644 | 0.4− | 0.0 | 2003 10 21 | 699 | 0.4+ | 0.5− | 2003 11 01 | 704 | 0.2− | 0.4− |
| 2003 09 20 | 644 | 0.2− | 0.1+ | 2003 10 21 | 704 | 0.1− | 0.3+ | 2003 11 01 | 704 | 0.6+ | 0.2+ |
| 2003 09 20 | 644 | 0.3− | 0.1− | 2003 10 21 | 704 | 0.2− | 0.2+ | 2003 11 01 | 704 | 0.2− | 0.3+ |
| 2003 09 22 | 691 | 0.1− | 0.3− | 2003 10 21 | 704 | 0.4− | 0.2− | 2003 11 01 | 704 | 0.3− | 0.5+ |
| 2003 09 22 | 691 | 0.4− | 0.2− | 2003 10 21 | 704 | 0.5− | 0.0 | 2003 11 01 | 704 | 0.6− | 0.4+ |
| 2003 09 22 | 691 | 0.0 | 0.1+ | 2003 10 21 | 704 | 0.2+ | 0.1+ | 2003 11 03 | 608 | 0.3− | 0.5− |
| 2003 09 27 | 691 | 0.1− | 0.0 | 2003 10 23 | 704 | 0.4+ | 0.4+ | 2003 11 03 | 608 | 0.6− | 0.9− |
| 2003 09 27 | 691 | 0.3− | 0.1+ | 2003 10 23 | 704 | 0.2+ | 0.3+ | 2003 11 03 | 608 | 1.0− | 0.2− |
| 2003 09 27 | 691 | 0.1+ | 0.1+ | 2003 10 23 | 704 | 0.0 | 0.7+ | 2003 11 19 | 644 | 0.3− | 0.1− |
| 2003 09 29 | 704 | 0.8+ | 0.1+ | 2003 10 23 | 704 | 0.1+ | 0.3+ | 2003 11 19 | 644 | 0.0 | 0.5− |
| 2003 09 29 | 704 | 0.3+ | 0.8+ | 2003 10 23 | 704 | 0.8+ | 0.4+ | 2003 11 19 | 644 | 0.3− | 0.0 |
| 2003 09 29 | 704 | 0.2− | 0.8− | 2003 10 25 | 691 | 0.3+ | 0.1− | 2003 11 28 | 691 | 0.2+ | 0.3− |
| 2003 09 29 | 704 | 0.2+ | 0.6− | 2003 10 25 | 691 | 0.0 | 0.1− | 2003 11 28 | 691 | 0.0 | 0.1− |
| 2003 09 29 | 704 | 0.5+ | 0.1− | 2003 10 25 | 691 | 0.1+ | 0.1− | 2003 11 28 | 691 | 0.2− | 0.2+ |
| 2003 10 16 | 701 | 0.4+ | 1.3− | 2003 10 26 | 703 | 2.0− | 0.5+ | 2005 03 13 | 703 | 0.1+ | 0.1+ |
| 2003 10 16 | 701 | 0.2+ | 1.5− | 2003 10 26 | 703 | 0.1+ | 1.7+ | 2005 03 13 | 703 | 0.7+ | 0.5+ |
| 2003 10 18 | 701 | 0.6+ | 1.7− | 2003 10 26 | 703 | 0.4− | 0.4+ | 2005 03 13 | 703 | 0.1+ | 0.4− |
| 2003 10 18 | 701 | 0.9+ | 1.4− | 2003 10 26 | 703 | 0.6− | 0.4+ | 2005 03 13 | 703 | 1.2− | 0.9− |
| 2003 10 18 | 701 | 0.8+ | 0.8− | 2003 10 28 | 106 | 0.8+ | 0.3− | | | | |

**2003 ST$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 196.61007 | | (2000.0) | | | |
| $n$ | 0.19365908 | $\omega$ | 103.43800 | | +0.97631657 | −0.21605249 |
| $a$ | 2.9587673 | $\Omega$ | 269.04015 | | +0.19387362 | +0.89685250 |
| $e$ | 0.0589760 | $i$ | 0.64647 | | +0.09601545 | +0.38597526 |
| $P$ | 5.09 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 29 | 691 | 0.3− | 0.0 | 2004 12 20 | 691 | 0.5+ | 0.1− | 2006 03 02 | 691 | 0.3+ | 0.4+ |
| 1994 11 29 | 691 | 0.7+ | 0.3+ | 2004 12 20 | 691 | 0.2+ | 0.3− | 2006 03 02 | 691 | 0.3+ | 0.4+ |
| 1994 11 29 | 691 | 0.0 | 1.6+ | 2006 02 07 | G96 | 0.2+ | 0.3− | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 2003 09 16 | 691 | 0.0 | 0.4+ | 2006 02 07 | G96 | 0.9− | 0.0 | 2006 03 02 | 691 | 0.2+ | 0.1+ |
| 2003 09 16 | 691 | 0.0 | 0.5+ | 2006 02 07 | G96 | 0.2− | 0.1+ | 2006 03 02 | 691 | 0.2+ | 0.1+ |
| 2003 09 16 | 691 | 0.1+ | 0.4+ | 2006 02 07 | G96 | 0.4+ | 0.0 | 2006 03 21 | G96 | 0.2+ | 0.0 |
| 2003 09 28 | 691 | 0.7− | 0.2+ | 2006 02 24 | 691 | 0.4− | 0.2+ | 2006 03 21 | G96 | 0.4+ | 0.2− |
| 2003 09 28 | 691 | 0.5− | 0.0 | 2006 02 24 | 691 | 0.2+ | 0.2+ | 2006 03 21 | G96 | 0.1− | 0.0 |
| 2003 09 28 | 691 | 0.6− | 0.3+ | 2006 02 24 | 691 | 0.3− | 0.3+ | 2006 03 21 | G96 | 0.0 | 0.1+ |
| 2003 09 29 | 704 | 0.4+ | 0.8+ | 2006 02 24 | 691 | 0.4+ | 0.1+ | 2006 04 24 | G96 | 0.2+ | 0.5− |
| 2003 09 29 | 704 | 0.2+ | 0.6+ | 2006 02 24 | 691 | 0.3+ | 0.5+ | 2006 04 24 | G96 | 0.1+ | 0.5− |
| 2003 09 29 | 704 | 0.2− | 0.1− | 2006 02 24 | 691 | 0.1+ | 0.6+ | 2006 04 24 | G96 | 0.4− | 0.3− |
| 2003 09 29 | 704 | 0.3+ | 1.3+ | 2006 02 24 | G96 | 0.2− | 0.0 | 2006 04 24 | G96 | 0.2+ | 0.4− |
| 2003 10 17 | 691 | 0.0 | 0.5+ | 2006 02 24 | G96 | 0.2− | 0.2+ | 2006 05 26 | G96 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 17 | 691 | 0.0 | 0.4+ | 2006 02 24 | G96 | 0.2− | 0.6+ | 2006 05 26 | G96 | 0.3− | 0.4+ |
| 2003 10 17 | 691 | 0.1− | 0.4+ | 2006 02 24 | G96 | 0.2+ | 0.2+ | 2006 05 26 | G96 | 0.1− | 0.4+ |
| 2004 12 20 | 691 | 0.8− | 1.6− | 2006 03 02 | 691 | 0.1+ | 0.5+ | 2006 05 26 | G96 | 0.5+ | 0.1+ |

**2003 SP$_{257}$ = 1996 AK$_{16}$ = 2005 EG$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.20773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23830540 | $\omega$ | 304.64549 | | +0.57656777 | | −0.81640647 |
| $a$ | 2.5765987 | $\Omega$ | 110.11274 | | +0.76046847 | | +0.52171579 |
| $e$ | 0.1360014 | $i$ | 1.97764 | | +0.29875962 | | +0.24757446 |
| $P$ | 4.14 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.2− | 0.2− | 2003 09 28 | 704 | 0.4− | 0.1+ | 2005 02 01 | 691 | 0.0 | 0.5+ |
| 1995 10 24 | 691 | 0.3− | 0.2− | 2003 09 28 | 704 | 0.9− | 0.8+ | 2005 02 01 | 691 | 0.3+ | 0.5+ |
| 1995 10 24 | 691 | 0.2+ | 0.4− | 2003 09 28 | 704 | 0.4− | 0.5+ | 2005 02 01 | 691 | 0.3+ | 0.7+ |
| 1996 01 13 | 691 | 0.3+ | 0.1+ | 2003 09 28 | 704 | 0.3+ | 0.0 | 2005 03 10 | G96 | 0.1+ | 0.2− |
| 1996 01 13 | 691 | 0.1+ | 0.1+ | 2003 09 29 | 704 | 1.2− | 0.1+ | 2005 03 10 | G96 | 0.0 | 0.2− |
| 1996 01 13 | 691 | 0.3+ | 0.1+ | 2003 09 29 | 704 | 0.1+ | 0.2− | 2005 03 10 | G96 | 0.2+ | 0.2− |
| 1996 01 24 | 691 | 0.0 | 0.1− | 2003 09 29 | 704 | 0.2+ | 1.7+ | 2005 03 10 | G96 | 0.1− | 0.2− |
| 1996 01 24 | 691 | 0.3+ | 0.5− | 2003 09 29 | 704 | 0.3+ | 0.0 | 2005 03 16 | G96 | 0.0 | 0.0 |
| 1996 01 24 | 691 | 0.2− | 0.2− | 2003 09 29 | 704 | 0.3+ | 0.9+ | 2005 03 16 | G96 | 0.2− | 0.0 |
| 2003 09 21 | 691 | 0.3− | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.3− | 0.3+ |
| 2003 09 21 | 691 | 0.1+ | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.0 | 0.0 |
| 2003 09 21 | 691 | 0.2− | 0.3+ | 2003 10 22 | 645 | 0.0 | 0.0 | | | | |
| 2003 09 28 | 704 | 0.1+ | 0.3− | 2003 10 22 | 645 | 0.1− | 0.0 | | | | |

**2003 SO$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.95216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17996316 | $\omega$ | 127.75732 | | +0.98368744 | | +0.17386600 |
| $a$ | 3.1070409 | $\Omega$ | 222.28645 | | −0.17893488 | | +0.91939167 |
| $e$ | 0.1436421 | $i$ | 3.93283 | | −0.01847504 | | +0.35283078 |
| $P$ | 5.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 807 | 0.3+ | 0.6+ | 2003 09 27 | 691 | 0.3+ | 0.2+ | 2003 10 22 | 645 | 0.0 | 0.1− |
| 2001 05 22 | 807 | 0.1+ | 0.4+ | 2003 09 27 | 704 | 0.1+ | 1.1+ | 2003 10 22 | 645 | 0.0 | 0.0 |
| 2003 09 19 | 704 | 1.4− | 0.2+ | 2003 09 27 | 704 | 0.1+ | 0.2− | 2003 10 24 | 645 | 0.0 | 0.1− |
| 2003 09 19 | 704 | 1.7− | 0.4+ | 2003 09 30 | 691 | 0.1+ | 0.2+ | 2003 10 24 | 645 | 0.1− | 0.2− |
| 2003 09 19 | 704 | 0.8− | 0.4− | 2003 09 30 | 691 | 0.2+ | 0.3+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 19 | 704 | 1.3− | 0.4− | 2003 09 30 | 691 | 0.1+ | 0.3+ | 2003 11 20 | 645 | 0.0 | 0.1+ |
| 2003 09 27 | 691 | 0.1+ | 0.4+ | 2003 10 17 | 691 | 0.2+ | 0.2+ | 2006 02 02 | G96 | 0.2+ | 0.4+ |
| 2003 09 27 | 704 | 0.4− | 0.6+ | 2003 10 17 | 691 | 0.1− | 0.2+ | 2006 02 02 | G96 | 0.2− | 0.5+ |
| 2003 09 27 | 691 | 0.3+ | 0.1+ | 2003 10 17 | 691 | 0.2+ | 0.5+ | 2006 02 02 | G96 | 0.1+ | 0.3+ |
| 2003 09 27 | 704 | 0.2+ | 0.3+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 02 02 | G96 | 0.3+ | 0.1+ |
| 2003 09 27 | 704 | 1.7+ | 0.3+ | 2003 10 19 | 645 | 0.0 | 0.1− | | | | |

**2003 SM$_{271}$ = 2006 MB$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.93157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29261444 | $\omega$ | 260.28159 | | +0.97294706 | | +0.20344288 |
| $a$ | 2.2470128 | $\Omega$ | 87.92062 | | −0.14443879 | | +0.90549020 |
| $e$ | 0.2125043 | $i$ | 6.28927 | | −0.18030932 | | +0.37242245 |
| $P$ | 3.37 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.2− | 1.1+ | 2003 10 06 | 608 | 0.1+ | 0.5+ | 2003 11 19 | 644 | 0.3− | 0.6+ |
| 2001 01 03 | 704 | 0.1+ | 1.2+ | 2003 10 06 | 608 | 0.2− | 0.9+ | 2003 11 19 | 644 | 0.2− | 0.4+ |
| 2001 01 03 | 704 | 0.1− | 0.5+ | 2003 10 14 | 699 | 0.6− | 0.4− | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 20 | 683 | 0.8− | 0.9+ | 2003 10 14 | 699 | 0.3+ | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 20 | 683 | (1.2− | 1.6+) | 2003 10 14 | 699 | (0.8− | 1.9−) | 2006 06 23 | D35 | 0.3− | 0.3+ |
| 2003 09 20 | 683 | 0.5− | 1.1− | 2003 10 14 | 699 | (1.8+ | 0.5−) | 2006 06 23 | D35 | 0.5+ | 0.5+ |
| 2003 09 25 | 608 | 0.2+ | 0.1− | 2003 10 15 | 699 | 0.0 | 0.1− | 2006 06 23 | D35 | 0.1− | 0.4+ |
| 2003 09 25 | 608 | 0.1+ | 0.1+ | 2003 10 15 | 699 | 0.3− | 0.3+ | 2006 06 24 | D35 | (1.4+ | 4.3−) |
| 2003 09 25 | 608 | 0.2+ | 0.1+ | 2003 10 15 | 699 | 0.4− | 1.1− | 2006 06 24 | D35 | (0.4− | 5.9−) |
| 2003 09 28 | 699 | 0.1− | 0.2− | 2003 10 15 | 699 | 0.6+ | 0.1+ | 2006 06 24 | D35 | (0.4+ | 5.2−) |
| 2003 09 28 | 699 | 0.2+ | 0.7+ | 2003 10 20 | 704 | 0.1+ | 0.4+ | 2006 06 25 | D35 | 0.1+ | 0.2+ |
| 2003 09 28 | 699 | 0.6+ | 0.9+ | 2003 10 20 | 704 | 0.2− | 0.1+ | 2006 06 25 | D35 | 0.8− | 0.5+ |
| 2003 09 28 | 699 | 0.3+ | 0.4+ | 2003 10 20 | 704 | 0.2+ | 0.2− | 2006 07 02 | D35 | 0.0 | 0.2+ |
| 2003 09 30 | 645 | 0.0 | 0.1− | 2003 10 20 | 704 | 0.8+ | 0.3+ | 2006 07 02 | D35 | 0.6+ | 0.4+ |
| 2003 09 30 | 645 | 0.0 | 0.1− | 2003 10 20 | 704 | 0.6− | 0.2+ | | | | |
| 2003 10 06 | 608 | 0.0 | 0.1− | 2003 11 19 | 644 | 0.5− | 0.3+ | | | | |

**2003 SO$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.55936 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25928288 | $\omega$ | 213.64762 | | −0.05760580 | | −0.99465672 |
| $a$ | 2.4356796 | $\Omega$ | 239.79016 | | +0.93642056 | | −0.02408250 |
| $e$ | 0.0907248 | $i$ | 5.68936 | | +0.34611863 | | −0.10038942 |
| $P$ | 3.80 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 24 | 691 | 0.2+ | 0.7− | 2001 01 30 | 608 | 0.8+ | 0.3− | 2003 09 27 | 704 | 0.9− | 1.6+ |
| 1992 11 24 | 691 | 0.0 | 0.7− | 2001 01 30 | 608 | 0.4+ | 0.1− | 2003 09 27 | 704 | 0.4+ | 0.1− |
| 1992 11 24 | 691 | 0.1− | 0.1− | 2001 02 19 | 608 | (0.8+ | 4.4+) | 2003 09 27 | 704 | 0.4− | 1.3+ |
| 1995 08 02 | 691 | 0.0 | 0.7+ | 2001 02 19 | 608 | (0.0 | 4.9+) | 2003 09 27 | 704 | 1.0− | 0.2+ |
| 1995 08 02 | 691 | 0.2− | 0.4+ | 2001 02 19 | 608 | (0.4+ | 4.3+) | 2003 09 27 | 704 | 0.0 | 1.1+ |
| 1995 08 02 | 691 | 0.2− | 0.5+ | 2003 09 20 | 704 | 1.6+ | 0.5− | 2003 09 27 | 704 | 0.7− | 0.7+ |
| 2001 01 04 | 704 | 0.2+ | 0.1+ | 2003 09 20 | 704 | 0.4− | 0.0 | 2003 09 27 | 704 | 0.2− | 0.7+ |
| 2001 01 04 | 704 | 0.3+ | 0.5− | 2003 09 20 | 704 | 0.3+ | 0.1+ | 2003 10 29 | 691 | 0.3− | 0.2+ |
| 2001 01 04 | 704 | 0.4− | 0.3− | 2003 09 20 | 704 | 0.1− | 0.7− | 2003 10 29 | 691 | 0.1− | 0.3+ |
| 2001 01 19 | 704 | 0.3− | 0.3+ | 2003 09 20 | 704 | 0.0 | 0.9− | 2003 10 29 | 691 | 0.2− | 0.3+ |
| 2001 01 19 | 704 | 0.3+ | 0.1− | 2003 09 21 | 644 | 0.3− | 0.1+ | 2005 02 15 | 809 | 0.1+ | 0.1− |
| 2001 01 19 | 704 | 0.2+ | 0.6+ | 2003 09 21 | 644 | 0.4− | 0.2+ | 2005 02 15 | 809 | 0.2+ | 0.1− |
| 2001 01 19 | 704 | 0.2+ | 0.5+ | 2003 09 21 | 644 | 0.2− | 0.0 | 2005 02 15 | 809 | 0.1+ | 0.0 |
| 2001 01 30 | 608 | 0.4+ | 0.9− | 2003 09 27 | 704 | 1.1+ | 0.0 | | | | |

**2003 SB$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.71778 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30381962 | $\omega$ | 121.85041 | | +0.86669229 | | −0.48824574 |
| $a$ | 2.1914194 | $\Omega$ | 267.55694 | | +0.41608339 | | +0.82064513 |
| $e$ | 0.1781504 | $i$ | 5.87566 | | +0.27517103 | | +0.29691358 |
| $P$ | 3.24 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 691 | 0.1+ | 0.1+ | 2003 10 17 | 691 | 0.4+ | 0.0 | 2003 11 22 | 691 | 0.1+ | 0.1− |
| 2003 09 30 | 691 | 0.5+ | 0.1+ | 2003 10 17 | 691 | 0.1+ | 0.0 | 2006 09 16 | 691 | 0.3− | 0.0 |
| 2003 09 30 | 691 | 0.1+ | 1.1− | 2003 10 17 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 691 | 0.2+ | 0.1+ |
| 2003 10 02 | 291 | 0.2− | 0.2− | 2003 10 17 | 699 | 0.5− | 0.3− | 2006 09 16 | 691 | 0.1+ | 0.3+ |
| 2003 10 02 | 291 | 0.0 | 0.1+ | 2003 10 17 | 699 | 1.7− | 1.2+ | 2006 09 18 | 691 | 0.0 | 0.3− |
| 2003 10 02 | 291 | 0.0 | 0.0 | 2003 10 17 | 699 | 0.1− | 0.9+ | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2003 10 05 | 291 | 0.2− | 0.1+ | 2003 10 17 | 699 | 1.8− | 0.4+ | 2006 09 18 | 691 | 0.3+ | 0.1− |
| 2003 10 05 | 291 | 0.1− | 0.0 | 2003 11 22 | 691 | 0.0 | 0.0 | | | | |
| 2003 10 05 | 291 | 0.1+ | 0.3+ | 2003 11 22 | 691 | 0.0 | 0.1− | | | | |

**2003 SK$_{289}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.10200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18171068 | $\omega$ | 281.74195 | | +0.63421026 | | +0.76764330 |
| $a$ | 3.0870885 | $\Omega$ | 28.27984 | | −0.61169221 | | +0.57111624 |
| $e$ | 0.0444189 | $i$ | 11.22187 | | −0.47287418 | | +0.29077482 |
| $P$ | 5.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 18 | 691 | 0.1− | 0.4+ | 2003 09 28 | 699 | 0.4− | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.1− |
| 2001 04 18 | 691 | 0.3+ | 0.2+ | 2003 09 28 | 704 | 0.9− | 0.3+ | 2003 10 22 | 645 | 0.0 | 0.0 |
| 2001 04 18 | 691 | 0.2+ | 0.1+ | 2003 09 28 | 699 | 0.2+ | 0.7− | 2003 10 22 | 645 | 0.1+ | 0.1− |
| 2003 09 19 | 644 | 0.2− | 0.2+ | 2003 09 28 | 704 | (2.2− | 1.1−) | 2003 10 24 | 645 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 644 | 0.2− | 0.3+ | 2003 09 28 | 699 | 0.2+ | 0.8+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2003 09 19 | 644 | 0.2− | 0.3+ | 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 11 19 | 645 | 0.0 | 0.1+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 09 28 | 645 | 0.0 | 0.1− | 2003 11 19 | 645 | 0.1− | 0.1+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 02 | 691 | 0.1+ | 0.4+ | 2006 02 21 | 703 | 0.4+ | 0.2+ |
| 2003 09 28 | 704 | 0.2− | 1.1+ | 2003 10 02 | 691 | 0.0 | 0.4+ | 2006 02 21 | 703 | 0.7+ | 1.2+ |
| 2003 09 28 | 699 | (0.8− | 3.6+) | 2003 10 02 | 691 | 0.2+ | 0.3+ | 2006 02 21 | 703 | 1.1− | 0.5− |
| 2003 09 28 | 704 | 1.4− | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 02 21 | 703 | 0.2+ | 0.5− |

**2003 SU$_{289}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.62923 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21108370 | $\omega$ | 303.36166 | | −0.38959416 | | −0.92053788 |
| $a$ | 2.7936130 | $\Omega$ | 169.44965 | | +0.88854104 | | −0.38389795 |
| $e$ | 0.1118932 | $i$ | 9.03301 | | +0.24230397 | | −0.07233516 |
| $P$ | 4.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | (2.0− | 5.2−) | 2003 09 28 | 704 | 0.0 | 0.5+ | 2005 02 02 | 703 | 0.3− | 0.5+ |
| 1996 03 26 | 691 | 0.7+ | 0.3+ | 2003 09 28 | 699 | (3.4+ | 0.6−) | 2005 02 02 | 704 | 0.8+ | 0.4− |
| 1996 03 26 | 691 | 0.1+ | 0.3+ | 2003 10 02 | 691 | 0.0 | 0.0 | 2005 02 02 | 703 | 1.5− | 0.3+ |
| 2003 09 18 | 644 | 0.4− | 0.2− | 2003 10 02 | 691 | 0.3+ | 0.2− | 2005 02 02 | 703 | 0.2− | 0.5− |
| 2003 09 18 | 644 | 0.8− | 0.4− | 2003 10 02 | 691 | 0.0 | 0.1− | 2005 02 02 | 704 | 1.2+ | 0.4+ |
| 2003 09 18 | 644 | 0.4− | 0.1+ | 2005 01 07 | 703 | 0.8+ | 0.1− | 2005 02 02 | 703 | 0.2− | 0.5− |
| 2003 09 26 | 645 | 0.0 | 0.3− | 2005 01 07 | 703 | 0.7− | 0.2− | 2005 02 02 | 704 | 0.4+ | 0.9+ |
| 2003 09 26 | 645 | 0.1+ | 0.3− | 2005 01 07 | 703 | 0.0 | 0.6+ | 2005 02 02 | 704 | 0.0 | 0.9+ |
| 2003 09 28 | 699 | 0.5+ | 2.1− | 2005 01 07 | 703 | 0.8+ | 0.2+ | 2006 05 26 | 703 | 0.4+ | 0.0 |
| 2003 09 28 | 704 | 0.2+ | 0.2− | 2005 01 18 | 703 | 0.1+ | 0.2− | 2006 05 26 | 703 | 0.1− | 0.0 |
| 2003 09 28 | 699 | 1.0+ | 0.9+ | 2005 01 18 | 703 | 0.4− | 1.6+ | 2006 05 26 | 703 | 0.6− | 1.3+ |
| 2003 09 28 | 704 | 0.7− | 0.1+ | 2005 01 18 | 703 | 0.4− | 0.9+ | 2006 05 26 | 703 | 0.6+ | 1.6− |
| 2003 09 28 | 699 | 2.0+ | 0.8− | 2005 01 18 | 703 | 0.1+ | 0.6+ | | | | |

**2003 SH$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.98858 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21867136 | $\omega$ | 131.48562 | | +0.99869482 | | −0.04052502 |
| $a$ | 2.7286099 | $\Omega$ | 230.86060 | | +0.02596518 | | +0.92696576 |
| $e$ | 0.1881023 | $i$ | 2.29703 | | +0.04398250 | | +0.37295066 |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 704 | 0.2− | 0.2− | 2003 11 01 | 704 | (2.3− | 0.2+) | 2003 11 19 | 644 | 0.3+ | 0.2− |
| 2003 09 29 | 704 | 1.1− | 0.2− | 2003 11 01 | 704 | (1.5− | 0.1−) | 2003 11 19 | 644 | 0.4+ | 0.4− |
| 2003 09 29 | 704 | 0.7− | 0.1− | 2003 11 01 | 704 | 1.3− | 0.3− | 2003 11 21 | 704 | 0.1− | 0.1+ |
| 2003 09 29 | 704 | 0.7− | 0.3+ | 2003 11 01 | 704 | 1.3− | 0.3+ | 2003 11 21 | 704 | 0.3− | 0.0 |
| 2003 09 29 | 704 | 0.7− | 0.5− | 2003 11 03 | 704 | 0.3− | 0.5+ | 2003 11 21 | 704 | 0.5− | 0.9+ |
| 2003 10 02 | 691 | 0.1+ | 0.2+ | 2003 11 03 | 704 | 0.1+ | 0.3+ | 2003 11 21 | 704 | (1.9− | 1.2−) |
| 2003 10 02 | 691 | 0.1+ | 0.2+ | 2003 11 03 | 704 | 0.8− | 0.3+ | 2003 11 21 | 699 | 0.1− | 0.1+ |
| 2003 10 02 | 691 | 0.2− | 0.0 | 2003 11 03 | 704 | 0.5− | 0.7− | 2003 11 21 | 699 | 0.6− | 0.3− |
| 2003 10 15 | 699 | 1.1− | 0.6+ | 2003 11 03 | 704 | 0.0 | 0.2− | 2003 11 21 | 699 | 0.0 | 0.6+ |
| 2003 10 15 | 699 | 1.4− | 0.3+ | 2003 11 04 | 704 | 0.4+ | 0.0 | 2003 11 21 | 699 | 0.1− | 0.1+ |
| 2003 10 15 | 699 | 0.3+ | 0.4+ | 2003 11 04 | 704 | 0.2− | 0.1− | 2003 11 22 | 246 | 0.4− | 1.2+ |
| 2003 10 15 | 699 | 0.7+ | 1.0+ | 2003 11 04 | 704 | 0.2+ | 0.2− | 2003 11 22 | 246 | 0.7+ | 0.3− |
| 2003 10 16 | 106 | 0.2+ | 0.6− | 2003 11 04 | 704 | 0.2+ | 0.2− | 2003 11 22 | 246 | 1.4+ | 0.2+ |
| 2003 10 16 | 106 | 0.3+ | 0.5− | 2003 11 04 | 704 | 0.2− | 1.4− | 2003 11 22 | 246 | 0.4+ | 0.1− |
| 2003 10 17 | 106 | 0.1+ | 0.8− | 2003 11 05 | 704 | 0.2− | 1.1− | 2003 11 22 | 246 | 0.5+ | 0.7+ |
| 2003 10 21 | 704 | 0.1+ | 0.0 | 2003 11 05 | 704 | 0.7+ | 0.1+ | 2003 11 26 | 699 | 0.5− | 0.3− |
| 2003 10 21 | 704 | 0.8+ | 1.4+ | 2003 11 05 | 704 | 0.1+ | 0.0 | 2003 11 26 | 699 | 1.1− | 0.7− |
| 2003 10 21 | 704 | 0.2+ | 0.8+ | 2003 11 05 | 704 | 0.6+ | 1.0− | 2003 11 26 | 699 | 0.9+ | 0.1+ |
| 2003 10 21 | 691 | 0.1+ | 0.3− | 2003 11 05 | 704 | 0.4− | 0.3− | 2003 11 26 | 699 | 0.6− | 0.4+ |
| 2003 10 21 | 691 | 0.1+ | 0.2− | 2003 11 05 | 704 | (0.2+ | 1.7+) | 2003 11 30 | 691 | 0.1− | 0.1− |
| 2003 10 21 | 691 | 0.1− | 0.4− | 2003 11 05 | 704 | 0.3− | 0.0 | 2003 11 30 | 691 | 0.2+ | 0.1− |
| 2003 10 23 | 699 | 0.3+ | 0.7+ | 2003 11 05 | 704 | 0.5+ | 0.2+ | 2003 11 30 | 691 | 0.1− | 0.0 |
| 2003 10 23 | 699 | 0.1+ | 0.2− | 2003 11 05 | 704 | 0.1+ | 0.8+ | 2003 12 01 | 704 | 0.1+ | 0.8+ |
| 2003 10 23 | 699 | 0.1+ | 0.9+ | 2003 11 06 | 704 | 0.3− | 0.1− | 2003 12 01 | 703 | (0.4− | 1.9−) |
| 2003 10 23 | 699 | 0.3− | 0.0 | 2003 11 06 | 704 | 0.4− | 0.4− | 2003 12 01 | 704 | 0.2− | 0.2+ |
| 2003 10 23 | 699 | 0.5+ | 0.4+ | 2003 11 06 | 704 | 0.5+ | 0.1+ | 2003 12 01 | 704 | 0.2− | 0.5− |
| 2003 10 23 | 699 | 0.2+ | 0.2+ | 2003 11 18 | 644 | 0.1+ | 0.0 | 2003 12 01 | 703 | (2.7− | 0.6−) |
| 2003 10 23 | 699 | 0.2+ | 0.1+ | 2003 11 18 | 703 | (0.7− | 1.7−) | 2003 12 01 | 704 | 0.8+ | 1.0+ |
| 2003 10 23 | 699 | 0.0 | 0.5− | 2003 11 18 | 644 | 0.3− | 0.2+ | 2003 12 01 | 703 | 1.0− | 0.1+ |
| 2003 10 24 | 704 | 0.6+ | 0.6+ | 2003 11 18 | 703 | 0.1+ | 0.7+ | 2003 12 01 | 704 | 0.1− | 0.9+ |
| 2003 10 24 | 704 | 0.1+ | 0.6+ | 2003 11 18 | 703 | 0.4− | 0.1− | 2003 12 01 | 703 | 0.6− | 0.3+ |
| 2003 10 24 | 704 | 0.2+ | 0.8+ | 2003 11 18 | 644 | 0.2− | 0.0 | 2005 03 13 | G96 | 0.1+ | 0.3− |
| 2003 10 24 | 704 | 0.7+ | 0.8+ | 2003 11 18 | 703 | 0.8+ | 0.0 | 2005 03 13 | G96 | 0.3+ | 0.2+ |
| 2003 10 24 | 704 | 0.9+ | 0.5+ | 2003 11 18 | 143 | 0.6+ | 0.3− | 2005 03 13 | G96 | 0.0 | 0.0 |
| 2003 10 25 | 106 | 0.0 | 0.5− | 2003 11 18 | 143 | 1.3+ | 0.8− | 2005 03 13 | G96 | 0.5− | 0.1− |
| 2003 10 25 | 106 | 0.0 | 0.1+ | 2003 11 18 | 143 | 0.1+ | 0.1+ | 2006 04 25 | G96 | 0.2+ | 0.3− |
| 2003 10 25 | 106 | 0.7+ | 0.1− | 2003 11 18 | 143 | 0.4− | 1.2+ | 2006 04 25 | G96 | 0.3+ | 0.1− |
| 2003 10 28 | 106 | 0.1+ | 0.5− | 2003 11 19 | 691 | 0.1+ | 0.1− | 2006 04 25 | G96 | 0.1+ | 0.9+ |
| 2003 10 28 | 106 | 0.2+ | 0.2− | 2003 11 19 | 691 | 0.2+ | 0.2− | 2006 04 25 | G96 | 0.6+ | 0.1− |
| 2003 10 28 | 106 | 0.7+ | 0.5− | 2003 11 19 | 691 | 0.3+ | 0.2− | 2006 05 23 | G96 | 0.4− | 0.3+ |
| 2003 10 30 | 608 | 0.8− | 0.9− | 2003 11 19 | 291 | 0.3− | 0.1+ | 2006 05 23 | G96 | 0.0 | 0.5+ |
| 2003 10 30 | 608 | 0.3− | 1.1− | 2003 11 19 | 291 | 0.1− | 0.0 | 2006 05 23 | G96 | 0.2− | 0.5+ |
| 2003 10 30 | 608 | (0.5− | 1.8−) | 2003 11 19 | 291 | 0.0 | 0.1+ | 2006 05 23 | G96 | (1.7+ | 0.3+) |
| 2003 11 01 | 704 | 1.3− | 0.1+ | 2003 11 19 | 644 | 0.2+ | 0.3− | | | | |

**2003 SK$_{297}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.77924 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22730171 | $\omega$ | 39.29421 | | +0.72953601 | | +0.67878922 |
| $a$ | 2.6590974 | $\Omega$ | 277.74196 | | −0.64688239 | | +0.64502179 |
| $e$ | 0.0797360 | $i$ | 4.85134 | | −0.22208193 | | +0.35098730 |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 644 | 0.2+ | 0.3+ | 2003 08 28 | 644 | 0.3− | 0.5+ | 2003 09 27 | 704 | 0.3− | 0.2− |
| 2002 05 07 | 644 | 0.1− | 0.4+ | 2003 09 18 | 644 | 0.2+ | 0.0 | 2003 09 27 | 704 | 0.2− | 0.6+ |
| 2002 05 07 | 644 | 0.2+ | 0.3+ | 2003 09 18 | 608 | 0.6+ | 0.4− | 2003 09 27 | 704 | 0.4+ | 0.1+ |
| 2003 08 20 | 644 | 0.5− | 0.2+ | 2003 09 18 | 608 | 0.8+ | 0.6− | 2003 09 27 | 704 | 0.1+ | 0.2− |
| 2003 08 20 | 644 | 0.3− | 0.3+ | 2003 09 18 | 644 | 0.5+ | 0.2+ | 2003 10 17 | 645 | 0.0 | 0.0 |
| 2003 08 20 | 644 | 0.2− | 0.4+ | 2003 09 18 | 608 | 1.5+ | 0.5− | 2003 10 17 | 645 | 0.0 | 0.0 |
| 2003 08 28 | 644 | 0.5− | 0.5+ | 2003 09 18 | 644 | 0.3+ | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.1− |
| 2003 08 28 | 644 | 0.2− | 0.5+ | 2003 09 19 | 683 | 0.9− | 0.8+ | 2003 10 19 | 645 | 0.0 | 0.1− |
| 2003 08 28 | 644 | 0.5− | 0.4+ | 2003 09 19 | 683 | 0.2+ | 1.0+ | 2004 12 19 | 691 | 0.6+ | 0.3+ |
| 2003 08 28 | 644 | 0.4− | 0.4+ | 2003 09 19 | 683 | 0.4− | 0.1+ | 2004 12 19 | 691 | 0.8+ | 0.3+ |
| 2003 08 28 | 644 | 0.3− | 0.2+ | 2003 09 27 | 704 | 0.2+ | 0.5+ | 2004 12 19 | 691 | 1.3− | 0.1− |

**2003 SN$_{298}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.95549 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20110302 | $\omega$ | 85.55389 | | +0.19235884 | | +0.97985646 |
| $a$ | 2.8852957 | $\Omega$ | 195.84669 | | −0.96015396 | | +0.17663048 |
| $e$ | 0.1410903 | $i$ | 11.33299 | | −0.20273741 | | +0.09318261 |
| $P$ | 4.90 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 16 | 699 | 0.2+ | 0.2+ | 2003 09 18 | 608 | 0.1+ | 0.7− | 2003 09 29 | 704 | 0.3− | 0.2− |
| 1998 09 16 | 699 | 0.6+ | 1.5+ | 2003 09 18 | 608 | 1.1− | 0.7− | 2003 09 29 | 691 | 0.0 | 0.2− |
| 1998 09 16 | 699 | 1.2− | 0.4+ | 2003 09 18 | 608 | 0.2− | 0.8− | 2003 09 29 | 691 | 0.2+ | 0.1− |
| 2002 05 07 | 291 | 0.4+ | 0.3− | 2003 09 20 | 704 | 0.1+ | 0.8+ | 2003 09 29 | 691 | 0.2+ | 0.1− |
| 2002 05 07 | 291 | 0.3+ | 0.5− | 2003 09 20 | 704 | 0.7+ | 0.4− | 2003 10 21 | 644 | 0.3+ | 0.6+ |
| 2002 05 07 | 291 | 1.2− | 0.7+ | 2003 09 20 | 704 | 0.4+ | 0.8+ | 2003 10 21 | 644 | 0.1− | 0.1+ |
| 2002 05 18 | 704 | 0.3− | 0.2− | 2003 09 20 | 704 | 0.0 | 0.4− | 2003 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 05 18 | 704 | 0.2− | 0.3+ | 2003 09 20 | 704 | 0.1+ | 0.3− | 2003 10 24 | 691 | 0.0 | 0.0 |
| 2002 05 18 | 704 | 0.3+ | 0.2+ | 2003 09 29 | 704 | 0.8− | 0.4− | 2003 10 24 | 691 | 0.2+ | 0.0 |
| 2002 06 01 | 644 | 0.9+ | 0.2− | 2003 09 29 | 704 | 0.7− | 0.3+ | 2003 10 24 | 691 | 0.1+ | 0.0 |
| 2002 06 01 | 644 | 0.9+ | 0.2− | 2003 09 29 | 704 | 0.1+ | 0.5+ | | | | |
| 2002 06 01 | 644 | 0.8+ | 0.2− | 2003 09 29 | 704 | 0.5− | 0.1+ | | | | |

**2003 SD$_{299}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.65336 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21521660 | $\omega$ | 59.33430 | +0.97263947 | | +0.14867130 | |
| $a$ | 2.7577329 | $\Omega$ | 291.60420 | −0.21560092 | | +0.86387174 | |
| $e$ | 0.2959901 | $i$ | 11.07002 | +0.08653733 | | +0.48127171 | |
| $P$ | 4.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 03 | 426 | 1.0+ | 0.9+ | 2003 09 19 | 644 | 0.3+ | 0.0 | 2003 10 23 | 704 | 0.2− | 0.5+ |
| 1998 07 03 | 426 | 0.6− | 0.1+ | 2003 09 29 | 699 | 1.1+ | 0.1− | 2003 10 23 | 704 | 0.8− | 0.6+ |
| 1998 07 03 | 426 | 0.8− | 0.1+ | 2003 09 29 | 699 | 0.0 | 0.3+ | 2003 10 23 | 704 | 0.3+ | 0.7− |
| 2000 01 12 | 691 | 0.0 | 0.1+ | 2003 09 29 | 699 | 0.1− | 0.0 | 2003 11 03 | 704 | 0.7− | 0.2+ |
| 2000 01 12 | 691 | 0.2+ | 0.1+ | 2003 09 29 | 699 | 0.1+ | 0.4+ | 2003 11 03 | 704 | 0.2− | 0.3+ |
| 2000 01 12 | 691 | 0.1− | 0.1+ | 2003 10 02 | 704 | 0.2+ | 0.4+ | 2003 11 03 | 704 | 0.7− | 0.0 |
| 2003 07 27 | 704 | 0.0 | 0.1+ | 2003 10 02 | 704 | 0.2− | 0.0 | 2003 11 03 | 704 | 0.1− | 0.8+ |
| 2003 07 27 | 704 | 0.3+ | 0.4+ | 2003 10 02 | 704 | 0.1− | 0.0 | 2003 11 03 | 704 | 0.3+ | 0.0 |
| 2003 07 27 | 704 | 0.3− | 0.1− | 2003 10 04 | 446 | 0.4+ | 0.0 | 2003 11 14 | 644 | 0.4+ | 0.1+ |
| 2003 07 27 | 704 | 0.1− | 0.0 | 2003 10 04 | 446 | 0.0 | 0.2+ | 2003 11 14 | 644 | 0.3+ | 0.1+ |
| 2003 09 07 | 704 | 0.5− | 0.5− | 2003 10 16 | 106 | 0.3− | 0.4− | 2003 11 14 | 644 | 0.2+ | 0.3+ |
| 2003 09 07 | 704 | 0.3− | 0.3− | 2003 10 16 | 106 | 0.2+ | 0.6− | 2003 11 14 | 644 | 0.4+ | 0.0 |
| 2003 09 07 | 704 | 0.7+ | 0.3+ | 2003 10 16 | 106 | 0.2− | 0.2− | 2003 11 14 | 644 | 0.0 | 0.0 |
| 2003 09 07 | 704 | 0.6− | 0.1− | 2003 10 18 | 644 | 0.3− | 0.2− | 2003 11 14 | 644 | 0.1+ | 0.2+ |
| 2003 09 17 | 644 | 0.2+ | 0.1− | 2003 10 18 | 644 | 0.4− | 0.1− | 2003 11 18 | 691 | 0.1+ | 0.0 |
| 2003 09 17 | 644 | 0.3+ | 0.1− | 2003 10 18 | 644 | 0.1− | 0.1− | 2003 11 18 | 691 | 0.2+ | 0.1+ |
| 2003 09 17 | 644 | 0.3+ | 0.2− | 2003 10 22 | 699 | 1.2− | 0.1− | 2003 11 18 | 691 | 0.3+ | 0.2+ |
| 2003 09 19 | 644 | 0.3+ | 0.1+ | 2003 10 22 | 699 | 1.1− | 0.2− | 2003 12 19 | 704 | 1.0− | 1.8− |
| 2003 09 19 | 644 | 0.7+ | 0.1+ | 2003 10 22 | 699 | 0.1− | 0.5− | 2003 12 19 | 704 | 0.9− | 0.4− |
| 2003 09 19 | 644 | 0.3+ | 0.0 | 2003 10 22 | 699 | 0.1+ | 0.4− | 2003 12 19 | 704 | 0.2+ | 0.9+ |
| 2003 09 19 | 644 | 0.5+ | 0.1− | 2003 10 23 | 704 | 0.6− | 0.3− | | | | |
| 2003 09 19 | 644 | 0.4+ | 0.2+ | 2003 10 23 | 704 | 0.1+ | 0.2− | | | | |

**2003 SF$_{318}$ = 2006 EA$_{56}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.55285 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19414465 | $\omega$ | 205.00595 | −0.90724281 | | −0.41796554 | |
| $a$ | 2.9538318 | $\Omega$ | 310.20484 | +0.39552099 | | −0.80970597 | |
| $e$ | 0.0207885 | $i$ | 3.53318 | +0.14308605 | | −0.41192359 | |
| $P$ | 5.08 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.2− | 0.3+ | 2003 10 17 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.1− | 0.1+ |
| 2003 09 16 | 691 | 0.4− | 0.2+ | 2003 10 17 | 645 | 0.2+ | 0.0 | 2006 03 05 | 691 | 0.4+ | 0.1+ |
| 2003 09 16 | 691 | 0.0 | 0.4+ | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 03 05 | 691 | 0.1+ | 0.1+ |
| 2003 09 26 | 645 | 0.1+ | 0.2− | 2003 10 18 | 645 | 0.1− | 0.0 | 2006 03 05 | 691 | 0.1+ | 0.4+ |
| 2003 09 26 | 645 | 0.1+ | 0.3− | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 03 09 | 691 | 0.5− | 0.4− |
| 2003 09 28 | 645 | 0.2+ | 0.2− | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 03 09 | 691 | 0.1+ | 0.3− |
| 2003 09 28 | 645 | 0.3+ | 0.2− | 2003 10 23 | 645 | 0.1− | 0.1+ | 2006 03 09 | 691 | 0.1− | 0.2+ |

**2003 SG$_{318}$ = 2006 EG$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.41464 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21462766 | $\omega$ | 21.43991 | +0.65520288 | | +0.75422220 | |
| $a$ | 2.7627754 | $\Omega$ | 289.52247 | −0.69959450 | | +0.58423577 | |
| $e$ | 0.0885873 | $i$ | 2.62130 | −0.28509072 | | +0.29969558 | |
| $P$ | 4.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.5+ | 1.3+ | 2003 09 28 | 691 | 0.1+ | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.1− |
| 2002 05 11 | 704 | 0.2+ | 2.0+ | 2003 09 28 | 691 | 0.1+ | 0.4+ | 2004 12 11 | 691 | 0.0 | 0.3+ |
| 2002 05 11 | 704 | 0.3+ | 0.7+ | 2003 09 28 | 691 | 0.1− | 0.3+ | 2004 12 11 | 691 | 0.1− | 0.3+ |
| 2003 09 16 | 691 | 0.2− | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2004 12 11 | 691 | 0.2+ | 0.4+ |
| 2003 09 16 | 691 | 0.2− | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 03 04 | 691 | 0.1+ | 0.1+ |
| 2003 09 16 | 691 | 0.1− | 0.5+ | 2003 10 22 | 645 | 0.1− | 0.1+ | 2006 03 04 | 691 | 0.2− | 0.4+ |
| 2003 09 22 | 699 | 2.2+ | 0.3− | 2003 10 22 | 645 | 0.1− | 0.0 | 2006 03 04 | 691 | 0.1− | 0.2+ |
| 2003 09 22 | 699 | 2.0+ | 1.0+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.4+ | 0.3+ |
| 2003 09 22 | 699 | 0.5− | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.1+ | 0.5+ |
| 2003 09 22 | 699 | 0.1− | 0.4− | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.3+ | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 11 16 | 645 | 0.1− | 0.0 | | | | |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 11 20 | 645 | 0.0 | 0.0 | | | | |

**2003 SH$_{318}$ = 2004 XN$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.24575 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21389680 | $\omega$ | 295.24868 | −0.60601235 | | +0.79418397 | |
| $a$ | 2.7690652 | $\Omega$ | 297.37538 | −0.71039298 | | −0.56577027 | |
| $e$ | 0.0465358 | $i$ | 2.90172 | −0.35789781 | | −0.22175623 | |
| $P$ | 4.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.1− | 0.2+ | 2003 09 29 | 645 | 0.1− | 0.0 | 2004 12 11 | 691 | 0.1+ | 0.1+ |
| 2003 09 16 | 691 | 0.3− | 0.1+ | 2003 10 18 | 645 | 0.0 | 0.0 | 2004 12 14 | 291 | 0.3+ | 0.2− |
| 2003 09 16 | 691 | 0.1+ | 0.4+ | 2003 10 18 | 645 | 0.1+ | 0.0 | 2004 12 14 | 291 | 0.2− | 0.1− |
| 2003 09 27 | 691 | 0.0 | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2004 12 14 | 291 | 0.3− | 0.3+ |
| 2003 09 27 | 691 | 0.2+ | 0.6+ | 2003 10 23 | 645 | 0.1+ | 0.2− | 2006 02 25 | 691 | 0.2+ | 0.4+ |
| 2003 09 27 | 691 | 0.1− | 0.3+ | 2004 12 11 | 691 | 0.2+ | 0.3+ | 2006 02 25 | 691 | 0.1+ | 0.9− |
| 2003 09 29 | 645 | 0.0 | 0.1− | 2004 12 11 | 691 | 0.2− | 0.2− | 2006 02 25 | 691 | 0.4− | 0.4+ |

**2003 SJ$_{318}$ = 2006 BZ$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.56748 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18086238 | $\omega$ | 282.12315 | +0.33337097 | | +0.94275022 | |
| $a$ | 3.0967340 | $\Omega$ | 7.37026 | −0.83448242 | | +0.29963028 | |
| $e$ | 0.1063672 | $i$ | 4.14146 | −0.43875152 | | +0.14643676 | |
| $P$ | 5.45 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 691 | 0.5+ | 0.2− | 2003 09 18 | 644 | 0.2− | 0.7+ | 2003 10 17 | 691 | 0.1− | 0.7+ |
| 1998 10 01 | 691 | 0.2+ | 0.5− | 2003 09 18 | 644 | 0.1+ | 0.5+ | 2006 01 31 | 691 | 0.1− | 0.5+ |
| 1998 10 01 | 691 | 0.0 | 0.8− | 2003 09 27 | 691 | 0.3+ | 0.3− | 2006 01 31 | 691 | 0.0 | 0.3+ |
| 2003 09 16 | 691 | 0.1− | 0.2+ | 2003 09 27 | 691 | 0.0 | 0.1− | 2006 01 31 | 691 | 0.2− | 0.3+ |
| 2003 09 16 | 691 | 0.3− | 0.1+ | 2003 09 27 | 691 | 0.4− | 0.4− | 2006 02 03 | 691 | 0.0 | 0.3+ |
| 2003 09 16 | 691 | 0.1− | 0.0 | 2003 10 17 | 691 | 0.1+ | 0.8+ | 2006 02 03 | 691 | 0.0 | 0.1+ |
| 2003 09 18 | 644 | 0.1+ | 0.5+ | 2003 10 17 | 691 | 0.4− | 0.6+ | 2006 02 03 | 691 | 0.6+ | 0.5− |

**2003 SK$_{318}$ = 2006 HL$_{40}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.72797 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26813979 | $\omega$ | 32.87815 | +0.35501550 | | +0.93410787 | |
| $a$ | 2.3817447 | $\Omega$ | 257.94018 | −0.86578594 | | +0.31338592 | |
| $e$ | 0.1840204 | $i$ | 2.19780 | −0.35267364 | | +0.17097295 | |
| $P$ | 3.68 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.0 | 0.1+ | 2003 09 27 | 691 | 0.1+ | 0.4+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2003 09 17 | 691 | 0.2− | 0.2− | 2003 10 17 | 691 | 0.2+ | 0.1− | 2006 04 21 | 703 | 0.7+ | 0.3+ |
| 2003 09 17 | 691 | 0.2− | 0.2− | 2003 10 17 | 691 | 0.2− | 0.2+ | 2006 04 21 | 703 | 0.8− | 0.1− |
| 2003 09 22 | 699 | 0.1− | 0.5+ | 2003 10 17 | 691 | 0.2+ | 0.0 | 2006 04 21 | 703 | 0.4+ | 0.5+ |
| 2003 09 22 | 699 | 0.1− | 0.4+ | 2003 10 18 | 645 | 0.0 | 0.2− | 2006 04 21 | 703 | 0.1+ | 0.3− |
| 2003 09 22 | 699 | 1.0+ | 0.6− | 2003 10 18 | 645 | 0.1− | 0.2− | 2006 04 25 | G96 | 0.0 | 0.3− |
| 2003 09 22 | 699 | 0.4− | 0.2− | 2003 10 19 | 645 | 0.0 | 0.2− | 2006 04 25 | G96 | 0.1+ | 0.1+ |
| 2003 09 27 | 691 | 0.1+ | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 04 25 | G96 | 0.2− | 0.0 |
| 2003 09 27 | 691 | 0.2− | 0.1+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 04 25 | G96 | 0.4− | 0.2− |

**2003 SL$_{318}$ = 2006 DL$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.50430 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19184382 | $\omega$ | 305.25160 | +0.31848357 | | +0.94790358 | |
| $a$ | 2.9774022 | $\Omega$ | 343.31560 | −0.86176512 | | +0.28651373 | |
| $e$ | 0.0669311 | $i$ | 1.36853 | −0.39487858 | | +0.13924323 | |
| $P$ | 5.14 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 23 | 691 | 0.4+ | 0.9+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2006 02 28 | G96 | 0.0 | 0.2− |
| 1998 09 23 | 691 | 0.4− | 0.2− | 2003 09 28 | 645 | 0.1− | 0.1− | 2006 02 28 | G96 | 0.2− | 0.7− |
| 1998 09 23 | 691 | 0.3− | 0.3+ | 2003 09 29 | 691 | 0.2+ | 0.2+ | 2006 02 28 | G96 | 0.4− | 0.5− |
| 2001 03 25 | 695 | 0.2+ | 0.3+ | 2003 09 29 | 691 | 0.1+ | 0.4+ | 2006 03 02 | 695 | 0.1− | 0.2− |
| 2001 03 25 | 695 | 0.2+ | 0.5+ | 2003 09 29 | 691 | 0.1+ | 0.1+ | 2006 03 02 | 695 | 0.0 | 0.2− |
| 2003 09 17 | 691 | 0.1− | 0.1+ | 2003 09 29 | 645 | 0.0 | 0.1− | 2006 03 02 | 695 | 0.2− | 0.1− |
| 2003 09 17 | 691 | 0.6+ | 0.4+ | 2003 09 29 | 645 | 0.0 | 0.2− | | | | |
| 2003 09 17 | 691 | 0.0 | 0.2+ | 2006 02 28 | G96 | 0.1+ | 0.1+ | | | | |

**2003 SM$_{318}$ = 2006 GO$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.96257 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22031377 | $\omega$ | 128.75062 | +0.75487099 | | +0.65473109 | |
| $a$ | 2.7150320 | $\Omega$ | 190.54608 | −0.64800990 | | +0.73541449 | |
| $e$ | 0.0792284 | $i$ | 12.20411 | −0.10125683 | | +0.17462164 | |
| $P$ | 4.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 09 22 | 699 | 0.2+ | 0.0 | 2006 04 02 | G96 | 0.2− | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 09 22 | 699 | 0.3+ | 0.2+ | 2006 04 02 | G96 | 0.1− | 0.1− |
| 2003 09 17 | 691 | 0.1+ | 0.1− | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 04 02 | G96 | 0.1− | 0.0 |
| 2003 09 17 | 691 | 0.2− | 0.0 | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 04 07 | G96 | 0.5+ | 0.1+ |
| 2003 09 17 | 691 | 0.0 | 0.1− | 2003 09 29 | 645 | 0.0 | 0.1− | 2006 04 07 | G96 | 0.2− | 0.1+ |
| 2003 09 22 | 699 | 0.1+ | 0.5+ | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 04 07 | G96 | 0.2− | 0.2− |
| 2003 09 22 | 699 | 0.9+ | 1.1+ | 2006 04 02 | G96 | 0.1− | 0.0 | 2006 04 07 | G96 | 0.2+ | 0.5− |

**2003 SO$_{318}$ = 2000 WF$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.47290 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.30397958 | $\omega$ | 157.81741 | +0.76729162 | | −0.63369542 | |
| $a$ | 2.1906506 | $\Omega$ | 241.88498 | +0.57034286 | | +0.74450034 | |
| $e$ | 0.1282688 | $i$ | 6.40919 | +0.29321084 | | +0.21011750 | |
| $P$ | 3.24 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 21 | 691 | 0.5− | 0.1+ | 2000 11 19 | 691 | 0.1− | 0.1− | 2003 09 30 | 704 | 1.2− | 1.2+ |
| 1997 12 21 | 691 | 0.3+ | 0.0 | 2003 09 18 | 691 | 0.5+ | 1.2+ | 2003 10 01 | 291 | 0.7− | 0.2− |
| 1997 12 21 | 691 | 0.1+ | 0.4− | 2003 09 18 | 691 | 0.3+ | 0.0 | 2003 10 01 | 291 | 0.4− | 1.0− |
| 2000 11 18 | 699 | 0.1+ | 0.3+ | 2003 09 18 | 691 | 0.2+ | 0.1+ | 2003 10 01 | 291 | 0.4+ | 0.3− |
| 2000 11 18 | 699 | 0.5+ | 0.3+ | 2003 09 30 | 691 | 0.1− | 0.1− | 2003 10 20 | 691 | 0.2− | 0.0 |
| 2000 11 18 | 699 | 0.3+ | 1.8+ | 2003 09 30 | 691 | 0.1− | 0.1+ | 2003 10 20 | 691 | 0.2+ | 0.4− |
| 2000 11 18 | 699 | 0.4− | 1.2+ | 2003 09 30 | 691 | 0.3− | 0.0 | 2003 10 20 | 691 | 0.2+ | 0.2− |
| 2000 11 19 | 691 | 0.1− | 0.0 | 2003 09 30 | 704 | 0.8+ | 0.0 | | | | |
| 2000 11 19 | 691 | 0.0 | 0.2− | 2003 09 30 | 704 | 0.8+ | 0.5+ | | | | |

**2003 SP$_{318}$ = 2000 WS$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.57178 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29840677 | $\omega$ | 308.08906 | +0.95453304 | | −0.26521219 | |
| $a$ | 2.2178403 | $\Omega$ | 67.66002 | +0.29809012 | | +0.84458456 | |
| $e$ | 0.1377878 | $i$ | 8.46282 | +0.00299164 | | +0.46512300 | |
| $P$ | 3.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 21 | 704 | 0.7− | 0.1+ | 2003 10 01 | 699 | 0.3+ | 0.2− | 2003 10 29 | 699 | 1.0+ | 0.6+ |
| 2000 11 21 | 704 | 0.5+ | 0.3− | 2003 10 01 | 699 | 0.1+ | 0.4− | 2003 10 29 | 699 | 1.1+ | 0.3+ |
| 2000 11 21 | 704 | 0.3− | 0.5− | 2003 10 01 | 699 | 0.4+ | 0.0 | 2005 03 16 | 703 | 1.2+ | 0.2+ |
| 2000 11 21 | 704 | 0.2+ | 0.2− | 2003 10 18 | 699 | 0.7+ | 0.1− | 2005 03 16 | 703 | 1.1− | 1.1+ |
| 2000 11 29 | 704 | 0.0 | 0.1+ | 2003 10 18 | 704 | 0.8− | 0.5− | 2005 03 16 | 703 | 0.8− | 0.6+ |
| 2000 11 29 | 704 | 0.2− | 0.9+ | 2003 10 18 | 699 | 0.5+ | 0.1− | 2005 03 16 | 703 | 0.3− | 0.0 |
| 2000 11 29 | 704 | 0.3+ | 0.1− | 2003 10 18 | 704 | 0.2− | 0.9+ | 2005 04 02 | 703 | 0.0 | 1.1+ |
| 2000 11 29 | 704 | 0.2− | 0.4+ | 2003 10 18 | 699 | 0.2− | 0.8− | 2005 04 02 | 703 | 0.4− | 0.5− |
| 2000 11 29 | 704 | 0.2+ | 0.4− | 2003 10 18 | 704 | 0.5− | 1.3+ | 2005 04 02 | 703 | 1.6+ | 0.2+ |
| 2003 09 18 | 704 | 0.5− | 0.4+ | 2003 10 18 | 699 | 0.8+ | 0.5− | 2005 04 02 | 703 | 0.8+ | 1.3− |
| 2003 09 18 | 704 | 0.2− | 0.5− | 2003 10 18 | 704 | 0.3− | 0.5+ | 2006 08 26 | E12 | 0.4+ | 0.2+ |
| 2003 09 18 | 704 | 0.3− | 0.1+ | 2003 10 18 | 704 | 0.2− | 0.3+ | 2006 08 26 | E12 | 0.5− | 0.5+ |
| 2003 09 18 | 704 | 0.2+ | 0.1− | 2003 10 29 | 699 | 1.4− | 0.2− | 2006 08 26 | E12 | 0.1+ | 0.5− |
| 2003 10 01 | 699 | 1.5− | 0.0 | 2003 10 29 | 699 | 0.6+ | 0.0 | 2006 08 26 | E12 | 0.3− | 0.3+ |

**2003 SQ$_{318}$ = 2006 KU$_{48}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.88583 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26757567 | $\omega$ | 252.31363 | +0.99749345 | | −0.04901372 | |
| $a$ | 2.3850911 | $\Omega$ | 110.47153 | +0.06477199 | | +0.92283662 | |
| $e$ | 0.2228736 | $i$ | 3.12270 | −0.02848529 | | +0.38206051 | |
| $P$ | 3.68 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 704 | 1.1− | 1.3+ | 2003 09 22 | 691 | 0.1− | 0.2− | 2006 05 21 | 691 | 0.2+ | 0.3+ |
| 2003 09 18 | 704 | 0.8+ | 0.1+ | 2003 09 22 | 691 | 0.0 | 0.3− | 2006 05 21 | 691 | 0.6+ | 0.0 |
| 2003 09 18 | 704 | 0.4+ | 0.1− | 2003 09 28 | 704 | (1.0− | 2.9+) | 2006 05 21 | 691 | 0.4− | 0.3+ |
| 2003 09 18 | 704 | 0.2+ | 0.0 | 2003 09 28 | 704 | 0.9+ | 0.1− | 2006 05 25 | 691 | 0.5− | 0.1+ |
| 2003 09 18 | 608 | 0.1− | 0.2− | 2003 09 28 | 704 | (3.1+ | 2.2−) | 2006 05 25 | 691 | 0.0 | 0.0 |
| 2003 09 18 | 608 | 0.1− | 0.4− | 2003 10 16 | 644 | 0.2− | 0.0 | 2006 05 25 | 691 | 0.1+ | 0.6− |
| 2003 09 18 | 608 | 0.4− | 0.0 | 2003 10 16 | 644 | 0.1− | 0.4+ | | | | |
| 2003 09 22 | 691 | 0.1− | 0.3− | 2003 10 16 | 644 | 0.0 | 0.2− | | | | |

**2003 SR$_{318}$ = 1999 UK$_{20}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.70055 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24273016 | $\omega$ | 158.26946 | +0.98132152 | | +0.19111606 | |
| $a$ | 2.5451900 | $\Omega$ | 190.78281 | −0.18922856 | | +0.93838531 | |
| $e$ | 0.1455665 | $i$ | 6.74420 | −0.03464997 | | +0.28793691 | |
| $P$ | 4.06 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.3+ | 0.0 | 2003 09 18 | 691 | 0.3+ | 0.3− | 2003 10 19 | 645 | 0.2− | 0.2− |
| 1999 10 31 | 691 | 0.0 | 0.1+ | 2003 09 18 | 691 | 0.2− | 0.0 | 2003 10 19 | 645 | 0.2− | 0.0 |
| 1999 10 31 | 691 | 0.2− | 0.5− | 2003 09 18 | 691 | 0.2− | 0.3+ | 2003 10 24 | 645 | 0.2− | 0.1− |
| 1999 11 04 | 691 | 0.1+ | 0.6+ | 2003 10 18 | 291 | 0.2+ | 0.2+ | 2003 10 24 | 645 | 0.1− | 0.1− |
| 1999 11 04 | 691 | 0.1+ | 0.5− | 2003 10 18 | 291 | 0.0 | 0.2+ | | | | |
| 1999 11 04 | 691 | 0.3− | 0.4+ | 2003 10 18 | 291 | 0.5+ | 0.0 | | | | |

**2003 ST$_{318}$ = 2006 KY$_{99}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.75464 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27033171 | $\omega$ | 282.16897 | +0.45170696 | | +0.89169683 | |
| $a$ | 2.3688527 | $\Omega$ | 14.78767 | −0.76811527 | | +0.40519584 | |
| $e$ | 0.1340841 | $i$ | 6.51066 | −0.45382789 | | +0.20172528 | |
| $P$ | 3.65 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1− | 0.0 | 2003 09 29 | 645 | 0.0 | 0.3− | 2006 05 26 | E12 | 0.2− | 0.3+ |
| 2003 09 18 | 691 | 0.2− | 0.0 | 2003 10 01 | 699 | 0.9− | 1.8− | 2006 05 26 | E12 | 0.5+ | 0.8− |
| 2003 09 18 | 691 | 0.2− | 0.1− | 2003 10 01 | 699 | 0.8− | 1.5+ | 2006 05 26 | E12 | 0.3− | 0.1+ |
| 2003 09 29 | 704 | 0.1− | 0.1+ | 2003 10 01 | 699 | 0.2+ | 0.1+ | 2006 05 30 | E12 | 0.5− | 0.1− |
| 2003 09 29 | 704 | 1.0+ | 0.4− | 2003 10 01 | 699 | 0.8+ | 0.7+ | 2006 05 30 | E12 | 0.3+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 704 | 0.1+ | 0.8+ | 2003 11 20 | 645 | 0.1+ | 0.1− | 2006 05 30 | E12 | 0.1+ | 0.2+ |
| 2003 09 29 | 645 | 0.0 | 0.3− | 2003 11 20 | 645 | 0.1+ | 0.1− | 2006 05 30 | E12 | 0.0 | 0.2+ |

**2003 SU$_{318}$ = 2006 EZ$_{26}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.02370 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19049981 | $\omega$ | 219.51027 | | +0.97713438 | | +0.21203374 |
| $a$ | 2.9913899 | $\Omega$ | 128.24097 | | −0.18962736 | | +0.90268677 |
| $e$ | 0.2312959 | $i$ | 1.15376 | | −0.09617628 | | +0.37443061 |
| $P$ | 5.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 608 | 0.3− | 0.9+ | 2003 09 29 | 704 | 0.0 | 1.2+ | 2003 10 15 | 699 | (0.6+ | 2.5−) |
| 2003 09 18 | 608 | 0.2− | 0.5+ | 2003 09 29 | 704 | 0.1− | 0.9+ | 2003 10 15 | 699 | 0.7+ | 1.4− |
| 2003 09 18 | 608 | 0.2− | 1.1+ | 2003 09 29 | 704 | 0.1− | 0.6− | 2006 03 03 | 691 | 0.8+ | 0.5+ |
| 2003 09 18 | 644 | 0.0 | 0.1− | 2003 09 29 | 704 | 0.7− | 0.1+ | 2006 03 03 | 691 | 0.9+ | 0.0 |
| 2003 09 18 | 644 | 0.0 | 0.1+ | 2003 09 29 | 704 | 0.6− | 0.6− | 2006 03 03 | 691 | 0.1+ | 0.3− |
| 2003 09 18 | 644 | 0.1− | 0.0 | 2003 09 29 | 691 | 0.2+ | 0.2+ | 2006 03 05 | G96 | 0.2− | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.6− | 2003 09 29 | 691 | 0.4+ | 0.1− | 2006 03 05 | G96 | 0.1− | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.6− | 2003 09 29 | 691 | 0.2+ | 0.1+ | 2006 03 05 | G96 | 0.8− | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.5− | 2003 10 15 | 699 | 0.5− | 0.7+ | 2006 03 05 | G96 | 0.4− | 0.6+ |
| 2003 09 28 | 645 | 0.1+ | 0.5− | 2003 10 15 | 699 | 0.8+ | 0.2− | | | | |

**2003 SV$_{318}$ = 2001 FM$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.91178 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21558739 | $\omega$ | 104.98179 | | −0.59266755 | | −0.80105867 |
| $a$ | 2.7545700 | $\Omega$ | 22.02187 | | +0.62578625 | | −0.52359063 |
| $e$ | 0.0749731 | $i$ | 12.94004 | | +0.50708652 | | −0.29009972 |
| $P$ | 4.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 07 | 691 | 0.2+ | 0.2+ | 2003 09 18 | 644 | 0.4+ | 0.5+ | 2005 01 15 | 704 | 1.2+ | 0.5− |
| 1992 04 07 | 691 | 0.2+ | 0.0 | 2003 09 30 | 691 | 0.2− | 0.2+ | 2005 01 15 | 704 | 0.0 | 0.5+ |
| 1992 04 07 | 691 | 0.1− | 0.2+ | 2003 09 30 | 691 | 0.4− | 0.2+ | 2005 01 15 | 704 | 0.8− | 0.2+ |
| 2001 03 21 | 691 | 0.6+ | 0.1− | 2003 09 30 | 691 | 0.2− | 0.2+ | 2005 01 15 | 704 | 0.1+ | 0.4+ |
| 2001 03 21 | 691 | 0.0 | 0.1+ | 2003 10 24 | 691 | 0.4− | 0.3+ | 2005 01 16 | 699 | 0.7− | 0.3− |
| 2001 03 21 | 691 | 0.3+ | 0.5+ | 2003 10 24 | 691 | 0.7− | 0.4+ | 2005 01 16 | 699 | 0.7− | 0.7− |
| 2001 03 26 | 704 | 0.1+ | 0.7+ | 2003 10 24 | 691 | 0.5− | 0.3+ | 2005 01 16 | 699 | 1.0− | 0.0 |
| 2001 03 26 | 704 | 0.2+ | 0.7+ | 2003 11 20 | 645 | 0.1+ | 0.0 | 2005 01 16 | 699 | 0.0 | 0.3− |
| 2001 03 26 | 704 | 0.3− | 0.4+ | 2003 11 20 | 645 | 0.1+ | 0.1− | 2005 01 31 | 704 | 0.5+ | 0.5+ |
| 2001 03 26 | 704 | 0.2− | 0.5+ | 2004 12 11 | 703 | 0.5+ | 0.0 | 2005 01 31 | 704 | 0.3+ | 0.5− |
| 2001 03 26 | 704 | 0.1− | 0.4+ | 2004 12 11 | 703 | 0.5+ | 0.2+ | 2005 01 31 | 704 | 1.1+ | 1.4+ |
| 2003 09 18 | 644 | 0.1+ | 0.2+ | 2004 12 11 | 703 | 0.1− | 0.8− | | | | |
| 2003 09 18 | 644 | 0.2+ | 0.4+ | 2004 12 11 | 703 | 0.7− | 0.0 | | | | |

**2003 SW$_{318}$ = 2006 EZ$_{42}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.86415 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18392036 | $\omega$ | 229.54068 | | +0.31390867 | | −0.94798874 |
| $a$ | 3.0623125 | $\Omega$ | 202.33299 | | +0.90769208 | | +0.31592350 |
| $e$ | 0.0661355 | $i$ | 7.97398 | | +0.27848956 | | +0.03885469 |
| $P$ | 5.36 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 691 | 0.0 | 0.0 | 2003 09 29 | 691 | 0.0 | 0.1− | 2006 03 04 | 691 | 0.3+ | 0.1− |
| 2003 09 19 | 691 | 0.5− | 0.2+ | 2003 09 29 | 691 | 0.3+ | 0.1− | 2006 03 04 | 691 | 0.2− | 0.2− |
| 2003 09 19 | 691 | 0.4+ | 0.1− | 2003 10 22 | 645 | 0.1− | 0.1+ | 2006 03 05 | 691 | 0.0 | 0.3− |
| 2003 09 21 | 644 | 0.2− | 0.4+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.1− | 0.2+ |
| 2003 09 21 | 644 | 0.1− | 0.1− | 2003 10 23 | 645 | 0.1+ | 0.0 | 2006 03 05 | 691 | 0.3+ | 0.2− |
| 2003 09 21 | 644 | 0.2+ | 0.4− | 2003 10 23 | 645 | 0.0 | 0.0 | | | | |
| 2003 09 29 | 691 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.3− | 0.6+ | | | | |

**2003 SX$_{318}$ = 2006 DJ$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.05914 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21445637 | $\omega$ | 255.17089 | | +0.88330974 | | +0.46646561 |
| $a$ | 2.7642464 | $\Omega$ | 77.00549 | | −0.40960829 | | +0.81634247 |
| $e$ | 0.1830473 | $i$ | 2.74257 | | −0.22800207 | | +0.34058011 |
| $P$ | 4.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 644 | 0.0 | 0.6+ | 2003 09 28 | 704 | (2.1− | 0.2+) | 2005 01 17 | 691 | 0.2+ | 0.1+ |
| 2003 09 19 | 644 | 0.1+ | 0.3+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.6− | 0.2+ |
| 2003 09 19 | 644 | 0.3− | 0.8+ | 2003 10 23 | 645 | 0.2− | 0.1− | 2006 02 27 | 691 | 0.5+ | 0.6+ |
| 2003 09 21 | 691 | 0.1+ | 0.2+ | 2004 12 19 | G96 | 0.2− | 1.2− | 2006 02 27 | 691 | 0.2− | 0.2+ |
| 2003 09 21 | 691 | 0.2+ | 0.0 | 2004 12 19 | G96 | 0.7− | 0.8− | 2006 03 03 | 691 | 0.7+ | 0.2− |
| 2003 09 21 | 691 | 0.3+ | 0.3+ | 2004 12 19 | G96 | 0.1+ | 0.5− | 2006 03 03 | 691 | 0.2+ | 0.5+ |
| 2003 09 28 | 704 | 0.0 | 1.8+ | 2004 12 19 | G96 | 0.3+ | 0.2− | 2006 03 03 | 691 | 0.0 | 0.1− |
| 2003 09 28 | 704 | 0.5− | 1.7+ | 2005 01 17 | 691 | 0.1− | 0.3+ | | | | |
| 2003 09 28 | 704 | 0.1− | 0.1+ | 2005 01 17 | 691 | 0.1+ | 0.1+ | | | | |

**2003 SY$_{318}$ = 2006 DM$_{203}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.85112 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18028127 | $\omega$ | 51.92793 | | −0.23187059 | | +0.96935623 |
| $a$ | 3.1033849 | $\Omega$ | 205.02878 | | −0.94172132 | | −0.24459274 |
| $e$ | 0.1226509 | $i$ | 11.05780 | | −0.24371495 | | +0.02286688 |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 699 | 0.3+ | 1.1+ | 2003 10 19 | 691 | 0.5+ | 0.3− | 2006 02 22 | 703 | 0.2+ | 0.6− |
| 2003 09 19 | 699 | 1.3− | 1.2+ | 2003 10 19 | 691 | 0.3+ | 0.3− | 2006 02 22 | 703 | 0.5− | 0.4− |
| 2003 09 19 | 699 | 0.8+ | 0.9− | 2003 10 24 | 704 | 0.3− | 0.6+ | 2006 03 04 | 703 | 0.4+ | 0.3+ |
| 2003 09 19 | 699 | 0.5− | 0.8− | 2003 10 24 | 704 | 0.4− | 0.7+ | 2006 03 04 | 703 | 0.3+ | 0.8+ |
| 2003 10 18 | 644 | 0.1− | 0.5− | 2003 10 24 | 704 | 0.4+ | 1.1− | 2006 03 04 | 703 | 0.2+ | 0.4+ |
| 2003 10 18 | 644 | 0.1+ | 0.4− | 2003 10 24 | 704 | 0.3− | 1.2+ | 2006 03 04 | 703 | 0.4− | 0.7+ |
| 2003 10 18 | 644 | 0.1+ | 0.2− | 2006 02 22 | 703 | 0.2− | 0.1+ | | | | |
| 2003 10 19 | 691 | 0.5+ | 0.2− | 2006 02 22 | 703 | 0.1+ | 1.1− | | | | |

**2003 SZ$_{318}$ = 2001 CU$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.37947 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26907192 | $\omega$ | 88.35220 | | +0.48276811 | | −0.87557422 |
| $a$ | 2.3762409 | $\Omega$ | 332.75967 | | +0.78755758 | | +0.44278318 |
| $e$ | 0.1664078 | $i$ | 2.18566 | | +0.38299870 | | +0.19316531 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 06 | 691 | 0.2+ | 0.1+ | 2003 09 19 | 699 | 1.0− | 0.3− | 2003 10 24 | 704 | 0.8− | 0.4+ |
| 1999 09 06 | 691 | 0.5+ | 0.3+ | 2003 09 19 | 699 | 0.6− | 0.2+ | 2003 10 29 | 704 | 1.0+ | 0.2− |
| 1999 09 06 | 691 | 0.5+ | 0.5+ | 2003 09 19 | 699 | 0.3+ | 0.1− | 2003 10 29 | 704 | 0.3− | 0.2− |
| 1999 09 13 | 691 | 0.3+ | 0.4+ | 2003 09 30 | 691 | 0.0 | 0.0 | 2003 10 29 | 704 | 1.0− | 0.5− |
| 1999 09 13 | 691 | 0.3+ | 0.1+ | 2003 09 30 | 691 | 0.1+ | 0.1− | 2003 10 29 | 704 | 0.4+ | 0.1+ |
| 1999 09 13 | 691 | 2.4− | 0.3+ | 2003 09 30 | 691 | 0.1− | 0.1− | 2005 03 11 | G96 | 0.5+ | 0.1+ |
| 2001 02 13 | 691 | 0.0 | 0.4+ | 2003 10 19 | 691 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.5+ | 1.4+ |
| 2001 02 13 | 691 | 0.2− | 0.5+ | 2003 10 19 | 691 | 0.3+ | 0.1− | 2005 03 11 | G96 | 0.2+ | 0.4+ |
| 2001 02 13 | 691 | 0.1− | 0.3+ | 2003 10 19 | 691 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.1− | 0.2+ |
| 2001 02 16 | 209 | 1.1+ | 0.2+ | 2003 10 24 | 704 | 0.0 | 0.5+ | 2005 05 12 | G96 | 0.6− | 0.2+ |
| 2001 02 16 | 209 | 1.1+ | 0.4+ | 2003 10 24 | 704 | 0.6− | 1.1+ | 2005 05 12 | G96 | 0.1− | 0.8+ |
| 2001 02 17 | 209 | 1.5+ | 0.1+ | 2003 10 24 | 704 | 0.3− | 0.6+ | 2005 05 12 | G96 | 0.7+ | 0.3− |
| 2003 09 19 | 699 | 0.5− | 0.7+ | 2003 10 24 | 704 | 0.4− | 0.2+ | 2005 05 12 | G96 | 0.2+ | 0.0 |

**2003 SA$_{319}$ = 2006 EE$_{59}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.38093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19663551 | $\omega$ | 315.47387 | | −0.85765729 | | −0.51250218 |
| $a$ | 2.9288339 | $\Omega$ | 193.87184 | | +0.50700237 | | −0.82914459 |
| $e$ | 0.0477902 | $i$ | 10.09356 | | +0.08586371 | | −0.22329524 |
| $P$ | 5.01 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 291 | 0.2− | 0.1− | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.0 | 0.2− |
| 2003 09 20 | 291 | 0.1− | 0.2+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.0 | 0.5+ |
| 2003 09 20 | 291 | 0.0 | 0.1+ | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 03 09 | 691 | 0.1+ | 0.1− |
| 2003 09 26 | 645 | 0.1+ | 0.1− | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 03 09 | 691 | 0.1− | 0.1− |
| 2003 09 26 | 645 | 0.1+ | 0.1− | 2006 03 05 | 691 | 0.1+ | 0.2− | 2006 03 09 | 691 | 0.0 | 0.0 |

**2003 SB$_{319}$ = 2006 EL$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.04536 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17884586 | $\omega$ | 147.16053 | | +0.68974409 | | −0.70552335 |
| $a$ | 3.1199678 | $\Omega$ | 258.64297 | | +0.62334175 | | +0.69297136 |
| $e$ | 0.0628135 | $i$ | 9.55578 | | +0.36837230 | | +0.14841662 |
| $P$ | 5.51 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 704 | 0.6+ | 0.1+ | 2003 09 30 | 704 | 0.4+ | 0.1+ | 2005 02 02 | 704 | 0.5− | 1.0+ |
| 2003 09 20 | 704 | 1.3− | 0.8+ | 2003 09 30 | 704 | 0.1− | 0.3+ | 2005 02 02 | 704 | 0.2+ | 0.3+ |
| 2003 09 20 | 704 | (5.9− | 0.9+) | 2003 09 30 | 704 | 0.4− | 0.6+ | 2005 02 02 | 704 | 0.7− | 0.7− |
| 2003 09 21 | 699 | 0.0 | 0.9− | 2003 09 30 | 704 | 0.6+ | 0.0 | 2006 03 04 | 703 | 0.1+ | 0.3+ |
| 2003 09 21 | 699 | 0.4+ | 1.7− | 2003 09 30 | 704 | 0.6+ | 0.2+ | 2006 03 04 | 703 | 0.0 | 0.5+ |
| 2003 09 21 | 699 | 0.3− | 0.4+ | 2003 09 30 | 704 | 0.0 | 0.0 | 2006 03 04 | 703 | 0.3− | 0.3− |
| 2003 09 21 | 699 | 0.7− | 0.4− | 2003 10 19 | 699 | 0.2+ | 0.6+ | 2006 03 04 | 703 | 0.4+ | 0.2+ |
| 2003 09 30 | 704 | 0.2+ | 0.5+ | 2003 10 19 | 699 | 0.1− | 0.2+ | 2006 03 05 | 699 | 0.0 | 1.5+ |
| 2003 09 30 | 704 | 1.0+ | 0.4+ | 2003 10 19 | 699 | 0.6− | 0.7− | 2006 03 05 | 699 | 0.5− | 0.6− |
| 2003 09 30 | 704 | 0.1− | 0.3+ | 2003 10 19 | 699 | 0.9− | 0.4+ | 2006 03 05 | 699 | 0.2+ | 0.2+ |
| 2003 09 30 | 704 | 0.0 | 0.4+ | 2005 02 02 | 704 | 0.7+ | 1.0− | 2006 03 05 | 699 | 0.9+ | 0.1− |

**2003 SC$_{319}$ = 2006 HF$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.18262 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24620901 | $\omega$ | 174.78725 | | +0.83883651 | | +0.54278602 |
| $a$ | 2.5211581 | $\Omega$ | 152.21237 | | −0.50263696 | | +0.80163611 |
| $e$ | 0.1694604 | $i$ | 5.12851 | | −0.20906792 | | +0.25052522 |
| $P$ | 4.00 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 699 | 0.3− | 0.1− | 2003 10 22 | 645 | 0.1− | 0.0 | 2005 01 17 | 691 | 0.3− | 0.2+ |
| 2003 09 20 | 699 | 0.4− | 0.4+ | 2003 10 23 | 691 | 0.4− | 0.5+ | 2005 03 09 | G96 | 0.0 | 0.2− |
| 2003 09 20 | 699 | 0.4+ | 1.4− | 2003 10 23 | 691 | 0.2− | 0.2+ | 2005 03 09 | G96 | 0.8− | 0.4− |
| 2003 09 20 | 699 | 0.2+ | 0.2+ | 2003 10 23 | 691 | 0.3− | 0.3+ | 2005 03 09 | G96 | 0.5+ | 0.1− |
| 2003 09 28 | 699 | 0.9+ | 1.0+ | 2003 10 29 | 699 | (0.4− | 2.3+) | 2005 03 09 | G96 | 0.3− | 0.6− |
| 2003 09 28 | 699 | 0.3− | 0.6− | 2003 10 29 | 699 | 1.5+ | 0.2− | 2006 04 24 | 691 | 0.1+ | 0.1+ |
| 2003 09 28 | 699 | 0.8+ | 0.0 | 2003 10 29 | 699 | 0.7+ | 0.1+ | 2006 04 24 | 691 | 0.4− | 0.3+ |
| 2003 09 28 | 699 | 0.2+ | 0.1− | 2003 10 29 | 699 | 0.1+ | 0.8+ | 2006 04 24 | 691 | 0.1+ | 0.3+ |
| 2003 10 05 | 691 | 0.0 | 0.7+ | 2003 11 20 | 645 | 0.1+ | 0.1− | 2006 05 01 | 691 | 0.0 | 0.3+ |
| 2003 10 05 | 691 | 0.1− | 0.6+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 01 | 691 | 0.5+ | 0.4+ |
| 2003 10 05 | 691 | 0.4− | 0.2+ | 2005 01 17 | 691 | 0.3+ | 0.4+ | 2006 05 01 | 691 | 0.2+ | 0.5+ |
| 2003 10 22 | 645 | 0.1− | 0.0 | 2005 01 17 | 691 | 0.3+ | 0.3+ | | | | |

**2003 SD$_{319}$ = 2006 GH$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.26435 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17853144 | $\omega$ | 359.66406 | | +0.75087265 | | −0.64862652 |
| $a$ | 3.1236299 | $\Omega$ | 41.66394 | | +0.60638388 | | +0.60243510 |
| $e$ | 0.0978716 | $i$ | 10.78512 | | +0.26170373 | | +0.46514039 |
| $P$ | 5.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 01 | 691 | 0.2− | 0.5− | 2003 10 20 | 691 | 0.0 | 0.1− | 2005 01 15 | 703 | 0.2− | 0.9− |
| 1995 04 01 | 691 | 0.4− | 0.6− | 2003 10 20 | 704 | 0.2+ | 1.4+ | 2005 01 15 | 703 | 1.2+ | 0.6+ |
| 1995 04 01 | 691 | 0.6− | 0.7− | 2003 10 20 | 704 | 1.2+ | 1.6+ | 2005 01 15 | 703 | 0.1− | 0.3− |
| 2003 09 20 | 699 | 0.7− | 1.1− | 2003 10 20 | 691 | 0.0 | 0.3− | 2005 01 15 | 703 | 1.2− | 1.0− |
| 2003 09 20 | 699 | 1.7+ | 0.5− | 2003 10 20 | 704 | 0.3+ | 1.7+ | 2006 04 02 | 691 | 0.1+ | 0.5+ |
| 2003 09 20 | 699 | 0.4− | 0.8− | 2003 10 25 | 704 | 0.2+ | 0.8+ | 2006 04 02 | 691 | 0.7+ | 0.4+ |
| 2003 09 20 | 699 | 1.3− | 0.3− | 2003 10 25 | 704 | 2.4− | 1.1+ | 2006 04 02 | 691 | 0.2+ | 0.5+ |
| 2003 10 20 | 691 | 0.1− | 0.2− | 2003 10 25 | 704 | 0.6− | 0.1− | 2006 04 07 | 691 | 0.2+ | 0.4+ |
| 2003 10 20 | 704 | 1.7+ | 1.9+ | 2003 10 25 | 704 | 0.9− | 0.2− | 2006 04 07 | 691 | 0.7+ | 0.6+ |
| 2003 10 20 | 704 | 0.3− | 2.6+ | 2003 10 25 | 704 | 1.6− | 0.1− | 2006 04 07 | 691 | 0.2+ | 0.9+ |

**2003 SE$_{319}$ = 2004 XG$_{191}$ = 2006 DR$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.33949 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12475148 | $\omega$ | 75.10905 | | +0.55405947 | | −0.83068504 |
| $a$ | 3.9667873 | $\Omega$ | 340.93878 | | +0.68499952 | | +0.49219036 |
| $e$ | 0.2991113 | $i$ | 9.62324 | | +0.47306846 | | +0.26021340 |
| $P$ | 7.90 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 691 | 0.0 | 0.1− | 2004 12 14 | 703 | 0.2+ | 0.5+ | 2004 12 21 | 703 | 0.9− | 0.0 |
| 2003 09 20 | 691 | 0.2+ | 0.1− | 2004 12 14 | 703 | 0.9+ | 0.3− | 2005 01 06 | 703 | 0.0 | 0.6+ |
| 2003 09 20 | 691 | 0.3+ | 0.0 | 2004 12 14 | 703 | 0.4− | 0.2− | 2005 01 06 | 703 | 0.0 | 0.3− |
| 2003 09 21 | 644 | 0.1− | 0.2+ | 2004 12 14 | 703 | 0.1− | 0.1− | 2005 01 06 | 703 | 0.8+ | 0.1+ |
| 2003 09 21 | 644 | 0.2+ | 0.2+ | 2004 12 20 | 012 | 0.5− | 0.3+ | 2005 01 06 | 703 | 0.0 | 0.1− |
| 2003 09 21 | 644 | 0.3+ | 0.1+ | 2004 12 20 | 012 | 0.4− | 0.5+ | 2005 12 03 | 568 | 0.2+ | 0.3− |
| 2003 09 27 | 704 | 0.0 | 0.4− | 2004 12 20 | 012 | 1.6+ | 0.2+ | 2005 12 03 | 568 | 0.2+ | 0.4− |
| 2003 09 27 | 704 | 0.9− | 1.2− | 2004 12 20 | 012 | 0.8− | 0.1+ | 2005 12 03 | 568 | 0.2+ | 0.4− |
| 2003 09 27 | 704 | 0.4− | 0.6− | 2004 12 20 | 012 | 0.2+ | 0.6− | 2006 02 24 | 691 | 0.2+ | 0.2+ |
| 2003 09 27 | 704 | 0.5− | 0.3− | 2004 12 20 | 012 | 0.0 | 0.1− | 2006 02 24 | 691 | 0.6− | 0.4+ |
| 2003 09 27 | 704 | 0.3− | 0.1+ | 2004 12 20 | 012 | 0.2+ | 1.0− | 2006 02 24 | 691 | 0.0 | 0.1− |
| 2003 09 27 | 291 | 0.1+ | 0.3+ | 2004 12 21 | 703 | 0.7− | 0.0 | 2006 03 02 | 691 | 0.3+ | 0.2− |
| 2003 09 27 | 291 | 0.0 | 0.2+ | 2004 12 21 | 703 | 0.2− | 0.5+ | 2006 03 02 | 691 | 0.1− | 0.1− |
| 2003 09 27 | 291 | 0.3− | 0.4+ | 2004 12 21 | 703 | 0.2− | 0.0 | 2006 03 02 | 691 | 0.3+ | 0.2+ |

**2003 SF$_{319}$ = 1997 YH$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.62456 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30380631 | $\omega$ | 118.99965 | | +0.38720611 | | −0.92075746 |
| $a$ | 2.1914834 | $\Omega$ | 308.14081 | | +0.82340145 | | +0.36862394 |
| $e$ | 0.1365294 | $i$ | 3.47845 | | +0.41482705 | | +0.12775791 |
| $P$ | 3.24 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 31 | 691 | 0.1+ | 0.3+ | 2000 11 20 | 704 | 0.2+ | 0.4− | 2003 09 27 | 291 | 0.0 | 0.2+ |
| 1997 12 31 | 691 | 0.1− | 0.1− | 2000 11 20 | 704 | 1.1+ | 0.2+ | 2003 09 27 | 291 | 0.2− | 0.3+ |
| 1997 12 31 | 691 | 0.5− | 0.2− | 2003 09 20 | 691 | 0.0 | 0.3− | 2003 09 27 | 291 | 0.3− | 0.3+ |
| 1998 01 08 | 691 | 0.2+ | 0.3+ | 2003 09 20 | 691 | 0.2+ | 0.2− | 2003 10 29 | 691 | 0.2+ | 0.2− |
| 1998 01 08 | 691 | 0.0 | 0.0 | 2003 09 20 | 691 | 0.2+ | 0.3− | 2003 10 29 | 691 | 0.3− | 0.3+ |
| 1998 01 08 | 691 | 0.3+ | 0.3− | 2003 09 21 | 644 | 0.2+ | 0.1+ | 2003 10 29 | 691 | 0.0 | 0.0 |
| 2000 11 20 | 704 | 0.1− | 0.2+ | 2003 09 21 | 644 | 0.3+ | 0.1− | | | | |
| 2000 11 20 | 704 | 1.0− | 0.6− | 2003 09 21 | 644 | 0.4+ | 0.1+ | | | | |

**2003 SG$_{319}$ = 2006 JS$_{43}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 221.59973 | | (2000.0) | | +0.82129999 | −0.57032972 |
| $n$ | 0.22629151 | $\omega$ | 209.10485 | | +0.54652159 | +0.79349181 |
| $a$ | 2.6670053 | $\Omega$ | 185.72680 | | +0.16364741 | +0.21235527 |
| $e$ | 0.0422122 | $i$ | 7.94709 | | | |
| $P$ | 4.36 | $H$ | 17.0 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 699 | 0.6− | 1.1− | 2003 09 29 | 704 | 0.4+ | 1.1+ | 2003 10 23 | 645 | 0.0 | 0.2− |
| 2003 09 21 | 699 | 1.4− | 0.1+ | 2003 10 18 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.0 | 0.2− |
| 2003 09 21 | 699 | 0.7+ | 0.5− | 2003 10 18 | 645 | 0.0 | 0.1− | 2003 10 24 | 645 | 0.1+ | 0.1− |
| 2003 09 21 | 699 | 0.3− | 0.7− | 2003 10 19 | 645 | 0.1+ | 0.2− | 2003 10 24 | 645 | 0.1+ | 0.1− |
| 2003 09 22 | 699 | (0.1+ | 2.3+) | 2003 10 19 | 645 | 0.1+ | 0.2− | 2006 05 05 | 691 | 0.2+ | 0.3− |
| 2003 09 22 | 699 | 0.5+ | 0.8+ | 2003 10 20 | 691 | 0.5− | 0.3+ | 2006 05 05 | 691 | 0.3+ | 0.2− |
| 2003 09 22 | 699 | 0.4+ | 0.1− | 2003 10 20 | 691 | 0.5− | 0.2+ | 2006 05 05 | 691 | 0.2− | 0.0 |
| 2003 09 22 | 699 | 0.3+ | 0.4− | 2003 10 20 | 691 | 0.3− | 0.2+ | 2006 05 09 | 691 | 0.1− | 0.0 |
| 2003 09 29 | 704 | 0.9+ | 0.4+ | 2003 10 22 | 645 | 0.2+ | 0.2− | 2006 05 09 | 691 | 0.4− | 0.9+ |
| 2003 09 29 | 704 | 0.2− | 1.1+ | 2003 10 22 | 645 | 0.1+ | 0.1− | 2006 05 09 | 691 | 0.2+ | 0.3− |

**2003 SH$_{319}$ = 2001 FK$_{6}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 263.83006 | | (2000.0) | | +0.44159315 | +0.89718783 |
| $n$ | 0.18158086 | $\omega$ | 294.84161 | | −0.68640884 | +0.34287666 |
| $a$ | 3.0885597 | $\Omega$ | 1.42292 | | −0.57778749 | +0.27836953 |
| $e$ | 0.2222514 | $i$ | 16.45627 | | | |
| $P$ | 5.43 | $H$ | 15.1 | $G$ 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 608 | 0.6− | 0.2+ | 2003 09 30 | 704 | 0.3+ | 0.5+ | 2003 10 22 | 704 | 0.5− | 0.1+ |
| 2001 03 18 | 608 | 0.1+ | 0.5+ | 2003 09 30 | 704 | 0.1− | 0.0 | 2003 10 22 | 704 | 0.1− | 1.3− |
| 2001 03 18 | 608 | 0.6− | 0.5+ | 2003 09 30 | 704 | 0.7+ | 0.2+ | 2003 11 19 | 704 | 0.1+ | 0.3− |
| 2001 03 20 | 608 | 0.0 | 0.1− | 2003 09 30 | 704 | 1.0+ | 0.3+ | 2003 11 19 | 704 | 0.8− | 0.9+ |
| 2001 03 20 | 608 | 0.8+ | 0.5− | 2003 09 30 | 704 | 0.1− | 1.0+ | 2003 11 19 | 704 | 1.0− | 0.8− |
| 2001 03 20 | 608 | 0.3+ | 0.5− | 2003 10 05 | 291 | 0.3+ | 0.1− | 2003 11 19 | 704 | 1.2+ | 0.2+ |
| 2003 09 21 | 699 | 1.2− | 1.4− | 2003 10 05 | 291 | 0.3+ | 0.2− | 2003 11 19 | 704 | 0.9+ | 0.6− |
| 2003 09 21 | 699 | 0.3+ | 0.5− | 2003 10 05 | 291 | 0.1+ | 0.1− | 2003 11 21 | 644 | 0.0 | 0.0 |
| 2003 09 21 | 699 | 0.3− | 0.0 | 2003 10 22 | 704 | 0.6− | 0.7+ | 2003 11 21 | 644 | 0.1+ | 0.1+ |
| 2003 09 21 | 699 | 0.3+ | 1.1+ | 2003 10 22 | 704 | 0.8− | 0.2+ | 2003 11 21 | 644 | 0.2− | 0.1− |

**2003 SJ$_{319}$ = 2006 KR$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.16690 | | (2000.0) | | +0.72505371 | +0.68812466 |
| $n$ | 0.27244301 | $\omega$ | 279.77343 | | −0.61213441 | +0.66252355 |
| $a$ | 2.3565985 | $\Omega$ | 36.75348 | | −0.31557658 | +0.29588341 |
| $e$ | 0.2199852 | $i$ | 2.67788 | | | |
| $P$ | 3.62 | $H$ | 18.6 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.5− | 0.3− | 2003 10 18 | 291 | 0.0 | 0.4+ | 2006 05 31 | G96 | 0.1− | 0.5− |
| 1996 11 08 | 691 | 0.1− | 0.4− | 2003 10 18 | 291 | 0.3− | 0.4+ | 2006 05 31 | G96 | 0.2− | 0.2− |
| 1996 11 08 | 691 | 0.7+ | 0.3+ | 2003 10 18 | 291 | 1.3− | 1.0+ | 2006 05 31 | G96 | 0.4− | 0.0 |
| 2003 09 21 | 691 | 0.2+ | 0.1− | 2003 10 19 | 645 | 0.1+ | 0.1− | 2006 05 31 | G96 | 0.3+ | 0.3− |
| 2003 09 21 | 691 | 0.0 | 0.1+ | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 06 01 | G96 | 0.2− | 0.3− |
| 2003 09 21 | 691 | 0.1− | 0.1− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 06 01 | G96 | 0.3+ | 0.2− |
| 2003 09 29 | 704 | 1.3− | 0.1− | 2003 10 22 | 645 | 0.1+ | 0.0 | 2006 06 01 | G96 | 0.4− | 0.3− |
| 2003 09 29 | 704 | 0.4− | 0.4− | 2003 10 24 | 645 | 0.1+ | 0.1− | 2006 06 01 | G96 | 0.0 | 0.1+ |
| 2003 09 29 | 704 | 0.8+ | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.1− | | | | |

**2003 SK$_{319}$ = 2006 DS$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 206.45895 | | (2000.0) | | +0.99838831 | −0.02173942 |
| $n$ | 0.18253473 | $\omega$ | 251.97508 | | +0.04009137 | +0.92396416 |
| $a$ | 3.0777905 | $\Omega$ | 109.24476 | | −0.04016806 | +0.38186075 |
| $e$ | 0.0751750 | $i$ | 3.18304 | | | |
| $P$ | 5.40 | $H$ | 16.4 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 691 | 0.2− | 0.2+ | 2003 10 02 | 691 | 0.0 | 0.3+ | 2006 02 27 | 691 | 0.3+ | 0.1+ |
| 2003 09 21 | 691 | 0.1− | 0.3+ | 2003 10 02 | 691 | 0.0 | 0.2+ | 2006 02 27 | 691 | 0.6+ | 0.1− |
| 2003 09 21 | 691 | 0.0 | 0.1+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 03 04 | G96 | 0.1− | 0.1+ |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 03 04 | G96 | 0.2+ | 0.3+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2005 01 17 | 691 | 0.0 | 0.1− | 2006 03 04 | G96 | 0.4− | 0.2+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 01 17 | 691 | 0.3+ | 0.2− | 2006 03 04 | G96 | 0.1− | 0.1+ |
| 2003 09 28 | 645 | 0.1+ | 0.0 | 2005 01 17 | 691 | 0.3− | 0.0 | | | | |
| 2003 10 02 | 691 | 0.2+ | 0.2+ | 2006 02 27 | 691 | 0.4− | 0.8+ | | | | |

**2003 SL$_{319}$ = 2006 QO$_{57}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.00879 | | (2000.0) | | +0.94670733 | −0.32042099 |
| $n$ | 0.31052996 | $\omega$ | 41.74938 | | +0.26895802 | +0.84244135 |
| $a$ | 2.1597346 | $\Omega$ | 336.87711 | | +0.17721970 | +0.43315466 |
| $e$ | 0.1978769 | $i$ | 4.79065 | | | |
| $P$ | 3.17 | $H$ | 18.8 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 644 | 0.2+ | 0.3+ | 2003 10 14 | 644 | 0.1+ | 0.2+ | 2006 08 27 | 673 | 0.3+ | 0.0 |
| 2003 09 21 | 644 | 0.2+ | 0.2+ | 2003 10 14 | 644 | 0.2+ | 0.3+ | 2006 08 27 | 673 | 0.1− | 0.0 |
| 2003 09 21 | 644 | 0.1+ | 0.5+ | 2003 10 14 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 673 | 0.8+ | 0.1+ |
| 2003 09 27 | 704 | 0.1− | 0.5+ | 2003 10 18 | 691 | 0.3− | 0.0 | 2006 08 28 | 673 | 0.0 | 0.0 |
| 2003 09 27 | 704 | 1.4− | 1.3− | 2003 10 18 | 691 | 0.2− | 0.1− | 2006 08 28 | 673 | 0.6− | 0.1− |
| 2003 09 27 | 704 | 0.3+ | 0.1− | 2003 10 18 | 691 | 0.1+ | 0.0 | | | | |
| 2003 09 27 | 704 | 0.4+ | 0.5− | 2006 08 27 | 673 | 0.4− | 0.0 | | | | |

**2003 SM$_{319}$ = 2000 AX$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 205.93769 | | (2000.0) | | +0.29302909 | −0.94783745 |
| $n$ | 0.22283950 | $\omega$ | 282.65230 | | +0.94464867 | +0.26676535 |
| $a$ | 2.6944777 | $\Omega$ | 149.38829 | | +0.14755627 | +0.17447182 |
| $e$ | 0.2651230 | $i$ | 14.26232 | | | |
| $P$ | 4.42 | $H$ | 15.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 28 | 691 | 0.4− | 0.4− | 2003 09 21 | 608 | 0.1+ | 1.0− | 2003 10 26 | 699 | 0.2+ | 0.4+ |
| 1997 05 28 | 691 | 0.3+ | 0.1− | 2003 09 21 | 608 | 0.3− | 1.2− | 2005 03 10 | 703 | 0.5+ | 1.2+ |
| 1997 05 28 | 691 | 0.3− | 0.6− | 2003 10 01 | 699 | 1.0+ | 0.3+ | 2005 03 10 | 703 | 0.4− | 0.2+ |
| 2000 01 08 | 704 | 0.1+ | 0.1− | 2003 10 01 | 699 | 0.1+ | 0.3− | 2005 03 10 | 703 | 0.1+ | 0.7+ |
| 2000 01 08 | 704 | 0.4+ | 0.5− | 2003 10 01 | 699 | 0.0 | 1.1− | 2005 03 10 | 703 | 1.0− | 0.6− |
| 2000 01 08 | 704 | 0.0 | 0.5− | 2003 10 01 | 699 | 0.4− | 1.1− | 2005 04 06 | 703 | 1.4− | 1.3− |
| 2000 01 08 | 704 | 0.5+ | 0.6− | 2003 10 18 | 704 | 0.8+ | 0.2+ | 2005 04 06 | 703 | 1.2+ | 0.0 |
| 2000 01 08 | 704 | 0.0 | 0.6− | 2003 10 18 | 704 | 1.0− | 0.1+ | 2005 04 06 | 703 | 1.0− | 1.2− |
| 2000 01 11 | 704 | 0.4+ | 0.2− | 2003 10 18 | 704 | 0.1− | 1.3+ | 2005 04 06 | 703 | 0.4− | 0.7− |
| 2000 01 11 | 704 | 0.8− | 0.1+ | 2003 10 18 | 704 | 0.1+ | 0.0 | 2006 06 20 | 691 | 0.3+ | 0.2+ |
| 2000 01 11 | 704 | 0.3+ | 1.1− | 2003 10 26 | 699 | 1.4+ | 0.2− | 2006 06 20 | 691 | 0.3+ | 0.2− |
| 2000 01 11 | 704 | 0.0 | 0.4+ | 2003 10 26 | 699 | 0.6− | 0.1− | 2006 06 20 | 691 | 0.1+ | 0.0 |
| 2003 09 21 | 608 | 0.1− | 1.5− | 2003 10 26 | 699 | 0.7− | 0.3− | | | | |

**2003 SN$_{319}$ = 2006 HQ$_{87}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.80673 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23909606 | $\omega$ | 284.52329 | | +0.76368081 | | +0.64435829 |
| $a$ | 2.5709153 | $\Omega$ | 35.38501 | | −0.56259777 | | +0.69456334 |
| $e$ | 0.1772636 | $i$ | 3.95352 | | −0.31666287 | | +0.31997524 |
| $P$ | 4.12 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 699 | 0.0 | 0.1+ | 2003 10 01 | 699 | 0.4+ | 0.2− | 2003 11 19 | 645 | 0.0 | 0.3+ |
| 2003 09 22 | 699 | 0.3− | 0.3+ | 2003 10 01 | 699 | 0.2+ | 0.4− | 2003 11 19 | 645 | 0.1− | 0.4+ |
| 2003 09 22 | 699 | 0.5+ | 0.4− | 2003 10 19 | 645 | 0.1+ | 0.3− | 2006 04 30 | 691 | 0.4− | 0.1+ |
| 2003 09 22 | 699 | 1.0− | 1.1+ | 2003 10 19 | 645 | 0.0 | 0.3− | 2006 04 30 | 691 | 0.4+ | 0.1− |
| 2003 09 28 | 704 | 0.4− | 0.5− | 2003 10 20 | 691 | 0.0 | 0.2− | 2006 04 30 | 691 | 0.1+ | 0.0 |
| 2003 09 28 | 704 | 0.2− | 0.4− | 2003 10 20 | 691 | 0.2− | 0.3− | 2006 05 01 | 691 | 0.0 | 0.0 |
| 2003 09 28 | 704 | 0.6+ | 0.5+ | 2003 10 20 | 691 | 0.2+ | 0.1− | 2006 05 01 | 691 | 0.3+ | 0.2− |
| 2003 10 01 | 699 | 0.3+ | 1.1− | 2003 10 23 | 645 | 0.1+ | 0.3− | 2006 05 01 | 691 | 0.7− | 0.3− |
| 2003 10 01 | 699 | 0.2− | 1.8+ | 2003 10 23 | 645 | 0.1+ | 0.2− | | | | |

**2003 SO$_{319}$ = 2006 HQ$_{58}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.52363 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23788611 | $\omega$ | 218.77757 | | −0.81539388 | | +0.57877108 |
| $a$ | 2.5796255 | $\Omega$ | 356.51518 | | −0.46644055 | | −0.66964473 |
| $e$ | 0.1249282 | $i$ | 11.89070 | | −0.34287903 | | −0.46540303 |
| $P$ | 4.14 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 645 | 0.1− | 0.1− | 2003 10 23 | 645 | 0.0 | 0.1+ | 2006 04 21 | 644 | 0.6+ | 0.2+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 24 | 691 | 0.2− | 0.3− | 2006 04 21 | 644 | 0.3+ | 0.0 |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2003 10 24 | 691 | 0.8+ | 0.1+ | 2006 04 29 | E12 | 0.3− | 0.2+ |
| 2003 09 29 | 645 | 0.0 | 0.1+ | 2003 10 24 | 691 | 0.1+ | 0.2+ | 2006 04 29 | E12 | 0.8− | 0.1+ |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.1− | 0.0 | 2006 04 29 | E12 | 0.4− | 0.3+ |
| 2003 10 19 | 645 | 0.1− | 0.1− | 2003 11 20 | 645 | 0.1− | 0.0 | 2006 04 29 | E12 | 0.5+ | 0.5− |
| 2003 10 23 | 645 | 0.1− | 0.0 | 2006 04 21 | 644 | 0.1+ | 0.2− | | | | |

**2003 SP$_{319}$ = 1995 WC$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.03985 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24469836 | $\omega$ | 266.57918 | | +0.82847346 | | +0.53551707 |
| $a$ | 2.5315238 | $\Omega$ | 60.97910 | | −0.40989399 | | +0.77921598 |
| $e$ | 0.1858203 | $i$ | 10.80101 | | −0.38160011 | | +0.32564385 |
| $P$ | 4.03 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.4+ | 0.4+ | 2003 09 30 | 645 | 0.0 | 0.1− | 2006 04 19 | 691 | 0.1− | 0.2+ |
| 1995 11 19 | 691 | 0.5+ | 0.2− | 2003 09 30 | 645 | 0.1− | 0.1− | 2006 04 19 | 691 | 0.1− | 0.2− |
| 1995 11 25 | 691 | 0.6− | 0.1− | 2003 10 19 | 704 | 0.3− | 1.7+ | 2006 04 19 | 691 | 0.0 | 0.1− |
| 1995 11 25 | 691 | 0.8− | 0.0 | 2003 10 19 | 704 | 1.3+ | 1.7+ | 2006 05 05 | 691 | 0.1− | 0.4+ |
| 1995 11 25 | 691 | 0.2− | 0.1− | 2003 10 19 | 704 | 1.1+ | 2.9+ | 2006 05 05 | 691 | 0.7+ | 0.1+ |
| 1999 10 09 | 704 | 2.0+ | 1.3+ | 2003 10 19 | 704 | 0.5+ | 0.3+ | 2006 05 05 | 691 | 0.4+ | 0.0 |
| 1999 10 09 | 704 | 1.6+ | 0.9+ | 2003 10 22 | 645 | 0.1+ | 0.0 | 2006 05 30 | G96 | 0.2− | 0.0 |
| 1999 10 09 | 704 | 0.9− | 0.2− | 2003 10 22 | 645 | 0.1+ | 0.0 | 2006 05 30 | G96 | 0.3− | 0.2+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 30 | G96 | 0.7− | 0.3+ |
| 2003 09 26 | 645 | 0.2− | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 30 | G96 | 1.0− | 0.2+ |

**2003 SQ$_{319}$ = 2006 DG$_{203}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.14446 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12484862 | $\omega$ | 301.25128 | | +0.63505654 | | −0.75758503 |
| $a$ | 3.9647294 | $\Omega$ | 108.55393 | | +0.75176661 | | +0.56121721 |
| $e$ | 0.1360091 | $i$ | 9.15836 | | +0.17762364 | | +0.33331692 |
| $P$ | 7.89 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.1+ | 0.0 | 2005 03 11 | G96 | 0.5− | 0.5+ |
| 2003 09 27 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.0 |
| 2003 09 28 | 699 | 0.1− | 0.9+ | 2003 10 27 | 699 | 1.9− | 0.5− | 2006 02 22 | 699 | 0.4− | 0.9+ |
| 2003 09 28 | 699 | 1.2+ | 0.5+ | 2003 10 27 | 699 | 0.4+ | 0.3− | 2006 02 22 | 699 | 0.4+ | 0.2+ |
| 2003 09 28 | 699 | 0.9− | 1.1+ | 2003 10 27 | 699 | 0.9− | 0.7+ | 2006 02 22 | 699 | (2.6+ | 0.2−) |
| 2003 09 28 | 699 | 0.4+ | 0.0 | 2003 10 27 | 699 | 0.1+ | 0.2+ | 2006 02 22 | 699 | 0.4− | 1.0+ |
| 2003 09 30 | 645 | 0.0 | 0.1− | 2004 12 11 | 704 | 0.5− | 0.1+ | 2006 03 03 | 699 | 1.2− | 2.0− |
| 2003 09 30 | 645 | 0.0 | 0.1− | 2004 12 11 | 704 | 0.1− | 0.6+ | 2006 03 03 | 699 | 0.3+ | 0.3+ |
| 2003 10 19 | 704 | 0.1− | 1.9+ | 2004 12 11 | 704 | 1.0+ | 0.5+ | 2006 03 03 | 699 | 0.9+ | 0.8− |
| 2003 10 19 | 704 | 0.0 | 0.2+ | 2004 12 11 | 704 | 0.0 | 1.2− | 2006 03 03 | 699 | 0.3+ | 0.5− |
| 2003 10 19 | 704 | 0.5− | 0.9− | 2005 03 11 | G96 | 0.0 | 0.0 | | | | |
| 2003 10 19 | 704 | 0.7− | 0.5+ | 2005 03 11 | G96 | 0.0 | 0.0 | | | | |

**2003 SR$_{319}$ = 2001 FG$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.68479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22174325 | $\omega$ | 121.55579 | | +0.41129775 | | +0.91118822 |
| $a$ | 2.7033510 | $\Omega$ | 172.61088 | | −0.88652559 | | +0.40598117 |
| $e$ | 0.0096468 | $i$ | 10.70015 | | −0.21191162 | | +0.07010931 |
| $P$ | 4.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 0.2− | 0.6− | 2003 09 28 | 704 | 0.7− | 0.8− | 2003 10 29 | 699 | 1.8− | 1.1+ |
| 2001 03 18 | 704 | 1.2+ | 0.0 | 2003 09 28 | 704 | 0.6+ | 0.8+ | 2003 10 29 | 699 | 0.0 | 1.7+ |
| 2001 03 18 | 704 | 1.0− | 0.1+ | 2003 09 28 | 704 | 0.0 | 1.0+ | 2003 10 29 | 699 | 2.8− | 0.4+ |
| 2001 03 18 | 704 | 0.1+ | 1.7+ | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 04 30 | 703 | 0.6− | 0.4− |
| 2001 03 18 | 704 | 0.0 | 0.5+ | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 04 30 | 703 | 1.1+ | 0.3+ |
| 2001 03 21 | 608 | 0.1− | 0.0 | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 04 30 | 703 | 0.8− | 1.0+ |
| 2001 03 21 | 608 | 0.3+ | 0.5− | 2003 10 24 | 645 | 0.1− | 0.1− | 2006 04 30 | 703 | 0.4+ | 0.5+ |
| 2001 03 21 | 608 | 0.1+ | 0.0 | 2003 10 29 | 699 | 0.3+ | 0.5− | | | | |

**2003 SS$_{319}$ = 1995 MQ$_{1}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.18719 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27238732 | $\omega$ | 166.58179 | | +0.76722688 | | +0.63912680 |
| $a$ | 2.3569197 | $\Omega$ | 153.45673 | | −0.59898009 | | +0.74391517 |
| $e$ | 0.1180895 | $i$ | 6.89721 | | −0.22931589 | | +0.19521054 |
| $P$ | 3.62 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 23 | 691 | 0.7− | 0.0 | 2003 09 28 | 704 | 0.8− | 0.2− | 2003 09 30 | 645 | 0.1− | 0.1+ |
| 1995 06 23 | 691 | 0.3− | 0.1− | 2003 09 28 | 704 | 0.3− | 0.1+ | 2003 10 18 | 699 | 0.8+ | 0.7− |
| 1995 06 23 | 691 | 0.1+ | 0.2− | 2003 09 28 | 704 | 1.4+ | 0.4+ | 2003 10 18 | 699 | 0.4− | 1.4+ |
| 1995 06 29 | 691 | 0.6+ | 0.1− | 2003 09 28 | 645 | 0.1− | 0.0 | 2003 10 18 | 699 | 0.7− | 0.7− |
| 1995 06 29 | 691 | 0.1+ | 0.1+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 18 | 699 | 0.3+ | 0.4− |
| 1995 06 29 | 691 | 0.1+ | 0.2+ | 2003 09 30 | 645 | 0.1− | 0.1+ | | | | |

**2003 ST$_{319}$ = 2006 KD$_{8}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.67149 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22816434 | $\omega$ | 339.24615 | | +0.68173951 | | −0.72826946 |
| $a$ | 2.6523909 | $\Omega$ | 67.70117 | | +0.68139361 | | +0.59740137 |
| $e$ | 0.1360866 | $i$ | 4.31894 | | +0.26633435 | | +0.33576062 |
| $P$ | 4.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 704 | 1.2+ | 1.1+ | 2003 10 20 | 704 | 0.1− | 0.5+ | 2006 05 19 | G96 | 0.1− | 0.2− |
| 2003 09 28 | 704 | 0.0 | 0.4− | 2003 10 20 | 704 | 0.6+ | 0.6+ | 2006 05 19 | G96 | 0.0 | 0.1− |
| 2003 09 28 | 704 | 1.6− | 0.7− | 2003 10 29 | 699 | 0.7+ | 0.8− | 2006 05 19 | G96 | 0.2− | 0.3+ |
| 2003 09 28 | 704 | 0.1+ | 0.1− | 2003 10 29 | 699 | 0.5− | 0.1− | 2006 05 20 | 691 | 0.1− | 0.0 |
| 2003 10 17 | 683 | 0.6+ | 0.1− | 2003 10 29 | 699 | 1.4− | 0.7+ | 2006 05 20 | 691 | 0.2+ | 0.0 |
| 2003 10 17 | 683 | (0.7− | 2.4+) | 2003 10 29 | 699 | 0.1− | 0.3+ | 2006 05 20 | 691 | 0.4+ | 0.1+ |
| 2003 10 20 | 704 | 0.5+ | 0.9− | 2006 05 19 | G96 | 0.2− | 0.1− | | | | |

**2003 SU$_{319}$ = 1999 XN$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 220.45553 | | (2000.0) | | | |
| $n$ | 0.23270157 | $\omega$ | 333.15097 | | +0.39715557 | −0.91474375 |
| $a$ | 2.6178003 | $\Omega$ | 93.37058 | | +0.85481649 | +0.33926924 |
| $e$ | 0.2032796 | $i$ | 4.26485 | | +0.33400032 | +0.21940888 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 25 | 691 | 0.1− | 0.3− | 1999 12 08 | 704 | 0.2+ | 0.0 | 2003 10 22 | 291 | 0.0 | 0.2+ |
| 1992 02 25 | 691 | 0.1− | 0.4+ | 1999 12 08 | 704 | 0.3− | 0.8− | 2003 10 22 | 291 | 0.1− | 0.2+ |
| 1992 02 25 | 691 | 0.1− | 0.8− | 2003 09 28 | 704 | 1.6− | 0.2+ | 2003 10 22 | 291 | 0.1− | 0.3+ |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2003 09 28 | 704 | 1.0+ | 1.3+ | 2003 11 19 | 644 | 0.1− | 0.6+ |
| 1999 12 07 | 704 | 0.2− | 0.7− | 2003 09 28 | 704 | 0.1+ | 0.7+ | 2003 11 19 | 644 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.1+ | 0.5+ | 2003 09 28 | 704 | 0.5− | 0.8− | 2003 11 19 | 644 | 0.1− | 0.5+ |
| 1999 12 07 | 704 | 0.2− | 0.4− | 2003 10 15 | 699 | 0.9+ | 1.3− | 2005 03 11 | 691 | 0.3+ | 0.6+ |
| 1999 12 07 | 704 | 0.4+ | 1.1+ | 2003 10 15 | 699 | 0.2+ | 0.0 | 2005 03 11 | 691 | 0.3+ | 0.5+ |
| 1999 12 08 | 704 | 0.2+ | 0.4+ | 2003 10 15 | 699 | 0.5− | 0.3+ | 2005 03 11 | 691 | 0.1+ | 0.3+ |
| 1999 12 08 | 704 | 0.3+ | 0.3− | 2003 10 15 | 699 | 0.3− | 0.9− | | | | |

**2003 SV$_{319}$ = 2006 GU$_{7}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.86487 | | (2000.0) | | | |
| $n$ | 0.23534363 | $\omega$ | 237.25820 | | +0.40020557 | +0.90844501 |
| $a$ | 2.5981711 | $\Omega$ | 56.79371 | | −0.78514816 | +0.40780374 |
| $e$ | 0.1715383 | $i$ | 8.29270 | | −0.47262869 | +0.09178113 |
| $P$ | 4.19 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 699 | 0.6− | 0.1− | 2003 10 22 | 645 | 0.0 | 0.2− | 2006 04 02 | 691 | 0.0 | 0.1− |
| 2003 09 28 | 699 | 0.6− | 0.6− | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 04 02 | 691 | 0.1+ | 0.1+ |
| 2003 09 28 | 699 | 0.4+ | 0.2+ | 2003 10 23 | 691 | 0.2+ | 0.1− | 2006 04 02 | 691 | 0.1− | 0.1+ |
| 2003 09 28 | 699 | 0.7+ | 0.4− | 2003 10 23 | 691 | 0.2− | 0.2+ | 2006 04 07 | 691 | 0.0 | 0.1− |
| 2003 10 05 | 691 | 0.1− | 0.3+ | 2003 10 23 | 691 | 0.1− | 0.1+ | 2006 04 07 | 691 | 0.0 | 0.0 |
| 2003 10 05 | 691 | 0.3+ | 0.7+ | 2003 10 24 | 645 | 0.0 | 0.2− | 2006 04 07 | 691 | 0.0 | 0.0 |
| 2003 10 05 | 691 | 0.1+ | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.2− | | | | |

**2003 SW$_{319}$ = 2006 KR$_{64}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.19424 | | (2000.0) | | | |
| $n$ | 0.26763629 | $\omega$ | 234.32957 | | −0.10080316 | +0.99469237 |
| $a$ | 2.3847309 | $\Omega$ | 29.90500 | | −0.89891230 | −0.08216878 |
| $e$ | 0.1552881 | $i$ | 2.37213 | | −0.42637472 | −0.06193051 |
| $P$ | 3.68 | $H$ | 17.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 691 | 0.4− | 0.1+ | 2003 10 19 | 645 | 0.1+ | 0.2− | 2003 10 24 | 691 | 0.1− | 0.4+ |
| 2003 09 29 | 691 | 0.3− | 0.1+ | 2003 10 22 | 645 | 0.2+ | 0.1− | 2006 05 23 | G96 | 0.1+ | 0.2− |
| 2003 09 29 | 691 | 0.8+ | 0.5− | 2003 10 22 | 645 | 0.2+ | 0.1− | 2006 05 23 | G96 | 0.2− | 0.2− |
| 2003 10 18 | 291 | 0.0 | 0.3+ | 2003 10 24 | 691 | 0.7− | 0.4+ | 2006 05 23 | G96 | 0.1− | 0.1+ |
| 2003 10 18 | 291 | 0.1+ | 0.2+ | 2003 10 24 | 645 | 0.1+ | 0.1− | 2006 05 24 | 644 | 0.3+ | 0.2+ |
| 2003 10 18 | 291 | 0.2+ | 0.1+ | 2003 10 24 | 645 | 0.0 | 0.2− | 2006 05 24 | 644 | 0.1− | 0.1+ |
| 2003 10 19 | 645 | 0.1+ | 0.1− | 2003 10 24 | 691 | 0.2− | 0.3− | 2006 05 24 | 644 | 0.1+ | 0.1− |

**2003 SX$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 190.06117 | | (2000.0) | | | |
| $n$ | 0.18528340 | $\omega$ | 119.31516 | | +0.98680331 | +0.08394198 |
| $a$ | 3.0472755 | $\Omega$ | 236.19665 | | −0.12336924 | +0.94362789 |
| $e$ | 0.0960801 | $i$ | 9.59228 | | +0.10487732 | +0.32018768 |
| $P$ | 5.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 13 | 691 | 0.1+ | 0.4+ | 2003 09 20 | 704 | (0.2+ | 2.5+) | 2004 09 16 | 691 | 0.2+ | 0.1− |
| 1993 10 13 | 691 | 0.8− | 0.6+ | 2003 09 20 | 704 | (2.3− | 0.6−) | 2004 09 16 | 691 | 0.1+ | 0.3+ |
| 1993 10 13 | 691 | 0.5+ | 0.1+ | 2003 09 20 | 704 | 1.4− | 0.1+ | 2004 11 11 | 691 | 0.1+ | 0.1− |
| 2002 05 04 | 644 | 0.2+ | 0.1− | 2003 09 20 | 704 | 0.3+ | 0.7− | 2004 11 11 | 691 | 0.0 | 0.0 |
| 2002 05 04 | 644 | 0.2− | 0.2+ | 2003 09 20 | 704 | 1.1− | 1.7− | 2004 11 11 | 691 | 0.4− | 0.3− |
| 2002 05 04 | 644 | 0.4− | 0.1+ | 2003 09 27 | 699 | 1.3− | 0.1+ | 2004 12 11 | 691 | 0.1+ | 0.0 |
| 2002 06 07 | 291 | 0.2+ | 0.4+ | 2003 09 27 | 699 | 1.7− | 0.2− | 2004 12 11 | 691 | 0.1+ | 0.1+ |
| 2002 06 07 | 291 | 0.0 | 0.2+ | 2003 09 27 | 699 | 0.3+ | 1.1+ | 2004 12 11 | 691 | 0.1+ | 0.1+ |
| 2002 06 07 | 291 | 0.2+ | 0.4+ | 2003 09 27 | 699 | 0.5+ | 0.2− | 2006 02 22 | 703 | 1.1+ | 0.3− |
| 2003 09 16 | 691 | 0.4+ | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 02 22 | 703 | 0.1− | 1.4+ |
| 2003 09 16 | 691 | 0.4+ | 0.4+ | 2003 10 23 | 645 | 0.1− | 0.1− | 2006 02 22 | 703 | 0.1+ | 1.0+ |
| 2003 09 16 | 691 | 0.4+ | 0.2+ | 2004 09 16 | 691 | 0.1+ | 0.1+ | 2006 02 22 | 703 | 1.4− | 1.5+ |

**2003 SY$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 191.55374 | | (2000.0) | | | |
| $n$ | 0.19155193 | $\omega$ | 96.17340 | | +0.90739610 | −0.40839811 |
| $a$ | 2.9804262 | $\Omega$ | 287.96587 | | +0.33242813 | +0.84187949 |
| $e$ | 0.2033647 | $i$ | 5.98678 | | +0.25714560 | +0.35277458 |
| $P$ | 5.15 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 644 | 0.1+ | 0.1+ | 2003 09 21 | 644 | 0.1− | 0.0 | 2005 01 19 | 691 | 0.0 | 0.3+ |
| 2003 09 16 | 699 | 1.0+ | 0.7+ | 2003 09 30 | 704 | 0.9+ | 0.2+ | 2005 01 19 | 691 | 0.1− | 0.2+ |
| 2003 09 16 | 644 | 0.2+ | 0.2+ | 2003 09 30 | 704 | 0.4+ | 0.4− | 2005 01 19 | 691 | 0.0 | 0.0 |
| 2003 09 16 | 699 | 0.2+ | 0.8− | 2003 09 30 | 704 | 1.1− | 0.2+ | 2005 02 01 | 703 | 0.2+ | 0.4− |
| 2003 09 16 | 699 | 1.4− | 0.3− | 2003 09 30 | 704 | 1.1− | 0.1+ | 2005 02 01 | 703 | 0.2+ | 0.5+ |
| 2003 09 16 | 699 | 0.8+ | 0.3− | 2004 12 20 | G96 | 0.1− | 0.3− | 2005 02 01 | 703 | 0.4+ | 0.9− |
| 2003 09 16 | 644 | 0.2+ | 0.1+ | 2004 12 20 | G96 | 0.0 | 0.2− | 2005 02 01 | 703 | 0.2− | 0.3− |
| 2003 09 21 | 644 | 0.0 | 0.0 | 2004 12 20 | G96 | 0.1+ | 0.0 | | | | |
| 2003 09 21 | 644 | 0.0 | 0.0 | 2004 12 20 | G96 | 0.2− | 0.1− | | | | |

**2003 SZ$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 253.86016 | | (2000.0) | | | |
| $n$ | 0.24119431 | $\omega$ | 290.61603 | | +0.95633249 | −0.22119232 |
| $a$ | 2.5559833 | $\Omega$ | 82.54771 | | +0.28276612 | +0.86560153 |
| $e$ | 0.2383793 | $i$ | 11.10939 | | −0.07396958 | +0.44923040 |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.5+ | 0.2− | 2002 05 09 | 644 | 0.2+ | 1.2+ | 2003 09 28 | 608 | 0.7+ | 0.3+ |
| 1999 10 16 | 704 | 0.0 | 0.1+ | 2002 05 09 | 644 | 0.6+ | 1.1+ | 2003 09 28 | 608 | 0.6+ | 0.4+ |
| 1999 10 16 | 704 | 0.4+ | 0.9+ | 2003 09 16 | 704 | 0.0 | 0.7− | 2003 10 17 | 704 | 0.0 | 0.4+ |
| 1999 10 16 | 704 | 0.3+ | 0.3− | 2003 09 16 | 704 | 0.4+ | 0.8− | 2003 10 17 | 704 | 0.4− | 0.2− |
| 1999 10 16 | 704 | 0.3+ | 0.1− | 2003 09 16 | 704 | 0.9− | 0.5− | 2003 10 17 | 704 | 0.3+ | 0.9+ |
| 1999 11 08 | 703 | 0.4− | 1.2+ | 2003 09 16 | 704 | 0.2− | 0.0 | 2006 06 01 | 691 | 0.2+ | 0.2+ |
| 1999 11 08 | 703 | 0.7− | 0.6+ | 2003 09 25 | 644 | 0.3− | 0.4− | 2006 06 01 | 691 | 0.1− | 0.0 |
| 1999 11 08 | 703 | 1.8− | 1.3− | 2003 09 25 | 644 | 0.6− | 0.2+ | 2006 06 01 | 691 | 0.0 | 0.5− |
| 1999 11 08 | 703 | 0.1+ | 1.7+ | 2003 09 25 | 644 | 0.0 | 0.5− | | | | |
| 2002 05 09 | 644 | 0.0 | 1.2+ | 2003 09 28 | 608 | 0.5+ | 0.1+ | | | | |

**2003 SA$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 131.95561 | | (2000.0) | | | |
| $n$ | 0.17945058 | $\omega$ | 84.54444 | | +0.37919394 | −0.92388967 |
| $a$ | 3.1129548 | $\Omega$ | 342.89280 | | +0.76467648 | +0.34414651 |
| $e$ | 0.0596464 | $i$ | 10.05913 | | +0.52103919 | +0.16730531 |
| $P$ | 5.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.2+ | 0.4+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 02 24 | G96 | 0.7+ | 0.1− |
| 2003 09 16 | 691 | 0.0 | 0.3+ | 2003 10 19 | 645 | 0.1− | 0.3− | 2006 02 24 | G96 | 0.4− | 0.0 |
| 2003 09 16 | 691 | 0.0 | 0.5+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 02 24 | G96 | 0.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 645 | 0.0 | 0.1+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 04 02 | 691 | 0.2− | 0.2+ |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 11 19 | 645 | 0.0 | 0.2− | 2006 04 02 | 691 | 0.0 | 0.2+ |
| 2003 09 29 | 645 | 0.0 | 0.1+ | 2003 11 19 | 645 | 0.0 | 0.2− | 2006 04 02 | 691 | 0.3− | 0.5− |
| 2003 09 29 | 645 | 0.0 | 0.2+ | 2006 02 24 | 691 | 0.2+ | 0.1− | 2006 04 08 | 691 | 0.9+ | 0.8+ |
| 2003 10 17 | 691 | 0.2− | 0.6+ | 2006 02 24 | 691 | 0.0 | 0.3+ | 2006 04 08 | 691 | 0.0 | 0.6+ |
| 2003 10 17 | 691 | 0.0 | 0.5+ | 2006 02 24 | 691 | 0.3+ | 0.3+ | 2006 04 08 | 691 | 0.3+ | 0.4+ |
| 2003 10 17 | 691 | 0.2− | 0.6+ | 2006 02 24 | G96 | 0.2+ | 0.2+ | | | | |

**2003 SB$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.26263 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18179474 | $\omega$ | 205.38835 | | −0.96802701 | | +0.24805591 |
| $a$ | 3.0861368 | $\Omega$ | 348.78130 | | −0.18472702 | | −0.80556431 |
| $e$ | 0.0391155 | $i$ | 11.05597 | | −0.16970457 | | −0.53808402 |
| $P$ | 5.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.1− | 0.4+ | 2003 09 29 | 645 | 0.1− | 0.1− | 2006 01 23 | 691 | 0.5− | 0.1− |
| 2003 09 16 | 691 | 0.2+ | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 02 01 | 691 | 0.3+ | 0.1− |
| 2003 09 16 | 691 | 0.0 | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 02 01 | 691 | 0.3+ | 0.3− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 23 | 645 | 0.1+ | 0.0 | 2006 02 01 | 691 | 0.1+ | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 23 | 645 | 0.0 | 0.1+ | 2006 02 20 | 691 | 0.4+ | 0.5+ |
| 2003 09 27 | 691 | 0.2− | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 02 20 | 691 | 0.3− | 0.2+ |
| 2003 09 27 | 691 | 0.4− | 0.4+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 02 20 | 691 | 0.1+ | 0.3+ |
| 2003 09 27 | 691 | 0.2− | 0.3+ | 2006 01 23 | 691 | 0.1− | 0.4− | | | | |
| 2003 09 29 | 645 | 0.0 | 0.1− | 2006 01 23 | 691 | 0.1− | 0.0 | | | | |

**2003 SC$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.02091 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25527130 | $\omega$ | 111.86631 | | +0.68790876 | | +0.72543796 |
| $a$ | 2.4611310 | $\Omega$ | 201.65032 | | −0.68666331 | | +0.64030557 |
| $e$ | 0.1657522 | $i$ | 3.54804 | | −0.23510642 | | +0.25248473 |
| $P$ | 3.86 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.0 | 0.3+ | 2006 03 24 | 691 | 0.1− | 0.2− | 2006 05 05 | G96 | 0.4+ | 0.2+ |
| 2003 09 16 | 691 | 0.1+ | 0.4+ | 2006 03 24 | 691 | 0.1− | 0.2+ | 2006 05 05 | G96 | 0.6− | 0.3+ |
| 2003 09 16 | 691 | 0.3+ | 0.3+ | 2006 03 24 | 691 | 0.1+ | 0.2+ | 2006 05 05 | G96 | 0.1+ | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 05 03 | 691 | 0.5+ | 0.2+ | 2006 05 19 | G96 | 0.0 | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 05 03 | 691 | 0.7− | 1.3− | 2006 05 19 | G96 | 0.3− | 0.1+ |
| 2003 09 28 | 645 | 0.1− | 0.0 | 2006 05 03 | 691 | 0.4+ | 0.5+ | 2006 05 19 | G96 | 0.8− | 0.0 |
| 2003 09 28 | 645 | 0.1− | 0.1− | 2006 05 05 | G96 | 0.7+ | 1.0+ | 2006 05 19 | G96 | 0.0 | 0.0 |

**2003 SD$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.96847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28997194 | $\omega$ | 52.57292 | | +0.70606561 | | −0.70803460 |
| $a$ | 2.2606434 | $\Omega$ | 352.47244 | | +0.61558786 | | +0.62246577 |
| $e$ | 0.0819354 | $i$ | 5.51220 | | +0.35003277 | | +0.33350167 |
| $P$ | 3.40 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.4− | 0.2+ | 2003 10 03 | 691 | 0.2− | 0.4+ | 2005 03 11 | G96 | 0.3− | 0.1+ |
| 2003 09 16 | 691 | 0.6+ | 0.1− | 2003 10 03 | 691 | 0.1+ | 0.0 | 2005 03 11 | G96 | 0.1+ | 0.2− |
| 2003 09 16 | 691 | 0.2+ | 0.2− | 2003 10 17 | 691 | 0.2+ | 0.0 | 2005 04 05 | G96 | 0.1+ | 0.3+ |
| 2003 09 28 | 691 | 0.1− | 0.0 | 2003 10 17 | 691 | 0.2− | 0.2− | 2005 04 05 | G96 | 0.1− | 0.2+ |
| 2003 09 28 | 691 | 0.1− | 0.1− | 2003 10 17 | 691 | 0.0 | 0.1+ | 2005 04 05 | G96 | 0.4+ | 0.1− |
| 2003 09 28 | 691 | 0.2− | 0.0 | 2005 03 11 | G96 | 0.3− | 0.1+ | 2005 04 05 | G96 | 0.3+ | 0.0 |
| 2003 10 03 | 691 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.2− | 0.4− | | | | |

**2003 SE$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.94110 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19048356 | $\omega$ | 298.19100 | | −0.67622007 | | −0.73628937 |
| $a$ | 2.9915600 | $\Omega$ | 194.44128 | | +0.70575215 | | −0.63788186 |
| $e$ | 0.1930331 | $i$ | 5.65727 | | +0.21128254 | | −0.22579790 |
| $P$ | 5.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.1+ | 0.4− | 2003 09 17 | 691 | 0.2+ | 0.0 | 2006 04 08 | 291 | 0.2+ | 0.2+ |
| 1998 09 14 | 691 | 0.2− | 0.1− | 2003 09 29 | 645 | 0.0 | 0.2+ | 2006 04 08 | 291 | 1.1− | 0.6+ |
| 1998 09 14 | 691 | 0.4− | 0.1− | 2003 09 29 | 645 | 0.1+ | 0.1+ | 2006 04 23 | 704 | 0.8+ | 0.3+ |
| 2000 01 07 | 704 | 0.1− | 0.8+ | 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 04 23 | 704 | 1.4+ | 0.1− |
| 2000 01 07 | 704 | 0.0 | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 04 23 | 704 | 1.5+ | 0.8− |
| 2000 01 07 | 704 | 0.5+ | 0.6+ | 2004 12 18 | 704 | 0.9− | 0.7+ | 2006 04 23 | 704 | 0.1− | 0.0 |
| 2000 01 07 | 704 | 0.2− | 0.1− | 2004 12 18 | 704 | 0.1+ | 0.0 | 2006 04 30 | 699 | 0.5+ | 0.7+ |
| 2000 01 07 | 704 | 0.7+ | 0.4+ | 2004 12 18 | 704 | 0.2− | 0.0 | 2006 04 30 | 699 | 0.1+ | 0.3+ |
| 2000 02 02 | 704 | 0.4+ | 0.8+ | 2006 01 27 | G96 | 0.4+ | 0.1− | 2006 04 30 | 699 | 0.8− | 0.9+ |
| 2000 02 02 | 704 | 0.0 | 0.3+ | 2006 01 27 | G96 | 0.1− | 0.5− | 2006 04 30 | 699 | 1.0+ | 1.0+ |
| 2000 02 02 | 704 | 0.4+ | 0.0 | 2006 01 27 | G96 | 0.7− | 0.2− | 2006 05 24 | G96 | 0.2− | 0.0 |
| 2003 09 17 | 691 | 0.7− | 0.2+ | 2006 01 27 | G96 | 0.3+ | 0.2− | 2006 05 24 | G96 | 0.4− | 0.0 |
| 2003 09 17 | 691 | 0.2+ | 0.0 | 2006 04 08 | 291 | 0.2+ | 0.2+ | 2006 05 24 | G96 | 0.1− | 0.4+ |

**2003 SF$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.12686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22184389 | $\omega$ | 229.39490 | | +0.94627778 | | −0.27764939 |
| $a$ | 2.7025334 | $\Omega$ | 145.75840 | | +0.30323943 | | +0.93993749 |
| $e$ | 0.1628183 | $i$ | 17.13053 | | −0.11226848 | | +0.19856567 |
| $P$ | 4.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 704 | 0.9− | 1.2+ | 2003 09 25 | 608 | 0.3+ | 1.2− | 2005 02 02 | 691 | 0.0 | 0.3+ |
| 2003 09 17 | 704 | 0.3+ | 0.6+ | 2003 10 03 | 608 | 0.3− | 0.3+ | 2005 03 09 | G96 | 0.4− | 0.1+ |
| 2003 09 17 | 704 | 0.0 | 0.9+ | 2003 10 03 | 608 | 0.1− | 0.2+ | 2005 03 09 | G96 | 0.5− | 0.3− |
| 2003 09 17 | 704 | 0.5+ | 0.5+ | 2003 10 03 | 608 | 0.0 | 0.1+ | 2005 03 09 | G96 | 0.2− | 0.0 |
| 2003 09 25 | 644 | 0.0 | 0.0 | 2005 01 13 | 691 | 0.2− | 0.0 | 2005 03 09 | G96 | 0.0 | 0.0 |
| 2003 09 25 | 644 | 0.3+ | 0.1+ | 2005 01 13 | 691 | 0.0 | 0.0 | 2006 05 24 | G96 | 0.1+ | 0.3+ |
| 2003 09 25 | 644 | 0.2+ | 0.2+ | 2005 01 13 | 691 | 0.3+ | 0.3− | 2006 05 24 | G96 | 0.0 | 0.5+ |
| 2003 09 25 | 608 | 0.4− | 0.8− | 2005 02 02 | 691 | 0.0 | 0.3+ | 2006 05 24 | G96 | 0.0 | 0.8+ |
| 2003 09 25 | 608 | 0.3− | 0.1− | 2005 02 02 | 691 | 0.3+ | 0.0 | 2006 05 24 | G96 | 0.1+ | 0.5+ |

**2003 SG$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.70646 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26645028 | $\omega$ | 52.07699 | | +0.34293915 | | +0.93501568 |
| $a$ | 2.3918022 | $\Omega$ | 238.21023 | | −0.89171691 | | +0.29384575 |
| $e$ | 0.1023421 | $i$ | 6.09255 | | −0.29535349 | | +0.19849521 |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.1+ | 0.1− | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 24 | 691 | 0.5+ | 0.4− |
| 2003 09 17 | 691 | 0.1+ | 0.4+ | 2006 05 05 | 691 | 0.2+ | 0.6− | 2006 06 04 | 691 | 0.0 | 0.1+ |
| 2003 09 17 | 691 | 0.1+ | 0.1+ | 2006 05 05 | 691 | 0.2− | 0.0 | 2006 06 04 | 691 | 0.1− | 0.1− |
| 2003 09 20 | 704 | 0.1− | 1.2+ | 2006 05 05 | 691 | 0.1− | 0.2+ | 2006 06 04 | 691 | 0.0 | 0.0 |
| 2003 09 20 | 704 | 0.5− | 0.5+ | 2006 05 24 | 691 | 0.0 | 0.2+ | 2006 06 19 | G96 | 0.3− | 0.2− |
| 2003 09 20 | 704 | 0.3+ | 0.2− | 2006 05 24 | 691 | 0.1+ | 0.2+ | 2006 06 19 | G96 | 0.6− | 0.4+ |
| 2003 11 16 | 645 | 0.0 | 0.1− | 2006 05 24 | 691 | 0.1+ | 0.1− | 2006 06 19 | G96 | 0.4− | 0.4− |
| 2003 11 16 | 645 | 0.1− | 0.2− | 2006 05 24 | 691 | 0.1+ | 0.2+ | 2006 06 19 | G96 | 0.2− | 0.1− |
| 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 24 | 691 | 0.3− | 0.1+ | | | | |

**2003 SH$_{320}$ = 2005 XL$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.50380 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18136930 | $\omega$ | 282.40691 | | −0.61540786 | | +0.77926357 |
| $a$ | 3.0909610 | $\Omega$ | 308.96479 | | −0.65101183 | | −0.58721385 |
| $e$ | 0.0579647 | $i$ | 8.75979 | | −0.44436106 | | −0.21892504 |
| $P$ | 5.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.2+ | 0.1+ | 2005 12 06 | G96 | 0.2+ | 0.1+ | 2006 02 01 | G96 | 0.2− | 0.0 | |
| 2003 09 17 | 691 | 0.1+ | 0.1+ | 2005 12 06 | G96 | 0.4− | 0.1+ | 2006 02 01 | G96 | 0.0 | 0.1− | |
| 2003 09 17 | 691 | 0.1+ | 0.0 | 2005 12 06 | G96 | 0.2− | 0.2− | 2006 02 01 | G96 | 0.4− | 0.1+ | |
| 2003 09 21 | 644 | 0.2+ | 0.5+ | 2005 12 06 | G96 | 0.2+ | 0.1+ | 2006 02 01 | G96 | 0.2− | 0.1+ | |
| 2003 09 21 | 644 | 0.1− | 0.4+ | 2006 01 05 | G96 | 0.5− | 0.1− | 2006 02 09 | 644 | 0.2− | 0.2+ | |
| 2003 09 21 | 644 | 0.2+ | 0.3+ | 2006 01 05 | G96 | 0.6+ | 0.0 | 2006 02 09 | 644 | 0.4− | 0.1+ | |
| 2003 09 30 | 691 | 0.1+ | 0.0 | 2006 01 05 | G96 | 0.2+ | 0.0 | 2006 02 09 | 644 | 0.4− | 0.1+ | |
| 2003 09 30 | 691 | 0.1+ | 0.1− | 2006 01 05 | G96 | 0.2− | 0.1+ | 2006 02 21 | 699 | 0.2+ | 0.5+ | |
| 2003 09 30 | 691 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.1− | 0.1− | 2006 02 21 | 699 | 0.6+ | 1.2− | |
| 2003 10 22 | 691 | 0.1− | 0.1− | 2006 01 23 | G96 | 0.4− | 0.0 | 2006 02 21 | 699 | 0.9+ | 1.3+ | |
| 2003 10 22 | 691 | 0.4− | 0.1− | 2006 01 23 | G96 | 0.0 | 0.0 | 2006 02 21 | 699 | 1.0+ | 1.2− | |
| 2003 10 22 | 691 | 0.3− | 0.0 | 2006 01 23 | G96 | 0.3− | 0.1+ | | | | | |

**2003 SJ$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.43647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17097523 | $\omega$ | 129.69520 | | +0.73923608 | | −0.67050118 |
| $a$ | 3.2149971 | $\Omega$ | 272.50845 | | +0.59699884 | | +0.69568603 |
| $e$ | 0.1794763 | $i$ | 3.61056 | | +0.31164468 | | +0.25777725 |
| $P$ | 5.76 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.4+ | 0.2− | 2003 10 19 | 645 | 0.1− | 0.0 | 2004 12 12 | 691 | 0.3− | 0.1+ | |
| 2003 09 17 | 691 | 0.4+ | 0.2+ | 2003 10 22 | 691 | 0.3+ | 0.1+ | 2004 12 12 | 691 | 0.3− | 0.1+ | |
| 2003 09 17 | 691 | 0.1+ | 0.2+ | 2003 10 22 | 691 | 0.2+ | 0.1+ | 2004 12 12 | 691 | 0.2− | 0.0 | |
| 2003 09 22 | 699 | 0.5+ | 0.3− | 2003 10 22 | 691 | 0.3+ | 0.1− | 2005 01 17 | 691 | 0.2+ | 0.0 | |
| 2003 09 22 | 699 | 0.6− | 0.7+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 01 17 | 691 | 0.5+ | 0.1− | |
| 2003 09 22 | 699 | 1.6+ | 0.2− | 2003 10 22 | 645 | 0.1− | 0.0 | 2005 01 17 | 691 | 0.1+ | 0.3− | |
| 2003 09 22 | 699 | 0.2− | 0.0 | 2003 10 24 | 645 | 0.0 | 0.0 | 2005 03 13 | G96 | 0.4− | 0.2+ | |
| 2003 09 29 | 645 | 0.1− | 0.0 | 2003 10 24 | 645 | 0.0 | 0.0 | 2005 03 13 | G96 | 0.1+ | 0.1− | |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2003 11 19 | 645 | 0.0 | 0.1+ | 2005 03 13 | G96 | 0.2− | 0.3+ | |
| 2003 10 19 | 645 | 0.1− | 0.0 | 2003 11 19 | 645 | 0.0 | 0.0 | 2005 03 13 | G96 | 0.1− | 0.3+ | |

**2003 SK$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.60266 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20834425 | $\omega$ | 89.57892 | | +0.69257176 | | +0.71994506 |
| $a$ | 2.8180479 | $\Omega$ | 224.37026 | | −0.68477510 | | +0.63657285 |
| $e$ | 0.1387771 | $i$ | 3.68819 | | −0.22677616 | | +0.27650338 |
| $P$ | 4.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 20 | 691 | 0.3− | 0.3+ | 2003 09 17 | 691 | 0.2− | 0.1− | 2003 09 27 | 691 | 0.1− | 0.2+ | |
| 1993 06 20 | 691 | 0.0 | 0.1− | 2003 09 21 | 699 | 1.4− | 1.4+ | 2003 09 27 | 691 | 0.1+ | 0.1+ | |
| 1993 06 20 | 691 | 0.2+ | 0.1+ | 2003 09 21 | 699 | 0.8− | 0.6+ | 2003 09 27 | 691 | 0.0 | 0.2+ | |
| 1998 08 27 | 327 | 0.8+ | 0.0 | 2003 09 21 | 699 | 0.3− | 0.6− | 2003 10 20 | 691 | 0.1− | 0.1+ | |
| 1998 08 27 | 327 | 0.2+ | 0.0 | 2003 09 21 | 699 | (0.4− | 2.0−) | 2003 10 20 | 691 | 0.1+ | 0.3+ | |
| 1998 08 27 | 327 | 0.1+ | 0.2− | 2003 09 21 | 644 | 0.2+ | 0.1+ | 2003 10 20 | 691 | 0.0 | 0.1+ | |
| 2002 05 18 | 644 | 0.1− | 0.2+ | 2003 09 21 | 644 | 0.0 | 0.6+ | 2006 03 05 | 691 | 0.1+ | 0.5+ | |
| 2002 05 18 | 644 | 0.2+ | 0.5+ | 2003 09 21 | 644 | 0.1− | 0.3+ | 2006 03 05 | 691 | 0.2+ | 0.4+ | |
| 2002 05 18 | 644 | 0.2+ | 0.5+ | 2003 09 27 | 704 | 0.2− | 0.9− | 2006 03 05 | 691 | 0.3+ | 0.6+ | |
| 2003 09 17 | 691 | 0.1+ | 0.0 | 2003 09 27 | 704 | 0.0 | 0.0 | | | | | |
| 2003 09 17 | 691 | 0.2− | 0.1− | 2003 09 27 | 704 | 0.3+ | 1.3+ | | | | | |

**2003 SL$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.53283 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21493359 | $\omega$ | 208.78112 | | +0.79080558 | | −0.61182140 |
| $a$ | 2.7601532 | $\Omega$ | 189.00150 | | +0.58066046 | | +0.75889056 |
| $e$ | 0.0269075 | $i$ | 6.36771 | | +0.19354578 | | +0.22306880 |
| $P$ | 4.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2003 10 24 | 691 | 0.0 | 0.1+ | |
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 03 23 | 691 | 0.1− | 0.5+ | |
| 2003 09 17 | 691 | 0.1+ | 0.2+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 03 23 | 691 | 0.1+ | 0.3+ | |
| 2003 09 17 | 691 | 0.1− | 0.3+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 03 23 | 691 | 0.4+ | 0.0 | |
| 2003 09 17 | 691 | 0.1− | 0.1− | 2003 10 24 | 691 | 0.2− | 0.6+ | 2006 04 07 | 691 | 0.4− | 0.2− | |
| 2003 09 29 | 691 | 0.2− | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 04 07 | 691 | 0.2+ | 0.1− | |
| 2003 09 29 | 691 | 0.2− | 0.3+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 04 07 | 691 | 0.0 | 0.0 | |
| 2003 09 29 | 691 | 0.0 | 0.1+ | 2003 10 24 | 691 | 0.1+ | 0.3+ | | | | | |

**2003 SM$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.67567 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18612306 | $\omega$ | 123.57508 | | +0.71871152 | | +0.69479087 |
| $a$ | 3.0381037 | $\Omega$ | 192.48790 | | −0.67195566 | | +0.68414233 |
| $e$ | 0.0134744 | $i$ | 7.12534 | | −0.17868782 | | +0.22184436 |
| $P$ | 5.30 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.2+ | 0.3+ | 2003 09 29 | 704 | 0.4− | 0.3+ | 2003 10 24 | 691 | 0.1− | 0.4+ | |
| 1996 05 11 | 691 | 0.2+ | 0.2+ | 2003 09 29 | 704 | 0.7− | 0.4+ | 2003 10 24 | 691 | 0.2+ | 0.2+ | |
| 1998 09 18 | 910 | 0.7− | 0.8+ | 2003 09 29 | 704 | 0.3− | 0.8+ | 2006 02 26 | 704 | 1.0+ | 0.2− | |
| 1998 09 18 | 910 | 0.2+ | 1.3+ | 2003 09 29 | 704 | 0.4− | 1.3+ | 2006 02 26 | 704 | 0.0 | 1.0+ | |
| 1998 09 18 | 910 | 0.0 | 0.7+ | 2003 09 29 | 704 | 0.1− | 0.3− | 2006 02 26 | 704 | 0.7+ | 0.8+ | |
| 2001 06 19 | 691 | 0.1− | 0.6+ | 2003 09 29 | 691 | 0.2+ | 0.1+ | 2006 02 26 | 704 | 2.1+ | 0.5− | |
| 2001 06 19 | 691 | 0.2− | 0.6+ | 2003 09 29 | 691 | 0.0 | 0.1+ | 2006 04 08 | 691 | 0.6+ | 1.2+ | |
| 2001 06 19 | 691 | 0.1+ | 0.6+ | 2003 09 29 | 691 | 0.1− | 0.1+ | 2006 04 08 | 691 | 0.0 | 0.5+ | |
| 2003 09 17 | 691 | 0.1− | 0.1− | 2003 10 20 | 704 | 0.7− | 0.6+ | 2006 04 08 | 691 | 0.1− | 0.7+ | |
| 2003 09 17 | 691 | 0.2− | 0.3+ | 2003 10 20 | 704 | 0.5+ | 0.7+ | 2006 04 24 | G96 | 0.4− | 0.1− | |
| 2003 09 17 | 691 | 0.2− | 0.4+ | 2003 10 20 | 704 | 0.7− | 0.5+ | 2006 04 24 | G96 | 0.1+ | 0.0 | |
| 2003 09 22 | 644 | 0.5− | 0.1+ | 2003 10 20 | 704 | 0.0 | 0.1+ | 2006 04 24 | G96 | 0.6− | 0.1+ | |
| 2003 09 22 | 644 | 0.4− | 0.3+ | 2003 10 20 | 704 | 0.6+ | 1.8+ | 2006 04 24 | G96 | 0.7− | 0.2− | |
| 2003 09 22 | 644 | 0.2− | 0.2+ | 2003 10 24 | 691 | 0.1+ | 0.4+ | | | | | |

**2003 SO$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.93929 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22704004 | $\omega$ | 120.72254 | | +0.47790502 | | +0.87840154 |
| $a$ | 2.6611401 | $\Omega$ | 177.81321 | | −0.83878293 | | +0.45775493 |
| $e$ | 0.2148344 | $i$ | 6.29849 | | −0.26086392 | | +0.13737232 |
| $P$ | 4.34 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.1+ | 0.6+ | 2003 10 01 | 691 | 0.2− | 0.2+ | 2006 03 06 | 691 | 0.3+ | 0.1− | |
| 2002 04 08 | 644 | 0.3+ | 0.4+ | 2003 10 01 | 691 | 0.1− | 0.1+ | 2006 03 06 | 691 | 0.2− | 0.3+ | |
| 2002 04 08 | 644 | 0.1+ | 0.8+ | 2003 10 18 | 691 | 0.5+ | 0.0 | 2006 03 06 | 691 | 0.2+ | 0.4+ | |
| 2003 09 17 | 644 | 0.4− | 0.4+ | 2003 10 18 | 691 | 0.2− | 0.4+ | 2006 03 21 | G96 | 0.2+ | 0.4− | |
| 2003 09 17 | 644 | 0.2− | 0.1− | 2003 10 18 | 691 | 0.0 | 0.3+ | 2006 03 21 | G96 | 0.4− | 0.1+ | |
| 2003 09 17 | 644 | 0.2+ | 0.3+ | 2003 11 16 | 645 | 0.0 | 0.1− | 2006 03 21 | G96 | 0.0 | 0.3− | |
| 2003 10 01 | 691 | 0.2− | 0.1+ | 2003 11 16 | 645 | 0.0 | 0.1− | 2006 03 21 | G96 | 0.1− | 0.3− | |

**2003 SP$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.37403 | | (2000.0) | | +0.83954124 | +0.54312429 |
| $n$ | 0.29248584 | $\omega$ | 333.60324 | | −0.47489291 | +0.72139704 |
| $a$ | 2.2476714 | $\Omega$ | 353.45001 | | −0.26390764 | +0.42965372 |
| $e$ | 0.1415773 | $i$ | 6.87637 | | | |
| $P$ | 3.37 | $H$ | 17.5 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 644 | 0.2− | 0.7− | 2003 10 17 | 644 | 0.3− | 0.4+ | 2005 04 04 | G96 | 0.4+ | 0.2+ |
| 2003 09 17 | 644 | 0.0 | 0.2+ | 2003 11 02 | 691 | 0.0 | 0.2+ | 2005 04 04 | G96 | 1.3+ | 0.0 |
| 2003 09 17 | 644 | 0.0 | 0.1+ | 2003 11 02 | 691 | 0.1+ | 0.5− | 2005 04 04 | G96 | 0.0 | 0.1+ |
| 2003 10 17 | 691 | 0.1+ | 0.1+ | 2003 11 02 | 691 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.1+ | 0.1+ |
| 2003 10 17 | 691 | 0.1− | 0.1+ | 2005 03 16 | G96 | 0.9− | 0.4− | 2006 07 29 | E12 | 0.3+ | 0.0 |
| 2003 10 17 | 691 | 0.1+ | 0.0 | 2005 03 16 | G96 | 0.0 | 0.6− | 2006 07 29 | E12 | 0.3+ | 0.3− |
| 2003 10 17 | 644 | 0.7− | 0.2+ | 2005 03 16 | G96 | 0.0 | 0.0 | 2006 07 29 | E12 | 0.5− | 0.2− |
| 2003 10 17 | 644 | 0.2− | 0.2+ | 2005 03 16 | G96 | 0.7− | 0.7+ | 2006 07 29 | E12 | 0.1− | 0.5+ |

**2003 SQ$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 239.42284 | | (2000.0) | | +0.60091197 | −0.79716192 |
| $n$ | 0.26685293 | $\omega$ | 126.33007 | | +0.71235212 | +0.56736488 |
| $a$ | 2.3893956 | $\Omega$ | 286.63093 | | +0.36257311 | +0.20647025 |
| $e$ | 0.0492454 | $i$ | 3.50820 | | | |
| $P$ | 3.69 | $H$ | 17.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 02 | 704 | 0.1− | 0.4− | 2003 10 18 | 645 | 0.0 | 0.0 | 2005 02 04 | 699 | 1.0+ | 0.1+ |
| 2001 01 02 | 704 | 0.0 | 0.8− | 2003 10 18 | 645 | 0.0 | 0.0 | 2005 02 04 | 699 | 0.7− | 0.9+ |
| 2001 01 02 | 704 | 0.1− | 0.8− | 2003 10 22 | 691 | 0.1− | 0.5+ | 2005 02 04 | 699 | 0.4+ | 1.1+ |
| 2003 09 18 | 291 | 0.3− | 0.5+ | 2003 10 22 | 691 | 0.2+ | 0.2+ | 2005 02 09 | 699 | 0.6+ | 0.3+ |
| 2003 09 18 | 291 | 0.1− | 0.5+ | 2003 10 22 | 691 | 0.3+ | 0.2+ | 2005 02 09 | 699 | 0.4− | 0.8+ |
| 2003 09 18 | 291 | 0.1− | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2005 02 09 | 699 | 0.5− | 0.8+ |
| 2003 09 25 | 608 | 0.5− | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2005 02 09 | 699 | 1.6+ | 1.0+ |
| 2003 09 25 | 608 | 0.0 | 0.4+ | 2003 11 16 | 645 | 0.0 | 0.1− | 2005 02 09 | 704 | 0.2+ | 0.3+ |
| 2003 09 25 | 608 | 0.2− | 0.5+ | 2003 11 16 | 645 | 0.0 | 0.1− | 2005 02 09 | 704 | 1.2+ | 0.6+ |
| 2003 09 30 | 691 | 0.0 | 0.4+ | 2003 11 20 | 645 | 0.0 | 0.1− | 2005 02 09 | 704 | 0.0 | 0.7+ |
| 2003 09 30 | 691 | 0.0 | 0.4+ | 2003 11 20 | 645 | 0.0 | 0.2− | | | | |
| 2003 09 30 | 691 | 0.0 | 0.4+ | 2005 02 04 | 699 | 1.1− | 0.4− | | | | |

**2003 SR$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.62502 | | (2000.0) | | −0.82695575 | −0.56226470 |
| $n$ | 0.19292742 | $\omega$ | 326.95358 | | +0.53147241 | −0.78259644 |
| $a$ | 2.9662432 | $\Omega$ | 178.83016 | | +0.18352456 | −0.26721006 |
| $e$ | 0.1187125 | $i$ | 4.52550 | | | |
| $P$ | 5.11 | $H$ | 16.6 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.2− | 0.3− | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 04 24 | 691 | 0.1+ | 0.0 |
| 1996 04 13 | 691 | 0.0 | 0.6− | 2005 12 02 | 695 | 0.1+ | 0.5+ | 2006 04 24 | 691 | 0.1− | 0.3+ |
| 1996 04 13 | 691 | 0.0 | 0.1+ | 2005 12 02 | 695 | 0.3+ | 0.1+ | 2006 04 24 | 691 | 0.1+ | 0.4+ |
| 2003 09 18 | 691 | 0.3− | 0.6+ | 2006 03 23 | 691 | 0.1+ | 0.0 | 2006 05 19 | G96 | 0.0 | 0.1+ |
| 2003 09 18 | 691 | 0.1− | 0.2+ | 2006 03 23 | 691 | 0.1− | 0.2− | 2006 05 19 | G96 | 0.1− | 0.3+ |
| 2003 09 18 | 691 | 0.1− | 0.5+ | 2006 03 23 | 691 | 0.6+ | 0.6− | 2006 05 19 | G96 | 0.2− | 0.2− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 04 09 | 691 | 0.2+ | 0.5+ | 2006 05 19 | G96 | 0.3− | 0.2+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 04 09 | 691 | 0.5− | 0.3+ | | | | |
| 2003 09 29 | 645 | 0.0 | 0.1− | 2006 04 09 | 691 | 0.2+ | 0.4+ | | | | |

**2003 SS$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.89909 | | (2000.0) | | +0.48425238 | +0.87492618 |
| $n$ | 0.18736044 | $\omega$ | 309.81616 | | −0.79952649 | +0.44161093 |
| $a$ | 3.0247126 | $\Omega$ | 349.14683 | | −0.35532666 | +0.19870574 |
| $e$ | 0.1171314 | $i$ | 0.59471 | | | |
| $P$ | 5.26 | $H$ | 16.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 09 29 | 645 | 0.1+ | 0.0 | 2004 12 11 | 691 | 0.3− | 0.4− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 09 29 | 645 | 0.1+ | 0.1+ | 2006 02 07 | 691 | 0.1− | 0.3+ |
| 2001 05 23 | 807 | 0.5+ | 0.4+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 02 07 | 691 | 0.4+ | 0.1+ |
| 2001 05 24 | 807 | 0.4+ | 0.5+ | 2003 10 19 | 645 | 0.1− | 0.1− | 2006 02 07 | 691 | 0.5+ | 0.6+ |
| 2003 09 18 | 691 | 0.1+ | 0.3+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 24 | G96 | 0.5− | 0.1+ |
| 2003 09 18 | 691 | 0.2+ | 0.3+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.4− | 0.2+ |
| 2003 09 18 | 691 | 0.2+ | 0.3+ | 2003 10 24 | 645 | 0.1− | 0.1− | 2006 03 24 | G96 | 0.4− | 0.6+ |
| 2003 09 28 | 291 | 0.2− | 0.3+ | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 03 24 | G96 | 0.3− | 0.3+ |
| 2003 09 28 | 291 | 0.0 | 0.4+ | 2004 12 11 | 691 | 0.2+ | 0.2− | | | | |
| 2003 09 28 | 291 | 0.0 | 0.5+ | 2004 12 11 | 691 | 0.2+ | 0.1− | | | | |

**2003 ST$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.94878 | | (2000.0) | | +0.02002085 | +0.99979953 |
| $n$ | 0.31320166 | $\omega$ | 270.94996 | | −0.88532287 | +0.01784727 |
| $a$ | 2.1474349 | $\Omega$ | 0.19777 | | −0.46454557 | +0.00907605 |
| $e$ | 0.0345016 | $i$ | 4.24728 | | | |
| $P$ | 3.15 | $H$ | 18.2 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 691 | 0.3+ | 0.5+ | 2003 09 29 | 691 | 0.2− | 0.3+ | 2005 03 16 | G96 | 0.1− | 0.2+ |
| 2002 03 11 | 691 | 0.3+ | 0.9+ | 2003 09 29 | 691 | 0.1+ | 0.5+ | 2005 03 16 | G96 | 0.1+ | 0.1− |
| 2002 03 11 | 691 | 0.1+ | 0.4+ | 2003 09 29 | 691 | 0.3+ | 0.5+ | 2005 03 16 | G96 | 0.1+ | 0.3− |
| 2002 03 17 | 691 | 0.5+ | 0.3+ | 2003 09 29 | 645 | 0.0 | 0.1− | 2005 03 16 | G96 | 0.1− | 0.1+ |
| 2002 03 17 | 691 | 0.1+ | 0.2+ | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2002 03 17 | 691 | 0.2+ | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2003 09 18 | 691 | 0.0 | 0.1+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2003 09 18 | 691 | 0.0 | 0.4+ | 2003 10 23 | 645 | 0.1− | 0.0 | | | | |
| 2003 09 18 | 691 | 0.1− | 0.1+ | 2003 10 23 | 645 | 0.2− | 0.1+ | | | | |

**2003 SU$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.09572 | | (2000.0) | | +0.27161061 | −0.96227374 |
| $n$ | 0.19091147 | $\omega$ | 58.74109 | | +0.86137572 | +0.23563526 |
| $a$ | 2.9870882 | $\Omega$ | 15.52323 | | +0.42925463 | +0.13603408 |
| $e$ | 0.2576495 | $i$ | 3.43363 | | | |
| $P$ | 5.16 | $H$ | 17.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1− | 0.1+ | 2003 09 29 | 645 | 0.0 | 0.1− | 2005 02 09 | 691 | 0.1+ | 0.0 |
| 2003 09 18 | 691 | 0.0 | 0.2+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2005 02 09 | 691 | 0.0 | 0.0 |
| 2003 09 18 | 691 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.1+ | 0.1+ | 2005 02 09 | 691 | 0.1+ | 0.0 |
| 2003 09 28 | 291 | 0.3− | 0.2+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.5+ | 0.2− |
| 2003 09 28 | 291 | 0.3− | 0.2+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.4− | 0.0 |
| 2003 09 28 | 291 | 0.1− | 0.3+ | 2003 10 24 | 645 | 0.1+ | 0.1− | 2005 03 16 | G96 | 0.4− | 0.2+ |
| 2003 09 29 | 645 | 0.0 | 0.1− | 2003 10 24 | 645 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.6− | 0.2+ |

**2003 SV$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.36963 | | (2000.0) | | −0.43161749 | +0.90153485 |
| $n$ | 0.21875145 | $\omega$ | 184.16405 | | −0.82659704 | −0.38166514 |
| $a$ | 2.7279438 | $\Omega$ | 60.26820 | | −0.36116987 | −0.20387897 |
| $e$ | 0.0775836 | $i$ | 2.02473 | | | |
| $P$ | 4.51 | $H$ | 16.9 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 1.9+ | 0.4+ | 2003 09 28 | 645 | 0.1+ | 0.0 | 2004 12 11 | 691 | 0.2+ | 0.2− |
| 1997 04 03 | 704 | 0.1− | 1.5+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 01 31 | G96 | 0.4− | 0.1− |
| 1999 11 14 | 691 | 0.4− | 1.1+ | 2003 09 29 | 691 | 0.1− | 0.3+ | 2006 01 31 | G96 | 0.3+ | 0.1+ |
| 1999 11 14 | 691 | 0.6− | 0.0 | 2003 09 29 | 691 | 0.3− | 0.3+ | 2006 01 31 | G96 | 0.2− | 0.5+ |
| 1999 11 14 | 691 | 0.0 | 0.0 | 2003 09 29 | 691 | 0.0 | 0.5+ | 2006 01 31 | G96 | 0.0 | 0.1+ |
| 2003 09 18 | 691 | 0.1− | 0.3+ | 2003 10 24 | 691 | 0.5+ | 0.1− | 2006 02 27 | 691 | 0.1− | 0.2+ |
| 2003 09 18 | 691 | 0.1− | 0.1+ | 2003 10 24 | 691 | 0.3− | 0.1+ | 2006 02 27 | 691 | 0.3+ | 0.8+ |
| 2003 09 18 | 691 | 0.2− | 0.1+ | 2003 10 24 | 691 | 0.1− | 0.0 | 2006 02 27 | 691 | 0.1+ | 0.4+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2004 12 11 | 691 | 0.2+ | 0.5− | | | | |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2004 12 11 | 691 | 0.0 | 0.3− | | | | |

**2003 SX$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.04598 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31680890 | $\omega$ | 357.67038 | | +0.97952155 | | +0.20120541 |
| $a$ | 2.1311031 | $\Omega$ | 350.71240 | | −0.18398176 | | +0.87966575 |
| $e$ | 0.1140629 | $i$ | 2.60794 | | −0.08178176 | | +0.43093451 |
| $P$ | 3.11 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.0 | 0.0 | 2003 10 24 | 704 | 0.6+ | 0.1+ | 2006 08 28 | 703 | (1.8− | 1.9+) |
| 2003 09 18 | 691 | 0.2− | 1.1+ | 2003 10 24 | 704 | 0.4+ | 0.7+ | 2006 08 28 | 703 | (1.2− | 1.9+) |
| 2003 09 18 | 691 | 0.3− | 0.0 | 2003 10 25 | 704 | (1.6− | 0.9−) | 2006 08 28 | 691 | 0.2− | 0.0 |
| 2003 09 29 | 691 | 0.1+ | 0.1+ | 2003 10 25 | 704 | 0.1+ | 0.4− | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2003 09 29 | 691 | 0.1+ | 0.0 | 2003 10 25 | 704 | 0.3− | 0.5− | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2003 09 29 | 691 | 0.0 | 0.0 | 2003 10 25 | 704 | 1.0+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 2003 10 16 | 691 | 0.2− | 0.1− | 2005 03 12 | 695 | 0.2− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.2− |
| 2003 10 16 | 691 | 0.1− | 0.1+ | 2005 03 12 | 695 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2− |
| 2003 10 16 | 691 | 0.1− | 0.2+ | 2006 07 25 | G96 | 0.5− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2003 10 24 | 704 | 0.8− | 0.9− | 2006 07 25 | G96 | 0.1+ | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2003 10 24 | 704 | 1.1− | 0.6− | 2006 07 25 | G96 | 0.9− | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 2003 10 24 | 704 | 0.0 | 1.1− | 2006 07 25 | G96 | 0.1− | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.6− |
| 2003 10 24 | 704 | 0.8− | 0.2+ | 2006 08 19 | 691 | 0.3+ | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2003 10 24 | 704 | (1.3− | 1.6−) | 2006 08 19 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2003 10 24 | 704 | 0.6+ | 0.4+ | 2006 08 19 | 691 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2003 10 24 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | (1.7− | 2.5+) | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2003 10 24 | 704 | 1.0+ | 0.1+ | 2006 08 28 | 703 | (1.5− | 1.8+) | | | | |

**2003 SY$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.61110 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17790627 | $\omega$ | 194.34537 | | −0.46089975 | | +0.87984409 |
| $a$ | 3.1309434 | $\Omega$ | 48.35414 | | −0.79816378 | | −0.35385496 |
| $e$ | 0.0265993 | $i$ | 8.92687 | | −0.38795102 | | −0.31727126 |
| $P$ | 5.54 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 04 | 644 | 0.0 | 0.1+ | 2003 10 19 | 645 | 0.1− | 0.1− | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2002 08 04 | 644 | 0.0 | 0.1+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 03 25 | 703 | 0.1+ | 1.1+ |
| 2002 08 04 | 644 | 0.1− | 0.1+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 03 25 | 703 | 1.8− | 1.5− |
| 2003 09 18 | 599 | 0.1+ | 0.3+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 03 25 | 703 | 1.0+ | 1.2+ |
| 2003 09 18 | 599 | 0.1+ | 0.2+ | 2003 10 25 | 704 | 1.9+ | 0.9+ | 2006 03 25 | 703 | 0.1+ | 0.1+ |
| 2003 09 18 | 599 | 0.1− | 0.1+ | 2003 10 25 | 704 | 1.7+ | 0.4− | 2006 04 02 | 703 | (2.5+ | 1.5−) |
| 2003 09 19 | 599 | 0.0 | 0.0 | 2003 10 25 | 704 | 1.2+ | 0.3+ | 2006 04 02 | 703 | 0.1− | 0.1− |
| 2003 09 28 | 704 | 0.0 | 0.4+ | 2003 11 19 | 645 | 0.0 | 0.0 | 2006 04 02 | 703 | 0.4+ | 0.8+ |
| 2003 09 28 | 704 | 0.6+ | 0.2+ | 2003 11 19 | 645 | 0.0 | 0.0 | 2006 04 02 | 703 | 0.6+ | 0.7− |
| 2003 09 28 | 704 | 0.1− | 0.5+ | 2003 11 20 | 645 | 0.0 | 0.0 | | | | |

**2003 SZ$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.87806 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28046141 | $\omega$ | 309.19053 | | +0.07177519 | | −0.99442065 |
| $a$ | 2.3114649 | $\Omega$ | 136.49962 | | +0.94624698 | | +0.04338144 |
| $e$ | 0.0685085 | $i$ | 6.44802 | | +0.31538067 | | +0.09615419 |
| $P$ | 3.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.4+ | 0.5+ | 2003 09 28 | 699 | 0.5− | 0.2− | 2003 11 21 | 695 | 0.3− | 0.2+ |
| 2001 01 03 | 704 | 0.1− | 0.1− | 2003 09 28 | 699 | 0.4+ | 0.0 | 2005 03 18 | 703 | 1.7+ | 0.2+ |
| 2001 01 03 | 704 | 0.5− | 0.0 | 2003 09 28 | 699 | 0.6+ | 0.9− | 2005 03 18 | 703 | 1.3− | 0.0 |
| 2001 01 03 | 704 | 0.2+ | 0.1+ | 2003 09 30 | 645 | 0.0 | 0.0 | 2005 03 18 | 703 | 0.7− | 0.5− |
| 2003 09 18 | 599 | 0.2+ | 0.3+ | 2003 09 30 | 645 | 0.0 | 0.0 | 2005 03 18 | 703 | 0.1+ | 0.3− |
| 2003 09 18 | 599 | 0.2− | 0.1− | 2003 10 16 | 644 | 0.2− | 0.3+ | 2006 05 30 | G96 | 0.6+ | 0.0 |
| 2003 09 19 | 599 | 0.1− | 0.3+ | 2003 10 16 | 644 | 0.5− | 0.4+ | 2006 05 30 | G96 | 0.5− | 0.3+ |
| 2003 09 19 | 599 | 0.2+ | 0.4+ | 2003 10 16 | 644 | 0.5− | 0.1+ | 2006 05 30 | G96 | 0.0 | 0.0 |
| 2003 09 28 | 699 | 0.3+ | 1.0− | 2003 11 21 | 695 | 0.2− | 0.2+ | 2006 05 30 | G96 | 0.1− | 0.3+ |

**2003 SA$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.02213 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22044910 | $\omega$ | 234.57894 | | +0.43897694 | | +0.89088694 |
| $a$ | 2.7139208 | $\Omega$ | 61.86345 | | −0.77549649 | | +0.44126939 |
| $e$ | 0.2193214 | $i$ | 7.60500 | | −0.45376695 | | +0.10771159 |
| $P$ | 4.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.0 | 0.1− | 2003 09 28 | 699 | 1.4− | 0.6+ | 2003 10 16 | 644 | 0.1− | 0.4+ |
| 2002 04 08 | 644 | 0.2− | 0.7− | 2003 09 28 | 699 | 0.5− | 0.1+ | 2003 10 16 | 644 | 0.1+ | 0.5+ |
| 2002 04 08 | 644 | 0.0 | 0.1− | 2003 09 28 | 699 | 0.2− | 1.3+ | 2003 10 23 | 691 | 0.2− | 0.0 |
| 2002 04 14 | 644 | 0.1+ | 0.9+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.0 | 0.1− |
| 2002 04 14 | 644 | 0.6+ | 0.6+ | 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 |
| 2002 04 14 | 644 | 0.3+ | 1.1+ | 2003 09 30 | 645 | 0.0 | 0.1− | 2003 10 23 | 691 | 0.1− | 0.0 |
| 2003 09 19 | 599 | 0.2+ | 0.2+ | 2003 09 30 | 645 | 0.1+ | 0.1− | 2003 10 23 | 691 | 0.2− | 0.1− |
| 2003 09 19 | 599 | 0.1− | 0.3+ | 2003 10 05 | 691 | 0.3− | 0.3+ | 2003 11 16 | 645 | 0.0 | 0.1+ |
| 2003 09 19 | 599 | 0.2− | 0.6+ | 2003 10 05 | 691 | 0.0 | 0.3+ | 2003 11 16 | 645 | 0.1+ | 0.1+ |
| 2003 09 19 | 599 | 0.2+ | 0.4+ | 2003 10 05 | 691 | 0.3− | 0.4+ | | | | |
| 2003 09 28 | 699 | 0.2− | 0.2− | 2003 10 16 | 644 | 0.1+ | 0.4+ | | | | |

**2003 SB$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.80153 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24070436 | $\omega$ | 257.56762 | | +0.86518097 | | +0.48977643 |
| $a$ | 2.5594506 | $\Omega$ | 73.02053 | | −0.40519098 | | +0.80923191 |
| $e$ | 0.1047434 | $i$ | 6.46058 | | −0.29543555 | | +0.32444223 |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 19 | 644 | 0.2+ | 0.5+ | 2003 10 16 | 644 | 0.1− | 0.5+ | 2005 01 18 | 691 | 0.3+ | 0.2+ |
| 2002 05 19 | 644 | 0.1+ | 0.3+ | 2003 10 16 | 644 | 0.5− | 0.8+ | 2005 01 18 | 691 | 0.3+ | 0.3+ |
| 2002 05 19 | 644 | 0.1+ | 0.5+ | 2003 10 16 | 644 | 0.1− | 0.0 | 2006 04 08 | 691 | 0.2+ | 0.5+ |
| 2003 09 19 | 599 | 0.2+ | 0.1+ | 2003 10 16 | 644 | 0.1− | 0.6+ | 2006 04 08 | 691 | 0.0 | 0.9+ |
| 2003 09 19 | 599 | 0.5− | 0.2+ | 2003 10 23 | 691 | 0.2− | 0.4+ | 2006 04 08 | 691 | 0.2+ | 0.4+ |
| 2003 09 19 | 599 | 0.6+ | 0.2− | 2003 10 23 | 645 | 0.1− | 0.1+ | 2006 05 08 | 691 | 0.2+ | 0.2+ |
| 2003 09 19 | 599 | 0.5− | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.1+ | 2006 05 08 | 691 | 0.4+ | 0.2+ |
| 2003 09 28 | 699 | 1.1+ | 0.3+ | 2003 10 23 | 691 | 0.1− | 0.3+ | 2006 05 08 | 691 | 0.1+ | 0.3+ |
| 2003 09 28 | 699 | 0.5− | 0.2− | 2003 10 23 | 691 | 0.2− | 0.4+ | 2006 05 23 | G96 | 0.1+ | 0.4+ |
| 2003 09 28 | 699 | 0.2+ | 0.2+ | 2003 10 27 | 704 | 0.9− | 0.3+ | 2006 05 23 | G96 | 0.3− | 0.3+ |
| 2003 09 28 | 699 | 0.0 | 0.2+ | 2003 10 27 | 704 | 0.3+ | 0.2− | 2006 05 23 | G96 | 0.1+ | 0.1+ |
| 2003 10 16 | 644 | 0.7− | 0.8+ | 2003 10 27 | 704 | 0.7+ | 0.6− | 2006 05 23 | G96 | 0.4− | 0.2+ |
| 2003 10 16 | 644 | 0.2− | 0.3+ | 2005 01 18 | 691 | 0.2− | 0.7+ | | | | |

**2003 SC$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.23346 | | | (2000.0) | | |
| $n$ | 0.21962370 | $\omega$ | 185.50337 | | +0.10189943 | +0.98893814 |
| $a$ | 2.7207162 | $\Omega$ | 90.37737 | | −0.90854504 | +0.13664665 |
| $e$ | 0.1315529 | $i$ | 6.18785 | | −0.40516961 | −0.05769782 |
| $P$ | 4.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 691 | 0.3− | 0.2− | 2003 09 19 | 599 | 0.7+ | 0.3+ | 2003 10 24 | 645 | 0.1− | 0.0 |
| 1999 12 16 | 691 | 0.2− | 0.0 | 2003 09 19 | 599 | 0.3− | 0.4+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 1999 12 16 | 691 | 0.0 | 0.2− | 2003 09 19 | 599 | 0.1− | 0.4+ | 2003 11 20 | 645 | 0.1− | 0.0 |
| 1999 12 31 | 691 | 0.2+ | 0.0 | 2003 09 19 | 599 | 0.7− | 0.7− | 2004 12 12 | 691 | 0.3+ | 0.3+ |
| 1999 12 31 | 691 | 0.2+ | 0.2− | 2003 09 30 | 645 | 0.1+ | 0.0 | 2004 12 12 | 691 | 0.1+ | 0.3+ |
| 1999 12 31 | 691 | 0.1+ | 0.2+ | 2003 09 30 | 645 | 0.1+ | 0.0 | 2004 12 12 | 691 | 0.1− | 0.1+ |
| 2002 05 23 | 644 | 0.4− | 0.7+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 04 08 | G96 | 0.1− | 0.2+ |
| 2002 05 23 | 644 | 0.6− | 0.6+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 04 08 | G96 | 0.0 | 0.5+ |
| 2002 05 23 | 644 | 0.1− | 0.9+ | 2003 10 23 | 691 | 0.2+ | 0.2+ | 2006 04 08 | G96 | 0.0 | 0.2+ |
| 2002 06 06 | 704 | 1.8+ | 0.3+ | 2003 10 23 | 691 | 0.1− | 0.4+ | 2006 04 08 | G96 | 0.0 | 0.6+ |
| 2002 06 06 | 704 | 0.8+ | 0.6− | 2003 10 23 | 691 | 0.5− | 0.1+ | | | | |
| 2002 06 06 | 704 | 0.7− | 0.0 | 2003 10 24 | 645 | 0.0 | 0.0 | | | | |

**2003 SD$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.78171 | | | (2000.0) | | |
| $n$ | 0.27601903 | $\omega$ | 337.54785 | | +0.77869000 | +0.62730028 |
| $a$ | 2.3362001 | $\Omega$ | 343.58453 | | −0.56917965 | +0.69847101 |
| $e$ | 0.1888741 | $i$ | 2.36723 | | −0.26396291 | +0.34443086 |
| $P$ | 3.57 | $H$ | 18.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.2+ | 0.0 | 2003 09 28 | 645 | 0.1− | 0.1− | 2003 11 20 | 645 | 0.0 | 0.0 |
| 1996 10 04 | 691 | 0.0 | 0.5− | 2003 09 28 | 291 | 2.0+ | 1.5+ | 2003 11 20 | 645 | 0.0 | 0.1+ |
| 2003 09 19 | 704 | 0.5+ | 0.0 | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 05 05 | 691 | 0.2+ | 0.2+ |
| 2003 09 19 | 704 | (3.1+ | 0.1−) | 2003 10 18 | 645 | 0.1− | 0.1− | 2006 05 05 | 691 | 0.0 | 0.5− |
| 2003 09 19 | 704 | 0.1− | 0.2+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 05 05 | 691 | 0.2+ | 0.3+ |
| 2003 09 19 | 704 | 0.3− | 0.1+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 05 31 | G96 | 0.3+ | 0.1− |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2003 10 24 | 691 | 0.0 | 0.5+ | 2006 05 31 | G96 | 1.5− | 0.8− |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 24 | 691 | 0.3+ | 0.4+ | 2006 05 31 | G96 | 0.3− | 0.5+ |
| 2003 09 28 | 291 | 0.4+ | 0.0 | 2003 10 24 | 691 | 0.1− | 0.1+ | 2006 05 31 | G96 | 0.1− | 0.3+ |
| 2003 09 28 | 291 | 0.1+ | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.1− | | | | |
| 2003 09 28 | 645 | 0.1− | 0.1− | 2003 10 24 | 645 | 0.0 | 0.0 | | | | |

**2003 SE$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 91.97056 | | | (2000.0) | | |
| $n$ | 0.17409215 | $\omega$ | 282.56264 | | −0.57969051 | −0.81266592 |
| $a$ | 3.1765078 | $\Omega$ | 203.17657 | | +0.79389946 | −0.54686079 |
| $e$ | 0.0445300 | $i$ | 8.68645 | | +0.18352808 | −0.20128927 |
| $P$ | 5.66 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.0 | 2003 09 19 | 691 | 0.1+ | 0.2+ | 2003 10 23 | 291 | 0.3+ | 0.2− |
| 2000 03 04 | 645 | 0.0 | 0.1+ | 2003 09 19 | 691 | 0.2− | 0.2+ | 2003 11 24 | 691 | 0.1− | 0.1+ |
| 2002 08 05 | 644 | 0.1− | 0.5+ | 2003 09 19 | 691 | 0.0 | 0.2+ | 2003 11 24 | 691 | 0.2− | 0.1+ |
| 2002 08 05 | 644 | 0.0 | 0.5+ | 2003 09 29 | 691 | 0.2+ | 0.1+ | 2003 11 24 | 691 | 0.1+ | 0.3− |
| 2002 08 05 | 644 | 0.2− | 0.9+ | 2003 09 29 | 691 | 0.2+ | 0.0 | 2006 02 25 | 691 | 0.0 | 0.2+ |
| 2003 09 19 | 291 | 0.2− | 0.2+ | 2003 09 29 | 691 | 0.0 | 0.2+ | 2006 02 25 | 691 | 0.0 | 0.3+ |
| 2003 09 19 | 291 | 0.2− | 0.1+ | 2003 10 23 | 291 | 0.0 | 0.2− | 2006 02 25 | 691 | 0.2+ | 0.5+ |
| 2003 09 19 | 291 | 0.2− | 0.1+ | 2003 10 23 | 291 | 0.0 | 0.1+ | | | | |

**2003 SF$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.14824 | | | (2000.0) | | |
| $n$ | 0.19812572 | $\omega$ | 290.40363 | | +0.92088438 | +0.38834699 |
| $a$ | 2.9141293 | $\Omega$ | 46.76193 | | −0.33798460 | +0.83886043 |
| $e$ | 0.0957357 | $i$ | 2.67796 | | −0.19426365 | +0.38144435 |
| $P$ | 4.97 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.2− | 0.0 | 2003 09 19 | 599 | 1.3− | 0.4+ | 2003 10 24 | 691 | 0.2+ | 0.2− |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 24 | 691 | 0.1+ | 0.1+ |
| 2001 03 15 | 691 | 0.6+ | 0.1− | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 03 | 691 | 0.2− | 0.1− |
| 2001 03 15 | 691 | 0.8+ | 0.1− | 2003 09 29 | 691 | 0.1− | 0.1+ | 2006 03 03 | 691 | 0.1+ | 0.6+ |
| 2001 03 15 | 691 | 0.3+ | 0.1− | 2003 09 29 | 691 | 0.2− | 0.4+ | 2006 03 03 | 691 | 0.2+ | 0.3− |
| 2003 09 19 | 599 | 0.8+ | 0.0 | 2003 09 29 | 691 | 0.3− | 0.0 | | | | |
| 2003 09 19 | 599 | 0.4− | 0.1− | 2003 10 24 | 691 | 0.1+ | 0.1− | | | | |

**2003 SG$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.88857 | | | (2000.0) | | |
| $n$ | 0.23430983 | $\omega$ | 49.50346 | | +0.09750506 | +0.99485951 |
| $a$ | 2.6058078 | $\Omega$ | 226.11476 | | −0.92420002 | +0.08032029 |
| $e$ | 0.1090823 | $i$ | 2.17374 | | −0.36925206 | +0.06167014 |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 09 | 691 | 0.4− | 0.6− | 2003 10 19 | 691 | 0.0 | 0.1+ | 2006 05 04 | 691 | 0.4− | 0.0 |
| 1997 04 09 | 691 | 0.1− | 0.2− | 2003 10 19 | 691 | 0.2− | 0.1+ | 2006 05 20 | G96 | 0.4− | 0.0 |
| 1997 04 09 | 691 | 0.5− | 0.1+ | 2003 10 25 | 691 | 0.4− | 0.0 | 2006 05 20 | G96 | 0.3− | 0.4+ |
| 1999 12 03 | 691 | 0.5+ | 0.0 | 2003 10 25 | 691 | 0.3− | 0.0 | 2006 05 20 | G96 | 0.3− | 0.5+ |
| 1999 12 03 | 691 | 0.1− | 0.0 | 2003 10 25 | 691 | 0.4− | 0.1− | 2006 05 20 | G96 | 0.4− | 0.4+ |
| 1999 12 03 | 691 | 0.2− | 0.3+ | 2005 01 19 | 691 | 0.1+ | 0.3+ | 2006 06 02 | 691 | 2.7+ | 0.7− |
| 1999 12 16 | 691 | 0.5+ | 0.4+ | 2005 01 19 | 691 | 0.0 | 0.3+ | 2006 06 02 | 691 | 0.1− | 0.6+ |
| 1999 12 16 | 691 | 0.4+ | 0.4+ | 2005 01 19 | 691 | 0.2+ | 0.3+ | 2006 06 02 | 691 | 0.4− | 0.2+ |
| 1999 12 16 | 691 | 0.3+ | 0.2+ | 2006 04 19 | G96 | 0.4− | 0.6+ | 2006 06 19 | G96 | 0.8− | 0.2+ |
| 2003 09 20 | 599 | 0.0 | 0.3+ | 2006 04 19 | G96 | 0.7− | 1.7+ | 2006 06 19 | G96 | 0.5− | 0.0 |
| 2003 09 20 | 599 | 0.2− | 0.2− | 2006 04 19 | G96 | 0.1− | 0.7+ | 2006 06 19 | G96 | 0.3− | 0.1+ |
| 2003 09 20 | 599 | 0.1+ | 0.1− | 2006 04 19 | G96 | 0.5− | 0.7+ | 2006 06 19 | G96 | 0.4− | 0.3+ |
| 2003 09 20 | 599 | 0.0 | 0.0 | 2006 05 04 | 691 | 0.1+ | 0.0 | | | | |
| 2003 10 19 | 691 | 0.1− | 0.0 | 2006 05 04 | 691 | 0.0 | 0.3+ | | | | |

**2003 SH$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 95.12767 | | | (2000.0) | | |
| $n$ | 0.17020618 | $\omega$ | 224.28272 | | +0.09329848 | −0.98963953 |
| $a$ | 3.2246741 | $\Omega$ | 220.73302 | | +0.95362299 | +0.12032746 |
| $e$ | 0.0060441 | $i$ | 9.62724 | | +0.28617929 | −0.07832559 |
| $P$ | 5.79 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 691 | 0.1+ | 0.3+ | 2003 09 30 | 704 | 0.5− | 0.0 | 2004 12 14 | 699 | 0.6− | 0.9+ |
| 2003 09 20 | 691 | 0.0 | 0.0 | 2003 09 30 | 704 | 0.4− | 0.0 | 2004 12 14 | 699 | 0.3+ | 0.2+ |
| 2003 09 20 | 691 | 0.8+ | 0.4− | 2003 11 20 | 645 | 0.2− | 0.0 | 2004 12 14 | 699 | 0.2+ | 0.1− |
| 2003 09 21 | 644 | 0.1− | 0.1+ | 2003 11 20 | 645 | 0.1− | 0.0 | 2006 02 22 | 703 | 0.2+ | 0.3− |
| 2003 09 21 | 644 | 0.4+ | 0.3+ | 2004 11 10 | 691 | 0.1+ | 0.2− | 2006 02 22 | 703 | 0.1− | 0.0 |
| 2003 09 21 | 644 | 0.2+ | 0.1− | 2004 11 10 | 691 | 0.2+ | 0.4− | 2006 02 22 | 703 | 0.3− | 0.2− |
| 2003 09 30 | 704 | 1.2+ | 0.4− | 2004 11 10 | 691 | 0.2+ | 0.0 | 2006 02 22 | 703 | 0.1+ | 0.6+ |
| 2003 09 30 | 704 | 0.1+ | 0.5+ | 2004 12 14 | 699 | 1.3− | 0.6+ | | | | |

**2003 SJ$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.52285 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24654782 | $\omega$ | 276.71764 | | −0.35409352 | | +0.93369578 |
| $a$ | 2.5188478 | $\Omega$ | 332.35817 | | −0.80635610 | | −0.33362513 |
| $e$ | 0.1138939 | $i$ | 6.58424 | | −0.47371681 | | −0.13002487 |
| $P$ | 4.00 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.1− | 0.5− | 2003 10 17 | 691 | 0.1− | 0.0 | 2005 01 17 | 691 | 0.5+ | 0.2− |
| 2001 02 17 | 704 | 0.4+ | 0.9+ | 2003 10 17 | 691 | 0.2+ | 0.1− | 2005 01 17 | 691 | 0.4+ | 0.3− |
| 2001 02 17 | 704 | 0.1− | 0.5+ | 2003 10 27 | 691 | 0.1− | 0.1+ | 2005 02 01 | 703 | 0.3− | 0.4− |
| 2003 09 20 | 644 | 0.1− | 0.2+ | 2003 10 27 | 691 | 0.2− | 0.1− | 2005 02 01 | 703 | 0.0 | 0.9+ |
| 2003 09 20 | 644 | 0.3− | 0.1− | 2003 10 27 | 691 | 0.0 | 0.3+ | 2005 02 01 | 703 | 0.4− | 0.4+ |
| 2003 09 20 | 644 | 0.1+ | 0.3+ | 2005 01 06 | 703 | 0.7− | 0.2− | 2005 02 01 | 703 | 2.4− | 0.0 |
| 2003 10 03 | 691 | 0.2+ | 0.0 | 2005 01 06 | 703 | 0.0 | 0.7+ | 2005 03 16 | G96 | 0.1− | 0.4− |
| 2003 10 03 | 691 | 0.1+ | 0.2− | 2005 01 06 | 703 | 0.6− | 0.2+ | 2005 03 16 | G96 | 0.2+ | 0.0 |
| 2003 10 03 | 691 | 0.2+ | 0.0 | 2005 01 06 | 703 | 1.1− | 0.5+ | 2005 03 16 | G96 | 0.1− | 0.0 |
| 2003 10 17 | 691 | 0.1− | 0.1− | 2005 01 17 | 691 | 0.3+ | 0.2− | 2005 03 16 | G96 | 0.3+ | 0.1− |

**2003 SK$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.29568 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19207260 | $\omega$ | 357.81344 | | +0.90347573 | | +0.42330139 |
| $a$ | 2.9750375 | $\Omega$ | 336.77572 | | −0.39062788 | | +0.74833302 |
| $e$ | 0.2561317 | $i$ | 9.84667 | | −0.17646943 | | +0.51069915 |
| $P$ | 5.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 644 | 0.1+ | 0.2+ | 2003 09 30 | 704 | 1.1+ | 0.1+ | 2003 10 29 | 699 | 0.4− | 0.5+ |
| 2003 09 20 | 644 | 0.2− | 0.3+ | 2003 09 30 | 704 | 0.7− | 0.1− | 2003 10 29 | 699 | 0.1+ | 1.1+ |
| 2003 09 20 | 644 | 0.2+ | 0.0 | 2003 09 30 | 704 | 0.4− | 0.6− | 2003 11 18 | 691 | 0.1+ | 0.1− |
| 2003 09 21 | 699 | 0.7+ | 0.0 | 2003 10 05 | 691 | 0.1− | 0.1− | 2003 11 18 | 691 | 0.1+ | 0.2− |
| 2003 09 21 | 699 | 0.2+ | 0.0 | 2003 10 05 | 691 | 0.2− | 0.4− | 2003 11 18 | 691 | 0.2+ | 0.1+ |
| 2003 09 21 | 699 | 0.5− | 0.4− | 2003 10 05 | 691 | 0.2+ | 0.1− | 2006 01 30 | 691 | 0.3+ | 0.2− |
| 2003 09 21 | 699 | 0.2− | 0.4+ | 2003 10 17 | 699 | 0.6+ | 1.5+ | 2006 01 30 | 691 | 0.1+ | 0.2+ |
| 2003 09 21 | 699 | 0.3+ | 1.0+ | 2003 10 17 | 699 | 1.0− | 0.7− | 2006 01 30 | 691 | 0.2+ | 0.2− |
| 2003 09 21 | 699 | 1.4− | 1.4+ | 2003 10 17 | 699 | 0.3− | 0.7− | 2006 03 03 | 691 | 0.2+ | 0.1− |
| 2003 09 21 | 699 | (2.8− | 0.1−) | 2003 10 17 | 699 | (2.3− | 0.3−) | 2006 03 03 | 691 | 0.5− | 0.2+ |
| 2003 09 21 | 699 | (0.3+ | 2.4+) | 2003 10 29 | 699 | 0.6+ | 0.1+ | 2006 03 03 | 691 | 0.2− | 0.1+ |
| 2003 09 30 | 704 | 0.1− | 0.5− | 2003 10 29 | 699 | 0.2− | 0.3+ | | | | |

**2003 SL$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.90685 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19002899 | $\omega$ | 154.66302 | | −0.70873021 | | −0.70345882 |
| $a$ | 2.9963288 | $\Omega$ | 340.32100 | | +0.61729541 | | −0.58174679 |
| $e$ | 0.1000086 | $i$ | 9.11711 | | +0.34153750 | | −0.40830916 |
| $P$ | 5.19 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 24 | 691 | 0.6+ | 0.4− | 2003 09 21 | 699 | 0.2+ | 0.4− | 2005 01 06 | 703 | 0.2− | 0.4+ |
| 1993 10 24 | 691 | 0.3− | 0.1− | 2003 09 21 | 699 | 1.7− | 0.6+ | 2005 01 06 | 703 | 0.4− | 0.7− |
| 1993 10 24 | 691 | 0.1− | 0.0 | 2003 10 02 | 691 | 0.1− | 0.1+ | 2005 01 06 | 703 | 0.2− | 1.1− |
| 2003 09 20 | 691 | 0.0 | 0.3− | 2003 10 02 | 691 | 0.1− | 0.1+ | 2005 01 06 | 703 | 1.0+ | 0.6− |
| 2003 09 20 | 691 | 0.5+ | 0.1− | 2003 10 02 | 691 | 0.1+ | 0.3+ | 2005 01 16 | 704 | 0.3+ | 0.4+ |
| 2003 09 20 | 691 | 0.3− | 0.2− | 2003 10 20 | 644 | 0.3− | 0.3+ | 2005 01 16 | 704 | 0.6− | 0.9+ |
| 2003 09 21 | 699 | 0.0 | 0.2+ | 2003 10 20 | 644 | 0.1− | 0.5+ | 2005 01 16 | 704 | 0.3+ | 1.5+ |
| 2003 09 21 | 699 | 0.8+ | 0.3+ | 2003 10 20 | 644 | 0.1− | 0.5+ | | | | |

**2003 SM$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.41932 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18994354 | $\omega$ | 325.84129 | | +0.69852270 | | +0.71486669 |
| $a$ | 2.9972274 | $\Omega$ | 348.35183 | | −0.61587299 | | +0.57772463 |
| $e$ | 0.0962465 | $i$ | 9.15377 | | −0.36437137 | | +0.39395414 |
| $P$ | 5.19 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 644 | 0.2− | 0.1− | 2003 10 17 | 644 | 0.1− | 0.1+ | 2006 02 25 | G96 | 0.7+ | 0.6− |
| 2003 09 20 | 644 | 0.0 | 0.3− | 2003 10 29 | 699 | (2.3− | 0.5+) | 2006 02 25 | G96 | 0.2− | 0.2− |
| 2003 09 20 | 644 | 0.3+ | 0.3− | 2003 10 29 | 699 | 0.9+ | 0.4+ | 2006 02 25 | G96 | 0.5− | 0.1− |
| 2003 10 17 | 644 | 0.2− | 0.1− | 2003 10 29 | 699 | 0.1+ | 0.7+ | 2006 02 25 | G96 | 0.3− | 0.0 |
| 2003 10 17 | 691 | 0.1− | 0.2+ | 2003 10 29 | 699 | 1.4− | 0.2+ | 2006 03 04 | 691 | 0.3− | 0.4+ |
| 2003 10 17 | 691 | 0.0 | 0.2+ | 2003 11 22 | 691 | 0.1+ | 0.1− | 2006 03 04 | 691 | 0.2+ | 0.1− |
| 2003 10 17 | 644 | 0.3− | 0.1+ | 2003 11 22 | 691 | 0.2+ | 0.2− | 2006 03 04 | 691 | 0.3+ | 0.1− |
| 2003 10 17 | 691 | 0.0 | 0.1+ | 2003 11 22 | 691 | 0.0 | 0.4− | | | | |

**2003 SN$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.29187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21183543 | $\omega$ | 20.48866 | | +0.99273852 | | +0.09868202 |
| $a$ | 2.7870001 | $\Omega$ | 333.55966 | | −0.12009583 | | +0.84573133 |
| $e$ | 0.1729638 | $i$ | 8.88735 | | +0.00687133 | | +0.52440478 |
| $P$ | 4.65 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 699 | 0.3− | 0.1− | 2003 10 21 | 691 | 0.1− | 0.0 | 2005 02 04 | G96 | 0.1− | 0.4− |
| 2003 09 21 | 699 | 1.3− | 1.2− | 2003 10 21 | 691 | 0.1− | 0.1− | 2005 02 04 | G96 | 0.5+ | 0.3− |
| 2003 09 21 | 699 | 0.6+ | 0.6+ | 2003 10 22 | 704 | (0.2− | 2.1−) | 2005 02 04 | G96 | 0.1− | 0.2− |
| 2003 09 21 | 699 | 0.8− | 0.1− | 2003 10 22 | 704 | 0.1+ | 0.9+ | 2005 02 04 | G96 | 0.2+ | 0.5− |
| 2003 09 30 | 704 | 0.3+ | 0.2− | 2003 10 22 | 704 | 0.4+ | 0.6+ | 2005 03 16 | G96 | 0.1− | 0.7+ |
| 2003 09 30 | 704 | 0.3+ | 0.3+ | 2003 10 29 | 699 | 1.1+ | 1.8− | 2005 03 16 | G96 | 0.1− | 0.2− |
| 2003 09 30 | 704 | 1.1+ | 1.4+ | 2003 10 29 | 699 | 0.5− | 0.9− | 2005 03 16 | G96 | 0.2− | 0.2− |
| 2003 09 30 | 704 | 0.3+ | 1.1+ | 2003 10 29 | 699 | 0.2+ | 0.2− | 2005 03 16 | G96 | 0.2− | 0.2− |
| 2003 10 18 | 644 | 0.1− | 0.0 | 2003 10 29 | 699 | 1.3− | 1.0+ | 2005 04 09 | G96 | 0.1− | 0.2+ |
| 2003 10 18 | 644 | 0.0 | 0.0 | 2005 01 15 | 691 | 0.1− | 0.0 | 2005 04 09 | G96 | 0.3+ | 0.2+ |
| 2003 10 18 | 644 | 0.3+ | 0.2+ | 2005 01 15 | 691 | 0.1− | 0.2+ | 2005 04 09 | G96 | 0.3+ | 0.1− |
| 2003 10 21 | 691 | 0.0 | 0.3− | 2005 01 15 | 691 | 0.1+ | 0.0 | 2005 04 09 | G96 | 0.2+ | 0.6+ |

**2003 SO$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.71560 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23736030 | $\omega$ | 238.29848 | | +0.36187762 | | +0.93084593 |
| $a$ | 2.5834338 | $\Omega$ | 53.00133 | | −0.83237969 | | +0.34712839 |
| $e$ | 0.0982134 | $i$ | 3.63967 | | −0.41974830 | | +0.11413909 |
| $P$ | 4.15 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 291 | 0.1− | 0.0 | 2003 09 28 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 |
| 2002 04 08 | 291 | 0.0 | 0.1− | 2003 09 28 | 645 | 0.0 | 0.1− | 2006 04 07 | 691 | 0.0 | 0.1+ |
| 2002 04 08 | 291 | 0.2+ | 0.2+ | 2003 10 20 | 691 | 0.1+ | 0.2+ | 2006 04 07 | 691 | 0.1+ | 0.1+ |
| 2003 09 21 | 691 | 0.3− | 0.2+ | 2003 10 20 | 691 | 0.0 | 0.3+ | 2006 04 07 | 691 | 0.2+ | 0.1− |
| 2003 09 21 | 691 | 0.4+ | 0.2+ | 2003 10 20 | 691 | 0.4− | 0.0 | 2006 05 02 | G96 | 0.3− | 0.2+ |
| 2003 09 21 | 691 | 0.0 | 0.3+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 05 02 | G96 | 0.3+ | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 10 22 | 645 | 0.0 | 0.1+ | 2006 05 02 | G96 | 0.4− | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 02 | G96 | 0.4− | 0.1+ |

**2003 SQ$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.40583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18468289 | $\omega$ | 85.64873 | | +0.87072136 | −0.48629354 | |
| $a$ | 3.0538775 | $\Omega$ | 303.43251 | | +0.40919211 | +0.79902011 | |
| $e$ | 0.1412893 | $i$ | 5.03428 | | +0.27277488 | +0.35367423 | |
| $P$ | 5.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 01 | 691 | 0.2− | 0.6+ | 2003 10 17 | 699 | 0.3+ | 0.1+ | 2005 01 19 | 691 | 0.3+ | 0.3+ |
| 1997 08 01 | 691 | 0.2− | 0.5+ | 2003 10 17 | 699 | (0.9− | 2.4−) | 2005 01 19 | 691 | 0.1+ | 0.1+ |
| 1997 08 01 | 691 | 0.2− | 0.6+ | 2003 10 17 | 699 | 0.1+ | 0.5+ | 2005 01 19 | 691 | 0.2+ | 0.2+ |
| 2003 09 21 | 691 | 0.2+ | 0.2− | 2003 10 17 | 699 | 0.2− | 0.8− | 2005 01 19 | 691 | 0.0 | 0.2+ |
| 2003 09 21 | 691 | 0.0 | 0.2− | 2003 10 26 | 691 | 0.3+ | 0.2+ | 2005 03 09 | G96 | 0.5− | 0.1− |
| 2003 09 21 | 691 | 0.1+ | 0.1− | 2003 10 26 | 691 | 0.3− | 0.1+ | 2005 03 09 | G96 | 0.0 | 0.0 |
| 2003 10 02 | 691 | 0.1+ | 0.3− | 2003 10 26 | 691 | 0.4− | 0.7+ | 2005 03 09 | G96 | 0.1− | 0.2− |
| 2003 10 02 | 691 | 0.1+ | 0.2− | 2005 01 19 | 691 | 0.3+ | 0.3+ | 2005 03 09 | G96 | 0.2− | 0.1+ |
| 2003 10 02 | 691 | 0.1− | 0.2− | 2005 01 19 | 691 | 0.2− | 0.5+ | | | | |

**2003 SR$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.40879 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18842758 | $\omega$ | 304.54574 | | +0.99892130 | −0.03346074 | |
| $a$ | 3.0132817 | $\Omega$ | 57.39178 | | +0.04384017 | +0.90813130 | |
| $e$ | 0.1909728 | $i$ | 2.19045 | | −0.01530619 | +0.41734629 | |
| $P$ | 5.23 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 691 | 0.6− | 0.2+ | 2003 09 22 | 699 | 1.2− | 0.5+ | 2003 10 18 | 645 | 0.0 | 0.0 |
| 1998 10 17 | 691 | 0.4− | 0.0 | 2003 09 22 | 699 | 0.1+ | 0.9− | 2003 10 20 | 691 | 0.1+ | 0.1+ |
| 1998 10 17 | 691 | 0.4− | 0.1− | 2003 09 22 | 699 | 1.0+ | 0.9+ | 2003 10 20 | 691 | 0.2− | 0.1+ |
| 1998 11 19 | 691 | 0.7+ | 0.0 | 2003 09 27 | 691 | 0.2+ | 0.4+ | 2003 10 20 | 691 | 0.1+ | 0.2+ |
| 1998 11 19 | 691 | 0.4+ | 0.0 | 2003 09 27 | 691 | 0.1+ | 0.3+ | 2003 10 22 | 645 | 0.1+ | 0.1− |
| 1998 11 19 | 691 | 0.3+ | 0.1+ | 2003 09 27 | 691 | 0.0 | 0.1+ | 2003 10 22 | 645 | 0.0 | 0.0 |
| 2000 02 06 | 695 | 0.0 | 0.0 | 2003 09 29 | 645 | 0.1− | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 |
| 2000 02 06 | 695 | 0.0 | 0.2+ | 2003 09 29 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 |
| 2003 09 22 | 699 | 0.5− | 0.7+ | 2003 10 18 | 645 | 0.0 | 0.1+ | | | | |

**2003 SS$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.86884 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23293689 | $\omega$ | 132.57976 | | +0.92770679 | −0.29437864 | |
| $a$ | 2.6160369 | $\Omega$ | 245.73613 | | +0.22351486 | +0.93055377 | |
| $e$ | 0.0121231 | $i$ | 14.58477 | | +0.29900036 | +0.21774042 | |
| $P$ | 4.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.6− | 0.2− | 2003 09 22 | 644 | 0.4− | 0.3+ | 2003 10 05 | 691 | 0.0 | 0.0 |
| 1999 10 13 | 704 | 0.5+ | 0.6+ | 2003 09 22 | 644 | 0.3− | 0.2+ | 2003 10 05 | 704 | 0.0 | 0.6− |
| 1999 10 13 | 704 | 0.1+ | 0.3− | 2003 09 29 | 699 | 0.7+ | 1.0+ | 2003 10 05 | 704 | 1.3+ | 0.7+ |
| 1999 10 13 | 704 | 0.0 | 0.4− | 2003 09 29 | 699 | 0.3+ | 0.5+ | 2003 10 05 | 704 | 0.4− | 0.4− |
| 1999 11 03 | 704 | 0.8− | 0.9+ | 2003 09 29 | 699 | 0.4− | 0.9− | 2003 10 05 | 704 | 0.6+ | 0.3− |
| 1999 11 03 | 704 | 0.5− | 0.7− | 2003 09 29 | 699 | 0.9− | 0.3− | 2003 10 20 | 644 | 0.2− | 0.1+ |
| 1999 11 03 | 704 | 1.4+ | 0.1+ | 2003 10 05 | 691 | 0.0 | 0.1− | 2003 10 20 | 644 | 0.5+ | 0.5+ |
| 2003 09 22 | 644 | 0.6− | 0.2+ | 2003 10 05 | 691 | 0.1− | 0.2− | 2003 10 20 | 644 | 0.0 | 0.1+ |

**2003 ST$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.70664 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27453997 | $\omega$ | 278.51158 | | +0.40469537 | −0.91266458 | |
| $a$ | 2.3445832 | $\Omega$ | 147.42781 | | +0.87520120 | +0.36845763 | |
| $e$ | 0.0963713 | $i$ | 6.09271 | | +0.26503681 | +0.17686816 | |
| $P$ | 3.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 691 | 0.2+ | 0.1− | 2003 09 28 | 704 | 1.0− | 1.0+ | 2003 10 22 | 645 | 0.0 | 0.0 |
| 1996 11 18 | 691 | 0.3+ | 0.1+ | 2003 09 28 | 704 | 0.4− | 0.4+ | 2003 10 23 | 645 | 0.1− | 0.2− |
| 1996 11 18 | 691 | 0.2+ | 0.1− | 2003 09 28 | 704 | 0.6− | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.1− |
| 1996 12 05 | 691 | 0.0 | 0.4− | 2003 10 15 | 699 | 1.4− | 0.5+ | 2003 10 27 | 699 | 0.0 | 0.2+ |
| 1996 12 05 | 691 | 0.4+ | 0.0 | 2003 10 15 | 699 | 0.3+ | 0.5− | 2003 10 27 | 699 | 1.3+ | 0.0 |
| 1996 12 05 | 691 | 0.3+ | 0.2+ | 2003 10 15 | 699 | 0.4+ | 0.4− | 2003 10 27 | 704 | 0.5+ | 0.4− |
| 1998 04 22 | 691 | 1.0− | 0.3− | 2003 10 15 | 699 | 0.5+ | 0.4− | 2003 10 27 | 699 | 0.4+ | 0.1− |
| 1998 04 22 | 691 | 0.8− | 0.3− | 2003 10 20 | 644 | 0.7− | 0.7+ | 2003 10 27 | 704 | 0.2− | 0.2+ |
| 1998 04 22 | 691 | 1.1− | 0.1+ | 2003 10 20 | 644 | 0.2− | 0.2+ | 2003 10 27 | 699 | 0.6+ | 0.8− |
| 1999 09 13 | 691 | 0.2+ | 0.6+ | 2003 10 20 | 704 | 1.2− | 0.4− | 2003 10 27 | 704 | 0.3− | 0.3+ |
| 1999 09 13 | 691 | 0.3+ | 0.2+ | 2003 10 20 | 704 | 1.4− | 0.1+ | 2003 10 27 | 704 | 0.1− | 0.5+ |
| 1999 09 13 | 691 | 0.5+ | 0.4+ | 2003 10 20 | 704 | 0.2− | 0.2+ | 2003 11 20 | 645 | 0.1− | 0.0 |
| 2001 02 22 | 704 | 0.4+ | 0.2+ | 2003 10 20 | 704 | 0.6− | 0.4+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2001 02 22 | 704 | 0.1+ | 0.0 | 2003 10 20 | 704 | 0.0 | 0.7+ | 2005 03 11 | 691 | 0.6+ | 0.2+ |
| 2001 02 22 | 704 | 0.2− | 0.7+ | 2003 10 20 | 644 | 0.7− | 0.4+ | 2005 03 11 | 691 | 0.9+ | 0.3+ |
| 2001 02 22 | 704 | 1.0+ | 0.5+ | 2003 10 20 | 644 | 0.0 | 0.1+ | 2005 03 11 | 691 | 0.5+ | 0.3+ |
| 2003 09 22 | 644 | 0.1− | 0.0 | 2003 10 20 | 644 | 0.4− | 0.4+ | 2006 06 19 | 691 | 0.3+ | 0.4+ |
| 2003 09 22 | 644 | 0.2− | 0.1+ | 2003 10 20 | 644 | 0.2+ | 0.7+ | 2006 06 19 | 691 | 0.6+ | 0.3− |
| 2003 09 22 | 644 | 0.2− | 0.0 | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 06 19 | 691 | 0.0 | 0.1− |

**2003 SU$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.77553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20321995 | $\omega$ | 186.62434 | | +0.99981104 | +0.00054484 | |
| $a$ | 2.8652234 | $\Omega$ | 173.25237 | | +0.00416708 | +0.97036222 | |
| $e$ | 0.0758816 | $i$ | 9.51922 | | −0.01898711 | +0.24165445 | |
| $P$ | 4.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 01 | 691 | 0.5− | 0.2− | 2003 09 28 | 704 | 0.4+ | 0.6+ | 2003 11 20 | 645 | 0.0 | 0.1+ |
| 1998 09 01 | 691 | 0.2− | 1.4+ | 2003 10 20 | 644 | 0.1+ | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 1998 09 01 | 691 | 0.2− | 0.3+ | 2003 10 20 | 644 | 0.1+ | 0.3+ | 2003 11 28 | 645 | 0.0 | 0.0 |
| 1998 09 17 | 691 | 0.0 | 0.5− | 2003 10 20 | 644 | 0.1+ | 0.6+ | 2003 11 28 | 645 | 0.0 | 0.0 |
| 1998 09 17 | 691 | 0.3+ | 0.2− | 2003 10 27 | 704 | 0.5+ | 1.4− | 2006 03 26 | 691 | 0.8+ | 0.1− |
| 1998 09 17 | 691 | 0.5+ | 0.4− | 2003 10 27 | 704 | 0.2+ | 0.8− | 2006 03 26 | 691 | 0.2+ | 0.7+ |
| 2003 09 22 | 644 | 0.4− | 0.4+ | 2003 10 27 | 704 | 1.7+ | 0.1+ | 2006 03 26 | 691 | 0.2+ | 0.8+ |
| 2003 09 22 | 644 | 0.3− | 0.5+ | 2003 10 27 | 704 | 0.3− | 1.4+ | 2006 04 18 | 291 | 0.2− | 0.0 |
| 2003 09 22 | 644 | 0.1− | 0.3+ | 2003 11 19 | 644 | 0.7− | 0.5+ | 2006 04 18 | 291 | 0.4− | 0.1− |
| 2003 09 28 | 704 | 1.1− | 1.0− | 2003 11 19 | 644 | 0.2+ | 0.9+ | 2006 04 18 | 291 | 0.3− | 0.2− |
| 2003 09 28 | 704 | 0.1+ | 0.6− | 2003 11 19 | 644 | 0.4− | 0.2+ | | | | |

**2003 SV$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.24068 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27656626 | $\omega$ | 316.33336 | | +0.72613238 | +0.68755477 | |
| $a$ | 2.3331174 | $\Omega$ | 0.23124 | | −0.59595842 | +0.62972511 | |
| $e$ | 0.1203037 | $i$ | 6.44683 | | −0.34287801 | +0.36154491 | |
| $P$ | 3.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 10 | 691 | 0.3− | 0.3− | 2003 09 22 | 691 | 0.2− | 0.3+ | 2003 10 29 | 699 | 0.5− | 0.6− |
| 1996 11 10 | 691 | 0.4− | 0.6− | 2003 09 22 | 691 | 0.1+ | 0.1+ | 2003 10 29 | 699 | 0.4− | 0.0 |
| 1996 11 10 | 691 | 0.4− | 0.7− | 2003 09 27 | 691 | 0.2+ | 0.0 | 2003 11 22 | 691 | 0.4− | 0.1− |
| 1996 12 02 | 691 | (3.2+ | 1.1+) | 2003 09 27 | 691 | 0.1+ | 0.0 | 2003 11 22 | 691 | 0.4− | 0.1− |
| 1996 12 02 | 691 | 0.8− | 0.0 | 2003 09 27 | 691 | 0.2+ | 0.1+ | 2003 11 22 | 691 | 0.6− | 0.0 |
| 1996 12 02 | 691 | 0.7− | 0.4− | 2003 10 17 | 691 | 0.4+ | 0.1+ | 2005 02 01 | 691 | 0.3+ | 0.0 |
| 1998 03 20 | 691 | 0.3− | 0.1− | 2003 10 17 | 691 | 0.2+ | 0.1+ | 2005 02 01 | 691 | 0.0 | 0.0 |
| 1998 03 20 | 691 | 0.3− | 0.1+ | 2003 10 17 | 691 | 0.4+ | 0.1− | 2005 02 01 | 691 | 0.2+ | 0.7+ |
| 1998 03 20 | 691 | 0.7− | 0.4− | 2003 10 20 | 644 | 0.6− | 0.6+ | 2005 02 09 | G96 | 0.5− | 0.5− |
| 1998 04 03 | 691 | 0.1+ | 0.1− | 2003 10 20 | 644 | 0.6− | 0.8+ | 2005 02 09 | G96 | 0.2+ | 0.1+ |
| 1998 04 03 | 691 | 0.6+ | 0.2+ | 2003 10 20 | 644 | 0.6− | 0.7+ | 2005 02 09 | G96 | 0.0 | 0.0 |
| 1998 04 03 | 691 | 0.6+ | 0.0 | 2003 10 29 | 699 | (0.5− | 2.3−) | 2005 02 09 | G96 | 0.1+ | 0.1− |
| 2003 09 22 | 691 | 0.2+ | 0.0 | 2003 10 29 | 699 | 0.6− | 0.3+ | | | | |

**2003 SW$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.19299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18627515 | $\omega$ | 240.53371 | | +0.37649521 | −0.92615755 | |
| $a$ | 3.0364498 | $\Omega$ | 187.45063 | | +0.89783850 | +0.37062789 | |
| $e$ | 0.0750966 | $i$ | 9.76349 | | +0.22833612 | +0.06976510 | |
| $P$ | 5.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.0 | 0.0 | 2003 10 17 | 691 | 0.1− | 0.6+ | 2006 03 25 | G96 | 0.1− | 0.1+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2006 02 25 | G96 | 0.1− | 0.2− | 2006 03 25 | G96 | 0.6− | 0.4+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 02 25 | G96 | 0.3− | 0.2− | 2006 03 25 | G96 | 0.1+ | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 02 25 | G96 | 0.0 | 0.3− | 2006 04 07 | G96 | 0.1+ | 0.4+ |
| 2003 09 27 | 691 | 0.3+ | 0.1+ | 2006 02 25 | G96 | 0.2− | 0.1+ | 2006 04 07 | G96 | 0.0 | 0.5+ |
| 2003 09 27 | 691 | 0.2+ | 0.1− | 2006 02 25 | 691 | 0.3+ | 0.4+ | 2006 04 07 | G96 | 0.1+ | 0.5+ |
| 2003 09 27 | 691 | 0.1+ | 0.0 | 2006 02 25 | 691 | 0.1− | 0.2+ | 2006 04 07 | G96 | 0.4− | 0.2+ |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 02 25 | 691 | 0.3+ | 0.2+ | 2006 04 25 | G96 | 1.0− | 0.1− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.4+ | 0.2+ | 2006 04 25 | G96 | 0.8− | 0.5+ |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.0 | 0.3+ | 2006 04 25 | G96 | 0.3− | 0.7− |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.2+ | 0.4+ | 2006 04 25 | G96 | 0.4+ | 0.3− |
| 2003 10 03 | 291 | 0.4− | 0.4+ | 2006 03 25 | G96 | 0.2− | 0.3+ | 2006 05 21 | G96 | 0.1+ | 0.2− |
| 2003 10 03 | 291 | 0.3− | 0.4+ | 2006 03 25 | G96 | 0.1+ | 0.1+ | 2006 05 21 | G96 | 0.3+ | 0.4− |
| 2003 10 03 | 291 | 0.0 | 0.4+ | 2006 03 25 | G96 | 0.1− | 0.2+ | 2006 05 21 | G96 | 0.4+ | 0.3+ |
| 2003 10 17 | 691 | 0.5− | 0.4+ | 2006 03 25 | G96 | 0.1+ | 0.3+ | 2006 05 21 | G96 | 0.1+ | 0.7+ |
| 2003 10 17 | 691 | 0.4+ | 0.6+ | 2006 03 25 | G96 | 0.1+ | 0.2+ | | | | |

**2003 SX$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.22513 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23029843 | $\omega$ | 298.04944 | | +0.75612456 | +0.64976291 | |
| $a$ | 2.6359797 | $\Omega$ | 21.72083 | | −0.50167470 | +0.65203688 | |
| $e$ | 0.0245784 | $i$ | 12.16686 | | −0.42023582 | +0.39071225 | |
| $P$ | 4.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4+ | 1.2− | 2003 10 19 | 645 | 0.0 | 0.0 | 2003 11 19 | 645 | 0.0 | 0.1+ |
| 1999 10 12 | 704 | 0.7+ | 0.1− | 2003 10 19 | 645 | 0.1− | 0.0 | 2005 01 07 | 703 | 0.2+ | 0.3− |
| 1999 10 12 | 704 | 0.0 | 0.2− | 2003 10 23 | 645 | 0.1+ | 0.1− | 2005 01 07 | 703 | 0.3− | 0.1+ |
| 1999 10 12 | 704 | 0.2+ | 0.3− | 2003 10 23 | 645 | 0.1+ | 0.1− | 2005 01 07 | 703 | 0.9+ | 0.4− |
| 1999 10 12 | 704 | 0.0 | 0.4− | 2003 10 24 | 691 | 0.7− | 0.4+ | 2005 01 07 | 703 | 0.8+ | 0.4+ |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 24 | 691 | 0.7− | 0.4+ | 2005 01 15 | 703 | 1.1− | 1.6+ |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 24 | 691 | 0.5− | 0.3+ | 2005 01 15 | 703 | 0.7+ | 0.1+ |
| 2003 09 30 | 691 | 0.2− | 0.3+ | 2003 11 16 | 645 | 0.1+ | 0.0 | 2005 01 15 | 703 | 0.5+ | 0.2− |
| 2003 09 30 | 691 | 0.1− | 0.3+ | 2003 11 16 | 645 | 0.1+ | 0.0 | 2005 01 15 | 703 | 1.5− | 0.2− |
| 2003 09 30 | 691 | 0.1− | 0.2+ | 2003 11 19 | 645 | 0.0 | 0.0 | | | | |

**2003 SY$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.06836 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23373845 | $\omega$ | 159.55450 | | +0.88573086 | −0.43419683 | |
| $a$ | 2.6100527 | $\Omega$ | 227.29201 | | +0.38878693 | +0.88713008 | |
| $e$ | 0.0720321 | $i$ | 12.91024 | | +0.25362487 | +0.15643952 | |
| $P$ | 4.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 704 | (1.4+ | 3.1+) | 2003 12 01 | 704 | 0.3− | 0.1+ | 2003 12 20 | 704 | (2.2+ | 3.3+) |
| 1998 08 27 | 704 | 0.4+ | 0.1− | 2003 12 01 | 704 | 0.7+ | 0.8+ | 2003 12 22 | 704 | 0.9+ | 1.1− |
| 1998 08 27 | 704 | 0.2+ | 0.4− | 2003 12 16 | 691 | 0.4− | 0.0 | 2003 12 22 | 704 | 1.2+ | 0.1+ |
| 1998 08 27 | 704 | (3.3− | 1.2+) | 2003 12 16 | 703 | 1.0− | 0.7+ | 2003 12 22 | 704 | 1.0− | 0.3− |
| 2002 07 09 | 704 | 0.5+ | 0.1+ | 2003 12 16 | 703 | 0.5− | 0.5+ | 2003 12 22 | 704 | 0.4+ | 0.5+ |
| 2002 07 09 | 704 | 0.1− | 0.6− | 2003 12 16 | 691 | 0.2− | 0.0 | 2003 12 26 | 608 | 0.2+ | 0.1− |
| 2002 07 09 | 704 | 0.2− | 0.1+ | 2003 12 16 | 703 | 0.7− | 0.0 | 2003 12 26 | 608 | 0.0 | 0.6− |
| 2003 09 26 | 704 | 0.5+ | 1.0+ | 2003 12 16 | 703 | 0.3+ | 0.2− | 2003 12 26 | 608 | 0.1− | 0.6− |
| 2003 09 26 | 704 | 0.5+ | 0.5− | 2003 12 16 | 691 | 0.1− | 0.0 | 2005 04 09 | 699 | 0.2+ | 0.6+ |
| 2003 09 26 | 704 | 0.3+ | 0.3− | 2003 12 20 | 704 | 0.6+ | 0.5− | 2005 04 09 | 699 | 1.4+ | 0.8+ |
| 2003 09 26 | 704 | 0.5+ | 0.8+ | 2003 12 20 | 704 | 0.8− | 0.3+ | 2005 04 09 | 699 | 0.2− | 0.9+ |
| 2003 12 01 | 704 | 1.2+ | 0.2+ | 2003 12 20 | 704 | 0.0 | 0.1+ | 2005 04 09 | 699 | 0.1+ | 2.1+ |
| 2003 12 01 | 704 | 0.3+ | 0.5+ | 2003 12 20 | 704 | 0.3+ | 0.7+ | | | | |

**2003 SZ$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.67858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23319629 | $\omega$ | 199.98683 | | −0.40251438 | +0.89641691 | |
| $a$ | 2.6140966 | $\Omega$ | 46.79030 | | −0.80146571 | −0.24717383 | |
| $e$ | 0.1163944 | $i$ | 14.74642 | | −0.44230634 | −0.36788834 | |
| $P$ | 4.23 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 691 | 0.3+ | 0.2+ | 2003 10 23 | 645 | 0.1+ | 0.1+ | 2006 04 24 | 691 | 0.1− | 0.4− |
| 1999 11 16 | 691 | 0.6− | 0.1− | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 05 04 | 691 | 0.0 | 0.0 |
| 1999 11 16 | 691 | 0.1+ | 0.1+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 05 04 | 691 | 0.3− | 0.9+ |
| 2003 09 26 | 645 | 0.1+ | 0.1− | 2003 11 20 | 645 | 0.0 | 0.1+ | 2006 05 04 | 691 | 0.1+ | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.2− | 2003 11 20 | 645 | 0.0 | 0.1+ | 2006 05 20 | 691 | 0.0 | 0.0 |
| 2003 09 27 | 645 | 0.0 | 0.0 | 2006 02 02 | 691 | 0.0 | 0.4+ | 2006 05 20 | 691 | 0.0 | 0.1+ |
| 2003 09 27 | 645 | 0.0 | 0.1− | 2006 02 02 | 691 | 0.5+ | 0.4− | 2006 05 20 | 691 | 0.2+ | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 02 02 | 691 | 0.0 | 0.4+ | 2006 05 31 | G96 | 0.1+ | 0.2− |
| 2003 09 28 | 645 | 0.1− | 0.0 | 2006 04 08 | 691 | 0.0 | 0.2+ | 2006 05 31 | G96 | 0.4− | 0.2− |
| 2003 10 20 | 691 | 0.1− | 0.4+ | 2006 04 08 | 691 | 0.7+ | 0.6+ | 2006 05 31 | G96 | 0.3− | 0.3− |
| 2003 10 20 | 691 | 0.1− | 0.3+ | 2006 04 08 | 691 | 0.2+ | 0.0 | 2006 05 31 | G96 | 0.3− | 0.2− |
| 2003 10 20 | 691 | 0.5− | 0.2+ | 2006 04 24 | 691 | 0.0 | 0.1− | | | | |
| 2003 10 23 | 645 | 0.0 | 0.1+ | 2006 04 24 | 691 | 0.0 | 0.1− | | | | |

**2003 SA$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.63978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24362912 | $\omega$ | 233.03912 | | +0.33366489 | +0.92747188 | |
| $a$ | 2.5389253 | $\Omega$ | 57.28433 | | −0.78858390 | +0.37267429 | |
| $e$ | 0.1157361 | $i$ | 11.56748 | | −0.51652993 | +0.03016254 | |
| $P$ | 4.05 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.0 | 0.1+ | 2003 10 20 | 691 | 0.1+ | 0.1+ | 2006 04 24 | 691 | 0.1+ | 0.4+ |
| 1995 11 15 | 691 | 0.6− | 0.2+ | 2003 10 20 | 691 | 0.2− | 0.1+ | 2006 04 24 | 691 | 1.4− | 0.2− |
| 1995 11 15 | 691 | 0.3+ | 0.1+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 05 02 | 691 | 0.0 | 0.4+ |
| 2002 05 17 | 644 | 0.2+ | 0.3+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 05 02 | 691 | 0.3− | 0.0 |
| 2002 05 17 | 644 | 0.2+ | 0.2+ | 2003 10 24 | 645 | 0.1+ | 0.0 | 2006 05 02 | 691 | 0.1+ | 0.1+ |
| 2002 05 17 | 644 | 0.2+ | 0.5+ | 2003 10 24 | 645 | 0.1+ | 0.1− | 2006 05 21 | 691 | 0.1− | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.1− | 0.1+ | 2006 05 21 | 691 | 1.5+ | 1.1− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.0 | 0.2+ | 2006 05 21 | 691 | 0.3+ | 0.3+ |
| 2003 10 20 | 691 | 0.3− | 0.1− | 2006 04 24 | 691 | 0.1− | 0.4+ | | | | |

**2003 SB$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.51899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17441510 | $\omega$ | 219.25335 | | +0.99048267 | +0.06172243 | |
| $a$ | 3.1725854 | $\Omega$ | 136.71322 | | −0.02623237 | +0.96208332 | |
| $e$ | 0.0907583 | $i$ | 10.33620 | | −0.13511454 | +0.26568030 | |
| $P$ | 5.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 1.0− | 0.6− | 2003 10 16 | 699 | (3.4− | 1.4+) | 2003 10 27 | 699 | 0.6+ | 0.9+ |
| 1994 01 11 | 691 | 2.2− | 0.7− | 2003 10 16 | 699 | 0.2+ | 0.4− | 2003 11 24 | 644 | 0.3− | 0.3+ |
| 1994 01 11 | 691 | (3.2+ | 0.6+) | 2003 10 16 | 699 | 0.3− | 0.3+ | 2003 11 24 | 644 | 0.4− | 0.7+ |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 10 16 | 699 | 0.4+ | 0.3+ | 2003 11 24 | 644 | 0.1− | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.2− | 2003 10 19 | 704 | 0.2− | 0.4− | 2005 01 13 | 691 | 0.0 | 0.2+ |
| 2003 09 28 | 645 | 0.1− | 0.1− | 2003 10 19 | 704 | 0.5+ | 0.3+ | 2005 01 13 | 691 | 0.1+ | 0.2+ |
| 2003 09 28 | 699 | 1.4+ | 0.2+ | 2003 10 19 | 704 | 0.0 | 1.4+ | 2005 01 13 | 691 | 0.0 | 0.0 |
| 2003 09 28 | 645 | 0.1− | 0.1− | 2003 10 19 | 704 | 0.5− | 2.0+ | 2006 04 02 | G96 | 0.2− | 0.1− |
| 2003 09 28 | 699 | 0.5− | 0.1− | 2003 10 27 | 699 | 0.4− | 0.1+ | 2006 04 02 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 699 | 0.0 | 0.1+ | 2003 10 27 | 699 | 0.9− | 0.0 | 2006 04 02 | G96 | 0.3+ | 0.3+ |
| 2003 09 28 | 699 | 1.1+ | 0.9+ | 2003 10 27 | 699 | 0.3+ | 0.6+ | 2006 04 02 | G96 | 0.0 | 0.0 |

**2003 SC$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.33629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17420358 | $\omega$ | 104.10870 | | −0.56517800 | −0.81984608 | |
| $a$ | 3.1751531 | $\Omega$ | 21.11098 | | +0.62380321 | −0.49752212 | |
| $e$ | 0.2889145 | $i$ | 14.76532 | | +0.53985496 | −0.28341514 | |
| $P$ | 5.66 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 1.4− | 0.3− | 2003 10 24 | 704 | 0.1+ | 0.2+ | 2005 03 16 | 703 | 1.1+ | 1.0+ |
| 1998 12 12 | 704 | 0.3+ | 0.8− | 2003 10 24 | 704 | 0.2+ | 0.6+ | 2005 04 02 | 699 | 0.0 | 0.7− |
| 1998 12 12 | 704 | 0.5+ | 0.1+ | 2003 10 24 | 704 | 0.1− | 0.3+ | 2005 04 02 | 699 | 0.4− | 0.6+ |
| 1998 12 12 | 704 | 1.2− | 1.9+ | 2005 01 09 | 703 | 0.4+ | 0.1− | 2005 04 02 | 699 | 1.1− | 1.0− |
| 1999 01 14 | 704 | 0.7+ | 0.7− | 2005 01 09 | 703 | 0.3− | 0.8+ | 2005 04 02 | 699 | 0.6− | 0.6+ |
| 1999 01 14 | 704 | 1.5+ | 0.2+ | 2005 01 09 | 703 | 0.4+ | 0.2− | 2005 04 02 | 703 | 0.0 | 0.3− |
| 1999 01 14 | 704 | 0.7+ | 1.1− | 2005 01 09 | 703 | 0.6+ | 0.4+ | 2005 04 02 | 703 | 0.4− | 0.2− |
| 1999 01 14 | 704 | 1.4− | 0.4− | 2005 03 02 | 703 | 0.5+ | 0.1− | 2005 04 02 | 703 | 0.5+ | 0.0 |
| 2003 09 27 | 333 | 0.7− | 1.4+ | 2005 03 02 | 703 | 0.4− | 0.2− | 2005 04 02 | 703 | 0.3− | 0.6− |
| 2003 09 27 | 333 | (2.1− | 1.2−) | 2005 03 02 | 703 | 0.7+ | 0.8− | 2005 04 09 | 703 | 0.5− | 0.2+ |
| 2003 09 29 | 691 | 0.1− | 0.0 | 2005 03 02 | 703 | 0.3− | 0.5− | 2005 04 09 | 703 | 0.5− | 2.9+ |
| 2003 09 29 | 691 | 0.3− | 0.1− | 2005 03 16 | 703 | 0.2− | 0.2− | 2005 04 09 | 703 | 1.5+ | 0.5− |
| 2003 09 29 | 691 | 0.1+ | 0.2− | 2005 03 16 | 703 | 0.3− | 0.6+ | 2005 04 09 | 703 | 0.4+ | 0.4− |
| 2003 10 24 | 704 | 0.8+ | 0.1+ | 2005 03 16 | 703 | 0.7+ | 0.4+ | | | | |

**2003 SD$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.90567 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23925936 | $\omega$ | 34.67904 | | +0.97653274 | −0.18931829 | |
| $a$ | 2.5697454 | $\Omega$ | 335.61225 | | +0.09269704 | +0.79979593 | |
| $e$ | 0.1867857 | $i$ | 14.39852 | | +0.19439926 | +0.56963589 | |
| $P$ | 4.12 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 704 | 0.6+ | 0.3+ | 2003 11 21 | 704 | 0.0 | 0.1+ | 2005 02 09 | 704 | 0.6− | 1.1+ |
| 1999 10 31 | 704 | 0.5− | 0.6− | 2003 11 21 | 704 | 0.2− | 0.3+ | 2005 02 09 | 704 | 0.5− | 0.9+ |
| 1999 10 31 | 704 | 0.0 | 0.4+ | 2003 11 21 | 704 | 0.1+ | 0.8+ | 2005 02 09 | 704 | 1.8− | 0.6+ |
| 1999 10 31 | 704 | 0.1− | 0.3− | 2003 11 21 | 704 | 0.3+ | 0.1− | 2005 03 08 | 699 | 1.2+ | 0.1+ |
| 1999 10 31 | 704 | 0.5− | 0.5+ | 2003 12 03 | 704 | 0.5+ | 1.1+ | 2005 03 08 | 699 | 1.1+ | 0.2− |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2003 12 03 | 704 | 0.0 | 0.7− | 2005 03 08 | 699 | 1.7+ | 0.9− |
| 2000 12 23 | 645 | 0.0 | 0.1− | 2003 12 03 | 704 | 0.1+ | 0.7+ | 2005 03 08 | 699 | 0.7+ | 0.8− |
| 2003 09 27 | 704 | 0.6− | 0.4− | 2003 12 03 | 704 | 0.1+ | 0.7− | 2005 03 11 | G96 | 0.1− | 0.1+ |
| 2003 09 27 | 704 | 0.3+ | 0.3− | 2003 12 17 | 704 | 0.1+ | 0.4− | 2005 03 11 | G96 | 0.2− | 0.2+ |
| 2003 09 27 | 704 | 1.3− | 0.6+ | 2003 12 17 | 704 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.4− | 0.2− |
| 2003 09 27 | 704 | 0.4− | 0.1− | 2003 12 17 | 704 | 1.1+ | 0.4− | 2005 03 11 | G96 | 0.3− | 0.3− |
| 2003 09 27 | 704 | 0.6− | 0.1+ | 2003 12 17 | 704 | 0.4+ | 0.3− | 2005 04 12 | G96 | 0.0 | 0.2− |
| 2003 11 21 | 644 | 0.1+ | 0.2+ | 2005 02 01 | 691 | 0.2− | 0.2− | 2005 04 12 | G96 | 0.3− | 0.3− |
| 2003 11 21 | 644 | 0.2+ | 0.2− | 2005 02 01 | 691 | 0.2+ | 0.3+ | 2005 04 12 | G96 | 0.9− | 0.7+ |
| 2003 11 21 | 644 | 0.2+ | 0.0 | 2005 02 01 | 691 | 0.1+ | 0.4+ | 2005 04 12 | G96 | 0.1− | 0.1+ |
| 2003 11 21 | 704 | 0.1+ | 0.1− | 2005 02 09 | 704 | 0.8+ | 0.4− | | | | |

**2003 SE$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.96865 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25609615 | $\omega$ | 171.57390 | | −0.74135947 | +0.64850271 | |
| $a$ | 2.4558435 | $\Omega$ | 50.33263 | | −0.62806857 | −0.57976410 | |
| $e$ | 0.1325686 | $i$ | 12.96606 | | −0.23646566 | −0.49327256 | |
| $P$ | 3.85 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 645 | 0.0 | 0.1− | 2003 10 20 | 691 | 0.0 | 0.3+ | 2005 01 07 | 703 | 0.4− | 0.7− |
| 2003 09 27 | 645 | 0.0 | 0.1− | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 01 07 | 703 | 0.0 | 0.1+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 01 07 | 703 | 0.5+ | 2.0+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 24 | 645 | 0.0 | 0.1− | 2005 01 15 | 703 | 0.4+ | 0.1+ |
| 2003 09 30 | 645 | 0.0 | 0.0 | 2003 10 24 | 645 | 0.0 | 0.1− | 2005 01 15 | 703 | 1.3− | 0.2− |
| 2003 09 30 | 645 | 0.1+ | 0.1+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2005 01 15 | 703 | 0.5+ | 0.3+ |
| 2003 10 20 | 691 | 0.5− | 0.5+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2005 01 15 | 703 | 0.7+ | 0.0 |
| 2003 10 20 | 691 | 0.3− | 0.3+ | 2005 01 07 | 703 | 0.4− | 1.5− | | | | |

**2003 SF$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.87238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23693733 | $\omega$ | 309.48671 | | +0.13284544 | −0.98339973 | |
| $a$ | 2.5865074 | $\Omega$ | 132.41411 | | +0.95298547 | +0.09246835 | |
| $e$ | 0.1641954 | $i$ | 9.63753 | | +0.27234314 | +0.15612358 | |
| $P$ | 4.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 30 | 691 | 0.2+ | 0.4− | 2003 10 01 | 699 | 0.1− | 0.6+ | 2003 11 02 | 704 | 0.0 | 0.7+ |
| 2000 01 30 | 691 | 0.1+ | 0.0 | 2003 10 19 | 704 | 0.0 | 0.7+ | 2003 11 02 | 704 | 0.6+ | 1.4− |
| 2000 01 30 | 691 | 0.1− | 0.1+ | 2003 10 19 | 704 | 1.1− | 0.1+ | 2003 11 02 | 704 | 0.7+ | 0.5+ |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2003 10 19 | 704 | 0.1+ | 0.4+ | 2003 11 24 | 644 | 0.3− | 0.7+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2003 10 19 | 704 | 0.8− | 0.3+ | 2003 11 24 | 644 | 0.1− | 0.2+ |
| 2003 09 27 | 645 | 0.0 | 0.0 | 2003 11 02 | 704 | 0.4− | 0.6− | 2003 11 24 | 644 | 0.2− | 0.2+ |
| 2003 09 27 | 645 | 0.1+ | 0.1− | 2003 11 02 | 704 | 0.7− | 1.1+ | 2005 04 06 | 703 | 0.1− | 0.2+ |
| 2003 10 01 | 699 | 0.6+ | 0.4− | 2003 11 02 | 704 | 0.3− | 0.0 | 2005 04 06 | 703 | 1.6+ | 0.5+ |
| 2003 10 01 | 699 | 0.8− | 1.4+ | 2003 11 02 | 704 | 0.3+ | 0.7+ | 2005 04 06 | 703 | 0.8− | 0.4+ |
| 2003 10 01 | 699 | 0.1− | 0.1− | 2003 11 02 | 704 | 0.5− | 0.1− | 2005 04 06 | 703 | 0.1+ | 0.6− |

**2003 SG$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.32816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30799250 | $\omega$ | 276.95626 | | +0.84283068 | +0.53437576 | |
| $a$ | 2.1715806 | $\Omega$ | 50.76381 | | −0.45546717 | +0.77147244 | |
| $e$ | 0.2161216 | $i$ | 4.72983 | | −0.28668118 | +0.34535896 | |
| $P$ | 3.20 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 645 | 0.1+ | 0.0 | 2003 10 15 | 699 | 1.0− | 0.6+ | 2006 07 31 | E12 | 0.8+ | 1.2+ |
| 2002 03 05 | 645 | 0.1− | 0.0 | 2003 10 15 | 699 | 1.4− | 1.2− | 2006 07 31 | E12 | 0.3− | 0.0 |
| 2003 09 28 | 704 | 1.0− | 0.2− | 2003 10 24 | 704 | 0.4+ | 0.2− | 2006 07 31 | E12 | 0.5+ | 0.7− |
| 2003 09 28 | 704 | 0.0 | 0.4+ | 2003 10 24 | 704 | 0.5+ | 0.7− | 2006 08 12 | 644 | 0.0 | 0.0 |
| 2003 09 28 | 699 | 0.6+ | 0.5+ | 2003 10 24 | 704 | 0.4+ | 0.2− | 2006 08 12 | 644 | 0.1− | 0.2+ |
| 2003 09 28 | 704 | 0.7+ | 0.2+ | 2003 10 24 | 704 | 0.6+ | 0.6+ | 2006 08 12 | 644 | 1.2− | 0.0 |
| 2003 09 28 | 699 | 1.3+ | 0.3+ | 2003 10 24 | 704 | 0.2+ | 0.2− | 2006 08 26 | E12 | 0.2− | 0.1− |
| 2003 09 28 | 704 | 0.3+ | 0.1− | 2003 10 29 | 699 | 0.4− | 0.2− | 2006 08 26 | E12 | 0.1+ | 0.2+ |
| 2003 09 28 | 699 | 0.8+ | 1.2− | 2003 10 29 | 699 | 1.1− | 0.2− | 2006 08 26 | E12 | 0.5+ | 0.4+ |
| 2003 09 28 | 699 | 0.1− | 0.6− | 2003 10 29 | 699 | 0.1− | 1.2+ | 2006 08 26 | E12 | 0.0 | 0.1− |
| 2003 10 15 | 699 | 0.5− | 0.8+ | 2003 10 29 | 699 | 0.1− | 1.5+ | | | | |
| 2003 10 15 | 699 | 0.1− | 1.2− | 2006 07 31 | E12 | 0.2− | 0.7− | | | | |

**2003 SH$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.71820 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21915657 | $\omega$ | 244.32031 | | +0.56314601 | −0.82609578 | |
| $a$ | 2.7245810 | $\Omega$ | 171.31610 | | +0.79893758 | +0.53785956 | |
| $e$ | 0.0912481 | $i$ | 7.91572 | | +0.21110498 | +0.16814535 | |
| $P$ | 4.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 27 | 691 | 0.4+ | 0.0 | 2003 10 19 | 704 | 1.0− | 0.1− | 2005 02 02 | 703 | 1.4+ | 1.8+ |
| 1994 09 27 | 691 | 0.0 | 0.2− | 2003 10 19 | 704 | 0.5+ | 1.1+ | 2005 02 02 | 704 | 0.7− | 1.2+ |
| 1994 09 27 | 691 | 0.0 | 0.1+ | 2003 10 19 | 704 | 0.2− | 0.2+ | 2005 02 09 | 704 | 1.1+ | 0.3− |
| 1996 01 21 | 691 | 0.3− | 0.4− | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 02 09 | 704 | 0.8+ | 0.6− |
| 1996 01 21 | 691 | 0.3− | 0.0 | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 02 09 | 704 | 0.4+ | 1.6+ |
| 1996 01 21 | 691 | 0.1− | 0.4− | 2003 10 29 | 699 | 0.9− | 0.1− | 2005 02 09 | 704 | 0.1− | 0.8+ |
| 1999 12 05 | 704 | 0.7+ | 0.8− | 2003 10 29 | 699 | 0.8− | 0.1+ | 2005 03 17 | G96 | 0.6− | 0.1− |
| 1999 12 05 | 704 | 0.1+ | 0.3− | 2003 10 29 | 699 | 0.1+ | 0.6+ | 2005 03 17 | G96 | 0.8− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 704 | 0.8− | 0.2− | 2003 10 29 | 699 | 0.5− | 1.2− | 2005 03 17 | G96 | 1.7− | 0.2− |
| 1999 12 05 | 704 | 0.0 | 0.6− | 2005 02 02 | 704 | 0.5+ | 0.6+ | 2005 03 17 | G96 | 1.4− | 0.5− |
| 2003 09 28 | 704 | 0.6+ | 0.8+ | 2005 02 02 | 704 | 0.6+ | 0.1− | 2006 05 08 | G96 | 0.4− | 0.3+ |
| 2003 09 28 | 704 | 0.1+ | 0.5+ | 2005 02 02 | 703 | 0.4+ | 1.3+ | 2006 05 08 | G96 | 0.1− | 0.1+ |
| 2003 09 28 | 704 | 0.4+ | 1.0+ | 2005 02 02 | 704 | 0.6+ | 0.5+ | 2006 05 08 | G96 | 0.2+ | 0.1− |
| 2003 09 28 | 704 | 0.6+ | 0.9+ | 2005 02 02 | 703 | 2.1+ | 0.2+ | 2006 05 08 | G96 | 0.3+ | 0.2+ |
| 2003 10 19 | 704 | 0.2+ | 1.0+ | 2005 02 02 | 703 | 0.3+ | 0.2− | | | | |

**2003 SJ$_{322}$ = 2004 XM$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.40216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18293650 | $\omega$ | 214.95156 | | +0.97821345 | | −0.19548444 |
| $a$ | 3.0732825 | $\Omega$ | 156.03158 | | +0.20684186 | | +0.94652161 |
| $e$ | 0.1028074 | $i$ | 9.90635 | | −0.01774523 | | +0.25667622 |
| $P$ | 5.39 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.6− | 0.6+ | 2003 10 23 | 645 | 0.1+ | 0.0 | 2004 12 15 | 599 | 0.4+ | 0.1− |
| 2000 03 03 | 704 | 0.1− | 0.4− | 2003 10 23 | 645 | 0.0 | 0.0 | 2004 12 15 | 599 | 0.5+ | 0.2− |
| 2000 03 03 | 704 | 0.4− | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2004 12 15 | 599 | 0.5+ | 0.1+ |
| 2000 03 03 | 704 | 1.3+ | 0.7+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2004 12 15 | 599 | 0.6+ | 0.2− |
| 2003 09 28 | 699 | 0.5− | 0.1− | 2003 10 27 | 699 | 1.2− | 0.3− | 2005 01 13 | 703 | 0.0 | 0.1− |
| 2003 09 28 | 699 | 1.2+ | 0.1− | 2003 10 27 | 699 | 0.6− | 0.2+ | 2005 01 13 | 703 | 0.9+ | 0.5− |
| 2003 09 28 | 699 | 0.3+ | 0.3+ | 2003 10 27 | 699 | 0.1− | 0.2+ | 2005 01 13 | 703 | 1.1− | 0.6+ |
| 2003 09 28 | 699 | 0.4+ | 0.1+ | 2003 10 27 | 699 | 0.2+ | 0.2+ | 2005 01 13 | 703 | 0.2− | 0.0 |
| 2003 10 20 | 704 | 0.4+ | 0.8+ | 2003 11 21 | 703 | (2.4− | 0.4−) | 2005 02 02 | 703 | 0.1− | 0.7+ |
| 2003 10 20 | 704 | 0.2+ | 0.9+ | 2003 11 21 | 703 | 1.0− | 1.1+ | 2005 02 02 | 703 | 0.4− | 0.6− |
| 2003 10 20 | 704 | 0.0 | 0.7+ | 2003 11 21 | 703 | 0.2− | 0.1+ | 2005 02 02 | 703 | 0.5− | 0.6− |
| 2003 10 20 | 704 | 0.2+ | 0.0 | 2003 11 21 | 703 | 1.2− | 0.0 | 2005 02 02 | 703 | 0.3− | 0.6− |
| 2003 10 20 | 704 | 0.5− | 0.7+ | 2003 11 24 | 644 | 0.2− | 0.4+ | 2006 04 07 | 291 | 0.1− | 0.2+ |
| 2003 10 22 | 645 | 0.0 | 0.0 | 2003 11 24 | 644 | 0.1− | 0.6+ | 2006 04 07 | 291 | 0.1+ | 0.1+ |
| 2003 10 22 | 645 | 0.0 | 0.1− | 2003 11 24 | 644 | 0.0 | 0.2+ | 2006 04 07 | 291 | 0.0 | 0.1− |

**2003 SK$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.93407 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20278359 | $\omega$ | 138.11446 | | −0.67205512 | | +0.73838149 |
| $a$ | 2.8693323 | $\Omega$ | 89.57857 | | −0.69339972 | | −0.60097082 |
| $e$ | 0.0159572 | $i$ | 3.20966 | | −0.25988219 | | −0.30598505 |
| $P$ | 4.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.6− | 0.5− | 2003 09 28 | 691 | 0.2− | 0.3+ | 2006 04 02 | 691 | 0.5+ | 0.4+ |
| 1996 03 26 | 691 | 0.7− | 0.3− | 2003 10 21 | 691 | 0.3− | 0.4+ | 2006 04 02 | 691 | 0.1+ | 0.3+ |
| 1996 03 26 | 691 | 0.3− | 0.6− | 2003 10 21 | 691 | 0.0 | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.4+ |
| 1999 12 05 | 691 | 0.3+ | 0.2+ | 2003 10 21 | 691 | 0.0 | 0.2+ | 2006 04 07 | 691 | 0.0 | 0.2+ |
| 1999 12 05 | 691 | 0.3+ | 0.2+ | 2003 11 28 | 691 | 0.3+ | 0.1+ | 2006 04 07 | 691 | 0.4+ | 1.0+ |
| 1999 12 05 | 691 | 0.3+ | 0.1− | 2003 11 28 | 691 | 0.1− | 0.1+ | 2006 04 07 | 691 | 0.0 | 0.0 |
| 1999 12 17 | 691 | 0.6+ | 0.0 | 2003 11 28 | 691 | 0.1+ | 0.3− | 2006 04 24 | 704 | 0.1+ | 0.4+ |
| 1999 12 17 | 691 | 0.2+ | 0.2− | 2005 01 18 | 691 | 0.5− | 0.2+ | 2006 04 24 | 704 | 1.0+ | 0.8+ |
| 1999 12 17 | 691 | 0.1+ | 0.3− | 2005 01 18 | 691 | 0.3− | 0.5+ | 2006 04 24 | 704 | 0.1− | 0.7+ |
| 2001 03 26 | 695 | 0.7+ | 0.3+ | 2005 01 18 | 691 | 0.4− | 0.4+ | 2006 05 24 | G96 | 0.5+ | 0.0 |
| 2001 03 26 | 695 | 0.2+ | 0.5+ | 2006 03 25 | 691 | 0.1+ | 0.0 | 2006 05 24 | G96 | 0.4− | 0.0 |
| 2003 09 28 | 691 | 0.3− | 0.1+ | 2006 03 25 | 691 | 0.2+ | 0.1+ | 2006 05 24 | G96 | 0.4− | 0.0 |
| 2003 09 28 | 691 | 0.3− | 0.0 | 2006 03 25 | 691 | 0.2+ | 0.1− | 2006 05 24 | G96 | 0.7− | 0.2− |

**2003 SL$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.72830 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23849534 | $\omega$ | 164.85029 | | +0.87793123 | | −0.45224049 |
| $a$ | 2.5752306 | $\Omega$ | 223.17809 | | +0.41192637 | | +0.88081298 |
| $e$ | 0.2788982 | $i$ | 13.28238 | | +0.24403570 | | +0.14016786 |
| $P$ | 4.13 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 704 | 1.2− | 1.8− | 2003 09 28 | 704 | (0.4+ | 3.6+) | 2003 11 30 | 704 | 0.2− | 0.3+ |
| 1999 12 16 | 704 | 0.2− | 1.4− | 2003 09 28 | 704 | (0.2+ | 2.3+) | 2003 11 30 | 704 | 0.3+ | 0.0 |
| 1999 12 16 | 704 | 0.7− | 1.4− | 2003 10 21 | 704 | 0.7− | 1.2+ | 2003 11 30 | 704 | 0.0 | 0.5− |
| 1999 12 16 | 704 | 0.2− | 1.0− | 2003 10 21 | 704 | 0.3− | 1.1+ | 2004 01 29 | 704 | 0.0 | 0.1− |
| 1999 12 16 | 704 | 1.1− | 1.5− | 2003 10 21 | 704 | 0.2− | 0.6+ | 2004 01 29 | 704 | 0.3− | 0.2+ |
| 2000 02 08 | 704 | 0.1+ | 0.5+ | 2003 10 21 | 704 | 0.3+ | 0.5+ | 2004 01 29 | 704 | 0.1+ | 0.0 |
| 2000 02 08 | 704 | 0.1− | 0.6+ | 2003 11 01 | 704 | 0.5+ | 0.3+ | 2004 01 29 | 704 | 0.0 | 0.2+ |
| 2000 02 08 | 704 | 0.1+ | 0.9+ | 2003 11 01 | 704 | 0.0 | 0.6+ | 2005 05 01 | 644 | 0.0 | 0.4+ |
| 2000 02 08 | 704 | 0.9+ | 0.2+ | 2003 11 01 | 704 | 0.6+ | 0.8+ | 2005 05 01 | 644 | 0.3+ | 0.8+ |
| 2000 02 08 | 704 | 0.8+ | 0.7+ | 2003 11 01 | 704 | 0.4− | 1.1+ | 2005 05 01 | 644 | 0.2+ | 0.6+ |
| 2002 07 09 | 704 | 0.4+ | 0.6+ | 2003 11 01 | 704 | 1.9+ | 0.6+ | 2006 08 12 | 644 | 0.1+ | 0.2+ |
| 2002 07 09 | 704 | 0.5+ | 0.1+ | 2003 11 20 | 703 | 0.4− | 0.3− | 2006 08 12 | 644 | 0.2− | 0.8+ |
| 2002 07 09 | 704 | 0.9− | 0.1+ | 2003 11 20 | 703 | 0.1− | 0.4− | 2006 08 12 | 644 | 0.5− | 0.2+ |
| 2002 07 09 | 704 | 0.0 | 0.4+ | 2003 11 20 | 703 | (2.7+ | 0.8+) | 2006 08 23 | 644 | 0.5− | 0.3+ |
| 2002 07 09 | 704 | 0.3+ | 0.5+ | 2003 11 20 | 703 | 1.8+ | 0.8+ | 2006 08 23 | 644 | 0.5− | 0.2+ |
| 2003 09 28 | 704 | (0.4+ | 2.4+) | 2003 11 30 | 704 | 0.4− | 0.6+ | 2006 08 23 | 644 | 0.5+ | 0.3+ |
| 2003 09 28 | 704 | 0.3− | 1.4+ | 2003 11 30 | 704 | 0.4+ | 0.3+ | | | | |

**2003 SM$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.65684 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18002357 | $\omega$ | 46.42251 | | +0.87652564 | | +0.42899122 |
| $a$ | 3.1063458 | $\Omega$ | 287.06403 | | −0.48053982 | | +0.75346083 |
| $e$ | 0.2460374 | $i$ | 13.20214 | | −0.02800517 | | +0.49826029 |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 699 | 0.9+ | 0.1+ | 2003 10 25 | 704 | 0.6+ | 1.3+ | 2003 11 03 | 704 | 1.6+ | 1.0− |
| 2003 09 29 | 699 | 1.0− | 1.9+ | 2003 10 25 | 704 | 0.2− | 0.5+ | 2003 11 03 | 704 | 0.6+ | 0.3+ |
| 2003 09 29 | 699 | 1.0− | 0.0 | 2003 10 25 | 704 | 0.7− | 0.8− | 2004 12 16 | 691 | 0.1+ | 0.1+ |
| 2003 09 29 | 699 | 0.0 | 0.8− | 2003 10 25 | 704 | 0.7− | 0.5− | 2004 12 16 | 691 | 0.1+ | 0.0 |
| 2003 10 18 | 644 | 0.2+ | 0.4− | 2003 10 25 | 704 | 0.3− | 0.2+ | 2004 12 16 | 691 | 0.0 | 0.1+ |
| 2003 10 18 | 644 | 0.3+ | 0.1− | 2003 10 25 | 704 | 0.3+ | 0.3+ | 2005 01 16 | 691 | 0.0 | 0.1+ |
| 2003 10 18 | 644 | 0.3+ | 0.1− | 2003 10 25 | 704 | 0.6− | 0.5− | 2005 01 16 | 691 | 0.1− | 0.1− |
| 2003 10 25 | 704 | 0.0 | 0.1+ | 2003 10 25 | 704 | 0.2− | 0.2− | 2005 01 16 | 691 | 0.2− | 0.2− |
| 2003 10 25 | 704 | 0.1− | 0.3− | 2003 11 03 | 704 | (1.6+ | 2.3−) | | | | |

**2003 SN$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.02375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21754857 | $\omega$ | 91.42807 | | +0.88101110 | | −0.46372805 |
| $a$ | 2.7379902 | $\Omega$ | 296.20777 | | +0.38184018 | | +0.81390012 |
| $e$ | 0.1221133 | $i$ | 5.99333 | | +0.27931617 | | +0.35003268 |
| $P$ | 4.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 704 | (2.5− | 1.6−) | 2003 10 29 | 699 | 0.4+ | 0.4− | 2003 12 10 | 644 | 0.2− | 0.0 |
| 2003 09 30 | 704 | 0.7− | 0.1− | 2003 10 29 | 699 | 1.3− | 0.0 | 2003 12 10 | 644 | 0.1− | 0.3− |
| 2003 09 30 | 704 | 0.5− | 1.2+ | 2003 11 02 | 704 | 1.3+ | 0.5+ | 2005 02 14 | 691 | 1.1+ | 0.3− |
| 2003 10 22 | 704 | 0.2− | 0.0 | 2003 11 02 | 704 | 0.1+ | 1.7− | 2005 02 14 | 691 | 0.3− | 0.3+ |
| 2003 10 22 | 704 | 0.4+ | 0.5+ | 2003 11 02 | 704 | (0.6+ | 2.6−) | 2005 02 14 | 691 | 0.4− | 0.2+ |
| 2003 10 22 | 704 | 0.0 | 0.3− | 2003 11 19 | 704 | 0.1+ | 1.1+ | 2005 03 17 | G96 | 0.2− | 0.1+ |
| 2003 10 22 | 704 | 0.0 | 0.2+ | 2003 11 19 | 704 | 0.2+ | 0.2+ | 2005 03 17 | G96 | 0.5− | 0.3− |
| 2003 10 22 | 704 | 0.4+ | 0.1− | 2003 11 19 | 704 | 0.2+ | 0.6− | 2005 03 17 | G96 | 0.5− | 0.2− |
| 2003 10 29 | 699 | 0.4− | 0.8− | 2003 11 19 | 704 | 0.9+ | 0.7+ | 2005 03 17 | G96 | 0.4− | 0.2− |
| 2003 10 29 | 699 | 0.3− | 0.0 | 2003 12 10 | 644 | 0.2− | 0.1− | | | | |

**2003 SO$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.18376 | | (2000.0) | | | |
| $n$ | 0.24700020 | $\omega$ | 82.10844 | | +0.98387167 | +0.15867844 |
| $a$ | 2.5157715 | $\Omega$ | 268.73415 | | −0.17848736 | +0.90128755 |
| $e$ | 0.0464993 | $i$ | 4.73742 | | +0.01178128 | +0.40311525 |
| $P$ | 3.99 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 2.1+ | 0.1+ | 2003 09 30 | 691 | 0.0 | 0.2+ | 2003 10 29 | 699 | 0.1− | 0.3+ |
| 1999 10 10 | 704 | 0.3+ | 0.9− | 2003 10 17 | 691 | 0.1− | 0.1− | 2003 10 29 | 699 | 0.1− | 0.5− |
| 1999 10 10 | 704 | 1.2− | 0.5− | 2003 10 17 | 691 | 0.1− | 0.0 | 2003 11 02 | 691 | 0.0 | 0.1− |
| 1999 10 14 | 704 | 0.0 | 0.4− | 2003 10 17 | 691 | 0.0 | 0.0 | 2003 11 02 | 691 | 0.3− | 0.1+ |
| 1999 10 14 | 704 | 0.7− | 0.0 | 2003 10 17 | 644 | 0.3− | 0.1+ | 2003 11 02 | 691 | 0.2+ | 0.0 |
| 1999 10 14 | 704 | 0.6+ | 0.3− | 2003 10 17 | 644 | 0.1− | 0.0 | 2005 02 14 | 691 | 0.0 | 0.1− |
| 1999 10 14 | 704 | 0.2− | 0.6− | 2003 10 17 | 644 | 0.1− | 0.2+ | 2005 02 14 | 691 | 0.1− | 0.1+ |
| 2003 09 30 | 691 | 0.1+ | 0.3+ | 2003 10 29 | 699 | 0.6− | 0.7− | 2005 02 14 | 691 | 0.1+ | 0.0 |
| 2003 09 30 | 691 | 0.1+ | 0.2+ | 2003 10 29 | 699 | 0.8+ | 1.2+ | | | | |

**2003 SB$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 213.49791 | | (2000.0) | | | |
| $n$ | 0.18091239 | $\omega$ | 8.51033 | | +0.90178862 | +0.42929254 |
| $a$ | 3.0961632 | $\Omega$ | 325.92749 | | −0.40156896 | +0.78968957 |
| $e$ | 0.1551081 | $i$ | 5.10509 | | −0.15974875 | +0.43829020 |
| $P$ | 5.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.2− | 0.1+ | 2003 10 19 | 645 | 0.1+ | 0.0 | 2004 12 12 | 691 | 0.3+ | 0.1+ |
| 2003 09 16 | 691 | 0.2− | 0.4+ | 2003 10 22 | 691 | 0.2− | 0.2+ | 2004 12 12 | 691 | 0.3− | 0.2− |
| 2003 09 16 | 691 | 0.3− | 0.4+ | 2003 10 22 | 691 | 0.2+ | 0.3+ | 2004 12 12 | 691 | 0.1− | 0.2+ |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2003 10 22 | 691 | 0.2+ | 0.1+ | 2006 02 04 | 691 | 0.3+ | 0.0 |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 02 04 | 691 | 0.2− | 0.5− |
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 02 04 | 691 | 0.1− | 0.4+ |
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 11 19 | 645 | 0.0 | 0.0 | | | | |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2003 11 19 | 645 | 0.1+ | 0.0 | | | | |

**2003 SF$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 146.77617 | | (2000.0) | | | |
| $n$ | 0.22493435 | $\omega$ | 202.52812 | | −0.17039246 | −0.98420204 |
| $a$ | 2.6777223 | $\Omega$ | 257.30894 | | +0.91141177 | −0.13886298 |
| $e$ | 0.0374443 | $i$ | 2.82557 | | +0.37455974 | −0.10983363 |
| $P$ | 4.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.2− | 0.3+ | 2003 10 17 | 691 | 0.2− | 0.1+ | 2005 01 08 | 704 | 0.2+ | 0.1− |
| 2003 09 16 | 691 | 0.4− | 0.3+ | 2003 10 18 | 645 | 0.0 | 0.0 | 2005 01 17 | 691 | 0.1− | 0.2− |
| 2003 09 16 | 691 | 0.3− | 0.2+ | 2003 10 18 | 645 | 0.1+ | 0.0 | 2005 01 17 | 691 | 0.0 | 0.1− |
| 2003 09 29 | 645 | 0.0 | 0.2− | 2003 10 22 | 691 | 0.2− | 0.1+ | 2005 01 17 | 691 | 0.2− | 0.0 |
| 2003 09 29 | 645 | 0.0 | 0.2− | 2003 10 22 | 691 | 0.1+ | 0.4+ | 2006 06 01 | G96 | 0.4− | 0.3+ |
| 2003 09 30 | 691 | 0.3+ | 0.4+ | 2003 10 22 | 691 | 0.1− | 0.5+ | 2006 06 01 | G96 | 0.3+ | 0.1+ |
| 2003 09 30 | 691 | 0.1+ | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 06 01 | G96 | 0.0 | 0.3− |
| 2003 09 30 | 691 | 0.2+ | 0.3+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 06 01 | G96 | 0.3+ | 0.3+ |
| 2003 10 17 | 691 | 0.1+ | 0.1− | 2005 01 08 | 704 | 0.2+ | 0.5+ | | | | |
| 2003 10 17 | 691 | 0.3+ | 0.0 | 2005 01 08 | 704 | 0.8+ | 0.9+ | | | | |

**2003 SR$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 93.17103 | | (2000.0) | | | |
| $n$ | 0.21869638 | $\omega$ | 157.08328 | | −0.85037744 | −0.52523947 |
| $a$ | 2.7284018 | $\Omega$ | 351.03479 | | +0.44623801 | −0.68835808 |
| $e$ | 0.0930310 | $i$ | 11.59896 | | +0.27880072 | −0.50028657 |
| $P$ | 4.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.2+ | 0.2+ | 2003 09 16 | 691 | 0.4+ | 0.3+ | 2003 09 29 | 645 | 0.1− | 0.1− |
| 2001 02 17 | 704 | 1.2+ | 0.2+ | 2003 09 16 | 691 | 0.1− | 0.1+ | 2003 10 17 | 691 | 0.3− | 0.0 |
| 2001 02 17 | 704 | 0.4+ | 0.4+ | 2003 09 27 | 691 | 0.1+ | 0.3+ | 2003 10 17 | 691 | 0.3+ | 0.0 |
| 2001 02 17 | 704 | 0.7− | 0.4+ | 2003 09 27 | 691 | 0.2+ | 0.3+ | 2003 10 17 | 691 | 0.0 | 0.3+ |
| 2001 03 29 | 608 | 0.5− | 0.7− | 2003 09 27 | 691 | 0.1+ | 0.2+ | 2003 11 16 | 645 | 0.0 | 0.1− |
| 2001 03 29 | 608 | 0.1− | 0.0 | 2003 09 28 | 645 | 0.1− | 0.0 | 2003 11 16 | 645 | 0.0 | 0.0 |
| 2001 03 29 | 608 | 0.4− | 0.3− | 2003 09 28 | 645 | 0.1− | 0.1− | 2003 11 19 | 645 | 0.0 | 0.0 |
| 2003 09 16 | 691 | 0.1+ | 0.3+ | 2003 09 29 | 645 | 0.1− | 0.1− | 2003 11 19 | 645 | 0.2+ | 0.0 |

**2003 SF$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 268.81464 | | (2000.0) | | | |
| $n$ | 0.18394886 | $\omega$ | 41.16066 | | +0.07750269 | +0.99542123 |
| $a$ | 3.0619962 | $\Omega$ | 233.35824 | | −0.93200713 | +0.05240924 |
| $e$ | 0.1426057 | $i$ | 3.99815 | | −0.35405655 | +0.07993649 |
| $P$ | 5.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 10 18 | 645 | 0.0 | 0.1− | 2003 11 19 | 645 | 0.1− | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 10 20 | 691 | 0.0 | 0.8+ | 2003 11 19 | 645 | 0.1+ | 0.1− |
| 2003 09 17 | 691 | 0.0 | 0.3− | 2003 10 20 | 691 | 0.4+ | 0.5+ | 2006 01 09 | 691 | 0.1− | 0.1− |
| 2003 09 17 | 691 | 0.1+ | 0.2+ | 2003 10 20 | 691 | 0.1+ | 0.2+ | 2006 01 09 | 691 | 0.0 | 0.2+ |
| 2003 09 17 | 691 | 0.2− | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 01 09 | 691 | 0.1+ | 0.1− |
| 2003 10 18 | 645 | 0.1− | 0.0 | 2003 10 24 | 645 | 0.0 | 0.1− | | | | |

**2003 SH$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 189.29867 | | (2000.0) | | | |
| $n$ | 0.21064982 | $\omega$ | 101.42495 | | +0.67005939 | −0.74097702 |
| $a$ | 2.7974478 | $\Omega$ | 306.41050 | | +0.65772020 | +0.62038477 |
| $e$ | 0.0995364 | $i$ | 3.16431 | | +0.34412870 | +0.25705213 |
| $P$ | 4.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.4+ | 0.5+ | 2003 10 18 | 645 | 0.0 | 0.1− | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 17 | 691 | 0.1+ | 0.3+ | 2003 10 18 | 645 | 0.0 | 0.2− | 2004 12 19 | G96 | 0.1− | 0.2+ |
| 2003 09 17 | 691 | 0.1− | 0.5+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2004 12 19 | G96 | 0.4+ | 0.1+ |
| 2003 09 27 | 691 | 0.0 | 0.4+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2004 12 19 | G96 | 0.2+ | 0.5+ |
| 2003 09 27 | 691 | 0.0 | 0.1+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2004 12 19 | G96 | 0.1− | 0.1+ |
| 2003 09 27 | 691 | 0.0 | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 05 07 | G96 | 0.3+ | 0.1+ |
| 2003 10 17 | 691 | 0.1+ | 0.3+ | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 05 07 | G96 | 0.5− | 0.0 |
| 2003 10 17 | 691 | 0.3+ | 0.6+ | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 05 07 | G96 | 0.2+ | 0.0 |
| 2003 10 17 | 691 | 0.3− | 0.0 | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 07 | G96 | 0.2− | 0.2− |

**2003 SC$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.49378 | | (2000.0) | | | |
| $n$ | 0.23924227 | $\omega$ | 140.31221 | | +0.94386292 | +0.32645659 |
| $a$ | 2.5698677 | $\Omega$ | 200.80210 | | −0.32752030 | +0.90490277 |
| $e$ | 0.1752976 | $i$ | 8.17279 | | −0.04304927 | +0.27308802 |
| $P$ | 4.12 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.1+ | 2003 09 17 | 691 | 0.1− | 0.1+ | 2003 09 30 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 0.2+ | 0.7+ | 2003 09 17 | 691 | 0.2+ | 0.1− | 2003 09 30 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.2− | 2003 09 17 | 691 | 0.2+ | 0.1+ | 2003 10 19 | 645 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.1+ | 0.1+ | 2003 09 19 | 704 | 0.3− | 0.3− | 2003 10 19 | 645 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.2− | 0.1− | 2003 09 19 | 704 | 0.4+ | 0.9− | 2003 10 24 | 704 | 0.6+ | 1.6+ |
| 1999 11 12 | 691 | 0.0 | 0.1+ | 2003 09 19 | 704 | 0.4− | 0.9+ | 2003 10 24 | 704 | 0.1+ | 1.1+ |
| 1999 11 12 | 691 | 0.1− | 0.1− | 2003 09 19 | 704 | 0.1− | 0.4− | 2003 10 24 | 704 | 0.3+ | 0.9− |
| 1999 11 12 | 691 | 0.0 | 0.0 | 2003 09 30 | 691 | 0.1− | 0.1+ | | | | |

**2003 SE$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.87768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21197237 | $\omega$ | 33.32817 | | +0.73755277 | +0.67300443 | |
| $a$ | 2.7857996 | $\Omega$ | 284.26941 | | −0.63141015 | +0.65814799 | |
| $e$ | 0.1975505 | $i$ | 3.28332 | | −0.23945172 | +0.33750003 | |
| $P$ | 4.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 06 | 691 | 0.1− | 0.0 | 2003 09 27 | 704 | 0.5+ | 0.9+ | 2003 11 16 | 645 | 0.0 | 0.0 |
| 1994 11 06 | 691 | 0.2+ | 0.0 | 2003 09 27 | 704 | 0.6+ | 0.7+ | 2003 11 16 | 645 | 0.0 | 0.0 |
| 1994 11 06 | 691 | 0.1− | 0.1+ | 2003 09 27 | 704 | 0.1− | 1.1+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 17 | 691 | 0.0 | 0.4+ | 2003 09 27 | 704 | 0.6+ | 0.6+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2003 09 17 | 691 | 0.1− | 0.3+ | 2003 10 17 | 645 | 0.0 | 0.1− | 2006 03 02 | G96 | 0.2− | 0.6+ |
| 2003 09 17 | 691 | 0.0 | 0.3+ | 2003 10 17 | 645 | 0.0 | 0.1− | 2006 03 02 | G96 | 0.2− | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 03 02 | G96 | 0.5+ | 0.5+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 03 02 | G96 | 0.6+ | 0.3+ |

**2003 SK$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.45567 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12346425 | $\omega$ | 86.14335 | | +0.96926173 | −0.23816617 | |
| $a$ | 3.9943112 | $\Omega$ | 287.62705 | | +0.19210864 | +0.88933955 | |
| $e$ | 0.1405104 | $i$ | 3.71273 | | +0.15370741 | +0.39032299 | |
| $P$ | 7.98 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.2+ | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2004 11 11 | 691 | 0.2+ | 0.1− |
| 2003 09 17 | 691 | 0.1− | 0.1+ | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 01 08 | 691 | (0.7− | 1.9+) |
| 2003 09 17 | 691 | 0.3+ | 0.4+ | 2003 10 22 | 645 | 0.1+ | 0.0 | 2006 01 08 | 691 | 0.1+ | 0.2+ |
| 2003 09 28 | 691 | 0.2+ | 0.2+ | 2003 10 22 | 645 | 0.0 | 0.3− | 2006 01 08 | 691 | 0.2+ | 0.1− |
| 2003 09 28 | 691 | 0.1+ | 0.6+ | 2003 10 24 | 645 | 0.1+ | 0.1+ | 2006 01 22 | G96 | 0.6− | 0.1+ |
| 2003 09 28 | 691 | 0.5− | 0.3+ | 2003 10 24 | 645 | 0.1+ | 0.0 | 2006 01 22 | G96 | 0.4− | 0.0 |
| 2003 09 28 | 645 | 0.1− | 0.0 | 2003 11 19 | 645 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.3− | 0.6− |
| 2003 09 28 | 645 | 0.2− | 0.0 | 2003 11 19 | 645 | 0.0 | 0.1+ | 2006 01 22 | G96 | 0.1− | 0.0 |
| 2003 09 29 | 645 | 0.1− | 0.0 | 2004 11 11 | 691 | 0.0 | 0.2+ | | | | |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2004 11 11 | 691 | 0.3− | 0.0 | | | | |

**2003 SN$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.00135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19775661 | $\omega$ | 43.92743 | | −0.19446161 | −0.98021558 | |
| $a$ | 2.9177542 | $\Omega$ | 57.31865 | | +0.88743432 | −0.19183547 | |
| $e$ | 0.0112410 | $i$ | 2.51313 | | +0.41790549 | −0.04875006 | |
| $P$ | 4.98 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2003 09 17 | 691 | 0.6+ | 0.7− | 2003 10 19 | 645 | 0.0 | 0.0 |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 19 | 645 | 0.1− | 0.0 |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2003 09 26 | 645 | 0.1− | 0.1+ | 2003 10 22 | 645 | 0.0 | 0.0 |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2003 09 30 | 691 | 0.3− | 0.2+ | 2003 10 22 | 645 | 0.0 | 0.0 |
| 2003 09 17 | 691 | 0.2+ | 0.2+ | 2003 09 30 | 691 | 0.0 | 0.3+ | | | | |
| 2003 09 17 | 691 | 0.1+ | 0.3+ | 2003 09 30 | 691 | 0.0 | 0.2+ | | | | |

**2003 SO$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.16903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26613427 | $\omega$ | 285.27624 | | +0.54836881 | −0.83579319 | |
| $a$ | 2.3936952 | $\Omega$ | 131.43589 | | +0.78049487 | +0.49985549 | |
| $e$ | 0.0627470 | $i$ | 2.08139 | | +0.30019894 | +0.22714364 | |
| $P$ | 3.70 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.2− | 0.0 | 2003 09 26 | 645 | 0.1+ | 0.1− | 2003 10 24 | 691 | 0.5− | 0.6+ |
| 1994 03 10 | 691 | 0.1+ | 0.2− | 2003 09 26 | 645 | 0.1+ | 0.1− | 2003 10 24 | 691 | 0.5− | 0.2+ |
| 2000 12 22 | 691 | 0.0 | 0.1− | 2003 09 28 | 645 | 0.1+ | 0.1− | 2005 04 04 | G96 | 0.2− | 0.0 |
| 2000 12 22 | 691 | 0.1+ | 0.1+ | 2003 09 28 | 645 | 0.1+ | 0.1− | 2005 04 04 | G96 | 0.1− | 0.4− |
| 2000 12 22 | 691 | 0.1− | 0.1− | 2003 09 30 | 691 | 0.1+ | 0.1+ | 2005 04 04 | G96 | 0.1− | 0.5− |
| 2003 09 17 | 691 | 0.1+ | 0.2+ | 2003 09 30 | 691 | 0.3+ | 0.4+ | 2005 04 04 | G96 | 0.1− | 0.3− |
| 2003 09 17 | 691 | (1.7− | 0.3−) | 2003 09 30 | 691 | 0.1+ | 0.0 | | | | |
| 2003 09 17 | 691 | 0.7− | 0.6− | 2003 10 24 | 691 | 0.7− | 0.7+ | | | | |

**2003 ST$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.24097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27507053 | $\omega$ | 15.53670 | | +0.27347470 | +0.96032957 | |
| $a$ | 2.3415675 | $\Omega$ | 270.35822 | | −0.88822015 | +0.23034938 | |
| $e$ | 0.1560697 | $i$ | 3.12868 | | −0.36915655 | +0.15718231 | |
| $P$ | 3.58 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.3+ | 0.3− | 2003 10 17 | 645 | 0.2− | 0.2− | 2003 10 23 | 645 | 0.0 | 0.1+ |
| 2003 09 18 | 691 | 0.0 | 0.3− | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 04 19 | 691 | 0.0 | 0.3+ |
| 2003 09 18 | 691 | 0.1− | 0.0 | 2003 10 18 | 645 | 0.0 | 0.1+ | 2006 04 19 | 691 | 0.0 | 0.2+ |
| 2003 09 30 | 691 | 0.1+ | 0.4+ | 2003 10 22 | 691 | 0.4+ | 0.2+ | 2006 04 19 | 691 | 0.2− | 0.4+ |
| 2003 09 30 | 691 | 0.1+ | 0.3+ | 2003 10 22 | 691 | 0.1− | 0.3+ | 2006 05 05 | 691 | 0.1+ | 0.3− |
| 2003 09 30 | 691 | 0.1+ | 0.1+ | 2003 10 22 | 691 | 0.0 | 0.2− | 2006 05 05 | 691 | 0.4− | 0.9− |
| 2003 10 17 | 645 | 0.1− | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 05 | 691 | 0.5+ | 0.4+ |

**2003 SV$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.92330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23359841 | $\omega$ | 260.18848 | | −0.26719292 | −0.96279810 | |
| $a$ | 2.6110957 | $\Omega$ | 205.42018 | | +0.91687264 | −0.24111672 | |
| $e$ | 0.1390234 | $i$ | 5.39319 | | +0.29656789 | −0.12199404 | |
| $P$ | 4.22 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.4+ | 0.3+ | 2003 09 29 | 291 | 0.1− | 0.3+ | 2003 10 22 | 645 | 0.1+ | 0.1+ |
| 2003 09 18 | 691 | 0.1− | 0.3+ | 2003 09 29 | 291 | 0.2− | 0.0 | 2005 01 09 | 599 | 0.5− | 0.3− |
| 2003 09 18 | 691 | 0.0 | 0.1+ | 2003 10 18 | 645 | 0.0 | 0.1− | 2005 01 09 | 599 | 0.9− | 0.3− |
| 2003 09 27 | 691 | 0.1+ | 0.2− | 2003 10 18 | 645 | 0.0 | 0.1− | 2005 01 09 | 599 | 0.5− | 0.8+ |
| 2003 09 27 | 691 | 0.1− | 0.2− | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 02 02 | 704 | 0.5+ | 0.3− |
| 2003 09 27 | 691 | 0.2− | 0.3− | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 02 02 | 704 | 0.9+ | 0.1+ |
| 2003 09 29 | 291 | 0.0 | 0.2+ | 2003 10 22 | 645 | 0.1− | 0.0 | 2005 02 02 | 704 | 0.4+ | 0.2+ |

**2003 SB$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.74109 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18141302 | $\omega$ | 205.92008 | | +0.80378910 | −0.58772446 | |
| $a$ | 3.0904644 | $\Omega$ | 191.52546 | | +0.59372915 | +0.80227199 | |
| $e$ | 0.1154904 | $i$ | 27.48481 | | +0.03753376 | −0.10459261 | |
| $P$ | 5.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 644 | 0.2− | 0.1− | 2003 10 22 | 645 | 0.2− | 0.1+ | 2006 03 05 | 691 | 0.0 | 0.3− |
| 2003 09 18 | 644 | 0.2− | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 04 19 | G96 | 0.4− | 0.0 |
| 2003 09 18 | 644 | 0.0 | 0.0 | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 04 19 | G96 | 0.2+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 691 | 0.1+ | 0.3+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 04 19 | G96 | 0.1− | 0.0 |
| 2003 10 19 | 691 | 0.2+ | 0.0 | 2003 10 24 | 645 | 0.0 | 0.1+ | 2006 04 19 | G96 | 0.1+ | 0.3− |
| 2003 10 19 | 691 | 0.1+ | 0.1− | 2006 03 05 | 691 | 0.1− | 0.4+ | | | | |
| 2003 10 22 | 645 | 0.2+ | 0.1− | 2006 03 05 | 691 | 0.2+ | 0.0 | | | | |

**2003 SC**$_{326}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.82172 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26851122 | $\omega$ | 268.14885 | | −0.19873821 | | +0.98003185 |
| $a$ | 2.3795477 | $\Omega$ | 350.38085 | | −0.88332088 | | −0.18193859 |
| $e$ | 0.1822747 | $i$ | 2.18792 | | −0.42455548 | | −0.08022418 |
| $P$ | 3.67 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 691 | 0.0 | 0.2+ | 2003 09 25 | 947 | 1.0− | 1.5+ | 2003 10 23 | 645 | 0.0 | 0.1− |
| 2002 02 13 | 691 | 0.1+ | 0.2+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2003 10 23 | 645 | 0.1− | 0.0 |
| 2002 02 13 | 691 | 0.2+ | 0.1+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2006 04 07 | 691 | 0.1+ | 0.0 |
| 2002 03 07 | 209 | 0.0 | 1.3+ | 2003 09 29 | 691 | 0.0 | 0.1+ | 2006 04 07 | 691 | 0.2+ | 0.1+ |
| 2002 03 07 | 209 | 0.3+ | 0.7+ | 2003 09 29 | 691 | 0.2+ | 0.3+ | 2006 04 07 | 691 | 0.0 | 0.1+ |
| 2002 03 08 | 209 | 0.3+ | 0.3+ | 2003 09 29 | 691 | 0.0 | 0.2+ | 2006 05 03 | G96 | 0.4− | 0.2+ |
| 2003 09 18 | 691 | 0.1+ | 0.3+ | 2003 09 29 | 645 | 0.0 | 0.1+ | 2006 05 03 | G96 | 0.1− | 0.3+ |
| 2003 09 18 | 691 | 0.1+ | 0.4+ | 2003 09 29 | 645 | 0.0 | 0.2+ | 2006 05 03 | G96 | 0.1− | 0.3+ |
| 2003 09 18 | 691 | 0.1+ | 0.2+ | 2003 10 18 | 645 | 0.1− | 0.0 | | | | |
| 2003 09 25 | 947 | 0.6− | 0.1+ | 2003 10 18 | 645 | 0.1− | 0.0 | | | | |

**2003 SJ**$_{326}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.54775 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19132980 | $\omega$ | 14.44899 | | +0.47013396 | | +0.88255896 |
| $a$ | 2.9827325 | $\Omega$ | 283.59454 | | −0.81057823 | | +0.42817593 |
| $e$ | 0.1281741 | $i$ | 0.47063 | | −0.34919479 | | +0.19430659 |
| $P$ | 5.15 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 0.1− | 0.1+ | 2003 09 28 | 291 | 0.1− | 0.2+ | 2003 10 19 | 645 | 0.1+ | 0.1− |
| 1998 10 20 | 691 | 0.6− | 0.7+ | 2003 09 28 | 291 | 0.2− | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.1+ |
| 1998 10 20 | 691 | 0.3+ | 0.1+ | 2003 09 29 | 645 | 0.0 | 0.1− | 2003 10 24 | 645 | 0.0 | 0.0 |
| 2003 09 18 | 691 | 0.1+ | 0.1− | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 02 04 | G96 | 0.1− | 0.1− |
| 2003 09 18 | 691 | 0.4+ | 0.0 | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 02 04 | G96 | 0.1− | 0.5− |
| 2003 09 18 | 691 | 0.3+ | 0.0 | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 02 04 | G96 | 0.1− | 0.7− |
| 2003 09 28 | 291 | 0.2− | 0.3+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 02 04 | G96 | 0.1− | 0.0 |

**2003 SS**$_{326}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.18014 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22267838 | $\omega$ | 126.56749 | | +0.97188429 | | +0.22671906 |
| $a$ | 2.6957773 | $\Omega$ | 220.43790 | | −0.23490996 | | +0.91520555 |
| $e$ | 0.0114776 | $i$ | 5.62322 | | −0.01606960 | | +0.33316253 |
| $P$ | 4.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.5− | 0.8+ | 2003 09 18 | 644 | 0.6− | 0.3+ | 2003 09 29 | 645 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 1.4− | 1.0+ | 2003 09 18 | 644 | 0.2− | 0.2+ | 2003 10 17 | 645 | 0.1+ | 0.1+ |
| 1999 10 06 | 704 | 1.1+ | 0.9− | 2003 09 18 | 644 | 0.1− | 0.3+ | 2003 10 17 | 645 | 0.1+ | 0.0 |
| 1999 10 06 | 704 | 1.2+ | 0.5− | 2003 09 20 | 691 | 0.0 | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.0 |
| 1999 11 15 | 691 | 0.2+ | 0.0 | 2003 09 20 | 691 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 |
| 1999 11 15 | 691 | 0.2− | 0.0 | 2003 09 20 | 691 | 0.0 | 0.2+ | 2003 10 22 | 645 | 0.1− | 0.0 |
| 1999 11 15 | 691 | 0.1− | 0.1− | 2003 09 29 | 645 | 0.0 | 0.1− | 2003 10 22 | 645 | 0.1− | 0.1− |

**2003 ST**$_{326}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.69449 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25448892 | $\omega$ | 86.21675 | | +0.15071605 | | +0.98822057 |
| $a$ | 2.4661726 | $\Omega$ | 192.54585 | | −0.94858245 | | +0.13700530 |
| $e$ | 0.1010369 | $i$ | 7.01990 | | −0.27834511 | | +0.06818829 |
| $P$ | 3.87 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.0 | 0.3− | 2003 09 29 | 691 | 0.1+ | 0.1+ | 2006 04 25 | 691 | 0.1+ | 0.2− |
| 2003 09 18 | 691 | 0.1− | 0.1+ | 2003 09 29 | 691 | 0.1− | 0.1+ | 2006 04 25 | 691 | 0.4+ | 0.3− |
| 2003 09 18 | 691 | 0.0 | 0.4− | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 04 25 | 691 | 0.7− | 1.3+ |
| 2003 09 29 | 704 | 1.2+ | 0.0 | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 04 29 | 691 | 0.0 | 0.5− |
| 2003 09 29 | 704 | 1.5+ | 1.0+ | 2003 10 19 | 645 | 0.1− | 0.1− | 2006 04 29 | 691 | 0.2+ | 0.2− |
| 2003 09 29 | 704 | 0.2− | 1.3+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 04 29 | 691 | (0.7+ | 3.6−) |
| 2003 09 29 | 704 | 1.1− | 0.6+ | 2003 10 24 | 645 | 0.0 | 0.0 | | | | |
| 2003 09 29 | 691 | 0.1+ | 0.2+ | 2003 10 24 | 645 | 0.1+ | 0.1+ | | | | |

**2003 SW**$_{326}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.13715 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28713642 | $\omega$ | 88.97823 | | −0.20295979 | | −0.97903108 |
| $a$ | 2.2755019 | $\Omega$ | 12.77235 | | +0.86401284 | | −0.18745742 |
| $e$ | 0.1805934 | $i$ | 4.53433 | | +0.46074845 | | −0.07973619 |
| $P$ | 3.43 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 691 | 0.6− | 0.2− | 2003 09 26 | 645 | 0.2+ | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 |
| 1996 09 17 | 691 | 0.0 | 0.4+ | 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 10 23 | 645 | 0.1+ | 0.0 |
| 1996 09 17 | 691 | 0.4+ | 0.3+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2003 11 19 | 645 | 0.2− | 0.1+ |
| 2003 09 18 | 691 | 0.2+ | 0.5+ | 2003 10 18 | 645 | 0.1− | 0.1+ | 2003 11 19 | 645 | 0.2− | 0.2+ |
| 2003 09 18 | 691 | 0.2+ | 0.3+ | 2003 10 18 | 645 | 0.1− | 0.1+ | 2005 04 11 | 691 | 0.6+ | 0.1+ |
| 2003 09 18 | 691 | 0.3− | 0.3+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2005 04 11 | 691 | 0.1− | 0.0 |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 19 | 645 | 0.0 | 0.1− | 2005 04 11 | 691 | 0.2− | 0.6+ |

**2003 SP**$_{327}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.24063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26542946 | $\omega$ | 71.22578 | | +0.30468400 | | +0.95148691 |
| $a$ | 2.3979307 | $\Omega$ | 216.60141 | | −0.89871784 | | +0.27228791 |
| $e$ | 0.1635584 | $i$ | 4.12590 | | −0.31539485 | | +0.14328973 |
| $P$ | 3.71 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 691 | 0.4− | 0.1+ | 2003 10 03 | 691 | 0.2+ | 0.2+ | 2006 03 26 | 691 | 0.0 | 0.0 |
| 2003 09 19 | 691 | 0.4− | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 03 26 | 691 | 0.2+ | 0.3+ |
| 2003 09 19 | 691 | 0.4− | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 04 09 | 691 | 0.1+ | 0.3− |
| 2003 09 29 | 691 | 0.2+ | 0.0 | 2003 10 24 | 645 | 0.1+ | 0.1− | 2006 04 09 | 691 | 0.1− | 0.0 |
| 2003 09 29 | 691 | 0.5+ | 0.1+ | 2003 10 24 | 645 | 0.2− | 0.4− | 2006 04 09 | 691 | 0.0 | 0.1− |
| 2003 09 29 | 691 | 0.4+ | 0.1+ | 2003 11 19 | 645 | 0.0 | 0.1+ | 2006 04 21 | 703 | (1.9− | 0.0 ) |
| 2003 10 03 | 691 | 0.2+ | 0.3+ | 2003 11 19 | 645 | 0.0 | 0.2+ | 2006 04 21 | 703 | (1.9− | 1.4+) |
| 2003 10 03 | 691 | 0.2+ | 0.4+ | 2006 03 26 | 691 | 0.2− | 0.1+ | 2006 04 21 | 703 | (0.3+ | 1.9−) |

**2003 SD**$_{328}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.33948 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37990788 | $\omega$ | 223.32452 | | +0.54416017 | | −0.83344120 |
| $a$ | 1.8880660 | $\Omega$ | 194.59891 | | +0.83547487 | | +0.54878614 |
| $e$ | 0.0438647 | $i$ | 22.45120 | | +0.07662535 | | −0.06488092 |
| $P$ | 2.59 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 704 | 0.5+ | 1.8+ | 2003 09 30 | 699 | 0.6− | 0.6+ | 2003 10 25 | 704 | 0.4− | 0.0 |
| 1998 10 16 | 704 | 0.2+ | 1.7− | 2003 09 30 | 699 | 0.6+ | 0.1+ | 2003 10 25 | 704 | 0.2− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 704 | (1.7− | 2.6+) | 2003 09 30 | 699 | 0.2− | 0.8+ | 2005 04 05 | 703 | (0.4− | 3.1−) | | |
| 1998 10 16 | 704 | 0.6− | 1.4+ | 2003 10 17 | 645 | 0.1+ | 0.1− | 2005 04 05 | 703 | 1.1− | 1.1− | | |
| 2003 09 20 | 699 | 0.2− | 1.0+ | 2003 10 17 | 645 | 0.0 | 0.1− | 2005 04 05 | 703 | 0.9+ | 1.3− | | |
| 2003 09 20 | 699 | 0.7+ | 0.1− | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 04 05 | 703 | 1.3− | 0.4− | | |
| 2003 09 20 | 699 | 0.9+ | 0.2+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2005 05 04 | 703 | 0.0 | 0.5+ | | |
| 2003 09 20 | 699 | (1.9+ | 2.8−) | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 05 04 | 703 | 0.8− | 0.2+ | | |
| 2003 09 20 | 704 | 0.5+ | 0.6+ | 2003 10 22 | 645 | 0.1− | 0.0 | 2005 05 04 | 703 | 0.2− | 0.4+ | | |
| 2003 09 20 | 704 | 0.1+ | 0.3+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2005 05 04 | 703 | 0.3− | 0.3− | | |
| 2003 09 20 | 704 | 0.6+ | 0.8+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2005 05 13 | 704 | 1.3+ | 0.2+ | | |
| 2003 09 20 | 704 | 0.1+ | 0.2+ | 2003 10 25 | 704 | 0.4− | 0.5+ | 2005 05 13 | 704 | 1.0+ | 0.2− | | |
| 2003 09 30 | 699 | 0.6+ | 0.0 | 2003 10 25 | 704 | 1.0+ | 0.8− | 2005 05 13 | 704 | 0.5+ | 1.2+ | | |

**2003 SE$_{328}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.38058 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19517340 | $\omega$ | 349.93540 | | +0.58325075 | | +0.80796377 |
| $a$ | 2.9434430 | $\Omega$ | 315.68204 | | −0.73668305 | | +0.48270744 |
| $e$ | 0.0429467 | $i$ | 6.88446 | | −0.34222310 | | +0.33791725 |
| $P$ | 5.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 691 | 0.1− | 0.5+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 01 28 | G96 | 0.1− | 0.4+ | |
| 2003 09 20 | 691 | 0.1+ | 0.3+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 01 28 | G96 | 0.1− | 0.2− | |
| 2003 09 20 | 691 | 0.2+ | 0.1+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 01 28 | G96 | 0.5− | 0.4− | |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 22 | 645 | 0.1+ | 0.0 | 2006 03 02 | G96 | 0.1+ | 0.5+ | |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 02 | G96 | 0.3+ | 0.1+ | |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 03 02 | G96 | 0.5+ | 0.1+ | |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 01 28 | G96 | 0.0 | 0.2− | 2006 03 02 | G96 | 0.1+ | 0.2+ | |

**2003 SL$_{328}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.44525 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24568286 | $\omega$ | 359.39190 | | −0.93824567 | | −0.34553379 |
| $a$ | 2.5247563 | $\Omega$ | 160.36631 | | +0.31763877 | | −0.88021818 |
| $e$ | 0.0093241 | $i$ | 2.96199 | | +0.13711552 | | −0.32530349 |
| $P$ | 4.01 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 699 | 1.4− | 0.7+ | 2003 10 16 | 691 | 0.1− | 0.3− | 2005 01 19 | 691 | 0.0 | 0.3− | |
| 2003 09 20 | 699 | 0.4− | 0.2+ | 2003 10 21 | 699 | 1.4+ | 1.0+ | 2005 01 19 | 691 | 0.0 | 0.3+ | |
| 2003 09 20 | 699 | 0.1− | 0.3+ | 2003 10 21 | 699 | 0.6+ | 1.1+ | 2005 02 09 | 699 | 0.4+ | 0.1+ | |
| 2003 09 20 | 699 | 0.7+ | 0.6+ | 2003 10 21 | 699 | 0.3− | 0.2− | 2005 02 09 | 699 | 1.0+ | 0.9+ | |
| 2003 09 28 | 691 | 0.0 | 0.1− | 2003 10 21 | 699 | (0.3+ | 2.4−) | 2005 02 09 | 699 | 0.4− | 0.4+ | |
| 2003 09 28 | 691 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.3+ | 0.1− | 2005 02 09 | 699 | 0.7− | 1.1+ | |
| 2003 09 28 | 691 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.5− | 0.0 | 2005 02 09 | 704 | 0.3+ | 0.9− | |
| 2003 10 16 | 691 | 0.1− | 0.4− | 2003 10 24 | 704 | 0.3− | 1.0+ | 2005 02 09 | 704 | 0.4+ | 0.6+ | |
| 2003 10 16 | 691 | 0.0 | 0.3− | 2005 01 19 | 691 | 0.1− | 0.6− | 2005 02 09 | 704 | 0.6− | 0.5+ | |

**2003 SE$_{329}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.19498 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18260953 | $\omega$ | 10.40128 | | +0.99271218 | | −0.11997409 |
| $a$ | 3.0769499 | $\Omega$ | 356.43015 | | +0.09327844 | | +0.82459305 |
| $e$ | 0.1000888 | $i$ | 10.49956 | | +0.07629978 | | +0.55285850 |
| $P$ | 5.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 699 | 0.6− | 0.5− | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 02 27 | G96 | 0.3+ | 0.0 | |
| 2003 09 22 | 699 | 0.8+ | 0.1− | 2003 10 18 | 645 | 0.1− | 0.1− | 2006 02 27 | G96 | 0.4+ | 0.5− | |
| 2003 09 22 | 699 | 0.2− | 0.4+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 03 05 | G96 | 0.3+ | 1.0+ | |
| 2003 09 22 | 699 | 0.2− | 0.3+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 03 05 | G96 | 0.4− | 0.1+ | |
| 2003 09 29 | 691 | 0.0 | 0.2+ | 2003 10 24 | 691 | 0.2+ | 0.4+ | 2006 03 05 | G96 | 0.5+ | 0.0 | |
| 2003 09 29 | 704 | 1.0− | 0.0 | 2003 10 24 | 691 | 0.2+ | 0.4+ | 2006 03 05 | G96 | 0.1+ | 0.2− | |
| 2003 09 29 | 691 | 0.1+ | 0.1+ | 2003 10 24 | 691 | 0.3+ | 0.4+ | 2006 04 21 | G96 | 0.2+ | 0.5+ | |
| 2003 09 29 | 704 | 0.4− | 1.1+ | 2006 02 27 | 691 | 0.1+ | 0.4+ | 2006 04 21 | G96 | 0.1− | 0.3+ | |
| 2003 09 29 | 704 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.7− | 0.2− | 2006 04 21 | G96 | 0.2+ | 0.0 | |
| 2003 09 29 | 704 | 0.0 | 0.8+ | 2006 02 27 | 691 | 0.4+ | 0.2− | 2006 04 21 | G96 | 0.2− | 0.5+ | |
| 2003 09 29 | 704 | 0.0 | 0.1+ | 2006 02 27 | G96 | 0.2+ | 0.4− | | | | | |
| 2003 09 29 | 691 | 0.0 | 0.1+ | 2006 02 27 | G96 | 0.3+ | 0.2− | | | | | |

**2003 SM$_{329}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.41324 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19548800 | $\omega$ | 67.84606 | | +0.40239133 | | +0.91145526 |
| $a$ | 2.9402842 | $\Omega$ | 226.17755 | | −0.87756911 | | +0.35741136 |
| $e$ | 0.0644148 | $i$ | 6.81531 | | −0.26067927 | | +0.20373129 |
| $P$ | 5.04 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 0.1− | 0.1− | 2003 09 28 | 691 | 0.3+ | 0.0 | 2003 10 25 | 691 | 0.3− | 0.1+ | |
| 1998 10 20 | 691 | 0.2+ | 0.5− | 2003 10 19 | 691 | 0.1+ | 0.0 | 2003 10 25 | 691 | 0.4− | 0.0 | |
| 1998 10 20 | 691 | 0.1+ | 0.5− | 2003 10 19 | 691 | 0.2+ | 0.1− | 2003 10 25 | 691 | 0.4− | 0.2+ | |
| 2003 09 22 | 644 | 0.2+ | 0.1− | 2003 10 19 | 691 | 0.0 | 0.1− | 2006 05 31 | G96 | 0.2− | 0.0 | |
| 2003 09 22 | 644 | 0.2− | 0.1+ | 2003 10 24 | 704 | 0.3− | 0.1+ | 2006 05 31 | G96 | 0.2− | 0.2+ | |
| 2003 09 22 | 644 | 0.1+ | 0.4− | 2003 10 24 | 704 | 0.0 | 1.8+ | 2006 05 31 | G96 | 0.4+ | 0.7+ | |
| 2003 09 28 | 691 | 0.0 | 0.2+ | 2003 10 24 | 704 | 0.1+ | 0.6+ | 2006 05 31 | G96 | 0.4+ | 0.7+ | |
| 2003 09 28 | 691 | 0.1+ | 0.4+ | 2003 10 24 | 704 | 0.3+ | 1.2+ | | | | | |

**2003 SJ$_{330}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.03190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28330295 | $\omega$ | 225.31474 | | +0.00457411 | | +0.99985785 |
| $a$ | 2.2959829 | $\Omega$ | 44.95493 | | −0.91085449 | | +0.01086335 |
| $e$ | 0.1725042 | $i$ | 1.31609 | | −0.41270229 | | −0.01289422 |
| $P$ | 3.48 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 291 | 0.4+ | 0.2+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.1+ | 0.0 | |
| 2002 02 13 | 291 | 0.4+ | 0.6+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | |
| 2002 02 13 | 291 | 0.3+ | 0.4+ | 2003 09 29 | 691 | 0.2− | 0.4+ | 2003 10 22 | 645 | 0.0 | 0.0 | |
| 2002 03 12 | 645 | 0.1− | 0.1− | 2003 09 29 | 691 | 0.6− | 0.5+ | 2003 10 22 | 645 | 0.1− | 0.0 | |
| 2002 03 12 | 645 | 0.1− | 0.1− | 2003 09 29 | 691 | 0.1− | 0.3+ | 2003 10 24 | 645 | 0.1+ | 0.1− | |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 18 | 645 | 0.0 | 0.1− | 2003 10 24 | 645 | 0.0 | 0.1− | |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 18 | 645 | 0.1+ | 0.1+ | | | | | |

**2003 SP$_{330}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.15279 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18367988 | $\omega$ | 219.08412 | | +0.13381036 | | +0.98867366 |
| $a$ | 3.0649847 | $\Omega$ | 58.70441 | | −0.88811975 | | +0.15006474 |
| $e$ | 0.1317815 | $i$ | 4.56198 | | −0.43970228 | | −0.00223034 |
| $P$ | 5.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 02 | 691 | 0.2− | 0.4+ | 2006 01 23 | 691 | 0.2− | 0.4− | |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 01 23 | 691 | 0.2+ | 0.0 | |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 02 01 | 691 | 0.3+ | 0.7+ | |
| 2003 09 28 | 645 | 0.1− | 0.1− | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 02 01 | 691 | 0.2− | 0.2− | |
| 2003 10 02 | 691 | 0.1− | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 02 01 | 691 | 0.1− | 0.2− | |
| 2003 10 02 | 691 | 0.2+ | 0.4+ | 2006 01 23 | 691 | 0.0 | 0.1+ | | | | | |

**2003 SL$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.04559 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26894605 | $\omega$ | 335.48880 | | +0.36626175 | | −0.91903675 |
| $a$ | 2.3769822 | $\Omega$ | 92.75283 | | +0.87599038 | | +0.28774481 |
| $e$ | 0.0835118 | $i$ | 8.38663 | | +0.31383623 | | +0.26939631 |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.1+ | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2003 11 28 | 645 | 0.1+ | 0.0 |
| 2001 01 18 | 704 | 0.5− | 0.0 | 2003 10 23 | 645 | 0.1+ | 0.1− | 2003 11 28 | 645 | 0.1+ | 0.0 |
| 2001 01 18 | 704 | 0.0 | 0.5− | 2003 10 27 | 699 | 1.5− | 0.3+ | 2003 12 19 | 644 | 0.4− | 0.4+ |
| 2001 01 18 | 704 | 0.2− | 0.7− | 2003 10 27 | 699 | 0.1+ | 0.5+ | 2003 12 19 | 644 | 0.3− | 0.5+ |
| 2001 01 18 | 704 | 0.4+ | 0.4+ | 2003 10 27 | 699 | 1.3+ | 0.8+ | 2003 12 19 | 644 | 0.0 | 0.4+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 27 | 699 | 0.2− | 0.1+ | 2005 03 16 | 703 | 1.3− | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 11 21 | 703 | 0.5+ | 1.6+ | 2005 03 16 | 703 | 0.5+ | 0.4− |
| 2003 10 16 | 644 | 0.4− | 0.4+ | 2003 11 21 | 703 | 1.9− | 0.4+ | 2005 03 16 | 703 | 0.4+ | 0.6− |
| 2003 10 16 | 644 | 0.0 | 0.4+ | 2003 11 21 | 703 | 0.1− | 0.8− | 2005 03 16 | 703 | 0.8+ | 1.9+ |
| 2003 10 16 | 644 | 0.1− | 0.4+ | 2003 11 21 | 703 | 0.6− | 0.2+ | | | | |

**2003 SQ$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.54750 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18713632 | $\omega$ | 261.30268 | | +0.00356611 | | −0.99966434 |
| $a$ | 3.0271271 | $\Omega$ | 188.61836 | | +0.97156936 | | +0.00953841 |
| $e$ | 0.0273193 | $i$ | 9.86011 | | +0.23672826 | | −0.02408801 |
| $P$ | 5.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.1− | 0.1+ | 2003 10 23 | 645 | 0.1+ | 0.0 | 2006 03 04 | 691 | 0.1+ | 0.4+ |
| 2001 05 24 | 645 | 0.1+ | 0.0 | 2003 10 23 | 645 | 0.1+ | 0.1+ | 2006 03 25 | G96 | 0.2− | 0.3+ |
| 2003 09 27 | 691 | 0.3− | 0.3+ | 2003 11 16 | 645 | 0.0 | 0.1− | 2006 03 25 | G96 | 0.2+ | 0.4+ |
| 2003 09 27 | 691 | 0.1− | 0.0 | 2003 11 16 | 645 | 0.1− | 0.1− | 2006 03 25 | G96 | 0.1− | 0.2+ |
| 2003 09 27 | 691 | 0.2+ | 0.8+ | 2006 02 25 | G96 | 0.1− | 0.1− | 2006 03 25 | G96 | 0.4+ | 0.2+ |
| 2003 10 20 | 691 | 0.1+ | 0.3+ | 2006 02 25 | G96 | 0.5− | 0.3+ | 2006 04 19 | G96 | 0.3− | 0.1+ |
| 2003 10 20 | 691 | 0.7− | 0.6+ | 2006 02 25 | G96 | 0.1+ | 0.1− | 2006 04 19 | G96 | 0.2− | 0.0 |
| 2003 10 20 | 691 | 0.3− | 0.7+ | 2006 02 25 | G96 | 0.2+ | 0.0 | 2006 04 19 | G96 | 0.5− | 0.1− |
| 2003 10 22 | 645 | 0.1+ | 0.1− | 2006 03 04 | 691 | 0.0 | 0.4+ | 2006 04 19 | G96 | 0.3− | 0.4+ |
| 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.7+ | 0.5+ | | | | |

**2003 SV$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.15607 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24591076 | $\omega$ | 229.77915 | | +0.94986006 | | +0.31171312 |
| $a$ | 2.5231963 | $\Omega$ | 112.04572 | | −0.27824321 | | +0.87842146 |
| $e$ | 0.1959652 | $i$ | 1.51535 | | −0.14264148 | | +0.36223014 |
| $P$ | 4.01 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.1− | 0.0 | 2003 09 27 | 691 | 0.2− | 0.1+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 1995 10 01 | 691 | 0.1+ | 0.1− | 2003 09 27 | 691 | 0.1− | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.0 |
| 1995 10 01 | 691 | 0.2+ | 0.0 | 2003 10 19 | 645 | 0.1+ | 0.0 | 2003 11 16 | 645 | 0.0 | 0.0 |
| 1995 10 19 | 691 | 0.0 | 0.2− | 2003 10 19 | 645 | 0.1+ | 0.1− | 2003 11 16 | 645 | 0.0 | 0.1+ |
| 1995 10 19 | 691 | 0.6+ | 0.1+ | 2003 10 20 | 691 | 0.3− | 0.2+ | 2003 11 19 | 645 | 0.1− | 0.0 |
| 1995 10 19 | 691 | 0.7− | 0.0 | 2003 10 20 | 691 | 0.2− | 0.1+ | 2003 11 19 | 645 | 0.0 | 0.1− |
| 2003 09 27 | 691 | 0.0 | 0.2+ | 2003 10 20 | 691 | 0.6− | 0.2+ | | | | |

**2003 SK$_{332}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.15007 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26234549 | $\omega$ | 280.68992 | | +0.64793119 | | −0.76017213 |
| $a$ | 2.4166865 | $\Omega$ | 128.81387 | | +0.72079660 | | +0.59145048 |
| $e$ | 0.1864498 | $i$ | 3.54676 | | +0.24624669 | | +0.26893246 |
| $P$ | 3.76 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.1+ | 0.1+ | 2003 09 28 | 699 | 0.9− | 0.8− | 2003 10 23 | 645 | 0.0 | 0.0 |
| 1997 02 03 | 691 | 0.2− | 0.2+ | 2003 09 28 | 699 | 0.0 | 0.6− | 2003 10 23 | 645 | 0.0 | 0.0 |
| 1997 02 03 | 691 | 0.3+ | 0.2+ | 2003 09 28 | 699 | 0.1− | 1.3+ | 2003 10 29 | 699 | 0.0 | 0.3+ |
| 1997 02 14 | 691 | 0.2− | 0.2− | 2003 10 19 | 645 | 0.0 | 0.0 | 2003 10 29 | 699 | 0.7− | 0.5+ |
| 1997 02 14 | 691 | 0.2− | 0.2− | 2003 10 19 | 645 | 0.0 | 0.0 | 2003 10 29 | 699 | 0.4+ | 0.7+ |
| 1997 02 14 | 691 | 0.1+ | 0.1− | 2003 10 22 | 645 | 0.0 | 0.0 | 2003 10 29 | 699 | 1.8− | 0.9− |
| 2003 09 28 | 699 | 0.3+ | 1.0+ | 2003 10 22 | 645 | 0.1+ | 0.1− | | | | |

**2003 SL$_{332}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.76915 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24041212 | $\omega$ | 262.45639 | | +0.93361701 | | −0.34932086 |
| $a$ | 2.5615243 | $\Omega$ | 117.96055 | | +0.35385997 | | +0.86432046 |
| $e$ | 0.1573685 | $i$ | 5.16969 | | +0.05605717 | | +0.36183571 |
| $P$ | 4.10 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 1.3− | 0.8+ | 2003 10 20 | 691 | 0.0 | 0.2+ | 2003 10 27 | 699 | 0.3+ | 0.7+ |
| 1999 11 05 | 704 | 0.5− | 0.7+ | 2003 10 20 | 644 | 0.5− | 0.4+ | 2003 10 27 | 699 | 0.3− | 0.7+ |
| 1999 11 05 | 704 | 1.2+ | 0.1+ | 2003 10 20 | 691 | 0.1+ | 0.2+ | 2005 02 09 | 691 | 0.1− | 0.2+ |
| 2003 09 28 | 704 | 1.1− | 0.8+ | 2003 10 20 | 644 | 0.1− | 0.7+ | 2005 02 09 | 691 | 0.2+ | 0.2− |
| 2003 09 28 | 704 | 0.7+ | 0.1− | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 02 09 | 691 | 0.0 | 0.2+ |
| 2003 09 28 | 704 | 0.5+ | 0.6+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 04 30 | 691 | 0.1+ | 0.3− |
| 2003 09 28 | 704 | 0.3+ | 0.7+ | 2003 10 23 | 645 | 0.1− | 0.1− | 2006 04 30 | 691 | 0.0 | 0.5+ |
| 2003 09 28 | 704 | 0.3− | 0.8+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 04 30 | 691 | 0.0 | 0.1+ |
| 2003 10 20 | 644 | 0.3− | 0.3+ | 2003 10 27 | 699 | 0.3− | 0.6+ | | | | |
| 2003 10 20 | 691 | 0.4+ | 0.0 | 2003 10 27 | 699 | 0.4− | 0.6− | | | | |

**2003 SO$_{332}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.69697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24332683 | $\omega$ | 232.05501 | | +0.90553971 | | −0.42189825 |
| $a$ | 2.5410276 | $\Omega$ | 152.81426 | | +0.41345918 | | +0.85393440 |
| $e$ | 0.2599157 | $i$ | 5.61696 | | +0.09512800 | | +0.30462748 |
| $P$ | 4.05 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 21 | 704 | 1.3+ | 1.1+ | 2003 09 28 | 704 | 0.4− | 0.2− | 2003 10 27 | 704 | 0.9+ | 0.7− |
| 1999 10 21 | 704 | 0.1− | 0.6+ | 2003 09 28 | 704 | 0.1+ | 1.6+ | 2003 12 01 | 704 | 0.1+ | 0.5− |
| 1999 10 21 | 704 | 0.9− | 0.1+ | 2003 09 28 | 704 | 0.2− | 1.4− | 2003 12 01 | 704 | 0.1+ | 0.4− |
| 1999 10 21 | 704 | 0.2− | 0.4+ | 2003 09 28 | 704 | 0.2− | 0.8+ | 2003 12 01 | 704 | 1.4+ | 1.2− |
| 1999 12 14 | 704 | 0.6− | 1.1− | 2003 10 04 | 291 | 0.2+ | 0.1+ | 2003 12 01 | 704 | 0.4+ | 0.4− |
| 1999 12 14 | 704 | 1.1− | 1.2− | 2003 10 04 | 291 | 0.0 | 0.4+ | 2003 12 20 | 704 | 0.3− | 0.4+ |
| 1999 12 14 | 704 | 0.7− | 1.1− | 2003 10 04 | 291 | 0.0 | 0.3+ | 2003 12 20 | 704 | 0.8− | 0.1− |
| 1999 12 14 | 704 | 0.5− | 1.3− | 2003 10 04 | 291 | 0.1− | 0.3+ | 2003 12 20 | 704 | 0.6− | 0.4− |
| 1999 12 14 | 704 | 0.4+ | 0.7− | 2003 10 04 | 291 | 0.0 | 0.2+ | 2003 12 20 | 704 | 0.9− | 0.1+ |
| 2000 01 05 | 704 | 0.3+ | 0.2+ | 2003 10 04 | 291 | 0.1− | 0.3+ | 2005 03 10 | 691 | 0.2+ | 0.1+ |
| 2000 01 05 | 704 | 0.5− | 1.4− | 2003 10 27 | 704 | 0.5− | 0.7+ | 2005 03 10 | 691 | 0.0 | 0.3+ |
| 2000 01 05 | 704 | 2.0+ | 0.1− | 2003 10 27 | 704 | 0.2− | 0.5+ | 2005 03 10 | 691 | 0.1+ | 0.7+ |
| 2000 01 05 | 704 | 0.2− | 0.5+ | 2003 10 27 | 704 | 0.8+ | 0.7+ | | | | |
| 2000 01 05 | 704 | 0.7+ | 0.7+ | 2003 10 27 | 704 | 0.4+ | 1.3+ | | | | |

**2003 TK**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.73640 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.33161807 | $\omega$ | 10.84457 | | −0.00525269 | | +0.99715579 |
| $a$ | 2.0671751 | $\Omega$ | 258.88557 | | −0.92310843 | | −0.03374473 |
| $e$ | 0.4487748 | $i$ | 4.39441 | | −0.38450389 | | +0.06739151 |
| $P$ | 2.97 | $H$ | 19.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 691 | 0.2− | 0.1+ | 2003 10 04 | 291 | 0.0 | 0.0 | 2003 10 19 | 291 | 0.0 | 0.3− |
| 2003 10 01 | 691 | 0.1− | 0.0 | 2003 10 04 | 291 | 0.1− | 1.2− | 2003 10 21 | 291 | 0.3− | 0.6− |
| 2003 10 01 | 691 | 0.1+ | 0.1+ | 2003 10 04 | 291 | 0.1− | 0.6− | 2003 10 21 | 291 | 0.5+ | 1.2− |
| 2003 10 02 | 291 | 0.2− | 0.0 | 2003 10 05 | J95 | 0.1− | 0.9+ | 2003 10 21 | 291 | 0.1− | 0.9− |
| 2003 10 02 | 291 | 0.3− | 0.2− | 2003 10 05 | J95 | 0.5− | 0.2− | 2003 10 24 | 291 | 0.3+ | 0.2+ |
| 2003 10 02 | 291 | 0.1− | 0.0 | 2003 10 05 | J95 | 0.9+ | 0.2+ | 2003 10 24 | 291 | 0.2+ | 0.5+ |
| 2003 10 02 | 673 | (1.6+ | 1.2+) | 2003 10 06 | 926 | 0.0 | 0.0 | 2003 10 24 | 291 | 0.2+ | 0.0 |
| 2003 10 02 | 673 | 1.3+ | 1.1+ | 2003 10 06 | 926 | 0.6+ | 0.9− | 2003 11 02 | 291 | 0.4+ | 0.2+ |
| 2003 10 02 | 673 | 0.9+ | 1.0+ | 2003 10 06 | 926 | 1.4+ | 0.6− | 2003 11 02 | 291 | 0.5− | 0.7+ |
| 2003 10 03 | 673 | 0.8− | 1.3− | 2003 10 17 | 540 | 0.1− | 0.1− | 2003 11 02 | 291 | 0.6− | 0.9+ |
| 2003 10 03 | 673 | 0.7− | 0.0 | 2003 10 17 | 540 | 0.3− | 0.9+ | 2006 10 13 | 291 | 0.0 | 0.1− |
| 2003 10 03 | 673 | 0.6− | 0.1+ | 2003 10 18 | 715 | 0.1− | 0.0 | 2006 10 13 | 291 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 03 | 673 | (2.0− | 0.2+) | 2003 10 18 | 715 | 0.2− | 0.6+ | 2006 10 13 | 291 | 0.5− | 0.3− | | |
| 2003 10 03 | 291 | 0.1− | 0.5+ | 2003 10 18 | 715 | 0.5− | 0.3− | 2006 10 16 | 291 | 0.1+ | 0.1− | | |
| 2003 10 03 | 291 | 0.0 | 0.6+ | 2003 10 19 | 291 | 0.3+ | 0.2− | 2006 10 16 | 291 | 0.3+ | 0.3+ | | |
| 2003 10 03 | 291 | 0.1− | 0.6+ | 2003 10 19 | 291 | 0.2− | 0.1+ | 2006 10 16 | 291 | 0.1+ | 0.0 | | |

**2003 TX$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.49150 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31266176 | $\omega$ | 80.60543 | | +0.08722709 | −0.99612418 | |
| $a$ | 2.1499063 | $\Omega$ | 4.43767 | | +0.84695310 | +0.06817484 | |
| $e$ | 0.4745886 | $i$ | 8.40960 | | +0.52446343 | +0.05557702 | |
| $P$ | 3.15 | $H$ | 20.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 691 | 0.1+ | 0.1+ | 2003 10 16 | 649 | 0.2− | 0.2− | 2003 11 01 | 170 | 0.0 | 0.1+ | | |
| 2003 10 01 | 691 | 0.1+ | 0.2+ | 2003 10 16 | 673 | 0.4+ | 0.5− | 2003 11 01 | 170 | 0.2+ | 0.1+ | | |
| 2003 10 01 | 691 | 0.1+ | 0.1+ | 2003 10 16 | 649 | 0.1+ | 0.0 | 2003 11 01 | 170 | 0.8+ | 0.0 | | |
| 2003 10 15 | 644 | 0.3− | 0.1+ | 2003 10 16 | 673 | 0.2+ | 0.4+ | 2003 11 03 | 704 | 0.7+ | 0.0 | | |
| 2003 10 15 | 644 | 0.4− | 0.1+ | 2003 10 16 | 673 | 0.4+ | 0.6+ | 2003 11 03 | 704 | 0.7− | 0.8+ | | |
| 2003 10 15 | 644 | 0.8− | 0.2+ | 2003 10 16 | 448 | 0.2− | 0.1− | 2003 11 03 | 704 | 0.5− | 0.6+ | | |
| 2003 10 15 | 198 | 1.4− | 1.1− | 2003 10 16 | 448 | 0.5− | 0.3− | 2003 11 03 | 704 | 0.5− | 0.3− | | |
| 2003 10 15 | 198 | 1.2− | 1.2− | 2003 10 16 | 448 | 0.3− | 0.2− | 2003 11 13 | 941 | 0.3+ | 0.3− | | |
| 2003 10 15 | 636 | 0.3+ | 0.4− | 2003 10 16 | 926 | 1.0− | 0.2+ | 2003 11 13 | 941 | 0.2+ | 0.2− | | |
| 2003 10 15 | 198 | 0.1+ | 0.3− | 2003 10 16 | 926 | 0.6+ | 0.6− | 2003 11 13 | 941 | 0.2+ | 0.2− | | |
| 2003 10 15 | 636 | 0.2− | 1.1− | 2003 10 17 | 699 | 0.1− | 0.4− | 2003 11 13 | 941 | 0.3+ | 0.1+ | | |
| 2003 10 16 | J95 | 0.1− | 0.2+ | 2003 10 17 | 699 | 0.3− | 0.4+ | 2003 11 14 | 644 | 0.5+ | 0.5+ | | |
| 2003 10 16 | J95 | 1.1+ | 1.1− | 2003 10 17 | 699 | 0.6+ | 0.7+ | 2003 11 14 | 644 | 0.2+ | 0.4+ | | |
| 2003 10 16 | J95 | 0.8+ | 0.5+ | 2003 10 17 | 699 | 1.0− | 0.1− | 2003 11 14 | 644 | 0.2+ | 0.2+ | | |
| 2003 10 16 | G90 | 0.1+ | 0.1+ | 2003 10 19 | 291 | 0.3− | 0.0 | 2003 12 07 | 540 | 0.4+ | 0.3− | | |
| 2003 10 16 | G90 | 0.0 | 0.5+ | 2003 10 19 | 291 | 0.4− | 0.1− | 2003 12 07 | 540 | 0.6+ | 0.1+ | | |
| 2003 10 16 | G90 | 0.4− | 0.5+ | 2003 10 19 | 291 | 0.2− | 0.0 | 2004 01 06 | 461 | 0.4+ | 0.5+ | | |
| 2003 10 16 | 651 | 0.7− | 0.3+ | 2003 10 20 | 644 | 0.1− | 0.1+ | 2004 01 06 | 461 | 1.7− | 0.4+ | | |
| 2003 10 16 | 651 | 0.3− | 0.2+ | 2003 10 20 | 644 | 0.1− | 0.1+ | 2004 03 23 | 696 | 0.1+ | 0.3+ | | |
| 2003 10 16 | 651 | 0.1− | 0.3+ | 2003 10 20 | 644 | 0.0 | 0.2+ | 2004 03 23 | 696 | 0.5− | 0.1+ | | |
| 2003 10 16 | H36 | (0.9− | 2.2+) | 2003 10 29 | 176 | 0.0 | 0.1+ | 2006 09 14 | 568 | 0.1− | 0.8+ | | |
| 2003 10 16 | H36 | 0.6− | 1.2− | 2003 10 29 | 176 | 0.0 | 0.2+ | 2006 09 14 | 568 | 0.3− | 0.6+ | | |
| 2003 10 16 | 649 | 0.0 | 0.2− | 2003 10 29 | 176 | 0.1− | 0.2+ | 2006 09 14 | 568 | 0.7− | 0.8+ | | |
| 2003 10 16 | 673 | 0.4− | 0.0 | 2003 10 29 | 176 | 0.1− | 0.3+ | | | | | | |

**2003 TW$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.32814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35701776 | $\omega$ | 117.76284 | | +0.94598294 | −0.12437018 | |
| $a$ | 1.9679294 | $\Omega$ | 250.69493 | | +0.03714054 | +0.95898870 | |
| $e$ | 0.0889793 | $i$ | 18.49681 | | +0.32208207 | +0.25470126 | |
| $P$ | 2.76 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 21 | 704 | 0.3+ | 0.7− | 2003 10 22 | 704 | 0.6− | 0.5+ | 2006 11 22 | 704 | 0.0 | 0.2− | | |
| 2003 08 21 | 704 | 0.1+ | 0.6− | 2003 10 22 | 704 | 1.5− | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.2− | | |
| 2003 08 21 | 704 | (0.7− | 2.4−) | 2003 10 23 | 704 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.5− | | |
| 2003 08 21 | 704 | 0.0 | 0.4− | 2003 10 23 | 704 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.7− | | |
| 2003 08 26 | 704 | 0.3+ | 0.4+ | 2003 10 23 | 704 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6+ | 1.4− | | |
| 2003 08 26 | 704 | 0.4− | 0.6− | 2003 10 23 | 704 | 0.1+ | 0.4− | 2006 11 23 | 644 | 0.0 | 0.0 | | |
| 2003 08 26 | 704 | 1.4− | 0.1+ | 2003 10 23 | 704 | 0.5− | 0.0 | 2006 11 23 | 644 | 0.1+ | 0.3− | | |
| 2003 08 26 | 704 | 0.4− | 0.8− | 2003 10 23 | 704 | 0.2− | 0.1− | 2006 11 23 | 644 | 0.4+ | 0.0 | | |
| 2003 08 26 | 704 | 0.5+ | 1.1− | 2003 10 23 | 704 | 0.2− | 0.3+ | 2006 11 27 | 704 | 2.6− | 0.9+ | | |
| 2003 09 14 | 644 | 0.2+ | 0.2+ | 2003 10 23 | 704 | 0.1− | 0.1+ | 2006 11 27 | 704 | 0.6− | 0.4+ | | |
| 2003 09 14 | 644 | 0.0 | 0.2+ | 2003 10 23 | 704 | 0.2+ | 0.1+ | 2006 11 27 | 704 | 0.5− | 0.3− | | |
| 2003 09 14 | 644 | 0.1+ | 0.3+ | 2003 10 23 | 704 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.3− | | |
| 2003 10 05 | 704 | 0.2+ | 0.6+ | 2006 10 03 | 703 | 0.5− | 0.0 | 2006 11 28 | 704 | 0.3+ | 1.1+ | | |
| 2003 10 05 | 704 | 0.2+ | 0.2+ | 2006 10 03 | 703 | 0.5− | 1.4− | 2006 11 28 | 704 | 0.3+ | 0.4− | | |
| 2003 10 05 | 704 | 0.2+ | 0.8+ | 2006 10 03 | 703 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4+ | 1.4+ | | |
| 2003 10 05 | 704 | 0.2− | 1.2+ | 2006 10 03 | 703 | 0.8+ | 0.2+ | 2006 11 28 | 704 | 0.2+ | 0.0 | | |
| 2003 10 05 | 704 | 0.9+ | 1.1+ | 2006 11 17 | G96 | 0.2− | 0.4− | 2006 11 28 | 704 | 1.0+ | 0.2− | | |
| 2003 10 18 | 644 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.1+ | 0.4+ | | |
| 2003 10 18 | 644 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.4− | | |
| 2003 10 18 | 644 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.0 | 0.2+ | | |
| 2003 10 19 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.6− | 0.8− | | |
| 2003 10 19 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.8+ | 0.1+ | | |
| 2003 10 19 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.6+ | 2006 11 28 | 704 | 0.1− | 0.5+ | | |
| 2003 10 22 | 704 | 1.1+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.2+ | 2006 11 28 | 704 | 1.5− | 0.5+ | | |
| 2003 10 22 | 704 | 0.6+ | 1.0− | 2006 11 19 | 704 | 0.5+ | 0.2+ | | | | | | |

**2003 TC$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.52701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26887238 | $\omega$ | 197.29143 | | +0.91245779 | +0.40743827 | |
| $a$ | 2.3774164 | $\Omega$ | 138.60041 | | −0.36836142 | +0.85799436 | |
| $e$ | 0.2071147 | $i$ | 3.26068 | | −0.17813097 | +0.31279343 | |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 08 | 691 | 0.2+ | 0.7+ | 2003 09 28 | 704 | 0.5− | 0.2− | 2005 03 04 | G96 | 0.1+ | 0.9+ | | |
| 1996 12 08 | 691 | 0.1− | 0.3+ | 2003 09 28 | 704 | 0.1− | 0.3− | 2005 03 04 | G96 | 0.1+ | 0.4+ | | |
| 1996 12 08 | 691 | 0.3− | 0.2+ | 2003 09 28 | 704 | 0.5+ | 0.5+ | 2005 03 04 | G96 | 0.4+ | 0.7+ | | |
| 2003 09 02 | 704 | 0.8− | 0.3+ | 2003 09 28 | 704 | 0.7− | 0.4− | 2005 03 04 | G96 | 0.1+ | 0.3+ | | |
| 2003 09 02 | 704 | 0.2+ | 0.5+ | 2003 09 28 | 704 | 0.5+ | 0.3− | 2006 04 21 | 691 | 0.0 | 0.3+ | | |
| 2003 09 02 | 704 | 0.9− | 1.0+ | 2003 10 03 | 608 | 0.8− | 0.4− | 2006 04 21 | 691 | 0.1− | 0.2+ | | |
| 2003 09 02 | 704 | 0.8− | 0.2+ | 2003 10 03 | 608 | 0.9− | 0.3− | 2006 04 21 | 691 | 0.7− | 0.7+ | | |
| 2003 09 02 | 704 | 0.2− | 0.1+ | 2003 10 03 | 608 | 0.4− | 0.2− | 2006 05 03 | 691 | 1.2+ | 0.5− | | |
| 2003 09 15 | 699 | 0.4+ | 1.0+ | 2003 10 15 | 699 | 0.4+ | 0.2− | 2006 05 03 | 691 | 0.2+ | 0.1+ | | |
| 2003 09 15 | 699 | 0.4− | 0.2− | 2003 10 15 | 699 | 0.7+ | 0.2− | 2006 05 03 | 691 | 0.4+ | 1.4+ | | |
| 2003 09 15 | 699 | (0.2+ | 2.0−) | 2003 10 15 | 699 | 0.9+ | 0.2+ | 2006 05 03 | 691 | 0.0 | 0.0 | | |
| 2003 09 15 | 699 | 0.3+ | 0.5− | 2003 10 15 | 699 | 0.5− | 0.2+ | 2006 05 03 | 691 | 0.2− | 0.1+ | | |
| 2003 09 18 | 704 | (2.8− | 4.0+) | 2003 10 16 | 644 | 0.0 | 0.1+ | 2006 05 03 | 691 | 0.4+ | 0.1− | | |
| 2003 09 18 | 704 | 0.2+ | 0.6+ | 2003 10 16 | 644 | 0.2+ | 0.3+ | 2006 05 26 | G96 | 0.9− | 0.4− | | |
| 2003 09 18 | 704 | (4.0+ | 0.2−) | 2003 10 16 | 644 | 0.4+ | 0.3+ | 2006 05 26 | G96 | 0.3− | 0.3− | | |
| 2003 09 20 | 699 | 0.4− | 0.5− | 2003 11 22 | 695 | 0.1− | 0.1+ | 2006 05 26 | G96 | 0.7− | 0.5− | | |
| 2003 09 20 | 699 | 0.3− | 0.2− | 2003 11 22 | 695 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.6− | 0.3− | | |
| 2003 09 20 | 699 | 0.1+ | 0.7− | 2003 11 23 | 695 | 0.1+ | 0.4+ | | | | | | |
| 2003 09 20 | 699 | 0.2+ | 0.9− | 2003 11 23 | 695 | 0.1− | 0.3+ | | | | | | |

**2003 TA$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.67059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20602674 | $\omega$ | 329.05332 | | +0.97445128 | −0.18093489 | |
| $a$ | 2.8391412 | $\Omega$ | 42.03889 | | +0.22414971 | +0.82089430 | |
| $e$ | 0.1545728 | $i$ | 11.46202 | | −0.01419892 | +0.54165959 | |
| $P$ | 4.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 645 | 0.0 | 0.0 | 2003 10 15 | 699 | 0.4+ | 0.0 | 2003 10 29 | 699 | 0.2− | 0.2+ | | |
| 2000 04 06 | 645 | 0.0 | 0.0 | 2003 10 15 | 699 | 0.6− | 0.9+ | 2003 10 29 | 699 | 0.5+ | 0.5+ | | |
| 2003 09 18 | 599 | 0.0 | 0.3+ | 2003 10 15 | 699 | 0.5− | 0.8− | 2003 10 29 | 699 | 0.3+ | 0.3+ | | |
| 2003 09 18 | 599 | 0.3− | 0.4+ | 2003 10 15 | 699 | 0.5− | 0.0 | 2003 10 29 | 699 | 1.1− | 0.2− | | |
| 2003 09 19 | 599 | 0.1+ | 0.3+ | 2003 10 16 | 644 | 0.4− | 0.9+ | 2003 11 18 | 699 | 0.1− | 0.7− | | |
| 2003 09 19 | 599 | 0.0 | 0.6+ | 2003 10 16 | 644 | 0.2− | 0.5+ | 2003 11 18 | 699 | (0.4− | 1.7−) | | |
| 2003 09 28 | 704 | 0.5− | 0.8+ | 2003 10 16 | 644 | 0.3− | 0.2+ | 2003 11 18 | 699 | 1.4+ | 0.2+ | | |
| 2003 09 28 | 704 | (1.7− | 1.0+) | 2003 10 20 | 704 | 0.4− | 0.9+ | 2003 11 18 | 699 | 0.6− | 0.3− | | |
| 2003 09 28 | 704 | 1.4+ | 0.4+ | 2003 10 20 | 704 | 0.0 | 0.3+ | 2006 05 01 | 691 | 0.3+ | 0.3+ | | |
| 2003 09 28 | 699 | 0.1− | 0.9− | 2003 10 20 | 704 | 0.3− | 0.4+ | 2006 05 01 | 691 | 0.3+ | 0.0 | | |
| 2003 09 28 | 704 | 0.6− | 0.8+ | 2003 10 20 | 704 | 0.4− | 0.6+ | 2006 05 01 | 691 | 0.1− | 0.2− | | |
| 2003 09 28 | 699 | 1.1− | 0.3+ | 2003 10 20 | 704 | 0.1− | 0.5+ | 2006 05 19 | G96 | 0.4− | 0.3+ | | |
| 2003 09 28 | 704 | 0.4− | 0.2+ | 2003 10 22 | 608 | 0.1+ | 0.2− | 2006 05 19 | G96 | 0.8− | 0.0 | | |
| 2003 09 28 | 699 | 0.8− | 0.7+ | 2003 10 22 | 608 | 0.3− | 0.2− | 2006 05 19 | G96 | 0.2− | 0.3+ | | |
| 2003 09 28 | 699 | 0.5− | 1.1− | 2003 10 22 | 608 | 0.3− | 0.1+ | 2006 05 19 | G96 | 0.0 | 0.2+ | | |
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 | | | | | | |
| 2003 09 28 | 645 | 0.2+ | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 | | | | | | |

**2003 TE$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.30592 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25649073 | $\omega$ | 26.04515 | | +0.45649732 | −0.88168154 | |
| $a$ | 2.4533241 | $\Omega$ | 37.13006 | | +0.77787289 | +0.33037825 | |
| $e$ | 0.2607877 | $i$ | 11.40515 | | +0.43188419 | +0.33687960 | |
| $P$ | 3.84 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.1+ | 0.2− | 2003 10 15 | 699 | 0.1+ | 0.5+ | 2003 10 29 | 699 | 0.1+ | 0.1− |
| 1999 09 11 | 704 | 0.6+ | 0.3+ | 2003 10 15 | 699 | 0.1− | 0.2− | 2003 11 15 | 683 | 0.2+ | 1.2− |
| 1999 09 11 | 704 | 0.2− | 1.0− | 2003 10 15 | 699 | 0.2− | 0.3+ | 2003 11 15 | 683 | (0.6− | 1.6−) |
| 1999 09 11 | 704 | 0.0 | 0.1+ | 2003 10 16 | 644 | 0.1− | 0.2+ | 2003 11 15 | 683 | 0.3− | 0.7− |
| 2001 03 19 | 699 | 0.2− | 0.2+ | 2003 10 16 | 644 | 0.1− | 0.1+ | 2003 11 18 | 699 | 0.3− | 0.5+ |
| 2001 03 19 | 699 | 0.7+ | 0.5+ | 2003 10 16 | 644 | 0.0 | 0.1+ | 2003 11 18 | 699 | 1.3− | 0.3+ |
| 2001 03 19 | 699 | 0.3+ | 0.1− | 2003 10 19 | 704 | 0.3− | 1.3+ | 2003 11 18 | 699 | 0.4− | 0.0 |
| 2001 03 19 | 645 | 0.1− | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | 2003 11 18 | 699 | 0.1− | 0.2+ |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.1+ | 0.1− | 2003 11 21 | 704 | 0.7+ | 0.1+ |
| 2001 03 19 | 699 | 0.7+ | 0.3+ | 2003 10 19 | 704 | 0.5− | 0.7+ | 2003 11 21 | 704 | 0.8+ | 0.2+ |
| 2003 09 18 | 704 | 0.4− | 0.8+ | 2003 10 19 | 704 | 0.6− | 0.2+ | 2003 11 21 | 704 | 0.5+ | 0.5+ |
| 2003 09 18 | 704 | 1.1− | 1.2+ | 2003 10 19 | 704 | 0.1− | 0.6+ | 2003 11 21 | 704 | 0.9+ | 0.2+ |
| 2003 09 18 | 704 | 0.8− | 0.5+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2003 11 21 | 704 | 0.5+ | 0.5+ |
| 2003 09 18 | 704 | 0.7− | 0.4+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2003 12 19 | 644 | 0.3− | 0.0 |
| 2003 09 18 | 704 | 0.7− | 0.5+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2003 12 19 | 644 | 0.3− | 0.0 |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 23 | 645 | 0.1+ | 0.0 | 2003 12 19 | 644 | 0.1− | 0.4+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 25 | 704 | 0.3− | 0.6+ | 2003 12 22 | 704 | 0.7− | 0.1+ |
| 2003 09 28 | 699 | 0.5+ | 0.3+ | 2003 10 25 | 704 | 0.1− | 0.4+ | 2003 12 22 | 704 | 0.3− | 0.9+ |
| 2003 09 28 | 699 | (1.5− | 1.4−) | 2003 10 25 | 704 | 0.1− | 0.5+ | 2003 12 22 | 704 | 0.3+ | 0.2− |
| 2003 09 28 | 699 | 1.2+ | 1.5− | 2003 10 25 | 704 | 0.2+ | 0.4+ | 2003 12 22 | 704 | 0.1− | 0.1+ |
| 2003 09 28 | 699 | 0.3− | 0.3+ | 2003 10 25 | 704 | 0.2+ | 0.6+ | 2003 12 27 | 704 | 0.0 | 0.4− |
| 2003 09 30 | 645 | 0.0 | 0.0 | 2003 10 29 | 704 | 0.0 | 0.3+ | 2003 12 27 | 704 | 0.7+ | 0.1− |
| 2003 09 30 | 645 | 0.0 | 0.1− | 2003 10 29 | 699 | 0.3+ | 0.4+ | 2003 12 27 | 704 | 0.2+ | 1.0− |
| 2003 10 03 | 608 | 0.1+ | 0.4− | 2003 10 29 | 704 | 0.2− | 0.2+ | 2005 05 11 | G96 | 0.1− | 0.1+ |
| 2003 10 03 | 608 | 0.0 | 0.1− | 2003 10 29 | 704 | 0.2− | 0.1+ | 2005 05 11 | G96 | 0.1− | 0.1− |
| 2003 10 03 | 608 | 0.1+ | 0.4− | 2003 10 29 | 699 | 0.1+ | 0.0 | 2005 05 11 | G96 | 0.1+ | 0.2− |
| 2003 10 15 | 699 | 0.1− | 0.7+ | 2003 10 29 | 699 | 0.2+ | 0.2+ | 2005 05 11 | G96 | 0.1+ | 0.0 |

**2003 TW$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.94293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18003627 | $\omega$ | 69.08202 | | +0.73839540 | +0.67121512 | |
| $a$ | 3.1061997 | $\Omega$ | 248.69412 | | −0.64178946 | +0.66978053 | |
| $e$ | 0.1592269 | $i$ | 4.00898 | | −0.20707130 | +0.31759142 | |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 31 | 910 | 0.1− | 0.1+ | 2003 10 14 | 699 | 0.3− | 0.9+ | 2003 10 24 | 704 | 1.3+ | 0.8− |
| 1997 08 31 | 910 | 0.1− | 0.1− | 2003 10 14 | 699 | 0.5+ | 1.2+ | 2003 10 24 | 704 | 0.8+ | 1.0− |
| 1997 08 31 | 910 | 0.1+ | 0.2+ | 2003 10 14 | 699 | 0.8+ | 0.1+ | 2003 10 24 | 704 | 1.4+ | 1.0− |
| 1999 01 10 | 691 | 0.2− | 0.5− | 2003 10 14 | 699 | 0.4− | 0.3+ | 2003 10 25 | 704 | 0.3+ | 0.7+ |
| 1999 01 10 | 691 | 0.1− | 0.8− | 2003 10 18 | 691 | 0.2− | 0.0 | 2003 10 25 | 704 | 0.0 | 0.3+ |
| 1999 01 10 | 691 | 0.4+ | 0.1+ | 2003 10 18 | 691 | 0.1− | 0.2+ | 2003 10 25 | 704 | 1.2+ | 1.4+ |
| 2003 09 20 | 644 | 0.2− | 0.1+ | 2003 10 18 | 691 | 0.0 | 0.1+ | 2003 10 25 | 704 | 0.5+ | 0.3+ |
| 2003 09 20 | 644 | 0.1− | 0.2− | 2003 10 21 | 699 | (3.8− | 2.0+) | 2003 11 20 | 704 | 1.0− | 0.5+ |
| 2003 09 20 | 644 | 0.2+ | 0.2− | 2003 10 21 | 699 | 0.5− | 0.7− | 2003 11 20 | 704 | 0.7− | 0.8− |
| 2003 09 27 | 704 | 0.4+ | 0.5− | 2003 10 21 | 699 | 0.1+ | 0.3− | 2003 11 20 | 704 | 1.0− | 0.8− |
| 2003 09 27 | 704 | 1.3+ | 1.0+ | 2003 10 21 | 699 | 0.3− | 0.4− | 2003 11 20 | 704 | (2.0− | 0.5+) |
| 2003 09 27 | 704 | 0.2+ | 0.2− | 2003 10 21 | 644 | 0.3− | 0.0 | 2003 11 22 | 695 | 0.3− | 0.2+ |
| 2003 09 27 | 704 | 0.1+ | 0.4+ | 2003 10 21 | 644 | 0.4− | 0.1+ | 2003 11 22 | 695 | 0.3− | 0.2+ |
| 2003 10 03 | 691 | 0.2− | 0.1− | 2003 10 21 | 644 | 0.3− | 0.1+ | 2004 12 19 | 691 | 0.2+ | 0.6+ |
| 2003 10 03 | 691 | 0.1− | 0.0 | 2003 10 24 | 704 | 1.5+ | 1.0− | 2004 12 19 | 691 | 0.1− | 0.2+ |
| 2003 10 03 | 691 | 0.0 | 0.2− | 2003 10 24 | 704 | 1.0+ | 0.8− | 2004 12 19 | 691 | 0.1+ | 0.2+ |

**2003 TX$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.63704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20420912 | $\omega$ | 149.68397 | | −0.75223894 | +0.65703188 | |
| $a$ | 2.8559633 | $\Omega$ | 71.47465 | | −0.61450964 | −0.67251126 | |
| $e$ | 0.0214397 | $i$ | 2.98970 | | −0.23772772 | −0.34064309 | |
| $P$ | 4.83 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 291 | 0.4− | 0.1+ | 2004 12 20 | G96 | 0.3+ | 0.7+ | 2006 04 08 | G96 | 0.1+ | 0.7− |
| 2003 09 17 | 291 | 0.1− | 0.1+ | 2004 12 20 | G96 | 0.2− | 0.3+ | 2006 04 08 | G96 | 0.3− | 0.1+ |
| 2003 09 17 | 291 | 0.0 | 0.1+ | 2006 03 24 | 691 | 0.3+ | 0.0 | 2006 05 06 | G96 | 0.4− | 0.4+ |
| 2003 10 01 | 691 | 0.2− | 0.3+ | 2006 03 24 | 691 | 0.5+ | 0.4+ | 2006 05 06 | G96 | 0.3− | 0.6+ |
| 2003 10 01 | 691 | 0.1− | 0.2+ | 2006 03 24 | 691 | (0.3− | 4.6+) | 2006 05 06 | G96 | 0.2− | 0.5+ |
| 2003 10 01 | 691 | 0.2− | 0.1+ | 2006 03 26 | G96 | 0.1− | 0.3+ | 2006 05 06 | G96 | 0.1− | 0.5+ |
| 2003 10 18 | 691 | 0.0 | 0.3+ | 2006 03 26 | G96 | 0.0 | 0.2+ | 2006 05 19 | G96 | 0.0 | 0.3+ |
| 2003 10 18 | 691 | 0.2+ | 0.1− | 2006 03 26 | G96 | 0.1+ | 0.6+ | 2006 05 19 | G96 | 0.3+ | 0.0 |
| 2003 10 18 | 691 | 0.3+ | 0.1− | 2006 03 26 | G96 | 0.3+ | 0.3+ | 2006 05 19 | G96 | 0.4− | 0.1− |
| 2004 12 20 | G96 | 0.5+ | 0.8− | 2006 04 08 | G96 | 0.2+ | 0.4+ | 2006 05 19 | G96 | 0.2− | 0.3− |
| 2004 12 20 | G96 | 0.3− | 0.4+ | 2006 04 08 | G96 | 0.2− | 0.4+ | | | | |

**2003 TS$_{38}$ = 2006 EU$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.18019 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18035629 | $\omega$ | 321.87502 | | +0.47075038 | +0.88023743 | |
| $a$ | 3.1025243 | $\Omega$ | 336.03071 | | −0.76900769 | +0.37615121 | |
| $e$ | 0.0640907 | $i$ | 8.46489 | | −0.43245954 | +0.28929627 | |
| $P$ | 5.46 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.4− | 0.5+ | 2003 10 16 | 691 | 0.1− | 0.2+ | 2006 02 24 | G96 | 0.3− | 0.2− |
| 2002 07 12 | 644 | 0.0 | 0.5+ | 2005 10 31 | 568 | 0.0 | 0.0 | 2006 02 24 | G96 | 0.0 | 0.3− |
| 2002 07 12 | 644 | 0.0 | 0.5+ | 2005 10 31 | 568 | 0.0 | 0.1+ | 2006 02 24 | G96 | 0.2− | 0.1− |
| 2003 09 21 | 691 | 0.3− | 0.0 | 2005 10 31 | 568 | 0.0 | 0.1+ | 2006 02 24 | G96 | 0.1+ | 0.2+ |
| 2003 09 21 | 691 | 0.3+ | 0.0 | 2006 01 07 | G96 | 0.7− | 0.2− | 2006 03 03 | 691 | 0.2+ | 0.3+ |
| 2003 09 21 | 691 | 0.0 | 0.1+ | 2006 01 07 | G96 | 0.5− | 1.0− | 2006 03 03 | 691 | 0.1− | 0.3+ |
| 2003 10 02 | 691 | 0.1+ | 0.1+ | 2006 01 07 | G96 | 0.2− | 0.4− | 2006 03 03 | 691 | 0.3− | 0.5+ |
| 2003 10 02 | 691 | 0.4+ | 0.0 | 2006 01 07 | G96 | 0.5+ | 0.5− | 2006 03 09 | G96 | 0.8− | 0.1− |
| 2003 10 02 | 691 | 0.0 | 0.0 | 2006 02 07 | 691 | 0.2+ | 0.0 | 2006 03 09 | G96 | 0.2− | 0.2− |
| 2003 10 16 | 691 | 0.3− | 0.0 | 2006 02 07 | 691 | 0.8+ | 0.3+ | 2006 03 09 | G96 | 0.8− | 0.2+ |
| 2003 10 16 | 691 | 0.3− | 0.1+ | 2006 02 07 | 691 | 0.5+ | 0.1− | 2006 03 09 | G96 | 0.2− | 0.2− |

**2003 TM$_{40}$ = 2006 QK$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.23209 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31390186 | $\omega$ | 10.48271 | | +0.99974224 | −0.01499556 | |
| $a$ | 2.1442403 | $\Omega$ | 350.32765 | | +0.00478390 | +0.87311547 | |
| $e$ | 0.1397207 | $i$ | 5.82332 | | +0.02219408 | +0.48728278 | |
| $P$ | 3.14 | $H$ | 19.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 02 | 691 | 0.0 | 0.1+ | 2003 11 02 | 291 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2003 10 02 | 691 | 0.2− | 0.0 | 2003 11 02 | 291 | 0.6+ | 0.0 | 2006 08 28 | 691 | 0.3+ | 0.0 |
| 2003 10 02 | 691 | 0.0 | 0.2+ | 2003 11 02 | 291 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2003 10 16 | 691 | 0.1− | 0.1+ | 2006 08 23 | 807 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2003 10 16 | 691 | 0.1− | 0.2− | 2006 08 23 | 807 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2003 10 16 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.0 |

**2003 TR$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 321.19308 | | | (2000.0) | | |
| $n$ | 0.21809311 | $\omega$ | 93.05448 | | +0.43964012 | +0.89766250 |
| $a$ | 2.7334308 | $\Omega$ | 203.10114 | | −0.85169753 | +0.40593899 |
| $e$ | 0.0969922 | $i$ | 4.43038 | | −0.28518044 | +0.17150970 |
| $P$ | 4.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 08 | 691 | 0.4+ | 0.7+ | 2003 10 28 | 704 | 0.6− | 0.7+ | 2006 03 25 | 691 | 0.0 | 0.4+ |
| 1997 05 08 | 691 | (5.4+ | 5.7+) | 2003 10 28 | 704 | 0.4− | 0.4+ | 2006 04 02 | 691 | 0.5+ | 0.5− |
| 1997 05 08 | 691 | 0.2− | 0.3+ | 2003 10 28 | 704 | 0.3− | 0.6+ | 2006 04 02 | 691 | 0.2+ | 0.2+ |
| 2003 10 02 | 691 | 0.2− | 0.2+ | 2003 10 28 | 704 | 0.2+ | 0.3+ | 2006 04 02 | 691 | 0.0 | 0.1+ |
| 2003 10 02 | 691 | 0.3− | 0.1+ | 2003 10 28 | 704 | 0.1− | 0.6+ | 2006 04 19 | G96 | 0.4− | 0.1+ |
| 2003 10 02 | 691 | 0.4− | 0.4− | 2006 02 22 | G96 | 0.1+ | 0.4− | 2006 04 19 | G96 | 0.2− | 0.1+ |
| 2003 10 21 | 691 | 0.3+ | 0.3+ | 2006 02 22 | G96 | 0.2− | 0.7− | 2006 04 19 | G96 | 0.6− | 0.2− |
| 2003 10 21 | 691 | 0.3+ | 0.4+ | 2006 02 22 | G96 | 0.0 | 0.3− | 2006 04 19 | G96 | 0.0 | 0.0 |
| 2003 10 21 | 691 | 0.2+ | 0.3+ | 2006 02 22 | G96 | 0.1+ | 0.1− | 2006 05 02 | G96 | 0.3− | 0.0 |
| 2003 10 22 | 695 | 0.3− | 0.1+ | 2006 03 25 | 691 | 0.1− | 0.4+ | 2006 05 02 | G96 | 0.8− | 0.3+ |
| 2003 10 22 | 695 | 0.1− | 0.1+ | 2006 03 25 | 691 | 0.2+ | 0.1+ | 2006 05 02 | G96 | 0.3− | 0.1− |

**2003 TV$_{43}$ = 2006 QA$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.81898 | | | (2000.0) | | |
| $n$ | 0.29494771 | $\omega$ | 236.10103 | | +0.09253461 | +0.99369184 |
| $a$ | 2.2351467 | $\Omega$ | 39.35995 | | −0.87738927 | +0.11145686 |
| $e$ | 0.1699463 | $i$ | 5.73337 | | −0.47077109 | −0.01240553 |
| $P$ | 3.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 699 | 0.7+ | 0.3− | 2003 10 21 | 691 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.5+ | 1.0− |
| 2002 04 09 | 699 | 0.7+ | 0.6− | 2003 10 21 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.6+ |
| 2002 04 09 | 699 | (1.7+ | 1.1−) | 2003 10 28 | 704 | 0.6− | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.2− |
| 2002 04 09 | 699 | 1.4+ | 0.3+ | 2003 10 28 | 704 | 0.4− | 0.9+ | 2006 09 14 | 703 | 0.4+ | 0.2− |
| 2002 04 17 | 704 | 0.5+ | 0.2+ | 2003 10 28 | 704 | 0.5− | 0.6+ | 2006 09 18 | 699 | (2.0+ | 0.1−) |
| 2002 04 17 | 704 | 0.3+ | 0.2+ | 2003 10 28 | 704 | 0.6− | 0.8+ | 2006 09 18 | 699 | 0.4− | 0.5+ |
| 2002 04 17 | 704 | 0.2+ | 0.8+ | 2006 08 19 | 644 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.4+ | 1.2+ |
| 2002 04 17 | 704 | 0.1+ | 1.2+ | 2006 08 19 | 644 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.5+ |
| 2002 04 17 | 704 | 0.7− | 1.3+ | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | (2.5− | 0.1+) |
| 2002 05 10 | 644 | 0.5− | 0.4+ | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.3− |
| 2002 05 10 | 644 | 0.2− | 0.9+ | 2006 08 23 | 644 | 0.3− | 0.0 | 2006 09 26 | 703 | 1.4+ | 0.5+ |
| 2002 05 10 | 644 | 0.0 | 0.8+ | 2006 08 23 | 644 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.0 |
| 2003 10 02 | 691 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.6+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.5+ |
| 2003 10 02 | 691 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.5+ |
| 2003 10 02 | 691 | 0.0 | 0.3− | 2006 08 30 | 699 | 0.5− | 0.9+ | 2006 09 30 | 703 | 0.9− | 0.7− |
| 2003 10 21 | 691 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.6− | 0.0 | 2006 09 30 | 703 | (0.1− | 1.6+) |

**2003 TW$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.93496 | | | (2000.0) | | |
| $n$ | 0.21061206 | $\omega$ | 308.21959 | | −0.98750037 | +0.10142262 |
| $a$ | 2.7977821 | $\Omega$ | 237.90926 | | −0.05735323 | −0.94421078 |
| $e$ | 0.0910820 | $i$ | 8.18728 | | −0.14681153 | −0.31333601 |
| $P$ | 4.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 699 | 0.8− | 0.3− | 2003 10 17 | 691 | 0.1− | 0.4+ | 2006 05 01 | 691 | 0.1+ | 0.1− |
| 2001 03 24 | 699 | 0.1− | 0.0 | 2003 10 27 | 691 | 0.2+ | 0.0 | 2006 05 20 | 691 | 0.0 | 0.0 |
| 2001 03 24 | 699 | 1.7+ | 0.6+ | 2003 10 27 | 691 | 0.2+ | 0.1+ | 2006 05 20 | 691 | 0.0 | 0.1+ |
| 2001 03 24 | 699 | 0.2− | 1.2+ | 2003 10 27 | 691 | 0.2− | 1.2− | 2006 05 20 | 691 | 0.0 | 0.2+ |
| 2003 10 03 | 691 | 0.2+ | 0.2+ | 2006 04 19 | 691 | 0.3− | 0.3− | 2006 05 28 | 691 | 0.1+ | 0.1+ |
| 2003 10 03 | 691 | 0.0 | 0.1+ | 2006 04 19 | 691 | 0.2− | 0.0 | 2006 05 28 | 691 | 0.0 | 0.2+ |
| 2003 10 03 | 691 | 0.1+ | 0.1− | 2006 04 19 | 691 | 0.1− | 0.4− | 2006 05 28 | 691 | 0.4+ | 0.1+ |
| 2003 10 17 | 691 | 0.1− | 0.3+ | 2006 05 01 | 691 | 0.2+ | 0.1− | | | | |
| 2003 10 17 | 691 | 0.3− | 0.3+ | 2006 05 01 | 691 | 0.0 | 0.0 | | | | |

**2003 TO$_{58}$ = 2000 AA$_{185}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.54092 | | | (2000.0) | | |
| $n$ | 0.23988336 | $\omega$ | 168.76024 | | +0.64497283 | −0.75686907 |
| $a$ | 2.5652870 | $\Omega$ | 240.98247 | | +0.69144589 | +0.63682993 |
| $e$ | 0.3124605 | $i$ | 6.93836 | | +0.32544221 | +0.14695865 |
| $P$ | 4.11 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.4+ | 0.0 | 2003 12 04 | 704 | 0.2− | 0.1+ | 2003 12 19 | 704 | 0.1− | 0.6− |
| 2000 01 07 | 704 | 0.2− | 0.9− | 2003 12 04 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.4+ | 0.3+ |
| 2000 01 07 | 704 | 0.3− | 0.3− | 2003 12 04 | 704 | 1.8− | 0.9+ | 2003 12 22 | 704 | 0.4+ | 0.9+ |
| 2000 01 11 | 704 | 0.1− | 0.2+ | 2003 12 04 | 704 | (2.5− | 1.1−) | 2003 12 22 | 704 | 0.2− | 0.7+ |
| 2000 01 11 | 704 | 0.1+ | 0.4+ | 2003 12 04 | 704 | 0.4− | 0.0 | 2003 12 22 | 704 | 0.7+ | 0.4+ |
| 2000 01 11 | 704 | 1.1+ | 1.0+ | 2003 12 04 | 704 | 0.3+ | 0.1− | 2003 12 22 | 704 | (3.5− | 0.2+) |
| 2000 01 11 | 704 | 1.0− | 0.0 | 2003 12 04 | 704 | 0.9− | 0.0 | 2003 12 27 | 704 | 0.6− | 0.3− |
| 2003 10 05 | 704 | 0.3+ | 0.4+ | 2003 12 04 | 704 | 0.2− | 0.3− | 2003 12 27 | 704 | 0.2− | 0.1+ |
| 2003 10 05 | 704 | 0.0 | 0.1+ | 2003 12 19 | 704 | 0.0 | 0.0 | 2003 12 27 | 704 | 0.1+ | 0.2− |
| 2003 10 05 | 704 | 0.3+ | 0.0 | 2003 12 19 | 704 | 0.4+ | 0.9− | 2003 12 27 | 704 | 0.3+ | 0.3− |
| 2003 12 04 | 704 | 0.0 | 0.5− | 2003 12 19 | 704 | 0.1+ | 0.1− | 2003 12 27 | 704 | 1.8+ | 0.3− |
| 2003 12 04 | 704 | 0.2− | 0.1− | 2003 12 19 | 704 | 0.2− | 0.2− | | | | |

**2003 TP$_{58}$ = 2006 EX$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.38624 | | | (2000.0) | | |
| $n$ | 0.17584995 | $\omega$ | 118.43446 | | +0.81408017 | −0.57615004 |
| $a$ | 3.1553041 | $\Omega$ | 276.83542 | | +0.50381374 | +0.76313046 |
| $e$ | 0.1667238 | $i$ | 4.21460 | | +0.28886882 | +0.29271665 |
| $P$ | 5.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 30 | 691 | 0.6+ | 0.0 | 2003 10 22 | 691 | 0.3+ | 0.3+ | 2006 03 05 | 691 | 0.8+ | 0.5+ |
| 1997 06 30 | 691 | 0.5+ | 0.7+ | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 03 05 | 691 | 0.1− | 0.2+ |
| 1997 06 30 | 691 | 1.3− | 0.2− | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 03 05 | 691 | 0.1+ | 0.4+ |
| 2003 10 15 | 644 | 0.3− | 0.4+ | 2003 11 19 | 645 | 0.0 | 0.1+ | 2006 03 09 | 691 | 0.4+ | 0.7+ |
| 2003 10 15 | 644 | 0.0 | 0.3+ | 2003 11 19 | 645 | 0.0 | 0.1+ | 2006 03 09 | 691 | 0.3− | 0.0 |
| 2003 10 15 | 644 | 0.0 | 0.3+ | 2004 12 12 | 691 | 0.0 | 0.1+ | 2006 03 09 | 691 | 0.0 | 0.2+ |
| 2003 10 22 | 691 | 0.1− | 0.2+ | 2004 12 12 | 691 | 0.1+ | 0.1− | | | | |
| 2003 10 22 | 691 | 0.2+ | 0.2+ | 2004 12 12 | 691 | 0.1− | 0.1+ | | | | |

**2003 TQ$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 269.22719 | | | (2000.0) | | |
| $n$ | 0.22402539 | $\omega$ | 216.83589 | | +0.97904652 | +0.10828376 |
| $a$ | 2.6849604 | $\Omega$ | 135.94453 | | −0.06850658 | +0.97267932 |
| $e$ | 0.1484865 | $i$ | 14.36025 | | −0.19176749 | +0.20535232 |
| $P$ | 4.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 26 | 910 | 0.1+ | 1.6+ | 2003 10 01 | 699 | 0.6+ | 0.6+ | 2003 11 23 | 703 | 0.2− | 0.8+ |
| 1998 07 26 | 910 | 0.2+ | 1.7+ | 2003 10 18 | 704 | 0.3− | 0.1+ | 2003 11 23 | 703 | 1.4− | 0.9− |
| 1998 07 27 | 910 | 0.0 | 1.6+ | 2003 10 18 | 704 | 0.3− | 0.4+ | 2003 11 23 | 703 | (1.7+ | 2.5+) |
| 2002 06 19 | 291 | 0.0 | 0.3+ | 2003 10 18 | 704 | 0.5+ | 0.7+ | 2005 01 17 | 691 | 0.0 | 0.5+ |
| 2002 06 19 | 291 | 0.0 | 0.2+ | 2003 10 24 | 699 | 0.3− | 0.4+ | 2005 01 17 | 691 | 0.2− | 0.5+ |
| 2002 06 19 | 291 | 0.1+ | 0.2+ | 2003 10 24 | 699 | 0.0 | 0.3+ | 2005 01 17 | 691 | 0.0 | 0.4+ |
| 2003 10 01 | 699 | 0.2− | 0.5− | 2003 10 24 | 699 | 0.0 | 0.1+ | 2005 03 09 | 691 | 0.2+ | 0.3+ |
| 2003 10 01 | 699 | 0.1− | 0.7+ | 2003 10 24 | 699 | 0.1+ | 0.5+ | 2005 03 09 | 691 | 0.1− | 0.3+ |
| 2003 10 01 | 699 | 0.7+ | 0.2− | 2003 11 23 | 703 | 0.8− | 1.1+ | 2005 03 09 | 691 | 0.3+ | 0.2+ |

**2003 TR$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 257.45534 | | (2000.0) | | | |
| $n$ | 0.20428480 | $\omega$ | 169.26933 | | +0.97140324 | +0.23743219 |
| $a$ | 2.8552579 | $\Omega$ | 176.99470 | | −0.21964286 | +0.90067984 |
| $e$ | 0.1222464 | $i$ | 1.42451 | | −0.09018180 | +0.36387055 |
| $P$ | 4.82 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 691 | 1.2+ | 0.1+ | 2003 10 02 | 691 | 0.1+ | 0.1− | 2003 11 19 | 691 | 0.0 | 0.0 |
| 1993 09 14 | 691 | 0.0 | 0.4− | 2003 10 02 | 691 | 0.6+ | 0.0 | 2003 11 19 | 691 | 0.0 | 0.0 |
| 1993 09 14 | 691 | 0.4+ | 0.1− | 2003 10 21 | 691 | 0.1− | 0.2+ | 2005 01 16 | 691 | 0.2+ | 0.2+ |
| 1998 10 12 | 691 | 0.6− | 0.1− | 2003 10 21 | 691 | 0.2+ | 0.2+ | 2005 01 16 | 691 | 0.0 | 0.3+ |
| 1998 10 12 | 691 | 1.3− | 0.4− | 2003 10 21 | 691 | 0.1+ | 0.0 | 2005 01 16 | 691 | 0.3+ | 0.0 |
| 1998 10 12 | 691 | 0.8− | 0.1− | 2003 10 28 | 704 | 0.3+ | 0.6+ | 2006 04 19 | G96 | 0.2− | 0.0 |
| 2000 01 16 | 691 | 0.2+ | 0.4− | 2003 10 28 | 704 | 1.2− | 1.3+ | 2006 04 19 | G96 | 0.2+ | 0.3+ |
| 2000 01 16 | 691 | 0.2− | 0.4− | 2003 10 28 | 704 | 0.2+ | 0.0 | 2006 04 19 | G96 | 0.4− | 0.4+ |
| 2000 01 16 | 691 | 0.4− | 0.3− | 2003 10 28 | 704 | 0.6+ | 1.2+ | 2006 04 19 | G96 | 0.1− | 0.2+ |
| 2003 10 02 | 691 | 0.2+ | 0.1+ | 2003 11 19 | 691 | 0.2+ | 0.0 | | | | |

**2003 TS$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 281.51031 | | (2000.0) | | | |
| $n$ | 0.22889135 | $\omega$ | 309.44245 | | +0.98155361 | +0.18227597 |
| $a$ | 2.6467716 | $\Omega$ | 40.15090 | | −0.13607264 | +0.87799418 |
| $e$ | 0.1042261 | $i$ | 5.13295 | | −0.13430096 | +0.44260782 |
| $P$ | 4.31 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 02 | 691 | 0.2+ | 0.1+ | 2003 10 28 | 704 | 0.4− | 0.2+ | 2006 04 30 | 691 | 0.1− | 0.3+ |
| 2003 10 02 | 691 | 0.2+ | 0.1− | 2003 11 15 | 291 | 0.1+ | 0.1+ | 2006 05 20 | 691 | 0.2+ | 0.0 |
| 2003 10 02 | 691 | 0.2+ | 0.1− | 2003 11 15 | 291 | 0.0 | 0.2+ | 2006 05 20 | 691 | 0.2+ | 0.3− |
| 2003 10 21 | 691 | 0.2− | 0.0 | 2003 11 15 | 291 | 0.7− | 0.1+ | 2006 05 20 | 691 | 0.0 | 0.7+ |
| 2003 10 21 | 691 | 0.2− | 0.1− | 2003 11 20 | 695 | 0.3+ | 0.3− | 2006 05 20 | 691 | 0.0 | 0.0 |
| 2003 10 21 | 691 | 0.1+ | 0.1− | 2003 11 20 | 695 | 0.5+ | 0.1− | 2006 05 20 | 691 | 0.2+ | 0.5− |
| 2003 10 28 | 704 | 0.4+ | 0.5+ | 2006 04 30 | 691 | 0.3− | 0.0 | 2006 05 20 | 691 | 0.2+ | 0.2− |
| 2003 10 28 | 704 | 0.3+ | 0.8+ | 2006 04 30 | 691 | 0.3− | 0.5+ | | | | |

**2003 TT$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 223.25572 | | (2000.0) | | | |
| $n$ | 0.23582975 | $\omega$ | 241.41474 | | +0.44814195 | −0.89393637 |
| $a$ | 2.5945995 | $\Omega$ | 181.99865 | | +0.87324488 | +0.43937727 |
| $e$ | 0.1766800 | $i$ | 11.28280 | | +0.19134307 | +0.08846117 |
| $P$ | 4.18 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 05 | 691 | 0.4+ | 0.2− | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 03 04 | 691 | 0.3+ | 0.2− |
| 2003 10 05 | 691 | 0.2− | 0.1− | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.4+ | 0.0 |
| 2003 10 05 | 691 | 0.2+ | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.2− | 0.3− |
| 2003 10 16 | 644 | 0.1− | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2005 04 06 | G96 | 0.3− | 0.6− |
| 2003 10 16 | 644 | 0.0 | 0.3+ | 2005 03 04 | 691 | 0.0 | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.2− |
| 2003 10 16 | 644 | 0.4+ | 0.3+ | 2005 03 04 | 691 | 0.3− | 0.3+ | | | | |

**2003 TU$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.68551 | | (2000.0) | | | |
| $n$ | 0.22565166 | $\omega$ | 334.99195 | | +0.57304887 | +0.81370218 |
| $a$ | 2.6720445 | $\Omega$ | 329.69070 | | −0.71567041 | +0.43892006 |
| $e$ | 0.0705363 | $i$ | 11.13790 | | −0.39928795 | +0.38110095 |
| $P$ | 4.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.3− | 0.3+ | 2003 10 18 | 644 | 0.5+ | 0.3+ | 2005 03 14 | G96 | 0.4− | 0.2− |
| 2001 02 02 | 691 | 0.3+ | 0.0 | 2003 10 18 | 644 | 0.7+ | 0.3+ | 2005 03 14 | G96 | 0.0 | 0.2− |
| 2001 02 02 | 691 | 0.3+ | 0.0 | 2003 10 25 | 291 | 0.4− | 0.4+ | 2005 03 14 | G96 | 0.2− | 0.3− |
| 2001 03 02 | 699 | 1.0+ | 0.4+ | 2003 10 25 | 291 | 0.7− | 0.3+ | 2005 03 14 | G96 | 0.3− | 0.3− |
| 2001 03 02 | 699 | 0.5+ | 0.7+ | 2003 10 25 | 291 | 0.2− | 0.2+ | 2006 05 04 | E12 | 0.5− | 0.2+ |
| 2001 03 02 | 699 | 1.0− | 0.6− | 2003 11 21 | 644 | 0.1− | 0.4+ | 2006 05 04 | E12 | 0.8+ | 0.4+ |
| 2001 03 02 | 699 | 0.2− | 0.8+ | 2003 11 21 | 644 | 0.2− | 0.5+ | 2006 05 04 | E12 | 0.3+ | 0.2+ |
| 2003 10 05 | 704 | 0.2+ | 0.4+ | 2003 11 21 | 644 | 0.1+ | 0.4+ | 2006 05 04 | E12 | 0.3− | 0.1− |
| 2003 10 05 | 704 | 0.9+ | 1.2− | 2005 02 09 | 699 | 0.5− | 0.1+ | 2006 05 23 | E12 | 0.6+ | 0.6+ |
| 2003 10 05 | 704 | 0.5+ | 0.1+ | 2005 02 09 | 699 | 0.2− | 0.9− | 2006 05 23 | E12 | 0.0 | 1.1+ |
| 2003 10 05 | 704 | 0.6− | 0.2− | 2005 02 09 | 699 | 0.1+ | 0.1+ | 2006 05 23 | E12 | 1.3+ | 0.4+ |
| 2003 10 18 | 644 | 0.6+ | 0.3+ | 2005 02 09 | 699 | 0.3+ | 0.7+ | 2006 05 23 | E12 | 0.2− | 1.0+ |

**2003 TV$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 210.78744 | | (2000.0) | | | |
| $n$ | 0.21092116 | $\omega$ | 50.60972 | | +0.33157661 | −0.93992077 |
| $a$ | 2.7950481 | $\Omega$ | 20.47452 | | +0.77832237 | +0.22384439 |
| $e$ | 0.1867947 | $i$ | 13.43594 | | +0.53317093 | +0.25776470 |
| $P$ | 4.67 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 05 | 704 | 0.3+ | 0.6− | 2003 11 20 | 644 | 0.3− | 0.8+ | 2003 12 17 | 704 | 0.4+ | 0.2+ |
| 2003 10 05 | 704 | 0.2− | 0.5− | 2003 12 03 | 704 | 0.8+ | 0.5− | 2003 12 17 | 704 | 0.3+ | 0.5− |
| 2003 10 05 | 704 | 0.2+ | 0.4+ | 2003 12 03 | 704 | 0.5− | 0.2+ | 2005 03 11 | 691 | 0.0 | 0.2+ |
| 2003 11 20 | 644 | 0.6− | 0.1+ | 2003 12 03 | 704 | 0.4− | 0.7− | 2005 03 11 | 691 | 0.3+ | 0.0 |
| 2003 11 20 | 704 | 0.1− | 0.5+ | 2003 12 03 | 704 | 0.4+ | 0.6− | 2005 03 11 | 691 | 0.0 | 0.1+ |
| 2003 11 20 | 704 | 1.3− | 0.7+ | 2003 12 03 | 704 | 0.9+ | 0.5− | 2005 04 05 | G96 | 0.5− | 0.2− |
| 2003 11 20 | 644 | 0.6− | 0.2+ | 2003 12 17 | 704 | 0.4+ | 0.4− | 2005 04 05 | G96 | 0.4− | 0.2− |
| 2003 11 20 | 704 | 0.4− | 0.8+ | 2003 12 17 | 704 | 0.4+ | 0.4+ | 2005 04 05 | G96 | 0.2− | 0.3− |
| 2003 11 20 | 704 | 0.1+ | 0.1− | 2003 12 17 | 704 | 0.7+ | 0.0 | 2005 04 05 | G96 | 0.0 | 0.2− |

**2003 TW$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 253.60729 | | (2000.0) | | | |
| $n$ | 0.27300193 | $\omega$ | 4.00330 | | +0.30376350 | −0.94376058 |
| $a$ | 2.3533810 | $\Omega$ | 68.35159 | | +0.87018181 | +0.21902517 |
| $e$ | 0.0795630 | $i$ | 8.07440 | | +0.38795792 | +0.24767711 |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 18 | 704 | 0.1+ | 1.0+ | 2003 10 20 | 704 | 0.2− | 0.3− | 2003 11 26 | 699 | 0.8− | 0.8+ |
| 2001 01 18 | 704 | 0.0 | 0.5− | 2003 10 20 | 704 | 0.4+ | 0.6+ | 2003 11 26 | 699 | 0.6+ | 0.8− |
| 2001 01 18 | 704 | 0.2− | 0.6− | 2003 10 20 | 644 | 0.1+ | 0.1+ | 2005 03 10 | 703 | 0.6− | 0.0 |
| 2001 01 18 | 704 | 0.3+ | 0.8+ | 2003 10 27 | 704 | 0.5+ | 0.4+ | 2005 03 10 | 703 | 1.0+ | 0.1− |
| 2001 01 18 | 704 | 0.2− | 0.7− | 2003 10 27 | 704 | 0.3− | 0.1+ | 2005 03 10 | 703 | 0.6+ | 1.0+ |
| 2003 10 15 | 699 | 0.4− | 1.1− | 2003 10 27 | 704 | 0.7− | 0.5− | 2005 03 10 | 703 | 1.0− | 0.3+ |
| 2003 10 15 | 699 | 0.1− | 0.1− | 2003 10 27 | 704 | 0.2+ | 0.1+ | 2005 04 06 | 703 | 0.5− | 1.5+ |
| 2003 10 15 | 699 | 0.6+ | 1.0+ | 2003 10 27 | 704 | 0.5+ | 0.1+ | 2005 04 06 | 703 | 1.4− | 0.5− |
| 2003 10 15 | 699 | 0.7+ | 1.0+ | 2003 11 18 | 699 | 0.2− | 0.2+ | 2005 04 06 | 703 | 1.1− | 1.2− |
| 2003 10 20 | 644 | 0.2− | 0.2+ | 2003 11 18 | 699 | 0.3+ | 0.2+ | 2005 04 06 | 703 | 2.5+ | 1.9− |
| 2003 10 20 | 644 | 0.1− | 0.1− | 2003 11 18 | 699 | 0.1+ | 1.3+ | 2005 04 09 | 699 | 0.8+ | 1.5+ |
| 2003 10 20 | 704 | 0.3− | 0.0 | 2003 11 18 | 699 | 0.8− | 1.8− | 2005 04 09 | 699 | 0.4+ | 1.0− |
| 2003 10 20 | 704 | 0.3− | 0.5− | 2003 11 26 | 699 | 1.7+ | 0.7− | 2005 04 09 | 699 | 0.3+ | 0.4+ |
| 2003 10 20 | 704 | 0.0 | 1.0− | 2003 11 26 | 699 | 1.0− | 0.7+ | 2005 04 09 | 699 | 1.1− | 0.0 |

**2003 UW$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.89509 | | (2000.0) | | | |
| $n$ | 0.17613065 | $\omega$ | 4.37451 | | −0.88681226 | +0.42665174 |
| $a$ | 3.1519508 | $\Omega$ | 203.54139 | | −0.43634184 | −0.89960786 |
| $e$ | 0.0263852 | $i$ | 26.39696 | | −0.15221630 | +0.09313427 |
| $P$ | 5.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 16 | 291 | 0.2− | 0.2+ | 2003 11 20 | 645 | 0.3+ | 0.1− | 2006 04 26 | 291 | 0.2+ | 0.2− |
| 2003 10 16 | 291 | 0.9− | 0.2+ | 2006 03 25 | 691 | 0.2− | 0.1+ | 2006 04 26 | 291 | 0.1+ | 0.1− |
| 2003 10 16 | 291 | 0.8− | 0.3+ | 2006 03 25 | 691 | 0.1+ | 0.1+ | 2006 04 26 | 291 | 0.1+ | 0.1− |
| 2003 10 17 | 291 | 0.4− | 0.1+ | 2006 03 25 | 691 | 0.1− | 0.1+ | 2006 04 26 | 291 | 0.3+ | 0.1+ |
| 2003 10 17 | 291 | 0.1− | 0.5+ | 2006 04 07 | 691 | 0.1+ | 0.5− | 2006 04 26 | 291 | 0.5− | 1.3+ |
| 2003 10 17 | 291 | 0.0 | 0.1+ | 2006 04 07 | 691 | 0.1+ | 0.6− | 2006 04 26 | 291 | 0.1− | 0.6+ |
| 2003 11 20 | 645 | 0.2+ | 0.1− | 2006 04 07 | 691 | 0.1− | 0.3− | | | | |

**2003 UJ$_3$ = 2006 UU$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.12564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31915218 | $\omega$ | 150.45781 | | +0.61248296 | +0.79033175 | |
| $a$ | 2.1206590 | $\Omega$ | 157.30032 | | −0.73290633 | +0.57510957 | |
| $e$ | 0.2241530 | $i$ | 2.30244 | | −0.29616369 | +0.21124563 | |
| $P$ | 3.09 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 17 | 291 | 0.2− | 0.3+ | 2003 11 21 | 691 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2003 10 17 | 291 | 1.2− | 0.5+ | 2003 11 21 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.4− |
| 2003 10 17 | 291 | 1.1− | 0.6+ | 2005 03 04 | G96 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2003 10 18 | 291 | 0.2− | 0.3+ | 2005 03 04 | G96 | 0.1+ | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2003 10 18 | 291 | 0.2+ | 0.1− | 2005 03 04 | G96 | 0.7− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.7− |
| 2003 10 18 | 291 | 0.0 | 0.6+ | 2005 03 04 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2003 10 19 | 291 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.6− | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2003 10 19 | 291 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.9− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2003 10 19 | 291 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.9− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2003 11 15 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2003 11 15 | 691 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.5+ | 0.6+ | 2006 11 16 | G96 | 0.5+ | 0.7− |
| 2003 11 15 | 691 | 0.1− | 0.4− | 2006 10 18 | 691 | 0.1− | 0.4− | | | | |
| 2003 11 21 | 691 | 0.5+ | 0.7− | 2006 10 18 | 691 | 0.0 | 0.5− | | | | |

**2003 UM$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.65604 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19499475 | $\omega$ | 62.06956 | | +0.88371786 | +0.43507724 | |
| $a$ | 2.9452405 | $\Omega$ | 271.69246 | | −0.46662295 | +0.79060848 | |
| $e$ | 0.0521285 | $i$ | 9.93662 | | −0.03613523 | +0.43086660 | |
| $P$ | 5.05 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 291 | 0.2+ | 0.0 | 2003 10 20 | 644 | 0.4− | 0.0 | 2003 11 19 | 704 | 0.3− | 0.5+ |
| 2002 06 06 | 291 | 0.1+ | 0.0 | 2003 10 20 | 644 | 0.1− | 0.1+ | 2003 11 19 | 704 | 0.0 | 1.0+ |
| 2002 06 06 | 291 | 0.2− | 0.0 | 2003 10 22 | 704 | 0.6+ | 0.5− | 2003 11 19 | 704 | 0.2+ | 0.6+ |
| 2003 09 30 | 704 | 0.0 | 0.5− | 2003 10 22 | 704 | 0.6+ | 0.0 | 2003 11 19 | 704 | 0.0 | 0.4+ |
| 2003 09 30 | 704 | 0.8− | 0.4− | 2003 10 22 | 704 | 0.1+ | 0.5+ | 2003 11 24 | 691 | 0.2− | 0.0 |
| 2003 09 30 | 704 | 0.1− | 0.2+ | 2003 10 22 | 704 | 0.2− | 0.5− | 2003 11 24 | 691 | 0.1− | 0.1+ |
| 2003 10 16 | 644 | 0.2+ | 0.0 | 2003 10 23 | 691 | 0.1+ | 0.2− | 2003 11 24 | 691 | 0.1− | 0.1− |
| 2003 10 16 | 644 | 0.1+ | 0.1+ | 2003 10 23 | 691 | 0.1+ | 0.1+ | 2003 12 19 | 704 | 0.4− | 0.4+ |
| 2003 10 16 | 644 | 0.2+ | 0.0 | 2003 10 23 | 691 | 0.6+ | 0.0 | 2003 12 19 | 704 | 0.9− | 0.4− |
| 2003 10 17 | 699 | 0.7− | 0.0 | 2003 11 14 | 644 | 0.0 | 0.2+ | 2003 12 19 | 704 | 0.3+ | 0.7− |
| 2003 10 17 | 699 | 1.2− | 0.3+ | 2003 11 14 | 644 | 0.2− | 0.2+ | 2003 12 19 | 704 | 0.1− | 1.7− |
| 2003 10 17 | 699 | 0.3− | 1.0+ | 2003 11 14 | 644 | 0.1− | 0.3+ | 2006 04 21 | E12 | 0.8+ | 0.3− |
| 2003 10 17 | 699 | (1.4+ | 2.4−) | 2003 11 19 | 699 | 0.8+ | 0.1− | 2006 04 21 | E12 | 1.1− | 0.3− |
| 2003 10 18 | 644 | 0.0 | 0.2− | 2003 11 19 | 699 | 0.1− | 0.1− | 2006 04 21 | E12 | 0.1+ | 0.0 |
| 2003 10 18 | 644 | 0.3+ | 0.1− | 2003 11 19 | 699 | 0.2− | 0.7+ | 2006 04 21 | E12 | 0.4+ | 0.7+ |
| 2003 10 18 | 644 | 0.1+ | 0.0 | 2003 11 19 | 699 | 0.7+ | 1.5− | | | | |
| 2003 10 20 | 644 | 0.1− | 0.3− | 2003 11 19 | 704 | 0.2− | 0.7+ | | | | |

**2003 UY$_{25}$ = 1993 OU$_{14}$ = 2006 QH$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.92566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30752774 | $\omega$ | 204.56019 | | +0.59150315 | +0.80434459 | |
| $a$ | 2.1737680 | $\Omega$ | 101.75119 | | −0.72996097 | +0.56378095 | |
| $e$ | 0.1751152 | $i$ | 3.28834 | | −0.34246316 | +0.18756549 | |
| $P$ | 3.20 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 13 | 809 | (2.2+ | 2.1−) | 2003 10 30 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.8− |
| 1993 07 13 | 809 | (1.5+ | 3.0−) | 2005 02 02 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.0 |
| 1993 07 13 | 809 | (1.2+ | 2.6−) | 2005 02 02 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 704 | 0.2− | 0.8− |
| 1993 07 24 | 809 | 0.2+ | 1.7− | 2005 02 02 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.1− | 0.3+ |
| 1995 01 07 | 691 | (1.6+ | 2.6−) | 2005 03 14 | G96 | 0.7− | 0.0 | 2006 09 19 | 704 | 0.4+ | 1.3− |
| 1995 01 07 | 691 | 0.1+ | 0.8− | 2005 03 14 | G96 | 0.4− | 1.3− | 2006 09 19 | 704 | 0.0 | 0.3− |
| 2003 10 21 | 644 | 0.0 | 0.0 | 2005 03 14 | G96 | (0.8− | 1.6−) | 2006 09 20 | 644 | 0.7− | 0.1+ |
| 2003 10 21 | 644 | 0.1+ | 0.1+ | 2005 03 14 | G96 | 0.8− | 1.4− | 2006 09 20 | 644 | 0.6− | 0.3+ |
| 2003 10 21 | 644 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.5− | 0.1+ |
| 2003 10 22 | 704 | 0.4+ | 0.2− | 2006 08 21 | 644 | 0.3− | 0.1+ | 2006 09 21 | 699 | (0.5− | 2.4−) |
| 2003 10 22 | 691 | 0.2+ | 0.3− | 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.3− | 0.3− |
| 2003 10 22 | 704 | 0.5+ | 0.2− | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 09 21 | 699 | 1.3+ | 0.6− |
| 2003 10 22 | 704 | 0.1− | 1.0+ | 2006 08 22 | 644 | 0.2+ | 0.4− | 2006 09 21 | 699 | 0.4− | 0.9− |
| 2003 10 22 | 704 | 0.5− | 1.2− | 2006 08 22 | 644 | 0.4− | 0.0 | 2006 09 26 | 704 | 1.1+ | 0.6+ |
| 2003 10 22 | 691 | 0.2− | 0.2− | 2006 08 30 | 699 | 0.0 | 0.4+ | 2006 09 26 | 704 | (0.7+ | 1.6+) |
| 2003 10 22 | 704 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 1.4+ | 0.3− |
| 2003 10 22 | 691 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.7+ |
| 2003 10 25 | 704 | 0.5+ | 0.1+ | 2006 08 30 | 699 | 1.4+ | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.2+ |
| 2003 10 25 | 704 | 0.5− | 0.1− | 2006 09 12 | 704 | 1.1+ | 0.1+ | 2006 10 02 | 703 | (0.7− | 1.7+) |
| 2003 10 25 | 704 | 0.1− | 0.1− | 2006 09 12 | 704 | 0.3− | 0.6+ | 2006 10 02 | 703 | 0.6− | 0.2+ |
| 2003 10 25 | 704 | 0.8− | 0.4+ | 2006 09 12 | 704 | 0.2− | 0.0 | 2006 10 02 | 703 | 1.0− | 1.2+ |
| 2003 10 25 | 704 | 0.4− | 1.0+ | 2006 09 12 | 704 | 0.4− | 0.2+ | 2006 10 02 | 703 | 0.1+ | 0.6+ |
| 2003 10 30 | 704 | 0.7+ | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.8− | | | | |
| 2003 10 30 | 704 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.0 | | | | |

**2003 UR$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.01609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19968136 | $\omega$ | 311.42365 | | +0.79121869 | −0.55758824 | |
| $a$ | 2.8989743 | $\Omega$ | 83.95057 | | +0.60881846 | +0.67956753 | |
| $e$ | 0.2242861 | $i$ | 14.62789 | | +0.05755935 | +0.47674241 | |
| $P$ | 4.94 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 699 | 0.4+ | 0.5− | 2003 10 22 | 683 | 0.1− | 0.5+ | 2003 11 21 | 699 | 0.4+ | 0.2− |
| 1998 12 14 | 699 | 0.9− | 0.5− | 2003 10 22 | 683 | 0.3+ | 1.5+ | 2003 11 21 | 608 | 0.3+ | 1.4− |
| 1998 12 14 | 699 | 0.9+ | 0.2+ | 2003 10 22 | 683 | 0.9+ | 1.0+ | 2003 11 21 | 608 | 0.1+ | 0.2+ |
| 2003 10 09 | 699 | 0.4− | 0.6+ | 2003 10 23 | 683 | 1.2+ | 1.4+ | 2003 11 21 | 608 | 0.5+ | 1.0− |
| 2003 10 09 | 699 | 0.7+ | 0.5+ | 2003 10 23 | 683 | (1.4+ | 2.2+) | 2003 12 11 | 699 | 0.6− | 0.4− |
| 2003 10 09 | 699 | 0.4+ | 0.6+ | 2003 10 23 | 683 | 1.2+ | 0.3− | 2003 12 11 | 699 | 0.1+ | 0.1− |
| 2003 10 09 | 699 | 0.0 | 0.3− | 2003 10 24 | 683 | 0.1− | 0.5− | 2003 12 11 | 699 | 0.9− | 0.4− |
| 2003 10 17 | 683 | 0.7+ | 0.8+ | 2003 10 24 | 683 | 0.5+ | 0.3+ | 2003 12 11 | 699 | 0.1− | 0.7− |
| 2003 10 17 | 683 | 1.6− | 0.7+ | 2003 10 24 | 683 | 1.5− | 1.8− | 2003 12 13 | 703 | 0.9− | 0.6− |
| 2003 10 17 | 683 | 0.2− | 0.5+ | 2003 10 25 | 683 | 0.3− | 0.5− | 2003 12 13 | 703 | 0.4− | 0.7+ |
| 2003 10 18 | 683 | 0.9+ | 0.2+ | 2003 10 25 | 683 | 0.5− | 0.8+ | 2003 12 13 | 703 | 0.1− | 0.1− |
| 2003 10 18 | 683 | 0.9+ | 0.1+ | 2003 10 25 | 683 | 1.7+ | 0.7+ | 2003 12 13 | 703 | 0.0 | 0.1+ |
| 2003 10 18 | 683 | 1.1− | 0.2+ | 2003 10 26 | 683 | 0.1+ | 0.7+ | 2003 12 18 | 608 | 0.2− | 0.1− |
| 2003 10 19 | 683 | 0.4− | 0.0 | 2003 10 26 | 683 | (2.7− | 1.6+) | 2003 12 18 | 608 | 0.2+ | 1.3+ |
| 2003 10 19 | 683 | 0.2− | 0.6− | 2003 10 26 | 683 | 1.0+ | 0.6+ | 2003 12 18 | 608 | 1.5− | 0.1− |
| 2003 10 19 | 683 | 0.3− | 0.1+ | 2003 10 27 | 683 | 0.3+ | 0.4+ | 2003 12 22 | 704 | 0.0 | 0.7+ |
| 2003 10 19 | 699 | 0.5− | 0.8− | 2003 10 27 | 683 | 0.3− | 0.7+ | 2003 12 22 | 704 | 0.1− | 0.7+ |
| 2003 10 19 | 699 | 0.4− | 0.4− | 2003 10 27 | 683 | 1.3− | 0.0 | 2003 12 22 | 704 | 0.4+ | 0.6+ |
| 2003 10 19 | 699 | 0.8− | 0.6− | 2003 11 05 | 683 | (0.1+ | 2.9−) | 2003 12 22 | 704 | 0.3+ | 0.5+ |
| 2003 10 19 | 699 | 0.3− | 0.7− | 2003 11 05 | 683 | 0.3+ | 0.9− | 2003 12 22 | 704 | 0.3+ | 0.4+ |
| 2003 10 20 | 704 | 0.3− | 0.3− | 2003 11 05 | 683 | (2.2− | 1.8−) | 2004 01 12 | 644 | 0.4+ | 0.0 |
| 2003 10 20 | 704 | 0.0 | 0.2− | 2003 11 19 | 703 | 0.3+ | 0.3− | 2004 01 12 | 644 | 0.6+ | 0.2+ |
| 2003 10 20 | 683 | 0.4+ | 0.8− | 2003 11 19 | 703 | 0.7− | 1.1+ | 2004 01 12 | 644 | 0.6+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 704 | 0.3− | 0.0 | 2003 11 19 | 703 | 1.1− | 0.5− | 2004 12 09 | 291 | 0.2− | 0.3+ | | |
| 2003 10 20 | 683 | 0.9+ | 0.2+ | 2003 11 19 | 703 | 0.4+ | 1.5− | 2004 12 09 | 291 | 0.3+ | 0.1− | | |
| 2003 10 20 | 704 | 0.2+ | 0.0 | 2003 11 21 | 699 | 0.1− | 0.5− | 2004 12 09 | 291 | 0.1− | 0.1− | | |
| 2003 10 20 | 683 | 0.2− | 0.2− | 2003 11 21 | 699 | 0.2− | 1.0− | | | | | | |
| 2003 10 20 | 704 | 0.1+ | 0.3− | 2003 11 21 | 699 | 0.2+ | 0.7− | | | | | | |

**2003 UY$_{33}$ = 2006 QO$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.27986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31810424 | $\omega$ | 0.40287 | | +0.98717215 | | +0.15851734 |
| $a$ | 2.1253139 | $\Omega$ | 350.41276 | | −0.14680300 | | +0.85424575 |
| $e$ | 0.1722127 | $i$ | 6.57250 | | −0.06276970 | | +0.49511257 |
| $P$ | 3.10 | $H$ | 19.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 691 | 0.3− | 0.1+ | 2003 10 18 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.2− | 0.2− |
| 2003 09 30 | 691 | 0.1+ | 0.0 | 2003 10 18 | 691 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.3+ | 0.0 |
| 2003 09 30 | 691 | 0.2+ | 0.1+ | 2003 10 18 | 691 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.2+ | 0.3+ |
| 2003 10 17 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 20 | 691 | 0.1− | 0.0 |
| 2003 10 17 | 691 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 20 | 691 | 0.1− | 0.1− |
| 2003 10 17 | 691 | 0.2− | 0.1− | 2006 08 18 | 691 | 0.4− | 0.1− | 2006 09 20 | 691 | 0.1+ | 0.0 |

**2003 UT$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.70708 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23419579 | $\omega$ | 172.68869 | | +0.82509124 | | −0.56314138 |
| $a$ | 2.6066536 | $\Omega$ | 221.69320 | | +0.51483013 | | +0.78273695 |
| $e$ | 0.2380178 | $i$ | 3.94704 | | +0.23275392 | | +0.26494273 |
| $P$ | 4.21 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 807 | 0.2+ | 0.5+ | 2003 10 21 | 644 | 0.4− | 0.1+ | 2003 10 28 | 608 | 0.5− | 1.4+ |
| 2001 05 22 | 807 | 0.1+ | 0.2+ | 2003 10 21 | 644 | 0.2− | 0.1+ | 2003 10 29 | 704 | 0.3− | 0.5− |
| 2003 09 22 | 644 | 0.0 | 0.2+ | 2003 10 21 | 644 | 0.1− | 0.4+ | 2003 10 29 | 704 | 0.0 | 0.0 |
| 2003 09 22 | 644 | 0.1− | 0.3+ | 2003 10 21 | 644 | 0.2+ | 0.1+ | 2003 10 29 | 704 | 0.2− | 0.0 |
| 2003 09 22 | 644 | 0.2+ | 0.2+ | 2003 10 21 | 644 | 0.0 | 0.0 | 2003 10 29 | 704 | 1.1− | 0.4− |
| 2003 09 22 | 691 | 0.1− | 0.1+ | 2003 10 21 | 644 | 0.1+ | 0.2+ | 2003 10 29 | 704 | 0.1+ | 0.6+ |
| 2003 09 22 | 691 | 0.0 | 0.1+ | 2003 10 21 | 947 | 0.0 | 0.1− | 2003 11 01 | 704 | 1.5+ | 0.9+ |
| 2003 09 22 | 691 | 0.2− | 0.2+ | 2003 10 21 | 947 | 0.3+ | 0.4+ | 2003 11 01 | 704 | 0.4+ | 0.8+ |
| 2003 09 27 | 704 | 0.0 | 0.2+ | 2003 10 24 | 704 | 0.7− | 0.1+ | 2003 11 01 | 704 | 0.2+ | 0.5+ |
| 2003 09 27 | 704 | 1.0+ | 0.3− | 2003 10 24 | 704 | 0.3− | 0.4+ | 2003 11 01 | 704 | 0.6+ | 0.4+ |
| 2003 09 27 | 704 | 0.7+ | 0.3− | 2003 10 24 | 704 | 0.2− | 0.7− | 2003 11 03 | 608 | 0.2+ | 0.0 |
| 2003 09 27 | 704 | 0.7+ | 0.1− | 2003 10 24 | 704 | 0.4− | 0.2+ | 2003 11 03 | 608 | 0.5+ | 0.2+ |
| 2003 09 27 | 704 | 0.8+ | 0.2+ | 2003 10 24 | 704 | 0.4− | 0.5− | 2003 11 03 | 608 | 0.3+ | 0.2+ |
| 2003 09 27 | 691 | 0.0 | 0.1+ | 2003 10 25 | 691 | 0.0 | 0.1− | 2003 11 16 | 291 | 0.2+ | 0.2− |
| 2003 09 27 | 691 | 0.1− | 0.0 | 2003 10 25 | 691 | 0.0 | 0.0 | 2003 11 16 | 291 | 0.5+ | 0.1− |
| 2003 09 27 | 691 | 0.1− | 0.0 | 2003 10 25 | 691 | 0.0 | 0.1− | 2003 11 16 | 291 | 0.9+ | 0.2− |
| 2003 10 20 | 704 | 0.4− | 1.1− | 2003 10 25 | 291 | 0.0 | 0.2− | 2003 11 21 | 704 | 0.4+ | 0.4+ |
| 2003 10 20 | 704 | 0.0 | 0.0 | 2003 10 25 | 291 | 0.1+ | 0.1− | 2003 11 21 | 704 | 0.1− | 0.5+ |
| 2003 10 20 | 704 | 0.5− | 0.7+ | 2003 10 25 | 291 | 0.1+ | 0.2− | 2003 11 21 | 704 | 0.2− | 0.2+ |
| 2003 10 21 | 699 | 0.6+ | 0.1+ | 2003 10 26 | 703 | 0.1− | 0.4− | 2003 11 21 | 704 | 0.3+ | 0.4+ |
| 2003 10 21 | 699 | 0.0 | 0.0 | 2003 10 26 | 703 | 0.9− | 0.3− | 2003 11 21 | 704 | 0.1− | 0.2+ |
| 2003 10 21 | 699 | 0.3− | 0.0 | 2003 10 26 | 703 | (2.2− | 0.8+) | 2003 11 23 | 291 | 0.5− | 0.1− |
| 2003 10 21 | 699 | 0.2+ | 0.3− | 2003 10 26 | 703 | 0.9− | 0.6+ | 2003 11 23 | 291 | 0.3− | 0.0 |
| 2003 10 21 | 704 | 0.1− | 0.1+ | 2003 10 27 | 947 | 0.4− | 0.6+ | 2003 11 23 | 291 | 0.3− | 0.2− |
| 2003 10 21 | 704 | 0.2+ | 0.1+ | 2003 10 27 | 947 | 0.2− | 0.6+ | 2005 03 13 | 691 | 0.4+ | 0.2+ |
| 2003 10 21 | 704 | 0.4+ | 0.1− | 2003 10 28 | 608 | 0.7− | 0.9− | 2005 03 13 | 691 | 0.2− | 0.1− |
| 2003 10 21 | 704 | 0.5+ | 0.1− | 2003 10 28 | 608 | 0.8− | 0.9− | 2005 03 13 | 691 | 0.1− | 0.1+ |

**2003 UE$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.68253 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22699907 | $\omega$ | 2.55924 | | +0.05794998 | | −0.99598505 |
| $a$ | 2.6614603 | $\Omega$ | 84.12461 | | +0.91471760 | | +0.02559395 |
| $e$ | 0.0656723 | $i$ | 3.93313 | | +0.39991688 | | +0.08578303 |
| $P$ | 4.34 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 691 | 0.3+ | 0.1− | 2003 10 19 | 291 | 0.3− | 0.6+ | 2003 11 24 | 695 | 0.5+ | 0.1+ |
| 2001 02 21 | 691 | 0.1− | 0.7+ | 2003 10 19 | 291 | 0.2− | 0.4+ | 2003 11 28 | 691 | 0.5+ | 0.0 |
| 2001 02 21 | 691 | 0.1+ | 0.2+ | 2003 11 18 | 691 | 0.8+ | 0.2+ | 2003 11 28 | 691 | 0.6+ | 0.1− |
| 2003 10 17 | 291 | 1.1− | 0.4+ | 2003 11 18 | 691 | 0.3+ | 0.2+ | 2003 11 28 | 691 | 0.0 | 0.1− |
| 2003 10 17 | 291 | 1.4− | 0.0 | 2003 11 18 | 691 | 0.6+ | 0.3− | 2003 12 22 | 691 | 0.4+ | 0.6− |
| 2003 10 17 | 291 | 0.9− | 0.0 | 2003 11 21 | 704 | 1.2− | 1.3− | 2003 12 22 | 691 | 0.0 | 0.4+ |
| 2003 10 18 | 291 | 0.3− | 0.4+ | 2003 11 21 | 704 | 0.9+ | 0.1− | 2003 12 22 | 691 | 0.9+ | 0.9− |
| 2003 10 18 | 291 | 0.3− | 0.3+ | 2003 11 21 | 704 | 0.7+ | 0.4− | 2005 03 01 | 691 | 0.2+ | 0.1+ |
| 2003 10 18 | 291 | 0.1+ | 0.3+ | 2003 11 21 | 704 | 0.7− | 0.9− | 2005 03 01 | 691 | 0.2− | 0.2+ |
| 2003 10 19 | 291 | 0.3− | 0.4+ | 2003 11 24 | 695 | 0.2− | 0.0 | 2005 03 01 | 691 | 0.2+ | 0.0 |

**2003 UX$_{39}$ = 2006 UF$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.41328 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31404768 | $\omega$ | 39.48724 | | −0.32990787 | | −0.94346433 |
| $a$ | 2.1435765 | $\Omega$ | 69.79725 | | +0.85720919 | | −0.31367860 |
| $e$ | 0.0120432 | $i$ | 1.96532 | | +0.39541523 | | −0.10714845 |
| $P$ | 3.14 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.3+ | 0.0 | 2003 10 19 | 691 | 0.1+ | 0.3+ | 2006 10 03 | 691 | 0.3− | 0.3− |
| 2002 05 18 | 644 | 0.1− | 0.3− | 2003 10 22 | 291 | 0.2− | 0.2+ | 2006 10 03 | 691 | 0.1+ | 0.1− |
| 2002 05 18 | 644 | 0.3+ | 0.2+ | 2003 10 22 | 291 | 0.2− | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.2− |
| 2002 06 06 | 291 | 0.1− | 0.5+ | 2003 10 22 | 291 | 0.2− | 0.2+ | 2006 10 21 | 703 | 1.5+ | 0.4+ |
| 2002 06 06 | 291 | 0.4+ | 0.2+ | 2005 04 10 | G96 | 0.2− | 0.3+ | 2006 10 21 | 703 | (1.6+ | 2.6+) |
| 2002 06 06 | 291 | 0.2− | 0.1+ | 2005 04 10 | G96 | 0.2+ | 0.2− | 2006 10 21 | 703 | 1.1+ | 0.6+ |
| 2003 10 16 | 291 | 0.1− | 0.1+ | 2005 04 10 | G96 | 0.1− | 0.1+ | 2006 10 21 | 703 | (0.8+ | 1.8+) |
| 2003 10 16 | 291 | 0.1− | 0.3+ | 2005 04 10 | G96 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2003 10 16 | 291 | 0.2− | 0.0 | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2003 10 19 | 691 | 0.2+ | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2003 10 19 | 691 | 0.2+ | 0.4+ | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.0 |

**2003 UT$_{46}$ = 2006 KP$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.57877 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27060225 | $\omega$ | 130.92611 | | +0.83094771 | | +0.55627974 |
| $a$ | 2.3672736 | $\Omega$ | 195.28174 | | −0.52002711 | | +0.77092825 |
| $e$ | 0.2152659 | $i$ | 1.92954 | | −0.19773141 | | +0.31019749 |
| $P$ | 3.64 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1+ | 0.3+ | 2003 10 19 | 291 | 0.2− | 0.1− | 2006 05 20 | 691 | 0.4− | 0.2− |
| 2003 09 18 | 691 | 0.2− | 0.1+ | 2003 10 27 | 621 | 0.3− | 0.0 | 2006 05 25 | G96 | 0.5− | 0.5− |
| 2003 09 18 | 691 | 0.0 | 0.0 | 2003 10 27 | 621 | 0.1− | 0.1+ | 2006 05 25 | G96 | 0.0 | 0.8− |
| 2003 10 18 | 691 | 0.3+ | 0.0 | 2003 10 27 | 621 | 0.0 | 0.1+ | 2006 05 25 | G96 | 0.1− | 0.0 |
| 2003 10 18 | 691 | 0.2+ | 0.2− | 2003 10 27 | 621 | 0.1− | 0.6− | 2006 05 25 | G96 | 0.1− | 0.5− |
| 2003 10 18 | 691 | 0.2+ | 0.1− | 2003 10 27 | 621 | 0.2+ | 0.2+ | 2006 06 01 | 691 | 0.2+ | 0.2+ |
| 2003 10 19 | 291 | 0.1− | 0.1− | 2006 05 20 | 691 | 0.1+ | 0.1− | 2006 06 01 | 691 | 0.2+ | 0.2+ |
| 2003 10 19 | 291 | 0.0 | 0.1− | 2006 05 20 | 691 | 0.2− | 0.0 | 2006 06 01 | 691 | 0.2+ | 0.0 |

**2003 UR$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.10248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27155357 | $\omega$ | 306.12035 | | +0.89560273 | −0.42221463 | |
| $a$ | 2.3617415 | $\Omega$ | 79.22889 | | +0.44004851 | +0.79466662 | |
| $e$ | 0.1247353 | $i$ | 8.19959 | | +0.06521551 | +0.43616485 | |
| $P$ | 3.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 16 | 699 | 0.2− | 1.0− | 2003 10 21 | 644 | 0.0 | 0.1− | 2003 11 21 | 699 | 0.3− | 1.0+ |
| 2003 10 16 | 699 | 1.0− | 1.1+ | 2003 10 23 | 699 | 0.8+ | 0.1+ | 2003 12 01 | 703 | 0.4+ | 0.6+ |
| 2003 10 16 | 699 | 0.7− | 0.2+ | 2003 10 23 | 699 | 0.4+ | 0.7− | 2003 12 01 | 703 | 0.1+ | 0.1+ |
| 2003 10 16 | 699 | 0.2+ | 0.9− | 2003 10 23 | 699 | 0.0 | 0.3+ | 2003 12 01 | 703 | 0.2+ | 0.1+ |
| 2003 10 18 | 644 | 0.2+ | 0.1+ | 2003 10 23 | 699 | 1.1+ | 0.6+ | 2003 12 01 | 703 | 0.6− | 0.0 |
| 2003 10 18 | 644 | 0.1+ | 0.0 | 2003 10 26 | 608 | 0.5− | 0.2+ | 2003 12 12 | 644 | 0.2+ | 0.2+ |
| 2003 10 18 | 644 | 0.2+ | 0.0 | 2003 10 26 | 608 | 0.4− | 0.0 | 2003 12 12 | 644 | 0.5+ | 0.2+ |
| 2003 10 19 | 644 | 0.1+ | 0.2+ | 2003 10 26 | 608 | 0.3+ | 0.2+ | 2003 12 12 | 644 | 0.2+ | 0.7+ |
| 2003 10 19 | 644 | 0.2+ | 0.0 | 2003 10 27 | 704 | 0.9+ | 0.3+ | 2003 12 17 | 699 | 0.5+ | 0.5+ |
| 2003 10 19 | 644 | 0.1− | 0.2− | 2003 10 27 | 704 | 0.3+ | 0.3+ | 2003 12 17 | 699 | 0.1− | 0.5+ |
| 2003 10 21 | 644 | 0.0 | 0.1+ | 2003 10 27 | 704 | 0.2+ | 0.7+ | 2003 12 17 | 699 | 0.7+ | 0.4− |
| 2003 10 21 | 644 | 0.1+ | 0.1+ | 2003 10 27 | 704 | 0.0 | 0.9+ | 2003 12 17 | 699 | 0.3+ | 0.1+ |
| 2003 10 21 | 704 | 0.2− | 0.3− | 2003 10 27 | 704 | 0.3+ | 0.2+ | 2005 03 10 | 699 | 0.4− | 0.8+ |
| 2003 10 21 | 704 | 0.0 | 0.4+ | 2003 11 18 | 703 | 1.3− | 0.9− | 2005 03 10 | 699 | 0.6+ | 0.1− |
| 2003 10 21 | 704 | 0.6+ | 0.1+ | 2003 11 18 | 703 | 0.7+ | 0.5− | 2005 03 10 | 699 | 0.3− | 0.2− |
| 2003 10 21 | 704 | 1.1− | 0.0 | 2003 11 18 | 703 | 0.5− | 1.9− | 2005 03 10 | 699 | 0.9+ | 1.0+ |
| 2003 10 21 | 644 | 0.2+ | 0.2+ | 2003 11 18 | 703 | 0.9− | 1.7− | 2006 06 20 | G96 | 0.1+ | 0.2+ |
| 2003 10 21 | 704 | 0.4− | 0.0 | 2003 11 21 | 699 | 0.4− | 0.3− | 2006 06 20 | G96 | 0.0 | 0.1+ |
| 2003 10 21 | 644 | 0.0 | 0.1− | 2003 11 21 | 699 | 1.3− | 0.7+ | 2006 06 20 | G96 | 0.2− | 0.3+ |
| 2003 10 21 | 644 | 0.1− | 0.0 | 2003 11 21 | 699 | 0.4− | 0.3− | 2006 06 20 | G96 | 0.1+ | 0.6+ |

**2003 UB$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.60606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18517237 | $\omega$ | 46.28256 | | +0.98988943 | +0.01560507 | |
| $a$ | 3.0484934 | $\Omega$ | 312.28636 | | −0.08587755 | +0.85698966 | |
| $e$ | 0.1891569 | $i$ | 10.98590 | | +0.11288913 | +0.51509727 | |
| $P$ | 5.32 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 05 | 691 | 0.2− | 0.1+ | 2003 11 03 | 704 | 0.6− | 1.0− | 2003 12 18 | 704 | 0.0 | 1.2+ |
| 1997 08 05 | 691 | 0.1− | 0.2+ | 2003 11 03 | 704 | 0.2− | 0.7− | 2003 12 18 | 704 | 0.6+ | 0.9+ |
| 1997 08 05 | 691 | 0.1+ | 0.2+ | 2003 11 03 | 704 | 0.3+ | 0.4− | 2003 12 18 | 704 | 0.2+ | 1.2+ |
| 1998 12 17 | 704 | 0.1− | 0.1+ | 2003 11 03 | 704 | 0.4− | 0.8− | 2003 12 18 | 704 | 0.7+ | 1.0+ |
| 1998 12 17 | 704 | 1.7+ | 1.0− | 2003 11 03 | 704 | 0.3− | 0.0 | 2003 12 28 | 704 | 0.1− | 0.1− |
| 1998 12 17 | 704 | 1.7+ | 0.8+ | 2003 11 20 | 704 | 0.1+ | 0.5− | 2003 12 28 | 704 | 0.4− | 0.5+ |
| 1998 12 17 | 704 | (3.4− | 0.4−) | 2003 11 20 | 704 | 0.4− | 0.5+ | 2003 12 28 | 704 | 0.3+ | 0.7+ |
| 2003 10 18 | 644 | 0.1− | 0.6− | 2003 11 20 | 704 | 0.2− | 0.2− | 2003 12 28 | 704 | 0.9+ | 1.0+ |
| 2003 10 18 | 644 | 0.1+ | 0.5− | 2003 11 20 | 704 | 0.3− | 0.1− | 2003 12 29 | 703 | 0.7− | 1.3+ |
| 2003 10 18 | 644 | 0.1+ | 0.2− | 2003 11 20 | 704 | 0.3+ | 0.1− | 2003 12 29 | 703 | 0.6− | 0.5+ |
| 2003 10 19 | 644 | 0.2+ | 0.5− | 2003 11 21 | 644 | 0.3− | 0.2− | 2003 12 29 | 703 | 0.0 | 0.8+ |
| 2003 10 19 | 644 | 0.3+ | 0.5− | 2003 11 21 | 644 | 0.2− | 0.2− | 2003 12 29 | 703 | 1.0− | 0.6+ |
| 2003 10 19 | 644 | 0.1+ | 0.5− | 2003 11 21 | 644 | 0.3− | 0.2− | 2005 03 08 | G96 | 0.1+ | 0.4+ |
| 2003 10 22 | 699 | 0.3− | 0.5− | 2003 12 04 | 704 | 0.5+ | 0.5− | 2005 03 08 | G96 | 0.7− | 0.2− |
| 2003 10 22 | 699 | 0.2− | 0.1− | 2003 12 04 | 704 | 0.1+ | 0.3+ | 2005 03 08 | G96 | 0.3+ | 0.1+ |
| 2003 10 22 | 699 | 0.1− | 0.6− | 2003 12 04 | 704 | 0.2+ | 0.2+ | 2005 03 08 | G96 | 0.6+ | 0.2+ |
| 2003 10 22 | 699 | 0.3+ | 0.2− | 2003 12 18 | 704 | 1.0+ | 0.4+ | | | | |

**2003 UT$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.10977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18585598 | $\omega$ | 73.27662 | | +0.98686032 | −0.00376141 | |
| $a$ | 3.0410136 | $\Omega$ | 286.71269 | | −0.06804093 | +0.89708994 | |
| $e$ | 0.2599649 | $i$ | 9.70969 | | +0.14655078 | +0.44183197 | |
| $P$ | 5.30 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 13 | 691 | 0.2− | 0.0 | 2003 11 14 | 644 | 0.1+ | 0.1− | 2003 12 03 | 699 | 0.1+ | 0.8− |
| 1997 07 13 | 691 | 0.1− | 0.2+ | 2003 11 14 | 644 | 0.1+ | 0.0 | 2003 12 04 | 704 | 0.8+ | 0.2+ |
| 1997 07 13 | 691 | 0.1+ | 0.2+ | 2003 11 20 | 704 | 0.1+ | 0.6− | 2003 12 04 | 704 | 0.2+ | 0.3+ |
| 2003 10 18 | 644 | 0.1− | 0.3+ | 2003 11 20 | 704 | 0.1− | 0.1− | 2003 12 04 | 704 | 0.1− | 1.1+ |
| 2003 10 18 | 644 | 0.1− | 0.0 | 2003 11 20 | 704 | 0.0 | 0.4− | 2003 12 18 | 704 | 0.0 | 0.7+ |
| 2003 10 18 | 644 | 0.1− | 0.0 | 2003 11 20 | 704 | 0.1− | 0.3− | 2003 12 18 | 704 | 0.1− | 0.1+ |
| 2003 10 19 | 644 | 0.0 | 0.1− | 2003 11 20 | 704 | 0.4− | 0.2− | 2003 12 18 | 704 | 0.2+ | 0.7+ |
| 2003 10 19 | 644 | 0.0 | 0.1− | 2003 11 22 | 704 | 0.4+ | 0.8+ | 2003 12 18 | 704 | 0.6− | 0.1− |
| 2003 10 19 | 644 | 0.0 | 0.1+ | 2003 11 22 | 704 | 0.9+ | 0.5+ | 2003 12 29 | 703 | 0.6+ | 0.6+ |
| 2003 11 03 | 704 | 0.0 | 0.2+ | 2003 11 22 | 704 | 0.3+ | 0.7− | 2003 12 29 | 703 | 0.9− | 0.3− |
| 2003 11 03 | 704 | 0.2+ | 0.8+ | 2003 11 22 | 704 | 1.1+ | 0.9− | 2003 12 29 | 703 | 0.1+ | 0.6+ |
| 2003 11 03 | 704 | 0.7− | 0.4+ | 2003 11 22 | 704 | 0.1+ | 0.3− | 2003 12 29 | 703 | 1.1− | 0.6− |
| 2003 11 03 | 704 | 0.5− | 0.3+ | 2003 12 03 | 699 | 0.0 | 0.4− | 2005 01 13 | 691 | 0.1+ | 0.0 |
| 2003 11 03 | 704 | 0.4− | 0.5+ | 2003 12 03 | 699 | 0.4+ | 0.6− | 2005 01 13 | 691 | 0.0 | 0.2+ |
| 2003 11 14 | 644 | 0.3− | 0.2− | 2003 12 03 | 699 | 0.4− | 0.5− | 2005 01 13 | 691 | 0.1+ | 0.2+ |

**2003 UK$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.97178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30341174 | $\omega$ | 162.27285 | | +0.46619171 | −0.87851611 | |
| $a$ | 2.1933829 | $\Omega$ | 259.83048 | | +0.79830975 | +0.46854369 | |
| $e$ | 0.1312342 | $i$ | 6.08170 | | +0.38127003 | +0.09314642 | |
| $P$ | 3.25 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.2+ | 0.2+ | 2003 11 19 | 699 | 0.1− | 0.1+ | 2003 11 24 | 704 | 0.1− | 0.4+ |
| 2001 01 03 | 704 | 0.4+ | 0.2− | 2003 11 19 | 699 | 0.2+ | 0.0 | 2003 11 24 | 703 | 0.0 | 0.8+ |
| 2001 01 03 | 704 | 0.2+ | 0.6− | 2003 11 19 | 703 | 0.0 | 0.1− | 2003 11 24 | 704 | 0.8− | 0.1+ |
| 2001 01 03 | 704 | 1.1− | 1.0− | 2003 11 19 | 703 | 0.2− | 0.3− | 2003 11 24 | 703 | 0.5− | 0.4+ |
| 2003 10 18 | 644 | 0.3+ | 0.4− | 2003 11 19 | 703 | 0.4− | 0.8+ | 2003 11 24 | 704 | 0.0 | 1.0+ |
| 2003 10 18 | 644 | 0.3+ | 0.1− | 2003 11 19 | 703 | (1.7− | 1.1−) | 2003 11 24 | 703 | 0.6− | 0.7+ |
| 2003 10 18 | 644 | 0.4+ | 0.1− | 2003 11 19 | 691 | 0.2− | 0.3− | 2003 11 24 | 704 | 0.2− | 0.2− |
| 2003 10 19 | 644 | 0.2+ | 0.2+ | 2003 11 19 | 691 | 0.3− | 0.3− | 2003 11 30 | 691 | 0.2− | 0.1+ |
| 2003 10 19 | 644 | 0.0 | 0.4+ | 2003 11 19 | 691 | 0.2− | 0.2− | 2003 11 30 | 691 | 0.1− | 0.0 |
| 2003 10 19 | 644 | 0.1+ | 0.0 | 2003 11 20 | 704 | 0.0 | 0.0 | 2003 11 30 | 691 | 0.1− | 0.0 |
| 2003 10 27 | 691 | 0.2− | 0.5− | 2003 11 20 | 704 | 0.0 | 0.2− | 2003 12 16 | 291 | 0.1+ | 0.1+ |
| 2003 10 27 | 691 | 0.1− | 0.5− | 2003 11 20 | 704 | 0.2+ | 0.3− | 2003 12 16 | 291 | 0.4+ | 0.1+ |
| 2003 10 27 | 691 | 0.1+ | 0.6− | 2003 11 20 | 704 | 0.2− | 0.3− | 2003 12 16 | 291 | 0.6+ | 0.5+ |
| 2003 10 30 | 704 | 0.1− | 0.4+ | 2003 11 20 | 704 | 0.2+ | 0.4− | 2003 12 22 | 704 | 0.5− | 0.1− |
| 2003 10 30 | 704 | 0.4− | 0.1− | 2003 11 21 | 644 | 0.1− | 0.1− | 2003 12 22 | 704 | 0.2+ | 0.9+ |
| 2003 10 30 | 704 | 0.6+ | 0.4− | 2003 11 21 | 644 | 0.3− | 0.1+ | 2003 12 22 | 704 | (1.5− | 1.3−) |
| 2003 10 30 | 704 | (0.8+ | 1.7−) | 2003 11 21 | 644 | 0.2− | 0.2− | 2003 12 22 | 704 | 0.3+ | 0.2+ |
| 2003 11 02 | 704 | 0.7+ | 0.9+ | 2003 11 22 | 704 | 0.3+ | 0.9+ | 2003 12 22 | 704 | 0.1+ | 0.2+ |
| 2003 11 02 | 704 | 0.3− | 0.8+ | 2003 11 22 | 704 | 0.6+ | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.2+ |
| 2003 11 02 | 704 | 0.2+ | 0.4+ | 2003 11 22 | 704 | 1.1+ | 0.1− | 2006 09 06 | 644 | 0.4− | 0.2+ |
| 2003 11 02 | 704 | 0.1− | 0.2− | 2003 11 23 | 704 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.0 |
| 2003 11 05 | 699 | 0.1+ | 0.6+ | 2003 11 23 | 704 | 0.3− | 1.4+ | 2006 09 20 | 699 | 0.2− | 0.4+ |
| 2003 11 05 | 699 | 0.3− | 0.2− | 2003 11 23 | 704 | 1.3+ | 0.3+ | 2006 09 20 | 699 | 0.3+ | 1.0+ |
| 2003 11 05 | 699 | 1.1− | 1.0− | 2003 11 24 | 704 | 0.4+ | 1.3+ | 2006 09 20 | 699 | 1.2− | 0.7− |
| 2003 11 05 | 699 | 0.5− | 0.1− | 2003 11 24 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | (1.7− | 0.3−) |
| 2003 11 16 | 691 | 0.1− | 0.2− | 2003 11 24 | 704 | 0.4− | 0.0 | 2006 09 29 | 699 | (1.4− | 2.2−) |
| 2003 11 16 | 691 | 0.2+ | 0.2− | 2003 11 24 | 704 | 0.0 | 0.0 | 2006 09 29 | 699 | 1.2+ | 0.4+ |
| 2003 11 16 | 691 | 0.0 | 0.2− | 2003 11 24 | 704 | 0.5− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.6− |
| 2003 11 19 | 699 | 0.0 | 0.4+ | 2003 11 24 | 703 | 0.5+ | 1.0+ | 2006 09 29 | 699 | 0.2+ | 0.3− |
| 2003 11 19 | 699 | 0.9+ | 0.1+ | 2003 11 24 | 704 | 0.6− | 0.0 | | | | |

**2003 UW$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.30980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27990367 | $\omega$ | 253.82919 | | −0.53318935 | −0.84377220 | |
| $a$ | 2.3145345 | $\Omega$ | 228.55547 | | +0.80407562 | −0.48291112 | |
| $e$ | 0.0340497 | $i$ | 4.69067 | | +0.26300478 | −0.23419077 | |
| $P$ | 3.52 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 644 | 0.3− | 0.6+ | 2003 10 17 | 699 | 0.1+ | 1.0− | 2005 03 17 | 703 | 0.3− | 0.9+ |
| 2002 05 12 | 644 | 0.0 | 0.0 | 2003 10 17 | 699 | 0.5+ | 1.1+ | 2005 04 04 | 703 | 0.8+ | 0.3− |
| 2002 05 12 | 644 | 0.4+ | 0.3+ | 2003 10 17 | 699 | 0.5− | 0.1− | 2005 04 04 | 703 | 0.0 | 0.2+ |
| 2003 10 02 | 691 | 0.0 | 0.1+ | 2005 03 04 | 703 | 0.1− | 0.5+ | 2005 04 04 | 703 | 0.3+ | 0.0 |
| 2003 10 02 | 691 | 0.1− | 0.0 | 2005 03 04 | 703 | 0.4+ | 0.1− | 2005 04 04 | 703 | 1.1+ | 0.9+ |
| 2003 10 02 | 691 | 0.0 | 0.1+ | 2005 03 04 | 703 | 0.1+ | 0.4− | 2005 05 14 | G96 | 0.0 | 0.1− |
| 2003 10 16 | 691 | 0.2+ | 0.1− | 2005 03 04 | 703 | 0.4− | 1.6− | 2005 05 14 | G96 | 0.3+ | 0.0 |
| 2003 10 16 | 691 | 0.5− | 0.4+ | 2005 03 17 | 703 | 0.4− | 1.1+ | 2005 05 14 | G96 | 0.1+ | 0.2− |
| 2003 10 16 | 691 | 0.1+ | 0.1− | 2005 03 17 | 703 | 1.4− | 0.8+ | 2005 05 14 | G96 | 0.4+ | 0.0 |
| 2003 10 17 | 699 | 0.2+ | 0.2+ | 2005 03 17 | 703 | (2.2− | 0.8−) | | | | |

**2003 UT$_{63}$ = 2004 XA$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.27129 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18668269 | $\omega$ | 192.65519 | | +0.37512168 | | +0.90659493 |
| $a$ | 3.0320289 | $\Omega$ | 99.63603 | | −0.83248228 | | +0.42120600 |
| $e$ | 0.0804248 | $i$ | 11.30770 | | −0.40774622 | | −0.02590611 |
| $P$ | 5.28 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 25 | 699 | 0.5+ | 0.1+ | 2002 07 14 | 644 | 0.3− | 0.3+ | 2004 12 14 | 691 | 0.2+ | 0.1− |
| 2001 04 25 | 699 | 0.7− | 0.9+ | 2003 10 16 | 699 | 0.2− | 1.0+ | 2004 12 14 | 691 | 0.2+ | 0.0 |
| 2001 04 25 | 699 | 0.5+ | 0.5+ | 2003 10 16 | 699 | 0.6+ | 0.2+ | 2005 01 18 | 691 | 0.3+ | 0.2− |
| 2001 04 25 | 699 | 0.2+ | 0.4+ | 2003 10 16 | 699 | 0.9− | 0.6− | 2005 01 18 | 691 | 0.3+ | 0.1− |
| 2002 06 12 | 644 | 0.2− | 0.9+ | 2003 10 16 | 699 | 0.5− | 0.2− | 2005 01 18 | 691 | 0.2+ | 0.2− |
| 2002 06 12 | 644 | 0.4− | 0.5+ | 2003 10 19 | 704 | 0.2− | 0.7+ | 2006 02 23 | 699 | 1.3+ | 0.0 |
| 2002 06 12 | 644 | 0.4− | 0.4+ | 2003 10 19 | 704 | 0.5+ | 0.2− | 2006 02 23 | 699 | 1.2+ | 0.5+ |
| 2002 06 17 | 644 | 0.1− | 0.9+ | 2003 10 19 | 704 | 0.3− | 0.2+ | 2006 02 23 | 699 | 0.5+ | 1.1+ |
| 2002 06 17 | 644 | 0.4− | 1.2+ | 2003 11 24 | 644 | 0.5− | 0.6+ | 2006 02 23 | 699 | 0.1+ | 0.8+ |
| 2002 06 17 | 644 | 0.0 | 1.0+ | 2003 11 24 | 644 | 0.2− | 0.9+ | 2006 04 02 | 703 | 1.4− | 0.0 |
| 2002 07 05 | 704 | 1.1+ | 2.9− | 2003 11 24 | 644 | 0.2− | 0.0 | 2006 04 02 | 703 | 1.2− | 0.0 |
| 2002 07 05 | 704 | 0.7+ | 1.3− | 2004 12 10 | 691 | 0.2− | 0.0 | 2006 04 02 | 703 | 0.5− | 1.4− |
| 2002 07 05 | 704 | 0.6+ | 0.2+ | 2004 12 10 | 691 | 0.3− | 0.3+ | 2006 04 02 | 703 | 0.2+ | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.0 | 2004 12 10 | 691 | 0.3− | 0.3+ | | | | |
| 2002 07 14 | 644 | 0.2− | 0.1+ | 2004 12 14 | 691 | 0.0 | 0.1+ | | | | |

**2003 UX$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.79883 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23237697 | $\omega$ | 228.97570 | | +0.78874507 | | +0.58038877 |
| $a$ | 2.6202375 | $\Omega$ | 94.58007 | | −0.48519248 | | +0.79010788 |
| $e$ | 0.2817963 | $i$ | 11.72460 | | −0.37745129 | | +0.19717611 |
| $P$ | 4.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 29 | 691 | 0.1− | 0.1+ | 2003 10 19 | 704 | 0.2− | 0.5+ | 2003 11 24 | 644 | 0.2+ | 0.0 |
| 1998 04 29 | 691 | 0.0 | 0.1− | 2003 10 19 | 704 | 0.5− | 0.2+ | 2003 11 24 | 644 | 0.3+ | 0.0 |
| 1998 04 29 | 691 | 0.2+ | 0.3+ | 2003 10 19 | 704 | 0.3− | 0.5+ | 2003 12 13 | 644 | 0.1+ | 0.1+ |
| 2003 09 02 | 704 | 1.2− | 0.8+ | 2003 10 19 | 704 | 0.3+ | 0.1+ | 2003 12 13 | 644 | 0.0 | 0.2+ |
| 2003 09 02 | 704 | 0.2+ | 0.5− | 2003 10 19 | 704 | 0.3− | 0.6+ | 2003 12 13 | 644 | 0.0 | 0.4+ |
| 2003 09 02 | 704 | 0.6− | 0.5− | 2003 10 27 | 699 | 0.0 | 0.1− | 2006 04 02 | 703 | 0.5− | 0.6− |
| 2003 10 16 | 699 | 0.1+ | 0.2− | 2003 10 27 | 699 | 0.5− | 0.3− | 2006 04 02 | 703 | 0.8− | 0.4+ |
| 2003 10 16 | 699 | 0.1− | 0.1− | 2003 10 27 | 699 | 0.1+ | 0.3− | 2006 04 02 | 703 | 0.4+ | 0.4+ |
| 2003 10 16 | 699 | 0.5+ | 0.2+ | 2003 10 27 | 699 | (0.9+ | 2.8−) | 2006 04 02 | 703 | 1.2+ | 0.5+ |
| 2003 10 16 | 699 | 0.6+ | 0.4− | 2003 11 24 | 644 | 0.9+ | 0.4+ | | | | |

**2003 UX$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.06478 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24340733 | $\omega$ | 13.13524 | | +0.93908546 | | −0.34365694 |
| $a$ | 2.5404673 | $\Omega$ | 6.96909 | | +0.31204130 | | +0.84732722 |
| $e$ | 0.1543769 | $i$ | 2.02627 | | +0.14404416 | | +0.40489071 |
| $P$ | 4.05 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 691 | 0.1− | 0.3− | 2003 11 20 | 704 | (2.2− | 1.1+) | 2003 12 22 | 691 | 0.1+ | 0.3− |
| 1999 12 15 | 691 | 0.1+ | 0.2− | 2003 11 20 | 704 | 0.3− | 0.3− | 2003 12 22 | 691 | 0.1+ | 0.1+ |
| 1999 12 15 | 691 | 0.2+ | 0.3− | 2003 11 20 | 704 | 0.4+ | 0.2+ | 2003 12 22 | 691 | 0.6− | 0.6+ |
| 2003 10 18 | 691 | 0.0 | 0.1− | 2003 11 20 | 704 | 0.7+ | 0.1− | 2005 03 04 | G96 | 0.6+ | 0.3− |
| 2003 10 18 | 691 | 0.0 | 0.0 | 2003 11 20 | 704 | 0.0 | 0.5+ | 2005 03 04 | G96 | 0.2+ | 0.0 |
| 2003 10 18 | 691 | 0.0 | 0.2− | 2003 11 24 | 704 | 0.3+ | 0.8+ | 2005 03 04 | G96 | 0.0 | 0.1− |
| 2003 10 20 | 691 | 0.1− | 0.0 | 2003 11 24 | 704 | 0.1+ | 0.7+ | 2005 03 04 | G96 | 0.6− | 0.8+ |
| 2003 10 20 | 691 | 0.1− | 0.0 | 2003 11 24 | 704 | 0.8+ | 0.1− | | | | |
| 2003 10 20 | 691 | 0.2− | 0.0 | 2003 11 24 | 704 | 0.2− | 0.8+ | | | | |

**2003 UT$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.63383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23072308 | $\omega$ | 198.66949 | | +0.94793962 | | +0.29576623 |
| $a$ | 2.6327444 | $\Omega$ | 143.45434 | | −0.26107252 | | +0.93403226 |
| $e$ | 0.1803240 | $i$ | 11.43334 | | −0.18235025 | | +0.20026499 |
| $P$ | 4.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.1+ | 0.1− | 2003 11 24 | 644 | 0.1− | 0.0 | 2005 03 10 | G96 | 0.2+ | 0.1− |
| 1997 03 02 | 691 | 0.0 | 0.1− | 2003 11 24 | 644 | 0.5− | 0.5− | 2005 03 10 | G96 | 0.0 | 0.2− |
| 1997 03 02 | 691 | 0.2− | 0.0 | 2003 11 29 | 704 | 1.9+ | 0.4+ | 2005 03 10 | G96 | 0.2+ | 0.0 |
| 2003 10 19 | 644 | 0.1− | 0.2+ | 2003 11 29 | 704 | 0.3− | 0.8+ | 2006 05 01 | 703 | 1.0− | 1.3+ |
| 2003 10 19 | 644 | 0.4− | 0.6+ | 2003 11 29 | 704 | 1.2+ | 0.5+ | 2006 05 01 | 703 | 0.5− | 0.3− |
| 2003 10 19 | 644 | 0.5− | 0.5+ | 2003 11 29 | 704 | 0.6+ | 1.5+ | 2006 05 01 | 703 | 1.7− | 0.6− |
| 2003 10 20 | 704 | (1.6+ | 3.4+) | 2003 12 19 | 809 | 0.6− | 0.4+ | 2006 05 01 | 703 | 0.2− | 0.3− |
| 2003 10 20 | 704 | (1.5+ | 2.1+) | 2003 12 19 | 809 | 0.6− | 0.4+ | 2006 05 21 | 691 | 0.0 | 0.1− |
| 2003 10 20 | 704 | (2.0+ | 2.9+) | 2003 12 19 | 809 | 0.7− | 0.5+ | 2006 05 21 | 691 | 0.1− | 0.7+ |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2003 12 19 | 809 | 0.4− | 0.2+ | 2006 05 21 | 691 | 0.3+ | 0.3+ |
| 2003 10 24 | 645 | 0.1+ | 0.1− | 2003 12 19 | 809 | 0.8− | 0.6+ | 2006 05 31 | 691 | 0.2+ | 0.3− |
| 2003 11 20 | 645 | 0.0 | 0.1− | 2003 12 19 | 809 | 0.7− | 0.5+ | 2006 05 31 | 691 | 0.0 | 0.2− |
| 2003 11 20 | 645 | 0.0 | 0.0 | 2003 12 19 | 809 | 0.7− | 0.6+ | 2006 05 31 | 691 | 0.6+ | 0.2+ |
| 2003 11 24 | 644 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.1− | 0.3− | | | | |

**2003 UZ$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.52866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21426714 | $\omega$ | 269.90156 | | +0.90637362 | | +0.36588753 |
| $a$ | 2.7658736 | $\Omega$ | 68.63366 | | −0.23680405 | | +0.85401794 |
| $e$ | 0.1137230 | $i$ | 13.10915 | | −0.34987242 | | +0.36983737 |
| $P$ | 4.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 18 | 644 | 0.2− | 0.1− | 2003 11 19 | 644 | 0.0 | 0.3− | 2003 12 17 | 699 | (2.3+ | 0.4−) |
| 2003 10 18 | 644 | 0.1− | 0.1− | 2003 11 19 | 644 | 0.4+ | 0.1− | 2003 12 17 | 699 | 1.2+ | 1.0+ |
| 2003 10 18 | 644 | 0.1− | 0.2− | 2003 11 19 | 644 | 0.2+ | 0.4− | 2006 04 27 | 703 | 0.3− | 0.5+ |
| 2003 10 21 | 644 | 0.2+ | 0.1+ | 2003 11 19 | 644 | 0.2+ | 0.5− | 2006 04 27 | 703 | 0.7+ | 0.8+ |
| 2003 10 21 | 644 | 0.2+ | 0.2− | 2003 11 19 | 644 | 0.1+ | 0.1− | 2006 04 27 | 703 | 0.5− | 0.2+ |
| 2003 10 21 | 644 | 0.4+ | 0.1− | 2003 11 21 | 699 | 0.5+ | 0.9− | 2006 04 27 | 703 | 0.5− | 0.4− |
| 2003 10 27 | 704 | 0.5+ | 0.9+ | 2003 11 21 | 699 | 0.1+ | 0.1+ | 2006 05 05 | G96 | 0.4+ | 0.4− |
| 2003 10 27 | 704 | 0.0 | 0.6+ | 2003 11 21 | 699 | 0.6+ | 0.6+ | 2006 05 05 | G96 | 0.2+ | 0.2− |
| 2003 10 27 | 704 | 0.8− | 0.2− | 2003 11 21 | 699 | 0.1− | 0.6− | 2006 05 05 | G96 | 0.3+ | 0.4− |
| 2003 10 27 | 704 | 0.4− | 0.9+ | 2003 11 30 | 704 | 0.7− | 0.9− | 2006 05 05 | G96 | 0.4+ | 0.5− |
| 2003 11 18 | 703 | (1.8+ | 2.3−) | 2003 11 30 | 704 | 0.7+ | 0.8+ | 2006 05 26 | 703 | 0.5− | 0.6− |
| 2003 11 18 | 703 | 0.8− | 0.6− | 2003 11 30 | 704 | 0.9+ | 0.1+ | 2006 05 26 | 703 | 0.2+ | 0.5+ |
| 2003 11 18 | 703 | 0.9− | 0.1− | 2003 11 30 | 704 | 0.3− | 0.9+ | 2006 05 26 | 703 | 1.1− | 0.2− |
| 2003 11 18 | 703 | 0.9− | 0.1− | 2003 12 17 | 699 | 0.5− | 0.2+ | 2006 05 26 | 703 | 0.6+ | 0.8+ |
| 2003 11 19 | 644 | 0.0 | 0.1− | 2003 12 17 | 699 | 0.4− | 0.4− | | | | |

**2003 UE$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.28821 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17670406 | $\omega$ | 23.93265 | +0.97769262 | | +0.00494324 | |
| $a$ | 3.1451282 | $\Omega$ | 333.07856 | −0.16052111 | | +0.66234088 | |
| $e$ | 0.1993141 | $i$ | 27.63097 | +0.13546259 | | +0.74918631 | |
| $P$ | 5.58 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 05 | 704 | 0.1− | 1.3− | 2003 09 04 | 704 | 0.1− | 0.4+ | 2003 10 19 | 699 | 0.1− | 0.5− |
| 2003 08 05 | 704 | 0.1+ | 0.6− | 2003 09 04 | 704 | 0.4+ | 0.5+ | 2003 10 21 | 644 | 0.4+ | 0.2− |
| 2003 08 05 | 704 | 0.0 | 1.2− | 2003 09 04 | 704 | 0.7+ | 0.8+ | 2003 10 21 | 644 | 0.2+ | 0.1− |
| 2003 08 05 | 704 | 0.0 | 1.2− | 2003 09 20 | 704 | 0.3+ | 0.4− | 2003 10 21 | 644 | 0.3+ | 0.1− |
| 2003 08 24 | 704 | 1.2− | 0.7+ | 2003 09 20 | 704 | 0.6+ | 0.1− | 2005 12 10 | 691 | 0.3+ | 0.0 |
| 2003 08 24 | 704 | 1.0− | 1.4+ | 2003 09 20 | 704 | 0.2+ | 0.5− | 2005 12 10 | 691 | 0.0 | 0.2+ |
| 2003 08 24 | 704 | 0.2− | 0.3+ | 2003 09 20 | 704 | 0.2+ | 0.1− | 2005 12 10 | 691 | 0.0 | 0.0 |
| 2003 08 24 | 704 | 1.1− | 0.9+ | 2003 09 20 | 704 | 0.3+ | 0.2− | 2006 02 02 | 691 | 0.2− | 0.0 |
| 2003 08 24 | 704 | 0.7− | 0.3+ | 2003 10 19 | 699 | 0.4+ | 0.9+ | 2006 02 02 | 691 | 0.2− | 0.1+ |
| 2003 09 04 | 704 | 0.1− | 0.6− | 2003 10 19 | 699 | 0.2+ | 0.1+ | 2006 02 02 | 691 | 0.2+ | 0.2− |
| 2003 09 04 | 704 | 0.4+ | 1.0+ | 2003 10 19 | 699 | 0.5− | 0.4− | | | | |

**2003 UK$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.09183 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28864782 | $\omega$ | 212.26078 | −0.57161705 | | +0.81882531 | |
| $a$ | 2.2675517 | $\Omega$ | 23.00915 | −0.72127440 | | −0.47080940 | |
| $e$ | 0.0705654 | $i$ | 7.75096 | −0.39117412 | | −0.32842597 | |
| $P$ | 3.41 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 16 | 691 | 0.1− | 0.5− | 2005 03 18 | 704 | 0.3+ | 0.4− | 2005 05 06 | G96 | 0.3− | 0.1+ |
| 1996 10 16 | 691 | 0.6+ | 0.4− | 2005 03 18 | 704 | 0.3+ | 0.0 | 2005 05 06 | G96 | 0.1− | 0.2− |
| 2003 10 19 | 691 | 0.0 | 0.1− | 2005 03 18 | 704 | 0.4− | 0.3− | 2005 05 06 | G96 | 0.2− | 0.1+ |
| 2003 10 19 | 691 | 0.1− | 0.2+ | 2005 03 18 | 704 | 1.5+ | 1.6+ | 2005 05 06 | G96 | 0.1− | 0.1+ |
| 2003 10 19 | 691 | 0.2+ | 0.4+ | 2005 03 18 | 703 | 0.4− | 0.2+ | 2006 08 30 | 699 | 1.3− | 0.3− |
| 2003 10 22 | 691 | 0.0 | 0.5+ | 2005 03 18 | 703 | (1.6− | 0.9−) | 2006 08 30 | 699 | 0.9+ | 1.1+ |
| 2003 10 22 | 691 | 0.1+ | 0.2+ | 2005 03 18 | 703 | 0.9+ | 0.5+ | 2006 08 30 | 699 | 0.4+ | 0.3+ |
| 2003 10 22 | 691 | 0.2− | 0.0 | 2005 03 18 | 703 | 0.7+ | 0.4− | 2006 08 30 | 699 | 0.1+ | 0.2+ |
| 2003 11 01 | 941 | 1.1− | 0.6+ | 2005 04 04 | 703 | 0.4− | 0.7+ | 2006 09 14 | 703 | 1.0− | 0.7− |
| 2003 11 01 | 941 | 0.8− | 0.2+ | 2005 04 04 | 703 | 0.8− | 0.0 | 2006 09 14 | 703 | 1.1− | 0.7− |
| 2003 11 01 | 941 | 0.2− | 0.5− | 2005 04 04 | 703 | 0.7− | 0.4− | 2006 09 14 | 703 | 1.0+ | 0.1− |
| 2003 11 01 | 941 | 0.6+ | 1.1− | 2005 04 04 | 703 | 0.6− | 0.4− | 2006 09 14 | 703 | 1.2− | 0.6+ |
| 2003 11 01 | 941 | 0.6+ | 1.5− | 2005 04 13 | 699 | 1.0− | 0.0 | 2006 10 11 | 291 | 0.2− | 0.3+ |
| 2005 03 11 | 691 | 0.3+ | 0.1+ | 2005 04 13 | 699 | (0.3− | 1.8+) | 2006 10 11 | 291 | 0.2− | 0.4+ |
| 2005 03 11 | 691 | 0.3+ | 0.1+ | 2005 04 13 | 699 | (1.9+ | 1.1+) | 2006 10 11 | 291 | 0.3+ | 0.3+ |
| 2005 03 11 | 691 | 0.2+ | 0.2+ | 2005 04 13 | 699 | 0.5− | 0.1− | | | | |

**2003 UG$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.57962 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22627218 | $\omega$ | 206.82809 | +0.79660295 | | −0.60301548 | |
| $a$ | 2.6671572 | $\Omega$ | 190.57663 | +0.58776832 | | +0.78902637 | |
| $e$ | 0.1395023 | $i$ | 13.34953 | +0.14125203 | | +0.11751477 | |
| $P$ | 4.36 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 691 | 0.2− | 0.8+ | 2003 10 20 | 704 | 0.4− | 0.4− | 2003 11 24 | 644 | 0.0 | 0.9+ |
| 2001 04 23 | 691 | 0.5+ | 0.2+ | 2003 10 20 | 704 | 0.0 | 1.0+ | 2003 11 24 | 644 | 0.1+ | 0.4+ |
| 2001 04 23 | 691 | 0.1− | 0.4+ | 2003 10 22 | 691 | 0.2− | 0.3+ | 2003 11 24 | 644 | 0.1− | 0.2+ |
| 2003 09 28 | 704 | 0.6+ | 0.3+ | 2003 10 22 | 691 | 0.0 | 0.1+ | 2003 11 28 | 645 | 0.0 | 0.2− |
| 2003 09 28 | 704 | 0.1− | 0.3+ | 2003 10 22 | 691 | 0.2− | 0.3+ | 2003 11 28 | 645 | 0.0 | 0.1− |
| 2003 09 28 | 704 | 0.5+ | 1.1+ | 2003 10 27 | 704 | 0.4− | 0.0 | 2006 05 30 | G96 | 0.1+ | 0.0 |
| 2003 09 28 | 704 | 0.2+ | 0.9+ | 2003 10 27 | 704 | 0.4+ | 0.8+ | 2006 05 30 | G96 | 0.2− | 0.6+ |
| 2003 09 28 | 704 | 0.9− | 0.1+ | 2003 10 27 | 704 | 0.6− | 0.9+ | 2006 05 30 | G96 | 0.3− | 0.6+ |
| 2003 10 20 | 704 | 0.4+ | 1.2+ | 2003 11 19 | 644 | 0.2+ | 0.7+ | 2006 05 30 | G96 | 0.4+ | 0.2+ |
| 2003 10 20 | 704 | 1.5− | 1.3− | 2003 11 19 | 644 | 0.2− | 0.5+ | | | | |
| 2003 10 20 | 704 | 1.5+ | 1.1+ | 2003 11 19 | 644 | 0.1− | 0.4+ | | | | |

**2003 UV$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.44783 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18446903 | $\omega$ | 256.37539 | +0.52335122 | | −0.84648373 | |
| $a$ | 3.0562373 | $\Omega$ | 161.07501 | +0.85068768 | | +0.51237283 | |
| $e$ | 0.2997241 | $i$ | 17.55416 | +0.04933531 | | +0.14470446 | |
| $P$ | 5.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 08 | 691 | 0.1+ | 0.6+ | 2003 10 17 | 644 | 0.1+ | 0.2+ | 2003 11 20 | 644 | 0.0 | 0.1+ |
| 1997 07 08 | 691 | 0.2+ | 0.0 | 2003 10 21 | 699 | 0.3+ | 0.7− | 2003 11 20 | 644 | 0.5+ | 0.3+ |
| 1997 07 08 | 691 | 0.3− | 0.4+ | 2003 10 21 | 699 | 0.9− | 0.7− | 2003 12 14 | 644 | 0.7+ | 0.3+ |
| 2003 09 28 | 699 | 0.3+ | 0.3+ | 2003 10 21 | 699 | 0.4− | 0.1+ | 2003 12 14 | 644 | 0.5+ | 0.1+ |
| 2003 09 28 | 699 | 0.8+ | 1.2+ | 2003 10 21 | 699 | 0.2+ | 0.2+ | 2003 12 14 | 644 | 0.6+ | 0.0 |
| 2003 09 28 | 699 | 1.0− | 0.6+ | 2003 10 29 | 608 | 0.7− | 0.5+ | 2005 03 01 | 691 | 0.1+ | 0.3+ |
| 2003 09 28 | 699 | 1.0− | 0.9− | 2003 10 29 | 608 | 0.6− | 0.9+ | 2005 03 01 | 691 | 0.1+ | 0.6+ |
| 2003 10 17 | 644 | 0.1+ | 0.3+ | 2003 10 29 | 608 | 0.2− | 0.6+ | 2005 03 01 | 691 | 0.0 | 0.5+ |
| 2003 10 17 | 644 | 0.1+ | 0.3+ | 2003 11 20 | 644 | 0.1− | 0.1− | | | | |

**2003 UY$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.07907 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23226061 | $\omega$ | 180.59011 | −0.83167319 | | +0.55300818 | |
| $a$ | 2.6211126 | $\Omega$ | 33.14133 | −0.50907055 | | −0.72341232 | |
| $e$ | 0.1730929 | $i$ | 5.24918 | −0.22173608 | | −0.41334800 | |
| $P$ | 4.24 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.2+ | 0.1− | 2002 07 06 | 644 | 0.3− | 0.5+ | 2004 12 19 | 691 | 0.2− | 0.2− |
| 1999 10 30 | 691 | 0.3+ | 0.1− | 2002 07 06 | 644 | 0.2+ | 0.4+ | 2004 12 19 | 691 | 0.2− | 0.2− |
| 1999 10 30 | 691 | 0.4+ | 0.0 | 2002 08 05 | 644 | 0.2− | 0.8+ | 2004 12 19 | 691 | 0.2− | 0.2− |
| 2001 01 18 | 704 | 0.3+ | 0.6+ | 2002 08 05 | 644 | 0.3− | 0.6+ | 2005 01 07 | 704 | 0.3− | 0.5− |
| 2001 01 18 | 704 | 0.0 | 0.5+ | 2002 08 05 | 644 | 0.1− | 0.9+ | 2005 01 07 | 704 | 0.3− | 0.1− |
| 2001 01 18 | 704 | 0.8− | 0.7+ | 2003 09 29 | 691 | 0.2− | 0.1+ | 2005 01 07 | 704 | 0.4− | 0.0 |
| 2001 01 18 | 704 | 1.2− | 0.0 | 2003 09 29 | 691 | 0.0 | 0.1+ | 2005 01 07 | 704 | 0.9− | 0.6− |
| 2001 02 03 | 704 | 0.8− | 0.5+ | 2003 09 29 | 691 | 0.0 | 0.1+ | 2005 01 16 | 704 | 1.3+ | 0.9+ |
| 2001 02 03 | 704 | 1.4+ | 1.1+ | 2003 10 18 | 691 | 0.5− | 0.2+ | 2005 01 16 | 704 | 0.5− | 0.2+ |
| 2001 02 03 | 704 | 0.2+ | 1.9+ | 2003 10 18 | 691 | 0.5− | 0.3+ | 2005 01 16 | 704 | 1.1+ | 0.5+ |
| 2001 02 03 | 704 | 0.2+ | 1.4+ | 2003 10 18 | 691 | 0.2− | 0.3+ | 2005 01 16 | 704 | 0.3− | 0.5+ |
| 2001 02 17 | 704 | 0.0 | 0.9+ | 2003 10 21 | 699 | 0.5− | 0.5+ | 2005 02 03 | 704 | 1.8+ | 1.9− |
| 2001 02 17 | 704 | 1.1+ | 0.5+ | 2003 10 21 | 699 | 0.0 | 0.1+ | 2005 02 03 | 704 | 0.6+ | 0.0 |
| 2001 02 17 | 704 | 0.7+ | 2.0+ | 2003 10 21 | 699 | 0.8+ | 0.7− | 2005 02 03 | 704 | 1.9+ | 1.5− |
| 2002 07 06 | 644 | 0.8+ | 0.3+ | 2003 10 21 | 699 | 0.7− | 0.0 | 2005 02 03 | 704 | 0.4+ | 0.8− |

**2003 UL$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.26660 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25905828 | $\omega$ | 357.69344 | +0.94159769 | | −0.33664290 | |
| $a$ | 2.4370872 | $\Omega$ | 21.98434 | +0.30929751 | | +0.85512158 | |
| $e$ | 0.1977211 | $i$ | 1.23731 | +0.13314967 | | +0.39425708 | |
| $P$ | 3.80 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 691 | 0.7− | 0.2+ | 2003 10 19 | 691 | 0.1+ | 0.1+ | 2003 10 28 | 704 | 0.7− | 0.3+ |
| 2001 02 21 | 691 | 0.4+ | 0.3+ | 2003 10 19 | 691 | 0.2− | 0.2− | 2005 03 04 | G96 | 0.4+ | 0.1− |
| 2001 02 21 | 691 | 0.4+ | 0.2− | 2003 10 19 | 691 | 0.3− | 0.3+ | 2005 03 04 | G96 | 0.0 | 0.2− |
| 2003 09 21 | 644 | 0.1+ | 0.1+ | 2003 10 21 | 699 | 0.6+ | 0.9− | 2005 03 04 | G96 | 0.6− | 0.0 |
| 2003 09 21 | 644 | 0.1− | 0.1+ | 2003 10 21 | 699 | 0.3+ | 0.5− | 2005 03 04 | G96 | 0.0 | 0.4− |
| 2003 09 21 | 644 | 0.4+ | 0.1+ | 2003 10 21 | 699 | 0.5− | 0.4+ | 2006 05 25 | 568 | 0.1+ | 0.3+ |
| 2003 09 30 | 691 | 0.1+ | 0.1+ | 2003 10 21 | 699 | (2.0− | 0.2−) | 2006 05 25 | 568 | 0.0 | 0.3+ |
| 2003 09 30 | 691 | 0.1+ | 0.1+ | 2003 10 28 | 704 | 1.2+ | 0.1− | 2006 05 25 | 568 | 0.0 | 0.3+ |
| 2003 09 30 | 691 | 0.0 | 0.0 | 2003 10 28 | 704 | 0.6− | 0.1− | | | | |

**2003 UQ$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.28731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17888520 | $\omega$ | 170.44713 | | −0.09249931 | −0.95691650 | |
| $a$ | 3.1195104 | $\Omega$ | 284.47895 | | +0.89375720 | +0.04205338 | |
| $e$ | 0.1722415 | $i$ | 16.51486 | | +0.43890995 | −0.28730182 | |
| $P$ | 5.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 644 | 0.3− | 0.1+ | 2003 11 19 | 644 | 0.0 | 0.0 | 2005 02 04 | 703 | 0.1− | 0.1+ | |
| 2003 10 19 | 644 | 0.1− | 0.1+ | 2003 11 19 | 644 | 0.1+ | 0.2− | 2005 02 04 | 703 | 0.4+ | 0.3+ | |
| 2003 10 19 | 644 | 0.2− | 0.1+ | 2005 01 18 | 703 | 0.6− | 0.3+ | 2005 02 14 | 703 | 0.6+ | 0.8+ | |
| 2003 10 22 | 704 | 0.2+ | 0.2− | 2005 01 18 | 703 | 0.2+ | 0.4− | 2005 02 14 | 703 | 0.2+ | 0.8− | |
| 2003 10 22 | 704 | 0.0 | 0.3+ | 2005 01 18 | 703 | 0.4− | 1.1+ | 2005 02 14 | 703 | 1.6− | 0.6− | |
| 2003 10 22 | 704 | 0.2+ | 0.5− | 2005 01 18 | 703 | 0.2+ | 0.8− | 2005 02 14 | 703 | 0.1+ | 0.3+ | |
| 2003 10 22 | 704 | 0.2+ | 0.4+ | 2005 02 04 | 703 | 0.3+ | 0.3− | | | | | |
| 2003 11 19 | 644 | 0.1+ | 0.0 | 2005 02 04 | 703 | 0.6+ | 0.0 | | | | | |

**2003 UZ$_{138}$ = 2006 KK$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.03066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22030627 | $\omega$ | 230.95025 | | +0.77643538 | −0.62836646 | |
| $a$ | 2.7150936 | $\Omega$ | 167.72523 | | +0.62510827 | +0.75827000 | |
| $e$ | 0.1625098 | $i$ | 13.04761 | | +0.07992335 | +0.17373027 | |
| $P$ | 4.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 704 | 0.3− | 1.4+ | 2003 10 18 | 699 | 0.0 | 0.1− | 2006 05 24 | 691 | 0.2+ | 0.1+ | |
| 2003 09 28 | 704 | 0.3+ | 0.7+ | 2003 10 18 | 699 | 1.2− | 1.1− | 2006 05 26 | 691 | 0.4− | 0.2+ | |
| 2003 09 28 | 704 | 0.2+ | 1.1+ | 2003 10 18 | 699 | 0.1− | 0.8− | 2006 05 26 | 691 | 0.4+ | 0.1+ | |
| 2003 09 28 | 704 | 0.6+ | 1.1+ | 2005 03 17 | G96 | 0.2+ | 0.8+ | 2006 05 26 | 691 | 0.1− | 0.3+ | |
| 2003 09 28 | 704 | 0.1+ | 1.4+ | 2005 03 17 | G96 | 0.2+ | 0.8+ | 2006 05 31 | 691 | 0.4− | 0.5+ | |
| 2003 10 16 | 644 | 0.4− | 0.0 | 2005 03 17 | G96 | 0.4+ | 1.0+ | 2006 05 31 | 691 | 0.2− | 0.1− | |
| 2003 10 16 | 644 | 0.6− | 0.1− | 2005 03 17 | G96 | 0.1− | 1.3+ | 2006 05 31 | 691 | 0.2+ | 0.5− | |
| 2003 10 16 | 644 | 0.1− | 0.1+ | 2006 05 24 | 691 | 0.2+ | 0.1− | | | | | |
| 2003 10 18 | 699 | 0.4+ | 0.8+ | 2006 05 24 | 691 | 0.0 | 0.2+ | | | | | |

**2003 UL$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.77095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20914670 | $\omega$ | 137.47861 | | +0.89730466 | −0.42155464 | |
| $a$ | 2.8108352 | $\Omega$ | 247.88778 | | +0.35740898 | +0.86789527 | |
| $e$ | 0.1528881 | $i$ | 8.12293 | | +0.25904281 | +0.26277268 | |
| $P$ | 4.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 699 | 0.1+ | 0.3+ | 2003 10 25 | 704 | 0.2− | 0.4− | 2003 11 19 | 699 | 0.3− | 0.4− | |
| 1998 09 18 | 699 | 0.7− | 1.0+ | 2003 10 25 | 704 | 0.1− | 0.4− | 2003 11 20 | 704 | 0.0 | 0.3+ | |
| 1998 09 18 | 699 | 0.1− | 0.8+ | 2003 10 25 | 704 | 0.4− | 0.2+ | 2003 11 20 | 704 | 0.6+ | 0.0 | |
| 2003 10 05 | 704 | 0.7+ | 0.7+ | 2003 10 25 | 691 | (2.9+ | 1.9−) | 2003 11 20 | 704 | 0.5+ | 0.2− | |
| 2003 10 05 | 704 | 0.7+ | 0.1+ | 2003 10 25 | 691 | 0.2+ | 0.3− | 2003 11 20 | 704 | 0.1+ | 0.4+ | |
| 2003 10 05 | 704 | 0.0 | 0.4− | 2003 10 25 | 691 | 0.0 | 0.2− | 2003 11 20 | 704 | 0.2+ | 0.2− | |
| 2003 10 05 | 704 | 0.4+ | 0.3− | 2003 10 30 | 704 | 0.7+ | 0.5+ | 2003 11 24 | 699 | 0.4+ | 0.1− | |
| 2003 10 05 | 704 | 0.1− | 0.4+ | 2003 10 30 | 704 | 0.4+ | 0.5+ | 2003 11 24 | 699 | 0.4− | 0.6+ | |
| 2003 10 18 | 699 | 1.2− | 0.3− | 2003 10 30 | 704 | 1.0+ | 0.5+ | 2003 11 24 | 699 | 0.2− | 0.2+ | |
| 2003 10 18 | 699 | 0.1− | 0.3− | 2003 11 02 | 704 | 0.6− | 0.3+ | 2003 11 24 | 699 | 1.0− | 0.6+ | |
| 2003 10 18 | 699 | 0.5+ | 0.5− | 2003 11 02 | 704 | 0.3− | 0.1− | 2003 12 01 | 703 | 1.3− | 0.6+ | |
| 2003 10 18 | 699 | 0.2+ | 0.5+ | 2003 11 02 | 704 | 0.9− | 0.4+ | 2003 12 01 | 703 | 1.4+ | 0.3− | |
| 2003 10 22 | 704 | 0.4− | 0.5+ | 2003 11 02 | 704 | 0.6− | 0.1− | 2003 12 01 | 703 | 1.1+ | 0.1+ | |
| 2003 10 22 | 704 | 0.2− | 0.3− | 2003 11 16 | 691 | 0.2+ | 0.1− | 2003 12 01 | 703 | (1.8− | 2.5−) | |
| 2003 10 22 | 704 | 0.0 | 0.0 | 2003 11 16 | 691 | 0.2+ | 0.1− | 2003 12 13 | 703 | 0.9− | 0.3− | |
| 2003 10 22 | 704 | 0.4+ | 0.2+ | 2003 11 16 | 691 | 0.1+ | 0.1+ | 2003 12 13 | 703 | 0.6− | 0.1− | |
| 2003 10 22 | 704 | 1.2+ | 0.6+ | 2003 11 19 | 699 | 0.4+ | 0.1+ | 2003 12 13 | 703 | 0.3− | 1.0+ | |
| 2003 10 23 | 699 | 0.2− | 0.5− | 2003 11 19 | 703 | 0.5− | 0.5− | 2003 12 13 | 703 | 1.0− | 0.2− | |
| 2003 10 23 | 699 | 0.6+ | 0.3− | 2003 11 19 | 699 | 0.4− | 0.1− | 2005 03 04 | 703 | 0.3− | 0.7+ | |
| 2003 10 23 | 699 | 0.9+ | 0.2− | 2003 11 19 | 703 | 0.8− | 1.3− | 2005 03 04 | 703 | 0.1− | 0.2− | |
| 2003 10 23 | 699 | 0.2− | 0.2− | 2003 11 19 | 703 | 0.3− | 0.0 | 2005 03 04 | 703 | 0.7+ | 0.7+ | |
| 2003 10 25 | 704 | 0.7− | 0.0 | 2003 11 19 | 699 | 0.1− | 0.2+ | 2005 03 04 | 703 | 0.4+ | 0.2+ | |
| 2003 10 25 | 704 | 0.2− | 0.4− | 2003 11 19 | 703 | 0.6− | 0.2− | | | | | |

**2003 UV$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.67524 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29783215 | $\omega$ | 284.38508 | | +0.98669123 | +0.03088773 | |
| $a$ | 2.2206920 | $\Omega$ | 74.03498 | | +0.04207651 | +0.89985348 | |
| $e$ | 0.1588680 | $i$ | 9.55818 | | −0.15706681 | +0.43509731 | |
| $P$ | 3.31 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 699 | 0.5+ | 0.5+ | 2003 10 28 | 608 | 0.2− | 0.3+ | 2003 11 18 | 703 | 0.1− | 0.0 | |
| 2003 09 22 | 699 | 0.7− | 1.9+ | 2003 10 28 | 608 | 0.0 | 0.1+ | 2003 11 30 | 704 | (1.2+ | 3.0−) | |
| 2003 09 22 | 699 | 0.1+ | 0.4+ | 2003 10 28 | 608 | 0.3− | 0.2− | 2003 11 30 | 704 | 0.4− | 0.0 | |
| 2003 09 22 | 699 | 0.7+ | 0.3+ | 2003 10 29 | 699 | 0.1− | 1.0− | 2003 11 30 | 704 | 0.2− | 0.2− | |
| 2003 10 18 | 699 | 0.3+ | 0.2− | 2003 10 29 | 699 | 0.5+ | 0.6− | 2003 11 30 | 704 | 0.2− | 0.1− | |
| 2003 10 18 | 699 | 1.0+ | 1.2− | 2003 10 29 | 699 | 0.4− | 0.3+ | 2003 11 30 | 704 | 0.2− | 0.2+ | |
| 2003 10 18 | 699 | 0.5− | 0.6− | 2003 10 29 | 699 | 0.5− | 0.2+ | 2003 12 21 | 704 | 0.1+ | 1.3+ | |
| 2003 10 18 | 699 | 0.7− | 1.0+ | 2003 11 01 | 704 | 0.8− | 0.2− | 2003 12 21 | 704 | 0.4− | 0.4+ | |
| 2003 10 21 | 704 | 0.1+ | 0.9+ | 2003 11 01 | 704 | 0.8+ | 1.0+ | 2003 12 21 | 704 | 0.0 | 0.8+ | |
| 2003 10 21 | 704 | 0.4− | 0.3+ | 2003 11 01 | 704 | 0.2+ | 1.4+ | 2003 12 21 | 704 | 0.2+ | 0.5+ | |
| 2003 10 21 | 704 | 0.2− | 0.4+ | 2003 11 05 | 699 | 0.5− | 0.1+ | 2003 12 21 | 704 | 0.1+ | 1.3+ | |
| 2003 10 21 | 704 | 0.4− | 0.9+ | 2003 11 05 | 699 | 0.2− | 0.7− | 2006 08 16 | E12 | 0.0 | 0.1− | |
| 2003 10 21 | 704 | 0.3− | 1.0+ | 2003 11 05 | 699 | 0.5− | 0.2− | 2006 08 16 | E12 | 0.5− | 1.0+ | |
| 2003 10 21 | 644 | 0.3+ | 0.2+ | 2003 11 05 | 699 | 0.3− | 0.1− | 2006 08 16 | E12 | 0.2− | 0.8− | |
| 2003 10 21 | 644 | 0.7+ | 0.3+ | 2003 11 15 | 644 | 0.1− | 0.3− | 2006 08 16 | E12 | 0.8− | 0.7+ | |
| 2003 10 21 | 644 | 0.8+ | 0.1+ | 2003 11 15 | 644 | 0.3+ | 0.3− | 2006 09 12 | E12 | 0.3+ | 0.3+ | |
| 2003 10 23 | 608 | 0.7− | 1.4− | 2003 11 15 | 644 | 1.0+ | 0.2+ | 2006 09 12 | E12 | 0.7+ | 0.4+ | |
| 2003 10 23 | 608 | 0.1− | 1.2− | 2003 11 17 | 703 | 0.8− | 0.6+ | 2006 09 12 | E12 | 0.2+ | 0.4− | |
| 2003 10 23 | 608 | 0.1− | 1.1− | 2003 11 17 | 703 | 0.3+ | 1.0− | 2006 09 12 | E12 | 0.2+ | 0.2− | |
| 2003 10 27 | 704 | 0.4− | 0.5+ | 2003 11 17 | 703 | 0.8+ | 1.0− | 2006 09 27 | E12 | 0.3− | 0.1+ | |
| 2003 10 27 | 704 | 0.5− | 0.3+ | 2003 11 17 | 703 | 0.6+ | 1.4− | 2006 09 27 | E12 | 0.2− | 1.0− | |
| 2003 10 27 | 704 | 0.1− | 0.4− | 2003 11 18 | 703 | 0.9+ | 1.0− | 2006 09 27 | E12 | 0.1+ | 0.9− | |
| 2003 10 27 | 704 | 0.1+ | 0.2+ | 2003 11 18 | 703 | 0.4+ | 1.0− | 2006 09 27 | E12 | 0.5+ | 0.4+ | |
| 2003 10 27 | 704 | 0.3− | 0.1− | 2003 11 18 | 703 | 0.2+ | 0.8− | | | | | |

**2003 UD$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.49481 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31799680 | $\omega$ | 267.65527 | | +0.94067481 | +0.33668220 | |
| $a$ | 2.1257926 | $\Omega$ | 72.66755 | | −0.29112248 | +0.86463479 | |
| $e$ | 0.1840522 | $i$ | 2.53027 | | −0.17429460 | +0.37289647 | |
| $P$ | 3.10 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 691 | 0.2+ | 0.1+ | 2003 10 24 | 704 | 0.3+ | 0.8− | 2006 09 30 | 703 | 0.4+ | 1.3− | |
| 2003 09 28 | 691 | 0.0 | 0.1− | 2003 10 24 | 704 | 1.1+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.2+ | |
| 2003 09 28 | 691 | 0.2− | 0.0 | 2003 10 24 | 704 | 0.2+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.1− | |
| 2003 10 19 | 691 | 0.1+ | 0.1− | 2003 10 28 | 704 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.0 | |
| 2003 10 19 | 691 | 0.1− | 0.0 | 2003 10 28 | 704 | 0.6− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.2+ | |
| 2003 10 19 | 691 | 0.2+ | 0.1− | 2003 10 28 | 704 | 1.4− | 0.4+ | 2006 10 16 | 703 | 1.4+ | 1.0− | |
| 2003 10 21 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.1− | |
| 2003 10 21 | 704 | 0.9+ | 0.1− | 2006 09 19 | 703 | 1.2− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.4− | |
| 2003 10 21 | 704 | 0.4+ | 0.2− | 2006 09 19 | 703 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.0 | |
| 2003 10 21 | 704 | 0.9− | 0.5− | 2006 09 19 | 703 | 1.0− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.2− | |
| 2003 10 21 | 644 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.5− | |
| 2003 10 21 | 644 | 0.8− | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.4− | |
| 2003 10 21 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.4− | |

**2003 UX$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.68323 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27638517 | $\omega$ | 333.77020 | | +0.62924335 | | −0.77494543 |
| $a$ | 2.3341363 | $\Omega$ | 77.17672 | | +0.72333440 | | +0.55602493 |
| $e$ | 0.2108209 | $i$ | 3.48466 | | +0.28432404 | | +0.30049269 |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 16 | 691 | 0.0 | 0.2− | 2003 10 20 | 704 | 0.2− | 0.0 | 2003 10 27 | 608 | 0.5− | 0.4+ |
| 1997 01 16 | 691 | 0.1+ | 0.1+ | 2003 10 20 | 704 | 1.0+ | 0.0 | 2003 10 27 | 608 | 0.8− | 1.0+ |
| 1997 01 16 | 691 | 0.0 | 0.2− | 2003 10 20 | 704 | 0.2+ | 0.0 | 2003 10 29 | 699 | 0.0 | 0.5− |
| 2003 09 17 | 644 | 0.0 | 0.0 | 2003 10 22 | 608 | 0.8+ | 0.5+ | 2003 10 29 | 699 | 0.4+ | 0.4+ |
| 2003 09 17 | 644 | 0.2+ | 0.1+ | 2003 10 22 | 608 | 0.6+ | 0.5+ | 2003 10 29 | 699 | 0.7+ | 0.2+ |
| 2003 09 17 | 644 | 0.2+ | 0.0 | 2003 10 22 | 608 | 0.8+ | 0.9+ | 2003 10 29 | 699 | 0.2+ | 0.3− |
| 2003 09 28 | 704 | 0.6+ | 0.8+ | 2003 10 23 | 691 | 0.1− | 0.0 | 2003 11 19 | 644 | 0.4+ | 0.3+ |
| 2003 09 28 | 704 | 0.1− | 0.8+ | 2003 10 23 | 691 | 0.0 | 0.2− | 2003 11 19 | 644 | 0.4+ | 0.5+ |
| 2003 09 28 | 704 | 0.2− | 0.5+ | 2003 10 23 | 691 | 0.2− | 0.3− | 2003 11 19 | 644 | 0.3+ | 0.3+ |
| 2003 09 28 | 704 | 0.0 | 0.4+ | 2003 10 25 | 704 | 0.8− | 0.3− | 2003 12 19 | 644 | 0.3+ | 0.4+ |
| 2003 09 28 | 704 | 0.4− | 0.6+ | 2003 10 25 | 704 | 1.5− | 0.1+ | 2003 12 19 | 644 | 0.4+ | 0.4+ |
| 2003 10 05 | 691 | 0.0 | 0.2− | 2003 10 25 | 704 | 1.2− | 0.2+ | 2003 12 19 | 644 | 0.2+ | 0.3+ |
| 2003 10 05 | 691 | 0.2+ | 0.2− | 2003 10 25 | 704 | 1.8− | 0.4− | 2005 04 01 | 691 | 0.0 | 0.5+ |
| 2003 10 05 | 691 | 0.1+ | 0.2− | 2003 10 25 | 704 | 1.5− | 0.4+ | 2005 04 01 | 691 | 0.5+ | 0.4+ |
| 2003 10 20 | 704 | 0.0 | 0.1+ | 2003 10 27 | 608 | 0.4+ | 0.8− | 2005 04 01 | 691 | 0.1− | 0.0 |

**2003 UP$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.35672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18067741 | $\omega$ | 323.05473 | | +0.84483895 | | −0.51447322 |
| $a$ | 3.0988470 | $\Omega$ | 68.53218 | | +0.52082409 | | +0.72802752 |
| $e$ | 0.2307857 | $i$ | 9.07898 | | +0.12243125 | | +0.45309297 |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 16 | 691 | 0.0 | 0.0 | 2003 10 23 | 699 | 0.2− | 0.1+ | 2003 11 18 | 703 | 0.3− | 0.0 |
| 2001 05 16 | 691 | 0.2+ | 0.7+ | 2003 10 25 | 704 | 1.4+ | 0.1+ | 2003 11 18 | 703 | 0.6− | 0.5+ |
| 2001 05 16 | 691 | 0.1+ | 0.0 | 2003 10 25 | 704 | 1.1+ | 0.4+ | 2003 11 21 | 699 | 0.1− | 0.2− |
| 2003 10 16 | 699 | 1.3+ | 0.6− | 2003 10 25 | 704 | (2.2+ | 0.3−) | 2003 11 21 | 699 | 0.0 | 0.3− |
| 2003 10 16 | 699 | 0.5− | 1.3− | 2003 10 25 | 704 | 1.3+ | 0.0 | 2003 11 21 | 699 | 0.3+ | 0.3− |
| 2003 10 16 | 699 | 0.3− | 0.9+ | 2003 10 25 | 704 | 1.3+ | 0.0 | 2003 11 21 | 699 | 0.1− | 0.3− |
| 2003 10 16 | 699 | 0.2− | 0.3− | 2003 10 29 | 691 | 0.1− | 0.0 | 2003 11 30 | 704 | 0.7− | 0.1− |
| 2003 10 16 | 608 | 0.7− | 0.7− | 2003 10 29 | 704 | 0.3+ | 0.1+ | 2003 11 30 | 704 | 1.2− | 0.6− |
| 2003 10 16 | 608 | 0.2− | 0.5− | 2003 10 29 | 704 | 0.0 | 0.3+ | 2003 11 30 | 704 | 0.8− | 0.0 |
| 2003 10 16 | 608 | 1.2− | 0.5+ | 2003 10 29 | 691 | 0.1− | 0.0 | 2003 11 30 | 704 | 0.4− | 0.3+ |
| 2003 10 21 | 704 | 0.1+ | 0.0 | 2003 10 29 | 704 | 0.5+ | 0.4+ | 2003 11 30 | 704 | 0.7− | 0.2− |
| 2003 10 21 | 704 | 0.3− | 0.0 | 2003 10 29 | 704 | 0.1+ | 0.3+ | 2003 12 21 | 704 | 1.0+ | 0.7− |
| 2003 10 21 | 704 | 0.0 | 0.3+ | 2003 10 29 | 704 | 0.1− | 0.3− | 2003 12 21 | 704 | 1.1+ | 0.1− |
| 2003 10 21 | 704 | 0.4− | 0.3+ | 2003 10 29 | 691 | 0.1− | 0.0 | 2003 12 21 | 704 | 1.9+ | 0.2+ |
| 2003 10 21 | 704 | 0.4− | 0.5− | 2003 11 01 | 704 | 0.2− | 1.1+ | 2003 12 21 | 704 | 1.2+ | 0.5+ |
| 2003 10 22 | 608 | 0.3− | 0.2− | 2003 11 01 | 704 | 0.5− | 1.4+ | 2003 12 21 | 704 | 1.4+ | 0.4+ |
| 2003 10 22 | 608 | 0.0 | 0.5− | 2003 11 01 | 704 | 0.7− | 0.7+ | 2006 03 25 | 691 | 0.2− | 0.6+ |
| 2003 10 22 | 608 | 0.1+ | 0.1− | 2003 11 01 | 704 | 1.4− | 0.7+ | 2006 03 25 | 691 | 0.5+ | 0.0 |
| 2003 10 23 | 699 | 0.1+ | 0.4+ | 2003 11 01 | 704 | 0.8− | 1.4+ | 2006 03 25 | 691 | 0.1− | 0.3− |
| 2003 10 23 | 699 | 0.5+ | 0.1− | 2003 11 18 | 703 | 0.3− | 0.1− | | | | |
| 2003 10 23 | 699 | 0.5− | 0.0 | 2003 11 18 | 703 | 0.1− | 0.2+ | | | | |

**2003 UA$_{156}$ = 2006 QQ$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.49871 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29982868 | $\omega$ | 81.39206 | | −0.78403683 | | +0.61736697 |
| $a$ | 2.2108228 | $\Omega$ | 136.69904 | | −0.60000958 | | −0.72723379 |
| $e$ | 0.0434935 | $i$ | 5.38605 | | −0.15898034 | | −0.29998175 |
| $P$ | 3.29 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 691 | 0.1+ | 0.1− | 2003 10 23 | 691 | 0.1− | 0.3+ | 2006 08 21 | 691 | 0.2+ | 0.3+ |
| 2003 10 20 | 691 | 0.4− | 0.1+ | 2003 10 23 | 691 | 0.1− | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2003 10 20 | 691 | 0.1− | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.2− | 0.0 |
| 2003 10 23 | 691 | 0.7− | 0.5+ | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.3− |
| 2003 10 23 | 645 | 0.1+ | 0.1− | 2006 08 21 | 691 | 0.4− | 0.3− | | | | |
| 2003 10 23 | 645 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.2+ | 0.1+ | | | | |

**2003 UJ$_{170}$ = 2006 KD$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.41890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20157357 | $\omega$ | 42.11968 | | −0.06666350 | | −0.99730539 |
| $a$ | 2.8808036 | $\Omega$ | 51.72570 | | +0.90471893 | | −0.07336135 |
| $e$ | 0.1419426 | $i$ | 2.23573 | | +0.42076078 | | −0.00026730 |
| $P$ | 4.89 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.2− | 0.0 | 2003 10 23 | 291 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.3+ | 0.1+ |
| 1995 02 02 | 691 | 0.1− | 0.5− | 2003 11 21 | 691 | 0.2− | 0.0 | 2005 04 11 | G96 | 0.3− | 0.3+ |
| 1995 02 02 | 691 | 0.0 | 0.2− | 2003 11 21 | 691 | 0.1− | 0.2− | 2005 04 11 | G96 | 0.1+ | 0.3+ |
| 2003 10 22 | 691 | 0.1− | 0.1− | 2003 11 21 | 691 | 0.1− | 0.1+ | 2005 04 11 | G96 | 0.7+ | 0.6+ |
| 2003 10 22 | 691 | 0.3+ | 0.0 | 2005 03 16 | G96 | 0.0 | 0.1+ | 2006 05 25 | 568 | 0.0 | 0.8− |
| 2003 10 22 | 691 | 0.2+ | 0.1− | 2005 03 16 | G96 | 0.3+ | 0.1+ | 2006 05 25 | 568 | 0.2− | 0.8− |
| 2003 10 23 | 291 | 0.2+ | 0.2+ | 2005 03 16 | G96 | 0.3− | 0.3+ | 2006 05 25 | 568 | 0.2− | 0.8− |
| 2003 10 23 | 291 | 0.1− | 0.1− | 2005 03 16 | G96 | 0.2+ | 0.5+ | 2006 05 26 | 568 | 0.1− | 0.0 |

**2003 UV$_{177}$ = 2006 RY$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.80426 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31586078 | $\omega$ | 353.05639 | | +0.94892710 | | +0.31547899 |
| $a$ | 2.1353656 | $\Omega$ | 348.55232 | | −0.28867608 | | +0.86410105 |
| $e$ | 0.1923017 | $i$ | 0.92904 | | −0.12729286 | | +0.39217646 |
| $P$ | 3.12 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 16 | 691 | 0.1− | 0.2+ | 2003 10 24 | 704 | 0.6+ | 0.4− | 2006 09 20 | 699 | 0.4+ | 0.7− |
| 2003 10 16 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 20 | 699 | (1.7+ | 1.4−) |
| 2003 10 16 | 691 | 0.1− | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.3− | 1.2+ |
| 2003 10 21 | 644 | 0.2− | 0.0 | 2006 08 19 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.6− |
| 2003 10 21 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | (2.4− | 0.8−) | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2003 10 21 | 644 | 0.3− | 0.3− | 2006 09 14 | 703 | 0.6+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2003 10 24 | 704 | 1.1+ | 0.9− | 2006 09 14 | 703 | 0.3− | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.5− |
| 2003 10 24 | 704 | 0.4− | 1.0− | 2006 09 14 | 703 | 0.6+ | 0.7+ | | | | |
| 2003 10 24 | 704 | 0.1+ | 0.7− | 2006 09 20 | 699 | 1.2− | 0.9+ | | | | |

**2003 UG$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.99934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27816444 | $\omega$ | 346.82856 | | +0.82999135 | | −0.55176448 |
| $a$ | 2.3241722 | $\Omega$ | 46.96631 | | +0.52134381 | | +0.71536575 |
| $e$ | 0.1166339 | $i$ | 6.41526 | | +0.19828007 | | +0.42872812 |
| $P$ | 3.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.1+ | 0.2− | 2003 10 23 | 699 | 0.7+ | 0.0 | 2003 11 01 | 704 | 1.0+ | 1.3− |
| 1996 11 08 | 691 | 0.0 | 0.1− | 2003 10 23 | 699 | 0.9+ | 0.1− | 2003 11 21 | 704 | 0.2− | 0.3+ |
| 1996 11 08 | 691 | 0.1− | 0.2− | 2003 10 23 | 699 | 0.0 | 0.7− | 2003 11 21 | 704 | 0.1− | 0.4− |
| 1998 04 18 | 691 | 0.2+ | 0.3+ | 2003 10 24 | 704 | 0.5+ | 0.8+ | 2003 11 21 | 704 | 0.2− | 0.2− |
| 1998 04 18 | 691 | 0.2+ | 0.2− | 2003 10 24 | 704 | 0.1+ | 0.5+ | 2003 11 21 | 704 | 0.0 | 0.5− |
| 1998 04 18 | 691 | 0.1+ | 0.2− | 2003 10 24 | 704 | 0.2+ | 0.5+ | 2003 11 28 | 691 | 0.3− | 0.1− |
| 2003 09 28 | 704 | 0.0 | 0.4+ | 2003 10 24 | 704 | 0.6+ | 0.6+ | 2003 11 28 | 691 | 0.0 | 0.1− |
| 2003 09 28 | 704 | 0.2+ | 0.2− | 2003 10 24 | 704 | 0.7− | 0.1+ | 2003 11 28 | 691 | 0.0 | 0.2− |
| 2003 09 28 | 704 | 0.5− | 0.4+ | 2003 10 28 | 704 | 0.1+ | 0.4+ | 2005 04 04 | 703 | (3.5− | 3.0+) |
| 2003 09 28 | 704 | 0.6+ | 0.4+ | 2003 10 28 | 704 | 0.3− | 0.1− | 2005 04 04 | 703 | (1.0+ | 2.9+) |
| 2003 09 28 | 704 | 0.2− | 0.0 | 2003 10 28 | 704 | 0.4+ | 0.2− | 2005 04 04 | 703 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 704 | 0.3+ | 1.4+ | 2003 10 28 | 704 | 0.7− | 0.3+ | 2005 04 04 | 703 | 1.3− | 1.1+ |
| 2003 10 21 | 704 | 0.0 | 0.2+ | 2003 10 28 | 704 | 0.1− | 0.2+ | 2006 07 20 | E12 | 0.0 | 0.6− |
| 2003 10 21 | 704 | 0.4+ | 0.3− | 2003 11 01 | 704 | (1.8− | 1.0+) | 2006 07 20 | E12 | 1.0− | 0.4+ |
| 2003 10 21 | 704 | 0.0 | 0.9+ | 2003 11 01 | 704 | 0.5− | 1.3− | 2006 07 20 | E12 | 0.4+ | 0.2+ |
| 2003 10 21 | 704 | 0.3+ | 1.0+ | 2003 11 01 | 704 | (1.6+ | 0.8−) | 2006 07 20 | E12 | 0.0 | 1.0− |
| 2003 10 23 | 699 | 0.2− | 0.7+ | 2003 11 01 | 704 | 1.3− | 0.5+ | | | | |

**2003 UQ$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.49663 | | | (2000.0) | | |
| $n$ | 0.21802177 | $\omega$ | 203.34120 | | +0.92415215 | −0.38202025 |
| $a$ | 2.7340271 | $\Omega$ | 179.11152 | | +0.36645362 | +0.88512179 |
| $e$ | 0.2299104 | $i$ | 6.77183 | | +0.10795627 | +0.26574412 |
| $P$ | 4.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 704 | 0.8+ | 1.9+ | 2003 10 21 | 644 | 0.1+ | 0.1+ | 2003 11 23 | 703 | 0.8− | 0.6− |
| 2003 09 28 | 704 | 1.2+ | 0.2− | 2003 10 23 | 699 | 0.1− | 0.4+ | 2003 11 23 | 703 | 0.8− | 0.4− |
| 2003 09 28 | 704 | 0.7+ | 0.8+ | 2003 10 23 | 699 | 0.3− | 0.1− | 2003 11 23 | 703 | 1.1− | 0.3− |
| 2003 09 28 | 704 | 0.9+ | 0.4+ | 2003 10 23 | 699 | 0.7− | 0.8+ | 2003 11 23 | 703 | 0.6+ | 0.4− |
| 2003 09 28 | 704 | 0.4+ | 1.4+ | 2003 10 23 | 699 | 0.3+ | 0.1− | 2003 11 23 | 703 | 0.8− | 0.1+ |
| 2003 10 16 | 699 | 0.7− | 0.3− | 2003 10 27 | 704 | 0.4+ | 0.0 | 2003 11 23 | 703 | 0.7+ | 0.1+ |
| 2003 10 16 | 699 | 0.6− | 0.8+ | 2003 10 27 | 704 | 0.3+ | 0.0 | 2003 12 22 | 704 | 0.0 | 1.0− |
| 2003 10 16 | 699 | 0.5− | 0.7+ | 2003 10 27 | 704 | 0.2+ | 0.3+ | 2003 12 22 | 704 | 0.9− | 0.1− |
| 2003 10 16 | 699 | 0.6− | 0.2− | 2003 10 27 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.8− | 0.2+ |
| 2003 10 21 | 704 | 0.2+ | 0.3− | 2003 10 27 | 704 | 0.1+ | 0.1+ | 2003 12 22 | 704 | 1.2+ | 0.5+ |
| 2003 10 21 | 704 | 0.3− | 0.3− | 2003 11 21 | 699 | 0.2− | 0.0 | 2005 02 02 | 691 | 0.4+ | 0.1+ |
| 2003 10 21 | 704 | 0.1+ | 0.6+ | 2003 11 21 | 699 | 0.2+ | 0.4− | 2005 02 02 | 691 | 0.1− | 0.5+ |
| 2003 10 21 | 704 | 0.0 | 0.2+ | 2003 11 21 | 699 | 0.7+ | 0.6− | 2005 02 02 | 691 | 0.1− | 0.1− |
| 2003 10 21 | 704 | 0.1+ | 0.1− | 2003 11 21 | 699 | 0.2+ | 0.5− | 2006 04 30 | 691 | 0.1+ | 0.3+ |
| 2003 10 21 | 644 | 0.0 | 0.2− | 2003 11 23 | 703 | 0.0 | 0.4+ | 2006 04 30 | 691 | 0.2− | 0.1+ |
| 2003 10 21 | 644 | 0.1+ | 0.0 | 2003 11 23 | 703 | 0.9− | 0.6− | 2006 04 30 | 691 | 0.2+ | 0.4+ |

**2003 UQ$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 268.48286 | | | (2000.0) | | |
| $n$ | 0.27552762 | $\omega$ | 94.35450 | | +0.32880435 | −0.94381852 |
| $a$ | 2.3389770 | $\Omega$ | 336.36655 | | +0.83044422 | +0.30563275 |
| $e$ | 0.1762921 | $i$ | 4.73335 | | +0.44972224 | +0.12567909 |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 684 | 0.2+ | 0.1− | 2003 10 30 | 704 | 0.2+ | 0.0 | 2003 11 19 | 704 | 0.1+ | 0.3+ |
| 2001 02 16 | 684 | 0.2− | 0.1+ | 2003 10 30 | 704 | 0.7+ | 0.3+ | 2003 11 19 | 704 | 0.4− | 0.0 |
| 2001 02 16 | 684 | 0.1+ | 0.1+ | 2003 10 30 | 704 | 0.6+ | 0.7+ | 2003 11 19 | 704 | 0.6+ | 1.5− |
| 2003 10 03 | 691 | 0.2+ | 0.1+ | 2003 10 30 | 704 | 0.1− | 0.0 | 2003 11 19 | 704 | 0.5− | 0.5− |
| 2003 10 03 | 691 | 0.2+ | 0.0 | 2003 11 02 | 704 | 0.1+ | 0.7+ | 2003 11 21 | 691 | 0.3+ | 0.5− |
| 2003 10 03 | 691 | 0.0 | 0.0 | 2003 11 02 | 704 | 1.7− | 0.9− | 2003 11 21 | 691 | 0.2+ | 0.2− |
| 2003 10 22 | 704 | 1.4− | 0.1+ | 2003 11 02 | 704 | 0.6− | 0.0 | 2003 11 21 | 691 | 0.2+ | 0.5− |
| 2003 10 22 | 704 | 0.4− | 0.1+ | 2003 11 02 | 704 | 0.2+ | 0.0 | 2003 12 28 | 704 | 0.0 | 0.6+ |
| 2003 10 22 | 704 | 0.4− | 0.2+ | 2003 11 18 | 644 | 0.2+ | 0.1− | 2003 12 28 | 704 | 0.1− | 0.3+ |
| 2003 10 22 | 704 | 0.0 | 0.7+ | 2003 11 18 | 644 | 0.2+ | 0.1− | 2003 12 28 | 704 | 0.0 | 0.6+ |
| 2003 10 22 | 704 | 0.5− | 1.1+ | 2003 11 18 | 644 | 0.3+ | 0.1− | 2003 12 28 | 704 | 0.7− | 0.8+ |
| 2003 10 23 | 699 | 0.5+ | 1.2+ | 2003 11 19 | 699 | 0.6− | 0.1− | 2003 12 28 | 704 | 0.1+ | 0.6+ |
| 2003 10 23 | 699 | 0.4+ | 0.9+ | 2003 11 19 | 699 | 0.5− | 0.3− | 2005 04 16 | 691 | 0.1− | 0.1− |
| 2003 10 23 | 699 | 0.0 | 0.3+ | 2003 11 19 | 699 | 0.7− | 0.0 | 2005 04 16 | 691 | 0.3+ | 0.2+ |
| 2003 10 23 | 699 | 0.5− | 0.1− | 2003 11 19 | 704 | 0.2− | 0.2+ | 2005 04 16 | 691 | 0.0 | 0.3+ |
| 2003 10 30 | 704 | 0.1+ | 0.3+ | 2003 11 19 | 699 | 0.1− | 0.1− | | | | |

**2003 UM$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.26679 | | | (2000.0) | | |
| $n$ | 0.22775285 | $\omega$ | 331.59801 | | +0.99583915 | −0.08071971 |
| $a$ | 2.6555847 | $\Omega$ | 33.11483 | | +0.09112624 | +0.88526422 |
| $e$ | 0.1144531 | $i$ | 4.43998 | | −0.00062648 | +0.45803012 |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 0.0 | 0.2− | 2003 10 29 | 703 | 0.6+ | 0.7+ | 2003 11 20 | 704 | 0.2+ | 0.2+ |
| 2001 03 16 | 691 | 0.1+ | 0.3+ | 2003 10 29 | 703 | 0.3+ | 0.6+ | 2003 11 24 | 704 | 0.2− | 0.2+ |
| 2001 03 16 | 691 | 0.1− | 0.1− | 2003 11 05 | 699 | 0.1+ | 1.1− | 2003 11 24 | 704 | 0.2− | 0.2+ |
| 2003 10 20 | 691 | 0.1+ | 0.1+ | 2003 11 05 | 699 | 0.0 | 0.2− | 2003 11 24 | 704 | 0.5− | 0.0 |
| 2003 10 20 | 691 | 0.1+ | 0.1− | 2003 11 05 | 699 | 0.8+ | 0.0 | 2003 11 24 | 704 | 0.3+ | 0.4− |
| 2003 10 20 | 691 | 0.1+ | 0.0 | 2003 11 05 | 699 | 1.1+ | 0.9− | 2003 11 24 | 704 | 0.4− | 0.0 |
| 2003 10 24 | 704 | 0.2− | 0.7+ | 2003 11 15 | 691 | 0.4+ | 0.1+ | 2003 12 17 | 644 | 0.2+ | 0.0 |
| 2003 10 24 | 704 | 0.2− | 0.7+ | 2003 11 15 | 691 | 0.4+ | 0.1− | 2003 12 17 | 644 | 0.1− | 0.1+ |
| 2003 10 24 | 704 | 0.5+ | 0.9+ | 2003 11 15 | 691 | 0.3+ | 0.0 | 2003 12 17 | 644 | 0.5+ | 0.6+ |
| 2003 10 28 | 608 | 0.9− | 0.7− | 2003 11 16 | 703 | 0.5+ | 0.8+ | 2003 12 19 | 704 | 0.7− | 0.2+ |
| 2003 10 28 | 608 | 0.1− | 0.3− | 2003 11 16 | 703 | 0.4− | 0.2− | 2003 12 19 | 704 | 0.4+ | 0.2+ |
| 2003 10 28 | 608 | 0.2− | 0.6− | 2003 11 16 | 703 | 0.9− | 0.9+ | 2003 12 19 | 704 | 0.7+ | 0.9+ |
| 2003 10 29 | 704 | 0.3− | 0.6− | 2003 11 16 | 703 | 1.4− | 0.6− | 2003 12 19 | 704 | 0.5− | 0.7+ |
| 2003 10 29 | 704 | 0.4− | 0.1− | 2003 11 19 | 699 | 0.1− | 0.2+ | 2003 12 22 | 691 | 0.9− | 0.2− |
| 2003 10 29 | 704 | 0.8− | 0.2− | 2003 11 19 | 699 | 0.1− | 1.1− | 2003 12 22 | 691 | 0.5+ | 0.1− |
| 2003 10 29 | 704 | 0.5− | 0.4− | 2003 11 19 | 699 | 0.6− | 1.3− | 2003 12 22 | 691 | 0.5− | 0.1+ |
| 2003 10 29 | 704 | 0.1− | 0.3− | 2003 11 19 | 699 | 0.7− | 0.3− | 2006 05 23 | G96 | 0.2− | 0.5+ |
| 2003 10 29 | 703 | 0.1− | 0.3+ | 2003 11 20 | 704 | 0.5+ | 0.1− | 2006 05 23 | G96 | 0.4+ | 0.6+ |
| 2003 10 29 | 703 | 1.0− | 0.9+ | 2003 11 20 | 704 | 1.3+ | 1.7+ | 2006 05 23 | G96 | 0.3+ | 0.8+ |

**2003 UB$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 216.33269 | | | (2000.0) | | |
| $n$ | 0.19025606 | $\omega$ | 185.22436 | | +0.97850527 | −0.20609791 |
| $a$ | 2.9939443 | $\Omega$ | 186.68223 | | +0.19135999 | +0.92036077 |
| $e$ | 0.1182023 | $i$ | 3.52156 | | +0.07686864 | +0.33235479 |
| $P$ | 5.18 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 599 | 0.0 | 0.0 | 2003 10 21 | 704 | 0.4− | 0.1− | 2003 11 24 | 691 | 0.1− | 0.1− |
| 2003 09 21 | 599 | 0.3+ | 0.5+ | 2003 10 21 | 704 | 0.7− | 0.4+ | 2003 11 24 | 691 | 0.1+ | 0.1+ |
| 2003 09 21 | 599 | 0.1− | 0.0 | 2003 10 25 | 691 | 0.3+ | 0.2+ | 2003 11 24 | 691 | 0.0 | 0.1− |
| 2003 09 21 | 599 | 0.1+ | 0.4+ | 2003 10 25 | 691 | 0.1+ | 0.0 | 2005 01 17 | 691 | 0.0 | 0.1− |
| 2003 09 27 | 691 | 0.2− | 0.2− | 2003 10 25 | 691 | 0.2+ | 0.1+ | 2005 01 17 | 691 | 0.1− | 0.1− |
| 2003 09 27 | 691 | 0.0 | 0.2+ | 2003 10 28 | 704 | 0.8+ | 0.7+ | 2005 01 17 | 691 | 0.0 | 0.1+ |
| 2003 09 27 | 691 | 0.1− | 0.1+ | 2003 10 28 | 704 | 0.4− | 0.0 | 2006 04 25 | 691 | 0.7+ | 0.3+ |
| 2003 10 21 | 704 | 0.8− | 0.0 | 2003 10 28 | 704 | 0.4− | 0.1− | 2006 04 25 | 691 | 0.0 | 0.2+ |
| 2003 10 21 | 704 | 0.4+ | 0.8+ | 2003 10 28 | 704 | 0.9− | 0.1+ | 2006 04 25 | 691 | 0.3− | 0.5+ |

**2003 UM$_{203}$ = 2006 QN$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.69723 | | | (2000.0) | | |
| $n$ | 0.30727728 | $\omega$ | 78.19191 | | +0.64839885 | +0.75910591 |
| $a$ | 2.1749490 | $\Omega$ | 232.38465 | | −0.72379768 | +0.59115746 |
| $e$ | 0.1586321 | $i$ | 4.18218 | | −0.23599970 | +0.27256391 |
| $P$ | 3.21 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 691 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.9− | 0.2− | 2006 09 29 | 699 | 0.3− | 0.1+ |
| 2003 10 21 | 691 | 0.1− | 0.3− | 2006 09 18 | 704 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.2− |
| 2003 10 21 | 691 | 0.1+ | 0.3− | 2006 09 18 | 704 | 0.0 | 0.5− | 2006 10 11 | 691 | 0.3+ | 0.1− |
| 2003 10 24 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.4+ | 0.0 |
| 2003 10 24 | 704 | 0.1− | 0.7− | 2006 09 20 | 699 | 1.3+ | 0.7− | 2006 10 11 | 691 | 0.3+ | 0.0 |
| 2003 10 24 | 704 | 0.6− | 0.9+ | 2006 09 20 | 699 | (1.3− | 1.6−) | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2003 10 29 | 704 | 0.1− | 1.4+ | 2006 09 20 | 699 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 10 29 | 704 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.6− | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 704 | 0.2+ | 0.3− | 2006 09 20 | 699 | 1.2+ | 1.4− | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2003 11 19 | 291 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.2− | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2003 11 19 | 291 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.8+ | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2003 11 19 | 291 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.4− | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2003 11 30 | 691 | 0.2− | 0.1− | 2006 09 22 | 703 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2003 11 30 | 691 | 0.2− | 0.1+ | 2006 09 22 | 703 | 0.2+ | 1.2+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2003 11 30 | 691 | 0.7− | 0.1− | 2006 09 22 | 703 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2006 08 29 | 703 | 0.6− | 0.4+ | 2006 09 22 | 703 | 1.2− | 0.6+ | 2006 10 24 | 644 | 0.3− | 0.2− |
| 2006 08 29 | 703 | 1.4− | 0.6− | 2006 09 25 | 704 | 0.7− | 0.3− | 2006 10 24 | 644 | 0.7− | 0.1− |
| 2006 08 29 | 703 | 0.7− | 0.0 | 2006 09 25 | 704 | 0.4− | 0.5− | 2006 10 24 | 644 | 0.4− | 0.3− |
| 2006 08 29 | 703 | 0.5+ | 0.2+ | 2006 09 25 | 704 | 0.7+ | 1.4+ | 2006 10 27 | 691 | 0.5+ | 0.6+ |
| 2006 08 30 | 704 | 0.9− | 1.2− | 2006 09 25 | 704 | 0.5+ | 1.1− | 2006 10 27 | 691 | 0.3− | 0.1+ |
| 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2006 08 30 | 704 | 0.2− | 0.7− | 2006 09 29 | 704 | 1.2− | 0.5− | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.9− |
| 2006 09 06 | 644 | 0.4+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.9− |
| 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.1+ | 1.2− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 09 18 | 704 | 0.1+ | 0.9− | 2006 09 29 | 699 | 0.1+ | 1.0+ | | | | |

**2003 UY$_{203}$ = 2006 KG$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 281.08612 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.21752521 | $\omega$ | 307.85824 | | +0.92505576 | | +0.37875725 |
| $a$ | 2.7381862 | $\Omega$ | 29.91610 | | −0.32803859 | | +0.83454224 |
| $e$ | 0.1033362 | $i$ | 3.28108 | | −0.19147462 | | +0.40010273 |
| $P$ | 4.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 691 | 0.1+ | 0.2+ | 2003 11 19 | 291 | 0.1+ | 0.1+ | 2006 05 23 | G96 | 0.4− | 0.2+ |
| 2003 10 21 | 691 | 0.1− | 0.0 | 2003 11 19 | 291 | 0.1+ | 0.3+ | 2006 05 23 | G96 | 0.7− | 0.4+ |
| 2003 10 21 | 691 | 0.1+ | 0.0 | 2003 11 30 | 691 | 0.4− | 0.1+ | 2006 05 23 | G96 | 0.1− | 0.3+ |
| 2003 10 24 | 704 | 0.4+ | 0.7+ | 2003 11 30 | 291 | 0.3− | 0.1+ | 2006 05 23 | G96 | 0.3− | 0.3+ |
| 2003 10 24 | 704 | 1.0− | 0.5+ | 2003 11 30 | 691 | 0.4− | 0.2− | 2006 05 23 | 291 | 0.6+ | 0.5+ |
| 2003 10 24 | 704 | 0.9− | 0.5+ | 2003 11 30 | 291 | 0.2− | 0.1+ | 2006 05 23 | 291 | 0.6+ | 0.5+ |
| 2003 10 24 | 704 | 0.1− | 1.1+ | 2003 11 30 | 691 | 0.1+ | 0.1− | 2006 05 23 | 291 | 0.3+ | 0.4+ |
| 2003 10 28 | 704 | 0.8+ | 0.4+ | 2003 11 30 | 291 | 0.0 | 0.0 | 2006 05 24 | G96 | 0.3− | 0.1+ |
| 2003 10 28 | 704 | 0.6+ | 0.7+ | 2005 02 04 | G96 | 0.9− | 0.5+ | 2006 05 24 | G96 | 0.1+ | 0.3+ |
| 2003 10 28 | 704 | 0.2+ | 0.7+ | 2005 02 04 | G96 | 0.5+ | 0.1− | 2006 05 24 | G96 | 0.6− | 0.2+ |
| 2003 10 28 | 704 | 0.4+ | 0.3− | 2005 02 04 | G96 | 0.2+ | 0.0 | 2006 05 24 | G96 | 0.2− | 0.3+ |
| 2003 11 19 | 291 | 0.2+ | 0.2+ | 2005 02 04 | G96 | 0.2+ | 0.2− | | | | |

**2003 UO$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 232.02520 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.22373723 | $\omega$ | 350.99117 | | +0.69922605 | | −0.71195736 |
| $a$ | 2.6872653 | $\Omega$ | 54.61150 | | +0.66076032 | | +0.60900768 |
| $e$ | 0.0547751 | $i$ | 4.55931 | | +0.27290791 | | +0.34960886 |
| $P$ | 4.41 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 22 | 691 | 0.1− | 0.2+ | 2003 10 28 | 704 | 0.4+ | 0.2− | 2003 11 21 | 704 | 0.3− | 0.9+ |
| 2003 10 22 | 691 | 0.0 | 0.2+ | 2003 11 18 | 644 | 0.2− | 0.2+ | 2003 11 21 | 704 | 0.0 | 0.3− |
| 2003 10 22 | 691 | 0.1− | 0.1+ | 2003 11 18 | 644 | 0.6− | 0.5− | 2003 11 21 | 691 | 0.2− | 0.1− |
| 2003 10 24 | 704 | 0.3− | 0.7+ | 2003 11 18 | 644 | 0.2+ | 0.0 | 2003 11 21 | 691 | 0.1− | 0.2− |
| 2003 10 24 | 704 | 0.7− | 0.0 | 2003 11 19 | 291 | 0.1+ | 0.1− | 2006 05 25 | 568 | 0.0 | 0.1+ |
| 2003 10 24 | 704 | 0.4− | 0.8− | 2003 11 19 | 291 | 0.1− | 0.1+ | 2006 05 25 | 568 | 0.0 | 0.1+ |
| 2003 10 24 | 704 | 0.2+ | 0.1− | 2003 11 19 | 291 | 0.2− | 0.1+ | 2006 05 25 | 568 | 0.1− | 0.1− |
| 2003 10 28 | 704 | 1.8+ | 1.2− | 2003 11 21 | 704 | 1.6+ | 2.0+ | 2006 05 26 | 568 | 0.1+ | 0.2− |
| 2003 10 28 | 704 | 0.2− | 0.2− | 2003 11 21 | 704 | 0.3+ | 0.1+ | | | | |
| 2003 10 28 | 704 | 0.7+ | 0.4− | 2003 11 21 | 691 | 0.1+ | 0.3− | | | | |

**2003 UM$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 356.64763 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.30748397 | $\omega$ | 120.35334 | | +0.95629494 | | −0.28459737 |
| $a$ | 2.1739742 | $\Omega$ | 256.25156 | | +0.23892231 | | +0.89284649 |
| $e$ | 0.0501659 | $i$ | 3.96194 | | +0.16857078 | | +0.34904079 |
| $P$ | 3.21 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.1− | 0.3− | 2003 11 20 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2003 10 23 | 691 | 0.1− | 0.2− | 2003 11 20 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 2003 10 23 | 691 | 0.1− | 0.5− | 2003 11 20 | 704 | 0.7− | 0.1+ | 2006 10 11 | 644 | 0.5+ | 0.4+ |
| 2003 10 24 | 704 | 0.1− | 1.3+ | 2003 11 20 | 704 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2003 10 24 | 704 | 1.5+ | 1.1+ | 2003 12 18 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2003 10 24 | 704 | 0.3+ | 0.4+ | 2003 12 18 | 691 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2003 10 24 | 704 | 1.0+ | 0.8− | 2003 12 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.6− | 0.8− |
| 2003 11 18 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.9− | 0.6− | 2006 10 17 | 703 | 0.5+ | 0.9+ |
| 2003 11 18 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 10 17 | 703 | (2.0+ | 0.2+) |
| 2003 11 18 | 691 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.5− | 0.7− |
| 2003 11 19 | 699 | 0.9− | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2003 11 19 | 699 | 0.0 | 0.8+ | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2003 11 19 | 699 | 0.2+ | 0.4− | 2006 10 03 | G96 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.2+ |
| 2003 11 19 | 699 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2003 11 20 | 704 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.1− | | | | |

**2003 UB$_{213}$ = 2006 QG$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 31.17879 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.27730854 | $\omega$ | 265.41970 | | +0.55942179 | | +0.82571177 |
| $a$ | 2.3289521 | $\Omega$ | 38.88556 | | −0.70737445 | | +0.52114086 |
| $e$ | 0.1090102 | $i$ | 6.62617 | | −0.43205167 | | +0.21589877 |
| $P$ | 3.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.3− | 0.2+ | 2005 03 03 | 703 | (2.1− | 0.5−) | 2006 08 16 | E12 | 1.0+ | 0.7+ |
| 2003 10 23 | 691 | 0.1+ | 0.1+ | 2005 03 03 | 703 | (1.6− | 0.5−) | 2006 08 28 | E12 | 0.5+ | 0.3+ |
| 2003 10 23 | 691 | 0.0 | 0.1− | 2005 03 13 | 152 | 0.7− | 0.4− | 2006 08 28 | E12 | 0.3+ | 0.6− |
| 2003 10 24 | 704 | 0.1+ | 0.2+ | 2005 03 13 | 152 | 0.3+ | 0.4− | 2006 08 28 | E12 | 0.7− | 0.7+ |
| 2003 10 24 | 704 | 0.8+ | 0.4+ | 2005 03 13 | 152 | 1.3− | 0.4+ | 2006 08 28 | E12 | 0.5− | 0.1− |
| 2003 10 24 | 704 | (0.6+ | 2.2+) | 2005 03 13 | 152 | 0.1− | 0.4− | 2006 09 14 | 644 | 0.0 | 0.1− |
| 2003 11 20 | 704 | 0.2+ | 0.4− | 2005 03 13 | 152 | 0.4+ | 0.4− | 2006 09 14 | 644 | 0.1− | 0.3− |
| 2003 11 20 | 704 | 0.6− | 0.4− | 2005 04 13 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.4− | 0.2− |
| 2003 11 20 | 704 | (0.2− | 3.8−) | 2005 04 13 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.8+ | 0.1− |
| 2003 11 20 | 704 | 0.1+ | 0.4+ | 2005 04 13 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.1− |
| 2003 11 20 | 704 | 0.3− | 0.1+ | 2006 08 16 | E12 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2005 03 03 | 703 | (0.3+ | 2.4−) | 2006 08 16 | E12 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2005 03 03 | 703 | 0.1− | 1.2− | 2006 08 16 | E12 | 0.6− | 0.7− | | | | |

**2003 UM$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 212.41758 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.20862431 | $\omega$ | 342.71183 | | +0.80752664 | | −0.58093377 |
| $a$ | 2.8155253 | $\Omega$ | 53.24434 | | +0.55510223 | | +0.69001752 |
| $e$ | 0.0407182 | $i$ | 7.31865 | | +0.19940473 | | +0.43173114 |
| $P$ | 4.72 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 704 | 0.4− | 0.1+ | 2003 10 25 | 704 | 0.2− | 0.2+ | 2006 05 08 | G96 | 0.7− | 0.1− |
| 2003 10 20 | 704 | 0.5− | 0.9− | 2003 10 25 | 704 | 0.9+ | 0.4− | 2006 05 08 | G96 | 0.2− | 0.3− |
| 2003 10 20 | 704 | 0.7− | 0.1− | 2006 04 07 | 691 | 0.1+ | 0.3− | 2006 05 08 | G96 | 0.4− | 0.2+ |
| 2003 10 21 | 704 | 0.2− | 0.4− | 2006 04 07 | 691 | 0.2− | 0.1+ | 2006 05 22 | G96 | 0.1− | 0.1− |
| 2003 10 21 | 704 | 0.4− | 0.8− | 2006 04 07 | 691 | 0.0 | 0.2+ | 2006 05 22 | G96 | 0.5+ | 0.1− |
| 2003 10 21 | 704 | 0.2+ | 0.5+ | 2006 04 26 | 691 | 0.0 | 0.2+ | 2006 05 22 | G96 | 0.1+ | 0.1+ |
| 2003 10 21 | 704 | 1.1+ | 1.5+ | 2006 04 26 | 691 | 0.0 | 0.4− | 2006 05 22 | G96 | 0.3− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | 0.0 | 0.1+ | 2006 04 26 | 691 | 0.4+ | 0.2+ | | | | | | |
| 2003 10 25 | 704 | 0.2+ | 0.2+ | 2006 05 08 | G96 | 0.1− | 0.4+ | | | | | | |

**2003 UD$_{219}$ = 2006 QP$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.35397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31259502 | $\omega$ | 61.28733 | | +0.73146376 | | +0.67983138 |
| $a$ | 2.1502123 | $\Omega$ | 255.82814 | | −0.64308114 | | +0.66201286 |
| $e$ | 0.1894155 | $i$ | 3.12297 | | −0.22673205 | | +0.31554441 |
| $P$ | 3.15 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 17 | 691 | 0.2+ | 0.1− | 2003 10 25 | 704 | 0.1− | 0.8+ | 2006 08 29 | 691 | 0.0 | 0.1− | | |
| 2003 10 17 | 691 | 0.2− | 0.2− | 2003 10 25 | 704 | 0.5+ | 0.7− | 2006 09 13 | 644 | 0.3+ | 0.0 | | |
| 2003 10 17 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.2− | 0.7+ | 2006 09 13 | 644 | 0.2+ | 0.1+ | | |
| 2003 10 21 | 644 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.6+ | 0.7+ | 2006 09 13 | 644 | 0.3+ | 0.5+ | | |
| 2003 10 21 | 644 | 0.2− | 0.1+ | 2006 08 29 | 703 | (1.4+ | 2.1+) | 2006 09 18 | 703 | (2.1+ | 1.7+) | | |
| 2003 10 21 | 644 | 0.0 | 0.1+ | 2006 08 29 | 703 | (1.6+ | 0.8+) | 2006 09 18 | 703 | 0.1+ | 0.0 | | |
| 2003 10 25 | 704 | 0.0 | 0.8+ | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.2− | | |
| 2003 10 25 | 704 | 0.6− | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.7− | 0.5− | | |

**2003 UN$_{219}$ = 2006 QH$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.13287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29692219 | $\omega$ | 75.14507 | | +0.79380642 | | +0.60260249 |
| $a$ | 2.2252268 | $\Omega$ | 247.73121 | | −0.58652318 | | +0.72284321 |
| $e$ | 0.1389602 | $i$ | 5.09024 | | −0.16081644 | | +0.33818328 |
| $P$ | 3.32 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 691 | 0.1+ | 0.1− | 2003 11 28 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.2+ | 0.8− | | |
| 2003 10 21 | 691 | 0.1− | 0.0 | 2003 11 28 | 691 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.1+ | 0.0 | | |
| 2003 10 21 | 691 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.2+ | 0.3− | 2006 09 11 | 703 | 1.1+ | 1.0− | | |
| 2003 10 25 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.5+ | 2006 09 11 | 703 | 0.3+ | 0.4− | | |
| 2003 10 25 | 704 | 0.4+ | 0.2− | 2006 08 29 | 703 | 0.3+ | 0.1− | 2006 09 11 | 703 | 0.0 | 0.4− | | |
| 2003 10 25 | 704 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 1.4− | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.3+ | | |
| 2003 10 25 | 704 | 0.5+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 1.3− | 2006 09 18 | 691 | 0.1+ | 0.3+ | | |
| 2003 10 25 | 704 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.0 | | |
| 2003 11 28 | 691 | 0.2− | 0.2− | 2006 08 29 | 703 | 1.3+ | 1.2+ | | | | | | |

**2003 UH$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.57994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21871612 | $\omega$ | 0.63383 | | +0.78189520 | | −0.61415543 |
| $a$ | 2.7282376 | $\Omega$ | 37.94129 | | +0.57119878 | | +0.63700452 |
| $e$ | 0.1349873 | $i$ | 10.02371 | | +0.24974357 | | +0.46587376 |
| $P$ | 4.51 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.1− | 0.2− | 2003 11 20 | 704 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 1.2− | 0.7− | | |
| 2002 07 16 | 644 | 0.2+ | 0.1+ | 2003 11 20 | 704 | 0.9+ | 0.3+ | 2003 12 27 | 704 | 0.1+ | 1.2− | | |
| 2002 07 16 | 644 | 0.1− | 0.1+ | 2003 11 20 | 704 | 0.1− | 0.3− | 2003 12 27 | 704 | 0.5+ | 0.1− | | |
| 2003 09 21 | 599 | 0.4− | 0.0 | 2003 11 20 | 704 | 0.2− | 0.2− | 2003 12 27 | 704 | 0.7+ | 1.0− | | |
| 2003 09 21 | 599 | 0.0 | 0.4+ | 2003 11 20 | 704 | 0.0 | 0.2+ | 2003 12 29 | 704 | 0.6+ | 1.4+ | | |
| 2003 09 21 | 599 | 0.1+ | 0.3+ | 2003 12 04 | 704 | 0.2− | 0.2+ | 2003 12 29 | 704 | 0.2+ | 1.2+ | | |
| 2003 10 22 | 704 | 0.7− | 0.0 | 2003 12 04 | 704 | 0.3− | 0.5+ | 2003 12 29 | 704 | 0.3+ | 0.3− | | |
| 2003 10 22 | 704 | 0.4+ | 0.4+ | 2003 12 04 | 704 | 1.1− | 0.9+ | 2003 12 29 | 704 | 1.0+ | 0.4+ | | |
| 2003 10 22 | 704 | 0.5+ | 0.6− | 2003 12 04 | 704 | 0.0 | 0.0 | 2003 12 29 | 704 | 1.7+ | 0.5− | | |
| 2003 10 25 | 704 | 0.4− | 0.3− | 2003 12 04 | 704 | 0.5+ | 0.3+ | 2004 01 11 | 644 | 0.3− | 0.4+ | | |
| 2003 10 25 | 704 | 0.5− | 0.7− | 2003 12 17 | 704 | 0.4− | 0.2− | 2004 01 11 | 644 | 0.2− | 0.5+ | | |
| 2003 10 25 | 704 | 0.2− | 0.6− | 2003 12 17 | 704 | 0.4+ | 0.3− | 2004 01 11 | 644 | 0.2− | 0.4+ | | |
| 2003 10 25 | 704 | 0.2+ | 0.7− | 2003 12 17 | 704 | 0.4+ | 0.1+ | 2005 03 16 | 703 | 0.0 | 0.0 | | |
| 2003 10 25 | 704 | 0.4+ | 0.5− | 2003 12 17 | 704 | 0.5− | 0.3− | 2005 03 16 | 703 | 0.6+ | 1.4− | | |
| 2003 11 03 | 704 | 0.1− | 0.5+ | 2003 12 17 | 704 | 0.0 | 0.2− | 2005 03 16 | 703 | 0.8+ | 1.6+ | | |
| 2003 11 03 | 704 | 0.3+ | 1.2+ | 2003 12 25 | 691 | 0.3− | 0.1− | 2005 03 16 | 703 | 1.5− | 0.2− | | |
| 2003 11 03 | 704 | 0.5+ | 0.2+ | 2003 12 25 | 691 | 0.2− | 0.2− | | | | | | |
| 2003 11 03 | 704 | 0.1+ | 0.3+ | 2003 12 25 | 691 | 0.3− | 0.1− | | | | | | |

**2003 UW$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.73340 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18432417 | $\omega$ | 330.73670 | | +0.98946981 | | −0.11084090 |
| $a$ | 3.0578384 | $\Omega$ | 36.00024 | | +0.14299996 | | +0.84802515 |
| $e$ | 0.2036081 | $i$ | 9.11144 | | −0.02237178 | | +0.51823512 |
| $P$ | 5.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 291 | 0.2+ | 0.4+ | 2003 11 03 | 704 | 0.4− | 0.4+ | 2003 12 04 | 704 | 0.6+ | 0.9− | | |
| 2001 05 24 | 291 | 0.2+ | 0.4+ | 2003 11 20 | 704 | 0.1− | 0.1− | 2003 12 04 | 704 | 1.2+ | 0.7+ | | |
| 2001 05 24 | 291 | 0.1+ | 0.2+ | 2003 11 20 | 704 | 0.3− | 0.2+ | 2003 12 18 | 691 | 0.2− | 0.0 | | |
| 2003 10 22 | 704 | 1.3+ | 1.1+ | 2003 11 20 | 704 | 0.3− | 0.5− | 2003 12 18 | 691 | 0.1− | 0.1− | | |
| 2003 10 22 | 704 | 0.5+ | 0.7+ | 2003 11 20 | 704 | 0.4+ | 0.1+ | 2003 12 18 | 691 | 0.2− | 0.1− | | |
| 2003 10 22 | 704 | 0.7− | 0.7+ | 2003 11 20 | 704 | 0.2− | 0.1+ | 2003 12 23 | 704 | 0.1− | 0.5+ | | |
| 2003 10 25 | 704 | 0.6+ | 0.2− | 2003 11 24 | 704 | 0.2− | 1.3− | 2003 12 23 | 704 | 0.4+ | 0.5+ | | |
| 2003 10 25 | 704 | (2.2+ | 1.8−) | 2003 11 24 | 704 | 0.0 | 0.2+ | 2003 12 23 | 704 | 0.3− | 0.4+ | | |
| 2003 10 25 | 704 | 0.4+ | 0.6+ | 2003 11 24 | 704 | 0.6− | 0.2− | 2003 12 23 | 704 | 0.0 | 0.7− | | |
| 2003 10 25 | 704 | 0.6− | 0.1− | 2003 11 24 | 704 | 0.1− | 0.1− | 2006 03 23 | 691 | 0.1+ | 0.3− | | |
| 2003 10 25 | 704 | 0.3− | 0.1− | 2003 11 24 | 704 | 0.3− | 0.9− | 2006 03 23 | 691 | 0.0 | 0.1+ | | |
| 2003 11 03 | 704 | 0.2− | 1.1+ | 2003 12 04 | 704 | 0.8+ | 0.1+ | 2006 03 23 | 691 | 0.3− | 0.1− | | |
| 2003 11 03 | 704 | 0.9− | 0.4+ | 2003 12 04 | 704 | 0.6+ | 0.4+ | | | | | | |

**2003 UO$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.25296 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27780017 | $\omega$ | 33.12311 | | +0.61401266 | | −0.78861214 |
| $a$ | 2.3262036 | $\Omega$ | 19.06235 | | +0.70054179 | | +0.52531986 |
| $e$ | 0.2063224 | $i$ | 5.77333 | | +0.36363396 | | +0.31957775 |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 807 | 0.2− | 0.3+ | 2003 10 30 | 704 | 0.1+ | 0.6+ | 2003 11 24 | 704 | 0.4− | 0.2+ | | |
| 2001 05 22 | 807 | 0.5+ | 0.4+ | 2003 10 30 | 704 | 0.2+ | 0.5+ | 2003 11 24 | 704 | 0.9+ | 1.3− | | |
| 2003 09 21 | 699 | 0.6− | 0.4− | 2003 10 30 | 704 | 0.4+ | 0.5+ | 2003 12 17 | 644 | 0.1− | 0.0 | | |
| 2003 09 21 | 699 | 0.1− | 0.3+ | 2003 10 30 | 704 | 0.7− | 0.3− | 2003 12 17 | 644 | 0.1+ | 0.3− | | |
| 2003 09 21 | 699 | 0.8− | 0.4+ | 2003 11 02 | 704 | 0.0 | 0.3− | 2003 12 17 | 644 | 0.2− | 0.2− | | |
| 2003 09 21 | 699 | 1.3+ | 0.3+ | 2003 11 02 | 704 | 0.3− | 0.3− | 2003 12 23 | 704 | 0.7− | 0.9+ | | |
| 2003 10 22 | 704 | 0.6− | 0.2− | 2003 11 02 | 704 | 0.3− | 0.1− | 2003 12 23 | 704 | 0.1− | 0.2+ | | |
| 2003 10 22 | 704 | 0.6+ | 0.3+ | 2003 11 02 | 704 | 0.1− | 0.1− | 2003 12 23 | 704 | 0.1+ | 1.4+ | | |
| 2003 10 22 | 704 | 0.5+ | 0.5+ | 2003 11 02 | 704 | 0.4− | 0.3+ | 2003 12 23 | 704 | 1.5+ | 1.2− | | |
| 2003 10 22 | 704 | 0.3− | 0.4− | 2003 11 20 | 704 | 0.4+ | 1.0− | 2003 12 28 | 704 | 0.3− | 0.7+ | | |
| 2003 10 22 | 704 | 0.4− | 0.9+ | 2003 11 20 | 704 | 0.3+ | 0.8− | 2003 12 28 | 704 | 0.6− | 0.5+ | | |
| 2003 10 22 | 691 | 0.1+ | 0.1+ | 2003 11 20 | 704 | 0.1− | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.8+ | | |
| 2003 10 22 | 691 | 0.0 | 0.2+ | 2003 11 20 | 704 | 0.1− | 0.1+ | 2003 12 28 | 704 | 0.2− | 0.6+ | | |
| 2003 10 22 | 691 | 0.1+ | 0.0 | 2003 11 20 | 704 | 0.3− | 0.3− | 2003 12 28 | 704 | 0.0 | 0.6+ | | |
| 2003 10 25 | 704 | 0.6− | 0.2+ | 2003 11 23 | 691 | 0.2− | 0.0 | 2005 04 05 | G96 | 0.1+ | 0.1+ | | |
| 2003 10 25 | 704 | 0.2− | 0.2+ | 2003 11 23 | 691 | 0.2+ | 0.4− | 2005 04 05 | G96 | 0.1− | 0.3+ | | |
| 2003 10 25 | 704 | 0.2− | 0.4+ | 2003 11 23 | 691 | 0.3+ | 0.3− | 2005 04 05 | G96 | 0.2+ | 0.0 | | |
| 2003 10 25 | 704 | 0.7− | 0.4+ | 2003 11 24 | 704 | 0.6+ | 0.2− | 2005 04 05 | G96 | 0.1+ | 0.1+ | | |
| 2003 10 25 | 704 | 0.3− | 0.3+ | 2003 11 24 | 704 | 0.2+ | 0.1− | | | | | | |
| 2003 10 30 | 704 | 0.0 | 0.2+ | 2003 11 24 | 704 | 0.1+ | 0.8− | | | | | | |

**2003 UW$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.38719 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28545402 | $\omega$ | 311.33198 | | −0.68084914 | | +0.72882475 |
| $a$ | 2.2844340 | $\Omega$ | 275.60238 | | −0.64834343 | | −0.64578884 |
| $e$ | 0.0860583 | $i$ | 4.17865 | | −0.34072751 | | −0.22753301 |
| $P$ | 3.45 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 691 | 0.4+ | 1.0+ | 2003 11 24 | 691 | 0.1+ | 0.3+ | 2005 04 09 | 704 | 0.4+ | 0.9+ |
| 1998 03 24 | 691 | 0.2+ | 0.2− | 2005 03 13 | 703 | 0.2− | 0.2+ | 2005 04 09 | 704 | 1.3+ | 0.4+ |
| 1998 03 24 | 691 | 0.3− | 0.2− | 2005 03 13 | 703 | 0.8− | 0.2+ | 2005 04 09 | 704 | 0.9+ | 1.1+ |
| 2003 10 23 | 691 | 0.1− | 0.1+ | 2005 03 13 | 703 | 1.0− | 0.6+ | 2005 04 09 | 704 | 0.2+ | 0.1+ |
| 2003 10 23 | 691 | 0.2− | 0.3− | 2005 03 13 | 703 | 1.0− | 0.7+ | 2006 08 29 | 703 | 0.4− | 0.2+ |
| 2003 10 23 | 691 | 0.6− | 0.2− | 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.6− | 1.7+ |
| 2003 10 25 | 704 | 0.5+ | 0.6+ | 2005 03 17 | 691 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.3+ |
| 2003 10 25 | 704 | 0.1− | 0.2+ | 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.2− |
| 2003 10 25 | 704 | 0.2+ | 1.1+ | 2005 04 02 | 644 | 0.2+ | 0.2+ | 2006 08 29 | 691 | 0.6− | 0.6+ |
| 2003 11 24 | 691 | 0.1− | 0.0 | 2005 04 02 | 644 | 0.8+ | 0.5+ | 2006 08 29 | 691 | 0.1− | 0.5+ |
| 2003 11 24 | 691 | 0.3+ | 0.2+ | 2005 04 02 | 644 | 0.7+ | 0.3+ | 2006 08 29 | 691 | 0.2+ | 0.4+ |

**2003 UP$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.28922 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28104859 | $\omega$ | 219.34429 | | −0.44735001 | −0.88904335 | |
| $a$ | 2.3082443 | $\Omega$ | 257.42740 | | +0.84366104 | −0.38335060 | |
| $e$ | 0.0508381 | $i$ | 5.72516 | | +0.29684004 | −0.25028830 | |
| $P$ | 3.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 699 | 0.8− | 0.1− | 2003 11 19 | 644 | 0.3+ | 0.3+ | 2003 11 30 | 691 | 0.1+ | 0.1− |
| 2003 10 23 | 699 | 0.5− | 0.9− | 2003 11 19 | 644 | 0.5+ | 0.1+ | 2003 11 30 | 691 | 0.1− | 0.2+ |
| 2003 10 23 | 699 | 0.9− | 0.5− | 2003 11 21 | 704 | 0.2− | 0.5+ | 2003 11 30 | 691 | 0.2+ | 0.1− |
| 2003 10 23 | 699 | 0.7− | 0.7+ | 2003 11 21 | 704 | 0.4+ | 0.8− | 2006 08 30 | 699 | (2.3− | 1.5+) |
| 2003 10 25 | 704 | 0.8− | 1.0+ | 2003 11 21 | 704 | 0.4− | 1.5− | 2006 08 30 | 699 | 0.1+ | 1.0+ |
| 2003 10 25 | 704 | 0.2− | 0.4− | 2003 11 21 | 704 | 0.8+ | 0.4+ | 2006 08 30 | 699 | 0.5+ | 0.2− |
| 2003 10 25 | 704 | 0.2+ | 1.1− | 2003 11 21 | 704 | 0.5+ | 0.1+ | 2006 08 30 | 699 | 0.6+ | 0.2+ |
| 2003 10 25 | 704 | 0.6− | 0.5− | 2003 11 24 | 691 | 0.2+ | 0.1− | 2006 09 11 | 703 | (2.2+ | 2.0−) |
| 2003 10 25 | 704 | 0.2+ | 0.1− | 2003 11 24 | 704 | 1.3− | 0.7+ | 2006 09 11 | 703 | (0.2+ | 2.9−) |
| 2003 10 30 | 704 | 0.3− | 0.1− | 2003 11 24 | 704 | 0.3+ | 0.8+ | 2006 09 11 | 703 | 0.2+ | 1.1− |
| 2003 10 30 | 704 | 0.7+ | 0.1− | 2003 11 24 | 704 | 1.4+ | 0.0 | 2006 09 11 | 703 | 0.8− | 1.1− |
| 2003 10 30 | 704 | 0.8+ | 0.5− | 2003 11 24 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.6+ | 0.2+ |
| 2003 10 30 | 704 | 0.2+ | 0.5+ | 2003 11 24 | 704 | 0.0 | 0.8+ | 2006 09 26 | 691 | 0.3− | 0.0 |
| 2003 11 02 | 704 | 0.6+ | 0.1− | 2003 11 24 | 704 | 0.6+ | 0.1− | 2006 09 26 | 691 | 0.6− | 0.1+ |
| 2003 11 02 | 704 | 0.4+ | 0.6− | 2003 11 24 | 704 | 0.9− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2003 11 02 | 704 | 0.9− | 0.0 | 2003 11 24 | 704 | 0.4+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.2− |
| 2003 11 02 | 704 | 0.5− | 0.4+ | 2003 11 24 | 704 | 0.5− | 0.4− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2003 11 02 | 704 | 0.3− | 0.2+ | 2003 11 24 | 704 | 1.4− | 0.3+ | | | | |
| 2003 11 19 | 644 | 0.3+ | 0.0 | 2003 11 24 | 691 | 0.0 | 0.2+ | | | | |

**2003 UG$_{237}$ = 2006 KG$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.54450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22684783 | $\omega$ | 157.83379 | | +0.86620324 | −0.49834705 | |
| $a$ | 2.6626431 | $\Omega$ | 232.10900 | | +0.45120958 | +0.81155881 | |
| $e$ | 0.1002093 | $i$ | 2.66075 | | +0.21471342 | +0.30499593 | |
| $P$ | 4.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 691 | 0.2+ | 0.1+ | 2003 10 23 | 608 | 0.1− | 0.3− | 2003 10 26 | 291 | 0.5− | 0.3+ |
| 2003 09 22 | 691 | 0.0 | 0.2− | 2003 10 23 | 608 | 0.4+ | 0.9− | 2003 10 26 | 291 | 0.2+ | 0.1− |
| 2003 09 22 | 691 | 0.2− | 0.1− | 2003 10 23 | 608 | 0.4− | 0.6− | 2006 05 19 | G96 | 0.0 | 0.4− |
| 2003 09 27 | 691 | 0.2+ | 0.0 | 2003 10 24 | 704 | 0.5+ | 0.0 | 2006 05 19 | G96 | 0.7− | 0.4− |
| 2003 09 27 | 691 | 0.1− | 0.2+ | 2003 10 24 | 704 | 0.6+ | 0.1− | 2006 05 19 | G96 | 0.8− | 0.4+ |
| 2003 09 27 | 691 | 0.1− | 0.1+ | 2003 10 24 | 704 | 0.7+ | 0.5+ | 2006 05 19 | G96 | 0.3+ | 0.2− |
| 2003 10 16 | 691 | 0.0 | 0.2+ | 2003 10 24 | 704 | 0.1+ | 0.1− | 2006 05 20 | 691 | 0.1− | 0.2− |
| 2003 10 16 | 691 | 0.2− | 0.0 | 2003 10 24 | 704 | 0.1− | 0.3+ | 2006 05 20 | 691 | 0.1− | 0.4− |
| 2003 10 16 | 691 | 0.2+ | 0.1− | 2003 10 26 | 291 | 0.1− | 0.0 | 2006 05 20 | 691 | 0.5+ | 0.7+ |

**2003 UA$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.09334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21926455 | $\omega$ | 124.13646 | | +0.97651309 | −0.16840515 | |
| $a$ | 2.7236864 | $\Omega$ | 245.88331 | | +0.11453338 | +0.93406363 | |
| $e$ | 0.1095347 | $i$ | 8.46741 | | +0.18249461 | +0.31490451 | |
| $P$ | 4.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 704 | 0.8+ | 0.6− | 2003 11 04 | 704 | 0.0 | 0.3+ | 2003 11 24 | 704 | 0.1+ | 0.7+ |
| 1998 08 27 | 704 | 0.0 | 0.4+ | 2003 11 04 | 704 | 0.1− | 0.0 | 2003 11 24 | 699 | 0.6+ | 0.4− |
| 1998 08 27 | 704 | 0.0 | 1.0+ | 2003 11 04 | 704 | 0.4+ | 0.1− | 2003 11 24 | 704 | 0.4+ | 0.8+ |
| 1998 08 27 | 704 | 0.1+ | 0.7− | 2003 11 04 | 704 | 0.1+ | 0.7− | 2003 11 24 | 704 | 0.1− | 0.8+ |
| 1998 08 27 | 704 | 0.3− | 0.1− | 2003 11 06 | 704 | 0.5− | 0.4+ | 2003 11 24 | 699 | 0.3− | 0.5− |
| 1999 12 14 | 704 | 0.5− | 0.2− | 2003 11 06 | 704 | 0.1+ | 0.8+ | 2003 11 24 | 704 | 0.1− | 0.4+ |
| 1999 12 14 | 704 | 0.4− | 0.5− | 2003 11 06 | 704 | 0.0 | 0.4+ | 2003 11 24 | 699 | 0.3+ | 0.1+ |
| 1999 12 14 | 704 | 0.4− | 0.4+ | 2003 11 06 | 704 | 0.3− | 0.0 | 2003 11 24 | 699 | 0.8+ | 0.8− |
| 2003 10 18 | 699 | 0.9+ | 0.2− | 2003 11 18 | 644 | 0.1− | 0.3+ | 2003 12 18 | 703 | (0.2+ | 1.5+) |
| 2003 10 18 | 699 | 0.8+ | 0.5+ | 2003 11 18 | 644 | 0.2− | 0.4+ | 2003 12 18 | 703 | 0.6+ | 0.9− |
| 2003 10 18 | 699 | (0.0 | 2.3−) | 2003 11 18 | 644 | 0.1− | 0.3+ | 2003 12 18 | 703 | 0.4+ | 0.1+ |
| 2003 10 18 | 699 | (1.6+ | 0.5+) | 2003 11 19 | 699 | 0.4+ | 0.6− | 2003 12 18 | 703 | 0.7− | 1.5+ |
| 2003 10 24 | 691 | 0.0 | 0.0 | 2003 11 19 | 703 | (1.7− | 0.7−) | 2003 12 22 | 704 | 0.2− | 0.7+ |
| 2003 10 24 | 691 | 0.1+ | 0.0 | 2003 11 19 | 699 | 0.4− | 0.2+ | 2003 12 22 | 704 | 0.0 | 0.2− |
| 2003 10 24 | 691 | 0.1+ | 0.0 | 2003 11 19 | 703 | (3.0− | 1.8−) | 2003 12 22 | 704 | (2.0+ | 0.7+) |
| 2003 10 25 | 704 | 0.3− | 0.2+ | 2003 11 19 | 703 | 0.6− | 1.0− | 2003 12 22 | 704 | 0.3+ | 0.3− |
| 2003 10 25 | 704 | 0.7− | 0.8+ | 2003 11 19 | 699 | 1.2− | 0.2+ | 2005 02 14 | 703 | 0.8+ | 0.4− |
| 2003 10 25 | 704 | 0.2− | 0.3+ | 2003 11 19 | 703 | (2.6− | 1.4−) | 2005 02 14 | 703 | 0.1− | 0.5+ |
| 2003 10 25 | 704 | 0.1− | 0.2+ | 2003 11 19 | 699 | 0.4− | 0.1+ | 2005 02 14 | 703 | 0.1+ | 0.6+ |
| 2003 10 25 | 704 | 0.1+ | 0.3+ | 2003 11 20 | 704 | 0.2− | 0.6+ | 2005 02 14 | 703 | 1.3+ | 0.5+ |
| 2003 10 30 | 704 | 0.1+ | 0.7+ | 2003 11 20 | 704 | 0.1− | 0.6+ | 2006 05 05 | 691 | 0.6− | 1.0+ |
| 2003 10 30 | 704 | 0.2− | 0.2+ | 2003 11 20 | 704 | 0.5− | 0.7+ | 2006 05 05 | 691 | 0.1+ | 0.3+ |
| 2003 10 30 | 704 | 0.2− | 0.5+ | 2003 11 20 | 704 | 0.4− | 0.5+ | 2006 05 05 | 691 | 0.2+ | 0.1+ |
| 2003 10 30 | 704 | 0.2+ | 0.5+ | 2003 11 20 | 704 | 0.4− | 0.5+ | 2006 06 02 | 691 | 0.3+ | 0.6+ |
| 2003 11 02 | 704 | 0.7+ | 0.6+ | 2003 11 23 | 691 | 0.1+ | 0.2+ | 2006 06 02 | 691 | 0.0 | 0.7+ |
| 2003 11 02 | 704 | 0.5− | 0.4+ | 2003 11 23 | 691 | 0.2− | 0.0 | 2006 06 02 | 691 | 0.3+ | 0.9+ |
| 2003 11 02 | 704 | 0.9− | 0.6+ | 2003 11 23 | 691 | 0.0 | 0.0 | | | | |
| 2003 11 04 | 704 | 0.0 | 0.3+ | 2003 11 24 | 704 | 0.1− | 0.7+ | | | | |

**2003 UC$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.59683 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30793727 | $\omega$ | 262.25565 | | +0.87162276 | +0.48818512 | |
| $a$ | 2.1718403 | $\Omega$ | 68.51372 | | −0.42895509 | +0.80324506 | |
| $e$ | 0.1927475 | $i$ | 2.71944 | | −0.23721573 | +0.34128091 | |
| $P$ | 3.20 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 704 | 0.6+ | 0.4− | 2003 11 24 | 699 | 0.0 | 0.6− | 2006 09 28 | 704 | 0.2+ | 0.6+ |
| 2003 10 24 | 704 | 0.3+ | 0.2− | 2003 11 30 | 691 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.5+ | 1.1+ |
| 2003 10 24 | 704 | 0.3+ | 0.1+ | 2003 11 30 | 691 | 0.3− | 0.1+ | 2006 09 28 | 704 | 0.1+ | 0.7+ |
| 2003 10 28 | 704 | 0.2− | 0.3− | 2003 11 30 | 691 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.3+ | 1.0+ |
| 2003 10 28 | 704 | 0.0 | 0.3− | 2003 12 01 | 704 | 0.1+ | 0.7− | 2006 09 28 | 704 | 0.2− | 0.5+ |
| 2003 10 28 | 704 | 0.3− | 0.4− | 2003 12 01 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2003 10 29 | 699 | 1.5+ | 0.4− | 2003 12 01 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 2003 10 29 | 699 | 0.0 | 0.8+ | 2003 12 01 | 704 | 1.4+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2003 10 29 | 699 | 0.4+ | 0.3− | 2006 09 12 | 703 | 0.1+ | 0.9− | 2006 09 30 | 703 | 1.0− | 0.3− |
| 2003 10 29 | 699 | 0.8− | 0.4+ | 2006 09 12 | 703 | (2.3− | 0.1+) | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2003 11 16 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.4− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2003 11 16 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | 1.2− | 0.5− | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2003 11 16 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2003 11 19 | 699 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2003 11 19 | 699 | 0.5− | 0.7+ | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.5+ | 0.2+ |
| 2003 11 19 | 699 | 0.5− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2003 11 19 | 699 | 0.7+ | 0.9+ | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 1.2− | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 1.0+ | 0.0 | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 704 | 0.7− | 0.2− | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.2− |
| 2003 11 21 | 704 | 0.1− | 0.3− | 2006 09 22 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.7− |
| 2003 11 24 | 699 | 0.8− | 0.1− | 2006 09 22 | 704 | 1.2− | 0.6− | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2003 11 24 | 703 | 0.3− | 1.2− | 2006 09 22 | 704 | 0.5+ | 0.8− | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2003 11 24 | 699 | 0.7+ | 0.7− | 2006 09 22 | 704 | 1.3+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2003 11 24 | 703 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.1− | 0.7− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2003 11 24 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.5+ | 1.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2003 11 24 | 703 | 0.3+ | 0.9− | 2006 09 26 | 704 | 1.1+ | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2003 11 24 | 703 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.8+ | 0.9+ | | | | |

**2003 UX$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.60196 | | (2000.0) | | | |
| $n$ | 0.29041914 | $\omega$ | 103.47228 | | +0.62992605 | −0.77590698 |
| $a$ | 2.2583221 | $\Omega$ | 307.43054 | | +0.69493513 | +0.58269578 |
| $e$ | 0.1228009 | $i$ | 2.45982 | | +0.34678285 | +0.24173124 |
| $P$ | 3.39 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 695 | 0.0 | 0.3− | 2003 11 02 | 704 | 0.9− | 0.8+ | 2003 11 24 | 704 | (2.1− | 4.3−) |
| 2003 10 24 | 695 | 0.1+ | 0.2− | 2003 11 02 | 704 | 0.2− | 0.4− | 2003 11 24 | 703 | 0.3+ | 0.6− |
| 2003 10 25 | 704 | 0.4− | 0.5+ | 2003 11 16 | 691 | 0.2+ | 0.3− | 2003 11 24 | 703 | 0.2+ | 0.2+ |
| 2003 10 25 | 704 | 0.3+ | 0.2− | 2003 11 16 | 691 | 0.1+ | 0.1− | 2003 11 24 | 703 | 0.9− | 0.4− |
| 2003 10 25 | 704 | 0.4+ | 0.5+ | 2003 11 16 | 691 | 0.2+ | 0.4− | 2003 11 24 | 703 | (1.7− | 0.5+) |
| 2003 10 25 | 704 | 0.6− | 0.8+ | 2003 11 20 | 704 | 0.6+ | 0.6+ | 2003 12 22 | 691 | 0.3+ | 0.2+ |
| 2003 10 25 | 704 | 0.6+ | 0.7− | 2003 11 20 | 704 | 0.3+ | 0.4+ | 2003 12 22 | 691 | 0.1+ | 0.1+ |
| 2003 10 27 | 691 | 0.1− | 0.2− | 2003 11 20 | 704 | 0.5+ | 1.1+ | 2003 12 22 | 691 | 0.6− | 0.1− |
| 2003 10 27 | 691 | 0.1+ | 0.0 | 2003 11 20 | 704 | 0.9+ | 1.1+ | 2006 08 19 | 691 | 0.2− | 0.1+ |
| 2003 10 27 | 691 | 0.0 | 0.1− | 2003 11 20 | 704 | (1.9+ | 0.8−) | 2006 08 19 | 691 | 0.1− | 0.1+ |
| 2003 10 30 | 704 | 0.2− | 0.1+ | 2003 11 24 | 699 | 0.5− | 0.3− | 2006 08 19 | 691 | 0.1+ | 0.1− |
| 2003 10 30 | 704 | 0.1+ | 0.2+ | 2003 11 24 | 699 | 0.3+ | 0.1− | 2006 09 26 | 291 | 0.1− | 0.1+ |
| 2003 10 30 | 704 | 0.1+ | 0.3− | 2003 11 24 | 699 | 0.3− | 0.6+ | 2006 09 26 | 291 | 0.0 | 0.0 |
| 2003 10 30 | 704 | 0.5− | 0.2− | 2003 11 24 | 704 | 0.6− | 0.1+ | 2006 09 26 | 291 | 0.2+ | 0.2+ |
| 2003 10 30 | 704 | 0.1+ | 0.6− | 2003 11 24 | 699 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2003 11 02 | 704 | 0.8− | 0.2+ | 2003 11 24 | 704 | (0.2− | 1.7−) | 2006 09 27 | G96 | 0.6+ | 0.5− |
| 2003 11 02 | 704 | 0.8− | 0.1+ | 2003 11 24 | 704 | (0.3− | 1.6−) | 2006 09 27 | G96 | 0.2− | 0.1− |

**2003 UR$_{259}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 179.57240 | | (2000.0) | | | |
| $n$ | 0.16793340 | $\omega$ | 188.46669 | | +0.49261725 | −0.79810522 |
| $a$ | 3.2537036 | $\Omega$ | 232.78864 | | +0.82177596 | +0.55780473 |
| $e$ | 0.1176291 | $i$ | 25.82411 | | +0.28637828 | −0.22777606 |
| $P$ | 5.87 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.3+ | 0.1− | 2003 11 30 | 704 | 0.2− | 0.4+ | 2003 12 28 | 699 | 1.0− | 0.6+ |
| 1997 11 23 | 691 | 1.0− | 1.9− | 2003 11 30 | 704 | 0.1+ | 0.8+ | 2003 12 28 | 699 | 0.6+ | 0.1+ |
| 1997 11 23 | 691 | 0.3+ | 0.1− | 2003 11 30 | 704 | 0.5+ | 0.5+ | 2003 12 28 | 699 | 1.3− | 0.6+ |
| 2003 10 25 | 704 | 0.6+ | 0.8+ | 2003 11 30 | 704 | 1.1+ | 0.6+ | 2003 12 28 | 699 | 0.4− | 0.1+ |
| 2003 10 25 | 704 | 0.6+ | 0.7+ | 2003 11 30 | 704 | 0.2− | 0.5+ | 2004 01 14 | 644 | 0.9− | 0.0 |
| 2003 10 25 | 704 | 0.8+ | 0.2− | 2003 12 17 | 691 | 0.2+ | 0.0 | 2004 01 14 | 644 | 0.4+ | 0.0 |
| 2003 10 25 | 704 | 0.2− | 0.9+ | 2003 12 17 | 691 | 0.0 | 0.1+ | 2004 01 14 | 644 | 0.0 | 0.3− |
| 2003 10 25 | 704 | 0.4+ | 0.0 | 2003 12 17 | 691 | 0.2+ | 0.0 | 2005 03 02 | 704 | 0.8− | 1.0− |
| 2003 10 29 | 704 | 0.0 | 0.9+ | 2003 12 21 | 703 | 1.6+ | 0.1− | 2005 03 02 | 704 | 0.2− | 0.4− |
| 2003 10 29 | 704 | 0.2− | 0.0 | 2003 12 21 | 703 | 0.3− | 0.5− | 2005 03 02 | 704 | 0.4+ | 0.1− |
| 2003 10 29 | 704 | 0.2− | 0.2− | 2003 12 21 | 703 | 0.0 | 0.5+ | | | | |
| 2003 10 29 | 704 | 0.6− | 0.6+ | 2003 12 21 | 703 | 0.4− | 0.0 | | | | |

**2003 UG$_{262}$ = 2003 US$_{246}$**

Id. Minor Planet Circular (d, *MPO* 58141)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.60115 | | (2000.0) | | | |
| $n$ | 0.30409608 | $\omega$ | 282.18814 | | +0.99641282 | −0.06231225 |
| $a$ | 2.1900910 | $\Omega$ | 81.40452 | | +0.08023287 | +0.91076713 |
| $e$ | 0.1250861 | $i$ | 3.31987 | | −0.02691073 | +0.40819164 |
| $P$ | 3.24 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 704 | 0.3+ | 0.0 | 2003 12 18 | 691 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.1+ | 0.2+ |
| 2003 10 24 | 704 | 0.2+ | 0.4+ | 2003 12 18 | 691 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.3− | 1.2− |
| 2003 10 24 | 704 | 0.6− | 0.1+ | 2003 12 18 | 691 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.0 |
| 2003 10 24 | 704 | (0.0 | 1.6+) | 2003 12 18 | 644 | 0.5− | 0.4− | 2006 09 26 | 704 | 0.9+ | 0.7− |
| 2003 10 26 | 691 | 0.1− | 0.1− | 2003 12 18 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | (1.6+ | 1.3−) |
| 2003 10 26 | 691 | 0.4− | 0.2− | 2003 12 18 | 644 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.6+ | 0.5+ |
| 2003 10 26 | 691 | 0.0 | 0.4+ | 2003 12 19 | 704 | 1.1− | 0.1+ | 2006 09 28 | 704 | 0.3+ | 0.1− |
| 2003 10 27 | 704 | 0.1− | 0.0 | 2003 12 19 | 704 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.0 | 0.9+ |
| 2003 10 27 | 704 | 0.4+ | 0.1− | 2003 12 19 | 704 | 0.3− | 1.1− | 2006 09 28 | 704 | 0.8− | 0.5− |
| 2003 10 27 | 704 | 0.6− | 0.4+ | 2003 12 19 | 704 | 1.2− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.8− |
| 2003 10 29 | 703 | 0.4+ | 0.5− | 2006 09 12 | 703 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.7+ | 0.9− |
| 2003 10 29 | 703 | 0.4− | 0.3+ | 2006 09 12 | 703 | 0.7− | 0.4− | 2006 09 30 | 703 | 0.7+ | 1.3− |
| 2003 10 29 | 703 | 1.0− | 0.2− | 2006 09 12 | 703 | 0.7− | 1.2+ | 2006 09 30 | 703 | 0.2+ | 0.8− |
| 2003 10 29 | 703 | 1.0− | 0.7− | 2006 09 12 | 703 | 0.0 | 0.7+ | 2006 09 30 | 704 | 0.0 | 1.3+ |
| 2003 11 02 | 704 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.5+ | 0.1− | 2006 09 30 | 704 | 0.0 | 0.8+ |
| 2003 11 02 | 704 | 0.7− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 09 30 | 704 | 0.3+ | 0.4+ |
| 2003 11 02 | 704 | 0.2− | 0.6+ | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.0 |
| 2003 11 16 | 703 | (2.3− | 2.4−) | 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.5− |
| 2003 11 16 | 703 | 0.2+ | 1.3− | 2006 09 18 | 703 | 0.1− | 0.4+ | 2006 09 30 | 704 | 1.0− | 0.8+ |
| 2003 11 16 | 703 | 0.7− | 1.4− | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 2003 11 16 | 703 | (2.1+ | 1.8−) | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.0 |
| 2003 11 18 | 644 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.9+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.4+ |
| 2003 11 18 | 644 | 0.4+ | 0.1− | 2006 09 18 | 699 | 0.7− | 0.2+ | 2006 10 01 | 704 | 0.5− | 0.9+ |
| 2003 11 18 | 644 | 0.2+ | 0.4− | 2006 09 18 | 699 | 1.2+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.0 |
| 2003 11 19 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.3− | 2006 10 01 | 704 | 0.1− | 0.5+ |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2006 09 19 | 704 | 0.1− | 0.6− | 2006 10 01 | 704 | 0.8+ | 0.1+ |
| 2003 11 19 | 699 | 0.6− | 0.3− | 2006 09 19 | 704 | 0.5− | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.3+ |
| 2003 11 19 | 699 | 0.9+ | 0.2− | 2006 09 19 | 704 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2003 11 19 | 691 | 1.3+ | 0.8+ | 2006 09 19 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2003 11 19 | 699 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.6− | 0.8− | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2003 11 19 | 699 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.8− | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2003 11 21 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.9− | 0.9− | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2003 11 21 | 704 | 0.6+ | 1.4+ | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2003 11 21 | 704 | 0.6+ | 1.0+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2003 11 21 | 704 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.2− | 0.1− | | | | |
| 2003 11 21 | 704 | 0.2− | 1.4+ | 2006 09 20 | 644 | 0.2+ | 0.2+ | | | | |

**2003 UW$_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 344.85604 | | (2000.0) | | | |
| $n$ | 0.31201500 | $\omega$ | 275.97417 | | +0.88990737 | −0.44614970 |
| $a$ | 2.1528762 | $\Omega$ | 110.55492 | | +0.44826121 | +0.81685291 |
| $e$ | 0.1604910 | $i$ | 5.82007 | | +0.08442013 | +0.36565254 |
| $P$ | 3.16 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 644 | 0.3− | 0.5+ | 2003 11 18 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.4− |
| 2003 10 21 | 644 | 0.0 | 0.2+ | 2003 11 18 | 691 | 1.0+ | 1.4+ | 2006 09 26 | 703 | 0.0 | 0.2− |
| 2003 10 21 | 644 | 0.2− | 0.1+ | 2003 11 18 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2003 10 27 | 704 | 0.2− | 0.3− | 2003 11 23 | 699 | 1.0− | 0.7− | 2006 10 02 | 703 | 0.2− | 0.4− |
| 2003 10 27 | 704 | 0.9− | 0.3− | 2003 11 23 | 699 | 0.0 | 0.5− | 2006 10 02 | 703 | 0.4− | 0.3− |
| 2003 10 27 | 704 | 0.6− | 1.0+ | 2003 11 23 | 699 | 0.3− | 0.2+ | 2006 10 02 | 703 | 0.4+ | 0.3+ |
| 2003 10 27 | 704 | 0.2− | 0.6− | 2003 11 23 | 699 | 0.0 | 1.1+ | 2006 10 02 | 703 | 0.3+ | 0.0 |
| 2003 10 27 | 704 | 0.1− | 0.4+ | 2003 11 30 | 704 | 0.7+ | 0.6− | 2006 10 10 | 644 | 0.4− | 0.3− |
| 2003 10 29 | 699 | 1.4+ | 1.2− | 2003 11 30 | 704 | 0.6− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2003 10 29 | 699 | 0.8+ | 0.3− | 2003 11 30 | 704 | (1.9+ | 0.8−) | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2003 10 29 | 699 | 0.2+ | 0.1− | 2003 11 30 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 703 | 0.2+ | 0.4+ |
| 2003 10 29 | 699 | 0.8− | 0.7− | 2003 11 30 | 704 | 0.6+ | 0.8+ | 2006 10 21 | 703 | 0.6− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 608 | 0.1− | 0.4− | 2003 12 22 | 691 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.7+ | 1.2+ |
| 2003 10 29 | 608 | 0.2− | 1.1− | 2003 12 22 | 691 | 0.1− | 0.3− | 2006 10 21 | 703 | 1.5+ | 0.5+ |
| 2003 10 29 | 608 | 0.3− | 0.9− | 2003 12 22 | 691 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2003 11 01 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2003 11 01 | 704 | 0.6− | 0.3+ | 2006 09 18 | 703 | 0.3+ | 1.1− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2003 11 01 | 704 | 0.4− | 0.8+ | 2006 09 18 | 703 | 0.2+ | 0.6− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2003 11 01 | 704 | 0.6− | 0.1− | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2003 11 01 | 704 | (0.5− | 1.7+) | 2006 09 20 | 703 | 1.0− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2003 11 16 | 703 | 0.6− | 0.7− | 2006 09 20 | 703 | 0.6− | 0.5+ | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2003 11 16 | 703 | 0.0 | 0.9− | 2006 09 20 | 703 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2003 11 16 | 703 | 0.3+ | 0.8− | 2006 09 20 | 703 | 1.2+ | 0.5+ | 2006 10 24 | 644 | 0.5− | 0.1− |
| 2003 11 16 | 703 | 1.2− | 1.0− | 2006 09 26 | 703 | 0.6+ | 0.1+ | | | | |

### 2003 $UT_{271}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.45859 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20865801 | $\omega$ | 124.67846 | | +0.97757532 | | +0.20846350 |
| $a$ | 2.8152222 | $\Omega$ | 223.31084 | | −0.20462603 | | +0.90687809 |
| $e$ | 0.2142787 | $i$ | 2.49188 | | −0.04974618 | | +0.36621729 |
| $P$ | 4.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 291 | 0.0 | 0.3+ | 2003 11 03 | 704 | 0.1− | 0.2+ | 2003 11 19 | 291 | 0.1+ | 0.1+ |
| 2003 09 28 | 291 | 0.1+ | 0.3+ | 2003 11 03 | 704 | 0.4+ | 0.3− | 2003 11 21 | 704 | 0.7− | 0.8− |
| 2003 09 28 | 291 | 0.2− | 0.0 | 2003 11 03 | 704 | 0.1+ | 0.3− | 2003 11 21 | 704 | 0.1− | 0.1+ |
| 2003 10 21 | 691 | 0.2+ | 0.1+ | 2003 11 04 | 704 | 0.5− | 0.6− | 2003 11 21 | 704 | 0.1+ | 0.5− |
| 2003 10 21 | 691 | 0.0 | 0.2+ | 2003 11 04 | 704 | 0.2− | 0.1+ | 2003 11 21 | 704 | 0.4− | 0.4− |
| 2003 10 21 | 691 | 0.0 | 0.2+ | 2003 11 04 | 704 | 1.3− | 0.1+ | 2003 11 21 | 699 | 0.6− | 0.8− |
| 2003 10 28 | 704 | 0.4− | 0.1+ | 2003 11 04 | 704 | 0.2− | 0.8− | 2003 11 21 | 699 | 1.0+ | 0.6+ |
| 2003 10 28 | 704 | 0.0 | 0.2− | 2003 11 05 | 704 | 0.0 | 0.3+ | 2003 11 21 | 699 | 0.1+ | 0.7− |
| 2003 10 28 | 704 | 0.6− | 0.2+ | 2003 11 05 | 704 | 0.0 | 0.1+ | 2003 11 21 | 699 | 0.2− | 0.4+ |
| 2003 10 28 | 704 | 0.0 | 0.1+ | 2003 11 05 | 704 | 1.3+ | 1.4+ | 2003 11 30 | 691 | 0.3+ | 0.1+ |
| 2003 10 28 | 704 | 0.1+ | 1.4− | 2003 11 05 | 704 | 0.2+ | 0.7− | 2003 11 30 | 691 | 0.3+ | 0.2+ |
| 2003 10 29 | 703 | 1.4− | 0.4− | 2003 11 05 | 704 | 0.8− | 1.1− | 2003 11 30 | 691 | 0.1+ | 0.1+ |
| 2003 10 29 | 703 | 1.2− | 0.1+ | 2003 11 18 | 644 | 0.0 | 0.1+ | 2005 02 04 | 691 | 0.0 | 0.3+ |
| 2003 10 29 | 703 | 1.4+ | 0.3+ | 2003 11 18 | 644 | 0.0 | 0.4+ | 2005 02 04 | 691 | 0.5− | 0.1− |
| 2003 10 29 | 703 | 0.4− | 0.4− | 2003 11 18 | 644 | 0.2+ | 0.1+ | 2005 02 04 | 691 | 0.5+ | 0.0 |
| 2003 11 01 | 704 | 0.0 | 0.2− | 2003 11 19 | 691 | 0.1+ | 0.2− | 2006 05 06 | G96 | 0.2+ | 0.2− |
| 2003 11 01 | 704 | 0.6− | 0.4− | 2003 11 19 | 691 | 0.2+ | 0.0 | 2006 05 06 | G96 | 0.4+ | 0.1− |
| 2003 11 01 | 704 | 0.7+ | 0.1+ | 2003 11 19 | 691 | 0.1+ | 0.1+ | 2006 05 06 | G96 | 0.0 | 0.2+ |
| 2003 11 03 | 704 | 1.3− | 0.0 | 2003 11 19 | 291 | 0.2+ | 0.1+ | 2006 05 06 | G96 | 0.5− | 0.2− |
| 2003 11 03 | 704 | 0.6− | 0.4− | 2003 11 19 | 291 | 0.2+ | 0.1+ | | | | |

### 2003 $UO_{276}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.41932 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24097682 | $\omega$ | 73.78885 | | +0.60110130 | | −0.79846995 |
| $a$ | 2.5575209 | $\Omega$ | 339.15340 | | +0.69255053 | | +0.54137192 |
| $e$ | 0.2237132 | $i$ | 5.40333 | | +0.39881197 | | +0.26336700 |
| $P$ | 4.09 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.7+ | 0.3− | 2003 10 30 | 704 | 0.5− | 0.1+ | 2003 11 19 | 704 | 0.4+ | 0.0 |
| 1999 12 07 | 703 | 0.1+ | 0.4− | 2003 10 30 | 704 | 0.5+ | 1.7+ | 2003 11 24 | 699 | 0.1+ | 0.0 |
| 1999 12 07 | 703 | 0.3− | 0.4− | 2003 11 02 | 704 | 0.2− | 0.8− | 2003 11 24 | 699 | 0.6+ | 0.5− |
| 1999 12 07 | 703 | 0.1− | 0.6− | 2003 11 02 | 704 | 0.5− | 0.4− | 2003 11 24 | 699 | 0.4− | 0.5− |
| 2003 10 17 | 699 | 1.8+ | 1.3+ | 2003 11 02 | 704 | 0.4− | 0.7− | 2003 11 24 | 699 | 0.1+ | 0.0 |
| 2003 10 17 | 699 | 0.1+ | 1.6+ | 2003 11 02 | 704 | 0.5− | 0.0 | 2003 12 19 | 704 | 0.6+ | 0.1+ |
| 2003 10 17 | 699 | 0.5− | 1.3− | 2003 11 14 | 644 | 0.2+ | 0.1− | 2003 12 19 | 704 | 0.3+ | 0.0 |
| 2003 10 17 | 699 | 0.1− | 0.7+ | 2003 11 14 | 644 | 0.0 | 0.2+ | 2003 12 19 | 704 | 0.3− | 0.7− |
| 2003 10 22 | 704 | 0.2+ | 0.3+ | 2003 11 14 | 644 | 0.0 | 0.0 | 2003 12 19 | 704 | 0.0 | 0.6− |
| 2003 10 22 | 704 | 0.1− | 0.3+ | 2003 11 18 | 644 | 0.0 | 0.3+ | 2003 12 28 | 704 | 0.0 | 0.4+ |
| 2003 10 22 | 704 | 0.0 | 0.5− | 2003 11 18 | 644 | 0.3− | 0.1+ | 2003 12 28 | 704 | 0.9− | 0.1− |
| 2003 10 22 | 704 | 0.7+ | 1.3− | 2003 11 18 | 644 | 0.0 | 0.1+ | 2003 12 28 | 704 | 0.0 | 0.7− |
| 2003 10 22 | 704 | 1.1− | 0.1+ | 2003 11 19 | 704 | 0.2+ | 0.9+ | 2005 03 17 | 691 | 0.1+ | 0.3+ |
| 2003 10 30 | 704 | 0.1− | 0.1+ | 2003 11 19 | 704 | 0.8− | 1.6+ | 2005 03 17 | 691 | 0.1− | 0.2+ |
| 2003 10 30 | 704 | 0.0 | 0.2− | 2003 11 19 | 704 | 0.3− | 0.4+ | 2005 03 17 | 691 | 0.3+ | 0.0 |
| 2003 10 30 | 704 | 0.5− | 0.0 | 2003 11 19 | 704 | 0.6+ | 0.7+ | | | | |

### 2003 $UP_{276} = 1981\ UY_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.22358 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17779297 | $\omega$ | 107.02424 | | +0.86825338 | | +0.40119578 |
| $a$ | 3.1322734 | $\Omega$ | 230.37056 | | −0.45505903 | | +0.87835048 |
| $e$ | 0.1416628 | $i$ | 22.26793 | | +0.19762933 | | +0.25988917 |
| $P$ | 5.54 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 10 30 | 381 | 1.0− | 1.5− | 2003 11 02 | 704 | 0.5− | 0.2− | 2003 11 24 | 704 | 0.6− | 0.0 |
| 1981 10 30 | 381 | 0.5+ | 1.3− | 2003 11 02 | 704 | 0.2+ | 0.2+ | 2003 11 26 | 704 | 0.2− | 0.2− |
| 1997 10 20 | 327 | 0.0 | 0.7+ | 2003 11 02 | 704 | 0.4− | 0.2− | 2003 11 26 | 704 | 0.6− | 0.4+ |
| 1997 10 20 | 327 | 0.2+ | 0.7− | 2003 11 02 | 704 | 0.4− | 0.5− | 2003 11 26 | 704 | 0.4− | 0.1− |
| 1997 10 20 | 327 | 0.1+ | 0.9− | 2003 11 18 | 644 | 0.5+ | 0.1− | 2003 12 01 | 704 | 0.3+ | 0.3+ |
| 2003 09 30 | 704 | 0.0 | 0.4+ | 2003 11 18 | 699 | 1.0+ | 0.1+ | 2003 12 01 | 704 | 0.1− | 0.0 |
| 2003 09 30 | 704 | 0.0 | 0.4+ | 2003 11 18 | 644 | 0.2− | 0.1+ | 2003 12 01 | 704 | 0.0 | 0.1+ |
| 2003 09 30 | 704 | 0.1+ | 0.5+ | 2003 11 18 | 699 | 0.4+ | 1.4+ | 2003 12 01 | 704 | 0.9+ | 0.0 |
| 2003 09 30 | 704 | 0.1− | 0.4+ | 2003 11 18 | 644 | 0.1+ | 0.1− | 2003 12 01 | 704 | 0.8+ | 1.0+ |
| 2003 09 30 | 704 | 0.3+ | 0.3− | 2003 11 18 | 699 | 0.1− | 1.6− | 2003 12 13 | 703 | 0.7+ | 0.4+ |
| 2003 10 05 | 704 | 0.1− | 0.1− | 2003 11 18 | 699 | 0.2+ | 0.7+ | 2003 12 13 | 703 | 0.0 | 0.1+ |
| 2003 10 05 | 704 | 0.2− | 0.1− | 2003 11 19 | 691 | 0.0 | 0.2− | 2003 12 13 | 703 | 1.7+ | 0.2+ |
| 2003 10 05 | 704 | 0.3− | 0.1+ | 2003 11 19 | 691 | 0.1+ | 0.3− | 2003 12 13 | 703 | 0.4+ | 0.9+ |
| 2003 10 05 | 704 | 0.4− | 0.2− | 2003 11 19 | 691 | 0.3+ | 0.1− | 2003 12 17 | 699 | 0.8− | 0.8− |
| 2003 10 05 | 704 | 0.7− | 0.5− | 2003 11 19 | 644 | 0.4+ | 0.1− | 2003 12 17 | 699 | 0.6− | 0.6− |
| 2003 10 22 | 704 | 0.0 | 0.1− | 2003 11 19 | 644 | 0.4+ | 0.0 | 2003 12 17 | 699 | 0.1+ | 0.3− |
| 2003 10 22 | 704 | 0.2+ | 0.5− | 2003 11 19 | 644 | 0.4+ | 0.1− | 2003 12 17 | 699 | 0.8+ | 0.4− |
| 2003 10 22 | 704 | 0.3+ | 0.1+ | 2003 11 20 | 704 | 0.8− | 0.0 | 2003 12 21 | 704 | 0.2− | 0.7+ |
| 2003 10 22 | 704 | (1.1+ | 3.0+) | 2003 11 20 | 704 | 0.9− | 0.1− | 2003 12 21 | 704 | 0.3− | 0.5+ |
| 2003 10 22 | 704 | 0.4+ | 1.3+ | 2003 11 20 | 704 | 0.9− | 0.1+ | 2003 12 21 | 704 | 0.1+ | 0.4+ |
| 2003 10 30 | 704 | 0.5+ | 0.4− | 2003 11 20 | 704 | 0.9− | 0.3+ | 2003 12 21 | 704 | 0.3− | 0.6+ |
| 2003 10 30 | 704 | 0.2− | 0.1+ | 2003 11 20 | 704 | 0.8− | 0.1− | 2003 12 21 | 704 | 0.2+ | 0.1+ |
| 2003 10 30 | 704 | 0.1+ | 0.1+ | 2003 11 24 | 704 | 0.1+ | 0.0 | 2006 03 24 | E12 | 0.6+ | 0.1− |
| 2003 10 30 | 704 | 0.0 | 0.1− | 2003 11 24 | 704 | 0.3− | 0.0 | 2006 03 24 | E12 | 0.1+ | 0.5− |
| 2003 10 30 | 704 | 0.1− | 0.0 | 2003 11 24 | 704 | 0.4− | 0.3− | 2006 03 24 | E12 | 0.0 | 1.0+ |
| 2003 11 02 | 704 | 0.5− | 0.5− | 2003 11 24 | 704 | 0.3− | 0.2− | 2006 03 24 | E12 | 0.7− | 0.6− |

### 2003 $US_{278}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.27430 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21935817 | $\omega$ | 310.37256 | | +0.90273312 | | −0.41591141 |
| $a$ | 2.7229114 | $\Omega$ | 74.46135 | | +0.42114228 | | +0.80219476 |
| $e$ | 0.1687132 | $i$ | 6.55337 | | +0.08781856 | | +0.42837047 |
| $P$ | 4.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | 0.0 | 0.6+ | 2003 11 21 | 704 | 0.0 | 0.0 | 2003 12 04 | 703 | 0.4+ | 0.8+ |
| 2003 10 25 | 704 | 1.1+ | 0.7− | 2003 11 21 | 704 | 0.2+ | 0.7− | 2003 12 04 | 703 | 0.1+ | 0.2− |
| 2003 10 25 | 704 | (2.9+ | 2.8−) | 2003 11 21 | 704 | (1.6+ | 4.1−) | 2003 12 04 | 703 | 1.3− | 0.5− |
| 2003 10 25 | 704 | 0.5+ | 0.7+ | 2003 11 21 | 704 | (2.5− | 1.4+) | 2003 12 04 | 703 | 0.6− | 0.5+ |
| 2003 10 25 | 704 | 0.4+ | 0.0 | 2003 11 21 | 704 | 1.5− | 0.1− | 2003 12 21 | 691 | 0.4+ | 0.2− |
| 2003 10 29 | 699 | 0.2− | 0.3+ | 2003 11 24 | 699 | 0.4− | 0.6− | 2003 12 21 | 691 | 0.1+ | 0.0 |
| 2003 10 29 | 699 | 0.4+ | 0.7− | 2003 11 24 | 699 | 0.3+ | 0.3− | 2003 12 21 | 691 | 0.5+ | 0.1− |
| 2003 10 29 | 699 | 0.3+ | 0.3+ | 2003 11 24 | 699 | 0.3− | 0.1− | 2003 12 21 | 704 | 0.4+ | 1.0+ |
| 2003 10 29 | 699 | 0.8− | 0.2− | 2003 11 24 | 699 | 0.4+ | 0.1− | 2003 12 21 | 704 | 0.2+ | 0.7+ |
| 2003 11 02 | 704 | 0.7+ | 0.5− | 2003 11 30 | 691 | 0.1− | 0.1+ | 2003 12 21 | 704 | 0.3+ | 0.8+ |
| 2003 11 02 | 704 | 0.0 | 0.1− | 2003 11 30 | 691 | 0.0 | 0.0 | 2003 12 21 | 704 | 0.4+ | 0.5+ |
| 2003 11 02 | 704 | 1.5− | 1.9+ | 2003 11 30 | 691 | 0.0 | 0.1− | 2003 12 21 | 704 | 0.9+ | 1.2+ |
| 2003 11 02 | 704 | 0.3− | 1.1+ | 2003 12 01 | 291 | 0.3− | 0.3− | 2004 01 21 | 704 | 0.3− | 0.6− |
| 2003 11 18 | 644 | 0.3− | 0.2+ | 2003 12 01 | 291 | 0.4− | 0.4− | 2004 01 21 | 704 | 0.6+ | 0.1− |
| 2003 11 18 | 644 | 0.2+ | 0.4+ | 2003 12 01 | 291 | 0.3− | 0.4− | 2004 01 21 | 704 | 0.4− | 1.7+ |
| 2003 11 18 | 644 | 0.1+ | 0.1+ | 2003 12 01 | 701 | 0.3− | 0.2+ | 2004 01 21 | 704 | 0.1+ | 0.0 |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2003 12 01 | 704 | 0.2− | 0.1− | 2006 05 20 | 691 | 0.2+ | 0.3+ |
| 2003 11 19 | 691 | 0.0 | 0.2+ | 2003 12 01 | 701 | 0.4− | 1.2− | 2006 05 20 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.0 | 0.0 | 2003 12 01 | 704 | 0.1+ | 0.6+ | 2006 05 20 | 691 | 0.1+ | 0.1+ |
| 2003 11 19 | 691 | 0.2+ | 0.3+ | 2003 12 01 | 704 | 0.0 | 0.1+ | 2006 06 01 | 691 | 0.2+ | 0.4+ |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2003 12 01 | 701 | 0.2− | 0.5− | 2006 06 01 | 691 | 0.2+ | 0.5+ |
| 2003 11 19 | 691 | 0.1+ | 0.3+ | 2003 12 01 | 704 | 0.2+ | 0.0 | 2006 06 01 | 691 | 0.1− | 0.1+ |

**2003 UL$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.79863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17304379 | $\omega$ | 65.19006 | | +0.21899313 | −0.97508262 | |
| $a$ | 3.1893244 | $\Omega$ | 12.31798 | | +0.82447885 | +0.16550136 | |
| $e$ | 0.2158106 | $i$ | 9.56209 | | +0.52180135 | +0.14772675 | |
| $P$ | 5.70 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 910 | 1.2+ | 0.7− | 2003 11 19 | 644 | 0.5− | 0.5+ | 2003 12 03 | 699 | (1.6− | 2.4+) |
| 1997 10 02 | 910 | 0.2+ | 0.7− | 2003 11 19 | 704 | 0.6− | 0.1+ | 2003 12 03 | 699 | 0.1− | 0.7− |
| 1997 10 03 | 910 | 0.3− | 0.3− | 2003 11 19 | 644 | 0.3− | 0.3+ | 2003 12 03 | 699 | 0.0 | 0.4− |
| 2003 10 22 | 704 | 0.1+ | 0.7+ | 2003 11 19 | 704 | 0.4− | 0.4+ | 2003 12 03 | 699 | 1.0− | 0.3− |
| 2003 10 22 | 704 | 0.8− | 0.6+ | 2003 11 19 | 704 | 0.1+ | 0.3+ | 2003 12 04 | 704 | 0.1+ | 0.9+ |
| 2003 10 22 | 704 | 1.2− | 0.9+ | 2003 11 19 | 704 | 0.0 | 0.1+ | 2003 12 04 | 704 | 0.2− | 0.4+ |
| 2003 10 22 | 704 | 0.7+ | 1.0+ | 2003 11 19 | 704 | 0.5− | 0.2+ | 2003 12 04 | 704 | 0.3+ | 0.1+ |
| 2003 10 30 | 704 | 0.8+ | 0.4− | 2003 11 19 | 644 | 0.3− | 0.2+ | 2003 12 04 | 704 | 0.8− | 0.9+ |
| 2003 10 30 | 704 | 1.1+ | 0.8− | 2003 11 20 | 691 | 0.1− | 0.1− | 2003 12 04 | 704 | 0.4− | 0.0 |
| 2003 10 30 | 704 | 0.1+ | 1.0− | 2003 11 20 | 691 | 0.2+ | 0.1− | 2003 12 12 | 644 | 0.1− | 0.3− |
| 2003 10 30 | 704 | 1.6+ | 1.1+ | 2003 11 20 | 691 | 0.0 | 0.2− | 2003 12 12 | 644 | 0.1− | 0.1− |
| 2003 11 03 | 704 | 0.0 | 0.6+ | 2003 11 30 | 704 | 0.2− | 0.9+ | 2003 12 12 | 644 | 0.6− | 0.0 |
| 2003 11 03 | 704 | 0.1+ | 0.2+ | 2003 11 30 | 704 | 0.1− | 0.1− | 2003 12 29 | 691 | 0.4+ | 0.3− |
| 2003 11 03 | 704 | 0.4+ | 0.1+ | 2003 11 30 | 704 | 0.1− | 0.3+ | 2003 12 29 | 691 | 0.3+ | 0.0 |
| 2003 11 03 | 704 | 0.5+ | 0.3− | 2003 11 30 | 704 | 0.1+ | 0.1+ | 2003 12 29 | 691 | 0.3+ | 0.2− |
| 2003 11 03 | 704 | 0.2− | 0.2+ | 2003 11 30 | 704 | 0.1− | 0.7− | 2005 05 09 | G96 | 0.3− | 0.3− |
| 2003 11 14 | 644 | 0.0 | 0.0 | 2003 12 01 | 691 | 0.3− | 0.1− | 2005 05 09 | G96 | 0.2− | 0.4− |
| 2003 11 14 | 644 | 0.1+ | 0.1− | 2003 12 01 | 691 | 0.1− | 0.1− | 2005 05 09 | G96 | 0.2+ | 0.2− |
| 2003 11 14 | 644 | 0.4+ | 0.0 | 2003 12 01 | 691 | 0.1− | 0.2− | 2005 05 09 | G96 | 0.0 | 0.1+ |

**2003 UU$_{293}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.55514 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21738007 | $\omega$ | 228.33152 | | +0.98168254 | −0.01773442 | |
| $a$ | 2.7394049 | $\Omega$ | 131.75059 | | +0.06186903 | +0.97137317 | |
| $e$ | 0.2546096 | $i$ | 14.73022 | | −0.18019881 | +0.23689586 | |
| $P$ | 4.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 30 | 644 | 0.2+ | 0.0 | 2003 09 18 | 704 | 0.2+ | 0.1+ | 2003 10 24 | 699 | 0.9+ | 0.0 |
| 2002 05 30 | 644 | 0.1− | 0.1+ | 2003 10 01 | 699 | 1.1+ | 0.0 | 2003 10 24 | 699 | 0.4− | 0.3− |
| 2002 05 30 | 644 | 0.0 | 0.3− | 2003 10 01 | 699 | 0.7+ | 0.6− | 2003 10 24 | 699 | 0.2+ | 0.4− |
| 2003 09 02 | 704 | 0.3− | 0.9+ | 2003 10 01 | 699 | 0.4+ | 0.3+ | 2003 11 23 | 703 | 0.7+ | 0.7− |
| 2003 09 02 | 704 | 0.3+ | 0.4+ | 2003 10 01 | 699 | 1.1+ | 0.3− | 2003 11 23 | 703 | 0.1+ | 0.7+ |
| 2003 09 02 | 704 | 1.0− | 0.3+ | 2003 10 18 | 704 | 1.4− | 0.1+ | 2003 11 23 | 703 | 0.7− | 0.8− |
| 2003 09 02 | 704 | 0.5− | 0.6+ | 2003 10 18 | 704 | 0.3− | 0.1+ | 2003 11 23 | 703 | 1.0− | 0.3− |
| 2003 09 02 | 704 | 0.3− | 0.5+ | 2003 10 18 | 704 | 0.8− | 0.3− | 2005 02 04 | G96 | 0.4− | 0.1+ |
| 2003 09 18 | 704 | 0.0 | 0.1+ | 2003 10 18 | 704 | 0.1− | 0.5− | 2005 02 04 | G96 | 0.2− | 0.3+ |
| 2003 09 18 | 704 | 1.0+ | 0.8+ | 2003 10 18 | 704 | 0.7+ | 0.1− | 2005 02 04 | G96 | 0.6− | 0.5+ |
| 2003 09 18 | 704 | 1.0− | 0.1− | 2003 10 24 | 699 | 0.2+ | 0.1+ | 2005 02 04 | G96 | 1.3+ | 0.4+ |

**2003 UH$_{298}$ = 2006 QP$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.70693 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29920042 | $\omega$ | 63.13113 | | +0.15609912 | −0.98767327 | |
| $a$ | 2.2139166 | $\Omega$ | 17.89966 | | +0.89231577 | +0.13597243 | |
| $e$ | 0.0845021 | $i$ | 2.16305 | | +0.42356302 | +0.07754355 | |
| $P$ | 3.29 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 691 | 0.0 | 0.2+ | 2003 10 16 | 691 | 0.6− | 0.3− | 2006 08 21 | 691 | 0.2− | 0.2+ |
| 2003 09 27 | 691 | 0.2− | 0.2+ | 2003 10 25 | 291 | 0.1+ | 0.0 | 2006 08 21 | 691 | 0.1− | 0.1+ |
| 2003 09 27 | 691 | 0.1− | 0.0 | 2003 10 25 | 291 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.1− |
| 2003 10 16 | 691 | 0.1+ | 0.1− | 2003 10 25 | 291 | 0.4+ | 0.0 | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2003 10 16 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 691 | 0.5+ | 0.5− | 2006 08 28 | 691 | 0.0 | 0.1+ |

**2003 UD$_{299}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.24563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18533068 | $\omega$ | 115.82253 | | +0.92505243 | +0.37936149 | |
| $a$ | 3.0467572 | $\Omega$ | 221.89066 | | −0.35791348 | +0.85376544 | |
| $e$ | 0.1363710 | $i$ | 1.63480 | | −0.12718469 | +0.35660824 | |
| $P$ | 5.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.7− | 0.2− | 2003 09 22 | 691 | 0.0 | 0.3− | 2003 10 16 | 691 | 0.1+ | 0.2− |
| 1998 12 14 | 691 | 0.6+ | 0.1+ | 2003 09 22 | 291 | 0.3− | 0.1− | 2003 10 24 | 291 | 0.0 | 0.1− |
| 1998 12 14 | 691 | 0.0 | 0.7+ | 2003 09 22 | 691 | 0.1+ | 0.2+ | 2003 10 24 | 291 | 0.0 | 0.1+ |
| 2000 02 06 | 695 | 0.2− | 0.5− | 2003 09 27 | 691 | 0.0 | 0.1+ | 2003 10 24 | 291 | 0.2− | 0.0 |
| 2000 02 06 | 695 | 0.0 | 0.3− | 2003 09 27 | 691 | 0.0 | 0.0 | 2003 11 24 | 691 | 0.2− | 0.1− |
| 2003 09 22 | 291 | 0.1− | 0.2+ | 2003 09 27 | 691 | 0.1+ | 0.3+ | 2003 11 24 | 691 | 0.3+ | 0.2− |
| 2003 09 22 | 291 | 0.1− | 0.2+ | 2003 10 16 | 691 | 0.0 | 0.1− | 2003 11 24 | 691 | 0.1− | 0.4− |
| 2003 09 22 | 691 | 0.5+ | 0.0 | 2003 10 16 | 691 | 0.0 | 0.1− | | | | |

**2003 UR$_{307}$ = 1985 BK$_1$ = 2006 QM$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.63016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30264712 | $\omega$ | 311.06580 | | +0.35059467 | −0.93151970 | |
| $a$ | 2.1970757 | $\Omega$ | 118.16485 | | +0.88879135 | +0.29839472 | |
| $e$ | 0.0925495 | $i$ | 6.29851 | | +0.29518351 | +0.20792218 | |
| $P$ | 3.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 01 18 | 691 | 0.1− | 1.0+ | 2003 09 28 | 699 | 0.1+ | 0.6+ | 2005 05 04 | 691 | 0.1− | 0.1+ |
| 1985 01 18 | 691 | 0.4− | 1.3− | 2003 10 18 | 699 | 0.8− | 0.3+ | 2005 05 04 | 691 | 0.1+ | 0.1+ |
| 1985 01 18 | 691 | 0.4+ | 0.6− | 2003 10 18 | 699 | 1.8− | 0.3− | 2005 05 04 | 691 | 0.1+ | 0.1+ |
| 2000 11 27 | 704 | 0.2− | 0.2+ | 2003 10 18 | 699 | 0.5+ | 0.9+ | 2006 08 17 | 644 | 0.4+ | 0.4− |
| 2000 11 27 | 704 | 0.5+ | 1.9+ | 2003 10 18 | 699 | 0.4− | 0.2− | 2006 08 17 | 644 | 0.1− | 0.2− |
| 2000 11 27 | 704 | 0.2− | 0.7+ | 2003 10 29 | 699 | 0.3+ | 0.5+ | 2006 08 17 | 644 | 0.3− | 0.1− |
| 2003 09 28 | 699 | 0.1+ | 2.5− | 2003 10 29 | 699 | 0.3− | 0.2− | 2006 08 24 | 644 | 0.7+ | 0.3− |
| 2003 09 28 | 699 | 1.6+ | 0.2− | 2003 10 29 | 699 | 0.5+ | 1.1− | 2006 08 24 | 644 | 0.2+ | 0.1− |
| 2003 09 28 | 699 | 0.4+ | 1.1+ | 2003 10 29 | 699 | 0.8− | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.0 |

**2003 UH$_{314}$ = 2006 EM$_{50}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.49328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22818460 | $\omega$ | 181.48373 | | +0.54178473 | +0.83548192 | |
| $a$ | 2.6522339 | $\Omega$ | 121.33023 | | −0.77004759 | +0.53719502 | |
| $e$ | 0.2601743 | $i$ | 6.17396 | | −0.33689169 | +0.11572150 | |
| $P$ | 4.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 16 | 644 | 0.1− | 0.0 | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.1− | 0.1+ |
| 2003 10 16 | 644 | 0.0 | 0.0 | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 03 08 | 691 | 0.2+ | 0.4+ |
| 2003 10 16 | 644 | 0.2+ | 0.3+ | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 03 08 | 691 | 0.2− | 0.2− |
| 2003 10 20 | 691 | 0.1+ | 0.1− | 2003 10 24 | 645 | 0.1− | 0.1+ | 2006 03 08 | 691 | 0.3+ | 0.4− |
| 2003 10 20 | 691 | 0.1+ | 0.1− | 2006 03 04 | 691 | 0.1+ | 0.1+ | | | | |
| 2003 10 20 | 691 | 0.1− | 0.2− | 2006 03 04 | 691 | 0.2− | 0.1+ | | | | |

**2003 UJ$_{314}$ = 1996 BH$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 254.32334 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.23034612 | | $\omega$ | 327.31210 | | +0.81555985 | | −0.57628925 | | | | | |
| $a$ | 2.6356159 | | $\Omega$ | 67.96561 | | +0.54233997 | | +0.72958443 | | | | | |
| $e$ | 0.0921054 | | $i$ | 3.24476 | | +0.20181546 | | +0.36823532 | | | | | |
| $P$ | 4.28 | | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 06 | 691 | 0.2− | 0.9+ | 2003 10 28 | 608 | 0.2− | 1.2− | 2003 12 22 | 691 | 0.1− | 0.0 | |
| 1994 09 06 | 691 | 0.3− | 0.3+ | 2003 10 28 | 608 | 0.3+ | 0.7− | 2003 12 22 | 691 | 0.0 | 0.4− | |
| 1994 09 06 | 691 | 0.2− | 0.3+ | 2003 10 28 | 608 | 0.6+ | 1.3− | 2003 12 22 | 691 | 0.0 | 0.1− | |
| 1996 01 18 | 691 | 0.1− | 0.0 | 2003 11 15 | 691 | 0.3+ | 0.0 | 2005 03 03 | 691 | 0.6+ | 0.4+ | |
| 1996 01 18 | 691 | 0.1+ | 0.0 | 2003 11 15 | 691 | 0.2+ | 0.1− | 2005 03 03 | 691 | 0.0 | 0.5+ | |
| 1996 01 18 | 691 | 0.2+ | 0.2− | 2003 11 15 | 691 | 0.2+ | 0.0 | 2005 03 03 | 691 | 0.2+ | 0.6+ | |
| 1996 01 25 | 691 | 0.1− | 0.0 | 2003 11 15 | 644 | 0.3+ | 0.1+ | 2005 03 03 | 703 | 0.4− | 2.5− | |
| 1996 01 25 | 691 | 0.1− | 0.0 | 2003 11 15 | 644 | 0.4+ | 0.2+ | 2005 03 03 | 703 | 0.5− | 0.2+ | |
| 1996 01 25 | 691 | 0.0 | 0.1− | 2003 11 15 | 644 | 0.0 | 0.1+ | 2005 03 03 | 703 | 1.3− | 0.2+ | |
| 2003 10 18 | 699 | 0.6− | 0.5− | 2003 12 01 | 704 | 0.7− | 0.7+ | 2005 03 03 | 703 | 1.2− | 1.9+ | |
| 2003 10 18 | 699 | 1.7+ | 1.6− | 2003 12 01 | 704 | 0.2− | 0.8+ | 2005 03 09 | 704 | 0.6+ | 1.0+ | |
| 2003 10 18 | 699 | 1.2+ | 1.0+ | 2003 12 01 | 704 | 0.1+ | 0.6− | 2005 03 09 | 704 | 1.3+ | 0.6− | |
| 2003 10 18 | 699 | 0.3+ | 2.5+ | 2003 12 01 | 704 | (3.9− | 2.0+) | 2005 03 09 | 704 | 0.1+ | 0.0 | |
| 2003 10 20 | 691 | 0.0 | 0.2+ | 2003 12 16 | 291 | 0.2− | 0.2+ | 2005 03 09 | 704 | 1.2+ | 1.1+ | |
| 2003 10 20 | 691 | 0.0 | 0.1− | 2003 12 16 | 291 | 0.1− | 0.0 | | | | | |
| 2003 10 20 | 691 | 0.1− | 0.0 | 2003 12 16 | 291 | 0.2− | 0.0 | | | | | |

**2003 UK$_{314}$ = 2005 CM$_{39}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 5.18947 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.29130323 | | $\omega$ | 259.17297 | | +0.59436101 | | +0.80194698 | | | | | |
| $a$ | 2.2537506 | | $\Omega$ | 47.46630 | | −0.70228079 | | +0.55401650 | | | | | |
| $e$ | 0.1710300 | | $i$ | 4.68085 | | −0.39183757 | | +0.22348771 | | | | | |
| $P$ | 3.38 | | $H$ | 18.2 | $G$ | 0.15 | | $U$ | 5 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 691 | 0.2+ | 0.5+ | 2003 10 24 | 645 | 0.1− | 0.2− | 2005 02 09 | 809 | 0.1− | 0.0 | |
| 2003 10 19 | 691 | 0.0 | 0.3+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2005 02 09 | 809 | 0.2+ | 0.1+ | |
| 2003 10 19 | 691 | 0.1− | 0.2+ | 2003 11 16 | 645 | 0.0 | 0.0 | 2005 02 09 | 809 | 0.1+ | 0.3− | |
| 2003 10 19 | 645 | 0.1− | 0.2− | 2003 11 16 | 645 | 0.0 | 0.1− | 2005 02 10 | 809 | 0.1+ | 0.3+ | |
| 2003 10 19 | 645 | 0.1− | 0.1− | 2003 11 19 | 645 | 0.1+ | 0.0 | 2005 02 10 | 809 | 0.3− | 0.4− | |
| 2003 10 22 | 645 | 0.0 | 0.1− | 2003 11 19 | 645 | 0.0 | 0.1+ | 2005 02 10 | 809 | 0.1− | 0.3+ | |
| 2003 10 22 | 645 | 0.1+ | 0.2− | 2005 02 09 | 809 | 0.1+ | 0.0 | | | | | |

**2003 UL$_{314}$ = 2000 AH$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 294.97868 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.22381966 | | $\omega$ | 83.37810 | | +0.89645950 | | +0.44211407 | | | | | |
| $a$ | 2.6866055 | | $\Omega$ | 250.37955 | | −0.41808051 | | +0.82147949 | | | | | |
| $e$ | 0.1138682 | | $i$ | 1.82058 | | −0.14686404 | | +0.36014803 | | | | | |
| $P$ | 4.40 | | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.3− | 0.3− | 2003 10 29 | 704 | 0.6− | 0.8+ | 2006 04 21 | 703 | 0.6− | 0.1+ | |
| 1996 01 13 | 691 | 0.2+ | 0.4+ | 2003 10 29 | 704 | 0.2− | 1.2+ | 2006 04 21 | 703 | 0.1+ | 0.4+ | |
| 1996 01 13 | 691 | 0.3+ | 0.3+ | 2003 10 29 | 704 | 0.1− | 1.3+ | 2006 04 21 | 703 | 2.8+ | 0.3+ | |
| 2000 01 05 | 691 | 0.1+ | 0.5− | 2003 11 16 | 691 | 0.0 | 0.1+ | 2006 05 03 | G96 | 0.3− | 0.6+ | |
| 2000 01 05 | 691 | 0.2+ | 0.0 | 2003 11 16 | 691 | 0.1− | 0.2+ | 2006 05 03 | G96 | 0.2− | 0.3+ | |
| 2000 01 05 | 691 | 0.2+ | 0.3− | 2003 11 16 | 691 | 0.0 | 0.1+ | 2006 05 03 | G96 | 0.7− | 0.4+ | |
| 2000 01 11 | 691 | 0.1− | 0.2− | 2003 11 21 | 291 | 0.4− | 0.3+ | 2006 05 03 | G96 | 0.1− | 0.3+ | |
| 2000 01 11 | 691 | 0.3− | 0.1+ | 2003 11 21 | 291 | 0.1+ | 0.2+ | 2006 06 02 | G96 | 0.3− | 0.1+ | |
| 2000 01 11 | 691 | 0.2− | 0.0 | 2003 11 21 | 291 | 0.0 | 0.2+ | 2006 06 02 | G96 | 0.2− | 0.4+ | |
| 2003 10 19 | 691 | 0.1+ | 0.0 | 2006 04 07 | 691 | 0.0 | 0.2+ | 2006 06 02 | G96 | 0.2− | 0.2+ | |
| 2003 10 19 | 691 | 0.1− | 0.2− | 2006 04 07 | 691 | 0.0 | 0.2− | 2006 06 02 | G96 | 0.0 | 0.1+ | |
| 2003 10 19 | 691 | 0.0 | 0.1− | 2006 04 07 | 691 | 0.1− | 0.4+ | | | | | |
| 2003 10 29 | 704 | 0.9+ | 0.5+ | 2006 04 21 | 703 | 0.9+ | 0.2+ | | | | | |

**2003 UM$_{314}$ = 2006 QB$_{75}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 27.19643 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.30515271 | | $\omega$ | 172.97390 | | +0.71490818 | | +0.69671321 | | | | | |
| $a$ | 2.1850325 | | $\Omega$ | 142.63283 | | −0.64616797 | | +0.69061433 | | | | | |
| $e$ | 0.0820532 | | $i$ | 5.59150 | | −0.26715774 | | +0.19401688 | | | | | |
| $P$ | 3.23 | | $H$ | 18.7 | $G$ | 0.15 | | $U$ | 5 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 691 | 0.1+ | 0.3+ | 2003 10 23 | 645 | 0.0 | 0.2− | 2006 08 21 | 691 | 0.0 | 0.1+ | |
| 2003 10 20 | 691 | 0.1+ | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.2− | 2006 08 21 | 691 | 0.1− | 0.1+ | |
| 2003 10 20 | 691 | 0.2− | 0.1+ | 2003 11 28 | 645 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.0 | 0.1− | |
| 2003 10 22 | 645 | 0.0 | 0.1− | 2003 11 28 | 645 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.2+ | |
| 2003 10 22 | 645 | 0.0 | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.3− | 2006 08 28 | 691 | 0.0 | 0.1− | |

**2003 UN$_{314}$ = 2000 AE$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 241.69308 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.24465719 | | $\omega$ | 298.98376 | | −0.03409790 | | −0.99569221 | | | | | |
| $a$ | 2.5318078 | | $\Omega$ | 152.56217 | | +0.96967711 | | −0.05384996 | | | | | |
| $e$ | 0.2005082 | | $i$ | 10.78482 | | +0.24199926 | | +0.07547984 | | | | | |
| $P$ | 4.03 | | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.3+ | 1.2− | 2003 10 21 | 704 | 0.2− | 0.1+ | 2004 01 12 | 644 | 0.0 | 0.2+ | |
| 2000 01 08 | 704 | 0.1− | 1.1− | 2003 10 21 | 704 | 0.5− | 1.2+ | 2004 01 12 | 644 | 0.2+ | 0.4+ | |
| 2000 01 08 | 704 | 0.4+ | 0.9+ | 2003 11 30 | 704 | 0.6− | 0.4+ | 2004 01 12 | 644 | 0.0 | 0.3+ | |
| 2000 01 08 | 704 | 1.4− | 0.2− | 2003 11 30 | 704 | 0.4− | 0.2− | 2004 01 12 | 644 | 0.1+ | 0.2+ | |
| 2000 01 08 | 704 | 0.0 | 0.1− | 2003 11 30 | 704 | 0.3− | 0.0 | 2004 01 12 | 644 | 0.1− | 0.3+ | |
| 2000 01 11 | 704 | 1.2+ | 1.1− | 2003 11 30 | 704 | 0.1+ | 0.3− | 2004 01 12 | 644 | 0.3+ | 0.4+ | |
| 2000 01 11 | 704 | 0.4− | 0.1+ | 2003 11 30 | 704 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.1− | 0.6+ | |
| 2000 01 11 | 704 | 0.2+ | 1.3− | 2003 12 14 | 704 | 0.9+ | 0.3+ | 2004 02 17 | 704 | 0.4+ | 1.8+ | |
| 2000 01 11 | 704 | 0.3+ | 0.8− | 2003 12 14 | 704 | 0.3− | 0.4+ | 2004 02 17 | 704 | (1.3− | 2.4+) | |
| 2002 08 06 | 644 | 0.0 | 0.6+ | 2003 12 14 | 644 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.9+ | |
| 2002 08 06 | 644 | 0.1− | 0.1− | 2003 12 14 | 704 | 0.9− | 0.4− | 2004 02 17 | 704 | (3.0− | 1.4+) | |
| 2002 08 06 | 644 | 0.1+ | 0.1+ | 2003 12 14 | 704 | 0.0 | 0.1+ | 2005 05 15 | 644 | 0.2+ | 0.7+ | |
| 2003 10 21 | 704 | 0.2+ | 1.4+ | 2003 12 14 | 704 | 0.2− | 0.2− | 2005 05 15 | 644 | 0.1+ | 0.6+ | |
| 2003 10 21 | 704 | 0.9+ | 0.2+ | 2003 12 14 | 644 | 0.0 | 0.1+ | 2005 05 15 | 644 | 0.1+ | 0.6+ | |
| 2003 10 21 | 704 | 0.2− | 0.3− | 2003 12 14 | 644 | 0.1+ | 0.2+ | | | | | |

**2003 UO$_{314}$ = 1995 HX$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 260.03423 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.29532999 | | $\omega$ | 25.31957 | | −0.16737825 | | −0.98251383 | | | | | |
| $a$ | 2.2332175 | | $\Omega$ | 74.40183 | | +0.88952438 | | −0.18616994 | | | | | |
| $e$ | 0.0819912 | | $i$ | 4.85720 | | +0.42512457 | | +0.00270806 | | | | | |
| $P$ | 3.34 | | $H$ | 17.7 | $G$ | 0.15 | | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.4+ | 0.3+ | 2003 10 24 | 691 | 0.1+ | 0.2− | 2003 11 30 | 691 | 0.4− | 0.3+ | |
| 1995 04 26 | 691 | 0.1− | 0.0 | 2003 11 01 | 704 | 0.1− | 0.5+ | 2003 11 30 | 691 | 0.0 | 0.4+ | |
| 1995 04 26 | 691 | 0.3− | 0.1+ | 2003 11 01 | 704 | 0.9+ | 1.7+ | 2005 04 02 | 691 | 0.2+ | 0.1− | |
| 1995 05 08 | 691 | 0.2+ | 0.3+ | 2003 11 01 | 704 | 0.5+ | 1.1+ | 2005 04 02 | 691 | 0.1+ | 0.5− | |
| 1995 05 08 | 691 | 0.8+ | 0.8+ | 2003 11 21 | 691 | 0.0 | 0.3− | 2005 04 02 | 691 | 0.3+ | 0.4− | |
| 1995 05 08 | 691 | 0.4− | 0.1+ | 2003 11 21 | 691 | 0.2+ | 0.2− | 2005 04 12 | 691 | 0.3− | 0.0 | |
| 2003 10 24 | 691 | 0.0 | 0.1− | 2003 11 21 | 691 | 0.1− | 0.0 | 2005 04 12 | 691 | 0.2− | 0.0 | |
| 2003 10 24 | 691 | 0.1− | 0.3− | 2003 11 30 | 691 | 0.3− | 0.3+ | 2005 04 12 | 691 | 0.5− | 0.0 | |

**2003 UP$_{314}$ = 2002 RE$_4$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.47190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17310149 | $\omega$ | 66.45005 | | +0.40568180 | +0.89601396 | |
| $a$ | 3.1886156 | $\Omega$ | 228.75369 | | −0.90146099 | +0.35961264 | |
| $e$ | 0.0496416 | $i$ | 13.89055 | | −0.15096478 | +0.26045677 | |
| $P$ | 5.69 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.0 | 0.0 | 2003 10 24 | 695 | 0.5+ | 0.2+ | 2003 11 24 | 699 | 0.5− | 1.9+ |
| 2002 09 03 | 644 | 0.4− | 0.2− | 2003 10 24 | 695 | 0.5+ | 0.1+ | 2003 11 24 | 699 | 0.3− | 0.4− |
| 2002 09 03 | 644 | 0.0 | 0.2− | 2003 11 15 | 691 | 0.1+ | 0.4− | 2003 11 24 | 699 | 0.3− | 0.6− |
| 2002 09 04 | 644 | 0.3+ | 0.3+ | 2003 11 15 | 691 | 0.0 | 0.5− | 2003 12 14 | 291 | 0.4+ | 0.0 |
| 2002 09 04 | 644 | 0.3+ | 0.0 | 2003 11 15 | 691 | 0.3− | 0.1− | 2003 12 14 | 291 | 0.3+ | 0.1− |
| 2002 09 04 | 644 | 0.1− | 0.1+ | 2003 11 24 | 699 | 0.9− | 0.0 | 2003 12 14 | 291 | 0.5+ | 0.1− |

**2003 UQ$_{314}$ = 2000 YP$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.48324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28380103 | $\omega$ | 194.83167 | | −0.96540293 | −0.25704720 | |
| $a$ | 2.2932958 | $\Omega$ | 330.16235 | | +0.24732406 | −0.84930043 | |
| $e$ | 0.0958538 | $i$ | 5.05766 | | +0.08263171 | −0.46110250 | |
| $P$ | 3.47 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 608 | 0.3+ | 1.5+ | 2003 11 19 | 704 | 0.4− | 0.8+ | 2005 05 10 | 699 | 0.8− | 0.3+ |
| 2000 12 29 | 608 | 0.5+ | 1.2+ | 2003 11 19 | 704 | 0.6− | 0.6− | 2005 05 10 | 699 | 0.6− | 0.6+ |
| 2000 12 29 | 608 | 0.5+ | 1.5+ | 2003 11 19 | 704 | 0.1− | 0.1− | 2005 05 10 | 699 | 0.8+ | 1.0+ |
| 2001 01 04 | 704 | (1.8− | 0.4−) | 2003 11 19 | 704 | 0.9− | 0.7+ | 2005 05 10 | 699 | 1.4+ | 0.8+ |
| 2001 01 04 | 704 | 0.5+ | 1.4− | 2003 11 19 | 691 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.3+ | 0.6+ |
| 2001 01 04 | 704 | (0.1− | 1.8−) | 2003 11 19 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7− | 1.2+ |
| 2001 01 04 | 704 | 0.6− | 0.9− | 2003 11 19 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.3− | 0.6+ |
| 2003 10 27 | 691 | 0.2− | 0.1+ | 2003 12 01 | 691 | 0.2+ | 0.2− | 2006 09 19 | 703 | (1.0+ | 2.1+) |
| 2003 10 27 | 691 | 0.1− | 0.4+ | 2003 12 01 | 691 | 0.1+ | 0.0 | | | | |
| 2003 10 27 | 691 | 0.3+ | 0.1− | 2003 12 01 | 691 | 0.1+ | 0.0 | | | | |

**2003 UR$_{314}$ = 1995 SN$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.73627 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25927007 | $\omega$ | 47.75495 | | +0.71332413 | −0.70083359 | |
| $a$ | 2.4357598 | $\Omega$ | 356.73852 | | +0.63782631 | +0.64977188 | |
| $e$ | 0.1850036 | $i$ | 0.98659 | | +0.29042430 | +0.29432768 | |
| $P$ | 3.80 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.0 | 0.3− | 1999 10 06 | 704 | 0.3− | 0.3− | 2003 11 19 | 691 | 0.1− | 0.3− |
| 1995 09 21 | 691 | 0.2+ | 0.2− | 1999 10 06 | 704 | 1.0+ | 0.8+ | 2003 12 01 | 691 | 0.4+ | 0.1− |
| 1995 09 21 | 691 | 0.3+ | 0.4− | 2003 10 27 | 691 | 0.1− | 0.2+ | 2003 12 01 | 691 | 0.4+ | 0.1− |
| 1995 09 26 | 691 | 0.4− | 0.0 | 2003 10 27 | 691 | 0.3− | 0.5+ | 2003 12 01 | 691 | 0.4+ | 0.1+ |
| 1995 09 26 | 691 | 0.2+ | 0.5+ | 2003 10 27 | 691 | 0.1− | 0.4+ | 2003 12 14 | 691 | 0.2− | 0.2− |
| 1995 09 26 | 691 | 0.1− | 0.2− | 2003 11 19 | 691 | 0.2+ | 0.3− | 2003 12 14 | 691 | 0.3− | 0.4− |
| 1999 10 06 | 704 | 1.2− | 0.8+ | 2003 11 19 | 691 | 0.2− | 0.4+ | 2003 12 14 | 691 | 0.0 | 0.3− |

**2003 US$_{314}$ = 2000 AL$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.43736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24116746 | $\omega$ | 309.52343 | | +0.57167041 | −0.81506458 | |
| $a$ | 2.5561730 | $\Omega$ | 105.36127 | | +0.77955698 | +0.50378210 | |
| $e$ | 0.1613257 | $i$ | 5.60269 | | +0.25589814 | +0.28613516 | |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 691 | 0.0 | 0.0 | 2003 10 29 | 699 | 0.4+ | 0.9+ | 2003 11 15 | 644 | 0.1+ | 0.0 |
| 2000 01 05 | 691 | 0.6− | 0.2+ | 2003 10 29 | 699 | 0.4+ | 0.0 | 2003 11 15 | 644 | 0.6+ | 0.2− |
| 2000 01 05 | 691 | 0.4+ | 0.6− | 2003 10 29 | 699 | 0.3+ | 0.9− | 2003 11 30 | 704 | 1.0− | 0.1− |
| 2000 01 05 | 691 | 0.1+ | 0.2− | 2003 11 05 | 699 | 0.1+ | 0.2− | 2003 11 30 | 704 | 0.2+ | 0.1+ |
| 2000 01 10 | 691 | 0.2− | 0.1− | 2003 11 05 | 699 | 1.7− | 0.2+ | 2003 11 30 | 704 | 0.9− | 0.3+ |
| 2000 01 10 | 691 | 0.1− | 0.9+ | 2003 11 05 | 699 | 0.4− | 0.1− | 2003 11 30 | 704 | 0.4+ | 0.1+ |
| 2000 01 10 | 691 | 0.4+ | 0.3− | 2003 11 05 | 699 | 1.3+ | 0.5− | | | | |
| 2003 10 29 | 699 | 0.1− | 0.6+ | 2003 11 15 | 644 | 0.3+ | 0.1− | | | | |

**2003 UT$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.38335 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23704812 | $\omega$ | 252.93882 | | +0.91555758 | +0.32482323 | |
| $a$ | 2.5857014 | $\Omega$ | 87.59800 | | −0.21439133 | +0.89307762 | |
| $e$ | 0.1690731 | $i$ | 13.73120 | | −0.34028029 | +0.31129123 | |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 291 | 0.0 | 0.1+ | 2003 10 16 | 699 | 1.2+ | 1.0− | 2003 11 23 | 699 | 0.3− | 0.6+ |
| 2002 03 21 | 291 | 0.0 | 0.0 | 2003 10 16 | 644 | 0.0 | 0.2− | 2003 12 22 | 644 | 0.1− | 0.7+ |
| 2002 03 21 | 291 | 0.1+ | 0.0 | 2003 10 16 | 644 | 0.0 | 0.1− | 2003 12 22 | 644 | 0.0 | 0.5+ |
| 2002 06 02 | 644 | 0.4+ | 0.9+ | 2003 10 27 | 699 | 0.2− | 0.1− | 2003 12 22 | 644 | 0.8− | 0.9+ |
| 2002 06 02 | 644 | 0.3+ | 0.5+ | 2003 10 27 | 699 | 0.6− | 0.2− | 2006 05 21 | 691 | 0.2− | 0.2+ |
| 2002 06 02 | 644 | 0.5+ | 0.7+ | 2003 10 27 | 699 | 0.9− | 0.3− | 2006 05 21 | 691 | 0.0 | 0.4+ |
| 2003 10 16 | 699 | 0.7− | 0.5+ | 2003 10 27 | 699 | 0.5+ | 0.7+ | 2006 05 21 | 691 | 0.0 | 0.0 |
| 2003 10 16 | 699 | 0.3+ | 1.0− | 2003 11 23 | 699 | 0.9− | 0.5− | 2006 05 29 | 691 | 0.2+ | 0.2+ |
| 2003 10 16 | 699 | 0.7+ | 0.3+ | 2003 11 23 | 699 | 1.3+ | 1.2+ | 2006 05 29 | 691 | 0.2− | 1.0− |
| 2003 10 16 | 644 | 0.1+ | 0.3− | 2003 11 23 | 699 | 0.8− | 0.6+ | 2006 05 29 | 691 | 0.3+ | 0.2+ |

**2003 UU$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.70230 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22921014 | $\omega$ | 183.21454 | | −0.89479535 | −0.44284597 | |
| $a$ | 2.6443169 | $\Omega$ | 330.29114 | | +0.41214913 | −0.77034488 | |
| $e$ | 0.1798432 | $i$ | 6.58369 | | +0.17168104 | −0.45875506 | |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 02 | 291 | 0.2− | 0.4+ | 2005 03 12 | 699 | 0.1+ | 0.5+ | 2005 04 18 | E12 | 0.1− | 0.1− |
| 2002 09 02 | 291 | 0.2− | 0.2+ | 2005 03 12 | 699 | 0.7− | 1.1+ | 2005 05 01 | 644 | 0.2− | 0.1+ |
| 2002 09 02 | 291 | 0.0 | 0.0 | 2005 03 12 | 699 | 1.1+ | 1.1+ | 2005 05 01 | 644 | 0.1− | 0.4+ |
| 2003 10 17 | 691 | 0.0 | 0.1− | 2005 04 06 | 699 | 0.1+ | 0.1+ | 2005 05 01 | 644 | 0.3− | 0.3+ |
| 2003 10 17 | 691 | 0.5+ | 0.7− | 2005 04 06 | 699 | 1.6+ | 0.2+ | 2005 05 08 | 699 | 0.1+ | 0.3+ |
| 2003 10 17 | 691 | 0.1− | 0.1+ | 2005 04 06 | 699 | 0.1− | 0.4+ | 2005 05 08 | 699 | 0.0 | 2.7− |
| 2003 10 25 | 691 | 0.1+ | 0.1− | 2005 04 06 | 704 | 0.6− | 1.1− | 2005 05 08 | 699 | 0.0 | 0.2− |
| 2003 10 25 | 691 | 0.3+ | 0.0 | 2005 04 06 | 704 | 0.5+ | 0.1+ | 2005 05 08 | 699 | 0.6+ | 0.2+ |
| 2003 10 25 | 691 | 0.0 | 0.1+ | 2005 04 06 | 704 | 0.7− | 0.7+ | 2005 05 14 | 644 | 0.0 | 0.1+ |
| 2003 11 21 | 691 | 0.3− | 0.1+ | 2005 04 06 | 704 | 0.5− | 0.9− | 2005 05 14 | 644 | 0.1+ | 0.2+ |
| 2003 11 21 | 691 | 0.2− | 0.2+ | 2005 04 18 | E12 | 0.5− | 0.3+ | 2005 05 14 | 644 | 0.1+ | 0.1+ |
| 2003 11 21 | 691 | 0.5− | 0.7+ | 2005 04 18 | E12 | 0.2− | 0.2+ | | | | |
| 2005 03 12 | 699 | 0.0 | 1.0+ | 2005 04 18 | E12 | 0.6+ | 0.3+ | | | | |

**2003 UV$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.36258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22287025 | $\omega$ | 263.27212 | | +0.97918840 | −0.20096668 | |
| $a$ | 2.6942299 | $\Omega$ | 108.31848 | | +0.19599831 | +0.90014852 | |
| $e$ | 0.0828808 | $i$ | 1.70996 | | +0.05267580 | +0.38645185 | |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.1+ | 0.1+ | 2003 11 15 | 691 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.2− | 0.2− |
| 2001 03 24 | 691 | 0.1+ | 0.1+ | 2003 11 15 | 691 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.0 | 0.2− |
| 2001 03 24 | 691 | 0.0 | 0.2+ | 2003 11 15 | 691 | 0.2+ | 0.4− | 2005 03 10 | G96 | 0.1− | 0.3− |
| 2003 10 20 | 691 | 0.2− | 0.1− | 2003 11 21 | 704 | 0.4− | 1.3+ | 2006 04 25 | G96 | 0.6− | 0.3+ |
| 2003 10 20 | 691 | 0.2− | 0.2+ | 2003 11 21 | 704 | 0.9+ | 0.8+ | 2006 04 25 | G96 | 0.4− | 0.6− |
| 2003 10 20 | 691 | 0.1− | 0.1− | 2003 11 21 | 704 | 1.7− | 0.6+ | 2006 04 25 | G96 | 0.2+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 28 | 704 | 1.3+ | 0.2+ | 2003 11 21 | 704 | 1.3+ | 1.6+ | 2006 04 25 | G96 | 0.0 | 0.3+ |
| 2003 10 28 | 704 | 1.2+ | 0.6+ | 2003 11 21 | 704 | 0.9− | 0.9+ | 2006 05 19 | G96 | 0.6+ | 0.6+ |
| 2003 10 28 | 704 | 1.0+ | 0.1+ | 2003 12 01 | 704 | 0.3− | 0.2+ | 2006 05 19 | G96 | 0.0 | 0.2+ |
| 2003 10 29 | 699 | 1.7− | 0.5+ | 2003 12 01 | 704 | 0.6− | 0.4− | 2006 05 19 | G96 | 0.4+ | 0.4+ |
| 2003 10 29 | 699 | 0.0 | 0.1+ | 2003 12 01 | 704 | 0.1− | 0.2+ | 2006 05 19 | G96 | 0.2+ | 0.4+ |
| 2003 10 29 | 699 | 1.8− | 0.7− | 2003 12 01 | 704 | 0.3− | 0.1− | | | | |
| 2003 10 29 | 699 | 1.0+ | 0.8− | 2005 03 10 | G96 | 0.0 | 0.3− | | | | |

**2003 UW$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.73246 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24498470 | $\omega$ | 247.09602 | | +0.92065209 | | −0.34528913 |
| $a$ | 2.5295508 | $\Omega$ | 132.56084 | | +0.38148420 | | +0.89479646 |
| $e$ | 0.1419844 | $i$ | 14.31694 | | −0.08288265 | | +0.28304540 |
| $P$ | 4.02 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 645 | 0.2+ | 0.2− | 2003 10 24 | 291 | 0.1− | 0.6+ | 2003 12 13 | 704 | 0.1+ | 0.2+ |
| 1999 10 16 | 645 | 0.1+ | 0.2− | 2003 11 23 | 703 | 1.3+ | 0.0 | 2003 12 13 | 704 | 0.5− | 0.7+ |
| 1999 11 10 | 704 | 0.0 | 0.1+ | 2003 11 23 | 703 | 1.1− | 1.3− | 2003 12 13 | 704 | 0.9+ | 0.3− |
| 1999 11 10 | 704 | 1.9− | 0.6− | 2003 11 23 | 703 | 0.2− | 0.0 | 2003 12 19 | 703 | 0.9+ | 0.1+ |
| 1999 11 10 | 704 | 0.9− | 0.4− | 2003 11 23 | 703 | 0.7− | 1.9+ | 2003 12 19 | 703 | 1.4+ | 0.1− |
| 2003 10 21 | 699 | 0.1+ | 0.8− | 2003 11 29 | 704 | 1.4− | 2.0+ | 2003 12 19 | 703 | 0.4− | 0.3− |
| 2003 10 21 | 699 | 1.0− | 0.9− | 2003 11 29 | 704 | 0.9− | 0.6+ | 2003 12 19 | 703 | 1.2− | 0.8− |
| 2003 10 21 | 699 | 0.1− | 0.4+ | 2003 11 29 | 704 | 0.2− | 1.2− | 2005 04 09 | 703 | 0.0 | 0.7− |
| 2003 10 21 | 699 | 0.5− | 0.9+ | 2003 11 29 | 704 | 0.1+ | 0.1− | 2005 04 09 | 703 | 1.1+ | 0.8− |
| 2003 10 24 | 291 | 0.2+ | 0.4+ | 2003 12 13 | 704 | 0.5+ | 0.7+ | 2005 04 09 | 703 | 0.4− | 0.9+ |
| 2003 10 24 | 291 | 0.1− | 0.5+ | 2003 12 13 | 704 | 0.6+ | 0.2+ | 2005 04 09 | 703 | 0.7− | 0.0 |

**2003 UX$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.18326 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22921650 | $\omega$ | 60.89941 | | −0.38296631 | | −0.90398257 |
| $a$ | 2.6442680 | $\Omega$ | 52.87062 | | +0.74280155 | | −0.42371439 |
| $e$ | 0.2218661 | $i$ | 13.79711 | | +0.54916543 | | −0.05728540 |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 644 | 0.7− | 0.1− | 2003 11 01 | 704 | 0.3+ | 0.5− | 2005 04 04 | 703 | 0.8− | 0.2− |
| 2003 10 21 | 644 | 0.2− | 0.2+ | 2003 11 01 | 704 | 0.6− | 0.3+ | 2005 04 04 | 703 | 0.8+ | 0.2+ |
| 2003 10 21 | 644 | 0.7+ | 0.2− | 2003 12 21 | 704 | 0.7− | 0.3+ | 2005 05 12 | 691 | 0.1+ | 0.4+ |
| 2003 10 23 | 691 | 0.0 | 0.1+ | 2003 12 21 | 704 | 0.6− | 0.2− | 2005 05 12 | 691 | 0.0 | 0.1+ |
| 2003 10 23 | 691 | 0.1+ | 0.2+ | 2003 12 21 | 704 | 0.0 | 0.2− | 2005 05 12 | 691 | 0.1− | 0.2− |
| 2003 10 23 | 691 | 0.2+ | 0.0 | 2005 04 04 | 703 | 0.9+ | 1.1− | | | | |
| 2003 11 01 | 704 | 0.0 | 0.2− | 2005 04 04 | 703 | 0.8− | 0.0 | | | | |

**2003 UY$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.71200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23958534 | $\omega$ | 9.31382 | | +0.90345050 | | −0.42816505 |
| $a$ | 2.5674139 | $\Omega$ | 16.08845 | | +0.38821437 | | +0.79610446 |
| $e$ | 0.0687200 | $i$ | 4.39941 | | +0.18184278 | | +0.42765918 |
| $P$ | 4.11 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 09 | 691 | 0.3+ | 0.3− | 2003 10 29 | 704 | 0.2+ | 0.9+ | 2003 11 30 | 691 | 0.5+ | 0.1+ |
| 1997 03 09 | 691 | 0.2− | 0.6− | 2003 10 29 | 704 | 0.2− | 0.5+ | 2003 11 30 | 691 | 0.4+ | 0.0 |
| 1997 03 09 | 691 | 0.1+ | 0.6− | 2003 10 29 | 704 | 0.5− | 0.7− | 2003 11 30 | 691 | 0.1+ | 0.2+ |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2003 10 29 | 704 | 0.2+ | 0.8+ | 2005 02 09 | 691 | 0.0 | 0.4− |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2003 11 19 | 691 | 0.3+ | 0.2− | 2005 02 09 | 691 | 0.5+ | 0.3− |
| 2001 02 27 | 691 | 0.3− | 1.1+ | 2003 11 19 | 691 | 0.0 | 0.2− | 2005 02 09 | 691 | 0.4+ | 0.2− |
| 2001 02 27 | 691 | 0.3− | 0.9+ | 2003 11 19 | 691 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.2+ | 0.4+ |
| 2001 02 27 | 691 | 0.2− | 0.7+ | 2003 11 24 | 699 | 1.5− | 1.0+ | 2005 04 11 | G96 | 0.3− | 0.5+ |
| 2003 10 21 | 691 | 0.0 | 0.3− | 2003 11 24 | 699 | 0.1− | 1.1+ | 2005 04 11 | G96 | 0.6− | 0.2+ |
| 2003 10 21 | 691 | 0.4− | 0.4− | 2003 11 24 | 699 | 0.9+ | 0.2− | 2005 04 11 | G96 | 0.3− | 0.0 |
| 2003 10 21 | 691 | 0.3− | 0.2− | 2003 11 24 | 699 | 1.5− | 0.6+ | | | | |

**2003 UZ$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.86482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20939618 | $\omega$ | 278.19701 | | +0.94730862 | | −0.31680239 |
| $a$ | 2.8086021 | $\Omega$ | 100.28246 | | +0.30957097 | | +0.86747161 |
| $e$ | 0.0785316 | $i$ | 2.75867 | | +0.08229332 | | +0.38357430 |
| $P$ | 4.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 645 | 0.0 | 0.0 | 2005 01 17 | 246 | 0.4+ | 0.5+ | 2006 03 26 | G96 | 0.2+ | 0.3− |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2005 01 17 | 246 | 0.4− | 0.4− | 2006 03 26 | G96 | 0.1+ | 0.1+ |
| 2003 10 24 | 704 | 0.2− | 0.8+ | 2005 01 17 | 246 | 0.2+ | 0.6− | 2006 04 09 | 691 | 0.2+ | 0.4+ |
| 2003 10 24 | 645 | 0.0 | 0.0 | 2005 01 17 | 246 | 0.1− | 0.1+ | 2006 04 09 | 691 | 0.1− | 0.3+ |
| 2003 10 24 | 645 | 0.0 | 0.0 | 2005 01 17 | 246 | 0.0 | 0.2+ | 2006 04 09 | 691 | 0.0 | 0.4− |
| 2003 10 24 | 704 | 0.4+ | 0.7+ | 2005 01 17 | 246 | 0.1− | 0.2+ | 2006 05 06 | G96 | 0.4+ | 0.6+ |
| 2003 10 24 | 704 | 0.3+ | 0.3+ | 2005 01 18 | 691 | 0.0 | 0.2− | 2006 05 06 | G96 | 0.1+ | 0.1+ |
| 2003 10 24 | 704 | 0.2− | 0.6+ | 2005 01 18 | 691 | 0.0 | 0.1+ | 2006 05 06 | G96 | 0.6− | 0.5+ |
| 2003 10 24 | 704 | 0.3+ | 0.7+ | 2005 01 18 | 691 | 0.0 | 0.0 | 2006 05 06 | G96 | 0.2+ | 0.1− |
| 2003 11 16 | 645 | 0.1− | 0.0 | 2006 03 24 | 691 | 0.2+ | 0.2+ | 2006 05 26 | G96 | 0.1− | 0.1− |
| 2003 11 16 | 645 | 0.0 | 0.0 | 2006 03 24 | 691 | 0.6+ | 0.4+ | 2006 05 26 | G96 | 0.2− | 0.2+ |
| 2005 01 16 | 568 | 0.1+ | 0.3+ | 2006 03 24 | 691 | 0.2+ | 0.3+ | 2006 05 26 | G96 | 0.3− | 0.2+ |
| 2005 01 16 | 568 | 0.1− | 0.2+ | 2006 03 26 | G96 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.2+ | 0.1+ |
| 2005 01 16 | 568 | 0.0 | 0.2+ | 2006 03 26 | G96 | 1.7− | 0.4+ | | | | |

**2003 UA$_{315}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.70702 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21358733 | $\omega$ | 301.25099 | | +0.97611136 | | −0.18571385 |
| $a$ | 2.7717394 | $\Omega$ | 69.65772 | | +0.21650724 | | +0.87488275 |
| $e$ | 0.0301441 | $i$ | 6.90772 | | −0.01819984 | | +0.44731481 |
| $P$ | 4.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.1+ | 0.1− | 2003 10 29 | 691 | 0.1+ | 0.1− | 2006 05 06 | G96 | 0.1− | 0.3+ |
| 2001 05 24 | 645 | 0.1− | 0.1+ | 2003 10 29 | 691 | 0.0 | 0.2− | 2006 05 06 | G96 | 0.5+ | 0.1− |
| 2003 10 23 | 695 | 0.2− | 0.1− | 2003 11 16 | 691 | 0.2+ | 0.4− | 2006 05 06 | G96 | 0.3− | 0.4− |
| 2003 10 23 | 691 | 0.2− | 0.2+ | 2003 11 16 | 691 | 0.4+ | 0.3− | 2006 05 19 | G96 | 0.2− | 0.2− |
| 2003 10 23 | 695 | 0.2− | 0.0 | 2003 11 16 | 691 | 0.4− | 0.6+ | 2006 05 19 | G96 | 0.5− | 0.1− |
| 2003 10 23 | 691 | 0.1− | 0.2− | 2003 11 21 | 695 | 0.1+ | 0.1+ | 2006 05 19 | G96 | 0.0 | 0.2+ |
| 2003 10 23 | 691 | 0.2+ | 0.2+ | 2003 11 21 | 695 | 0.0 | 0.1+ | 2006 05 19 | G96 | 0.0 | 0.1+ |
| 2003 10 29 | 691 | 0.0 | 0.2+ | 2006 05 06 | G96 | 0.5+ | 0.0 | | | | |

**2003 UB$_{315}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.26266 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18189837 | $\omega$ | 237.83718 | | +0.29054413 | | +0.94453310 |
| $a$ | 3.0849646 | $\Omega$ | 49.84037 | | −0.79654532 | | +0.32740802 |
| $e$ | 0.0709634 | $i$ | 11.55651 | | −0.53018832 | | +0.02571392 |
| $P$ | 5.42 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 644 | 0.3− | 0.8+ | 2003 11 24 | 704 | 0.4+ | 0.3+ | 2003 12 22 | 704 | 0.6+ | 0.5+ |
| 2002 09 09 | 644 | 0.3− | 0.6+ | 2003 11 24 | 703 | 0.3− | 0.4+ | 2003 12 22 | 704 | 0.7− | 0.2− |
| 2002 09 09 | 644 | 0.4− | 0.3+ | 2003 11 24 | 704 | 0.7− | 0.4+ | 2003 12 27 | 704 | 0.5+ | 0.9− |
| 2003 10 24 | 704 | 0.6+ | 0.3+ | 2003 11 24 | 703 | 0.8− | 0.1+ | 2003 12 27 | 704 | 0.9− | 0.2+ |
| 2003 10 24 | 704 | 0.6+ | 0.2− | 2003 11 24 | 703 | 1.4− | 0.3− | 2003 12 27 | 704 | 0.1+ | 0.6+ |
| 2003 10 24 | 704 | 0.8+ | 0.2+ | 2003 11 24 | 704 | 0.1+ | 0.2+ | 2003 12 27 | 704 | 0.2− | 0.1+ |
| 2003 10 24 | 704 | 0.4− | 0.8+ | 2003 11 24 | 703 | 0.7+ | 0.5+ | 2006 04 19 | 699 | 1.1+ | 0.5+ |
| 2003 11 18 | 691 | 0.3− | 0.0 | 2003 11 29 | 704 | 0.4− | 0.5− | 2006 04 19 | 699 | 0.6+ | 1.0+ |
| 2003 11 18 | 691 | 0.2− | 0.2+ | 2003 11 29 | 704 | 1.2+ | 0.9+ | 2006 04 19 | 699 | 1.1+ | 0.7+ |
| 2003 11 18 | 691 | 0.3− | 0.2− | 2003 11 29 | 704 | 0.0 | 0.1+ | 2006 04 19 | 699 | 0.2− | 0.1− |
| 2003 11 24 | 699 | 0.5+ | 0.2− | 2003 11 29 | 704 | 0.3− | 0.8− | 2006 05 30 | G96 | 0.3− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 699 | 1.0− | 0.3− | 2003 12 22 | 704 | 0.2− | 0.0 | 2006 05 30 | G96 | 0.4− | 0.6+ |
| 2003 11 24 | 699 | 1.3+ | 0.0 | 2003 12 22 | 704 | 0.3+ | 0.4+ | 2006 05 30 | G96 | 0.3− | 0.1+ |
| 2003 11 24 | 699 | 0.8+ | 0.6− | 2003 12 22 | 704 | 1.1+ | 0.4+ | | | | |

**2003 UC$_{315}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.21597 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27138573 | $\omega$ | 234.06587 | | +0.99757385 | +0.05478640 | |
| $a$ | 2.3627152 | $\Omega$ | 122.75657 | | −0.03493142 | +0.92761377 | |
| $e$ | 0.2183188 | $i$ | 2.92758 | | −0.06021797 | +0.36950120 | |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 704 | 0.4+ | 0.2− | 2003 10 25 | 704 | 1.1+ | 0.4+ | 2003 12 21 | 704 | 0.8+ | 0.4+ |
| 1999 09 13 | 704 | 0.3+ | 0.3+ | 2003 11 24 | 699 | 1.1− | 0.1− | 2003 12 21 | 704 | 0.1+ | 0.2+ |
| 1999 09 13 | 704 | 0.2− | 0.1− | 2003 11 24 | 699 | 0.1+ | 0.4+ | 2003 12 21 | 704 | 0.7− | 0.4− |
| 1999 09 13 | 704 | 0.5− | 0.2+ | 2003 11 24 | 699 | 0.6− | 1.5− | 2003 12 21 | 704 | 0.4− | 0.6+ |
| 2001 03 02 | 691 | 0.3− | 0.3+ | 2003 11 24 | 699 | 0.6+ | 0.2− | 2005 03 16 | G96 | 0.2+ | 0.6− |
| 2001 03 02 | 691 | 0.3+ | 0.1+ | 2003 12 01 | 704 | 0.2+ | 0.5+ | 2005 03 16 | G96 | 1.0+ | 0.6− |
| 2001 03 02 | 691 | 0.2+ | 0.4+ | 2003 12 01 | 704 | 0.3− | 0.3− | 2005 03 16 | G96 | 0.5− | 0.6− |
| 2003 10 25 | 704 | 0.9+ | 0.7+ | 2003 12 01 | 704 | 0.5+ | 0.2− | 2005 03 16 | G96 | 1.7− | 0.9− |
| 2003 10 25 | 704 | 0.7− | 0.1+ | 2003 12 01 | 704 | 0.2+ | 1.0− | | | | |
| 2003 10 25 | 704 | 0.0 | 0.2− | 2003 12 01 | 704 | 0.2− | 0.5− | | | | |

**2003 UD$_{315}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.31423 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23721378 | $\omega$ | 309.99851 | | +0.98059429 | +0.14349516 | |
| $a$ | 2.5844975 | $\Omega$ | 42.24981 | | −0.05283864 | +0.84959948 | |
| $e$ | 0.0982628 | $i$ | 11.45943 | | −0.18879331 | +0.50753312 | |
| $P$ | 4.15 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | 0.1+ | 0.5+ | 2003 11 20 | 704 | 0.6+ | 0.4− | 2004 01 11 | 644 | 0.2+ | 0.4+ |
| 2003 10 25 | 704 | 0.3− | 0.3− | 2003 11 20 | 704 | 0.5− | 0.1+ | 2004 01 11 | 644 | 0.3+ | 0.3+ |
| 2003 10 25 | 704 | 0.1− | 1.0+ | 2003 11 26 | 704 | 0.3+ | 0.1− | 2004 01 11 | 644 | 0.2+ | 0.2+ |
| 2003 10 25 | 704 | 0.3− | 0.7+ | 2003 11 26 | 704 | 0.4+ | 0.5+ | 2005 03 11 | 703 | 1.4− | 0.4+ |
| 2003 11 03 | 704 | 0.2− | 1.4− | 2003 11 26 | 704 | 0.5− | 0.6+ | 2005 03 11 | 703 | 0.2+ | 0.1− |
| 2003 11 03 | 704 | 0.4+ | 0.2+ | 2003 11 26 | 704 | 0.9+ | 0.9− | 2005 03 11 | 703 | 0.2− | 1.7− |
| 2003 11 03 | 704 | 0.2+ | 0.3+ | 2003 11 26 | 704 | 0.5− | 0.0 | 2005 03 11 | 703 | 0.9+ | 0.2− |
| 2003 11 03 | 704 | 0.1+ | 0.3− | 2003 12 17 | 704 | 0.1− | 0.5− | 2005 03 16 | 703 | 0.2− | 0.5− |
| 2003 11 03 | 704 | 0.0 | 0.1+ | 2003 12 17 | 704 | 1.9− | 0.7− | 2005 03 16 | 703 | 0.3− | 0.0 |
| 2003 11 20 | 704 | 0.2+ | 0.0 | 2003 12 17 | 704 | (2.3− | 1.0−) | 2005 03 16 | 703 | 1.8+ | 0.4+ |
| 2003 11 20 | 704 | 0.2+ | 0.2− | 2003 12 17 | 704 | 0.0 | 0.2+ | 2005 03 16 | 703 | 0.8− | 1.7+ |
| 2003 11 20 | 704 | 0.2+ | 0.5− | 2003 12 17 | 704 | 0.2+ | 0.2+ | | | | |

**2003 UE$_{315}$ = 2006 RN$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.99911 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31071277 | $\omega$ | 207.63612 | | +0.85576692 | +0.51733381 | |
| $a$ | 2.1588874 | $\Omega$ | 121.20931 | | −0.47350673 | +0.78735698 | |
| $e$ | 0.2163309 | $i$ | 0.35889 | | −0.20845705 | +0.33531287 | |
| $P$ | 3.17 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 1999 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.4+ | 2006 09 27 | 704 | 0.2+ | 1.0+ |
| 1999 04 16 | 691 | 0.3+ | 0.4+ | 2006 09 12 | 703 | 0.6− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2002 04 13 | 691 | 0.1+ | 1.0+ | 2006 09 12 | 703 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.7+ |
| 2002 04 13 | 691 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.3− | 2006 09 27 | 704 | 0.4+ | 0.1+ |
| 2002 04 13 | 691 | 0.3+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.8− | 0.2− |
| 2003 10 28 | 704 | 0.4− | 1.3+ | 2006 09 15 | 691 | 0.1− | 0.3− | 2006 09 28 | 704 | (1.0− | 1.7+) |
| 2003 10 28 | 704 | 0.8− | 0.5+ | 2006 09 19 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2003 10 28 | 704 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.7+ | 0.8+ | 2006 09 28 | 704 | 0.8− | 0.7+ |
| 2003 11 16 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2003 11 16 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2003 11 16 | 691 | 0.0 | 0.1− | 2006 09 19 | 291 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 11 21 | 291 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2003 11 21 | 291 | 0.7− | 0.3+ | 2006 09 19 | 291 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 11 21 | 291 | 0.3+ | 0.3+ | 2006 09 19 | 291 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.1− |
| 2003 11 30 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2003 11 30 | 691 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.8− | 0.5+ |
| 2003 11 30 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 1.2− | 0.2+ |
| 2003 11 30 | 691 | 0.3+ | 0.6− | 2006 09 20 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.7− | 1.1+ |
| 2003 11 30 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2003 11 30 | 691 | 0.0 | 0.2− | 2006 09 21 | A50 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2005 04 04 | G96 | 0.2+ | 0.1− | 2006 09 21 | A50 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 04 04 | G96 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2005 04 04 | G96 | 0.5+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2006 07 21 | G96 | 0.0 | 0.6− | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.5− | 0.6− |
| 2006 07 21 | G96 | 0.3+ | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2006 09 06 | 644 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.2− | | | | |
| 2006 09 06 | 644 | 0.3− | 0.3− | 2006 09 27 | 704 | 0.8+ | 0.2+ | | | | |

**2003 UF$_{315}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.87190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36240482 | $\omega$ | 120.80576 | | +0.94498068 | −0.14024522 | |
| $a$ | 1.9483788 | $\Omega$ | 248.68505 | | +0.05769328 | +0.96072705 | |
| $e$ | 0.0957226 | $i$ | 18.49600 | | +0.32199844 | +0.23944690 | |
| $P$ | 2.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 08 | 704 | 0.0 | 0.4+ | 2003 10 29 | 704 | 0.6+ | 0.1− | 2003 12 14 | 644 | 0.3− | 0.1− |
| 2000 09 08 | 704 | 0.1+ | 0.9− | 2003 10 29 | 704 | 0.1− | 0.4+ | 2003 12 14 | 644 | 0.1− | 0.0 |
| 2000 09 08 | 704 | 0.3+ | 0.2− | 2003 10 29 | 704 | 0.4− | 0.3− | 2003 12 14 | 644 | 0.4− | 0.0 |
| 2000 09 26 | 704 | 0.6− | 1.1+ | 2003 11 21 | 704 | 0.3− | 0.2− | 2003 12 23 | 704 | 0.6+ | 0.1− |
| 2000 09 26 | 704 | 0.2− | 0.4− | 2003 11 21 | 704 | 0.6+ | 0.1+ | 2003 12 23 | 704 | 0.0 | 0.9+ |
| 2000 09 26 | 704 | 0.6+ | 0.2+ | 2003 11 21 | 704 | 0.5− | 0.3− | 2003 12 23 | 704 | 0.0 | 0.6− |
| 2000 09 26 | 704 | 0.2− | 0.1− | 2003 11 21 | 704 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 0.2+ | 0.1+ |

**2003 UG$_{315}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.09061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24390243 | $\omega$ | 225.11099 | | +0.65030195 | −0.75967179 | |
| $a$ | 2.5370282 | $\Omega$ | 184.32682 | | +0.70592275 | +0.60549055 | |
| $e$ | 0.1689886 | $i$ | 1.88323 | | +0.28067854 | +0.23723397 | |
| $P$ | 4.04 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.1− | 0.0 | 2003 09 28 | 291 | 0.1+ | 0.3+ | 2003 10 19 | 645 | 0.1− | 0.0 |
| 1999 10 04 | 691 | 0.2+ | 0.4− | 2003 09 28 | 291 | 0.0 | 0.4+ | 2005 02 18 | 809 | 0.1+ | 0.0 |
| 1999 10 04 | 691 | 0.2+ | 0.3− | 2003 09 28 | 645 | 0.0 | 0.0 | 2005 02 18 | 809 | 0.0 | 0.1+ |
| 2003 09 18 | 691 | 0.1− | 0.2+ | 2003 09 28 | 645 | 0.0 | 0.1+ | 2005 02 18 | 809 | 0.1+ | 0.1− |
| 2003 09 18 | 691 | 0.1− | 0.3+ | 2003 09 28 | 291 | 0.1− | 0.4+ | 2005 03 08 | G96 | 0.8− | 0.9+ |
| 2003 09 18 | 691 | 0.0 | 0.6+ | 2003 10 18 | 645 | 0.0 | 0.1+ | 2005 03 08 | G96 | 0.6+ | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.2− | 2003 10 18 | 645 | 0.2+ | 0.0 | 2005 03 08 | G96 | 0.4+ | 0.2− |
| 2003 09 26 | 645 | 0.0 | 0.2− | 2003 10 19 | 645 | 0.2− | 0.0 | 2005 03 08 | G96 | 0.0 | 0.1+ |

**2003 UZ$_{315}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.30819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24692012 | $\omega$ | 278.84200 | | +0.98421902 | −0.17254864 | |
| $a$ | 2.5163153 | $\Omega$ | 91.10092 | | +0.17383219 | +0.90130404 | |
| $e$ | 0.1746202 | $i$ | 2.24936 | | +0.03309520 | +0.39733864 | |
| $P$ | 3.99 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.2− | 0.5− | 2003 10 28 | 704 | 0.4− | 0.8+ | 2003 12 01 | 704 | (2.4− | 1.8−) |
| 1991 11 08 | 691 | 0.3+ | 0.3− | 2003 11 01 | 704 | 0.4+ | 0.4− | 2005 03 16 | G96 | 0.6+ | 0.4+ |
| 1991 11 08 | 691 | 0.2+ | 0.3− | 2003 11 01 | 704 | 1.0+ | 0.4− | 2005 03 16 | G96 | 0.0 | 0.2+ |
| 2003 10 21 | 704 | 1.0+ | 0.2− | 2003 11 01 | 704 | (0.5+ | 3.3−) | 2005 03 16 | G96 | 0.4− | 0.1+ |
| 2003 10 21 | 704 | 0.0 | 0.4− | 2003 11 16 | 691 | 0.4− | 0.0 | 2005 03 16 | G96 | 0.0 | 0.4− |
| 2003 10 21 | 704 | 0.5+ | 0.5+ | 2003 11 16 | 691 | 0.5− | 0.2− | 2006 06 04 | G96 | 0.4+ | 0.0 |
| 2003 10 28 | 704 | 0.6− | 0.1− | 2003 11 16 | 691 | 0.6− | 0.0 | 2006 06 04 | G96 | 0.7− | 0.2+ |
| 2003 10 28 | 704 | 0.2− | 1.0+ | 2003 12 01 | 704 | (3.8− | 1.8−) | 2006 06 04 | G96 | 0.4+ | 0.4+ |
| 2003 10 28 | 704 | 0.6− | 1.0+ | 2003 12 01 | 704 | (2.6− | 1.1−) | 2006 06 04 | G96 | 0.0 | 0.0 |

**2003 UF$_{316}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.30431 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16735225 | $\omega$ | 161.71108 | | +0.11102204 | −0.99251428 | |
| $a$ | 3.2612319 | $\Omega$ | 281.89073 | | +0.90519587 | +0.12212551 | |
| $e$ | 0.1547126 | $i$ | 2.98090 | | +0.41023717 | −0.00086913 | |
| $P$ | 5.89 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.3− | 0.1− | 2003 10 23 | 691 | 0.2− | 0.2− | 2003 11 24 | 699 | 0.9+ | 0.1− |
| 2002 08 08 | 644 | 0.5− | 0.1− | 2003 10 23 | 691 | 0.1+ | 0.1+ | 2003 11 24 | 699 | 1.6− | 1.1− |
| 2002 08 08 | 644 | 0.1− | 0.3− | 2003 11 19 | 699 | 1.3+ | 0.7+ | 2003 11 24 | 699 | 0.3− | 0.3− |
| 2002 08 17 | 644 | 0.2+ | 0.1− | 2003 11 19 | 699 | (1.9+ | 2.3+) | 2003 11 30 | 691 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.1− | 0.0 | 2003 11 19 | 699 | 0.4+ | 0.0 | 2003 11 30 | 691 | 0.2− | 0.1− |
| 2002 08 17 | 644 | 0.8+ | 0.7+ | 2003 11 19 | 699 | 0.3− | 0.7+ | 2003 11 30 | 691 | 0.2+ | 0.1− |
| 2002 08 27 | 644 | 0.1+ | 0.0 | 2003 11 24 | 704 | 0.2+ | 0.5+ | 2003 12 16 | 291 | 0.1− | 0.1+ |
| 2002 08 27 | 644 | 0.0 | 0.1− | 2003 11 24 | 699 | 0.5− | 0.9− | 2003 12 16 | 291 | 0.2− | 0.2+ |
| 2002 08 27 | 644 | 0.0 | 0.0 | 2003 11 24 | 704 | 0.5+ | 0.0 | 2003 12 16 | 291 | 0.2+ | 0.1− |
| 2003 10 23 | 691 | 0.1+ | 0.2+ | 2003 11 24 | 704 | 1.1− | 0.1+ | | | | |

**2003 UJ$_{316}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.84041 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23098355 | $\omega$ | 309.41381 | | +0.97805458 | +0.13314768 | |
| $a$ | 2.6307648 | $\Omega$ | 43.62669 | | −0.02575917 | +0.84053102 | |
| $e$ | 0.1692811 | $i$ | 13.43045 | | −0.20675035 | +0.52514694 | |
| $P$ | 4.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.3− | 0.2+ | 2003 11 19 | 699 | 0.9− | 0.0 | 2006 04 30 | 691 | 0.3+ | 0.1+ |
| 2003 10 23 | 691 | 0.1− | 0.3+ | 2003 11 19 | 699 | 1.0− | 1.2+ | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 2003 10 23 | 691 | 0.2− | 0.0 | 2003 11 19 | 699 | (1.0− | 2.6+) | 2006 05 20 | 691 | 0.2+ | 0.2+ |
| 2003 10 28 | 704 | 0.6+ | 1.1+ | 2003 11 24 | 704 | (0.2− | 1.7+) | 2006 05 20 | 691 | 0.1+ | 0.4+ |
| 2003 10 28 | 704 | 0.9+ | 0.7+ | 2003 11 24 | 704 | 0.7− | 0.9+ | 2006 05 20 | 691 | 0.5− | 0.5+ |
| 2003 10 28 | 704 | 0.0 | 0.9+ | 2003 11 24 | 704 | 0.7− | 1.0+ | 2006 06 02 | G96 | 0.2+ | 0.3+ |
| 2003 10 28 | 704 | 0.2+ | 1.0+ | 2003 11 24 | 704 | (0.6− | 1.8+) | 2006 06 02 | G96 | 0.7+ | 0.2− |
| 2003 10 29 | 704 | 1.2+ | 0.9− | 2003 12 01 | 691 | 0.1+ | 0.1− | 2006 06 02 | G96 | 0.1− | 0.1− |
| 2003 10 29 | 704 | 1.2+ | 0.3− | 2003 12 01 | 691 | 0.1− | 0.1+ | 2006 06 02 | G96 | 0.3+ | 0.1+ |
| 2003 10 29 | 704 | (2.2− | 0.7+) | 2003 12 01 | 691 | 0.3− | 0.3− | | | | |
| 2003 11 19 | 699 | 0.4+ | 0.8− | 2006 04 30 | 691 | 0.4+ | 0.3+ | | | | |

**2003 UL$_{316}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.05883 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27125265 | $\omega$ | 90.14459 | | −0.01909531 | −0.99981760 | |
| $a$ | 2.3634879 | $\Omega$ | 0.94981 | | +0.90793614 | −0.01749995 | |
| $e$ | 0.1511182 | $i$ | 1.31615 | | +0.41867330 | −0.00765033 | |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.0 | 0.1− | 2003 10 29 | 704 | 0.5+ | 0.2− | 2003 12 22 | 691 | 0.3− | 0.1− |
| 1999 09 30 | 691 | 0.1+ | 0.1− | 2003 10 29 | 704 | 0.6− | 1.0+ | 2003 12 22 | 691 | 0.3− | 0.3− |
| 1999 09 30 | 691 | 0.1+ | 0.1− | 2003 11 15 | 691 | 0.1+ | 0.1+ | 2003 12 22 | 691 | 0.3− | 0.8− |
| 2003 10 24 | 704 | 0.7+ | 0.8+ | 2003 11 15 | 691 | 0.1− | 0.0 | 2005 05 14 | G96 | 1.3+ | 0.5+ |
| 2003 10 24 | 704 | 0.0 | 0.3+ | 2003 11 15 | 691 | 0.4− | 0.3+ | 2005 05 14 | G96 | 0.3− | 0.2+ |
| 2003 10 24 | 704 | 0.9− | 0.4+ | 2003 12 16 | 291 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.1− | 0.2+ |
| 2003 10 29 | 704 | 0.9− | 0.2+ | 2003 12 16 | 291 | 0.1− | 0.1− | 2005 05 14 | G96 | 0.5− | 0.2+ |
| 2003 10 29 | 704 | 0.0 | 1.4+ | 2003 12 16 | 291 | 1.5+ | 0.2+ | | | | |

**2003 UM$_{316}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.88638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28013347 | $\omega$ | 211.43276 | | +0.96138034 | −0.27510505 | |
| $a$ | 2.3132685 | $\Omega$ | 164.52931 | | +0.25837017 | +0.89202551 | |
| $e$ | 0.2412388 | $i$ | 1.73278 | | +0.09482984 | +0.35861917 | |
| $P$ | 3.52 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 13 | 691 | 0.4− | 0.4− | 2003 11 19 | 699 | 0.3+ | 0.3+ | 2003 12 04 | 703 | 0.2+ | 0.5− |
| 2001 02 13 | 691 | 0.2+ | 0.0 | 2003 11 19 | 691 | 0.2+ | 0.0 | 2003 12 04 | 703 | 0.1+ | 0.7− |
| 2001 02 13 | 691 | 0.2+ | 0.2+ | 2003 11 19 | 699 | 1.5− | 0.3− | 2003 12 04 | 703 | 0.9+ | 0.2+ |
| 2003 10 24 | 704 | 0.6− | 0.3− | 2003 11 19 | 691 | 0.0 | 0.0 | 2003 12 04 | 703 | 0.7+ | 0.7+ |
| 2003 10 24 | 704 | 0.5− | 0.0 | 2003 11 19 | 691 | 0.0 | 0.1− | 2003 12 21 | 691 | 0.0 | 0.1− |
| 2003 10 24 | 704 | 0.5− | 0.8− | 2003 12 01 | 704 | 0.8+ | 0.6− | 2003 12 21 | 691 | 0.0 | 0.0 |
| 2003 10 24 | 704 | 0.3+ | 0.3− | 2003 12 01 | 704 | 0.0 | 0.9+ | 2003 12 21 | 691 | 0.3− | 0.1− |
| 2003 11 19 | 699 | 0.7+ | 0.3+ | 2003 12 01 | 704 | 0.3− | 0.1+ | 2005 03 11 | 695 | 0.0 | 0.2+ |
| 2003 11 19 | 699 | 0.7+ | 0.2+ | 2003 12 01 | 704 | 1.3− | 1.4+ | 2005 03 11 | 695 | 0.1+ | 0.2+ |

**2003 UU$_{316}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.98663 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27349426 | $\omega$ | 30.97011 | | +0.08327098 | −0.99266621 | |
| $a$ | 2.3505559 | $\Omega$ | 54.39341 | | +0.89081519 | +0.03473235 | |
| $e$ | 0.1840281 | $i$ | 6.18773 | | +0.44667018 | +0.11579055 | |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 1.3− | 0.4− | 2003 10 29 | 704 | 0.2− | 0.5+ | 2003 12 23 | 704 | 0.3− | 0.3+ |
| 1992 11 27 | 691 | 0.7+ | 0.2+ | 2003 11 20 | 704 | 0.3+ | 0.2− | 2003 12 23 | 704 | 0.7− | 1.4− |
| 1992 11 27 | 691 | 0.5+ | 0.2+ | 2003 11 20 | 704 | 0.2− | 0.3− | 2003 12 23 | 704 | 1.0− | 0.3+ |
| 1999 10 01 | 691 | 0.2− | 0.1+ | 2003 11 20 | 704 | 0.4− | 0.9− | 2003 12 23 | 704 | 0.4− | 0.6+ |
| 1999 10 01 | 691 | 0.0 | 0.2− | 2003 11 20 | 704 | 0.3− | 0.4− | 2003 12 28 | 704 | 1.3+ | 0.8+ |
| 1999 10 01 | 691 | 0.2+ | 0.1+ | 2003 12 17 | 704 | 0.2+ | 0.4+ | 2003 12 28 | 704 | 0.1+ | 0.3− |
| 2003 10 29 | 704 | 0.4+ | 1.1+ | 2003 12 17 | 704 | 0.0 | 0.4+ | 2003 12 28 | 704 | 0.2+ | 0.8− |
| 2003 10 29 | 704 | 0.2− | 0.1+ | 2003 12 17 | 704 | 0.7+ | 0.2− | 2003 12 28 | 704 | 0.3+ | 0.0 |

**2003 VA$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.75729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17843675 | $\omega$ | 45.25303 | | +0.79518413 | +0.54591622 | |
| $a$ | 3.1247349 | $\Omega$ | 279.90816 | | −0.60392000 | +0.67394612 | |
| $e$ | 0.1962757 | $i$ | 15.54074 | | −0.05443182 | +0.49776712 | |
| $P$ | 5.52 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 28 | 327 | 1.0+ | 0.1+ | 2003 11 03 | 704 | 1.1+ | 1.2+ | 2003 11 21 | 644 | 0.1+ | 0.1+ |
| 1997 10 28 | 327 | 0.1− | 1.0− | 2003 11 03 | 704 | 1.3− | 0.2+ | 2003 11 21 | 644 | 0.1+ | 0.1+ |
| 1997 10 28 | 327 | 0.1− | 0.3− | 2003 11 03 | 704 | 0.2+ | 0.0 | 2003 11 21 | 704 | 0.9+ | 0.2+ |
| 2003 09 28 | 704 | 0.3− | 0.6+ | 2003 11 04 | 704 | 0.3− | 0.2− | 2003 11 21 | 704 | 0.7+ | 0.0 |
| 2003 09 28 | 704 | 0.6− | 1.4+ | 2003 11 04 | 704 | 0.4+ | 0.5− | 2003 11 21 | 704 | 0.6+ | 0.4+ |
| 2003 09 28 | 704 | 0.9− | 1.3+ | 2003 11 04 | 704 | 0.1+ | 0.4− | 2003 12 17 | 644 | 0.1− | 0.1+ |
| 2003 09 28 | 704 | 1.4− | 0.5+ | 2003 11 04 | 704 | 0.2− | 0.8− | 2003 12 17 | 644 | 0.0 | 0.4− |
| 2003 10 22 | 699 | 0.4− | 0.2+ | 2003 11 04 | 704 | 0.0 | 0.3− | 2003 12 17 | 644 | 0.7− | 0.4− |
| 2003 10 22 | 699 | 1.4+ | 0.5− | 2003 11 21 | 644 | 0.0 | 0.1+ | 2005 01 16 | 691 | 0.0 | 0.0 |
| 2003 10 22 | 699 | 0.0 | 0.7− | 2003 11 21 | 644 | 0.1+ | 0.1+ | 2005 01 16 | 691 | 0.1+ | 0.0 |
| 2003 10 22 | 699 | 0.3− | 0.6+ | 2003 11 21 | 644 | 0.0 | 0.2+ | 2005 01 16 | 691 | 0.2− | 0.1− |
| 2003 11 03 | 704 | 1.0+ | 1.8− | 2003 11 21 | 644 | 0.2− | 0.0 | | | | |

**2003 $VO_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.46270 | | | (2000.0) | | |
| $n$ | 0.65353348 | $\omega$ | 228.97478 | | −0.73360141 | −0.66818221 |
| $a$ | 1.3150961 | $\Omega$ | 268.70724 | | +0.65477261 | −0.64614022 |
| $e$ | 0.1003480 | $i$ | 7.12145 | | +0.18193898 | −0.36882970 |
| $P$ | 1.51 | $H$ | 20.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 14 | 644 | 0.5+ | 0.3+ | 2003 11 15 | 246 | 0.2− | 0.3+ | 2003 12 21 | 715 | 0.4+ | 0.6+ |
| 2003 11 14 | 644 | 0.4+ | 0.4+ | 2003 11 15 | 246 | 0.2− | 0.0 | 2003 12 21 | 715 | 0.9− | 0.3+ |
| 2003 11 14 | 644 | 0.5+ | 0.1+ | 2003 11 15 | 246 | 0.4+ | 0.5+ | 2006 08 27 | 291 | 0.3− | 0.3+ |
| 2003 11 15 | 176 | 0.7− | 0.2− | 2003 11 15 | 557 | 0.1+ | 0.2− | 2006 08 27 | 291 | 0.1− | 0.3− |
| 2003 11 15 | 176 | 0.3− | 0.0 | 2003 11 19 | 448 | 0.2+ | 0.6− | 2006 08 27 | 291 | 0.4− | 0.2+ |
| 2003 11 15 | 176 | 0.2+ | 0.2+ | 2003 11 19 | 448 | 0.1+ | 0.4− | 2006 09 27 | 291 | 0.1− | 0.1− |
| 2003 11 15 | 176 | 0.5+ | 0.4+ | 2003 11 19 | 448 | 0.4+ | 0.1+ | 2006 09 27 | 291 | 0.2+ | 0.2+ |
| 2003 11 15 | 673 | 0.2+ | 0.4+ | 2003 11 27 | 941 | 1.4− | 0.6− | 2006 09 27 | 291 | 0.0 | 0.1− |
| 2003 11 15 | 673 | 0.5− | 0.4− | 2003 11 27 | 941 | 1.2− | 0.4− | 2006 10 17 | 113 | 0.6− | 0.6− |
| 2003 11 15 | 673 | 0.0 | 0.7+ | 2003 11 27 | 941 | 1.0− | 0.4− | 2006 10 17 | 113 | 0.6− | 0.6− |
| 2003 11 15 | 673 | 0.1+ | 1.1− | 2003 11 27 | 941 | 0.6− | 0.8− | 2006 10 17 | 113 | 0.5− | 0.6− |
| 2003 11 15 | 413 | 0.1+ | 0.0 | 2003 11 27 | 941 | 0.4− | 0.4− | 2006 10 30 | 240 | 0.1+ | 0.3+ |
| 2003 11 15 | 413 | 0.3+ | 0.0 | 2003 12 10 | 448 | 0.2− | 0.2+ | 2006 10 30 | 240 | 0.2+ | 0.1+ |
| 2003 11 15 | 557 | 0.3− | 0.3+ | 2003 12 10 | 448 | 0.0 | 0.6+ | 2006 10 30 | 240 | 1.0+ | 0.1− |
| 2003 11 15 | 246 | 0.5+ | 0.5+ | 2003 12 10 | 448 | 0.5+ | 0.5+ | 2006 10 30 | 240 | 2.0+ | 0.2+ |
| 2003 11 15 | 246 | 0.1+ | 0.0 | 2003 12 21 | 715 | 0.6− | 0.2+ | | | | |

**2003 $VB_3$ = 2006 $WB_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.47749 | | | (2000.0) | | |
| $n$ | 0.33892796 | $\omega$ | 304.61145 | | −0.72524986 | −0.68847572 |
| $a$ | 2.0373444 | $\Omega$ | 191.88048 | | +0.63743722 | −0.66942545 |
| $e$ | 0.3366684 | $i$ | 1.03457 | | +0.26016616 | −0.27905332 |
| $P$ | 2.91 | $H$ | 19.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 15 | 291 | 0.0 | 0.1− | 2003 11 17 | 649 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2003 11 15 | 291 | 0.2+ | 0.1+ | 2003 11 17 | 649 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2003 11 15 | 291 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2003 11 15 | 413 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.5− | 0.3− |
| 2003 11 15 | 413 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.4− |
| 2003 11 15 | 246 | 1.7+ | 1.7+ | 2006 11 19 | 691 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2003 11 15 | 246 | 0.1+ | 0.9+ | 2006 11 19 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2003 11 16 | 291 | 1.7− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2003 11 16 | 291 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2003 11 16 | 291 | 0.5+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2003 11 17 | 649 | 0.0 | 0.8− | 2006 11 23 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.3+ |

**2003 $VS_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.53242 | | | (2000.0) | | |
| $n$ | 0.27305709 | $\omega$ | 24.84518 | | +0.41907166 | −0.90791262 |
| $a$ | 2.3530640 | $\Omega$ | 40.38034 | | +0.83080151 | +0.37963246 |
| $e$ | 0.1794815 | $i$ | 0.75887 | | +0.36626193 | +0.17769040 |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 691 | 0.5+ | 0.4+ | 2003 11 16 | 291 | 0.1+ | 0.0 | 2003 11 24 | 703 | (1.6+ | 0.6−) |
| 2001 02 20 | 691 | 0.1+ | 0.3+ | 2003 11 16 | 291 | 0.1+ | 0.0 | 2003 11 24 | 699 | 1.1+ | 0.1− |
| 2001 02 20 | 691 | 0.3− | 0.1+ | 2003 11 16 | 291 | 0.1+ | 0.1− | 2003 11 24 | 703 | 0.3+ | 0.2− |
| 2003 10 18 | 691 | 0.1− | 0.1− | 2003 11 19 | 699 | 0.4− | 0.6+ | 2003 11 28 | 691 | 0.2+ | 0.0 |
| 2003 10 18 | 691 | 0.2− | 0.1− | 2003 11 19 | 699 | 0.3− | 0.3− | 2003 11 28 | 691 | 0.5+ | 0.1+ |
| 2003 10 18 | 691 | 0.1− | 0.3− | 2003 11 19 | 699 | 0.2− | 0.4+ | 2003 11 28 | 691 | 0.2+ | 0.1+ |
| 2003 10 28 | 704 | 0.0 | 0.7+ | 2003 11 19 | 699 | 0.4− | 0.4− | 2003 12 22 | 691 | 0.0 | 0.0 |
| 2003 10 28 | 704 | 0.5− | 0.3+ | 2003 11 20 | 695 | 0.1− | 0.2− | 2003 12 22 | 691 | 0.2+ | 0.1− |
| 2003 10 28 | 704 | 0.0 | 0.8− | 2003 11 20 | 695 | 0.2+ | 0.0 | 2003 12 22 | 691 | 0.2− | 0.1+ |
| 2003 11 15 | 691 | 0.0 | 0.1− | 2003 11 21 | 704 | 0.5− | 0.7+ | 2005 04 02 | G96 | 0.0 | 0.1− |
| 2003 11 15 | 691 | 0.2− | 0.3− | 2003 11 21 | 704 | 0.2− | 0.2+ | 2005 04 02 | G96 | 0.2+ | 0.6− |
| 2003 11 15 | 691 | 0.1− | 0.1− | 2003 11 21 | 704 | 0.7+ | 0.9+ | 2005 04 02 | G96 | 0.3− | 0.0 |
| 2003 11 15 | 644 | 0.0 | 0.2− | 2003 11 21 | 704 | 0.0 | 0.5+ | 2005 04 02 | G96 | 0.3− | 0.2+ |
| 2003 11 15 | 644 | 0.4− | 0.2− | 2003 11 21 | 704 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.7+ |
| 2003 11 15 | 644 | 0.5− | 0.2− | 2003 11 24 | 699 | 0.5− | 0.0 | 2006 10 20 | G96 | 0.0 | 1.1+ |
| 2003 11 16 | 703 | 0.6− | 0.9+ | 2003 11 24 | 699 | 0.4+ | 0.3− | 2006 10 20 | G96 | 0.1− | 1.7+ |
| 2003 11 16 | 703 | 0.1− | 0.0 | 2003 11 24 | 703 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.5− | 1.1+ |
| 2003 11 16 | 703 | 0.0 | 1.0+ | 2003 11 24 | 699 | (2.7+ | 0.3+) | | | | |
| 2003 11 16 | 703 | 0.3+ | 0.5− | 2003 11 24 | 703 | 0.0 | 0.1− | | | | |

**2003 $VL_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.97364 | | | (2000.0) | | |
| $n$ | 0.18741821 | $\omega$ | 251.50261 | | +0.51840008 | +0.83770387 |
| $a$ | 3.0240910 | $\Omega$ | 50.95297 | | −0.67715507 | +0.52482132 |
| $e$ | 0.1686858 | $i$ | 12.77989 | | −0.52222826 | +0.15104571 |
| $P$ | 5.26 | $H$ | 14.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 27 | 209 | 0.8+ | 0.3+ | 2003 11 15 | 644 | 0.0 | 0.1+ | 2003 11 21 | 704 | 0.3− | 2.4+ |
| 2001 02 27 | 209 | 0.1− | 0.4+ | 2003 11 15 | 644 | 0.2− | 0.1+ | 2003 11 24 | 699 | 0.1+ | 0.3− |
| 2001 02 27 | 209 | 0.0 | 0.3+ | 2003 11 15 | 644 | 0.4+ | 0.3+ | 2003 11 24 | 699 | 0.6− | 0.8− |
| 2003 10 18 | 691 | 0.1− | 0.2− | 2003 11 16 | 703 | 1.5− | 0.3− | 2003 11 24 | 699 | 0.3− | 0.9+ |
| 2003 10 18 | 691 | 0.1− | 0.0 | 2003 11 16 | 703 | 0.4− | 1.2− | 2003 11 24 | 699 | 1.6+ | 0.1− |
| 2003 10 18 | 691 | 0.1− | 0.0 | 2003 11 16 | 703 | (3.7− | 0.3−) | 2003 11 29 | 691 | 0.1− | 0.0 |
| 2003 10 28 | 704 | 0.1− | 0.5− | 2003 11 16 | 703 | 0.6− | 0.2− | 2003 11 29 | 691 | 0.2+ | 0.3+ |
| 2003 10 28 | 704 | 0.8+ | 0.0 | 2003 11 19 | 699 | 0.7+ | 0.2+ | 2003 11 29 | 691 | 0.2+ | 0.2+ |
| 2003 10 28 | 704 | 0.3+ | 0.6+ | 2003 11 19 | 699 | 0.1− | 0.6− | 2003 12 18 | 691 | 0.1− | 0.3− |
| 2003 11 02 | 704 | 0.9+ | 1.0− | 2003 11 19 | 699 | 0.5− | 0.1+ | 2003 12 18 | 691 | 0.0 | 0.0 |
| 2003 11 02 | 704 | 0.0 | 0.0 | 2003 11 19 | 699 | 0.5+ | 0.3− | 2003 12 18 | 691 | 0.0 | 0.3− |
| 2003 11 02 | 704 | 0.3+ | 0.3+ | 2003 11 21 | 704 | 0.5+ | 0.3+ | 2006 03 03 | 703 | 0.1+ | 0.4− |
| 2003 11 15 | 691 | 0.1+ | 0.0 | 2003 11 21 | 704 | 0.5+ | 0.8+ | 2006 03 03 | 703 | 0.2− | 0.1− |
| 2003 11 15 | 691 | 0.0 | 0.2− | 2003 11 21 | 704 | 0.2+ | 1.2+ | 2006 03 03 | 703 | 1.1− | 0.6− |
| 2003 11 15 | 691 | 0.1+ | 0.0 | 2003 11 21 | 704 | 0.4+ | 0.5+ | 2006 03 03 | 703 | 0.6+ | 0.3+ |

**2003 $VE_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 268.34762 | | | (2000.0) | | |
| $n$ | 0.22183024 | $\omega$ | 352.16435 | | +0.99804832 | −0.04354410 |
| $a$ | 2.7026443 | $\Omega$ | 10.64416 | | +0.06176026 | +0.79426270 |
| $e$ | 0.1902733 | $i$ | 14.02400 | | −0.00923208 | +0.60601210 |
| $P$ | 4.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 691 | 0.0 | 0.0 | 2003 11 20 | 704 | 1.4− | 0.7− | 2003 11 24 | 704 | 0.1− | 0.2+ |
| 2001 03 20 | 691 | 0.1− | 0.0 | 2003 11 20 | 704 | 0.6+ | 0.1+ | 2003 12 03 | 704 | 0.0 | 0.1+ |
| 2001 03 20 | 691 | 0.1+ | 0.1− | 2003 11 20 | 704 | 0.7− | 1.2− | 2003 12 03 | 704 | 0.4+ | 0.0 |
| 2003 09 30 | 704 | 0.4− | 0.2− | 2003 11 20 | 704 | 0.5+ | 1.3+ | 2003 12 03 | 704 | 0.4− | 1.0− |
| 2003 09 30 | 704 | 0.2− | 0.0 | 2003 11 20 | 704 | 0.9− | 0.8+ | 2003 12 03 | 704 | 0.2+ | 0.3− |
| 2003 09 30 | 704 | 1.1+ | 0.2− | 2003 11 22 | 704 | 1.0+ | 0.3+ | 2003 12 03 | 704 | 1.1+ | 0.6− |
| 2003 09 30 | 704 | 0.1+ | 0.4+ | 2003 11 22 | 704 | 0.6− | 0.0 | 2003 12 12 | 644 | 0.5+ | 0.4− |
| 2003 09 30 | 704 | 0.3+ | 0.6− | 2003 11 22 | 704 | 1.5+ | 1.2− | 2003 12 12 | 644 | 0.5+ | 0.1+ |
| 2003 11 03 | 704 | 0.7+ | 0.5+ | 2003 11 22 | 704 | 0.5+ | 0.0 | 2003 12 12 | 644 | 0.0 | 0.1− |
| 2003 11 03 | 704 | 0.2− | 0.1+ | 2003 11 22 | 704 | 0.5+ | 0.8+ | 2003 12 17 | 704 | 0.5− | 1.0+ |
| 2003 11 03 | 704 | 0.2− | 0.1− | 2003 11 22 | 704 | 0.8+ | 0.6+ | 2003 12 17 | 704 | 0.3− | 0.6+ |
| 2003 11 14 | 644 | 0.2+ | 0.1− | 2003 11 23 | 704 | 0.7− | 0.7− | 2003 12 17 | 704 | 1.0− | 0.2+ |
| 2003 11 14 | 644 | 0.2+ | 0.0 | 2003 11 23 | 704 | 2.0− | 0.0 | 2003 12 17 | 704 | 1.4− | 0.6+ |
| 2003 11 14 | 644 | 0.3+ | 0.1− | 2003 11 23 | 704 | 1.7− | 0.5− | 2003 12 17 | 704 | 0.1− | 0.1− |
| 2003 11 18 | 644 | 0.1+ | 0.3− | 2003 11 23 | 704 | 1.0− | 0.0 | 2005 03 09 | 703 | 0.2+ | 0.2− |
| 2003 11 18 | 644 | 0.2+ | 0.5− | 2003 11 23 | 704 | 0.6+ | 0.1− | 2005 03 09 | 703 | 0.6− | 0.2+ |
| 2003 11 18 | 644 | 0.1+ | 0.3+ | 2003 11 24 | 704 | 0.4+ | 0.5+ | 2005 03 09 | 703 | 0.3+ | 0.2− |
| 2003 11 20 | 644 | 0.3+ | 0.1+ | 2003 11 24 | 704 | 0.1+ | 0.2− | 2005 03 09 | 703 | (2.5− | 0.6−) |
| 2003 11 20 | 644 | 0.3+ | 0.1− | 2003 11 24 | 704 | 0.0 | 0.0 | | | | |
| 2003 11 20 | 644 | 0.5+ | 0.1− | 2003 11 24 | 704 | 0.4+ | 0.1− | | | | |

**2003 VY$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.97880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22044633 | $\omega$ | 162.57962 | | +0.62062688 | −0.77785309 | |
| $a$ | 2.7139435 | $\Omega$ | 248.94356 | | +0.70620383 | +0.60927881 | |
| $e$ | 0.1483791 | $i$ | 6.07894 | | +0.34073220 | +0.15402567 | |
| $P$ | 4.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | 0.8− | 0.2− | 2003 11 20 | 704 | 0.6− | 0.5− | 2003 11 24 | 703 | 0.1− | 0.1− |
| 2003 10 25 | 704 | 0.2+ | 1.0+ | 2003 11 20 | 704 | 0.1+ | 0.9− | 2003 11 24 | 699 | 0.7+ | 0.9− |
| 2003 10 25 | 704 | 0.4+ | 0.7− | 2003 11 20 | 704 | 0.1− | 0.2− | 2003 11 24 | 703 | 0.4− | 1.3− |
| 2003 10 25 | 704 | 0.2− | 0.5− | 2003 11 20 | 704 | 0.3+ | 0.0 | 2003 11 24 | 703 | (2.1− | 0.2−) |
| 2003 10 25 | 704 | 0.6+ | 0.9+ | 2003 11 24 | 704 | 0.3− | 0.6+ | 2003 11 30 | 691 | 0.3+ | 0.5+ |
| 2003 11 15 | 644 | 0.8+ | 0.0 | 2003 11 24 | 704 | 1.2− | 0.6− | 2003 11 30 | 691 | 0.3+ | 0.1+ |
| 2003 11 15 | 644 | 0.2+ | 0.0 | 2003 11 24 | 699 | 0.7− | 0.7+ | 2003 11 30 | 691 | 0.2+ | 0.4+ |
| 2003 11 15 | 644 | 0.3+ | 0.2− | 2003 11 24 | 704 | 0.3− | 0.1+ | 2006 05 25 | 568 | 0.1+ | 0.3− |
| 2003 11 19 | 699 | 0.3− | 0.3+ | 2003 11 24 | 704 | 0.1+ | 0.3+ | 2006 05 25 | 568 | 0.0 | 0.1+ |
| 2003 11 19 | 699 | 0.6− | 0.1− | 2003 11 24 | 699 | 0.4− | 0.4− | 2006 05 25 | 568 | 0.0 | 0.3− |
| 2003 11 19 | 699 | 0.3− | 0.3− | 2003 11 24 | 704 | 0.9− | 0.4− | 2006 05 26 | 568 | 0.0 | 0.8+ |
| 2003 11 19 | 699 | 0.8− | 0.2− | 2003 11 24 | 703 | (1.9− | 3.4+) | | | | |
| 2003 11 20 | 704 | 0.8+ | 0.5+ | 2003 11 24 | 699 | 0.2− | 0.4− | | | | |

**2003 VK$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.54189 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22799812 | $\omega$ | 131.81274 | | +0.98079169 | −0.10587590 | |
| $a$ | 2.6536799 | $\Omega$ | 234.90179 | | +0.05587328 | +0.95716743 | |
| $e$ | 0.2489752 | $i$ | 11.55050 | | +0.18688457 | +0.26948249 | |
| $P$ | 4.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 05 | 704 | 0.7− | 0.7+ | 2003 11 21 | 704 | 0.3− | 0.9+ | 2003 12 17 | 699 | 0.6− | 0.4+ |
| 2003 10 05 | 704 | 0.0 | 0.7+ | 2003 11 21 | 704 | 0.8+ | 0.6+ | 2003 12 22 | 691 | 1.3− | 0.7− |
| 2003 10 05 | 704 | 0.3+ | 0.5+ | 2003 11 21 | 704 | 0.5+ | 0.5+ | 2003 12 22 | 691 | 0.2+ | 0.1− |
| 2003 10 05 | 704 | 0.8− | 1.2− | 2003 11 21 | 704 | 0.2+ | 1.1+ | 2003 12 22 | 691 | 0.0 | 0.1− |
| 2003 10 27 | 691 | 0.1+ | 0.0 | 2003 11 24 | 699 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.5− | 0.3+ |
| 2003 10 27 | 691 | 0.1+ | 0.1− | 2003 11 24 | 699 | 0.5+ | 0.8− | 2003 12 22 | 704 | 0.1+ | 0.5+ |
| 2003 10 27 | 691 | 0.0 | 0.2− | 2003 11 24 | 699 | 0.5+ | 0.1+ | 2003 12 22 | 704 | 0.5+ | 0.0 |
| 2003 11 02 | 704 | 0.7− | 0.4+ | 2003 11 24 | 699 | 0.2− | 0.9− | 2006 05 04 | G96 | 0.6− | 0.6+ |
| 2003 11 02 | 704 | 0.6+ | 0.4+ | 2003 12 01 | 704 | 0.5+ | 0.4+ | 2006 05 04 | G96 | 0.3− | 0.2− |
| 2003 11 02 | 704 | 0.2+ | 0.1− | 2003 12 01 | 704 | 0.4+ | 0.2+ | 2006 05 04 | G96 | 0.5− | 0.9+ |
| 2003 11 02 | 704 | 0.1− | 0.2− | 2003 12 01 | 704 | 0.4+ | 0.8+ | 2006 05 04 | G96 | 0.9− | 0.6− |
| 2003 11 15 | 644 | 0.1+ | 0.3− | 2003 12 01 | 704 | 0.3+ | 0.9+ | 2006 05 20 | 691 | 0.2− | 0.0 |
| 2003 11 15 | 644 | 0.2+ | 0.1+ | 2003 12 01 | 704 | 0.0 | 0.8+ | 2006 05 20 | 691 | 0.0 | 0.4+ |
| 2003 11 15 | 644 | 0.6+ | 0.0 | 2003 12 01 | 691 | 0.2+ | 0.2− | 2006 05 20 | 691 | 0.3+ | 0.4+ |
| 2003 11 19 | 699 | 0.3− | 0.2− | 2003 12 01 | 691 | 0.1+ | 0.1− | 2006 06 02 | 691 | 0.1− | 0.1+ |
| 2003 11 19 | 699 | 0.1+ | 0.0 | 2003 12 01 | 691 | 0.2+ | 0.0 | 2006 06 02 | 691 | 0.2+ | 0.3− |
| 2003 11 19 | 699 | 0.3+ | 0.2− | 2003 12 17 | 699 | 0.1− | 0.6− | 2006 06 02 | 691 | 0.4+ | 0.6− |
| 2003 11 19 | 699 | 0.1+ | 0.2− | 2003 12 17 | 699 | 1.0− | 0.1− | | | | |
| 2003 11 21 | 704 | 0.1+ | 1.0+ | 2003 12 17 | 699 | 1.5− | 0.8+ | | | | |

**2003 VL$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.35769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24234998 | $\omega$ | 102.99690 | | +0.91521874 | −0.31433445 | |
| $a$ | 2.5478512 | $\Omega$ | 275.76513 | | +0.19394781 | +0.89207592 | |
| $e$ | 0.0938909 | $i$ | 14.67937 | | +0.35321226 | +0.32464506 | |
| $P$ | 4.07 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.2− | 0.7− | 2003 11 04 | 704 | 0.7− | 0.0 | 2003 12 03 | 704 | 0.1+ | 1.0+ |
| 1999 11 01 | 704 | 0.1− | 0.7− | 2003 11 04 | 704 | 0.1− | 0.9− | 2003 12 03 | 704 | 0.2− | 0.9+ |
| 1999 11 01 | 704 | 0.0 | 0.4+ | 2003 11 04 | 704 | 0.6+ | 1.3− | 2003 12 18 | 704 | 0.7+ | 0.0 |
| 1999 11 01 | 704 | 1.1− | 0.9− | 2003 11 20 | 704 | 0.1− | 0.1+ | 2003 12 18 | 704 | 0.2+ | 0.3− |
| 1999 12 12 | 704 | 0.2+ | 1.4− | 2003 11 20 | 704 | 0.3− | 0.5+ | 2003 12 18 | 704 | 1.1+ | 0.5− |
| 1999 12 12 | 704 | 0.2− | 0.4− | 2003 11 20 | 704 | 1.0− | 0.6+ | 2003 12 18 | 704 | 0.2+ | 0.1+ |
| 1999 12 12 | 704 | 0.4− | 0.5− | 2003 11 20 | 704 | 0.1+ | 0.7+ | 2003 12 29 | 704 | 0.4+ | 0.8+ |
| 1999 12 12 | 704 | 0.6+ | 0.8+ | 2003 11 20 | 704 | 0.3− | 0.2+ | 2003 12 29 | 704 | 0.9+ | 0.3+ |
| 1999 12 12 | 704 | 1.0+ | 1.0+ | 2003 12 03 | 704 | 0.7− | 0.2− | 2003 12 29 | 704 | 1.3− | 0.3− |
| 2003 11 04 | 704 | 0.2+ | 1.0+ | 2003 12 03 | 704 | 0.2− | 0.0 | 2003 12 29 | 704 | (0.7+ | 3.0−) |

**2003 WJ$_4$ = 2006 QM$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.90672 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27571034 | $\omega$ | 325.04198 | | +0.49314845 | +0.86828172 | |
| $a$ | 2.3379435 | $\Omega$ | 334.37916 | | −0.76713513 | +0.40488740 | |
| $e$ | 0.1134846 | $i$ | 7.14345 | | −0.41025394 | +0.28662353 | |
| $P$ | 3.57 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 645 | 0.0 | 0.1+ | 2003 11 19 | 691 | 0.2− | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2001 02 21 | 645 | 0.0 | 0.1+ | 2005 03 09 | G96 | 0.3+ | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2003 10 27 | 691 | 0.5− | 0.0 | 2005 03 09 | G96 | 0.2− | 0.4− | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 2003 10 27 | 691 | 0.6− | 0.2+ | 2005 03 09 | G96 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2003 10 27 | 691 | 0.1+ | 0.1− | 2005 03 09 | G96 | 0.0 | 0.4− | 2006 08 20 | 644 | 0.2+ | 0.2+ |
| 2003 11 16 | 691 | 0.5+ | 0.0 | 2005 04 12 | G96 | 0.2+ | 0.2− | 2006 08 28 | 703 | 1.2+ | 0.4− |
| 2003 11 16 | 691 | 0.1+ | 0.5− | 2005 04 12 | G96 | 0.3− | 0.3− | 2006 08 28 | 703 | 1.8− | 1.0− |
| 2003 11 16 | 691 | 0.8+ | 0.4− | 2005 04 12 | G96 | 0.7− | 0.4− | 2006 08 28 | 703 | 0.1− | 0.1− |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2005 04 12 | G96 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.1− | 1.2+ |
| 2003 11 19 | 691 | 0.0 | 0.3+ | 2006 08 20 | 644 | 0.1+ | 0.3+ | | | | |

**2003 WW$_8$ = 2003 UH$_{130}$**

Id. Minor Planet Center (d, *MPO* 58142)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.66742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17262546 | $\omega$ | 7.37128 | | +0.82210141 | −0.55840706 | |
| $a$ | 3.1944749 | $\Omega$ | 27.50755 | | +0.50932310 | +0.63415086 | |
| $e$ | 0.1509579 | $i$ | 13.91166 | | +0.25443910 | +0.53482169 | |
| $P$ | 5.71 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.1− | 2003 10 22 | 704 | 0.3+ | 0.1+ | 2004 01 11 | 644 | 0.4+ | 0.1− |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2003 11 03 | 704 | 0.7+ | 0.9+ | 2004 01 11 | 644 | 0.4+ | 0.1+ |
| 2003 10 18 | 699 | 0.1− | 0.2− | 2003 11 03 | 704 | 0.1+ | 0.1− | 2006 03 24 | 691 | 0.4+ | 0.4+ |
| 2003 10 18 | 699 | 0.7− | 1.2+ | 2003 11 03 | 704 | 0.3+ | 0.6− | 2006 03 24 | 691 | 0.4+ | 0.2+ |
| 2003 10 18 | 699 | 0.4− | 0.9− | 2003 11 03 | 704 | 0.1− | 0.4+ | 2006 03 24 | 691 | 0.0 | 0.2+ |
| 2003 10 18 | 699 | 0.6+ | 0.3− | 2003 11 03 | 704 | 0.3+ | 0.9+ | 2006 03 24 | G96 | 0.1+ | 0.2− |
| 2003 10 18 | 644 | 0.1+ | 0.6+ | 2003 11 16 | 691 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.5− | 0.0 |
| 2003 10 18 | 644 | 0.1+ | 0.0 | 2003 11 16 | 691 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.1+ | 0.4− |
| 2003 10 18 | 644 | 0.0 | 0.1+ | 2003 11 16 | 691 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.2− | 0.2+ |
| 2003 10 22 | 704 | 0.1+ | 0.3+ | 2003 11 19 | 704 | 0.4− | 0.4+ | 2006 05 05 | G96 | 0.2− | 1.1+ |
| 2003 10 22 | 704 | 0.5− | 0.0 | 2003 11 19 | 704 | 0.8− | 0.1− | 2006 05 05 | G96 | 0.3− | 0.1− |
| 2003 10 22 | 704 | 0.5− | 0.3− | 2003 11 19 | 704 | 0.2− | 0.4+ | 2006 05 05 | G96 | 0.6+ | 0.4− |
| 2003 10 22 | 704 | 0.0 | 0.4− | 2004 01 11 | 644 | 0.3+ | 0.2+ | 2006 05 05 | G96 | 0.1− | 0.3+ |

**2003 WG$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.19540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29582779 | $\omega$ | 72.62534 | | +0.22266064 | −0.97486095 | |
| $a$ | 2.2307115 | $\Omega$ | 4.53362 | | +0.85003963 | +0.18998470 | |
| $e$ | 0.1401182 | $i$ | 6.00403 | | +0.47734145 | +0.11641277 | |
| $P$ | 3.33 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 18 | 644 | 0.4− | 0.2+ | 2003 11 24 | 704 | 0.3+ | 0.6+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 2003 11 18 | 644 | 0.5− | 0.1+ | 2003 11 24 | 704 | 0.5− | 0.1− | 2006 08 27 | 691 | 0.1− | 0.2− |
| 2003 11 18 | 644 | 0.1− | 0.2− | 2003 11 24 | 704 | 0.6− | 0.5− | 2006 09 17 | 704 | (1.7− | 0.7−) |
| 2003 11 19 | 704 | 0.4− | 0.1+ | 2003 11 24 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 704 | 0.7− | 0.1− |
| 2003 11 19 | 704 | 0.6− | 0.9+ | 2003 11 24 | 704 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.2+ | 0.1− | 2003 11 24 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | (0.6+ | 1.8+) |
| 2003 11 19 | 704 | 0.8+ | 0.1+ | 2003 11 24 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.2+ | 1.7+ |
| 2003 11 19 | 704 | 0.2− | 0.2+ | 2003 11 24 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.8+ | 0.3− |
| 2003 11 21 | 704 | 0.0 | 0.1− | 2003 12 04 | 704 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2003 11 21 | 704 | 0.7+ | 0.9− | 2003 12 04 | 704 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.7+ | 0.0 |
| 2003 11 21 | 704 | 0.2− | 0.5+ | 2003 12 04 | 704 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2003 11 21 | 704 | 0.1+ | 0.1− | 2003 12 17 | 704 | 0.9− | 0.7− | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 2003 11 21 | 704 | 0.1− | 0.3+ | 2003 12 17 | 704 | 0.6+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2003 11 21 | 704 | 0.3− | 0.2− | 2003 12 17 | 704 | 0.7− | 0.5− | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2003 11 21 | 704 | 0.3− | 0.8− | 2003 12 17 | 704 | 1.1− | 0.5+ | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2003 11 21 | 704 | 0.8+ | 0.9− | 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.6+ | 0.1+ |
| 2003 11 21 | 691 | 0.1− | 0.1− | 2003 12 18 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2003 11 21 | 691 | 0.2+ | 0.1+ | 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 1.4+ | 0.5+ |
| 2003 11 21 | 691 | 0.1+ | 0.0 | 2003 12 28 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2003 11 23 | 704 | 0.2− | 0.6− | 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.3+ |
| 2003 11 23 | 704 | 0.4+ | 0.0 | 2003 12 28 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 1.0− | 0.5− |
| 2003 11 23 | 704 | 0.9+ | 0.8− | 2006 08 18 | 691 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.4− | 0.1− |
| 2003 11 23 | 704 | 0.2− | 0.5+ | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.3+ |
| 2003 11 24 | 704 | (0.2− | 1.7+) | 2006 08 18 | 691 | (0.3− | 1.7+) | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2003 11 24 | 704 | 0.9− | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.2− | | | | |

## 2003 WM$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.92214 | | (2000.0) | | +0.85374859 | +0.51613520 |
| $n$ | 0.30116972 | $\omega$ | 86.28746 | | −0.50314376 | +0.78382433 |
| $a$ | 2.2042551 | $\Omega$ | 242.62765 | | −0.13401382 | +0.34528809 |
| $e$ | 0.2160175 | $i$ | 4.43604 | | | |
| $P$ | 3.27 | $H$ | 17.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 20 | 691 | 0.1+ | 0.3− | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.4+ | 0.4+ |
| 1999 06 12 | 691 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 09 27 | 703 | 0.2− | 0.4− |
| 1999 06 12 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.8− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.9− |
| 1999 06 12 | 691 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.6− | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.4− |
| 2003 11 19 | 691 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2003 11 19 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.3− | 2006 10 03 | 704 | 0.3− | 1.1+ |
| 2003 11 21 | 704 | 0.7+ | 0.5− | 2006 09 19 | 699 | 0.2+ | 1.2+ | 2006 10 03 | 704 | 0.2− | 1.2+ |
| 2003 11 21 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 1.3+ | 0.8− | 2006 10 03 | 704 | 0.1− | 0.5+ |
| 2003 11 21 | 704 | 0.2− | 0.3+ | 2006 09 21 | 683 | 0.7+ | 0.8− | 2006 10 03 | 704 | 0.2+ | 0.3+ |
| 2003 11 21 | 704 | 0.4+ | 0.9− | 2006 09 21 | 683 | 0.1+ | 0.9− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2003 11 23 | 704 | 0.0 | 0.1− | 2006 09 21 | 683 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2003 11 23 | 704 | 0.5+ | 0.0 | 2006 09 22 | 683 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2003 11 23 | 704 | (1.8+ | 0.4−) | 2006 09 22 | 683 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2003 11 30 | 691 | 0.2+ | 0.1− | 2006 09 22 | 683 | 0.9− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.6− |
| 2003 11 30 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.7− |
| 2003 11 30 | 691 | 0.2+ | 0.0 | 2006 09 25 | 291 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.8+ | 0.1− |
| 2003 12 01 | 691 | 0.1− | 0.0 | 2006 09 25 | 291 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2003 12 01 | 691 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2003 12 01 | 691 | 0.3− | 0.2+ | 2006 09 25 | 291 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | (1.7+ | 0.6−) | 2006 09 25 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | (0.6+ | 1.6−) | 2006 09 25 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2003 12 21 | 704 | 1.0− | 0.2+ | 2006 09 25 | 683 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2003 12 27 | 691 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.4+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2003 12 27 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 683 | (0.3+ | 1.6+) | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2003 12 27 | 691 | 0.0 | 0.5+ | 2006 09 25 | 683 | 0.7+ | 1.3+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 27 | 699 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.5+ | 0.6− | 2006 11 20 | G96 | 0.4− | 0.4− |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 27 | 699 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.6− | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.7− | 0.1− | 2006 11 20 | G96 | 0.3− | 0.2− |

## 2003 WR$_{24}$ = 2006 SL$_{54}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.30321 | | (2000.0) | | +0.59900097 | +0.78917005 |
| $n$ | 0.29946044 | $\omega$ | 48.05896 | | −0.76946399 | +0.52037740 |
| $a$ | 2.2126348 | $\Omega$ | 259.24212 | | −0.22163712 | +0.32621771 |
| $e$ | 0.3216103 | $i$ | 7.93821 | | | |
| $P$ | 3.29 | $H$ | 16.6 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 2003 11 20 | 704 | 0.1− | 1.1+ | 2006 09 17 | 703 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2003 11 20 | 704 | 0.6+ | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.7− | 2006 09 30 | 704 | 1.1− | 0.6+ |
| 2003 11 20 | 704 | 0.9+ | 1.0+ | 2006 09 17 | 703 | 0.5− | 0.6− | 2006 09 30 | 704 | 0.7− | 0.1+ |
| 2003 11 20 | 704 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.5− | 0.9− | 2006 09 30 | 704 | 1.2− | 0.6− |
| 2003 11 21 | 704 | 0.2+ | 0.2− | 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.0 |
| 2003 11 21 | 704 | 0.7+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.7− | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2003 11 21 | 704 | 0.9+ | 0.0 | 2006 09 21 | 704 | 0.6+ | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.3+ |
| 2003 11 21 | 704 | 0.3− | 0.6− | 2006 09 21 | 704 | (0.2+ | 1.7+) | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2003 11 21 | 691 | 0.4− | 0.0 | 2006 09 21 | 704 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2003 11 21 | 691 | 0.2− | 0.2− | 2006 09 21 | 704 | 1.1+ | 1.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2003 11 21 | 691 | 0.4− | 0.1− | 2006 09 21 | 106 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2003 11 24 | 704 | 1.2− | 0.9+ | 2006 09 21 | 106 | 0.1+ | 0.5− | 2006 11 14 | 703 | 0.0 | 0.2− |
| 2003 11 24 | 704 | 0.1− | 0.1+ | 2006 09 21 | 106 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.6− |
| 2003 11 24 | 704 | (1.1− | 2.2+) | 2006 09 22 | 106 | 0.5+ | 0.5+ | 2006 11 14 | 703 | 0.3+ | 0.0 |
| 2003 11 24 | 704 | 0.1− | 0.0 | 2006 09 22 | 699 | 0.4+ | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.2− |
| 2003 11 24 | 704 | 0.4+ | 0.8+ | 2006 09 22 | 699 | 0.3+ | 0.6+ | 2006 11 15 | 683 | 0.4+ | 0.7+ |
| 2003 12 14 | 691 | 0.2+ | 0.4− | 2006 09 22 | 699 | 0.0 | 0.1+ | 2006 11 15 | 683 | 0.4+ | 0.3+ |
| 2003 12 14 | 691 | 0.2+ | 0.3− | 2006 09 22 | 699 | 0.1− | 0.3− | 2006 11 15 | 683 | 1.2+ | 1.3+ |
| 2003 12 14 | 691 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.2− | 2006 11 25 | 703 | 0.2− | 0.5− |
| 2005 02 13 | 809 | 0.1+ | 0.4+ | 2006 09 28 | 703 | (1.9− | 1.0+) | 2006 11 25 | 703 | 0.7− | 0.8+ |
| 2005 02 13 | 809 | 0.1+ | 0.4+ | 2006 09 28 | 703 | (0.3− | 1.7+) | 2006 11 25 | 703 | 0.1− | 0.2+ |
| 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.0 | 2006 11 25 | 703 | 1.2− | 0.3− |

## 2003 WZ$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.27989 | | (2000.0) | | +0.45793829 | +0.88792051 |
| $n$ | 0.30088470 | $\omega$ | 338.76640 | | −0.80589335 | +0.39399755 |
| $a$ | 2.2056469 | $\Omega$ | 318.45446 | | −0.37527113 | +0.23740914 |
| $e$ | 0.1947373 | $i$ | 3.75816 | | | |
| $P$ | 3.28 | $H$ | 16.9 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 27 | 688 | 0.5+ | 0.4+ | 2006 08 29 | 699 | 0.4− | 1.1− | 2006 09 27 | 699 | 0.2+ | 0.5+ |
| 1997 12 27 | 688 | 0.3− | 0.6+ | 2006 08 29 | 699 | 0.8− | 0.0 | 2006 09 27 | 699 | 0.2− | 0.8− |
| 2003 11 16 | 691 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2003 11 16 | 691 | 0.0 | 0.4− | 2006 09 17 | 703 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2003 11 16 | 691 | 0.3+ | 0.3− | 2006 09 17 | 703 | 1.1− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2003 11 20 | 704 | 0.0 | 1.1+ | 2006 09 17 | 703 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2003 11 20 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2003 11 20 | 704 | 0.8+ | 1.3+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2003 11 20 | 704 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2003 11 24 | 704 | 1.3− | 0.5+ | 2006 09 19 | 699 | 1.0+ | 0.1− | 2006 10 17 | 703 | 0.2− | 1.3− |
| 2003 11 24 | 704 | (2.2− | 0.4+) | 2006 09 19 | 699 | 0.4− | 0.9− | 2006 10 17 | 703 | 0.7− | 1.3+ |
| 2003 11 24 | 704 | 0.9− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.9+ | 0.3+ |
| 2005 03 13 | G96 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.7− |
| 2005 03 13 | G96 | 0.9− | 1.0− | 2006 09 25 | 704 | 0.2+ | 0.3− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2005 03 13 | G96 | 0.1+ | 0.3− | 2006 09 25 | 704 | 0.9− | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2005 03 13 | G96 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2006 08 24 | 644 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.8+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2006 08 24 | 644 | 0.8+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2006 08 29 | 699 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2006 08 29 | 699 | 0.9+ | 0.9− | 2006 09 27 | 699 | 0.1+ | 0.4− | | | | |

**2003 WQ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 326.07117 | | | (2000.0) | | |
| $n$ | 0.29009147 | $\omega$ | 135.52986 | | +0.92117601 | −0.37526066 |
| $a$ | 2.2600224 | $\Omega$ | 246.76637 | | +0.31844444 | +0.87908349 |
| $e$ | 0.1191643 | $i$ | 6.43739 | | +0.22366915 | +0.29392459 |
| $P$ | 3.40 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.2+ | 0.3+ | 2003 11 20 | 704 | 0.3− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.3+ |
| 2002 05 18 | 644 | 0.1+ | 0.6+ | 2003 11 20 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 691 | 0.0 | 0.1− |
| 2002 05 18 | 644 | 0.2− | 0.6+ | 2003 11 20 | 704 | 0.0 | 0.2+ | 2006 09 16 | 691 | 0.3− | 0.1− |
| 2003 10 25 | 704 | 0.6− | 0.9+ | 2003 11 29 | 691 | 0.2− | 0.1− | 2006 09 16 | 691 | 0.2− | 0.1− |
| 2003 10 25 | 704 | 0.0 | 0.4+ | 2003 11 29 | 691 | 0.1− | 0.4− | 2006 09 17 | 703 | 1.2− | 0.3− |
| 2003 10 25 | 704 | 0.7− | 1.3+ | 2003 11 29 | 691 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.1− | 0.9− |
| 2003 10 25 | 704 | 0.6+ | 0.1− | 2003 12 21 | 291 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.3− | 0.0 |
| 2003 10 25 | 704 | 0.2+ | 0.5+ | 2003 12 21 | 291 | 0.8− | 0.1− | 2006 09 17 | 703 | (1.6− | 0.3+) |
| 2003 11 16 | 691 | 0.3+ | 0.2+ | 2003 12 21 | 291 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.4+ | 0.4− |
| 2003 11 16 | 691 | 0.4+ | 0.0 | 2003 12 22 | 691 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2− |
| 2003 11 16 | 691 | 0.4+ | 0.1− | 2003 12 22 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.5+ |
| 2003 11 19 | 699 | 0.1− | 1.3+ | 2003 12 22 | 691 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.3+ | 1.4+ |
| 2003 11 19 | 699 | 0.5− | 0.1− | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.8+ | 1.3− |
| 2003 11 19 | 699 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2003 11 19 | 699 | 0.5+ | 0.3+ | 2006 08 22 | 644 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.9+ | 1.4− |
| 2003 11 20 | 704 | 0.4− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.3+ | | | | |
| 2003 11 20 | 704 | 0.2+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.5+ | | | | |

**2003 WF$_{30}$ = 2006 PX$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.47094 | | | (2000.0) | | |
| $n$ | 0.27714159 | $\omega$ | 53.39013 | | +0.80871322 | +0.58014472 |
| $a$ | 2.3298873 | $\Omega$ | 270.95093 | | −0.56589869 | +0.72239182 |
| $e$ | 0.1449957 | $i$ | 5.56900 | | −0.16044190 | +0.37627405 |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 18 | 691 | 0.2− | 0.2+ | 2003 12 01 | 691 | 0.1− | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.0 |
| 2003 11 18 | 691 | 0.0 | 0.3+ | 2006 06 05 | G96 | 0.4− | 0.5− | 2006 08 12 | 644 | 0.1− | 0.3− |
| 2003 11 18 | 691 | 0.3+ | 0.8− | 2006 06 05 | G96 | 0.2+ | 0.5− | 2006 08 12 | 644 | 0.1+ | 0.3− |
| 2003 11 20 | 704 | 0.0 | 0.9+ | 2006 06 05 | G96 | 0.3− | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.4− |
| 2003 11 20 | 704 | 0.6+ | 0.4+ | 2006 06 05 | G96 | 0.6− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.2− |
| 2003 11 20 | 704 | 0.2− | 0.6+ | 2006 06 22 | 691 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 2003 12 01 | 691 | 0.0 | 0.1− | 2006 06 22 | 691 | 0.2+ | 0.4+ | | | | |
| 2003 12 01 | 691 | 0.1− | 0.0 | 2006 06 22 | 691 | 0.0 | 0.2+ | | | | |

**2003 WZ$_{31}$ = 2006 QK$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.27907 | | | (2000.0) | | |
| $n$ | 0.26687267 | $\omega$ | 278.93873 | | +0.31053284 | +0.95035142 |
| $a$ | 2.3892778 | $\Omega$ | 9.22747 | | −0.81563497 | +0.27722110 |
| $e$ | 0.0811361 | $i$ | 7.17862 | | −0.48816898 | +0.14135290 |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 699 | 1.0− | 0.3+ | 2003 11 19 | 699 | 0.1+ | 0.7− | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2003 10 23 | 699 | 0.5− | 0.1+ | 2003 11 19 | 699 | 0.1+ | 0.4− | 2006 08 20 | 644 | 0.1+ | 0.0 |
| 2003 10 23 | 699 | 0.2− | 0.5+ | 2003 11 20 | 704 | 0.2− | 1.4+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2003 10 23 | 699 | 1.4+ | 0.6− | 2003 11 20 | 704 | 0.8− | 0.7+ | 2006 08 23 | E12 | 0.1+ | 0.2− |
| 2003 11 18 | 644 | 0.2+ | 0.1− | 2003 11 20 | 704 | (0.1− | 2.1+) | 2006 08 23 | E12 | 0.7− | 0.4+ |
| 2003 11 18 | 644 | 0.1+ | 0.2− | 2006 07 29 | E12 | 0.8+ | 0.3− | 2006 08 23 | E12 | 0.6− | 0.0 |
| 2003 11 18 | 644 | 0.4+ | 0.1− | 2006 07 29 | E12 | 0.3− | 0.4+ | 2006 08 23 | E12 | 0.0 | 0.1+ |
| 2003 11 19 | 699 | 0.4+ | 0.0 | 2006 07 29 | E12 | 0.4+ | 0.6− | | | | |
| 2003 11 19 | 699 | 0.1− | 1.0− | 2006 07 29 | E12 | 0.2+ | 0.1− | | | | |

**2003 WR$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.62847 | | | (2000.0) | | |
| $n$ | 0.29929081 | $\omega$ | 106.66805 | | −0.20263924 | −0.97921382 |
| $a$ | 2.2134708 | $\Omega$ | 354.99828 | | +0.85553826 | −0.17265401 |
| $e$ | 0.1301319 | $i$ | 5.79988 | | +0.47643638 | −0.10644660 |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.2+ | 0.0 | 2003 11 19 | 704 | 0.1− | 0.3− | 2003 11 24 | 704 | 0.2+ | 0.5+ |
| 2003 10 23 | 691 | 0.2− | 0.0 | 2003 11 20 | 704 | 0.1+ | 0.7− | 2003 11 24 | 691 | 0.1− | 0.1− |
| 2003 10 23 | 691 | 0.1+ | 0.0 | 2003 11 20 | 704 | 0.9− | 0.0 | 2003 11 24 | 704 | 0.5+ | 0.2− |
| 2003 11 14 | 644 | 0.2+ | 0.1+ | 2003 11 20 | 704 | 0.4+ | 0.9+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2003 11 14 | 644 | 0.5+ | 0.1+ | 2003 11 21 | 704 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2003 11 14 | 644 | 0.2+ | 0.2+ | 2003 11 21 | 704 | 0.1+ | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 2003 11 19 | 699 | 1.0− | 0.3− | 2003 11 21 | 704 | 0.0 | 0.8− | 2006 10 19 | G96 | 0.5+ | 0.3+ |
| 2003 11 19 | 699 | 0.8+ | 0.6− | 2003 11 21 | 704 | 1.2+ | 1.4+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2003 11 19 | 699 | 0.9− | 0.7− | 2003 11 21 | 704 | 1.4− | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2003 11 19 | 699 | 0.3− | 0.2+ | 2003 11 24 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2003 11 19 | 704 | 0.4− | 0.1− | 2003 11 24 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.5− | 0.2+ |
| 2003 11 19 | 704 | 0.9− | 0.4− | 2003 11 24 | 704 | 0.3+ | 0.9+ | | | | |

**2003 WC$_{39}$ = 2006 QG$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 143.39842 | | | (2000.0) | | |
| $n$ | 0.27107094 | $\omega$ | 245.34733 | | −0.96552083 | +0.24892470 |
| $a$ | 2.3645440 | $\Omega$ | 308.97422 | | −0.18899290 | −0.87154826 |
| $e$ | 0.0697404 | $i$ | 5.62470 | | −0.17902854 | −0.42242174 |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 691 | 0.1− | 0.2− | 2005 04 05 | 644 | 1.0+ | 0.3− | 2006 08 28 | 703 | 0.2− | 0.0 |
| 2003 10 25 | 691 | 0.3− | 0.1− | 2005 04 05 | 644 | 1.2+ | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.0 |
| 2003 10 25 | 691 | 0.4− | 0.5− | 2005 04 05 | 644 | 1.3+ | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2003 11 19 | 691 | 0.4+ | 0.2+ | 2005 04 14 | 703 | 1.0− | 0.8+ | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2003 11 19 | 691 | 0.2+ | 0.1− | 2005 04 14 | 703 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.7− |
| 2003 11 19 | 691 | 0.1+ | 0.3+ | 2005 04 14 | 703 | 2.5− | 1.0− | 2006 09 28 | G96 | 0.3+ | 0.3+ |
| 2003 11 20 | 704 | 0.3− | 1.0+ | 2005 04 14 | 703 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2003 11 20 | 704 | (1.9− | 0.4+) | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2003 11 20 | 704 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.5+ | 0.8+ | | | | |
| 2003 11 20 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.0 | 0.5− | | | | |

**2003 WB$_{40}$ = 2006 SR$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.16257 | | | (2000.0) | | |
| $n$ | 0.30761536 | $\omega$ | 323.13939 | | +0.96473470 | +0.26058706 |
| $a$ | 2.1733552 | $\Omega$ | 21.84405 | | −0.21132837 | +0.85095300 |
| $e$ | 0.1253378 | $i$ | 5.73270 | | −0.15693078 | +0.45604098 |
| $P$ | 3.20 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.5+ | 0.0 | 2005 04 09 | G96 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.2− | 0.6+ |
| 2003 10 23 | 691 | 0.4+ | 0.0 | 2005 04 09 | G96 | 0.0 | 0.3+ | 2006 09 26 | 704 | (1.9− | 0.5+) |
| 2003 10 23 | 691 | 0.1+ | 0.0 | 2005 04 09 | G96 | 0.4+ | 1.3+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2003 11 19 | 691 | 0.1− | 0.1+ | 2005 04 09 | G96 | 0.2+ | 0.0 | 2006 09 28 | 699 | 0.5− | 0.8+ |
| 2003 11 19 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.9− | 0.7− | 2006 09 28 | 691 | 0.5− | 0.1+ |
| 2003 11 19 | 691 | 0.2− | 0.3+ | 2006 09 12 | 703 | 1.2+ | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.2+ |
| 2003 11 20 | 704 | 0.7− | 0.6− | 2006 09 12 | 703 | 0.1− | 1.1+ | 2006 09 28 | 699 | 0.5− | 1.1+ |
| 2003 11 20 | 704 | 0.5− | 0.3− | 2006 09 12 | 703 | 1.4+ | 1.3+ | 2006 09 28 | 699 | 0.3− | 0.9+ |
| 2003 11 20 | 704 | 0.0 | 0.1+ | 2006 09 20 | 691 | 0.4− | 0.2− | 2006 09 28 | 699 | 1.1− | 1.8+ |
| 2003 11 20 | 704 | 0.4− | 0.4+ | 2006 09 20 | 691 | 0.4− | 0.0 | 2006 10 15 | 291 | 0.1− | 0.3+ |
| 2003 12 01 | 691 | 0.1+ | 0.1− | 2006 09 20 | 691 | 2.3+ | 2.0− | 2006 10 15 | 291 | 0.1+ | 0.2+ |
| 2003 12 01 | 691 | 0.3− | 0.4− | 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 10 15 | 291 | 0.0 | 0.1+ |
| 2003 12 01 | 691 | 0.1+ | 0.3− | 2006 09 26 | 704 | 1.0− | 0.7− | | | | |

**2003 WE$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.98334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30240556 | $\omega$ | 119.06386 | | +0.40756164 | −0.91274584 | |
| $a$ | 2.1982455 | $\Omega$ | 306.85735 | | +0.82514908 | +0.38127206 | |
| $e$ | 0.1279269 | $i$ | 2.01122 | | +0.39118091 | +0.14671960 | |
| $P$ | 3.26 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 1.5+ | 0.1+ | 2003 11 24 | 704 | 0.3− | 0.9+ | 2006 09 17 | 703 | (0.6− | 2.2+) |
| 2001 01 21 | 704 | 0.1− | 1.1+ | 2003 11 24 | 704 | 0.4− | 0.3− | 2006 09 17 | 703 | (2.6+ | 0.7+) |
| 2001 01 21 | 704 | 0.0 | 0.2+ | 2003 11 24 | 704 | (1.5− | 0.2−) | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2001 01 21 | 704 | 0.3− | 0.2− | 2003 11 24 | 704 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 2001 01 21 | 704 | 0.4− | 1.1+ | 2003 11 24 | 704 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.2− | 0.0 |
| 2003 11 19 | 691 | 0.2− | 0.0 | 2003 12 14 | 691 | 0.2+ | 0.2− | 2006 09 26 | 691 | (1.6+ | 1.0+) |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2003 12 14 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2003 11 19 | 691 | 0.1− | 0.1+ | 2003 12 14 | 691 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2003 11 20 | 704 | 0.3+ | 0.2+ | 2003 12 22 | 704 | 0.5− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2003 11 20 | 704 | 0.3+ | 0.0 | 2003 12 22 | 704 | (0.8+ | 1.8−) | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2003 11 20 | 704 | 0.7+ | 0.2+ | 2003 12 22 | 704 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2003 11 20 | 704 | 0.4+ | 0.4− | 2003 12 22 | 704 | 0.0 | 0.9− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 11 20 | 704 | (1.5+ | 0.3+) | 2003 12 22 | 704 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2003 11 21 | 704 | 0.2+ | 0.6+ | 2003 12 27 | 704 | (0.1− | 2.1−) | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 11 21 | 704 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.1+ | 0.7− | 2006 10 22 | G96 | 0.4+ | 0.1+ |
| 2003 11 21 | 704 | 0.0 | 0.6− | 2003 12 27 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 11 21 | 704 | 0.1− | 0.8+ | 2003 12 27 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2003 11 21 | 704 | 0.2+ | 0.8− | 2006 09 17 | 703 | 0.9+ | 1.0+ | 2006 10 22 | G96 | 0.0 | 0.3− |

**2003 WE$_{43}$ = 2006 OW$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.24137 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28555235 | $\omega$ | 5.59597 | | +0.89911309 | +0.43340709 | |
| $a$ | 2.2839095 | $\Omega$ | 328.49180 | | −0.40600732 | +0.77346309 | |
| $e$ | 0.2080486 | $i$ | 6.73256 | | −0.16356561 | +0.46250745 | |
| $P$ | 3.45 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 18 | 691 | 0.1+ | 0.2− | 2003 12 01 | 691 | 0.2+ | 0.1− | 2006 07 19 | 428 | 0.3− | 0.2− |
| 2003 11 18 | 691 | 0.2− | 0.2− | 2003 12 01 | 691 | 0.0 | 0.0 | 2006 07 19 | 428 | 0.6+ | 0.3− |
| 2003 11 18 | 691 | 0.1− | 0.1+ | 2006 07 05 | D35 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2003 11 19 | 644 | 0.3− | 0.1+ | 2006 07 05 | D35 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.6− | 0.5− |
| 2003 11 19 | 644 | 0.2− | 0.4+ | 2006 07 05 | D35 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.5− | 0.6− |
| 2003 11 19 | 644 | 0.2− | 0.2+ | 2006 07 17 | 428 | 0.8− | 0.6+ | 2006 09 26 | G96 | 1.3+ | 1.5+ |
| 2003 12 01 | 691 | 0.1+ | 0.2+ | 2006 07 17 | 428 | 0.7− | 0.2− | | | | |

**2003 WY$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.29512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30403130 | $\omega$ | 71.63845 | | +0.90894158 | +0.40871586 | |
| $a$ | 2.1904021 | $\Omega$ | 264.16987 | | −0.40691159 | +0.82664043 | |
| $e$ | 0.2259067 | $i$ | 4.74653 | | −0.09081939 | +0.38680350 | |
| $P$ | 3.24 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | 0.3− | 0.5+ | 2005 03 10 | G96 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.6+ |
| 2003 10 25 | 704 | 0.1+ | 0.1+ | 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.4+ |
| 2003 10 25 | 704 | 0.4− | 1.1+ | 2006 08 29 | 683 | 0.1+ | 1.2− | 2006 09 19 | 699 | 0.5+ | 0.4+ |
| 2003 10 25 | 704 | 0.3+ | 0.5+ | 2006 08 29 | 683 | 0.3− | 1.0− | 2006 09 27 | 703 | 0.2− | 0.0 |
| 2003 11 20 | 704 | 1.0+ | 0.0 | 2006 08 29 | 699 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.7− |
| 2003 11 20 | 704 | 1.1+ | 0.5+ | 2006 08 29 | 683 | 1.0− | 0.2− | 2006 09 27 | 703 | 0.2− | 0.5+ |
| 2003 11 20 | 704 | 0.4+ | 0.4− | 2006 08 29 | 699 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.7+ | 0.1+ |
| 2003 11 20 | 704 | 1.2+ | 0.8+ | 2006 08 29 | 699 | 1.1+ | 0.6+ | 2006 09 29 | 699 | 0.1− | 0.3− |
| 2003 11 24 | 704 | 0.5− | 0.4+ | 2006 08 29 | 699 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.3+ |
| 2003 11 24 | 704 | (0.0 | 2.1+) | 2006 08 31 | 704 | 0.5− | 0.6+ | 2006 09 29 | 699 | 0.5+ | 0.1− |
| 2003 11 24 | 704 | (0.2− | 2.5+) | 2006 08 31 | 704 | 0.2+ | 0.9− | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2003 11 24 | 704 | 0.3− | 0.8+ | 2006 08 31 | 704 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2003 11 24 | 704 | 0.1+ | 1.0+ | 2006 08 31 | 704 | (0.2+ | 1.7−) | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2003 11 29 | 704 | 1.3+ | 1.3− | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2003 11 29 | 704 | 0.3− | 0.7− | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2003 11 29 | 704 | (0.1− | 2.4−) | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2003 11 29 | 704 | (2.3+ | 0.3−) | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.3− | 0.6+ |
| 2003 11 29 | 704 | 0.3− | 0.4− | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2003 11 29 | 704 | (0.0 | 2.3−) | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.1+ |
| 2003 11 29 | 704 | 0.5− | 0.6+ | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2003 11 29 | 704 | 0.2− | 1.4− | 2006 09 13 | 644 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2003 12 19 | 704 | 0.4+ | 0.3− | 2006 09 15 | 683 | 1.2+ | 0.5+ | 2006 10 17 | 703 | 0.6+ | 0.2− |
| 2003 12 19 | 704 | 0.5− | 0.5− | 2006 09 15 | 683 | 1.3+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2003 12 19 | 704 | 0.7− | 0.9− | 2006 09 15 | 683 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2003 12 19 | 704 | 0.8− | 0.2− | 2006 09 16 | 703 | 0.5− | 0.5− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2005 03 10 | G96 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.8− | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.2+ |

**2003 WF$_{54}$ = 2006 KZ$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.65038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21492067 | $\omega$ | 167.19497 | | +0.10431038 | −0.99389457 | |
| $a$ | 2.7602638 | $\Omega$ | 276.80928 | | +0.90925475 | +0.10995123 | |
| $e$ | 0.0442540 | $i$ | 2.07529 | | +0.40295799 | +0.00918172 | |
| $P$ | 4.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 704 | 0.1+ | 0.6+ | 2003 11 20 | 704 | 0.3− | 0.2− | 2006 05 25 | 568 | 0.0 | 0.0 |
| 2003 10 29 | 704 | 0.4− | 0.9+ | 2003 11 20 | 704 | 0.4− | 0.4− | 2006 05 25 | 568 | 0.1+ | 0.0 |
| 2003 10 29 | 704 | 0.6+ | 1.5− | 2003 11 21 | 691 | 0.1+ | 0.0 | 2006 05 25 | 568 | 0.1+ | 0.0 |
| 2003 10 29 | 704 | 0.5− | 0.3+ | 2003 11 21 | 691 | 0.3− | 0.2− | 2006 05 26 | 568 | 0.2− | 0.2− |
| 2003 11 20 | 704 | 0.1− | 0.2+ | 2003 11 21 | 691 | 0.4+ | 0.2+ | | | | |

**2003 WN$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.18238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28209469 | $\omega$ | 203.97343 | | −0.97049348 | −0.23888668 | |
| $a$ | 2.3025343 | $\Omega$ | 322.15843 | | +0.22897072 | −0.87036049 | |
| $e$ | 0.1554647 | $i$ | 3.06441 | | +0.07559645 | −0.43058770 | |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 691 | 0.5+ | 0.2− | 2004 03 16 | 704 | 0.8+ | 0.2− | 2004 03 27 | 703 | 0.4+ | 0.3+ |
| 2003 11 20 | 691 | 0.5+ | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2004 03 27 | 704 | 0.1− | 0.3+ |
| 2003 11 20 | 691 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2004 03 27 | 703 | 0.2+ | 0.0 |
| 2003 11 21 | 291 | 0.4+ | 0.6+ | 2004 03 18 | 704 | 1.6+ | 1.1+ | 2004 04 11 | 644 | 0.2− | 0.5− |
| 2003 11 21 | 291 | 1.1− | 0.8+ | 2004 03 18 | 704 | 0.8− | 0.8+ | 2004 04 11 | 644 | 0.3+ | 0.1− |
| 2003 11 21 | 291 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.1− | 2004 04 11 | 644 | 0.4− | 0.2− |
| 2004 01 24 | 704 | 0.1+ | 0.4+ | 2004 03 20 | 704 | 1.0− | 0.0 | 2004 04 12 | 699 | 0.6− | 0.2− |
| 2004 01 24 | 704 | 0.6+ | 0.3+ | 2004 03 20 | 704 | 1.1− | 0.3− | 2004 04 12 | 699 | 0.9− | 0.2− |
| 2004 01 24 | 704 | 0.1− | 0.7− | 2004 03 20 | 704 | 1.6− | 0.1+ | 2004 04 12 | 699 | 0.6− | 0.5+ |
| 2004 01 24 | 704 | 0.6+ | 0.6− | 2004 03 20 | 704 | 1.3− | 0.0 | 2004 04 12 | 699 | 0.5− | 0.2+ |
| 2004 01 24 | 704 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.3− | 0.3+ | 2004 04 15 | 699 | 0.4− | 0.5− |
| 2004 01 30 | 699 | 0.3− | 0.2− | 2004 03 26 | 291 | 0.3+ | 0.3− | 2004 04 15 | 699 | 0.8− | 0.5+ |
| 2004 01 30 | 699 | 0.9− | 1.0− | 2004 03 26 | 291 | 0.2+ | 0.2− | 2004 04 15 | 699 | 1.4− | 0.1− |
| 2004 01 30 | 699 | 0.4− | 0.0 | 2004 03 26 | 291 | 0.0 | 0.3− | 2004 04 15 | 699 | 1.4− | 0.2+ |
| 2004 01 30 | 699 | 0.8+ | 1.0− | 2004 03 26 | 291 | 0.5+ | 0.3+ | 2004 04 21 | 691 | 0.2− | 0.1− |
| 2004 02 13 | 644 | 1.2+ | 1.1− | 2004 03 26 | 291 | 0.5+ | 0.2+ | 2004 04 21 | 691 | 0.2− | 0.0 |
| 2004 02 13 | 644 | 0.2− | 1.1− | 2004 03 26 | 291 | 0.5+ | 0.0 | 2004 04 21 | 691 | 0.1− | 0.1+ |
| 2004 02 13 | 644 | 0.6− | 1.3− | 2004 03 26 | 291 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.2− | 0.8+ |
| 2004 03 15 | 703 | 0.8− | 0.4+ | 2004 03 26 | 291 | 0.2+ | 0.2+ | 2005 07 11 | G96 | 0.4− | 0.7+ |
| 2004 03 15 | 703 | 0.1+ | 0.2+ | 2004 03 26 | 291 | 0.1+ | 0.1− | 2005 07 11 | G96 | 0.3− | 0.1+ |
| 2004 03 15 | 703 | 1.0− | 0.5− | 2004 03 27 | 704 | 0.3+ | 0.0 | 2005 07 11 | G96 | 0.1+ | 0.4+ |
| 2004 03 15 | 703 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.7+ | 0.3+ | 2004 03 27 | 703 | 1.3+ | 0.5+ | 2006 11 12 | G96 | 0.3− | 0.2− | | |
| 2004 03 16 | 704 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.0 | | |
| 2004 03 16 | 704 | 0.4+ | 0.3+ | 2004 03 27 | 703 | 0.9− | 1.2+ | 2006 11 12 | G96 | 0.4+ | 0.1+ | | |
| 2004 03 16 | 704 | 0.5+ | 0.4− | 2004 03 27 | 704 | 0.3+ | 0.3+ | | | | | | |

**2003 WO$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.21742 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18015393 | $\omega$ | 121.84487 | | +0.99611555 | | +0.06335004 |
| $a$ | 3.1048472 | $\Omega$ | 234.59261 | | −0.08109278 | | +0.93066711 |
| $e$ | 0.1259190 | $i$ | 4.30343 | | +0.03431869 | | +0.36034082 |
| $P$ | 5.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.2− | 0.8+ | 2003 11 19 | 699 | 0.6+ | 0.3− | 2003 12 18 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 05 | 644 | 0.1− | 0.7+ | 2003 11 19 | 699 | 0.5+ | 0.3− | 2003 12 18 | 691 | 0.0 | 0.0 | | |
| 2002 08 05 | 644 | 0.2− | 0.1+ | 2003 11 21 | 704 | 0.1+ | 0.4+ | 2003 12 18 | 691 | 0.1+ | 0.2+ | | |
| 2003 10 18 | 691 | 0.4+ | 0.2− | 2003 11 21 | 704 | 0.6− | 0.2− | 2003 12 21 | 291 | 0.1− | 0.4+ | | |
| 2003 10 18 | 691 | 0.0 | 0.3− | 2003 11 21 | 704 | 0.3− | 0.1+ | 2003 12 21 | 291 | 0.6− | 0.3+ | | |
| 2003 10 18 | 691 | 0.2− | 0.2− | 2003 11 28 | 691 | 0.2+ | 0.1− | 2003 12 21 | 291 | 0.3+ | 0.5+ | | |
| 2003 11 18 | 691 | 0.1− | 0.1− | 2003 11 28 | 691 | 0.1+ | 0.1− | 2005 02 02 | 691 | 0.0 | 0.1− | | |
| 2003 11 18 | 691 | 0.0 | 0.1+ | 2003 11 28 | 691 | 0.2+ | 0.0 | 2005 02 02 | 691 | 0.1+ | 0.0 | | |
| 2003 11 18 | 691 | 1.2− | 0.3− | 2003 12 01 | 291 | 0.2+ | 0.2+ | 2005 02 02 | 691 | 0.0 | 0.3+ | | |
| 2003 11 19 | 699 | 0.4+ | 0.4− | 2003 12 01 | 291 | 0.2+ | 0.0 | | | | | | |
| 2003 11 19 | 699 | 0.1+ | 0.7− | 2003 12 01 | 291 | 0.0 | 0.0 | | | | | | |

**2003 WG$_{61}$ = 2006 UJ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.51465 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31833612 | $\omega$ | 260.97564 | | +0.74892107 | | −0.66265638 |
| $a$ | 2.1242817 | $\Omega$ | 140.52710 | | +0.60916835 | | +0.68731386 |
| $e$ | 0.1063158 | $i$ | 0.17453 | | +0.26082782 | | +0.29746626 |
| $P$ | 3.10 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.2− | 0.2+ | | |
| 2003 11 19 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.1− | | |
| 2003 11 19 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.3+ | 0.4− | | |
| 2003 11 21 | 704 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.5− | | |
| 2003 11 21 | 704 | 0.8+ | 0.7+ | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2003 11 21 | 704 | 0.7+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 22 | G96 | 0.3+ | 0.6− | | |
| 2003 11 30 | 291 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.7+ | 1.4− | 2006 11 22 | G96 | 0.0 | 0.3− | | |
| 2003 11 30 | 291 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.0 | | |
| 2003 11 30 | 291 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.3− | | |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5− | 1.0+ | | | | | | |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.3+ | | | | | | |

**2003 WF$_{69}$ = 2006 KW$_{34}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.46978 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22544439 | $\omega$ | 284.46371 | | +0.96694690 | | +0.11343988 |
| $a$ | 2.6736820 | $\Omega$ | 69.42974 | | +0.00577177 | | +0.88561225 |
| $e$ | 0.1440232 | $i$ | 14.11706 | | −0.25491249 | | +0.45035801 |
| $P$ | 4.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.4− | 0.2+ | 2003 11 24 | 704 | 0.2+ | 0.6+ | 2003 12 01 | 291 | 0.1− | 0.1− | | |
| 2003 11 19 | 691 | 0.2+ | 0.4+ | 2003 11 24 | 704 | 0.2+ | 0.3+ | 2006 05 20 | 691 | 0.0 | 0.2+ | | |
| 2003 11 19 | 691 | 0.1+ | 0.7+ | 2003 11 30 | 691 | 0.1− | 0.1− | 2006 05 20 | 691 | 0.0 | 0.1− | | |
| 2003 11 21 | 704 | 0.3+ | 0.3− | 2003 11 30 | 691 | 0.5+ | 0.1− | 2006 05 20 | 691 | 0.0 | 0.3+ | | |
| 2003 11 21 | 704 | 0.7− | 0.5− | 2003 11 30 | 691 | 0.0 | 0.0 | 2006 05 24 | 691 | 0.2+ | 0.1− | | |
| 2003 11 21 | 704 | 0.2− | 1.8− | 2003 12 01 | 291 | 0.3− | 0.2+ | 2006 05 24 | 691 | 0.3− | 0.0 | | |
| 2003 11 24 | 704 | 0.5+ | 0.5+ | 2003 12 01 | 291 | 0.1− | 0.0 | 2006 05 24 | 691 | 0.1+ | 0.3− | | |

**2003 WX$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.46502 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31008695 | $\omega$ | 49.87326 | | +0.99749213 | | +0.05712036 |
| $a$ | 2.1617911 | $\Omega$ | 306.81183 | | −0.06950287 | | +0.90208120 |
| $e$ | 0.1572656 | $i$ | 2.99235 | | +0.01337197 | | +0.42776952 |
| $P$ | 3.18 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 735 | 1.0− | 0.2+ | 2003 12 18 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.5− | 0.0 | | |
| 2003 11 20 | 735 | 0.5+ | 0.3− | 2003 12 18 | 691 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.9− | 0.5+ | | |
| 2003 11 20 | 735 | 1.2− | 0.7− | 2003 12 18 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.1− | | |
| 2003 11 20 | 704 | 0.3− | 0.2− | 2003 12 22 | 704 | 0.2− | 0.5− | 2006 10 17 | 703 | 0.3− | 0.3− | | |
| 2003 11 20 | 704 | 0.2+ | 0.2− | 2003 12 22 | 704 | 0.7− | 0.3+ | 2006 10 19 | 704 | 0.1− | 0.6+ | | |
| 2003 11 20 | 704 | 0.2+ | 0.5− | 2003 12 22 | 704 | 0.3− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.2− | | |
| 2003 11 20 | 704 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2003 11 20 | 704 | 0.0 | 0.6− | 2003 12 22 | 704 | 0.8− | 0.6− | 2006 10 19 | 704 | 0.5+ | 0.1+ | | |
| 2003 11 21 | 704 | 0.1− | 0.0 | 2003 12 27 | 704 | 1.0+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2003 11 21 | 704 | 0.2− | 0.1+ | 2003 12 27 | 704 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 2003 11 21 | 704 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 0.4+ | 1.2+ | 2006 10 19 | 704 | 0.5− | 0.2+ | | |
| 2003 11 21 | 704 | 0.0 | 0.0 | 2003 12 27 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.3+ | | |
| 2003 11 21 | 704 | 0.3− | 0.1− | 2003 12 27 | 704 | 0.5− | 1.0+ | 2006 10 19 | 644 | 0.5− | 0.2+ | | |
| 2003 11 24 | 704 | 0.3+ | 0.4+ | 2005 04 06 | 691 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.2+ | | |
| 2003 11 24 | 704 | 0.3− | 1.2+ | 2005 04 06 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.7− | 0.2− | | |
| 2003 11 24 | 704 | 0.1− | 0.3− | 2005 04 06 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.4+ | | |
| 2003 11 24 | 704 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.5− | 1.3+ | 2006 10 21 | 703 | 0.1− | 0.3− | | |
| 2003 11 24 | 704 | 0.2− | 0.9+ | 2006 08 30 | 699 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.9+ | 0.0 | | |
| 2003 11 30 | 691 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.4− | 0.9+ | 2006 10 29 | 704 | 0.1+ | 0.2− | | |
| 2003 11 30 | 691 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.8+ | 0.2− | 2006 10 29 | 704 | 0.3− | 0.5+ | | |
| 2003 11 30 | 691 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.1− | 2006 10 29 | 704 | 0.1− | 0.2− | | |
| 2003 12 04 | 704 | 0.6+ | 0.1− | 2006 09 25 | 704 | 0.3− | 0.3+ | 2006 10 29 | 704 | 0.4− | 0.3+ | | |
| 2003 12 04 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 704 | 1.3+ | 0.2− | 2006 11 14 | 703 | 0.0 | 0.8− | | |
| 2003 12 04 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.0 | 0.8− | | |
| 2003 12 05 | 704 | 0.5− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.5− | | |
| 2003 12 05 | 704 | 0.8+ | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 1.1− | 0.7− | | |
| 2003 12 05 | 704 | 0.1+ | 0.7− | 2006 09 28 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.5+ | 1.0+ | | |
| 2003 12 18 | 704 | 0.1+ | 0.8− | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.2− | 1.3+ | | |
| 2003 12 18 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.4− | 0.3− | | |
| 2003 12 18 | 704 | 1.3− | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.8+ | | |
| 2003 12 18 | 704 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.2+ | | | | | | |

**2003 WG$_{75}$ = 2006 VA$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.14945 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30669233 | $\omega$ | 216.29168 | | −0.80892872 | | +0.58790661 |
| $a$ | 2.1777137 | $\Omega$ | 359.71607 | | −0.51951290 | | −0.71512789 |
| $e$ | 0.0596641 | $i$ | 4.44276 | | −0.27521026 | | −0.37809775 |
| $P$ | 3.21 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 18 | 691 | 0.1+ | 0.1− | 2005 05 04 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.0 | | |
| 2003 11 18 | 691 | 0.6− | 0.8− | 2005 05 04 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.0 | | |
| 2003 11 18 | 691 | 0.1+ | 0.3− | 2005 05 04 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.1− | | |
| 2003 11 20 | 704 | 0.5− | 0.8+ | 2005 05 16 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 1.3− | | |
| 2003 11 20 | 704 | 0.0 | 1.3+ | 2005 05 16 | 644 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.6+ | | |
| 2003 11 20 | 704 | 1.0− | 0.6+ | 2005 05 16 | 644 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.4− | 0.2− | | |
| 2003 11 21 | 644 | 0.7+ | 0.5+ | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.0 | | |
| 2003 11 21 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.6− | | |
| 2003 11 21 | 644 | 0.1− | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.4− | 0.5− | | |
| 2003 12 01 | 691 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.6− | | |
| 2003 12 01 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.5+ | 0.4− | | |
| 2003 12 01 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.0 | | | | | | |

**2003 WB$_{77}$ = 2006 HQ$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 269.97281 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.21901892 | | $\omega$ | 164.13962 | | | +0.99455858 | | | −0.06115593 | | | |
| $a$ | 2.7257224 | | $\Omega$ | 199.95135 | | | +0.04589658 | | | +0.98397967 | | | |
| $e$ | 0.2292061 | | $i$ | 14.31009 | | | +0.09352403 | | | +0.16746333 | | | |
| $P$ | 4.50 | | $H$ | 16.2 | | $G$ | 0.15 | | $U$ | 2 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 699 | 0.0 | 0.2+ | 1998 10 16 | 557 | 0.5− | 1.2− | 2006 04 30 | 691 | 0.2+ | 0.0 |
| 1998 09 18 | 699 | 0.4+ | 0.5− | 2003 11 19 | 644 | 0.0 | 0.2− | 2006 04 30 | 691 | 0.1+ | 0.3+ |
| 1998 09 18 | 699 | 0.1− | 0.2+ | 2003 11 19 | 644 | 0.2+ | 0.1− | 2006 04 30 | 691 | 0.1+ | 0.3+ |
| 1998 10 10 | 699 | 0.6− | 0.8+ | 2003 11 19 | 644 | 0.2+ | 0.0 | 2006 05 05 | 691 | 0.0 | 0.1+ |
| 1998 10 10 | 699 | 0.3+ | 0.6+ | 2003 11 21 | 644 | 0.1− | 0.1+ | 2006 05 05 | 691 | 0.2− | 0.3− |
| 1998 10 10 | 699 | 0.3+ | 0.6+ | 2003 11 21 | 644 | 0.0 | 0.1+ | 2006 05 05 | 691 | 0.2− | 0.4− |
| 1998 10 16 | 557 | 0.0 | 0.7− | 2003 11 21 | 644 | 0.2− | 0.2+ | | | | |

**2003 WH$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 282.69610 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.28902863 | | $\omega$ | 182.99229 | | | +0.23551023 | | | −0.96496245 | | | |
| $a$ | 2.2655595 | | $\Omega$ | 253.40758 | | | +0.89416273 | | | +0.26177732 | | | |
| $e$ | 0.0443909 | | $i$ | 6.93300 | | | +0.38079909 | | | −0.01789133 | | | |
| $P$ | 3.41 | | $H$ | 16.7 | | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 699 | 0.3+ | 0.6+ | 2003 11 24 | 704 | 0.1+ | 0.1+ | 2003 12 21 | 704 | 0.0 | 0.2+ |
| 2003 11 19 | 699 | 0.0 | 0.3− | 2003 11 24 | 704 | 0.7− | 0.1+ | 2003 12 21 | 704 | 0.0 | 0.4− |
| 2003 11 19 | 699 | 0.9− | 0.7− | 2003 11 24 | 704 | 0.3− | 0.1− | 2003 12 21 | 704 | 0.2+ | 0.5+ |
| 2003 11 19 | 699 | 0.5− | 0.6− | 2003 11 24 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | (1.5+ | 3.0−) |
| 2003 11 20 | 704 | 0.7+ | 0.1− | 2003 11 28 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 1.4+ | 0.8+ |
| 2003 11 20 | 704 | 0.1− | 0.0 | 2003 11 28 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.0 |
| 2003 11 20 | 704 | 0.2− | 0.3+ | 2003 11 28 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.4+ |
| 2003 11 20 | 704 | 0.2+ | 0.2+ | 2003 12 18 | 691 | 0.0 | 0.1− | 2006 09 20 | 699 | (1.2+ | 3.9−) |
| 2003 11 21 | 644 | 0.0 | 0.3+ | 2003 12 18 | 691 | 0.3− | 0.1− | 2006 09 20 | 699 | 0.3+ | 0.4− |
| 2003 11 21 | 644 | 0.1+ | 0.0 | 2003 12 18 | 691 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.1− | 0.3− |
| 2003 11 21 | 644 | 0.2+ | 0.1+ | 2003 12 21 | 704 | 0.6+ | 0.7+ | 2006 09 20 | 699 | 0.2+ | 0.5− |
| 2003 11 24 | 704 | 0.4− | 0.0 | 2003 12 21 | 704 | 0.8+ | 0.0 | | | | |

**2003 WW$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 163.24417 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.17557528 | | $\omega$ | 259.52470 | | | +0.36079336 | | | −0.93068765 | | | |
| $a$ | 3.1585940 | | $\Omega$ | 168.74629 | | | +0.92990656 | | | +0.35401820 | | | |
| $e$ | 0.2016837 | | $i$ | 18.03033 | | | +0.07142793 | | | +0.09214998 | | | |
| $P$ | 5.61 | | $H$ | 15.2 | | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 699 | 0.4+ | 0.7+ | 2003 10 27 | 699 | 0.1+ | 1.0+ | 2003 12 22 | 644 | 0.0 | 0.7+ |
| 2003 10 01 | 699 | 0.1+ | 0.1+ | 2003 10 27 | 699 | 0.3− | 0.8− | 2003 12 22 | 644 | 0.7+ | 0.3+ |
| 2003 10 01 | 699 | 0.2− | 1.1+ | 2003 11 20 | 644 | 0.2+ | 0.5+ | 2005 02 14 | 809 | 0.1+ | 0.1+ |
| 2003 10 01 | 699 | 1.1− | 0.5+ | 2003 11 20 | 644 | 0.2+ | 0.4+ | 2005 02 14 | 809 | 0.1+ | 0.0 |
| 2003 10 16 | 699 | 0.1+ | 0.2− | 2003 11 20 | 644 | 0.4+ | 0.4+ | 2005 02 14 | 809 | 0.1+ | 0.0 |
| 2003 10 16 | 699 | 1.0− | 0.6− | 2003 11 21 | 703 | 0.2+ | 0.3− | 2006 05 25 | 691 | 0.1+ | 0.1+ |
| 2003 10 16 | 699 | 0.4− | 0.5− | 2003 11 21 | 703 | 1.1+ | 0.7+ | 2006 05 25 | 691 | 0.0 | 0.5+ |
| 2003 10 16 | 699 | 0.5− | 0.6+ | 2003 11 21 | 703 | (2.1− | 0.6+) | 2006 05 25 | 691 | 0.1− | 0.2+ |
| 2003 10 27 | 699 | 0.5− | 0.8− | 2003 11 21 | 703 | 0.0 | 0.0 | | | | |
| 2003 10 27 | 699 | 0.3+ | 1.1− | 2003 12 22 | 644 | 0.0 | 0.3+ | | | | |

**2003 WF$_{84}$ = 2006 SD$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 327.15526 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.29590503 | | $\omega$ | 123.50395 | | | +0.90420157 | | | −0.41036926 | | | |
| $a$ | 2.2303233 | | $\Omega$ | 260.97132 | | | +0.34121758 | | | +0.86078563 | | | |
| $e$ | 0.1171359 | | $i$ | 6.88500 | | | +0.25688536 | | | +0.30107337 | | | |
| $P$ | 3.33 | | $H$ | 18.3 | | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 691 | 0.0 | 0.1− | 2003 11 21 | 704 | (0.4− | 1.5+) | 2006 09 13 | 621 | 0.3− | 0.4− |
| 2003 10 24 | 691 | 0.6− | 0.1− | 2003 11 21 | 291 | 0.0 | 0.0 | 2006 09 13 | 621 | 0.1− | 0.2− |
| 2003 10 24 | 691 | 0.2+ | 0.3− | 2003 11 21 | 291 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2003 11 21 | 691 | 0.2− | 0.0 | 2003 11 21 | 291 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3− |
| 2003 11 21 | 691 | 0.1− | 0.1+ | 2003 11 22 | 291 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2003 11 21 | 691 | 0.3− | 0.1+ | 2003 11 22 | 291 | 0.7+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2003 11 21 | 704 | 0.6+ | 1.2+ | 2003 11 22 | 291 | 0.4+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2003 11 21 | 704 | 0.1+ | 0.8+ | 2006 09 13 | 621 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ |

**2003 WO$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 354.77786 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.35827657 | | $\omega$ | 153.66811 | | | +0.14806869 | | | −0.98283176 | | | |
| $a$ | 1.9633171 | | $\Omega$ | 287.65289 | | | +0.88576766 | | | +0.18129880 | | | |
| $e$ | 0.1770332 | | $i$ | 6.63354 | | | +0.43987647 | | | −0.03424145 | | | |
| $P$ | 2.75 | | $H$ | 17.5 | | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 644 | 0.1− | 0.2+ | 2003 12 01 | 691 | 0.1+ | 0.0 | 2003 12 23 | 704 | 1.0− | 0.4− |
| 2003 11 19 | 704 | 0.0 | 0.1− | 2003 12 01 | 691 | 0.0 | 0.2− | 2003 12 23 | 704 | 0.2− | 0.8− |
| 2003 11 19 | 704 | 0.5+ | 0.0 | 2003 12 04 | 704 | 0.1+ | 0.8− | 2003 12 28 | 704 | 0.3− | 0.5+ |
| 2003 11 19 | 644 | 0.2− | 0.3+ | 2003 12 04 | 704 | 0.1+ | 0.1− | 2003 12 28 | 704 | 0.8− | 1.1+ |
| 2003 11 19 | 704 | 0.3− | 0.2+ | 2003 12 04 | 704 | 0.2− | 0.8− | 2003 12 28 | 704 | 1.1− | 0.0 |
| 2003 11 19 | 704 | 0.8+ | 0.3− | 2003 12 04 | 704 | 0.4− | 0.7+ | 2003 12 28 | 704 | 0.1+ | 0.6+ |
| 2003 11 19 | 704 | 0.9+ | 0.3+ | 2003 12 04 | 704 | 0.1− | 0.0 | 2003 12 29 | 691 | 0.3+ | 0.2+ |
| 2003 11 19 | 644 | 0.1− | 0.0 | 2003 12 17 | 691 | 0.0 | 0.1+ | 2003 12 29 | 691 | 0.3+ | 0.1− |
| 2003 11 23 | 704 | 0.1+ | 0.2+ | 2003 12 17 | 691 | 0.0 | 0.4+ | 2003 12 29 | 691 | 0.4+ | 0.1+ |
| 2003 11 23 | 704 | 1.0− | 0.7− | 2003 12 17 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 1.0− | 0.4− |
| 2003 11 23 | 704 | 0.5− | 0.5− | 2003 12 18 | 704 | 0.6− | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2003 11 23 | 704 | 0.3− | 0.5+ | 2003 12 18 | 704 | 0.5+ | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2003 11 23 | 704 | 0.9+ | 0.2− | 2003 12 18 | 704 | 0.5− | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2003 11 24 | 704 | 0.4− | 0.5+ | 2003 12 18 | 704 | 0.5− | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2003 11 24 | 704 | 0.0 | 0.2+ | 2003 12 18 | 704 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.6− | 0.0 |
| 2003 11 24 | 704 | 0.1− | 0.0 | 2003 12 23 | 704 | 0.3+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2003 11 24 | 704 | 0.3− | 0.1− | 2003 12 23 | 704 | 0.5+ | 0.4− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2003 12 01 | 691 | 0.1+ | 0.1− | 2003 12 23 | 704 | 1.1− | 0.9− | | | | |

**2003 WR$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 304.00449 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.21666449 | | $\omega$ | 227.21840 | | | +0.73210050 | | | +0.62750203 | | | |
| $a$ | 2.7454333 | | $\Omega$ | 92.10283 | | | −0.52147296 | | | +0.76664401 | | | |
| $e$ | 0.2114051 | | $i$ | 15.38262 | | | −0.43828623 | | | +0.13600799 | | | |
| $P$ | 4.55 | | $H$ | 15.2 | | $G$ | 0.15 | | $U$ | 2 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 0.0 | 0.0 | 2003 11 23 | 691 | 0.1− | 0.2− | 2004 01 18 | 644 | 0.1+ | 0.4+ |
| 2002 06 08 | 704 | 0.1− | 0.0 | 2003 11 24 | 699 | 0.4+ | 0.3− | 2006 04 18 | 703 | 0.4+ | 0.3− |
| 2002 06 08 | 704 | 0.4− | 0.1+ | 2003 11 24 | 699 | 0.8+ | 0.3+ | 2006 04 18 | 703 | 0.1− | 0.4− |
| 2002 06 08 | 704 | 0.6+ | 0.4+ | 2003 11 24 | 699 | 0.4+ | 0.3+ | 2006 04 18 | 703 | 1.0− | 0.1− |
| 2003 11 19 | 699 | (0.5− | 1.6+) | 2003 11 24 | 699 | 0.0 | 0.6+ | 2006 04 18 | 703 | 0.9− | 1.0+ |
| 2003 11 19 | 699 | 1.3− | 0.8+ | 2003 11 30 | 704 | 0.3+ | 0.0 | 2006 04 29 | 699 | 1.1+ | 0.1− |
| 2003 11 19 | 699 | 1.4− | 1.0+ | 2003 11 30 | 704 | 0.6− | 0.6+ | 2006 04 29 | 699 | 1.0+ | 0.1− |
| 2003 11 19 | 699 | 0.3+ | 0.4+ | 2003 11 30 | 704 | 0.0 | 0.2+ | 2006 04 29 | 699 | 0.2+ | 0.7− |
| 2003 11 19 | 703 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.7+ | 0.8+ | 2006 04 29 | 699 | (2.9+ | 0.9−) |
| 2003 11 19 | 703 | 0.5+ | 0.7− | 2003 12 22 | 704 | 0.0 | 0.0 | 2006 05 26 | 703 | 0.7− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 703 | 0.2+ | 0.6− | 2003 12 22 | 704 | 0.4− | 0.4− | 2006 05 26 | 703 | 0.1+ | 0.9− |
| 2003 11 19 | 703 | 0.9− | 0.1− | 2003 12 22 | 704 | 0.3− | 0.3+ | 2006 05 26 | 703 | 0.4+ | 1.2+ |
| 2003 11 23 | 691 | 0.2− | 0.2− | 2004 01 18 | 644 | 0.2+ | 0.4+ | 2006 05 26 | 703 | 0.4− | 1.1+ |
| 2003 11 23 | 691 | 0.4+ | 0.3− | 2004 01 18 | 644 | 0.1− | 0.4− | | | | |

**2003 WL$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.27585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30973015 | $\omega$ | 29.22936 | | +0.90794352 | −0.41908166 | |
| $a$ | 2.1634510 | $\Omega$ | 355.54403 | | +0.37656145 | +0.81894520 | |
| $e$ | 0.0878131 | $i$ | 2.22869 | | +0.18395663 | +0.39204506 | |
| $P$ | 3.18 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 691 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2003 10 19 | 691 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.3− |
| 2003 10 19 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.4+ | 0.3− |
| 2003 11 02 | 704 | 1.1+ | 0.3+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 2003 11 02 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 699 | (0.8− | 1.8−) | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2003 11 02 | 704 | 0.6− | 0.5− | 2006 09 19 | 699 | 0.6− | 0.2− | 2006 10 17 | G96 | (0.7+ | 1.8−) |
| 2003 11 16 | 691 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2003 11 16 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2003 11 16 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 11 19 | 699 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.8+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.4− |
| 2003 11 19 | 699 | 0.1+ | 0.5− | 2006 09 27 | 704 | 0.3+ | 0.9+ | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2003 11 19 | 699 | 0.6− | 0.7− | 2006 09 29 | 704 | 1.1− | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.6− |
| 2003 11 19 | 699 | 0.4+ | 0.4− | 2006 09 29 | 704 | (1.8− | 0.6+) | 2006 10 22 | G96 | 0.5− | 0.5− |
| 2003 11 20 | 704 | 0.4− | 0.1+ | 2006 09 29 | 704 | (0.9− | 1.6−) | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2003 11 20 | 704 | 0.9− | 1.0+ | 2006 09 29 | 704 | 0.6− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.6− |
| 2003 11 20 | 704 | (0.3+ | 1.8+) | 2006 10 01 | 704 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2003 11 20 | 704 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.4− | 1.2+ | 2006 10 31 | G96 | 0.1+ | 0.7− |
| 2006 07 21 | G96 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.9+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 01 | 704 | (1.6+ | 0.2+) | | | | |
| 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 01 | 704 | 1.0+ | 1.1+ | | | | |

**2003 WT$_{95}$ = 2006 RF$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.36513 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30538460 | $\omega$ | 231.38296 | | +0.94865415 | −0.31625084 | |
| $a$ | 2.1839262 | $\Omega$ | 147.05198 | | +0.29373759 | +0.87327921 | |
| $e$ | 0.1699903 | $i$ | 0.67215 | | +0.11736070 | +0.37063299 | |
| $P$ | 3.23 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.2+ | 0.2− | 2005 04 02 | G96 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 0.3+ | 0.7+ |
| 1995 03 02 | 691 | 0.1+ | 0.6+ | 2005 04 02 | G96 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.9− | 0.7+ |
| 1995 03 02 | 691 | 0.1+ | 0.4+ | 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.1− |
| 2003 11 18 | 691 | 0.0 | 0.2− | 2005 04 02 | G96 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.8− | 0.8+ |
| 2003 11 18 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | (1.8− | 0.2−) | 2006 09 19 | 699 | 0.2− | 0.4− |
| 2003 11 18 | 691 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.2− | 0.8− | 2006 09 19 | 703 | 0.6− | 0.5+ |
| 2003 11 19 | 699 | 0.7+ | 0.3− | 2006 09 12 | 703 | 0.2− | 0.5− | 2006 09 19 | 699 | 1.0+ | 0.5+ |
| 2003 11 19 | 699 | (0.5− | 1.8−) | 2006 09 12 | 703 | 0.9− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2003 11 19 | 699 | (1.2− | 1.8+) | 2006 09 17 | 704 | 0.2+ | 1.3+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2003 11 19 | 699 | 1.0− | 1.1+ | 2006 09 17 | 704 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2003 11 20 | 695 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 2003 11 20 | 695 | 0.3+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.9+ | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2003 11 21 | 704 | 0.3− | 0.0 | 2006 09 18 | 704 | 0.0 | 0.7+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2003 11 21 | 704 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.5+ | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2003 11 21 | 704 | 0.4+ | 1.0+ | 2006 09 18 | 704 | 0.6− | 1.4+ | 2006 10 16 | G96 | 0.7− | 0.5− |
| 2003 11 21 | 704 | 0.3− | 0.3− | 2006 09 19 | 699 | (1.9− | 1.5+) | | | | |

**2003 WY$_{95}$ = 2006 UV$_{297}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.74281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29853316 | $\omega$ | 275.61211 | | +0.75681340 | −0.65343926 | |
| $a$ | 2.2172143 | $\Omega$ | 125.19044 | | +0.60710216 | +0.69375891 | |
| $e$ | 0.1373144 | $i$ | 1.10994 | | +0.24219918 | +0.30284601 | |
| $P$ | 3.30 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 699 | 0.0 | 1.0+ | 2003 11 24 | 699 | 0.1+ | 0.3− | 2003 11 28 | 691 | 0.0 | 0.2− |
| 2003 11 19 | 699 | 0.8− | 0.4− | 2003 11 24 | 703 | 0.7+ | 0.3− | 2003 11 28 | 691 | 0.1− | 0.3− |
| 2003 11 19 | 699 | 1.2− | 0.6− | 2003 11 24 | 699 | 0.2+ | 0.4+ | 2006 08 18 | 691 | 0.2+ | 0.0 |
| 2003 11 19 | 699 | 0.5+ | 0.5+ | 2003 11 24 | 703 | 0.7− | 0.1− | 2006 08 18 | 691 | 0.2− | 0.2+ |
| 2003 11 21 | 704 | 0.5+ | 1.3+ | 2003 11 24 | 699 | 0.2+ | 0.6− | 2006 08 18 | 691 | 0.0 | 0.2− |
| 2003 11 21 | 704 | 0.5− | 1.2+ | 2003 11 24 | 703 | 0.1− | 0.2− | 2006 10 19 | 695 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 0.3+ | 0.6+ | 2003 11 24 | 703 | 0.9+ | 0.5− | 2006 10 19 | 695 | 0.0 | 0.1− |
| 2003 11 21 | 704 | 0.4− | 0.9+ | 2003 11 24 | 699 | 0.5− | 0.9− | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2003 11 21 | 704 | 0.0 | 0.7+ | 2003 11 28 | 691 | 0.3+ | 0.2− | | | | |

**2003 WA$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.95360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30559454 | $\omega$ | 325.93478 | | +0.81884375 | −0.56229235 | |
| $a$ | 2.1829259 | $\Omega$ | 68.69268 | | +0.55039097 | +0.71201114 | |
| $e$ | 0.1310792 | $i$ | 7.11669 | | +0.16298675 | +0.42055612 | |
| $P$ | 3.23 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 02 | 704 | 0.4+ | 0.6− | 2003 12 19 | 049 | (1.5+ | 1.5−) | 2006 09 26 | 703 | 0.3+ | 0.0 |
| 2003 11 02 | 704 | 0.8+ | 0.1− | 2003 12 19 | 049 | (2.0+ | 1.2−) | 2006 09 29 | 699 | 0.1− | 0.0 |
| 2003 11 02 | 704 | 0.2− | 0.5− | 2003 12 22 | 704 | 0.4− | 1.2− | 2006 09 29 | 699 | 0.9− | 0.3+ |
| 2003 11 02 | 704 | 0.1+ | 0.4+ | 2003 12 22 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.7− | 0.2+ |
| 2003 11 15 | 291 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.3− | 0.7+ | 2006 09 29 | 699 | 0.2+ | 0.7+ |
| 2003 11 15 | 291 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 704 | 0.9+ | 0.3+ |
| 2003 11 15 | 291 | 0.1+ | 0.1+ | 2003 12 27 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.7− | 0.4+ |
| 2003 11 21 | 704 | 0.1− | 0.1+ | 2003 12 27 | 691 | 0.5+ | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 2003 11 21 | 704 | 0.5+ | 0.2+ | 2003 12 27 | 691 | 0.2+ | 0.4− | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 2003 11 21 | 704 | 0.3+ | 0.1− | 2003 12 27 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.1− | 0.2+ |
| 2003 11 21 | 704 | 0.7+ | 1.4+ | 2003 12 27 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2003 11 21 | 704 | 0.2− | 0.4+ | 2003 12 27 | 704 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2003 11 23 | 704 | 1.0+ | 0.5− | 2003 12 27 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.8+ |
| 2003 11 23 | 704 | 0.2− | 0.1+ | 2004 01 11 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 2003 11 23 | 704 | 1.1− | 0.5− | 2004 01 11 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 11 23 | 704 | (2.0+ | 1.1+) | 2004 01 11 | 644 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 11 24 | 691 | 0.0 | 0.1− | 2004 01 16 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 11 24 | 691 | 0.0 | 0.0 | 2004 01 16 | 644 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.9− |
| 2003 11 24 | 691 | 0.1+ | 0.0 | 2004 01 16 | 644 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.5− |
| 2003 11 26 | 704 | (1.8− | 0.3+) | 2006 09 18 | 703 | (0.8− | 2.0−) | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2003 11 26 | 704 | 1.3− | 0.7− | 2006 09 18 | 703 | 0.7− | 0.7− | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2003 11 26 | 704 | (1.7− | 0.4−) | 2006 09 18 | 703 | 0.6− | 0.6− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2003 12 14 | 291 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.8− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2003 12 14 | 291 | 0.2− | 0.2− | 2006 09 21 | 699 | 1.4+ | 0.9− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2003 12 14 | 691 | 0.0 | 0.1− | 2006 09 21 | 699 | 0.8− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2003 12 14 | 291 | 0.3− | 0.2− | 2006 09 21 | 699 | 1.1+ | 1.0+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2003 12 14 | 691 | 0.1− | 0.1− | 2006 09 21 | 699 | 1.0− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2003 12 14 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.3+ | 2006 10 28 | 703 | 0.1+ | 1.3− |
| 2003 12 18 | 704 | 0.6− | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 10 28 | 703 | (1.8+ | 0.2+) |
| 2003 12 18 | 704 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.6+ | 0.1+ |
| 2003 12 18 | 704 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.9+ | 0.3− | 2006 10 28 | 703 | 0.6+ | 0.0 |
| 2003 12 18 | 704 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.6− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.3− |
| 2003 12 18 | 704 | 0.5− | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.4+ | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2003 12 19 | 049 | (1.8+ | 1.7−) | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.1+ |

**2003 WO$_{108}$ = 2006 PG$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.87099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27067219 | $\omega$ | 304.04614 | | +0.77745022 | +0.62791584 | |
| $a$ | 2.3668658 | $\Omega$ | 17.14798 | | −0.52935475 | +0.68414751 | |
| $e$ | 0.1315976 | $i$ | 7.00475 | | −0.33963909 | +0.37103083 | |
| $P$ | 3.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 691 | 0.2+ | 0.2+ | 2003 12 01 | 691 | 0.1+ | 0.1− | 2003 12 29 | 691 | 0.1+ | 0.1+ |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2003 12 01 | 691 | 0.1− | 0.2− | 2006 08 14 | 644 | 0.3− | 0.0 |
| 2003 11 20 | 691 | 0.2+ | 0.2− | 2003 12 01 | 691 | 0.2+ | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2003 11 24 | 704 | 0.2− | 0.8+ | 2003 12 01 | 691 | 0.3− | 0.0 | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2003 11 24 | 704 | 0.4− | 0.5+ | 2003 12 01 | 691 | 0.3+ | 0.0 | 2006 08 19 | 644 | 0.1− | 0.1− |
| 2003 11 24 | 704 | 0.8− | 0.6− | 2003 12 29 | 691 | 0.2− | 0.0 | 2006 08 19 | 644 | 0.0 | 0.0 |
| 2003 12 01 | 691 | 0.2− | 0.1− | 2003 12 29 | 691 | 0.0 | 0.0 | 2006 08 19 | 644 | 0.4+ | 0.1+ |

**2003 WC$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.44605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29468614 | $\omega$ | 124.22534 | | +0.72329172 | −0.68008946 | |
| $a$ | 2.2364691 | $\Omega$ | 278.94608 | | +0.58700418 | +0.69682970 | |
| $e$ | 0.1064222 | $i$ | 6.95970 | | +0.36369656 | +0.22783040 | |
| $P$ | 3.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.2+ | 0.0 | 2003 12 18 | 704 | 0.7+ | 0.2+ | 2006 09 15 | 683 | (0.2− | 1.9+) |
| 2001 01 21 | 704 | 0.4+ | 0.1+ | 2003 12 20 | 704 | 0.9− | 0.9− | 2006 09 16 | 703 | 1.1− | 0.3− |
| 2001 01 21 | 704 | 0.8− | 0.8+ | 2003 12 20 | 704 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.9− | 1.0− |
| 2001 01 21 | 704 | 0.2− | 0.6+ | 2003 12 20 | 704 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.2+ |
| 2001 01 21 | 704 | 1.4+ | 0.4+ | 2003 12 20 | 704 | 1.4− | 1.3− | 2006 09 16 | 703 | 1.1− | 0.8− |
| 2003 11 03 | 704 | 0.2− | 0.7− | 2003 12 20 | 704 | (1.9− | 0.3+) | 2006 09 16 | 644 | 0.3+ | 0.2+ |
| 2003 11 03 | 704 | 0.2+ | 0.8− | 2003 12 22 | 704 | (2.0− | 0.0 ) | 2006 09 16 | 644 | 0.4+ | 0.3+ |
| 2003 11 03 | 704 | (0.6+ | 1.8−) | 2003 12 22 | 704 | 0.5− | 0.2+ | 2006 09 16 | 644 | 0.2+ | 0.1− |
| 2003 11 20 | 704 | 0.9− | 0.3− | 2003 12 22 | 704 | 0.5+ | 0.3+ | 2006 09 20 | G92 | 0.5− | 0.4+ |
| 2003 11 20 | 704 | 0.5− | 0.5− | 2003 12 25 | 691 | 0.1+ | 0.2− | 2006 09 20 | G92 | 0.4+ | 0.7+ |
| 2003 11 20 | 704 | 0.5− | 0.9+ | 2003 12 25 | 691 | 0.1+ | 0.2− | 2006 09 20 | G92 | 0.2+ | 0.1− |
| 2003 11 20 | 704 | 0.3− | 0.1+ | 2003 12 25 | 691 | 0.4+ | 0.2− | 2006 09 21 | 699 | 0.8− | 0.1− |
| 2003 11 20 | 704 | 0.6− | 0.2− | 2003 12 27 | 704 | 0.3+ | 0.3+ | 2006 09 21 | 699 | 0.8+ | 0.7+ |
| 2003 11 24 | 704 | 0.0 | 0.3+ | 2003 12 27 | 704 | 0.7+ | 0.6+ | 2006 09 21 | 699 | 1.0+ | 0.7− |
| 2003 11 24 | 704 | 0.4+ | 0.1− | 2003 12 27 | 704 | 0.4+ | 0.6+ | 2006 09 21 | 699 | (2.1+ | 0.4−) |
| 2003 11 24 | 704 | 1.0+ | 0.3+ | 2003 12 27 | 704 | 0.3− | 0.3+ | 2006 09 27 | 703 | 0.6− | 0.3− |
| 2003 12 15 | 703 | 0.8+ | 1.0− | 2004 01 12 | 644 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.8− | 0.2+ |
| 2003 12 15 | 703 | 0.8− | 0.8+ | 2004 01 12 | 644 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.1− | 0.1− |
| 2003 12 15 | 703 | (2.5− | 1.5−) | 2004 01 12 | 644 | 0.4− | 0.3− | 2006 09 27 | 703 | 0.2− | 0.4− |
| 2003 12 15 | 703 | (3.9+ | 2.3+) | 2006 08 29 | 683 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.5+ | 0.1− |
| 2003 12 17 | 644 | 0.2− | 0.1− | 2006 08 29 | 683 | 0.7+ | 0.6+ | 2006 09 29 | 699 | (0.2− | 2.2−) |
| 2003 12 17 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 683 | (1.2− | 1.7+) | 2006 09 29 | 699 | 0.2+ | 0.2− |
| 2003 12 17 | 644 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 29 | 699 | 1.4+ | 0.6+ |
| 2003 12 18 | 704 | 1.4− | 0.5+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 23 | 703 | 0.1+ | 0.5+ |
| 2003 12 18 | 704 | 0.3+ | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 23 | 703 | 1.3+ | 0.5+ |
| 2003 12 18 | 704 | 0.5+ | 0.3+ | 2006 09 15 | 683 | 0.4− | 0.8− | 2006 10 23 | 703 | 0.3− | 0.8+ |
| 2003 12 18 | 704 | 1.3+ | 0.1+ | 2006 09 15 | 683 | (2.8+ | 2.6+) | 2006 10 23 | 703 | 1.3− | 1.2+ |

**2003 WO$_{116}$ = 2002 OU$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.22685 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12336146 | $\omega$ | 84.59644 | | +0.88171244 | −0.47058580 | |
| $a$ | 3.9965297 | $\Omega$ | 303.47174 | | +0.41531139 | +0.80802570 | |
| $e$ | 0.2902007 | $i$ | 2.31179 | | +0.22382943 | +0.35446223 | |
| $P$ | 7.99 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 23 | 644 | 0.2− | 0.4− | 2002 08 17 | 644 | 0.0 | 0.1− | 2003 11 24 | 704 | 0.2− | 0.9+ |
| 2002 07 23 | 644 | 0.3− | 0.6− | 2002 09 14 | 644 | 0.4− | 0.5+ | 2003 11 24 | 704 | 0.3+ | 0.4− |
| 2002 07 23 | 644 | 0.0 | 0.6− | 2002 09 14 | 644 | 0.3− | 0.2− | 2003 11 30 | 691 | 0.1+ | 0.1− |
| 2002 08 07 | 644 | 0.8+ | 0.2− | 2002 09 14 | 644 | 0.3− | 0.0 | 2003 11 30 | 691 | 0.1+ | 0.2− |
| 2002 08 07 | 644 | 0.8+ | 0.4+ | 2003 11 20 | 704 | 0.3− | 0.6+ | 2003 11 30 | 691 | 0.2− | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 0.1+ | 2003 11 20 | 704 | 1.1− | 0.2− | 2003 11 30 | 691 | 0.4+ | 0.0 |
| 2002 08 08 | 644 | 0.3− | 0.6+ | 2003 11 20 | 704 | 0.0 | 0.3− | 2003 11 30 | 691 | 0.0 | 0.2− |
| 2002 08 08 | 644 | 0.0 | 0.0 | 2003 11 24 | 704 | 0.5− | 0.7+ | 2003 11 30 | 691 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.1+ | 0.3+ | 2003 11 24 | 704 | 0.2+ | 0.4+ | | | | |

**2003 WH$_{117}$ = 2006 SS$_{368}$ = 2006 TW$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.07694 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29041269 | $\omega$ | 101.31350 | | −0.46722535 | −0.88361946 | |
| $a$ | 2.2583556 | $\Omega$ | 16.64292 | | +0.76434081 | −0.42089734 | |
| $e$ | 0.0993337 | $i$ | 6.06971 | | +0.44439127 | −0.20509044 | |
| $P$ | 3.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 0.1− | 0.6− | 2003 12 17 | 704 | 0.6+ | 0.7− | 2006 10 16 | G96 | 0.1− | 0.6− |
| 2003 11 20 | 704 | 0.5− | 0.4− | 2006 09 19 | 703 | 0.9− | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2003 11 20 | 704 | 0.7− | 0.0 | 2006 09 19 | 703 | 0.9+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.5+ |
| 2003 11 20 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.9− | 0.5− |
| 2003 11 20 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2003 11 24 | 704 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.6− | 0.1− |
| 2003 11 24 | 704 | 0.0 | 0.8− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2003 11 24 | 704 | 0.8− | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.8+ |
| 2003 12 03 | 704 | 0.3− | 1.6+ | 2006 10 16 | 703 | 0.0 | 0.8+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2003 12 03 | 704 | (0.3− | 2.9+) | 2006 10 16 | 703 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 12 03 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 1.3+ | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2003 12 03 | 704 | 0.4+ | 0.7− | 2006 10 16 | 703 | 0.6+ | 1.3+ | 2006 11 15 | G96 | 0.6+ | 0.5− |
| 2003 12 17 | 704 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2003 12 17 | 704 | 0.7+ | 0.2− | 2006 10 16 | G96 | 0.8− | 0.1+ | | | | |
| 2003 12 17 | 704 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.4− | | | | |

**2003 WS$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.03968 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28356449 | $\omega$ | 151.56349 | | +0.38914948 | −0.91566696 | |
| $a$ | 2.2945709 | $\Omega$ | 275.38397 | | +0.82487169 | +0.39498818 | |
| $e$ | 0.1290280 | $i$ | 5.79834 | | +0.41006021 | +0.07442016 | |
| $P$ | 3.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 704 | 0.1− | 1.3+ | 2003 12 17 | 691 | 0.0 | 0.1− | 2004 01 16 | 644 | 0.2+ | 0.1− |
| 2001 03 03 | 704 | 0.4+ | 0.7+ | 2003 12 17 | 691 | 0.1− | 0.1− | 2004 01 16 | 644 | 0.0 | 0.1+ |
| 2001 03 03 | 704 | 0.9+ | 0.5+ | 2003 12 17 | 691 | 0.1− | 0.1− | 2004 01 17 | 644 | 0.2− | 0.0 |
| 2003 11 20 | 704 | 0.2+ | 0.9+ | 2003 12 18 | 704 | 0.1− | 0.3+ | 2004 01 17 | 644 | 0.0 | 0.1+ |
| 2003 11 20 | 704 | (0.8− | 1.6+) | 2003 12 18 | 704 | 0.5− | 0.2+ | 2004 01 17 | 644 | 0.0 | 0.1+ |
| 2003 11 20 | 704 | 0.0 | 1.3+ | 2003 12 18 | 704 | 0.1+ | 0.1+ | 2004 02 22 | 704 | 0.5− | 0.1− |
| 2003 11 20 | 704 | 0.1− | 1.4+ | 2003 12 22 | 704 | 0.6+ | 0.5+ | 2004 02 22 | 704 | 0.1+ | 0.6− |
| 2003 11 20 | 704 | 0.8− | 1.1+ | 2003 12 22 | 704 | (0.5+ | 1.6+) | 2004 02 22 | 704 | 0.2− | 0.3− |
| 2003 11 24 | 704 | 0.4+ | 0.1+ | 2003 12 22 | 704 | 0.6+ | 0.0 | 2006 08 27 | 699 | 0.2− | 0.2+ |
| 2003 11 24 | 704 | 0.2+ | 0.7− | 2003 12 22 | 704 | 1.0+ | 0.7+ | 2006 08 27 | 699 | 0.4− | 0.6+ |
| 2003 11 24 | 704 | 0.5+ | 0.1+ | 2003 12 22 | 704 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.4− |
| 2003 11 24 | 704 | 0.7+ | 0.1− | 2003 12 24 | 704 | 0.1− | 0.7+ | 2006 08 27 | 699 | 0.6+ | 1.2+ |
| 2003 11 24 | 704 | 0.5+ | 0.0 | 2003 12 24 | 704 | 0.1− | 0.5− | 2006 08 29 | 703 | 0.8− | 0.3− |
| 2003 11 26 | 704 | 0.3− | 0.4+ | 2003 12 24 | 704 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.2+ | 1.2− |
| 2003 11 26 | 704 | 0.7+ | 0.2− | 2003 12 27 | 704 | 0.2+ | 0.2− | 2006 08 29 | 703 | 0.0 | 0.3+ |
| 2003 11 26 | 704 | 0.1+ | 0.4− | 2003 12 27 | 704 | 0.3+ | 1.2− | 2006 08 29 | 703 | 0.1− | 0.5+ |
| 2003 11 26 | 704 | 0.1+ | 0.2+ | 2003 12 27 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.1+ |
| 2003 11 26 | 704 | 1.5+ | 1.3+ | 2003 12 27 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 1.3+ | 1.1− |
| 2003 12 04 | 704 | 0.1− | 0.9− | 2003 12 27 | 704 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.2+ | 0.0 |
| 2003 12 04 | 704 | 0.2+ | 1.1− | 2003 12 29 | 691 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.4− | 0.8+ |
| 2003 12 04 | 704 | 0.4− | 0.3− | 2003 12 29 | 691 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.3− | 0.3− |
| 2003 12 04 | 704 | 0.9− | 0.3+ | 2003 12 29 | 691 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.5− | 0.6+ |
| 2003 12 04 | 704 | 0.4+ | 0.4− | 2004 01 16 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.3− | 0.4+ |

**2003 WG$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.20412 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27694607 | $\omega$ | 227.49870 | | −0.52477919 | | −0.85037541 |
| $a$ | 2.3309837 | $\Omega$ | 254.19257 | | +0.79221100 | | −0.47142278 |
| $e$ | 0.1146053 | $i$ | 2.28251 | | +0.31146192 | | −0.23371400 |
| $P$ | 3.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 02 | 691 | 0.0 | 0.0 | 2003 11 16 | 291 | 0.0 | 0.0 | 2003 11 24 | 704 | 0.7− | 0.6+ |
| 1992 10 02 | 691 | 0.0 | 0.3− | 2003 11 16 | 291 | 0.2+ | 0.1− | 2003 11 24 | 704 | 1.2− | 0.8+ |
| 1992 10 02 | 691 | 0.1+ | 0.1− | 2003 11 16 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 1996 12 10 | 327 | 1.0− | 0.2− | 2003 11 16 | 691 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.0 | 0.0 |
| 1996 12 10 | 327 | 0.8+ | 0.1+ | 2003 11 16 | 691 | 0.2− | 0.1− | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 1996 12 10 | 327 | 0.2+ | 0.0 | 2003 11 21 | 704 | 0.4+ | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.1+ |
| 2003 10 23 | 691 | 0.2+ | 0.2− | 2003 11 21 | 704 | 0.8− | 0.5+ | 2006 09 28 | G96 | 0.6+ | 0.4+ |
| 2003 10 23 | 691 | 0.1+ | 0.1− | 2003 11 21 | 704 | 0.6+ | 1.0− | 2006 09 28 | G96 | 0.1+ | 0.2+ |
| 2003 10 23 | 691 | 0.0 | 0.1− | 2003 11 21 | 704 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.3− |
| 2003 10 24 | 704 | (3.0− | 0.3−) | 2003 11 21 | 704 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 2003 10 24 | 704 | (1.9− | 0.0 ) | 2003 11 24 | 704 | 0.8− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2003 10 24 | 704 | (0.6− | 2.3+) | 2003 11 24 | 704 | 1.4− | 0.9+ | 2006 09 30 | G96 | 0.5− | 0.4+ |
| 2003 11 16 | 291 | 0.2+ | 0.3− | 2003 11 24 | 704 | 0.1+ | 1.0+ | 2006 09 30 | G96 | 0.6+ | 0.3+ |

**2003 WR$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.91305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28374649 | $\omega$ | 47.82628 | | −0.61074018 | | −0.69100315 |
| $a$ | 2.2935896 | $\Omega$ | 84.14150 | | +0.56212265 | | −0.72228126 |
| $e$ | 0.1759370 | $i$ | 22.87343 | | +0.55768680 | | −0.02871277 |
| $P$ | 3.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 23 | 608 | 0.1+ | 0.4+ | 2003 12 04 | 704 | 0.5− | 0.3+ | 2003 12 30 | 704 | 0.2− | 0.0 |
| 2001 03 23 | 608 | 0.1+ | 0.5+ | 2003 12 04 | 704 | 0.1+ | 0.7+ | 2003 12 30 | 704 | 0.5− | 0.5− |
| 2001 03 23 | 608 | 0.7+ | 0.4+ | 2003 12 04 | 704 | 0.2− | 0.3+ | 2003 12 30 | 704 | 0.4+ | 0.2− |
| 2003 10 25 | 704 | 0.5− | 0.0 | 2003 12 04 | 704 | 0.4+ | 1.1+ | 2003 12 30 | 704 | (3.8+ | 4.7+) |
| 2003 10 25 | 704 | 0.1+ | 0.2+ | 2003 12 14 | 691 | 0.0 | 0.1− | 2003 12 30 | 704 | 0.1− | 0.2+ |
| 2003 10 25 | 704 | 0.5− | 0.7+ | 2003 12 14 | 691 | 0.2+ | 0.0 | 2004 02 10 | 704 | (1.7+ | 0.4+) |
| 2003 10 25 | 704 | 0.1+ | 0.0 | 2003 12 14 | 691 | 0.1− | 0.1− | 2004 02 10 | 704 | 0.3− | 0.6+ |
| 2003 11 21 | 704 | 0.5+ | 0.9− | 2003 12 17 | 699 | 0.5− | 0.1− | 2004 02 10 | 704 | 0.8− | 0.7+ |
| 2003 11 21 | 704 | (1.8+ | 0.4+) | 2003 12 17 | 699 | 0.4− | 0.4− | 2004 02 10 | 704 | 0.0 | 0.7− |
| 2003 11 21 | 704 | 0.2− | 0.4+ | 2003 12 17 | 704 | 0.2+ | 0.2− | 2004 02 10 | 704 | (1.5− | 1.6−) |
| 2003 11 21 | 704 | 0.5− | 0.5+ | 2003 12 17 | 699 | 0.1− | 0.7− | 2006 09 22 | 703 | 1.3− | 1.1+ |
| 2003 11 21 | 704 | 0.0 | 0.6+ | 2003 12 17 | 704 | 0.0 | 0.2− | 2006 09 22 | 703 | 0.2− | 0.3− |
| 2003 11 24 | 704 | 0.1− | 0.4+ | 2003 12 17 | 699 | 0.7− | 0.6+ | 2006 09 22 | 703 | 0.5+ | 0.9+ |
| 2003 11 24 | 704 | 0.1+ | 0.1+ | 2003 12 17 | 704 | 0.3+ | 0.7− | 2006 09 22 | 703 | 1.1+ | 0.2+ |
| 2003 11 24 | 704 | 0.3+ | 0.3− | 2003 12 17 | 704 | 0.2− | 0.1− | 2006 11 18 | 703 | (0.0 | 2.5−) |
| 2003 11 24 | 704 | 0.1− | 0.2+ | 2003 12 28 | 704 | 0.3+ | 0.7− | 2006 11 18 | 703 | 0.8− | 0.7− |
| 2003 11 24 | 704 | 0.9+ | 0.5+ | 2003 12 28 | 704 | 0.4+ | 0.9− | 2006 11 18 | 703 | 0.5− | 1.0− |
| 2003 11 29 | 704 | 0.3− | 0.1+ | 2003 12 28 | 704 | 0.9+ | 1.2+ | 2006 11 18 | 703 | (1.8− | 1.5−) |
| 2003 11 29 | 704 | 0.2− | 0.6− | 2003 12 28 | 704 | 0.1+ | 0.7− | 2006 11 25 | 703 | 0.8+ | 0.8+ |
| 2003 11 29 | 704 | 0.1+ | 0.2− | 2003 12 28 | 704 | 1.2+ | 1.4+ | 2006 11 25 | 703 | 0.9− | 0.1− |
| 2003 11 29 | 704 | 0.2− | 0.6− | 2003 12 28 | 704 | (2.5− | 3.7−) | 2006 11 25 | 703 | 0.6+ | 0.6− |
| 2003 12 04 | 704 | 0.0 | 0.3− | 2003 12 28 | 704 | (1.7+ | 1.2+) | 2006 11 25 | 703 | 0.6− | 0.5+ |

**2003 WG$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.78750 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28880169 | $\omega$ | 186.15369 | | +0.02701759 | | −0.99275967 |
| $a$ | 2.2667462 | $\Omega$ | 262.34074 | | +0.92210910 | | +0.06995950 |
| $e$ | 0.0931349 | $i$ | 6.78208 | | +0.38598556 | | −0.09764177 |
| $P$ | 3.41 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 645 | 0.0 | 0.0 | 2003 12 29 | 691 | 0.2+ | 0.0 | 2006 10 03 | 703 | 0.7− | 0.5− |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2003 12 29 | 691 | 0.3+ | 0.1− | 2006 10 03 | 703 | 0.1+ | 0.0 |
| 2003 11 21 | 704 | 0.5− | 0.6+ | 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 0.3− | 1.3− |
| 2003 11 21 | 704 | 0.7− | 0.1+ | 2004 01 17 | 644 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2003 11 21 | 704 | 0.9− | 0.0 | 2004 01 17 | 644 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2003 11 23 | 704 | 1.1+ | 0.1− | 2004 01 17 | 644 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2003 11 23 | 704 | 0.0 | 1.5+ | 2004 01 17 | 644 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.4+ | 0.1+ |
| 2003 11 23 | 704 | 0.8+ | 0.8− | 2004 01 17 | 644 | 0.1− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2003 11 23 | 704 | 0.2+ | 0.6− | 2004 01 17 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2003 11 23 | 704 | 0.0 | 0.4− | 2006 09 19 | 699 | 0.6− | 0.9+ | 2006 10 09 | 644 | 0.0 | 0.4+ |
| 2003 12 19 | 704 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2003 12 19 | 704 | 0.3+ | 0.2− | 2006 09 19 | 699 | 1.4+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2003 12 19 | 704 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2003 12 19 | 704 | 0.3− | 0.5− | 2006 09 27 | 699 | 0.6+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 12 19 | 704 | 0.4+ | 0.0 | 2006 09 27 | 699 | (2.0+ | 0.7+) | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2003 12 21 | 704 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.2− | 0.1+ | 2006 10 17 | 703 | 1.1− | 0.7− |
| 2003 12 21 | 704 | 0.1+ | 0.1− | 2006 09 27 | 699 | (0.9− | 2.1+) | 2006 10 17 | 703 | 0.7− | 0.1+ |
| 2003 12 21 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.6+ | 0.6− | 2006 10 17 | 703 | 0.2− | 0.9− |
| 2003 12 24 | 704 | (0.8− | 1.7+) | 2006 09 27 | 703 | 0.5+ | 0.7+ | 2006 10 17 | 703 | (2.4− | 0.1−) |
| 2003 12 24 | 704 | 0.1− | 0.4+ | 2006 09 27 | 703 | 1.2+ | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2003 12 24 | 704 | 0.6− | 0.4+ | 2006 09 27 | 703 | 0.1+ | 0.4− | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2003 12 24 | 704 | 0.1− | 0.1+ | 2006 10 03 | 703 | 0.9− | 0.5− | 2006 10 24 | 644 | 0.3+ | 0.1+ |

**2003 WM$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.52594 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29250252 | $\omega$ | 7.20439 | | +0.24749743 | | −0.96259483 |
| $a$ | 2.2475859 | $\Omega$ | 68.51475 | | +0.88292251 | | +0.17721160 |
| $e$ | 0.1662153 | $i$ | 6.80490 | | +0.39898981 | | +0.20495670 |
| $P$ | 3.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 704 | 0.6+ | 0.5+ | 2003 12 18 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.7− |
| 2003 11 21 | 704 | 0.1+ | 0.6+ | 2003 12 18 | 704 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.6− | 0.1+ |
| 2003 11 21 | 704 | 0.5− | 0.1+ | 2003 12 22 | 704 | 0.6− | 0.3− | 2006 10 02 | 703 | 0.3+ | 0.2− |
| 2003 11 21 | 704 | 0.2+ | 0.3+ | 2003 12 22 | 704 | 0.4− | 0.5− | 2006 10 02 | 703 | 0.8− | 0.3+ |
| 2003 11 21 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.3+ |
| 2003 11 23 | 704 | 0.2− | 0.8− | 2006 09 14 | 644 | 0.1+ | 0.6+ | 2006 10 02 | 703 | 0.7− | 0.2+ |
| 2003 11 23 | 704 | 0.7− | 0.3− | 2006 09 14 | 644 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2003 11 23 | 704 | 0.1− | 0.6− | 2006 09 14 | 644 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.0 | 0.9− |
| 2003 12 18 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.8+ | 0.9− | 2006 10 19 | 703 | 0.1− | 0.9+ |
| 2003 12 18 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.1+ |

**2003 WJ$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.64299 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29702327 | $\omega$ | 265.79583 | | +0.95588416 | | +0.26471295 |
| $a$ | 2.2247219 | $\Omega$ | 78.81812 | | −0.19043709 | | +0.88849481 |
| $e$ | 0.1608365 | $i$ | 7.45759 | | −0.22364969 | | +0.37483868 |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.4+ | 0.4+ | 2003 12 21 | 704 | 0.6+ | 1.0+ | 2006 09 25 | 703 | 0.1+ | 0.0 |
| 2001 01 04 | 704 | 0.1− | 1.4+ | 2003 12 21 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 2001 01 04 | 704 | 0.4− | 0.4− | 2003 12 21 | 704 | 0.6+ | 0.0 | 2006 09 25 | 703 | 0.6− | 0.3− |
| 2001 01 04 | 704 | 0.2+ | 0.7− | 2003 12 27 | 691 | 0.2− | 0.2+ | 2006 10 04 | 703 | 0.5− | 0.7− |
| 2002 05 10 | 699 | 1.1+ | 0.4+ | 2003 12 27 | 691 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.1− | 0.2− |
| 2002 05 10 | 699 | 0.6− | 1.5+ | 2003 12 27 | 691 | 0.1+ | 0.1+ | 2006 10 04 | 703 | 0.3+ | 0.4− |
| 2002 05 10 | 699 | 0.8+ | 1.2+ | 2006 07 31 | E12 | 0.1− | 0.3+ | 2006 10 04 | 703 | 0.3+ | 0.4− |
| 2002 05 10 | 699 | 0.3+ | 0.9+ | 2006 07 31 | E12 | 0.1− | 1.5− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 11 21 | 704 | 0.5+ | 0.5− | 2006 07 31 | E12 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 11 21 | 704 | 0.4− | 0.6− | 2006 07 31 | E12 | 1.0− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2003 11 21 | 704 | 0.5+ | 1.2− | 2006 08 19 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2003 11 23 | 704 | 0.3+ | 0.7+ | 2006 08 19 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2003 11 23 | 704 | 0.8+ | 0.2+ | 2006 08 19 | 644 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 704 | 0.8+ | 0.2+ | 2006 09 14 | 644 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.8− |
| 2003 11 30 | 291 | 0.4− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.2− | 2006 10 21 | 703 | (1.6+ | 1.2−) |
| 2003 11 30 | 291 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2003 11 30 | 291 | 0.5− | 0.0 | 2006 09 17 | 699 | 0.1− | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 2003 12 19 | 704 | 0.5+ | 0.4− | 2006 09 17 | 699 | 0.0 | 1.0+ | 2006 10 28 | 703 | 0.7+ | 0.2− |
| 2003 12 19 | 704 | 0.3+ | 0.2− | 2006 09 17 | 699 | 0.6− | 0.2− | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2003 12 19 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 699 | 0.2+ | 1.3+ | 2006 10 28 | 703 | 0.5+ | 0.2+ |
| 2003 12 19 | 704 | 0.4+ | 0.0 | 2006 09 25 | 703 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.9+ | 1.4+ |

### 2003 WQ$_{144}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.05249 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30066216 | $\omega$ | 239.70399 | | −0.54677465 | | −0.83189175 |
| $a$ | 2.2067351 | $\Omega$ | 243.73964 | | +0.79992747 | | −0.48556749 |
| $e$ | 0.0738702 | $i$ | 6.07030 | | +0.24729236 | | −0.26866397 |
| $P$ | 3.28 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 15 | 691 | 0.0 | 0.1− | 2003 11 24 | 699 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2003 11 15 | 691 | 0.0 | 0.0 | 2003 11 24 | 699 | 1.0+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2003 11 15 | 691 | 0.1+ | 0.4− | 2003 11 24 | 699 | 1.5+ | 1.2+ | 2006 10 17 | 703 | 0.2− | 1.8+ |
| 2003 11 21 | 704 | 0.5− | 0.3− | 2003 12 21 | 291 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.8+ | 0.9+ |
| 2003 11 21 | 704 | 0.6− | 0.1− | 2003 12 21 | 291 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 1.2− |
| 2003 11 21 | 704 | 0.2− | 0.3+ | 2003 12 21 | 291 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 1.0− |
| 2003 11 21 | 704 | 1.1− | 0.1+ | 2003 12 22 | 691 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.9− |
| 2003 11 21 | 704 | 0.8− | 0.4+ | 2003 12 22 | 691 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.1− | 1.0− |
| 2003 11 24 | 699 | 0.2+ | 0.4+ | 2003 12 22 | 691 | 0.7− | 0.4+ | | | | |

### 2003 WJ$_{147}$ = 2006 SQ$_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.31213 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29757674 | $\omega$ | 237.84540 | | +0.97047765 | | +0.21902236 |
| $a$ | 2.2219625 | $\Omega$ | 109.33349 | | −0.16902567 | | +0.91633920 |
| $e$ | 0.1417554 | $i$ | 6.14489 | | −0.17205652 | | +0.33518902 |
| $P$ | 3.31 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 691 | 0.3− | 0.1+ | 2003 12 01 | 704 | 0.5+ | 0.0 | 2006 09 25 | 703 | 0.3− | 0.3+ |
| 2000 12 23 | 691 | 0.3+ | 0.0 | 2003 12 01 | 704 | 0.8− | 0.0 | 2006 10 09 | 644 | 0.4+ | 0.0 |
| 2000 12 23 | 691 | 0.1− | 0.3− | 2006 08 30 | D35 | 1.0− | 0.0 | 2006 10 09 | 644 | 0.4+ | 0.0 |
| 2003 11 19 | 699 | 0.2− | 0.1− | 2006 08 30 | D35 | 0.2− | 0.6− | 2006 10 09 | 644 | 0.4+ | 0.1+ |
| 2003 11 19 | 699 | 0.9− | 0.2+ | 2006 08 30 | D35 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2003 11 19 | 699 | 0.6+ | 0.4+ | 2006 09 17 | 699 | 0.3+ | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.5− |
| 2003 11 19 | 699 | (2.7− | 0.7−) | 2006 09 17 | 699 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.4− | 0.1+ |
| 2003 11 23 | 691 | 0.2− | 0.2+ | 2006 09 17 | 699 | 0.6+ | 0.8+ | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2003 11 23 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2003 11 23 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.5− | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2003 11 24 | 699 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2003 11 24 | 699 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.9− | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2003 11 24 | 699 | 0.5+ | 0.6+ | 2006 09 25 | 703 | 1.2+ | 1.2+ | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2003 11 24 | 699 | (1.9+ | 0.2+) | 2006 09 25 | 703 | 0.2+ | 0.2+ | | | | |
| 2003 12 01 | 704 | 1.0+ | 0.4− | 2006 09 25 | 703 | 0.4− | 0.4+ | | | | |

### 2003 WZ$_{148}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.66482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18192930 | $\omega$ | 19.63447 | | +0.46894551 | | −0.87478246 |
| $a$ | 3.0846149 | $\Omega$ | 42.64022 | | +0.78440385 | | +0.34908693 |
| $e$ | 0.1037805 | $i$ | 10.36224 | | +0.40595654 | | +0.33599698 |
| $P$ | 5.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.1− | 0.1− | 2003 11 26 | 704 | 0.7− | 0.4+ | 2006 04 24 | G96 | 0.4− | 0.2− |
| 2003 10 23 | 691 | 0.0 | 0.2+ | 2003 11 26 | 704 | 0.3+ | 0.0 | 2006 05 03 | G96 | 0.4− | 0.3− |
| 2003 10 23 | 691 | 0.1+ | 0.3− | 2003 12 29 | 691 | 0.0 | 0.3− | 2006 05 03 | G96 | 0.6− | 0.3+ |
| 2003 10 29 | 704 | 0.1+ | 1.1− | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 05 03 | G96 | 0.2+ | 0.0 |
| 2003 10 29 | 704 | 0.1− | 0.0 | 2003 12 29 | 691 | 0.2+ | 0.1+ | 2006 05 04 | 691 | 0.4− | 0.2− |
| 2003 10 29 | 704 | 0.5− | 0.5+ | 2005 03 09 | 703 | 0.2− | 0.5+ | 2006 05 04 | 691 | 0.8+ | 0.6+ |
| 2003 11 24 | 704 | 0.2+ | 0.4− | 2005 03 09 | 703 | 0.3+ | 1.3− | 2006 05 04 | 691 | 0.4+ | 0.2− |
| 2003 11 24 | 704 | 0.0 | 0.8+ | 2005 03 09 | 703 | 0.3− | 1.0+ | 2006 05 20 | 691 | 0.6− | 0.5− |
| 2003 11 24 | 704 | 0.3− | 0.1+ | 2005 03 09 | 703 | 0.0 | 0.3− | 2006 05 20 | 691 | 0.1+ | 0.3+ |
| 2003 11 24 | 704 | 0.4− | 0.0 | 2006 04 24 | G96 | 0.5− | 0.0 | 2006 05 20 | 691 | 0.3+ | 0.4+ |
| 2003 11 26 | 704 | 0.5− | 0.4+ | 2006 04 24 | G96 | 0.2− | 0.5− | | | | |
| 2003 11 26 | 704 | 0.4+ | 1.3+ | 2006 04 24 | G96 | 0.3− | 0.1− | | | | |

### 2003 WE$_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.25568 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27816627 | $\omega$ | 94.47886 | | +0.90731494 | | −0.41895708 |
| $a$ | 2.3241621 | $\Omega$ | 290.29319 | | +0.36923161 | | +0.83424791 |
| $e$ | 0.1704007 | $i$ | 2.16421 | | +0.20111591 | | +0.35847649 |
| $P$ | 3.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 0.1+ | 0.7− | 2003 12 21 | 704 | 0.4− | 0.1+ | 2006 07 25 | 644 | 0.2+ | 0.2+ |
| 2003 11 20 | 704 | (1.5+ | 0.6−) | 2003 12 21 | 704 | 0.0 | 1.1+ | 2006 07 25 | 644 | 0.1− | 0.6+ |
| 2003 11 20 | 704 | 0.3+ | 0.6+ | 2003 12 21 | 704 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.7− | 0.2− |
| 2003 11 24 | 704 | (1.5+ | 1.3+) | 2003 12 27 | 704 | 1.1+ | 0.8+ | 2006 09 25 | G96 | 1.1− | 0.8− |
| 2003 11 24 | 704 | (0.9+ | 1.7−) | 2003 12 27 | 704 | (2.0+ | 0.6+) | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2003 11 24 | 704 | 0.4+ | 0.1+ | 2003 12 27 | 704 | (2.7+ | 0.4+) | 2006 09 25 | G96 | 0.7+ | 0.2− |
| 2003 11 24 | 704 | 0.3+ | 0.0 | 2003 12 27 | 704 | 1.2+ | 0.9+ | 2006 09 26 | G96 | 0.8+ | 0.3+ |
| 2003 11 26 | 691 | (3.0− | 0.1+) | 2003 12 29 | 691 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.0 | 0.4+ |
| 2003 11 26 | 691 | (5.7− | 0.2−) | 2003 12 29 | 691 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2003 11 26 | 691 | (6.2− | 1.1+) | 2003 12 29 | 691 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2003 12 18 | 704 | 0.4+ | 0.0 | 2006 06 19 | G96 | 0.5− | 0.0 | 2006 10 19 | G96 | 0.8− | 0.4− |
| 2003 12 18 | 704 | 0.4+ | 0.4+ | 2006 06 19 | G96 | 0.3− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2003 12 18 | 704 | 0.6− | 0.6+ | 2006 06 19 | G96 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2003 12 18 | 704 | 0.5+ | 0.2− | 2006 06 19 | G96 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.5+ |
| 2003 12 18 | 704 | 1.5− | 1.1+ | 2006 07 25 | 644 | 0.8+ | 0.2+ | | | | |

### 2003 WW$_{152}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.29231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28403979 | $\omega$ | 264.77443 | | −0.11754508 | | −0.98948094 |
| $a$ | 2.2920105 | $\Omega$ | 192.92522 | | +0.99283992 | | −0.11527571 |
| $e$ | 0.2918178 | $i$ | 22.14728 | | +0.02126164 | | −0.08740124 |
| $P$ | 3.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 645 | 0.0 | 0.1+ | 2004 04 22 | 703 | 1.0+ | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 06 16 | 645 | 0.0 | 0.0 | 2004 04 22 | 703 | (0.7− | 1.8+) | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2003 11 26 | 704 | 0.2+ | 0.2+ | 2006 08 31 | 704 | 0.8+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2003 11 26 | 704 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2003 11 26 | 704 | 0.3+ | 0.2− | 2006 08 31 | 704 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2003 11 29 | 704 | 0.9+ | 0.5+ | 2006 08 31 | 704 | 0.1+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2003 11 29 | 704 | 0.0 | 0.6− | 2006 08 31 | 704 | 1.3+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2003 11 29 | 704 | (1.6+ | 0.0 ) | 2006 09 17 | 703 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 2003 11 29 | 704 | 0.1+ | 0.8− | 2006 09 17 | 703 | 1.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2003 12 14 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2003 12 14 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2003 12 14 | 644 | 0.2+ | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2004 01 27 | 704 | (1.5− | 0.6−) | 2006 09 19 | 699 | (1.7− | 0.6+) | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2004 01 27 | 704 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2004 01 27 | 704 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.5− | 0.5− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2004 01 27 | 704 | 0.5− | 0.1+ | 2006 09 24 | 106 | 1.1− | 0.2− | 2006 10 22 | 644 | 0.7+ | 0.7+ |
| 2004 01 27 | 704 | 0.0 | 0.1+ | 2006 09 24 | 106 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.6+ |
| 2004 02 20 | 704 | 0.2− | 0.2+ | 2006 09 24 | 106 | 0.3+ | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2004 02 20 | 704 | 0.3+ | 0.1+ | 2006 09 24 | 106 | 0.5+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2004 02 20 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.7− | 0.4− | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2004 02 20 | 704 | 1.1+ | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2004 02 22 | 704 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 22 | 704 | 0.9− | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.5− | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2004 02 22 | 704 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.6+ | 0.4− | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2004 02 22 | 704 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2004 03 16 | 688 | 1.4− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2004 03 16 | 688 | 0.3− | 0.7+ | 2006 10 10 | 644 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 03 16 | 688 | 0.3+ | 0.9+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2004 04 22 | 703 | 0.5+ | 1.4+ | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.6− | 0.5− |
| 2004 04 22 | 703 | 1.2+ | 1.4+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.0 |

### 2003 WO$_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.16526 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18012794 | $\omega$ | 239.81187 | | +0.79343835 | −0.59610287 | |
| $a$ | 3.1051458 | $\Omega$ | 156.09690 | | +0.60824674 | +0.78392331 | |
| $e$ | 0.2187754 | $i$ | 17.66432 | | −0.02216963 | +0.17356732 | |
| $P$ | 5.47 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 28 | 644 | 0.1− | 0.5+ | 2003 11 19 | 644 | 0.1− | 0.1− | 2003 12 13 | 704 | 0.7+ | 1.0− |
| 2002 07 28 | 644 | 0.2+ | 0.3+ | 2003 11 19 | 644 | 0.0 | 0.1+ | 2003 12 13 | 704 | 0.0 | 0.7+ |
| 2002 07 28 | 644 | 0.0 | 0.5+ | 2003 11 26 | 699 | 0.5− | 0.1− | 2003 12 13 | 704 | 0.7− | 0.1− |
| 2003 10 01 | 699 | 0.1+ | 0.3+ | 2003 11 26 | 699 | 1.3− | 1.5+ | 2003 12 22 | 644 | 0.4+ | 0.1− |
| 2003 10 01 | 699 | 1.5− | 0.0 | 2003 11 26 | 699 | 0.6+ | 0.3− | 2003 12 22 | 644 | 0.4+ | 0.1+ |
| 2003 10 01 | 699 | 0.7+ | 0.4+ | 2003 11 26 | 699 | 0.1− | 0.9+ | 2003 12 22 | 644 | 0.2+ | 0.1+ |
| 2003 10 01 | 699 | 0.3− | 1.1− | 2003 11 29 | 704 | 0.2− | 0.3− | 2005 03 10 | G96 | 0.1− | 0.5+ |
| 2003 10 19 | 704 | 0.3+ | 0.9+ | 2003 11 29 | 704 | 0.4− | 0.4− | 2005 03 10 | G96 | 0.0 | 0.2+ |
| 2003 10 19 | 704 | 0.5+ | 0.6− | 2003 11 29 | 704 | 0.6− | 0.7+ | 2005 03 10 | G96 | 0.1+ | 0.3+ |
| 2003 10 19 | 704 | 0.2− | 0.4+ | 2003 11 29 | 704 | 0.0 | 0.5− | 2005 03 10 | G96 | 0.1+ | 0.4+ |
| 2003 10 19 | 704 | 0.6− | 0.4+ | 2003 12 13 | 704 | 1.2+ | 0.1+ | | | | |
| 2003 11 19 | 644 | 0.0 | 0.2− | 2003 12 13 | 704 | 1.2+ | 0.9− | | | | |

### 2003 WL$_{162}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.98225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26225235 | $\omega$ | 273.23446 | | +0.92180070 | −0.33767627 | |
| $a$ | 2.4172586 | $\Omega$ | 106.56653 | | +0.38449249 | +0.85907139 | |
| $e$ | 0.1765616 | $i$ | 11.45876 | | −0.04948729 | +0.38467011 | |
| $P$ | 3.76 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.3+ | 0.0 | 2003 11 23 | 699 | 1.1+ | 1.2+ | 2003 12 20 | 704 | 0.8+ | 0.4+ |
| 1998 04 17 | 691 | 0.2− | 0.4+ | 2003 11 23 | 699 | 0.7− | 0.1+ | 2003 12 20 | 704 | (3.1+ | 1.0+) |
| 1998 04 17 | 691 | 0.1+ | 0.1− | 2003 11 23 | 699 | 0.1+ | 0.4+ | 2003 12 20 | 704 | (0.2+ | 1.8−) |
| 2002 06 09 | 644 | 0.0 | 0.3+ | 2003 11 23 | 699 | 0.3+ | 0.1+ | 2003 12 21 | 608 | 0.5− | 0.9+ |
| 2002 06 09 | 644 | 0.1+ | 0.2+ | 2003 11 30 | 704 | 0.2+ | 0.2+ | 2003 12 21 | 608 | 0.6− | 0.7+ |
| 2002 06 09 | 644 | 0.1− | 0.5− | 2003 11 30 | 704 | 0.1+ | 0.4+ | 2003 12 21 | 608 | 0.4− | 0.7+ |
| 2003 10 21 | 644 | 0.6− | 0.2+ | 2003 11 30 | 704 | 0.3+ | 0.7+ | 2003 12 28 | 699 | 2.4− | 2.1− |
| 2003 10 21 | 644 | 0.4− | 0.3+ | 2003 12 01 | 703 | 0.5+ | 0.9− | 2003 12 28 | 699 | 0.8+ | 0.2− |
| 2003 10 21 | 644 | 0.7− | 0.5+ | 2003 12 01 | 703 | 0.1− | 0.0 | 2003 12 28 | 699 | 0.0 | 0.3+ |
| 2003 11 19 | 703 | 0.5− | 0.9− | 2003 12 01 | 703 | 0.2− | 0.1− | 2003 12 28 | 699 | 2.0+ | 0.7+ |
| 2003 11 19 | 703 | (0.4− | 1.8−) | 2003 12 01 | 703 | 0.2+ | 1.0− | 2004 01 13 | 644 | 0.9+ | 0.3− |
| 2003 11 19 | 703 | 1.1− | 0.9− | 2003 12 20 | 704 | 0.7− | 0.3+ | 2004 01 13 | 644 | 0.6+ | 0.2− |
| 2003 11 19 | 703 | 0.3+ | 0.5− | 2003 12 20 | 704 | 0.0 | 0.3+ | 2004 01 13 | 644 | 0.5+ | 0.4− |

### 2003 WB$_{170}$ = 2006 DZ$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.02673 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12385022 | $\omega$ | 235.73968 | | +0.95114270 | −0.28114480 | |
| $a$ | 3.9860082 | $\Omega$ | 140.15784 | | +0.30513171 | +0.91904830 | |
| $e$ | 0.2713307 | $i$ | 11.48935 | | −0.04714020 | +0.27623871 | |
| $P$ | 7.96 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 14 | 704 | 0.6+ | 1.4+ | 2003 11 20 | 703 | 1.5− | 1.0+ | 2005 03 09 | G96 | 0.2+ | 0.1− |
| 2002 08 14 | 704 | 0.6− | 0.7+ | 2003 11 20 | 703 | 0.6+ | 0.7+ | 2005 03 09 | G96 | 0.1− | 0.4− |
| 2002 08 14 | 704 | 0.3+ | 0.5+ | 2003 11 20 | 703 | (2.3− | 1.2+) | 2005 03 09 | G96 | 0.2− | 0.7− |
| 2002 08 29 | 644 | 0.4− | 0.5− | 2003 11 20 | 703 | 1.2− | 0.3+ | 2006 02 25 | 691 | 0.7+ | 0.3− |
| 2002 08 29 | 644 | 0.4− | 0.3− | 2003 11 23 | 699 | 0.2+ | 0.3+ | 2006 02 25 | 691 | 0.1+ | 0.5+ |
| 2002 08 29 | 644 | 0.4− | 0.5− | 2003 11 23 | 699 | 0.8+ | 0.3+ | 2006 02 25 | 691 | 0.1− | 0.4− |
| 2002 09 06 | 704 | 0.4− | 0.9+ | 2003 11 23 | 699 | 0.5+ | 0.4+ | 2006 03 04 | 691 | 0.0 | 0.9+ |
| 2002 09 06 | 704 | 0.1+ | 1.3+ | 2003 11 23 | 699 | 0.1+ | 0.8− | 2006 03 04 | 691 | 0.1− | 0.4+ |
| 2002 09 06 | 704 | 0.6+ | 0.8+ | 2005 03 09 | G96 | 0.2+ | 0.4− | 2006 03 04 | 691 | 0.3− | 0.5+ |

### 2003 WV$_{181}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.06815 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26804648 | $\omega$ | 15.92001 | | +0.05105753 | −0.99806781 | |
| $a$ | 2.3822974 | $\Omega$ | 71.16376 | | +0.91215504 | +0.03216725 | |
| $e$ | 0.1578306 | $i$ | 2.14406 | | +0.40665256 | +0.05315929 | |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.5+ | 0.1− | 2003 11 23 | 704 | 0.2+ | 0.0 | 2004 01 21 | 704 | 0.6+ | 0.3− |
| 2001 03 15 | 691 | 0.2− | 0.6+ | 2003 11 24 | 695 | 0.3+ | 0.1− | 2004 01 21 | 704 | 0.1+ | 0.1+ |
| 2001 03 15 | 691 | 0.1− | 0.1− | 2003 11 24 | 695 | 0.0 | 0.0 | 2004 01 21 | 704 | 0.7+ | 0.4− |
| 2003 11 21 | 695 | 0.1+ | 0.1− | 2003 12 24 | 704 | 0.5− | 0.2− | 2004 01 21 | 704 | 0.4− | 0.3+ |
| 2003 11 21 | 695 | 0.1+ | 0.0 | 2003 12 24 | 704 | 0.7− | 0.5− | 2005 05 04 | G96 | 0.9− | 0.3− |
| 2003 11 21 | 695 | 0.1+ | 0.2− | 2003 12 24 | 704 | 0.6+ | 0.6− | 2005 05 04 | G96 | 0.3+ | 0.6− |
| 2003 11 21 | 695 | 0.0 | 0.1+ | 2004 01 13 | 691 | 0.1+ | 0.1+ | 2005 05 04 | G96 | 0.9+ | 0.6− |
| 2003 11 23 | 704 | 0.2− | 0.5+ | 2004 01 13 | 691 | 0.0 | 0.0 | 2005 05 04 | G96 | 0.7− | 0.3− |
| 2003 11 23 | 704 | 0.8− | 0.9+ | 2004 01 13 | 691 | 0.1− | 0.1− | | | | |
| 2003 11 23 | 704 | 0.1+ | 0.4+ | 2004 01 21 | 704 | 0.1− | 0.4− | | | | |

### 2003 WE$_{183}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.94315 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18624571 | $\omega$ | 217.27333 | | +0.60862698 | +0.78209003 | |
| $a$ | 3.0367698 | $\Omega$ | 90.61138 | | −0.69193445 | +0.60569397 | |
| $e$ | 0.2313292 | $i$ | 7.69096 | | −0.38832965 | +0.14652645 | |
| $P$ | 5.29 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.0 | 0.0 | 2002 07 14 | 644 | 0.2− | 0.5+ | 2003 11 26 | 691 | 0.0 | 0.1+ |
| 2001 03 19 | 645 | 0.1+ | 0.1+ | 2002 08 13 | 704 | 0.5+ | 0.2+ | 2003 11 26 | 691 | 0.1− | 0.1− |
| 2002 07 05 | 704 | 0.0 | 0.0 | 2002 08 13 | 704 | 0.7+ | 0.0 | 2003 12 01 | 704 | 0.4+ | 1.0+ |
| 2002 07 05 | 704 | 0.9− | 0.5+ | 2002 08 13 | 704 | 0.2+ | 0.4− | 2003 12 01 | 704 | 1.1+ | 0.5+ |
| 2002 07 05 | 704 | 0.3− | 0.4− | 2002 08 13 | 704 | 0.1− | 0.2− | 2003 12 01 | 704 | 1.1+ | 0.5+ |
| 2002 07 05 | 704 | 0.1− | 0.2− | 2002 08 13 | 704 | 0.0 | 0.0 | 2003 12 01 | 704 | 0.2− | 0.5− |
| 2002 07 05 | 704 | 0.2+ | 1.0+ | 2003 11 23 | 695 | 0.3+ | 0.3− | 2003 12 19 | 691 | 0.5+ | 0.0 |
| 2002 07 14 | 644 | 0.2− | 0.5+ | 2003 11 23 | 695 | 1.8− | 0.5− | 2003 12 19 | 691 | 1.2− | 0.5+ |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2003 11 26 | 691 | 0.0 | 0.0 | 2003 12 19 | 691 | 0.4+ | 0.0 |

### 2003 WR$_{189}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.22712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18489507 | $\omega$ | 305.07479 | | −0.14062811 | −0.98136162 | |
| $a$ | 3.0515407 | $\Omega$ | 152.12384 | | +0.97486717 | −0.16034024 | |
| $e$ | 0.2517458 | $i$ | 16.26690 | | +0.17279391 | +0.10592626 | |
| $P$ | 5.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 291 | 0.3+ | 0.1− | 2003 11 21 | 703 | 0.1− | 0.7+ | 2003 12 13 | 704 | 0.1− | 0.5+ |
| 2002 08 13 | 291 | 0.4− | 0.1+ | 2003 11 21 | 703 | 0.7+ | 1.1− | 2003 12 13 | 704 | 0.3− | 0.8+ |
| 2002 08 13 | 291 | 0.1+ | 0.2+ | 2003 12 03 | 699 | 0.1− | 0.3− | 2004 01 14 | 644 | 0.8+ | 0.2+ |
| 2003 10 21 | 699 | 0.4+ | 0.9+ | 2003 12 03 | 699 | 1.3− | 0.9− | 2004 01 14 | 644 | 0.5+ | 0.2+ |
| 2003 10 21 | 699 | 0.5− | 0.4− | 2003 12 03 | 699 | 0.6− | 0.4− | 2004 01 14 | 644 | 0.5+ | 0.0 |
| 2003 10 21 | 699 | 0.1− | 1.4− | 2003 12 03 | 699 | 1.0− | 0.1− | 2005 04 17 | 703 | 0.2+ | 0.2+ |
| 2003 10 21 | 699 | 0.2− | 0.1− | 2003 12 13 | 704 | 0.2− | 0.3+ | 2005 04 17 | 703 | 1.0− | 0.0 |
| 2003 11 21 | 703 | 1.1+ | 0.3+ | 2003 12 13 | 704 | 0.3+ | 0.2+ | 2005 04 17 | 703 | 0.0 | 0.4− |
| 2003 11 21 | 703 | 0.6+ | 0.4+ | 2003 12 13 | 704 | 0.4− | 0.7+ | 2005 04 17 | 703 | 0.9+ | 0.9+ |

**2003 WV$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.58116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17535760 | $\omega$ | 299.97745 | | +0.31842701 | −0.91799606 | |
| $a$ | 3.1612074 | $\Omega$ | 129.50039 | | +0.94051111 | +0.27477101 | |
| $e$ | 0.1959948 | $i$ | 17.84092 | | +0.11850353 | +0.28597923 | |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.2+ | 0.1+ | 2003 11 23 | 703 | 1.0− | 0.0 | 2003 12 22 | 644 | 0.2+ | 0.3+ |
| 2002 08 08 | 644 | 0.1+ | 0.2− | 2003 11 23 | 703 | 0.5− | 0.9− | 2003 12 22 | 644 | 0.0 | 0.0 |
| 2002 08 08 | 644 | 0.3− | 0.6+ | 2003 11 23 | 703 | 1.2− | 0.4− | 2005 03 09 | 703 | 0.1+ | 0.3+ |
| 2003 09 28 | 699 | 0.5+ | 0.0 | 2003 12 13 | 704 | 0.7+ | 0.3+ | 2005 03 09 | 703 | 0.4+ | 0.0 |
| 2003 09 28 | 699 | 0.0 | 0.0 | 2003 12 13 | 704 | 0.2+ | 1.2− | 2005 03 09 | 703 | 0.0 | 0.1+ |
| 2003 09 28 | 699 | 0.0 | 0.2+ | 2003 12 13 | 704 | 0.4− | 0.1+ | 2005 03 09 | 703 | 0.7+ | 0.6+ |
| 2003 09 28 | 699 | 0.3+ | 0.0 | 2003 12 13 | 704 | 0.5+ | 0.4+ | 2005 04 01 | 703 | 0.8− | 1.1+ |
| 2003 10 21 | 699 | 0.8+ | 0.3+ | 2003 12 13 | 704 | 0.8+ | 0.5+ | 2005 04 01 | 703 | 1.1+ | 1.5− |
| 2003 10 21 | 699 | 0.5+ | 0.7− | 2003 12 22 | 644 | 0.0 | 0.4+ | 2005 04 01 | 703 | 0.2− | 1.5+ |
| 2003 10 21 | 699 | 0.8− | 0.8+ | 2003 12 22 | 644 | 0.2− | 0.6+ | 2005 04 01 | 703 | 1.3− | 1.8− |
| 2003 10 21 | 699 | 0.1+ | 0.2− | 2003 12 22 | 644 | 0.3− | 0.0 | | | | |
| 2003 11 23 | 703 | 1.3− | 0.5− | 2003 12 22 | 644 | 1.2+ | 0.4+ | | | | |

**2003 WB$_{192}$ = 2005 EW$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.05495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20591402 | $\omega$ | 115.00326 | | +0.81631797 | −0.54147793 | |
| $a$ | 2.8401772 | $\Omega$ | 278.37779 | | +0.42900954 | +0.80147317 | |
| $e$ | 0.1047298 | $i$ | 11.72605 | | +0.38675029 | +0.25385508 | |
| $P$ | 4.79 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 02 | 691 | 0.2− | 0.2− | 2003 11 19 | 704 | 0.1+ | 0.5+ | 2003 12 23 | 704 | 0.3− | 0.1− |
| 1994 12 02 | 691 | 0.0 | 0.0 | 2003 11 19 | 704 | 0.2− | 0.2+ | 2003 12 29 | 691 | 0.2+ | 0.2− |
| 1994 12 02 | 691 | 0.1+ | 0.1+ | 2003 11 19 | 704 | 0.0 | 0.5− | 2003 12 29 | 691 | 0.2+ | 0.1− |
| 2000 02 11 | 704 | 0.7+ | 1.5+ | 2003 11 19 | 704 | 0.2+ | 0.1+ | 2003 12 29 | 691 | 0.1− | 0.3− |
| 2000 02 11 | 704 | 0.2+ | 0.2+ | 2003 11 26 | 704 | 0.3+ | 2.3+ | 2005 03 10 | 699 | 0.3+ | 0.6− |
| 2000 02 11 | 704 | 0.0 | 1.2+ | 2003 11 26 | 704 | 0.4− | 0.8+ | 2005 03 10 | 699 | 1.6+ | 0.0 |
| 2000 02 11 | 704 | 1.8+ | 1.9+ | 2003 11 26 | 704 | 1.8− | 1.1+ | 2005 03 10 | 699 | 0.5− | 1.4− |
| 2002 07 21 | 644 | 0.3− | 0.7+ | 2003 11 26 | 704 | 1.0− | 1.6+ | 2005 03 10 | 699 | 0.0 | 0.0 |
| 2002 07 21 | 644 | 0.5− | 0.4+ | 2003 12 16 | 691 | 0.5+ | 1.0− | 2005 03 13 | 703 | 0.9− | 0.6− |
| 2002 07 21 | 644 | 0.2− | 0.6+ | 2003 12 16 | 691 | 0.0 | 0.1− | 2005 03 13 | 703 | 0.4− | 0.2− |
| 2002 07 29 | 644 | 0.0 | 0.3+ | 2003 12 16 | 691 | 0.1+ | 0.1− | 2005 03 13 | 703 | 0.1+ | 0.4+ |
| 2002 07 29 | 644 | 0.1− | 0.4+ | 2003 12 23 | 704 | 0.1− | 0.4+ | 2005 03 13 | 703 | 1.0− | 1.1+ |
| 2002 07 29 | 644 | 0.1− | 0.6+ | 2003 12 23 | 704 | 0.1− | 0.8+ | | | | |
| 2003 11 19 | 704 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.0 | 0.6+ | | | | |

**2003 WC$_{192}$ = 2006 PS$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.74965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28810506 | $\omega$ | 42.40193 | | +0.99437916 | +0.08513585 | |
| $a$ | 2.2703987 | $\Omega$ | 312.59973 | | −0.10440773 | +0.88719631 | |
| $e$ | 0.1597108 | $i$ | 4.90538 | | +0.01758186 | +0.45346952 | |
| $P$ | 3.42 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | (0.4+ | 1.8+) | 2003 11 24 | 699 | 0.2+ | 0.1− | 2006 08 13 | 644 | 0.3− | 0.2− |
| 2003 11 19 | 704 | (0.7− | 3.0+) | 2003 11 24 | 699 | 0.1+ | 0.4− | 2006 08 13 | 644 | 0.2− | 0.1+ |
| 2003 11 19 | 704 | 0.5+ | 1.3+ | 2003 12 01 | 691 | 0.2+ | 0.0 | 2006 08 13 | 644 | 0.1+ | 0.0 |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2003 12 01 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2003 11 19 | 691 | 0.1− | 0.1+ | 2003 12 01 | 691 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2003 11 19 | 691 | 0.2+ | 0.0 | 2006 08 12 | 644 | 0.1− | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2003 11 24 | 699 | 0.1+ | 0.4− | 2006 08 12 | 644 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2003 11 24 | 699 | 0.8− | 0.6− | 2006 08 12 | 644 | 0.1− | 0.1+ | | | | |

**2003 WD$_{192}$ = 1999 VR$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.10928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24595192 | $\omega$ | 162.70504 | | +0.91458723 | −0.39136566 | |
| $a$ | 2.5229147 | $\Omega$ | 220.80952 | | +0.35015870 | +0.89235857 | |
| $e$ | 0.2122191 | $i$ | 8.96114 | | +0.20228465 | +0.22478679 | |
| $P$ | 4.01 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.4+ | 0.2− | 2003 11 19 | 699 | 0.5+ | 0.6− | 2003 12 22 | 691 | 0.3− | 0.2+ |
| 1999 11 04 | 691 | 0.5+ | 0.1+ | 2003 12 01 | 703 | 0.7− | 0.6− | 2003 12 22 | 691 | 0.1+ | 0.4− |
| 1999 11 04 | 691 | 0.0 | 0.3− | 2003 12 01 | 703 | 1.0− | 0.9− | 2003 12 22 | 691 | 0.1− | 0.1+ |
| 1999 11 09 | 691 | 0.3− | 0.1+ | 2003 12 01 | 703 | 0.1+ | 0.0 | 2003 12 22 | 691 | 0.4+ | 0.2− |
| 1999 11 09 | 691 | 0.4− | 0.0 | 2003 12 01 | 703 | 0.1+ | 0.8+ | 2003 12 22 | 691 | 0.2− | 0.4+ |
| 1999 11 09 | 691 | 0.3− | 0.2+ | 2003 12 01 | 704 | 0.1+ | 0.7+ | 2006 06 04 | G96 | 0.6− | 0.1− |
| 2003 11 19 | 699 | 0.5− | 0.2+ | 2003 12 01 | 704 | 0.1− | 0.1+ | 2006 06 04 | G96 | 0.3+ | 0.1− |
| 2003 11 19 | 699 | 0.1− | 0.5+ | 2003 12 01 | 704 | 1.0+ | 0.1− | 2006 06 04 | G96 | 0.1+ | 0.2+ |
| 2003 11 19 | 699 | 0.3+ | 0.2+ | 2003 12 22 | 691 | 0.4+ | 0.3− | 2006 06 04 | G96 | 0.2+ | 0.3− |

**2003 WE$_{192}$ = 1994 RW$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.97418 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22667655 | $\omega$ | 43.00130 | | +0.96053629 | −0.27189333 | |
| $a$ | 2.6639842 | $\Omega$ | 332.61206 | | +0.20778550 | +0.84164589 | |
| $e$ | 0.3654480 | $i$ | 7.32948 | | +0.18491952 | +0.46658999 | |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 03 | 809 | 0.5− | 0.8− | 2003 11 19 | 704 | 0.2− | 0.5+ | 2003 12 26 | 106 | 0.7− | 1.3− |
| 1994 09 03 | 809 | 1.2+ | 0.6− | 2003 11 19 | 704 | 0.4− | 0.2+ | 2003 12 26 | 106 | (2.0− | 1.6−) |
| 1994 09 03 | 809 | 0.0 | 0.3− | 2003 11 19 | 704 | 0.5− | 0.0 | 2003 12 29 | 704 | 0.1+ | 0.1+ |
| 1994 09 04 | 809 | 0.4− | 0.1+ | 2003 11 19 | 704 | 0.0 | 0.2+ | 2003 12 29 | 704 | 0.1+ | 0.4+ |
| 1994 09 04 | 809 | 0.1− | 0.1+ | 2003 12 17 | 704 | 0.2+ | 0.2+ | 2003 12 29 | 704 | 0.0 | 0.6+ |
| 1994 09 04 | 809 | 0.5+ | 0.3+ | 2003 12 17 | 704 | 0.3+ | 0.1+ | 2003 12 29 | 704 | 0.0 | 0.4− |
| 2000 02 11 | 704 | 0.2+ | 0.4+ | 2003 12 17 | 704 | 0.4+ | 0.2+ | 2003 12 29 | 704 | 0.6+ | 0.9+ |
| 2000 02 11 | 704 | 0.0 | 1.1− | 2003 12 17 | 704 | 0.3+ | 0.3+ | 2004 01 18 | 691 | 0.0 | 0.5− |
| 2000 02 11 | 704 | 0.8− | 0.5− | 2003 12 17 | 704 | 0.5+ | 0.1+ | 2004 01 18 | 691 | 0.2− | 0.0 |
| 2003 11 19 | 704 | 0.3+ | 0.7+ | 2003 12 26 | 106 | 0.4+ | 0.4− | 2004 01 18 | 691 | 0.1− | 0.1− |

**2003 WF$_{192}$ = 1997 ST$_{25}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.29839 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17482949 | $\omega$ | 117.41327 | | +0.19802176 | −0.97901685 | |
| $a$ | 3.1675703 | $\Omega$ | 321.06976 | | +0.87012212 | +0.19816493 | |
| $e$ | 0.1287467 | $i$ | 4.38990 | | +0.45130353 | +0.04750450 | |
| $P$ | 5.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.6+ | 0.3+ | 2003 11 20 | 691 | 0.1+ | 0.3+ | 2003 11 20 | 291 | 0.2− | 0.2+ |
| 1997 09 27 | 691 | 0.0 | 0.0 | 2003 11 20 | 691 | 0.2+ | 0.2+ | 2003 12 01 | 691 | 0.1+ | 0.1+ |
| 1997 09 27 | 691 | 0.4+ | 0.3− | 2003 11 20 | 291 | 0.1+ | 0.6− | 2003 12 01 | 691 | 0.0 | 0.1+ |
| 1997 10 05 | 691 | 0.1− | 0.2+ | 2003 11 20 | 291 | 0.0 | 0.3− | 2003 12 01 | 691 | 0.2− | 0.2+ |
| 1997 10 05 | 691 | 0.2− | 0.2+ | 2003 11 20 | 291 | 0.2+ | 0.5− | 2003 12 29 | 691 | 0.1− | 0.1− |
| 1997 10 05 | 691 | 0.7− | 0.3− | 2003 11 20 | 291 | 0.4− | 0.2+ | 2003 12 29 | 691 | 0.3− | 0.0 |
| 2003 11 20 | 691 | 0.2+ | 0.2+ | 2003 11 20 | 291 | 0.2− | 0.0 | 2003 12 29 | 691 | 0.4+ | 0.0 |

**2003 WG$_{192}$ = 2000 HE$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.83628 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17973245 | $\omega$ | 150.80733 | | −0.93622738 | −0.34894243 | |
| $a$ | 3.1096992 | $\Omega$ | 9.06583 | | +0.24911884 | −0.74227641 | |
| $e$ | 0.1249612 | $i$ | 15.24877 | | +0.24782674 | −0.57207073 | |
| $P$ | 5.48 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 27 | 699 | 0.8+ | 0.2− | 2000 05 09 | 704 | 0.1− | 1.6+ | 2005 03 02 | 703 | 0.3+ | 1.3+ |
| 1998 12 27 | 699 | 1.7+ | 0.9+ | 2003 11 20 | 704 | 1.0+ | 0.2+ | 2005 03 02 | 703 | 0.8− | 0.3+ |
| 1998 12 27 | 699 | 0.7+ | 0.3− | 2003 11 20 | 704 | 0.1− | 0.1+ | 2005 03 02 | 703 | 0.3− | 0.8− |
| 1999 01 14 | 704 | 1.5− | 0.1+ | 2003 11 20 | 704 | 0.1+ | 0.3+ | 2005 03 11 | 703 | 0.4+ | 0.3− |
| 1999 01 14 | 704 | 1.4− | 1.6+ | 2003 11 20 | 704 | 1.2− | 0.1− | 2005 03 11 | 703 | 0.7− | 0.0 |
| 1999 01 14 | 704 | 2.0− | 2.7+ | 2003 12 17 | 704 | 0.5+ | 0.1− | 2005 03 11 | 703 | 0.8− | 2.2− |
| 1999 01 14 | 704 | 2.2+ | 1.3− | 2003 12 17 | 704 | 0.1+ | 0.4+ | 2005 03 11 | 703 | 0.8− | 0.4− |
| 2000 04 30 | 699 | 0.5− | 0.8− | 2003 12 17 | 704 | 0.2+ | 0.0 | 2005 03 11 | 699 | 0.4+ | 1.3+ |
| 2000 04 30 | 699 | 0.4+ | 0.2+ | 2003 12 17 | 704 | 0.1+ | 0.2− | 2005 03 11 | 699 | 0.6+ | 0.5+ |
| 2000 04 30 | 699 | 0.7− | 0.4− | 2003 12 17 | 704 | 0.0 | 0.3+ | 2005 03 11 | 699 | 1.1+ | 1.0+ |
| 2000 04 30 | 699 | 0.7+ | 0.6+ | 2003 12 29 | 704 | 0.0 | 0.7− | 2005 03 11 | 699 | 0.3+ | 0.4+ |
| 2000 05 09 | 704 | 0.8+ | 0.0 | 2003 12 29 | 704 | 0.4+ | 0.3− | 2005 03 16 | 703 | 1.0− | 0.1− |
| 2000 05 09 | 704 | 0.9+ | 0.9+ | 2003 12 29 | 704 | 0.1− | 0.1− | 2005 03 16 | 703 | 0.9− | 0.0 |
| 2000 05 09 | 704 | 0.7+ | 0.1− | 2003 12 29 | 704 | 0.6− | 0.2+ | 2005 03 16 | 703 | 0.5+ | 0.0 |
| 2000 05 09 | 704 | 0.3+ | 1.0+ | 2005 03 02 | 703 | 0.4+ | 0.3− | 2005 03 16 | 703 | (1.5− | 4.1−) |

**2003 WJ$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.25776 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27109083 | $\omega$ | 34.78054 | | +0.99820708 | | +0.02031223 |
| $a$ | 2.3644284 | $\Omega$ | 323.92857 | | −0.04430569 | | +0.88321632 |
| $e$ | 0.1254426 | $i$ | 5.48727 | | +0.04024475 | | +0.46852571 |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 703 | 1.3− | 0.7+ | 2003 12 17 | 704 | 0.4+ | 0.6− | 2006 08 20 | 644 | 0.4− | 0.3+ |
| 1999 09 18 | 703 | 1.3+ | 0.3− | 2003 12 17 | 704 | 0.7+ | 0.6+ | 2006 08 28 | 703 | 1.3− | 1.1− |
| 1999 09 18 | 703 | 1.6+ | 0.5+ | 2003 12 17 | 704 | 0.8+ | 0.5− | 2006 08 28 | 703 | 0.4− | 0.4+ |
| 1999 09 18 | 703 | 0.8+ | 0.1+ | 2003 12 17 | 704 | 0.7− | 0.2+ | 2006 08 28 | 703 | 0.6+ | 0.3− |
| 1999 10 09 | 703 | 0.3− | 1.7+ | 2003 12 17 | 704 | 0.5− | 0.3+ | 2006 08 28 | 703 | 1.1+ | 0.4− |
| 1999 10 09 | 703 | 0.6+ | 0.4− | 2003 12 23 | 704 | 0.0 | 0.4− | 2006 09 13 | 644 | 0.4− | 0.4+ |
| 1999 10 09 | 703 | 1.1− | 0.5− | 2003 12 23 | 704 | 0.2− | 0.6+ | 2006 09 13 | 644 | 0.2+ | 0.2+ |
| 1999 10 09 | 703 | 1.2− | 1.8− | 2003 12 23 | 704 | 0.0 | 1.2− | 2006 09 13 | 644 | 0.0 | 0.4+ |
| 1999 10 09 | 704 | 0.0 | 0.2+ | 2003 12 23 | 704 | 0.6− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.5+ | 0.7+ | 2003 12 23 | 704 | 1.3+ | 0.2− | 2006 09 26 | G96 | 0.4− | 0.1− |
| 1999 10 09 | 704 | 0.5+ | 0.6− | 2003 12 25 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2001 02 02 | 691 | 0.2− | 0.1+ | 2003 12 25 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2001 02 02 | 691 | 0.7− | 0.5+ | 2003 12 25 | 691 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 02 02 | 691 | 0.2− | 0.3− | 2004 01 11 | 644 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2003 11 19 | 704 | 0.2+ | 0.3− | 2004 01 11 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2003 11 19 | 704 | 0.7+ | 0.0 | 2004 01 11 | 644 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2003 11 19 | 704 | 1.4+ | 0.4+ | 2005 03 03 | 691 | 0.4+ | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2003 12 04 | 704 | 0.6− | 1.4+ | 2005 03 03 | 691 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2003 12 04 | 704 | 0.0 | 0.4+ | 2005 03 03 | 691 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2003 12 04 | 704 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2003 12 04 | 704 | 0.7+ | 0.9+ | 2006 08 20 | 644 | 0.3− | 0.3+ | | | | |

**2003 WK$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.43241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17483721 | $\omega$ | 52.07286 | | −0.24130142 | | −0.94960864 |
| $a$ | 3.1674771 | $\Omega$ | 53.07805 | | +0.79324971 | | −0.31175123 |
| $e$ | 0.2663437 | $i$ | 14.49076 | | +0.55904250 | | +0.03247456 |
| $P$ | 5.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.2+ | 0.2− | 2003 12 03 | 704 | 0.5+ | 0.2+ | 2004 01 16 | 644 | 0.4− | 0.6+ |
| 2003 11 19 | 704 | 0.1+ | 0.7− | 2003 12 17 | 704 | 0.1− | 0.1+ | 2004 01 16 | 644 | 0.3− | 0.5+ |
| 2003 11 19 | 704 | 0.2+ | 0.0 | 2003 12 17 | 704 | 0.6+ | 0.2+ | 2004 01 16 | 644 | 0.4− | 0.6+ |
| 2003 11 19 | 704 | 0.1− | 0.0 | 2003 12 17 | 704 | 0.2+ | 0.1+ | 2005 04 02 | 691 | 0.1+ | 0.1+ |
| 2003 11 19 | 704 | 0.0 | 0.1− | 2003 12 17 | 704 | 0.4+ | 0.0 | 2005 04 02 | 691 | 0.0 | 0.0 |
| 2003 11 27 | 703 | 1.2− | 0.1− | 2003 12 17 | 704 | 0.2− | 0.0 | 2005 04 02 | 691 | 0.1− | 0.0 |
| 2003 11 27 | 703 | 0.7− | 0.6+ | 2003 12 29 | 704 | 0.2+ | 0.6− | 2005 04 12 | 691 | 0.0 | 0.2− |
| 2003 11 27 | 703 | 0.2− | 0.1− | 2003 12 29 | 704 | 0.3− | 0.4+ | 2005 04 12 | 691 | 0.1+ | 0.1+ |
| 2003 11 27 | 703 | 0.3− | 0.7+ | 2003 12 29 | 704 | 0.3+ | 0.5− | 2005 04 12 | 691 | 0.2− | 0.0 |
| 2003 12 03 | 704 | 0.4+ | 0.5+ | 2003 12 29 | 704 | 0.1+ | 1.4− | | | | |
| 2003 12 03 | 704 | 0.5+ | 0.1+ | 2003 12 29 | 704 | 0.2+ | 0.7− | | | | |

**2003 WM$_{192}$ = 2006 HX$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.26971 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18703794 | $\omega$ | 9.92766 | | +0.56643641 | | −0.81273684 |
| $a$ | 3.0281885 | $\Omega$ | 45.72729 | | +0.74243594 | | +0.43141813 |
| $e$ | 0.1423241 | $i$ | 10.98283 | | +0.35768514 | | +0.39158298 |
| $P$ | 5.27 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.0 | 2003 12 03 | 704 | 1.6− | 1.1− | 2003 12 27 | 704 | 0.7+ | 1.6+ |
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2003 12 03 | 704 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.2− | 0.6+ |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2003 12 03 | 704 | 0.5− | 0.2− | 2003 12 27 | 704 | 0.3− | 1.2− |
| 2000 05 05 | 645 | 0.1+ | 0.1− | 2003 12 03 | 704 | 0.3− | 0.1− | 2003 12 27 | 704 | 0.3+ | 0.0 |
| 2003 11 20 | 704 | 0.8+ | 0.4+ | 2003 12 17 | 704 | 0.3− | 0.1− | 2006 04 26 | 807 | 0.2+ | 0.0 |
| 2003 11 20 | 704 | 0.5+ | 0.2− | 2003 12 17 | 704 | 0.6− | 0.1+ | 2006 04 26 | 807 | 0.2+ | 0.0 |
| 2003 11 20 | 704 | 1.0+ | 0.8+ | 2003 12 17 | 704 | 0.2− | 1.2− | 2006 04 28 | 807 | 0.2+ | 0.2+ |
| 2003 11 20 | 704 | 0.0 | 0.1+ | 2003 12 17 | 704 | 0.7+ | 0.4+ | 2006 04 28 | 807 | 0.4− | 0.3+ |

**2003 WN$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.30592 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27661537 | $\omega$ | 46.19924 | | +0.89445458 | | −0.44124842 |
| $a$ | 2.3328412 | $\Omega$ | 339.64751 | | +0.32654954 | | +0.75527093 |
| $e$ | 0.1583242 | $i$ | 12.02561 | | +0.30547734 | | +0.48462939 |
| $P$ | 3.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 12 | 809 | 0.3+ | 0.7− | 2001 02 17 | 704 | 0.1+ | 1.6+ | 2003 12 17 | 704 | 0.2+ | 0.2+ |
| 1994 02 12 | 809 | 0.9− | 1.1− | 2001 02 17 | 704 | 0.4+ | 0.6+ | 2003 12 17 | 704 | 0.0 | 0.1+ |
| 1994 02 12 | 809 | 0.5− | 0.8− | 2001 02 17 | 704 | 0.1+ | 0.9+ | 2003 12 17 | 704 | 0.2+ | 0.1− |
| 1994 02 16 | 691 | 0.1− | 0.0 | 2003 11 21 | 644 | 0.6− | 0.1− | 2003 12 30 | 704 | 0.2− | 0.5+ |
| 1994 02 16 | 691 | 1.2− | 0.3+ | 2003 11 21 | 644 | 0.5− | 0.3− | 2003 12 30 | 704 | 0.2− | 0.1− |
| 1994 02 16 | 691 | 0.6+ | 0.1+ | 2003 11 21 | 704 | 0.1− | 0.3+ | 2003 12 30 | 704 | 0.1+ | 1.1− |
| 1999 09 11 | 704 | 0.6+ | 1.7+ | 2003 11 21 | 704 | 0.1− | 0.4+ | 2004 01 28 | 291 | 0.5+ | 0.4+ |
| 1999 09 11 | 704 | 0.2− | 0.5+ | 2003 11 21 | 704 | 0.1+ | 0.2+ | 2004 01 28 | 291 | 0.1+ | 0.6+ |
| 1999 09 11 | 704 | 0.4+ | 0.3+ | 2003 11 21 | 704 | (2.2+ | 0.7−) | 2004 01 28 | 291 | 0.2+ | 0.2+ |
| 1999 09 11 | 704 | 0.2− | 1.4+ | 2003 11 21 | 704 | 0.5− | 1.3− | 2005 04 04 | G92 | 0.9+ | 0.4+ |
| 2001 02 03 | 704 | 0.4+ | 0.5+ | 2003 11 21 | 644 | 0.5− | 0.2+ | 2005 04 04 | G92 | 0.5+ | 0.9+ |
| 2001 02 03 | 704 | 0.1+ | 0.4+ | 2003 12 03 | 704 | 0.0 | 0.1− | 2005 04 04 | G92 | 0.6+ | 0.7+ |
| 2001 02 03 | 704 | 0.7+ | 0.4− | 2003 12 03 | 704 | 0.3− | 0.3− | 2006 07 29 | E12 | 0.6− | 0.5+ |
| 2001 02 03 | 704 | 1.4+ | 0.3− | 2003 12 03 | 704 | 0.4− | 0.2− | 2006 07 29 | E12 | 0.2− | 0.5+ |
| 2001 02 03 | 704 | 0.4+ | 0.6− | 2003 12 03 | 704 | 0.4+ | 0.1− | 2006 07 29 | E12 | 1.2− | 0.1+ |
| 2001 02 17 | 704 | 0.2+ | 0.3+ | 2003 12 03 | 704 | 0.3− | 0.2− | 2006 07 29 | E12 | 0.1+ | 0.0 |
| 2001 02 17 | 704 | 0.4+ | 0.0 | 2003 12 17 | 704 | 0.2− | 0.3− | | | | |

**2003 WO$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.31074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22721658 | $\omega$ | 70.26513 | | −0.65270590 | | −0.75144286 |
| $a$ | 2.6597615 | $\Omega$ | 60.86238 | | +0.64716048 | | −0.61922153 |
| $e$ | 0.1323040 | $i$ | 6.34181 | | +0.39390142 | | −0.22781205 |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 1.6+ | 1.2+ | 2003 11 21 | 704 | 0.8− | 1.4+ | 2003 12 14 | 291 | 0.1+ | 0.1+ |
| 2000 01 29 | 704 | 0.1+ | 0.2− | 2003 11 21 | 704 | 0.9− | 2.0+ | 2003 12 14 | 291 | 0.2+ | 0.1− |
| 2000 01 29 | 704 | 0.7− | 0.4+ | 2003 11 26 | 704 | 0.2+ | 0.9+ | 2003 12 22 | 704 | 0.3− | 0.8− |
| 2000 01 29 | 704 | 0.9− | 1.1− | 2003 11 26 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.4+ | 0.6− |
| 2001 05 22 | 807 | 0.2− | 0.4+ | 2003 11 26 | 704 | 0.7+ | 1.3+ | 2003 12 22 | 704 | 0.3− | 0.1+ |
| 2001 05 22 | 807 | 0.2+ | 0.4+ | 2003 11 26 | 704 | 1.0− | 0.3− | 2003 12 22 | 704 | 1.0+ | 0.1+ |
| 2002 08 30 | 644 | 0.3+ | 0.2+ | 2003 11 26 | 704 | 0.5+ | 0.1+ | 2005 04 18 | 691 | 1.1− | 0.6− |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2003 11 30 | 691 | 0.0 | 0.3− | 2005 04 18 | 691 | 0.6+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.5− | 0.1+ | 2003 11 30 | 691 | 0.1− | 0.3− | 2005 04 18 | 691 | 0.6+ | 0.4+ | | |
| 2003 11 21 | 704 | 0.5+ | 0.8+ | 2003 11 30 | 691 | 0.1− | 0.4− | | | | | | |
| 2003 11 21 | 704 | 1.3− | 0.1+ | 2003 12 14 | 291 | 0.2+ | 0.0 | | | | | | |

**2003 WP$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.75735 | | (2000.0) | | +0.88423634 | −0.00479324 |
| $n$ | 0.16970489 | $\omega$ | 259.04777 | | +0.15044046 | +0.94957389 |
| $a$ | 3.2310212 | $\Omega$ | 99.94498 | | −0.44214676 | +0.31350671 |
| $e$ | 0.2107519 | $i$ | 28.30334 | | | |
| $P$ | 5.81 | $H$ | 13.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 704 | 0.1− | 0.8+ | 2003 11 23 | 704 | 0.4− | 0.2− | 2003 12 27 | 704 | (2.6− | 0.3−) | |
| 2001 05 26 | 704 | 0.6+ | 0.1+ | 2003 11 23 | 704 | 0.0 | 1.0+ | 2003 12 27 | 704 | 0.8− | 0.4− | |
| 2001 05 26 | 704 | 0.0 | 1.2+ | 2003 11 23 | 704 | 1.1+ | 1.1+ | 2003 12 27 | 704 | 0.7− | 1.3− | |
| 2001 06 21 | 704 | 0.2+ | 0.1+ | 2003 12 17 | 691 | 0.0 | 0.0 | 2003 12 27 | 704 | 0.7− | 0.1+ | |
| 2001 06 21 | 704 | 0.7+ | 0.1− | 2003 12 17 | 691 | 0.1− | 0.0 | 2003 12 27 | 704 | 0.1− | 1.1+ | |
| 2001 06 21 | 704 | 0.0 | 0.4− | 2003 12 17 | 691 | 0.1− | 0.0 | 2006 05 04 | 703 | 0.2+ | 0.3− | |
| 2001 06 21 | 704 | 0.2+ | 0.7+ | 2003 12 22 | 704 | 0.5+ | 0.0 | 2006 05 04 | 703 | 0.5− | 0.1+ | |
| 2003 01 03 | 704 | 0.4− | 0.1+ | 2003 12 22 | 704 | 0.2− | 0.1− | 2006 05 04 | 703 | 0.6− | 0.1+ | |
| 2003 01 03 | 704 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.2+ | 0.0 | 2006 05 04 | 703 | 0.3+ | 0.8− | |
| 2003 01 03 | 704 | 0.0 | 0.6+ | 2003 12 22 | 704 | 0.1+ | 0.5+ | | | | | |
| 2003 11 23 | 704 | 0.6+ | 0.2+ | 2003 12 22 | 704 | 0.8+ | 0.8+ | | | | | |

**2003 WQ$_{192}$ = 1994 RA$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 179.69227 | | (2000.0) | | −0.74702647 | −0.66354832 |
| $n$ | 0.24132704 | $\omega$ | 185.28922 | | +0.61196017 | −0.66246005 |
| $a$ | 2.5550460 | $\Omega$ | 313.05324 | | +0.25972333 | −0.34763530 |
| $e$ | 0.0863540 | $i$ | 3.19158 | | | |
| $P$ | 4.08 | $H$ | 16.3 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 02 | 691 | 0.1+ | 0.4− | 2003 12 01 | 691 | 0.1− | 0.0 | 2005 04 06 | 691 | 0.3+ | 0.0 | |
| 1994 09 02 | 691 | 0.1+ | 1.1− | 2003 12 01 | 691 | 0.1+ | 0.1+ | 2005 04 14 | 703 | 2.0− | 0.3− | |
| 1994 09 02 | 691 | 0.3+ | 0.6− | 2003 12 18 | 691 | 0.0 | 0.0 | 2005 04 14 | 703 | 1.3− | 0.3+ | |
| 1994 09 09 | 691 | 0.1+ | 0.7+ | 2003 12 18 | 691 | 0.0 | 0.0 | 2005 04 14 | 703 | 0.2+ | 0.6− | |
| 1994 09 09 | 691 | 0.4− | 0.9+ | 2003 12 18 | 691 | 0.1+ | 0.1− | 2005 04 14 | 703 | 0.6− | 0.7+ | |
| 1994 09 09 | 691 | 0.1− | 0.6+ | 2005 03 17 | G96 | 0.2− | 0.2− | 2005 05 06 | G96 | 0.1− | 0.7− | |
| 2003 11 24 | 699 | 0.6− | 0.5− | 2005 03 17 | G96 | 0.3− | 0.1− | 2005 05 06 | G96 | 0.0 | 0.4+ | |
| 2003 11 24 | 699 | 0.2− | 1.5+ | 2005 03 17 | G96 | 0.2− | 0.1− | 2005 05 06 | G96 | 1.4+ | 0.9+ | |
| 2003 11 24 | 699 | 0.1+ | 0.7− | 2005 03 17 | G96 | 0.5− | 0.0 | 2005 05 06 | G96 | 0.1+ | 0.7− | |
| 2003 11 24 | 699 | 0.3+ | 0.3− | 2005 04 06 | 691 | 0.3+ | 0.0 | | | | | |
| 2003 12 01 | 691 | 0.1− | 0.0 | 2005 04 06 | 691 | 0.3+ | 0.1+ | | | | | |

**2003 WR$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.29497 | | (2000.0) | | +0.91154567 | −0.36408047 |
| $n$ | 0.18070606 | $\omega$ | 298.49264 | | +0.41115435 | +0.81384374 |
| $a$ | 3.0985195 | $\Omega$ | 83.40406 | | −0.00604885 | +0.45288384 |
| $e$ | 0.0185269 | $i$ | 11.09297 | | | |
| $P$ | 5.45 | $H$ | 15.7 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 699 | 0.2+ | 0.1+ | 2003 12 01 | 704 | 0.4+ | 0.0 | 2006 02 02 | 691 | 0.5− | 0.0 | |
| 2003 11 24 | 699 | 0.5− | 0.2− | 2003 12 14 | 691 | 0.1+ | 0.1− | 2006 02 02 | 691 | 0.4+ | 0.1+ | |
| 2003 11 24 | 699 | 0.0 | 0.6− | 2003 12 14 | 691 | 0.0 | 0.1− | 2006 02 02 | 691 | 0.1− | 0.3− | |
| 2003 11 24 | 699 | 0.4− | 0.2+ | 2003 12 14 | 691 | 0.3+ | 0.1− | 2006 04 30 | 703 | (0.1− | 2.9−) | |
| 2003 12 01 | 704 | 0.5− | 0.2− | 2003 12 27 | 691 | 0.0 | 0.2− | 2006 04 30 | 703 | (1.2+ | 2.1+) | |
| 2003 12 01 | 704 | 0.5− | 0.4+ | 2003 12 27 | 691 | 0.1− | 0.3+ | 2006 04 30 | 703 | 0.3+ | 1.0− | |
| 2003 12 01 | 704 | 0.1− | 0.2− | 2003 12 27 | 691 | 0.1+ | 0.3+ | 2006 04 30 | 703 | 0.0 | 1.5+ | |

**2003 WS$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.59045 | | (2000.0) | | +0.93891392 | −0.29809422 |
| $n$ | 0.24025799 | $\omega$ | 81.12086 | | +0.18852390 | +0.86359465 |
| $a$ | 2.5626197 | $\Omega$ | 296.06840 | | +0.28792254 | +0.40662528 |
| $e$ | 0.1868526 | $i$ | 11.03846 | | | |
| $P$ | 4.10 | $H$ | 16.1 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.4− | 0.2+ | 2003 11 24 | 704 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.3+ | 0.3+ | |
| 2000 01 03 | 704 | 0.1− | 1.6− | 2003 11 24 | 704 | 0.8− | 0.3+ | 2003 12 28 | 704 | 0.6− | 0.4+ | |
| 2000 01 03 | 704 | 1.9− | 1.2− | 2003 12 18 | 704 | 0.8+ | 0.6− | 2003 12 28 | 704 | 0.1+ | 0.1− | |
| 2000 01 31 | 691 | 0.3+ | 0.1− | 2003 12 18 | 704 | 0.9+ | 0.2− | 2003 12 28 | 704 | 0.3+ | 0.2+ | |
| 2000 01 31 | 691 | 0.2+ | 0.2+ | 2003 12 18 | 704 | 1.0− | 0.3− | 2003 12 28 | 704 | 0.1+ | 0.2− | |
| 2000 01 31 | 691 | 0.0 | 0.5+ | 2003 12 23 | 704 | 0.6+ | 0.3− | 2004 01 16 | 691 | 0.2− | 0.1− | |
| 2003 11 24 | 704 | 0.7− | 1.0+ | 2003 12 23 | 704 | 0.3+ | 0.0 | 2004 01 16 | 691 | 0.2− | 0.1− | |
| 2003 11 24 | 704 | 0.0 | 0.6+ | 2003 12 23 | 704 | 0.9+ | 0.3− | 2004 01 16 | 691 | 0.0 | 0.0 | |

**2003 WT$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.27279 | | (2000.0) | | +0.05886109 | −0.95405741 |
| $n$ | 0.17758940 | $\omega$ | 3.01717 | | +0.90959222 | −0.07000005 |
| $a$ | 3.1346666 | $\Omega$ | 83.74252 | | +0.41131176 | +0.29133220 |
| $e$ | 0.1062586 | $i$ | 17.19029 | | | |
| $P$ | 5.55 | $H$ | 15.0 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 18 | 644 | 0.4− | 0.6+ | 2003 12 16 | 703 | 0.8− | 0.2− | 2005 03 01 | 703 | 0.6− | 0.2− | |
| 2003 11 18 | 644 | 0.2− | 0.4+ | 2003 12 16 | 703 | 0.9− | 1.1+ | 2005 03 01 | 703 | 0.3− | 0.4− | |
| 2003 11 18 | 644 | 0.7+ | 0.2− | 2003 12 22 | 704 | 0.7+ | 0.6+ | 2005 03 01 | 703 | 0.2− | 0.3− | |
| 2003 12 01 | 704 | 0.3− | 0.0 | 2003 12 22 | 704 | 0.2− | 0.1− | 2006 05 02 | 691 | 0.0 | 0.2+ | |
| 2003 12 01 | 704 | 0.0 | 0.3+ | 2003 12 22 | 704 | 0.3− | 0.1− | 2006 05 02 | 691 | 0.0 | 0.3+ | |
| 2003 12 01 | 704 | 0.2− | 0.5+ | 2003 12 22 | 704 | 0.3+ | 0.6+ | 2006 05 02 | 691 | 0.1− | 0.1+ | |
| 2003 12 01 | 704 | 0.3+ | 0.4+ | 2003 12 26 | 608 | 0.1+ | 0.5− | 2006 05 23 | 691 | 0.1+ | 0.1− | |
| 2003 12 01 | 704 | 0.4+ | 0.9+ | 2003 12 26 | 608 | 0.9+ | 1.2− | 2006 05 23 | 691 | 0.2− | 0.0 | |
| 2003 12 16 | 703 | 0.5− | 0.9− | 2003 12 26 | 608 | 0.2+ | 0.1− | 2006 05 23 | 691 | 0.5+ | 0.2+ | |
| 2003 12 16 | 703 | 1.3− | 0.2+ | 2005 03 01 | 703 | 1.1+ | 0.3+ | | | | | |

**2003 WV$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.28012 | | (2000.0) | | −0.00808046 | −0.98358221 |
| $n$ | 0.18354584 | $\omega$ | 357.65037 | | +0.92037040 | −0.07780287 |
| $a$ | 3.0664768 | $\Omega$ | 92.77408 | | +0.39096423 | +0.16282733 |
| $e$ | 0.1076265 | $i$ | 10.39837 | | | |
| $P$ | 5.37 | $H$ | 15.7 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 699 | 0.3− | 0.2− | 2003 12 03 | 704 | 0.3+ | 0.7+ | 2005 03 09 | 703 | 0.8− | 0.1+ | |
| 2003 11 19 | 699 | 0.2− | 0.3− | 2003 12 03 | 704 | 0.7− | 0.1+ | 2005 03 09 | 703 | 0.0 | 0.2+ | |
| 2003 11 19 | 699 | 0.0 | 0.2− | 2003 12 03 | 704 | 0.7+ | 1.4+ | 2005 03 09 | 703 | 0.4+ | 0.9− | |
| 2003 11 19 | 699 | 0.1+ | 0.6− | 2003 12 21 | 691 | 0.0 | 0.1− | 2005 03 09 | 703 | 0.5+ | 0.3+ | |
| 2003 11 26 | 691 | 0.4− | 0.0 | 2003 12 21 | 691 | 0.2− | 0.0 | 2006 05 26 | 691 | 0.1+ | 0.6+ | |
| 2003 11 26 | 691 | 0.2− | 0.1+ | 2003 12 21 | 691 | 0.2− | 0.1− | 2006 05 26 | 691 | 0.1+ | 0.4+ | |
| 2003 11 26 | 691 | 0.0 | 0.2+ | 2004 01 18 | 644 | 0.0 | 0.3+ | 2006 05 26 | 691 | 0.2+ | 0.2+ | |
| 2003 12 03 | 704 | 1.1+ | 1.4+ | 2004 01 18 | 644 | 0.5+ | 0.0 | | | | | |
| 2003 12 03 | 704 | 0.5+ | 1.4+ | 2004 01 18 | 644 | 0.3+ | 0.1+ | | | | | |

**2003 WA$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.84979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21765698 | $\omega$ | 354.40789 | | −0.36990656 | | −0.91791460 |
| $a$ | 2.7370810 | $\Omega$ | 117.23191 | | +0.85853907 | | −0.39676599 |
| $e$ | 0.2626973 | $i$ | 9.28967 | | +0.35507717 | | +0.00308799 |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.6− | 0.5− | 2003 11 23 | 699 | 0.1+ | 0.6+ | 2003 12 05 | 703 | 1.0− | 1.3− |
| 2000 03 12 | 704 | 0.1+ | 0.9− | 2003 11 23 | 699 | 1.4+ | 0.5+ | 2003 12 20 | 704 | 0.8+ | 0.6+ |
| 2000 03 12 | 704 | 0.0 | 0.5− | 2003 11 30 | 704 | 0.3+ | 0.1− | 2003 12 20 | 704 | 0.2+ | 1.8+ |
| 2000 03 12 | 704 | 0.3− | 0.6− | 2003 11 30 | 704 | 0.1+ | 0.4− | 2003 12 20 | 704 | 0.3+ | 0.1− |
| 2000 04 03 | 704 | 0.3+ | 0.5+ | 2003 11 30 | 704 | 0.7+ | 0.1− | 2003 12 20 | 704 | 0.1+ | 0.3− |
| 2000 04 03 | 704 | 0.9+ | 0.8+ | 2003 11 30 | 704 | 0.6+ | 0.0 | 2003 12 20 | 704 | 0.2− | 1.5+ |
| 2000 04 03 | 704 | 0.5− | 1.4+ | 2003 12 05 | 703 | 1.4− | 0.4− | 2003 12 27 | 608 | 0.2+ | 0.9− |
| 2003 11 23 | 699 | 0.2+ | 0.4+ | 2003 12 05 | 703 | 0.9− | 0.1− | 2003 12 27 | 608 | 0.2− | 0.1− |
| 2003 11 23 | 699 | 0.9− | 0.4− | 2003 12 05 | 703 | 1.1− | 0.5− | 2003 12 27 | 608 | 0.6+ | 0.5− |

**2003 WD$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.66872 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28276888 | $\omega$ | 104.75167 | | −0.50211941 | | −0.86462792 |
| $a$ | 2.2988730 | $\Omega$ | 15.42419 | | +0.76654034 | | −0.45417072 |
| $e$ | 0.1335288 | $i$ | 3.70060 | | +0.40036484 | | −0.21481974 |
| $P$ | 3.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 291 | 0.1− | 0.0 | 2004 01 31 | 704 | 0.7− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2003 11 24 | 291 | 0.2− | 0.1+ | 2004 01 31 | 704 | 0.5− | 1.3− | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2003 11 24 | 291 | 0.4+ | 0.3+ | 2004 02 23 | 704 | 0.9+ | 1.0+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2003 12 28 | 704 | 0.8+ | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2003 12 28 | 704 | 0.0 | 0.7+ | 2004 02 23 | 704 | 1.0+ | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2003 12 28 | 704 | 0.8− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2003 12 28 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2003 12 28 | 704 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2004 01 13 | 699 | 0.1+ | 0.7− | 2006 10 21 | 703 | 0.5− | 0.9− | 2006 11 20 | 691 | 0.5+ | 0.0 |
| 2004 01 13 | 699 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.6− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2004 01 13 | 699 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.4− |
| 2004 01 13 | 699 | 0.4− | 0.4− | 2006 10 21 | 703 | 0.9− | 0.7+ | | | | |
| 2004 01 31 | 704 | 0.3− | 1.0− | 2006 10 21 | 644 | 0.0 | 0.0 | | | | |

**2003 XH$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.07228 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17648665 | $\omega$ | 257.20284 | | −0.67083065 | | −0.64928974 |
| $a$ | 3.1477107 | $\Omega$ | 241.01553 | | +0.73216756 | | −0.65670557 |
| $e$ | 0.2316575 | $i$ | 24.18287 | | −0.11796991 | | −0.38361520 |
| $P$ | 5.58 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 691 | 0.0 | 0.1+ | 2003 12 17 | 699 | 0.1+ | 0.2+ | 2004 01 18 | 703 | 1.7+ | 0.2+ |
| 2003 11 23 | 691 | 0.1− | 0.2− | 2003 12 20 | 704 | 0.7− | 2.2+ | 2004 01 18 | 703 | 0.7+ | 0.2+ |
| 2003 11 23 | 691 | 0.1+ | 0.2− | 2003 12 20 | 704 | 2.0− | 1.0+ | 2004 01 18 | 703 | 0.4+ | 0.0 |
| 2003 12 01 | 704 | 0.2+ | 0.1− | 2003 12 20 | 704 | 2.1− | 1.8+ | 2004 02 11 | 644 | 0.1+ | 0.3+ |
| 2003 12 01 | 704 | 0.0 | 0.2+ | 2003 12 21 | 703 | 0.9− | 0.5− | 2004 02 11 | 644 | 0.3+ | 0.0 |
| 2003 12 01 | 704 | 0.2+ | 0.3+ | 2003 12 21 | 703 | (2.4− | 3.0−) | 2004 02 11 | 644 | 0.0 | 0.1+ |
| 2003 12 01 | 704 | 0.0 | 0.2− | 2003 12 21 | 703 | (4.2+ | 1.1+) | 2005 04 12 | E12 | 0.3+ | 0.6− |
| 2003 12 01 | 704 | 0.3− | 0.5− | 2003 12 21 | 703 | 1.2+ | 0.8+ | 2005 04 12 | E12 | 0.8− | 0.3+ |
| 2003 12 04 | 704 | 0.0 | 0.2+ | 2003 12 28 | 691 | 0.1− | 0.3− | 2005 04 12 | E12 | 0.1− | 0.6− |
| 2003 12 04 | 704 | 0.4+ | 0.2+ | 2003 12 28 | 691 | 0.2− | 0.4− | 2005 04 12 | E12 | 0.1+ | 0.2− |
| 2003 12 04 | 704 | 0.1− | 0.2+ | 2003 12 28 | 691 | 0.3− | 0.4− | 2005 05 11 | 644 | 0.1+ | 0.1+ |
| 2003 12 04 | 704 | 0.4+ | 0.1+ | 2004 01 18 | 644 | 0.2+ | 0.0 | 2005 05 11 | 644 | 0.5+ | 0.2+ |
| 2003 12 17 | 699 | 0.6+ | 0.3+ | 2004 01 18 | 644 | 0.0 | 0.2+ | 2005 05 11 | 644 | 0.1+ | 0.7+ |
| 2003 12 17 | 699 | 0.4+ | 0.5+ | 2004 01 18 | 644 | 0.3+ | 0.1+ | | | | |
| 2003 12 17 | 699 | 0.2+ | 0.0 | 2004 01 18 | 703 | 0.0 | 0.1+ | | | | |

**2003 XK$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.60543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26267570 | $\omega$ | 300.44959 | | +0.61870822 | | −0.77695577 |
| $a$ | 2.4146607 | $\Omega$ | 110.86979 | | +0.75673499 | | +0.54959238 |
| $e$ | 0.0916842 | $i$ | 7.15368 | | +0.21107411 | | +0.30706341 |
| $P$ | 3.75 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2− | 0.7+ | 2003 12 03 | 704 | 0.6+ | 0.6+ | 2003 12 22 | 704 | 0.6− | 0.8− |
| 1999 10 09 | 704 | 0.2+ | 0.6+ | 2003 12 03 | 704 | 0.9− | 0.1+ | 2003 12 22 | 704 | 0.1+ | 0.1+ |
| 1999 10 09 | 704 | 0.6− | 0.1− | 2003 12 03 | 704 | 0.1+ | 0.0 | 2004 01 17 | 644 | 0.1− | 0.3+ |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2003 12 03 | 704 | 1.3+ | 0.2+ | 2004 01 17 | 644 | 0.5− | 0.1+ |
| 2003 11 18 | 691 | 0.0 | 0.1+ | 2003 12 03 | 704 | 0.0 | 0.4− | 2004 01 17 | 644 | 0.2− | 0.2+ |
| 2003 11 18 | 691 | 0.1− | 0.2+ | 2003 12 03 | 704 | 0.5− | 0.1− | 2005 05 13 | 691 | 0.2+ | 0.4+ |
| 2003 12 01 | 704 | 0.2+ | 0.0 | 2003 12 03 | 704 | 0.3− | 0.2+ | 2005 05 13 | 691 | 0.1− | 0.1+ |
| 2003 12 01 | 704 | 0.4− | 0.3− | 2003 12 03 | 704 | 0.9+ | 0.2+ | 2005 05 13 | 691 | 0.3+ | 0.6+ |
| 2003 12 01 | 704 | 0.4+ | 0.5+ | 2003 12 03 | 704 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.2− | 0.8+ |
| 2003 12 01 | 704 | 0.1+ | 0.3+ | 2003 12 22 | 704 | 0.0 | 0.3− | 2006 08 17 | 644 | 0.1− | 0.5+ |
| 2003 12 01 | 704 | 0.5− | 0.3+ | 2003 12 22 | 704 | 0.3− | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.7+ |
| 2003 12 03 | 704 | 0.6+ | 0.5+ | 2003 12 22 | 704 | (0.5+ | 2.0−) | | | | |

**2003 XR$_4$ = 2006 RY$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.07734 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28129038 | $\omega$ | 267.29978 | | −0.11891181 | | −0.99287279 |
| $a$ | 2.3069214 | $\Omega$ | 189.54059 | | +0.92902369 | | −0.10842307 |
| $e$ | 0.1915465 | $i$ | 2.75808 | | +0.35039259 | | −0.04947793 |
| $P$ | 3.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.1− | 0.8− | 2006 09 25 | 699 | 0.4+ | 0.1+ |
| 1999 09 30 | 691 | 0.0 | 0.2− | 2003 12 22 | 704 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.8− | 0.7+ |
| 1999 09 30 | 691 | 0.1+ | 0.0 | 2003 12 24 | 704 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 03 14 | 691 | 0.2+ | 0.3+ | 2003 12 24 | 704 | 0.2+ | 0.4− | 2006 09 28 | G96 | 0.4− | 0.6− |
| 2001 03 14 | 691 | 0.2+ | 0.3+ | 2003 12 24 | 704 | 0.7− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2001 03 14 | 691 | 0.1+ | 0.6+ | 2003 12 24 | 704 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2003 12 01 | 704 | (2.7+ | 0.9−) | 2003 12 24 | 704 | 0.9− | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2003 12 01 | 704 | (1.5+ | 1.7+) | 2003 12 24 | 704 | 0.1+ | 0.6− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2003 12 01 | 704 | 1.1+ | 1.4+ | 2003 12 24 | 704 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2003 12 01 | 704 | (2.1+ | 0.1+) | 2006 08 19 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2003 12 03 | 704 | 0.3+ | 0.1+ | 2006 08 19 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 12 03 | 704 | 0.2− | 0.1+ | 2006 08 19 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2003 12 03 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.9+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2003 12 03 | 704 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.9+ | 0.9− |
| 2003 12 19 | 704 | 0.3+ | 1.3− | 2006 08 28 | 703 | 1.4− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2003 12 19 | 704 | 0.4− | 0.2− | 2006 08 28 | 703 | 1.1− | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2003 12 19 | 704 | 0.5− | 0.3+ | 2006 09 12 | 703 | 1.0+ | 1.0− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2003 12 19 | 704 | 0.6− | 0.1+ | 2006 09 12 | 703 | 0.4+ | 1.1+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2003 12 21 | 704 | 0.6− | 0.6+ | 2006 09 12 | 703 | 0.8− | 0.9− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2003 12 21 | 704 | 0.8+ | 0.5+ | 2006 09 12 | 703 | 0.1+ | 0.5− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2003 12 21 | 704 | 0.9+ | 0.5+ | 2006 09 16 | 699 | 0.1+ | 1.0+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2003 12 21 | 704 | 1.1+ | 0.6+ | 2006 09 16 | 699 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2003 12 21 | 704 | 1.3+ | 0.5+ | 2006 09 16 | 699 | 0.5+ | 0.0 | 2006 11 21 | G96 | 0.6− | 0.6− |
| 2003 12 22 | 704 | (1.7− | 0.1−) | 2006 09 16 | 699 | 0.7− | 0.2+ | 2006 11 21 | G96 | 0.6− | 0.2− |
| 2003 12 22 | 704 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.0 | | | | |
| 2003 12 22 | 704 | 1.0− | 0.4+ | 2006 09 25 | 699 | 0.7− | 1.3+ | | | | |

**2003 XL$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.86705 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21104371 | $\omega$ | 81.77480 | +0.60279040 | | −0.79493292 | |
| $a$ | 2.7939659 | $\Omega$ | 330.80839 | +0.66529825 | | +0.54830578 | |
| $e$ | 0.2298609 | $i$ | 8.10231 | +0.44047925 | | +0.25969680 | |
| $P$ | 4.67 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.2− | 0.0 | 2003 11 05 | 699 | 0.1− | 0.4+ | 2003 12 04 | 704 | 0.3− | 0.2− |
| 2000 02 05 | 695 | 0.2+ | 0.0 | 2003 11 05 | 699 | 0.2− | 0.2+ | 2003 12 04 | 704 | 0.2+ | 0.0 |
| 2003 09 30 | 704 | 0.0 | 0.3+ | 2003 11 05 | 699 | 0.8− | 0.7+ | 2003 12 04 | 704 | 0.7+ | 0.5− |
| 2003 09 30 | 704 | (2.4+ | 1.4−) | 2003 11 05 | 699 | 0.4+ | 1.2− | 2003 12 29 | 704 | 0.1− | 0.8− |
| 2003 09 30 | 704 | 0.5+ | 1.0+ | 2003 11 20 | 704 | 0.4− | 0.0 | 2003 12 29 | 704 | 0.7+ | 0.5− |
| 2003 09 30 | 704 | 0.2+ | 1.6+ | 2003 11 20 | 704 | 0.5− | 0.3+ | 2003 12 29 | 704 | 0.0 | 0.6− |
| 2003 09 30 | 704 | 0.0 | 0.8+ | 2003 11 20 | 704 | 0.2− | 0.1− | 2003 12 29 | 704 | 0.2+ | 1.5+ |
| 2003 10 18 | 644 | 0.1− | 0.2− | 2003 11 20 | 704 | 0.1− | 0.1− | 2003 12 29 | 704 | (2.6+ | 1.7−) |
| 2003 10 18 | 644 | 0.1+ | 0.0 | 2003 11 20 | 704 | 0.6− | 0.3+ | 2005 03 08 | 691 | 0.2+ | 0.1− |
| 2003 10 18 | 644 | 0.1+ | 0.2− | 2003 12 03 | 699 | 0.9+ | 0.0 | 2005 03 08 | 691 | 0.3− | 0.4+ |
| 2003 11 03 | 704 | 0.4− | 0.3+ | 2003 12 03 | 699 | 0.8+ | 0.2+ | 2005 03 08 | 691 | 0.3+ | 0.1+ |
| 2003 11 03 | 704 | 0.1− | 0.4+ | 2003 12 03 | 699 | 0.4− | 1.1− | | | | |
| 2003 11 03 | 704 | 0.4− | 0.6− | 2003 12 03 | 699 | 0.2+ | 0.6− | | | | |

**2003 XC$_{11}$ = 2006 SC$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.38909 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28248696 | $\omega$ | 293.67125 | +0.85224352 | | −0.50986737 | |
| $a$ | 2.3004022 | $\Omega$ | 97.16940 | +0.51261896 | | +0.76921692 | |
| $e$ | 0.1177640 | $i$ | 6.77896 | +0.10441640 | | +0.38515010 | |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.4− | 0.2+ | 2003 12 21 | 704 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.5− |
| 1999 10 16 | 704 | 0.1+ | 0.8+ | 2003 12 21 | 704 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.3+ | 0.1+ |
| 1999 10 16 | 704 | 0.1+ | 0.7+ | 2003 12 21 | 704 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 1999 10 16 | 704 | 0.7− | 0.4+ | 2003 12 21 | 704 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.1+ |
| 2003 12 13 | 673 | 0.1− | 0.2− | 2003 12 28 | 673 | 0.5− | 0.1+ | 2006 10 02 | 703 | 0.3+ | 1.1− |
| 2003 12 13 | 673 | 0.2+ | 0.1− | 2003 12 28 | 673 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.7− | 0.1+ |
| 2003 12 13 | 673 | 0.5− | 0.0 | 2003 12 28 | 673 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.2− | 0.7− |
| 2003 12 14 | 673 | 0.2+ | 0.1− | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2003 12 14 | 673 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2003 12 14 | 673 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2003 12 19 | 704 | 0.5− | 0.2+ | 2006 09 20 | 703 | 1.0− | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.8+ |
| 2003 12 19 | 704 | 0.6+ | 0.6+ | 2006 09 20 | 703 | 0.0 | 0.1− | 2006 10 21 | 703 | 1.0+ | 0.5+ |
| 2003 12 19 | 704 | 0.5− | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.6+ |
| 2003 12 19 | 704 | 0.4+ | 0.3− | 2006 09 20 | 703 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.7+ | 0.7− |

**2003 XV$_{13}$ = 2006 QU$_{181}$ = 2006 PY$_{27}$**

Id. Minor Planet Center (*MPO* 103580; d, unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.57066 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28266340 | $\omega$ | 188.93571 | +0.98642400 | | −0.16421782 | |
| $a$ | 2.2994448 | $\Omega$ | 180.51673 | +0.15358001 | | +0.92348728 | |
| $e$ | 0.1830877 | $i$ | 2.85752 | +0.05814527 | | +0.34670411 | |
| $P$ | 3.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.1− | 0.6+ | 2006 07 25 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.6− | 0.4+ |
| 2002 05 18 | 644 | 0.1+ | 0.6+ | 2006 07 25 | 644 | 0.3− | 0.2+ | 2006 08 29 | 703 | 0.7+ | 0.2− |
| 2002 05 18 | 644 | 0.4+ | 1.2− | 2006 07 25 | 644 | 0.5− | 0.4+ | 2006 08 29 | 703 | 0.6− | 0.9− |
| 2003 12 14 | 644 | 0.1− | 0.3+ | 2006 07 25 | 644 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.8− | 0.1+ |
| 2003 12 14 | 644 | 0.3− | 0.1+ | 2006 07 25 | 644 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2003 12 14 | 644 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.7+ | 0.3+ |
| 2003 12 16 | 691 | 0.2+ | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.6+ | 0.2+ |
| 2003 12 16 | 691 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.6+ | 0.1+ |
| 2003 12 16 | 691 | 0.0 | 0.0 | 2006 08 14 | E12 | 1.0− | 0.0 | 2006 10 20 | G96 | 1.3+ | 0.5+ |
| 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 08 14 | E12 | 0.6− | 0.2− | 2006 10 20 | G96 | 0.6+ | 0.2− |
| 2003 12 28 | 691 | 0.2+ | 0.1+ | 2006 08 14 | E12 | 0.1+ | 0.1− | 2006 10 20 | G96 | 1.1+ | 0.0 |
| 2003 12 28 | 691 | 0.8− | 0.6+ | 2006 08 15 | 644 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.7+ | 0.3+ |
| 2005 05 06 | G96 | 0.5+ | 0.0 | 2006 08 15 | 644 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.7+ | 0.1+ |
| 2005 05 06 | G96 | 0.1− | 0.6+ | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.9+ | 0.0 |
| 2005 05 06 | G96 | 0.3+ | 0.2+ | 2006 08 24 | 644 | 0.6− | 0.4+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2005 05 06 | G96 | 0.2+ | 0.3+ | 2006 08 24 | 644 | 0.5− | 0.3− | | | | |
| 2006 07 25 | 644 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.0 | | | | |

**2003 XQ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.44194 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21681213 | $\omega$ | 165.97420 | −0.72756806 | | −0.67933503 | |
| $a$ | 2.7441867 | $\Omega$ | 330.51909 | +0.60920315 | | −0.57566312 | |
| $e$ | 0.3026397 | $i$ | 11.20703 | +0.31546194 | | −0.45509986 | |
| $P$ | 4.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.3− | 0.0 | 2004 01 13 | 699 | 0.4+ | 0.4+ | 2004 02 17 | 645 | 0.1− | 0.3− |
| 2002 08 28 | 644 | 0.2+ | 0.0 | 2004 01 13 | 699 | 0.2− | 0.1− | 2004 02 17 | 645 | 0.1− | 0.3− |
| 2002 08 28 | 644 | 0.5+ | 0.3+ | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2004 02 22 | 951 | 0.2+ | 0.3− |
| 2002 09 13 | 644 | 0.3+ | 0.1− | 2004 01 17 | 644 | 0.1+ | 0.1+ | 2004 02 22 | 951 | 0.7+ | 0.3+ |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2004 01 17 | 644 | 0.3+ | 0.3+ | 2004 02 22 | 951 | 0.6+ | 0.1+ |
| 2002 09 13 | 644 | 0.3− | 0.1− | 2004 01 26 | 699 | 0.1+ | 0.1+ | 2004 02 22 | 951 | 0.7− | 0.4+ |
| 2002 09 13 | 644 | 0.8− | 0.8+ | 2004 01 26 | 699 | 0.0 | 0.0 | 2004 02 22 | 951 | 0.6− | 0.8− |
| 2002 09 13 | 644 | 0.3− | 0.2+ | 2004 01 26 | 699 | 0.3− | 0.0 | 2004 02 22 | 951 | 0.2− | 0.3− |
| 2003 11 19 | 704 | 1.0+ | 0.8+ | 2004 01 26 | 699 | 0.2− | 0.8+ | 2004 02 23 | 704 | 0.1− | 0.1+ |
| 2003 11 19 | 704 | 1.0+ | 0.5+ | 2004 01 31 | 704 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.1− | 1.1+ |
| 2003 11 19 | 704 | 0.7− | 0.3+ | 2004 01 31 | 704 | 0.4+ | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.0 |
| 2003 11 19 | 704 | 1.2− | 1.6+ | 2004 01 31 | 704 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.3− | 0.1− |
| 2003 11 19 | 704 | 1.3− | 0.4− | 2004 01 31 | 704 | 0.1+ | 0.2+ | 2004 03 13 | 703 | 0.2+ | 0.6+ |
| 2003 11 30 | 703 | 0.9+ | 1.0− | 2004 01 31 | 704 | 0.1+ | 0.1+ | 2004 03 13 | 703 | 0.7+ | 0.3− |
| 2003 11 30 | 703 | 0.9+ | 1.4− | 2004 02 02 | 704 | 0.1+ | 0.1− | 2004 03 13 | 703 | 0.1− | 0.3+ |
| 2003 11 30 | 703 | 1.9+ | 1.0− | 2004 02 02 | 704 | 0.0 | 0.4+ | 2004 03 13 | 703 | 0.8+ | 0.0 |
| 2003 11 30 | 703 | 0.5+ | 0.5− | 2004 02 02 | 704 | 0.1+ | 0.2+ | 2004 03 14 | 704 | 0.6+ | 0.2+ |
| 2003 12 04 | 704 | 0.7− | 0.6− | 2004 02 02 | 704 | 0.1+ | 0.4+ | 2004 03 14 | 704 | 0.4− | 0.3+ |
| 2003 12 04 | 704 | 0.2+ | 0.3+ | 2004 02 02 | 704 | 0.1+ | 0.3+ | 2004 03 14 | 704 | 0.1− | 0.0 |
| 2003 12 04 | 704 | 0.2− | 0.5+ | 2004 02 03 | 704 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.1− | 1.1+ |
| 2003 12 04 | 704 | 0.0 | 0.6+ | 2004 02 03 | 704 | 0.1− | 0.7+ | 2004 03 18 | 704 | 0.2− | 0.7+ |
| 2003 12 04 | 704 | 0.1− | 0.2+ | 2004 02 03 | 704 | 0.1+ | 0.7+ | 2004 03 18 | 704 | 0.6+ | 0.5− |
| 2003 12 17 | 644 | 0.1+ | 0.2+ | 2004 02 03 | 704 | 0.7− | 0.3+ | 2004 03 18 | 704 | 0.2− | 1.1− |
| 2003 12 17 | 644 | 0.2+ | 0.1+ | 2004 02 03 | 704 | 0.4− | 0.6+ | 2004 03 18 | 704 | 0.4− | 0.6+ |
| 2003 12 17 | 644 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.3− | 0.4+ | 2004 04 15 | 704 | 1.1+ | 0.5+ |
| 2003 12 29 | 704 | 1.3+ | 0.2+ | 2004 02 15 | 704 | 0.2− | 0.1− | 2004 04 15 | 704 | 0.9+ | 0.5+ |
| 2003 12 29 | 704 | 0.5+ | 0.7− | 2004 02 15 | 704 | 0.3− | 0.2+ | 2004 04 15 | 704 | 1.0+ | 0.4+ |
| 2003 12 29 | 704 | (0.8+ | 2.5−) | 2004 02 15 | 704 | 0.1− | 0.3+ | 2004 04 15 | 704 | 0.8+ | 0.9+ |
| 2003 12 29 | 704 | 0.6+ | 0.2− | 2004 02 15 | 704 | 0.2− | 0.4+ | 2004 04 15 | 704 | 0.2+ | 0.1+ |
| 2003 12 29 | 704 | 0.2− | 1.7− | 2004 02 17 | 691 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.4+ | 0.0 |
| 2004 01 13 | 699 | 0.1− | 0.1+ | 2004 02 17 | 691 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.8+ |
| 2004 01 13 | 699 | 0.1− | 0.2− | 2004 02 17 | 691 | 0.2− | 0.2+ | 2004 04 20 | 704 | 1.6+ | 0.3− |

**2003 XX$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.56411 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17685451 | $\omega$ | 102.01239 | −0.33325787 | | −0.94077629 | |
| $a$ | 3.1433443 | $\Omega$ | 8.29656 | +0.60553395 | | −0.26420070 | |
| $e$ | 0.2695148 | $i$ | 25.57110 | +0.72268100 | | −0.21245695 | |
| $P$ | 5.57 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 15 | 704 | 0.0 | 0.0 | 2003 12 18 | 704 | 0.3− | 0.7+ | 2005 03 17 | G96 | 0.2− | 0.2+ |
| 2003 12 15 | 704 | 0.4− | 0.8− | 2003 12 18 | 704 | 0.3+ | 0.4+ | 2005 03 17 | G96 | 0.8− | 0.0 |
| 2003 12 15 | 704 | 0.2+ | 0.1− | 2003 12 18 | 704 | 0.1− | 0.6+ | 2005 03 17 | G96 | 0.6− | 0.1− |
| 2003 12 15 | 704 | 0.0 | 0.7− | 2003 12 18 | 704 | 0.9+ | 0.3− | 2005 03 17 | 691 | 0.0 | 0.0 |
| 2003 12 17 | 704 | 0.4− | 0.1− | 2003 12 18 | 704 | 0.1+ | 0.8+ | 2005 03 17 | 691 | 0.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.5− | 0.2− | 2005 03 03 | 691 | 0.2− | 0.0 | 2005 03 17 | 691 | 0.1+ | 0.1− |
| 2003 12 17 | 704 | 0.4− | 0.5− | 2005 03 03 | 691 | 0.3+ | 0.1− | 2005 04 03 | 644 | 0.3− | 0.3− |
| 2003 12 17 | 704 | 0.1+ | 0.3+ | 2005 03 03 | 691 | 0.1+ | 0.0 | 2005 04 03 | 644 | 0.3+ | 0.0 |
| 2003 12 17 | 704 | 0.6+ | 0.3− | 2005 03 17 | G96 | 0.6− | 0.1− | 2005 04 03 | 644 | 0.1+ | 0.1+ |

**2003 XA$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 36.22508 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27599478 | $\omega$ | 13.99833 | | +0.71364650 | | +0.60111147 | | |
| $a$ | 2.3363369 | $\Omega$ | 303.16474 | | −0.67693153 | | +0.45969267 | | |
| $e$ | 0.2353949 | $i$ | 25.44725 | | −0.18020091 | | +0.65371832 | | |
| $P$ | 3.57 | $H$ | 15.0 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 18 | 608 | 0.9+ | 0.8+ | 2003 12 18 | 704 | 0.2+ | 0.3− | 2004 01 11 | 644 | 0.2− | 0.5− |
| 2001 02 18 | 608 | 1.3+ | 0.6+ | 2003 12 18 | 704 | 0.2− | 0.3− | 2004 01 11 | 644 | 0.3− | 0.7− |
| 2001 02 18 | 608 | 0.9+ | 0.8+ | 2003 12 18 | 704 | 1.4− | 0.4+ | 2004 01 19 | 704 | 0.5− | 1.2− |
| 2003 12 03 | 699 | 0.2− | 0.4+ | 2003 12 18 | 704 | 0.7− | 0.2+ | 2004 01 19 | 704 | (0.0 | 2.1−) |
| 2003 12 03 | 699 | 0.6+ | 0.8+ | 2003 12 19 | 704 | 0.6+ | 0.4+ | 2004 01 19 | 704 | 0.5− | 0.7− |
| 2003 12 03 | 699 | 0.0 | 0.6+ | 2003 12 19 | 704 | 0.7+ | 0.5− | 2006 09 12 | 704 | 0.2− | 0.8+ |
| 2003 12 03 | 699 | 0.3+ | 0.6− | 2003 12 19 | 704 | 0.2+ | 0.0 | 2006 09 12 | 704 | 0.1− | 0.7+ |
| 2003 12 15 | 704 | 0.2+ | 0.1+ | 2003 12 19 | 704 | 0.5+ | 0.0 | 2006 09 12 | 704 | 0.2− | 0.4+ |
| 2003 12 15 | 704 | 0.9− | 0.5− | 2003 12 30 | 704 | (0.7− | 1.8+) | 2006 09 12 | 704 | 0.8+ | 0.0 |
| 2003 12 15 | 704 | 0.4+ | 0.3− | 2003 12 30 | 704 | 0.1− | 0.6− | 2006 09 12 | 704 | 0.3− | 0.1+ |
| 2003 12 15 | 704 | (1.4− | 1.8−) | 2003 12 30 | 704 | 0.4− | 0.5+ | 2006 10 14 | 704 | 1.3− | 0.2+ |
| 2003 12 17 | 704 | 0.1+ | 0.1+ | 2003 12 30 | 704 | 0.4− | 0.2+ | 2006 10 14 | 704 | 0.0 | 0.1− |
| 2003 12 17 | 704 | 0.7− | 0.0 | 2003 12 30 | 704 | 0.6+ | 0.4+ | 2006 10 14 | 704 | 0.7+ | 0.6+ |
| 2003 12 17 | 704 | 0.6+ | 0.5+ | 2004 01 11 | 644 | 0.5− | 0.5− | 2006 10 14 | 704 | 0.2− | 0.5− |

**2003 XE$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 252.30620 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26217761 | $\omega$ | 193.20622 | | −0.48883924 | | −0.87095974 | | |
| $a$ | 2.4177180 | $\Omega$ | 286.07736 | | +0.80500988 | | −0.42842909 | | |
| $e$ | 0.1548005 | $i$ | 2.96196 | | +0.33614773 | | −0.24057773 | | |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 15 | 701 | 0.3− | 0.4− | 2004 01 21 | 704 | 0.3+ | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.1− |
| 2003 12 15 | 701 | 1.3− | 0.5− | 2004 01 21 | 704 | 0.2− | 0.3− | 2004 01 30 | 704 | 0.8+ | 0.6− |
| 2003 12 18 | 701 | 0.4+ | 0.2− | 2004 01 21 | 704 | 0.4− | 0.1− | 2004 01 30 | 704 | 0.1− | 0.7− |
| 2003 12 18 | 701 | 0.7− | 0.3+ | 2004 01 21 | 704 | 0.7− | 0.0 | 2004 01 30 | 704 | 0.6+ | 0.3+ |
| 2003 12 25 | 291 | 0.0 | 0.1+ | 2004 01 24 | 704 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2003 12 25 | 291 | 0.2− | 0.0 | 2004 01 24 | 704 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2003 12 25 | 291 | 0.4− | 0.1+ | 2004 01 24 | 704 | 1.1− | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.2− |
| 2003 12 27 | 691 | 0.6− | 0.4+ | 2004 01 24 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.4+ |
| 2003 12 27 | 691 | 0.5+ | 0.2− | 2004 01 24 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.6− |
| 2003 12 27 | 691 | 0.4+ | 0.3− | 2004 01 28 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2003 12 28 | 691 | 0.1− | 0.2+ | 2004 01 28 | 704 | 0.3− | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2003 12 28 | 691 | 0.5+ | 0.3− | 2004 01 28 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2003 12 28 | 691 | 0.8+ | 0.0 | 2004 01 30 | 704 | 0.8− | 0.7− | 2006 10 22 | 691 | 0.1− | 0.2− |

**2003 XH$_{15}$ = 2006 TB$_{10}$ = 2006 UJ$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 200.33633 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.30348504 | $\omega$ | 129.44808 | | −0.98878169 | | +0.12947253 | | |
| $a$ | 2.1930298 | $\Omega$ | 58.11122 | | −0.14908457 | | −0.88615056 | | |
| $e$ | 0.0456805 | $i$ | 5.03256 | | +0.00919513 | | −0.44494275 | | |
| $P$ | 3.25 | $H$ | 17.4 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.1+ | 0.1+ | 2003 12 22 | 704 | 0.8− | 0.3− | 2006 10 18 | 691 | 0.5+ | 0.1− |
| 2003 12 14 | 691 | 0.2− | 0.1+ | 2003 12 22 | 704 | 0.5+ | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2003 12 14 | 691 | 0.2− | 0.0 | 2003 12 22 | 704 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2003 12 18 | 704 | 1.2+ | 0.3− | 2005 05 28 | 599 | 0.8− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2003 12 18 | 704 | 0.2+ | 0.0 | 2005 05 28 | 599 | 0.4+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2003 12 18 | 704 | 0.7+ | 0.5+ | 2005 05 28 | 599 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2003 12 18 | 704 | (0.0 | 1.7+) | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2003 12 19 | 691 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.6− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.5− |
| 2003 12 19 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− | | | | |
| 2003 12 22 | 704 | 0.0 | 0.5− | 2006 10 18 | 691 | 0.0 | 0.6+ | | | | |

**2003 XN$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 38.32939 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29606881 | $\omega$ | 212.70788 | | +0.79669759 | | +0.59266779 | | |
| $a$ | 2.2295007 | $\Omega$ | 110.49458 | | −0.52378601 | | +0.77481813 | | |
| $e$ | 0.1625099 | $i$ | 7.26145 | | −0.30153137 | | +0.22000400 | | |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 13 | 691 | 0.5− | 0.9+ | 2003 12 19 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.1− | 0.7+ |
| 1999 06 13 | 691 | 0.3− | 0.7+ | 2003 12 19 | 704 | 0.9+ | 1.4+ | 2006 09 30 | 704 | 0.1− | 0.1+ |
| 1999 06 13 | 691 | 0.4− | 0.7+ | 2003 12 19 | 704 | 0.5+ | 0.1− | 2006 09 30 | 704 | 0.8− | 0.0 |
| 1999 07 16 | 704 | 0.4+ | 0.5− | 2003 12 19 | 704 | (2.1+ | 1.3+) | 2006 09 30 | 704 | 0.8− | 0.3+ |
| 1999 07 16 | 704 | 0.4+ | 0.3+ | 2003 12 19 | 704 | 0.5− | 1.1+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 1999 07 16 | 704 | 0.1+ | 0.6− | 2005 03 10 | 703 | 0.0 | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 1999 07 16 | 704 | 0.1+ | 0.6− | 2005 03 10 | 703 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1999 07 16 | 704 | 0.3+ | 0.2− | 2005 03 10 | 703 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2000 12 25 | 691 | 0.1− | 0.4+ | 2005 03 10 | 703 | 0.4+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2000 12 25 | 691 | 0.0 | 0.3+ | 2005 03 18 | 703 | 0.1− | 1.3− | 2006 10 12 | 644 | 0.2+ | 0.3− |
| 2000 12 25 | 691 | 0.1+ | 0.6+ | 2005 03 18 | 703 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2002 04 16 | 704 | 0.5+ | 0.6+ | 2005 03 18 | 703 | 0.9+ | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.1+ |
| 2002 04 16 | 704 | 0.0 | 0.1+ | 2005 03 18 | 703 | 0.3+ | 1.3+ | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 2002 04 16 | 704 | 0.1− | 0.2+ | 2005 04 05 | 699 | 1.3− | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2002 05 12 | 644 | 0.6+ | 0.8+ | 2005 04 05 | 699 | 0.2− | 1.5+ | 2006 10 22 | 703 | 0.2+ | 0.1+ |
| 2002 05 12 | 644 | 0.4+ | 0.7+ | 2005 04 05 | 699 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2002 05 12 | 644 | 0.6+ | 0.6+ | 2005 04 05 | 699 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 2002 05 18 | 704 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2002 05 18 | 704 | 1.4+ | 0.3+ | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.8− | 0.0 |
| 2002 05 18 | 704 | 0.5− | 1.0+ | 2006 09 16 | 699 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.4− | 0.0 |
| 2002 05 18 | 704 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.3+ | 0.1− | 2006 10 28 | 703 | 0.6+ | 0.0 |
| 2002 05 18 | 704 | 0.8+ | 0.8+ | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 10 28 | 703 | 0.9+ | 1.0+ |
| 2002 06 09 | 704 | 0.9+ | 0.4+ | 2006 09 18 | 703 | 0.6+ | 0.7+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2002 06 09 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.3− | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2002 06 09 | 704 | 1.1+ | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2003 12 01 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.1− | 2006 11 10 | 704 | 1.2+ | 0.1− |
| 2003 12 01 | 704 | 0.6+ | 0.7+ | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 11 10 | 704 | 0.6− | 0.3+ |
| 2003 12 01 | 704 | 0.2+ | 1.1+ | 2006 09 25 | 699 | 0.6− | 0.2− | 2006 11 10 | 704 | 0.2− | 0.3− |
| 2003 12 01 | 704 | 0.1− | 0.7+ | 2006 09 25 | 699 | 0.4− | 0.1+ | 2006 11 10 | 704 | 0.2− | 1.4+ |
| 2003 12 01 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.4+ | 0.3+ |
| 2003 12 14 | 644 | 0.5− | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.4− | 0.8+ |
| 2003 12 14 | 644 | 0.8− | 1.1+ | 2006 09 26 | 703 | 0.3− | 0.5− | 2006 11 16 | 703 | 1.1− | 0.1+ |
| 2003 12 14 | 644 | 0.4− | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.3− | 1.4+ |

**2003 XQ$_{35}$ = 2006 QR$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 308.69361 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28419537 | $\omega$ | 91.96778 | | +0.62947319 | | −0.77183316 | | |
| $a$ | 2.2911739 | $\Omega$ | 318.56990 | | +0.64813628 | | +0.58519303 | | |
| $e$ | 0.0756407 | $i$ | 7.78654 | | +0.42858239 | | +0.24864169 | | |
| $P$ | 3.47 | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.9− | 0.8− | 2004 01 11 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.8− | 1.2− |
| 2003 11 19 | 704 | 0.5− | 1.0− | 2004 01 11 | 644 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.2+ | 0.0 |
| 2003 11 19 | 704 | 0.6− | 1.1− | 2004 01 11 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.0 |
| 2003 11 19 | 704 | 0.9− | 1.3− | 2006 08 24 | 704 | 1.3+ | 0.9− | 2006 09 18 | 703 | 0.1+ | 0.7− |
| 2003 11 19 | 704 | 1.2− | 0.2+ | 2006 08 24 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.8+ |
| 2003 12 03 | 704 | 1.1+ | 0.4+ | 2006 08 24 | 704 | 0.4+ | 1.2+ | 2006 09 18 | 703 | 0.3+ | 1.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 03 | 704 | 0.3+ | 0.4+ | 2006 08 29 | 703 | (1.7− | 0.6−) | 2006 09 20 | 699 | 0.2− | 0.3+ |
| 2003 12 03 | 704 | 0.4+ | 0.1− | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 09 20 | 699 | 0.5− | 1.2− |
| 2003 12 03 | 704 | 0.4+ | 0.8+ | 2006 08 29 | 703 | 0.0 | 0.7+ | 2006 09 20 | 699 | 0.4+ | 0.2− |
| 2003 12 17 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.7+ | 0.9− | 2006 09 20 | 699 | 0.1− | 0.2+ |
| 2003 12 17 | 704 | 0.3− | 1.2+ | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.3− | 1.5+ |
| 2003 12 17 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.0 | 1.0+ |
| 2003 12 25 | 691 | 0.5+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.3+ | 1.3+ |
| 2003 12 25 | 691 | 0.3+ | 0.1− | 2006 09 12 | 703 | 0.4− | 0.4− | | | | |
| 2003 12 25 | 691 | 0.5− | 0.1− | 2006 09 12 | 703 | 0.7− | 0.0 | | | | |

### 2003 XM$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.93508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18178125 | $\omega$ | 93.15133 | | +0.26715748 | −0.96015114 | |
| $a$ | 3.0862895 | $\Omega$ | 340.73673 | | +0.75544138 | +0.26155212 | |
| $e$ | 0.2413107 | $i$ | 14.40576 | | +0.59827686 | +0.09848996 | |
| $P$ | 5.42 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 03 | 644 | 0.5+ | 0.0 | 2002 08 29 | 644 | 0.1+ | 0.4+ | 2003 12 15 | 704 | 0.2+ | 0.7− |
| 2002 08 03 | 644 | 0.0 | 0.2− | 2002 08 29 | 644 | 0.1− | 0.4+ | 2003 12 15 | 704 | 0.0 | 0.1− |
| 2002 08 03 | 644 | 0.1− | 0.0 | 2003 12 04 | 704 | 0.8− | 0.5− | 2003 12 30 | 704 | 0.3+ | 0.8+ |
| 2002 08 18 | 644 | 0.4− | 0.0 | 2003 12 04 | 704 | 0.4− | 0.2+ | 2003 12 30 | 704 | 0.5+ | 1.7+ |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2003 12 04 | 704 | 0.2+ | 0.8− | 2003 12 30 | 704 | 1.1− | 0.1− |
| 2002 08 18 | 644 | 0.4− | 0.1− | 2003 12 15 | 704 | 0.1+ | 0.2− | 2003 12 30 | 704 | 0.1+ | 0.3+ |
| 2002 08 29 | 644 | 0.1+ | 0.2− | 2003 12 15 | 704 | 0.4+ | 1.1− | 2003 12 30 | 704 | 0.3+ | 0.7+ |

### 2003 XH$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.40681 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21290755 | $\omega$ | 286.37685 | | +0.54429454 | −0.83072209 | |
| $a$ | 2.7776360 | $\Omega$ | 130.05720 | | +0.81609839 | +0.49210660 | |
| $e$ | 0.2950979 | $i$ | 8.77825 | | +0.19423406 | +0.26025354 | |
| $P$ | 4.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 25 | 369 | 0.2+ | 0.2− | 2003 12 20 | 704 | 0.5− | 0.4+ | 2004 02 16 | 704 | 0.7+ | 0.0 |
| 1995 01 25 | 369 | 0.2− | 0.0 | 2003 12 28 | 699 | 0.8+ | 0.3+ | 2004 02 16 | 704 | 0.5+ | 0.7+ |
| 2003 10 21 | 704 | 0.6+ | 0.1+ | 2003 12 28 | 699 | 0.3− | 0.2+ | 2004 02 16 | 704 | 0.3+ | 0.0 |
| 2003 10 21 | 704 | 0.5+ | 0.1+ | 2003 12 28 | 699 | 0.3− | 0.4− | 2004 02 16 | 704 | 0.6+ | 1.6− |
| 2003 10 21 | 704 | 0.9+ | 0.2+ | 2003 12 28 | 699 | 0.3+ | 0.3+ | 2004 02 22 | 704 | 0.5+ | 0.1+ |
| 2003 10 21 | 704 | 0.4+ | 0.3+ | 2003 12 28 | 691 | 0.3− | 0.1− | 2004 02 22 | 704 | 0.1− | 0.2+ |
| 2003 10 21 | 704 | 0.7+ | 0.3− | 2003 12 28 | 691 | 0.1− | 0.2− | 2004 02 22 | 704 | 0.1− | 0.6+ |
| 2003 12 14 | 704 | 1.0− | 0.0 | 2003 12 28 | 691 | 0.3− | 0.2− | 2004 02 22 | 704 | 1.4+ | 0.7+ |
| 2003 12 14 | 704 | 0.7− | 0.3+ | 2004 01 11 | 699 | 0.1+ | 0.8+ | 2004 02 22 | 704 | 0.1+ | 0.7− |
| 2003 12 14 | 704 | 1.0+ | 0.6+ | 2004 01 11 | 699 | 0.1− | 0.3+ | 2006 05 25 | G96 | 0.4+ | 0.8+ |
| 2003 12 14 | 704 | 0.1+ | 0.1− | 2004 01 11 | 699 | 0.2− | 0.2− | 2006 05 25 | G96 | 0.1+ | 0.3+ |
| 2003 12 20 | 704 | 0.6− | 0.5+ | 2004 01 11 | 699 | 0.1+ | 0.7+ | 2006 05 25 | G96 | 0.2+ | 0.2+ |
| 2003 12 20 | 704 | 0.4− | 0.2− | 2004 01 20 | 608 | 0.2− | 0.1− | 2006 05 25 | G96 | 0.3− | 0.3+ |
| 2003 12 20 | 704 | 0.2+ | 0.1+ | 2004 01 20 | 608 | 0.2− | 0.4− | | | | |
| 2003 12 20 | 704 | 0.4− | 0.3+ | 2004 01 20 | 608 | 0.6− | 0.7− | | | | |

### 2003 XK$_{43}$ = 2000 BE$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.74111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23710731 | $\omega$ | 136.23341 | | +0.30355095 | −0.95137587 | |
| $a$ | 2.5852711 | $\Omega$ | 296.03208 | | +0.85737729 | +0.29670196 | |
| $e$ | 0.1911031 | $i$ | 3.34013 | | +0.41564529 | +0.08277616 | |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | (20.6+ | 6.7−) | 2003 12 04 | 704 | 0.1+ | 0.4+ | 2003 12 27 | 704 | 0.4− | 0.0 |
| 2000 01 26 | 691 | 0.0 | 0.1− | 2003 12 04 | 704 | 0.0 | 0.2− | 2003 12 27 | 704 | 0.7− | 0.1+ |
| 2000 01 26 | 691 | 0.0 | 0.1− | 2003 12 04 | 704 | 0.7− | 0.7+ | 2004 01 21 | 704 | 0.1+ | 0.1+ |
| 2000 01 26 | 691 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.1− | 2004 01 21 | 704 | 0.3+ | 0.1+ |
| 2000 02 02 | 691 | 0.1+ | 0.0 | 2003 12 22 | 704 | 1.4+ | 0.1− | 2004 01 21 | 704 | 0.2− | 0.8+ |
| 2000 02 02 | 691 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.9− | 2004 01 21 | 704 | 0.4+ | 1.0− |
| 2000 02 02 | 691 | 0.1− | 0.0 | 2003 12 22 | 704 | 0.6+ | 0.7− | 2004 01 21 | 704 | 0.4− | 1.3+ |
| 2003 12 04 | 704 | 1.1− | 0.0 | 2003 12 27 | 704 | (4.2− | 3.2+) | | | | |
| 2003 12 04 | 704 | 1.1+ | 0.0 | 2003 12 27 | 704 | 0.8− | 0.0 | | | | |

### 2003 XL$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.29618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23598019 | $\omega$ | 196.37065 | | +0.99607587 | +0.08419843 | |
| $a$ | 2.5934966 | $\Omega$ | 158.74277 | | −0.07040514 | +0.94052696 | |
| $e$ | 0.2710691 | $i$ | 4.31317 | | −0.05362819 | +0.32911954 | |
| $P$ | 4.18 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 704 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.2− | 1.2+ | 2005 04 04 | G96 | 0.6− | 0.3− |
| 2003 12 01 | 704 | 0.1− | 0.3+ | 2004 01 13 | 644 | 0.5+ | 0.2+ | 2005 04 04 | G96 | 0.0 | 0.4− |
| 2003 12 01 | 704 | 0.7+ | 0.3+ | 2004 01 13 | 644 | 0.8+ | 0.5+ | 2006 04 08 | 691 | 0.0 | 0.2+ |
| 2003 12 01 | 704 | 0.6+ | 0.0 | 2004 01 13 | 644 | 0.3− | 0.2+ | 2006 04 08 | 691 | 0.1+ | 0.0 |
| 2003 12 15 | 691 | 0.1− | 0.2+ | 2005 03 08 | G96 | 0.3+ | 0.4− | 2006 04 08 | 691 | 0.0 | 0.4+ |
| 2003 12 15 | 691 | 0.0 | 0.0 | 2005 03 08 | G96 | 0.1− | 0.2− | 2006 05 08 | 691 | 0.0 | 0.5+ |
| 2003 12 15 | 691 | 0.0 | 0.1− | 2005 03 08 | G96 | 0.1− | 0.4− | 2006 05 08 | 691 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | 0.8− | 0.2+ | 2005 03 08 | G96 | 0.3− | 0.4− | 2006 05 08 | 691 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 0.9− | 0.8+ | 2005 04 04 | G96 | 0.0 | 0.0 | | | | |
| 2003 12 22 | 704 | 0.1− | 0.7− | 2005 04 04 | G96 | 0.2+ | 0.3− | | | | |

### 2003 XM$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.45603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17397998 | $\omega$ | 273.42860 | | +0.82824267 | −0.37983682 | |
| $a$ | 3.1778730 | $\Omega$ | 109.24597 | | +0.49669770 | +0.83800115 | |
| $e$ | 0.2984530 | $i$ | 25.87321 | | −0.25943299 | +0.39176276 | |
| $P$ | 5.67 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.0 | 0.0 | 2003 12 04 | 704 | 1.1− | 0.3+ | 2003 12 23 | 704 | 0.0 | 0.2− |
| 2002 07 16 | 644 | 0.5+ | 0.1+ | 2003 12 04 | 704 | 0.6− | 0.1+ | 2004 01 21 | 704 | 0.4+ | 0.2+ |
| 2002 07 16 | 644 | 0.3− | 0.3− | 2003 12 04 | 704 | 0.2+ | 0.5− | 2004 01 21 | 704 | 0.2+ | 0.2+ |
| 2002 07 16 | 644 | 0.1+ | 0.0 | 2003 12 17 | 691 | 0.0 | 0.0 | 2004 01 21 | 704 | 0.1− | 0.0 |
| 2002 07 16 | 644 | 0.1− | 0.1− | 2003 12 17 | 691 | 0.2+ | 0.3− | 2004 01 21 | 704 | 0.0 | 0.4+ |
| 2002 07 16 | 644 | 0.1+ | 0.1+ | 2003 12 17 | 691 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.8+ | 1.3− |
| 2002 07 29 | 644 | 0.1+ | 0.1− | 2003 12 23 | 704 | 0.2− | 0.2+ | 2004 02 15 | 704 | 0.0 | 0.5− |
| 2002 07 29 | 644 | 0.2− | 0.0 | 2003 12 23 | 704 | 0.3− | 0.8+ | 2004 02 15 | 704 | 1.4− | 0.9+ |
| 2002 07 29 | 644 | 0.1− | 0.2+ | 2003 12 23 | 704 | 0.5+ | 0.9+ | | | | |

### 2003 YP$_{6}$ = 2006 TG$_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.15140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27136134 | $\omega$ | 89.99196 | | +0.12977965 | −0.99141207 | |
| $a$ | 2.3628568 | $\Omega$ | 352.49360 | | +0.85362880 | +0.11997684 | |
| $e$ | 0.0932936 | $i$ | 7.08113 | | +0.50445527 | +0.05203519 | |
| $P$ | 3.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 699 | 0.3+ | 0.2− | 2003 12 28 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2003 12 17 | 699 | 0.3− | 0.2+ | 2003 12 28 | 691 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2003 12 17 | 699 | 0.2− | 0.6+ | 2003 12 29 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2003 12 17 | 699 | (2.0+ | 0.8+) | 2003 12 29 | 704 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | (1.4− | 1.7+) |
| 2003 12 18 | 691 | 0.2+ | 0.1+ | 2003 12 29 | 704 | 0.3+ | 0.8− | 2006 10 23 | G96 | (1.2− | 2.0+) |
| 2003 12 18 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 10 23 | G96 | (1.6− | 2.2+) |
| 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 10 23 | G96 | (1.4− | 2.1+) |

**2003 YS$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.87197 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26629427 | $\omega$ | 180.25029 | | −0.69963543 | | −0.71224230 |
| $a$ | 2.3927363 | $\Omega$ | 314.14825 | | +0.65567831 | | −0.60844704 |
| $e$ | 0.1736315 | $i$ | 4.53668 | | +0.28389473 | | −0.35000444 |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 699 | 0.6− | 0.9− | 2003 12 27 | 704 | 0.2− | 1.3− | 2004 01 30 | 704 | 0.5+ | 0.5+ |
| 2003 12 17 | 699 | 0.3+ | 0.1− | 2003 12 27 | 704 | (0.1+ | 2.7−) | 2004 01 30 | 704 | 0.5− | 0.3+ |
| 2003 12 17 | 699 | 0.7− | 1.1− | 2003 12 27 | 704 | (0.9− | 2.0−) | 2004 01 30 | 704 | 0.4+ | 0.1+ |
| 2003 12 17 | 699 | 1.3− | 0.4− | 2003 12 27 | 704 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3− |
| 2003 12 18 | 704 | 0.0 | 0.3− | 2003 12 27 | 704 | 0.2− | 1.1− | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2003 12 18 | 704 | 0.0 | 0.2+ | 2003 12 28 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 2003 12 18 | 704 | 0.3+ | 0.5− | 2003 12 28 | 691 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.5− | 0.2+ |
| 2003 12 18 | 704 | 0.0 | 0.4+ | 2003 12 28 | 691 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.3+ |
| 2003 12 18 | 691 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2004 01 22 | 704 | 0.9+ | 1.0+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2003 12 18 | 691 | 0.1− | 0.0 | 2004 01 22 | 704 | 1.0+ | 0.5+ | 2006 10 23 | G96 | 0.5− | 0.4− |
| 2003 12 22 | 704 | 0.5+ | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2003 12 22 | 704 | 0.4− | 0.3+ | 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.7− |
| 2003 12 22 | 704 | 0.2− | 0.1+ | 2004 01 30 | 704 | 1.2+ | 1.1+ | | | | |
| 2003 12 22 | 704 | 0.3+ | 0.4+ | 2004 01 30 | 704 | 0.5+ | 0.6+ | | | | |

**2003 YF$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.56709 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27721275 | $\omega$ | 158.04801 | | +0.17618389 | | −0.98355791 |
| $a$ | 2.3294886 | $\Omega$ | 281.78694 | | +0.89699839 | | +0.17701200 |
| $e$ | 0.1366989 | $i$ | 2.32206 | | +0.40540488 | | +0.03578539 |
| $P$ | 3.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.1− | 0.1− | 2003 12 30 | 704 | 0.3− | 0.7+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2003 12 30 | 704 | (2.6+ | 2.3+) | 2006 10 21 | 691 | 0.5+ | 0.1− |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2004 01 27 | 691 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2003 12 18 | 291 | 0.5− | 0.1+ | 2004 01 27 | 691 | 0.4− | 0.3+ | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2003 12 18 | 291 | 0.3− | 0.0 | 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2003 12 18 | 291 | 0.9+ | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2003 12 21 | 704 | 1.5− | 0.3− | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.4− | 0.6− |
| 2003 12 21 | 704 | 0.2+ | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2003 12 21 | 704 | 0.7− | 0.1− | 2006 09 19 | 703 | (1.4+ | 1.6−) | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2003 12 29 | 691 | (2.7+ | 0.0 ) | 2006 09 19 | 703 | (1.1+ | 1.6−) | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.9− | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2003 12 30 | 704 | 0.6− | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.8− | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2003 12 30 | 704 | 0.9+ | 0.1+ | 2006 09 25 | 699 | (1.0− | 2.3+) | | | | |

**2003 YH$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.42892 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29763219 | $\omega$ | 346.79618 | | +0.74355595 | | −0.66397314 |
| $a$ | 2.2216865 | $\Omega$ | 55.09363 | | +0.62193144 | | +0.64324089 |
| $e$ | 0.1406698 | $i$ | 5.53824 | | +0.24561318 | | +0.38128838 |
| $P$ | 3.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 0.1− | 0.7− | 2003 12 29 | 704 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2003 11 20 | 704 | 0.3+ | 0.1− | 2004 01 16 | 703 | 1.0− | 0.6+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2003 11 20 | 704 | 0.6+ | 0.4− | 2004 01 16 | 703 | 0.4− | 1.1+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2003 11 20 | 704 | 0.5− | 0.4− | 2004 01 16 | 703 | 0.5− | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2003 12 04 | 704 | 0.2− | 0.4+ | 2004 01 16 | 703 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2003 12 04 | 704 | 0.0 | 0.4− | 2004 01 19 | 704 | (5.0+ | 0.2−) | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2003 12 04 | 704 | 0.4+ | 0.3+ | 2004 01 19 | 704 | (5.1+ | 0.9+) | 2006 11 17 | 703 | 0.5+ | 0.9− |
| 2003 12 04 | 704 | 0.1− | 0.6+ | 2004 01 19 | 704 | (4.5+ | 0.1−) | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2003 12 16 | 703 | 0.7+ | 0.4− | 2004 01 31 | 704 | 0.8+ | 0.7+ | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2003 12 16 | 703 | 0.3+ | 1.3+ | 2004 01 31 | 704 | (0.1− | 1.8+) | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2003 12 16 | 703 | 0.4+ | 1.4+ | 2004 01 31 | 704 | (1.6− | 0.2+) | 2006 11 18 | 704 | 1.1− | 0.1− |
| 2003 12 16 | 703 | 0.4+ | 0.9+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2003 12 18 | 704 | 0.4− | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2003 12 18 | 704 | 0.0 | 0.6− | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.2− |
| 2003 12 18 | 704 | 0.5+ | 0.5− | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2003 12 18 | 704 | 0.5− | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2003 12 23 | 704 | 0.4+ | 0.3− | 2006 10 23 | 704 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2003 12 23 | 704 | 0.0 | 0.6− | 2006 10 23 | 704 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.6+ | 0.8+ |
| 2003 12 23 | 704 | 0.1+ | 0.4− | 2006 10 23 | 704 | 0.5− | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2003 12 23 | 704 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2003 12 28 | 704 | 0.0 | 0.4− | 2006 10 24 | 644 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2003 12 28 | 704 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.8+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.9+ |
| 2003 12 28 | 704 | 0.4+ | 0.3+ | 2006 10 28 | 704 | 1.1− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 2003 12 28 | 704 | 0.7− | 0.8− | 2006 10 28 | 704 | 1.1+ | 1.1− | 2006 11 27 | 703 | 0.2+ | 0.9− |
| 2003 12 29 | 704 | (0.3+ | 1.7−) | 2006 10 28 | 704 | 0.6− | 1.1+ | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2003 12 29 | 704 | 0.5− | 0.7− | 2006 11 11 | 703 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.6− | 0.7− |
| 2003 12 29 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.6− |
| 2003 12 29 | 704 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.3− | | | | |

**2003 YM$_{13}$ = 2006 VJ$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.23713 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29762490 | $\omega$ | 310.89416 | | +0.81604438 | | −0.56149448 |
| $a$ | 2.2217228 | $\Omega$ | 83.69681 | | +0.56306924 | | +0.71874612 |
| $e$ | 0.1279249 | $i$ | 7.92812 | | +0.13047837 | | +0.41003410 |
| $P$ | 3.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 699 | (1.6+ | 0.4+) | 2004 01 26 | 699 | 1.0+ | 0.7− | 2006 11 17 | 704 | 0.9+ | 0.6+ |
| 2003 12 17 | 699 | (1.2+ | 1.9−) | 2004 01 26 | 699 | 0.4+ | 0.2+ | 2006 11 17 | 704 | (2.1− | 1.9−) |
| 2003 12 17 | 699 | 0.5− | 0.3+ | 2004 01 31 | 704 | 1.1− | 0.1+ | 2006 11 18 | 198 | 0.1+ | 0.3− |
| 2003 12 17 | 699 | 0.1− | 0.9− | 2004 01 31 | 704 | 0.2− | 1.1+ | 2006 11 18 | 198 | 0.2+ | 0.2− |
| 2003 12 18 | 704 | 0.5− | 0.2− | 2004 01 31 | 704 | 0.1+ | 1.1+ | 2006 11 18 | 198 | 0.2+ | 0.2− |
| 2003 12 18 | 704 | 0.1− | 0.1− | 2005 05 19 | G96 | 0.0 | 0.2− | 2006 11 18 | 198 | 0.3+ | 0.3− |
| 2003 12 18 | 704 | 0.6+ | 0.3− | 2005 05 19 | G96 | 0.0 | 0.3+ | 2006 11 18 | 198 | 0.4+ | 0.2− |
| 2003 12 28 | 704 | 0.4− | 0.3+ | 2005 05 19 | G96 | 0.4+ | 0.1− | 2006 11 18 | 198 | 0.4+ | 0.2− |
| 2003 12 28 | 704 | 0.3+ | 0.6+ | 2005 05 19 | G96 | 0.3− | 0.4+ | 2006 11 19 | 703 | 1.5− | 1.2+ |
| 2003 12 28 | 704 | 0.2+ | 0.1− | 2006 11 01 | 703 | 0.1− | 0.5− | 2006 11 19 | 703 | 0.4− | 0.4− |
| 2003 12 28 | 704 | 0.1− | 0.5+ | 2006 11 01 | 703 | 0.2− | 0.4− | 2006 11 19 | 703 | 0.4− | 0.6+ |
| 2003 12 28 | 704 | 0.6+ | 0.2+ | 2006 11 01 | 703 | 0.0 | 1.0+ | 2006 11 19 | 703 | 0.3+ | 0.4+ |
| 2004 01 13 | 699 | 0.3+ | 0.0 | 2006 11 01 | 703 | 0.2− | 0.5+ | 2006 11 20 | 704 | (1.7+ | 0.1−) |
| 2004 01 13 | 699 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.8− | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.4− |
| 2004 01 13 | 699 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2004 01 13 | 699 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.3− | 0.1− | 2006 11 20 | 704 | 1.1+ | 0.7− |
| 2004 01 18 | 691 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.2− | 0.8− | 2006 11 28 | 704 | 1.0+ | 0.1+ |
| 2004 01 18 | 691 | 0.0 | 0.1− | 2006 11 15 | A44 | 0.9− | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.4+ |
| 2004 01 18 | 691 | 0.1+ | 0.1− | 2006 11 15 | A44 | 0.4− | 0.2− | 2006 11 28 | 704 | 0.8+ | 0.1− |
| 2004 01 26 | 699 | (0.7− | 2.4+) | 2006 11 15 | A44 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.0 | 0.9− |
| 2004 01 26 | 699 | (1.9+ | 0.7+) | 2006 11 17 | 704 | 0.1+ | 1.0+ | 2006 11 28 | 704 | 0.5− | 0.5+ |

**2003 YF$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.66231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36549265 | $\omega$ | 22.23585 | | −0.44489662 | | −0.79784204 |
| $a$ | 1.9373895 | $\Omega$ | 96.30910 | | +0.74768503 | | −0.58094888 |
| $e$ | 0.1044324 | $i$ | 24.16178 | | +0.49298487 | | +0.16107908 |
| $P$ | 2.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 14 | 704 | 1.6− | 1.2− | 2003 12 27 | 704 | 0.5+ | 0.1− | 2003 12 29 | 704 | 0.1− | 0.7+ |
| 1999 05 14 | 704 | 1.0+ | 0.2+ | 2003 12 27 | 704 | 0.1+ | 0.0 | 2003 12 29 | 704 | 0.1+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 14 | 704 | 0.6− | 0.5− | 2003 12 27 | 704 | 0.5+ | 0.4− | 2003 12 30 | 704 | 0.2− | 0.0 | | |
| 1999 05 14 | 704 | 1.1+ | 1.0+ | 2003 12 27 | 704 | 0.3+ | 0.4− | 2003 12 30 | 704 | 0.1− | 0.4+ | | |
| 1999 05 14 | 704 | 0.3+ | 0.4+ | 2003 12 28 | 704 | 0.1− | 0.1− | 2003 12 30 | 704 | 0.1− | 0.2+ | | |
| 2000 12 31 | 608 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.2− | 0.4+ | 2003 12 30 | 704 | 0.4− | 0.2+ | | |
| 2000 12 31 | 608 | 0.2− | 0.0 | 2003 12 28 | 704 | 0.1− | 0.3− | 2003 12 30 | 704 | 0.0 | 0.4+ | | |
| 2000 12 31 | 608 | 0.1+ | 0.1− | 2003 12 28 | 704 | 0.1− | 0.3+ | 2004 01 31 | 699 | 0.2+ | 0.4− | | |
| 2003 12 01 | 704 | 1.2+ | 0.2− | 2003 12 28 | 704 | 0.1+ | 0.1− | 2004 01 31 | 699 | 1.3− | 0.1− | | |
| 2003 12 01 | 704 | 1.0+ | 0.4− | 2003 12 28 | 704 | 0.4− | 0.1+ | 2004 01 31 | 699 | 0.5− | 0.1− | | |
| 2003 12 01 | 704 | 0.8+ | 0.2+ | 2003 12 28 | 704 | 1.2− | 0.6+ | 2004 01 31 | 699 | 0.2− | 0.3− | | |
| 2003 12 01 | 704 | (1.7+ | 0.4−) | 2003 12 28 | 704 | 0.2− | 0.7+ | 2004 02 10 | 704 | 1.0− | 0.5+ | | |
| 2003 12 17 | 699 | 0.8+ | 0.6− | 2003 12 28 | 704 | 0.2− | 0.6+ | 2004 02 10 | 704 | 0.4+ | 0.4− | | |
| 2003 12 17 | 699 | 0.3+ | 0.1− | 2003 12 28 | 704 | 0.2− | 0.2+ | 2004 02 10 | 704 | 0.8− | 0.3+ | | |
| 2003 12 17 | 699 | 0.1− | 0.6− | 2003 12 28 | 704 | 0.1+ | 0.2− | 2004 02 10 | 704 | 0.5− | 0.3+ | | |
| 2003 12 17 | 699 | 0.3− | 0.4− | 2003 12 28 | 704 | 0.3+ | 0.1+ | 2004 02 10 | 704 | 0.0 | 0.0 | | |
| 2003 12 18 | 704 | 0.2− | 0.0 | 2003 12 28 | 704 | 0.2− | 0.3+ | 2005 07 27 | E12 | 0.5− | 0.6+ | | |
| 2003 12 18 | 704 | 1.1+ | 0.8− | 2003 12 28 | 704 | 0.1− | 0.3− | 2005 07 27 | E12 | 0.4+ | 0.1− | | |
| 2003 12 18 | 704 | 0.4+ | 0.2+ | 2003 12 28 | 704 | 0.3− | 0.0 | 2005 07 27 | E12 | 0.4− | 0.5+ | | |
| 2003 12 18 | 704 | 0.3+ | 0.6− | 2003 12 29 | 704 | 0.4+ | 0.7+ | 2005 07 27 | E12 | 0.1+ | 1.0+ | | |
| 2003 12 18 | 704 | 0.5+ | 0.2− | 2003 12 29 | 704 | 0.2+ | 0.7+ | | | | | | |
| 2003 12 27 | 704 | 0.1+ | 0.5− | 2003 12 29 | 704 | 0.2+ | 0.1− | | | | | | |

**2003 YL$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.99730 | | (2000.0) | | | |
| $n$ | 0.28204070 | $\omega$ | 43.73023 | | +0.45260448 | −0.89164106 |
| $a$ | 2.3028281 | $\Omega$ | 19.36727 | | +0.80856381 | +0.40507388 |
| $e$ | 0.1877138 | $i$ | 1.93511 | | +0.37599701 | +0.20221613 |
| $P$ | 3.49 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.1− | 0.3− | 2004 01 22 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2+ | | |
| 2003 12 17 | 691 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.7+ | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.3− | | |
| 2003 12 17 | 691 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.2+ | | |
| 2003 12 18 | 704 | 0.4− | 0.4+ | 2004 01 30 | 704 | 0.9− | 0.9+ | 2006 09 25 | 699 | 0.9− | 1.2− | | |
| 2003 12 18 | 704 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.3+ | 1.0− | | |
| 2003 12 18 | 704 | 0.2+ | 0.5+ | 2004 01 30 | 704 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.2+ | | |
| 2003 12 18 | 704 | 1.0+ | 1.4+ | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1− | | |
| 2003 12 18 | 704 | 0.1+ | 1.1+ | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2003 12 19 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.5+ | | |
| 2003 12 19 | 691 | 1.1+ | 1.1+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1+ | | |
| 2003 12 21 | 645 | 0.1− | 0.3− | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.5+ | | |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.3− | 1.5+ | | |
| 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.7+ | | |
| 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.6− | 0.0 | 2006 10 16 | 703 | 1.0+ | 0.3− | | |
| 2003 12 21 | 691 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2003 12 22 | 704 | (0.2+ | 1.8+) | 2006 09 15 | 691 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.8− | 0.6− | | |
| 2003 12 22 | 704 | 0.2+ | 1.0+ | 2006 09 15 | 691 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.4− | | |
| 2003 12 22 | 704 | 0.0 | 1.2+ | 2006 09 20 | 704 | (1.5+ | 1.6−) | 2006 10 27 | G96 | 0.3− | 0.9− | | |
| 2003 12 22 | 704 | 0.9− | 0.6− | 2006 09 20 | 704 | (0.0 | 1.6−) | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2003 12 22 | 704 | 1.2+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.8− | 2006 11 11 | G96 | 0.6+ | 0.2− | | |
| 2003 12 27 | 704 | 0.8− | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.5− | 0.7− | | |
| 2003 12 27 | 704 | 0.8− | 0.1− | 2006 09 20 | 704 | (1.8+ | 1.9−) | 2006 11 11 | G96 | 0.7+ | 0.3+ | | |
| 2003 12 27 | 704 | 0.6+ | 0.1− | 2006 09 20 | 704 | 0.1+ | 1.0− | 2006 11 21 | G96 | 0.2+ | 0.3− | | |
| 2003 12 27 | 704 | 0.4− | 0.2− | 2006 09 20 | 704 | (0.2+ | 1.5−) | 2006 11 21 | G96 | 0.9+ | 0.1− | | |
| 2003 12 27 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.4− | 1.4− | 2006 11 21 | G96 | 0.4+ | 0.0 | | |
| 2004 01 15 | 691 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.5− | 0.1+ | 2006 11 21 | G96 | 0.5− | 0.4− | | |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.2+ | 1.1− | | | | | | |
| 2004 01 15 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.9− | | | | | | |

**2003 YP$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.60780 | | (2000.0) | | | |
| $n$ | 0.34836537 | $\omega$ | 31.05386 | | −0.99591869 | −0.07539418 |
| $a$ | 2.0003811 | $\Omega$ | 144.51769 | | +0.05471390 | −0.94152845 |
| $e$ | 0.4866705 | $i$ | 4.90346 | | +0.07177986 | −0.32838985 |
| $P$ | 2.83 | $H$ | 19.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 20 | 704 | 0.8+ | 2.3+ | 2004 01 02 | 941 | 1.2− | 0.5+ | 2004 04 13 | 703 | 0.5− | 0.3− | | |
| 2003 12 20 | 704 | 1.2+ | 1.9+ | 2004 01 02 | 941 | 1.2− | 0.3+ | 2004 04 13 | 621 | 0.2+ | 0.9− | | |
| 2003 12 20 | 704 | 0.8+ | 1.1+ | 2004 01 02 | 941 | 1.2− | 0.1+ | 2004 04 13 | 621 | 0.0 | 0.9− | | |
| 2003 12 20 | 704 | 0.1− | 0.8+ | 2004 01 02 | 941 | 0.7− | 0.2− | 2004 04 23 | 703 | 0.2+ | 0.5+ | | |
| 2003 12 21 | H36 | 1.0+ | 0.0 | 2004 01 09 | 448 | 0.4+ | 0.1+ | 2004 04 23 | 703 | 1.2+ | 0.7+ | | |
| 2003 12 21 | H36 | 0.0 | 1.2− | 2004 01 09 | 448 | 0.7+ | 0.5+ | 2004 04 23 | 703 | 0.7+ | 0.5+ | | |
| 2003 12 21 | H36 | 0.2− | 0.2+ | 2004 01 09 | 448 | 0.1+ | 0.3− | 2004 04 23 | 703 | 1.0+ | 0.6+ | | |
| 2003 12 21 | 448 | 0.1+ | 0.0 | 2004 01 10 | 926 | 0.1+ | 0.6+ | 2004 05 01 | 703 | 2.3− | 0.7+ | | |
| 2003 12 21 | 854 | 0.7+ | 1.2− | 2004 01 10 | 926 | 0.4+ | 0.5+ | 2004 05 01 | 703 | 0.7− | 0.2− | | |
| 2003 12 21 | 448 | 0.5− | 0.1− | 2004 01 10 | 926 | 0.4− | 0.5+ | 2004 05 01 | 703 | 1.3− | 0.1− | | |
| 2003 12 21 | 854 | 0.1− | 0.5+ | 2004 01 14 | 649 | 0.1− | 0.1+ | 2004 05 01 | 703 | 0.2+ | 1.7− | | |
| 2003 12 21 | 448 | 0.5− | 0.0 | 2004 01 14 | 649 | 0.1− | 0.2+ | 2004 05 10 | 240 | 0.0 | 0.1− | | |
| 2003 12 21 | 854 | 0.1+ | 0.5+ | 2004 01 14 | 649 | 0.1− | 0.0 | 2004 05 10 | 240 | 0.1− | 0.1− | | |
| 2003 12 21 | 704 | 0.8− | 1.2− | 2004 01 15 | 587 | 1.7+ | 0.2+ | 2004 05 10 | 240 | 0.1− | 0.2− | | |
| 2003 12 21 | 704 | 0.2− | 1.0+ | 2004 01 15 | 587 | 1.1+ | 1.1+ | 2004 05 10 | 240 | 0.1− | 0.2− | | |
| 2003 12 21 | 704 | 0.1− | 1.0+ | 2004 01 18 | 644 | 0.3− | 0.3+ | 2004 05 10 | 240 | 0.2− | 0.1− | | |
| 2003 12 21 | 704 | 0.1+ | 0.1+ | 2004 01 18 | 644 | 0.3− | 0.3+ | 2004 05 10 | 240 | 0.1− | 0.1− | | |
| 2003 12 21 | 966 | 0.5+ | 0.2+ | 2004 01 18 | 644 | 0.3− | 0.3+ | 2004 05 10 | 240 | 0.1− | 0.3− | | |
| 2003 12 21 | 966 | 0.1+ | 0.6+ | 2004 01 20 | 608 | 0.2− | 0.1+ | 2004 05 12 | 704 | 0.5− | 0.9+ | | |
| 2003 12 21 | J95 | 0.3− | 0.1− | 2004 01 20 | 608 | 0.2− | 0.9− | 2004 05 12 | 704 | 0.3+ | 1.1+ | | |
| 2003 12 21 | J95 | 0.2+ | 0.2+ | 2004 01 20 | 608 | 0.2+ | 1.0− | 2004 05 12 | 704 | 0.4+ | 0.9+ | | |
| 2003 12 21 | J95 | 0.2− | 0.0 | 2004 02 12 | 448 | 1.1+ | 0.6− | 2004 05 15 | 240 | 0.0 | 0.5− | | |
| 2003 12 22 | 704 | 0.6− | 0.1− | 2004 02 12 | 448 | 0.9+ | 0.7− | 2004 05 15 | 240 | 0.0 | 0.1− | | |
| 2003 12 22 | 704 | 0.2+ | 0.6+ | 2004 02 12 | 448 | 0.4+ | 1.0− | 2004 05 15 | 240 | 0.5+ | 0.1− | | |
| 2003 12 22 | 704 | 0.3+ | 0.0 | 2004 02 16 | 704 | 0.8+ | 0.1− | 2004 05 15 | 240 | 0.7− | 0.1− | | |
| 2003 12 22 | 704 | 0.4− | 0.8+ | 2004 02 16 | 704 | 0.5− | 0.2− | 2004 05 15 | 240 | 1.1+ | 1.0− | | |
| 2003 12 22 | 704 | 0.3− | 0.2− | 2004 02 16 | 704 | 0.6− | 0.2− | 2004 05 15 | 240 | 0.0 | 0.9− | | |
| 2003 12 22 | 704 | 0.4+ | 0.1− | 2004 02 16 | 704 | 0.6+ | 0.3− | 2004 05 22 | 941 | 0.1− | 0.1− | | |
| 2003 12 22 | 704 | 0.1+ | 1.2+ | 2004 02 16 | 240 | 0.9− | 0.3+ | 2004 05 22 | 941 | 0.1− | 0.0 | | |
| 2003 12 22 | 704 | 0.3− | 0.5+ | 2004 02 16 | 240 | 0.3+ | 0.2+ | 2004 05 22 | 941 | 0.1− | 0.0 | | |
| 2003 12 22 | 704 | 0.1− | 0.1+ | 2004 02 16 | 240 | 0.2− | 0.1− | 2004 05 22 | 941 | 0.2− | 0.0 | | |
| 2003 12 22 | 704 | 2.2− | 1.2− | 2004 02 16 | 240 | 0.4− | 0.5− | 2004 05 22 | 941 | 0.1− | 0.0 | | |
| 2003 12 24 | 170 | 0.2− | 0.6− | 2004 02 16 | 240 | 0.0 | 0.4− | 2004 05 24 | 704 | 0.1+ | 0.2+ | | |
| 2003 12 24 | 170 | 0.3− | 0.6− | 2004 02 16 | 240 | 0.2+ | 0.2− | 2004 05 24 | 704 | 0.2+ | 0.5+ | | |
| 2003 12 24 | 170 | 0.4+ | 0.7− | 2004 02 22 | 704 | 0.0 | 0.1+ | 2004 05 24 | 704 | 0.1− | 0.1+ | | |
| 2003 12 24 | 170 | 0.2+ | 0.1− | 2004 02 22 | 704 | 0.4+ | 1.2+ | 2004 05 24 | 704 | 0.1− | 0.1+ | | |
| 2003 12 24 | 704 | 0.7+ | 1.6+ | 2004 02 22 | 704 | 1.2+ | 0.0 | 2004 06 01 | 703 | 0.2+ | 0.1+ | | |
| 2003 12 24 | 446 | 0.0 | 0.0 | 2004 02 22 | 704 | 0.7− | 0.7+ | 2004 06 01 | 703 | 0.4+ | 2.2+ | | |
| 2003 12 24 | 704 | 0.1+ | 0.1+ | 2004 02 24 | 608 | 0.2+ | 0.4+ | 2004 06 01 | 703 | 1.2+ | 0.6+ | | |
| 2003 12 24 | 704 | 0.1+ | 0.9+ | 2004 02 24 | 608 | 0.1− | 0.6+ | 2004 06 01 | 703 | 0.4+ | 0.1− | | |
| 2003 12 24 | 446 | 0.0 | 0.1− | 2004 02 24 | 608 | 0.7+ | 0.1+ | 2004 06 07 | 240 | 0.6− | 0.0 | | |
| 2003 12 24 | 118 | 0.1− | 0.2+ | 2004 02 24 | 587 | 0.2− | 0.1+ | 2004 06 07 | 240 | 0.3− | 0.1+ | | |
| 2003 12 24 | 118 | 0.1+ | 0.8+ | 2004 02 24 | 587 | 0.1+ | 0.1− | 2004 06 07 | 240 | 0.3− | 0.0 | | |
| 2003 12 24 | 118 | 0.1+ | 0.0 | 2004 03 25 | J95 | 0.7− | 0.2− | 2004 06 07 | 240 | 0.2+ | 0.2− | | |
| 2003 12 27 | 704 | 0.5+ | 0.1+ | 2004 03 25 | J95 | 0.7+ | 1.0− | 2004 06 07 | 240 | 0.2− | 0.2+ | | |
| 2003 12 27 | 704 | 0.3+ | 0.5− | 2004 04 11 | 621 | 0.1− | 0.5− | 2004 06 07 | 240 | 0.6− | 0.1+ | | |
| 2003 12 27 | 704 | 0.2− | 0.8+ | 2004 04 11 | 621 | 0.1− | 0.2− | 2004 06 10 | 704 | 0.6+ | 1.2+ | | |
| 2003 12 27 | 704 | 0.4− | 0.3− | 2004 04 11 | 621 | 0.2− | 0.6− | 2004 06 10 | 704 | 0.4+ | 1.0+ | | |
| 2003 12 27 | 448 | 0.2+ | 0.2− | 2004 04 12 | 704 | 0.3+ | 1.4+ | 2004 06 10 | 704 | 0.2+ | 0.7+ | | |
| 2003 12 27 | 448 | 0.3+ | 0.1− | 2004 04 12 | 704 | 1.0+ | 0.7+ | 2004 06 10 | 704 | 0.4+ | 1.2+ | | |
| 2003 12 27 | 448 | 0.1− | 0.3− | 2004 04 12 | 704 | 1.4+ | 2.8+ | 2004 06 13 | 704 | 0.9+ | 0.3+ | | |
| 2003 12 30 | 413 | 0.3− | 0.1− | 2004 04 12 | 704 | 1.9+ | 0.0 | 2004 06 13 | 704 | 1.0+ | 0.2+ | | |
| 2003 12 30 | 413 | 0.1− | 0.1− | 2004 04 13 | 703 | 0.2− | 0.5+ | 2004 06 13 | 704 | 0.2+ | 0.8+ | | |
| 2003 12 30 | 413 | 0.1− | 0.1− | 2004 04 13 | 703 | 0.2+ | 0.5− | 2006 11 16 | 291 | 0.1+ | 0.8− | | |
| 2004 01 02 | 941 | 1.1− | 0.7+ | 2004 04 13 | 703 | 0.0 | 0.4− | 2006 11 16 | 291 | 0.2− | 0.2+ | | |

**2003 YL$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.83487 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22299830 | $\omega$ | 214.49728 | | −0.98649992 | | −0.15825195 |
| $a$ | 2.6931984 | $\Omega$ | 316.33576 | | +0.16061027 | | −0.88474526 |
| $e$ | 0.1424177 | $i$ | 3.49766 | | +0.03197265 | | −0.43838584 |
| $P$ | 4.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.8− | 1.0+ | 2004 02 15 | 704 | 0.9− | 0.7+ |
| 2003 12 17 | 691 | 0.0 | 0.1− | 2003 12 22 | 704 | 0.6+ | 0.2+ | 2004 02 15 | 704 | 0.8+ | 0.2− |
| 2003 12 17 | 691 | 0.4− | 0.0 | 2003 12 27 | 704 | 0.2+ | 0.4+ | 2004 02 15 | 704 | (1.3+ | 2.0−) |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2003 12 27 | 704 | 0.0 | 1.4+ | 2006 08 28 | 691 | 0.3+ | 0.1+ |
| 2003 12 19 | 691 | 0.0 | 0.3− | 2003 12 27 | 704 | (0.0 | 2.3+) | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2003 12 27 | 704 | 0.7− | 0.0 | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 01 15 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2004 01 15 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.5− |
| 2003 12 21 | 691 | 0.1+ | 0.0 | 2004 01 15 | 691 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.3+ |
| 2003 12 21 | 691 | 0.1− | 0.1+ | 2004 01 22 | 704 | (2.0+ | 1.0+) | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2004 01 22 | 704 | 0.4+ | 1.2+ | 2006 09 28 | G96 | 0.9− | 0.2− |
| 2003 12 22 | 704 | 0.8+ | 0.1+ | 2004 01 22 | 704 | 0.7+ | 0.6+ | 2006 09 28 | G96 | 0.5− | 0.5− |
| 2003 12 22 | 704 | 0.2− | 0.8+ | 2004 01 22 | 704 | 1.2+ | 1.2+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.2+ | 1.4+ | 2004 01 22 | 704 | 1.3+ | 0.9+ | 2006 09 28 | G96 | 0.6− | 0.5− |

**2003 YV$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.68833 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21719389 | $\omega$ | 239.91566 | | −0.98706411 | | −0.00352039 |
| $a$ | 2.7409702 | $\Omega$ | 299.45525 | | +0.08010430 | | −0.87685685 |
| $e$ | 0.0252163 | $i$ | 10.60761 | | −0.13888034 | | −0.48073867 |
| $P$ | 4.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.6− | 0.5+ | 2003 12 21 | 691 | 0.3+ | 0.0 | 2006 05 26 | G96 | 0.2− | 0.3+ |
| 2002 10 03 | 644 | 0.3− | 0.7+ | 2003 12 21 | 691 | 0.2− | 0.1+ | 2006 05 26 | G96 | 0.5+ | 0.1− |
| 2002 10 03 | 644 | 0.3− | 1.0+ | 2003 12 22 | 704 | 0.2− | 0.0 | 2006 05 26 | G96 | 0.1− | 0.1− |
| 2003 12 17 | 691 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.3− | 1.0+ | 2006 05 26 | G96 | 0.0 | 0.2+ |
| 2003 12 17 | 691 | 0.6+ | 0.1+ | 2003 12 22 | 704 | 1.5− | 0.3− | 2006 09 16 | 691 | 0.2+ | 0.4− |
| 2003 12 17 | 691 | 0.1− | 0.1− | 2004 01 24 | 704 | (1.3− | 2.9+) | 2006 09 16 | 691 | 0.4+ | 0.3− |
| 2003 12 19 | 691 | 0.1+ | 0.0 | 2004 01 24 | 704 | (2.4+ | 1.7+) | 2006 09 16 | 691 | 0.0 | 0.1− |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 01 24 | 704 | (1.1+ | 3.0+) | 2006 09 18 | 691 | 0.7+ | 0.5− |
| 2003 12 19 | 691 | 0.0 | 0.1+ | 2004 01 24 | 704 | (0.9− | 3.2+) | 2006 09 18 | 691 | 0.4− | 0.3− |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2004 01 28 | 291 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.5− | 0.8+ |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 01 28 | 291 | 0.2+ | 0.3+ | | | | |
| 2003 12 21 | 691 | 0.2+ | 0.1+ | 2004 01 28 | 291 | 0.5+ | 0.1+ | | | | |

**2003 YV$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.22918 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28766964 | $\omega$ | 41.87152 | | −0.03754181 | | −0.99594429 |
| $a$ | 2.2726891 | $\Omega$ | 50.44637 | | +0.88637672 | | −0.07097112 |
| $e$ | 0.1131200 | $i$ | 6.08751 | | +0.46144004 | | +0.05529992 |
| $P$ | 3.43 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 0.5+ | 0.3− | 2003 12 19 | 704 | 0.9+ | 0.5+ | 2006 10 16 | 703 | (1.3+ | 2.6+) |
| 2003 11 20 | 704 | 0.0 | 0.4− | 2003 12 19 | 704 | 0.9− | 0.9− | 2006 10 16 | 703 | (1.2+ | 1.7+) |
| 2003 11 20 | 704 | 0.1+ | 0.6− | 2003 12 19 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.8+ |
| 2003 12 04 | 704 | 0.4+ | 0.5+ | 2003 12 19 | 704 | 1.0− | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2003 12 04 | 704 | 0.5− | 0.2− | 2003 12 23 | 704 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.5+ | 0.4+ |
| 2003 12 04 | 704 | 0.2− | 0.3+ | 2003 12 23 | 704 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2003 12 04 | 704 | 0.7− | 0.3+ | 2003 12 23 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2003 12 18 | 704 | 0.2− | 0.9+ | 2003 12 23 | 704 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.8− | 0.7− |
| 2003 12 18 | 704 | 0.9− | 0.6+ | 2003 12 23 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 0.5+ | 0.1− | 2003 12 28 | 704 | 0.8− | 1.5− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2003 12 19 | 704 | 0.1+ | 0.7+ | 2003 12 28 | 704 | (0.0 | 1.6−) | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2003 12 19 | 704 | (0.4+ | 2.1−) | 2003 12 28 | 704 | 0.0 | 1.2− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 0.8+ | 0.6+ | 2006 10 16 | 703 | (2.9+ | 0.4+) | | | | |
| 2003 12 19 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.8+ | 0.4− | | | | |

**2003 YC$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.67691 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18364223 | $\omega$ | 311.92931 | | +0.78767025 | | −0.58210929 |
| $a$ | 3.0654037 | $\Omega$ | 84.64883 | | +0.60804752 | | +0.68171865 |
| $e$ | 0.1299349 | $i$ | 11.69408 | | +0.09926630 | | +0.44317994 |
| $P$ | 5.37 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.1+ | 0.4− | 2003 12 18 | 704 | 0.4− | 0.4+ | 2005 04 02 | 703 | 0.2+ | 0.0 |
| 2002 08 12 | 608 | 0.1+ | 0.8− | 2003 12 18 | 704 | 0.6− | 0.5+ | 2005 04 02 | 703 | 1.0+ | 0.2+ |
| 2002 08 12 | 608 | 0.1+ | 0.6− | 2003 12 19 | 704 | 0.6+ | 0.4+ | 2005 04 02 | 703 | 0.3− | 0.1− |
| 2002 08 13 | 704 | 0.0 | 0.5+ | 2003 12 19 | 704 | 0.1+ | 0.1+ | 2005 04 02 | 703 | 0.3+ | 0.8− |
| 2002 08 13 | 704 | 0.4+ | 0.0 | 2003 12 19 | 704 | 1.1+ | 1.2+ | 2006 05 01 | 691 | 0.4− | 1.2− |
| 2002 08 13 | 704 | 0.8+ | 0.6− | 2003 12 19 | 704 | 0.0 | 0.6+ | 2006 05 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 13 | 704 | 2.7− | 0.9− | 2003 12 21 | 704 | 0.2− | 0.3+ | 2006 05 01 | 691 | 0.1+ | 0.3+ |
| 2002 08 13 | 704 | 0.0 | 0.3− | 2003 12 21 | 704 | 0.2− | 0.2− | 2006 05 05 | 691 | 0.1+ | 0.7+ |
| 2002 08 20 | 644 | 0.1− | 0.6+ | 2003 12 21 | 704 | 0.7− | 0.2− | 2006 05 05 | 691 | 0.2+ | 0.1+ |
| 2002 08 20 | 644 | 0.0 | 0.4+ | 2004 01 22 | 704 | 0.7+ | 0.4+ | 2006 05 05 | 691 | 0.3+ | 0.2+ |
| 2002 08 20 | 644 | 0.1+ | 0.7+ | 2004 01 22 | 704 | 0.0 | 0.4+ | 2006 05 30 | G96 | 0.2+ | 0.4+ |
| 2002 09 01 | 644 | 0.3+ | 0.9+ | 2004 01 22 | 704 | 0.1− | 0.2+ | 2006 05 30 | G96 | 0.1− | 0.1+ |
| 2002 09 01 | 644 | 0.0 | 0.8+ | 2005 03 16 | 703 | 0.2− | 0.4+ | 2006 05 30 | G96 | 0.2− | 0.2+ |
| 2002 09 01 | 644 | 0.3+ | 1.0+ | 2005 03 16 | 703 | 0.8− | 0.1− | 2006 05 30 | G96 | 0.0 | 0.2+ |
| 2003 12 18 | 704 | 1.0− | 0.3− | 2005 03 16 | 703 | 0.5+ | 0.2+ | | | | |
| 2003 12 18 | 704 | 0.4+ | 1.0− | 2005 03 16 | 703 | 0.7− | 0.0 | | | | |

**2003 YS$_{25}$ = 2006 VS$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.43132 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30531678 | $\omega$ | 287.39302 | | +0.99506998 | | −0.03269832 |
| $a$ | 2.1842496 | $\Omega$ | 74.55890 | | +0.06922441 | | +0.90505440 |
| $e$ | 0.1794298 | $i$ | 5.57428 | | −0.07101913 | | +0.42403697 |
| $P$ | 3.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 1.0− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2003 12 18 | 704 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.6− | 0.2+ |
| 2003 12 18 | 704 | (1.8− | 0.5+) | 2006 10 27 | 704 | 0.1− | 1.0+ | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2003 12 18 | 704 | 1.0+ | 1.0− | 2006 10 27 | 704 | 0.5− | 0.8− | 2006 11 20 | 704 | 0.1− | 0.1− |
| 2003 12 19 | 704 | 0.2− | 0.0 | 2006 10 27 | 704 | (1.5+ | 0.3−) | 2006 11 20 | 704 | 1.1+ | 1.3+ |
| 2003 12 19 | 704 | 0.5− | 0.1+ | 2006 10 27 | 704 | 1.1+ | 0.7− | 2006 11 20 | 704 | 0.4+ | 0.4+ |
| 2003 12 19 | 704 | 0.6− | 0.3+ | 2006 11 02 | 703 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.3+ | 0.9− | 2006 11 02 | 703 | 0.4− | 0.8− | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2003 12 22 | 704 | 0.4− | 0.8− | 2006 11 02 | 703 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.5+ |
| 2003 12 22 | 704 | 1.1+ | 0.4+ | 2006 11 02 | 703 | 0.8− | 1.0− | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2003 12 22 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2003 12 27 | 704 | 0.3+ | 0.8− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2003 12 27 | 704 | 0.0 | 0.4+ | 2006 11 11 | 703 | 1.0− | 1.4− | 2006 11 23 | 691 | (2.2+ | 0.5−) |
| 2003 12 27 | 704 | 0.2+ | 0.9+ | 2006 11 11 | 703 | 0.5+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 12 27 | 704 | 0.7+ | 1.0− | 2006 11 11 | 703 | 0.7− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 12 27 | 704 | 0.6− | 0.6− | 2006 11 11 | 703 | 0.2− | 0.7− | 2006 11 25 | 291 | 0.2− | 0.2+ |
| 2003 12 27 | 704 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 11 25 | 291 | 0.1− | 0.3+ |
| 2003 12 27 | 704 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 11 25 | 291 | 0.1− | 0.2+ |
| 2003 12 27 | 704 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2003 12 27 | 704 | 0.8− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.4+ | 0.8− | 2006 11 14 | 704 | (1.2+ | 2.1+) | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2005 04 14 | 691 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.8+ | 1.3+ | 2006 11 27 | 703 | 0.3+ | 0.5− |
| 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 1.1+ | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.1− | 0.8− |
| 2006 09 16 | 703 | (0.9+ | 1.9+) | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.4− | 0.9− |
| 2006 09 16 | 703 | 1.2− | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.0 | 0.5+ |
| 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2006 09 16 | 703 | 0.5− | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.3− |
| 2006 09 30 | 703 | 0.5+ | 1.2+ | 2006 11 18 | 704 | 0.5− | 0.3− | 2006 11 29 | 704 | 0.4− | 0.4+ |
| 2006 09 30 | 703 | 0.6+ | 0.8− | 2006 11 18 | 704 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.4− | 0.5+ |
| 2006 09 30 | 703 | 0.1− | 0.5− | 2006 11 18 | 704 | 1.0− | 1.2+ | | | | |
| 2006 09 30 | 703 | 0.9+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 1.1+ | | | | |

### 2003 YL$_{28}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 314.35738 | | | | | | |
| $n$ | 0.29723554 | $\omega$ | 338.26673 | | +0.48117514 | | −0.86324330 |
| $a$ | 2.2236626 | $\Omega$ | 82.68496 | | +0.82524599 | | +0.38734661 |
| $e$ | 0.1534510 | $i$ | 8.84922 | | +0.29570179 | | +0.32368752 |
| $P$ | 3.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.0 | 1.0+ | 2003 12 17 | 644 | 0.0 | 0.2+ | 2004 01 11 | 644 | 0.2− | 0.3+ |
| 2001 02 16 | 704 | (0.7+ | 1.6+) | 2003 12 17 | 644 | 0.0 | 0.3+ | 2004 01 11 | 644 | 0.2− | 0.0 |
| 2001 02 16 | 704 | 0.4+ | 0.0 | 2003 12 19 | 704 | 0.0 | 0.2+ | 2004 01 11 | 644 | 0.0 | 0.1+ |
| 2001 02 16 | 704 | 0.2− | 0.2+ | 2003 12 19 | 704 | 0.1− | 0.5− | 2006 09 14 | 644 | 0.1+ | 0.3− |
| 2003 11 29 | 691 | 0.2+ | 0.2− | 2003 12 19 | 704 | 0.5− | 0.1− | 2006 09 14 | 644 | 0.4− | 0.4− |
| 2003 11 29 | 691 | 0.3+ | 0.2− | 2003 12 19 | 704 | 0.2− | 0.5+ | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2003 11 29 | 691 | 0.1+ | 0.0 | 2003 12 19 | 704 | 0.5− | 0.4− | 2006 09 20 | 703 | 0.5+ | 0.1− |
| 2003 12 04 | 704 | 0.0 | 0.2+ | 2003 12 21 | 704 | 0.2+ | 0.7− | 2006 09 20 | 703 | 0.5+ | 0.1+ |
| 2003 12 04 | 704 | 0.4+ | 0.0 | 2003 12 21 | 704 | 0.1− | 0.3− | 2006 09 20 | 703 | 0.0 | 0.3− |
| 2003 12 04 | 704 | 0.3+ | 0.4+ | 2003 12 21 | 704 | (0.1− | 2.5−) | 2006 09 20 | 703 | 0.4− | 0.5+ |
| 2003 12 04 | 704 | (0.1+ | 1.9−) | 2003 12 21 | 704 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.8− | 0.3+ |
| 2003 12 16 | 106 | (0.4+ | 1.5−) | 2003 12 24 | 704 | 0.5− | 0.7+ | 2006 09 27 | 703 | 0.4+ | 0.9+ |
| 2003 12 16 | 106 | 0.2− | 0.0 | 2003 12 24 | 704 | 0.4− | 0.1− | 2006 09 27 | 703 | 0.0 | 0.5+ |
| 2003 12 16 | 106 | 0.2+ | 0.4+ | 2003 12 24 | 704 | 0.2− | 0.3− | 2006 09 27 | 703 | 0.6− | 0.1− |
| 2003 12 17 | 644 | 0.1− | 0.1+ | 2003 12 24 | 704 | 0.3+ | 0.1− | | | | |

### 2003 YM$_{29}$ = 2006 RN$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 314.59227 | | | | | | |
| $n$ | 0.28610308 | $\omega$ | 149.46392 | | +0.39724332 | | −0.90866750 |
| $a$ | 2.2809776 | $\Omega$ | 276.86481 | | +0.81365515 | | +0.41350852 |
| $e$ | 0.1316020 | $i$ | 7.43854 | | +0.42445617 | | +0.05774157 |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 1.0− | 0.0 | 2003 12 30 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 703 | (1.9+ | 0.1+) |
| 1999 09 08 | 704 | 0.4+ | 1.1+ | 2003 12 30 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 703 | 1.2+ | 1.4+ |
| 1999 09 08 | 704 | 0.3− | 1.0+ | 2003 12 30 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.3− | 0.3+ |
| 2003 12 17 | 691 | 0.3− | 0.1− | 2003 12 30 | 704 | 0.3+ | 0.1− | 2006 09 28 | 703 | 0.0 | 0.7− |
| 2003 12 17 | 691 | 0.1− | 0.1+ | 2003 12 30 | 704 | 0.2+ | 0.6+ | 2006 09 28 | 703 | 1.2− | 0.1− |
| 2003 12 17 | 691 | 0.3− | 0.0 | 2003 12 30 | 704 | 0.3+ | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.0 |
| 2003 12 19 | 704 | 0.6+ | 0.8+ | 2003 12 30 | 704 | 0.6+ | 0.1+ | 2006 10 04 | 703 | 0.1+ | 0.4+ |
| 2003 12 19 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.5+ | 0.2+ | 2006 10 04 | 703 | 0.2− | 1.1− |
| 2003 12 19 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.4+ | 0.6− | 2006 10 04 | 703 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 1.0− | 1.0− | 2006 09 14 | 644 | 0.7+ | 0.2+ | 2006 10 04 | 703 | 0.4+ | 0.3+ |
| 2003 12 21 | 704 | 0.1− | 0.7+ | 2006 09 16 | 703 | 0.4− | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2003 12 21 | 704 | 0.8+ | 1.1+ | 2006 09 16 | 703 | 0.4− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2003 12 21 | 704 | (0.5− | 1.8+) | 2006 09 16 | 703 | (0.1− | 1.9−) | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2003 12 29 | 691 | 0.0 | 0.2− | 2006 09 22 | 699 | 1.4− | 1.4+ | 2006 10 19 | 703 | 0.6+ | 1.1− |
| 2003 12 29 | 691 | 0.0 | 0.3− | 2006 09 22 | 699 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.5+ | 0.1− |
| 2003 12 29 | 691 | 0.2− | 0.3− | 2006 09 22 | 699 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.0 | 0.6− |
| 2003 12 30 | 704 | 0.2+ | 0.1− | 2006 09 22 | 699 | 0.4+ | 0.5− | 2006 10 22 | G92 | 0.2+ | 0.0 |
| 2003 12 30 | 704 | 0.4+ | 0.1− | 2006 09 25 | 703 | 0.0 | 0.4+ | 2006 10 22 | G92 | 0.1+ | 0.3+ |
| 2003 12 30 | 704 | 0.6+ | 0.2+ | 2006 09 25 | 703 | 0.9+ | 0.5− | 2006 10 22 | G92 | 0.3− | 0.3+ |

### 2003 YS$_{29}$ = 2004 BM$_{162}$ = 2006 SR$_{320}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 203.50825 | | | | | | |
| $n$ | 0.26185492 | $\omega$ | 59.31814 | | −0.99735613 | | −0.04731316 |
| $a$ | 2.4197039 | $\Omega$ | 117.91957 | | +0.02358205 | | −0.92865854 |
| $e$ | 0.1369991 | $i$ | 3.57884 | | +0.06873605 | | −0.36790593 |
| $P$ | 3.76 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.2+ | 0.1+ | 2003 12 24 | 608 | 0.5− | 0.5+ | 2006 10 01 | 691 | 0.3+ | 0.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.2− | 2003 12 24 | 608 | 0.9− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.2− |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2004 01 30 | 291 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2003 12 19 | 704 | 0.2− | 0.2− | 2004 01 30 | 291 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2003 12 19 | 704 | 0.0 | 0.2− | 2004 01 30 | 291 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2003 12 19 | 704 | 0.2+ | 0.7− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2003 12 19 | 704 | 0.6+ | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.9− | 0.6+ |
| 2003 12 21 | 704 | 0.4+ | 0.9+ | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 10 22 | 703 | (1.5− | 0.5+) |
| 2003 12 21 | 704 | (1.7+ | 0.3+) | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | (1.0− | 1.6−) |
| 2003 12 21 | 704 | 1.0+ | 1.1− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 2003 12 24 | 608 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1− | | | | |

### 2003 YV$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 228.23100 | | | | | | |
| $n$ | 0.21261887 | $\omega$ | 10.13887 | | −0.15983377 | | −0.97390847 |
| $a$ | 2.7801497 | $\Omega$ | 89.19188 | | +0.89403069 | | −0.21201125 |
| $e$ | 0.1850416 | $i$ | 9.27208 | | +0.41852394 | | +0.08095378 |
| $P$ | 4.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 699 | 0.6− | 0.1− | 2003 12 28 | 704 | 0.5+ | 0.3+ | 2004 02 09 | 644 | 0.2+ | 0.2− |
| 2000 04 07 | 699 | 1.3+ | 0.2− | 2003 12 28 | 704 | 0.7− | 0.2+ | 2004 02 09 | 644 | 0.3+ | 0.0 |
| 2000 04 07 | 699 | 0.3− | 0.5+ | 2003 12 28 | 704 | 0.1+ | 0.9+ | 2004 02 11 | 691 | 0.2+ | 0.2− |
| 2000 04 07 | 699 | 0.1− | 0.5+ | 2003 12 28 | 704 | 0.3+ | 0.7+ | 2004 02 11 | 691 | 0.1+ | 0.2− |
| 2003 12 17 | 644 | 0.3+ | 0.5− | 2004 01 13 | 699 | 0.1− | 0.1− | 2004 02 11 | 691 | 0.2+ | 0.2− |
| 2003 12 17 | 644 | 0.7+ | 0.3+ | 2004 01 13 | 699 | 1.1+ | 0.4+ | 2004 02 14 | 704 | 0.5+ | 0.2+ |
| 2003 12 17 | 644 | 0.3+ | 0.2− | 2004 01 13 | 699 | 0.3− | 0.8− | 2004 02 14 | 704 | 0.4+ | 0.5+ |
| 2003 12 19 | 704 | 0.6+ | 0.2+ | 2004 01 13 | 699 | 0.3+ | 1.2− | 2004 02 14 | 704 | 0.6+ | 0.4+ |
| 2003 12 19 | 704 | 0.0 | 0.2+ | 2004 01 20 | 704 | (3.3+ | 2.2−) | 2004 02 14 | 704 | 0.3+ | 0.3+ |
| 2003 12 19 | 704 | 0.1+ | 0.3+ | 2004 01 20 | 704 | 0.4+ | 0.4+ | 2004 02 14 | 704 | 0.7+ | 0.6+ |
| 2003 12 19 | 704 | 0.3− | 0.3+ | 2004 01 20 | 704 | 0.0 | 0.5+ | 2004 02 18 | 691 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.2+ | 0.7+ | 2004 01 20 | 704 | 0.9− | 1.0+ | 2004 02 18 | 691 | 0.2− | 0.1− |
| 2003 12 23 | 704 | 0.6− | 0.2− | 2004 01 28 | 703 | 0.1− | 0.3− | 2004 02 18 | 691 | 0.0 | 0.2− |
| 2003 12 23 | 704 | 0.5+ | 0.0 | 2004 01 28 | 703 | 0.8− | 1.9+ | 2004 02 22 | 703 | 0.2− | 0.5+ |
| 2003 12 23 | 704 | 0.6− | 0.1− | 2004 01 28 | 703 | (2.3+ | 3.3+) | 2004 02 22 | 703 | 0.8− | 0.0 |
| 2003 12 23 | 704 | 0.3− | 0.2+ | 2004 01 28 | 703 | 0.7+ | 0.4− | 2004 02 22 | 703 | 0.3− | 0.4+ |
| 2003 12 23 | 704 | 0.2− | 0.2− | 2004 01 31 | 704 | 0.5− | 0.4− | 2004 02 22 | 703 | 0.6+ | 0.3− |
| 2003 12 23 | 704 | 0.7+ | 0.8+ | 2004 01 31 | 704 | 1.1− | 0.9+ | 2004 05 14 | 645 | 0.0 | 0.1− |
| 2003 12 23 | 704 | 0.4+ | 0.3− | 2004 01 31 | 704 | 1.2− | 0.7− | 2004 05 14 | 645 | 0.0 | 0.2− |
| 2003 12 23 | 704 | 0.5+ | 0.7− | 2004 01 31 | 704 | 1.6− | 0.4+ | 2005 06 09 | 691 | 0.2+ | 0.3+ |
| 2003 12 23 | 704 | 0.0 | 0.3+ | 2004 01 31 | 704 | 1.6− | 0.9− | 2005 06 09 | 691 | 0.0 | 0.3+ |
| 2003 12 28 | 704 | 0.2+ | 0.5+ | 2004 02 09 | 644 | 0.2+ | 0.1− | 2005 06 09 | 691 | 0.0 | 0.1− |

### 2003 YK$_{31}$ = 2006 TB$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | P | | Q |
|---|---|---|---|---|---|---|---|
| $M$ | 357.61022 | | | | | | |
| $n$ | 0.30827371 | $\omega$ | 334.31534 | | +0.93080233 | | −0.36551766 |
| $a$ | 2.1702598 | $\Omega$ | 47.12425 | | +0.33582184 | | +0.85303120 |
| $e$ | 0.1631438 | $i$ | 0.15380 | | +0.14432852 | | +0.37247094 |
| $P$ | 3.20 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.9+ | 1.0+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 1.2+ | 0.8− |
| 2003 12 18 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2003 12 18 | 704 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.4− | 0.4− | | |
| 2003 12 19 | 704 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.2− | | |
| 2003 12 19 | 704 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2003 12 19 | 704 | 1.3+ | 1.3+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.6− | | |
| 2003 12 19 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.2− | | |
| 2003 12 25 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2003 12 25 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.1+ | | |
| 2003 12 25 | 691 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2− | | |
| 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.2+ | | |
| 2005 04 02 | G96 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 17 | 703 | (0.2+ | 1.9+) | | |
| 2005 04 02 | G96 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.7− | | |
| 2005 04 02 | G96 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4− | 0.4+ | | |
| 2006 07 21 | G96 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 21 | 704 | 1.2− | 0.9− | | |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | (1.5− | 0.1−) | | |
| 2006 07 21 | G96 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 1.2− | 0.6+ | | |
| 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.8− | 0.3+ | | |
| 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.7− | 1.1+ | | |
| 2006 09 25 | G96 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | | | | | |
| 2006 09 25 | G96 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.3+ | | | | | | |

**2003 YQ$_{31}$ = 2006 UA$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.09432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30824718 | $\omega$ | 137.87213 | | +0.52979405 | −0.84522094 | |
| $a$ | 2.1703843 | $\Omega$ | 280.02292 | | +0.75789943 | +0.50892993 | |
| $e$ | 0.1006251 | $i$ | 4.08456 | | +0.38066615 | +0.16307022 | |
| $P$ | 3.20 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.2+ | 0.3+ | 2003 12 27 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.5+ | | |
| 2003 12 18 | 704 | 0.1− | 0.1+ | 2003 12 27 | 704 | 1.2+ | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.8+ | | |
| 2003 12 18 | 704 | 0.2+ | 0.3+ | 2003 12 27 | 704 | (1.5− | 1.1−) | 2006 10 22 | 644 | 0.3− | 0.6+ | | |
| 2003 12 18 | 704 | 0.1− | 0.0 | 2003 12 27 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.4+ | 0.8− | | |
| 2003 12 19 | 704 | 0.2− | 1.1+ | 2003 12 27 | 704 | 0.5+ | 0.7− | 2006 10 27 | 703 | 0.2+ | 0.4+ | | |
| 2003 12 19 | 704 | 0.2+ | 0.7+ | 2003 12 29 | 704 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.6− | 0.4+ | | |
| 2003 12 19 | 704 | 0.2− | 0.5+ | 2003 12 29 | 704 | 0.3− | 0.4+ | 2006 10 27 | 703 | 0.2+ | 0.5+ | | |
| 2003 12 19 | 704 | 0.5− | 0.3+ | 2003 12 29 | 704 | 0.1− | 0.8+ | 2006 11 01 | G96 | 0.1+ | 0.1+ | | |
| 2003 12 19 | 704 | 0.4− | 0.6+ | 2003 12 29 | 704 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.1+ | | |
| 2003 12 20 | 704 | 0.3+ | 1.1− | 2003 12 29 | 704 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.0 | | |
| 2003 12 20 | 704 | 0.5− | 0.5− | 2004 01 13 | 691 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.0 | | |
| 2003 12 20 | 704 | (0.4+ | 1.8+) | 2004 01 13 | 691 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.8+ | 0.2− | | |
| 2003 12 20 | 704 | (1.8+ | 0.8+) | 2004 01 13 | 691 | 0.2− | 0.3− | 2006 11 14 | 703 | (1.9+ | 0.3−) | | |
| 2003 12 21 | 704 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.4− | 1.2− | | |
| 2003 12 21 | 704 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.3− | 1.0− | | |
| 2003 12 21 | 704 | 1.0+ | 0.7+ | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.1+ | | |
| 2003 12 21 | 704 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.0 | | |
| 2003 12 25 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2003 12 25 | 691 | 0.1+ | 0.3− | 2006 10 19 | 703 | (0.2+ | 1.5−) | 2006 11 23 | G96 | 0.2+ | 0.1− | | |
| 2003 12 25 | 691 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.6− | 1.1− | | | | | | |

**2003 YQ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.98477 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17743134 | $\omega$ | 97.38665 | | +0.94349254 | −0.22547764 | |
| $a$ | 3.1365279 | $\Omega$ | 275.87202 | | +0.11129719 | +0.90587681 | |
| $e$ | 0.3173494 | $i$ | 14.13116 | | +0.31214542 | +0.35853457 | |
| $P$ | 5.55 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 566 | 0.1+ | 0.0 | 2002 07 29 | 644 | 0.2− | 0.3+ | 2003 12 19 | 704 | 0.1− | 0.8− | | |
| 1997 10 30 | 566 | 0.1+ | 0.5− | 2003 09 30 | 291 | 0.2− | 0.3+ | 2003 12 20 | 460 | 0.1+ | 0.0 | | |
| 1997 10 30 | 566 | 0.0 | 0.1− | 2003 09 30 | 291 | 0.2− | 0.1+ | 2003 12 20 | 460 | 0.0 | 0.2− | | |
| 2002 07 03 | 644 | 0.2− | 0.5+ | 2003 09 30 | 291 | 0.3− | 0.4+ | 2003 12 21 | 460 | 0.6+ | 1.3+ | | |
| 2002 07 03 | 644 | 0.3− | 0.6+ | 2003 11 21 | 704 | 0.2− | 0.3− | 2003 12 21 | 460 | 0.3− | 0.2− | | |
| 2002 07 03 | 644 | 0.2− | 0.3+ | 2003 11 21 | 704 | 0.3+ | 1.2− | 2003 12 21 | 704 | 0.7+ | 0.3− | | |
| 2002 07 14 | 704 | 0.0 | 0.3− | 2003 11 21 | 704 | 0.5− | 1.1− | 2003 12 21 | 704 | 0.4+ | 0.2− | | |
| 2002 07 14 | 704 | 1.2− | 0.7+ | 2003 11 21 | 704 | 1.4− | 1.1− | 2003 12 21 | 704 | 0.9+ | 0.3− | | |
| 2002 07 14 | 704 | 0.3− | 0.3+ | 2003 12 19 | 704 | 0.3+ | 0.3+ | 2003 12 21 | 704 | 0.5+ | 0.7− | | |
| 2002 07 14 | 704 | 0.5+ | 1.1+ | 2003 12 19 | 704 | 0.7− | 0.5+ | 2004 01 30 | 691 | 0.0 | 0.3+ | | |
| 2002 07 29 | 644 | 0.4− | 0.9+ | 2003 12 19 | 704 | 0.2+ | 0.4+ | 2004 01 30 | 691 | 0.1− | 0.2+ | | |
| 2002 07 29 | 644 | 0.1+ | 0.3+ | 2003 12 19 | 704 | 0.2+ | 0.1− | 2004 01 30 | 691 | 0.6+ | 1.4+ | | |

**2003 YN$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.36960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18218148 | $\omega$ | 305.06630 | | +0.80525592 | −0.56262179 | |
| $a$ | 3.0817677 | $\Omega$ | 89.87740 | | +0.58646261 | +0.70928750 | |
| $e$ | 0.1505451 | $i$ | 10.78568 | | +0.08731845 | +0.42469751 | |
| $P$ | 5.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.3+ | 0.4+ | 2003 11 30 | 703 | 0.7+ | 0.2− | 2003 12 20 | 704 | 1.6− | 0.6+ | | |
| 2002 08 06 | 644 | 0.1− | 0.4+ | 2003 11 30 | 703 | 1.1+ | 0.7+ | 2003 12 20 | 704 | 1.2− | 0.2− | | |
| 2002 08 06 | 644 | 0.3− | 0.6+ | 2003 11 30 | 704 | 0.1+ | 0.3+ | 2003 12 20 | 704 | 0.2− | 0.1+ | | |
| 2003 11 01 | 704 | 0.0 | 0.2− | 2003 11 30 | 704 | 0.6− | 0.4+ | 2003 12 20 | 704 | 0.3− | 1.4+ | | |
| 2003 11 01 | 704 | 0.8− | 0.3− | 2003 11 30 | 703 | 0.3+ | 0.9− | 2003 12 22 | 291 | 0.4+ | 0.1− | | |
| 2003 11 01 | 704 | 0.2+ | 0.7− | 2003 11 30 | 704 | 0.1+ | 0.1− | 2003 12 22 | 291 | 0.4+ | 0.1+ | | |
| 2003 11 01 | 704 | 0.3+ | 0.4+ | 2003 11 30 | 704 | 0.7− | 0.1+ | 2003 12 22 | 291 | 0.3+ | 0.1− | | |
| 2003 11 01 | 704 | 0.6− | 0.5− | 2003 11 30 | 704 | 0.4− | 0.6+ | 2003 12 22 | 704 | 0.7+ | 0.1− | | |
| 2003 11 19 | 699 | 0.0 | 0.2− | 2003 11 30 | 704 | 1.6− | 1.6+ | 2003 12 22 | 704 | 0.8+ | 0.3− | | |
| 2003 11 19 | 699 | 1.0+ | 0.4− | 2003 11 30 | 704 | 0.3+ | 0.3− | 2003 12 22 | 704 | 0.9+ | 0.2− | | |
| 2003 11 19 | 699 | 0.4− | 0.3− | 2003 11 30 | 704 | 0.2− | 1.0+ | 2004 02 20 | 291 | 0.1+ | 0.1+ | | |
| 2003 11 19 | 699 | 0.4− | 0.4− | 2003 11 30 | 704 | 0.3+ | 0.3+ | 2004 02 20 | 291 | 0.3− | 0.0 | | |
| 2003 11 24 | 699 | 0.8− | 0.9− | 2003 11 30 | 704 | 0.4− | 0.6+ | 2004 02 20 | 291 | 0.1− | 0.1+ | | |
| 2003 11 24 | 699 | 0.3+ | 0.0 | 2003 12 17 | 703 | 0.8− | 0.2+ | 2006 05 05 | G96 | 0.0 | 0.1+ | | |
| 2003 11 24 | 699 | 0.2− | 1.2+ | 2003 12 17 | 703 | 0.9+ | 0.2+ | 2006 05 05 | G96 | 0.5+ | 0.5+ | | |
| 2003 11 24 | 699 | 1.2+ | 0.3− | 2003 12 17 | 703 | 1.6− | 0.5+ | 2006 05 05 | G96 | 0.0 | 0.8+ | | |
| 2003 11 30 | 703 | 0.6− | 0.3− | 2003 12 17 | 703 | 0.7− | 0.9− | 2006 05 05 | G96 | 0.4+ | 0.7+ | | |

**2003 YM$_{34}$ = 2006 SA$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.35134 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29707119 | $\omega$ | 85.75369 | | +0.82900958 | −0.55836050 | |
| $a$ | 2.2244826 | $\Omega$ | 308.18563 | | +0.49602412 | +0.75996583 | |
| $e$ | 0.1577597 | $i$ | 2.27867 | | +0.25826960 | +0.33269428 | |
| $P$ | 3.32 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.0 | 0.2+ | 2003 12 22 | 704 | 0.5+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2001 01 26 | 691 | 0.1+ | 0.2+ | 2003 12 22 | 704 | 1.0− | 0.4+ | 2006 09 27 | 691 | 0.4+ | 0.1+ | | |
| 2001 01 26 | 691 | 0.0 | 0.0 | 2003 12 22 | 704 | (0.3− | 1.6+) | 2006 09 29 | 704 | 1.0+ | 0.9− | | |
| 2001 02 16 | 691 | 0.0 | 0.2− | 2003 12 22 | 704 | 1.0+ | 0.5+ | 2006 09 29 | 704 | 0.5+ | 0.9− | | |
| 2001 02 16 | 691 | 0.0 | 0.4− | 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.7− | 0.8+ | | |
| 2001 02 16 | 691 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.2− | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2003 12 18 | 704 | 0.1− | 0.9− | 2003 12 22 | 704 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.1+ | | |
| 2003 12 18 | 704 | 0.1+ | 0.7− | 2003 12 27 | 704 | 0.2+ | 1.3− | 2006 10 01 | 691 | 0.2− | 0.1+ | | |
| 2003 12 18 | 704 | 0.0 | 0.2− | 2003 12 27 | 704 | 0.5+ | 1.1− | 2006 10 01 | 704 | 0.9− | 0.9+ | | |
| 2003 12 18 | 704 | 1.5+ | 0.0 | 2003 12 27 | 704 | 1.0− | 0.8− | 2006 10 01 | 704 | (1.9− | 1.0−) | | |
| 2003 12 20 | 704 | 0.4+ | 0.8+ | 2006 08 28 | 703 | 0.8− | 0.0 | 2006 10 01 | 704 | 0.6− | 0.3+ | | |
| 2003 12 20 | 704 | 0.6+ | 1.3+ | 2006 08 28 | 703 | 0.7+ | 0.2− | 2006 10 01 | 704 | 0.8+ | 0.7+ | | |
| 2003 12 20 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2003 12 21 | 704 | 0.4+ | 0.5+ | 2006 08 28 | 703 | (0.5− | 1.8−) | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2003 12 21 | 704 | 0.4− | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2003 12 21 | 704 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.2+ | | |
| 2003 12 21 | 704 | 0.3− | 0.4− | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2003 12 22 | 704 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.9+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2003 12 22 | 704 | 0.6− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.3− | 0.7− | | |
| 2003 12 22 | 704 | 0.5− | 1.0+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.4− | | |
| 2003 12 22 | 704 | 0.1− | 0.4− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.1− | 0.4− | | |
| 2003 12 22 | 704 | 0.2− | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.6− | | |

**2003 YS$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 295.93147 | | (2000.0) | | +0.00885747 | −0.99883418 |
| $n$ | 0.29686396 | $\omega$ | 166.06389 | | +0.91270920 | +0.02746242 |
| $a$ | 2.2255178 | $\Omega$ | 283.41263 | | +0.40851373 | −0.03970015 |
| $e$ | 0.1240283 | $i$ | 2.79623 | | | |
| $P$ | 3.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 621 | 0.5− | 0.2− | 2003 12 25 | 691 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.8− |
| 1999 09 03 | 621 | 0.2− | 0.3+ | 2003 12 25 | 691 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.5+ | 0.1+ |
| 1999 09 03 | 621 | 0.5+ | 0.6+ | 2003 12 27 | 704 | 0.1− | 0.6− | 2006 09 18 | 699 | 0.2− | 0.1+ |
| 2003 11 21 | 704 | 0.1− | 1.2− | 2003 12 27 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.7+ | 0.6+ |
| 2003 11 21 | 704 | 0.4− | 0.4+ | 2003 12 27 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | (1.4+ | 1.9−) |
| 2003 11 21 | 704 | 1.1− | 0.4− | 2003 12 27 | 704 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.1− | 1.3− |
| 2003 11 21 | 704 | 0.5+ | 0.6− | 2003 12 29 | 704 | 0.9+ | 0.4− | 2006 09 19 | 703 | 0.2+ | 0.9− |
| 2003 12 18 | 704 | 0.0 | 0.1+ | 2003 12 29 | 704 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2003 12 18 | 704 | 0.3+ | 0.2− | 2003 12 29 | 704 | 0.6+ | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.4− |
| 2003 12 18 | 704 | 0.1+ | 0.2+ | 2003 12 29 | 704 | 0.6− | 0.2− | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.3− | 0.4− | 2003 12 29 | 704 | 0.8+ | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2003 12 18 | 704 | 0.4+ | 0.0 | 2003 12 29 | 704 | (0.5+ | 1.7−) | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2003 12 20 | 704 | 1.2− | 0.7+ | 2003 12 29 | 704 | 0.1− | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2003 12 20 | 704 | 0.5+ | 1.4− | 2003 12 29 | 704 | (1.8− | 0.5−) | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2003 12 20 | 704 | 1.0− | 0.3+ | 2003 12 29 | 704 | 0.2+ | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2003 12 20 | 704 | 0.3− | 0.1− | 2003 12 29 | 704 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2003 12 21 | 704 | (2.0+ | 0.4+) | 2003 12 30 | 704 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 12 21 | 704 | 0.6+ | 0.4+ | 2003 12 30 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2003 12 21 | 704 | 0.5+ | 0.7+ | 2003 12 30 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 1.0+ | 0.1− |
| 2003 12 21 | 704 | 0.1− | 0.2+ | 2003 12 30 | 704 | 0.6+ | 1.2+ | 2006 10 17 | 703 | 0.1+ | 0.8+ |
| 2003 12 22 | 704 | 0.3+ | 0.8+ | 2004 01 13 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 1.0+ | 2004 01 13 | 691 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.9+ | 0.3+ |
| 2003 12 22 | 704 | 0.4− | 0.7+ | 2004 01 13 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.6− | 1.3− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.9− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2003 12 25 | 691 | 0.1− | 0.4− | 2006 09 18 | 703 | 1.3− | 0.5− | | | | |

**2003 YG$_{35}$ = 2006 SQ$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.23735 | | (2000.0) | | +0.51457191 | −0.85400067 |
| $n$ | 0.29950017 | $\omega$ | 332.41113 | | +0.80018735 | +0.44609562 |
| $a$ | 2.2124391 | $\Omega$ | 86.52840 | | +0.30808432 | +0.26773412 |
| $e$ | 0.1061625 | $i$ | 4.41290 | | | |
| $P$ | 3.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 0.0 | 0.5+ | 2003 12 21 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.6+ |
| 1993 12 16 | 691 | 0.1− | 0.5+ | 2003 12 21 | 704 | 0.4+ | 0.2− | 2006 09 26 | 703 | 0.6+ | 1.5+ |
| 1993 12 16 | 691 | 0.5− | 0.7+ | 2003 12 21 | 704 | 0.6+ | 0.3− | 2006 09 26 | 703 | 1.0+ | 1.0+ |
| 2003 12 19 | 291 | 0.3− | 0.1+ | 2003 12 21 | 704 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2003 12 19 | 291 | 0.6− | 0.0 | 2003 12 21 | 704 | 0.2− | 1.2− | 2006 09 26 | 703 | 0.1+ | 0.4− |
| 2003 12 19 | 291 | 0.3− | 0.1+ | 2003 12 21 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.0 |
| 2003 12 19 | 704 | 1.3+ | 0.3+ | 2003 12 21 | 704 | 0.6− | 0.5− | 2006 09 29 | 699 | (1.6− | 1.4+) |
| 2003 12 19 | 704 | 0.7+ | 0.1− | 2003 12 21 | 704 | 0.4− | 0.3− | 2006 09 29 | 699 | 0.4− | 0.5+ |
| 2003 12 19 | 704 | 1.5+ | 0.7− | 2003 12 21 | 704 | 0.5− | 0.2− | 2006 09 29 | 699 | 0.6− | 0.7+ |
| 2003 12 19 | 704 | 0.1+ | 0.1− | 2003 12 21 | 704 | 0.4− | 0.7− | 2006 10 16 | 703 | 0.5+ | 0.4− |
| 2003 12 19 | 704 | (2.0+ | 0.4+) | 2003 12 21 | 704 | (2.3− | 0.8+) | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2003 12 19 | 704 | 0.5+ | 0.9+ | 2003 12 21 | 704 | (0.1− | 1.7+) | 2006 10 16 | 703 | 0.0 | 1.0− |
| 2003 12 19 | 704 | 0.1+ | 1.2+ | 2003 12 21 | 704 | 0.1+ | 0.0 | 2006 10 16 | 703 | 1.1+ | 0.2− |
| 2003 12 20 | 704 | 0.5− | 0.6− | 2003 12 25 | 691 | 1.2+ | 0.5− | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2003 12 20 | 704 | 0.1− | 0.2− | 2003 12 25 | 691 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2003 12 20 | 704 | 0.3− | 0.3− | 2003 12 25 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.9− |
| 2003 12 20 | 704 | 0.4− | 0.2+ | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 1.4− |
| 2003 12 20 | 704 | 0.7− | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.7− | 0.2− |
| 2003 12 21 | 704 | 0.2− | 0.3+ | 2005 05 10 | G96 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.8− |
| 2003 12 21 | 704 | 0.5− | 1.1+ | 2005 05 10 | G96 | 0.1− | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.7− |
| 2003 12 21 | 704 | 0.7+ | 0.2+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2003 12 21 | 704 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.2+ | 0.3+ | | | | |

**2003 YF$_{36}$ = 2006 VW$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.88303 | | (2000.0) | | +0.99288702 | +0.04751905 |
| $n$ | 0.30899215 | $\omega$ | 273.05711 | | +0.00083374 | +0.91410227 |
| $a$ | 2.1668944 | $\Omega$ | 84.23760 | | −0.11905739 | +0.40268967 |
| $e$ | 0.2390087 | $i$ | 6.29922 | | | |
| $P$ | 3.19 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.9+ | 0.1+ | 2003 12 27 | 704 | 0.2− | 1.0− | 2006 11 14 | 704 | 0.6− | 0.6+ |
| 2003 12 18 | 704 | 0.0 | 0.6+ | 2003 12 27 | 704 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2003 12 18 | 704 | 0.8+ | 0.5− | 2003 12 27 | 704 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2003 12 22 | 704 | 0.9− | 1.6− | 2003 12 30 | 704 | 0.4+ | 1.0+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | 0.0 | 0.4+ | 2003 12 30 | 704 | 0.3− | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.8− |
| 2003 12 22 | 704 | 0.5− | 0.5+ | 2003 12 30 | 704 | 0.6+ | 0.2+ | 2006 12 01 | 704 | 0.7+ | 0.7+ |
| 2003 12 27 | 704 | 0.3+ | 0.4− | 2003 12 30 | 704 | 0.7− | 0.1− | 2006 12 01 | 704 | 0.3− | 0.1+ |
| 2003 12 27 | 704 | 0.2+ | 0.0 | 2003 12 30 | 704 | 0.3+ | 0.4+ | 2006 12 01 | 704 | 0.4− | 0.2+ |
| 2003 12 27 | 704 | 0.6− | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.7− | 2006 12 01 | 704 | 0.1− | 0.0 |
| 2003 12 27 | 704 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.3− | | | | |
| 2003 12 27 | 704 | 0.0 | 0.4− | 2006 11 14 | 704 | 0.2− | 1.5+ | | | | |

**2003 YS$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.46646 | | (2000.0) | | +0.37247058 | −0.92589876 |
| $n$ | 0.28657402 | $\omega$ | 117.97957 | | +0.81992227 | +0.36014784 |
| $a$ | 2.2784780 | $\Omega$ | 310.01050 | | +0.43473341 | +0.11403956 |
| $e$ | 0.1293631 | $i$ | 4.72296 | | | |
| $P$ | 3.44 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2004 01 22 | 704 | 1.1+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2003 12 17 | 691 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.8− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2004 01 22 | 704 | 0.2− | 0.9− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2003 12 21 | 691 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2003 12 21 | 691 | 0.1− | 0.1+ | 2004 01 31 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2003 12 22 | 704 | 0.3− | 0.4+ | 2004 01 31 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.6+ | 0.4− |
| 2003 12 22 | 704 | 0.5+ | 0.5− | 2004 01 31 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2003 12 22 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |

**2003 YQ$_{39}$ = 2006 RC$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.19087 | | (2000.0) | | +0.88440704 | −0.45229781 |
| $n$ | 0.28406031 | $\omega$ | 306.34083 | | +0.45680545 | +0.78832506 |
| $a$ | 2.2919001 | $\Omega$ | 80.80704 | | +0.09567112 | +0.41709746 |
| $e$ | 0.1992735 | $i$ | 6.69651 | | | |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.2− | 0.3− | 2003 12 28 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 699 | (3.2+ | 0.7+) |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 01 16 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.0− | 0.5+ |
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2004 01 16 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 1.0− |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2004 01 16 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.8+ | 0.5− |
| 2003 12 21 | 691 | 0.1− | 0.1− | 2006 08 29 | D35 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.7− |
| 2003 12 21 | 691 | 0.2− | 0.1− | 2006 08 29 | D35 | 0.5+ | 0.1+ | 2006 09 25 | 703 | 0.5− | 0.9− |
| 2003 12 22 | 704 | 0.6+ | 0.4+ | 2006 08 29 | D35 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.0 | 0.3+ |
| 2003 12 22 | 704 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.6+ | 0.4− |
| 2003 12 22 | 704 | 0.5+ | 0.4− | 2006 09 14 | 644 | 0.4− | 0.1− | 2006 09 25 | 703 | 0.0 | 0.8− |
| 2003 12 28 | 704 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.7+ | 0.9+ |
| 2003 12 28 | 704 | 0.3+ | 0.3− | 2006 09 17 | 699 | 0.1− | 1.0+ | 2006 10 21 | 703 | 0.6− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 1.1+ | 0.2− | 2006 09 17 | 699 | 1.0+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 2003 12 28 | 704 | 0.0 | 0.1− | 2006 09 17 | 699 | 0.5− | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.0 |

**2003 YJ$_{41}$ = 2006 SH$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.41063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27289646 | $\omega$ | 279.88790 | | +0.90002917 | | −0.42042950 |
| $a$ | 2.3539873 | $\Omega$ | 105.04812 | | +0.43174822 | | +0.82412140 |
| $e$ | 0.1228571 | $i$ | 6.82921 | | +0.05950599 | | +0.37955626 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 08 | 644 | 0.5− | 0.3+ | 2003 12 21 | 291 | 0.5− | 0.4+ | 2006 09 17 | 699 | (1.8− | 2.3−) |
| 2002 07 08 | 644 | 0.1+ | 0.1+ | 2003 12 21 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.4+ | 1.2+ |
| 2002 07 08 | 644 | 0.2+ | 0.1+ | 2003 12 21 | 691 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2003 12 19 | 691 | 0.3+ | 0.1− | 2005 04 30 | 691 | 0.4+ | 0.6+ | 2006 09 19 | 703 | 0.3− | 1.3− |
| 2003 12 19 | 691 | 0.1+ | 0.0 | 2005 04 30 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.2− |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2005 04 30 | 691 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.2+ | 1.1+ |
| 2003 12 21 | 291 | 0.5− | 0.2+ | 2006 09 17 | 699 | (2.8+ | 0.8−) | 2006 09 25 | 703 | 0.6− | 0.2+ |
| 2003 12 21 | 291 | 0.4− | 0.2+ | 2006 09 17 | 699 | (0.4− | 1.7−) | 2006 09 25 | 703 | 0.9− | 0.9+ |
| 2003 12 21 | 691 | 0.1+ | 0.1− | 2006 09 17 | 699 | 0.1− | 0.3+ | 2006 09 25 | 703 | 0.1+ | 1.9+ |

**2003 YJ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.28925 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29249045 | $\omega$ | 343.26782 | | +0.23465802 | | −0.97099925 |
| $a$ | 2.2476478 | $\Omega$ | 93.14289 | | +0.89703281 | | +0.19815597 |
| $e$ | 0.1500503 | $i$ | 2.62804 | | +0.37452337 | | +0.13377096 |
| $P$ | 3.37 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.3+ | 0.3+ | 2004 01 22 | 704 | 0.8+ | 1.3− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2003 12 19 | 691 | 0.3+ | 0.2+ | 2004 01 22 | 704 | 0.1− | 0.6− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2003 12 19 | 691 | 0.3− | 0.1+ | 2004 01 22 | 704 | 0.2− | 1.0− | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2003 12 21 | 291 | 0.4− | 0.4+ | 2004 01 22 | 704 | (0.3+ | 1.7−) | 2006 11 01 | G96 | 0.0 | 0.2+ |
| 2003 12 21 | 291 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.5− | 1.4+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2003 12 21 | 291 | 0.3− | 0.4+ | 2006 10 16 | 703 | (2.7− | 0.7+) | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2003 12 28 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.1− | 0.4+ | 2006 11 11 | 691 | 0.5+ | 0.2− |
| 2003 12 28 | 691 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.6− | 0.9− | 2006 11 11 | 691 | 0.3+ | 0.3+ |
| 2003 12 28 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2004 01 19 | 699 | 0.8+ | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2004 01 19 | 699 | 1.0− | 0.4− | 2006 10 17 | G96 | 0.5− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2004 01 19 | 699 | (0.2+ | 1.5+) | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2004 01 19 | 699 | (1.7− | 0.5−) | 2006 10 21 | G96 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2004 01 22 | 704 | (0.2+ | 1.8−) | 2006 10 21 | G96 | 0.2− | 0.0 | | | | |

**2003 YR$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.33629 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28913596 | $\omega$ | 143.08193 | | +0.09503889 | | −0.99426893 |
| $a$ | 2.2649988 | $\Omega$ | 301.41592 | | +0.89907462 | | +0.10684494 |
| $e$ | 0.1453483 | $i$ | 3.28875 | | +0.42735516 | | −0.00366757 |
| $P$ | 3.41 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 645 | 0.0 | 0.1+ | 2004 01 24 | 704 | (1.7+ | 0.4+) | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 1999 10 16 | 645 | 0.1+ | 0.4− | 2004 01 24 | 704 | (2.0+ | 0.2+) | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.2+ | 0.6− | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2003 12 19 | 691 | 0.1− | 0.2− | 2004 01 24 | 704 | 1.0+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2003 12 21 | 291 | 0.6− | 0.1+ | 2004 01 30 | 704 | 0.0 | 1.0+ | 2006 10 17 | 703 | 0.5− | 1.0− |
| 2003 12 21 | 291 | 0.3− | 0.3− | 2004 01 30 | 704 | 0.7+ | 1.0+ | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2003 12 21 | 291 | 0.2− | 0.0 | 2004 01 30 | 704 | 0.5+ | 0.8+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2003 12 28 | 691 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2003 12 28 | 691 | 0.0 | 0.3− | 2004 02 16 | 704 | 0.2− | 1.2+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2003 12 28 | 691 | 0.3− | 0.1− | 2004 02 16 | 704 | 1.2+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2004 01 15 | 691 | 0.0 | 0.2+ | 2004 02 16 | 704 | 1.4+ | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 2004 01 15 | 691 | 0.0 | 0.1+ | 2004 04 14 | 645 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8− | 1.0− |
| 2004 01 15 | 691 | 0.2− | 0.0 | 2004 04 14 | 645 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2004 01 21 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2004 01 21 | 704 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.5− |
| 2004 01 21 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2004 01 21 | 704 | 0.4+ | 0.5− | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2004 01 21 | 704 | 0.7+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2004 01 24 | 704 | 0.3+ | 0.5− | 2006 09 30 | 691 | 0.5+ | 0.9+ | 2006 11 25 | G96 | 0.2+ | 0.4− |

**2003 YV$_{44}$ = 2006 QO$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.24858 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27856985 | $\omega$ | 178.76464 | | −0.18290184 | | −0.97616009 |
| $a$ | 2.3219167 | $\Omega$ | 281.76539 | | +0.90097837 | | −0.11885870 |
| $e$ | 0.1851259 | $i$ | 6.85616 | | +0.39342711 | | −0.18161523 |
| $P$ | 3.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 704 | (2.1− | 0.5+) | 2003 12 21 | 608 | 0.2+ | 0.0 | 2004 01 30 | 704 | 0.6− | 0.2+ |
| 2003 11 21 | 704 | 0.7− | 1.3− | 2003 12 27 | 291 | 0.3− | 0.2+ | 2004 01 30 | 704 | 0.4+ | 0.0 |
| 2003 11 21 | 704 | 0.6+ | 0.8− | 2003 12 27 | 291 | 0.4− | 0.1+ | 2004 01 30 | 704 | (2.6+ | 0.0 ) |
| 2003 12 19 | 704 | (1.7+ | 1.1+) | 2003 12 27 | 291 | 0.5− | 0.1− | 2004 01 30 | 704 | 0.1+ | 0.2− |
| 2003 12 19 | 704 | 0.8− | 1.5+ | 2004 01 21 | 704 | 0.3+ | 0.5+ | 2006 08 22 | 807 | 0.2− | 0.0 |
| 2003 12 19 | 704 | (0.9+ | 1.6+) | 2004 01 21 | 704 | 1.1− | 0.4+ | 2006 08 23 | 807 | 0.5− | 0.2− |
| 2003 12 19 | 704 | 0.8+ | 0.8+ | 2004 01 21 | 704 | 0.7− | 0.1− | 2006 08 23 | 807 | 0.4− | 0.1− |
| 2003 12 19 | 704 | 1.2+ | 1.3+ | 2004 01 21 | 704 | 1.4− | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.4+ |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2004 01 21 | 704 | 0.2+ | 0.8+ | 2006 09 27 | 703 | 1.3+ | 0.6− |
| 2003 12 19 | 691 | 0.1+ | 0.2− | 2004 01 24 | 704 | 0.1− | 0.7− | 2006 09 27 | 703 | 0.1+ | 0.5+ |
| 2003 12 19 | 691 | 0.2+ | 0.2− | 2004 01 24 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.4+ | 0.4− |
| 2003 12 21 | 704 | (0.8+ | 2.4+) | 2004 01 24 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2003 12 21 | 704 | (1.9+ | 1.1+) | 2004 01 24 | 704 | 0.7+ | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.4+ |
| 2003 12 21 | 704 | (1.1+ | 1.9+) | 2004 01 27 | 691 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.5− | 0.3+ |
| 2003 12 21 | 704 | (1.6+ | 2.0+) | 2004 01 27 | 691 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.4+ | 0.3− |
| 2003 12 21 | 608 | 0.1+ | 0.4+ | 2004 01 27 | 691 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 12 21 | 608 | 0.1+ | 0.2+ | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− |

**2003 YA$_{50}$ = 1998 EL**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.18705 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29985104 | $\omega$ | 330.46239 | | −0.37409653 | | +0.92638501 |
| $a$ | 2.2107129 | $\Omega$ | 277.54049 | | −0.84209844 | | −0.35881757 |
| $e$ | 0.0867885 | $i$ | 2.49512 | | −0.38848681 | | −0.11428368 |
| $P$ | 3.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 910 | 0.2+ | 0.1+ | 2003 12 21 | 704 | 0.0 | 1.1+ | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 1998 03 02 | 910 | 0.5+ | 0.2− | 2003 12 21 | 704 | 0.7+ | 1.2+ | 2006 10 04 | G96 | 0.4+ | 0.6− |
| 1998 03 02 | 910 | 0.4+ | 0.0 | 2003 12 21 | 704 | 0.5− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 1998 03 02 | 910 | 0.2+ | 0.1− | 2003 12 22 | 704 | 0.2− | 0.7− | 2006 10 13 | 691 | 0.2+ | 0.1+ |
| 1998 03 02 | 910 | 0.3+ | 0.4− | 2003 12 22 | 704 | 0.2− | 0.8+ | 2006 10 13 | 691 | 0.1+ | 0.0 |
| 1998 03 02 | 910 | 0.4+ | 0.2− | 2003 12 22 | 704 | 0.6− | 1.4+ | 2006 10 13 | 691 | 0.3+ | 0.0 |
| 1999 09 09 | 704 | 0.8− | 0.7− | 2003 12 22 | 704 | 0.6− | 0.8− | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 1999 09 09 | 704 | 0.4− | 0.2− | 2003 12 22 | 704 | 0.5− | 0.9+ | 2006 10 21 | 691 | 0.5− | 0.1− |
| 1999 09 09 | 704 | 0.4− | 0.5− | 2003 12 22 | 704 | 0.1− | 0.9− | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2001 01 21 | 704 | 0.2+ | 0.6+ | 2003 12 22 | 704 | 1.3− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2001 01 21 | 704 | 0.7+ | 0.0 | 2003 12 22 | 704 | 0.7− | 1.0− | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2001 01 21 | 704 | 1.1− | 0.6+ | 2003 12 22 | 704 | 0.6− | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2001 01 21 | 704 | 0.2+ | 0.7+ | 2003 12 22 | 704 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2002 06 16 | 644 | 0.1− | 0.6+ | 2003 12 22 | 704 | 0.3− | 0.6+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2002 06 16 | 644 | 0.2− | 0.3+ | 2003 12 22 | 704 | 0.6− | 1.0+ | 2006 11 13 | 691 | (0.0 | 3.5−) |
| 2002 06 16 | 644 | 0.4− | 0.4+ | 2005 05 04 | 644 | 0.4+ | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2002 07 04 | 644 | 0.3+ | 1.0+ | 2005 05 04 | 644 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.7− |
| 2002 07 04 | 644 | 0.2+ | 0.9+ | 2005 05 04 | 644 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.7+ | 0.5− |
| 2002 07 04 | 644 | 0.5+ | 0.4+ | 2005 06 04 | 704 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 28 | 608 | 0.1+ | 0.4− | 2005 06 04 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2002 07 28 | 608 | 0.2+ | 0.5− | 2005 06 04 | 704 | 0.7− | 0.8+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 07 28 | 608 | 0.1+ | 0.7− | 2005 06 14 | G96 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2002 08 06 | 644 | 0.0 | 0.3+ | 2005 06 14 | G96 | 0.2− | 0.2+ | 2006 11 19 | 704 | 1.2− | 0.4+ |
| 2002 08 06 | 644 | 0.2+ | 0.3+ | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2002 08 06 | 644 | 0.1+ | 0.5+ | 2005 06 14 | G96 | 0.4− | 0.1+ | 2006 11 19 | 704 | 1.4+ | 1.0+ |
| 2003 12 18 | 704 | 1.0+ | 1.4− | 2005 06 26 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 1.2+ | 1.0+ |
| 2003 12 18 | 704 | (1.7+ | 1.0−) | 2005 06 26 | 644 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 1.2− | 0.5+ |
| 2003 12 18 | 704 | 1.4+ | 0.9− | 2005 06 26 | 644 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 0.6+ | 0.9+ |
| 2003 12 18 | 704 | (2.0+ | 1.3−) | 2006 10 04 | G96 | 0.4+ | 0.6− | 2006 11 22 | 704 | (0.2+ | 1.9+) |

**2003 YH$_{50}$ = 1995 UL$_{68}$ = 2006 QG$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.04043 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25933047 | $\omega$ | 135.05363 | | −0.62000049 | −0.78458944 | |
| $a$ | 2.4353816 | $\Omega$ | 353.25841 | | +0.70908289 | −0.55795133 | |
| $e$ | 0.1365364 | $i$ | 2.11626 | | +0.33585836 | −0.27038809 | |
| $P$ | 3.80 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.1+ | 0.3− | 2003 12 18 | 704 | 0.6− | 0.6− | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 1995 10 19 | 691 | 0.0 | 0.3+ | 2003 12 18 | 704 | 0.2+ | 0.6− | 2006 09 26 | G96 | 0.4− | 0.6− |
| 1995 10 19 | 691 | 0.9− | 1.0+ | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 1995 10 28 | 691 | 0.2+ | 0.4− | 2006 08 21 | 691 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.5− |
| 1995 10 28 | 691 | 0.3+ | 0.5− | 2006 08 21 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 1.0− | 0.6+ |
| 1995 10 28 | 691 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.3+ | 0.2− | | | | |
| 2003 12 18 | 704 | 0.4+ | 1.1+ | 2006 08 28 | 691 | 0.1− | 0.2− | | | | |

**2003 YE$_{51}$ = 2006 SM$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.21886 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27339257 | $\omega$ | 214.03309 | | −0.69893664 | −0.70751665 | |
| $a$ | 2.3511387 | $\Omega$ | 280.55865 | | +0.67754792 | −0.60830911 | |
| $e$ | 0.0613789 | $i$ | 6.09856 | | +0.22894626 | −0.35969460 | |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.2− | 0.6+ | 2003 12 23 | 704 | 0.6− | 0.5+ | 2006 09 25 | 152 | 0.4+ | 0.2− |
| 1999 11 03 | 704 | 0.5− | 0.5+ | 2003 12 23 | 704 | 0.6− | 0.1− | 2006 09 25 | 152 | 0.1+ | 0.2+ |
| 1999 11 03 | 704 | 0.5+ | 0.3− | 2003 12 23 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 152 | 0.1+ | 0.9− |
| 2003 12 18 | 704 | 0.2+ | 0.2− | 2006 09 16 | 703 | (0.8− | 2.0−) | 2006 09 26 | 152 | (2.3+ | 0.6+) |
| 2003 12 18 | 704 | 0.3+ | 0.0 | 2006 09 16 | 703 | 1.0− | 0.4− | 2006 09 26 | 152 | 1.4− | 0.6+ |
| 2003 12 18 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | (0.4+ | 2.5−) | 2006 09 27 | 703 | 0.6+ | 0.4− |
| 2003 12 21 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.8− | 0.2+ | 2006 09 27 | 703 | 0.8+ | 0.2− |
| 2003 12 21 | 704 | 0.3+ | 0.0 | 2006 09 22 | 699 | 0.5+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.4+ |
| 2003 12 21 | 704 | 0.7+ | 0.7− | 2006 09 22 | 699 | 0.5+ | 0.7− | 2006 09 27 | 703 | 1.0+ | 0.1+ |
| 2003 12 21 | 704 | 1.0+ | 0.2− | 2006 09 22 | 699 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 12 23 | 704 | 0.9− | 0.4+ | 2006 09 22 | 699 | 0.6− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2003 12 23 | 704 | 0.7− | 0.1+ | 2006 09 25 | 152 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.0 |

**2003 YP$_{51}$ = 2006 QL$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.83053 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26580556 | $\omega$ | 141.79051 | | +0.34746488 | −0.93309010 | |
| $a$ | 2.3956682 | $\Omega$ | 287.70584 | | +0.83457189 | +0.35285240 | |
| $e$ | 0.0821593 | $i$ | 5.59004 | | +0.42750194 | +0.06955605 | |
| $P$ | 3.71 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 703 | 0.8− | 0.2− | 2003 12 18 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.0 | 0.3+ |
| 1999 11 09 | 703 | 0.1+ | 0.1− | 2003 12 18 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 1.3− |
| 1999 11 09 | 703 | 0.2+ | 1.0+ | 2003 12 21 | 704 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.6− |
| 1999 11 09 | 703 | 0.7− | 0.1− | 2003 12 21 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 2001 03 24 | 699 | 0.6− | 0.4+ | 2003 12 21 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 1.1+ | 0.5− |
| 2001 03 24 | 699 | 0.1+ | 0.6+ | 2003 12 21 | 704 | 0.4+ | 0.7+ | 2006 09 20 | 699 | 0.5− | 0.8+ |
| 2001 03 24 | 699 | 0.2+ | 0.8+ | 2003 12 21 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.6+ |
| 2001 03 24 | 699 | 0.8− | 0.0 | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.8+ |
| 2002 07 14 | 704 | (0.4+ | 1.7+) | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.8− |
| 2002 07 14 | 704 | 0.7+ | 1.0+ | 2006 08 18 | 644 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.8+ | 0.2+ |
| 2002 07 14 | 704 | 0.9+ | 0.3− | 2006 08 27 | 699 | 0.4+ | 0.5+ | 2006 10 01 | 704 | (2.6+ | 0.7+) |
| 2002 07 14 | 704 | 0.6+ | 0.5+ | 2006 08 27 | 699 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2002 07 14 | 704 | (2.0+ | 1.3+) | 2006 08 27 | 699 | 0.5+ | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2006 08 27 | 699 | 0.4− | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 07 22 | 644 | 0.1− | 0.7+ | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 10 16 | 703 | (2.7+ | 3.0+) |
| 2002 07 22 | 644 | 0.2− | 1.1+ | 2006 08 29 | 703 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2002 08 07 | 644 | 0.1− | 0.6+ | 2006 08 29 | 703 | (0.6− | 1.7+) | 2006 10 16 | 703 | 0.4+ | 0.4+ |
| 2002 08 07 | 644 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2002 08 07 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2002 08 27 | 644 | 0.1− | 0.7− | 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.7− | 0.5− |
| 2002 08 27 | 644 | 0.0 | 0.8− | 2006 08 30 | 704 | 0.5− | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2002 08 27 | 644 | 0.1− | 0.8− | 2006 08 30 | 704 | 0.1− | 0.8+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2003 10 29 | 704 | 0.5− | 0.7− | 2006 09 12 | 703 | 0.1− | 0.4− | 2006 11 11 | 291 | 0.0 | 0.0 |
| 2003 10 29 | 704 | 0.1+ | 0.6− | 2006 09 12 | 703 | 0.7− | 0.2− | 2006 11 11 | 291 | 0.2+ | 0.0 |
| 2003 10 29 | 704 | 0.0 | 0.3− | 2006 09 12 | 703 | 0.8− | 0.3− | 2006 11 11 | 291 | 0.3+ | 0.1+ |
| 2003 10 29 | 704 | 0.6+ | 0.1+ | 2006 09 12 | 703 | 0.9− | 0.7− | 2006 11 19 | 703 | 0.3− | 1.1− |
| 2003 12 18 | 704 | 0.7+ | 0.0 | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.1− | 0.6− |
| 2003 12 18 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.4+ | 2006 11 19 | 703 | 1.1− | 1.1− |
| 2003 12 18 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.1− | 1.2− |

**2003 YD$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.21582 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30196983 | $\omega$ | 237.44927 | | +0.34751142 | −0.93762235 | |
| $a$ | 2.2003597 | $\Omega$ | 192.22774 | | +0.87536653 | +0.32822607 | |
| $e$ | 0.1225086 | $i$ | 2.70817 | | +0.33610898 | +0.11459485 | |
| $P$ | 3.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 691 | 0.2+ | 0.3− | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2003 11 24 | 691 | 0.0 | 0.4− | 2006 09 06 | 644 | 0.5+ | 0.7+ | 2006 10 01 | 704 | (2.2− | 0.9−) |
| 2003 11 24 | 691 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | (0.8− | 3.6−) |
| 2003 12 19 | 704 | 0.3− | 1.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.3− |
| 2003 12 19 | 704 | 0.2+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | (2.6− | 2.9−) |
| 2003 12 19 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2003 12 19 | 704 | (1.9+ | 0.2−) | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2003 12 21 | 704 | (1.6− | 0.7+) | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.3− | 0.1+ |
| 2003 12 21 | 704 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 10 17 | 703 | 1.1− | 0.8− |
| 2003 12 21 | 704 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2003 12 21 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 1.0+ | 0.1− | 2006 10 17 | 703 | (1.1+ | 2.1+) |
| 2003 12 21 | 704 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.9− | 2006 10 17 | 703 | 1.2+ | 0.2− |
| 2003 12 23 | 704 | 0.8− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2003 12 23 | 704 | 0.5− | 0.9+ | 2006 09 24 | 958 | 1.1− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2003 12 23 | 704 | 0.5− | 0.6+ | 2006 09 24 | 958 | 1.1− | 1.3− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2003 12 23 | 704 | 0.6− | 0.1+ | 2006 09 24 | 958 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2003 12 23 | 704 | 0.4+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2004 01 17 | 644 | 0.5+ | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2004 01 17 | 644 | 0.3+ | 0.1− | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2004 01 17 | 644 | 0.5+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.0 | | | | |

**2003 YT$_{56}$ = 2006 TR$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.95198 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29522552 | $\omega$ | 238.80889 | | −0.45489170 | −0.88902741 | |
| $a$ | 2.2337443 | $\Omega$ | 238.33661 | | +0.83644070 | −0.40648331 | |
| $e$ | 0.1382556 | $i$ | 3.50249 | | +0.30568038 | −0.21071684 | |
| $P$ | 3.34 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.1− | 0.1− | 2003 12 23 | 704 | 0.3+ | 0.5− | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.5− | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2003 12 19 | 704 | 0.9+ | 0.5− | 2006 10 11 | 691 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2003 12 19 | 704 | (0.1− | 1.6−) | 2006 10 15 | 691 | 0.3+ | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2003 12 19 | 704 | 0.5+ | 0.5− | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2003 12 21 | 704 | 0.3+ | 0.3− | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.0 | 1.0− |
| 2003 12 21 | 704 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2003 12 21 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | (0.0 | 1.9−) | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2003 12 23 | 704 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.2− | 1.2− | 2006 11 18 | 291 | 0.0 | 0.1+ |
| 2003 12 23 | 704 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.1− | 2006 11 18 | 291 | 0.1+ | 0.1+ |
| 2003 12 23 | 704 | 0.9− | 1.0+ | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 18 | 291 | 0.1+ | 0.2+ |

### 2003 YF$_{57}$ = 2006 KC$_{100}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.74491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22113935 | $\omega$ | 77.18693 | | +0.92059091 | | +0.31077801 |
| $a$ | 2.7082705 | $\Omega$ | 264.32539 | | −0.38058101 | | +0.84974374 |
| $e$ | 0.1932067 | $i$ | 13.74839 | | +0.08758125 | | +0.42585514 |
| $P$ | 4.46 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 699 | 1.2+ | 1.3+ | 2002 07 09 | 704 | 0.0 | 0.1+ | 2003 12 21 | 704 | 0.5− | 0.8+ |
| 1998 09 26 | 699 | 0.1+ | 0.8− | 2002 07 09 | 704 | 0.3+ | 0.2+ | 2003 12 21 | 704 | 0.4− | 0.5+ |
| 1998 09 26 | 699 | 0.8+ | 0.2+ | 2002 07 09 | 704 | 0.3− | 0.1+ | 2004 01 13 | 691 | 0.1+ | 0.0 |
| 1998 10 29 | 699 | 1.1− | 0.3+ | 2002 07 18 | 704 | 0.4+ | 0.1− | 2004 01 13 | 691 | 0.0 | 0.1+ |
| 1998 10 29 | 699 | 0.4− | 0.5+ | 2002 07 18 | 704 | 0.6+ | 0.3− | 2004 01 13 | 691 | 0.0 | 0.5+ |
| 1998 10 29 | 699 | 1.0− | 0.1− | 2002 07 18 | 704 | 0.3+ | 0.2+ | 2006 05 29 | E12 | 0.7+ | 0.6+ |
| 2002 06 13 | 704 | 2.8− | 0.8− | 2002 07 18 | 704 | 1.4+ | 0.2− | 2006 05 29 | E12 | 0.1+ | 0.8+ |
| 2002 06 13 | 704 | 1.5− | 0.1+ | 2002 07 18 | 704 | 0.5+ | 0.5− | 2006 05 29 | E12 | 0.5+ | 1.0+ |
| 2002 06 13 | 704 | 1.3− | 0.0 | 2003 12 19 | 704 | 0.2+ | 0.5+ | 2006 05 29 | E12 | 0.4− | 0.1+ |
| 2002 06 13 | 704 | 1.7− | 0.6+ | 2003 12 19 | 704 | 0.3+ | 0.1− | 2006 05 30 | E12 | 0.6− | 0.3+ |
| 2002 07 03 | 644 | 0.6+ | 1.1+ | 2003 12 19 | 704 | 0.1− | 0.7+ | 2006 05 30 | E12 | 0.1+ | 0.6+ |
| 2002 07 03 | 644 | 0.6+ | 1.2+ | 2003 12 19 | 704 | 0.5+ | 0.8+ | 2006 05 30 | E12 | 0.0 | 0.6+ |
| 2002 07 03 | 644 | 0.6+ | 0.9+ | 2003 12 21 | 704 | 0.5− | 0.5+ | 2006 05 30 | E12 | 0.2+ | 0.6+ |
| 2002 07 09 | 704 | 0.0 | 0.1+ | 2003 12 21 | 704 | 1.4+ | 0.5+ | | | | |
| 2002 07 09 | 704 | 0.1+ | 0.0 | 2003 12 21 | 704 | 0.7− | 0.5+ | | | | |

### 2003 YX$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.49051 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28309660 | $\omega$ | 269.38722 | | +0.99592531 | | −0.03405238 |
| $a$ | 2.2970985 | $\Omega$ | 92.56207 | | +0.06431265 | | +0.91730520 |
| $e$ | 0.1976168 | $i$ | 4.79491 | | −0.06321918 | | +0.39672611 |
| $P$ | 3.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 12 | 291 | 0.2− | 0.6+ | 2004 01 21 | 704 | 1.0− | 0.3+ | 2006 09 17 | 699 | 0.5+ | 0.3− |
| 2002 06 12 | 291 | 0.1− | 0.5+ | 2004 01 21 | 704 | 0.2− | 0.6+ | 2006 09 20 | 703 | 0.1+ | 0.2− |
| 2002 06 12 | 291 | 0.7+ | 0.4+ | 2004 01 21 | 704 | 0.1+ | 0.8+ | 2006 09 20 | 703 | 0.1+ | 0.1+ |
| 2003 11 23 | 704 | 0.1+ | 0.1+ | 2004 01 21 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.8− | 0.1+ |
| 2003 11 23 | 704 | 0.4− | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.4+ | 0.2− |
| 2003 11 23 | 704 | 0.1− | 1.2+ | 2006 08 15 | 644 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 11 23 | 704 | 0.0 | 0.4+ | 2006 08 15 | 644 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2003 12 19 | 704 | (1.6+ | 1.0+) | 2006 08 28 | 699 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2003 12 19 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.2− | 0.2− | 2006 10 28 | 703 | 0.1− | 0.7− |
| 2003 12 19 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 699 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.2− | 1.4+ |
| 2003 12 19 | 704 | 0.2+ | 0.2− | 2006 08 28 | 699 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.3− | 0.9+ |
| 2003 12 21 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 644 | 0.3− | 0.3+ | 2006 10 28 | 703 | (2.0− | 3.3+) |
| 2003 12 21 | 704 | 0.0 | 1.3+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 11 27 | 703 | 0.9− | 0.5+ |
| 2003 12 21 | 704 | 0.0 | 0.7− | 2006 09 14 | 644 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.3− | 1.7− |
| 2003 12 21 | 704 | 0.3+ | 0.7+ | 2006 09 17 | 699 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.4− | 1.2+ |
| 2003 12 21 | 704 | 0.2− | 0.6+ | 2006 09 17 | 699 | 0.7+ | 0.1+ | 2006 11 27 | 703 | 1.0− | 1.8− |
| 2003 12 21 | 704 | 0.1+ | 0.7− | 2006 09 17 | 699 | 0.8+ | 0.6+ | | | | |

### 2003 YH$_{58}$ = 2006 QP$_{167}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.05202 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26043700 | $\omega$ | 13.55594 | | −0.62894448 | | −0.77541216 |
| $a$ | 2.4284785 | $\Omega$ | 115.44665 | | +0.70736206 | | −0.60076948 |
| $e$ | 0.1332648 | $i$ | 3.57188 | | +0.32259534 | | −0.19445309 |
| $P$ | 3.78 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 703 | 0.2+ | 0.2− | 2003 12 19 | 704 | 0.4− | 0.1− | 2006 08 30 | 699 | 0.2− | 0.2+ |
| 1999 12 05 | 703 | 0.5+ | 0.7− | 2003 12 21 | 704 | 0.8+ | 0.2+ | 2006 08 30 | 699 | 0.4− | 0.2− |
| 1999 12 05 | 703 | 0.6− | 0.9− | 2003 12 21 | 704 | 1.0+ | 0.2− | 2006 08 30 | 699 | 0.2− | 0.8+ |
| 1999 12 05 | 703 | 0.4+ | 0.3− | 2003 12 21 | 704 | 1.0+ | 0.1+ | 2006 08 30 | 699 | 1.3+ | 0.2− |
| 2002 08 29 | 644 | 0.5+ | 0.5+ | 2003 12 21 | 704 | 0.8+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.0 |
| 2002 08 29 | 644 | 0.1− | 0.5+ | 2003 12 21 | 704 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.0 |
| 2002 08 29 | 644 | 0.6− | 0.1− | 2003 12 23 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | (2.1+ | 1.3−) |
| 2003 12 19 | 704 | 0.5− | 0.2+ | 2003 12 23 | 704 | 0.6− | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.6− | 0.0 | 2003 12 23 | 704 | 0.6− | 0.2+ | 2006 09 30 | 291 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.4− | 0.2− | 2003 12 23 | 704 | 0.6− | 0.4+ | 2006 09 30 | 291 | 0.0 | 0.0 |
| 2003 12 19 | 704 | 0.5− | 0.4− | 2003 12 23 | 704 | 0.3− | 0.5+ | 2006 09 30 | 291 | 0.1+ | 0.1− |

### 2003 YT$_{59}$ = 2006 SX$_{6}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.65313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29975785 | $\omega$ | 149.95835 | | +0.62972318 | | −0.76976078 |
| $a$ | 2.2111711 | $\Omega$ | 260.80690 | | +0.68998030 | | +0.61604039 |
| $e$ | 0.1229324 | $i$ | 6.07581 | | +0.35689760 | | +0.16722016 |
| $P$ | 3.29 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.3+ | 0.4+ | 2006 09 18 | G92 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2003 12 19 | 704 | 0.8+ | 0.2− | 2006 09 18 | G92 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2003 12 19 | 704 | 0.6+ | 0.5− | 2006 09 18 | G92 | 0.0 | 0.2− | 2006 10 31 | 703 | 0.3− | 0.6− |
| 2003 12 21 | 704 | 0.2− | 0.2+ | 2006 09 18 | 291 | 0.0 | 0.2+ | 2006 10 31 | 703 | 0.5− | 0.4− |
| 2003 12 21 | 704 | 1.0+ | 1.3− | 2006 09 18 | 291 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.3− | 0.4− |
| 2003 12 21 | 704 | 0.6+ | 0.1− | 2006 09 18 | 291 | 0.2− | 0.0 | 2006 10 31 | 703 | 1.0+ | 0.2+ |
| 2003 12 21 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2003 12 23 | 704 | 1.4− | 0.1− | 2006 09 28 | 703 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.5− |
| 2003 12 23 | 704 | 0.9− | 0.5+ | 2006 09 28 | 703 | 0.6+ | 0.2− | 2006 11 14 | 703 | 0.0 | 0.8− |
| 2003 12 23 | 704 | 0.7− | 0.4+ | 2006 09 28 | 703 | 0.8+ | 0.4+ | 2006 11 14 | 703 | 0.7− | 1.2− |
| 2003 12 23 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 1.0+ |
| 2006 09 17 | 703 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4− | 1.2+ |
| 2006 09 17 | 703 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2006 09 17 | 703 | 0.2+ | 1.0− | 2006 10 17 | 703 | 0.5− | 0.2+ | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2006 09 17 | 703 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.8+ | | | | |

### 2003 YQ$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.75044 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29724780 | $\omega$ | 189.23319 | | −0.13688420 | | −0.98307268 |
| $a$ | 2.2236014 | $\Omega$ | 268.70349 | | +0.91644359 | | −0.07901074 |
| $e$ | 0.1005351 | $i$ | 6.99675 | | +0.37602375 | | −0.16530400 |
| $P$ | 3.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 699 | 0.8+ | 0.2+ | 2003 12 19 | 704 | 0.6+ | 0.8− | 2006 10 19 | 703 | 1.1− | 0.1+ |
| 2001 03 21 | 699 | 0.0 | 0.4− | 2003 12 21 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2001 03 21 | 699 | 0.8− | 0.9+ | 2003 12 21 | 704 | 0.2− | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2001 03 21 | 699 | 1.4+ | 0.5+ | 2003 12 21 | 704 | 0.0 | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2002 07 08 | 644 | 0.4− | 0.7+ | 2003 12 21 | 704 | (1.1− | 1.6+) | 2006 10 27 | 703 | 0.9− | 0.4− |
| 2002 07 08 | 644 | 0.3− | 0.5+ | 2003 12 21 | 704 | 0.2− | 0.6+ | 2006 10 27 | 703 | 0.4+ | 1.2− |
| 2002 07 08 | 644 | 0.2− | 0.4+ | 2004 01 03 | 704 | 0.9− | 0.7− | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2003 11 23 | 704 | 1.2+ | 0.9− | 2004 01 03 | 704 | 1.0− | 0.2− | 2006 10 27 | 703 | 0.6− | 0.8− |
| 2003 11 23 | 704 | 1.2+ | 0.3− | 2004 01 03 | 704 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2003 11 23 | 704 | (2.0+ | 1.7−) | 2004 01 03 | 704 | 0.5− | 0.6− | 2006 11 15 | 703 | 0.2+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 704 | 0.5+ | 1.2− | 2004 01 18 | 644 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.1+ | | |
| 2003 12 01 | 704 | 0.1− | 0.1+ | 2004 01 18 | 644 | 0.7− | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.2+ | | |
| 2003 12 01 | 704 | 0.0 | 0.5+ | 2004 01 18 | 644 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.5+ | | |
| 2003 12 01 | 704 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 1.5+ | | |
| 2003 12 01 | 704 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 704 | 0.5− | 0.1+ | | |
| 2003 12 19 | 704 | 0.6+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 23 | 703 | 0.1− | 0.1+ | | |
| 2003 12 19 | 704 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.4− | 2006 11 23 | 703 | 0.4− | 0.4+ | | |
| 2003 12 19 | 704 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.9+ | 0.7− | 2006 11 23 | 703 | 0.2− | 0.3+ | | |
| 2003 12 19 | 704 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.3+ | 0.2+ | 2006 11 23 | 703 | 0.1+ | 0.1− | | |

**2003 YL$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.27644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29897151 | $\omega$ | 334.15880 | | +0.44651352 | −0.89151157 | |
| $a$ | 2.2150465 | $\Omega$ | 89.23943 | | +0.83361616 | +0.38346026 | |
| $e$ | 0.0852886 | $i$ | 4.38049 | | +0.32513039 | +0.24117495 | |
| $P$ | 3.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 16 | 691 | 0.0 | 0.1+ | 2003 12 27 | 704 | 0.1− | 0.3+ | 2006 11 14 | 704 | (0.4− | 1.8+) | | |
| 2003 12 16 | 691 | 0.1− | 0.2+ | 2003 12 27 | 704 | 0.3+ | 0.6− | 2006 11 14 | 704 | (0.7− | 1.7+) | | |
| 2003 12 16 | 691 | 0.2− | 0.0 | 2003 12 27 | 704 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.5− | | |
| 2003 12 19 | 704 | 0.1+ | 0.3+ | 2004 01 20 | 704 | 0.3+ | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.5− | | |
| 2003 12 19 | 704 | 1.0− | 0.3+ | 2004 01 20 | 704 | 0.7+ | 0.7− | 2006 11 16 | G96 | 0.3− | 0.5− | | |
| 2003 12 19 | 704 | 0.7− | 0.7+ | 2004 01 20 | 704 | 0.5+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2003 12 21 | 704 | 0.7+ | 1.4+ | 2004 01 21 | 691 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.5+ | 0.3− | | |
| 2003 12 21 | 704 | (2.4+ | 1.4−) | 2004 01 21 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.8+ | | |
| 2003 12 21 | 704 | (1.5+ | 1.8+) | 2004 01 21 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.1+ | | |
| 2003 12 21 | 704 | (1.1− | 2.2+) | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.1− | 1.2+ | | |
| 2003 12 21 | 704 | (2.4− | 2.7+) | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.3+ | | |
| 2003 12 25 | 608 | 0.3+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.7+ | | |
| 2003 12 25 | 608 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 1.1+ | 0.9+ | | |
| 2003 12 25 | 608 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.8+ | | |
| 2003 12 27 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.2+ | | |
| 2003 12 27 | 704 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.6− | 0.9− | | |
| 2003 12 27 | 704 | 0.6+ | 0.7− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 1.3− | 0.7− | | |
| 2003 12 27 | 704 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | (1.7− | 0.2−) | | |
| 2003 12 27 | 704 | (1.8+ | 0.1−) | 2006 11 14 | 704 | (0.4+ | 3.0+) | 2006 11 28 | 704 | (1.8− | 0.5+) | | |

**2003 YR$_{64}$ = 2006 RP$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.19186 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29564088 | $\omega$ | 240.93736 | | +0.50561140 | −0.86276067 | |
| $a$ | 2.2316516 | $\Omega$ | 178.68925 | | +0.80687656 | +0.47242331 | |
| $e$ | 0.2319453 | $i$ | 2.66886 | | +0.30546248 | +0.18016725 | |
| $P$ | 3.33 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | (1.7− | 0.7+) | 2006 09 16 | 691 | 0.1− | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2003 12 19 | 704 | 0.1− | 1.0+ | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1− | | |
| 2003 12 19 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 691 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2003 12 21 | 704 | 0.9− | 0.8− | 2006 09 18 | 699 | 1.2− | 1.1+ | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2003 12 21 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.4− | | |
| 2003 12 21 | 704 | 0.8+ | 0.1− | 2006 09 18 | 699 | 1.0+ | 1.1+ | 2006 10 20 | G96 | 0.1+ | 0.4− | | |
| 2003 12 21 | 704 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 1.0− | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2003 12 23 | 704 | 0.8− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2003 12 23 | 704 | 0.2+ | 0.8− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.4+ | | |
| 2003 12 23 | 704 | 0.7− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2003 12 23 | 704 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.6− | | |
| 2006 09 12 | 703 | (0.9+ | 3.8+) | 2006 09 27 | 704 | 1.1− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.3− | | |
| 2006 09 12 | 703 | (2.2+ | 0.8+) | 2006 09 27 | 704 | (1.6+ | 0.9+) | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2006 09 12 | 703 | (2.0+ | 1.8+) | 2006 09 27 | 704 | 0.7− | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.3− | | |
| 2006 09 12 | 703 | (0.2+ | 2.6+) | 2006 09 27 | 704 | 0.3+ | 0.4− | | | | | | |

**2003 YJ$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.44071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24401420 | $\omega$ | 33.33082 | | −0.78697918 | −0.57845858 | |
| $a$ | 2.5362535 | $\Omega$ | 109.85759 | | +0.50439084 | −0.80350513 | |
| $e$ | 0.1179192 | $i$ | 13.18863 | | +0.35532189 | −0.14058867 | |
| $P$ | 4.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 20 | 691 | 0.1− | 0.3− | 2004 01 13 | 699 | 0.5+ | 0.1+ | 2004 01 22 | 704 | 0.3− | 0.2+ | | |
| 1995 12 20 | 691 | 0.0 | 0.5− | 2004 01 13 | 699 | 0.1+ | 1.0− | 2004 01 22 | 704 | 1.0+ | 0.0 | | |
| 1995 12 20 | 691 | 0.1− | 0.3− | 2004 01 13 | 699 | 0.6− | 0.7+ | 2004 01 26 | 699 | 0.8+ | 0.8− | | |
| 2000 02 11 | 704 | 1.6− | 0.4− | 2004 01 13 | 699 | 0.7+ | 0.6− | 2004 01 26 | 699 | 0.9− | 0.1− | | |
| 2000 02 11 | 704 | 1.1+ | 0.2+ | 2004 01 15 | 691 | 0.1+ | 0.3+ | 2004 01 26 | 699 | 0.0 | 0.4− | | |
| 2000 02 11 | 704 | 1.0+ | 0.6− | 2004 01 15 | 691 | 0.0 | 0.0 | 2004 01 26 | 699 | 1.0− | 1.0− | | |
| 2003 12 19 | 704 | 0.2+ | 0.3+ | 2004 01 15 | 691 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.7− | 0.9− | | |
| 2003 12 19 | 704 | 0.1− | 0.1+ | 2004 01 16 | 691 | 0.1+ | 0.2− | 2004 02 15 | 704 | 0.2+ | 0.4− | | |
| 2003 12 19 | 704 | 0.5+ | 0.9+ | 2004 01 16 | 691 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.3− | 0.5+ | | |
| 2003 12 19 | 704 | 0.1− | 0.6+ | 2004 01 16 | 691 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.5− | 0.4− | | |
| 2003 12 21 | 704 | 0.4+ | 0.7+ | 2004 01 19 | 699 | 0.3+ | 0.4+ | 2004 02 15 | 704 | 0.0 | 0.5− | | |
| 2003 12 21 | 704 | 0.9+ | 0.2+ | 2004 01 19 | 699 | 0.3− | 0.2+ | 2004 02 18 | 704 | 0.8+ | 1.0+ | | |
| 2003 12 21 | 704 | 0.5− | 0.2+ | 2004 01 19 | 699 | 0.2+ | 0.4+ | 2004 02 18 | 704 | (1.3+ | 3.9−) | | |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2004 01 19 | 699 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.4+ | 0.3− | | |
| 2003 12 22 | 691 | 0.2+ | 0.0 | 2004 01 20 | 704 | 0.7− | 0.2+ | 2004 02 18 | 704 | 0.6+ | 1.2+ | | |
| 2003 12 22 | 691 | 0.2+ | 0.0 | 2004 01 20 | 704 | 0.8− | 0.9+ | 2005 07 12 | G96 | 0.1+ | 0.3+ | | |
| 2003 12 29 | 699 | 0.1− | 0.6− | 2004 01 20 | 704 | 0.9− | 0.9+ | 2005 07 12 | G96 | 0.4+ | 0.5+ | | |
| 2003 12 29 | 699 | 0.3− | 0.6+ | 2004 01 20 | 704 | 0.9− | 1.1+ | 2005 07 12 | G96 | 0.3+ | 0.2− | | |
| 2003 12 29 | 699 | 0.6− | 0.4− | 2004 01 22 | 704 | 0.2+ | 0.3− | 2005 07 12 | G96 | 0.4− | 0.8+ | | |
| 2003 12 29 | 699 | 0.5− | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.0 | | | | | | |

**2003 YT$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.86873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25558719 | $\omega$ | 49.43974 | | −0.99454298 | −0.09359086 | |
| $a$ | 2.4591027 | $\Omega$ | 125.14137 | | +0.07024587 | −0.92741668 | |
| $e$ | 0.1189915 | $i$ | 3.23163 | | +0.07713487 | −0.36213126 | |
| $P$ | 3.86 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.3+ | 0.6+ | 2004 01 19 | 699 | 0.3− | 0.2− | 2004 02 13 | 691 | 0.0 | 0.0 | | |
| 2003 12 19 | 704 | 0.3− | 0.3− | 2004 01 19 | 703 | 0.6− | 0.2− | 2004 02 22 | 704 | 0.4− | 0.2− | | |
| 2003 12 19 | 704 | 0.2− | 0.4− | 2004 01 19 | 703 | 0.1+ | 0.0 | 2004 02 22 | 704 | 0.7+ | 0.2− | | |
| 2003 12 19 | 704 | 0.2− | 0.2+ | 2004 01 19 | 703 | 0.8− | 0.3+ | 2004 02 22 | 704 | 0.2− | 0.1− | | |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2004 01 19 | 703 | 1.1− | 0.5− | 2006 09 17 | 691 | 0.0 | 0.0 | | |
| 2003 12 22 | 691 | 0.2+ | 0.0 | 2004 01 21 | 704 | 0.5+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1− | | |
| 2003 12 22 | 691 | 0.1− | 0.0 | 2004 01 21 | 704 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 2004 01 15 | 691 | 0.1− | 0.2− | 2004 01 21 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.0 | | |
| 2004 01 15 | 691 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2004 01 15 | 691 | 0.0 | 0.2− | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2004 01 19 | 699 | 0.1+ | 0.5− | 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.1− | | |
| 2004 01 19 | 699 | 0.1− | 0.5+ | 2004 02 13 | 691 | 0.0 | 0.2+ | | | | | | |
| 2004 01 19 | 699 | 0.6+ | 0.0 | 2004 02 13 | 691 | 0.1− | 0.1+ | | | | | | |

**2003 YE$_{72}$ = 2003 YL$_{178}$ = 2005 FD$_{11}$**

Id. Minor Planet Center (d, *MPO* 102379; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.67245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22194346 | $\omega$ | 306.67885 | | +0.96290037 | −0.24533308 | |
| $a$ | 2.7017250 | $\Omega$ | 67.76463 | | +0.26964272 | +0.85809639 | |
| $e$ | 0.0260091 | $i$ | 6.97486 | | +0.01075587 | +0.45109008 | |
| $P$ | 4.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 910 | 0.3− | 0.0 | 2003 12 18 | 704 | 0.3− | 0.5+ | 2003 12 29 | 704 | 0.0 | 1.9− | | |
| 1998 10 01 | 910 | 0.5− | 0.0 | 2003 12 18 | 704 | 0.0 | 0.3+ | 2003 12 29 | 704 | (1.9− | 2.2+) | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 910 | 0.6− | 0.3+ | 2003 12 22 | 704 | 1.3+ | 0.2+ | 2003 12 29 | 704 | 1.3− | 1.8− |
| 2001 05 17 | 691 | 0.0 | 0.8+ | 2003 12 22 | 704 | 0.4+ | 0.8+ | 2003 12 29 | 704 | (0.6− | 2.3−) |
| 2001 05 17 | 691 | 0.0 | 0.7+ | 2003 12 22 | 704 | 0.1+ | 0.1+ | 2005 03 13 | G96 | 0.1− | 0.3− |
| 2001 05 17 | 691 | 1.2+ | 0.6+ | 2003 12 22 | 704 | 0.8+ | 0.9+ | 2005 03 13 | G96 | 0.1− | 0.5− |
| 2002 08 19 | 644 | 0.4− | 0.1+ | 2003 12 25 | 691 | 0.2+ | 0.4+ | 2005 03 13 | G96 | 0.1− | 0.3− |
| 2002 08 19 | 644 | 0.0 | 0.1+ | 2003 12 25 | 691 | 0.1+ | 0.4+ | 2005 03 13 | G96 | 0.0 | 0.4− |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2003 12 25 | 691 | 0.1+ | 0.4+ | 2005 03 13 | G96 | 0.2− | 0.4− |
| 2002 08 30 | 644 | 0.3− | 0.4+ | 2003 12 27 | 704 | 0.1− | 0.3+ | 2005 03 13 | G96 | 0.1− | 0.4− |
| 2002 08 30 | 644 | 0.0 | 0.6+ | 2003 12 27 | 704 | 0.2+ | 0.2+ | 2005 03 13 | G96 | 0.4+ | 0.1− |
| 2002 08 30 | 644 | 0.4− | 0.5+ | 2003 12 27 | 704 | 0.5− | 0.7− | 2005 03 13 | G96 | 0.9+ | 0.0 |
| 2002 09 09 | 644 | 0.1− | 1.2+ | 2003 12 27 | 704 | 0.4+ | 0.1+ | 2005 03 30 | 703 | 0.2− | 0.2+ |
| 2002 09 09 | 644 | 0.4− | 1.0+ | 2003 12 27 | 704 | 0.7+ | 0.1+ | 2005 03 30 | 703 | 0.1+ | 1.7+ |
| 2002 09 09 | 644 | 0.4− | 1.0+ | 2003 12 27 | 704 | 0.8− | 0.7+ | 2005 03 30 | 703 | 1.1− | 0.0 |
| 2003 12 18 | 704 | 0.8− | 0.9+ | 2003 12 27 | 704 | 0.1+ | 1.4+ | 2005 03 30 | 703 | 1.2− | 1.4+ |
| 2003 12 18 | 704 | 0.4− | 0.7+ | 2003 12 27 | 704 | 0.4+ | 0.1+ | | | | |
| 2003 12 18 | 704 | (2.2− | 0.4−) | 2003 12 29 | 704 | 1.8− | 2.0+ | | | | |

### 2003 YA$_{73}$ = 2006 PV$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.85033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27854691 | $\omega$ | 72.78218 | | +0.87530760 | −0.48312454 | |
| $a$ | 2.3220442 | $\Omega$ | 316.10152 | | +0.43156689 | +0.79975202 | |
| $e$ | 0.2080808 | $i$ | 1.70832 | | +0.21814356 | +0.35635289 | |
| $P$ | 3.54 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.0 | 0.0 | 2003 12 18 | 704 | 0.4− | 0.5− | 2005 03 11 | G96 | 0.2− | 0.4− |
| 2000 12 23 | 645 | 0.1+ | 0.1− | 2003 12 18 | 704 | 0.2− | 0.2− | 2005 03 11 | G96 | 0.1− | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 12 18 | 704 | 0.9− | 0.3− | 2005 03 11 | G96 | 0.1+ | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 12 22 | 704 | 1.2+ | 0.3+ | 2006 08 14 | 644 | 0.2− | 0.1− |
| 2003 11 23 | 704 | 0.9− | 0.5− | 2003 12 22 | 704 | 1.1+ | 0.4+ | 2006 08 14 | 644 | 0.0 | 0.5+ |
| 2003 11 23 | 704 | 0.8− | 0.8+ | 2003 12 22 | 704 | 1.3+ | 0.2+ | 2006 08 14 | 644 | 0.2+ | 0.4+ |
| 2003 11 23 | 704 | 0.7− | 0.2+ | 2003 12 22 | 704 | 0.2+ | 0.3+ | 2006 08 20 | 644 | 0.3− | 0.2+ |
| 2003 12 18 | 704 | 0.6+ | 0.3+ | 2003 12 22 | 704 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 2003 12 18 | 704 | 0.5− | 0.1− | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.4+ |

### 2003 YG$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.82035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27270396 | $\omega$ | 215.39785 | | −0.93484453 | −0.34717409 | |
| $a$ | 2.3550949 | $\Omega$ | 304.12065 | | +0.34294626 | −0.82864422 | |
| $e$ | 0.1164915 | $i$ | 5.15639 | | +0.09194330 | −0.43911149 | |
| $P$ | 3.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 699 | 0.6− | 0.9+ | 2003 12 22 | 704 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.4+ | 1.2+ |
| 2001 03 24 | 699 | 0.3+ | 1.0+ | 2004 01 18 | 691 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.3− |
| 2001 03 24 | 699 | 0.0 | 0.3+ | 2004 01 18 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | (2.9− | 1.5+) |
| 2001 03 24 | 699 | 1.2+ | 0.2− | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.8+ | 0.3+ |
| 2002 08 27 | 644 | 0.4− | 0.7+ | 2004 01 22 | 704 | 0.7+ | 1.3− | 2006 09 27 | 703 | 0.2+ | 0.2− |
| 2002 08 27 | 644 | 0.3− | 0.8+ | 2004 01 22 | 704 | 0.7+ | 0.1− | 2006 09 27 | 703 | (2.2+ | 0.3−) |
| 2002 08 27 | 644 | 0.5− | 0.8+ | 2004 01 22 | 704 | 0.4− | 0.7+ | 2006 09 27 | 703 | 0.5+ | 0.2− |
| 2003 12 18 | 704 | 0.9+ | 0.6− | 2004 01 28 | 691 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2003 12 18 | 704 | 0.1− | 0.7+ | 2004 01 28 | 691 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2003 12 18 | 704 | 1.4+ | 0.1− | 2004 01 28 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2003 12 18 | 704 | 0.7+ | 0.5− | 2006 09 16 | 703 | 0.9− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2003 12 18 | 704 | 1.0+ | 0.4− | 2006 09 16 | 703 | (0.5+ | 1.7+) | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2003 12 22 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 703 | (0.2+ | 2.2−) | 2006 10 23 | G96 | 0.4+ | 0.0 |
| 2003 12 22 | 704 | 0.3− | 0.3+ | 2006 09 16 | 703 | 1.3− | 0.4− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2003 12 22 | 704 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.9− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.2+ |

### 2003 YL$_{76}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.08657 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28860663 | $\omega$ | 29.66646 | | −0.17740863 | −0.98019991 | |
| $a$ | 2.2677674 | $\Omega$ | 70.67077 | | +0.88358702 | −0.19799562 | |
| $e$ | 0.0960230 | $i$ | 5.34763 | | +0.43335916 | +0.00242393 | |
| $P$ | 3.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 16 | 691 | 0.0 | 0.4− | 2004 01 22 | 704 | 0.7+ | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 1997 01 16 | 691 | 0.2+ | 0.4− | 2004 01 22 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1997 01 16 | 691 | 0.3+ | 0.8− | 2006 09 14 | 291 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2002 07 09 | 644 | 0.2− | 0.3+ | 2006 09 14 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.2+ | 0.4+ |
| 2002 07 09 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 291 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 1.4+ |
| 2002 07 09 | 644 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.8+ | 0.8− | 2006 10 16 | 703 | 0.4+ | 1.4+ |
| 2003 12 04 | 704 | 1.0− | 0.4− | 2006 09 18 | 703 | (2.3+ | 0.4+) | 2006 10 16 | 703 | 1.2− | 1.3+ |
| 2003 12 04 | 704 | 0.4+ | 1.0+ | 2006 09 18 | 703 | (1.5+ | 1.5+) | 2006 10 19 | 644 | 0.4− | 0.2+ |
| 2003 12 04 | 704 | 0.5+ | 0.1− | 2006 09 18 | 703 | 1.4+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2003 12 04 | 704 | 1.0+ | 0.5− | 2006 09 25 | 699 | 0.8− | 1.1− | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2003 12 18 | 704 | (2.1− | 1.6−) | 2006 09 25 | 699 | 1.0− | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 2003 12 18 | 704 | (2.5− | 1.1−) | 2006 09 25 | 699 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2003 12 18 | 704 | 1.5− | 1.4− | 2006 09 25 | 699 | (0.8− | 1.7−) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2003 12 18 | 704 | (2.9− | 2.5−) | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2003 12 18 | 704 | 1.3− | 1.5− | 2006 09 30 | 703 | 0.5− | 1.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.3− | 1.4+ | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 22 | 703 | 0.9− | 0.3+ |
| 2003 12 22 | 704 | 0.3+ | 1.3+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.9− | 0.6+ |
| 2003 12 22 | 704 | 0.4+ | 0.9+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.8− | 0.7+ |
| 2003 12 22 | 644 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 2003 12 22 | 644 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2003 12 22 | 644 | 0.5− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.9+ | 0.7+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.1− |
| 2004 01 22 | 704 | 0.5+ | 0.9+ | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.9− | 0.3+ |

### 2003 YC$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.07058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18109409 | $\omega$ | 22.37568 | | −0.27366254 | −0.94596007 | |
| $a$ | 3.0940918 | $\Omega$ | 83.85482 | | +0.85384216 | −0.32220320 | |
| $e$ | 0.0432374 | $i$ | 10.07770 | | +0.44278932 | +0.03666945 | |
| $P$ | 5.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.0 | 0.5+ | 2003 12 27 | 704 | 1.5+ | 0.1+ | 2005 04 06 | 703 | 0.7− | 0.1− |
| 2003 12 18 | 704 | 0.0 | 0.1+ | 2005 03 16 | 703 | 0.2+ | 0.0 | 2005 04 06 | 703 | 1.3− | 0.1− |
| 2003 12 18 | 704 | 0.6− | 0.4− | 2005 03 16 | 703 | 0.7+ | 1.5+ | 2005 04 06 | 703 | 0.4− | 0.5− |
| 2003 12 22 | 704 | 0.4− | 0.7− | 2005 03 16 | 703 | 0.4+ | 0.4+ | 2005 04 06 | 703 | 0.9− | 0.5+ |
| 2003 12 22 | 704 | 0.3+ | 0.6− | 2005 03 16 | 703 | 0.1+ | 0.9− | 2005 04 16 | 703 | 0.1+ | 0.2+ |
| 2003 12 22 | 704 | 0.7− | 0.4+ | 2005 03 30 | 703 | 0.9+ | 0.5+ | 2005 04 16 | 703 | 0.0 | 0.8+ |
| 2003 12 27 | 704 | 0.5− | 0.6− | 2005 03 30 | 703 | 1.2− | 0.7+ | 2005 04 16 | 703 | 1.0+ | 0.5− |
| 2003 12 27 | 704 | 0.0 | 1.4+ | 2005 03 30 | 703 | 1.2+ | 0.6− | 2005 04 16 | 703 | 0.1+ | 0.6− |
| 2003 12 27 | 704 | 0.3+ | 0.2− | 2005 03 30 | 703 | 0.2− | 1.4− | | | | |

### 2003 YZ$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.97566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21596819 | $\omega$ | 113.59181 | | +0.72095938 | −0.66330783 | |
| $a$ | 2.7513311 | $\Omega$ | 288.62227 | | +0.53320926 | +0.71588006 | |
| $e$ | 0.1051630 | $i$ | 12.22098 | | +0.44261209 | +0.21803318 | |
| $P$ | 4.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 1.3− | 1.0− | 2002 08 15 | 644 | 0.4− | 0.4+ | 2003 12 18 | 704 | 1.3+ | 0.2− |
| 1998 11 14 | 704 | 0.9+ | 0.2+ | 2002 08 15 | 644 | 0.8− | 0.3+ | 2003 12 18 | 704 | 0.5− | 1.2+ |
| 1998 11 14 | 704 | 0.1+ | 2.5− | 2002 08 15 | 644 | 0.5− | 0.3+ | 2003 12 18 | 704 | 0.4+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 1.2+ | 0.9− | 2002 09 04 | 644 | 0.0 | 0.1+ | 2003 12 22 | 704 | (1.1− | 2.6+) |
| 2002 07 21 | 644 | 0.4− | 0.9+ | 2002 09 04 | 644 | 0.2− | 0.3+ | 2003 12 22 | 704 | 0.6− | 2.0+ |
| 2002 07 21 | 644 | 0.4− | 0.9+ | 2002 09 04 | 644 | 0.0 | 0.0 | 2003 12 22 | 704 | (2.2− | 1.2+) |
| 2002 07 21 | 644 | 0.4− | 0.3+ | 2002 10 31 | 645 | 0.0 | 0.0 | 2003 12 28 | 704 | 0.3+ | 0.5+ |
| 2002 08 04 | 644 | 0.0 | 0.5+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2003 12 28 | 704 | 0.8+ | 0.0 |
| 2002 08 04 | 644 | 0.2+ | 0.4+ | 2003 12 18 | 704 | 0.2− | 0.7+ | 2003 12 28 | 704 | 0.1+ | 0.5+ |
| 2002 08 04 | 644 | 0.5+ | 0.4+ | 2003 12 18 | 704 | 0.2+ | 0.0 | 2003 12 28 | 704 | 0.2+ | 0.1+ |

**2003 YD$_{78}$ = 2006 SP$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.19659 | | (2000.0) | | | |
| $n$ | 0.28466161 | $\omega$ | 325.77387 | | +0.58439303 | −0.80117189 |
| $a$ | 2.2886714 | $\Omega$ | 88.13396 | | +0.77037909 | +0.49786159 |
| $e$ | 0.0934635 | $i$ | 7.40845 | | +0.25495264 | +0.33205035 |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.3+ | 0.4+ | 2005 05 16 | G96 | 0.4− | 0.4− | 2006 09 29 | 699 | 0.4− | 0.1+ |
| 2003 12 18 | 704 | 0.9− | 0.9− | 2005 05 16 | G96 | 0.3− | 0.3− | 2006 09 29 | 699 | 0.0 | 0.3+ |
| 2003 12 18 | 704 | 1.1− | 0.4− | 2005 05 16 | G96 | 0.1− | 0.5− | 2006 09 29 | 699 | (1.8− | 0.3−) |
| 2003 12 18 | 704 | 0.0 | 0.7+ | 2005 05 16 | G96 | 0.6− | 0.5− | 2006 10 17 | 703 | 0.4+ | 0.4+ |
| 2003 12 18 | 704 | 1.2− | 0.3− | 2005 06 14 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 1.0− |
| 2003 12 22 | 704 | 0.1+ | 0.4− | 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.6+ | 0.0 | 2005 06 14 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 1.0− | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 699 | (0.8− | 1.7+) | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2003 12 22 | 704 | 0.0 | 0.6− | 2006 09 25 | 699 | 0.5+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2003 12 27 | 704 | 1.1+ | 1.3+ | 2006 09 25 | 699 | (2.0− | 0.4+) | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2003 12 27 | 704 | 0.6+ | 0.1+ | 2006 09 25 | 699 | (1.5+ | 2.7+) | 2006 10 28 | 703 | 0.5− | 0.4+ |
| 2003 12 27 | 704 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.5− | 2006 10 28 | 703 | 0.2+ | 0.5+ |
| 2003 12 28 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 703 | 0.7+ | 0.1+ | 2006 10 28 | 703 | 0.5+ | 1.4+ |
| 2003 12 28 | 704 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.7− | 1.2− | 2006 10 28 | 703 | 0.5− | 0.1− |
| 2003 12 28 | 704 | 0.8− | 0.1+ | 2006 09 26 | 703 | 0.4− | 1.3− | | | | |
| 2003 12 28 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.2+ | | | | |

**2003 YR$_{81}$ = 2006 RW$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 293.00419 | | (2000.0) | | | |
| $n$ | 0.27768722 | $\omega$ | 136.91786 | | +0.25939324 | −0.96223020 |
| $a$ | 2.3268343 | $\Omega$ | 297.89115 | | +0.85873694 | +0.26895000 |
| $e$ | 0.2179141 | $i$ | 5.36460 | | +0.44191177 | +0.04217743 |
| $P$ | 3.55 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.3+ | 0.6− | 2003 12 23 | 704 | 0.8− | 0.3− | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2003 12 18 | 704 | 0.3− | 0.1− | 2003 12 23 | 704 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.0 |
| 2003 12 18 | 704 | 0.8+ | 1.3− | 2003 12 27 | 704 | 0.6+ | 0.9− | 2006 09 14 | 691 | 0.2+ | 0.0 |
| 2003 12 22 | 704 | 0.3− | 0.5+ | 2003 12 27 | 704 | 0.3+ | 0.9+ | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2003 12 22 | 704 | 0.3− | 0.5+ | 2003 12 27 | 704 | 0.3− | 1.0− | 2006 09 17 | 691 | 0.1− | 0.3− |
| 2003 12 22 | 704 | 0.4− | 1.0+ | 2003 12 27 | 704 | 1.1+ | 0.6− | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.4− | 0.6+ | 2003 12 27 | 704 | 0.0 | 0.0 | 2006 09 18 | 291 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 0.0 | 1.1+ | 2006 08 29 | 691 | 0.2+ | 0.2− | 2006 09 18 | 291 | 0.0 | 0.1− |
| 2003 12 23 | 704 | 0.2− | 0.1− | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 18 | 291 | 0.2− | 0.1− |
| 2003 12 23 | 704 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.1− | | | | |

**2003 YN$_{85}$ = 2006 QC$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.00556 | | (2000.0) | | | |
| $n$ | 0.27799037 | $\omega$ | 144.14378 | | +0.95749949 | −0.27700337 |
| $a$ | 2.3251423 | $\Omega$ | 232.13612 | | +0.23518452 | +0.91115345 |
| $e$ | 0.1150742 | $i$ | 5.84501 | | +0.16698191 | +0.30507134 |
| $P$ | 3.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 18 | 691 | 0.7+ | 0.2+ | 2003 12 19 | 704 | 0.4+ | 1.0− | 2006 09 11 | 703 | 0.5− | 1.1+ |
| 1998 05 18 | 691 | 0.5− | 0.4+ | 2003 12 19 | 704 | 0.4− | 0.0 | 2006 09 11 | 703 | 0.3− | 0.9+ |
| 1998 05 18 | 691 | 0.1+ | 0.7+ | 2003 12 19 | 704 | 0.7+ | 0.8+ | 2006 09 11 | 703 | 1.0+ | 1.2+ |
| 2001 02 22 | 645 | 0.0 | 0.1+ | 2003 12 22 | 704 | 0.7− | 0.5+ | 2006 09 11 | 703 | 0.7+ | 0.7+ |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.1− | 1.3+ | 2006 09 30 | 699 | 0.5− | 0.3+ |
| 2003 12 03 | 704 | 0.4− | 0.1+ | 2003 12 22 | 704 | 1.0− | 0.0 | 2006 09 30 | 699 | 0.1− | 0.2− |
| 2003 12 03 | 704 | 0.2+ | 0.2+ | 2003 12 22 | 704 | 0.2− | 0.6+ | 2006 09 30 | 699 | 1.1− | 0.0 |
| 2003 12 03 | 704 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.1− | 0.7+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2003 12 03 | 704 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.6+ | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2003 12 03 | 704 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.1− | 0.9− | 2006 10 10 | 644 | 0.4− | 0.3+ |
| 2003 12 19 | 704 | 1.0+ | 0.4+ | 2006 08 30 | 699 | 0.4− | 0.5+ | | | | |
| 2003 12 19 | 704 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.6− | 0.3+ | | | | |

**2003 YW$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.26579 | | (2000.0) | | | |
| $n$ | 0.17337870 | $\omega$ | 317.72097 | | +0.47866266 | −0.83669726 |
| $a$ | 3.1852160 | $\Omega$ | 102.04791 | | +0.86066226 | +0.38720436 |
| $e$ | 0.2702656 | $i$ | 15.79007 | | +0.17361605 | +0.38731187 |
| $P$ | 5.68 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 10 | 644 | 0.7− | 0.7+ | 2003 12 28 | 704 | 0.1+ | 0.2+ | 2004 01 28 | 691 | 0.1+ | 0.1− |
| 2002 09 10 | 644 | 0.1− | 0.2+ | 2003 12 28 | 704 | 0.7+ | 0.1− | 2004 01 31 | 704 | 0.1− | 1.2− |
| 2002 09 10 | 644 | 0.3+ | 0.4+ | 2003 12 28 | 704 | 0.1− | 0.2+ | 2004 01 31 | 704 | 0.5+ | 0.4− |
| 2003 10 25 | 691 | 0.2+ | 0.3+ | 2004 01 12 | 644 | 0.1+ | 0.4+ | 2004 01 31 | 704 | 0.4+ | 0.7+ |
| 2003 10 25 | 691 | 0.3− | 0.4+ | 2004 01 12 | 644 | 0.1+ | 0.4+ | 2004 01 31 | 704 | 0.2− | 0.7+ |
| 2003 10 25 | 691 | 0.0 | 0.4+ | 2004 01 12 | 644 | 0.3+ | 0.4+ | 2004 01 31 | 704 | 0.4− | 0.2+ |
| 2003 12 19 | 704 | 0.5− | 1.6+ | 2004 01 13 | 699 | 0.2− | 1.0+ | 2004 02 15 | 703 | 0.8− | 0.1+ |
| 2003 12 19 | 704 | 0.5− | 0.1− | 2004 01 13 | 699 | 1.1− | 0.2+ | 2004 02 15 | 703 | 1.4− | 1.0+ |
| 2003 12 19 | 704 | 0.0 | 0.7+ | 2004 01 13 | 699 | 0.2− | 0.1− | 2004 02 15 | 703 | 0.2+ | 0.2− |
| 2003 12 19 | 704 | 0.4− | 0.1− | 2004 01 13 | 699 | 0.4+ | 0.3− | 2004 02 15 | 703 | 0.2− | 0.2− |
| 2003 12 22 | 704 | 0.7+ | 1.1− | 2004 01 26 | 699 | 0.0 | 0.5− | 2004 02 19 | 704 | 0.7+ | 0.0 |
| 2003 12 22 | 704 | 0.5− | 0.0 | 2004 01 26 | 699 | 0.9+ | 0.1− | 2004 02 19 | 704 | 0.1− | 0.1− |
| 2003 12 22 | 704 | 0.8− | 1.6− | 2004 01 26 | 699 | 0.2− | 0.2− | 2004 02 19 | 704 | 0.3+ | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 1.9− | 2004 01 26 | 699 | 1.1+ | 0.8+ | 2006 05 31 | 691 | 0.1+ | 0.6+ |
| 2003 12 28 | 704 | 0.0 | 0.0 | 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 05 31 | 691 | 0.1+ | 0.1− |
| 2003 12 28 | 704 | 0.3+ | 0.4+ | 2004 01 28 | 691 | 0.0 | 0.1− | 2006 05 31 | 691 | 0.0 | 0.1+ |

**2003 YO$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.96696 | | (2000.0) | | | |
| $n$ | 0.30359781 | $\omega$ | 69.99099 | | +0.96571536 | −0.25510047 |
| $a$ | 2.1924866 | $\Omega$ | 304.75993 | | +0.21086016 | +0.87896037 |
| $e$ | 0.2155421 | $i$ | 3.35937 | | +0.15143262 | +0.40292979 |
| $P$ | 3.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 704 | 0.8− | 0.7+ | 2006 09 25 | 704 | 0.2− | 0.0 | 2006 11 17 | 704 | 1.0− | 0.4− |
| 2003 10 24 | 704 | 1.4− | 0.2+ | 2006 09 25 | 704 | 0.7+ | 0.2+ | 2006 11 17 | 704 | 1.2− | 0.1− |
| 2003 10 24 | 704 | 0.6− | 0.9− | 2006 09 25 | 704 | 0.6+ | 0.3− | 2006 11 17 | 704 | 0.7− | 0.1− |
| 2003 10 24 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.0 | 1.4+ |
| 2003 10 29 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 704 | 0.6− | 0.6+ | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2003 10 29 | 704 | 0.5+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2003 10 29 | 704 | 0.9+ | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.9− | 0.1− |
| 2003 12 19 | 704 | 0.3− | 1.4− | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2003 12 19 | 704 | 0.4+ | 0.6− | 2006 11 15 | 704 | 0.8+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.1+ | 0.9− | 2006 11 15 | 704 | 0.9+ | 0.3− | 2006 11 19 | 704 | 0.6− | 0.3− |
| 2003 12 19 | 704 | 0.3+ | 1.2− | 2006 11 15 | 704 | 0.8+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2003 12 22 | 704 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.7+ | 0.7+ | 2006 11 19 | 704 | 0.6− | 0.2− |
| 2003 12 22 | 704 | 0.0 | 0.0 | 2006 11 15 | 704 | 1.2+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.4+ | 0.6+ | 2006 11 15 | 704 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.2− | 0.6+ | 2006 11 15 | 704 | 0.1− | 1.2+ | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2004 01 21 | 704 | 0.7− | 0.1+ | 2006 11 15 | 704 | 1.3+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2004 01 21 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.7+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2004 01 21 | 704 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2004 01 24 | 704 | 0.2+ | 0.7+ | 2006 11 15 | 628 | 0.3− | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2004 01 24 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 628 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.5+ | 0.8+ | 2006 11 15 | 628 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.3+ |
| 2004 01 24 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.1− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2004 01 24 | 704 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 01 26 | 699 | 0.2+ | 0.8− | 2006 11 16 | 704 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 01 26 | 699 | 0.6− | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.1− | 2006 11 22 | 704 | 1.3+ | 0.3− |
| 2004 01 26 | 699 | 0.7− | 0.0 | 2006 11 16 | 704 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.3+ |
| 2004 01 26 | 699 | 0.7+ | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.6+ |
| 2004 01 27 | 691 | (0.4− | 2.8−) | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.1+ |
| 2004 01 27 | 691 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.5+ |
| 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.4− | 0.4− |
| 2004 02 11 | 699 | 0.6− | 0.1− | 2006 11 17 | 704 | 0.6− | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2004 02 11 | 699 | 0.3+ | 0.2− | 2006 11 17 | 691 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.8− | 0.3+ |
| 2004 02 11 | 699 | 0.7− | 0.5+ | 2006 11 17 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.7− | 0.2+ |
| 2004 02 11 | 699 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.9− | 0.1+ | | | | |

### 2003 YD$_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.00294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29079990 | $\omega$ | 281.44252 | | +0.96265499 | −0.25541887 | |
| $a$ | 2.2563504 | $\Omega$ | 93.40343 | | +0.26991802 | +0.87980303 | |
| $e$ | 0.2153795 | $i$ | 5.15883 | | +0.02096756 | +0.40088382 | |
| $P$ | 3.39 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.9− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 12 19 | 691 | 0.2+ | 0.2− | 2006 10 01 | 704 | 1.0+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.4+ | 0.7+ | 2006 10 01 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2003 12 22 | 704 | (1.8+ | 0.9+) | 2006 10 01 | 704 | 0.3− | 0.7+ | 2006 10 22 | 703 | 0.7− | 0.2+ |
| 2003 12 22 | 704 | (1.5+ | 0.3+) | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 1.1− | 0.1− |
| 2004 01 15 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.5− | 0.6+ |
| 2004 01 22 | 704 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1− | 0.5+ |
| 2004 01 22 | 704 | 1.0+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.2− | 0.5+ |
| 2004 01 22 | 704 | 0.9+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.3− | 2006 11 13 | 703 | 0.7− | 0.1+ |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.5− | 2006 11 13 | 703 | 0.1+ | 0.5+ |
| 2006 09 29 | 699 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.6− | 2006 11 13 | 703 | 0.2− | 0.7+ |
| 2006 09 29 | 699 | 0.5− | 0.7− | 2006 10 16 | 703 | 0.5+ | 0.4− | 2006 11 13 | 703 | 0.6− | 0.8+ |
| 2006 09 29 | 699 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 09 29 | 699 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.7+ | 0.4− |
| 2006 09 30 | 703 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.3− |

### 2003 YF$_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.29304 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27498341 | $\omega$ | 124.91684 | | −0.19534929 | −0.98062385 | |
| $a$ | 2.3420620 | $\Omega$ | 336.33543 | | +0.88745481 | −0.17037791 | |
| $e$ | 0.0770168 | $i$ | 2.09611 | | +0.41744773 | −0.09668630 | |
| $P$ | 3.58 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 01 22 | 704 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.1− | 0.2− |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 1.3+ |
| 2003 12 19 | 691 | 0.1− | 0.3− | 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 2003 12 22 | 704 | 0.2− | 0.8+ | 2004 01 27 | 691 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.9+ | 0.8+ |
| 2003 12 22 | 704 | 0.5− | 0.5+ | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.6+ | 0.6+ | 2004 02 16 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2003 12 22 | 704 | 1.1+ | 0.8− | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.7− | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2003 12 28 | 691 | 0.5+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2003 12 28 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2003 12 28 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2004 01 15 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2004 01 15 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.4− | 0.2+ |
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.6− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2004 01 22 | 704 | 0.1− | 0.5− | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2004 01 22 | 704 | 0.2+ | 0.8− | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2004 01 22 | 704 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.1− |

### 2003 YH$_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.06039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26683094 | $\omega$ | 198.46230 | | −0.92959089 | −0.36792002 | |
| $a$ | 2.3895269 | $\Omega$ | 319.92779 | | +0.34238450 | −0.83954816 | |
| $e$ | 0.1632305 | $i$ | 1.98186 | | +0.13650507 | −0.39974210 | |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.2+ | 0.3− | 2004 01 21 | 704 | 0.1+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2003 12 19 | 691 | 0.0 | 0.2− | 2004 01 21 | 704 | 0.0 | 0.8+ | 2006 09 15 | 691 | 0.1− | 0.2+ |
| 2003 12 19 | 691 | 0.3− | 0.3− | 2004 01 21 | 704 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.1− |
| 2003 12 22 | 704 | 0.3+ | 0.6+ | 2004 01 21 | 704 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.5− |
| 2003 12 22 | 704 | 0.1− | 0.2− | 2004 01 21 | 704 | 0.2− | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.6− | 2004 01 24 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2003 12 22 | 704 | 1.2+ | 0.1− | 2004 01 24 | 704 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2003 12 27 | 704 | 0.6− | 0.3− | 2004 01 24 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 691 | 0.4− | 0.4− |
| 2003 12 27 | 704 | 0.2+ | 1.2+ | 2004 01 24 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2003 12 27 | 704 | (1.7+ | 0.1−) | 2004 01 24 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 2003 12 27 | 704 | 0.2− | 0.2− | 2004 01 30 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2003 12 28 | 691 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.1+ | 0.8− | 2006 10 11 | 691 | 0.0 | 0.2− |
| 2003 12 28 | 691 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.1+ | 1.2− | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2003 12 28 | 691 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2003 12 29 | 699 | (1.7+ | 1.0+) | 2004 02 16 | 691 | 0.3− | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.4− |
| 2003 12 29 | 699 | (1.9+ | 0.7−) | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2003 12 29 | 699 | (0.1+ | 1.6−) | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.7+ | 1.2+ |
| 2003 12 29 | 699 | 0.5+ | 0.8+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2004 01 15 | 691 | 0.2− | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2004 01 15 | 691 | 0.4− | 0.0 | 2004 04 16 | 645 | 0.0 | 0.0 | | | | |
| 2004 01 15 | 691 | 0.3− | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.0 | | | | |

### 2003 YQ$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.35023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21596454 | $\omega$ | 164.56376 | | −0.22304868 | −0.95368927 | |
| $a$ | 2.7513621 | $\Omega$ | 297.95917 | | +0.86843659 | −0.10036735 | |
| $e$ | 0.0761187 | $i$ | 13.20725 | | +0.44279474 | −0.28355452 | |
| $P$ | 4.56 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 20 | 704 | 0.2+ | 0.8+ | 2004 02 18 | 704 | 0.8+ | 0.9+ | 2004 02 26 | 704 | (1.7− | 0.8+) |
| 2003 12 20 | 704 | 0.2+ | 0.4+ | 2004 02 18 | 704 | 0.7+ | 0.4− | 2004 02 26 | 704 | 0.4− | 0.6− |
| 2003 12 20 | 704 | 0.0 | 0.7− | 2004 02 18 | 704 | 1.4+ | 0.5− | 2004 02 26 | 704 | 1.1− | 0.6+ |
| 2003 12 20 | 704 | 0.0 | 0.1+ | 2004 02 18 | 704 | 0.7+ | 0.3+ | 2004 03 11 | 644 | 0.5+ | 0.0 |
| 2003 12 22 | 704 | (1.7+ | 1.3+) | 2004 02 18 | 608 | 0.4− | 0.7− | 2004 03 11 | 644 | 0.4+ | 0.0 |
| 2003 12 22 | 704 | 0.4+ | 0.0 | 2004 02 18 | 608 | 0.5− | 0.6− | 2004 03 11 | 644 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | (2.0+ | 0.2−) | 2004 02 18 | 608 | 0.7− | 0.8− | 2006 08 29 | 703 | 0.4− | 0.5− |
| 2004 01 24 | 704 | (0.8− | 1.7−) | 2004 02 22 | 704 | 0.2− | 0.3+ | 2006 08 29 | 703 | 0.5− | 0.3− |
| 2004 01 24 | 704 | 0.5− | 0.9− | 2004 02 22 | 704 | 0.4+ | 0.3+ | 2006 08 29 | 703 | 0.6+ | 0.9+ |
| 2004 01 24 | 704 | 0.5+ | 1.2− | 2004 02 22 | 704 | 0.1+ | 1.4+ | 2006 08 29 | 703 | (2.1− | 0.4−) |
| 2004 01 29 | 704 | 0.2− | 0.5+ | 2004 02 22 | 704 | 0.3+ | 1.0− | 2006 09 16 | 691 | 0.3+ | 0.3− |
| 2004 01 29 | 704 | 0.4− | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.3− | 2006 09 16 | 691 | 0.0 | 0.0 |
| 2004 01 29 | 704 | 0.3− | 0.5− | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 09 16 | 691 | 0.1− | 0.3+ |
| 2004 01 29 | 704 | 1.1− | 0.9+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2− |
| 2004 01 29 | 704 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.2− | 0.9+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2004 02 11 | 644 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2004 02 11 | 644 | 0.2− | 0.1− | 2004 02 26 | 704 | 0.4+ | 0.1+ | | | | |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 0.7− | 0.3+ | | | | |

**2003 YG$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.42766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17145493 | $\omega$ | 300.47453 | | +0.72992971 | −0.59266173 | |
| $a$ | 3.2089977 | $\Omega$ | 98.08260 | | +0.68298984 | +0.65206613 | |
| $e$ | 0.2070882 | $i$ | 20.11697 | | −0.02697231 | +0.47282326 | |
| $P$ | 5.75 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 26 | 691 | 0.2− | 0.3+ | 2003 12 05 | 703 | 0.3− | 0.9− | 2004 01 13 | 644 | 0.1+ | 0.0 |
| 2001 06 26 | 691 | 0.1+ | 0.5+ | 2003 12 14 | 703 | 0.4− | 0.1+ | 2004 01 13 | 691 | 0.1+ | 0.1+ |
| 2001 06 26 | 691 | 0.2+ | 0.4− | 2003 12 14 | 703 | 0.6+ | 0.9+ | 2004 01 13 | 644 | 0.1+ | 0.3+ |
| 2002 06 20 | 644 | 0.0 | 0.1− | 2003 12 14 | 703 | 0.5− | 0.7+ | 2004 01 18 | 644 | 0.4+ | 0.9+ |
| 2002 06 20 | 644 | 0.1+ | 0.1+ | 2003 12 14 | 703 | 1.1+ | 0.9− | 2004 01 18 | 644 | 0.4+ | 0.5+ |
| 2002 06 20 | 644 | 0.1+ | 0.3+ | 2003 12 21 | 703 | 0.2+ | 1.1+ | 2004 01 18 | 644 | 0.3+ | 0.4+ |
| 2003 10 24 | 704 | 0.1− | 0.3+ | 2003 12 21 | 703 | 0.1+ | 0.3+ | 2004 02 10 | 644 | 0.1+ | 0.8+ |
| 2003 10 24 | 704 | 1.7− | 0.3+ | 2003 12 21 | 703 | 0.1− | 0.3+ | 2004 02 10 | 644 | 0.2− | 0.8+ |
| 2003 10 24 | 704 | 1.6− | 0.5+ | 2003 12 21 | 703 | 1.0+ | 0.6+ | 2004 02 10 | 644 | 0.3+ | 0.2+ |
| 2003 11 30 | 704 | 0.2+ | 0.2− | 2003 12 22 | 608 | 1.6− | 0.7− | 2005 03 08 | 703 | 0.6+ | 0.7− |
| 2003 11 30 | 704 | 0.6+ | 0.3+ | 2003 12 22 | 608 | 0.2+ | 0.8− | 2005 03 08 | 703 | 0.9− | 0.5− |
| 2003 11 30 | 704 | 0.0 | 0.2− | 2003 12 22 | 608 | 0.2+ | 0.7− | 2005 03 08 | 703 | 0.5+ | 0.4+ |
| 2003 11 30 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 699 | 0.5− | 0.7− | 2005 03 08 | 703 | 0.0 | 0.8− |
| 2003 11 30 | 704 | 0.9+ | 0.4+ | 2003 12 28 | 699 | 0.1− | 0.2− | 2005 03 08 | 704 | 0.3− | 0.3− |
| 2003 11 30 | 735 | 0.5+ | 0.5− | 2003 12 28 | 699 | 0.5− | 0.2− | 2005 03 08 | 704 | 0.5− | 0.1+ |
| 2003 11 30 | 735 | 0.3+ | 0.4+ | 2003 12 28 | 699 | 1.5− | 0.6+ | 2005 03 08 | 704 | 0.8+ | 0.7+ |
| 2003 12 05 | 703 | 0.2− | 0.2− | 2004 01 13 | 691 | 0.5+ | 0.4− | 2005 03 08 | 704 | 0.3− | 1.5+ |
| 2003 12 05 | 703 | 1.0− | 0.6− | 2004 01 13 | 644 | 0.0 | 0.2+ | | | | |
| 2003 12 05 | 703 | 0.7− | 1.6− | 2004 01 13 | 691 | 0.1+ | 0.1+ | | | | |

**2003 YO$_{92}$ = 2006 KF$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.11302 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21416079 | $\omega$ | 250.90787 | | +0.67380068 | +0.72233436 | |
| $a$ | 2.7667892 | $\Omega$ | 62.47024 | | −0.59466143 | +0.65512560 | |
| $e$ | 0.1555974 | $i$ | 10.10892 | | −0.43860053 | +0.22145769 | |
| $P$ | 4.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 28 | 691 | 0.3− | 0.1+ | 2003 12 22 | 704 | 0.7+ | 1.5+ | 2006 05 20 | E12 | 0.4+ | 0.1+ |
| 1992 04 28 | 691 | 0.0 | 0.2− | 2003 12 22 | 704 | 0.5+ | 0.6− | 2006 05 20 | E12 | 0.0 | 0.2+ |
| 1992 04 28 | 691 | 0.1+ | 0.1− | 2003 12 27 | 704 | 0.4− | 0.1+ | 2006 05 27 | 704 | 0.5− | 0.3+ |
| 2002 08 13 | 704 | 0.2− | 1.0+ | 2003 12 27 | 704 | 0.7− | 0.2− | 2006 05 27 | 704 | 0.4− | 1.2− |
| 2002 08 13 | 704 | 0.1− | 1.2+ | 2003 12 27 | 704 | 0.3− | 0.1+ | 2006 05 27 | 704 | 1.1− | 0.7− |
| 2002 08 13 | 704 | 0.5− | 0.5+ | 2005 03 09 | 703 | 0.9+ | 0.6+ | 2006 06 04 | G96 | 0.1+ | 0.2+ |
| 2003 11 24 | 704 | 0.2+ | 0.6+ | 2005 03 09 | 703 | 0.6+ | 1.9+ | 2006 06 04 | G96 | 0.1+ | 0.1+ |
| 2003 11 24 | 704 | 0.3− | 0.4− | 2005 03 09 | 703 | 0.2+ | 0.3− | 2006 06 04 | G96 | 0.2+ | 0.0 |
| 2003 11 24 | 704 | 0.9− | 0.3− | 2005 03 09 | 703 | 0.1− | 0.5+ | 2006 06 04 | G96 | 0.1+ | 0.3+ |
| 2003 11 24 | 704 | 0.8− | 0.8− | 2006 05 20 | G96 | 0.7+ | 0.6+ | 2006 06 26 | E12 | 0.8+ | 0.4+ |
| 2003 12 21 | 704 | 0.6+ | 1.2+ | 2006 05 20 | G96 | 0.4+ | 0.1+ | 2006 06 26 | E12 | 0.5+ | 0.6+ |
| 2003 12 21 | 704 | 0.0 | 0.9+ | 2006 05 20 | G96 | 0.2+ | 0.1+ | 2006 06 26 | E12 | 0.0 | 0.3+ |
| 2003 12 21 | 704 | 0.3+ | 0.2+ | 2006 05 20 | G96 | 0.1+ | 0.2+ | 2006 06 26 | E12 | 1.2− | 0.7+ |
| 2003 12 22 | 704 | (1.7+ | 2.3+) | 2006 05 20 | E12 | 0.4+ | 0.2+ | | | | |

**2003 YV$_{93}$ = 2006 RA$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.19928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28710439 | $\omega$ | 138.67342 | | +0.62416383 | −0.77994961 | |
| $a$ | 2.2756711 | $\Omega$ | 272.65483 | | +0.70423951 | +0.58702667 | |
| $e$ | 0.1593232 | $i$ | 2.62819 | | +0.33832859 | +0.21697536 | |
| $P$ | 3.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 704 | 0.5+ | 1.0+ | 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2003 12 21 | 704 | 0.0 | 0.8+ | 2006 09 17 | 703 | 0.7− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 12 21 | 704 | 0.7+ | 0.9+ | 2006 09 17 | 703 | 0.5− | 0.8− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2003 12 21 | 704 | (0.4− | 1.7+) | 2006 09 19 | 699 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.9+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 1.0+ | 0.4− | 2006 09 19 | 699 | 0.8+ | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.5− |
| 2003 12 22 | 704 | 1.3− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | (1.1+ | 2.0−) |
| 2003 12 22 | 704 | 0.7− | 0.7+ | 2006 09 25 | 691 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.3− | 1.0− |
| 2003 12 30 | 704 | 0.1+ | 1.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | (1.6− | 0.8−) |
| 2003 12 30 | 704 | 0.5+ | 0.9− | 2006 09 25 | 704 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 12 30 | 704 | 0.9+ | 0.5− | 2006 09 25 | 704 | 0.6− | 0.9+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 12 30 | 704 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.8− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 12 30 | 704 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.8− | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2004 01 21 | 704 | 0.5− | 0.2+ | 2006 09 29 | 704 | 0.8− | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2004 01 21 | 704 | 0.3− | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2004 01 21 | 704 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2004 01 21 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.0 | 1.1+ | 2006 10 24 | J95 | 0.0 | 0.1+ |
| 2004 01 21 | 704 | 0.9− | 0.5− | 2006 10 01 | 703 | 0.4+ | 0.1− | 2006 10 24 | J95 | 0.1+ | 0.4− |
| 2006 09 06 | 644 | 0.2− | 0.1− | 2006 10 01 | 703 | 0.1− | 0.6+ | 2006 10 24 | J95 | 0.3+ | 0.4− |
| 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 01 | 703 | 1.2+ | 0.4− | 2006 10 26 | 198 | 0.1− | 0.2+ |
| 2006 09 06 | 644 | 0.6+ | 0.1− | 2006 10 01 | 703 | 0.1+ | 0.9− | 2006 10 26 | 198 | 0.0 | 0.2+ |
| 2006 09 15 | 704 | 0.5+ | 1.1+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 10 26 | 198 | 0.2+ | 0.4+ |
| 2006 09 15 | 704 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 10 26 | 198 | 0.2+ | 0.3+ |
| 2006 09 15 | 704 | 0.0 | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | | | |
| 2006 09 17 | 703 | 1.1− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.0 | | | | |

**2003 YB$_{95}$ = 2006 QZ$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.92422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28338481 | $\omega$ | 281.06116 | | +0.67184758 | −0.73998996 | |
| $a$ | 2.2955407 | $\Omega$ | 126.67996 | | +0.69427348 | +0.61401202 | |
| $e$ | 0.1428162 | $i$ | 2.29979 | | +0.25807975 | +0.27459806 | |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 20 | 807 | 0.1− | 0.1+ | 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.0 |
| 2001 05 21 | 807 | 0.3+ | 0.6+ | 2003 12 25 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.6+ | 0.4− |
| 2003 12 19 | 704 | 0.4+ | 0.1− | 2003 12 29 | 691 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.8− |
| 2003 12 19 | 704 | 0.9+ | 0.5+ | 2003 12 29 | 691 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.1− | 1.0+ |
| 2003 12 19 | 704 | 0.2+ | 0.4− | 2003 12 29 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | 1.5− | 1.2− |
| 2003 12 19 | 704 | 0.8+ | 0.4+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 08 31 | 704 | (3.7+ | 0.4−) |
| 2003 12 23 | 704 | (1.2− | 1.8−) | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 08 31 | 704 | 0.6+ | 0.0 |
| 2003 12 23 | 704 | (1.7− | 0.4−) | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 08 31 | 704 | 1.3− | 0.7+ |
| 2003 12 23 | 704 | (1.9− | 0.4−) | 2006 08 23 | 807 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.0 | 0.7− |
| 2003 12 23 | 704 | (2.2− | 1.3−) | 2006 08 23 | 807 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.6− |
| 2003 12 23 | 704 | 0.7− | 0.3− | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2003 12 25 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.7− |

**2003 YX$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.79482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23937705 | $\omega$ | 324.59088 | | +0.03925540 | −0.99843802 | |
| $a$ | 2.5689030 | $\Omega$ | 123.12801 | | +0.92736878 | +0.02158808 | |
| $e$ | 0.0417625 | $i$ | 2.72100 | | +0.37208355 | +0.05153135 | |
| $P$ | 4.12 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 08 | 691 | 0.1− | 0.2+ | 2003 12 19 | 704 | 0.3− | 1.2+ | 2005 03 16 | G96 | 0.0 | 0.5− |
| 1994 09 08 | 691 | 0.1− | 0.4+ | 2003 12 23 | 704 | 0.3− | 0.8+ | 2005 03 16 | G96 | 0.3+ | 0.3+ |
| 2001 05 02 | 644 | 0.7+ | 0.6− | 2003 12 23 | 704 | 0.9+ | 0.8+ | 2005 04 10 | 695 | 0.1− | 0.2+ |
| 2001 05 02 | 644 | 0.6+ | 0.5− | 2003 12 23 | 704 | 0.4− | 1.0− | 2005 04 10 | 695 | 0.0 | 0.3+ |
| 2001 05 02 | 644 | 1.1+ | 0.4− | 2003 12 23 | 704 | 0.4− | 0.5+ | 2005 04 18 | 691 | 0.2+ | 0.3+ |
| 2001 05 23 | 691 | 0.0 | 0.3+ | 2004 01 28 | 691 | 0.2+ | 0.1− | 2005 04 18 | 691 | 0.4− | 0.1− |
| 2001 05 23 | 691 | 0.3− | 0.1+ | 2004 01 28 | 691 | 0.0 | 0.1+ | 2005 04 18 | 691 | 0.2+ | 0.3+ |
| 2001 05 23 | 691 | 0.2− | 0.0 | 2004 01 28 | 691 | 0.0 | 0.3− | 2005 05 13 | 691 | 0.0 | 0.1+ |
| 2003 12 19 | 704 | 0.3− | 0.2+ | 2005 03 16 | G96 | 0.7− | 0.6+ | 2005 05 13 | 691 | 0.4+ | 0.2− |
| 2003 12 19 | 704 | 0.1+ | 0.6+ | 2005 03 16 | G96 | 0.2− | 0.2+ | 2005 05 13 | 691 | 0.0 | 0.0 |

**2003 YM$_{99}$ = 2006 UW$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.45389 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29724875 | $\omega$ | 8.91951 | | −0.64085888 | | −0.76568526 |
| $a$ | 2.2235967 | $\Omega$ | 120.95683 | | +0.70029783 | | −0.61247489 |
| $e$ | 0.0566626 | $i$ | 3.67783 | | +0.31445644 | | −0.19647034 |
| $P$ | 3.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 18 | 644 | 0.1+ | 0.1+ | 2003 12 27 | 704 | 0.5− | 0.7− | 2006 11 02 | 703 | 0.4− | 0.5+ |
| 2002 07 18 | 644 | 0.2+ | 0.0 | 2003 12 27 | 704 | 0.2− | 0.3+ | 2006 11 02 | 703 | 0.2− | 0.4+ |
| 2002 07 18 | 644 | 0.3− | 0.2− | 2003 12 28 | 704 | 0.3+ | 0.5+ | 2006 11 02 | 703 | 0.6− | 0.5+ |
| 2003 12 19 | 704 | 0.5− | 0.9+ | 2003 12 28 | 704 | 0.6+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2003 12 19 | 704 | 0.7− | 0.4+ | 2003 12 28 | 704 | 0.7− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2003 12 19 | 704 | (0.7− | 1.9+) | 2003 12 28 | 704 | 0.5− | 0.5− | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2003 12 19 | 704 | 1.1− | 0.2− | 2003 12 28 | 704 | 0.6+ | 0.7− | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 2003 12 19 | 704 | 0.9− | 0.4+ | 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 704 | (2.7+ | 1.7+) |
| 2003 12 23 | 704 | 1.3+ | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.8+ | 0.2− |
| 2003 12 23 | 704 | 1.2+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2003 12 23 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.5− |
| 2003 12 27 | 704 | 0.7+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2003 12 27 | 704 | 0.3+ | 0.5− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2003 12 27 | 704 | 0.4− | 0.1+ | 2006 11 02 | 703 | 0.5− | 0.7− | 2006 11 17 | G96 | 0.3+ | 0.4− |

**2003 YF$_{100}$ = 2006 SP$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.90680 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28005757 | $\omega$ | 19.75678 | | −0.85607121 | | −0.51479908 |
| $a$ | 2.3136865 | $\Omega$ | 129.17291 | | +0.46585590 | | −0.80714576 |
| $e$ | 0.0974254 | $i$ | 3.40815 | | +0.22387580 | | −0.28895956 |
| $P$ | 3.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 17 | 699 | 0.0 | 1.1+ | 2003 12 23 | 704 | (2.1+ | 0.9+) | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 04 17 | 699 | 0.6+ | 0.4+ | 2003 12 23 | 704 | (2.3+ | 0.2+) | 2006 10 16 | 703 | 0.7− | 0.8+ |
| 2001 04 17 | 699 | 0.5+ | 1.0+ | 2004 01 21 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.8+ | 0.5− |
| 2001 04 17 | 699 | 0.4+ | 1.3+ | 2004 01 21 | 704 | 1.0− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2004 01 21 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2002 08 28 | 644 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 08 28 | 644 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2003 12 19 | 704 | 1.1+ | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.3+ |
| 2003 12 19 | 704 | 0.6− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 1.1+ | 0.3− |
| 2003 12 19 | 704 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2003 12 19 | 704 | 0.1− | 1.0+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2003 12 19 | 704 | 0.4− | 0.9− | 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2003 12 23 | 704 | 1.2+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.3+ | | | | |

**2003 YG$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.18219 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26849516 | $\omega$ | 289.05102 | | −0.99047346 | | +0.07878727 |
| $a$ | 2.3796427 | $\Omega$ | 255.59180 | | −0.03189425 | | −0.92910298 |
| $e$ | 0.0403768 | $i$ | 6.69621 | | −0.13395925 | | −0.36133119 |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 691 | 0.2+ | 0.1− | 2002 09 04 | 644 | 0.2+ | 0.2+ | 2003 12 30 | 704 | 0.5+ | 0.9+ |
| 1999 12 14 | 691 | 0.0 | 0.5− | 2002 09 12 | 644 | 0.1− | 0.1+ | 2003 12 30 | 704 | 0.3+ | 1.0+ |
| 1999 12 14 | 691 | 0.2− | 0.6− | 2002 09 12 | 644 | 0.2+ | 0.6+ | 2003 12 30 | 704 | 0.1+ | 1.6+ |
| 2000 01 10 | 691 | 0.1− | 0.6− | 2002 09 12 | 644 | 0.1− | 0.5+ | 2005 01 19 | 809 | 1.5− | 0.0 |
| 2000 01 10 | 691 | 0.2− | 0.5− | 2003 12 19 | 704 | 0.1+ | 0.4+ | 2005 01 19 | 809 | 0.2− | 0.4+ |
| 2000 01 10 | 691 | 0.1− | 0.6− | 2003 12 19 | 704 | 0.7+ | 0.0 | 2005 01 19 | 809 | 0.0 | 0.3+ |
| 2001 04 15 | 608 | 0.2− | 0.1+ | 2003 12 19 | 704 | 0.5+ | 0.0 | 2005 02 14 | 809 | 0.2− | 0.4+ |
| 2001 04 15 | 608 | 0.2− | 0.2− | 2003 12 19 | 704 | 0.8+ | 0.2− | 2005 02 14 | 809 | 0.0 | 0.4+ |
| 2001 04 15 | 608 | 0.0 | 0.0 | 2003 12 23 | 704 | 0.1+ | 1.4+ | 2005 02 14 | 809 | 0.4− | 0.6+ |
| 2002 08 27 | 644 | 0.7+ | 1.0+ | 2003 12 23 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.2+ |
| 2002 08 27 | 644 | 0.7+ | 1.0+ | 2003 12 23 | 704 | 0.8+ | 1.2+ | 2006 09 28 | 703 | 1.1− | 0.1+ |
| 2002 08 27 | 644 | 0.3+ | 1.0+ | 2003 12 23 | 704 | 0.1− | 0.9+ | 2006 09 28 | 703 | 2.1− | 0.5− |
| 2002 09 04 | 644 | 0.0 | 0.7+ | 2003 12 30 | 704 | 0.8+ | 0.9+ | 2006 09 28 | 703 | 0.3+ | 1.6+ |
| 2002 09 04 | 644 | 0.2− | 0.2+ | 2003 12 30 | 704 | 1.0+ | 1.4+ | | | | |

**2003 YE$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.65387 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29146731 | $\omega$ | 173.90489 | | +0.68620842 | | −0.72592539 |
| $a$ | 2.2529047 | $\Omega$ | 232.75309 | | +0.66489652 | | +0.65181881 |
| $e$ | 0.1569669 | $i$ | 3.33956 | | +0.29500953 | | +0.21946427 |
| $P$ | 3.38 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.1− | 0.4− | 2003 12 28 | 704 | 0.1+ | 0.2− | 2006 09 27 | 699 | 0.2− | 0.2+ |
| 1996 11 17 | 691 | 0.2+ | 0.3− | 2003 12 28 | 704 | 0.1+ | 0.9+ | 2006 09 27 | 699 | (1.4+ | 4.2+) |
| 1996 11 17 | 691 | 0.1+ | 0.4− | 2003 12 28 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.9+ | 0.2− |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2004 01 18 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2004 01 18 | 644 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.7+ |
| 2003 12 19 | 704 | 0.0 | 0.4+ | 2004 01 18 | 644 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.0 |
| 2003 12 19 | 704 | 0.2+ | 0.5− | 2006 09 16 | 644 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 12 19 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2003 12 23 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2003 12 23 | 704 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.5+ | 0.1+ |
| 2003 12 23 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2003 12 23 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2003 12 23 | 704 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.6− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 12 27 | 704 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 12 27 | 704 | 0.1− | 0.1+ | 2006 09 25 | 704 | 1.0+ | 0.5− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2003 12 27 | 704 | 0.8+ | 0.6+ | 2006 09 25 | 704 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 12 27 | 704 | 1.0− | 0.6− | 2006 09 27 | 699 | 0.1+ | 0.6+ | | | | |
| 2003 12 28 | 704 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.8− | 0.5+ | | | | |

**2003 YL$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.62703 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24584067 | $\omega$ | 131.96880 | | −0.83366965 | | −0.55198219 |
| $a$ | 2.5236758 | $\Omega$ | 14.55651 | | +0.48369185 | | −0.74518580 |
| $e$ | 0.1695280 | $i$ | 4.02073 | | +0.26652787 | | −0.37418415 |
| $P$ | 4.01 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.3− | 1.1− | 2004 01 13 | 699 | 0.4− | 0.3+ | 2004 02 14 | 704 | 0.3− | 0.0 |
| 2000 01 03 | 704 | 0.8+ | 0.6− | 2004 01 13 | 699 | 0.2+ | 0.1+ | 2004 02 14 | 704 | 0.6+ | 0.6+ |
| 2000 01 03 | 704 | 1.1− | 1.1− | 2004 01 13 | 699 | 0.8− | 0.1+ | 2004 03 19 | 704 | (0.4− | 1.7+) |
| 2002 09 13 | 644 | 0.3− | 0.0 | 2004 01 13 | 699 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.0 | 0.2+ |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2004 01 18 | 691 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.4− | 0.7+ |
| 2002 09 13 | 644 | 0.3− | 0.3+ | 2004 01 18 | 691 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.5− | 0.7− |
| 2003 12 20 | 704 | 0.2+ | 0.2+ | 2004 01 18 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.8− | 0.1− |
| 2003 12 20 | 704 | 0.4+ | 0.3+ | 2004 01 26 | 699 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.6+ | 0.5+ |
| 2003 12 20 | 704 | 0.1+ | 0.1− | 2004 01 26 | 699 | 0.5− | 0.1− | 2006 09 19 | 703 | 0.9+ | 0.3+ |
| 2003 12 20 | 704 | 0.0 | 0.1+ | 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.0 |
| 2003 12 20 | 704 | 0.1+ | 0.2+ | 2004 01 26 | 699 | 0.4− | 0.7+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2003 12 23 | 704 | 0.1+ | 0.4− | 2004 01 26 | 699 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2003 12 23 | 704 | 0.0 | 0.3+ | 2004 01 26 | 699 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.1+ | 0.1+ | 2004 01 26 | 699 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2003 12 23 | 704 | 0.8− | 0.2+ | 2004 01 26 | 699 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2003 12 23 | 704 | 0.5− | 0.5− | 2004 01 31 | 704 | 0.3+ | 1.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2003 12 28 | 704 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.5+ | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2003 12 28 | 704 | 0.1− | 0.5− | 2004 01 31 | 704 | 0.6+ | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2003 12 28 | 704 | 0.3− | 0.0 | 2004 02 14 | 704 | 0.7+ | 1.4+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2003 12 28 | 704 | 0.2+ | 0.5+ | 2004 02 14 | 704 | 0.8+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2003 12 28 | 704 | 0.0 | 0.1− | 2004 02 14 | 704 | 0.4+ | 0.7+ | 2006 10 20 | G96 | 0.5− | 0.3− |

**2003 YG$_{104}$ = 2005 EO$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 236.29305 | | (2000.0) | | | |
| $n$ | 0.18925375 | $\omega$ | 136.93483 | | +0.79439306 | −0.59267769 |
| $a$ | 3.0045059 | $\Omega$ | 259.88248 | | +0.51414489 | +0.77265534 |
| $e$ | 0.0945181 | $i$ | 7.76088 | | +0.32341104 | +0.22745742 |
| $P$ | 5.21 | $H$ | 14.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.1+ | 0.8+ | 2002 09 12 | 644 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.0 | 0.1+ |
| 2002 08 11 | 704 | 0.8− | 0.8+ | 2002 10 05 | 704 | 0.4+ | 1.3+ | 2003 12 23 | 704 | 0.2+ | 0.2− |
| 2002 08 11 | 704 | 0.2− | 0.1− | 2002 10 05 | 644 | 0.1+ | 0.2+ | 2003 12 23 | 704 | 0.2− | 0.2+ |
| 2002 08 12 | 608 | 0.9− | 0.4− | 2002 10 05 | 704 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.3+ | 0.3+ |
| 2002 08 12 | 608 | 0.8− | 0.6− | 2002 10 05 | 704 | 0.6− | 0.1− | 2005 03 07 | 704 | 1.4+ | 1.1− |
| 2002 08 12 | 608 | 0.4− | 0.4− | 2002 10 05 | 644 | 0.0 | 0.7+ | 2005 03 07 | 704 | 0.5+ | 0.1+ |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2002 10 05 | 704 | 0.9+ | 1.0− | 2005 03 07 | 704 | 0.0 | 0.8+ |
| 2002 08 29 | 644 | 0.2+ | 0.3+ | 2002 10 05 | 704 | 0.6− | 0.3− | 2005 03 07 | 704 | 0.9+ | 0.1+ |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2002 10 05 | 644 | 0.0 | 0.6+ | 2005 03 13 | 703 | 0.4− | 0.4+ |
| 2002 09 07 | 704 | 1.0+ | 1.3+ | 2003 12 21 | 704 | 1.0− | 0.2+ | 2005 03 13 | 703 | 0.1+ | 0.9+ |
| 2002 09 07 | 704 | 0.8− | 0.4− | 2003 12 21 | 704 | 0.2+ | 0.3− | 2005 03 13 | 703 | 0.5+ | 1.1+ |
| 2002 09 07 | 704 | 0.5+ | 0.6+ | 2003 12 21 | 704 | 0.4+ | 0.2+ | 2005 03 13 | 703 | 1.1− | 1.4+ |
| 2002 09 12 | 644 | 0.2− | 0.0 | 2003 12 21 | 704 | 0.1+ | 0.2− | | | | |
| 2002 09 12 | 644 | 0.1− | 0.0 | 2003 12 23 | 704 | 0.0 | 0.3+ | | | | |

**2003 YG$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.12397 | | (2000.0) | | | |
| $n$ | 0.27797915 | $\omega$ | 102.76972 | | +0.28836914 | −0.95696793 |
| $a$ | 2.3252049 | $\Omega$ | 330.40749 | | +0.85100847 | +0.27169763 |
| $e$ | 0.1220794 | $i$ | 3.77238 | | +0.43889386 | +0.10194501 |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.2− | 0.5+ | 2003 12 28 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.5+ | 1.4− |
| 1999 10 10 | 704 | 0.4− | 0.1− | 2003 12 28 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.7+ | 0.3− |
| 1999 10 10 | 704 | 0.2+ | 0.4+ | 2004 01 22 | 704 | 0.8− | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.0 |
| 1999 10 10 | 704 | 0.0 | 0.5+ | 2004 01 22 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 699 | 0.9+ | 0.4+ |
| 1999 10 10 | 704 | 0.1− | 0.3− | 2004 01 22 | 704 | 0.2− | 0.4− | 2006 09 24 | 106 | 0.1+ | 1.1+ |
| 2003 12 14 | 691 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 09 24 | 106 | 0.6+ | 0.5+ |
| 2003 12 14 | 691 | 0.1+ | 0.1− | 2004 01 24 | 704 | 1.5− | 0.6− | 2006 09 24 | 106 | 1.1+ | 0.3− |
| 2003 12 14 | 691 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.2− | 0.7+ | 2006 09 24 | 106 | 0.5− | 0.6− |
| 2003 12 22 | 704 | 1.2+ | 1.2+ | 2004 01 24 | 704 | 0.4+ | 0.5− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.5+ | 1.3+ | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.1+ | 0.5+ | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.7+ | 1.1+ | 2006 07 22 | G96 | 0.4− | 0.2− | 2006 10 21 | 691 | 0.2+ | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 1.0+ | 2006 07 22 | G96 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.1− |
| 2003 12 23 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.2+ | 0.1+ |
| 2003 12 23 | 704 | 1.1+ | 0.2+ | 2006 08 28 | 703 | 1.3− | 0.2− | 2006 10 23 | G96 | (3.5+ | 2.4+) |
| 2003 12 23 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 703 | (1.7− | 0.2−) | 2006 10 23 | 691 | 0.1+ | 0.2− |
| 2003 12 23 | 704 | 0.4+ | 0.1+ | 2006 08 28 | 703 | (0.2+ | 2.4−) | 2006 10 23 | G96 | 0.5− | 0.6− |
| 2003 12 23 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2003 12 28 | 704 | 0.3− | 1.1− | 2006 09 16 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2003 12 28 | 704 | (1.7− | 0.6−) | 2006 09 16 | 691 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.9− | 0.2− |
| 2003 12 28 | 704 | 0.0 | 1.2− | 2006 09 19 | 699 | 0.2− | 0.7+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2003 12 28 | 704 | 0.4− | 1.4− | 2006 09 19 | 699 | (1.9+ | 1.8−) | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2003 12 28 | 704 | 0.6− | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 10 27 | 691 | 0.0 | 0.5− |
| 2003 12 28 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.0 | 1.5+ | | | | |

**2003 YL$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.41704 | | (2000.0) | | | |
| $n$ | 0.28012657 | $\omega$ | 207.16308 | | −0.33631741 | −0.93668951 |
| $a$ | 2.3133065 | $\Omega$ | 262.62304 | | +0.88090659 | −0.27629593 |
| $e$ | 0.1421791 | $i$ | 5.64122 | | +0.33300779 | −0.21511235 |
| $P$ | 3.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.1− | 0.2− | 2003 12 28 | 691 | 0.2− | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.2− |
| 2003 12 17 | 691 | 0.2− | 0.3− | 2004 01 30 | 704 | 0.2+ | 0.3− | 2006 09 27 | 703 | 0.4+ | 0.4+ |
| 2003 12 17 | 691 | 0.0 | 0.2− | 2004 01 30 | 704 | 0.4+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.2− |
| 2003 12 23 | 704 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.3− |
| 2003 12 23 | 704 | 0.6+ | 0.2+ | 2004 01 30 | 704 | 0.9+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2003 12 23 | 704 | 0.8+ | 0.3+ | 2006 09 25 | 152 | 1.1− | 0.5− | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2003 12 24 | 608 | 0.2− | 0.2− | 2006 09 25 | 152 | (1.0− | 2.3−) | 2006 10 17 | 703 | 0.7+ | 0.3+ |
| 2003 12 24 | 608 | 0.3+ | 0.4+ | 2006 09 26 | 152 | 0.2+ | 0.2+ | 2006 10 26 | 104 | 0.1+ | 1.1+ |
| 2003 12 24 | 608 | 0.0 | 0.0 | 2006 09 26 | 152 | 0.2− | 0.6+ | 2006 10 26 | 104 | 0.4− | 0.5− |
| 2003 12 28 | 691 | 0.3− | 0.3+ | 2006 09 26 | 152 | (1.7− | 0.4−) | 2006 10 26 | 104 | 1.1+ | 0.3− |
| 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.8− | | | | |

**2003 YT$_{111}$ = 2006 UN$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.49192 | | (2000.0) | | | |
| $n$ | 0.30672155 | $\omega$ | 264.37164 | | +0.88481102 | +0.44943812 |
| $a$ | 2.1775753 | $\Omega$ | 68.86951 | | −0.35803590 | +0.82465342 |
| $e$ | 0.0516752 | $i$ | 7.57389 | | −0.29819414 | +0.34344158 |
| $P$ | 3.21 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 1.1+ | 0.7− | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2003 12 23 | 704 | 0.0 | 0.2− | 2006 10 16 | 703 | (0.5+ | 2.3−) | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2003 12 23 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2003 12 27 | 704 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.7+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2003 12 27 | 704 | 0.6+ | 0.8+ | 2006 10 21 | G96 | 0.6+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2003 12 27 | 704 | 0.7− | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.4− | 2006 11 13 | 703 | 0.8− | 1.2− |
| 2003 12 29 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.5− | 2006 11 13 | 703 | 0.4+ | 0.4+ |
| 2003 12 29 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.0 | 0.2+ |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.2+ |

**2003 YY$_{111}$ = 2006 UB$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.93167 | | (2000.0) | | | |
| $n$ | 0.30892551 | $\omega$ | 10.21612 | | +0.64351144 | −0.76346362 |
| $a$ | 2.1672060 | $\Omega$ | 39.76108 | | +0.69607710 | +0.55384660 |
| $e$ | 0.0734485 | $i$ | 4.92603 | | +0.31838609 | +0.33223070 |
| $P$ | 3.19 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.4+ | 2006 11 18 | 704 | (1.1+ | 1.5+) |
| 2003 12 23 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.5− |
| 2003 12 23 | 704 | 0.8+ | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2003 12 23 | 704 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2003 12 27 | 704 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2003 12 27 | 704 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2003 12 27 | 704 | 0.7− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2003 12 27 | 704 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 22 | 104 | 0.1+ | 1.1− |
| 2003 12 27 | 704 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 22 | 104 | (2.3+ | 0.3−) |
| 2003 12 30 | 704 | (0.2− | 2.0+) | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 22 | 104 | 0.3+ | 0.6+ |
| 2003 12 30 | 704 | (0.9+ | 2.1+) | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2003 12 30 | 704 | (0.3− | 2.8+) | 2006 11 11 | 703 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.6− | 0.7− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.3− |
| 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.5− | 0.6− | 2006 11 29 | 704 | 0.3− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 1.1+ | 0.9+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.8+ | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.5− |

**2003 YL$_{112}$ = 2006 SJ$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.09518 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29650074 | $\omega$ | 17.89132 | | +0.65084479 | | −0.75824774 |
| $a$ | 2.2273349 | $\Omega$ | 31.53578 | | +0.68732578 | | +0.56708599 |
| $e$ | 0.1139302 | $i$ | 4.19151 | | +0.32246601 | | +0.32167351 |
| $P$ | 3.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.1− | 0.5− | 2006 09 27 | 704 | 0.7+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2003 12 18 | 704 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.8+ | 1.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2003 12 18 | 704 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 28 | 704 | 1.1− | 0.0 |
| 2003 12 18 | 704 | 0.1− | 0.5− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | 0.2+ | 0.0 |
| 2003 12 18 | 704 | 0.5+ | 0.7− | 2006 10 02 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 704 | 0.5+ | 0.4− |
| 2003 12 23 | 704 | 0.1+ | 1.1+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 28 | 704 | 0.2− | 0.8− |
| 2003 12 23 | 704 | 0.2+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2003 12 23 | 704 | 0.7+ | 1.1+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2003 12 23 | 704 | 0.1− | 1.4+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2003 12 23 | 704 | 0.0 | 0.9+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2003 12 27 | 704 | 0.2+ | 0.7− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2003 12 27 | 704 | 0.3− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2003 12 27 | 704 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.2− | 0.5+ |
| 2003 12 28 | 704 | 0.2− | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2003 12 28 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2003 12 28 | 704 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2003 12 28 | 704 | 0.6+ | 0.6− | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 2003 12 28 | 704 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.3+ |
| 2003 12 28 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2003 12 28 | 704 | 0.2− | 0.6− | 2006 10 21 | 703 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 2003 12 28 | 704 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2003 12 28 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2003 12 28 | 704 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2005 05 16 | 644 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2005 05 16 | 644 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.3− | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2005 05 16 | 644 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.8− | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.2+ |
| 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 23 | 704 | 0.4+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2006 09 20 | 699 | 0.6− | 1.2+ | 2006 10 23 | 704 | 0.7+ | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.1− |
| 2006 09 20 | 699 | (2.1+ | 1.8+) | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 1.0− |
| 2006 09 20 | 699 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 2006 09 20 | 699 | 0.8− | 0.8− | 2006 10 27 | 691 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 2006 09 27 | 704 | 0.2+ | 0.8− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.3− | 0.9+ |
| 2006 09 27 | 704 | 0.7+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.2− | | | | |

**2003 YP$_{112}$ = 2006 QT$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.18919 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26740861 | $\omega$ | 51.74419 | | +0.98605140 | | −0.14931597 |
| $a$ | 2.3860844 | $\Omega$ | 316.70127 | | +0.09823352 | | +0.87874077 |
| $e$ | 0.1329070 | $i$ | 6.15535 | | +0.13436072 | | +0.45334248 |
| $P$ | 3.69 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.1+ | 0.7− | 2003 12 27 | 704 | 0.4− | 0.5− | 2006 09 17 | 703 | 0.4+ | 0.0 |
| 1999 10 14 | 704 | 0.6+ | 0.2− | 2006 08 24 | 704 | 0.0 | 0.8− | 2006 09 17 | 703 | 0.4− | 0.5+ |
| 1999 10 14 | 704 | 0.8+ | 0.6− | 2006 08 24 | 704 | 0.0 | 1.2+ | 2006 09 17 | 703 | 0.7− | 0.1− |
| 1999 10 14 | 704 | 0.4− | 0.4− | 2006 08 24 | 704 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.3− | 0.1− |
| 1999 10 14 | 704 | 0.9+ | 0.8− | 2006 08 24 | 704 | 0.9+ | 0.7− | 2006 09 18 | 704 | 0.2+ | 0.6− |
| 1999 10 30 | 699 | 0.3− | 0.0 | 2006 08 24 | 704 | 0.8− | 0.2+ | 2006 09 18 | 704 | 0.2+ | 0.4− |
| 1999 10 30 | 699 | 0.7+ | 1.0+ | 2006 08 28 | 699 | 0.7− | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.9− |
| 1999 10 30 | 699 | 1.2− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.4+ | 2006 09 18 | 704 | 0.3− | 0.5− |
| 1999 12 05 | 699 | 0.6+ | 0.4− | 2006 08 28 | 699 | 1.1− | 0.6+ | 2006 09 18 | 704 | 0.3− | 1.1− |
| 1999 12 05 | 699 | 0.6− | 0.4− | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.7+ |
| 1999 12 05 | 699 | 0.8− | 0.5+ | 2006 08 28 | 699 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.7+ | 0.9− |
| 2003 12 04 | 704 | 1.0− | 0.0 | 2006 08 28 | 699 | 0.7− | 0.6− | 2006 09 20 | 699 | 0.2− | 0.4+ |
| 2003 12 04 | 704 | 0.9− | 0.8+ | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.5− | 0.2+ |
| 2003 12 04 | 704 | 0.0 | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.3+ |
| 2003 12 04 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 25 | 704 | 1.0+ | 0.1+ |
| 2003 12 04 | 704 | 0.7− | 0.3− | 2006 08 30 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 0.9+ | 0.5+ |
| 2003 12 18 | 704 | 1.0− | 0.1− | 2006 08 30 | 704 | 0.7+ | 1.1− | 2006 09 25 | 704 | (1.6+ | 0.8+) |
| 2003 12 18 | 704 | 0.7− | 0.6− | 2006 08 30 | 704 | 0.3+ | 1.0+ | 2006 09 25 | 704 | 0.0 | 0.0 |
| 2003 12 18 | 691 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 09 29 | 699 | 1.1+ | 0.1− |
| 2003 12 18 | 704 | 0.3+ | 0.6− | 2006 08 30 | 704 | 0.2− | 1.0+ | 2006 09 29 | 699 | (0.7+ | 1.8−) |
| 2003 12 18 | 704 | 1.1+ | 0.5− | 2006 08 30 | 704 | 0.2+ | 0.0 | 2006 09 29 | 699 | (1.1+ | 2.0+) |
| 2003 12 18 | 691 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.8− | 1.4+ |
| 2003 12 18 | 691 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.4+ | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2003 12 23 | 704 | 0.7+ | 1.4+ | 2006 08 30 | 704 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2003 12 23 | 704 | (0.2+ | 1.6+) | 2006 08 30 | 704 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2003 12 23 | 704 | 0.1+ | 1.3+ | 2006 09 11 | 703 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.3+ | 1.1+ | 2006 09 11 | 703 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2003 12 23 | 704 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 12 27 | 704 | 0.1− | 0.5− | 2006 09 11 | 703 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2003 12 27 | 704 | 0.4+ | 0.6+ | 2006 09 13 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.7− | 1.1+ | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 12 27 | 704 | 0.2− | 0.7+ | 2006 09 13 | 644 | 0.3+ | 0.0 | | | | |

**2003 YU$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.12836 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28543276 | $\omega$ | 162.02844 | | −0.53633791 | | −0.84115512 |
| $a$ | 2.2845474 | $\Omega$ | 320.32731 | | +0.76042931 | | −0.44598493 |
| $e$ | 0.0661165 | $i$ | 6.23006 | | +0.36618153 | | −0.30586843 |
| $P$ | 3.45 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.1− | 0.1+ | 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 10 23 | 400 | 1.3+ | 0.9− |
| 2003 12 14 | 691 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 400 | 0.3+ | 0.8− |
| 2003 12 14 | 691 | 0.0 | 0.2− | 2003 12 28 | 704 | 0.9− | 0.9− | 2006 10 23 | 400 | 0.3+ | 0.1+ |
| 2003 12 23 | 704 | 1.3+ | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.2− | 2006 10 24 | 400 | 0.6+ | 0.6− |
| 2003 12 23 | 704 | 0.9− | 0.4+ | 2004 01 22 | 704 | 0.2− | 0.2− | 2006 10 24 | 400 | 0.4− | 0.9− |
| 2003 12 23 | 704 | 0.2− | 0.4− | 2004 01 22 | 704 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.7+ |
| 2003 12 27 | 691 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.2+ | 1.0+ | 2006 10 27 | 703 | 0.0 | 0.7− |
| 2003 12 27 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.3− | 0.6− | 2006 10 27 | 703 | 0.4− | 1.0+ |
| 2003 12 27 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.3− | 1.1+ |
| 2003 12 28 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.8− | 0.8+ | | | | |

**2003 YH$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.60145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27157654 | $\omega$ | 106.16379 | | −0.93379380 | | −0.34602531 |
| $a$ | 2.3616084 | $\Omega$ | 53.67959 | | +0.26961913 | | −0.84780269 |
| $e$ | 0.1655850 | $i$ | 6.49073 | | +0.23523319 | | −0.40186701 |
| $P$ | 3.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.0 | 1.6− | 2004 01 18 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 0.2+ | 0.0 | 2004 01 19 | 704 | (2.4+ | 0.3−) | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 1999 11 12 | 704 | 0.3+ | 0.6− | 2004 01 19 | 704 | (3.6+ | 0.1+) | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 1999 11 12 | 704 | 0.1− | 0.1− | 2004 01 19 | 704 | 0.5+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 1999 11 12 | 704 | 0.6+ | 0.5− | 2004 01 19 | 704 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.0 | 0.2− |
| 2003 12 17 | 699 | 0.5+ | 0.1− | 2004 01 27 | 703 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2003 12 17 | 699 | 0.7+ | 0.3+ | 2004 01 27 | 703 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.8− |
| 2003 12 17 | 699 | 0.4− | 0.7− | 2004 01 27 | 703 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.7− | 1.0− |
| 2003 12 17 | 699 | 1.1+ | 0.1+ | 2004 01 27 | 703 | 0.5+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2003 12 23 | 704 | 0.8+ | 0.9− | 2004 02 11 | 703 | 0.8− | 0.8− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2003 12 23 | 704 | 0.4+ | 0.7+ | 2004 02 11 | 703 | 1.4− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2003 12 23 | 704 | 0.4+ | 0.2− | 2004 02 11 | 703 | 0.3− | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.5+ | 0.4− | 2004 02 11 | 703 | 0.9− | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2003 12 23 | 704 | 0.1− | 0.4− | 2004 02 14 | 704 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.4− |
| 2003 12 27 | 704 | 1.1+ | 1.1+ | 2004 02 14 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 12 27 | 704 | 0.1− | 0.4+ | 2004 02 14 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2003 12 27 | 704 | 0.1− | 0.5+ | 2004 02 14 | 704 | 0.3− | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2003 12 27 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.3− | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2004 01 16 | 699 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.6− | 0.3− |
| 2004 01 16 | 699 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2004 01 16 | 699 | 0.4− | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2004 01 16 | 699 | 0.6− | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.1+ | | | | |
| 2004 01 18 | 691 | 0.4− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ | | | | |

### 2003 YT$_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.48280 | | (2000.0) | | | |
| $n$ | 0.28330590 | $\omega$ | 56.07393 | | −0.74323646 | −0.65529844 |
| $a$ | 2.2959670 | $\Omega$ | 82.59269 | | +0.56014783 | −0.71972054 |
| $e$ | 0.1769329 | $i$ | 7.81536 | | +0.36583326 | −0.22931702 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 691 | 0.3+ | 0.2+ | 2004 01 30 | 699 | 0.3− | 0.5− | 2004 02 15 | 704 | 0.1− | 0.3− |
| 2001 05 29 | 691 | 0.4+ | 0.4+ | 2004 01 30 | 699 | 0.1− | 0.1+ | 2004 03 18 | 644 | 0.1+ | 0.0 |
| 2001 05 29 | 691 | 0.6− | 0.3− | 2004 01 30 | 699 | 0.2+ | 0.1+ | 2004 03 18 | 644 | 0.3+ | 0.0 |
| 2003 12 23 | 704 | 0.7− | 0.7+ | 2004 01 30 | 699 | 1.0− | 0.3− | 2004 03 18 | 644 | 0.2+ | 0.2− |
| 2003 12 23 | 704 | 0.1+ | 0.1+ | 2004 01 30 | 699 | 0.0 | 0.3− | 2004 03 23 | 704 | 0.5+ | 0.5+ |
| 2003 12 23 | 704 | 0.3+ | 0.5− | 2004 01 30 | 704 | 0.6+ | 0.2+ | 2004 03 23 | 704 | 0.6+ | 0.3− |
| 2003 12 27 | 704 | 0.8+ | 1.4+ | 2004 01 30 | 704 | 0.5+ | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.5+ |
| 2003 12 27 | 704 | 0.4− | 0.5+ | 2004 01 30 | 704 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.7− | 0.4− |
| 2003 12 27 | 704 | 0.6+ | 0.4+ | 2004 01 30 | 704 | 0.6+ | 0.2+ | 2004 03 23 | 704 | 0.3+ | 0.1+ |
| 2003 12 27 | 704 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.3+ | 0.4− | 2006 11 18 | G96 | 0.2− | 0.3+ |
| 2004 01 30 | 699 | 0.0 | 0.5+ | 2004 02 15 | 704 | 0.7− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2004 01 30 | 699 | 0.9− | 0.1+ | 2004 02 15 | 704 | 0.2− | 0.5− | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2004 01 30 | 699 | 0.3− | 0.2− | 2004 02 15 | 704 | 0.4− | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.2+ |

### 2003 YB$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 288.09149 | | (2000.0) | | | |
| $n$ | 0.21212204 | $\omega$ | 109.18922 | | +0.99601134 | +0.05568919 |
| $a$ | 2.7844891 | $\Omega$ | 247.66799 | | −0.07767771 | +0.92563017 |
| $e$ | 0.0758480 | $i$ | 4.32233 | | +0.04390425 | +0.37430936 |
| $P$ | 4.65 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.3+ | 0.1+ | 2002 08 26 | 644 | 0.1+ | 0.2− | 2003 12 25 | 691 | 0.1− | 0.1− |
| 2002 08 05 | 644 | 0.2+ | 0.1+ | 2002 08 26 | 644 | 0.0 | 0.4− | 2003 12 27 | 291 | 0.4+ | 0.0 |
| 2002 08 05 | 644 | 0.2+ | 0.2+ | 2003 12 21 | 704 | 0.1− | 0.0 | 2003 12 27 | 291 | 0.7+ | 0.2+ |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2003 12 21 | 704 | 1.4− | 0.7− | 2003 12 27 | 291 | 0.3+ | 0.1+ |
| 2002 08 16 | 644 | 0.3− | 0.3+ | 2003 12 21 | 704 | 0.8− | 0.0 | 2003 12 29 | 691 | 0.2− | 0.0 |
| 2002 08 16 | 644 | 0.4− | 0.1+ | 2003 12 25 | 691 | 0.0 | 0.0 | 2003 12 29 | 691 | 0.2− | 0.0 |
| 2002 08 26 | 644 | 0.1− | 0.2− | 2003 12 25 | 691 | 0.1− | 0.0 | 2003 12 29 | 691 | 0.1− | 0.0 |

### 2003 YB$_{120}$ = 2006 TS

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 167.43471 | | (2000.0) | | | |
| $n$ | 0.25849274 | $\omega$ | 233.26596 | | −0.93852489 | +0.34148365 |
| $a$ | 2.4406405 | $\Omega$ | 326.61636 | | −0.28011170 | −0.83897618 |
| $e$ | 0.0680790 | $i$ | 5.27592 | | −0.20176340 | −0.42368371 |
| $P$ | 3.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.2+ | 0.2+ | 2003 12 29 | 704 | 0.2+ | 0.9+ | 2006 10 02 | 461 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.0 | 0.1+ | 2003 12 30 | 704 | 0.1+ | 0.6+ | 2006 10 02 | 461 | 0.2+ | 0.0 |
| 2003 12 23 | 704 | 0.6+ | 0.8+ | 2003 12 30 | 704 | 0.3+ | 0.7− | 2006 10 12 | 461 | 0.4− | 0.4+ |
| 2003 12 27 | 704 | 0.0 | 0.4+ | 2003 12 30 | 704 | 0.6− | 0.4− | 2006 10 12 | 461 | 0.3+ | 0.2+ |
| 2003 12 27 | 704 | 0.2− | 0.4− | 2004 01 16 | 644 | 0.1− | 0.5+ | 2006 10 12 | 461 | 0.3− | 0.3+ |
| 2003 12 27 | 704 | 0.3− | 0.5+ | 2004 01 16 | 644 | 0.1+ | 0.4+ | 2006 10 13 | 461 | 0.6− | 0.1− |
| 2003 12 27 | 704 | 0.2+ | 0.3+ | 2004 01 16 | 644 | 0.2− | 0.5+ | 2006 10 13 | 461 | 0.6− | 0.4+ |
| 2003 12 28 | 704 | 0.7+ | 0.6− | 2006 09 19 | 703 | 0.3− | 0.3+ | 2006 10 13 | 461 | 0.1+ | 0.1− |
| 2003 12 28 | 704 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.0 | 2006 10 13 | 461 | 0.0 | 0.1+ |
| 2003 12 28 | 704 | 0.0 | 0.8− | 2006 09 19 | 703 | 0.3+ | 1.2+ | 2006 10 23 | G96 | 0.5+ | 0.4− |
| 2003 12 28 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.7+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2003 12 28 | 691 | 0.2− | 0.2− | 2006 10 01 | 461 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2003 12 28 | 691 | 0.0 | 0.0 | 2006 10 01 | 461 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2003 12 29 | 704 | 0.7+ | 1.0− | 2006 10 01 | 461 | 0.0 | 0.1− | | | | |
| 2003 12 29 | 704 | 0.3− | 0.7+ | 2006 10 02 | 461 | 0.0 | 0.2− | | | | |

### 2003 YS$_{120}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.75432 | | (2000.0) | | | |
| $n$ | 0.29824657 | $\omega$ | 352.42248 | | +0.72176739 | −0.68650501 |
| $a$ | 2.2186344 | $\Omega$ | 51.32245 | | +0.64079516 | +0.61468017 |
| $e$ | 0.1447656 | $i$ | 6.48015 | | +0.26159777 | +0.38843166 |
| $P$ | 3.30 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | 0.9+ | 0.4+ | 2006 09 16 | 703 | 0.2− | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.1+ |
| 2001 02 16 | 704 | 0.3+ | 0.7+ | 2006 09 16 | 703 | 0.9− | 1.1+ | 2006 11 17 | 704 | 1.1+ | 0.4+ |
| 2001 02 16 | 704 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.6− | 0.8− | 2006 11 17 | 704 | (1.7− | 1.1+) |
| 2001 02 16 | 704 | 0.3+ | 0.9+ | 2006 09 16 | 703 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2003 12 18 | 704 | 0.5+ | 0.8− | 2006 09 17 | 699 | 0.8+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2003 12 18 | 704 | 0.6+ | 0.5− | 2006 09 17 | 699 | 0.7− | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 699 | 0.5+ | 1.2− | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2003 12 18 | 704 | 0.4+ | 0.6− | 2006 09 17 | 699 | 0.7− | 0.6+ | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2003 12 27 | 704 | 0.5− | 0.5− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.6− |
| 2003 12 27 | 704 | 0.1+ | 0.6− | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.8− |
| 2003 12 27 | 704 | 0.8+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.3− |
| 2003 12 27 | 704 | 0.0 | 0.6− | 2006 09 30 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2003 12 27 | 704 | 0.3− | 0.2− | 2006 10 12 | 691 | 1.4+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2003 12 28 | 704 | (0.6+ | 2.3+) | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2003 12 28 | 704 | 0.1− | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2003 12 28 | 704 | (0.8+ | 2.4+) | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2003 12 28 | 704 | 0.8− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.7+ | 0.2− |
| 2003 12 28 | 704 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 25 | 704 | 1.8+ | 0.3− |
| 2003 12 28 | 704 | 0.6+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.6− | 2006 11 25 | 704 | 0.1− | 0.5+ |
| 2003 12 28 | 704 | (0.7+ | 2.9+) | 2006 10 27 | G96 | 0.1− | 0.7− | 2006 11 25 | 704 | 0.3+ | 0.0 |
| 2003 12 28 | 704 | 0.8− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 25 | 704 | 2.5+ | 0.6+ |
| 2003 12 28 | 704 | 1.4+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 26 | 704 | 1.2− | 0.0 |
| 2003 12 28 | 704 | 0.1− | 1.2− | 2006 11 01 | 691 | 0.4− | 0.2− | 2006 11 26 | 704 | 0.5− | 0.1+ |
| 2003 12 28 | 704 | (0.9+ | 2.0+) | 2006 11 01 | 691 | 1.1− | 0.0 | 2006 11 26 | 704 | 0.0 | 0.7+ |
| 2003 12 28 | 704 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 11 26 | 704 | 0.1− | 0.2+ |
| 2003 12 28 | 704 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.4− | 0.6− |
| 2003 12 28 | 704 | 0.5+ | 0.6− | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 26 | 704 | 0.1− | 0.0 |
| 2003 12 28 | 704 | (1.3+ | 2.6+) | 2006 11 11 | 703 | 1.3+ | 0.4+ | 2006 11 26 | 704 | 0.3− | 0.2+ |
| 2003 12 28 | 704 | 0.8+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | (0.9− | 4.0+) |
| 2003 12 28 | 704 | 0.3− | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.3− | 0.4+ |
| 2003 12 28 | 704 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.1− | 0.2− |
| 2003 12 28 | 704 | 0.2− | 0.6− | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.0 | 0.3− |
| 2003 12 29 | 704 | (0.2+ | 1.6+) | 2006 11 12 | 703 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.6+ | 1.0+ |
| 2003 12 29 | 704 | 0.4+ | 0.1+ | 2006 11 12 | 703 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 1.0+ | 0.4+ |
| 2003 12 29 | 704 | 0.4+ | 0.9+ | 2006 11 12 | 703 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2004 01 19 | 704 | 1.2− | 0.9+ | 2006 11 12 | 703 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2004 01 19 | 704 | 1.1− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2004 01 19 | 704 | 0.4− | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2004 01 19 | 704 | 1.3− | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.4− | 0.6− |
| 2004 01 27 | 703 | 0.9+ | 1.1− | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.3− | 0.6− |
| 2004 01 27 | 703 | 0.1+ | 0.5− | 2006 11 14 | 691 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2004 01 27 | 703 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.2− | | | | |
| 2004 01 27 | 703 | (1.0− | 1.7−) | 2006 11 17 | 704 | 1.1+ | 0.8+ | | | | |

**2003 YJ$_{122}$ = 2006 UR$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 228.67002 | | | (2000.0) | | |
| $n$ | 0.28114216 | $\omega$ | 138.80430 | | −0.98626081 | −0.16364159 |
| $a$ | 2.3077321 | $\Omega$ | 31.79857 | | +0.13809079 | −0.89178865 |
| $e$ | 0.1558598 | $i$ | 2.45882 | | +0.09066722 | −0.42182276 |
| $P$ | 3.51 | $H$ | 17.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 13 | 691 | 0.3+ | 1.6+ | 2003 12 27 | 704 | 1.0− | 0.1+ | 2004 01 18 | 941 | 0.7− | 1.0+ |
| 1994 04 13 | 691 | 0.6+ | 0.7+ | 2003 12 27 | 704 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.6+ | 0.3− |
| 1994 04 13 | 691 | (4.5− | 4.9−) | 2003 12 27 | 704 | 0.6+ | 1.0− | 2006 10 20 | 691 | 0.2+ | 0.2+ |
| 1994 05 04 | 691 | 0.8+ | 0.2+ | 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4+ | 0.3− |
| 1994 05 04 | 691 | 1.1+ | 0.6+ | 2003 12 29 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.8+ | 0.4− |
| 1994 05 04 | 691 | 0.8+ | 0.3− | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2003 12 26 | 941 | 0.6− | 0.6+ | 2004 01 03 | 941 | 1.1+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.7− |
| 2003 12 26 | 941 | 0.5− | 0.3+ | 2004 01 03 | 941 | 1.3+ | 0.4− | 2006 10 29 | G96 | 0.0 | 0.6− |
| 2003 12 26 | 941 | 0.5− | 0.3+ | 2004 01 03 | 941 | 1.1+ | 0.8− | 2006 10 29 | G96 | 0.5− | 0.9− |
| 2003 12 26 | 941 | 0.5− | 0.5+ | 2004 01 03 | 941 | 0.3+ | 0.9− | 2006 10 29 | G96 | 0.2+ | 0.8− |
| 2003 12 27 | 941 | 0.5− | 0.1+ | 2004 01 03 | 941 | 0.2+ | 1.1− | 2006 10 29 | G96 | 0.1− | 0.9− |
| 2003 12 27 | 941 | 0.4− | 0.2− | 2004 01 18 | 941 | 0.3− | 1.0+ | 2006 10 29 | 691 | 0.2− | 0.4− |
| 2003 12 27 | 941 | 0.3− | 0.2− | 2004 01 18 | 941 | 0.5− | 1.1+ | 2006 10 29 | 691 | 0.2+ | 0.2− |
| 2003 12 27 | 941 | 0.0 | 0.5− | 2004 01 18 | 941 | 0.6− | 1.0+ | 2006 10 29 | 691 | 0.3− | 0.3− |
| 2003 12 27 | 941 | 0.3+ | 0.4− | 2004 01 18 | 941 | 0.6− | 1.1+ | | | | |

**2003 YW$_{122}$ = 1998 FD$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 157.70135 | | | (2000.0) | | |
| $n$ | 0.29773179 | $\omega$ | 176.57179 | | −0.61624763 | +0.78354952 |
| $a$ | 2.2211910 | $\Omega$ | 55.36892 | | −0.72483839 | −0.52491465 |
| $e$ | 0.1325995 | $i$ | 5.53069 | | −0.30797430 | −0.33243760 |
| $P$ | 3.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 704 | 0.1+ | 0.0 | 2002 08 30 | 644 | 0.5− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 1998 03 24 | 704 | 1.5+ | 0.4+ | 2002 08 30 | 644 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.0 |
| 1998 03 24 | 704 | 1.1+ | 1.6− | 2003 11 21 | 704 | 0.4+ | 0.9+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 1998 03 24 | 704 | (3.6− | 0.3+) | 2003 11 21 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 1998 03 25 | 704 | 0.7− | 0.9+ | 2003 11 21 | 704 | 0.8+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 1998 03 25 | 704 | 0.9− | 0.1+ | 2003 11 21 | 704 | 0.0 | 1.2+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 1998 03 25 | 704 | 0.5+ | 0.3− | 2003 11 21 | 704 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 1998 03 25 | 704 | 0.8+ | 0.5− | 2003 12 22 | 704 | (1.6− | 0.2−) | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 1998 03 25 | 704 | (5.6− | 1.1+) | 2003 12 22 | 704 | 1.3− | 0.8− | 2006 11 08 | 644 | 0.2− | 0.6+ |
| 2001 01 19 | 704 | 0.3+ | 0.8+ | 2003 12 22 | 704 | 1.2− | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2001 01 19 | 704 | 0.4+ | 0.4− | 2003 12 22 | 704 | 0.6− | 0.8− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2001 01 19 | 704 | 0.3− | 0.1+ | 2003 12 27 | 704 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.5+ |
| 2001 01 19 | 704 | 0.1− | 0.4− | 2003 12 27 | 704 | (0.9+ | 2.2+) | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2001 01 19 | 704 | 0.2− | 0.1− | 2003 12 27 | 704 | (0.8+ | 1.7+) | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 2001 01 19 | 704 | 0.4+ | 0.5− | 2003 12 29 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.2− |
| 2001 01 19 | 704 | (0.0 | 1.8−) | 2003 12 29 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2001 01 19 | 704 | 0.4− | 0.7− | 2003 12 29 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2001 02 21 | 645 | 0.1− | 0.0 | 2005 07 03 | E12 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2001 02 21 | 645 | 0.1− | 0.0 | 2005 07 03 | E12 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 02 22 | 645 | 0.1− | 0.1+ | 2005 07 03 | E12 | 0.1+ | 0.6+ | 2006 11 13 | G96 | 0.5+ | 0.2− |
| 2001 02 22 | 645 | 0.0 | 0.1+ | 2005 07 03 | E12 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2002 07 29 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 1.2+ | 0.5− |
| 2002 07 29 | 644 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | (2.2+ | 1.6+) |
| 2002 07 29 | 644 | 0.3− | 0.8+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.5− | 1.1− |
| 2002 08 13 | 704 | 0.4− | 1.0− | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2002 08 13 | 704 | (0.5+ | 2.7−) | 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 1.3− |
| 2002 08 13 | 704 | 0.1+ | 1.2+ | 2006 10 16 | 703 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.6− |
| 2002 08 13 | 704 | 1.0+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.4− |
| 2002 08 13 | 644 | 0.1− | 0.3− | 2006 10 16 | 703 | (1.6− | 0.7−) | 2006 11 18 | 704 | 0.5− | 0.1− |
| 2002 08 13 | 644 | 0.4− | 0.6− | 2006 10 17 | G96 | 0.8+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2002 08 13 | 644 | 0.2− | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.5+ | 0.3− |
| 2002 08 19 | 644 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.3− | 0.6− |
| 2002 08 19 | 644 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2002 08 19 | 644 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.3− | 0.4+ | | | | |
| 2002 08 30 | 644 | 0.6− | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.3+ | | | | |

**2003 YF$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 174.82635 | | | (2000.0) | | |
| $n$ | 0.23981532 | $\omega$ | 96.26303 | | −0.93941747 | +0.31141035 |
| $a$ | 2.5657722 | $\Omega$ | 101.95058 | | −0.34262677 | −0.86538392 |
| $e$ | 0.1383851 | $i$ | 8.41927 | | +0.01008504 | −0.39259938 |
| $P$ | 4.11 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 644 | 0.4+ | 0.5− | 2004 01 22 | 704 | 1.5+ | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.4− |
| 2003 12 17 | 644 | 0.8+ | 0.6− | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2004 01 30 | 704 | 0.6+ | 0.0 |
| 2003 12 17 | 644 | 0.1+ | 0.6− | 2004 01 22 | 704 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.8− |
| 2003 12 27 | 704 | 1.0− | 0.8+ | 2004 01 22 | 704 | 0.5+ | 0.1+ | 2004 02 15 | 704 | 0.5− | 0.1+ |
| 2003 12 27 | 704 | 0.1− | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.3+ | 2004 02 15 | 704 | 1.0− | 0.2− |
| 2003 12 27 | 704 | 0.3− | 0.1+ | 2004 01 26 | 699 | 0.6+ | 0.3+ | 2004 02 15 | 704 | 0.5− | 0.8− |
| 2003 12 27 | 704 | 0.5− | 0.4+ | 2004 01 26 | 699 | 1.3+ | 0.4− | 2004 02 15 | 704 | 0.3+ | 0.9+ |
| 2003 12 27 | 704 | 1.0− | 0.5+ | 2004 01 26 | 699 | 0.4+ | 0.4− | 2006 09 29 | 699 | 1.3− | 0.9+ |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2004 01 26 | 699 | 1.0− | 0.6+ | 2006 09 29 | 699 | 0.6+ | 0.4+ |
| 2003 12 29 | 691 | 0.1+ | 0.2− | 2004 01 26 | 699 | 0.5− | 0.5− | 2006 09 29 | 699 | 0.2+ | 0.6+ |
| 2003 12 29 | 691 | 0.2+ | 0.0 | 2004 01 26 | 699 | 0.5− | 0.3− | 2006 09 29 | 699 | (0.1− | 2.7+) |
| 2004 01 13 | 699 | 0.5+ | 0.1+ | 2004 01 26 | 699 | 0.6− | 0.1− | 2006 10 16 | 703 | 1.2− | 0.4+ |
| 2004 01 13 | 699 | 0.4+ | 0.1+ | 2004 01 26 | 699 | 0.9− | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2004 01 13 | 699 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.7+ | 0.3− | 2006 10 16 | 703 | 1.1+ | 1.1− |
| 2004 01 13 | 699 | 1.2− | 1.5+ | 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 1.2+ | 1.6− |

**2003 YO$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 222.98061 | | | (2000.0) | | |
| $n$ | 0.28482366 | $\omega$ | 210.36623 | | −0.98968338 | −0.13557289 |
| $a$ | 2.2878033 | $\Omega$ | 321.75537 | | +0.14183345 | −0.88138911 |
| $e$ | 0.0599597 | $i$ | 4.29260 | | +0.02025062 | −0.45251876 |
| $P$ | 3.46 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2003 12 29 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.2− | 0.1− | 2003 12 29 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.2+ |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2004 01 21 | 691 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2003 12 18 | 691 | 0.3− | 0.1− | 2004 01 21 | 691 | 0.1+ | 0.7+ | 2006 10 04 | G96 | 0.4+ | 0.1− |
| 2003 12 18 | 691 | 0.3− | 0.1− | 2004 01 21 | 691 | 0.5+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2003 12 18 | 691 | 0.3− | 0.0 | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2003 12 28 | 691 | 0.2− | 0.1− | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2003 12 28 | 691 | 0.8+ | 0.6− | 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2003 12 28 | 691 | 0.1− | 0.1− | 2004 02 27 | 695 | 0.1+ | 0.3− | | | | |
| 2003 12 29 | 691 | 0.2− | 0.1+ | 2004 02 27 | 695 | 0.0 | 0.2− | | | | |

**2003 YV$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 137.48875 | | | (2000.0) | | |
| $n$ | 0.37210592 | $\omega$ | 239.01836 | | +0.74348230 | +0.52089149 |
| $a$ | 1.9143661 | $\Omega$ | 86.33862 | | −0.37357859 | +0.84366915 |
| $e$ | 0.0859873 | $i$ | 24.85160 | | −0.55468289 | +0.12997854 |
| $P$ | 2.65 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 704 | 0.9+ | 0.7− | 2004 01 22 | 704 | 0.7+ | 0.9− | 2005 07 27 | E12 | 0.4+ | 0.1+ |
| 2003 12 29 | 704 | 0.0 | 0.2+ | 2004 01 22 | 704 | 1.2− | 0.6+ | 2005 07 29 | E12 | 0.2− | 0.1+ |
| 2003 12 29 | 704 | 0.1+ | 0.0 | 2004 01 22 | 704 | 0.7+ | 0.4+ | 2005 07 29 | E12 | 0.0 | 0.1− |
| 2003 12 29 | 704 | 0.1+ | 0.0 | 2005 07 04 | E12 | 0.1+ | 0.1− | 2005 07 29 | E12 | 0.2+ | 0.2+ |
| 2003 12 30 | 704 | 0.2+ | 0.9+ | 2005 07 04 | E12 | 0.8− | 0.1− | 2005 07 29 | E12 | 0.2+ | 0.2− |
| 2003 12 30 | 704 | 0.3− | 0.5− | 2005 07 04 | E12 | 0.3+ | 0.5− | 2005 08 09 | E12 | 0.3− | 0.8− |
| 2003 12 30 | 704 | 1.5− | 0.7− | 2005 07 04 | E12 | 0.0 | 0.6+ | 2005 08 09 | E12 | 0.4− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 30 | 704 | 0.1+ | 0.3+ | 2005 07 27 | E12 | 0.4+ | 0.4− | 2005 08 09 | E12 | 0.1− | 0.6+ |
| 2003 12 30 | 704 | 0.0 | 0.5+ | 2005 07 27 | E12 | 0.1− | 0.3+ | 2005 08 09 | E12 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 0.2+ | 0.2− | 2005 07 27 | E12 | 0.5+ | 0.2+ | | | | |

**2003 YS$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.57907 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18278856 | $\omega$ | 307.02234 | | +0.98764263 | | +0.02383385 |
| $a$ | 3.0749405 | $\Omega$ | 52.14142 | | +0.05765478 | | +0.86380456 |
| $e$ | 0.3133784 | $i$ | 11.31443 | | −0.14573252 | | +0.50326299 |
| $P$ | 5.39 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.1− | 0.3− | 2003 12 17 | 704 | 0.1− | 0.2+ | 2003 12 29 | 704 | 0.8+ | 0.2− |
| 2002 07 16 | 644 | 0.2+ | 0.4+ | 2003 12 17 | 704 | 0.2+ | 0.5− | 2004 01 16 | 644 | 0.5− | 0.2− |
| 2002 07 16 | 644 | 0.1− | 0.2− | 2003 12 17 | 704 | 0.1+ | 0.1− | 2004 01 16 | 644 | 0.4− | 0.2+ |
| 2003 11 19 | 704 | 0.1+ | 0.7+ | 2003 12 17 | 704 | 0.8+ | 0.3− | 2004 01 16 | 644 | 0.3− | 0.2− |
| 2003 11 19 | 704 | 0.2− | 0.4− | 2003 12 27 | 704 | 0.6− | 0.1− | 2004 01 19 | 704 | 0.1+ | 1.5+ |
| 2003 11 19 | 704 | 0.1+ | 0.5+ | 2003 12 27 | 704 | 1.6− | 1.5+ | 2004 01 19 | 704 | 0.6+ | 0.0 |
| 2003 11 19 | 704 | 0.4− | 0.4+ | 2003 12 27 | 704 | 0.1− | 0.2− | 2004 01 19 | 704 | 0.6+ | 1.3+ |
| 2003 12 03 | 704 | 0.2− | 0.5− | 2003 12 27 | 704 | 0.2− | 0.3− | 2004 01 19 | 704 | 0.0 | 0.3− |
| 2003 12 03 | 704 | 0.8− | 0.1− | 2003 12 29 | 704 | 0.3+ | 0.3− | 2006 05 07 | G96 | 0.0 | 0.4− |
| 2003 12 03 | 704 | 0.6+ | 0.1+ | 2003 12 29 | 704 | 0.4+ | 0.4− | 2006 05 07 | G96 | 0.2+ | 0.2− |
| 2003 12 03 | 704 | 0.6+ | 0.7− | 2003 12 29 | 704 | 0.1+ | 0.7− | 2006 05 07 | G96 | 0.4+ | 0.3+ |
| 2003 12 17 | 704 | 0.0 | 0.4− | 2003 12 29 | 704 | 0.1− | 0.6− | 2006 05 07 | G96 | 0.7− | 0.1+ |

**2003 YU$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.48913 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28794902 | $\omega$ | 306.59922 | | +0.96498009 | | −0.18865208 |
| $a$ | 2.2712188 | $\Omega$ | 64.92022 | | +0.25387709 | | +0.84652924 |
| $e$ | 0.1720683 | $i$ | 11.60995 | | −0.06602912 | | +0.49779377 |
| $P$ | 3.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 08 | 696 | 0.0 | 0.6+ | 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 1998 03 08 | 696 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.5− |
| 1998 03 08 | 696 | 0.3+ | 0.6+ | 2005 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2003 12 17 | 704 | 0.1− | 0.1+ | 2006 08 05 | E12 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2003 12 17 | 704 | 0.1− | 0.6+ | 2006 08 05 | E12 | 1.0− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2003 12 17 | 704 | 0.2+ | 0.0 | 2006 08 05 | E12 | 0.4− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 12 17 | 704 | 0.5+ | 0.6+ | 2006 08 05 | E12 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2003 12 27 | 704 | (0.9− | 1.8+) | 2006 09 24 | 699 | 0.4+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 12 27 | 704 | 0.3+ | 0.1− | 2006 09 24 | 699 | 0.1+ | 0.8+ | 2006 10 21 | 703 | 0.6− | 0.1− |
| 2003 12 27 | 704 | 0.2+ | 0.4+ | 2006 09 24 | 699 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.3− |
| 2003 12 29 | 704 | 0.5+ | 0.3+ | 2006 09 24 | 699 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.1+ |
| 2003 12 29 | 704 | (2.1+ | 0.1−) | 2006 09 25 | 703 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 703 | 0.4− | 0.3− | 2006 10 24 | 644 | 0.2− | 0.0 |
| 2003 12 29 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 703 | 0.1+ | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.3+ |
| 2003 12 29 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 703 | 0.5− | 0.1+ | 2006 10 24 | 644 | 0.3+ | 0.3+ |
| 2004 01 19 | 704 | 0.6− | 0.6− | 2006 10 09 | 644 | 0.0 | 0.2+ | 2006 11 11 | 644 | 0.5− | 0.2+ |
| 2004 01 19 | 704 | 0.7− | 0.8− | 2006 10 09 | 644 | 0.0 | 0.2+ | 2006 11 11 | 644 | 0.2− | 0.1+ |
| 2004 01 19 | 704 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.2− | 0.2+ | 2006 11 11 | 644 | 0.6− | 0.3+ |
| 2004 01 19 | 704 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | | | |

**2003 YW$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.50940 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28395732 | $\omega$ | 80.72149 | | −0.24696468 | | −0.96817055 |
| $a$ | 2.2924542 | $\Omega$ | 23.69692 | | +0.84459913 | | −0.23563987 |
| $e$ | 0.1155466 | $i$ | 5.80830 | | +0.47503763 | | −0.08437795 |
| $P$ | 3.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 704 | 0.4− | 0.3− | 2003 12 29 | 704 | 0.2+ | 0.4+ | 2006 10 18 | H07 | 0.2+ | 0.0 |
| 1999 10 11 | 704 | 0.0 | 0.3− | 2003 12 29 | 704 | 0.3− | 0.2+ | 2006 10 18 | H07 | 0.2− | 0.6+ |
| 1999 10 11 | 704 | 0.3− | 0.5+ | 2003 12 30 | 704 | (1.6− | 0.5+) | 2006 10 18 | H07 | 0.6+ | 0.6+ |
| 1999 10 11 | 704 | 0.2− | 0.0 | 2003 12 30 | 704 | 0.6− | 0.2− | 2006 10 21 | 703 | 0.2− | 0.0 |
| 1999 10 11 | 704 | 0.3+ | 0.3− | 2003 12 30 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.2− |
| 1999 10 11 | 704 | 0.0 | 0.6− | 2003 12 30 | 704 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.4+ |
| 1999 10 11 | 704 | 0.1− | 0.6− | 2003 12 30 | 704 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.6− |
| 1999 10 11 | 704 | 0.1+ | 0.1− | 2004 01 16 | 699 | 0.8+ | 1.0+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 1999 10 11 | 704 | 0.4+ | 0.3− | 2004 01 16 | 699 | 1.0− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 1999 10 11 | 704 | 0.7− | 0.5− | 2004 01 16 | 699 | 0.6− | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1999 10 11 | 704 | 0.1− | 0.2− | 2004 01 16 | 699 | 0.1− | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1999 10 11 | 704 | 0.6− | 0.6+ | 2004 01 16 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 1999 10 11 | 704 | 0.1− | 0.6+ | 2004 01 16 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 1.2+ | 0.0 | 2004 01 16 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2− | 0.4− |
| 1999 11 09 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 1999 11 09 | 704 | 1.1+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2003 12 17 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2003 12 17 | 704 | 0.4− | 0.8+ | 2006 09 23 | 691 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2003 12 27 | 704 | 0.4+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2003 12 27 | 704 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.3− | 2006 11 20 | G96 | 0.5− | 0.2+ |
| 2003 12 27 | 704 | 0.6+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 11 20 | G96 | 0.4+ | 1.0− |
| 2003 12 29 | 704 | 0.8+ | 1.0− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2003 12 29 | 704 | 0.4+ | 1.3− | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.7− |
| 2003 12 29 | 704 | 0.7+ | 0.9− | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2003 12 29 | 704 | 0.3− | 1.2− | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2003 12 29 | 704 | 0.5+ | 0.8− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2003 12 29 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2003 12 29 | 704 | 0.3− | 1.3− | 2006 10 11 | 691 | 0.1− | 0.0 | | | | |

**2003 YO$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.18272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26593139 | $\omega$ | 200.96799 | | −0.99252562 | | −0.10191697 |
| $a$ | 2.3949124 | $\Omega$ | 332.91480 | | +0.12194856 | | −0.84916366 |
| $e$ | 0.1690649 | $i$ | 8.47780 | | −0.00462962 | | −0.51820267 |
| $P$ | 3.71 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 01 | 691 | 0.2+ | 0.0 | 2004 01 19 | 699 | 0.2− | 0.5− | 2004 02 15 | 704 | 0.0 | 0.2− |
| 1998 09 01 | 691 | 0.4+ | 0.5− | 2004 01 19 | 699 | 0.0 | 0.2− | 2004 02 15 | 704 | 0.7+ | 0.6− |
| 1998 09 01 | 691 | 0.1− | 0.3− | 2004 01 19 | 699 | 0.5− | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.7+ |
| 2003 12 27 | 704 | 0.3+ | 0.6+ | 2004 01 31 | 704 | 0.7+ | 0.4− | 2005 06 13 | G96 | 0.0 | 0.8+ |
| 2003 12 27 | 704 | 0.5− | 1.0+ | 2004 01 31 | 704 | 0.4− | 0.6− | 2005 06 13 | G96 | 0.1− | 0.5+ |
| 2003 12 27 | 704 | 0.3− | 0.5+ | 2004 01 31 | 704 | 0.5+ | 0.5+ | 2005 06 13 | G96 | 0.7− | 0.2+ |
| 2003 12 27 | 704 | 0.1+ | 0.6+ | 2004 01 31 | 704 | 0.5− | 0.5− | 2006 09 28 | 703 | 0.4− | 0.2− |
| 2003 12 27 | 704 | 0.1+ | 0.1+ | 2004 01 31 | 704 | 0.3− | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.9+ |
| 2003 12 29 | 704 | 0.3+ | 0.3+ | 2004 02 09 | 106 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.9− | 0.5− |
| 2003 12 29 | 704 | 0.1+ | 0.7+ | 2004 02 09 | 106 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.8− | 0.1+ |
| 2003 12 29 | 704 | 0.0 | 0.3+ | 2004 02 09 | 106 | 1.0− | 0.2+ | 2006 10 18 | A50 | 0.2− | 0.1− |
| 2003 12 29 | 704 | 0.1− | 0.3+ | 2004 02 11 | 703 | 0.0 | 1.2− | 2006 10 18 | A50 | 0.1+ | 0.0 |
| 2003 12 29 | 704 | 0.0 | 0.5+ | 2004 02 11 | 703 | 0.7+ | 1.0− | 2006 10 19 | 703 | (2.7− | 1.7−) |
| 2004 01 16 | 703 | 0.1+ | 0.0 | 2004 02 11 | 703 | 0.2+ | 0.0 | 2006 10 19 | 703 | (1.5+ | 0.2+) |
| 2004 01 16 | 703 | 0.8− | 0.0 | 2004 02 11 | 703 | 0.5+ | 0.6− | 2006 10 19 | 703 | 0.2+ | 1.0+ |
| 2004 01 16 | 703 | 0.3+ | 0.1+ | 2004 02 15 | 704 | 0.2+ | 1.1+ | 2006 10 19 | 703 | 1.2+ | 0.5+ |
| 2004 01 16 | 703 | 0.6− | 0.4− | 2004 02 15 | 704 | 0.3+ | 0.3− | | | | |
| 2004 01 19 | 699 | 0.3− | 1.0− | 2004 02 15 | 704 | 0.2+ | 0.6− | | | | |

**2003 YB$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.87116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28308056 | $\omega$ | 124.36060 | | −0.96397260 | +0.22942376 | |
| $a$ | 2.2971853 | $\Omega$ | 69.22642 | | −0.26561229 | −0.85756866 | |
| $e$ | 0.0539404 | $i$ | 8.27801 | | +0.01438530 | −0.46037021 | |
| $P$ | 3.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.5+ | 0.9− | 2004 01 31 | 704 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2003 12 27 | 704 | 0.2− | 0.3+ | 2004 01 31 | 704 | 1.2+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.3− |
| 2003 12 27 | 704 | (0.9+ | 1.6−) | 2004 01 31 | 704 | 0.6− | 0.4+ | 2006 11 21 | 704 | 1.4− | 0.8+ |
| 2003 12 27 | 704 | 0.3+ | 0.7+ | 2006 10 22 | G96 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.4− |
| 2003 12 27 | 704 | (1.6+ | 0.7−) | 2006 10 22 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2003 12 29 | 704 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.4− |
| 2003 12 29 | 704 | 0.4− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.8− | 0.3− |
| 2003 12 29 | 704 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.3− |
| 2003 12 29 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 1.2− | 1.0+ |
| 2003 12 29 | 704 | 0.1− | 0.5− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2004 01 28 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.4+ | 2006 11 27 | 703 | 1.1+ | 1.2− |
| 2004 01 28 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.9− | 2006 11 27 | 703 | (0.5+ | 1.6−) |
| 2004 01 28 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | (0.5+ | 1.8+) | 2006 11 27 | 703 | 0.4+ | 0.8+ |
| 2004 01 31 | 704 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.2+ | 1.3− | 2006 11 27 | 703 | 0.3+ | 0.6− |

**2003 YQ$_{129}$ = 2006 UY$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.21268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29625457 | $\omega$ | 22.87259 | | +0.93459431 | −0.35569077 | |
| $a$ | 2.2285686 | $\Omega$ | 357.94929 | | +0.30557404 | +0.80882934 | |
| $e$ | 0.1166254 | $i$ | 6.72509 | | +0.18209335 | +0.46827254 | |
| $P$ | 3.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.8− | 0.8− | 2006 10 17 | A50 | 0.4+ | 1.2− | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2003 12 27 | 704 | 0.4− | 0.5− | 2006 10 17 | A50 | 0.2+ | 1.1− | 2006 10 27 | 703 | 0.8+ | 0.3+ |
| 2003 12 27 | 704 | 0.1− | 0.4+ | 2006 10 17 | A50 | 0.2+ | 1.2− | 2006 11 02 | 703 | 0.6+ | 0.3− |
| 2003 12 27 | 704 | 0.3− | 0.2− | 2006 10 17 | A50 | (1.8− | 1.1−) | 2006 11 02 | 703 | 0.2− | 0.2+ |
| 2003 12 29 | 704 | 0.2+ | 1.1+ | 2006 10 17 | A50 | (2.1− | 0.6−) | 2006 11 02 | 703 | 0.5− | 1.0− |
| 2003 12 29 | 704 | 0.6+ | 0.4+ | 2006 10 17 | A50 | (1.8− | 0.9−) | 2006 11 02 | 703 | 0.7− | 0.0 |
| 2003 12 29 | 704 | 0.2− | 0.4− | 2006 10 18 | A50 | (2.4+ | 0.1+) | 2006 11 15 | 703 | 0.4+ | 0.1+ |
| 2003 12 30 | 704 | 0.0 | 0.3− | 2006 10 18 | A50 | (2.3+ | 0.2+) | 2006 11 15 | 703 | 0.3+ | 0.2− |
| 2003 12 30 | 704 | 0.1+ | 0.1− | 2006 10 18 | A50 | (2.1+ | 0.1−) | 2006 11 15 | 703 | 0.1+ | 0.2+ |
| 2003 12 30 | 704 | 0.4− | 0.6+ | 2006 10 18 | A50 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.5+ | 0.4+ |
| 2003 12 30 | 704 | 0.4+ | 0.1− | 2006 10 18 | A50 | 1.2− | 0.1− | 2006 11 15 | 704 | 1.0+ | 0.8+ |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2006 10 18 | A50 | 1.1− | 0.2+ | 2006 11 15 | 704 | 0.6+ | 0.3+ |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 10 19 | 703 | 1.0+ | 0.4− | 2006 11 15 | 704 | 0.7− | 0.9+ |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 10 19 | 703 | 1.0+ | 0.4− | 2006 11 15 | 704 | 1.0− | 0.8+ |
| 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 11 21 | 703 | 0.4− | 0.4− |
| 2006 09 18 | 703 | 0.1− | 0.8− | 2006 10 19 | 703 | 0.0 | 0.6− | 2006 11 21 | 703 | 0.5− | 0.2+ |
| 2006 09 18 | 703 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.7− | 0.4− | 2006 11 21 | 703 | 0.3− | 1.0+ |
| 2006 09 18 | 703 | 0.5+ | 0.7+ | 2006 10 27 | 703 | 0.2− | 0.4+ | 2006 11 21 | 703 | (0.5+ | 2.3+) |

**2003 YT$_{130}$ = 2001 DL$_{67}$ = 2006 UF$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.09711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29669882 | $\omega$ | 102.44451 | | +0.40628252 | −0.91191124 | |
| $a$ | 2.2263435 | $\Omega$ | 323.41126 | | +0.79608676 | +0.38435945 | |
| $e$ | 0.1269375 | $i$ | 5.57430 | | +0.44853137 | +0.14382523 | |
| $P$ | 3.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | (1.0+ | 2.5+) | 2003 12 28 | 704 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 2001 02 19 | 704 | 1.0+ | 0.5+ | 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.7− | 1.0+ |
| 2001 02 19 | 704 | 1.5+ | 0.5+ | 2003 12 29 | 704 | 1.0+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.5+ |
| 2001 02 19 | 704 | 0.1+ | 0.1− | 2003 12 29 | 704 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2001 02 19 | 704 | 0.1+ | 0.8+ | 2003 12 29 | 704 | 0.1− | 0.8+ | 2006 10 19 | 703 | 0.9+ | 0.2− |
| 2001 02 20 | 645 | 0.1− | 0.1− | 2003 12 29 | 704 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2001 02 20 | 645 | 0.1− | 0.1− | 2003 12 29 | 704 | 0.5+ | 0.9+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2001 02 22 | 704 | 0.4+ | 0.7+ | 2006 08 30 | 699 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2001 02 22 | 704 | 0.7+ | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.9− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2001 02 22 | 704 | 0.1+ | 0.7+ | 2006 08 30 | 699 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 02 22 | 704 | 0.3− | 1.0− | 2006 08 30 | 699 | 0.6− | 0.7+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2003 12 23 | 704 | 0.1− | 0.0 | 2006 09 20 | 699 | 1.4− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 12 23 | 704 | 0.3− | 0.3− | 2006 09 20 | 699 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 23 | 704 | 0.3− | 0.5− | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2003 12 23 | 704 | 0.3− | 0.5− | 2006 09 20 | 699 | 0.3− | 0.4+ | 2006 10 31 | 703 | 0.1− | 0.7− |
| 2003 12 23 | 704 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.3+ | 0.3− | 2006 10 31 | 703 | 0.8+ | 1.4− |
| 2003 12 28 | 704 | 0.3− | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.2− | 2006 10 31 | 703 | 0.0 | 0.8− |
| 2003 12 28 | 704 | 0.2+ | 0.0 | 2006 09 28 | 703 | 0.4+ | 0.5− | 2006 10 31 | 703 | 0.4+ | 0.4+ |
| 2003 12 28 | 704 | 0.2− | 0.6− | 2006 09 28 | 703 | 0.2− | 0.5− | 2006 11 14 | 703 | 0.4− | 0.3− |
| 2003 12 28 | 704 | 0.8− | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.8− |
| 2003 12 28 | 704 | 0.2+ | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2003 12 28 | 704 | 1.0+ | 0.7+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.7+ |
| 2003 12 28 | 704 | 0.7− | 0.8+ | 2006 10 17 | 703 | 0.6− | 0.2− | | | | |

**2003 YH$_{131}$ = 2006 KA$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.49190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23574240 | $\omega$ | 285.83381 | | +0.96222997 | −0.12595930 | |
| $a$ | 2.5952403 | $\Omega$ | 81.87330 | | +0.22010380 | +0.88166667 | |
| $e$ | 0.2959803 | $i$ | 14.11057 | | −0.16021171 | +0.45475063 | |
| $P$ | 4.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.2+ | 0.4+ | 2003 12 29 | 704 | 0.3+ | 0.1+ | 2006 05 28 | 703 | 0.2− | 0.0 |
| 2003 12 23 | 704 | 0.0 | 0.3+ | 2003 12 29 | 704 | 0.1+ | 1.0− | 2006 05 28 | 703 | 0.6+ | 0.2+ |
| 2003 12 23 | 704 | 0.6− | 0.1− | 2003 12 29 | 704 | 0.4+ | 0.3− | 2006 05 28 | 703 | 1.2+ | 0.9+ |
| 2003 12 28 | 704 | 0.3− | 0.1− | 2006 05 26 | G96 | 0.4− | 0.2− | 2006 05 28 | 703 | 0.3− | 0.6− |
| 2003 12 28 | 704 | 0.1− | 0.6+ | 2006 05 26 | G96 | 0.7− | 0.0 | 2006 05 28 | 703 | 0.7− | 0.3− |
| 2003 12 28 | 704 | 0.5+ | 0.2− | 2006 05 26 | G96 | 0.1− | 0.2− | 2006 06 21 | 691 | 0.3+ | 0.1+ |
| 2003 12 28 | 704 | 0.2− | 0.2− | 2006 05 28 | 703 | 0.2− | 0.5− | 2006 06 21 | 691 | 0.4− | 0.1+ |
| 2003 12 28 | 704 | 0.1+ | 0.3+ | 2006 05 28 | 703 | 1.0+ | 0.3+ | 2006 06 21 | 691 | 0.0 | 0.1− |
| 2003 12 29 | 704 | 0.3− | 0.3+ | 2006 05 28 | 703 | 0.1+ | 0.2− | | | | |

**2003 YP$_{131}$ = 2006 UL$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.66512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29752662 | $\omega$ | 131.51890 | | −0.10476030 | −0.99297347 | |
| $a$ | 2.2222121 | $\Omega$ | 324.38204 | | +0.88197551 | −0.06719488 | |
| $e$ | 0.1074855 | $i$ | 5.42269 | | +0.45950460 | −0.09740917 | |
| $P$ | 3.31 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.4+ | 0.4+ | 2003 12 29 | 704 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 12 17 | 704 | (1.9+ | 0.7−) | 2003 12 29 | 704 | (3.1− | 1.6+) | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2003 12 17 | 704 | 0.4+ | 0.3− | 2003 12 29 | 704 | 0.6− | 1.1− | 2006 10 27 | 703 | 1.1− | 0.6− |
| 2003 12 17 | 704 | 0.1− | 0.6− | 2003 12 29 | 704 | (4.1− | 1.1+) | 2006 10 27 | 703 | 0.4+ | 0.7− |
| 2003 12 17 | 704 | 0.8+ | 0.4− | 2003 12 29 | 704 | 0.6− | 0.3− | 2006 10 27 | 703 | 0.0 | 1.0+ |
| 2003 12 23 | 704 | (0.9+ | 2.3+) | 2006 09 20 | 699 | (0.3+ | 2.9+) | 2006 10 27 | 703 | 0.4+ | 0.4+ |
| 2003 12 23 | 704 | (0.7+ | 2.5+) | 2006 09 20 | 699 | 1.0− | 0.5+ | 2006 10 31 | 703 | 0.1− | 0.4+ |
| 2003 12 23 | 704 | (0.3− | 2.5+) | 2006 09 20 | 699 | 0.3+ | 0.2− | 2006 10 31 | 703 | 0.4+ | 0.5− |
| 2003 12 23 | 704 | (1.2+ | 2.2+) | 2006 09 20 | 699 | (2.3− | 0.4+) | 2006 10 31 | 703 | 0.2+ | 0.3− |
| 2003 12 28 | 704 | 0.3+ | 1.1+ | 2006 09 23 | 152 | 0.3− | 0.6− | 2006 10 31 | 703 | 0.9− | 1.0+ |
| 2003 12 28 | 704 | 0.8+ | 0.3+ | 2006 09 24 | 152 | (3.4+ | 1.6+) | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2003 12 28 | 704 | (0.3+ | 2.3+) | 2006 09 30 | 691 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.5− | 0.4− |
| 2003 12 28 | 704 | 0.4− | 0.4+ | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.8+ |
| 2003 12 29 | 704 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 1.1− | 0.2+ |
| 2003 12 29 | 704 | (2.9− | 1.2+) | 2006 10 21 | 644 | 0.2− | 0.2− | | | | |

**2003 YM$_{133}$ = 2006 UL$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.82162 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24404230 | $\omega$ | 214.42641 | | −0.99373960 | | −0.09325087 |
| $a$ | 2.5360588 | $\Omega$ | 320.08257 | | +0.11119020 | | −0.87913590 |
| $e$ | 0.1321627 | $i$ | 5.50241 | | −0.01087860 | | −0.46735891 |
| $P$ | 4.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 691 | 0.1+ | 0.3− | 2003 12 29 | 704 | 0.6+ | 0.8+ | 2004 01 22 | 704 | 0.1− | 1.0− |
| 2003 12 27 | 691 | 0.2+ | 0.1− | 2003 12 29 | 704 | 1.4− | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.4− |
| 2003 12 27 | 691 | 0.2− | 0.8− | 2003 12 30 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2003 12 28 | 704 | 0.7+ | 0.3+ | 2003 12 30 | 704 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.3+ | 0.1+ |
| 2003 12 28 | 704 | 0.3− | 0.5+ | 2003 12 30 | 704 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.4+ | 0.0 |
| 2003 12 28 | 704 | 0.4− | 0.5− | 2003 12 30 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2003 12 28 | 704 | 0.7− | 0.7+ | 2004 01 22 | 704 | 0.3+ | 0.5+ | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2003 12 29 | 704 | 0.1− | 1.3+ | 2004 01 22 | 704 | 0.3− | 0.1− | | | | |
| 2003 12 29 | 704 | 0.3− | 0.9+ | 2004 01 22 | 704 | 0.2+ | 0.3+ | | | | |

**2003 YN$_{133}$ = 2002 RA$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.46665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17808325 | $\omega$ | 115.67655 | | +0.22077100 | | −0.97305183 |
| $a$ | 3.1288687 | $\Omega$ | 321.38062 | | +0.85225708 | | +0.22564794 |
| $e$ | 0.1521384 | $i$ | 6.12182 | | +0.47425524 | | +0.04746722 |
| $P$ | 5.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1− | 0.1− | 2002 10 04 | 704 | 0.3− | 0.0 | 2003 12 28 | 704 | 0.4+ | 0.5+ |
| 2002 09 13 | 644 | 0.3+ | 0.0 | 2002 10 04 | 704 | 0.7− | 0.1− | 2003 12 28 | 704 | 0.2+ | 1.3+ |
| 2002 09 13 | 644 | 0.1− | 0.1+ | 2002 10 04 | 704 | 0.9+ | 0.5+ | 2003 12 29 | 704 | 0.4− | 0.5+ |
| 2002 09 13 | 644 | 0.2− | 0.2+ | 2002 10 04 | 704 | 0.1+ | 0.1+ | 2003 12 29 | 704 | 0.3− | 0.3+ |
| 2002 09 13 | 644 | 0.1+ | 0.5+ | 2003 12 18 | 704 | 0.1− | 0.1− | 2003 12 29 | 704 | 0.6+ | 0.5+ |
| 2002 09 13 | 644 | 0.0 | 0.1− | 2003 12 18 | 704 | 0.5+ | 0.7− | 2003 12 29 | 704 | 0.4− | 0.8+ |
| 2002 09 14 | 644 | 0.2+ | 0.1− | 2003 12 18 | 704 | 1.3− | 0.3− | 2004 01 22 | 704 | 0.6+ | 0.6− |
| 2002 09 14 | 644 | 0.1+ | 0.2− | 2003 12 18 | 691 | 0.1+ | 0.1− | 2004 01 22 | 704 | 0.2− | 1.1− |
| 2002 09 14 | 644 | 0.2+ | 0.3− | 2003 12 18 | 691 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.1− | 0.3+ |
| 2002 09 15 | 608 | 0.7− | 0.1+ | 2003 12 18 | 691 | 0.0 | 0.3− | 2004 01 22 | 704 | 0.3− | 0.1+ |
| 2002 09 15 | 608 | 0.3+ | 0.1− | 2003 12 28 | 704 | 0.7− | 0.1+ | 2004 01 22 | 704 | (3.0+ | 1.1−) |
| 2002 09 15 | 608 | 0.2− | 0.5− | 2003 12 28 | 704 | 1.0+ | 0.8+ | | | | |

**2003 YS$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.85605 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23316049 | $\omega$ | 103.38074 | | −0.93974929 | | −0.29058157 |
| $a$ | 2.6143641 | $\Omega$ | 59.98869 | | +0.17233805 | | −0.85763644 |
| $e$ | 0.1233503 | $i$ | 12.00386 | | +0.29524713 | | −0.42429009 |
| $P$ | 4.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 04 | 704 | 0.3+ | 0.2+ | 2003 12 29 | 703 | 0.9− | 0.2− | 2004 02 09 | 644 | 0.2− | 0.1+ |
| 2003 12 04 | 704 | 0.3+ | 0.0 | 2003 12 30 | 704 | 0.0 | 0.5+ | 2004 02 09 | 644 | 0.1− | 0.3+ |
| 2003 12 04 | 704 | 0.9+ | 0.3+ | 2003 12 30 | 704 | 0.3+ | 0.0 | 2004 02 11 | 704 | 0.4− | 0.9+ |
| 2003 12 17 | 704 | 0.3+ | 0.9− | 2003 12 30 | 704 | 0.2+ | 0.1+ | 2004 02 11 | 704 | 0.5+ | 0.6+ |
| 2003 12 17 | 704 | 0.1+ | 0.4+ | 2003 12 30 | 704 | 0.4+ | 0.4+ | 2004 02 11 | 704 | 0.2+ | 0.8+ |
| 2003 12 17 | 704 | 0.4+ | 0.2− | 2003 12 30 | 704 | 0.2+ | 0.3+ | 2004 02 11 | 704 | 0.4+ | 0.5+ |
| 2003 12 17 | 704 | 1.1− | 0.4− | 2004 01 19 | 704 | 0.5+ | 0.2− | 2004 02 11 | 704 | 0.6+ | 0.1− |
| 2003 12 17 | 699 | 0.2− | 0.6− | 2004 01 19 | 704 | 0.4+ | 0.1+ | 2004 02 26 | 703 | 0.4+ | 0.6− |
| 2003 12 17 | 699 | 0.6− | 0.0 | 2004 01 19 | 704 | 0.3+ | 0.3− | 2004 02 26 | 703 | 0.9− | 1.8− |
| 2003 12 17 | 699 | 0.2− | 0.1− | 2004 01 19 | 704 | 0.1+ | 0.1+ | 2004 02 26 | 703 | (1.2− | 2.7−) |
| 2003 12 17 | 699 | 0.6− | 0.6− | 2004 01 19 | 704 | 0.3+ | 0.3+ | 2004 02 26 | 703 | 1.0− | 0.6− |
| 2003 12 28 | 704 | 0.5− | 0.3− | 2004 01 31 | 699 | 0.1− | 0.9− | 2006 09 20 | 703 | 0.3− | 0.0 |
| 2003 12 28 | 704 | 0.1+ | 0.1− | 2004 01 31 | 699 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.0 |
| 2003 12 28 | 704 | 0.1+ | 0.6+ | 2004 01 31 | 699 | 0.2− | 0.1+ | 2006 09 20 | 703 | 0.2+ | 0.3+ |
| 2003 12 28 | 704 | 0.3+ | 0.1+ | 2004 01 31 | 699 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.2+ | 0.7− |
| 2003 12 28 | 704 | 0.2− | 0.3− | 2004 02 02 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 1.3− | 0.1+ |
| 2003 12 29 | 703 | 0.9− | 0.0 | 2004 02 02 | 704 | 0.1+ | 0.1− | 2006 09 26 | 703 | 1.0+ | 0.3+ |
| 2003 12 29 | 703 | 0.3+ | 0.3+ | 2004 02 02 | 704 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2003 12 29 | 703 | 0.6− | 0.1− | 2004 02 09 | 644 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.2− |

**2003 YF$_{136}$ = 2006 WZ$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.38172 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31177124 | $\omega$ | 99.04475 | | +0.99497468 | | −0.07937500 |
| $a$ | 2.1539982 | $\Omega$ | 265.52479 | | +0.04917857 | | +0.91837285 |
| $e$ | 0.2811786 | $i$ | 3.50981 | | +0.08721728 | | +0.38767374 |
| $P$ | 3.16 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 291 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 17 | 691 | 0.0 | 0.3− |
| 2003 12 27 | 291 | 0.1− | 0.4− | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.7− |
| 2003 12 27 | 291 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.4+ | 2006 11 19 | 704 | (2.1− | 0.7+) |
| 2003 12 30 | 291 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.8− | 0.2− | 2006 11 19 | 704 | 0.5+ | 1.1− |
| 2003 12 30 | 291 | 0.5− | 0.1− | 2006 11 11 | 703 | 1.4− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2003 12 30 | 291 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2003 12 31 | 291 | 0.8+ | 0.8+ | 2006 11 16 | 704 | (1.4− | 1.9+) | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2003 12 31 | 291 | 0.3+ | 0.7+ | 2006 11 16 | 704 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.7+ |
| 2003 12 31 | 291 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.5− | 0.6+ | 2006 11 22 | 704 | 0.3− | 0.2− |
| 2006 10 20 | G96 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.6+ | 1.0+ | 2006 11 22 | 704 | 0.3− | 0.8− |
| 2006 10 20 | G96 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.5− | | | | |

**2003 YH$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.33411 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28460260 | $\omega$ | 68.52718 | | +0.01987299 | | −0.99973710 |
| $a$ | 2.2889878 | $\Omega$ | 20.34414 | | +0.90469323 | | +0.01311183 |
| $e$ | 0.1433409 | $i$ | 1.88521 | | +0.42559983 | | +0.01881012 |
| $P$ | 3.46 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 691 | 0.3+ | 0.1+ | 2003 12 28 | 691 | 0.5− | 0.1+ | 2006 09 14 | 691 | 0.3− | 0.2+ |
| 2001 02 22 | 691 | 0.2+ | 0.3+ | 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.0 |
| 2001 02 22 | 691 | 0.4− | 0.1− | 2003 12 28 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.3+ |
| 2003 12 22 | 704 | 1.2+ | 0.5− | 2003 12 28 | 704 | 0.9− | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.3+ | 2003 12 28 | 704 | 0.1+ | 0.5− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2003 12 22 | 704 | 0.5− | 0.2+ | 2003 12 28 | 704 | 0.4− | 1.0− | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2003 12 22 | 704 | 0.1− | 0.1+ | 2003 12 30 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.7+ | 0.6− | 2003 12 30 | 704 | 0.9− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 0.8+ | 0.0 | 2003 12 30 | 704 | 1.1+ | 0.6− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 0.6− | 0.2+ | 2003 12 30 | 704 | 0.4− | 0.8+ | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2003 12 22 | 704 | 0.1+ | 0.2+ | 2003 12 30 | 704 | 1.2− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 1.0+ | 1.0+ | 2004 01 22 | 704 | 0.4+ | 1.0− | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2003 12 27 | 704 | 0.2+ | 0.6− | 2004 01 22 | 704 | 0.0 | 1.1− | 2006 10 16 | G96 | 0.1− | 0.6− |
| 2003 12 27 | 704 | 0.3+ | 0.6− | 2004 01 22 | 704 | 0.8− | 0.3+ | 2006 10 16 | G96 | 0.7+ | 0.2− |
| 2003 12 27 | 704 | 0.5+ | 0.4− | 2004 01 22 | 704 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2003 12 27 | 704 | 0.0 | 0.4+ | 2004 01 22 | 704 | 1.0+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.5+ | 0.6− | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2003 12 27 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.3− |

**2003 YP$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.35829 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25534023 | $\omega$ | 100.18932 | | −0.97379558 | | −0.22155686 |
| $a$ | 2.4606880 | $\Omega$ | 67.02507 | | +0.18066666 | | −0.89071141 |
| $e$ | 0.1817355 | $i$ | 3.19602 | | +0.13813663 | | −0.39692032 |
| $P$ | 3.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 02 11 | 699 | (2.2− | 1.9−) |
| 2002 10 04 | 644 | 0.5− | 0.6+ | 2004 01 18 | 691 | 0.2− | 0.0 | 2004 02 11 | 699 | 0.2− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.1− | 0.7+ | 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 02 11 | 699 | 1.0− | 0.3+ |
| 2003 12 19 | 691 | 0.0 | 0.0 | 2004 01 20 | 704 | 1.4+ | 0.2+ | 2004 02 15 | 704 | (1.6− | 1.0+) |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 01 20 | 704 | 0.0 | 0.7+ | 2004 02 15 | 704 | 1.3− | 0.9+ |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2004 01 20 | 704 | 0.5+ | 0.5+ | 2004 02 15 | 704 | 1.4− | 0.7+ |
| 2003 12 27 | 704 | 0.4− | 0.2+ | 2004 01 20 | 704 | 1.0+ | 0.2+ | 2004 02 15 | 704 | 1.2− | 0.6+ |
| 2003 12 27 | 704 | 0.4+ | 0.7− | 2004 01 22 | 704 | 0.8+ | 0.3− | 2004 02 15 | 704 | 1.0− | 0.4+ |
| 2003 12 27 | 704 | 0.3+ | 0.7+ | 2004 01 22 | 704 | (0.4+ | 2.1+) | 2006 09 28 | 691 | 0.2+ | 0.3+ |
| 2003 12 27 | 704 | 0.4+ | 0.4− | 2004 01 22 | 704 | 0.5− | 0.8− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2003 12 27 | 704 | 0.1− | 1.2+ | 2004 01 22 | 704 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2003 12 29 | 699 | 0.4+ | 1.2+ | 2004 01 22 | 704 | 0.8+ | 1.1− | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2003 12 29 | 699 | 0.4+ | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.3− |
| 2003 12 29 | 699 | 0.8− | 0.6+ | 2004 01 22 | 704 | 0.2+ | 1.0− | 2006 10 02 | 691 | 0.2− | 0.3− |
| 2003 12 29 | 699 | 0.4− | 0.7− | 2004 01 22 | 704 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2004 01 13 | 699 | 0.8− | 1.2− | 2004 01 24 | 704 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2004 01 13 | 699 | 0.1− | 0.4+ | 2004 01 24 | 704 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 01 13 | 699 | 0.4− | 0.1− | 2004 01 24 | 704 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2004 01 13 | 699 | 0.2+ | 0.5− | 2004 01 31 | 704 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2004 01 15 | 691 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.7+ | 0.6− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2004 01 15 | 691 | 0.1− | 0.0 | 2004 01 31 | 704 | 1.2+ | 1.4− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 01 15 | 691 | (2.6+ | 1.5−) | 2004 02 11 | 699 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |

**2003 YC$_{138}$ = 2006 WN$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.94842 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29239789 | $\omega$ | 69.36466 | | −0.99103019 | | −0.04541373 |
| $a$ | 2.2481221 | $\Omega$ | 107.86394 | | −0.00248930 | | −0.93405194 |
| $e$ | 0.0280158 | $i$ | 7.58817 | | +0.13361500 | | −0.35423800 |
| $P$ | 3.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.1− | 0.1+ | 2003 12 29 | 699 | 0.5− | 0.0 | 2004 02 11 | 699 | 0.2+ | 0.4− |
| 2002 08 19 | 644 | 0.3− | 0.2+ | 2004 01 12 | 644 | 0.2− | 0.7+ | 2004 02 11 | 699 | 0.4− | 0.9− |
| 2002 08 19 | 644 | 0.1+ | 0.5+ | 2004 01 12 | 644 | 0.1+ | 0.1− | 2004 02 15 | 704 | 1.0+ | 0.0 |
| 2003 12 22 | 704 | 0.5+ | 0.5− | 2004 01 12 | 644 | 0.6− | 0.0 | 2004 02 15 | 704 | 1.1− | 0.3+ |
| 2003 12 22 | 704 | 0.9+ | 0.1− | 2004 01 22 | 704 | 0.0 | 0.4+ | 2004 02 15 | 704 | 0.8+ | 1.3+ |
| 2003 12 22 | 704 | 0.2+ | 0.3− | 2004 01 22 | 704 | 0.2− | 0.1− | 2004 02 15 | 704 | (2.3+ | 0.7+) |
| 2003 12 27 | 704 | 0.2+ | 0.1+ | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2003 12 27 | 704 | 0.6+ | 0.1− | 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2003 12 27 | 704 | 0.0 | 0.5− | 2004 01 22 | 704 | 0.6+ | 0.3− | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2003 12 27 | 704 | 0.1+ | 0.3+ | 2004 01 30 | 704 | (1.6− | 0.8+) | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2003 12 27 | 704 | 0.5− | 0.7+ | 2004 01 30 | 704 | 0.1+ | 1.0+ | 2006 11 25 | 703 | 0.1+ | 0.6+ |
| 2003 12 29 | 699 | (1.6− | 0.9+) | 2004 01 30 | 704 | 0.7+ | 0.0 | 2006 11 25 | 703 | 0.2− | 0.0 |
| 2003 12 29 | 699 | 0.2+ | 0.9− | 2004 02 11 | 699 | 1.4− | 1.3− | 2006 11 25 | 703 | 0.0 | 0.4+ |
| 2003 12 29 | 699 | 0.7− | 0.8+ | 2004 02 11 | 699 | 0.5− | 0.2+ | 2006 11 25 | 703 | 0.5− | 0.0 |

**2003 YO$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.90378 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24104528 | $\omega$ | 63.81241 | | −0.30031174 | | −0.94286903 |
| $a$ | 2.5570367 | $\Omega$ | 44.47499 | | +0.78505648 | | −0.33022819 |
| $e$ | 0.0258853 | $i$ | 11.88274 | | +0.54175565 | | −0.04412848 |
| $P$ | 4.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 691 | 0.3− | 0.0 | 2003 12 28 | 704 | 1.2− | 0.3+ | 2005 04 06 | G96 | 0.2− | 0.3− |
| 2001 04 24 | 691 | 0.0 | 0.8− | 2003 12 28 | 704 | 0.4+ | 0.5+ | 2005 04 16 | 691 | 0.2+ | 0.2+ |
| 2001 04 24 | 691 | 0.1− | 0.1+ | 2003 12 28 | 704 | 0.1− | 0.4− | 2005 04 16 | 691 | 0.1+ | 0.2+ |
| 2003 12 18 | 704 | 1.0+ | 0.3+ | 2003 12 28 | 704 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.2+ | 0.1+ |
| 2003 12 18 | 704 | 0.8− | 0.2+ | 2003 12 28 | 704 | 0.1+ | 0.1+ | 2005 05 14 | 644 | 0.6+ | 0.2+ |
| 2003 12 18 | 704 | 0.5− | 0.2+ | 2003 12 30 | 704 | 0.5− | 1.0+ | 2005 05 14 | 644 | 0.2+ | 0.6+ |
| 2003 12 18 | 704 | 0.1+ | 0.3− | 2003 12 30 | 704 | 0.0 | 0.8+ | 2005 05 14 | 644 | 0.3+ | 0.2+ |
| 2003 12 18 | 704 | 0.2+ | 1.7− | 2003 12 30 | 704 | 0.5+ | 0.6+ | 2005 06 01 | G96 | 0.2− | 0.1− |
| 2003 12 18 | 704 | 1.2+ | 1.2− | 2005 04 06 | G96 | 0.3− | 0.2− | 2005 06 01 | G96 | 0.6− | 0.1− |
| 2003 12 18 | 704 | 0.6+ | 0.6− | 2005 04 06 | G96 | 0.3− | 0.1− | 2005 06 01 | G96 | 0.0 | 0.0 |
| 2003 12 18 | 704 | 1.0− | 0.7− | 2005 04 06 | G96 | 0.2− | 0.1− | 2005 06 01 | G96 | 0.3− | 0.1− |

**2003 YK$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.39440 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17298351 | $\omega$ | 226.35476 | | −0.94766764 | | +0.15354768 |
| $a$ | 3.1900654 | $\Omega$ | 319.92328 | | +0.07534097 | | −0.74442621 |
| $e$ | 0.1754054 | $i$ | 25.77053 | | −0.31024151 | | −0.64980976 |
| $P$ | 5.70 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 644 | 0.1− | 0.0 | 2004 01 30 | 703 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.9+ | 0.1+ |
| 2003 12 17 | 644 | 0.4− | 0.7+ | 2004 01 30 | 703 | 1.0− | 0.1− | 2004 03 19 | 704 | 0.5− | 0.6+ |
| 2003 12 17 | 644 | 0.1− | 0.2− | 2004 01 30 | 703 | 0.9− | 0.7− | 2004 03 19 | 704 | 0.2− | 0.1− |
| 2003 12 28 | 704 | 0.1+ | 0.1− | 2004 01 30 | 703 | 0.5− | 0.1− | 2004 03 19 | 704 | 0.5+ | 1.0+ |
| 2003 12 28 | 704 | 1.1+ | 1.0+ | 2004 01 31 | 704 | 0.5+ | 0.2− | 2004 03 19 | 704 | 0.5+ | 0.4− |
| 2003 12 28 | 704 | 0.4+ | 1.2− | 2004 01 31 | 704 | 0.5+ | 0.8− | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 2003 12 30 | 704 | 0.4− | 0.0 | 2004 01 31 | 704 | 0.3+ | 0.6− | 2006 09 27 | G96 | 0.1+ | 0.3+ |
| 2003 12 30 | 704 | 0.3− | 0.4− | 2004 01 31 | 704 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.1− | 0.3+ |
| 2003 12 30 | 704 | 0.2+ | 0.5+ | 2004 01 31 | 704 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2003 12 30 | 704 | 0.1+ | 0.9+ | 2004 02 14 | 704 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2003 12 30 | 704 | 0.1+ | 0.7+ | 2004 02 14 | 704 | 0.7− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 01 17 | 644 | 0.2− | 0.3+ | 2004 02 14 | 704 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2004 01 17 | 644 | 0.3− | 0.1+ | 2004 02 14 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2004 02 14 | 704 | 0.3+ | 0.5− | | | | |

**2003 YU$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.95157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28306672 | $\omega$ | 60.43483 | | −0.25331706 | | −0.96139058 |
| $a$ | 2.2972601 | $\Omega$ | 44.66550 | | +0.82621077 | | −0.27281831 |
| $e$ | 0.1790614 | $i$ | 8.79728 | | +0.50319602 | | −0.03603210 |
| $P$ | 3.48 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2− | 0.3+ | 2004 02 02 | 704 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.2− |
| 1999 10 09 | 704 | 0.0 | 0.1+ | 2004 02 14 | 704 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.7− |
| 1999 10 09 | 704 | 0.5+ | 1.2− | 2004 02 14 | 704 | 0.3− | 0.3+ | 2006 10 21 | 703 | 1.2− | 1.2+ |
| 1999 10 09 | 704 | 0.1+ | 0.1+ | 2004 02 14 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 2001 05 14 | 691 | 0.5− | 0.5− | 2004 02 14 | 704 | 0.0 | 0.8+ | 2006 10 21 | 703 | 0.1− | 0.8+ |
| 2001 05 14 | 691 | 0.2+ | 0.1+ | 2004 02 14 | 704 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2001 05 14 | 691 | 0.0 | 0.1− | 2004 02 16 | 703 | 0.6− | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2003 11 21 | 644 | 0.1+ | 0.3+ | 2004 02 16 | 703 | 0.5− | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2003 11 21 | 644 | 0.0 | 0.2+ | 2004 02 16 | 703 | 0.9− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2003 11 21 | 644 | 0.1+ | 0.3+ | 2004 02 16 | 703 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 12 18 | 703 | 0.6− | 0.9+ | 2004 03 20 | 703 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 12 18 | 703 | 0.6− | 0.3− | 2004 03 20 | 703 | 0.9+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2003 12 18 | 703 | 0.2− | 0.8+ | 2004 03 20 | 703 | 0.7+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2003 12 18 | 703 | 0.3+ | 0.2− | 2004 03 20 | 703 | 0.3+ | 1.0+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2003 12 18 | 704 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.5+ | 0.7+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2003 12 18 | 704 | 1.2− | 0.0 | 2004 03 23 | 704 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2003 12 18 | 704 | 0.1− | 0.3+ | 2004 03 23 | 704 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.7− | 0.3− |
| 2003 12 28 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2003 12 28 | 704 | 0.5− | 0.3− | 2004 03 25 | 704 | 0.7+ | 1.4+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2003 12 28 | 704 | 0.2+ | 0.7− | 2004 03 25 | 704 | 0.6+ | 0.5+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2003 12 28 | 704 | 0.1− | 0.4+ | 2004 03 25 | 704 | 0.8+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2003 12 30 | 704 | 0.1+ | 0.3− | 2004 03 25 | 704 | 0.3+ | 0.8− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2003 12 30 | 704 | 0.0 | 0.3− | 2004 03 25 | 704 | 1.0+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2003 12 30 | 704 | 0.2+ | 0.9− | 2006 09 30 | 703 | 1.2− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2003 12 30 | 704 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.1+ |
| 2004 01 17 | 644 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.8− | 0.9− | 2006 11 17 | 703 | 0.5+ | 0.7− |
| 2004 01 17 | 644 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.5− | 0.8− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2004 01 17 | 644 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 11 18 | 704 | 0.4− | 1.2+ |
| 2004 01 17 | 644 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.7− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2004 01 17 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.5+ |
| 2004 01 17 | 644 | 0.3− | 0.2− | 2006 09 30 | 703 | 1.1− | 0.4− | 2006 11 18 | 704 | 1.3− | 0.7+ |
| 2004 01 19 | 704 | 0.9+ | 0.6− | 2006 10 01 | 704 | 0.2+ | 0.9+ | 2006 11 18 | 704 | 0.4+ | 1.3+ |
| 2004 01 19 | 704 | 0.8+ | 0.5− | 2006 10 01 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 704 | 0.7+ | 0.1− | 2006 10 01 | 704 | 1.0+ | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.1+ | | |
| 2004 01 19 | 704 | 0.7+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.1− | | |
| 2004 01 31 | 699 | 0.6+ | 0.3− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.1− | 0.1− | | |
| 2004 01 31 | 699 | (2.3− | 2.4−) | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.0 | 0.4− | | |
| 2004 01 31 | 699 | 0.6− | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.6− | | |
| 2004 01 31 | 699 | 0.8− | 1.3− | 2006 10 15 | 703 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.9+ | 0.4− | | |
| 2004 01 31 | 704 | 0.3+ | 0.1+ | 2006 10 15 | 703 | (0.4− | 2.7+) | 2006 11 21 | 704 | 0.9+ | 0.4+ | | |
| 2004 01 31 | 704 | 0.4+ | 0.4− | 2006 10 15 | 703 | 0.7+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.2+ | | |
| 2004 01 31 | 704 | 1.2− | 0.2+ | 2006 10 15 | 703 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.4+ | | |
| 2004 01 31 | 704 | (2.0− | 0.7+) | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.7+ | | |
| 2004 02 02 | 704 | 0.5− | 0.5− | 2006 10 19 | 644 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.4− | 0.5+ | | |
| 2004 02 02 | 704 | 0.6− | 0.5− | 2006 10 19 | 644 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 0.3+ | 0.5− | | |
| 2004 02 02 | 704 | 0.2+ | 1.5− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.5− | | |
| 2004 02 02 | 704 | 0.0 | 1.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.2− | | |

### 2003 YD$_{146}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.14706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24719337 | $\omega$ | 298.92469 | | +0.96597177 | | +0.21554262 |
| $a$ | 2.5144606 | $\Omega$ | 49.01537 | | −0.11622446 | | +0.85552899 |
| $e$ | 0.1768589 | $i$ | 10.91723 | | −0.23106367 | | +0.47075634 |
| $P$ | 3.99 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.3− | 0.7− | 2002 09 26 | 704 | 0.5− | 1.0+ | 2006 07 30 | E12 | 0.1+ | 0.1− | | |
| 1993 04 19 | 691 | 0.3− | 0.7− | 2003 12 28 | 704 | 1.0+ | 0.0 | 2006 07 30 | E12 | 0.2− | 0.1− | | |
| 2000 01 31 | 704 | 0.1+ | 0.2+ | 2003 12 28 | 704 | 0.7+ | 0.4− | 2006 07 30 | E12 | 0.1− | 0.4+ | | |
| 2000 01 31 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 704 | 0.9+ | 0.0 | 2006 07 30 | E12 | 0.8− | 0.3+ | | |
| 2000 01 31 | 704 | 0.1− | 0.9+ | 2003 12 30 | 704 | 0.4+ | 0.5− | 2006 08 15 | E12 | 1.0− | 0.5− | | |
| 2000 01 31 | 704 | 0.7− | 1.8+ | 2003 12 30 | 704 | 0.6− | 0.8+ | 2006 08 15 | E12 | 0.9+ | 0.5− | | |
| 2002 08 13 | 704 | 0.2+ | 0.1− | 2003 12 30 | 704 | 0.1− | 0.1− | 2006 08 15 | E12 | 0.5− | 0.4+ | | |
| 2002 08 13 | 704 | 0.2− | 0.0 | 2004 01 18 | 644 | 0.4− | 0.2+ | 2006 08 15 | E12 | 0.0 | 0.9+ | | |
| 2002 08 13 | 704 | 0.2− | 0.1− | 2004 01 18 | 644 | 0.2− | 0.2+ | 2006 08 28 | E12 | 0.6− | 0.2+ | | |
| 2002 08 13 | 704 | 0.1+ | 0.6− | 2004 01 18 | 644 | 0.2− | 0.1+ | 2006 08 28 | E12 | 0.2+ | 0.1+ | | |
| 2002 08 13 | 704 | 0.4− | 0.8+ | 2005 04 09 | 704 | 0.2+ | 0.2− | 2006 08 28 | E12 | 0.3+ | 0.2− | | |
| 2002 08 21 | 644 | 0.1+ | 0.0 | 2005 04 09 | 704 | 0.8− | 0.5− | 2006 08 28 | E12 | 0.0 | 0.2+ | | |
| 2002 08 21 | 644 | 0.0 | 0.1+ | 2005 04 09 | 704 | 0.7− | 0.4+ | 2006 09 17 | 699 | 0.0 | 0.5− | | |
| 2002 08 21 | 644 | 0.2− | 0.2+ | 2005 04 15 | 699 | (0.7− | 1.6+) | 2006 09 17 | 699 | 0.1− | 0.0 | | |
| 2002 09 01 | 644 | 0.3+ | 0.0 | 2005 04 15 | 699 | 0.1− | 0.3+ | 2006 09 17 | 699 | 0.3+ | 0.6+ | | |
| 2002 09 01 | 644 | 0.1− | 0.3− | 2005 04 15 | 699 | 0.2+ | 0.7+ | 2006 09 17 | 699 | 0.5− | 0.0 | | |
| 2002 09 01 | 644 | 0.2+ | 0.1+ | 2005 04 15 | 699 | (1.8− | 1.1+) | 2006 09 27 | E12 | 0.5+ | 0.1− | | |
| 2002 09 10 | 644 | 0.1− | 0.1+ | 2005 05 04 | 691 | 0.2+ | 0.5+ | 2006 09 27 | E12 | 0.4− | 0.2+ | | |
| 2002 09 10 | 644 | 0.3− | 0.4+ | 2005 05 04 | 691 | 0.2+ | 0.5+ | 2006 09 27 | E12 | 0.2+ | 0.3− | | |
| 2002 09 10 | 644 | 0.1− | 0.0 | 2005 05 04 | 691 | 0.4+ | 0.5+ | 2006 09 27 | E12 | 0.2− | 0.2+ | | |
| 2002 09 26 | 704 | 0.4+ | 0.6− | 2005 05 08 | 703 | 0.5+ | 0.6− | 2006 10 11 | E12 | 0.4+ | 0.0 | | |
| 2002 09 26 | 704 | 0.6+ | 0.2− | 2005 05 08 | 703 | 0.9+ | 1.1− | 2006 10 11 | E12 | 0.7+ | 0.4+ | | |
| 2002 09 26 | 704 | 0.7− | 0.1+ | 2005 05 08 | 703 | 0.4− | 0.9+ | 2006 10 11 | E12 | 0.5+ | 0.2− | | |
| 2002 09 26 | 704 | 0.5− | 0.2+ | 2005 05 08 | 703 | 0.5+ | 1.5+ | 2006 10 11 | E12 | 0.3+ | 0.1− | | |

### 2003 YF$_{147}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.11515 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26197717 | $\omega$ | 177.00262 | | −0.93764161 | | −0.34383899 |
| $a$ | 2.4189511 | $\Omega$ | 342.61877 | | +0.31526236 | | −0.77936930 |
| $e$ | 0.2056583 | $i$ | 9.83365 | | +0.14641673 | | −0.52379217 |
| $P$ | 3.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.9− | 0.6+ | 2003 12 30 | 704 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.4− | 0.4+ | | |
| 2003 12 17 | 704 | 0.5− | 0.2− | 2003 12 30 | 704 | 0.9+ | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.2− | | |
| 2003 12 17 | 704 | 0.8− | 0.1− | 2003 12 30 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.2+ | | |
| 2003 12 17 | 704 | 0.2− | 0.0 | 2003 12 30 | 704 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.0 | | |
| 2003 12 17 | 704 | 0.2− | 0.4− | 2003 12 30 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | | |
| 2003 12 29 | 704 | 0.8+ | 0.0 | 2004 01 19 | 704 | 0.3− | 0.6− | 2006 10 20 | 691 | 0.3+ | 0.4− | | |
| 2003 12 29 | 704 | 0.6+ | 0.0 | 2004 01 19 | 704 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1+ | | |
| 2003 12 29 | 704 | 0.2+ | 0.3+ | 2004 01 19 | 704 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.0 | | |
| 2003 12 29 | 704 | 0.4− | 0.3+ | 2004 01 19 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.3− | | |
| 2003 12 29 | 704 | 0.5+ | 0.4+ | 2004 01 19 | 704 | 0.2− | 0.3− | | | | | | |

### 2003 YL$_{147}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.20484 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23884532 | $\omega$ | 59.02670 | | +0.38996215 | | −0.92048145 |
| $a$ | 2.5727143 | $\Omega$ | 8.14326 | | +0.77194349 | | +0.31176766 |
| $e$ | 0.0848116 | $i$ | 10.31593 | | +0.50202865 | | +0.23561586 |
| $P$ | 4.13 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.6− | 0.1+ | 2002 08 13 | 704 | 0.5+ | 1.9− | 2003 12 29 | 704 | 0.2+ | 0.5+ | | |
| 1999 12 13 | 704 | 0.6+ | 1.2− | 2002 08 13 | 644 | 0.3− | 0.6+ | 2003 12 29 | 704 | 0.3− | 0.3+ | | |
| 1999 12 13 | 704 | 0.2− | 1.1− | 2002 08 13 | 644 | 0.3− | 0.8+ | 2003 12 29 | 704 | 0.5+ | 0.4+ | | |
| 1999 12 13 | 704 | 0.5− | 0.4+ | 2002 08 13 | 644 | 0.0 | 0.5+ | 2003 12 29 | 704 | 0.5− | 0.4− | | |
| 2002 07 16 | 644 | 0.3− | 0.2+ | 2002 08 24 | 644 | 0.1− | 0.5+ | 2003 12 30 | 704 | 1.0− | 1.0+ | | |
| 2002 07 16 | 644 | 0.0 | 0.1+ | 2002 08 24 | 644 | 0.0 | 0.7+ | 2003 12 30 | 704 | 1.0+ | 0.0 | | |
| 2002 07 16 | 644 | 0.3− | 0.0 | 2002 08 24 | 644 | 0.3− | 0.3+ | 2003 12 30 | 704 | 0.3− | 0.7+ | | |
| 2002 07 29 | 644 | 0.1− | 0.4+ | 2002 08 30 | 644 | 0.2− | 0.8+ | 2003 12 30 | 704 | 0.4+ | 0.4+ | | |
| 2002 07 29 | 644 | 0.0 | 0.4+ | 2002 08 30 | 644 | 0.2− | 0.1+ | 2003 12 30 | 704 | 0.1− | 0.8+ | | |
| 2002 07 29 | 644 | 0.1+ | 0.6+ | 2002 08 30 | 644 | 0.3− | 0.6+ | 2005 04 15 | 691 | 0.3+ | 0.4+ | | |
| 2002 08 13 | 704 | 0.5− | 0.6− | 2003 11 24 | 704 | 0.6− | 0.6+ | 2005 04 15 | 691 | 0.1+ | 0.2+ | | |
| 2002 08 13 | 704 | 0.0 | 0.0 | 2003 11 24 | 704 | 0.5− | 1.5+ | 2005 04 15 | 691 | 0.1+ | 0.4+ | | |
| 2002 08 13 | 704 | 0.2+ | 0.2− | 2003 11 24 | 704 | 0.9+ | 0.7+ | | | | | | |
| 2002 08 13 | 704 | 0.3+ | 0.1+ | 2003 12 29 | 704 | 0.0 | 0.2+ | | | | | | |

### 2003 YU$_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.71911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15147450 | $\omega$ | 282.65594 | | +0.97675364 | | +0.12318861 |
| $a$ | 3.4853230 | $\Omega$ | 70.47620 | | −0.03224247 | | +0.89350274 |
| $e$ | 0.0890262 | $i$ | 10.72735 | | −0.21192627 | | +0.43183032 |
| $P$ | 6.51 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 608 | 0.3− | 1.1+ | 2002 10 15 | 644 | 0.4− | 0.7+ | 2003 12 29 | 704 | 0.1− | 0.2+ | | |
| 2002 10 07 | 608 | 0.6− | 0.9+ | 2002 10 15 | 644 | 0.2− | 0.7+ | 2003 12 29 | 704 | 0.2+ | 0.8+ | | |
| 2002 10 07 | 608 | 0.5− | 0.7+ | 2003 12 23 | 704 | 0.3+ | 0.7+ | 2003 12 30 | 704 | 0.6+ | 0.3+ | | |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.4− | 0.1− | 2003 12 30 | 704 | 0.8− | 0.6− | | |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2003 12 23 | 704 | 0.4+ | 0.8− | 2003 12 30 | 704 | 0.0 | 0.3+ | | |
| 2002 10 15 | 644 | 0.0 | 0.7+ | 2003 12 29 | 704 | 0.3− | 1.0− | | | | | | |

### 2003 YV$_{149}$ = 2006 SO$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.82884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27144658 | $\omega$ | 65.22300 | | +0.94618005 | | −0.31455720 |
| $a$ | 2.3623621 | $\Omega$ | 313.01056 | | +0.24637803 | | +0.85263071 |
| $e$ | 0.0698952 | $i$ | 5.97671 | | +0.20985989 | | +0.41722252 |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 691 | 0.1− | 0.5− | 2003 12 29 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.4+ | | |
| 1999 10 14 | 691 | 0.3+ | 0.5− | 2003 12 29 | 704 | 0.1+ | 0.3− | 2006 09 19 | 703 | 1.0− | 1.0− | | |
| 1999 10 14 | 691 | 0.2+ | 0.5− | 2003 12 30 | 704 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.1+ | | |
| 1999 10 31 | 703 | 0.6− | 0.6+ | 2003 12 30 | 704 | 0.9− | 0.7+ | 2006 09 25 | 704 | 0.5− | 0.1− | | |
| 1999 10 31 | 703 | 0.4+ | 0.7+ | 2003 12 30 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 704 | 1.1− | 0.6+ | | |
| 1999 10 31 | 703 | (2.3− | 1.6−) | 2003 12 30 | 704 | 0.8− | 0.1+ | 2006 09 25 | 704 | 0.5− | 0.2+ | | |
| 1999 10 31 | 703 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.7− | 0.1+ | 2006 09 25 | 704 | 0.9− | 0.8− | | |
| 2002 07 08 | 644 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.7+ | 2006 09 25 | 704 | 0.5+ | 0.3+ | | |
| 2002 07 08 | 644 | 0.1− | 0.5+ | 2006 08 29 | 703 | 0.3+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | | |
| 2002 07 08 | 644 | 0.1+ | 0.4+ | 2006 08 29 | 703 | (0.3− | 1.6+) | 2006 10 18 | 691 | 0.1+ | 0.1+ | | |
| 2003 12 18 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.0 | | |
| 2003 12 18 | 704 | 0.7+ | 0.7+ | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ | | |
| 2003 12 18 | 704 | 0.1− | 0.1− | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 704 | 0.5+ | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2003 12 23 | 704 | 0.8+ | 1.0+ | 2006 09 18 | 704 | 0.6+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2003 12 23 | 704 | 0.5+ | 0.3− | 2006 09 18 | 704 | 0.7− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2003 12 23 | 704 | 0.1− | 0.1− | 2006 09 18 | 704 | (1.6+ | 0.0 ) | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2003 12 23 | 704 | (0.3+ | 1.6+) | 2006 09 18 | 704 | 0.0 | 0.5+ | | | | |
| 2003 12 29 | 704 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.1− | | | | |

**2003 YT$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.57676 | | (2000.0) | | | |
| $n$ | 0.27455028 | $\omega$ | 138.46696 | | −0.89813854 | −0.43793624 |
| $a$ | 2.3445246 | $\Omega$ | 15.69886 | | +0.35505351 | −0.77525937 |
| $e$ | 0.2378941 | $i$ | 8.39080 | | +0.25939191 | −0.45517553 |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.3+ | 0.4+ | 2004 01 19 | 704 | 1.1+ | 0.6− | 2004 04 20 | 704 | 0.7+ | 0.0 |
| 2003 11 19 | 704 | 0.1+ | 0.4− | 2004 01 19 | 704 | 0.3+ | 0.7− | 2004 04 20 | 704 | (0.3+ | 1.8+) |
| 2003 11 19 | 704 | 0.4− | 0.7+ | 2004 01 19 | 704 | 0.5+ | 0.6− | 2004 04 20 | 704 | (1.4− | 1.7+) |
| 2003 11 19 | 704 | 0.4− | 0.1+ | 2004 01 19 | 704 | 0.3+ | 0.3− | 2004 04 22 | 704 | 0.1+ | 0.8+ |
| 2003 11 19 | 704 | 1.1+ | 0.1− | 2004 01 31 | 704 | 0.6+ | 0.1+ | 2004 04 22 | 704 | 0.1+ | 0.8+ |
| 2003 11 19 | 704 | 0.2+ | 0.1+ | 2004 01 31 | 704 | 0.4+ | 0.1− | 2004 04 22 | 704 | (1.2+ | 3.0+) |
| 2003 11 19 | 704 | 0.4− | 0.1+ | 2004 01 31 | 704 | 0.5+ | 0.3+ | 2006 09 18 | G98 | 0.5− | 0.5+ |
| 2003 11 19 | 704 | 0.1+ | 0.8− | 2004 01 31 | 704 | 0.3+ | 0.4− | 2006 09 18 | G98 | 0.0 | 0.1+ |
| 2003 12 04 | 704 | 0.1+ | 0.6− | 2004 01 31 | 704 | 0.1+ | 0.7− | 2006 09 18 | G98 | 0.8− | 0.6− |
| 2003 12 04 | 704 | 0.0 | 0.3− | 2004 02 02 | 704 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2003 12 04 | 704 | 0.2+ | 0.2− | 2004 02 02 | 704 | 0.4− | 0.4− | 2006 09 18 | G98 | 0.5+ | 0.6+ |
| 2003 12 04 | 704 | 0.0 | 0.6+ | 2004 02 02 | 704 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.2− | 0.0 |
| 2003 12 04 | 704 | 0.5+ | 0.6+ | 2004 02 02 | 704 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1− |
| 2003 12 17 | 699 | 0.3+ | 0.2+ | 2004 02 11 | 704 | 0.2− | 0.0 | 2006 09 18 | G98 | 0.2+ | 0.2− |
| 2003 12 17 | 699 | 0.2− | 0.0 | 2004 02 11 | 704 | 0.0 | 0.6+ | 2006 09 24 | 691 | 0.1− | 0.1− |
| 2003 12 17 | 704 | 0.3− | 0.1− | 2004 02 11 | 704 | 0.4− | 0.2− | 2006 09 24 | 691 | 0.1− | 0.3+ |
| 2003 12 17 | 699 | 0.5− | 0.3− | 2004 02 11 | 704 | 0.5− | 0.4− | 2006 09 24 | 691 | 0.2− | 0.2+ |
| 2003 12 17 | 704 | 0.3− | 0.3− | 2004 02 11 | 704 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2003 12 17 | 699 | 0.0 | 0.5− | 2004 03 20 | 703 | 0.7− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2003 12 17 | 704 | 0.9+ | 0.2+ | 2004 03 20 | 703 | 0.4− | 0.5− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2003 12 17 | 704 | 0.0 | 1.5+ | 2004 03 20 | 703 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1− |
| 2003 12 29 | 703 | 0.1− | 0.1− | 2004 03 20 | 703 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.1− |
| 2003 12 29 | 703 | 0.1− | 0.7− | 2004 03 23 | 704 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2003 12 29 | 704 | 0.5− | 0.4− | 2004 03 23 | 704 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.2− |
| 2003 12 29 | 703 | 0.4− | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.5− | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2003 12 29 | 704 | 0.4− | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.0 |
| 2003 12 29 | 703 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2003 12 29 | 704 | 0.6− | 0.1+ | 2004 04 09 | 703 | 0.2− | 1.3+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2003 12 29 | 704 | 0.4− | 0.3+ | 2004 04 09 | 703 | 0.8− | 1.0− | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2003 12 29 | 704 | 0.3− | 0.1+ | 2004 04 09 | 703 | 1.0+ | 1.3− | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2003 12 30 | 704 | 0.5− | 0.1+ | 2004 04 09 | 703 | 1.2+ | 1.0+ | 2006 10 17 | 703 | 1.1− | 0.7− |
| 2003 12 30 | 704 | 0.6− | 0.0 | 2004 04 14 | 699 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2003 12 30 | 704 | 0.3− | 0.2+ | 2004 04 14 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 1.1+ |
| 2003 12 30 | 704 | 0.5− | 0.4+ | 2004 04 14 | 699 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2003 12 30 | 704 | 0.6− | 0.3+ | 2004 04 14 | 704 | 0.7+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 01 18 | 703 | 0.2− | 0.3− | 2004 04 14 | 699 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2004 01 18 | 703 | 0.1− | 0.3+ | 2004 04 14 | 704 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2004 01 18 | 703 | 0.1+ | 0.5+ | 2004 04 14 | 704 | 0.4+ | 0.8+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2004 01 18 | 703 | 0.2− | 0.0 | 2004 04 20 | 704 | (1.6+ | 0.6+) | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2004 01 19 | 704 | 0.7+ | 0.2− | 2004 04 20 | 704 | 0.6+ | 0.4− | | | | |

**2003 YJ$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 199.96016 | | (2000.0) | | | |
| $n$ | 0.25361603 | $\omega$ | 138.01206 | | −0.98836055 | −0.05606093 |
| $a$ | 2.4718280 | $\Omega$ | 39.45377 | | −0.03054142 | −0.83757789 |
| $e$ | 0.1377587 | $i$ | 12.85911 | | +0.14903234 | −0.54343394 |
| $P$ | 3.89 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 03 | 704 | 0.8− | 0.4+ | 2003 12 29 | 704 | 0.6+ | 1.8+ | 2004 02 14 | 703 | 0.0 | 0.7− |
| 2003 12 03 | 704 | 0.0 | 0.9+ | 2003 12 29 | 704 | 1.4+ | 0.7+ | 2004 02 14 | 703 | 0.4− | 0.1+ |
| 2003 12 03 | 704 | 0.5− | 0.5+ | 2003 12 29 | 704 | 0.0 | 0.4+ | 2004 02 26 | 703 | (1.0+ | 2.6−) |
| 2003 12 03 | 704 | 0.7− | 1.0− | 2003 12 29 | 704 | 1.1− | 1.3+ | 2004 02 26 | 703 | 1.8+ | 1.5− |
| 2003 12 03 | 704 | 0.5− | 1.6+ | 2003 12 29 | 704 | 0.6− | 0.0 | 2004 02 26 | 703 | 1.1+ | 0.1+ |
| 2003 12 17 | 704 | 0.4+ | 0.2+ | 2003 12 29 | 704 | 0.9+ | 1.2− | 2004 02 26 | 703 | 0.3− | 0.8− |
| 2003 12 17 | 704 | 0.2− | 0.0 | 2003 12 30 | 704 | 0.0 | 0.6+ | 2006 10 16 | 703 | (0.7− | 2.6+) |
| 2003 12 17 | 704 | 0.1− | 0.3+ | 2003 12 30 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2003 12 17 | 704 | 0.5+ | 0.3− | 2003 12 30 | 704 | 0.7+ | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.1− |
| 2003 12 29 | 704 | 0.2− | 1.2− | 2003 12 30 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 1.3− | 0.9+ |
| 2003 12 29 | 704 | 0.7+ | 0.6− | 2004 01 30 | 703 | 1.2− | 0.1+ | 2006 11 17 | G96 | 0.6+ | 0.3− |
| 2003 12 29 | 704 | 0.8+ | 0.0 | 2004 01 30 | 703 | 0.5− | 0.4− | 2006 11 17 | G96 | 0.8+ | 0.3− |
| 2003 12 29 | 704 | 0.7+ | 0.5− | 2004 01 30 | 703 | 0.9− | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.6− |
| 2003 12 29 | 704 | (0.9+ | 2.1+) | 2004 01 30 | 703 | 1.3− | 1.0− | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2003 12 29 | 704 | 0.7+ | 0.1+ | 2004 02 14 | 703 | 0.2− | 0.3+ | | | | |
| 2003 12 29 | 704 | 0.0 | 1.2− | 2004 02 14 | 703 | (1.2− | 2.1+) | | | | |

**2003 YM$_{152}$ = 2006 SY$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 104.69510 | | (2000.0) | | | |
| $n$ | 0.23428725 | $\omega$ | 255.97152 | | −0.34270414 | +0.93910289 |
| $a$ | 2.6059752 | $\Omega$ | 353.80872 | | −0.74576580 | −0.28832455 |
| $e$ | 0.0973684 | $i$ | 13.56249 | | −0.57130311 | −0.18696181 |
| $P$ | 4.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 704 | 0.3+ | 0.6− | 2006 09 25 | 691 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.0 | 0.2− |
| 2003 12 29 | 704 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2003 12 29 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2003 12 30 | 704 | 1.1− | 0.1− | 2006 09 25 | 704 | 0.6+ | 0.4− | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2003 12 30 | 704 | 0.4− | 0.1+ | 2006 09 25 | 704 | (0.7+ | 1.7+) | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2003 12 30 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2004 01 19 | 704 | 0.9+ | 0.7− | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2004 01 19 | 704 | 0.9− | 0.8+ | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2004 01 19 | 704 | 0.1− | 0.7− | 2006 10 01 | 691 | 0.1− | 0.0 | | | | |
| 2006 09 25 | 691 | 0.0 | 0.8+ | 2006 10 01 | 691 | 0.1− | 0.1− | | | | |

**2003 YS$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 189.62488 | | (2000.0) | | | |
| $n$ | 0.17200080 | $\omega$ | 332.82660 | | +0.06487900 | −0.98701716 |
| $a$ | 3.2022046 | $\Omega$ | 113.14364 | | +0.94212461 | +0.01205290 |
| $e$ | 0.0271996 | $i$ | 9.19455 | | +0.32892543 | +0.16016199 |
| $P$ | 5.73 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.3− | 1.3+ | 2002 10 29 | 291 | 0.2− | 0.4+ | 2004 01 21 | 704 | 0.2− | 0.6+ |
| 2001 08 24 | 644 | 0.2− | 1.5+ | 2003 12 29 | 691 | 0.1+ | 0.2− | 2004 01 30 | 291 | 0.8+ | 0.1+ |
| 2001 08 24 | 644 | 0.2− | 1.7+ | 2003 12 29 | 691 | 0.0 | 0.2− | 2004 01 30 | 291 | 0.3− | 0.0 |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2003 12 29 | 691 | 0.0 | 0.3− | 2004 01 30 | 291 | 0.2− | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2003 12 30 | 704 | 0.3− | 0.6+ | 2005 03 03 | 703 | 1.1+ | 2.1+ |
| 2002 10 15 | 644 | 0.1− | 0.6+ | 2003 12 30 | 704 | 0.4− | 0.8+ | 2005 03 03 | 703 | 0.1+ | 0.8+ |
| 2002 10 15 | 644 | 0.1− | 0.2+ | 2003 12 30 | 704 | 0.1− | 0.7+ | 2005 03 03 | 703 | 0.5+ | 1.2+ |
| 2002 10 15 | 644 | 0.1− | 0.1+ | 2004 01 21 | 704 | 0.0 | 0.2+ | 2005 03 03 | 703 | 0.2+ | 1.2+ |
| 2002 10 29 | 291 | 0.2− | 0.2+ | 2004 01 21 | 704 | 0.1− | 0.7+ | | | | |
| 2002 10 29 | 291 | 0.6− | 0.3+ | 2004 01 21 | 704 | 0.0 | 0.5+ | | | | |

**2003 YV$_{157}$ = 2006 PH$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.24426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28841130 | $\omega$ | 34.80042 | | +0.99719213 | −0.05848341 | |
| $a$ | 2.2687912 | $\Omega$ | 328.45363 | | +0.02999790 | +0.88423230 | |
| $e$ | 0.1860393 | $i$ | 5.12888 | | +0.06861470 | +0.46337126 | |
| $P$ | 3.42 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 644 | 0.0 | 0.0 | 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.1− | 0.2+ |
| 2003 11 19 | 704 | 0.4− | 0.4+ | 2003 12 29 | 691 | 0.2+ | 0.2− | 2006 08 14 | 644 | 0.1+ | 0.2+ |
| 2003 11 19 | 704 | 0.7+ | 0.5+ | 2003 12 29 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2003 11 19 | 704 | 1.1+ | 0.3+ | 2003 12 29 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2003 11 19 | 644 | 0.3− | 0.3+ | 2003 12 29 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2003 11 19 | 704 | (0.9+ | 1.6+) | 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2003 11 19 | 644 | 0.1+ | 0.3+ | 2006 08 12 | 644 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2003 12 17 | 691 | 0.6− | 0.0 | 2006 08 12 | 644 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.7+ | 0.1− |
| 2003 12 17 | 691 | 0.2− | 0.2+ | 2006 08 12 | 644 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2003 12 17 | 691 | 0.3+ | 0.5− | 2006 08 14 | 644 | 0.1− | 0.2+ | | | | |

**2003 YX$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.09984 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17980687 | $\omega$ | 351.51543 | | +0.95569127 | −0.28107665 | |
| $a$ | 3.1088411 | $\Omega$ | 25.34309 | | +0.28065228 | +0.78035597 | |
| $e$ | 0.1851890 | $i$ | 11.79083 | | +0.08881721 | +0.55860583 | |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 1.4+ | 0.8+ | 2002 08 31 | 704 | 0.2− | 0.7+ | 2003 12 28 | 704 | 0.9− | 0.5+ |
| 1997 10 30 | 704 | 2.2− | 0.7+ | 2002 08 31 | 704 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.1+ |
| 1997 10 30 | 704 | 1.5− | 0.5+ | 2003 11 19 | 704 | 0.2− | 0.2+ | 2003 12 28 | 704 | 0.3− | 0.2+ |
| 1997 10 30 | 704 | 1.2+ | 0.1− | 2003 11 19 | 704 | 0.3− | 0.7+ | 2006 03 26 | 691 | 0.6+ | 0.4+ |
| 1997 10 30 | 704 | 1.2+ | 0.1+ | 2003 11 19 | 704 | 1.5+ | 0.0 | 2006 03 26 | 691 | 0.2+ | 0.4+ |
| 2000 05 04 | 645 | 0.1− | 0.0 | 2003 11 19 | 704 | 0.6− | 0.0 | 2006 03 26 | 691 | 0.5+ | 0.1+ |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2003 12 17 | 704 | 0.5+ | 1.0− | 2006 05 06 | G96 | 0.4+ | 0.2+ |
| 2002 08 13 | 704 | 0.8− | 0.8− | 2003 12 17 | 704 | 0.7− | 0.3− | 2006 05 06 | G96 | 0.1− | 0.2+ |
| 2002 08 13 | 704 | 0.4+ | 0.1− | 2003 12 17 | 704 | 0.1− | 0.5+ | 2006 05 06 | G96 | 0.0 | 0.2+ |
| 2002 08 13 | 704 | 0.3− | 0.7− | 2003 12 17 | 704 | 0.3+ | 0.1+ | 2006 05 06 | G96 | 0.0 | 0.2+ |
| 2002 08 13 | 704 | 0.0 | 0.1+ | 2003 12 17 | 704 | 0.2− | 0.3+ | 2006 05 06 | G96 | 0.1− | 0.2+ |
| 2002 08 13 | 704 | 0.7− | 1.2− | 2003 12 28 | 704 | 0.3+ | 0.5+ | 2006 05 06 | G96 | 0.1− | 0.2+ |
| 2002 08 20 | 644 | 0.1− | 0.2+ | 2003 12 28 | 704 | 0.4− | 0.1+ | 2006 05 06 | G96 | 0.3+ | 0.1− |
| 2002 08 20 | 644 | 0.1+ | 0.5+ | 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 05 06 | G96 | 0.6+ | 0.2+ |
| 2002 08 20 | 644 | 0.1+ | 0.5+ | 2003 12 28 | 704 | 0.2− | 0.1+ | | | | |
| 2002 08 31 | 704 | 0.1− | 0.6+ | 2003 12 28 | 704 | 1.2+ | 0.1+ | | | | |

**2003 YK$_{160}$ = 2006 UB$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.25845 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29879453 | $\omega$ | 102.51494 | | +0.37036396 | −0.92750617 | |
| $a$ | 2.2159211 | $\Omega$ | 325.61004 | | +0.81364218 | +0.35022440 | |
| $e$ | 0.1615547 | $i$ | 5.14226 | | +0.44812604 | +0.13067197 | |
| $P$ | 3.30 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.3+ | 0.5− | 2006 09 30 | 703 | 1.1+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 12 17 | 704 | 0.7− | 0.5− | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.5− | 0.3− |
| 2003 12 17 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2003 12 17 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | (1.7− | 1.0+) | 2006 10 19 | 644 | 0.2− | 0.5+ |
| 2003 12 17 | 704 | 0.3+ | 0.4− | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.1− | 0.5− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2003 12 23 | 704 | 0.3− | 1.4+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.5− | 0.0 |
| 2003 12 23 | 704 | 1.0− | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2003 12 23 | 704 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2003 12 28 | 704 | 0.6+ | 0.1− | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2003 12 28 | 704 | 0.4+ | 0.3− | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 12 28 | 704 | 0.2− | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2003 12 28 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2003 12 28 | 704 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.3+ | | | | |

**2003 YD$_{161}$ = 2006 UU$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.08151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28272734 | $\omega$ | 334.06727 | | −0.99424095 | −0.09871913 | |
| $a$ | 2.2990981 | $\Omega$ | 200.39698 | | +0.10662082 | −0.95045373 | |
| $e$ | 0.0340585 | $i$ | 6.87292 | | −0.01081352 | −0.29477490 | |
| $P$ | 3.49 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2005 05 04 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2003 11 18 | 691 | 0.3− | 0.1− | 2005 05 04 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.6+ | 0.2− |
| 2003 11 18 | 691 | 0.3+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.7− |
| 2003 11 18 | 691 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.8+ | 0.1− |
| 2003 12 17 | 691 | 0.4− | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2003 12 17 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2003 12 17 | 691 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2003 12 28 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.1+ |
| 2003 12 28 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.3+ | | | | |

**2003 YW$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.73301 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17595940 | $\omega$ | 214.47346 | | +0.95115234 | +0.27444842 | |
| $a$ | 3.1539955 | $\Omega$ | 128.95977 | | −0.22611066 | +0.93109009 | |
| $e$ | 0.0869253 | $i$ | 10.47545 | | −0.21019801 | +0.24031084 | |
| $P$ | 5.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.1− | 0.5− | 2002 09 08 | 608 | 0.2+ | 0.7+ | 2002 09 16 | 644 | 0.3− | 0.7− |
| 2002 08 12 | 608 | 0.3+ | 0.2+ | 2002 09 08 | 608 | 0.3+ | 0.7+ | 2003 12 17 | 691 | 0.1− | 0.0 |
| 2002 08 19 | 644 | 0.1+ | 0.3+ | 2002 09 08 | 608 | 0.4− | 0.4+ | 2003 12 17 | 691 | 0.2− | 0.1− |
| 2002 08 19 | 644 | 0.1− | 0.1− | 2002 09 13 | 608 | 0.3+ | 0.7− | 2003 12 17 | 691 | 0.1+ | 0.2− |
| 2002 08 19 | 644 | 0.3+ | 0.3+ | 2002 09 13 | 608 | 0.3− | 0.2+ | 2003 12 28 | 691 | 0.3+ | 0.2+ |
| 2002 08 30 | 644 | 0.4− | 0.2+ | 2002 09 13 | 608 | 0.2+ | 0.1− | 2003 12 28 | 691 | 0.3− | 0.3+ |
| 2002 08 30 | 644 | 0.4− | 0.4+ | 2002 09 16 | 644 | 0.3+ | 0.6− | 2003 12 28 | 691 | 0.3+ | 0.1− |
| 2002 08 30 | 644 | 0.1+ | 0.5− | 2002 09 16 | 644 | 0.1− | 0.2− | | | | |

**2003 YS$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.99730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18154846 | $\omega$ | 345.80970 | | +0.31269314 | −0.93030384 | |
| $a$ | 3.0889272 | $\Omega$ | 85.69336 | | +0.88914895 | +0.21568315 | |
| $e$ | 0.0835263 | $i$ | 11.08506 | | +0.33412145 | +0.29667413 | |
| $P$ | 5.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2003 12 17 | 699 | 0.7− | 0.4− | 2004 01 26 | 699 | 1.1− | 1.3− |
| 2002 10 15 | 644 | 0.2− | 0.0 | 2003 12 21 | 645 | 0.1+ | 0.2− | 2004 01 26 | 699 | 0.4− | 0.6+ |
| 2002 10 15 | 644 | 0.1− | 0.2+ | 2003 12 21 | 645 | 0.1+ | 0.3− | 2004 01 26 | 699 | 0.2− | 0.1− |
| 2003 10 24 | 691 | 0.3+ | 0.0 | 2003 12 23 | 704 | 0.6+ | 2.0+ | 2004 01 26 | 699 | 0.5+ | 0.3+ |
| 2003 10 24 | 691 | 0.2+ | 0.0 | 2003 12 23 | 704 | 0.2+ | 0.6+ | 2004 02 09 | 644 | 0.2+ | 0.2+ |
| 2003 10 24 | 691 | 0.1+ | 0.0 | 2003 12 23 | 704 | 0.6+ | 1.9+ | 2004 02 09 | 644 | 0.4+ | 0.3+ |
| 2003 11 24 | 291 | 0.1− | 0.4+ | 2003 12 23 | 704 | 1.6+ | 0.5+ | 2004 02 09 | 644 | 0.7+ | 0.2+ |
| 2003 11 24 | 291 | 0.5− | 0.4+ | 2003 12 28 | 704 | 0.8− | 0.2+ | 2005 04 05 | 599 | 0.1+ | 0.1− |
| 2003 11 24 | 291 | 0.4− | 0.5+ | 2003 12 28 | 704 | 0.1− | 0.5+ | 2005 04 05 | 599 | 0.5+ | 0.2+ |
| 2003 12 17 | 699 | 0.2− | 0.2+ | 2003 12 28 | 704 | 1.5− | 0.6− | 2005 04 06 | 599 | 0.2− | 0.6+ |
| 2003 12 17 | 699 | 0.4+ | 0.1− | 2003 12 28 | 704 | 0.5− | 0.0 | 2005 04 06 | 599 | 0.1+ | 0.3+ |
| 2003 12 17 | 699 | 0.3− | 0.2− | 2003 12 28 | 704 | 1.6− | 0.8+ | | | | |

**2003 YH$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.47234 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21890486 | $\omega$ | 102.90072 | | +0.80004544 | −0.59139874 | |
| $a$ | 2.7266692 | $\Omega$ | 293.44389 | | +0.49894974 | +0.74925985 | |
| $e$ | 0.0222926 | $i$ | 6.31223 | | +0.33313128 | +0.29808926 | |
| $P$ | 4.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.2− | 0.2+ | 2003 12 29 | 691 | 0.0 | 0.4− | 2004 02 11 | 691 | 0.1− | 0.2+ | |
| 1995 02 03 | 691 | 0.1+ | 0.3− | 2003 12 29 | 691 | 0.3− | 0.6− | 2006 09 15 | 691 | 0.4− | 0.3+ | |
| 1995 02 03 | 691 | 0.1+ | 0.0 | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2− | |
| 2003 12 17 | 291 | 0.1− | 0.4+ | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1− | |
| 2003 12 17 | 291 | 0.3− | 0.5+ | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.5+ | |
| 2003 12 17 | 291 | 0.2+ | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.5− | |
| 2003 12 29 | 691 | 0.2+ | 0.4− | 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2+ | |

**2003 YQ$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.96238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27999984 | $\omega$ | 38.10678 | | +0.08913727 | −0.99378681 | |
| $a$ | 2.3140045 | $\Omega$ | 46.88747 | | +0.88995401 | +0.04941798 | |
| $e$ | 0.0634735 | $i$ | 5.23845 | | +0.44725429 | +0.09972786 | |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.2+ | 0.2− | 2003 12 28 | 704 | 0.3+ | 0.5− | 2006 09 28 | 704 | (0.2+ | 1.9−) | |
| 2001 03 26 | 704 | 0.7+ | 0.0 | 2005 05 10 | G96 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.8− | 1.0+ | |
| 2001 03 26 | 704 | 0.9− | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.5− | |
| 2001 03 26 | 704 | (1.3+ | 1.5+) | 2005 05 10 | G96 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.6+ | 0.9+ | |
| 2003 11 24 | 704 | 0.1+ | 0.0 | 2005 05 10 | G96 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.0 | |
| 2003 11 24 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 703 | 1.2+ | 1.2+ | 2006 10 02 | G96 | 0.3− | 0.4− | |
| 2003 11 24 | 704 | 0.8− | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.7− | 2006 10 02 | G96 | 0.0 | 0.2− | |
| 2003 11 24 | 704 | 0.6+ | 1.2+ | 2006 09 18 | 703 | 0.6+ | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.2− | |
| 2003 12 18 | 704 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.1+ | 1.1− | 2006 10 02 | G96 | 0.1+ | 0.3− | |
| 2003 12 18 | 704 | 0.6− | 0.5− | 2006 09 18 | 699 | (1.6− | 0.6+) | 2006 10 16 | 703 | 1.0− | 0.9+ | |
| 2003 12 18 | 704 | 0.4− | 0.4− | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.9+ | 0.5− | |
| 2003 12 23 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 699 | (1.8− | 0.9+) | 2006 10 16 | 703 | 0.4− | 0.7− | |
| 2003 12 23 | 704 | 0.7+ | 1.0+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 16 | 703 | (1.6− | 1.4+) | |
| 2003 12 23 | 704 | 0.7+ | 0.8+ | 2006 09 20 | 644 | 0.4− | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.0 | |
| 2003 12 23 | 704 | (0.7+ | 2.1+) | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.6− | |
| 2003 12 28 | 704 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 22 | 703 | (0.3− | 2.3−) | |
| 2003 12 28 | 704 | 0.2− | 0.4− | 2006 09 28 | 704 | 0.7− | 1.3+ | 2006 10 22 | 703 | (0.2− | 2.0−) | |
| 2003 12 28 | 704 | 0.1− | 0.7− | 2006 09 28 | 704 | 0.2− | 0.3− | | | | | |
| 2003 12 28 | 704 | 0.5− | 0.6− | 2006 09 28 | 704 | 0.6+ | 0.6− | | | | | |

**2003 YM$_{169}$ = 2006 QZ$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.14850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27702611 | $\omega$ | 313.24397 | | +0.98856208 | −0.12403755 | |
| $a$ | 2.3305347 | $\Omega$ | 54.06155 | | +0.14957751 | +0.87908169 | |
| $e$ | 0.1323967 | $i$ | 6.08236 | | −0.01927653 | +0.46025000 | |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.4+ | 0.6+ | 2003 12 28 | 704 | 0.8− | 0.9+ | 2006 08 30 | 699 | 0.6+ | 0.1− | |
| 1999 10 08 | 704 | 0.1+ | 0.3− | 2003 12 28 | 704 | 0.6+ | 0.9+ | 2006 09 14 | 644 | 0.3− | 0.3+ | |
| 1999 10 08 | 704 | 0.2+ | 1.7− | 2003 12 28 | 704 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.2+ | |
| 2003 11 24 | 704 | 0.1− | 0.0 | 2003 12 28 | 704 | 0.1− | 0.4− | 2006 09 14 | 644 | 0.3− | 0.3+ | |
| 2003 11 24 | 704 | (3.1− | 0.2−) | 2005 04 12 | 691 | 0.0 | 0.1− | 2006 09 17 | 699 | 0.1− | 0.3− | |
| 2003 11 24 | 704 | (3.3− | 0.0 ) | 2005 04 12 | 691 | 0.0 | 0.3+ | 2006 09 17 | 699 | 0.5− | 0.2− | |
| 2003 11 24 | 704 | (4.0− | 0.9−) | 2005 04 12 | 691 | 0.2+ | 0.4− | 2006 09 17 | 699 | 0.4− | 0.3− | |
| 2003 11 24 | 704 | (3.2− | 1.1−) | 2005 05 08 | 691 | 0.1− | 0.0 | 2006 09 17 | 699 | 0.1− | 0.3+ | |
| 2003 12 18 | 704 | 0.6+ | 0.5− | 2005 05 08 | 691 | 0.1+ | 0.7+ | 2006 09 20 | 703 | (2.0− | 2.2+) | |
| 2003 12 18 | 704 | 0.5+ | 0.2+ | 2005 05 08 | 691 | 0.0 | 0.3+ | 2006 09 20 | 703 | (0.2− | 2.7+) | |
| 2003 12 18 | 704 | 0.1− | 0.1− | 2006 08 28 | E12 | 0.6+ | 0.1− | 2006 09 20 | 703 | (1.0+ | 2.7+) | |
| 2003 12 23 | 704 | 0.8+ | 1.3+ | 2006 08 28 | E12 | 0.4+ | 0.0 | 2006 09 20 | 703 | 0.3+ | 0.0 | |
| 2003 12 23 | 704 | 0.2+ | 0.6− | 2006 08 28 | E12 | 0.2− | 1.0+ | 2006 09 26 | 703 | 0.5− | 0.9− | |
| 2003 12 23 | 704 | 1.4− | 0.6− | 2006 08 28 | E12 | 0.6+ | 0.8+ | 2006 09 26 | 703 | 0.7− | 0.8+ | |
| 2003 12 23 | 704 | 0.3− | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.1+ | 0.1− | |
| 2003 12 23 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 699 | 0.9− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ | |
| 2003 12 28 | 704 | 0.1− | 0.5+ | 2006 08 30 | 699 | 0.4− | 0.9+ | | | | | |

**2003 YW$_{173}$ = 2006 SS$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.28217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28186747 | $\omega$ | 232.23411 | | +0.53490658 | +0.83572042 | |
| $a$ | 2.3037715 | $\Omega$ | 70.54556 | | −0.72782615 | +0.53047705 | |
| $e$ | 0.1400196 | $i$ | 7.57412 | | −0.42912008 | +0.14200519 | |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.9− | 0.3− | 2003 12 29 | 691 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.2+ | 0.1− | |
| 1999 09 08 | 703 | 0.7− | 0.7+ | 2003 12 29 | 691 | 0.3− | 0.6+ | 2006 09 17 | 699 | 1.0+ | 0.2+ | |
| 1999 09 08 | 703 | 0.3+ | 0.6+ | 2005 03 10 | 699 | 0.3− | 1.3+ | 2006 09 17 | 699 | 1.4− | 0.2+ | |
| 1999 09 08 | 703 | 0.1+ | 1.2+ | 2005 03 10 | 699 | 0.0 | 0.9− | 2006 09 17 | 699 | 0.9+ | 1.0+ | |
| 1999 10 16 | 704 | 0.8− | 1.9− | 2005 03 10 | 699 | (1.6+ | 0.8+) | 2006 09 17 | 699 | 0.6+ | 0.5− | |
| 1999 10 16 | 704 | 1.1+ | 1.6− | 2005 03 10 | 699 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.1− | |
| 1999 10 16 | 704 | 0.1− | 0.2− | 2005 04 06 | 703 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.6+ | |
| 1999 10 16 | 704 | 1.3+ | 0.0 | 2005 04 06 | 703 | 0.7− | 0.5− | 2006 09 19 | 703 | 1.2+ | 0.2− | |
| 2002 06 08 | 704 | 0.1+ | 0.5+ | 2005 04 06 | 703 | 0.8− | 1.0− | 2006 10 12 | 644 | 0.2+ | 0.1− | |
| 2002 06 08 | 704 | 0.0 | 0.6+ | 2005 04 06 | 703 | 0.3+ | 0.8− | 2006 10 12 | 644 | 0.0 | 0.4− | |
| 2002 06 08 | 704 | 0.8+ | 1.4+ | 2006 08 19 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2003 11 21 | 704 | (0.9− | 1.9+) | 2006 08 19 | 644 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.0 | |
| 2003 11 21 | 704 | (0.2− | 2.2+) | 2006 08 19 | 644 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.5− | |
| 2003 11 21 | 704 | (2.2− | 1.3+) | 2006 08 28 | D35 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.4+ | |
| 2003 12 19 | 691 | 0.0 | 0.3+ | 2006 08 28 | D35 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.7− | 1.7− | |
| 2003 12 19 | 691 | 0.0 | 0.1+ | 2006 08 28 | D35 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− | |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2006 09 17 | 699 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1+ | |
| 2003 12 29 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.1− | 0.0 | |

**2003 YB$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.39868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28400721 | $\omega$ | 57.75779 | | +0.15659938 | −0.98666773 | |
| $a$ | 2.2921857 | $\Omega$ | 23.35451 | | +0.86439500 | +0.11521256 | |
| $e$ | 0.1221304 | $i$ | 6.41777 | | +0.47780531 | +0.11494723 | |
| $P$ | 3.47 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2004 01 03 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 704 | (1.8− | 0.7+) | |
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2004 01 03 | 704 | (0.3− | 2.3+) | 2006 09 26 | 704 | 0.5− | 0.1+ | |
| 2003 12 03 | 704 | 0.2− | 0.7− | 2004 01 03 | 704 | 0.5+ | 0.8+ | 2006 09 26 | 704 | 0.3− | 0.0 | |
| 2003 12 03 | 704 | 0.3+ | 0.3+ | 2004 01 03 | 704 | 0.8− | 1.2+ | 2006 09 30 | G92 | 0.8− | 0.2− | |
| 2003 12 03 | 704 | 0.4+ | 0.8− | 2004 01 16 | 691 | 0.0 | 0.1− | 2006 09 30 | G92 | 0.0 | 0.2− | |
| 2003 12 03 | 704 | 0.2− | 0.3+ | 2004 01 16 | 691 | 0.2+ | 0.2− | 2006 09 30 | G92 | 0.1− | 0.4− | |
| 2003 12 17 | 704 | 0.4− | 0.3− | 2004 01 16 | 691 | 0.2+ | 0.7− | 2006 10 17 | 703 | 0.2− | 1.3+ | |
| 2003 12 17 | 704 | 0.8+ | 0.5− | 2006 09 18 | 699 | 0.2− | 0.9+ | 2006 10 17 | 703 | (0.8− | 2.1+) | |
| 2003 12 17 | 704 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.1− | 2006 10 17 | 703 | (0.3− | 1.7+) | |
| 2003 12 29 | 704 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.7+ | 1.1+ | |
| 2003 12 29 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.5+ | 2006 10 19 | 695 | 0.4− | 0.1+ | |
| 2003 12 29 | 704 | 0.2− | 1.1+ | 2006 09 20 | 691 | 0.2− | 0.3+ | 2006 10 19 | 695 | 0.4− | 0.2+ | |
| 2003 12 29 | 704 | 0.3− | 0.8+ | 2006 09 20 | 691 | 0.3− | 0.2− | | | | | |
| 2003 12 29 | 704 | 0.4− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.2− | | | | | |

**2003 YD$_{180}$ = 2005 GC$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.18919 | | (2000.0) | | | |
| $n$ | 0.29680465 | $\omega$ | 234.69808 | | +0.87349096 | +0.48192763 |
| $a$ | 2.2258142 | $\Omega$ | 96.39991 | | −0.42109631 | +0.81902247 |
| $e$ | 0.1826054 | $i$ | 3.98069 | | −0.24431831 | +0.31136465 |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 291 | 0.5− | 0.4+ | 2003 12 28 | 691 | 0.0 | 0.4+ | 2005 04 18 | 691 | 0.1+ | 0.1− |
| 2003 12 18 | 291 | 0.4− | 0.2+ | 2004 01 21 | 704 | (2.1+ | 0.7+) | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2003 12 18 | 291 | 0.5+ | 0.1− | 2004 01 21 | 704 | 0.9+ | 0.0 | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2003 12 19 | 704 | 0.3+ | 1.0+ | 2004 01 21 | 704 | 0.6+ | 0.9− | 2006 11 12 | G96 | 0.1− | 0.1+ |
| 2003 12 19 | 704 | 0.4+ | 1.1+ | 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.3− | 0.3− |
| 2003 12 19 | 704 | 0.3+ | 0.4− | 2005 04 14 | 691 | 1.0− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.6− |
| 2003 12 19 | 704 | 0.4− | 0.0 | 2005 04 14 | 691 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.2− |
| 2003 12 28 | 691 | 0.2+ | 0.3− | 2005 04 18 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2003 12 28 | 691 | 0.3− | 0.5− | 2005 04 18 | 691 | 0.2+ | 0.1− | | | | |

**2003 YE$_{180}$ = 2005 JL$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 179.73947 | | (2000.0) | | | |
| $n$ | 0.24387216 | $\omega$ | 148.62444 | | −0.99896956 | +0.01592601 |
| $a$ | 2.5372382 | $\Omega$ | 32.37075 | | −0.03364779 | −0.88829795 |
| $e$ | 0.0306872 | $i$ | 4.55288 | | +0.03045735 | −0.45899141 |
| $P$ | 4.04 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 691 | 0.2+ | 0.2− | 2004 01 16 | 703 | 1.2− | 0.8− | 2006 09 30 | 703 | 0.6− | 0.5− |
| 1998 09 15 | 691 | 0.0 | 0.3− | 2004 01 16 | 703 | (5.5− | 0.0 ) | 2006 09 30 | 703 | 0.3− | 0.1− |
| 1998 09 15 | 691 | 0.2+ | 0.2− | 2004 02 11 | 699 | 0.5+ | 0.6+ | 2006 09 30 | 703 | 0.0 | 0.3− |
| 2002 10 03 | 704 | 1.1− | 0.6+ | 2004 02 11 | 699 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2004 02 11 | 699 | 1.1− | 0.0 | 2006 10 12 | 644 | 0.6+ | 0.8+ |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2004 02 11 | 699 | 0.0 | 0.9+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2002 10 03 | 704 | 0.1+ | 0.1− | 2005 05 14 | 428 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.8− | 1.1− |
| 2003 12 18 | 704 | 0.4+ | 1.0+ | 2005 05 14 | 428 | (1.3+ | 1.7+) | 2006 10 16 | 703 | 0.4+ | 1.2+ |
| 2003 12 18 | 704 | 0.2+ | 0.1− | 2005 05 16 | 428 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.9+ |
| 2003 12 18 | 704 | 0.7− | 0.7+ | 2005 05 16 | 428 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 1.0+ |
| 2003 12 18 | 704 | 0.8− | 0.4+ | 2005 05 16 | 428 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | (0.4− | 1.7+) | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2003 12 28 | 704 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.7− | 1.4− | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2003 12 28 | 704 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2003 12 28 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2003 12 28 | 704 | 1.2+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2004 01 16 | 703 | 0.6− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.4+ |
| 2004 01 16 | 703 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.1+ | | | | |

**2003 YF$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.23181 | | (2000.0) | | | |
| $n$ | 0.17891999 | $\omega$ | 112.48716 | | −0.95359632 | −0.15244355 |
| $a$ | 3.1191060 | $\Omega$ | 59.63010 | | −0.00464372 | −0.85480323 |
| $e$ | 0.1981340 | $i$ | 17.51402 | | +0.30105232 | −0.49605686 |
| $P$ | 5.51 | $H$ | 13.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 699 | 1.2+ | 0.6− | 2003 12 17 | 704 | 0.2− | 0.0 | 2004 02 14 | 703 | 0.6− | 1.1+ |
| 1999 03 21 | 699 | 0.7+ | 0.5− | 2003 12 29 | 703 | 0.4+ | 0.6+ | 2004 02 14 | 703 | (0.8+ | 4.4+) |
| 1999 03 21 | 699 | 0.2+ | 0.3− | 2003 12 29 | 703 | 1.2− | 0.3+ | 2004 02 14 | 703 | 0.2+ | 1.7− |
| 1999 04 10 | 704 | 0.1− | 1.9+ | 2003 12 29 | 703 | 0.2− | 0.6+ | 2004 02 14 | 703 | 0.5− | 0.6− |
| 1999 04 10 | 704 | 1.0+ | 1.3+ | 2003 12 29 | 703 | 0.6− | 0.4− | 2005 05 07 | G96 | 0.2− | 0.4− |
| 1999 04 10 | 704 | 0.8− | 0.4+ | 2003 12 30 | 704 | 0.3− | 0.8− | 2005 05 07 | G96 | 0.4− | 0.4− |
| 1999 04 10 | 704 | 1.0− | 0.0 | 2003 12 30 | 704 | 0.4+ | 0.1+ | 2005 05 07 | G96 | 0.4− | 0.1− |
| 2002 10 15 | 644 | 0.8− | 1.2+ | 2003 12 30 | 704 | 0.6+ | 0.1− | 2005 05 07 | G96 | 0.3− | 0.5− |
| 2002 10 15 | 644 | 0.9− | 1.3+ | 2003 12 30 | 704 | 1.0+ | 0.5− | 2005 05 14 | 704 | 0.7+ | 1.0+ |
| 2002 10 15 | 644 | 1.1− | 1.3+ | 2004 01 30 | 703 | 0.2+ | 0.3+ | 2005 05 14 | 704 | 0.2− | 0.1+ |
| 2003 12 17 | 704 | 0.2+ | 0.1+ | 2004 01 30 | 703 | 0.3+ | 0.2+ | 2005 05 14 | 704 | 1.5+ | 1.8+ |
| 2003 12 17 | 704 | 0.1+ | 0.8+ | 2004 01 30 | 703 | 0.5− | 0.1+ | 2005 05 14 | 704 | 0.3+ | 0.6+ |
| 2003 12 17 | 704 | 0.2+ | 0.2+ | 2004 01 30 | 703 | 0.7+ | 0.5− | | | | |

**2003 YG$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 278.27696 | | (2000.0) | | | |
| $n$ | 0.24554698 | $\omega$ | 7.91362 | | +0.46757065 | −0.87725315 |
| $a$ | 2.5256877 | $\Omega$ | 54.27481 | | +0.80350780 | +0.37056310 |
| $e$ | 0.0507396 | $i$ | 7.69113 | | +0.36844660 | +0.30513916 |
| $P$ | 4.01 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 691 | 0.3+ | 0.1+ | 2003 12 28 | 704 | 0.0 | 0.3+ | 2005 04 30 | 691 | 0.0 | 0.0 |
| 2001 05 25 | 691 | 0.5− | 0.0 | 2003 12 28 | 704 | 0.8− | 0.0 | 2005 04 30 | 691 | 0.3+ | 0.0 |
| 2001 05 25 | 691 | 0.2+ | 0.0 | 2003 12 28 | 704 | 0.5+ | 0.7+ | 2005 05 14 | 644 | 0.2+ | 0.4+ |
| 2003 12 17 | 704 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 1.3+ | 0.0 | 2005 05 14 | 644 | 0.1+ | 0.1+ |
| 2003 12 17 | 704 | 0.6− | 0.7+ | 2005 04 12 | 695 | 0.1+ | 0.1− | 2005 05 14 | 644 | 0.1− | 0.2+ |
| 2003 12 17 | 704 | 0.2− | 0.3− | 2005 04 12 | 691 | 0.1− | 0.2+ | 2005 05 14 | G96 | 0.7− | 0.4− |
| 2003 12 23 | 704 | 0.1− | 0.3− | 2005 04 12 | 691 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.5− | 0.1− |
| 2003 12 23 | 704 | 0.3− | 0.6− | 2005 04 12 | 691 | 0.1+ | 0.2− | 2005 05 14 | G96 | 0.3− | 0.3− |
| 2003 12 23 | 704 | 0.1+ | 0.1+ | 2005 04 12 | 695 | 0.3− | 0.0 | 2005 05 14 | G96 | 0.5− | 0.1− |
| 2003 12 23 | 704 | 0.2− | 0.7− | 2005 04 30 | 691 | 0.1+ | 0.1− | | | | |

**2003 YH$_{180}$ = 2006 SF$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 302.42820 | | (2000.0) | | | |
| $n$ | 0.25903829 | $\omega$ | 343.94453 | | +0.61518652 | −0.78092233 |
| $a$ | 2.4372125 | $\Omega$ | 67.96254 | | +0.73556016 | +0.51915091 |
| $e$ | 0.1041480 | $i$ | 6.70292 | | +0.28371959 | +0.34733649 |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 25 | 691 | 0.1− | 0.3+ | 2003 12 18 | 691 | 0.1+ | 0.1+ | 2005 05 04 | 691 | 0.5+ | 0.2+ |
| 1995 12 25 | 691 | 0.1− | 0.1+ | 2003 12 18 | 691 | 0.0 | 0.2+ | 2005 05 04 | 691 | 0.6+ | 0.1+ |
| 1995 12 25 | 691 | 0.1− | 0.2+ | 2003 12 18 | 691 | 0.0 | 0.1+ | 2005 05 14 | G96 | 0.2− | 0.1− |
| 1999 11 12 | 704 | 0.3− | 0.5+ | 2003 12 23 | 704 | 0.1+ | 0.1+ | 2005 05 14 | G96 | 0.7− | 0.4− |
| 1999 11 12 | 704 | 0.3+ | 1.0− | 2003 12 23 | 704 | 0.1− | 0.9+ | 2005 05 14 | G96 | 0.4− | 0.4− |
| 1999 11 12 | 704 | 0.6+ | 0.6− | 2003 12 23 | 704 | 0.1− | 0.9+ | 2005 05 14 | G96 | 0.3− | 0.1− |
| 1999 11 12 | 704 | 0.2+ | 0.1− | 2003 12 23 | 704 | (0.3− | 2.3+) | 2005 06 13 | G96 | 0.9− | 0.1− |
| 1999 11 12 | 704 | 0.4− | 0.5− | 2003 12 23 | 704 | 0.5+ | 0.7+ | 2005 06 13 | G96 | 0.7− | 0.2+ |
| 1999 12 07 | 704 | 0.4+ | 1.2− | 2003 12 28 | 704 | 0.2+ | 0.1+ | 2005 06 13 | G96 | 0.8− | 0.5+ |
| 1999 12 07 | 704 | 1.0+ | 0.3− | 2003 12 28 | 704 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.5− | 0.3+ |
| 1999 12 07 | 704 | 0.3− | 1.3− | 2003 12 28 | 691 | 0.3− | 0.2+ | 2006 09 20 | 703 | 0.4+ | 0.6− |
| 1999 12 07 | 704 | 0.3+ | 0.3− | 2003 12 28 | 704 | 0.6+ | 0.4+ | 2006 09 20 | 703 | 1.0− | 1.0+ |
| 2001 05 24 | 645 | 0.1− | 0.1− | 2003 12 28 | 704 | 0.0 | 0.9+ | 2006 09 20 | 703 | 0.2+ | 0.2+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.8+ | 1.1− |
| 2001 05 24 | 645 | 0.0 | 0.1− | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.8+ | 0.3− |
| 2001 05 24 | 645 | 0.1− | 0.1− | 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 09 26 | 703 | 1.0− | 0.8+ |
| 2002 08 30 | 644 | 0.7− | 0.7+ | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.5+ |
| 2002 08 30 | 644 | 0.3− | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.4+ |
| 2002 08 30 | 644 | 0.0 | 0.6+ | 2005 05 04 | 691 | 0.6+ | 1.1+ | | | | |

**2003 YJ$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 170.12020 | | (2000.0) | | | |
| $n$ | 0.17872503 | $\omega$ | 4.42077 | | −0.45927686 | −0.87029712 |
| $a$ | 3.1213739 | $\Omega$ | 113.00601 | | +0.80895262 | −0.49251460 |
| $e$ | 0.0686524 | $i$ | 11.14367 | | +0.36696106 | −0.00350540 |
| $P$ | 5.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 704 | 0.1+ | 0.3− | 2005 03 10 | 703 | 1.1+ | 0.1− | 2005 04 16 | 703 | 0.2− | 0.2− |
| 2003 12 21 | 704 | 0.4− | 0.3+ | 2005 03 10 | 703 | 0.2− | 0.2+ | 2005 04 16 | 703 | 0.2+ | 0.2+ |
| 2003 12 21 | 704 | 1.2+ | 0.2− | 2005 03 10 | 703 | 1.6+ | 0.1− | 2005 04 16 | 703 | 0.0 | 1.2+ |
| 2003 12 21 | 704 | 0.4+ | 0.9+ | 2005 03 18 | 703 | 0.4− | 0.1+ | 2005 04 16 | 703 | 1.0− | 0.5+ |
| 2003 12 27 | 691 | 0.3− | 0.5− | 2005 03 18 | 703 | 0.7+ | 0.1− | 2005 04 16 | 703 | 0.7− | 0.3+ |
| 2003 12 27 | 691 | 0.1+ | 0.2+ | 2005 03 18 | 703 | 1.3− | 0.6+ | 2005 04 16 | 703 | 0.4− | 1.4− |
| 2003 12 27 | 691 | 0.2− | 0.2+ | 2005 03 18 | 703 | 1.5− | 0.6− | 2005 04 16 | 703 | 1.1− | 0.6− |
| 2004 01 30 | 291 | 0.5− | 0.1− | 2005 04 08 | 704 | 1.6+ | 0.1− | 2005 05 08 | 703 | 0.5+ | 1.6− |
| 2004 01 30 | 291 | 0.4+ | 0.0 | 2005 04 08 | 704 | 0.9+ | 0.1+ | 2005 05 08 | 703 | 0.8+ | 0.7+ |
| 2004 01 30 | 291 | 0.2+ | 0.0 | 2005 04 08 | 704 | 0.3+ | 0.8− | 2005 05 08 | 703 | 0.3− | 1.4+ |
| 2005 03 10 | 703 | 0.1− | 0.4+ | 2005 04 16 | 703 | 0.6− | 0.1+ | 2005 05 08 | 703 | (0.6+ | 3.8+) |

**2003 YK**$_{180}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.15555 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30851774 | $\omega$ | 315.29097 | | −0.46983597 | | +0.88128757 |
| $a$ | 2.1691152 | $\Omega$ | 286.62369 | | −0.79433351 | | −0.44720472 |
| $e$ | 0.0262779 | $i$ | 3.04239 | | −0.38508237 | | −0.15277486 |
| $P$ | 3.19 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.1+ | 0.3+ | 2004 02 29 | 691 | 0.3+ | 0.5+ | 2005 10 01 | G96 | 0.2+ | 0.2+ |
| 1999 10 10 | 704 | 0.7+ | 0.3− | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 1999 10 10 | 704 | 0.3+ | 0.9+ | 2004 02 29 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 1999 10 10 | 704 | 0.3− | 0.1− | 2005 06 13 | G96 | 0.6− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.2− | 0.7+ | 2005 06 13 | G96 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2002 08 28 | 644 | 0.3− | 0.9+ | 2005 06 13 | G96 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.0 | 0.2+ |
| 2002 08 28 | 644 | 0.1− | 0.7+ | 2005 06 13 | G96 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.2+ | 0.2+ |
| 2002 08 28 | 644 | 0.6− | 1.1+ | 2005 07 05 | G96 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.9+ | 0.0 |
| 2002 08 28 | 644 | 0.2− | 0.7+ | 2005 07 05 | G96 | 0.4− | 0.1+ | 2006 10 29 | G96 | 0.5+ | 0.1+ |
| 2002 08 28 | 644 | 0.6− | 0.7+ | 2005 07 05 | G96 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.4− | 2005 07 18 | 644 | 0.3+ | 0.4+ | 2006 11 14 | G96 | 1.2− | 0.8− |
| 2002 09 14 | 644 | 1.0− | 0.8− | 2005 07 18 | 644 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.2− |
| 2002 09 14 | 644 | 0.5− | 0.8− | 2005 07 18 | 644 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2005 07 28 | 644 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2003 12 21 | 645 | 0.1+ | 0.0 | 2005 07 28 | 644 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2004 02 17 | 704 | 0.2+ | 0.4+ | 2005 07 28 | 644 | 0.1− | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2004 02 17 | 704 | 0.0 | 0.2+ | 2005 10 01 | G96 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2004 02 17 | 704 | 0.2− | 0.6+ | 2005 10 01 | G96 | 0.0 | 0.3+ | | | | |
| 2004 02 17 | 704 | 0.3+ | 0.3+ | 2005 10 01 | G96 | 0.1+ | 0.0 | | | | |

**2003 YL**$_{180}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.24486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35519334 | $\omega$ | 260.13507 | | −0.86800234 | | +0.39570805 |
| $a$ | 1.9746623 | $\Omega$ | 302.58626 | | −0.18295508 | | −0.81647049 |
| $e$ | 0.0708278 | $i$ | 20.85616 | | −0.46162688 | | −0.42046531 |
| $P$ | 2.77 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.2− | 1.2+ | 2004 01 23 | 704 | 0.0 | 0.7+ | 2004 01 29 | 704 | 0.7+ | 1.2− |
| 2002 08 05 | 644 | 0.2− | 1.2+ | 2004 01 23 | 704 | 1.0+ | 0.2+ | 2004 01 29 | 704 | 0.1+ | 1.7+ |
| 2002 08 05 | 644 | 0.3− | 0.8+ | 2004 01 23 | 704 | 0.8+ | 0.6+ | 2004 01 29 | 704 | 0.3− | 0.5− |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2004 01 23 | 704 | 0.5+ | 0.1+ | 2004 01 29 | 704 | 0.0 | 1.2− |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2004 01 28 | 608 | 1.8+ | 1.5+ | 2004 02 13 | 683 | 0.6− | 0.4− |
| 2003 12 21 | 645 | 0.2− | 0.0 | 2004 01 28 | 608 | 2.0+ | 1.8+ | 2004 02 13 | 683 | 1.2+ | 0.1− |
| 2003 12 21 | 645 | 0.2− | 0.0 | 2004 01 28 | 608 | (1.2+ | 2.1+) | 2004 02 13 | 683 | (2.5− | 0.1−) |
| 2004 01 23 | 704 | 1.1+ | 0.4+ | 2004 01 29 | 704 | 0.8+ | 0.8+ | | | | |

**2003 YM**$_{180}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.82048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19549704 | $\omega$ | 205.26963 | | −0.80296732 | | −0.57463198 |
| $a$ | 2.9401935 | $\Omega$ | 298.73978 | | +0.57289846 | | −0.67087585 |
| $e$ | 0.0571605 | $i$ | 10.39760 | | +0.16441058 | | −0.46874693 |
| $P$ | 5.04 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 18 | 691 | 0.1− | 0.4− | 2003 12 22 | 704 | 1.2+ | 0.2+ | 2003 12 27 | 704 | 0.1− | 0.3+ |
| 1994 01 18 | 691 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.5− | 0.8− | 2003 12 27 | 704 | 0.3− | 0.2+ |
| 1994 01 18 | 691 | 0.2− | 0.5+ | 2003 12 22 | 704 | 0.6+ | 0.2− | 2004 01 13 | 691 | 0.1+ | 0.0 |
| 1998 12 28 | 691 | 0.4+ | 0.1− | 2003 12 22 | 704 | 0.2+ | 0.3− | 2004 01 13 | 691 | 0.0 | 0.2− |
| 1998 12 28 | 691 | 0.5+ | 0.1− | 2003 12 22 | 704 | 0.6+ | 0.2− | 2004 01 13 | 691 | 0.0 | 0.1− |
| 1998 12 28 | 691 | 0.6+ | 0.2+ | 2003 12 22 | 704 | 0.2+ | 0.2+ | 2004 01 21 | 704 | 0.0 | 0.3+ |
| 1999 01 07 | 691 | 0.5− | 0.1+ | 2003 12 22 | 704 | 0.4+ | 0.2+ | 2004 01 21 | 704 | 1.7− | 0.9− |
| 1999 01 07 | 691 | 0.3− | 0.8+ | 2003 12 27 | 704 | 0.5− | 0.2− | 2004 01 21 | 704 | 1.7− | 0.7− |
| 1999 01 07 | 691 | 0.1− | 0.3− | 2003 12 27 | 704 | 0.4+ | 0.1− | | | | |
| 2003 12 22 | 704 | 0.8− | 0.3− | 2003 12 27 | 704 | 0.4+ | 0.2+ | | | | |

**2003 YN**$_{180}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.65526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27615726 | $\omega$ | 252.14515 | | −0.76731283 | | +0.63478886 |
| $a$ | 2.3354204 | $\Omega$ | 327.08508 | | −0.50652652 | | −0.68694365 |
| $e$ | 0.1820977 | $i$ | 9.63649 | | −0.39327077 | | −0.35376760 |
| $P$ | 3.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.8− | 0.2+ | 2004 01 13 | 699 | 0.6− | 0.2− | 2004 02 23 | 704 | 0.4+ | 0.7+ |
| 2003 12 23 | 704 | 0.5− | 0.4+ | 2004 01 13 | 699 | 0.7+ | 1.6− | 2004 02 23 | 704 | 1.0+ | 0.5− |
| 2003 12 23 | 704 | 0.2− | 0.8− | 2004 02 15 | 704 | 0.8− | 0.2− | 2005 08 02 | 704 | 0.1− | 0.5− |
| 2003 12 28 | 704 | 1.3+ | 0.7+ | 2004 02 15 | 704 | 1.1− | 0.4+ | 2005 08 02 | 704 | 0.1+ | 0.3+ |
| 2003 12 28 | 704 | 0.3+ | 0.3+ | 2004 02 15 | 704 | 0.5− | 0.4+ | 2005 08 02 | 704 | 0.4+ | 0.1+ |
| 2003 12 28 | 704 | 0.1+ | 0.2− | 2004 02 15 | 704 | 0.4− | 0.1+ | 2005 08 26 | 699 | 0.9+ | 1.1+ |
| 2003 12 28 | 704 | 0.1− | 0.2+ | 2004 02 15 | 704 | 0.3− | 0.1− | 2005 08 26 | 699 | 1.0− | 0.7− |
| 2003 12 28 | 704 | 0.6− | 0.0 | 2004 02 23 | 704 | 1.1+ | 0.8+ | 2005 08 26 | 699 | 0.3− | 0.6− |
| 2004 01 13 | 699 | 0.6− | 0.7− | 2004 02 23 | 704 | 0.4+ | 0.8− | 2005 08 26 | 699 | 0.1− | 0.5+ |
| 2004 01 13 | 699 | 0.9+ | 1.2+ | 2004 02 23 | 704 | 0.4+ | 0.0 | | | | |

**2003 YP**$_{180}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.88778 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20429358 | $\omega$ | 202.77644 | | −0.89631645 | | +0.44337562 |
| $a$ | 2.8551761 | $\Omega$ | 3.55962 | | −0.39076998 | | −0.78353484 |
| $e$ | 0.2125853 | $i$ | 5.45887 | | −0.20956062 | | −0.43530588 |
| $P$ | 4.82 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.3− | 0.4− | 2004 01 31 | 704 | (0.2+ | 2.6−) | 2006 09 15 | 691 | 0.3− | 0.0 |
| 1997 11 23 | 691 | 0.2+ | 0.2− | 2004 01 31 | 704 | 0.5+ | 0.2− | 2006 09 22 | D35 | 0.0 | 0.2+ |
| 1997 11 23 | 691 | 0.0 | 0.2− | 2004 01 31 | 704 | 0.6+ | 0.1− | 2006 09 22 | D35 | 0.3− | 0.1+ |
| 2000 05 10 | 704 | 0.4+ | 0.4+ | 2004 02 11 | 699 | 0.3− | 0.4+ | 2006 09 22 | D35 | 0.3+ | 0.2+ |
| 2000 05 10 | 704 | 0.3− | 1.1+ | 2004 02 11 | 699 | (1.7+ | 0.2−) | 2006 09 23 | 691 | 0.1+ | 0.6+ |
| 2000 05 10 | 704 | 0.2− | 0.4+ | 2004 02 11 | 699 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2000 05 10 | 704 | 1.0+ | 0.5+ | 2004 02 11 | 699 | 0.5− | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 2000 05 10 | 704 | 0.0 | 0.1+ | 2005 01 17 | 809 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 01 17 | 809 | 0.4− | 0.5+ | 2006 10 16 | G96 | 0.6+ | 0.2− |
| 2001 09 19 | 645 | 0.1+ | 0.1− | 2005 01 21 | 809 | 0.5− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2003 12 28 | 704 | 1.1+ | 0.4+ | 2005 01 21 | 809 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2003 12 28 | 704 | 0.6− | 0.4+ | 2005 01 21 | 809 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.5− | 0.5+ |
| 2003 12 28 | 704 | (1.0− | 1.9+) | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2004 01 16 | 703 | 0.5+ | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2004 01 16 | 703 | 0.9+ | 0.5+ | 2006 08 27 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 703 | 0.7− | 1.4+ | 2006 09 15 | 691 | 0.1− | 0.2+ | |
| 2004 01 16 | 703 | 0.3+ | 1.0+ | 2006 09 15 | 691 | 0.3− | 0.2+ | |

**2003 YQ$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.32705 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20620115 | $\omega$ | 320.32196 | | −0.52276370 | | −0.85233367 |
| $a$ | 2.8375400 | $\Omega$ | 161.17953 | | +0.79394866 | | −0.49348180 |
| $e$ | 0.1404889 | $i$ | 2.78348 | | +0.31042494 | | −0.17321380 |
| $P$ | 4.78 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 291 | 0.2− | 0.5+ | 2004 01 30 | 704 | 0.1+ | 1.3− | 2004 02 26 | 704 | 0.0 | 0.5+ |
| 2002 10 07 | 291 | 0.0 | 0.3+ | 2004 01 30 | 704 | 0.7− | 0.4− | 2004 02 26 | 704 | 0.6− | 0.9− |
| 2002 10 07 | 291 | 0.2+ | 0.4+ | 2004 02 14 | 691 | 0.1+ | 0.1− | 2005 05 15 | G96 | (3.3+ | 0.2+) |
| 2002 11 08 | 645 | 0.1− | 0.1− | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2005 05 15 | G96 | 0.3+ | 0.1− |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2004 02 14 | 691 | 0.2− | 0.2+ | 2005 05 15 | G96 | 0.4− | 0.3+ |
| 2003 12 28 | 291 | 0.4− | 0.5+ | 2004 02 26 | 704 | 0.0 | 0.6− | 2005 05 15 | G96 | 1.2− | 0.4+ |
| 2003 12 28 | 291 | 0.1− | 0.4+ | 2004 02 26 | 704 | 0.1+ | 0.9+ | 2005 05 19 | G96 | 0.2− | 0.5+ |
| 2003 12 28 | 291 | 0.4+ | 0.0 | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.0 |
| 2004 01 30 | 704 | 1.0+ | 0.9− | 2004 02 26 | 704 | 0.7+ | 0.3+ | 2005 05 19 | G96 | 0.7− | 0.0 |
| 2004 01 30 | 704 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.3− | 0.4− | 2005 05 19 | G96 | 0.5− | 0.2+ |

**2003 YR$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.88612 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21296893 | $\omega$ | 340.18469 | | −0.07721706 | | −0.98306455 |
| $a$ | 2.7771023 | $\Omega$ | 113.94712 | | +0.93751376 | | −0.12831731 |
| $e$ | 0.2481041 | $i$ | 10.47760 | | +0.33927198 | | +0.13083866 |
| $P$ | 4.63 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | 1.0− | 0.0 | 2004 02 02 | 699 | 1.2+ | 0.2+ | 2004 03 19 | 644 | 0.3− | 0.0 |
| 1998 12 22 | 704 | 2.1+ | 1.4− | 2004 02 02 | 699 | 0.7− | 0.3+ | 2004 03 19 | 644 | 0.2− | 0.2− |
| 1998 12 22 | 704 | 0.9+ | 1.8+ | 2004 02 02 | 699 | 1.7− | 1.2− | 2004 03 26 | 703 | 0.2+ | 0.4+ |
| 1998 12 22 | 704 | 0.3− | 0.6+ | 2004 02 02 | 699 | 0.7− | 0.6− | 2004 03 26 | 703 | 0.3+ | 0.1+ |
| 1998 12 22 | 704 | 1.6− | 0.7− | 2004 02 17 | 704 | 0.6+ | 0.1− | 2004 03 26 | 703 | 1.0+ | 0.1+ |
| 2002 10 05 | 704 | 0.5− | 0.5− | 2004 02 17 | 704 | 0.1− | 0.3+ | 2004 03 26 | 703 | 0.6− | 0.8− |
| 2002 10 05 | 704 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.6+ | 2004 04 14 | 703 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 1.2− | 0.9+ | 2004 02 17 | 704 | 0.8− | 0.7+ | 2004 04 14 | 703 | 0.5− | 1.4− |
| 2002 10 05 | 704 | 1.1+ | 1.4+ | 2004 02 17 | 704 | 0.3+ | 0.0 | 2004 04 14 | 703 | 1.4− | 0.5+ |
| 2003 12 28 | 704 | 0.7+ | 0.6− | 2004 03 14 | 704 | 0.7+ | 0.9+ | 2004 04 14 | 703 | 0.2+ | 0.5+ |
| 2003 12 28 | 704 | 0.4− | 0.4+ | 2004 03 14 | 704 | 0.1+ | 0.4− | 2005 06 08 | 691 | 0.2− | 0.1+ |
| 2003 12 28 | 704 | 0.9+ | 0.8− | 2004 03 14 | 704 | 1.1+ | 0.4+ | 2005 06 08 | 691 | 0.2+ | 0.0 |
| 2003 12 28 | 704 | 0.2+ | 0.4+ | 2004 03 14 | 704 | 0.9+ | 1.7+ | 2005 06 08 | 691 | 0.0 | 0.2+ |
| 2003 12 28 | 704 | 0.3− | 0.1− | 2004 03 19 | 644 | 0.2− | 0.1− | | | | |

**2003 YS$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.67656 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25913142 | $\omega$ | 203.67447 | | −0.49558019 | | +0.86296245 |
| $a$ | 2.4366286 | $\Omega$ | 36.83296 | | −0.76835389 | | −0.38271320 |
| $e$ | 0.2037168 | $i$ | 9.45400 | | −0.40500935 | | −0.32988850 |
| $P$ | 3.80 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 291 | 0.0 | 0.1− | 2004 01 27 | 703 | 0.1+ | 0.1− | 2005 08 06 | E12 | 0.4+ | 0.2+ |
| 2002 10 30 | 291 | 0.1− | 0.0 | 2004 01 27 | 703 | 1.3+ | 0.5+ | 2005 08 06 | E12 | 0.5+ | 0.3− |
| 2002 10 30 | 291 | 0.1+ | 0.1+ | 2004 01 27 | 703 | 0.2− | 0.5+ | 2005 08 06 | E12 | 0.1+ | 0.3− |
| 2002 10 31 | 644 | 0.6− | 0.4+ | 2004 02 09 | 644 | 0.1− | 0.5+ | 2005 08 24 | E12 | 0.8− | 0.0 |
| 2002 10 31 | 644 | 0.2+ | 0.2+ | 2004 02 09 | 644 | 0.3− | 0.6+ | 2005 08 24 | E12 | 0.1+ | 0.5+ |
| 2002 10 31 | 644 | 0.1− | 0.3+ | 2004 02 09 | 644 | 0.3+ | 0.5+ | 2005 08 24 | E12 | (0.1− | 2.1−) |
| 2003 12 30 | 704 | 0.5+ | 0.1+ | 2005 07 05 | E12 | 0.2+ | 0.1+ | 2005 08 24 | E12 | 0.2+ | 0.8+ |
| 2003 12 30 | 704 | 0.4+ | 0.1− | 2005 07 05 | E12 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.5− |
| 2003 12 30 | 704 | 0.8− | 0.0 | 2005 07 05 | E12 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.7+ | 0.4− |
| 2003 12 30 | 704 | 0.8− | 1.4− | 2005 07 05 | E12 | 0.8− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 2004 01 17 | 644 | 0.0 | 0.7+ | 2005 07 25 | E12 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2004 01 17 | 644 | 0.2− | 0.4+ | 2005 07 25 | E12 | 0.3− | 0.9+ | 2006 10 13 | 691 | 0.3− | 0.4+ |
| 2004 01 17 | 644 | 0.0 | 0.5+ | 2005 07 25 | E12 | 0.1− | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.2− |
| 2004 01 27 | 703 | (1.2+ | 1.6+) | 2005 07 25 | E12 | 0.2+ | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.0 |

**2003 YU$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.11079 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23919241 | $\omega$ | 9.15452 | | +0.84256154 | | −0.53795961 |
| $a$ | 2.5702249 | $\Omega$ | 23.44854 | | +0.48988590 | | +0.74518272 |
| $e$ | 0.2009301 | $i$ | 3.78363 | | +0.22383444 | | +0.39408397 |
| $P$ | 4.12 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 644 | 0.1+ | 0.2− | 2004 01 26 | 699 | (1.7+ | 1.0−) | 2005 04 05 | G96 | 0.3− | 0.6− |
| 2003 12 17 | 644 | 0.3+ | 0.8− | 2004 01 26 | 699 | 0.6+ | 0.2+ | 2005 04 05 | G96 | 0.3− | 0.7− |
| 2003 12 17 | 644 | 0.6+ | 0.6− | 2004 01 26 | 699 | 0.7+ | 0.6+ | 2005 04 17 | 691 | 0.2+ | 0.1+ |
| 2003 12 28 | 704 | 0.5− | 1.1− | 2004 01 26 | 699 | (2.0+ | 2.1−) | 2005 04 17 | 691 | 0.3+ | 0.1+ |
| 2003 12 28 | 704 | 0.1+ | 1.2+ | 2004 01 31 | 704 | 0.3− | 0.9+ | 2005 04 17 | 691 | 0.1+ | 0.2+ |
| 2003 12 28 | 704 | 0.0 | 1.0+ | 2004 01 31 | 704 | 0.3+ | 1.3− | 2005 05 12 | G96 | 0.1− | 0.4− |
| 2004 01 16 | 703 | 1.2− | 0.9− | 2004 01 31 | 704 | 0.7+ | 0.0 | 2005 05 12 | G96 | 0.2+ | 0.3− |
| 2004 01 16 | 703 | 0.5− | 1.1+ | 2004 01 31 | 704 | (1.8− | 0.1−) | 2005 05 12 | G96 | 0.2− | 0.0 |
| 2004 01 16 | 703 | 0.0 | 1.2− | 2005 04 05 | G96 | 0.3− | 0.3− | 2005 05 12 | G96 | 0.4− | 0.2+ |
| 2004 01 16 | 703 | 0.8− | 0.9+ | 2005 04 05 | G96 | 1.0− | 0.1+ | | | | |

**2003 YX$_{180}$ = 2006 SQ$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.92221 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29134844 | $\omega$ | 78.34036 | | +0.57442237 | | −0.81775768 |
| $a$ | 2.2535174 | $\Omega$ | 336.48747 | | +0.71121073 | | +0.52050328 |
| $e$ | 0.1173146 | $i$ | 5.20783 | | +0.40523849 | | +0.24565976 |
| $P$ | 3.38 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.7− | 0.4− | 2004 03 23 | 291 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2003 12 18 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 291 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.9− |
| 2003 12 18 | 704 | 0.3− | 0.6− | 2006 09 29 | 400 | (6.4− | 3.5−) | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2003 12 18 | 704 | 1.5+ | 0.1+ | 2006 09 29 | 400 | (6.1− | 3.7−) | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2003 12 18 | 704 | 0.9− | 0.2− | 2006 09 30 | 400 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 09 30 | 400 | 1.2− | 0.7− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2003 12 23 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 400 | 0.6− | 1.3+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2003 12 23 | 704 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2003 12 23 | 704 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.1+ |
| 2003 12 23 | 704 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.0 |
| 2003 12 28 | 704 | 0.5− | 0.8− | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.6+ | 0.7+ |
| 2003 12 28 | 704 | 0.2− | 0.6− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.9+ |
| 2003 12 28 | 704 | 0.9− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.9− |
| 2003 12 28 | 704 | 1.4− | 0.8− | 2006 10 17 | 400 | 0.0 | 1.4− | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2004 01 18 | 691 | 0.2+ | 0.1− | 2006 10 17 | 400 | 1.2− | 0.4+ | 2006 11 14 | 703 | 1.3− | 0.5+ |
| 2004 01 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 400 | 0.1− | 0.5− | 2006 11 14 | 703 | 0.6+ | 0.1+ |
| 2004 01 18 | 691 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.1− | 1.3− | | | | |
| 2004 03 23 | 291 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.8+ | 1.1− | | | | |

**2003 YH$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.61098 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25885479 | $\omega$ | 74.69128 | | −0.94427496 | | −0.30599958 |
| $a$ | 2.4383642 | $\Omega$ | 87.37295 | | +0.23565916 | | −0.88572717 |
| $e$ | 0.0721985 | $i$ | 6.97340 | | +0.22980331 | | −0.34907254 |
| $P$ | 3.81 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.7+ | 0.2+ | 2004 01 31 | 704 | 0.7− | 0.9+ | 2006 10 16 | 703 | (0.3− | 1.9−) |
| 2003 12 23 | 704 | 0.5− | 1.0− | 2004 01 31 | 704 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.6+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 1.0− | 0.3+ | 2004 02 15 | 704 | 1.3+ | 1.1− | 2006 10 16 | 703 | 0.4+ | 0.8− | | |
| 2003 12 23 | 704 | 0.4− | 0.4+ | 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.8− | | |
| 2003 12 28 | 704 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2003 12 28 | 704 | (2.0+ | 1.2+) | 2004 02 15 | 704 | 0.9+ | 1.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2003 12 28 | 704 | 0.2+ | 0.9− | 2004 02 15 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 28 | 704 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.6+ | 2006 10 22 | 703 | 0.2− | 0.7+ | | |
| 2004 01 13 | 699 | 0.3+ | 0.4+ | 2006 09 26 | 703 | 1.3− | 0.5− | 2006 10 22 | 703 | 0.9− | 0.1+ | | |
| 2004 01 13 | 699 | 1.2− | 0.4+ | 2006 09 26 | 703 | 0.9+ | 0.5− | 2006 10 22 | 703 | 0.1+ | 0.8− | | |
| 2004 01 13 | 699 | 0.2− | 0.4+ | 2006 09 26 | 703 | (1.9− | 0.2−) | 2006 10 22 | 703 | 0.1− | 0.9+ | | |
| 2004 01 13 | 699 | (2.4− | 1.2−) | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.5− | 0.1+ | | |
| 2004 01 26 | 699 | 0.3+ | 0.6− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.0 | 0.6+ | | |
| 2004 01 26 | 699 | 0.2− | 0.9+ | 2006 10 04 | G96 | 0.5+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2004 01 26 | 699 | (2.5+ | 1.3+) | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 28 | 703 | 0.8+ | 0.1− | | |
| 2004 01 26 | 699 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.4+ | 0.2+ | | |
| 2004 01 31 | 704 | 0.3− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 703 | (0.0 | 1.9+) | | |
| 2004 01 31 | 704 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.8− | 0.2+ | | |

**2003 YK$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.32061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25295107 | $\omega$ | 184.12421 | | −0.93189161 | | +0.36112408 |
| $a$ | 2.4761581 | $\Omega$ | 17.16669 | | −0.32940520 | | −0.80305638 |
| $e$ | 0.0962387 | $i$ | 6.64759 | | −0.15188890 | | −0.47401461 |
| $P$ | 3.90 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 03 14 | 704 | 0.1+ | 1.4+ | 2006 10 13 | 691 | 0.1+ | 0.2− | | |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 03 14 | 704 | 1.2+ | 0.8+ | 2006 10 21 | 691 | 0.2− | 0.3+ | | |
| 2004 02 11 | 644 | 0.3− | 0.2− | 2004 03 20 | 704 | 1.4+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2+ | | |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2004 03 20 | 704 | 1.1+ | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2006 11 14 | G96 | 0.6− | 0.2+ | | |
| 2004 02 17 | 691 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.4+ | 1.2+ | 2006 11 14 | G96 | 0.4− | 0.5+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.1− | 2004 03 20 | 704 | (1.8+ | 0.6+) | 2006 11 14 | G96 | 0.7− | 0.4+ | | |
| 2004 02 17 | 691 | 0.3− | 0.1− | 2006 10 13 | 691 | 0.6+ | 0.0 | 2006 11 14 | G96 | 0.7− | 0.3+ | | |
| 2004 03 14 | 704 | 0.5− | 0.3− | 2006 10 13 | 691 | 0.2+ | 0.2− | | | | | | |

**2004 AB**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.90239 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22138791 | $\omega$ | 1.23787 | | −0.95034639 | | +0.30159300 |
| $a$ | 2.7062429 | $\Omega$ | 196.93418 | | −0.28773018 | | −0.94547503 |
| $e$ | 0.4244586 | $i$ | 15.26823 | | −0.11854568 | | −0.12295783 |
| $P$ | 4.45 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 291 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.3− | 0.1− | 2004 05 10 | 703 | 0.3− | 0.2− | | |
| 2002 11 06 | 291 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.0 | 0.5+ | 2004 05 14 | 699 | 0.0 | 0.2− | | |
| 2002 11 06 | 291 | 0.1− | 0.7+ | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2004 05 14 | 699 | 0.3− | 0.3− | | |
| 2004 01 03 | 704 | 0.6+ | 1.5+ | 2004 03 19 | 704 | 0.3+ | 0.1− | 2004 05 14 | 699 | (1.7− | 0.5+) | | |
| 2004 01 03 | 704 | (0.1+ | 1.6+) | 2004 03 19 | 704 | 0.1− | 0.0 | 2004 05 14 | 699 | 0.0 | 0.7− | | |
| 2004 01 03 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.1− | 0.2+ | 2004 05 15 | 704 | 0.4+ | 0.2− | | |
| 2004 01 03 | 704 | 0.2+ | 1.1+ | 2004 03 19 | 704 | 0.3+ | 0.4+ | 2004 05 15 | 704 | 0.2− | 0.1+ | | |
| 2004 01 04 | 620 | 0.2+ | 0.2− | 2004 03 19 | 704 | 0.0 | 0.0 | 2004 05 15 | 704 | 0.4− | 0.0 | | |
| 2004 01 04 | 620 | 0.3+ | 0.5− | 2004 03 22 | 704 | 0.3+ | 0.6− | 2004 05 15 | 704 | 1.1− | 0.3+ | | |
| 2004 01 04 | 413 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.8− | 2004 05 15 | 704 | 1.3− | 0.5+ | | |
| 2004 01 04 | 413 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.4− | 2004 05 29 | 703 | 0.1+ | 0.3− | | |
| 2004 01 05 | 620 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.8− | 2004 05 29 | 703 | 0.1+ | 0.2− | | |
| 2004 01 05 | 620 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.2+ | 0.5− | 2004 05 29 | 703 | 0.2− | 0.8− | | |
| 2004 01 05 | 620 | 0.1+ | 0.0 | 2004 03 31 | 704 | 0.3+ | 0.2+ | 2004 05 29 | 703 | (1.4+ | 2.8+) | | |
| 2004 01 05 | 926 | 0.1− | 0.4− | 2004 03 31 | 704 | 0.8+ | 0.0 | 2004 06 06 | 699 | 0.8+ | 0.5+ | | |
| 2004 01 05 | 926 | 0.8+ | 0.2− | 2004 03 31 | 704 | 0.5− | 0.9+ | 2004 06 06 | 699 | 0.3− | 0.1− | | |
| 2004 01 05 | 926 | 0.9+ | 0.1+ | 2004 03 31 | 704 | 0.2− | 0.4+ | 2004 06 06 | 699 | 0.0 | 0.5− | | |
| 2004 02 25 | 704 | 1.2+ | 0.6− | 2004 04 16 | 704 | 0.1+ | 0.1+ | 2004 06 06 | 699 | 0.6− | 0.1+ | | |
| 2004 02 25 | 704 | (0.2− | 2.6−) | 2004 04 16 | 704 | 0.1+ | 0.0 | 2004 06 21 | 704 | 0.1+ | 0.6+ | | |
| 2004 02 25 | 704 | 0.1− | 1.0− | 2004 04 16 | 704 | 0.0 | 0.5+ | 2004 06 21 | 704 | 0.5+ | 0.7+ | | |
| 2004 02 25 | 704 | 0.7+ | 0.9− | 2004 04 16 | 704 | 0.0 | 0.0 | 2004 06 21 | 704 | 0.4+ | 0.1+ | | |
| 2004 02 25 | 704 | 0.6+ | 0.1− | 2004 04 16 | 704 | 0.2+ | 0.2− | 2004 06 21 | 704 | 0.1+ | 0.4+ | | |
| 2004 02 26 | H06 | 0.5+ | 0.5− | 2004 04 16 | 644 | 0.0 | 0.2+ | 2004 06 21 | 704 | 0.7+ | 0.1− | | |
| 2004 02 26 | H06 | 0.6− | 0.4− | 2004 04 16 | 644 | 0.2− | 0.2+ | 2004 06 27 | 703 | 0.8− | 0.2+ | | |
| 2004 02 26 | H06 | 0.1− | 0.0 | 2004 04 16 | 644 | 0.0 | 0.1+ | 2004 06 27 | 703 | 0.5+ | 0.4+ | | |
| 2004 02 26 | 809 | 0.3− | 0.1− | 2004 04 20 | 691 | 0.2+ | 0.8+ | 2004 06 27 | 703 | 0.8− | 0.1+ | | |
| 2004 02 26 | 809 | 0.4− | 0.1− | 2004 04 20 | 691 | 0.2− | 0.2+ | 2004 06 27 | 703 | (1.6+ | 1.1−) | | |
| 2004 02 26 | 809 | 0.2− | 0.0 | 2004 04 20 | 691 | 0.1− | 0.2+ | 2004 07 03 | 185 | 0.2+ | 0.4+ | | |
| 2004 02 26 | H36 | 0.8− | 0.3− | 2004 04 23 | 703 | 0.1− | 0.3+ | 2004 07 03 | 185 | 1.2− | 0.9− | | |
| 2004 02 26 | H36 | 0.0 | 0.1− | 2004 04 23 | 703 | 0.1− | 0.3+ | 2004 07 09 | 699 | 0.3+ | 0.1+ | | |
| 2004 02 26 | 704 | 0.5− | 0.2− | 2004 04 23 | 703 | 0.1+ | 0.1+ | 2004 07 09 | 699 | 0.1+ | 0.1− | | |
| 2004 02 26 | 704 | 0.3− | 0.3+ | 2004 04 23 | 703 | 0.2− | 0.9+ | 2004 07 09 | 699 | 0.4− | 0.5+ | | |
| 2004 02 26 | 704 | 0.2− | 0.0 | 2004 04 24 | 704 | 1.3+ | 0.5− | 2004 07 09 | 699 | 0.1+ | 0.1− | | |
| 2004 02 26 | 704 | 0.8− | 0.6+ | 2004 04 24 | 704 | 1.1+ | 0.8− | 2006 10 21 | G96 | 0.3− | 0.7+ | | |
| 2004 02 26 | 704 | 0.1− | 0.5+ | 2004 04 24 | 704 | (1.6+ | 0.5−) | 2006 10 21 | G96 | 0.3+ | 0.2+ | | |
| 2004 02 26 | 704 | 0.8− | 0.1+ | 2004 04 24 | 704 | (2.1+ | 0.6−) | 2006 10 21 | G96 | 0.4− | 0.0 | | |
| 2004 02 26 | 926 | 0.8− | 0.0 | 2004 04 24 | 704 | 0.6+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.7+ | | |
| 2004 02 26 | 926 | 0.2− | 0.2+ | 2004 05 10 | 703 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1− | | |
| 2004 02 26 | 926 | 0.2+ | 0.1+ | 2004 05 10 | 703 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2− | | |
| 2004 02 26 | 704 | 0.1+ | 0.1+ | 2004 05 10 | 703 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.3+ | 0.3− | | |

**2004 AH**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.37261 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.34969755 | $\omega$ | 300.65582 | | +0.60586198 | | −0.75215126 |
| $a$ | 1.9952975 | $\Omega$ | 109.76226 | | +0.79104887 | | +0.53485412 |
| $e$ | 0.4242215 | $i$ | 15.98897 | | +0.08469327 | | +0.38496695 |
| $P$ | 2.82 | $H$ | 19.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 10 | 699 | 0.6+ | 0.8+ | 2004 01 11 | 673 | 0.1− | 0.5+ | 2004 01 16 | 926 | 0.3− | 0.2+ | | |
| 2004 01 10 | 699 | 0.2− | 0.1− | 2004 01 11 | 649 | (0.7− | 2.7+) | 2004 01 16 | J95 | 0.2+ | 0.2+ | | |
| 2004 01 10 | 699 | 0.3+ | 0.9+ | 2004 01 11 | 649 | 1.0+ | 0.4+ | 2004 01 16 | J95 | 0.3− | 0.0 | | |
| 2004 01 10 | 699 | (0.6− | 2.9+) | 2004 01 11 | 649 | (0.3+ | 2.2−) | 2004 01 16 | J95 | 0.5+ | 0.2− | | |
| 2004 01 10 | 620 | 0.3− | 0.3− | 2004 01 13 | 448 | 0.0 | 0.8− | 2004 01 23 | 246 | 0.9− | 0.2− | | |
| 2004 01 10 | 620 | 0.3− | 0.1− | 2004 01 13 | 448 | (0.2− | 1.5−) | 2004 01 23 | 246 | 0.0 | 0.4− | | |
| 2004 01 10 | 620 | 0.5− | 0.4− | 2004 01 13 | 448 | 0.3− | 0.3− | 2004 01 23 | 246 | 0.4− | 0.1+ | | |
| 2004 01 10 | 106 | 0.3− | 0.5− | 2004 01 13 | 649 | 0.2− | 0.1− | 2004 01 23 | 246 | 0.4− | 0.3+ | | |
| 2004 01 10 | 106 | 0.0 | 1.2− | 2004 01 13 | 649 | 0.1+ | 0.0 | 2004 01 23 | 246 | 0.0 | 0.4− | | |
| 2004 01 10 | 587 | (1.8− | 1.1+) | 2004 01 13 | 649 | 0.1− | 0.2− | 2004 01 23 | 246 | 0.7− | 0.3− | | |
| 2004 01 10 | 587 | (2.0− | 2.4−) | 2004 01 13 | J95 | 0.0 | 0.0 | 2004 02 13 | 715 | 0.1− | 0.3− | | |
| 2004 01 10 | 587 | 0.8− | 0.9− | 2004 01 13 | J95 | 0.1+ | 0.0 | 2004 02 13 | 715 | 0.0 | 0.7− | | |
| 2004 01 10 | 587 | 0.1+ | 0.3− | 2004 01 13 | J95 | 0.1− | 0.2− | 2004 02 13 | 715 | 0.1− | 0.6− | | |
| 2004 01 11 | H36 | 0.3+ | 0.3+ | 2004 01 14 | 644 | 0.1+ | 0.4+ | 2006 10 12 | 291 | 0.9+ | 0.2− | | |
| 2004 01 11 | H36 | 0.1+ | 0.6− | 2004 01 14 | 644 | 0.3− | 0.4+ | 2006 10 12 | 291 | 0.6− | 0.5+ | | |
| 2004 01 11 | H36 | 1.3+ | 1.0+ | 2004 01 14 | 644 | 0.1+ | 0.3+ | 2006 10 12 | 291 | 0.2− | 0.4+ | | |
| 2004 01 11 | 673 | 0.3− | 0.1− | 2004 01 14 | 644 | 0.2− | 1.0+ | 2006 10 16 | 291 | 1.2+ | 0.3− | | |
| 2004 01 11 | 673 | 0.2− | 0.1+ | 2004 01 14 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 291 | 0.8− | 0.1− | | |
| 2004 01 11 | 673 | 0.2− | 0.3+ | 2004 01 14 | 644 | 0.4− | 0.7+ | 2006 10 16 | 291 | 0.2− | 1.1− | | |
| 2004 01 11 | 673 | 0.1+ | 0.9+ | 2004 01 16 | 926 | 0.2− | 0.0 | 2006 11 21 | 696 | 0.8+ | 0.2+ | | |
| 2004 01 11 | 673 | 0.6+ | 1.4+ | 2004 01 16 | 926 | 0.3− | 0.2+ | 2006 11 21 | 696 | 0.3+ | 0.4− | | |

**2004 AY**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.15535 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28592614 | $\omega$ | 86.99862 | | −0.54359437 | | −0.80151988 |
| $a$ | 2.2819185 | $\Omega$ | 39.46998 | | +0.52554891 | | −0.55646486 |
| $e$ | 0.2791149 | $i$ | 23.07474 | | +0.65444900 | | −0.21888977 |
| $P$ | 3.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 644 | 0.1+ | 0.1+ | 2004 02 09 | 704 | 0.7− | 0.1+ | 2004 04 20 | 113 | 0.5+ | 0.1+ | | |
| 2001 05 14 | 644 | 0.1+ | 0.1− | 2004 02 09 | 704 | 0.1− | 0.0 | 2004 04 20 | 113 | 0.8+ | 0.3+ | | |
| 2001 05 14 | 644 | 0.2+ | 0.6+ | 2004 02 09 | 704 | 0.2+ | 1.5− | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2004 01 05 | 704 | 0.6+ | 0.5− | 2004 02 11 | 704 | 0.5− | 0.5+ | 2006 10 09 | 644 | 0.3− | 0.1− | | |
| 2004 01 05 | 704 | 0.3+ | 0.0 | 2004 02 11 | 704 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.6− | 0.3+ | | |
| 2004 01 05 | 704 | 0.8+ | 0.1− | 2004 02 11 | 704 | 0.4− | 0.6+ | 2006 10 28 | 703 | 1.1− | 0.6+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 05 | 704 | 0.2+ | 0.2+ | 2004 02 11 | 704 | 0.2− | 0.3+ | 2006 10 28 | 703 | 1.2+ | 0.3+ |
| 2004 01 13 | 704 | 0.2+ | 1.4− | 2004 02 11 | 704 | 0.4− | 0.7+ | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2004 01 13 | 704 | 0.0 | 0.2+ | 2004 03 10 | 704 | 0.5− | 0.7− | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2004 01 13 | 704 | 0.1− | 0.4− | 2004 03 10 | 704 | 0.3− | 0.3+ | 2006 11 23 | 703 | 1.0+ | 0.4− |
| 2004 01 13 | 704 | 0.3+ | 0.3− | 2004 03 10 | 704 | 0.3− | 0.4+ | 2006 11 23 | 703 | 0.5+ | 0.5− |
| 2004 01 13 | 704 | 0.3− | 0.7+ | 2004 03 10 | 704 | 0.5+ | 0.4+ | 2006 11 23 | 703 | 1.1− | 0.4+ |
| 2004 02 09 | 704 | 0.2− | 0.1+ | 2004 03 10 | 704 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.4− | 0.6+ |
| 2004 02 09 | 704 | 0.1− | 0.3− | 2004 04 20 | 113 | 0.1+ | 0.4+ | | | | |

### 2004 AQ$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.66331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26841412 | $\omega$ | 116.60451 | | −0.77525931 | −0.63064699 | |
| $a$ | 2.3801216 | $\Omega$ | 24.34811 | | +0.54462055 | −0.69583151 | |
| $e$ | 0.0928827 | $i$ | 4.93399 | | +0.31993977 | −0.34366100 | |
| $P$ | 3.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.2+ | 0.0 | 2004 02 14 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.2− |
| 1995 10 24 | 691 | 0.2+ | 0.1− | 2004 02 14 | 704 | 0.8+ | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.8− |
| 1995 10 24 | 691 | 0.4− | 0.1+ | 2004 02 14 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.8+ |
| 2003 12 23 | 704 | 0.4+ | 0.5− | 2004 04 19 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.2− | 0.1+ | 2004 04 19 | 704 | 0.1− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 12 23 | 704 | 0.3− | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2003 12 23 | 704 | 0.0 | 0.0 | 2006 09 18 | 699 | (0.6− | 1.8+) | 2006 10 27 | 691 | 0.1− | 0.4− |
| 2003 12 23 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | (0.8− | 2.8+) | 2006 10 27 | 691 | 0.5− | 0.1− |
| 2003 12 28 | 704 | 0.8+ | 1.3− | 2006 09 18 | 699 | (0.5− | 2.2+) | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2003 12 28 | 704 | 0.7− | 0.7− | 2006 09 18 | 699 | (0.5+ | 2.0−) | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2003 12 28 | 704 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2003 12 28 | 704 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2003 12 28 | 704 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2004 01 12 | 644 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 01 12 | 644 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2004 01 12 | 644 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 01 13 | 699 | 0.9− | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 2004 01 13 | 699 | 0.2+ | 0.9− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2004 01 13 | 699 | 0.7− | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.2− |
| 2004 01 13 | 699 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.9+ |
| 2004 01 28 | 691 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2004 01 28 | 691 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.4− | 0.5− |
| 2004 01 31 | 704 | 0.3+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.3− | 1.3− |
| 2004 01 31 | 704 | 0.1+ | 1.0− | 2006 10 19 | 644 | 0.0 | 0.7+ | 2006 11 13 | G96 | 0.4+ | 0.8− |
| 2004 01 31 | 704 | 0.0 | 0.9− | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.5+ | 1.3− |
| 2004 01 31 | 704 | 1.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2004 01 31 | 704 | 0.8+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.7− |
| 2004 02 14 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.2− | 0.4− |
| 2004 02 14 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.6− |

### 2004 AR$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.20682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20053077 | $\omega$ | 240.31713 | | −0.97790458 | −0.17492472 | |
| $a$ | 2.8907822 | $\Omega$ | 289.40760 | | +0.20755891 | −0.87774445 | |
| $e$ | 0.1540552 | $i$ | 6.97111 | | −0.02493855 | −0.44605608 | |
| $P$ | 4.91 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 23 | 691 | 0.1− | 0.1+ | 2004 01 15 | 691 | 0.4− | 0.7+ | 2004 01 30 | 704 | 0.1− | 0.2+ |
| 1996 06 23 | 691 | 0.3− | 0.4+ | 2004 01 19 | 699 | 0.0 | 0.6+ | 2004 01 30 | 704 | 0.1− | 0.2− |
| 1996 06 23 | 691 | 0.5− | 0.3+ | 2004 01 19 | 699 | 0.2+ | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.4− |
| 1999 01 09 | 327 | 0.6+ | 0.1+ | 2004 01 19 | 699 | 0.0 | 0.8− | 2004 01 30 | 704 | 0.5+ | 0.4+ |
| 1999 01 09 | 327 | 0.3+ | 0.3− | 2004 01 19 | 699 | 0.7− | 0.5+ | 2004 02 16 | 704 | 0.5+ | 1.4+ |
| 1999 01 09 | 327 | 1.0+ | 1.8− | 2004 01 21 | 704 | 1.0− | 0.6− | 2004 02 16 | 704 | (0.1+ | 1.8+) |
| 2003 12 21 | 691 | 0.0 | 0.1+ | 2004 01 21 | 704 | 0.3− | 0.0 | 2004 02 16 | 704 | (1.6+ | 0.0 ) |
| 2003 12 21 | 704 | 1.5− | 0.5− | 2004 01 21 | 704 | 0.2+ | 0.6− | 2004 02 16 | 704 | 1.2− | 0.7+ |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2004 01 21 | 704 | 0.9− | 0.6− | 2004 02 18 | 049 | 1.0− | 0.1+ |
| 2003 12 21 | 704 | 0.6− | 0.6− | 2004 01 21 | 704 | 0.5− | 0.1+ | 2004 02 18 | 049 | 1.1− | 0.0 |
| 2003 12 21 | 691 | 0.0 | 0.1+ | 2004 01 24 | 704 | 0.5+ | 0.7+ | 2004 02 18 | 049 | 0.8− | 0.5− |
| 2003 12 21 | 704 | 0.2− | 0.4+ | 2004 01 24 | 704 | 0.6+ | 0.3+ | 2004 04 13 | 645 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | 1.1+ | 0.7+ | 2004 01 24 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 645 | 0.1+ | 0.0 |
| 2004 01 13 | 699 | 0.3− | 0.5+ | 2004 01 24 | 704 | 0.1− | 0.9− | 2004 04 15 | 645 | 0.1+ | 0.0 |
| 2004 01 13 | 699 | 0.0 | 0.5+ | 2004 01 24 | 704 | 0.4− | 0.3+ | 2004 04 15 | 645 | 0.1+ | 0.0 |
| 2004 01 13 | 699 | 0.1− | 0.7− | 2004 01 26 | 699 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2004 01 13 | 699 | 0.7+ | 0.5+ | 2004 01 26 | 699 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 2004 01 15 | 691 | 0.1+ | 0.1+ | 2004 01 26 | 699 | 0.3− | 0.4− | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 2004 01 15 | 691 | 0.2+ | 0.1+ | 2004 01 26 | 699 | 0.6+ | 0.1− | | | | |

### 2004 AZ$_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.87856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27774711 | $\omega$ | 23.29613 | | −0.60853512 | −0.79191816 | |
| $a$ | 2.3264998 | $\Omega$ | 104.22513 | | +0.71960496 | −0.57755160 | |
| $e$ | 0.1569228 | $i$ | 2.98654 | | +0.33444536 | −0.19824169 | |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 704 | 0.6+ | 0.7+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.4+ |
| 2003 12 01 | 704 | (1.6+ | 0.5−) | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | (1.6+ | 0.5−) |
| 2003 12 01 | 704 | 1.1+ | 0.7− | 2004 02 15 | 704 | 0.0 | 1.3+ | 2006 09 18 | 699 | 0.8+ | 1.3+ |
| 2004 01 13 | 699 | 0.2− | 0.6− | 2004 02 15 | 704 | (0.1+ | 1.7+) | 2006 09 30 | 703 | 1.0− | 0.9− |
| 2004 01 13 | 699 | 0.6− | 0.4− | 2004 02 15 | 704 | 0.6+ | 0.9+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2004 01 13 | 699 | 0.5+ | 0.5+ | 2004 02 21 | 049 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.1+ | 1.0+ |
| 2004 01 13 | 699 | 0.4− | 0.2− | 2004 02 21 | 049 | 0.7+ | 0.4− | 2006 09 30 | 703 | 1.2− | 0.7− |
| 2004 01 16 | 644 | 0.2− | 0.2+ | 2004 02 21 | 049 | 0.6+ | 0.0 | 2006 10 02 | G96 | 0.7+ | 0.0 |
| 2004 01 16 | 644 | 0.2− | 0.2+ | 2004 02 23 | 704 | (2.2+ | 0.1−) | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2004 01 16 | 644 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.4+ | 0.1+ |
| 2004 01 16 | 691 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.6+ | 0.1+ |
| 2004 01 16 | 691 | 0.3− | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.7− | 0.2+ |
| 2004 01 16 | 691 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.3− |
| 2004 01 22 | 704 | 0.4+ | 0.4+ | 2004 03 16 | 699 | 0.2− | 1.0+ | 2006 10 21 | 703 | 1.1+ | 0.7+ |
| 2004 01 22 | 704 | 0.1− | 0.1+ | 2004 03 16 | 699 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.9+ | 0.3+ |
| 2004 01 22 | 704 | 0.0 | 0.3+ | 2004 03 16 | 699 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.6+ | 0.1+ |
| 2004 01 22 | 704 | 0.1− | 0.3+ | 2004 03 16 | 699 | 1.1− | 0.6+ | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2004 01 22 | 704 | 0.4+ | 0.4+ | 2004 03 19 | 704 | 0.6− | 0.5+ | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2004 01 27 | 691 | 0.2− | 0.2− | 2004 03 19 | 704 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 01 27 | 691 | 0.2− | 0.2− | 2004 03 19 | 704 | 0.1+ | 1.2+ | 2006 11 13 | 703 | 1.9− | 1.0− |
| 2004 01 27 | 691 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.5+ | 0.5− | 2006 11 13 | 703 | 0.6+ | 0.7− |
| 2004 01 30 | 704 | 0.6+ | 0.2− | 2004 03 19 | 704 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.6+ | 0.3+ |
| 2004 01 30 | 704 | 0.7+ | 0.3− | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 13 | 703 | 2.3− | 1.0− |
| 2004 01 30 | 704 | 1.2+ | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 2004 01 30 | 704 | 0.6+ | 0.9− | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2004 01 30 | 704 | 0.1+ | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 1.0− | 0.9+ | 2006 11 18 | G96 | 0.0 | 0.1− |

### 2004 AV$_6$ = 2006 VK$_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.51650 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29565654 | $\omega$ | 60.56220 | | +0.98138216 | −0.18655619 | |
| $a$ | 2.2315728 | $\Omega$ | 310.15054 | | +0.14892658 | +0.88929093 | |
| $e$ | 0.1762561 | $i$ | 3.42554 | | +0.12128451 | +0.41756248 | |
| $P$ | 3.33 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 18 | 691 | 0.2− | 0.6+ | 2004 01 16 | 691 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 1994 01 18 | 691 | 0.4+ | 0.4− | 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 1994 01 18 | 691 | 0.2− | 0.4− | 2004 01 27 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 1999 08 17 | 691 | 0.2− | 0.2− | 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 1999 08 17 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 1999 08 17 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.4− | 0.1− |
| 2004 01 15 | 691 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.1− | 1.0+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2004 01 15 | 691 | 0.6− | 0.1− | 2006 11 15 | 691 | 0.8+ | 0.3− | 2006 11 22 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.2− | 0.7− |
| 2004 01 16 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.8− | 0.8− |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2− | 0.5− |
| 2004 01 16 | 691 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1+ | | | | |
| 2004 01 16 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 691 | (1.3− | 2.5−) | | | | |

**2004 AR$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 261.37868 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27553205 | $\omega$ | 336.53966 | −0.70287698 | −0.71026541 |
| $a$ | 2.3389520 | $\Omega$ | 158.05469 | +0.66786641 | −0.67763254 |
| $e$ | 0.1715746 | $i$ | 5.92249 | +0.24478236 | −0.19062318 |
| $P$ | 3.58 | $H$ | 16.7 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 291 | 0.1− | 0.5+ | 2004 01 29 | 704 | 0.9− | 0.3− | 2004 02 22 | 704 | 0.3+ | 0.5+ |
| 2002 08 15 | 291 | 0.4+ | 0.2− | 2004 01 29 | 704 | 0.7− | 0.1+ | 2004 03 18 | 704 | 1.3− | 1.0+ |
| 2002 08 15 | 291 | 0.4− | 0.4+ | 2004 01 29 | 704 | 1.2− | 0.4− | 2004 03 18 | 704 | 0.1− | 0.6+ |
| 2004 01 13 | 699 | 0.4− | 0.2− | 2004 01 29 | 704 | 1.2− | 0.2+ | 2004 03 18 | 704 | 1.2+ | 0.5− |
| 2004 01 13 | 699 | 0.5− | 0.3+ | 2004 01 29 | 704 | 1.4− | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.5+ |
| 2004 01 13 | 699 | 0.3+ | 0.5+ | 2004 02 11 | 699 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.7− |
| 2004 01 13 | 699 | 0.2+ | 0.6− | 2004 02 11 | 644 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2004 01 17 | 644 | 0.1− | 0.1+ | 2004 02 11 | 699 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.6− |
| 2004 01 17 | 644 | 0.2− | 0.1− | 2004 02 11 | 644 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2004 02 11 | 699 | 0.8− | 0.2− | 2006 10 03 | G96 | 0.0 | 0.4− |
| 2004 01 23 | 704 | 0.7+ | 0.0 | 2004 02 11 | 644 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.2− | 0.6− |
| 2004 01 23 | 704 | 1.4+ | 0.9+ | 2004 02 11 | 699 | 0.8+ | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2004 01 23 | 704 | 0.7+ | 0.1+ | 2004 02 17 | 644 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.3− |
| 2004 01 23 | 704 | 0.1− | 0.5+ | 2004 02 17 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.1+ |
| 2004 01 23 | 704 | 0.7+ | 0.7+ | 2004 02 17 | 644 | 0.5− | 1.0− | 2006 10 16 | 703 | 1.1− | 1.4+ |
| 2004 01 24 | 608 | 0.0 | 0.1− | 2004 02 22 | 704 | 0.5+ | 0.5− | 2006 10 16 | 703 | 1.4+ | 0.5+ |
| 2004 01 24 | 608 | 0.5+ | 0.6− | 2004 02 22 | 704 | 1.0+ | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.4+ |
| 2004 01 24 | 608 | 0.2+ | 0.3− | 2004 02 22 | 704 | 0.4+ | 0.2− | | | | |

**2004 AU$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 269.39560 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.26861498 | $\omega$ | 292.16204 | −0.45470366 | −0.89059303 |
| $a$ | 2.3789349 | $\Omega$ | 184.91475 | +0.85227864 | −0.43202414 |
| $e$ | 0.0756826 | $i$ | 6.30893 | +0.25858404 | −0.14212386 |
| $P$ | 3.67 | $H$ | 16.9 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 13 | 699 | 1.0+ | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2004 01 13 | 699 | 1.1+ | 0.7− | 2004 02 23 | 704 | 1.2− | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2004 01 13 | 699 | 0.1+ | 0.4− | 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 10 15 | 703 | 0.8+ | 1.2− |
| 2004 01 13 | 699 | 0.4− | 0.5− | 2006 07 21 | G96 | 0.4+ | 0.0 | 2006 10 15 | 703 | 0.7+ | 1.2− |
| 2004 01 17 | 644 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.1− | 0.5− | 2006 10 15 | 703 | 0.5− | 0.7− |
| 2004 01 17 | 644 | 0.3− | 0.1+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 15 | 703 | 1.0+ | 0.6− |
| 2004 01 17 | 644 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.2− |
| 2004 01 29 | 704 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2004 01 29 | 704 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.7− | 0.1− |
| 2004 01 29 | 704 | 0.6+ | 0.6− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 644 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.6− | 0.7+ |
| 2004 02 11 | 644 | 0.4− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 2.0+ |
| 2004 02 11 | 644 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 1.2− |
| 2004 02 23 | 704 | 0.8− | 1.0+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 1.8− | 2.2− |

**2004 AO$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 234.37180 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27175332 | $\omega$ | 109.82304 | −0.92515449 | −0.37795011 |
| $a$ | 2.3605841 | $\Omega$ | 47.98776 | +0.32809572 | −0.84289991 |
| $e$ | 0.1279566 | $i$ | 2.71964 | +0.19089885 | −0.38297971 |
| $P$ | 3.63 | $H$ | 17.9 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.7− | 0.2− | 2006 09 26 | G96 | 0.5+ | 0.6− |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.6+ | 0.0 |
| 2004 01 15 | 691 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 1.3− | 0.4+ | 2006 10 19 | 691 | 0.6+ | 0.3− |
| 2004 01 15 | 691 | 0.3+ | 0.9+ | 2004 01 22 | 704 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2004 01 15 | 691 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2004 01 18 | 691 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.4− | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2004 01 18 | 691 | 0.2− | 0.2+ | 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 1.0− | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.6+ | 0.7− |
| 2004 01 22 | 704 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 27 | 691 | 0.8− | 0.1+ |

**2004 AY$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 287.96901 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27451436 | $\omega$ | 111.11254 | −0.02635673 | −0.99949270 |
| $a$ | 2.3447291 | $\Omega$ | 340.37231 | +0.89627999 | −0.01570670 |
| $e$ | 0.1599179 | $i$ | 3.05112 | +0.44270476 | −0.02770640 |
| $P$ | 3.59 | $H$ | 18.0 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 01 | 691 | 0.3− | 0.1+ | 2004 01 15 | 691 | 0.1− | 0.2+ | 2006 09 16 | 691 | 0.1− | 0.1− |
| 1995 08 01 | 691 | 0.0 | 0.1− | 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 09 16 | 691 | 0.5− | 0.1+ |
| 1995 08 01 | 691 | 0.2+ | 0.0 | 2004 01 19 | 699 | 1.0+ | 0.9− | 2006 09 16 | 691 | 0.3+ | 0.1+ |
| 2003 12 19 | 691 | 0.5− | 0.1+ | 2004 01 19 | 699 | 1.3+ | 0.9− | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2003 12 19 | 691 | 0.5+ | 0.2− | 2004 01 19 | 699 | 1.1− | 0.6− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2003 12 19 | 691 | 0.1− | 0.2− | 2004 01 19 | 699 | 0.7− | 1.2+ | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2003 12 28 | 704 | 1.2− | 0.7+ | 2004 01 22 | 704 | 1.0− | 0.3− | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2003 12 28 | 704 | 0.2+ | 0.2− | 2004 01 22 | 704 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2003 12 28 | 704 | (1.6+ | 0.9+) | 2004 01 22 | 704 | (0.3− | 1.7−) | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2003 12 29 | 699 | 0.7+ | 0.6− | 2004 01 22 | 704 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2003 12 29 | 699 | 0.5− | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.5− | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2003 12 29 | 699 | 0.2+ | 0.0 | 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.7+ | 0.7− |
| 2003 12 29 | 699 | 0.6+ | 0.1+ | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.6+ | 0.1− |
| 2004 01 15 | 691 | 0.1− | 0.2+ | 2004 01 27 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.3− |

**2004 AC$_{10}$ = 2006 UO$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 221.50153 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27156185 | $\omega$ | 138.97097 | −0.99433980 | −0.10478032 |
| $a$ | 2.3616935 | $\Omega$ | 35.02624 | +0.08771269 | −0.90298802 |
| $e$ | 0.1214838 | $i$ | 1.75635 | +0.05995706 | −0.41669379 |
| $P$ | 3.63 | $H$ | 17.4 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 691 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.2− | 1.2+ | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2003 12 28 | 691 | 0.3− | 0.1− | 2004 01 22 | 704 | 0.8+ | 0.3− | 2006 10 29 | 691 | 0.3+ | 0.3+ |
| 2003 12 28 | 691 | 0.1+ | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2004 01 15 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | (1.8+ | 1.2+) | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2004 01 15 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 01 15 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.3− | 0.5− | 2006 11 10 | 691 | 0.8− | 0.5+ |
| 2004 01 19 | 699 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.5+ | 0.4+ |
| 2004 01 19 | 699 | 1.0− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2004 01 19 | 699 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.7− | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2004 01 19 | 699 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.7− |
| 2004 01 22 | 704 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.6+ | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2004 01 22 | 704 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.6+ | 0.0 | | | | |

### 2004 $AC_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.04076 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26044008 | $\omega$ | 147.37905 | −0.80900927 | | +0.57860604 | |
| $a$ | 2.4284593 | $\Omega$ | 68.31656 | −0.56036080 | | −0.70600742 | |
| $e$ | 0.1470871 | $i$ | 6.39699 | −0.17748174 | | −0.40837309 | |
| $P$ | 3.78 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 07 | 809 | 0.4− | 0.1− | 2004 01 26 | 699 | 0.6+ | 0.3− | 2005 07 29 | E12 | 0.7− | 1.0+ |
| 1997 06 07 | 809 | 0.5− | 1.4− | 2004 01 31 | 704 | 0.1− | 0.6− | 2006 09 30 | G96 | 0.1− | 0.3− |
| 1997 06 07 | 809 | 0.1− | 1.1− | 2004 01 31 | 704 | 0.6+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2004 01 13 | 699 | 0.4− | 0.6+ | 2004 01 31 | 704 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.5− |
| 2004 01 13 | 699 | 0.4+ | 0.3+ | 2004 01 31 | 704 | 0.8+ | 0.2− | 2006 11 11 | 703 | (1.2+ | 4.5−) |
| 2004 01 13 | 699 | 0.2+ | 0.3+ | 2004 01 31 | 704 | 0.5+ | 1.0+ | 2006 11 11 | 703 | 1.0+ | 0.9+ |
| 2004 01 13 | 699 | 1.3− | 0.7+ | 2004 02 14 | 704 | 0.1+ | 1.0− | 2006 11 11 | 703 | 0.9− | 0.7− |
| 2004 01 17 | 644 | 0.3− | 0.1− | 2004 02 14 | 704 | 0.4− | 0.5− | 2006 11 11 | 703 | 1.1+ | 1.0− |
| 2004 01 17 | 644 | 0.2− | 0.1− | 2004 02 14 | 704 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2004 01 17 | 644 | 0.1− | 0.0 | 2004 02 14 | 704 | 0.6− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 01 26 | 699 | 1.2+ | 1.4+ | 2005 07 29 | E12 | 0.8+ | 1.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 01 26 | 699 | 0.0 | 1.1+ | 2005 07 29 | E12 | 0.3− | 1.3+ | 2006 11 15 | G96 | 0.5− | 0.1− |
| 2004 01 26 | 699 | 0.3− | 0.3+ | 2005 07 29 | E12 | 0.5− | 0.3− | | | | |

### 2004 $AT_{23}$ = 2006 $UU_{127}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.87862 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28704364 | $\omega$ | 218.51611 | −0.56744270 | | −0.82234456 | |
| $a$ | 2.2759922 | $\Omega$ | 266.09419 | +0.76549573 | | −0.50808461 | |
| $e$ | 0.1256350 | $i$ | 2.40878 | +0.30335633 | | −0.25612391 | |
| $P$ | 3.43 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.1+ | 0.1− | 2004 02 17 | 645 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.6− |
| 2004 01 15 | 691 | 0.1− | 0.1− | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2004 01 15 | 691 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.4+ | 0.4+ |
| 2004 01 27 | 691 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.5+ | 0.4− | 2006 10 23 | 691 | 0.1+ | 0.2− |
| 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2004 01 27 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.4+ |

### 2004 $AS_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.59798 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21085282 | $\omega$ | 261.09868 | −0.34554978 | | −0.93307006 | |
| $a$ | 2.7956519 | $\Omega$ | 209.73087 | +0.92053569 | | −0.31637673 | |
| $e$ | 0.1586416 | $i$ | 11.61865 | +0.18223446 | | −0.17113163 | |
| $P$ | 4.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 22 | 910 | 0.3− | 0.9+ | 2002 09 04 | 644 | 0.2+ | 0.8+ | 2004 01 18 | 644 | 0.1+ | 0.0 |
| 1998 09 22 | 910 | 0.3− | 0.9+ | 2002 09 04 | 644 | 0.1− | 0.8+ | 2005 04 12 | 704 | 0.0 | 0.6− |
| 1998 09 22 | 910 | 0.2+ | 0.9+ | 2002 10 11 | 645 | 0.1− | 0.2+ | 2005 04 12 | 704 | (3.9+ | 0.2−) |
| 1998 10 24 | 691 | 0.4+ | 0.0 | 2002 10 11 | 645 | 0.2− | 0.1+ | 2005 04 12 | 704 | (3.1+ | 0.6+) |
| 1998 10 24 | 691 | 0.2+ | 0.1+ | 2003 11 30 | 704 | 0.0 | 1.1+ | 2005 04 12 | 704 | 2.7+ | 0.5+ |
| 1998 10 24 | 691 | 0.3+ | 0.1+ | 2003 11 30 | 704 | 0.6− | 2.3+ | 2005 04 18 | 703 | 0.8− | 0.1+ |
| 1998 11 11 | 704 | 1.2+ | 0.0 | 2003 11 30 | 704 | 0.0 | 0.4+ | 2005 04 18 | 703 | (0.2− | 3.0+) |
| 1998 11 11 | 704 | 2.3+ | 1.7− | 2003 11 30 | 704 | 0.6+ | 0.2+ | 2005 04 18 | 703 | 0.0 | 1.0+ |
| 1998 11 11 | 704 | 1.0+ | 0.1+ | 2003 11 30 | 704 | 0.3+ | 0.9+ | 2005 04 18 | 703 | 0.2− | 0.0 |
| 1998 11 11 | 704 | (4.9− | 0.7−) | 2004 01 12 | 644 | 0.3− | 0.2+ | 2005 05 01 | 644 | 0.5− | 0.2+ |
| 2000 03 09 | 704 | 0.7− | 0.0 | 2004 01 12 | 644 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.7− | 0.5+ |
| 2000 03 09 | 704 | 0.2+ | 0.4+ | 2004 01 12 | 644 | 0.4− | 0.3+ | 2005 05 01 | 644 | 0.6− | 0.4+ |
| 2000 03 09 | 704 | 0.5+ | 1.1− | 2004 01 12 | 644 | 0.2− | 0.2+ | 2005 05 14 | 644 | 0.4− | 0.5+ |
| 2000 04 07 | 704 | 0.2− | 0.5+ | 2004 01 12 | 644 | 0.3− | 0.4+ | 2005 05 14 | 644 | 0.6− | 0.3+ |
| 2000 04 07 | 704 | 0.6− | 1.5+ | 2004 01 12 | 644 | 0.0 | 0.2+ | 2005 05 14 | 644 | 1.4− | 0.5+ |
| 2000 04 07 | 704 | (0.4− | 3.2+) | 2004 01 18 | 644 | 0.3+ | 0.2− | | | | |
| 2002 09 04 | 644 | 0.4− | 0.7+ | 2004 01 18 | 644 | 0.1+ | 0.2+ | | | | |

### 2004 $BC_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.09449 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21964932 | $\omega$ | 314.46737 | −0.94827604 | | +0.31597174 | |
| $a$ | 2.7205047 | $\Omega$ | 243.97412 | −0.28074224 | | −0.87968237 | |
| $e$ | 0.0843384 | $i$ | 1.94944 | −0.14817672 | | −0.35541636 | |
| $P$ | 4.49 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2004 01 18 | 691 | 0.2+ | 0.6− | 2006 08 19 | 691 | 0.3+ | 0.1− |
| 2004 01 16 | 691 | 0.0 | 0.3+ | 2004 01 18 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.2+ | 0.4+ |
| 2004 01 17 | 691 | 0.1+ | 0.1+ | 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.4− |
| 2004 01 17 | 691 | 0.1+ | 0.4+ | 2004 02 11 | 691 | 0.3− | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2004 01 17 | 691 | 0.2− | 0.3− | 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.2− | 0.2− |

### 2004 $BF_1$ = 2006 $UH_{259}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.83167 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28673744 | $\omega$ | 227.73444 | −0.03972424 | | −0.99891587 | |
| $a$ | 2.2776122 | $\Omega$ | 224.56001 | +0.92663947 | | −0.02774033 | |
| $e$ | 0.1360197 | $i$ | 1.98231 | +0.37384659 | | −0.03738403 | |
| $P$ | 3.44 | $H$ | 19.3 | $G$ | 0.15 | $U$ | 8 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.8− | 1.6− | 2004 01 18 | 691 | 0.7+ | 1.5+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2004 01 16 | 691 | 0.6− | 1.4− | 2004 01 18 | 691 | 1.0+ | 1.7+ | 2006 10 29 | 691 | 0.3− | 0.1− |
| 2004 01 16 | 691 | 0.4− | 1.6− | 2004 01 18 | 691 | 0.8+ | 1.6+ | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2004 01 17 | 691 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.3− | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2004 01 17 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | | | | |
| 2004 01 17 | 691 | 0.7− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.3+ | | | | |

### 2004 $BJ_1$ = 2006 $UK_{222}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.37770 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24605717 | $\omega$ | 335.71361 | −0.38169115 | | +0.92160215 | |
| $a$ | 2.5221952 | $\Omega$ | 271.78454 | −0.83607297 | | −0.37674821 | |
| $e$ | 0.0651745 | $i$ | 4.04104 | −0.39407341 | | −0.09332876 | |
| $P$ | 4.01 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 27 | 691 | 0.0 | 0.0 | 2004 01 18 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 1996 01 27 | 691 | 0.0 | 0.0 | 2004 01 18 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 1996 01 27 | 691 | 0.1− | 0.3− | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.5− | 0.4+ |
| 2002 11 09 | 695 | 0.0 | 0.0 | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1+ | 1.2+ |
| 2002 11 09 | 695 | 0.2+ | 0.0 | 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2004 04 13 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.3+ |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.1+ | 0.3+ |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.8− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2004 01 17 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 1.1− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2004 01 17 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | (3.6− | 1.1−) | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2004 01 17 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.8− | 1.0+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.5− | 0.5− |
| 2004 01 17 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2004 01 18 | 691 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.1− | 0.5− | | | | |

**2004 $BQ_1$ = 1999 $XT_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 286.16705 | | (2000.0) | | | |
| $n$ | 0.27291430 | $\omega$ | 172.52015 | | −0.08585438 | −0.99383752 |
| $a$ | 2.3538847 | $\Omega$ | 282.38615 | | +0.91033708 | −0.04965401 |
| $e$ | 0.1379830 | $i$ | 4.11652 | | +0.40486470 | −0.09910326 |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 02 | 159 | (2.7− | 0.7+) | 2004 01 21 | 704 | 0.4− | 1.1+ | 2004 01 29 | 704 | 0.3+ | 0.9+ |
| 1999 12 02 | 159 | 0.3+ | 0.6− | 2004 01 21 | 704 | 0.7+ | 0.6+ | 2004 01 30 | 704 | 0.5− | 0.7+ |
| 1999 12 02 | 159 | 0.1+ | 0.4− | 2004 01 21 | 704 | 0.3− | 0.3− | 2004 01 30 | 704 | 0.4+ | 0.0 |
| 1999 12 02 | 159 | 1.1+ | 0.4− | 2004 01 24 | 704 | 0.6+ | 0.6+ | 2004 01 30 | 704 | 0.2− | 0.1+ |
| 1999 12 02 | 159 | 0.9− | 1.5+ | 2004 01 24 | 704 | 0.3+ | 0.2+ | 2004 02 11 | 699 | 0.6− | 0.2− |
| 1999 12 02 | 159 | 0.7− | 0.1+ | 2004 01 24 | 704 | 0.8+ | 0.0 | 2004 02 11 | 699 | 0.2+ | 0.5+ |
| 1999 12 02 | 159 | (2.3− | 4.9+) | 2004 01 24 | 704 | 0.4− | 0.3+ | 2004 02 11 | 699 | 0.1+ | 0.5− |
| 2003 12 18 | 644 | 0.0 | 0.7− | 2004 01 24 | 704 | 0.3+ | 0.1+ | 2004 02 11 | 699 | 0.3− | 1.1+ |
| 2003 12 18 | 644 | 0.7+ | 0.1− | 2004 01 26 | 699 | 0.6− | 0.7− | 2004 02 13 | 691 | 0.2+ | 0.2+ |
| 2003 12 18 | 644 | 0.3+ | 0.0 | 2004 01 26 | 699 | 0.4− | 0.4− | 2004 02 13 | 691 | 0.1+ | 0.1+ |
| 2003 12 29 | 699 | 0.2+ | 0.2− | 2004 01 26 | 699 | 0.4− | 0.2+ | 2004 02 13 | 691 | 0.1+ | 0.2+ |
| 2003 12 29 | 699 | 0.9+ | 0.8− | 2004 01 26 | 699 | 0.5− | 0.6− | 2004 02 16 | 704 | 1.2+ | 0.3+ |
| 2003 12 29 | 699 | 0.3− | 0.2− | 2004 01 27 | 704 | 1.0+ | 0.5+ | 2004 02 16 | 704 | 0.6+ | 0.4+ |
| 2003 12 29 | 699 | 0.2− | 0.7+ | 2004 01 27 | 704 | 0.7+ | 0.2− | 2004 02 16 | 704 | 0.4+ | 1.1+ |
| 2004 01 16 | 691 | 0.2− | 0.2− | 2004 01 27 | 691 | 0.1− | 0.1− | 2004 02 16 | 704 | (0.5+ | 2.0+) |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2004 01 27 | 704 | 0.6+ | 0.2− | 2004 02 16 | 704 | 0.5+ | 2.0+ |
| 2004 01 16 | 691 | 0.1− | 0.2− | 2004 01 27 | 704 | 0.1+ | 0.3+ | 2004 02 17 | 645 | 0.1− | 0.2− |
| 2004 01 17 | 608 | 0.1− | 0.5+ | 2004 01 27 | 691 | 0.2− | 0.0 | 2004 02 17 | 645 | 0.1− | 0.2− |
| 2004 01 17 | 608 | 0.4+ | 1.5+ | 2004 01 27 | 704 | 0.4+ | 0.1− | 2004 03 17 | 645 | 0.1− | 0.1− |
| 2004 01 17 | 608 | 0.6− | 0.4+ | 2004 01 27 | 691 | 0.2− | 0.1− | 2004 03 17 | 645 | 0.1− | 0.1− |
| 2004 01 19 | 703 | 0.3+ | 0.1− | 2004 01 28 | 704 | 0.5− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2004 01 19 | 703 | 0.6+ | 0.7+ | 2004 01 28 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2004 01 19 | 703 | 0.8− | 0.3+ | 2004 01 28 | 704 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2004 01 19 | 703 | 1.7− | 0.6+ | 2004 01 28 | 704 | 1.2+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.4− |
| 2004 01 21 | 704 | 0.4+ | 0.4+ | 2004 01 29 | 704 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2004 01 21 | 704 | 0.7+ | 0.9+ | 2004 01 29 | 704 | 1.0+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.3− |

**2004 $BX_2$ = 2006 $RT_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 221.41389 | | (2000.0) | | | |
| $n$ | 0.25531816 | $\omega$ | 140.72190 | | −0.92606543 | −0.37729712 |
| $a$ | 2.4608298 | $\Omega$ | 17.11578 | | +0.33991122 | −0.84212625 |
| $e$ | 0.1199426 | $i$ | 1.37272 | | +0.16389995 | −0.38531838 |
| $P$ | 3.86 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.1+ | 0.1+ | 2004 01 22 | 704 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.1− |
| 2002 10 05 | 645 | 0.1+ | 0.3− | 2004 01 22 | 704 | 0.2− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2− |
| 2004 01 16 | 644 | 0.2+ | 0.4+ | 2004 01 28 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2004 01 16 | 644 | 0.0 | 0.2− | 2004 01 28 | 691 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.7− | 0.3− |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 01 28 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 1.0− | 0.3+ |
| 2004 01 17 | 644 | 0.2+ | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2004 01 17 | 644 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.5− | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2004 01 17 | 644 | 0.2+ | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.3− | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.1− | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.8+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.2+ | 0.7− | 2006 09 18 | 691 | 0.4+ | 0.4+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2004 01 22 | 704 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 16 | G96 | 0.7− | 0.1+ |

**2004 $BC_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.00250 | | (2000.0) | | | |
| $n$ | 0.29247511 | $\omega$ | 117.98363 | | +0.40533725 | −0.91186787 |
| $a$ | 2.2477264 | $\Omega$ | 307.95640 | | +0.80721755 | +0.39028466 |
| $e$ | 0.1210238 | $i$ | 4.71389 | | +0.42907055 | +0.12718045 |
| $P$ | 3.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 0.4+ | 0.2− | 2004 01 27 | 704 | 0.4− | 0.7+ | 2004 02 26 | 704 | 0.2− | 1.2− |
| 2003 12 22 | 704 | 1.0+ | 0.2− | 2004 01 27 | 704 | 0.2− | 0.0 | 2004 03 17 | 645 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 0.5+ | 1.1− | 2004 01 28 | 704 | 0.1− | 0.5+ | 2004 03 17 | 645 | 0.0 | 0.1− |
| 2003 12 27 | 704 | (0.5− | 2.1−) | 2004 01 28 | 704 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.9+ |
| 2003 12 27 | 704 | (0.5− | 1.7−) | 2004 01 28 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.4+ | 0.4− |
| 2003 12 27 | 704 | 0.1− | 0.1− | 2004 01 28 | 704 | 0.6− | 0.3+ | 2006 10 19 | 703 | 0.1+ | 1.4+ |
| 2004 01 16 | 644 | 0.0 | 0.2+ | 2004 01 28 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.1− |
| 2004 01 16 | 644 | 0.2− | 0.1− | 2004 01 29 | 704 | 1.1− | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.5− |
| 2004 01 16 | 644 | 0.3− | 0.1+ | 2004 01 29 | 704 | 1.2− | 0.6− | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 2004 01 17 | 644 | 0.8+ | 0.7− | 2004 01 29 | 704 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.3+ |
| 2004 01 17 | 644 | 0.3+ | 0.5+ | 2004 01 30 | 691 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.2− |
| 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 11 02 | 703 | 1.0+ | 0.5− |
| 2004 01 17 | 644 | 0.1+ | 0.1− | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.8+ | 0.0 |
| 2004 01 17 | 644 | 0.6+ | 0.0 | 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 11 02 | 703 | 0.4− | 0.1+ |
| 2004 01 17 | 644 | 0.0 | 0.2+ | 2004 02 12 | 691 | 0.1− | 0.1− | 2006 11 02 | 703 | 1.1− | 0.3+ |
| 2004 01 24 | 704 | 0.4+ | 0.2− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 1.2+ | 0.0 |
| 2004 01 24 | 704 | 1.2+ | 0.5+ | 2004 02 22 | 704 | 0.7+ | 1.2+ | 2006 11 14 | 703 | 0.6− | 0.3+ |
| 2004 01 24 | 704 | 0.7+ | 0.3+ | 2004 02 22 | 704 | (1.1+ | 2.2+) | 2006 11 14 | 703 | 0.3+ | 0.0 |
| 2004 01 24 | 704 | 0.5+ | 0.4− | 2004 02 22 | 704 | 0.7− | 0.9+ | 2006 11 22 | 703 | 0.6− | 0.5− |
| 2004 01 24 | 704 | 1.0+ | 0.2+ | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.5− | 0.4− |
| 2004 01 27 | 704 | 0.5− | 0.0 | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.4− | 0.4− |
| 2004 01 27 | 704 | 0.6− | 0.9+ | 2004 02 26 | 704 | 0.3− | 0.6+ | 2006 11 22 | 703 | 0.2+ | 0.5− |
| 2004 01 27 | 704 | 0.1+ | 1.1+ | 2004 02 26 | 704 | 1.0+ | 0.9− | | | | |

**2004 $BN_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 233.91134 | | (2000.0) | | | |
| $n$ | 0.25936517 | $\omega$ | 47.40385 | | −0.87147389 | −0.48867314 |
| $a$ | 2.4351644 | $\Omega$ | 103.30317 | | +0.43652201 | −0.81154500 |
| $e$ | 0.1284882 | $i$ | 2.45086 | | +0.22356607 | −0.32030184 |
| $P$ | 3.80 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 291 | 0.6− | 0.2+ | 2004 01 26 | 699 | 0.7− | 0.7− | 2004 02 23 | 704 | 0.1− | 0.2− |
| 2003 12 18 | 291 | 0.4− | 0.2+ | 2004 01 26 | 699 | 0.0 | 0.6− | 2004 02 23 | 704 | 0.7+ | 1.1+ |
| 2003 12 18 | 291 | 0.2− | 0.1+ | 2004 01 26 | 699 | (2.1− | 0.7−) | 2004 02 23 | 704 | 0.2+ | 1.1+ |
| 2004 01 16 | 644 | 0.3+ | 0.0 | 2004 01 26 | 699 | 0.6+ | 0.4− | 2004 02 23 | 704 | 0.5+ | 1.4+ |
| 2004 01 16 | 644 | 0.3+ | 0.1+ | 2004 01 30 | 704 | 0.8− | 0.2+ | 2004 02 23 | 704 | 0.3− | 1.0+ |
| 2004 01 16 | 644 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.5− | 0.1+ | 2004 04 15 | 645 | 0.1− | 0.1− |
| 2004 01 17 | 644 | 0.5+ | 0.2− | 2004 01 30 | 704 | 0.0 | 0.3+ | 2004 04 15 | 645 | 0.1− | 0.1− |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2004 01 30 | 704 | 0.2− | 0.0 | 2004 04 16 | 645 | 0.0 | 0.1− |
| 2004 01 17 | 644 | 0.7+ | 0.1− | 2004 01 30 | 704 | 0.4− | 0.5+ | 2004 04 16 | 645 | 0.1+ | 0.2− |
| 2004 01 19 | 703 | 0.8+ | 0.2− | 2004 02 10 | 703 | 0.9− | 0.7− | 2006 09 17 | 691 | 0.4− | 0.0 |
| 2004 01 19 | 703 | (1.6+ | 0.2+) | 2004 02 10 | 703 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.1− | 0.4− |
| 2004 01 19 | 703 | (2.2+ | 0.0 ) | 2004 02 10 | 703 | 0.0 | 0.6− | 2006 09 17 | 691 | 0.0 | 0.2− |
| 2004 01 19 | 703 | 0.7+ | 0.8+ | 2004 02 10 | 703 | 0.8− | 1.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 01 19 | 691 | 0.1+ | 0.1− | 2004 02 14 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.0 | 0.3− |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2004 02 14 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.8+ |
| 2004 01 19 | 691 | 0.2+ | 0.2− | 2004 02 14 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.3− | 0.8+ | 2004 02 16 | 704 | 1.3+ | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2004 01 22 | 704 | 0.2− | 0.3− | 2004 02 16 | 704 | (1.7+ | 0.1−) | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.2− | 0.4+ | 2004 02 16 | 704 | (1.8+ | 0.2−) | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2004 01 22 | 704 | 0.0 | 0.7+ | 2004 02 16 | 704 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2004 01 22 | 704 | 0.4+ | 1.2+ | 2004 02 17 | 644 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.6− |
| 2004 01 24 | 704 | 0.3+ | 0.3+ | 2004 02 17 | 644 | 0.5+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2004 01 24 | 704 | 0.6+ | 0.6− | 2004 02 17 | 644 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2004 01 24 | 704 | 0.7+ | 0.4+ | 2004 02 17 | 608 | 0.7− | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2004 01 24 | 704 | 0.7+ | 0.4+ | 2004 02 17 | 608 | 0.6− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2004 01 24 | 704 | 0.6+ | 0.0 | 2004 02 17 | 608 | 0.7− | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.6− |

### 2004 $BW_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 233.58564 | | | (2000.0) | | |
| $n$ | 0.25697209 | $\omega$ | 40.56762 | | −0.84043705 | −0.53931713 |
| $a$ | 2.4502595 | $\Omega$ | 106.71950 | | +0.48179720 | −0.78835576 |
| $e$ | 0.1471871 | $i$ | 3.16872 | | +0.24806657 | −0.29602740 |
| $P$ | 3.84 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.2+ | 1.1+ | 2004 01 23 | 246 | 0.4− | 0.6+ | 2004 02 23 | 704 | 0.7− | 1.1+ |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 11 | 699 | (0.1− | 2.1+) | 2004 02 23 | 704 | 0.8− | 1.4+ |
| 2004 01 16 | 644 | 0.0 | 0.0 | 2004 02 11 | 699 | 0.2− | 1.2− | 2004 02 23 | 704 | 0.1− | 0.4+ |
| 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 02 11 | 699 | 0.0 | 0.3− | 2004 02 23 | 704 | 0.3− | 1.1+ |
| 2004 01 17 | 644 | 0.6+ | 0.1− | 2004 02 11 | 699 | 1.8+ | 1.6− | 2004 04 15 | 645 | 0.0 | 0.1+ |
| 2004 01 17 | 644 | 0.3+ | 0.1− | 2004 02 12 | 691 | 0.2+ | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2004 01 19 | 691 | 0.4− | 0.0 | 2004 02 12 | 691 | 0.2+ | 0.0 | 2004 04 16 | 645 | 0.0 | 0.0 |
| 2004 01 19 | 691 | 0.2− | 0.0 | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.0 |
| 2004 01 19 | 691 | 0.4− | 0.2+ | 2004 02 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4+ |
| 2004 01 22 | 704 | 1.2+ | 0.5+ | 2004 02 14 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.6− | 0.3− |
| 2004 01 22 | 704 | 0.8+ | 0.8− | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 1.0+ | 0.3+ |
| 2004 01 22 | 704 | 0.5+ | 0.2+ | 2004 02 15 | 704 | 0.5+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2004 01 22 | 704 | 0.5+ | 1.2+ | 2004 02 15 | 704 | 0.1+ | 1.0− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2004 01 22 | 704 | 1.4+ | 1.0+ | 2004 02 15 | 704 | 0.5+ | 0.9− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2004 01 23 | 246 | 0.0 | 0.2+ | 2004 02 16 | 291 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2004 01 23 | 246 | 0.1+ | 0.6+ | 2004 02 16 | 291 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2004 01 23 | 246 | 0.1+ | 0.5+ | 2004 02 16 | 291 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2004 01 23 | 246 | 0.4+ | 0.3+ | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3+ |
| 2004 01 23 | 246 | 0.6+ | 0.4+ | 2004 02 17 | 645 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.6− | 0.2− |
| 2004 01 23 | 246 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.6+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2+ |

### 2004 $BY_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 308.73021 | | | (2000.0) | | |
| $n$ | 0.28901805 | $\omega$ | 348.83545 | | +0.09752513 | −0.99101341 |
| $a$ | 2.2656148 | $\Omega$ | 95.52085 | | +0.92004632 | +0.05470060 |
| $e$ | 0.1944894 | $i$ | 5.27729 | | +0.37947808 | +0.12206668 |
| $P$ | 3.41 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.1− | 0.2− | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2004 01 16 | 644 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 2004 01 16 | 644 | 0.1+ | 0.0 | 2004 01 31 | 704 | 0.7− | 0.7− | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 2004 01 17 | 644 | 0.1+ | 0.1− | 2004 01 31 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2004 01 17 | 644 | 0.3+ | 0.1+ | 2004 01 31 | 704 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2004 02 17 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2004 02 17 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.9− |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 02 17 | 691 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2004 01 19 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2004 01 26 | 699 | 0.4− | 0.4− | 2006 10 16 | 703 | 1.2+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2004 01 26 | 699 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3− | 1.1+ | 2006 10 28 | 703 | 0.2+ | 0.1+ |
| 2004 01 26 | 699 | (2.3− | 0.2+) | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.1− | 1.0− |
| 2004 01 26 | 699 | 0.7+ | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.7− |
| 2004 01 30 | 704 | 0.1− | 1.1+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2004 01 30 | 704 | 0.1− | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.1− | | | | |

### 2004 $BG_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.55072 | | | (2000.0) | | |
| $n$ | 0.27083918 | $\omega$ | 146.97442 | | −0.68516214 | −0.72813015 |
| $a$ | 2.3658928 | $\Omega$ | 346.23971 | | +0.64927840 | −0.59840752 |
| $e$ | 0.1958751 | $i$ | 4.69673 | | +0.33013694 | −0.33426774 |
| $P$ | 3.64 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.5+ | 0.5− | 2004 02 14 | 691 | 0.1+ | 0.5− | 2004 03 14 | 540 | 0.6+ | 0.1− |
| 2004 01 16 | 644 | 0.3+ | 0.5− | 2004 02 15 | 704 | 0.1− | 0.9+ | 2004 03 14 | 540 | 0.3− | 0.4− |
| 2004 01 16 | 644 | 0.3+ | 0.4− | 2004 02 15 | 704 | 1.4+ | 0.9+ | 2004 03 14 | 540 | 0.2+ | 0.6− |
| 2004 01 17 | 644 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.5+ | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2004 01 17 | 644 | 0.4+ | 0.0 | 2004 02 15 | 704 | 0.1− | 1.2+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2004 01 17 | 644 | 0.5+ | 0.1− | 2004 02 17 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2004 01 30 | 704 | 0.3− | 0.4+ | 2004 02 17 | 644 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2004 01 30 | 704 | 0.9− | 0.4+ | 2004 02 17 | 644 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2004 01 30 | 704 | 0.4+ | 1.2+ | 2004 02 23 | 704 | 1.5− | 1.0+ | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2004 01 30 | 704 | (0.6+ | 1.6+) | 2004 02 23 | 704 | 1.3− | 0.1− | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2004 01 30 | 704 | 0.0 | 0.9+ | 2004 02 23 | 704 | 0.7− | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.6− |
| 2004 02 14 | 691 | 0.1+ | 0.4− | 2004 02 23 | 704 | 0.9− | 0.2− | 2006 10 19 | G96 | 0.7+ | 0.7− |
| 2004 02 14 | 691 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.7− | 0.7− | 2006 10 19 | G96 | 0.3− | 0.3− |

### 2004 $BH_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 262.21499 | | | (2000.0) | | |
| $n$ | 0.24537258 | $\omega$ | 129.75917 | | −0.24572603 | −0.96825265 |
| $a$ | 2.5268843 | $\Omega$ | 334.35476 | | +0.85378209 | −0.19377502 |
| $e$ | 0.0228934 | $i$ | 6.08604 | | +0.45899332 | −0.15791785 |
| $P$ | 4.02 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.8+ | 0.2+ | 2004 02 10 | 703 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.8+ |
| 2000 02 03 | 704 | 0.4− | 1.0+ | 2004 02 10 | 703 | 0.7− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.5− |
| 2000 02 03 | 704 | 0.9+ | 0.6− | 2004 02 10 | 703 | 0.3− | 0.6+ | 2006 09 19 | 699 | 0.0 | 1.2− |
| 2000 02 03 | 704 | 1.4− | 0.2+ | 2004 02 11 | 691 | 0.6+ | 0.3− | 2006 09 19 | 699 | 0.7− | 0.6+ |
| 2000 02 03 | 704 | 0.3+ | 0.1+ | 2004 02 11 | 691 | 0.6+ | 0.4− | 2006 09 19 | 699 | (1.9+ | 1.1−) |
| 2002 10 04 | 704 | 1.0− | 0.4+ | 2004 02 11 | 691 | 0.2+ | 0.3− | 2006 09 19 | 699 | 1.0− | 0.0 |
| 2002 10 04 | 704 | 0.2+ | 0.5+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.6+ | 0.1+ |
| 2002 10 04 | 704 | 0.0 | 0.3+ | 2004 02 12 | 691 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.0 | 0.6+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2− |
| 2002 10 04 | 704 | 0.1− | 0.2+ | 2004 02 12 | 691 | 0.3+ | 0.1− | 2006 09 25 | 704 | 0.4− | 0.9− |
| 2003 12 29 | 291 | 0.6− | 0.2− | 2004 02 12 | 691 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.8− | 0.8− |
| 2003 12 29 | 291 | 0.3− | 0.2+ | 2004 02 12 | 691 | 0.3+ | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.3− |
| 2003 12 29 | 291 | 1.0− | 0.2+ | 2004 02 16 | 704 | 0.4− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2004 01 16 | 644 | 0.0 | 0.1− | 2004 02 16 | 704 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 01 16 | 644 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.5+ | 1.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2004 01 16 | 644 | 0.3+ | 0.3− | 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 09 29 | 704 | 0.9+ | 0.4+ |
| 2004 01 17 | 644 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.9+ |
| 2004 01 17 | 644 | 0.7+ | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2004 01 17 | 644 | 0.4+ | 0.0 | 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.5+ | 2004 02 23 | 704 | 0.6− | 1.4+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2004 01 22 | 704 | 0.2− | 1.4+ | 2004 03 17 | 645 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.0 | 0.0 | 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2004 01 22 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2004 01 28 | 691 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.8+ | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.6− |
| 2004 01 28 | 691 | 0.1+ | 0.3− | 2006 08 28 | 703 | 1.1− | 0.6+ | 2006 10 23 | G96 | 0.2+ | 0.7− |
| 2004 01 28 | 691 | 0.2+ | 0.2− | 2006 09 17 | 703 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2004 02 10 | 703 | 0.7− | 0.2− | 2006 09 17 | 703 | 0.4− | 0.8− | 2006 10 23 | G96 | 0.1+ | 0.4− |

### 2004 $BK_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.28713 | | | (2000.0) | | |
| $n$ | 0.27153574 | $\omega$ | 151.70462 | | −0.62490587 | −0.78056656 |
| $a$ | 2.3618450 | $\Omega$ | 336.96139 | | +0.70914153 | −0.55979468 |
| $e$ | 0.1319343 | $i$ | 2.11452 | | +0.32651332 | −0.27811107 |
| $P$ | 3.63 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.2− | 0.1− | 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.4+ | 0.0 |
| 2003 12 21 | 691 | 0.1+ | 0.2− | 2004 01 22 | 704 | 0.8+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2003 12 21 | 691 | 0.2+ | 0.4− | 2004 01 22 | 704 | 0.6− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2004 01 16 | 644 | 0.0 | 0.3+ | 2004 01 22 | 704 | 0.6+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.0 | 0.3+ | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2004 01 16 | 644 | 0.1− | 0.7+ | 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2004 01 16 | 691 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.8+ | 0.8− |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2004 01 17 | 644 | 0.6+ | 0.3+ | 2004 02 13 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.8− |
| 2004 01 17 | 644 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.7− | 0.4+ | | | | |
| 2004 01 22 | 704 | 0.6− | 0.0 | 2006 09 15 | 691 | 0.6+ | 0.2+ | | | | |

**2004 BD$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.88488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27695527 | $\omega$ | 105.50703 | | +0.73582751 | | −0.66489150 |
| $a$ | 2.3309321 | $\Omega$ | 296.35679 | | +0.55333541 | | +0.69963746 |
| $e$ | 0.1157911 | $i$ | 8.23626 | | +0.39035599 | | +0.26158500 |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.3+ | 0.4+ | 2004 01 17 | 644 | 0.4+ | 0.6− | 2006 10 19 | H82 | 0.3− | 0.7− |
| 1995 08 28 | 691 | 0.5+ | 0.4+ | 2004 01 21 | 704 | 0.1+ | 0.6+ | 2006 10 19 | H82 | 0.1+ | 1.6− |
| 1995 08 28 | 691 | 0.4− | 1.5− | 2004 01 21 | 704 | 0.1− | 0.2− | 2006 10 19 | H82 | 0.4− | 0.3− |
| 2003 12 29 | 691 | 0.2− | 0.1− | 2004 01 21 | 704 | 0.1+ | 0.6+ | 2006 10 19 | H82 | 0.0 | 0.9− |
| 2003 12 29 | 691 | 0.1− | 0.1− | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2003 12 29 | 691 | 0.3− | 0.0 | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2004 01 16 | 644 | 0.1+ | 0.3+ | 2004 01 27 | 691 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2004 01 16 | 644 | 0.2+ | 0.2− | 2004 03 17 | 645 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.4− | 0.1+ |
| 2004 01 16 | 644 | 0.3+ | 0.2+ | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 10 24 | 644 | 0.2− | 0.4+ |
| 2004 01 16 | 691 | 0.0 | 0.2− | 2006 10 16 | H82 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2004 01 16 | 691 | 0.3+ | 0.3− | 2006 10 16 | H82 | 0.6− | 0.6+ | 2006 10 27 | 703 | 0.9+ | 0.7+ |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2006 10 16 | H82 | 0.3− | 0.0 | 2006 10 27 | 703 | 1.9+ | 0.8+ |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2006 10 16 | H82 | 1.3− | 0.2+ | 2006 10 27 | 703 | 0.5− | 0.5− |
| 2004 01 17 | 644 | 0.6+ | 0.4+ | 2006 10 19 | H82 | (0.5− | 1.7−) | 2006 10 27 | 703 | 1.1+ | 0.8+ |

**2004 BJ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.35432 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28281996 | $\omega$ | 346.86004 | | −0.66787848 | | −0.74352375 |
| $a$ | 2.2985962 | $\Omega$ | 145.02653 | | +0.68800481 | | −0.63384863 |
| $e$ | 0.1156825 | $i$ | 3.33331 | | +0.28387976 | | −0.21309233 |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 807 | 0.4− | 0.2+ | 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 04 15 | 645 | 0.1+ | 0.1− |
| 2002 08 12 | 807 | 0.2+ | 0.5+ | 2004 01 21 | 704 | 0.9+ | 0.3+ | 2006 10 03 | G96 | 0.2− | 0.4− |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2004 01 21 | 704 | 0.9+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.5− |
| 2003 12 29 | 691 | 0.3+ | 0.2+ | 2004 01 21 | 704 | 0.8+ | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.1− |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2004 01 24 | 704 | (3.1− | 1.0−) | 2006 10 03 | G96 | 0.6+ | 1.3− |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 01 24 | 704 | 0.8− | 1.4+ | 2006 10 18 | 691 | 0.3+ | 0.5+ |
| 2004 01 16 | 644 | 0.2+ | 0.3+ | 2004 01 24 | 704 | (0.6+ | 1.8+) | 2006 10 18 | 691 | 0.4+ | 0.1− |
| 2004 01 16 | 644 | 0.2+ | 0.0 | 2004 01 27 | 691 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2004 01 16 | 644 | 0.1− | 0.4+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.5− | 0.3− |
| 2004 01 16 | 644 | 0.1+ | 0.2+ | 2004 01 27 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.0 |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.5+ | 0.0 |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2004 02 13 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.6+ | 0.4− |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2004 04 13 | 645 | 0.0 | 0.1− | 2006 11 22 | G96 | (1.1+ | 2.3+) |
| 2004 01 17 | 644 | 0.1− | 0.1− | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2004 01 17 | 644 | 0.2− | 0.1− | 2004 04 15 | 645 | 0.0 | 0.1− | | | | |

**2004 BM$_6$ = 2006 UN$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.02825 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27526456 | $\omega$ | 334.99316 | | −0.90074582 | | −0.43434638 |
| $a$ | 2.3404670 | $\Omega$ | 179.26270 | | +0.40397192 | | −0.83812234 |
| $e$ | 0.2361059 | $i$ | 1.93655 | | +0.15957336 | | −0.32999115 |
| $P$ | 3.58 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.0 | 0.0 | 2004 01 19 | 699 | 0.1+ | 0.7− | 2004 01 30 | 704 | 0.5+ | 0.4+ |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2004 01 19 | 699 | 1.8− | 0.1+ | 2004 01 30 | 704 | 0.7+ | 0.6+ |
| 2004 01 16 | 691 | 0.1+ | 0.0 | 2004 01 19 | 699 | 1.1− | 0.8+ | 2004 01 30 | 704 | 0.4+ | 0.5+ |
| 2004 01 17 | 644 | 0.5+ | 0.3+ | 2004 01 26 | 699 | 1.2− | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.5− |
| 2004 01 17 | 644 | 0.3+ | 0.3+ | 2004 01 26 | 699 | 1.4− | 1.7− | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2004 01 26 | 699 | 1.6− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2004 01 18 | 691 | 0.3+ | 0.0 | 2004 01 26 | 699 | 1.8− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2004 01 28 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.4+ | 0.2+ |
| 2004 01 18 | 691 | 0.3+ | 0.2+ | 2004 01 28 | 691 | 0.5+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2004 01 19 | 699 | 0.3+ | 0.6− | 2004 01 28 | 691 | 0.2+ | 0.0 | | | | |

**2004 BR$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.88446 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27022103 | $\omega$ | 151.76572 | | +0.18737151 | | −0.97726306 |
| $a$ | 2.3694995 | $\Omega$ | 287.29212 | | +0.88054356 | | +0.21188148 |
| $e$ | 0.1162370 | $i$ | 5.96605 | | +0.43535612 | | −0.00794664 |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 291 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.8+ | 0.5+ | 2006 09 22 | 106 | 0.6+ | 0.1+ |
| 2003 12 17 | 291 | 0.2− | 0.2+ | 2004 01 30 | 704 | 0.4− | 0.6+ | 2006 09 22 | 106 | 0.8+ | 0.2+ |
| 2003 12 17 | 291 | 0.5− | 0.1+ | 2004 01 30 | 704 | 1.3+ | 0.6+ | 2006 09 23 | 106 | (1.5+ | 0.8−) |
| 2004 01 16 | 691 | 0.2+ | 0.3− | 2004 02 11 | 699 | 0.3− | 0.1+ | 2006 09 23 | 106 | 0.4+ | 0.1− |
| 2004 01 16 | 691 | 0.2+ | 0.1− | 2004 02 11 | 699 | 0.4− | 0.9+ | 2006 09 23 | 106 | 0.4− | 0.5− |
| 2004 01 16 | 691 | 0.3+ | 0.1− | 2004 02 11 | 699 | 0.4+ | 0.7− | 2006 09 23 | 106 | 1.2− | 0.1+ |
| 2004 01 18 | 691 | 0.2+ | 0.1− | 2004 02 11 | 699 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2004 01 18 | 691 | 0.0 | 0.2− | 2004 02 16 | 704 | 0.8− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.7+ |
| 2004 01 18 | 691 | 0.4+ | 0.6− | 2004 02 16 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2004 01 19 | 699 | 0.4+ | 0.0 | 2004 02 16 | 704 | 0.6− | 0.4+ | 2006 10 17 | 703 | 1.5− | 1.0− |
| 2004 01 19 | 699 | 0.6− | 0.8+ | 2004 02 16 | 704 | 0.2− | 1.2+ | 2006 10 17 | 703 | (2.0− | 0.5−) |
| 2004 01 19 | 699 | 0.6+ | 0.6+ | 2006 09 16 | 703 | (0.5− | 1.5+) | 2006 10 17 | 703 | 0.8+ | 1.0− |
| 2004 01 19 | 699 | 0.5− | 0.5− | 2006 09 16 | 703 | 0.7− | 1.3+ | 2006 10 17 | 703 | 0.8− | 0.1− |
| 2004 01 28 | 691 | 0.3− | 0.1+ | 2006 09 16 | 703 | (0.6+ | 1.9+) | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2004 01 28 | 691 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2004 01 28 | 691 | 0.1− | 0.2− | 2006 09 22 | 106 | 1.2+ | 1.1− | 2006 10 22 | 644 | 0.4+ | 0.3+ |
| 2004 01 30 | 704 | 1.0− | 0.1− | 2006 09 22 | 106 | 0.3− | 0.2− | | | | |

**2004 BR$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.89540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26526507 | $\omega$ | 143.77007 | | −0.25574061 | | −0.96482128 |
| $a$ | 2.3989213 | $\Omega$ | 320.94388 | | +0.86267139 | | −0.19929205 |
| $e$ | 0.0947155 | $i$ | 5.55240 | | +0.43634254 | | −0.17147179 |
| $P$ | 3.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.1+ | 0.2− | 2004 02 13 | 185 | 0.4+ | 0.4− | 2004 02 26 | 704 | 0.1− | 0.8+ |
| 1999 12 12 | 704 | 0.2− | 0.9− | 2004 02 13 | 185 | 0.8− | 0.9− | 2006 08 18 | 291 | 0.1+ | 0.0 |
| 1999 12 12 | 704 | 0.5− | 0.3− | 2004 02 14 | 185 | 1.0− | 0.8+ | 2006 08 18 | 291 | 0.1+ | 0.1− |
| 1999 12 12 | 704 | 0.6+ | 0.3+ | 2004 02 14 | 185 | (2.0− | 0.6+) | 2006 08 18 | 291 | 0.2+ | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.8+ | 2004 02 14 | 185 | 1.4− | 1.1+ | 2006 09 16 | 703 | 0.6+ | 0.5− |
| 2002 09 14 | 644 | 0.4− | 0.6+ | 2004 02 14 | 185 | 0.9− | 1.3+ | 2006 09 16 | 703 | 0.7− | 1.0− |
| 2002 09 14 | 644 | 0.3− | 0.8+ | 2004 02 16 | 704 | 0.6+ | 0.1− | 2006 09 16 | 703 | 0.6− | 0.3− |
| 2004 01 16 | 644 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.8− | 0.6− | 2006 09 16 | 703 | 0.5− | 0.8− |
| 2004 01 16 | 644 | 0.3+ | 0.0 | 2004 02 16 | 704 | 0.5+ | 0.0 | 2006 09 18 | 699 | 1.3+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 16 | 704 | 0.5+ | 1.1+ | 2006 09 18 | 699 | (2.4+ | 0.5−) |
| 2004 01 18 | 644 | 0.5+ | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.3+ | 0.5+ |
| 2004 01 18 | 644 | 0.2+ | 0.1+ | 2004 02 16 | 185 | 0.4+ | 0.1− | 2006 09 18 | 699 | (1.1+ | 1.9+) |
| 2004 01 18 | 644 | 0.1+ | 0.2+ | 2004 02 16 | 185 | 0.7+ | 0.4− | 2006 09 25 | 704 | 1.3− | 1.2+ |
| 2004 01 22 | 704 | 0.3+ | 0.1− | 2004 02 16 | 185 | 0.5+ | 0.7− | 2006 09 25 | 704 | 0.6− | 0.3+ |
| 2004 01 22 | 704 | 0.1− | 0.0 | 2004 02 16 | 185 | 0.2− | 1.2− | 2006 09 25 | 704 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.0 | 0.1− | 2004 02 16 | 185 | 1.0+ | 0.5− | 2006 09 25 | 704 | 0.1− | 1.1− |
| 2004 01 22 | 704 | 0.1− | 0.0 | 2004 02 17 | 644 | 0.1− | 0.5+ | 2006 10 03 | G96 | 0.3− | 0.4− |
| 2004 01 30 | 704 | 0.6+ | 0.7− | 2004 02 17 | 644 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2004 01 30 | 704 | 1.1+ | 0.0 | 2004 02 17 | 644 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2004 01 30 | 704 | 0.6+ | 0.1− | 2004 02 17 | 106 | 0.1− | 0.5− | 2006 10 03 | G96 | 0.3+ | 0.4− |
| 2004 01 30 | 704 | 0.4− | 0.5+ | 2004 02 17 | 106 | 0.1+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2004 01 30 | 704 | 0.0 | 0.5− | 2004 02 17 | 106 | 0.5− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2004 02 09 | 185 | 0.1+ | 0.0 | 2004 02 18 | H36 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 2004 02 09 | 185 | 0.6− | 0.1− | 2004 02 18 | H36 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2004 02 09 | 185 | 0.2+ | 0.2− | 2004 02 18 | 608 | 0.3− | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2004 02 11 | 291 | 0.3− | 0.2− | 2004 02 18 | 608 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2004 02 11 | 291 | 0.4− | 0.1− | 2004 02 18 | 608 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2004 02 24 | 185 | 0.1− | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 2004 02 11 | 291 | 0.1− | 0.1− | 2004 02 24 | 185 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.0 | 1.0+ |
| 2004 02 11 | 691 | 0.0 | 0.2+ | 2004 02 24 | 185 | 0.5+ | 0.8+ | 2006 10 17 | 703 | 1.0− | 1.0+ |
| 2004 02 11 | 691 | 0.1− | 0.2+ | 2004 02 24 | 185 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2004 02 11 | 699 | 0.7+ | 0.2− | 2004 02 24 | 185 | 1.1+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2004 02 11 | 699 | 1.2− | 0.6+ | 2004 02 24 | 185 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2004 02 11 | 699 | 1.3+ | 0.3+ | 2004 02 26 | 704 | 0.7+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2004 02 11 | 699 | (1.6− | 1.3+) | 2004 02 26 | 704 | 0.0 | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 02 13 | 185 | 0.1− | 0.4− | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 02 13 | 185 | 0.4+ | 0.7− | 2004 02 26 | 704 | 0.6− | 1.0− | 2006 10 21 | 644 | 0.0 | 0.3+ |

**2004 BA**$_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.00696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23071632 | $\omega$ | 26.64499 | | −0.55317027 | | −0.82869008 |
| $a$ | 2.6327958 | $\Omega$ | 97.05313 | | +0.74817486 | | −0.53921905 |
| $e$ | 0.1419400 | $i$ | 4.93045 | | +0.36638371 | | −0.15005190 |
| $P$ | 4.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 18 | 691 | 0.3+ | 0.4+ | 2004 01 05 | 703 | 0.8− | 0.6− | 2004 01 30 | 704 | 0.6+ | 0.5+ |
| 1996 05 18 | 691 | 0.0 | 0.3+ | 2004 01 05 | 703 | 1.3+ | 1.3+ | 2004 01 30 | 704 | 0.4+ | 0.1+ |
| 1996 05 18 | 691 | 0.1+ | 0.3+ | 2004 01 05 | 703 | 0.7− | 0.1+ | 2004 02 13 | 699 | 0.2− | 0.6− |
| 2000 03 11 | 699 | 0.6− | 0.2+ | 2004 01 16 | 644 | 0.0 | 0.1+ | 2004 02 13 | 699 | 1.0− | 0.0 |
| 2000 03 11 | 699 | 1.6+ | 0.3+ | 2004 01 16 | 644 | 0.1+ | 0.2+ | 2004 02 13 | 699 | 0.5− | 0.8+ |
| 2000 03 11 | 699 | 0.5− | 0.1− | 2004 01 16 | 644 | 0.3− | 0.1+ | 2004 02 13 | 699 | 0.3+ | 0.4+ |
| 2000 03 11 | 699 | 0.2− | 0.5+ | 2004 01 16 | 644 | 0.2+ | 0.5+ | 2004 02 15 | 704 | 0.3+ | 0.3− |
| 2003 10 25 | 691 | 0.8− | 0.2+ | 2004 01 16 | 644 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.0 | 0.2− |
| 2003 10 25 | 691 | 0.7− | 0.2+ | 2004 01 16 | 644 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.1+ | 0.5− |
| 2003 10 25 | 691 | 0.4+ | 0.2+ | 2004 01 18 | 644 | 0.2+ | 0.3+ | 2004 02 15 | 704 | 0.6+ | 0.4− |
| 2003 12 16 | 699 | 0.5+ | 1.0+ | 2004 01 18 | 644 | 0.0 | 0.4+ | 2004 02 15 | 704 | 0.6+ | 0.7− |
| 2003 12 16 | 699 | 1.6+ | 0.2+ | 2004 01 18 | 644 | 0.3+ | 0.4+ | 2004 02 17 | 644 | 0.3− | 0.3+ |
| 2003 12 16 | 699 | (2.2+ | 0.7+) | 2004 01 22 | 704 | 0.7+ | 0.0 | 2004 02 17 | 644 | 0.3+ | 0.0 |
| 2003 12 16 | 699 | (2.6+ | 0.4−) | 2004 01 22 | 704 | 0.2+ | 0.6− | 2004 02 17 | 644 | 0.2− | 0.2+ |
| 2003 12 27 | 704 | 0.1+ | 0.9− | 2004 01 22 | 704 | 0.4+ | 0.5− | 2004 02 17 | 644 | 0.4+ | 0.1+ |
| 2003 12 27 | 704 | 1.0+ | 0.2+ | 2004 01 22 | 704 | 0.6+ | 0.6− | 2004 02 17 | 644 | 0.1− | 0.2+ |
| 2003 12 27 | 704 | 0.2+ | 0.5− | 2004 01 22 | 704 | 0.4+ | 0.3− | 2004 02 17 | 644 | 0.2+ | 0.1− |
| 2003 12 27 | 704 | 0.6+ | 0.6+ | 2004 01 30 | 704 | 0.3+ | 0.4+ | 2004 04 15 | 645 | 0.2− | 0.2− |
| 2003 12 27 | 704 | 0.3+ | 0.9+ | 2004 01 30 | 704 | 0.3+ | 0.5+ | 2004 04 15 | 645 | 0.2− | 0.3− |
| 2004 01 05 | 703 | 1.8− | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.3+ | | | | |

**2004 BC**$_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.83094 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26554588 | $\omega$ | 123.81422 | | −0.15834951 | | −0.98629956 |
| $a$ | 2.3972298 | $\Omega$ | 335.17375 | | +0.86560621 | | −0.11613477 |
| $e$ | 0.0700203 | $i$ | 6.32350 | | +0.47502771 | | −0.11715753 |
| $P$ | 3.71 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.7− | 0.0 | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2002 09 05 | 704 | 0.1− | 0.8+ | 2004 02 13 | 291 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.8+ | 0.9+ |
| 2002 09 05 | 704 | 0.1+ | 0.4+ | 2004 02 13 | 699 | 0.4− | 0.5− | 2006 09 30 | 703 | 0.4− | 0.7− |
| 2002 09 14 | 644 | 0.3− | 1.0+ | 2004 02 13 | 699 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.5− |
| 2002 09 14 | 644 | 0.6− | 0.5+ | 2004 02 13 | 291 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.0 | 0.6+ |
| 2002 09 14 | 644 | 0.4− | 0.8+ | 2004 02 13 | 699 | 1.1− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2003 12 28 | 704 | 1.0− | 1.3− | 2004 02 13 | 291 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2003 12 28 | 704 | 0.0 | 0.8− | 2004 02 13 | 699 | 1.1− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3− |
| 2003 12 28 | 704 | 0.4− | 0.3+ | 2004 02 16 | 704 | (0.5+ | 1.6+) | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2004 01 16 | 644 | 0.1− | 0.4+ | 2004 02 16 | 704 | (0.8+ | 1.7+) | 2006 10 12 | 644 | 0.4− | 0.1− |
| 2004 01 16 | 644 | 0.0 | 0.7+ | 2004 02 16 | 704 | 0.7+ | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2004 01 16 | 644 | 0.0 | 0.4+ | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 1.4+ | 1.0+ |
| 2004 01 18 | 644 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.4+ |
| 2004 01 18 | 644 | 0.2+ | 0.4+ | 2004 02 23 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 2004 01 18 | 644 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 1.1− | 0.4+ |
| 2004 01 30 | 704 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.6− | 0.2− |
| 2004 01 30 | 704 | 0.1+ | 0.8+ | 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2004 01 30 | 704 | 0.1+ | 0.3+ | 2004 05 13 | 291 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2004 01 30 | 704 | 0.4− | 0.9+ | 2004 05 13 | 291 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 01 30 | 704 | 0.8+ | 0.1+ | 2004 05 13 | 291 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 02 11 | 691 | 0.1+ | 0.4− | 2006 09 28 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2004 02 11 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.0 | | | | |

**2004 BY**$_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.73807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28516017 | $\omega$ | 136.98695 | | +0.10739796 | | −0.99049700 |
| $a$ | 2.2860030 | $\Omega$ | 306.66627 | | +0.88064491 | | +0.13488130 |
| $e$ | 0.1000416 | $i$ | 6.14867 | | +0.46144363 | | −0.02688340 |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.2− | 0.4+ | 2004 01 29 | 704 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.4+ |
| 2002 08 27 | 644 | 0.3− | 0.6+ | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 1.1+ | 0.8− |
| 2002 08 27 | 644 | 0.4− | 0.6+ | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.7+ |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 02 12 | 333 | 0.6− | 0.4+ | 2006 11 02 | G96 | 0.6+ | 0.4− |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 02 12 | 333 | 0.7− | 0.6− | 2006 11 02 | G96 | 0.4+ | 0.7− |
| 2003 12 25 | 645 | 0.2− | 0.1− | 2004 02 12 | 333 | 0.4− | 0.2+ | 2006 11 02 | G96 | 0.5+ | 0.3− |
| 2003 12 25 | 645 | 0.2− | 0.1− | 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 11 02 | G96 | 0.2+ | 0.2− |
| 2004 01 17 | 608 | 0.0 | 0.2− | 2004 02 14 | 106 | 0.1− | 0.6− | 2006 11 02 | 703 | 1.1− | 0.3+ |
| 2004 01 17 | 608 | 0.2+ | 0.0 | 2004 02 14 | 106 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.5− | 0.5− |
| 2004 01 17 | 608 | 0.4+ | 0.0 | 2004 02 14 | 106 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.4+ | 0.5− |
| 2004 01 18 | 644 | 0.3+ | 0.4+ | 2004 02 17 | 704 | 0.3+ | 0.6+ | 2006 11 02 | 703 | 0.5− | 0.5+ |
| 2004 01 18 | 644 | 0.0 | 0.3+ | 2004 02 17 | 704 | 0.4− | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.4+ |
| 2004 01 18 | 644 | 0.2+ | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.7+ |
| 2004 01 24 | 704 | 0.4+ | 0.9+ | 2004 02 17 | 704 | 1.2+ | 0.4+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2004 01 24 | 704 | 0.7+ | 0.3+ | 2004 02 17 | 704 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.7+ |
| 2004 01 24 | 704 | 0.9+ | 0.8+ | 2004 02 19 | 608 | 0.8+ | 0.0 | 2006 11 15 | 703 | 0.6− | 0.1+ |
| 2004 01 24 | 704 | 0.2+ | 0.2+ | 2004 02 19 | 608 | 0.9+ | 0.1− | 2006 11 15 | 703 | 0.8− | 0.5+ |
| 2004 01 24 | 704 | 0.4+ | 0.6+ | 2004 02 19 | 608 | 0.6+ | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.2+ |
| 2004 01 29 | 704 | 0.1− | 0.6+ | 2004 03 01 | 691 | 0.0 | 0.1+ | 2006 11 21 | 703 | 0.3− | 0.0 |
| 2004 01 29 | 704 | 0.1+ | 0.6+ | 2004 03 01 | 691 | 0.1− | 0.1− | 2006 11 21 | 703 | 0.5+ | 0.2+ |
| 2004 01 29 | 704 | 0.3− | 0.4+ | 2004 03 01 | 691 | 0.4+ | 0.0 | 2006 11 21 | 703 | 0.1− | 0.6+ |
| 2004 01 29 | 704 | 0.1− | 0.1+ | 2006 10 27 | 703 | (1.5+ | 2.3−) | 2006 11 21 | 703 | 0.3− | 0.1+ |

**2004 BY**$_{11}$ **= 2006 VJ**$_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.26784 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29982039 | $\omega$ | 93.93638 | | +0.63481469 | | −0.77150760 |
| $a$ | 2.2108636 | $\Omega$ | 316.56113 | | +0.68227601 | | +0.58538624 |
| $e$ | 0.1591223 | $i$ | 3.52416 | | +0.36264274 | | +0.24919667 |
| $P$ | 3.29 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 566 | 0.8+ | 0.3− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.5− | 0.6+ |
| 1996 10 08 | 566 | 0.0 | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.2+ |
| 1996 10 08 | 566 | 0.7− | 0.0 | 2004 02 12 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.7− | 0.5− |
| 2004 01 16 | 644 | 0.4+ | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.1+ | 2006 11 23 | 644 | 0.1+ | 0.2+ |
| 2004 01 16 | 644 | 0.4+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 23 | 644 | 0.0 | 0.0 |
| 2004 01 16 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.2+ | 2006 11 23 | 644 | 0.2+ | 0.3− |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.4+ | 2006 11 25 | 691 | 0.1− | 0.3− |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.8+ | 2006 11 25 | 691 | 0.1− | 0.2− |
| 2004 01 24 | 704 | 0.3− | 0.1+ | 2006 11 16 | 704 | 1.0+ | 0.7+ | 2006 11 27 | 704 | 0.2+ | 0.0 |
| 2004 01 24 | 704 | 1.0+ | 0.9+ | 2006 11 16 | 704 | 0.5− | 1.5+ | 2006 11 27 | 704 | 1.0+ | 0.8− |
| 2004 01 24 | 704 | 0.8− | 1.1+ | 2006 11 19 | 704 | 1.0+ | 0.2+ | 2006 11 27 | 704 | 0.8− | 0.1− |
| 2004 01 24 | 704 | (1.1+ | 1.9+) | 2006 11 19 | 704 | 0.4+ | 0.1− | 2006 11 27 | 704 | 0.6− | 0.3+ |
| 2004 01 24 | 704 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 0.5− | 0.5+ |
| 2004 02 12 | 691 | 0.1− | 0.3− | 2006 11 19 | 704 | 1.0+ | 0.7− | 2006 11 28 | 704 | 1.1+ | 1.2− |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.9− | 2006 11 28 | 704 | 1.0+ | 0.8− |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5− | 0.1− | | | | |

## 2004 $BB_{12}$ = 2000 $AJ_{257}$ = 2006 $TQ_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.10201 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25355136 | $\omega$ | 255.52509 | | −0.40032693 | | +0.91636568 |
| $a$ | 2.4722483 | $\Omega$ | 350.87394 | | −0.83200979 | | −0.36507347 |
| $e$ | 0.1700273 | $i$ | 1.26695 | | −0.38405476 | | −0.16430249 |
| $P$ | 3.89 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 691 | 0.2− | 0.6− | 2004 01 22 | 704 | 0.4− | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.3+ |
| 2000 01 08 | 691 | 0.0 | 0.7− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.2+ | 0.5+ |
| 2000 01 08 | 691 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2004 01 16 | 644 | 0.5+ | 1.2+ | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2004 01 16 | 644 | 0.4+ | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2004 01 16 | 644 | 0.7+ | 1.1+ | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 691 | 0.5− | 0.0 | 2006 11 12 | G96 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.3− | 0.0 | | | | |
| 2004 01 22 | 704 | 0.6− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.2+ | | | | |

## 2004 $BD_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.74219 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26646944 | $\omega$ | 175.31807 | | −0.91988508 | | −0.39191883 |
| $a$ | 2.3916876 | $\Omega$ | 341.58723 | | +0.35831556 | | −0.82479948 |
| $e$ | 0.0396576 | $i$ | 2.63633 | | +0.15944090 | | −0.40756036 |
| $P$ | 3.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2+ | 0.2− | 2004 01 19 | 691 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.1− | 0.0 |
| 2002 09 13 | 644 | 0.2+ | 0.3− | 2004 01 22 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2002 09 13 | 644 | 0.2− | 0.1− | 2004 01 22 | 704 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.6− | 0.3+ |
| 2004 01 16 | 644 | 0.2+ | 0.1+ | 2004 01 22 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2004 01 16 | 644 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.6− | 0.2+ | 2006 11 11 | 691 | 0.7+ | 0.0 |
| 2004 01 16 | 644 | 0.3+ | 0.1− | 2004 01 22 | 704 | 0.1− | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2004 01 16 | 644 | 0.1+ | 0.3+ | 2004 02 12 | 691 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.7− | 0.3− |
| 2004 01 16 | 644 | 0.2+ | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.5+ | 0.1− |
| 2004 01 16 | 644 | 0.2+ | 0.1+ | 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2004 01 19 | 691 | 0.1− | 0.1− | 2004 02 23 | 704 | (0.5+ | 1.8+) | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2004 01 19 | 691 | 0.1− | 0.1− | 2004 02 23 | 704 | (0.5− | 1.6+) | | | | |

## 2004 $BQ_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.43250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28208641 | $\omega$ | 164.17497 | | −0.16027318 | | −0.98640822 |
| $a$ | 2.3025794 | $\Omega$ | 295.03632 | | +0.90123083 | | −0.13127248 |
| $e$ | 0.1689411 | $i$ | 2.29059 | | +0.40261086 | | −0.09882488 |
| $P$ | 3.49 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 04 | 691 | 0.2− | 1.0− | 2004 01 21 | 704 | 0.5+ | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.1+ |
| 1997 02 04 | 691 | 0.2− | 0.4− | 2004 01 21 | 704 | (0.2+ | 1.8−) | 2004 02 11 | 691 | 0.2+ | 0.1+ |
| 1997 02 04 | 691 | 0.1− | 0.5− | 2004 01 21 | 704 | 0.3+ | 0.2− | 2004 02 17 | 644 | 0.4− | 0.3+ |
| 2003 12 29 | 691 | 0.1+ | 0.1+ | 2004 01 21 | 704 | 0.9+ | 0.0 | 2004 02 17 | 644 | 0.5+ | 0.3+ |
| 2003 12 29 | 691 | 0.1− | 0.2+ | 2004 01 24 | 704 | 0.0 | 0.3− | 2004 02 17 | 644 | 0.1− | 0.2+ |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.1+ | 0.0 | 2004 03 17 | 645 | 0.0 | 0.0 |
| 2004 01 17 | 644 | 0.5− | 0.1− | 2004 01 24 | 704 | 0.5+ | 0.4+ | 2004 03 17 | 645 | 0.0 | 0.1+ |
| 2004 01 17 | 644 | 0.4− | 0.3+ | 2004 01 24 | 704 | 0.3+ | 1.4− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2004 01 17 | 644 | 0.4+ | 0.0 | 2004 01 24 | 704 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.4+ | 0.3− |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 01 28 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2004 01 19 | 691 | 0.2− | 0.3+ | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 2004 01 21 | 704 | 0.1+ | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.0 |

## 2004 $BY_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.02863 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28490248 | $\omega$ | 77.34046 | | +0.84701229 | | −0.44686453 |
| $a$ | 2.2873813 | $\Omega$ | 308.43526 | | +0.21737740 | | +0.78540729 |
| $e$ | 0.2201699 | $i$ | 21.56356 | | +0.48509508 | | +0.42830769 |
| $P$ | 3.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 0.5+ | 0.4+ | 2004 01 22 | 704 | 0.2+ | 0.3+ | 2004 02 12 | 691 | 0.1+ | 0.2− |
| 2003 12 28 | 704 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.0 | 0.1− | 2004 02 14 | 691 | 0.2− | 0.0 |
| 2003 12 28 | 704 | 0.7− | 0.5− | 2004 01 30 | 691 | 0.1+ | 0.1− | 2004 02 14 | 691 | 0.2− | 0.2− |
| 2003 12 28 | 704 | 0.2− | 0.5− | 2004 01 30 | 691 | 0.2+ | 0.0 | 2004 02 14 | 691 | 0.5− | 0.2+ |
| 2004 01 17 | 644 | 0.2+ | 0.4+ | 2004 01 30 | 704 | 0.7+ | 0.3+ | 2004 02 22 | 704 | 0.2+ | 0.1− |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.9+ | 0.5+ | 2004 02 22 | 704 | 0.2− | 0.4+ |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.1− | 0.1+ | 2004 02 22 | 704 | 0.5− | 0.1+ |
| 2004 01 19 | 691 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.9+ | 0.2− | 2004 02 22 | 704 | 0.7− | 0.4+ |
| 2004 01 19 | 691 | 0.0 | 0.2− | 2004 01 30 | 704 | 0.2− | 0.1+ | 2006 11 20 | 703 | 0.3− | 0.8+ |
| 2004 01 19 | 691 | 0.3− | 0.1+ | 2004 01 30 | 704 | 0.7+ | 0.7+ | 2006 11 20 | 703 | 1.5+ | 0.3− |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.5+ | 1.1− | 2006 11 20 | 703 | 0.8− | 0.5− |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 01 30 | 704 | 0.2− | 0.4+ | 2006 11 20 | 703 | 0.4− | 0.1− |
| 2004 01 22 | 704 | 0.4+ | 0.2+ | 2004 02 12 | 691 | 0.0 | 0.0 | | | | |
| 2004 01 22 | 704 | 0.4+ | 0.0 | 2004 02 12 | 691 | 0.1− | 0.1− | | | | |

## 2004 $BB_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.27055 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28371602 | $\omega$ | 54.16096 | | −0.86377579 | | −0.49974020 |
| $a$ | 2.2937539 | $\Omega$ | 95.77531 | | +0.43889953 | | −0.80902085 |
| $e$ | 0.1033157 | $i$ | 3.71295 | | +0.24750472 | | −0.30942689 |
| $P$ | 3.47 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.3− | 0.1+ | 2004 01 22 | 704 | 0.7− | 1.1+ | 2004 02 17 | 645 | 0.1+ | 0.1− |
| 2004 01 17 | 644 | 0.7− | 0.4+ | 2004 01 22 | 704 | 0.4− | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2004 01 17 | 644 | 0.4− | 0.0 | 2004 01 30 | 691 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.7+ | 0.0 |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2004 01 30 | 691 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2004 01 19 | 691 | 0.2− | 0.0 | 2004 01 30 | 691 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.6− | 0.1+ |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3− |
| 2004 01 22 | 704 | 0.3+ | 0.5+ | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.5− | 0.2+ | 2004 02 14 | 691 | 0.0 | 0.2+ | | | | |
| 2004 01 22 | 704 | 0.5− | 0.4+ | 2004 02 17 | 645 | 0.1− | 0.1− | | | | |

### 2004 $BF_{15}$ = 2006 $SD_{280}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.85761 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26991081 | $\omega$ | 264.44070 | +0.94851559 | | −0.31026864 | |
| $a$ | 2.3713147 | $\Omega$ | 113.62180 | +0.31108984 | | +0.87485862 | |
| $e$ | 0.0809244 | $i$ | 3.98372 | +0.05950878 | | +0.37196205 | |
| $P$ | 3.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.0 | 0.2− | 2006 09 16 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.7− | 1.0+ |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2006 09 29 | 699 | 1.0+ | 0.3− | 2006 10 16 | 703 | 0.4− | 1.0− |
| 2004 01 16 | 691 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.0 | 0.1+ | 2006 10 16 | 703 | (1.7− | 0.3−) |
| 2004 01 22 | 704 | (4.8+ | 0.5−) | 2006 09 29 | 699 | 1.1+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2004 01 22 | 704 | 1.1+ | 0.6+ | 2006 09 29 | 699 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 1.0+ | 1.4+ |
| 2004 01 22 | 704 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 2004 01 22 | 704 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2004 01 22 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 1.0− | 2006 10 22 | 703 | 0.8− | 0.4+ |
| 2004 01 23 | 673 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.4− |
| 2004 01 23 | 673 | 0.3− | 1.0+ | 2006 10 01 | 704 | 0.5+ | 0.0 | 2006 11 13 | 703 | (1.5− | 1.8−) |
| 2004 01 23 | 649 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.0 | 0.8+ | 2006 11 13 | 703 | 0.6− | 0.7− |
| 2004 01 23 | 673 | (0.3− | 2.1+) | 2006 10 01 | 704 | 0.8− | 1.1+ | 2006 11 13 | 703 | 0.5− | 1.1− |
| 2004 01 23 | 649 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2004 01 23 | 649 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.7+ | 0.1+ |
| 2006 09 16 | 644 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.5+ | 0.0 |
| 2006 09 16 | 644 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.1− |

### 2004 $BQ_{15}$ = 2006 $WB_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.10733 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29908121 | $\omega$ | 321.45925 | +0.12020764 | | −0.98876846 | |
| $a$ | 2.2145048 | $\Omega$ | 121.46992 | +0.93468870 | | +0.08257914 | |
| $e$ | 0.1095832 | $i$ | 5.97672 | +0.33452528 | | +0.12456977 | |
| $P$ | 3.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 12 | 644 | 0.4− | 0.2+ | 2004 01 22 | 644 | 0.8+ | 0.0 | 2006 10 30 | 703 | (0.4− | 2.0+) |
| 2004 01 12 | 644 | 0.0 | 0.1+ | 2004 01 22 | 644 | 1.3+ | 0.2− | 2006 11 19 | 703 | 0.4− | 0.4+ |
| 2004 01 12 | 644 | 0.1− | 0.4+ | 2004 01 24 | 704 | 0.6+ | 1.1+ | 2006 11 19 | 703 | 0.3− | 0.2− |
| 2004 01 17 | 644 | 0.4+ | 0.2− | 2004 01 24 | 704 | 0.3+ | 0.3− | 2006 11 19 | 703 | 0.2− | 0.2+ |
| 2004 01 17 | 644 | 0.4+ | 0.0 | 2004 01 24 | 704 | 1.1+ | 0.0 | 2006 11 19 | 703 | 0.7− | 0.4+ |
| 2004 01 17 | 644 | 0.3+ | 0.3− | 2004 01 24 | 704 | 0.7− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.6− |
| 2004 01 19 | 703 | (0.1− | 1.7+) | 2004 01 24 | 704 | (2.2+ | 0.5+) | 2006 11 23 | G96 | 0.2− | 0.7− |
| 2004 01 19 | 703 | 1.1− | 1.4+ | 2004 01 26 | 699 | 0.5+ | 0.5− | 2006 11 23 | G96 | 0.1− | 0.7− |
| 2004 01 19 | 703 | 1.2− | 0.1+ | 2004 01 26 | 699 | 0.8− | 0.2− | 2006 11 23 | G96 | 0.5+ | 0.4− |
| 2004 01 19 | 703 | 0.9− | 0.7+ | 2004 01 26 | 699 | 0.2− | 0.5+ | 2006 11 28 | 704 | 0.9+ | 0.6+ |
| 2004 01 21 | 704 | 0.1− | 0.7− | 2004 01 26 | 699 | 0.1− | 0.5− | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2004 01 21 | 704 | 0.5− | 0.6− | 2006 10 30 | 703 | 1.2+ | 1.0+ | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2004 01 21 | 704 | 0.2− | 1.0− | 2006 10 30 | 703 | (1.8+ | 2.0−) | | | | |
| 2004 01 22 | 644 | 0.7+ | 0.1− | 2006 10 30 | 703 | 1.1− | 0.6− | | | | |

### 2004 $BV_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.30727 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26000823 | $\omega$ | 124.30995 | −0.71235107 | | −0.70179034 | |
| $a$ | 2.4311476 | $\Omega$ | 11.12466 | +0.63177197 | | −0.64543990 | |
| $e$ | 0.1580190 | $i$ | 2.02042 | +0.30564708 | | −0.30149237 | |
| $P$ | 3.79 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 291 | 0.2+ | 0.3+ | 2004 01 30 | 704 | 0.1+ | 0.2+ | 2004 04 15 | 645 | 0.0 | 0.1− |
| 2002 10 10 | 291 | 0.2− | 0.1+ | 2004 02 10 | 703 | 1.0− | 0.8− | 2004 04 16 | 645 | 0.0 | 0.0 |
| 2002 10 10 | 291 | 0.2− | 0.1+ | 2004 02 10 | 703 | (0.6− | 2.0−) | 2004 04 16 | 645 | 0.1+ | 0.0 |
| 2003 12 29 | 691 | 0.3− | 0.2+ | 2004 02 10 | 703 | 0.4+ | 0.3− | 2006 09 15 | 691 | 0.1− | 0.0 |
| 2003 12 29 | 691 | 0.2− | 0.1+ | 2004 02 10 | 703 | 0.3− | 0.9− | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 2003 12 29 | 691 | 0.0 | 0.0 | 2004 02 11 | 699 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3− |
| 2004 01 17 | 644 | 0.6+ | 0.2− | 2004 02 11 | 699 | 0.7+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 2004 01 17 | 644 | 0.8+ | 0.1− | 2004 02 11 | 699 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.3− |
| 2004 01 17 | 644 | 0.4+ | 0.1+ | 2004 02 11 | 699 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2004 01 19 | 703 | 0.5− | 0.1− | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.3− | 0.3− |
| 2004 01 19 | 703 | 0.9− | 0.5− | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.4− |
| 2004 01 19 | 703 | 0.7− | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.8− | 0.6+ |
| 2004 01 19 | 703 | 0.1− | 0.9− | 2004 02 15 | 704 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.7+ | 0.6− | 2004 02 15 | 704 | 0.8+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2004 02 15 | 704 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 2004 01 22 | 704 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.1+ |
| 2004 01 22 | 704 | 0.3+ | 0.2− | 2004 02 23 | 704 | 0.4+ | 0.7+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2004 01 30 | 704 | 0.5− | 0.8+ | 2004 02 23 | 704 | 0.3+ | 0.6+ | 2006 10 16 | G96 | 0.9+ | 0.8− |
| 2004 01 30 | 704 | 0.0 | 0.1− | 2004 02 23 | 704 | 1.4− | 0.7+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2004 01 30 | 704 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.7− | 0.5+ | 2006 10 16 | G96 | 0.5− | 0.5− |
| 2004 01 30 | 704 | 0.0 | 0.2+ | 2004 04 15 | 645 | 0.1− | 0.0 | | | | |

### 2004 $BX_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.89696 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19343672 | $\omega$ | 169.54195 | −0.87675049 | | −0.48013763 | |
| $a$ | 2.9610343 | $\Omega$ | 341.68413 | +0.43460964 | | −0.76613876 | |
| $e$ | 0.1473048 | $i$ | 5.08699 | +0.20596854 | | −0.42719931 | |
| $P$ | 5.10 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 11 | 691 | 1.5− | 1.5− | 2004 01 30 | 704 | 0.3− | 0.1+ | 2004 02 19 | 608 | 1.3+ | 0.0 |
| 1994 03 11 | 691 | 0.9+ | 0.3+ | 2004 01 30 | 704 | 0.4+ | 0.1− | 2004 02 19 | 608 | 0.7+ | 0.2+ |
| 1994 03 11 | 691 | 0.4+ | 0.8+ | 2004 01 30 | 704 | 0.1+ | 0.2− | 2004 02 19 | 608 | 0.9+ | 0.2− |
| 1999 02 23 | 699 | 0.0 | 0.6+ | 2004 01 30 | 704 | 0.8+ | 0.2− | 2004 02 23 | 704 | 0.5+ | 0.5+ |
| 1999 02 23 | 699 | 0.5+ | 1.1+ | 2004 02 10 | 644 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.6+ | 0.2+ |
| 1999 02 23 | 699 | 0.1+ | 0.4+ | 2004 02 10 | 644 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.6+ |
| 2004 01 18 | 644 | 0.0 | 0.2+ | 2004 02 10 | 703 | 0.6− | 0.3− | 2004 02 23 | 704 | 0.0 | 0.8+ |
| 2004 01 18 | 644 | 0.1+ | 0.1− | 2004 02 10 | 644 | 0.5− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.0 |
| 2004 01 18 | 644 | 0.1− | 0.0 | 2004 02 10 | 703 | 0.2+ | 1.1+ | 2004 03 01 | 691 | 0.0 | 0.0 |
| 2004 01 19 | 703 | 1.0− | 0.0 | 2004 02 10 | 703 | 0.0 | 0.4− | 2004 03 01 | 691 | 0.1+ | 0.2+ |
| 2004 01 19 | 703 | 0.2− | 0.7− | 2004 02 10 | 703 | (0.1+ | 1.6+) | 2004 03 01 | 691 | 0.1− | 0.1+ |
| 2004 01 19 | 703 | 0.8− | 0.1− | 2004 02 11 | 699 | 0.3− | 0.3− | 2004 03 10 | 644 | 0.1+ | 0.6+ |
| 2004 01 19 | 703 | (2.2− | 0.2+) | 2004 02 11 | 699 | 0.1+ | 0.1− | 2004 03 10 | 644 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 1.1+ | 0.1− | 2004 02 11 | 699 | 0.3+ | 0.3− | 2004 03 10 | 644 | 0.1− | 0.3+ |
| 2004 01 22 | 704 | 0.2− | 0.8+ | 2004 02 11 | 699 | 0.6− | 0.1+ | 2004 03 19 | 644 | 0.5+ | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.4+ | 2004 02 12 | 691 | 0.5− | 0.1− | 2004 03 19 | 644 | 0.2+ | 0.1− |
| 2004 01 22 | 704 | 0.3+ | 0.4− | 2004 02 12 | 691 | 0.3− | 0.2− | 2004 03 19 | 644 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 0.3− | 2004 02 12 | 691 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.8+ | 0.5+ |
| 2004 01 26 | 699 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.8− | 0.2+ |
| 2004 01 26 | 699 | 0.4− | 0.3− | 2004 02 16 | 704 | 0.0 | 0.3+ | 2006 08 28 | 703 | 1.0− | 1.5+ |
| 2004 01 26 | 699 | 0.8+ | 0.5+ | 2004 02 16 | 704 | 0.1− | 0.2− | 2006 08 28 | 703 | (1.5+ | 1.7+) |
| 2004 01 26 | 699 | 0.2− | 0.2+ | 2004 02 16 | 704 | 0.3+ | 0.1+ | | | | |

### 2004 $BF_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.94598 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23513285 | $\omega$ | 77.54131 | −0.14807528 | | −0.98851205 | |
| $a$ | 2.5997236 | $\Omega$ | 21.04651 | +0.87145265 | | −0.14489999 | |
| $e$ | 0.1258480 | $i$ | 4.83872 | +0.46759384 | | −0.04298756 | |
| $P$ | 4.19 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.6− | 0.2+ | 2004 01 23 | 704 | 1.0+ | 0.8+ | 2004 03 20 | 704 | 0.6+ | 0.4+ |
| 2000 03 11 | 699 | 0.4+ | 0.8− | 2004 01 23 | 704 | 0.1− | 0.7+ | 2004 03 20 | 704 | 0.6+ | 0.9− |
| 2000 03 11 | 699 | 0.9+ | 0.3+ | 2004 01 23 | 704 | 0.4+ | 0.1+ | 2004 03 20 | 704 | 0.4− | 0.2+ |
| 2000 03 11 | 699 | 0.5− | 0.6+ | 2004 01 23 | 704 | 1.3+ | 0.3+ | 2004 03 20 | 704 | 0.7− | 0.3− |
| 2004 01 18 | 644 | 0.5− | 0.1− | 2004 02 10 | 644 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.9− | 0.6+ |
| 2004 01 18 | 644 | 0.8− | 0.3− | 2004 02 10 | 644 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.2− |
| 2004 01 18 | 644 | 0.6− | 0.1− | 2004 02 10 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.9+ | 0.1− |
| 2004 01 19 | 703 | 0.3− | 0.3+ | 2004 02 16 | 704 | 0.3− | 1.2− | 2006 09 14 | 703 | (2.4− | 2.6+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 703 | 0.3− | 0.3− | 2004 02 16 | 704 | 0.6+ | 0.6− | 2006 11 23 | G96 | 0.4+ | 0.6− |
| 2004 01 19 | 703 | 1.1− | 0.1+ | 2004 02 16 | 704 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.9+ | 0.5+ |
| 2004 01 19 | 703 | 1.1+ | 0.6+ | 2004 02 16 | 704 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2004 01 23 | 704 | 0.3+ | 0.2− | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.0 |

**2004 BD$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.85766 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27786624 | $\omega$ | 129.61825 | | −0.90944736 | | −0.41298718 |
| $a$ | 2.3258348 | $\Omega$ | 26.09643 | | +0.33973478 | | −0.80516070 |
| $e$ | 0.1923792 | $i$ | 6.32313 | | +0.23976192 | | −0.42562641 |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.0 | 0.1− | 2004 02 02 | 704 | 0.3+ | 1.4+ | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 02 02 | 704 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2003 12 29 | 704 | 0.8+ | 0.3+ | 2004 02 13 | 699 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2003 12 29 | 704 | 0.5+ | 0.6+ | 2004 02 13 | 699 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2003 12 29 | 704 | 0.4+ | 0.4+ | 2004 02 13 | 699 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2003 12 29 | 704 | 0.4+ | 0.3+ | 2004 02 13 | 699 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2003 12 29 | 704 | 0.5+ | 0.1− | 2004 02 14 | 704 | (0.4− | 1.9+) | 2006 10 20 | 644 | 0.3− | 0.3− |
| 2004 01 17 | 644 | 0.3+ | 0.2+ | 2004 02 14 | 704 | 0.5+ | 0.8+ | 2006 10 27 | G96 | 0.6+ | 0.4− |
| 2004 01 17 | 644 | 0.2+ | 0.1+ | 2004 02 14 | 704 | 0.4− | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2004 01 17 | 644 | 0.1+ | 0.2+ | 2004 02 14 | 704 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2004 01 19 | 704 | (4.6− | 0.9+) | 2004 02 14 | 704 | 0.7+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2004 01 19 | 704 | (3.8− | 0.1+) | 2004 03 20 | 704 | 0.5+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2004 01 19 | 704 | (4.5− | 1.9+) | 2004 03 20 | 704 | 0.4+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2004 01 19 | 704 | (5.6− | 0.5+) | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2004 01 27 | 703 | 0.4+ | 0.6− | 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2004 01 27 | 703 | 0.0 | 0.1− | 2004 03 25 | 704 | 0.6− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2004 01 27 | 703 | 0.6− | 0.2− | 2004 03 25 | 704 | 0.8+ | 0.2+ | 2006 11 15 | 691 | 0.4+ | 0.1+ |
| 2004 01 27 | 703 | 0.4+ | 0.5− | 2004 03 25 | 704 | 0.0 | 0.5+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2004 01 28 | 691 | 0.9− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2004 01 28 | 691 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2004 01 28 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 02 02 | 704 | 0.6+ | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.7− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 02 02 | 704 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 02 02 | 704 | 0.1+ | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | | | |

**2004 BK$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.32133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24518899 | $\omega$ | 137.55687 | | −0.93476186 | | +0.27508522 |
| $a$ | 2.5281456 | $\Omega$ | 59.72428 | | −0.35319768 | | −0.78787624 |
| $e$ | 0.1153048 | $i$ | 15.09008 | | +0.03836234 | | −0.55098018 |
| $P$ | 4.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 30 | 704 | 0.5+ | 0.3− | 2004 01 30 | 703 | 0.6− | 1.2− | 2004 02 11 | 704 | 0.2− | 0.2− |
| 2003 12 30 | 704 | 0.7− | 0.4− | 2004 01 30 | 703 | 1.3− | 1.2− | 2004 02 11 | 704 | 0.1− | 0.3+ |
| 2003 12 30 | 704 | 0.3− | 0.9+ | 2004 01 30 | 703 | 0.1− | 0.5− | 2006 09 19 | 703 | (1.1− | 2.1−) |
| 2003 12 30 | 704 | 0.0 | 0.3+ | 2004 01 31 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.0 |
| 2003 12 30 | 704 | 0.7+ | 0.5+ | 2004 01 31 | 704 | 0.8+ | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.1− |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2004 01 31 | 704 | 0.8+ | 0.3− | 2006 09 19 | 703 | 0.3+ | 0.8+ |
| 2004 01 17 | 644 | 0.2− | 0.2− | 2004 01 31 | 704 | 0.7+ | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.7− |
| 2004 01 17 | 644 | 0.1+ | 0.1− | 2004 02 02 | 699 | 1.0− | 0.3+ | 2006 10 22 | 703 | 0.2− | 1.1+ |
| 2004 01 19 | 704 | 0.3+ | 0.6+ | 2004 02 02 | 699 | 1.2+ | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.6+ |
| 2004 01 19 | 704 | 0.3+ | 0.3− | 2004 02 02 | 699 | 0.4+ | 1.5+ | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2004 01 19 | 704 | 0.7+ | 0.7− | 2004 02 02 | 699 | 1.1− | 0.1− | 2006 11 19 | 703 | 0.9− | 0.5+ |
| 2004 01 19 | 704 | 0.2+ | 0.3+ | 2004 02 11 | 704 | 0.7− | 0.7+ | 2006 11 19 | 703 | 0.0 | 0.8− |
| 2004 01 19 | 704 | 0.5+ | 0.1+ | 2004 02 11 | 704 | 0.2− | 0.7+ | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2004 01 30 | 703 | 0.2− | 0.4− | 2004 02 11 | 704 | 0.7− | 0.9− | 2006 11 19 | 703 | 0.5− | 1.6− |

**2004 BU$_{17}$ = 2006 SK$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.86332 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23356106 | $\omega$ | 189.90197 | | −0.50653603 | | +0.84596253 |
| $a$ | 2.6113741 | $\Omega$ | 49.87445 | | −0.77541539 | | −0.36243988 |
| $e$ | 0.0655812 | $i$ | 12.58768 | | −0.37703080 | | −0.39113262 |
| $P$ | 4.22 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 19 | 691 | 0.2+ | 0.2− | 2004 01 19 | 704 | 0.3− | 0.1− | 2005 05 19 | 644 | 0.0 | 0.2+ |
| 1998 12 19 | 691 | 0.1+ | 0.7− | 2004 01 19 | 704 | 0.8− | 1.3+ | 2006 09 19 | 703 | 0.1+ | 0.8+ |
| 1998 12 19 | 691 | 0.4+ | 0.2− | 2004 01 19 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.8+ |
| 2004 01 18 | 644 | 0.2− | 0.7+ | 2004 01 19 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.0 | 1.1+ |
| 2004 01 18 | 644 | 0.2− | 0.5+ | 2005 04 07 | G96 | 0.3− | 0.2− | 2006 09 19 | 703 | (0.1− | 2.4+) |
| 2004 01 18 | 703 | 1.4+ | 0.0 | 2005 04 07 | G96 | 0.2− | 0.2− | 2006 09 25 | 703 | 1.3− | 0.5+ |
| 2004 01 18 | 703 | 0.5+ | 0.5+ | 2005 04 07 | G96 | 0.2− | 0.4− | 2006 09 25 | 703 | (1.7+ | 0.2+) |
| 2004 01 18 | 644 | 0.1− | 0.7+ | 2005 04 07 | G96 | 0.1− | 0.4− | 2006 09 25 | 703 | (0.5+ | 2.1+) |
| 2004 01 18 | 703 | 0.1− | 0.8− | 2005 05 19 | 644 | 0.1− | 0.5− | 2006 09 25 | 703 | 0.7− | 0.2− |
| 2004 01 18 | 703 | 1.1+ | 0.3− | 2005 05 19 | 644 | 0.0 | 0.1+ | | | | |

**2004 BV$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.72979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27017704 | $\omega$ | 145.75252 | | −0.97914174 | | −0.18855267 |
| $a$ | 2.3697567 | $\Omega$ | 23.72541 | | +0.11699283 | | −0.82780086 |
| $e$ | 0.1411176 | $i$ | 10.84332 | | +0.16611479 | | −0.52838776 |
| $P$ | 3.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 703 | 0.4− | 0.1+ | 2004 01 19 | 704 | 0.8+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2− |
| 2003 12 29 | 704 | 0.8+ | 0.8+ | 2004 01 19 | 704 | 0.0 | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2003 12 29 | 703 | (0.6− | 2.3−) | 2004 01 19 | 704 | 0.4+ | 1.0+ | 2006 10 29 | 691 | 0.3+ | 0.3− |
| 2003 12 29 | 704 | 0.1+ | 0.3+ | 2004 01 30 | 699 | 0.4+ | 1.4− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2003 12 29 | 703 | (0.1− | 1.8−) | 2004 01 30 | 699 | 0.2+ | 1.0− | 2006 10 29 | 691 | 0.2+ | 0.4+ |
| 2003 12 29 | 704 | 0.2− | 0.1+ | 2004 01 30 | 699 | 0.0 | 1.2− | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2003 12 29 | 703 | 1.1− | 0.9+ | 2004 01 30 | 699 | 0.7− | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.3− |
| 2003 12 29 | 704 | 0.8+ | 0.1− | 2004 02 11 | 704 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2003 12 29 | 704 | 0.2+ | 0.8− | 2004 02 11 | 704 | 0.7− | 0.1− | 2006 11 15 | 691 | 0.3− | 0.2− |
| 2004 01 18 | 703 | (1.6+ | 1.8+) | 2004 02 11 | 704 | 0.6− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2004 01 18 | 703 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.6+ | 0.5+ |
| 2004 01 18 | 703 | 0.2+ | 0.6− | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 01 18 | 703 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2004 01 19 | 704 | 0.2− | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.4− |

**2004 BE$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.06047 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29786198 | $\omega$ | 330.29932 | | +0.78436376 | | −0.61160509 |
| $a$ | 2.2205438 | $\Omega$ | 67.77237 | | +0.58887735 | | +0.68175502 |
| $e$ | 0.1478664 | $i$ | 6.41973 | | +0.19492810 | | +0.40143406 |
| $P$ | 3.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 691 | 0.3+ | 0.1+ | 2004 02 13 | 699 | 0.6− | 0.2+ | 2006 11 17 | 704 | 0.1+ | 0.5− |
| 1998 04 24 | 691 | 0.4− | 0.0 | 2004 02 13 | 699 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.5− |
| 1998 04 24 | 691 | 0.2+ | 0.1− | 2004 02 14 | 704 | (1.6− | 0.5−) | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2003 12 19 | 704 | 0.4− | 0.2− | 2004 02 14 | 704 | (1.6− | 0.2+) | 2006 11 18 | 704 | 0.3+ | 0.2− |
| 2003 12 19 | 704 | 0.1− | 0.6+ | 2004 02 14 | 704 | 0.7− | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2003 12 19 | 704 | 0.8+ | 1.0+ | 2004 02 14 | 704 | 1.2− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2003 12 27 | 704 | 1.0+ | 0.9− | 2004 02 14 | 704 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.3− |
| 2003 12 27 | 704 | 0.7+ | 1.1− | 2006 10 31 | G96 | 0.3− | 0.1+ | 2006 11 21 | 704 | (0.4− | 1.9+) |
| 2003 12 27 | 704 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2003 12 27 | 704 | 0.1+ | 0.8− | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5− | 1.0+ |
| 2003 12 27 | 704 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2004 01 17 | 644 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.6− | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | (2.0+ | 1.0−) |
| 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 01 20 | 704 | 0.5− | 1.1+ | 2006 11 15 | 703 | 0.1− | 0.5− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 01 20 | 704 | 0.1− | 1.0+ | 2006 11 15 | 703 | 0.8− | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2004 01 20 | 704 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.6− | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.0 |
| 2004 01 31 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.8− | 0.2− | 2006 12 01 | 691 | 0.3+ | 0.1+ |
| 2004 01 31 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.6+ | 1.0+ |
| 2004 01 31 | 704 | 0.8+ | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.3− |
| 2004 01 31 | 704 | 0.8+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.2+ | 0.0 |
| 2004 01 31 | 704 | 0.6+ | 0.0 | 2006 11 17 | 704 | 0.2− | 0.5− | 2006 12 01 | 704 | 0.2+ | 0.0 |
| 2004 02 13 | 699 | 0.1− | 0.5− | 2006 11 17 | 704 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2004 02 13 | 699 | 0.4− | 1.1− | 2006 11 17 | 704 | 0.2+ | 1.0− | | | | |

**2004 BH$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.86024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27489031 | $\omega$ | 108.34615 | | −0.94861847 | −0.30694409 | |
| $a$ | 2.3425908 | $\Omega$ | 53.84816 | | +0.24228206 | −0.86084142 | |
| $e$ | 0.0862574 | $i$ | 5.46253 | | +0.20352494 | −0.40587853 | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 0.9+ | 0.3− | 2004 02 14 | 704 | 0.0 | 0.6− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2003 12 28 | 704 | 0.5+ | 0.2+ | 2004 02 14 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2003 12 28 | 704 | 0.8− | 0.4− | 2004 02 14 | 704 | 1.1+ | 0.8− | 2006 10 23 | 691 | 0.2+ | 0.7− |
| 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 02 14 | 704 | 0.7− | 0.5− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2004 02 17 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.7+ | 0.7+ |
| 2004 01 17 | 644 | 0.1+ | 0.1+ | 2004 02 17 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2004 01 20 | 704 | (1.8− | 0.9−) | 2004 02 17 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2004 01 20 | 704 | (2.0− | 1.1−) | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2004 01 20 | 704 | (1.9− | 1.6−) | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2004 01 31 | 704 | 0.7− | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.5− |
| 2004 01 31 | 704 | 1.2+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 1.0− | 0.4− |
| 2004 01 31 | 704 | 0.5− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2004 01 31 | 704 | 0.2+ | 1.2+ | 2006 10 15 | 691 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2004 01 31 | 704 | 0.2− | 1.0+ | 2006 10 19 | 691 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.8− | 0.5+ |
| 2004 02 14 | 704 | 0.7− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1− | | | | |

**2004 BR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.24709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23924869 | $\omega$ | 216.21888 | | −0.81161111 | +0.58419569 | |
| $a$ | 2.5698218 | $\Omega$ | 359.51777 | | −0.47841026 | −0.66628168 | |
| $e$ | 0.0551397 | $i$ | 11.45148 | | −0.33527754 | −0.46344807 | |
| $P$ | 4.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.2− | 0.9− | 2004 02 16 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.6+ | 1.1− |
| 2004 01 17 | 644 | 0.1+ | 0.4− | 2004 02 22 | 703 | (0.2+ | 1.7+) | 2006 09 19 | 703 | 1.0+ | 0.3+ |
| 2004 01 17 | 644 | 0.3− | 0.7− | 2004 02 22 | 703 | 0.6− | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2004 01 20 | 704 | 0.3+ | 0.6+ | 2004 02 22 | 703 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2004 01 20 | 704 | 0.2− | 0.0 | 2004 02 22 | 703 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2004 01 20 | 704 | 0.7+ | 0.3+ | 2004 03 14 | 704 | 0.8+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2004 01 28 | 703 | 0.5+ | 0.4+ | 2004 03 14 | 704 | 0.9+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2004 01 28 | 703 | 0.5+ | 1.0+ | 2004 03 14 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.4+ | 0.2+ |
| 2004 01 28 | 703 | 0.2− | 0.2+ | 2004 03 18 | 645 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2004 01 28 | 703 | 0.5+ | 1.0− | 2004 03 18 | 645 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.9+ |
| 2004 02 11 | 644 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2004 02 11 | 644 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.4− |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.2− | 1.4− |
| 2004 02 15 | 704 | 0.5+ | 0.1− | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2004 02 15 | 704 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2004 02 15 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 703 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2004 02 16 | 691 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.5− | 0.9− | | | | |
| 2004 02 16 | 691 | 0.0 | 0.2− | 2006 09 19 | 703 | 1.4− | 0.5− | | | | |

**2004 BR$_{20}$ = 2006 UG$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.32213 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26880395 | $\omega$ | 200.20833 | | −0.98262777 | +0.18490576 | |
| $a$ | 2.3778199 | $\Omega$ | 350.40577 | | −0.15446950 | −0.86232534 | |
| $e$ | 0.1269644 | $i$ | 5.47112 | | −0.10286805 | −0.47138611 | |
| $P$ | 3.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.1− | 0.1+ | 2005 07 03 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2004 01 16 | 691 | 0.2+ | 0.0 | 2005 07 03 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2005 07 03 | 644 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2004 01 19 | 699 | 0.1− | 0.4+ | 2006 10 17 | 691 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2004 01 19 | 699 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2004 01 19 | 699 | 0.3− | 1.0+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2004 01 19 | 699 | 0.2+ | 0.8− | 2006 10 21 | 691 | 0.4− | 0.0 | | | | |

**2004 BN$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.80870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26198866 | $\omega$ | 319.61615 | | −0.69653283 | −0.71751236 | |
| $a$ | 2.4188803 | $\Omega$ | 174.52845 | | +0.66926220 | −0.65180474 | |
| $e$ | 0.1395688 | $i$ | 2.55271 | | +0.25870857 | −0.24561473 | |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.2− | 0.7+ | 2006 09 24 | 691 | 0.1− | 0.2− |
| 2004 01 18 | 644 | 0.3+ | 0.1+ | 2004 01 30 | 704 | 1.1− | 0.4− | 2006 09 24 | 691 | 0.1+ | 0.0 |
| 2004 01 18 | 644 | 0.1+ | 0.4+ | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2004 01 18 | 644 | 0.3− | 0.3+ | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 02 11 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2004 01 18 | 644 | 0.1− | 0.3+ | 2004 02 13 | 691 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2004 01 18 | 644 | 0.0 | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2004 01 19 | 699 | 0.1− | 1.0− | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 2004 01 19 | 699 | 1.2+ | 1.0+ | 2006 09 15 | 691 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2004 01 19 | 699 | 1.3+ | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2− |
| 2004 01 19 | 699 | 0.5+ | 0.6− | 2006 09 15 | 691 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.3− | 0.0 |
| 2004 01 24 | 704 | (0.2+ | 2.0+) | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2004 01 24 | 704 | (0.9+ | 1.9+) | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2004 01 24 | 704 | (0.3+ | 1.7+) | 2006 09 19 | 691 | 0.1+ | 0.2− | | | | |
| 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.3− | | | | |

**2004 BA$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.57122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23864263 | $\omega$ | 7.82207 | | +0.83555364 | −0.48391370 | |
| $a$ | 2.5741708 | $\Omega$ | 26.66592 | | +0.46746764 | +0.37740402 | |
| $e$ | 0.2518542 | $i$ | 35.42744 | | +0.28865918 | +0.78955287 | |
| $P$ | 4.13 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 704 | 0.3+ | 0.2− | 2006 08 16 | E12 | 0.0 | 0.2+ | 2006 09 18 | E12 | 0.0 | 0.2− |
| 2004 01 19 | 704 | 0.1− | 0.8+ | 2006 08 16 | E12 | 0.1− | 0.8+ | 2006 09 18 | E12 | 0.2− | 0.1+ |
| 2004 01 19 | 704 | 0.3+ | 0.9− | 2006 08 16 | E12 | 0.0 | 0.0 | 2006 09 18 | E12 | 0.3+ | 0.0 |
| 2004 01 19 | 704 | 0.4− | 0.1+ | 2006 08 16 | E12 | 0.5+ | 0.7− | 2006 09 18 | E12 | 0.6− | 0.1+ |
| 2004 01 20 | 620 | 0.3− | 0.2− | 2006 09 17 | E12 | 0.0 | 0.1− | 2006 09 18 | E12 | 0.1− | 0.1+ |
| 2004 01 20 | 620 | 0.4− | 0.6+ | 2006 09 17 | E12 | 0.1− | 0.2+ | 2006 09 18 | E12 | 0.1− | 0.1+ |
| 2004 01 20 | 673 | 0.0 | 0.2+ | 2006 09 17 | E12 | 0.4+ | 0.0 | 2006 09 18 | E12 | 0.0 | 0.0 |
| 2004 01 20 | 673 | 0.1− | 0.1+ | 2006 09 17 | E12 | 0.4− | 0.1+ | 2006 09 19 | E12 | 0.2− | 0.2+ |
| 2004 01 20 | 673 | 0.1− | 0.1+ | 2006 09 17 | E12 | 0.1− | 0.0 | 2006 09 19 | E12 | 0.1+ | 0.2− |
| 2004 01 20 | 673 | 0.0 | 0.2+ | 2006 09 17 | E12 | 0.0 | 0.1− | 2006 09 19 | E12 | 0.1− | 0.1− |
| 2004 01 21 | 711 | 0.2− | 0.4− | 2006 09 18 | F84 | 0.1+ | 0.1− | 2006 10 01 | E12 | 0.3− | 0.2+ |
| 2004 01 21 | 711 | 0.1− | 0.5+ | 2006 09 18 | F84 | 0.0 | 0.3− | 2006 10 01 | E12 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 711 | 0.2− | 0.0 | 2006 09 18 | F84 | 0.0 | 0.2− | 2006 10 01 | E12 | 0.4+ | 0.0 |
| 2004 01 23 | 704 | 0.5+ | 0.1− | 2006 09 18 | E12 | 0.4+ | 0.2− | 2006 10 01 | E12 | 0.8+ | 0.1− |
| 2004 01 23 | 704 | 0.1+ | 1.0− | 2006 09 18 | E12 | 0.3− | 0.0 | 2006 10 21 | E12 | 0.2− | 0.2− |
| 2004 01 23 | 704 | 0.1+ | 0.2− | 2006 09 18 | E12 | 0.0 | 0.2+ | 2006 10 21 | E12 | 0.2+ | 0.5− |
| 2004 01 23 | 704 | 0.2+ | 0.2+ | 2006 09 18 | E12 | 0.0 | 0.1− | 2006 10 21 | E12 | 0.2+ | 0.1+ |
| 2004 01 23 | 704 | 0.5+ | 0.1+ | 2006 09 18 | E12 | 0.3− | 0.0 | 2006 10 21 | E12 | 0.2− | 0.5+ |

### 2004 $BH_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.50502 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26268845 | $\omega$ | 7.58084 | | −0.94914311 | | −0.31468868 |
| $a$ | 2.4145826 | $\Omega$ | 154.07041 | | +0.28766114 | | −0.87956958 |
| $e$ | 0.1330354 | $i$ | 1.29986 | | +0.12797823 | | −0.35683104 |
| $P$ | 3.75 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 01 | 704 | 1.0+ | 1.1+ | 2004 01 21 | 704 | 0.1+ | 0.1+ | 2004 02 17 | 645 | 0.0 | 0.0 |
| 1997 05 01 | 704 | 0.4+ | 1.8+ | 2004 01 21 | 704 | 0.3+ | 0.2+ | 2004 04 13 | 645 | 0.1− | 0.0 |
| 1997 05 01 | 704 | 0.0 | 0.8+ | 2004 01 24 | 704 | 0.2+ | 0.3+ | 2004 04 13 | 645 | 0.0 | 0.1− |
| 1997 05 01 | 704 | (5.5− | 2.0+) | 2004 01 24 | 704 | 0.3− | 1.1+ | 2004 04 15 | 645 | 0.1− | 0.0 |
| 2002 11 07 | 695 | 0.3− | 0.2+ | 2004 01 24 | 704 | 0.1+ | 0.6+ | 2004 04 15 | 645 | 0.0 | 0.1− |
| 2002 11 07 | 695 | 0.3− | 0.1+ | 2004 01 28 | 691 | 0.1+ | 0.1− | 2004 04 16 | 645 | 0.1+ | 0.2− |
| 2003 12 29 | 691 | 0.2− | 0.3− | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2004 04 16 | 645 | 0.1− | 0.1− |
| 2003 12 29 | 691 | 0.2− | 0.0 | 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.4− | 0.2+ |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.3+ | 0.8+ | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 2004 01 17 | 644 | 0.2+ | 0.5+ | 2004 01 30 | 704 | 0.5+ | 0.1− | 2006 09 14 | 691 | 0.2− | 0.1− |
| 2004 01 17 | 644 | 0.1+ | 0.2+ | 2004 01 30 | 704 | 1.4+ | 0.2− | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2004 01 17 | 644 | 0.2+ | 0.0 | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 695 | 0.1+ | 0.1+ |
| 2004 01 19 | 699 | 0.5− | 0.3− | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2004 01 19 | 699 | 1.2− | 1.5+ | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2004 01 19 | 699 | 0.5− | 1.4− | 2004 02 16 | 704 | 0.3+ | 1.2+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2004 01 19 | 699 | (2.4+ | 1.9−) | 2004 02 16 | 704 | 0.7+ | 0.4+ | 2006 11 16 | G96 | 0.7+ | 0.7− |
| 2004 01 21 | 704 | 0.2+ | 0.5+ | 2004 02 16 | 704 | (2.7+ | 1.4+) | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2004 01 21 | 704 | 0.0 | 1.1+ | 2004 02 16 | 704 | (2.0+ | 0.9+) | 2006 11 16 | G96 | 0.1+ | 0.8− |
| 2004 01 21 | 704 | 0.5+ | 0.3+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.5− | 0.0 |

### 2004 $BG_{23}$ = 2006 $SZ_{358}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.77614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27859881 | $\omega$ | 327.29107 | | −0.46935338 | | −0.88193900 |
| $a$ | 2.3217559 | $\Omega$ | 150.63355 | | +0.82801299 | | −0.45669473 |
| $e$ | 0.1146599 | $i$ | 5.08740 | | +0.30676033 | | −0.11667702 |
| $P$ | 3.54 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.1− | 0.3− | 2004 01 18 | 644 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 1997 01 31 | 691 | 0.1− | 0.0 | 2004 01 21 | 704 | 1.1+ | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 1997 01 31 | 691 | 0.0 | 0.1− | 2004 01 21 | 704 | 0.4+ | 1.2+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2004 01 21 | 704 | 1.5+ | 0.7+ | 2006 10 02 | G96 | 0.3− | 0.3− |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2002 09 02 | 291 | 0.2− | 0.2+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.4− | 0.5− |
| 2002 09 02 | 291 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.4− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2002 09 02 | 291 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2004 01 18 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4− | | | | |
| 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.6+ | | | | |

### 2004 $BC_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.59300 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26892294 | $\omega$ | 329.17940 | | −0.15590303 | | −0.98523989 |
| $a$ | 2.3771184 | $\Omega$ | 129.69309 | | +0.92395596 | | −0.17076163 |
| $e$ | 0.1029763 | $i$ | 5.27081 | | +0.34928447 | | +0.01195114 |
| $P$ | 3.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.2+ | 0.4+ | 2004 01 24 | 704 | 0.3+ | 1.0− | 2006 09 18 | 703 | 0.1+ | 0.2− |
| 2001 03 24 | 691 | 0.0 | 0.3+ | 2004 01 24 | 704 | 1.0+ | 0.8− | 2006 09 18 | 703 | 0.9− | 0.3+ |
| 2001 03 24 | 691 | 0.2+ | 0.6+ | 2004 01 24 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.4+ | 1.4+ |
| 2003 12 19 | 704 | 0.2− | 0.7+ | 2004 01 24 | 704 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.1− | 0.6+ |
| 2003 12 19 | 704 | 0.5+ | 0.5− | 2004 01 24 | 704 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.9− | 1.2+ |
| 2003 12 19 | 704 | 0.3+ | 0.5+ | 2004 01 24 | 704 | 0.0 | 0.3− | 2006 09 18 | 699 | (2.5− | 0.1−) |
| 2004 01 19 | 699 | 0.4− | 0.4+ | 2004 01 24 | 704 | 0.5+ | 0.2− | 2006 09 18 | 699 | 0.1+ | 1.3+ |
| 2004 01 19 | 699 | 0.6+ | 0.1− | 2004 01 24 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2004 01 19 | 699 | 0.2− | 0.1− | 2004 01 24 | 704 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.0 |
| 2004 01 19 | 699 | 0.2− | 0.4− | 2004 01 24 | 704 | 0.0 | 0.8− | 2006 09 26 | 703 | 0.2− | 0.7+ |
| 2004 01 21 | 704 | 0.5− | 0.4+ | 2004 01 24 | 704 | (0.1+ | 1.7−) | 2006 09 26 | 703 | 0.5+ | 0.2− |
| 2004 01 21 | 704 | (2.0− | 0.6+) | 2004 01 24 | 704 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.3− | 0.1− |
| 2004 01 21 | 704 | 0.3− | 0.1+ | 2004 01 27 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.3+ |
| 2004 01 21 | 704 | 0.8− | 0.9+ | 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.7− | 0.3− |
| 2004 01 21 | 704 | (1.9− | 0.5+) | 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.9+ | 0.3− |
| 2004 01 22 | 704 | 0.9− | 0.2+ | 2004 01 30 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | 0.4− | 0.1+ | 2004 01 30 | 704 | 0.0 | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.6− | 0.4+ | 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 1.4− | 0.2+ | 2004 01 30 | 704 | 0.7+ | 0.9+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.4− | 0.0 | 2004 01 30 | 704 | 0.2− | 0.2+ | | | | |
| 2004 01 24 | 704 | 0.1− | 0.1− | 2006 09 18 | 703 | 1.1− | 0.2− | | | | |

### 2004 $BU_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.21951 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27409417 | $\omega$ | 303.41338 | | +0.13241458 | | −0.99091526 |
| $a$ | 2.3471248 | $\Omega$ | 138.95714 | | +0.92088381 | | +0.11420831 |
| $e$ | 0.1533598 | $i$ | 2.05299 | | +0.36665976 | | +0.07101690 |
| $P$ | 3.60 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 691 | 0.1− | 0.1− | 2004 01 26 | 699 | 0.7− | 0.7− | 2004 02 26 | 704 | 1.3+ | 0.0 |
| 2003 12 29 | 691 | 0.0 | 0.2− | 2004 01 26 | 699 | 0.9− | 0.3− | 2004 03 18 | 645 | 0.0 | 0.1− |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2004 01 28 | 691 | 0.2+ | 0.0 | 2004 03 18 | 645 | 0.0 | 0.1− |
| 2004 01 12 | 644 | 0.2− | 0.1+ | 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1− |
| 2004 01 12 | 644 | 0.3− | 0.3− | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 2004 01 12 | 644 | 0.3+ | 0.0 | 2004 01 30 | 704 | 0.4+ | 1.3− | 2006 09 15 | 691 | 0.0 | 0.1− |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.8− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2004 01 19 | 691 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.9+ | 0.9+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2004 01 21 | 704 | 0.7+ | 0.1− | 2004 02 10 | 703 | 0.9− | 0.7+ | 2006 09 23 | 691 | 0.2+ | 0.0 |
| 2004 01 21 | 704 | 0.4+ | 0.3+ | 2004 02 10 | 703 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2004 01 21 | 704 | 0.0 | 0.8+ | 2004 02 10 | 703 | 0.4+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.2+ |
| 2004 01 24 | 704 | 0.2+ | 0.7+ | 2004 02 10 | 703 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2004 01 24 | 704 | 0.5− | 1.1+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2004 01 24 | 704 | 0.3− | 1.3+ | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2004 01 24 | 704 | 0.6+ | 0.0 | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2004 01 24 | 704 | 0.1+ | 1.3+ | 2004 02 26 | 704 | 1.2+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2004 01 26 | 699 | 1.0− | 0.1− | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2004 01 26 | 699 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2− |

### 2004 $BA_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.62787 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29994085 | $\omega$ | 123.60738 | | +0.70178273 | | −0.71059609 |
| $a$ | 2.2102716 | $\Omega$ | 281.73492 | | +0.63531437 | | +0.65637280 |
| $e$ | 0.1597030 | $i$ | 2.95881 | | +0.32229900 | | +0.25343234 |
| $P$ | 3.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 09 | 566 | 1.3− | 0.1− | 2004 01 30 | 704 | 0.4+ | 0.6+ | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 1996 10 09 | 566 | 0.1− | 0.3+ | 2004 02 11 | 699 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 1996 10 09 | 566 | 1.3+ | 0.1− | 2004 02 11 | 699 | 0.9− | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2003 12 30 | 691 | 0.8− | 0.3+ | 2004 02 11 | 699 | 0.9+ | 0.6− | 2006 11 19 | 704 | 0.7− | 0.1+ |
| 2003 12 30 | 691 | 0.2+ | 0.0 | 2004 02 11 | 699 | 1.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 30 | 691 | 0.1+ | 0.2− | 2004 02 22 | 704 | 0.5− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2004 01 16 | 644 | 0.2− | 0.1− | 2004 02 22 | 704 | 0.4− | 1.2+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2004 01 16 | 644 | 0.2− | 1.0− | 2004 02 22 | 704 | 0.6+ | 1.2+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2004 01 16 | 644 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.9− | 0.4+ |
| 2004 01 19 | 691 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.9− | 0.8+ |
| 2004 01 19 | 691 | 0.6+ | 0.9− | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.6− | 0.7+ |
| 2004 01 19 | 691 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.4− | 0.7− | 2006 11 22 | 704 | 0.7− | 0.5+ |
| 2004 01 21 | 704 | 1.2− | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2004 01 21 | 704 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.4+ | 0.2− | 2006 11 27 | 704 | 0.6+ | 0.4− |
| 2004 01 21 | 704 | 0.7− | 0.7+ | 2006 11 15 | 704 | 0.1− | 0.6− | 2006 11 27 | 704 | 0.3+ | 0.2− |
| 2004 01 24 | 704 | 0.8+ | 0.1− | 2006 11 16 | 704 | 0.6+ | 0.2− | 2006 11 27 | 704 | 0.1+ | 0.6− |
| 2004 01 24 | 704 | 0.7+ | 0.8+ | 2006 11 16 | 704 | 0.3+ | 0.5+ | 2006 11 27 | 704 | 0.5+ | 0.2− |
| 2004 01 24 | 704 | 0.6+ | 0.8+ | 2006 11 16 | 704 | 0.9− | 0.9+ | 2006 11 28 | 704 | 1.3+ | 2.3− |
| 2004 01 24 | 704 | (2.0+ | 0.6−) | 2006 11 16 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.8− | 0.2+ |
| 2004 01 30 | 704 | 1.0+ | 0.7+ | 2006 11 16 | 704 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.9− | 0.0 |
| 2004 01 30 | 704 | 0.3+ | 0.4− | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.7+ | 0.1+ |
| 2004 01 30 | 704 | 0.7+ | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.1− | 2006 11 28 | 704 | 1.2− | 1.3+ |
| 2004 01 30 | 704 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.4+ | | | | |

### 2004 $BC_{25}$ = 2006 $SA_{119}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.94222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27686830 | $\omega$ | 44.57365 | | +0.95760744 | −0.04463400 | |
| $a$ | 2.3314202 | $\Omega$ | 315.51843 | | −0.15152057 | +0.76219177 | |
| $e$ | 0.1600280 | $i$ | 23.96469 | | +0.24500921 | +0.64581074 | |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 704 | 1.2− | 1.0− | 2004 01 22 | 704 | 0.2− | 0.1+ | 2006 09 25 | 703 | 0.4− | 0.0 |
| 2004 01 19 | 704 | 0.0 | 1.1+ | 2004 01 22 | 704 | 0.7+ | 0.1− | 2006 09 25 | 703 | 0.6+ | 0.1+ |
| 2004 01 19 | 704 | 0.3− | 0.1+ | 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 10 02 | 703 | (0.6+ | 2.5+) |
| 2004 01 19 | 704 | 0.2+ | 0.4− | 2004 01 22 | 704 | 0.3+ | 0.1− | 2006 10 02 | 703 | 0.2− | 0.7+ |
| 2004 01 19 | 704 | 0.5+ | 0.8+ | 2004 01 22 | 704 | 0.4− | 0.2− | 2006 10 02 | 703 | 1.0+ | 0.3− |
| 2004 01 20 | 938 | 1.0− | 0.7− | 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 10 02 | 703 | 0.3+ | 0.3− |
| 2004 01 20 | 938 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2004 01 21 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2004 01 21 | 704 | 0.7+ | 0.2− | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2004 01 21 | 704 | (0.6+ | 1.6−) | 2006 09 25 | 703 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2004 01 21 | 704 | 0.6+ | 0.6+ | 2006 09 25 | 703 | 0.3+ | 0.6+ | | | | |

### 2004 $BR_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.63817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23960363 | $\omega$ | 115.52278 | | −0.96649348 | −0.09344223 | |
| $a$ | 2.5672832 | $\Omega$ | 59.94993 | | −0.04285428 | −0.85957992 | |
| $e$ | 0.0438427 | $i$ | 16.03380 | | +0.25308864 | −0.50238522 | |
| $P$ | 4.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | 1.1+ | 0.5− | 2002 10 28 | 644 | 0.1+ | 0.1− | 2004 01 21 | 704 | 0.7+ | 0.5− |
| 2002 10 08 | 699 | 0.3− | 1.1+ | 2003 12 30 | 704 | 0.2− | 0.1+ | 2004 01 21 | 704 | 0.5+ | 0.2− |
| 2002 10 08 | 699 | 0.7+ | 0.5+ | 2003 12 30 | 704 | 0.1− | 0.3+ | 2004 01 21 | 704 | 0.7+ | 0.1+ |
| 2002 10 08 | 699 | 0.8− | 0.2− | 2003 12 30 | 704 | 0.3+ | 0.1− | 2004 01 23 | 704 | 0.4− | 0.2− |
| 2002 10 16 | 644 | 0.0 | 0.3− | 2003 12 30 | 704 | 0.4+ | 0.1+ | 2004 01 23 | 704 | 1.3− | 0.3− |
| 2002 10 16 | 644 | 0.5− | 0.0 | 2003 12 30 | 704 | 0.5− | 0.2− | 2004 01 23 | 704 | 0.2+ | 0.4− |
| 2002 10 16 | 644 | 0.2− | 0.1+ | 2004 01 19 | 704 | 0.1− | 0.1+ | 2004 01 23 | 704 | 0.2− | 0.1+ |
| 2002 10 28 | 644 | 0.0 | 0.1− | 2004 01 19 | 704 | 0.4+ | 1.4+ | 2004 01 23 | 704 | 0.8− | 0.3− |
| 2002 10 28 | 644 | 0.0 | 0.4− | 2004 01 19 | 704 | 0.3+ | 0.2+ | | | | |

### 2004 $BU_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.78231 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28488664 | $\omega$ | 339.58480 | | −0.32290713 | −0.94314141 | |
| $a$ | 2.2874661 | $\Omega$ | 129.16918 | | +0.88183257 | −0.33006859 | |
| $e$ | 0.1023251 | $i$ | 5.83637 | | +0.34366017 | −0.03923018 | |
| $P$ | 3.46 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2004 02 10 | 104 | 0.0 | 0.4+ | 2004 03 18 | 645 | 0.2− | 0.1− |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2004 02 10 | 104 | 0.5+ | 0.1− | 2004 04 15 | 645 | 0.1+ | 0.0 |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2004 02 10 | 104 | 0.5+ | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2004 01 21 | 704 | 0.3+ | 0.0 | 2004 02 10 | 104 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.6+ | 1.4+ |
| 2004 01 21 | 704 | 0.2+ | 0.4+ | 2004 02 11 | 104 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2004 01 21 | 704 | 0.3+ | 0.4+ | 2004 02 11 | 104 | 0.5+ | 0.6− | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2004 01 21 | 704 | 0.1− | 0.3− | 2004 02 11 | 104 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.9− | 0.5+ |
| 2004 01 24 | 704 | 0.2− | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2004 01 24 | 704 | 0.5+ | 0.3− | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.2− |
| 2004 01 24 | 704 | 0.7+ | 0.3− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2004 01 24 | 704 | 0.2+ | 0.2+ | 2004 02 16 | 704 | 0.2− | 0.6+ | 2006 11 19 | 703 | 0.6+ | 0.4− |
| 2004 01 24 | 704 | 1.2+ | 0.9− | 2004 02 16 | 704 | 0.2+ | 0.8+ | 2006 11 19 | 703 | 0.5+ | 0.1− |
| 2004 01 26 | 699 | 0.2− | 0.4+ | 2004 02 16 | 704 | 0.4− | 0.4− | 2006 11 19 | 703 | 0.4+ | 0.3− |
| 2004 01 26 | 699 | 0.4+ | 0.2− | 2004 02 16 | 704 | 0.3+ | 1.2+ | 2006 11 19 | 703 | 0.4− | 0.0 |
| 2004 01 26 | 699 | 0.4− | 0.5− | 2004 02 23 | 704 | 0.2− | 0.7+ | 2006 11 19 | 703 | 0.1+ | 1.0− |
| 2004 01 26 | 699 | 0.8+ | 0.6− | 2004 02 23 | 704 | 0.1+ | 0.6− | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2004 01 30 | 691 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.5+ |
| 2004 01 30 | 691 | 0.3− | 0.1− | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 11 19 | 703 | 0.3+ | 0.8− |
| 2004 01 30 | 691 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.0 | | | | |
| 2004 02 10 | 104 | 0.5+ | 0.1− | 2004 03 18 | 645 | 0.1− | 0.1− | | | | |

### 2004 $BY_{28}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.85361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28884705 | $\omega$ | 352.17845 | | −0.20091471 | −0.97872800 | |
| $a$ | 2.2665089 | $\Omega$ | 109.40473 | | +0.90114019 | −0.20128036 | |
| $e$ | 0.1241844 | $i$ | 2.52364 | | +0.38416096 | −0.03972039 | |
| $P$ | 3.41 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.1+ | 0.2− | 2004 01 30 | 704 | (1.1− | 3.0−) | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 1999 11 10 | 691 | 0.2+ | 0.1− | 2004 01 30 | 704 | 0.1+ | 1.2− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 1999 11 10 | 691 | 0.1+ | 0.2− | 2004 01 30 | 704 | (0.9− | 3.4−) | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2002 08 29 | 291 | 0.1− | 1.0+ | 2004 01 30 | 704 | (0.7− | 2.4−) | 2006 11 09 | 644 | 0.5− | 0.5+ |
| 2002 08 29 | 291 | 0.4− | 0.9+ | 2004 01 31 | 691 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2002 08 29 | 291 | 0.4− | 0.8+ | 2004 01 31 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2003 12 19 | 291 | 0.2− | 0.6+ | 2004 01 31 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.4− |
| 2003 12 19 | 291 | 0.3− | 0.5+ | 2004 02 10 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | (1.2− | 1.8−) |
| 2003 12 19 | 291 | 1.1− | 0.5+ | 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2004 01 18 | 644 | 0.3+ | 0.4+ | 2004 02 10 | 644 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2004 02 11 | 291 | 0.2− | 0.5+ | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 2004 01 18 | 644 | 0.1− | 0.0 | 2004 02 11 | 291 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.5− | 0.2− |
| 2004 01 22 | 704 | 0.9+ | 0.3+ | 2004 02 11 | 291 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.2+ |
| 2004 01 22 | 704 | 0.4− | 0.2− | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2004 01 22 | 704 | 0.2− | 0.7+ | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 0.1− | 2004 02 11 | 691 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2004 01 22 | 704 | 0.6+ | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.8− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2004 01 26 | 699 | 0.6− | 0.4− | 2004 02 23 | 704 | 0.9+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.7− |
| 2004 01 26 | 699 | 1.3− | 0.0 | 2004 02 23 | 704 | 0.3− | 0.7− | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2004 01 26 | 699 | (1.7+ | 0.0 ) | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.3+ | 1.0− |
| 2004 01 26 | 699 | 0.5+ | 0.7− | 2004 02 23 | 704 | 0.8+ | 0.7+ | | | | |
| 2004 01 30 | 704 | (1.5− | 2.9−) | 2006 10 22 | 691 | 0.0 | 0.2+ | | | | |

### 2004 $BD_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.12655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28869596 | $\omega$ | 315.05462 | | +0.57029134 | −0.81649475 | |
| $a$ | 2.2672996 | $\Omega$ | 99.97143 | | +0.77701140 | +0.50064127 | |
| $e$ | 0.1492860 | $i$ | 5.24436 | | +0.26649779 | +0.28756676 | |
| $P$ | 3.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.2− | 0.4+ | 2004 02 10 | 644 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.1− | 0.2+ | |
| 2004 01 18 | 644 | 0.1− | 0.5+ | 2004 02 10 | 644 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.2+ | |
| 2004 01 18 | 644 | 0.4+ | 0.6+ | 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.5+ | 0.4− | |
| 2004 01 22 | 704 | 0.3+ | 1.0− | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.4− | |
| 2004 01 22 | 704 | 0.5− | 0.5− | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.4− | |
| 2004 01 22 | 704 | 0.9+ | 0.4− | 2004 02 15 | 704 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.3− | |
| 2004 01 22 | 704 | 0.1− | 0.8− | 2004 02 15 | 704 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.3− | |
| 2004 01 28 | 703 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.4+ | 0.2− | |
| 2004 01 28 | 703 | 0.7− | 0.2+ | 2004 02 15 | 704 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.4− | |
| 2004 01 28 | 703 | 1.5− | 0.3+ | 2004 02 15 | 704 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.4− | |
| 2004 01 28 | 703 | 0.6− | 1.3− | 2004 02 19 | 608 | 0.4− | 0.5− | 2006 11 28 | 704 | 1.4− | 0.5+ | |
| 2004 01 30 | 704 | 0.8+ | 0.0 | 2004 02 19 | 608 | 0.1+ | 0.8− | 2006 11 28 | 704 | 0.2− | 0.2+ | |
| 2004 01 30 | 704 | 0.0 | 0.5+ | 2004 02 19 | 608 | 0.4− | 0.6− | 2006 11 28 | 704 | 0.3− | 0.5+ | |
| 2004 01 30 | 704 | 0.1− | 0.6+ | 2006 11 14 | 704 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.4+ | |
| 2004 01 30 | 704 | 0.2− | 0.5+ | 2006 11 14 | 704 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.0 | 0.5+ | |
| 2004 02 10 | 644 | 0.5+ | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.2+ | | | | | |

### 2004 $BL_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.73958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28294963 | $\omega$ | 106.48968 | | −0.59165197 | −0.80610526 | |
| $a$ | 2.2978939 | $\Omega$ | 19.79896 | | +0.72558897 | −0.53888735 | |
| $e$ | 0.1567636 | $i$ | 2.01787 | | +0.35138097 | −0.24452960 | |
| $P$ | 3.48 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 691 | 0.1+ | 1.1− | 2004 02 10 | 644 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.1− | |
| 1999 11 15 | 691 | 0.4+ | 0.6− | 2004 02 10 | 703 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.6− | |
| 1999 11 15 | 691 | 0.4+ | 0.6− | 2004 02 10 | 703 | 0.1− | 0.9+ | 2006 10 12 | 691 | 0.2+ | 0.0 | |
| 2003 12 19 | 704 | 0.2+ | 1.3+ | 2004 02 10 | 644 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.4+ | |
| 2003 12 19 | 704 | 0.2− | 0.3+ | 2004 02 10 | 703 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.4+ | |
| 2003 12 19 | 704 | 0.3+ | 0.1+ | 2004 02 11 | 699 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.4+ | |
| 2003 12 19 | 704 | 1.4+ | 0.0 | 2004 02 11 | 699 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.3+ | |
| 2004 01 18 | 644 | 0.1− | 0.0 | 2004 02 11 | 699 | 1.2− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ | |
| 2004 01 18 | 644 | 0.1− | 0.0 | 2004 02 11 | 699 | 0.3+ | 0.6− | 2006 10 20 | 691 | 0.0 | 0.2+ | |
| 2004 01 18 | 644 | 0.1− | 0.1− | 2004 02 16 | 704 | 0.8− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | |
| 2004 01 22 | 704 | 0.3− | 0.4+ | 2004 02 16 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.4+ | |
| 2004 01 22 | 704 | 0.0 | 0.8− | 2004 02 16 | 704 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.3− | 0.2− | |
| 2004 01 22 | 704 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.1+ | |
| 2004 01 22 | 704 | 0.2+ | 0.0 | 2004 02 16 | 704 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.3− | 0.1+ | |
| 2004 01 26 | 699 | 0.8+ | 0.8+ | 2004 02 19 | 608 | 0.3− | 1.2− | 2006 11 01 | 691 | 0.2+ | 0.0 | |
| 2004 01 26 | 699 | 0.9+ | 0.6− | 2004 02 19 | 608 | 0.0 | 1.0− | 2006 11 01 | 691 | 0.0 | 0.2+ | |
| 2004 01 26 | 699 | 0.1+ | 0.7+ | 2004 02 19 | 608 | (0.3+ | 2.7−) | 2006 11 01 | 691 | 0.1− | 0.0 | |
| 2004 01 26 | 699 | (2.1− | 0.5+) | 2004 02 23 | 704 | 1.0+ | 1.0+ | 2006 11 11 | 703 | 0.5− | 1.3+ | |
| 2004 01 30 | 704 | (0.4− | 1.7+) | 2004 02 23 | 704 | 0.6− | 0.8+ | 2006 11 11 | 703 | 1.2− | 1.0+ | |
| 2004 01 30 | 704 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.0+ | 1.4− | |
| 2004 01 30 | 704 | 0.0 | 0.6+ | 2004 03 01 | 691 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.6+ | |
| 2004 01 30 | 704 | 0.2− | 0.8+ | 2004 03 01 | 691 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.3− | |
| 2004 01 30 | 704 | 0.8− | 0.6− | 2004 03 01 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− | |
| 2004 02 10 | 644 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.5− | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.3− | |
| 2004 02 10 | 703 | 0.4+ | 0.7− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.5− | |

### 2004 $BR_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.43105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24066604 | $\omega$ | 145.85602 | | −0.31785558 | −0.93919617 | |
| $a$ | 2.5597222 | $\Omega$ | 322.20547 | | +0.81569309 | −0.20102444 | |
| $e$ | 0.1826891 | $i$ | 12.23925 | | +0.48333488 | −0.27838773 | |
| $P$ | 4.10 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.2+ | 0.5− | 2004 02 10 | 703 | 0.2− | 0.1+ | 2004 02 29 | 691 | 0.3+ | 0.0 | |
| 2004 01 18 | 644 | 0.0 | 0.4− | 2004 02 10 | 703 | 1.0− | 1.2− | 2006 08 29 | 691 | 0.2− | 0.0 | |
| 2004 01 18 | 644 | 0.0 | 0.4− | 2004 02 10 | 703 | (0.6− | 1.8−) | 2006 08 29 | 691 | 0.5+ | 0.2− | |
| 2004 01 22 | 704 | 0.0 | 0.7+ | 2004 02 10 | 703 | 0.9− | 1.1+ | 2006 08 29 | 691 | 0.1− | 0.2+ | |
| 2004 01 22 | 704 | 0.2+ | 1.0+ | 2004 02 26 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.2+ | |
| 2004 01 22 | 704 | 0.4+ | 1.1+ | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 691 | 0.3+ | 0.1+ | |
| 2004 01 22 | 704 | 0.1− | 1.1+ | 2004 02 26 | 704 | 0.4+ | 0.0 | 2006 09 14 | 691 | 0.4− | 0.1− | |
| 2004 01 22 | 704 | 0.2− | 1.1+ | 2004 02 26 | 704 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.1− | |
| 2004 01 31 | 691 | 0.2− | 0.3− | 2004 02 26 | 704 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 | |
| 2004 01 31 | 691 | 0.2− | 0.4− | 2004 02 29 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.0 | |
| 2004 01 31 | 691 | 0.3− | 0.4− | 2004 02 29 | 691 | 0.4+ | 0.1− | | | | | |

### 2004 $BH_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.18336 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27630123 | $\omega$ | 149.31400 | | −0.94675673 | −0.32173116 | |
| $a$ | 2.3346091 | $\Omega$ | 11.93608 | | +0.28251432 | −0.84789699 | |
| $e$ | 0.1715118 | $i$ | 3.28861 | | +0.15439351 | −0.42137840 | |
| $P$ | 3.57 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.1− | 0.0 | 2004 03 10 | 644 | 0.3− | 0.2+ | |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2004 02 18 | 704 | 0.0 | 1.4− | 2004 03 10 | 644 | 0.3− | 0.1+ | |
| 2004 01 18 | 644 | 0.2− | 0.2+ | 2004 02 18 | 704 | 0.2+ | 0.9− | 2004 03 20 | 691 | 0.1− | 0.2+ | |
| 2004 01 18 | 644 | 0.5− | 0.3+ | 2004 02 18 | 704 | 0.1− | 0.9− | 2004 03 20 | 691 | 0.0 | 0.1+ | |
| 2004 01 18 | 644 | 0.5− | 0.1+ | 2004 02 18 | 704 | 0.6+ | 0.6− | 2004 03 20 | 691 | 0.2− | 0.1+ | |
| 2004 01 22 | 704 | 0.1+ | 0.3− | 2004 02 18 | 333 | 0.2+ | 0.1− | 2006 10 13 | 691 | 0.1− | 0.2+ | |
| 2004 01 22 | 704 | 0.9+ | 0.5+ | 2004 02 18 | 333 | 0.1− | 0.6− | 2006 10 13 | 691 | 0.2+ | 0.2+ | |
| 2004 01 22 | 704 | 0.2− | 0.2− | 2004 02 18 | 333 | 0.3− | 0.5+ | 2006 10 13 | 691 | 0.4− | 0.3+ | |
| 2004 01 22 | 704 | 0.3+ | 0.6+ | 2004 02 19 | 704 | 0.3+ | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.6− | |
| 2004 01 22 | 704 | 0.1− | 0.7+ | 2004 02 19 | 704 | 0.7+ | 0.2+ | 2006 11 01 | G96 | 0.6+ | 0.6− | |
| 2004 02 10 | 644 | 0.2+ | 0.0 | 2004 02 19 | 704 | 0.5+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.6− | |
| 2004 02 10 | 644 | 0.3− | 0.1+ | 2004 02 19 | 704 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.5− | |
| 2004 02 10 | 644 | 0.3− | 0.2− | 2004 02 19 | 704 | 1.0+ | 0.0 | 2006 11 14 | G96 | 0.9+ | 0.0 | |
| 2004 02 16 | 704 | 0.4− | 1.2+ | 2004 02 27 | 608 | 0.6+ | 0.6− | 2006 11 14 | G96 | 0.1− | 0.8− | |
| 2004 02 16 | 704 | 0.3− | 0.4+ | 2004 02 27 | 608 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.5− | |
| 2004 02 16 | 704 | 0.1+ | 0.2+ | 2004 02 27 | 608 | 0.6+ | 0.7− | | | | | |
| 2004 02 16 | 704 | 0.6− | 0.3+ | 2004 03 10 | 644 | 0.7− | 0.4+ | | | | | |

### 2004 $BN_{31}$ = 2006 $RK_{69}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.06267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28036780 | $\omega$ | 98.94788 | | +0.07290025 | −0.99724808 | |
| $a$ | 2.3119794 | $\Omega$ | 346.84884 | | +0.89017601 | +0.07115796 | |
| $e$ | 0.1871330 | $i$ | 3.39758 | | +0.44974685 | +0.02080400 | |
| $P$ | 3.52 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 699 | 0.1− | 0.7− | 2004 01 30 | 704 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.5− | |
| 2004 01 19 | 699 | (2.1− | 0.5+) | 2004 01 30 | 704 | 0.3− | 0.5− | 2006 09 26 | G96 | 0.5− | 0.7− | |
| 2004 01 19 | 699 | 0.7− | 0.6− | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2− | |
| 2004 01 19 | 699 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | |
| 2004 01 22 | 704 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.6− | |
| 2004 01 22 | 704 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | |
| 2004 01 22 | 704 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.5− | 0.3+ | |
| 2004 01 22 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.6− | 2006 09 27 | 691 | 0.3+ | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.6+ | 0.3+ | 2006 09 23 | 691 | 0.4+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.6+ |
| 2004 01 27 | 691 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2004 01 30 | 704 | (2.1− | 0.6−) | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.2+ |

**2004 BA$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.35849 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26841119 | $\omega$ | 183.60988 | | −0.96623284 | | +0.25754056 |
| $a$ | 2.3801389 | $\Omega$ | 11.32439 | | −0.23535215 | | −0.86916834 |
| $e$ | 0.1579888 | $i$ | 2.38831 | | −0.10489739 | | −0.42216023 |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 27 | 691 | 0.4− | 0.1− | 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 1997 04 27 | 691 | 0.1− | 0.1− | 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.5− |
| 1997 04 27 | 691 | 0.3+ | 0.3− | 2004 01 30 | 704 | 0.7+ | 0.8+ | 2006 10 03 | G96 | 0.3− | 0.1+ |
| 2003 12 27 | 704 | 0.5+ | 0.6− | 2004 01 30 | 704 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.5− |
| 2003 12 27 | 704 | 0.9+ | 0.3+ | 2004 01 30 | 704 | 0.1− | 0.7+ | 2006 10 03 | G96 | 0.4− | 0.2− |
| 2003 12 27 | 704 | (1.3+ | 1.7+) | 2004 01 30 | 704 | 0.3+ | 0.4− | 2006 10 03 | G96 | 1.4− | 0.2− |
| 2004 01 13 | 699 | 0.5+ | 0.0 | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.1− |
| 2004 01 13 | 699 | 0.1+ | 1.0− | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.1+ |
| 2004 01 13 | 699 | 0.5+ | 0.7− | 2004 02 11 | 691 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.0 |
| 2004 01 13 | 699 | 0.7+ | 0.1− | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2004 01 19 | 691 | 0.2− | 0.2− | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.4+ | 0.2+ |
| 2004 01 19 | 691 | 0.2− | 0.2− | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2004 01 19 | 691 | 0.3− | 0.2− | 2004 02 15 | 704 | 0.6− | 0.7+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2004 02 15 | 704 | 0.1+ | 1.4+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2004 01 22 | 704 | 0.3− | 0.0 | 2004 02 15 | 704 | 0.5+ | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2004 01 22 | 704 | 0.1+ | 1.2+ | 2004 02 15 | 704 | 1.1− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2004 01 22 | 704 | 0.2− | 0.2+ | 2004 02 23 | 704 | 0.5− | 0.1− | 2006 11 21 | 291 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2004 02 23 | 704 | 0.7− | 0.0 | 2006 11 21 | 291 | 0.1− | 0.3+ |
| 2004 01 26 | 699 | (1.9− | 0.0 ) | 2004 02 23 | 704 | 0.4+ | 1.1− | 2006 11 21 | 291 | (2.4− | 1.3+) |
| 2004 01 26 | 699 | (1.8− | 0.2−) | 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2004 01 26 | 699 | 0.9+ | 0.3+ | 2004 02 23 | 704 | 0.5− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2004 01 26 | 699 | 1.0− | 0.6− | 2006 09 27 | G96 | 1.0− | 0.7− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.9− | 2006 11 21 | G96 | 0.2+ | 0.5− |

**2004 BF$_{33}$ = 2006 SE$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.55597 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28589726 | $\omega$ | 294.87301 | | +0.74907923 | | −0.65789275 |
| $a$ | 2.2820722 | $\Omega$ | 106.36761 | | +0.63332548 | | +0.67668543 |
| $e$ | 0.2069101 | $i$ | 4.65277 | | +0.19436856 | | +0.33056612 |
| $P$ | 3.45 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2004 01 19 | 691 | 0.2+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2004 01 19 | 691 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.5− | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.9− | 2006 10 21 | 644 | 0.5+ | 0.0 |
| 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 09 26 | 703 | (1.7− | 0.6−) | 2006 10 22 | 644 | 0.2+ | 0.4− |
| 2004 01 22 | 704 | 1.0+ | 0.8+ | 2006 09 29 | 699 | 0.9+ | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 29 | 699 | (2.0+ | 1.5+) | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2004 01 28 | 691 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.5− | 0.1+ | 2006 10 23 | 644 | 0.6+ | 0.1+ |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2006 09 18 | 703 | 0.7+ | 0.1− | 2006 10 16 | 703 | 0.5− | 1.3+ | 2006 10 23 | 644 | 1.0+ | 0.0 |
| 2006 09 18 | 703 | 1.1+ | 0.7− | 2006 10 16 | 703 | 0.4− | 0.5+ | 2006 10 28 | 703 | (1.8+ | 0.3−) |
| 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.4− | 0.6− |
| 2006 09 18 | 703 | 0.7− | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.6+ | 2006 10 28 | 703 | 0.6− | 0.4− |
| 2006 09 20 | 644 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.8− | 0.2− |
| 2006 09 20 | 644 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− | | | | |

**2004 BT$_{33}$ = 2006 WO$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.17696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27405427 | $\omega$ | 180.33580 | | +0.23007392 | | +0.96946567 |
| $a$ | 2.3473526 | $\Omega$ | 102.96690 | | −0.89266576 | | +0.24496714 |
| $e$ | 0.1620345 | $i$ | 4.99606 | | −0.38757428 | | +0.01128811 |
| $P$ | 3.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2004 01 19 | 691 | 0.0 | 0.2− | 2004 01 30 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.6− |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2004 02 14 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.8− |
| 2004 01 22 | 704 | 0.9+ | 0.5− | 2004 02 14 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2004 01 22 | 704 | 0.3− | 0.7− | 2004 02 14 | 691 | 0.4+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.7+ | 0.1− | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.3+ |

**2004 BD$_{34}$ = 2006 QR$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.41890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21559204 | $\omega$ | 199.16738 | | +0.75802488 | | +0.61467782 |
| $a$ | 2.7545304 | $\Omega$ | 120.94307 | | −0.56027051 | | +0.78486453 |
| $e$ | 0.0477723 | $i$ | 14.73187 | | −0.33390903 | | +0.07847833 |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 644 | 0.3− | 0.3− | 2004 01 22 | 704 | 0.9+ | 0.0 | 2005 05 09 | 703 | 1.0− | 1.0− |
| 2002 10 06 | 644 | 0.3− | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.1− | 2006 08 16 | E12 | 0.3− | 0.3− |
| 2002 10 06 | 644 | 0.0 | 0.4− | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 08 16 | E12 | (0.0 | 2.1+) |
| 2002 11 05 | 644 | 0.0 | 0.2− | 2004 01 30 | 691 | 0.1− | 0.2− | 2006 08 16 | E12 | 0.6− | 0.0 |
| 2002 11 05 | 644 | 0.4+ | 0.5− | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 08 16 | E12 | 1.3− | 0.6− |
| 2002 11 05 | 644 | 0.7+ | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 08 24 | 644 | 0.5+ | 0.3+ |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.6− | 0.3− | 2006 08 24 | 644 | 0.0 | 0.7+ |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.6+ | 0.9− | 2006 08 24 | 644 | 0.3+ | 0.1+ |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2004 02 23 | 704 | 1.1+ | 1.1+ | 2006 09 13 | 644 | 0.4+ | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.6+ | 2005 05 09 | 703 | 0.3− | 0.2− | 2006 09 13 | 644 | 0.5+ | 0.6+ |
| 2004 01 22 | 704 | 0.5+ | 0.2+ | 2005 05 09 | 703 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.6+ | 0.2+ |
| 2004 01 22 | 704 | 0.3− | 1.0− | 2005 05 09 | 703 | 1.1+ | 0.1+ | | | | |

**2004 BF$_{34}$ = 2006 PS$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.44453 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20642026 | $\omega$ | 203.98023 | | +0.81234760 | | +0.52050780 |
| $a$ | 2.8355317 | $\Omega$ | 122.05174 | | −0.47222942 | | +0.85172736 |
| $e$ | 0.0974483 | $i$ | 18.07645 | | −0.34218526 | | +0.06026718 |
| $P$ | 4.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 05 | 608 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.3− | 0.4+ | 2006 06 21 | 644 | 0.2− | 0.4+ |
| 2004 01 19 | 691 | 0.2+ | 0.1− | 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 08 13 | 644 | 0.1+ | 0.3+ |
| 2004 01 19 | 691 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.4+ | 0.3+ | 2006 08 13 | 644 | 0.2+ | 0.4+ |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 02 14 | 691 | 0.3+ | 0.3+ | 2006 08 13 | 644 | 0.1− | 0.5+ |
| 2004 01 22 | 704 | 0.7− | 0.5+ | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 08 20 | 644 | 0.3+ | 0.3+ |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.5+ |
| 2004 01 22 | 704 | 0.3− | 0.1+ | 2006 06 21 | 644 | 0.0 | 0.6+ | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 1.4− | 0.6+ | 2006 06 21 | 644 | 0.6− | 0.4+ | | | | |

**2004 BJ$_{34}$ = 2006 UH$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 221.95362 | | (2000.0) | | −0.99405531 | −0.10679937 |
| $n$ | 0.27489719 | $\omega$ | 203.92034 | | +0.10546040 | −0.89619003 |
| $a$ | 2.3425517 | $\Omega$ | 329.92526 | | +0.02705821 | −0.43062435 |
| $e$ | 0.0788472 | $i$ | 2.42053 | | | |
| $P$ | 3.59 | $H$ | 17.0 | $G$ 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 699 | 0.6+ | 0.4+ | 2004 01 22 | 704 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.2− |
| 2004 01 19 | 699 | 0.1− | 0.2− | 2004 01 22 | 704 | 0.1− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2004 01 19 | 699 | 0.4− | 0.9− | 2004 01 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.4− |
| 2004 01 19 | 699 | (0.5− | 1.8−) | 2004 01 27 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.3+ |
| 2004 01 19 | 703 | (2.0+ | 0.7+) | 2004 01 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.1+ |
| 2004 01 19 | 703 | 1.1+ | 0.4+ | 2004 01 30 | 704 | 0.8− | 1.4+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 01 19 | 703 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2004 01 19 | 703 | 0.6+ | 0.2+ | 2004 01 30 | 704 | 0.2+ | 0.5− | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2004 01 22 | 704 | 0.6− | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.1+ | | | | |
| 2004 01 22 | 704 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | | | |

**2004 BA$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 217.67700 | | (2000.0) | | −0.97079853 | −0.23823514 |
| $n$ | 0.25898653 | $\omega$ | 195.33701 | | +0.22573683 | −0.86741158 |
| $a$ | 2.4375373 | $\Omega$ | 330.83419 | | +0.08119786 | −0.43685372 |
| $e$ | 0.0770012 | $i$ | 3.31517 | | | |
| $P$ | 3.81 | $H$ | 17.3 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1+ | 0.1− | 2004 01 30 | 691 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.3+ | 0.0 |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2004 01 30 | 691 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2004 02 12 | 691 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.3− |
| 2004 01 22 | 704 | 0.4+ | 0.9− | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.4+ | 0.3+ |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.6− | 0.2− |
| 2004 01 22 | 704 | 0.4+ | 0.2− | 2004 04 13 | 645 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.4+ | 0.1+ |
| 2004 01 22 | 704 | 0.5− | 0.3− | 2004 04 13 | 645 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2004 01 24 | 704 | 0.7− | 0.6+ | 2006 09 28 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2004 01 24 | 704 | 0.7− | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2004 01 24 | 704 | 0.1− | 0.9+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2004 01 24 | 704 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.1− | | | | |
| 2004 01 24 | 704 | 0.9+ | 0.6− | 2006 10 02 | 691 | 0.3+ | 0.1− | | | | |

**2004 BX$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 283.64739 | | (2000.0) | | +0.98986235 | −0.11864605 |
| $n$ | 0.17377593 | $\omega$ | 40.68260 | | +0.06412925 | +0.86383719 |
| $a$ | 3.1803601 | $\Omega$ | 325.89243 | | +0.12672793 | +0.48960027 |
| $e$ | 0.0721710 | $i$ | 8.00346 | | | |
| $P$ | 5.67 | $H$ | 15.8 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 691 | 0.1− | 0.3+ | 2003 12 29 | 291 | 0.7− | 0.2+ | 2004 01 28 | 691 | 0.2+ | 0.3+ |
| 2001 08 26 | 691 | 0.0 | 0.1+ | 2003 12 29 | 291 | 0.3− | 0.3+ | 2004 01 28 | 691 | 0.1− | 0.3+ |
| 2001 08 26 | 691 | 0.3− | 0.1+ | 2004 01 19 | 691 | 0.3+ | 0.1+ | 2004 02 13 | 291 | 0.1− | 0.2+ |
| 2001 09 22 | 691 | 0.4− | 0.3+ | 2004 01 19 | 691 | 0.4+ | 0.2+ | 2004 02 13 | 291 | 0.4− | 0.0 |
| 2001 09 22 | 691 | 0.1− | 1.0+ | 2004 01 19 | 691 | 0.4+ | 0.1+ | 2004 02 13 | 291 | 0.6− | 0.4+ |
| 2001 09 22 | 691 | 0.1− | 0.3+ | 2004 01 22 | 704 | 1.0+ | 0.7+ | 2004 04 14 | 645 | 0.1+ | 0.1− |
| 2002 11 14 | 644 | 0.5+ | 0.6− | 2004 01 22 | 704 | 0.0 | 1.8+ | 2004 04 14 | 645 | 0.3+ | 0.1− |
| 2002 11 14 | 644 | 0.3+ | 0.9− | 2004 01 22 | 704 | 0.3+ | 0.9+ | 2004 04 15 | 645 | 0.1+ | 0.1− |
| 2002 11 14 | 644 | 0.6+ | 1.1− | 2004 01 22 | 704 | 0.3− | 1.3+ | 2004 04 15 | 645 | 0.1+ | 0.0 |
| 2003 12 29 | 291 | 0.6− | 0.1− | 2004 01 28 | 691 | 0.1− | 0.1− | | | | |

**2004 BE$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 76.04889 | | (2000.0) | | +0.67869004 | +0.72614882 |
| $n$ | 0.26915422 | $\omega$ | 209.69144 | | −0.64960435 | +0.66338123 |
| $a$ | 2.3757564 | $\Omega$ | 103.29114 | | −0.34262812 | +0.18064671 |
| $e$ | 0.1259188 | $i$ | 6.48656 | | | |
| $P$ | 3.66 | $H$ | 16.6 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 26 | 691 | 0.2− | 0.4+ | 2004 01 19 | 691 | 0.1+ | 0.3+ | 2005 07 12 | G96 | 0.0 | 0.2+ |
| 1998 06 26 | 691 | 0.1+ | 0.4+ | 2004 01 19 | 691 | 0.1+ | 0.4+ | 2005 07 12 | G96 | 0.1+ | 0.6+ |
| 1998 06 26 | 691 | 0.1− | 0.5+ | 2004 01 19 | 691 | 0.0 | 0.2+ | 2005 07 12 | G96 | 0.5− | 0.1+ |
| 2002 09 28 | 608 | (2.8− | 1.5−) | 2004 01 22 | 704 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.4− | 0.4+ |
| 2002 09 28 | 608 | (3.3− | 1.1−) | 2004 01 22 | 704 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2002 09 28 | 608 | (2.9− | 1.9−) | 2004 01 22 | 704 | 0.7+ | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2002 10 04 | 704 | 0.7− | 0.6+ | 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.3− | 0.3+ |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2004 02 12 | 691 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 0.1+ | 0.6+ | 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2002 10 29 | 704 | 0.1− | 0.2+ | 2005 06 16 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2002 10 29 | 704 | 0.6− | 0.4+ | 2005 06 16 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.4+ | 0.1+ |
| 2002 10 29 | 704 | 0.1− | 0.4+ | 2005 06 16 | 691 | 0.4+ | 0.3+ | | | | |

**2004 BM$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.03677 | | (2000.0) | | −0.30886508 | +0.95036195 |
| $n$ | 0.18345334 | $\omega$ | 166.20720 | | −0.87615998 | −0.26891844 |
| $a$ | 3.0675075 | $\Omega$ | 85.79176 | | −0.37006224 | −0.15650891 |
| $e$ | 0.1602679 | $i$ | 2.16125 | | | |
| $P$ | 5.37 | $H$ | 15.9 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.2− | 0.3+ | 2004 02 23 | 704 | 1.0− | 0.5− | 2005 04 30 | 691 | 0.3+ | 0.0 |
| 2004 01 19 | 691 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.3+ | 2005 04 30 | 691 | 0.3+ | 0.3+ |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.9− | 1.2+ | 2005 04 30 | 691 | 0.4+ | 0.2+ |
| 2004 01 22 | 704 | 0.8+ | 0.1+ | 2005 04 05 | 691 | 0.4+ | 0.1+ | 2005 05 13 | 704 | 0.7+ | 0.5− |
| 2004 01 22 | 704 | 0.8+ | 0.3− | 2005 04 05 | 691 | 0.0 | 0.0 | 2005 05 13 | 704 | 0.3+ | 0.4+ |
| 2004 01 22 | 704 | 1.7+ | 0.1+ | 2005 04 05 | 691 | 0.1− | 0.4− | 2005 05 13 | 704 | 0.2+ | 0.4− |
| 2004 01 30 | 691 | 0.1− | 0.2− | 2005 04 16 | 691 | 0.1− | 0.1+ | 2005 05 13 | 704 | 0.5− | 0.4+ |
| 2004 01 30 | 691 | 0.0 | 0.3− | 2005 04 16 | 691 | 0.0 | 0.3+ | | | | |
| 2004 01 30 | 691 | 0.1− | 0.1− | 2005 04 16 | 691 | 1.5− | 0.7− | | | | |

**2004 BS$_{36}$ = 2006 VY$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 155.11680 | | (2000.0) | | −0.37906781 | +0.91885103 |
| $n$ | 0.27526688 | $\omega$ | 129.93521 | | −0.88223523 | −0.32310197 |
| $a$ | 2.3404538 | $\Omega$ | 117.46564 | | −0.27922855 | −0.22653453 |
| $e$ | 0.0761943 | $i$ | 7.09788 | | | |
| $P$ | 3.58 | $H$ | 16.4 | $G$ 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2004 01 30 | 691 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.1+ |
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.4+ | 0.2+ |
| 2004 01 22 | 704 | 0.8− | 1.0+ | 2004 01 30 | 704 | 0.4+ | 1.2+ | 2006 11 22 | G96 | 0.1− | 0.1+ |
| 2004 01 22 | 704 | 0.9− | 0.7+ | 2004 01 30 | 704 | 0.7− | 0.9+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.4− | 0.4− | 2004 02 14 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2004 01 22 | 704 | 0.2+ | 0.7+ | 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.4+ | 0.4− | 2004 02 14 | 691 | 0.0 | 0.0 | | | | |
| 2004 01 30 | 691 | 0.0 | 0.4− | 2006 11 15 | 703 | 0.7− | 0.1− | | | | |

### 2004 $BC_{37}$ = 2006 $SP_{85}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.56459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27074200 | $\omega$ | 265.18981 | | +0.98425660 | −0.16239505 | |
| $a$ | 2.3664589 | $\Omega$ | 104.14389 | | +0.17673893 | +0.90768603 | |
| $e$ | 0.1775926 | $i$ | 4.12561 | | −0.00151196 | +0.38695466 | |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.2− | 0.9+ | 2006 09 18 | 703 | 1.1− | 0.9− | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2002 07 05 | 644 | 0.0 | 0.7+ | 2006 09 18 | 703 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.2− |
| 2002 07 05 | 644 | 0.5− | 1.2+ | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 10 04 | G96 | 1.0− | 0.1+ |
| 2002 08 13 | 704 | (0.4− | 2.0+) | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2002 08 13 | 704 | 0.2− | 0.7+ | 2006 09 25 | 699 | 0.8+ | 0.4− | 2006 10 16 | 703 | (2.2− | 0.2+) |
| 2002 08 13 | 704 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.2− | 0.5− | 2006 10 16 | 703 | 1.0− | 1.3+ |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 2004 01 19 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.2+ |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 1.0+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.7− | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 2004 01 22 | 704 | 0.2+ | 0.3− | 2006 09 26 | 704 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2004 01 24 | 704 | 0.1+ | 0.9+ | 2006 09 26 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.7− | 0.0 |
| 2004 01 24 | 704 | 0.7+ | 0.8+ | 2006 09 26 | 703 | 0.9+ | 0.6+ | 2006 10 22 | 703 | 0.8− | 0.3+ |
| 2004 01 24 | 704 | 1.1+ | 0.9+ | 2006 09 26 | 703 | 0.9+ | 0.8+ | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 2004 01 30 | 691 | 0.0 | 0.2− | 2006 09 26 | 703 | 1.4+ | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.6+ |
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 1.4− | 0.8+ | 2006 11 14 | 704 | 0.3− | 0.5+ |
| 2004 01 30 | 691 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.2− | 0.4+ | 2006 11 14 | 704 | 1.1− | 0.0 |
| 2004 02 14 | 691 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2004 02 14 | 691 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.0 | 1.1+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2004 02 14 | 691 | 0.1− | 0.3+ | 2006 10 01 | 704 | (1.8+ | 1.1−) | 2006 11 24 | G96 | 0.4− | 0.4− |
| 2005 04 30 | 691 | 0.1+ | 0.8+ | 2006 10 01 | 704 | 1.1+ | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 04 30 | 691 | 0.0 | 0.5+ | 2006 10 01 | 704 | (1.1− | 2.0+) | | | | |
| 2005 04 30 | 691 | 0.5+ | 0.8+ | 2006 10 01 | 704 | 0.4+ | 0.6+ | | | | |

### 2004 $BU_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.65111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26548590 | $\omega$ | 40.46627 | | −0.71247902 | −0.69927103 | |
| $a$ | 2.3975909 | $\Omega$ | 95.06113 | | +0.62775070 | −0.67229498 | |
| $e$ | 0.1531164 | $i$ | 3.35276 | | +0.31353262 | −0.24298044 | |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 13 | 691 | 0.1+ | 0.4− | 2004 02 10 | 703 | 0.6+ | 0.1+ | 2004 03 10 | 644 | 0.1− | 0.0 |
| 2000 01 13 | 691 | 0.1+ | 0.3− | 2004 02 10 | 703 | 0.9+ | 0.2− | 2004 03 10 | 644 | 0.2− | 0.2+ |
| 2000 01 13 | 691 | 0.1− | 0.3− | 2004 02 10 | 703 | 1.4− | 1.1− | 2004 03 10 | 644 | 0.2− | 0.0 |
| 2003 12 22 | 704 | 0.4+ | 0.8− | 2004 02 10 | 703 | 0.5+ | 0.8+ | 2004 03 18 | 644 | 0.3− | 0.3+ |
| 2003 12 22 | 704 | 0.6+ | 0.0 | 2004 02 11 | 699 | 0.3− | 0.2+ | 2004 03 18 | 644 | 0.2− | 0.1+ |
| 2003 12 22 | 704 | 0.1− | 1.0+ | 2004 02 11 | 699 | 0.3− | 0.1+ | 2004 03 18 | 644 | 0.1− | 0.2+ |
| 2003 12 22 | 704 | 0.4+ | 0.6− | 2004 02 11 | 699 | 0.1− | 0.6+ | 2004 03 19 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.5+ | 0.7+ | 2004 02 11 | 699 | 0.2− | 0.5+ | 2004 03 19 | 644 | 0.2+ | 0.1+ |
| 2004 01 19 | 703 | 0.3+ | 0.6+ | 2004 02 16 | 704 | 0.5− | 0.1+ | 2004 03 19 | 644 | 0.2+ | 0.2+ |
| 2004 01 19 | 703 | 0.8− | 0.1+ | 2004 02 16 | 704 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.3− | 0.5+ |
| 2004 01 19 | 703 | 0.1− | 0.4+ | 2004 02 16 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1− | 0.9+ |
| 2004 01 19 | 703 | 0.3+ | 0.5+ | 2004 02 16 | 704 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.1− | 1.2+ |
| 2004 01 22 | 704 | 0.1− | 0.3+ | 2004 02 16 | 704 | 0.5− | 0.4− | 2006 10 22 | G96 | 0.3− | 0.3+ |
| 2004 01 22 | 704 | 0.2− | 0.2+ | 2004 02 18 | 644 | 0.6− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.5− | 0.6+ | 2004 02 18 | 644 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.3+ |
| 2004 01 22 | 704 | 0.4+ | 0.1+ | 2004 02 18 | 644 | 0.5− | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.1+ |
| 2004 01 22 | 704 | 0.4− | 0.1+ | 2004 02 23 | 704 | 1.5+ | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2004 01 30 | 704 | 0.7+ | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.6− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 01 30 | 704 | 0.5+ | 0.5− | 2004 02 23 | 704 | 1.0+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2004 01 30 | 704 | 0.9+ | 0.4− | 2004 02 23 | 704 | 0.1+ | 0.8+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2004 01 30 | 704 | (1.5− | 5.8−) | 2004 02 23 | 704 | (1.8+ | 0.5+) | | | | |

### 2004 $BJ_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.29396 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22341013 | $\omega$ | 42.23135 | | −0.97897901 | −0.09057913 | |
| $a$ | 2.6898877 | $\Omega$ | 131.60502 | | +0.04558445 | −0.97048141 | |
| $e$ | 0.1934202 | $i$ | 14.14612 | | +0.19880179 | −0.22352016 | |
| $P$ | 4.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 704 | 0.1+ | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.9+ | 2004 02 15 | 608 | 0.1+ | 0.8+ |
| 2000 05 05 | 704 | 0.4+ | 0.4+ | 2004 01 22 | 704 | 0.2+ | 0.8+ | 2004 02 15 | 608 | 0.4− | 0.6+ |
| 2000 05 05 | 704 | 1.1− | 0.0 | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2004 02 16 | 704 | 1.2+ | 1.5+ |
| 2000 05 05 | 704 | 0.2+ | 0.3+ | 2004 01 22 | 704 | 0.3+ | 0.8+ | 2004 02 16 | 704 | 0.6+ | 0.5+ |
| 2000 05 31 | 699 | 0.5− | 0.4+ | 2004 01 22 | 704 | 0.4+ | 0.5+ | 2004 02 16 | 704 | 0.4− | 0.1− |
| 2000 05 31 | 699 | 0.1− | 0.1− | 2004 01 23 | 699 | 0.5+ | 1.0− | 2004 02 16 | 704 | 0.2− | 0.2+ |
| 2000 05 31 | 699 | 0.3+ | 0.0 | 2004 01 23 | 699 | 0.4− | 0.3− | 2004 02 16 | 704 | 0.3− | 0.1+ |
| 2000 05 31 | 699 | 0.8+ | 1.4− | 2004 01 23 | 699 | 0.8+ | 0.9− | 2004 03 14 | 704 | 0.0 | 0.6+ |
| 2001 09 12 | 695 | 0.1− | 0.4+ | 2004 01 23 | 699 | 0.3− | 0.9− | 2004 03 14 | 704 | 0.2+ | 0.9− |
| 2001 09 12 | 695 | 0.0 | 0.4+ | 2004 01 30 | 704 | 0.3− | 0.2− | 2004 03 14 | 704 | 0.3+ | 0.4− |
| 2003 12 28 | 699 | 0.8+ | 0.8+ | 2004 01 30 | 704 | 0.1− | 0.7+ | 2004 03 14 | 704 | 0.1+ | 0.0 |
| 2003 12 28 | 699 | 0.3− | 1.5− | 2004 01 30 | 704 | 0.0 | 0.4+ | 2004 03 23 | 704 | 0.6− | 0.0 |
| 2003 12 28 | 699 | 0.6+ | 0.5− | 2004 01 30 | 704 | 0.2+ | 0.2− | 2004 03 23 | 704 | 0.2− | 0.5− |
| 2003 12 28 | 699 | (0.8+ | 1.8−) | 2004 01 30 | 704 | 0.2− | 0.8− | 2004 03 23 | 704 | 0.2+ | 0.7− |
| 2004 01 19 | 703 | 0.1− | 0.3− | 2004 02 10 | 644 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.0 |
| 2004 01 19 | 703 | 0.3+ | 0.6− | 2004 02 10 | 644 | 0.3− | 0.1+ | 2004 03 23 | 704 | 0.7− | 0.0 |
| 2004 01 19 | 703 | 1.4− | 0.1− | 2004 02 10 | 644 | 0.2− | 0.2− | | | | |
| 2004 01 19 | 703 | 1.1− | 0.7− | 2004 02 15 | 608 | 0.3+ | 1.0+ | | | | |

### 2004 $BK_{38}$ = 2006 $WZ_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.33750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27302335 | $\omega$ | 82.60509 | | −0.93446075 | +0.34167049 | |
| $a$ | 2.3532579 | $\Omega$ | 117.32910 | | −0.35464162 | −0.86794061 | |
| $e$ | 0.1762549 | $i$ | 6.47753 | | −0.03181877 | −0.36047244 | |
| $P$ | 3.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 703 | 0.9+ | 0.7+ | 2004 02 15 | 608 | (0.8− | 1.6−) | 2004 03 18 | 644 | 0.1− | 0.1+ |
| 2004 01 19 | 703 | 0.9+ | 0.3+ | 2004 02 15 | 608 | (0.3+ | 1.6−) | 2004 03 18 | 644 | 0.2− | 0.3+ |
| 2004 01 19 | 703 | 0.6+ | 0.4+ | 2004 02 15 | 608 | (0.3− | 1.8−) | 2004 03 20 | 704 | (0.4+ | 1.6+) |
| 2004 01 19 | 703 | (0.4+ | 1.6+) | 2004 02 16 | 704 | (1.9+ | 0.3+) | 2004 03 20 | 704 | 0.7+ | 1.0+ |
| 2004 01 22 | 704 | 0.0 | 0.2− | 2004 02 16 | 691 | 0.3− | 0.0 | 2004 03 20 | 704 | 0.3− | 0.3− |
| 2004 01 22 | 704 | 0.1+ | 0.5− | 2004 02 16 | 704 | 1.2+ | 0.4+ | 2004 03 20 | 704 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.5+ | 0.6− | 2004 02 16 | 704 | 0.1− | 0.8+ | 2004 03 20 | 704 | 1.1− | 1.0+ |
| 2004 01 22 | 704 | 0.4− | 0.6− | 2004 02 16 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.6− | 0.2+ |
| 2004 01 22 | 704 | 0.0 | 0.1− | 2004 02 16 | 704 | 0.9+ | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2004 01 23 | 699 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.3− | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 01 23 | 699 | 0.9− | 0.1− | 2004 02 16 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2004 01 23 | 699 | 0.1+ | 0.2− | 2004 03 14 | 704 | 0.2− | 0.6+ | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2004 01 23 | 699 | 1.3− | 1.3− | 2004 03 14 | 704 | 0.1+ | 1.0− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2004 01 30 | 704 | 0.1− | 0.5+ | 2004 03 14 | 704 | 0.7+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2004 01 30 | 704 | 1.0− | 0.6+ | 2004 03 14 | 704 | 0.4+ | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.2− |
| 2004 01 30 | 704 | (1.1− | 2.8−) | 2004 03 16 | 691 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.5+ | 0.2+ |
| 2004 02 10 | 644 | 0.5+ | 0.2− | 2004 03 16 | 691 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2004 02 10 | 644 | 0.2+ | 0.0 | 2004 03 16 | 691 | 0.0 | 0.2− | | | | |
| 2004 02 10 | 644 | 0.1+ | 0.2+ | 2004 03 18 | 644 | 0.0 | 0.0 | | | | |

### 2004 $BA_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.89825 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30469139 | $\omega$ | 130.78865 | | +0.63268325 | −0.77309140 | |
| $a$ | 2.1872374 | $\Omega$ | 279.90488 | | +0.69597931 | +0.59322326 | |
| $e$ | 0.1128151 | $i$ | 2.62895 | | +0.33959492 | +0.22453477 | |
| $P$ | 3.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1− | 2004 01 24 | 704 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.8− | 0.7− |
| 2001 02 20 | 645 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.4+ | 0.0 |
| 2003 12 19 | 704 | 0.3− | 0.1− | 2004 01 24 | 704 | 0.5+ | 0.2− | 2006 11 15 | 704 | 0.0 | 0.1− |
| 2003 12 19 | 704 | 0.6+ | 0.2− | 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 11 15 | 704 | 0.3− | 0.2+ |
| 2003 12 19 | 704 | 0.8+ | 1.1− | 2004 01 27 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2003 12 19 | 704 | 0.0 | 1.2− | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2003 12 19 | 704 | 0.3+ | 1.0− | 2004 01 30 | 704 | 0.9+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.3− |
| 2003 12 27 | 691 | 0.2− | 0.0 | 2004 01 30 | 704 | 0.6+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2003 12 27 | 691 | 0.3− | 0.0 | 2004 01 30 | 704 | 1.0+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2003 12 27 | 691 | 0.1− | 0.0 | 2004 01 30 | 704 | 0.9+ | 0.0 | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2004 01 21 | 704 | 0.7− | 0.3− | 2004 01 30 | 704 | 0.7+ | 0.8+ | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2004 01 21 | 704 | 1.5− | 0.7+ | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.7+ |
| 2004 01 21 | 704 | 0.7− | 0.1− | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2004 01 21 | 704 | 1.2− | 0.1+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.1+ |
| 2004 01 21 | 704 | 1.4− | 0.1+ | 2004 02 16 | 704 | 1.1+ | 0.2− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2004 01 22 | 704 | 0.8− | 0.3+ | 2004 02 16 | 704 | 0.3− | 0.8+ | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2004 01 22 | 704 | 0.5− | 0.1− | 2004 02 16 | 704 | 0.9− | 0.6+ | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2004 01 22 | 704 | 0.6− | 1.4− | 2004 03 18 | 704 | 1.1+ | 1.0+ | 2006 11 21 | 704 | 0.9+ | 0.3− |
| 2004 01 22 | 704 | 1.1− | 0.4+ | 2004 03 18 | 704 | 1.1+ | 0.7+ | 2006 11 21 | 704 | 0.7+ | 0.3+ |
| 2004 01 24 | 704 | 0.4+ | 0.2+ | 2004 03 18 | 704 | 1.1+ | 1.4+ | 2006 11 23 | 703 | 0.4− | 0.6− |
| 2004 01 24 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.0 | 0.6− |
| 2004 01 24 | 704 | 0.2+ | 0.3− | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 11 23 | 703 | 0.1− | 0.6− |
| 2004 01 24 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.8+ | 0.9+ | 2006 11 23 | 703 | (0.8+ | 1.7−) |
| 2004 01 24 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.3− | 0.4− | 2006 11 29 | H07 | 0.3− | 0.4+ |
| 2004 01 24 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 1.2+ | 0.5+ | 2006 11 29 | H07 | 0.3− | 1.0+ |
| 2004 01 24 | 704 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.4− | 0.3− | 2006 12 01 | H07 | 0.7− | 0.5+ |
| 2004 01 24 | 704 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2− | 2006 12 01 | H07 | 0.0 | 0.0 |
| 2004 01 24 | 704 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.3− | 2006 12 01 | H07 | 0.2+ | 0.1− |
| 2004 01 24 | 704 | 0.8+ | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.1− | | | | |

## 2004 $BE_{40}$ = 2006 $WT_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.67406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29145077 | $\omega$ | 326.43207 | | −0.33277524 | −0.94242327 | |
| $a$ | 2.2529899 | $\Omega$ | 142.97456 | | +0.87684887 | −0.32217333 | |
| $e$ | 0.0873570 | $i$ | 3.15593 | | +0.34698226 | −0.08968126 | |
| $P$ | 3.38 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 704 | 0.4− | 0.0 | 2004 01 24 | 704 | 0.4+ | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2004 01 21 | 704 | 0.2− | 0.6− | 2004 01 28 | 704 | 0.9− | 0.7+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2004 01 21 | 704 | 0.4− | 0.2− | 2004 01 28 | 691 | 0.3+ | 0.2− | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2004 01 21 | 704 | 0.1− | 0.2− | 2004 01 28 | 704 | 0.2− | 0.6− | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2004 01 22 | 704 | 0.3+ | 0.9+ | 2004 01 28 | 691 | 0.1+ | 0.4− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2004 01 22 | 704 | 0.2+ | 0.1− | 2004 01 28 | 704 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.2+ | 0.5− | 2004 01 28 | 691 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 0.2− | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2004 01 24 | 704 | 0.0 | 1.1+ | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2004 01 24 | 704 | 0.1− | 1.0+ | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2004 01 24 | 704 | 0.8− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.5− | 2006 11 24 | 691 | 0.1− | 0.2+ |

## 2004 $BO_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.24946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26837569 | $\omega$ | 292.52701 | | +0.51672281 | −0.85420701 | |
| $a$ | 2.3803488 | $\Omega$ | 126.23255 | | +0.80944052 | +0.46546736 | |
| $e$ | 0.0113379 | $i$ | 4.10117 | | +0.27893292 | +0.23166898 | |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 291 | 0.3+ | 0.1− | 2004 01 24 | 704 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.6− |
| 2003 12 19 | 291 | 0.5+ | 0.1+ | 2004 01 24 | 704 | 0.8− | 1.1+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2003 12 19 | 291 | 0.9− | 0.2− | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2004 01 21 | 704 | 0.8+ | 0.0 | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2004 01 21 | 704 | 0.7+ | 0.2− | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.4− | 0.4− |
| 2004 01 21 | 704 | 1.5+ | 1.0+ | 2004 02 23 | 704 | (1.6+ | 1.2−) | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2004 01 22 | 704 | 0.0 | 0.4− | 2004 02 23 | 704 | (2.2− | 0.2−) | 2006 11 08 | 644 | 0.4+ | 0.2− |
| 2004 01 22 | 704 | 0.5− | 0.5− | 2004 02 23 | 704 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2004 01 22 | 704 | 0.5− | 0.3− | 2004 02 23 | 704 | (1.1− | 2.5−) | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2004 01 22 | 704 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2004 01 24 | 704 | 1.2− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2004 01 24 | 704 | (1.1− | 2.0+) | 2006 10 21 | G96 | 0.3+ | 0.4− | | | | |

## 2004 $BS_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.01564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27212127 | $\omega$ | 165.84841 | | +0.04034490 | −0.99895201 | |
| $a$ | 2.3584557 | $\Omega$ | 281.83603 | | +0.91457399 | +0.04563159 | |
| $e$ | 0.1864835 | $i$ | 1.26541 | | +0.40240118 | −0.00355578 | |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 376 | 0.7− | 1.2− | 2004 01 30 | 704 | (0.0 | 1.6+) | 2006 09 17 | 703 | 0.3− | 0.8− |
| 1999 11 13 | 376 | 0.8+ | 0.2+ | 2004 01 30 | 704 | 0.5+ | 0.6− | 2006 09 17 | 703 | 0.8− | 0.5− |
| 1999 11 13 | 376 | 0.0 | 1.4+ | 2004 01 30 | 704 | 0.0 | 1.0+ | 2006 09 17 | 703 | 0.1− | 1.0− |
| 1999 11 13 | 376 | 0.5− | 1.1+ | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.7+ |
| 2002 07 07 | 291 | 0.7− | 0.8+ | 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 07 07 | 291 | 0.1+ | 0.5+ | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2002 07 07 | 291 | 0.0 | 0.4+ | 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | (1.7− | 1.2−) |
| 2004 01 21 | 704 | 0.0 | 0.9+ | 2004 02 11 | 691 | 0.2+ | 0.2− | 2006 10 16 | 703 | (2.1− | 1.0−) |
| 2004 01 21 | 704 | 0.3− | 0.3− | 2004 02 26 | 704 | 0.2+ | 0.9+ | 2006 10 16 | 703 | 0.2+ | 0.6− |
| 2004 01 21 | 704 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.8+ |
| 2004 01 21 | 704 | 0.5+ | 0.7+ | 2004 02 26 | 704 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2004 01 22 | 704 | 0.2− | 0.1+ | 2004 02 26 | 704 | 0.9− | 0.3− | 2006 10 23 | G96 | 0.2− | 0.8− |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 08 21 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2004 01 22 | 704 | 0.5+ | 0.4+ | 2006 08 21 | 691 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.9− | 1.1− |
| 2004 01 22 | 704 | 0.3− | 0.2− | 2006 09 16 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.9− | 0.5− |
| 2004 01 30 | 704 | (1.0− | 2.0+) | 2006 09 16 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.9− |
| 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.7− |
| 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.1− | | | | |

## 2004 $BU_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.38518 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25820822 | $\omega$ | 200.24937 | | −0.80442467 | −0.59382106 | |
| $a$ | 2.4424331 | $\Omega$ | 303.31090 | | +0.54774205 | −0.73056500 | |
| $e$ | 0.1550059 | $i$ | 1.14218 | | +0.22995565 | −0.33712212 | |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 704 | 0.2− | 0.3+ | 2004 01 30 | 704 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2004 01 21 | 704 | 0.1+ | 0.0 | 2004 01 30 | 704 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.0 |
| 2004 01 21 | 704 | 0.2+ | 0.5+ | 2004 01 30 | 691 | 0.2− | 0.1− | 2006 09 21 | 621 | 0.4+ | 0.6− |
| 2004 01 22 | 704 | 0.3− | 0.4+ | 2004 01 30 | 691 | 0.2− | 0.0 | 2006 09 21 | 621 | 0.8+ | 0.2+ |
| 2004 01 22 | 704 | 0.2− | 0.4+ | 2004 02 11 | 291 | 0.7+ | 0.0 | 2006 09 21 | 621 | 0.7+ | 0.3− |
| 2004 01 22 | 704 | 0.2− | 0.0 | 2004 02 11 | 291 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.5+ |
| 2004 01 22 | 704 | 0.4− | 0.1− | 2004 02 11 | 291 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.0 |
| 2004 01 24 | 704 | (0.6− | 1.8−) | 2004 02 16 | 704 | (0.0 | 2.3+) | 2006 09 26 | 691 | 0.4− | 0.3+ |
| 2004 01 24 | 704 | 0.7+ | 1.0− | 2004 02 16 | 704 | 0.5− | 0.7+ | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2004 01 24 | 704 | (2.7− | 0.8−) | 2004 02 16 | 704 | (1.7+ | 2.4+) | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2004 01 24 | 704 | 0.4+ | 1.1− | 2004 02 16 | 704 | 0.5− | 1.1+ | 2006 09 30 | 691 | 0.4− | 0.0 |
| 2004 01 24 | 704 | (0.3+ | 2.1−) | 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2004 01 26 | 699 | 1.1− | 0.5− | 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.6+ | 0.8− |
| 2004 01 26 | 699 | 0.7+ | 0.9− | 2004 02 17 | 644 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2004 01 26 | 699 | 0.3− | 0.5− | 2004 02 26 | 704 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 2004 01 26 | 699 | 0.2+ | 0.4− | 2004 02 26 | 704 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2004 01 30 | 704 | 0.9+ | 0.5+ | 2004 02 26 | 704 | 0.4+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 691 | 0.4− | 0.2+ | 2004 02 26 | 704 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.8− |
| 2004 01 30 | 704 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.4− |

**2004 BW$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.46782 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27865189 | $\omega$ | 197.80324 | | −0.72523004 | −0.68818923 | |
| $a$ | 2.3214610 | $\Omega$ | 298.69109 | | +0.63455528 | −0.65631138 | |
| $e$ | 0.1512538 | $i$ | 1.36547 | | +0.26717220 | −0.30927489 | |
| $P$ | 3.54 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 333 | 0.8− | 0.1+ | 2004 01 30 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2003 12 19 | 333 | 0.3− | 0.6+ | 2004 01 30 | 691 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.5− | 0.3+ |
| 2004 01 21 | 704 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.5+ | 1.0+ |
| 2004 01 21 | 704 | 0.1− | 0.1− | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2004 01 21 | 704 | 0.3+ | 0.4− | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2004 01 21 | 704 | 0.6− | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2004 01 22 | 704 | 0.9+ | 0.7+ | 2004 02 16 | 704 | (0.5+ | 1.5+) | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2004 01 22 | 704 | 0.7+ | 0.9+ | 2004 02 16 | 704 | 0.0 | 1.0+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.4+ | 0.0 | 2004 02 16 | 704 | 1.4− | 1.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.8− | 2004 02 16 | 704 | 0.2− | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2004 01 22 | 704 | 0.4+ | 0.2+ | 2004 02 26 | 704 | 0.5+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2004 01 24 | 704 | 1.2− | 0.8− | 2004 02 26 | 704 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 0.3+ | 0.4− | 2004 02 26 | 704 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2004 01 24 | 704 | 0.8+ | 0.2− | 2004 02 26 | 704 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2004 01 24 | 704 | 0.6+ | 0.3− | 2004 02 26 | 704 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.4− |
| 2004 01 24 | 704 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.6− | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2004 01 30 | 704 | 0.3+ | 0.6+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.5− |
| 2004 01 30 | 704 | 0.5+ | 0.9+ | 2006 10 15 | 691 | 0.6+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 23 | 691 | 0.5− | 0.8− |
| 2004 01 30 | 704 | 0.3− | 0.6+ | 2006 10 17 | 691 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.6+ | 0.0 |
| 2004 01 30 | 704 | 0.1+ | 0.6− | 2006 10 17 | 691 | 0.2− | 0.7+ | 2006 11 23 | 691 | 0.7+ | 0.1+ |

**2004 BX$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.66338 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26606488 | $\omega$ | 334.39630 | | −0.98980213 | −0.13999102 | |
| $a$ | 2.3941114 | $\Omega$ | 197.61634 | | +0.14101938 | −0.93681794 | |
| $e$ | 0.1665590 | $i$ | 4.99467 | | +0.02013172 | −0.32058488 | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 10 | 691 | 0.1+ | 0.2− | 2004 02 23 | 704 | 0.4− | 0.7− | 2006 09 30 | G96 | 0.1− | 0.2− |
| 1991 10 10 | 691 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 1991 10 10 | 691 | 0.0 | 0.6− | 2004 02 23 | 704 | 0.6+ | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2004 01 22 | 644 | 1.0+ | 0.6− | 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 10 15 | 691 | 0.3− | 0.2− |
| 2004 01 22 | 644 | 0.1− | 0.0 | 2004 02 26 | 704 | (1.7− | 0.2+) | 2006 10 15 | 691 | 0.1+ | 0.1+ |
| 2004 01 22 | 644 | 0.3+ | 0.1− | 2004 02 26 | 704 | 0.2− | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 2004 01 23 | 704 | (1.7+ | 0.8−) | 2004 02 26 | 704 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2004 01 23 | 704 | 0.2+ | 0.5+ | 2004 02 26 | 704 | 0.3− | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2004 01 23 | 704 | 0.4+ | 0.4− | 2004 02 26 | 704 | 0.1− | 0.6− | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2004 01 23 | 704 | 0.4+ | 0.8− | 2004 03 15 | 704 | 0.6− | 0.2+ | 2006 10 27 | 691 | 0.5+ | 0.4+ |
| 2004 01 23 | 704 | 0.2+ | 0.1+ | 2004 03 15 | 704 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.4+ |
| 2004 01 29 | 704 | 1.2− | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.9− | 2006 10 27 | 691 | 0.3+ | 0.4+ |
| 2004 01 29 | 704 | 0.0 | 0.4+ | 2004 03 15 | 704 | (1.7− | 0.9−) | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2004 01 29 | 704 | 0.0 | 1.0+ | 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2004 01 29 | 704 | 0.7+ | 1.0− | 2004 03 20 | 704 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2004 02 13 | 333 | 1.0− | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2004 02 13 | 333 | 0.0 | 0.5− | 2004 03 20 | 704 | 0.8+ | 0.5+ | | | | |
| 2004 02 13 | 333 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.1+ | | | | |

**2004 BM$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.83612 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26787656 | $\omega$ | 75.80011 | | −0.98118652 | +0.18650624 | |
| $a$ | 2.3833048 | $\Omega$ | 114.92921 | | −0.19145236 | −0.90666634 | |
| $e$ | 0.1399798 | $i$ | 3.15340 | | −0.02487973 | −0.37838019 | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2004 02 14 | 608 | 0.3+ | 0.7− | 2004 02 25 | 704 | 0.5− | 0.6− |
| 2004 01 22 | 704 | 0.8+ | 0.3− | 2004 02 14 | 608 | 0.6+ | 0.6− | 2004 02 26 | 704 | 0.4− | 0.3+ |
| 2004 01 22 | 704 | 0.3+ | 0.0 | 2004 02 16 | 704 | 1.2+ | 0.9+ | 2004 02 26 | 704 | 0.1− | 0.3+ |
| 2004 01 22 | 704 | 0.8+ | 0.2− | 2004 02 16 | 704 | 0.3+ | 0.5+ | 2004 02 26 | 704 | 0.6− | 0.0 |
| 2004 01 22 | 704 | 0.8+ | 0.1+ | 2004 02 16 | 704 | 0.2+ | 0.4− | 2004 02 26 | 704 | 0.4− | 0.2+ |
| 2004 01 23 | 699 | 0.0 | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.7+ | 2004 04 19 | 704 | 0.3+ | 1.0− |
| 2004 01 23 | 699 | 0.1− | 0.2+ | 2004 02 16 | 704 | 0.9+ | 0.6+ | 2004 04 19 | 704 | 0.9− | 0.3− |
| 2004 01 23 | 699 | 1.4− | 0.4− | 2004 02 18 | 049 | 1.1− | 0.6− | 2004 04 19 | 704 | 0.1− | 0.2− |
| 2004 01 23 | 699 | 0.6− | 0.2+ | 2004 02 18 | 049 | (1.7− | 0.6−) | 2004 04 19 | 704 | 0.6+ | 0.5+ |
| 2004 01 30 | 704 | 0.8+ | 1.1+ | 2004 02 18 | 049 | 0.8− | 0.5− | 2005 07 18 | 644 | 0.2− | 0.5+ |
| 2004 01 30 | 704 | 0.6+ | 0.4+ | 2004 02 20 | 608 | 0.4− | 0.8− | 2005 07 18 | 644 | 0.0 | 0.3+ |
| 2004 01 30 | 704 | (0.4− | 1.8+) | 2004 02 20 | 608 | 0.3− | 0.4− | 2005 07 18 | 644 | 0.1− | 0.3+ |
| 2004 02 10 | 703 | 0.0 | 0.4+ | 2004 02 20 | 608 | 0.6− | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.3+ |
| 2004 02 10 | 703 | 0.7− | 1.1− | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2004 02 10 | 703 | 0.0 | 0.9− | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2004 02 10 | 703 | (2.1− | 1.2−) | 2004 02 23 | 704 | 1.1+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.6+ |
| 2004 02 11 | 699 | 0.6− | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.9+ | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2004 02 11 | 699 | 0.2− | 0.6− | 2004 02 23 | 704 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2004 02 11 | 699 | 0.7+ | 0.6+ | 2004 02 25 | 704 | 0.6− | 0.7+ | 2006 11 17 | 703 | 1.2− | 0.3− |
| 2004 02 11 | 699 | 1.5− | 0.0 | 2004 02 25 | 704 | 0.6− | 0.7+ | | | | |
| 2004 02 14 | 608 | 0.3+ | 0.8− | 2004 02 25 | 704 | (1.0+ | 2.1+) | | | | |

**2004 BN$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.25118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22372202 | $\omega$ | 185.25400 | | −0.86443459 | −0.48694765 | |
| $a$ | 2.6873871 | $\Omega$ | 324.70741 | | +0.46878450 | −0.69085313 | |
| $e$ | 0.1383065 | $i$ | 12.49907 | | +0.18164232 | −0.53441925 | |
| $P$ | 4.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 0.0 | 0.4+ | 2004 02 12 | 333 | 1.0− | 0.0 | 2004 03 15 | 703 | 0.2+ | 0.7+ |
| 2003 12 22 | 704 | 0.5+ | 0.2+ | 2004 02 12 | 333 | 1.8− | 0.4− | 2004 03 15 | 703 | 1.0− | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.1+ | 2004 02 12 | 333 | 0.2− | 0.3− | 2004 03 15 | 703 | 0.7− | 0.9+ |
| 2004 01 22 | 704 | 1.0+ | 0.4+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2004 03 15 | 703 | 0.4+ | 0.1+ |
| 2004 01 22 | 704 | 1.3+ | 0.6+ | 2004 02 12 | 333 | 1.5− | 1.0− | 2004 03 15 | 704 | 0.5+ | 0.6− |
| 2004 01 22 | 704 | 0.9+ | 0.2+ | 2004 02 12 | 333 | 1.0− | 0.2− | 2004 03 15 | 704 | 0.8+ | 0.1− |
| 2004 01 22 | 704 | 1.2+ | 0.6+ | 2004 02 12 | 333 | 0.1+ | 1.8− | 2004 03 15 | 704 | 0.5+ | 0.1− |
| 2004 01 22 | 704 | 1.0+ | 0.4+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.0 |
| 2004 01 23 | 699 | 0.4− | 0.8+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2004 03 15 | 704 | 0.5+ | 0.0 |
| 2004 01 23 | 699 | 0.3− | 0.8+ | 2004 02 13 | 333 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.2+ |
| 2004 01 23 | 699 | 0.2+ | 0.5+ | 2004 02 13 | 333 | 0.2− | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.3+ |
| 2004 01 23 | 699 | 1.6− | 0.2− | 2004 02 13 | 333 | 0.5− | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.3+ |
| 2004 01 29 | 704 | 1.9+ | 0.8− | 2004 02 17 | 704 | 0.4− | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.1− |
| 2004 01 29 | 704 | 1.9+ | 1.2− | 2004 02 17 | 704 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.0 | 0.2+ |
| 2004 01 29 | 704 | (2.5+ | 0.4−) | 2004 02 17 | 704 | 0.6+ | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.2+ |
| 2004 02 10 | 333 | 0.2− | 0.3+ | 2004 02 17 | 704 | 0.5+ | 0.6+ | 2004 03 20 | 704 | 0.0 | 0.1− |
| 2004 02 10 | 333 | 0.7− | 0.5− | 2004 02 17 | 704 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.2+ |
| 2004 02 10 | 333 | 0.6− | 0.0 | 2004 02 26 | 704 | 0.1− | 0.2− | 2004 03 20 | 704 | 0.1+ | 0.2+ |
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.2− | 0.3− | 2006 08 21 | 691 | 0.1− | 0.1+ |
| 2004 02 11 | 644 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.3+ | 0.1+ | 2006 08 21 | 691 | 0.3− | 0.2+ |
| 2004 02 11 | 699 | 0.4− | 1.3− | 2004 02 26 | 704 | 0.2− | 0.4+ | 2006 08 21 | 691 | 0.2− | 0.2+ |
| 2004 02 11 | 699 | 0.5− | 0.5− | 2004 03 10 | 644 | 0.1− | 0.1+ | 2006 09 19 | 291 | 0.3+ | 0.3− |
| 2004 02 11 | 699 | 1.0− | 0.0 | 2004 03 10 | 644 | 0.7− | 0.2+ | 2006 09 19 | 291 | 0.2+ | 0.1− |
| 2004 02 11 | 699 | 0.9− | 0.5− | 2004 03 10 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 291 | 0.1+ | 0.1− |

### 2004 $BV_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.65430 | | (2000.0) | **P** | **Q** | | |
| $n$ | 0.28814793 | $\omega$ | 152.30235 | −0.98318185 | +0.18084823 | | |
| $a$ | 2.2701735 | $\Omega$ | 38.14386 | −0.17425203 | −0.88722439 | | |
| $e$ | 0.1553043 | $i$ | 2.36094 | −0.05467793 | −0.42441349 | | |
| $P$ | 3.42 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.1− | 0.2− | 2004 02 18 | 333 | 0.1− | 0.0 | 2004 03 18 | 691 | 0.1− | 0.1+ |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2004 02 18 | 333 | 0.4− | 0.1− | 2004 03 18 | 691 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.4+ | 0.6+ | 2004 02 18 | 333 | 0.5− | 0.3− | 2004 03 20 | 691 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.6+ | 2004 03 20 | 691 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.3+ | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.8+ | 2004 03 20 | 691 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.1− | 0.9+ | 2004 02 23 | 704 | 0.4+ | 0.8+ | 2004 04 19 | 704 | 0.0 | 0.7− |
| 2004 01 22 | 704 | 0.6+ | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.6+ | 2004 04 19 | 704 | 0.9+ | 0.8+ |
| 2004 01 23 | 699 | 0.1+ | 0.5− | 2004 02 23 | 704 | 0.3+ | 0.8+ | 2004 04 19 | 704 | 0.5+ | 0.9+ |
| 2004 01 23 | 699 | 0.3− | 0.6− | 2004 03 10 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2004 01 23 | 699 | 0.5− | 1.0+ | 2004 03 10 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.5− | 0.2+ |
| 2004 01 23 | 699 | 0.9− | 0.5+ | 2004 03 10 | 644 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2004 02 16 | 704 | 0.9+ | 0.3− | 2004 03 10 | 644 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2004 02 16 | 704 | 0.8+ | 0.1− | 2004 03 10 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2004 03 10 | 644 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 02 16 | 704 | 0.1− | 0.8− | 2004 03 14 | 703 | (0.2− | 2.4+) | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2004 02 16 | 704 | 0.0 | 0.6− | 2004 03 14 | 703 | 0.5− | 0.3− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2004 03 14 | 703 | (1.5− | 0.4−) | 2006 11 24 | 691 | 1.2+ | 0.1− |
| 2004 02 16 | 704 | 0.3+ | 0.6− | 2004 03 14 | 703 | 0.9+ | 0.3− | | | | |
| 2004 02 16 | 691 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.3− | 0.0 | | | | |

### 2004 $BU_{44}$ = 2006 $WU_{117}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.63377 | | (2000.0) | **P** | **Q** | | |
| $n$ | 0.30192533 | $\omega$ | 74.71320 | +0.99807239 | +0.04270302 | | |
| $a$ | 2.2005759 | $\Omega$ | 282.82362 | −0.05736182 | +0.91173346 | | |
| $e$ | 0.1990975 | $i$ | 2.64714 | +0.02368821 | +0.40855667 | | |
| $P$ | 3.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.8− | 0.8− | 2005 05 16 | G96 | 0.0 | 0.0 |
| 2004 01 15 | 691 | 0.1+ | 0.2+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 1.1− | 1.2+ |
| 2004 01 15 | 691 | 0.0 | 0.2+ | 2004 01 27 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.2− |
| 2004 01 21 | 704 | 0.2+ | 0.0 | 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.4− |
| 2004 01 21 | 704 | 0.3+ | 0.1+ | 2005 01 20 | 809 | 0.3+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.4− |
| 2004 01 21 | 704 | 1.1+ | 0.1+ | 2005 01 20 | 809 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 01 21 | 704 | 0.3+ | 0.4− | 2005 01 20 | 809 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.5− |
| 2004 01 24 | 704 | 0.2− | 0.7− | 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.1+ | 0.9+ |
| 2004 01 24 | 704 | 0.4+ | 0.8− | 2005 05 16 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.6+ |
| 2004 01 24 | 704 | 0.9− | 0.1+ | 2005 05 16 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1− | 0.7+ |

### 2004 $BO_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.80058 | | (2000.0) | **P** | **Q** | | |
| $n$ | 0.26026231 | $\omega$ | 342.31165 | −0.67756276 | −0.73218030 | | |
| $a$ | 2.4295650 | $\Omega$ | 150.22647 | +0.69054806 | −0.66582701 | | |
| $e$ | 0.1168120 | $i$ | 8.03749 | +0.25308515 | −0.14347959 | | |
| $P$ | 3.79 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 704 | (2.0+ | 0.8−) | 2004 02 11 | 703 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.3− |
| 2004 01 21 | 704 | 1.3+ | 1.0+ | 2004 02 11 | 703 | 0.2− | 0.4+ | 2006 09 21 | 699 | 0.4− | 0.0 |
| 2004 01 21 | 704 | 1.1+ | 0.6+ | 2004 02 11 | 699 | 0.3− | 0.1+ | 2006 09 21 | 699 | 0.4− | 1.1+ |
| 2004 01 24 | 704 | 0.7− | 0.4− | 2004 02 11 | 703 | 0.0 | 0.3+ | 2006 09 21 | 699 | 0.7+ | 0.5+ |
| 2004 01 24 | 704 | 0.5− | 0.5− | 2004 02 11 | 699 | 0.1+ | 0.0 | 2006 09 21 | 699 | 0.6+ | 0.3+ |
| 2004 01 24 | 704 | 0.7− | 0.6− | 2004 02 11 | 703 | 0.7− | 0.1− | 2006 09 26 | 704 | 0.2− | 1.0+ |
| 2004 01 24 | 704 | 0.8− | 1.0− | 2004 02 11 | 699 | 0.1− | 0.4+ | 2006 09 26 | 704 | 1.3+ | 1.3+ |
| 2004 01 27 | 704 | 0.5+ | 0.6+ | 2004 02 11 | 699 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.6+ | 0.2+ |
| 2004 01 27 | 704 | 0.0 | 1.0+ | 2004 02 17 | 704 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.3+ |
| 2004 01 27 | 704 | 0.4− | 1.0+ | 2004 02 17 | 704 | 1.5− | 0.3− | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 2004 01 27 | 704 | 1.2+ | 1.1+ | 2004 02 17 | 704 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.8− | 0.4− |
| 2004 01 27 | 704 | 1.1+ | 0.2+ | 2004 02 17 | 704 | 0.8− | 0.7− | 2006 09 26 | 703 | 0.0 | 0.8− |
| 2004 01 28 | 704 | 0.2− | 0.2+ | 2004 02 18 | 608 | 0.0 | 0.9− | 2006 09 26 | 703 | 1.4− | 0.3− |
| 2004 01 28 | 704 | 0.0 | 0.1+ | 2004 02 18 | 608 | 0.3+ | 0.9− | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2004 01 28 | 704 | 0.2− | 0.1+ | 2004 02 18 | 608 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2004 01 28 | 704 | 0.4+ | 0.4+ | 2004 02 22 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.9+ | 1.4− |
| 2004 01 28 | 704 | 0.2+ | 0.0 | 2004 02 22 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | 1.0+ | 0.0 |
| 2004 01 29 | 704 | 0.2+ | 0.1+ | 2004 02 22 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2004 01 29 | 704 | 0.0 | 0.3− | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | (0.4− | 2.4+) |
| 2004 01 29 | 704 | 0.6+ | 0.2− | 2004 02 23 | 704 | 0.7+ | 0.4− | 2006 10 16 | 703 | 0.7+ | 0.5− |
| 2004 01 29 | 704 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2004 01 29 | 704 | 0.6+ | 0.1− | 2004 02 23 | 704 | (0.9+ | 1.7−) | 2006 10 21 | 644 | 0.2+ | 0.6+ |
| 2004 01 29 | 704 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2004 01 29 | 704 | 0.2− | 0.1− | 2004 02 26 | 704 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 01 29 | 704 | 0.4− | 0.5− | 2004 02 26 | 704 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.6+ |
| 2004 01 29 | 704 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2004 01 29 | 704 | 0.0 | 0.3− | 2004 02 26 | 704 | 1.1+ | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.8− |
| 2004 02 02 | 608 | 0.0 | 1.1− | 2006 09 18 | 703 | (1.9− | 1.3−) | 2006 10 22 | 703 | 0.2− | 0.6+ |
| 2004 02 02 | 608 | 0.1+ | 1.3− | 2006 09 18 | 703 | 0.7+ | 0.5− | | | | |
| 2004 02 02 | 608 | 0.1− | 0.7− | 2006 09 18 | 703 | 0.5− | 1.2− | | | | |

### 2004 $BV_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.46022 | | (2000.0) | **P** | **Q** | | |
| $n$ | 0.17264473 | $\omega$ | 296.87666 | +0.59325339 | −0.78636192 | | |
| $a$ | 3.1942372 | $\Omega$ | 115.67256 | +0.78965588 | +0.52683989 | | |
| $e$ | 0.0490556 | $i$ | 11.02080 | +0.15650560 | +0.32260605 | | |
| $P$ | 5.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 29 | 691 | 0.6− | 0.1− | 2002 10 15 | 644 | 0.2− | 0.5+ | 2004 01 21 | 704 | 0.1+ | 0.4− |
| 2000 05 29 | 691 | 0.3− | 0.0 | 2002 10 15 | 644 | 0.1+ | 0.1− | 2004 01 21 | 704 | 0.4+ | 0.2− |
| 2000 05 29 | 691 | 0.5− | 0.0 | 2002 10 15 | 644 | 0.1− | 0.5+ | 2004 01 21 | 704 | 0.0 | 0.6+ |
| 2000 06 25 | 691 | 0.2− | 0.0 | 2003 12 19 | 691 | 0.7− | 0.3− | 2004 01 24 | 704 | 0.8− | 1.3+ |
| 2000 06 25 | 691 | 0.3+ | 0.4+ | 2003 12 19 | 691 | 0.3− | 0.3+ | 2004 01 24 | 704 | 0.7− | 0.2− |
| 2000 06 25 | 691 | 0.5+ | 0.0 | 2003 12 19 | 691 | 0.1+ | 0.2− | 2004 01 24 | 704 | 0.6+ | 0.4− |
| 2000 07 05 | 691 | 0.7+ | 0.1− | 2003 12 29 | 699 | 0.8+ | 0.5− | 2004 01 24 | 704 | 0.4+ | 1.5+ |
| 2000 07 05 | 691 | 0.2+ | 0.0 | 2003 12 29 | 699 | 0.3− | 0.1− | 2004 01 27 | 691 | 0.0 | 0.1+ |
| 2000 07 05 | 691 | 0.1+ | 0.1− | 2003 12 29 | 699 | 0.3− | 0.2− | 2004 01 27 | 691 | 0.0 | 0.1− |
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2003 12 29 | 699 | 0.1− | 0.7− | 2004 01 27 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2004 01 15 | 691 | 0.2− | 0.1− | 2004 01 28 | 291 | 0.3+ | 0.2+ |
| 2002 10 10 | 644 | 0.4− | 0.3+ | 2004 01 15 | 691 | 0.2− | 0.1− | 2004 01 28 | 291 | 0.4+ | 0.1+ |
| 2002 10 10 | 644 | 0.6− | 0.5+ | 2004 01 15 | 691 | 0.3− | 0.1− | 2004 01 28 | 291 | 0.7+ | 0.1+ |
| 2002 10 10 | 644 | 0.3− | 0.3+ | 2004 01 21 | 704 | 0.1+ | 0.6+ | | | | |

### 2004 $BW_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.08546 | | (2000.0) | **P** | **Q** | | |
| $n$ | 0.28268965 | $\omega$ | 143.91992 | +0.05012514 | −0.99714112 | | |
| $a$ | 2.2993025 | $\Omega$ | 303.14235 | +0.89978300 | +0.06965614 | | |
| $e$ | 0.1156523 | $i$ | 3.87204 | +0.43344899 | −0.02928505 | | |
| $P$ | 3.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.2− | 0.5− | 2004 01 24 | 704 | 0.1− | 0.3+ | 2004 01 28 | 291 | 0.1− | 0.2− |
| 2003 12 27 | 704 | 0.3− | 0.1+ | 2004 01 24 | 704 | 0.5+ | 0.7+ | 2006 10 11 | 644 | 0.5− | 0.3+ |
| 2003 12 27 | 704 | 0.5+ | 0.7+ | 2004 01 24 | 704 | 0.3+ | 0.9+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2004 01 21 | 704 | 1.2+ | 0.1+ | 2004 01 24 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.3− |
| 2004 01 21 | 704 | 1.5+ | 0.5+ | 2004 01 24 | 704 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.3− |
| 2004 01 21 | 704 | 1.3− | 0.9− | 2004 01 28 | 291 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1+ |
| 2004 01 21 | 704 | 0.9+ | 0.2− | 2004 01 28 | 291 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.2+ |

**2004 BN$_{48}$ = 2003 YT$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 171.25607 | | (2000.0) | | | |
| $n$ | 0.23875616 | $\omega$ | 262.51679 | | −0.94499442 | +0.32100435 |
| $a$ | 2.5733548 | $\Omega$ | 296.18956 | | −0.26567518 | −0.86526202 |
| $e$ | 0.1620345 | $i$ | 4.01205 | | −0.19079372 | −0.38506863 |
| $P$ | 4.13 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 691 | 0.4− | 0.3+ | 2004 01 21 | 704 | 0.1− | 0.6+ | 2004 02 16 | 691 | 0.3+ | 0.2+ |
| 2003 12 27 | 691 | 0.2+ | 0.2+ | 2004 01 21 | 704 | 1.2+ | 0.6+ | 2004 02 16 | 691 | 0.1+ | 0.1+ |
| 2003 12 27 | 691 | 0.3− | 0.0 | 2004 01 24 | 704 | 0.0 | 0.7− | 2004 02 16 | 691 | 0.2+ | 0.2+ |
| 2004 01 15 | 691 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.0 | 0.9+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 2004 01 15 | 691 | 0.1− | 0.0 | 2004 01 24 | 704 | 0.9− | 0.6− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2004 01 15 | 691 | 0.2− | 0.3− | 2004 01 24 | 704 | 0.6− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2004 01 21 | 704 | 1.4+ | 1.2+ | 2004 01 27 | 691 | 0.2− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2004 01 21 | 704 | 0.3+ | 0.2− | 2004 01 27 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.1− |
| 2004 01 21 | 704 | 1.4+ | 0.1− | 2004 01 27 | 691 | 0.3− | 0.5− | 2006 10 01 | 691 | 0.1− | 0.1− |

**2004 BO$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 184.89625 | | (2000.0) | | | |
| $n$ | 0.17845669 | $\omega$ | 163.45281 | | −0.22689070 | −0.96535769 |
| $a$ | 3.1245021 | $\Omega$ | 299.50061 | | +0.87594328 | −0.14443420 |
| $e$ | 0.1844662 | $i$ | 8.51431 | | +0.42572758 | −0.21730920 |
| $P$ | 5.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.3− | 0.3+ | 2004 01 15 | 691 | 0.0 | 0.4+ | 2004 01 24 | 704 | 0.0 | 0.9− |
| 2001 05 24 | 807 | 0.1− | 0.5+ | 2004 01 15 | 691 | 0.1− | 0.4+ | 2004 01 30 | 704 | 1.6+ | 0.0 |
| 2002 10 04 | 644 | 0.3+ | 0.1− | 2004 01 15 | 691 | 0.1− | 0.4+ | 2004 01 30 | 704 | 2.0+ | 0.8+ |
| 2002 10 04 | 644 | 0.2− | 0.7− | 2004 01 21 | 704 | 0.2− | 0.7+ | 2004 01 30 | 704 | 1.1+ | 0.3+ |
| 2002 10 04 | 644 | 0.3+ | 0.3− | 2004 01 21 | 704 | 0.1− | 0.0 | 2004 02 11 | 699 | 0.2+ | 0.8+ |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2004 01 21 | 704 | 0.1− | 0.5+ | 2004 02 11 | 699 | 1.6− | 0.2− |
| 2003 12 19 | 691 | 0.3− | 0.0 | 2004 01 21 | 704 | 0.0 | 0.3+ | 2004 02 11 | 699 | 0.9− | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.2− | 2004 01 21 | 704 | 0.1+ | 0.6+ | 2004 02 11 | 699 | 1.0+ | 0.3+ |
| 2003 12 27 | 704 | 0.1− | 0.4+ | 2004 01 24 | 704 | 0.2+ | 0.8− | 2004 04 13 | 645 | 0.2− | 0.1− |
| 2003 12 27 | 704 | 0.1+ | 0.1+ | 2004 01 24 | 704 | 0.4− | 1.0− | 2004 04 13 | 645 | 0.1− | 0.0 |
| 2003 12 27 | 704 | 0.2+ | 0.5+ | 2004 01 24 | 704 | 0.0 | 1.4− | 2004 04 15 | 645 | 0.0 | 0.1− |
| 2003 12 27 | 704 | 0.4+ | 0.5− | 2004 01 24 | 704 | 0.6+ | 1.2− | 2004 04 15 | 645 | 0.0 | 0.0 |

**2004 BT$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.64374 | | (2000.0) | | | |
| $n$ | 0.26866476 | $\omega$ | 250.72515 | | −0.99471609 | +0.07230159 |
| $a$ | 2.3786410 | $\Omega$ | 293.36609 | | −0.03456115 | −0.90433945 |
| $e$ | 0.1073384 | $i$ | 4.55394 | | −0.09667177 | −0.42064550 |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.4− | 0.4− | 2004 01 26 | 699 | 0.3− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 1993 01 23 | 691 | 0.2+ | 0.2− | 2004 01 26 | 699 | 0.5− | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.1− |
| 1993 01 23 | 691 | 0.0 | 0.2− | 2004 01 30 | 704 | (0.3− | 1.7+) | 2006 10 13 | 691 | 0.1+ | 0.1+ |
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.2− |
| 2004 01 15 | 691 | 0.2+ | 0.4+ | 2004 01 30 | 704 | 0.5+ | 0.2− | 2006 10 19 | A50 | 0.3+ | 0.3+ |
| 2004 01 15 | 691 | 0.3− | 0.3+ | 2004 01 30 | 704 | 0.5+ | 1.1+ | 2006 10 19 | A50 | 0.7− | 0.0 |
| 2004 01 21 | 704 | 0.4+ | 1.0+ | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 01 21 | 704 | 0.5+ | 0.5+ | 2004 02 16 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2004 01 21 | 704 | 0.2+ | 0.6+ | 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2004 01 21 | 704 | 0.4+ | 0.2− | 2004 04 13 | 645 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2004 01 21 | 704 | 0.5+ | 0.4+ | 2004 04 13 | 645 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2004 01 24 | 704 | 0.6+ | 0.1+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2004 01 24 | 704 | 0.6+ | 0.2− | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2004 01 24 | 704 | 0.1− | 0.5− | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.6+ | 0.1− |
| 2004 01 24 | 704 | 0.5+ | 0.2− | 2004 04 16 | 645 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 01 24 | 704 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2004 01 26 | 699 | 0.4− | 0.8+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2004 01 26 | 699 | 1.1− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.1− | | | | |

**2004 BF$_{49}$ = 2006 QF$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.46125 | | (2000.0) | | | |
| $n$ | 0.27412500 | $\omega$ | 98.54083 | | +0.82884438 | −0.55592033 |
| $a$ | 2.3469488 | $\Omega$ | 295.25579 | | +0.48200259 | +0.76670007 |
| $e$ | 0.2379169 | $i$ | 3.99466 | | +0.28406072 | +0.32112862 |
| $P$ | 3.60 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.7− | 0.0 | 2004 01 24 | 704 | 1.4− | 1.0− | 2006 08 28 | 703 | 0.1− | 0.3− |
| 1999 10 10 | 704 | 0.4− | 0.6− | 2004 01 27 | 691 | 0.3+ | 0.2− | 2006 08 28 | 699 | 0.3+ | 1.1+ |
| 1999 10 10 | 704 | 0.2+ | 0.1− | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.1+ |
| 1999 10 10 | 704 | 0.7+ | 0.0 | 2004 01 27 | 691 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.3+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ |
| 2004 01 16 | 691 | 0.1+ | 0.3− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.1+ |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.2− |
| 2004 01 16 | 691 | 0.3− | 0.0 | 2006 08 25 | 704 | 1.0− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2004 01 21 | 704 | 0.1− | 0.6− | 2006 08 25 | 704 | 0.5− | 1.1+ | 2006 09 17 | 691 | 0.2+ | 0.0 |
| 2004 01 21 | 704 | 0.4+ | 1.1+ | 2006 08 25 | 704 | 0.9− | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 2004 01 21 | 704 | 0.2− | 1.3+ | 2006 08 25 | 704 | 1.4+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.2− |
| 2004 01 21 | 704 | 0.7+ | 0.5+ | 2006 08 28 | 699 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.3− |
| 2004 01 24 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 699 | 0.4− | 0.6− | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2004 01 24 | 704 | 0.4− | 1.0+ | 2006 08 28 | 703 | 1.0− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2− |
| 2004 01 24 | 704 | 0.2− | 0.9+ | 2006 08 28 | 699 | 0.1+ | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.3− |
| 2004 01 24 | 704 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.1+ | | | | |

**2004 BR$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.44680 | | (2000.0) | | | |
| $n$ | 0.23634711 | $\omega$ | 313.40734 | | +0.20063830 | −0.97914165 |
| $a$ | 2.5908117 | $\Omega$ | 124.99176 | | +0.90974588 | +0.17408896 |
| $e$ | 0.0903514 | $i$ | 2.24068 | | +0.36346487 | +0.10476006 |
| $P$ | 4.17 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.1− | 2003 12 18 | 291 | 0.5− | 0.1+ | 2004 01 24 | 704 | 0.3− | 0.5− |
| 1998 09 25 | 645 | 0.0 | 0.1− | 2003 12 18 | 291 | 0.4− | 0.1+ | 2004 01 27 | 691 | 0.3− | 0.2− |
| 2002 08 20 | 644 | 0.2− | 0.0 | 2003 12 18 | 291 | 0.5+ | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.2− |
| 2002 08 20 | 644 | 0.0 | 0.5+ | 2003 12 29 | 691 | 0.2+ | 0.0 | 2004 01 27 | 691 | 0.2− | 0.0 |
| 2002 08 20 | 644 | 0.3− | 0.3+ | 2003 12 29 | 691 | 0.2− | 0.1+ | 2004 02 13 | 691 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.5+ | 0.5+ | 2003 12 29 | 691 | 0.1− | 0.0 | 2004 02 13 | 691 | 0.5− | 0.0 |
| 2002 09 07 | 704 | 0.3+ | 1.6+ | 2004 01 16 | 644 | 0.3+ | 0.9+ | 2004 02 13 | 691 | 0.2+ | 0.3+ |
| 2002 09 07 | 704 | 0.0 | 0.7+ | 2004 01 16 | 644 | 0.3+ | 0.8+ | 2004 02 17 | 645 | 0.0 | 0.2− |
| 2002 09 09 | 608 | 0.5− | 0.3− | 2004 01 16 | 644 | 0.3+ | 0.5+ | 2004 02 17 | 645 | 0.1+ | 0.1− |
| 2002 09 09 | 608 | 1.0− | 0.1− | 2004 01 16 | 691 | 0.2+ | 0.2+ | 2005 05 08 | G96 | 0.1+ | 0.1+ |
| 2002 09 12 | 644 | 0.3− | 0.0 | 2004 01 16 | 691 | 0.3+ | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.1− |
| 2002 09 12 | 644 | 0.3− | 0.1− | 2004 01 16 | 691 | 0.2+ | 0.1+ | 2005 05 08 | G96 | 0.0 | 0.0 |
| 2002 09 12 | 644 | 0.1− | 0.0 | 2004 01 21 | 704 | 0.0 | 0.2− | 2005 05 08 | G96 | 0.0 | 0.1+ |
| 2002 09 14 | 608 | 0.4− | 0.1+ | 2004 01 21 | 704 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2002 09 14 | 608 | 0.6− | 0.2+ | 2004 01 21 | 704 | 0.4+ | 0.8+ | 2006 09 30 | G96 | 0.4+ | 0.3+ |
| 2002 09 14 | 608 | 0.3− | 0.1− | 2004 01 24 | 704 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.3+ |
| 2002 09 15 | 644 | 0.4+ | 0.7+ | 2004 01 24 | 704 | 0.1+ | 0.4− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2002 09 15 | 644 | 0.4+ | 0.2+ | 2004 01 24 | 704 | 0.1− | 0.0 | | | | |
| 2002 09 15 | 644 | 0.9+ | 0.3− | 2004 01 24 | 704 | 0.2− | 0.0 | | | | |

**2004 BU$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.59846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25875985 | $\omega$ | 11.78892 | | −0.97217075 | | −0.23400965 |
| $a$ | 2.4389606 | $\Omega$ | 154.66950 | | +0.21277547 | | −0.90181699 |
| $e$ | 0.1236543 | $i$ | 1.48847 | | +0.09803379 | | −0.36327069 |
| $P$ | 3.81 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 291 | 0.4− | 0.3− | 2004 01 24 | 704 | 0.4− | 1.0+ | 2006 09 18 | 691 | 0.2− | 0.6+ |
| 2003 12 17 | 291 | 0.0 | 0.3− | 2004 01 24 | 704 | 0.8− | 0.6+ | 2006 09 18 | 691 | 0.2+ | 0.3+ |
| 2003 12 17 | 291 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.2− | 0.9+ | 2006 09 18 | 691 | 0.5− | 0.3− |
| 2004 01 16 | 644 | 0.3− | 0.3+ | 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.5+ |
| 2004 01 16 | 644 | 0.0 | 0.8+ | 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2004 01 16 | 644 | 0.3− | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.5+ | 0.2− |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 10 29 | 291 | 0.0 | 0.3− |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 291 | 0.0 | 0.0 |
| 2004 01 16 | 691 | 0.2+ | 0.2+ | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2004 01 21 | 704 | 0.2− | 0.2− | 2004 02 13 | 691 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2004 01 21 | 704 | 0.2+ | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.7− |
| 2004 01 21 | 704 | 0.1+ | 0.2+ | 2004 02 13 | 691 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.9− |
| 2004 01 24 | 704 | (0.2− | 1.5+) | 2004 02 17 | 645 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 01 24 | 704 | 0.2− | 1.4+ | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2004 01 24 | 704 | 0.7+ | 1.4+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 01 24 | 704 | 0.0 | 0.4− | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2004 01 24 | 704 | (1.5+ | 3.1+) | 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 01 24 | 704 | 0.4− | 0.4− | 2004 04 16 | 645 | 0.0 | 0.1− | | | | |

**2004 BC$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.69403 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25894753 | $\omega$ | 150.40692 | | +0.06640516 | | −0.99451618 |
| $a$ | 2.4377820 | $\Omega$ | 295.68263 | | +0.89694425 | | +0.09497193 |
| $e$ | 0.0609110 | $i$ | 5.14361 | | +0.43712856 | | −0.04379379 |
| $P$ | 3.81 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2004 01 24 | 704 | 0.6− | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.2+ |
| 2002 09 13 | 644 | 0.2− | 0.2+ | 2004 01 24 | 704 | 0.3− | 0.0 | 2006 09 16 | 703 | 0.4+ | 0.1− |
| 2002 09 13 | 644 | 0.0 | 0.0 | 2004 01 24 | 704 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.9+ | 0.6+ |
| 2003 12 29 | 691 | 0.1+ | 0.0 | 2004 01 24 | 704 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.3− | 0.1− |
| 2003 12 29 | 691 | 0.0 | 0.1− | 2004 01 28 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.6− | 1.3+ |
| 2003 12 29 | 691 | 0.0 | 0.0 | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.8− | 0.5− |
| 2004 01 21 | 704 | 0.4+ | 0.2+ | 2004 01 28 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.1− | 0.3+ |
| 2004 01 21 | 704 | 1.1+ | 0.2− | 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | (1.7+ | 1.5−) |
| 2004 01 21 | 704 | 0.2+ | 0.1+ | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 1.3+ | 1.1− |
| 2004 01 21 | 704 | 0.1+ | 0.1+ | 2004 02 11 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | (2.6+ | 0.0 ) |
| 2004 01 21 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 0.6− | 0.8− | | | | |
| 2004 01 24 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.3+ | 0.3− | | | | |

**2004 BX$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.84804 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27484379 | $\omega$ | 103.36498 | | −0.57312544 | | +0.81503763 |
| $a$ | 2.3428551 | $\Omega$ | 131.33683 | | −0.78886949 | | −0.52063234 |
| $e$ | 0.0920786 | $i$ | 6.50737 | | −0.22183813 | | −0.25427473 |
| $P$ | 3.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 699 | 0.0 | 1.1+ | 2004 01 24 | 704 | 0.5+ | 0.1− | 2004 02 26 | 704 | 0.2− | 0.4+ |
| 2001 05 22 | 699 | 0.7+ | 1.1+ | 2004 01 24 | 704 | 0.9+ | 0.7+ | 2004 04 15 | 645 | 0.1− | 0.2− |
| 2001 05 22 | 699 | 0.4+ | 0.0 | 2004 01 24 | 704 | 0.3+ | 0.5− | 2004 04 15 | 645 | 0.1− | 0.1− |
| 2001 05 22 | 699 | 0.7− | 0.5+ | 2004 01 24 | 704 | 1.5+ | 0.3+ | 2005 07 05 | G96 | 1.1+ | 0.5+ |
| 2004 01 16 | 644 | 0.2+ | 0.7+ | 2004 01 26 | 699 | 0.8+ | 1.0+ | 2005 07 05 | G96 | 0.1− | 0.2− |
| 2004 01 16 | 644 | 0.3+ | 0.5+ | 2004 01 26 | 699 | 0.2− | 0.2− | 2005 07 05 | G96 | 0.5− | 0.1+ |
| 2004 01 16 | 644 | 0.1+ | 0.5+ | 2004 01 26 | 699 | 0.7− | 0.3− | 2005 07 05 | G96 | 0.2− | 0.0 |
| 2004 01 21 | 704 | 0.3− | 0.1+ | 2004 01 26 | 699 | 0.6+ | 1.0+ | 2006 11 23 | G96 | 0.6− | 0.2+ |
| 2004 01 21 | 704 | 0.4− | 0.5+ | 2004 02 26 | 704 | 1.0− | 0.5− | 2006 11 23 | G96 | 0.4− | 0.3+ |
| 2004 01 21 | 704 | 0.2+ | 0.5+ | 2004 02 26 | 704 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.3+ |

**2004 BB$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.52902 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28228965 | $\omega$ | 213.25912 | | −0.89741509 | | −0.43987517 |
| $a$ | 2.3014741 | $\Omega$ | 300.60911 | | +0.41291095 | | −0.81025537 |
| $e$ | 0.0993985 | $i$ | 2.26402 | | +0.15540499 | | −0.38729325 |
| $P$ | 3.49 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.2+ | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2004 01 21 | 704 | 0.3− | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2004 01 21 | 704 | 0.8− | 0.3+ | 2004 02 17 | 704 | 0.8+ | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2004 01 21 | 704 | 0.1− | 0.2− | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.6+ | 0.0 |
| 2004 01 24 | 704 | (1.8− | 0.1+) | 2004 02 17 | 704 | 0.8+ | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.2− |
| 2004 01 24 | 704 | 0.2+ | 0.2+ | 2004 02 17 | 704 | 0.1− | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 2004 01 24 | 704 | 0.7− | 0.5+ | 2004 02 29 | 691 | 0.3− | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.2+ |
| 2004 01 24 | 704 | 0.9+ | 1.3+ | 2004 02 29 | 691 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2004 01 24 | 704 | 0.3− | 0.4+ | 2004 02 29 | 691 | 0.2+ | 0.5− | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2004 01 26 | 699 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.6− | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2004 01 26 | 699 | 0.3− | 1.2+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2004 01 26 | 699 | 0.7+ | 0.5− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2004 01 26 | 699 | 0.9+ | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1− |

**2004 BK$_{52}$ = 2006 SJ$_{351}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.94010 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24194145 | $\omega$ | 90.22397 | | −0.94120788 | | +0.32980409 |
| $a$ | 2.5507185 | $\Omega$ | 109.03359 | | −0.33249880 | | −0.86602796 |
| $e$ | 0.1099791 | $i$ | 4.44054 | | −0.05976853 | | −0.37579894 |
| $P$ | 4.07 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 21 | 704 | 0.2+ | 0.1− | 2006 09 20 | 691 | 0.0 | 0.5− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 21 | 704 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2003 12 27 | 691 | 0.9+ | 1.1− | 2004 01 24 | 704 | 0.8− | 0.8− | 2006 09 30 | 703 | 1.3− | 0.4− |
| 2003 12 27 | 691 | 0.3+ | 0.3+ | 2004 01 24 | 704 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2003 12 27 | 691 | 0.0 | 0.5+ | 2004 01 24 | 704 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.2− | 0.9+ |
| 2004 01 13 | 691 | 0.1− | 0.1+ | 2004 01 24 | 704 | 0.7− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2004 01 13 | 691 | 0.3− | 0.1+ | 2004 01 24 | 704 | 0.7− | 1.4+ | 2006 10 02 | G96 | 0.3+ | 0.4+ |
| 2004 01 13 | 691 | 0.2− | 0.1− | 2006 09 20 | 691 | 0.6+ | 0.1− | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2004 01 21 | 704 | 0.1− | 0.4+ | 2006 09 20 | 691 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.1− |

**2004 BS$_{52}$ = 2006 WR$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.67293 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30227027 | $\omega$ | 327.04204 | | −0.26776830 | | −0.96315544 |
| $a$ | 2.1989014 | $\Omega$ | 138.47405 | | +0.89198035 | | −0.25767411 |
| $e$ | 0.1236202 | $i$ | 2.17274 | | +0.36424057 | | −0.07704318 |
| $P$ | 3.26 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 14 | 691 | 0.3− | 0.4+ | 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 11 20 | H07 | 0.3− | 0.3+ |
| 2001 03 14 | 691 | 0.1+ | 0.3+ | 2004 02 11 | 699 | 0.8− | 1.2− | 2006 11 20 | H07 | 0.1− | 0.7+ |
| 2001 03 14 | 691 | 0.2+ | 0.3+ | 2004 02 11 | 699 | 0.3− | 0.5+ | 2006 11 21 | H07 | 0.3+ | 0.5+ |
| 2001 04 16 | 645 | 0.0 | 0.1− | 2004 02 11 | 699 | 0.4+ | 0.4+ | 2006 11 21 | H07 | 0.6+ | 0.2+ |
| 2001 04 16 | 645 | 0.0 | 0.2− | 2004 02 11 | 699 | 0.9− | 0.5+ | 2006 11 21 | H07 | 0.4+ | 0.1+ |
| 2004 01 21 | 704 | 0.5+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.7− | 2006 11 21 | H07 | 0.4+ | 0.1+ |
| 2004 01 21 | 704 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.4+ | 0.4− | 2006 11 21 | H07 | 0.1+ | 0.3+ |
| 2004 01 21 | 704 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.6− | 2006 11 21 | H07 | 1.3− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.4− | 2006 11 21 | H07 | 0.3− | 0.0 |
| 2004 01 24 | 704 | 0.9+ | 1.3+ | 2006 11 20 | H07 | 0.4+ | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2004 01 24 | 704 | 0.7+ | 0.2+ | 2006 11 20 | H07 | 0.7+ | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2004 01 24 | 704 | 0.5− | 0.1+ | 2006 11 20 | H07 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2004 01 24 | 704 | 0.1+ | 0.7+ | 2006 11 20 | H07 | 1.5− | 1.1− | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 11 20 | H07 | 0.2− | 0.8+ | | | | |
| 2004 02 11 | 691 | 0.1− | 0.3− | 2006 11 20 | H07 | 0.7+ | 0.2+ | | | | |

**2004 BY$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.37975 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23041651 | $\omega$ | 105.35707 | | +0.61164596 | | −0.78715702 |
| $a$ | 2.6350791 | $\Omega$ | 306.66008 | | +0.68270248 | | +0.57575171 |
| $e$ | 0.0663334 | $i$ | 5.66620 | | +0.39975811 | | +0.22111943 |
| $P$ | 4.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2− | 0.4− | 2002 09 28 | 608 | 0.3− | 0.1+ | 2004 01 24 | 704 | 0.3− | 1.0+ |
| 2002 09 13 | 644 | 0.3+ | 0.4− | 2002 09 28 | 608 | 0.4− | 0.1+ | 2004 01 24 | 704 | 0.1− | 1.1+ |
| 2002 09 13 | 644 | 0.1− | 1.1− | 2004 01 21 | 704 | 0.4− | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.8+ |
| 2002 09 19 | 644 | 0.9+ | 0.6+ | 2004 01 21 | 704 | 0.1+ | 0.6− | 2004 01 28 | 691 | 0.2− | 0.0 |
| 2002 09 19 | 644 | 0.5+ | 0.8+ | 2004 01 21 | 704 | 0.3+ | 1.1− | 2004 01 28 | 691 | 0.4+ | 0.6− |
| 2002 09 28 | 608 | 0.7− | 0.2+ | 2004 01 24 | 704 | 1.1− | 0.9+ | 2004 01 28 | 691 | 0.0 | 0.0 |

**2004 BU$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.52673 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27575876 | $\omega$ | 270.86214 | | +0.89820543 | | −0.42988831 |
| $a$ | 2.3376698 | $\Omega$ | 114.60276 | | +0.43267567 | | +0.82777278 |
| $e$ | 0.1633953 | $i$ | 5.79336 | | +0.07758075 | | +0.36053885 |
| $P$ | 3.57 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.8+ | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.5+ |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.1+ | 2006 10 02 | 703 | 0.6− | 0.4+ |
| 2004 01 16 | 691 | 0.1+ | 0.3− | 2006 09 12 | 703 | 0.1+ | 0.8− | 2006 10 02 | 703 | 0.4− | 0.2+ |
| 2004 01 16 | 691 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.3− | 1.2− | 2006 10 10 | 644 | 0.4− | 0.0 |
| 2004 01 16 | 691 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.4− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2004 01 22 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.7+ | 0.5− |
| 2004 01 22 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 0.6− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 2004 01 22 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 699 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.1+ | 1.0− |
| 2004 01 24 | 704 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.4− | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2004 01 24 | 704 | 0.6− | 0.8+ | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.6+ | 0.9− |
| 2004 01 24 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.8+ | 0.5− | 2006 10 28 | 703 | 0.9+ | 1.2+ |
| 2004 02 15 | 735 | 1.0− | 0.3− | 2006 09 26 | 703 | 0.4− | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2004 02 15 | 735 | 1.0− | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.8+ | 2006 10 28 | 703 | (1.9+ | 0.1−) |
| 2004 02 15 | 735 | 0.4− | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.1− | | | | |
| 2006 09 12 | 703 | 0.5− | 0.4+ | 2006 10 02 | 703 | 0.6− | 0.1+ | | | | |

**2004 BX$_{54}$ = 2006 UM$_{293}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.31470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23141995 | $\omega$ | 318.34881 | | −0.16539051 | | −0.97700458 |
| $a$ | 2.6274564 | $\Omega$ | 140.61430 | | +0.95162201 | | −0.19392212 |
| $e$ | 0.1461929 | $i$ | 12.24366 | | +0.25896241 | | +0.08863554 |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 08 | 599 | 0.2− | 0.0 | 2004 01 24 | 704 | 0.5+ | 0.2+ | 2004 02 11 | 703 | 0.1+ | 0.3+ |
| 2002 09 08 | 599 | 0.3+ | 0.0 | 2004 01 24 | 704 | 0.1+ | 0.4+ | 2004 02 11 | 703 | 0.1− | 0.3− |
| 2002 09 08 | 599 | 0.1− | 0.2+ | 2004 01 24 | 704 | 0.3+ | 0.9+ | 2004 02 11 | 703 | 0.3− | 0.6− |
| 2004 01 22 | 704 | 0.5− | 0.5− | 2004 01 24 | 704 | 0.6+ | 0.1+ | 2004 02 11 | 703 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.4− | 1.2− | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 695 | 0.0 | 0.1− |
| 2004 01 22 | 704 | 0.2+ | 0.1− | 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.1− |
| 2004 01 22 | 704 | 0.6− | 0.9− | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 695 | 0.1+ | 0.1− |

**2004 BF$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.87815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22424009 | $\omega$ | 204.71655 | | +0.95672371 | | +0.27987252 |
| $a$ | 2.6832463 | $\Omega$ | 138.76851 | | −0.24281452 | | +0.91872342 |
| $e$ | 0.0455543 | $i$ | 6.94478 | | −0.16037722 | | +0.27860124 |
| $P$ | 4.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 10 | 691 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.5− | 1.0+ | 2006 08 16 | 644 | 0.2− | 0.8+ |
| 1997 07 10 | 691 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.5+ |
| 1997 07 10 | 691 | 0.1− | 0.2− | 2004 01 22 | 704 | 0.3− | 1.2+ | 2006 08 28 | 699 | 0.2+ | 1.6+ |
| 2002 10 11 | 644 | 0.2− | 0.8+ | 2004 01 24 | 704 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.4− |
| 2002 10 11 | 644 | 0.6− | 0.8+ | 2004 01 24 | 704 | 1.5− | 0.6− | 2006 08 28 | 703 | 0.2− | 0.0 |
| 2002 10 11 | 644 | 0.6− | 0.6+ | 2004 01 24 | 704 | 0.3− | 0.5− | 2006 08 28 | 699 | 0.5+ | 0.7+ |
| 2002 10 31 | 704 | 0.3− | 1.1+ | 2004 01 24 | 704 | 0.8− | 0.5− | 2006 08 28 | 703 | (3.5− | 2.3−) |
| 2002 10 31 | 704 | 0.0 | 0.8+ | 2004 01 24 | 704 | 0.6+ | 0.7− | 2006 08 28 | 703 | 0.4− | 0.4+ |
| 2002 10 31 | 704 | (0.4− | 1.9+) | 2004 01 27 | 704 | 1.1+ | 0.2+ | 2006 08 28 | 699 | (2.2+ | 2.1+) |
| 2002 10 31 | 704 | (0.0 | 1.7+) | 2004 01 27 | 704 | 0.6+ | 0.9+ | 2006 08 28 | 699 | (1.9+ | 1.9+) |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2004 01 27 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 644 | 0.2+ | 0.4+ |
| 2002 11 07 | 645 | 0.1+ | 0.0 | 2005 05 04 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.6+ |
| 2003 12 28 | 291 | 0.5+ | 0.3+ | 2005 05 04 | 691 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.3+ | 0.3+ |
| 2003 12 28 | 291 | 0.2− | 1.1+ | 2005 05 04 | 691 | 0.3+ | 0.4+ | | | | |
| 2003 12 28 | 291 | 0.4− | 0.2− | 2006 08 16 | 644 | 0.0 | 0.8+ | | | | |

**2004 BM$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.72099 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26010819 | $\omega$ | 227.83987 | | −0.99358377 | | +0.11165896 |
| $a$ | 2.4305247 | $\Omega$ | 318.56163 | | −0.09409184 | | −0.90433422 |
| $e$ | 0.1159716 | $i$ | 1.55749 | | −0.06275366 | | −0.41196103 |
| $P$ | 3.79 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.0 | 0.0 | 2004 01 30 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2004 01 18 | 644 | 0.0 | 0.2+ | 2004 01 30 | 691 | 0.3− | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1− |
| 2004 01 18 | 644 | 0.1+ | 0.0 | 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 2004 01 22 | 704 | 0.3+ | 0.7+ | 2004 02 11 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.2+ | 0.1− |
| 2004 01 22 | 704 | 0.1− | 0.9+ | 2004 02 11 | 691 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2004 01 22 | 704 | 0.1− | 0.0 | 2004 02 16 | 704 | 0.2− | 0.4− | 2006 11 09 | 691 | 0.8− | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.5+ | 2004 02 16 | 704 | 0.9− | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2004 01 24 | 704 | 0.3− | 0.1+ | 2004 02 16 | 704 | 0.3+ | 0.4− | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 2004 01 24 | 704 | 1.1− | 0.9+ | 2004 02 16 | 704 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.4− |
| 2004 01 24 | 704 | 0.5+ | 0.6+ | 2004 02 26 | 704 | 0.1− | 0.4− | 2006 11 11 | 691 | 0.2+ | 0.3− |
| 2004 01 24 | 704 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 691 | 0.4− | 0.2− |
| 2004 01 24 | 704 | 0.0 | 1.0+ | 2004 02 26 | 704 | 0.9+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2004 01 30 | 704 | 0.3− | 0.6− | 2004 02 26 | 704 | 0.8+ | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2004 01 30 | 691 | 0.2− | 0.4− | 2004 02 26 | 704 | 0.5+ | 0.3− | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2004 01 30 | 704 | 0.2− | 1.0+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.4+ | 0.1+ |
| 2004 01 30 | 704 | 0.6+ | 0.7+ | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2004 01 30 | 704 | (1.8− | 0.1−) | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 01 30 | 704 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1− | | | | |

**2004 BT$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.27432 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24401130 | $\omega$ | 129.09537 | | −0.68819689 | | −0.72552137 |
| $a$ | 2.5362735 | $\Omega$ | 4.39369 | | +0.65757133 | | −0.62487092 |
| $e$ | 0.0695547 | $i$ | 1.45491 | | +0.30656971 | | −0.28836623 |
| $P$ | 4.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 07 21 | G96 | 0.2+ | 0.4+ |
| 2000 03 03 | 704 | 0.5+ | 0.1+ | 2004 02 23 | 704 | 0.3− | 0.9+ | 2006 07 21 | G96 | 0.5− | 0.4+ |
| 2000 03 03 | 704 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.6− | 0.3− | 2006 09 18 | 691 | 0.3− | 0.3+ |
| 2000 03 03 | 704 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.8− | 0.2− | 2006 09 18 | 691 | 0.7− | 0.1+ |
| 2000 03 03 | 704 | 0.3− | 0.3+ | 2004 02 26 | 704 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.5− | 0.0 |
| 2004 01 22 | 704 | 0.6− | 0.1− | 2004 02 26 | 704 | 0.4+ | 1.1− | 2006 09 25 | 691 | 0.2+ | 0.2+ |
| 2004 01 22 | 704 | 0.9− | 0.8− | 2004 02 26 | 704 | (0.7− | 1.8+) | 2006 09 25 | 691 | 0.1+ | 0.5+ |
| 2004 01 22 | 704 | 1.1− | 0.1− | 2004 02 26 | 704 | (0.1− | 1.7+) | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2004 01 24 | 704 | 0.7+ | 0.1− | 2004 02 26 | 704 | 0.1− | 0.6− | 2006 09 26 | G96 | 0.6+ | 0.1− |
| 2004 01 24 | 704 | 1.2+ | 0.2− | 2004 03 17 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2004 01 24 | 704 | 0.3+ | 0.1− | 2004 03 17 | 691 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2004 02 11 | 644 | 0.2− | 0.3− | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2004 02 11 | 644 | 0.1− | 0.3− | 2004 03 18 | 704 | 1.4+ | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.4− |
| 2004 02 11 | 644 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.7+ | 0.1+ |
| 2004 02 14 | 691 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.9+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2004 02 14 | 691 | 0.1− | 0.2− | 2004 03 26 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2004 02 14 | 691 | 0.3− | 0.0 | 2004 03 26 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.8+ | 0.5− |
| 2004 02 17 | 704 | 0.3+ | 0.7+ | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.4− | 0.9− |
| 2004 02 17 | 704 | 0.9+ | 0.7+ | 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2004 02 17 | 704 | 0.7+ | 0.5+ | 2004 03 27 | 704 | 0.1+ | 1.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 02 17 | 704 | 0.3+ | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 11 23 | 291 | 0.0 | 0.3− |
| 2004 02 17 | 704 | 0.6+ | 1.3+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 11 23 | 291 | 0.2+ | 0.0 |
| 2004 02 23 | 704 | 0.3− | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 11 23 | 291 | 0.1+ | 0.1+ |

### 2004 $BT_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 181.18594 | | (2000.0) | | | |
| $n$ | 0.20093048 | $\omega$ | 282.41356 | | −0.95567066 | −0.29367367 |
| $a$ | 2.8869471 | $\Omega$ | 240.51174 | | +0.27871919 | −0.87909561 |
| $e$ | 0.1596859 | $i$ | 1.39546 | | +0.09491683 | −0.37542868 |
| $P$ | 4.91 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 691 | 0.1+ | 0.4− | 2004 02 11 | 703 | 0.9− | 0.2+ | 2004 03 15 | 704 | 1.8+ | 1.0+ |
| 1997 11 02 | 691 | 0.1+ | 0.6− | 2004 02 11 | 703 | 1.0− | 0.6+ | 2004 03 15 | 704 | 0.3+ | 1.2+ |
| 1997 11 02 | 691 | 0.3+ | 0.5− | 2004 02 11 | 703 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.6+ | 0.6+ |
| 2002 11 05 | 291 | 0.3− | 0.7+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.5+ | 0.9+ |
| 2002 11 05 | 291 | 0.1− | 0.1+ | 2004 02 12 | 691 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.3− | 0.9+ |
| 2002 11 05 | 291 | 0.0 | 0.3+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.5+ |
| 2004 01 23 | 699 | 0.4+ | 0.9+ | 2004 02 18 | 333 | 0.4− | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.0 |
| 2004 01 23 | 699 | 0.4− | 0.0 | 2004 02 18 | 333 | 0.1− | 0.4− | 2004 03 27 | 691 | 0.4+ | 0.0 |
| 2004 01 23 | 699 | 0.2+ | 0.4− | 2004 02 18 | 333 | 1.0− | 0.1+ | 2004 03 27 | 691 | 0.1− | 0.3+ |
| 2004 01 23 | 699 | 1.1+ | 0.6− | 2004 02 22 | 691 | 0.1+ | 0.0 | 2004 03 27 | 691 | 0.2+ | 0.0 |
| 2004 01 24 | 704 | 0.4+ | 0.4+ | 2004 02 22 | 691 | 0.1+ | 0.1− | 2006 08 19 | 691 | 0.2− | 0.4+ |
| 2004 01 24 | 704 | 0.3+ | 0.5+ | 2004 02 22 | 691 | 0.1+ | 0.1− | 2006 08 19 | 691 | 0.3− | 0.3+ |
| 2004 01 24 | 704 | 0.8− | 0.9− | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.2− | 0.6+ |
| 2004 01 24 | 704 | 0.7− | 0.9+ | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.0 | 0.6+ |
| 2004 01 24 | 704 | 0.1− | 0.5− | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.7+ |
| 2004 01 29 | 704 | 1.0+ | 0.4+ | 2004 03 01 | 333 | 0.3− | 0.9− | 2006 08 29 | 691 | 0.4− | 0.6+ |
| 2004 01 29 | 704 | 0.3+ | 1.4− | 2004 03 01 | 333 | 0.6− | 0.3+ | 2006 09 27 | G96 | 0.6− | 0.1− |
| 2004 01 29 | 704 | 1.0+ | 1.2+ | 2004 03 01 | 333 | 0.5− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2+ |
| 2004 01 29 | 704 | 0.1− | 0.2+ | 2004 03 01 | 333 | 1.1− | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.1+ |
| 2004 02 11 | 703 | 1.5− | 0.2+ | 2004 03 15 | 704 | 1.3+ | 1.1+ | 2006 09 27 | G96 | 0.2+ | 0.2+ |

### 2004 $BW_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 160.01447 | | (2000.0) | | | |
| $n$ | 0.19021513 | $\omega$ | 222.14658 | | −0.97897878 | −0.15173411 |
| $a$ | 2.9943738 | $\Omega$ | 308.61078 | | +0.19981002 | −0.84761984 |
| $e$ | 0.1962610 | $i$ | 10.04538 | | −0.04094527 | −0.50844603 |
| $P$ | 5.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 645 | 0.0 | 0.1− | 2004 01 26 | 699 | 0.1− | 0.1+ | 2004 02 14 | 333 | 0.1+ | 0.3− |
| 2001 09 20 | 645 | 0.1+ | 0.1− | 2004 01 26 | 699 | 0.2+ | 0.0 | 2004 02 14 | 608 | 0.6+ | 0.3− |
| 2003 12 19 | 291 | 0.7− | 0.1+ | 2004 01 26 | 699 | 0.5− | 0.0 | 2004 02 14 | 608 | 0.3+ | 0.7− |
| 2003 12 19 | 291 | 0.6− | 0.1+ | 2004 01 29 | 704 | 0.1− | 0.7+ | 2004 02 14 | 608 | 0.5+ | 0.5− |
| 2003 12 19 | 291 | 0.7+ | 0.0 | 2004 01 29 | 704 | 0.1− | 0.3+ | 2004 02 17 | 704 | 0.1+ | 0.2− |
| 2004 01 13 | 699 | 0.6− | 0.4− | 2004 01 29 | 704 | 0.1+ | 0.3− | 2004 02 17 | 704 | 0.1− | 0.3+ |
| 2004 01 13 | 699 | 0.8+ | 0.4+ | 2004 01 29 | 704 | 0.1+ | 0.2− | 2004 02 17 | 704 | 0.5+ | 0.3+ |
| 2004 01 13 | 699 | 0.3− | 0.8+ | 2004 01 29 | 704 | 0.4− | 0.0 | 2004 02 17 | 704 | 0.3+ | 0.2− |
| 2004 01 13 | 699 | 0.8− | 0.3− | 2004 01 31 | 691 | 0.5− | 0.1− | 2004 02 17 | 704 | 0.1+ | 0.1+ |
| 2004 01 23 | 704 | 0.3+ | 0.3− | 2004 01 31 | 691 | 0.1+ | 0.0 | 2004 02 18 | 608 | (0.4− | 1.6+) |
| 2004 01 23 | 704 | (1.6+ | 0.6−) | 2004 01 31 | 691 | 0.0 | 0.0 | 2004 02 18 | 608 | 0.1− | 1.3+ |
| 2004 01 23 | 704 | 0.3+ | 0.8+ | 2004 02 11 | 644 | 0.1− | 0.0 | 2004 02 18 | 608 | 0.5+ | 0.3+ |
| 2004 01 23 | 704 | 0.9+ | 0.1+ | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2004 01 23 | 704 | 0.7+ | 0.2− | 2004 02 11 | 644 | 0.3− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 2004 01 24 | 704 | (1.6+ | 0.4+) | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.3+ | 0.1− |
| 2004 01 24 | 704 | 1.0+ | 0.5− | 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.6− | 0.5+ |
| 2004 01 24 | 704 | (2.0+ | 0.5+) | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2004 01 24 | 704 | 0.4+ | 0.1+ | 2004 02 14 | 333 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 2004 01 26 | 699 | 0.4− | 0.4− | 2004 02 14 | 333 | 0.3+ | 0.0 | | | | |

### 2004 $BH_{58}$ = 2006 $TO_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.07897 | | (2000.0) | | | |
| $n$ | 0.27459323 | $\omega$ | 182.88896 | | +0.13576344 | −0.98501841 |
| $a$ | 2.3442801 | $\Omega$ | 259.32509 | | +0.91114294 | +0.16628470 |
| $e$ | 0.0631357 | $i$ | 6.21197 | | +0.38908461 | −0.04569608 |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 1.3− | 0.5+ | 2004 01 26 | 699 | 1.3− | 0.6+ | 2006 10 27 | 703 | 0.7− | 1.3+ |
| 2004 01 23 | 704 | 0.3+ | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.6− | 1.0+ |
| 2004 01 23 | 704 | 0.1− | 0.1− | 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.6+ | 0.1+ |
| 2004 01 23 | 704 | 0.3+ | 0.5− | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 10 28 | 291 | 0.2+ | 0.1− |
| 2004 01 24 | 704 | 0.4− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 10 28 | 291 | 0.6− | 0.1− |
| 2004 01 24 | 704 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.6+ | 0.8+ | 2006 10 28 | 291 | 0.2− | 0.1− |
| 2004 01 24 | 704 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2004 01 24 | 704 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2004 01 24 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2004 01 24 | 704 | 1.0+ | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2004 01 24 | 704 | 0.6+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2004 01 26 | 699 | 1.3− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2004 01 26 | 699 | 0.4+ | 1.4− | 2006 10 21 | 644 | 0.5− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 2004 01 26 | 699 | 0.8+ | 0.5+ | 2006 10 27 | 703 | 1.2+ | 0.6− | | | | |

### 2004 $BF_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 266.93517 | | (2000.0) | | | |
| $n$ | 0.28303398 | $\omega$ | 245.23903 | | −0.74497950 | −0.66289688 |
| $a$ | 2.2974373 | $\Omega$ | 253.14625 | | +0.63675647 | −0.67327853 |
| $e$ | 0.0977818 | $i$ | 4.47390 | | +0.19886365 | −0.32751145 |
| $P$ | 3.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.0 | 0.2− | 2004 02 17 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 1995 07 25 | 691 | 0.2+ | 0.1+ | 2004 02 17 | 704 | 0.1− | 0.7+ | 2006 11 01 | G96 | 1.0+ | 0.5− |
| 1995 07 25 | 691 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2004 01 23 | 704 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2004 01 23 | 704 | 0.6− | 0.5− | 2004 02 23 | 704 | 0.6− | 0.6− | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2004 01 23 | 704 | 0.1− | 0.2− | 2004 02 23 | 704 | (1.9− | 0.6+) | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2004 01 23 | 704 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 08 | 644 | 0.4+ | 0.3+ |
| 2004 01 25 | 608 | 0.3+ | 0.4− | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.4+ | 0.2+ |
| 2004 01 25 | 608 | 0.8+ | 0.3− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | (0.5+ | 1.7−) |
| 2004 01 25 | 608 | 0.9+ | 0.8− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2004 01 29 | 704 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 2004 01 29 | 704 | 0.9− | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2004 01 29 | 704 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2004 01 29 | 704 | 0.1− | 0.1− | 2006 10 27 | 703 | 1.5− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.5+ | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2004 02 17 | 704 | 0.0 | 0.4+ | 2006 10 27 | 703 | 1.3− | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− | | |

**2004 BO$_{59}$ = 2006 SR$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.40736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27520246 | $\omega$ | 274.15154 | | +0.14276819 | −0.98965418 | |
| $a$ | 2.3408191 | $\Omega$ | 167.61320 | | +0.93233461 | +0.12965346 | |
| $e$ | 0.1924013 | $i$ | 3.79750 | | +0.33221894 | +0.06143761 | |
| $P$ | 3.58 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 13 | 699 | (2.0− | 2.7−) | 2004 01 30 | 704 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 2004 01 13 | 699 | 0.5+ | 0.4+ | 2004 02 10 | 644 | 0.4+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2004 01 13 | 699 | 1.2− | 0.6+ | 2004 02 10 | 644 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2004 01 13 | 699 | 0.2+ | 0.0 | 2004 02 10 | 644 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.5+ | 0.0 |
| 2004 01 24 | 704 | 0.2− | 0.0 | 2006 07 22 | G96 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.8− |
| 2004 01 24 | 704 | 0.4− | 0.6+ | 2006 07 22 | G96 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2004 01 24 | 704 | 0.0 | 0.7− | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 2004 01 25 | 608 | 0.7+ | 0.8− | 2006 07 22 | G96 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.6+ |
| 2004 01 25 | 608 | 0.1− | 0.8− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.5− |
| 2004 01 25 | 608 | 0.9+ | 0.8− | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | (0.3− | 1.7−) |
| 2004 01 29 | 704 | 0.1− | 0.9+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.3− | 1.3− |
| 2004 01 29 | 704 | 1.1+ | 0.9− | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2004 01 29 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.6− |
| 2004 01 29 | 704 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.2− | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2004 01 29 | 704 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.6− | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.6− |
| 2004 01 30 | 704 | 0.2+ | 1.3+ | 2006 09 20 | 704 | 0.1− | 0.8− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2004 01 30 | 704 | 0.5− | 1.0+ | 2006 09 20 | 704 | (2.1+ | 2.0−) | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2004 01 30 | 704 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.9− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2004 01 30 | 704 | 0.8− | 0.4+ | 2006 09 27 | 704 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2004 01 30 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.8+ | | | | |
| 2004 01 30 | 704 | (0.6− | 2.0−) | 2006 09 27 | 704 | 0.7+ | 0.2+ | | | | |

**2004 BF$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.05027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28024196 | $\omega$ | 131.30878 | | +0.64783087 | −0.76142623 | |
| $a$ | 2.3126714 | $\Omega$ | 278.29739 | | +0.69168312 | +0.60078380 | |
| $e$ | 0.2055096 | $i$ | 1.35219 | | +0.31920155 | +0.24349318 | |
| $P$ | 3.52 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.1− | 0.2− | 2004 01 21 | 704 | 0.7− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 1992 10 03 | 691 | 0.1− | 0.1+ | 2004 01 21 | 704 | 0.2− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 1992 10 03 | 691 | 0.1− | 0.2+ | 2004 01 21 | 704 | 0.2− | 0.4+ | 2006 09 16 | 699 | 0.7+ | 0.9+ |
| 1999 10 06 | 704 | 0.2− | 0.6− | 2004 01 27 | 691 | 0.1− | 0.1− | 2006 09 16 | 699 | (0.3+ | 2.3−) |
| 1999 10 06 | 704 | 0.3+ | 0.1− | 2004 01 27 | 691 | 0.2− | 0.0 | 2006 09 16 | 699 | 1.2− | 0.1+ |
| 1999 10 06 | 704 | 0.3+ | 0.1+ | 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.1+ | 1.1− |
| 1999 10 06 | 704 | 1.0+ | 0.3+ | 2004 02 16 | 691 | 0.0 | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2004 01 15 | 691 | 0.1− | 0.3− | 2004 02 16 | 691 | 0.5+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2004 01 15 | 691 | 0.0 | 0.3− | 2004 02 16 | 691 | 0.4+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.0 |
| 2004 01 15 | 691 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.0 | | | | |

**2004 BJ$_{61}$ = 2006 SB$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.29345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27989696 | $\omega$ | 37.59005 | | −0.54435815 | −0.83651120 | |
| $a$ | 2.3145715 | $\Omega$ | 85.47287 | | +0.75358282 | −0.52045892 | |
| $e$ | 0.1023650 | $i$ | 3.60236 | | +0.36849307 | −0.17138121 | |
| $P$ | 3.52 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 291 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2003 12 14 | 291 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.2− | 0.9+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2003 12 14 | 291 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2004 01 17 | 644 | 0.1− | 0.0 | 2004 01 27 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2004 01 17 | 644 | 0.2− | 0.0 | 2004 01 27 | 691 | 0.2− | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2004 01 17 | 644 | 0.1− | 0.2+ | 2004 01 27 | 691 | 0.2− | 0.1+ | | | | |
| 2004 01 22 | 704 | 0.5+ | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.3− | | | | |

**2004 BM$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.78084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21951559 | $\omega$ | 255.80458 | | +0.99027796 | +0.00370322 | |
| $a$ | 2.7216095 | $\Omega$ | 103.84261 | | +0.04738409 | +0.93087973 | |
| $e$ | 0.1648093 | $i$ | 8.23380 | | −0.13078344 | +0.36530702 | |
| $P$ | 4.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 608 | 0.7+ | 0.1+ | 2002 09 17 | 608 | 0.6− | 0.8− | 2004 01 22 | 704 | 0.4+ | 0.1− |
| 2002 09 09 | 608 | 1.0+ | 0.7+ | 2002 10 01 | 608 | 0.1+ | 0.1+ | 2004 01 27 | 691 | 0.2− | 0.1+ |
| 2002 09 09 | 608 | 0.6+ | 0.2− | 2002 10 01 | 608 | 0.0 | 0.6+ | 2004 01 27 | 691 | 0.3− | 0.0 |
| 2002 09 09 | 644 | 1.0− | 0.1− | 2002 10 01 | 608 | 0.4− | 0.2− | 2004 01 27 | 691 | 0.0 | 0.1− |
| 2002 09 09 | 644 | 0.6− | 0.0 | 2004 01 22 | 704 | 0.1+ | 0.1+ | 2004 01 31 | 691 | 0.2+ | 0.1− |
| 2002 09 09 | 644 | 0.4− | 0.1+ | 2004 01 22 | 704 | 0.2+ | 0.1− | 2004 01 31 | 691 | 0.1+ | 0.1− |
| 2002 09 17 | 608 | 0.5+ | 0.2+ | 2004 01 22 | 704 | 0.3− | 0.3+ | 2004 01 31 | 691 | 0.1+ | 0.0 |
| 2002 09 17 | 608 | 0.0 | 0.6− | 2004 01 22 | 704 | 0.1− | 0.3+ | | | | |

**2004 BF$_{62}$ = 2006 QW$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.07174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22322604 | $\omega$ | 342.06689 | | +0.29963078 | +0.92856592 | |
| $a$ | 2.6913663 | $\Omega$ | 304.81895 | | −0.83939571 | +0.14744287 | |
| $e$ | 0.2155932 | $i$ | 15.47585 | | −0.45347131 | +0.34062579 | |
| $P$ | 4.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.1− | 0.4+ | 2005 04 10 | E12 | (1.5− | 1.9+) | 2006 09 28 | 703 | 0.2+ | 0.1+ |
| 2002 11 25 | 644 | 0.1+ | 0.2+ | 2005 04 10 | E12 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.4+ |
| 2002 11 25 | 644 | 0.3− | 0.4+ | 2006 08 30 | H06 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.7− | 0.6+ |
| 2004 01 15 | 691 | 0.1+ | 0.2+ | 2006 08 30 | H06 | 1.0+ | 0.5+ | 2006 10 18 | 106 | 0.1− | 0.5+ |
| 2004 01 15 | 691 | 0.4− | 0.1− | 2006 08 30 | H06 | 0.2− | 0.5+ | 2006 10 18 | 106 | 0.1+ | 0.2+ |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2006 08 31 | H06 | 0.1− | 0.1− | 2006 10 18 | 106 | 0.5+ | 0.1+ |
| 2004 01 22 | 704 | 0.1− | 1.5− | 2006 08 31 | H06 | 0.4− | 0.6+ | 2006 10 18 | 106 | 0.5+ | 0.2− |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2006 08 31 | H06 | 0.5− | 0.2− | 2006 10 20 | 703 | 0.2− | 0.4− |
| 2004 01 22 | 704 | 0.2− | 0.0 | 2006 09 15 | H06 | 0.0 | 0.4− | 2006 10 20 | 703 | 0.3− | 1.7− |
| 2004 01 22 | 704 | 0.2+ | 0.2+ | 2006 09 15 | H06 | 0.6+ | 0.3− | 2006 10 20 | 703 | 0.9− | 0.5− |
| 2004 01 22 | 704 | 0.2+ | 0.6+ | 2006 09 15 | H06 | 0.2+ | 0.5− | 2006 10 20 | 703 | 0.4− | 0.3− |
| 2004 01 27 | 691 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 10 26 | 703 | 0.8+ | 0.0 |
| 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 10 26 | 703 | 0.2+ | 0.3+ |
| 2004 01 27 | 691 | 0.2+ | 0.2− | 2006 09 16 | 703 | 0.7− | 0.7− | 2006 10 26 | 703 | 0.3+ | 0.3+ |
| 2005 04 10 | E12 | 0.1+ | 0.2+ | 2006 09 16 | 703 | (0.6+ | 2.1−) | 2006 10 26 | 703 | 0.8− | 0.1− |
| 2005 04 10 | E12 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 0.5+ | 0.9+ | | | | |

**2004 BO$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.66984 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26975878 | $\omega$ | 130.49421 | | −0.92416513 | −0.38174355 | |
| $a$ | 2.3722056 | $\Omega$ | 27.07250 | | +0.34065424 | −0.83996993 | |
| $e$ | 0.1255385 | $i$ | 1.73862 | | +0.17283951 | −0.38564541 | |
| $P$ | 3.65 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1− | 0.0 | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 09 28 | G98 | 0.7+ | 0.1− |
| 1995 10 15 | 691 | 0.1− | 0.3− | 2004 01 27 | 691 | 0.2+ | 0.1− | 2006 09 28 | G98 | 0.7+ | 0.5− |
| 1995 10 15 | 691 | 0.4+ | 0.1− | 2004 01 27 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 1999 12 14 | 691 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.4− |
| 1999 12 14 | 691 | 0.1− | 0.2+ | 2004 02 15 | 704 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 1999 12 14 | 691 | 0.0 | 0.2− | 2004 02 15 | 704 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2004 01 15 | 691 | 0.1− | 0.1− | 2004 02 15 | 704 | 0.0 | 0.4− | 2006 11 10 | 691 | 0.1− | 0.6+ | | |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.2− | | |
| 2004 01 22 | 704 | 0.4− | 0.5+ | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.2+ | | |
| 2004 01 22 | 704 | 0.5+ | 0.7+ | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.2+ | | |
| 2004 01 22 | 704 | 0.1− | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.4+ | 0.0 | | |
| 2004 01 22 | 704 | 0.4+ | 0.5− | 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.3− | | |
| 2004 01 22 | 704 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.3+ | 1.1− | | |
| 2004 01 26 | 699 | 0.2+ | 0.6− | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.3− | | |
| 2004 01 26 | 699 | 0.6− | 1.1− | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 11 20 | G96 | 1.1+ | 1.4− | | |
| 2004 01 26 | 699 | 0.3− | 0.3− | 2006 09 24 | 691 | 0.4− | 0.5+ | | | | | | |
| 2004 01 26 | 699 | (1.7− | 1.4+) | 2006 09 28 | G98 | 0.4− | 0.1+ | | | | | | |

**2004 BU$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 218.52174 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27086478 | $\omega$ | 92.21526 | −0.99911860 | −0.01308477 |
| $a$ | 2.3657437 | $\Omega$ | 87.03678 | −0.00393572 | −0.91678835 |
| $e$ | 0.1289113 | $i$ | 2.28891 | +0.04179153 | −0.39915901 |
| $P$ | 3.64 | $H$ | 17.1 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.1− | 0.4− | 2004 01 30 | 704 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.2− | | |
| 2004 01 22 | 704 | 0.1− | 0.2+ | 2004 02 15 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.6+ | | |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 0.7+ | 0.7− | 2006 10 29 | 691 | 0.4+ | 0.5+ | | |
| 2004 01 22 | 704 | 0.1− | 0.5+ | 2004 02 15 | 704 | 0.2+ | 0.6− | 2006 10 29 | 691 | 0.1+ | 0.0 | | |
| 2004 01 22 | 704 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 10 29 | 691 | 0.4+ | 0.0 | | |
| 2004 01 27 | 691 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2004 02 23 | 704 | (0.2+ | 2.2+) | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.1− | | |
| 2004 01 30 | 704 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.2− | | | | | | |
| 2004 01 30 | 704 | 0.2− | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.0 | | | | | | |

**2004 BK$_{65}$ = 2006 SE$_{362}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 178.80255 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.26460562 | $\omega$ | 135.40473 | −0.81606921 | +0.57465820 |
| $a$ | 2.4029054 | $\Omega$ | 79.76735 | −0.54621727 | −0.73200496 |
| $e$ | 0.1240989 | $i$ | 3.59091 | −0.18888551 | −0.36597361 |
| $P$ | 3.72 | $H$ | 16.3 | $G$ 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 01 27 | 691 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1− | | |
| 2004 01 17 | 644 | 0.6+ | 0.2+ | 2004 02 11 | 699 | 0.2− | 0.9− | 2006 10 02 | G96 | 0.1+ | 0.2+ | | |
| 2004 01 17 | 644 | 0.1+ | 0.1− | 2004 02 11 | 699 | 0.2− | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.2− | | |
| 2004 01 22 | 704 | 0.7+ | 0.4− | 2004 02 11 | 699 | 0.8− | 1.3− | 2006 10 02 | G96 | 0.1− | 0.3− | | |
| 2004 01 22 | 704 | 0.1+ | 0.4+ | 2004 02 11 | 699 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.5+ | 0.3− | | |
| 2004 01 22 | 704 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.1+ | | |
| 2004 01 22 | 704 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.2+ | | |
| 2004 01 27 | 691 | 0.4− | 0.2+ | 2006 09 30 | G96 | 0.8− | 0.3− | 2006 10 03 | G96 | 0.1− | 0.1+ | | |
| 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.2− | | | | | | |

**2004 BJ$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 60.15608 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.29630688 | $\omega$ | 234.97687 | +0.95079318 | +0.29343185 |
| $a$ | 2.2283063 | $\Omega$ | 107.78040 | −0.23919481 | +0.89921061 |
| $e$ | 0.0639391 | $i$ | 5.99475 | −0.19692172 | +0.32452740 |
| $P$ | 3.33 | $H$ | 17.0 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 05 | 691 | 1.6+ | 1.3+ | 2002 08 29 | 644 | 0.6+ | 0.5+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | | |
| 1994 01 05 | 691 | 0.1+ | 0.0 | 2002 08 29 | 644 | 0.5+ | 0.4+ | 2005 06 17 | G96 | 0.2− | 0.4+ | | |
| 1994 01 05 | 691 | 1.8− | 0.7− | 2002 08 29 | 644 | 0.6+ | 0.3+ | 2005 06 17 | G96 | 0.0 | 0.3+ | | |
| 2002 07 18 | 644 | 0.6− | 0.3+ | 2003 12 28 | 691 | 0.3− | 0.3+ | 2005 06 17 | G96 | 0.3+ | 0.5+ | | |
| 2002 07 18 | 644 | 0.6− | 0.1+ | 2003 12 28 | 691 | 0.0 | 0.3+ | 2005 06 17 | G96 | 0.0 | 0.5+ | | |
| 2002 07 18 | 644 | 0.3− | 0.0 | 2003 12 28 | 691 | 0.2+ | 0.6+ | 2005 07 05 | G96 | 0.2− | 0.1+ | | |
| 2002 08 11 | 644 | 0.1+ | 0.8+ | 2004 01 22 | 704 | 0.4+ | 1.0− | 2005 07 05 | G96 | 0.1+ | 0.0 | | |
| 2002 08 11 | 644 | 0.2+ | 1.0+ | 2004 01 22 | 704 | 0.2+ | 0.7− | 2005 07 05 | G96 | 0.6− | 0.6+ | | |
| 2002 08 11 | 644 | 0.0 | 0.7+ | 2004 01 22 | 704 | 0.1+ | 0.2− | 2005 07 05 | G96 | 0.8+ | 0.4+ | | |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2004 01 22 | 704 | 0.8+ | 0.3− | 2006 11 12 | D35 | 0.3− | 0.2− | | |
| 2002 08 18 | 644 | 0.5− | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 11 12 | D35 | 0.3− | 0.1+ | | |
| 2002 08 18 | 644 | 0.0 | 0.1+ | 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 11 12 | D35 | 0.1− | 0.1− | | |

**2004 BH$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 196.93299 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.22915488 | $\omega$ | 235.65236 | −0.97380520 | −0.08382879 |
| $a$ | 2.6447419 | $\Omega$ | 298.69988 | +0.18014997 | −0.85162155 |
| $e$ | 0.2120873 | $i$ | 13.94388 | −0.13874226 | −0.51741035 |
| $P$ | 4.30 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 699 | 0.7+ | 0.1− | 2004 01 28 | 608 | 0.0 | 0.6− | 2004 02 18 | 704 | 0.2+ | 0.2− | | |
| 2000 05 07 | 699 | 0.0 | 0.7+ | 2004 01 29 | 704 | 0.4+ | 0.1− | 2004 02 18 | 704 | 0.1− | 0.4− | | |
| 2000 05 07 | 699 | 0.4− | 0.2− | 2004 01 29 | 699 | 0.2− | 0.3+ | 2004 02 18 | 704 | 0.6+ | 0.2+ | | |
| 2000 05 07 | 699 | 0.5− | 0.6− | 2004 01 29 | 704 | 0.4+ | 0.2+ | 2004 02 18 | 704 | 0.3+ | 0.0 | | |
| 2001 08 17 | 644 | 0.3+ | 0.6+ | 2004 01 29 | 699 | 0.0 | 0.6− | 2004 02 18 | 608 | 0.0 | 0.3− | | |
| 2001 08 17 | 644 | 0.4− | 0.9+ | 2004 01 29 | 704 | 0.1+ | 0.2+ | 2004 02 18 | 608 | 0.1+ | 0.4− | | |
| 2001 08 17 | 644 | 0.7− | 0.1+ | 2004 01 29 | 699 | 0.2+ | 0.2+ | 2004 02 18 | 608 | 0.0 | 0.5− | | |
| 2003 12 01 | 704 | 0.2+ | 1.1− | 2004 01 29 | 704 | 0.4+ | 0.4+ | 2004 03 15 | 703 | 0.3− | 0.5+ | | |
| 2003 12 01 | 704 | 1.0+ | 1.2+ | 2004 01 29 | 704 | 0.2+ | 0.3− | 2004 03 15 | 703 | 0.5− | 0.2+ | | |
| 2003 12 01 | 704 | 0.2− | 1.7+ | 2004 01 29 | 699 | 0.2+ | 0.1− | 2004 03 15 | 703 | 0.2− | 0.4+ | | |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2004 02 03 | 608 | 1.7+ | 0.8+ | 2004 03 15 | 703 | 0.3+ | 0.4+ | | |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2004 02 03 | 608 | 1.5+ | 1.0+ | 2004 04 16 | 704 | 0.4+ | 1.0+ | | |
| 2003 12 25 | 645 | 0.2− | 0.0 | 2004 02 03 | 608 | 1.8+ | 0.8+ | 2004 04 16 | 704 | 0.2+ | 0.4− | | |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2004 02 13 | 699 | 0.4− | 0.2+ | 2004 04 16 | 704 | 0.8+ | 0.6+ | | |
| 2004 01 23 | 704 | 1.3+ | 0.5− | 2004 02 13 | 699 | 0.1− | 0.1+ | 2004 04 25 | 703 | 1.0+ | 1.0+ | | |
| 2004 01 23 | 704 | 0.6+ | 0.3− | 2004 02 13 | 699 | 0.5+ | 0.3− | 2004 04 25 | 703 | 2.1− | 0.6+ | | |
| 2004 01 23 | 704 | 0.7+ | 0.2− | 2004 02 13 | 699 | 0.5− | 0.1+ | 2004 04 25 | 703 | 0.9− | 0.7− | | |
| 2004 01 23 | 704 | 1.0+ | 0.2− | 2004 02 13 | 333 | 0.1− | 0.0 | 2004 04 25 | 703 | 1.1− | 1.6− | | |
| 2004 01 23 | 704 | 0.9+ | 0.4+ | 2004 02 13 | 333 | 0.7− | 0.2+ | 2005 07 07 | 691 | 0.1+ | 0.1+ | | |
| 2004 01 28 | 608 | 0.0 | 0.7− | 2004 02 13 | 333 | 0.7− | 0.1− | 2005 07 07 | 691 | 0.1− | 0.1− | | |
| 2004 01 28 | 608 | 0.1+ | 0.8− | 2004 02 18 | 704 | 0.1+ | 0.4− | 2005 07 07 | 691 | 0.0 | 0.1+ | | |

**2004 BX$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 284.59385 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27299289 | $\omega$ | 183.19077 | −0.21580189 | −0.97392639 |
| $a$ | 2.3534330 | $\Omega$ | 279.27992 | +0.89742617 | −0.16958830 |
| $e$ | 0.1857257 | $i$ | 4.06603 | +0.38478022 | −0.15068908 |
| $P$ | 3.61 | $H$ | 17.1 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 01 30 | 691 | 0.1− | 0.0 | 2004 03 10 | 644 | 0.3+ | 0.5+ | | |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 01 30 | 704 | 0.1− | 0.2+ | 2004 03 10 | 644 | 0.6+ | 0.3+ | | |
| 2004 01 21 | 704 | (0.5+ | 1.5+) | 2004 01 30 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 691 | 0.4+ | 0.3+ | | |
| 2004 01 21 | 704 | 0.7+ | 0.3+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.1− | | |
| 2004 01 21 | 704 | 0.2+ | 0.1− | 2004 01 30 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.8− | 0.4+ | | |
| 2004 01 21 | 704 | 0.3+ | 0.2− | 2004 02 11 | 703 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.3+ | | |
| 2004 01 26 | 699 | 0.1+ | 0.0 | 2004 02 11 | 703 | 0.4− | 0.1− | 2006 09 19 | 699 | (2.2+ | 0.6+) | | |
| 2004 01 26 | 699 | 0.1+ | 0.4+ | 2004 02 11 | 699 | 0.2+ | 0.3− | 2006 09 19 | 699 | (0.9− | 2.0+) | | |
| 2004 01 26 | 699 | 0.7+ | 0.5+ | 2004 02 11 | 703 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 0.5− | 0.5− | | |
| 2004 01 26 | 699 | 0.3− | 1.2+ | 2004 02 11 | 699 | 0.5− | 0.3− | 2006 09 26 | 691 | 0.4+ | 0.0 | | |
| 2004 01 29 | 704 | 0.4− | 0.8− | 2004 02 11 | 703 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.1+ | | |
| 2004 01 29 | 704 | 0.1+ | 0.6− | 2004 02 11 | 699 | 0.3+ | 0.6+ | 2006 09 26 | 691 | 0.4− | 0.8+ | | |
| 2004 01 29 | 704 | 1.0+ | 0.7− | 2004 02 11 | 699 | 0.4− | 1.1+ | 2006 09 30 | 691 | 0.1− | 0.1− | | |
| 2004 01 29 | 704 | 0.3− | 0.6+ | 2004 02 17 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.2− | | |
| 2004 01 29 | 704 | (1.0+ | 2.0−) | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.1− | | |
| 2004 01 29 | 704 | 0.3− | 0.9− | 2004 02 17 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.5+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 0.6+ | 0.2+ | 2004 02 17 | 704 | 0.1− | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2004 01 29 | 704 | 0.3− | 0.7− | 2004 02 17 | 704 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2004 01 29 | 704 | 0.7+ | 0.3− | 2004 02 22 | 704 | 0.6+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2004 01 30 | 704 | 0.2+ | 0.7− | 2004 02 22 | 704 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2004 01 30 | 704 | 0.1+ | 1.2+ | 2004 02 22 | 704 | 0.9+ | 0.7+ | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2004 01 30 | 704 | 0.1− | 0.4− | 2004 03 10 | 644 | 0.5+ | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.8− |

**2004 BM$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.90884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17614250 | $\omega$ | 313.70367 | | +0.60504141 | | −0.78914489 |
| $a$ | 3.1518094 | $\Omega$ | 98.76895 | | +0.75779903 | | +0.53003247 |
| $e$ | 0.1653321 | $i$ | 6.14029 | | +0.24426525 | | +0.31034806 |
| $P$ | 5.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 1.7+ | 0.4+ | 2002 10 15 | 644 | 0.2+ | 0.4+ | 2004 01 30 | 691 | 0.4− | 0.2+ |
| 2000 04 28 | 691 | 0.0 | 1.0+ | 2002 10 15 | 644 | 0.1− | 0.7+ | 2004 01 30 | 691 | 0.7− | 0.1+ |
| 2000 04 28 | 691 | 1.5− | 0.7− | 2004 01 22 | 704 | 0.3− | 0.8+ | 2004 01 30 | 691 | 0.6− | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.8− | 1.4+ | 2004 02 17 | 691 | 0.2+ | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.5− | 1.3+ | 2004 02 17 | 691 | 0.5+ | 0.1− |
| 2002 10 07 | 644 | 0.6− | 0.2+ | 2004 01 26 | 699 | 2.0− | 1.4− | 2004 02 17 | 691 | 0.5+ | 0.1+ |
| 2002 10 07 | 644 | 0.3− | 0.4+ | 2004 01 26 | 699 | 0.9− | 1.3+ | 2004 02 17 | 645 | 0.2+ | 0.1− |
| 2002 10 07 | 644 | 0.2− | 0.4+ | 2004 01 26 | 699 | 0.6− | 0.6− | 2004 02 17 | 645 | 0.2+ | 0.1− |
| 2002 10 15 | 644 | 0.0 | 0.6+ | 2004 01 26 | 699 | 0.8− | 0.1+ | | | | |

**2004 BO$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.43522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26520097 | $\omega$ | 135.14014 | | −0.59721352 | | −0.80204540 |
| $a$ | 2.3993079 | $\Omega$ | 351.52033 | | +0.72048238 | | −0.53221617 |
| $e$ | 0.1423183 | $i$ | 2.99063 | | +0.35247858 | | −0.27105188 |
| $P$ | 3.72 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 291 | 0.2− | 0.7+ | 2004 01 30 | 704 | 0.5− | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.1− |
| 2002 08 29 | 291 | 0.5− | 0.4+ | 2004 01 30 | 704 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3− |
| 2002 08 29 | 291 | 0.0 | 0.5+ | 2004 02 10 | 703 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2004 02 10 | 703 | 0.3− | 0.3− | 2006 09 21 | 621 | 0.4− | 0.9+ |
| 2004 01 22 | 704 | 0.5+ | 0.5+ | 2004 02 10 | 703 | 0.1− | 0.8+ | 2006 09 21 | 621 | 0.1− | 0.0 |
| 2004 01 22 | 704 | 0.6+ | 0.1+ | 2004 02 10 | 703 | (1.5+ | 1.2+) | 2006 09 21 | 621 | 0.2− | 0.4− |
| 2004 01 22 | 704 | 0.5+ | 0.2+ | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 09 21 | 621 | 0.1+ | 0.2+ |
| 2004 01 22 | 704 | 1.5+ | 0.3+ | 2004 02 11 | 691 | 0.3+ | 0.0 | 2006 09 21 | 621 | 0.6+ | 0.1+ |
| 2004 01 26 | 699 | 0.6+ | 1.0− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 22 | 621 | 1.2+ | 0.5+ |
| 2004 01 26 | 699 | 0.6− | 0.4− | 2004 02 13 | 291 | 0.2− | 0.1− | 2006 10 16 | 621 | 0.3+ | 0.3+ |
| 2004 01 26 | 699 | 0.6− | 0.8− | 2004 02 13 | 291 | 0.4− | 0.0 | 2006 10 16 | 621 | 0.2+ | 0.0 |
| 2004 01 26 | 699 | 0.0 | 0.2− | 2004 02 13 | 291 | 0.7− | 0.4− | 2006 10 19 | G96 | 0.5+ | 0.1− |
| 2004 01 28 | 691 | 0.2+ | 0.0 | 2004 02 16 | 704 | 0.4− | 1.2− | 2006 10 19 | G96 | 0.7+ | 0.4− |
| 2004 01 28 | 691 | 0.4+ | 0.0 | 2004 02 16 | 704 | 0.8+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2004 01 28 | 691 | 0.3+ | 0.0 | 2004 02 16 | 704 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2004 01 30 | 704 | (1.6− | 0.7+) | 2004 02 23 | 704 | 0.6− | 0.7+ | 2006 10 31 | G96 | 0.5− | 0.2+ |
| 2004 01 30 | 704 | 0.5+ | 0.1− | 2004 02 23 | 704 | 0.6− | 0.8+ | 2006 10 31 | G96 | 0.4− | 0.2+ |
| 2004 01 30 | 704 | 0.4+ | 0.5+ | 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 1.4− | 0.6− |
| 2004 01 30 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.6− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2004 01 30 | 704 | 0.1− | 0.5+ | 2004 02 23 | 704 | 0.1− | 1.0+ | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2004 01 30 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2004 01 30 | 704 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.5− |
| 2004 01 30 | 704 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.4− |

**2004 BS$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.95548 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25797629 | $\omega$ | 6.43905 | | −0.56391428 | | −0.81820846 |
| $a$ | 2.4438967 | $\Omega$ | 117.94333 | | +0.75192133 | | −0.56476495 |
| $e$ | 0.0486021 | $i$ | 7.28118 | | +0.34148940 | | −0.10758936 |
| $P$ | 3.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.0 | 0.1− | 2004 01 30 | 704 | 0.8+ | 0.4+ | 2004 04 13 | 291 | 0.3+ | 0.1+ |
| 2000 02 04 | 691 | 0.0 | 0.3− | 2004 01 30 | 704 | 0.4+ | 0.1− | 2004 04 15 | 645 | 0.0 | 0.2− |
| 2000 02 04 | 691 | 0.1+ | 0.3− | 2004 01 30 | 704 | 0.8+ | 0.9+ | 2004 04 15 | 645 | 0.0 | 0.2− |
| 2001 05 26 | 691 | 0.2+ | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2004 04 16 | 645 | 0.0 | 0.2− |
| 2001 05 26 | 691 | 0.1+ | 0.4+ | 2004 02 11 | 691 | 0.4+ | 0.5+ | 2004 04 16 | 645 | 0.0 | 0.2− |
| 2001 05 26 | 691 | 0.0 | 0.4+ | 2004 02 11 | 691 | 0.1− | 0.1+ | 2004 04 17 | 291 | 0.1+ | 0.2+ |
| 2003 12 22 | 291 | 0.7− | 0.3+ | 2004 02 13 | 291 | 0.1+ | 0.1− | 2004 04 17 | 291 | 0.3− | 0.1+ |
| 2003 12 22 | 291 | 0.7− | 0.4+ | 2004 02 13 | 699 | 0.7− | 0.1− | 2004 04 17 | 291 | 0.2− | 0.4+ |
| 2003 12 22 | 291 | 0.8− | 0.3+ | 2004 02 13 | 699 | 0.3+ | 0.0 | 2006 10 13 | F84 | 0.1+ | 0.5− |
| 2004 01 22 | 704 | 0.1− | 0.6+ | 2004 02 13 | 291 | 0.3+ | 0.2+ | 2006 10 13 | F84 | 0.5+ | 0.3+ |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2004 02 13 | 699 | 0.2+ | 0.7− | 2006 10 16 | 703 | (1.7− | 1.5−) |
| 2004 01 22 | 704 | 0.3− | 0.8+ | 2004 02 13 | 291 | 0.8+ | 0.2− | 2006 10 16 | 703 | 0.1− | 1.1− |
| 2004 01 22 | 704 | 0.1+ | 0.5+ | 2004 02 13 | 699 | 0.8− | 0.1+ | 2006 10 16 | 703 | (2.2+ | 1.1+) |
| 2004 01 22 | 704 | 0.2+ | 0.4+ | 2004 02 16 | 704 | 0.6− | 1.0− | 2006 10 16 | 703 | 0.3− | 0.9+ |
| 2004 01 26 | 699 | 0.3+ | 1.4+ | 2004 02 16 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2004 01 26 | 699 | 0.8− | 0.3+ | 2004 02 16 | 704 | 0.6+ | 0.5− | 2006 10 22 | 703 | 0.7− | 0.6− |
| 2004 01 26 | 699 | 0.0 | 0.5− | 2004 02 16 | 704 | 0.7+ | 0.3− | 2006 10 22 | 703 | 0.4+ | 1.0+ |
| 2004 01 26 | 699 | 0.3− | 0.2− | 2004 02 23 | 704 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.8+ |
| 2004 01 27 | 704 | (2.2− | 0.6−) | 2004 02 23 | 704 | 0.0 | 0.6+ | 2006 10 28 | 703 | 1.3− | 0.3+ |
| 2004 01 27 | 704 | 0.4− | 0.6− | 2004 02 23 | 704 | 1.0+ | 0.6+ | 2006 10 28 | 703 | 0.7+ | 1.2+ |
| 2004 01 27 | 704 | 0.9+ | 0.8+ | 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 0.8+ | 0.4+ |
| 2004 01 30 | 704 | 1.0− | 0.1+ | 2004 04 13 | 291 | 0.2+ | 0.0 | 2006 10 28 | 703 | 1.0− | 0.2− |
| 2004 01 30 | 704 | 0.5+ | 0.5+ | 2004 04 13 | 291 | 0.2+ | 0.3+ | | | | |

**2004 BX$_{70}$ = 2006 UE$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.13741 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28794756 | $\omega$ | 315.95615 | | +0.26605154 | | −0.95808795 |
| $a$ | 2.2712265 | $\Omega$ | 118.34836 | | +0.91443615 | | +0.21597951 |
| $e$ | 0.1270308 | $i$ | 6.93258 | | +0.30499690 | | +0.18820291 |
| $P$ | 3.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.2+ | 0.7+ | 2004 02 11 | 691 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.2− | 0.0 |
| 2004 01 22 | 704 | 0.3− | 0.2− | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.5+ | 0.3+ |
| 2004 01 22 | 704 | 1.0− | 0.6+ | 2004 02 16 | 704 | 0.5+ | 0.2− | 2006 11 13 | 703 | 1.1+ | 0.8+ |
| 2004 01 22 | 704 | 0.5− | 0.2− | 2004 02 16 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 703 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.8+ |
| 2004 01 26 | 699 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 13 | 703 | 0.3+ | 0.1+ |
| 2004 01 26 | 699 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 11 13 | 703 | 0.4+ | 0.4+ |
| 2004 01 26 | 699 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.8+ | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2004 01 26 | 699 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.2− |
| 2004 01 30 | 704 | (1.7+ | 0.6−) | 2006 10 22 | 703 | 0.5− | 0.3+ | 2006 11 13 | 644 | 0.3− | 0.7+ |
| 2004 01 30 | 704 | 0.3+ | 0.5− | 2006 10 22 | 703 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.7− | 0.0 |
| 2004 01 30 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.3− | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2004 01 30 | 704 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.9+ | 0.1− | 2006 11 19 | 703 | 0.5− | 1.1+ |
| 2004 01 30 | 704 | 0.3+ | 0.1+ | 2006 11 01 | 703 | 0.3− | 0.5− | 2006 11 19 | 703 | 0.1− | 0.7− |
| 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 11 01 | 703 | 0.2− | 0.9− | 2006 11 20 | 704 | 1.4+ | 1.6+ |
| 2004 02 10 | 644 | 0.3+ | 0.5+ | 2006 11 01 | 703 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.7− | 0.3− |
| 2004 02 10 | 644 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.6− | 0.7− | 2006 11 20 | 704 | 0.7− | 1.1− |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.4+ | 0.1− | | | | |

**2004 BU$_{71}$ = 2006 SR$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.74912 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27698798 | $\omega$ | 300.46747 | | −0.71102290 | | −0.70283628 |
| $a$ | 2.3307486 | $\Omega$ | 194.91468 | | +0.67051965 | | −0.66842645 |
| $e$ | 0.1661013 | $i$ | 4.81946 | | +0.21177780 | | −0.24336650 |
| $P$ | 3.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 0.2+ | 0.0 | 2004 01 29 | 704 | 1.2− | 0.4− | 2006 09 25 | G96 | 0.4− | 0.0 |
| 2004 01 23 | 704 | 0.7+ | 0.8+ | 2004 01 29 | 704 | 0.2− | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2004 01 23 | 704 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 2004 01 23 | 704 | 0.7− | 0.2+ | 2006 09 18 | 691 | 0.6+ | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.3− |
| 2004 01 23 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 691 | 0.5+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2004 01 26 | 699 | 0.5+ | 0.4− | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.5+ |
| 2004 01 26 | 699 | 1.0− | 1.0− | 2006 09 24 | 691 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.4− |
| 2004 01 26 | 699 | 0.1− | 0.4− | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 29 | G96 | 0.1− | 0.3− |
| 2004 01 26 | 699 | 0.6+ | 1.0− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 29 | G96 | 0.2− | 0.5− |
| 2004 01 29 | 704 | 0.8+ | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 10 29 | G96 | 0.4+ | 0.0 |
| 2004 01 29 | 704 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 29 | G96 | 0.4+ | 0.5− |

**2004 BF$_{72}$ = 2006 WS$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.58300 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26460233 | $\omega$ | 68.57709 | | −0.59147583 | | +0.80567773 |
| $a$ | 2.4029253 | $\Omega$ | 165.02736 | | −0.77828208 | | −0.55999559 |
| $e$ | 0.0672171 | $i$ | 7.16965 | | −0.21079219 | | −0.19310191 |
| $P$ | 3.72 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 1.1− | 0.1− | 2004 01 29 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 703 | 0.0 | 0.5+ |
| 2004 01 23 | 704 | 1.5+ | 0.4− | 2004 01 29 | 704 | 1.1+ | 0.6− | 2006 11 19 | 703 | 0.7− | 0.7− |
| 2004 01 23 | 704 | 0.2+ | 0.6+ | 2004 01 29 | 704 | 0.1+ | 0.4− | 2006 11 19 | 703 | 0.4− | 0.5+ |
| 2004 01 23 | 704 | 0.1+ | 0.2− | 2004 01 29 | 704 | 2.0+ | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2004 01 26 | 699 | 0.2− | 0.4− | 2004 02 17 | 704 | 0.4− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2004 01 26 | 699 | 0.9− | 0.1+ | 2004 02 17 | 704 | 1.0− | 0.1− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2004 01 26 | 699 | 1.3− | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2004 01 26 | 699 | 0.5− | 0.3− | 2006 11 19 | 703 | 0.9+ | 0.8+ | | | | |

**2004 BO$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.81999 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28296981 | $\omega$ | 207.09430 | | −0.76878794 | | −0.63682885 |
| $a$ | 2.2977846 | $\Omega$ | 293.22681 | | +0.59765085 | | −0.68295775 |
| $e$ | 0.1502914 | $i$ | 3.64555 | | +0.22754904 | | −0.35779565 |
| $P$ | 3.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 15 | 566 | 0.6− | 0.5− | 2004 02 04 | A16 | 0.3+ | 1.3+ | 2004 02 17 | 704 | 0.1− | 0.7+ |
| 1997 01 15 | 566 | 0.9+ | 0.1+ | 2004 02 04 | A16 | (0.5− | 2.1+) | 2004 03 10 | 644 | 0.2+ | 0.7+ |
| 1997 01 15 | 566 | 0.6− | 0.2− | 2004 02 09 | A16 | 0.9+ | 1.4− | 2004 03 10 | 644 | 0.0 | 0.5+ |
| 2003 12 19 | 291 | 0.3− | 0.5− | 2004 02 09 | A16 | (2.0− | 1.1−) | 2004 03 10 | 644 | 0.0 | 0.4+ |
| 2003 12 19 | 291 | 0.5− | 0.3− | 2004 02 09 | A16 | (1.9− | 0.9−) | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2003 12 19 | 291 | 0.7− | 0.4− | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.6+ |
| 2004 01 13 | 699 | 0.5− | 0.2− | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.3+ |
| 2004 01 13 | 699 | 0.5− | 0.0 | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.4+ | 0.0 |
| 2004 01 13 | 699 | 0.6− | 1.2− | 2004 02 11 | 699 | 1.0− | 0.6− | 2006 10 13 | 691 | 0.2− | 0.1− |
| 2004 01 13 | 699 | 0.3+ | 0.6− | 2004 02 11 | 644 | 0.5+ | 0.1+ | 2006 10 13 | 691 | 0.5− | 0.1+ |
| 2004 01 24 | 704 | 0.6+ | 0.1− | 2004 02 11 | 699 | 0.3− | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.2+ |
| 2004 01 24 | 704 | 0.1+ | 0.0 | 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2004 01 24 | 704 | 0.8+ | 0.5− | 2004 02 11 | 699 | 0.4+ | 0.3− | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2004 01 24 | 704 | 0.1+ | 0.7+ | 2004 02 11 | 644 | 0.6+ | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 0.6+ | 0.1− | 2004 02 11 | 699 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2004 01 26 | 699 | 0.7+ | 0.4+ | 2004 02 12 | A16 | (1.9+ | 2.3−) | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2004 01 26 | 699 | 0.4+ | 0.1− | 2004 02 12 | A16 | (3.7+ | 2.3−) | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2004 01 26 | 699 | 0.4− | 0.2+ | 2004 02 17 | 644 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2004 01 26 | 699 | 0.1− | 0.3− | 2004 02 17 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 1.2− | 0.9+ |
| 2004 01 30 | 704 | 0.4− | 0.2+ | 2004 02 17 | 704 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 1.1+ | 0.9− |
| 2004 01 30 | 704 | 0.1+ | 0.1− | 2004 02 17 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.7+ | 1.5+ |
| 2004 01 30 | 704 | 0.2+ | 0.3− | 2004 02 17 | 704 | (0.8+ | 1.6+) | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2004 01 30 | 704 | 0.1− | 0.2+ | 2004 02 17 | 704 | 0.7+ | 1.0+ | | | | |

**2004 BX$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.40119 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19231060 | $\omega$ | 287.70013 | | +0.30435623 | | −0.94952527 |
| $a$ | 2.9725824 | $\Omega$ | 144.29577 | | +0.91583921 | | +0.26976671 |
| $e$ | 0.2453012 | $i$ | 7.47812 | | +0.26192713 | | +0.16008649 |
| $P$ | 5.13 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 23 | 691 | 0.6+ | 0.2− | 2004 01 13 | 644 | 0.2+ | 0.4+ | 2004 01 30 | 704 | 0.3+ | 1.6+ |
| 1992 09 23 | 691 | 0.1+ | 0.3− | 2004 01 13 | 644 | 0.2+ | 0.3+ | 2004 01 30 | 704 | 0.7+ | 0.9+ |
| 1992 09 23 | 691 | 0.0 | 0.7− | 2004 01 24 | 704 | 1.2+ | 1.0+ | 2004 02 14 | 691 | 0.2− | 0.2+ |
| 1999 02 12 | 691 | 0.2− | 0.6− | 2004 01 24 | 704 | 1.2+ | 1.0+ | 2004 02 14 | 691 | 0.1− | 0.4+ |
| 1999 02 12 | 691 | 0.5− | 0.6− | 2004 01 24 | 704 | (2.1+ | 1.5+) | 2004 02 14 | 691 | 0.3− | 0.2+ |
| 1999 02 12 | 691 | 0.3− | 0.6− | 2004 01 26 | 699 | 0.3+ | 1.4− | 2004 04 16 | 645 | 0.0 | 0.0 |
| 2002 08 30 | 644 | 0.9− | 1.0+ | 2004 01 26 | 699 | 0.3− | 0.3− | 2004 04 16 | 645 | 0.1+ | 0.1− |
| 2002 08 30 | 644 | 0.7− | 0.8+ | 2004 01 26 | 699 | 0.2− | 1.2+ | 2005 04 07 | 691 | 0.1+ | 0.0 |
| 2002 08 30 | 644 | 0.7− | 0.6+ | 2004 01 26 | 699 | 0.2+ | 0.2− | 2005 04 07 | 691 | 0.1+ | 0.0 |
| 2004 01 13 | 644 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.1+ | 1.5+ | 2005 04 07 | 691 | 0.1+ | 0.2− |

**2004 BU$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.79700 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23789826 | $\omega$ | 171.35361 | | +0.52296374 | | −0.84997669 |
| $a$ | 2.5795376 | $\Omega$ | 247.09289 | | +0.77783157 | | +0.50643451 |
| $e$ | 0.2247699 | $i$ | 3.96091 | | +0.34854981 | | +0.14513345 |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.1− | 0.4+ | 2004 01 25 | 608 | 0.7+ | 0.5+ | 2004 02 17 | 704 | 0.0 | 0.1+ |
| 2002 08 07 | 644 | 0.4+ | 0.6+ | 2004 01 25 | 608 | 0.0 | 0.4+ | 2004 02 23 | 704 | 0.0 | 0.3+ |
| 2002 08 07 | 644 | 0.8− | 0.5+ | 2004 01 26 | 699 | 0.3+ | 0.1+ | 2004 02 23 | 704 | 1.5− | 0.8+ |
| 2003 10 24 | 691 | 0.4+ | 0.1− | 2004 01 26 | 699 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.1− | 0.1+ |
| 2003 10 24 | 691 | 0.3− | 0.1− | 2004 01 26 | 699 | 0.8− | 0.5+ | 2004 02 23 | 704 | 1.0− | 0.5+ |
| 2003 10 24 | 691 | 0.4− | 0.0 | 2004 01 26 | 699 | 0.6− | 0.6− | 2004 02 23 | 704 | 0.2− | 0.2+ |
| 2003 12 23 | 704 | 0.2− | 0.4− | 2004 01 29 | 704 | 0.1+ | 0.4− | 2004 02 23 | 704 | 1.0+ | 0.7− |
| 2003 12 23 | 704 | 0.1+ | 0.7+ | 2004 01 29 | 704 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.0 | 0.2+ |
| 2003 12 23 | 704 | 0.5− | 0.4− | 2004 01 29 | 704 | 1.1+ | 0.3− | 2004 02 23 | 704 | 0.8− | 0.0 |
| 2004 01 13 | 699 | 0.3− | 0.0 | 2004 01 29 | 704 | 0.4− | 0.5+ | 2004 02 23 | 704 | 0.9− | 0.6+ |
| 2004 01 13 | 699 | 0.0 | 0.2+ | 2004 01 29 | 704 | 0.5+ | 0.4+ | 2005 05 16 | G96 | 0.1− | 0.2− |
| 2004 01 13 | 699 | 1.6+ | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.4− | 2005 05 16 | G96 | 0.3+ | 0.1− |
| 2004 01 13 | 699 | 0.5+ | 0.4+ | 2004 02 17 | 704 | 0.7+ | 1.9− | 2005 05 16 | G96 | 0.0 | 0.2+ |
| 2004 01 25 | 608 | 0.7+ | 0.3+ | 2004 02 17 | 704 | 0.0 | 0.0 | 2005 05 16 | G96 | 0.3− | 0.2− |

**2004 BV$_{74}$ = 2006 VP$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.48030 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30052189 | $\omega$ | 214.06292 | | +0.63437769 | | −0.77290473 |
| $a$ | 2.2074217 | $\Omega$ | 196.57658 | | +0.71938659 | | +0.59667947 |
| $e$ | 0.1702794 | $i$ | 2.71949 | | +0.28292736 | | +0.21585154 |
| $P$ | 3.28 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 02 | 327 | 0.6+ | 0.2+ | 2004 02 11 | 703 | 1.0− | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.4− |
| 1996 12 02 | 327 | 0.0 | 0.2+ | 2004 02 11 | 703 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.4− |
| 1996 12 02 | 327 | 0.6− | 0.6− | 2004 02 11 | 703 | 0.6− | 1.0+ | 2006 11 17 | 704 | 0.0 | 0.1+ |
| 2001 04 16 | 645 | 0.0 | 0.1− | 2004 02 11 | 703 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.5− |
| 2001 04 16 | 645 | 0.1− | 0.2− | 2004 02 17 | 704 | 1.1+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 25 | 608 | 0.5− | 0.7− | 2004 02 17 | 704 | (2.3+ | 1.5+) | 2006 11 17 | 704 | 0.6+ | 0.1+ | | |
| 2004 01 25 | 608 | 0.1+ | 1.0− | 2004 02 17 | 704 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.2− | | |
| 2004 01 25 | 608 | 0.5− | 0.0 | 2004 02 17 | 704 | 0.8+ | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.1− | | |
| 2004 01 26 | 699 | 0.6− | 0.8+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2004 01 26 | 699 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.0 | 0.2− | | |
| 2004 01 26 | 699 | 0.1− | 1.0− | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.3− | | |
| 2004 01 26 | 699 | (2.7+ | 1.4−) | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.6+ | | |
| 2004 01 29 | 704 | 0.4+ | 0.1+ | 2006 11 02 | 703 | 0.5+ | 0.3+ | 2006 11 20 | 704 | 0.0 | 0.1+ | | |
| 2004 01 29 | 704 | (2.2+ | 0.8+) | 2006 11 02 | 703 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.1+ | | |
| 2004 01 29 | 704 | 0.5+ | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.3+ | 2006 11 24 | 691 | 0.7+ | 0.2+ | | |
| 2004 01 29 | 704 | 0.9+ | 0.8+ | 2006 11 02 | 703 | 0.4− | 0.7+ | 2006 11 24 | 691 | 0.0 | 0.1− | | |
| 2004 01 29 | 704 | 0.2+ | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.5− | 2006 11 24 | 691 | 0.1+ | 0.2− | | |
| 2004 01 30 | 704 | 0.5+ | 1.3+ | 2006 11 12 | G96 | 0.2+ | 0.7− | 2006 11 29 | 704 | 0.2+ | 0.2+ | | |
| 2004 01 30 | 704 | 0.5− | 1.0+ | 2006 11 12 | G96 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.4+ | 0.0 | | |
| 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 11 14 | 704 | 0.4− | 0.8+ | 2006 11 29 | 704 | 0.3+ | 0.2− | | |
| 2004 01 30 | 704 | 0.1− | 1.2+ | 2006 11 14 | 704 | 0.2− | 0.8+ | 2006 11 29 | 704 | 0.1+ | 0.2+ | | |
| 2004 02 11 | 699 | 1.2− | 0.3+ | 2006 11 14 | 704 | 0.1− | 1.2+ | 2006 11 29 | 704 | 0.7+ | 0.1+ | | |
| 2004 02 11 | 699 | 0.1+ | 1.1− | 2006 11 14 | 704 | 0.8+ | 1.1+ | 2006 12 01 | G96 | 1.1− | 1.8− | | |
| 2004 02 11 | 699 | 0.4+ | 0.5− | 2006 11 16 | 691 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.5− | | |
| 2004 02 11 | 644 | 0.4− | 0.3− | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.2− | 0.4− | | |
| 2004 02 11 | 699 | 1.0+ | 0.6− | 2006 11 16 | 691 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.5− | 0.4− | | |
| 2004 02 11 | 644 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− | | | | | | |
| 2004 02 11 | 644 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.3− | 0.4− | | | | | | |

### 2004 BG$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 264.00674 | | (2000.0) | | | |
| $n$ | 0.22925648 | $\omega$ | 327.56681 | | +0.23071240 | −0.96842137 |
| $a$ | 2.6439605 | $\Omega$ | 108.94464 | | +0.91269178 | +0.18171534 |
| $e$ | 0.1554933 | $i$ | 5.73461 | | +0.33729142 | +0.17070318 |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.1− | 0.7− | 2004 01 30 | 704 | (0.6+ | 2.1+) | 2004 02 17 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 30 | 644 | 0.2+ | 0.8− | 2004 01 30 | 704 | 0.2− | 0.7+ | 2004 02 17 | 644 | 0.2+ | 0.1+ | | |
| 2002 08 30 | 644 | 0.4+ | 0.2− | 2004 02 10 | 644 | 0.3+ | 0.1− | 2004 02 18 | 691 | 0.1− | 0.1− | | |
| 2003 12 27 | 704 | (2.4+ | 0.4+) | 2004 02 10 | 644 | 0.5+ | 0.4− | 2004 02 18 | 691 | 0.2− | 0.1+ | | |
| 2003 12 27 | 704 | 0.7+ | 0.9+ | 2004 02 10 | 644 | 0.5+ | 0.5+ | 2004 02 18 | 691 | 0.4− | 0.1+ | | |
| 2003 12 27 | 291 | 0.4− | 0.2+ | 2004 02 11 | 699 | 1.0− | 0.5− | 2004 02 18 | 608 | 0.3− | 0.6− | | |
| 2003 12 27 | 704 | 0.1− | 0.6− | 2004 02 11 | 699 | 0.2+ | 0.3+ | 2004 02 18 | 608 | 0.9− | 0.4− | | |
| 2003 12 27 | 291 | 1.1− | 0.2+ | 2004 02 11 | 699 | 0.4− | 0.5− | 2004 02 18 | 608 | 0.4− | 0.4− | | |
| 2003 12 27 | 704 | 0.8+ | 0.1+ | 2004 02 11 | 699 | 1.5− | 0.0 | 2004 02 23 | 704 | 0.1− | 0.4− | | |
| 2003 12 27 | 291 | 0.2+ | 0.1+ | 2004 02 13 | 699 | 1.3+ | 1.1− | 2004 02 23 | 704 | 0.7+ | 0.8− | | |
| 2004 01 22 | 704 | 0.7+ | 0.3+ | 2004 02 13 | 291 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.3+ | 1.1− | | |
| 2004 01 22 | 704 | 0.4+ | 0.5+ | 2004 02 13 | 699 | 0.6− | 0.1− | 2004 02 23 | 704 | 0.0 | 0.1− | | |
| 2004 01 22 | 704 | 0.9+ | 0.5+ | 2004 02 13 | 291 | 0.6+ | 0.1− | 2004 02 23 | 704 | 0.2+ | 1.1− | | |
| 2004 01 22 | 704 | 0.1+ | 0.6+ | 2004 02 13 | 699 | 0.8− | 0.1− | 2004 02 26 | 695 | 0.5− | 0.2− | | |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2004 02 13 | 699 | 1.4− | 0.6− | 2004 02 26 | 695 | 0.4− | 0.2− | | |
| 2004 01 27 | 704 | 0.8+ | 0.8+ | 2004 02 13 | 291 | 0.8+ | 0.2+ | 2005 05 19 | G96 | 0.4+ | 0.4+ | | |
| 2004 01 27 | 704 | 0.1+ | 0.7− | 2004 02 16 | 704 | 0.6+ | 0.8− | 2005 05 19 | G96 | 0.2− | 0.3− | | |
| 2004 01 27 | 704 | 1.0− | 0.8+ | 2004 02 16 | 704 | 0.0 | 0.9− | 2005 05 19 | G96 | 0.1+ | 0.2+ | | |
| 2004 01 30 | 704 | 0.7+ | 0.1− | 2004 02 16 | 704 | 0.1− | 0.8− | 2005 05 19 | G96 | 0.1− | 0.1− | | |
| 2004 01 30 | 704 | 0.0 | 0.7+ | 2004 02 16 | 704 | 0.0 | 0.2+ | | | | | | |
| 2004 01 30 | 704 | 1.0+ | 0.2− | 2004 02 17 | 644 | 0.0 | 0.2+ | | | | | | |

### 2004 BV$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.78545 | | (2000.0) | | | |
| $n$ | 0.22932876 | $\omega$ | 147.65669 | | −0.46814439 | −0.87600097 |
| $a$ | 2.6434050 | $\Omega$ | 329.78785 | | +0.75372575 | −0.32731588 |
| $e$ | 0.2041134 | $i$ | 13.33147 | | +0.46123565 | −0.35424090 |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.9− | 0.8+ | 2004 01 30 | 704 | 0.5− | 0.8− | 2004 02 27 | 608 | 0.3+ | 0.4− | | |
| 2002 09 06 | 704 | 0.3− | 0.1− | 2004 01 30 | 704 | 0.1− | 0.7− | 2004 02 27 | 608 | 0.4+ | 0.4− | | |
| 2002 09 06 | 704 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.5− | 0.1− | 2004 03 10 | 644 | 0.0 | 0.3+ | | |
| 2002 09 13 | 644 | 0.3− | 0.2+ | 2004 01 30 | 704 | 0.5+ | 0.7− | 2004 03 10 | 644 | 0.0 | 0.2+ | | |
| 2002 09 13 | 644 | 0.2+ | 0.2+ | 2004 01 30 | 704 | 0.7− | 0.7− | 2004 03 10 | 644 | 0.1+ | 0.1+ | | |
| 2002 09 13 | 644 | 0.4+ | 0.3+ | 2004 02 10 | 703 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.8+ | 0.3− | | |
| 2003 12 28 | 704 | 0.6− | 0.2+ | 2004 02 10 | 703 | 1.3− | 0.3+ | 2004 03 18 | 704 | 0.9+ | 0.2− | | |
| 2003 12 28 | 704 | 0.4+ | 0.7− | 2004 02 10 | 703 | 0.5− | 0.1+ | 2004 03 18 | 704 | 1.1+ | 0.5+ | | |
| 2003 12 28 | 704 | 1.0− | 1.1+ | 2004 02 10 | 703 | 0.9− | 0.1− | 2004 03 18 | 704 | 1.1+ | 0.5+ | | |
| 2003 12 28 | 704 | 0.4− | 0.8+ | 2004 02 12 | 333 | 0.8− | 0.2+ | 2004 03 18 | 704 | 0.1+ | 0.3+ | | |
| 2004 01 18 | 644 | 0.7− | 0.2− | 2004 02 12 | 333 | 1.0− | 0.2− | 2004 03 20 | 704 | 0.3+ | 0.0 | | |
| 2004 01 18 | 644 | 0.1− | 0.1+ | 2004 02 12 | 333 | 1.0− | 0.2− | 2004 03 20 | 704 | 0.5− | 0.1− | | |
| 2004 01 18 | 644 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.0 | 0.2− | 2004 03 20 | 704 | 0.2− | 0.3− | | |
| 2004 01 23 | 704 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.3− | 0.1+ | | |
| 2004 01 23 | 704 | 0.3+ | 0.3+ | 2004 02 17 | 704 | 0.5− | 0.1− | 2004 03 23 | 704 | 0.8+ | 0.2+ | | |
| 2004 01 23 | 704 | 0.8+ | 0.1− | 2004 02 17 | 704 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.5+ | 0.2+ | | |
| 2004 01 23 | 704 | 0.1+ | 0.2+ | 2004 02 17 | 704 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.3− | 0.5+ | | |
| 2004 01 23 | 704 | 1.0+ | 0.2+ | 2004 02 26 | 704 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.6+ | 0.1− | | |
| 2004 01 27 | 704 | 1.3+ | 0.4+ | 2004 02 26 | 704 | 0.3+ | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.3+ | | |
| 2004 01 27 | 704 | (2.3+ | 0.1−) | 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.1+ | | |
| 2004 01 27 | 704 | 1.1+ | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.0 | | |
| 2004 01 27 | 704 | 0.6+ | 0.3+ | 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.4+ | | |
| 2004 01 27 | 704 | 0.2+ | 0.4− | 2004 02 27 | 608 | 0.1+ | 0.8− | 2006 09 27 | G96 | 0.4− | 0.2+ | | |

### 2004 BP$_{77}$ = 2006 QJ$_{111}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.34767 | | (2000.0) | | | |
| $n$ | 0.28095946 | $\omega$ | 292.65441 | | +0.64463282 | −0.75570903 |
| $a$ | 2.3087325 | $\Omega$ | 116.68645 | | +0.74028262 | +0.57931041 |
| $e$ | 0.2078740 | $i$ | 7.43082 | | +0.19086689 | +0.30545592 |
| $P$ | 3.51 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 691 | 0.2− | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.8+ | 0.5− | | |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.4+ | | |
| 2003 12 29 | 691 | 0.1− | 0.2− | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.3− | 0.6− | | |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2006 08 29 | D35 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.5− | 0.3− | | |
| 2004 01 22 | 704 | 0.1+ | 0.2+ | 2006 08 29 | D35 | 0.4+ | 0.0 | 2006 09 25 | 703 | 0.7− | 0.3− | | |
| 2004 01 22 | 704 | 0.7+ | 0.9+ | 2006 08 29 | D35 | 0.4+ | 0.4+ | 2006 09 25 | 703 | 1.2+ | 0.8− | | |
| 2004 01 22 | 704 | 0.1− | 1.1+ | 2006 08 30 | D35 | 1.0− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | | |
| 2004 01 22 | 704 | 0.5+ | 0.7+ | 2006 08 30 | D35 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2− | | |
| 2004 01 28 | 691 | 0.0 | 0.2− | 2006 08 30 | D35 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.3+ | | |
| 2004 01 28 | 691 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.7− | 0.5+ | | | | | | |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.2+ | | | | | | |

### 2004 BV$_{77}$ = 2006 TB$_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.76749 | | (2000.0) | | | |
| $n$ | 0.27858847 | $\omega$ | 15.30071 | | +0.96765390 | −0.25228077 |
| $a$ | 2.3218133 | $\Omega$ | 359.31101 | | +0.22612095 | +0.86832694 |
| $e$ | 0.1713412 | $i$ | 2.75731 | | +0.11187151 | +0.42703951 |
| $P$ | 3.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | (0.2+ | 1.6+) | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | | |
| 2004 01 22 | 704 | 0.5− | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.0 | | |
| 2004 01 22 | 704 | 0.0 | 0.6+ | 2006 10 21 | 691 | 0.8− | 0.4− | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2004 01 22 | 704 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1− | | |
| 2004 01 22 | 704 | 0.9+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3− | | |
| 2004 01 28 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.3− | | |
| 2004 01 28 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.1+ | | |
| 2004 01 28 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.3+ | | |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 16 | 704 | 0.6+ | 0.7+ | | |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 16 | 704 | (0.5− | 1.6+) | | |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 10 27 | 224 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.9+ | | |
| 2004 02 14 | 691 | 0.5− | 0.1+ | 2006 10 27 | 224 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.3− | 0.1− | | |
| 2004 02 14 | 691 | 0.2− | 0.2+ | 2006 10 27 | 224 | 0.7+ | 0.3− | 2006 11 19 | 704 | (0.9+ | 1.6+) | | |
| 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | (0.3+ | 2.5+) | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | (1.7+ | 1.6+) |
| 2006 10 11 | 691 | 0.8− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.1− | 0.2− |
| 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 1.5+ |
| 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.7− |
| 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.3− |
| 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.3− |
| 2006 10 19 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.3− |
| 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2006 10 20 | 644 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.2− | | | | |

**2004 BW$_{77}$ = 2006 VN$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.23123 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26460561 | $\omega$ | 188.50087 | | +0.04419309 | | +0.99737998 |
| $a$ | 2.4029055 | $\Omega$ | 84.04603 | | −0.91316646 | | +0.06358002 |
| $e$ | 0.1567051 | $i$ | 3.30110 | | −0.40518390 | | −0.03450738 |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 03 | 608 | 0.1+ | 0.1− | 2004 01 28 | 691 | 0.5+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2001 05 03 | 608 | 0.4+ | 0.3− | 2004 01 30 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2001 05 03 | 608 | 0.0 | 0.5− | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 05 30 | 691 | 0.3+ | 0.7+ | 2004 01 30 | 691 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 2001 05 30 | 691 | 0.1+ | 0.7+ | 2004 02 14 | 691 | 0.5− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2001 05 30 | 691 | 0.1+ | 0.7+ | 2004 02 14 | 691 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2004 01 22 | 704 | 0.0 | 1.3+ | 2004 02 14 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2004 01 22 | 704 | (1.7− | 1.5+) | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.6− | 0.9+ |
| 2004 01 22 | 704 | 0.2+ | 1.1+ | 2006 09 28 | G96 | 0.6− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.6+ |
| 2004 01 22 | 704 | 0.5− | 0.5+ | 2006 09 28 | G96 | 0.6− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.3+ | 0.1+ |

**2004 BF$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.41763 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25955080 | $\omega$ | 75.19298 | | −0.99432569 | | +0.06848014 |
| $a$ | 2.4340031 | $\Omega$ | 108.68228 | | −0.09400391 | | −0.92384225 |
| $e$ | 0.0901153 | $i$ | 4.92971 | | +0.04979639 | | −0.37659788 |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 28 | 691 | 0.2+ | 0.1+ | 2004 01 30 | 704 | 0.4− | 1.4+ | 2004 02 13 | 691 | 0.1− | 0.2− |
| 1997 05 28 | 691 | 0.0 | 0.0 | 2004 01 30 | 704 | 0.1+ | 0.9+ | 2004 02 13 | 691 | 0.0 | 0.1− |
| 1997 05 28 | 691 | 0.2− | 0.2− | 2004 01 30 | 704 | 0.0 | 0.7+ | 2004 02 13 | 691 | 0.2+ | 0.1+ |
| 2000 01 08 | 691 | 0.2− | 0.4− | 2004 01 30 | 704 | 0.4+ | 0.6+ | 2004 02 15 | 704 | (2.2+ | 0.1+) |
| 2000 01 08 | 691 | 0.1+ | 0.2− | 2004 01 30 | 704 | 0.4+ | 1.3+ | 2004 02 15 | 704 | (0.2− | 2.2−) |
| 2000 01 08 | 691 | 0.1+ | 0.4− | 2004 02 11 | 691 | 0.2+ | 0.1− | 2004 02 15 | 704 | 0.3+ | 1.0− |
| 2004 01 22 | 704 | 0.1+ | 0.9+ | 2004 02 11 | 691 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.7+ | 0.3− |
| 2004 01 22 | 704 | 0.5+ | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.1− | 2004 02 15 | 704 | 0.1− | 0.5− |
| 2004 01 22 | 704 | 0.2+ | 0.5+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.3− | 0.1+ | 2004 02 12 | 691 | 0.3+ | 0.1− | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2004 01 22 | 704 | 0.4− | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.1− | 2004 04 16 | 645 | 0.0 | 0.1− |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.2+ | 2004 04 16 | 645 | 0.1− | 0.1− |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.2− | | | | |
| 2004 01 28 | 691 | 0.0 | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.1+ | | | | |

**2004 BH$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.33037 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26754860 | $\omega$ | 29.87184 | | +0.78145064 | | −0.62393796 |
| $a$ | 2.3852520 | $\Omega$ | 8.74004 | | +0.56433275 | | +0.70261096 |
| $e$ | 0.1731697 | $i$ | 2.27337 | | +0.26620190 | | +0.34211002 |
| $P$ | 3.68 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.2+ | 0.3− | 2006 09 16 | 699 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.1+ |
| 1995 07 24 | 691 | 0.3+ | 0.6− | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.1+ | 0.2− |
| 1995 07 24 | 691 | 0.2+ | 0.4− | 2006 09 17 | 704 | 0.8− | 0.7+ | 2006 09 28 | 704 | 0.8− | 0.3+ |
| 2004 01 22 | 704 | 0.4+ | 0.6+ | 2006 09 17 | 704 | 0.8− | 0.4− | 2006 09 28 | 704 | 1.4+ | 0.5+ |
| 2004 01 22 | 704 | 0.0 | 1.0+ | 2006 09 17 | 704 | 0.2− | 0.7+ | 2006 10 16 | G96 | 0.6+ | 0.5− |
| 2004 01 22 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2004 01 22 | 704 | 0.7− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 10 21 | 644 | 1.2+ | 0.0 |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.4+ | 0.6− |
| 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2004 01 28 | 691 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.6− | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2004 02 13 | 291 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2004 02 13 | 291 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.5+ | 2006 10 23 | 644 | 0.5+ | 0.2− |
| 2004 02 13 | 291 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.8− | 0.4+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.6− | 0.2− | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.5− |
| 2004 02 23 | 704 | 0.9− | 0.3− | 2006 09 20 | 704 | 0.2− | 0.6+ | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 08 27 | 691 | 0.3+ | 0.3+ | 2006 09 22 | D35 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.5− |
| 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 22 | D35 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2006 08 27 | 691 | 0.2+ | 0.4+ | 2006 09 22 | D35 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.7− |
| 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 09 23 | 691 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2006 09 15 | 691 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2006 09 16 | 699 | 0.6− | 0.8− | 2006 09 27 | 704 | 0.2− | 0.8+ | 2006 11 21 | G96 | 0.6+ | 0.3− |
| 2006 09 16 | 699 | 0.6− | 0.1− | 2006 09 27 | 704 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 09 16 | 699 | 0.8− | 0.8+ | 2006 09 27 | 704 | 0.2− | 0.8+ | | | | |

**2004 BJ$_{78}$ = 2006 RH$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.73831 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26836370 | $\omega$ | 310.05600 | | +0.93619195 | | −0.34931242 |
| $a$ | 2.3804197 | $\Omega$ | 70.42114 | | +0.33378968 | | +0.84872640 |
| $e$ | 0.2071348 | $i$ | 2.37583 | | +0.11013214 | | +0.39704449 |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 699 | 1.0− | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.2+ |
| 2004 01 22 | 704 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 09 30 | 704 | 0.5+ | 0.4+ |
| 2004 01 22 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.7− | 0.3− |
| 2004 01 22 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.7− | 2006 09 30 | 704 | 0.2− | 0.8− |
| 2004 01 22 | 704 | 1.1+ | 0.7+ | 2006 09 19 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.5+ |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 19 | 704 | 1.1− | 0.9+ | 2006 09 30 | 704 | 0.7+ | 0.1− |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7+ | 1.2− | 2006 10 16 | 703 | 0.2+ | 0.7+ |
| 2004 02 13 | 691 | 0.3− | 0.2− | 2006 09 19 | 704 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2004 02 13 | 691 | 0.6− | 0.3− | 2006 09 19 | 704 | 0.8+ | 0.9+ | 2006 10 16 | 703 | 1.3− | 0.4+ |
| 2004 02 13 | 691 | 0.3− | 0.3− | 2006 09 19 | 704 | 0.6− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2004 02 14 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2004 02 14 | 691 | 0.2+ | 0.0 | 2006 09 19 | 704 | 0.5+ | 1.4+ | 2006 10 19 | 644 | 0.7+ | 0.1− |
| 2004 02 14 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2005 05 14 | G96 | 0.2+ | 0.2− | 2006 09 19 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 09 19 | 704 | (0.2+ | 3.8+) | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2005 05 14 | G96 | 0.6+ | 0.7+ | 2006 09 19 | 704 | 0.9− | 0.8− | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2005 05 14 | G96 | 0.0 | 0.4+ | 2006 09 19 | 704 | 1.0+ | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.8− | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.1− | | |
| 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2006 09 14 | 644 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2006 09 16 | 704 | 1.0+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.5+ | 0.2− | | |
| 2006 09 16 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.0 | | |
| 2006 09 16 | 704 | 0.2+ | 1.2+ | 2006 09 26 | 704 | 0.2− | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.1− | | |
| 2006 09 18 | 703 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.9− | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.0 | | |
| 2006 09 18 | 703 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.7+ | 0.0 | | |
| 2006 09 18 | 703 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.6+ | 0.1− | | |
| 2006 09 18 | 703 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.4− | | |
| 2006 09 18 | 703 | 0.1− | 0.5− | 2006 09 28 | 704 | (1.7− | 1.0−) | 2006 11 17 | G96 | 0.5+ | 0.3− | | |
| 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 09 28 | 704 | 0.5− | 0.2+ | 2006 11 18 | 703 | 0.1+ | 0.1+ | | |
| 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.4− | 2006 11 18 | 703 | 1.0− | 0.2+ | | |
| 2006 09 18 | 703 | 0.0 | 0.6− | 2006 09 30 | 704 | 0.4+ | 0.2− | 2006 11 18 | 703 | 0.2+ | 1.7− | | |
| 2006 09 18 | 699 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.7− | 0.6+ | 2006 11 18 | 703 | 0.5− | 0.0 | | |

**2004 BA$_{79}$ = 2006 RY$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 290.42201 | | (2000.0) | | −0.08503994 | −0.99636972 |
| $n$ | 0.27463800 | $\omega$ | 101.45260 | | +0.90019878 | −0.07513226 |
| $a$ | 2.3440253 | $\Omega$ | 353.42189 | | +0.42709527 | −0.04003146 |
| $e$ | 0.1634253 | $i$ | 1.97480 | | | |
| $P$ | 3.59 | $H$ | 18.2 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.3+ | 1.3+ | 2006 09 19 | 691 | 0.4− | 0.2+ | | |
| 2004 01 22 | 704 | 0.1+ | 0.4− | 2004 01 30 | 704 | 0.5+ | 0.9+ | 2006 09 19 | 691 | 0.0 | 0.0 | | |
| 2004 01 22 | 704 | 0.3− | 0.7− | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 09 24 | 691 | 0.3− | 0.4+ | | |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.0 | 0.3− | | |
| 2004 01 28 | 691 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.5+ | | |
| 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.3+ | 0.4− | | |
| 2004 01 30 | 704 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.3− | | |
| 2004 01 30 | 704 | 0.3+ | 0.4− | 2006 09 19 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.1+ | | |

**2004 BV$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.52453 | | (2000.0) | | +0.69068155 | −0.72234642 |
| $n$ | 0.28241175 | $\omega$ | 92.21909 | | +0.64309621 | +0.63519962 |
| $a$ | 2.3008106 | $\Omega$ | 314.03208 | | +0.33073594 | +0.27338086 |
| $e$ | 0.1600034 | $i$ | 2.73239 | | | |
| $P$ | 3.49 | $H$ | 17.5 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 06 | 691 | 0.2− | 0.0 | 2004 02 11 | 691 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 1997 01 06 | 691 | 0.2− | 0.7− | 2004 02 11 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.0 | | |
| 1997 01 06 | 691 | 0.5− | 0.2− | 2004 02 11 | 691 | 0.1+ | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.2− | | |
| 1999 10 10 | 704 | 0.4+ | 0.4+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.0 | | |
| 1999 10 10 | 704 | 0.1+ | 1.1+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.4+ | | |
| 1999 10 10 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.2+ | | |
| 1999 10 10 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.8− | 2006 10 11 | 644 | 0.4+ | 0.2+ | | |
| 1999 10 10 | 704 | 0.1+ | 1.2+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 2003 12 29 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 2003 12 29 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.5− | | |
| 2003 12 29 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.8− | | |
| 2004 01 24 | 704 | (0.8+ | 1.6+) | 2006 09 19 | 703 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.4− | | |
| 2004 01 24 | 704 | (0.4+ | 1.8+) | 2006 09 19 | 703 | 0.3− | 0.6− | 2006 10 17 | 703 | (0.4+ | 1.6−) | | |
| 2004 01 24 | 704 | 0.2+ | 0.0 | 2006 09 22 | 224 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.7+ | 0.3+ | | |
| 2004 01 24 | 704 | (0.3− | 1.7+) | 2006 09 22 | 224 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2004 01 28 | 691 | 0.2+ | 0.1− | 2006 09 22 | 224 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2004 01 28 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1− | | | | | | |

**2004 BJ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.57440 | | (2000.0) | | −0.88125149 | +0.39985354 |
| $n$ | 0.17361924 | $\omega$ | 259.49258 | | −0.21850504 | −0.81746195 |
| $a$ | 3.1822734 | $\Omega$ | 303.63196 | | −0.41910782 | −0.41457583 |
| $e$ | 0.2072647 | $i$ | 17.61883 | | | |
| $P$ | 5.68 | $H$ | 14.9 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 291 | 0.1− | 0.1− | 2004 02 11 | 644 | 0.1− | 0.4− | 2006 09 14 | 691 | 0.2− | 0.3− | | |
| 2003 12 22 | 291 | 0.2− | 0.1+ | 2004 02 17 | 704 | 0.5− | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1− | | |
| 2003 12 22 | 291 | 0.5− | 0.2− | 2004 02 17 | 704 | 0.4− | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.0 | | |
| 2004 01 24 | 704 | 1.2+ | 0.2− | 2004 02 17 | 704 | 0.4− | 0.7− | 2006 09 18 | 691 | 0.0 | 0.1+ | | |
| 2004 01 24 | 704 | 1.3+ | 0.2+ | 2004 02 17 | 704 | 1.0− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.0 | | |
| 2004 01 24 | 704 | 1.0+ | 0.0 | 2004 02 17 | 704 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1+ | | |
| 2004 01 24 | 704 | 0.9+ | 0.4+ | 2004 02 17 | 608 | 0.4− | 1.2+ | 2006 09 20 | 691 | 0.2+ | 0.0 | | |
| 2004 01 28 | 691 | 0.0 | 0.1− | 2004 02 17 | 608 | 0.4− | 0.9+ | 2006 09 20 | 691 | 0.1+ | 0.3+ | | |
| 2004 01 28 | 691 | 0.1− | 0.2− | 2004 02 17 | 608 | 0.0 | 0.4+ | 2006 09 20 | 691 | 0.1+ | 0.2+ | | |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2004 02 26 | 704 | 1.3+ | 0.4− | 2006 09 26 | 691 | 0.1− | 0.1− | | |
| 2004 01 30 | 704 | 0.1− | 1.2+ | 2004 02 26 | 704 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 2004 01 30 | 704 | 0.2+ | 0.6+ | 2004 02 26 | 704 | 1.4− | 1.2− | 2006 09 26 | 691 | 0.1+ | 0.2+ | | |
| 2004 01 30 | 704 | 0.3− | 0.8+ | 2004 02 26 | 704 | 0.5+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.1− | | |
| 2004 01 30 | 704 | 0.9+ | 0.3− | 2004 02 26 | 704 | 0.4+ | 0.6− | 2006 09 28 | 691 | 0.0 | 0.1− | | |
| 2004 02 11 | 644 | 0.2− | 0.3− | 2006 08 28 | 703 | (1.3− | 2.3−) | 2006 09 28 | 691 | 0.0 | 0.1+ | | |
| 2004 02 11 | 644 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.9+ | 1.4− | | | | | | |

**2004 BK$_{81}$ = 2006 RN$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.64532 | | (2000.0) | | +0.43832660 | −0.89874472 |
| $n$ | 0.26316538 | $\omega$ | 227.41593 | | +0.83580181 | +0.41218933 |
| $a$ | 2.4116644 | $\Omega$ | 196.59741 | | +0.33061327 | +0.14952554 |
| $e$ | 0.1480221 | $i$ | 2.26750 | | | |
| $P$ | 3.75 | $H$ | 17.1 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.4− | 0.4− | 2006 09 13 | 644 | 0.6+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.1+ | | |
| 1999 12 07 | 704 | 0.5+ | 1.0− | 2006 09 13 | 644 | 0.2+ | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.0 | | |
| 1999 12 07 | 704 | 0.1− | 0.7− | 2006 09 15 | 691 | 0.2+ | 0.6+ | 2006 10 16 | G96 | 0.3+ | 0.2+ | | |
| 2004 01 26 | 699 | (0.5− | 1.5−) | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 2004 01 26 | 699 | 0.5− | 1.2+ | 2006 09 15 | 691 | 1.5− | 0.9− | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2004 01 26 | 699 | 0.7+ | 0.4+ | 2006 09 20 | 704 | 0.6+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3− | | |
| 2004 01 26 | 699 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.6+ | 2006 10 19 | G96 | 0.8+ | 0.2− | | |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | (1.0− | 1.8+) | 2006 11 11 | G96 | 0.1+ | 0.1− | | |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.3− | 0.6+ | | |
| 2004 01 30 | 704 | 0.0 | 0.7− | 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.3+ | | |
| 2004 01 30 | 704 | 0.9+ | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.6− | | |
| 2004 01 30 | 704 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.4− | 0.3− | | |
| 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2004 02 10 | 644 | 0.1− | 0.6− | 2006 09 28 | G96 | 0.0 | 0.3+ | | | | | | |
| 2006 09 13 | 644 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.1+ | | | | | | |

**2004 BC$_{83}$ = 2006 WN$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.30196 | | (2000.0) | | +0.04129393 | +0.99844916 |
| $n$ | 0.26666703 | $\omega$ | 222.64342 | | −0.90301453 | +0.05328831 |
| $a$ | 2.3905060 | $\Omega$ | 49.75871 | | −0.42762082 | −0.01611296 |
| $e$ | 0.1768613 | $i$ | 2.80367 | | | |
| $P$ | 3.70 | $H$ | 17.1 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2004 01 29 | 291 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.2− | | |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2004 01 29 | 291 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.1+ | | |
| 2001 05 03 | 608 | 0.3+ | 0.4− | 2004 01 29 | 291 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 03 | 608 | 0.6− | 0.2− | 2004 02 12 | 691 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.5− |
| 2001 05 03 | 608 | 0.3− | 0.5− | 2004 02 12 | 691 | 0.2− | 0.4− | 2006 11 26 | H07 | 0.4− | 0.3+ |
| 2002 11 04 | 291 | 0.1+ | 0.2+ | 2004 02 12 | 691 | 0.1− | 0.3− | 2006 11 26 | H07 | 0.2− | 0.6+ |
| 2002 11 04 | 291 | 0.2− | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.3− | 2006 11 26 | H07 | 1.2+ | 1.1+ |
| 2002 11 04 | 291 | 0.2− | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.2− | 2006 11 27 | H07 | 0.7+ | 0.4+ |
| 2004 01 22 | 704 | 0.4− | 1.2+ | 2004 02 12 | 691 | 0.0 | 0.2− | 2006 11 27 | H07 | 0.4− | 0.4+ |
| 2004 01 22 | 704 | (1.3+ | 1.7+) | 2004 02 13 | 691 | 0.8− | 0.1+ | 2006 11 28 | H07 | 0.4+ | 0.4+ |
| 2004 01 22 | 704 | (1.8+ | 0.5+) | 2004 02 13 | 691 | 0.4+ | 0.4+ | 2006 11 28 | H07 | 0.4+ | 0.9+ |
| 2004 01 28 | 691 | 0.6+ | 0.0 | 2004 02 13 | 691 | 0.2− | 0.0 | 2006 11 30 | 691 | 0.2− | 0.1+ |
| 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.3− | 2006 11 30 | 691 | 0.4− | 0.1− |
| 2004 01 28 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.3− | 2006 11 30 | 691 | 0.5+ | 1.2− |

### 2004 BH$_{87}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.47208 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27846796 | $\omega$ | 201.53367 | | −0.08343690 | | −0.99042237 |
| $a$ | 2.3224831 | $\Omega$ | 253.38619 | | +0.93022641 | | −0.03782091 |
| $e$ | 0.0697630 | $i$ | 6.59213 | | +0.35737531 | | −0.13278971 |
| $P$ | 3.54 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 012 | 0.3+ | 0.3− | 2002 09 04 | 644 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 1999 11 12 | 012 | 0.4− | 0.8− | 2002 09 04 | 644 | 0.2− | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.4− |
| 1999 11 12 | 012 | 0.3+ | 1.1− | 2002 09 04 | 644 | 0.5− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 1999 11 12 | 012 | 0.9− | 0.1− | 2002 09 12 | 644 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.4− |
| 1999 11 12 | 012 | 0.3+ | 1.0+ | 2002 09 12 | 644 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1999 11 12 | 012 | 0.8− | 0.5+ | 2002 09 12 | 644 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 1999 11 15 | 012 | 0.4− | 0.3− | 2004 01 23 | 699 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 |
| 1999 11 15 | 012 | 0.3+ | 0.8− | 2004 01 23 | 699 | 0.5− | 1.4+ | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 1999 11 15 | 012 | 0.2+ | 0.3− | 2004 01 23 | 699 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.8+ |
| 1999 11 15 | 012 | 0.8− | 0.6+ | 2004 01 23 | 699 | 0.6− | 0.3− | 2006 11 14 | 703 | 0.2− | 0.4− |
| 1999 11 15 | 012 | 0.1− | 0.4− | 2004 01 29 | 704 | 0.9+ | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 1999 11 15 | 012 | (3.1− | 1.7+) | 2004 01 29 | 704 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.0 | 1.2− |
| 1999 12 07 | 704 | 0.9+ | 0.3− | 2004 01 29 | 704 | 0.1− | 1.1+ | 2006 11 19 | 704 | 1.2+ | 0.9+ |
| 1999 12 07 | 704 | 0.5+ | 0.7− | 2004 01 29 | 704 | 0.9+ | 0.6− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 1999 12 07 | 704 | 0.9+ | 0.5− | 2004 01 29 | 704 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2002 08 03 | 599 | 0.0 | 0.2− | 2004 02 18 | 704 | 0.4+ | 1.2+ | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 08 03 | 599 | 0.1+ | 0.6+ | 2004 02 18 | 704 | 0.4+ | 1.4+ | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2002 08 03 | 599 | 1.1− | 1.2+ | 2004 02 18 | 704 | 0.1+ | 1.1+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 08 03 | 599 | 0.0 | 0.5+ | 2004 02 18 | 704 | 0.5+ | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2002 08 27 | 644 | 0.1+ | 0.7+ | 2004 02 18 | 704 | (1.9+ | 0.8+) | 2006 11 22 | 704 | 0.2+ | 0.8+ |
| 2002 08 27 | 644 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2002 08 27 | 644 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.7+ |

### 2004 BG$_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.37606 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21485303 | $\omega$ | 281.98574 | | −0.97480317 | | +0.18970351 |
| $a$ | 2.7608431 | $\Omega$ | 269.03350 | | −0.12980231 | | −0.91023956 |
| $e$ | 0.1465860 | $i$ | 6.74023 | | −0.18141153 | | −0.36807135 |
| $P$ | 4.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 0.9+ | 0.1− | 2004 01 29 | 704 | 0.3− | 0.3+ | 2004 03 10 | 644 | 0.0 | 0.4+ |
| 2004 01 23 | 704 | 1.1+ | 0.1+ | 2004 01 29 | 704 | 0.1− | 0.3+ | 2004 03 10 | 644 | 0.1− | 0.3+ |
| 2004 01 23 | 704 | 1.2+ | 0.1− | 2004 02 17 | 704 | 0.5+ | 0.7− | 2004 03 10 | 644 | 0.0 | 0.1− |
| 2004 01 23 | 704 | 1.0+ | 0.2+ | 2004 02 17 | 704 | 0.7+ | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.2− |
| 2004 01 23 | 704 | 0.8+ | 0.5− | 2004 02 17 | 704 | 0.6+ | 0.0 | 2006 10 18 | 691 | 0.6+ | 0.1+ |
| 2004 01 28 | 291 | 0.7− | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 10 18 | 691 | 0.4− | 0.0 |
| 2004 01 28 | 291 | 0.6− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.5− | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2004 01 28 | 291 | 0.6− | 0.1+ | 2004 02 23 | 704 | 0.8+ | 0.8− | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2004 01 29 | 704 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.6− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2− |

### 2004 BL$_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.16444 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23149566 | $\omega$ | 254.17541 | | −0.42740203 | | −0.90322054 |
| $a$ | 2.6268835 | $\Omega$ | 221.19783 | | +0.85046681 | | −0.38706243 |
| $e$ | 0.1617663 | $i$ | 3.39358 | | +0.30664914 | | −0.18540586 |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 0.5− | 0.4− | 2004 02 11 | 644 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.3+ | 0.0 |
| 2004 01 23 | 704 | 0.7+ | 0.1+ | 2004 02 11 | 644 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.6− | 0.2− |
| 2004 01 23 | 704 | 0.4− | 0.1− | 2004 02 11 | 644 | 0.5+ | 0.5+ | 2004 02 23 | 704 | 0.1+ | 0.1− |
| 2004 01 23 | 704 | 0.3+ | 0.1+ | 2004 02 11 | 703 | 0.9− | 0.6+ | 2004 02 23 | 704 | 0.1+ | 0.9− |
| 2004 01 23 | 704 | 0.9− | 0.2+ | 2004 02 11 | 703 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 2004 01 29 | 704 | 0.7− | 0.7+ | 2004 02 11 | 703 | 0.4+ | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.2− |
| 2004 01 29 | 704 | 0.5+ | 0.4− | 2004 02 11 | 703 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2004 01 29 | 704 | (1.5− | 2.2+) | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.3+ |
| 2004 01 29 | 704 | 0.7− | 0.9− | 2004 02 17 | 704 | 0.2− | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2004 02 01 | 608 | 0.7+ | 0.5− | 2004 02 17 | 704 | 0.6− | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2004 02 01 | 608 | 0.0 | 0.7− | 2004 02 17 | 704 | 0.4+ | 0.4− | | | | |
| 2004 02 01 | 608 | 0.3− | 0.1− | 2004 02 17 | 704 | 1.2+ | 0.4+ | | | | |

### 2004 BV$_{89}$ = 1994 YL$_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.48184 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22596208 | $\omega$ | 167.97669 | | −0.21356412 | | −0.96087364 |
| $a$ | 2.6695968 | $\Omega$ | 294.14444 | | +0.87953651 | | −0.11052734 |
| $e$ | 0.1493940 | $i$ | 11.14524 | | +0.42521277 | | −0.25397944 |
| $P$ | 4.36 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 31 | 691 | (2.5− | 5.5−) | 2004 02 12 | 644 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.5− | 0.1− |
| 1994 12 31 | 691 | (2.9− | 6.1−) | 2004 02 12 | 644 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 1995 01 07 | 691 | 0.3+ | 0.2− | 2004 02 12 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 1995 01 07 | 691 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 0.4− | 2004 02 19 | 704 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 2002 10 06 | 704 | 0.4− | 1.1− | 2004 02 19 | 704 | 0.6+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 0.2+ | 2004 02 19 | 704 | 0.5+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 2002 10 06 | 704 | 0.1+ | 0.4− | 2004 02 19 | 704 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2004 01 23 | 704 | 0.4+ | 0.7+ | 2004 03 13 | 644 | 0.4+ | 0.5+ | 2006 10 16 | 461 | 0.1− | 0.6+ |
| 2004 01 23 | 704 | 1.3+ | 0.4+ | 2004 03 13 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 461 | 0.4+ | 0.2+ |
| 2004 01 23 | 704 | 1.2+ | 0.5− | 2004 03 13 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 461 | 0.6+ | 0.1+ |
| 2004 01 23 | 704 | 1.2− | 0.0 | 2004 03 16 | 704 | 0.1− | 0.7− | 2006 10 17 | 461 | 0.2+ | 0.3− |
| 2004 01 23 | 704 | 0.9+ | 1.0+ | 2004 03 16 | 704 | 0.1− | 0.2+ | 2006 10 17 | 461 | 0.1+ | 0.1+ |
| 2004 01 29 | 704 | 0.6− | 0.7+ | 2004 03 16 | 704 | (2.0+ | 1.1+) | 2006 10 18 | 461 | 0.2− | 0.1+ |
| 2004 01 29 | 704 | 0.0 | 0.8+ | 2004 03 16 | 704 | 0.4− | 0.6+ | 2006 10 18 | 461 | 0.3− | 0.3+ |
| 2004 01 29 | 704 | 0.4+ | 1.1+ | 2004 03 16 | 704 | 0.4− | 0.0 | | | | |
| 2004 01 29 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.4+ | | | | |

### 2004 BC$_{93}$ = 2006 UE$_{285}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.45234 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26145450 | $\omega$ | 326.79634 | | −0.98085958 | | +0.16519329 |
| $a$ | 2.4221738 | $\Omega$ | 223.09253 | | −0.12889971 | | −0.94765173 |
| $e$ | 0.1554780 | $i$ | 8.67817 | | −0.14594295 | | −0.27325332 |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 699 | 1.0+ | 0.1+ | 2004 02 19 | 704 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2004 01 27 | 699 | 0.2− | 0.4− | 2004 02 19 | 704 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.4+ |
| 2004 01 27 | 699 | 0.1+ | 0.9− | 2004 02 19 | 704 | 0.7+ | 0.5+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2004 01 27 | 699 | 1.3− | 0.2− | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2004 01 29 | 704 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2004 01 29 | 704 | 0.2+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2004 01 29 | 704 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 0.7− | 0.1− | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.1+ |
| 2004 02 16 | 703 | 0.6+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2004 02 16 | 703 | 0.8+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2004 02 16 | 703 | 0.5+ | 0.4− | 2006 10 20 | 695 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2004 02 16 | 703 | 0.4− | 0.4+ | 2006 10 20 | 695 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.6− | 0.6− |
| 2004 02 18 | 683 | (2.0+ | 1.1−) | 2006 10 28 | 691 | 0.1+ | 0.7+ | 2006 11 21 | G96 | (0.7− | 1.8+) |
| 2004 02 18 | 683 | (1.7− | 1.2+) | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 02 18 | 683 | (0.3+ | 2.4+) | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | |
| 2004 02 19 | 704 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | | | |

**2004 BA$_{94}$ = 2004 CD$_{130}$**

Id. Minor Planet Center (d, *MPO* 87832)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.26313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25409604 | $\omega$ | 318.31149 | | −0.94119710 | | +0.32131208 |
| $a$ | 2.4687140 | $\Omega$ | 240.71456 | | −0.26956769 | | −0.90051717 |
| $e$ | 0.0735554 | $i$ | 6.87697 | | −0.20366954 | | −0.29296308 |
| $P$ | 3.88 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 699 | 0.7+ | 0.3− | 2004 02 14 | 699 | 1.2− | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2003 12 29 | 699 | 1.1− | 0.2+ | 2004 02 14 | 699 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2003 12 29 | 699 | 0.6− | 0.6+ | 2004 02 14 | 699 | 0.2− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2003 12 29 | 699 | 1.0+ | 0.1+ | 2004 02 16 | 703 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2004 01 14 | 644 | 0.1+ | 0.1− | 2004 02 16 | 703 | 0.5+ | 1.0− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2004 01 14 | 644 | 0.2+ | 0.2− | 2004 02 16 | 703 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2004 01 14 | 644 | 0.4+ | 0.3− | 2004 02 16 | 703 | 0.9− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.6+ |
| 2004 01 28 | 608 | 0.4+ | 1.1− | 2004 02 18 | 608 | 0.4− | 0.9+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2004 01 28 | 608 | 0.1+ | 0.7− | 2004 02 18 | 608 | 0.5− | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2004 01 28 | 608 | 1.0+ | 0.7− | 2004 02 18 | 608 | 0.1− | 0.8+ | 2006 11 15 | 691 | 0.5− | 0.2+ |
| 2004 01 29 | 704 | 0.8+ | 1.1+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2004 01 29 | 704 | 0.8+ | 0.8+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2004 01 29 | 704 | 0.9+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4− | 2006 11 17 | 691 | 0.2+ | 0.4− |
| 2004 01 29 | 704 | 0.2+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2004 01 29 | 704 | 0.5− | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 2004 02 10 | 644 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.4− |
| 2004 02 10 | 644 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2004 02 10 | 644 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.4− |
| 2004 02 13 | 333 | 1.0− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 02 13 | 333 | 0.8− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.3− | 0.6− |
| 2004 02 13 | 333 | 1.1− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.3+ |
| 2004 02 14 | 699 | 1.3+ | 0.9− | 2006 10 21 | 691 | 0.1− | 0.1− | | | | |

**2004 BR$_{96}$ = 1995 WV$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.22198 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27106014 | $\omega$ | 267.05687 | | −0.97050012 | | +0.24004669 |
| $a$ | 2.3646068 | $\Omega$ | 286.83162 | | −0.21080650 | | −0.89017492 |
| $e$ | 0.0455012 | $i$ | 1.34811 | | −0.11700484 | | −0.38725469 |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 28 | 691 | 0.3+ | 0.4− | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.9+ | 0.0 |
| 1995 11 28 | 691 | 0.1− | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 1995 11 28 | 691 | 0.1+ | 0.1− | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.3− |
| 2004 01 24 | 704 | 0.3− | 1.1+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2004 01 24 | 704 | 0.6+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2004 01 24 | 704 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 1.1+ |
| 2004 01 24 | 704 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2004 01 24 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2004 01 30 | 691 | 0.1+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.6− | 0.4− |
| 2004 01 30 | 691 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.5− | 0.8− |
| 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.7− | 0.2+ |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.5− | 1.1+ |
| 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 11 09 | 691 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.0 | 0.0 |
| 2004 02 26 | 704 | 0.6− | 0.5+ | 2006 11 09 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.6− | 1.2+ |
| 2004 02 26 | 704 | 1.5− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.5− | 0.1− |

**2004 BE$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.84340 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26944362 | $\omega$ | 331.64937 | | −0.43898283 | | −0.89769885 |
| $a$ | 2.3740550 | $\Omega$ | 144.35243 | | +0.83612826 | | −0.42356106 |
| $e$ | 0.0749612 | $i$ | 3.72140 | | +0.32891277 | | −0.12137872 |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.5+ | 0.0 | 2004 02 17 | 704 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2004 01 24 | 704 | 0.5+ | 0.6− | 2004 02 17 | 704 | 0.1+ | 0.9− | 2006 11 13 | 703 | (0.0 | 2.0+) |
| 2004 01 24 | 704 | 0.5+ | 0.5+ | 2004 02 26 | 704 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2004 01 30 | 691 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.7− | 0.6+ | 2006 11 13 | 703 | 0.3+ | 0.1− |
| 2004 01 30 | 691 | 0.2− | 0.1+ | 2004 02 26 | 704 | 0.7+ | 0.0 | 2006 11 13 | 703 | (2.1+ | 0.9+) |
| 2004 01 30 | 691 | 0.3− | 0.2− | 2004 02 26 | 704 | 0.7+ | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2004 02 11 | 644 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2004 02 11 | 644 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.4+ | 2006 11 23 | G96 | 0.4+ | 0.5− |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2004 02 13 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.4− | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2004 02 17 | 704 | 0.7− | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2004 02 17 | 704 | 0.6+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1+ | | | | |
| 2004 02 17 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | | | |

**2004 BZ$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.09512 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21038253 | $\omega$ | 210.33095 | | −0.96868240 | | +0.24567054 |
| $a$ | 2.7998167 | $\Omega$ | 343.77135 | | −0.19390986 | | −0.83917407 |
| $e$ | 0.1541492 | $i$ | 7.41370 | | −0.15509149 | | −0.48521424 |
| $P$ | 4.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.0 | 0.3+ | 2004 03 14 | 691 | 0.1+ | 0.0 | 2004 03 20 | 699 | 0.7+ | 0.1− |
| 2001 08 25 | 691 | 0.5− | 1.1+ | 2004 03 17 | 683 | (1.3+ | 2.7−) | 2004 03 20 | 704 | 0.5+ | 1.1− |
| 2001 08 25 | 691 | 0.7− | 0.7+ | 2004 03 17 | 683 | 1.1+ | 1.1− | 2004 03 20 | 704 | 0.6+ | 1.3+ |
| 2004 01 27 | 691 | 0.1+ | 0.1− | 2004 03 17 | 683 | 0.5+ | 0.4− | 2004 03 27 | 704 | 0.4+ | 1.0+ |
| 2004 01 27 | 691 | 0.2− | 0.2+ | 2004 03 18 | 683 | 0.9+ | 0.6+ | 2004 03 27 | 704 | 0.4− | 0.2− |
| 2004 01 27 | 691 | 0.2− | 0.1+ | 2004 03 18 | 683 | 0.9+ | 1.3+ | 2004 03 27 | 704 | 0.1+ | 0.4+ |
| 2004 01 27 | 691 | 0.2− | 0.1+ | 2004 03 18 | 683 | (0.2− | 1.8+) | 2004 03 30 | 691 | 0.1+ | 0.2− |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.5+ | 2004 03 30 | 691 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.0 | 0.2− | 2004 03 30 | 691 | 0.2− | 0.0 |
| 2004 01 30 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.9+ | 2004 03 31 | 691 | 0.3− | 0.0 |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.1− | 0.0 | 2004 03 31 | 691 | 0.0 | 0.3− |
| 2004 01 30 | 691 | 0.3+ | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.0 | 2004 03 31 | 691 | 0.2− | 0.2+ |
| 2004 01 30 | 691 | 0.2+ | 0.2+ | 2004 03 20 | 699 | 0.8+ | 0.8+ | 2006 09 17 | 691 | 0.2+ | 0.4+ |
| 2004 01 30 | 691 | 0.2+ | 0.2− | 2004 03 20 | 704 | 1.2+ | 0.0 | 2006 09 17 | 691 | 0.3− | 0.3+ |
| 2004 01 30 | 691 | 0.2− | 0.1− | 2004 03 20 | 699 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2004 02 26 | 704 | 0.3− | 0.2− | 2004 03 20 | 704 | 0.6+ | 0.4+ | 2006 09 27 | 691 | 0.4− | 0.4− |
| 2004 02 26 | 704 | 0.3− | 0.1+ | 2004 03 20 | 704 | 0.8+ | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.0 |
| 2004 02 26 | 704 | 0.5+ | 0.5+ | 2004 03 20 | 704 | 0.6− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.3− |
| 2004 02 26 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 699 | 0.4+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.8+ |
| 2004 02 26 | 704 | 0.0 | 1.0+ | 2004 03 20 | 704 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2004 03 14 | 691 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.0 | 1.6+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.4+ | 1.5+ | 2006 10 02 | G96 | 0.4− | 0.2+ |

**2004 BA$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 294.57257 | | (2000.0) | | | |
| $n$ | 0.21412869 | $\omega$ | 265.78227 | | +0.33910336 | −0.94024738 |
| $a$ | 2.7670657 | $\Omega$ | 164.28924 | | +0.90186170 | +0.31562064 |
| $e$ | 0.0413680 | $i$ | 6.51438 | | +0.26768336 | +0.12774377 |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 691 | 0.2+ | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.2− | 2006 09 28 | 704 | 1.0− | 0.8+ |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.1− | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2004 03 15 | 704 | 0.8+ | 1.0+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2004 03 18 | 704 | 1.3+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 01 27 | 691 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.4+ |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.3− |
| 2004 01 30 | 691 | 0.4− | 0.2− | 2004 03 18 | 704 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.0 | 0.9+ |
| 2004 01 30 | 691 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.3+ | 1.4+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2004 01 30 | 691 | 0.0 | 0.2− | 2004 03 20 | 699 | (2.1− | 0.0 ) | 2006 09 30 | 703 | 0.8+ | 0.8− |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | 2004 03 20 | 699 | 1.1− | 0.8− | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2004 01 30 | 691 | 0.2+ | 0.2+ | 2004 03 20 | 699 | 0.8− | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 699 | 0.6− | 0.6− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2004 02 13 | 291 | 0.5− | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.6− | 0.9− |
| 2004 02 13 | 291 | 0.5− | 0.1+ | 2004 03 30 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2004 02 13 | 291 | 0.2− | 0.2+ | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2004 02 14 | 703 | 1.4+ | 0.7− | 2004 03 31 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2004 02 14 | 703 | 0.1+ | 0.7− | 2004 03 31 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2004 02 14 | 703 | 1.0+ | 0.6− | 2004 03 31 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 02 14 | 703 | (2.0+ | 0.1+) | 2006 09 15 | 691 | 0.3− | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2004 02 26 | 704 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.4+ | 2006 10 24 | 644 | 0.2+ | 0.1− |
| 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 10 24 | 644 | 0.2+ | 0.4− |
| 2004 02 26 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.8+ | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2004 02 26 | 704 | 0.8+ | 0.5− | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2004 03 15 | 691 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.2− | 0.6+ | 2006 11 23 | G96 | 0.8+ | 0.5− |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 704 | (0.4+ | 1.7+) | 2006 11 23 | G96 | 0.5+ | 0.7− |
| 2004 03 15 | 691 | 0.2+ | 0.0 | 2006 09 28 | 704 | (2.0− | 0.7−) | 2006 11 23 | G96 | 0.3+ | 0.6− |
| 2004 03 15 | 704 | 0.9− | 0.6+ | 2006 09 28 | 704 | 0.7− | 0.0 | | | | |

**2004 BN$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 304.58480 | | (2000.0) | | | |
| $n$ | 0.23919598 | $\omega$ | 321.69014 | | +0.27419990 | −0.95761064 |
| $a$ | 2.5701993 | $\Omega$ | 112.23956 | | +0.90417044 | +0.22544245 |
| $e$ | 0.1257275 | $i$ | 5.47393 | | +0.32755187 | +0.17932530 |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.3− | 0.2− | 2004 01 30 | 691 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 2004 01 18 | 691 | 0.6+ | 0.0 | 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 2004 01 18 | 691 | 0.4+ | 0.3− | 2004 03 17 | 691 | 1.0− | 0.9+ | 2006 09 26 | 703 | 0.6− | 0.3+ |
| 2004 01 27 | 691 | 0.2+ | 0.0 | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.4+ |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2004 03 20 | 704 | (0.6− | 2.3+) | 2006 10 16 | 703 | 0.9+ | 0.4+ |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.1+ | 1.3+ | 2006 10 16 | 703 | 1.3− | 0.1+ |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2004 03 20 | 704 | (0.4− | 2.0+) | 2006 10 16 | 703 | 0.7+ | 0.3− |
| 2004 01 27 | 691 | 0.1+ | 0.6+ | 2004 03 27 | 691 | 0.3+ | 0.1− | 2006 10 16 | 703 | (1.5+ | 0.9+) |
| 2004 01 27 | 691 | 0.0 | 0.3− | 2004 03 27 | 691 | 0.7+ | 0.4− | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2004 01 30 | 691 | 0.0 | 0.3+ | 2004 03 27 | 691 | 0.2− | 0.2− | 2006 10 22 | 703 | (1.5+ | 2.2+) |
| 2004 01 30 | 691 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.9+ | 0.2− |
| 2004 01 30 | 691 | 0.2− | 0.0 | 2006 09 18 | 703 | 1.5− | 0.6− | 2006 10 22 | 703 | 0.1+ | 0.3+ |
| 2004 01 30 | 691 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.6+ | 0.5− | | | | |
| 2004 01 30 | 691 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.6+ | | | | |

**2004 BT$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 290.17289 | | (2000.0) | | | |
| $n$ | 0.24539855 | $\omega$ | 348.57042 | | −0.18835484 | −0.97854806 |
| $a$ | 2.5267060 | $\Omega$ | 112.24277 | | +0.90801884 | −0.20589745 |
| $e$ | 0.0774080 | $i$ | 5.17359 | | +0.37419813 | +0.00706712 |
| $P$ | 4.02 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.2− | 0.1− | 2004 01 30 | 691 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.4+ | 0.7+ |
| 2004 01 18 | 691 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.0 | 0.0 | 2004 03 20 | 704 | 1.2+ | 0.4− |
| 2004 01 18 | 691 | 0.1− | 0.0 | 2004 01 30 | 691 | 0.1+ | 0.1+ | 2004 03 27 | 691 | 0.0 | 0.2− |
| 2004 01 18 | 691 | 0.2− | 0.1+ | 2004 01 30 | 691 | 0.4+ | 0.1+ | 2004 03 27 | 691 | 0.1+ | 0.2− |
| 2004 01 18 | 691 | 0.0 | 0.2− | 2004 02 25 | 704 | 0.5+ | 0.2− | 2004 03 27 | 691 | 0.1+ | 0.2− |
| 2004 01 18 | 691 | 0.2− | 0.2+ | 2004 02 25 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2− |
| 2004 01 27 | 691 | 0.2+ | 0.1− | 2004 02 25 | 704 | 0.9− | 0.3+ | 2006 10 16 | 703 | 0.0 | 1.1− |
| 2004 01 27 | 691 | 0.2+ | 0.1− | 2004 02 25 | 704 | 1.7+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2004 01 27 | 691 | 0.1− | 0.2− | 2004 03 17 | 691 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.9− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2004 03 17 | 691 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.6− | 0.8+ |
| 2004 01 27 | 691 | 0.2+ | 0.0 | 2004 03 17 | 691 | 0.3− | 0.2− | 2006 10 22 | 703 | 1.0− | 0.5+ |
| 2004 01 27 | 691 | 0.1− | 0.2+ | 2004 03 20 | 704 | 1.3− | 1.4+ | 2006 10 22 | 703 | (3.0− | 1.8−) |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2004 01 30 | 691 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.7+ | 0.4+ | | | | |

**2004 BJ$_{100}$ = 2006 UD$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 223.89753 | | (2000.0) | | | |
| $n$ | 0.26420503 | $\omega$ | 324.70968 | | −0.99805707 | −0.05841953 |
| $a$ | 2.4053337 | $\Omega$ | 211.96199 | | +0.06229408 | −0.92868874 |
| $e$ | 0.1767673 | $i$ | 2.34530 | | +0.00124022 | −0.36622996 |
| $P$ | 3.73 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 26 | 699 | (1.7− | 0.1+) | 2004 01 30 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2004 01 26 | 699 | 0.2− | 0.7+ | 2004 01 30 | 704 | 0.5− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2004 01 26 | 699 | 0.1− | 0.4+ | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2004 01 26 | 699 | 0.7+ | 0.6− | 2004 01 30 | 704 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2004 01 28 | 704 | 0.6+ | 0.3+ | 2004 01 30 | 704 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2004 01 28 | 704 | 0.7− | 0.1− | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 1.5− | 0.2− |
| 2004 01 28 | 704 | 0.3− | 0.5− | 2004 01 30 | 691 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2004 01 28 | 704 | 0.5− | 0.5− | 2004 02 11 | 703 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2004 01 28 | 704 | 0.2− | 0.2+ | 2004 02 11 | 703 | 0.6− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2004 01 29 | 704 | 0.1+ | 0.9− | 2004 02 11 | 703 | 0.7− | 0.8+ | 2006 10 29 | G96 | 0.1− | 0.3− |
| 2004 01 29 | 704 | 0.3− | 0.1− | 2004 02 11 | 703 | 0.5+ | 0.9− | 2006 10 29 | G96 | 0.3+ | 0.4− |
| 2004 01 29 | 704 | 1.2+ | 0.1− | 2004 02 17 | 704 | 0.3+ | 0.8+ | 2006 10 29 | G96 | 0.1+ | 0.6− |
| 2004 01 29 | 704 | 0.5+ | 0.2+ | 2004 02 17 | 704 | 0.0 | 1.0+ | 2006 10 29 | G96 | 0.5+ | 0.4− |
| 2004 01 29 | 704 | 0.8+ | 1.3− | 2004 02 17 | 704 | 0.4+ | 0.9+ | 2006 10 29 | 691 | 0.2+ | 0.2− |
| 2004 01 29 | 704 | 0.5− | 0.5+ | 2004 02 17 | 704 | 0.5− | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2004 01 29 | 704 | 0.1+ | 0.2− | 2004 02 22 | 704 | (0.4+ | 2.2−) | 2006 10 29 | 691 | 0.4− | 0.4− |
| 2004 01 29 | 704 | 0.4− | 0.1− | 2004 02 22 | 704 | 0.9+ | 0.2− | 2006 11 09 | 691 | 0.0 | 0.3+ |
| 2004 01 29 | 704 | 0.4− | 1.3+ | 2004 02 22 | 704 | 0.7+ | 0.0 | 2006 11 09 | 691 | 0.2− | 0.4+ |
| 2004 01 30 | 704 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.6+ | 0.2+ |

**2004 BG$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 123.39210 | | (2000.0) | | | |
| $n$ | 0.18601345 | $\omega$ | 266.47837 | | −0.51695907 | +0.84722690 |
| $a$ | 3.0392970 | $\Omega$ | 331.32809 | | −0.64866541 | −0.48095459 |
| $e$ | 0.1887408 | $i$ | 14.76906 | | −0.55855752 | −0.22558647 |
| $P$ | 5.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.1− | 0.9+ | 2004 02 19 | 704 | 0.9+ | 0.3+ | 2004 03 19 | 704 | 0.8+ | 1.5+ |
| 2000 08 21 | 699 | 0.4− | 1.3+ | 2004 02 19 | 704 | 0.3+ | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.4− |
| 2000 08 21 | 699 | 1.8− | 0.9+ | 2004 02 19 | 704 | 0.2+ | 0.7+ | 2004 03 19 | 704 | (1.9+ | 2.0+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.3− | 0.4+ | 2004 02 20 | 608 | 0.3− | 0.8− | 2004 03 19 | 704 | 0.7+ | 0.2− | | |
| 2004 01 29 | 291 | 0.4− | 0.2+ | 2004 02 20 | 608 | 0.1− | 0.4− | 2004 03 19 | 704 | 1.2+ | 0.3+ | | |
| 2004 01 29 | 291 | 0.1− | 0.1+ | 2004 02 20 | 608 | 0.2+ | 0.7− | 2004 04 12 | 703 | 0.7+ | 1.2− | | |
| 2004 01 29 | 291 | 0.3− | 0.1+ | 2004 02 26 | 704 | (0.1+ | 1.7−) | 2004 04 12 | 703 | 0.4+ | 0.5+ | | |
| 2004 01 30 | 291 | 0.3− | 0.3+ | 2004 02 26 | 704 | (0.2+ | 1.6−) | 2004 04 12 | 703 | 0.4− | 0.8+ | | |
| 2004 01 30 | 291 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.4+ | 1.2− | 2004 04 12 | 703 | 1.0− | 0.3− | | |
| 2004 01 30 | 291 | 0.2− | 0.4+ | 2004 02 26 | 704 | 0.4+ | 0.6− | 2005 07 29 | E12 | 0.3− | 0.6− | | |
| 2004 02 17 | 703 | 0.4+ | 0.3− | 2004 02 26 | 704 | 0.1+ | 1.0+ | 2005 07 29 | E12 | 0.3+ | 0.7− | | |
| 2004 02 17 | 703 | 0.2− | 1.1− | 2004 03 16 | 704 | (0.5+ | 6.7+) | 2005 07 29 | E12 | 1.0+ | 0.6− | | |
| 2004 02 17 | 703 | 0.6− | 0.9− | 2004 03 16 | 704 | (0.7+ | 2.7+) | 2005 07 29 | E12 | (0.2+ | 2.3−) | | |
| 2004 02 17 | 703 | 0.3− | 0.2+ | 2004 03 16 | 704 | 1.4+ | 1.1+ | | | | | | |
| 2004 02 19 | 704 | 1.0+ | 0.9− | 2004 03 16 | 704 | (1.5+ | 2.4+) | | | | | | |

### 2004 BM$_{103}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.91233 | | (2000.0) | | | |
| $n$ | 0.27762828 | $\omega$ | 356.57704 | | −0.71285153 | −0.69610327 |
| $a$ | 2.3271636 | $\Omega$ | 138.86325 | | +0.64648560 | −0.69940483 |
| $e$ | 0.0635166 | $i$ | 7.45365 | | +0.27184383 | −0.16208987 |
| $P$ | 3.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.1− | 0.1− | 2004 02 03 | 333 | 0.3+ | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.1− | | |
| 2004 01 18 | 644 | 0.4+ | 0.1+ | 2004 02 03 | 333 | 0.9− | 0.3− | 2004 02 23 | 704 | 0.5+ | 0.4− | | |
| 2004 01 18 | 644 | 0.4+ | 0.0 | 2004 02 11 | 333 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.8+ | 0.2− | | |
| 2004 01 18 | 608 | 0.3− | 0.1− | 2004 02 11 | 333 | 0.0 | 0.6− | 2004 02 23 | 704 | 0.4+ | 0.1+ | | |
| 2004 01 18 | 608 | 0.2− | 0.3− | 2004 02 11 | 699 | 0.5+ | 0.6− | 2004 02 23 | 704 | 0.5+ | 0.4+ | | |
| 2004 01 18 | 608 | 0.4− | 0.1+ | 2004 02 11 | 699 | 0.3+ | 0.2− | 2004 03 14 | 704 | 0.4+ | 0.7+ | | |
| 2004 01 24 | 704 | 0.9+ | 0.2− | 2004 02 11 | 699 | 0.2− | 0.7− | 2004 03 14 | 704 | 0.1+ | 0.6+ | | |
| 2004 01 24 | 704 | 0.3+ | 0.0 | 2004 02 11 | 699 | 0.8− | 0.5− | 2004 03 14 | 704 | 0.2− | 0.2− | | |
| 2004 01 24 | 704 | 0.0 | 0.3− | 2004 02 13 | 691 | 0.4− | 0.2+ | 2004 03 19 | 644 | 0.2+ | 0.2+ | | |
| 2004 01 24 | 704 | 0.6− | 0.1− | 2004 02 13 | 691 | 0.1− | 0.2− | 2004 03 19 | 644 | 0.3− | 0.1+ | | |
| 2004 01 29 | 704 | 1.0+ | 0.5+ | 2004 02 13 | 691 | 0.1− | 0.3− | 2004 03 19 | 644 | 0.1− | 0.0 | | |
| 2004 01 29 | 704 | 0.1+ | 0.5+ | 2004 02 17 | 704 | 0.3− | 0.5+ | 2006 11 13 | 703 | 0.9− | 0.2+ | | |
| 2004 01 29 | 704 | 0.0 | 0.3+ | 2004 02 17 | 704 | 0.3+ | 0.9+ | 2006 11 13 | 703 | 0.8+ | 0.0 | | |
| 2004 01 29 | 704 | 0.8+ | 0.6+ | 2004 02 17 | 704 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.2+ | | |
| 2004 01 29 | 704 | 0.1+ | 0.8+ | 2004 02 17 | 704 | 0.2− | 1.0+ | 2006 11 13 | 703 | (0.0 | 2.7−) | | |
| 2004 01 31 | 333 | 0.2+ | 0.6+ | 2004 02 17 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.1− | | |
| 2004 01 31 | 333 | 0.9+ | 0.1+ | 2004 02 21 | 049 | 0.6− | 0.4− | 2006 11 19 | 703 | 0.3+ | 0.0 | | |
| 2004 01 31 | 333 | 0.1− | 0.0 | 2004 02 21 | 049 | 0.5− | 0.5− | 2006 11 19 | 703 | 0.3+ | 0.3+ | | |
| 2004 02 03 | 333 | 0.5− | 0.6− | 2004 02 21 | 049 | 0.9− | 0.4− | 2006 11 19 | 703 | 0.4− | 0.5− | | |

### 2004 BQ$_{103}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.88406 | | (2000.0) | | | |
| $n$ | 0.28455516 | $\omega$ | 352.76448 | | +0.22155356 | −0.87598897 |
| $a$ | 2.2892422 | $\Omega$ | 83.71581 | | +0.91488762 | +0.03467214 |
| $e$ | 0.2147618 | $i$ | 25.53268 | | +0.33748282 | +0.48108332 |
| $P$ | 3.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 21 | 704 | (0.4+ | 1.8−) | 2004 01 31 | 703 | 0.3+ | 0.6+ | 2006 09 26 | E12 | 0.5− | 0.1− | | |
| 2001 04 21 | 704 | 0.5− | 0.5− | 2004 02 03 | 704 | 0.6− | 0.5+ | 2006 10 03 | E12 | 0.1− | 0.4+ | | |
| 2001 04 21 | 704 | 0.4+ | 1.0+ | 2004 02 03 | 704 | 0.4− | 0.4− | 2006 10 03 | E12 | 0.2+ | 0.4+ | | |
| 2001 04 21 | 704 | 0.3+ | 0.8+ | 2004 02 03 | 704 | 0.1+ | 0.1− | 2006 10 03 | E12 | 0.3− | 0.6+ | | |
| 2003 11 21 | 644 | 0.1+ | 0.0 | 2004 02 10 | 704 | 0.4+ | 0.0 | 2006 10 03 | E12 | 0.2− | 0.4+ | | |
| 2003 11 21 | 644 | 0.4− | 0.6− | 2004 02 10 | 704 | 0.6+ | 1.0− | 2006 10 12 | E12 | 0.0 | 0.0 | | |
| 2003 11 21 | 644 | 0.1− | 0.2− | 2004 02 10 | 704 | 0.5− | 0.0 | 2006 10 12 | E12 | 0.2+ | 0.1+ | | |
| 2003 11 21 | 644 | 0.0 | 0.2− | 2004 02 10 | 704 | 0.3− | 0.8− | 2006 10 12 | E12 | 0.0 | 0.3− | | |
| 2003 11 21 | 644 | 0.0 | 0.0 | 2004 02 10 | 704 | 0.0 | 0.1+ | 2006 10 30 | E12 | 0.3+ | 0.3+ | | |
| 2003 11 21 | 644 | 0.0 | 0.5− | 2004 02 11 | 704 | 0.0 | 0.2+ | 2006 10 30 | E12 | 0.6− | 0.9+ | | |
| 2003 12 04 | 704 | 0.3− | 0.5+ | 2004 02 11 | 704 | 0.1− | 0.1− | 2006 10 30 | E12 | 0.4− | 0.4+ | | |
| 2003 12 04 | 704 | 0.2+ | 0.2+ | 2004 02 11 | 704 | 0.1− | 0.4+ | 2006 10 30 | E12 | 0.7− | 0.2− | | |
| 2003 12 04 | 704 | 0.9+ | 0.0 | 2004 02 11 | 704 | 0.3+ | 0.4+ | 2006 11 14 | E12 | 0.6+ | 0.3− | | |
| 2003 12 04 | 704 | (0.8− | 2.5+) | 2004 02 11 | 704 | 0.3+ | 0.3+ | 2006 11 14 | E12 | 0.4+ | 0.3− | | |
| 2003 12 04 | 704 | 0.3− | 0.6− | 2004 04 14 | 704 | 0.0 | 0.9+ | 2006 11 14 | E12 | 0.2− | 0.1+ | | |
| 2003 12 17 | 704 | 0.9+ | 0.1− | 2004 04 14 | 704 | 0.0 | 0.1− | 2006 11 14 | E12 | 0.3− | 0.3+ | | |
| 2003 12 17 | 704 | 1.2+ | 1.0+ | 2004 04 14 | 704 | 0.1− | 1.0+ | 2006 11 25 | 703 | 0.7+ | 0.1− | | |
| 2003 12 17 | 704 | 0.7+ | 0.8− | 2004 04 14 | 704 | 0.0 | 0.4+ | 2006 11 25 | 703 | 0.3+ | 0.1− | | |
| 2003 12 17 | 704 | (2.2+ | 0.4+) | 2004 04 14 | 704 | 0.2+ | 1.1+ | 2006 11 25 | 703 | 0.6− | 0.1− | | |
| 2004 01 31 | 703 | 0.6− | 0.5+ | 2006 09 26 | E12 | 0.0 | 0.1− | 2006 11 25 | 703 | 0.1+ | 0.2− | | |
| 2004 01 31 | 703 | 0.2− | 0.3− | 2006 09 26 | E12 | 0.2− | 0.2− | | | | | | |
| 2004 01 31 | 703 | 1.0− | 0.7− | 2006 09 26 | E12 | 0.3− | 0.3+ | | | | | | |

### 2004 BZ$_{104}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.83692 | | (2000.0) | | | |
| $n$ | 0.23391235 | $\omega$ | 96.51104 | | −0.44745043 | +0.89399438 |
| $a$ | 2.6087589 | $\Omega$ | 146.87597 | | −0.83670606 | −0.40912182 |
| $e$ | 0.0796113 | $i$ | 2.48676 | | −0.31577062 | −0.18273855 |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 0.4+ | 0.0 | 2005 06 05 | 704 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.0 | | |
| 1997 10 05 | 691 | 0.2− | 0.7+ | 2005 06 05 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 1997 10 05 | 691 | 0.0 | 0.2+ | 2005 06 17 | G96 | 0.0 | 0.6+ | 2006 10 16 | 703 | (0.6+ | 1.9+) | | |
| 2000 01 16 | 691 | 0.1+ | 0.2− | 2005 06 17 | G96 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.7+ | 1.2+ | | |
| 2000 01 16 | 691 | 1.0− | 0.1+ | 2005 06 17 | G96 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.4+ | 0.3+ | | |
| 2000 01 16 | 691 | 0.1− | 0.5− | 2005 06 17 | G96 | 0.0 | 0.4+ | 2006 10 16 | 703 | (6.9− | 1.1−) | | |
| 2000 03 11 | 704 | 0.2+ | 1.0+ | 2005 06 17 | G96 | 0.0 | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | | |
| 2000 03 11 | 704 | 0.8+ | 0.9+ | 2005 06 17 | G96 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2000 03 11 | 704 | 0.6− | 0.1− | 2005 06 17 | G96 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.6+ | | |
| 2000 03 11 | 704 | 0.3+ | 0.4− | 2005 06 17 | G96 | 0.8+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2003 12 19 | 291 | 0.3− | 0.9+ | 2005 07 05 | G96 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.1− | | |
| 2003 12 19 | 291 | 0.1− | 0.7+ | 2005 07 05 | G96 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2003 12 19 | 291 | 0.8− | 0.3+ | 2005 07 05 | G96 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.7+ | | |
| 2004 01 24 | 704 | 1.1+ | 1.2+ | 2005 07 05 | G96 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.2+ | | |
| 2004 01 24 | 704 | 1.5+ | 0.9+ | 2005 07 05 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.1− | | |
| 2004 01 24 | 704 | 1.0+ | 0.0 | 2005 07 05 | G96 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.5+ | | |
| 2004 01 24 | 704 | 0.5+ | 0.4+ | 2005 07 05 | G96 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.6− | | |
| 2004 01 30 | 704 | 0.2− | 0.7+ | 2005 07 05 | G96 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.4− | | |
| 2004 01 30 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 10 22 | G96 | 1.0− | 1.1− | | |
| 2004 01 30 | 704 | 0.5+ | 1.0+ | 2006 09 14 | 691 | 0.6− | 0.7+ | 2006 10 22 | G96 | 0.6+ | 0.6− | | |
| 2004 01 30 | 704 | 0.2+ | 1.2+ | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− | | |
| 2004 04 16 | 645 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2004 04 16 | 645 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2005 06 05 | 704 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.4− | | |
| 2005 06 05 | 704 | 0.6+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | | | | | | |

### 2004 BN$_{106}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 274.94783 | | (2000.0) | | | |
| $n$ | 0.28479037 | $\omega$ | 178.19314 | | −0.68433464 | −0.72849681 |
| $a$ | 2.2879815 | $\Omega$ | 314.98845 | | +0.66844269 | −0.60962565 |
| $e$ | 0.0639864 | $i$ | 2.53498 | | +0.29132537 | −0.31248835 |
| $P$ | 3.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 06 | 691 | 0.2− | 0.3− | 2004 01 26 | 699 | 0.8+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.8+ | | |
| 1997 01 06 | 691 | 0.4− | 0.8− | 2004 01 30 | 704 | 0.9+ | 0.5+ | 2006 11 22 | 704 | 0.6+ | 1.1+ | | |
| 1997 01 06 | 691 | 0.5− | 0.2− | 2004 01 30 | 704 | 0.3+ | 0.1− | 2006 11 22 | 704 | 1.2+ | 1.0+ | | |
| 1999 10 13 | 704 | 0.0 | 0.5− | 2004 01 30 | 704 | 1.1+ | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.6+ | | |
| 1999 10 13 | 704 | 1.5+ | 0.2+ | 2004 01 30 | 704 | 0.8+ | 0.5− | 2006 11 22 | 704 | (2.1+ | 1.1+) | | |
| 1999 10 13 | 704 | 0.9+ | 0.2− | 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.6− | 0.9− | | |
| 1999 10 13 | 704 | (2.3+ | 0.7−) | 2004 02 11 | 691 | 0.5+ | 0.0 | 2006 11 23 | 703 | 1.3+ | 0.0 | | |
| 1999 10 13 | 704 | 1.7+ | 0.5+ | 2004 02 11 | 691 | 0.4+ | 0.0 | 2006 11 23 | 703 | 1.2− | 1.2+ | | |
| 2002 09 05 | 704 | (2.1− | 0.6−) | 2004 02 26 | 704 | 0.1+ | 0.2− | 2006 11 23 | 703 | (1.8+ | 1.3+) | | |
| 2002 09 05 | 704 | 0.5− | 0.2+ | 2004 02 26 | 704 | 0.2− | 0.7− | 2006 11 23 | G96 | 0.0 | 0.6− | | |
| 2002 09 05 | 704 | 0.8− | 0.1− | 2004 02 26 | 704 | 0.1+ | 0.8− | 2006 11 23 | G96 | 0.3+ | 0.5− | | |
| 2003 12 22 | 291 | 0.4− | 0.6+ | 2004 02 26 | 704 | 0.2− | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.6− | | |
| 2003 12 22 | 291 | 0.5− | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.5− | 0.6− | | |
| 2003 12 22 | 291 | 0.9− | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 24 | 703 | 0.4+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 24 | 703 | 0.5− | 0.0 | | |
| 2004 01 16 | 644 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.6+ | 2006 11 24 | 703 | 0.4− | 0.3− | | |
| 2004 01 16 | 644 | 0.3+ | 0.1− | 2006 11 19 | 704 | (0.2− | 1.8+) | 2006 11 24 | 703 | 0.7+ | 0.3− | | |
| 2004 01 26 | 699 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.2− | 1.0+ | 2006 11 24 | 291 | 0.3− | 0.0 | | |
| 2004 01 26 | 699 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.3+ | 2006 11 24 | 291 | 0.3− | 0.1− | | |
| 2004 01 26 | 699 | 0.2+ | 0.7− | 2006 11 19 | 704 | 0.3+ | 1.2+ | 2006 11 24 | 291 | 0.1− | 0.2− | | |

**2004 BX$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.38400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28633990 | $\omega$ | 15.80263 | | +0.37727872 | −0.92470954 | |
| $a$ | 2.2797198 | $\Omega$ | 52.05966 | | +0.84256064 | +0.31999697 | |
| $e$ | 0.1594747 | $i$ | 3.68774 | | +0.38438566 | +0.20618973 | |
| $P$ | 3.44 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 0.0 | 0.6+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 | | |
| 2001 03 16 | 691 | 0.3+ | 0.1− | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.5+ | 0.0 | | |
| 2001 03 16 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.8+ | 2006 10 28 | 691 | 0.4+ | 0.3− | | |
| 2001 04 15 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2001 04 15 | 691 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.7+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | | |
| 2001 04 15 | 691 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.0 | | |
| 2004 01 27 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.3+ | | |
| 2004 01 27 | 704 | 1.5− | 0.8+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2004 01 27 | 704 | (0.3+ | 1.8+) | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | | |
| 2004 01 27 | 704 | 0.8− | 0.4+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.2− | | |
| 2004 01 30 | 704 | 0.4− | 0.7+ | 2006 10 11 | 644 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1− | | |
| 2004 01 30 | 704 | 0.1+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− | | |
| 2004 01 30 | 704 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.5− | | |
| 2004 01 30 | 704 | 0.9− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.4− | | |
| 2004 02 10 | 703 | 0.4+ | 0.7+ | 2006 10 12 | 644 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.4− | | |
| 2004 02 10 | 703 | 0.8+ | 0.5+ | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− | | |
| 2004 02 10 | 703 | 0.6+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.4− | | |
| 2004 02 10 | 644 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.7− | | |
| 2004 02 10 | 703 | 0.6− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 1.4− | | |
| 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.5+ | | |
| 2004 02 10 | 644 | 0.7+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5− | 0.5+ | | |
| 2004 02 13 | 699 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.5− | 0.1+ | | |
| 2004 02 13 | 699 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6− | 0.2+ | | |
| 2004 02 13 | 699 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.7− | 0.3+ | | |
| 2004 02 13 | 699 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.6− | 0.9+ | | |
| 2004 02 15 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 1.0− | 0.9+ | | |
| 2004 02 15 | 704 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ | | |
| 2004 02 15 | 704 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.3+ | | |
| 2004 02 15 | 704 | 0.7+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.3− | 2006 11 23 | 691 | 0.9− | 0.5+ | | |
| 2004 02 15 | 704 | 0.4− | 0.9− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.7+ | 0.4− | | |
| 2004 03 17 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.6− | 2006 11 27 | 703 | 1.3− | 0.4− | | |
| 2004 03 17 | 645 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.6− | 0.2+ | | |
| 2004 04 15 | 645 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.1+ | 0.7− | | |
| 2004 04 15 | 645 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.6− | | | | | | |

**2004 BE$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.39346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28111053 | $\omega$ | 126.05299 | | −0.81992460 | −0.57108557 | |
| $a$ | 2.3079053 | $\Omega$ | 19.22024 | | +0.47862456 | −0.72200520 | |
| $e$ | 0.1167946 | $i$ | 6.94594 | | +0.31407353 | −0.39060180 | |
| $P$ | 3.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 703 | 0.9− | 0.2+ | 2004 03 18 | 644 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.0 | | |
| 2004 01 28 | 703 | 0.9− | 1.1+ | 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 10 31 | 691 | 0.4+ | 0.0 | | |
| 2004 01 28 | 703 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.4− | | |
| 2004 01 28 | 703 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.4+ | 0.1+ | | |
| 2004 01 30 | 704 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.4+ | 0.0 | | |
| 2004 01 30 | 704 | 0.4+ | 1.3+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.6− | 0.1− | | |
| 2004 01 30 | 704 | 0.9+ | 0.5+ | 2006 10 19 | G96 | (0.9+ | 1.8−) | 2006 11 14 | 703 | 0.2+ | 0.5− | | |
| 2004 01 30 | 704 | 0.9+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.6+ | | |
| 2004 02 11 | 644 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.4+ | 0.1+ | | |
| 2004 02 11 | 644 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.4+ | 0.3− | | |
| 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− | | |
| 2004 02 13 | 691 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.8− | 0.6− | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2004 02 13 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.5− | | |
| 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.1+ | | |
| 2004 03 18 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.5− | 0.6+ | 2006 11 22 | 704 | 0.7+ | 0.8+ | | |
| 2004 03 18 | 644 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.5+ | | |

**2004 BK$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.64151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25640538 | $\omega$ | 71.56713 | | −0.23972984 | −0.96919725 | |
| $a$ | 2.4538685 | $\Omega$ | 32.47013 | | +0.84633606 | −0.23711898 | |
| $e$ | 0.1539808 | $i$ | 6.03543 | | +0.47565205 | −0.06656789 | |
| $P$ | 3.84 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 29 | 691 | 0.1+ | 0.1− | 2004 01 28 | 703 | 0.2− | 0.2− | 2004 02 22 | 703 | 0.6− | 0.6+ | | |
| 1993 04 29 | 691 | 0.2− | 0.1+ | 2004 01 28 | 703 | 0.1− | 0.0 | 2004 02 22 | 703 | (0.8+ | 1.6+) | | |
| 1993 04 29 | 691 | 0.0 | 0.0 | 2004 01 28 | 703 | 0.5− | 0.3+ | 2004 02 22 | 703 | 0.7− | 0.2+ | | |
| 1999 12 12 | 704 | 0.7+ | 1.1− | 2004 01 28 | 703 | 0.2− | 0.3+ | 2004 02 22 | 703 | 0.8− | 1.3+ | | |
| 1999 12 12 | 704 | 0.7− | 1.7− | 2004 01 30 | 704 | 0.2+ | 0.3− | 2004 03 10 | 703 | (1.6− | 0.6−) | | |
| 1999 12 12 | 704 | 0.3− | 1.0− | 2004 01 30 | 704 | 0.1− | 0.1− | 2004 03 10 | 703 | 0.6− | 0.1− | | |
| 1999 12 12 | 704 | 0.1− | 0.1+ | 2004 01 30 | 704 | 0.2+ | 0.5+ | 2004 03 10 | 703 | (1.6− | 2.0+) | | |
| 2002 08 19 | 644 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 0.3+ | 0.6− | 2004 03 10 | 703 | 1.3− | 0.9+ | | |
| 2002 08 19 | 644 | 0.3− | 0.2+ | 2004 01 30 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.1− | | |
| 2002 08 19 | 644 | 0.2− | 1.0+ | 2004 02 14 | 703 | 0.4+ | 0.0 | 2006 08 29 | 691 | 0.0 | 0.2+ | | |
| 2002 08 30 | 644 | 0.3− | 0.1− | 2004 02 14 | 703 | 0.5+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.1+ | | |
| 2002 08 30 | 644 | 0.1− | 0.2+ | 2004 02 14 | 703 | 0.9+ | 0.5− | 2006 09 14 | 703 | (1.7− | 2.1+) | | |
| 2002 08 30 | 644 | 0.2− | 0.4+ | 2004 02 14 | 703 | 0.1+ | 1.0− | 2006 09 14 | 703 | 0.7+ | 0.6+ | | |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2004 02 15 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.7+ | | |
| 2002 09 16 | 644 | 0.7− | 0.3+ | 2004 02 15 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.2+ | | |
| 2002 09 16 | 644 | 0.3− | 0.5+ | 2004 02 15 | 704 | 0.8+ | 0.1+ | 2006 10 03 | G96 | 0.2− | 0.2+ | | |
| 2002 09 16 | 644 | 0.3− | 0.8+ | 2004 02 15 | 704 | 0.8+ | 0.3+ | 2006 10 03 | G96 | 0.5− | 0.4− | | |
| 2003 12 17 | 644 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.4+ | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.3− | | |
| 2003 12 17 | 644 | 0.1− | 0.4+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.2− | 0.1+ | | |
| 2003 12 17 | 644 | 0.0 | 0.5+ | 2004 02 16 | 691 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1− | | |
| 2004 01 13 | 699 | 0.7− | 0.9+ | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.5+ | 0.1+ | | |
| 2004 01 13 | 699 | 0.2+ | 0.3− | 2004 02 18 | 644 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.1− | | |
| 2004 01 13 | 699 | 1.0+ | 0.2− | 2004 02 18 | 644 | 0.6+ | 0.7+ | | | | | | |
| 2004 01 13 | 699 | 0.2+ | 0.5− | 2004 02 18 | 644 | 0.0 | 0.9+ | | | | | | |

**2004 BT$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.60095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22983377 | $\omega$ | 183.58814 | | −0.92081487 | −0.37567512 | |
| $a$ | 2.6395313 | $\Omega$ | 333.57254 | | +0.36342076 | −0.72910476 | |
| $e$ | 0.1861179 | $i$ | 13.61004 | | +0.14151090 | −0.57207907 | |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 644 | 0.2− | 0.2+ | 2004 02 19 | 608 | 0.3− | 0.5+ | 2004 03 19 | 644 | 0.1+ | 0.1+ | | |
| 2003 12 18 | 644 | 0.6− | 0.0 | 2004 02 19 | 608 | 0.5− | 0.5+ | 2004 03 19 | 704 | 0.0 | 0.3− | | |
| 2003 12 18 | 644 | 0.6− | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 1.4+ | 1.0− | | |
| 2004 01 28 | 703 | 0.5+ | 0.4− | 2004 02 23 | 704 | 0.1− | 0.1− | 2004 03 19 | 704 | 1.3+ | 0.8+ | | |
| 2004 01 28 | 703 | 0.3− | 0.5− | 2004 02 23 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 1.0+ | 0.1+ | | |
| 2004 01 28 | 703 | 0.5− | 0.6− | 2004 02 23 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.3+ | | |
| 2004 01 28 | 703 | 0.2− | 1.1− | 2004 02 23 | 704 | 0.4+ | 0.2− | 2006 10 18 | 691 | 0.7+ | 0.1− | | |
| 2004 01 30 | 704 | 0.4+ | 0.6+ | 2004 02 29 | 691 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.3− | | |
| 2004 01 30 | 704 | 0.1+ | 0.4+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.2− | | |
| 2004 01 30 | 704 | 0.2+ | 0.4+ | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.5+ | | |
| 2004 02 14 | 608 | 0.1+ | 0.5− | 2004 03 01 | 291 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ | | |
| 2004 02 14 | 608 | 0.1+ | 0.7− | 2004 03 01 | 291 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.8+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 608 | 0.0 | 0.4− | 2004 03 01 | 291 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3+ | | |
| 2004 02 16 | 704 | 1.3− | 0.5+ | 2004 03 14 | 704 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2− | | |
| 2004 02 16 | 704 | 0.1+ | 0.5− | 2004 03 14 | 704 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.2− | | |
| 2004 02 16 | 704 | 0.1+ | 0.2− | 2004 03 14 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 291 | 0.1− | 0.0 | | |
| 2004 02 16 | 704 | 0.1+ | 0.1− | 2004 03 14 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 291 | 0.1+ | 0.2+ | | |
| 2004 02 16 | 704 | 0.5+ | 0.1− | 2004 03 19 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 291 | 0.3− | 0.6− | | |
| 2004 02 19 | 608 | 0.3− | 0.5+ | 2004 03 19 | 644 | 0.1+ | 0.1+ | | | | | | |

**2004 BY$_{107}$ = 2006 VT$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.88863 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30156165 | $\omega$ | 10.36638 | | −0.20849308 | | −0.97533161 |
| $a$ | 2.2023448 | $\Omega$ | 91.69544 | | +0.89204650 | | −0.22004080 |
| $e$ | 0.1135416 | $i$ | 4.16046 | | +0.40097841 | | −0.01761508 |
| $P$ | 3.27 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.0 | 2004 02 14 | 608 | 0.5+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2004 02 14 | 608 | 0.4− | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2004 01 28 | 703 | 1.0− | 1.5− | 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2004 01 28 | 703 | 0.0 | 1.3− | 2004 02 15 | 704 | 0.4+ | 0.5− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 01 28 | 703 | 1.0− | 0.1− | 2004 02 15 | 704 | 0.7+ | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2004 01 28 | 703 | (1.3− | 1.9−) | 2004 02 15 | 704 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2004 01 30 | 704 | 1.2+ | 0.7+ | 2004 02 15 | 704 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2004 01 30 | 704 | 0.6+ | 1.3+ | 2004 02 19 | 608 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 01 30 | 704 | 1.0+ | 0.6+ | 2004 02 19 | 608 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2004 02 11 | 691 | 0.2− | 0.0 | 2004 02 19 | 608 | 0.7− | 0.5− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2004 02 11 | 691 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2004 02 14 | 608 | 0.8+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1− | | | | |

**2004 BE$_{108}$ = 2006 SZ$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.04779 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27788552 | $\omega$ | 349.84501 | | +0.17198831 | | −0.98066243 |
| $a$ | 2.3257272 | $\Omega$ | 90.20673 | | +0.91023395 | | +0.12195167 |
| $e$ | 0.1212249 | $i$ | 5.35855 | | +0.37668843 | | +0.15306528 |
| $P$ | 3.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.2+ | 0.0 | 2004 01 30 | 704 | 1.3− | 0.3− | 2006 09 30 | 703 | 0.4− | 1.1− |
| 1999 11 01 | 703 | 1.0− | 0.1+ | 2004 02 15 | 704 | 1.2+ | 0.8+ | 2006 09 30 | 703 | 0.4+ | 0.8− |
| 1999 11 01 | 703 | 0.2+ | 0.5+ | 2004 02 15 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 1.1+ |
| 1999 11 01 | 703 | 0.6+ | 0.3− | 2004 02 15 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.8+ | 0.1+ |
| 2004 01 28 | 703 | 0.1+ | 0.0 | 2004 02 15 | 704 | (1.8+ | 0.5+) | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2004 01 28 | 703 | 0.2+ | 0.4+ | 2004 02 19 | 608 | 0.2+ | 0.8− | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2004 01 28 | 703 | 1.0− | 0.2+ | 2004 02 19 | 608 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.8+ | 0.2− |
| 2004 01 28 | 703 | 0.0 | 0.1+ | 2004 02 19 | 608 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2004 01 30 | 704 | 0.4+ | 0.8− | 2006 09 29 | 699 | (1.7+ | 0.1+) | 2006 10 16 | 703 | 0.5+ | 0.8+ |
| 2004 01 30 | 704 | (1.8− | 0.0 ) | 2006 09 29 | 699 | (2.3+ | 1.3+) | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2004 01 30 | 704 | (0.5+ | 2.0−) | 2006 09 29 | 699 | 1.0− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2004 01 30 | 704 | 0.0 | 0.3− | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.6+ |

**2004 BH$_{108}$ = 2006 WT$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.87531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28018883 | $\omega$ | 129.35121 | | −0.99105743 | | −0.12195521 |
| $a$ | 2.3129638 | $\Omega$ | 43.72159 | | +0.08498146 | | −0.88973204 |
| $e$ | 0.0861196 | $i$ | 4.49347 | | +0.10287530 | | −0.43989069 |
| $P$ | 3.52 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.1+ | 0.2− | 2004 02 11 | 644 | 0.5− | 0.5− | 2004 02 15 | 704 | 0.1+ | 0.5+ |
| 2004 01 18 | 644 | 0.0 | 0.3− | 2004 02 11 | 644 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2004 01 18 | 644 | 0.1+ | 0.3− | 2004 02 11 | 644 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2004 01 28 | 703 | 0.3− | 0.4+ | 2004 02 14 | 703 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.2+ |
| 2004 01 28 | 703 | 0.0 | 0.7+ | 2004 02 14 | 703 | 0.8− | 0.3− | 2006 09 27 | G96 | 0.0 | 0.0 |
| 2004 01 28 | 703 | 0.4+ | 0.3+ | 2004 02 14 | 703 | 0.2+ | 0.6+ | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2004 01 28 | 703 | 0.3− | 0.6+ | 2004 02 14 | 703 | (1.7− | 1.5−) | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2004 01 30 | 704 | 0.2− | 0.2− | 2004 02 15 | 704 | 0.8+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2004 01 30 | 704 | 0.8+ | 1.0+ | 2004 02 15 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2004 01 30 | 704 | 0.3− | 1.0− | 2004 02 15 | 704 | 0.5+ | 0.5− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2004 01 30 | 704 | 0.8− | 0.4− | 2004 02 15 | 704 | 0.8+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1+ |

**2004 BN$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.88113 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17417175 | $\omega$ | 219.78035 | | −0.80167963 | | +0.59751176 |
| $a$ | 3.1755399 | $\Omega$ | 356.76737 | | −0.44224659 | | −0.61202940 |
| $e$ | 0.2191306 | $i$ | 17.56084 | | −0.40215385 | | −0.51807308 |
| $P$ | 5.66 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 703 | 0.4− | 0.5− | 2004 02 15 | 704 | 0.3+ | 0.6− | 2004 04 20 | 704 | 0.2− | 0.2+ |
| 2004 01 28 | 703 | 0.2− | 0.0 | 2004 02 15 | 704 | 0.0 | 0.0 | 2004 04 20 | 704 | 0.5+ | 0.6− |
| 2004 01 28 | 703 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.1+ | 0.1+ | 2004 04 20 | 704 | 1.8− | 1.7+ |
| 2004 01 28 | 703 | 0.1+ | 0.4+ | 2004 02 15 | 704 | 1.0+ | 0.3+ | 2004 04 20 | 704 | 0.3+ | 1.7− |
| 2004 01 30 | 699 | 0.1+ | 0.7− | 2004 03 23 | 704 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2004 01 30 | 699 | 0.7+ | 0.5+ | 2004 03 23 | 704 | 0.5+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2004 01 30 | 699 | 1.4− | 0.1− | 2004 03 23 | 704 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.1+ |
| 2004 01 30 | 699 | 1.2− | 0.2− | 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2004 01 30 | 704 | 0.8+ | 0.6+ | 2004 03 23 | 704 | 0.2− | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2004 01 30 | 704 | 1.5+ | 0.2+ | 2004 03 28 | 703 | 0.0 | 1.6+ | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2004 01 30 | 704 | 0.3− | 0.0 | 2004 03 28 | 703 | 0.9− | 0.8− | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2004 01 30 | 704 | 0.4− | 0.2− | 2004 03 28 | 703 | 0.6− | 0.8+ | 2006 10 16 | G96 | 0.4− | 0.2+ |
| 2004 02 15 | 704 | 0.5+ | 0.1− | 2004 03 28 | 703 | 0.7− | 0.4+ | | | | |

**2004 BO$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.32218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28646953 | $\omega$ | 73.37308 | | −0.76881645 | | −0.62667877 |
| $a$ | 2.2790320 | $\Omega$ | 67.63608 | | +0.52164469 | | −0.72972268 |
| $e$ | 0.1103191 | $i$ | 7.90956 | | +0.36987578 | | −0.27345663 |
| $P$ | 3.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 691 | 0.1+ | 0.3+ | 2004 03 14 | 704 | 0.1+ | 0.4+ | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2001 05 17 | 691 | 0.0 | 0.1− | 2004 03 14 | 704 | 0.4− | 0.3− | 2006 11 17 | 644 | 0.0 | 0.3+ |
| 2001 05 17 | 691 | 0.1+ | 0.1+ | 2004 03 14 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2003 12 28 | 699 | 1.0+ | 0.1− | 2004 03 14 | 704 | 0.5+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2003 12 28 | 699 | 1.4− | 0.1+ | 2004 03 18 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2003 12 28 | 699 | 0.1+ | 0.8+ | 2004 03 18 | 644 | 0.1+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2003 12 28 | 699 | (1.6+ | 0.1−) | 2004 03 18 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.1− | 0.8+ |
| 2004 01 28 | 703 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.0 | 2006 11 21 | 704 | 1.5− | 0.1− |
| 2004 01 28 | 703 | 0.7+ | 1.0+ | 2004 03 23 | 704 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2004 01 28 | 703 | (1.6− | 0.6−) | 2004 03 23 | 704 | 0.7− | 0.6+ | 2006 11 21 | 704 | 0.8− | 0.4+ |
| 2004 01 28 | 703 | 0.5− | 0.8− | 2004 03 23 | 704 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2004 01 30 | 699 | 0.9− | 0.5− | 2004 03 23 | 704 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 01 30 | 699 | 0.0 | 0.0 | 2004 03 25 | 704 | 0.7+ | 0.6− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 01 30 | 699 | (1.7− | 1.1+) | 2004 03 25 | 704 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2004 01 30 | 699 | 0.1+ | 0.5− | 2004 03 25 | 704 | (0.8+ | 1.7−) | 2006 11 27 | 703 | 0.6− | 0.1− |
| 2004 01 30 | 704 | 0.4+ | 0.2+ | 2004 03 25 | 704 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2004 01 30 | 704 | 0.5+ | 0.3− | 2004 03 25 | 704 | 0.3− | 1.1− | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2004 01 30 | 704 | 0.2+ | 0.8+ | 2006 10 31 | G96 | 0.4+ | 0.0 | 2006 11 27 | 703 | 0.1− | 0.2+ |
| 2004 01 30 | 704 | (0.2− | 1.6−) | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2004 01 30 | 704 | 0.3− | 0.7+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.0 | 0.1− |
| 2004 02 11 | 644 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.2− |
| 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.3+ | 0.0 |
| 2004 02 15 | 704 | 0.6− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.3− |
| 2004 02 15 | 704 | 0.2+ | 0.4− | 2006 11 15 | 703 | 0.8− | 0.1− | 2006 12 01 | 704 | 1.7+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 704 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.8+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.0 | | |
| 2004 02 15 | 704 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.5+ | 1.4− | 2006 12 01 | 704 | 0.4+ | 1.1− | | |
| 2004 02 15 | 704 | 0.4− | 0.2− | 2006 11 15 | 703 | 0.4− | 0.1+ | 2006 12 01 | 704 | 1.1+ | 0.7− | | |

**2004 BP$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.20802 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17753255 | $\omega$ | 114.95946 | | −0.83972258 | | −0.53352859 |
| $a$ | 3.1353358 | $\Omega$ | 33.06585 | | +0.40698705 | | −0.74157822 |
| $e$ | 0.1885467 | $i$ | 10.67439 | | +0.35948231 | | −0.40670504 |
| $P$ | 5.55 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.0 | 0.2+ | 2004 01 30 | 704 | 0.8− | 0.0 | 2004 03 18 | 644 | 0.1− | 0.4+ | | |
| 1999 05 18 | 691 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.0 | 0.3− | 2004 03 18 | 644 | 0.1+ | 0.3+ | | |
| 1999 05 18 | 691 | 0.2− | 0.3− | 2004 01 30 | 704 | 0.2− | 0.1− | 2004 03 18 | 644 | 0.0 | 0.0 | | |
| 2004 01 17 | 644 | 0.1+ | 0.1− | 2004 01 30 | 704 | 0.0 | 0.5− | 2004 03 23 | 704 | 0.0 | 0.5+ | | |
| 2004 01 17 | 644 | 0.1+ | 0.2+ | 2004 02 11 | 644 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.5− | 0.4+ | | |
| 2004 01 17 | 644 | 0.2+ | 0.1− | 2004 02 11 | 644 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.2− | | |
| 2004 01 28 | 703 | 0.4+ | 0.4+ | 2004 02 11 | 644 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.9+ | 0.2− | | |
| 2004 01 28 | 703 | 0.4+ | 0.7− | 2004 02 15 | 704 | 1.0− | 0.2− | 2004 03 23 | 704 | 0.0 | 0.0 | | |
| 2004 01 28 | 703 | 1.2− | 0.6− | 2004 02 15 | 704 | 0.5+ | 0.7+ | 2004 03 25 | 704 | 0.9− | 0.8+ | | |
| 2004 01 28 | 703 | 0.0 | 0.5− | 2004 02 15 | 704 | 0.2− | 0.3+ | 2004 03 25 | 704 | 0.9+ | 0.2− | | |
| 2004 01 30 | 699 | 1.6+ | 0.2+ | 2004 02 15 | 704 | 0.1+ | 0.6+ | 2004 03 25 | 704 | 0.1+ | 1.0+ | | |
| 2004 01 30 | 699 | 0.4− | 0.7+ | 2004 02 15 | 704 | 0.3+ | 1.2+ | 2004 03 25 | 704 | 0.5+ | 0.9− | | |
| 2004 01 30 | 699 | 0.6− | 0.2− | 2004 03 14 | 704 | 0.5+ | 0.2− | 2005 02 18 | 809 | 0.2+ | 0.5+ | | |
| 2004 01 30 | 699 | 0.0 | 0.5− | 2004 03 14 | 704 | 0.0 | 1.4− | 2005 02 18 | 809 | 0.0 | 0.0 | | |
| 2004 01 30 | 704 | 0.6− | 0.0 | 2004 03 14 | 704 | 0.0 | 1.2− | | | | | | |

**2004 BQ$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.28104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27017518 | $\omega$ | 135.53102 | | −0.99659171 | | −0.07956197 |
| $a$ | 2.3697675 | $\Omega$ | 39.92077 | | +0.06300789 | | −0.90466405 |
| $e$ | 0.1219957 | $i$ | 1.94597 | | +0.05324442 | | −0.41863212 |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 11 | 691 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2004 01 16 | 644 | 0.3+ | 0.2− | 2004 02 13 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2004 01 16 | 644 | 0.4+ | 0.3+ | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2004 01 16 | 644 | 0.7+ | 0.1+ | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.1+ | | |
| 2004 01 28 | 691 | 0.2− | 0.2+ | 2004 02 13 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.8− | | |
| 2004 01 28 | 691 | 0.3− | 0.2+ | 2004 02 13 | 691 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1− | 0.4− | | |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.0 | | |
| 2004 01 30 | 704 | 0.1+ | 1.2+ | 2004 02 23 | 704 | (0.6− | 2.8+) | 2006 11 11 | G96 | 0.3+ | 0.4− | | |
| 2004 01 30 | 704 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.3− | 0.9+ | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2004 01 30 | 704 | 0.2− | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.6+ | 0.4− | | |
| 2004 01 30 | 704 | 0.3+ | 1.4+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.1− | | |
| 2004 02 11 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.1− | | |

**2004 BW$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.80152 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21305858 | $\omega$ | 194.43456 | | −0.87193811 | | −0.46178851 |
| $a$ | 2.7763233 | $\Omega$ | 316.82788 | | +0.46948998 | | −0.69427402 |
| $e$ | 0.1700844 | $i$ | 13.75771 | | +0.13893552 | | −0.55202804 |
| $P$ | 4.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.1− | 0.7+ | 2004 01 30 | 704 | 0.5+ | 0.4− | 2004 03 16 | 699 | 1.1− | 0.2− | | |
| 2003 11 19 | 704 | 0.0 | 0.7− | 2004 01 30 | 704 | 0.2+ | 0.2+ | 2004 03 16 | 699 | 1.1+ | 0.2+ | | |
| 2003 11 19 | 704 | 0.1− | 0.2+ | 2004 01 30 | 704 | 0.2− | 0.0 | 2004 03 18 | 645 | 0.0 | 0.1− | | |
| 2003 11 19 | 704 | 1.5+ | 0.5− | 2004 02 11 | 699 | 0.3+ | 0.0 | 2004 03 18 | 645 | 0.0 | 0.0 | | |
| 2003 12 18 | 704 | 0.7+ | 0.1+ | 2004 02 11 | 699 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.7− | 0.5+ | | |
| 2003 12 18 | 704 | 0.7+ | 0.4+ | 2004 02 11 | 699 | 0.2− | 0.2− | 2004 03 18 | 704 | 1.9+ | 1.7+ | | |
| 2003 12 18 | 704 | 0.0 | 0.1− | 2004 02 11 | 699 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.4− | 0.3+ | | |
| 2003 12 18 | 704 | 0.2− | 1.0− | 2004 02 15 | 704 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.4− | | |
| 2003 12 23 | 704 | 0.3− | 1.0+ | 2004 02 15 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.2+ | | |
| 2003 12 23 | 704 | 0.4− | 0.1− | 2004 02 15 | 704 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.0 | 0.1+ | | |
| 2003 12 23 | 704 | 0.4− | 0.1− | 2004 02 15 | 704 | 0.6− | 0.4+ | 2004 03 18 | 704 | 0.2− | 0.5− | | |
| 2003 12 23 | 704 | 0.5− | 0.2+ | 2004 02 15 | 704 | 0.1− | 0.6+ | 2004 03 18 | 704 | 0.4− | 0.3− | | |
| 2003 12 23 | 704 | 0.5− | 0.6+ | 2004 02 17 | 645 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.5+ | 1.1+ | | |
| 2003 12 28 | 704 | 0.9+ | 0.0 | 2004 02 17 | 645 | 0.1− | 0.3− | 2004 03 27 | 704 | 0.1− | 0.3+ | | |
| 2003 12 28 | 704 | 1.1+ | 0.7− | 2004 02 17 | 608 | 1.2+ | 0.4+ | 2004 03 27 | 704 | 1.2+ | 0.4+ | | |
| 2003 12 28 | 704 | 0.7− | 0.3+ | 2004 02 17 | 608 | 1.2+ | 1.1− | 2004 03 27 | 704 | 0.2+ | 0.2+ | | |
| 2003 12 28 | 704 | 0.2− | 0.0 | 2004 02 17 | 608 | 0.8+ | 0.7− | 2004 03 27 | 704 | 0.7+ | 0.4+ | | |
| 2003 12 28 | 704 | 0.3− | 0.4− | 2004 02 17 | 608 | 0.3− | 0.5+ | 2006 08 29 | 691 | 0.4− | 0.1+ | | |
| 2004 01 12 | 644 | 0.0 | 0.3+ | 2004 02 17 | 608 | 0.1− | 0.7+ | 2006 08 29 | 691 | 0.3− | 0.1− | | |
| 2004 01 12 | 644 | 0.0 | 0.2+ | 2004 02 17 | 608 | 0.6− | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.1− | | |
| 2004 01 12 | 644 | 0.2+ | 0.6+ | 2004 02 21 | 049 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.2+ | | |
| 2004 01 22 | 704 | 0.1− | 0.0 | 2004 02 21 | 049 | 0.2− | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.5− | | |
| 2004 01 22 | 704 | 0.1+ | 0.1− | 2004 02 21 | 049 | 0.8− | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.3− | | |
| 2004 01 22 | 704 | 0.2+ | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.9+ | | |
| 2004 01 22 | 704 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.7− | 0.2− | 2006 09 17 | 691 | 0.0 | 0.1+ | | |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.5− | 2006 09 17 | 691 | 0.2− | 0.1− | | |
| 2004 01 26 | 699 | (3.8− | 2.6−) | 2004 02 23 | 704 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.3− | | |
| 2004 01 26 | 699 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.0 | 1.4+ | 2006 09 19 | 691 | 0.1− | 0.1− | | |
| 2004 01 26 | 699 | 0.6− | 1.2+ | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.2− | | |
| 2004 01 26 | 699 | 0.4− | 0.7− | 2004 02 26 | 704 | 0.0 | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 2004 01 28 | 691 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.1− | 0.9+ | 2006 09 25 | 691 | 0.3+ | 0.2− | | |
| 2004 01 28 | 691 | 0.2+ | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 691 | 0.6+ | 0.1− | | |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2004 01 30 | 704 | 0.0 | 0.5+ | 2004 03 16 | 699 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.3+ | | |
| 2004 01 30 | 704 | 0.1+ | 0.6+ | 2004 03 16 | 699 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ | | |

**2004 BY$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.55550 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21062269 | $\omega$ | 91.15057 | | +0.81346590 | | −0.45921344 |
| $a$ | 2.7976880 | $\Omega$ | 296.28181 | | +0.23080274 | | +0.81816970 |
| $e$ | 0.2044574 | $i$ | 23.45798 | | +0.53385703 | | +0.34600775 |
| $P$ | 4.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 20 | 644 | 0.2− | 0.4+ | 2002 08 22 | 644 | 0.1− | 0.3+ | 2004 01 29 | 704 | 0.1− | 0.5− | | |
| 2002 07 20 | 644 | 0.4+ | 0.4+ | 2002 08 22 | 644 | 0.3− | 0.1+ | 2004 01 29 | 704 | 0.8− | 0.4+ | | |
| 2002 07 20 | 644 | 0.7+ | 0.2+ | 2002 08 22 | 644 | 0.1− | 0.1− | 2004 01 29 | 704 | 0.8+ | 0.0 | | |
| 2002 08 03 | 644 | 0.0 | 0.2− | 2004 01 23 | 704 | (5.2+ | 1.5−) | 2004 01 30 | 704 | 0.6− | 0.8− | | |
| 2002 08 03 | 644 | 0.2− | 0.3− | 2004 01 23 | 704 | (3.0+ | 0.4+) | 2004 01 30 | 704 | 0.0 | 0.1+ | | |
| 2002 08 03 | 644 | 0.0 | 0.3− | 2004 01 23 | 704 | 0.2+ | 0.4− | 2004 01 30 | 704 | 0.8− | 0.3− | | |
| 2002 08 14 | 644 | 0.3− | 0.1− | 2004 01 23 | 704 | 0.7+ | 0.3+ | 2004 02 11 | 644 | 0.4+ | 0.8+ | | |
| 2002 08 14 | 644 | 0.1+ | 0.1− | 2004 01 23 | 704 | (4.6+ | 0.2−) | 2004 02 11 | 644 | 0.2+ | 0.5+ | | |
| 2002 08 14 | 644 | 0.1+ | 0.1− | 2004 01 29 | 704 | 0.0 | 0.4− | 2004 02 11 | 644 | 0.1+ | 0.2+ | | |

**2004 BV$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.52882 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27814122 | $\omega$ | 150.14301 | | −0.95464196 | | +0.29460205 |
| $a$ | 2.3243016 | $\Omega$ | 47.05709 | | −0.28354438 | | −0.85513427 |
| $e$ | 0.1617582 | $i$ | 3.38513 | | −0.09089178 | | −0.42656184 |
| $P$ | 3.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.2+ | 0.2+ | 2004 02 10 | 644 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.3− | | |
| 2004 01 18 | 644 | 0.2+ | 0.1+ | 2004 02 10 | 644 | 0.6+ | 0.4− | 2006 10 27 | G96 | 0.8− | 0.3− | | |
| 2004 01 18 | 644 | 0.4+ | 0.1− | 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.7− | 0.4− | | |
| 2004 01 30 | 704 | 0.3− | 1.4+ | 2004 02 14 | 608 | 0.1− | 0.7− | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 2004 01 30 | 704 | 1.5− | 0.2+ | 2004 02 14 | 608 | 0.3+ | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2004 01 30 | 704 | (0.1+ | 1.9+) | 2004 02 14 | 608 | 0.5+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 704 | 0.5− | 0.5− | 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2004 01 31 | 599 | 0.1− | 0.5− | 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2004 01 31 | 599 | 0.1− | 0.0 | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2004 01 31 | 599 | 0.2+ | 0.2− | 2004 02 19 | 608 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.5− |
| 2004 01 31 | 599 | 0.1+ | 0.3+ | 2004 02 19 | 608 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2004 01 31 | 599 | 0.1− | 0.7+ | 2004 02 19 | 608 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.4− |
| 2004 01 31 | 599 | 0.6− | 1.0− | 2006 10 27 | G96 | 0.3− | 0.2− | | | | |

### 2004 BF$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.60430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27650316 | $\omega$ | 198.37599 | | −0.23996704 | −0.97044232 | |
| $a$ | 2.3334723 | $\Omega$ | 265.51474 | | +0.89386850 | −0.21057394 | |
| $e$ | 0.1792116 | $i$ | 1.47386 | | +0.37870163 | −0.11789959 | |
| $P$ | 3.56 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 02 11 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.5− | 0.2+ |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.4+ | 0.1+ |
| 2004 01 24 | 704 | 1.4+ | 0.1− | 2004 02 11 | 644 | 0.1− | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2004 01 24 | 704 | 0.6+ | 0.8+ | 2004 02 11 | 644 | 0.2− | 0.6+ | 2006 10 01 | 691 | 0.2+ | 0.5+ |
| 2004 01 24 | 704 | 0.0 | 0.8+ | 2004 02 11 | 691 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2004 01 24 | 704 | 0.0 | 0.1+ | 2004 02 29 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.4− | 0.4− |
| 2004 01 31 | 691 | 0.2+ | 0.1− | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2004 01 31 | 691 | 0.3+ | 0.1− | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2004 01 31 | 691 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.8− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 02 11 | 644 | 0.3+ | 0.8+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.7− | 0.2− |
| 2004 02 11 | 644 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.2+ | | | | |

### 2004 BW$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.73155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27160643 | $\omega$ | 300.62790 | | −0.75715894 | +0.65000082 | |
| $a$ | 2.3614351 | $\Omega$ | 279.99599 | | −0.57451701 | −0.70989552 | |
| $e$ | 0.1899967 | $i$ | 3.77732 | | −0.31087063 | −0.27119602 | |
| $P$ | 3.63 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.3+ | 0.1− | 2004 01 31 | 691 | 0.3− | 0.3− | 2005 07 28 | 644 | 0.1− | 0.2+ |
| 2004 01 15 | 691 | 0.3+ | 0.0 | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2005 07 28 | 644 | 0.1− | 0.0 |
| 2004 01 15 | 691 | 0.1+ | 0.0 | 2005 07 06 | 691 | 0.0 | 0.3+ | 2005 08 31 | 691 | 0.3− | 0.3+ |
| 2004 01 27 | 691 | 0.3+ | 0.1+ | 2005 07 06 | 691 | 0.0 | 0.2+ | 2005 08 31 | 691 | 0.1+ | 0.6− |
| 2004 01 27 | 691 | 0.3+ | 0.2− | 2005 07 18 | 644 | 0.7− | 0.3+ | 2005 08 31 | 691 | 0.1+ | 0.2− |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2005 07 18 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | (5.7− | 3.7−) |
| 2004 01 31 | 691 | 0.2− | 0.0 | 2005 07 18 | 644 | 0.3− | 0.8+ | 2006 11 16 | 691 | (6.2− | 3.7−) |
| 2004 01 31 | 691 | 0.5− | 1.0+ | 2005 07 28 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | (5.6− | 3.2−) |

### 2004 BT$_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.36323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24299700 | $\omega$ | 277.88008 | | +0.92744473 | −0.26660071 | |
| $a$ | 2.5433264 | $\Omega$ | 97.87026 | | +0.34891798 | +0.86921107 | |
| $e$ | 0.1347797 | $i$ | 15.35118 | | −0.13454557 | +0.41640867 | |
| $P$ | 4.06 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 21 | 644 | 0.6+ | 0.1− | 2004 01 28 | 691 | 0.2+ | 0.2− | 2006 08 16 | E12 | 0.5+ | 0.3+ |
| 2002 08 21 | 644 | 0.4− | 0.1+ | 2004 01 28 | 691 | 0.1+ | 0.2− | 2006 09 03 | E12 | 0.4− | 0.9+ |
| 2002 08 21 | 644 | 0.5− | 0.5+ | 2004 01 30 | 699 | 0.1− | 1.3+ | 2006 09 03 | E12 | 0.1− | 0.1− |
| 2003 12 18 | 704 | 0.2− | 0.1+ | 2004 01 30 | 699 | 0.6+ | 0.7+ | 2006 09 03 | E12 | 0.6− | 0.1+ |
| 2003 12 18 | 704 | 0.6− | 0.6− | 2004 01 30 | 699 | 0.4+ | 0.3+ | 2006 09 03 | E12 | 2.1+ | 0.7+ |
| 2003 12 18 | 704 | 0.5− | 0.3− | 2004 01 30 | 699 | 0.1− | 0.4+ | 2006 09 12 | E12 | 0.1+ | 0.0 |
| 2003 12 18 | 704 | 0.2− | 0.0 | 2004 02 14 | 704 | 0.2+ | 0.8+ | 2006 09 12 | E12 | 0.2− | 0.0 |
| 2003 12 28 | 704 | 0.2− | 0.7+ | 2004 02 14 | 704 | 0.2+ | 0.7− | 2006 09 12 | E12 | 0.4− | 0.4+ |
| 2003 12 28 | 704 | 1.0+ | 1.3+ | 2004 02 14 | 704 | 0.1− | 0.3+ | 2006 09 12 | E12 | 0.1+ | 0.7− |
| 2003 12 28 | 704 | 0.5− | 0.4+ | 2005 04 03 | 644 | 0.5+ | 0.5+ | 2006 09 21 | F84 | 0.2− | 0.3+ |
| 2004 01 13 | 699 | 0.2− | 0.3− | 2005 04 03 | 644 | 0.4− | 1.2+ | 2006 09 21 | F84 | 0.1− | 0.3+ |
| 2004 01 13 | 699 | 0.2− | 0.5+ | 2005 04 03 | 644 | 0.4+ | 0.7+ | 2006 09 28 | E12 | 0.4− | 0.1− |
| 2004 01 13 | 699 | 0.1− | 0.4+ | 2006 08 16 | E12 | 0.0 | 0.3+ | 2006 09 28 | E12 | 0.3− | 0.7+ |
| 2004 01 13 | 699 | 0.5− | 0.6+ | 2006 08 16 | E12 | 0.9+ | 0.1+ | 2006 09 28 | E12 | 0.1− | 0.2+ |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 08 16 | E12 | 0.9− | 0.4+ | 2006 09 28 | E12 | 0.5− | 0.1− |

### 2004 BG$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.19109 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22285171 | $\omega$ | 161.72213 | | −0.95044420 | −0.31089438 | |
| $a$ | 2.6943793 | $\Omega$ | 0.16971 | | +0.24670668 | −0.75560476 | |
| $e$ | 0.1488937 | $i$ | 13.91873 | | +0.18918678 | −0.57654674 | |
| $P$ | 4.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 644 | 0.6− | 0.8+ | 2004 02 20 | 049 | 0.2− | 0.1− | 2004 03 22 | 704 | (1.5+ | 0.6+) |
| 2001 07 27 | 644 | 0.7− | 1.1+ | 2004 02 23 | 608 | 0.3− | 0.5+ | 2004 03 22 | 704 | 1.0+ | 0.8+ |
| 2001 07 27 | 644 | 0.7− | 1.1+ | 2004 02 23 | 608 | 0.4− | 0.5+ | 2004 03 22 | 704 | 0.5+ | 0.4+ |
| 2003 12 19 | 704 | 0.4+ | 0.5− | 2004 02 23 | 608 | 0.0 | 0.2+ | 2004 03 26 | 703 | 1.1+ | 0.1+ |
| 2003 12 19 | 704 | 0.6+ | 0.1− | 2004 02 23 | 049 | 0.4+ | 0.4+ | 2004 03 26 | 703 | 0.3− | 1.0+ |
| 2003 12 19 | 704 | 0.7+ | 0.4+ | 2004 02 23 | 049 | 0.1+ | 0.6− | 2004 03 26 | 703 | 0.4+ | 1.3+ |
| 2003 12 19 | 704 | 0.2− | 0.5+ | 2004 02 23 | 049 | 0.2− | 0.3− | 2004 03 26 | 703 | 0.5+ | 0.7+ |
| 2004 01 29 | 703 | 0.0 | 0.4+ | 2004 02 27 | 704 | 1.4− | 0.2− | 2004 04 19 | 704 | 1.0+ | 0.4+ |
| 2004 01 29 | 703 | 0.3− | 0.3+ | 2004 02 27 | 704 | 0.2+ | 0.7− | 2004 04 19 | 704 | (2.4+ | 0.3−) |
| 2004 01 29 | 703 | 0.5+ | 0.6− | 2004 02 27 | 704 | (1.7− | 1.5−) | 2004 04 19 | 704 | 0.9+ | 0.3− |
| 2004 01 29 | 703 | 0.2− | 1.1− | 2004 02 27 | 704 | 0.3− | 0.3+ | 2004 04 19 | 704 | 1.5+ | 0.5− |
| 2004 01 30 | 699 | 0.4+ | 0.0 | 2004 03 14 | 704 | 0.4+ | 0.9+ | 2004 04 19 | 704 | (1.7+ | 0.3−) |
| 2004 01 30 | 699 | 0.8− | 0.4+ | 2004 03 14 | 704 | 1.3+ | 0.5+ | 2004 04 22 | 704 | 0.5− | 0.5+ |
| 2004 01 30 | 699 | 0.4+ | 0.2+ | 2004 03 14 | 704 | 0.9+ | 0.1+ | 2004 04 22 | 704 | 1.3− | 0.7+ |
| 2004 01 30 | 699 | (0.9+ | 1.6+) | 2004 03 14 | 704 | 0.0 | 0.6+ | 2004 04 22 | 704 | 0.8− | 0.6+ |
| 2004 02 11 | 644 | 0.0 | 0.2+ | 2004 03 14 | 704 | 0.6+ | 0.2− | 2004 04 22 | 704 | 0.1+ | 0.3+ |
| 2004 02 11 | 644 | 0.1− | 0.3+ | 2004 03 19 | 644 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.4− | 1.4− |
| 2004 02 11 | 644 | 0.0 | 0.4+ | 2004 03 19 | 644 | 1.0+ | 0.3+ | 2006 09 16 | 691 | 0.0 | 0.3+ |
| 2004 02 15 | 049 | 0.1− | 0.5− | 2004 03 19 | 644 | 0.0 | 0.0 | 2006 09 16 | 691 | 0.1− | 0.1+ |
| 2004 02 16 | 049 | 0.4− | 0.4− | 2004 03 20 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 691 | 0.2+ | 0.1+ |
| 2004 02 16 | 049 | 0.2− | 0.3− | 2004 03 20 | 704 | 1.5− | 0.6− | 2006 09 28 | 691 | 0.4− | 0.6+ |
| 2004 02 16 | 704 | 0.2− | 0.6+ | 2004 03 20 | 704 | 0.2− | 1.2− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2004 02 16 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.7− | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.4+ |
| 2004 02 16 | 704 | 0.2− | 0.5+ | 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.2− | 1.3− |
| 2004 02 16 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.8− | 0.9− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2004 02 16 | 704 | 0.3+ | 0.8+ | 2004 03 20 | 704 | 0.4− | 1.1− | 2006 09 28 | G96 | 0.2− | 0.6− |
| 2004 02 18 | 608 | 0.1+ | 0.7− | 2004 03 20 | 704 | 0.6− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2004 02 18 | 608 | 0.5+ | 0.7− | 2004 03 20 | 704 | 0.5− | 1.2− | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2004 02 18 | 608 | 0.0 | 0.4− | 2004 03 20 | 704 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2004 02 20 | 049 | 0.1− | 0.0 | 2004 03 22 | 704 | 1.0+ | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2004 02 20 | 049 | 0.0 | 0.2+ | 2004 03 22 | 704 | 1.1+ | 1.3+ | 2006 10 23 | G96 | 0.2+ | 0.1− |

### 2004 BE$_{120}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.81015 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28256672 | $\omega$ | 137.54702 | | −0.85537235 | −0.51744495 | |
| $a$ | 2.2999693 | $\Omega$ | 11.36602 | | +0.43605103 | −0.74452897 | |
| $e$ | 0.2411013 | $i$ | 7.07288 | | +0.27963840 | −0.42181433 | |
| $P$ | 3.49 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.2− | 0.3+ | 2004 02 09 | 644 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.4+ |
| 2004 01 17 | 644 | 0.2− | 0.2− | 2004 02 09 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2004 01 17 | 644 | 0.5− | 0.6− | 2004 02 14 | 704 | 0.5+ | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.4− |
| 2004 01 17 | 644 | 0.0 | 0.2− | 2004 02 14 | 704 | 0.2+ | 0.9+ | 2006 10 15 | 691 | 0.2+ | 0.2+ |
| 2004 01 17 | 644 | 0.5− | 0.3− | 2004 02 14 | 704 | 1.1+ | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.0 |
| 2004 01 17 | 644 | 0.0 | 0.2− | 2004 02 14 | 704 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.4+ | 0.3− |
| 2004 01 30 | 703 | 0.3+ | 0.2− | 2004 02 14 | 704 | 0.6− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 703 | 0.7+ | 0.6+ | 2004 02 22 | 703 | 0.2− | 0.8− | 2006 10 19 | 691 | 0.4− | 0.3− | | |
| 2004 01 30 | 703 | 0.0 | 0.8− | 2004 02 22 | 703 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.3+ | 0.0 | | |
| 2004 01 30 | 703 | 0.6− | 1.4+ | 2004 02 22 | 703 | 0.2− | 0.4− | 2006 10 21 | 691 | 0.5− | 0.1+ | | |
| 2004 01 31 | 704 | 0.6− | 1.4+ | 2004 02 22 | 703 | 0.4+ | 0.3− | 2006 10 21 | 691 | 0.6− | 0.3+ | | |
| 2004 01 31 | 704 | 0.6− | 0.1− | 2004 03 14 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 691 | 0.1+ | 0.2+ | | |
| 2004 01 31 | 704 | 0.1+ | 0.3− | 2004 03 14 | 704 | 1.0− | 0.3+ | 2006 10 23 | 691 | 0.2+ | 0.1− | | |
| 2004 01 31 | 704 | 1.1− | 0.2+ | 2004 03 14 | 704 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2004 01 31 | 704 | 0.0 | 1.5− | 2004 03 20 | 704 | (1.7− | 0.9+) | 2006 10 23 | 691 | 0.0 | 0.2+ | | |
| 2004 02 02 | 704 | 0.9+ | 0.3− | 2004 03 20 | 704 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.2− | 0.5+ | | |
| 2004 02 02 | 704 | 1.2+ | 0.6− | 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 10 31 | 691 | 0.4+ | 0.0 | | |
| 2004 02 02 | 704 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.7+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.3− | | |
| 2004 02 02 | 704 | 0.5+ | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.0 | | | | | | |
| 2004 02 09 | 644 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.3− | | | | | | |

**2004 BT$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.48030 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27787046 | $\omega$ | 54.79440 | | −0.56032467 | | −0.80963684 |
| $a$ | 2.3258112 | $\Omega$ | 70.21382 | | +0.68672144 | | −0.57204679 |
| $e$ | 0.1409236 | $i$ | 10.70044 | | +0.46308740 | | −0.13134173 |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 24 | 691 | 0.1− | 0.7− | 2004 02 13 | 644 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 1992 11 24 | 691 | 0.3+ | 0.5− | 2004 02 13 | 644 | 0.6+ | 0.4+ | 2006 11 13 | 703 | 0.9− | 0.1− |
| 1992 11 24 | 691 | 0.4+ | 0.6− | 2004 02 14 | 704 | 0.2+ | 0.5+ | 2006 11 13 | 703 | 0.8− | 1.1+ |
| 2003 12 18 | 704 | 0.5− | 1.2+ | 2004 02 14 | 704 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.2− | 0.6+ |
| 2003 12 18 | 704 | 0.4+ | 0.8+ | 2004 02 14 | 704 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.5+ | 0.8+ |
| 2003 12 18 | 704 | 1.2− | 0.5+ | 2004 02 14 | 704 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.6− | 1.2− |
| 2003 12 18 | 704 | 1.3+ | 0.1+ | 2004 02 14 | 704 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.4− |
| 2003 12 18 | 704 | 0.5+ | 0.4− | 2004 02 16 | 703 | 0.4− | 0.0 | 2006 11 14 | 704 | 1.1+ | 0.1− |
| 2004 01 31 | 704 | 0.9+ | 0.1+ | 2004 02 16 | 703 | 0.5− | 0.6− | 2006 11 14 | 704 | 0.8+ | 1.1− |
| 2004 01 31 | 704 | (1.9+ | 0.3−) | 2004 02 16 | 703 | 0.9− | 0.2+ | 2006 11 17 | 704 | 0.9+ | 1.6+ |
| 2004 01 31 | 704 | 0.2+ | 0.3− | 2004 02 16 | 703 | 0.3− | 0.4− | 2006 11 17 | 704 | 0.3+ | 2.4+ |
| 2004 01 31 | 704 | 0.0 | 0.1− | 2004 03 08 | 644 | 0.2− | 0.2− | 2006 11 17 | 704 | 1.7− | 0.2− |
| 2004 01 31 | 704 | 0.4+ | 0.1− | 2004 03 08 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.3− | 1.7+ |
| 2004 02 02 | 699 | 0.9+ | 0.1− | 2004 03 08 | 644 | 0.3− | 0.6− | 2006 11 19 | 703 | 2.4− | 0.2+ |
| 2004 02 02 | 699 | 0.4+ | 0.0 | 2004 03 25 | 704 | 0.7− | 0.2+ | 2006 11 19 | 703 | 0.6+ | 1.2+ |
| 2004 02 02 | 699 | 0.2− | 0.0 | 2004 03 25 | 704 | 1.1− | 0.3− | 2006 11 19 | 703 | 0.3− | 1.2+ |
| 2004 02 02 | 699 | 0.4+ | 0.8+ | 2004 03 25 | 704 | 0.1− | 1.0+ | 2006 11 19 | 703 | 0.5+ | 0.2− |
| 2004 02 02 | 704 | 0.0 | 0.2− | 2004 03 25 | 704 | (2.0− | 0.5+) | 2006 11 20 | 704 | 0.7− | 0.9+ |
| 2004 02 02 | 704 | 0.5+ | 0.7+ | 2004 03 25 | 704 | 0.1− | 0.0 | 2006 11 20 | 704 | 1.2− | 0.2− |
| 2004 02 02 | 704 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.8+ | 0.4− | 2006 11 20 | 704 | 0.4− | 1.0− |
| 2004 02 02 | 704 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.9+ | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.6− | 2006 11 23 | G96 | 0.6+ | 0.1+ |
| 2004 02 10 | 644 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.9− | 0.7+ | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2004 02 10 | 644 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2004 02 13 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.2− | | | | |

**2004 BD$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.98583 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23254723 | $\omega$ | 56.62866 | | +0.14811679 | | −0.98244225 |
| $a$ | 2.6189584 | $\Omega$ | 25.58657 | | +0.79750332 | | +0.05081909 |
| $e$ | 0.2234276 | $i$ | 15.22850 | | +0.58485030 | | +0.17951226 |
| $P$ | 4.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.0 | 0.1− | 2004 01 31 | 704 | 0.3− | 0.2+ | 2004 02 14 | 704 | 0.1− | 0.3− |
| 1996 04 13 | 691 | 0.0 | 0.1− | 2004 01 31 | 704 | 0.0 | 0.1− | 2004 03 17 | 644 | 0.2− | 0.1− |
| 1996 04 13 | 691 | 0.1− | 0.1+ | 2004 01 31 | 704 | 0.3+ | 0.3+ | 2004 03 17 | 644 | 0.1− | 0.2− |
| 2004 01 17 | 644 | 0.2− | 0.1− | 2004 02 02 | 704 | 0.2+ | 0.1− | 2004 03 17 | 644 | 0.1+ | 0.1− |
| 2004 01 17 | 644 | 0.5− | 0.2− | 2004 02 02 | 704 | 0.2− | 0.2− | 2004 03 25 | 704 | 0.1+ | 0.9+ |
| 2004 01 17 | 644 | 0.6− | 0.1− | 2004 02 02 | 704 | 0.0 | 0.5− | 2004 03 25 | 704 | 0.8− | 0.3+ |
| 2004 01 30 | 703 | 0.4− | 0.7+ | 2004 02 02 | 704 | 0.7+ | 0.4+ | 2004 03 25 | 704 | 0.6− | 0.2+ |
| 2004 01 30 | 703 | 2.2+ | 0.3− | 2004 02 14 | 704 | 0.3− | 0.4− | 2004 03 25 | 704 | 0.1+ | 0.1− |
| 2004 01 30 | 703 | 2.0+ | 2.4+ | 2004 02 14 | 704 | 1.2− | 0.0 | 2005 02 15 | 809 | 0.1+ | 0.6+ |
| 2004 01 30 | 703 | 1.1+ | 0.3− | 2004 02 14 | 704 | 0.5− | 0.9− | 2005 02 15 | 809 | 0.8+ | 0.4+ |
| 2004 01 31 | 704 | 0.8− | 1.2− | 2004 02 14 | 704 | 0.1− | 0.1− | 2005 02 15 | 809 | 0.4− | 0.0 |

**2004 BR$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.70085 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28726337 | $\omega$ | 96.31716 | | −0.93231181 | | +0.07739153 |
| $a$ | 2.2748314 | $\Omega$ | 88.52949 | | −0.21874583 | | −0.89856692 |
| $e$ | 0.2580004 | $i$ | 20.69506 | | +0.28800165 | | −0.43195837 |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.4+ | 0.1+ | 2004 03 17 | 113 | 0.9+ | 0.1− | 2004 05 11 | 704 | 1.7+ | 0.6+ |
| 2004 01 17 | 644 | 0.3+ | 0.0 | 2004 03 24 | 703 | 1.9− | 1.7− | 2004 05 11 | 704 | 0.6+ | 0.6+ |
| 2004 01 17 | 644 | 0.5+ | 0.0 | 2004 03 24 | 703 | 2.1− | 0.1− | 2004 05 11 | 704 | 0.8+ | 0.5− |
| 2004 01 30 | 703 | 0.1− | 0.0 | 2004 03 24 | 703 | 1.4− | 0.9+ | 2004 05 11 | 704 | (2.0+ | 0.1+) |
| 2004 01 30 | 703 | 0.8− | 0.6− | 2004 03 24 | 703 | 2.8− | 2.9+ | 2004 05 22 | 703 | 0.2+ | 0.6+ |
| 2004 01 30 | 703 | 0.1+ | 0.7+ | 2004 04 01 | 704 | 0.2+ | 0.8− | 2004 05 22 | 703 | 0.2+ | 1.2− |
| 2004 01 30 | 703 | 0.7− | 0.1− | 2004 04 01 | 704 | 0.4+ | 1.0− | 2004 05 22 | 703 | 0.4+ | 0.5− |
| 2004 01 31 | 645 | 0.1+ | 0.0 | 2004 04 01 | 704 | 0.7+ | 0.4− | 2004 05 22 | 703 | 0.2+ | 0.4− |
| 2004 01 31 | 645 | 0.1+ | 0.0 | 2004 04 01 | 704 | 1.0+ | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2004 02 10 | 704 | 1.2− | 0.1+ | 2004 04 16 | 703 | 0.2− | 0.7+ | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2004 02 10 | 704 | (0.7− | 1.6+) | 2004 04 16 | 703 | 1.2+ | 0.7+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2004 02 10 | 704 | 0.7− | 1.0− | 2004 04 16 | 703 | 0.1+ | 0.6+ | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2004 02 10 | 704 | 1.0+ | 0.0 | 2004 04 16 | 703 | 0.5+ | 0.9+ | 2006 11 28 | 704 | 0.3+ | 0.4+ |
| 2004 03 17 | 113 | 0.7+ | 0.1− | 2004 04 29 | 703 | 0.7− | 0.1− | 2006 11 28 | 704 | 0.6− | 0.2+ |
| 2004 03 17 | 113 | 0.5+ | 0.3− | 2004 04 29 | 703 | 0.7− | 1.0− | 2006 11 28 | 704 | 0.2− | 1.1+ |
| 2004 03 17 | 113 | 0.9+ | 0.3− | 2004 04 29 | 703 | 0.8− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2004 03 17 | 113 | 1.2− | 0.1− | 2004 04 29 | 703 | 0.8− | 0.4+ | | | | |

**2004 BZ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.49140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26812464 | $\omega$ | 330.24345 | | +0.39679572 | | +0.91789105 |
| $a$ | 2.3818344 | $\Omega$ | 323.13381 | | −0.84037536 | | +0.36090633 |
| $e$ | 0.1856061 | $i$ | 0.51596 | | −0.36921866 | | +0.16499287 |
| $P$ | 3.68 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 01 | 704 | 0.4+ | 0.4− | 2001 06 27 | 608 | 0.3− | 1.0− | 2005 08 31 | 691 | 0.2+ | 0.0 |
| 1997 05 01 | 704 | 1.6+ | 0.1− | 2001 06 27 | 608 | 0.6− | 0.0 | 2005 08 31 | 691 | 0.0 | 0.2+ |
| 1997 05 01 | 704 | 1.5+ | 0.5+ | 2004 01 22 | 568 | 0.2+ | 0.6+ | 2005 08 31 | 691 | 0.0 | 0.1+ |
| 1997 05 01 | 704 | 1.7− | 0.4+ | 2004 01 22 | 568 | 0.2+ | 0.6+ | 2005 09 14 | 691 | 0.2− | 0.2+ |
| 1998 11 26 | 691 | 0.1− | 0.0 | 2004 01 22 | 568 | 0.1+ | 0.7+ | 2005 09 14 | 691 | 0.0 | 0.3+ |
| 1998 11 26 | 691 | 0.2− | 0.3− | 2004 01 30 | 568 | 0.1− | 0.7+ | 2005 09 14 | 691 | 0.1+ | 0.3+ |
| 1998 11 26 | 691 | 0.1− | 0.2− | 2004 01 30 | 568 | 0.0 | 0.7+ | 2005 09 29 | 699 | 0.6+ | 0.5− |
| 2000 01 28 | 691 | 0.7− | 0.3+ | 2004 01 30 | 568 | 0.2− | 0.7+ | 2005 09 29 | 699 | 0.7− | 0.5+ |
| 2000 01 28 | 691 | 0.4+ | 0.6− | 2004 03 15 | 691 | 0.0 | 0.2+ | 2005 09 29 | 699 | 0.5+ | 0.2− |
| 2000 01 28 | 691 | 0.4+ | 0.2− | 2004 03 15 | 691 | 0.0 | 0.3+ | 2005 09 29 | 699 | 0.6+ | 0.6+ |
| 2000 02 05 | 691 | 0.1+ | 0.1− | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2005 10 13 | 691 | 0.4− | 0.1− |
| 2000 02 05 | 691 | 0.1+ | 0.0 | 2005 08 25 | 644 | 0.2− | 0.3− | 2005 10 13 | 691 | 0.2+ | 0.1+ |
| 2000 02 05 | 691 | 0.0 | 0.1+ | 2005 08 25 | 644 | 0.1− | 0.4+ | 2005 10 13 | 691 | 0.0 | 0.5+ |
| 2001 06 27 | 608 | 0.3− | 0.6− | 2005 08 25 | 644 | 0.4− | 0.2− | | | | |

**2004 BB$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.53900 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20153772 | $\omega$ | 87.95232 | | +0.87949807 | | −0.46886995 |
| $a$ | 2.8811452 | $\Omega$ | 299.99974 | | +0.39060329 | | +0.80903820 |
| $e$ | 0.1675968 | $i$ | 5.40073 | | +0.27186803 | | +0.35442651 |
| $P$ | 4.89 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.2+ | 0.1− | 2002 10 04 | 704 | 0.3− | 0.4+ | 2004 01 16 | 691 | 0.0 | 0.1+ |
| 2002 08 11 | 704 | 0.3+ | 0.0 | 2002 10 04 | 704 | 0.7− | 0.5+ | 2004 01 27 | 691 | 0.1− | 0.0 |
| 2002 08 11 | 704 | 0.1− | 0.1+ | 2002 10 04 | 704 | 0.3+ | 0.1+ | 2004 01 27 | 691 | 0.1+ | 0.2+ |
| 2002 08 28 | 644 | 0.3+ | 0.1− | 2002 10 04 | 704 | 0.2− | 0.0 | 2004 01 27 | 691 | 0.2− | 0.0 |
| 2002 08 28 | 644 | 0.4− | 0.0 | 2002 10 04 | 704 | 0.3− | 0.0 | 2004 02 11 | 691 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.1− | 0.1− | 2002 10 12 | 704 | 0.4+ | 0.6− | 2004 02 11 | 691 | 0.0 | 0.5+ |
| 2002 09 06 | 704 | 1.1− | 0.1+ | 2002 10 12 | 704 | 0.8+ | 0.4− | 2004 02 11 | 691 | 0.2+ | 0.1+ |
| 2002 09 06 | 704 | 0.5+ | 1.2+ | 2002 10 12 | 704 | 1.2− | 0.4− | 2004 04 14 | 645 | 0.1+ | 0.0 |
| 2002 09 06 | 704 | 1.0− | 0.6+ | 2002 10 12 | 704 | (0.3+ | 2.8−) | 2004 04 14 | 645 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.4+ | 0.5+ | 2002 11 05 | 291 | 0.1− | 0.1− | 2004 04 15 | 645 | 0.1− | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.2+ | 2002 11 05 | 291 | 0.6+ | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.3− | 0.3− | 2002 11 05 | 291 | 0.5+ | 0.3− | 2004 04 16 | 645 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.4− | 0.2− | 2004 01 16 | 691 | 0.1+ | 0.1+ | 2004 04 16 | 645 | 0.1− | 0.0 |
| 2002 09 13 | 644 | 0.1− | 0.1− | 2004 01 16 | 691 | 0.1+ | 0.1+ | | | | |

### 2004 $BS_{129}$ = 2006 $SL_{176}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 274.04291 | | | (2000.0) | | |
| $n$ | 0.26333745 | $\omega$ | 295.18638 | | −0.13526053 | −0.99076722 |
| $a$ | 2.4106137 | $\Omega$ | 162.57989 | | +0.91977030 | −0.12901505 |
| $e$ | 0.1512029 | $i$ | 1.76377 | | +0.36841172 | −0.04165852 |
| $P$ | 3.74 | $H$ | 18.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 807 | 0.3− | 0.2+ | 2004 02 13 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.4+ |
| 2002 08 09 | 807 | 0.1+ | 0.5+ | 2004 02 13 | 291 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2004 01 16 | 691 | 0.2− | 0.1− | 2004 02 13 | 691 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.5− | 1.1+ |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2004 02 13 | 291 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.2+ |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2004 02 13 | 291 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.7− |
| 2004 01 27 | 691 | 0.2+ | 0.2+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 01 27 | 691 | 0.2+ | 0.2+ | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.4− |

### 2004 $BO_{131}$ = 2006 $SM_{318}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 119.45783 | | | (2000.0) | | |
| $n$ | 0.23391331 | $\omega$ | 108.45194 | | −0.41619394 | +0.90761887 |
| $a$ | 2.6087518 | $\Omega$ | 136.82176 | | −0.86157659 | −0.37435459 |
| $e$ | 0.1287564 | $i$ | 4.59926 | | −0.29063445 | −0.18996480 |
| $P$ | 4.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.4− | 0.4− | 2004 01 28 | 691 | 0.0 | 0.1+ | 2005 06 27 | G96 | 0.1− | 0.7+ |
| 2000 02 04 | 691 | 0.1− | 0.4− | 2004 02 11 | 691 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2000 02 04 | 691 | 0.3− | 0.2− | 2004 02 11 | 691 | 0.3+ | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2000 02 14 | 691 | 0.3+ | 0.1+ | 2004 02 11 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2000 02 14 | 691 | 0.1+ | 0.0 | 2005 06 27 | G96 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.7− |
| 2000 02 14 | 691 | 0.2+ | 0.2+ | 2005 06 27 | G96 | 0.2− | 0.6+ | 2006 09 27 | 691 | 0.2− | 0.6− |
| 2004 01 16 | 691 | 0.2− | 0.4+ | 2005 06 27 | G96 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.5− |
| 2004 01 16 | 691 | 0.0 | 0.5+ | 2005 06 27 | G96 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.6+ |
| 2004 01 16 | 691 | 0.3− | 0.3+ | 2005 06 27 | G96 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.4+ | 0.8+ |
| 2004 01 28 | 691 | 0.3+ | 0.2+ | 2005 06 27 | G96 | 0.7+ | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2004 01 28 | 691 | 0.3+ | 0.2+ | 2005 06 27 | G96 | 0.2− | 0.5+ | | | | |

### 2004 $BC_{135}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 155.63932 | | | (2000.0) | | |
| $n$ | 0.22446647 | $\omega$ | 129.07185 | | −0.56168620 | +0.82209651 |
| $a$ | 2.6814419 | $\Omega$ | 106.51175 | | −0.78590653 | −0.49499692 |
| $e$ | 0.1163768 | $i$ | 5.57192 | | −0.25857212 | −0.28131011 |
| $P$ | 4.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1− | 0.3− | 2004 03 17 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.6+ | 0.1− |
| 2004 01 18 | 691 | 0.2+ | 0.0 | 2004 03 27 | 691 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 01 18 | 691 | 0.2− | 0.2+ | 2004 03 27 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2004 01 27 | 691 | 0.3+ | 0.0 | 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.1− |
| 2004 01 27 | 691 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.7− | 0.1− |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.4+ | 0.5+ |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.1− |

### 2004 $BJ_{140}$ = 2006 $UL_{218}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 127.21344 | | | (2000.0) | | |
| $n$ | 0.23946474 | $\omega$ | 311.64961 | | −0.32691160 | +0.94382481 |
| $a$ | 2.5682758 | $\Omega$ | 299.20861 | | −0.84982954 | −0.31590164 |
| $e$ | 0.1939611 | $i$ | 3.16577 | | −0.41342297 | −0.09695818 |
| $P$ | 4.12 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 291 | 0.0 | 0.2+ | 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.3− |
| 2003 12 18 | 291 | 0.3+ | 0.5− | 2004 01 28 | 691 | 0.1+ | 0.3− | 2006 10 30 | 408 | 0.5+ | 0.0 |
| 2003 12 18 | 291 | 0.4− | 0.0 | 2004 02 13 | 291 | 0.1− | 0.4+ | 2006 10 30 | 408 | 0.2+ | 0.2− |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2004 02 13 | 291 | 0.3− | 0.8+ | 2006 10 31 | 408 | 0.4− | 0.3+ |
| 2004 01 19 | 691 | 0.1+ | 0.3− | 2004 02 13 | 291 | 0.2− | 0.3+ | 2006 10 31 | 408 | 0.7− | 0.9+ |
| 2004 01 19 | 691 | 0.1− | 0.3− | 2006 10 13 | 691 | 0.0 | 0.1− | | | | |
| 2004 01 28 | 691 | 0.3+ | 0.3− | 2006 10 13 | 691 | 0.1+ | 0.2+ | | | | |

### 2004 $BU_{141}$ = 2006 $QC_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.88815 | | | (2000.0) | | |
| $n$ | 0.24376221 | $\omega$ | 248.81707 | | +0.82476884 | −0.56394112 |
| $a$ | 2.5380010 | $\Omega$ | 145.47349 | | +0.54219618 | +0.76781854 |
| $e$ | 0.1018048 | $i$ | 4.20445 | | +0.16056048 | +0.30401496 |
| $P$ | 4.04 | $H$ | 18.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 10 | 691 | 0.5+ | 0.4+ | 2004 01 28 | 691 | 0.3+ | 0.3+ | 2006 08 19 | 691 | 0.3− | 0.2+ |
| 1997 05 10 | 691 | 0.2− | 0.4+ | 2004 01 28 | 691 | 0.2− | 0.2− | 2006 08 19 | 691 | 0.4− | 0.2− |
| 1997 05 10 | 691 | 0.3− | 0.2− | 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.1− |
| 2004 01 19 | 691 | 0.2+ | 0.1− | 2004 02 12 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 2004 01 19 | 691 | 0.1+ | 0.2− | 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.3+ | 0.4+ |
| 2004 01 19 | 691 | 0.1+ | 0.2− | 2004 02 12 | 691 | 0.3− | 0.6+ | 2006 08 28 | 691 | 0.3+ | 0.4+ |

### 2004 $BK_{142}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.23409 | | | (2000.0) | | |
| $n$ | 0.28620553 | $\omega$ | 46.10930 | | +0.52565025 | −0.84997626 |
| $a$ | 2.2804333 | $\Omega$ | 12.31968 | | +0.72572425 | +0.42651550 |
| $e$ | 0.1920626 | $i$ | 9.46920 | | +0.44386500 | +0.30923274 |
| $P$ | 3.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.8+ | 0.6− | 2003 12 29 | 704 | 0.8+ | 0.1− | 2006 09 26 | 704 | (0.4+ | 1.7−) |
| 1999 10 16 | 704 | 0.3− | 0.3+ | 2004 01 19 | 704 | 0.0 | 0.1+ | 2006 09 26 | 704 | (0.0 | 1.6−) |
| 1999 10 16 | 704 | 0.4− | 0.1+ | 2004 01 19 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 2001 03 19 | 691 | 0.2+ | 0.7+ | 2004 01 19 | 704 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.2− |
| 2001 03 19 | 691 | 0.2+ | 0.2+ | 2004 01 19 | 704 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.7+ | 0.9− |
| 2001 03 19 | 691 | 0.4+ | 0.5+ | 2004 01 19 | 704 | 0.3+ | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.5− |
| 2001 08 21 | 250 | 0.3− | 0.7− | 2004 01 28 | 703 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.2− |
| 2001 08 21 | 250 | 0.7− | 0.6− | 2004 01 28 | 703 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.6− |
| 2001 08 21 | 250 | 0.3− | 0.8− | 2004 01 28 | 703 | 0.0 | 1.3− | 2006 09 28 | 704 | 0.1− | 0.2+ |
| 2001 08 21 | 250 | 0.4− | 0.7− | 2004 01 28 | 703 | 0.6+ | 0.3+ | 2006 09 28 | 704 | 0.3+ | 0.5+ |
| 2001 08 21 | 250 | 0.4− | 0.8− | 2004 02 11 | 704 | 0.5+ | 0.7− | 2006 09 28 | 704 | 1.0+ | 0.6+ |
| 2001 08 21 | 250 | 0.6− | 0.6− | 2004 02 11 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 704 | (3.9+ | 5.0−) |
| 2001 08 21 | 250 | 0.2− | 0.7− | 2004 02 11 | 704 | 0.7+ | 0.1− | 2006 09 28 | 704 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 250 | 0.9− | 0.5− | 2004 02 11 | 704 | 0.7− | 0.8− | 2006 10 17 | 703 | 0.6+ | 0.2− | | |
| 2003 12 03 | 704 | 0.6+ | 0.6+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.2+ | | |
| 2003 12 03 | 704 | 0.3+ | 0.5− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.0 | | |
| 2003 12 03 | 704 | 0.1+ | 0.6− | 2006 09 13 | 644 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1− | 1.0+ | | |
| 2003 12 03 | 704 | 0.1− | 0.3− | 2006 09 16 | 704 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.5− | 0.1+ | | |
| 2003 12 17 | 703 | 0.8− | 0.4− | 2006 09 16 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2003 12 17 | 703 | (0.3+ | 1.8+) | 2006 09 16 | 704 | 0.3− | 1.5+ | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2003 12 17 | 704 | 0.0 | 0.0 | 2006 09 16 | 704 | 0.8+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2003 12 17 | 703 | 0.7+ | 0.6+ | 2006 09 18 | 699 | 0.8− | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2003 12 17 | 704 | 0.1+ | 0.5− | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.3− | | |
| 2003 12 17 | 703 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.9− | 0.7− | 2006 10 28 | G96 | 0.3− | 0.1− | | |
| 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.0 | | |
| 2003 12 17 | 704 | 0.0 | 0.4+ | 2006 09 19 | 704 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 1.2− | | |
| 2003 12 29 | 703 | 0.7− | 0.2− | 2006 09 19 | 704 | 0.3− | 0.6+ | 2006 11 11 | 703 | 1.0− | 0.1+ | | |
| 2003 12 29 | 703 | 0.7− | 0.0 | 2006 09 19 | 704 | 0.9+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.6− | | |
| 2003 12 29 | 703 | 0.4− | 0.1− | 2006 09 19 | 704 | 1.3− | 0.5+ | 2006 11 15 | G96 | 0.4− | 0.6− | | |
| 2003 12 29 | 703 | 1.2− | 0.3− | 2006 09 22 | 704 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2003 12 29 | 704 | 0.2− | 0.2+ | 2006 09 22 | 704 | (0.7− | 2.1+) | 2006 11 15 | G96 | 0.1− | 0.1− | | |
| 2003 12 29 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.7− | | |
| 2003 12 29 | 704 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.2− | | | | | | |
| 2003 12 29 | 704 | 1.1+ | 0.4− | 2006 09 22 | 704 | 0.4− | 0.8+ | | | | | | |

**2004 BR$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.76401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26567235 | $\omega$ | 169.40988 | | −0.96386312 | −0.26636955 | |
| $a$ | 2.3964690 | $\Omega$ | 355.13654 | | +0.24093600 | −0.86541066 | |
| $e$ | 0.1203339 | $i$ | 2.63177 | | +0.11365620 | −0.42439563 | |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.4− | 0.5+ | 2004 02 29 | 691 | 0.7− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2− |
| 2004 01 22 | 704 | 0.1+ | 1.1+ | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.3− |
| 2004 01 22 | 704 | 0.1− | 0.7+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 0.3+ | 1.4+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.5− |
| 2004 01 22 | 704 | 0.9− | 0.7+ | 2006 10 11 | 691 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 2004 01 31 | 691 | 0.3+ | 0.3− | 2006 10 11 | 691 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.5− |
| 2004 01 31 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.6+ | 0.2− | 2006 11 01 | 691 | 0.4− | 0.3− |
| 2004 01 31 | 691 | 0.2− | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2004 02 11 | 691 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.1− | 1.2− | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2004 02 11 | 691 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2004 02 11 | 691 | 0.1+ | 0.3− | 2006 10 17 | 691 | 0.2+ | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2004 02 16 | 704 | 0.6+ | 0.9− | 2006 10 17 | 691 | 0.0 | 0.8+ | 2006 11 15 | 691 | 0.3+ | 0.3− |
| 2004 02 16 | 704 | 0.5+ | 0.2− | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 691 | 0.7− | 0.4+ |
| 2004 02 16 | 704 | 1.5+ | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.4− | 0.4+ |
| 2004 02 16 | 704 | 0.6+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2004 02 23 | 704 | (0.0 | 2.4−) | 2006 10 21 | 691 | 0.8− | 0.4+ | 2006 11 23 | 691 | 0.3+ | 0.2+ |
| 2004 02 23 | 704 | 0.9+ | 1.3+ | 2006 10 21 | 691 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 02 23 | 704 | 0.3− | 0.8− | 2006 10 21 | 691 | 0.8− | 0.0 | 2006 11 23 | 691 | 0.6+ | 0.0 |

**2004 BH$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.45910 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17944425 | $\omega$ | 107.09427 | | +0.57670619 | −0.78252699 | |
| $a$ | 3.1130280 | $\Omega$ | 305.34069 | | +0.59644294 | +0.59958169 | |
| $e$ | 0.2026743 | $i$ | 16.71790 | | +0.55827036 | +0.16778947 | |
| $P$ | 5.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.1− | 0.1+ | 2004 01 16 | 691 | 0.0 | 0.1+ | 2004 01 28 | 291 | 0.4+ | 0.2+ |
| 1993 01 26 | 691 | 0.0 | 0.0 | 2004 01 17 | 644 | 0.1+ | 0.4+ | 2004 02 13 | 691 | 0.0 | 0.1+ |
| 1993 01 26 | 691 | 0.1+ | 0.1− | 2004 01 17 | 644 | 0.1+ | 0.2+ | 2004 02 13 | 691 | 0.6+ | 0.2+ |
| 2002 09 03 | 644 | 0.1− | 0.2+ | 2004 01 17 | 644 | 0.3+ | 0.4+ | 2004 02 13 | 691 | 0.4+ | 0.5+ |
| 2002 09 03 | 644 | 0.1− | 0.0 | 2004 01 22 | 704 | 0.0 | 0.2− | 2004 02 17 | 645 | 0.2− | 0.0 |
| 2002 09 03 | 644 | 0.0 | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.8− | 2004 02 17 | 645 | 0.2− | 0.3− |
| 2003 12 21 | 691 | 0.3+ | 0.1− | 2004 01 22 | 704 | 0.8+ | 0.3− | 2004 04 14 | 645 | 0.0 | 0.0 |
| 2003 12 21 | 691 | 0.2− | 0.1+ | 2004 01 22 | 704 | 0.2− | 0.2− | 2004 04 14 | 645 | 0.1− | 0.0 |
| 2003 12 21 | 691 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2004 04 16 | 645 | 0.2+ | 0.1+ |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2004 01 28 | 291 | 0.0 | 0.2− | 2004 04 16 | 645 | 0.0 | 0.0 |
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2004 01 28 | 291 | 0.2+ | 0.0 | | | | |

**2004 BR$_{150}$ = 2006 PN$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.89311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18932713 | $\omega$ | 297.01827 | | −0.94485371 | +0.28874381 | |
| $a$ | 3.0037294 | $\Omega$ | 260.09633 | | −0.21615339 | −0.90431211 | |
| $e$ | 0.0624073 | $i$ | 9.02493 | | −0.24602678 | −0.31439883 | |
| $P$ | 5.21 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.0 | 0.6− | 2003 12 22 | 704 | 0.4− | 1.0+ | 2004 01 23 | 704 | 0.1− | 0.6+ |
| 2001 08 25 | 704 | 0.5+ | 0.2+ | 2003 12 22 | 704 | 0.3+ | 0.8− | 2006 08 13 | 644 | 0.2+ | 0.2+ |
| 2001 08 25 | 704 | 0.5+ | 0.4+ | 2004 01 17 | 608 | 0.2− | 0.0 | 2006 08 13 | 644 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.8− | 0.4− | 2004 01 17 | 608 | 0.3− | 0.3+ | 2006 08 13 | 644 | 0.5− | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 0.5+ | 2004 01 17 | 608 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 0.3+ | 1.3− | 2004 01 23 | 704 | 0.1+ | 0.3− | 2006 08 18 | 644 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 0.5+ | 1.2+ | 2004 01 23 | 704 | 0.0 | 0.9− | 2006 08 18 | 644 | 0.0 | 0.2+ |

**2004 BV$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.61516 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19072853 | $\omega$ | 346.39990 | | −0.71657502 | −0.69103898 | |
| $a$ | 2.9889979 | $\Omega$ | 149.20182 | | +0.65602175 | −0.71387067 | |
| $e$ | 0.0513285 | $i$ | 10.66891 | | +0.23697195 | −0.11337456 | |
| $P$ | 5.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 691 | 0.1+ | 0.2− | 2002 10 15 | 644 | 0.6− | 0.4+ | 2004 01 18 | 691 | 0.2− | 0.0 |
| 2001 07 18 | 691 | 0.1− | 0.3+ | 2002 10 15 | 644 | 0.4− | 0.5+ | 2004 01 18 | 691 | 0.2− | 0.0 |
| 2001 07 18 | 691 | 0.1− | 0.2+ | 2002 10 15 | 644 | 0.4− | 0.2+ | 2004 01 18 | 691 | 0.4− | 0.0 |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2003 12 22 | 704 | 1.4+ | 0.0 | 2004 01 23 | 704 | 0.2− | 0.4+ |
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2003 12 22 | 704 | 0.4− | 0.3+ | 2004 01 23 | 704 | 1.0+ | 0.5− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2003 12 22 | 704 | 0.4− | 0.5− | 2004 01 23 | 704 | 0.8+ | 0.3+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.2+ | 1.5+ | 2004 01 23 | 704 | 1.1+ | 0.1+ |

**2004 BU$_{152}$ = 2006 TJ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.06416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25825023 | $\omega$ | 263.60248 | | −0.55244821 | +0.83263992 | |
| $a$ | 2.4421682 | $\Omega$ | 332.74935 | | −0.72726879 | −0.50427728 | |
| $e$ | 0.1145107 | $i$ | 4.87111 | | −0.40728501 | −0.22894363 | |
| $P$ | 3.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.2− | 0.1− | 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 10 13 | 691 | 0.4+ | 0.2+ |
| 2003 12 21 | 691 | 0.0 | 0.2− | 2005 01 20 | 809 | 0.4+ | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.1+ |
| 2003 12 21 | 691 | 0.4+ | 0.3− | 2005 01 20 | 809 | 0.2+ | 0.7+ | 2006 10 13 | 691 | 0.1+ | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2005 01 20 | 809 | 0.3− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.2− |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.3− | 0.0 |
| 2004 02 13 | 691 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.2− | 0.3− | | | | |
| 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.3− | | | | |

**2004 BY$_{153}$ = 2006 QT$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.50551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17814626 | $\omega$ | 222.95055 | | −0.88039643 | +0.47229520 | |
| $a$ | 3.1281308 | $\Omega$ | 345.06203 | | −0.37739687 | −0.75250919 | |
| $e$ | 0.0489221 | $i$ | 9.57733 | | −0.28718240 | −0.45898492 | |
| $P$ | 5.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2004 02 13 | 291 | 0.4− | 0.1− | 2004 03 14 | 691 | 0.0 | 0.1− |
| 2004 01 27 | 691 | 0.2+ | 0.0 | 2004 02 13 | 291 | 0.5− | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.1− |
| 2004 01 27 | 691 | 0.1− | 0.3− | 2004 03 12 | 644 | 0.2− | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.5− |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2004 03 12 | 644 | 0.2− | 0.1− | 2006 08 21 | 691 | 0.3+ | 0.1+ |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2004 03 12 | 644 | 0.2− | 0.1− | 2006 08 27 | 291 | 0.1− | 0.2+ |
| 2004 01 27 | 691 | 0.3+ | 0.2− | 2004 03 14 | 691 | 0.3+ | 0.1− | 2006 08 27 | 291 | 0.0 | 0.2+ |
| 2004 02 13 | 291 | 0.3+ | 0.2+ | 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 291 | 0.3− | 0.1+ |

## 2004 $BB_{154}$ = 2006 $PU_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.33583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20269090 | $\omega$ | 347.04792 | | +0.62541457 | +0.77331253 | |
| $a$ | 2.8702070 | $\Omega$ | 321.52041 | | −0.70015579 | +0.49725233 | |
| $e$ | 0.0531580 | $i$ | 9.63425 | | −0.34443939 | +0.39335461 | |
| $P$ | 4.86 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.3− | 0.1+ | 2004 02 11 | 691 | 0.1− | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.3+ |
| 2001 07 19 | 644 | 0.1− | 0.6+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.3− |
| 2001 07 19 | 644 | 0.1− | 0.5+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.2+ | 0.2− |
| 2004 01 28 | 691 | 0.1− | 0.5+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 08 13 | 644 | 0.7− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 08 13 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.7+ | 0.4+ |
| 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 08 13 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.5+ |

## 2004 $BF_{154}$ = 2006 $QC_{106}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.25785 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22780474 | $\omega$ | 26.67486 | | +0.92965935 | +0.35297085 | |
| $a$ | 2.6551815 | $\Omega$ | 312.24144 | | −0.35834161 | +0.79974326 | |
| $e$ | 0.0433095 | $i$ | 8.19839 | | −0.08558495 | +0.48561537 | |
| $P$ | 4.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 691 | 0.2+ | 0.1− | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.0 |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.0 |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 1.7− | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.0 |
| 2004 02 11 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.5− | 1.0+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2004 02 11 | 691 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.7+ | 1.3− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 1.1− | 2006 09 30 | 691 | 0.2+ | 0.1− |

## 2004 $BZ_{158}$ = 2006 $SF_{295}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.47178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26397846 | $\omega$ | 281.96505 | | −0.40183647 | −0.91555641 | |
| $a$ | 2.4067098 | $\Omega$ | 191.77066 | | +0.86901394 | −0.37547874 | |
| $e$ | 0.1808100 | $i$ | 4.73803 | | +0.28869054 | −0.14412558 | |
| $P$ | 3.73 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.5+ |
| 2004 01 29 | 704 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2004 01 29 | 704 | 0.3− | 0.3− | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.6− |
| 2004 01 29 | 704 | 0.5− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 16 | G96 | 0.7+ | 0.7− |
| 2004 02 18 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2004 02 18 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.4− | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.4+ | 0.5+ | | | | |

## 2004 $BD_{162}$ = 2002 $RV_{128}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.15862 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23092919 | $\omega$ | 199.47392 | | +0.09485598 | −0.97615635 | |
| $a$ | 2.6311776 | $\Omega$ | 245.48960 | | +0.93943971 | +0.15265992 | |
| $e$ | 0.2070658 | $i$ | 12.39108 | | +0.32932563 | −0.15431696 | |
| $P$ | 4.27 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 07 | 691 | 0.4+ | 0.2+ | 2004 01 16 | 644 | 0.0 | 0.7+ | 2004 02 19 | 704 | 0.4+ | 0.0 |
| 1995 01 07 | 691 | 0.1− | 0.7− | 2004 01 22 | 608 | 0.0 | 0.2− | 2004 02 19 | 704 | 0.3+ | 0.3+ |
| 1995 01 07 | 691 | 0.2− | 0.3− | 2004 01 22 | 608 | 0.6− | 0.7− | 2004 02 19 | 704 | 0.2− | 0.3− |
| 2002 09 10 | 644 | 0.8− | 0.7+ | 2004 01 22 | 608 | 0.6− | 1.1− | 2004 02 19 | 704 | 0.9+ | 1.2+ |
| 2002 09 10 | 644 | 0.4− | 0.7+ | 2004 01 29 | 699 | 0.8+ | 1.1+ | 2004 02 19 | 704 | 0.4− | 0.6− |
| 2002 09 10 | 644 | 0.1− | 0.7+ | 2004 01 29 | 699 | 0.1+ | 0.4+ | 2005 06 13 | G96 | 0.1− | 0.2− |
| 2002 09 11 | 644 | 0.2− | 0.9+ | 2004 01 29 | 699 | 0.5− | 2.1+ | 2005 06 13 | G96 | 0.7+ | 0.2+ |
| 2002 09 11 | 644 | 0.3− | 0.7+ | 2004 01 29 | 699 | 0.6− | 1.2− | 2005 06 13 | G96 | 0.0 | 0.7− |
| 2002 09 11 | 644 | 0.2− | 0.6+ | 2004 02 03 | 608 | 0.3+ | 1.5+ | 2005 06 13 | G96 | 0.2+ | 0.7− |
| 2004 01 16 | 644 | 0.3+ | 0.1+ | 2004 02 03 | 608 | 0.2+ | 0.6+ | | | | |
| 2004 01 16 | 644 | 0.4+ | 0.7+ | 2004 02 03 | 608 | 0.5+ | 0.4+ | | | | |

## 2004 $BE_{162}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.57199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24072511 | $\omega$ | 173.56254 | | −0.02463400 | +0.99794258 | |
| $a$ | 2.5593035 | $\Omega$ | 95.01458 | | −0.91983331 | +0.00056382 | |
| $e$ | 0.1628841 | $i$ | 3.40653 | | −0.39153526 | −0.06411157 | |
| $P$ | 4.09 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.5+ | 0.1− | 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 11 02 | 703 | 0.9− | 0.9+ |
| 2004 01 16 | 644 | 0.1− | 0.3+ | 2004 01 22 | 704 | 0.2+ | 0.5− | 2006 11 02 | 703 | 1.3− | 1.1− |
| 2004 01 16 | 644 | 0.4+ | 0.2+ | 2004 02 11 | 691 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.4+ | 0.1+ |
| 2004 01 18 | 644 | 0.0 | 0.0 | 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2004 01 18 | 644 | 0.3+ | 0.3+ | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2004 01 18 | 644 | 0.2+ | 0.3+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.5− |
| 2004 01 22 | 704 | 0.6− | 0.5+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.6+ |
| 2004 01 22 | 704 | 0.2+ | 0.5− | 2006 11 02 | 703 | 0.4+ | 0.4+ | | | | |

## 2004 $BF_{162}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.30553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18085822 | $\omega$ | 145.43370 | | −0.63143153 | +0.71183163 | |
| $a$ | 3.0967814 | $\Omega$ | 83.33289 | | −0.76282736 | −0.49899922 | |
| $e$ | 0.1491685 | $i$ | 18.03807 | | −0.13924315 | −0.49426259 | |
| $P$ | 5.45 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 06 | 291 | 0.2− | 0.1+ | 2004 02 02 | 699 | 0.2− | 0.6+ | 2004 03 08 | 644 | 0.3− | 0.1− |
| 2003 01 06 | 291 | 0.0 | 0.0 | 2004 02 02 | 699 | 0.7+ | 0.8− | 2004 03 08 | 644 | 0.2+ | 0.0 |
| 2003 01 06 | 291 | 0.2+ | 0.1+ | 2004 02 02 | 699 | 1.0− | 1.5− | 2004 03 08 | 644 | 0.1+ | 0.0 |
| 2004 01 17 | 644 | 0.3+ | 0.3− | 2004 02 11 | 704 | 1.3+ | 0.5− | 2004 03 17 | 644 | 0.1+ | 0.2− |
| 2004 01 17 | 644 | 0.0 | 0.1− | 2004 02 11 | 704 | 1.7+ | 0.2+ | 2004 03 17 | 644 | 0.2− | 0.1− |
| 2004 01 17 | 644 | 0.8− | 0.2− | 2004 02 11 | 704 | 1.4− | 0.2+ | 2004 03 17 | 644 | 0.0 | 0.3− |
| 2004 01 30 | 703 | 0.5− | 0.6− | 2004 02 11 | 704 | 1.4+ | 0.2+ | 2006 09 28 | E12 | 0.0 | 0.6+ |
| 2004 01 30 | 703 | (2.0+ | 1.7−) | 2004 02 26 | 703 | 0.7− | 0.2+ | 2006 09 28 | E12 | 0.1− | 0.3+ |
| 2004 01 30 | 703 | 0.3+ | 0.6− | 2004 02 26 | 703 | 0.4− | 0.2+ | 2006 09 28 | E12 | 0.3− | 1.1− |
| 2004 01 30 | 703 | 0.8+ | 0.3+ | 2004 02 26 | 703 | 0.2+ | 0.7+ | 2006 09 28 | E12 | 0.5+ | 0.0 |
| 2004 02 02 | 699 | 0.6− | 0.9+ | 2004 02 26 | 703 | 1.3− | 1.3+ | | | | |

**2004 $BL_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 204.81139 | | | (2000.0) | | |
| $n$ | 0.17827686 | $\omega$ | 155.05384 | | −0.29646219 | −0.93102093 |
| $a$ | 3.1266030 | $\Omega$ | 311.41262 | | +0.82170793 | −0.13506631 |
| $e$ | 0.1724511 | $i$ | 16.48886 | | +0.48673016 | −0.33905326 |
| $P$ | 5.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 26 | 691 | 0.8− | 0.1+ | 2002 11 25 | 644 | 0.2+ | 0.2+ | 2004 02 19 | 704 | (1.9− | 0.3−) |
| 2001 07 26 | 691 | 0.0 | 0.5+ | 2004 01 30 | 699 | 1.1+ | 0.2+ | 2004 02 19 | 704 | 0.2+ | 0.4+ |
| 2001 07 26 | 691 | 0.3+ | 0.0 | 2004 01 30 | 699 | 0.2+ | 0.2+ | 2004 02 19 | 704 | 0.4− | 0.2− |
| 2002 10 30 | 704 | 1.3+ | 0.7+ | 2004 01 30 | 699 | (0.8− | 1.6+) | 2004 02 19 | 704 | 0.2− | 0.3+ |
| 2002 10 30 | 704 | 0.2− | 0.0 | 2004 01 30 | 699 | 0.1+ | 1.4+ | 2004 03 13 | 644 | 0.1− | 1.0+ |
| 2002 10 30 | 704 | 0.9− | 0.3− | 2004 02 12 | 644 | 0.2+ | 0.6+ | 2004 03 13 | 644 | 0.5− | 0.9+ |
| 2002 10 30 | 704 | 0.5− | 0.8+ | 2004 02 12 | 644 | 0.1+ | 0.8+ | 2004 03 13 | 644 | 0.4− | 0.8+ |
| 2002 11 13 | 704 | 0.8+ | 0.0 | 2004 02 12 | 644 | 0.2+ | 0.6+ | 2004 03 19 | E12 | 0.6+ | 1.3− |
| 2002 11 13 | 704 | 0.2− | 1.1− | 2004 02 15 | 703 | (0.1− | 2.1+) | 2004 03 19 | E12 | 0.4+ | 1.3− |
| 2002 11 13 | 704 | 1.4− | 0.3− | 2004 02 15 | 703 | 0.6+ | 0.5− | 2004 03 19 | E12 | 0.2+ | 1.4− |
| 2002 11 25 | 644 | 0.3+ | 0.3+ | 2004 02 15 | 703 | 0.3+ | 0.3+ | 2004 03 19 | E12 | (1.7− | 0.7+) |
| 2002 11 25 | 644 | 0.5+ | 0.2+ | 2004 02 15 | 703 | 0.9− | 0.4− | | | | |

**2004 CR**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 235.25482 | | | (2000.0) | | |
| $n$ | 0.26904353 | $\omega$ | 126.44436 | | −0.96516350 | −0.25449464 |
| $a$ | 2.3764081 | $\Omega$ | 38.91564 | | +0.19824523 | −0.86284965 |
| $e$ | 0.1669499 | $i$ | 5.55068 | | +0.17075787 | −0.43671840 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.2− | 0.2− |
| 1995 11 30 | 691 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.4+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 1995 11 30 | 691 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.5+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2004 01 31 | 704 | 0.4− | 0.8+ | 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.7+ | 0.1− |
| 2004 01 31 | 704 | 0.1− | 0.3+ | 2004 04 15 | 645 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2004 01 31 | 704 | 0.4+ | 0.9− | 2004 04 16 | 645 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2004 01 31 | 704 | 0.4− | 0.2− | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2004 01 31 | 704 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2004 02 09 | 106 | 0.8− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2004 02 09 | 106 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2004 02 09 | 106 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 03 | G96 | 0.3+ | 0.4+ |
| 2004 02 10 | 106 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.7+ | 0.3+ | 2006 11 03 | G96 | 0.1− | 0.5− |
| 2004 02 10 | 106 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 03 | G96 | 0.2− | 0.2− |
| 2004 02 10 | 106 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 03 | G96 | 0.5+ | 0.3− |
| 2004 02 13 | 699 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 03 | G96 | 0.1− | 0.3− |
| 2004 02 13 | 699 | 0.7+ | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.5− | 2006 11 03 | G96 | 0.0 | 0.1+ |
| 2004 02 13 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 03 | G96 | 0.2+ | 0.4− |
| 2004 02 13 | 699 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 03 | G96 | 0.2+ | 0.1− |
| 2004 02 14 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.3+ |
| 2004 02 14 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.6+ |
| 2004 02 14 | 704 | 0.4+ | 0.8+ | 2006 10 20 | 691 | 0.5− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 02 17 | 645 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 25 | 703 | 1.2− | 0.3− |
| 2004 02 17 | 645 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 25 | 703 | 1.4− | 0.5− |
| 2004 02 25 | 113 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 25 | 703 | 1.0− | 0.2+ |
| 2004 02 25 | 113 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 25 | 703 | 0.3+ | 0.2− |
| 2004 02 25 | 113 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2004 03 20 | 704 | 1.0+ | 0.9+ | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ |

**2004 $CO_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.55854 | | | (2000.0) | | |
| $n$ | 0.21482801 | $\omega$ | 342.72803 | | −0.89187735 | −0.45142197 |
| $a$ | 2.7610574 | $\Omega$ | 170.29537 | | +0.43199602 | −0.86847408 |
| $e$ | 0.0964634 | $i$ | 9.49339 | | +0.13391874 | −0.20486818 |
| $P$ | 4.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.1− | 0.4− | 2004 02 26 | 704 | 0.6− | 0.4− | 2004 03 29 | 691 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.3+ | 0.5+ | 2004 02 26 | 704 | 0.4− | 0.8− | 2004 03 29 | 691 | 0.1+ | 0.1− |
| 2002 10 31 | 704 | 0.1− | 0.2− | 2004 03 01 | 704 | (0.0 | 1.6+) | 2004 03 29 | 691 | 0.0 | 0.2− |
| 2002 10 31 | 704 | 0.1− | 0.8− | 2004 03 01 | 704 | (0.1− | 2.1+) | 2006 09 14 | 644 | 0.0 | 0.6+ |
| 2004 01 30 | 699 | 0.1− | 0.2+ | 2004 03 01 | 704 | 0.8+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.4+ |
| 2004 01 30 | 699 | 0.3− | 0.1− | 2004 03 01 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 644 | 0.2− | 0.5+ |
| 2004 01 30 | 699 | 0.4− | 0.3+ | 2004 03 01 | 704 | 1.2+ | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.3+ |
| 2004 01 30 | 699 | 0.5− | 1.1− | 2004 03 12 | 644 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.5− | 0.5+ |
| 2004 02 12 | 683 | 1.1− | 0.4+ | 2004 03 12 | 644 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.3+ |
| 2004 02 12 | 683 | (0.2− | 1.7+) | 2004 03 12 | 644 | 0.3+ | 0.3− | 2006 09 17 | 704 | 0.1− | 1.2− |
| 2004 02 12 | 683 | 0.4+ | 0.4+ | 2004 03 15 | 703 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.5− | 0.8− |
| 2004 02 12 | 644 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.7+ | 0.7+ | 2006 09 17 | 704 | 0.2+ | 1.3− |
| 2004 02 12 | 644 | 0.3− | 0.2+ | 2004 03 15 | 703 | 0.9+ | 1.0+ | 2006 09 17 | 704 | (0.0 | 1.5−) |
| 2004 02 12 | 644 | 0.3− | 0.4+ | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 704 | (0.3+ | 1.6+) |
| 2004 02 13 | 333 | 0.0 | 0.6+ | 2004 03 15 | 703 | 0.3− | 0.0 | 2006 09 20 | 704 | 1.0+ | 0.3− |
| 2004 02 13 | 333 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.9+ | 1.5+ |
| 2004 02 13 | 333 | 0.4− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.8+ |
| 2004 02 14 | 699 | 0.0 | 1.4+ | 2004 03 15 | 703 | 0.7+ | 0.7+ | 2006 09 26 | G96 | 0.4+ | 0.2+ |
| 2004 02 14 | 699 | 0.6− | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2004 02 14 | 699 | (2.1− | 0.4+) | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3+ |
| 2004 02 14 | 699 | 0.4− | 0.6− | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2004 02 19 | 704 | (1.6− | 0.4+) | 2004 03 18 | 704 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2004 02 19 | 704 | 0.7+ | 0.8+ | 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2004 02 19 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.5+ |
| 2004 02 19 | 704 | 0.6+ | 0.2− | 2004 03 27 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.4+ |
| 2004 02 19 | 704 | 0.3− | 0.5+ | 2004 03 27 | 704 | 0.5− | 0.2+ | 2006 11 25 | G96 | 0.6+ | 0.5− |
| 2004 02 26 | 704 | 0.5− | 1.0− | 2004 03 27 | 704 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.6− | 0.5− | 2004 03 27 | 704 | 0.2− | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2004 02 26 | 704 | 0.3+ | 0.7− | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.5+ | 0.3− |

**2004 $CC_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 243.32395 | | | (2000.0) | | |
| $n$ | 0.19086676 | $\omega$ | 238.48861 | | +0.52518254 | −0.85098943 |
| $a$ | 2.9875546 | $\Omega$ | 179.82810 | | +0.82862805 | +0.51123920 |
| $e$ | 0.0867464 | $i$ | 10.25662 | | +0.19380106 | +0.12021426 |
| $P$ | 5.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.0 | 1.3+ | 2002 10 11 | 704 | 1.1+ | 0.1− | 2004 02 09 | 644 | 0.2+ | 0.2+ |
| 2002 09 07 | 704 | 0.4+ | 0.1+ | 2002 10 31 | 704 | 0.7+ | 0.8+ | 2004 02 09 | 644 | 0.3+ | 0.3+ |
| 2002 09 07 | 704 | 0.5− | 0.4− | 2002 10 31 | 645 | 0.0 | 0.1− | 2004 02 09 | 644 | 0.3+ | 0.4+ |
| 2002 10 03 | 704 | 0.0 | 0.1+ | 2002 10 31 | 645 | 0.0 | 0.1− | 2004 02 11 | 644 | 0.5+ | 0.3+ |
| 2002 10 03 | 704 | 0.6− | 0.5+ | 2002 10 31 | 704 | 0.3− | 0.5− | 2004 02 11 | 644 | 0.3+ | 0.4+ |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2002 10 31 | 704 | 0.2− | 0.3+ | 2004 02 11 | 644 | 0.4+ | 0.0 |
| 2002 10 03 | 704 | 0.8+ | 1.1− | 2002 10 31 | 704 | 1.1− | 0.0 | 2004 03 11 | 644 | 0.3+ | 0.1+ |
| 2002 10 11 | 704 | 0.4− | 1.0+ | 2002 10 31 | 704 | 0.0 | 0.4+ | 2004 03 11 | 644 | 0.3+ | 0.9+ |
| 2002 10 11 | 704 | 0.4− | 0.4+ | 2004 01 28 | 645 | 0.1− | 0.1− | 2004 03 11 | 644 | 0.3+ | 0.4+ |
| 2002 10 11 | 704 | 0.7− | 0.2+ | 2004 01 28 | 645 | 0.1− | 0.0 | | | | |

### 2004 $CR_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.71391 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26001085 | $\omega$ | 305.28257 | | +0.48086796 | −0.87447896 | |
| $a$ | 2.4311312 | $\Omega$ | 115.85499 | | +0.82566558 | +0.42720181 | |
| $e$ | 0.1580487 | $i$ | 4.05654 | | +0.29502941 | +0.22975023 | |
| $P$ | 3.79 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 05 | 703 | 0.5+ | 0.4+ | 2004 02 12 | 291 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2004 01 05 | 703 | 0.7− | 0.0 | 2004 02 12 | 291 | 0.0 | 0.2+ | 2006 09 14 | 703 | (1.8− | 2.1+) |
| 2004 01 05 | 703 | 0.7− | 1.0− | 2004 02 14 | 691 | 0.1− | 0.2− | 2006 09 14 | 703 | 1.0+ | 0.9+ |
| 2004 01 05 | 703 | (0.4− | 2.0+) | 2004 02 14 | 691 | 0.1+ | 0.3− | 2006 09 21 | 699 | 0.9+ | 1.2− |
| 2004 01 16 | 644 | 0.2− | 0.4+ | 2004 02 14 | 691 | 0.3− | 0.2− | 2006 09 21 | 699 | 0.4− | 0.5+ |
| 2004 01 16 | 644 | 0.2− | 0.3+ | 2004 02 16 | 704 | 1.0− | 1.2− | 2006 09 21 | 699 | 0.2+ | 0.1+ |
| 2004 01 16 | 644 | 0.1− | 0.5+ | 2004 02 16 | 704 | 0.5− | 0.5− | 2006 09 21 | 699 | (2.1− | 0.4−) |
| 2004 01 30 | 704 | 0.6+ | 0.3+ | 2004 02 16 | 704 | 0.4+ | 0.4− | 2006 09 22 | 704 | 0.7+ | 0.2+ |
| 2004 01 30 | 704 | 0.6+ | 0.2+ | 2004 02 16 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.4+ |
| 2004 01 30 | 704 | 0.7+ | 0.2+ | 2004 02 16 | 704 | 0.1+ | 0.1− | 2006 09 22 | 704 | 1.2+ | 0.6− |
| 2004 01 30 | 704 | 0.4− | 1.0+ | 2004 02 17 | 644 | 0.2+ | 0.0 | 2006 09 22 | 704 | (2.0+ | 0.6−) |
| 2004 02 10 | 703 | (2.0− | 1.2−) | 2004 02 17 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7− | 0.1+ |
| 2004 02 10 | 703 | (1.9− | 0.7−) | 2004 02 17 | 644 | 0.3+ | 0.0 | 2006 09 30 | 703 | (1.9− | 0.5+) |
| 2004 02 10 | 703 | 0.0 | 0.4− | 2004 02 18 | 608 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 1.2− | 0.1− |
| 2004 02 10 | 703 | 0.1− | 0.1− | 2004 02 18 | 608 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 1.0− | 0.6− |
| 2004 02 11 | 699 | 0.6− | 0.1+ | 2004 02 18 | 608 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.7+ | 1.4+ |
| 2004 02 11 | 699 | (0.0 | 1.7−) | 2006 08 31 | 704 | (0.1+ | 1.5−) | 2006 11 27 | G96 | 0.2+ | 0.6− |
| 2004 02 11 | 699 | 0.2+ | 0.2− | 2006 08 31 | 704 | 0.3− | 1.2− | 2006 11 27 | G96 | 0.2− | 0.7− |
| 2004 02 11 | 699 | 0.8+ | 0.1− | 2006 08 31 | 704 | 0.3− | 0.9+ | 2006 11 27 | G96 | 0.1− | 0.7− |
| 2004 02 12 | 291 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.7+ | | | | |

### 2004 $CW_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.70086 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26759298 | $\omega$ | 130.13320 | | −0.78658268 | −0.61747203 | |
| $a$ | 2.3849882 | $\Omega$ | 11.73688 | | +0.56038685 | −0.71655238 | |
| $e$ | 0.1512437 | $i$ | 1.12609 | | +0.25933428 | −0.32447030 | |
| $P$ | 3.68 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.1+ | 0.2+ | 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 10 19 | 701 | 0.3+ | 0.1+ |
| 2004 01 18 | 644 | 0.1+ | 0.1− | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 10 20 | 701 | 0.0 | 0.0 |
| 2004 01 18 | 644 | 0.1+ | 0.1− | 2004 02 17 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 701 | 0.6− | 0.0 |
| 2004 01 22 | 704 | (1.7+ | 0.9+) | 2004 02 17 | 644 | 0.2+ | 0.2− | 2006 10 20 | 701 | (2.5+ | 0.6+) |
| 2004 01 22 | 704 | 0.6− | 0.7+ | 2004 02 17 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 701 | 1.3+ | 0.2− |
| 2004 01 22 | 704 | 0.5+ | 0.0 | 2004 02 26 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 701 | 0.6+ | 0.1− |
| 2004 01 22 | 704 | 1.2− | 0.4− | 2004 02 26 | 704 | 0.3− | 0.9+ | 2006 10 20 | 701 | 0.7− | 0.1− |
| 2004 01 22 | 704 | 0.6+ | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 701 | 0.4+ | 0.2+ |
| 2004 02 10 | 644 | 0.6+ | 0.4− | 2004 02 26 | 704 | 0.7− | 0.6− | 2006 10 28 | G96 | 0.6− | 0.1− |
| 2004 02 10 | 644 | 0.1− | 0.0 | 2006 10 19 | 701 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.6− | 0.2− |
| 2004 02 10 | 644 | 0.1− | 0.0 | 2006 10 19 | 701 | 0.1− | 0.8+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2004 02 11 | 691 | 0.0 | 0.2− | 2006 10 19 | 701 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.5− |

### 2004 $CH_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.83933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27813389 | $\omega$ | 340.16889 | | +0.31606127 | −0.94620414 | |
| $a$ | 2.3243424 | $\Omega$ | 91.35694 | | +0.87953818 | +0.26483845 | |
| $e$ | 0.2233130 | $i$ | 3.97511 | | +0.35569350 | +0.18589870 | |
| $P$ | 3.54 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.3+ | 0.8+ | 2004 02 10 | 644 | 0.1+ | 0.1+ | 2004 02 18 | 691 | 0.0 | 0.2− |
| 1999 10 08 | 704 | 0.4+ | 0.7− | 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.9− | 0.4+ |
| 1999 10 08 | 704 | 1.0+ | 0.7− | 2004 02 11 | 691 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.1− |
| 1999 10 08 | 704 | 0.4− | 1.2− | 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 1999 10 08 | 704 | 0.3− | 0.6− | 2004 02 13 | 699 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.8+ |
| 2004 01 18 | 644 | 0.4+ | 0.1+ | 2004 02 13 | 699 | 0.3+ | 1.1+ | 2006 09 18 | 703 | 0.5− | 0.0 |
| 2004 01 18 | 644 | 0.5+ | 0.2+ | 2004 02 13 | 699 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.6+ |
| 2004 01 18 | 644 | 0.6+ | 0.0 | 2004 02 13 | 699 | 0.1− | 0.7− | 2006 09 18 | 703 | 0.4− | 0.4− |
| 2004 01 30 | 704 | 0.6− | 0.6− | 2004 02 15 | 704 | 0.3− | 1.0+ | 2006 09 18 | 703 | 0.7+ | 0.2+ |
| 2004 01 30 | 704 | 0.8+ | 0.1− | 2004 02 15 | 704 | 0.8+ | 0.6+ | 2006 10 02 | 703 | 1.1− | 0.4+ |
| 2004 01 30 | 704 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.5− | 0.1+ | 2006 10 02 | 703 | 0.5+ | 0.4+ |
| 2004 01 30 | 704 | 0.5+ | 1.4+ | 2004 02 15 | 704 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.5− | 0.4+ |
| 2004 02 10 | 644 | 0.2+ | 0.3+ | 2004 02 18 | 691 | 0.2− | 0.1− | 2006 10 02 | 703 | 0.6+ | 0.4+ |
| 2004 02 10 | 644 | 0.3+ | 0.1+ | 2004 02 18 | 691 | 0.1− | 0.3− | | | | |

### 2004 $CX_4$ = 2006 $WJ_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.76646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29800648 | $\omega$ | 342.90259 | | +0.26886126 | −0.95688282 | |
| $a$ | 2.2198259 | $\Omega$ | 91.39480 | | +0.89606317 | +0.20662578 | |
| $e$ | 0.1541874 | $i$ | 6.31428 | | +0.35324838 | +0.20415937 | |
| $P$ | 3.31 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.8+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.7+ | 1.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2004 01 13 | 699 | 0.3− | 0.5+ | 2004 02 16 | 691 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 2004 01 13 | 699 | 0.4+ | 0.7− | 2004 02 16 | 691 | 0.4− | 0.5+ | 2006 11 24 | 691 | 0.2+ | 0.2− |
| 2004 01 13 | 699 | 0.3+ | 0.3− | 2004 02 16 | 691 | 0.8− | 1.3− | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2004 01 13 | 699 | (0.4+ | 3.6+) | 2006 11 02 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2004 01 30 | 704 | 0.1− | 0.5+ | 2006 11 02 | G96 | 0.5− | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2004 01 30 | 704 | 0.9+ | 0.4− | 2006 11 02 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.0 | 0.5+ |
| 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 11 02 | G96 | 0.4+ | 0.3− | 2006 11 29 | 704 | 0.4+ | 0.1− |
| 2004 01 30 | 704 | 1.0+ | 0.5+ | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.1+ | 2006 12 01 | 291 | 0.1− | 0.1+ |
| 2004 02 10 | 644 | 0.5+ | 1.0+ | 2006 11 16 | 691 | 0.2− | 0.2+ | 2006 12 01 | 291 | 0.3− | 0.2+ |
| 2004 02 10 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.8− | 2006 12 01 | 291 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2004 02 11 | 644 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.5+ | 0.1− | 2006 12 01 | G96 | 0.3+ | 0.2− |
| 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.6− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2004 02 15 | 704 | (1.6+ | 0.7+) | 2006 11 17 | G96 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2004 02 15 | 704 | 1.0+ | 0.8− | 2006 11 17 | G96 | 0.4+ | 0.2− | | | | |

### 2004 $CO_5$ = 2006 $UE_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.05709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26976851 | $\omega$ | 83.66613 | | −0.92346208 | −0.37294984 | |
| $a$ | 2.3721485 | $\Omega$ | 74.40741 | | +0.30452621 | −0.85534146 | |
| $e$ | 0.0959871 | $i$ | 5.37016 | | +0.23341289 | −0.35958227 | |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 704 | 0.5− | 0.1+ | 2004 02 15 | 704 | 0.2− | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2004 01 30 | 704 | 0.5− | 0.2+ | 2004 02 15 | 704 | 0.4+ | 0.1− | 2006 11 08 | 644 | 0.3− | 0.1− |
| 2004 01 30 | 704 | 0.5+ | 0.3− | 2004 02 15 | 704 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2004 01 30 | 704 | 0.3− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2004 02 10 | 644 | 0.5+ | 0.5− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2004 02 10 | 644 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 02 11 | 644 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.5+ |
| 2004 02 15 | 704 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1− | 0.3+ | | | | |

**2004 CP$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.91443 | | | (2000.0) | | |
| $n$ | 0.29861969 | $\omega$ | 355.66645 | | +0.74492231 | −0.66138415 |
| $a$ | 2.2167859 | $\Omega$ | 46.14651 | | +0.61568987 | +0.63099015 |
| $e$ | 0.1569294 | $i$ | 6.97197 | | +0.25693722 | +0.40549037 |
| $P$ | 3.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.2+ | 0.3+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2002 07 06 | 644 | 0.0 | 0.4+ | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.5− |
| 2002 07 06 | 644 | 0.3− | 0.1− | 2004 02 22 | 703 | (0.1− | 1.8+) | 2006 11 19 | 704 | 0.5+ | 0.5− |
| 2004 01 31 | 704 | 0.7+ | 1.2+ | 2004 02 22 | 703 | (0.2+ | 2.3+) | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2004 01 31 | 704 | 0.0 | 0.5− | 2004 02 22 | 703 | 1.0− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.9− |
| 2004 01 31 | 704 | (2.6+ | 0.3+) | 2004 02 22 | 703 | 0.0 | 1.0+ | 2006 11 19 | 704 | 0.3+ | 0.7− |
| 2004 01 31 | 704 | 0.3− | 0.3+ | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.9+ |
| 2004 02 10 | 644 | 0.3+ | 0.3+ | 2004 03 18 | 645 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2004 02 10 | 644 | 0.0 | 0.2+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 22 | 704 | 1.0− | 0.7+ |
| 2004 02 10 | 644 | 0.2+ | 0.3+ | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.9− |
| 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 11 15 | 704 | 1.0− | 0.0 | 2006 11 22 | 704 | 1.3− | 0.5+ |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.5− | 0.5− | 2006 11 27 | 704 | 0.4+ | 0.8− |
| 2004 02 11 | 644 | 0.0 | 0.6+ | 2006 11 15 | 704 | 0.7− | 0.8+ | 2006 11 27 | 704 | 0.3− | 0.3+ |
| 2004 02 15 | 704 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.1+ | 2006 11 27 | 704 | 0.2− | 0.5− |
| 2004 02 15 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.4− | 1.6+ |
| 2004 02 15 | 704 | 0.0 | 0.6+ | 2006 11 16 | 704 | 0.1− | 0.1+ | 2006 11 29 | 704 | 1.0− | 0.2− |
| 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.6+ | 0.7+ | 2006 11 29 | 704 | 0.3− | 0.3− |
| 2004 02 15 | 704 | 0.9+ | 0.8− | 2006 11 18 | 691 | 0.2+ | 0.3− | 2006 11 29 | 704 | 1.2− | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.7+ | 0.6+ | | | | |

**2004 CU$_5$ = 2006 VD$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.52343 | | | (2000.0) | | |
| $n$ | 0.28964554 | $\omega$ | 329.42297 | | +0.55595746 | −0.82226288 |
| $a$ | 2.2623414 | $\Omega$ | 86.53911 | | +0.78515484 | +0.47146567 |
| $e$ | 0.1616043 | $i$ | 6.99930 | | +0.27284277 | +0.31875364 |
| $P$ | 3.40 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 644 | 0.2− | 0.0 | 2004 02 22 | 703 | 1.4− | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2002 07 09 | 644 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.2+ |
| 2002 07 09 | 644 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.7+ | 2006 11 17 | 704 | 0.0 | 0.7+ |
| 2004 01 28 | 703 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2004 01 28 | 703 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2004 01 28 | 703 | 0.1+ | 0.1− | 2006 09 30 | 699 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 0.7+ |
| 2004 01 28 | 703 | 0.4− | 0.5+ | 2006 09 30 | 699 | 0.2+ | 0.6− | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2004 02 10 | 644 | 0.8− | 0.0 | 2006 09 30 | 699 | 1.3+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2004 02 10 | 644 | 0.3− | 0.2+ | 2006 09 30 | 699 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.6− |
| 2004 02 11 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2004 02 11 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.8− | 0.3− |
| 2004 02 11 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.0 | 0.9− |
| 2004 02 15 | 704 | 1.2+ | 0.5+ | 2006 11 01 | 703 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.3− |
| 2004 02 15 | 704 | 0.7+ | 0.0 | 2006 11 01 | 703 | 0.8− | 0.3− | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2004 02 15 | 704 | 0.5+ | 0.1+ | 2006 11 01 | 703 | 0.5− | 0.3+ | 2006 11 20 | 704 | 0.1− | 0.6− |
| 2004 02 15 | 704 | 0.4+ | 0.5+ | 2006 11 01 | 703 | 0.2− | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.4− |
| 2004 02 15 | 704 | 0.1+ | 0.2− | 2006 11 13 | 703 | 1.1− | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2004 02 16 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.3− | 0.5− | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 2004 02 22 | 703 | 0.8+ | 0.6− | 2006 11 14 | 704 | 0.5+ | 0.3+ | 2006 11 28 | 704 | 0.1− | 0.3− |
| 2004 02 22 | 703 | 0.2− | 0.6− | 2006 11 14 | 704 | 0.5+ | 0.3+ | | | | |
| 2004 02 22 | 703 | 0.5+ | 0.3− | 2006 11 14 | 704 | 0.2− | 0.4+ | | | | |

**2004 CB$_7$ = 1993 FZ$_{76}$ = 2006 UF$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 224.99916 | | | (2000.0) | | |
| $n$ | 0.26181657 | $\omega$ | 333.29587 | | −0.98455915 | −0.16606521 |
| $a$ | 2.4199402 | $\Omega$ | 197.41308 | | +0.17440778 | −0.95768937 |
| $e$ | 0.1661067 | $i$ | 10.66214 | | −0.01500659 | −0.23506046 |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (0.1+ | 3.8−) | 2004 02 12 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.3− |
| 1993 03 22 | 809 | 0.0 | 0.2+ | 2004 02 12 | 644 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 02 10 | 644 | 0.1+ | 0.3− | 2004 02 19 | 704 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2004 02 10 | 644 | 0.3+ | 0.1− | 2004 02 19 | 704 | 0.3− | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2004 02 10 | 644 | 0.4+ | 0.2+ | 2004 02 19 | 704 | 0.5− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2004 02 12 | 644 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.4− | 2006 10 22 | 691 | 0.1+ | 0.2+ |

**2004 CL$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 176.24920 | | | (2000.0) | | |
| $n$ | 0.24495855 | $\omega$ | 216.34377 | | −0.78104420 | +0.62447043 |
| $a$ | 2.5297308 | $\Omega$ | 2.30444 | | −0.55677575 | −0.69449572 |
| $e$ | 0.1901811 | $i$ | 3.67474 | | −0.28279096 | −0.35736869 |
| $P$ | 4.02 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.9+ | 0.6+ | 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 2004 01 22 | 704 | 0.4− | 0.3+ | 2004 02 23 | 704 | 0.8+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2004 01 22 | 704 | 1.2+ | 0.7+ | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2006 11 01 | G96 | 0.5+ | 0.6− |
| 2004 01 22 | 704 | 0.5+ | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.9− |
| 2004 02 10 | 703 | 1.1− | 0.5− | 2004 03 01 | 691 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.6− |
| 2004 02 10 | 703 | 0.1− | 0.8− | 2004 03 01 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.8− |
| 2004 02 10 | 703 | 0.6− | 0.2− | 2004 03 01 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2004 02 10 | 703 | (1.9− | 1.4−) | 2006 10 13 | 691 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2004 02 12 | 691 | 0.4− | 0.1− | 2006 10 13 | 691 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2004 02 12 | 691 | 0.4− | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2004 02 12 | 691 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.8− |
| 2004 02 16 | 704 | 0.9+ | 1.1+ | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.8− |
| 2004 02 16 | 704 | 0.7+ | 0.9− | 2006 10 17 | 691 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2004 02 16 | 704 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.1+ | | | | |
| 2004 02 16 | 704 | 0.6− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− | | | | |

**2004 CP$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 193.29459 | | | (2000.0) | | |
| $n$ | 0.18653669 | $\omega$ | 21.04676 | | −0.51184072 | −0.85797347 |
| $a$ | 3.0336109 | $\Omega$ | 99.76287 | | +0.78173671 | −0.48620277 |
| $e$ | 0.1961459 | $i$ | 2.53539 | | +0.35623980 | −0.16579620 |
| $P$ | 5.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.1+ | 0.1+ | 2004 02 10 | 644 | 0.2− | 0.4+ | 2004 02 21 | 049 | 0.5− | 0.4+ |
| 1997 11 22 | 691 | 0.3− | 0.1+ | 2004 02 10 | 703 | 0.2− | 0.4+ | 2004 02 23 | 704 | 1.8+ | 0.1− |
| 1997 11 22 | 691 | 0.2+ | 0.1− | 2004 02 10 | 703 | 0.5− | 0.3+ | 2004 02 23 | 704 | 1.4− | 0.4− |
| 2003 10 25 | 691 | 0.2+ | 0.2− | 2004 02 10 | 644 | 0.0 | 0.2+ | 2004 02 23 | 704 | 0.6+ | 0.8− |
| 2003 10 25 | 691 | 0.3+ | 0.6+ | 2004 02 12 | 691 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.7+ | 0.4+ |
| 2003 10 25 | 691 | 0.4− | 0.0 | 2004 02 12 | 691 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.1− | 0.1− |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2004 02 12 | 691 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.2+ | 0.1+ |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2004 02 12 | 333 | 1.1− | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.1+ |
| 2003 12 25 | 645 | 0.0 | 0.1− | 2004 02 12 | 333 | 0.4− | 0.8+ | 2004 02 26 | 704 | 0.3+ | 0.3− |
| 2003 12 25 | 645 | 0.1+ | 0.1− | 2004 02 12 | 333 | 0.9− | 0.2+ | 2004 02 26 | 704 | 0.3+ | 0.2+ |
| 2004 01 22 | 704 | 0.8+ | 0.7+ | 2004 02 15 | 049 | 2.6− | 1.3− | 2004 02 26 | 704 | 0.6+ | 0.3+ |
| 2004 01 22 | 704 | 0.0 | 0.5+ | 2004 02 15 | 049 | 2.4− | 0.4− | 2004 02 27 | 608 | 0.2+ | 0.6− |
| 2004 01 22 | 704 | 0.8+ | 0.3+ | 2004 02 15 | 049 | 2.2− | 0.9− | 2004 02 27 | 608 | 0.5+ | 0.8− |
| 2004 01 22 | 704 | 0.6+ | 0.9+ | 2004 02 16 | 704 | 0.1− | 0.2+ | 2004 02 27 | 608 | 0.1+ | 0.8− |
| 2004 01 22 | 704 | 0.2+ | 0.9+ | 2004 02 16 | 704 | 0.4+ | 0.2+ | 2004 03 20 | 691 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 704 | 0.9+ | 0.4+ | 2004 02 16 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 691 | 0.1− | 0.2+ | | |
| 2004 01 30 | 704 | 0.8+ | 0.1+ | 2004 02 16 | 704 | 0.0 | 0.5+ | 2004 03 20 | 691 | 0.2− | 0.2+ | | |
| 2004 01 30 | 704 | 0.2+ | 0.4+ | 2004 02 16 | 704 | 0.1− | 0.9+ | 2004 04 19 | 704 | 1.5+ | 0.4+ | | |
| 2004 01 30 | 704 | 1.5+ | 1.6+ | 2004 02 18 | 049 | 0.2+ | 0.3− | 2004 04 19 | 704 | 0.6+ | 0.4+ | | |
| 2004 01 30 | 704 | 0.3+ | 0.7+ | 2004 02 18 | 049 | 0.4+ | 0.1− | 2004 04 19 | 704 | 0.2+ | 1.2+ | | |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2004 02 18 | 049 | 0.0 | 0.3− | 2005 05 19 | G96 | 0.3+ | 0.5− | | |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2004 02 20 | 608 | 0.2+ | 0.6− | 2005 05 19 | G96 | 0.0 | 0.2− | | |
| 2004 01 30 | 691 | 0.0 | 0.0 | 2004 02 20 | 608 | 0.5+ | 0.7− | 2005 05 19 | G96 | 0.2− | 0.3− | | |
| 2004 02 10 | 703 | 0.8− | 0.3− | 2004 02 20 | 608 | 0.3+ | 0.3− | 2005 05 19 | G96 | 0.3− | 0.2− | | |
| 2004 02 10 | 644 | 0.5− | 0.3+ | 2004 02 21 | 049 | 0.2+ | 0.3+ | | | | | | |
| 2004 02 10 | 703 | 0.4− | 0.0 | 2004 02 21 | 049 | 0.4+ | 0.3+ | | | | | | |

### 2004 $CN_{11}$ = 2006 $UP_{288}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.12555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27410158 | $\omega$ | 171.28704 | | −0.47923025 | −0.87637575 | |
| $a$ | 2.3470825 | $\Omega$ | 307.33376 | | +0.80158284 | −0.41474486 | |
| $e$ | 0.1333147 | $i$ | 3.46091 | | +0.35749590 | −0.24485148 | |
| $P$ | 3.60 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 691 | 0.1− | 0.2− | 2004 02 12 | 691 | 0.0 | 0.1− | 2006 10 29 | 104 | (2.0+ | 0.1+) |
| 2004 01 30 | 691 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.4− | 0.0 | 2006 10 29 | 104 | 0.6+ | 0.3+ |
| 2004 01 30 | 691 | 0.5− | 0.2− | 2004 02 17 | 704 | (0.4+ | 1.7+) | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 02 11 | 644 | 0.3+ | 0.1− | 2004 02 17 | 704 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 2004 02 11 | 644 | 0.2+ | 0.1− | 2004 02 17 | 704 | 0.2+ | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 02 11 | 644 | 0.3− | 0.6+ | 2004 02 17 | 704 | 0.4− | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.7− |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.3− | 0.6− |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.2− | 0.7− |
| 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− | | | | |
| 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 10 29 | 104 | 0.1− | 0.2+ | | | | |

### 2004 $CA_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.30013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29090595 | $\omega$ | 294.74533 | | +0.06656656 | −0.97911868 | |
| $a$ | 2.2558020 | $\Omega$ | 149.46845 | | +0.99611803 | +0.05409935 | |
| $e$ | 0.2242835 | $i$ | 22.21633 | | +0.05759999 | +0.19595883 | |
| $P$ | 3.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 0.3− | 0.2− | 2004 02 14 | 703 | 0.8− | 0.8+ | 2004 03 10 | 644 | 0.0 | 0.2+ |
| 2004 01 23 | 704 | 0.0 | 0.4+ | 2004 02 14 | 699 | 0.9+ | 0.7+ | 2004 03 19 | 644 | 0.1− | 0.0 |
| 2004 01 23 | 704 | 0.2− | 0.6+ | 2004 02 15 | 608 | 0.4− | 0.7− | 2004 03 19 | 644 | 0.1− | 0.2+ |
| 2004 01 23 | 704 | (0.3+ | 1.9+) | 2004 02 15 | 608 | 0.3− | 0.1− | 2004 03 19 | 644 | 0.1+ | 0.1+ |
| 2004 01 23 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 608 | 0.5− | 0.5+ | 2004 03 20 | 704 | 0.4+ | 0.0 |
| 2004 02 11 | 644 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2004 03 20 | 704 | 0.5+ | 0.4− |
| 2004 02 11 | 644 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 0.7− | 0.1− |
| 2004 02 11 | 644 | 0.2+ | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2006 09 24 | 703 | 0.1+ | 0.2− |
| 2004 02 12 | 691 | 0.1+ | 0.3− | 2004 02 17 | 704 | 0.2− | 0.1− | 2006 09 24 | 703 | 0.3+ | 0.1+ |
| 2004 02 12 | 691 | 0.1+ | 0.3− | 2004 02 17 | 704 | 0.1+ | 0.7+ | 2006 09 24 | 703 | 0.6− | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.4− | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 09 24 | 703 | 0.1− | 0.2− |
| 2004 02 14 | 703 | 0.8− | 0.2− | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 11 18 | E12 | 0.9+ | 0.2+ |
| 2004 02 14 | 703 | 0.3+ | 0.0 | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 11 18 | E12 | 0.4− | 0.0 |
| 2004 02 14 | 699 | 0.5+ | 0.2+ | 2004 03 10 | 644 | 0.0 | 0.1+ | 2006 11 18 | E12 | 0.1− | 0.0 |
| 2004 02 14 | 703 | 0.6− | 0.5+ | 2004 03 10 | 644 | 0.0 | 0.3+ | 2006 11 18 | E12 | 0.0 | 0.0 |

### 2004 $CP_{12}$ = 2006 $SE_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.65294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21187945 | $\omega$ | 308.10556 | | +0.14584253 | +0.98898202 | |
| $a$ | 2.7866141 | $\Omega$ | 330.25090 | | −0.89090620 | +0.12013575 | |
| $e$ | 0.0601101 | $i$ | 2.93271 | | −0.43013498 | +0.08649832 | |
| $P$ | 4.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.1− | 0.6+ | 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 09 16 | 699 | 0.2+ | 0.3+ |
| 2001 08 19 | 807 | 0.3− | 0.7+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 16 | 699 | (2.1+ | 0.2+) |
| 2004 01 31 | 691 | 0.1− | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.1+ |
| 2004 01 31 | 691 | 0.2+ | 0.0 | 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 09 19 | 703 | (1.6+ | 0.2−) |
| 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.5+ | 0.8− |
| 2004 02 11 | 291 | (1.7− | 0.4−) | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 09 19 | 703 | 1.2− | 0.7− |
| 2004 02 11 | 291 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.9+ | 0.8− | 2006 10 19 | G96 | (0.2− | 1.9+) |
| 2004 02 11 | 291 | 0.4− | 0.1+ | 2006 08 28 | 703 | 1.1+ | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2004 02 12 | 691 | 0.4+ | 0.0 | 2006 09 16 | 699 | (1.1+ | 2.0+) | 2006 10 19 | G96 | 0.1+ | 0.4+ |
| 2004 02 12 | 691 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.4+ |

### 2004 $CU_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.96467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27999739 | $\omega$ | 315.28937 | | −0.76149576 | −0.64814869 | |
| $a$ | 2.3140180 | $\Omega$ | 184.31824 | | +0.61246948 | −0.71688248 | |
| $e$ | 0.1136773 | $i$ | 3.99281 | | +0.21214463 | −0.25687115 | |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 1.1+ | 0.6− | 2004 02 18 | 691 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.0 |
| 2004 01 29 | 704 | 0.3− | 0.5− | 2004 03 15 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.2− |
| 2004 01 29 | 704 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.3+ | 1.0− | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2004 01 29 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.2− |
| 2004 02 11 | 644 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2004 03 18 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2004 02 11 | 644 | 0.1+ | 0.4+ | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.3+ |
| 2004 02 12 | 691 | 0.2− | 0.1+ | 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2004 02 12 | 691 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.4− | 1.3+ | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.4+ | 2006 11 20 | 704 | (1.5− | 2.6+) |
| 2004 02 15 | 608 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2006 11 20 | 704 | (0.9+ | 3.6−) |
| 2004 02 15 | 608 | 0.1+ | 0.9− | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 11 20 | 704 | (1.3− | 2.0+) |
| 2004 02 15 | 608 | 0.5+ | 0.3− | 2004 03 20 | 704 | 0.5− | 1.0− | 2006 11 20 | 704 | (2.1− | 1.7+) |
| 2004 02 18 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.2+ | 2006 11 20 | 704 | (0.2− | 1.6+) |
| 2004 02 18 | 704 | 0.8+ | 0.7+ | 2004 03 20 | 704 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.9+ | 0.1− |
| 2004 02 18 | 704 | 0.8+ | 0.1− | 2004 03 20 | 704 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.8+ | 0.3+ |
| 2004 02 18 | 691 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.4+ | 0.2− | 2006 11 28 | 704 | 0.7+ | 0.0 |
| 2004 02 18 | 704 | 0.8+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.7+ |
| 2004 02 18 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |
| 2004 02 18 | 691 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | | | | |

### 2004 $CW_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.19402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28630154 | $\omega$ | 259.03734 | | +0.33736212 | −0.94132214 | |
| $a$ | 2.2799234 | $\Omega$ | 171.22692 | | +0.88721600 | +0.31439421 | |
| $e$ | 0.1561628 | $i$ | 3.74855 | | +0.31469759 | +0.12275549 | |
| $P$ | 3.44 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.1+ |
| 2004 02 18 | 704 | 0.4− | 0.6− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.2+ |
| 2004 02 18 | 704 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.8− | 0.2+ |
| 2004 02 18 | 704 | (0.6− | 1.6−) | 2006 11 09 | 644 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.4+ |
| 2004 02 18 | 704 | 1.0− | 0.3+ | 2006 11 09 | 644 | 0.9+ | 0.3− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2004 02 18 | 704 | 0.4− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 22 | 683 | (0.9+ | 2.0−) |
| 2004 02 26 | 704 | 0.7+ | 1.0− | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 22 | 683 | (0.6+ | 1.8−) |
| 2004 02 26 | 704 | 0.9+ | 0.7+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 683 | 1.0+ | 0.8− |
| 2004 02 26 | 704 | 1.4+ | 0.4+ | 2006 11 13 | 703 | (1.1− | 3.1+) | 2006 11 25 | 683 | (1.6+ | 0.3−) |
| 2004 02 26 | 704 | 0.1+ | 1.0+ | 2006 11 13 | 703 | 0.5− | 0.2− | 2006 11 25 | 683 | (1.6+ | 0.1−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.3− | 0.4+ | 2006 11 13 | 703 | 0.4+ | 0.2− | 2006 11 25 | 704 | 0.2− | 0.1+ |
| 2004 02 29 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.6− | 2006 11 25 | 683 | 1.2+ | 0.6− |
| 2004 02 29 | 691 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.3− | 0.7+ | 2006 11 25 | 704 | 0.1− | 0.1+ |
| 2004 02 29 | 691 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.3− | 0.9− | 2006 11 25 | 704 | 1.1− | 1.4+ |
| 2004 03 18 | 704 | 0.1− | 0.6− | 2006 11 14 | 704 | 0.1+ | 0.3− | 2006 11 25 | 704 | 0.2− | 1.0+ |
| 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.9− | 0.0 | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.8− | 0.1− | 2006 11 14 | 704 | 0.4+ | 1.0− | 2006 11 28 | 704 | 0.4+ | 0.1+ |
| 2004 03 18 | 704 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.7+ | 2006 11 28 | 704 | 0.5− | 0.3− |
| 2004 03 18 | 704 | 0.3− | 1.0− | 2006 11 17 | 704 | (0.6− | 1.9+) | 2006 11 28 | 704 | 0.3− | 0.0 |
| 2004 03 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.6+ | 0.6+ | 2006 11 28 | 704 | 0.2+ | 0.1− |
| 2004 03 20 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.5− | | | | |
| 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | (0.9+ | 2.7−) | | | | |

**2004 CA$_{13}$ = 2006 WP$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.87928 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27312041 | $\omega$ | 339.44536 | | −0.64093504 | −0.76592351 | |
| $a$ | 2.3527003 | $\Omega$ | 150.34817 | | +0.71777552 | −0.62140667 | |
| $e$ | 0.0629050 | $i$ | 5.87394 | | +0.27203046 | −0.16496946 | |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.6− | 1.2− | 2004 02 17 | 704 | 0.5+ | 0.2+ | 2004 03 20 | 691 | 0.1+ | 0.4− |
| 2004 01 24 | 704 | 0.7− | 0.3− | 2004 02 17 | 704 | 0.2+ | 0.9− | 2006 11 23 | G96 | 0.3− | 0.1+ |
| 2004 01 24 | 704 | 0.1+ | 0.2+ | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2004 01 24 | 704 | 0.2+ | 0.1+ | 2004 02 17 | 704 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2004 02 17 | 704 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2004 02 11 | 644 | 0.2− | 0.4+ | 2004 02 26 | 704 | 1.2+ | 0.5− | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2004 02 11 | 644 | 0.2+ | 0.1− | 2004 02 26 | 704 | 0.4+ | 0.6− | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2004 02 12 | 691 | 0.2− | 0.3+ | 2004 02 26 | 704 | 0.4− | 0.6− | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2004 02 12 | 691 | 0.3− | 0.2+ | 2004 03 20 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 691 | 0.2+ | 0.0 | | | | |

**2004 CJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.64464 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23585018 | $\omega$ | 262.08424 | | +0.65727775 | −0.74562163 | |
| $a$ | 2.5944496 | $\Omega$ | 145.99978 | | +0.74537335 | +0.62162611 | |
| $e$ | 0.0589709 | $i$ | 11.31346 | | +0.11137566 | +0.24006117 | |
| $P$ | 4.18 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2005 06 29 | 691 | 0.2+ | 0.3+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.0 | 2005 06 29 | 691 | 0.0 | 0.0 |
| 2002 10 16 | 644 | 0.0 | 0.4+ | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.9+ |
| 2002 10 16 | 644 | 0.2− | 0.6+ | 2004 02 23 | 704 | 0.9+ | 1.1+ | 2006 09 19 | 703 | 0.9+ | 0.2+ |
| 2002 10 16 | 644 | 0.1− | 0.3+ | 2004 03 20 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.1− | 0.2+ | 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 1.1+ | 0.1+ |
| 2004 02 11 | 644 | 0.1− | 0.4+ | 2004 03 20 | 691 | 0.2− | 0.1+ | 2006 09 25 | 703 | 0.6− | 1.0+ |
| 2004 02 11 | 644 | 0.0 | 0.3+ | 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.3− | 0.2− |
| 2004 02 12 | 291 | 0.1+ | 0.4+ | 2005 06 04 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.5− | 1.1+ |
| 2004 02 12 | 291 | 0.0 | 0.3+ | 2005 06 04 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 703 | 1.2− | 0.6+ |
| 2004 02 12 | 291 | 0.3+ | 0.3+ | 2005 06 29 | 691 | 0.9− | 0.4+ | | | | |

**2004 CP$_{13}$ = 2006 RC$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.40131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26036825 | $\omega$ | 274.33776 | | +0.49311101 | −0.86976111 | |
| $a$ | 2.4289060 | $\Omega$ | 146.09594 | | +0.81101460 | +0.45172722 | |
| $e$ | 0.1768059 | $i$ | 1.94155 | | +0.31479651 | +0.19864074 | |
| $P$ | 3.79 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.4+ | 0.1− | 2006 09 17 | 704 | (2.6− | 1.4+) | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 1.1− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 0.7+ | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2004 02 12 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 1.0+ | 0.4+ | 2006 10 09 | 644 | 0.3+ | 0.2+ |
| 2004 02 12 | 691 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2004 02 12 | 291 | 0.7− | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.4+ | 2006 10 20 | G96 | 0.6+ | 0.4− |
| 2004 02 12 | 291 | 0.6− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.9+ | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2004 02 12 | 291 | 0.8− | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2004 02 14 | 608 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2004 02 14 | 608 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2004 02 14 | 608 | 0.3+ | 1.1− | 2006 09 20 | 704 | (2.0− | 1.4+) | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2004 02 17 | 704 | 0.3+ | 1.3+ | 2006 09 20 | 704 | 1.1− | 0.9− | 2006 10 22 | 644 | 0.5+ | 0.6− |
| 2004 02 17 | 704 | 0.9+ | 1.0+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2004 02 17 | 704 | 0.9+ | 0.5+ | 2006 09 20 | 704 | 1.0− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2004 02 17 | 704 | 0.1− | 1.3+ | 2006 09 20 | 704 | (1.6− | 0.7−) | 2006 10 23 | 644 | 0.0 | 0.4− |
| 2004 03 20 | 691 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2004 03 20 | 691 | 0.5+ | 0.5− | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2004 03 20 | 691 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.2− |
| 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.3− | 0.0 | 2006 10 24 | 644 | 0.3+ | 0.1+ |
| 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 1.0+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.8+ | 0.1+ | 2006 11 17 | G96 | 0.6+ | 0.4− |
| 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.6− |
| 2006 09 14 | 644 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 1.5− | 0.8− | 2006 11 17 | G96 | 0.6+ | 0.3− |

**2004 CE$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.07583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26372288 | $\omega$ | 335.97915 | | −0.47164077 | −0.87770887 | |
| $a$ | 2.4082645 | $\Omega$ | 142.00678 | | +0.82968410 | −0.47426458 | |
| $e$ | 0.1130781 | $i$ | 7.91324 | | +0.29862901 | −0.06855833 | |
| $P$ | 3.74 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.1+ | 0.2+ | 2004 02 17 | 704 | 0.5+ | 0.0 | 2004 03 19 | 704 | 0.5− | 1.2− |
| 2004 01 24 | 704 | 0.2+ | 0.1+ | 2004 02 17 | 704 | 0.4+ | 0.8+ | 2004 03 19 | 704 | 0.4+ | 0.1− |
| 2004 01 24 | 704 | 0.7+ | 0.8− | 2004 02 17 | 704 | 0.7+ | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.3+ |
| 2004 01 24 | 704 | 0.9+ | 0.3+ | 2004 02 17 | 704 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.4− | 1.1+ |
| 2004 01 24 | 704 | 0.1− | 0.6− | 2004 02 17 | 704 | 0.6+ | 0.3+ | 2004 03 19 | 704 | 1.2+ | 0.9+ |
| 2004 02 11 | 699 | 0.2− | 0.3− | 2004 02 22 | 691 | 0.1− | 0.1− | 2004 03 27 | 691 | 0.0 | 0.1+ |
| 2004 02 11 | 644 | 0.0 | 0.3− | 2004 02 22 | 691 | 0.0 | 0.1− | 2004 03 27 | 691 | 0.2− | 0.1− |
| 2004 02 11 | 699 | 0.6− | 0.4+ | 2004 02 22 | 691 | 0.2+ | 0.1− | 2004 03 27 | 691 | 0.3− | 0.1− |
| 2004 02 11 | 644 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2004 02 11 | 699 | 1.4− | 0.5− | 2004 02 23 | 704 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 2004 02 11 | 644 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2004 02 11 | 699 | (1.9− | 0.5−) | 2004 02 23 | 704 | 0.2+ | 0.6+ | 2006 10 13 | G92 | 0.2+ | 0.2+ |
| 2004 02 12 | 291 | 0.6− | 0.9+ | 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 10 13 | G92 | 0.5+ | 0.7+ |
| 2004 02 12 | 291 | 0.4− | 0.3− | 2004 02 25 | 704 | 0.5+ | 0.5+ | 2006 10 13 | G92 | 1.0− | 0.0 |
| 2004 02 12 | 291 | 0.4− | 0.2− | 2004 02 25 | 704 | 0.1+ | 0.7+ | 2006 10 28 | 703 | (2.3+ | 0.4−) |
| 2004 02 15 | 608 | 0.3+ | 1.0− | 2004 02 25 | 704 | 0.0 | 0.9+ | 2006 10 28 | 703 | 0.3− | 0.3− |
| 2004 02 15 | 608 | (0.3+ | 1.6−) | 2004 02 25 | 704 | 0.8+ | 0.3− | 2006 10 28 | 703 | 0.6− | 0.3− |
| 2004 02 15 | 608 | 0.2+ | 1.3− | 2004 02 25 | 704 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.5+ | 0.1− |

**2004 CF$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.96851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22359902 | $\omega$ | 61.48217 | | +0.99439492 | −0.07625704 | |
| $a$ | 2.6883725 | $\Omega$ | 302.80358 | | +0.03644959 | +0.89746679 | |
| $e$ | 0.0374724 | $i$ | 4.99859 | | +0.09924799 | +0.43444012 | |
| $P$ | 4.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2004 02 11 | 644 | 0.2+ | 0.2− | 2006 09 13 | 644 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 17 | 703 | 1.3− | 1.0− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2004 02 12 | 691 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.9− | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 09 17 | 703 | 0.3− | 0.8− | 2006 10 21 | 691 | 0.3+ | 0.2− |
| 2004 02 22 | 691 | 0.1− | 0.2+ | 2006 09 18 | 704 | 1.4− | 1.2+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2004 02 22 | 691 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.5− | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.4− |
| 2004 02 22 | 691 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.5+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 10 01 | 703 | 0.6+ | 0.6− | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2004 02 26 | 704 | 0.5+ | 0.8+ | 2006 10 01 | 703 | 0.9− | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.8+ | 1.2+ | 2006 10 01 | 703 | 0.2+ | 0.1− | 2006 10 24 | 644 | 0.9+ | 0.1− |
| 2004 02 26 | 704 | 1.3− | 0.5+ | 2006 10 01 | 703 | 0.2+ | 1.3+ | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2004 03 21 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2004 03 21 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.4− | 0.1− |
| 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2006 08 21 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.5− |

### 2004 $CK_{14}$ = 2006 $UW_{145}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.51031 | | (2000.0) | | | |
| $n$ | 0.23325078 | $\omega$ | 188.75767 | | −0.90044077 | −0.41407717 |
| $a$ | 2.6136895 | $\Omega$ | 325.78130 | | +0.41205777 | −0.71390073 |
| $e$ | 0.1065849 | $i$ | 13.70308 | | +0.13933708 | −0.56469979 |
| $P$ | 4.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2004 02 16 | 704 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2004 02 11 | 691 | 0.2+ | 0.2− | 2004 02 16 | 704 | 0.6− | 0.7+ | 2006 10 22 | 691 | 1.0− | 0.3+ |
| 2004 02 11 | 691 | 0.2+ | 0.0 | 2004 02 23 | 704 | 0.9+ | 0.6− | 2006 10 22 | 691 | 0.2+ | 0.2− |
| 2004 02 12 | 291 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.2− | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2004 02 12 | 291 | 0.3− | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2004 02 12 | 291 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.7+ | 0.2+ |
| 2004 02 16 | 704 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.4+ | 0.2− |

### 2004 $CO_{14}$ = 2004 $BU_{160}$ = 2004 $DR_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 233.21729 | | (2000.0) | | | |
| $n$ | 0.26036924 | $\omega$ | 96.22424 | | −0.92389679 | −0.38114805 |
| $a$ | 2.4288998 | $\Omega$ | 61.37532 | | +0.33409194 | −0.84655686 |
| $e$ | 0.1223177 | $i$ | 2.20529 | | +0.18654034 | −0.37157456 |
| $P$ | 3.79 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | (0.6+ | 1.8+) | 2004 02 23 | 704 | 0.9− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.7− | 0.3+ | 2004 02 23 | 704 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.3− | 0.8+ | 2004 02 23 | 704 | 0.4+ | 1.1− | 2006 10 17 | G96 | 0.5+ | 0.2− |
| 2004 01 22 | 704 | 0.2− | 0.3+ | 2004 02 23 | 704 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.2− |
| 2004 02 11 | 691 | 0.0 | 0.2− | 2004 02 29 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.2− |
| 2004 02 11 | 691 | 0.3− | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.9− |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.2+ | 0.2+ |
| 2004 02 12 | 291 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2004 02 12 | 291 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 02 12 | 291 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.3− | | | | |
| 2004 02 23 | 704 | 1.1+ | 1.4− | 2006 09 27 | 691 | 0.3− | 0.2− | | | | |

### 2004 $CH_{15}$ = 2001 $OW_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.47938 | | (2000.0) | | | |
| $n$ | 0.19840970 | $\omega$ | 284.32402 | | +0.53346014 | −0.84573628 |
| $a$ | 2.9113479 | $\Omega$ | 133.42964 | | +0.78239317 | +0.48789241 |
| $e$ | 0.0922378 | $i$ | 0.96768 | | +0.32137394 | +0.21608130 |
| $P$ | 4.97 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.3+ | 0.1− | 2002 10 31 | 644 | 0.1− | 0.2+ | 2004 03 20 | 691 | 0.1− | 0.0 |
| 1992 10 25 | 691 | 0.1+ | 0.2− | 2002 11 06 | 704 | 0.4+ | 0.7+ | 2004 03 20 | 691 | 0.1− | 0.2− |
| 1992 10 25 | 691 | 0.4− | 0.4− | 2002 11 06 | 704 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.0 | 0.6+ |
| 1995 05 26 | 691 | 0.1− | 0.1− | 2002 11 06 | 704 | 0.4+ | 0.0 | 2005 06 13 | G96 | 0.2+ | 0.7+ |
| 1995 05 26 | 691 | 0.5− | 0.5− | 2002 11 06 | 704 | 0.9+ | 0.2+ | 2005 06 13 | G96 | 0.3+ | 0.9+ |
| 1995 05 26 | 691 | 0.8+ | 0.4− | 2002 11 22 | 644 | 0.1− | 0.8+ | 2005 06 13 | G96 | 0.1− | 0.5+ |
| 2001 07 17 | 644 | 0.2− | 0.1+ | 2002 11 22 | 644 | 0.1+ | 0.6+ | 2006 06 19 | G96 | 0.4− | 0.1+ |
| 2001 07 17 | 644 | 0.0 | 0.2+ | 2002 11 22 | 644 | 0.1− | 0.6+ | 2006 06 19 | G96 | 0.4− | 0.0 |
| 2001 07 17 | 644 | 0.2− | 0.1+ | 2004 02 11 | 291 | 0.1+ | 0.0 | 2006 06 19 | G96 | 0.0 | 0.0 |
| 2002 10 11 | 704 | 0.1− | 0.6+ | 2004 02 11 | 291 | 0.1− | 0.1+ | 2006 06 19 | G96 | 0.0 | 0.4− |
| 2002 10 11 | 704 | 0.4− | 0.0 | 2004 02 11 | 291 | 0.3− | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.2+ | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.2− | 0.4+ |
| 2002 10 11 | 704 | 0.1+ | 1.5− | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.5− | 0.6+ |
| 2002 10 31 | 644 | 0.2− | 0.5+ | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.3+ | 0.5+ |
| 2002 10 31 | 644 | 0.1+ | 0.3+ | 2004 03 20 | 691 | 0.0 | 0.2+ | | | | |

### 2004 $CU_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 283.20118 | | (2000.0) | | | |
| $n$ | 0.27119331 | $\omega$ | 20.85355 | | −0.54785712 | −0.83463560 |
| $a$ | 2.3638327 | $\Omega$ | 102.40701 | | +0.75905625 | −0.52452912 |
| $e$ | 0.1154319 | $i$ | 3.33914 | | +0.35169048 | −0.16808516 |
| $P$ | 3.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.9+ | 0.1+ |
| 2004 02 11 | 644 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.7+ | 0.4− | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2004 02 11 | 644 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 644 | 0.0 | 0.1+ |
| 2004 02 12 | 644 | 0.0 | 0.3− | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.6− |
| 2004 02 12 | 644 | 0.2+ | 0.6− | 2004 03 22 | 704 | 0.9− | 1.1− | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2004 02 12 | 644 | 0.8+ | 0.2− | 2004 03 22 | 704 | (0.1+ | 1.7+) | 2006 11 11 | 644 | 0.1− | 0.3− |
| 2004 02 17 | 704 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 11 13 | 683 | 0.3+ | 1.2− |
| 2004 02 17 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 1.4+ | 1.3+ | 2006 11 13 | 683 | (1.6+ | 0.6−) |
| 2004 02 17 | 704 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.8− | 2006 11 13 | 683 | 0.8+ | 0.6− |
| 2004 02 17 | 704 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 2004 02 17 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | (1.9+ | 1.0−) | 2006 11 14 | 704 | 0.2− | 0.9+ |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.8+ |
| 2004 02 18 | 691 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.1− | 0.7+ |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2004 02 19 | 608 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2004 02 19 | 608 | 0.6− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2004 02 19 | 608 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 02 23 | 704 | 0.4− | 0.1+ | 2006 11 02 | 703 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 11 02 | 703 | 0.7− | 0.6+ | 2006 11 17 | 703 | 0.0 | 0.8+ |
| 2004 02 23 | 704 | 0.2− | 0.6+ | 2006 11 02 | 703 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 11 02 | 703 | (1.5− | 1.5−) | 2006 11 17 | 703 | 1.4− | 0.7− |
| 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2004 03 10 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.1+ | 0.1− |
| 2004 03 10 | 644 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.8+ | 0.9− |
| 2004 03 10 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | (2.0+ | 0.3−) |
| 2004 03 15 | 704 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2004 03 15 | 704 | (1.3+ | 2.6+) | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2004 03 15 | 704 | (0.4− | 2.2+) | 2006 11 11 | 683 | 0.1+ | 1.2− | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2004 03 15 | 704 | 0.0 | 0.8+ | 2006 11 11 | 683 | 0.8+ | 1.3+ | 2006 11 20 | 704 | 0.5+ | 0.2+ |
| 2004 03 20 | 704 | (0.2− | 1.8+) | 2006 11 11 | 683 | (1.4+ | 1.6+) | | | | |
| 2004 03 20 | 704 | 0.9+ | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.0 | | | | |

### 2004 $CV_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.51627 | | (2000.0) | | | |
| $n$ | 0.27625021 | $\omega$ | 330.86363 | | −0.19445876 | −0.98025674 |
| $a$ | 2.3348965 | $\Omega$ | 130.32554 | | +0.90882098 | −0.19378491 |
| $e$ | 0.1528346 | $i$ | 2.69242 | | +0.36909378 | −0.03929548 |
| $P$ | 3.57 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.3+ | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.5+ | 0.6− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 691 | 0.6− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 1.4+ | 0.6− | 2004 02 29 | 691 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.2+ | | |
| 2004 02 11 | 291 | 0.4− | 0.2+ | 2004 02 29 | 691 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.5− | 0.5− | | |
| 2004 02 11 | 291 | 0.2− | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.8+ | 1.5+ | | |
| 2004 02 11 | 291 | 0.2+ | 0.2+ | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1+ | | |
| 2004 02 12 | 691 | 0.1+ | 0.2− | 2004 03 18 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.4− | | |
| 2004 02 12 | 691 | 0.2− | 0.2− | 2004 03 18 | 691 | 0.4+ | 0.1− | 2006 11 15 | 621 | 0.3− | 0.4− | | |
| 2004 02 12 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.4− | 2006 11 15 | 621 | 0.9+ | 0.1+ | | |
| 2004 02 23 | 704 | 0.2− | 0.9+ | 2006 10 21 | G96 | 0.6+ | 0.4− | 2006 11 15 | 621 | 0.4+ | 0.3− | | |
| 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.6− | | | | | | |

**2004 CB$_{17}$ = 2006 QR$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.27856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25601266 | $\omega$ | 314.64103 | | +0.39421807 | −0.91838851 | |
| $a$ | 2.4563774 | $\Omega$ | 112.11409 | | +0.85322251 | +0.35200652 | |
| $e$ | 0.1605393 | $i$ | 2.10199 | | +0.34147249 | +0.18070404 | |
| $P$ | 3.85 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 08 18 | 691 | 0.3− | 0.5+ | | |
| 2004 02 11 | 291 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.2− | 0.3− | 2006 08 27 | 691 | 0.1− | 0.3− | | |
| 2004 02 11 | 291 | 0.8− | 0.1+ | 2004 02 23 | 704 | 1.7+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.0 | | |
| 2004 02 12 | 691 | 0.2− | 0.1− | 2004 02 23 | 704 | 1.5+ | 0.7+ | 2006 08 27 | 691 | 0.3− | 0.2+ | | |
| 2004 02 12 | 691 | 0.1− | 0.3− | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.0 | | |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.4+ | | |
| 2004 02 17 | 704 | 1.4+ | 0.7+ | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.5− | | |
| 2004 02 17 | 704 | 1.3+ | 1.4− | 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | (0.2− | 2.1−) | | |
| 2004 02 17 | 704 | (2.1+ | 1.7−) | 2004 03 18 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.0 | | |
| 2004 02 22 | 691 | 0.1− | 0.5+ | 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1− | | |
| 2004 02 22 | 691 | 0.2+ | 0.6+ | 2006 08 18 | 691 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.3+ | 0.3− | | |
| 2004 02 22 | 691 | (2.8+ | 0.5+) | 2006 08 18 | 691 | 0.1− | 0.4+ | | | | | | |

**2004 CV$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.07031 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26811744 | $\omega$ | 52.98114 | | +0.52545780 | −0.85080064 | |
| $a$ | 2.3818771 | $\Omega$ | 5.32917 | | +0.75986689 | +0.46626776 | |
| $e$ | 0.1943925 | $i$ | 3.51177 | | +0.38274849 | +0.24234819 | |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.2+ | 0.7− | 2004 02 23 | 704 | 0.5+ | 1.2+ | 2006 09 27 | 704 | (1.7+ | 0.0 ) | | |
| 1999 12 15 | 704 | 0.1− | 1.1− | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 1999 12 15 | 704 | 0.2− | 0.3− | 2006 08 18 | 691 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.0 | | |
| 1999 12 15 | 704 | 0.2+ | 0.1− | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ | | |
| 2004 01 22 | 704 | 0.3− | 1.0+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 01 | 703 | 0.5− | 0.6− | | |
| 2004 01 22 | 704 | 1.3− | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.3+ | 0.5+ | | |
| 2004 01 22 | 704 | (1.6+ | 1.9+) | 2006 08 27 | 691 | (2.1+ | 2.1+) | 2006 10 01 | 703 | 0.5− | 0.8− | | |
| 2004 01 22 | 704 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.8− | 0.2+ | | |
| 2004 01 22 | 704 | 0.3+ | 0.9− | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.1− | | |
| 2004 01 23 | 699 | (1.6+ | 0.0 ) | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2004 01 23 | 699 | 1.2+ | 0.6+ | 2006 09 17 | 704 | 1.1− | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.3+ | | |
| 2004 01 23 | 699 | (1.9+ | 2.8+) | 2006 09 17 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | | |
| 2004 01 23 | 699 | 1.2+ | 1.4+ | 2006 09 17 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.5− | | |
| 2004 02 10 | 644 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1− | 1.0− | | |
| 2004 02 10 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.6− | 2006 10 16 | 703 | 1.1+ | 0.3− | | |
| 2004 02 10 | 644 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.2− | | |
| 2004 02 13 | 691 | 0.0 | 0.0 | 2006 09 22 | A50 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.3− | | |
| 2004 02 13 | 691 | 0.1− | 0.0 | 2006 09 22 | A50 | 0.0 | 0.6− | 2006 10 16 | G96 | 0.2+ | 0.1− | | |
| 2004 02 13 | 691 | 0.2+ | 0.3− | 2006 09 25 | 699 | 1.4− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2004 02 18 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.3+ | 0.4+ | | |
| 2004 02 18 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 699 | 0.9− | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.2− | | |
| 2004 02 18 | 704 | 0.5− | 0.5− | 2006 09 25 | 699 | 1.0− | 0.5+ | 2006 10 24 | 644 | 0.0 | 0.4+ | | |
| 2004 02 18 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.4+ | 0.7+ | 2006 11 13 | G96 | (0.5− | 1.8−) | | |
| 2004 02 23 | 704 | 0.9− | 0.9+ | 2006 09 27 | 704 | 0.5− | 0.9+ | 2006 11 13 | G96 | 1.0+ | 0.2+ | | |
| 2004 02 23 | 704 | (0.7+ | 1.8+) | 2006 09 27 | 704 | 1.1+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.2+ | | |
| 2004 02 23 | 704 | 0.7− | 0.6+ | 2006 09 27 | 704 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |

**2004 CE$_{18}$ = 2006 RY$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.33786 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22047182 | $\omega$ | 336.64338 | | +0.68419798 | +0.72338161 | |
| $a$ | 2.7137343 | $\Omega$ | 336.19411 | | −0.62766684 | +0.51935759 | |
| $e$ | 0.0835840 | $i$ | 13.27620 | | −0.37135894 | +0.45495795 | |
| $P$ | 4.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.9− | 0.3+ | 2004 02 23 | 704 | 0.7+ | 0.9+ | 2006 09 27 | 703 | 0.4− | 0.4+ | | |
| 2001 06 27 | 644 | 0.9− | 0.6+ | 2004 02 23 | 704 | 0.8+ | 0.7+ | 2006 09 27 | 703 | 0.3+ | 0.4+ | | |
| 2001 06 27 | 644 | 1.0− | 0.4+ | 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 09 27 | 703 | 1.0− | 0.0 | | |
| 2001 08 17 | 644 | 0.7+ | 0.1− | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2001 08 17 | 644 | 0.9+ | 0.3− | 2006 09 13 | 644 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.5+ | | |
| 2001 08 17 | 644 | 0.7+ | 0.2− | 2006 09 13 | 644 | 0.0 | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.7+ | | |
| 2004 02 10 | 644 | 0.3− | 0.3− | 2006 09 15 | 704 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.2+ | 0.0 | | |
| 2004 02 10 | 644 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.6+ | 1.0+ | 2006 10 23 | 691 | 0.2+ | 0.0 | | |
| 2004 02 10 | 644 | 0.0 | 0.2− | 2006 09 15 | 704 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.1+ | 0.0 | | |
| 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.3− | 0.0 | 2006 10 23 | 703 | 0.3− | 0.7− | | |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.0 | 0.4+ | 2006 10 23 | 703 | 0.4− | 0.5− | | |
| 2004 02 13 | 691 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.6− | 0.2− | 2006 10 23 | 703 | 1.1− | 0.7− | | |
| 2004 02 16 | 704 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 23 | 703 | 0.6− | 0.2+ | | |
| 2004 02 16 | 704 | 0.8+ | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.4+ | | |
| 2004 02 16 | 704 | 0.5− | 0.5− | 2006 09 19 | 699 | (0.3+ | 1.7+) | 2006 10 24 | 644 | 0.5+ | 0.2+ | | |
| 2004 02 16 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.9+ | 2006 10 24 | 644 | 0.3+ | 0.4− | | |
| 2004 02 23 | 704 | 0.2+ | 1.4+ | 2006 09 19 | 699 | 0.9− | 0.2− | | | | | | |
| 2004 02 23 | 704 | 0.6+ | 1.3+ | 2006 09 27 | 703 | 0.6− | 0.0 | | | | | | |

**2004 CH$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.22547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26082946 | $\omega$ | 128.76220 | | −0.99079480 | −0.13106904 | |
| $a$ | 2.4260419 | $\Omega$ | 43.73645 | | +0.10396486 | −0.89693404 | |
| $e$ | 0.1601135 | $i$ | 2.80740 | | +0.08670050 | −0.42229164 | |
| $P$ | 3.78 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 10 | 703 | 0.3+ | 0.2+ | 2004 02 23 | 704 | (1.7+ | 3.0−) | 2006 10 28 | G96 | 0.1+ | 0.4− | | |
| 2004 02 10 | 644 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.6+ | 0.6+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 2004 02 10 | 703 | 0.1+ | 0.2− | 2004 02 23 | 704 | 0.9+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.2+ | | |
| 2004 02 10 | 644 | 0.2+ | 0.1+ | 2004 02 23 | 704 | 0.3+ | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.0 | | |
| 2004 02 10 | 703 | 0.3− | 0.1+ | 2004 03 19 | 644 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.1+ | | |
| 2004 02 10 | 644 | 0.3+ | 0.3+ | 2004 03 19 | 644 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ | | |
| 2004 02 10 | 703 | 0.2− | 0.4+ | 2004 03 19 | 644 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2004 02 13 | 691 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.6+ | | |
| 2004 02 13 | 691 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.3+ | | |
| 2004 02 13 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1− | 1.3− | | |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.0 | 0.6− | | |
| 2004 02 16 | 691 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2004 02 16 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2004 02 16 | 704 | 0.5+ | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 14 | G96 | 0.3− | 0.2− | | |
| 2004 02 16 | 704 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.8− | 0.5− | | |
| 2004 02 16 | 704 | 0.8− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.1+ | | |
| 2004 02 16 | 704 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.6+ | 0.7− | | |
| 2004 02 23 | 704 | 1.2+ | 0.0 | 2006 10 28 | G96 | 0.3− | 0.2− | | | | | | |

**2004 CJ$_{18}$ = 2006 UJ$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 266.40675 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27959000 | $\omega$ | 48.55578 | | | −0.79305019 | | −0.60662115 | | | |
| $a$ | 2.3162653 | $\Omega$ | 94.02484 | | | +0.54098298 | | −0.74325961 | | | |
| $e$ | 0.1592271 | $i$ | 3.19043 | | | +0.28001575 | | −0.28209206 | | | |
| $P$ | 3.53 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.5− | 0.5− | 2004 02 13 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2004 02 16 | 704 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2004 01 22 | 704 | 0.5+ | 0.2− | 2004 02 16 | 704 | 0.0 | 1.2− | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 0.2− | 0.2− | 2004 02 16 | 704 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.8+ | 0.5+ |
| 2004 02 10 | 644 | 0.4− | 0.1+ | 2004 02 16 | 704 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.2+ |
| 2004 02 10 | 644 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2004 02 10 | 644 | 0.1− | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.4− | 0.5− |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.4− | 0.5− |
| 2004 02 13 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.3− |

**2004 CZ$_{18}$ = 2006 SM$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 220.33036 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.25930097 | $\omega$ | 117.89494 | | | −0.95554246 | | −0.29372782 | | | |
| $a$ | 2.4355663 | $\Omega$ | 45.03693 | | | +0.25612025 | | −0.87010187 | | | |
| $e$ | 0.1208325 | $i$ | 2.08484 | | | +0.14608567 | | −0.39578618 | | | |
| $P$ | 3.80 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2004 01 22 | 704 | (0.4+ | 2.0+) | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2004 01 22 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2− |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2004 01 22 | 704 | 0.1+ | 1.0+ | 2006 09 18 | 691 | 0.4+ | 0.2− |
| 2004 01 16 | 691 | 0.1+ | 0.3− | 2004 01 22 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2004 01 22 | 704 | 0.6+ | 0.9+ | 2006 09 25 | 691 | 0.1+ | 0.3− |
| 2004 01 17 | 644 | 0.3− | 0.1− | 2004 01 22 | 704 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2004 01 17 | 644 | 0.0 | 0.2+ | 2004 02 11 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2004 01 17 | 644 | 0.1+ | 0.3− | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2004 01 22 | 704 | 0.3+ | 0.7− | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2004 01 22 | 704 | 0.9+ | 0.4+ | 2004 02 13 | 691 | 0.2− | 0.3− | 2006 09 26 | G96 | 1.0− | 0.4− |
| 2004 01 22 | 704 | 0.1+ | 0.9+ | 2004 02 13 | 691 | 0.5− | 0.0 | | | | |
| 2004 01 22 | 704 | 0.2+ | 0.3+ | 2004 02 13 | 691 | 0.2− | 0.1+ | | | | |

**2004 CL$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 349.49346 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.30172790 | $\omega$ | 147.89112 | | | +0.54785346 | | −0.83562718 | | | |
| $a$ | 2.2015357 | $\Omega$ | 268.86016 | | | +0.75888048 | | +0.51643143 | | | |
| $e$ | 0.1062197 | $i$ | 2.28125 | | | +0.35207528 | | +0.18715178 | | | |
| $P$ | 3.27 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 699 | 0.6− | 0.4+ | 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2003 12 29 | 699 | 0.4− | 0.5− | 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 1.2+ | 0.3+ |
| 2003 12 29 | 699 | (1.7+ | 0.8+) | 2004 02 13 | 691 | 0.6− | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2003 12 29 | 699 | 0.2− | 0.7− | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 11 22 | 704 | 1.0+ | 0.1− |
| 2003 12 29 | 691 | 0.1− | 0.3− | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2003 12 29 | 691 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2003 12 29 | 691 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 26 | H07 | 0.0 | 0.1− |
| 2004 01 16 | 644 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.5− | 0.7− | 2006 11 26 | H07 | 0.2− | 0.1− |
| 2004 01 16 | 644 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.4− | 0.7− | 2006 11 26 | H07 | 0.8− | 0.3+ |
| 2004 01 16 | 644 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.1− | 2006 11 27 | H07 | 0.0 | 0.3− |
| 2004 01 22 | 608 | 0.1+ | 1.3+ | 2006 11 15 | 703 | 0.3+ | 0.7+ | 2006 11 27 | H07 | 0.0 | 0.1+ |
| 2004 01 22 | 608 | 0.6− | 1.1+ | 2006 11 15 | 703 | 0.6− | 0.1− | 2006 11 27 | H07 | 0.3− | 0.2+ |
| 2004 01 22 | 608 | 0.2− | 0.5+ | 2006 11 15 | 703 | 0.1− | 0.2− | 2006 11 30 | 691 | 0.1+ | 0.0 |
| 2004 01 30 | 704 | 1.1− | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.1− | 2006 11 30 | 691 | 0.0 | 0.0 |
| 2004 01 30 | 704 | 0.5+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 | 2006 11 30 | 691 | 0.3− | 0.1− |
| 2004 01 30 | 704 | 0.7+ | 0.2+ | 2006 11 20 | 691 | 0.3+ | 0.5+ | 2006 12 01 | 704 | 0.4− | 1.3− |
| 2004 01 30 | 704 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.5+ | 2006 12 01 | 704 | 0.2− | 0.1+ |
| 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.2− | 2006 12 01 | 704 | 0.0 | 0.2− |
| 2004 02 11 | 691 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.6+ | 2006 12 01 | 704 | 0.5− | 1.1+ |
| 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.5− | | | | |

**2004 CX$_{20}$ = 2006 SL$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 152.70474 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.24372562 | $\omega$ | 195.46859 | | | −0.71732238 | | +0.69628364 | | | |
| $a$ | 2.5382550 | $\Omega$ | 28.71213 | | | −0.63354166 | | −0.63674401 | | | |
| $e$ | 0.0897301 | $i$ | 3.01314 | | | −0.28995443 | | −0.33127959 | | | |
| $P$ | 4.04 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 691 | 0.5+ | 0.3− | 2004 02 11 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1− |
| 2004 01 28 | 691 | 0.4+ | 0.3− | 2004 02 11 | 691 | 0.2− | 0.3− | 2006 09 24 | 691 | 0.2+ | 0.3+ |
| 2004 01 28 | 691 | 0.5+ | 0.3− | 2004 02 13 | 691 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.4+ | 0.3+ |
| 2004 01 29 | 291 | 0.3− | 0.4+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.3− |
| 2004 01 29 | 291 | 0.7− | 0.4+ | 2004 02 13 | 691 | 0.3+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.4− |
| 2004 01 29 | 291 | 0.6− | 0.4+ | 2006 09 18 | 691 | 0.6− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |

**2004 CB$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 242.98601 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27294629 | $\omega$ | 68.56252 | | | −0.93511290 | | −0.35037072 | | | |
| $a$ | 2.3537008 | $\Omega$ | 90.89612 | | | +0.30233878 | | −0.86683998 | | | |
| $e$ | 0.1537242 | $i$ | 3.03588 | | | +0.18481105 | | −0.35472356 | | | |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.6− | 0.7− | 2004 02 15 | 704 | 0.3+ | 0.1− |
| 2000 01 05 | 691 | 0.1+ | 0.2− | 2004 01 30 | 704 | (1.4+ | 1.6+) | 2004 02 15 | 704 | 0.1+ | 0.3− |
| 2000 01 05 | 691 | 0.0 | 0.3− | 2004 01 30 | 704 | 0.4+ | 0.5+ | 2004 02 23 | 704 | 0.6+ | 1.1+ |
| 2004 01 17 | 644 | 0.1+ | 0.7+ | 2004 01 30 | 704 | (1.8+ | 0.4+) | 2004 02 23 | 704 | 0.1− | 0.0 |
| 2004 01 17 | 644 | 0.3+ | 0.3− | 2004 01 30 | 704 | 0.6+ | 0.9+ | 2004 02 23 | 704 | 0.2− | 0.5− |
| 2004 01 17 | 644 | 0.2+ | 0.7+ | 2004 02 11 | 691 | 0.2− | 0.2− | 2004 02 23 | 704 | 0.1− | 0.5+ |
| 2004 01 17 | 644 | 0.5+ | 0.7+ | 2004 02 11 | 691 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.2+ | 0.2− |
| 2004 01 17 | 644 | 0.1− | 0.4+ | 2004 02 11 | 691 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2004 01 17 | 644 | 0.0 | 0.4+ | 2004 02 13 | 699 | 0.6+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2004 01 22 | 704 | 0.2− | 0.1− | 2004 02 13 | 699 | 0.7+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.7− | 0.3− | 2004 02 13 | 699 | 0.9− | 0.0 | 2006 10 31 | G96 | 0.3− | 0.3+ |
| 2004 01 22 | 704 | 0.9+ | 0.1− | 2004 02 13 | 699 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2004 01 22 | 704 | 0.5− | 0.1+ | 2004 02 13 | 691 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2004 01 22 | 704 | 0.6+ | 0.5− | 2004 02 13 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3+ |
| 2004 01 26 | 699 | 0.2+ | 0.8+ | 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 01 26 | 699 | 0.1− | 0.2− | 2004 02 15 | 704 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 01 26 | 699 | 0.4+ | 0.0 | 2004 02 15 | 704 | (0.7− | 1.6+) | 2006 11 16 | G96 | 0.3+ | 0.8− |
| 2004 01 26 | 699 | 0.3− | 0.3+ | 2004 02 15 | 704 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.6+ | 0.6− |

**2004 CY$_{22}$ = 2006 UA$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 309.65734 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.28975484 | $\omega$ | 46.44665 | | | +0.02759215 | | −0.99918389 | | | |
| $a$ | 2.2617725 | $\Omega$ | 41.99926 | | | +0.90395461 | | +0.01234253 | | | |
| $e$ | 0.1799695 | $i$ | 2.52682 | | | +0.42673731 | | +0.03846054 | | | |
| $P$ | 3.40 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.8− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2004 02 13 | 691 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2004 02 13 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 11 | G96 | 0.2+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2004 02 14 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2004 02 14 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.1− |
| 2004 02 14 | 691 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.5+ | 0.4+ | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2004 02 23 | 704 | 0.5+ | 0.8− | 2006 10 28 | 691 | 0.4+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2004 02 23 | 704 | 0.5+ | 0.7+ | 2006 11 01 | 691 | 0.8+ | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.5+ |
| 2004 02 23 | 704 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.3− |
| 2006 10 19 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.4+ | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2006 10 19 | 691 | 0.4− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2006 10 19 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 | | | | |

**2004 CB$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.60208 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23827990 | $\omega$ | 269.87135 | | −0.87792075 | +0.47039517 | |
| $a$ | 2.5767826 | $\Omega$ | 298.18794 | | −0.38901330 | −0.80954688 | |
| $e$ | 0.1409587 | $i$ | 5.81826 | | −0.27914837 | −0.35122961 | |
| $P$ | 4.14 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1− | 0.6+ | 2004 02 13 | 644 | 0.4+ | 0.0 | 2004 03 12 | 644 | 0.2− | 0.1+ |
| 2001 05 24 | 807 | 0.2− | 0.6+ | 2004 02 16 | 854 | 0.4+ | 0.4+ | 2004 03 12 | 644 | 0.1+ | 0.2− |
| 2003 12 22 | 291 | 0.9− | 0.2+ | 2004 02 16 | 854 | 0.2− | 0.5− | 2004 03 12 | 644 | 0.2+ | 0.1− |
| 2003 12 22 | 291 | 0.1+ | 0.4+ | 2004 02 16 | 854 | 0.8− | 0.8− | 2004 03 15 | 704 | 0.3+ | 0.2− |
| 2003 12 22 | 291 | 0.0 | 0.3+ | 2004 02 19 | 704 | 0.8+ | 0.2+ | 2004 03 15 | 704 | 0.2+ | 0.2− |
| 2004 01 30 | 699 | 0.8+ | 1.1+ | 2004 02 19 | 704 | 0.3+ | 0.2− | 2004 03 15 | 704 | 0.3+ | 0.5− |
| 2004 01 30 | 699 | 0.3+ | 0.1− | 2004 02 19 | 704 | 0.7+ | 0.4− | 2004 03 15 | 704 | 0.2+ | 0.5− |
| 2004 01 30 | 699 | (0.9− | 1.8+) | 2004 02 19 | 704 | 0.5+ | 1.4− | 2004 03 19 | 704 | 1.1+ | 0.1+ |
| 2004 01 30 | 699 | 0.9− | 0.9+ | 2004 02 19 | 704 | 0.4− | 0.2− | 2004 03 19 | 704 | 0.5− | 0.5− |
| 2004 02 12 | 683 | 0.2+ | 1.3+ | 2004 02 23 | 704 | 0.7− | 0.2− | 2004 03 19 | 704 | 0.5+ | 0.8+ |
| 2004 02 12 | 683 | (2.7+ | 0.2−) | 2004 02 23 | 704 | 0.3+ | 0.3− | 2004 03 19 | 704 | 0.3+ | 0.2− |
| 2004 02 12 | 683 | (3.0+ | 1.6+) | 2004 02 23 | 704 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.3− | 0.1+ |
| 2004 02 12 | 644 | 0.7− | 0.1− | 2004 02 23 | 704 | 0.2− | 0.3+ | 2005 10 01 | G96 | 0.4− | 0.4+ |
| 2004 02 12 | 644 | 0.1− | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.2− | 0.4+ |
| 2004 02 12 | 644 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.4+ | 1.3+ | 2005 10 01 | G96 | 0.3− | 0.8+ |
| 2004 02 13 | 644 | 0.2− | 0.0 | 2004 02 26 | 704 | 0.2− | 0.8− | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2004 02 13 | 683 | 0.5− | 0.6+ | 2004 02 26 | 704 | 1.3+ | 1.0+ | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 2004 02 13 | 683 | (3.0+ | 0.6−) | 2004 02 26 | 704 | 1.3− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.3+ |
| 2004 02 13 | 644 | 0.1+ | 0.4− | 2004 02 26 | 704 | 0.6+ | 0.5− | 2006 11 01 | G96 | 0.0 | 0.0 |

**2004 CW$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.66337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26851453 | $\omega$ | 335.08010 | | −0.59771933 | −0.80161370 | |
| $a$ | 2.3795282 | $\Omega$ | 151.62197 | | +0.73976091 | −0.55730356 | |
| $e$ | 0.1189009 | $i$ | 1.46216 | | +0.30900712 | −0.21639828 | |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.4− | 0.1+ | 2004 03 14 | 703 | 0.7− | 0.4+ | 2006 10 17 | G96 | 0.5+ | 0.4− |
| 2004 01 24 | 704 | 0.6− | 0.8+ | 2004 03 14 | 703 | 0.9− | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2004 01 24 | 704 | 0.5− | 0.3+ | 2004 03 18 | 704 | 0.4− | 0.4+ | 2006 10 20 | 683 | 0.0 | 1.0− |
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.2+ | 0.1+ | 2004 03 18 | 704 | 0.6− | 0.2− | 2006 10 20 | 683 | 0.6− | 0.9− |
| 2004 02 11 | 644 | 0.4+ | 0.1+ | 2004 03 27 | 691 | 0.2− | 0.0 | 2006 10 20 | 683 | 0.4− | 0.2+ |
| 2004 02 14 | 691 | 0.1− | 0.2− | 2004 03 27 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2004 03 27 | 691 | 0.1− | 0.1− | 2006 10 23 | 683 | 0.4− | 0.2− |
| 2004 02 14 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 23 | 683 | 0.2+ | 0.8− |
| 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 23 | 683 | (1.8− | 0.2+) |
| 2004 02 17 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2004 02 17 | 704 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2004 02 17 | 704 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2004 02 22 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2004 02 22 | 691 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.6+ | 0.5− |
| 2004 02 22 | 691 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2004 02 26 | 704 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 1.3+ |
| 2004 02 26 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.6+ |
| 2004 02 26 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.5+ |
| 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.5− | 0.1+ |
| 2004 02 26 | 704 | 0.6+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.1+ | 2006 11 18 | G92 | 1.0− | 0.2+ |
| 2004 03 14 | 703 | 1.2− | 0.2− | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 18 | G92 | 0.1+ | 0.0 |
| 2004 03 14 | 703 | 0.8− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 18 | G92 | 0.1− | 0.0 |

**2004 CK$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.90019 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28432444 | $\omega$ | 59.96843 | | −0.99706484 | −0.05789568 | |
| $a$ | 2.2904804 | $\Omega$ | 116.67217 | | +0.03501743 | −0.92674234 | |
| $e$ | 0.1357877 | $i$ | 3.21390 | | +0.06808443 | −0.37120981 | |
| $P$ | 3.47 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 02 17 | 704 | (2.1+ | 1.7+) | 2004 03 17 | 691 | 0.2− | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 02 17 | 704 | (1.6+ | 1.1+) | 2004 03 17 | 691 | 0.2− | 0.2− |
| 2004 01 22 | 704 | 0.4+ | 0.1+ | 2004 02 17 | 704 | 1.1+ | 0.5+ | 2004 03 19 | 704 | 0.4− | 0.8− |
| 2004 01 22 | 704 | 0.3− | 0.5+ | 2004 02 17 | 704 | 0.7+ | 0.3+ | 2004 03 19 | 704 | 0.3+ | 1.4+ |
| 2004 01 22 | 704 | 0.1− | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2004 03 19 | 704 | 0.2− | 1.0+ |
| 2004 01 22 | 704 | 0.7+ | 1.5+ | 2004 02 23 | 704 | 0.3+ | 0.2− | 2004 03 19 | 704 | 1.1− | 0.0 |
| 2004 02 11 | 644 | 0.6+ | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2004 02 11 | 644 | 0.3+ | 0.1− | 2004 02 23 | 704 | 0.7+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2004 02 14 | 691 | 0.2− | 0.1+ | 2004 03 14 | 704 | 0.5+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2004 02 14 | 691 | 0.0 | 0.0 | 2004 03 14 | 704 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2004 02 14 | 691 | 0.4− | 0.0 | 2004 03 14 | 704 | (0.8+ | 1.9−) | 2006 11 22 | 691 | 0.2+ | 0.4− |
| 2004 02 17 | 704 | 0.8+ | 0.9+ | 2004 03 17 | 691 | 0.1+ | 0.2− | | | | |

**2004 CN$_{27}$ = 2006 UH$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.50225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23973231 | $\omega$ | 107.14481 | | −0.97617033 | +0.21022371 | |
| $a$ | 2.5663644 | $\Omega$ | 85.01580 | | −0.21391919 | −0.89052447 | |
| $e$ | 0.0860956 | $i$ | 3.09735 | | −0.03647010 | −0.40345032 | |
| $P$ | 4.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 0.1− | 0.7− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 644 | 0.3+ | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2004 02 11 | 644 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.2− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 02 14 | 691 | 0.2− | 0.0 | 2004 02 19 | 704 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2004 02 14 | 691 | 0.2− | 0.2+ | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2004 02 14 | 691 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.6− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2004 02 17 | 704 | (1.4+ | 1.7+) | 2004 02 23 | 704 | 0.7+ | 0.3− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2004 02 17 | 704 | 0.5− | 0.1− | 2004 02 23 | 704 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.0 |
| 2004 02 17 | 704 | 0.1+ | 0.5− | 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2004 02 17 | 704 | 1.4+ | 1.1− | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2004 02 17 | 704 | 0.2− | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 02 19 | 704 | (1.5− | 0.3−) | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2+ |

**2004 CS$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.92072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26610762 | $\omega$ | 146.09058 | | −0.96775379 | +0.25053852 | |
| $a$ | 2.3938550 | $\Omega$ | 48.44123 | | −0.23817028 | −0.87629183 | |
| $e$ | 0.1302382 | $i$ | 2.00161 | | −0.08202151 | −0.41151317 | |
| $P$ | 3.70 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 26 | 675 | 0.9− | 1.6− | 2004 02 12 | 691 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 1971 03 26 | 675 | (0.4− | 3.3−) | 2004 02 14 | 691 | 0.5− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1− |
| 1995 11 14 | 691 | 0.4+ | 0.3− | 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.0 | 0.2− | 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.4− |
| 1995 11 14 | 691 | 0.0 | 0.4− | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2004 01 17 | 644 | 0.2− | 0.7+ | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2004 01 17 | 644 | 0.5− | 0.7+ | 2004 04 14 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.9− |
| 2004 01 17 | 644 | 0.2− | 0.5+ | 2004 04 14 | 645 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2004 01 22 | 704 | 0.1+ | 0.2+ | 2005 07 07 | 691 | 0.1− | 0.3+ | 2006 10 29 | 291 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.4+ | 0.9+ | 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 10 29 | 291 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.7+ | 0.0 | 2005 07 07 | 691 | 0.1− | 0.4+ | 2006 10 29 | 291 | 0.3+ | 0.2+ |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.7+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2004 01 30 | 704 | 1.3+ | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2004 01 30 | 704 | 0.7+ | 0.5− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2004 01 30 | 704 | 0.4+ | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.5− |
| 2004 01 30 | 704 | 0.0 | 0.4− | 2006 10 12 | 691 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.2− | | | | |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.3+ | | | | |

**2004 CZ$_{27}$ = 2006 QS$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.22432 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21473038 | $\omega$ | 310.82426 | | +0.54760569 | | +0.83668477 |
| $a$ | 2.7618943 | $\Omega$ | 352.36174 | | −0.74507460 | | +0.48252545 |
| $e$ | 0.0564469 | $i$ | 4.01497 | | −0.38077796 | | +0.25909032 |
| $P$ | 4.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 13 | 691 | 0.3− | 0.3− | 2004 01 22 | 704 | 0.3− | 0.3+ | 2006 08 28 | 699 | 1.0− | 0.8+ |
| 1993 12 13 | 691 | 0.0 | 0.2+ | 2004 01 22 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 699 | 1.1− | 0.6+ |
| 1993 12 13 | 691 | 0.2+ | 0.1− | 2004 01 22 | 704 | 1.2+ | 0.9+ | 2006 08 28 | 699 | 0.0 | 0.1+ |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2004 02 12 | 691 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.7− | 1.2− |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.2+ |
| 2000 03 11 | 704 | 0.4+ | 1.5+ | 2004 02 12 | 691 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.9− |
| 2000 03 11 | 704 | 0.5+ | 1.5+ | 2004 02 14 | 691 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.0 | 1.1+ |
| 2000 03 11 | 704 | 0.1+ | 0.6+ | 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.6+ | 1.5+ |
| 2002 10 16 | 644 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.0 |
| 2002 10 16 | 644 | 0.2+ | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.6+ |
| 2002 10 31 | 644 | 0.1+ | 0.5+ | 2006 08 17 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2002 10 31 | 644 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.7− | 0.3+ |
| 2002 10 31 | 644 | 0.1− | 1.1+ | 2006 08 28 | 703 | 0.7− | 1.4+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 11 09 | 695 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.4− | 1.1+ | 2006 09 30 | G96 | 0.2− | 0.8+ |
| 2002 11 09 | 695 | 0.1− | 0.4− | 2006 08 28 | 703 | 0.6− | 0.7+ | | | | |
| 2004 01 22 | 704 | 0.2− | 0.3+ | 2006 08 28 | 699 | 0.3+ | 0.2+ | | | | |

**2004 CQ$_{28}$ = 2006 UE$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.67941 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27830566 | $\omega$ | 9.29480 | | +0.99918129 | | +0.03959421 |
| $a$ | 2.3233859 | $\Omega$ | 348.42628 | | −0.03926852 | | +0.89973577 |
| $e$ | 0.2317746 | $i$ | 2.37385 | | −0.00973345 | | +0.43463530 |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2004 01 19 | 691 | 0.1− | 0.5+ | 2006 10 27 | 703 | 0.0 | 1.0− | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 1.0− |
| 2004 01 30 | 691 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.3+ |
| 2004 02 12 | 691 | 0.3+ | 0.1− | 2006 10 29 | 704 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.7− | 0.8+ | 2006 11 14 | G96 | 0.1− | 0.6− |
| 2004 02 12 | 691 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.1− | 0.7+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2004 02 14 | 691 | 0.3− | 0.3+ | 2006 10 29 | 704 | 1.1− | 0.6− | 2006 11 14 | G96 | 0.1− | 0.6− |
| 2004 02 14 | 691 | 0.6− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2004 02 14 | 691 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.4+ | 0.7− |
| 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.9+ |
| 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 16 | 704 | 1.2+ | 1.1+ |
| 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.7+ | 0.4+ |
| 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.7− |
| 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.3− |
| 2006 10 21 | 704 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2006 10 21 | 704 | 0.9+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.7− |
| 2006 10 21 | 704 | 0.3+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.7+ |
| 2006 10 21 | 704 | 0.7− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4− | 0.1− |
| 2006 10 21 | 704 | 0.4− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.7+ | 0.8+ |
| 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.0 | 0.1+ | | | | |

**2004 CS$_{28}$ = 2006 UR$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.50067 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25741364 | $\omega$ | 340.56065 | | +0.73656940 | | +0.67582607 |
| $a$ | 2.4474567 | $\Omega$ | 336.85334 | | −0.61113176 | | +0.64795242 |
| $e$ | 0.0381683 | $i$ | 3.92676 | | −0.28979904 | | +0.35130725 |
| $P$ | 3.83 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.3− | 0.3+ | 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 10 04 | 644 | 0.3− | 0.5+ | 2005 02 14 | 809 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 01 30 | 691 | 0.1+ | 0.3− | 2005 02 14 | 809 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 01 30 | 691 | 0.3− | 0.1− | 2005 02 14 | 809 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2004 01 30 | 691 | 0.1+ | 0.4− | 2006 09 27 | 291 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.5− | 0.6− |
| 2004 02 12 | 691 | 0.1− | 0.5+ | 2006 09 27 | 291 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 27 | 291 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.6− |
| 2004 02 12 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2− | | | | |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1+ | | | | |

**2004 CW$_{28}$ = 2006 QN$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.04285 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21435209 | $\omega$ | 287.07895 | | −0.06179879 | | +0.99787985 |
| $a$ | 2.7651428 | $\Omega$ | 339.34554 | | −0.89231565 | | −0.06440114 |
| $e$ | 0.0577784 | $i$ | 3.31769 | | −0.44716182 | | −0.00939620 |
| $P$ | 4.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 10 | 691 | 0.1+ | 0.3− | 2004 02 14 | 691 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 1997 10 10 | 691 | 0.1− | 0.1+ | 2004 02 14 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.0 |
| 1997 10 10 | 691 | 0.1+ | 0.1− | 2005 05 11 | 644 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.6− | 0.8− |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2005 05 11 | 644 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.9− |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | 2005 05 11 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 1.2− | 1.1+ |
| 2004 01 30 | 691 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2004 02 12 | 691 | 0.3+ | 0.1− | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.5+ | 0.1− |
| 2004 02 12 | 691 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | | | | |

**2004 CC$_{29}$ = 2006 SM$_{299}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.09195 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24357668 | $\omega$ | 140.02717 | | +0.08240975 | | +0.99544406 |
| $a$ | 2.5392897 | $\Omega$ | 134.64017 | | −0.93072088 | | +0.09407780 |
| $e$ | 0.0305304 | $i$ | 3.86454 | | −0.35632467 | | −0.01550797 |
| $P$ | 4.05 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 13 | 691 | 0.1− | 0.1+ | 2004 04 13 | 645 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2000 01 13 | 691 | 0.1− | 0.1+ | 2005 06 01 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2000 01 13 | 691 | 0.0 | 0.3− | 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2002 10 15 | 644 | 0.0 | 1.5+ | 2005 06 01 | 691 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2002 10 15 | 644 | 0.2− | 1.3+ | 2005 06 16 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 2002 10 15 | 644 | 0.4− | 1.7+ | 2005 06 16 | 691 | 0.3+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 2002 11 08 | 645 | 0.1− | 0.1− | 2005 06 16 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.9+ |
| 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 1.2− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.5− | 2006 10 16 | 703 | (1.0− | 3.5+) |
| 2004 02 14 | 691 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.8− |
| 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 16 | 703 | 1.2+ | 0.4+ |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.9− | 1.0+ |
| 2004 04 13 | 645 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.3− | | | | |

### 2004 $CH_{30}$ = 1994 $TS_{14}$ = 1998 $SL_{37}$ = 2001 $KZ_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 99.39857 | | (2000.0) | | | |
| $n$ | 0.25532264 | $\omega$ | 315.53247 | | +0.27945223 | +0.96006162 |
| $a$ | 2.4608010 | $\Omega$ | 330.68701 | | −0.87293855 | +0.24809170 |
| $e$ | 0.1900920 | $i$ | 1.60543 | | −0.39985590 | +0.12935296 |
| $P$ | 3.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.5+ | 0.7− | 2004 01 22 | 704 | 0.7+ | 1.0+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 1993 03 24 | 809 | 0.6+ | 0.8− | 2004 01 30 | 691 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.0 |
| 1994 10 13 | 691 | 0.1− | 0.1+ | 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 1994 10 13 | 691 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.5+ | 0.0 |
| 1994 10 13 | 691 | 0.1+ | 0.1+ | 2004 02 12 | 691 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 1994 10 14 | 691 | 0.1+ | 0.5+ | 2004 02 12 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 1994 10 14 | 691 | 0.3− | 0.2− | 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.1− |
| 1994 10 14 | 691 | 0.7− | 0.0 | 2005 07 03 | 704 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 1998 09 21 | 691 | 0.2− | 0.1+ | 2005 07 03 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 1998 09 21 | 691 | 0.3− | 0.1− | 2005 07 03 | 704 | 0.8− | 1.0+ | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 1998 09 21 | 691 | 0.8− | 0.2+ | 2005 07 03 | E12 | 0.8+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 1998 09 27 | 691 | 0.5+ | 0.4− | 2005 07 03 | E12 | 0.4+ | 0.5+ | 2006 11 18 | 691 | 0.3− | 0.1− |
| 1998 09 27 | 691 | 0.4+ | 0.1+ | 2005 07 03 | E12 | 0.4− | 0.8+ | 2006 11 18 | 691 | 0.3− | 0.4+ |
| 1998 09 27 | 691 | 0.9+ | 0.1− | 2005 07 03 | E12 | 0.3+ | 0.4+ | 2006 11 18 | 691 | 0.4− | 0.2+ |
| 2001 05 24 | 699 | 0.5− | 0.8− | 2005 07 26 | 644 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 1.1− | 0.8+ |
| 2001 05 24 | 699 | 0.4+ | 0.5+ | 2005 07 26 | 644 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.4− | 0.2+ |
| 2001 05 24 | 699 | 0.3+ | 0.6+ | 2005 07 26 | 644 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.6− |
| 2001 05 24 | 699 | 0.5− | 0.2+ | 2005 08 04 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 1.2+ | 0.9− |
| 2004 01 22 | 704 | 0.6+ | 1.0+ | 2005 08 04 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.4+ | 1.2+ | 2005 08 04 | 644 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.3− | 1.3+ | 2006 10 23 | 691 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.3+ |

### 2004 $CU_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.40913 | | (2000.0) | | | |
| $n$ | 0.28014023 | $\omega$ | 134.44356 | | +0.14160803 | −0.98737006 |
| $a$ | 2.3132313 | $\Omega$ | 307.28418 | | +0.88099252 | +0.15843006 |
| $e$ | 0.1116935 | $i$ | 5.12300 | | +0.45144141 | +0.00054012 |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.5+ | 0.2+ | 2004 02 12 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 07 29 | 644 | 0.1− | 0.6+ | 2004 02 12 | 691 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 07 29 | 644 | 0.3− | 1.0− | 2004 02 14 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.5+ | 0.6+ |
| 2003 12 22 | 704 | 1.5+ | 1.1+ | 2004 02 14 | 691 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.7+ | 0.2− |
| 2003 12 22 | 704 | 0.7+ | 0.9+ | 2004 02 14 | 691 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.2+ |
| 2003 12 22 | 704 | 1.3− | 0.6− | 2004 02 16 | 704 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.5− | 0.3− |
| 2004 01 13 | 699 | 0.1− | 0.4+ | 2004 02 16 | 704 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2004 01 13 | 699 | 0.8+ | 0.8− | 2004 02 16 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2004 01 13 | 699 | 1.5− | 1.1+ | 2004 02 16 | 704 | 0.1+ | 1.4+ | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2004 01 13 | 699 | 0.5+ | 1.3− | 2004 02 17 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2004 01 19 | 691 | 0.2+ | 0.1− | 2004 02 17 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.5+ |
| 2004 01 19 | 691 | 0.3+ | 0.2− | 2004 02 17 | 644 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2004 01 19 | 691 | 0.2+ | 0.1− | 2004 02 22 | 704 | 0.6+ | 0.1+ | 2006 10 25 | 106 | 0.0 | 0.3− |
| 2004 01 24 | 704 | 0.1− | 0.2+ | 2004 02 22 | 704 | 0.2+ | 0.2+ | 2006 10 25 | 106 | 0.8+ | 0.3− |
| 2004 01 24 | 704 | 0.2− | 0.5+ | 2004 02 22 | 704 | 0.2− | 0.5+ | 2006 10 25 | 106 | 0.1+ | 0.7− |
| 2004 01 24 | 704 | 0.3− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.4− | 2006 10 26 | 106 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 0.3− | 0.7+ | 2004 02 26 | 704 | 0.8+ | 0.2+ | 2006 10 27 | 703 | 1.2− | 0.5− |
| 2004 01 24 | 704 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.3+ | 0.9+ | 2006 10 27 | 703 | 0.8− | 0.2− |
| 2004 01 30 | 691 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.3+ |
| 2004 01 30 | 691 | 0.2− | 0.1− | 2006 09 28 | 703 | 1.4+ | 0.5− | 2006 10 27 | 703 | 0.5− | 0.3− |
| 2004 01 30 | 691 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.1− | 0.1+ | 2006 11 14 | 703 | 1.1+ | 0.4− |
| 2004 01 30 | 704 | 0.3− | 1.2+ | 2006 09 28 | 703 | 0.4− | 0.8− | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2004 01 30 | 704 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.2+ |
| 2004 01 30 | 704 | 0.4− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2004 01 30 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1+ | | | | |
| 2004 02 12 | 691 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− | | | | |

### 2004 $CH_{32}$ = 2006 $RK_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.16988 | | (2000.0) | | | |
| $n$ | 0.18888266 | $\omega$ | 308.77780 | | −0.43490957 | +0.88652613 |
| $a$ | 3.0084398 | $\Omega$ | 294.75468 | | −0.76284587 | −0.45588856 |
| $e$ | 0.1227570 | $i$ | 10.01187 | | −0.47845569 | −0.07897491 |
| $P$ | 5.22 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.4+ | 0.3+ |
| 2004 01 19 | 691 | 0.0 | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.5+ |
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2004 02 14 | 691 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1− |
| 2004 01 30 | 691 | 0.3− | 0.3− | 2004 02 14 | 691 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.2− | 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2004 01 30 | 691 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.0 |

### 2004 $CA_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.53901 | | (2000.0) | | | |
| $n$ | 0.25757507 | $\omega$ | 314.41400 | | +0.32226276 | +0.94603091 |
| $a$ | 2.4464340 | $\Omega$ | 334.32725 | | −0.84453416 | +0.27097210 |
| $e$ | 0.1399895 | $i$ | 4.53278 | | −0.42767835 | +0.17776289 |
| $P$ | 3.83 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 644 | 0.4− | 0.5− | 2004 01 28 | 691 | 0.4− | 0.0 | 2004 03 18 | 645 | 0.1− | 0.0 |
| 2002 10 28 | 644 | 0.4+ | 0.1− | 2004 02 12 | 291 | 0.3− | 0.2+ | 2004 04 14 | 645 | 0.1− | 0.1− |
| 2002 10 28 | 644 | 0.3+ | 0.1− | 2004 02 12 | 291 | 0.0 | 0.3+ | 2004 04 14 | 645 | 0.0 | 0.1+ |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2004 02 12 | 291 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2004 01 22 | 704 | 1.2+ | 0.6+ | 2004 02 14 | 691 | 0.4+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2004 01 22 | 704 | 0.0 | 0.1+ | 2004 02 14 | 691 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2004 02 14 | 691 | 0.2+ | 0.3− | | | | |
| 2004 01 28 | 691 | 0.4− | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.1− | | | | |

### 2004 $CV_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 208.37948 | | (2000.0) | | | |
| $n$ | 0.23456748 | $\omega$ | 7.52464 | | −0.99221427 | −0.11431189 |
| $a$ | 2.6038993 | $\Omega$ | 165.62706 | | +0.10135931 | −0.97181980 |
| $e$ | 0.1107124 | $i$ | 11.48673 | | +0.07236810 | −0.20615300 |
| $P$ | 4.20 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 333 | 0.9− | 0.8− | 2004 02 18 | 704 | 0.0 | 0.3+ | 2004 03 18 | 704 | 1.7− | 0.9− |
| 2004 02 12 | 333 | 0.1+ | 0.0 | 2004 02 25 | 333 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.5− | 1.1− |
| 2004 02 12 | 333 | 0.4− | 0.3+ | 2004 02 25 | 333 | 0.7− | 0.3− | 2004 03 18 | 704 | 0.0 | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 608 | 1.4+ | 0.5− | 2004 02 25 | 333 | 0.9− | 0.7+ | 2004 03 18 | 704 | 0.7− | 1.3+ | | |
| 2004 02 14 | 608 | 1.1+ | 1.4− | 2004 02 25 | 333 | 0.6− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.6− | | |
| 2004 02 14 | 608 | 1.2+ | 0.1+ | 2004 03 11 | 644 | 0.5+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.4− | | |
| 2004 02 16 | 691 | 0.3− | 0.2− | 2004 03 11 | 644 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.6− | 0.1− | | |
| 2004 02 16 | 691 | 0.1− | 0.1+ | 2004 03 11 | 644 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.3− | | |
| 2004 02 16 | 691 | 0.1− | 0.1+ | 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.6+ | | |
| 2004 02 18 | 704 | 0.1+ | 0.5+ | 2004 03 14 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.4− | 0.4+ | | |
| 2004 02 18 | 704 | 1.1+ | 0.3+ | 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2004 02 18 | 704 | 0.3− | 0.5+ | 2004 03 18 | 704 | 0.3+ | 0.8+ | | | | | | |

**2004 CR$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.84191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27291403 | $\omega$ | 258.97461 | | −0.27206027 | | −0.96155551 |
| $a$ | 2.3538863 | $\Omega$ | 206.90250 | | +0.91196123 | | −0.24525624 |
| $e$ | 0.1861101 | $i$ | 4.73357 | | +0.30709920 | | −0.12353294 |
| $P$ | 3.61 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 691 | 0.2+ | 0.2− | 2004 02 16 | 715 | 0.1+ | 0.1+ | 2006 10 01 | 715 | 0.1+ | 0.0 | | |
| 2001 05 25 | 691 | 0.0 | 0.2+ | 2004 02 26 | 715 | 0.3− | 0.1− | 2006 10 01 | 715 | 0.0 | 0.0 | | |
| 2001 05 25 | 691 | 0.2− | 0.2− | 2004 02 26 | 715 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.1− | 0.4− | | |
| 2004 02 13 | 699 | 1.1+ | 0.2− | 2004 02 26 | 715 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.6− | | |
| 2004 02 13 | 699 | 0.7+ | 0.0 | 2004 03 07 | 715 | 0.3− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.5− | | |
| 2004 02 13 | 699 | 0.2+ | 0.2− | 2004 03 07 | 715 | 0.7− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2004 02 13 | 699 | 1.0+ | 0.1+ | 2004 03 07 | 715 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.5− | | |
| 2004 02 14 | 715 | 0.2− | 0.0 | 2004 03 25 | 715 | 0.5+ | 1.0+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | |
| 2004 02 14 | 715 | 0.1− | 0.0 | 2004 03 25 | 715 | (1.8+ | 0.1−) | 2006 10 28 | G96 | 0.3+ | 0.1+ | | |
| 2004 02 14 | 715 | 0.2− | 0.0 | 2004 04 16 | 715 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | | |
| 2004 02 15 | 715 | 0.1− | 0.0 | 2004 04 16 | 715 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.5− | 0.5− | | |
| 2004 02 15 | 715 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2004 02 15 | 715 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.6− | | |
| 2004 02 16 | 715 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.7− | | |
| 2004 02 16 | 715 | 0.5− | 0.0 | 2006 10 01 | 715 | 0.1+ | 0.0 | | | | | | |

**2004 CT$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.65550 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25466010 | $\omega$ | 262.56504 | | −0.40755598 | | −0.91308239 |
| $a$ | 2.4650673 | $\Omega$ | 211.49700 | | +0.84759481 | | −0.37279709 |
| $e$ | 0.1276517 | $i$ | 1.46610 | | +0.33982518 | | −0.16523586 |
| $P$ | 3.87 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 704 | 0.2− | 0.5+ | 2004 02 26 | 704 | (1.4− | 1.9+) | 2006 09 28 | 691 | 0.1− | 0.0 | | |
| 2000 02 05 | 704 | 0.4+ | 0.4+ | 2004 02 26 | 704 | 1.2+ | 0.3− | 2006 09 28 | 691 | 0.2− | 0.1+ | | |
| 2000 02 05 | 704 | 0.2+ | 0.9+ | 2004 02 26 | 704 | 1.3+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.2+ | | |
| 2000 02 05 | 704 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.7− | 0.9+ | 2006 10 02 | 691 | 0.1− | 0.3+ | | |
| 2004 02 11 | 644 | 0.2− | 0.2+ | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.5− | 0.1+ | | |
| 2004 02 11 | 644 | 0.2− | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.0 | | |
| 2004 02 11 | 644 | 0.5+ | 0.5− | 2004 02 29 | 691 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.5− | | |
| 2004 02 12 | 691 | 0.1− | 0.5− | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.0 | | |
| 2004 02 12 | 691 | 0.2− | 0.4− | 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.4− | | |
| 2004 02 12 | 691 | 0.1− | 0.3− | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.8+ | | |
| 2004 02 15 | 608 | 0.5− | 0.7+ | 2006 09 24 | 691 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.6− | | |
| 2004 02 15 | 608 | 0.2− | 0.5+ | 2006 09 24 | 691 | 0.7+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.4− | | |
| 2004 02 15 | 608 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.1− | 0.5− | | |
| 2004 02 26 | 704 | 0.6− | 1.1+ | 2006 09 28 | 691 | 0.3− | 0.1+ | | | | | | |

**2004 CF$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.34366 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27418831 | $\omega$ | 105.59196 | | −0.95760219 | | +0.27888603 |
| $a$ | 2.3465875 | $\Omega$ | 90.64369 | | −0.28417660 | | −0.87317441 |
| $e$ | 0.1299447 | $i$ | 4.14371 | | −0.04734656 | | −0.39973620 |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.2+ | 0.6+ | 2004 02 16 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 291 | 0.1− | 0.1− | | |
| 2004 01 22 | 704 | 0.4+ | 0.4+ | 2004 02 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 291 | 0.3+ | 0.1+ | | |
| 2004 01 22 | 704 | 0.5− | 0.4+ | 2004 03 10 | 644 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.0 | | |
| 2004 01 22 | 704 | 0.1− | 0.2− | 2004 03 10 | 644 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.0 | | |
| 2004 01 22 | 704 | 0.3− | 1.1+ | 2004 03 10 | 644 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2004 02 10 | 644 | 0.1+ | 0.1− | 2004 03 16 | 691 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.1+ | | |
| 2004 02 10 | 644 | 0.1+ | 0.1− | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 10 | 644 | 0.1− | 0.3+ | 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.5− | 0.1− | | |
| 2004 02 16 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.6+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2004 02 16 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1− | | |
| 2004 02 16 | 704 | 0.6− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2004 02 16 | 691 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1− | | |
| 2004 02 16 | 704 | 0.1− | 0.6− | 2006 11 11 | 291 | 0.1+ | 0.0 | | | | | | |

**2004 CT$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.93125 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21149562 | $\omega$ | 160.58423 | | −0.91874402 | | −0.39481651 |
| $a$ | 2.7899846 | $\Omega$ | 356.14837 | | +0.35076994 | | −0.80979305 |
| $e$ | 0.0981194 | $i$ | 4.62627 | | +0.18130052 | | −0.43399900 |
| $P$ | 4.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.2+ | 0.1+ | 2004 03 11 | 644 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2+ | | |
| 2004 02 11 | 291 | 0.2− | 0.0 | 2004 03 11 | 644 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.9− | 0.6− | | |
| 2004 02 11 | 291 | 0.1− | 0.2+ | 2004 03 14 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.1+ | | |
| 2004 02 16 | 691 | 0.1− | 0.2− | 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | | |
| 2004 02 16 | 691 | 0.2+ | 0.4− | 2004 03 14 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2004 02 16 | 691 | 0.1− | 0.2− | 2004 03 19 | 704 | 0.6+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.1+ | | |
| 2004 02 23 | 704 | 0.3+ | 1.0+ | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | |
| 2004 02 23 | 704 | 0.4− | 0.8+ | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.0 | | |
| 2004 02 23 | 704 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.5− | 2006 10 16 | G96 | 0.2+ | 0.0 | | |
| 2004 02 23 | 704 | 0.0 | 0.1− | 2004 03 30 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.1− | 0.5+ | | |
| 2004 02 23 | 704 | 0.2+ | 0.1+ | 2004 03 30 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.2− | 0.4− | | |
| 2004 03 11 | 644 | 0.3− | 0.1− | 2004 03 30 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4+ | | |

**2004 CQ$_{43}$ = 2006 SG$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.86721 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20842845 | $\omega$ | 334.57042 | | +0.67853302 | | +0.73436353 |
| $a$ | 2.8172889 | $\Omega$ | 338.14505 | | −0.66571391 | | +0.60473766 |
| $e$ | 0.0694727 | $i$ | 2.68079 | | −0.31051237 | | +0.30822487 |
| $P$ | 4.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 291 | 0.1+ | 0.1+ | 2004 02 29 | 291 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.3− | 0.2− | | |
| 2004 02 12 | 291 | 0.1− | 0.1+ | 2004 02 29 | 291 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2− | 0.1− | | |
| 2004 02 12 | 291 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1+ | | |
| 2004 02 16 | 691 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.2− | | |
| 2004 02 16 | 691 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3− | | |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 | | | | | | |
| 2004 02 29 | 291 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1− | | | | | | |

**2004 CY$_{43}$ = 2006 VM$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.06132 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26257383 | $\omega$ | 109.41051 | | −0.91058050 | | −0.41273878 |
| $a$ | 2.4152852 | $\Omega$ | 46.21959 | | +0.36679494 | | −0.83158336 |
| $e$ | 0.1172026 | $i$ | 1.75666 | | +0.19053772 | | −0.37163937 |
| $P$ | 3.75 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 645 | 0.0 | 0.1− | 2004 02 19 | 704 | 0.3+ | 1.1+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.8− | 1.5+ | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2004 02 19 | 704 | 0.1+ | 1.3− | 2006 11 09 | 691 | 0.4+ | 0.2+ |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2004 02 19 | 704 | 0.4− | 0.6+ | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2004 02 12 | 691 | 0.2+ | 0.2− | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2004 02 16 | 691 | 0.2+ | 0.1− | 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.1− | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.7− | 0.1− |

**2004 CC$_{45}$ = 2006 SC$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.33631 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26106471 | $\omega$ | 53.01916 | | −0.23635727 | | −0.96802038 |
| $a$ | 2.4245842 | $\Omega$ | 50.86794 | | +0.85348971 | | −0.24819812 |
| $e$ | 0.0809806 | $i$ | 6.22374 | | +0.46442497 | | −0.03652714 |
| $P$ | 3.78 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.1+ | 0.4− | 2004 02 13 | 691 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.3− | 0.1− |
| 1993 03 19 | 691 | 0.0 | 0.5+ | 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 1993 03 19 | 691 | 0.2− | 0.2− | 2004 02 16 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2004 02 11 | 644 | 0.7+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 02 13 | 691 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 | | | | |
| 2004 02 13 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.3− | 0.1− | | | | |

**2004 CE$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.29274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19652997 | $\omega$ | 268.20187 | | +0.98083530 | | −0.06358922 |
| $a$ | 2.9298824 | $\Omega$ | 95.41303 | | +0.12990459 | | +0.91791875 |
| $e$ | 0.0623477 | $i$ | 10.66083 | | −0.14521335 | | +0.39163961 |
| $P$ | 5.02 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.2− | 0.2− | 2004 02 13 | 691 | 0.6+ | 0.2+ | 2004 03 18 | 645 | 0.1− | 0.0 |
| 2002 11 15 | 644 | 0.4+ | 0.2− | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2004 03 18 | 645 | 0.0 | 0.1+ |
| 2002 11 15 | 644 | 0.1− | 0.3+ | 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.7+ |
| 2004 01 18 | 644 | 0.1− | 0.6+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.4+ |
| 2004 01 18 | 644 | 0.4+ | 0.0 | 2004 02 16 | 691 | 0.1− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.3+ |
| 2004 01 18 | 644 | 0.1+ | 0.4+ | 2004 03 17 | 645 | 0.1− | 0.1− | | | | |
| 2004 02 13 | 691 | 0.3+ | 0.3− | 2004 03 17 | 645 | 0.1− | 0.1− | | | | |

**2004 CJ$_{45}$ = 1999 WF$_{15}$ = 2006 WH$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.52272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29327697 | $\omega$ | 65.06186 | | −0.34159877 | | −0.93831227 |
| $a$ | 2.2436274 | $\Omega$ | 45.02519 | | +0.83261462 | | −0.32861901 |
| $e$ | 0.0903483 | $i$ | 4.35098 | | +0.43596235 | | −0.10760867 |
| $P$ | 3.36 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 29 | 691 | 0.2− | 0.4+ | 2004 02 13 | 691 | 0.0 | 0.8− | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 1999 11 29 | 691 | 0.1+ | 0.2+ | 2004 02 15 | 704 | 1.0+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.1− |
| 1999 11 29 | 691 | 0.2− | 0.6+ | 2004 02 15 | 704 | 1.1+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 1999 12 05 | 691 | 0.4+ | 0.0 | 2004 02 15 | 704 | (1.7+ | 0.4+) | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1999 12 05 | 691 | 0.1− | 0.3− | 2004 02 16 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 1999 12 05 | 691 | 0.4− | 0.1+ | 2004 02 16 | 691 | 0.3− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2001 03 15 | 691 | 0.5+ | 0.3+ | 2004 02 16 | 691 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 03 15 | 691 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.7+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2001 03 15 | 691 | 0.9+ | 1.6+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2001 04 14 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2001 04 14 | 691 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2001 04 14 | 691 | 0.2− | 0.2− | 2006 11 01 | G96 | 1.0− | 0.9− | 2006 11 24 | 691 | 0.1− | 0.4+ |
| 2004 02 13 | 691 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.6+ | 0.3− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 24 | 691 | 0.2+ | 0.1+ |

**2004 CS$_{46}$ = 2006 SS$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.37222 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22645005 | $\omega$ | 160.40667 | | +0.08338843 | | +0.99045469 |
| $a$ | 2.6657603 | $\Omega$ | 114.24888 | | −0.92959306 | | +0.11699590 |
| $e$ | 0.0344271 | $i$ | 6.91371 | | −0.35903079 | | −0.07287986 |
| $P$ | 4.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 08 | 691 | (2.3+ | 4.4−) | 2004 02 13 | 691 | 0.1− | 0.3+ | 2004 02 18 | 291 | 0.0 | 0.5+ |
| 1995 01 08 | 691 | 0.0 | 0.2− | 2004 02 13 | 691 | 0.2+ | 0.2+ | 2006 09 18 | F84 | 0.6+ | 0.2− |
| 1995 01 08 | 691 | 0.7+ | 0.6+ | 2004 02 13 | 691 | 0.0 | 0.2+ | 2006 09 18 | F84 | 0.2+ | 0.3+ |
| 1995 01 09 | 691 | 1.5− | 0.4− | 2004 02 16 | 291 | 0.1+ | 0.3+ | 2006 09 18 | F84 | 0.5− | 0.4+ |
| 1995 01 09 | 691 | 0.6− | 0.3− | 2004 02 16 | 291 | 0.4+ | 0.3+ | 2006 09 19 | F84 | 0.1− | 1.0+ |
| 1995 01 09 | 691 | 1.2− | 0.6− | 2004 02 16 | 291 | 0.5+ | 0.3+ | 2006 09 19 | F84 | 0.3+ | 1.0+ |
| 2001 07 21 | 608 | 0.2+ | 1.5− | 2004 02 17 | 291 | 0.0 | 0.3+ | 2006 09 19 | F84 | 0.2− | 0.9+ |
| 2001 07 21 | 608 | 0.1− | 2.0− | 2004 02 17 | 291 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.6− | 0.6+ |
| 2001 07 21 | 608 | 0.2− | 1.4− | 2004 02 17 | 291 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.6− | 1.3+ |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2004 02 18 | 291 | 0.3− | 0.3+ | 2006 10 02 | 703 | 2.2− | 2.6+ |
| 2003 12 21 | 645 | 0.1+ | 0.2+ | 2004 02 18 | 291 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.5− | 2.0+ |

**2004 CC$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.88197 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23684431 | $\omega$ | 314.32939 | | −0.23810355 | | −0.96854647 |
| $a$ | 2.5871845 | $\Omega$ | 149.22879 | | +0.92645808 | | −0.24883261 |
| $e$ | 0.1470211 | $i$ | 8.12191 | | +0.29151695 | | −0.00027913 |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 23 | 691 | 0.1− | 0.2+ | 2004 02 18 | 291 | 0.4+ | 0.2− | 2004 03 15 | 703 | 0.7− | 0.4+ |
| 1995 01 23 | 691 | 0.0 | 0.1− | 2004 02 18 | 704 | 0.0 | 0.7+ | 2004 03 15 | 704 | 0.5+ | 0.3+ |
| 1995 01 23 | 691 | 0.2+ | 0.4− | 2004 02 18 | 704 | 0.2+ | 0.4+ | 2004 03 15 | 703 | 1.7− | 0.2− |
| 2004 01 24 | 704 | 0.5+ | 0.5+ | 2004 02 18 | 291 | 0.3+ | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.4+ |
| 2004 01 24 | 704 | 0.0 | 0.8+ | 2004 02 18 | 704 | 0.2− | 1.2+ | 2004 03 15 | 703 | 0.2− | 0.2+ |
| 2004 01 24 | 704 | 0.5+ | 0.8+ | 2004 02 18 | 704 | 0.4− | 0.5+ | 2004 03 19 | 704 | 0.5+ | 1.5+ |
| 2004 01 24 | 704 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.5+ | 0.1− | 2004 03 19 | 704 | 1.8+ | 0.7+ |
| 2004 01 24 | 704 | 0.5+ | 0.9+ | 2004 02 23 | 704 | 0.7+ | 0.0 | 2004 03 19 | 704 | 1.2+ | 1.5+ |
| 2004 02 14 | 608 | 0.9+ | 0.3+ | 2004 02 23 | 704 | 0.6+ | 0.2− | 2004 03 19 | 704 | 0.3+ | 1.4+ |
| 2004 02 14 | 608 | 0.9+ | 0.5+ | 2004 02 23 | 704 | 0.2+ | 0.3− | 2004 03 19 | 704 | 0.1+ | 0.3+ |
| 2004 02 14 | 608 | 0.6+ | 0.5− | 2004 02 23 | 704 | 0.8+ | 0.2− | 2004 03 30 | 691 | 0.2− | 0.1− |
| 2004 02 16 | 691 | 0.2− | 0.2− | 2004 03 14 | 691 | 0.1− | 0.1+ | 2004 03 30 | 691 | 0.2− | 0.0 |
| 2004 02 16 | 691 | 0.3− | 0.2− | 2004 03 14 | 691 | 0.2− | 0.2+ | 2004 03 30 | 691 | 0.2− | 0.1− |
| 2004 02 16 | 691 | 0.5− | 0.1− | 2004 03 14 | 691 | 0.1+ | 0.0 | 2006 08 18 | 691 | 0.2− | 1.1+ |
| 2004 02 18 | 291 | 0.2− | 0.2− | 2004 03 15 | 704 | 0.0 | 0.6+ | 2006 08 18 | 691 | 0.5− | 1.0+ |
| 2004 02 18 | 704 | 0.0 | 0.7+ | 2004 03 15 | 703 | 0.7− | 1.4+ | 2006 08 18 | 691 | 0.1− | 0.8+ |

**2004 CW$_{49}$ = 2006 WV$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.68414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29160223 | $\omega$ | 357.35123 | | +0.78053820 | −0.62258274 | |
| $a$ | 2.2522097 | $\Omega$ | 41.32877 | | +0.57507665 | +0.67996531 | |
| $e$ | 0.0983253 | $i$ | 4.87604 | | +0.24504480 | +0.38734728 | |
| $P$ | 3.38 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.2− | 1.1+ | 2004 03 18 | 645 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.9+ |
| 2002 07 15 | 644 | 0.3− | 1.3+ | 2004 04 14 | 291 | 0.5− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 07 15 | 644 | 0.5− | 0.5+ | 2004 04 14 | 291 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2002 08 13 | 644 | 0.2+ | 0.0 | 2004 04 14 | 291 | 0.5+ | 0.6+ | 2006 11 22 | 704 | 1.2− | 0.3− |
| 2002 08 13 | 644 | 0.1− | 0.3+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 22 | 704 | 1.2+ | 0.5+ |
| 2002 08 13 | 644 | 0.3− | 0.1+ | 2004 04 16 | 645 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.5− |
| 2004 02 11 | 691 | 0.3+ | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.5− |
| 2004 02 11 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 23 | 703 | 1.0+ | 0.2− |
| 2004 02 11 | 691 | 0.3− | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.1− |
| 2004 02 13 | 699 | 0.7+ | 0.1− | 2006 11 16 | 704 | 1.1− | 0.9− | 2006 11 23 | 703 | 0.4− | 0.1+ |
| 2004 02 13 | 699 | 0.4− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.4+ | 0.5− |
| 2004 02 13 | 699 | 1.2+ | 0.8+ | 2006 11 16 | 704 | 1.1− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2004 02 13 | 699 | (0.9+ | 2.3+) | 2006 11 16 | 691 | 0.2+ | 0.0 | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2004 02 15 | 704 | (2.0+ | 0.7−) | 2006 11 16 | 704 | 0.2− | 0.9+ | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2004 02 15 | 704 | 0.7+ | 0.3− | 2006 11 16 | 691 | 0.3− | 0.3+ | 2006 11 27 | 704 | 0.5− | 0.7− |
| 2004 02 15 | 704 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 1.4+ | 2006 11 27 | 704 | 0.6+ | 0.2+ |
| 2004 03 18 | 645 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3− | 0.6+ | 2006 11 27 | 704 | 0.4− | 0.6− |

**2004 CY$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.91625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36201382 | $\omega$ | 261.18008 | | −0.13584374 | +0.99070863 | |
| $a$ | 1.9497815 | $\Omega$ | 1.07965 | | −0.71597096 | −0.09359875 | |
| $e$ | 0.1129394 | $i$ | 20.34012 | | −0.68478614 | −0.09866961 | |
| $P$ | 2.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 608 | 0.3− | 0.0 | 2004 02 19 | 704 | 0.2− | 0.1+ | 2005 10 10 | 703 | 0.6+ | 0.6− |
| 2002 09 09 | 608 | 0.6− | 0.1+ | 2004 02 19 | 704 | 0.2+ | 0.3+ | 2005 10 10 | 703 | 0.9− | 0.5+ |
| 2002 09 09 | 608 | 0.0 | 1.4− | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2005 10 10 | 703 | 0.4+ | 0.0 |
| 2002 09 09 | 644 | 0.1− | 0.3+ | 2004 03 23 | 704 | 1.4+ | 0.8+ | 2005 10 25 | 703 | 0.4− | 0.8− |
| 2002 09 09 | 644 | 0.0 | 0.3+ | 2004 03 23 | 704 | 0.4+ | 0.5− | 2005 10 25 | 703 | 0.7+ | 0.3+ |
| 2002 09 09 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.7− | 0.8+ | 2005 10 25 | 703 | 0.3− | 1.8− |
| 2002 10 07 | 608 | 0.6− | 1.1+ | 2004 03 23 | 704 | 0.3− | 1.0+ | 2005 10 25 | 703 | 0.4+ | 0.2+ |
| 2002 10 07 | 608 | 0.6− | 1.9+ | 2005 09 29 | 703 | 1.1− | 0.4+ | 2005 10 25 | 703 | 1.9+ | 0.4+ |
| 2002 10 07 | 608 | 0.7− | 1.2+ | 2005 09 29 | 703 | 0.0 | 0.5− | 2005 10 25 | 703 | 0.3+ | 0.8+ |
| 2004 02 14 | 704 | 0.1+ | 0.1− | 2005 09 29 | 703 | 0.3− | 0.8+ | 2005 10 25 | 703 | 1.2− | 1.0− |
| 2004 02 14 | 704 | 0.2+ | 0.2+ | 2005 09 29 | 703 | 1.0− | 0.6− | 2005 10 25 | 703 | 0.4+ | 0.5− |
| 2004 02 14 | 704 | 0.3+ | 1.0+ | 2005 09 29 | 703 | 0.1− | 0.2− | 2005 10 25 | 703 | 0.3− | 0.1− |
| 2004 02 14 | 704 | 0.9+ | 0.1+ | 2005 09 29 | 703 | 0.5+ | 1.6+ | 2005 10 25 | 703 | 0.1− | 0.0 |
| 2004 02 19 | 704 | 0.2− | 0.3− | 2005 09 29 | 703 | 0.6+ | 0.6− | 2005 10 25 | 703 | 0.8− | 0.2+ |
| 2004 02 19 | 704 | 0.2− | 0.4− | 2005 09 29 | 703 | 0.7+ | 0.8− | 2005 10 25 | 703 | 1.0+ | 0.9+ |
| 2004 02 19 | 704 | 0.1+ | 0.3− | 2005 10 10 | 703 | 0.3+ | 0.0 | | | | |

**2004 CR$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.73287 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19945158 | $\omega$ | 26.31872 | | −0.96924595 | −0.22052160 | |
| $a$ | 2.9012004 | $\Omega$ | 140.44415 | | +0.18448388 | −0.94486604 | |
| $e$ | 0.0942568 | $i$ | 9.87684 | | +0.16287415 | −0.24207102 | |
| $P$ | 4.94 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 26 | 910 | 0.3+ | 0.5− | 2004 02 17 | 704 | (1.2+ | 1.7−) | 2004 03 20 | 704 | 0.7− | 0.0 |
| 1999 01 26 | 910 | 0.4− | 0.4− | 2004 02 17 | 704 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 0.3− | 0.1+ |
| 1999 01 26 | 910 | 0.1+ | 0.4− | 2004 02 19 | 049 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.5+ |
| 2001 08 21 | 807 | 0.3− | 0.6+ | 2004 02 19 | 049 | 0.1− | 0.0 | 2006 09 18 | 734 | 0.5− | 0.8+ |
| 2001 08 21 | 807 | 0.3− | 0.5+ | 2004 02 19 | 049 | 0.5+ | 0.3+ | 2006 09 18 | 734 | 0.5− | 0.7− |
| 2004 02 11 | 644 | 0.5− | 0.3+ | 2004 02 19 | 608 | 0.2+ | 0.2+ | 2006 09 18 | 734 | 0.3+ | 0.3+ |
| 2004 02 11 | 644 | 0.3− | 0.7+ | 2004 02 19 | 608 | 0.1+ | 0.7− | 2006 09 18 | 734 | 0.0 | 0.9+ |
| 2004 02 11 | 644 | 0.2+ | 0.1− | 2004 02 19 | 608 | 0.2− | 0.2− | 2006 09 18 | 734 | 0.0 | 0.6− |
| 2004 02 11 | 644 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.5− | 2006 09 18 | 734 | 0.4+ | 0.2+ |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 09 18 | 734 | (2.1− | 0.1−) |
| 2004 02 11 | 644 | 0.1+ | 0.7+ | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 734 | 0.5+ | 0.2− |
| 2004 02 17 | 704 | 1.0− | 1.1+ | 2004 02 23 | 704 | 0.2− | 0.0 | 2006 09 20 | 734 | (2.2+ | 0.0 ) |
| 2004 02 17 | 704 | 0.1− | 0.9− | 2004 02 23 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 734 | 0.2− | 0.4+ |
| 2004 02 17 | 704 | 1.5+ | 0.3+ | 2004 03 20 | 704 | 0.7− | 0.2− | | | | |

**2004 CT$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.01088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22222430 | $\omega$ | 130.57502 | | −0.07336989 | −0.97193099 | |
| $a$ | 2.6994483 | $\Omega$ | 321.80936 | | +0.77040484 | +0.08709868 | |
| $e$ | 0.0593802 | $i$ | 21.19481 | | +0.63331922 | −0.21854969 | |
| $P$ | 4.44 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 28 | 691 | 0.7− | 0.2− | 2004 02 13 | 683 | (1.8+ | 0.6−) | 2004 02 26 | 704 | 0.9− | 1.4+ |
| 1995 01 28 | 691 | 0.2+ | 0.3− | 2004 02 13 | 644 | 0.2+ | 0.3+ | 2004 02 26 | 704 | 1.1− | 0.2+ |
| 1995 01 28 | 691 | (2.1− | 2.8−) | 2004 02 13 | 644 | 0.3+ | 0.0 | 2004 02 26 | 704 | 0.8− | 0.8+ |
| 2003 12 21 | 704 | 1.4+ | 0.9− | 2004 02 17 | 608 | 0.2− | 1.0− | 2004 03 13 | 644 | 0.6+ | 0.0 |
| 2003 12 21 | 704 | 1.4+ | 0.1− | 2004 02 17 | 608 | 0.0 | 0.4− | 2004 03 13 | 644 | 0.3+ | 0.1− |
| 2003 12 21 | 704 | 0.0 | 0.2− | 2004 02 17 | 608 | 0.1− | 0.2− | 2004 03 13 | 644 | 0.6+ | 0.2− |
| 2004 01 16 | 703 | (1.9− | 1.8+) | 2004 02 18 | 683 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.1+ | 0.0 |
| 2004 01 16 | 703 | (3.9− | 0.5+) | 2004 02 18 | 683 | 0.6+ | 1.2+ | 2004 03 16 | 704 | 0.9+ | 0.4+ |
| 2004 01 16 | 703 | 0.6− | 1.2+ | 2004 02 18 | 683 | 0.1− | 0.6− | 2004 03 16 | 704 | 0.3− | 0.2− |
| 2004 01 16 | 703 | (0.8+ | 3.6+) | 2004 02 19 | 704 | 0.2− | 0.5+ | 2004 03 16 | 704 | 0.0 | 0.2− |
| 2004 01 29 | 699 | 0.6+ | 0.7− | 2004 02 19 | 704 | 0.1+ | 0.4+ | 2004 03 21 | 691 | 0.1− | 0.3− |
| 2004 01 29 | 699 | 1.2+ | 0.6+ | 2004 02 19 | 704 | 0.3− | 0.4+ | 2004 03 21 | 691 | 0.2− | 0.4− |
| 2004 01 29 | 699 | 1.3+ | 0.2+ | 2004 02 19 | 704 | 0.9+ | 0.3+ | 2004 03 21 | 691 | 0.1− | 0.2− |
| 2004 01 29 | 699 | 0.1− | 0.4− | 2004 02 19 | 704 | 0.2+ | 0.0 | 2006 09 15 | 704 | 0.9+ | 0.2+ |
| 2004 01 30 | 699 | (0.2− | 1.8−) | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 09 15 | 704 | 0.9+ | 1.0+ |
| 2004 01 30 | 699 | 1.4− | 0.6+ | 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 09 15 | 704 | 0.0 | 1.1+ |
| 2004 01 30 | 699 | 0.6+ | 0.0 | 2004 02 23 | 704 | 0.4− | 0.7+ | 2006 09 15 | 704 | 0.2+ | 0.5− |
| 2004 01 30 | 699 | 0.5− | 0.4+ | 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 09 27 | 703 | 0.7− | 0.1− |
| 2004 02 13 | 644 | 0.2− | 0.6+ | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.2− |
| 2004 02 13 | 683 | (0.6− | 2.0−) | 2004 02 26 | 704 | 0.6− | 0.5− | 2006 09 27 | 703 | 0.9− | 0.7− |
| 2004 02 13 | 683 | (0.6+ | 2.7−) | 2004 02 26 | 704 | 0.4− | 0.2− | 2006 09 27 | 703 | 0.3− | 0.8− |

**2004 CU$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.79613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24322771 | $\omega$ | 131.05385 | | −0.10067767 | −0.98078416 | |
| $a$ | 2.5417179 | $\Omega$ | 323.68024 | | +0.80707120 | +0.01771391 | |
| $e$ | 0.1557198 | $i$ | 16.38827 | | +0.58180760 | −0.19429009 | |
| $P$ | 4.05 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.5− | 0.3− | 2004 02 15 | 704 | 0.1− | 1.2+ | 2006 09 15 | 691 | 0.0 | 0.5+ |
| 2000 02 03 | 704 | 0.8+ | 0.2+ | 2004 02 15 | 704 | (0.6+ | 1.6+) | 2006 09 15 | 691 | 0.4− | 0.2+ |
| 2000 02 03 | 704 | 0.2+ | 0.6− | 2004 02 15 | 704 | 0.7+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.8+ |
| 2000 02 03 | 704 | 0.5− | 0.6+ | 2004 02 17 | 691 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.4+ |
| 2004 01 17 | 644 | 0.1− | 0.0 | 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.5+ |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2004 02 17 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.4− |
| 2004 01 17 | 644 | 0.1− | 0.9+ | 2004 02 17 | 645 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.2− |
| 2004 01 30 | 704 | 0.1− | 0.3+ | 2004 02 17 | 645 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2004 01 30 | 704 | 0.4− | 0.0 | 2004 02 23 | 704 | (0.2+ | 1.7+) | 2006 09 19 | 691 | 0.1− | 0.3− |
| 2004 01 30 | 704 | 0.3+ | 0.2+ | 2004 02 23 | 704 | 0.7+ | 1.4+ | 2006 09 26 | 691 | 0.1+ | 0.5− |
| 2004 01 30 | 704 | 0.7+ | 1.1+ | 2004 02 23 | 704 | 0.6+ | 1.5+ | 2006 09 26 | 691 | 0.3+ | 0.3− |
| 2004 02 10 | 703 | 0.3+ | 0.8− | 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.7− |
| 2004 02 10 | 703 | (0.5+ | 1.7+) | 2004 02 23 | 704 | 0.5− | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2004 02 10 | 703 | 0.9− | 0.4− | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 10 | 703 | 0.3+ | 0.6+ | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2004 02 15 | 704 | 0.0 | 1.1+ | 2004 03 18 | 645 | 0.1+ | 0.1+ | | | | |
| 2004 02 15 | 704 | 0.3+ | 0.2+ | 2004 03 18 | 645 | 0.1+ | 0.1+ | | | | |

**2004 CX$_{52}$ = 2002 PY$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.24731 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26101508 | $\omega$ | 170.23090 | | −0.99028662 | | +0.13761411 |
| $a$ | 2.4248915 | $\Omega$ | 17.71592 | | −0.13156891 | | −0.88123796 |
| $e$ | 0.1259365 | $i$ | 3.74367 | | −0.04496690 | | −0.45219687 |
| $P$ | 3.78 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 807 | 0.2− | 0.4+ | 2004 02 17 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.0 |
| 2002 08 12 | 807 | 0.2− | 0.3+ | 2004 02 17 | 691 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.2− |
| 2003 12 28 | 704 | (2.0+ | 0.5−) | 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2003 12 28 | 704 | 0.6+ | 0.1− | 2004 04 15 | 645 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2003 12 28 | 704 | 1.4+ | 0.7+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2004 01 30 | 704 | 1.5+ | 0.2− | 2004 04 16 | 645 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2004 01 30 | 704 | 0.2+ | 0.0 | 2004 04 16 | 645 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2004 01 30 | 704 | 0.4− | 0.5+ | 2006 09 27 | G96 | 0.2− | 1.0− | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2004 01 30 | 704 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 11 17 | 691 | 0.4+ | 0.0 |
| 2004 02 10 | 703 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2004 02 10 | 703 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.6+ | 0.6− | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 02 10 | 703 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2004 02 10 | 703 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.5+ | 0.0 |
| 2004 02 15 | 704 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.7+ | 0.2− |
| 2004 02 15 | 704 | 0.0 | 0.5+ | 2006 10 29 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2004 02 15 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.4− | 0.1− | | | | |
| 2004 02 15 | 704 | 0.4− | 0.5+ | 2006 10 29 | 691 | 0.2− | 0.2− | | | | |

**2004 CW$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.14383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28274908 | $\omega$ | 132.75434 | | −0.45331469 | | −0.89124889 |
| $a$ | 2.2989803 | $\Omega$ | 344.18651 | | +0.80269242 | | −0.40161292 |
| $e$ | 0.1800547 | $i$ | 2.83151 | | +0.38754441 | | −0.21067152 |
| $P$ | 3.49 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.5+ | 0.0 | 2004 02 26 | 704 | 0.2+ | 0.0 | 2006 10 27 | 703 | (0.9− | 1.6−) |
| 2004 02 11 | 291 | 0.5− | 0.2− | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.4+ |
| 2004 02 11 | 291 | 0.4− | 0.4− | 2004 02 29 | 691 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.6− |
| 2004 02 17 | 691 | 0.0 | 0.3+ | 2004 02 29 | 691 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2004 02 17 | 691 | 0.3− | 0.1+ | 2004 03 11 | 644 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2004 02 17 | 691 | 0.4− | 0.1+ | 2004 03 11 | 644 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2004 02 18 | 704 | 0.0 | 0.4− | 2004 03 11 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2004 02 18 | 704 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2004 02 18 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2004 02 18 | 704 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.1− |
| 2004 02 18 | 704 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.2− | 0.6+ | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2004 02 23 | 704 | 0.7+ | 0.5+ | 2004 03 18 | 704 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.6+ |
| 2004 02 23 | 704 | 0.2+ | 0.6+ | 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.3− | 1.9−) |
| 2004 02 23 | 704 | (1.0+ | 1.7+) | 2004 03 26 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2004 02 23 | 704 | 0.5+ | 0.4+ | 2004 03 26 | 691 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2004 02 23 | 704 | 0.4+ | 0.7+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 10 13 | 691 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2004 02 26 | 704 | 0.4+ | 0.4− | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.9+ |
| 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.9+ | 0.9− | 2006 11 22 | 704 | (1.7+ | 0.7+) |
| 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 703 | (0.4− | 1.8+) | 2006 11 22 | 704 | 1.2+ | 0.5+ |

**2004 CY$_{53}$ = 1999 YB$_{29}$ = 2006 RF$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.76150 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26578970 | $\omega$ | 27.71206 | | +0.60109574 | | −0.79909529 |
| $a$ | 2.3957635 | $\Omega$ | 25.34462 | | +0.72820302 | | +0.54176501 |
| $e$ | 0.1770987 | $i$ | 1.53003 | | +0.32924804 | | +0.26064802 |
| $P$ | 3.71 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 18 | 691 | 0.2− | 0.6− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 1999 12 18 | 691 | 0.2+ | 0.3− | 2006 09 25 | G96 | 1.1+ | 0.0 | 2006 10 27 | G96 | 0.5− | 0.5− |
| 1999 12 18 | 691 | 0.3− | 0.7− | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2004 02 11 | 291 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.7− |
| 2004 02 11 | 291 | 0.6+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2004 02 11 | 291 | 0.9+ | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.4+ | 0.1+ |
| 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2004 02 17 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 1.0− | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2004 02 29 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.5− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 2004 02 29 | 691 | 0.7+ | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 1.0+ | 0.5− | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2004 02 29 | 691 | 0.9− | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.5− | 2006 10 31 | 691 | 0.4+ | 0.1+ |
| 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.6− | 1.4− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2004 02 29 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.5− |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.1+ | | | | |
| 2006 09 18 | 691 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.2+ | | | | |

**2004 CR$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.74420 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21061967 | $\omega$ | 267.42517 | | −0.46129699 | | +0.88580664 |
| $a$ | 2.7977147 | $\Omega$ | 334.90904 | | −0.75934109 | | −0.42360471 |
| $e$ | 0.1722647 | $i$ | 6.84139 | | −0.45891851 | | −0.18948784 |
| $P$ | 4.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.2− | 0.3+ | 2004 03 17 | 691 | 0.3− | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.5− |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 03 17 | 691 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.1+ |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2004 03 17 | 691 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.7− | 0.5− |
| 2004 02 17 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2004 03 26 | 691 | 0.0 | 0.4− |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2004 03 18 | 704 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.0 | 0.2+ |
| 2004 02 17 | 691 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.3− | 0.9+ | 2004 03 26 | 691 | 0.1− | 0.2− |
| 2004 02 26 | 704 | 1.1+ | 0.3+ | 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 2004 02 26 | 704 | 0.5+ | 0.7− | 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2004 02 26 | 704 | 0.6+ | 0.1− | 2004 03 20 | 704 | 1.4+ | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 2004 02 26 | 704 | 0.1+ | 0.8− | 2004 03 20 | 704 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2004 02 26 | 704 | 0.2+ | 0.0 | 2004 03 20 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 02 29 | 691 | 0.2− | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.6+ |
| 2004 02 29 | 691 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.5+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2004 02 29 | 691 | 0.1− | 0.2+ | 2004 03 23 | 704 | 1.2+ | 0.5− | 2006 10 20 | G96 | 0.3− | 0.2− |

**2004 CH$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.10347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26223655 | $\omega$ | 321.44268 | | −0.12092934 | | +0.99243572 |
| $a$ | 2.4173558 | $\Omega$ | 301.60213 | | −0.90448040 | | −0.11894202 |
| $e$ | 0.1429276 | $i$ | 1.42313 | | −0.40901259 | | −0.03039974 |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 0.4+ | 0.4+ | 2004 02 26 | 704 | 1.1+ | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.1+ |
| 1998 10 20 | 691 | 0.4+ | 0.1+ | 2004 02 26 | 704 | 0.7+ | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 1.1− | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.1− | 2005 08 24 | 644 | 0.3− | 0.4+ | | |
| 2000 02 05 | 695 | 0.3+ | 0.5+ | 2004 02 29 | 691 | 0.2− | 0.3+ | 2005 08 24 | 644 | 0.1− | 0.1+ | | |
| 2000 02 05 | 695 | 0.5+ | 0.1+ | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2005 08 24 | 644 | 0.3− | 0.1+ | | |
| 2004 02 12 | 291 | 0.3+ | 0.2+ | 2005 06 17 | G96 | 0.1− | 0.3+ | 2005 10 25 | G96 | 0.2− | 0.0 | | |
| 2004 02 12 | 291 | 0.3− | 0.4+ | 2005 06 17 | G96 | 0.2+ | 0.3+ | 2005 10 25 | G96 | 0.5− | 0.6+ | | |
| 2004 02 12 | 291 | 0.6− | 0.2+ | 2005 06 17 | G96 | 0.0 | 0.5− | 2005 10 25 | G96 | 0.9+ | 1.0+ | | |
| 2004 02 17 | 691 | 0.2+ | 0.1− | 2005 06 17 | G96 | 0.3− | 0.4+ | 2005 10 25 | G96 | 0.5− | 0.4+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.2− | 2005 07 29 | 644 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2005 07 29 | 644 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1+ | | |
| 2004 02 26 | 704 | 1.3+ | 0.4+ | 2005 07 29 | 644 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.7− | | |
| 2004 02 26 | 704 | (1.9+ | 0.1+) | 2005 08 06 | 644 | 0.0 | 0.3+ | | | | | | |

**2004 CA$_{56}$ = 2006 UL$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.74126 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28595259 | $\omega$ | 27.10505 | | −0.40751094 | | −0.91171162 |
| $a$ | 2.2817779 | $\Omega$ | 86.98244 | | +0.82810117 | | −0.39299326 |
| $e$ | 0.1637648 | $i$ | 2.99190 | | +0.38494582 | | −0.11974226 |
| $P$ | 3.45 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.2+ | 0.0 | 2004 02 17 | 291 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.0 | | |
| 2004 02 13 | 691 | 0.1− | 0.2− | 2004 02 18 | 291 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.1− | | |
| 2004 02 13 | 691 | 0.2+ | 0.1− | 2004 02 18 | 291 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.2+ | | |
| 2004 02 16 | 291 | 0.1− | 0.1+ | 2004 02 18 | 291 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2+ | | |
| 2004 02 16 | 291 | 0.4− | 0.1+ | 2004 02 22 | 291 | 1.1− | 0.4− | 2006 10 23 | 691 | 0.0 | 0.0 | | |
| 2004 02 16 | 291 | (2.0− | 0.8−) | 2004 02 22 | 291 | 0.2+ | 0.8− | 2006 10 27 | 691 | 0.2+ | 0.0 | | |
| 2004 02 16 | 704 | 1.1+ | 0.5+ | 2004 02 22 | 291 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.3− | 0.0 | | |
| 2004 02 16 | 704 | 0.9+ | 0.9+ | 2004 02 23 | 704 | 1.0+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.2+ | | |
| 2004 02 16 | 704 | (1.6+ | 1.0+) | 2004 02 23 | 704 | 1.0+ | 0.3+ | 2006 11 15 | G96 | 0.6+ | 0.0 | | |
| 2004 02 16 | 704 | (1.9+ | 1.0+) | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2004 02 17 | 291 | 0.0 | 0.2+ | 2004 02 23 | 704 | 1.4+ | 1.0+ | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 2004 02 17 | 291 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.2− | | |

**2004 CN$_{56}$ = 2006 SQ$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.56391 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26584240 | $\omega$ | 84.67856 | | −0.34769264 | | −0.93746338 |
| $a$ | 2.3954469 | $\Omega$ | 25.68681 | | +0.84445951 | | −0.32074861 |
| $e$ | 0.1515244 | $i$ | 2.18153 | | +0.40742848 | | −0.13521369 |
| $P$ | 3.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 1995 11 30 | 691 | 0.1− | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 1995 11 30 | 691 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.2− | | |
| 2000 01 24 | 012 | 0.1− | 0.0 | 2004 03 30 | 691 | 0.1− | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.0 | | |
| 2000 01 24 | 012 | 0.0 | 0.8− | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 | | |
| 2000 01 24 | 012 | 0.0 | 1.0− | 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2004 02 11 | 644 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.2− | | |
| 2004 02 11 | 644 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2004 02 11 | 644 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2004 02 14 | 608 | 0.6+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.5+ | | |
| 2004 02 14 | 608 | 0.4+ | 0.8− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.3+ | | |
| 2004 02 14 | 608 | 0.4+ | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2004 02 17 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.6− | 0.5− | | |
| 2004 02 17 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.1+ | | |
| 2004 02 17 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.6− | 0.2− | | |
| 2004 02 23 | 704 | 0.4− | 0.9+ | 2006 10 02 | 691 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.4− | | |
| 2004 02 23 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2− | | | | | | |

**2004 CU$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.07127 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28010702 | $\omega$ | 188.00073 | | −0.78674185 | | +0.61571829 |
| $a$ | 2.3134142 | $\Omega$ | 30.14205 | | −0.56139363 | | −0.68411956 |
| $e$ | 0.2106692 | $i$ | 5.01683 | | −0.25666019 | | −0.39098774 |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.2+ | 0.1− | 2004 02 13 | 699 | 0.1+ | 0.6− | 2004 04 14 | 291 | 0.2+ | 0.4+ | | |
| 1995 09 29 | 691 | 0.1+ | 0.3− | 2004 02 13 | 699 | 0.3− | 0.7+ | 2004 04 14 | 291 | 0.3+ | 0.2+ | | |
| 1995 09 29 | 691 | 0.1− | 0.3− | 2004 02 13 | 699 | 0.6+ | 0.5− | 2004 04 15 | 645 | 0.2− | 0.1− | | |
| 2002 10 11 | 291 | 0.6− | 0.4+ | 2004 02 13 | 699 | 0.2− | 0.1− | 2004 04 15 | 645 | 0.2− | 0.2− | | |
| 2002 10 11 | 291 | 0.1− | 0.3+ | 2004 02 15 | 704 | 0.4+ | 0.5+ | 2004 04 17 | 291 | 0.1+ | 0.5+ | | |
| 2002 10 11 | 291 | 0.3+ | 0.5+ | 2004 02 15 | 704 | 0.1+ | 0.0 | 2004 04 17 | 291 | 0.0 | 0.3+ | | |
| 2004 01 20 | 704 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.5+ | 0.1− | 2004 04 17 | 291 | 0.1+ | 0.1+ | | |
| 2004 01 20 | 704 | 0.4+ | 0.3+ | 2004 02 15 | 704 | 0.6+ | 0.1− | 2004 04 19 | 291 | 0.6+ | 0.2+ | | |
| 2004 01 20 | 704 | 0.6− | 0.2+ | 2004 02 15 | 704 | 0.4+ | 0.2+ | 2004 04 19 | 291 | 0.5+ | 0.2+ | | |
| 2004 01 30 | 704 | 0.4− | 0.1+ | 2004 02 18 | 691 | 0.2− | 0.0 | 2004 04 19 | 291 | 0.6+ | 0.1+ | | |
| 2004 01 30 | 704 | 0.6− | 0.1− | 2004 02 18 | 691 | 0.3− | 0.0 | 2005 07 29 | 644 | 0.4− | 0.4+ | | |
| 2004 01 30 | 704 | 0.1+ | 0.7− | 2004 02 18 | 691 | 0.1− | 0.0 | 2005 07 29 | 644 | 0.4− | 0.4+ | | |
| 2004 01 30 | 704 | 0.0 | 0.0 | 2004 04 13 | 291 | 0.1− | 0.0 | 2005 07 29 | 644 | 0.3− | 0.5+ | | |
| 2004 02 10 | 644 | 0.4+ | 0.0 | 2004 04 13 | 291 | 0.4− | 0.3+ | 2006 11 21 | 691 | 0.3− | 0.0 | | |
| 2004 02 10 | 644 | 0.0 | 0.2− | 2004 04 13 | 291 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.2− | | |
| 2004 02 10 | 644 | 0.2+ | 0.0 | 2004 04 14 | 291 | 0.5+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.2− | | |

**2004 CV$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.43817 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18566032 | $\omega$ | 347.24573 | | −0.11039382 | | −0.97993395 |
| $a$ | 3.0431497 | $\Omega$ | 108.90562 | | +0.92658700 | | −0.16187440 |
| $e$ | 0.0507000 | $i$ | 10.10329 | | +0.35951320 | | +0.11630187 |
| $P$ | 5.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.2− | 0.2− | 2004 01 28 | 703 | 0.9+ | 1.1+ | 2004 03 18 | 644 | 0.1+ | 0.3+ | | |
| 2001 08 16 | 644 | 0.2+ | 0.2+ | 2004 02 10 | 644 | 0.2+ | 0.2+ | 2004 03 18 | 645 | 0.0 | 0.1− | | |
| 2001 08 16 | 644 | 0.0 | 0.0 | 2004 02 10 | 644 | 0.2+ | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.0 | | |
| 2004 01 18 | 644 | 0.3+ | 0.3+ | 2004 02 10 | 644 | 0.4− | 0.3+ | 2004 04 16 | 645 | 0.1− | 0.1− | | |
| 2004 01 18 | 644 | 0.2+ | 0.4+ | 2004 02 15 | 704 | 0.0 | 0.2− | 2004 04 16 | 645 | 0.1− | 0.1− | | |
| 2004 01 18 | 644 | 0.4+ | 0.5+ | 2004 02 15 | 704 | 0.6+ | 0.1− | 2005 03 31 | 691 | 0.2+ | 0.5+ | | |
| 2004 01 18 | 644 | 0.0 | 0.6+ | 2004 02 15 | 704 | 0.1− | 0.0 | 2005 03 31 | 691 | 0.3+ | 0.4+ | | |
| 2004 01 18 | 644 | 0.3+ | 0.6+ | 2004 02 15 | 704 | 1.0+ | 0.8+ | 2005 03 31 | 691 | 0.2+ | 0.3+ | | |
| 2004 01 18 | 644 | 0.2+ | 0.5+ | 2004 03 17 | 645 | 0.0 | 0.2− | 2006 06 21 | 691 | 0.6+ | 0.5− | | |
| 2004 01 28 | 703 | 0.6+ | 0.4− | 2004 03 17 | 645 | 0.0 | 0.2− | 2006 06 21 | 691 | 0.0 | 0.6− | | |
| 2004 01 28 | 703 | 0.6− | 0.0 | 2004 03 18 | 644 | 0.0 | 0.2+ | 2006 06 21 | 691 | 0.5− | 0.4− | | |
| 2004 01 28 | 703 | 0.1+ | 0.8+ | 2004 03 18 | 644 | 0.2+ | 0.2+ | | | | | | |

**2004 CJ$_{59}$ = 2006 TK$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.28641 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23984618 | $\omega$ | 64.06977 | | −0.22011446 | | −0.97349968 |
| $a$ | 2.5655522 | $\Omega$ | 38.80860 | | +0.85583791 | | −0.22324181 |
| $e$ | 0.1637673 | $i$ | 5.68039 | | +0.46807167 | | −0.04961325 |
| $P$ | 4.11 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 30 | 691 | 0.5− | 0.2− | 2004 02 15 | 704 | 0.6+ | 0.6+ | 2006 10 11 | 568 | 0.2− | 0.2+ | | |
| 1994 09 30 | 691 | 0.5+ | 0.1− | 2004 02 15 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 568 | 0.2− | 0.2+ | | |
| 1994 09 30 | 691 | 0.1+ | 0.3+ | 2004 02 15 | 704 | 0.8+ | 1.1+ | 2006 10 11 | 568 | 0.2− | 0.1+ | | |
| 2004 02 10 | 644 | 0.3− | 0.4− | 2004 02 22 | 703 | 1.0+ | 0.6− | 2006 10 15 | 568 | 0.3+ | 0.1− | | |
| 2004 02 10 | 644 | 0.3− | 0.2− | 2004 02 22 | 703 | 0.7− | 0.9− | 2006 10 15 | 568 | 0.1+ | 0.0 | | |
| 2004 02 10 | 644 | 0.2+ | 0.2+ | 2004 02 22 | 703 | 0.6− | 0.0 | 2006 10 15 | 568 | 0.1+ | 0.1− | | |
| 2004 02 15 | 704 | 0.9+ | 0.9+ | 2004 02 22 | 703 | 2.1− | 1.2− | | | | | | |

**2004 CV$_{59}$ = 2006 SH$_{315}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 298.72596 | | | (2000.0) | | |
| $n$ | 0.26551598 | $\omega$ | 54.07510 | | +0.05827195 | −0.99612756 |
| $a$ | 2.3974098 | $\Omega$ | 32.77102 | | +0.87227629 | +0.01873116 |
| $e$ | 0.1095788 | $i$ | 6.98606 | | +0.48552905 | +0.08590124 |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 1999 12 12 | 704 | 0.2− | 0.7− | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 1999 12 12 | 704 | 0.8+ | 0.7− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2002 08 30 | 644 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2002 08 30 | 644 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2004 01 28 | 703 | 0.8− | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.6+ | 0.1− |
| 2004 01 28 | 703 | 0.0 | 0.7+ | 2006 10 01 | 691 | 0.6− | 0.5− | 2006 11 11 | 703 | (1.6+ | 0.2−) |
| 2004 01 28 | 703 | 0.3+ | 1.2− | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2004 01 28 | 703 | 0.9+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.1+ |
| 2004 01 30 | 704 | 0.5+ | 1.1+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2004 01 30 | 704 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2004 01 30 | 704 | 0.5− | 0.2+ | 2006 10 15 | 703 | 1.1+ | 1.1+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 1.4+ | 0.9+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2004 02 10 | 644 | 0.2− | 0.2+ | 2006 10 15 | 703 | (1.2+ | 2.1+) | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 10 15 | 703 | 0.7− | 1.3+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2004 02 10 | 644 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2004 02 15 | 704 | 1.0+ | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2004 02 15 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.5+ | 0.7− | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2004 02 15 | 704 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.2+ | | | | |
| 2004 02 15 | 704 | 0.1− | 0.5− | 2006 10 22 | G96 | 0.9− | 0.4+ | | | | |

**2004 CA$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 223.16856 | | | (2000.0) | | |
| $n$ | 0.27600634 | $\omega$ | 108.57557 | | −0.99744036 | +0.05076432 |
| $a$ | 2.3362717 | $\Omega$ | 74.35834 | | −0.06699835 | −0.90954546 |
| $e$ | 0.1520177 | $i$ | 2.99750 | | +0.02497904 | −0.41249246 |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.2− | 0.3+ | 2004 01 30 | 704 | 0.7− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.4+ |
| 1995 10 26 | 691 | 0.0 | 0.1+ | 2004 01 30 | 704 | 0.5− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.4+ |
| 1995 10 26 | 691 | 0.0 | 0.2− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1+ |
| 1999 12 08 | 691 | 0.3− | 0.1− | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.3− | 0.1− |
| 1999 12 08 | 691 | 0.3+ | 0.3− | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 1999 12 08 | 691 | 0.3+ | 0.4− | 2004 02 15 | 704 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.7− | 0.1− |
| 2004 01 22 | 704 | 0.3+ | 0.0 | 2004 02 15 | 704 | 1.0+ | 0.2− | 2006 09 30 | G96 | 0.3− | 0.1+ |
| 2004 01 22 | 704 | 0.4+ | 0.1+ | 2004 02 15 | 704 | (1.9+ | 0.3+) | 2006 11 24 | G96 | 0.1− | 0.8+ |
| 2004 01 22 | 704 | 0.5− | 0.1− | 2004 02 23 | 704 | (0.1− | 1.6+) | 2006 11 24 | G96 | 0.1− | 0.8+ |
| 2004 01 22 | 704 | 0.5+ | 0.4+ | 2004 02 23 | 704 | 0.2+ | 1.4+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2004 01 22 | 704 | 0.5+ | 0.5+ | 2004 02 23 | 704 | 0.7+ | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2004 01 30 | 704 | 0.2− | 1.3− | 2004 02 23 | 704 | 0.3− | 0.5+ | | | | |
| 2004 01 30 | 704 | 0.1+ | 0.7+ | 2006 09 26 | G96 | 0.3+ | 0.6+ | | | | |

**2004 CC$_{60}$ = 2006 QU$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 308.26258 | | | (2000.0) | | |
| $n$ | 0.25580477 | $\omega$ | 29.96159 | | +0.66969967 | −0.74216154 |
| $a$ | 2.4577080 | $\Omega$ | 18.03805 | | +0.66327092 | +0.58174496 |
| $e$ | 0.1468290 | $i$ | 4.89665 | | +0.33402701 | +0.33281984 |
| $P$ | 3.85 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 11 | 691 | 0.0 | 0.1+ | 2004 01 28 | 691 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.1− | 0.1+ |
| 1991 11 11 | 691 | 0.0 | 0.3− | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 1.6+ | 0.5+ |
| 1991 11 11 | 691 | 0.1+ | 0.2− | 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.3+ |
| 2002 08 13 | 644 | 0.2− | 0.7+ | 2004 02 11 | 699 | 1.1− | 0.4− | 2006 08 23 | 644 | 0.2− | 0.3+ |
| 2002 08 13 | 644 | 0.5− | 0.7+ | 2004 02 11 | 699 | 0.7− | 0.1− | 2006 08 23 | 644 | 0.1− | 0.6+ |
| 2002 08 13 | 644 | 0.4− | 0.6+ | 2004 02 11 | 699 | 0.8+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2003 12 28 | 704 | 0.6+ | 1.1+ | 2004 02 11 | 699 | 1.0− | 0.8+ | 2006 08 24 | 644 | 0.3− | 0.2+ |
| 2003 12 28 | 704 | 0.1+ | 1.1+ | 2004 02 15 | 704 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.2− | 0.3+ |
| 2003 12 28 | 704 | 0.3+ | 0.4− | 2004 02 15 | 704 | 0.7− | 1.0+ | | | | |

**2004 CC$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 247.98916 | | | (2000.0) | | |
| $n$ | 0.25535929 | $\omega$ | 108.88173 | | −0.66456558 | −0.74580818 |
| $a$ | 2.4605656 | $\Omega$ | 22.96564 | | +0.63342000 | −0.59498373 |
| $e$ | 0.1175955 | $i$ | 6.78146 | | +0.39639840 | −0.29960729 |
| $P$ | 3.86 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 703 | 0.1− | 0.2− | 2004 02 22 | 703 | 0.8− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2004 01 28 | 703 | 0.1+ | 0.1− | 2004 02 22 | 703 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2004 01 28 | 703 | 0.5+ | 0.5+ | 2004 02 22 | 703 | 0.7− | 0.7+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2004 01 28 | 703 | 0.8+ | 0.2− | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 691 | 0.2+ | 0.0 | 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2004 02 11 | 691 | 0.2+ | 0.2− | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2004 02 11 | 691 | 0.1+ | 0.0 | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2004 02 15 | 704 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.7− | 0.2− |
| 2004 02 15 | 704 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2004 02 15 | 704 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2004 02 15 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2004 02 15 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2004 02 22 | 703 | 0.3− | 1.3+ | 2006 09 30 | 691 | 0.1− | 0.1+ | | | | |

**2004 CK$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.21731 | | | (2000.0) | | |
| $n$ | 0.30257259 | $\omega$ | 44.71060 | | +0.18513339 | −0.98201609 |
| $a$ | 2.1974365 | $\Omega$ | 34.66993 | | +0.88243403 | +0.14954802 |
| $e$ | 0.2165117 | $i$ | 3.73077 | | +0.43247636 | +0.11523799 |
| $P$ | 3.26 | $H$ | 17.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2004 01 18 | 644 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 17 | 704 | (1.9− | 0.9+) |
| 2004 01 18 | 644 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 17 | 704 | (1.9− | 1.1+) |
| 2004 01 30 | 704 | 0.8+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.5− | 0.5+ |
| 2004 01 30 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.7− | 1.0+ |
| 2004 01 30 | 704 | 1.1+ | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 1.0− | 0.3+ |
| 2004 01 30 | 704 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.6− |
| 2004 01 30 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.4− |
| 2004 02 11 | 691 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2004 02 13 | 699 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2004 02 13 | 699 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.4− | 0.5− |
| 2004 02 13 | 699 | 0.9+ | 0.0 | 2006 10 31 | G96 | (2.4− | 1.0+) | 2006 11 22 | 704 | 0.7+ | 0.4+ |
| 2004 02 13 | 699 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.8− | 0.4+ |
| 2004 02 15 | 704 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.6− |
| 2004 02 15 | 704 | 0.5+ | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.3+ | 2006 12 01 | 704 | 0.2− | 0.0 |
| 2004 02 15 | 704 | 1.2− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.1+ | 0.7− |
| 2004 02 15 | 704 | 0.8− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.7+ | 0.0 |
| 2004 02 15 | 704 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.4− | 0.2− | 2006 12 01 | 704 | 0.7+ | 0.6− |
| 2004 03 17 | 645 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 03 17 | 645 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.0 | 0.0 | | | | |

**2004 $CL_{61}$ = 2006 $UA_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 191.14097 | | | (2000.0) | | |
| $n$ | 0.25949303 | $\omega$ | 118.52242 | | −0.91336006 | +0.39513250 |
| $a$ | 2.4343644 | $\Omega$ | 84.89643 | | −0.39946068 | −0.82298685 |
| $e$ | 0.0960823 | $i$ | 5.65817 | | −0.07876912 | −0.40812125 |
| $P$ | 3.80 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 02 | 691 | 0.2+ | 0.7+ | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 1997 05 02 | 691 | 0.1+ | 0.3+ | 2004 02 15 | 704 | 0.4+ | 0.5− | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 1997 05 02 | 691 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.6− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2004 02 11 | 691 | 0.0 | 0.2+ | 2004 02 15 | 704 | 0.3+ | 0.1+ | | | | |
| 2004 02 11 | 691 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.3+ | | | | |

**2004 $CR_{61}$ = 2006 $SC_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 252.21345 | | | (2000.0) | | |
| $n$ | 0.24636597 | $\omega$ | 118.20354 | | −0.48389663 | −0.87512375 |
| $a$ | 2.5200872 | $\Omega$ | 0.74221 | | +0.75429192 | −0.41799354 |
| $e$ | 0.0482605 | $i$ | 6.97806 | | +0.44372035 | −0.24380284 |
| $P$ | 4.00 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.1+ | 0.1− | 2004 02 11 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2002 10 04 | 644 | 0.0 | 0.2− | 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.2− |
| 2002 10 04 | 644 | 0.1+ | 0.0 | 2004 02 15 | 704 | 0.5− | 0.5− | 2006 09 25 | 691 | 0.3− | 0.5− |
| 2004 01 18 | 644 | 0.2+ | 0.2− | 2004 02 15 | 704 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2004 01 18 | 644 | 0.3+ | 0.4− | 2004 02 15 | 704 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2004 01 18 | 644 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.5+ |

**2004 $CN_{63}$ = 2006 $UT_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 230.86181 | | | (2000.0) | | |
| $n$ | 0.26116943 | $\omega$ | 133.05488 | | −0.97189588 | −0.22561787 |
| $a$ | 2.4239360 | $\Omega$ | 34.06824 | | +0.16559318 | −0.85808842 |
| $e$ | 0.0727495 | $i$ | 6.88922 | | +0.16732395 | −0.46128174 |
| $P$ | 3.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 699 | 0.4− | 1.4+ | 2004 02 16 | 691 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1− |
| 2004 01 30 | 699 | 0.2+ | 0.1+ | 2004 02 18 | 704 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 2004 01 30 | 699 | 0.2+ | 0.7− | 2004 02 18 | 704 | 0.5+ | 0.4− | 2006 10 16 | 691 | 0.3+ | 0.5+ |
| 2004 01 30 | 699 | 1.5− | 0.1− | 2004 02 18 | 704 | 0.5+ | 1.0+ | 2006 10 20 | 695 | 0.0 | 0.1− |
| 2004 02 12 | 644 | 0.1+ | 0.2− | 2004 02 18 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 695 | 0.1− | 0.1− |
| 2004 02 12 | 644 | 0.1− | 0.1− | 2004 02 18 | 704 | 0.1+ | 0.6− | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2004 02 12 | 644 | 0.0 | 0.2− | 2004 03 16 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2004 02 15 | 704 | 0.2− | 0.7+ | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.1+ |
| 2004 02 15 | 704 | 0.3− | 0.5+ | 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2004 02 15 | 704 | 0.8+ | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2004 02 15 | 704 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2004 02 16 | 691 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.6− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2004 02 16 | 691 | 0.1− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.6− | | | | |

**2004 $CO_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 230.48084 | | | (2000.0) | | |
| $n$ | 0.17819763 | $\omega$ | 61.51686 | | +0.22060698 | −0.97420016 |
| $a$ | 3.1275296 | $\Omega$ | 15.95288 | | +0.82334521 | +0.15983299 |
| $e$ | 0.0813405 | $i$ | 9.97508 | | +0.52291034 | +0.15933445 |
| $P$ | 5.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.6− | 0.3+ | 2002 12 02 | 704 | 1.4+ | 0.1− | 2004 02 17 | 608 | 0.0 | 0.2+ |
| 2002 11 06 | 699 | 0.5− | 0.1− | 2004 02 12 | 644 | 0.1− | 0.3− | 2004 02 18 | 704 | 0.9+ | 0.4+ |
| 2002 11 06 | 699 | 0.5− | 0.7+ | 2004 02 12 | 644 | 0.3+ | 0.0 | 2004 02 18 | 704 | 0.5+ | 0.6+ |
| 2002 11 06 | 699 | 0.0 | 0.2− | 2004 02 12 | 644 | 0.1+ | 0.5− | 2004 02 18 | 704 | 0.2+ | 0.3− |
| 2002 11 13 | 644 | 0.8− | 0.3+ | 2004 02 15 | 704 | 0.6+ | 0.5− | 2004 02 18 | 704 | 0.3− | 0.7− |
| 2002 11 13 | 644 | 0.3− | 0.1+ | 2004 02 15 | 704 | 0.0 | 0.2− | 2004 02 18 | 704 | 0.9+ | 0.1− |
| 2002 11 13 | 644 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.2− | 0.7+ | 2004 03 23 | 704 | 1.0+ | 1.5+ |
| 2002 11 25 | 644 | 0.1+ | 0.1+ | 2004 02 15 | 704 | 0.3− | 0.7− | 2004 03 23 | 704 | 0.5+ | 0.5− |
| 2002 11 25 | 644 | 0.0 | 0.3+ | 2004 02 16 | 691 | 0.6− | 0.2+ | 2004 03 23 | 704 | 0.4+ | 0.5+ |
| 2002 11 25 | 644 | 0.2+ | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.5− | 0.2+ |
| 2002 12 02 | 704 | 0.9− | 0.4+ | 2004 02 16 | 691 | 0.3− | 0.2− | 2005 01 20 | 809 | 0.3+ | 0.7+ |
| 2002 12 02 | 704 | 0.7+ | 1.4− | 2004 02 17 | 608 | 0.0 | 0.5+ | 2005 01 20 | 809 | 0.4+ | 0.6+ |
| 2002 12 02 | 704 | 0.6+ | 0.7+ | 2004 02 17 | 608 | 0.3− | 0.5+ | 2005 01 20 | 809 | 0.3+ | 0.6+ |

**2004 $CQ_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 165.68717 | | | (2000.0) | | |
| $n$ | 0.28996638 | $\omega$ | 200.75788 | | +0.03133696 | +0.98398033 |
| $a$ | 2.2606723 | $\Omega$ | 71.37099 | | −0.88894163 | +0.10771109 |
| $e$ | 0.0923165 | $i$ | 10.67307 | | −0.45694723 | −0.14205998 |
| $P$ | 3.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 21 | 691 | 0.1− | 0.0 | 2004 02 13 | 644 | 0.1− | 0.0 | 2005 08 05 | 644 | 0.3− | 0.7+ |
| 1992 11 21 | 691 | 0.2− | 0.1+ | 2004 02 15 | 704 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.1− | 0.8+ |
| 1992 11 21 | 691 | 0.3− | 0.6+ | 2004 02 15 | 704 | 0.4− | 0.5+ | 2005 08 10 | E12 | 0.4+ | 0.8+ |
| 1999 12 07 | 704 | 1.1+ | 0.2− | 2004 02 15 | 704 | 0.8+ | 0.2− | 2005 08 10 | E12 | 0.1+ | 0.5+ |
| 1999 12 07 | 704 | 0.1+ | 0.8− | 2004 02 15 | 704 | 0.2+ | 0.2+ | 2005 08 10 | E12 | 0.0 | 0.0 |
| 1999 12 07 | 704 | 1.5+ | 0.2+ | 2004 03 25 | 704 | 0.5+ | 1.7+ | 2005 08 10 | E12 | 0.0 | 0.9+ |
| 2001 04 24 | 608 | 0.3+ | 0.1− | 2004 03 25 | 704 | 0.2− | 0.9+ | 2005 08 28 | E12 | 0.4− | 0.2+ |
| 2001 04 24 | 608 | 0.3− | 0.2− | 2004 03 25 | 704 | 0.2− | 0.9+ | 2005 08 28 | E12 | 0.2− | 0.0 |
| 2001 04 24 | 608 | 0.0 | 0.3− | 2004 03 25 | 704 | 0.2+ | 0.9+ | 2005 08 28 | E12 | 0.7− | 0.1+ |
| 2002 10 31 | 704 | 0.1− | 0.3− | 2004 03 25 | 704 | 0.2− | 1.5+ | 2005 08 28 | E12 | 0.5+ | 0.7− |
| 2002 10 31 | 704 | 0.2− | 0.1− | 2005 07 27 | 644 | 0.1+ | 0.8+ | 2005 09 10 | 699 | 1.0− | 1.0− |
| 2002 10 31 | 704 | 0.5+ | 0.6− | 2005 07 27 | 644 | 0.1− | 0.8+ | 2005 09 10 | 699 | 0.2+ | 0.1− |
| 2004 02 13 | 644 | 0.3+ | 0.2+ | 2005 07 27 | 644 | 0.2+ | 0.6+ | 2005 09 10 | 699 | 0.3− | 0.2− |
| 2004 02 13 | 644 | 0.3− | 0.0 | 2005 08 05 | 644 | 0.2+ | 1.0+ | 2005 09 10 | 699 | 1.2− | 0.1+ |

**2004 $CP_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 183.43263 | | | (2000.0) | | |
| $n$ | 0.17857941 | $\omega$ | 74.59907 | | −0.63733786 | −0.76027195 |
| $a$ | 3.1230705 | $\Omega$ | 55.68707 | | +0.63573828 | −0.61091688 |
| $e$ | 0.2095880 | $i$ | 8.74978 | | +0.43547364 | −0.22083278 |
| $P$ | 5.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 03 | 691 | 0.3− | 0.2− | 2004 02 14 | 608 | 0.3− | 0.1− | 2004 03 18 | 703 | 1.1− | 0.3+ |
| 1991 11 03 | 691 | 0.2+ | 0.4+ | 2004 02 15 | 704 | 0.1+ | 0.2− | 2004 03 18 | 703 | 0.2− | 1.1− |
| 1991 11 03 | 691 | 0.1+ | 0.2− | 2004 02 15 | 704 | 0.3− | 0.3− | 2004 03 18 | 644 | 0.2− | 0.2+ |
| 2002 10 15 | 644 | 0.3− | 0.1− | 2004 02 15 | 704 | 0.7− | 0.2− | 2004 03 18 | 703 | 0.9+ | 0.6+ |
| 2002 10 15 | 644 | 0.0 | 0.5+ | 2004 02 15 | 704 | 0.4− | 0.1− | 2004 03 18 | 703 | 0.1− | 0.7− |
| 2002 10 15 | 644 | 0.1+ | 0.2+ | 2004 02 15 | 704 | 1.0− | 0.5− | 2004 03 18 | 644 | 0.2− | 0.1+ |
| 2003 12 27 | 704 | 1.3+ | 0.3− | 2004 02 18 | 704 | 0.3− | 0.1− | 2004 03 23 | 704 | 0.5+ | 0.4+ |
| 2003 12 27 | 704 | 0.1− | 1.5− | 2004 02 18 | 704 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.1+ |
| 2003 12 27 | 704 | 0.9− | 0.1+ | 2004 02 18 | 704 | 0.3− | 0.4− | 2004 03 23 | 704 | 0.5+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.0 | 0.1− | 2004 02 18 | 704 | 0.5+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.2− |
| 2004 01 21 | 620 | 0.7+ | 1.6− | 2004 02 19 | 704 | 0.1+ | 0.8+ | 2004 03 23 | 704 | 0.1− | 0.1− |
| 2004 01 22 | 620 | 0.7− | 0.9− | 2004 02 19 | 704 | 0.0 | 0.6+ | 2004 03 25 | 704 | 0.2+ | 0.0 |
| 2004 01 22 | 620 | 0.8− | 0.3+ | 2004 02 19 | 704 | 0.4+ | 0.4+ | 2004 03 25 | 704 | 0.3+ | 0.3− |
| 2004 01 28 | 703 | 0.5+ | 0.6+ | 2004 02 19 | 704 | 0.2− | 1.0+ | 2004 03 25 | 704 | 0.3− | 0.5− |
| 2004 01 28 | 703 | 0.9− | 0.2− | 2004 02 19 | 704 | 0.2− | 0.7+ | 2004 03 25 | 704 | 0.4+ | 0.2+ |
| 2004 01 28 | 703 | 0.1+ | 0.3+ | 2004 02 23 | 608 | 0.7+ | 0.5+ | 2004 03 25 | 704 | 1.0+ | 0.7− |
| 2004 01 28 | 703 | 1.1+ | 1.1+ | 2004 02 23 | 608 | 0.1+ | 0.2+ | 2004 04 14 | 644 | 0.4− | 0.7− |
| 2004 02 14 | 608 | 0.2− | 0.1− | 2004 02 23 | 608 | 1.5+ | 0.1− | 2004 04 14 | 644 | 0.6− | 0.3+ |
| 2004 02 14 | 608 | 0.2− | 0.1+ | 2004 03 18 | 644 | 0.3− | 0.3+ | 2004 04 14 | 644 | 0.1− | 0.1+ |

**2004 CV$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.34537 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28015295 | $\omega$ | 357.08874 | | +0.36787479 | | −0.92626421 |
| $a$ | 2.3131613 | $\Omega$ | 71.31555 | | +0.85488046 | | +0.30225179 |
| $e$ | 0.1515008 | $i$ | 4.95798 | | +0.36585179 | | +0.22511878 |
| $P$ | 3.52 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.5− | 0.2+ | 2004 02 15 | 704 | (0.1− | 1.9+) | 2006 09 20 | 644 | 0.3+ | 0.2− |
| 1999 10 09 | 704 | 0.2+ | 0.1− | 2004 02 15 | 704 | 0.8+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 1999 10 09 | 704 | 0.3+ | 0.2− | 2004 02 15 | 704 | 0.7+ | 0.6+ | 2006 09 26 | 703 | 0.0 | 0.5− |
| 2003 12 28 | 704 | 0.6+ | 0.3− | 2004 02 17 | 691 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.9− | 0.1+ |
| 2003 12 28 | 704 | 0.8+ | 0.8− | 2004 02 17 | 691 | 0.1− | 0.1− | 2006 09 26 | 703 | 1.0+ | 0.1− |
| 2003 12 28 | 704 | 0.8+ | 1.1− | 2004 02 17 | 691 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2003 12 28 | 704 | 0.2+ | 0.6+ | 2005 02 18 | 809 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2004 01 12 | 644 | 0.4− | 0.4+ | 2005 02 18 | 809 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2004 01 12 | 644 | 0.3− | 0.3+ | 2005 02 18 | 809 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.3+ |
| 2004 01 12 | 644 | 0.2− | 0.0 | 2006 09 18 | 703 | 1.2+ | 1.1− | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2004 01 17 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 1.2− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2004 01 17 | 644 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 1.3+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2004 01 17 | 644 | 0.3− | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2004 02 15 | 704 | 0.5− | 1.1+ | 2006 09 20 | 644 | 0.1+ | 0.2− | | | | |

**2004 CQ$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.79985 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26881242 | $\omega$ | 65.06418 | | −0.55971105 | | −0.82738203 |
| $a$ | 2.3777699 | $\Omega$ | 59.05078 | | +0.73940869 | | −0.52396060 |
| $e$ | 0.1621859 | $i$ | 3.10828 | | +0.37416350 | | −0.20224805 |
| $P$ | 3.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3− | 0.4− | 2004 02 10 | 703 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1− |
| 1999 12 07 | 704 | 0.8+ | 0.3+ | 2004 02 16 | 704 | 1.3+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 1999 12 07 | 704 | 0.7− | 1.6+ | 2004 02 16 | 704 | 0.6− | 0.6− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2004 01 23 | 699 | 0.4− | 0.2+ | 2004 02 16 | 704 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.4+ | 0.4+ |
| 2004 01 23 | 699 | 0.1− | 0.8− | 2004 02 16 | 704 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2004 01 23 | 704 | 0.4+ | 0.2− | 2004 02 16 | 704 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2004 01 23 | 699 | 0.9− | 0.6− | 2004 02 27 | 608 | 0.8− | 0.6− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2004 01 23 | 704 | 0.2+ | 0.4− | 2004 02 27 | 608 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2004 01 23 | 699 | 0.6− | 0.8+ | 2004 02 27 | 608 | 0.2− | 0.5− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2004 01 23 | 704 | 0.6+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2004 01 28 | 704 | (0.4− | 1.8−) | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2004 01 28 | 704 | 1.1+ | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2004 01 28 | 704 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2004 01 28 | 704 | 0.4− | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2004 02 10 | 703 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 02 10 | 703 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2004 02 10 | 703 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1− | | | | |

**2004 CC$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.73045 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28677604 | $\omega$ | 110.79597 | | −0.68833093 | | −0.72460072 |
| $a$ | 2.2774078 | $\Omega$ | 22.81240 | | +0.62869458 | | −0.61927972 |
| $e$ | 0.1165596 | $i$ | 5.02728 | | +0.36186138 | | −0.30240111 |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 703 | 0.8+ | 0.8+ | 2004 02 16 | 704 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.4− |
| 2004 01 19 | 703 | 0.2− | 0.1+ | 2004 03 14 | 704 | 0.4+ | 1.0+ | 2006 11 17 | 704 | 1.3− | 0.4+ |
| 2004 01 19 | 703 | 0.5+ | 0.2− | 2004 03 14 | 704 | 0.8+ | 0.4− | 2006 11 17 | 704 | 0.3+ | 0.4− |
| 2004 01 19 | 703 | 0.9− | 0.9+ | 2004 03 14 | 704 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2004 01 30 | 704 | 0.4+ | 0.2− | 2004 03 16 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.8+ |
| 2004 01 30 | 704 | 0.0 | 0.6− | 2004 03 16 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | (0.1− | 1.6+) |
| 2004 01 30 | 704 | 0.4+ | 0.0 | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2004 01 30 | 704 | 0.2− | 0.7+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.4− |
| 2004 02 10 | 644 | 0.2+ | 0.4− | 2006 11 13 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2004 02 10 | 644 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2004 02 10 | 644 | 0.3+ | 0.5− | 2006 11 17 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.9− | 0.6− |
| 2004 02 16 | 704 | 0.4+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2004 02 16 | 704 | 0.6− | 0.7− | 2006 11 17 | 691 | 0.2+ | 0.0 | | | | |
| 2004 02 16 | 704 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.5− | | | | |

**2004 CD$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.43286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17639792 | $\omega$ | 238.63807 | | −0.58985517 | | +0.80715421 |
| $a$ | 3.1487661 | $\Omega$ | 355.01140 | | −0.61529754 | | −0.46845107 |
| $e$ | 0.1931047 | $i$ | 15.97786 | | −0.52295297 | | −0.35924320 |
| $P$ | 5.59 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.3− | 0.7+ | 2004 03 16 | 704 | 0.7− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2000 08 26 | 704 | 0.4+ | 0.1− | 2004 03 20 | 704 | 1.4+ | 0.3+ | 2006 09 16 | 699 | 1.2− | 0.3+ |
| 2000 08 26 | 704 | 1.4− | 1.4+ | 2004 03 20 | 704 | 0.0 | 0.6+ | 2006 09 16 | 699 | 0.0 | 0.8+ |
| 2004 02 10 | 644 | 0.0 | 0.2− | 2004 03 20 | 704 | 0.4+ | 0.9+ | 2006 09 16 | 699 | 0.3− | 1.1− |
| 2004 02 10 | 644 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 09 16 | 699 | 0.6+ | 0.8+ |
| 2004 02 10 | 644 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.1+ | 1.2+ | 2006 09 23 | 691 | 0.2+ | 0.0 |
| 2004 02 16 | 704 | 0.2− | 0.1− | 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2004 02 16 | 704 | 0.6− | 0.4+ | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.1− |
| 2004 02 16 | 704 | 0.3− | 0.7− | 2006 08 18 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 1.0+ | 0.4− |
| 2004 02 16 | 704 | 0.1+ | 0.2− | 2006 09 13 | 644 | 0.5− | 0.5− | 2006 09 25 | 699 | 1.3− | 0.3+ |
| 2004 03 14 | 704 | 0.3− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 1.2+ |
| 2004 03 14 | 704 | 0.3− | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.9− | 1.1− |
| 2004 03 14 | 704 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.7− |
| 2004 03 16 | 704 | (1.9+ | 0.0 ) | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2004 03 16 | 704 | 1.2+ | 0.3− | 2006 09 14 | 644 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2004 03 16 | 704 | 0.0 | 1.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2004 03 16 | 704 | 1.2+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.2+ | | | | |

**2004 CW$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.48702 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27839568 | $\omega$ | 74.52887 | | −0.09346736 | | −0.99455064 |
| $a$ | 2.3228851 | $\Omega$ | 21.00000 | | +0.85692585 | | −0.10397644 |
| $e$ | 0.0711324 | $i$ | 7.40434 | | +0.50689441 | | −0.00761090 |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 699 | 0.7− | 1.1+ | 2004 03 23 | 704 | 0.3− | 0.9− | 2006 11 14 | 703 | 0.2− | 0.3+ |
| 2004 01 30 | 699 | 0.0 | 0.5+ | 2004 03 23 | 704 | 0.2+ | 0.5− | 2006 11 14 | 703 | 0.5− | 0.5+ |
| 2004 01 30 | 699 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.6− | 0.4+ | 2006 11 14 | 703 | 0.7− | 0.3− |
| 2004 01 30 | 699 | 0.4+ | 1.2− | 2004 03 23 | 704 | (0.3− | 1.7+) | 2006 11 14 | 703 | 0.0 | 1.3+ |
| 2004 02 11 | 644 | 0.3+ | 0.5+ | 2004 03 23 | 704 | 0.3+ | 0.5− | 2006 11 15 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 15 | 691 | 1.0− | 0.7− |
| 2004 02 11 | 644 | 0.5+ | 0.8+ | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2004 02 16 | 704 | (1.6+ | 2.1−) | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 17 | 691 | 0.0 | 0.4+ |
| 2004 02 16 | 704 | 1.4+ | 1.1− | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 1.3− | 1.5− |
| 2004 02 16 | 704 | (0.8+ | 2.2−) | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2004 02 16 | 704 | 0.3+ | 1.3− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.4− | 0.3+ | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.4+ |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2004 03 20 | 704 | 0.5+ | 0.7+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.6+ | 0.1− |
| 2004 03 20 | 704 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2004 03 20 | 704 | 0.7− | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2004 03 20 | 704 | 0.4− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.0 | | | | |

**2004 CH$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.91589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27372875 | $\omega$ | 114.11348 | | −0.78518769 | | −0.61334617 |
| $a$ | 2.3492132 | $\Omega$ | 28.28408 | | +0.48235700 | | −0.69221123 |
| $e$ | 0.1267160 | $i$ | 10.37846 | | +0.38834523 | | −0.38032893 |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 704 | 0.6+ | 0.3+ | 2004 03 15 | 704 | 0.6− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 0.2− | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2004 01 30 | 704 | (1.7− | 0.4+) | 2004 03 15 | 704 | (0.1− | 1.9−) | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2004 02 11 | 644 | 0.3− | 0.1+ | 2004 03 15 | 704 | 0.4− | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 02 11 | 644 | 0.2− | 0.0 | 2004 03 15 | 704 | (0.0 | 1.6−) | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2004 02 11 | 644 | 0.2− | 0.0 | 2004 03 18 | 703 | 0.9− | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2004 02 16 | 704 | 0.8+ | 0.2− | 2004 03 18 | 703 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2004 02 16 | 704 | 1.0+ | 0.1+ | 2004 03 18 | 703 | 0.3− | 0.8+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2004 02 16 | 704 | 0.3+ | 0.6− | 2004 03 18 | 703 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.6+ | 0.4− |
| 2004 02 16 | 704 | 0.5+ | 0.2+ | 2004 03 23 | 704 | 0.8− | 0.9− | 2006 11 11 | 703 | (0.4− | 1.5−) |
| 2004 02 16 | 704 | 0.7+ | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.6− | 1.2+ |
| 2004 03 14 | 704 | 0.1+ | 1.0+ | 2004 03 23 | 704 | (1.6+ | 0.5−) | 2006 11 11 | 703 | (0.2+ | 2.4+) |
| 2004 03 14 | 704 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.0 | 1.1− |
| 2004 03 14 | 704 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2004 03 14 | 704 | 0.8− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.7+ | 1.3+ |
| 2004 03 15 | 704 | (1.8− | 0.7+) | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 1.0+ | 0.0 |
| 2004 03 15 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 14 | 703 | (0.6− | 2.1−) |
| 2004 03 15 | 704 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.2+ | 2006 11 14 | G96 | 0.6+ | 0.4− |
| 2004 03 15 | 704 | 0.7− | 0.2− | 2006 10 27 | 703 | 0.5− | 0.5− | 2006 11 14 | G96 | 0.5+ | 0.0 |
| 2004 03 15 | 704 | 0.1+ | 1.1− | 2006 10 27 | 703 | 0.5− | 0.4− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2004 03 15 | 704 | 0.7+ | 0.3+ | 2006 10 27 | 703 | 0.8− | 0.7− | 2006 11 14 | G96 | 0.7+ | 0.0 |
| 2004 03 15 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.9− | | | | |

**2004 CG$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.56039 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21894711 | $\omega$ | 227.51766 | | −0.94375884 | | +0.31726254 |
| $a$ | 2.7263184 | $\Omega$ | 330.61663 | | −0.21920458 | | −0.81114270 |
| $e$ | 0.0843412 | $i$ | 10.93560 | | −0.24752497 | | −0.49131661 |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.2+ | 0.8− | 2004 02 16 | 704 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 02 16 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 2004 01 22 | 704 | 0.4+ | 0.9− | 2004 02 16 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 0.3− | 1.1− | 2004 02 23 | 704 | 0.7+ | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.2− |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.0 | 0.6− | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.9+ | 0.8− | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2004 02 23 | 704 | 1.0+ | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2004 02 11 | 699 | (1.6− | 0.7+) | 2004 03 19 | 644 | 0.6− | 0.4− | 2006 10 23 | 691 | 0.3+ | 0.1+ |
| 2004 02 11 | 699 | 1.0− | 0.8− | 2004 03 19 | 644 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2004 02 11 | 699 | 0.4+ | 0.1+ | 2004 03 19 | 644 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2004 02 11 | 699 | 0.9+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.0 | 0.4− |
| 2004 02 13 | 691 | 0.6− | 0.2+ | 2006 10 17 | 691 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2004 02 13 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2004 02 13 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1− | | | | |
| 2004 02 16 | 704 | 0.4+ | 1.3+ | 2006 10 19 | 691 | 0.0 | 0.1− | | | | |

**2004 CP$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.71642 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22934254 | $\omega$ | 142.54540 | | +0.50683401 | | −0.83308669 |
| $a$ | 2.6432991 | $\Omega$ | 275.98594 | | +0.72719418 | | +0.55120705 |
| $e$ | 0.2514480 | $i$ | 12.87166 | | +0.46293403 | | +0.04623145 |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 20 | 644 | 0.4+ | 0.1+ | 2002 08 12 | 704 | 0.7+ | 0.9+ | 2004 02 17 | 644 | 0.2− | 0.3+ |
| 2002 07 20 | 644 | 0.5+ | 0.2+ | 2002 10 11 | 645 | 0.1− | 0.0 | 2004 02 17 | 703 | 0.7− | 1.5− |
| 2002 07 20 | 644 | 1.1+ | 0.3+ | 2002 10 11 | 645 | 0.0 | 0.0 | 2004 02 17 | 703 | 0.3− | 0.3+ |
| 2002 08 04 | 644 | 0.0 | 0.0 | 2002 10 31 | 645 | 0.0 | 0.0 | 2004 02 17 | 644 | 0.0 | 0.1+ |
| 2002 08 04 | 644 | 0.6+ | 0.0 | 2002 10 31 | 645 | 0.1− | 0.0 | 2004 02 17 | 703 | 1.2+ | 0.4+ |
| 2002 08 04 | 644 | 0.3+ | 0.2− | 2004 02 13 | 644 | 0.6+ | 0.6+ | 2004 02 17 | 703 | 0.5− | 0.7+ |
| 2002 08 12 | 704 | 1.3− | 1.5+ | 2004 02 13 | 644 | 0.1+ | 0.4+ | 2004 02 17 | 644 | 0.3+ | 0.2+ |
| 2002 08 12 | 704 | 0.5− | 0.6+ | 2004 02 13 | 644 | 0.4+ | 0.7+ | | | | |

**2004 CQ$_{72}$ = 2006 SR$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.42822 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25287007 | $\omega$ | 64.32287 | | +0.10265557 | | −0.99397793 |
| $a$ | 2.4766868 | $\Omega$ | 19.89745 | | +0.86748721 | | +0.07059958 |
| $e$ | 0.1193980 | $i$ | 6.46772 | | +0.48675227 | | +0.08380677 |
| $P$ | 3.90 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 30 | 291 | 0.4− | 0.2− | 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.4− |
| 2003 11 30 | 291 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.2− |
| 2003 11 30 | 291 | 0.1− | 0.2+ | 2006 09 28 | 699 | (1.1− | 2.4+) | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2004 02 13 | 691 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.7+ |
| 2004 02 13 | 691 | 0.0 | 0.2− | 2006 09 28 | 699 | (1.7+ | 0.1−) | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2004 02 13 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 699 | 0.3− | 1.0+ | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2004 02 16 | 704 | 0.5+ | 0.2+ | 2006 09 28 | 699 | 0.9+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2004 02 16 | 704 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.2+ |
| 2004 02 16 | 704 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.0 | 0.3+ |

**2004 CU$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.92927 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28644242 | $\omega$ | 0.47867 | | −0.05386448 | | −0.99709895 |
| $a$ | 2.2791758 | $\Omega$ | 92.60973 | | +0.91597112 | | −0.07078419 |
| $e$ | 0.1261737 | $i$ | 3.08607 | | +0.39761229 | | +0.02798721 |
| $P$ | 3.44 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.9+ | 0.7+ | 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.1− |
| 2004 01 22 | 704 | 0.9+ | 0.3+ | 2004 02 23 | 704 | (0.2+ | 1.6+) | 2006 11 17 | 703 | (2.5− | 0.7+) |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.8− | 0.6− |
| 2004 01 22 | 704 | 1.1+ | 0.8+ | 2006 10 17 | G96 | 0.6+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.2+ |
| 2004 01 30 | 691 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2004 01 30 | 691 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.9+ | 0.5− | 2006 11 18 | 704 | 0.8+ | 0.8+ |
| 2004 01 30 | 691 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | (0.2+ | 2.7+) |
| 2004 02 13 | 691 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.9+ |
| 2004 02 13 | 691 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.2− | 0.5− |
| 2004 02 13 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2004 02 16 | 704 | 1.1+ | 0.7− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.4− | | |
| 2004 02 16 | 704 | 0.1− | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.7− | 2006 11 28 | 704 | 0.6+ | 0.4− | | |
| 2004 02 16 | 704 | 0.9− | 0.9+ | 2006 11 11 | 703 | 0.9− | 0.5− | 2006 11 28 | 704 | 0.8+ | 0.7− | | |
| 2004 02 23 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.6+ | 0.9− | 2006 11 28 | 704 | 0.6+ | 0.3+ | | |
| 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.3+ | 0.3+ | | |
| 2004 02 23 | 704 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.4− | | | | | | |

**2004 CN$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.34703 | | | (2000.0) | | |
| $n$ | 0.28135867 | $\omega$ | 119.91817 | | −0.32132492 | −0.94678730 |
| $a$ | 2.3065481 | $\Omega$ | 348.77843 | | +0.83264973 | −0.27314959 |
| $e$ | 0.1112873 | $i$ | 5.46989 | | +0.45104847 | −0.17024427 |
| $P$ | 3.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 704 | 0.3− | 0.6+ | 2004 02 23 | 704 | 0.6− | 0.3− | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 704 | 0.1− | 0.4+ | 2004 02 23 | 704 | 0.6− | 0.9+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2004 01 30 | 704 | 0.6+ | 1.2− | 2004 02 23 | 704 | 0.5+ | 0.8+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2004 02 14 | 608 | 0.5+ | 0.3− | 2004 02 29 | 691 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2004 02 14 | 608 | 0.4+ | 1.0− | 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2004 02 14 | 608 | 0.2+ | 0.2+ | 2004 02 29 | 691 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2004 02 16 | 704 | 0.1− | 0.3+ | 2006 09 17 | 291 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 2004 02 16 | 704 | 1.1+ | 1.4+ | 2006 09 17 | 291 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2004 02 16 | 704 | 0.3− | 1.1+ | 2006 09 17 | 291 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2004 02 16 | 704 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.0 | 0.6− | 2006 11 01 | G96 | 0.4+ | 0.6− |
| 2004 02 19 | 608 | 1.0− | 0.5− | 2006 10 04 | G96 | 0.1− | 0.8− | 2006 11 23 | 703 | 0.0 | 1.6+ |
| 2004 02 19 | 608 | 0.1− | 0.9− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 23 | 703 | 0.4+ | 0.7+ |
| 2004 02 19 | 608 | 0.3− | 0.9− | 2006 10 04 | G96 | 0.2− | 0.5− | 2006 11 23 | 703 | 0.8− | 2.8+ |
| 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 23 | 703 | 0.9− | 0.3+ |
| 2004 02 23 | 704 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.4− | | | | |

**2004 CP$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.50501 | | | (2000.0) | | |
| $n$ | 0.27590617 | $\omega$ | 308.10556 | | −0.12362997 | −0.99206373 |
| $a$ | 2.3368371 | $\Omega$ | 148.97292 | | +0.92379376 | −0.12349444 |
| $e$ | 0.1306927 | $i$ | 2.54825 | | +0.36238201 | −0.02363642 |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2004 02 11 | 291 | 0.4− | 0.1− | 2004 03 14 | 703 | 0.7+ | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.3+ |
| 2004 02 11 | 291 | 0.5− | 0.0 | 2004 03 14 | 703 | 0.1− | 0.8+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2004 02 17 | 704 | 0.1+ | 0.4+ | 2004 03 14 | 703 | 0.9− | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2004 02 17 | 704 | 0.1− | 0.1+ | 2004 03 14 | 703 | 0.8− | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2004 02 17 | 704 | 0.4+ | 0.1+ | 2004 03 18 | 704 | 0.3− | 0.7+ | 2006 11 08 | 644 | (1.6+ | 0.8−) |
| 2004 02 17 | 704 | 0.3− | 0.3+ | 2004 03 18 | 704 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.4+ | 0.2− |
| 2004 02 17 | 704 | 0.1− | 0.3+ | 2004 03 18 | 704 | 1.4+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2004 02 17 | 608 | 0.2+ | 0.5− | 2004 03 18 | 704 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.2− | 0.3− |
| 2004 02 17 | 608 | 0.3+ | 0.8− | 2004 03 26 | 691 | 0.0 | 0.3− | 2006 11 10 | 644 | 0.5+ | 0.0 |
| 2004 02 17 | 608 | 0.3+ | 1.0− | 2004 03 26 | 691 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.4+ | 0.1− |
| 2004 02 19 | 704 | 0.8+ | 0.3− | 2004 03 26 | 691 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.4− | 0.7+ |
| 2004 02 19 | 704 | 0.9− | 1.0− | 2006 10 15 | 621 | 0.1+ | 0.5− | 2006 11 14 | 704 | 0.2+ | 0.4+ |
| 2004 02 19 | 704 | 0.4− | 0.6− | 2006 10 15 | 621 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.2− | 0.2+ |
| 2004 02 19 | 704 | 0.1− | 0.2− | 2006 10 15 | 621 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2004 02 23 | 704 | 0.7− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2004 02 23 | 704 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2004 02 23 | 704 | 1.2+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 17 | 704 | (1.7− | 0.5−) |
| 2004 02 26 | 704 | 0.3+ | 0.9+ | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 1.3+ | 0.0 |
| 2004 02 26 | 704 | 1.1+ | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.6− |
| 2004 02 26 | 704 | 0.9+ | 0.9+ | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 1.2− | 0.5+ |
| 2004 02 26 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | | | | |

**2004 CS$_{74}$ = 2006 UE$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 183.45634 | | | (2000.0) | | |
| $n$ | 0.24508465 | $\omega$ | 25.93281 | | −0.92505340 | +0.37980068 |
| $a$ | 2.5288630 | $\Omega$ | 176.37631 | | −0.36136573 | −0.87571873 |
| $e$ | 0.1717080 | $i$ | 4.77317 | | −0.11700865 | −0.29810762 |
| $P$ | 4.02 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 0.6+ | 0.1− | 2004 02 11 | 703 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.2+ |
| 2004 01 29 | 704 | 0.5− | 0.4+ | 2004 02 11 | 703 | 0.5− | 0.7− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2004 01 29 | 704 | 0.1+ | 0.5+ | 2004 02 17 | 704 | 0.7+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2004 01 29 | 704 | 0.1+ | 0.6− | 2004 02 17 | 704 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 02 17 | 704 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.7+ |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.6− |
| 2004 02 11 | 703 | 0.9− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.2+ | | | | |
| 2004 02 11 | 703 | 0.3+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.4− | | | | |

**2004 CK$_{75}$ = 2006 SQ$_{317}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 252.23801 | | | (2000.0) | | |
| $n$ | 0.26254369 | $\omega$ | 332.68514 | | −0.76137528 | −0.64806482 |
| $a$ | 2.4154701 | $\Omega$ | 166.87187 | | +0.60825889 | −0.72360925 |
| $e$ | 0.1454454 | $i$ | 4.51497 | | +0.22434084 | −0.23749031 |
| $P$ | 3.75 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 20 | 691 | 0.0 | 0.9− | 2004 02 17 | 704 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 1993 04 20 | 691 | 0.0 | 0.4− | 2004 02 17 | 704 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 1993 04 20 | 691 | 0.4− | 0.4+ | 2004 03 01 | 691 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2002 09 05 | 645 | 0.1+ | 0.1+ | 2004 03 01 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.6− |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2004 03 01 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2− | 1.2− |
| 2004 02 11 | 644 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 02 11 | 644 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2004 02 11 | 644 | 0.3− | 0.5− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.7+ | 0.9− |
| 2004 02 17 | 704 | 1.3+ | 1.3+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.9− |
| 2004 02 17 | 704 | 0.3+ | 1.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.7− | 0.6− |
| 2004 02 17 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.3+ | 0.5− | 2006 11 23 | G96 | 0.0 | 1.0− |

**2004 CK$_{76}$ = 2006 UZ$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 194.26902 | | | (2000.0) | | |
| $n$ | 0.25794063 | $\omega$ | 342.91396 | | −0.87278514 | +0.48754853 |
| $a$ | 2.4441220 | $\Omega$ | 226.28917 | | −0.44397705 | −0.81280309 |
| $e$ | 0.1296490 | $i$ | 1.84657 | | −0.20280649 | −0.31882214 |
| $P$ | 3.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 27 | 691 | 0.2− | 0.2− | 2004 02 17 | 704 | 0.3+ | 1.0+ | 2005 07 18 | 644 | 0.3+ | 1.0+ |
| 1994 09 27 | 691 | 0.0 | 0.3− | 2004 02 17 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 1994 09 27 | 691 | 0.2− | 0.1− | 2004 02 17 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 1998 10 29 | 691 | 0.3+ | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.4+ |
| 1998 10 29 | 691 | 0.4+ | 0.2+ | 2005 05 19 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.3+ |
| 1998 10 29 | 691 | 0.5+ | 0.1+ | 2005 05 19 | G96 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 291 | 0.2− | 0.7+ | 2005 05 19 | G96 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.4− |
| 2002 10 31 | 291 | 0.8− | 0.3− | 2005 05 19 | G96 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2002 10 31 | 291 | 0.6+ | 0.1+ | 2005 07 06 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 02 11 | 644 | 0.3− | 0.1+ | 2005 07 06 | 691 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2004 02 11 | 644 | 0.4− | 0.5+ | 2005 07 06 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2004 02 11 | 644 | 0.0 | 0.6+ | 2005 07 18 | 644 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2004 02 17 | 704 | 0.4+ | 0.6+ | 2005 07 18 | 644 | 0.2− | 0.2+ | | | | |

**2004 CF$_{77}$ = 2006 UX$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.90852 | | (2000.0) | | | |
| $n$ | 0.27580279 | $\omega$ | 283.77012 | | +0.36815670 | −0.92878500 |
| $a$ | 2.3374210 | $\Omega$ | 144.53392 | | +0.87892209 | +0.33269732 |
| $e$ | 0.1784671 | $i$ | 4.21547 | | +0.30324347 | +0.16331234 |
| $P$ | 3.57 | $H$ | 17.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2004 02 17 | 704 | 0.0 | 0.6− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.4+ | 0.1+ | 2004 02 17 | 704 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2004 02 11 | 644 | 0.4+ | 0.4+ | 2004 02 17 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2004 02 12 | 691 | 0.3+ | 0.1− | 2004 02 17 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.5− |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2004 02 17 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2004 02 12 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2004 02 12 | 291 | 0.8− | 0.4− | 2006 09 30 | 703 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.5+ | 0.3− |
| 2004 02 12 | 291 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.1− | | | | |
| 2004 02 12 | 291 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.1+ | | | | |

**2004 CU$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 84.96175 | | (2000.0) | | | |
| $n$ | 0.21247458 | $\omega$ | 327.61368 | | +0.00151497 | +0.99927536 |
| $a$ | 2.7814082 | $\Omega$ | 302.44681 | | −0.90761148 | −0.01459238 |
| $e$ | 0.0550711 | $i$ | 2.58308 | | −0.41980842 | +0.03515433 |
| $P$ | 4.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 291 | 0.2+ | 0.1+ | 2004 02 17 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 691 | 0.3+ | 0.8+ |
| 2004 01 30 | 291 | 0.2− | 0.0 | 2004 03 10 | 644 | 0.2− | 0.3− | 2004 03 20 | 691 | 0.2− | 0.4− |
| 2004 01 30 | 291 | 0.0 | 0.0 | 2004 03 10 | 644 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2004 02 11 | 644 | 0.2+ | 0.3− | 2004 03 10 | 644 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2004 02 11 | 644 | 0.4+ | 0.2− | 2004 03 11 | 644 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2004 02 11 | 644 | 0.0 | 0.1− | 2004 03 11 | 644 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2004 02 17 | 704 | 0.9− | 0.4− | 2004 03 11 | 644 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2004 02 17 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 691 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.3− |

**2004 CF$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.00710 | | (2000.0) | | | |
| $n$ | 0.22510131 | $\omega$ | 44.65094 | | +0.98395558 | −0.16424333 |
| $a$ | 2.6763980 | $\Omega$ | 324.62845 | | +0.11046898 | +0.86754231 |
| $e$ | 0.0395020 | $i$ | 6.91370 | | +0.14010004 | +0.46946189 |
| $P$ | 4.38 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 291 | 0.4− | 0.0 | 2004 02 17 | 704 | 0.2− | 0.4+ | 2006 09 17 | 703 | (1.9− | 0.3+) |
| 2004 01 30 | 291 | 0.1+ | 0.0 | 2004 02 22 | 691 | 0.0 | 0.1− | 2006 09 17 | 703 | 1.2+ | 1.0− |
| 2004 01 30 | 291 | 0.1+ | 0.3+ | 2004 02 22 | 691 | 0.1+ | 0.0 | 2006 09 17 | 703 | 1.0− | 0.1+ |
| 2004 02 11 | 644 | 0.1+ | 0.0 | 2004 02 22 | 691 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.8+ | 1.2+ |
| 2004 02 11 | 644 | 0.5+ | 0.0 | 2004 02 29 | 691 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.4− | 1.5+ |
| 2004 02 11 | 644 | 0.5+ | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.8− | 0.1− |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.6+ |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2004 02 17 | 704 | 1.4− | 0.2+ | 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 02 17 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.9+ | 0.5− | | | | |

**2004 CJ$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 211.44738 | | (2000.0) | | | |
| $n$ | 0.26867073 | $\omega$ | 77.36998 | | −0.91232712 | +0.40843204 |
| $a$ | 2.3786058 | $\Omega$ | 126.72918 | | −0.38832951 | −0.84058565 |
| $e$ | 0.1247479 | $i$ | 2.07545 | | −0.12984381 | −0.35580758 |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 1.3− | 0.6− | 2004 03 10 | 644 | 0.3− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2004 01 24 | 704 | 0.7+ | 0.3− | 2004 03 10 | 644 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.8+ | 1.0− |
| 2004 01 24 | 704 | 0.2− | 0.3− | 2004 03 10 | 644 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2004 01 24 | 704 | (0.1+ | 1.5+) | 2004 03 14 | 703 | 1.1− | 1.1+ | 2006 10 21 | G96 | 0.3+ | 0.7− |
| 2004 01 24 | 704 | 0.8+ | 0.3− | 2004 03 14 | 703 | 1.3+ | 0.2− | 2006 11 13 | 291 | 0.2− | 0.3+ |
| 2004 02 11 | 644 | 0.5− | 0.5+ | 2004 03 14 | 703 | 0.7− | 0.2+ | 2006 11 13 | 291 | 0.1− | 0.4+ |
| 2004 02 11 | 644 | 0.8− | 0.4− | 2004 03 14 | 703 | 1.2− | 1.1+ | 2006 11 13 | 291 | 0.2− | 0.4+ |
| 2004 02 11 | 644 | 0.2− | 0.2+ | 2004 03 18 | 691 | 0.4− | 0.3+ | 2006 11 13 | 291 | 0.4− | 0.1− |
| 2004 02 11 | 644 | 0.5− | 0.0 | 2004 03 18 | 691 | 0.4− | 0.3+ | 2006 11 13 | 291 | 0.3− | 0.1+ |
| 2004 02 11 | 644 | 0.3− | 0.1+ | 2004 03 18 | 691 | 0.2− | 0.3+ | 2006 11 13 | 291 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2004 02 17 | 704 | 1.0+ | 0.8− | 2004 03 19 | 704 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2004 02 17 | 704 | 0.7+ | 0.4− | 2004 03 19 | 704 | 0.8+ | 0.7− | 2006 11 15 | 691 | 0.7− | 0.1+ |
| 2004 02 17 | 704 | 1.0+ | 0.3+ | 2004 03 19 | 704 | 0.1− | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 2004 02 17 | 704 | 0.6+ | 0.4+ | 2004 03 27 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2004 02 17 | 704 | 1.3+ | 0.2− | 2004 03 27 | 691 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.6+ |
| 2004 02 22 | 691 | 0.1− | 0.1+ | 2004 03 27 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2004 02 22 | 691 | 0.0 | 0.0 | 2005 07 01 | 291 | 0.2− | 0.7+ | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2004 02 22 | 691 | 0.2+ | 0.0 | 2005 07 01 | 291 | 0.3− | 0.8+ | 2006 11 27 | 691 | 0.4+ | 0.3− |
| 2004 02 23 | 704 | 0.1+ | 0.4+ | 2005 07 01 | 291 | 0.3− | 0.8+ | 2006 11 27 | 703 | 0.4− | 0.0 |
| 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 27 | 703 | 1.1+ | 0.5+ |
| 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.9− | 2006 11 27 | 703 | 0.4+ | 0.4− |
| 2004 02 23 | 704 | 0.8+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.3− | 0.2− |
| 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2+ | | | | |

**2004 CN$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 283.56318 | | (2000.0) | | | |
| $n$ | 0.25778428 | $\omega$ | 129.50390 | | −0.15930592 | −0.98700289 |
| $a$ | 2.4451102 | $\Omega$ | 329.64291 | | +0.89244266 | −0.13482184 |
| $e$ | 0.1417368 | $i$ | 2.39737 | | +0.42209918 | −0.08745490 |
| $P$ | 3.82 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.2+ | 0.4+ | 2004 02 17 | 704 | 0.9+ | 1.0+ | 2004 03 18 | 691 | 0.3+ | 0.1+ |
| 2004 01 24 | 704 | 1.7+ | 0.5− | 2004 02 17 | 704 | 0.4− | 1.1+ | 2004 03 18 | 691 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 1.0+ | 0.1+ | 2004 02 17 | 704 | 0.3− | 1.5+ | 2004 03 18 | 691 | 0.2+ | 0.5− |
| 2004 01 24 | 704 | 0.8+ | 0.6− | 2004 02 17 | 704 | 0.3+ | 0.3+ | 2004 03 27 | 691 | 0.0 | 0.0 |
| 2004 01 24 | 704 | 0.1− | 0.1+ | 2004 02 22 | 691 | 0.1+ | 0.2− | 2004 03 27 | 691 | 0.2− | 0.2+ |
| 2004 01 30 | 291 | 0.7− | 0.1− | 2004 02 22 | 691 | 0.1− | 0.3− | 2004 03 27 | 691 | 0.1+ | 0.1+ |
| 2004 01 30 | 291 | 0.4− | 0.2− | 2004 02 22 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2004 01 30 | 291 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 2004 02 11 | 644 | 0.5− | 0.1+ | 2004 02 26 | 704 | 0.3− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2004 02 11 | 644 | 0.4− | 0.0 | 2004 02 26 | 704 | 0.8− | 1.4− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2004 02 11 | 644 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.2− | 1.2− | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2004 02 17 | 704 | 1.0+ | 0.8+ | 2004 02 26 | 704 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.1− |

**2004 CO$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 268.62287 | | (2000.0) | | | |
| $n$ | 0.26053455 | $\omega$ | 148.21077 | | −0.48770118 | −0.87205012 |
| $a$ | 2.4278723 | $\Omega$ | 330.91912 | | +0.78228558 | −0.41572050 |
| $e$ | 0.1749997 | $i$ | 4.83189 | | +0.38752655 | −0.25827320 |
| $P$ | 3.78 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 1.2+ | 0.6− | 2004 02 26 | 704 | 0.5− | 0.0 | 2006 09 17 | 291 | 0.3+ | 0.2+ |
| 2004 01 22 | 704 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.9− | 1.1− | 2006 09 17 | 291 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | 0.9− | 0.2− | 2004 02 26 | 704 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2004 02 11 | 644 | 0.5− | 0.0 | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.5+ | 0.1+ |
| 2004 02 11 | 644 | 0.1− | 0.5+ | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.6− |
| 2004 02 11 | 644 | 1.0− | 0.5+ | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2004 02 17 | 704 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.5− | 0.3− |
| 2004 02 17 | 704 | 0.5+ | 0.5+ | 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2004 02 17 | 704 | 0.4+ | 0.3+ | 2004 03 18 | 691 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2004 02 17 | 704 | 0.5+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.5− |
| 2004 02 17 | 704 | 1.4+ | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2004 02 26 | 704 | 1.1− | 1.3− | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 2004 02 26 | 704 | 0.4+ | 0.0 | 2006 09 17 | 291 | 0.0 | 0.0 | | | | |

**2004 CR$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.09727 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27702280 | $\omega$ | 341.05992 | | −0.55908171 | | −0.82864032 |
| $a$ | 2.3305533 | $\Omega$ | 142.91783 | | +0.76656158 | | −0.52946725 |
| $e$ | 0.1562700 | $i$ | 2.65970 | | +0.31592876 | | −0.18171311 |
| $P$ | 3.56 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.2+ | 0.2− | 2004 02 18 | 704 | 0.6− | 1.4+ | 2004 03 26 | 691 | 0.0 | 0.4+ |
| 2004 02 11 | 291 | 0.2− | 0.2− | 2004 02 18 | 704 | 0.4+ | 0.6+ | 2006 10 18 | 691 | 0.3+ | 0.5+ |
| 2004 02 11 | 291 | 0.1− | 0.1− | 2004 02 18 | 704 | 0.3− | 0.6+ | 2006 10 18 | 691 | 0.2− | 0.4+ |
| 2004 02 11 | 644 | 0.0 | 0.1− | 2004 02 18 | 704 | 0.6+ | 0.4− | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2004 02 11 | 644 | 0.1+ | 0.2− | 2004 02 18 | 704 | 0.0 | 0.6− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2004 02 11 | 644 | 0.2+ | 0.3− | 2004 03 10 | 644 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.1− | 0.3− |
| 2004 02 17 | 704 | 0.3− | 0.4− | 2004 03 10 | 644 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2004 02 17 | 704 | 0.4+ | 0.2+ | 2004 03 10 | 644 | 0.6− | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.5− |
| 2004 02 17 | 704 | 0.7+ | 0.4+ | 2004 03 17 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2004 02 17 | 704 | 0.4− | 0.3− | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.6− |
| 2004 02 17 | 608 | 0.0 | 0.2− | 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2004 02 17 | 608 | 0.4+ | 0.3− | 2004 03 26 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 02 17 | 608 | 0.0 | 0.2− | 2004 03 26 | 691 | 0.1− | 0.1+ | | | | |

**2004 CE$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.25543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27405322 | $\omega$ | 104.83962 | | −0.14528811 | | −0.98937873 |
| $a$ | 2.3473586 | $\Omega$ | 353.50912 | | +0.89141119 | | −0.12888506 |
| $e$ | 0.1298860 | $i$ | 2.32825 | | +0.42927549 | | −0.06721881 |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.2− | 0.1− | 2004 02 29 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 02 11 | 644 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2004 02 11 | 644 | 0.2− | 0.0 | 2004 02 29 | 691 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.0 | 1.3− |
| 2004 02 17 | 704 | 0.6+ | 0.3+ | 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.9+ | 0.6− |
| 2004 02 17 | 704 | 0.5− | 0.8− | 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2004 02 17 | 704 | 0.5+ | 0.5+ | 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.1− | 1.1− |
| 2004 02 17 | 704 | 0.5+ | 0.4− | 2004 03 26 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2004 02 17 | 704 | 0.2+ | 0.5− | 2004 03 26 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2004 02 19 | 049 | 0.2− | 0.2− | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2004 02 19 | 049 | 0.5− | 0.4− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2004 02 19 | 049 | 0.3− | 0.7− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.4+ |
| 2004 02 23 | 704 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.4+ | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2004 02 23 | 704 | 0.1− | 0.5− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | (1.4− | 1.6+) |
| 2004 02 23 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2004 02 23 | 704 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.8− | 0.4+ |
| 2004 02 23 | 704 | 0.8+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2004 02 23 | 704 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.4+ | 2006 11 17 | 703 | (1.7+ | 0.1+) |
| 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 10 23 | 691 | 1.0− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2004 02 23 | 704 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.5− | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5− |
| 2004 02 26 | 704 | 1.1− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.5− |
| 2004 02 26 | 704 | 0.1− | 1.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.8+ |
| 2004 02 26 | 704 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.6+ | 1.3+ |
| 2004 02 26 | 704 | 0.5− | 1.2+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.8+ |

**2004 CM$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.22805 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26536305 | $\omega$ | 98.09852 | | −0.53292674 | | −0.84607927 |
| $a$ | 2.3983308 | $\Omega$ | 24.11630 | | +0.76453397 | | −0.48743943 |
| $e$ | 0.1248155 | $i$ | 1.65322 | | +0.36259743 | | −0.21576069 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.6+ | 0.1− | 2004 02 26 | 704 | 0.6+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.2− | 0.9− | 2004 02 26 | 704 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.2− | 0.0 | 2004 02 29 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2004 01 22 | 704 | 0.4− | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2004 02 11 | 644 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2004 02 11 | 644 | 0.4+ | 0.1+ | 2004 03 15 | 703 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2004 03 15 | 703 | 1.1− | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2004 02 17 | 704 | 1.0+ | 0.2+ | 2004 03 15 | 703 | 0.7− | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2004 02 17 | 704 | (1.7+ | 0.1−) | 2004 03 15 | 703 | 1.1− | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2004 02 17 | 704 | 1.0+ | 0.8− | 2004 03 19 | 644 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2004 02 17 | 704 | 0.2+ | 0.1− | 2004 03 19 | 644 | 0.3+ | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.3+ |
| 2004 02 23 | 704 | 0.3− | 1.4+ | 2004 03 19 | 644 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2004 02 23 | 704 | (0.1− | 1.7+) | 2004 03 19 | 704 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.8− | 0.2+ |
| 2004 02 23 | 704 | 0.0 | 1.4+ | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.3+ |
| 2004 02 23 | 704 | 0.3− | 1.5+ | 2004 03 19 | 704 | 0.5+ | 0.5+ | 2006 11 17 | 691 | 0.1+ | 0.4− |
| 2004 02 23 | 704 | (0.1− | 1.7+) | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.2− |
| 2004 02 25 | 704 | 0.6+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2004 02 25 | 704 | 0.9+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.4+ | 0.0 |
| 2004 02 25 | 704 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2004 02 25 | 704 | 0.7− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.3− |
| 2004 02 25 | 704 | 0.6− | 1.5− | 2006 10 16 | 691 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.5− |
| 2004 02 26 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.4− |

**2004 CW$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.56968 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26224818 | $\omega$ | 132.00734 | | −0.88049242 | | −0.47327946 |
| $a$ | 2.4172843 | $\Omega$ | 19.79288 | | +0.40774246 | | −0.78533519 |
| $e$ | 0.0953130 | $i$ | 4.60670 | | +0.24182471 | | −0.39906790 |
| $P$ | 3.76 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.5− | 0.3− | 2004 03 19 | 704 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.2+ | 0.2− |
| 2004 02 11 | 644 | 0.5− | 0.1− | 2004 03 19 | 704 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.2− | 0.3− | 2004 03 19 | 704 | 0.8− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ |
| 2004 02 17 | 704 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 10 21 | 691 | 0.7− | 0.0 |
| 2004 02 17 | 704 | 0.1+ | 1.0+ | 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2004 02 17 | 704 | 0.6+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2004 02 17 | 704 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.7− | 0.2+ |
| 2004 02 17 | 704 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2004 03 15 | 704 | 0.2+ | 0.8− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2004 03 15 | 704 | 0.6+ | 0.7− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 704 | (0.4+ | 2.1−) | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2004 03 19 | 704 | 0.0 | 0.8+ | 2006 10 12 | 691 | 0.3+ | 0.1− | | | | |
| 2004 03 19 | 704 | 0.3− | 0.6− | 2006 10 12 | 691 | 0.0 | 0.1+ | | | | |

**2004 CX$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 268.75526 | | (2000.0) | | | |
| $n$ | 0.26317877 | $\omega$ | 63.40323 | | −0.63385021 | −0.77266789 |
| $a$ | 2.4115826 | $\Omega$ | 65.97574 | | +0.69534698 | −0.58902108 |
| $e$ | 0.1345673 | $i$ | 2.19002 | | +0.33871299 | −0.23672452 |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.3− | 0.3− | 2004 02 25 | 704 | 0.5− | 0.2− | 2006 10 23 | 734 | 0.2− | 0.3+ |
| 2004 02 11 | 644 | 0.0 | 0.2− | 2004 02 26 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 734 | 0.2− | 0.1− |
| 2004 02 11 | 644 | 0.1+ | 0.0 | 2004 02 26 | 704 | 0.0 | 0.3− | 2006 10 23 | 734 | 0.6− | 0.1− |
| 2004 02 17 | 704 | 0.4+ | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 734 | 0.1+ | 0.0 |
| 2004 02 17 | 704 | 0.7+ | 0.2+ | 2004 02 26 | 704 | 0.6+ | 0.2− | 2006 10 24 | 734 | 0.6+ | 0.4− |
| 2004 02 17 | 704 | 0.2+ | 0.4+ | 2004 03 15 | 703 | 0.2− | 1.0+ | 2006 10 24 | 734 | 0.3+ | 0.1− |
| 2004 02 17 | 704 | 0.4− | 0.3− | 2004 03 15 | 703 | 1.2+ | 1.1+ | 2006 10 24 | 734 | 1.5− | 0.3− |
| 2004 02 18 | 691 | 0.0 | 0.1− | 2004 03 15 | 703 | 0.9− | 1.1+ | 2006 10 24 | 734 | 0.7− | 0.3− |
| 2004 02 18 | 691 | 0.1− | 0.2− | 2004 03 15 | 703 | 1.5− | 1.1+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2004 02 18 | 691 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.4+ | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2004 02 23 | 704 | 0.6− | 0.1+ | 2004 03 19 | 704 | 0.3+ | 0.9− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.1+ | 0.5− | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 0.5+ | 0.2− | 2004 03 19 | 704 | (1.3− | 1.7−) | 2006 11 14 | G96 | 0.7− | 0.3− |
| 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 734 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2004 02 23 | 704 | 0.4− | 0.4− | 2006 10 23 | 734 | 0.8+ | 0.5+ | 2006 11 14 | G96 | 0.5− | 0.3− |
| 2004 02 25 | 704 | 0.7+ | 0.1− | 2006 10 23 | 734 | 0.3+ | 0.2+ | | | | |
| 2004 02 25 | 704 | 0.0 | 0.6− | 2006 10 23 | 734 | 0.3+ | 0.1+ | | | | |

**2004 CH$_{80}$ = 2006 QY$_{148}$ = 2006 SD$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 163.00077 | | (2000.0) | | | |
| $n$ | 0.21074660 | $\omega$ | 151.39258 | | −0.96174354 | +0.26845430 |
| $a$ | 2.7965913 | $\Omega$ | 44.29141 | | −0.26388001 | −0.85424920 |
| $e$ | 0.0364751 | $i$ | 4.48484 | | −0.07359823 | −0.44518602 |
| $P$ | 4.68 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.3− | 0.5− | 2004 02 11 | 644 | 0.3+ | 0.1− | 2006 08 27 | 691 | 0.3− | 0.4+ |
| 2000 04 29 | 704 | 0.4− | 0.1+ | 2004 02 11 | 644 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.4− |
| 2000 04 29 | 704 | 0.7+ | 0.5+ | 2004 02 11 | 644 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.4− |
| 2000 04 29 | 704 | (1.1+ | 2.8+) | 2004 02 17 | 704 | (0.0 | 2.5+) | 2006 09 18 | 703 | 0.7+ | 0.2− |
| 2000 05 07 | 704 | 0.1− | 0.8+ | 2004 02 17 | 704 | (0.8+ | 4.1+) | 2006 09 18 | 703 | 0.3+ | 0.1+ |
| 2000 05 07 | 704 | 1.1+ | 0.9+ | 2004 02 17 | 704 | (0.0 | 3.3+) | 2006 09 18 | 703 | 0.3− | 0.6+ |
| 2000 05 07 | 704 | 0.3+ | 0.5+ | 2004 02 17 | 704 | (0.1− | 3.3+) | 2006 09 18 | 703 | 0.3− | 0.3+ |
| 2000 05 07 | 704 | 0.3+ | 1.0+ | 2004 02 18 | 691 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.2− |
| 2000 05 07 | 704 | 0.4− | 0.5+ | 2004 02 18 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.7+ |
| 2002 11 24 | 644 | 0.6+ | 0.1+ | 2004 02 18 | 608 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.8+ |
| 2002 11 24 | 644 | 0.4+ | 0.2+ | 2004 02 18 | 608 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.8+ |
| 2002 11 24 | 644 | 0.6+ | 0.6+ | 2004 02 18 | 608 | 0.6− | 1.3− | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 2002 12 07 | 704 | 1.1− | 0.0 | 2004 02 18 | 691 | 0.0 | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.4+ |
| 2002 12 07 | 704 | 0.5+ | 0.4+ | 2004 03 20 | 704 | 0.8+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 1.2− |
| 2002 12 07 | 704 | 0.1− | 1.4+ | 2004 03 20 | 704 | 1.3+ | 0.2+ | 2006 10 16 | 703 | 1.4+ | 0.5− |
| 2002 12 10 | 291 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.8+ | 2006 10 16 | 703 | 0.5− | 0.1− |
| 2002 12 10 | 291 | 0.3− | 0.0 | 2006 08 18 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.4− |
| 2002 12 10 | 291 | 0.1− | 0.0 | 2006 08 18 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 12 31 | 704 | 0.7+ | 0.8− | 2006 08 18 | 691 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.8+ | 0.5+ |
| 2002 12 31 | 704 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.3+ | 0.6+ | | | | |

**2004 CL$_{80}$ = 2006 TD$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 132.74070 | | (2000.0) | | | |
| $n$ | 0.22528221 | $\omega$ | 262.00616 | | −0.39847930 | +0.91700491 |
| $a$ | 2.6749651 | $\Omega$ | 344.47411 | | −0.81315580 | −0.36218820 |
| $e$ | 0.1458794 | $i$ | 3.80935 | | −0.42425451 | −0.16709789 |
| $P$ | 4.37 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.1− | 0.1+ | 2004 02 25 | 704 | 0.9− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.4− |
| 2004 02 11 | 291 | 0.1− | 0.1+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.1− |
| 2004 02 11 | 291 | 0.4− | 0.2+ | 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.6− | 0.3+ |
| 2004 02 17 | 704 | 0.3+ | 1.1− | 2004 02 29 | 691 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2004 02 17 | 704 | 0.9+ | 0.1− | 2006 10 15 | 691 | 0.5+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2004 02 17 | 704 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.6− | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2004 02 17 | 704 | 0.6+ | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.5− | 0.5− |
| 2004 02 25 | 704 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.3− | 0.5− |
| 2004 02 25 | 704 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2004 02 25 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− |

**2004 CQ$_{81}$ = 2006 RF$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 101.35523 | | (2000.0) | | | |
| $n$ | 0.22554147 | $\omega$ | 248.32722 | | −0.15145118 | +0.98844934 |
| $a$ | 2.6729148 | $\Omega$ | 12.96540 | | −0.89756413 | −0.13518281 |
| $e$ | 0.0190902 | $i$ | 1.40938 | | −0.41405456 | −0.06850925 |
| $P$ | 4.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.2+ | 2004 02 12 | 691 | 0.2− | 0.2+ | 2006 09 19 | 703 | (1.6− | 0.2−) |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2004 02 17 | 704 | 1.2− | 1.1+ | 2006 09 19 | 703 | (1.9− | 0.8+) |
| 2000 03 11 | 691 | 0.1− | 0.5− | 2004 02 17 | 704 | 0.4+ | 0.4− | 2006 09 19 | 703 | 0.7− | 0.0 |
| 2000 03 11 | 691 | 0.2− | 0.6− | 2004 02 17 | 704 | 0.7+ | 0.6− | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 2000 03 11 | 691 | 0.0 | 0.8− | 2004 02 17 | 704 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2000 04 05 | 704 | 0.8+ | 1.7+ | 2004 02 17 | 704 | 0.7+ | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 704 | 0.8+ | 0.1− | 2004 02 23 | 704 | 0.9− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2000 04 05 | 704 | 0.4− | 1.5+ | 2004 02 23 | 704 | 0.1− | 1.0+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.7+ | 0.9+ | 2004 02 23 | 704 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 1.1− | 0.2+ | 2004 02 23 | 704 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2001 07 19 | 644 | 0.7− | 0.3+ | 2004 02 23 | 704 | 0.7− | 1.0− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 07 19 | 644 | 0.9− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 07 19 | 644 | 0.8− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2002 11 06 | 704 | 0.6− | 1.4+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.9+ | 0.3− |
| 2002 11 06 | 704 | 0.6+ | 0.4− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2002 11 06 | 704 | 0.5− | 1.1− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.9+ | 0.2− |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.8− | 0.7− | | | | |

**2004 CS$_{81}$ = 2006 SH$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 271.45410 | | (2000.0) | | | |
| $n$ | 0.25977026 | $\omega$ | 146.15249 | | −0.46868150 | −0.88175330 |
| $a$ | 2.4326321 | $\Omega$ | 331.68746 | | +0.78349762 | −0.38702798 |
| $e$ | 0.0749788 | $i$ | 6.46155 | | +0.40800629 | −0.26966730 |
| $P$ | 3.79 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.0 | 0.1− | 2004 02 17 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.4− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.6+ | 0.4+ |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2004 03 20 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2004 03 20 | 691 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.3− | 0.1− |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2004 03 20 | 691 | 0.1+ | 0.6− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2004 02 17 | 704 | 1.1− | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.1− | | | | |

**2004 CW$_{81}$ = 2006 SO$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.18482 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26272564 | $\omega$ | 287.04089 | +0.19767173 | | −0.98018178 | |
| $a$ | 2.4143547 | $\Omega$ | 151.54832 | +0.90945370 | | +0.17841860 | |
| $e$ | 0.1545864 | $i$ | 1.56621 | +0.36581396 | | +0.08608413 | |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.1+ | 0.3− | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.3+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.4− | 0.2+ |
| 2004 02 17 | 704 | 0.8+ | 0.6+ | 2006 07 21 | G96 | 0.5− | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.1− |
| 2004 02 17 | 704 | (0.2− | 1.6+) | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2004 02 17 | 704 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 02 17 | 704 | 0.0 | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2004 02 26 | 704 | 1.1− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2004 02 26 | 704 | 0.4+ | 0.6+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.2− |

**2004 CC$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.22733 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27759947 | $\omega$ | 148.50265 | −0.75087918 | | −0.66034294 | |
| $a$ | 2.3273246 | $\Omega$ | 350.14702 | +0.59139286 | | −0.66466354 | |
| $e$ | 0.1191843 | $i$ | 3.78572 | +0.29399819 | | −0.34952766 | |
| $P$ | 3.55 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.3− | 0.2− | 2004 02 25 | 704 | 0.1− | 1.5+ | 2006 10 19 | 691 | 0.2− | 0.2+ |
| 2003 12 21 | 645 | 0.1− | 0.4− | 2004 02 25 | 704 | 0.0 | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.4+ |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2004 02 25 | 704 | 0.3+ | 1.2+ | 2006 10 23 | 691 | 0.6− | 0.1− |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2004 02 25 | 704 | 0.5+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2004 02 25 | 704 | 0.3+ | 1.0+ | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2004 02 17 | 704 | 1.0+ | 1.3+ | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2004 02 17 | 704 | 0.6+ | 0.2+ | 2004 03 18 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2004 02 17 | 704 | 0.5+ | 0.2− | 2004 03 18 | 691 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2004 02 17 | 704 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.6+ | 0.2+ |
| 2004 02 17 | 704 | 0.8+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2004 02 22 | 691 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 14 | 703 | 0.8+ | 0.0 |
| 2004 02 22 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.6− | 2006 11 14 | 703 | 0.1+ | 0.1+ |
| 2004 02 22 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.5− | 0.5+ | 2006 11 14 | 703 | 0.0 | 0.8− |
| 2004 02 23 | 704 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.4+ | 2006 11 14 | 703 | (1.7+ | 1.9−) |
| 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 22 | 704 | 1.0− | 0.6+ |
| 2004 02 23 | 704 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.2− | 2006 11 22 | 704 | 0.2− | 0.9+ |
| 2004 02 23 | 704 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2004 02 23 | 704 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1− | | | | |

**2004 CD$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.34135 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21355962 | $\omega$ | 342.39067 | −0.61366704 | | −0.78148604 | |
| $a$ | 2.7719791 | $\Omega$ | 145.21821 | +0.74610050 | | −0.62064065 | |
| $e$ | 0.2163642 | $i$ | 11.39038 | +0.25835406 | | −0.06391201 | |
| $P$ | 4.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 24 | 704 | 0.1+ | 0.9+ | 2004 02 17 | 704 | 0.5+ | 0.0 | 2004 02 29 | 691 | 0.4− | 0.1+ |
| 2004 01 24 | 704 | 0.9+ | 0.3+ | 2004 02 17 | 704 | 0.1+ | 0.1− | 2004 02 29 | 691 | 0.5− | 0.3+ |
| 2004 01 24 | 704 | 0.4− | 0.4+ | 2004 02 17 | 704 | 0.2− | 0.7− | 2004 02 29 | 691 | 0.5− | 0.2+ |
| 2004 02 12 | 691 | 0.1+ | 0.3− | 2004 02 17 | 104 | 0.5+ | 0.6+ | 2004 03 18 | 691 | 0.0 | 0.0 |
| 2004 02 12 | 291 | 0.1− | 0.0 | 2004 02 17 | 104 | 0.1− | 0.4− | 2004 03 18 | 691 | 0.1+ | 0.1+ |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2004 02 17 | 104 | 0.2− | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.1+ |
| 2004 02 12 | 291 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 695 | 0.1− | 0.6+ |
| 2004 02 12 | 291 | 0.2− | 0.0 | 2004 02 23 | 704 | 0.5+ | 0.1− | 2006 10 20 | 695 | 0.1+ | 0.0 |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 695 | 0.0 | 0.2+ |
| 2004 02 17 | 704 | 0.5+ | 0.3− | 2004 02 23 | 704 | 0.8+ | 0.1− | | | | |
| 2004 02 17 | 704 | 0.3− | 0.2− | 2004 02 23 | 704 | 1.0+ | 0.3− | | | | |

**2004 CO$_{83}$ = 2006 VZ$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.95349 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26789977 | $\omega$ | 172.58289 | −0.57152036 | | −0.82020625 | |
| $a$ | 2.3831671 | $\Omega$ | 312.26961 | +0.75112755 | | −0.51062069 | |
| $e$ | 0.1611135 | $i$ | 1.93791 | +0.33041170 | | −0.25793066 | |
| $P$ | 3.68 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2004 03 15 | 184 | 0.4− | 0.5+ | 2006 11 11 | 691 | 0.4+ | 0.2+ |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2004 03 15 | 184 | 0.6− | 0.2+ | 2006 11 11 | 691 | 0.6− | 0.4− |
| 2004 02 12 | 691 | 0.2− | 0.0 | 2004 03 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.3− |
| 2004 02 17 | 704 | 1.0+ | 0.9− | 2004 03 20 | 691 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2004 02 17 | 704 | 1.1+ | 0.8− | 2004 03 20 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2004 02 17 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2004 02 17 | 704 | 0.7+ | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2004 03 15 | 184 | 0.8− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.2+ | | | | |

**2004 CB$_{84}$ = 2006 SC$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.15262 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27081944 | $\omega$ | 281.20525 | +0.13272079 | | −0.99112264 | |
| $a$ | 2.3660077 | $\Omega$ | 161.16254 | +0.91855083 | | +0.12003224 | |
| $e$ | 0.1499838 | $i$ | 1.38723 | +0.37235676 | | +0.05716793 | |
| $P$ | 3.64 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.4+ | 0.5− |
| 2004 02 12 | 691 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.5+ | 2006 10 29 | G96 | 0.0 | 0.5− |
| 2004 02 12 | 691 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.7− |
| 2004 02 17 | 704 | 0.9+ | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.5− | 0.0 |
| 2004 02 17 | 704 | 0.6+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2004 02 17 | 704 | 0.4+ | 0.0 | 2006 09 23 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2004 02 17 | 704 | 0.7− | 0.8+ | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2004 02 22 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.8+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2004 02 22 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.9+ | 1.1− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2004 02 22 | 691 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.7− | 0.1+ | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.3− |
| 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.2− |

**2004 CJ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.67975 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27249893 | $\omega$ | 173.22761 | −0.99998577 | | −0.00469926 | |
| $a$ | 2.3562761 | $\Omega$ | 6.50475 | +0.00321261 | | −0.90843502 | |
| $e$ | 0.1275168 | $i$ | 1.27827 | +0.00426014 | | −0.41799967 | |
| $P$ | 3.62 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 03 | 691 | 0.2+ | 0.0 | 2004 01 30 | 691 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.0 |
| 1997 05 03 | 691 | 0.1− | 0.3− | 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.6− |
| 1997 05 03 | 691 | 0.0 | 0.2− | 2004 02 13 | 691 | 0.4− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2002 11 06 | 291 | 0.9− | 0.1− | 2004 02 13 | 691 | 0.3− | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 2002 11 06 | 291 | 0.3+ | 0.7+ | 2004 02 13 | 691 | 0.4− | 0.0 | 2006 11 09 | 691 | 0.4+ | 0.6− |
| 2002 11 06 | 291 | 0.3− | 0.3+ | 2004 02 17 | 704 | 0.0 | 0.8+ | 2006 11 09 | 691 | 0.2+ | 0.1+ |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 02 17 | 704 | 0.1− | 0.7+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.1+ | 2004 02 17 | 704 | 1.5+ | 1.2+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 1.1+ | 0.7+ | 2004 02 20 | 608 | 0.4+ | 0.9− | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2004 01 22 | 704 | 1.2+ | 0.4+ | 2004 02 20 | 608 | 0.1− | 0.6− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2004 01 22 | 704 | 0.8+ | 0.6− | 2004 02 20 | 608 | 0.6+ | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.3− |

**2004 CF$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.73715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26796054 | $\omega$ | 333.74412 | | −0.25956022 | −0.96537913 | |
| $a$ | 2.3828067 | $\Omega$ | 131.28812 | | +0.89199572 | −0.24994126 | |
| $e$ | 0.1334717 | $i$ | 1.97653 | | +0.37009747 | −0.07464921 | |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 291 | 0.2− | 0.1− | 2004 03 27 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.0 | |
| 2004 01 30 | 291 | 0.2− | 0.3− | 2004 03 27 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.3− | |
| 2004 01 30 | 291 | 0.0 | 0.3− | 2004 03 27 | 691 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.4− | 0.2− | |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1+ | |
| 2004 02 14 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.0 | |
| 2004 02 14 | 691 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.2− | |
| 2004 02 17 | 704 | 0.5− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3− | |
| 2004 02 17 | 704 | (1.9− | 0.7+) | 2006 09 23 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.0 | |
| 2004 02 17 | 704 | 0.3+ | 1.0+ | 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− | |
| 2004 02 17 | 704 | 0.4− | 0.6+ | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.4− | |
| 2004 02 17 | 704 | 0.2− | 1.2+ | 2006 09 27 | 691 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.2− | |
| 2004 02 22 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.5− | 0.9− | 2006 11 16 | G96 | 0.6+ | 0.1− | |
| 2004 02 22 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− | |
| 2004 02 22 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.3− | 0.5+ | 2006 11 17 | 703 | (1.6+ | 2.1−) | |
| 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | (0.5− | 1.7−) | |
| 2004 03 17 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.9+ | 2006 11 17 | 703 | (2.0+ | 0.5−) | |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 1.2+ | 0.6− | 2006 11 17 | 703 | (0.1− | 1.9−) | |
| 2004 03 19 | 704 | (1.6+ | 0.8+) | 2006 10 21 | 703 | (1.9+ | 0.6+) | 2006 11 21 | 691 | 0.2+ | 0.0 | |
| 2004 03 19 | 704 | 0.7+ | 0.4− | 2006 10 21 | G96 | 0.7+ | 0.7− | 2006 11 21 | 691 | 0.1+ | 0.0 | |
| 2004 03 19 | 704 | 1.3+ | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.5+ | 0.1− | |
| 2004 03 19 | 704 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.6− | 0.2− | | | | | |

**2004 CL$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.41236 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22206417 | $\omega$ | 167.82409 | | −0.84239661 | −0.53831873 | |
| $a$ | 2.7007459 | $\Omega$ | 339.55132 | | +0.48842449 | −0.74389644 | |
| $e$ | 0.0327883 | $i$ | 3.95582 | | +0.22761694 | −0.39601898 | |
| $P$ | 4.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.1+ | 0.9− | 2004 02 23 | 704 | 0.1+ | 0.9+ | 2006 09 16 | 691 | 0.1+ | 0.1+ | |
| 1995 02 02 | 691 | 0.6− | 0.1− | 2004 02 23 | 704 | 0.0 | 0.5+ | 2006 09 16 | 691 | 0.0 | 0.6+ | |
| 1995 02 02 | 691 | 0.1− | 0.7− | 2004 02 23 | 704 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.8+ | 1.4− | |
| 2004 02 14 | 691 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.9− | 0.1− | 2006 09 17 | 703 | 0.5− | 0.0 | |
| 2004 02 14 | 691 | 0.3+ | 0.2+ | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.2− | |
| 2004 02 14 | 691 | 0.2− | 0.4+ | 2004 02 26 | 704 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.3− | 0.1− | |
| 2004 02 17 | 704 | 0.2− | 0.6+ | 2004 02 26 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | |
| 2004 02 17 | 704 | 1.2+ | 0.6+ | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.6− | 0.2+ | |
| 2004 02 17 | 704 | 1.5+ | 0.5− | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | |
| 2004 02 17 | 704 | 0.1− | 0.5+ | 2004 03 26 | 691 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.1− | |
| 2004 02 19 | 704 | 1.1+ | 0.3− | 2006 07 22 | G96 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.6− | |
| 2004 02 19 | 704 | 0.2+ | 1.1+ | 2006 07 22 | G96 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.5− | 0.5− | |
| 2004 02 19 | 704 | 0.4+ | 0.7+ | 2006 07 22 | G96 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.2− | |
| 2004 02 19 | 704 | (0.2− | 1.8+) | 2006 07 22 | G96 | 0.2+ | 0.1− | | | | | |
| 2004 02 23 | 704 | 0.3+ | 0.1− | 2006 09 16 | 691 | 0.0 | 0.4+ | | | | | |

**2004 CU$_{88}$ = 2006 QA$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.50364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22563655 | $\omega$ | 280.22464 | | +0.97397580 | −0.19137584 | |
| $a$ | 2.6721638 | $\Omega$ | 90.88515 | | +0.22422866 | +0.89173147 | |
| $e$ | 0.0883249 | $i$ | 6.97576 | | −0.03305530 | +0.41011008 | |
| $P$ | 4.37 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.1− | 0.5+ | 2004 02 11 | 691 | 0.1+ | 0.2+ | 2005 04 30 | 691 | 0.0 | 0.1− | |
| 2002 10 15 | 644 | 0.4− | 0.5+ | 2004 02 18 | 691 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.1− | 0.0 | |
| 2002 10 15 | 644 | 0.3− | 0.5+ | 2004 02 18 | 691 | 0.4+ | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.3+ | |
| 2003 12 29 | 291 | 0.4− | 0.2+ | 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.3− | 0.1+ | |
| 2003 12 29 | 291 | 0.5− | 0.3+ | 2004 03 17 | 645 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.1− | 0.0 | |
| 2003 12 29 | 291 | 0.2− | 0.6+ | 2004 03 17 | 645 | 0.2+ | 0.1− | 2006 08 24 | 644 | 0.5+ | 0.1+ | |
| 2004 02 11 | 691 | 0.0 | 0.1+ | 2005 04 30 | 691 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.2+ | 0.2+ | |
| 2004 02 11 | 691 | 0.3− | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.5+ | | | | | |

**2004 CL$_{89}$ = 2006 UC$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.89549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28969983 | $\omega$ | 332.43850 | | +0.63601080 | −0.76915709 | |
| $a$ | 2.2620588 | $\Omega$ | 77.99813 | | +0.71921761 | +0.56155052 | |
| $e$ | 0.1441854 | $i$ | 3.65476 | | +0.27967175 | +0.30505472 | |
| $P$ | 3.40 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.7+ | |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.2− | 0.6− | |
| 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.7− | 0.5− | |
| 2004 02 18 | 691 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.6− | 0.5− | |
| 2004 02 18 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.6− | 2006 11 17 | 703 | 1.0− | 1.0− | |
| 2004 02 18 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.4− | |
| 2004 02 26 | 695 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.4− | 2006 11 18 | 704 | 1.1− | 0.1+ | |
| 2004 02 26 | 695 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 1.2− | 0.6− | |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.7+ | |
| 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.8+ | |
| 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.2− | 2006 11 21 | 704 | 1.1+ | 1.0+ | |
| 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3+ | |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.1+ | 0.6+ | | | | | |
| 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.2+ | | | | | |

**2004 CP$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.10382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26979353 | $\omega$ | 205.18076 | | +0.42609925 | −0.90187933 | |
| $a$ | 2.3720019 | $\Omega$ | 219.70583 | | +0.84771910 | +0.42547806 | |
| $e$ | 0.0852481 | $i$ | 6.38861 | | +0.31592998 | +0.07471346 | |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1− | 0.5− | 2004 02 18 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.1+ | |
| 1995 10 15 | 691 | 0.1+ | 0.3− | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.1+ | |
| 1995 10 15 | 691 | 0.0 | 0.2− | 2004 02 18 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1+ | |
| 2001 05 26 | 691 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 0.8+ | 0.2− | 2006 11 17 | 703 | 0.4− | 0.3− | |
| 2001 05 26 | 691 | 0.4− | 0.5+ | 2004 02 19 | 704 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.0 | 0.6+ | |
| 2001 05 26 | 691 | 0.1− | 0.5+ | 2004 02 19 | 704 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.7− | 0.2− | |
| 2002 08 28 | 644 | (0.4+ | 1.7+) | 2004 02 19 | 704 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.7− | 0.5− | |
| 2002 08 28 | 644 | (0.2− | 1.9+) | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | (0.1− | 1.7+) | |
| 2002 08 28 | 644 | (0.5+ | 1.8+) | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.6− | 1.2+ | |
| 2002 09 05 | 699 | 0.7− | 1.1+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.1− | |
| 2002 09 05 | 699 | 0.6− | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.6+ | |
| 2002 09 05 | 699 | 0.8+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1+ | 1.3+ | |
| 2002 09 05 | 699 | 0.7− | 0.9+ | 2006 11 01 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.5+ | 1.2+ | |
| 2002 09 13 | 644 | 0.2+ | 0.7+ | 2006 11 11 | 703 | (1.8+ | 3.4−) | 2006 11 21 | 704 | 0.4− | 1.0+ | |
| 2002 09 13 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.7+ | |
| 2002 09 13 | 644 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.6+ | 1.4+ | |
| 2002 10 11 | 645 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (1.9+ | 0.2−) | 2006 11 21 | 704 | 0.1+ | 0.5+ | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.4− | 2006 11 27 | G96 | 0.1− | 0.5− | |
| 2004 02 12 | 644 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.1− | 0.0 | |
| 2004 02 12 | 644 | 0.1+ | 0.6+ | 2006 11 13 | G96 | 0.6+ | 0.4− | 2006 11 27 | G96 | 0.1− | 0.4− | |
| 2004 02 12 | 644 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.5− | 2006 11 27 | G96 | 0.2+ | 0.2− | |

**2004 CA$_{91}$ = 2006 QW$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.26025 | | | (2000.0) | | |
| $n$ | 0.21417002 | $\omega$ | 176.22438 | | +0.96897257 | −0.24607721 |
| $a$ | 2.7667097 | $\Omega$ | 198.07236 | | +0.22476870 | +0.91631188 |
| $e$ | 0.0881581 | $i$ | 4.28860 | | +0.10281626 | +0.31594073 |
| $P$ | 4.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2− | 0.2+ | 2004 02 18 | 691 | 0.1+ | 0.3+ | 2006 08 19 | 699 | 0.3+ | 0.6+ |
| 1997 09 28 | 691 | 0.1− | 0.1− | 2004 03 20 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 1.3− | 0.6+ |
| 1997 09 28 | 691 | 0.1+ | 0.1+ | 2004 03 20 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.9+ |
| 2002 11 04 | 644 | 0.2− | 0.2+ | 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.1+ | 1.1+ |
| 2002 11 04 | 644 | 0.0 | 0.1+ | 2005 05 11 | G96 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.5− |
| 2002 11 04 | 644 | 0.2+ | 0.3+ | 2005 05 11 | G96 | 0.2+ | 0.6+ | 2006 09 27 | G96 | 0.6− | 0.5− |
| 2004 02 12 | 691 | 0.2+ | 0.4+ | 2005 05 11 | G96 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.6− | 0.1− |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2005 05 11 | G96 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2004 02 12 | 691 | 0.1− | 0.5+ | 2006 08 19 | 699 | 0.9+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.1+ |
| 2004 02 18 | 691 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.1− | 0.9+ | | | | |
| 2004 02 18 | 691 | 0.2− | 0.3− | 2006 08 19 | 699 | (1.1− | 2.2+) | | | | |

**2004 CR$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.45148 | | | (2000.0) | | |
| $n$ | 0.27090441 | $\omega$ | 217.19094 | | −0.73813701 | −0.66558985 |
| $a$ | 2.3655130 | $\Omega$ | 280.70122 | | +0.64281312 | −0.64427121 |
| $e$ | 0.0571772 | $i$ | 6.43926 | | +0.20480489 | −0.37670249 |
| $P$ | 3.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 0.3+ | 0.4− | 2004 02 23 | 704 | 0.3− | 1.2− | 2006 11 02 | 703 | 1.3− | 0.6+ |
| 2004 01 23 | 704 | 0.2+ | 1.0+ | 2004 03 12 | 644 | 0.0 | 0.4+ | 2006 11 02 | 703 | 0.6− | 0.3+ |
| 2004 01 23 | 704 | 1.2− | 0.7+ | 2004 03 12 | 644 | 0.0 | 0.4+ | 2006 11 02 | 703 | 1.4− | 0.9− |
| 2004 02 13 | 644 | 0.2+ | 0.4− | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2006 11 02 | 703 | 0.4− | 0.4− |
| 2004 02 13 | 644 | 0.0 | 0.1− | 2004 03 15 | 704 | (1.8− | 0.2−) | 2006 11 11 | 703 | 0.6− | 1.5− |
| 2004 02 13 | 644 | 0.4+ | 0.3− | 2004 03 15 | 704 | 0.7− | 0.6+ | 2006 11 11 | 703 | 0.9− | 0.5− |
| 2004 02 18 | 704 | 0.8+ | 0.1− | 2004 03 15 | 704 | 0.8+ | 0.2+ | 2006 11 11 | 703 | (0.4+ | 1.9+) |
| 2004 02 18 | 704 | 0.1+ | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2004 02 18 | 704 | 0.7− | 1.4+ | 2006 10 27 | 703 | 0.2+ | 1.4− | 2006 11 14 | 703 | (0.2+ | 2.6−) |
| 2004 02 18 | 691 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.3− | 1.3+ | 2006 11 14 | 703 | 1.1+ | 1.3− |
| 2004 02 18 | 704 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.6+ | 1.3+ | 2006 11 14 | 703 | 0.2− | 0.0 |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.3+ | 2006 11 14 | 703 | 0.8− | 0.2− |
| 2004 02 18 | 691 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.1− | 0.8+ | 2006 11 15 | 691 | 0.2+ | 0.4+ |
| 2004 02 23 | 704 | 0.5− | 0.1+ | 2006 10 27 | 703 | 1.5+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2004 02 23 | 704 | 0.4+ | 0.4− | 2006 10 27 | 703 | 0.8+ | 0.8− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.6− | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.5− | | | | |

**2004 CU$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 219.02905 | | | (2000.0) | | |
| $n$ | 0.22576844 | $\omega$ | 218.30478 | | −0.87810866 | −0.47027006 |
| $a$ | 2.6711230 | $\Omega$ | 293.42692 | | +0.45925428 | −0.77674948 |
| $e$ | 0.1609334 | $i$ | 5.51316 | | +0.13420394 | −0.41893473 |
| $P$ | 4.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 608 | 0.4− | 0.5+ | 2004 03 16 | 704 | 1.0+ | 1.2− | 2004 03 19 | 704 | 0.0 | 0.8+ |
| 2004 02 14 | 608 | 0.1− | 0.4+ | 2004 03 16 | 704 | 1.4+ | 0.6− | 2004 03 19 | 704 | 0.4− | 0.4+ |
| 2004 02 14 | 608 | 0.4+ | 0.7+ | 2004 03 16 | 704 | 1.2+ | 0.5− | 2004 03 19 | 704 | 0.0 | 0.2+ |
| 2004 02 18 | 608 | 0.2+ | 0.8− | 2004 03 16 | 704 | 0.7+ | 0.4− | 2004 03 19 | 704 | 0.4− | 0.8+ |
| 2004 02 18 | 608 | 0.5− | 0.8− | 2004 03 16 | 704 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2004 02 18 | 608 | 0.0 | 0.8− | 2004 03 17 | 704 | 0.7− | 0.1+ | 2006 10 19 | 691 | 1.1+ | 0.8+ |
| 2004 02 19 | 704 | 0.1+ | 0.5− | 2004 03 17 | 704 | 0.9− | 0.5+ | 2006 10 19 | 691 | 0.5+ | 0.1+ |
| 2004 02 19 | 704 | 0.7− | 0.5+ | 2004 03 17 | 704 | (0.7+ | 2.7−) | 2006 10 23 | 691 | 0.5− | 0.6− |
| 2004 02 19 | 704 | 0.3+ | 0.0 | 2004 03 17 | 704 | 0.3+ | 1.4− | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2004 02 19 | 704 | 0.2− | 0.3− | 2004 03 17 | 704 | 0.9− | 0.8− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2004 02 19 | 704 | 0.0 | 0.0 | 2004 03 17 | 704 | 0.5+ | 1.7+ | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2004 02 26 | 704 | 0.3− | 0.4+ | 2004 03 17 | 704 | 0.1+ | 0.5− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2004 02 26 | 704 | 0.0 | 0.1− | 2004 03 17 | 704 | 0.8+ | 0.8− | 2006 10 23 | 691 | 0.2− | 0.4− |
| 2004 02 26 | 704 | 0.3− | 0.5+ | 2004 03 17 | 704 | 0.3− | 0.4+ | | | | |
| 2004 02 26 | 704 | 0.3− | 0.7+ | 2004 03 19 | 704 | 0.1+ | 1.1+ | | | | |

**2004 CZ$_{92}$ = 2006 QQ$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 258.06083 | | | (2000.0) | | |
| $n$ | 0.22081187 | $\omega$ | 90.35273 | | +0.05335687 | −0.99855595 |
| $a$ | 2.7109475 | $\Omega$ | 356.56991 | | +0.86959876 | +0.04954091 |
| $e$ | 0.0069091 | $i$ | 5.99592 | | +0.49086764 | +0.02077770 |
| $P$ | 4.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 13 | 691 | 0.4− | 0.1− | 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1− |
| 1993 10 13 | 691 | 0.4+ | 0.1− | 2004 02 18 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.9+ | 0.4+ |
| 1993 10 13 | 691 | 0.1+ | 0.1− | 2004 02 18 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 2000 02 12 | 645 | 0.1+ | 0.1+ | 2004 03 18 | 645 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.9− | 0.9− |
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.5+ |
| 2000 03 11 | 704 | (2.4+ | 1.1−) | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.6+ |
| 2000 03 11 | 704 | 0.9+ | 0.2+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.4+ | 0.0 | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 0.6+ | 0.3− | 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.2− |
| 2000 04 06 | 704 | 0.0 | 1.4+ | 2005 01 18 | 809 | 0.8+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2000 04 06 | 704 | 0.1+ | 0.1+ | 2005 01 18 | 809 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.6+ |
| 2000 04 06 | 704 | 0.1+ | 0.9+ | 2005 01 18 | 809 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2002 10 03 | 644 | 0.2+ | 0.6+ | 2006 08 18 | 644 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.5− | 0.2− |
| 2002 10 03 | 644 | 0.1+ | 0.8+ | 2006 08 18 | 644 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.9− | 0.8+ |
| 2002 10 03 | 644 | 0.1+ | 0.9+ | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2004 02 15 | 704 | 0.6+ | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2004 02 15 | 704 | 1.3− | 0.3− | 2006 08 22 | 644 | 0.0 | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.6+ |
| 2004 02 15 | 704 | 0.7+ | 0.3+ | 2006 08 22 | 644 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 1.1+ |
| 2004 02 15 | 704 | 0.8+ | 1.0+ | 2006 09 14 | 703 | 1.4− | 0.2+ | | | | |

**2004 CN$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.88612 | | | (2000.0) | | |
| $n$ | 0.28941225 | $\omega$ | 176.69671 | | −0.04447535 | −0.98937450 |
| $a$ | 2.2635571 | $\Omega$ | 275.82040 | | +0.91335559 | +0.01586336 |
| $e$ | 0.1650744 | $i$ | 7.99792 | | +0.40472645 | −0.14452148 |
| $P$ | 3.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.1+ | 0.1+ | 2004 02 11 | 644 | 0.4− | 0.0 | 2006 10 19 | 703 | 1.1− | 0.4− |
| 2002 08 05 | 644 | 0.1+ | 0.0 | 2004 02 13 | 699 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.3− | 0.6− |
| 2002 08 05 | 644 | 0.2− | 0.2− | 2004 02 13 | 699 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.7+ | 0.4+ |
| 2004 01 23 | 704 | 0.2− | 0.2+ | 2004 02 13 | 699 | 0.1− | 0.3− | 2006 10 27 | 703 | 1.1− | 0.2− |
| 2004 01 23 | 704 | 0.1− | 0.2+ | 2004 02 13 | 699 | 0.4− | 0.6− | 2006 10 27 | 703 | 0.3+ | 0.3+ |
| 2004 01 23 | 704 | 0.4+ | 0.6+ | 2004 02 18 | 704 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.1− | 0.6− |
| 2004 01 23 | 704 | 0.1+ | 0.5− | 2004 02 18 | 704 | 0.0 | 0.3+ | 2006 11 14 | 644 | 0.1+ | 0.5− |
| 2004 01 23 | 704 | 1.2+ | 1.3− | 2004 02 18 | 704 | 0.0 | 0.4+ | 2006 11 14 | 644 | 0.6+ | 0.0 |
| 2004 01 29 | 704 | 0.5+ | 0.6+ | 2004 02 18 | 704 | 0.5− | 0.2− | 2006 11 14 | 644 | 0.1− | 0.1+ |
| 2004 01 29 | 704 | 0.9+ | 0.2+ | 2004 02 23 | 704 | (1.8− | 0.6−) | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2004 01 29 | 704 | 0.8+ | 0.3− | 2004 02 23 | 704 | 0.4− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.6− |
| 2004 01 29 | 704 | 0.0 | 0.3− | 2004 02 23 | 704 | 0.5− | 0.1− | 2006 11 15 | 703 | 0.3+ | 0.2− |
| 2004 01 29 | 704 | 0.5+ | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2004 02 11 | 644 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.1− | 0.8+ |
| 2004 02 11 | 644 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.4+ |
| 2004 02 11 | 644 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 22 | 703 | 0.1− | 0.7+ |
| 2004 02 11 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.4+ | 0.4− | 2006 11 22 | 703 | 0.1− | 0.7+ |
| 2004 02 11 | 644 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.8+ | 0.2+ | | | | |

**2004 CG$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.55280 | | | (2000.0) | | |
| $n$ | 0.21212403 | $\omega$ | 177.63970 | | −0.90330592 | +0.42873621 |
| $a$ | 2.7844717 | $\Omega$ | 27.76290 | | −0.39412113 | −0.81559744 |
| $e$ | 0.1613365 | $i$ | 1.83989 | | −0.16943124 | −0.38856928 |
| $P$ | 4.65 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2004 03 15 | 703 | 0.4− | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2004 02 11 | 644 | 0.2− | 0.0 | 2004 03 15 | 704 | (1.8+ | 1.4+) | 2006 09 26 | G96 | 0.3− | 0.7− |
| 2004 02 11 | 644 | 0.4+ | 0.3− | 2004 03 15 | 703 | 0.3− | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.8− |
| 2004 02 18 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | (1.9+ | 1.0+) | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2004 02 18 | 704 | 0.0 | 0.0 | 2004 03 15 | 703 | 0.1+ | 0.8− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2004 02 18 | 704 | 0.4− | 0.5+ | 2004 03 30 | 691 | 0.2− | 0.2+ | 2006 10 15 | 291 | 0.4+ | 0.1+ |
| 2004 02 23 | 704 | 0.3− | 0.3− | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 10 15 | 291 | 0.2− | 0.3+ |
| 2004 02 23 | 704 | 0.1− | 0.9− | 2004 03 30 | 691 | 0.1+ | 0.1− | 2006 10 15 | 291 | 0.1− | 0.6− |
| 2004 02 23 | 704 | 0.6+ | 0.9+ | 2006 09 19 | 691 | 0.5+ | 0.7+ | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2004 02 23 | 704 | 0.3− | 1.4− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.5− |
| 2004 03 15 | 703 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.6+ | 0.7− |
| 2004 03 15 | 704 | 1.1+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2004 03 15 | 704 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1+ | | | | |

**2004 CN$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 307.35618 | | | (2000.0) | | |
| $n$ | 0.26102584 | $\omega$ | 169.51683 | | +0.21453123 | −0.97645143 |
| $a$ | 2.4248249 | $\Omega$ | 268.09237 | | +0.89446272 | +0.20577941 |
| $e$ | 0.1428881 | $i$ | 1.30607 | | +0.39231721 | +0.06478765 |
| $P$ | 3.78 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 16 | 691 | 0.1+ | 0.3− | 2004 02 29 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | (1.6− | 0.8+) |
| 2000 01 16 | 691 | 0.2− | 0.4− | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 1.2− | 0.6+ |
| 2000 01 16 | 691 | 0.1− | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 2004 02 12 | 291 | 0.0 | 0.2+ | 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2004 02 12 | 291 | 0.3− | 0.3+ | 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 02 12 | 291 | 0.5− | 0.3+ | 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2004 02 18 | 704 | 0.4+ | 1.1+ | 2004 03 26 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 02 18 | 704 | 0.0 | 0.1− | 2004 03 26 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2004 02 18 | 704 | 1.0+ | 0.0 | 2004 03 26 | 691 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.7+ | 0.1− |
| 2004 02 18 | 704 | 0.9+ | 1.0+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2004 02 26 | 704 | 0.3+ | 1.2+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2004 02 26 | 704 | 0.7+ | 0.2− | 2006 09 15 | 691 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2004 02 26 | 704 | 0.3− | 1.0− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2004 02 26 | 704 | (0.1− | 1.5−) | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.0 |
| 2004 02 26 | 704 | 0.1− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.2− |

**2004 CL$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 264.59096 | | | (2000.0) | | |
| $n$ | 0.23359076 | $\omega$ | 304.52063 | | −0.28130133 | −0.95735510 |
| $a$ | 2.6111527 | $\Omega$ | 161.47776 | | +0.93433436 | −0.28889979 |
| $e$ | 0.1429618 | $i$ | 11.96988 | | +0.21883526 | +0.00285025 |
| $P$ | 4.22 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 644 | 0.3− | 0.6− | 2004 03 18 | 691 | 0.1− | 0.4− | 2004 03 30 | 704 | 0.5− | 0.0 |
| 2004 02 13 | 644 | 0.0 | 0.3− | 2004 03 18 | 691 | 0.0 | 0.4− | 2004 03 30 | 704 | 0.2− | 0.2+ |
| 2004 02 13 | 644 | 0.3+ | 0.6− | 2004 03 19 | 704 | 1.0+ | 0.1− | 2004 03 30 | 704 | 0.4− | 0.5+ |
| 2004 02 14 | 333 | 0.5− | 0.5− | 2004 03 19 | 704 | 0.4+ | 0.1+ | 2004 03 30 | 704 | 0.3+ | 0.3+ |
| 2004 02 14 | 333 | 0.7− | 0.6+ | 2004 03 19 | 704 | 0.9+ | 1.2+ | 2006 08 28 | 703 | 0.0 | 1.0+ |
| 2004 02 14 | 333 | 0.6− | 0.4+ | 2004 03 19 | 704 | 0.1− | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.5− |
| 2004 02 18 | 704 | 0.9+ | 0.4− | 2004 03 19 | 704 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.7+ | 0.9− |
| 2004 02 18 | 704 | 0.8+ | 0.3− | 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 08 28 | 703 | 1.4− | 0.6+ |
| 2004 02 18 | 704 | 0.5+ | 0.3− | 2004 03 19 | 704 | 0.5+ | 0.7+ | 2006 09 16 | 704 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 0.6− | 0.2− | 2004 03 19 | 704 | 1.3+ | 0.9+ | 2006 09 16 | 704 | 0.1− | 0.6− |
| 2004 02 18 | 704 | 0.5+ | 1.3+ | 2004 03 19 | 704 | 0.4+ | 0.7+ | 2006 09 16 | 699 | 0.4− | 0.1− |
| 2004 02 20 | 608 | 0.3− | 0.3− | 2004 03 19 | 704 | 0.4− | 0.9+ | 2006 09 16 | 704 | 0.7− | 0.8+ |
| 2004 02 20 | 608 | 0.6− | 0.5+ | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.5− | 0.2− |
| 2004 02 20 | 608 | 0.3− | 0.4− | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 699 | 0.4− | 0.6+ |
| 2004 02 26 | 704 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.7+ | 0.3− |
| 2004 02 26 | 704 | 0.4+ | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | (2.5− | 1.8−) |
| 2004 02 26 | 704 | 0.5+ | 0.3+ | 2004 03 28 | 704 | 0.3+ | 0.7− | 2006 09 19 | 699 | 0.7− | 0.3− |
| 2004 02 26 | 704 | 0.5+ | 0.3+ | 2004 03 28 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.2− | 0.3+ |
| 2004 02 26 | 704 | 0.1+ | 0.1− | 2004 03 28 | 704 | 0.3− | 0.7+ | 2006 09 19 | 699 | 0.3− | 0.7+ |
| 2004 03 14 | 703 | 0.9+ | 0.6+ | 2004 03 28 | 704 | 1.2− | 0.0 | 2006 09 25 | 699 | 1.5+ | 0.6+ |
| 2004 03 14 | 703 | 0.4− | 0.1− | 2004 03 28 | 704 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.9+ |
| 2004 03 14 | 703 | 1.3− | 0.1− | 2004 03 28 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.9+ | 0.1+ |
| 2004 03 14 | 703 | 0.5+ | 0.6− | 2004 03 28 | 704 | 0.2− | 1.2− | 2006 09 25 | 699 | 0.2− | 0.6− |
| 2004 03 15 | 704 | 0.0 | 0.3+ | 2004 03 28 | 704 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.3− |
| 2004 03 15 | 704 | (0.3+ | 1.7+) | 2004 03 29 | 704 | 0.4− | 1.1− | 2006 09 30 | 703 | 0.6+ | 0.4− |
| 2004 03 15 | 704 | 0.3+ | 0.4+ | 2004 03 29 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | (0.9− | 2.4−) |
| 2004 03 15 | 704 | 0.4+ | 0.3+ | 2004 03 29 | 704 | 0.9− | 0.4− | 2006 09 30 | 703 | (2.4+ | 0.2−) |
| 2004 03 15 | 704 | 0.1− | 0.9+ | 2004 03 29 | 704 | 1.1− | 0.9+ | | | | |
| 2004 03 18 | 691 | 0.1− | 0.4− | 2004 03 30 | 704 | 0.7− | 0.9− | | | | |

**2004 CC$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 102.68349 | | | (2000.0) | | |
| $n$ | 0.15721439 | $\omega$ | 114.91677 | | −0.92958930 | +0.24752671 |
| $a$ | 3.3999656 | $\Omega$ | 80.37784 | | −0.34739298 | −0.83603484 |
| $e$ | 0.0612947 | $i$ | 16.08223 | | +0.12321464 | −0.48966956 |
| $P$ | 6.27 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 291 | 0.2− | 0.2+ | 2003 01 06 | 291 | 0.2− | 0.4+ | 2005 04 04 | 703 | 0.4− | 0.4− |
| 2002 11 05 | 291 | 0.2− | 0.2+ | 2004 01 31 | 645 | 0.0 | 0.1− | 2005 04 12 | 699 | 1.8+ | 1.9+ |
| 2002 11 05 | 291 | 0.1− | 0.1+ | 2004 01 31 | 645 | 0.0 | 0.2− | 2005 04 12 | 699 | 1.2+ | 0.2+ |
| 2002 12 10 | 704 | 0.0 | 0.2− | 2004 02 13 | 644 | 0.3+ | 0.5+ | 2005 04 12 | 699 | 0.3− | 1.5+ |
| 2002 12 10 | 704 | 0.6− | 0.1+ | 2004 02 13 | 644 | 0.6+ | 0.6+ | 2005 04 12 | 699 | 0.6− | 0.5+ |
| 2002 12 10 | 704 | 0.9+ | 0.2+ | 2004 02 13 | 644 | 0.3+ | 1.0+ | 2005 04 18 | 703 | 0.3+ | 0.3− |
| 2002 12 10 | 704 | 0.7− | 0.3+ | 2004 02 16 | 703 | 0.2+ | 0.5+ | 2005 04 18 | 703 | 0.3+ | 1.0+ |
| 2002 12 10 | 704 | 0.2− | 0.9− | 2004 02 16 | 703 | 1.0− | 0.3− | 2005 04 18 | 703 | 0.1− | 0.2− |
| 2002 12 10 | 704 | 0.9− | 0.1+ | 2004 02 16 | 703 | 0.7− | 0.8+ | 2005 04 18 | 703 | 0.1− | 0.4− |
| 2002 12 10 | 704 | 2.0+ | 0.5− | 2004 02 16 | 703 | 0.3+ | 0.1− | 2005 05 14 | 704 | 0.1− | 0.4− |
| 2002 12 10 | 704 | 0.2+ | 1.0+ | 2005 04 04 | 703 | 1.2− | 0.3+ | 2005 05 14 | 704 | 0.8+ | 0.5− |
| 2003 01 06 | 291 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.4− | 0.7+ | 2005 05 14 | 704 | 0.3+ | 0.1− |
| 2003 01 06 | 291 | 0.3+ | 0.0 | 2005 04 04 | 703 | 0.2− | 0.2+ | 2005 05 14 | 704 | 0.1+ | 0.9− |

**2004 CF$_{97}$ = 2004 DS$_{49}$**

Id. Minor Planet Center (d, *MPO* 77916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 283.36065 | | | (2000.0) | | |
| $n$ | 0.28330679 | $\omega$ | 352.07068 | | −0.76280860 | −0.64618096 |
| $a$ | 2.2959622 | $\Omega$ | 147.63520 | | +0.59569349 | −0.71664801 |
| $e$ | 0.1395092 | $i$ | 2.56344 | | +0.25153987 | −0.26242293 |
| $P$ | 3.48 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 291 | 0.1− | 0.2+ | 2004 02 26 | 704 | 0.6+ | 0.8+ | 2004 03 28 | 691 | 0.1− | 0.4− |
| 2004 02 13 | 291 | 0.2− | 0.2+ | 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2004 02 13 | 291 | 0.3+ | 0.5+ | 2004 02 26 | 704 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2004 02 14 | 703 | 0.7− | 0.4− | 2004 03 15 | 704 | 1.2− | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2004 02 14 | 703 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.1+ | 0.9− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 02 14 | 703 | 0.2+ | 1.5− | 2004 03 15 | 704 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.4− |
| 2004 02 14 | 703 | 0.5− | 0.5− | 2004 03 20 | 699 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2004 02 20 | 608 | 0.1− | 1.5+ | 2004 03 20 | 699 | 0.1− | 0.4− | 2006 11 20 | 691 | 0.3+ | 0.3+ |
| 2004 02 20 | 608 | 0.2+ | 1.1+ | 2004 03 20 | 699 | 0.5+ | 0.4− | 2006 12 01 | G96 | 0.7− | 0.4− |
| 2004 02 20 | 608 | 0.5+ | 1.3+ | 2004 03 20 | 699 | 0.1+ | 0.7+ | 2006 12 01 | G96 | 0.3− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.2− | 0.3− | 2004 03 28 | 691 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2004 02 26 | 704 | 0.2+ | 0.3+ | 2004 03 28 | 691 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.2+ | 0.4− |

**2004 CA$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.86722 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24150573 | $\omega$ | 129.63645 | | −0.31818905 | −0.94437744 | |
| $a$ | 2.5537855 | $\Omega$ | 338.47374 | | +0.78556562 | −0.21357250 | |
| $e$ | 0.1979973 | $i$ | 13.09096 | | +0.53069990 | −0.25007607 | |
| $P$ | 4.08 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.1+ | 0.4+ | 2004 02 17 | 291 | 0.5+ | 0.2− | 2004 03 18 | 704 | 0.1− | 0.4+ |
| 2000 03 09 | 704 | 1.1+ | 0.5− | 2004 02 19 | 704 | 0.1− | 0.7− | 2004 03 18 | 704 | 0.8+ | 0.8+ |
| 2000 03 09 | 704 | 0.5+ | 0.4+ | 2004 02 19 | 704 | 0.3− | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.1+ |
| 2002 09 11 | 644 | 0.3− | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.6+ | 2004 03 20 | 704 | (2.6+ | 0.5+) |
| 2002 09 11 | 644 | 0.6− | 0.4+ | 2004 02 19 | 704 | 0.4− | 0.5+ | 2004 03 20 | 704 | 0.7+ | 0.1+ |
| 2002 09 13 | 644 | 0.3− | 0.4+ | 2004 02 19 | 704 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.7+ |
| 2002 09 13 | 644 | 0.6− | 0.6+ | 2004 02 26 | 704 | 0.5+ | 0.5− | 2004 03 20 | 704 | 0.4+ | 0.6+ |
| 2002 09 13 | 644 | 0.5− | 0.3+ | 2004 02 26 | 704 | 0.5+ | 0.1− | 2004 03 27 | 691 | 0.5− | 0.4+ |
| 2002 09 17 | 644 | 0.3− | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.1+ | 2004 03 27 | 691 | 0.2− | 0.3+ |
| 2002 09 17 | 644 | 0.8− | 0.3+ | 2004 02 26 | 704 | 0.1− | 0.1− | 2004 03 27 | 691 | 0.3− | 0.3+ |
| 2002 09 17 | 644 | 0.5− | 0.4+ | 2004 02 26 | 704 | 0.1+ | 0.2+ | 2006 08 19 | 691 | 0.6− | 0.9+ |
| 2002 09 18 | 644 | 0.2− | 0.9+ | 2004 03 16 | 704 | 0.2+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.7+ |
| 2002 09 18 | 644 | 0.9− | 0.3+ | 2004 03 16 | 704 | 1.4+ | 0.3+ | 2006 08 19 | 691 | 0.3− | 0.7+ |
| 2004 02 14 | 703 | 0.8+ | 0.6− | 2004 03 16 | 704 | 0.5+ | 1.3+ | 2006 10 02 | G96 | 0.6− | 0.2− |
| 2004 02 14 | 703 | 1.1+ | 0.4− | 2004 03 16 | 704 | 1.0+ | 0.1+ | 2006 10 02 | G96 | 0.6− | 0.7+ |
| 2004 02 14 | 703 | 1.5+ | 1.5− | 2004 03 16 | 704 | 0.4+ | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2004 02 14 | 703 | (0.0 | 1.7−) | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2004 02 17 | 291 | 0.4− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.2+ | | | | |
| 2004 02 17 | 291 | 0.3− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 1.2+ | | | | |

**2004 CX$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.15094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26792618 | $\omega$ | 130.70597 | | −0.98077416 | +0.18868426 | |
| $a$ | 2.3830104 | $\Omega$ | 60.22445 | | −0.19184089 | −0.88546267 | |
| $e$ | 0.1625441 | $i$ | 3.28932 | | −0.03576494 | −0.42468119 | |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 703 | 0.7+ | 0.7+ | 2004 03 16 | 704 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.7+ | 1.1+ |
| 2004 02 15 | 703 | 0.4+ | 0.9− | 2004 03 16 | 704 | 0.4+ | 0.1− | 2004 03 22 | 704 | 0.7− | 0.7− |
| 2004 02 15 | 703 | 1.1− | 0.6− | 2004 03 16 | 704 | 0.5− | 0.4− | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2004 02 15 | 703 | 0.4− | 0.9+ | 2004 03 16 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 691 | 0.4− | 0.3+ |
| 2004 02 18 | 704 | 0.3+ | 0.6− | 2004 03 16 | 704 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 0.4− | 0.6− | 2004 03 17 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2004 02 18 | 704 | (1.0− | 1.6−) | 2004 03 17 | 691 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2004 03 11 | 644 | 0.0 | 0.4+ | 2004 03 17 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.6+ | 0.4− |
| 2004 03 11 | 644 | 0.2− | 0.5+ | 2004 03 20 | 704 | (1.8+ | 0.1−) | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 03 11 | 644 | 0.1− | 0.3+ | 2004 03 20 | 704 | 1.5− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 704 | 0.4+ | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2004 03 15 | 704 | 1.4+ | 0.2− | 2004 03 20 | 704 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2004 03 15 | 704 | 1.3+ | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2004 03 15 | 704 | 1.2+ | 0.5− | 2004 03 22 | 704 | 0.6− | 0.2+ | 2006 11 27 | 691 | 0.5− | 0.1+ |

**2004 CY$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.68505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27130766 | $\omega$ | 60.53705 | | −0.39097135 | −0.91889545 | |
| $a$ | 2.3631684 | $\Omega$ | 52.57265 | | +0.81982640 | −0.37368155 | |
| $e$ | 0.1854296 | $i$ | 3.80183 | | +0.41836119 | −0.12646439 | |
| $P$ | 3.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 12 | 691 | 0.0 | 0.4+ | 2004 03 11 | 644 | 0.3− | 0.2+ | 2006 10 28 | 704 | 1.4+ | 0.3+ |
| 1997 04 12 | 691 | 0.1+ | 0.3+ | 2004 03 15 | 704 | 1.4+ | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 1997 04 12 | 691 | 0.0 | 0.1+ | 2004 03 15 | 704 | 1.0+ | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 1999 12 07 | 704 | 0.0 | 1.2− | 2004 03 15 | 704 | 1.4+ | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.2− | 1.2− | 2004 03 15 | 704 | (2.2+ | 0.0 ) | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 1999 12 07 | 704 | 1.1+ | 1.8− | 2004 03 15 | 704 | 1.3+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.3− |
| 1999 12 07 | 704 | 0.1− | 0.2− | 2004 03 20 | 704 | 1.1+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2003 12 22 | 704 | 0.4− | 0.6+ | 2004 03 20 | 704 | 1.3− | 0.6− | 2006 11 11 | 703 | 0.8− | 0.6+ |
| 2003 12 22 | 704 | 0.2+ | 1.1+ | 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2003 12 22 | 704 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.3+ | 1.0+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2003 12 22 | 704 | (1.7− | 0.6+) | 2004 03 20 | 704 | 0.5+ | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2003 12 27 | 704 | 0.5− | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2003 12 27 | 704 | 0.8− | 0.5+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2003 12 27 | 704 | 0.5− | 0.5+ | 2004 03 22 | 704 | 0.2+ | 0.8+ | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2003 12 27 | 704 | 0.5+ | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2004 01 18 | 703 | 1.4− | 0.7+ | 2004 03 22 | 704 | 0.3+ | 0.7− | 2006 11 17 | 703 | 0.3+ | 0.2− |
| 2004 01 18 | 703 | 0.4+ | 0.2− | 2006 09 28 | 683 | 0.8+ | 0.6+ | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2004 01 18 | 703 | 0.4− | 0.5+ | 2006 09 28 | 683 | (2.2+ | 0.6+) | 2006 11 17 | 703 | 0.4+ | 0.3+ |
| 2004 01 18 | 703 | 1.2− | 0.2+ | 2006 09 28 | 683 | 1.1− | 0.5− | 2006 11 17 | 703 | 0.5+ | 0.7+ |
| 2004 01 18 | 703 | 1.1+ | 0.6+ | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | (2.1+ | 3.2+) |
| 2004 01 18 | 703 | 0.4− | 0.5− | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.1− | 1.0+ |
| 2004 01 18 | 703 | 0.1− | 0.9− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.1+ | 1.1− |
| 2004 01 18 | 703 | (2.0+ | 1.0−) | 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 1.0+ |
| 2004 02 15 | 703 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2004 02 15 | 703 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2004 02 15 | 703 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.4+ |
| 2004 02 15 | 703 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2004 02 18 | 704 | 0.6− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 2004 02 18 | 704 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2004 02 18 | 704 | 0.9− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2004 02 21 | 608 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2004 02 21 | 608 | 0.2− | 0.8− | 2006 10 18 | 691 | 0.2− | 0.7− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2004 02 21 | 608 | 0.0 | 0.6− | 2006 10 18 | 691 | 0.3+ | 0.7+ | 2006 11 24 | 703 | 0.4− | 0.4− |
| 2004 02 25 | 704 | 0.5+ | 0.5− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 24 | 703 | 0.6− | 0.5− |
| 2004 02 25 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 24 | 703 | 0.4− | 1.0− |
| 2004 02 25 | 704 | 0.6+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 24 | 703 | 0.3− | 0.6− |
| 2004 02 25 | 704 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 25 | 703 | 0.2− | 0.2− |
| 2004 02 25 | 704 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.5− | 0.3+ | 2006 11 25 | 703 | 0.1− | 0.7− |
| 2004 03 11 | 644 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.6− | 0.3+ | 2006 11 25 | 703 | 0.1− | 0.5+ |
| 2004 03 11 | 644 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.5+ | 2006 11 25 | 703 | 0.7− | 0.5− |
| 2004 03 11 | 644 | 0.3− | 0.2+ | 2006 10 28 | 704 | 1.3− | 1.0+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 03 11 | 644 | 0.5− | 0.0 | 2006 10 28 | 704 | 0.2− | 0.7+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 03 11 | 644 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.6+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.0 |

**2004 CE$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.18999 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27997093 | $\omega$ | 112.14112 | | −0.99541807 | +0.07946152 | |
| $a$ | 2.3141638 | $\Omega$ | 72.44866 | | −0.09436973 | −0.90601467 | |
| $e$ | 0.1522110 | $i$ | 3.19777 | | +0.01540200 | −0.41572020 | |
| $P$ | 3.52 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 703 | (1.5− | 1.7−) | 2004 03 15 | 704 | 0.2+ | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.2− |
| 2004 02 15 | 703 | (2.5− | 0.9−) | 2004 03 15 | 704 | 0.9− | 0.4+ | 2004 03 22 | 704 | 0.2+ | 0.6− |
| 2004 02 15 | 703 | 0.6− | 0.5− | 2004 03 16 | 704 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.1− | 0.6+ |
| 2004 02 15 | 703 | 0.3+ | 0.3− | 2004 03 16 | 704 | 0.5+ | 0.6+ | 2004 03 22 | 704 | 0.6+ | 0.0 |
| 2004 02 18 | 704 | 0.6− | 0.6+ | 2004 03 16 | 704 | 0.5+ | 0.7+ | 2004 03 26 | 703 | 0.1+ | 0.9− |
| 2004 02 18 | 704 | (1.1− | 2.0+) | 2004 03 16 | 704 | 0.1− | 0.7+ | 2004 03 26 | 703 | 0.8− | 0.9+ |
| 2004 02 18 | 704 | 1.1+ | 1.3+ | 2004 03 16 | 704 | 0.0 | 1.4− | 2004 03 26 | 703 | 1.1− | 0.9− |
| 2004 02 26 | 704 | 0.2+ | 0.2+ | 2004 03 16 | 704 | 0.2− | 1.2− | 2004 03 26 | 703 | 1.2− | 1.0− |
| 2004 02 26 | 704 | 0.4− | 0.1+ | 2004 03 16 | 704 | 1.0+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2004 02 26 | 704 | 0.1+ | 0.1+ | 2004 03 16 | 704 | 0.5+ | 1.1− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2004 02 26 | 704 | 0.2+ | 0.5+ | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.3+ | 0.3+ |
| 2004 02 26 | 704 | 0.4+ | 0.6+ | 2004 03 19 | 644 | 0.4+ | 0.5+ | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2004 03 14 | 703 | 0.2− | 0.6− | 2004 03 19 | 644 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.3− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 703 | 1.2− | 1.1− | 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2004 03 14 | 703 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.4− | | |
| 2004 03 14 | 703 | 0.5+ | 0.5− | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.1+ | | |
| 2004 03 15 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2004 03 15 | 704 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.4+ | | | | | | |

**2004 CY$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.99923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18338713 | $\omega$ | 307.25613 | | −0.97312036 | −0.20971136 | |
| $a$ | 3.0682458 | $\Omega$ | 220.88509 | | +0.22871094 | −0.92845169 | |
| $e$ | 0.2396811 | $i$ | 8.36065 | | −0.02698267 | −0.30659193 | |
| $P$ | 5.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 01 29 | 704 | 0.0 | 0.4+ | 2004 02 19 | 704 | 0.1+ | 0.2+ | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 01 29 | 704 | 0.2+ | 0.3+ | 2004 02 26 | 683 | 0.7+ | 0.5+ | | |
| 2004 01 14 | 644 | 0.1− | 0.4+ | 2004 01 29 | 699 | 0.3− | 0.5+ | 2004 02 26 | 683 | 0.4− | 0.4+ | | |
| 2004 01 14 | 644 | 0.0 | 0.7+ | 2004 02 12 | 644 | 0.0 | 0.3+ | 2004 02 26 | 683 | 0.5− | 0.7+ | | |
| 2004 01 14 | 644 | 0.1− | 0.5+ | 2004 02 12 | 644 | 0.3+ | 0.4+ | 2004 05 17 | 704 | 0.2+ | 0.6+ | | |
| 2004 01 28 | 608 | 0.1+ | 0.3− | 2004 02 12 | 644 | 0.4+ | 0.1+ | 2004 05 17 | 704 | 0.6+ | 0.1− | | |
| 2004 01 28 | 608 | 0.2+ | 0.5− | 2004 02 13 | 699 | 0.6− | 0.7− | 2004 05 17 | 704 | 0.7+ | 0.2+ | | |
| 2004 01 28 | 608 | 0.1− | 0.5− | 2004 02 13 | 699 | 0.3+ | 0.3− | 2006 05 25 | G96 | 1.2− | 0.2+ | | |
| 2004 01 29 | 704 | 0.4− | 0.2+ | 2004 02 13 | 699 | 0.1+ | 0.2− | 2006 05 25 | G96 | 0.6− | 0.3+ | | |
| 2004 01 29 | 699 | 0.7− | 0.0 | 2004 02 13 | 699 | 0.4− | 0.1+ | 2006 05 25 | G96 | 0.2+ | 0.1+ | | |
| 2004 01 29 | 704 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.7+ | 0.4+ | 2006 05 25 | G96 | 0.4+ | 0.3+ | | |
| 2004 01 29 | 699 | 0.4− | 0.1− | 2004 02 19 | 704 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.3+ | | |
| 2004 01 29 | 704 | 0.2+ | 0.4− | 2004 02 19 | 704 | 0.7+ | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.2+ | | |
| 2004 01 29 | 699 | 0.2− | 0.1− | 2004 02 19 | 704 | (1.2+ | 1.6−) | 2006 09 26 | 691 | 0.3+ | 0.7+ | | |

**2004 CU$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.29414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26454628 | $\omega$ | 203.28686 | | −0.33586083 | −0.93633971 | |
| $a$ | 2.4032647 | $\Omega$ | 266.46449 | | +0.87950500 | −0.27287737 | |
| $e$ | 0.0720438 | $i$ | 5.88291 | | +0.33714753 | −0.22092056 | |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 644 | 0.3− | 0.2+ | 2006 10 15 | 461 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.4+ | | |
| 2004 02 12 | 644 | 0.2− | 0.3+ | 2006 10 15 | 461 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.6− | | |
| 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 10 15 | 461 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.1− | | |
| 2004 02 19 | 704 | 0.2− | 0.2− | 2006 10 15 | 461 | 0.2− | 0.2+ | 2006 10 27 | 703 | (2.0+ | 0.9+) | | |
| 2004 02 19 | 704 | 0.3− | 0.1+ | 2006 10 15 | 461 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.8− | | |
| 2004 02 19 | 704 | 0.3+ | 0.3− | 2006 10 15 | 461 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.3− | | |
| 2004 02 19 | 704 | 0.1+ | 0.3− | 2006 10 17 | 461 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.2− | | |
| 2004 02 19 | 704 | 0.2− | 0.0 | 2006 10 17 | 461 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.1− | | |
| 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 10 17 | 461 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1− | | |
| 2004 02 23 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 461 | 0.0 | 0.1+ | 2006 11 13 | 291 | 0.1+ | 0.2+ | | |
| 2004 02 23 | 704 | 1.0+ | 0.5− | 2006 10 17 | 461 | 0.0 | 0.2+ | 2006 11 13 | 291 | 0.2+ | 0.1− | | |
| 2004 02 23 | 704 | 0.5− | 0.3+ | 2006 10 17 | 461 | 0.0 | 0.1+ | 2006 11 13 | 291 | 0.1+ | 0.1+ | | |
| 2004 02 23 | 704 | 1.4+ | 0.2+ | 2006 10 19 | 461 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.2+ | | |
| 2004 02 24 | 097 | 0.5− | 0.5+ | 2006 10 19 | 461 | 0.0 | 0.0 | 2006 11 14 | 703 | (2.1− | 0.4−) | | |
| 2004 02 24 | 097 | 0.3− | 0.6+ | 2006 10 19 | 461 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.6− | 1.2− | | |
| 2004 03 21 | 691 | 0.0 | 0.1− | 2006 10 19 | 703 | 1.3+ | 1.0− | 2006 11 14 | 703 | 0.3+ | 0.8+ | | |
| 2004 03 21 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 1.4− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2004 03 21 | 691 | 0.1− | 0.0 | 2006 10 19 | 703 | (1.7+ | 0.8−) | 2006 11 23 | G96 | 0.3− | 0.1− | | |
| 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | (0.1− | 1.6−) | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2006 10 12 | 644 | 0.2− | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.4− | 0.1− | | |
| 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.2− | | | | | | |

**2004 CX$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.32375 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28044180 | $\omega$ | 309.71172 | | −0.95500344 | −0.27632519 | |
| $a$ | 2.3115727 | $\Omega$ | 214.63955 | | +0.29496205 | −0.92291064 | |
| $e$ | 0.1304953 | $i$ | 10.92861 | | −0.03107777 | −0.26810508 | |
| $P$ | 3.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 704 | 1.0+ | 0.3+ | 2004 02 19 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.2− | | |
| 2004 01 28 | 704 | 0.1+ | 0.2− | 2004 02 19 | 704 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.2− | 0.2− | | |
| 2004 01 28 | 704 | 0.1+ | 0.1− | 2004 03 16 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ | | |
| 2004 01 28 | 704 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.4− | 0.6+ | 2006 11 02 | 703 | 0.5+ | 0.1+ | | |
| 2004 01 28 | 704 | 0.1+ | 0.2+ | 2004 03 16 | 704 | 0.2+ | 0.4+ | 2006 11 02 | 703 | 0.1+ | 0.4+ | | |
| 2004 02 13 | 644 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 02 | 703 | 0.4+ | 0.2− | | |
| 2004 02 13 | 644 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 02 | 703 | (1.6+ | 0.9+) | | |
| 2004 02 13 | 644 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 2004 02 14 | 699 | 0.9− | 0.9− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.1− | | |
| 2004 02 14 | 699 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2004 02 14 | 699 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.0 | | |
| 2004 02 14 | 699 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.4+ | 0.1− | | |
| 2004 02 19 | 704 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1+ | | |
| 2004 02 19 | 704 | 0.2− | 1.0− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 | | |

**2004 CG$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.42882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18333443 | $\omega$ | 326.55020 | | −0.99494301 | −0.04611249 | |
| $a$ | 3.0688338 | $\Omega$ | 211.17755 | | +0.06769217 | −0.96416410 | |
| $e$ | 0.0915677 | $i$ | 9.92516 | | −0.07420360 | −0.26126848 | |
| $P$ | 5.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 644 | 0.3− | 0.2+ | 2004 03 15 | 703 | 0.2− | 0.8− | 2006 09 25 | 691 | 0.3+ | 0.0 | | |
| 2004 02 14 | 644 | 0.2− | 0.1− | 2004 03 15 | 703 | 0.3− | 0.4− | 2006 09 25 | 691 | 0.2− | 0.4+ | | |
| 2004 02 14 | 644 | 0.2+ | 0.2− | 2004 03 15 | 703 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.5+ | 0.0 | | |
| 2004 02 19 | 704 | 0.5+ | 0.3− | 2004 03 16 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | | |
| 2004 02 19 | 704 | 0.3+ | 0.4+ | 2004 03 16 | 704 | 0.2− | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2004 02 19 | 704 | 0.3− | 0.0 | 2004 03 16 | 704 | 0.6+ | 0.0 | | | | | | |
| 2004 03 15 | 703 | 0.0 | 0.6+ | 2006 09 25 | 691 | 0.7− | 0.5− | | | | | | |

**2004 CZ$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.81958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23434556 | $\omega$ | 136.94130 | | −0.10466857 | −0.98019880 | |
| $a$ | 2.6055429 | $\Omega$ | 318.21966 | | +0.83013681 | +0.00696247 | |
| $e$ | 0.0597248 | $i$ | 14.61277 | | +0.54764712 | −0.19789352 | |
| $P$ | 4.21 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | (2.5− | 1.2+) | 2002 12 10 | 704 | 0.8− | 0.7+ | 2006 09 17 | 703 | 0.3− | 0.6− | | |
| 2002 10 06 | 704 | (1.7− | 0.4−) | 2002 12 10 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.2+ | 1.5− | | |
| 2002 10 06 | 704 | 0.6− | 0.2− | 2002 12 10 | 704 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.1− | | |
| 2002 10 06 | 704 | 0.2− | 0.3− | 2002 12 10 | 704 | 0.2+ | 0.6− | 2006 09 28 | 703 | 0.5− | 0.2+ | | |
| 2002 10 13 | 644 | 0.2− | 0.0 | 2004 02 14 | 644 | 0.2− | 0.1− | 2006 09 28 | 703 | (1.6+ | 0.7+) | | |
| 2002 10 13 | 644 | 0.6− | 0.1+ | 2004 02 14 | 644 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.4+ | 0.0 | | |
| 2002 10 13 | 644 | 0.3− | 0.1+ | 2004 02 14 | 644 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.2− | 0.7+ | | |
| 2002 11 15 | 644 | 1.1+ | 0.2− | 2004 02 19 | 704 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.3− | 1.0− | | |
| 2002 11 15 | 644 | 0.2+ | 0.5+ | 2004 02 19 | 704 | 0.4− | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.2+ | | |
| 2002 11 15 | 644 | 0.2+ | 0.3− | 2004 02 19 | 704 | 0.3+ | 0.9+ | 2006 10 19 | 703 | 0.4− | 1.0− | | |
| 2002 11 15 | 704 | 0.2− | 0.3− | 2004 02 19 | 704 | 1.3+ | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.4+ | | |
| 2002 11 15 | 704 | 0.6− | 0.4− | 2004 02 19 | 704 | 0.4− | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.4+ | | |
| 2002 11 15 | 704 | 0.7+ | 1.2− | 2004 03 16 | 704 | 0.2+ | 0.8− | 2006 10 23 | 644 | 0.0 | 0.5+ | | |
| 2002 11 15 | 704 | 0.4+ | 0.6+ | 2004 03 16 | 704 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.3+ | 0.1+ | | |
| 2002 11 25 | 644 | 0.4+ | 0.1+ | 2004 03 16 | 704 | 0.2− | 0.7− | 2006 10 27 | 703 | 0.3− | 0.9+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.3+ | 0.1+ | 2004 03 16 | 704 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.5− | 0.6+ | | |
| 2002 11 25 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 1.0+ | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.2+ | | |

**2004 CK$_{108}$ = 2006 UY$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.91154 | | (2000.0) | | | |
| $n$ | 0.28358846 | $\omega$ | 46.39521 | | +0.06795359 | −0.99553290 |
| $a$ | 2.2944416 | $\Omega$ | 39.84811 | | +0.88336920 | +0.02949990 |
| $e$ | 0.1768585 | $i$ | 5.87153 | | +0.46372532 | +0.08968830 |
| $P$ | 3.48 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 704 | 0.6+ | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4+ | 1.0− | | |
| 2004 02 15 | 704 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.1+ | | |
| 2004 02 15 | 704 | 0.5− | 1.0+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.5+ | | |
| 2004 02 15 | 704 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 14 | 701 | 0.2+ | 0.4− | | |
| 2004 02 15 | 704 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2004 02 19 | 704 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2004 02 19 | 704 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.5− | | |
| 2004 02 19 | 704 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 14 | 701 | 0.2+ | 0.0 | | |
| 2004 02 23 | 704 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.0 | | |
| 2004 02 23 | 704 | 1.0+ | 1.0− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 14 | 701 | 0.3− | 0.7− | | |
| 2004 02 23 | 704 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 14 | 701 | 0.4+ | 0.5− | | |
| 2004 02 23 | 704 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.4− | | |
| 2006 10 17 | G96 | 0.5− | 0.4− | 2006 10 29 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 1.0− | 1.1− | | |
| 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | (1.2− | 1.8−) | | |
| 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.3− | | |
| 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.2+ | | |
| 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.2+ | | |
| 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.3+ | | |

**2004 CJ$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 223.06437 | | (2000.0) | | | |
| $n$ | 0.22550129 | $\omega$ | 334.08869 | | −0.89508314 | −0.44589357 |
| $a$ | 2.6732322 | $\Omega$ | 179.41621 | | +0.43784846 | −0.87986824 |
| $e$ | 0.1572976 | $i$ | 12.79523 | | +0.08434983 | −0.16434965 |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 703 | 0.5− | 1.3− | 2004 03 16 | 704 | 0.1− | 0.2− | 2004 04 13 | 691 | 0.2+ | 0.4+ | | |
| 2004 02 15 | 703 | (0.0 | 2.0−) | 2004 03 18 | 704 | 0.6+ | 0.4− | 2004 04 15 | 699 | 0.4− | 0.7− | | |
| 2004 02 15 | 703 | (1.6− | 0.7−) | 2004 03 18 | 704 | 0.7+ | 0.4− | 2004 04 15 | 699 | 1.0− | 0.1− | | |
| 2004 02 15 | 703 | 0.4+ | 0.7− | 2004 03 18 | 704 | 0.7+ | 0.3− | 2004 04 15 | 699 | 0.5+ | 0.5− | | |
| 2004 02 19 | 704 | 0.7+ | 1.1+ | 2004 03 18 | 704 | 0.6+ | 0.3− | 2004 04 15 | 699 | 0.6− | 1.1− | | |
| 2004 02 19 | 704 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.2− | 2004 04 19 | 704 | 0.5+ | 0.0 | | |
| 2004 02 19 | 704 | 0.6+ | 0.7+ | 2004 03 20 | 699 | 0.0 | 0.2+ | 2004 04 19 | 704 | 0.5+ | 0.6− | | |
| 2004 02 19 | 704 | 0.6+ | 0.7+ | 2004 03 20 | 699 | 0.4− | 0.3− | 2004 04 19 | 704 | 1.1+ | 0.3− | | |
| 2004 02 25 | 704 | 0.9+ | 0.3+ | 2004 03 20 | 699 | 0.9− | 0.0 | 2004 04 19 | 704 | 0.7+ | 0.0 | | |
| 2004 02 25 | 704 | 0.0 | 0.4− | 2004 03 20 | 699 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.5+ | 1.3− | | |
| 2004 02 25 | 704 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.1+ | | |
| 2004 02 25 | 704 | 0.3+ | 1.0+ | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.5− | | |
| 2004 02 25 | 704 | 0.3+ | 0.2− | 2004 03 23 | 704 | 1.5− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.2+ | | |
| 2004 03 15 | 691 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.7+ | 0.7− | 2006 09 23 | 691 | 0.3+ | 0.0 | | |
| 2004 03 15 | 691 | 0.3− | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.0 | | |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.1− | | |
| 2004 03 15 | 703 | 0.8− | 0.3− | 2004 03 27 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.0 | | |
| 2004 03 15 | 703 | 0.8− | 0.2− | 2004 03 27 | 704 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2004 03 15 | 703 | 1.2− | 0.5+ | 2004 04 12 | 699 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.4− | 0.2+ | | |
| 2004 03 15 | 703 | 0.7− | 0.5− | 2004 04 12 | 699 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1− | | |
| 2004 03 16 | 704 | 0.2− | 0.1+ | 2004 04 12 | 699 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.0 | | |
| 2004 03 16 | 704 | 0.5− | 0.0 | 2004 04 12 | 699 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.3+ | 0.2+ | | |
| 2004 03 16 | 704 | 0.5− | 0.0 | 2004 04 13 | 691 | 0.1+ | 0.4+ | | | | | | |
| 2004 03 16 | 704 | 0.0 | 0.6+ | 2004 04 13 | 691 | 0.2+ | 0.4+ | | | | | | |

**2004 CG$_{110}$ = 2006 QE$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 186.52150 | | (2000.0) | | | |
| $n$ | 0.17407853 | $\omega$ | 197.12329 | | −0.80109715 | −0.58800621 |
| $a$ | 3.1766734 | $\Omega$ | 306.33186 | | +0.56411282 | −0.67933210 |
| $e$ | 0.0606684 | $i$ | 7.97488 | | +0.20005020 | −0.43904055 |
| $P$ | 5.66 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 644 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.6− | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.2− | | |
| 2004 02 14 | 644 | 0.6− | 0.4+ | 2004 03 19 | 704 | 0.2− | 0.4− | 2006 09 28 | G96 | 0.1− | 0.1− | | |
| 2004 02 14 | 644 | 0.4− | 0.1− | 2006 08 16 | 644 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.4− | | |
| 2004 02 17 | 703 | 1.1+ | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 11 18 | G96 | (2.1+ | 0.0 ) | | |
| 2004 02 17 | 703 | 0.6+ | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2004 02 17 | 703 | 0.9− | 0.8+ | 2006 08 17 | 644 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.3+ | | |
| 2004 02 17 | 703 | 0.5+ | 0.9− | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.3+ | | |
| 2004 03 19 | 704 | 0.0 | 0.6− | 2006 08 17 | 644 | 0.2+ | 0.0 | | | | | | |
| 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.1+ | | | | | | |

**2004 CF$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.78413 | | (2000.0) | | | |
| $n$ | 0.24207806 | $\omega$ | 193.89308 | | −0.80987223 | −0.58223580 |
| $a$ | 2.5497588 | $\Omega$ | 310.26912 | | +0.54675170 | −0.70508049 |
| $e$ | 0.0780176 | $i$ | 5.37490 | | +0.21253130 | −0.40479993 |
| $P$ | 4.07 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.1+ | 0.5+ | 2004 02 25 | 333 | 0.1− | 0.3+ | 2004 03 21 | 691 | 0.0 | 0.0 | | |
| 2004 02 11 | 644 | 0.5+ | 0.4+ | 2004 02 25 | 333 | 0.1− | 0.1+ | 2006 10 13 | 291 | 0.0 | 0.1+ | | |
| 2004 02 11 | 644 | 0.5+ | 0.1+ | 2004 02 26 | 333 | 0.2− | 0.3− | 2006 10 13 | 291 | 0.0 | 0.2− | | |
| 2004 02 14 | 691 | 0.1+ | 0.1− | 2004 02 26 | 333 | 0.0 | 0.0 | 2006 10 13 | 291 | 0.1− | 0.3− | | |
| 2004 02 14 | 691 | 0.4− | 0.1+ | 2004 02 26 | 333 | 0.1+ | 0.1− | 2006 10 16 | 291 | 0.0 | 0.1+ | | |
| 2004 02 14 | 691 | 0.0 | 0.2− | 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 10 16 | 291 | 0.1− | 0.0 | | |
| 2004 02 25 | 333 | 0.1− | 0.4− | 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 10 16 | 291 | 0.2+ | 0.2+ | | |

**2004 CK$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.70908 | | (2000.0) | | | |
| $n$ | 0.24134416 | $\omega$ | 277.39704 | | −0.77489493 | +0.63005413 |
| $a$ | 2.5549252 | $\Omega$ | 301.67143 | | −0.55389849 | −0.71548734 |
| $e$ | 0.0744666 | $i$ | 3.41467 | | −0.30452308 | −0.30184377 |
| $P$ | 4.08 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 691 | 0.0 | 0.1− | 2004 02 25 | 333 | 0.3− | 0.3− | 2006 10 13 | 691 | 0.0 | 0.2− | | |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2004 02 26 | 333 | 0.4− | 1.1− | 2006 10 13 | 691 | 0.1− | 0.1+ | | |
| 2004 02 14 | 691 | 0.3+ | 0.6+ | 2004 02 26 | 333 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.4+ | 0.4+ | | |
| 2004 02 25 | 333 | 0.3− | 0.1− | 2004 02 26 | 333 | 0.7− | 0.5− | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2004 02 25 | 333 | 0.6− | 0.3− | 2004 03 15 | 704 | 1.4+ | 0.8+ | 2006 10 17 | 691 | 0.4+ | 0.2+ | | |
| 2004 02 25 | 333 | 0.6− | 0.0 | 2004 03 15 | 704 | 1.0+ | 0.4− | 2006 10 21 | 691 | 0.3− | 0.0 | | |
| 2004 02 25 | 333 | 0.8− | 0.4− | 2004 03 15 | 704 | 0.9+ | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.3− | | |
| 2004 02 25 | 333 | 0.2− | 0.2− | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2+ | 0.3− | | |

**2004 CP$_{111}$ = 2006 UF$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.67471 | | (2000.0) | | | |
| $n$ | 0.23576624 | $\omega$ | 11.42662 | | +0.79435970 | +0.60674228 |
| $a$ | 2.5950654 | $\Omega$ | 311.17884 | | −0.56034168 | +0.71330629 |
| $e$ | 0.1743894 | $i$ | 2.22839 | | −0.23454182 | +0.35079616 |
| $P$ | 4.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 291 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 2004 02 12 | 291 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2004 02 12 | 291 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2004 02 26 | 333 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2004 02 26 | 333 | 0.4+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.0+ | 0.1+ |
| 2004 02 26 | 333 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.5− |
| 2004 02 29 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.7− | 0.4− |
| 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.6− | 0.0 | 2006 11 22 | 704 | (1.7− | 1.3+) |
| 2004 02 29 | 691 | 0.1+ | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.8− | 0.0 |
| 2006 10 23 | 691 | 1.3+ | 1.1− | 2006 11 19 | 704 | 0.5− | 0.7+ | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.3+ | | | | |
| 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.9+ | | | | |

**2004 CH$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.01537 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29760318 | $\omega$ | 323.66047 | | +0.42195533 | | −0.90014896 |
| $a$ | 2.2218309 | $\Omega$ | 101.15752 | | +0.85561582 | | +0.35595051 |
| $e$ | 0.1220817 | $i$ | 6.32582 | | +0.29979206 | | +0.25105991 |
| $P$ | 3.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 0.4+ | 0.0 | 2004 02 13 | 699 | 0.8+ | 0.0 | 2006 11 25 | 704 | 0.2− | 1.2+ |
| 2003 12 22 | 704 | 0.2+ | 0.2+ | 2004 02 15 | 704 | 0.2− | 0.5+ | 2006 11 25 | 704 | 0.4− | 0.8− |
| 2003 12 22 | 704 | 0.1− | 0.8+ | 2004 02 15 | 704 | 0.5+ | 0.3− | 2006 11 25 | 704 | 0.4− | 1.1+ |
| 2003 12 27 | 704 | 1.1− | 0.5+ | 2004 02 15 | 704 | 0.1+ | 0.6− | 2006 11 25 | 704 | 0.3− | 1.2+ |
| 2003 12 27 | 704 | 0.7+ | 0.3− | 2004 02 15 | 704 | 0.0 | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2003 12 27 | 704 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.4+ |
| 2003 12 27 | 704 | 0.3− | 0.8− | 2006 11 17 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2004 01 18 | 644 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2004 01 18 | 644 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2004 01 18 | 644 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.8+ | 0.1− |
| 2004 01 30 | 704 | 0.4− | 0.2+ | 2006 11 17 | G96 | 1.4− | 0.7− | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2004 01 30 | 704 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.8− | 2006 12 01 | G96 | 0.5+ | 0.5− |
| 2004 01 30 | 704 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.1− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2004 01 30 | 704 | 0.6+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.3− | 2006 12 03 | 644 | 0.1+ | 0.2+ |
| 2004 01 30 | 704 | 0.3+ | 0.3+ | 2006 11 18 | 291 | 0.0 | 0.0 | 2006 12 03 | 644 | 0.1+ | 0.5− |
| 2004 02 13 | 699 | 0.0 | 0.3− | 2006 11 18 | 291 | 0.0 | 0.0 | 2006 12 03 | 644 | 0.1− | 0.1+ |
| 2004 02 13 | 699 | 0.5− | 0.3− | 2006 11 18 | 291 | 0.0 | 0.0 | | | | |
| 2004 02 13 | 699 | 0.1+ | 0.9− | 2006 11 25 | 704 | 1.5− | 0.1+ | | | | |

**2004 CS$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.81056 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28128571 | $\omega$ | 282.56461 | | −0.23977437 | | +0.97019389 |
| $a$ | 2.3069469 | $\Omega$ | 333.48255 | | −0.85740734 | | −0.22858208 |
| $e$ | 0.2121480 | $i$ | 4.50917 | | −0.45536897 | | −0.08046153 |
| $P$ | 3.50 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.1− | 0.5− | 2004 01 30 | 691 | 0.2+ | 0.2+ | 2005 08 31 | 691 | 0.2− | 0.2+ |
| 1995 11 19 | 691 | 0.7− | 0.0 | 2004 02 10 | 644 | 0.2+ | 0.8+ | 2005 08 31 | 691 | 0.1− | 0.1+ |
| 1995 11 19 | 691 | 0.2+ | 0.3− | 2004 02 10 | 644 | 0.0 | 0.2+ | 2005 08 31 | 691 | 0.1− | 0.2+ |
| 1998 09 25 | 645 | 0.1+ | 0.1− | 2004 02 10 | 644 | 0.4+ | 0.3+ | 2005 09 14 | 691 | 0.2− | 0.2+ |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.5+ | 2005 09 14 | 691 | 0.3− | 0.3+ |
| 2001 07 20 | 644 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.5− | 0.3+ | 2005 09 14 | 691 | 0.0 | 0.2+ |
| 2001 07 20 | 644 | 0.5− | 0.5+ | 2004 02 23 | 704 | 0.9+ | 0.9− | 2005 09 23 | 703 | 0.7+ | 0.5− |
| 2001 07 20 | 644 | 0.8− | 0.3+ | 2005 08 27 | 644 | 0.2− | 0.3+ | 2005 09 23 | 703 | 0.1− | 0.7− |
| 2004 01 30 | 691 | 0.2+ | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.2+ | 2005 09 23 | 703 | 0.0 | 1.6+ |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.1− | 0.2+ | 2005 09 23 | 703 | 1.8− | 0.9+ |

**2004 CP$_{116}$ = 2006 QE$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.60517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23794191 | $\omega$ | 212.79193 | | +0.98794912 | | +0.10393098 |
| $a$ | 2.5792222 | $\Omega$ | 140.73477 | | −0.07076663 | | +0.96234296 |
| $e$ | 0.1094495 | $i$ | 10.44070 | | −0.13765399 | | +0.25118593 |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.3+ | 0.4+ | 2004 02 26 | 704 | 1.1+ | 0.2− | 2006 09 20 | 608 | (1.1+ | 2.3−) |
| 2000 02 06 | 695 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.7+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2002 10 08 | 699 | 0.4+ | 0.2− | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.5− |
| 2002 10 08 | 699 | 0.8+ | 0.5+ | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.9− |
| 2002 10 08 | 699 | 0.4− | 0.3− | 2006 08 30 | 699 | 0.6− | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2002 10 08 | 699 | 1.2− | 0.7+ | 2006 08 30 | 699 | 0.1− | 0.3− | 2006 10 02 | 703 | 0.3+ | 0.6− |
| 2002 10 16 | 644 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.6+ | 0.4− |
| 2002 10 16 | 644 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 10 02 | 703 | 1.2− | 0.7+ |
| 2002 10 16 | 644 | 0.3+ | 0.1− | 2006 08 31 | 704 | 0.2− | 0.9+ | 2006 10 02 | 703 | 0.4− | 1.2− |
| 2002 10 25 | 644 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.4+ | 0.3− |
| 2002 10 25 | 644 | 0.1− | 0.1+ | 2006 08 31 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 2002 10 25 | 644 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.6+ | 0.2− |
| 2004 01 30 | 691 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2004 01 30 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.3− | 1.1− |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.9− | 0.5+ | 2006 10 24 | 644 | 0.2+ | 0.3− |
| 2004 02 26 | 704 | 0.4+ | 0.7+ | 2006 09 20 | 608 | (0.9+ | 2.0−) | | | | |
| 2004 02 26 | 704 | 0.6+ | 0.7− | 2006 09 20 | 608 | (0.6+ | 2.7−) | | | | |

**2004 CQ$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.83994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28265284 | $\omega$ | 258.75977 | | +0.39310592 | | −0.91928218 |
| $a$ | 2.2995021 | $\Omega$ | 168.03500 | | +0.87634463 | | +0.36808731 |
| $e$ | 0.1379602 | $i$ | 5.45226 | | +0.27836636 | | +0.13939875 |
| $P$ | 3.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 608 | 0.1+ | 0.6+ | 2004 02 17 | 704 | 0.4+ | 1.3+ | 2006 11 13 | 703 | 0.5− | 0.7− |
| 2004 01 28 | 608 | 0.4+ | 0.3+ | 2004 02 17 | 704 | 0.8+ | 1.3− | 2006 11 13 | 703 | 0.3− | 1.0+ |
| 2004 01 28 | 608 | 0.3+ | 0.6+ | 2004 02 17 | 704 | 1.3+ | 1.0− | 2006 11 13 | 703 | 0.5− | 0.4+ |
| 2004 02 11 | 644 | 0.1− | 0.5− | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.6− | 0.0 |
| 2004 02 11 | 699 | 0.3+ | 0.3− | 2004 02 29 | 691 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.3+ | 1.1− |
| 2004 02 11 | 699 | 0.2+ | 0.4− | 2004 02 29 | 691 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2004 02 11 | 644 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.7+ | 0.1+ | 2006 11 17 | 704 | 0.6+ | 1.1+ |
| 2004 02 11 | 699 | 1.1− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.8− |
| 2004 02 11 | 644 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2004 02 11 | 699 | 0.6− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2004 02 17 | 704 | 0.2− | 1.5− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2004 02 17 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.3− |

**2004 CY$_{118}$ = 2006 SC$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.59264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24509908 | $\omega$ | 312.39355 | | +0.41199295 | | −0.91048249 |
| $a$ | 2.5287638 | $\Omega$ | 113.24391 | | +0.84703428 | | +0.36819854 |
| $e$ | 0.1046744 | $i$ | 2.23452 | | +0.33584927 | | +0.18828560 |
| $P$ | 4.02 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.7+ | 0.1+ |
| 1996 02 15 | 691 | 0.2− | 1.0− | 2004 03 18 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.9+ | 1.3− |
| 1996 02 15 | 691 | 0.4− | 0.4− | 2004 03 18 | 691 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.5− | 0.7+ |
| 2004 02 11 | 291 | 0.0 | 0.1+ | 2004 03 18 | 691 | 0.3+ | 0.3− | 2006 09 19 | 703 | (2.1+ | 1.4+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.8− | 1.2− |
| 2004 02 11 | 291 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.2+ |
| 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.3− | 1.1+ |
| 2004 02 29 | 691 | 0.3− | 0.3+ | 2006 09 18 | 703 | (0.6− | 1.5+) | | | | |

**2004 CW$_{120}$ = 2006 QB$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.90985 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21801816 | $\omega$ | 205.20006 | +0.99689692 | | −0.06648072 | |
| $a$ | 2.7340572 | $\Omega$ | 158.48554 | +0.07603537 | | +0.95183509 | |
| $e$ | 0.0446402 | $i$ | 6.60017 | −0.02037543 | | +0.29931634 | |
| $P$ | 4.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.4− |
| 1995 03 10 | 691 | 0.4− | 0.3+ | 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 09 19 | 703 | 0.3− | 0.0 |
| 1995 03 10 | 691 | 0.3− | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.4− | 0.3+ |
| 1995 03 10 | 691 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.1+ |
| 1995 03 10 | 691 | 0.2− | 0.2− | 2006 08 24 | 644 | 0.1− | 0.2− | 2006 09 26 | 704 | 1.0+ | 0.2− |
| 1995 03 10 | 691 | 0.2+ | 0.1− | 2006 08 24 | 644 | 0.5− | 0.1− | 2006 09 26 | 704 | 1.0+ | 0.2− |
| 2001 07 19 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.2+ |
| 2001 07 19 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 1.2− | 0.1+ |
| 2001 07 19 | 691 | 0.4+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3− | 1.2+ |
| 2004 02 12 | 291 | 0.2+ | 0.8+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2004 02 12 | 291 | 0.5+ | 0.6+ | 2006 09 14 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 1.4+ | 0.8+ |
| 2004 02 12 | 291 | 0.5+ | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 2004 02 26 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.8− | 0.8− | 2006 10 16 | 703 | 1.4+ | 0.7+ |
| 2004 02 26 | 704 | 0.9+ | 0.7+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.2− | 0.2+ |
| 2004 02 26 | 704 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2004 02 26 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2004 03 30 | 413 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2004 03 30 | 413 | 0.3+ | 0.4− | 2006 09 18 | 703 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2004 03 30 | 413 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2004 03 30 | 413 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.0 | 0.7− | 2006 11 23 | G96 | 0.8+ | 0.2+ |
| 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2005 06 10 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.7− | 0.4− | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2005 06 10 | 691 | 1.0− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.8+ | 2006 11 23 | G96 | 0.6− | 0.5− |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.0 | 0.2+ | | | | |

**2004 CC$_{121}$ = 2006 QL$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.27993 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19926794 | $\omega$ | 166.70302 | +0.89152209 | | +0.45291609 | |
| $a$ | 2.9029825 | $\Omega$ | 166.35870 | −0.41843200 | | +0.82971381 | |
| $e$ | 0.0367808 | $i$ | 1.80824 | −0.17350226 | | +0.32625450 | |
| $P$ | 4.95 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 691 | 0.6− | 1.9+ | 2004 02 12 | 691 | 0.2− | 0.1+ | 2005 06 16 | G96 | 0.3− | 0.6− |
| 2001 09 21 | 691 | 0.0 | 0.1− | 2004 02 12 | 691 | 0.1− | 0.3+ | 2005 06 16 | G96 | 0.2− | 0.2+ |
| 2001 09 21 | 691 | 0.2+ | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.1+ | 0.7+ |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2004 02 29 | 691 | 0.3+ | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.6+ |
| 2002 11 24 | 644 | 0.2− | 0.8+ | 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.5+ |
| 2002 11 24 | 644 | 0.3− | 0.4+ | 2004 03 20 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 1.1+ | 1.0− |
| 2002 12 10 | 644 | 0.5− | 0.1+ | 2004 03 20 | 691 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.1− |
| 2002 12 10 | 644 | 0.2− | 0.2− | 2004 03 20 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 1.3− |
| 2002 12 10 | 644 | 0.2− | 0.1− | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.1− |
| 2003 01 03 | 291 | 0.3+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.0 |
| 2003 01 03 | 291 | 0.1− | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.6− | 0.5+ |
| 2003 01 03 | 291 | 0.3− | 0.3+ | 2005 06 16 | G96 | 0.7− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2005 06 16 | G96 | 0.1− | 0.9+ | 2006 09 25 | G96 | 0.2+ | 0.4+ |

**2004 CF$_{122}$ = 2006 SJ$_{352}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.13836 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21270361 | $\omega$ | 347.26258 | −0.29301054 | | +0.95174586 | |
| $a$ | 2.7794112 | $\Omega$ | 265.64386 | −0.86899256 | | −0.30489536 | |
| $e$ | 0.0725527 | $i$ | 5.25013 | −0.39874398 | | −0.03490905 | |
| $P$ | 4.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 644 | 0.2− | 0.1− | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 2004 02 12 | 644 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.5− | 0.4− |
| 2004 02 12 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5+ | 2006 10 03 | G96 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.1+ | 0.9− | 2006 09 30 | 703 | 0.9+ | 0.4+ | 2006 10 03 | G96 | 0.6− | 0.2− |
| 2004 02 26 | 704 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.4− | 0.3− |

**2004 CM$_{122}$ = 2006 SU$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.18999 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24070535 | $\omega$ | 223.22687 | +0.97794511 | | −0.17606932 | |
| $a$ | 2.5594436 | $\Omega$ | 146.42527 | +0.19825972 | | +0.95176199 | |
| $e$ | 0.1837821 | $i$ | 11.72176 | −0.06569963 | | +0.25129406 | |
| $P$ | 4.09 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2004 01 30 | 291 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.9+ | 0.2+ |
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2004 01 30 | 291 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.8− |
| 2001 05 24 | 645 | 0.0 | 0.2+ | 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.4+ |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.9+ |
| 2002 10 16 | 644 | 0.1− | 0.1− | 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 09 25 | 703 | 0.3− | 0.1− |
| 2002 10 16 | 644 | 0.3+ | 0.4+ | 2004 02 22 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 0.1+ | 1.1+ |
| 2002 10 16 | 644 | 0.0 | 0.5+ | 2004 02 22 | 691 | 0.1+ | 0.2− | 2006 09 25 | 703 | 1.0− | 1.3+ |
| 2004 01 30 | 291 | 0.2− | 0.5+ | 2004 02 22 | 691 | 0.2+ | 0.5− | 2006 09 25 | 703 | 0.5− | 1.4+ |

**2004 CQ$_{126}$ = 2006 QF$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.69806 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22484109 | $\omega$ | 187.64771 | +0.90935822 | | −0.41557647 | |
| $a$ | 2.6784626 | $\Omega$ | 196.94692 | +0.38506577 | | +0.85817719 | |
| $e$ | 0.1016636 | $i$ | 3.75196 | +0.15745468 | | +0.30137701 | |
| $P$ | 4.38 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | 0.3+ | 0.1+ | 2004 02 12 | 691 | 0.5+ | 0.4+ | 2006 09 13 | 644 | 0.2+ | 0.5+ |
| 2002 10 08 | 699 | 0.1+ | 1.4+ | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.2+ |
| 2002 10 08 | 699 | 0.1− | 0.0 | 2004 02 22 | 691 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.2+ |
| 2002 10 08 | 699 | 1.1− | 0.8+ | 2004 02 22 | 691 | 0.6+ | 0.3+ | 2006 09 17 | 703 | 0.8− | 0.2+ |
| 2002 10 15 | 644 | 0.1+ | 0.2+ | 2004 02 22 | 691 | 0.4+ | 0.6+ | 2006 09 17 | 703 | 0.1− | 1.0+ |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 699 | (0.3− | 2.9+) |
| 2002 10 15 | 644 | 0.2+ | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.8+ | 2006 09 20 | 699 | 0.7− | 0.3+ |
| 2002 11 06 | 704 | (2.3+ | 1.5+) | 2005 06 14 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.0 | 0.4+ |
| 2002 11 06 | 704 | 0.3− | 0.4+ | 2006 08 28 | 699 | (2.0− | 0.9+) | 2006 09 20 | 699 | 0.6+ | 0.5− |
| 2002 11 06 | 704 | 0.4+ | 1.1+ | 2006 08 28 | 699 | 0.6− | 1.2+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.5+ | 0.5+ | 2006 08 28 | 699 | (0.9+ | 2.6+) | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2002 11 06 | 608 | 0.2− | 0.1− | 2006 08 28 | 699 | 1.2− | 0.5+ | 2006 09 27 | G96 | 0.6+ | 0.0 |
| 2002 11 06 | 608 | 0.4− | 0.1+ | 2006 08 29 | 703 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 2002 11 06 | 608 | 0.1+ | 0.4− | 2006 08 29 | 703 | 0.7+ | 0.1+ | 2006 11 13 | G96 | 0.5− | 0.4− |
| 2002 11 22 | 644 | 0.3− | 0.1+ | 2006 08 29 | 703 | (2.2− | 1.5−) | 2006 11 13 | G96 | 0.2− | 1.0+ |
| 2002 11 22 | 644 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.9− | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2002 11 22 | 644 | 0.5− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.4+ | 2006 11 13 | G96 | 1.3− | 0.0 |
| 2003 12 19 | 291 | 0.2− | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2003 12 19 | 291 | 1.2− | 0.5+ | 2006 08 29 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2003 12 19 | 291 | 1.0− | 0.3+ | 2006 09 13 | 644 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.4+ | 0.4− |
| 2004 02 12 | 691 | 0.5+ | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.1− |

**2004 $CO_{128}$ = 2006 $UA_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.01056 | | $\omega$ | 78.47961 | +0.67238642 | +0.73404605 |
| $n$ | 0.22017820 | | $\Omega$ | 234.19906 | −0.71663782 | +0.61336015 |
| $a$ | 2.7161464 | | $i$ | 6.74449 | −0.18527477 | +0.29148880 |
| $e$ | 0.0410489 | | | | | |
| $P$ | 4.48 | $H$ | 16.0 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 644 | 0.2− | 0.4+ | 2004 03 27 | 691 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.4− |
| 2004 02 14 | 644 | 0.5− | 0.0 | 2004 03 27 | 691 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.3− |
| 2004 02 14 | 644 | 0.5− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2004 02 24 | 608 | 0.2+ | 0.6− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2004 02 24 | 608 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 02 24 | 608 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.6− | 0.1− | | | | |
| 2004 03 27 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.9− | 0.2− | | | | |

**2004 $CJ_{129}$ = 2006 $QJ_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.32983 | | $\omega$ | 72.47002 | +0.03449740 | −0.99936872 |
| $n$ | 0.21040578 | | $\Omega$ | 15.56038 | +0.90451257 | +0.02760766 |
| $a$ | 2.7996105 | | $i$ | 1.81375 | +0.42504933 | +0.02236011 |
| $e$ | 0.0445233 | | | | | |
| $P$ | 4.68 | $H$ | 16.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 05 | 691 | 0.2− | 0.3− | 2004 02 23 | 704 | 0.3− | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 1995 04 05 | 691 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.3+ | 1.8+ | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 2000 04 29 | 691 | 0.1− | 0.4− | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.7+ |
| 2000 04 29 | 691 | 0.4− | 0.0 | 2004 02 23 | 704 | 0.7− | 1.7+ | 2006 08 28 | 691 | 0.2− | 0.4+ |
| 2000 04 29 | 691 | 0.1+ | 0.0 | 2004 02 23 | 704 | 0.8− | 1.2+ | 2006 08 28 | 691 | 0.3− | 0.3+ |
| 2000 05 11 | 691 | 0.2+ | 0.5+ | 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2000 05 11 | 691 | 0.5− | 0.0 | 2004 03 17 | 691 | 0.9+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2000 05 11 | 691 | 0.8+ | 0.3+ | 2004 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.5− | 0.4− |
| 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 08 23 | 807 | 0.6− | 0.7+ | 2006 09 26 | G96 | 0.5− | 0.5+ |
| 2004 02 14 | 691 | 0.1− | 0.0 | 2006 08 23 | 807 | 0.5− | 0.5+ | | | | |
| 2004 02 14 | 691 | 0.4+ | 0.3+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | | | | |

**2004 $CP_{130}$ = 2001 $SM_{312}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 203.88163 | | $\omega$ | 140.30279 | −0.48732812 | −0.86743365 |
| $n$ | 0.17494304 | | $\Omega$ | 338.28278 | +0.71633717 | −0.33140674 |
| $a$ | 3.1661995 | | $i$ | 15.73556 | +0.49937197 | −0.37111782 |
| $e$ | 0.0554537 | | | | | |
| $P$ | 5.63 | $H$ | 15.6 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7− | 0.0 | 2001 09 25 | 704 | 0.2+ | 0.9+ | 2004 02 26 | 704 | 1.7− | 0.5+ |
| 2001 09 21 | 704 | 0.4+ | 0.4− | 2001 09 25 | 704 | 0.7+ | 0.2− | 2004 02 26 | 704 | 0.3− | 0.2− |
| 2001 09 21 | 704 | 0.2− | 0.0 | 2004 02 13 | 291 | 0.3− | 0.0 | 2004 02 26 | 704 | 0.0 | 0.1− |
| 2001 09 21 | 704 | 0.8− | 0.3− | 2004 02 13 | 291 | 0.2+ | 0.2+ | 2004 02 26 | 704 | 0.6+ | 0.4− |
| 2001 09 21 | 704 | 0.6− | 0.4+ | 2004 02 13 | 291 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 1.1+ | 0.0 | 2004 02 18 | 704 | 1.7+ | 0.2− | 2004 03 29 | 691 | 0.2+ | 0.1+ |
| 2001 09 25 | 704 | 0.3− | 0.9− | 2004 02 18 | 704 | 0.7+ | 0.2− | 2004 03 29 | 691 | 0.1− | 0.3+ |
| 2001 09 25 | 704 | 0.2+ | 0.6+ | 2004 02 18 | 704 | 1.2− | 0.3− | 2004 03 29 | 691 | 0.1− | 0.1− |

**2004 $CQ_{130}$ = 2000 $ES_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 173.82696 | | $\omega$ | 152.70130 | −0.77938090 | +0.59995162 |
| $n$ | 0.24279121 | | $\Omega$ | 65.32794 | −0.60499294 | −0.64564848 |
| $a$ | 2.5447634 | | $i$ | 11.46472 | −0.16293849 | −0.47243633 |
| $e$ | 0.0632114 | | | | | |
| $P$ | 4.06 | $H$ | 15.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 08 | 910 | 0.8+ | 1.4− | 2004 02 15 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 1998 12 08 | 910 | 1.1+ | 0.7− | 2004 02 15 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 1998 12 08 | 910 | 1.1+ | 0.1+ | 2004 03 09 | 644 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.5+ |
| 2000 03 04 | 704 | 0.2+ | 0.3+ | 2004 03 09 | 644 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.3+ |
| 2000 03 04 | 704 | 0.2− | 0.2+ | 2004 03 09 | 644 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.4+ |
| 2000 03 04 | 704 | 0.3− | 0.1− | 2004 03 14 | 704 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2000 03 04 | 704 | 0.5− | 1.0+ | 2004 03 14 | 704 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2000 03 04 | 704 | 0.9− | 0.5− | 2004 03 14 | 704 | 0.9+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2000 03 05 | 608 | 0.3− | 0.3− | 2004 03 14 | 704 | 0.6+ | 0.7+ | 2006 11 08 | 644 | 0.2+ | 0.4+ |
| 2000 03 05 | 608 | 0.1− | 0.3− | 2004 03 14 | 704 | 0.6+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2000 03 05 | 608 | 0.1− | 0.3− | 2004 03 25 | 704 | 1.2+ | 1.2+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2001 07 13 | 644 | 0.2− | 0.9+ | 2004 03 25 | 704 | 0.0 | 1.0+ | 2006 11 08 | 644 | 0.2− | 0.6+ |
| 2001 07 13 | 644 | 0.1− | 0.3+ | 2004 03 25 | 704 | (0.2− | 2.6+) | 2006 11 09 | 644 | 0.4− | 0.5+ |
| 2001 07 13 | 644 | 0.3− | 0.9+ | 2004 03 25 | 704 | 0.6+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2002 11 07 | 704 | 0.7+ | 0.1− | 2004 04 14 | 704 | 0.8− | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2002 11 07 | 704 | 1.0− | 0.7+ | 2004 04 14 | 704 | (0.3− | 1.7+) | 2006 11 16 | G96 | 0.5+ | 0.8− |
| 2002 11 07 | 704 | (0.7+ | 1.6+) | 2004 04 14 | 704 | (0.3+ | 1.7+) | 2006 11 16 | G96 | 1.2+ | 0.9− |
| 2002 11 07 | 704 | 0.5− | 0.5+ | 2004 04 14 | 704 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.8+ | 0.9− |
| 2002 12 05 | 704 | 0.2+ | 1.0+ | 2005 07 05 | E12 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.4+ | 0.8− |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2005 07 05 | E12 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.7− | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 1.3+ | 2005 07 05 | E12 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.2− | 0.5− |
| 2002 12 05 | 704 | 1.3− | 0.9+ | 2005 07 05 | E12 | 0.5− | 1.3+ | 2006 11 20 | 704 | 0.9− | 0.0 |
| 2004 02 15 | 704 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.8− | 0.1− | 2006 11 20 | 704 | 1.0− | 0.2+ |
| 2004 02 15 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 1.0− | 0.7+ | | | | |

**2004 $CS_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 132.81346 | | $\omega$ | 241.48737 | −0.24097404 | +0.96887330 |
| $n$ | 0.24328586 | | $\Omega$ | 14.89688 | −0.79540063 | −0.16367133 |
| $a$ | 2.5413129 | | $i$ | 12.74387 | −0.55611991 | −0.18573159 |
| $e$ | 0.1433646 | | | | | |
| $P$ | 4.05 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.1+ | 1.2+ | 2004 03 23 | 704 | (2.1+ | 0.9+) | 2005 07 25 | E12 | 0.2− | 0.2+ |
| 2000 03 04 | 704 | 0.4+ | 1.2+ | 2004 03 23 | 704 | 0.1+ | 0.7+ | 2005 08 05 | E12 | 0.0 | 0.7+ |
| 2000 03 04 | 704 | 1.6+ | 1.3+ | 2005 06 17 | E12 | 0.1+ | 0.1− | 2005 08 05 | E12 | 0.0 | 0.7+ |
| 2004 02 12 | 644 | 0.2+ | 0.5+ | 2005 06 17 | E12 | 0.1− | 0.0 | 2005 08 05 | E12 | 0.3− | 0.7+ |
| 2004 02 12 | 644 | 0.2+ | 0.4− | 2005 06 17 | E12 | 0.3+ | 0.3+ | 2006 10 19 | A50 | 0.3− | 0.1+ |
| 2004 02 12 | 644 | 0.2+ | 0.2+ | 2005 06 17 | E12 | 0.3− | 0.1+ | 2006 10 20 | A50 | 0.1− | 0.4− |
| 2004 02 12 | 644 | 0.2+ | 0.0 | 2005 07 04 | E12 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.3− | 0.9+ |
| 2004 02 12 | 644 | 0.9+ | 0.4+ | 2005 07 04 | E12 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.8+ |
| 2004 02 12 | 644 | 0.5+ | 0.3+ | 2005 07 04 | E12 | 0.3− | 0.4+ | 2006 10 27 | 703 | 0.2+ | 0.3− |
| 2004 03 17 | 645 | 0.1− | 0.1− | 2005 07 04 | E12 | 0.1− | 0.8+ | 2006 10 27 | 703 | 0.1+ | 1.1+ |
| 2004 03 17 | 645 | 0.1− | 0.1− | 2005 07 25 | E12 | 0.3+ | 0.3− | | | | |
| 2004 03 23 | 704 | 1.4+ | 0.9+ | 2005 07 25 | E12 | 0.3− | 0.2+ | | | | |

**2004 $CT_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 127.97450 | | $\omega$ | 276.40322 | +0.22787043 | +0.97367776 |
| $n$ | 0.25791046 | | $\Omega$ | 6.77513 | −0.87514188 | +0.20713014 |
| $a$ | 2.4443126 | | $i$ | 2.50978 | −0.42685097 | +0.09512479 |
| $e$ | 0.1749399 | | | | | |
| $P$ | 3.82 | $H$ | 17.2 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 695 | 0.4− | 0.3+ | 2004 03 18 | 691 | 0.3+ | 0.1− | 2005 07 18 | 644 | 0.1+ | 0.2− |
| 2002 12 05 | 695 | 0.3+ | 0.1+ | 2004 03 18 | 691 | 0.2− | 0.2+ | 2005 08 02 | 704 | 0.4− | 0.2− |
| 2004 02 14 | 691 | 0.4+ | 0.2+ | 2004 03 18 | 691 | 0.2− | 0.1− | 2005 08 02 | 704 | 0.7+ | 0.3− |
| 2004 02 14 | 691 | 0.2+ | 0.0 | 2005 07 04 | 644 | 0.1− | 0.1+ | 2005 08 02 | 704 | 0.0 | 0.5+ |
| 2004 02 14 | 691 | 0.3− | 0.4+ | 2005 07 04 | 644 | 0.2− | 0.1− | 2005 08 27 | E12 | 0.5− | 1.5+ |
| 2004 02 22 | 691 | 0.4− | 0.1+ | 2005 07 04 | 644 | 0.3− | 0.1− | 2005 08 27 | E12 | 1.3− | 1.3+ |
| 2004 02 22 | 691 | 0.2+ | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.0 | 2005 08 27 | E12 | 0.7+ | 0.8+ |
| 2004 02 22 | 691 | 0.3+ | 0.1− | 2005 07 18 | 644 | 0.1− | 0.1− | 2005 08 27 | E12 | 0.9+ | 1.0− |

**2004 DV**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 262.51992 | | | (2000.0) | | |
| $n$ | 0.24240484 | $\omega$ | 90.92954 | | −0.14782630 | −0.98895177 |
| $a$ | 2.5474667 | $\Omega$ | 7.59817 | | +0.87097187 | −0.13546113 |
| $e$ | 0.2385244 | $i$ | 4.78750 | | +0.46856738 | −0.06020532 |
| $P$ | 4.07 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.1− | 0.0 | 2004 01 23 | 699 | 1.7+ | 0.7+ | 2004 02 23 | 704 | 0.6+ | 0.7+ |
| 2002 08 18 | 644 | 0.2− | 0.2− | 2004 02 16 | 691 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.0 | 0.2+ |
| 2002 08 29 | 644 | 0.1+ | 0.5+ | 2004 02 16 | 691 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.2− | 0.1− | 2004 02 23 | 704 | 0.2+ | 0.1+ |
| 2002 09 01 | 644 | 0.3− | 0.3+ | 2004 02 17 | 704 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.6− | 0.3− |
| 2002 09 01 | 644 | 0.3− | 0.3+ | 2004 02 17 | 704 | 0.2− | 0.8+ | 2004 03 14 | 704 | 0.3+ | 1.3+ |
| 2002 09 04 | 644 | 0.1− | 0.2− | 2004 02 17 | 704 | 0.2− | 0.6+ | 2004 03 14 | 704 | 0.0 | 0.9+ |
| 2002 09 04 | 644 | 0.1+ | 0.3+ | 2004 02 17 | 704 | 0.3− | 0.2− | 2004 03 14 | 704 | 0.9+ | 1.4+ |
| 2002 09 04 | 644 | 0.1+ | 0.5+ | 2004 02 17 | 704 | 0.3− | 0.5− | 2004 03 19 | 644 | 0.2− | 0.2+ |
| 2002 09 15 | 644 | 0.3− | 0.1+ | 2004 02 18 | 704 | 0.1+ | 0.4+ | 2004 03 19 | 644 | 0.2− | 0.2+ |
| 2002 09 15 | 644 | 0.1− | 0.4+ | 2004 02 18 | 704 | 0.3+ | 0.6+ | 2004 03 19 | 644 | 0.1+ | 0.2+ |
| 2002 09 15 | 644 | 0.1+ | 0.5+ | 2004 02 18 | 704 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.6+ | 0.6− |
| 2002 09 15 | 644 | 0.1+ | 0.4+ | 2004 02 18 | 333 | 0.2+ | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.8− |
| 2002 09 16 | 644 | 0.6− | 1.0+ | 2004 02 18 | 704 | 0.3+ | 0.1− | 2004 03 19 | 704 | 0.5+ | 0.1+ |
| 2002 09 16 | 644 | 0.5− | 0.5+ | 2004 02 18 | 333 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.3− | 1.6− |
| 2004 01 23 | 704 | 0.2+ | 0.0 | 2004 02 18 | 333 | 0.6− | 0.5− | 2004 03 23 | 704 | 0.1+ | 0.0 |
| 2004 01 23 | 704 | 0.2+ | 0.7+ | 2004 02 19 | 704 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 0.1+ | 0.4+ |
| 2004 01 23 | 704 | 0.4+ | 0.4− | 2004 02 19 | 704 | 0.5+ | 0.5− | 2004 03 23 | 704 | 0.6− | 0.2+ |
| 2004 01 23 | 699 | 0.5− | 0.1+ | 2004 02 19 | 704 | 0.6+ | 0.3+ | 2004 03 23 | 704 | 0.1+ | 0.8+ |
| 2004 01 23 | 704 | 0.1+ | 0.0 | 2004 02 20 | 704 | 0.9− | 0.6− | 2004 03 26 | 691 | 0.1+ | 0.1+ |
| 2004 01 23 | 699 | 0.2+ | 1.3− | 2004 02 20 | 704 | 0.9+ | 0.6− | 2004 03 26 | 691 | 0.2− | 0.0 |
| 2004 01 23 | 704 | 0.3− | 0.4+ | 2004 02 20 | 704 | 0.4− | 0.1− | 2004 03 26 | 691 | 0.0 | 0.3+ |
| 2004 01 23 | 699 | 0.3− | 0.1+ | 2004 02 20 | 704 | 0.6− | 0.2+ | | | | |

**2004 DT$_2$ = 2006 WX$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 232.59011 | | | (2000.0) | | |
| $n$ | 0.28120529 | $\omega$ | 131.54533 | | −0.97178890 | +0.23213293 |
| $a$ | 2.3073868 | $\Omega$ | 61.91591 | | −0.22801836 | −0.87948085 |
| $e$ | 0.1795545 | $i$ | 2.71047 | | −0.06028238 | −0.41548494 |
| $P$ | 3.50 | $H$ | 17.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.7− | 0.2− | 2004 02 17 | 291 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.5+ | 0.0 |
| 1992 11 28 | 691 | 0.1− | 0.0 | 2004 02 17 | 291 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.5− | 0.1− |
| 1992 11 28 | 691 | 0.8+ | 0.1+ | 2004 02 18 | 291 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.4− | 0.0 |
| 2004 02 16 | 291 | 0.1− | 0.2− | 2004 02 18 | 291 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.5+ | 0.3− |
| 2004 02 16 | 291 | 0.2− | 0.1− | 2004 02 18 | 291 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2004 02 16 | 291 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 02 16 | 704 | 1.4+ | 0.4− | 2004 02 23 | 704 | 0.8+ | 0.4+ | 2006 11 24 | H07 | 0.4− | 0.2− |
| 2004 02 16 | 704 | 1.2+ | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 11 24 | H07 | 0.2+ | 0.5+ |
| 2004 02 16 | 704 | 1.0+ | 0.9+ | 2004 02 23 | 704 | 0.5+ | 0.0 | | | | |
| 2004 02 17 | 291 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.2+ | 0.3+ | | | | |

**2004 DD$_3$ = 2006 VX$_{44}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.52829 | | | (2000.0) | | |
| $n$ | 0.22657521 | $\omega$ | 1.26179 | | +0.92953422 | +0.34688714 |
| $a$ | 2.6647786 | $\Omega$ | 337.17148 | | −0.34106893 | +0.67996778 |
| $e$ | 0.2544437 | $i$ | 18.80171 | | −0.14013605 | +0.64599778 |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.1+ | 0.1− | 2004 02 26 | 704 | 1.4− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2004 02 16 | 691 | 0.3+ | 0.3+ | 2004 02 29 | 291 | 0.4+ | 0.4− | 2006 11 16 | 704 | 1.1− | 1.1+ |
| 2004 02 16 | 691 | 0.2+ | 0.1+ | 2004 02 29 | 291 | 0.5+ | 0.5− | 2006 11 16 | 704 | 0.1− | 1.0+ |
| 2004 02 17 | 691 | 0.0 | 0.2− | 2004 02 29 | 291 | 0.7+ | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.7− |
| 2004 02 17 | 691 | 0.0 | 0.4− | 2006 11 13 | 704 | 0.4+ | 0.4+ | 2006 11 20 | 703 | 0.6− | 0.4− |
| 2004 02 17 | 691 | 0.0 | 0.1− | 2006 11 13 | 704 | 0.1− | 0.3+ | 2006 11 20 | 703 | 0.2− | 0.5− |
| 2004 02 26 | 704 | 0.2− | 0.7+ | 2006 11 13 | 704 | 0.5+ | 0.1− | 2006 11 20 | 703 | 0.1− | 1.2− |
| 2004 02 26 | 704 | 0.7− | 0.3+ | 2006 11 13 | 704 | 0.7+ | 0.4− | 2006 11 20 | 703 | 0.3+ | 0.5− |
| 2004 02 26 | 704 | 0.1+ | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.6+ | | | | |

**2004 DJ$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 180.25556 | | | (2000.0) | | |
| $n$ | 0.21798531 | $\omega$ | 352.43232 | | −0.99702580 | +0.07700158 |
| $a$ | 2.7343319 | $\Omega$ | 191.98534 | | −0.06987400 | −0.92074903 |
| $e$ | 0.0403238 | $i$ | 0.88628 | | −0.03251438 | −0.38248136 |
| $P$ | 4.52 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.1− | 0.4+ | 2004 02 29 | 291 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.3− | 0.7+ |
| 2001 08 24 | 691 | 0.1− | 0.2+ | 2004 03 14 | 691 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.4− | 0.5+ |
| 2001 08 24 | 691 | 0.0 | 0.1+ | 2004 03 14 | 691 | 0.2− | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2004 02 16 | 691 | 0.2+ | 0.0 | 2004 03 14 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2004 02 16 | 691 | 0.1− | 0.1+ | 2004 03 23 | 291 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.6− | 0.1− |
| 2004 02 16 | 691 | 0.3− | 0.1+ | 2004 03 23 | 291 | 0.7+ | 0.1− | 2006 09 25 | G96 | 0.8+ | 1.1+ |
| 2004 02 17 | 691 | 0.2− | 0.3+ | 2004 03 23 | 291 | 0.8+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.5+ |
| 2004 02 17 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.7+ | 0.8− | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2004 02 25 | 333 | 0.6− | 0.6− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2004 02 25 | 333 | 0.3− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.9− |
| 2004 02 25 | 333 | 0.8− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 10 02 | G96 | 0.3− | 0.3− |
| 2004 02 29 | 291 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.4− | 0.4− |
| 2004 02 29 | 291 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | | | | |

**2004 DP$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 216.13844 | | | (2000.0) | | |
| $n$ | 0.21346609 | $\omega$ | 120.82832 | | −0.68937275 | −0.72428573 |
| $a$ | 2.7727888 | $\Omega$ | 12.77911 | | +0.64250298 | −0.61977208 |
| $e$ | 0.0393325 | $i$ | 3.43255 | | +0.33459698 | −0.30214689 |
| $P$ | 4.62 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.2− | 0.1+ | 2004 02 17 | 704 | 0.3+ | 0.5+ | 2004 03 18 | 691 | 0.0 | 0.3+ |
| 2002 10 31 | 644 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.5+ |
| 2002 10 31 | 644 | 0.1+ | 0.1− | 2004 02 17 | 704 | 0.9+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.4+ |
| 2004 01 22 | 704 | 0.7+ | 0.4+ | 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.2+ |
| 2004 01 22 | 704 | 1.0+ | 0.8− | 2004 02 23 | 704 | 0.8− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.3+ | 1.0+ | 2004 02 23 | 704 | 0.9+ | 0.8+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.9− | 0.7+ | 2004 02 23 | 704 | 0.6− | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2004 02 16 | 691 | 0.1− | 0.3− | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2004 02 16 | 691 | 0.1− | 0.4− | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2004 02 16 | 691 | 0.1− | 0.4− | 2004 02 29 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2004 02 17 | 704 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2004 02 17 | 704 | 0.5+ | 0.2− | 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.1+ |

**2004 DQ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 314.47171 | | | (2000.0) | | |
| $n$ | 0.25980502 | $\omega$ | 341.77369 | | +0.32144353 | −0.94583221 |
| $a$ | 2.4324151 | $\Omega$ | 89.45641 | | +0.87435996 | +0.27799477 |
| $e$ | 0.0834092 | $i$ | 2.61127 | | +0.36355015 | +0.16769117 |
| $P$ | 3.79 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 14 | 691 | 0.6− | 1.3− | 2004 02 23 | 704 | 0.9+ | 1.0− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1993 04 14 | 691 | 0.9+ | 1.6+ | 2004 02 23 | 704 | (1.5− | 3.1+) | 2006 10 20 | 644 | 0.3− | 0.3− |
| 1993 04 14 | 691 | 0.5− | 0.2− | 2004 02 23 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 704 | 0.4+ | 0.8− | 2004 02 23 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2000 01 27 | 704 | 0.2− | 0.1− | 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 2000 01 27 | 704 | 0.1+ | 1.8+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2002 09 13 | 644 | 0.2+ | 0.6+ | 2004 03 18 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2002 09 13 | 644 | 0.3− | 0.7+ | 2004 03 27 | 691 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2002 09 13 | 644 | 0.0 | 0.8+ | 2004 03 27 | 691 | 0.3− | 0.6− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2004 01 22 | 704 | 0.0 | 1.1− | 2004 03 27 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.1+ | 1.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2004 01 22 | 704 | 0.3− | 1.4+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2004 02 16 | 691 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2004 02 16 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 02 16 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 1.0− | 0.2+ |
| 2004 02 17 | 704 | 1.2+ | 0.6+ | 2006 09 27 | 691 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2004 02 17 | 704 | 1.3+ | 0.5− | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 11 18 | G96 | 0.4+ | 0.5− |
| 2004 02 17 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.8− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2004 02 17 | 704 | 0.1− | 0.4+ | 2006 09 30 | 703 | (1.9+ | 0.6+) | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2004 02 17 | 704 | 0.6+ | 1.4+ | 2006 09 30 | 703 | 0.8− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2004 02 23 | 704 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.0 | | | | |

### 2004 $DU_4$ = 2006 $SZ_{245}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.79590 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22210682 | $\omega$ | 158.29444 | | −0.98702889 | | −0.15995834 |
| $a$ | 2.7004001 | $\Omega$ | 12.52440 | | +0.13644567 | | −0.88074502 |
| $e$ | 0.0443596 | $i$ | 3.61839 | | +0.08459643 | | −0.44575950 |
| $P$ | 4.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.1+ | 0.5− | 2004 02 17 | 704 | 0.0 | 1.0+ | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2000 04 26 | 691 | 0.4− | 0.2− | 2004 02 23 | 704 | 0.7+ | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.1− |
| 2000 04 26 | 691 | 0.1− | 0.0 | 2004 02 23 | 704 | 1.4+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2003 12 25 | 645 | 0.0 | 0.2− | 2004 02 23 | 704 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2003 12 25 | 645 | 0.1− | 0.2− | 2004 02 23 | 704 | 0.7+ | 0.8− | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2004 02 25 | 704 | 0.1− | 1.3+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2004 02 16 | 691 | 0.0 | 0.2+ | 2004 02 25 | 704 | (2.0+ | 0.1−) | 2006 09 30 | 691 | 0.5+ | 0.0 |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2004 02 25 | 704 | 0.3− | 1.0+ | 2006 09 30 | 691 | 0.3+ | 0.2− |
| 2004 02 17 | 704 | 0.6+ | 0.5+ | 2004 02 25 | 704 | 0.1+ | 1.1+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2004 02 17 | 704 | 0.1+ | 0.2+ | 2004 02 25 | 704 | 0.4− | 0.7− | | | | |
| 2004 02 17 | 704 | (2.0+ | 0.7+) | 2006 09 15 | 691 | 0.2+ | 0.1+ | | | | |

### 2004 $DP_6$ = 2006 $RL_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.60696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19261263 | $\omega$ | 205.13423 | | −0.26743332 | | +0.96339470 |
| $a$ | 2.9694741 | $\Omega$ | 49.36000 | | −0.87984600 | | −0.23623166 |
| $e$ | 0.1649238 | $i$ | 1.41287 | | −0.39287457 | | −0.12674876 |
| $P$ | 5.12 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 05 | 691 | 0.3+ | 0.1− | 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.4− | 0.1− |
| 1996 12 05 | 691 | 0.2+ | 0.8− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 1.1− | 0.7+ |
| 1996 12 05 | 691 | 0.2− | 0.3− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.3− |
| 2001 10 20 | 704 | 0.7+ | 0.6− | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.2+ |
| 2001 10 20 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1+ |
| 2001 10 20 | 704 | 0.5− | 1.3+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 291 | 0.0 | 0.0 |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 29 | 291 | 0.1+ | 0.1− |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.4− | 0.4+ | 2006 10 29 | 291 | 0.3+ | 0.2+ |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 02 18 | 291 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.6− | 0.5− |
| 2004 02 18 | 291 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2004 02 18 | 291 | 0.0 | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 02 23 | 704 | 1.1− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2004 02 23 | 704 | 0.6+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 1.0+ | 1.0+ | 2006 10 16 | G96 | 0.5− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2004 03 14 | 691 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2004 03 14 | 691 | 0.6+ | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.0 | | | | |

### 2004 $DR_6$ = 2006 $SQ_{117}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.86459 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25438871 | $\omega$ | 110.85754 | | −0.68389943 | | −0.72950386 |
| $a$ | 2.4668202 | $\Omega$ | 22.30180 | | +0.65890031 | | −0.62363722 |
| $e$ | 0.1262183 | $i$ | 1.55235 | | +0.31326019 | | −0.28089274 |
| $P$ | 3.87 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 291 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.5+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2002 10 07 | 291 | 0.3+ | 0.4− | 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2002 10 07 | 291 | 0.0 | 0.2− | 2004 03 14 | 691 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2004 03 14 | 691 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2004 02 16 | 691 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3+ |
| 2004 02 18 | 291 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.7+ | 0.3− |
| 2004 02 18 | 291 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.5− | 0.5− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2004 02 18 | 291 | 0.6− | 0.0 | 2006 09 25 | G96 | 0.7− | 0.6− | 2006 11 22 | G96 | 0.5+ | 0.0 |
| 2004 02 23 | 704 | (0.6+ | 1.7−) | 2006 09 25 | G96 | 0.7− | 0.4− | 2006 11 22 | G96 | 0.6+ | 0.3+ |
| 2004 02 23 | 704 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.4+ | | | | |
| 2004 02 23 | 704 | 0.3+ | 1.4+ | 2006 10 02 | 691 | 0.1− | 0.4+ | | | | |

### 2004 $DT_6$ = 1993 $FY_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.17809 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26538959 | $\omega$ | 55.36533 | | −0.50147922 | | −0.86484734 |
| $a$ | 2.3981709 | $\Omega$ | 64.74938 | | +0.78498752 | | −0.46630950 |
| $e$ | 0.1646719 | $i$ | 1.49615 | | +0.36374880 | | −0.18599603 |
| $P$ | 3.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | (3.2− | 0.9+) | 2004 02 23 | 704 | 0.3− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 1993 03 20 | 809 | (3.2+ | 4.2−) | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2000 01 04 | 704 | 0.3− | 0.5− | 2004 02 23 | 704 | 0.5+ | 1.1+ | 2006 10 01 | 691 | 0.3− | 0.4+ |
| 2000 01 04 | 704 | 0.8+ | 0.6− | 2004 03 15 | 703 | 1.1+ | 0.4− | 2006 10 13 | D35 | 0.6+ | 0.3+ |
| 2000 01 04 | 704 | 0.2+ | 0.6− | 2004 03 15 | 703 | 0.0 | 0.1− | 2006 10 13 | D35 | 0.8+ | 0.9+ |
| 2000 01 04 | 704 | 0.7− | 0.2+ | 2004 03 15 | 703 | 0.4+ | 0.8+ | 2006 10 13 | D35 | 0.2+ | 0.3+ |
| 2003 11 20 | 691 | 0.6− | 0.0 | 2004 03 15 | 703 | 0.4− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2003 11 20 | 691 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.4− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2003 11 20 | 691 | 0.3+ | 0.3− | 2004 03 19 | 704 | 0.1− | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2003 11 30 | 691 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.5− | 0.1− |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.1− |
| 2003 11 30 | 691 | 0.4+ | 0.7− | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.8+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2004 02 16 | 691 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.7− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.8− |
| 2004 02 18 | 704 | 0.5+ | 0.5+ | 2004 03 29 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.9− |
| 2004 02 18 | 704 | 0.4+ | 0.3+ | 2004 03 29 | 691 | 0.4− | 0.3+ | 2006 11 19 | 691 | 0.3+ | 0.3+ |
| 2004 02 18 | 704 | 0.1− | 0.3− | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2004 02 18 | 608 | 0.4− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.5+ | 0.9− |
| 2004 02 18 | 608 | 0.1+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2004 02 18 | 608 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2004 02 23 | 704 | 0.4+ | 0.2+ | 2006 09 23 | 691 | 0.4− | 0.4+ | 2006 11 20 | G96 | 0.1+ | 0.6− |
| 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.4+ | | | | |

### 2004 $DA_8$ = 2006 $SL_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.92203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22984930 | $\omega$ | 48.68755 | | +0.90097376 | | −0.43327734 |
| $a$ | 2.6394124 | $\Omega$ | 336.96043 | | +0.37869362 | | +0.81088448 |
| $e$ | 0.0927411 | $i$ | 3.33073 | | +0.21174848 | | +0.39336637 |
| $P$ | 4.29 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.0 | 0.7− | 2006 09 27 | 704 | 1.3− | 0.2− |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | (1.7− | 1.2−) | 2006 09 27 | 704 | 0.1+ | 0.2− |
| 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | (1.7− | 0.4−) | 2006 09 27 | 704 | 0.5+ | 1.1+ |
| 2004 02 18 | 291 | 0.2+ | 0.0 | 2006 09 16 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2004 02 18 | 291 | 0.0 | 0.1+ | 2006 09 16 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2004 02 18 | 291 | 0.0 | 0.2− | 2006 09 16 | 691 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2004 02 26 | 704 | 0.7+ | 0.0 | 2006 09 16 | 699 | 0.5+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2004 02 26 | 704 | (1.8+ | 0.2+) | 2006 09 16 | 699 | 0.5− | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.8− |
| 2004 02 26 | 704 | 0.7− | 0.4+ | 2006 09 16 | 699 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2004 02 26 | 704 | (1.6+ | 1.0+) | 2006 09 16 | 699 | 0.8+ | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.6+ |
| 2006 07 22 | G96 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.6− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2006 07 22 | G96 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.3− |
| 2006 07 22 | G96 | 0.5− | 0.1+ | 2006 09 19 | 699 | 1.3+ | 0.8− | | | | |
| 2006 08 28 | 703 | 0.6− | 0.7− | 2006 09 27 | 704 | 0.8+ | 0.5− | | | | |

**2004 DQ$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.52614 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28880601 | $\omega$ | 151.23922 | | −0.82876951 | −0.55937275 | |
| $a$ | 2.2667236 | $\Omega$ | 354.66843 | | +0.47591538 | −0.68991066 | |
| $e$ | 0.0726929 | $i$ | 9.66245 | | +0.29435634 | −0.45948385 | |
| $P$ | 3.41 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 05 | 327 | 0.2+ | 0.1− | 2004 02 18 | 608 | 0.0 | 0.9− | 2004 03 15 | 703 | 0.3− | 1.5+ |
| 1997 02 05 | 327 | 0.1− | 0.1− | 2004 02 18 | 608 | 0.3− | 0.8− | 2004 03 15 | 703 | 0.0 | 0.6+ |
| 1997 02 05 | 327 | 0.4− | 0.1− | 2004 02 18 | 608 | 0.0 | 0.7− | 2004 03 26 | 703 | 1.2+ | 0.3− |
| 1997 02 05 | 327 | 0.1+ | 0.2− | 2004 03 15 | 704 | 0.4+ | 0.3− | 2004 03 26 | 703 | 0.0 | 0.6− |
| 2003 12 25 | 645 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.3− | 0.7+ | 2004 03 26 | 703 | 0.0 | 1.7− |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2004 03 15 | 703 | 0.5− | 0.0 | 2004 03 26 | 703 | 1.2− | 1.5+ |
| 2004 02 17 | 704 | 0.9− | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.2+ | 2005 12 01 | 695 | 0.6− | 0.6+ |
| 2004 02 17 | 704 | 0.0 | 0.1+ | 2004 03 15 | 703 | 0.9+ | 0.3+ | 2005 12 01 | 695 | 0.0 | 0.7+ |
| 2004 02 17 | 704 | 0.1− | 0.2− | 2004 03 15 | 704 | 0.9+ | 0.5+ | | | | |

**2004 DD$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.10147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27794543 | $\omega$ | 169.15834 | | −0.88780437 | −0.45843061 | |
| $a$ | 2.3253930 | $\Omega$ | 343.37272 | | +0.41093111 | −0.74995827 | |
| $e$ | 0.1490993 | $i$ | 8.14809 | | +0.20721735 | −0.47686891 | |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 11 | 691 | 0.7+ | 0.0 | 2004 02 22 | 333 | 0.7− | 0.0 | 2004 03 16 | 599 | 0.3− | 0.1− |
| 1997 04 11 | 691 | 0.1− | 0.1+ | 2004 02 22 | 333 | 0.2− | 0.1− | 2004 03 16 | 599 | 0.2− | 0.0 |
| 1997 04 11 | 691 | 0.3− | 0.4+ | 2004 02 26 | 704 | 0.5− | 0.4+ | 2004 03 16 | 599 | 0.5− | 0.1− |
| 2004 01 22 | 704 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.7+ | 0.7− | 2004 03 16 | 599 | 0.4− | 0.1+ |
| 2004 01 22 | 704 | 0.0 | 0.2+ | 2004 02 26 | 704 | 0.5+ | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.1+ | 0.4− | 2004 02 26 | 704 | 0.7+ | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | 0.2− | 0.9+ | 2004 02 27 | 704 | 0.6+ | 0.2− | 2004 03 18 | 704 | 0.2+ | 0.1− |
| 2004 02 13 | 644 | 0.1+ | 0.2+ | 2004 02 27 | 704 | 0.9+ | 0.3− | 2004 03 18 | 704 | 0.2+ | 0.1− |
| 2004 02 13 | 644 | 0.0 | 0.3+ | 2004 02 27 | 704 | 0.9+ | 0.3− | 2004 03 18 | 704 | 0.2+ | 0.0 |
| 2004 02 13 | 644 | 0.3+ | 0.4− | 2004 03 01 | 704 | 0.2− | 0.1+ | 2004 03 20 | 699 | 0.4− | 0.6− |
| 2004 02 16 | 333 | 0.8− | 0.7+ | 2004 03 01 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 699 | 0.7− | 0.4+ |
| 2004 02 16 | 333 | 0.0 | 0.3− | 2004 03 01 | 704 | 0.3+ | 0.1+ | 2004 03 20 | 699 | 0.3− | 0.3− |
| 2004 02 16 | 333 | 0.4− | 0.7− | 2004 03 01 | 704 | 0.1− | 0.2− | 2004 03 20 | 699 | 0.5− | 0.3+ |
| 2004 02 18 | 704 | 0.1+ | 0.0 | 2004 03 01 | 704 | 0.5+ | 0.4− | 2004 03 27 | 704 | 0.2+ | 0.7− |
| 2004 02 18 | 704 | 0.1− | 0.2− | 2004 03 15 | 704 | 0.1− | 0.7+ | 2004 03 27 | 704 | 0.3+ | 0.1+ |
| 2004 02 18 | 704 | 0.3+ | 0.4+ | 2004 03 15 | 704 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.6− |
| 2004 02 18 | 704 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2004 03 27 | 704 | 0.1+ | 0.5− |
| 2004 02 18 | 704 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.6− | 0.5+ | 2004 03 27 | 704 | 0.4− | 0.8− |
| 2004 02 20 | 608 | 0.4− | 0.1+ | 2004 03 15 | 704 | 0.7+ | 0.1+ | 2006 11 22 | 703 | 1.5− | 0.6+ |
| 2004 02 20 | 608 | 0.4− | 0.1− | 2004 03 15 | 599 | 0.3− | 0.0 | 2006 11 22 | 703 | 0.3+ | 0.3+ |
| 2004 02 20 | 608 | 0.2− | 0.0 | 2004 03 15 | 599 | 0.5− | 0.1− | 2006 11 22 | 703 | 0.8+ | 0.1− |
| 2004 02 22 | 333 | 0.3− | 0.1+ | 2004 03 15 | 599 | 0.2− | 0.1− | 2006 11 22 | 703 | 0.3+ | 0.2− |

**2004 DM$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.33932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22035749 | $\omega$ | 318.62673 | | −0.61599120 | −0.78720023 | |
| $a$ | 2.7146729 | $\Omega$ | 169.28407 | | +0.75803599 | −0.60252874 | |
| $e$ | 0.1212296 | $i$ | 9.13084 | | +0.21432749 | −0.13143407 | |
| $P$ | 4.47 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 333 | 0.2+ | 0.3+ | 2004 02 25 | 704 | 0.8− | 0.9+ | 2004 03 27 | 691 | 0.3+ | 0.1+ |
| 2004 02 18 | 333 | 0.2− | 0.3− | 2004 02 26 | 704 | 0.3+ | 0.0 | 2004 03 27 | 691 | 0.1− | 0.4+ |
| 2004 02 18 | 333 | 0.7− | 0.4− | 2004 02 26 | 704 | 0.1− | 0.3− | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 2004 02 22 | 691 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.2+ | 0.3− | 2006 08 19 | 691 | 0.5− | 0.1− |
| 2004 02 22 | 691 | 0.3− | 0.3+ | 2004 02 26 | 704 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 2004 02 22 | 691 | 0.2− | 0.1+ | 2004 03 11 | 644 | 0.3+ | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2004 02 22 | 333 | 0.4− | 0.4− | 2004 03 11 | 644 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.5+ |
| 2004 02 22 | 333 | 0.1− | 0.2− | 2004 03 11 | 644 | 0.6+ | 0.7− | 2006 08 27 | 691 | 0.1+ | 0.1+ |
| 2004 02 22 | 333 | 0.8− | 0.1+ | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.9+ | 0.0 |
| 2004 02 25 | 333 | 0.2− | 0.2− | 2004 03 18 | 691 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2004 02 25 | 333 | 0.5− | 0.0 | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2004 02 25 | 333 | 0.1− | 0.3− | 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 2004 02 25 | 704 | 0.6+ | 0.1− | 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 10 16 | G96 | 0.8+ | 0.2− |
| 2004 02 25 | 704 | 0.5− | 0.4+ | 2004 03 18 | 704 | 0.7+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.6− |
| 2004 02 25 | 704 | 0.4− | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.6− | 2006 10 16 | G96 | (1.5+ | 0.1−) |
| 2004 02 25 | 704 | 0.3− | 1.0+ | 2004 03 27 | 691 | 0.2+ | 0.4− | 2006 10 16 | G96 | 0.0 | 0.8− |

**2004 DG$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.86545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21640305 | $\omega$ | 224.90508 | | −0.52593637 | +0.84921874 | |
| $a$ | 2.7476440 | $\Omega$ | 13.59014 | | −0.71317750 | −0.41015458 | |
| $e$ | 0.0856967 | $i$ | 11.56326 | | −0.46343154 | −0.33256692 | |
| $P$ | 4.55 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 608 | 0.3− | 0.4− | 2004 03 17 | 704 | 0.1− | 0.4+ | 2004 04 19 | 704 | 0.2− | 0.7− |
| 2004 02 17 | 608 | 0.2+ | 1.0− | 2004 03 17 | 704 | 0.3+ | 1.1+ | 2004 04 19 | 704 | 1.1− | 0.1+ |
| 2004 02 17 | 608 | 0.1− | 0.4− | 2004 03 17 | 704 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.5+ | 0.3+ |
| 2004 02 18 | 704 | 0.7+ | 0.2− | 2004 03 17 | 704 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.2− |
| 2004 02 18 | 704 | 0.5+ | 0.2− | 2004 03 17 | 704 | 0.1+ | 0.8+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2004 02 18 | 704 | 0.3− | 0.5+ | 2004 03 17 | 704 | 0.5− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2004 02 18 | 704 | 0.2− | 0.2+ | 2004 03 17 | 704 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 2004 02 18 | 704 | 0.8+ | 0.1− | 2004 03 17 | 704 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.4− | 0.2− |
| 2004 02 25 | 704 | 0.9− | 0.8− | 2004 03 20 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2004 02 25 | 704 | 0.5+ | 0.5− | 2004 03 20 | 704 | 0.9+ | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2004 02 25 | 704 | 0.5− | 0.1+ | 2004 03 20 | 704 | (1.7+ | 1.1+) | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 2004 02 25 | 704 | 0.4− | 0.1− | 2004 03 20 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.6+ |
| 2004 02 25 | 704 | 0.7− | 0.9− | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2004 03 15 | 704 | 0.5− | 0.3− | 2004 03 22 | 704 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2004 03 15 | 704 | 0.0 | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.6− |
| 2004 03 15 | 704 | 0.4− | 0.2− | 2004 03 22 | 704 | 0.3− | 1.4− | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2004 03 15 | 704 | 0.7+ | 0.2− | 2004 03 22 | 704 | 1.2− | 0.3− | 2006 11 25 | G96 | 0.2− | 0.7− |
| 2004 03 15 | 704 | 0.5+ | 0.4− | 2004 04 19 | 704 | 0.6+ | 0.6− | 2006 11 25 | G96 | 0.6− | 0.5− |
| 2004 03 17 | 704 | 0.1− | 0.4+ | 2004 04 19 | 704 | 1.2+ | 0.1− | | | | |
| 2004 03 17 | 704 | 0.2+ | 0.7+ | 2004 04 19 | 704 | 0.7+ | 0.2− | | | | |

**2004 DW$_{13}$ = 2006 UT$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.11403 | | | (2000.0) | | |
| $n$ | 0.27342068 | $\omega$ | 84.59617 | | −0.15682187 | −0.98660528 |
| $a$ | 2.3509775 | $\Omega$ | 14.65839 | | +0.82123169 | −0.15552557 |
| $e$ | 0.1606388 | $i$ | 10.22253 | | +0.54862137 | −0.04921201 |
| $P$ | 3.60 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 704 | 0.3+ | 0.7− | 2004 02 25 | 926 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2004 02 16 | 704 | 0.1− | 0.4− | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2004 02 16 | 704 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2004 02 16 | 704 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2004 02 19 | 704 | (1.8+ | 1.3+) | 2006 10 03 | 691 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2004 02 19 | 704 | 0.1+ | 0.6+ | 2006 10 03 | 691 | 0.5+ | 0.3− | 2006 10 29 | 691 | 0.5+ | 0.0 |
| 2004 02 19 | 704 | 0.7+ | 1.0+ | 2006 10 03 | 691 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.4− |
| 2004 02 25 | 926 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.2− | 0.4+ | | | | |
| 2004 02 25 | 926 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.3− | 0.2+ | | | | |

**2004 DM$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.22418 | | | (2000.0) | | |
| $n$ | 0.21819505 | $\omega$ | 159.78651 | | −0.82878905 | −0.55173655 |
| $a$ | 2.7325794 | $\Omega$ | 345.55347 | | +0.44815377 | −0.55470917 |
| $e$ | 0.0946727 | $i$ | 21.94900 | | +0.33506254 | −0.62280375 |
| $P$ | 4.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 703 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2004 02 16 | 703 | (2.2− | 0.7−) | 2004 03 20 | 704 | 1.0+ | 1.0+ | 2006 10 17 | 703 | 0.1+ | 1.3− |
| 2004 02 16 | 703 | 0.6− | 0.9− | 2004 03 20 | 704 | 1.5+ | 0.2+ | 2006 10 17 | 703 | (0.4+ | 1.8+) |
| 2004 02 16 | 703 | 1.4− | 0.5− | 2004 03 21 | 704 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.9+ |
| 2004 02 19 | 704 | 0.7+ | 0.9+ | 2004 03 21 | 704 | 0.1+ | 0.6− | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2004 02 19 | 704 | 0.9+ | 0.6− | 2004 03 21 | 704 | 0.7+ | 0.9− | 2006 10 21 | 691 | 0.3+ | 0.1+ |
| 2004 02 19 | 704 | 0.4+ | 0.3+ | 2004 03 21 | 704 | 0.7− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.5+ |
| 2004 02 19 | 704 | 0.3− | 1.0− | 2004 03 21 | 704 | 0.4+ | 0.7− | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2004 02 19 | 704 | 0.1+ | 0.4− | 2004 04 12 | 703 | (0.5+ | 2.9+) | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2004 02 25 | 704 | 0.4+ | 0.7+ | 2004 04 12 | 703 | (0.6− | 2.0−) | 2006 10 21 | 691 | 0.4+ | 0.2+ |
| 2004 02 25 | 704 | (1.6+ | 1.5+) | 2004 04 12 | 703 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2004 02 25 | 704 | 0.3− | 1.1+ | 2004 04 12 | 703 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2004 02 25 | 704 | 0.9− | 1.4+ | 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2004 02 25 | 704 | (0.0 | 1.8+) | 2006 09 17 | 703 | 1.1+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2004 03 16 | 704 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.5− |
| 2004 03 16 | 704 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.4− | 1.1+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 03 16 | 704 | 0.7− | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.7− | 2006 10 24 | 644 | 0.6+ | 0.1+ |
| 2004 03 16 | 704 | 0.1− | 0.4+ | 2006 09 19 | 699 | 1.2− | 0.0 | 2006 10 24 | 644 | 0.5+ | 0.4+ |
| 2004 03 18 | 704 | 0.5− | 0.9− | 2006 09 19 | 699 | (2.7+ | 2.1+) | 2006 10 24 | 644 | 0.8+ | 0.1+ |
| 2004 03 18 | 704 | 0.6− | 1.0− | 2006 09 19 | 699 | (2.0+ | 1.2+) | 2006 10 28 | 691 | 0.4+ | 0.4+ |
| 2004 03 18 | 704 | 0.7− | 0.1+ | 2006 09 27 | 703 | 1.1+ | 0.2− | 2006 10 28 | 691 | 0.5+ | 0.2+ |
| 2004 03 18 | 704 | 0.3+ | 0.3− | 2006 09 27 | 703 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 1.2− | 1.2− |
| 2004 03 18 | 704 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.7− | 1.0+ | | | | |
| 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 09 27 | 703 | 0.5+ | 0.1+ | | | | |

**2004 DO$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.58602 | | | (2000.0) | | |
| $n$ | 0.28229890 | $\omega$ | 287.37709 | | +0.54056736 | −0.84007768 |
| $a$ | 2.3014237 | $\Omega$ | 129.81352 | | +0.79255704 | +0.49042644 |
| $e$ | 0.1358673 | $i$ | 3.38451 | | +0.28220608 | +0.23184348 |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.3− | 0.4+ | 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.4− |
| 2004 02 17 | 704 | 0.0 | 0.2+ | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 644 | 0.5+ | 0.1− |
| 2004 02 17 | 704 | 0.8+ | 0.8− | 2004 03 26 | 691 | 0.2− | 0.5+ | 2006 11 17 | 644 | 0.3+ | 0.0 |
| 2004 02 19 | 704 | 0.1+ | 0.7+ | 2004 03 26 | 691 | 0.0 | 0.3− | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2004 02 19 | 704 | 0.3− | 0.4− | 2006 11 14 | 704 | 0.4+ | 0.1− | 2006 11 29 | 704 | 0.2− | 0.1+ |
| 2004 02 19 | 704 | 0.0 | 0.7− | 2006 11 14 | 704 | 0.6+ | 0.6+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.2− | 0.3+ | 2006 11 14 | 704 | (0.6+ | 1.7+) | 2006 11 29 | 704 | 0.0 | 0.4+ |
| 2004 02 23 | 704 | 0.7− | 0.2− | 2006 11 17 | 704 | 0.9− | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 0.6− | 2006 11 17 | 704 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.6− | | | | |

**2004 DR$_{15}$ = 2006 UB$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.70775 | | | (2000.0) | | |
| $n$ | 0.27614095 | $\omega$ | 125.11085 | | +0.01009860 | −0.97371028 |
| $a$ | 2.3355124 | $\Omega$ | 322.25345 | | +0.75301986 | +0.15714087 |
| $e$ | 0.2652855 | $i$ | 21.82278 | | +0.65792029 | −0.16490916 |
| $P$ | 3.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 699 | 0.1+ | 0.2+ | 2004 02 19 | 704 | 0.5+ | 0.5− | 2006 10 20 | 703 | 0.8− | 0.3− |
| 2004 01 29 | 699 | 0.1− | 0.2− | 2004 02 19 | 704 | 0.6+ | 0.2− | 2006 10 20 | 703 | 0.4+ | 0.7+ |
| 2004 01 29 | 699 | 0.1+ | 0.1− | 2004 02 19 | 704 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.7− | 0.7− |
| 2004 01 29 | 699 | 0.4− | 0.2− | 2004 02 19 | 704 | 0.4− | 0.0 | 2006 10 20 | 703 | 1.0+ | 0.0 |
| 2004 02 17 | 703 | 0.1+ | 0.0 | 2006 09 22 | 699 | (2.2+ | 0.8−) | 2006 10 27 | 703 | 0.6− | 1.1− |
| 2004 02 17 | 703 | 0.9− | 0.1− | 2006 09 22 | 699 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.7+ |
| 2004 02 17 | 703 | 0.0 | 0.9+ | 2006 09 22 | 699 | 0.4+ | 0.6+ | 2006 10 27 | 703 | 0.6+ | 0.5+ |
| 2004 02 17 | 703 | 0.5+ | 0.1+ | 2006 09 22 | 699 | 0.7+ | 0.1− | 2006 10 27 | 703 | 0.9− | 0.2− |

**2004 DV$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 177.01952 | | | (2000.0) | | |
| $n$ | 0.21098735 | $\omega$ | 69.45146 | | −0.96021646 | +0.24873521 |
| $a$ | 2.7944635 | $\Omega$ | 124.74648 | | −0.27669861 | −0.90882370 |
| $e$ | 0.1109822 | $i$ | 8.88749 | | +0.03771252 | −0.33491832 |
| $P$ | 4.67 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.2− | 0.0 | 2004 02 19 | 704 | 0.2+ | 0.3+ | 2004 03 25 | 704 | 0.0 | 0.0 |
| 2002 11 25 | 644 | 0.2+ | 0.2− | 2004 02 27 | 704 | 0.1− | 0.2− | 2004 03 25 | 704 | 0.3+ | 0.1+ |
| 2002 11 25 | 644 | 0.2+ | 0.1− | 2004 02 27 | 704 | 0.0 | 0.4− | 2004 03 25 | 704 | 0.4− | 0.0 |
| 2003 12 22 | 691 | 0.2− | 0.2+ | 2004 02 27 | 704 | 0.1+ | 0.0 | 2004 03 26 | 704 | 0.3+ | 0.2+ |
| 2003 12 22 | 691 | 0.2− | 0.1+ | 2004 03 15 | 704 | 0.4− | 1.5+ | 2004 03 26 | 704 | 0.0 | 0.8+ |
| 2003 12 22 | 691 | 0.2− | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.6− | 2004 03 26 | 704 | 0.6+ | 0.2+ |
| 2003 12 22 | 691 | 0.1+ | 0.3− | 2004 03 15 | 704 | 0.1− | 0.4− | 2004 03 26 | 704 | 0.4− | 1.1+ |
| 2003 12 22 | 691 | 0.0 | 0.2+ | 2004 03 15 | 704 | 0.3− | 0.7+ | 2004 03 26 | 704 | 0.4− | 0.1+ |
| 2003 12 22 | 691 | 0.2− | 0.4− | 2004 03 15 | 704 | 0.5+ | 0.5+ | 2004 03 26 | 703 | 0.1− | 0.2+ |
| 2003 12 22 | 691 | 0.2+ | 0.2− | 2004 03 21 | 198 | 0.3− | 0.0 | 2004 03 26 | 703 | 0.6+ | 0.6− |
| 2003 12 22 | 691 | 0.0 | 0.1+ | 2004 03 21 | 198 | 0.2− | 1.0− | 2004 03 26 | 703 | 0.4+ | 0.0 |
| 2003 12 22 | 691 | 0.3+ | 0.2− | 2004 03 21 | 198 | 0.3− | 1.2− | 2004 03 26 | 703 | 0.9+ | 0.9− |
| 2004 02 17 | 704 | 0.4+ | 0.0 | 2004 03 23 | 704 | 1.2+ | 0.0 | 2004 03 27 | 691 | 0.4− | 0.2− |
| 2004 02 17 | 704 | 0.4+ | 0.3+ | 2004 03 23 | 704 | 0.4− | 0.3+ | 2004 03 27 | 691 | 0.5− | 0.3− |
| 2004 02 17 | 704 | 0.6+ | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.1+ | 2004 03 27 | 691 | 0.3− | 0.2− |
| 2004 02 17 | 704 | (1.7+ | 1.6+) | 2004 03 23 | 704 | 0.4+ | 0.9+ | 2005 05 15 | G96 | 0.0 | 0.3− |
| 2004 02 17 | 703 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.5+ | 1.5+ | 2005 05 15 | G96 | 0.0 | 0.3− |
| 2004 02 17 | 703 | 1.0+ | 1.0− | 2004 03 23 | 704 | 0.0 | 0.7+ | 2005 05 15 | G96 | 0.0 | 0.0 |
| 2004 02 17 | 703 | 0.8− | 0.0 | 2004 03 23 | 704 | 1.2+ | 0.0 | 2005 05 15 | G96 | 0.1− | 0.1− |
| 2004 02 17 | 703 | (2.0− | 0.3+) | 2004 03 23 | 704 | 0.2− | 0.8+ | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2004 02 19 | 704 | (0.4− | 1.7+) | 2004 03 23 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 703 | (2.1− | 0.7−) |
| 2004 02 19 | 704 | (1.6− | 0.2−) | 2004 03 23 | 704 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.7+ |
| 2004 02 19 | 704 | 0.0 | 0.0 | 2004 03 25 | 704 | 0.4+ | 0.5− | 2006 09 26 | 703 | (1.9− | 0.1+) |
| 2004 02 19 | 704 | 0.5− | 0.3+ | 2004 03 25 | 704 | 0.3− | 0.1+ | | | | |

**2004 DO$_{16}$ = 2006 TR$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.88199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26226909 | $\omega$ | 309.54663 | | −0.98524125 | −0.15686039 | |
| $a$ | 2.4171558 | $\Omega$ | 221.55969 | | +0.17069232 | −0.93027115 | |
| $e$ | 0.0838562 | $i$ | 5.92813 | | −0.01279917 | −0.33164802 | |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 691 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2004 02 19 | 704 | 0.0 | 1.1− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2004 02 19 | 704 | 0.2− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2004 02 19 | 704 | 0.8+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2− |
| 2004 02 19 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2004 02 19 | 704 | 0.3+ | 0.6− | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2004 02 23 | 704 | 0.3+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2004 02 23 | 704 | 0.4− | 0.6− | 2006 10 20 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.7− | 0.1− | | | | |

**2004 DT$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.34401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27911292 | $\omega$ | 3.46526 | | −0.92184805 | −0.38560358 | |
| $a$ | 2.3189039 | $\Omega$ | 153.74775 | | +0.35342882 | −0.87754203 | |
| $e$ | 0.1916260 | $i$ | 5.03339 | | +0.15901019 | −0.28500855 | |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.2− | 0.7+ | 2004 03 17 | 333 | 0.2− | 0.6− | 2004 04 10 | 644 | 0.2− | 0.2+ |
| 1995 10 19 | 691 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2004 04 10 | 644 | 0.0 | 0.2+ |
| 1995 10 19 | 691 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.8+ | 0.2+ | 2004 04 15 | 644 | 0.1− | 0.1+ |
| 2004 02 18 | 608 | 0.1+ | 0.6− | 2004 03 19 | 704 | 1.4+ | 0.0 | 2004 04 15 | 644 | 0.2− | 0.1+ |
| 2004 02 18 | 608 | 0.6+ | 0.7− | 2004 03 19 | 704 | 0.6+ | 0.3+ | 2004 04 15 | 644 | 0.2− | 0.1+ |
| 2004 02 18 | 608 | 0.2+ | 0.4− | 2004 03 19 | 704 | 1.3+ | 0.3+ | 2004 05 23 | 291 | 0.5+ | 0.2− |
| 2004 02 19 | 704 | 0.3+ | 0.6− | 2004 03 20 | 691 | 0.0 | 0.0 | 2004 05 23 | 291 | 0.4− | 0.3+ |
| 2004 02 19 | 704 | 1.3+ | 0.5− | 2004 03 20 | 691 | 0.1− | 0.1+ | 2004 05 23 | 291 | 0.3− | 0.3+ |
| 2004 02 19 | 704 | 0.0 | 0.5− | 2004 03 20 | 691 | 0.1+ | 0.0 | 2005 09 29 | G96 | 0.6− | 0.1+ |
| 2004 02 19 | 704 | 0.5+ | 0.5+ | 2004 03 21 | 699 | 1.2+ | 1.0− | 2005 09 29 | G96 | 0.4− | 0.1+ |
| 2004 02 23 | 704 | 1.0− | 0.7+ | 2004 03 21 | 699 | 0.0 | 0.4+ | 2005 09 29 | G96 | 0.4+ | 0.9+ |
| 2004 02 23 | 704 | 1.0− | 0.7+ | 2004 03 21 | 699 | 1.3− | 0.2+ | 2005 09 29 | G96 | 0.0 | 1.0+ |
| 2004 02 23 | 704 | 0.4− | 0.7+ | 2004 03 21 | 699 | 0.4− | 0.3+ | 2006 10 23 | G96 | (3.6+ | 0.9+) |
| 2004 02 23 | 704 | 1.1− | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.3− | 2006 10 23 | G96 | (2.8+ | 0.1+) |
| 2004 02 23 | 704 | 1.2− | 0.5+ | 2004 03 22 | 704 | 0.0 | 0.2− | 2006 10 23 | G96 | (3.5+ | 0.8+) |
| 2004 03 16 | 704 | (1.6+ | 0.5+) | 2004 03 22 | 704 | 0.1+ | 0.2− | 2006 10 23 | G96 | (3.9+ | 0.6+) |
| 2004 03 16 | 704 | 0.6+ | 0.6+ | 2004 03 22 | 704 | 0.6+ | 1.0+ | 2006 11 16 | 691 | (4.0+ | 0.8+) |
| 2004 03 16 | 704 | 0.8+ | 0.4+ | 2004 03 22 | 704 | 0.3− | 0.4+ | 2006 11 16 | 691 | (4.0+ | 0.3+) |
| 2004 03 16 | 704 | 0.5+ | 0.0 | 2004 03 30 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | (4.8+ | 0.9+) |
| 2004 03 16 | 704 | 1.0+ | 0.2+ | 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | (4.3+ | 0.2+) |
| 2004 03 17 | 333 | 0.3− | 0.1− | 2004 03 30 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | (4.6+ | 0.6+) |
| 2004 03 17 | 333 | 0.2+ | 0.0 | 2004 04 10 | 644 | 0.5− | 0.4+ | 2006 11 22 | G96 | (3.7+ | 0.6+) |

**2004 DV$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.18727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23444852 | $\omega$ | 82.82394 | | −0.85552955 | −0.51170538 | |
| $a$ | 2.6047800 | $\Omega$ | 66.37020 | | +0.43452190 | −0.79248285 | |
| $e$ | 0.1722807 | $i$ | 4.94111 | | +0.28153135 | −0.33185620 | |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.1+ | 0.4+ | 2004 03 15 | 704 | 0.5− | 0.2− | 2004 03 23 | 704 | 0.9− | 0.1+ |
| 2004 02 17 | 704 | 0.2− | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.8+ | 2004 03 23 | 704 | 1.2− | 0.1− |
| 2004 02 17 | 704 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.1− | 1.9− | 2004 03 26 | 703 | 1.1+ | 0.3+ |
| 2004 02 17 | 704 | 0.1+ | 1.0+ | 2004 03 15 | 704 | 0.3+ | 0.1− | 2004 03 26 | 703 | 0.3− | 0.8+ |
| 2004 02 20 | 608 | 0.0 | 0.9− | 2004 03 19 | 644 | 0.5− | 0.0 | 2004 03 26 | 703 | 0.1+ | 0.2− |
| 2004 02 20 | 608 | 1.1+ | 1.0− | 2004 03 19 | 644 | 0.6− | 0.1+ | 2004 03 26 | 703 | 0.3+ | 0.0 |
| 2004 02 20 | 608 | 0.0 | 1.0− | 2004 03 19 | 644 | 0.5− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.1− |
| 2004 02 27 | 704 | 0.7− | 0.0 | 2004 03 20 | 704 | 0.8+ | 0.1+ | 2006 09 20 | 691 | 0.0 | 0.0 |
| 2004 02 27 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 1.4+ | 0.4− | 2006 09 20 | 691 | 0.0 | 0.2+ |
| 2004 02 27 | 704 | 0.5− | 0.7− | 2004 03 20 | 704 | 1.4+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.5− |
| 2004 03 10 | 644 | 0.1+ | 0.0 | 2004 03 20 | 704 | 1.2+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.7+ |
| 2004 03 10 | 644 | 0.0 | 0.1+ | 2004 03 23 | 704 | 1.1− | 1.3+ | 2006 10 02 | G96 | 0.9− | 0.3+ |
| 2004 03 10 | 644 | 0.0 | 0.1+ | 2004 03 23 | 704 | 1.0− | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 704 | 0.1− | 0.4+ | 2004 03 23 | 704 | 0.4− | 0.1− | | | | |

**2004 DS$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.78481 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18273294 | $\omega$ | 37.92655 | | −0.95615812 | −0.28829429 | |
| $a$ | 3.0755644 | $\Omega$ | 125.24098 | | +0.25092110 | −0.89711258 | |
| $e$ | 0.1801486 | $i$ | 3.61239 | | +0.15099753 | −0.33477667 | |
| $P$ | 5.39 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 699 | 0.3− | 0.3+ | 2004 02 20 | 608 | 0.4+ | 1.1− | 2004 03 19 | 704 | 0.1− | 0.4− |
| 2002 11 28 | 699 | 1.4− | 1.0+ | 2004 02 20 | 608 | 0.1+ | 0.5− | 2004 03 19 | 704 | 0.0 | 0.1− |
| 2002 11 28 | 699 | 0.2− | 0.3+ | 2004 02 20 | 608 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.0 | 0.2+ |
| 2002 11 28 | 699 | 0.5+ | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.5− | 2004 03 19 | 291 | 0.3+ | 0.1+ |
| 2002 12 10 | 644 | 0.7+ | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.3− |
| 2002 12 10 | 644 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.4+ | 0.1+ | 2004 03 20 | 699 | 0.3− | 0.5+ |
| 2002 12 10 | 644 | 0.1+ | 0.3− | 2004 02 23 | 704 | 0.0 | 0.1− | 2004 03 20 | 699 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.5+ | 0.5+ | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2004 03 20 | 699 | 0.8− | 0.4+ |
| 2003 12 27 | 704 | 0.6+ | 0.4+ | 2004 03 11 | 644 | 0.1+ | 0.1− | 2004 03 20 | 699 | 0.4− | 0.1− |
| 2003 12 27 | 704 | 0.5+ | 0.2+ | 2004 03 11 | 644 | 0.1− | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.4+ |
| 2003 12 27 | 704 | 0.1− | 0.7+ | 2004 03 11 | 644 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.5− | 0.4+ |
| 2003 12 27 | 704 | 0.8+ | 1.0+ | 2004 03 14 | 691 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.1− | 0.3+ |
| 2004 02 15 | 703 | (0.8− | 2.7−) | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2004 03 22 | 704 | 0.4− | 0.1+ |
| 2004 02 15 | 703 | 0.4+ | 0.3− | 2004 03 14 | 691 | 0.2− | 0.0 | 2004 03 22 | 704 | 0.5− | 0.3+ |
| 2004 02 15 | 703 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.4+ | 0.0 | 2004 03 28 | 691 | 0.5− | 0.1+ |
| 2004 02 15 | 703 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.9+ | 1.4+ | 2004 03 28 | 691 | 0.2− | 0.0 |
| 2004 02 18 | 704 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 1.1+ | 1.1+ | 2004 03 28 | 691 | 0.1− | 0.1+ |
| 2004 02 18 | 704 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.6+ | 0.8+ | 2006 08 28 | 691 | 0.4− | 0.7+ |
| 2004 02 18 | 704 | 0.2+ | 0.3+ | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 08 28 | 691 | 0.2− | 0.8+ |
| 2004 02 18 | 704 | 0.4+ | 0.0 | 2004 03 19 | 291 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.2− | 1.1+ |
| 2004 02 18 | 704 | 0.1+ | 0.9+ | 2004 03 19 | 291 | 0.3+ | 0.0 | | | | |

**2004 DZ$_{22}$ = 2006 SC$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.93129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24394327 | $\omega$ | 323.22434 | | −0.95859440 | −0.27238656 | |
| $a$ | 2.5367451 | $\Omega$ | 201.42543 | | +0.28363659 | −0.93928759 | |
| $e$ | 0.1121379 | $i$ | 13.14620 | | −0.02543739 | −0.20867291 | |
| $P$ | 4.04 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.3− | 0.2+ | 2004 02 23 | 704 | 0.1− | 0.7− | 2006 09 30 | 691 | 0.5− | 0.2+ |
| 2002 10 10 | 644 | 0.2− | 0.2+ | 2004 02 23 | 704 | 0.3− | 0.9− | 2006 09 30 | 691 | 0.5− | 0.1− |
| 2002 10 10 | 644 | 0.4− | 0.4+ | 2004 02 23 | 704 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2002 10 10 | 291 | 0.1− | 0.0 | 2004 02 25 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2002 10 10 | 291 | 0.0 | 0.1+ | 2004 02 25 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2002 10 10 | 291 | 0.3+ | 0.1+ | 2004 02 25 | 704 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2004 02 18 | 703 | 1.1− | 0.1− | 2004 02 25 | 704 | 0.8+ | 0.7+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2004 02 18 | 703 | 1.1− | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.3+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2004 02 18 | 703 | (1.9− | 0.4+) | 2004 02 26 | 704 | 0.4− | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2004 02 18 | 703 | 0.6+ | 0.2+ | 2004 02 26 | 704 | 0.4+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2004 02 19 | 704 | 0.1+ | 0.1+ | 2004 02 26 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 02 19 | 704 | 0.6+ | 0.0 | 2004 02 26 | 704 | 1.0− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2004 02 19 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 691 | 0.4+ | 0.3− | 2006 11 16 | G96 | 0.4− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2004 02 19 | 704 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | | | | |

**2004 DM$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.56556 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37690217 | $\omega$ | 207.53739 | | −0.23558627 | | −0.91701093 |
| $a$ | 1.8980907 | $\Omega$ | 257.58079 | | +0.94123968 | | −0.13282195 |
| $e$ | 0.0933353 | $i$ | 19.24243 | | +0.24200616 | | −0.37609743 |
| $P$ | 2.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 04 | 704 | 1.0+ | 0.2+ | 2000 11 21 | 704 | 1.2+ | 0.4− | 2004 02 23 | 704 | 0.0 | 0.0 |
| 2000 10 04 | 704 | 1.0− | 0.1+ | 2000 11 30 | 704 | 1.9− | 0.3+ | 2004 02 23 | 704 | 0.1+ | 0.3− |
| 2000 10 04 | 704 | 1.9− | 0.2+ | 2000 11 30 | 704 | 0.1+ | 0.7+ | 2004 02 26 | 704 | 0.1− | 0.1− |
| 2000 10 04 | 704 | 0.7− | 0.4− | 2000 11 30 | 704 | 0.0 | 0.3+ | 2004 02 26 | 704 | 0.8− | 0.6− |
| 2000 11 06 | 704 | 0.5+ | 0.6− | 2003 12 26 | 608 | 0.1+ | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.4− |
| 2000 11 06 | 704 | 1.0+ | 0.3− | 2003 12 26 | 608 | 0.8+ | 0.2+ | 2005 10 03 | 644 | 0.4− | 0.1− |
| 2000 11 06 | 704 | 1.3+ | 0.8+ | 2003 12 26 | 608 | 0.5+ | 0.5+ | 2005 10 03 | 644 | 0.1+ | 0.6− |
| 2000 11 21 | 704 | 0.1− | 1.1+ | 2004 02 20 | 704 | 0.2− | 0.8+ | 2005 10 03 | 644 | 0.1− | 0.1+ |
| 2000 11 21 | 704 | 1.4− | 0.9− | 2004 02 20 | 704 | 0.8− | 0.0 | 2005 12 28 | 291 | 0.3− | 0.2− |
| 2000 11 21 | 704 | 0.4+ | 0.1+ | 2004 02 20 | 704 | 0.4− | 0.1− | 2005 12 28 | 291 | 0.2+ | 0.3+ |
| 2000 11 21 | 704 | 0.4+ | 0.5− | 2004 02 23 | 704 | 0.4+ | 0.4− | 2005 12 28 | 291 | 0.3+ | 0.3+ |
| 2000 11 21 | 704 | 0.4+ | 0.5− | 2004 02 23 | 704 | 0.2− | 0.2− | | | | |
| 2000 11 21 | 704 | 0.6+ | 1.0− | 2004 02 23 | 704 | 0.2+ | 0.0 | | | | |

**2004 DZ$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.08051 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26829051 | $\omega$ | 215.27422 | | −0.84240811 | | +0.53883858 |
| $a$ | 2.3808526 | $\Omega$ | 357.32946 | | −0.48801017 | | −0.76392339 |
| $e$ | 0.1817783 | $i$ | 1.53703 | | −0.22846149 | | −0.35506907 |
| $P$ | 3.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.4+ | 0.3− | 2004 02 23 | 704 | 0.7+ | 1.3+ | 2004 03 01 | 691 | 0.1− | 0.2− |
| 2004 01 22 | 704 | 0.4+ | 0.6− | 2004 02 23 | 704 | 0.4+ | 1.4+ | 2006 10 21 | G96 | 0.4+ | 0.2+ |
| 2004 01 22 | 704 | 0.2− | 0.4+ | 2004 02 23 | 704 | 0.9− | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.1+ |
| 2004 01 22 | 704 | 0.7− | 0.1− | 2004 02 23 | 704 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2004 02 16 | 704 | 0.2− | 0.4+ | 2004 02 27 | 695 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2004 02 16 | 704 | 0.9+ | 0.1+ | 2004 02 27 | 695 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2004 02 16 | 704 | 0.4− | 0.3− | 2004 03 01 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2004 02 16 | 704 | 0.2+ | 0.7− | 2004 03 01 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.1− | 0.0 |

**2004 DD$_{26}$ = 2006 SD$_{294}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.12315 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21738039 | $\omega$ | 254.55400 | | −0.38275117 | | +0.92379176 |
| $a$ | 2.7394022 | $\Omega$ | 352.91501 | | −0.81161535 | | −0.34166127 |
| $e$ | 0.0723844 | $i$ | 4.88501 | | −0.44134121 | | −0.17284777 |
| $P$ | 4.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.7− | 0.8+ | 2005 01 17 | 809 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.7− | 0.1+ |
| 2001 08 14 | 608 | 0.8− | 0.4+ | 2005 01 17 | 809 | 0.1− | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.6+ |
| 2001 08 14 | 608 | 0.4− | 0.3+ | 2005 01 17 | 809 | 0.3+ | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.3− |
| 2001 08 22 | 608 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 1.0− | 0.6− | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2001 08 22 | 608 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 2.5− | 1.4+ | 2006 09 25 | 691 | 0.3− | 0.1− |
| 2001 08 22 | 608 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.4+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2004 02 16 | 704 | 1.0− | 0.9+ | 2006 08 28 | 703 | 1.1− | 0.8− | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 2004 02 16 | 704 | 1.1+ | 0.7+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.1− |
| 2004 02 16 | 704 | 1.0+ | 0.1− | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2004 02 16 | 704 | 0.2+ | 0.2+ | 2006 09 06 | 644 | 0.6− | 0.2+ | 2006 10 02 | 691 | 0.7+ | 0.7+ |
| 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.2− |
| 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 09 17 | 691 | 1.5+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.2+ | 0.8+ | 2006 09 17 | 703 | 0.6+ | 0.2− | | | | |
| 2004 02 23 | 704 | 0.0 | 1.3+ | 2006 09 17 | 691 | 0.3− | 0.1− | | | | |

**2004 DK$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.36345 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25573231 | $\omega$ | 168.72970 | | −0.99660719 | | +0.08119442 |
| $a$ | 2.4581723 | $\Omega$ | 15.94616 | | −0.07881236 | | −0.89425386 |
| $e$ | 0.1341861 | $i$ | 2.81129 | | −0.02372165 | | −0.44013351 |
| $P$ | 3.85 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.0 | 0.4− | 2004 03 18 | 691 | 0.1+ | 0.3+ |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.1+ | 0.9− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.3− |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2004 02 29 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.5− | 0.1+ |
| 2004 02 16 | 691 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2004 02 23 | 704 | 0.9+ | 0.2− | 2004 03 18 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2004 02 23 | 704 | 0.3− | 0.1− | 2004 03 18 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.1− |

**2004 DF$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.42437 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26379989 | $\omega$ | 273.67730 | | −0.99088917 | | −0.13026475 |
| $a$ | 2.4077957 | $\Omega$ | 258.84002 | | +0.13321103 | | −0.91055148 |
| $e$ | 0.1558947 | $i$ | 1.99778 | | +0.01983615 | | −0.39233543 |
| $P$ | 3.74 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 22 | 704 | 0.2− | 0.4− | 2004 02 17 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.3+ |
| 2004 01 22 | 704 | 0.4− | 0.5+ | 2004 02 17 | 704 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 2004 01 22 | 704 | 0.0 | 0.0 | 2004 02 17 | 644 | 0.5+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2004 01 22 | 704 | 0.4+ | 0.4+ | 2004 02 17 | 704 | 0.6+ | 0.9− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 01 22 | 704 | 0.3− | 1.0+ | 2004 02 17 | 704 | 1.2+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2004 01 30 | 704 | 0.5− | 0.2+ | 2004 02 17 | 704 | (0.1− | 1.7−) | 2006 11 21 | 691 | 0.8+ | 0.2+ |
| 2004 01 30 | 704 | 0.9− | 0.0 | 2004 02 23 | 704 | 0.8+ | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2004 01 30 | 704 | 0.3− | 0.3+ | 2004 02 23 | 704 | 0.7+ | 0.1− | 2006 11 21 | 691 | 0.1− | 1.0− |
| 2004 02 11 | 703 | 0.4− | 1.1− | 2004 02 23 | 704 | 0.3− | 0.4− | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 02 11 | 703 | 0.7− | 0.5− | 2004 02 23 | 704 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 02 11 | 703 | (2.5− | 0.1−) | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2004 02 11 | 703 | 0.8− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.7− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2004 02 17 | 644 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 | | | | |

**2004 DB$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.59664 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26194696 | $\omega$ | 96.96518 | | −0.44673628 | | −0.89447593 |
| $a$ | 2.4191371 | $\Omega$ | 19.60149 | | +0.79762788 | | −0.40752611 |
| $e$ | 0.1861504 | $i$ | 3.14851 | | +0.40523630 | | −0.18394368 |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.1+ | 1.3− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 291 | 0.3+ | 0.1+ |
| 2000 01 03 | 704 | 1.4− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 01 | 291 | 0.3− | 0.0 |
| 2000 01 03 | 704 | 0.8+ | 0.5− | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 01 | 291 | 0.1+ | 0.1− |
| 2000 01 03 | 704 | 0.2+ | 1.1− | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 01 | 291 | 0.1+ | 0.0 |
| 2004 02 17 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 01 | 291 | 0.3+ | 0.2+ |
| 2004 02 17 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 01 | 291 | 0.1− | 0.1− |
| 2004 02 17 | 691 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 10 01 | 291 | 0.8+ | 0.2+ |
| 2004 02 17 | 704 | 1.3+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 01 | 291 | 0.3+ | 0.0 |
| 2004 02 17 | 704 | 0.2+ | 1.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 01 | 291 | 0.5+ | 0.3− |
| 2004 02 17 | 704 | 1.1+ | 0.8+ | 2006 09 28 | G96 | 0.5− | 0.2− | 2006 10 01 | 291 | 0.8+ | 0.1− |
| 2004 02 17 | 704 | 1.1+ | 1.1+ | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 10 02 | 291 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.8− | 0.6− | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 10 02 | 291 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.2− | 0.2+ | 2006 10 02 | 291 | 0.7− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.1− | 0.5− | 2006 09 29 | 291 | 0.6− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2004 02 23 | 704 | 0.4− | 0.2− | 2006 09 29 | 291 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2004 02 23 | 704 | 0.4− | 0.4− | 2006 09 29 | 291 | 0.5− | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2004 02 25 | 704 | 0.5− | 1.0+ | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2004 02 25 | 704 | 0.9− | 0.3− | 2006 09 30 | 291 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.5− | 0.3+ |
| 2004 02 25 | 704 | 0.6− | 0.2− | 2006 09 30 | 291 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2004 02 25 | 704 | 0.4+ | 0.4− | 2006 09 30 | G96 | 0.4+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2004 02 25 | 704 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2004 02 26 | 704 | 0.5− | 0.5+ | 2006 09 30 | 291 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2004 02 26 | 704 | 0.1+ | 0.8+ | 2006 09 30 | G96 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.6− | 0.2− |
| 2004 02 26 | 704 | 0.6− | 0.6+ | 2006 09 30 | 291 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3+ |
| 2004 02 26 | 704 | 0.5+ | 1.3+ | 2006 09 30 | 291 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.6− | 0.3+ |
| 2004 02 26 | 704 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.7+ | 0.5+ |
| 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 291 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.9+ | 0.2− |
| 2004 03 19 | 704 | 0.5− | 0.0 | 2006 09 30 | 291 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.3+ |
| 2004 03 19 | 704 | 0.1− | 0.5+ | 2006 09 30 | 291 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.4+ |
| 2004 03 19 | 704 | 0.7− | 0.9+ | 2006 09 30 | 291 | 0.1+ | 0.0 | | | | |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 09 30 | 291 | 0.2+ | 0.3+ | | | | |

**2004 DD$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.46041 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24361654 | $\omega$ | 280.10099 | | +0.55713614 | | +0.83036812 |
| $a$ | 2.5390127 | $\Omega$ | 23.76441 | | −0.75248382 | | +0.50959616 |
| $e$ | 0.1426905 | $i$ | 1.33476 | | −0.35123699 | | +0.22538976 |
| $P$ | 4.05 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | (1.6− | 1.5+) |
| 2004 02 17 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.2+ | 0.2− | 2006 10 29 | G96 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.5+ | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 1.0+ | 0.5+ | 2006 10 29 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.6+ | 1.1+ |
| 2004 02 23 | 704 | 0.5+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 02 29 | 691 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.4− | 0.3− | 2006 11 27 | 703 | 0.3− | 0.6+ |
| 2004 02 29 | 691 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.6− | 2006 11 27 | 703 | 0.2− | 0.7+ |
| 2004 02 29 | 691 | 0.4− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2004 03 26 | 691 | 0.3− | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.0 | 1.3+ |
| 2004 03 26 | 691 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.5− | 0.0 | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3− | 0.4+ | 2006 12 01 | 691 | 0.1+ | 0.2− |
| 2006 09 27 | G96 | 0.0 | 0.6− | 2006 11 18 | 704 | (0.2− | 1.7+) | | | | |

**2004 DJ$_{29}$ = 2006 SF$_{282}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.61931 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21123681 | $\omega$ | 257.75900 | | −0.19281817 | | +0.98123345 |
| $a$ | 2.7922630 | $\Omega$ | 1.12672 | | −0.86938459 | | −0.17015808 |
| $e$ | 0.0215308 | $i$ | 4.20154 | | −0.45496328 | | −0.09070363 |
| $P$ | 4.67 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 691 | 0.1+ | 0.5+ | 2004 02 23 | 704 | 0.4+ | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 1997 11 29 | 691 | 0.3− | 0.0 | 2004 02 23 | 704 | 0.7+ | 0.6− | 2006 09 25 | 699 | 0.4− | 1.0+ |
| 1997 11 29 | 691 | 0.1+ | 0.6− | 2004 02 23 | 704 | 0.8+ | 0.2− | 2006 09 25 | 699 | 0.5− | 0.4− |
| 2001 08 24 | 644 | 0.1− | 0.8+ | 2004 03 19 | 644 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.8+ |
| 2001 08 24 | 644 | 0.2− | 0.7+ | 2004 03 19 | 644 | 0.1− | 0.7+ | 2006 09 25 | 699 | 1.3+ | 0.0 |
| 2001 08 24 | 644 | 0.3− | 0.6+ | 2004 03 19 | 644 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.3+ |
| 2002 11 07 | 695 | 0.4+ | 0.2− | 2005 01 17 | 809 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 2002 11 07 | 695 | 0.4+ | 0.1− | 2005 01 17 | 809 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 2004 02 17 | 691 | 0.3+ | 0.1+ | 2006 08 19 | 691 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.6− | 1.1+ |
| 2004 02 17 | 691 | 0.2− | 0.5+ | 2006 08 19 | 691 | 0.5− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2004 02 17 | 691 | 0.3− | 0.4+ | 2006 08 19 | 691 | 0.3− | 0.4+ | 2006 10 16 | G96 | 0.4− | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 1.0+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.3− | 0.5− |
| 2004 02 23 | 704 | 1.0+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.2− |

**2004 DV$_{29}$ = 2006 SV$_{335}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.33375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26963677 | $\omega$ | 328.59085 | | −0.20783485 | | −0.97669081 |
| $a$ | 2.3729211 | $\Omega$ | 133.34413 | | +0.91205068 | | −0.21332245 |
| $e$ | 0.1655941 | $i$ | 4.23169 | | +0.35350846 | | −0.02384524 |
| $P$ | 3.66 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.6+ | 0.0 | 2004 02 29 | 691 | 0.5− | 0.0 | 2006 09 18 | 291 | 0.2+ | 0.2− |
| 2004 02 17 | 704 | 1.1+ | 0.2− | 2004 02 29 | 691 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.6+ |
| 2004 02 17 | 704 | 1.4+ | 0.4+ | 2004 02 29 | 691 | 0.4− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2004 02 17 | 704 | 0.7+ | 0.7− | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2004 02 17 | 704 | 0.5+ | 0.1− | 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.3− |
| 2004 02 23 | 704 | 0.1− | 0.2+ | 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2004 02 23 | 704 | 0.2− | 0.3− | 2006 09 18 | 291 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.2+ |
| 2004 02 23 | 704 | 0.3− | 0.8− | 2006 09 18 | 291 | 0.1+ | 0.1− | | | | |

**2004 DX$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.09562 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25545667 | $\omega$ | 115.25242 | | −0.04321970 | | −0.99812461 |
| $a$ | 2.4599402 | $\Omega$ | 337.09903 | | +0.87187273 | | −0.01649459 |
| $e$ | 0.0814909 | $i$ | 6.39617 | | +0.48782169 | | −0.05895077 |
| $P$ | 3.86 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 291 | 0.1+ | 0.3+ | 2004 02 23 | 704 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.0 | 0.0 |
| 2002 11 05 | 291 | 0.4− | 0.1− | 2004 02 23 | 704 | 1.0+ | 0.7+ | 2006 09 18 | 703 | (1.6− | 0.6+) |
| 2002 11 05 | 291 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.8+ | 0.2+ |
| 2004 01 22 | 704 | 0.3+ | 0.5+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | (0.5+ | 1.9+) |
| 2004 01 22 | 704 | 0.6− | 0.2− | 2004 02 29 | 691 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.8+ | 0.3+ | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | (0.0 | 1.9+) |
| 2004 02 17 | 704 | 1.1− | 1.3− | 2004 03 18 | 691 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.4− | 0.3− |
| 2004 02 17 | 704 | 0.2+ | 0.4+ | 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.2− | 0.6− |
| 2004 02 17 | 704 | 0.1− | 0.0 | 2004 03 20 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.4− |
| 2004 02 23 | 704 | 0.1+ | 0.2− | 2004 03 20 | 691 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.4− | 0.4− |
| 2004 02 23 | 704 | 0.7+ | 0.2+ | 2004 03 20 | 691 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.4− |
| 2004 02 23 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.7+ | 0.9+ | | | | |

**2004 DE$_{31}$ = 2006 TP$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.30450 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22917822 | $\omega$ | 227.90355 | | +0.45479202 | | +0.89038306 |
| $a$ | 2.6445624 | $\Omega$ | 69.15777 | | −0.81080870 | | +0.42302910 |
| $e$ | 0.0705534 | $i$ | 1.19869 | | −0.36844736 | | +0.16812018 |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 1.1− | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2004 02 17 | 704 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2004 02 17 | 704 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.6+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 02 23 | 704 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2004 02 23 | 704 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.7+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2004 02 23 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.4+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2004 02 23 | 704 | 0.9− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2004 02 29 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.3+ |
| 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4− | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2004 02 29 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2006 10 11 | 644 | 0.7+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.7− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.9− |
| 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1− | | | | |
| 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.5+ | 0.3− | | | | |

**2004 DK$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.68185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22300771 | $\omega$ | 171.54465 | | +0.06119928 | −0.99509292 | |
| $a$ | 2.6931226 | $\Omega$ | 274.92105 | | +0.91113761 | +0.08749983 | |
| $e$ | 0.1884835 | $i$ | 4.47565 | | +0.40753271 | −0.04619364 | |
| $P$ | 4.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1+ | 0.4+ | 2003 12 19 | 291 | 0.1− | 0.3− | 2004 02 18 | 704 | 0.6+ | 0.1+ |
| 2002 09 13 | 644 | 0.2+ | 0.6+ | 2003 12 19 | 291 | 0.7− | 0.3− | 2004 02 23 | 704 | 0.5+ | 0.5+ |
| 2002 09 13 | 644 | 0.4− | 0.2+ | 2003 12 19 | 291 | 0.6− | 0.4− | 2004 02 23 | 704 | 0.8+ | 0.7+ |
| 2002 09 13 | 644 | 0.5+ | 0.5+ | 2004 01 30 | 699 | 0.2+ | 0.6+ | 2004 02 23 | 704 | 0.3+ | 0.3+ |
| 2002 09 13 | 644 | 0.1+ | 1.0+ | 2004 01 30 | 699 | 0.4− | 0.6− | 2004 02 23 | 704 | 0.4+ | 0.4+ |
| 2002 09 13 | 644 | 0.4+ | 0.6+ | 2004 01 30 | 699 | 0.1+ | 0.9− | 2004 02 23 | 704 | 1.0+ | 0.2+ |
| 2002 09 15 | 608 | 0.3− | 0.4+ | 2004 01 30 | 699 | 1.0− | 0.8+ | 2004 02 26 | 704 | (1.5+ | 2.6+) |
| 2002 09 15 | 608 | 0.0 | 0.1− | 2004 02 18 | 704 | 0.5+ | 0.2− | 2004 02 26 | 704 | 1.0− | 1.7+ |
| 2002 09 15 | 608 | 0.1− | 0.0 | 2004 02 18 | 704 | 0.4+ | 0.5− | 2004 02 26 | 704 | 0.7− | 1.0+ |
| 2002 09 26 | 608 | 1.3− | 0.1+ | 2004 02 18 | 704 | 1.9+ | 0.5+ | | | | |
| 2002 09 26 | 608 | 0.9− | 0.3− | 2004 02 18 | 704 | 1.5+ | 1.3+ | | | | |

**2004 DQ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.48390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18062447 | $\omega$ | 156.92965 | | −0.32839740 | −0.91670128 | |
| $a$ | 3.0994526 | $\Omega$ | 311.40316 | | +0.81239922 | −0.15119408 | |
| $e$ | 0.1217266 | $i$ | 17.66626 | | +0.48183260 | −0.36986365 | |
| $P$ | 5.46 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 691 | 1.0− | 0.3+ | 2003 11 30 | 691 | 0.0 | 0.3+ | 2004 02 18 | 691 | 0.1− | 0.1+ |
| 2001 07 18 | 691 | 0.5− | 0.4+ | 2003 12 21 | 704 | 1.7+ | 1.4+ | 2004 02 18 | 691 | 0.1− | 0.1+ |
| 2001 07 18 | 691 | 0.6− | 0.6+ | 2003 12 21 | 704 | 0.1+ | 0.9+ | 2004 02 23 | 704 | 0.1+ | 0.5− |
| 2001 08 24 | 699 | 0.2+ | 0.8+ | 2003 12 21 | 704 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.1− | 0.1− |
| 2001 08 24 | 699 | 0.1+ | 1.9+ | 2004 01 17 | 608 | 0.5+ | 0.5− | 2004 02 23 | 704 | 0.0 | 0.9+ |
| 2001 08 24 | 699 | 0.5+ | 1.2+ | 2004 01 17 | 608 | 0.5+ | 0.3− | 2004 02 26 | 704 | 0.2− | 0.8+ |
| 2001 08 24 | 699 | 0.2+ | 0.2+ | 2004 01 17 | 608 | 0.8+ | 0.4− | 2004 02 26 | 704 | 0.2+ | 0.1− |
| 2002 11 25 | 644 | 0.5+ | 0.1− | 2004 01 29 | 704 | 0.2+ | 1.7+ | 2004 02 26 | 704 | 0.1− | 0.5− |
| 2002 11 25 | 644 | 0.0 | 0.1− | 2004 01 29 | 704 | 0.3+ | 0.9+ | 2004 02 26 | 704 | 1.4+ | 0.2− |
| 2002 11 25 | 644 | 0.0 | 0.0 | 2004 01 29 | 704 | 0.5+ | 0.2+ | 2004 03 15 | 704 | 1.0+ | 0.1+ |
| 2003 11 30 | 691 | 0.0 | 0.3+ | 2004 01 29 | 704 | 0.2+ | 0.9+ | 2004 03 15 | 704 | 0.1− | 1.0− |
| 2003 11 30 | 691 | 0.0 | 0.1+ | 2004 02 18 | 691 | 0.0 | 0.3+ | 2004 03 15 | 704 | 0.2+ | 0.1− |

**2004 DX$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.91470 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27155102 | $\omega$ | 5.69427 | | −0.45782341 | −0.88734184 | |
| $a$ | 2.3617563 | $\Omega$ | 111.56288 | | +0.81333041 | −0.44300323 | |
| $e$ | 0.1537585 | $i$ | 3.38881 | | +0.35901443 | −0.12795549 | |
| $P$ | 3.63 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 703 | (2.1+ | 2.0−) | 2004 03 16 | 704 | 0.0 | 1.3− | 2006 10 18 | 691 | 0.2+ | 0.4+ |
| 2004 02 15 | 703 | 0.6+ | 0.0 | 2004 03 16 | 704 | 0.2− | 1.1− | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2004 02 15 | 703 | 0.4− | 0.2− | 2004 03 16 | 704 | 0.9+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2004 02 15 | 703 | 0.6− | 0.3+ | 2004 03 16 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.4− |
| 2004 02 18 | 704 | 0.7− | 0.3− | 2004 03 16 | 704 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.5− |
| 2004 02 18 | 704 | 0.1+ | 0.2+ | 2004 03 17 | 704 | 0.3− | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.2− |
| 2004 02 18 | 704 | 1.0− | 0.1+ | 2004 03 17 | 704 | 0.1+ | 0.9+ | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2004 02 18 | 704 | 0.2+ | 0.2+ | 2004 03 17 | 704 | 0.3− | 0.8+ | 2006 11 13 | 703 | 1.1− | 1.0− |
| 2004 02 23 | 704 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.5+ | 0.3− |
| 2004 02 23 | 704 | 0.7+ | 0.1+ | 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 11 13 | 703 | (1.6− | 1.1−) |
| 2004 02 23 | 704 | 0.2+ | 0.3− | 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 11 13 | 703 | (0.0 | 1.7−) |
| 2004 02 23 | 704 | 0.5+ | 0.0 | 2004 03 19 | 704 | 0.4− | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2004 02 23 | 704 | 0.4+ | 0.1− | 2004 03 19 | 704 | 0.3− | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2004 03 15 | 704 | 0.2− | 0.6− | 2004 03 22 | 704 | 1.1+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2004 03 15 | 704 | 0.1− | 1.1+ | 2004 03 22 | 704 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 704 | 0.4+ | 0.9− | 2004 03 22 | 704 | (0.1− | 1.6+) | 2006 11 20 | 704 | 0.4+ | 1.2+ |
| 2004 03 15 | 704 | 0.0 | 0.4+ | 2004 03 22 | 704 | 0.5− | 0.7+ | 2006 11 20 | 704 | 0.3+ | 0.9+ |
| 2004 03 15 | 704 | 0.0 | 0.9− | 2004 03 22 | 704 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.6− | 1.0+ |
| 2004 03 16 | 704 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.9+ |
| 2004 03 16 | 704 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | | | | |

**2004 DW$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.42347 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25983094 | $\omega$ | 79.04244 | | −0.28227363 | −0.95909864 | |
| $a$ | 2.4322533 | $\Omega$ | 27.38230 | | +0.86114750 | −0.26308133 | |
| $e$ | 0.1419817 | $i$ | 2.64769 | | +0.42278432 | −0.10448926 | |
| $P$ | 3.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.9+ | 0.7− | 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2000 02 03 | 704 | 0.4− | 0.5− | 2004 03 21 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2000 02 03 | 704 | 0.1− | 0.6− | 2004 03 21 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2000 02 03 | 704 | 0.4+ | 0.2− | 2004 03 28 | 691 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2000 02 03 | 704 | 1.1− | 0.6+ | 2004 03 28 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2002 10 08 | 291 | 0.3− | 0.5+ | 2004 03 28 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 10 08 | 291 | 0.5− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2002 10 08 | 291 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2004 02 18 | 704 | 0.7+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2004 02 18 | 704 | 0.6− | 0.7− | 2006 09 24 | 691 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2004 02 18 | 704 | 0.2− | 0.1+ | 2006 09 24 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2004 02 23 | 704 | 1.0− | 1.1− | 2006 09 24 | 691 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.7+ | 0.4− |
| 2004 02 23 | 704 | 1.0+ | 0.4+ | 2006 10 02 | 691 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2004 02 23 | 704 | 0.9+ | 0.1+ | 2006 10 02 | 691 | 0.7− | 0.6+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2004 02 23 | 704 | 1.0+ | 0.7+ | 2006 10 02 | 691 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2004 02 23 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2004 02 27 | 695 | 0.6− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2004 02 27 | 695 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2004 03 15 | 704 | 0.6+ | 1.2+ | 2006 10 21 | 703 | 0.8+ | 0.9+ | 2006 11 13 | G96 | 0.4+ | 0.9− |
| 2004 03 15 | 704 | 1.3+ | 1.2+ | 2006 10 21 | 703 | (2.9+ | 1.6−) | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2004 03 15 | 704 | 0.3+ | 1.4+ | 2006 10 21 | 703 | 0.4− | 0.6− | | | | |
| 2004 03 15 | 704 | 0.5+ | 1.1+ | 2006 10 21 | 703 | 0.5− | 0.8− | | | | |

**2004 DE$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.82223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22998073 | $\omega$ | 40.67308 | | −0.59231782 | −0.80374693 | |
| $a$ | 2.6384068 | $\Omega$ | 85.72189 | | +0.72386072 | −0.56144951 | |
| $e$ | 0.1629385 | $i$ | 3.22665 | | +0.35381529 | −0.19688912 | |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.0 | 0.1+ | 2004 03 16 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.5+ | 0.3− |
| 2002 10 30 | 644 | 0.5− | 0.1− | 2004 03 16 | 333 | 0.2− | 0.3+ | 2004 03 22 | 704 | 0.2+ | 0.6− |
| 2002 10 30 | 644 | 0.5+ | 0.0 | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.1− | 0.2− |
| 2004 02 18 | 703 | 1.1+ | 0.2− | 2004 03 16 | 333 | 0.0 | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.2+ |
| 2004 02 18 | 703 | 0.1− | 0.6− | 2004 03 16 | 333 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.5− |
| 2004 02 18 | 703 | 0.5+ | 0.2+ | 2004 03 17 | 333 | 0.6− | 0.2+ | 2004 03 23 | 704 | 0.5− | 0.0 |
| 2004 02 18 | 703 | 0.3− | 1.7− | 2004 03 17 | 333 | 0.2− | 0.0 | 2004 03 23 | 704 | 0.1− | 0.3− |
| 2004 02 23 | 704 | 0.9− | 0.3+ | 2004 03 17 | 333 | 0.0 | 0.3− | 2004 03 23 | 704 | 0.0 | 0.8− |
| 2004 02 23 | 704 | 0.6+ | 1.0+ | 2004 03 20 | 691 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.4− |
| 2004 02 23 | 704 | 0.5+ | 0.3− | 2004 03 20 | 691 | 0.5− | 0.0 | 2004 03 25 | 704 | 0.8+ | 0.2+ |
| 2004 02 23 | 704 | 0.3+ | 0.2+ | 2004 03 20 | 691 | 0.7− | 0.1+ | 2004 03 25 | 704 | 0.4+ | 0.3+ |
| 2004 02 23 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 1.1+ | 0.6− | 2004 03 25 | 704 | 0.0 | 0.4+ |
| 2004 02 23 | 704 | 1.5− | 0.7− | 2004 03 20 | 704 | 0.1+ | 1.4+ | 2004 03 25 | 704 | 1.0− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.6+ | 0.1+ | 2004 03 20 | 704 | 0.8+ | 0.5+ | 2004 04 19 | 704 | 0.2− | 0.0 |
| 2004 02 23 | 704 | 0.2− | 0.3− | 2004 03 20 | 704 | 0.2− | 0.6+ | 2004 04 19 | 704 | 0.6− | 0.5+ |
| 2004 02 23 | 704 | 0.6+ | 0.8+ | 2004 03 20 | 704 | 0.6+ | 0.6+ | 2004 04 19 | 704 | 0.2− | 0.0 |
| 2004 03 15 | 333 | 0.0 | 0.3− | 2004 03 22 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 2004 03 15 | 333 | 0.1+ | 0.4− | 2004 03 22 | 704 | 1.0+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2004 03 15 | 333 | 0.4− | 0.3− | 2004 03 22 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | (1.0− | 2.3+) |
| 2004 03 16 | 704 | 0.6− | 0.2− | 2004 03 22 | 704 | 0.8+ | 0.7+ | 2006 09 30 | 703 | 0.8− | 0.9+ |
| 2004 03 16 | 704 | 0.4+ | 0.2− | 2004 03 22 | 704 | 0.8+ | 0.5+ | | | | |
| 2004 03 16 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.4− | | | | |

**2004 DT$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.71049 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22544417 | $\omega$ | 311.43521 | | +0.99498363 | | −0.03435804 |
| $a$ | 2.6736838 | $\Omega$ | 50.75080 | | +0.07439125 | | +0.88203987 |
| $e$ | 0.0491444 | $i$ | 6.96846 | | −0.06688443 | | +0.46992041 |
| $P$ | 4.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.5− | 0.1− | 2002 11 22 | 644 | 0.4− | 0.2+ | 2004 02 23 | 704 | 0.3+ | 0.3+ |
| 2002 10 16 | 644 | 0.3− | 0.2+ | 2002 11 22 | 644 | 0.0 | 0.1+ | 2004 02 23 | 704 | 0.8− | 0.0 |
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2004 02 15 | 704 | 0.0 | 1.2+ | 2006 09 14 | 703 | 0.7+ | 0.3− |
| 2002 10 31 | 644 | 0.4+ | 0.4+ | 2004 02 15 | 704 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.6− |
| 2002 10 31 | 644 | 0.1+ | 0.4+ | 2004 02 15 | 704 | 0.1+ | 1.0− | 2006 09 14 | 703 | 0.2− | 0.8+ |
| 2002 10 31 | 644 | 0.1− | 0.1− | 2004 02 19 | 704 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.7+ |
| 2002 11 06 | 704 | 0.9+ | 1.1− | 2004 02 19 | 704 | 0.8+ | 0.5+ | 2006 09 18 | 703 | (1.0− | 1.7+) |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2004 02 19 | 704 | 0.1+ | 1.0− | 2006 09 18 | 703 | 0.9+ | 1.2− |
| 2002 11 06 | 704 | 0.1+ | 0.4− | 2004 02 19 | 704 | 0.0 | 0.9− | 2006 09 18 | 703 | 0.4− | 0.5+ |
| 2002 11 22 | 644 | 0.0 | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.6− | 0.1− |

**2004 DE$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.69968 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26467251 | $\omega$ | 326.65054 | | −0.83766037 | | +0.54115177 |
| $a$ | 2.4025006 | $\Omega$ | 246.28231 | | −0.48177758 | | −0.79590729 |
| $e$ | 0.1579823 | $i$ | 4.63773 | | −0.25732367 | | −0.27145229 |
| $P$ | 3.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 413 | 0.1− | 0.3− | 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2004 02 19 | 704 | 0.6+ | 0.3+ | 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2004 02 19 | 704 | 0.1− | 0.8− | 2005 08 06 | 644 | 0.3− | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.5− |
| 2004 02 19 | 704 | 0.3− | 0.5− | 2005 08 06 | 644 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.3− |
| 2004 02 19 | 704 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.2− | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2004 02 19 | 704 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2004 02 23 | 704 | 0.4+ | 0.5− | 2006 09 27 | G96 | 0.4− | 0.6− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 02 23 | 704 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.0 |
| 2004 02 26 | 704 | 0.1− | 0.8+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.3− | 0.4− |
| 2004 02 26 | 704 | 0.0 | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.0 | 1.2− |
| 2004 02 26 | 704 | 0.7− | 0.9+ | 2006 11 15 | 691 | 0.0 | 0.5+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2004 03 21 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.8+ |

**2004 DG$_{35}$ = 2006 PP$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.76694 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18535460 | $\omega$ | 227.85334 | | −0.85069708 | | −0.50718771 |
| $a$ | 3.0464950 | $\Omega$ | 281.23303 | | +0.51420069 | | −0.74836700 |
| $e$ | 0.0340586 | $i$ | 8.09473 | | +0.10914270 | | −0.42744293 |
| $P$ | 5.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 24 | 691 | 0.2+ | 0.0 | 2004 02 19 | 704 | 0.2− | 0.3+ | 2004 03 21 | 691 | 0.2+ | 0.2+ |
| 1992 12 24 | 691 | 0.2+ | 0.1+ | 2004 02 19 | 704 | 0.6− | 0.3− | 2004 03 21 | 691 | 0.0 | 0.1+ |
| 1992 12 24 | 691 | 0.4− | 0.1− | 2004 02 19 | 704 | 0.4− | 0.1− | 2004 03 21 | 691 | 0.0 | 0.2+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.3− | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.4+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 08 14 | 644 | 0.1− | 0.5+ |
| 2002 12 11 | 704 | 0.2+ | 0.1− | 2004 02 23 | 704 | 0.4+ | 0.4− | 2006 08 14 | 644 | 0.6− | 0.2+ |
| 2002 12 11 | 704 | 0.7− | 0.0 | 2004 02 23 | 704 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.6+ |
| 2002 12 11 | 704 | 0.5+ | 0.9+ | 2004 02 23 | 704 | 0.5+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.6+ |
| 2004 02 19 | 704 | 0.1− | 0.3+ | 2004 02 23 | 704 | 0.3+ | 0.3− | 2006 08 17 | 644 | 0.1+ | 0.6+ |

**2004 DE$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.69798 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27979379 | $\omega$ | 256.88857 | | −0.99886113 | | +0.00586993 |
| $a$ | 2.3151404 | $\Omega$ | 283.43277 | | +0.01396010 | | −0.91301759 |
| $e$ | 0.1802058 | $i$ | 2.79034 | | −0.04562410 | | −0.40787795 |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.8− | 0.2+ | 2004 03 16 | 691 | 0.2− | 0.0 | 2004 03 20 | 704 | 0.9− | 0.4− |
| 2004 02 19 | 704 | 0.3− | 0.1− | 2004 03 16 | 691 | 0.2− | 0.1− | 2004 03 20 | 704 | 0.8− | 0.5+ |
| 2004 02 19 | 704 | 0.4+ | 0.1+ | 2004 03 16 | 691 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.7− | 0.6+ |
| 2004 02 19 | 704 | 0.8− | 0.0 | 2004 03 18 | 704 | 0.7+ | 1.3+ | 2006 11 16 | 691 | 0.4+ | 0.2− |
| 2004 02 19 | 704 | 0.3− | 0.1− | 2004 03 18 | 704 | 0.9+ | 0.5− | 2006 11 16 | 691 | 0.3+ | 0.4− |
| 2004 02 23 | 704 | 0.4− | 0.8− | 2004 03 18 | 704 | 0.9+ | 0.6− | 2006 11 20 | 691 | 0.9− | 0.0 |
| 2004 02 23 | 704 | 0.6+ | 0.4+ | 2004 03 18 | 704 | 1.9+ | 0.1+ | 2006 11 20 | 691 | 0.4+ | 0.2+ |
| 2004 02 23 | 704 | 0.4+ | 0.2− | 2004 03 20 | 704 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.6+ | 0.2− |
| 2004 02 23 | 704 | 0.3+ | 0.3− | 2004 03 20 | 704 | 0.1− | 0.5+ | | | | |
| 2004 02 23 | 704 | 0.8+ | 0.7+ | 2004 03 20 | 704 | 0.2− | 0.2− | | | | |

**2004 DG$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.55893 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21741529 | $\omega$ | 227.10361 | | −0.96532440 | | −0.25383402 |
| $a$ | 2.7391090 | $\Omega$ | 298.10681 | | +0.25510462 | | −0.86766760 |
| $e$ | 0.0937704 | $i$ | 3.96339 | | +0.05541155 | | −0.42745903 |
| $P$ | 4.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.3− | 1.1+ | 2004 03 16 | 704 | 0.2− | 0.9− | 2004 03 27 | 704 | 0.7+ | 0.2+ |
| 2004 02 19 | 704 | 0.3+ | 0.6+ | 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 09 17 | 703 | 0.4+ | 0.6− |
| 2004 02 19 | 704 | 0.9− | 0.0 | 2004 03 16 | 704 | 0.5− | 0.1− | 2006 09 17 | 703 | 0.8+ | 0.5+ |
| 2004 02 19 | 704 | 0.5+ | 0.3+ | 2004 03 16 | 704 | 0.3+ | 0.2− | 2006 09 17 | 703 | (1.6+ | 0.3+) |
| 2004 02 19 | 608 | 0.3+ | 0.4− | 2004 03 17 | 683 | (0.1+ | 2.0−) | 2006 09 17 | 703 | (1.4− | 1.6+) |
| 2004 02 19 | 608 | 0.4+ | 0.7− | 2004 03 17 | 683 | 0.4+ | 1.2− | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2004 02 19 | 608 | 0.5− | 0.3− | 2004 03 17 | 683 | 0.4− | 1.2− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2004 02 23 | 704 | 0.0 | 0.4+ | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2004 02 23 | 704 | 0.3+ | 0.2− | 2004 03 18 | 704 | 0.5− | 0.0 | 2006 10 01 | 691 | 0.3− | 0.1− |
| 2004 02 23 | 704 | 1.0− | 0.3− | 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 2004 02 23 | 704 | 0.9− | 0.6+ | 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.4− | 0.0 |
| 2004 03 16 | 691 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.1+ | 0.7− | 2006 10 23 | G96 | 0.2− | 0.9− |
| 2004 03 16 | 691 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.0 | 1.0− |
| 2004 03 16 | 704 | (0.9+ | 2.2+) | 2004 03 27 | 704 | 0.8+ | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.3− |
| 2004 03 16 | 704 | 1.0+ | 0.1+ | 2004 03 27 | 704 | 0.4− | 0.1+ | 2006 10 23 | G96 | (1.6− | 0.0 ) |

**2004 DQ$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.90176 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26592124 | $\omega$ | 110.77778 | | −0.44916875 | | −0.89333662 |
| $a$ | 2.3949734 | $\Omega$ | 5.96968 | | +0.76129375 | | −0.39090821 |
| $e$ | 0.1730060 | $i$ | 7.75851 | | +0.46763154 | | −0.22167648 |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 1991 10 07 | 691 | 0.5− | 0.6+ | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1991 10 07 | 691 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.6+ | 0.4+ | 2004 03 20 | 608 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.5− | 0.3+ |
| 2004 02 19 | 704 | 0.2+ | 0.9− | 2004 03 20 | 608 | 0.5− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2004 02 19 | 704 | 0.2− | 0.1− | 2004 03 20 | 608 | 0.3− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2004 02 19 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.4− | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2004 02 23 | 704 | 0.3+ | 0.4− | 2004 03 22 | 704 | 1.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 0.7− | 2004 03 22 | 704 | 1.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 23 | 704 | 1.0− | 0.4− | 2004 03 23 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 02 23 | 704 | 1.1− | 0.3− | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 104 | 0.1− | 0.8+ |
| 2004 02 23 | 704 | 0.3+ | 0.7− | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 29 | 104 | 0.3+ | 0.4+ |
| 2004 03 11 | 644 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.3− | 0.4− | 2006 10 29 | 104 | 0.1− | 0.2+ |
| 2004 03 11 | 644 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.5− | 0.3+ | 2006 10 30 | 104 | 0.4+ | 0.4+ |
| 2004 03 11 | 644 | 0.1+ | 0.6+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 30 | 104 | 0.4− | 0.4− |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 23 | 691 | 0.2− | 0.2+ | 2006 10 30 | 104 | 0.2− | 0.5+ |
| 2004 03 15 | 703 | 1.1+ | 0.5+ | 2004 03 28 | 704 | 0.5+ | 0.6− | 2006 10 30 | 104 | 0.4− | 0.1− |
| 2004 03 15 | 704 | 0.1+ | 0.5+ | 2004 03 28 | 704 | 0.7+ | 0.4− | 2006 11 23 | 703 | 0.2− | 0.7− |
| 2004 03 15 | 703 | 0.7− | 0.7+ | 2004 03 28 | 704 | 0.5+ | 0.2− | 2006 11 23 | 703 | 0.5+ | 0.4− |
| 2004 03 15 | 691 | 0.6− | 0.0 | 2004 03 28 | 704 | 0.2+ | 0.3+ | 2006 11 23 | 703 | 0.1− | 0.4− |
| 2004 03 15 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 704 | 0.2+ | 0.3− | 2006 11 23 | 703 | 0.6+ | 0.3+ |
| 2004 03 15 | 703 | 0.3+ | 0.0 | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 704 | 0.2+ | 0.7+ | 2004 04 13 | 691 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2004 03 15 | 704 | 0.0 | 0.4− | 2004 04 13 | 691 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 703 | 0.4− | 0.4+ | 2004 04 21 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 04 21 | 691 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.3− |
| 2004 03 15 | 704 | 0.4+ | 0.8+ | 2004 04 21 | 691 | 0.3+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 1.1− |
| 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.6+ |
| 2004 03 19 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.7+ | 0.4− |

**2004 DP**$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.79092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22566491 | $\omega$ | 153.44685 | | −0.99436738 | +0.09951592 | |
| $a$ | 2.6719400 | $\Omega$ | 32.32858 | | −0.10525955 | −0.88694414 | |
| $e$ | 0.0700892 | $i$ | 3.91049 | | −0.01240730 | −0.45102847 | |
| $P$ | 4.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.0 | 0.1− | 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2001 09 12 | 695 | 0.1+ | 0.1− | 2004 03 18 | 691 | 0.3− | 0.2+ | 2006 10 16 | 291 | 0.1− | 0.1+ |
| 2004 02 20 | 608 | 0.1− | 0.4− | 2004 03 19 | 704 | 0.2− | 0.4+ | 2006 10 16 | 291 | 0.0 | 0.2+ |
| 2004 02 20 | 608 | 0.1+ | 0.8− | 2004 03 19 | 704 | 0.8+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2004 02 20 | 608 | 0.9+ | 0.6− | 2004 03 19 | 704 | 0.6+ | 0.4+ | 2006 10 27 | G96 | 0.4− | 0.1+ |
| 2004 02 23 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 02 23 | 704 | 0.1+ | 0.1− | 2004 03 28 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2004 02 23 | 704 | 0.2+ | 0.2− | 2004 03 28 | 691 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2004 02 23 | 704 | 0.7+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 691 | 0.6+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 10 16 | 291 | 0.3− | 0.1+ | | | | |

**2004 DN**$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.86879 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21623778 | $\omega$ | 282.96039 | | +0.49511905 | +0.86877537 | |
| $a$ | 2.7490438 | $\Omega$ | 16.72687 | | −0.78408235 | +0.45141171 | |
| $e$ | 0.0447368 | $i$ | 1.85165 | | −0.37426194 | +0.20360948 | |
| $P$ | 4.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 23 | 691 | 0.0 | 0.1− | 2004 02 23 | 704 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 1997 10 23 | 691 | 0.2− | 0.1+ | 2004 02 23 | 704 | 0.1+ | 0.6+ | 2006 09 23 | 691 | 0.2− | 0.2+ |
| 1997 10 23 | 691 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.1+ | 1.1+ | 2006 09 23 | 691 | 0.1− | 0.0 |
| 2000 04 06 | 704 | 0.2+ | 0.1+ | 2004 03 17 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 0.8+ | 0.2+ | 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2000 04 06 | 704 | 1.3+ | 1.5+ | 2004 03 17 | 691 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2000 04 06 | 704 | 0.3− | 0.6+ | 2004 03 18 | 691 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2000 04 06 | 704 | 0.9− | 0.5+ | 2004 03 18 | 691 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.3+ | 0.3+ |
| 2004 02 14 | 691 | 0.2− | 0.2+ | 2004 03 18 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2004 02 14 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2004 02 22 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.4+ | 0.5− |
| 2004 02 22 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 02 22 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.2+ | | | | |

**2004 DE**$_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.99613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21208900 | $\omega$ | 173.25379 | | −0.99516172 | +0.08931140 | |
| $a$ | 2.7847783 | $\Omega$ | 12.10091 | | −0.09677743 | −0.81916107 | |
| $e$ | 0.0899402 | $i$ | 11.26366 | | −0.01694942 | −0.56656739 | |
| $P$ | 4.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 608 | 0.3+ | 0.4− | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.2+ |
| 2004 02 18 | 608 | 0.5+ | 0.1− | 2004 03 26 | 704 | 1.3+ | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.3+ |
| 2004 02 18 | 608 | 0.2− | 0.9− | 2004 03 27 | 704 | 1.1+ | 0.2+ | 2006 09 14 | 691 | 0.4+ | 0.3+ |
| 2004 02 25 | 704 | 0.2− | 1.0− | 2004 03 27 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.2+ |
| 2004 02 25 | 704 | 1.1+ | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 2004 02 25 | 704 | 0.2+ | 0.5+ | 2004 03 28 | 704 | 0.0 | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2004 02 25 | 704 | 0.5+ | 0.9− | 2004 03 28 | 704 | 0.2− | 0.4+ | 2006 09 22 | A50 | 0.6+ | 0.1+ |
| 2004 02 25 | 704 | 0.6− | 0.9− | 2004 03 28 | 704 | 1.0− | 0.3+ | 2006 09 22 | A50 | 0.8+ | 0.1− |
| 2004 03 15 | 704 | 0.3+ | 0.3− | 2004 03 28 | 704 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.7− | 0.1+ |
| 2004 03 15 | 704 | 0.1− | 0.3− | 2004 03 28 | 703 | 1.4− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2004 03 15 | 704 | 0.6− | 0.4− | 2004 03 28 | 704 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.5− | 0.1+ |
| 2004 03 15 | 704 | 0.8− | 0.5+ | 2004 03 28 | 703 | 1.3− | 0.4− | 2006 09 25 | G96 | 0.5− | 0.3+ |
| 2004 03 15 | 704 | 0.8− | 0.2+ | 2004 03 28 | 704 | 0.3− | 0.7− | 2006 10 31 | G96 | 0.2− | 1.1− |
| 2004 03 19 | 704 | 0.8+ | 0.1− | 2004 03 28 | 704 | 0.7− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2004 03 19 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 703 | 0.0 | 1.0+ | 2006 10 31 | G96 | 0.7− | 0.6− |
| 2004 03 19 | 704 | 0.4+ | 0.2− | 2004 03 28 | 704 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2004 03 19 | 704 | 0.5+ | 0.4− | 2004 03 28 | 703 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2004 03 19 | 704 | 0.4+ | 0.8− | 2004 03 30 | 704 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2004 03 26 | 691 | 0.1+ | 0.0 | 2004 03 30 | 704 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.5− | 0.3− |
| 2004 03 26 | 691 | 0.1− | 0.0 | 2004 03 30 | 704 | 0.5+ | 1.5+ | 2006 11 15 | G96 | 0.6− | 0.3− |
| 2004 03 26 | 704 | 0.0 | 0.3+ | 2004 03 30 | 704 | 0.9+ | 1.5+ | | | | |
| 2004 03 26 | 704 | 0.0 | 1.5+ | 2004 03 30 | 704 | 0.4+ | 0.1− | | | | |

**2004 DZ**$_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.47701 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23469262 | $\omega$ | 191.74740 | | −0.46693018 | −0.88265888 | |
| $a$ | 2.6029736 | $\Omega$ | 286.10767 | | +0.81578798 | −0.40650104 | |
| $e$ | 0.1378435 | $i$ | 3.20741 | | +0.34127143 | −0.23594533 | |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.3+ | 1.0− | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2004 03 20 | 704 | 0.4− | 0.5− |
| 2004 02 19 | 704 | 0.7− | 0.2− | 2004 03 18 | 704 | 0.3− | 0.3− | 2004 03 20 | 699 | 0.3− | 0.0 |
| 2004 02 19 | 704 | 0.4+ | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.0 | 0.5− |
| 2004 02 19 | 704 | 0.7− | 0.7+ | 2004 03 18 | 704 | 0.5+ | 0.4− | 2004 03 23 | 704 | 0.3+ | 0.2+ |
| 2004 02 19 | 704 | 0.2+ | 0.5− | 2004 03 20 | 704 | 0.4+ | 0.4− | 2004 03 23 | 704 | 0.5− | 0.8+ |
| 2004 02 25 | 704 | 1.2+ | 0.5− | 2004 03 20 | 704 | 0.4− | 0.3+ | 2004 03 23 | 704 | 0.3+ | 0.6+ |
| 2004 02 25 | 704 | 1.1− | 0.4+ | 2004 03 20 | 704 | 0.2− | 0.3− | 2004 03 23 | 704 | 1.0+ | 0.2− |
| 2004 02 25 | 704 | 1.0+ | 0.9+ | 2004 03 20 | 704 | 0.4− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.2− |
| 2004 02 25 | 704 | 0.3+ | 0.9+ | 2004 03 20 | 699 | 0.7− | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2004 03 16 | 704 | 0.6− | 0.4− | 2004 03 20 | 704 | 0.5+ | 0.3− | 2006 10 19 | 691 | 1.1− | 0.1− |
| 2004 03 16 | 704 | (2.4− | 0.3+) | 2004 03 20 | 699 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.4+ | 0.1+ |
| 2004 03 16 | 704 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.8+ | 0.2− | 2006 10 21 | 691 | 0.8+ | 0.1+ |
| 2004 03 16 | 704 | 0.2− | 0.2+ | 2004 03 20 | 699 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 2004 03 16 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.1+ | 1.0− | | | | |
| 2004 03 18 | 704 | 0.2− | 0.1+ | 2004 03 20 | 704 | 0.2− | 0.8+ | | | | |

**2004 DR$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.02756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23400183 | $\omega$ | 147.55395 | | −0.97054274 | −0.22563995 | |
| $a$ | 2.6080939 | $\Omega$ | 19.93246 | | +0.13149459 | −0.78983157 | |
| $e$ | 0.1923869 | $i$ | 14.34414 | | +0.20188104 | −0.57030930 | |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.3+ | 1.0− | 2004 03 28 | 704 | 0.1− | 0.4+ | 2004 04 26 | 699 | 0.2+ | 0.3− | |
| 2004 02 19 | 704 | 0.2+ | 0.0 | 2004 03 28 | 704 | 0.4+ | 0.1− | 2004 04 26 | 699 | 0.1− | 1.0− | |
| 2004 02 19 | 704 | 0.6+ | 0.8− | 2004 03 28 | 704 | 0.5+ | 0.5− | 2004 04 26 | 699 | (0.9+ | 1.9−) | |
| 2004 02 19 | 704 | 0.4− | 0.8− | 2004 04 11 | 703 | 0.3− | 1.0+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | |
| 2004 02 19 | 704 | 0.4+ | 0.5+ | 2004 04 11 | 703 | 0.7− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.3+ | |
| 2004 02 25 | 704 | (1.6+ | 0.7−) | 2004 04 11 | 703 | 1.2− | 0.7− | 2006 09 18 | 691 | 0.2− | 0.2+ | |
| 2004 02 25 | 704 | (1.7+ | 1.2−) | 2004 04 11 | 703 | 0.3+ | 0.1+ | 2006 09 24 | 691 | (2.0− | 0.0 ) | |
| 2004 02 25 | 704 | 1.5+ | 0.3− | 2004 04 12 | 699 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.3+ | |
| 2004 02 25 | 704 | 0.3+ | 0.5− | 2004 04 12 | 699 | 0.3+ | 0.2+ | 2006 09 24 | 691 | (1.8− | 0.3+) | |
| 2004 02 25 | 704 | 0.6+ | 1.0− | 2004 04 12 | 699 | 0.1− | 0.5− | 2006 09 28 | 691 | 0.2+ | 0.4+ | |
| 2004 03 16 | 704 | 0.3+ | 0.4+ | 2004 04 12 | 699 | 1.0− | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.3+ | |
| 2004 03 16 | 704 | 0.9+ | 0.4+ | 2004 04 15 | 699 | (1.6− | 0.3+) | 2006 09 28 | 691 | 0.0 | 0.3+ | |
| 2004 03 16 | 704 | 0.2+ | 0.3+ | 2004 04 15 | 699 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.1+ | |
| 2004 03 16 | 704 | 0.8+ | 0.8+ | 2004 04 15 | 699 | 0.9− | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.2+ | |
| 2004 03 16 | 704 | 0.3+ | 1.3+ | 2004 04 15 | 699 | 0.3− | 0.8− | 2006 10 02 | 691 | 0.1+ | 0.1+ | |
| 2004 03 19 | 704 | 0.8+ | 0.9+ | 2004 04 16 | 644 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.6− | |
| 2004 03 19 | 704 | (0.1+ | 1.5+) | 2004 04 16 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.4− | 0.2+ | |
| 2004 03 19 | 704 | 0.7+ | 0.4− | 2004 04 16 | 644 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.7− | |
| 2004 03 19 | 704 | 0.2+ | 0.1− | 2004 04 16 | 644 | 0.5− | 0.0 | 2006 10 17 | 703 | 1.1− | 0.5− | |
| 2004 03 19 | 704 | 0.6+ | 0.6+ | 2004 04 16 | 704 | 0.7+ | 0.7− | 2006 10 20 | 691 | 0.0 | 0.2+ | |
| 2004 03 22 | 704 | 0.9− | 0.6+ | 2004 04 16 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.0 | |
| 2004 03 22 | 704 | 0.2− | 0.0 | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | |
| 2004 03 22 | 704 | 0.5− | 0.3− | 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | (0.7+ | 2.6+) | |
| 2004 03 22 | 704 | 0.5− | 0.4− | 2004 04 20 | 691 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.6+ | |
| 2004 03 22 | 704 | 0.1− | 0.8+ | 2004 04 21 | 704 | 0.6+ | 0.4− | 2006 10 21 | 703 | 0.3+ | 0.5− | |
| 2004 03 24 | 699 | 0.4− | 0.1− | 2004 04 21 | 704 | 1.3+ | 1.1+ | 2006 10 21 | 703 | 0.7− | 0.2+ | |
| 2004 03 24 | 699 | 0.4− | 0.5+ | 2004 04 21 | 704 | 0.4+ | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.2+ | |
| 2004 03 24 | 699 | 1.4− | 1.4+ | 2004 04 21 | 704 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.5− | |
| 2004 03 24 | 699 | 0.3+ | 0.4+ | 2004 04 21 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 691 | 0.2− | 0.3− | |
| 2004 03 26 | 691 | 0.3− | 0.1− | 2004 04 24 | E12 | 0.7− | 0.9+ | 2006 11 16 | 691 | 0.3− | 0.6− | |
| 2004 03 26 | 691 | 0.2− | 0.2− | 2004 04 24 | E12 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.2− | 0.2− | |
| 2004 03 26 | 691 | 0.6− | 0.3− | 2004 04 24 | E12 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.3− | 0.1− | |
| 2004 03 28 | 704 | 0.5+ | 0.3− | 2004 04 24 | E12 | 0.1− | 0.1− | | | | | |
| 2004 03 28 | 704 | 0.3+ | 0.0 | 2004 04 26 | 699 | 0.9+ | 0.2− | | | | | |

**2004 DC$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.42508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28775530 | $\omega$ | 338.37164 | | −0.24430290 | −0.96729421 | |
| $a$ | 2.2722381 | $\Omega$ | 125.70643 | | +0.90155013 | −0.25248959 | |
| $e$ | 0.0983723 | $i$ | 4.82136 | | +0.35710426 | −0.02430875 | |
| $P$ | 3.43 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.4+ | 0.3− | 2004 02 26 | 704 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.1+ | |
| 1996 12 04 | 691 | 0.2− | 0.5− | 2004 02 29 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1+ | |
| 1996 12 04 | 691 | 0.4− | 0.4− | 2004 02 29 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.0 | |
| 2004 01 22 | 704 | 0.7+ | 0.2− | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.1+ | |
| 2004 01 22 | 704 | 0.8+ | 0.2− | 2004 03 14 | 703 | 0.3+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.0 | |
| 2004 01 22 | 704 | 0.4+ | 0.5+ | 2004 03 14 | 703 | (2.3+ | 2.4+) | 2006 11 25 | G96 | 0.2− | 0.0 | |
| 2004 01 22 | 704 | 0.4− | 1.3+ | 2004 03 14 | 703 | (1.8− | 0.7−) | 2006 11 25 | G96 | 0.2− | 0.1− | |
| 2004 02 23 | 704 | 1.1+ | 0.0 | 2004 03 14 | 703 | 1.2− | 1.1− | 2006 11 28 | 704 | 0.7+ | 0.8+ | |
| 2004 02 23 | 704 | 1.4+ | 0.8+ | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2− | 0.8− | |
| 2004 02 23 | 704 | (2.1+ | 0.6+) | 2004 03 18 | 691 | 0.2+ | 0.3− | 2006 11 28 | 704 | 1.3+ | 0.4− | |
| 2004 02 23 | 704 | (1.6+ | 1.0+) | 2004 03 18 | 691 | 0.0 | 0.3− | 2006 11 28 | 704 | 0.6− | 0.8+ | |
| 2004 02 23 | 704 | 0.9+ | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 1.4+ | 0.3− | |
| 2004 02 25 | 704 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.2− | 0.1+ | |
| 2004 02 25 | 704 | 0.2+ | 1.0+ | 2006 11 20 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.2− | 1.2− | |
| 2004 02 25 | 704 | 0.2− | 1.2+ | 2006 11 21 | G96 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.3+ | 0.2− | |
| 2004 02 25 | 704 | 0.6− | 0.3− | 2006 11 21 | G96 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.6− | 1.1+ | |
| 2004 02 26 | 704 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.6− | 0.2− | | | | | |
| 2004 02 26 | 704 | 1.3− | 1.0+ | 2006 11 23 | G96 | 0.4− | 0.2− | | | | | |

**2004 DE$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.36010 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27078057 | $\omega$ | 139.88955 | | −0.80775396 | −0.58949966 | |
| $a$ | 2.3662342 | $\Omega$ | 3.99817 | | +0.52140339 | −0.71825068 | |
| $e$ | 0.0934934 | $i$ | 4.00376 | | +0.27508554 | −0.36960264 | |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.0 | 0.3− | 2004 03 15 | 703 | 0.6− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1+ | |
| 2004 02 17 | 691 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | |
| 2004 02 17 | 691 | 0.2− | 0.4− | 2004 03 15 | 704 | (1.8− | 0.2−) | 2006 10 31 | 691 | 0.1− | 0.3+ | |
| 2004 02 17 | 704 | 0.9+ | 0.9+ | 2004 03 15 | 703 | (1.6− | 0.2−) | 2006 10 31 | 691 | 0.1− | 0.4+ | |
| 2004 02 17 | 704 | (0.9+ | 1.6+) | 2004 03 15 | 704 | 0.8− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.0 | |
| 2004 02 17 | 704 | 0.3+ | 1.0+ | 2004 03 15 | 703 | 0.8− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 | |
| 2004 02 17 | 704 | 0.4+ | 1.2+ | 2004 03 15 | 704 | 0.5+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.5+ | |
| 2004 02 17 | 704 | (0.1− | 1.6+) | 2004 03 15 | 703 | 0.7+ | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | |
| 2004 02 23 | 704 | 0.5− | 0.7− | 2004 03 19 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.7+ | |
| 2004 02 23 | 704 | (0.5− | 2.0+) | 2004 03 19 | 644 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.6− | 0.3− | |
| 2004 02 23 | 704 | 0.1+ | 0.1− | 2004 03 19 | 644 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.8+ | 1.2− | |
| 2004 02 23 | 704 | 0.2− | 0.4− | 2004 03 19 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (1.4+ | 1.7−) | |
| 2004 02 25 | 704 | 0.8− | 0.3+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.3− | |
| 2004 02 25 | 704 | 0.1+ | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.2− | |
| 2004 02 25 | 704 | 1.0+ | 0.2− | 2004 03 19 | 704 | 1.0+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.3− | |
| 2004 02 25 | 704 | 0.7− | 0.1+ | 2004 03 19 | 704 | 0.8+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.3− | |
| 2004 02 26 | 704 | 0.2+ | 0.2+ | 2004 03 31 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.5− | |
| 2004 02 26 | 704 | 0.3+ | 0.0 | 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.5− | |
| 2004 02 26 | 704 | 0.8+ | 0.5+ | 2004 03 31 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.7+ | 0.4− | |
| 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2+ | |
| 2004 02 26 | 704 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.4− | 2006 11 19 | 704 | (3.2− | 1.6+) | |
| 2004 02 27 | 704 | 1.0− | 0.9+ | 2006 10 19 | 703 | 0.3− | 1.4− | 2006 11 19 | 704 | 0.9− | 0.3− | |
| 2004 02 27 | 704 | 0.6+ | 0.8+ | 2006 10 19 | 703 | (1.2+ | 1.8−) | 2006 11 19 | 704 | (0.9+ | 1.8+) | |
| 2004 02 27 | 704 | 0.5+ | 1.1− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | (0.4+ | 1.8+) | |
| 2004 02 29 | 691 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.4− | 0.3+ | |
| 2004 02 29 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.0 | | | | | |
| 2004 02 29 | 691 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.3+ | | | | | |

**2004 DG$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.45629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22371688 | $\omega$ | 350.55881 | | −0.31762598 | −0.93466921 | |
| $a$ | 2.6874283 | $\Omega$ | 117.81655 | | +0.88132914 | −0.35314124 | |
| $e$ | 0.1562748 | $i$ | 10.40331 | | +0.34981807 | +0.04104542 | |
| $P$ | 4.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 699 | 0.1− | 0.4− | 2004 01 23 | 699 | 1.4− | 0.6− | 2004 03 15 | 704 | 0.3− | 0.5+ | |
| 1998 12 16 | 699 | 0.0 | 0.0 | 2004 02 15 | 049 | 1.3+ | 0.6− | 2004 03 15 | 704 | 0.1− | 0.1+ | |
| 1998 12 16 | 699 | 0.1− | 1.2+ | 2004 02 16 | 049 | 1.0+ | 0.6− | 2004 03 15 | 704 | 0.5− | 0.2+ | |
| 2003 11 20 | 691 | 0.0 | 0.1− | 2004 02 16 | 049 | 0.9+ | 0.5− | 2004 03 15 | 704 | 0.4− | 0.2+ | |
| 2003 11 20 | 691 | 0.4+ | 0.0 | 2004 02 16 | 704 | 0.1− | 0.5− | 2004 03 15 | 704 | 0.1− | 0.5+ | |
| 2003 11 20 | 691 | 0.4− | 0.7+ | 2004 02 16 | 704 | 0.2+ | 0.3+ | 2004 03 18 | 703 | 0.3− | 0.0 | |
| 2003 12 27 | 704 | 0.1+ | 0.6+ | 2004 02 16 | 704 | 0.2+ | 0.2+ | 2004 03 18 | 703 | 0.4− | 0.3+ | |
| 2003 12 27 | 704 | 0.1− | 0.4− | 2004 02 18 | 608 | 0.1− | 0.5− | 2004 03 18 | 703 | 0.4+ | 0.3+ | |
| 2003 12 27 | 704 | 0.9− | 0.5+ | 2004 02 18 | 608 | 0.1− | 0.1− | 2004 03 18 | 703 | 0.5− | 0.5+ | |
| 2003 12 27 | 704 | 0.3+ | 0.2− | 2004 02 18 | 608 | 0.5− | 0.1− | 2004 03 23 | 704 | 0.0 | 0.3− | |
| 2003 12 27 | 704 | 0.1+ | 0.5+ | 2004 02 20 | 049 | 0.4+ | 0.8− | 2004 03 23 | 704 | 0.1− | 0.2+ | |
| 2004 01 23 | 704 | 0.2− | 0.5− | 2004 02 20 | 049 | 0.2− | 0.5− | 2004 03 23 | 704 | 0.3− | 0.8− | |
| 2004 01 23 | 704 | 0.4+ | 0.1− | 2004 02 20 | 049 | 0.2+ | 1.1− | 2004 03 23 | 704 | 0.2+ | 0.2− | |
| 2004 01 23 | 699 | 0.8+ | 1.0+ | 2004 02 20 | 049 | 0.2+ | 1.1− | 2004 03 23 | 704 | 0.6− | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 0.4− | 0.0 | 2004 03 14 | 704 | 0.0 | 1.5+ | 2005 07 12 | G96 | 0.3− | 0.3+ |
| 2004 01 23 | 699 | 0.4+ | 0.3− | 2004 03 14 | 704 | 0.0 | 0.5+ | 2005 07 12 | G96 | 0.4+ | 0.2+ |
| 2004 01 23 | 704 | 0.3+ | 0.1+ | 2004 03 14 | 704 | 0.6+ | 0.8+ | 2005 07 12 | G96 | 0.3− | 0.2+ |
| 2004 01 23 | 699 | 1.2− | 0.5− | 2004 03 14 | 704 | 0.2+ | 0.7+ | 2005 07 12 | G96 | 0.5+ | 0.7+ |

### 2004 DK$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.09441 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26868022 | $\omega$ | 207.89943 | | −0.94665134 | | −0.32119440 |
| $a$ | 2.3785498 | $\Omega$ | 313.34020 | | +0.30196322 | | −0.85572296 |
| $e$ | 0.1141769 | $i$ | 2.06290 | | +0.11255864 | | −0.40567521 |
| $P$ | 3.67 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 01 | 691 | 0.1+ | 0.3+ | 2004 03 13 | 644 | 0.5+ | 0.2+ | 2004 03 27 | 704 | 0.2− | 0.2− |
| 1998 09 01 | 691 | 0.3− | 0.1+ | 2004 03 14 | 703 | (0.1− | 2.0+) | 2004 03 27 | 704 | 0.2− | 0.5+ |
| 1998 09 01 | 691 | 0.1+ | 0.2− | 2004 03 14 | 703 | 1.1− | 1.3+ | 2006 10 23 | 691 | 0.2− | 0.8+ |
| 1999 12 07 | 691 | 0.1− | 0.5− | 2004 03 14 | 703 | 0.6+ | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 1999 12 07 | 691 | 0.1− | 0.4− | 2004 03 14 | 703 | (1.1− | 1.6+) | 2006 10 23 | 691 | 0.1+ | 0.2− |
| 1999 12 07 | 691 | 0.1− | 0.4− | 2004 03 15 | 599 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2004 02 25 | 333 | 0.3+ | 0.4+ | 2004 03 15 | 599 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2004 02 25 | 333 | 0.5− | 0.2+ | 2004 03 15 | 599 | 0.3− | 0.5+ | 2006 10 27 | 691 | 0.4+ | 0.1− |
| 2004 02 25 | 333 | 0.1+ | 0.2− | 2004 03 15 | 599 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.0 |
| 2004 02 26 | 333 | 0.0 | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2004 02 26 | 333 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2004 02 26 | 333 | 0.9+ | 0.8− | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 11 21 | 691 | 0.3− | 0.2+ |
| 2004 02 26 | 704 | 1.0+ | 0.6+ | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 11 21 | 691 | 0.3− | 0.2+ |
| 2004 02 26 | 704 | 0.9+ | 0.0 | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.5+ | 0.1− | 2004 03 27 | 704 | 0.7− | 0.4− | 2006 11 25 | 691 | 0.2− | 0.4+ |
| 2004 03 13 | 644 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.3− | 0.5− | 2006 11 25 | 691 | 0.1− | 0.1+ |
| 2004 03 13 | 644 | 0.5+ | 0.1− | 2004 03 27 | 704 | (0.4+ | 1.5−) | 2006 11 25 | 691 | 0.2− | 0.1+ |

### 2004 DO$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.56699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17758529 | $\omega$ | 198.41281 | | −0.87242663 | | +0.48748146 |
| $a$ | 3.1347150 | $\Omega$ | 10.96620 | | −0.42201336 | | −0.71511180 |
| $e$ | 0.1680445 | $i$ | 10.63977 | | −0.24652892 | | −0.50097600 |
| $P$ | 5.55 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.4− | 0.8+ | 2004 03 28 | 704 | 0.2+ | 0.5+ | 2004 04 22 | 703 | (0.7+ | 1.6−) |
| 1995 10 18 | 691 | 0.4− | 0.6+ | 2004 03 29 | 704 | 0.3− | 0.2+ | 2004 04 22 | 703 | 0.5+ | 0.0 |
| 1995 10 18 | 691 | 0.5− | 0.6+ | 2004 03 29 | 704 | 0.4− | 0.0 | 2004 04 22 | 703 | 0.1+ | 1.0− |
| 2004 02 26 | 333 | 0.2+ | 0.5− | 2004 03 29 | 704 | 0.2− | 0.3+ | 2004 04 23 | 691 | 0.1− | 0.3+ |
| 2004 02 26 | 333 | 0.6+ | 0.1− | 2004 03 29 | 704 | 0.0 | 0.1+ | 2004 04 23 | 691 | 0.1− | 0.3+ |
| 2004 02 27 | 333 | 0.3− | 0.3− | 2004 03 29 | 691 | 0.0 | 0.2+ | 2004 04 23 | 691 | 0.1+ | 0.2+ |
| 2004 02 27 | 333 | 0.5+ | 0.3+ | 2004 03 29 | 704 | 0.3+ | 0.2− | 2004 04 26 | 699 | 0.5+ | 1.0− |
| 2004 03 13 | 644 | 0.7+ | 0.5+ | 2004 03 29 | 691 | 0.0 | 0.2+ | 2004 04 26 | 699 | (2.1− | 0.2−) |
| 2004 03 13 | 644 | 0.7+ | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.2+ | 2004 04 26 | 699 | 0.6− | 0.2+ |
| 2004 03 13 | 644 | 0.7+ | 0.2+ | 2004 03 30 | 333 | 0.5− | 0.2+ | 2004 04 26 | 699 | 0.1+ | 0.3+ |
| 2004 03 16 | 184 | 0.0 | 0.2− | 2004 03 30 | 333 | 0.3− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.3+ |
| 2004 03 16 | 184 | 0.3+ | 0.3− | 2004 03 30 | 333 | 0.2− | 0.2− | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 2004 03 16 | 184 | 0.0 | 0.2− | 2004 03 31 | 704 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.1+ |
| 2004 03 16 | 704 | 0.9+ | 0.6− | 2004 03 31 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.4+ |
| 2004 03 16 | 704 | 0.1+ | 0.3− | 2004 03 31 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.2+ |
| 2004 03 16 | 704 | 0.2+ | 0.3+ | 2004 03 31 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.4+ |
| 2004 03 16 | 704 | 0.2+ | 0.4+ | 2004 03 31 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.7− |
| 2004 03 17 | 184 | 0.2+ | 0.4+ | 2004 04 03 | 608 | 0.3+ | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.8− |
| 2004 03 17 | 184 | 0.2+ | 0.4+ | 2004 04 03 | 608 | 0.2− | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2004 03 17 | 184 | 0.7+ | 0.5+ | 2004 04 03 | 608 | 0.2− | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.1− |
| 2004 03 18 | 704 | 0.8+ | 0.3+ | 2004 04 11 | 644 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2004 03 18 | 704 | 1.0+ | 0.3+ | 2004 04 11 | 644 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.2+ |
| 2004 03 18 | 704 | 0.9+ | 0.2+ | 2004 04 11 | 644 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2004 03 18 | 704 | 0.9+ | 0.0 | 2004 04 11 | 703 | 0.1+ | 1.0− | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 1.0+ | 0.1+ | 2004 04 11 | 703 | (0.7+ | 1.6−) | 2006 09 27 | 691 | 1.1− | 0.0 |
| 2004 03 24 | 699 | 0.3− | 0.4+ | 2004 04 11 | 703 | 0.5+ | 0.6− | 2006 09 27 | 691 | 0.0 | 0.6+ |
| 2004 03 24 | 699 | 0.6− | 0.5+ | 2004 04 11 | 703 | (1.7− | 0.9+) | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2004 03 24 | 699 | 0.1+ | 0.1+ | 2004 04 16 | 704 | 0.9− | 0.5+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2004 03 24 | 699 | 0.6− | 0.3+ | 2004 04 16 | 704 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.7− | 0.1+ |
| 2004 03 27 | 704 | 0.3+ | 0.3+ | 2004 04 16 | 704 | 0.2− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2004 03 27 | 704 | 0.5+ | 0.4+ | 2004 04 16 | 704 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.5− | 0.4− |
| 2004 03 27 | 704 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.4+ |
| 2004 03 27 | 704 | 0.2+ | 0.4+ | 2004 04 20 | 704 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.7− | 0.4+ |
| 2004 03 27 | 704 | 0.0 | 0.3+ | 2004 04 20 | 704 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.8− | 0.4+ |
| 2004 03 28 | 704 | 1.0− | 0.0 | 2004 04 20 | 704 | 0.1− | 0.8− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2004 03 28 | 704 | 0.4+ | 0.2+ | 2004 04 20 | 704 | 0.1+ | 0.6+ | | | | |
| 2004 03 28 | 704 | 0.3+ | 0.7+ | 2004 04 22 | 703 | 0.3− | 0.7− | | | | |

### 2004 DZ$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.20131 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27513436 | $\omega$ | 0.47329 | | −0.94541407 | | −0.32465388 |
| $a$ | 2.3412053 | $\Omega$ | 160.51005 | | +0.29870339 | | −0.89787986 |
| $e$ | 0.1823514 | $i$ | 4.83888 | | +0.13026324 | | −0.29734090 |
| $P$ | 3.58 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 291 | 0.0 | 0.0 | 2004 02 19 | 704 | 0.5− | 1.1+ | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 2003 12 19 | 291 | 0.0 | 0.1+ | 2004 02 26 | 704 | (0.5− | 2.2−) | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2003 12 19 | 291 | 0.0 | 0.1− | 2004 02 26 | 704 | (1.4− | 2.0−) | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2004 02 26 | 704 | (0.5− | 3.0−) | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.7+ |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2004 02 19 | 704 | 0.3+ | 0.7+ | 2004 02 29 | 691 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.1− | 0.3+ |
| 2004 02 19 | 704 | 0.0 | 1.2+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2004 02 19 | 704 | (0.3+ | 1.6+) | 2006 10 03 | G96 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.2+ |
| 2004 02 19 | 704 | 1.0− | 0.0 | 2006 10 03 | G96 | 0.0 | 0.0 | | | | |

### 2004 DS$_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.80860 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18358585 | $\omega$ | 257.47667 | | −0.79629175 | | +0.58869122 |
| $a$ | 3.0660313 | $\Omega$ | 318.36140 | | −0.44101692 | | −0.72241932 |
| $e$ | 0.1448283 | $i$ | 12.08862 | | −0.41403324 | | −0.36270232 |
| $P$ | 5.37 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.5− | 0.4+ | 2004 03 16 | 704 | (0.9+ | 2.2+) | 2004 03 19 | 704 | 0.2− | 0.4+ |
| 2004 02 19 | 704 | 0.2+ | 0.2− | 2004 03 16 | 704 | 1.1+ | 0.3+ | 2004 03 19 | 704 | 1.5− | 0.3+ |
| 2004 02 19 | 704 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.0 | 0.2− | 2004 03 19 | 704 | 0.2− | 0.4+ |
| 2004 02 19 | 704 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.0 | 2004 03 19 | 704 | 1.4+ | 0.2− |
| 2004 02 19 | 704 | 0.5+ | 0.6+ | 2004 03 18 | 704 | 0.4+ | 0.8− | 2004 03 27 | 703 | 0.8− | 0.5− |
| 2004 02 26 | 704 | 0.4+ | 0.1+ | 2004 03 18 | 704 | 0.3+ | 0.2− | 2004 03 27 | 703 | 0.2+ | 1.0+ |
| 2004 02 26 | 704 | 0.1− | 0.5− | 2004 03 18 | 704 | 0.7+ | 0.0 | 2004 03 27 | 703 | 1.4+ | 0.1+ |
| 2004 02 26 | 704 | 0.2− | 0.2+ | 2004 03 18 | 704 | 0.6− | 0.3− | 2004 03 27 | 703 | 1.3− | 1.2+ |
| 2004 02 26 | 704 | 0.5+ | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.1− |
| 2004 02 26 | 704 | 0.5− | 0.3+ | 2004 03 18 | 704 | 0.8+ | 0.2− | 2006 10 18 | 691 | 0.5+ | 0.1+ |
| 2004 03 13 | 644 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.6− | 2006 10 18 | 691 | 0.0 | 0.1− |
| 2004 03 13 | 644 | 0.2− | 0.6+ | 2004 03 18 | 704 | 0.5+ | 0.5− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2004 03 13 | 644 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.3+ | 0.2− |
| 2004 03 15 | 703 | 0.3+ | 0.3− | 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2004 03 15 | 703 | 1.2− | 0.5+ | 2004 03 18 | 704 | 0.9+ | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2004 03 15 | 703 | 1.2− | 1.7− | 2004 03 18 | 704 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2004 03 15 | 703 | 1.1− | 0.6− | 2004 03 18 | 704 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2004 03 16 | 704 | 0.9− | 0.5+ | 2004 03 18 | 704 | 0.2− | 0.8− | | | | |

### 2004 DU$_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 284.00716 | | | (2000.0) | | |
| $n$ | 0.22638349 | $\omega$ | 270.14382 | | +0.14618428 | −0.98742099 |
| $a$ | 2.6662828 | $\Omega$ | 170.76947 | | +0.98906651 | +0.14468844 |
| $e$ | 0.0580113 | $i$ | 22.06145 | | +0.01943187 | +0.06375770 |
| $P$ | 4.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 08 28 | 703 | (0.8+ | 3.3+) |
| 2002 10 05 | 644 | 0.1− | 0.0 | 2004 03 18 | 704 | 0.4+ | 0.3− | 2006 09 18 | 703 | 0.4− | 0.7− |
| 2002 10 05 | 644 | 0.1− | 0.4+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 1.1− |
| 2004 02 19 | 704 | 0.8− | 0.4− | 2004 03 18 | 704 | 0.5− | 0.2+ | 2006 09 18 | 703 | 1.6− | 0.6+ |
| 2004 02 19 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.1+ |
| 2004 02 19 | 704 | 0.2− | 0.9− | 2004 03 30 | 691 | 0.3− | 0.0 | 2006 09 19 | 703 | (2.0− | 0.0 ) |
| 2004 02 19 | 704 | 0.2+ | 0.1− | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.4+ |
| 2004 02 19 | 704 | 0.1+ | 0.4− | 2004 03 30 | 691 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2004 02 26 | 704 | 0.0 | 0.7− | 2006 08 19 | 691 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.5+ | 0.1+ |
| 2004 02 26 | 704 | 0.8+ | 0.1− | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2004 02 26 | 704 | 0.3− | 0.9+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.4− |
| 2004 03 15 | 704 | 0.5− | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.3− | 2006 10 03 | G96 | 0.4− | 0.1− |
| 2004 03 15 | 704 | 0.2− | 1.0+ | 2006 08 28 | 703 | 0.6− | 1.4− | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2004 03 15 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 703 | 2.6− | 0.7− | | | | |

### 2004 DX$_{47}$ = 2006 RW$_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 247.38470 | | | (2000.0) | | |
| $n$ | 0.22322011 | $\omega$ | 140.86547 | | −0.46630606 | −0.88238832 |
| $a$ | 2.6914140 | $\Omega$ | 336.72391 | | +0.76645782 | −0.36752543 |
| $e$ | 0.1077868 | $i$ | 9.15096 | | +0.44170247 | −0.29379570 |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.5+ | 0.2− | 2004 03 16 | 704 | 0.6+ | 1.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ |
| 1995 02 02 | 691 | 0.7− | 0.0 | 2004 03 16 | 704 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2004 02 19 | 704 | 0.8− | 0.4+ | 2004 03 16 | 704 | 0.8+ | 0.7− | 2006 09 15 | 691 | 0.0 | 0.3+ |
| 2004 02 19 | 704 | 0.3+ | 0.3+ | 2004 03 16 | 704 | 0.4− | 0.3+ | 2006 09 19 | 699 | (1.8+ | 0.5+) |
| 2004 02 19 | 704 | 0.2− | 0.7+ | 2004 03 18 | 704 | 0.0 | 0.4− | 2006 09 19 | 703 | (1.4− | 1.6−) |
| 2004 02 19 | 704 | 0.1+ | 0.7+ | 2004 03 18 | 704 | 0.5− | 0.7− | 2006 09 19 | 699 | (2.3+ | 0.6+) |
| 2004 02 19 | 704 | 0.3+ | 0.7+ | 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 703 | (2.7+ | 0.0 ) |
| 2004 02 26 | 704 | 0.6+ | 0.2+ | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.1− |
| 2004 02 26 | 704 | 0.5+ | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 699 | (2.3+ | 0.0 ) |
| 2004 02 26 | 704 | 0.1− | 0.4− | 2006 09 12 | 703 | 1.5− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.6− |
| 2004 02 26 | 704 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.6− | 0.3− | 2006 09 19 | 699 | 1.0+ | 0.4+ |
| 2004 02 26 | 704 | 0.1+ | 0.2+ | 2006 09 12 | 703 | (2.0− | 1.3+) | | | | |
| 2004 03 16 | 704 | 0.7− | 0.7− | 2006 09 12 | 703 | 1.0+ | 0.8− | | | | |

### 2004 DJ$_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 277.36863 | | | (2000.0) | | |
| $n$ | 0.24152946 | $\omega$ | 311.44289 | | −0.56995291 | −0.82110212 |
| $a$ | 2.5536183 | $\Omega$ | 173.09540 | | +0.80932152 | −0.56745290 |
| $e$ | 0.0478269 | $i$ | 14.81570 | | +0.14195900 | −0.06155082 |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.0 | 0.2− | 2004 03 16 | 704 | 0.5− | 0.3− | 2004 03 30 | 703 | 0.3+ | 0.8+ |
| 2000 03 29 | 704 | 0.4− | 0.1− | 2004 03 17 | 704 | 0.8− | 1.1− | 2004 04 20 | 704 | 0.4+ | 0.9+ |
| 2000 03 29 | 704 | 0.1− | 0.0 | 2004 03 17 | 704 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.5+ | 1.5+ |
| 2000 03 29 | 704 | 0.0 | 0.8+ | 2004 03 17 | 704 | 0.7− | 0.7+ | 2004 04 20 | 704 | 1.1+ | 0.3+ |
| 2000 03 29 | 704 | 0.3− | 0.1− | 2004 03 17 | 704 | 0.3− | 0.9− | 2004 04 20 | 704 | 0.0 | 0.2− |
| 2000 04 02 | 699 | 1.1− | 0.0 | 2004 03 17 | 704 | 0.2− | 0.6− | 2004 04 20 | 704 | 0.5+ | 0.6+ |
| 2000 04 02 | 699 | 0.5+ | 0.2+ | 2004 03 17 | 704 | 0.4− | 1.0− | 2004 04 22 | 704 | 1.2+ | 0.0 |
| 2000 04 02 | 699 | 0.5+ | 0.0 | 2004 03 17 | 704 | 0.5− | 0.7− | 2004 04 22 | 704 | 0.6+ | 0.1− |
| 2000 04 02 | 699 | 0.2+ | 0.5− | 2004 03 17 | 704 | 0.3− | 0.4− | 2004 04 22 | 704 | 0.8+ | 0.5− |
| 2002 11 06 | 699 | 0.6+ | 0.4+ | 2004 03 17 | 704 | 0.0 | 0.6− | 2004 04 22 | 704 | 0.9+ | 1.3+ |
| 2002 11 06 | 699 | 0.0 | 0.6+ | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2004 04 25 | 699 | 0.1− | 0.9− |
| 2002 11 06 | 699 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.0 | 0.7+ | 2004 04 25 | 699 | 1.1− | 0.6+ |
| 2002 11 06 | 699 | 0.1+ | 0.6+ | 2004 03 19 | 704 | 0.5− | 0.3+ | 2004 04 25 | 699 | 0.7− | 0.1− |
| 2004 02 19 | 704 | 1.0+ | 0.5+ | 2004 03 19 | 704 | 0.5− | 1.2+ | 2004 04 25 | 699 | 0.6+ | 0.5− |
| 2004 02 19 | 704 | 0.4− | 1.1+ | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 09 30 | 699 | (2.1+ | 0.7−) |
| 2004 02 19 | 704 | 0.7− | 0.3+ | 2004 03 22 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 699 | 0.9+ | 0.5− |
| 2004 02 26 | 704 | 0.7+ | 0.2− | 2004 03 22 | 704 | 0.0 | 0.7− | 2006 09 30 | 699 | (1.4+ | 1.9−) |
| 2004 02 26 | 704 | 0.1+ | 0.4+ | 2004 03 22 | 704 | (2.1+ | 0.5−) | 2006 09 30 | 699 | 0.6+ | 0.5− |
| 2004 02 26 | 704 | 0.6+ | 0.3− | 2004 03 23 | 683 | 0.1+ | 0.7− | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2004 02 26 | 704 | 0.0 | 0.5− | 2004 03 23 | 683 | 1.4+ | 1.0− | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 2004 02 26 | 704 | 0.0 | 0.2− | 2004 03 24 | 699 | 0.2− | 0.9− | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2004 03 12 | 644 | 0.0 | 0.0 | 2004 03 24 | 699 | 1.2− | 0.7− | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2004 03 12 | 644 | 0.0 | 0.1+ | 2004 03 24 | 699 | 1.0− | 0.0 | 2006 10 28 | 703 | (1.3+ | 1.6+) |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2004 03 24 | 699 | 0.1− | 0.8− | 2006 10 28 | 703 | 0.7+ | 0.1− |
| 2004 03 15 | 703 | 0.2− | 0.9− | 2004 03 28 | 704 | 0.2+ | 0.4+ | 2006 10 28 | 703 | (2.0+ | 1.6+) |
| 2004 03 15 | 703 | 1.2− | 0.2+ | 2004 03 28 | 704 | 0.1+ | 0.0 | 2006 10 28 | 703 | 1.2− | 0.8+ |
| 2004 03 15 | 703 | 1.2− | 0.1+ | 2004 03 28 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 703 | 0.7− | 0.9− |
| 2004 03 15 | 703 | 1.4− | 0.4− | 2004 03 28 | 704 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.6− |
| 2004 03 16 | 704 | 0.3+ | 0.3+ | 2004 03 28 | 704 | 0.2− | 0.2+ | 2006 11 16 | 703 | (0.5+ | 1.5−) |
| 2004 03 16 | 704 | 0.6+ | 0.0 | 2004 03 30 | 703 | 0.7+ | 0.1− | 2006 11 16 | 703 | 0.1− | 0.6− |
| 2004 03 16 | 704 | 0.2+ | 0.2+ | 2004 03 30 | 703 | 0.3− | 0.0 | | | | |
| 2004 03 16 | 704 | 0.3+ | 0.1+ | 2004 03 30 | 703 | 0.2+ | 0.8+ | | | | |

### 2004 DV$_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 194.75392 | | | (2000.0) | | |
| $n$ | 0.19902531 | $\omega$ | 175.08437 | | −0.90998959 | −0.41433529 |
| $a$ | 2.9053414 | $\Omega$ | 340.41521 | | +0.37880655 | −0.81541591 |
| $e$ | 0.1421778 | $i$ | 2.67760 | | +0.16859579 | −0.40425631 |
| $P$ | 4.95 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.1− | 0.2+ | 2004 02 19 | 704 | 0.8+ | 0.4+ | 2004 03 18 | 704 | 0.3+ | 0.1− |
| 2001 09 19 | 645 | 0.1− | 0.2+ | 2004 02 19 | 704 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.6+ | 0.1− |
| 2002 11 07 | 695 | 0.3− | 0.6+ | 2004 02 19 | 704 | 0.6+ | 0.0 | 2004 03 18 | 704 | 0.2+ | 0.2+ |
| 2002 11 07 | 695 | 0.1− | 0.9+ | 2004 02 19 | 704 | 0.4+ | 0.8− | 2004 03 18 | 704 | 0.1+ | 0.1+ |
| 2004 02 14 | G98 | 0.4− | 0.6+ | 2004 02 26 | 704 | 0.7+ | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.2+ |
| 2004 02 14 | G98 | 0.3− | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.1− | 2004 03 27 | 704 | 0.8+ | 0.3+ |
| 2004 02 14 | G98 | 0.0 | 0.6+ | 2004 02 26 | 704 | 1.1+ | 0.8+ | 2004 03 27 | 704 | 0.4+ | 0.0 |
| 2004 02 14 | G98 | 0.1− | 0.6+ | 2004 02 26 | 704 | 0.4+ | 0.7+ | 2004 03 27 | 704 | 0.6+ | 0.8+ |
| 2004 02 14 | G98 | 0.5− | 0.6+ | 2004 02 26 | 704 | 0.0 | 0.6+ | 2004 03 27 | 704 | 0.2+ | 0.7+ |
| 2004 02 14 | G98 | 1.3− | 0.3+ | 2004 03 14 | 691 | 0.1+ | 0.0 | 2004 03 28 | 691 | 0.0 | 0.2+ |
| 2004 02 16 | G98 | 0.6− | 0.2+ | 2004 03 14 | 691 | 0.1+ | 0.1+ | 2004 03 28 | 691 | 0.0 | 0.1+ |
| 2004 02 16 | G98 | 0.6− | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.1− | 2004 03 28 | 691 | 0.2− | 0.1+ |
| 2004 02 16 | G98 | 0.3− | 0.6+ | 2004 03 15 | 704 | 0.4+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.5+ |
| 2004 02 16 | G98 | 0.9− | 0.4+ | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.6+ |
| 2004 02 16 | G98 | 0.1− | 0.8+ | 2004 03 15 | 704 | 0.4+ | 0.0 | 2006 08 27 | 691 | 0.3− | 0.6+ |
| 2004 02 17 | G98 | 0.3− | 0.3+ | 2004 03 15 | 704 | 0.8+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.5+ |
| 2004 02 17 | G98 | 0.4− | 0.3+ | 2004 03 17 | 291 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2004 02 17 | G98 | 0.3− | 0.5+ | 2004 03 17 | 291 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2004 02 17 | G98 | 0.5− | 0.3+ | 2004 03 17 | 291 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.6− | 0.4− |
| 2004 02 17 | G98 | 0.4− | 0.8+ | 2004 03 18 | 704 | 0.4+ | 0.2− | | | | |

### 2004 DZ$_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.88524 | | | (2000.0) | | |
| $n$ | 0.26589745 | $\omega$ | 147.78743 | | −0.78112864 | −0.62428357 |
| $a$ | 2.3951163 | $\Omega$ | 353.55301 | | +0.55142356 | −0.68196194 |
| $e$ | 0.1757132 | $i$ | 5.31249 | | +0.29286533 | −0.38104848 |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 16 | 413 | 0.9− | 1.7− | 2004 03 18 | 704 | 0.3− | 0.3+ | 2004 03 31 | 691 | 0.2− | 0.2− |
| 2004 02 19 | 704 | 0.9+ | 0.2+ | 2004 03 18 | 704 | 0.0 | 0.5− | 2004 03 31 | 691 | 0.1+ | 0.2− |
| 2004 02 19 | 704 | 0.4+ | 0.0 | 2004 03 18 | 704 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.6+ | 0.1+ | 2004 03 18 | 704 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.6+ | 0.1+ |
| 2004 02 19 | 704 | 0.8+ | 0.2− | 2004 03 20 | 699 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.6+ | 0.0 |
| 2004 02 26 | 683 | 0.2+ | 0.0 | 2004 03 20 | 699 | 0.5+ | 0.3− | 2006 10 02 | G96 | 0.7+ | 0.1− |
| 2004 02 26 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 699 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.4− | 0.2+ |
| 2004 02 26 | 683 | 1.3− | 0.4+ | 2004 03 20 | 699 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.3+ |
| 2004 02 26 | 704 | 0.3+ | 0.1− | 2004 03 23 | 691 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.7− | 0.5− |
| 2004 02 26 | 704 | 0.8+ | 0.1+ | 2004 03 23 | 691 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.5− | 1.3− |
| 2004 02 26 | 683 | (1.2− | 3.5−) | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 1.0− | 0.9− |
| 2004 02 26 | 704 | 0.2+ | 0.1− | 2004 03 27 | 291 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2004 02 26 | 704 | 0.1+ | 0.3− | 2004 03 27 | 291 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.4+ | 1.3− |
| 2004 03 15 | 691 | 0.3− | 0.3− | 2004 03 27 | 291 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2004 03 27 | 704 | 1.1+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2004 03 15 | 691 | 0.3− | 0.2− | 2004 03 27 | 704 | 1.3+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 03 16 | 704 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2004 03 16 | 704 | 0.1+ | 0.3+ | 2004 03 30 | 691 | 0.1+ | 0.2− | 2006 11 23 | G96 | 1.1+ | 0.0 |
| 2004 03 16 | 704 | 0.0 | 0.1+ | 2004 03 30 | 691 | 0.0 | 0.6+ | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2004 03 16 | 704 | 0.2− | 0.3− | 2004 03 30 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.3− | 0.1+ |
| 2004 03 18 | 704 | 0.1+ | 0.1+ | 2004 03 31 | 691 | 0.0 | 0.0 | | | | |

### 2004 DN$_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.12276 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21854236 | $\omega$ | 219.84627 | | −0.93115607 | | +0.36292109 |
| $a$ | 2.7296835 | $\Omega$ | 341.34194 | | −0.30021757 | | −0.81784446 |
| $e$ | 0.0739198 | $i$ | 6.31078 | | −0.20692457 | | −0.44656324 |
| $P$ | 4.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 621 | 0.9− | 1.2+ | 2004 03 15 | 703 | 0.6+ | 0.6+ | 2004 03 29 | 691 | 0.3− | 0.0 |
| 2001 08 23 | 621 | 0.5− | 0.9+ | 2004 03 15 | 704 | 0.7+ | 0.0 | 2004 03 29 | 691 | 0.3− | 0.1+ |
| 2001 08 23 | 621 | 0.2− | 0.9+ | 2004 03 15 | 703 | 0.2− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2004 02 19 | 608 | 0.9+ | 0.7− | 2004 03 15 | 704 | 1.2+ | 0.0 | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2004 02 19 | 608 | 0.3+ | 0.1− | 2004 03 18 | 704 | 0.3+ | 0.3− | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2004 02 19 | 608 | 0.3− | 0.4− | 2004 03 18 | 704 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2004 02 26 | 704 | 0.5− | 0.6+ | 2004 03 18 | 704 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2004 02 26 | 704 | 0.3− | 0.7+ | 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2004 02 26 | 704 | 0.1+ | 0.6+ | 2004 03 18 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2004 02 26 | 704 | 0.5+ | 0.4+ | 2004 03 27 | 704 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2004 02 26 | 704 | 0.2− | 0.8+ | 2004 03 27 | 704 | 1.1+ | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 2004 03 11 | 644 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.6+ | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2004 03 11 | 644 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2004 03 11 | 644 | 0.1− | 0.3− | 2004 03 27 | 704 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2004 03 15 | 703 | 0.6+ | 0.3+ | 2004 03 28 | 704 | 0.6− | 0.6+ | 2006 11 20 | G96 | 0.4+ | 0.6− |
| 2004 03 15 | 704 | 1.0− | 0.0 | 2004 03 28 | 704 | 1.3+ | 0.8+ | 2006 11 20 | G96 | 0.5+ | 0.5− |
| 2004 03 15 | 703 | 0.5+ | 0.5+ | 2004 03 28 | 704 | 0.6+ | 0.4+ | 2006 11 20 | G96 | 0.6− | 0.4− |
| 2004 03 15 | 704 | 0.4+ | 0.6− | 2004 03 28 | 704 | 0.0 | 0.3+ | 2006 11 20 | G96 | 1.1− | 1.2− |
| 2004 03 15 | 704 | 0.1+ | 0.0 | 2004 03 29 | 691 | 0.5− | 0.1+ | | | | |

### 2004 DJ$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.12531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27112350 | $\omega$ | 75.91837 | | −0.68897278 | | −0.72320635 |
| $a$ | 2.3642384 | $\Omega$ | 57.73444 | | +0.64123969 | | −0.63899258 |
| $e$ | 0.1873813 | $i$ | 3.24361 | | +0.33782861 | | −0.26203254 |
| $P$ | 3.64 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.7+ | 0.8+ | 2004 03 26 | 704 | 0.7+ | 0.3+ |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.1− | 0.7+ | 2004 03 27 | 691 | 0.2− | 0.0 |
| 2004 01 18 | 691 | 0.4− | 0.1− | 2004 03 15 | 704 | 0.7+ | 1.3+ | 2004 03 27 | 691 | 0.1− | 0.1+ |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2004 03 15 | 691 | 0.1− | 0.0 | 2004 03 27 | 691 | 0.0 | 0.0 |
| 2004 01 27 | 691 | 0.0 | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.1+ | 2004 03 28 | 704 | 0.5− | 0.8+ |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2004 03 15 | 691 | 0.4− | 0.0 | 2004 03 28 | 704 | 1.1− | 0.8− |
| 2004 01 27 | 691 | 0.3+ | 0.1− | 2004 03 17 | 691 | 0.3− | 0.2+ | 2004 03 28 | 703 | 0.6+ | 0.1− |
| 2004 01 27 | 691 | 0.0 | 0.1− | 2004 03 17 | 691 | 0.1− | 0.3+ | 2004 03 28 | 703 | (0.2+ | 1.8+) |
| 2004 01 27 | 691 | 0.5+ | 0.4− | 2004 03 17 | 691 | 0.1− | 0.2+ | 2004 03 28 | 704 | 0.5+ | 0.0 |
| 2004 01 27 | 691 | 0.1− | 0.4− | 2004 03 20 | 704 | 0.3− | 0.0 | 2004 03 28 | 704 | 0.8− | 0.4− |
| 2004 01 27 | 691 | 0.4− | 0.4− | 2004 03 20 | 704 | 0.2+ | 0.4− | 2004 03 28 | 703 | 0.7+ | 0.2− |
| 2004 01 27 | 691 | 0.4− | 0.4− | 2004 03 20 | 704 | 0.2− | 0.1+ | 2004 03 28 | 703 | 0.3− | 0.8− |
| 2004 02 25 | 704 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.4+ | 0.2− | 2006 09 30 | G96 | 0.0 | 0.5+ |
| 2004 02 25 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 0.2+ | 0.5− | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2004 02 25 | 704 | 0.4− | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2004 02 25 | 704 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.6+ | 0.6− | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2004 02 25 | 704 | 0.6+ | 0.7+ | 2004 03 22 | 704 | 0.7+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2004 02 26 | 704 | 0.6+ | 0.1− | 2004 03 25 | 704 | (1.0− | 2.3+) | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2004 02 26 | 704 | 0.4+ | 0.0 | 2004 03 25 | 704 | 0.7+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.4+ |
| 2004 02 26 | 704 | 0.3+ | 0.3− | 2004 03 25 | 704 | (0.2− | 2.1+) | 2006 11 13 | G96 | 0.2+ | 0.3+ |
| 2004 02 26 | 704 | 0.1− | 0.4+ | 2004 03 25 | 704 | 0.6+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2004 02 26 | 704 | (1.8+ | 0.0 ) | 2004 03 26 | 704 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.3+ |
| 2004 03 15 | 704 | 0.1− | 0.8+ | 2004 03 26 | 704 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2004 03 15 | 704 | 0.8+ | 1.1+ | 2004 03 26 | 704 | 0.1+ | 0.5+ | | | | |

### 2004 DK$_{52}$ = 2006 QH$_{139}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.62956 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18172807 | $\omega$ | 9.51460 | | +0.59056204 | | +0.79479213 |
| $a$ | 3.0868916 | $\Omega$ | 296.81170 | | −0.75031859 | | +0.47701576 |
| $e$ | 0.0431579 | $i$ | 9.01142 | | −0.29708331 | | +0.37518187 |
| $P$ | 5.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 0.2− | 1.0− | 2004 02 26 | 704 | 1.1+ | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.1− |
| 2004 02 19 | 704 | 0.8+ | 0.2+ | 2004 02 26 | 704 | 0.6− | 0.7+ | 2006 08 14 | 644 | 0.5− | 0.3+ |
| 2004 02 19 | 704 | 0.5+ | 0.7+ | 2004 03 21 | 691 | 0.3− | 0.3− | 2006 08 17 | 644 | 0.2− | 0.5+ |
| 2004 02 19 | 704 | 0.2+ | 1.0+ | 2004 03 21 | 691 | 0.0 | 0.3− | 2006 08 17 | 644 | 0.1+ | 0.3+ |
| 2004 02 25 | 704 | 1.2+ | 0.8+ | 2004 03 21 | 691 | 0.1+ | 0.4− | 2006 08 17 | 644 | 0.3− | 0.5+ |
| 2004 02 25 | 704 | 0.1+ | 0.9+ | 2006 05 26 | G96 | 0.6+ | 0.4− | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2004 02 25 | 704 | 0.8− | 0.5+ | 2006 05 26 | G96 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2004 02 25 | 704 | 0.7− | 0.4+ | 2006 05 26 | G96 | 0.4− | 0.4+ | 2006 08 18 | 644 | 0.4+ | 0.5− |
| 2004 02 26 | 704 | 0.3− | 0.3+ | 2006 05 26 | G96 | 0.0 | 0.3− | | | | |
| 2004 02 26 | 704 | 0.3+ | 0.2+ | 2006 08 14 | 644 | 0.4− | 0.1− | | | | |

### 2004 DV$_{52}$ = 2000 GX$_{19}$

Id. Minor Planet Center; 2000 GX$_{19}$ = 2002 VS$_{129}$ (*MPO* 40083) is invalid

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.70635 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22811577 | $\omega$ | 127.23683 | | −0.67202548 | | −0.74051398 |
| $a$ | 2.6527674 | $\Omega$ | 4.99412 | | +0.66175318 | | −0.60329021 |
| $e$ | 0.0558575 | $i$ | 3.00281 | | +0.33236198 | | −0.29610803 |
| $P$ | 4.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.0 | 0.2+ | 2004 02 17 | 704 | 0.7+ | 0.6+ | 2004 03 26 | 691 | 0.2− | 0.3+ |
| 2000 04 05 | 691 | 0.2− | 0.4+ | 2004 02 17 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 691 | 0.4− | 0.4+ |
| 2000 04 05 | 691 | 0.1− | 0.1+ | 2004 02 23 | 704 | 0.4+ | 1.4+ | 2006 09 16 | 691 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 1.0+ | 0.6+ | 2004 02 23 | 704 | 0.5+ | 1.4+ | 2006 09 16 | 691 | 0.1− | 0.6+ |
| 2000 04 05 | 704 | 1.3+ | 0.5+ | 2004 02 23 | 704 | (1.3+ | 1.8+) | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2000 04 05 | 704 | 1.0+ | 0.8+ | 2004 02 23 | 704 | 0.6+ | 0.7− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2000 04 05 | 704 | 0.0 | 0.9+ | 2004 02 25 | 704 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2000 04 06 | 704 | 0.2+ | 0.7+ | 2004 02 25 | 704 | 0.4+ | 1.0− | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2000 04 06 | 704 | 0.0 | 1.4+ | 2004 02 25 | 704 | 0.4+ | 0.2− | 2006 09 28 | 691 | 0.3+ | 0.2+ |
| 2000 04 06 | 704 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.6+ | 0.6+ | 2006 09 28 | 691 | 0.3− | 0.7+ |
| 2000 04 06 | 704 | 1.3+ | 0.2+ | 2004 02 26 | 704 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2000 04 11 | 691 | 0.0 | 0.3− | 2004 02 26 | 704 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.4+ |
| 2000 04 11 | 691 | 0.1− | 0.1− | 2004 02 26 | 704 | 0.3+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2000 04 11 | 691 | 0.0 | 0.1+ | 2004 02 26 | 704 | 0.3+ | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2004 02 17 | 691 | 0.1− | 0.3− | 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2004 02 17 | 691 | 0.3− | 0.1− | 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 1.3− | 0.0 |
| 2004 02 17 | 691 | 0.2− | 0.1− | 2004 03 17 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2004 02 17 | 704 | 0.9− | 0.3− | 2004 03 26 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.1+ |
| 2004 02 17 | 704 | 1.0− | 0.2+ | 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |

**2004 DK$_{53}$ = 2006 UW$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 335.23087 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28697628 | $\omega$ | 300.63737 | | +0.45236410 | | −0.89080799 | |
| $a$ | 2.2763483 | $\Omega$ | 122.40728 | | +0.83459561 | | +0.40594739 | |
| $e$ | 0.2273327 | $i$ | 2.90270 | | +0.31435155 | | +0.20412703 | |
| $P$ | 3.43 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 621 | 0.6+ | 0.7− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 2004 02 23 | 621 | 0.4+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.7+ |
| 2004 02 23 | 621 | 0.1+ | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.6+ |
| 2004 02 23 | 621 | 0.5− | 0.4− | 2006 10 22 | 691 | 0.4− | 0.6− | 2006 11 14 | 704 | 0.3+ | 1.1+ |
| 2004 02 23 | 621 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.1+ | 0.3− | 2006 11 14 | 704 | (3.5+ | 1.8+) |
| 2004 02 24 | 621 | 1.2− | 0.0 | 2006 10 22 | 691 | 0.2+ | 0.4− | 2006 11 14 | 704 | 0.7− | 0.9+ |
| 2004 02 24 | 621 | 0.5− | 0.8− | 2006 11 01 | 703 | 1.0+ | 0.6+ | 2006 11 14 | 704 | 0.2+ | 1.4+ |
| 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 703 | 0.1− | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2004 02 29 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 703 | 1.0+ | 1.4− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.6+ | 0.8+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2006 10 16 | 703 | 0.1− | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2006 10 16 | 703 | 0.3− | 1.3+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.1− | 1.2− |
| 2006 10 16 | 703 | 0.6− | 0.6− | 2006 11 08 | 644 | 0.5+ | 0.1− | 2006 11 20 | 704 | 1.2− | 0.6− |
| 2006 10 16 | 703 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.6− | 2006 11 20 | 704 | 0.2− | 0.8+ |

**2004 DR$_{54}$ = 2006 RM$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 300.79904 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23557075 | $\omega$ | 276.30764 | | +0.36935910 | | −0.92883733 | |
| $a$ | 2.5965009 | $\Omega$ | 151.96176 | | +0.87506472 | | +0.33717275 | |
| $e$ | 0.0336005 | $i$ | 3.52457 | | +0.31278682 | | +0.15354400 | |
| $P$ | 4.18 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 291 | 0.6+ | 0.0 | 2004 02 22 | 691 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2004 01 30 | 291 | 0.4− | 0.2+ | 2004 02 22 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.4+ | 0.2+ |
| 2004 01 30 | 291 | 0.6− | 0.2+ | 2004 02 22 | 691 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 2004 02 12 | 691 | 0.0 | 0.4− | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2004 02 29 | 691 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.3− |
| 2004 02 12 | 691 | 0.2+ | 0.0 | 2004 02 29 | 691 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.3− | 0.1− |

**2004 DN$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 359.33261 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22479844 | $\omega$ | 37.61843 | | +0.99806536 | | −0.01813293 | |
| $a$ | 2.6788014 | $\Omega$ | 323.28597 | | −0.01189898 | | +0.88313466 | |
| $e$ | 0.0502098 | $i$ | 5.70915 | | +0.06102419 | | +0.46876900 | |
| $P$ | 4.38 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.1+ | 0.1− | 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 2004 02 12 | 691 | 0.0 | 0.3− | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.2− |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2004 02 13 | 291 | 0.3− | 0.0 | 2004 03 18 | 691 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.4+ |
| 2004 02 13 | 291 | 0.1+ | 0.3+ | 2004 03 18 | 691 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2004 02 13 | 291 | 0.2− | 0.4− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2004 02 22 | 691 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.3+ |
| 2004 02 22 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.5− | 0.1− |
| 2004 02 22 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.5+ | 0.6− |
| 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.3− |

**2004 DT$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 322.49521 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27390315 | $\omega$ | 127.31347 | | +0.40366808 | | −0.91371257 | |
| $a$ | 2.3482160 | $\Omega$ | 298.81678 | | +0.82164323 | | +0.38450190 | |
| $e$ | 0.1922324 | $i$ | 3.05571 | | +0.40243568 | | +0.13148241 | |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 1999 12 15 | 704 | 0.4− | 0.1− | 2006 09 18 | 703 | 1.0− | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 1999 12 15 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.3+ | 1.0+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1999 12 15 | 704 | 0.1− | 0.2− | 2006 09 18 | 699 | 1.0− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1999 12 15 | 704 | 1.2+ | 1.3− | 2006 09 18 | 699 | 0.7− | 0.3− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2004 01 24 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2004 01 24 | 704 | 0.4− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2004 01 24 | 704 | 0.0 | 0.6− | 2006 09 19 | 703 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2004 02 11 | 703 | 1.0− | 0.9− | 2006 09 19 | 703 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2004 02 11 | 703 | 0.5+ | 0.5− | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2004 02 11 | 703 | (1.2+ | 1.6+) | 2006 09 22 | 224 | 1.2+ | 0.3+ | 2006 10 17 | 703 | 0.7− | 0.1+ |
| 2004 02 11 | 703 | 0.5+ | 0.4+ | 2006 09 22 | 224 | 1.0+ | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2004 02 22 | 691 | 0.0 | 0.2+ | 2006 09 22 | 224 | 0.9+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2004 02 22 | 691 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.7− | 2006 10 23 | 683 | 1.1− | 0.0 |
| 2004 02 22 | 691 | 0.5− | 0.6+ | 2006 09 25 | 704 | 0.8+ | 0.8+ | 2006 10 23 | 683 | 0.3− | 0.1− |
| 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.2− | 0.5+ | 2006 10 28 | 683 | 0.4+ | 0.7− |
| 2004 02 29 | 691 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.7+ | 0.5− | 2006 10 28 | 683 | (0.7− | 1.7−) |
| 2004 02 29 | 691 | 0.0 | 0.1− | 2006 09 29 | 704 | (2.6− | 1.2−) | 2006 10 28 | 683 | (2.4+ | 0.9+) |
| 2004 03 18 | 691 | 0.2+ | 0.1− | 2006 09 29 | 704 | 1.0− | 0.6+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.5− | 2006 11 06 | 644 | 0.3+ | 0.4− |
| 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 1.0− | 0.2− | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2004 03 27 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.6+ | 2006 11 06 | 644 | 0.2− | 0.2+ |
| 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.0 | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2004 03 27 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 11 06 | 644 | 0.2+ | 0.0 |
| 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.1+ | | | | |
| 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.2− | | | | |

**2004 DZ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 298.40701 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28726310 | $\omega$ | 114.84698 | | −0.40023794 | | −0.91641104 | |
| $a$ | 2.2748328 | $\Omega$ | 358.74555 | | +0.82995925 | | −0.36218618 | |
| $e$ | 0.1502392 | $i$ | 1.66437 | | +0.38855789 | | −0.17032903 | |
| $P$ | 3.43 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.1+ | 0.0 | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2004 02 11 | 291 | 0.1+ | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 291 | 0.1+ | 0.2+ | 2004 03 18 | 691 | 0.1− | 0.3− | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2004 02 23 | 704 | 0.4+ | 0.1+ | 2004 03 18 | 691 | 0.2− | 0.6− | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.5+ | 0.8− | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2004 02 23 | 704 | 0.4− | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.1+ | | | | |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.6− | | | | |

**2004 DF$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 290.29267 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27655778 | $\omega$ | 1.57116 | | −0.52595130 | | −0.84936134 | |
| $a$ | 2.3331651 | $\Omega$ | 120.16324 | | +0.77977236 | | −0.50233816 | |
| $e$ | 0.1748544 | $i$ | 2.93554 | | +0.33960315 | | −0.16199286 | |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 704 | (1.7+ | 0.4−) | 2004 03 15 | 704 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2004 02 18 | 704 | (1.2+ | 1.8+) | 2004 03 19 | 704 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2004 02 18 | 704 | 0.6− | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 704 | 0.1− | 1.2+ | 2004 03 19 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.3− | | |
| 2004 02 23 | 704 | 0.6+ | 0.0 | 2004 03 19 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.1+ | 1.0+ | | |
| 2004 02 23 | 704 | 0.1− | 0.4− | 2004 03 20 | 699 | 0.1+ | 0.8− | 2006 11 11 | 703 | 0.6+ | 0.8− | | |
| 2004 02 23 | 704 | 0.1+ | 0.6+ | 2004 03 20 | 699 | 0.5− | 0.8− | 2006 11 11 | 703 | 0.8− | 0.9+ | | |
| 2004 02 23 | 704 | 1.1+ | 0.1+ | 2004 03 20 | 699 | 0.4+ | 0.2− | 2006 11 11 | 644 | 0.1+ | 0.4+ | | |
| 2004 02 23 | 704 | 0.4+ | 0.1+ | 2004 03 20 | 699 | 0.2+ | 0.3+ | 2006 11 11 | 644 | 0.3+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.8+ | 1.3− | 2004 03 22 | 704 | (1.6+ | 0.1−) | 2006 11 11 | 644 | 0.1+ | 0.6+ | | |
| 2004 02 26 | 704 | 0.2+ | 0.0 | 2004 03 22 | 704 | 1.4+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− | | |
| 2004 02 26 | 704 | 0.6+ | 0.3+ | 2004 03 22 | 704 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.4− | | |
| 2004 02 26 | 704 | 1.5+ | 1.4+ | 2004 03 22 | 704 | 0.5+ | 1.0+ | 2006 11 16 | G96 | 0.2− | 0.0 | | |
| 2004 02 26 | 704 | 0.3+ | 1.1+ | 2004 03 22 | 704 | (1.6+ | 0.9+) | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2004 02 29 | 691 | 0.5− | 0.1− | 2004 03 28 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.7− | | |
| 2004 02 29 | 691 | 0.6− | 0.0 | 2004 03 28 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 1.3− | | |
| 2004 02 29 | 691 | 0.4− | 0.1− | 2004 03 28 | 691 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.6− | 0.0 | | |
| 2004 03 15 | 704 | 0.0 | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.3− | 1.2− | | |
| 2004 03 15 | 704 | 0.1− | 0.5− | 2006 10 18 | 691 | 0.2+ | 0.1+ | | | | | | |
| 2004 03 15 | 704 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.3− | 0.2+ | | | | | | |

## 2004 $DP_{59}$ = 2006 $SN_{323}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 295.75690 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23755925 | $\omega$ | 286.04907 | | +0.12512377 | | −0.99158381 | | |
| $a$ | 2.5819911 | $\Omega$ | 156.68536 | | +0.93936847 | | +0.10761718 | | |
| $e$ | 0.0429284 | $i$ | 4.81925 | | +0.31926623 | | +0.07197290 | | |
| $P$ | 4.15 | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 25 | 691 | 0.0 | 0.6+ | 2004 02 29 | 291 | 0.1− | 1.0+ | 2006 10 01 | 691 | 0.2− | 0.0 | | |
| 1993 07 25 | 691 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.2− | 0.4+ | | |
| 1993 07 25 | 691 | 0.2+ | 1.0+ | 2006 09 17 | 691 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.4+ | 0.1− | | |
| 1996 04 23 | 691 | 0.4− | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.3− | | |
| 1996 04 23 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.3+ | | |
| 1996 04 23 | 691 | 0.5− | 0.1− | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.5+ | | |
| 2004 02 22 | 695 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.0 | | |
| 2004 02 22 | 695 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.7+ | | |
| 2004 02 25 | 333 | 0.2+ | 0.6+ | 2006 10 01 | 691 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.0 | 0.2− | | |
| 2004 02 25 | 333 | 0.2+ | 0.2+ | 2006 10 01 | 291 | 0.0 | 0.0 | 2006 10 22 | 703 | (1.6− | 1.5−) | | |
| 2004 02 29 | 291 | 0.7+ | 0.4+ | 2006 10 01 | 291 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.2− | | |
| 2004 02 29 | 291 | 0.7+ | 0.5+ | 2006 10 01 | 291 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.2− | | |

## 2004 $DB_{61}$ = 2006 $QH_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 140.32360 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19035575 | $\omega$ | 70.57531 | | −0.93754615 | | +0.34677061 | | |
| $a$ | 2.9928989 | $\Omega$ | 129.70460 | | −0.33107069 | | −0.86521508 | | |
| $e$ | 0.0747737 | $i$ | 2.04995 | | −0.10676801 | | −0.36215053 | | |
| $P$ | 5.18 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.3+ | 0.7+ | 2004 02 26 | 704 | 1.1+ | 1.0+ | 2006 08 21 | 691 | 0.1− | 0.1+ | | |
| 1994 04 03 | 691 | 0.2− | 0.7+ | 2004 02 26 | 704 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.3+ | | |
| 1994 04 03 | 691 | 0.2+ | 0.7− | 2004 02 26 | 704 | 0.1− | 0.7+ | 2006 08 28 | 691 | 0.1− | 0.3+ | | |
| 2001 09 20 | 291 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.8+ | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.5+ | | |
| 2001 09 20 | 291 | 0.4− | 0.5+ | 2004 02 29 | 691 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.3− | 1.2+ | | |
| 2001 09 20 | 291 | 0.2+ | 0.4+ | 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.6− | | |
| 2004 02 17 | 704 | 0.0 | 0.9+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.3− | | |
| 2004 02 17 | 704 | 0.5+ | 0.3+ | 2006 08 21 | 691 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.1− | | |
| 2004 02 17 | 704 | 0.4+ | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.2+ | | | | | | |

## 2004 $DU_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 220.59210 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21255941 | $\omega$ | 106.48078 | | −0.80970394 | | −0.58516608 | | |
| $a$ | 2.7806681 | $\Omega$ | 37.73663 | | +0.50704654 | | −0.73559702 | | |
| $e$ | 0.0386747 | $i$ | 4.14835 | | +0.29543752 | | −0.34128826 | | |
| $P$ | 4.64 | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 691 | 0.5− | 0.3− | 2004 03 15 | 704 | 0.3+ | 0.7+ | 2004 03 23 | 704 | 0.9− | 0.3+ | | |
| 2003 12 22 | 691 | 0.1+ | 0.7− | 2004 03 17 | 691 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.5+ | | |
| 2003 12 22 | 691 | 0.1+ | 0.1− | 2004 03 17 | 691 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.3+ | 0.5+ | | |
| 2004 02 26 | 704 | 0.1+ | 0.5+ | 2004 03 17 | 691 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.2− | 0.6+ | | |
| 2004 02 26 | 704 | 0.8+ | 0.4− | 2004 03 18 | 704 | 0.5+ | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.7+ | | |
| 2004 02 26 | 704 | 1.4− | 0.7+ | 2004 03 18 | 704 | 0.8+ | 0.2+ | 2004 04 12 | 291 | 0.1− | 0.2+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.4+ | 2004 03 18 | 704 | 0.1+ | 0.7− | 2004 04 12 | 291 | 0.2− | 0.3+ | | |
| 2004 02 26 | 704 | 0.8+ | 0.3− | 2004 03 19 | 704 | 0.7− | 0.3+ | 2004 04 12 | 291 | 0.0 | 0.3+ | | |
| 2004 02 29 | 691 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.4+ | | |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.5− | 0.9+ | | |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.6− | 0.9+ | | |
| 2004 03 15 | 704 | 0.6+ | 0.3+ | 2004 03 19 | 704 | 1.3+ | 0.1− | 2006 09 28 | 691 | 0.0 | 0.2+ | | |
| 2004 03 15 | 704 | 0.8+ | 0.4+ | 2004 03 21 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.2+ | | |
| 2004 03 15 | 704 | 1.2+ | 1.4+ | 2004 03 21 | 691 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.3− | 0.3+ | | |
| 2004 03 15 | 704 | 0.2+ | 0.9+ | 2004 03 21 | 691 | 0.4− | 0.2− | | | | | | |

## 2004 $DV_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 228.32040 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28831279 | $\omega$ | 163.08793 | | −0.70741612 | | +0.70196023 | | |
| $a$ | 2.2693080 | $\Omega$ | 61.79555 | | −0.65883080 | | −0.61260320 | | |
| $e$ | 0.1953076 | $i$ | 5.37479 | | −0.25593830 | | −0.36327558 | | |
| $P$ | 3.42 | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 691 | 0.1− | 0.0 | 2004 03 10 | 644 | 0.3+ | 0.1− | 2004 03 26 | 703 | 0.4− | 0.3+ | | |
| 2003 12 25 | 691 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.4+ | 0.6+ | 2004 03 26 | 703 | 0.7+ | 0.7− | | |
| 2003 12 25 | 691 | 0.0 | 0.1+ | 2004 03 15 | 704 | 0.7+ | 0.8+ | 2004 04 22 | 704 | 0.5+ | 0.1+ | | |
| 2004 02 17 | 704 | 0.7− | 0.1− | 2004 03 15 | 704 | 0.6− | 1.0+ | 2004 04 22 | 704 | 0.3− | 0.8+ | | |
| 2004 02 17 | 704 | 0.5+ | 0.1+ | 2004 03 15 | 704 | 0.7− | 0.6+ | 2004 04 22 | 704 | 0.0 | 0.4+ | | |
| 2004 02 17 | 704 | 1.9− | 1.2+ | 2004 03 15 | 704 | 0.2− | 1.5+ | 2004 04 22 | 704 | 0.8− | 0.6+ | | |
| 2004 02 17 | 704 | 0.6+ | 1.7+ | 2004 03 17 | 691 | 0.1+ | 0.6− | 2006 10 29 | G96 | 0.1+ | 0.0 | | |
| 2004 02 17 | 704 | 0.7+ | 0.6+ | 2004 03 17 | 691 | 0.2+ | 0.6− | 2006 10 29 | G96 | 0.0 | 0.1− | | |
| 2004 02 27 | 704 | 0.6+ | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.6− | 2006 10 29 | G96 | 0.1− | 0.0 | | |
| 2004 02 27 | 704 | 0.4− | 0.5− | 2004 03 23 | 704 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.1+ | | |
| 2004 02 27 | 704 | 0.1+ | 0.4− | 2004 03 23 | 704 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.2− | 0.1− | | |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− | | |
| 2004 02 29 | 691 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.3− | | |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.1− | 0.3− | | |
| 2004 03 10 | 644 | 0.2+ | 0.3− | 2004 03 26 | 703 | 0.9− | 0.9− | | | | | | |
| 2004 03 10 | 644 | 0.2+ | 0.2− | 2004 03 26 | 703 | 0.3+ | 0.4+ | | | | | | |

## 2004 $DJ_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 228.52132 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26217355 | $\omega$ | 49.25067 | | −0.99637307 | | +0.08189478 | | |
| $a$ | 2.4177430 | $\Omega$ | 135.43253 | | −0.08456339 | | −0.92273741 | | |
| $e$ | 0.1686061 | $i$ | 1.88700 | | −0.00947339 | | −0.37662836 | | |
| $P$ | 3.76 | $H$ | 17.5 | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 22 | 695 | 0.0 | 0.7− | 2004 03 15 | 703 | 0.7+ | 0.4+ | 2004 03 29 | 691 | 0.0 | 0.3− | | |
| 2004 02 22 | 695 | 0.1− | 0.8− | 2004 03 15 | 703 | 0.6+ | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 26 | 704 | 0.3+ | 0.9+ | 2004 03 19 | 704 | 0.4− | 1.2− | 2006 10 16 | 691 | 0.3− | 0.1+ | | |
| 2004 02 26 | 704 | 0.1− | 0.2+ | 2004 03 19 | 704 | 0.5+ | 1.1+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | | |
| 2004 02 26 | 704 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.2− | 1.2+ | 2006 10 20 | 691 | 0.4− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2004 03 19 | 704 | 1.0− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.3+ | | |
| 2004 02 26 | 704 | 0.1− | 0.1− | 2004 03 19 | 704 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.3+ | | |
| 2004 03 01 | 333 | (1.3+ | 1.7−) | 2004 03 22 | 704 | 0.5+ | 0.7+ | 2006 11 13 | G96 | 0.3+ | 1.1− | | |
| 2004 03 01 | 333 | 1.2+ | 0.1− | 2004 03 22 | 704 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.2+ | 0.6− | | |
| 2004 03 01 | 333 | 0.0 | 0.1+ | 2004 03 22 | 704 | 0.2− | 0.9+ | 2006 11 13 | G96 | 0.4− | 1.0− | | |
| 2004 03 01 | 333 | 1.1− | 0.1− | 2004 03 22 | 704 | (1.6+ | 0.1+) | 2006 11 13 | G96 | 1.1+ | 0.1+ | | |
| 2004 03 15 | 703 | 0.2− | 0.4− | 2004 03 29 | 691 | 0.1− | 0.2− | | | | | | |
| 2004 03 15 | 703 | 0.1+ | 0.3− | 2004 03 29 | 691 | 0.0 | 0.1− | | | | | | |

**2004 DA$_{63}$ = 2006 SN$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.16168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21869230 | $\omega$ | 305.84879 | | +0.15906923 | −0.98308480 | |
| $a$ | 2.7284357 | $\Omega$ | 134.72429 | | +0.94199888 | +0.12360790 | |
| $e$ | 0.0497170 | $i$ | 7.34080 | | +0.29552512 | +0.13514940 | |
| $P$ | 4.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.0 | 0.3− | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.1− | 0.4+ | | |
| 2004 02 11 | 644 | 0.1+ | 0.1− | 2004 03 01 | 291 | 0.3− | 0.3+ | 2006 09 19 | 734 | 0.2− | 0.5+ | | |
| 2004 02 11 | 644 | 0.7+ | 0.2+ | 2004 03 01 | 291 | 0.4+ | 0.2+ | 2006 09 19 | 734 | 0.3− | 0.2+ | | |
| 2004 02 23 | 704 | 1.2+ | 0.8+ | 2004 03 01 | 291 | 0.3− | 0.1− | 2006 09 19 | 734 | 0.1+ | 0.5+ | | |
| 2004 02 23 | 704 | 0.8+ | 0.5+ | 2005 06 28 | 691 | 0.0 | 0.0 | 2006 09 19 | 734 | 0.1− | 0.2+ | | |
| 2004 02 23 | 704 | 0.1+ | 0.2− | 2005 06 28 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 734 | 0.2− | 0.0 | | |
| 2004 02 23 | 704 | (2.7+ | 0.3+) | 2005 06 28 | 691 | 0.1− | 0.0 | 2006 09 20 | 734 | 0.2− | 0.5+ | | |
| 2004 02 29 | 691 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 20 | 734 | 0.5+ | 0.1+ | | |
| 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 08 23 | 644 | 0.3− | 0.6+ | | | | | | |

**2004 DY$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.83482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27752409 | $\omega$ | 10.88455 | | −0.56900623 | −0.82179539 | |
| $a$ | 2.3277460 | $\Omega$ | 113.80276 | | +0.75201373 | −0.53464019 | |
| $e$ | 0.1596878 | $i$ | 1.86249 | | +0.33272700 | −0.19700813 | |
| $P$ | 3.55 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.6− | 0.7+ | 2004 03 19 | 704 | 0.8+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.1− | | |
| 2004 02 23 | 704 | 0.3− | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.8+ | 2006 11 11 | 703 | (1.8− | 1.1+) | | |
| 2004 02 23 | 704 | 1.1+ | 0.3+ | 2004 03 28 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | (0.8+ | 1.6+) | | |
| 2004 02 23 | 704 | 0.8− | 0.5+ | 2004 03 28 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | (1.9+ | 0.8+) | | |
| 2004 02 23 | 704 | 0.1− | 0.6+ | 2004 03 28 | 691 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.0 | 0.2− | | |
| 2004 02 26 | 695 | 0.2+ | 0.7− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.2+ | | |
| 2004 02 26 | 695 | 0.3− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.2+ | | |
| 2004 03 15 | 704 | 1.4+ | 0.9− | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.5− | | |
| 2004 03 15 | 704 | 0.0 | 0.7− | 2006 10 16 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.2+ | | |
| 2004 03 15 | 704 | 0.9+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.7− | | |
| 2004 03 15 | 704 | 0.3+ | 1.3− | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 1.0− | | |
| 2004 03 15 | 704 | 1.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | (1.8+ | 0.8−) | | |
| 2004 03 19 | 704 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.1+ | 1.4− | | |
| 2004 03 19 | 704 | 0.7− | 1.0+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.3− | | |
| 2004 03 19 | 704 | 0.8− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.5− | 2006 11 27 | 703 | 0.5− | 0.0 | | |
| 2004 03 19 | 704 | 0.5− | 0.8+ | 2006 11 01 | 691 | 0.2+ | 0.1− | 2006 11 27 | 703 | 2.7+ | 0.4− | | |
| 2004 03 19 | 704 | 0.7+ | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.4− | | | | | | |

**2004 DE$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.28767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27083646 | $\omega$ | 122.13953 | | −0.99622364 | +0.08053142 | |
| $a$ | 2.3659086 | $\Omega$ | 62.49774 | | −0.08673937 | −0.90658560 | |
| $e$ | 0.1256628 | $i$ | 2.09674 | | −0.00383965 | −0.41426710 | |
| $P$ | 3.64 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 691 | 0.4− | 0.5− | 2004 03 20 | 699 | 0.1+ | 0.7− | 2004 04 15 | 699 | 0.7− | 0.4− | | |
| 1999 12 17 | 691 | 0.1+ | 0.4− | 2004 03 22 | 704 | 0.3+ | 0.2− | 2004 04 19 | 704 | 0.4+ | 0.0 | | |
| 1999 12 17 | 691 | 0.0 | 0.6− | 2004 03 22 | 704 | 0.4+ | 0.2− | 2004 04 19 | 704 | 0.1+ | 0.6− | | |
| 2004 02 23 | 704 | 0.3+ | 0.4− | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.3+ | | |
| 2004 02 23 | 704 | 0.2+ | 0.7+ | 2004 03 22 | 704 | 0.9+ | 0.3− | 2004 04 25 | 691 | 0.0 | 0.1+ | | |
| 2004 02 23 | 704 | 0.5− | 0.4− | 2004 03 22 | 704 | 0.4+ | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.1+ | | |
| 2004 02 23 | 704 | 0.5− | 0.6− | 2004 03 28 | 704 | 0.4− | 0.1+ | 2004 04 25 | 691 | 0.1− | 0.3+ | | |
| 2004 02 26 | 695 | 0.2− | 0.1− | 2004 03 28 | 704 | 1.2− | 0.4− | 2005 08 27 | 644 | 0.4− | 0.5+ | | |
| 2004 02 26 | 695 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.7+ | 2005 08 27 | 644 | 0.0 | 0.4+ | | |
| 2004 03 15 | 703 | 0.6+ | 0.3+ | 2004 03 28 | 704 | 0.4+ | 0.2− | 2005 08 27 | 644 | 0.1− | 0.5+ | | |
| 2004 03 15 | 703 | 0.2+ | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.2− | | |
| 2004 03 15 | 703 | 0.3− | 0.7+ | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.0 | | |
| 2004 03 15 | 703 | 1.0+ | 0.1− | 2004 03 29 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2004 03 17 | 691 | 0.1+ | 0.2− | 2004 04 12 | 699 | 0.9− | 0.6+ | 2006 11 16 | 691 | 0.2− | 0.1− | | |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2004 04 12 | 699 | 0.1− | 0.9+ | 2006 11 16 | 691 | 0.0 | 0.3+ | | |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2004 04 12 | 699 | 1.2+ | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.2+ | | |
| 2004 03 19 | 704 | 0.1− | 0.0 | 2004 04 12 | 699 | 0.6− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.5+ | | |
| 2004 03 19 | 704 | 0.8+ | 0.5+ | 2004 04 12 | 703 | (2.3+ | 1.2+) | 2006 11 16 | 691 | 0.5− | 0.8+ | | |
| 2004 03 19 | 704 | 0.0 | 0.7+ | 2004 04 12 | 703 | 0.6+ | 1.2+ | 2006 11 16 | 691 | 0.1− | 0.2+ | | |
| 2004 03 19 | 704 | 0.8+ | 0.0 | 2004 04 12 | 703 | (1.6+ | 1.5+) | 2006 11 24 | 691 | 0.1+ | 0.1− | | |
| 2004 03 19 | 704 | 0.4− | 0.8+ | 2004 04 12 | 703 | (1.2+ | 1.8+) | 2006 11 24 | 691 | 0.5+ | 0.2+ | | |
| 2004 03 20 | 699 | (1.8+ | 0.1−) | 2004 04 15 | 699 | (1.8− | 1.2+) | 2006 11 24 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 20 | 699 | 0.3− | 0.1− | 2004 04 15 | 699 | 0.8+ | 0.8+ | | | | | | |
| 2004 03 20 | 699 | 0.0 | 0.2+ | 2004 04 15 | 699 | 1.0− | 0.2+ | | | | | | |

**2004 DD$_{69}$ = 2006 UZ$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.68223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20852239 | $\omega$ | 292.35951 | | +0.02332418 | +0.99841682 | |
| $a$ | 2.8164427 | $\Omega$ | 338.78417 | | −0.85731603 | −0.00636109 | |
| $e$ | 0.1217467 | $i$ | 8.13114 | | −0.51426180 | +0.05588733 | |
| $P$ | 4.73 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.3+ | 0.0 | 2004 02 29 | 691 | 1.3− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.2− | | |
| 2004 01 18 | 644 | 0.3− | 0.2+ | 2004 02 29 | 691 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.1+ | | |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.2− | | |
| 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 | | |
| 2004 02 11 | 691 | 0.3+ | 0.2− | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1− | | |
| 2004 02 11 | 691 | 0.3+ | 0.3− | 2006 08 29 | 703 | (1.6− | 1.9−) | 2006 10 19 | 691 | 0.2− | 0.2+ | | |
| 2004 02 26 | 695 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.7− | 0.1− | 2006 10 21 | 691 | 0.2+ | 0.2+ | | |
| 2004 02 26 | 695 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 1.3− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.2+ | | |
| 2004 02 29 | 691 | 0.5+ | 0.3+ | 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1− | | |

**2004 DL$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.50062 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21095663 | $\omega$ | 307.64114 | | −0.48971157 | −0.87179309 | |
| $a$ | 2.7947348 | $\Omega$ | 171.65188 | | +0.82482887 | −0.46792582 | |
| $e$ | 0.1114179 | $i$ | 4.98840 | | +0.28255957 | −0.14499042 | |
| $P$ | 4.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 1.3+ | 0.1+ | 2004 03 15 | 704 | 0.1+ | 0.1− | 2004 03 28 | 691 | 0.2+ | 0.2+ | | |
| 2004 02 26 | 704 | 0.0 | 0.2− | 2004 03 15 | 704 | 0.3− | 0.2− | 2006 08 19 | 691 | 0.2− | 0.2− | | |
| 2004 02 26 | 704 | 0.5+ | 0.4+ | 2004 03 15 | 599 | 0.3− | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.0 | | |
| 2004 02 26 | 704 | 1.9+ | 0.6+ | 2004 03 15 | 599 | 0.1− | 0.6+ | 2006 08 19 | 691 | 0.2+ | 0.2− | | |
| 2004 02 26 | 695 | 0.7− | 0.0 | 2004 03 15 | 599 | 0.3+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.2+ | | |
| 2004 02 26 | 695 | 0.8− | 0.1− | 2004 03 15 | 599 | 0.5− | 0.1− | 2006 08 27 | 691 | 0.0 | 0.0 | | |
| 2004 02 27 | 695 | 0.4− | 0.1− | 2004 03 18 | 704 | 0.3− | 0.5− | 2006 08 27 | 691 | 0.0 | 0.1+ | | |
| 2004 02 27 | 695 | 0.6− | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.2+ | | |
| 2004 03 14 | 691 | 0.2+ | 0.2− | 2004 03 18 | 704 | 1.1− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.3+ | | |
| 2004 03 14 | 691 | 0.1+ | 0.0 | 2004 03 18 | 704 | 0.5− | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.4+ | | |
| 2004 03 14 | 691 | 0.1+ | 0.0 | 2004 03 28 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.3+ | | |
| 2004 03 15 | 704 | 0.2+ | 0.2− | 2004 03 28 | 691 | 0.2− | 0.0 | | | | | | |

**2004 $DO_{70}$ = 2006 $SO_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 281.01590 | | (2000.0) | | −0.16741268 | −0.98570435 |
| $n$ | 0.23926897 | $\omega$ | 340.78870 | | +0.90734483 | −0.16157365 |
| $a$ | 2.5696765 | $\Omega$ | 118.84479 | | +0.38561425 | −0.04775859 |
| $e$ | 0.0968602 | $i$ | 1.24105 | | | |
| $P$ | 4.12 | $H$ | 17.1 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.1− | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.4− | 0.2− |
| 2004 02 26 | 704 | 1.4− | 0.6− | 2004 03 15 | 704 | 1.4+ | 0.8− | 2006 09 25 | 691 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.3− | 0.7− | 2004 03 15 | 704 | 0.3+ | 0.9− | 2006 09 25 | 691 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.4+ | 0.8+ | 2004 03 15 | 704 | (1.8+ | 0.0 ) | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2004 02 26 | 704 | 1.3− | 0.1− | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2004 02 27 | 695 | 0.2− | 0.1+ | 2004 03 21 | 691 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2004 02 27 | 695 | 0.1− | 0.1− | 2004 03 21 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.3+ | 0.0 | | | | |
| 2004 03 14 | 691 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.4+ | 0.1+ | | | | |

**2004 $DF_{76}$ = 2006 $UQ_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 291.04595 | | (2000.0) | | +0.25058520 | −0.96803999 |
| $n$ | 0.22412911 | $\omega$ | 233.16104 | | +0.89659793 | +0.23606989 |
| $a$ | 2.6841320 | $\Omega$ | 202.33340 | | +0.36512903 | +0.08467341 |
| $e$ | 0.0622525 | $i$ | 1.54990 | | | |
| $P$ | 4.40 | $H$ | 16.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.4− | 0.4− | 2004 02 26 | 704 | 1.0+ | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.1+ |
| 1995 03 02 | 691 | 0.5+ | 0.5− | 2004 02 26 | 704 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.4+ | 0.5+ |
| 1995 03 02 | 691 | 0.4− | 0.5− | 2004 02 26 | 704 | 1.1+ | 0.7+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2000 05 07 | 691 | 0.4+ | 0.6+ | 2004 02 26 | 704 | 0.6+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2000 05 07 | 691 | 0.2+ | 0.6+ | 2006 08 19 | 691 | 0.1− | 1.3− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2000 05 07 | 691 | 0.0 | 0.9+ | 2006 08 19 | 691 | 0.3− | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2002 11 04 | 644 | 0.4− | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2002 11 04 | 644 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 1.4+ | 2006 10 23 | G96 | 0.6+ | 0.2+ |
| 2002 11 04 | 644 | 0.6− | 0.5+ | 2006 08 28 | 703 | 0.5+ | 1.0− | 2006 10 23 | G96 | 0.4+ | 0.1+ |
| 2002 12 11 | 291 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2002 12 11 | 291 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 0.8+ | 1.2+ | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2002 12 11 | 291 | 0.7− | 1.0+ | 2006 08 28 | 691 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2004 02 17 | 291 | 0.2+ | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.6+ | 2006 11 21 | G96 | 0.1− | 0.6− |
| 2004 02 17 | 291 | 0.4− | 0.5+ | 2006 08 28 | 691 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.5− |
| 2004 02 17 | 291 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | | | | |
| 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.3− | | | | |

**2004 $DA_{77}$ = 2006 $UD_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 265.01969 | | (2000.0) | | −0.57919305 | −0.81163980 |
| $n$ | 0.25983564 | $\omega$ | 215.89504 | | +0.76452964 | −0.50847841 |
| $a$ | 2.4322240 | $\Omega$ | 269.61804 | | +0.28289546 | −0.28755963 |
| $e$ | 0.1196566 | $i$ | 4.35887 | | | |
| $P$ | 3.79 | $H$ | 17.3 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 02 | 691 | 0.1− | 0.0 | 2004 02 26 | 704 | 0.4+ | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 1999 12 02 | 691 | 0.4+ | 0.1− | 2004 02 26 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.6− |
| 1999 12 02 | 691 | 0.3− | 0.1+ | 2004 02 26 | 704 | 1.1+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2004 02 26 | 704 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.4− |
| 2004 02 18 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4− |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.3− |
| 2004 02 26 | 704 | 0.3+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.2+ | | | | |

**2004 $DW_{78}$ = 1999 $KT_1$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 192.13389 | | (2000.0) | | −0.57606061 | −0.80435618 |
| $n$ | 0.18363298 | $\omega$ | 272.59097 | | +0.81445310 | −0.54969739 |
| $a$ | 3.0655066 | $\Omega$ | 213.94489 | | +0.06942857 | −0.22548594 |
| $e$ | 0.2706957 | $i$ | 15.10197 | | | |
| $P$ | 5.37 | $H$ | 15.8 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 16 | 691 | 0.0 | 0.1− | 2004 02 21 | 608 | 0.1− | 0.2− | 2004 03 27 | 699 | 0.9+ | 0.2+ |
| 1999 05 16 | 691 | 0.2+ | 0.1+ | 2004 02 21 | 608 | 0.2− | 0.1+ | 2004 03 27 | 699 | 0.3− | 0.8+ |
| 1999 05 16 | 691 | 0.0 | 0.0 | 2004 03 14 | 644 | 0.4+ | 0.1+ | 2004 03 31 | 704 | 1.0+ | 0.7− |
| 1999 05 19 | 691 | 0.0 | 0.1+ | 2004 03 14 | 644 | 0.4+ | 0.1+ | 2004 03 31 | 704 | 0.1+ | 0.3− |
| 1999 05 19 | 691 | 0.3− | 0.5− | 2004 03 14 | 644 | 0.5+ | 0.0 | 2004 03 31 | 704 | 0.4+ | 0.0 |
| 1999 05 19 | 691 | 0.1+ | 0.4+ | 2004 03 27 | 699 | 0.3+ | 0.3+ | 2004 03 31 | 704 | 0.5− | 0.2− |
| 2004 02 21 | 608 | 0.4− | 0.0 | 2004 03 27 | 699 | 0.6− | 1.1− | 2004 03 31 | 704 | 1.7− | 0.9+ |

**2004 $DX_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 247.63845 | | (2000.0) | | −0.92291113 | +0.38093221 |
| $n$ | 0.29961522 | $\omega$ | 166.58768 | | −0.36144467 | −0.80720708 |
| $a$ | 2.2118727 | $\Omega$ | 35.96462 | | −0.13263781 | −0.45089620 |
| $e$ | 0.1007996 | $i$ | 5.46266 | | | |
| $P$ | 3.29 | $H$ | 16.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 699 | 0.5− | 0.2+ | 2004 02 17 | 704 | 0.1− | 0.4+ | 2004 03 22 | 704 | 0.1+ | 0.4− |
| 2001 04 26 | 699 | 0.6− | 1.4− | 2004 02 17 | 704 | 1.3+ | 0.3+ | 2004 03 22 | 704 | 0.3+ | 0.6− |
| 2001 04 26 | 699 | 1.5− | 0.2− | 2004 03 10 | 644 | 0.3− | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.0 |
| 2001 04 26 | 699 | 0.0 | 0.7+ | 2004 03 10 | 644 | 0.4− | 0.2− | 2004 03 22 | 704 | 0.1+ | 0.1+ |
| 2001 05 15 | 699 | 0.3+ | 1.1− | 2004 03 10 | 644 | 0.4− | 0.2− | 2005 07 29 | 644 | 0.6− | 0.8− |
| 2001 05 15 | 699 | 1.4+ | 0.6+ | 2004 03 20 | 704 | 0.7+ | 0.9− | 2005 07 29 | 644 | 0.2+ | 0.2− |
| 2001 05 15 | 699 | 0.9+ | 0.9+ | 2004 03 20 | 704 | 0.2+ | 0.3+ | 2005 07 29 | 644 | 0.3+ | 0.0 |
| 2001 05 15 | 699 | 0.2+ | 0.8+ | 2004 03 20 | 704 | 0.8− | 1.0− | 2005 08 27 | 644 | 0.2− | 0.2− |
| 2004 02 17 | 704 | 0.2− | 0.7+ | 2004 03 20 | 704 | 0.3− | 0.5+ | 2005 08 27 | 644 | 0.1+ | 0.4+ |
| 2004 02 17 | 704 | 1.2+ | 0.7+ | 2004 03 20 | 704 | 1.7− | 0.5+ | 2005 08 27 | 644 | 0.2+ | 0.6+ |

**2004 $DZ_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 194.72491 | | (2000.0) | | −0.71536802 | −0.67400550 |
| $n$ | 0.17219849 | $\omega$ | 354.47477 | | +0.65177839 | −0.73872140 |
| $a$ | 3.1997532 | $\Omega$ | 140.98128 | | +0.25186012 | −0.00269727 |
| $e$ | 0.0882648 | $i$ | 17.02158 | | | |
| $P$ | 5.72 | $H$ | 14.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 08 | 910 | 0.4+ | 0.5− | 2004 03 15 | 704 | 0.2+ | 0.3− | 2004 03 26 | 703 | 0.3− | 1.3+ |
| 1998 01 08 | 910 | 0.4+ | 0.2+ | 2004 03 15 | 704 | 0.6+ | 0.8+ | 2004 03 26 | 703 | 0.4− | 0.5− |
| 1998 01 08 | 910 | 0.6+ | 0.0 | 2004 03 15 | 704 | 0.3− | 0.1− | 2004 04 14 | 703 | 1.4+ | 1.0− |
| 1998 01 28 | 691 | 0.1− | 0.0 | 2004 03 15 | 704 | 0.3+ | 1.1− | 2004 04 14 | 703 | 0.3− | 0.3+ |
| 1998 01 28 | 691 | 0.1− | 0.2+ | 2004 03 25 | 704 | (0.5+ | 3.2+) | 2004 04 14 | 703 | 0.1− | 0.0 |
| 1998 01 28 | 691 | 0.1− | 0.1+ | 2004 03 25 | 704 | (1.3+ | 1.7+) | 2004 04 14 | 703 | 0.9− | 0.0 |
| 2004 02 18 | 608 | 0.1+ | 0.9− | 2004 03 25 | 704 | 0.8+ | 1.6+ | 2005 06 30 | 644 | 0.1− | 0.1+ |
| 2004 02 18 | 608 | 0.4− | 1.2− | 2004 03 25 | 704 | 0.7+ | 0.7+ | 2005 06 30 | 644 | 0.1+ | 0.2+ |
| 2004 02 18 | 608 | 0.4− | 0.2− | 2004 03 26 | 703 | 0.5− | 0.7− | 2005 06 30 | 644 | 0.0 | 0.1− |
| 2004 03 15 | 704 | 0.1− | 0.5− | 2004 03 26 | 703 | 0.7− | 0.8+ | | | | |

**2004 $DF_{79}$ = 2001 $QM_{240}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.58235 | | | (2000.0) | | |
| $n$ | 0.22640261 | $\omega$ | 218.48716 | | +0.97199905 | −0.23408020 |
| $a$ | 2.6661327 | $\Omega$ | 155.02706 | | +0.22586494 | +0.90649469 |
| $e$ | 0.2230499 | $i$ | 2.79657 | | +0.06482957 | +0.35138845 |
| $P$ | 4.35 | $H$ | 17.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.1+ | 0.4+ | 2001 09 12 | 704 | 0.1− | 0.3+ | 2001 09 19 | 704 | 0.0 | 0.7+ |
| 2001 08 24 | 704 | 0.0 | 0.7− | 2001 09 12 | 704 | 0.4+ | 0.7+ | 2001 09 21 | 704 | 0.0 | 0.7− |
| 2001 08 24 | 704 | 0.1+ | 0.2+ | 2001 09 12 | 704 | 0.5+ | 0.4+ | 2001 09 21 | 704 | 0.8− | 0.3− |
| 2001 08 27 | 691 | 0.3− | 0.3+ | 2001 09 12 | 704 | 0.1+ | 1.1+ | 2001 09 21 | 704 | 0.0 | 0.5+ |
| 2001 08 27 | 691 | 0.2− | 0.5+ | 2001 09 19 | 699 | 0.6− | 0.1+ | 2001 09 21 | 704 | 0.2+ | 0.1+ |
| 2001 08 27 | 691 | 0.3− | 0.1+ | 2001 09 19 | 699 | 0.1+ | 0.7− | 2001 09 21 | 704 | 0.4− | 0.3+ |
| 2001 09 11 | 704 | 0.0 | 1.0− | 2001 09 19 | 699 | 0.4+ | 0.4− | 2004 02 18 | 493 | 0.1+ | 0.0 |
| 2001 09 11 | 704 | 0.4+ | 0.7− | 2001 09 19 | 699 | 0.1+ | 0.3− | 2004 02 18 | 493 | 0.1+ | 0.1+ |
| 2001 09 11 | 704 | 0.1+ | 0.8− | 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 02 19 | 493 | 0.2− | 0.1+ |
| 2001 09 11 | 704 | 0.2+ | 0.7− | 2001 09 19 | 704 | 0.2+ | 0.9+ | 2004 02 19 | 493 | 0.1+ | 0.1− |
| 2001 09 11 | 704 | 0.0 | 0.8− | 2001 09 19 | 704 | 0.1+ | 0.2− | 2004 02 19 | 493 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.1− | 0.1− | 2001 09 19 | 704 | 0.0 | 0.4+ | | | | |

**2004 EL**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 175.96765 | | | (2000.0) | | |
| $n$ | 0.24062751 | $\omega$ | 334.29897 | | −0.65573302 | +0.75207549 |
| $a$ | 2.5599955 | $\Omega$ | 254.65062 | | −0.68029038 | −0.62665875 |
| $e$ | 0.1783708 | $i$ | 3.94277 | | −0.32744343 | −0.20415989 |
| $P$ | 4.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 19 | 704 | 1.0+ | 0.5+ | 2004 03 16 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 704 | 0.1− | 0.4− |
| 2004 02 19 | 704 | 0.6+ | 0.6− | 2004 03 16 | 704 | 0.6+ | 0.0 | 2004 03 22 | 608 | 0.5− | 1.1− |
| 2004 02 19 | 704 | 0.4+ | 0.5− | 2004 03 19 | 704 | 0.1+ | 0.0 | 2004 03 22 | 608 | 0.3+ | 1.3− |
| 2004 03 11 | 843 | 0.6− | 0.2− | 2004 03 19 | 704 | 0.1− | 0.3+ | 2004 03 22 | 608 | 0.0 | 1.0− |
| 2004 03 11 | 843 | 0.8− | 0.1+ | 2004 03 19 | 704 | 0.8+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2004 03 11 | 843 | 1.2− | 0.2+ | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2004 03 11 | 843 | 1.1− | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.4+ | 2006 11 18 | 691 | 0.4− | 0.3− |
| 2004 03 12 | 843 | 0.3− | 0.3+ | 2004 03 19 | 704 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2004 03 12 | 843 | 0.5− | 1.7+ | 2004 03 19 | 704 | 0.4+ | 0.4− | 2006 11 20 | 691 | 0.6+ | 0.2+ |
| 2004 03 12 | 843 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.6+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2004 03 12 | 843 | 1.2− | 1.3+ | 2004 03 20 | 704 | 0.5+ | 0.0 | | | | |
| 2004 03 16 | 704 | 1.0+ | 0.4− | 2004 03 20 | 704 | 0.5− | 0.4− | | | | |

**2004 EO**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 318.83583 | | | (2000.0) | | |
| $n$ | 0.29918227 | $\omega$ | 19.86081 | | −0.52269689 | −0.84919689 |
| $a$ | 2.2140061 | $\Omega$ | 101.71854 | | +0.77142769 | −0.50867497 |
| $e$ | 0.1179317 | $i$ | 4.40374 | | +0.36288742 | −0.14182529 |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 691 | 0.1+ | 0.2− | 2004 03 15 | 704 | 1.2− | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.0 |
| 2001 05 25 | 691 | 0.0 | 0.2+ | 2004 03 20 | 699 | (2.2+ | 0.1+) | 2006 10 29 | G96 | 0.3+ | 0.1+ |
| 2001 05 25 | 691 | 0.0 | 0.0 | 2004 03 20 | 699 | 1.1− | 0.8+ | 2006 10 29 | G96 | 0.4− | 0.5+ |
| 2004 02 25 | 704 | 0.3+ | 0.8+ | 2004 03 20 | 704 | 0.7+ | 0.8− | 2006 10 29 | G96 | 0.2+ | 0.5+ |
| 2004 02 25 | 704 | 0.7− | 0.4− | 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2004 02 25 | 704 | 0.7+ | 0.6+ | 2004 03 20 | 699 | 0.8− | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.6− |
| 2004 02 25 | 704 | 0.1+ | 1.3+ | 2004 03 20 | 704 | (0.1− | 2.8+) | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2004 03 11 | 644 | 0.5+ | 0.0 | 2004 03 20 | 704 | 1.0+ | 1.0+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2004 03 11 | 644 | 0.0 | 0.1+ | 2004 03 20 | 699 | 0.3− | 1.0− | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2004 03 11 | 644 | 0.3+ | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2004 03 12 | 644 | 0.2+ | 0.1− | 2004 03 22 | 704 | 0.4+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 03 12 | 644 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 03 12 | 644 | 0.1+ | 0.2− | 2004 03 22 | 704 | (0.1− | 2.5−) | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 704 | (0.8+ | 2.0−) | 2004 03 26 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 704 | 0.1− | 0.1+ | 2004 03 26 | 691 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | (0.6+ | 3.6−) | 2004 03 26 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.1+ |

**2004 $EE_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 169.94348 | | | (2000.0) | | |
| $n$ | 0.21478914 | $\omega$ | 163.76710 | | −0.90220350 | +0.40166699 |
| $a$ | 2.7613906 | $\Omega$ | 41.06606 | | −0.41753344 | −0.72201040 |
| $e$ | 0.0514704 | $i$ | 13.83942 | | −0.10814191 | −0.56335123 |
| $P$ | 4.59 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 11 | 644 | 0.0 | 0.1+ | 2004 03 25 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2004 03 11 | 644 | 0.2+ | 0.3+ | 2004 03 25 | 704 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 03 11 | 644 | 0.2+ | 0.3+ | 2004 03 25 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2004 03 14 | 704 | 0.5+ | 0.3+ | 2004 03 25 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.1− | 0.4− |
| 2004 03 14 | 704 | 0.3− | 0.1+ | 2004 03 26 | 703 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2004 03 14 | 704 | 0.0 | 0.4− | 2004 03 26 | 703 | 1.2− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 1.3− |
| 2004 03 23 | 704 | 0.4− | 0.4− | 2004 03 26 | 703 | (1.8− | 0.2−) | 2006 10 22 | 703 | 0.1− | 1.5− |
| 2004 03 23 | 704 | 0.1− | 0.0 | 2004 03 26 | 703 | 0.4+ | 1.6− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 03 23 | 704 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 03 23 | 704 | 0.3− | 0.6− | 2006 10 19 | 644 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2004 03 23 | 704 | 0.1− | 0.6− | 2006 10 19 | 644 | 0.8− | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |

**2004 $EX_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 299.04743 | | | (2000.0) | | |
| $n$ | 0.25812398 | $\omega$ | 24.94022 | | −0.09733428 | −0.99440668 |
| $a$ | 2.4429645 | $\Omega$ | 70.66710 | | +0.90568206 | −0.10558099 |
| $e$ | 0.1471194 | $i$ | 2.49058 | | +0.41263307 | −0.00282829 |
| $P$ | 3.82 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 704 | 1.6− | 1.5− | 2004 03 20 | 699 | (1.6+ | 0.9+) | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2000 02 11 | 704 | 0.4+ | 0.0 | 2004 03 20 | 699 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.5− | 0.2+ |
| 2000 02 11 | 704 | 0.7+ | 0.6− | 2004 03 20 | 699 | 0.1− | 1.2+ | 2006 10 01 | 691 | 0.2+ | 0.2− |
| 2002 10 04 | 644 | 0.5− | 0.1+ | 2004 03 20 | 699 | 0.7− | 0.6+ | 2006 10 01 | 691 | 0.4+ | 0.2− |
| 2002 10 04 | 644 | 0.4− | 0.5+ | 2004 03 22 | 704 | 1.4+ | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 644 | 0.0 | 0.7+ | 2004 03 22 | 704 | 0.5− | 0.4+ | 2006 10 13 | D35 | 0.2− | 0.0 |
| 2004 02 23 | 704 | 0.7+ | 0.8+ | 2004 03 22 | 704 | 0.7+ | 0.8+ | 2006 10 13 | D35 | 0.4− | 0.1− |
| 2004 02 23 | 704 | 0.4+ | 0.7− | 2004 03 22 | 704 | 1.4+ | 0.5+ | 2006 10 13 | D35 | 0.5− | 0.1+ |
| 2004 02 23 | 704 | 1.3+ | 1.1+ | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.7− |
| 2004 02 23 | 704 | 0.4− | 0.0 | 2004 03 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2004 03 11 | 644 | 0.1− | 0.6+ | 2004 03 27 | 691 | 0.8− | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.7− |
| 2004 03 11 | 644 | 0.0 | 0.4+ | 2004 03 30 | 691 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2004 03 11 | 644 | 0.3+ | 0.0 | 2004 03 30 | 691 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.2+ | 0.4+ | 2004 03 30 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2004 03 31 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2004 03 31 | 691 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 703 | 0.9+ | 0.5+ | 2004 03 31 | 691 | 0.0 | 0.6− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 703 | 0.6+ | 0.9+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2004 03 15 | 703 | 0.7+ | 1.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2004 03 15 | 703 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.6− |
| 2004 03 19 | 704 | 0.7− | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2004 03 19 | 704 | 0.8− | 0.6+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2004 03 19 | 704 | 0.3− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.3+ | | | | |
| 2004 03 19 | 704 | 0.9− | 0.6+ | 2006 09 27 | 691 | 0.2− | 0.3+ | | | | |

### 2004 EB$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.62143 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23378262 | $\omega$ | 307.67967 | −0.30525447 | | −0.95185484 | |
| $a$ | 2.6097239 | $\Omega$ | 160.03848 | +0.89759129 | | −0.29747156 | |
| $e$ | 0.1691213 | $i$ | 4.72874 | +0.31804023 | | −0.07404746 | |
| $P$ | 4.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.1− | 1.2+ | 2004 03 15 | 704 | 0.9+ | 0.3− | 2004 03 23 | 691 | 0.1− | 0.0 |
| 2004 02 26 | 704 | 0.3+ | 0.8+ | 2004 03 15 | 704 | 1.3+ | 0.1+ | 2004 03 23 | 691 | 0.2+ | 0.0 |
| 2004 02 26 | 704 | 0.3+ | 0.4+ | 2004 03 19 | 704 | 0.7+ | 0.6− | 2004 04 13 | 691 | 0.3− | 0.3+ |
| 2004 02 26 | 704 | 0.6+ | 0.2+ | 2004 03 19 | 704 | 0.5+ | 0.0 | 2004 04 13 | 691 | 0.2− | 0.3+ |
| 2004 02 26 | 704 | 0.2+ | 0.8+ | 2004 03 19 | 704 | 0.1− | 0.2− | 2004 04 13 | 691 | 0.3− | 0.3+ |
| 2004 03 11 | 644 | 0.0 | 0.3− | 2004 03 19 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2004 03 11 | 644 | 0.0 | 0.3− | 2004 03 20 | 699 | (2.7− | 0.3+) | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2004 03 11 | 644 | 0.8+ | 0.2+ | 2004 03 20 | 699 | 0.7− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.6+ |
| 2004 03 15 | 691 | 0.3− | 0.3− | 2004 03 20 | 699 | 0.4− | 0.7− | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 691 | 0.3− | 0.1− | 2004 03 20 | 699 | 1.7− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2004 03 15 | 691 | 0.5− | 0.1− | 2004 03 22 | 704 | 0.8+ | 1.3+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 704 | 0.6+ | 0.2+ | 2004 03 22 | 704 | 0.2− | 0.8+ | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 704 | 1.5+ | 0.4− | 2004 03 22 | 704 | 0.3+ | 1.0− | | | | |
| 2004 03 15 | 704 | 1.1+ | 0.1+ | 2004 03 23 | 691 | 0.3+ | 0.0 | | | | |

### 2004 ED$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.37277 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22327322 | $\omega$ | 0.23731 | +0.99909429 | | −0.04234958 | |
| $a$ | 2.6909872 | $\Omega$ | 2.20268 | +0.03886046 | | +0.86850537 | |
| $e$ | 0.0432989 | $i$ | 6.17950 | +0.01733400 | | +0.49386732 | |
| $P$ | 4.41 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.4− | 1.6+ | 2004 03 29 | 291 | 0.1+ | 0.3+ | 2006 10 03 | 691 | 0.2+ | 0.0 |
| 2001 08 27 | 644 | 0.6− | 1.2+ | 2004 03 29 | 291 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2001 08 27 | 644 | 0.7− | 1.2+ | 2004 04 12 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.4+ | 0.1− |
| 2004 03 11 | 644 | 0.1+ | 0.6+ | 2004 04 12 | 691 | 0.1+ | 0.6+ | 2006 10 17 | 691 | 0.6− | 0.4+ |
| 2004 03 11 | 644 | 0.7+ | 0.2+ | 2004 04 12 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.9− | 1.3+ |
| 2004 03 11 | 644 | 0.4+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.5+ |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 17 | 703 | (2.3+ | 1.7−) |
| 2004 03 15 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | (1.8+ | 2.1−) |
| 2004 03 17 | 291 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.3+ |
| 2004 03 17 | 291 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.9− |
| 2004 03 17 | 291 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.5+ |
| 2004 03 23 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2004 03 29 | 291 | 0.0 | 0.3+ | 2006 10 03 | 691 | 0.3+ | 0.1− | | | | |

### 2004 EV$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.18776 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21143511 | $\omega$ | 183.54977 | −0.96155277 | | +0.27079178 | |
| $a$ | 2.7905168 | $\Omega$ | 12.45276 | −0.24645231 | | −0.77748901 | |
| $e$ | 0.0930774 | $i$ | 12.23445 | −0.12115088 | | −0.56761136 | |
| $P$ | 4.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 0.6+ | 0.4− | 2004 03 22 | 704 | 0.4− | 0.9+ | 2004 04 21 | 691 | 0.2+ | 0.1− |
| 2004 02 25 | 704 | 0.9+ | 0.2− | 2004 03 25 | 704 | 0.2+ | 0.1+ | 2005 07 04 | E12 | 0.2− | 0.9+ |
| 2004 02 25 | 704 | 0.3+ | 0.7− | 2004 03 25 | 704 | 1.2+ | 0.5− | 2005 07 04 | E12 | (0.2− | 3.0+) |
| 2004 02 25 | 704 | 0.2+ | 0.9− | 2004 03 25 | 704 | 0.6+ | 0.6− | 2005 07 04 | E12 | (0.6− | 2.1+) |
| 2004 02 25 | 704 | 0.4+ | 1.3− | 2004 03 26 | 691 | 0.3− | 0.1+ | 2005 07 04 | E12 | (0.8+ | 4.1+) |
| 2004 03 11 | 644 | 0.2+ | 0.2+ | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.4+ |
| 2004 03 11 | 644 | 0.1− | 0.4+ | 2004 03 26 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2004 03 11 | 644 | 0.3+ | 0.4+ | 2004 03 26 | 704 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.5+ |
| 2004 03 15 | 703 | 0.7+ | 0.0 | 2004 03 26 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2004 03 15 | 704 | 0.1+ | 0.1+ | 2004 03 26 | 704 | 0.0 | 0.6− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2004 03 15 | 703 | 0.1+ | 0.7− | 2004 03 26 | 704 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2004 03 15 | 704 | 0.4+ | 0.0 | 2004 03 26 | 704 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2004 03 15 | 703 | 0.1− | 1.0+ | 2004 03 27 | 704 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2004 03 15 | 704 | 0.4+ | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2004 03 15 | 703 | 0.6− | 0.5− | 2004 03 27 | 704 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 704 | 0.8+ | 0.4+ | 2004 03 27 | 704 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2004 03 15 | 704 | 0.1− | 1.1+ | 2004 03 27 | 704 | 1.2+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2004 03 28 | 704 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2004 03 18 | 691 | 0.3− | 0.0 | 2004 03 28 | 704 | 0.2− | 0.9− | 2006 10 03 | 691 | 0.0 | 0.3− |
| 2004 03 18 | 691 | 0.2− | 0.2+ | 2004 03 28 | 704 | 0.3+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.1− |
| 2004 03 20 | 699 | 0.9− | 0.3− | 2004 03 28 | 704 | 1.2− | 1.3− | 2006 10 03 | 691 | 0.0 | 0.1+ |
| 2004 03 20 | 699 | 0.1+ | 1.0+ | 2004 04 12 | 699 | 0.3+ | 1.5+ | 2006 10 17 | 703 | 1.5− | 0.3+ |
| 2004 03 20 | 699 | 0.0 | 0.9− | 2004 04 12 | 699 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2004 03 20 | 704 | 0.1+ | 0.3+ | 2004 04 12 | 699 | 0.4− | 0.5+ | 2006 10 17 | 703 | 1.4− | 1.1− |
| 2004 03 20 | 699 | 0.0 | 0.7+ | 2004 04 12 | 699 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 1.3+ | 0.5− |
| 2004 03 20 | 704 | 0.5− | 0.3− | 2004 04 19 | 704 | 0.8+ | 1.2+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2004 03 20 | 704 | 0.3− | 0.4− | 2004 04 19 | 704 | 1.0+ | 0.7− | 2006 10 19 | G96 | 0.5− | 0.4− |
| 2004 03 20 | 704 | 0.1− | 0.4+ | 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2004 03 22 | 704 | 0.2− | 0.3+ | 2004 04 21 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2004 03 22 | 704 | 0.4+ | 0.4− | 2004 04 21 | 691 | 0.0 | 0.1+ | | | | |

### 2004 EN$_6$ = 2006 SH$_{172}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.31546 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18222811 | $\omega$ | 305.30822 | +0.21399833 | | +0.97639035 | |
| $a$ | 3.0812420 | $\Omega$ | 336.99541 | −0.86999983 | | +0.17680361 | |
| $e$ | 0.0853445 | $i$ | 4.31998 | −0.44419028 | | +0.12410625 | |
| $P$ | 5.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.2− | 0.5− | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2004 03 12 | 644 | 0.2− | 0.4− | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.3− |
| 2004 03 12 | 644 | 0.1+ | 0.6− | 2006 09 17 | 691 | 0.6− | 0.4− | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2004 03 15 | 703 | 0.2− | 1.0+ | 2006 09 17 | 691 | 0.2+ | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.4− |
| 2004 03 15 | 703 | (3.9− | 2.3−) | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | (0.7− | 1.9−) |
| 2004 03 15 | 703 | 1.0+ | 1.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | (2.1+ | 2.5−) |
| 2004 03 15 | 703 | 0.9+ | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | (2.1− | 2.2−) |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | (0.9− | 3.8−) |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.3+ | | | | |

### 2004 EV$_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.67702 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18022551 | $\omega$ | 224.84067 | −0.24468357 | | +0.96943045 | |
| $a$ | 3.1040249 | $\Omega$ | 31.00973 | −0.87933837 | | −0.21391719 | |
| $e$ | 0.1676021 | $i$ | 2.03465 | −0.40852660 | | −0.12018340 | |
| $P$ | 5.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 07 | 699 | 1.0+ | 1.2+ | 2004 03 19 | 704 | 0.6+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 1999 05 07 | 699 | 0.4− | 0.8+ | 2004 03 19 | 704 | 0.8+ | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 1999 05 07 | 699 | 0.2+ | 0.3+ | 2004 03 19 | 704 | 0.4− | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2001 12 08 | 691 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.7+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 12 08 | 691 | 0.3+ | 0.1− | 2004 03 20 | 699 | 0.8− | 1.5− | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2001 12 08 | 691 | 0.1− | 0.2+ | 2004 03 20 | 699 | 0.2+ | 0.5+ | 2006 10 16 | G96 | 0.4− | 0.0 |
| 2004 02 23 | 704 | 0.2+ | 0.7+ | 2004 03 20 | 699 | 0.7− | 1.0+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2004 02 23 | 704 | 0.0 | 0.7− | 2004 03 20 | 699 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2004 02 23 | 704 | (2.0− | 0.2+) | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 1.5− | 1.4− | 2004 03 23 | 704 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2004 03 12 | 644 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 03 12 | 644 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 04 21 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 1.4− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 04 21 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2004 03 15 | 703 | 0.6− | 0.7+ | 2004 04 21 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2004 03 15 | 703 | 0.2+ | 1.0− | 2006 09 14 | 691 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 1.0− |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2004 03 15 | 703 | 0.1− | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.5+ | 2006 11 22 | G96 | 0.5+ | 0.4+ |
| 2004 03 15 | 703 | 0.0 | 0.5− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2004 03 19 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.4+ | | | | |

### 2004 ES$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.01525 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23825844 | $\omega$ | 302.15856 | | −0.36230880 | | −0.93092313 |
| $a$ | 2.5769373 | $\Omega$ | 168.79652 | | +0.91485303 | | −0.36462330 |
| $e$ | 0.0622834 | $i$ | 13.68998 | | +0.17825897 | | −0.02078383 |
| $P$ | 4.14 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.0 | 0.0 | 2004 03 21 | 699 | 1.0+ | 0.3− | 2004 04 21 | 691 | 0.1− | 0.2+ |
| 2000 04 27 | 699 | 0.0 | 0.8+ | 2004 03 21 | 699 | 0.3+ | 0.5+ | 2004 04 21 | 691 | 0.0 | 0.1− |
| 2000 04 27 | 699 | 0.5+ | 0.0 | 2004 03 22 | 704 | 1.1− | 0.6− | 2004 04 25 | 699 | 0.9+ | 1.5− |
| 2000 04 27 | 699 | 0.4− | 0.5+ | 2004 03 22 | 704 | 0.9+ | 0.2− | 2004 04 25 | 699 | 1.0− | 0.2− |
| 2004 02 23 | 704 | 0.7− | 0.5+ | 2004 03 22 | 704 | 0.7+ | 0.0 | 2004 04 25 | 699 | 0.5+ | 0.2− |
| 2004 02 23 | 704 | 0.0 | 0.7− | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2004 04 25 | 699 | 1.1− | 1.2− |
| 2004 02 23 | 704 | 0.7− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.4+ |
| 2004 02 23 | 704 | 1.2+ | 0.7− | 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2004 03 12 | 644 | 0.4− | 0.2− | 2004 03 22 | 704 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2004 03 12 | 644 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 2004 03 12 | 644 | 0.1+ | 0.3− | 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 703 | (2.1− | 0.7−) |
| 2004 03 15 | 683 | (0.8+ | 1.8+) | 2004 03 22 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.7− | 0.7− |
| 2004 03 15 | 683 | (1.5+ | 0.8+) | 2004 03 22 | 704 | (2.0+ | 0.6+) | 2006 10 16 | 703 | 1.2+ | 1.1+ |
| 2004 03 15 | 683 | 0.6− | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2004 03 15 | 703 | 0.4− | 0.1+ | 2004 03 22 | 704 | 1.2+ | 0.7− | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 2004 03 15 | 703 | 0.6− | 0.4+ | 2004 03 22 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.7− | 0.4+ |
| 2004 03 15 | 703 | 1.0− | 0.5+ | 2004 03 22 | 704 | (2.1+ | 0.3+) | 2006 10 17 | 703 | 0.1+ | 0.9+ |
| 2004 03 15 | 703 | 0.3− | 0.1+ | 2004 03 24 | 699 | (1.5− | 0.1−) | 2006 10 28 | 703 | 0.1− | 0.6+ |
| 2004 03 16 | 704 | 1.2− | 1.4− | 2004 03 24 | 699 | 1.4− | 0.4− | 2006 10 28 | 703 | (0.2− | 1.7−) |
| 2004 03 16 | 683 | 0.4− | 0.6+ | 2004 03 24 | 699 | 0.6− | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.5− |
| 2004 03 16 | 704 | (1.9+ | 0.7−) | 2004 03 24 | 699 | 0.2+ | 0.7− | 2006 10 28 | 703 | (0.9− | 2.8−) |
| 2004 03 16 | 683 | 0.5+ | 0.9+ | 2004 03 30 | 703 | 1.0− | 0.2− | 2006 11 08 | 644 | 0.4− | 0.1− |
| 2004 03 16 | 704 | 0.8+ | 0.3+ | 2004 03 30 | 703 | 0.6− | 0.6+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2004 03 16 | 683 | 0.9+ | 0.1− | 2004 03 30 | 703 | 0.7− | 0.8+ | 2006 11 08 | 644 | 0.3− | 0.3− |
| 2004 03 16 | 704 | 0.7− | 0.3+ | 2004 03 30 | 703 | 1.0+ | 0.7+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2004 03 20 | 704 | 0.6+ | 0.2− | 2004 04 10 | 644 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2004 03 20 | 704 | 1.1+ | 0.2− | 2004 04 10 | 644 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2004 03 20 | 704 | 0.4+ | 0.1− | 2004 04 10 | 644 | 0.3+ | 0.3+ | 2006 11 21 | 568 | 0.1− | 0.1− |
| 2004 03 20 | 704 | 0.7+ | 0.1+ | 2004 04 16 | 691 | 0.3− | 0.4− | 2006 11 21 | 568 | 0.1− | 0.1− |
| 2004 03 20 | 704 | 0.6+ | 0.1− | 2004 04 16 | 691 | 0.1+ | 0.1− | 2006 11 21 | 568 | 0.1− | 0.0 |
| 2004 03 21 | 699 | 0.0 | 0.2+ | 2004 04 16 | 691 | 0.1− | 0.1− | | | | |
| 2004 03 21 | 699 | 0.3− | 0.2+ | 2004 04 21 | 691 | 0.1+ | 0.2+ | | | | |

### 2004 EN$_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.02726 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18584932 | $\omega$ | 268.61476 | | −0.15659901 | | +0.98762926 |
| $a$ | 3.0410862 | $\Omega$ | 352.36146 | | −0.88029204 | | −0.14327720 |
| $e$ | 0.1487258 | $i$ | 3.48257 | | −0.44784225 | | −0.06371883 |
| $P$ | 5.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.1− | 2006 11 15 | 691 | 0.5+ | 0.3− |
| 2004 03 13 | 644 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.7+ | 1.3− | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2004 03 13 | 644 | 0.0 | 0.2+ | 2004 03 27 | 704 | 1.3+ | 0.4− | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2004 03 13 | 644 | 0.2+ | 0.2+ | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2004 03 13 | 644 | 0.2+ | 0.2+ | 2004 03 31 | 291 | 0.6− | 0.3+ | 2006 11 18 | 691 | 0.4− | 0.0 |
| 2004 03 13 | 644 | 0.2+ | 0.1+ | 2004 03 31 | 291 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.3+ | 0.5− |
| 2004 03 15 | 703 | 0.6+ | 1.2− | 2004 03 31 | 291 | 0.2− | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2004 03 15 | 703 | 0.5− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 03 15 | 703 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.4+ | 0.1+ |
| 2004 03 15 | 703 | 0.0 | 0.7− | 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2004 03 18 | 704 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.3+ | 0.2− |
| 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.6+ | 0.3− |
| 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2004 03 18 | 704 | 0.0 | 1.2− | 2006 11 15 | 691 | 0.3− | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.8+ |

### 2004 EO$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.56545 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27284327 | $\omega$ | 345.63797 | | −0.96367478 | | −0.26707746 |
| $a$ | 2.3542932 | $\Omega$ | 178.87081 | | +0.24856367 | | −0.89787028 |
| $e$ | 0.1496332 | $i$ | 2.13178 | | +0.09770881 | | −0.34999798 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.5+ | 0.4− | 2004 03 23 | 704 | 0.2− | 0.2− | 2004 04 14 | 185 | 0.8− | 0.0 |
| 2004 02 26 | 704 | 0.3+ | 0.0 | 2004 03 23 | 704 | 0.5− | 0.5− | 2004 04 15 | 699 | 0.7− | 0.5+ |
| 2004 02 26 | 704 | 0.0 | 0.5+ | 2004 03 23 | 704 | 0.6− | 0.2− | 2004 04 15 | 699 | 0.5+ | 0.4+ |
| 2004 02 26 | 704 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.2− | 0.2− | 2004 04 15 | 699 | 0.9− | 0.0 |
| 2004 02 26 | 704 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.2− | 2004 04 15 | 699 | 0.6+ | 0.4− |
| 2004 03 14 | 185 | 0.9− | 0.2+ | 2004 03 26 | 691 | 0.1− | 0.1− | 2004 04 16 | 185 | 0.4− | 0.1+ |
| 2004 03 14 | 185 | 0.0 | 0.4− | 2004 03 26 | 691 | 0.0 | 0.0 | 2004 04 16 | 185 | 0.7+ | 0.1− |
| 2004 03 14 | 185 | 0.1+ | 0.8− | 2004 03 27 | 704 | 0.7+ | 0.6+ | 2004 04 21 | 704 | 1.0+ | 0.2+ |
| 2004 03 15 | 185 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.0 | 0.8− | 2004 04 21 | 704 | 0.9+ | 1.1+ |
| 2004 03 15 | 185 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.3− | 0.1+ | 2004 04 21 | 704 | (1.0+ | 1.7+) |
| 2004 03 15 | 185 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.7+ | 2004 04 21 | 704 | 0.4− | 1.3+ |
| 2004 03 16 | 185 | (0.2− | 2.1−) | 2004 03 27 | 704 | 0.5+ | 0.3+ | 2004 04 21 | 185 | 0.4− | 0.7+ |
| 2004 03 16 | 185 | 0.5− | 0.1+ | 2004 03 27 | 185 | 0.4− | 0.7− | 2004 04 21 | 185 | 0.5− | 0.3+ |
| 2004 03 16 | 185 | 0.4− | 0.6− | 2004 03 27 | 185 | 0.9− | 0.6− | 2004 04 22 | 691 | 0.4− | 0.3+ |
| 2004 03 18 | 704 | 0.9+ | 0.6− | 2004 03 29 | 185 | 0.3− | 0.3− | 2004 04 22 | 691 | 0.5+ | 0.1− |
| 2004 03 18 | 704 | 0.9+ | 0.0 | 2004 03 29 | 185 | 0.1+ | 0.0 | 2004 04 22 | 691 | 0.3− | 0.0 |
| 2004 03 18 | 704 | 0.5+ | 0.2+ | 2004 04 11 | 644 | 0.3− | 0.4+ | 2004 04 25 | 185 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 1.1+ | 0.7+ | 2004 04 11 | 644 | 0.2− | 0.4+ | 2004 04 25 | 185 | 0.2− | 0.2− |
| 2004 03 18 | 704 | 0.7+ | 0.3+ | 2004 04 11 | 644 | 0.2− | 0.2+ | 2004 05 11 | 185 | 0.6+ | 0.4− |
| 2004 03 19 | 704 | 1.4+ | 1.3− | 2004 04 12 | 699 | 0.1− | 1.4+ | 2004 05 11 | 185 | 0.6+ | 0.5− |
| 2004 03 19 | 704 | 0.7+ | 0.3+ | 2004 04 12 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.2+ |
| 2004 03 19 | 704 | 0.8− | 0.8+ | 2004 04 12 | 699 | 0.3+ | 1.3+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2004 03 19 | 704 | 0.4+ | 0.1− | 2004 04 12 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2004 03 19 | 704 | 0.1+ | 0.1− | 2004 04 12 | 699 | 1.0+ | 0.9− | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2004 03 22 | 704 | 0.5+ | 0.4− | 2004 04 12 | 699 | 0.4+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2004 03 22 | 704 | 0.1+ | 0.8− | 2004 04 12 | 691 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2004 03 22 | 704 | 0.1+ | 1.1− | 2004 04 12 | 185 | 0.1− | 0.7+ | 2006 11 18 | 691 | 0.1− | 0.4− |
| 2004 03 22 | 704 | 0.1− | 0.1+ | 2004 04 12 | 185 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2004 03 22 | 704 | 0.4− | 0.5− | 2004 04 13 | 644 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.7− | 1.2+ |
| 2004 03 22 | 185 | 0.8− | 0.5− | 2004 04 13 | 644 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2004 03 22 | 185 | 0.7− | 0.7− | 2004 04 13 | 644 | 0.1− | 0.5+ | | | | |
| 2004 03 23 | 704 | 0.5− | 0.2− | 2004 04 14 | 185 | 1.0− | 0.1− | | | | |

### 2004 EA$_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.18418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22076690 | $\omega$ | 26.30253 | | +0.99405549 | | −0.09241625 |
| $a$ | 2.7113156 | $\Omega$ | 338.76275 | | +0.04818321 | | +0.84749660 |
| $e$ | 0.0897275 | $i$ | 9.14297 | | +0.09763227 | | +0.52269374 |
| $P$ | 4.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.7+ | 0.0 | 2004 03 16 | 599 | 0.3+ | 0.1+ | 2006 09 27 | 699 | 0.3+ | 0.1− |
| 2002 12 06 | 704 | 0.7+ | 1.2− | 2004 03 16 | 599 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.6− | 0.9+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.4− | 1.0− |
| 2002 12 06 | 704 | 0.6− | 1.6− | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.3− | 1.0− |
| 2002 12 06 | 704 | (0.6− | 1.8−) | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.3+ | 0.7+ | 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1− | | |
| 2004 02 26 | 704 | 0.6− | 0.3+ | 2006 09 16 | 703 | 0.1− | 1.2+ | 2006 10 11 | 644 | 0.2− | 0.2− | | |
| 2004 02 26 | 704 | (1.8+ | 0.7−) | 2006 09 16 | 703 | 0.8+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2− | | |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.1+ | 1.1+ | 2006 10 11 | 644 | 0.3− | 0.2+ | | |
| 2004 03 12 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 0.4− | 0.2− | | |
| 2004 03 12 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.2− | 1.2+ | 2006 10 17 | 703 | 0.5− | 0.0 | | |
| 2004 03 15 | 599 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | (0.4− | 2.2−) | | |
| 2004 03 15 | 599 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.7− | 0.4+ | 2006 10 17 | 703 | 0.9+ | 0.8− | | |
| 2004 03 15 | 599 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2004 03 15 | 599 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2004 03 15 | 599 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.9− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.4− | | |
| 2004 03 15 | 599 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2004 03 15 | 599 | 0.5+ | 0.1− | 2006 09 27 | 699 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2004 03 16 | 599 | 0.5+ | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2004 03 16 | 599 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.3+ | | | | | | |

**2004 EG$_{10}$ = 2006 TT$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 238.20298 | | (2000.0) | | | |
| $n$ | 0.25914922 | $\omega$ | 257.74407 | | −0.98912161 | −0.14128740 |
| $a$ | 2.4365170 | $\Omega$ | 274.12325 | | +0.14580298 | −0.90477709 |
| $e$ | 0.1210077 | $i$ | 2.35260 | | +0.01949197 | −0.40176645 |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 18 | 691 | 0.2+ | 0.2− | 2004 03 18 | 704 | 0.6+ | 1.1+ | 2006 10 17 | 691 | 0.3+ | 0.6− | | |
| 1999 12 18 | 691 | 0.3− | 0.3− | 2004 03 18 | 704 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.6+ | 0.1+ | | |
| 1999 12 18 | 691 | 0.2− | 0.4− | 2004 03 20 | 704 | 0.2+ | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.5+ | | |
| 2004 01 30 | 291 | 0.2− | 0.4+ | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.5+ | 0.1− | | |
| 2004 01 30 | 291 | 0.1− | 0.2+ | 2004 03 20 | 704 | 1.0+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.4+ | | |
| 2004 01 30 | 291 | 0.2− | 0.2+ | 2004 03 20 | 704 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2+ | | |
| 2004 03 14 | 703 | (1.4− | 1.6−) | 2004 03 20 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2004 03 14 | 703 | 0.5+ | 1.4− | 2004 03 20 | 704 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.1− | | |
| 2004 03 14 | 703 | 0.4+ | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.5− | 2006 10 21 | 691 | 0.3− | 0.1− | | |
| 2004 03 14 | 703 | 0.1− | 0.5+ | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.7− | 0.1+ | | |
| 2004 03 15 | 599 | 0.1− | 0.3− | 2005 07 05 | G96 | 0.8+ | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.5− | | |
| 2004 03 15 | 599 | 0.1− | 0.1+ | 2005 07 05 | G96 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 2004 03 15 | 599 | 0.0 | 0.2+ | 2005 07 05 | G96 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.1+ | | |
| 2004 03 15 | 599 | 0.2− | 0.2− | 2005 07 05 | G96 | 0.8− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.5+ | | |
| 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1+ | | |
| 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.4+ | | |

**2004 EL$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.12442 | | (2000.0) | | | |
| $n$ | 0.17997735 | $\omega$ | 223.14191 | | −0.88363592 | +0.46624455 |
| $a$ | 3.1068777 | $\Omega$ | 344.48863 | | −0.37463293 | −0.75857199 |
| $e$ | 0.0356617 | $i$ | 9.13743 | | −0.28078058 | −0.45517530 |
| $P$ | 5.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.6− | 0.9+ | 2004 03 18 | 704 | 0.1+ | 0.2− | 2004 04 01 | 291 | 0.3+ | 0.8+ | | |
| 2001 09 28 | 644 | 0.3− | 0.8+ | 2004 03 18 | 704 | 0.0 | 0.2+ | 2004 04 01 | 291 | 0.4+ | 0.2+ | | |
| 2001 09 28 | 644 | 0.6− | 1.0+ | 2004 03 18 | 704 | 0.3− | 0.1− | 2004 04 01 | 291 | 0.5+ | 0.5− | | |
| 2004 02 17 | 291 | 0.1− | 0.4+ | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 08 18 | 644 | 0.4− | 0.0 | | |
| 2004 02 17 | 291 | 0.2+ | 0.3+ | 2004 03 18 | 691 | 0.2− | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.3+ | | |
| 2004 02 17 | 291 | 0.2+ | 0.4+ | 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.2+ | | |
| 2004 02 26 | 704 | 0.8+ | 0.2+ | 2004 03 23 | 704 | 1.4+ | 1.0− | 2006 08 28 | 691 | 0.1− | 0.7+ | | |
| 2004 02 26 | 704 | 0.8+ | 0.4+ | 2004 03 23 | 704 | 0.3− | 1.3+ | 2006 08 28 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.5+ | 0.3− | 2004 03 23 | 704 | 0.8+ | 0.8+ | 2006 08 28 | 691 | 0.1− | 0.4+ | | |
| 2004 02 26 | 704 | 0.1− | 0.7− | 2004 03 23 | 704 | 0.6− | 1.0+ | 2006 08 28 | 703 | 0.8− | 0.3+ | | |
| 2004 02 26 | 704 | 0.1− | 0.3− | 2004 03 28 | 691 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.6− | | |
| 2004 02 26 | 695 | 0.0 | 0.2− | 2004 03 28 | 691 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.2− | 0.3+ | | |
| 2004 02 26 | 695 | 0.1− | 0.2− | 2004 03 28 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3− | 0.3− | | |
| 2004 03 14 | 691 | 0.0 | 0.2− | 2004 03 30 | 291 | 0.9− | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.0 | | |
| 2004 03 14 | 691 | 0.1+ | 0.1− | 2004 03 30 | 291 | 0.9− | 0.6+ | 2006 09 26 | G96 | 0.4− | 0.1+ | | |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2004 03 30 | 291 | 0.8− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.0 | | |
| 2004 03 15 | 599 | 0.6− | 0.4+ | 2004 03 30 | 291 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− | | |
| 2004 03 15 | 599 | 0.1+ | 0.4+ | 2004 03 30 | 291 | 0.4+ | 0.2− | 2006 10 16 | G96 | 0.4− | 0.3− | | |
| 2004 03 15 | 599 | 0.3+ | 0.2− | 2004 03 30 | 291 | 0.3+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.4− | | |
| 2004 03 15 | 599 | 0.0 | 0.2+ | 2004 03 30 | 291 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.3− | 0.3+ | | |
| 2004 03 18 | 704 | 0.0 | 0.3+ | 2004 03 30 | 291 | 0.4+ | 0.3− | 2006 10 16 | G96 | 0.4− | 0.1− | | |
| 2004 03 18 | 704 | 0.2+ | 0.0 | 2004 03 30 | 291 | 0.4+ | 0.4− | | | | | | |

**2004 EM$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 208.37930 | | (2000.0) | | | |
| $n$ | 0.23759934 | $\omega$ | 189.07568 | | −0.99849795 | +0.05440722 |
| $a$ | 2.5817007 | $\Omega$ | 354.03178 | | −0.04556070 | −0.88999619 |
| $e$ | 0.1504146 | $i$ | 3.56099 | | −0.03043148 | −0.45271032 |
| $P$ | 4.15 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.2+ | 0.5+ | 2004 03 16 | 599 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.1− | | |
| 2004 02 26 | 704 | 0.5+ | 0.7− | 2004 03 16 | 599 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.7+ | 0.2+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.1− | 2004 03 16 | 599 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.6− | 0.3+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.7+ | 2004 03 18 | 704 | 0.8+ | 1.1+ | 2006 10 20 | 691 | 0.1− | 0.5− | | |
| 2004 02 26 | 704 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | | |
| 2004 03 15 | 704 | 0.3+ | 0.9+ | 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2− | | |
| 2004 03 15 | 704 | 0.1− | 1.0− | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.4− | | |
| 2004 03 15 | 704 | 0.5+ | 0.3+ | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1− | | |
| 2004 03 15 | 704 | 0.6+ | 0.1+ | 2004 03 18 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.5− | | |
| 2004 03 15 | 599 | 0.3− | 0.1− | 2004 03 21 | 291 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.4+ | | |
| 2004 03 15 | 599 | 0.1− | 0.2+ | 2004 03 21 | 291 | 0.1− | 0.6− | 2006 10 29 | 691 | 0.1+ | 0.4+ | | |
| 2004 03 15 | 599 | 0.0 | 0.1− | 2004 03 21 | 291 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.3− | | |
| 2004 03 15 | 599 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.3+ | 0.4+ | | |
| 2004 03 16 | 599 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | | | | | | |

**2004 EN$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.88910 | | (2000.0) | | | |
| $n$ | 0.17599052 | $\omega$ | 57.19398 | | −0.47192549 | +0.88158565 |
| $a$ | 3.1536236 | $\Omega$ | 184.67794 | | −0.84327679 | −0.45455687 |
| $e$ | 0.0983628 | $i$ | 6.79360 | | −0.25723645 | −0.12721949 |
| $P$ | 5.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.2+ | 1.7+ | 2004 03 21 | 291 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.0 | | |
| 2004 02 26 | 704 | 0.1− | 0.3+ | 2004 03 21 | 291 | 0.7+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.0 | | |
| 2004 02 26 | 704 | 0.3+ | 1.0+ | 2004 03 27 | 704 | 1.2+ | 0.3− | 2006 09 19 | 691 | 0.4− | 0.0 | | |
| 2004 02 26 | 704 | 0.8+ | 0.6+ | 2004 03 27 | 704 | 0.3+ | 0.8− | 2006 09 23 | 691 | 0.1− | 0.3+ | | |
| 2004 03 14 | 012 | 1.4− | 0.5− | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.1+ | | |
| 2004 03 14 | 012 | 0.5− | 0.4+ | 2004 03 27 | 704 | 0.3− | 0.5− | 2006 09 23 | 691 | 0.0 | 0.2+ | | |
| 2004 03 14 | 012 | (2.2− | 0.1+) | 2004 03 27 | 704 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.2− | | |
| 2004 03 15 | 703 | 0.2− | 0.3− | 2004 04 12 | 699 | (3.0− | 0.7+) | 2006 09 25 | G96 | 0.2− | 0.0 | | |
| 2004 03 15 | 703 | 0.5− | 1.0+ | 2004 04 12 | 644 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.1− | | |
| 2004 03 15 | 703 | 0.3+ | 0.1− | 2004 04 12 | 699 | 0.7− | 1.2− | 2006 09 25 | G96 | 0.1+ | 0.1− | | |
| 2004 03 15 | 703 | 0.9− | 0.8+ | 2004 04 12 | 644 | 0.5+ | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.6+ | | |
| 2004 03 18 | 704 | 0.6+ | 0.3+ | 2004 04 12 | 699 | 0.2− | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.5+ | | |
| 2004 03 18 | 704 | 1.2+ | 1.2+ | 2004 04 12 | 644 | 0.5+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.3+ | | |
| 2004 03 18 | 704 | 0.7+ | 0.6+ | 2004 04 12 | 699 | 0.5− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.5+ | | |
| 2004 03 18 | 704 | (2.6+ | 0.3−) | 2004 04 22 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.8+ | | |
| 2004 03 18 | 704 | (0.5+ | 2.2+) | 2004 04 22 | 691 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.6+ | | |
| 2004 03 21 | 291 | 0.3− | 0.4+ | 2004 04 22 | 691 | 0.2− | 0.5+ | | | | | | |

**2004 ET$_{10}$ = 2006 WA$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.84574 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25858478 | $\omega$ | 104.80627 | | −0.92065625 | | +0.38903378 |
| $a$ | 2.4400613 | $\Omega$ | 98.09651 | | −0.36954432 | | −0.84185254 |
| $e$ | 0.1404389 | $i$ | 1.87096 | | −0.12581362 | | −0.37408156 |
| $P$ | 3.81 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 1.0− | 0.5− | 2004 03 19 | 704 | 0.1+ | 0.0 | 2004 03 31 | 691 | 0.0 | 0.2− |
| 2004 03 15 | 333 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.2− | 2004 03 31 | 691 | 0.3+ | 0.4+ |
| 2004 03 15 | 703 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.1+ | 0.3+ | 2004 04 25 | 691 | 0.0 | 0.1− |
| 2004 03 15 | 333 | 0.2− | 0.2+ | 2004 03 19 | 704 | 1.0+ | 0.4+ | 2004 04 25 | 691 | 0.2− | 0.2− |
| 2004 03 15 | 703 | 0.7− | 0.4− | 2004 03 20 | 699 | 0.5− | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.2+ |
| 2004 03 15 | 333 | 0.5+ | 0.4− | 2004 03 20 | 699 | 0.8+ | 0.5+ | 2006 11 11 | 691 | 0.3− | 0.2− |
| 2004 03 15 | 703 | 0.2− | 0.5+ | 2004 03 20 | 699 | 0.8− | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2004 03 16 | 704 | 0.2+ | 1.5− | 2004 03 20 | 699 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2004 03 16 | 333 | 1.0− | 0.2+ | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2004 03 16 | 704 | 0.2+ | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2004 03 16 | 333 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.8+ | 0.8+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2004 03 16 | 704 | 0.8+ | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2004 03 16 | 333 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 03 17 | 691 | 0.3− | 0.2− | 2004 03 28 | 704 | 0.8+ | 0.1− | 2006 11 27 | 691 | 0.4− | 0.3+ |
| 2004 03 17 | 691 | 0.0 | 0.3− | 2004 03 28 | 704 | 0.6− | 0.7− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2004 03 17 | 691 | 0.2− | 0.2− | 2004 03 28 | 704 | 0.4− | 0.3+ | | | | |
| 2004 03 19 | 704 | 0.4+ | 0.3+ | 2004 03 31 | 691 | 0.3− | 0.0 | | | | |

**2004 EA$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.83710 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24116705 | $\omega$ | 100.13658 | | −0.35585710 | | −0.93249583 |
| $a$ | 2.5561759 | $\Omega$ | 11.31314 | | +0.68554203 | | −0.30540264 |
| $e$ | 0.1075716 | $i$ | 18.35774 | | +0.63513609 | | −0.19282311 |
| $P$ | 4.09 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 1.1+ | 0.7+ | 2004 03 22 | 704 | 0.2+ | 0.3+ | 2004 04 25 | 691 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.6+ | 1.4+ | 2004 03 23 | 704 | 0.0 | 0.8+ | 2006 09 14 | 291 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.6+ | 1.4+ | 2004 03 23 | 704 | 0.4− | 0.4+ | 2006 09 14 | 291 | 0.2− | 0.2+ |
| 2000 04 05 | 704 | 0.7+ | 1.2+ | 2004 03 23 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 291 | 0.0 | 0.1+ |
| 2002 11 14 | 644 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.5+ | 0.2− | 2006 09 14 | 291 | 0.1− | 0.2+ |
| 2002 11 14 | 644 | 0.4+ | 0.1− | 2004 03 24 | 699 | 0.3+ | 0.8+ | 2006 09 14 | 291 | 0.1− | 0.0 |
| 2002 11 14 | 644 | 0.4+ | 0.7− | 2004 03 24 | 699 | 0.6+ | 0.1− | 2006 09 14 | 291 | 0.1− | 0.1+ |
| 2002 11 14 | 644 | 0.9+ | 0.1− | 2004 03 24 | 699 | 0.3− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.6+ |
| 2002 11 14 | 644 | 0.0 | 0.8− | 2004 03 24 | 699 | 0.5+ | 0.6+ | 2006 09 15 | 691 | 0.2− | 0.4+ |
| 2002 11 14 | 644 | 0.2+ | 0.1+ | 2004 03 28 | 704 | 1.4+ | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.6+ |
| 2004 03 15 | 333 | 0.5− | 0.4− | 2004 03 28 | 704 | 0.5− | 0.4− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2004 03 15 | 333 | 0.4+ | 0.5− | 2004 03 28 | 704 | 1.0+ | 0.9+ | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2004 03 15 | 333 | 0.9− | 0.0 | 2004 03 28 | 704 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.8− | 0.3+ |
| 2004 03 16 | 333 | 0.1+ | 0.6− | 2004 04 12 | 644 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2004 03 16 | 333 | 0.2− | 0.5− | 2004 04 12 | 644 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1− |
| 2004 03 16 | 333 | 0.0 | 0.4− | 2004 04 12 | 644 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.3+ | 0.8+ | 2004 04 13 | 644 | 0.5+ | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.2− |
| 2004 03 19 | 704 | 0.2+ | 0.0 | 2004 04 13 | 644 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.5− |
| 2004 03 19 | 704 | 0.4− | 0.0 | 2004 04 13 | 644 | 0.5+ | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.7+ |
| 2004 03 19 | 704 | 0.0 | 0.0 | 2004 04 15 | 691 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2004 03 19 | 704 | 0.6+ | 0.3+ | 2004 04 15 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 2004 03 20 | 691 | 0.5− | 0.1− | 2004 04 15 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | (1.5+ | 0.7+) |
| 2004 03 20 | 691 | 0.4− | 0.3− | 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.9− |
| 2004 03 20 | 691 | 0.6− | 0.5− | 2004 04 22 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.4− |
| 2004 03 22 | 704 | 0.2− | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2004 03 22 | 704 | 0.1+ | 0.6+ | 2004 04 25 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2004 03 22 | 704 | 1.0+ | 0.5+ | 2004 04 25 | 691 | 0.3+ | 0.3+ | | | | |

**2004 ED$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.17264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23791914 | $\omega$ | 255.27147 | | +0.51291642 | | −0.85089687 |
| $a$ | 2.5793867 | $\Omega$ | 162.42853 | | +0.85809121 | | +0.51196669 |
| $e$ | 0.0916660 | $i$ | 22.09168 | | −0.02441765 | | +0.11774812 |
| $P$ | 4.14 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.1− | 0.6− | 2004 03 21 | 608 | 0.3− | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2004 02 23 | 704 | 0.2− | 0.3− | 2004 03 21 | 608 | 0.6− | 0.6+ | 2006 09 25 | 703 | 0.6− | 0.6+ |
| 2004 02 23 | 704 | 0.4+ | 0.6− | 2004 03 21 | 608 | 0.2+ | 0.6+ | 2006 09 25 | 703 | (0.2+ | 1.8−) |
| 2004 02 23 | 704 | 0.5+ | 0.1− | 2004 03 22 | 704 | 1.0− | 0.3+ | 2006 09 25 | 703 | 0.9+ | 0.9+ |
| 2004 02 23 | 704 | (1.6− | 1.5−) | 2004 03 22 | 704 | 0.3− | 0.3+ | 2006 10 04 | 703 | 0.2+ | 0.7− |
| 2004 02 25 | 704 | 0.9− | 0.4+ | 2004 03 22 | 704 | 0.3− | 0.0 | 2006 10 04 | 703 | 0.1+ | 0.7− |
| 2004 02 25 | 704 | 1.3+ | 0.5+ | 2004 03 22 | 704 | 0.1− | 0.6− | 2006 10 04 | 703 | 0.9− | 0.4− |
| 2004 02 25 | 704 | 1.2+ | 0.5+ | 2004 03 22 | 704 | 0.2− | 0.6+ | 2006 10 04 | 703 | 0.7+ | 0.7− |
| 2004 02 25 | 704 | (1.8+ | 0.1−) | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 2004 03 15 | 704 | 0.0 | 0.8+ | 2004 03 23 | 704 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.0 |
| 2004 03 15 | 704 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.6+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.4+ |
| 2004 03 15 | 704 | 0.0 | 0.0 | 2004 03 23 | 704 | 0.6+ | 0.3− | 2006 10 21 | 703 | 1.3− | 0.6+ |
| 2004 03 15 | 704 | 0.2− | 0.3− | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 0.8+ | 1.3− |
| 2004 03 15 | 704 | 0.1+ | 0.3+ | 2004 04 09 | 644 | 0.1− | 0.1+ | 2006 10 31 | 703 | 0.6+ | 0.0 |
| 2004 03 16 | 608 | 1.3− | 0.9− | 2004 04 09 | 644 | 0.2− | 0.1+ | 2006 10 31 | 703 | 0.6− | 0.2+ |
| 2004 03 16 | 608 | 0.7− | 1.0− | 2004 04 09 | 644 | 0.1− | 0.1+ | 2006 10 31 | 703 | 1.2+ | 0.7+ |
| 2004 03 16 | 608 | 0.6− | 0.6− | 2004 04 11 | 049 | 0.4+ | 0.9− | 2006 11 18 | 703 | 0.6− | 1.1+ |
| 2004 03 20 | 704 | 0.8+ | 0.3+ | 2004 04 11 | 049 | (0.2+ | 1.9−) | 2006 11 18 | 703 | 0.4− | 1.0− |
| 2004 03 20 | 704 | 0.3+ | 0.4− | 2004 04 11 | 049 | (0.2− | 1.8−) | 2006 11 18 | 703 | 0.3+ | 0.2+ |
| 2004 03 20 | 704 | 0.3+ | 0.5− | 2006 09 19 | 703 | 0.3+ | 0.3− | 2006 11 18 | 703 | 0.5− | 0.0 |
| 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.7− | 0.0 | | | | |
| 2004 03 20 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.4+ | 0.2− | | | | |

**2004 EW$_{11}$ = 2004 CX$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.65612 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17417787 | $\omega$ | 228.91324 | | −0.98892527 | | +0.10880947 |
| $a$ | 3.1754655 | $\Omega$ | 317.04878 | | −0.04530331 | | −0.86892639 |
| $e$ | 0.0516401 | $i$ | 8.51858 | | −0.14133092 | | −0.48283272 |
| $P$ | 5.66 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.7− | 0.1− | 2004 02 26 | 333 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.6+ | 0.2+ |
| 2001 08 27 | 699 | 0.2+ | 0.7+ | 2004 02 26 | 333 | 0.1− | 0.3+ | 2004 03 18 | 704 | 1.2+ | 0.6+ |
| 2001 08 27 | 699 | 0.1+ | 1.1+ | 2004 03 11 | 644 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.2+ | 0.6+ |
| 2001 08 27 | 699 | 0.9− | 0.7+ | 2004 03 11 | 644 | 0.4− | 0.2− | 2004 03 21 | 691 | 0.2− | 0.2+ |
| 2003 11 30 | 691 | 0.6− | 0.2− | 2004 03 11 | 644 | 0.1+ | 0.1+ | 2004 03 21 | 691 | 0.2− | 0.1+ |
| 2003 11 30 | 691 | 0.2− | 0.2− | 2004 03 11 | 644 | 0.5+ | 0.4+ | 2004 03 21 | 691 | 0.2− | 0.2+ |
| 2003 11 30 | 691 | 0.2− | 0.3+ | 2004 03 11 | 644 | 0.5+ | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.4+ |
| 2004 02 14 | 691 | 0.2+ | 0.2− | 2004 03 11 | 644 | 0.2+ | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.2+ |
| 2004 02 14 | 691 | 0.1+ | 0.2− | 2004 03 15 | 704 | (1.8+ | 0.6−) | 2006 10 20 | G96 | 0.1+ | 0.6+ |
| 2004 02 14 | 691 | 0.4+ | 0.1− | 2004 03 15 | 704 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.4+ |
| 2004 02 18 | 704 | 0.3− | 0.4− | 2004 03 15 | 704 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.7− | 0.4+ |
| 2004 02 18 | 704 | 0.5− | 0.5+ | 2004 03 15 | 704 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.5+ | 0.0 |
| 2004 02 18 | 704 | 0.3+ | 0.4+ | 2004 03 15 | 704 | 0.9+ | 0.6− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 0.5− | 0.5+ | 2004 03 18 | 704 | 0.5+ | 0.6+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2004 02 26 | 333 | 0.7+ | 1.0− | 2004 03 18 | 704 | 0.2+ | 0.5+ | | | | |

**2004 EK$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.09990 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23242820 | $\omega$ | 229.21699 | | +0.93569744 | | −0.33403399 |
| $a$ | 2.6198525 | $\Omega$ | 149.78246 | | +0.35116756 | | +0.91276561 |
| $e$ | 0.0641158 | $i$ | 13.03818 | | −0.03393586 | | +0.23511750 |
| $P$ | 4.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 1.0− | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2004 02 23 | 704 | 0.9+ | 0.4− | 2004 03 23 | 704 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2004 02 23 | 704 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2004 02 23 | 704 | 1.4+ | 0.3+ | 2004 03 25 | 704 | 0.4− | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2004 03 11 | 644 | 0.3− | 0.3+ | 2004 03 25 | 704 | 0.7+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2004 03 11 | 644 | 0.0 | 0.1+ | 2004 03 25 | 704 | 0.7+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2004 03 11 | 644 | 0.1+ | 0.1+ | 2004 03 25 | 704 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 2004 03 15 | 704 | 0.5− | 0.0 | 2004 03 26 | 703 | (2.3+ | 0.6−) | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2004 03 15 | 704 | 0.1+ | 0.1− | 2004 03 26 | 703 | 1.5− | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2004 03 15 | 704 | 0.7+ | 0.1− | 2004 03 26 | 703 | 0.9+ | 0.4− | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2004 03 19 | 644 | 0.2+ | 0.8− | 2004 03 26 | 703 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2004 03 19 | 644 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.5+ | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.4− |
| 2004 03 19 | 644 | 0.3− | 0.4− | 2006 09 25 | 699 | 1.0+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2004 03 20 | 704 | 0.5+ | 0.7− | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2004 03 20 | 704 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2004 03 20 | 704 | 1.2− | 0.9+ | 2006 09 26 | 703 | 0.3− | 0.1− | 2006 10 28 | 703 | 1.1− | 1.0− |
| 2004 03 20 | 704 | 0.9+ | 0.5− | 2006 09 26 | 703 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.9+ | 0.4+ |
| 2004 03 20 | 704 | 0.5+ | 0.6− | 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 10 28 | 703 | (2.4+ | 0.7+) |
| 2004 03 22 | 704 | 0.5+ | 0.7− | 2006 09 26 | 703 | 0.6− | 0.6− | 2006 10 31 | 703 | 1.2+ | 0.3+ |
| 2004 03 22 | 704 | 0.1− | 0.4− | 2006 09 29 | 699 | 1.4+ | 0.6+ | 2006 10 31 | 703 | 0.6− | 0.3+ |
| 2004 03 22 | 704 | 0.5+ | 0.3+ | 2006 09 29 | 699 | 1.1− | 0.3− | 2006 10 31 | 703 | 0.7+ | 0.7+ |
| 2004 03 22 | 704 | 0.5− | 0.0 | 2006 09 29 | 699 | 0.5− | 0.1− | 2006 10 31 | 703 | 0.0 | 0.0 |
| 2004 03 23 | 704 | 1.1− | 0.1− | 2006 09 29 | 699 | 0.9− | 1.1− | | | | |

### 2004 ET$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.82757 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17664165 | $\omega$ | 0.61740 | | −0.14368415 | | −0.98362122 |
| $a$ | 3.1458690 | $\Omega$ | 97.64743 | | +0.90749059 | | −0.17482500 |
| $e$ | 0.1841681 | $i$ | 6.30422 | | +0.39473496 | | +0.04388075 |
| $P$ | 5.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.0 | 0.8− | 2002 12 01 | 704 | 0.1+ | 0.6− | 2004 03 23 | 704 | 0.9+ | 0.3− |
| 2002 10 30 | 608 | 0.3− | 0.4− | 2002 12 01 | 704 | 0.9+ | 0.1+ | 2004 03 23 | 704 | 1.4+ | 0.0 |
| 2002 10 30 | 608 | 0.3− | 0.1− | 2004 03 11 | 644 | 0.2+ | 0.3− | 2004 03 23 | 704 | 1.2+ | 0.1+ |
| 2002 11 11 | 704 | 0.7+ | 0.7+ | 2004 03 11 | 644 | 0.2+ | 0.3− | 2004 03 26 | 691 | 0.0 | 0.4− |
| 2002 11 11 | 704 | 0.3− | 0.4+ | 2004 03 11 | 644 | 0.5+ | 0.5− | 2004 03 26 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.0 | 0.4+ | 2004 03 15 | 704 | 0.6+ | 0.6− | 2004 03 26 | 691 | 0.2− | 0.5+ |
| 2002 11 11 | 704 | 0.5− | 0.1+ | 2004 03 15 | 704 | 0.9− | 1.0+ | 2004 03 27 | 691 | 0.1− | 0.1+ |
| 2002 11 11 | 704 | 0.1− | 0.6+ | 2004 03 15 | 704 | 0.2− | 1.1+ | 2004 03 27 | 691 | 0.4− | 0.1− |
| 2002 12 01 | 704 | 0.2− | 0.4− | 2004 03 23 | 704 | 0.9+ | 0.5+ | 2004 03 27 | 691 | 0.4− | 0.1− |

### 2004 EM$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.74644 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20376455 | $\omega$ | 176.48805 | | −0.81681275 | | +0.56851643 |
| $a$ | 2.8601159 | $\Omega$ | 38.69790 | | −0.53304448 | | −0.67876954 |
| $e$ | 0.0963046 | $i$ | 9.01904 | | −0.22063662 | | −0.46482360 |
| $P$ | 4.84 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 11 | 644 | 0.2+ | 0.2− | 2004 03 23 | 704 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.5+ |
| 2004 03 11 | 644 | 0.6+ | 0.2+ | 2004 03 23 | 704 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.2+ |
| 2004 03 11 | 644 | 0.2− | 0.2+ | 2004 03 23 | 704 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2004 03 15 | 704 | 0.6− | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.1− |
| 2004 03 15 | 704 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 03 15 | 704 | 0.1− | 0.6− | 2004 03 28 | 703 | 1.0+ | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 704 | 0.1− | 0.3− | 2004 03 28 | 703 | (2.1+ | 0.7−) | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2004 03 15 | 704 | 0.5+ | 0.3− | 2004 03 28 | 703 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2004 03 20 | 691 | 0.3+ | 0.1+ | 2004 03 28 | 703 | 0.6− | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2004 03 20 | 691 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2004 03 20 | 691 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2004 03 20 | 704 | 1.0− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.9− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 0.8− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2004 03 20 | 704 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2004 03 20 | 704 | 1.1− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | | | | |
| 2004 03 20 | 704 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.2+ | | | | |

### 2004 EG$_{16}$ = 2006 UP$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.01425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25893673 | $\omega$ | 154.95467 | | −0.69362323 | | −0.72023005 |
| $a$ | 2.4378498 | $\Omega$ | 338.95564 | | +0.65491213 | | −0.62332091 |
| $e$ | 0.1458595 | $i$ | 1.98999 | | +0.29996154 | | −0.30453195 |
| $P$ | 3.81 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.0 | 0.3− | 2004 03 16 | 599 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.3− |
| 2004 03 12 | 644 | 0.2+ | 0.3− | 2004 03 20 | 291 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2004 03 12 | 644 | 0.3+ | 0.3− | 2004 03 20 | 291 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 2004 03 15 | 704 | 1.2+ | 0.7− | 2004 03 20 | 291 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.3− |
| 2004 03 15 | 704 | 1.0+ | 0.3− | 2004 03 23 | 704 | 0.8+ | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2004 03 15 | 704 | 0.6+ | 0.7+ | 2004 03 23 | 704 | 0.7+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2004 03 15 | 599 | 0.5− | 0.0 | 2004 03 23 | 704 | 1.1+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.5+ |
| 2004 03 15 | 599 | 0.7− | 0.8− | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.3− |
| 2004 03 15 | 599 | 0.1− | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 599 | 0.3− | 0.0 | 2006 10 03 | 691 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.3− | 0.2+ |
| 2004 03 16 | 599 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.6+ | 0.4− |

### 2004 EJ$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.20717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24296855 | $\omega$ | 175.33524 | | −0.47452513 | | +0.87704662 |
| $a$ | 2.5435250 | $\Omega$ | 66.32007 | | −0.81023007 | | −0.40192627 |
| $e$ | 0.0860462 | $i$ | 4.69338 | | −0.34402491 | | −0.26314349 |
| $P$ | 4.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 704 | 0.6− | 1.3+ | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2004 02 18 | 704 | 0.8− | 0.4+ | 2004 03 20 | 704 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2004 02 18 | 704 | 0.8+ | 0.3− | 2004 03 20 | 704 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2004 02 18 | 704 | 0.8+ | 0.7+ | 2004 03 20 | 704 | 0.9− | 0.4− | 2006 11 23 | 291 | 0.0 | 0.0 |
| 2004 03 12 | 644 | 0.1− | 0.1− | 2004 04 13 | 291 | 1.4+ | 0.4+ | 2006 11 23 | 291 | 0.1− | 0.1+ |
| 2004 03 12 | 644 | 0.2− | 0.1− | 2004 04 13 | 291 | 0.3− | 0.3− | 2006 11 23 | 291 | 0.1+ | 0.1+ |
| 2004 03 12 | 644 | 0.1− | 0.2− | 2004 04 13 | 291 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2004 03 15 | 704 | 1.5− | 0.8+ | 2006 10 27 | G96 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2004 03 15 | 704 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.6− |
| 2004 03 15 | 704 | 0.1− | 1.4− | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2004 03 15 | 704 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.4− | | | | |

### 2004 ER$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.18139 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28904405 | $\omega$ | 75.77943 | | −0.76686085 | | +0.63808643 |
| $a$ | 2.2654790 | $\Omega$ | 143.79582 | | −0.62468345 | | −0.71736302 |
| $e$ | 0.1749466 | $i$ | 6.71495 | | −0.14729232 | | −0.27970702 |
| $P$ | 3.41 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 291 | 0.2− | 0.2+ | 2004 03 15 | 704 | 0.7− | 0.2+ | 2004 04 15 | 704 | 0.4− | 0.5+ |
| 2002 11 06 | 291 | 0.1− | 0.0 | 2004 03 20 | 704 | 1.0+ | 0.2+ | 2004 04 15 | 704 | 0.3− | 0.5+ |
| 2002 11 06 | 291 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 1.1+ | 0.0 | 2004 04 15 | 704 | 0.2− | 0.3+ |
| 2004 02 19 | 704 | (2.1+ | 0.3+) | 2004 03 20 | 704 | 1.0+ | 0.1− | 2004 04 15 | 704 | 0.2+ | 0.9+ |
| 2004 02 19 | 704 | 1.1+ | 1.0− | 2004 03 20 | 704 | 1.1+ | 0.3− | 2004 04 15 | 704 | 0.2− | 0.4+ |
| 2004 02 19 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 704 | 1.1+ | 0.1+ | 2004 04 21 | 691 | 0.3− | 0.2+ |
| 2004 02 19 | 704 | 0.2− | 0.4+ | 2004 03 21 | 699 | 0.1+ | 0.1− | 2004 04 21 | 703 | 0.1+ | 0.1− |
| 2004 02 25 | 704 | 1.4+ | 0.2− | 2004 03 21 | 699 | 1.0− | 0.3+ | 2004 04 21 | 691 | 0.4− | 0.2+ |
| 2004 02 25 | 704 | 0.8+ | 0.4+ | 2004 03 21 | 699 | 0.3− | 0.1− | 2004 04 21 | 703 | 0.7+ | 0.6− |
| 2004 02 25 | 704 | 0.5+ | 0.3− | 2004 03 21 | 699 | 0.7− | 0.1− | 2004 04 21 | 703 | 1.3+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 0.3+ | 0.0 | 2004 03 22 | 704 | 0.3+ | 0.2+ | 2004 04 21 | 703 | 1.1+ | 1.0+ |
| 2004 02 25 | 704 | 0.5+ | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2004 04 21 | 691 | 0.3− | 0.2+ |
| 2004 02 29 | 683 | 0.8+ | 1.4− | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2004 04 25 | 699 | 0.2− | 0.3+ |
| 2004 02 29 | 683 | 0.4− | 0.3− | 2004 03 22 | 704 | 0.3+ | 0.0 | 2004 04 25 | 699 | 0.5− | 0.2+ |
| 2004 02 29 | 683 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.0 | 0.2+ | 2004 04 25 | 699 | 0.8− | 0.2+ |
| 2004 03 12 | 644 | 0.4− | 0.2− | 2004 03 28 | 703 | 0.2− | 0.2− | 2004 04 25 | 699 | 0.1+ | 0.2+ |
| 2004 03 12 | 644 | 0.5− | 0.5− | 2004 03 28 | 703 | 0.8+ | 1.1+ | 2005 10 07 | G96 | 0.2− | 0.4+ |
| 2004 03 12 | 644 | 0.7− | 0.2− | 2004 03 28 | 703 | 0.2+ | 0.3− | 2005 10 07 | G96 | 0.5− | 0.3+ |
| 2004 03 12 | 644 | 0.4− | 0.3− | 2004 03 28 | 703 | 0.3− | 0.6− | 2005 10 07 | G96 | 0.8+ | 0.9+ |
| 2004 03 12 | 644 | 0.6− | 0.1− | 2004 04 10 | 644 | 0.1− | 0.2+ | 2005 10 07 | G96 | 0.0 | 0.6+ |
| 2004 03 12 | 644 | 0.5− | 0.4− | 2004 04 10 | 644 | 0.3− | 0.2+ | 2005 10 07 | G96 | 0.7− | 0.3+ |
| 2004 03 15 | 704 | 0.3− | 0.4+ | 2004 04 10 | 644 | 0.3− | 0.1+ | 2005 10 07 | G96 | 0.3− | 0.3+ |
| 2004 03 15 | 704 | 0.1− | 0.0 | 2004 04 15 | 644 | 0.1− | 0.2+ | 2005 10 07 | G96 | 0.1+ | 0.1+ |
| 2004 03 15 | 704 | 0.3− | 0.0 | 2004 04 15 | 644 | 0.2− | 0.1+ | 2005 10 07 | G96 | 0.1− | 0.1+ |
| 2004 03 15 | 704 | 0.1− | 0.0 | 2004 04 15 | 644 | 0.2− | 0.0 | | | | |

**2004 EY**$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.14331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21065850 | $\omega$ | 149.28249 | | −0.98150850 | +0.16101950 | |
| $a$ | 2.7973709 | $\Omega$ | 40.39901 | | −0.19132555 | −0.84209031 | |
| $e$ | 0.1352109 | $i$ | 9.18991 | | +0.00596688 | −0.51473938 | |
| $P$ | 4.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 704 | 0.1+ | 1.1− | 2004 03 23 | 704 | 0.6+ | 0.4+ | 2004 05 17 | 704 | 0.4+ | 0.5+ |
| 2004 01 23 | 704 | 0.3+ | 0.3− | 2004 03 30 | 703 | 0.0 | 0.3− | 2004 05 17 | 704 | 0.1+ | 0.5+ |
| 2004 01 23 | 704 | 0.6+ | 0.4+ | 2004 03 30 | 703 | 0.0 | 0.3− | 2004 05 17 | 704 | 0.6+ | 0.6+ |
| 2004 01 23 | 704 | (0.5− | 1.6−) | 2004 03 30 | 703 | 0.8− | 1.0+ | 2006 09 17 | 691 | 0.2+ | 0.0 |
| 2004 03 12 | 644 | 0.3− | 0.3− | 2004 03 30 | 703 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2004 03 12 | 644 | 0.0 | 0.3− | 2004 04 10 | 644 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.2+ | 0.0 |
| 2004 03 12 | 644 | 0.2− | 0.2− | 2004 04 10 | 644 | 0.4− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2004 03 15 | 704 | 0.5− | 0.1+ | 2004 04 10 | 644 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2004 03 15 | 704 | 0.3− | 0.7− | 2004 04 15 | 704 | 0.5+ | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2004 03 15 | 704 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.5+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 704 | 0.4− | 0.5− | 2004 04 15 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 691 | 0.3+ | 0.3+ |
| 2004 03 15 | 704 | 0.3+ | 0.2− | 2004 04 20 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2004 03 15 | 333 | 0.1+ | 0.7+ | 2004 04 20 | 704 | 0.0 | 0.6+ | 2006 10 15 | 703 | 0.9− | 0.4+ |
| 2004 03 15 | 333 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.3− |
| 2004 03 16 | 333 | 0.4+ | 0.9− | 2004 04 20 | 704 | 0.3+ | 0.2+ | 2006 10 15 | 703 | 1.4− | 0.1+ |
| 2004 03 16 | 333 | 0.2+ | 0.0 | 2004 04 20 | 704 | 0.4− | 0.4+ | 2006 10 15 | 703 | 0.2− | 0.6− |
| 2004 03 20 | 704 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2004 03 20 | 704 | 0.3− | 0.3+ | 2004 04 22 | 704 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2004 03 20 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 704 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2004 03 20 | 704 | 0.2− | 0.3+ | 2004 04 22 | 704 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2004 03 20 | 704 | 0.1− | 0.1+ | 2004 04 22 | 704 | 1.0+ | 0.1+ | 2006 11 16 | G96 | 0.6− | 0.5− |
| 2004 03 23 | 704 | 0.1+ | 0.4+ | 2004 05 13 | 704 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.7− | 0.1− |
| 2004 03 23 | 704 | 0.3+ | 0.3+ | 2004 05 13 | 704 | 0.1+ | 0.7+ | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2004 03 23 | 704 | 0.1+ | 0.1− | 2004 05 13 | 704 | 0.5+ | 0.8− | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2004 03 23 | 704 | 0.0 | 0.2− | 2004 05 13 | 704 | 0.1− | 0.1+ | | | | |

**2004 EW**$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.74433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27369865 | $\omega$ | 113.01583 | | −0.50505591 | +0.84976851 | |
| $a$ | 2.3493855 | $\Omega$ | 125.77861 | | −0.84426317 | −0.45006918 | |
| $e$ | 0.2106037 | $i$ | 10.72936 | | −0.17927137 | −0.27446532 | |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 09 | 910 | 0.5+ | 0.2+ | 2004 03 15 | 704 | 0.5+ | 0.5− | 2004 04 15 | 704 | 0.6+ | 0.8+ |
| 1997 07 09 | 910 | 0.2+ | 0.5+ | 2004 03 15 | 704 | 1.2− | 0.4+ | 2004 04 24 | 703 | 1.0− | 0.4+ |
| 1997 07 09 | 910 | 0.5− | 0.4+ | 2004 04 13 | 703 | 0.0 | 0.0 | 2004 04 24 | 703 | 0.2− | 0.9− |
| 2000 02 26 | 695 | 0.3+ | 0.5+ | 2004 04 13 | 703 | 0.5+ | 1.2+ | 2004 04 24 | 703 | 0.3+ | 1.0− |
| 2000 02 26 | 695 | 0.1− | 0.6+ | 2004 04 13 | 703 | 0.1− | 0.0 | 2004 04 24 | 703 | 1.3− | 0.1− |
| 2004 03 12 | 644 | 0.4− | 0.2− | 2004 04 13 | 703 | 0.6+ | 0.2+ | 2004 05 24 | 703 | 0.2+ | 0.5− |
| 2004 03 12 | 644 | 0.2− | 0.2− | 2004 04 15 | 704 | 0.6+ | 0.8+ | 2004 05 24 | 703 | 1.1+ | 0.5− |
| 2004 03 12 | 644 | 0.2− | 0.1− | 2004 04 15 | 704 | 0.7+ | 0.3+ | 2004 05 24 | 703 | 0.4+ | 1.0− |
| 2004 03 15 | 704 | 1.5− | 0.2− | 2004 04 15 | 704 | 1.6+ | 0.7+ | 2004 05 24 | 703 | 0.8− | 0.3− |
| 2004 03 15 | 704 | 0.6− | 0.0 | 2004 04 15 | 704 | 0.2+ | 0.6− | | | | |

**2004 EU**$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.01407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26118311 | $\omega$ | 101.31408 | | −0.66635540 | −0.74495143 | |
| $a$ | 2.4238514 | $\Omega$ | 30.54787 | | +0.65728776 | −0.60706661 | |
| $e$ | 0.0817578 | $i$ | 3.59886 | | +0.35205578 | −0.27661797 | |
| $P$ | 3.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.2− | 0.0 | 2006 11 02 | 691 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 0.2+ | 2004 03 22 | 704 | 0.2− | 1.1− | 2006 11 02 | G96 | 0.0 | 0.4− |
| 2004 02 23 | 704 | 0.5+ | 0.5− | 2004 03 22 | 704 | 0.9− | 0.2− | 2006 11 02 | 691 | 0.1− | 0.1− |
| 2004 02 23 | 704 | (1.9+ | 1.2−) | 2004 03 28 | 691 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.2− | 0.3− |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 11 02 | 691 | 0.1− | 0.2− |
| 2004 03 14 | 691 | 0.1+ | 0.1− | 2004 03 28 | 691 | 0.2− | 0.0 | 2006 11 02 | G96 | 0.1+ | 0.3− |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2004 04 09 | 644 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.8− |
| 2004 03 15 | 704 | 0.3− | 0.9+ | 2004 04 09 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.6+ |
| 2004 03 15 | 704 | (0.2+ | 1.7+) | 2004 04 09 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.3− | 0.2− |
| 2004 03 15 | 704 | (0.5− | 1.8+) | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2004 03 15 | 704 | 1.1− | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.5+ | 0.3+ | 2006 11 12 | G96 | 0.5− | 0.3− |
| 2004 03 18 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 12 | G96 | 0.4− | 0.2− |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.5− | 2006 11 18 | 704 | 1.0+ | 0.6+ |
| 2004 03 19 | 291 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.7+ | 0.9+ |
| 2004 03 19 | 291 | 0.4+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.1− | 1.4+ |
| 2004 03 19 | 291 | 0.4+ | 0.1+ | 2006 11 02 | G96 | 0.3− | 0.7+ | | | | |

**2004 EA**$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.36750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28366346 | $\omega$ | 163.12527 | | −0.89534448 | +0.44255837 | |
| $a$ | 2.2940372 | $\Omega$ | 43.25371 | | −0.41658647 | −0.79246698 | |
| $e$ | 0.1990220 | $i$ | 4.18478 | | −0.15752451 | −0.41968818 | |
| $P$ | 3.47 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 29 | 291 | 0.1− | 0.2+ | 2004 03 14 | 703 | 0.4+ | 0.0 | 2004 03 26 | 703 | 0.8+ | 0.7− |
| 2002 10 29 | 291 | 0.1− | 0.4+ | 2004 03 14 | 703 | 0.2+ | 0.3+ | 2004 04 13 | 703 | 0.7+ | 1.0− |
| 2002 10 29 | 291 | 0.4− | 0.4+ | 2004 03 14 | 703 | 0.3+ | 0.3+ | 2004 04 13 | 703 | 1.3+ | 0.4+ |
| 2003 12 27 | 704 | 0.2+ | 0.1− | 2004 03 15 | 704 | 0.2+ | 0.3− | 2004 04 13 | 703 | 0.1− | 0.4+ |
| 2003 12 27 | 704 | 0.8+ | 0.1− | 2004 03 15 | 704 | 0.1+ | 0.6+ | 2004 04 13 | 703 | 0.2+ | 0.9− |
| 2003 12 27 | 704 | (2.5+ | 1.2+) | 2004 03 15 | 704 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.1+ | 0.3+ |
| 2003 12 27 | 704 | 0.6+ | 1.1+ | 2004 03 15 | 704 | 0.1+ | 0.2− | 2004 04 20 | 704 | 0.2+ | 0.3+ |
| 2004 01 23 | 704 | 0.3+ | 0.4− | 2004 03 15 | 704 | 0.1− | 0.0 | 2004 04 20 | 704 | 1.5− | 0.4+ |
| 2004 01 23 | 704 | 0.3− | 0.3+ | 2004 03 19 | 644 | 0.2+ | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.1+ |
| 2004 01 23 | 704 | 0.5+ | 1.1− | 2004 03 19 | 644 | 0.3+ | 0.2+ | 2004 04 22 | 704 | 0.4+ | 0.1+ |
| 2004 01 23 | 704 | 0.4+ | 0.3− | 2004 03 19 | 644 | 0.2+ | 0.3+ | 2004 04 22 | 704 | 0.4− | 1.0+ |
| 2004 02 17 | 704 | 0.5+ | 0.3+ | 2004 03 20 | 704 | 0.5+ | 0.3+ | 2004 04 22 | 704 | 0.2+ | 0.1+ |
| 2004 02 17 | 704 | 0.4+ | 0.2+ | 2004 03 20 | 704 | 0.1+ | 0.0 | 2004 04 22 | 704 | 0.8− | 0.5+ |
| 2004 02 17 | 704 | 0.6+ | 0.1+ | 2004 03 20 | 704 | 0.2+ | 0.0 | 2004 04 22 | 704 | 0.3− | 0.3− |
| 2004 02 17 | 704 | 0.8+ | 0.3− | 2004 03 20 | 704 | 0.4+ | 0.1+ | 2004 05 21 | 704 | (2.3+ | 2.2+) |
| 2004 02 17 | 704 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.6+ | 0.5+ | 2004 05 21 | 704 | 0.3− | 1.4+ |
| 2004 02 17 | 703 | 0.2+ | 0.1− | 2004 03 22 | 704 | 0.1− | 0.1− | 2004 05 21 | 704 | 0.5− | 1.4+ |
| 2004 02 17 | 703 | 0.8− | 0.5− | 2004 03 22 | 704 | 0.2− | 0.0 | 2005 08 29 | 691 | 0.3− | 0.0 |
| 2004 02 17 | 703 | 1.0− | 0.3+ | 2004 03 22 | 704 | 0.1+ | 0.1+ | 2005 08 29 | 691 | 0.5− | 0.3+ |
| 2004 02 17 | 703 | 1.2− | 0.2+ | 2004 03 22 | 704 | 0.1− | 0.2− | 2005 08 29 | 691 | 0.2+ | 1.0+ |
| 2004 02 29 | 691 | 0.2− | 0.1+ | 2004 03 22 | 704 | 0.1− | 0.1− | 2006 11 26 | 691 | 0.1− | 0.3− |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2004 03 26 | 703 | 0.9− | 0.1− | 2006 11 26 | 691 | 0.2− | 0.0 |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2004 03 26 | 703 | 0.0 | 0.2− | 2006 11 26 | 691 | 0.3+ | 0.3− |
| 2004 03 14 | 703 | 0.3+ | 0.2+ | 2004 03 26 | 703 | (1.9+ | 0.3−) | | | | |

**2004 EL$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.47316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25684260 | $\omega$ | 191.72119 | | −0.96530070 | +0.26106601 | |
| $a$ | 2.4510830 | $\Omega$ | 3.43117 | | −0.23035677 | −0.83998521 | |
| $e$ | 0.0635204 | $i$ | 5.99707 | | −0.12300536 | −0.47567782 | |
| $P$ | 3.84 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.2− | 0.5+ | 2004 03 15 | 704 | 1.1+ | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.4+ | |
| 2004 02 23 | 704 | 0.3+ | 0.0 | 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.1− | |
| 2004 02 23 | 704 | 0.0 | 0.3− | 2004 03 15 | 704 | 0.4− | 0.6− | 2006 11 17 | G96 | 0.0 | 0.2− | |
| 2004 02 23 | 704 | 0.2− | 0.4− | 2004 03 19 | 704 | 1.0+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.0 | |
| 2004 02 23 | 704 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.2− | |
| 2004 03 14 | 691 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.1− | 0.4+ | |
| 2004 03 14 | 691 | 0.2− | 0.0 | 2004 03 22 | 704 | 0.2− | 0.9− | 2006 11 20 | G96 | 0.0 | 0.1+ | |
| 2004 03 14 | 691 | 0.3− | 0.1+ | 2004 03 22 | 704 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.0 | |

**2004 EP$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.19732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27509136 | $\omega$ | 145.80895 | | −0.70888110 | −0.70517305 | |
| $a$ | 2.3414492 | $\Omega$ | 349.30807 | | +0.62800825 | −0.62149168 | |
| $e$ | 0.1293104 | $i$ | 4.57043 | | +0.32108135 | −0.34129028 | |
| $P$ | 3.58 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.3− | |
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2004 03 15 | 704 | 0.9+ | 0.1− | 2006 11 11 | 691 | 0.2− | 0.2− | |
| 2004 02 26 | 704 | 0.5+ | 0.8− | 2004 03 18 | 704 | 0.5− | 0.8+ | 2006 11 15 | 691 | 0.4+ | 0.2+ | |
| 2004 02 26 | 704 | 0.5+ | 0.4+ | 2004 03 18 | 704 | 0.8+ | 0.6+ | 2006 11 15 | 691 | 0.0 | 0.2+ | |
| 2004 02 26 | 704 | 0.3− | 0.5+ | 2004 03 18 | 704 | 1.0− | 0.1− | 2006 11 15 | 691 | 0.7− | 0.2+ | |
| 2004 02 26 | 704 | 0.8− | 1.4+ | 2004 03 18 | 704 | 0.7− | 0.3− | 2006 11 17 | 691 | 0.0 | 0.2+ | |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.5− | 0.0 | 2006 11 17 | 691 | 0.4+ | 0.3+ | |
| 2004 03 14 | 691 | 0.1+ | 0.2+ | 2004 03 31 | 291 | 0.2+ | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.3+ | |
| 2004 03 14 | 691 | 0.0 | 0.4+ | 2004 03 31 | 291 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.3+ | 0.2− | |
| 2004 03 15 | 704 | 0.9+ | 0.2− | 2004 03 31 | 291 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.2+ | 1.0− | |
| 2004 03 15 | 704 | 0.5+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.5− | 2006 11 19 | 691 | 0.2− | 0.2+ | |

**2004 ET$_{24}$ = 2006 PN$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.66089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21813232 | $\omega$ | 309.47877 | | −0.05945441 | −0.95927956 | |
| $a$ | 2.7331032 | $\Omega$ | 141.09883 | | +0.99630201 | −0.07421262 | |
| $e$ | 0.1358047 | $i$ | 26.08554 | | +0.06202799 | +0.27253480 | |
| $P$ | 4.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 691 | 0.3+ | 0.3+ | 2004 03 14 | 704 | 0.9− | 0.4+ | 2006 08 15 | 644 | 0.1− | 0.3+ | |
| 2003 11 20 | 691 | 0.1+ | 0.1+ | 2004 03 14 | 704 | 0.2+ | 0.5+ | 2006 08 15 | 644 | 0.3− | 0.4+ | |
| 2003 11 20 | 691 | 0.4− | 0.1+ | 2004 03 14 | 704 | 0.1− | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.2+ | |
| 2004 02 16 | 704 | 0.4+ | 0.7− | 2004 03 14 | 704 | 0.2− | 0.6+ | 2006 08 16 | 644 | 0.3+ | 0.2+ | |
| 2004 02 16 | 704 | 0.1+ | 1.7− | 2004 03 18 | 644 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.3− | |
| 2004 02 16 | 704 | 0.5+ | 1.7− | 2004 03 18 | 644 | 0.7− | 0.4+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | |
| 2004 02 16 | 704 | 0.9+ | 0.4+ | 2004 03 18 | 644 | 0.1− | 0.5+ | | | | | |

**2004 EG$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.65787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24214572 | $\omega$ | 336.05749 | | +0.22657677 | −0.96961615 | |
| $a$ | 2.5492838 | $\Omega$ | 100.74329 | | +0.90809239 | +0.17605549 | |
| $e$ | 0.1914727 | $i$ | 5.38695 | | +0.35218060 | +0.16984991 | |
| $P$ | 4.07 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.1+ | 1.0+ | 2003 12 25 | 645 | 0.1− | 0.0 | 2004 03 16 | 691 | 0.0 | 0.0 | |
| 2000 03 12 | 704 | 0.0 | 1.4+ | 2004 01 18 | 644 | 0.4+ | 0.4+ | 2004 03 18 | 644 | 0.2− | 0.2+ | |
| 2000 03 12 | 704 | 0.2− | 0.1+ | 2004 01 18 | 644 | 0.3+ | 0.0 | 2004 03 18 | 644 | 0.0 | 0.1+ | |
| 2002 08 19 | 644 | 0.0 | 1.3+ | 2004 01 18 | 644 | 0.1+ | 0.7+ | 2004 03 18 | 644 | 0.0 | 0.2+ | |
| 2002 08 19 | 644 | 0.1+ | 1.6+ | 2004 03 10 | 644 | 0.4+ | 0.4+ | 2006 08 20 | 644 | 0.3− | 0.3+ | |
| 2002 08 19 | 644 | 0.4− | 1.2+ | 2004 03 10 | 644 | 0.7+ | 0.6+ | 2006 08 20 | 644 | 0.6− | 0.1+ | |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2004 03 10 | 644 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.5− | 0.4+ | |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2004 03 16 | 691 | 0.0 | 0.1− | | | | | |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2004 03 16 | 691 | 0.2+ | 0.1− | | | | | |

**2004 EU$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.28341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18532068 | $\omega$ | 252.88975 | | −0.69837278 | +0.71268064 | |
| $a$ | 3.0468667 | $\Omega$ | 332.44991 | | −0.59034126 | −0.62573729 | |
| $e$ | 0.0909696 | $i$ | 8.20932 | | −0.40468835 | −0.31707910 | |
| $P$ | 5.32 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.3+ | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2004 03 27 | 703 | 0.3+ | 1.0+ | |
| 2004 03 13 | 644 | 0.1+ | 0.1+ | 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.2− | |
| 2004 03 13 | 644 | 0.4+ | 0.3+ | 2004 03 19 | 704 | 0.2− | 0.4− | 2006 09 25 | 691 | 0.0 | 0.0 | |
| 2004 03 16 | 691 | 0.0 | 0.0 | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2− | |
| 2004 03 16 | 691 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.0 | 0.7− | 2006 09 27 | 691 | 0.4+ | 0.1+ | |
| 2004 03 16 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.2− | 1.1− | 2006 09 27 | 691 | 0.1+ | 0.3+ | |
| 2004 03 18 | 704 | 0.1− | 0.2− | 2004 03 19 | 704 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.4+ | |
| 2004 03 18 | 704 | 1.1+ | 0.6− | 2004 03 20 | 704 | 0.3+ | 0.7− | 2006 10 01 | 691 | 0.3− | 0.0 | |
| 2004 03 18 | 704 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.4− | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.0 | |
| 2004 03 18 | 704 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.6− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1− | |
| 2004 03 19 | 704 | 0.4+ | 0.7+ | 2004 03 20 | 704 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.5− | |
| 2004 03 19 | 704 | 0.4− | 0.4+ | 2004 03 20 | 704 | 0.7− | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.4− | |
| 2004 03 19 | 704 | 0.5− | 0.3+ | 2004 03 27 | 703 | 0.1− | 0.9− | 2006 10 23 | G96 | 0.0 | 0.1− | |
| 2004 03 19 | 704 | 0.3− | 0.7+ | 2004 03 27 | 703 | 0.0 | 1.4− | 2006 10 23 | G96 | 0.1+ | 0.1+ | |
| 2004 03 19 | 704 | 0.0 | 0.1− | 2004 03 27 | 703 | 0.7+ | 0.8+ | | | | | |

**2004 EV$_{25}$ = 2006 UH$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.82381 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22232907 | $\omega$ | 91.74729 | | +0.83927454 | −0.53809422 | |
| $a$ | 2.6986002 | $\Omega$ | 300.81405 | | +0.45577651 | +0.77442795 | |
| $e$ | 0.0184514 | $i$ | 5.20604 | | +0.29645575 | +0.33274008 | |
| $P$ | 4.43 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.2− | 0.2− | 2004 03 19 | 704 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.3+ | 0.1+ | |
| 2004 03 13 | 644 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.3+ | |
| 2004 03 13 | 644 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.1+ | 1.3− | 2006 10 20 | 644 | 0.4− | 0.1− | |
| 2004 03 16 | 703 | (0.6+ | 1.8+) | 2004 03 19 | 704 | 0.9+ | 0.8− | 2006 10 20 | 644 | 0.4− | 0.2+ | |
| 2004 03 16 | 703 | 0.4− | 0.6+ | 2004 03 19 | 704 | 0.3− | 0.8− | 2006 10 20 | 644 | 0.2− | 0.2+ | |
| 2004 03 16 | 703 | (1.1+ | 3.1+) | 2006 10 17 | 703 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 2004 03 16 | 703 | 0.3− | 0.2+ | 2006 10 17 | 703 | (2.3− | 0.7+) | 2006 10 21 | 644 | 0.2+ | 0.1+ | |
| 2004 03 16 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 1.0+ | 1.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | |
| 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.1− | 2006 10 31 | 703 | 0.4+ | 0.6− | |
| 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.6− | 2006 10 31 | 703 | 0.5− | 0.6− | |
| 2004 03 17 | 704 | 1.3+ | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.5− | 2006 10 31 | 703 | 0.5− | 0.5+ | |
| 2004 03 17 | 704 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 10 31 | 703 | (2.3+ | 0.2+) | |
| 2004 03 17 | 704 | 0.9− | 0.8+ | 2006 10 19 | G96 | 0.3+ | 0.3− | | | | | |
| 2004 03 17 | 704 | 0.0 | 1.5+ | 2006 10 19 | 644 | 0.0 | 0.0 | | | | | |

**2004 EH$_{26}$ = 2006 SK$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 74.19159 | | (2000.0) | | | |
| $n$ | 0.17668350 | $\omega$ | 73.25845 | | +0.04779429 | +0.99881690 |
| $a$ | 3.1453723 | $\Omega$ | 199.48763 | | −0.92637374 | +0.04096485 |
| $e$ | 0.1199659 | $i$ | 1.54117 | | −0.37356045 | +0.02620455 |
| $P$ | 5.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.1+ | 0.1− | 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 09 30 | J75 | 0.0 | 0.6+ |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.5− | 0.0 | 2006 09 30 | J75 | 0.2+ | 0.4− |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2004 03 16 | 291 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.4− | 0.1+ |
| 2004 03 16 | 291 | 0.0 | 0.1+ | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2004 03 16 | 291 | 0.1− | 0.2− | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.3+ |
| 2004 03 18 | 704 | 0.6− | 0.5+ | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.7− | 0.4− |
| 2004 03 18 | 704 | 0.5− | 0.2− | 2006 09 27 | J75 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.2+ |
| 2004 03 18 | 704 | 0.6+ | 0.2− | 2006 09 27 | J75 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2004 03 18 | 704 | 0.5− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.4− |
| 2004 03 21 | 691 | 0.3+ | 0.5− | 2006 09 28 | 691 | 0.3+ | 0.1− | | | | |
| 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1+ | | | | |

**2004 EN$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 260.87538 | | (2000.0) | | | |
| $n$ | 0.23091282 | $\omega$ | 107.54365 | | −0.43193957 | −0.90189308 |
| $a$ | 2.6313019 | $\Omega$ | 8.05076 | | +0.81588593 | −0.39269310 |
| $e$ | 0.1053398 | $i$ | 1.69080 | | +0.38439348 | −0.17994720 |
| $P$ | 4.27 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.2− | 0.0 | 2004 03 16 | 291 | 0.0 | 0.1+ | 2004 03 30 | 691 | 0.1+ | 0.3+ |
| 2004 01 18 | 691 | 0.1− | 0.2− | 2004 03 16 | 291 | 0.2+ | 0.1+ | 2004 03 31 | 691 | 0.3− | 0.1+ |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 03 23 | 691 | 0.0 | 0.1+ | 2004 03 31 | 691 | 0.3+ | 0.5+ |
| 2004 02 13 | 291 | 0.3− | 0.5− | 2004 03 23 | 691 | 0.1+ | 0.0 | 2004 03 31 | 691 | 0.0 | 0.2+ |
| 2004 02 13 | 291 | 0.1− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.6+ |
| 2004 02 13 | 291 | 0.3+ | 0.6− | 2004 03 29 | 291 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2004 03 29 | 291 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2004 03 29 | 291 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.6− | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2004 03 30 | 691 | 0.4+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 291 | 0.1+ | 0.2+ | 2004 03 30 | 691 | 0.3+ | 0.2+ | 2006 09 23 | 691 | 0.7− | 0.6+ |

**2004 ER$_{28}$ = 2006 UF$_{305}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 265.93157 | | (2000.0) | | | |
| $n$ | 0.20124729 | $\omega$ | 75.69420 | | +0.00664800 | −0.99994629 |
| $a$ | 2.8839166 | $\Omega$ | 13.93219 | | +0.90426429 | +0.00261707 |
| $e$ | 0.0302907 | $i$ | 1.89231 | | +0.42692142 | +0.01002789 |
| $P$ | 4.90 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.3+ | 0.4− | 2004 03 16 | 291 | 0.7+ | 0.0 | 2004 03 29 | 291 | 0.1+ | 0.0 |
| 2004 03 15 | 691 | 0.3− | 0.0 | 2004 03 17 | 291 | 0.1− | 0.3+ | 2004 03 29 | 291 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 03 17 | 291 | 0.4− | 0.3+ | 2006 10 19 | 695 | 0.0 | 0.2+ |
| 2004 03 16 | 291 | 0.0 | 0.0 | 2004 03 17 | 291 | 0.8− | 0.0 | 2006 10 19 | 695 | 0.0 | 0.2+ |
| 2004 03 16 | 291 | 0.3+ | 0.3− | 2004 03 29 | 291 | 0.0 | 0.1− | 2006 10 20 | 695 | 0.1− | 0.0 |

**2004 EU$_{28}$ = 2006 WY$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.08409 | | (2000.0) | | | |
| $n$ | 0.24080103 | $\omega$ | 345.24585 | | +0.99226066 | +0.12394819 |
| $a$ | 2.5587655 | $\Omega$ | 7.64582 | | −0.10749125 | +0.88748277 |
| $e$ | 0.1103952 | $i$ | 3.21375 | | −0.06216446 | +0.44385942 |
| $P$ | 4.09 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.1− | 2004 03 16 | 291 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2004 03 16 | 291 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2001 05 23 | 807 | 0.1+ | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.5+ | 1.1+ |
| 2001 05 23 | 807 | 0.2− | 0.4+ | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.1+ | 0.7− | 2004 03 23 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 1.0− | 1.2− |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2004 03 29 | 291 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.8+ | 0.0 |
| 2002 12 10 | 644 | 0.2− | 0.5+ | 2004 03 29 | 291 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2004 03 29 | 291 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.4− |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.4− | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 25 | 691 | 0.3− | 0.0 |
| 2004 03 16 | 291 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.7− | 0.4− | 2006 11 25 | 691 | 0.1− | 0.3− |

**2004 EW$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.32376 | | (2000.0) | | | |
| $n$ | 0.22877472 | $\omega$ | 271.39258 | | +0.63502022 | −0.77222083 |
| $a$ | 2.6476711 | $\Omega$ | 139.16187 | | +0.72068797 | +0.58262116 |
| $e$ | 0.0667420 | $i$ | 1.80512 | | +0.27813337 | +0.25343158 |
| $P$ | 4.31 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 291 | 0.0 | 0.2+ | 2004 04 15 | 644 | 0.6+ | 0.6+ | 2006 10 17 | G96 | 1.1+ | 0.5− |
| 2004 02 29 | 291 | 0.5− | 0.3+ | 2004 04 15 | 644 | 0.5+ | 0.9+ | 2006 10 17 | G96 | 0.2+ | 0.1+ |
| 2004 02 29 | 291 | 0.7− | 0.2+ | 2004 04 15 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2004 02 29 | 291 | 1.0+ | 0.0 | 2006 09 14 | 703 | 0.5+ | 1.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2004 02 29 | 291 | 0.7+ | 0.4− | 2006 09 14 | 703 | 0.6− | 0.6− | 2006 10 20 | 644 | 0.4+ | 0.3− |
| 2004 02 29 | 291 | 0.2+ | 0.1+ | 2006 09 14 | 703 | (1.2− | 1.8+) | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2004 03 16 | 291 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 25 | A44 | 0.8− | 0.1+ |
| 2004 03 16 | 291 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 25 | A44 | 0.4+ | 0.2+ |
| 2004 03 16 | 291 | 0.5+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2004 03 17 | 291 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2004 03 17 | 291 | 0.6− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.7− |
| 2004 03 17 | 291 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2004 03 23 | 691 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2004 03 23 | 691 | 0.1− | 0.1− | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2004 03 23 | 691 | 0.2− | 0.2− | 2006 10 03 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2004 03 30 | 291 | 0.2+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2004 03 30 | 291 | 0.2+ | 0.0 | 2006 10 17 | G96 | 1.0− | 0.6− | | | | |
| 2004 03 30 | 291 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.4− | | | | |

**2004 EX$_{29}$ = 2006 QG$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 317.09691 | | (2000.0) | | | |
| $n$ | 0.21143653 | $\omega$ | 245.97993 | | +0.73607187 | −0.67645505 |
| $a$ | 2.7905043 | $\Omega$ | 156.56315 | | +0.64137594 | +0.68534266 |
| $e$ | 0.1096539 | $i$ | 3.55070 | | +0.21641418 | +0.26965535 |
| $P$ | 4.66 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.5+ | 0.2− | 2004 03 17 | 291 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.4− | 0.1+ |
| 1992 09 27 | 691 | 0.3− | 0.1+ | 2004 03 17 | 291 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 1992 09 27 | 691 | 0.2− | 0.1− | 2004 03 17 | 291 | 0.4− | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 2004 03 15 | 691 | 0.4− | 0.5+ | 2004 03 23 | 691 | 0.0 | 0.5− | 2006 09 30 | G96 | 0.2− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.2− | 2004 03 23 | 691 | 0.3− | 0.5− | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.4− | 2004 03 23 | 691 | 0.0 | 0.4− | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2004 03 16 | 291 | 0.2+ | 0.2+ | 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.4− |
| 2004 03 16 | 291 | 0.4+ | 0.0 | 2006 08 18 | 691 | 0.5+ | 0.1− | | | | |
| 2004 03 16 | 291 | 0.9+ | 0.9+ | 2006 08 18 | 691 | 0.2+ | 0.1+ | | | | |

### 2004 EZ$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.34377 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21930538 | $\omega$ | 8.56969 | | +0.97557804 | −0.21954105 | |
| $a$ | 2.7233484 | $\Omega$ | 4.13227 | | +0.19531676 | +0.85243375 | |
| $e$ | 0.0995324 | $i$ | 5.58725 | | +0.10049307 | +0.47450862 | |
| $P$ | 4.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.3− | 0.9+ | 2004 03 16 | 291 | 0.2+ | 0.3+ | 2006 09 29 | 691 | 0.3− | 0.3− |
| 2001 08 14 | 644 | 0.1− | 0.6+ | 2004 03 16 | 291 | 0.2− | 0.2+ | 2006 09 29 | 691 | 0.0 | 0.1− |
| 2001 08 14 | 644 | 0.4− | 0.6+ | 2004 03 16 | 291 | 0.3− | 0.2+ | 2006 09 29 | 691 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 0.8+ | 0.2− | 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2002 12 11 | 704 | 0.4+ | 1.1− | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.5− |
| 2002 12 11 | 704 | 0.6− | 0.0 | 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.6− |
| 2002 12 11 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2004 02 13 | 291 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.6+ | 0.1− | 2006 10 17 | 703 | 0.7− | 0.8+ |
| 2004 02 13 | 291 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.7− | 0.6+ |
| 2004 02 13 | 291 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2004 02 29 | 291 | 0.5+ | 0.4+ | 2006 09 14 | 691 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.9+ |
| 2004 02 29 | 291 | 0.3+ | 0.1− | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2004 02 29 | 291 | 0.0 | 0.5+ | 2006 09 14 | 691 | 0.2− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.3+ | | | | |

### 2004 EC$_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.54377 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17555042 | $\omega$ | 160.52926 | | +0.52432162 | +0.85115496 | |
| $a$ | 3.1588921 | $\Omega$ | 141.08221 | | −0.78642445 | +0.49526333 | |
| $e$ | 0.1385052 | $i$ | 2.27541 | | −0.32653243 | +0.17392377 | |
| $P$ | 5.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 645 | 0.0 | 0.1− | 2004 03 16 | 291 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5+ |
| 2003 01 25 | 645 | 0.1− | 0.0 | 2004 03 23 | 691 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.1− | 0.3+ |
| 2004 02 13 | 291 | 0.4+ | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.8− | 0.4− |
| 2004 02 13 | 291 | 0.2+ | 0.8+ | 2004 03 23 | 691 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.6+ | 0.2+ |
| 2004 02 13 | 291 | 0.3+ | 0.1+ | 2004 03 29 | 291 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.2+ | 0.1+ |
| 2004 02 29 | 291 | 0.2+ | 0.2− | 2004 03 29 | 291 | 0.2+ | 0.1− | 2006 09 20 | 691 | 0.2− | 0.3+ |
| 2004 02 29 | 291 | 0.2+ | 0.3− | 2004 03 29 | 291 | 0.4+ | 0.1+ | 2006 09 20 | 691 | 0.4+ | 0.5+ |
| 2004 02 29 | 291 | 0.2− | 0.1− | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.7− | 0.2− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2004 04 13 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2004 04 21 | 691 | 0.5− | 0.4+ | 2006 10 11 | 291 | 0.3− | 0.2+ |
| 2004 03 16 | 291 | 0.0 | 0.1+ | 2004 04 21 | 691 | 0.2− | 0.5+ | 2006 10 11 | 291 | 0.3− | 0.2+ |
| 2004 03 16 | 291 | 0.2+ | 0.1+ | 2004 04 21 | 691 | 0.1− | 0.2+ | 2006 10 11 | 291 | 0.3− | 0.1+ |

### 2004 EW$_{30}$ = 2006 TV$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.56591 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21744134 | $\omega$ | 355.57828 | | −0.70117325 | −0.71084390 | |
| $a$ | 2.7388903 | $\Omega$ | 138.92849 | | +0.65671014 | −0.67407826 | |
| $e$ | 0.0888946 | $i$ | 4.82748 | | +0.27764700 | −0.20079705 | |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.5+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.3+ |
| 1999 03 10 | 691 | 0.1− | 0.5+ | 2004 03 22 | 704 | 1.1+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.3+ |
| 1999 03 10 | 691 | 0.3+ | 0.2+ | 2004 04 23 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2001 05 24 | 807 | 0.6− | 0.5+ | 2004 04 23 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2001 05 24 | 807 | 0.3− | 0.6+ | 2004 04 23 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2004 03 15 | 703 | 1.2− | 1.3+ | 2005 07 04 | G96 | 0.3− | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.8+ |
| 2004 03 15 | 703 | (0.3− | 1.7+) | 2005 07 04 | G96 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.8+ |
| 2004 03 15 | 703 | 0.8+ | 0.6− | 2005 07 04 | G96 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 1.6+ |
| 2004 03 15 | 703 | (1.7− | 0.1+) | 2005 07 04 | G96 | 0.4− | 0.5+ | 2006 10 16 | 703 | 1.3− | 1.1+ |
| 2004 03 16 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.9− | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.9+ |
| 2004 03 16 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1− | | | | |
| 2004 03 22 | 704 | 0.5− | 0.1+ | 2006 09 30 | 703 | 1.5− | 0.6+ | | | | |

### 2004 EU$_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.81208 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18053855 | $\omega$ | 260.94214 | | −0.50770290 | +0.85929050 | |
| $a$ | 3.1004358 | $\Omega$ | 338.20274 | | −0.71007151 | −0.45818399 | |
| $e$ | 0.0410533 | $i$ | 9.62887 | | −0.48788955 | −0.22734834 | |
| $P$ | 5.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 644 | 0.2+ | 0.4− | 2004 03 19 | 704 | 0.7− | 0.5− | 2004 04 19 | 704 | 0.3+ | 0.4+ |
| 2004 03 14 | 644 | 0.1− | 0.3− | 2004 03 19 | 704 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2004 03 14 | 644 | 0.0 | 0.4− | 2004 03 19 | 704 | 0.4+ | 1.3− | 2006 10 19 | 691 | 0.3+ | 0.1− |
| 2004 03 16 | 703 | (0.7+ | 2.0+) | 2004 03 19 | 704 | 1.0+ | 1.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2004 03 16 | 703 | 0.2+ | 0.8+ | 2004 04 12 | 644 | 0.4− | 0.7+ | 2006 10 23 | 691 | 0.0 | 0.3− |
| 2004 03 16 | 703 | 0.8+ | 0.2+ | 2004 04 12 | 644 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.5− |
| 2004 03 16 | 703 | 0.6+ | 0.3+ | 2004 04 12 | 644 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.1+ | 1.2− |
| 2004 03 17 | 704 | 0.9− | 1.4− | 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.4− | 0.9+ |
| 2004 03 17 | 704 | 0.3− | 0.6+ | 2004 04 19 | 704 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2004 03 17 | 704 | 1.1− | 0.0 | 2004 04 19 | 704 | 0.7+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.6+ |

### 2004 EA$_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.08478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22689993 | $\omega$ | 317.23740 | | −0.92244036 | −0.37498652 | |
| $a$ | 2.6622355 | $\Omega$ | 201.27768 | | +0.38558340 | −0.90730886 | |
| $e$ | 0.1392766 | $i$ | 14.70807 | | −0.02071792 | −0.19019924 | |
| $P$ | 4.34 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 04 12 | 644 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.5+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 04 12 | 644 | 0.2+ | 0.3+ | 2004 05 17 | 704 | 0.4+ | 0.0 |
| 2004 03 14 | 644 | 0.2− | 0.3+ | 2004 04 12 | 699 | 0.8− | 0.6+ | 2004 05 17 | 704 | 0.0 | 0.5− |
| 2004 03 14 | 644 | 0.0 | 0.2+ | 2004 04 12 | 699 | 0.2+ | 0.0 | 2004 05 17 | 704 | 0.6+ | 0.2− |
| 2004 03 14 | 644 | 0.1− | 0.2+ | 2004 04 12 | 691 | 0.1− | 0.0 | 2004 05 17 | 704 | 0.5+ | 0.5− |
| 2004 03 16 | 703 | 0.8+ | 0.1− | 2004 04 12 | 699 | 0.5− | 0.5− | 2006 09 24 | 691 | 0.1− | 0.5+ |
| 2004 03 16 | 703 | 0.4+ | 0.4− | 2004 04 12 | 699 | 0.1− | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.4+ |
| 2004 03 16 | 703 | (1.4+ | 1.7−) | 2004 04 12 | 691 | 0.2− | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.4+ |
| 2004 03 16 | 703 | 0.7+ | 0.6− | 2004 04 12 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2004 03 17 | 704 | (2.6+ | 0.3−) | 2004 04 15 | 699 | 0.4− | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.3+ |
| 2004 03 17 | 704 | 0.4+ | 1.4− | 2004 04 15 | 699 | 0.6− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2004 03 17 | 704 | 0.4+ | 0.8− | 2004 04 15 | 699 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2004 03 18 | 704 | 0.9− | 0.5− | 2004 04 15 | 699 | 0.2+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.0 | 0.4+ | 2004 04 16 | 704 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2004 03 18 | 704 | 0.5+ | 0.4− | 2004 04 16 | 704 | 0.0 | 0.7+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2004 03 24 | 699 | 0.2− | 1.0+ | 2004 04 16 | 704 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1+ |
| 2004 03 24 | 699 | 0.3− | 0.1− | 2004 04 16 | 704 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.2− |
| 2004 03 24 | 699 | 1.4− | 1.0− | 2004 04 16 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2004 03 24 | 699 | 0.5− | 0.0 | 2004 04 16 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2004 03 27 | 704 | 0.5+ | 0.2+ | 2004 04 16 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.8+ |
| 2004 03 27 | 704 | 0.2+ | 0.5+ | 2004 04 16 | 644 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.8+ | 0.7+ |
| 2004 03 27 | 704 | 0.3+ | 0.7+ | 2004 04 19 | 704 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.6+ | 0.3+ | 2004 04 19 | 704 | 0.6+ | 0.3+ | 2006 10 17 | G96 | 0.3− | 0.2+ | | |
| 2004 03 27 | 704 | 0.3− | 0.2+ | 2004 04 19 | 704 | 0.7+ | 0.9+ | 2006 10 17 | G96 | 0.2− | 0.1− | | |
| 2004 03 31 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 704 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.1+ | | |
| 2004 03 31 | 704 | 0.9+ | 0.7+ | 2004 04 19 | 704 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 2004 03 31 | 704 | 0.1+ | 0.8+ | 2004 04 20 | 703 | 0.6+ | 0.6+ | 2006 10 21 | G96 | 0.7+ | 0.0 | | |
| 2004 03 31 | 704 | 0.0 | 0.3+ | 2004 04 20 | 703 | 0.6− | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2004 04 09 | E12 | 0.8− | 0.0 | 2004 04 20 | 703 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.0 | | |
| 2004 04 09 | E12 | 0.4− | 0.0 | 2004 04 20 | 703 | 0.1− | 0.8+ | 2006 10 22 | 691 | 0.0 | 0.0 | | |
| 2004 04 09 | E12 | 0.5− | 0.5− | 2004 04 22 | 704 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.2− | | |
| 2004 04 09 | E12 | (1.9− | 0.2−) | 2004 04 22 | 704 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2004 04 12 | 644 | 0.1+ | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.8− | | | | | | |

**2004 EZ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.81731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22377694 | $\omega$ | 182.26628 | | −0.89023409 | +0.44928050 | |
| $a$ | 2.6869474 | $\Omega$ | 24.86460 | | −0.41505896 | −0.73224821 | |
| $e$ | 0.1356046 | $i$ | 10.27970 | | −0.18764147 | −0.51181989 | |
| $P$ | 4.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 24 | 097 | 0.3+ | 0.5− | 2004 03 20 | 704 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.7+ | 0.6− | | |
| 2004 02 25 | 097 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.1+ | 1.1+ | 2004 04 20 | 704 | 1.1+ | 0.6+ | | |
| 2004 03 15 | 704 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.2− | 2004 04 20 | 704 | 0.1+ | 0.3− | | |
| 2004 03 15 | 704 | 0.7+ | 0.5+ | 2004 03 22 | 704 | 0.7+ | 0.4− | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2004 03 15 | 704 | 1.2+ | 0.5+ | 2004 03 22 | 704 | 0.5+ | 0.8− | 2006 09 26 | G96 | 0.0 | 0.4− | | |
| 2004 03 15 | 704 | (1.7+ | 2.3−) | 2004 03 22 | 704 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.0 | 0.5− | | |
| 2004 03 15 | 704 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.1− | 0.6− | 2006 09 26 | G96 | 0.2+ | 0.6− | | |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2004 03 27 | 691 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.3+ | | |
| 2004 03 15 | 691 | 0.3− | 0.1− | 2004 03 27 | 691 | 0.5− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.0 | | |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 27 | 691 | 0.4− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ | | |
| 2004 03 16 | 608 | 0.0 | 0.7+ | 2004 03 28 | 703 | 1.4+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 16 | 608 | 0.4+ | 1.0+ | 2004 03 28 | 703 | 0.4− | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.1+ | | |
| 2004 03 16 | 608 | 0.3+ | 0.5+ | 2004 03 28 | 703 | 0.1+ | 0.9+ | 2006 11 17 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 20 | 704 | 0.4− | 0.6+ | 2004 03 28 | 703 | 0.5+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2004 03 20 | 704 | 1.1− | 0.4+ | 2004 04 20 | 704 | 0.9+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1− | | |
| 2004 03 20 | 704 | 0.1− | 0.4+ | 2004 04 20 | 704 | 0.7+ | 0.4+ | 2006 11 20 | 691 | 0.2− | 0.3− | | |

**2004 EG$_{33}$ = 2006 ST$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.34916 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22932460 | $\omega$ | 154.26412 | | −0.76954719 | −0.63827180 | |
| $a$ | 2.6434369 | $\Omega$ | 346.01633 | | +0.57054516 | −0.67302896 | |
| $e$ | 0.0438517 | $i$ | 4.78450 | | +0.28683679 | −0.37368586 | |
| $P$ | 4.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 291 | 0.3+ | 0.1− | 2004 03 16 | 599 | 0.2− | 0.5− | 2006 09 27 | 691 | 0.1− | 0.2+ | | |
| 2004 03 15 | 291 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2004 03 15 | 291 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.2− | | |
| 2004 03 16 | 599 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 | | |
| 2004 03 16 | 599 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.0 | | |

**2004 EZ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.96258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27002809 | $\omega$ | 316.78858 | | −0.99824723 | −0.05492184 | |
| $a$ | 2.3706281 | $\Omega$ | 220.07884 | | +0.05918155 | −0.92573840 | |
| $e$ | 0.1964621 | $i$ | 1.96233 | | +0.00010408 | −0.37415506 | |
| $P$ | 3.65 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.2− | 0.1− | 2004 04 12 | 691 | 0.3+ | 0.2− | | |
| 2004 03 12 | 644 | 0.1+ | 0.2+ | 2004 03 26 | 699 | 1.6− | 0.0 | 2004 04 12 | 691 | 0.2− | 0.1− | | |
| 2004 03 12 | 644 | 0.2+ | 0.2+ | 2004 03 26 | 699 | 0.4+ | 0.4− | 2004 04 12 | 691 | 0.3+ | 0.2− | | |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2004 03 26 | 699 | 0.6− | 0.4− | 2004 04 17 | 691 | 0.2− | 0.1− | | |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2004 03 26 | 699 | 0.2− | 1.3+ | 2004 04 17 | 691 | 0.0 | 0.1+ | | |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.8− | 0.4+ | 2004 04 17 | 691 | 0.2+ | 0.2− | | |
| 2004 03 16 | 704 | 0.1+ | 0.5+ | 2004 03 27 | 704 | 0.7− | 0.5− | 2006 11 19 | 691 | 0.4− | 0.2+ | | |
| 2004 03 16 | 704 | 1.1+ | 0.4+ | 2004 03 27 | 704 | 0.7− | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.1− | | |
| 2004 03 16 | 704 | 1.3+ | 0.5+ | 2004 03 27 | 704 | 0.8− | 1.5− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2004 03 16 | 704 | (2.1+ | 0.0 ) | 2004 03 31 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.4− | | |
| 2004 03 20 | 704 | 0.0 | 0.4+ | 2004 03 31 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.3+ | | |
| 2004 03 20 | 704 | 0.7+ | 0.2+ | 2004 03 31 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2− | | |

**2004 EK$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.68324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22929744 | $\omega$ | 301.42556 | | −0.60350735 | −0.79732311 | |
| $a$ | 2.6436457 | $\Omega$ | 185.71283 | | +0.75447340 | −0.56802223 | |
| $e$ | 0.0645608 | $i$ | 4.26285 | | +0.25797050 | −0.20402601 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 18 | 691 | 0.0 | 0.2+ | 2004 03 18 | 704 | 1.4+ | 0.2− | 2006 09 26 | G96 | 0.6+ | 0.3− | | |
| 1993 09 18 | 691 | 0.1+ | 0.2− | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 1993 09 18 | 691 | 0.0 | 0.2− | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2000 04 29 | 704 | 0.0 | 1.0+ | 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 2000 04 29 | 704 | 0.7+ | 0.6+ | 2004 03 27 | 704 | 1.4− | 0.1− | 2006 10 15 | 703 | 0.8− | 1.3− | | |
| 2000 04 29 | 704 | 0.5− | 1.2− | 2004 03 27 | 704 | 0.2− | 0.2+ | 2006 10 15 | 703 | (2.0+ | 0.8−) | | |
| 2004 03 12 | 644 | 0.1− | 0.4+ | 2004 03 27 | 704 | 0.4− | 0.2− | 2006 10 15 | 703 | 0.9+ | 0.9− | | |
| 2004 03 12 | 644 | 0.2− | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.1+ | | |
| 2004 03 12 | 644 | 0.3− | 0.2+ | 2004 03 27 | 704 | 0.6− | 0.3+ | 2006 10 17 | G96 | 0.9+ | 0.4− | | |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2004 04 21 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.0 | 1.0− | | |
| 2004 03 15 | 703 | 1.0− | 0.1+ | 2004 04 21 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.6− | 0.0 | | |
| 2004 03 15 | 703 | 0.6+ | 1.1− | 2004 04 21 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.5− | | |
| 2004 03 15 | 691 | 0.3− | 0.0 | 2006 09 14 | 691 | 0.4− | 0.3+ | 2006 10 21 | 291 | 0.0 | 0.2+ | | |
| 2004 03 15 | 703 | 0.6+ | 0.5− | 2006 09 14 | 691 | 0.9− | 0.2+ | 2006 10 21 | 291 | 0.1+ | 0.3+ | | |
| 2004 03 15 | 703 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 291 | 0.2+ | 0.2+ | | |
| 2004 03 15 | 691 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.5− | | |
| 2004 03 16 | 704 | 0.9+ | 0.1− | 2006 09 18 | 691 | 0.4+ | 0.2− | 2006 10 21 | G96 | 1.0+ | 0.8− | | |
| 2004 03 16 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1− | | |
| 2004 03 16 | 704 | 0.9+ | 1.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2004 03 16 | 704 | 0.5+ | 1.0+ | 2006 09 25 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3+ | | |
| 2004 03 18 | 704 | 0.6+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2004 03 18 | 704 | 0.6+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.0 | | | | | | |

**2004 EK$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.09402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25435096 | $\omega$ | 48.61011 | | −0.99833770 | −0.02842400 | |
| $a$ | 2.4670643 | $\Omega$ | 129.69912 | | +0.00855818 | −0.93339769 | |
| $e$ | 0.1193615 | $i$ | 3.73636 | | +0.05699650 | −0.35771613 | |
| $P$ | 3.87 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.8+ | 0.7+ | 2004 03 28 | 704 | 0.3− | 0.1− | | |
| 2001 08 21 | 807 | 0.1− | 0.3+ | 2004 03 19 | 704 | 0.4+ | 0.8+ | 2004 03 28 | 704 | 0.1+ | 0.2− | | |
| 2004 03 12 | 644 | 0.2− | 0.4+ | 2004 03 19 | 704 | 0.3+ | 0.5+ | 2004 03 28 | 704 | 0.4+ | 0.3− | | |
| 2004 03 12 | 644 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.8− | 0.2− | | |
| 2004 03 12 | 644 | 0.2− | 0.3+ | 2004 03 22 | 704 | (1.3− | 2.2+) | 2006 10 22 | G96 | 0.2− | 0.8− | | |
| 2004 03 14 | 691 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.0 | 0.6− | | |
| 2004 03 14 | 691 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.7− | | |
| 2004 03 14 | 691 | 0.1+ | 0.0 | 2004 03 22 | 704 | (0.3+ | 2.3−) | 2006 11 16 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 16 | 704 | 1.3+ | 0.8− | 2004 03 24 | 699 | 0.5− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.2+ | | |
| 2004 03 16 | 704 | 0.9− | 0.1− | 2004 03 24 | 699 | (0.3+ | 2.4+) | 2006 11 16 | 691 | 1.0− | 0.6− | | |
| 2004 03 16 | 704 | (0.9+ | 1.6−) | 2004 03 24 | 699 | 0.5− | 0.3+ | 2006 11 20 | 691 | 0.4+ | 0.2+ | | |
| 2004 03 16 | 704 | 0.2+ | 0.1+ | 2004 03 24 | 699 | 0.3− | 0.3− | 2006 11 20 | 691 | 0.3+ | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.2+ | 0.2+ | 2004 03 28 | 704 | 0.3+ | 0.7+ | 2006 11 20 | 691 | 0.4+ | 0.2+ |
| 2004 03 19 | 704 | 0.5+ | 0.4− | 2004 03 28 | 704 | 0.5− | 0.0 | | | | |

**2004 ED$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.68708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21741247 | $\omega$ | 318.20896 | | −0.77732653 | −0.62901673 | |
| $a$ | 2.7391328 | $\Omega$ | 182.86963 | | +0.61725193 | −0.75950064 | |
| $e$ | 0.1512795 | $i$ | 11.60425 | | +0.12150518 | −0.16582138 | |
| $P$ | 4.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 15 | 699 | 1.0+ | 1.1+ | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.5+ | 0.3− |
| 1999 01 15 | 699 | 1.0− | 1.5+ | 2004 03 28 | 704 | 0.0 | 0.3+ | 2006 09 12 | 703 | 1.0+ | 1.1+ |
| 1999 01 15 | 699 | 0.4+ | 0.9+ | 2004 03 28 | 704 | 0.3− | 0.4+ | 2006 09 12 | 703 | 0.8+ | 1.3+ |
| 2004 02 26 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.8− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2004 02 26 | 704 | 0.0 | 0.0 | 2004 03 28 | 704 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.0 |
| 2004 02 26 | 704 | 0.1+ | 0.2− | 2004 03 28 | 704 | 0.5− | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.3+ |
| 2004 02 26 | 704 | 0.0 | 0.4+ | 2004 04 19 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 699 | 1.3− | 0.0 |
| 2004 02 26 | 704 | 0.4+ | 0.7− | 2004 04 19 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 699 | 0.0 | 1.4− |
| 2004 03 13 | 644 | 0.0 | 0.3+ | 2004 04 19 | 704 | 0.4+ | 1.3+ | 2006 09 18 | 699 | 0.4+ | 0.6+ |
| 2004 03 13 | 644 | 0.5+ | 0.4+ | 2004 04 19 | 704 | 0.1− | 0.9+ | 2006 09 18 | 699 | (1.6− | 1.4−) |
| 2004 03 13 | 644 | 0.1+ | 0.0 | 2004 04 19 | 704 | (5.0− | 3.2+) | 2006 09 19 | 691 | 0.1− | 0.4+ |
| 2004 03 16 | 704 | 0.1+ | 0.1+ | 2004 04 20 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.4+ |
| 2004 03 16 | 704 | 0.6+ | 0.8+ | 2004 04 20 | 704 | 0.4+ | 0.9− | 2006 09 19 | 691 | 0.2+ | 0.6+ |
| 2004 03 16 | 704 | 0.3− | 0.8− | 2004 04 20 | 704 | 1.1+ | 0.3− | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2004 03 16 | 704 | 1.3+ | 1.1+ | 2004 04 20 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 291 | 0.2− | 0.4+ |
| 2004 03 16 | 704 | 0.2+ | 0.8− | 2004 04 20 | 704 | 1.0+ | 0.7− | 2006 09 19 | 703 | 0.3− | 0.5− |
| 2004 03 19 | 704 | 0.2− | 1.1+ | 2004 04 20 | E12 | 0.1+ | 0.2− | 2006 09 19 | 291 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | 0.7+ | 1.0+ | 2004 04 20 | E12 | 0.3− | 0.1− | 2006 09 19 | 291 | 0.1− | 0.4+ |
| 2004 03 19 | 704 | 0.3− | 1.5+ | 2004 04 20 | E12 | 0.5− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.4− |
| 2004 03 19 | 704 | 0.1− | 0.4+ | 2004 04 20 | E12 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 1.3+ |
| 2004 03 19 | 704 | 0.5+ | 0.5+ | 2004 04 20 | 113 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2004 03 20 | 699 | 0.4− | 0.6+ | 2004 04 20 | 113 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2004 03 20 | 699 | 0.3− | 0.1− | 2004 04 20 | 113 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 2004 03 20 | 699 | 0.0 | 0.1+ | 2004 04 22 | 704 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2004 03 20 | 699 | 0.7− | 0.5+ | 2004 04 22 | 704 | 0.2+ | 1.4+ | 2006 09 27 | 691 | 0.2− | 0.7+ |
| 2004 03 22 | 704 | 1.1+ | 0.6− | 2004 04 22 | 704 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.5+ |
| 2004 03 22 | 704 | 0.9+ | 0.4− | 2004 04 22 | 704 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.3− | 0.7+ |
| 2004 03 22 | 704 | 0.7+ | 0.4− | 2004 04 22 | 704 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2004 03 22 | 704 | 0.7+ | 0.5− | 2004 05 11 | 683 | (0.8− | 1.8−) | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2004 03 22 | 704 | 1.1+ | 0.5− | 2004 05 11 | 683 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.5+ |
| 2004 03 24 | 699 | 0.3+ | 0.5− | 2004 05 11 | 683 | 1.1− | 1.0+ | 2006 10 17 | 703 | (0.0 | 2.6+) |
| 2004 03 24 | 699 | 0.0 | 0.2+ | 2006 08 28 | 703 | (3.3− | 2.3+) | 2006 10 17 | 703 | (0.5− | 3.8+) |
| 2004 03 24 | 699 | 1.2− | 0.5+ | 2006 08 28 | 703 | (3.2− | 0.3+) | 2006 10 17 | 703 | (1.7− | 1.7+) |
| 2004 03 24 | 699 | 0.4− | 0.6+ | 2006 08 28 | 703 | (2.0− | 0.7−) | 2006 10 17 | 703 | 0.5+ | 0.0 |
| 2004 03 26 | 691 | 0.1− | 0.6+ | 2006 08 28 | 703 | (3.1− | 4.1−) | | | | |
| 2004 03 26 | 691 | 0.2− | 0.3+ | 2006 09 12 | 703 | 0.1+ | 0.5− | | | | |

**2004 EG$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.65206 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22052285 | $\omega$ | 113.20531 | | −0.86829893 | −0.46870827 | |
| $a$ | 2.7133156 | $\Omega$ | 39.38294 | | +0.30711852 | −0.76504914 | |
| $e$ | 0.1393812 | $i$ | 14.82863 | | +0.38953200 | −0.44160205 | |
| $P$ | 4.47 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.1− | 0.3+ | 2004 03 22 | 699 | 1.3− | 1.2+ | 2004 04 22 | 704 | 0.4+ | 2.0− |
| 2004 03 13 | 644 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.4− | 0.2+ | 2004 04 22 | 704 | 0.8+ | 0.2+ |
| 2004 03 13 | 644 | 0.7− | 0.0 | 2004 03 22 | 704 | 0.7− | 0.7+ | 2004 05 21 | 704 | 0.8+ | 0.2+ |
| 2004 03 14 | 703 | 0.7+ | 0.2+ | 2004 03 22 | 699 | 0.6− | 1.1− | 2004 05 21 | 704 | 0.1+ | 0.7+ |
| 2004 03 14 | 703 | 1.3− | 1.0+ | 2004 03 22 | 704 | 0.5+ | 1.0− | 2004 05 21 | 704 | 0.6+ | 0.1+ |
| 2004 03 14 | 703 | 0.1− | 0.7+ | 2004 04 09 | E12 | 0.3+ | 0.0 | 2004 05 21 | 704 | 0.4+ | 0.8− |
| 2004 03 14 | 703 | 1.0− | 0.0 | 2004 04 09 | E12 | 0.2− | 0.8+ | 2004 05 21 | 704 | 0.0 | 0.5+ |
| 2004 03 16 | 704 | 0.7+ | 0.2+ | 2004 04 09 | E12 | 0.0 | 0.2− | 2004 05 24 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 0.0 | 0.6+ | 2004 04 09 | E12 | 1.1− | 0.4− | 2004 05 24 | 691 | 0.1+ | 0.0 |
| 2004 03 16 | 704 | 1.2+ | 0.7+ | 2004 04 17 | 699 | 0.1+ | 0.7− | 2004 05 24 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 1.1− | 1.8− | 2004 04 17 | 699 | 0.3+ | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.4− |
| 2004 03 16 | 704 | 0.6+ | 0.9− | 2004 04 17 | 699 | 0.9+ | 0.5− | 2006 09 30 | 703 | 0.8+ | 0.2+ |
| 2004 03 16 | 704 | 1.0− | 1.0+ | 2004 04 17 | 699 | 1.0+ | 0.5− | 2006 09 30 | 703 | 0.2+ | 1.5+ |
| 2004 03 16 | 704 | 1.5+ | 0.1− | 2004 04 20 | 704 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.0 | 0.4− |
| 2004 03 16 | 704 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 0.3− | 1.6+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2004 03 16 | 704 | 1.9+ | 0.4− | 2004 04 20 | 703 | 1.2− | 0.6− | 2006 10 02 | G96 | 0.4− | 0.4− |
| 2004 03 20 | 704 | 0.6+ | 0.8+ | 2004 04 20 | 704 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.7+ | 0.9− | 2004 04 20 | 703 | 0.4− | 0.5− | 2006 10 02 | G96 | 0.4− | 0.0 |
| 2004 03 20 | 704 | 0.6+ | 0.5+ | 2004 04 20 | 704 | 0.7− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2004 03 20 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 703 | 1.0− | 0.2+ | 2006 10 04 | G96 | 0.4− | 0.2− |
| 2004 03 20 | 704 | 0.2+ | 1.3− | 2004 04 20 | 704 | 0.5− | 0.3− | 2006 10 04 | G96 | 0.4+ | 0.4− |
| 2004 03 22 | 699 | (2.2− | 0.7−) | 2004 04 20 | 703 | 0.2− | 0.6− | 2006 10 04 | G96 | 0.1− | 0.4− |
| 2004 03 22 | 699 | 1.1− | 0.1+ | 2004 04 22 | 704 | (0.6+ | 2.2+) | | | | |
| 2004 03 22 | 704 | 0.2+ | 0.3− | 2004 04 22 | 704 | 0.2− | 1.5+ | | | | |

**2004 EM$_{38}$ = 2006 SE$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.27812 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22902452 | $\omega$ | 142.29464 | | −0.97167421 | −0.21436194 | |
| $a$ | 2.6457455 | $\Omega$ | 25.86034 | | +0.11952556 | −0.80894407 | |
| $e$ | 0.1225632 | $i$ | 13.18486 | | +0.20386974 | −0.54741068 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 1.4+ | 0.7+ | 2004 03 22 | 704 | 0.9+ | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2004 02 25 | 704 | 0.6+ | 0.4− | 2004 03 22 | 704 | 0.4+ | 1.1+ | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2004 02 25 | 704 | 0.5− | 0.1− | 2004 03 22 | 704 | 0.4− | 0.7+ | 2006 10 28 | 691 | 0.6− | 0.3− |
| 2004 03 14 | 691 | 0.2− | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.8+ | 2006 10 28 | 691 | 1.3− | 0.7+ |
| 2004 03 14 | 691 | 0.3− | 0.1− | 2004 03 22 | 704 | (0.4− | 3.2+) | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2004 03 14 | 691 | 0.5− | 0.1− | 2004 03 24 | 699 | 0.5− | 1.4− | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2004 03 16 | 704 | 0.1+ | 0.1− | 2004 03 24 | 699 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2004 03 16 | 704 | 0.1− | 0.1+ | 2004 03 24 | 699 | 0.8+ | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2004 03 16 | 704 | 0.4− | 0.5+ | 2004 03 24 | 699 | 1.0+ | 0.9− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2004 03 20 | 704 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2004 03 20 | 704 | 0.6− | 1.3− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2004 03 20 | 704 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.5− |
| 2004 03 20 | 704 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.7+ | 0.7− | 2006 11 01 | 691 | 0.6+ | 0.2− |
| 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.5− | 0.5− | | | | |
| 2004 03 21 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.5+ | 0.1− | | | | |

**2004 EO$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.19466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19839564 | $\omega$ | 166.18332 | | −0.15162775 | +0.98679887 | |
| $a$ | 2.9114855 | $\Omega$ | 95.07290 | | −0.91221348 | −0.11753763 | |
| $e$ | 0.0346736 | $i$ | 3.27444 | | −0.38062526 | −0.11141321 | |
| $P$ | 4.97 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.1− | 0.1+ | 2004 03 22 | 704 | (0.0 | 2.2−) | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2004 03 14 | 691 | 0.0 | 0.1− | 2004 03 22 | 704 | (1.1+ | 3.3−) | 2006 10 15 | 703 | 0.3+ | 0.1− |
| 2004 03 14 | 691 | 0.1+ | 0.2− | 2004 03 24 | 699 | 0.4+ | 0.0 | 2006 10 15 | 703 | 0.3− | 0.1− |
| 2004 03 16 | 704 | 0.7+ | 0.1− | 2004 03 24 | 699 | 1.0+ | 0.7− | 2006 10 15 | 703 | 0.1+ | 0.3+ |
| 2004 03 16 | 704 | 0.2− | 0.7− | 2004 03 24 | 699 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 1.1+ | 0.1− |
| 2004 03 16 | 704 | 0.1+ | 0.6+ | 2004 03 24 | 699 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2004 03 16 | 704 | 0.3+ | 0.2+ | 2004 03 28 | 704 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2004 03 19 | 704 | 1.1− | 0.1+ | 2004 03 28 | 704 | 0.3− | 0.2− | 2006 10 21 | 703 | (1.2+ | 1.7+) |
| 2004 03 19 | 704 | 0.4+ | 0.4− | 2004 03 28 | 704 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.4− |
| 2004 03 19 | 704 | 0.3− | 0.2+ | 2004 03 28 | 704 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2004 03 19 | 704 | 0.6− | 0.4+ | 2004 03 28 | 704 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2004 03 19 | 704 | 0.1+ | 0.1− | 2004 04 19 | 704 | 0.8+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2004 03 21 | 699 | (1.7− | 1.2−) | 2004 04 19 | 704 | 0.5+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 21 | 699 | 0.9− | 0.0 | 2004 04 19 | 704 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2004 03 21 | 699 | 1.0− | 0.6+ | 2004 04 19 | 704 | 0.4+ | 0.4− | 2006 11 18 | G96 | 0.5− | 0.1− |
| 2004 03 21 | 699 | (1.8− | 0.2+) | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.2+ |
| 2004 03 22 | 704 | (0.3+ | 2.3−) | 2006 10 10 | 644 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.2+ |

**2004 ED$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.69087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26332348 | $\omega$ | 91.88986 | | −0.88698918 | +0.46048966 | |
| $a$ | 2.4106990 | $\Omega$ | 115.53026 | | −0.43747864 | −0.81391247 | |
| $e$ | 0.1292661 | $i$ | 2.19960 | | −0.14786016 | −0.35425382 | |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.6+ | 0.3− | 2004 03 17 | 704 | 0.1− | 0.1− | 2004 03 30 | 691 | 0.0 | 0.1+ |
| 2000 01 05 | 691 | 0.3− | 0.3− | 2004 03 17 | 704 | 1.2+ | 0.3+ | 2004 03 31 | 691 | 0.6− | 0.3+ |
| 2000 01 05 | 691 | 0.7− | 0.7− | 2004 03 17 | 704 | 0.4+ | 1.2+ | 2004 03 31 | 691 | 0.1+ | 0.1− |
| 2004 02 26 | 704 | 0.1− | 1.0− | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2004 03 31 | 691 | 0.0 | 0.1+ |
| 2004 02 26 | 704 | 0.1+ | 0.5− | 2004 03 19 | 704 | 0.3− | 0.8− | 2004 07 16 | 807 | 0.6+ | 0.3− |
| 2004 02 26 | 704 | 0.1− | 0.6− | 2004 03 19 | 704 | 0.1− | 0.0 | 2004 07 16 | 807 | 1.0− | 0.6+ |
| 2004 02 26 | 704 | 0.3+ | 1.2− | 2004 03 19 | 704 | 0.6− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.2+ | 1.4− | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.5+ | 0.9+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2004 03 22 | 704 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2004 03 16 | 704 | 0.4+ | 0.7+ | 2004 03 22 | 704 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.5+ |
| 2004 03 16 | 704 | 0.2+ | 0.4− | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.4− | 0.3− |
| 2004 03 16 | 704 | 0.7+ | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2004 03 16 | 704 | 0.5+ | 0.5+ | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2004 03 16 | 704 | (2.9+ | 0.2+) | 2004 03 30 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2004 03 17 | 704 | 0.8− | 0.9+ | 2004 03 30 | 691 | 0.1+ | 0.0 | | | | |

**2004 EM$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.51976 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22693876 | $\omega$ | 128.18835 | | −0.38572792 | −0.92233792 | |
| $a$ | 2.6619318 | $\Omega$ | 344.45437 | | +0.81805028 | −0.33062814 | |
| $e$ | 0.1428023 | $i$ | 4.81818 | | +0.42662363 | −0.19994449 | |
| $P$ | 4.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.1− | 0.3+ | 2004 02 26 | 704 | 0.4− | 0.2− | 2004 03 31 | 291 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.7− | 0.5+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2004 03 31 | 291 | 0.4+ | 0.1+ |
| 2002 10 12 | 704 | 0.1+ | 0.1+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2004 04 24 | 691 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.4+ | 0.3− | 2004 03 15 | 691 | 0.2+ | 0.1+ | 2004 04 24 | 691 | 0.4− | 0.2+ |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 03 16 | 704 | 0.3+ | 0.5− | 2004 04 24 | 691 | 0.1+ | 0.4+ |
| 2004 01 18 | 691 | 0.2− | 0.0 | 2004 03 16 | 704 | 1.0+ | 0.5− | 2006 09 15 | 691 | 0.5− | 0.8+ |
| 2004 01 18 | 691 | 0.2− | 0.0 | 2004 03 16 | 704 | 0.8+ | 0.1− | 2006 09 15 | 691 | 0.3− | 0.7+ |
| 2004 01 18 | 691 | 0.2− | 0.2+ | 2004 03 16 | 704 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.8+ |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.7+ | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.5+ |
| 2004 01 18 | 691 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 1.0+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.5+ |
| 2004 01 30 | 568 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.6+ |
| 2004 01 30 | 568 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.7+ | 1.1+ | 2006 09 28 | G96 | 0.5− | 0.2+ |
| 2004 01 30 | 568 | 0.0 | 0.3+ | 2004 03 18 | 704 | 0.7+ | 1.0− | 2006 09 28 | G96 | 0.6− | 0.0 |
| 2004 02 16 | 703 | 1.2+ | 0.3− | 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.6− | 0.1+ |
| 2004 02 16 | 703 | 0.5− | 0.3− | 2004 03 23 | 691 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2004 02 16 | 703 | 0.5− | 0.2+ | 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2004 02 16 | 703 | 0.3+ | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.4− | 0.5− |
| 2004 02 26 | 704 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.8+ | 0.7+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2004 02 26 | 704 | 0.0 | 0.3+ | 2004 03 27 | 704 | 1.2− | 1.4+ | 2006 10 19 | G96 | 0.2− | 0.6− |
| 2004 02 26 | 704 | 0.5− | 0.9+ | 2004 03 27 | 704 | 0.8+ | 0.3+ | | | | |
| 2004 02 26 | 704 | 0.2− | 0.7+ | 2004 03 31 | 291 | 0.4+ | 0.0 | | | | |

**2004 EP$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.38187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27398840 | $\omega$ | 271.21448 | | −0.56050024 | −0.82779562 | |
| $a$ | 2.3477288 | $\Omega$ | 212.91375 | | +0.77653805 | −0.51511213 | |
| $e$ | 0.1857434 | $i$ | 2.57052 | | +0.28779878 | −0.22229237 | |
| $P$ | 3.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.9+ | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2004 02 26 | 704 | 0.0 | 0.6− | 2004 03 27 | 704 | 1.3+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2004 02 26 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 0.2− | 0.7− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2004 03 15 | 691 | 0.1− | 0.2− | 2004 03 30 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2004 03 30 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 1.3+ | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2004 03 30 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 0.6+ | 0.1+ | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2004 03 16 | 704 | (2.5+ | 0.3−) | 2004 03 31 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2004 03 16 | 704 | (1.6+ | 1.1+) | 2004 03 31 | 691 | 0.3− | 0.2+ | 2006 10 29 | 291 | 0.2− | 0.1+ |
| 2004 03 16 | 704 | 0.5− | 0.1− | 2004 04 12 | 691 | 0.0 | 0.4− | 2006 10 29 | 291 | 0.0 | 0.2+ |
| 2004 03 18 | 704 | 0.8+ | 0.8+ | 2004 04 12 | 691 | 0.3+ | 0.3− | 2006 10 29 | 291 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 0.3+ | 1.2+ | 2004 04 12 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2004 03 18 | 704 | 1.0− | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 03 18 | 704 | 0.3− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.5− | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2004 03 20 | 704 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 03 20 | 704 | (0.9− | 1.7+) | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2004 03 20 | 704 | 0.7+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.3− | | | | |
| 2004 03 27 | 704 | (1.1+ | 2.0+) | 2006 10 20 | 691 | 0.1− | 0.5− | | | | |

**2004 EU$_{39}$ = 2006 SB$_{303}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.49206 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21526504 | $\omega$ | 324.19672 | | −0.98645019 | −0.15469084 | |
| $a$ | 2.7573192 | $\Omega$ | 207.05935 | | +0.16396844 | −0.94077640 | |
| $e$ | 0.0677445 | $i$ | 6.89994 | | −0.00551192 | −0.30167949 | |
| $P$ | 4.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.2− | 0.3+ | 2004 03 16 | 704 | 0.3− | 0.4− | 2006 09 27 | 691 | 0.3+ | 0.1− |
| 2004 03 15 | 703 | 0.3+ | 0.5− | 2004 03 16 | 704 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2004 03 15 | 703 | 0.6− | 0.5+ | 2004 03 16 | 704 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2004 03 15 | 703 | 0.3+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.4− | 0.0 | | | | |

**2004 EA$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.29415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22418097 | $\omega$ | 196.76179 | | −0.89596032 | +0.44219166 | |
| $a$ | 2.6837180 | $\Omega$ | 9.79663 | | −0.37436975 | −0.70165480 | |
| $e$ | 0.1932162 | $i$ | 14.11430 | | −0.23896108 | −0.55870124 | |
| $P$ | 4.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 645 | 0.0 | 0.0 | 2004 03 16 | 704 | 0.7− | 0.3− | 2004 03 26 | 703 | 0.4+ | 0.6− |
| 2003 12 25 | 645 | 0.0 | 0.1− | 2004 03 16 | 704 | (2.4+ | 0.0 ) | 2004 03 26 | 703 | 0.3+ | 1.3− |
| 2004 02 17 | 704 | 0.4+ | 0.1+ | 2004 03 16 | 704 | 0.6+ | 1.2+ | 2004 03 26 | 703 | 0.1+ | 1.1− |
| 2004 02 17 | 704 | 0.2+ | 0.3+ | 2004 03 16 | 704 | 0.3+ | 0.1− | 2004 04 12 | 703 | 0.6+ | 0.0 |
| 2004 02 17 | 704 | 0.6− | 0.3+ | 2004 03 17 | 691 | 0.0 | 0.3− | 2004 04 12 | 703 | 0.7+ | 0.6+ |
| 2004 02 17 | 704 | 0.9− | 0.1− | 2004 03 17 | 691 | 0.2− | 0.4− | 2004 04 12 | 703 | 0.7+ | 0.7+ |
| 2004 02 17 | 704 | 0.3+ | 0.2− | 2004 03 17 | 691 | 0.1− | 0.2− | 2004 04 12 | 703 | 0.5− | 0.5+ |
| 2004 02 17 | 704 | 0.6− | 0.9+ | 2004 03 19 | 644 | 0.1− | 0.2− | 2004 04 12 | 291 | 0.1+ | 0.1− |
| 2004 02 17 | 704 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 0.7− | 0.2− | 2004 04 12 | 291 | 0.4− | 0.3− |
| 2004 02 17 | 704 | 0.7− | 1.2+ | 2004 03 19 | 704 | 1.4+ | 0.1− | 2004 04 12 | 291 | 0.4− | 0.1− |
| 2004 02 17 | 703 | 0.1+ | 0.2− | 2004 03 19 | 644 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.6− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 703 | 1.5+ | 2.0+ | 2004 03 19 | 704 | 0.1+ | 0.1− | 2004 04 19 | 704 | 0.6+ | 0.1− |
| 2004 02 17 | 703 | 1.5+ | 0.2+ | 2004 03 19 | 704 | 0.2+ | 0.2− | 2004 04 19 | 704 | 0.5+ | 0.3+ |
| 2004 02 17 | 703 | 0.3− | 0.2+ | 2004 03 19 | 644 | 0.3− | 0.2− | 2004 04 19 | 704 | 0.0 | 0.4− |
| 2004 02 29 | 691 | 0.1+ | 0.0 | 2004 03 19 | 704 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.4+ | 0.1+ |
| 2004 02 29 | 691 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.3+ | 0.4− | 2004 04 22 | 704 | 0.0 | 0.9+ |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.5− | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.8+ |
| 2004 03 15 | 704 | 0.0 | 1.1+ | 2004 03 20 | 704 | 0.1+ | 0.3− | 2004 04 22 | 704 | 0.0 | 0.3+ |
| 2004 03 15 | 704 | 0.5− | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | 0.1− | 0.9+ | 2004 03 20 | 704 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2004 03 15 | 704 | 0.7− | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2004 03 15 | 704 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.3− | 2006 10 20 | G96 | 0.5+ | 0.2+ |
| 2004 03 16 | 704 | 0.5+ | 0.4− | 2004 03 22 | 704 | 0.4− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2004 03 16 | 704 | 0.2+ | 1.1+ | 2004 03 22 | 704 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2004 03 16 | 704 | 1.2− | 0.0 | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2004 03 16 | 704 | 0.8+ | 0.0 | 2004 03 26 | 703 | 0.3− | 0.6− | 2006 10 21 | G96 | 0.2− | 0.2− |

### 2004 EW$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.74169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27634641 | $\omega$ | 189.83606 | | −0.98592762 | −0.16664489 | |
| $a$ | 2.3343546 | $\Omega$ | 340.55598 | | +0.15596027 | −0.88830572 | |
| $e$ | 0.1502695 | $i$ | 2.28534 | | +0.06019234 | −0.42795143 | |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2− | 0.4+ | 2004 02 26 | 704 | 0.2− | 0.4+ | 2004 04 10 | 644 | 0.3+ | 0.1− |
| 1995 10 15 | 691 | 0.4+ | 0.5+ | 2004 03 15 | 703 | (1.5− | 0.8+) | 2004 04 10 | 644 | 0.1+ | 0.3− |
| 1995 10 15 | 691 | 0.5− | 0.0 | 2004 03 15 | 703 | 0.8− | 0.1− | 2004 04 12 | 699 | 0.8+ | 0.5+ |
| 2004 01 18 | 703 | (1.1+ | 1.6−) | 2004 03 15 | 703 | 0.5− | 0.4− | 2004 04 12 | 699 | 0.6+ | 0.3+ |
| 2004 01 18 | 703 | 0.6− | 0.4− | 2004 03 15 | 703 | 1.1− | 0.2+ | 2004 04 12 | 699 | 0.3+ | 0.4+ |
| 2004 01 18 | 703 | (0.3+ | 2.0−) | 2004 03 16 | 704 | 0.6+ | 0.1− | 2004 04 12 | 699 | 0.3+ | 0.5− |
| 2004 01 18 | 703 | (0.4− | 1.6−) | 2004 03 16 | 704 | 0.2− | 0.2− | 2004 04 15 | 699 | 0.4− | 0.1+ |
| 2004 01 18 | 703 | (0.3+ | 1.9−) | 2004 03 16 | 704 | 0.6+ | 0.3+ | 2004 04 15 | 699 | 0.4− | 0.9+ |
| 2004 01 18 | 703 | (0.1+ | 1.7+) | 2004 03 16 | 704 | 0.7+ | 0.2+ | 2004 04 15 | 699 | 0.2− | 0.3− |
| 2004 01 18 | 703 | (1.0+ | 1.8+) | 2004 03 16 | 704 | 0.1+ | 0.2+ | 2004 04 15 | 699 | 0.1− | 0.2− |
| 2004 01 18 | 703 | 1.0− | 0.2− | 2004 03 18 | 704 | 0.3+ | 0.1− | 2004 04 17 | 691 | 0.1− | 0.2− |
| 2004 01 20 | 309 | 0.1+ | 0.5− | 2004 03 18 | 704 | 0.9+ | 0.1− | 2004 04 17 | 691 | 0.2− | 0.1+ |
| 2004 01 20 | 309 | 0.3+ | 0.6− | 2004 03 18 | 704 | 0.7+ | 0.0 | 2004 04 17 | 691 | 0.1+ | 0.5− |
| 2004 01 21 | 309 | 0.1− | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.0 | 2004 05 14 | 704 | 0.5+ | 0.5+ |
| 2004 01 21 | 309 | 0.1− | 0.4− | 2004 03 18 | 704 | 1.0+ | 0.0 | 2004 05 14 | 704 | 0.4− | 0.6+ |
| 2004 01 22 | 309 | 0.1− | 0.3− | 2004 03 23 | 691 | 0.1− | 0.1− | 2004 05 14 | 704 | 0.0 | 0.4+ |
| 2004 01 22 | 309 | 0.2− | 0.4− | 2004 03 23 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2004 01 23 | 699 | 0.1+ | 1.3+ | 2004 03 23 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2004 01 23 | 699 | 0.5+ | 0.6− | 2004 03 27 | 683 | 0.6− | 0.2− | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2004 01 23 | 699 | 0.3− | 0.4− | 2004 03 27 | 683 | (1.5+ | 0.3+) | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2004 01 23 | 699 | 1.2− | 0.8− | 2004 03 27 | 683 | 0.6− | 1.0− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 1.1+ | 0.9+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2004 03 27 | 704 | 1.5− | 1.1+ | 2006 11 24 | 691 | 0.1+ | 0.5− |
| 2004 02 19 | 704 | 1.2+ | 0.2− | 2004 03 27 | 704 | 0.4− | 0.6+ | 2006 11 24 | 691 | 0.3+ | 0.2− |
| 2004 02 19 | 704 | 0.6+ | 0.2+ | 2004 03 27 | 704 | 0.3+ | 0.5− | 2006 11 27 | 704 | 0.2+ | 0.6− |
| 2004 02 19 | 704 | 0.1+ | 0.1+ | 2004 03 29 | 683 | 0.6− | 0.2− | 2006 11 27 | 704 | 0.6+ | 0.8+ |
| 2004 02 19 | 704 | 0.3+ | 0.8+ | 2004 03 29 | 683 | 1.2+ | 0.7+ | 2006 11 27 | 704 | 0.1− | 0.3− |
| 2004 02 19 | 704 | 0.1− | 0.1+ | 2004 03 29 | 683 | (1.6− | 1.4+) | 2006 11 30 | 691 | 0.1− | 0.1+ |
| 2004 02 26 | 704 | 0.1− | 0.5+ | 2004 03 30 | 683 | 0.3− | 0.3+ | 2006 11 30 | 691 | 0.4+ | 0.5− |
| 2004 02 26 | 704 | 0.2− | 0.2+ | 2004 03 30 | 683 | 0.1− | 1.0+ | 2006 11 30 | 691 | 0.9− | 0.5+ |
| 2004 02 26 | 704 | 0.1+ | 0.5+ | 2004 03 30 | 683 | (1.6− | 0.6+) | | | | |
| 2004 02 26 | 704 | 0.1+ | 0.4+ | 2004 04 10 | 644 | 0.0 | 0.1+ | | | | |

### 2004 EO$_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.83176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18597761 | $\omega$ | 93.60638 | | +0.14727943 | +0.98896760 | |
| $a$ | 3.0396875 | $\Omega$ | 184.94806 | | −0.96474387 | +0.14009664 | |
| $e$ | 0.0964761 | $i$ | 10.60241 | | −0.21812390 | +0.04812496 | |
| $P$ | 5.30 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.7− | 0.9+ | 2004 03 26 | 699 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.6+ | 0.3+ |
| 2000 08 02 | 704 | 0.1+ | 0.4+ | 2004 03 26 | 699 | 0.8− | 0.4+ | 2006 09 14 | 691 | 0.2− | 0.4+ |
| 2000 08 02 | 704 | 0.4+ | 1.5+ | 2004 03 26 | 699 | 0.1+ | 0.6− | 2006 09 14 | 703 | 0.6+ | 0.6+ |
| 2000 08 02 | 704 | 0.4− | 1.1+ | 2004 03 26 | 699 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.3+ |
| 2001 11 18 | 704 | 0.3− | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2001 11 18 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.3+ |
| 2001 11 18 | 704 | 0.1− | 0.5+ | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.2+ |
| 2001 11 18 | 704 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 699 | (0.4− | 1.5+) |
| 2001 11 18 | 704 | 0.3− | 0.6+ | 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 09 18 | 699 | 0.8+ | 0.4− |
| 2004 03 15 | 703 | 0.2− | 0.1+ | 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.8+ |
| 2004 03 15 | 703 | 0.8− | 0.1+ | 2004 03 29 | 691 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.9+ |
| 2004 03 15 | 703 | 0.5− | 0.0 | 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 0.2− | 0.5+ | 2004 03 31 | 704 | 0.6− | 1.1+ | 2006 09 20 | 704 | 0.7+ | 0.9+ |
| 2004 03 16 | 704 | 0.9+ | 0.9− | 2004 03 31 | 704 | 0.6+ | 0.5+ | 2006 09 20 | 704 | (0.8− | 1.8+) |
| 2004 03 16 | 704 | (1.7− | 1.6−) | 2004 03 31 | 704 | 0.8+ | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.2− |
| 2004 03 16 | 704 | 0.8− | 1.2+ | 2004 03 31 | 704 | 0.5− | 0.4+ | 2006 10 01 | 704 | 1.1+ | 0.4+ |
| 2004 03 16 | 704 | 1.2+ | 0.4− | 2004 03 31 | 704 | 0.2+ | 1.3+ | 2006 10 01 | 704 | 0.8+ | 0.8+ |
| 2004 03 16 | 704 | 0.5− | 0.2+ | 2004 04 15 | 691 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.3− |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2004 04 15 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.4− | 1.5+ |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2004 04 15 | 691 | 0.1− | 0.4+ | 2006 10 15 | 703 | 0.8− | 0.7+ |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2004 04 15 | 699 | (2.7− | 1.1+) | 2006 10 15 | 703 | 0.2+ | 0.5+ |
| 2004 03 18 | 704 | 0.4+ | 0.1+ | 2004 04 15 | 699 | 0.3− | 1.1+ | 2006 10 15 | 703 | 1.1− | 0.3+ |
| 2004 03 18 | 704 | 0.9+ | 0.4+ | 2004 04 15 | 699 | (1.8− | 0.7+) | 2006 10 15 | 703 | 0.3− | 0.0 |
| 2004 03 18 | 704 | 0.1− | 0.3− | 2004 04 15 | 699 | (0.8− | 1.8−) | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | 0.3+ | 0.3− | 2004 04 21 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2004 03 18 | 704 | 0.6+ | 0.0 | 2004 04 21 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2004 03 19 | 704 | 0.3+ | 0.0 | 2004 04 21 | 704 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | 0.6+ | 0.1− | 2004 04 21 | 704 | 1.0+ | 1.4+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2004 03 19 | 704 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2004 03 19 | 704 | 0.0 | 0.2+ | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2004 03 19 | 704 | 0.2+ | 0.0 | 2006 07 22 | G96 | 1.2− | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2004 03 20 | 699 | 0.6+ | 0.3− | 2006 07 22 | G96 | 0.6+ | 0.0 | 2006 11 11 | 703 | (2.0− | 1.2−) |
| 2004 03 20 | 699 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | (2.5− | 0.2+) |
| 2004 03 20 | 699 | 0.2+ | 0.8+ | 2006 09 14 | 691 | 0.0 | 0.4+ | | | | |
| 2004 03 20 | 699 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.2− | | | | |

### 2004 EN$_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.94819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21853031 | $\omega$ | 166.98745 | | −0.99874133 | −0.04381554 | |
| $a$ | 2.7297838 | $\Omega$ | 10.59228 | | +0.02505082 | −0.85740930 | |
| $e$ | 0.1627655 | $i$ | 7.63181 | | +0.04345368 | −0.51276650 | |
| $P$ | 4.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.3+ | 0.3− | 2004 03 27 | 704 | 0.2+ | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.0 | 0.3+ | 2004 03 27 | 704 | 0.1+ | 0.3− | 2004 04 22 | 691 | 0.2+ | 0.2+ |
| 2004 02 23 | 704 | 0.1+ | 0.2− | 2004 04 08 | 608 | 0.8+ | 1.4− | 2004 04 26 | 608 | 0.3+ | 0.0 |
| 2004 03 15 | 703 | 0.4− | 0.6+ | 2004 04 08 | 608 | 0.5+ | 1.0− | 2004 04 26 | 608 | 0.6+ | 0.3− |
| 2004 03 15 | 703 | 0.2− | 0.2− | 2004 04 08 | 608 | 0.5+ | 0.7− | 2004 04 26 | 608 | 0.4− | 0.6− |
| 2004 03 15 | 703 | (1.7− | 0.1−) | 2004 04 12 | 699 | 1.3− | 0.8+ | 2006 09 14 | 691 | 0.2− | 0.0 |
| 2004 03 15 | 703 | 0.5− | 0.9+ | 2004 04 12 | 644 | 0.3+ | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 2004 03 16 | 704 | (0.9+ | 1.8−) | 2004 04 12 | 644 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.4− | 0.3− |
| 2004 03 16 | 704 | 0.7+ | 0.3+ | 2004 04 12 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.3+ | 0.1− |
| 2004 03 16 | 704 | 1.4+ | 0.2− | 2004 04 12 | 699 | 0.2+ | 0.4− | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2004 03 16 | 704 | 0.7+ | 0.1− | 2004 04 12 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 1.0+ | 0.7− | 2004 04 12 | 644 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.8+ |
| 2004 03 18 | 704 | 0.1+ | 0.0 | 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.6− | 0.1+ | 2004 04 12 | 699 | 0.1+ | 0.6− | 2006 09 25 | 691 | 0.4+ | 0.2+ |
| 2004 03 18 | 704 | 0.0 | 0.6− | 2004 04 12 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.6+ | 0.1− |
| 2004 03 18 | 704 | 0.1− | 0.9− | 2004 04 12 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.3+ | 0.2+ | 2004 04 12 | 699 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2004 03 21 | 699 | 0.1− | 0.0 | 2004 04 12 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2004 03 21 | 699 | 0.1− | 0.1+ | 2004 04 13 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2004 03 21 | 699 | 0.5− | 0.4− | 2004 04 13 | 644 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1− | 0.1− |
| 2004 03 21 | 699 | 0.1+ | 0.8+ | 2004 04 13 | 644 | 0.2− | 0.0 | 2006 10 03 | 691 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 24 | 699 | 0.4− | 0.6− | 2004 04 15 | 699 | 0.7− | 0.0 | 2006 10 17 | 703 | (1.7+ | 0.4−) |
| 2004 03 24 | 699 | 0.2− | 0.1− | 2004 04 15 | 699 | 0.8− | 0.5− | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2004 03 24 | 699 | 1.1− | 0.1+ | 2004 04 15 | 699 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.9− | 0.6+ |
| 2004 03 24 | 699 | 0.8− | 0.8+ | 2004 04 15 | 699 | 0.1− | 0.4− | 2006 10 17 | 703 | 1.1+ | 0.8− |
| 2004 03 26 | 691 | 0.1− | 0.0 | 2004 04 21 | 704 | 0.5+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2004 03 26 | 691 | 0.1− | 0.0 | 2004 04 21 | 704 | 0.5+ | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2004 03 26 | 691 | 0.1− | 0.0 | 2004 04 21 | 704 | 1.1+ | 0.0 | 2006 10 19 | G96 | 0.3− | 0.5− |
| 2004 03 27 | 704 | 0.0 | 0.1+ | 2004 04 21 | 704 | 0.8+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2004 03 27 | 704 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.2− | 0.1+ | | | | |
| 2004 03 27 | 704 | 0.6− | 0.3+ | 2004 04 22 | 691 | 0.2+ | 0.2+ | | | | |

## 2004 EY$_{42}$ = 2001 LQ$_{18}$

Id. Minor Planet Center; 2001 lQ18 = 1999 CN$_{131}$ (*MPO* 17625) is invalid.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.70621 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29478040 | $\omega$ | 171.06955 | | +0.26354469 | +0.96274988 | |
| $a$ | 2.2359923 | $\Omega$ | 114.19245 | | −0.88908974 | +0.26674532 | |
| $e$ | 0.1231911 | $i$ | 3.80117 | | −0.37425076 | +0.04426736 | |
| $P$ | 3.34 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.3+ | 0.2− | 2004 03 17 | 704 | 0.4+ | 1.3+ | 2004 03 22 | 704 | 0.0 | 0.1+ |
| 2001 06 15 | 704 | 0.2− | 0.2− | 2004 03 17 | 704 | 0.0 | 0.9+ | 2004 03 22 | 704 | 0.4+ | 0.3+ |
| 2001 06 15 | 704 | 1.0+ | 0.4+ | 2004 03 17 | 704 | 0.1− | 0.4+ | 2004 03 22 | 704 | 0.0 | 0.7+ |
| 2001 06 17 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.0 | 1.1− | 2004 03 22 | 704 | 0.6− | 0.1− |
| 2001 06 17 | 691 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.9+ | 0.1− | 2004 03 22 | 704 | 0.3− | 0.6− |
| 2001 06 17 | 691 | 0.0 | 0.0 | 2004 03 19 | 704 | (1.7− | 0.5+) | 2004 03 26 | 704 | 0.3− | 0.3+ |
| 2004 03 15 | 683 | (1.9− | 0.1+) | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2004 03 26 | 704 | 0.2+ | 0.6+ |
| 2004 03 15 | 683 | (1.5− | 2.7−) | 2004 03 20 | 704 | 0.1− | 0.5+ | 2004 03 26 | 704 | 0.4− | 0.4+ |
| 2004 03 15 | 703 | 0.9+ | 0.4+ | 2004 03 20 | 704 | 0.7+ | 0.2− | 2004 03 26 | 704 | 0.3+ | 0.2+ |
| 2004 03 15 | 703 | 0.8− | 0.6+ | 2004 03 20 | 704 | 0.5− | 0.1+ | 2004 04 20 | 704 | (2.3+ | 0.8−) |
| 2004 03 15 | 703 | 0.6− | 0.0 | 2004 03 20 | 704 | 0.2− | 0.1− | 2004 04 20 | 704 | 0.4+ | 0.5− |
| 2004 03 15 | 703 | 0.4+ | 0.8+ | 2004 03 20 | 704 | 0.0 | 0.6+ | 2004 04 20 | 704 | 0.8+ | 0.0 |
| 2004 03 16 | 704 | 0.0 | 0.9− | 2004 03 20 | 704 | 0.0 | 0.5+ | 2004 04 21 | 691 | 0.3− | 0.4− |
| 2004 03 16 | 704 | (1.2− | 1.9+) | 2004 03 20 | 704 | 0.5− | 0.1+ | 2004 04 21 | 691 | 0.2− | 0.2− |
| 2004 03 16 | 704 | 1.1+ | 0.9− | 2004 03 20 | 704 | 0.2+ | 0.2− | 2004 04 21 | 691 | 0.4− | 0.1+ |
| 2004 03 16 | 704 | 0.7− | 0.7− | 2004 03 20 | 704 | 0.2− | 1.1+ | 2005 10 08 | 703 | 1.2− | 0.4− |
| 2004 03 17 | 704 | 0.3+ | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.2+ | 2005 10 08 | 703 | 0.0 | 0.6+ |
| 2004 03 17 | 704 | 0.3− | 0.5+ | 2004 03 22 | 704 | 0.0 | 1.3− | 2005 10 08 | 703 | 0.6+ | 0.0 |
| 2004 03 17 | 704 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.6− | 2005 10 08 | 703 | 0.3+ | 0.3+ |
| 2004 03 17 | 704 | 0.2+ | 0.1− | 2004 03 22 | 704 | 1.3+ | 1.1− | | | | |

## 2004 EA$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.73246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26660121 | $\omega$ | 74.47455 | | −0.97189551 | −0.22708216 | |
| $a$ | 2.3908994 | $\Omega$ | 92.36971 | | +0.18507848 | −0.89999759 | |
| $e$ | 0.1164790 | $i$ | 3.56174 | | +0.14548220 | −0.37207261 | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.6− | 0.7+ | 2004 03 20 | 704 | 0.0 | 0.2− | 2004 04 15 | 644 | 0.0 | 0.1+ |
| 2004 03 15 | 703 | 0.0 | 0.5+ | 2004 03 20 | 704 | 0.2− | 0.8− | 2004 04 20 | 704 | 0.1− | 0.2− |
| 2004 03 15 | 703 | 0.6− | 0.8+ | 2004 03 20 | 704 | 0.4+ | 0.4− | 2004 04 20 | 704 | 0.1− | 1.3− |
| 2004 03 15 | 703 | (2.3+ | 0.4+) | 2004 03 20 | 704 | 0.4+ | 0.4− | 2004 04 20 | 704 | 0.5+ | 0.8− |
| 2004 03 16 | 704 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.3+ | 0.3+ | 2004 04 20 | 704 | 0.9− | 0.3+ |
| 2004 03 16 | 704 | 0.7+ | 0.3+ | 2004 03 20 | 704 | 0.6+ | 0.6+ | 2004 04 20 | 704 | 0.1− | 0.6− |
| 2004 03 16 | 704 | 0.1+ | 0.1+ | 2004 03 22 | 704 | 0.4+ | 0.1+ | 2004 04 21 | 691 | 0.2− | 0.1− |
| 2004 03 16 | 704 | 0.9+ | 0.0 | 2004 03 22 | 704 | 0.7− | 0.1− | 2004 04 21 | 691 | 0.1− | 0.3− |
| 2004 03 17 | 704 | 0.3+ | 0.6+ | 2004 03 22 | 704 | 0.0 | 0.1+ | 2004 04 21 | 691 | 0.3− | 0.1− |
| 2004 03 17 | 704 | 0.4+ | 0.5+ | 2004 03 22 | 704 | 0.5− | 0.3− | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2004 03 17 | 704 | 1.4+ | 1.0− | 2004 03 22 | 704 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 2004 03 17 | 704 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2004 03 17 | 704 | (2.0+ | 0.5+) | 2004 03 22 | 704 | 1.4− | 0.5+ | 2006 09 28 | G96 | 0.6+ | 0.6+ |
| 2004 03 17 | 704 | 0.4− | 0.4+ | 2004 03 22 | 704 | 0.7− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 704 | 0.1− | 0.3+ | 2004 03 22 | 704 | 0.4− | 0.2− | 2006 11 19 | 691 | 1.3+ | 0.8− |
| 2004 03 17 | 704 | 0.1+ | 0.3+ | 2004 03 22 | 704 | 0.6− | 0.6+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2004 03 17 | 704 | 0.5− | 0.1− | 2004 03 22 | 704 | 0.6+ | 0.2+ | 2006 11 23 | 691 | 0.4− | 0.3+ |
| 2004 03 17 | 704 | 0.0 | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.5− | 0.3+ |
| 2004 03 19 | 704 | 0.7+ | 0.1+ | 2004 03 22 | 704 | 0.3+ | 0.7− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2004 03 19 | 704 | 0.1+ | 0.2+ | 2004 03 22 | 704 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.3− | 0.2− | 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2004 03 19 | 704 | 0.1− | 0.3+ | 2004 03 30 | 703 | 0.3− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2004 03 19 | 704 | 0.3+ | 0.3+ | 2004 03 30 | 703 | 0.2− | 0.7− | 2006 12 01 | 691 | 0.1− | 0.4− |
| 2004 03 20 | 704 | 0.3+ | 0.1− | 2004 03 30 | 703 | 0.5+ | 0.5+ | 2006 12 01 | 691 | 0.3+ | 0.1+ |
| 2004 03 20 | 704 | 0.6+ | 0.0 | 2004 03 30 | 703 | 0.3+ | 0.0 | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 0.3+ | 0.1− | 2004 04 15 | 644 | 0.1+ | 0.3+ | | | | |
| 2004 03 20 | 704 | 0.3+ | 0.2+ | 2004 04 15 | 644 | 0.1+ | 0.1+ | | | | |

## 2004 EC$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.32848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22967401 | $\omega$ | 132.03147 | | −0.95409971 | −0.29738344 | |
| $a$ | 2.6407552 | $\Omega$ | 30.71750 | | +0.25016860 | −0.85645125 | |
| $e$ | 0.1628476 | $i$ | 3.97974 | | +0.16464936 | −0.42196487 | |
| $P$ | 4.29 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 683 | 1.4+ | 0.8+ | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 2000 05 07 | 704 | 0.3+ | 0.6+ | 2004 03 27 | 683 | (0.2− | 2.9+) | 2006 09 14 | 691 | 0.3− | 0.6+ |
| 2000 05 07 | 704 | 0.2− | 0.9+ | 2004 03 27 | 683 | 0.5− | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.5+ |
| 2000 05 07 | 704 | 0.5+ | 0.8+ | 2004 03 28 | 704 | 0.1+ | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2004 02 23 | 704 | (0.7− | 3.7−) | 2004 03 28 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 691 | 0.4− | 0.2+ |
| 2004 02 23 | 704 | (0.7− | 1.8−) | 2004 03 28 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2004 02 23 | 704 | (0.1+ | 2.3−) | 2004 03 28 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.7− | 0.3− |
| 2004 03 15 | 703 | 0.6− | 0.6− | 2004 03 28 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2004 03 15 | 703 | 0.1− | 1.0+ | 2004 03 30 | 683 | (0.2+ | 1.6+) | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2004 03 15 | 703 | 0.3− | 0.1− | 2004 03 30 | 683 | 0.5− | 1.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 703 | 0.9− | 0.2+ | 2004 03 30 | 683 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2004 03 16 | 704 | 0.4+ | 0.3+ | 2004 04 11 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2004 03 16 | 704 | 1.1+ | 0.8− | 2004 04 11 | 644 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.9+ | 0.2+ |
| 2004 03 16 | 704 | 1.0+ | 0.5− | 2004 04 11 | 644 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.2+ |
| 2004 03 16 | 704 | 0.9+ | 0.2− | 2004 04 12 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.4+ |
| 2004 03 17 | 333 | 0.0 | 0.3− | 2004 04 12 | 644 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.5+ |
| 2004 03 17 | 333 | 0.4+ | 0.3− | 2004 04 12 | 644 | 0.5+ | 0.0 | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2004 03 17 | 333 | 0.3− | 0.6− | 2004 04 15 | 691 | 0.1− | 0.1+ | 2006 10 29 | 291 | 0.2− | 0.1+ |
| 2004 03 19 | 704 | 0.6− | 0.6+ | 2004 04 15 | 644 | 0.1+ | 0.6+ | 2006 10 29 | 291 | 0.2− | 0.4+ |
| 2004 03 19 | 704 | 0.2+ | 0.4− | 2004 04 15 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2004 03 19 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 1.0+ | 0.4+ |
| 2004 03 19 | 704 | 0.1− | 0.1+ | 2004 04 15 | 644 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2004 03 19 | 704 | 0.3+ | 0.6− | 2004 04 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2004 03 21 | 699 | 0.6+ | 0.9+ | 2004 04 19 | 704 | 0.6+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2004 03 21 | 699 | 1.0− | 0.5− | 2004 04 19 | 704 | 0.6+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 03 21 | 699 | 1.4+ | 0.5− | 2004 04 19 | 704 | 0.6+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2004 03 21 | 699 | 0.4− | 0.4+ | 2004 04 19 | 704 | 1.2+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 03 22 | 704 | 0.2− | 0.3+ | 2004 04 22 | 691 | 0.7− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2004 03 22 | 704 | 0.0 | 0.3+ | 2004 04 22 | 691 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.4+ |
| 2004 03 22 | 704 | 0.0 | 0.2+ | 2004 04 22 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2004 03 22 | 704 | 1.0+ | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.5+ | 2006 11 22 | G96 | 0.0 | 0.1− |

## 2004 EN$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.51280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24254121 | $\omega$ | 286.65091 | | −0.97787281 | −0.16240511 | |
| $a$ | 2.5465118 | $\Omega$ | 244.16413 | | +0.19815242 | −0.92118138 | |
| $e$ | 0.1410860 | $i$ | 8.42492 | | −0.06708487 | −0.35362330 | |
| $P$ | 4.06 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 644 | 0.3− | 0.2− | 2004 03 17 | 703 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.3− |
| 2004 03 15 | 644 | 0.3− | 0.4− | 2004 03 26 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 644 | 0.3− | 0.0 | 2004 03 26 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 704 | 0.1+ | 0.3+ | 2004 03 26 | 704 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.5+ | 0.2+ |
| 2004 03 17 | 704 | 0.0 | 0.0 | 2004 03 26 | 704 | 0.5+ | 0.0 | 2006 11 01 | G96 | 0.5+ | 0.4− |
| 2004 03 17 | 703 | 0.0 | 0.5+ | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 03 17 | 704 | 0.3+ | 0.2− | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.5+ | 0.3− |
| 2004 03 17 | 703 | 1.1− | 0.1− | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2004 03 17 | 704 | 0.3+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.5− | 0.2+ |
| 2004 03 17 | 703 | 0.7− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2004 03 17 | 704 | 0.6+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.0 |

**2004 EJ$_{45}$ = 2006 SD$_{301}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 324.04370 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.21360685 | $\omega$ | 46.02768 | +0.74068455 | −0.67181363 |
| $a$ | 2.7715705 | $\Omega$ | 356.15828 | +0.58117480 | +0.64610759 |
| $e$ | 0.0347501 | $i$ | 6.22894 | +0.33707899 | +0.36223119 |
| $P$ | 4.61 | $H$ | 16.0 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.3− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 09 26 | 291 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.1− | 0.3− | 2004 03 30 | 691 | 0.1− | 0.3+ | 2006 09 26 | 291 | 0.0 | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2004 03 31 | 691 | 0.0 | 0.3+ | 2006 09 26 | 291 | 0.1− | 0.0 |
| 2004 03 17 | 291 | 0.0 | 0.2− | 2004 03 31 | 691 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.0 | 1.3− |
| 2004 03 17 | 291 | 0.3+ | 0.3− | 2004 03 31 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | (2.0+ | 0.9−) |
| 2004 03 17 | 291 | 0.0 | 0.0 | 2004 04 12 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2004 03 18 | 704 | 1.2+ | 0.1+ | 2004 04 12 | 691 | 0.8− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2004 03 18 | 704 | 1.0+ | 0.7− | 2004 04 12 | 691 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 1.1+ | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.9+ | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2004 03 18 | 704 | 0.8− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.6+ | 2006 10 02 | 691 | 0.3− | 0.1− |
| 2004 03 18 | 704 | 1.4+ | 0.4+ | 2006 07 21 | G96 | (0.3+ | 1.8+) | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2004 03 29 | 291 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.6− | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2004 03 29 | 291 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.5+ | 0.3− |
| 2004 03 29 | 291 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | | | | |
| 2004 03 30 | 691 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | | | | |

**2004 EN$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 8.86343 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.19320315 | $\omega$ | 171.44070 | +0.95803032 | +0.28449207 |
| $a$ | 2.9634203 | $\Omega$ | 171.77020 | −0.27543057 | +0.94757987 |
| $e$ | 0.0639161 | $i$ | 14.25378 | −0.07947269 | +0.14545325 |
| $P$ | 5.10 | $H$ | 15.9 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.4+ | 1.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2004 03 17 | 291 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2004 03 17 | 291 | 0.4− | 0.4+ | 2006 09 12 | 703 | (0.7+ | 1.9+) | 2006 09 26 | G96 | 0.6+ | 0.0 |
| 2004 03 17 | 291 | 0.4− | 0.1+ | 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2004 03 23 | 691 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.9+ |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 12 | 703 | (0.5+ | 3.0+) | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2004 03 30 | 691 | 0.6+ | 0.3− | 2006 09 16 | 699 | 0.6− | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.9+ |
| 2004 03 30 | 691 | 0.1+ | 0.5+ | 2006 09 16 | 699 | 0.7+ | 0.4− | 2006 09 30 | G96 | 0.4− | 0.0 |
| 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.5+ | 1.3+ | 2006 09 30 | 703 | 0.8− | 1.1+ |
| 2005 06 24 | 644 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.6− | 2006 09 30 | 703 | 0.9− | 0.6+ |
| 2005 06 24 | 644 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2005 06 24 | 644 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.8+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.9− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2005 07 04 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.3+ | | | | |

**2004 EY$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 101.01285 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.18107294 | $\omega$ | 164.63495 | −0.27055031 | +0.96256411 |
| $a$ | 3.0943327 | $\Omega$ | 89.66588 | −0.88499727 | −0.24192155 |
| $e$ | 0.1334226 | $i$ | 0.94650 | −0.37892264 | −0.12224687 |
| $P$ | 5.44 | $H$ | 16.2 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 14 | 691 | 0.0 | 0.3+ | 2004 03 30 | 291 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.9− | 0.3+ |
| 1999 04 14 | 691 | 0.2+ | 0.1+ | 2004 04 24 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.2− |
| 1999 04 14 | 691 | 0.1+ | 0.6+ | 2004 04 24 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.3+ |
| 2001 11 15 | 691 | 0.1− | 0.2+ | 2004 04 24 | 691 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2001 11 15 | 691 | 0.3+ | 0.5− | 2006 09 15 | 691 | 0.5+ | 1.3+ | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2001 11 15 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.6− | 0.2+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.6− | 0.2+ |
| 2004 03 17 | 291 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2004 03 17 | 291 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.4+ |
| 2004 03 17 | 291 | 0.2+ | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.5− | 0.2− |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.5− | 0.8+ |
| 2004 03 30 | 291 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2004 03 30 | 291 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.1− |

**2004 EF$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 121.39676 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.17835809 | $\omega$ | 220.71620 | −0.64322454 | +0.76434776 |
| $a$ | 3.1256536 | $\Omega$ | 9.55532 | −0.61290419 | −0.47867957 |
| $e$ | 0.1772631 | $i$ | 15.76739 | −0.45892335 | −0.43201664 |
| $P$ | 5.53 | $H$ | 15.2 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.5− | 0.4+ | 2004 03 20 | 704 | 0.1− | 0.8+ | 2006 09 15 | 691 | 0.1− | 0.0 |
| 1995 10 23 | 691 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.8+ |
| 1995 10 23 | 691 | 0.0 | 0.4+ | 2004 03 22 | 704 | 1.0+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 2004 02 13 | 691 | 0.0 | 0.0 | 2004 03 22 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2004 02 13 | 691 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.5− | 1.2+ | 2006 09 19 | 703 | 1.2− | 0.2− |
| 2004 02 13 | 691 | 0.1− | 0.2− | 2004 03 22 | 704 | (1.8+ | 0.9−) | 2006 09 19 | 703 | 0.9+ | 0.6+ |
| 2004 02 29 | 691 | 0.2+ | 0.1+ | 2004 03 22 | 704 | 1.4+ | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.5− |
| 2004 02 29 | 691 | 0.2+ | 0.0 | 2004 03 28 | 703 | 0.8+ | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.0 |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2004 03 28 | 703 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.3− | 0.4+ |
| 2004 03 15 | 704 | 1.0+ | 0.8− | 2004 03 28 | 703 | 0.5− | 0.7+ | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 2004 03 15 | 704 | 0.8− | 0.2− | 2004 03 28 | 703 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.3+ |
| 2004 03 15 | 704 | 0.5+ | 0.4+ | 2004 04 13 | 291 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2004 03 15 | 704 | 1.0+ | 0.1+ | 2004 04 13 | 291 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2004 03 15 | 704 | 0.4+ | 0.2+ | 2004 04 13 | 291 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2004 03 17 | 691 | 0.1− | 0.1+ | 2005 07 03 | E12 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2004 03 17 | 691 | 0.3− | 0.0 | 2005 07 03 | E12 | 0.2− | 0.9+ | 2006 11 15 | G96 | 0.6+ | 0.5− |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2005 07 03 | E12 | 0.3− | 1.0+ | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2004 03 20 | 704 | 0.2+ | 0.3+ | 2005 07 03 | E12 | 0.1+ | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.8− |
| 2004 03 20 | 704 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 1.1+ | 1.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ | | | | |

**2004 EV$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 358.84773 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.22202896 | $\omega$ | 358.13774 | +0.96026014 | −0.27848227 |
| $a$ | 2.7010314 | $\Omega$ | 18.06540 | +0.25684670 | +0.85553920 |
| $e$ | 0.0890079 | $i$ | 3.44929 | +0.10922564 | +0.43646341 |
| $P$ | 4.44 | $H$ | 16.7 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2004 03 17 | 291 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2004 03 17 | 291 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.9− | 0.1− |
| 2004 03 17 | 291 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.4− | 0.2− |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.4− | 0.4− | 2006 10 28 | 691 | 0.5+ | 0.2+ |
| 2004 03 30 | 291 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2004 03 30 | 291 | 0.1− | 0.1− | 2006 10 13 | A50 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2004 03 30 | 291 | 0.1− | 0.4+ | 2006 10 13 | A50 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 13 | A50 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.6+ | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 15 | 703 | 0.9+ | 1.2+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.4+ | 0.4− | 2006 11 13 | 691 | 0.4− | 0.1+ |
| 2006 09 18 | 691 | 0.4− | 0.1− | 2006 10 15 | 703 | 0.3− | 1.4+ | 2006 11 13 | 691 | 0.6− | 0.4− |
| 2006 09 18 | 691 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.1− | | | | |

**2004 EF$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.93694 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23688666 | $\omega$ | 237.32750 | | +0.91625121 | −0.39963098 |
| $a$ | 2.5868762 | $\Omega$ | 146.20397 | | +0.38229808 | +0.85144011 |
| $e$ | 0.2179472 | $i$ | 2.87578 | | +0.11971589 | +0.33962453 |
| $P$ | 4.16 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.0 | 0.9− | 2005 05 19 | G96 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 10 30 | 608 | 0.1− | 1.1− | 2005 05 19 | G96 | 0.2+ | 1.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 10 30 | 608 | 0.3− | 0.7− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2002 11 11 | 704 | 0.1+ | 0.7− | 2006 09 19 | 691 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 11 11 | 704 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2002 11 11 | 704 | 1.1− | 0.2+ | 2006 09 20 | 699 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2002 12 03 | 608 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2002 12 03 | 608 | 0.7+ | 0.3− | 2006 09 20 | 699 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.5− | 0.0 |
| 2002 12 03 | 608 | 0.6+ | 0.2− | 2006 09 20 | 699 | 0.7− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 12 10 | 644 | 0.3− | 0.4+ | 2006 09 23 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2002 12 10 | 644 | 0.1− | 0.6+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 27 | 704 | 0.0 | 0.0 |
| 2002 12 10 | 644 | 0.3− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.3+ | 0.7+ |
| 2002 12 27 | 644 | 0.4+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.3+ | 1.1+ |
| 2002 12 27 | 644 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.4+ | 2006 10 27 | 704 | 0.3− | 0.5− |
| 2002 12 27 | 644 | 0.2− | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 03 15 | 691 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.7− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 03 17 | 291 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.2− | 2006 11 07 | 644 | 0.2− | 0.4+ |
| 2004 03 17 | 291 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 07 | 644 | 0.3+ | 0.3+ |
| 2004 03 17 | 291 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2004 03 23 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2005 05 19 | G96 | 0.3+ | 0.7+ | 2006 10 21 | 703 | 0.5+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2005 05 19 | G96 | 0.1− | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.1+ | | | | |

**2004 EV$_{47}$ = 2004 FR$_{163}$**

Id. Minor Planet Center (d, *MPO* 77916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.54001 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22773178 | $\omega$ | 173.95731 | | −0.84251731 | −0.53850835 |
| $a$ | 2.6557486 | $\Omega$ | 333.44742 | | +0.49297791 | −0.76097111 |
| $e$ | 0.0482003 | $i$ | 1.68777 | | +0.21711143 | −0.36184489 |
| $P$ | 4.33 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.1− | 0.9+ | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2004 02 26 | 704 | (0.5+ | 2.0+) | 2004 03 20 | 704 | 0.8− | 0.9+ | 2006 10 20 | 691 | 0.0 | 0.2− |
| 2004 02 26 | 704 | (0.7+ | 2.2+) | 2004 03 20 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 03 15 | 703 | 0.8− | 0.9+ | 2004 03 20 | 704 | 0.8+ | 1.4− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2004 03 15 | 703 | 1.0− | 0.3− | 2004 03 23 | 704 | 1.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2004 03 15 | 703 | 1.0− | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 1.4+ | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 2004 03 17 | 691 | 0.4− | 0.0 | 2004 03 23 | 704 | 0.7+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 691 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2004 03 17 | 691 | 0.3− | 0.2− | 2004 04 25 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 1.0+ | 0.2− | 2004 04 25 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.5+ | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2004 03 18 | 704 | 0.8+ | 0.6− | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.4− |
| 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.2+ | | | | |
| 2004 03 20 | 704 | (1.7+ | 0.4+) | 2006 10 20 | 691 | 0.3− | 0.2− | | | | |

**2004 EX$_{47}$ = 2006 QS$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.39324 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.18065287 | $\omega$ | 172.69562 | | −0.98083354 | −0.19479965 |
| $a$ | 3.0991277 | $\Omega$ | 356.06348 | | +0.17543540 | −0.87324983 |
| $e$ | 0.0887956 | $i$ | 3.60839 | | +0.08478203 | −0.44664060 |
| $P$ | 5.46 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.0 | 1.0+ | 2004 03 18 | 704 | 0.7+ | 0.6− | 2006 08 21 | 691 | 0.2− | 0.2+ |
| 2004 03 15 | 703 | 0.3− | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 08 21 | 691 | 0.0 | 0.2− |
| 2004 03 15 | 703 | 0.9+ | 0.3+ | 2004 03 27 | 704 | 1.3+ | 0.5+ | 2006 08 21 | 691 | 0.1+ | 0.2− |
| 2004 03 15 | 703 | 0.6+ | 0.6+ | 2004 03 27 | 704 | 0.5+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2004 03 27 | 704 | (2.3+ | 0.9−) | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2004 03 17 | 691 | 0.3− | 0.3− | 2004 03 27 | 704 | 0.6+ | 0.4− | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2004 03 17 | 691 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2004 03 18 | 704 | 0.3− | 0.3− | 2004 03 28 | 291 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2004 03 18 | 704 | 0.9− | 0.1+ | 2004 03 28 | 291 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.2+ | 0.0 | 2004 03 28 | 291 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1− |

**2004 ES$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.65009 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.24433101 | $\omega$ | 119.41976 | | −0.21745794 | −0.97542532 |
| $a$ | 2.5340606 | $\Omega$ | 343.02948 | | +0.84815252 | −0.17085438 |
| $e$ | 0.0812788 | $i$ | 6.97825 | | +0.48306247 | −0.13911949 |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 1.0− | 0.3− | 2004 03 23 | 704 | 0.2− | 1.1+ | 2006 10 19 | 703 | 0.3+ | 0.3+ |
| 2004 03 15 | 703 | (1.5+ | 1.7−) | 2004 03 23 | 704 | 0.0 | 0.3− | 2006 10 19 | A50 | 0.9+ | 0.0 |
| 2004 03 15 | 703 | (3.0− | 1.5+) | 2004 03 27 | 704 | 0.4+ | 0.5− | 2006 10 19 | A50 | 0.9− | 0.4− |
| 2004 03 15 | 703 | 1.2− | 0.2+ | 2004 03 27 | 704 | (0.2− | 1.7+) | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2004 03 17 | 691 | 0.2+ | 0.2− | 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.4+ | 0.6+ |
| 2004 03 17 | 691 | 0.1+ | 0.3− | 2004 03 28 | 691 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.0 | 0.1+ | 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2004 03 18 | 704 | 0.2− | 0.3+ | 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.5− | 2006 10 04 | G96 | 0.2− | 0.3+ | 2006 11 23 | 703 | 0.2+ | 0.8− |
| 2004 03 18 | 704 | 0.8− | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 1.0− | 0.5+ |
| 2004 03 20 | 704 | (1.8+ | 0.5+) | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.7− | 0.5− |
| 2004 03 20 | 704 | 0.7− | 0.7+ | 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.2+ | 1.2− |
| 2004 03 20 | 704 | 0.6− | 0.2− | 2006 10 19 | 703 | (1.9+ | 0.6+) | | | | |
| 2004 03 23 | 704 | 0.9+ | 0.7+ | 2006 10 19 | 703 | (2.0+ | 0.8−) | | | | |

**2004 EW$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 286.81305 | | (2000.0) | | | |
| $n$ | 0.24287674 | $\omega$ | 133.98514 | | −0.30451518 | −0.95209587 |
| $a$ | 2.5441660 | $\Omega$ | 333.70552 | | +0.85482166 | −0.26019985 |
| $e$ | 0.0868478 | $i$ | 3.62387 | | +0.42017906 | −0.16065336 |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.5− | 0.5− | 2004 03 26 | 699 | 0.0 | 0.3+ | 2004 04 25 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | (0.3+ | 1.8+) | 2004 03 26 | 704 | 1.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 703 | 0.6+ | 0.2− | 2004 03 26 | 699 | 0.4− | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | 0.1− | 0.4+ | 2004 03 26 | 704 | (1.8+ | 0.7+) | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2004 03 26 | 704 | 0.6+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2004 03 26 | 704 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2004 03 17 | 691 | 0.1+ | 0.1+ | 2004 03 26 | 699 | 1.2− | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 704 | 0.1− | 0.2− | 2004 03 26 | 704 | 0.5+ | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 0.2− | 0.8− | 2004 03 26 | 699 | 1.1− | 1.0− | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | (1.5− | 0.2−) | 2004 03 27 | 704 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 0.6− | 0.2− | 2004 03 27 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.3− |
| 2004 03 20 | 704 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.4− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2004 03 20 | 704 | 0.2− | 0.3− | 2004 03 27 | 704 | 0.1+ | 0.9− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 1.4+ | 0.6− | 2004 04 25 | 691 | 0.1− | 0.1+ | | | | |
| 2004 03 20 | 704 | 0.3+ | 0.4− | 2004 04 25 | 691 | 0.0 | 0.0 | | | | |

**2004 EJ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 219.20757 | | (2000.0) | | | |
| $n$ | 0.23581525 | $\omega$ | 171.13184 | | −0.99886106 | −0.04681649 |
| $a$ | 2.5947058 | $\Omega$ | 6.20705 | | +0.03686355 | −0.87974501 |
| $e$ | 0.0849212 | $i$ | 4.88573 | | +0.03029291 | −0.47313521 |
| $P$ | 4.18 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 699 | 0.6+ | 0.8+ | 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.1+ |
| 2000 04 26 | 699 | 0.3− | 0.7− | 2004 03 27 | 704 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2000 04 26 | 699 | 0.1+ | 0.6+ | 2004 03 27 | 704 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2000 04 26 | 699 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2004 03 15 | 703 | 0.7− | 0.7+ | 2004 03 28 | 704 | 0.6− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2004 03 15 | 703 | 0.3+ | 0.4+ | 2004 03 28 | 704 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2004 03 15 | 703 | 0.5− | 0.3+ | 2004 03 28 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 703 | 0.3+ | 0.3− | 2004 03 28 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.7− | 0.1+ |
| 2004 03 17 | 691 | 0.1− | 0.2− | 2004 03 28 | 704 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2004 03 17 | 691 | 0.2− | 0.1− | 2004 03 29 | 704 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2004 03 29 | 704 | 0.2− | 1.0+ | 2006 10 02 | G96 | 0.4+ | 0.0 |
| 2004 03 18 | 704 | 0.7+ | 0.2+ | 2004 03 29 | 704 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2004 03 18 | 704 | 0.3+ | 0.2− | 2004 03 29 | 704 | 0.2+ | 0.7+ | 2006 10 02 | G96 | 0.7+ | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 0.2− | 2004 03 29 | 704 | 1.0+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2004 03 18 | 704 | 0.4+ | 0.1− | 2004 03 31 | 704 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.1− | 2004 03 31 | 704 | 0.1+ | 0.5− | 2006 10 11 | 691 | 0.1− | 0.1− |
| 2004 03 26 | 699 | 0.2− | 0.1− | 2004 03 31 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2004 03 26 | 699 | 0.1+ | 0.2+ | 2004 03 31 | 704 | 0.5+ | 0.4− | 2006 10 11 | 691 | 0.3+ | 0.1− |
| 2004 03 26 | 699 | 0.7− | 0.5− | 2004 04 25 | 691 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.2+ |
| 2004 03 26 | 699 | 0.2+ | 0.1− | 2004 04 25 | 691 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.2− | 0.4+ |
| 2004 03 27 | 704 | 0.2− | 0.3+ | 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.4− | 0.2+ |

**2004 EN$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 149.97429 | | (2000.0) | | | |
| $n$ | 0.20659589 | $\omega$ | 189.34930 | | −0.63601959 | +0.77083140 |
| $a$ | 2.8339244 | $\Omega$ | 41.16696 | | −0.70441222 | −0.56088568 |
| $e$ | 0.1301607 | $i$ | 3.13753 | | −0.31509128 | −0.30203675 |
| $P$ | 4.77 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.2+ | 1.0+ | 2004 03 22 | 704 | 0.6+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2004 03 12 | 644 | 0.4− | 0.6+ | 2004 03 22 | 704 | 0.6+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2004 03 12 | 644 | 0.2− | 0.7+ | 2004 03 22 | 704 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2004 03 15 | 703 | 0.5+ | 1.3+ | 2004 03 22 | 704 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.5− | 0.3− |
| 2004 03 15 | 703 | (1.7− | 0.4−) | 2004 03 28 | 704 | 1.2− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2004 03 15 | 703 | (1.7+ | 1.3+) | 2004 03 28 | 704 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2004 03 15 | 703 | 0.9− | 0.2+ | 2004 03 28 | 704 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.6+ | 0.8− |
| 2004 03 17 | 691 | 0.0 | 0.2− | 2004 03 28 | 704 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2004 04 15 | 691 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2004 03 17 | 691 | 0.2− | 0.1− | 2004 04 15 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2004 03 19 | 704 | 0.5+ | 0.8− | 2004 04 15 | 691 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2004 03 19 | 704 | 0.1+ | 0.4− | 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.2+ | 1.4− | 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 0.1− | 0.1+ | 2004 04 25 | 691 | 0.0 | 0.0 | | | | |
| 2004 03 19 | 704 | 0.8+ | 0.4− | 2006 09 26 | G96 | 0.4− | 0.1+ | | | | |

**2004 EP$_{49}$ = 2006 SO$_{340}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.31668 | | (2000.0) | | | |
| $n$ | 0.22073040 | $\omega$ | 352.33491 | | +0.93521595 | −0.34261113 |
| $a$ | 2.7116145 | $\Omega$ | 28.21724 | | +0.33406498 | +0.77011825 |
| $e$ | 0.0737219 | $i$ | 10.89659 | | +0.11735293 | +0.53808503 |
| $P$ | 4.47 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.8+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 1.0− | 0.8− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2004 03 17 | 691 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2004 03 27 | 691 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.8− |
| 2004 03 27 | 691 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.3− | 0.7− |
| 2004 03 27 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.7− | 0.8− |
| 2004 03 27 | 691 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 16 | 703 | 1.2− | 0.1− |
| 2004 03 27 | 691 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 19 | 291 | 0.1+ | 0.2+ |
| 2004 03 27 | 691 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 19 | 291 | 0.1+ | 0.2+ |
| 2006 09 18 | 703 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 19 | 291 | 0.2+ | 0.2+ |

**2004 EB$_{50}$ = 2006 SL$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 248.79902 | | (2000.0) | | | |
| $n$ | 0.21974922 | $\omega$ | 117.22810 | | −0.44499905 | −0.89553029 |
| $a$ | 2.7196801 | $\Omega$ | 359.19244 | | +0.78967735 | −0.39178625 |
| $e$ | 0.0654451 | $i$ | 4.73429 | | +0.42235711 | −0.21101905 |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 24 | 691 | 0.2− | 0.3− | 2004 03 12 | 644 | 0.7+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 1993 10 24 | 691 | 0.2− | 0.3+ | 2004 03 12 | 644 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 1993 10 24 | 691 | 0.4+ | 0.2− | 2004 03 12 | 644 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 1995 03 10 | 691 | 0.1− | 0.2+ | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 1995 03 10 | 691 | 0.7+ | 0.1− | 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.0 |
| 1995 03 10 | 691 | 0.5+ | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 1995 03 10 | 691 | 0.3− | 0.2+ | 2006 08 19 | 691 | 0.5− | 0.7+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 1995 03 10 | 691 | 0.4− | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.3+ | | | | |
| 1995 03 10 | 691 | 0.2− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.1+ | | | | |

**2004 EC$_{50}$ = 2006 SZ$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 78.31366 | | | (2000.0) | −0.08455735 | +0.99640796 |
| $n$ | 0.17186166 | $\omega$ | 82.22270 | | −0.94596075 | −0.08172744 |
| $a$ | 3.2039327 | $\Omega$ | 182.93855 | | −0.31306280 | −0.02217660 |
| $e$ | 0.1413216 | $i$ | 5.15664 | | | |
| $P$ | 5.73 | $H$ | 15.2 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 704 | 1.0− | 0.5+ | 2004 03 18 | 704 | 0.1+ | 0.8+ | 2004 03 31 | 291 | 0.4− | 0.2− |
| 1999 05 18 | 704 | (4.1+ | 1.8+) | 2004 03 18 | 691 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.6− | 0.2+ |
| 1999 05 18 | 704 | 1.1+ | 0.0 | 2004 03 18 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 1.4+ | 0.9+ |
| 1999 05 18 | 704 | (2.7− | 0.5+) | 2004 03 18 | 691 | 0.5− | 0.0 | 2006 09 25 | 699 | 1.1+ | 0.3+ |
| 2001 11 20 | 704 | 0.7− | 1.3− | 2004 03 23 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 699 | 1.1− | 0.7+ |
| 2001 11 20 | 704 | 0.7− | 0.6− | 2004 03 23 | 704 | (0.3+ | 2.6+) | 2006 09 30 | 703 | 0.8− | 0.4+ |
| 2001 11 20 | 704 | 0.0 | 0.6+ | 2004 03 23 | 704 | 0.8+ | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.6+ |
| 2001 11 20 | 704 | 1.4+ | 1.1+ | 2004 03 23 | 704 | 0.9+ | 0.2+ | 2006 09 30 | 703 | (1.6− | 0.5+) |
| 2004 03 12 | 644 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.7+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.4+ |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2004 03 12 | 644 | 0.1− | 0.1+ | 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.4− | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 1.0+ | 2004 03 28 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.6− | 0.0 |
| 2004 03 18 | 704 | 0.3− | 0.1+ | 2004 03 31 | 291 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2004 03 18 | 704 | 0.7+ | 1.2+ | 2004 03 31 | 291 | 0.1− | 0.0 | | | | |

**2004 EP$_{50}$ = 2006 WP$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 202.53935 | | | (2000.0) | −0.83094101 | +0.55596344 |
| $n$ | 0.25760644 | $\omega$ | 170.51470 | | −0.51243910 | −0.75008631 |
| $a$ | 2.4462353 | $\Omega$ | 43.28431 | | −0.21666379 | −0.35815525 |
| $e$ | 0.1293616 | $i$ | 1.75656 | | | |
| $P$ | 3.83 | $H$ | 17.3 | $G$ 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 695 | 0.2+ | 0.4− | 2004 03 18 | 691 | 0.2− | 0.1− | 2004 03 20 | 699 | 0.4− | 0.4− |
| 2004 02 26 | 695 | 0.0 | 0.3− | 2004 03 19 | 704 | 0.6− | 0.7+ | 2004 03 20 | 699 | 0.8+ | 0.2+ |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.2− | 0.8+ | 2004 03 28 | 691 | 0.2− | 0.0 |
| 2004 03 14 | 691 | 0.3+ | 0.1+ | 2004 03 19 | 704 | 0.4− | 0.2− | 2004 03 28 | 691 | 0.1+ | 0.3− |
| 2004 03 14 | 691 | 0.1− | 0.2− | 2004 03 19 | 704 | 0.1− | 0.4+ | 2004 03 28 | 691 | 0.3+ | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 0.3− | 2004 03 19 | 704 | 0.6− | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2004 03 18 | 704 | 0.3+ | 0.6+ | 2004 03 19 | 704 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2004 03 18 | 704 | 1.2+ | 0.0 | 2004 03 19 | 704 | 1.6− | 0.7+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 0.8+ | 0.5− | 2004 03 19 | 704 | 1.8− | 0.6+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 03 18 | 691 | 0.1− | 0.2+ | 2004 03 20 | 699 | 0.5+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2004 03 20 | 699 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.0 | 0.1+ |

**2004 EX$_{50}$ = 2006 UL$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 107.79118 | | | (2000.0) | −0.43590378 | +0.89994916 |
| $n$ | 0.18907596 | $\omega$ | 247.56401 | | −0.76159595 | −0.37412952 |
| $a$ | 3.0063889 | $\Omega$ | 356.55409 | | −0.47954093 | −0.22387186 |
| $e$ | 0.0836390 | $i$ | 8.52529 | | | |
| $P$ | 5.21 | $H$ | 15.9 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 11 | 644 | 0.2− | 0.4+ | 2004 03 16 | 704 | (2.8+ | 0.2−) | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2004 03 11 | 644 | 0.3+ | 0.2+ | 2004 03 16 | 704 | 0.3− | 1.5+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2004 03 11 | 644 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.1+ | 0.5− | 2006 10 20 | G96 | 0.2− | 0.3+ |
| 2004 03 14 | 691 | 0.2− | 0.0 | 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2004 03 14 | 691 | 0.2+ | 0.1− | 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.5+ | 0.4+ |
| 2004 03 14 | 691 | 0.1− | 0.2− | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | 1.4+ | 0.5− | 2006 10 20 | G96 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.0 |

**2004 EA$_{52}$ = 2006 QC$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 127.04302 | | | (2000.0) | −0.89246165 | +0.45080344 |
| $n$ | 0.17115542 | $\omega$ | 222.10087 | | −0.39487620 | −0.79883894 |
| $a$ | 3.2127402 | $\Omega$ | 344.66837 | | −0.21813986 | −0.39828710 |
| $e$ | 0.1164125 | $i$ | 3.68302 | | | |
| $P$ | 5.76 | $H$ | 16.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 691 | 0.2+ | 0.2+ | 2004 03 15 | 291 | 0.0 | 0.3+ | 2006 08 21 | 691 | 0.2+ | 0.2+ |
| 2001 10 26 | 691 | 0.0 | 0.3+ | 2004 03 15 | 291 | 0.2+ | 0.3+ | 2006 08 21 | 691 | 0.5− | 0.7+ |
| 2001 10 26 | 691 | 0.4− | 0.0 | 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2004 02 26 | 704 | 0.6+ | 0.7+ | 2004 03 18 | 691 | 0.3+ | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.5+ |
| 2004 02 26 | 704 | 0.1+ | 0.9+ | 2004 03 18 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 691 | 0.5− | 0.1− |
| 2004 02 26 | 704 | 0.3+ | 0.3+ | 2004 03 20 | 291 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.5+ | 0.2− |
| 2004 02 26 | 695 | 0.1− | 0.5+ | 2004 03 20 | 291 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2004 02 26 | 695 | 0.2− | 0.5+ | 2004 03 20 | 291 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 291 | 0.2− | 0.1+ | 2006 08 21 | 691 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.2− |

**2004 EB$_{52}$ = 2006 QX$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.04385 | | | (2000.0) | +0.59746063 | +0.80047967 |
| $n$ | 0.18292293 | $\omega$ | 318.53318 | | −0.66275452 | +0.45944592 |
| $a$ | 3.0734344 | $\Omega$ | 347.89566 | | −0.45143908 | +0.38489187 |
| $e$ | 0.0601569 | $i$ | 13.14205 | | | |
| $P$ | 5.39 | $H$ | 15.4 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 291 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.4+ | 0.5− | 2006 09 18 | 699 | 1.1+ | 0.9+ |
| 2004 03 15 | 291 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.7− | 0.3+ |
| 2004 03 15 | 291 | 0.3− | 0.1+ | 2006 08 21 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2004 03 18 | 704 | 0.9+ | 0.5+ | 2006 08 21 | 691 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2004 03 18 | 704 | 0.7+ | 1.0+ | 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2004 03 18 | 704 | 0.5+ | 0.1− | 2006 08 23 | 807 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.5+ |
| 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 08 23 | 807 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 0.7+ | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2004 03 18 | 691 | 0.4− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.5− | 0.0 |
| 2004 03 18 | 691 | 0.0 | 0.2− | 2006 08 28 | 691 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2004 03 18 | 691 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.6+ | 1.0− | | | | |
| 2004 03 23 | 704 | 1.3+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.7− | | | | |

**2004 EE$_{53}$ = 2006 RQ$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.53749 | | | (2000.0) | +0.88161578 | −0.46752265 |
| $n$ | 0.21925368 | $\omega$ | 5.68131 | | +0.42611466 | +0.72959555 |
| $a$ | 2.7237764 | $\Omega$ | 22.54665 | | +0.20292833 | +0.49911211 |
| $e$ | 0.1341109 | $i$ | 9.70282 | | | |
| $P$ | 4.50 | $H$ | 15.3 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2006 09 12 | 703 | (1.3+ | 1.9+) | 2006 09 28 | 704 | 0.5− | 0.3+ |
| 2002 12 05 | 704 | 0.4+ | 0.9− | 2006 09 12 | 703 | 0.7+ | 1.3+ | 2006 09 28 | 704 | 0.2− | 0.0 |
| 2002 12 05 | 704 | 0.3− | 1.1− | 2006 09 12 | 703 | 0.8+ | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.8− | 2006 09 18 | 703 | 0.1− | 0.8− | 2006 09 28 | 704 | 0.1+ | 0.5+ |
| 2002 12 05 | 704 | 0.8− | 0.5− | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 2002 12 15 | 704 | 0.5− | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.7− | 0.1+ |
| 2002 12 15 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 703 | 0.9− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 2002 12 15 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.6+ | 0.8+ |
| 2004 03 15 | 704 | 0.1− | 1.3+ | 2006 09 18 | 699 | 0.1− | 0.7− | 2006 09 30 | 703 | 0.7− | 0.3− |
| 2004 03 15 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.6− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.4+ |
| 2004 03 15 | 704 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.6− | 0.6+ |
| 2004 03 15 | 704 | 0.6− | 0.6− | 2006 09 19 | 704 | 0.4− | 0.9+ | 2006 10 19 | 644 | 0.4− | 0.5+ |
| 2004 03 15 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 704 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2004 03 18 | 691 | 0.2+ | 0.0 | 2006 09 19 | 704 | 0.9+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.9+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2004 03 18 | 704 | 0.1− | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.6+ | | |
| 2004 03 18 | 704 | 0.9+ | 1.3+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.7+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.0 | | |
| 2004 03 20 | 704 | 0.4+ | 1.0+ | 2006 09 22 | 704 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.7+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.7+ | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.4+ | | |
| 2004 03 20 | 704 | 1.0+ | 1.4+ | 2006 09 22 | 704 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.0 | 0.4+ | | |
| 2004 03 20 | 704 | 0.7+ | 1.2+ | 2006 09 22 | 704 | 1.0− | 0.8− | 2006 11 21 | G96 | 0.1+ | 0.5+ | | |
| 2006 08 23 | 644 | 0.5− | 0.5− | 2006 09 26 | 704 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.6+ | | |
| 2006 08 23 | 644 | 0.2− | 0.7− | 2006 09 26 | 704 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.5+ | 0.5+ | | |
| 2006 08 23 | 644 | 0.4− | 0.4− | 2006 09 26 | 704 | 0.2− | 0.3+ | | | | | | |
| 2006 09 12 | 703 | 0.7+ | 0.8+ | 2006 09 26 | 704 | 0.0 | 0.0 | | | | | | |

**2004 EA$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.05321 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28660624 | $\omega$ | 296.07695 | | −0.77694448 | | −0.62938099 |
| $a$ | 2.2783072 | $\Omega$ | 204.92769 | | +0.58988004 | | −0.71920502 |
| $e$ | 0.1582833 | $i$ | 2.09258 | | +0.21999728 | | −0.29431908 |
| $P$ | 3.44 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 599 | 0.2+ | 0.5− | 2004 03 27 | 704 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.8+ | 0.1+ | | |
| 2004 03 15 | 599 | 0.3+ | 0.2− | 2004 03 27 | 704 | 0.7+ | 0.9+ | 2006 11 21 | 704 | 1.0+ | 0.8+ | | |
| 2004 03 15 | 599 | 0.1− | 0.3− | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.5− | | |
| 2004 03 15 | 599 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2004 03 18 | 704 | 0.2+ | 0.3+ | 2004 03 28 | 691 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.3− | 0.1+ | | |
| 2004 03 18 | 704 | 0.3+ | 0.4− | 2004 03 28 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2− | | |
| 2004 03 18 | 704 | 0.1+ | 0.5− | 2004 03 28 | 691 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.5+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.2− | 0.9− | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.7− | | |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.5− | | |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.6− | | |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.1− | | |
| 2004 03 20 | 704 | 0.3− | 0.3− | 2006 11 19 | 691 | 0.4+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.3− | | |
| 2004 03 20 | 704 | 0.4− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.2− | 0.0 | | |
| 2004 03 20 | 704 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.6+ | | | | | | |

**2004 EF$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.59372 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23744593 | $\omega$ | 263.02946 | | −0.89607436 | | −0.44277563 |
| $a$ | 2.5828126 | $\Omega$ | 250.68532 | | +0.41936214 | | −0.82101774 |
| $e$ | 0.0736871 | $i$ | 1.92073 | | +0.14555457 | | −0.36038814 |
| $P$ | 4.15 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.3+ | 0.7− | 2004 03 18 | 691 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.0 | | |
| 1998 12 14 | 691 | 0.4+ | 0.3− | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.1− | | |
| 1998 12 14 | 691 | 0.3+ | 1.1− | 2004 03 20 | 699 | 0.8− | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.3− | | |
| 2002 10 31 | 291 | 0.4− | 0.4+ | 2004 03 20 | 699 | (1.5− | 1.7−) | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 31 | 644 | 0.5− | 1.3+ | 2004 03 20 | 699 | 0.1− | 0.9− | 2006 10 27 | 691 | 0.0 | 0.2+ | | |
| 2002 10 31 | 291 | 0.6− | 0.1+ | 2004 03 20 | 699 | 0.4+ | 1.2− | 2006 10 27 | 691 | 0.0 | 0.3+ | | |
| 2002 10 31 | 644 | 0.0 | 1.4+ | 2004 03 28 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 31 | 291 | 0.5− | 0.3+ | 2004 03 28 | 691 | 0.5+ | 0.3− | 2006 10 31 | 691 | 0.1− | 0.2+ | | |
| 2002 10 31 | 644 | 0.2− | 1.2+ | 2004 03 28 | 691 | 0.5+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.5− | | |
| 2004 02 26 | 704 | 1.2+ | 1.2+ | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.0 | | |
| 2004 02 26 | 704 | 1.3− | 1.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.3+ | | |
| 2004 02 26 | 704 | 1.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.2+ | | |
| 2004 02 26 | 704 | 1.2− | 0.2− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2004 03 15 | 599 | 0.2− | 0.3+ | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.4+ | 0.4+ | | |
| 2004 03 15 | 599 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.1+ | | |
| 2004 03 15 | 599 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.2− | 0.6− | | |
| 2004 03 18 | 704 | 0.2+ | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.2− | 1.1− | | |
| 2004 03 18 | 704 | 0.1+ | 1.3+ | 2006 09 28 | 691 | 0.3+ | 0.3− | 2006 11 20 | G96 | 0.0 | 0.2− | | |
| 2004 03 18 | 704 | (0.4− | 1.6+) | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.5− | 1.3− | | |
| 2004 03 18 | 704 | 0.8+ | 1.2+ | 2006 10 02 | 691 | 0.0 | 0.1− | | | | | | |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.1+ | | | | | | |

**2004 EQ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.57747 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22686518 | $\omega$ | 245.48950 | | +0.14735062 | | −0.98309398 |
| $a$ | 2.6625074 | $\Omega$ | 197.13123 | | +0.98713704 | | +0.15306216 |
| $e$ | 0.0427015 | $i$ | 21.65379 | | +0.06203437 | | −0.10048977 |
| $P$ | 4.34 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.0 | 0.5+ | 2004 04 25 | 691 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.0 | 0.9+ | | |
| 2000 04 27 | 699 | 1.2+ | 0.8+ | 2004 04 25 | 691 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.5− | 0.1− | | |
| 2000 04 27 | 699 | 1.0− | 0.5+ | 2006 09 14 | 703 | 0.3+ | 0.8− | 2006 10 15 | 703 | (3.1− | 1.2+) | | |
| 2000 04 27 | 699 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 11 16 | 644 | 0.0 | 0.3− | 2006 09 14 | 703 | 1.2− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2002 11 16 | 644 | 0.2− | 0.5− | 2006 09 14 | 703 | 0.7− | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.4+ | | |
| 2002 11 16 | 644 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.3− | | |
| 2004 03 14 | 644 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.9+ | 0.5− | | |
| 2004 03 14 | 644 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 1.2+ | | |
| 2004 03 14 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.6− | | |
| 2004 03 17 | 704 | 1.0+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.8+ | 0.6− | | |
| 2004 03 17 | 704 | 0.1+ | 0.7− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.9+ | | |
| 2004 03 17 | 704 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.5− | | |
| 2004 03 17 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 0.8+ | 1.0+ | 2006 10 21 | 703 | 0.4− | 0.5+ | | |
| 2004 03 17 | 704 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2004 03 26 | 699 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2004 03 26 | 699 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.4− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2004 03 26 | 699 | 0.9− | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2004 03 26 | 699 | 1.1− | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.5+ | 0.2− | | |
| 2004 03 27 | 703 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.8+ | 0.2− | | |
| 2004 03 27 | 703 | (0.2− | 2.8−) | 2006 10 10 | 644 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.6+ | 0.3− | | |
| 2004 03 27 | 703 | 0.4− | 0.9− | 2006 10 10 | 644 | 0.4− | 0.5+ | 2006 11 16 | 703 | 0.1− | 0.4− | | |
| 2004 03 27 | 703 | 1.3+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.4− | 0.6− | | |
| 2004 03 28 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 16 | 703 | 1.2− | 0.2+ | | |
| 2004 03 28 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 11 16 | 703 | (0.6− | 1.5+) | | |
| 2004 03 28 | 691 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | | | | | | |
| 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 10 15 | 703 | 0.2+ | 0.5− | | | | | | |

**2004 ET$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.15425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22491075 | $\omega$ | 356.62832 | | −0.78122069 | | +0.60801121 |
| $a$ | 2.6779096 | $\Omega$ | 221.91734 | | −0.56767426 | | −0.78620980 |
| $e$ | 0.0958796 | $i$ | 12.22658 | | −0.25969245 | | −0.11043784 |
| $P$ | 4.38 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 03 | 608 | 0.0 | 0.3+ | 2004 03 31 | 704 | (2.0+ | 0.3+) | 2006 10 20 | 691 | 0.4− | 0.1− | | |
| 1997 09 03 | 608 | 0.0 | 0.3+ | 2004 03 31 | 704 | 0.6+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2000 05 24 | 691 | 0.1+ | 0.1+ | 2004 03 31 | 704 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.0 | | |
| 2000 05 24 | 691 | 0.1− | 0.1+ | 2004 04 25 | 703 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2000 05 24 | 691 | 0.1− | 0.1− | 2004 04 25 | 703 | (1.1+ | 1.5−) | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2004 03 01 | 703 | (1.6− | 1.5−) | 2004 04 25 | 703 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.3+ | 0.5− | | |
| 2004 03 01 | 703 | 0.6− | 0.2− | 2004 04 25 | 703 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.5− | | |
| 2004 03 01 | 703 | 1.1− | 0.2− | 2004 04 26 | 699 | 1.0+ | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.2+ | | |
| 2004 03 01 | 703 | (2.8− | 0.6−) | 2004 04 26 | 699 | 1.0− | 0.7− | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 14 | 644 | 0.3− | 0.1+ | 2004 04 26 | 699 | 1.1− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.4+ | | |
| 2004 03 14 | 644 | 0.0 | 0.0 | 2004 04 26 | 699 | 1.0+ | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2004 03 14 | 644 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 17 | 704 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2004 03 17 | 704 | (0.8+ | 2.0+) | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.3+ | | |
| 2004 03 17 | 704 | 0.5+ | 1.0+ | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.4+ | | |
| 2004 03 17 | 704 | 0.0 | 0.5− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1− | | |
| 2004 03 17 | 704 | 0.2− | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 28 | 608 | (0.3+ | 1.8−) | 2006 10 12 | 691 | (2.5+ | 0.5−) | 2006 11 09 | 644 | 0.2− | 0.1+ | | |
| 2004 03 28 | 608 | 0.1− | 0.5− | 2006 10 16 | 691 | 1.3+ | 0.8− | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2004 03 28 | 608 | 0.5+ | 1.3− | 2006 10 16 | 691 | 0.3− | 0.1− | | | | | | |
| 2004 03 31 | 704 | 1.0+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.1− | | | | | | |

**2004 EW$_{56}$ = 2006 TV$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.47660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27246485 | $\omega$ | 243.15650 | | +0.03681121 | −0.98568354 | |
| $a$ | 2.3564726 | $\Omega$ | 206.35099 | | +0.99675033 | +0.04802053 | |
| $e$ | 0.2603930 | $i$ | 21.75827 | | +0.07164996 | −0.16162296 | |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.1− | 0.0 | 2004 03 20 | E12 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.0 |
| 2001 05 24 | 645 | 0.1+ | 0.0 | 2004 03 20 | E12 | (0.0 | 3.2+) | 2006 09 27 | 703 | 1.0− | 1.1+ |
| 2004 03 15 | 644 | 0.8− | 0.0 | 2004 03 20 | E12 | 0.2+ | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.7+ |
| 2004 03 15 | 644 | 0.6− | 0.0 | 2004 03 20 | E12 | 1.7+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2004 03 15 | 644 | 0.6− | 0.4− | 2006 09 16 | 703 | 0.4+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.7+ |
| 2004 03 17 | 704 | 0.7+ | 0.6− | 2006 09 16 | 703 | 1.2− | 1.1+ | 2006 10 17 | 703 | 0.9+ | 0.4+ |
| 2004 03 17 | 704 | 0.8− | 0.7− | 2006 09 16 | 703 | 1.3+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2004 03 17 | 704 | 0.7− | 0.3+ | 2006 09 16 | 703 | 0.7+ | 0.8− | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2004 03 17 | 704 | 0.7+ | 1.4− | 2006 09 27 | 703 | 1.4− | 2.4− | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2004 03 17 | 704 | (0.5− | 2.3−) | 2006 09 27 | 703 | 0.6+ | 0.5+ | | | | |

**2004 EY$_{56}$ = 2006 TX$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.34680 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17663549 | $\omega$ | 123.12247 | | +0.22548469 | +0.97235676 | |
| $a$ | 3.1459421 | $\Omega$ | 159.64655 | | −0.94184889 | +0.23348532 | |
| $e$ | 0.1766103 | $i$ | 10.04316 | | −0.24915321 | −0.00263421 | |
| $P$ | 5.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.4− | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 23 | 691 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.4+ | 0.4− |
| 2004 03 15 | 691 | 0.1+ | 0.1− | 2006 09 14 | 291 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.3− |
| 2004 03 15 | 704 | 0.1− | 0.3− | 2006 09 14 | 291 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.1− |
| 2004 03 15 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 291 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 704 | 0.5+ | 0.2− | 2006 09 29 | 699 | 0.4− | 0.9− | 2006 10 16 | 703 | 1.4+ | 0.1+ |
| 2004 03 17 | 704 | 0.5− | 0.2− | 2006 09 29 | 699 | 0.7+ | 1.0− | 2006 10 16 | 703 | 0.3− | 0.7+ |
| 2004 03 17 | 704 | 0.4− | 0.2+ | 2006 09 29 | 699 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.9− | 0.4− |
| 2004 03 17 | 704 | 0.3− | 0.1− | 2006 09 29 | 699 | 1.2+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.9+ |
| 2004 03 17 | 704 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.7− | 2006 10 19 | 644 | 0.0 | 0.5+ |
| 2004 03 17 | 704 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.6− | 2006 10 19 | 644 | 0.4− | 0.8+ |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.5− | 0.2+ |

**2004 EM$_{58}$ = 2006 SD$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.06686 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24109813 | $\omega$ | 17.44882 | | −0.56483579 | −0.82404823 | |
| $a$ | 2.5566630 | $\Omega$ | 106.96281 | | +0.75156239 | −0.53555100 | |
| $e$ | 0.0743945 | $i$ | 2.61544 | | +0.34075579 | −0.18474210 | |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 1.2+ | 1.0+ | 2004 03 19 | 704 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.6+ | 0.0 |
| 2004 03 15 | 704 | 0.4+ | 1.1+ | 2004 03 19 | 704 | 0.9+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2004 03 15 | 704 | 0.5+ | 1.3+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 704 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.4− |
| 2004 03 16 | 291 | 0.6− | 0.5− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2004 03 16 | 291 | 0.7− | 0.2− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.8− |
| 2004 03 16 | 291 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 03 17 | 704 | 1.0+ | 0.1+ | 2006 09 23 | 691 | 0.5− | 0.5− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2004 03 17 | 704 | 1.1+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.5− | 0.3+ |
| 2004 03 17 | 704 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2004 03 17 | 704 | 0.4− | 0.5− | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2004 03 17 | 704 | 0.4+ | 1.3+ | 2006 10 21 | G96 | 0.6+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2004 03 19 | 704 | 1.1+ | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.2+ | | | | |
| 2004 03 19 | 704 | 0.2− | 1.0+ | 2006 10 21 | G96 | 0.8+ | 0.2+ | | | | |

**2004 EP$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.29651 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25816901 | $\omega$ | 30.37093 | | −0.39285950 | −0.91801278 | |
| $a$ | 2.4426803 | $\Omega$ | 82.80792 | | +0.83239506 | −0.37994277 | |
| $e$ | 0.1412292 | $i$ | 3.11896 | | +0.39087066 | −0.11356070 | |
| $P$ | 3.82 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2004 03 20 | 704 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2004 03 20 | 704 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2004 02 29 | 691 | 0.1+ | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2004 03 15 | 704 | (0.4− | 1.6+) | 2004 03 20 | 704 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2004 03 15 | 704 | 0.4− | 0.6+ | 2004 03 20 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2004 03 15 | 704 | 0.2− | 0.8+ | 2006 10 21 | 703 | (2.1+ | 0.3−) | 2006 10 22 | 691 | 0.5− | 0.0 |
| 2004 03 15 | 704 | (1.3− | 2.2+) | 2006 10 21 | 703 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2004 03 17 | 704 | 0.6− | 0.5− | 2006 10 21 | 703 | 0.4+ | 1.0− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2004 03 17 | 704 | 0.3− | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2004 03 17 | 704 | 0.6+ | 0.9+ | 2006 10 21 | G96 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2004 03 17 | 704 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.1+ | 1.0− | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2004 03 18 | 704 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2004 03 18 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2004 03 18 | 704 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.4+ | 0.4+ | | | | |
| 2004 03 18 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2− | | | | |

**2004 EV$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.66293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30413120 | $\omega$ | 185.43705 | | −0.72518890 | −0.68589828 | |
| $a$ | 2.1899224 | $\Omega$ | 311.06660 | | +0.63471185 | −0.63192383 | |
| $e$ | 0.1481937 | $i$ | 4.59275 | | +0.26691183 | −0.36085429 | |
| $P$ | 3.24 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.6− | 1.0− | 2004 03 17 | 704 | 0.1+ | 0.3+ | 2004 04 15 | 703 | 0.1+ | 0.7+ |
| 1999 11 04 | 704 | 0.7− | 0.3+ | 2004 03 17 | 704 | 0.1+ | 0.5+ | 2004 04 15 | 703 | 0.3− | 0.2+ |
| 1999 11 04 | 704 | 0.6+ | 0.8+ | 2004 03 17 | 704 | 0.0 | 0.6− | 2004 04 19 | 704 | 0.6+ | 0.3+ |
| 1999 11 04 | 704 | 0.5+ | 0.4+ | 2004 03 17 | 704 | 0.0 | 0.1− | 2004 04 19 | 704 | 0.3+ | 0.2− |
| 2002 09 13 | 644 | 0.4+ | 0.2− | 2004 03 27 | 699 | 1.4− | 0.8+ | 2004 04 19 | 704 | 0.5+ | 0.1− |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2004 03 27 | 699 | 0.1− | 0.5+ | 2004 04 19 | 704 | 0.4+ | 0.4− |
| 2002 09 13 | 644 | 0.7+ | 0.3+ | 2004 03 27 | 699 | 1.1− | 0.3+ | 2004 04 19 | 704 | 0.6+ | 0.6− |
| 2002 09 18 | 644 | 0.3− | 0.2− | 2004 03 27 | 699 | 0.6− | 0.4+ | 2005 08 10 | 807 | 0.1+ | 0.1+ |
| 2002 09 18 | 644 | 0.4− | 0.3− | 2004 03 31 | 704 | (1.9+ | 0.1+) | 2005 08 10 | 807 | 0.3− | 0.0 |
| 2002 09 28 | 608 | (3.0− | 1.0−) | 2004 03 31 | 704 | 0.7+ | 0.3− | 2006 11 22 | G96 | (14.7− | 6.9+) |
| 2002 09 28 | 608 | (2.4− | 1.1−) | 2004 03 31 | 704 | 0.7+ | 0.7− | 2006 11 22 | G96 | (15.0− | 6.1+) |
| 2002 09 28 | 608 | (2.3− | 0.5−) | 2004 03 31 | 704 | 0.7+ | 0.6− | 2006 11 22 | G96 | (14.3− | 7.3+) |
| 2004 03 15 | 644 | 0.4− | 0.1− | 2004 03 31 | 704 | 0.6+ | 0.5− | 2006 11 22 | G96 | (13.6− | 6.7+) |
| 2004 03 15 | 644 | 0.2− | 0.1− | 2004 04 15 | 703 | 0.5− | 0.6+ | | | | |
| 2004 03 15 | 644 | 0.1− | 0.1+ | 2004 04 15 | 703 | 0.5− | 0.1+ | | | | |

**2004 EG$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.53492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22069371 | $\omega$ | 193.25639 | | −0.99964608 | +0.00242685 | |
| $a$ | 2.7119150 | $\Omega$ | 346.79669 | | +0.01111200 | −0.86670656 | |
| $e$ | 0.2822178 | $i$ | 6.66050 | | −0.02417107 | −0.49881243 | |
| $P$ | 4.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.2− | 0.3+ | 2004 03 25 | 699 | 0.2+ | 0.3+ | 2004 04 25 | 704 | 0.3− | 0.4− |
| 2001 08 20 | 807 | 0.3− | 0.6+ | 2004 03 25 | 699 | 0.7− | 0.3+ | 2004 04 25 | 704 | 0.0 | 0.3− |
| 2004 03 15 | 644 | 0.4+ | 0.4+ | 2004 03 25 | 699 | 0.2− | 0.1+ | 2004 04 25 | 704 | 0.3− | 0.2− |
| 2004 03 15 | 644 | 0.4+ | 0.2+ | 2004 03 25 | 699 | (2.6− | 0.7+) | 2004 04 25 | 704 | 0.4− | 0.5− |
| 2004 03 15 | 644 | 0.3+ | 0.3+ | 2004 03 25 | 699 | 0.4− | 0.1− | 2004 05 13 | 644 | 0.0 | 0.2+ |
| 2004 03 17 | 704 | 0.6+ | 0.4+ | 2004 03 26 | 704 | 0.1+ | 0.1− | 2004 05 13 | 644 | 0.2− | 0.1− |
| 2004 03 17 | 704 | 0.3+ | 0.7+ | 2004 03 26 | 704 | 1.0− | 0.4− | 2004 05 13 | 644 | 0.3− | 0.3+ |
| 2004 03 17 | 704 | 0.6+ | 0.3+ | 2004 03 26 | 704 | 0.1+ | 0.7− | 2004 05 13 | 644 | 0.2− | 0.1+ |
| 2004 03 17 | 704 | 0.7+ | 0.3− | 2004 03 26 | 704 | 1.2− | 0.3+ | 2004 05 13 | 644 | 0.1− | 0.1− |
| 2004 03 17 | 704 | 1.1+ | 0.8+ | 2004 03 26 | 704 | 0.1− | 0.3− | 2004 05 13 | 644 | 0.4− | 0.1+ |
| 2004 03 19 | 704 | 0.2+ | 0.7+ | 2004 04 09 | E12 | 0.3− | 0.7− | 2004 05 14 | 699 | 0.6+ | 0.2+ |
| 2004 03 19 | 704 | 0.5+ | 0.7+ | 2004 04 09 | E12 | 0.2+ | 0.4− | 2004 05 14 | 699 | 0.6+ | 0.6+ |
| 2004 03 19 | 704 | 1.3+ | 0.5− | 2004 04 09 | E12 | 0.4+ | 0.7− | 2004 05 14 | 699 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.4− | 0.8+ | 2004 04 09 | E12 | 0.4+ | 0.7− | 2004 05 14 | 699 | 0.1− | 0.3+ |
| 2004 03 19 | 704 | 1.0− | 0.4+ | 2004 04 17 | 704 | 0.9+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.5+ |
| 2004 03 25 | 699 | 0.0 | 0.3+ | 2004 04 17 | 704 | 0.8− | 0.8+ | 2006 09 17 | 691 | 0.3− | 0.3+ |
| 2004 03 25 | 699 | 0.6− | 0.2− | 2004 04 17 | 704 | 0.8+ | 0.3− | 2006 09 17 | 691 | 0.0 | 0.3− |
| 2004 03 25 | 699 | 0.9− | 0.1+ | 2004 04 25 | 704 | 0.2+ | 0.9− | | | | |

**2004 EB$_{61}$ = 2006 UT$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.98162 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26695796 | $\omega$ | 335.69423 | | −0.96736988 | | −0.25328659 |
| $a$ | 2.3887689 | $\Omega$ | 189.64036 | | +0.23829921 | | −0.90091325 |
| $e$ | 0.1556153 | $i$ | 2.20231 | | +0.08607552 | | −0.35242194 |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.8+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2004 03 12 | 644 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2004 03 12 | 644 | 0.4− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.7− | 0.0 |
| 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.6+ | 0.1− |
| 2004 03 18 | 704 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.5− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2004 03 18 | 704 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.3+ |

**2004 EU$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.33762 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17438904 | $\omega$ | 192.97660 | | −0.98518290 | | +0.16977327 |
| $a$ | 3.1729015 | $\Omega$ | 356.51078 | | −0.09838939 | | −0.67563247 |
| $e$ | 0.1244183 | $i$ | 23.55817 | | −0.14047844 | | −0.71742442 |
| $P$ | 5.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.2− | 0.5+ | 2004 03 15 | 703 | 1.3− | 0.2+ | 2004 04 10 | 644 | 0.1− | 0.2− |
| 1995 07 25 | 691 | 0.1− | 0.2− | 2004 03 15 | 703 | 0.5+ | 0.2+ | 2004 04 10 | 644 | 0.0 | 0.2− |
| 1995 07 25 | 691 | 0.1+ | 0.1− | 2004 03 15 | 691 | 0.0 | 0.1− | 2004 04 10 | 644 | 0.0 | 0.0 |
| 2004 02 23 | 704 | 1.0+ | 1.1− | 2004 03 18 | 704 | 0.3− | 0.1− | 2004 04 12 | 699 | 0.7− | 0.1+ |
| 2004 02 23 | 704 | 1.5+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.7+ | 2004 04 12 | 699 | 1.6− | 0.1− |
| 2004 02 23 | 704 | 1.2+ | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.6+ | 2004 04 12 | 699 | 0.9− | 1.3− |
| 2004 02 23 | 704 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.8+ | 0.1+ | 2004 04 12 | 699 | 0.5− | 1.2− |
| 2004 02 29 | 683 | 1.3− | 0.2− | 2004 03 18 | 704 | 0.1+ | 0.9+ | 2004 04 13 | 691 | 0.1− | 0.2+ |
| 2004 02 29 | 683 | 1.1− | 1.7+ | 2004 03 20 | 699 | 0.1− | 0.3− | 2004 04 13 | 691 | 0.2+ | 0.1− |
| 2004 02 29 | 683 | 0.0 | 0.7− | 2004 03 20 | 699 | 0.0 | 1.5− | 2004 04 13 | 691 | 0.0 | 0.0 |
| 2004 03 12 | 644 | 0.3− | 0.1− | 2004 03 20 | 699 | 0.5− | 0.8+ | 2004 04 24 | 691 | 0.1− | 0.2+ |
| 2004 03 12 | 644 | 0.3− | 0.2− | 2004 03 20 | 699 | 0.4− | 1.3+ | 2004 04 24 | 691 | 0.0 | 0.2+ |
| 2004 03 12 | 644 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.4− | 2004 04 24 | 691 | 0.2− | 0.1+ |
| 2004 03 15 | 691 | 0.2+ | 0.3− | 2004 03 27 | 704 | 0.9+ | 0.0 | 2006 10 22 | G96 | 0.5− | 1.1+ |
| 2004 03 15 | 703 | 1.1+ | 1.6+ | 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 10 22 | G96 | 0.5− | 0.4+ |
| 2004 03 15 | 703 | 0.3− | 0.3− | 2004 03 27 | 704 | 1.1+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.8+ | 1.0+ | 2006 10 22 | G96 | 0.3− | 0.2− |

**2004 EW$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.84577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27083405 | $\omega$ | 271.57702 | | −0.06033185 | | −0.99817301 |
| $a$ | 2.3659226 | $\Omega$ | 181.89118 | | +0.95072134 | | −0.05646402 |
| $e$ | 0.1248747 | $i$ | 5.69242 | | +0.30412005 | | −0.02150491 |
| $P$ | 3.64 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.2+ | 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.4− | 0.5− |
| 2002 10 05 | 645 | 0.1− | 0.1+ | 2004 04 21 | 691 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.3− | 0.4− |
| 2004 03 12 | 644 | 0.1+ | 0.1+ | 2004 04 21 | 691 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 04 21 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.5− | 0.4− |
| 2004 03 12 | 644 | 0.4+ | 0.6+ | 2004 04 24 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.9+ | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 04 24 | 691 | 0.1− | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 04 24 | 691 | 0.4− | 0.8+ | 2006 11 28 | 704 | 0.4+ | 0.1+ |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.8− | 0.5− | 2006 11 28 | 704 | 0.3+ | 0.4+ |
| 2004 03 18 | 704 | 0.1+ | 0.9− | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 28 | 704 | 1.2+ | 0.9+ |
| 2004 03 18 | 704 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.8− | 0.2− | 2006 11 28 | 704 | 0.0 | 0.7+ |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.2− | | | | |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.6− | 0.2− | | | | |

**2004 EE$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.15413 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22507907 | $\omega$ | 283.82340 | | −0.08273125 | | −0.99655095 |
| $a$ | 2.6765743 | $\Omega$ | 170.91479 | | +0.92941307 | | −0.07949385 |
| $e$ | 0.0182751 | $i$ | 2.34482 | | +0.35964828 | | −0.02381016 |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.2− | 0.1+ |
| 2004 02 26 | 704 | 0.0 | 1.0− | 2004 03 27 | 704 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 704 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2004 03 12 | 644 | 0.1− | 0.2+ | 2004 04 25 | 691 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.5− |
| 2004 03 12 | 644 | 0.2− | 0.1− | 2004 04 25 | 691 | 0.6+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2004 03 12 | 644 | 0.3− | 0.0 | 2004 04 25 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.6− |
| 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.6+ | 0.1+ |
| 2004 03 18 | 704 | 1.2+ | 0.5+ | 2006 09 27 | 691 | 0.5− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 0.3− | 1.0+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 20 | 691 | 0.0 | 0.3− |

**2004 ER$_{62}$ = 2006 TD$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.05680 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26024188 | $\omega$ | 263.48459 | | −0.31354060 | | −0.94869884 |
| $a$ | 2.4296922 | $\Omega$ | 204.90681 | | +0.90500171 | | −0.28554501 |
| $e$ | 0.1035581 | $i$ | 5.55640 | | +0.28751382 | | −0.13577391 |
| $P$ | 3.79 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.3− | 0.2− | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.5+ |
| 2004 03 13 | 644 | 0.7− | 0.3− | 2004 03 27 | 691 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.2− |
| 2004 03 13 | 644 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.2− |
| 2004 03 18 | 704 | 0.8+ | 0.8+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.2− |
| 2004 03 18 | 704 | 1.1+ | 0.5− | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.2− | | | | |
| 2004 03 27 | 691 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.0 | | | | |

**2004 EE$_{63}$ = 2004 FY$_{164}$ = 2006 SC$_{169}$**
Id. Minor Planet Center (d, *MPO* 102379; unpublished)
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *M* | 98.51504 | | | (2000.0) | | **P** | | **Q** | | | |
| *n* | 0.18696819 | | $\omega$ | 0.67471 | | −0.22819598 | | +0.97271267 | | | |
| *a* | 3.0289416 | | $\Omega$ | 256.13503 | | −0.89347659 | | −0.22632200 | | | |
| *e* | 0.0645578 | | *i* | 2.47425 | | −0.38681543 | | −0.05107271 | | | |
| *P* | 5.27 | | *H* | 15.8 | *G* | 0.15 | | *U* | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.6− | 0.1+ | 2004 03 16 | 291 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.4− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.2− | 0.4+ | 2004 03 18 | 704 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2001 11 12 | 691 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.9− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 691 | 0.0 | 0.2+ | 2004 03 18 | 704 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 11 12 | 691 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2004 03 13 | 644 | 0.2− | 0.0 | 2004 03 19 | 704 | 0.3+ | 0.9− | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2004 03 13 | 644 | 0.4− | 0.2− | 2004 03 19 | 704 | 0.6+ | 0.8+ | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2004 03 13 | 644 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2004 03 16 | 291 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2004 03 16 | 291 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | | | | |

**2004 EH$_{63}$ = 2006 ST$_{369}$**
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *M* | 143.82642 | | | (2000.0) | | **P** | | **Q** | | | |
| *n* | 0.21409334 | | $\omega$ | 37.40638 | | −0.55640749 | | +0.83031947 | | | |
| *a* | 2.7673703 | | $\Omega$ | 198.84958 | | −0.78384536 | | −0.53702046 | | | |
| *e* | 0.0485945 | | *i* | 5.56115 | | −0.27567582 | | −0.14892485 | | | |
| *P* | 4.60 | | *H* | 16.0 | *G* | 0.15 | | *U* | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 1.1+ | 2004 04 25 | 691 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2004 03 13 | 644 | 0.2+ | 0.2− | 2006 09 21 | 950 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2004 03 13 | 644 | 0.0 | 0.1− | 2006 09 21 | 950 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2004 03 13 | 644 | 0.7+ | 0.4− | 2006 09 21 | 950 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 09 21 | 950 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2004 03 18 | 704 | 0.9− | 0.4+ | 2006 09 21 | 950 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2004 03 18 | 704 | 1.3− | 0.4+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 0.5+ | 0.7− | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.6− | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2004 03 20 | 704 | 1.2+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 03 20 | 704 | (0.5− | 2.0−) | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2004 03 20 | 704 | 0.8+ | 0.4− | 2006 09 25 | G96 | 0.4+ | 0.6− | 2006 11 14 | G96 | 0.1− | 0.6− |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.7− |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.8− | 1.0− |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 03 31 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2004 03 31 | 691 | 0.2− | 0.3− | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 03 31 | 691 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2004 04 25 | 691 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.0 | | | | |

**2004 EB$_{64}$**
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *M* | 348.88669 | | | (2000.0) | | **P** | | **Q** | | | |
| *n* | 0.22936488 | | $\omega$ | 28.06819 | | +0.67272981 | | −0.73916648 | | | |
| *a* | 2.6431274 | | $\Omega$ | 19.71148 | | +0.65941425 | | +0.57894735 | | | |
| *e* | 0.0564238 | | *i* | 5.55900 | | +0.33557033 | | +0.34416984 | | | |
| *P* | 4.30 | | *H* | 15.6 | *G* | 0.15 | | *U* | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.4− | 0.0 | 2004 04 20 | 691 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.7− |
| 2004 03 13 | 644 | 0.4− | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.8− |
| 2004 03 13 | 644 | 0.4− | 0.2+ | 2004 04 20 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2004 03 18 | 704 | 0.5+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.8+ |
| 2004 03 18 | 704 | 0.6+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.1− |
| 2004 03 18 | 704 | 0.5− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.4+ |
| 2004 03 18 | 704 | 0.4− | 1.1+ | 2006 11 09 | 644 | 0.4+ | 0.2− | 2006 11 19 | 704 | 0.9− | 0.6+ |
| 2004 03 27 | 704 | (1.4+ | 2.0+) | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 22 | 704 | 1.3− | 0.3− |
| 2004 03 27 | 704 | 0.3+ | 1.0+ | 2006 11 09 | 644 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.1− | 1.0+ |
| 2004 03 27 | 704 | 0.3− | 0.7− | 2006 11 14 | G96 | 0.0 | 0.8− | 2006 11 22 | 704 | (1.0− | 2.6−) |
| 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.7− | 2006 11 22 | 704 | 1.0− | 1.1+ |

**2004 EC$_{64}$**
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *M* | 109.12997 | | | (2000.0) | | **P** | | **Q** | | | |
| *n* | 0.17849235 | | $\omega$ | 223.43272 | | −0.71605402 | | +0.69801821 | | | |
| *a* | 3.1240859 | | $\Omega$ | 0.90665 | | −0.48700401 | | −0.49328705 | | | |
| *e* | 0.1232117 | | *i* | 22.68163 | | −0.50009373 | | −0.51907462 | | | |
| *P* | 5.52 | | *H* | 14.9 | *G* | 0.15 | | *U* | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 704 | 0.1− | 0.5− | 2004 03 18 | 703 | 1.2− | 0.1− | 2004 03 25 | 704 | 0.4− | 0.4− |
| 2004 01 30 | 704 | 0.0 | 0.2+ | 2004 03 18 | 644 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.2+ |
| 2004 01 30 | 704 | 0.0 | 0.1+ | 2004 03 18 | 703 | 0.4− | 1.1+ | 2006 09 26 | 703 | 0.9− | 0.2+ |
| 2004 01 30 | 704 | 0.2− | 1.0+ | 2004 03 18 | 703 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2004 02 15 | 704 | 0.5+ | 0.7− | 2004 03 18 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 1.3− | 0.1+ |
| 2004 02 15 | 704 | 0.0 | 0.3− | 2004 03 23 | 704 | 0.3− | 0.7+ | 2006 11 17 | G96 | 0.7+ | 0.0 |
| 2004 02 15 | 704 | 0.6+ | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2004 02 15 | 704 | 0.1+ | 0.6− | 2004 03 23 | 704 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2004 03 14 | 704 | 1.4+ | 0.0 | 2004 03 23 | 704 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.1+ |
| 2004 03 14 | 704 | 0.4+ | 0.2− | 2004 03 23 | 704 | 0.6− | 0.0 | 2006 11 21 | G96 | 0.5+ | 0.4+ |
| 2004 03 14 | 704 | 0.6+ | 0.9+ | 2004 03 25 | 704 | 0.6− | 0.4− | 2006 11 21 | G96 | 0.7+ | 0.1+ |
| 2004 03 14 | 704 | 0.7+ | 0.5+ | 2004 03 25 | 704 | (1.6+ | 1.5−) | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2004 03 18 | 644 | 0.1− | 0.1+ | 2004 03 25 | 704 | (1.1− | 1.8−) | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2004 03 18 | 703 | 0.1− | 0.7+ | 2004 03 25 | 704 | 0.4+ | 1.3− | | | | |

**2004 EA$_{66}$ = 2006 VB$_{88}$**
Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *M* | 268.92603 | | | (2000.0) | | **P** | | **Q** | | | |
| *n* | 0.26997564 | | $\omega$ | 186.09341 | | −0.82127708 | | −0.56957266 | | | |
| *a* | 2.3709351 | | $\Omega$ | 319.12833 | | +0.52555881 | | −0.73274430 | | | |
| *e* | 0.1432439 | | *i* | 2.89326 | | +0.22201778 | | −0.37238794 | | | |
| *P* | 3.65 | | *H* | 16.9 | *G* | 0.15 | | *U* | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 644 | 0.1− | 0.3+ | 2004 03 20 | 704 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2002 10 06 | 644 | 0.4− | 0.8+ | 2004 03 23 | 704 | (2.1+ | 0.0 ) | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2002 10 06 | 644 | 0.2− | 0.3+ | 2004 03 23 | 704 | 0.5− | 0.4− | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2004 03 14 | 691 | 0.1+ | 0.0 | 2004 03 23 | 704 | (1.8+ | 0.4−) | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.7+ | 0.5+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 03 16 | 704 | 0.5− | 0.4− | 2004 03 27 | 704 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2004 03 16 | 704 | 1.0+ | 0.3− | 2004 03 27 | 704 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2004 03 16 | 704 | 0.3+ | 1.0+ | 2004 03 27 | 704 | 0.4+ | 1.0+ | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2004 03 16 | 704 | 0.5− | 0.0 | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.5− | 0.5+ |
| 2004 03 16 | 704 | 0.1− | 0.8+ | 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2004 03 18 | 704 | 0.0 | 0.1− | 2005 07 09 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2005 07 09 | 691 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2004 03 18 | 704 | 0.1+ | 0.3+ | 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2004 03 18 | 704 | 1.1− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2004 03 18 | 704 | 0.5+ | 0.1+ | 2006 10 04 | G96 | 0.6− | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2004 03 20 | 704 | 0.2− | 0.4− | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2004 03 20 | 704 | 0.8− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.3− | | | | |
| 2004 03 20 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | | | | |

**2004 EB$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.16698 | | (2000.0) | | | |
| $n$ | 0.27711124 | $\omega$ | 175.77175 | | −0.07956673 | −0.99638392 |
| $a$ | 2.3300574 | $\Omega$ | 278.79001 | | +0.91368650 | −0.06094388 |
| $e$ | 0.1829277 | $i$ | 1.72814 | | +0.39855504 | −0.05920240 |
| $P$ | 3.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.4− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 13 | 104 | 0.1− | 0.1+ |
| 2004 03 14 | 691 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 13 | 104 | 0.0 | 0.2+ |
| 2004 03 18 | 704 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 13 | 104 | 0.3+ | 0.0 |
| 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.3+ |
| 2004 03 18 | 704 | 0.9− | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.9− |
| 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.3− |
| 2004 03 18 | 704 | 0.3− | 1.3+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 16 | 704 | (1.0+ | 1.9+) |
| 2004 03 21 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.6+ | 0.0 |
| 2004 03 21 | 691 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2004 03 21 | 691 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 1.0− | 0.4− |
| 2004 03 27 | 704 | 0.9+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2004 03 27 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5− | 1.3− |
| 2004 03 27 | 704 | 0.8+ | 1.1− | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2004 03 27 | 704 | 0.7− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 1.0+ | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 1.0+ | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.4+ | 2006 11 29 | 704 | 1.1− | 0.3− |
| 2006 10 17 | 691 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.6− | 2006 11 29 | 704 | 0.5− | 0.2− |
| 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.3− | 2006 11 29 | 704 | 0.5− | 0.1− |
| 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.4− | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.0 | | | | |
| 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.1− | 0.1− | | | | |

**2004 ER$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 182.21067 | | (2000.0) | | | |
| $n$ | 0.18210004 | $\omega$ | 169.01907 | | −0.98423898 | −0.17679253 |
| $a$ | 3.0826865 | $\Omega$ | 0.83410 | | +0.13194203 | −0.75010803 |
| $e$ | 0.0678880 | $i$ | 16.95529 | | +0.11774940 | −0.63724591 |
| $P$ | 5.41 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.3+ | 0.8− | 2004 03 18 | 704 | 0.3+ | 0.3− | 2006 09 14 | 703 | (2.2− | 1.0−) |
| 2004 02 26 | 704 | 0.8+ | 0.3+ | 2004 03 20 | 704 | 0.0 | 0.9+ | 2006 09 14 | 703 | 0.9+ | 0.3+ |
| 2004 02 26 | 704 | 0.4+ | 0.1+ | 2004 03 20 | 704 | 1.2+ | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 2004 02 26 | 704 | 0.1− | 0.3− | 2004 03 20 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.5+ |
| 2004 02 26 | 704 | 0.6− | 0.5− | 2004 03 20 | 704 | 0.6+ | 0.8− | 2006 09 30 | 703 | 0.5− | 0.7− |
| 2004 03 14 | 644 | 0.0 | 0.0 | 2004 03 24 | 699 | 1.3− | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2004 03 14 | 644 | 0.2+ | 0.1+ | 2004 03 24 | 699 | 0.3− | 0.6− | 2006 10 02 | G96 | 0.4− | 0.5− |
| 2004 03 14 | 644 | 0.2− | 0.1+ | 2004 03 24 | 699 | 1.2− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2004 03 16 | 703 | (1.9+ | 0.7−) | 2004 03 24 | 699 | 0.6+ | 0.7− | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2004 03 16 | 703 | 0.1+ | 0.5− | 2004 03 27 | 704 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2004 03 16 | 703 | 0.3+ | 0.8− | 2004 03 27 | 704 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2004 03 16 | 703 | (1.6− | 0.0 ) | 2004 03 27 | 704 | 0.2− | 1.2+ | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2004 03 18 | 704 | 0.0 | 0.6− | 2004 03 27 | 704 | 0.2− | 1.4+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.3+ | 0.2− | 2004 03 27 | 704 | 1.1− | 1.4+ | 2006 11 21 | G96 | 0.6+ | 0.2− |
| 2004 03 18 | 704 | 0.5+ | 0.4− | 2006 09 14 | 703 | 0.9− | 0.2− | | | | |
| 2004 03 18 | 704 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.5+ | 0.9+ | | | | |

**2004 EB$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.11963 | | (2000.0) | | | |
| $n$ | 0.22886587 | $\omega$ | 262.38279 | | +0.28154202 | −0.95757672 |
| $a$ | 2.6469680 | $\Omega$ | 170.55599 | | +0.95948417 | +0.28020010 |
| $e$ | 0.0516174 | $i$ | 22.00838 | | +0.01114521 | +0.06734035 |
| $P$ | 4.31 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.6+ | 0.5+ | 2004 03 18 | 704 | (0.7+ | 1.8+) | 2006 10 02 | 703 | 0.2− | 0.5+ |
| 2004 02 26 | 704 | 0.1+ | 0.2+ | 2004 03 20 | 699 | 1.3− | 0.2− | 2006 10 02 | 703 | 0.4+ | 0.5− |
| 2004 02 26 | 704 | 1.3+ | 0.1+ | 2004 03 20 | 699 | 1.2− | 0.0 | 2006 10 02 | 703 | 0.9+ | 0.6− |
| 2004 02 26 | 704 | 0.3+ | 0.6+ | 2004 03 20 | 699 | 0.2+ | 0.8+ | 2006 10 02 | 703 | 0.5+ | 1.5− |
| 2004 03 15 | 691 | 0.1+ | 0.4− | 2004 03 20 | 699 | 1.3+ | 0.5− | 2006 10 21 | 703 | 0.6+ | 0.8+ |
| 2004 03 15 | 691 | 0.3+ | 0.3− | 2004 03 30 | 691 | 0.3− | 0.1+ | 2006 10 21 | 703 | (1.7− | 2.0−) |
| 2004 03 15 | 691 | 0.3+ | 0.3− | 2004 03 30 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.9+ | 0.8+ |
| 2004 03 15 | 704 | 0.6− | 0.7− | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2004 03 15 | 704 | 0.4− | 0.5− | 2004 04 12 | 291 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.1+ |
| 2004 03 15 | 704 | 1.1+ | 0.2− | 2004 04 12 | 291 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2004 03 15 | 704 | 0.5− | 0.7+ | 2004 04 12 | 291 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | (1.7+ | 0.7+) | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 10 21 | 703 | 1.5− | 1.3+ |
| 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 09 25 | 699 | 0.4+ | 1.3+ | 2006 10 24 | 644 | 0.6− | 0.4− |
| 2004 03 18 | 704 | 0.5+ | 0.8+ | 2006 09 25 | 699 | 1.4− | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | (3.2+ | 2.0+) | 2006 09 25 | 699 | 0.2+ | 1.0− | 2006 10 24 | 644 | 0.1− | 0.4− |

**2004 EC$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.58415 | | (2000.0) | | | |
| $n$ | 0.27005235 | $\omega$ | 99.32304 | | −0.28498152 | −0.95851653 |
| $a$ | 2.3704861 | $\Omega$ | 7.24210 | | +0.86100863 | −0.25855913 |
| $e$ | 0.1499565 | $i$ | 2.55547 | | +0.42124775 | −0.11997181 |
| $P$ | 3.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 1.0− | 0.5− | 2004 03 20 | 699 | (3.3− | 0.1+) | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2004 02 26 | 704 | 0.2− | 0.4− | 2004 03 20 | 699 | (0.8− | 1.6+) | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2004 02 26 | 704 | 0.3− | 0.4− | 2004 03 20 | 699 | 0.6− | 0.9− | 2006 10 12 | 691 | 0.3− | 0.3+ |
| 2004 02 26 | 704 | 0.7− | 0.3+ | 2004 03 20 | 699 | (1.7− | 0.2−) | 2006 10 12 | 691 | 0.1+ | 0.3− |
| 2004 02 26 | 704 | 1.4− | 0.9− | 2004 03 27 | 704 | 1.2+ | 1.2+ | 2006 10 12 | 691 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.8+ | 2006 11 17 | G96 | 0.6+ | 0.2− |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.6+ | 1.5+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.7− | 0.8+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 704 | 0.8+ | 0.9+ | 2004 03 27 | 704 | 1.5+ | 0.8− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 704 | 1.1+ | 1.0+ | 2004 04 12 | 691 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2004 03 15 | 704 | 0.8+ | 0.8− | 2004 04 12 | 691 | 0.6− | 0.6− | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2004 03 15 | 704 | 0.2+ | 0.9+ | 2004 04 12 | 691 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.1+ | 0.5+ | 2004 04 12 | 291 | 0.2+ | 0.4− | 2006 11 19 | 704 | (2.9+ | 1.7+) |
| 2004 03 18 | 704 | 0.1+ | 0.2+ | 2004 04 12 | 291 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2004 04 12 | 291 | 0.0 | 0.3− | 2006 11 20 | G96 | 0.3− | 0.1− |
| 2004 03 18 | 704 | 1.1+ | 0.4+ | 2006 09 30 | G96 | 0.5− | 0.3− | 2006 11 20 | G96 | 0.3− | 0.2+ |
| 2004 03 18 | 704 | 0.3+ | 1.5+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.1+ |

**2004 EL$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.60705 | | (2000.0) | | | |
| $n$ | 0.26031511 | $\omega$ | 10.19514 | | −0.99055531 | +0.13711075 |
| $a$ | 2.4292365 | $\Omega$ | 177.68497 | | −0.12733013 | −0.91739656 |
| $e$ | 0.1324455 | $i$ | 1.28894 | | −0.05086473 | −0.37360967 |
| $P$ | 3.79 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.0 | 2004 03 29 | 291 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2004 03 29 | 291 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.4− |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2004 03 30 | 691 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.3+ | 0.2− | 2004 03 30 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.2+ | 0.0 | 2004 03 30 | 691 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.2+ | | |
| 2004 03 18 | 704 | 1.0− | 0.2+ | 2004 03 31 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.4− | | |
| 2004 03 20 | 704 | 0.9+ | 0.3− | 2004 03 31 | 691 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.2− | | |
| 2004 03 20 | 704 | 0.2+ | 0.8− | 2004 03 31 | 691 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.4− | 0.6− | | |
| 2004 03 20 | 704 | 0.1− | 1.5− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.5− | 0.3− | | |
| 2004 03 20 | 704 | (0.6+ | 1.5+) | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.1+ | | |
| 2004 03 29 | 291 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2− | | | | | | |

**2004 EN$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 155.53965 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.21453054 | $\omega$ | 217.23190 | −0.77375799 | +0.63347742 |
| $a$ | 2.7636092 | $\Omega$ | 2.07926 | −0.56549077 | −0.68912831 |
| $e$ | 0.0357760 | $i$ | 3.50745 | −0.28551489 | −0.35186437 |
| $P$ | 4.59 | $H$ | 16.4 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 291 | 0.2+ | 0.2+ | 2004 03 18 | 704 | 0.4+ | 0.4− | 2006 10 15 | 691 | 0.0 | 0.2− | | |
| 2004 02 13 | 291 | 0.4− | 0.1+ | 2004 03 18 | 704 | 0.6− | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.2+ | | |
| 2004 02 13 | 291 | 0.2− | 0.1− | 2004 03 18 | 704 | 0.6− | 0.2− | 2006 10 15 | 691 | 0.2− | 0.0 | | |
| 2004 03 15 | 691 | 0.2+ | 0.2− | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.6− | 0.2− | | |
| 2004 03 15 | 703 | 0.5− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.4− | 0.3+ | | |
| 2004 03 15 | 703 | 0.4− | 0.2− | 2004 04 24 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.0 | | |
| 2004 03 15 | 703 | (1.7− | 0.8−) | 2004 04 24 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.1− | | |
| 2004 03 15 | 691 | 0.1+ | 0.1− | 2004 04 24 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2004 03 15 | 703 | (2.1− | 0.7+) | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.8− | | |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.4+ | | | | | | |
| 2004 03 18 | 704 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.0 | | | | | | |

**2004 EP$_{69}$ = 1993 RU$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 35.71025 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23482481 | $\omega$ | 349.68936 | +0.99663967 | +0.08158424 |
| $a$ | 2.6019967 | $\Omega$ | 5.64637 | −0.06886890 | +0.88290282 |
| $e$ | 0.1724415 | $i$ | 4.25853 | −0.04434458 | +0.46241390 |
| $P$ | 4.20 | $H$ | 15.4 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 809 | 0.1+ | 1.5+ | 2006 10 27 | 703 | 0.5− | 0.0 | 2006 11 17 | G96 | 0.3− | 0.2− | | |
| 1993 09 14 | 809 | 1.5− | 1.1+ | 2006 10 27 | 703 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.2− | | |
| 1993 09 14 | 809 | (3.7− | 0.8+) | 2006 10 27 | 703 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.5+ | | |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.6− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.3+ | | |
| 2004 03 15 | 691 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.7+ | | |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.2+ | 0.3− | | |
| 2004 03 18 | 704 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.4− | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2004 03 18 | 704 | 1.0+ | 0.4− | 2006 11 14 | 703 | 0.5+ | 0.4+ | 2006 11 19 | 704 | (1.9− | 1.1+) | | |
| 2004 03 18 | 704 | 0.6− | 0.7− | 2006 11 14 | 703 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.7− | 0.2+ | | |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 1.3− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.2− | | |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.0 | 0.9+ | 2006 11 19 | 704 | 0.4− | 0.0 | | |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.4− | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.2− | | |
| 2004 04 21 | 691 | 0.3+ | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.4+ | 2006 11 21 | G96 | 0.6− | 0.3− | | |
| 2004 04 21 | 691 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.5− | | |
| 2004 04 21 | 691 | 0.1+ | 0.8+ | 2006 11 16 | 704 | 0.2− | 0.9+ | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 2004 04 24 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.8+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.6+ | | |
| 2004 04 24 | 691 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.6+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.3+ | | |
| 2004 04 24 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 1.2+ | 0.5− | 2006 11 22 | 704 | 0.1− | 0.1+ | | |
| 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 16 | 704 | 1.3+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.5+ | | |
| 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.7− | 2006 11 22 | 704 | 0.4+ | 0.1− | | |
| 2006 10 19 | 703 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.5− | 2006 11 27 | 704 | 0.4− | 0.7+ | | |
| 2006 10 20 | G96 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.6− | 2006 11 27 | 704 | 0.2+ | 0.1+ | | |
| 2006 10 20 | G96 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.6− | 0.4− | 2006 11 27 | 704 | 0.3+ | 0.0 | | |
| 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.8− | 2006 11 27 | 704 | 0.4+ | 0.3+ | | |
| 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.2− | | | | | | |

**2004 ED$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 215.89081 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.22897958 | $\omega$ | 184.67182 | −0.98072702 | −0.19478257 |
| $a$ | 2.6460917 | $\Omega$ | 344.07129 | +0.18101882 | −0.87635215 |
| $e$ | 0.1177182 | $i$ | 3.19709 | +0.07353028 | −0.44052999 |
| $P$ | 4.30 | $H$ | 17.0 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.1− | 0.9− | 2004 03 18 | 704 | 0.9+ | 0.5− | 2004 04 13 | 691 | 0.1− | 0.3− | | |
| 2004 02 26 | 704 | 0.4+ | 0.9− | 2004 03 18 | 704 | 0.0 | 1.6+ | 2004 04 24 | 691 | 0.0 | 0.4+ | | |
| 2004 02 26 | 704 | 0.4+ | 0.0 | 2004 03 23 | 691 | 0.2− | 0.1− | 2004 04 24 | 691 | 0.3− | 0.0 | | |
| 2004 02 26 | 704 | 0.3+ | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.3− | 2004 04 24 | 691 | 0.4+ | 0.1+ | | |
| 2004 03 15 | 703 | 1.6− | 0.3+ | 2004 03 23 | 691 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.3− | | |
| 2004 03 15 | 703 | 2.0− | 1.0+ | 2004 03 27 | 704 | 1.1+ | 0.6+ | 2006 09 26 | 691 | 0.5+ | 0.1+ | | |
| 2004 03 15 | 703 | 0.1+ | 1.2+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 2004 03 15 | 703 | 1.3− | 0.7+ | 2004 03 27 | 704 | 1.2+ | 0.5− | 2006 09 30 | 691 | 0.4− | 0.1− | | |
| 2004 03 18 | 704 | 0.7+ | 0.1− | 2004 03 27 | 704 | 1.0+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.5+ | | |
| 2004 03 18 | 704 | 0.2− | 0.2− | 2004 04 13 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.1− | | |
| 2004 03 18 | 704 | 0.5− | 0.9+ | 2004 04 13 | 691 | 0.0 | 0.3− | | | | | | |

**2004 EF$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 180.90841 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.21547710 | $\omega$ | 21.55715 | −0.96824790 | +0.24965914 |
| $a$ | 2.7555099 | $\Omega$ | 172.86326 | −0.24184973 | −0.92240557 |
| $e$ | 0.0397923 | $i$ | 5.95839 | −0.06328283 | −0.29468336 |
| $P$ | 4.57 | $H$ | 16.2 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.6+ | 0.4− | 2004 03 20 | 704 | 0.5− | 0.5− | 2004 04 13 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 26 | 704 | 0.2− | 0.2− | 2004 03 20 | 699 | 0.5+ | 0.6+ | 2006 09 17 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 26 | 704 | 0.1− | 0.3+ | 2004 03 20 | 704 | 0.4+ | 0.4− | 2006 09 17 | 691 | 0.1− | 0.1+ | | |
| 2004 02 26 | 704 | 0.6+ | 0.2+ | 2004 03 20 | 704 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.3− | 0.0 | | |
| 2004 03 15 | 703 | 0.6− | 1.2+ | 2004 03 20 | 699 | 0.5− | 0.3− | 2006 09 27 | 691 | 0.4− | 0.1+ | | |
| 2004 03 15 | 703 | 0.3+ | 0.8+ | 2004 03 20 | 704 | 0.8− | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2004 03 15 | 703 | 0.8+ | 0.5+ | 2004 03 23 | 691 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.2− | | |
| 2004 03 15 | 703 | 0.5− | 1.1+ | 2004 03 23 | 691 | 0.4− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.1− | | |
| 2004 03 18 | 704 | 0.7− | 0.5+ | 2004 03 23 | 691 | 0.4− | 0.3− | 2006 10 01 | 691 | 0.3− | 0.0 | | |
| 2004 03 18 | 704 | 0.3− | 0.1+ | 2004 03 27 | 704 | 1.5+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.3+ | | |
| 2004 03 18 | 704 | 0.3− | 0.5− | 2004 03 27 | 704 | 0.9+ | 0.8+ | 2006 10 22 | G96 | 0.7+ | 0.1− | | |
| 2004 03 18 | 704 | 0.5+ | 1.5− | 2004 03 27 | 704 | (1.8+ | 0.4+) | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 2004 03 18 | 704 | 1.3+ | 0.1− | 2004 03 27 | 704 | 1.5+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.2− | | |
| 2004 03 20 | 699 | 0.5+ | 1.2− | 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.6+ | 0.4− | | |
| 2004 03 20 | 699 | 0.4− | 0.2+ | 2004 04 13 | 691 | 0.1− | 0.2+ | | | | | | |

**2004 EK$_{71}$ = 2006 RW$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 266.69027 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23607840 | $\omega$ | 296.65642 | −0.40416594 | −0.91465031 |
| $a$ | 2.5927773 | $\Omega$ | 177.14585 | +0.88611563 | −0.39370746 |
| $e$ | 0.1325527 | $i$ | 9.29626 | +0.22682369 | −0.09170193 |
| $P$ | 4.17 | $H$ | 17.0 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | (2.6− | 1.6+) | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.5− | 0.2+ | | |
| 2004 03 15 | 703 | 1.4+ | 1.7− | 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.4+ | | |
| 2004 03 15 | 703 | 0.0 | 0.8+ | 2004 03 27 | 291 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.6− | | |
| 2004 03 15 | 703 | 1.1− | 0.3+ | 2004 03 27 | 291 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.4− | | |
| 2004 03 18 | 704 | 0.6− | 0.2− | 2004 03 27 | 291 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.8− | | |
| 2004 03 18 | 704 | 0.2− | 0.5− | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.6− | | |
| 2004 03 18 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.5+ | 0.1+ | | |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.4+ | 0.2+ | | |

**2004 EN$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.73252 | | (2000.0) | | −0.04403057 | +0.99741870 |
| $n$ | 0.17308042 | $\omega$ | 282.01083 | | −0.80905115 | −0.06890793 |
| $a$ | 3.1888744 | $\Omega$ | 345.10999 | | −0.58608664 | +0.02019006 |
| $e$ | 0.0647852 | $i$ | 12.75216 | | | |
| $P$ | 5.69 | $H$ | 15.3 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2004 04 24 | 691 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2004 03 15 | 703 | 1.1− | 0.4− | 2004 04 24 | 691 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2004 03 15 | 703 | 1.2− | 0.4− | 2004 04 24 | 691 | 0.0 | 0.0 | 2006 11 14 | 291 | 0.3+ | 0.0 |
| 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 11 14 | 291 | 0.1− | 0.0 |
| 2004 03 15 | 703 | 0.7− | 0.9+ | 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 291 | 0.7+ | 0.2+ |
| 2004 03 15 | 703 | (0.4− | 1.7+) | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 11 17 | 291 | 0.0 | 0.3+ |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.4− | 2006 11 17 | 291 | 0.1− | 0.1+ |
| 2004 03 18 | 704 | 1.1+ | 0.9+ | 2006 08 28 | 703 | 0.4+ | 1.2− | 2006 11 17 | 291 | 0.0 | 0.3+ |
| 2004 03 18 | 704 | 0.5− | 0.6+ | 2006 08 28 | 703 | (0.0 | 1.8+) | 2006 11 22 | 291 | 1.0− | 0.7− |
| 2004 03 18 | 704 | 0.1+ | 1.1+ | 2006 08 28 | 703 | 0.0 | 1.0− | 2006 11 22 | 291 | 0.3+ | 0.2− |
| 2004 03 20 | 704 | 0.8+ | 0.2− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 11 22 | 291 | 0.0 | 0.2− |
| 2004 03 20 | 704 | 1.0+ | 0.3− | 2006 09 13 | 644 | 0.3− | 0.3+ | 2006 11 24 | 291 | 0.2+ | 0.2+ |
| 2004 03 20 | 704 | (0.1+ | 1.5+) | 2006 09 13 | 644 | 0.3− | 0.2+ | 2006 11 24 | 291 | 0.1+ | 0.1− |
| 2004 03 20 | 704 | 0.9+ | 0.9+ | 2006 09 16 | 699 | 1.0− | 0.2+ | 2006 11 24 | 291 | 0.3+ | 0.4+ |
| 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 09 16 | 699 | 0.9− | 1.3+ | 2006 11 25 | 291 | 0.3− | 0.1− |
| 2004 03 27 | 704 | 1.0+ | 0.0 | 2006 09 16 | 699 | (2.3+ | 0.1+) | 2006 11 25 | 291 | 0.0 | 0.1+ |
| 2004 03 27 | 704 | 0.0 | 1.2− | 2006 09 16 | 699 | 0.4+ | 0.9+ | 2006 11 25 | 291 | 0.5− | 0.1+ |
| 2004 03 27 | 704 | 0.3− | 1.2− | 2006 09 28 | G96 | 0.2− | 0.2− | | | | |
| 2004 03 27 | 704 | 0.9+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− | | | | |

**2004 EE$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 262.64705 | | (2000.0) | | −0.48206503 | −0.87529470 |
| $n$ | 0.22957163 | $\omega$ | 281.17517 | | +0.84484282 | −0.45280029 |
| $a$ | 2.6415403 | $\Omega$ | 197.80043 | | +0.23206449 | −0.16979717 |
| $e$ | 0.1130099 | $i$ | 7.21103 | | | |
| $P$ | 4.29 | $H$ | 16.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.1− | 0.0 | 2004 03 27 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.5+ | 1.5+ |
| 2002 11 11 | 704 | 0.6− | 0.3+ | 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 704 | 0.6+ | 0.9+ | 2004 03 27 | 704 | 1.2− | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 1.2− | 0.9+ | 2004 03 27 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2004 03 15 | 703 | 1.2− | 1.0− | 2004 03 29 | 691 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.4− | 0.1+ |
| 2004 03 15 | 703 | (1.7− | 0.3+) | 2004 03 29 | 691 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 2004 03 15 | 703 | 0.1− | 0.5+ | 2004 03 29 | 691 | 0.4− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2004 03 18 | 704 | 0.4+ | 0.4− | 2004 04 15 | 699 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2004 03 18 | 704 | 0.7− | 0.0 | 2004 04 15 | 699 | 0.8− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.1− | 0.8− | 2004 04 15 | 699 | 1.4+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2004 03 18 | 704 | (0.2+ | 1.6−) | 2004 04 15 | 699 | 1.1+ | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2004 03 18 | 704 | 0.9+ | 0.9− | 2004 04 22 | 691 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2004 03 19 | 704 | 0.5+ | 0.6− | 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2004 03 19 | 704 | 1.2+ | 0.7+ | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2004 03 19 | 704 | 0.4+ | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.2− | 0.8− |
| 2004 03 20 | 704 | 0.4+ | 0.1+ | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 03 20 | 704 | 0.5+ | 0.3− | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2004 03 20 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 1.0+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.5− | 0.1− |
| 2004 03 27 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.2+ | | | | |

**2004 EM$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 233.90192 | | (2000.0) | | −0.88935504 | −0.45447251 |
| $n$ | 0.22621931 | $\omega$ | 82.18709 | | +0.39583694 | −0.82009508 |
| $a$ | 2.6675727 | $\Omega$ | 70.77032 | | +0.22882468 | −0.34770503 |
| $e$ | 0.1410118 | $i$ | 3.03692 | | | |
| $P$ | 4.36 | $H$ | 16.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.3− | 1.2+ | 2004 04 20 | 691 | 0.1− | 0.2+ |
| 2004 03 13 | 644 | 0.4+ | 0.0 | 2004 03 23 | 704 | 1.3+ | 0.8− | 2006 09 17 | 691 | 0.3− | 0.7− |
| 2004 03 13 | 644 | 1.0+ | 0.1+ | 2004 03 23 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2− |
| 2004 03 13 | 644 | 0.0 | 0.2− | 2004 03 23 | 704 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2004 03 13 | 644 | 0.4+ | 0.1− | 2004 03 23 | 704 | 0.6− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2004 03 13 | 644 | 0.4+ | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.4− | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2004 03 14 | 691 | 0.2+ | 0.2− | 2004 03 28 | 704 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.6+ |
| 2004 03 14 | 691 | 0.4+ | 0.2− | 2004 03 28 | 704 | 0.5− | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2004 03 28 | 704 | 0.5+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 0.7+ | 0.1+ | 2004 03 28 | 704 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2004 03 19 | 704 | 0.9− | 0.6+ | 2004 03 28 | 704 | 0.7+ | 0.2− | 2006 10 22 | G96 | 0.9+ | 0.2+ |
| 2004 03 19 | 704 | (0.2+ | 1.8+) | 2004 04 10 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.7+ | 0.2− |
| 2004 03 19 | 704 | 0.3+ | 0.4− | 2004 04 10 | 644 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.0 | 0.8+ | 2004 04 10 | 644 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2004 03 21 | 691 | 0.3− | 0.1− | 2004 04 11 | 644 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2004 03 21 | 691 | 0.1− | 0.1− | 2004 04 11 | 644 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.6+ | 0.2− |
| 2004 03 21 | 691 | 0.2− | 0.1+ | 2004 04 11 | 644 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2004 03 22 | 704 | (2.2− | 0.6+) | 2004 04 20 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2004 03 22 | 704 | 0.5− | 0.3− | 2004 04 20 | 691 | 0.3− | 0.3+ | | | | |

**2004 ET$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.53036 | | (2000.0) | | +0.70174399 | +0.70455795 |
| $n$ | 0.16986948 | $\omega$ | 291.72590 | | −0.51838082 | +0.60665312 |
| $a$ | 3.2289339 | $\Omega$ | 23.89742 | | −0.48870921 | +0.36819843 |
| $e$ | 0.0872001 | $i$ | 15.11164 | | | |
| $P$ | 5.80 | $H$ | 14.7 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 0.1− | 0.7− | 2006 08 28 | 699 | 1.4− | 1.0− | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2000 09 21 | 699 | 1.2+ | 1.1− | 2006 08 28 | 699 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2000 09 21 | 699 | 0.7− | 0.6+ | 2006 08 28 | 699 | 0.5− | 0.3+ | 2006 10 16 | 703 | 1.2+ | 0.4+ |
| 2000 09 21 | 699 | 0.6+ | 0.1− | 2006 08 28 | 699 | 0.9+ | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2004 03 13 | 644 | 0.7+ | 0.7+ | 2006 09 12 | 703 | 0.1− | 0.8− | 2006 10 16 | 703 | 0.4− | 0.7− |
| 2004 03 13 | 644 | 0.4+ | 0.7+ | 2006 09 12 | 703 | 0.6− | 0.3− | 2006 10 17 | 106 | (0.2+ | 2.4−) |
| 2004 03 13 | 644 | 0.9+ | 0.6+ | 2006 09 12 | 703 | 1.1− | 0.6+ | 2006 10 17 | 106 | (0.4+ | 1.9−) |
| 2004 03 19 | 704 | 0.4− | 0.2− | 2006 09 12 | 703 | 0.5− | 0.1− | 2006 10 18 | 106 | 0.2+ | 0.9− |
| 2004 03 19 | 704 | 0.3+ | 1.0− | 2006 09 18 | 703 | 0.3+ | 0.7+ | 2006 10 18 | 106 | 0.8+ | 1.2− |
| 2004 03 19 | 704 | 0.8− | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2004 03 19 | 704 | 0.7− | 0.2+ | 2006 09 18 | 703 | 1.3+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2004 03 22 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2004 03 22 | 704 | 0.1− | 0.5+ | 2006 09 18 | 699 | 1.0+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2004 03 28 | 704 | 0.2− | 0.3− | 2006 09 18 | 699 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2004 03 28 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 03 28 | 704 | 0.4+ | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2004 03 28 | 704 | 1.3+ | 1.0− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2004 04 16 | 704 | 0.4− | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.5+ | 0.1− |
| 2004 04 16 | 704 | 0.7+ | 1.3+ | 2006 09 30 | 703 | 1.4− | 0.1− | 2006 10 22 | 703 | 0.8− | 0.7+ |
| 2004 04 16 | 704 | (1.7+ | 0.1+) | 2006 09 30 | 703 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.5− | 1.2+ |
| 2004 04 16 | 704 | (0.5+ | 2.0+) | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 10 22 | 703 | 1.3− | 0.3− |
| 2004 04 21 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 1.2+ | 0.8+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2004 04 21 | 704 | 0.4+ | 0.8+ | 2006 10 02 | G96 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.3+ |
| 2004 04 21 | 704 | 1.0− | 1.2+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2004 04 21 | 704 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.4− | 0.1+ |

**2004 EL$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 187.70835 | | (2000.0) | | | |
| $n$ | 0.18334250 | $\omega$ | 353.93444 | | −0.96626563 | −0.25627403 |
| $a$ | 3.0687436 | $\Omega$ | 171.09104 | | +0.24269474 | −0.93928049 |
| $e$ | 0.0899524 | $i$ | 9.50761 | | +0.08619744 | −0.22820118 |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.0 | 0.1+ | 2004 04 20 | 704 | 1.4+ | 0.9− |
| 2004 03 14 | 691 | 0.1− | 0.1− | 2004 03 22 | 704 | 0.5− | 0.7+ | 2004 04 20 | 704 | 0.5− | 0.2+ |
| 2004 03 14 | 691 | 0.1− | 0.2− | 2004 03 22 | 704 | 0.6− | 0.5+ | 2004 04 20 | 704 | 1.0− | 0.1− |
| 2004 03 19 | 704 | 0.6+ | 0.8+ | 2004 03 28 | 704 | 0.6+ | 0.3+ | 2004 04 20 | 704 | 0.0 | 0.3+ |
| 2004 03 19 | 704 | 0.5+ | 0.4− | 2004 03 28 | 704 | 0.1− | 0.8− | 2004 04 20 | 704 | 0.2− | 0.3+ |
| 2004 03 19 | 704 | 0.5+ | 0.4− | 2004 03 28 | 704 | (1.8− | 0.2+) | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 1.0+ | 0.6+ | 2004 03 28 | 704 | 0.2− | 0.6+ | 2006 10 19 | 695 | 0.2+ | 0.1− |
| 2004 03 19 | 704 | 0.2− | 0.6+ | 2004 04 10 | 644 | 0.0 | 0.3− | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2004 03 22 | 704 | 0.1− | 0.4+ | 2004 04 10 | 644 | 0.0 | 0.1− | 2006 10 19 | 695 | 0.2− | 0.0 |
| 2004 03 22 | 704 | 0.5+ | 0.3+ | 2004 04 10 | 644 | 0.1− | 0.3− | 2006 10 20 | 695 | 0.0 | 0.1+ |

**2004 EN$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 289.45384 | | (2000.0) | | | |
| $n$ | 0.22282561 | $\omega$ | 83.24942 | | −0.10935211 | −0.98990466 |
| $a$ | 2.6945897 | $\Omega$ | 14.02553 | | +0.69966136 | −0.14109032 |
| $e$ | 0.0464262 | $i$ | 21.84300 | | +0.70605672 | −0.01350135 |
| $P$ | 4.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.0 | 0.0 | 2004 03 28 | 704 | (0.5− | 1.6−) | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2004 03 14 | 691 | 0.2+ | 0.2− | 2004 03 28 | 704 | 0.6+ | 0.8− | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2004 03 14 | 691 | 0.0 | 0.2− | 2004 03 29 | 691 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2004 03 19 | 704 | 0.9+ | 1.3+ | 2004 03 29 | 691 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2004 03 19 | 704 | 0.6+ | 1.3+ | 2004 03 29 | 691 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2004 03 19 | 704 | 0.9+ | 0.6+ | 2004 04 14 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2004 03 19 | 704 | 0.0 | 0.8+ | 2004 04 14 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 1.0+ | 0.9+ | 2004 04 14 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2004 03 22 | 704 | 0.2+ | 0.3+ | 2004 04 14 | 185 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2004 03 22 | 704 | (1.7+ | 1.6+) | 2004 04 14 | 185 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.5+ | 0.3+ |
| 2004 03 22 | 704 | 0.9− | 0.3− | 2004 04 23 | 291 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3− | 1.0− |
| 2004 03 22 | 704 | 0.3+ | 0.0 | 2004 04 23 | 291 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.6− | 0.1− |
| 2004 03 24 | 699 | 0.5+ | 0.6− | 2004 04 23 | 291 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2004 03 24 | 699 | (1.0− | 2.5−) | 2004 04 28 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2004 03 24 | 699 | 0.5− | 0.5+ | 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 03 24 | 699 | 1.2− | 0.4− | 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 03 28 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 03 28 | 704 | 0.3+ | 0.9− | 2006 09 25 | 691 | 0.1+ | 0.1+ | | | | |

**2004 EA$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 117.86336 | | (2000.0) | | | |
| $n$ | 0.17168334 | $\omega$ | 232.31067 | | −0.63379062 | +0.77345402 |
| $a$ | 3.2061509 | $\Omega$ | 358.28069 | | −0.58373929 | −0.48577722 |
| $e$ | 0.1920338 | $i$ | 17.15609 | | −0.50750161 | −0.40717241 |
| $P$ | 5.74 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | (0.9+ | 1.6−) | 2004 03 23 | 704 | 0.7− | 0.2− |
| 2004 01 18 | 691 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.0 | 0.7− | 2004 03 23 | 704 | 0.8+ | 0.9− |
| 2004 01 18 | 691 | 0.1− | 0.0 | 2004 03 19 | 704 | 0.5− | 0.7+ | 2004 03 23 | 704 | 0.9− | 0.7− |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.6+ | 0.6− | 2004 03 29 | 291 | 0.3− | 0.1+ |
| 2004 01 18 | 691 | 0.3− | 0.1+ | 2004 03 19 | 704 | 0.4− | 0.1− | 2004 03 29 | 291 | 0.1+ | 0.0 |
| 2004 01 18 | 691 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.1+ | 0.0 | 2004 03 29 | 291 | 0.6+ | 0.0 |
| 2004 01 27 | 691 | 0.3+ | 0.3− | 2004 03 19 | 704 | 0.1+ | 0.1− | 2004 03 30 | 291 | 0.3+ | 0.2+ |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2004 03 19 | 704 | 0.4+ | 0.0 | 2004 03 30 | 291 | 0.2+ | 0.2+ |
| 2004 01 27 | 691 | 0.1+ | 0.1− | 2004 03 19 | 704 | 0.2+ | 0.7− | 2004 03 30 | 291 | 0.0 | 0.2+ |
| 2004 01 27 | 691 | 0.0 | 0.2− | 2004 03 20 | 699 | 1.0− | 0.7+ | 2004 04 12 | 691 | 0.4− | 0.4− |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2004 03 20 | 704 | 0.0 | 0.1+ | 2004 04 12 | 691 | 0.0 | 0.1+ |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2004 03 20 | 699 | (1.5− | 0.4+) | 2004 04 12 | 691 | 0.0 | 0.1− |
| 2004 01 30 | 568 | 0.4+ | 0.3− | 2004 03 20 | 704 | 0.0 | 0.0 | 2004 04 24 | 691 | 0.2− | 0.1− |
| 2004 01 30 | 568 | 0.4+ | 0.2− | 2004 03 20 | 704 | 0.2+ | 0.6− | 2004 04 24 | 691 | 0.1− | 0.1+ |
| 2004 01 30 | 568 | 0.2+ | 0.2− | 2004 03 20 | 699 | 1.0− | 0.5− | 2004 04 24 | 691 | 0.3− | 0.1− |
| 2004 02 23 | 704 | 0.4− | 0.2+ | 2004 03 20 | 704 | 0.3− | 0.7+ | 2006 09 17 | 691 | 0.3+ | 0.1− |
| 2004 02 23 | 704 | 0.6+ | 0.4+ | 2004 03 20 | 704 | 0.7+ | 0.7+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2004 02 23 | 704 | 0.5+ | 0.4− | 2004 03 20 | 699 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 0.7− | 2004 03 22 | 704 | 0.6− | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2004 03 22 | 704 | 0.5− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2004 03 22 | 704 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2004 03 15 | 691 | 0.3− | 0.1− | 2004 03 22 | 704 | 0.3+ | 0.6− | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 2004 03 15 | 704 | 0.3+ | 0.3+ | 2004 03 22 | 704 | 0.9+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 2004 03 15 | 704 | 0.8+ | 0.7+ | 2004 03 22 | 704 | 0.8+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2004 03 15 | 704 | 0.2+ | 0.6− | 2004 03 22 | 704 | 0.2+ | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2004 03 15 | 704 | 0.2+ | 0.5+ | 2004 03 22 | 704 | 0.2− | 1.1+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2004 03 19 | 704 | 0.6+ | 0.3− | 2004 03 22 | 704 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2004 03 19 | 704 | 0.1+ | 0.0 | 2004 03 23 | 704 | 0.2− | 1.0+ | 2006 10 02 | G96 | 0.3− | 0.4− |

**2004 EE$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.28126 | | (2000.0) | | | |
| $n$ | 0.27567993 | $\omega$ | 6.94217 | | −0.05179367 | −0.99707008 |
| $a$ | 2.3381154 | $\Omega$ | 86.03774 | | +0.91351640 | −0.07007665 |
| $e$ | 0.1793411 | $i$ | 3.23468 | | +0.40349128 | +0.03066795 |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.3− | 0.2+ | 2004 03 24 | 699 | 0.8− | 1.0+ | 2006 11 11 | G96 | 0.8+ | 0.5− |
| 1995 09 24 | 691 | 0.1+ | 0.3+ | 2004 03 24 | 699 | 0.5− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 1995 09 24 | 691 | 0.2− | 0.3+ | 2004 03 24 | 699 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2004 02 23 | 704 | 0.5+ | 0.5− | 2004 04 15 | 621 | 0.6− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.5− |
| 2004 02 23 | 704 | 1.1− | 0.8− | 2004 04 15 | 621 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.8+ | 1.3+ | 2004 04 16 | 621 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2004 02 23 | 704 | 1.2+ | 0.1− | 2004 04 16 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2004 02 23 | 704 | 0.3− | 1.0+ | 2004 04 16 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2004 03 15 | 703 | 0.1− | 0.5+ | 2004 04 16 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2004 03 15 | 703 | 0.4− | 0.3+ | 2004 04 16 | 621 | 0.5− | 0.5− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2004 03 15 | 703 | 1.2− | 0.5− | 2004 04 16 | 621 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2004 03 15 | 703 | 1.1− | 0.5+ | 2004 04 16 | 621 | 0.3+ | 0.4+ | 2006 11 27 | 703 | 0.4+ | 0.6− |
| 2004 03 19 | 704 | 0.9+ | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 27 | 703 | 0.3+ | 0.6+ |
| 2004 03 19 | 704 | (1.7+ | 0.2+) | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.6− |
| 2004 03 19 | 704 | 0.8+ | 0.4− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.1+ | 0.0 |
| 2004 03 19 | 704 | 0.8+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 27 | 704 | 1.0+ | 0.2+ |
| 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.9− | 2006 11 27 | 704 | 1.0− | 0.6+ |
| 2004 03 22 | 704 | 0.5+ | 0.4− | 2006 11 02 | 703 | 0.3− | 0.2+ | 2006 11 27 | 704 | 0.0 | 0.2+ |
| 2004 03 22 | 704 | 0.0 | 0.7− | 2006 11 02 | 703 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.3− | 0.5+ |
| 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 11 02 | 703 | 0.9− | 0.3− | 2006 11 29 | 704 | 0.5− | 0.1+ |
| 2004 03 22 | 704 | 0.6+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.7− | 0.1+ |
| 2004 03 22 | 704 | 0.1− | 0.7− | 2006 11 11 | G96 | 0.3+ | 0.5− | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2004 03 24 | 699 | 0.3− | 0.6− | 2006 11 11 | G96 | 0.6+ | 0.6− | 2006 11 29 | 704 | 0.8− | 0.4+ |

**2004 ER$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 285.77427 | | (2000.0) | | | |
| $n$ | 0.26156850 | $\omega$ | 87.03424 | | −0.54347785 | −0.83893178 |
| $a$ | 2.4214700 | $\Omega$ | 35.93444 | | +0.74940307 | −0.50032936 |
| $e$ | 0.1223742 | $i$ | 2.80585 | | +0.37818891 | −0.21415881 |
| $P$ | 3.77 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 683 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.1+ | 0.8− | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2004 03 15 | 683 | (0.3+ | 1.8+) | 2004 03 22 | 704 | 0.8+ | 0.5− | 2006 11 11 | G96 | 0.5− | 0.1+ |
| 2004 03 15 | 683 | 0.9− | 1.3+ | 2004 03 22 | 704 | 0.5+ | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.4− | 0.6− | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.0 |
| 2004 03 15 | 703 | 0.8− | 0.4+ | 2004 03 29 | 691 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 703 | (2.4− | 0.3+) | 2004 03 29 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2004 03 15 | 703 | 0.6− | 0.3+ | 2004 03 29 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.4− | 0.2− |
| 2004 03 19 | 704 | 0.2+ | 0.2− | 2004 04 19 | 704 | 1.0+ | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2004 03 19 | 704 | 1.0+ | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2004 03 19 | 704 | 1.2+ | 0.1+ | 2004 04 19 | 704 | 0.6− | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.2+ |
| 2004 03 19 | 704 | 1.0+ | 0.9+ | 2004 04 19 | 704 | 0.0 | 0.9+ | 2006 11 17 | 703 | 0.1+ | 1.0− |
| 2004 03 19 | 704 | 0.5+ | 0.1− | 2006 11 02 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.2− | 1.2− |
| 2004 03 21 | 608 | 0.3− | 0.7− | 2006 11 02 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2004 03 21 | 608 | 0.0 | 1.0− | 2006 11 02 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2004 03 21 | 608 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.9+ | 0.5− |
| 2004 03 22 | 704 | 0.2+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3+ | 1.0+ |

**2004 EU$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.53206 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21680507 | $\omega$ | 138.27896 | | −0.85032285 | −0.52481942 | |
| $a$ | 2.7442464 | $\Omega$ | 10.28063 | | +0.40635482 | −0.70178853 | |
| $e$ | 0.1161287 | $i$ | 12.59971 | | +0.33440516 | −0.48172341 | |
| $P$ | 4.55 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 704 | 0.4− | 0.9− | 2004 03 15 | 691 | 0.2− | 0.1− | 2004 03 25 | 704 | 0.3+ | 0.6+ |
| 2004 02 18 | 704 | 0.9+ | 0.8− | 2004 03 19 | 704 | 1.5+ | 0.6+ | 2004 04 15 | 644 | 0.2+ | 0.2− |
| 2004 02 18 | 704 | 0.3− | 0.7− | 2004 03 19 | 704 | 0.8+ | 0.3+ | 2004 04 15 | 644 | 0.2+ | 0.2− |
| 2004 02 25 | 704 | 0.1− | 0.3+ | 2004 03 19 | 704 | 1.3+ | 1.2− | 2004 04 15 | 644 | 0.2+ | 0.1+ |
| 2004 02 25 | 704 | 0.1− | 0.2− | 2004 03 19 | 704 | 0.9+ | 0.0 | 2004 04 19 | 704 | 0.3+ | 0.1+ |
| 2004 02 25 | 704 | 0.4− | 0.9+ | 2004 03 19 | 704 | 0.1− | 0.3+ | 2004 04 19 | 704 | 1.1+ | 1.0− |
| 2004 02 25 | 704 | 0.2− | 0.0 | 2004 03 20 | 704 | 0.2+ | 0.4+ | 2004 04 19 | 704 | 0.5+ | 0.7− |
| 2004 02 25 | 704 | 0.5− | 0.0 | 2004 03 20 | 704 | 0.4− | 0.1+ | 2004 04 24 | 691 | 0.3+ | 0.1− |
| 2004 03 15 | 703 | 0.7− | 0.6− | 2004 03 20 | 704 | 0.9+ | 0.7+ | 2004 04 24 | 691 | 0.3+ | 0.1− |
| 2004 03 15 | 704 | 0.3− | 0.3− | 2004 03 20 | 704 | 0.8− | 0.3+ | 2004 04 24 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 703 | 0.9− | 0.1− | 2004 03 23 | 704 | 1.2− | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.7+ |
| 2004 03 15 | 704 | 0.3− | 0.2+ | 2004 03 23 | 704 | 0.5− | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.3+ |
| 2004 03 15 | 703 | 1.2− | 0.6+ | 2004 03 23 | 704 | 0.6− | 0.7+ | 2006 10 20 | G96 | 0.0 | 0.5+ |
| 2004 03 15 | 704 | 0.1− | 0.7+ | 2004 03 23 | 704 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.5− | 0.6+ |
| 2004 03 15 | 703 | 0.6+ | 0.4− | 2004 03 23 | 704 | 1.1+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.5+ |
| 2004 03 15 | 704 | 0.0 | 0.2+ | 2004 03 25 | 704 | 0.2− | 1.3+ | 2006 10 21 | G96 | 0.8− | 0.2+ |
| 2004 03 15 | 704 | 0.9+ | 1.1+ | 2004 03 25 | 704 | 0.7− | 0.6+ | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2004 03 25 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.6+ | 0.3− |
| 2004 03 15 | 691 | 0.2− | 0.3− | 2004 03 25 | 704 | 0.4− | 1.2+ | | | | |

**2004 EV$_{78}$ = 2006 WD$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.07335 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24011283 | $\omega$ | 92.38558 | | −0.56778844 | +0.82175212 | |
| $a$ | 2.5636524 | $\Omega$ | 142.88312 | | −0.78352230 | −0.52148652 | |
| $e$ | 0.1200688 | $i$ | 4.59766 | | −0.25240659 | −0.22972868 | |
| $P$ | 4.10 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2004 03 27 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.6+ | 0.3− |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2004 03 27 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.7+ | 0.4− |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2004 03 28 | 704 | (0.2+ | 1.9+) | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2004 03 19 | 704 | 0.2+ | 1.1+ | 2004 03 28 | 704 | 0.5− | 0.8+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2004 03 19 | 704 | 0.8+ | 0.7+ | 2004 03 28 | 704 | 0.6+ | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2004 03 19 | 704 | (0.2+ | 1.8+) | 2004 03 28 | 704 | 0.6− | 0.6− | 2006 11 20 | 691 | 0.3− | 0.2+ |
| 2004 03 22 | 704 | 0.3+ | 1.0− | 2004 03 28 | 704 | 0.5− | 1.1− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 03 22 | 704 | 1.2+ | 0.7+ | 2005 07 28 | 644 | 0.3− | 0.6+ | 2006 11 24 | G96 | 1.0+ | 0.0 |
| 2004 03 22 | 704 | 0.7+ | 1.0− | 2005 07 28 | 644 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.4+ |
| 2004 03 22 | 704 | 0.0 | 0.5− | 2005 07 28 | 644 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.6+ | 0.1− |
| 2004 03 27 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.1− | | | | |

**2004 EW$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.35527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20362038 | $\omega$ | 131.57476 | | −0.75619306 | +0.65226831 | |
| $a$ | 2.8614658 | $\Omega$ | 89.20634 | | −0.61480112 | −0.68095242 | |
| $e$ | 0.0904307 | $i$ | 2.98879 | | −0.22403492 | −0.33294121 | |
| $P$ | 4.84 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.2− | 0.1− | 2004 03 19 | 704 | 0.6+ | 0.5+ | 2004 04 09 | 644 | 0.2+ | 0.3− |
| 2004 02 23 | 704 | 0.9+ | 0.5+ | 2004 03 19 | 704 | 0.5+ | 0.4+ | 2004 04 09 | 644 | 0.0 | 0.7− |
| 2004 02 23 | 704 | 0.0 | 0.4+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2004 04 09 | 644 | 0.1+ | 0.4− |
| 2004 02 23 | 704 | 0.1− | 0.4− | 2004 03 19 | 704 | 0.3− | 0.8+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2004 02 23 | 704 | 0.7+ | 0.3+ | 2004 03 19 | 704 | 0.8+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 703 | (2.4+ | 1.1+) | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 09 28 | 691 | 0.4− | 0.3+ |
| 2004 03 15 | 704 | 0.2− | 0.3− | 2004 03 22 | 704 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.2− |
| 2004 03 15 | 703 | 0.2− | 0.4− | 2004 03 22 | 704 | 0.9− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1− |
| 2004 03 15 | 704 | 0.6+ | 0.3+ | 2004 03 22 | 704 | 0.6− | 0.3− | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 703 | 0.2− | 0.3+ | 2004 03 22 | 704 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2004 03 15 | 704 | 0.6+ | 1.0− | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2004 03 15 | 703 | (0.2− | 1.9+) | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2004 03 15 | 704 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 03 15 | 704 | 0.1+ | 0.3− | 2004 03 28 | 704 | 0.3− | 0.7+ | 2006 11 16 | G96 | 0.4+ | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.2− | 2004 03 28 | 704 | 0.7− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2004 03 28 | 704 | 1.1− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2004 03 28 | 704 | 0.1+ | 0.8− | 2006 11 16 | G96 | 0.2+ | 0.2− |

**2004 EN$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.46351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21119704 | $\omega$ | 139.32331 | | −0.93666532 | +0.34765470 | |
| $a$ | 2.7926135 | $\Omega$ | 61.06817 | | −0.33256810 | −0.84499161 | |
| $e$ | 0.1727784 | $i$ | 2.77417 | | −0.10980230 | −0.40635624 | |
| $P$ | 4.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 291 | 0.4+ | 0.3+ | 2004 03 25 | 699 | 0.4− | 1.2− | 2004 04 19 | 704 | 0.6+ | 0.0 |
| 2001 09 17 | 291 | 0.5− | 0.0 | 2004 03 25 | 699 | 0.6− | 0.3+ | 2004 04 19 | 704 | 0.2+ | 0.0 |
| 2001 09 17 | 291 | 0.0 | 0.0 | 2004 03 25 | 699 | 0.5+ | 0.3− | 2004 04 19 | 704 | 0.9− | 0.4− |
| 2004 03 15 | 703 | 0.4+ | 0.6− | 2004 04 09 | E12 | 0.4− | 0.3+ | 2004 04 19 | 704 | 0.1− | 0.1+ |
| 2004 03 15 | 703 | 0.3− | 0.7− | 2004 04 09 | E12 | 0.7− | 0.1+ | 2004 04 22 | 704 | 1.3+ | 0.4+ |
| 2004 03 15 | 703 | 0.1− | 1.0− | 2004 04 09 | E12 | 0.4− | 0.1− | 2004 04 22 | 704 | 0.6− | 0.0 |
| 2004 03 15 | 703 | 0.1+ | 0.5+ | 2004 04 09 | E12 | 0.5− | 0.2− | 2004 04 22 | 704 | (1.0+ | 1.5+) |
| 2004 03 19 | 704 | 0.7+ | 1.0+ | 2004 04 13 | 691 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.2+ | 0.5+ |
| 2004 03 19 | 704 | 0.1− | 0.3− | 2004 04 13 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 0.2+ | 0.5+ | 2004 04 13 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.4− |
| 2004 03 19 | 704 | 0.2− | 0.0 | 2004 04 16 | 704 | 0.1− | 0.7+ | 2006 10 19 | 691 | 0.3+ | 0.2− |
| 2004 03 19 | 704 | 0.2+ | 0.1+ | 2004 04 16 | 704 | 0.5+ | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2004 03 22 | 704 | 0.7+ | 1.3+ | 2004 04 16 | 704 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2004 03 22 | 704 | 0.7+ | 0.5− | 2004 04 16 | 704 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 03 22 | 704 | 0.2+ | 0.9+ | 2004 04 16 | 704 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2004 03 22 | 704 | 0.3+ | 0.0 | 2004 04 19 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.7− | 0.4+ |
| 2004 03 22 | 704 | 0.1+ | 0.7+ | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2004 03 25 | 699 | 0.1+ | 0.4− | 2004 04 19 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ |

**2004 ET$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.69969 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21250345 | $\omega$ | 309.70075 | | +0.23414930 | −0.95611452 | |
| $a$ | 2.7811562 | $\Omega$ | 125.87767 | | +0.94520357 | +0.18148517 | |
| $e$ | 0.1273165 | $i$ | 12.55418 | | +0.22751775 | +0.23001773 | |
| $P$ | 4.64 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.7+ | 0.2+ | 2004 03 23 | 704 | 0.5− | 1.2− |
| 2001 07 27 | 699 | 0.4− | 0.1+ | 2003 01 05 | 704 | 0.3− | 0.3+ | 2004 03 23 | 704 | 0.8+ | 0.5+ |
| 2001 07 27 | 699 | 0.7+ | 0.5+ | 2003 01 05 | 704 | 0.3− | 0.2+ | 2006 08 30 | 699 | (0.4− | 1.5+) |
| 2001 07 27 | 699 | 0.0 | 0.5+ | 2003 01 27 | 644 | 0.2− | 0.1− | 2006 08 30 | 699 | 0.6− | 1.0+ |
| 2002 10 31 | 704 | 0.9+ | 0.4+ | 2003 01 27 | 644 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.7− | 1.0+ |
| 2002 10 31 | 704 | 1.1− | 1.5− | 2003 01 27 | 644 | 0.0 | 0.5+ | 2006 08 30 | 699 | (1.0− | 1.8+) |
| 2002 10 31 | 704 | 0.6− | 0.9− | 2004 03 12 | 644 | 0.3− | 0.4+ | 2006 09 20 | 703 | 0.4+ | 0.9− |
| 2002 10 31 | 704 | 0.1− | 1.3− | 2004 03 12 | 644 | 0.4− | 0.6+ | 2006 09 20 | 703 | 1.4+ | 0.6+ |
| 2002 11 27 | 699 | 0.7+ | 1.4− | 2004 03 12 | 644 | 0.5− | 0.4+ | 2006 09 20 | 703 | 0.7− | 0.5− |
| 2002 11 27 | 699 | 0.4− | 0.0 | 2004 03 15 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 703 | 0.3+ | 0.1+ |
| 2002 11 27 | 699 | 1.0+ | 0.7− | 2004 03 15 | 704 | (1.9+ | 1.6+) | 2006 09 26 | 703 | 0.8− | 0.6− |
| 2002 11 27 | 699 | 1.2− | 0.8+ | 2004 03 15 | 704 | (0.2+ | 1.8+) | 2006 09 26 | 703 | 0.2+ | 0.8+ |
| 2002 12 08 | 644 | 0.4+ | 0.4+ | 2004 03 15 | 704 | (1.2+ | 1.8+) | 2006 09 26 | 703 | 0.1+ | 0.9− |
| 2002 12 08 | 644 | 0.2+ | 0.3+ | 2004 03 15 | 704 | (2.2+ | 3.2+) | 2006 09 26 | 703 | 1.3− | 0.3− |
| 2002 12 08 | 644 | 0.4+ | 0.4+ | 2004 03 19 | 644 | 0.1+ | 0.5+ | 2006 10 12 | E12 | 0.5+ | 0.2+ |
| 2002 12 14 | 704 | 0.6− | 0.6+ | 2004 03 19 | 644 | 0.2+ | 0.5+ | 2006 10 12 | E12 | 0.1+ | 0.4+ |
| 2002 12 14 | 704 | 0.5− | 0.8+ | 2004 03 19 | 644 | 0.3+ | 0.3+ | 2006 10 12 | E12 | 1.5+ | 0.4+ |
| 2002 12 14 | 704 | 0.4− | 0.9+ | 2004 03 23 | 704 | (0.6− | 1.9−) | 2006 10 12 | E12 | 0.8− | 0.9+ |
| 2002 12 14 | 704 | 0.0 | 1.4+ | 2004 03 23 | 704 | 0.7+ | 0.2+ | | | | |
| 2003 01 05 | 704 | 0.8+ | 0.2− | 2004 03 23 | 704 | 0.1+ | 0.3− | | | | |

**2004 EN$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 105.07025 | | (2000.0) | | | |
| $n$ | 0.20572669 | $\omega$ | 133.99575 | | −0.00002997 | +0.97611452 |
| $a$ | 2.8419011 | $\Omega$ | 134.60277 | | −0.98242182 | +0.04052753 |
| $e$ | 0.0576859 | $i$ | 17.76653 | | −0.18667452 | −0.21344312 |
| $P$ | 4.79 | $H$ | 14.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 18 | 699 | 0.2− | 0.0 | 2004 02 17 | 704 | 0.1+ | 0.1− | 2004 04 14 | 704 | 0.2− | 0.4+ |
| 1999 02 18 | 699 | 0.8+ | 1.5− | 2004 02 17 | 704 | 0.1− | 0.8+ | 2004 04 14 | 704 | 1.1+ | 0.7− |
| 1999 02 18 | 699 | 0.3+ | 1.0− | 2004 03 14 | 704 | 0.8+ | 1.3+ | 2004 04 14 | 704 | 0.1− | 0.5− |
| 2001 09 12 | 704 | 0.3− | 1.1+ | 2004 03 14 | 704 | 0.6− | 0.0 | 2004 04 14 | 704 | 0.1− | 0.6+ |
| 2001 09 12 | 704 | 0.4− | 0.5+ | 2004 03 14 | 704 | 0.0 | 0.4− | 2006 09 25 | 703 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.6− | 1.2+ | 2004 03 14 | 704 | 0.4− | 0.4+ | 2006 09 25 | 703 | 0.3+ | 0.4− |
| 2001 09 12 | 704 | 0.6− | 0.3− | 2004 03 19 | 644 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.4− | 0.8− |
| 2003 12 28 | 704 | 0.9− | 0.1+ | 2004 03 19 | 644 | 0.1+ | 0.1− | 2006 09 25 | 703 | 0.2+ | 0.5+ |
| 2003 12 28 | 704 | 0.5− | 0.2+ | 2004 03 19 | 644 | 0.1− | 0.1− | 2006 10 31 | 703 | 0.1− | 1.3− |
| 2003 12 28 | 704 | 1.0− | 0.9+ | 2004 03 25 | 704 | 0.5+ | 0.2+ | 2006 10 31 | 703 | 1.2+ | 0.6− |
| 2003 12 28 | 704 | 0.2− | 1.1+ | 2004 03 25 | 704 | (2.0+ | 0.2−) | 2006 10 31 | 703 | 0.1− | 0.8+ |
| 2004 02 02 | 699 | 1.1− | 0.1− | 2004 03 25 | 704 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 1.4+ | 1.2+ |
| 2004 02 02 | 699 | 0.6− | 0.6+ | 2004 03 25 | 704 | 0.5+ | 0.8+ | 2006 11 24 | 703 | 0.2+ | 0.5− |
| 2004 02 02 | 699 | 1.4− | 1.1− | 2004 03 26 | 703 | 0.3+ | 0.5+ | 2006 11 24 | 703 | 0.1− | 0.0 |
| 2004 02 02 | 699 | 0.3+ | 0.4− | 2004 03 26 | 703 | 0.3− | 1.2+ | 2006 11 24 | 703 | 0.7+ | 1.3+ |
| 2004 02 17 | 704 | 0.1+ | 0.0 | 2004 03 26 | 703 | 0.7+ | 0.3+ | 2006 11 24 | 703 | 2.2− | 0.8+ |
| 2004 02 17 | 704 | 0.3− | 0.1+ | 2004 03 26 | 703 | 1.3+ | 0.5+ | | | | |
| 2004 02 17 | 704 | (2.0− | 0.5+) | 2004 04 14 | 704 | 0.5+ | 0.1− | | | | |

**2004 EA$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.56208 | | (2000.0) | | | |
| $n$ | 0.26561050 | $\omega$ | 346.66053 | | −0.02701863 | −0.99265791 |
| $a$ | 2.3968410 | $\Omega$ | 104.79230 | | +0.92797494 | −0.06875743 |
| $e$ | 0.1006224 | $i$ | 7.00413 | | +0.37166180 | +0.09951228 |
| $P$ | 3.71 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | 0.7− | 1.2− | 2006 10 30 | 703 | 0.3+ | 0.4+ | 2006 11 20 | 704 | 0.3+ | 0.6− |
| 2002 10 08 | 699 | 0.0 | 0.6+ | 2006 10 30 | 703 | 0.4− | 1.2− | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.0 | 0.7+ | 2006 10 30 | 703 | 0.0 | 0.6− | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2002 10 08 | 699 | 0.5+ | 0.4+ | 2006 10 30 | 703 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2004 03 15 | 704 | 0.2− | 0.4− | 2006 11 14 | 704 | 0.5− | 0.7+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2004 03 15 | 704 | 0.9+ | 1.2+ | 2006 11 14 | 704 | 0.1− | 0.7− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2004 03 15 | 704 | 0.9− | 0.7+ | 2006 11 14 | 704 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2004 03 15 | 704 | 0.6+ | 0.5− | 2006 11 14 | 704 | 0.4+ | 0.7+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2004 03 19 | 644 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.0 | 0.7+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2004 03 19 | 644 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2004 03 19 | 644 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2004 03 23 | 704 | 0.9+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2004 03 23 | 704 | 0.7+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2004 03 23 | 704 | 0.8+ | 0.9− | 2006 11 15 | 703 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 03 23 | 704 | 0.9+ | 0.3− | 2006 11 15 | 703 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.8+ | 0.6+ |
| 2004 03 23 | 704 | 1.3+ | 0.4− | 2006 11 15 | 703 | 0.7− | 0.2− | 2006 11 28 | 704 | 0.2− | 1.0+ |
| 2004 03 26 | 691 | 0.3− | 0.2− | 2006 11 15 | 703 | 0.5− | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.2+ |
| 2004 03 26 | 691 | 0.5− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2004 03 26 | 691 | 0.2− | 0.5+ | 2006 11 20 | 704 | 0.1− | 1.3+ | 2006 11 28 | 704 | 0.4+ | 0.1− |

**2004 EL$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 183.63887 | | (2000.0) | | | |
| $n$ | 0.20917137 | $\omega$ | 100.72279 | | −0.94742176 | +0.26349310 |
| $a$ | 2.8106141 | $\Omega$ | 94.73903 | | −0.31455291 | −0.87102976 |
| $e$ | 0.1432443 | $i$ | 10.49683 | | +0.05872379 | −0.41458237 |
| $P$ | 4.71 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 608 | 0.4+ | 0.1− | 2004 04 15 | 704 | 0.2− | 0.0 | 2004 05 23 | 704 | 0.3+ | 0.4+ |
| 2002 12 05 | 608 | 0.2+ | 0.6− | 2004 04 15 | 704 | 1.0− | 0.4− | 2004 05 23 | 704 | 0.1+ | 0.4+ |
| 2002 12 05 | 608 | 0.1− | 0.8− | 2004 04 15 | 704 | 0.5− | 0.6− | 2004 05 23 | 704 | 0.8+ | 0.3+ |
| 2004 02 18 | 704 | 0.7+ | 0.1− | 2004 04 15 | 704 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.7+ |
| 2004 02 18 | 704 | 0.1− | 0.1+ | 2004 04 15 | 704 | 0.4− | 0.6− | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 2004 02 18 | 704 | 0.3+ | 0.4+ | 2004 04 24 | 703 | 0.9− | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2004 02 18 | 704 | 0.3+ | 1.0+ | 2004 04 24 | 703 | 1.0− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2004 02 27 | 704 | (2.1+ | 2.1−) | 2004 04 24 | 704 | 0.7+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2004 02 27 | 704 | (2.5+ | 1.1+) | 2004 04 24 | 703 | 0.8− | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.6+ |
| 2004 02 27 | 704 | 1.2+ | 0.1+ | 2004 04 24 | 704 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.7+ |
| 2004 02 27 | 704 | 1.0+ | 0.2− | 2004 04 24 | 703 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.2− |
| 2004 03 15 | 704 | 1.0+ | 0.4+ | 2004 04 24 | 704 | 0.3− | 1.0+ | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2004 03 15 | 704 | 0.7+ | 0.1+ | 2004 04 24 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.9− | 0.5− |
| 2004 03 15 | 704 | 0.5+ | 0.1− | 2004 04 24 | 704 | 0.9− | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.5+ |
| 2004 03 15 | 704 | 1.0+ | 0.1+ | 2004 04 25 | 699 | 0.7− | 0.4− | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2004 03 15 | 704 | 1.0+ | 0.5+ | 2004 04 25 | 699 | 0.8− | 0.8− | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2004 03 19 | 644 | 0.0 | 0.1− | 2004 04 25 | 699 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.8+ |
| 2004 03 19 | 644 | 0.2− | 0.1− | 2004 04 25 | 699 | 0.7− | 0.1− | 2006 10 28 | 703 | 0.1+ | 1.6− |
| 2004 03 19 | 644 | 0.1− | 0.2− | 2004 05 13 | 704 | (3.0− | 0.7+) | 2006 10 28 | 703 | (1.1+ | 1.8+) |
| 2004 03 24 | 703 | 0.2+ | 0.0 | 2004 05 13 | 704 | (2.1− | 0.2−) | 2006 10 28 | 703 | 1.1+ | 1.0+ |
| 2004 03 24 | 703 | 0.1+ | 0.5+ | 2004 05 13 | 704 | (2.1− | 0.9+) | 2006 10 28 | 703 | 1.2− | 0.8− |
| 2004 03 24 | 703 | 0.0 | 0.4− | 2004 05 13 | 704 | (2.2− | 0.5+) | | | | |
| 2004 03 24 | 703 | 0.2− | 0.3+ | 2004 05 23 | 704 | 0.2+ | 0.4− | | | | |

**2004 EA$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 243.38894 | | (2000.0) | | | |
| $n$ | 0.26223259 | $\omega$ | 113.92725 | | −0.99652416 | −0.05968165 |
| $a$ | 2.4173801 | $\Omega$ | 62.69550 | | +0.02944417 | −0.90497138 |
| $e$ | 0.1546657 | $i$ | 3.75013 | | +0.07792720 | −0.42126584 |
| $P$ | 3.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2004 02 25 | 704 | (0.2− | 2.1+) | 2004 03 20 | 704 | 0.6+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2004 02 25 | 704 | 0.4+ | 1.4− | 2004 03 20 | 704 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2004 02 25 | 704 | 0.6− | 0.5+ | 2004 03 22 | 704 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2004 03 15 | 704 | 0.2+ | 0.0 | 2004 03 22 | 704 | 0.6+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2004 03 15 | 704 | 0.2+ | 0.1− | 2004 03 22 | 704 | 1.1+ | 0.9+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2004 03 15 | 704 | 0.5− | 0.1− | 2004 03 22 | 704 | 0.2− | 0.6− | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 704 | 0.4− | 0.5− | 2004 04 20 | 704 | 0.1− | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2004 03 20 | 691 | 0.5− | 0.1+ | 2004 04 20 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 691 | 0.2− | 0.1− | 2004 04 20 | 704 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 691 | 0.0 | 0.1− | 2004 04 22 | 704 | 0.7+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.1+ | | |
| 2004 03 20 | 704 | 0.1+ | 0.2+ | 2004 04 22 | 704 | 0.5+ | 0.8+ | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2004 03 20 | 704 | 0.0 | 0.1+ | 2004 04 22 | 704 | 1.0− | 1.2− | 2006 11 24 | G96 | 0.3− | 0.2− | | |

**2004 EH$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.70546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25453263 | $\omega$ | 23.29497 | | +0.09756018 | −0.99075306 | |
| $a$ | 2.4658902 | $\Omega$ | 61.22213 | | +0.89534842 | +0.04600737 | |
| $e$ | 0.1649729 | $i$ | 6.17555 | | +0.43454945 | +0.12763891 | |
| $P$ | 3.87 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 699 | 0.8− | 0.8− | 2006 10 15 | 703 | 0.2− | 0.4+ |
| 2004 03 15 | 704 | 0.6− | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 10 15 | 703 | (3.2− | 0.4−) |
| 2004 03 15 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 03 15 | 704 | 0.0 | 0.7+ | 2006 09 30 | 703 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2004 03 20 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.8− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2004 03 20 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.5− | 0.9+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2004 03 23 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2004 03 23 | 704 | 0.6− | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2004 03 23 | 704 | 1.4+ | 0.3− | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.4− |
| 2004 03 23 | 704 | 0.8+ | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2004 03 23 | 704 | 0.4− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2004 03 30 | 691 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.6+ | 0.7− |
| 2004 03 30 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2004 03 30 | 691 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (5.1− | 4.4+) |
| 2006 09 18 | 699 | 1.5− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | (2.5− | 4.4+) |
| 2006 09 18 | 699 | 0.8− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ | | | | |
| 2006 09 18 | 699 | 0.3+ | 0.4− | 2006 10 15 | 703 | 0.6− | 0.4+ | | | | |

**2004 ES$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.46224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22281591 | $\omega$ | 4.69620 | | −0.95465768 | +0.29407076 | |
| $a$ | 2.6946679 | $\Omega$ | 192.70145 | | −0.27954941 | −0.93906394 | |
| $e$ | 0.1107342 | $i$ | 12.17753 | | −0.10237594 | −0.17799244 | |
| $P$ | 4.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.0 | 0.2− | 2004 03 26 | 704 | 0.5+ | 0.5− | 2006 10 21 | G96 | 0.6+ | 0.2− |
| 2004 03 13 | 644 | 0.1− | 0.4− | 2004 03 26 | 704 | 1.0+ | 0.3+ | 2006 10 21 | G96 | 0.6+ | 0.1− |
| 2004 03 13 | 644 | 0.1− | 0.2− | 2004 03 26 | 704 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 1.3+ | 1.2− | 2004 03 26 | 704 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 0.5− | 0.5− | 2004 03 26 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.2+ | 0.0 |
| 2004 03 18 | 704 | 0.8+ | 0.3− | 2004 03 26 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.7− | 0.1+ |
| 2004 03 18 | 704 | 0.9+ | 0.2− | 2004 03 27 | 704 | (0.9− | 1.7+) | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 1.4− | 0.0 | 2004 03 27 | 704 | 0.2− | 0.8− | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2004 03 20 | 704 | 0.3− | 1.0+ | 2004 03 27 | 704 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 03 20 | 704 | 0.0 | 0.1+ | 2004 03 27 | 704 | 0.3− | 1.0+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 03 20 | 704 | 1.3+ | 0.3+ | 2004 03 29 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 03 20 | 704 | 0.7+ | 0.8+ | 2004 03 29 | 691 | 0.3− | 0.1+ | | | | |
| 2004 03 26 | 704 | 0.3− | 0.3− | 2004 03 29 | 691 | 0.3− | 0.3− | | | | |

**2004 EU$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.86673 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18626785 | $\omega$ | 103.76477 | | +0.28822928 | +0.95747934 | |
| $a$ | 3.0365292 | $\Omega$ | 183.07362 | | −0.94381783 | +0.28185766 | |
| $e$ | 0.0526702 | $i$ | 13.52270 | | −0.16165330 | +0.06155954 | |
| $P$ | 5.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.6− | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2004 04 23 | 691 | 0.2+ | 0.2+ |
| 2004 03 13 | 644 | 1.2− | 0.2+ | 2004 03 23 | 704 | (0.0 | 1.8+) | 2006 09 15 | 691 | 0.0 | 0.2− |
| 2004 03 13 | 644 | 0.3− | 0.4+ | 2004 03 23 | 704 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 |
| 2004 03 19 | 291 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.1− | 0.8+ | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 2004 03 19 | 291 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 2004 03 19 | 291 | 0.2− | 0.1+ | 2004 03 27 | 704 | 0.6− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.1− |
| 2004 03 20 | 704 | 0.8+ | 0.1+ | 2004 03 27 | 704 | 0.7+ | 0.4− | 2006 09 18 | 691 | 0.3− | 0.5+ |
| 2004 03 20 | 704 | 1.2+ | 1.0+ | 2004 03 27 | 704 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2004 03 20 | 704 | 1.0+ | 0.9− | 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2004 03 20 | 704 | 0.7+ | 1.1+ | 2004 04 23 | 691 | 0.0 | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2004 03 20 | 704 | 0.6+ | 0.0 | 2004 04 23 | 691 | 0.0 | 0.4+ | | | | |

**2004 EA$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.42890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19178181 | $\omega$ | 74.02568 | | −0.40623229 | +0.91331408 | |
| $a$ | 2.9780439 | $\Omega$ | 171.82741 | | −0.89665273 | −0.39233987 | |
| $e$ | 0.0424418 | $i$ | 11.71217 | | −0.17603753 | −0.10920999 | |
| $P$ | 5.14 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.3− | 0.2+ | 2004 04 17 | 699 | 0.6− | 0.7− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2004 03 13 | 644 | 0.2− | 0.2+ | 2004 04 17 | 699 | (2.2− | 0.4−) | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2004 03 13 | 644 | 0.1+ | 0.2+ | 2004 04 17 | 699 | 0.8− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2004 03 20 | 704 | 0.0 | 0.9+ | 2004 04 17 | 699 | (1.1+ | 1.6−) | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 0.2+ | 0.5− | 2004 04 23 | 704 | 1.1+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2004 03 20 | 704 | 0.4+ | 0.0 | 2004 04 23 | 704 | 1.1+ | 0.9+ | 2006 10 16 | 703 | (1.5+ | 1.5−) |
| 2004 03 25 | 699 | 0.0 | 0.5− | 2004 04 23 | 704 | 1.3+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.5+ |
| 2004 03 25 | 699 | (1.8− | 1.1+) | 2006 09 25 | 699 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2004 03 25 | 699 | 0.3− | 0.8+ | 2006 09 25 | 699 | (1.0− | 2.0−) | 2006 10 22 | 703 | 0.5− | 1.3− |
| 2004 03 25 | 699 | 0.0 | 0.2− | 2006 09 25 | 699 | 1.3+ | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.9− |
| 2004 04 09 | E12 | 0.7− | 1.2+ | 2006 09 25 | 699 | (3.2+ | 0.3+) | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2004 04 09 | E12 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 1.3− | 0.1+ |
| 2004 04 09 | E12 | 0.8− | 0.3+ | 2006 09 30 | 703 | (2.0− | 1.0−) | 2006 10 22 | 644 | 0.4+ | 0.4+ |
| 2004 04 09 | E12 | 0.9− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.8+ | 2006 10 22 | 644 | 0.4+ | 0.2− |
| 2004 04 14 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | (0.4− | 2.1−) | 2006 10 22 | 644 | 0.5+ | 0.3+ |
| 2004 04 14 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.5+ | | | | |
| 2004 04 14 | 691 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | | | | |

**2004 EK$_{83}$ = 2006 TF$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.08204 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20575973 | $\omega$ | 11.80781 | | −0.70520958 | −0.70160604 | |
| $a$ | 2.8415968 | $\Omega$ | 123.14213 | | +0.64016345 | −0.69201193 | |
| $e$ | 0.0075358 | $i$ | 7.00526 | | +0.30474612 | −0.16990720 | |
| $P$ | 4.79 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.0 | 2006 10 14 | 461 | 0.2− | 0.1+ |
| 2004 03 14 | 691 | 0.4− | 0.2− | 2004 03 23 | 704 | 0.3+ | 0.8− | 2006 10 14 | 461 | 0.1− | 0.3− |
| 2004 03 14 | 691 | 0.1− | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.3− | 2006 10 14 | 461 | 0.2− | 0.2− |
| 2004 03 20 | 704 | 0.2− | 0.6+ | 2004 03 23 | 704 | 1.8+ | 1.1+ | 2006 10 14 | 461 | 0.1− | 0.2− |
| 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.6+ | 0.2+ | 2006 10 14 | 461 | 0.1+ | 0.3− |
| 2004 03 20 | 704 | 0.3+ | 0.3− | 2006 09 20 | 644 | 0.5+ | 0.0 | 2006 10 14 | 461 | 0.2− | 0.2− |
| 2004 03 20 | 704 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 10 15 | 461 | 0.1− | 0.4− |
| 2004 03 20 | 704 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 10 15 | 461 | 0.3+ | 0.1+ |
| 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 2004 03 21 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.1− | 0.0 |
| 2004 03 21 | 691 | 0.3− | 0.0 | 2006 10 14 | 461 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.6+ |
| 2004 03 23 | 704 | 0.6+ | 0.4− | 2006 10 14 | 461 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.7− | 0.2− |

**2004 EK$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.29666 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17533332 | $\omega$ | 133.87922 | | −0.67414986 | | −0.73854603 |
| $a$ | 3.1614992 | $\Omega$ | 358.43377 | | +0.55707325 | | −0.50090402 |
| $e$ | 0.1753263 | $i$ | 18.05147 | | +0.48496532 | | −0.45127035 |
| $P$ | 5.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 1.4− | 1.6− | 2004 02 17 | 704 | 0.6+ | 0.5+ | 2004 03 20 | 704 | 0.9+ | 0.4+ |
| 2002 11 25 | 644 | 0.0 | 0.4+ | 2004 02 17 | 704 | 1.0+ | 0.5+ | 2004 03 20 | 704 | 0.6+ | 0.1+ |
| 2002 11 25 | 644 | 0.4− | 0.1+ | 2004 02 17 | 704 | 0.1− | 0.7+ | 2004 03 22 | 704 | 0.3+ | 0.3+ |
| 2002 11 25 | 644 | 0.4− | 0.5+ | 2004 02 17 | 704 | 0.1+ | 1.5+ | 2004 03 22 | 704 | 0.0 | 0.0 |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 1.2+ | 0.2+ | 2004 03 22 | 704 | 0.2+ | 0.8+ |
| 2003 12 25 | 645 | 0.2− | 0.0 | 2004 03 15 | 704 | 1.3+ | 0.6− | 2004 03 22 | 704 | 0.5+ | 0.7+ |
| 2004 01 28 | 645 | 0.2− | 0.1− | 2004 03 15 | 704 | 0.8+ | 0.6+ | 2004 04 19 | 704 | 0.8− | 0.0 |
| 2004 01 28 | 645 | 0.1− | 0.0 | 2004 03 15 | 704 | 1.5+ | 1.1− | 2004 04 19 | 704 | 0.4− | 0.4− |
| 2004 01 30 | 704 | (4.3+ | 0.0 ) | 2004 03 15 | 704 | 2.0+ | 0.4− | 2004 04 19 | 704 | 0.0 | 0.3+ |
| 2004 01 30 | 704 | (4.6+ | 0.4−) | 2004 03 20 | 704 | 0.5+ | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.4− |
| 2004 01 30 | 704 | 1.4− | 0.3− | 2004 03 20 | 704 | 0.4+ | 0.2+ | | | | |
| 2004 02 17 | 704 | 1.6+ | 1.1+ | 2004 03 20 | 704 | 0.6+ | 0.1− | | | | |

**2004 ER$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.30720 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25480790 | $\omega$ | 176.03616 | | −0.93983690 | | +0.33765124 |
| $a$ | 2.4641139 | $\Omega$ | 23.90086 | | −0.31685330 | | −0.80471296 |
| $e$ | 0.1644570 | $i$ | 7.36611 | | −0.12771291 | | −0.48829161 |
| $P$ | 3.87 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.2+ | 0.4+ | 2004 03 22 | 704 | 0.6+ | 0.7+ | 2004 04 15 | 704 | (1.8− | 1.2+) |
| 2004 02 17 | 704 | 0.3+ | 0.3− | 2004 03 22 | 704 | 0.5+ | 0.0 | 2004 04 15 | 704 | 1.1− | 0.2+ |
| 2004 02 17 | 704 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.2+ | 0.2− | 2004 04 15 | 704 | 1.2− | 0.8+ |
| 2004 02 17 | 704 | 0.8− | 0.4+ | 2004 03 22 | 704 | 1.1+ | 0.3− | 2004 04 15 | 704 | 0.4+ | 0.3+ |
| 2004 02 17 | 704 | 0.7− | 0.3+ | 2004 03 25 | 704 | (2.5+ | 0.2−) | 2004 04 20 | 704 | 0.3+ | 0.6− |
| 2004 02 17 | 703 | (1.7− | 0.3−) | 2004 03 25 | 704 | 1.4+ | 0.5+ | 2004 04 20 | 704 | (1.6+ | 0.3+) |
| 2004 02 17 | 703 | (1.6− | 1.3−) | 2004 03 25 | 704 | 0.4+ | 0.0 | 2004 04 20 | 704 | 0.4+ | 0.5+ |
| 2004 02 17 | 703 | 1.4− | 0.1+ | 2004 03 25 | 704 | 1.2+ | 0.2+ | 2004 04 20 | 704 | 0.2+ | 0.0 |
| 2004 02 17 | 703 | 0.9− | 1.4− | 2004 03 25 | 704 | 1.1+ | 0.0 | 2004 04 20 | 704 | 0.5+ | 0.2− |
| 2004 03 15 | 704 | 0.3+ | 0.0 | 2004 03 26 | 703 | 0.6− | 0.4+ | 2006 10 19 | A50 | 0.2+ | 0.3− |
| 2004 03 15 | 704 | 0.5+ | 0.1− | 2004 03 26 | 703 | 1.1− | 0.5+ | 2006 11 02 | 691 | 0.3+ | 0.0 |
| 2004 03 15 | 704 | 0.7+ | 0.0 | 2004 03 26 | 703 | 0.5− | 0.7+ | 2006 11 02 | 691 | 0.3+ | 0.3+ |
| 2004 03 15 | 704 | 0.6− | 0.3− | 2004 03 26 | 703 | 0.7− | 0.8− | 2006 11 02 | 691 | 0.2+ | 0.2− |
| 2004 03 15 | 704 | 0.1+ | 0.1+ | 2004 04 13 | 703 | (0.3+ | 1.7−) | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2004 03 20 | 704 | 0.0 | 0.1− | 2004 04 13 | 703 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 0.1− | 0.4− | 2004 04 13 | 703 | 0.5− | 0.6− | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2004 03 20 | 704 | 0.2− | 0.2− | 2004 04 13 | 703 | 0.3− | 0.4− | | | | |

**2004 EB$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.57024 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25817128 | $\omega$ | 111.31075 | | −0.99428649 | | −0.04603575 |
| $a$ | 2.4426661 | $\Omega$ | 66.15665 | | −0.00039859 | | −0.90061512 |
| $e$ | 0.1456215 | $i$ | 6.04408 | | +0.10674371 | | −0.43217255 |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.1+ | 0.4− | 2004 04 10 | 644 | 0.6+ | 0.3+ |
| 2004 03 15 | 704 | 0.6+ | 0.6+ | 2004 03 23 | 704 | 0.6+ | 0.3+ | 2004 04 10 | 644 | 0.7+ | 0.5+ |
| 2004 03 15 | 704 | 0.7+ | 0.1− | 2004 03 23 | 704 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.5+ | 0.3− |
| 2004 03 15 | 704 | 0.7+ | 0.1+ | 2004 03 23 | 704 | 1.1− | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2004 03 15 | 704 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.5+ | 0.7− | 2006 10 21 | G96 | 0.5+ | 0.0 |
| 2004 03 20 | 704 | 0.6+ | 0.0 | 2004 03 30 | 703 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2004 03 20 | 704 | 0.5− | 0.5+ | 2004 03 30 | 703 | 0.8− | 0.8− | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2004 03 20 | 704 | 0.8+ | 0.6+ | 2004 03 30 | 703 | 0.3− | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.1+ | 0.5+ | 2004 03 30 | 703 | 1.0− | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2004 03 20 | 704 | 0.4− | 0.4+ | 2004 04 02 | 608 | 0.0 | 0.9− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2004 04 02 | 608 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2004 04 02 | 608 | 0.3− | 0.6− | 2006 11 15 | 691 | 0.2− | 0.1− |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2004 04 10 | 644 | 0.7+ | 0.3+ | | | | |

**2004 EK$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.08733 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21696353 | $\omega$ | 302.14422 | | +0.27578633 | | −0.95826517 |
| $a$ | 2.7429100 | $\Omega$ | 131.65482 | | +0.91236172 | | +0.23630725 |
| $e$ | 0.0927129 | $i$ | 5.78399 | | +0.30255245 | | +0.16089359 |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 06 | 691 | 0.2+ | 0.6− | 2002 12 01 | 704 | 0.4− | 0.9+ | 2004 03 26 | 691 | 0.0 | 0.4+ |
| 1995 04 06 | 691 | (5.7+ | 1.8+) | 2002 12 01 | 704 | 0.0 | 0.1− | 2004 03 26 | 691 | 0.5+ | 0.9+ |
| 1995 04 06 | 691 | 0.3− | 0.5− | 2004 03 15 | 704 | 0.7+ | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.3+ |
| 1999 01 17 | 691 | 0.3− | 0.2− | 2004 03 15 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.4− | 0.2+ |
| 1999 01 17 | 691 | 0.5− | 0.1− | 2004 03 15 | 704 | 0.5− | 0.4− | 2006 08 29 | 691 | 0.3− | 0.1+ |
| 2002 11 11 | 704 | 0.3+ | 1.0+ | 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.2+ |
| 2002 11 11 | 704 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.7− | 0.0 | 2006 09 14 | 703 | 0.5− | 1.2− |
| 2002 11 11 | 704 | 0.3− | 0.3+ | 2004 03 20 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 703 | (0.5− | 1.9−) |
| 2002 11 23 | 644 | 0.2+ | 0.3+ | 2004 03 20 | 704 | 0.8+ | 1.0+ | 2006 09 14 | 703 | 1.4+ | 0.2+ |
| 2002 11 23 | 644 | 0.5+ | 0.2− | 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.4− | 1.4+ |
| 2002 11 23 | 644 | 0.1+ | 0.3+ | 2004 03 23 | 704 | (0.2+ | 2.0+) | 2006 09 25 | 699 | 1.5+ | 0.2− |
| 2002 12 01 | 704 | (1.9+ | 0.4+) | 2004 03 23 | 704 | (0.0 | 2.0+) | 2006 09 25 | 699 | 0.4− | 0.2− |
| 2002 12 01 | 704 | 1.1+ | 0.7− | 2004 03 23 | 704 | (1.5+ | 1.9+) | 2006 09 25 | 699 | (2.0− | 1.7+) |
| 2002 12 01 | 704 | 0.4+ | 0.1+ | 2004 03 23 | 704 | (0.3− | 2.7+) | 2006 09 25 | 699 | 0.4− | 0.4+ |

**2004 ET$_{86}$ = 2006 SF$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.92528 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19628606 | $\omega$ | 161.49971 | | +0.06977058 | | +0.99302130 |
| $a$ | 2.9323091 | $\Omega$ | 112.41175 | | −0.92773806 | | +0.09962449 |
| $e$ | 0.0740317 | $i$ | 5.90340 | | −0.36665265 | | −0.06311630 |
| $P$ | 5.02 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.1+ | 0.1− | 2004 03 15 | 106 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.2− | 2006 09 29 | 699 | (1.6+ | 0.4−) |
| 2001 10 11 | 644 | 0.6− | 0.1+ | 2004 03 20 | 704 | 0.6+ | 0.5− | 2006 09 29 | 699 | 1.1+ | 1.1+ |
| 2001 10 11 | 644 | 0.5− | 0.2− | 2004 03 20 | 704 | 1.0+ | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.2+ |
| 2001 10 11 | 644 | 0.8− | 0.0 | 2004 03 20 | 704 | 0.3+ | 0.4− | 2006 09 29 | 699 | 0.2+ | 0.9− |
| 2001 10 24 | 644 | 0.1+ | 0.1+ | 2004 03 20 | 704 | (1.7+ | 0.7−) | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 2001 10 24 | 644 | 0.4+ | 0.4− | 2004 03 26 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2001 10 24 | 644 | 0.1− | 0.2− | 2004 03 26 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | (0.9+ | 1.7+) |
| 2004 03 15 | 704 | 0.4− | 0.1+ | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.8+ | 0.2+ |
| 2004 03 15 | 704 | 0.2− | 0.1+ | 2004 03 27 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2004 03 15 | 704 | 0.1− | 0.4+ | 2004 03 27 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2004 03 15 | 704 | 0.5− | 0.7+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2004 03 15 | 704 | 0.4+ | 0.1+ | 2004 03 28 | 926 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.8+ |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 03 28 | 926 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.8− | 0.8+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2004 03 28 | 926 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.7− | 0.6+ | 2006 10 22 | 703 | 1.2− | 0.2+ |
| 2004 03 15 | 106 | 0.5− | 1.4− | 2006 09 26 | 703 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.8− |
| 2004 03 15 | 106 | 0.0 | 0.6− | 2006 09 26 | 703 | 0.0 | 0.0 | | | | |

**2004 EL$_{87}$ = 2006 QX$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.94418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21185952 | $\omega$ | 86.16891 | | −0.25172933 | | −0.96770857 |
| $a$ | 2.7867888 | $\Omega$ | 18.42708 | | +0.87063304 | | −0.23236139 |
| $e$ | 0.0323984 | $i$ | 2.38109 | | +0.42264696 | | −0.09771543 |
| $P$ | 4.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.1− | 0.1+ | 2006 08 18 | 691 | 0.4− | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 08 18 | 691 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 691 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2004 03 21 | 691 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.2− |
| 2004 03 21 | 691 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.2+ | 0.9+ | | | | |
| 2004 03 21 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.4+ | 0.3+ | | | | |

**2004 ES$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.93250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21891331 | $\omega$ | 153.23442 | | −0.99138390 | | +0.11543721 |
| $a$ | 2.7265990 | $\Omega$ | 33.57346 | | −0.13097551 | | −0.86696591 |
| $e$ | 0.1051723 | $i$ | 6.42731 | | −0.00183841 | | −0.48481374 |
| $P$ | 4.50 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.0 | 0.3+ | 2004 03 28 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2004 03 14 | 691 | 0.4+ | 0.2− | 2004 03 28 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.7+ | 0.5− |
| 2004 03 14 | 691 | 0.0 | 0.3− | 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2004 03 21 | 691 | 0.1+ | 0.1− | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.6− |
| 2004 03 21 | 691 | 0.1− | 0.3− | 2004 04 20 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2004 03 21 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.3− | 1.0+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2004 03 23 | 704 | 0.7− | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.4− |
| 2004 03 23 | 704 | 0.9− | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.6− |
| 2004 03 23 | 704 | 0.2− | 1.0+ | 2006 10 23 | 691 | 0.5− | 0.2+ | | | | |
| 2004 03 28 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1− | | | | |

**2004 EU$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.97679 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29124114 | $\omega$ | 229.73707 | | +0.87206578 | | −0.48866835 |
| $a$ | 2.2540709 | $\Omega$ | 159.47334 | | +0.46884371 | | +0.81867617 |
| $e$ | 0.1151040 | $i$ | 4.34129 | | +0.14030983 | | +0.30161660 |
| $P$ | 3.38 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.2− | 0.8+ | 2004 01 22 | 568 | 0.0 | 0.2+ | 2004 03 15 | 691 | 0.1− | 0.2+ |
| 2002 10 04 | 644 | 0.4− | 0.5+ | 2004 01 22 | 568 | 0.5+ | 0.3+ | 2004 03 15 | 691 | 0.0 | 0.2− |
| 2002 10 04 | 644 | 0.1− | 0.8+ | 2004 01 22 | 568 | 0.6+ | 0.1− | 2004 03 21 | 691 | 0.2+ | 0.2+ |
| 2004 01 21 | 245 | 0.9− | 0.2+ | 2004 01 22 | 568 | 0.3+ | 0.2+ | 2004 03 21 | 691 | 0.1+ | 0.1+ |
| 2004 01 21 | 245 | 0.5+ | 1.2− | 2004 01 30 | 568 | 0.2+ | 0.2+ | 2004 03 21 | 691 | 0.1+ | 0.4+ |
| 2004 01 21 | 245 | 1.0− | 0.1− | 2004 01 30 | 568 | 0.3+ | 0.2+ | 2005 06 04 | 691 | 0.1+ | 0.1+ |
| 2004 01 22 | 568 | 0.5+ | 0.1+ | 2004 01 30 | 568 | 0.2+ | 0.3+ | 2005 06 04 | 691 | 0.1+ | 0.0 |
| 2004 01 22 | 568 | 0.6+ | 0.2+ | 2004 03 15 | 691 | 0.3− | 0.1− | 2005 06 04 | 691 | 0.2− | 0.1+ |

**2004 EL$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.52568 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23633615 | $\omega$ | 153.60621 | | −0.93955754 | | −0.34121378 |
| $a$ | 2.5908918 | $\Omega$ | 6.63591 | | +0.25434472 | | −0.75101727 |
| $e$ | 0.1656488 | $i$ | 14.21082 | | +0.22921693 | | −0.56528418 |
| $P$ | 4.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 699 | 0.5+ | 0.9+ | 2004 03 15 | 704 | 0.1− | 1.1− | 2004 03 26 | 703 | 1.0+ | 0.6− |
| 2000 04 03 | 699 | 1.2+ | 0.4+ | 2004 03 15 | 704 | 0.7+ | 1.3− | 2006 09 21 | 621 | 1.2− | 1.0− |
| 2000 04 03 | 699 | 0.3+ | 0.0 | 2004 03 20 | 704 | 0.2− | 1.3+ | 2006 09 21 | 621 | 2.1− | 0.7+ |
| 2000 04 03 | 699 | 0.7+ | 2.2+ | 2004 03 20 | 704 | 0.1+ | 1.1+ | 2006 09 21 | 621 | 0.9− | 0.4+ |
| 2004 02 16 | 704 | 0.4− | 0.5+ | 2004 03 20 | 704 | 0.4− | 0.0 | 2006 09 21 | 621 | 0.2− | 0.5+ |
| 2004 02 16 | 704 | 0.9− | 0.2+ | 2004 03 20 | 704 | 0.2+ | 0.8− | 2006 09 21 | 621 | 0.4− | 0.2− |
| 2004 02 16 | 704 | 0.6− | 0.3+ | 2004 03 20 | 704 | 0.4− | 0.3+ | 2006 09 21 | 621 | 0.0 | 0.0 |
| 2004 02 16 | 704 | 0.3− | 0.2+ | 2004 03 22 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 2004 02 16 | 704 | 0.1+ | 0.9+ | 2004 03 22 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.2+ | 0.5+ |
| 2004 02 27 | 704 | 0.6+ | 0.1+ | 2004 03 22 | 704 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2004 02 27 | 704 | 0.1+ | 0.3− | 2004 03 22 | 704 | 1.1+ | 0.4− | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2004 02 27 | 704 | 0.2+ | 1.3− | 2004 03 22 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2004 03 15 | 704 | 0.7− | 0.8+ | 2004 03 26 | 703 | 0.3− | 0.4− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | 0.7+ | 0.0 | 2004 03 26 | 703 | 1.0− | 0.1− | | | | |
| 2004 03 15 | 704 | 0.8+ | 0.0 | 2004 03 26 | 703 | 0.5− | 0.5− | | | | |

**2004 EF$_{94}$ = 2004 FZ$_{163}$**

Id. Minor Planet Center (d, *MPO* 87832)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.87329 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27330676 | $\omega$ | 67.55336 | | −0.89635928 | | −0.44099619 |
| $a$ | 2.3516307 | $\Omega$ | 86.25398 | | +0.38817930 | | −0.83020623 |
| $e$ | 0.1303512 | $i$ | 2.60848 | | +0.21414217 | | −0.34099848 |
| $P$ | 3.61 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.1+ | 0.6− | 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1999 12 05 | 691 | 0.0 | 0.1+ | 2004 03 19 | 704 | 0.9+ | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 1999 12 05 | 691 | 0.4− | 0.8− | 2004 03 19 | 704 | 0.5− | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2004 02 23 | 704 | 0.2+ | 0.0 | 2004 03 19 | 704 | 0.9+ | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2004 02 23 | 704 | 0.7+ | 0.4+ | 2004 03 22 | 704 | 0.7+ | 0.1− | 2006 11 15 | 691 | 0.4+ | 0.5+ |
| 2004 02 23 | 704 | 0.1+ | 0.5+ | 2004 03 22 | 704 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.5− | 0.2+ |
| 2004 03 15 | 703 | 0.8− | 0.1− | 2004 03 22 | 704 | 1.3+ | 0.2+ | 2006 11 23 | 691 | 0.4+ | 0.2− |
| 2004 03 15 | 703 | 0.2+ | 0.8+ | 2004 03 22 | 704 | 0.3− | 0.4+ | 2006 11 23 | 691 | 0.4− | 0.1+ |
| 2004 03 15 | 703 | 0.2− | 0.7− | 2004 04 21 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.5− | 0.2+ |
| 2004 03 15 | 703 | 0.9+ | 0.1− | 2004 04 21 | 691 | 0.3− | 0.3+ | | | | |
| 2004 03 19 | 704 | 0.4− | 1.3− | 2004 04 21 | 691 | 0.3− | 0.1− | | | | |

**2004 EO$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.73758 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22031942 | $\omega$ | 80.23853 | | −0.39762090 | | −0.90642560 |
| $a$ | 2.7149856 | $\Omega$ | 34.32146 | | +0.71121365 | | −0.40255302 |
| $e$ | 0.0714609 | $i$ | 14.63342 | | +0.57971782 | | −0.12784247 |
| $P$ | 4.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 704 | 0.1+ | 0.8+ | 2004 04 16 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 2001 09 11 | 704 | 0.5− | 0.2− | 2004 04 21 | 704 | 0.9+ | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2001 09 11 | 704 | 0.1− | 0.3+ | 2004 04 21 | 704 | 0.5+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2004 03 14 | 644 | 0.4+ | 0.1+ | 2004 04 21 | 704 | 0.7+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2004 03 14 | 644 | 0.2+ | 0.6+ | 2004 04 21 | 704 | 1.0− | 1.5+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2004 03 14 | 644 | 0.5+ | 0.5+ | 2004 04 21 | 704 | 1.4+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2004 03 15 | 703 | 0.6+ | 1.1+ | 2004 05 16 | 704 | 1.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 03 15 | 703 | 0.7+ | 0.6− | 2004 05 16 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2004 03 15 | 703 | 1.3− | 1.4+ | 2004 05 16 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2004 03 15 | 703 | 0.5− | 0.6− | 2004 05 28 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.5− | 0.0 |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2004 05 28 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2004 03 16 | 691 | 0.2+ | 0.2+ | 2004 05 28 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.5− | 0.1+ |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2005 07 04 | E12 | 0.7− | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2004 03 22 | 704 | 0.4− | 0.3− | 2005 07 04 | E12 | 0.8− | 0.6− | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2004 03 22 | 704 | 0.4+ | 0.8+ | 2005 07 04 | E12 | 0.5+ | 1.0+ | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2004 03 22 | 704 | 0.0 | 1.3+ | 2005 07 04 | E12 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.2+ |
| 2004 03 28 | 704 | 0.5+ | 1.3+ | 2006 09 27 | 683 | (1.8− | 0.3−) | 2006 10 28 | G96 | 0.4− | 0.2+ |
| 2004 03 28 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 683 | 1.3− | 0.8− | 2006 11 11 | 703 | 0.4− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 28 | 704 | 0.7+ | 0.4+ | 2006 09 27 | 683 | 1.5− | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.6+ | | |
| 2004 03 28 | 704 | 1.2+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.3+ | 0.8+ | | |
| 2004 04 11 | 703 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8− | 0.2− | | |
| 2004 04 11 | 703 | 0.1+ | 1.0+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.0 | 0.0 | | |
| 2004 04 11 | 703 | 0.8+ | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.1− | | |
| 2004 04 11 | 703 | 0.6− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.3− | | |
| 2004 04 15 | 699 | 0.8− | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.0 | | |
| 2004 04 15 | 699 | 1.2+ | 0.5+ | 2006 09 30 | 703 | 1.0− | 0.7+ | 2006 11 18 | 704 | 0.9+ | 0.8+ | | |
| 2004 04 15 | 699 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | | |
| 2004 04 15 | 699 | 1.1− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.7+ | | |
| 2004 04 16 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.3+ | | | | | | |
| 2004 04 16 | 704 | 0.1− | 0.9− | 2006 10 16 | 691 | 0.2− | 0.4+ | | | | | | |

**2004 EW$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 168.41122 | | (2000.0) | | | |
| $n$ | 0.22183680 | $\omega$ | 156.13490 | | −0.54454833 | +0.81897768 |
| $a$ | 2.7025910 | $\Omega$ | 80.40725 | | −0.79603213 | −0.43669777 |
| $e$ | 0.1530703 | $i$ | 10.57459 | | −0.26419683 | −0.37225075 |
| $P$ | 4.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 0.3− | 0.0 | 2004 04 12 | 703 | 0.8+ | 1.1+ | 2004 04 25 | 699 | (1.0− | 2.9−) | | |
| 2004 03 15 | 704 | 0.7+ | 0.7+ | 2004 04 12 | 703 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2004 03 15 | 704 | 0.5+ | 0.2− | 2004 04 12 | 703 | 0.5+ | 0.4+ | 2006 11 16 | 691 | 0.2+ | 0.1+ | | |
| 2004 03 15 | 704 | 0.2− | 0.1− | 2004 04 17 | 704 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2004 03 15 | 704 | 0.5+ | 0.3− | 2004 04 17 | 704 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− | | |
| 2004 03 22 | 699 | 0.0 | 0.1− | 2004 04 17 | 704 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.5+ | | |
| 2004 03 22 | 699 | 1.0− | 0.5− | 2004 04 17 | 704 | 0.3+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 22 | 699 | 0.6− | 1.3− | 2004 04 25 | 699 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.6+ | 0.1− | | |
| 2004 03 22 | 699 | 0.8− | 0.0 | 2004 04 25 | 699 | 0.7− | 0.1− | 2006 11 27 | 691 | 0.4− | 0.3− | | |
| 2004 04 12 | 703 | 0.4+ | 0.3+ | 2004 04 25 | 699 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.6− | 0.1− | | |

**2004 EX$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 168.96623 | | (2000.0) | | | |
| $n$ | 0.21559753 | $\omega$ | 183.81251 | | −0.75795885 | +0.58712687 |
| $a$ | 2.7544836 | $\Omega$ | 37.31446 | | −0.58539094 | −0.42001976 |
| $e$ | 0.2266122 | $i$ | 27.96044 | | −0.28777739 | −0.69200104 |
| $P$ | 4.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 01 | 704 | 0.8+ | 0.5− | 2004 03 29 | 704 | 0.8− | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 01 | 704 | 0.2+ | 0.5− | 2004 03 29 | 704 | 0.3− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1− | | |
| 2004 03 01 | 704 | 0.4+ | 1.0+ | 2004 03 29 | 704 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.2− | | |
| 2004 03 01 | 704 | 0.1+ | 0.2− | 2004 04 14 | 704 | 1.2− | 0.4+ | 2006 10 23 | 691 | 0.2+ | 0.4+ | | |
| 2004 03 18 | 644 | 0.2− | 0.1+ | 2004 04 14 | 704 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.9− | 0.1+ | | |
| 2004 03 18 | 644 | 0.2− | 0.2+ | 2004 04 14 | 704 | 0.1+ | 0.6− | 2006 10 28 | 691 | 0.9+ | 0.1− | | |
| 2004 03 18 | 644 | 0.1− | 0.1− | 2004 04 14 | 704 | 0.4− | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.1− | | |
| 2004 03 19 | 703 | 0.9+ | 1.0− | 2004 04 14 | 704 | 0.5− | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.1− | | |
| 2004 03 19 | 703 | 0.4+ | 0.1− | 2004 04 26 | 704 | 1.1+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.4+ | | |
| 2004 03 19 | 703 | 0.4+ | 0.1− | 2004 04 26 | 704 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2004 03 19 | 703 | 0.3− | 0.0 | 2004 04 26 | 704 | 0.7+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2004 03 29 | 704 | 0.5− | 0.2− | 2004 04 26 | 704 | 1.0+ | 1.1− | 2006 11 15 | G96 | 0.1− | 0.1− | | |
| 2004 03 29 | 704 | 0.2− | 1.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 | | | | | | |

**2004 EM$_{96}$ = 2006 SW$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.38297 | | (2000.0) | | | |
| $n$ | 0.18234410 | $\omega$ | 248.55000 | | −0.81252434 | +0.58152722 |
| $a$ | 3.0799351 | $\Omega$ | 326.96947 | | −0.50364726 | −0.73520743 |
| $e$ | 0.0910818 | $i$ | 4.24804 | | −0.29350236 | −0.34827593 |
| $P$ | 5.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 291 | 0.4+ | 0.1+ | 2004 03 18 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | | |
| 2004 01 30 | 291 | 0.2+ | 0.0 | 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.2− | | |
| 2004 01 30 | 291 | 0.4− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.4− | | |
| 2004 03 11 | 644 | 0.5+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.1− | | |
| 2004 03 11 | 644 | 0.1− | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.6+ | 2006 09 27 | G96 | 0.4+ | 0.3− | | |
| 2004 03 11 | 644 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.9− | 2006 09 27 | G96 | 0.1+ | 0.2− | | |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.5− | | | | | | |

**2004 EU$_{96}$ = 2006 VR**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 250.66051 | | (2000.0) | | | |
| $n$ | 0.26660203 | $\omega$ | 235.24064 | | −0.95078880 | −0.30903911 |
| $a$ | 2.3908945 | $\Omega$ | 286.74914 | | +0.29132849 | −0.86721418 |
| $e$ | 0.1572739 | $i$ | 1.33200 | | +0.10549109 | −0.39042847 |
| $P$ | 3.70 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.3− | 0.7− | 2004 03 12 | 644 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.2+ | | |
| 2000 01 08 | 691 | 0.0 | 0.1− | 2004 03 18 | 704 | 0.9− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.3+ | | |
| 2000 01 08 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | 1.2+ | 0.4+ | 2006 11 02 | G96 | 0.3− | 0.1− | | |
| 2000 01 08 | 691 | 0.0 | 0.2− | 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 11 02 | G96 | 0.3− | 0.1+ | | |
| 2004 03 12 | 644 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.1+ | | |
| 2004 03 12 | 644 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.3− | 0.2+ | | |

**2004 EQ$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.20060 | | (2000.0) | | | |
| $n$ | 0.28140643 | $\omega$ | 193.39788 | | +0.99786710 | +0.04118419 |
| $a$ | 2.3062871 | $\Omega$ | 163.98027 | | −0.02852443 | +0.97296624 |
| $e$ | 0.2318753 | $i$ | 10.57513 | | −0.05871639 | +0.22724558 |
| $P$ | 3.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.3+ | 0.1+ | 2002 11 06 | 699 | 0.5+ | 0.7− | 2004 03 18 | 704 | 0.4− | 0.9+ | | |
| 2002 10 10 | 644 | 0.1+ | 0.1+ | 2002 11 30 | 704 | 0.8+ | 0.1− | 2004 03 18 | 704 | 0.4+ | 0.4+ | | |
| 2002 10 10 | 644 | 0.4+ | 0.0 | 2002 11 30 | 704 | 0.2− | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.4− | | |
| 2002 10 31 | 704 | 0.5− | 0.0 | 2002 11 30 | 704 | 0.9− | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.4− | | |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2002 11 30 | 704 | 0.6− | 0.2− | 2004 03 18 | 704 | 0.5+ | 0.8− | | |
| 2002 10 31 | 704 | 0.7− | 0.2− | 2002 12 13 | 644 | 0.4+ | 0.0 | 2004 03 18 | 704 | 0.9+ | 1.7− | | |
| 2002 10 31 | 704 | 0.6− | 0.2+ | 2002 12 13 | 644 | 0.4+ | 0.1− | 2004 03 18 | 704 | 0.2+ | 0.3− | | |
| 2002 10 31 | 704 | 0.8− | 0.3− | 2002 12 13 | 644 | 0.3+ | 0.2+ | 2004 03 18 | 704 | 1.4+ | 0.4− | | |
| 2002 11 06 | 699 | 0.8+ | 0.4− | 2004 03 15 | 691 | 0.2− | 0.0 | 2004 03 23 | 691 | 0.5− | 0.2+ | | |
| 2002 11 06 | 699 | 0.1− | 0.7+ | 2004 03 15 | 691 | 0.1+ | 0.0 | 2004 03 23 | 691 | 0.1− | 0.2+ | | |
| 2002 11 06 | 699 | 0.7+ | 0.3+ | 2004 03 15 | 691 | 0.3− | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.1+ | | |

**2004 ES$_{100}$ = 2004 FV$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.72491 | | (2000.0) | | | |
| $n$ | 0.22122147 | $\omega$ | 248.04227 | | +0.43493484 | −0.90039291 |
| $a$ | 2.7076001 | $\Omega$ | 176.12197 | | +0.87497800 | +0.41966858 |
| $e$ | 0.3063899 | $i$ | 9.48837 | | +0.21270915 | +0.11476453 |
| $P$ | 4.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.1− | 0.1− | 2002 09 14 | 644 | 0.2+ | 0.3− | 2004 03 18 | 704 | 0.4− | 0.3+ | | |
| 1995 03 27 | 691 | 0.3+ | 0.0 | 2002 09 14 | 644 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.6+ | 0.5+ | | |
| 1995 03 27 | 691 | 0.2− | 0.1+ | 2002 09 14 | 644 | 0.0 | 0.2− | 2004 03 23 | 691 | 0.3− | 0.1− | | |
| 2002 08 28 | 644 | 0.6+ | 0.4− | 2002 10 03 | 704 | 0.6+ | 0.3− | 2004 03 23 | 691 | 0.2− | 0.0 | | |
| 2002 08 28 | 644 | 0.4+ | 0.6− | 2002 10 03 | 704 | 0.8− | 0.2− | 2004 03 23 | 691 | 0.3− | 0.1− | | |
| 2002 08 28 | 644 | 0.2+ | 0.4− | 2002 10 03 | 704 | 1.2− | 0.3− | 2004 04 13 | 691 | 0.1+ | 0.0 | | |
| 2002 09 05 | 704 | 0.2− | 0.9+ | 2004 03 15 | 691 | 0.1− | 0.3+ | 2004 04 13 | 691 | 0.3+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.5+ | 0.2− | 2004 03 15 | 691 | 0.2+ | 0.0 | 2004 04 13 | 691 | 0.0 | 0.5− | | |
| 2002 09 05 | 704 | 0.1− | 1.1+ | 2004 03 15 | 691 | 0.2+ | 0.0 | | | | | | |
| 2002 09 05 | 704 | 0.2− | 1.3+ | 2004 03 18 | 704 | 0.4+ | 0.0 | | | | | | |

**2004 EL$_{101}$ = 2006 SQ$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.71880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17894210 | $\omega$ | 323.92960 | | +0.66750939 | | +0.74355360 |
| $a$ | 3.1188491 | $\Omega$ | 347.77744 | | −0.63200495 | | +0.53773336 |
| $e$ | 0.0718119 | $i$ | 10.74956 | | −0.39370160 | | +0.39745550 |
| $P$ | 5.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1− | 0.3+ | 2004 04 24 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 1995 09 18 | 691 | 0.4− | 0.4+ | 2004 04 24 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 1995 09 18 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.6− | 2006 09 25 | G96 | 0.4+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2004 03 15 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 1.8− | 1.0− | 2006 09 27 | G96 | 0.4+ | 0.1− |
| 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 09 27 | G96 | 0.5+ | 0.1− |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 1.4+ | 2006 09 27 | G96 | 0.6+ | 0.2− |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.7+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 1.5− | 0.7− | | | | |
| 2004 04 24 | 691 | 0.2− | 0.2− | 2006 09 19 | 703 | 1.3+ | 0.1− | | | | |

**2004 ER$_{107}$ = 2006 QV$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.49276 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17223732 | $\omega$ | 21.31481 | | −0.98887918 | | +0.14858480 |
| $a$ | 3.1992723 | $\Omega$ | 167.22517 | | −0.14027311 | | −0.91763173 |
| $e$ | 0.0492619 | $i$ | 1.64963 | | −0.04941069 | | −0.36861168 |
| $P$ | 5.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 291 | 0.3− | 0.9+ | 2004 03 15 | 691 | 0.2+ | 0.2+ | 2004 04 13 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 291 | 0.2+ | 0.1+ | 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 08 19 | 691 | 0.2+ | 0.3+ |
| 2001 10 14 | 291 | 0.3− | 0.4+ | 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 08 19 | 691 | 0.4+ | 0.4+ |
| 2004 03 12 | 644 | 0.3+ | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 08 19 | 691 | 0.1− | 0.3+ |
| 2004 03 12 | 644 | 0.4+ | 0.5+ | 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2004 03 12 | 644 | 0.1+ | 0.4+ | 2004 04 13 | 691 | 0.3− | 0.0 | 2006 08 27 | 691 | 0.7− | 0.2+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.0 |

**2004 EP$_{108}$ = 2006 QH$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.64087 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22440355 | $\omega$ | 98.63592 | | +0.27803799 | | −0.96029783 |
| $a$ | 2.6819432 | $\Omega$ | 335.18417 | | +0.85849116 | | +0.25910053 |
| $e$ | 0.1575171 | $i$ | 3.12339 | | +0.43091507 | | +0.10341658 |
| $P$ | 4.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.3− | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.5+ | 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 08 27 | 691 | 0.2+ | 0.1+ |
| 2002 10 31 | 644 | 0.2− | 0.6+ | 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.7− |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.8− |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.5− |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.6− |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.2+ | | | | |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.3+ | | | | |

**2004 EW$_{108}$ = 2006 SU$_{345}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.52128 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19911564 | $\omega$ | 259.11753 | | −0.35937622 | | +0.93302780 |
| $a$ | 2.9044627 | $\Omega$ | 349.76819 | | −0.81296491 | | −0.32225228 |
| $e$ | 0.1140735 | $i$ | 5.66877 | | −0.45818859 | | −0.16003937 |
| $P$ | 4.95 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 11 | 691 | 0.3− | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.2− |
| 1999 03 11 | 691 | 0.6+ | 0.2− | 2004 03 23 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2− |
| 1999 03 11 | 691 | 0.4− | 0.0 | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.3− | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.1− | 0.6+ |
| 2004 03 15 | 691 | 0.3+ | 0.1+ | 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.6+ | 0.0 |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1− |

**2004 EB$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.78233 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27207129 | $\omega$ | 320.61724 | | +0.68459896 | | +0.72876770 |
| $a$ | 2.3587445 | $\Omega$ | 352.54407 | | −0.63645116 | | +0.58766608 |
| $e$ | 0.1178303 | $i$ | 6.59173 | | −0.35532264 | | +0.35149141 |
| $P$ | 3.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.0 | 0.0 | 2005 08 05 | 644 | 0.1+ | 0.1+ | 2005 08 29 | 699 | 0.5+ | 0.9− |
| 2004 03 14 | 691 | 0.0 | 0.1− | 2005 08 05 | 644 | 0.2+ | 0.1+ | 2005 08 29 | 699 | 0.3− | 0.5− |
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2005 08 22 | 644 | 0.0 | 0.1+ | 2005 08 29 | 699 | 1.7− | 1.0− |
| 2004 03 18 | 691 | 0.1− | 0.2− | 2005 08 22 | 644 | 0.0 | 0.3− | 2005 09 03 | 644 | 0.1− | 0.1+ |
| 2004 03 18 | 691 | 0.2− | 0.1− | 2005 08 22 | 644 | 0.4+ | 0.0 | 2005 09 03 | 644 | 0.2+ | 0.1− |
| 2004 03 18 | 691 | 0.1− | 0.2− | 2005 08 27 | E12 | 0.1+ | 1.9+ | 2005 09 03 | 644 | 0.3+ | 0.3− |
| 2004 03 27 | 704 | 1.8+ | 0.3− | 2005 08 27 | E12 | 0.4+ | 0.3− | 2005 09 24 | 644 | 0.0 | 0.3− |
| 2004 03 27 | 704 | 0.3+ | 1.0+ | 2005 08 27 | E12 | 0.0 | 1.4+ | 2005 09 24 | 644 | 0.4+ | 0.0 |
| 2004 03 27 | 704 | 1.1− | 1.1+ | 2005 08 27 | E12 | 0.6+ | 0.6− | 2005 09 24 | 644 | 0.0 | 0.1+ |
| 2005 08 05 | 644 | 0.1+ | 0.1+ | 2005 08 29 | 699 | 1.1− | 0.0 | | | | |

**2004 EC$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.96228 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18986629 | $\omega$ | 247.84361 | | −0.01594404 | | +0.99756106 |
| $a$ | 2.9980403 | $\Omega$ | 21.57888 | | −0.83576158 | | +0.02401041 |
| $e$ | 0.0746979 | $i$ | 10.64754 | | −0.54886097 | | −0.06553961 |
| $P$ | 5.19 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 699 | 0.5+ | 0.6+ | 2004 05 28 | 691 | 1.0+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2000 09 30 | 699 | 1.3− | 0.7+ | 2004 05 28 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2000 09 30 | 699 | 0.5− | 0.3− | 2005 07 10 | E12 | 0.7+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2000 09 30 | 699 | 0.1− | 0.7+ | 2005 07 10 | E12 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 11 19 | 699 | 0.3+ | 0.7+ | 2005 07 10 | E12 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2001 11 19 | 699 | 0.7+ | 0.3+ | 2005 07 10 | E12 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2001 11 19 | 699 | 0.4− | 0.1+ | 2005 07 27 | E12 | 0.2+ | 0.9− | 2006 10 23 | 691 | 0.9− | 0.9+ |
| 2001 11 19 | 699 | 0.4− | 0.0 | 2005 07 27 | E12 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.6− | 0.3+ |
| 2004 03 14 | 644 | 0.6+ | 0.5+ | 2005 07 27 | E12 | 0.7+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.3+ |
| 2004 03 14 | 644 | 0.7+ | 0.5+ | 2005 07 27 | E12 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 03 14 | 644 | 0.5+ | 0.8+ | 2005 08 10 | E12 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 03 25 | 699 | 0.3− | 0.3− | 2005 08 10 | E12 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 03 25 | 699 | 0.5− | 0.4− | 2005 08 10 | E12 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 03 25 | 699 | 0.1− | 0.9+ | 2005 08 10 | E12 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2004 03 25 | 699 | (0.5+ | 2.2+) | 2005 09 05 | E12 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2004 04 16 | 644 | 0.5+ | 0.6+ | 2005 09 05 | E12 | 0.5+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2004 04 16 | 644 | 0.6+ | 0.7+ | 2005 09 05 | E12 | 0.3− | 1.4+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2004 04 16 | 644 | 0.4+ | 0.7+ | 2005 09 05 | E12 | 0.3− | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2004 04 16 | 644 | 0.5+ | 0.7+ | 2006 07 22 | G96 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.4+ |
| 2004 04 16 | 644 | 0.4+ | 0.7+ | 2006 07 22 | G96 | 0.4+ | 1.0− | 2006 11 13 | 691 | 0.1− | 0.4+ |
| 2004 04 16 | 644 | 0.6+ | 0.6+ | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 11 13 | 691 | 1.0+ | 0.2+ |
| 2004 04 30 | 691 | 0.0 | 1.0+ | 2006 07 22 | G96 | 0.6+ | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.4+ |
| 2004 04 30 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.4− | 0.5− |
| 2004 04 30 | 691 | 0.3− | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.6+ | 0.7− |
| 2004 05 15 | 704 | 0.4+ | 1.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 14 | 703 | 1.0− | 0.3− |
| 2004 05 15 | 704 | 0.9+ | 0.4− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2004 05 15 | 704 | 0.7+ | 0.3+ | 2006 10 15 | 691 | 0.4− | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.8− |
| 2004 05 15 | 704 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.8+ | 0.1+ |
| 2004 05 28 | 691 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.4− | 0.2+ | | | | |

**2004 FF**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.02765 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26706658 | $\omega$ | 68.18877 | | −0.73818442 | −0.67245549 | |
| $a$ | 2.3881211 | $\Omega$ | 69.50998 | | +0.59581627 | −0.68725930 | |
| $e$ | 0.1480393 | $i$ | 3.28849 | | +0.31636487 | −0.27473307 | |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 21 | 704 | 0.3+ | 0.4− | 2006 10 28 | 691 | 1.0+ | 0.7+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 21 | 704 | 0.7+ | 0.8+ | 2006 10 28 | 691 | 0.2+ | 1.1− |
| 2004 03 16 | 704 | 0.6− | 0.4− | 2004 03 21 | 704 | 0.5+ | 0.7− | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2004 03 16 | 704 | 0.2− | 0.4− | 2004 03 22 | 704 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2004 03 16 | 704 | 0.3+ | 0.6− | 2004 03 22 | 704 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2004 03 16 | 333 | 0.2− | 0.4− | 2004 03 22 | 704 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.3− | 0.0 |
| 2004 03 16 | 704 | 0.9+ | 0.0 | 2004 03 22 | 704 | 1.3+ | 1.0+ | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2004 03 16 | 333 | 0.4− | 0.6− | 2004 03 23 | 704 | 0.8− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2004 03 16 | 333 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.8− | 0.2+ | 2006 11 09 | 644 | 0.5+ | 0.2+ |
| 2004 03 17 | 333 | 0.4− | 0.5− | 2004 03 23 | 704 | 1.1− | 0.5+ | 2006 11 12 | G96 | 0.4+ | 0.1− |
| 2004 03 17 | 333 | 0.8− | 0.3− | 2004 03 23 | 704 | 1.2− | 0.7+ | 2006 11 12 | G96 | 0.3− | 0.1− |
| 2004 03 17 | 333 | 0.5− | 0.2− | 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.7− | 0.2− |
| 2004 03 19 | 704 | 0.3+ | 1.3+ | 2004 04 19 | 704 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2004 03 19 | 704 | 0.1+ | 0.3+ | 2004 04 19 | 704 | 0.4+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 0.0 | 0.5+ | 2004 04 19 | 704 | 0.6− | 0.0 | 2006 11 14 | 691 | 0.3− | 0.0 |
| 2004 03 19 | 704 | 0.9+ | 0.2+ | 2004 04 19 | 704 | 0.7− | 0.7+ | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.5+ | 0.3− |
| 2004 03 20 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 12 01 | G96 | 0.5+ | 0.7− |
| 2004 03 20 | 704 | 0.3+ | 0.8− | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2004 03 20 | 704 | 0.5+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2004 03 20 | 704 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.0 | 1.0− | | | | |
| 2004 03 20 | 704 | 0.6+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1− | | | | |

**2004 FO$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.24065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26754881 | $\omega$ | 52.21241 | | +0.23195831 | −0.97259568 | |
| $a$ | 2.3852507 | $\Omega$ | 24.38946 | | +0.87991291 | +0.20282741 | |
| $e$ | 0.1604855 | $i$ | 2.20745 | | +0.41466687 | +0.11366037 | |
| $P$ | 3.68 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 291 | 0.2− | 0.3− | 2004 03 23 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.3− | 0.1− |
| 2004 02 29 | 291 | 0.2− | 0.0 | 2004 03 23 | 691 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2004 02 29 | 291 | 0.4− | 0.2− | 2004 03 30 | 291 | 0.0 | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2004 02 29 | 926 | 0.6+ | 0.1+ | 2004 03 30 | 291 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2004 02 29 | 926 | 0.4+ | 0.3− | 2004 03 30 | 291 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.1+ |
| 2004 02 29 | 926 | 1.0+ | 0.4− | 2004 04 13 | 691 | 0.6+ | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.5− |
| 2004 03 16 | 291 | 0.0 | 0.0 | 2004 04 13 | 691 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.4− | 1.2− |
| 2004 03 16 | 291 | 0.4+ | 0.1+ | 2004 04 13 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2004 03 16 | 291 | 0.6+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.3+ |
| 2004 03 17 | 291 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2004 03 17 | 291 | 0.4− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2− | 1.5+ |
| 2004 03 17 | 291 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2004 03 23 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.3+ | | | | |

**2004 FV$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.23891 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23896777 | $\omega$ | 276.28138 | | −0.97552891 | +0.07739877 | |
| $a$ | 2.5718353 | $\Omega$ | 268.29234 | | +0.00766245 | −0.92345687 | |
| $e$ | 0.2282086 | $i$ | 11.88157 | | −0.21973766 | −0.37581489 | |
| $P$ | 4.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1− | 0.9+ | 2004 04 12 | E12 | 0.3+ | 0.2− | 2004 04 26 | E12 | 0.3+ | 0.6+ |
| 2002 11 13 | 644 | 0.1− | 0.8+ | 2004 04 12 | E12 | 0.7+ | 0.4+ | 2004 04 26 | E12 | 0.3+ | 0.8+ |
| 2002 11 13 | 644 | 0.2− | 1.3+ | 2004 04 12 | E12 | 0.4+ | 0.3− | 2004 04 28 | 608 | 0.2− | 0.4+ |
| 2004 01 27 | 704 | 1.0− | 0.6− | 2004 04 12 | E12 | 0.5+ | 0.5− | 2004 04 28 | 608 | 0.4− | 0.9+ |
| 2004 01 27 | 704 | 0.3− | 0.6− | 2004 04 22 | 428 | 0.2− | 0.3− | 2004 04 28 | 608 | 0.3− | 0.8+ |
| 2004 01 27 | 704 | 0.9− | 0.6− | 2004 04 22 | 428 | 0.6− | 0.2+ | 2004 05 13 | 644 | 0.0 | 0.2− |
| 2004 03 16 | 644 | 0.4+ | 0.0 | 2004 04 23 | E12 | 0.1+ | 0.7− | 2004 05 13 | 644 | 0.0 | 0.4− |
| 2004 03 16 | 644 | 0.1+ | 0.2+ | 2004 04 23 | E12 | 0.2− | 0.7− | 2004 05 13 | 644 | 0.1− | 0.4− |
| 2004 03 16 | 644 | 0.3+ | 0.3− | 2004 04 23 | E12 | 0.1+ | 0.4− | 2004 05 15 | 704 | 0.2+ | 0.5− |
| 2004 03 17 | E12 | 0.1− | 0.2− | 2004 04 23 | E12 | 0.6− | 0.4− | 2004 05 15 | 704 | 0.8+ | 1.1− |
| 2004 03 17 | E12 | 0.3− | 0.1− | 2004 04 24 | E12 | 0.2+ | 1.2− | 2004 05 15 | 704 | 0.5+ | 0.3− |
| 2004 03 17 | E12 | 0.3− | 0.2+ | 2004 04 24 | E12 | 0.2+ | 1.0− | 2004 06 13 | 644 | 0.2− | 0.1+ |
| 2004 03 17 | E12 | 0.8− | 0.2− | 2004 04 24 | E12 | 0.1− | 0.4− | 2004 06 13 | 644 | 0.0 | 0.1+ |
| 2004 03 18 | E12 | 0.4− | 0.1− | 2004 04 24 | E12 | 0.5− | 0.5− | 2004 06 13 | 644 | 0.1− | 0.1+ |
| 2004 03 18 | E12 | 0.2− | 0.3− | 2004 04 24 | E12 | 0.1+ | 0.5+ | 2004 07 21 | E12 | 0.4− | 0.4− |
| 2004 03 18 | E12 | 0.6− | 0.0 | 2004 04 24 | E12 | 0.5+ | 0.5+ | 2004 07 21 | E12 | 0.3− | 0.2− |
| 2004 03 18 | E12 | 0.0 | 0.9− | 2004 04 24 | E12 | 0.0 | 0.8+ | 2004 07 21 | E12 | 0.4+ | 0.4+ |
| 2004 03 26 | 704 | 0.5+ | 0.2+ | 2004 04 24 | E12 | 0.4− | 0.4+ | 2004 07 21 | E12 | 0.1+ | 0.4− |
| 2004 03 26 | 704 | 0.7+ | 0.5+ | 2004 04 25 | 704 | 0.2− | 0.1− | 2006 10 27 | 703 | 1.1+ | 0.0 |
| 2004 03 26 | 704 | 0.0 | 0.6+ | 2004 04 25 | 704 | 0.1+ | 0.0 | 2006 10 27 | 703 | (0.9− | 1.8−) |
| 2004 03 26 | 704 | 0.2− | 0.3+ | 2004 04 25 | 704 | 0.2− | 0.2+ | 2006 10 27 | 703 | 1.3− | 0.7− |
| 2004 03 26 | 704 | 0.2+ | 0.0 | 2004 04 25 | E12 | 0.3+ | 0.6+ | 2006 10 27 | 703 | 0.6+ | 0.6− |
| 2004 03 28 | 699 | 0.3− | 0.2+ | 2004 04 25 | E12 | 0.5+ | 0.7+ | 2006 11 22 | 703 | (2.6+ | 1.9+) |
| 2004 03 28 | 699 | 0.0 | 0.0 | 2004 04 25 | E12 | 0.0 | 0.8+ | 2006 11 22 | 703 | (0.5+ | 3.0+) |
| 2004 03 28 | 699 | 0.0 | 0.1− | 2004 04 25 | E12 | 0.2+ | 0.9+ | 2006 11 22 | 703 | 0.1− | 0.0 |
| 2004 03 28 | 699 | 0.1− | 0.6+ | 2004 04 26 | E12 | 0.2+ | 0.7+ | 2006 11 22 | 703 | (0.8− | 4.0+) |
| 2004 04 11 | 428 | 0.7+ | 0.1+ | 2004 04 26 | E12 | 0.4+ | 0.7+ | | | | |

**2004 FO$_9$ = 2006 WQ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.21332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28377343 | $\omega$ | 296.36745 | | −0.59597761 | −0.80283919 | |
| $a$ | 2.2934445 | $\Omega$ | 190.26166 | | +0.76522706 | −0.56174235 | |
| $e$ | 0.1760584 | $i$ | 5.19237 | | +0.24338907 | −0.19973673 | |
| $P$ | 3.47 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.2+ | 0.4+ | 2004 03 18 | 291 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 691 | 0.3− | 0.3− | 2004 03 23 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 1999 10 06 | 691 | 0.1+ | 0.2+ | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2004 03 16 | 291 | 0.1− | 0.0 | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.0 | 0.3− |
| 2004 03 16 | 291 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 291 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.2− | 0.1− |
| 2004 03 18 | 704 | 0.9+ | 1.5+ | 2006 10 23 | G96 | 0.6+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 291 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 291 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2004 03 18 | 704 | 0.5+ | 1.2+ | 2006 11 16 | 691 | 0.2− | 0.0 | | | | |

**2004 FA$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.12549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23341210 | $\omega$ | 274.89650 | | +0.73929511 | −0.67103027 | |
| $a$ | 2.6124850 | $\Omega$ | 127.26325 | | +0.64242956 | +0.67782759 | |
| $e$ | 0.0932732 | $i$ | 4.05105 | | +0.20180933 | +0.30044655 | |
| $P$ | 4.22 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 1.5− | 0.0 | 2004 03 19 | 704 | 0.2+ | 1.1+ | 2006 10 16 | 703 | 0.5− | 0.6− |
| 2002 11 11 | 704 | 0.8+ | 0.6− | 2004 03 26 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 11 11 | 704 | 0.0 | 0.3+ | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 11 11 | 704 | 0.6− | 0.3+ | 2004 03 26 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 11 16 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 11 16 | 644 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 11 16 | 644 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.9+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2002 11 24 | 644 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 13 | 703 | (2.5− | 0.6−) | | |
| 2002 11 24 | 644 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 13 | 703 | (0.9− | 1.8−) | | |
| 2004 03 16 | 599 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.1− | | |
| 2004 03 16 | 599 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.5− | 0.4+ | | |
| 2004 03 16 | 599 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.2− | 0.5− | | |
| 2004 03 18 | 691 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.3− | 0.7− | | |
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.4− | | |
| 2004 03 18 | 691 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.3− | 0.5− | | |
| 2004 03 19 | 704 | 0.1+ | 1.0− | 2006 10 16 | 703 | 0.3+ | 1.0+ | | | | | | |
| 2004 03 19 | 704 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.3− | 0.1+ | | | | | | |

**2004 FT$_{11}$ = 2006 RR$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.27736 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17589747 | $\omega$ | 247.11451 | | −0.51270052 | | −0.85100048 |
| $a$ | 3.1547357 | $\Omega$ | 234.22324 | | +0.83013186 | | −0.45753934 |
| $e$ | 0.0533462 | $i$ | 8.05897 | | +0.21913302 | | −0.25779048 |
| $P$ | 5.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.4− | 1.1+ | 2004 03 17 | 704 | 0.3− | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.1− | | |
| 2001 09 28 | 644 | 0.2− | 0.9+ | 2004 03 17 | 704 | 0.7− | 0.5− | 2006 09 14 | 691 | 0.0 | 0.2+ | | |
| 2001 09 28 | 644 | 0.3− | 0.8+ | 2006 05 25 | 291 | 0.6− | 0.1+ | 2006 09 16 | 691 | 0.1+ | 0.0 | | |
| 2004 03 16 | 703 | 0.0 | 0.5+ | 2006 05 25 | 291 | 0.3− | 1.0+ | 2006 09 16 | 691 | 0.3+ | 0.1− | | |
| 2004 03 16 | 703 | 1.1+ | 0.3+ | 2006 05 25 | 291 | 0.0 | 0.1− | 2006 09 16 | 691 | 0.3− | 0.1− | | |
| 2004 03 16 | 703 | 0.4+ | 0.3+ | 2006 05 25 | G96 | 0.4+ | 0.6+ | 2006 09 23 | 691 | 0.2+ | 0.4− | | |
| 2004 03 16 | 703 | 0.3+ | 1.1− | 2006 05 25 | G96 | 0.2+ | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.5− | | |
| 2004 03 17 | 704 | 0.5− | 1.3+ | 2006 05 25 | G96 | 0.6+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.4− | | |
| 2004 03 17 | 704 | (0.5− | 1.5+) | 2006 09 14 | 691 | 0.0 | 0.0 | | | | | | |

**2004 FE$_{12}$ = 2006 SO$_{122}$ = 2006 TW$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.12714 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23012525 | $\omega$ | 42.58985 | | +0.98755000 | | −0.00433324 |
| $a$ | 2.6373020 | $\Omega$ | 316.88502 | | −0.08250167 | | +0.83683955 |
| $e$ | 0.1011987 | $i$ | 13.30128 | | +0.13393459 | | +0.54743108 |
| $P$ | 4.28 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.0 | 0.1− | 2004 03 16 | 704 | 0.6+ | 0.7+ | 2006 10 03 | 703 | 0.3+ | 0.4+ | | |
| 1995 01 29 | 691 | 0.1+ | 0.4− | 2004 03 17 | 704 | 0.5− | 0.1+ | 2006 10 03 | 703 | 0.2+ | 0.3+ | | |
| 1995 01 29 | 691 | 0.3− | 0.3+ | 2004 03 17 | 704 | 1.0+ | 0.0 | 2006 10 03 | 703 | 0.5+ | 0.2+ | | |
| 2001 06 28 | 644 | 0.2+ | 0.1− | 2004 03 17 | 704 | 0.2− | 0.3− | 2006 10 03 | 703 | 0.3+ | 0.0 | | |
| 2001 06 28 | 644 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.8− | 0.9+ | 2006 11 16 | 703 | 0.3− | 0.2− | | |
| 2001 06 28 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.1+ | 0.3+ | | |
| 2001 07 30 | 644 | 0.1+ | 0.0 | 2006 09 19 | 703 | (0.2− | 1.7+) | 2006 11 16 | 703 | 0.2+ | 0.3+ | | |
| 2001 07 30 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.6+ | 2006 11 16 | 703 | 0.2+ | 0.0 | | |
| 2001 07 30 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 1.0− | 0.6− | 2006 11 22 | 703 | (0.4+ | 2.0−) | | |
| 2004 03 16 | 704 | 0.7+ | 0.4+ | 2006 09 25 | 703 | 1.0− | 0.4− | 2006 11 22 | 703 | 1.3+ | 0.0 | | |
| 2004 03 16 | 704 | 0.4− | 0.3+ | 2006 09 25 | 703 | 0.4− | 0.9− | 2006 11 22 | 703 | (2.5+ | 0.1−) | | |
| 2004 03 16 | 704 | 0.1− | 0.5+ | 2006 09 25 | 703 | (0.5+ | 1.8+) | 2006 11 22 | 703 | 0.5− | 0.4+ | | |

**2004 FB$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.35764 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21174315 | $\omega$ | 308.61388 | | −0.85058747 | | −0.51896178 |
| $a$ | 2.7878098 | $\Omega$ | 200.55657 | | +0.52536222 | | −0.83189784 |
| $e$ | 0.1454095 | $i$ | 13.96403 | | +0.02225952 | | −0.19653157 |
| $P$ | 4.65 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | 0.4+ | 0.2− | 2004 03 19 | 704 | 0.1+ | 0.2− | 2004 04 22 | 691 | 0.3− | 0.0 | | |
| 2004 03 16 | 703 | 1.1+ | 0.3+ | 2004 03 19 | 704 | (1.7− | 0.2+) | 2004 04 22 | 691 | 0.1− | 0.2+ | | |
| 2004 03 16 | 703 | 1.1+ | 0.4− | 2004 03 19 | 704 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.1− | | |
| 2004 03 16 | 703 | 0.2− | 0.5+ | 2004 03 26 | 699 | 0.6− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | | |
| 2004 03 17 | 704 | (1.8+ | 1.0−) | 2004 03 26 | 699 | 0.5− | 0.7− | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2004 03 17 | 704 | 0.3+ | 0.6+ | 2004 03 26 | 699 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.6− | | |
| 2004 03 17 | 704 | 0.4+ | 1.5− | 2004 03 26 | 699 | 0.6− | 1.4+ | 2006 10 21 | 691 | 0.4+ | 0.0 | | |
| 2004 03 17 | 704 | 0.3− | 0.1+ | 2004 04 15 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2+ | 0.0 | | |
| 2004 03 17 | 704 | 0.1+ | 0.9+ | 2004 04 15 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.7− | 0.5+ | | |
| 2004 03 19 | 704 | 1.2− | 0.8− | 2004 04 15 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 19 | 704 | 0.1− | 0.0 | 2004 04 22 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2+ | | |

**2004 FL$_{13}$ = 2006 RW$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.31596 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21232993 | $\omega$ | 65.12876 | | +0.24776850 | | +0.96686077 |
| $a$ | 2.7826713 | $\Omega$ | 219.37749 | | −0.92021980 | | +0.21498777 |
| $e$ | 0.0121514 | $i$ | 5.56934 | | −0.30299554 | | +0.13769720 |
| $P$ | 4.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | (0.4+ | 2.2+) | 2004 03 20 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.3− | 0.2− | | |
| 2004 03 16 | 703 | 0.9+ | 0.3− | 2004 03 20 | 704 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.4+ | | |
| 2004 03 16 | 703 | 0.1+ | 0.7− | 2004 03 20 | 704 | 1.4+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2004 03 16 | 703 | 0.9− | 0.7− | 2004 03 20 | 704 | 0.9− | 1.0− | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2004 03 16 | 691 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2004 03 16 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2004 03 16 | 691 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.5− | 0.3− | | |
| 2004 03 17 | 704 | 0.8+ | 0.6− | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 2004 03 17 | 704 | 1.0+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2004 03 17 | 704 | 1.2− | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 17 | 704 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.3− | 0.3+ | | |
| 2004 03 17 | 704 | 1.1+ | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.2+ | | |
| 2004 03 17 | 704 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.1− | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 17 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2− | | |
| 2004 03 17 | 704 | 0.6+ | 0.8− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 18 | 704 | 1.0+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.3− | | |
| 2004 03 18 | 704 | 1.0+ | 0.5+ | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.6− | | |
| 2004 03 18 | 704 | 0.6− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.6− | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.2− | | |

**2004 FU$_{13}$ = 2006 SO$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.31837 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19257333 | $\omega$ | 40.29424 | | −0.90822415 | | +0.41518967 |
| $a$ | 2.9698781 | $\Omega$ | 163.99579 | | −0.41591083 | | −0.88166788 |
| $e$ | 0.0445259 | $i$ | 10.95742 | | −0.04633653 | | −0.22423042 |
| $P$ | 5.12 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.3− | 0.1+ | 2004 03 17 | 704 | 0.4− | 0.4+ | 2006 09 18 | 703 | 1.0− | 0.4− | | |
| 2004 03 15 | 703 | 1.3− | 1.2+ | 2004 03 17 | 704 | 0.0 | 1.3− | 2006 09 18 | 703 | 0.6+ | 0.6+ | | |
| 2004 03 15 | 703 | (0.8− | 1.5+) | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.6+ | 1.1+ | | |
| 2004 03 15 | 703 | (1.7− | 4.3−) | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 09 19 | 703 | (1.9− | 2.6−) | | |
| 2004 03 16 | 704 | 0.1− | 0.4+ | 2004 03 19 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.3+ | 0.0 | | |
| 2004 03 16 | 704 | 1.1− | 0.2− | 2004 03 19 | 704 | 0.9+ | 0.0 | 2006 09 19 | 703 | 0.8+ | 0.3+ | | |
| 2004 03 16 | 704 | 0.3+ | 0.0 | 2004 03 23 | 704 | 0.6− | 0.9− | 2006 09 19 | 703 | 0.9− | 0.9− | | |
| 2004 03 16 | 704 | 0.1+ | 0.2− | 2004 03 23 | 704 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.2− | | |
| 2004 03 16 | 704 | 0.1− | 0.8− | 2004 03 23 | 704 | 0.3+ | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 2004 03 17 | 704 | 0.3− | 0.4+ | 2004 03 23 | 704 | 0.5+ | 0.9− | 2006 10 02 | G96 | 0.4− | 0.0 | | |
| 2004 03 17 | 704 | 1.1+ | 0.2+ | 2006 09 18 | 703 | (0.9− | 1.7−) | 2006 10 02 | G96 | 0.1− | 0.1+ | | |

**2004 FC$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 236.99778 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22594377 | $\omega$ | 315.52049 | −0.83953393 | −0.54120818 | |
| $a$ | 2.6697411 | $\Omega$ | 191.98331 | +0.54012872 | −0.82191234 | |
| $e$ | 0.2115828 | $i$ | 13.28526 | +0.05868347 | −0.17763389 | |
| $P$ | 4.36 | $H$ | 16.2 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.7+ | 0.3− | 2004 04 17 | 699 | 0.9− | 0.7+ |
| 2004 03 16 | 691 | 0.3− | 0.1+ | 2004 03 27 | 704 | 0.5+ | 0.6− | 2004 04 17 | 699 | 1.2+ | 1.1− |
| 2004 03 16 | 691 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.5− | 0.2− | 2004 04 17 | 699 | 0.3+ | 1.5− |
| 2004 03 17 | 704 | 0.7+ | 0.8+ | 2004 03 31 | 704 | 0.1+ | 0.1− | 2004 04 17 | 699 | 0.5− | 0.8− |
| 2004 03 17 | 704 | 0.2+ | 1.1+ | 2004 03 31 | 704 | 0.5+ | 0.1+ | 2004 04 19 | 704 | 0.4− | 0.0 |
| 2004 03 17 | 704 | 0.5+ | 0.3+ | 2004 03 31 | 704 | 0.9+ | 0.4+ | 2004 04 19 | 704 | 0.0 | 0.2− |
| 2004 03 17 | 704 | 0.0 | 0.3+ | 2004 03 31 | 704 | 0.7+ | 0.4+ | 2004 04 19 | 704 | 0.1− | 0.2+ |
| 2004 03 17 | 704 | 0.8− | 0.7+ | 2004 03 31 | 704 | 1.1+ | 0.7+ | 2004 04 19 | 704 | 0.3− | 0.1− |
| 2004 03 18 | 704 | 0.5+ | 0.0 | 2004 04 09 | E12 | 0.7− | 0.5+ | 2004 04 19 | 704 | 0.3+ | 0.8− |
| 2004 03 18 | 704 | 0.3+ | 1.2+ | 2004 04 09 | E12 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.3− | 0.6− |
| 2004 03 18 | 704 | 0.6− | 0.5− | 2004 04 09 | E12 | 0.4− | 0.1+ | 2004 04 22 | 704 | 0.7− | 0.5+ |
| 2004 03 18 | 704 | 0.7− | 1.0− | 2004 04 09 | E12 | 0.4+ | 0.7− | 2004 04 22 | 704 | 0.0 | 1.5+ |
| 2004 03 23 | 691 | 0.2− | 0.1− | 2004 04 13 | 691 | 0.2+ | 0.5+ | 2004 04 22 | 704 | 0.2+ | 0.7+ |
| 2004 03 23 | 691 | 0.1+ | 0.2− | 2004 04 13 | 691 | 0.4− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2− |
| 2004 03 23 | 691 | 0.2+ | 0.4− | 2004 04 13 | 691 | 0.6− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2004 03 27 | 291 | 0.1− | 0.1+ | 2004 04 16 | 704 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 291 | 0.1+ | 0.0 | 2004 04 16 | 704 | 0.9+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.1− |
| 2004 03 27 | 291 | 0.2+ | 0.0 | 2004 04 16 | 704 | 1.5+ | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2004 03 27 | 704 | 0.3− | 0.0 | 2004 04 16 | 704 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.3− | 0.3− | 2004 04 16 | 704 | 0.1− | 0.8− | | | | |

**2004 FC$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 185.79210 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22048976 | $\omega$ | 132.48805 | −0.77542797 | +0.61362900 | |
| $a$ | 2.7135871 | $\Omega$ | 85.91415 | −0.61424726 | −0.67840095 | |
| $e$ | 0.1608781 | $i$ | 8.58511 | −0.14632758 | −0.40401931 | |
| $P$ | 4.47 | $H$ | 15.8 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 1.0− | 0.0 | 2004 04 09 | E12 | 0.6− | 0.3+ | 2004 05 24 | 699 | 0.9+ | 0.1− |
| 2004 03 16 | 704 | 0.5− | 0.7+ | 2004 04 09 | E12 | 0.5− | 1.5+ | 2004 05 24 | 699 | 0.7+ | 0.7+ |
| 2004 03 16 | 704 | 0.2+ | 0.7+ | 2004 04 09 | E12 | 0.6− | 0.2+ | 2004 06 11 | 699 | (1.0+ | 1.9+) |
| 2004 03 16 | 704 | 1.2− | 0.0 | 2004 04 15 | 644 | 0.0 | 0.3+ | 2004 06 11 | 699 | 0.4− | 0.0 |
| 2004 03 16 | 704 | 1.0− | 0.8+ | 2004 04 15 | 644 | 0.1+ | 0.4+ | 2004 06 11 | 699 | 0.2+ | 0.1− |
| 2004 03 23 | 683 | 0.0 | 0.1− | 2004 04 15 | 644 | 0.1+ | 0.3+ | 2004 06 11 | 699 | 0.4− | 0.2+ |
| 2004 03 23 | 704 | 1.3+ | 1.0− | 2004 04 22 | 703 | 0.5+ | 0.2+ | 2004 06 16 | 704 | (0.5+ | 2.2+) |
| 2004 03 23 | 704 | 1.0+ | 0.7− | 2004 04 22 | 703 | 0.6+ | 0.1+ | 2004 06 16 | 704 | 0.1+ | 0.5+ |
| 2004 03 23 | 683 | 0.7− | 1.2+ | 2004 04 22 | 703 | 1.3+ | 0.3− | 2004 06 16 | 704 | 0.8+ | 0.1+ |
| 2004 03 23 | 704 | 0.4+ | 0.3+ | 2004 04 22 | 703 | 0.5+ | 0.4− | 2004 06 16 | 704 | 0.5+ | 0.5− |
| 2004 03 23 | 683 | 0.8− | 1.2+ | 2004 04 25 | 699 | 0.3+ | 0.3+ | 2004 06 16 | 704 | 0.2− | 0.0 |
| 2004 03 23 | 704 | 0.4+ | 0.2+ | 2004 04 25 | 699 | 0.0 | 0.4− | 2005 09 01 | 644 | 0.0 | 0.1− |
| 2004 03 23 | 704 | 0.8+ | 0.3− | 2004 04 25 | 699 | 0.3− | 0.2− | 2005 09 01 | 644 | 0.0 | 0.0 |
| 2004 03 26 | 683 | 0.1− | 0.4− | 2004 04 25 | 699 | 0.3+ | 0.6+ | 2005 09 01 | 644 | 0.0 | 0.2− |
| 2004 03 26 | 683 | 0.8+ | 1.0− | 2004 05 09 | 703 | 0.9− | 0.9+ | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2004 03 26 | 683 | 0.7− | 0.2− | 2004 05 09 | 703 | (1.6− | 0.2−) | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2004 03 28 | 683 | (1.1+ | 3.6−) | 2004 05 09 | 703 | 1.5− | 0.6− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2004 03 28 | 683 | 0.2− | 2.2− | 2004 05 09 | 703 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3+ |
| 2004 03 28 | 683 | 0.2− | 0.7+ | 2004 05 24 | 699 | 0.4− | 0.3− | | | | |
| 2004 04 09 | E12 | 0.9− | 0.6+ | 2004 05 24 | 699 | 0.2+ | 0.4− | | | | |

**2004 FY$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 212.07245 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22894932 | $\omega$ | 294.83925 | −0.97040653 | −0.23792551 | |
| $a$ | 2.6463248 | $\Omega$ | 231.42361 | +0.23620151 | −0.89972236 | |
| $e$ | 0.1947025 | $i$ | 3.02553 | +0.05019981 | −0.36591137 | |
| $P$ | 4.30 | $H$ | 17.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 691 | 0.2+ | 0.4+ | 2004 03 16 | 691 | 0.5+ | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.7+ |
| 2000 04 29 | 691 | 0.0 | 0.4+ | 2004 03 16 | 704 | (1.6+ | 0.1−) | 2004 03 27 | 704 | 0.1+ | 0.0 |
| 2000 04 29 | 691 | 0.2+ | 0.2+ | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2004 03 27 | 704 | 0.8+ | 0.3+ |
| 2002 11 07 | 695 | 0.0 | 0.2− | 2004 03 16 | 704 | (1.7+ | 2.0+) | 2004 03 27 | 704 | 0.3− | 0.2+ |
| 2002 11 07 | 695 | 0.1− | 0.3− | 2004 03 16 | 704 | 1.2+ | 1.1+ | 2006 09 25 | 691 | 0.2− | 0.4+ |
| 2004 02 19 | 704 | 0.2− | 0.2− | 2004 03 16 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2004 02 19 | 704 | 0.7+ | 0.8+ | 2004 03 18 | 704 | (2.3+ | 0.8+) | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2004 02 19 | 704 | 1.1− | 0.4− | 2004 03 18 | 704 | (2.3+ | 0.1−) | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2004 02 19 | 704 | 0.8− | 0.0 | 2004 03 18 | 704 | (3.0+ | 0.4+) | 2006 09 26 | 691 | 0.1− | 0.8+ |
| 2004 02 19 | 704 | 0.1+ | 0.4− | 2004 03 18 | 704 | (0.6+ | 1.7+) | 2006 09 26 | 691 | 0.3+ | 0.2+ |
| 2004 02 26 | 704 | 0.6+ | 0.1+ | 2004 03 18 | 704 | (3.2+ | 0.2+) | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2004 02 26 | 704 | 0.3+ | 0.4− | 2004 03 20 | 704 | (2.4+ | 0.1−) | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2004 02 26 | 704 | 0.4− | 0.1+ | 2004 03 20 | 704 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.6− | 0.5+ |
| 2004 02 26 | 704 | 1.3− | 0.2− | 2004 03 20 | 704 | 0.7− | 0.7− | | | | |
| 2004 03 16 | 691 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 0.8− | 0.4+ | | | | |

**2004 FZ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 199.05204 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22821293 | $\omega$ | 354.85869 | −0.99438695 | +0.10234371 | |
| $a$ | 2.6520144 | $\Omega$ | 191.12310 | −0.09143827 | −0.95888455 | |
| $e$ | 0.0757675 | $i$ | 7.99719 | −0.05323192 | −0.26470017 | |
| $P$ | 4.32 | $H$ | 16.4 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.0 | 0.4+ | 2004 03 31 | 691 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.5+ | 0.2− |
| 2000 04 10 | 695 | 0.0 | 0.4− | 2004 03 31 | 691 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2004 03 16 | 704 | 0.1+ | 0.1− | 2004 03 31 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2004 03 16 | 704 | (1.7+ | 1.0+) | 2004 04 12 | 691 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2004 03 16 | 704 | 0.5+ | 0.3+ | 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2004 03 16 | 704 | 0.6+ | 0.4+ | 2004 04 12 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.3− |
| 2004 03 16 | 704 | 1.1+ | 0.3+ | 2004 04 24 | 691 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2004 03 18 | 704 | 0.1− | 0.6− | 2004 04 24 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.5− |
| 2004 03 18 | 704 | 0.8+ | 0.5− | 2004 04 24 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2004 03 18 | 704 | 0.9+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2004 03 18 | 704 | 0.5+ | 1.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2004 03 27 | 704 | 0.9+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2004 03 27 | 704 | 0.5+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2004 03 27 | 704 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2004 03 27 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 03 27 | 704 | 0.6+ | 0.5− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.6− | 0.5+ |
| 2004 03 30 | 691 | 0.4− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.4− | 0.4+ |
| 2004 03 30 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.2− | 0.4+ |
| 2004 03 30 | 691 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.2− | | | | |

**2004 FV$_{20}$ = 2000 KU$_{45}$**

Id. Minor Planet Center; 2000 KU$_{45}$ = 2001 SV$_{217}$ (*MPO* 22180) is invalid

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 227.36533 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.22473704 | $\omega$ | 335.85526 | −0.90917152 | −0.41642144 | |
| $a$ | 2.6792893 | $\Omega$ | 179.53470 | +0.39266671 | −0.85776652 | |
| $e$ | 0.1587256 | $i$ | 4.06518 | +0.13863623 | −0.30137979 | |
| $P$ | 4.39 | $H$ | 16.5 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 691 | 0.0 | 0.1+ | 2004 03 19 | 291 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.0 |
| 2000 05 30 | 691 | 0.3− | 0.2+ | 2004 03 19 | 291 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2000 05 30 | 691 | 0.2− | 0.2+ | 2004 03 19 | 291 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2000 06 03 | 691 | 0.0 | 0.1+ | 2004 03 23 | 291 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2000 06 03 | 691 | 0.2− | 0.1− | 2004 03 23 | 291 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2000 06 03 | 691 | 0.1− | 0.1− | 2004 03 23 | 291 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2000 06 23 | 691 | 1.0+ | 0.4− | 2004 03 24 | 699 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2000 06 23 | 691 | 0.0 | 0.2+ | 2004 03 24 | 699 | 0.1+ | 0.5+ | 2006 10 02 | 291 | 0.3− | 0.2+ |
| 2000 06 23 | 691 | 0.0 | 0.2+ | 2004 03 24 | 699 | 0.8+ | 0.3+ | 2006 10 02 | 291 | 0.2− | 0.1+ |
| 2004 02 26 | 704 | 1.2+ | 0.1− | 2004 03 24 | 699 | 1.0− | 0.3+ | 2006 10 02 | 291 | 0.1− | 0.1− |
| 2004 02 26 | 704 | 0.2+ | 1.0+ | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 695 | 0.0 | 0.3+ |
| 2004 02 26 | 704 | 0.5+ | 1.2+ | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.0 | 0.4+ |
| 2004 03 16 | 704 | 1.3+ | 0.2− | 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2004 03 16 | 704 | 0.7+ | 0.0 | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2004 03 16 | 704 | 0.1+ | 0.7+ | 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2004 03 16 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.3+ |
| 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 09 14 | 691 | 0.4− | 0.2+ | 2006 11 16 | G96 | 1.4+ | 0.6+ |
| 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.5− | 0.6+ |
| 2004 03 18 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 691 | 0.2+ | 1.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2004 03 18 | 704 | 1.2+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.0 | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.8+ | | | | |

## 2004 FZ$_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.42862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17391369 | $\omega$ | 258.34918 | | −0.68720402 | | +0.72504002 |
| $a$ | 3.1786805 | $\Omega$ | 328.09009 | | −0.62850738 | | −0.62476476 |
| $e$ | 0.1285634 | $i$ | 4.93489 | | −0.36432006 | | −0.28980331 |
| $P$ | 5.67 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.3+ | 0.4+ | 2004 03 27 | 704 | 0.3+ | 0.8− | 2004 04 19 | 704 | (3.3+ | 0.5+) |
| 2004 03 16 | 703 | 0.8+ | 0.1+ | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2004 04 19 | 704 | 0.6+ | 0.1− |
| 2004 03 16 | 704 | (2.8+ | 0.8−) | 2004 03 28 | 704 | 0.6+ | 1.3+ | 2004 04 19 | 704 | 0.2+ | 0.2− |
| 2004 03 16 | 703 | (1.5+ | 0.5+) | 2004 03 28 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.3− | 0.5− |
| 2004 03 16 | 703 | 1.0+ | 0.5+ | 2004 03 28 | 704 | 0.2+ | 0.2− | 2004 04 22 | 691 | 0.2+ | 0.1+ |
| 2004 03 16 | 704 | 1.2− | 0.1− | 2004 03 28 | 704 | 0.6+ | 0.2+ | 2004 04 22 | 691 | 0.2+ | 0.1− |
| 2004 03 16 | 704 | 0.4+ | 1.5+ | 2004 03 28 | 704 | 0.2− | 0.9− | 2004 04 22 | 691 | 0.0 | 0.1− |
| 2004 03 16 | 703 | 0.6+ | 0.5+ | 2004 03 29 | 704 | 0.3− | 0.4+ | 2004 04 26 | 699 | 1.0− | 1.4+ |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2004 03 29 | 704 | 0.3+ | 0.7+ | 2004 04 26 | 699 | 0.9− | 0.5− |
| 2004 03 18 | 704 | 0.5+ | 0.3− | 2004 03 29 | 704 | 0.4− | 0.0 | 2004 04 26 | 699 | 0.7− | 1.2+ |
| 2004 03 18 | 704 | 0.1− | 0.4+ | 2004 03 29 | 704 | 0.0 | 0.2− | 2004 04 26 | 699 | 0.8− | 0.4− |
| 2004 03 18 | 704 | 0.5− | 0.0 | 2004 03 29 | 704 | 0.1+ | 1.0+ | 2006 08 28 | 703 | (2.1− | 0.6−) |
| 2004 03 18 | 704 | 0.7+ | 0.7+ | 2004 03 30 | 704 | 0.5+ | 0.8− | 2006 08 28 | 703 | 1.0− | 0.4+ |
| 2004 03 20 | 704 | 0.6− | 0.5− | 2004 03 30 | 704 | (1.1− | 3.7−) | 2006 08 28 | 703 | (0.4− | 2.2−) |
| 2004 03 20 | 704 | 1.2− | 0.9− | 2004 03 30 | 704 | (0.2+ | 1.9−) | 2006 08 28 | 703 | 0.4+ | 0.9− |
| 2004 03 20 | 704 | 0.2+ | 0.0 | 2004 03 30 | 704 | 0.3− | 0.3− | 2006 09 25 | 691 | 0.4− | 0.2− |
| 2004 03 20 | 704 | 0.2− | 0.1− | 2004 03 30 | 704 | 0.6+ | 1.0− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2004 03 20 | 704 | 0.1− | 0.1+ | 2004 03 31 | 704 | 0.5+ | 0.4− | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 2004 03 24 | 699 | 0.6− | 0.0 | 2004 03 31 | 704 | 0.8+ | 1.1− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2004 03 24 | 699 | 0.7− | 0.5− | 2004 03 31 | 704 | 0.6− | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2004 03 24 | 699 | 0.5+ | 0.0 | 2004 03 31 | 704 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2004 03 24 | 699 | 0.2− | 0.3− | 2004 03 31 | 704 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.3− |
| 2004 03 26 | 699 | 0.7− | 0.8− | 2004 04 11 | 644 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2004 03 26 | 699 | 0.4− | 0.2− | 2004 04 11 | 644 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.3+ |
| 2004 03 26 | 699 | 0.6− | 0.7− | 2004 04 11 | 644 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2004 03 26 | 699 | 0.2− | 0.2+ | 2004 04 15 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2004 03 27 | 704 | 0.1− | 0.3+ | 2004 04 15 | 691 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.2− | 0.8− |
| 2004 03 27 | 704 | 0.1− | 0.4+ | 2004 04 15 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.7− |
| 2004 03 27 | 704 | 0.8+ | 0.3− | 2004 04 19 | 704 | 0.3+ | 0.1− | | | | |

## 2004 FA$_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.23739 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19018727 | $\omega$ | 282.44191 | | −0.31684530 | | +0.94691389 |
| $a$ | 2.9946661 | $\Omega$ | 328.91600 | | −0.82411462 | | −0.30325737 |
| $e$ | 0.0559327 | $i$ | 6.05215 | | −0.46951480 | | −0.10671949 |
| $P$ | 5.18 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.4− | 0.9+ | 2004 03 27 | 703 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.3+ |
| 2001 10 14 | 704 | 0.3− | 0.5+ | 2004 03 27 | 703 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.6− | 0.4− |
| 2001 10 14 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.6− | 0.4− |
| 2001 10 14 | 704 | 0.6+ | 0.7+ | 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 10 12 | 461 | 0.1+ | 0.2+ |
| 2001 10 20 | 644 | 0.2− | 0.7− | 2006 09 16 | 644 | 0.2+ | 0.0 | 2006 10 12 | 461 | 0.0 | 0.2+ |
| 2001 10 20 | 644 | 0.0 | 0.7− | 2006 09 17 | 703 | 0.5− | 0.7− | 2006 10 12 | 461 | 0.3+ | 0.3+ |
| 2001 10 20 | 644 | 0.3− | 0.3− | 2006 09 17 | 703 | 0.9− | 0.1+ | 2006 10 12 | 461 | 0.1+ | 0.1− |
| 2004 03 16 | 703 | 1.3− | 0.5− | 2006 09 17 | 703 | 0.4− | 0.9+ | 2006 10 13 | 461 | 0.4+ | 0.2+ |
| 2004 03 16 | 703 | 0.6+ | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 10 13 | 461 | 0.9+ | 0.0 |
| 2004 03 16 | 703 | 0.6+ | 1.2+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 13 | 461 | 0.0 | 0.4− |
| 2004 03 16 | 703 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.0 | 0.8− | 2006 10 13 | 461 | 0.0 | 0.2+ |
| 2004 03 18 | 704 | 0.4+ | 0.9− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 13 | 461 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.4+ | 0.5− | 2006 09 18 | 703 | 0.8− | 0.0 | 2006 10 13 | 461 | 0.1+ | 0.4+ |
| 2004 03 18 | 704 | 0.2− | 1.0+ | 2006 09 18 | 703 | 1.1− | 0.3− | 2006 10 17 | 703 | 0.5+ | 1.3− |
| 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | (1.9− | 0.4+) |
| 2004 03 26 | 699 | 0.5+ | 1.1+ | 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2004 03 26 | 699 | 0.0 | 1.0− | 2006 09 19 | 703 | 0.7+ | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.9− |
| 2004 03 26 | 699 | 0.6− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2004 03 26 | 699 | 0.1+ | 0.5− | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2004 03 27 | 703 | 0.5− | 0.2− | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2004 03 27 | 703 | 0.1+ | 0.2− | 2006 09 25 | 704 | (1.2− | 1.7+) | 2006 10 23 | G96 | 0.3+ | 0.3− |

## 2004 FQ$_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.07583 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23621406 | $\omega$ | 277.29987 | | −0.94144934 | | +0.33450502 |
| $a$ | 2.5917845 | $\Omega$ | 282.24961 | | −0.28979674 | | −0.86679670 |
| $e$ | 0.1387111 | $i$ | 2.47408 | | −0.17231075 | | −0.36982410 |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | 0.0 | 0.2+ | 2004 03 20 | 704 | 1.1+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 2004 03 16 | 703 | 1.3− | 0.7+ | 2004 03 27 | 704 | 0.8+ | 0.9− | 2006 10 21 | 691 | 0.5+ | 0.1+ |
| 2004 03 16 | 703 | 0.5− | 0.0 | 2004 03 27 | 704 | 0.6+ | 1.3− | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2004 03 16 | 703 | (1.6− | 0.1+) | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2004 03 16 | 691 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.6+ | 0.2+ | 2006 11 01 | G96 | 0.6+ | 0.7− |
| 2004 03 16 | 691 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2004 03 28 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.5− | 0.4− | 2004 03 28 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 0.8− | 0.2+ | 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 0.3− | 0.3+ | 2006 10 13 | 691 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 0.4− | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2004 03 18 | 704 | 0.7− | 0.0 | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.5− | 1.0− |
| 2004 03 20 | 704 | 0.2− | 0.6− | 2006 10 17 | 691 | 0.1− | 0.9+ | 2006 11 20 | G96 | 0.4+ | 0.1− |
| 2004 03 20 | 704 | 0.8− | 0.9− | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.3+ |
| 2004 03 20 | 704 | 0.7+ | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.2− | | | | |
| 2004 03 20 | 704 | 0.8+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.1− | | | | |

## 2004 FT$_{21}$ = 2006 UW$_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.12598 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27010538 | $\omega$ | 199.63069 | | −0.49896752 | | −0.86486001 |
| $a$ | 2.3701758 | $\Omega$ | 280.33547 | | +0.80242096 | | −0.43699987 |
| $e$ | 0.1508389 | $i$ | 3.21739 | | +0.32734084 | | −0.24707949 |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | (1.6− | 0.5+) | 2004 03 19 | 704 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2004 03 16 | 703 | 0.2+ | 0.6− | 2004 03 19 | 704 | 0.9− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2004 03 16 | 703 | 0.3+ | 1.0+ | 2004 03 19 | 704 | 0.1− | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2004 03 16 | 703 | 0.3+ | 1.2− | 2004 03 19 | 704 | (2.0+ | 1.1−) | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2004 03 16 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.2− | 2006 11 09 | 691 | 0.4+ | 0.0 |
| 2004 03 16 | 691 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.7+ | 0.2− | 2006 11 13 | 691 | 0.5− | 0.3+ |
| 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.3− |
| 2004 03 18 | 704 | 0.7+ | 0.6+ | 2006 10 19 | G96 | 0.5+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.0 |
| 2004 03 18 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2+ |
| 2004 03 18 | 704 | 0.2+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.0 |
| 2004 03 18 | 704 | 0.0 | 1.2+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1+ |

### 2004 FY$_{22}$ = 2006 SF$_{250}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 230.69142 | | (2000.0) | | | |
| $n$ | 0.22018669 | $\omega$ | 141.30584 | | −0.83617433 | −0.54840561 |
| $a$ | 2.7160765 | $\Omega$ | 5.45443 | | +0.48000255 | −0.73876641 |
| $e$ | 0.0518514 | $i$ | 4.81899 | | +0.26534889 | −0.39175946 |
| $P$ | 4.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.2− | 0.1− | 2004 03 27 | 704 | 0.4− | 1.3− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2004 03 17 | 691 | 0.0 | 0.3− | 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2004 03 18 | 704 | 0.8+ | 0.1− | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2004 03 18 | 704 | 1.1− | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 1.4+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 03 18 | 704 | 0.9+ | 0.7+ | 2006 09 19 | 691 | 0.1− | 0.0 | | | | |

### 2004 FC$_{23}$ = 2006 SS$_{156}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.84795 | | (2000.0) | | | |
| $n$ | 0.17821219 | $\omega$ | 79.63696 | | −0.21011749 | +0.97766231 |
| $a$ | 3.1273592 | $\Omega$ | 178.20868 | | −0.94944557 | −0.20277827 |
| $e$ | 0.0611948 | $i$ | 9.57757 | | −0.23324614 | −0.05529359 |
| $P$ | 5.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.3+ | 0.5+ | 2004 04 25 | 691 | 0.0 | 0.2− | 2006 09 26 | 291 | 0.1+ | 0.2+ |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2004 04 25 | 691 | 0.3− | 0.2+ | 2006 09 26 | 291 | 0.0 | 0.3+ |
| 2004 03 17 | 691 | 0.2+ | 0.2+ | 2004 04 25 | 691 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 09 23 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.7− | 0.3+ |
| 2004 03 18 | 704 | 0.3+ | 0.4+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.9− | 0.2+ |
| 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.6+ | 2006 09 26 | 291 | 0.1+ | 0.4+ | | | | |

### 2004 FA$_{24}$ = 2006 SQ$_{231}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.18270 | | (2000.0) | | | |
| $n$ | 0.21141719 | $\omega$ | 133.47416 | | −0.18899023 | −0.98140011 |
| $a$ | 2.7906745 | $\Omega$ | 327.37503 | | +0.88193568 | −0.15453897 |
| $e$ | 0.0256840 | $i$ | 3.58505 | | +0.43182421 | −0.11389265 |
| $P$ | 4.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.5− | 0.2+ | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.5+ |
| 1997 11 23 | 691 | 0.1+ | 0.3− | 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 1997 11 23 | 691 | 0.1− | 0.2− | 2004 03 18 | 704 | 0.4+ | 1.5+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 1999 02 07 | 691 | 0.2+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 1.2+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 1999 02 07 | 691 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 1999 02 07 | 691 | 0.2+ | 0.6− | 2004 04 13 | 621 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.3+ | 0.6− |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2004 04 13 | 621 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2001 09 19 | 645 | 0.1+ | 0.0 | 2004 04 13 | 621 | 0.5− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.3+ | | | | |

### 2004 FE$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 302.51953 | | (2000.0) | | | |
| $n$ | 0.26161621 | $\omega$ | 268.32508 | | −0.06142171 | −0.99794276 |
| $a$ | 2.4211756 | $\Omega$ | 185.30223 | | +0.97647031 | −0.05626694 |
| $e$ | 0.2134560 | $i$ | 11.46918 | | +0.20671989 | −0.03072928 |
| $P$ | 3.77 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.9+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2004 03 27 | 704 | (1.5+ | 0.8+) | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2004 03 17 | 691 | 0.1+ | 0.1− | 2004 03 31 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 0.2− | 0.1− | 2004 03 31 | 691 | 0.3− | 0.1− | 2006 10 16 | 703 | (0.1+ | 1.6+) |
| 2004 03 18 | 704 | 0.4+ | 0.7− | 2004 03 31 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.5+ |
| 2004 03 18 | 704 | 0.2+ | 0.1− | 2004 04 25 | 691 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.3− | 0.6− | 2004 04 25 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.5+ |
| 2004 03 18 | 704 | 0.1− | 0.3− | 2004 04 25 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2004 03 21 | 291 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2004 03 21 | 291 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.6+ |
| 2004 03 21 | 291 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2004 03 27 | 704 | (2.5+ | 0.7+) | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.0 | 1.1− |
| 2004 03 27 | 704 | (2.2+ | 0.3−) | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.5+ | 0.8− |
| 2004 03 27 | 704 | 1.2+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.3+ |

### 2004 FH$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.48931 | | (2000.0) | | | |
| $n$ | 0.22758603 | $\omega$ | 235.01744 | | +0.77302636 | −0.63371322 |
| $a$ | 2.6568823 | $\Omega$ | 164.24151 | | +0.61122101 | +0.73182299 |
| $e$ | 0.0412869 | $i$ | 6.11809 | | +0.16982086 | +0.25068440 |
| $P$ | 4.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.3− | 0.8− | 2004 03 22 | 704 | 0.8+ | 0.1− | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2004 02 26 | 704 | 0.3+ | 0.2− | 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2004 02 26 | 704 | 0.8− | 1.0− | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.2− |
| 2004 02 26 | 704 | 0.0 | 0.4− | 2004 03 26 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.6+ | 0.4+ |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 703 | (2.0+ | 0.4−) |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2004 04 15 | 691 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2004 03 17 | 691 | 0.3− | 0.1+ | 2004 04 15 | 691 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.2− | 0.4− |
| 2004 03 18 | 704 | (1.6+ | 3.4+) | 2004 04 15 | 691 | 0.2− | 0.3− | 2006 11 23 | G96 | 1.4+ | 0.9− |
| 2004 03 18 | 704 | (1.7+ | 2.7+) | 2006 10 16 | 703 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | (3.3+ | 1.6+) | 2006 10 16 | 703 | 1.0− | 0.4− | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2004 03 22 | 704 | 1.2+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 1.2+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2004 03 22 | 704 | 0.9+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.4+ | | | | |
| 2004 03 22 | 704 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.4+ | 0.5+ | | | | |

### 2004 FJ$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.59616 | | (2000.0) | | | |
| $n$ | 0.21507539 | $\omega$ | 130.44960 | | −0.69239856 | −0.72145109 |
| $a$ | 2.7589399 | $\Omega$ | 3.41792 | | +0.60346889 | −0.58637365 |
| $e$ | 0.0561818 | $i$ | 9.28694 | | +0.39548645 | −0.36833988 |
| $P$ | 4.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 25 | 691 | 0.7− | 0.2+ | 2004 03 27 | 704 | (0.8+ | 2.1+) | 2006 09 24 | 691 | 0.1+ | 0.0 |
| 1992 09 25 | 691 | 0.6+ | 1.5+ | 2004 03 27 | 704 | (1.4+ | 1.9+) | 2006 09 24 | 691 | 0.5− | 0.1− |
| 1992 09 25 | 691 | 1.1− | 0.2+ | 2004 03 27 | 704 | (0.3+ | 1.6+) | 2006 09 24 | 691 | 0.1− | 0.3+ |
| 2004 02 17 | 291 | 0.3+ | 0.0 | 2004 03 28 | 704 | (0.1− | 2.1+) | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2004 02 17 | 291 | 0.0 | 0.1− | 2004 03 28 | 704 | 0.3− | 1.4+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2004 02 17 | 291 | 0.2+ | 0.3+ | 2004 03 28 | 704 | 1.0− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.7− | 1.5+ | 2004 03 28 | 704 | (0.7+ | 1.8+) | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 2004 03 15 | 703 | 1.0− | 0.4+ | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 703 | (1.8− | 1.7+) | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.5− | 0.5+ |
| 2004 03 15 | 703 | 0.7− | 1.1− | 2004 03 29 | 691 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2004 03 17 | 691 | 0.3+ | 0.4+ | 2004 03 29 | 701 | 0.8− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.4+ |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2004 03 29 | 701 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2004 03 17 | 691 | 0.3+ | 0.3+ | 2004 03 29 | 701 | 0.5+ | 1.0+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2004 03 18 | 704 | 1.2+ | 0.4+ | 2006 09 15 | 691 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2004 03 18 | 704 | 0.4+ | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | 0.8+ | 0.5− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2004 03 18 | 704 | 0.3− | 1.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | | | |
| 2004 03 27 | 704 | 0.9+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | | | |

**2004 FM$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.15254 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22632529 | $\omega$ | 273.77852 | | −0.05886466 | | −0.99826189 |
| $a$ | 2.6667399 | $\Omega$ | 179.56427 | | +0.99796773 | | −0.05891673 |
| $e$ | 0.0631446 | $i$ | 22.04893 | | +0.02439991 | | +0.00142016 |
| $P$ | 4.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.7+ | 0.4− | 2004 03 20 | 704 | 1.0+ | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.2+ |
| 2004 02 26 | 704 | 0.3− | 0.5+ | 2004 03 20 | 704 | 1.1+ | 1.0− | 2006 09 23 | 461 | 0.0 | 0.0 |
| 2004 02 26 | 704 | 0.5+ | 0.7+ | 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 09 23 | 461 | 0.4− | 0.0 |
| 2004 02 26 | 704 | 0.1+ | 0.7+ | 2004 03 29 | 691 | 0.2− | 0.0 | 2006 09 23 | 461 | 0.1− | 0.3− |
| 2004 02 26 | 704 | 0.3− | 0.3− | 2004 03 29 | 691 | 0.1− | 0.3+ | 2006 09 24 | 461 | 0.9− | 0.8+ |
| 2004 03 17 | 691 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 09 24 | 461 | 0.3− | 0.4+ |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.7+ | 0.5+ | 2006 09 24 | 461 | 0.1− | 0.0 |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.9+ | 0.1− |
| 2004 03 18 | 704 | 0.9− | 0.7+ | 2006 07 21 | G96 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 1.4+ | 0.2− |
| 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 291 | 0.2− | 0.3− | 2006 09 26 | 703 | (2.4− | 2.1−) |
| 2004 03 18 | 704 | 0.6+ | 0.4− | 2006 09 14 | 291 | 0.1+ | 0.1+ | 2006 09 26 | 703 | (3.4− | 1.8+) |
| 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 291 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.5− | 0.1− |
| 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.4− | 0.1− |
| 2004 03 20 | 704 | 0.9+ | 0.7− | 2006 09 18 | 703 | (1.9+ | 0.1+) | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2004 03 20 | 704 | 0.8− | 0.1− | 2006 09 18 | 703 | 1.3− | 0.5+ | | | | |

**2004 FW$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.78679 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17377294 | $\omega$ | 142.65358 | | +0.81365406 | | +0.58132868 |
| $a$ | 3.1803966 | $\Omega$ | 181.82364 | | −0.56361571 | | +0.78673901 |
| $e$ | 0.0667664 | $i$ | 8.86232 | | −0.14249350 | | +0.20760224 |
| $P$ | 5.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.0 | 0.3+ | 2004 03 29 | 704 | (0.7+ | 1.6+) | 2006 09 27 | G96 | 0.2+ | 0.1+ |
| 1995 10 26 | 691 | 0.2− | 0.4+ | 2004 03 29 | 704 | 0.3− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.0 |
| 1995 10 26 | 691 | 0.0 | 0.2+ | 2004 03 29 | 704 | 1.3+ | 1.1+ | 2006 09 27 | G96 | 0.2− | 0.2+ |
| 2001 11 18 | 608 | 0.4− | 0.3+ | 2004 03 29 | 704 | 0.4+ | 1.5+ | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2001 11 18 | 608 | 0.2+ | 0.1+ | 2004 03 29 | 704 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.3+ |
| 2001 11 18 | 608 | 0.0 | 0.7+ | 2004 04 15 | 691 | 0.3− | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.4+ |
| 2004 03 17 | 691 | 0.1+ | 0.1+ | 2004 04 15 | 691 | 0.6− | 0.5+ | 2006 10 19 | G96 | 0.5+ | 0.2+ |
| 2004 03 17 | 691 | 0.3+ | 0.2+ | 2004 04 15 | 691 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.4+ |
| 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 09 13 | 644 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 09 13 | 644 | 0.7− | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2004 03 18 | 704 | 0.1− | 0.5− | 2006 09 13 | 644 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.6− | 0.1+ |
| 2004 03 18 | 704 | (1.8+ | 0.3+) | 2006 09 13 | 644 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.3+ |
| 2004 03 18 | 704 | 1.4+ | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.9+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 0.3+ | 1.2+ | 2006 09 17 | 703 | 0.7− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2004 03 27 | 704 | 0.8− | 0.1+ | 2006 09 17 | 703 | 1.1− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.2+ |
| 2004 03 27 | 704 | 0.7− | 0.1− | 2006 09 17 | 703 | 0.9− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 1.1+ | 0.5+ | 2006 09 17 | 703 | 0.4+ | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.3+ |
| 2004 03 27 | 704 | 1.2+ | 0.0 | 2006 09 20 | 699 | 0.9− | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.8+ | 0.2+ |
| 2004 03 29 | 691 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.3− | 0.1+ | | | | |
| 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.8+ | 0.2+ | | | | |

**2004 FD$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.19056 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23841400 | $\omega$ | 280.74978 | | −0.46167696 | | −0.88702282 |
| $a$ | 2.5758163 | $\Omega$ | 196.75053 | | +0.82266669 | | −0.42533122 |
| $e$ | 0.1302461 | $i$ | 1.33222 | | +0.33177386 | | −0.17967713 |
| $P$ | 4.13 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.4+ | 0.4+ | 2004 03 21 | 291 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2000 04 12 | 691 | 0.1− | 0.3+ | 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 10 15 | 291 | 0.5− | 0.5+ |
| 2000 04 12 | 691 | 0.1+ | 0.3+ | 2004 03 27 | 704 | 0.4+ | 0.1+ | 2006 10 15 | 291 | 0.0 | 0.3+ |
| 2002 10 30 | 644 | 0.5− | 0.9+ | 2004 03 27 | 704 | 1.0+ | 0.3+ | 2006 10 15 | 291 | 0.1− | 0.2+ |
| 2002 10 30 | 644 | 0.0 | 0.8+ | 2004 03 27 | 704 | 1.1+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2002 10 30 | 644 | 0.3− | 0.9+ | 2004 03 29 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2004 03 29 | 691 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.5− |
| 2004 03 17 | 691 | 0.2− | 0.2− | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2004 04 22 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.7+ | 0.5− |
| 2004 03 18 | 704 | 0.3− | 0.6− | 2004 04 22 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2004 03 18 | 704 | 0.1− | 0.5+ | 2004 04 22 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.9− | 0.1− |
| 2004 03 18 | 704 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2004 03 18 | 704 | 0.3− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.6+ | 2006 11 21 | G96 | 0.3+ | 0.6− |
| 2004 03 18 | 704 | 0.9− | 0.8+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.8− |
| 2004 03 21 | 291 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2004 03 21 | 291 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.1− |

**2004 FF$_{27}$ = 2006 QP$_{117}$**

Id. Minor Planet Center; 2004 FF$_{27}$ = 1995 VL$_8$ (*MPO* 69698) is invalid

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.27845 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16827563 | $\omega$ | 152.56023 | | +0.86682230 | | +0.49861716 |
| $a$ | 3.2492907 | $\Omega$ | 177.53119 | | −0.45832622 | | +0.79693757 |
| $e$ | 0.1477734 | $i$ | 0.26824 | | −0.19635728 | | +0.34098600 |
| $P$ | 5.86 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 27 | 691 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.7+ | 1.0+ | 2006 09 20 | 704 | 0.7− | 0.1+ |
| 1995 11 27 | 691 | 0.3− | 0.1− | 2004 03 27 | 704 | (1.7+ | 0.6+) | 2006 09 20 | 644 | 0.2− | 0.3+ |
| 1995 11 27 | 691 | 0.1+ | 0.2− | 2004 03 27 | 704 | (1.0+ | 1.5+) | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1997 02 03 | 691 | 0.5+ | 0.3− | 2005 02 11 | 809 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 1997 02 03 | 691 | 0.1+ | 0.2+ | 2005 02 11 | 809 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 1997 02 03 | 691 | 0.1+ | 0.1+ | 2005 05 30 | E12 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2000 09 07 | 704 | 0.2− | 0.4+ | 2005 05 30 | E12 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.8+ | 0.7+ |
| 2000 09 07 | 704 | 1.0− | 0.1− | 2005 05 30 | E12 | 0.1+ | 0.2− | 2006 09 27 | 704 | (1.8+ | 0.4−) |
| 2000 09 07 | 704 | 0.8+ | 0.2− | 2005 05 30 | E12 | 0.4− | 0.3− | 2006 09 27 | 704 | 1.1− | 0.6+ |
| 2000 09 07 | 704 | 0.4− | 0.0 | 2005 06 13 | G96 | 0.2− | 0.3− | 2006 09 27 | 704 | 0.8+ | 1.1+ |
| 2000 09 21 | 704 | 0.5− | 0.2− | 2005 06 13 | G96 | 0.3− | 0.3− | 2006 09 27 | 704 | 0.4− | 0.5− |
| 2000 09 21 | 704 | 0.2+ | 0.6+ | 2005 06 13 | G96 | (1.8− | 0.1−) | 2006 09 28 | 704 | 0.2− | 0.7+ |
| 2000 09 21 | 704 | (2.2− | 0.3+) | 2005 06 13 | G96 | 1.1+ | 0.5− | 2006 09 28 | 704 | 0.3+ | 0.4+ |
| 2000 09 21 | 704 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 09 28 | 701 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.5− | 0.8+ | 2006 08 27 | 699 | 1.2+ | 0.0 | 2006 09 28 | 701 | 0.3− | 0.1− |
| 2000 10 01 | 704 | 0.5+ | 0.3+ | 2006 08 27 | 699 | 0.2+ | 0.8+ | 2006 09 28 | 704 | 0.3+ | 0.6+ |
| 2000 10 01 | 704 | 0.3+ | 0.3+ | 2006 08 27 | 699 | 0.6− | 0.4− | 2006 09 28 | 701 | 0.6− | 0.4+ |
| 2000 10 01 | 704 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 09 28 | 701 | 0.4+ | 0.2+ |
| 2001 11 21 | 704 | 0.8+ | 0.8+ | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2001 11 21 | 704 | 1.3+ | 0.2− | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 0.7+ | 0.3− | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.8− | 0.0 | 2006 09 16 | 699 | 0.3+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 12 17 | 704 | (0.5− | 1.7+) | 2006 09 16 | 699 | 0.3− | 0.7+ | 2006 10 17 | 701 | 0.3+ | 0.3− |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2006 09 16 | 699 | 0.0 | 0.6+ | 2006 10 17 | 701 | 0.6− | 0.3− |
| 2001 12 17 | 704 | (1.2− | 1.8+) | 2006 09 16 | 699 | 0.1− | 0.3− | 2006 10 17 | 701 | 0.4+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.6− | 1.1+ | 2006 09 17 | 704 | 0.5− | 0.2+ | 2006 10 17 | 701 | 0.7+ | 0.4+ | | |
| 2001 12 17 | 704 | 1.3− | 1.2+ | 2006 09 17 | 704 | 0.4− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 2003 01 27 | 704 | 1.0− | 0.7− | 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2003 01 27 | 704 | 0.4− | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2003 01 27 | 704 | 1.5− | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2004 02 26 | 704 | 0.8+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2004 02 26 | 704 | 0.7+ | 0.7− | 2006 09 19 | 703 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2004 02 26 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 699 | 0.7− | 0.2+ | 2006 11 11 | G96 | 0.9− | 0.8− | | |
| 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.1− | | |
| 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 1.4+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 2004 03 17 | 691 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.1− | | |
| 2004 03 18 | 704 | 1.4+ | 0.9+ | 2006 09 19 | 703 | 0.2− | 0.7+ | 2006 11 21 | 701 | 0.1− | 0.2+ | | |
| 2004 03 18 | 704 | 0.8+ | 0.0 | 2006 09 19 | 699 | 1.0− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2− | | |
| 2004 03 18 | 704 | 0.7− | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.5+ | 2006 11 21 | 701 | 0.0 | 0.4− | | |
| 2004 03 18 | 704 | 0.1+ | 1.2+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1+ | | |
| 2004 03 26 | 691 | 0.2+ | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 11 21 | G96 | 0.1+ | 0.1+ | | |
| 2004 03 26 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1+ | | |
| 2004 03 26 | 691 | 0.2+ | 0.6+ | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 11 21 | 701 | 0.1− | 0.1− | | |
| 2004 03 27 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.1− | 0.8+ | 2006 11 21 | 701 | 0.4− | 0.1− | | |

**2004 FJ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.64367 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19092384 | $\omega$ | 241.80666 | | −0.29210143 | | +0.95575102 |
| $a$ | 2.9869591 | $\Omega$ | 11.37365 | | −0.80372147 | | −0.22554225 |
| $e$ | 0.0907112 | $i$ | 10.18804 | | −0.51837105 | | −0.18886682 |
| $P$ | 5.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2+ | 0.1+ | 2004 03 23 | 704 | 0.4+ | 0.7− | 2006 09 15 | 691 | 0.3− | 0.3+ | | |
| 2001 10 14 | 704 | 0.2− | 0.4+ | 2004 03 24 | 699 | 0.5− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.8− | | |
| 2001 10 14 | 704 | 0.5− | 0.3+ | 2004 03 24 | 699 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.1+ | | |
| 2004 03 17 | 704 | 0.0 | 1.4+ | 2004 03 24 | 699 | (1.3− | 1.6+) | 2006 09 19 | 691 | 0.1+ | 0.0 | | |
| 2004 03 17 | 704 | 0.2− | 0.5+ | 2004 03 24 | 699 | 0.3− | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | | |
| 2004 03 17 | 704 | 1.1+ | 1.4− | 2004 03 26 | 704 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 1.0− | | |
| 2004 03 18 | 704 | 0.6− | 0.1+ | 2004 03 26 | 704 | 0.7+ | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.3+ | | |
| 2004 03 18 | 704 | 1.2− | 0.0 | 2004 03 26 | 704 | 0.5+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.0 | | |
| 2004 03 18 | 704 | 0.3− | 1.4+ | 2004 03 27 | 704 | 0.4+ | 0.6− | 2006 09 26 | 691 | 0.0 | 0.3+ | | |
| 2004 03 19 | 291 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.7+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2004 03 19 | 291 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.7− | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2004 03 19 | 291 | 0.1− | 0.2− | 2004 03 27 | 704 | 0.6+ | 0.5− | 2006 09 30 | 691 | 0.0 | 0.3+ | | |
| 2004 03 20 | 704 | 0.4− | 0.5+ | 2004 03 27 | 704 | 0.5+ | 0.7− | 2006 10 11 | 691 | 0.1− | 0.2+ | | |
| 2004 03 20 | 704 | 0.5− | 0.4+ | 2004 03 29 | 291 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.0 | | |
| 2004 03 20 | 704 | 0.4− | 0.7+ | 2004 03 29 | 291 | 0.5− | 0.1− | 2006 10 11 | 691 | 0.2− | 0.1− | | |
| 2004 03 20 | 704 | 0.6+ | 0.4− | 2004 03 29 | 291 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1− | | |
| 2004 03 20 | 704 | 0.3+ | 1.3− | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.2+ | | |
| 2004 03 22 | 704 | 0.1− | 0.9+ | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.1− | | |
| 2004 03 22 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2004 03 22 | 704 | 0.6+ | 0.3− | 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.5− | | |
| 2004 03 23 | 704 | 0.3+ | 0.6− | 2006 07 21 | G96 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 2004 03 23 | 704 | 1.3+ | 0.1+ | 2006 07 21 | G96 | 0.5− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2004 03 23 | 704 | 0.5+ | 0.1+ | 2006 07 21 | G96 | 0.2− | 0.5+ | | | | | | |

**2004 FN$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.08002 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29925508 | $\omega$ | 160.41864 | | −0.74212392 | | +0.66648241 |
| $a$ | 2.2136470 | $\Omega$ | 61.58621 | | −0.62522637 | | −0.65013433 |
| $e$ | 0.1033387 | $i$ | 4.63587 | | −0.24154518 | | −0.36486511 |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 24 | 621 | 0.5− | 0.5− | 2004 04 13 | 691 | 0.1− | 0.1+ | 2004 04 25 | 703 | 0.3+ | 0.1+ | | |
| 2004 03 24 | 621 | 0.6− | 0.3− | 2004 04 15 | 621 | 0.5− | 0.1+ | 2004 04 25 | 703 | 0.1+ | 0.1− | | |
| 2004 03 24 | 621 | 0.0 | 0.1− | 2004 04 15 | 621 | 0.3− | 0.2− | 2004 04 28 | 608 | 0.3+ | 0.1+ | | |
| 2004 03 26 | 621 | 0.2− | 0.2+ | 2004 04 15 | 621 | 0.5− | 0.1− | 2004 04 28 | 608 | 0.5+ | 0.3− | | |
| 2004 03 26 | 621 | 0.5− | 0.0 | 2004 04 16 | 704 | 0.8+ | 0.1+ | 2004 04 28 | 608 | 0.5+ | 0.3− | | |
| 2004 03 26 | 621 | 1.2− | 0.1− | 2004 04 16 | 704 | 0.3− | 0.9− | 2004 05 13 | 691 | 0.2+ | 0.2+ | | |
| 2004 03 27 | 621 | 0.1+ | 0.1− | 2004 04 16 | 704 | 0.6+ | 0.1+ | 2004 05 13 | 691 | 0.1− | 0.2+ | | |
| 2004 03 27 | 621 | 0.6+ | 1.0+ | 2004 04 16 | 704 | 0.2− | 0.2− | 2004 05 13 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 27 | 621 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.1+ | 0.4− | 2005 09 29 | 691 | 0.1+ | 0.0 | | |
| 2004 03 27 | 621 | 0.1− | 0.0 | 2004 04 19 | 704 | 0.1+ | 0.4− | 2005 09 29 | 691 | 0.1− | 0.2− | | |
| 2004 03 28 | 704 | 0.0 | 0.1+ | 2004 04 19 | 704 | 0.6− | 0.1+ | 2005 09 29 | 691 | 0.2+ | 0.0 | | |
| 2004 03 28 | 704 | 0.5+ | 0.3− | 2004 04 19 | 704 | 0.8− | 0.4+ | 2005 11 01 | G96 | 0.0 | 0.3− | | |
| 2004 03 28 | 704 | 0.4+ | 0.5− | 2004 04 19 | 704 | 0.7+ | 0.2− | 2005 11 01 | G96 | 0.1− | 0.0 | | |
| 2004 03 28 | 704 | 0.1− | 1.2+ | 2004 04 22 | 704 | 0.9+ | 0.2+ | 2005 11 01 | G96 | 0.4+ | 0.2− | | |
| 2004 04 12 | 621 | 0.2− | 0.3− | 2004 04 22 | 704 | 0.2+ | 0.4− | 2005 11 01 | G96 | 0.3− | 0.2− | | |
| 2004 04 12 | 621 | 0.3− | 0.2− | 2004 04 22 | 704 | 0.5+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2004 04 12 | 621 | 0.4− | 0.1− | 2004 04 22 | 704 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.2+ | | |
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2004 04 25 | 703 | 0.7− | 1.1− | 2006 11 27 | G96 | 0.1+ | 0.0 | | |
| 2004 04 13 | 691 | 0.2− | 0.0 | 2004 04 25 | 703 | 0.5− | 0.7− | 2006 11 27 | G96 | 0.2− | 0.3+ | | |

**2004 FH$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.28879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26797392 | $\omega$ | 115.22356 | | −0.93684209 | | −0.03240670 |
| $a$ | 2.3827274 | $\Omega$ | 64.62422 | | −0.16374500 | | −0.83919577 |
| $e$ | 0.2409307 | $i$ | 22.67083 | | +0.30905415 | | −0.54286302 |
| $P$ | 3.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 703 | 0.7+ | 0.7− | 2004 04 14 | 704 | (1.6+ | 0.6−) | 2006 10 22 | G96 | 0.5− | 0.5− | | |
| 2004 03 19 | 703 | 0.0 | 0.0 | 2004 04 14 | 704 | 0.5+ | 1.1+ | 2006 10 22 | G96 | 0.3− | 0.3− | | |
| 2004 03 19 | 703 | 0.3− | 0.2+ | 2004 04 14 | 704 | 0.9− | 0.7− | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2004 03 19 | 703 | (4.3− | 0.5−) | 2004 04 14 | 704 | (2.1− | 0.5−) | 2006 10 22 | G96 | 0.1+ | 0.7− | | |
| 2004 03 30 | 704 | 0.6− | 0.1+ | 2004 04 23 | 608 | 0.7+ | 0.6− | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2004 03 30 | 704 | 0.2− | 0.1− | 2004 04 23 | 608 | 1.0+ | 0.3− | 2006 11 19 | 691 | 0.0 | 0.3+ | | |
| 2004 03 30 | 704 | 0.0 | 0.5− | 2004 04 23 | 608 | 0.7+ | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 31 | 704 | 0.2− | 0.0 | 2004 04 26 | 704 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2004 03 31 | 704 | 0.3− | 0.0 | 2004 04 26 | 704 | 0.4− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2004 03 31 | 704 | 0.0 | 0.2+ | 2004 04 26 | 704 | 0.5− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 31 | 704 | 0.5− | 0.1− | 2004 04 26 | 704 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.1− | | |
| 2004 04 12 | 703 | 1.1− | 0.8+ | 2004 04 26 | 704 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.1+ | | |
| 2004 04 12 | 703 | 0.3+ | 0.9+ | 2004 05 13 | 704 | 0.3+ | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.1− | | |
| 2004 04 12 | 703 | 0.5− | 0.5− | 2004 05 13 | 704 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2004 04 12 | 703 | 0.7+ | 0.1+ | 2004 05 13 | 704 | 0.0 | 0.8− | | | | | | |

**2004 FO$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.31153 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23395388 | $\omega$ | 163.02487 | | −0.68193523 | | +0.55684011 |
| $a$ | 2.6084502 | $\Omega$ | 60.68234 | | −0.71821627 | | −0.38719716 |
| $e$ | 0.2655343 | $i$ | 32.94897 | | −0.13831028 | | −0.73485200 |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | (1.5+ | 1.9+) | 2004 04 26 | 704 | 0.1− | 0.1− | 2004 06 05 | 699 | 0.4+ | 1.1+ | | |
| 2004 02 17 | 704 | 0.6+ | 0.2− | 2004 04 26 | 704 | 0.6+ | 0.1+ | 2004 06 05 | 699 | 0.1− | 0.7+ | | |
| 2004 02 17 | 704 | 0.0 | 0.8− | 2004 04 26 | 704 | 0.6+ | 0.0 | 2004 06 05 | 699 | (0.2+ | 1.7+) | | |
| 2004 02 17 | 704 | 1.4+ | 0.8− | 2004 05 07 | 084 | 0.3+ | 0.3+ | 2004 06 12 | 704 | 0.5+ | 0.2+ | | |
| 2004 03 29 | 704 | 0.0 | 0.5+ | 2004 05 08 | 703 | 1.1− | 0.7− | 2004 06 12 | 704 | 1.0+ | 0.2− | | |
| 2004 03 29 | 704 | 0.2+ | 0.0 | 2004 05 08 | 703 | 0.1+ | 1.2− | 2004 06 12 | 704 | 0.0 | 0.2+ | | |
| 2004 03 29 | 704 | 0.3− | 0.3+ | 2004 05 08 | 703 | 0.6− | 1.2− | 2004 06 12 | 704 | 0.1+ | 0.1− | | |
| 2004 03 29 | 704 | 0.4− | 0.6+ | 2004 05 08 | 703 | 1.0− | 0.6− | 2004 06 12 | 704 | 1.1+ | 0.2− | | |
| 2004 03 29 | 704 | 0.4− | 0.2+ | 2004 05 08 | 084 | 0.4+ | 0.3− | 2004 06 14 | 704 | 0.2+ | 0.5+ | | |
| 2004 03 30 | 704 | 0.1+ | 0.6+ | 2004 05 09 | 084 | 0.2− | 0.2− | 2004 06 14 | 704 | 0.8+ | 0.2+ | | |
| 2004 03 30 | 704 | 0.1− | 0.5+ | 2004 05 12 | 683 | 0.2+ | 0.3+ | 2004 06 14 | 704 | 1.0+ | 0.2+ | | |
| 2004 03 30 | 704 | 0.3− | 0.3+ | 2004 05 12 | 683 | 0.9− | 1.4+ | 2004 06 14 | 704 | 0.6+ | 0.2+ | | |
| 2004 03 30 | 704 | 0.2− | 0.8+ | 2004 05 12 | 683 | 0.8− | 0.9+ | 2004 06 14 | 704 | 0.8+ | 0.2+ | | |
| 2004 03 30 | 704 | 0.1− | 0.5+ | 2004 05 12 | 084 | 0.0 | 0.1− | 2004 06 17 | 704 | 0.4+ | 0.2+ | | |
| 2004 04 09 | 644 | 0.2− | 0.4− | 2004 05 12 | 084 | 0.1− | 0.3+ | 2004 06 17 | 704 | 1.2+ | 0.3+ | | |
| 2004 04 09 | 644 | 0.4− | 0.5− | 2004 05 13 | 084 | 1.1− | 0.8− | 2004 06 17 | 704 | 0.2+ | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 09 | 644 | 0.5− | 0.4− | 2004 05 14 | 704 | 0.1+ | 0.5+ | 2004 06 17 | 704 | 0.7+ | 0.1+ |
| 2004 04 15 | 704 | 0.5− | 0.1− | 2004 05 14 | 704 | 0.0 | 0.1+ | 2004 06 17 | 704 | 0.6+ | 0.9+ |
| 2004 04 15 | 704 | 0.1− | 0.4+ | 2004 05 14 | 704 | 0.0 | 0.0 | 2004 07 05 | E12 | 1.6+ | 1.4− |
| 2004 04 15 | 704 | 0.5− | 0.1+ | 2004 05 14 | 704 | 0.3+ | 0.2+ | 2004 07 05 | E12 | (2.1+ | 1.0−) |
| 2004 04 15 | 704 | 0.1− | 0.2− | 2004 05 14 | 704 | 0.4− | 0.3− | 2004 07 05 | E12 | 0.5+ | 1.1− |
| 2004 04 15 | 704 | 0.4− | 0.1+ | 2004 05 14 | 084 | 0.7+ | 0.7− | 2004 07 05 | E12 | (2.3+ | 1.0−) |
| 2004 04 16 | 084 | 0.6+ | 0.9+ | 2004 05 16 | 084 | 0.1+ | 1.0− | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2004 04 17 | 084 | 0.2− | 0.1+ | 2004 05 20 | 084 | 0.5− | 0.9− | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2004 04 17 | 084 | 0.3+ | 1.0+ | 2004 05 22 | 084 | 0.5+ | 0.1− | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2004 04 19 | 084 | 1.0+ | 0.8+ | 2004 05 23 | 704 | 0.3+ | 0.0 | 2006 11 01 | G96 | 1.3− | 0.4− |
| 2004 04 22 | 084 | 0.7− | 0.1+ | 2004 05 23 | 704 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.8− | 0.3+ |
| 2004 04 24 | 084 | 0.6− | 0.0 | 2004 05 23 | 704 | (2.8+ | 1.0−) | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2004 04 25 | 084 | 0.7+ | 0.6− | 2004 05 23 | 704 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2004 04 26 | 084 | 0.4+ | 0.4− | 2004 05 23 | 704 | 0.0 | 0.0 | 2006 11 22 | 691 | 1.1+ | 0.9+ |
| 2004 04 26 | 704 | 0.0 | 0.1+ | 2004 05 25 | 084 | 1.3− | 0.1− | 2006 11 22 | 691 | 0.4− | 0.0 |
| 2004 04 26 | 704 | 0.3− | 0.6+ | 2004 06 05 | 699 | 0.9− | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.2+ |

**2004 FE$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.07414 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29698328 | $\omega$ | 314.71567 | | −0.94185660 | | +0.33155464 |
| $a$ | 2.2249216 | $\Omega$ | 244.71793 | | −0.28870853 | | −0.88159832 |
| $e$ | 0.1392267 | $i$ | 3.45981 | | −0.17191137 | | −0.33594036 |
| $P$ | 3.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.0 | 0.0 | 2004 03 26 | 699 | (2.3− | 0.2+) | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 1995 10 20 | 691 | 0.2− | 0.5+ | 2004 03 26 | 699 | 0.1− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.5+ |
| 1995 10 20 | 691 | 0.0 | 0.1− | 2004 03 27 | 703 | (1.7+ | 0.1+) | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 0.2− | 1.0+ | 2004 03 27 | 703 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.4− | 0.2+ |
| 2004 03 16 | 703 | (1.7− | 1.8−) | 2004 03 27 | 703 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 03 16 | 703 | 0.2+ | 0.0 | 2004 03 27 | 703 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2004 03 16 | 704 | 0.6+ | 0.5− | 2004 04 16 | 704 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2004 03 16 | 703 | 0.4− | 0.2+ | 2004 04 16 | 704 | 1.0+ | 0.7+ | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2004 03 16 | 704 | 1.0+ | 0.9− | 2004 04 16 | 704 | 0.6− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.1+ |
| 2004 03 16 | 703 | 0.6+ | 0.4− | 2004 04 16 | 704 | 0.8+ | 0.9+ | 2006 11 20 | G96 | 0.5+ | 0.1− |
| 2004 03 19 | 704 | 0.7− | 0.6− | 2004 04 19 | 704 | 0.6+ | 0.4− | 2006 11 20 | G96 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 0.4− | 0.1− | 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 03 19 | 704 | 0.8− | 0.2− | 2004 04 19 | 704 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 0.2− | 0.5+ | 2004 04 19 | 704 | 0.6+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 03 26 | 699 | 1.2− | 0.6− | 2004 04 19 | 704 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2004 03 26 | 699 | 0.6− | 0.6+ | 2006 10 22 | G96 | 0.4− | 0.5+ | | | | |

**2004 FP$_{34}$ = 2006 QE$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.60387 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17924745 | $\omega$ | 353.92898 | | −0.93405757 | | +0.34857666 |
| $a$ | 3.1153061 | $\Omega$ | 206.88029 | | −0.32000341 | | −0.91347893 |
| $e$ | 0.0619944 | $i$ | 9.89023 | | −0.15853793 | | −0.20988225 |
| $P$ | 5.50 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 14 | 691 | 0.4+ | 1.5+ | 2004 03 19 | 704 | 1.2+ | 0.8− | 2006 08 29 | 703 | 0.3+ | 0.1+ |
| 1999 04 14 | 691 | 0.2− | 0.9− | 2004 03 19 | 704 | 1.0+ | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.1+ |
| 1999 04 14 | 691 | 0.1− | 0.6− | 2004 03 19 | 704 | 0.9+ | 0.4− | 2006 09 13 | 644 | 0.3+ | 0.2+ |
| 2001 10 11 | 644 | 0.3− | 0.2+ | 2004 04 24 | 691 | 0.5− | 0.0 | 2006 09 13 | 644 | 0.3+ | 0.4+ |
| 2001 10 11 | 644 | 0.0 | 0.5+ | 2004 04 24 | 691 | 0.5− | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.1+ |
| 2001 10 11 | 644 | 0.1− | 0.4+ | 2004 04 24 | 691 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.8+ |
| 2004 03 16 | 704 | 1.3+ | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.4− |
| 2004 03 16 | 704 | 0.8+ | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.5+ | 1.3− |
| 2004 03 16 | 704 | 0.2− | 1.3+ | 2006 08 29 | 703 | 1.6− | 0.7+ | | | | |

**2004 FY$_{34}$ = 2006 SV$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.44223 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21548485 | $\omega$ | 127.18321 | | +0.07656558 | | −0.99556406 |
| $a$ | 2.7554438 | $\Omega$ | 318.32249 | | +0.88675104 | | +0.09306563 |
| $e$ | 0.0364285 | $i$ | 4.71696 | | +0.45586216 | | −0.01382018 |
| $P$ | 4.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.1− | 0.6+ | 2004 03 20 | 704 | (1.5+ | 1.1+) | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2001 08 21 | 691 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 08 21 | 691 | 0.3− | 0.6+ | 2004 03 20 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 699 | (1.8− | 0.8−) |
| 2002 12 06 | 704 | 1.0− | 0.3+ | 2004 03 20 | 704 | 1.1+ | 1.2+ | 2006 09 27 | 699 | (1.9− | 1.4+) |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2004 03 20 | 704 | 0.8+ | 1.2+ | 2006 09 27 | 699 | 1.0− | 1.3+ |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2004 03 26 | 699 | 0.0 | 1.1+ | 2006 09 27 | 699 | 1.3− | 0.4− |
| 2002 12 06 | 704 | 0.4+ | 0.0 | 2004 03 26 | 699 | 0.2− | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.3+ | 1.0+ | 2004 03 26 | 699 | (1.7− | 1.2+) | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2004 03 16 | 691 | 0.3+ | 0.5+ | 2004 03 26 | 699 | 0.7− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2004 03 27 | 704 | 0.3− | 1.0+ | 2006 10 17 | 703 | 1.3− | 0.3− |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2004 03 27 | 704 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.8+ | 0.6+ |
| 2004 03 19 | 704 | (2.0+ | 0.8+) | 2004 03 27 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 703 | (1.8− | 0.1−) |
| 2004 03 19 | 704 | (0.1− | 1.6+) | 2004 03 27 | 704 | (0.1+ | 1.9+) | 2006 10 17 | 703 | 1.3− | 0.1− |
| 2004 03 19 | 704 | 1.4+ | 0.3+ | 2004 03 27 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2004 03 19 | 704 | (1.7+ | 1.3+) | 2006 09 17 | 703 | 1.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2004 03 19 | 704 | 1.0+ | 1.4+ | 2006 09 17 | 703 | 0.3+ | 1.2+ | 2006 10 20 | 644 | 0.4+ | 0.4+ |
| 2004 03 19 | 704 | 0.5+ | 1.1+ | 2006 09 17 | 703 | 0.8− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2004 03 19 | 704 | 0.9+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2004 03 20 | 704 | 0.5+ | 1.1+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2004 03 20 | 704 | (1.3+ | 1.9+) | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2004 03 20 | 704 | 1.5+ | 0.8+ | 2006 09 19 | 703 | (3.5− | 0.2+) | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2004 03 20 | 704 | (2.1+ | 0.9+) | 2006 09 19 | 703 | 1.0− | 0.5+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 704 | (2.7+ | 0.7+) | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.2− |

**2004 FQ$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.11555 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22872080 | $\omega$ | 200.49419 | | −0.76891817 | | +0.63761635 |
| $a$ | 2.6480872 | $\Omega$ | 19.35401 | | −0.56506046 | | −0.64333422 |
| $e$ | 0.1493903 | $i$ | 8.15553 | | −0.29911792 | | −0.42375285 |
| $P$ | 4.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.6+ | 0.2+ | 2004 03 28 | 704 | 0.2− | 0.1+ | 2004 04 23 | 691 | 0.2− | 0.2+ |
| 2004 03 16 | 704 | 0.0 | 0.9+ | 2004 03 28 | 704 | 1.2− | 0.7− | 2004 04 23 | 691 | 0.1− | 0.0 |
| 2004 03 16 | 704 | 0.2+ | 0.3− | 2004 03 28 | 704 | 0.7− | 0.3− | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2004 03 16 | 704 | 0.8+ | 0.8+ | 2004 04 12 | 699 | 1.2+ | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 2004 03 16 | 704 | 0.7− | 0.3+ | 2004 04 12 | 699 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 2004 03 19 | 704 | 0.2+ | 0.8+ | 2004 04 12 | 699 | 0.2+ | 0.6− | 2006 10 23 | 691 | 0.0 | 0.4+ |
| 2004 03 19 | 704 | 0.7+ | 0.5+ | 2004 04 12 | 699 | 0.7− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2004 03 19 | 704 | 1.4+ | 1.2+ | 2004 04 14 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.6+ |
| 2004 03 19 | 704 | 0.5+ | 0.4+ | 2004 04 14 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 2004 03 22 | 704 | 0.5+ | 0.7− | 2004 04 14 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.5− |
| 2004 03 22 | 704 | 0.4+ | 0.5− | 2004 04 15 | 699 | 0.1− | 1.3+ | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 2004 03 22 | 704 | 0.1+ | 0.5− | 2004 04 15 | 699 | 0.8− | 0.7− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2004 03 22 | 704 | 0.1+ | 0.5− | 2004 04 15 | 699 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2004 03 22 | 704 | 0.2+ | 0.7− | 2004 04 15 | 699 | 0.3+ | 1.0+ | 2006 10 31 | 691 | 0.1− | 0.4− |
| 2004 03 24 | 699 | 0.8+ | 0.2− | 2004 04 21 | 704 | 0.3− | 0.4− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 03 24 | 699 | 0.1+ | 0.5− | 2004 04 21 | 704 | 0.5− | 0.7− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2004 03 24 | 699 | 0.8− | 1.4− | 2004 04 21 | 704 | 1.0− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2004 03 24 | 699 | 0.5− | 0.6− | 2004 04 21 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2004 03 28 | 704 | 0.1− | 0.0 | 2004 04 21 | 704 | (2.0− | 0.6−) | | | | |
| 2004 03 28 | 704 | 0.5+ | 0.3− | 2004 04 23 | 691 | 0.2− | 0.2+ | | | | |

**2004 FA$_{36}$ = 2004 FU$_{163}$**

Id. Minor Planet Center (d, *MPO* 77916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 269.82571 | | (2000.0) | | | |
| $n$ | 0.24492536 | $\omega$ | 319.08241 | | −0.66552923 | −0.74620895 |
| $a$ | 2.5299593 | $\Omega$ | 172.59298 | | +0.71242258 | −0.64134666 |
| $e$ | 0.1307011 | $i$ | 6.94589 | | +0.22254195 | −0.17845634 |
| $P$ | 4.02 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.4+ | 0.7− | 2004 03 24 | 699 | 1.0− | 0.9+ | 2004 04 19 | 704 | 0.4+ | 0.5− |
| 2004 03 16 | 704 | 0.6− | 0.7− | 2004 03 24 | 699 | 0.3+ | 0.3+ | 2004 04 19 | 704 | 0.3− | 0.2− |
| 2004 03 16 | 704 | 0.0 | 0.8− | 2004 03 28 | 704 | (1.9+ | 3.0−) | 2006 10 16 | 703 | 1.1− | 0.4+ |
| 2004 03 19 | 704 | 0.1− | 0.6+ | 2004 03 28 | 704 | 0.7+ | 1.0+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2004 03 19 | 704 | (1.6+ | 0.2−) | 2004 03 28 | 704 | 0.9+ | 1.0+ | 2006 10 16 | 703 | 0.2+ | 0.5+ |
| 2004 03 19 | 704 | 0.4+ | 1.0− | 2004 03 28 | 704 | 1.3+ | 0.2− | 2006 10 16 | 703 | 0.7+ | 1.2+ |
| 2004 03 19 | 704 | 0.3+ | 1.3+ | 2004 03 28 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2004 03 19 | 704 | 0.4− | 1.0− | 2004 03 28 | 704 | 1.1+ | 0.2− | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2004 03 22 | 704 | 0.6− | 0.2− | 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2004 03 22 | 704 | 0.2− | 0.8+ | 2004 03 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2004 03 22 | 704 | 0.3− | 0.5− | 2004 04 11 | 644 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2004 03 22 | 704 | 0.6− | 0.4− | 2004 04 11 | 644 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2004 03 22 | 704 | 0.1+ | 0.2+ | 2004 04 11 | 644 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2004 03 24 | 699 | 0.5− | 0.5− | 2004 04 19 | 704 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2004 03 24 | 699 | 0.7+ | 0.4+ | 2004 04 19 | 704 | 0.1+ | 0.1+ | | | | |

### 2004 FY$_{37}$ = 2006 RU$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 150.84950 | | (2000.0) | | | |
| $n$ | 0.21380077 | $\omega$ | 202.46416 | | −0.72584437 | +0.68694380 |
| $a$ | 2.7698943 | $\Omega$ | 21.05255 | | −0.61514002 | −0.62516976 |
| $e$ | 0.0679707 | $i$ | 5.66676 | | −0.30781930 | −0.37050098 |
| $P$ | 4.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1− | 0.1+ | 2004 03 21 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.3− | 0.0 |
| 2001 05 24 | 807 | 0.1− | 0.3+ | 2004 03 21 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.3+ |
| 2004 02 29 | 691 | 0.2− | 0.0 | 2004 03 30 | 691 | 0.5+ | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2004 02 29 | 691 | 0.3− | 0.3+ | 2004 03 30 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.3− |
| 2004 02 29 | 691 | 0.4− | 0.1+ | 2004 03 30 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.4− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3+ |
| 2004 03 19 | 704 | 0.7+ | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2004 03 19 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2004 03 19 | 704 | 0.1− | 0.9− | 2006 09 18 | 691 | 0.1+ | 0.5+ | | | | |
| 2004 03 21 | 691 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.5+ | 0.1− | | | | |

### 2004 FJ$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.99319 | | (2000.0) | | | |
| $n$ | 0.23807162 | $\omega$ | 281.69691 | | +0.37644696 | −0.92557830 |
| $a$ | 2.5782853 | $\Omega$ | 146.10272 | | +0.87542732 | +0.34129310 |
| $e$ | 0.0818783 | $i$ | 4.10324 | | +0.30317437 | +0.16377980 |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.8− | 1.1+ | 2004 03 19 | 704 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2002 11 07 | 704 | 0.2− | 0.6+ | 2004 03 19 | 704 | 0.9− | 1.3− | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2002 11 07 | 704 | 1.0+ | 0.5+ | 2004 03 19 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.6+ | 1.2− |
| 2002 11 23 | 644 | 0.2+ | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.9− | 0.0 |
| 2002 11 23 | 644 | 0.1− | 0.0 | 2004 03 24 | 699 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.9− |
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2004 03 24 | 699 | 0.1− | 0.8+ | 2006 11 13 | 703 | 0.0 | 0.6− |
| 2002 12 01 | 704 | 1.0− | 0.2− | 2004 03 24 | 699 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.0 |
| 2002 12 01 | 704 | 0.4+ | 0.3− | 2004 03 24 | 699 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.5− | 1.1− |
| 2002 12 01 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.9+ | 2006 11 20 | 704 | (0.6+ | 2.4+) |
| 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.3+ | 0.5+ | 2006 11 20 | 704 | 0.5− | 0.3− |
| 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | (1.6− | 0.5−) | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.1− |

### 2004 FY$_{39}$ = 2006 SG$_{320}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 292.34546 | | (2000.0) | | | |
| $n$ | 0.23673141 | $\omega$ | 345.59662 | | −0.04060353 | −0.99819653 |
| $a$ | 2.5880071 | $\Omega$ | 106.71586 | | +0.92123291 | −0.05453431 |
| $e$ | 0.0938631 | $i$ | 2.64611 | | +0.38688664 | +0.02509393 |
| $P$ | 4.16 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.2− | 0.3+ | 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.6+ |
| 1996 04 18 | 691 | 0.2+ | 0.2+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.5+ |
| 1996 04 18 | 691 | 0.4+ | 0.6+ | 2004 03 19 | 704 | (2.0+ | 1.6+) | 2006 10 01 | 691 | 0.1+ | 0.7+ |
| 1999 01 23 | 691 | 0.4+ | 0.9− | 2004 03 22 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 1999 01 23 | 691 | 0.7− | 1.7+ | 2004 03 22 | 704 | 0.7− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 1999 01 23 | 691 | 0.1+ | 0.5− | 2004 03 22 | 704 | 0.8+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2002 11 11 | 704 | 0.4− | 0.2+ | 2004 03 22 | 704 | 0.5− | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.0 |
| 2002 11 11 | 704 | 0.4+ | 1.2− | 2004 03 26 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.1− |
| 2002 11 11 | 704 | 0.4+ | 1.0− | 2004 03 26 | 704 | 0.6− | 1.2+ | 2006 10 21 | 703 | 1.0+ | 0.4− |
| 2002 11 11 | 704 | 1.4+ | 1.1− | 2004 03 26 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.5− |
| 2004 03 16 | 333 | 0.2+ | 0.0 | 2004 03 26 | 704 | 0.2+ | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2004 03 16 | 333 | 0.7+ | 0.7− | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2004 03 16 | 333 | 0.4+ | 0.6+ | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2004 03 18 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | (2.3+ | 2.0+) |
| 2004 03 19 | 704 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.1− |

### 2004 FB$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.26062 | | (2000.0) | | | |
| $n$ | 0.18695420 | $\omega$ | 295.82584 | | +0.26165187 | +0.96427094 |
| $a$ | 3.0290927 | $\Omega$ | 349.09649 | | −0.78831105 | +0.18871953 |
| $e$ | 0.1373785 | $i$ | 12.66460 | | −0.55686982 | +0.18592067 |
| $P$ | 5.27 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.2− | 0.6− | 2004 03 21 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.6+ | 2004 03 23 | 704 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.5+ | 0.5+ |
| 2001 11 12 | 704 | 1.1+ | 0.8+ | 2004 03 23 | 704 | 0.0 | 0.6− | 2006 10 04 | G96 | 0.0 | 0.6− |
| 2004 02 26 | 704 | 1.0+ | 0.1− | 2004 03 23 | 704 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.4+ | 0.4− |
| 2004 02 26 | 704 | 0.2− | 0.3+ | 2004 03 23 | 704 | 1.0− | 0.3− | 2006 10 04 | G96 | 1.3+ | 0.5− |
| 2004 02 26 | 704 | 0.1− | 0.3+ | 2004 03 30 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2004 02 26 | 704 | 0.3− | 0.2− | 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.4− | 0.3− |
| 2004 03 18 | 704 | 0.0 | 0.7− | 2004 03 30 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | (0.3+ | 1.7−) |
| 2004 03 18 | 704 | 0.1+ | 0.3− | 2004 03 31 | 691 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.8− | 1.1− |
| 2004 03 18 | 704 | 0.0 | 0.1+ | 2004 03 31 | 691 | 0.5− | 0.1+ | 2006 10 17 | 703 | (2.9− | 1.7+) |
| 2004 03 18 | 704 | 0.3− | 0.3− | 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 09 21 | A13 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2004 03 19 | 704 | 0.2− | 0.0 | 2006 09 21 | A13 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2004 03 19 | 704 | 0.3+ | 0.0 | 2006 09 21 | A13 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 09 27 | A13 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2004 03 19 | 704 | 1.0+ | 0.2− | 2006 09 27 | A13 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2004 03 21 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.1− | 0.3+ | | | | |
| 2004 03 21 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | (1.6+ | 0.9−) | | | | |

### 2004 FC$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 195.18066 | | (2000.0) | | | |
| $n$ | 0.29338189 | $\omega$ | 308.05986 | | −0.09334595 | +0.99441895 |
| $a$ | 2.2430925 | $\Omega$ | 316.50433 | | −0.88964452 | −0.10547893 |
| $e$ | 0.1084343 | $i$ | 4.09635 | | −0.44701136 | +0.00226787 |
| $P$ | 3.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 1.3+ | 0.1+ | 2004 03 20 | 699 | (1.7− | 1.1+) | 2005 09 30 | 644 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 0.2+ | 1.1+ | 2004 03 20 | 704 | 0.5− | 0.2− | 2005 10 08 | 704 | 0.2+ | 0.7+ |
| 2004 03 18 | 704 | 0.1− | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.5− | 2005 10 08 | 704 | 0.2− | 0.2− |
| 2004 03 18 | 704 | 0.0 | 0.3− | 2004 03 20 | 704 | 0.2− | 0.0 | 2005 10 08 | 704 | 0.2− | 0.3+ |
| 2004 03 18 | 704 | 0.5− | 0.3− | 2004 03 20 | 704 | 0.6+ | 0.9− | 2005 10 08 | 704 | 0.7+ | 0.5− |
| 2004 03 19 | 704 | 0.4+ | 0.4− | 2004 03 20 | 699 | (2.6− | 0.7−) | 2005 11 03 | G96 | 0.7− | 0.4− |
| 2004 03 19 | 704 | 0.5+ | 0.8+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2005 11 03 | G96 | 0.8− | 0.3− |
| 2004 03 19 | 704 | 0.0 | 0.2− | 2004 03 20 | 704 | 0.6+ | 1.1+ | 2005 11 03 | G96 | 1.0− | 0.3− |
| 2004 03 19 | 704 | 0.8+ | 0.0 | 2004 03 20 | 704 | 0.8− | 0.1+ | 2005 11 03 | G96 | 0.5− | 0.2− |
| 2004 03 19 | 704 | 0.2− | 0.6+ | 2004 03 27 | 704 | 0.7− | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2004 03 19 | 704 | 0.1+ | 0.1+ | 2004 03 27 | 704 | 1.0− | 0.4− | 2006 11 22 | G96 | 0.5+ | 0.3− |
| 2004 03 19 | 704 | 0.1+ | 0.3+ | 2004 03 27 | 703 | 0.9+ | 0.5+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2004 03 19 | 704 | 0.2+ | 0.3+ | 2004 03 27 | 704 | 0.6− | 0.0 | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2004 03 19 | 704 | 0.1+ | 0.4+ | 2004 03 27 | 703 | 1.1+ | 0.8+ | 2006 11 27 | 291 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | (1.7− | 0.1+) | 2004 03 27 | 704 | 0.2+ | 0.7− | 2006 11 27 | 291 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 1.1− | 0.2+ | 2004 03 27 | 703 | (1.2− | 1.7+) | 2006 11 27 | 291 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 0.7+ | 0.1+ | 2004 03 27 | 703 | 0.6+ | 0.7+ | 2006 11 27 | G96 | 0.3− | 0.6− |
| 2004 03 20 | 699 | (2.4− | 1.3−) | 2005 09 01 | 691 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2004 03 20 | 699 | 1.0− | 0.4− | 2005 09 01 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2004 03 20 | 704 | 0.3− | 0.1+ | 2005 09 01 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.7− |
| 2004 03 20 | 704 | 0.1+ | 0.4− | 2005 09 30 | 644 | 0.5− | 0.1− | | | | |
| 2004 03 20 | 704 | 0.0 | 0.1+ | 2005 09 30 | 644 | 0.1+ | 0.2+ | | | | |

**2004 FN$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.12247 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21331847 | $\omega$ | 357.32999 | | −0.95069336 | | −0.30689919 |
| $a$ | 2.7740679 | $\Omega$ | 164.57033 | | +0.28756131 | | −0.92625089 |
| $e$ | 0.1011210 | $i$ | 9.66465 | | +0.11614919 | | −0.21879711 |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.3− | 0.2− | 2004 03 21 | 691 | 0.3− | 0.0 | 2004 04 20 | 704 | 0.2+ | 0.5+ |
| 2004 03 18 | 691 | 0.2− | 0.1− | 2004 03 22 | 699 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.0 | 0.6− |
| 2004 03 18 | 691 | 0.1− | 0.1− | 2004 03 22 | 699 | (0.9+ | 2.2+) | 2006 10 02 | G96 | 0.4− | 0.6− |
| 2004 03 19 | 704 | 0.2− | 0.2+ | 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2004 03 19 | 704 | 0.3+ | 0.6+ | 2004 03 22 | 699 | 0.5+ | 0.5− | 2006 10 02 | G96 | 0.5− | 0.1− |
| 2004 03 19 | 704 | 0.2+ | 0.2+ | 2004 03 22 | 704 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.3+ |
| 2004 03 19 | 704 | 1.1+ | 0.2− | 2004 03 22 | 704 | 0.7+ | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.2+ |
| 2004 03 20 | 704 | 0.6+ | 0.1− | 2004 03 22 | 699 | 0.2− | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.6+ | 0.0 | 2004 03 22 | 704 | 0.8+ | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2004 03 20 | 704 | 0.4− | 0.1+ | 2004 03 28 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 0.4+ | 0.5+ | 2004 03 28 | 691 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.2− | 0.0 |
| 2004 03 20 | 704 | 0.9+ | 0.0 | 2004 03 28 | 691 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2004 04 20 | 704 | 0.5+ | 0.3− | 2006 10 03 | G96 | 0.1− | 0.0 |
| 2004 03 21 | 691 | 0.2− | 0.2− | 2004 04 20 | 704 | 0.3− | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.2− |

**2004 FT$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.95089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27290196 | $\omega$ | 108.65975 | | −0.59528802 | | −0.79169531 |
| $a$ | 2.3539557 | $\Omega$ | 19.85739 | | +0.49576697 | | −0.49636102 |
| $e$ | 0.2890132 | $i$ | 23.84085 | | +0.63233479 | | −0.35615204 |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 645 | 0.1− | 0.1+ | 2004 03 30 | 703 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2004 01 28 | 645 | 0.1− | 0.0 | 2004 04 02 | 608 | 0.1− | 0.8− | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 704 | 0.1− | 0.6+ | 2004 04 02 | 608 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | 0.7+ | 0.3+ | 2004 04 02 | 608 | 0.5− | 0.3− | 2006 09 23 | 691 | 0.2− | 0.1− |
| 2004 03 15 | 704 | 0.4+ | 0.2+ | 2004 04 10 | 644 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.2− |
| 2004 03 15 | 704 | 0.3+ | 0.6+ | 2004 04 10 | 644 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.3− |
| 2004 03 15 | 704 | 0.2+ | 0.4+ | 2004 04 10 | 644 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2004 03 23 | 704 | 0.6+ | 0.1+ | 2004 04 19 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.1− |
| 2004 03 23 | 704 | 0.8+ | 0.2− | 2004 04 19 | 704 | (1.8+ | 0.6+) | 2006 10 11 | 691 | 0.2− | 0.1− |
| 2004 03 23 | 704 | 0.7+ | 0.4− | 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2004 03 23 | 704 | 0.6+ | 0.1− | 2004 04 19 | 704 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 2004 03 23 | 704 | 0.4+ | 0.1+ | 2004 04 23 | 703 | 0.3+ | 1.2+ | 2006 10 15 | 691 | 0.2+ | 0.0 |
| 2004 03 28 | 691 | 0.0 | 0.1− | 2004 04 23 | 703 | 0.8+ | 1.4+ | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2004 03 28 | 691 | 0.1− | 0.2− | 2004 04 23 | 703 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2004 03 28 | 691 | 0.1− | 0.3− | 2004 04 23 | 703 | (0.8+ | 2.4+) | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2004 03 30 | 703 | 0.4− | 0.4− | 2004 04 28 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.8+ |
| 2004 03 30 | 703 | 0.2− | 0.8− | 2004 04 28 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.4+ |
| 2004 03 30 | 703 | 0.8− | 0.1− | 2004 04 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |

**2004 FN$_{43}$ = 2006 SN$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.93537 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21877805 | $\omega$ | 286.09114 | | +0.69680134 | | +0.71535652 |
| $a$ | 2.7277227 | $\Omega$ | 28.30210 | | −0.60871758 | | +0.62832955 |
| $e$ | 0.0453458 | $i$ | 6.33043 | | −0.37938212 | | +0.30572377 |
| $P$ | 4.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.8+ | 0.0 | 2006 09 25 | 673 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.1+ | 1.1+ | 2006 09 25 | 673 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 03 19 | 704 | 1.1+ | 0.5− | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2004 03 19 | 704 | 0.9+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2004 03 19 | 704 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.7− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2004 03 20 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.5− |
| 2004 03 20 | 691 | 0.1− | 0.1− | 2006 09 29 | 673 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2004 03 20 | 691 | 0.1− | 0.1− | 2006 09 29 | 673 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.5− |
| 2004 03 22 | 704 | (2.6+ | 0.8+) | 2006 09 29 | 673 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2004 03 22 | 704 | 0.2− | 0.7− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2004 03 22 | 704 | 0.2− | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2004 03 22 | 704 | 0.2− | 0.9+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2004 03 28 | 704 | 0.9+ | 1.0− | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2004 03 28 | 704 | 0.9+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.9− |
| 2004 03 28 | 704 | 0.9− | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2004 03 29 | 691 | 0.5− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2004 03 29 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2004 03 29 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.1+ | | | | |
| 2006 09 25 | 673 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ | | | | |

**2004 FY$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.86371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18609310 | $\omega$ | 220.10254 | | −0.89090506 | | +0.45285373 |
| $a$ | 3.0384298 | $\Omega$ | 346.69431 | | −0.36825656 | | −0.76507969 |
| $e$ | 0.0866287 | $i$ | 8.69920 | | −0.26584822 | | −0.45779532 |
| $P$ | 5.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | 0.8− | 0.8+ | 2004 04 12 | 644 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2004 03 16 | 703 | 0.8− | 0.9+ | 2004 04 12 | 644 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2004 03 16 | 703 | 1.3− | 0.2− | 2004 04 12 | 644 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.1− |
| 2004 03 16 | 703 | 1.3+ | 0.7− | 2004 04 16 | 644 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.1+ | 0.3+ | 2004 04 16 | 644 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.3+ | 0.3+ |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2004 04 16 | 644 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.5+ | 1.1+ | 2004 04 19 | 704 | 0.9− | 1.4− | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2004 03 18 | 704 | 0.7+ | 1.0+ | 2004 04 19 | 704 | 0.7− | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.1− | 1.0+ | 2004 04 19 | 704 | 0.0 | 0.6− | 2006 10 22 | G96 | 0.1− | 1.1− |
| 2004 03 20 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 704 | 1.2+ | 0.2− | 2006 10 22 | G96 | 0.4− | 1.0− |
| 2004 03 20 | 704 | 0.1+ | 0.1− | 2004 04 19 | 704 | 1.0+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2004 03 20 | 704 | 1.1+ | 0.5− | 2006 09 25 | 691 | 0.3− | 0.1− | | | | |
| 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |

**2004 FD$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.24439 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25613506 | $\omega$ | 327.27351 | | −0.99166708 | | −0.12592232 |
| $a$ | 2.4555947 | $\Omega$ | 205.53421 | | +0.12754744 | | −0.92999264 |
| $e$ | 0.1373089 | $i$ | 3.61819 | | +0.01811232 | | −0.34533645 |
| $P$ | 3.85 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.7+ | 0.9+ | 2004 03 27 | 704 | 0.8+ | 0.7− | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 1994 10 09 | 691 | 0.5− | 0.3− | 2004 04 14 | 691 | 0.4+ | 0.7+ | 2006 11 11 | 691 | 0.3+ | 0.6+ |
| 1994 10 09 | 691 | 0.4− | 0.1+ | 2004 04 14 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2004 03 18 | 704 | 0.7+ | 0.6+ | 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 2004 03 18 | 704 | 0.8− | 1.3− | 2004 04 21 | 704 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.8− | 2004 04 21 | 704 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2004 03 18 | 704 | 0.6− | 0.4− | 2004 04 21 | 704 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2004 03 20 | 704 | 1.4− | 0.7− | 2004 04 21 | 704 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2004 03 20 | 704 | 0.6− | 0.9− | 2004 04 23 | 691 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.5− | 0.3+ |
| 2004 03 20 | 704 | 0.7− | 0.3+ | 2004 04 23 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2004 03 20 | 704 | 0.7+ | 1.0− | 2004 04 23 | 291 | 0.5− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2004 03 27 | 704 | 1.4+ | 0.1− | 2004 04 23 | 691 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 1.4+ | 0.1− | 2004 04 23 | 291 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.3− |
| 2004 03 27 | 704 | 0.9+ | 0.6− | 2004 04 23 | 291 | 0.0 | 0.3+ | | | | |

**2004 FG$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.75412 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24201944 | $\omega$ | 318.19912 | | −0.99777589 | | +0.04384070 |
| $a$ | 2.5501705 | $\Omega$ | 224.39072 | | −0.02355343 | | −0.93656857 |
| $e$ | 0.1331013 | $i$ | 4.11612 | | −0.06235784 | | −0.34773165 |
| $P$ | 4.07 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.2− | 0.2+ | 2004 03 31 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.1− | 0.2− | 2004 03 31 | 704 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.4+ | 0.3+ |
| 2004 03 18 | 704 | 0.4+ | 1.1− | 2004 03 31 | 704 | 0.1+ | 0.9+ | 2006 10 16 | 691 | 0.2− | 0.2− |
| 2004 03 18 | 704 | 0.2− | 0.3− | 2004 04 11 | 703 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.3+ | 0.0 | 2004 04 11 | 703 | 1.0+ | 1.0+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2004 03 20 | 704 | (0.4− | 1.7−) | 2004 04 11 | 703 | 1.2− | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2004 03 20 | 699 | (0.3+ | 2.2+) | 2004 04 11 | 703 | 1.2+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2004 03 20 | 704 | 0.2+ | 0.6− | 2004 04 16 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2004 03 20 | 704 | 0.2+ | 0.5− | 2004 04 16 | 644 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.7+ | 0.4+ |
| 2004 03 20 | 699 | 1.1− | 0.7+ | 2004 04 16 | 644 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.5+ |
| 2004 03 20 | 704 | 0.3− | 0.2− | 2004 04 16 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2004 03 20 | 699 | 0.6− | 0.2− | 2004 04 16 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2004 03 20 | 699 | 1.1− | 0.4− | 2004 04 16 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 1.1+ | 0.3− | 2004 04 20 | 691 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.7+ | 0.0 |
| 2004 03 27 | 704 | 0.1− | 0.6+ | 2004 04 20 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2004 03 27 | 704 | 0.6+ | 0.1+ | 2004 04 20 | 691 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 03 27 | 704 | 0.4+ | 0.3− | 2006 10 12 | 691 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2004 03 31 | 704 | 0.2− | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.1+ | | | | |

**2004 FD$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.45233 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17348192 | $\omega$ | 71.83542 | | −0.49339050 | | +0.86898099 |
| $a$ | 3.1839524 | $\Omega$ | 168.37533 | | −0.85211414 | | −0.47414596 |
| $e$ | 0.1131797 | $i$ | 10.84684 | | −0.17454888 | | −0.14162504 |
| $P$ | 5.68 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2004 03 30 | 703 | 0.8+ | 0.3− | 2004 04 20 | E12 | 0.1− | 0.7− |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2004 04 15 | 644 | 0.2+ | 0.1− | 2004 04 20 | E12 | 0.2− | 0.4− |
| 2004 03 18 | 691 | 0.1− | 0.1− | 2004 04 15 | 644 | 0.5+ | 0.1− | 2004 04 20 | E12 | 0.3+ | 0.2− |
| 2004 03 20 | 704 | 0.4+ | 0.3+ | 2004 04 15 | 644 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.4+ | 0.8− | 2004 04 15 | 049 | 0.5− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.0 | 0.4+ | 2004 04 15 | 049 | 0.6− | 1.0− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2004 03 20 | 704 | 0.6− | 0.5+ | 2004 04 15 | 049 | 0.6− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.5− |
| 2004 03 20 | 704 | 0.2− | 0.8+ | 2004 04 20 | 704 | 0.5− | 1.5+ | 2006 10 11 | 644 | 0.4+ | 0.2− |
| 2004 03 30 | 703 | 1.1+ | 1.0+ | 2004 04 20 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2004 03 30 | 703 | 0.1− | 0.5+ | 2004 04 20 | 704 | 0.5+ | 0.7+ | | | | |
| 2004 03 30 | 703 | 0.0 | 0.5− | 2004 04 20 | E12 | 1.1− | 0.3− | | | | |

**2004 FR$_{51}$ = 2006 RU$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.68089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21276808 | $\omega$ | 174.88656 | | −0.98467020 | | +0.16732756 |
| $a$ | 2.7788498 | $\Omega$ | 15.01947 | | −0.16601509 | | −0.81241121 |
| $e$ | 0.0093327 | $i$ | 10.95668 | | −0.05351249 | | −0.55856022 |
| $P$ | 4.63 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 703 | 0.2− | 0.0 | 2006 09 12 | 703 | 1.2− | 1.2− | 2006 09 28 | 291 | 0.1− | 0.1− |
| 2004 03 14 | 703 | 0.4+ | 1.1+ | 2006 09 12 | 703 | 0.8− | 0.8− | 2006 09 28 | 291 | 0.1− | 0.2+ |
| 2004 03 14 | 703 | 0.8− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 28 | 291 | 0.2− | 0.1+ |
| 2004 03 14 | 703 | (2.3+ | 3.9−) | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2004 03 15 | 704 | 0.8− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2004 03 15 | 704 | 0.5+ | 1.2− | 2006 09 18 | 699 | 1.3+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2004 03 15 | 704 | (2.4− | 0.2−) | 2006 09 18 | 699 | 0.6− | 0.1− | 2006 10 16 | 703 | (0.7+ | 2.2+) |
| 2004 03 15 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.9− | 0.3+ | 2006 10 16 | 703 | (0.9− | 2.0+) |
| 2004 03 19 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.3− | 1.4+ |
| 2004 03 19 | 644 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2004 03 19 | 644 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | 0.2+ | 1.2− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.3− |
| 2004 03 20 | 704 | 0.3− | 1.0− | 2006 09 20 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2004 03 20 | 704 | 1.5+ | 0.8+ | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2004 03 20 | 704 | 0.5− | 0.4− | 2006 09 20 | 704 | 0.2+ | 0.9− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2004 03 22 | 704 | 0.1− | 0.6+ | 2006 09 23 | 461 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2004 03 22 | 704 | 0.3− | 0.3+ | 2006 09 23 | 461 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2004 03 22 | 704 | 0.5− | 0.3− | 2006 09 23 | 461 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2004 03 22 | 704 | 0.8+ | 0.4+ | 2006 09 28 | 704 | (0.2− | 1.7+) | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2006 09 12 | 703 | 0.5− | 0.2− | 2006 09 28 | 704 | 0.6− | 1.0+ | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2006 09 12 | 703 | 1.4− | 0.1− | 2006 09 28 | 704 | 0.9+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.4− |

**2004 FU$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.42688 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19143385 | $\omega$ | 288.43892 | | +0.12579009 | | −0.98818846 |
| $a$ | 2.9816516 | $\Omega$ | 153.85342 | | +0.96857591 | | +0.10325251 |
| $e$ | 0.1460638 | $i$ | 11.45602 | | +0.21456367 | | +0.11323640 |
| $P$ | 5.15 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 691 | (1.1− | 2.5+) | 2002 11 30 | 704 | 0.6+ | 0.3− | 2004 03 19 | 704 | 0.3+ | 1.2+ |
| 2001 08 10 | 691 | 0.0 | 0.2+ | 2002 11 30 | 704 | 1.1− | 0.2+ | 2004 03 19 | 704 | 0.0 | 0.0 |
| 2001 08 10 | 691 | 0.0 | 0.6+ | 2002 11 30 | 704 | 0.2+ | 0.1+ | 2004 03 20 | 704 | 0.4− | 0.3+ |
| 2002 10 07 | 608 | 0.6− | 0.3+ | 2002 11 30 | 704 | 0.3− | 1.2+ | 2004 03 20 | 704 | 0.1− | 0.1+ |
| 2002 10 07 | 608 | 0.3− | 0.2+ | 2002 12 08 | 644 | 0.1− | 0.0 | 2004 03 20 | 704 | 0.5+ | 0.7+ |
| 2002 10 07 | 608 | 0.3− | 0.7+ | 2002 12 08 | 644 | 0.2+ | 0.2+ | 2004 03 20 | 704 | 0.2+ | 0.4+ |
| 2002 10 31 | 704 | 0.0 | 0.9− | 2002 12 08 | 644 | 0.1− | 0.4+ | 2005 05 02 | 691 | 0.0 | 0.7+ |
| 2002 10 31 | 704 | 0.5− | 0.1− | 2004 02 11 | 644 | 0.4− | 0.1+ | 2005 05 02 | 691 | 0.0 | 0.3+ |
| 2002 10 31 | 704 | 0.3− | 0.2− | 2004 02 11 | 644 | 0.2− | 0.4+ | 2005 05 02 | 691 | 0.0 | 0.5+ |
| 2002 10 31 | 704 | 1.1− | 0.6− | 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.4+ |
| 2002 10 31 | 704 | 0.9− | 0.4− | 2004 03 19 | 704 | 1.2+ | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2+ |
| 2002 11 07 | 645 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 0.8+ | 0.9+ | 2006 10 22 | G96 | 0.3− | 0.5+ |
| 2002 11 07 | 645 | 0.1+ | 0.2+ | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− |

**2004 FQ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.73875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26425012 | $\omega$ | 115.53080 | | −0.78163182 | −0.62309939 | |
| $a$ | 2.4050600 | $\Omega$ | 25.95521 | | +0.54658804 | −0.70607605 | |
| $e$ | 0.1306177 | $i$ | 3.70263 | | +0.30048828 | −0.33645767 | |
| $P$ | 3.73 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 291 | 0.4− | 1.1+ | 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.2+ | 0.1− |
| 2002 10 28 | 291 | 0.6− | 0.5+ | 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.3+ | 0.1− |
| 2002 10 28 | 291 | 0.4− | 1.4+ | 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.7− |
| 2004 03 19 | 704 | 0.4− | 0.7+ | 2004 03 28 | 704 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.3− | 0.3− |
| 2004 03 19 | 704 | 0.5+ | 0.5+ | 2004 03 28 | 704 | 0.9+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.5− |
| 2004 03 19 | 704 | 0.6+ | 0.5+ | 2004 03 28 | 704 | 0.6+ | 0.6+ | 2006 11 09 | 691 | 0.2+ | 0.1+ |
| 2004 03 20 | 704 | 1.5− | 0.2+ | 2004 03 28 | 704 | 0.5+ | 0.8+ | 2006 11 09 | 691 | 0.2+ | 0.1+ |
| 2004 03 20 | 704 | 1.2− | 0.5− | 2004 03 28 | 704 | 0.2+ | 0.3+ | 2006 11 09 | 691 | 0.5− | 0.2+ |
| 2004 03 20 | 704 | 0.8− | 0.6− | 2004 04 12 | 691 | 0.4− | 0.6− | 2006 11 19 | 704 | 0.5+ | 1.2+ |
| 2004 03 20 | 704 | 1.0+ | 0.2− | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 1.0− | 0.1− |
| 2004 03 20 | 704 | 0.1− | 0.4− | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2004 03 22 | 704 | 0.8+ | 0.1+ | 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2004 03 22 | 704 | 0.5+ | 0.1− | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2004 03 22 | 704 | 0.1− | 0.0 | 2004 04 19 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.7− |
| 2004 03 22 | 704 | 0.9+ | 0.1− | 2006 09 27 | G96 | 0.5+ | 0.4− | 2006 11 19 | 704 | (2.0+ | 0.8+) |
| 2004 03 24 | 699 | 1.0− | 0.2− | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.4+ | 0.3+ |
| 2004 03 24 | 699 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2004 03 24 | 699 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.0 | 0.9+ |
| 2004 03 24 | 699 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.2+ | 0.5− | 2006 11 22 | 704 | 1.0− | 0.4− |

**2004 FK$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.61676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23717375 | $\omega$ | 81.46247 | | +0.46677731 | +0.88380917 | |
| $a$ | 2.5847882 | $\Omega$ | 216.41687 | | −0.83091402 | +0.42603433 | |
| $e$ | 0.1705589 | $i$ | 3.05392 | | −0.30282146 | +0.19332900 | |
| $P$ | 4.16 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 691 | 0.0 | 0.4+ | 2004 03 17 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.6− |
| 2001 06 27 | 691 | 0.0 | 0.4+ | 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.4+ | 0.0 |
| 2001 06 27 | 691 | 0.0 | 0.5+ | 2004 03 21 | 691 | 0.1− | 0.4− | 2006 11 11 | 691 | 0.2− | 0.3− |
| 2001 07 14 | 608 | 0.7+ | 0.6+ | 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 07 14 | 608 | 0.4+ | 0.3+ | 2005 02 10 | 809 | 0.1+ | 0.0 | 2006 11 15 | 691 | (0.2− | 2.0−) |
| 2001 07 14 | 608 | 0.2+ | 0.4+ | 2005 02 10 | 809 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2001 07 23 | 608 | 0.8− | 0.3− | 2005 02 10 | 809 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.5+ |
| 2001 07 23 | 608 | 0.4− | 0.4− | 2006 09 27 | G96 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 07 23 | 608 | 1.1− | 0.8− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.2− | 0.4+ |
| 2004 02 22 | 691 | 0.3+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2004 02 22 | 691 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.4− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.5− | | | | |

**2004 FL$_{54}$ = 2006 SJ$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.56207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17449516 | $\omega$ | 210.41413 | | +0.69151517 | +0.71099980 | |
| $a$ | 3.1716149 | $\Omega$ | 103.67498 | | −0.63349220 | +0.68179655 | |
| $e$ | 0.1493281 | $i$ | 7.54704 | | −0.34712304 | +0.17214168 | |
| $P$ | 5.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.8− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2004 03 18 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.3+ | 1.0+ | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 1.3+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2004 03 21 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | (3.2+ | 0.8−) | 2006 10 22 | 644 | 0.2+ | 0.6− |
| 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.3− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2004 03 21 | 691 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2004 03 28 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 703 | (1.1− | 2.1−) | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2004 03 28 | 691 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.2− | 0.6− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2004 03 28 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.5+ | | | | |

**2004 FH$_{55}$ = 2000 KT$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.16277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20075858 | $\omega$ | 253.27766 | | +0.74605408 | +0.66377739 | |
| $a$ | 2.8885949 | $\Omega$ | 65.09964 | | −0.58654571 | +0.69271998 | |
| $e$ | 0.1124016 | $i$ | 3.34615 | | −0.31522600 | +0.28202590 | |
| $P$ | 4.91 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.2− | 0.3− | 2004 03 19 | 291 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.5− |
| 2000 05 28 | 704 | 0.0 | 0.8+ | 2004 03 19 | 704 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.4+ |
| 2000 05 28 | 704 | 0.2+ | 0.2− | 2004 03 19 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 0.5+ | 0.3− |
| 2000 05 29 | 704 | 0.3− | 0.6+ | 2004 03 19 | 291 | 0.3− | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2000 05 29 | 704 | 0.6+ | 0.7+ | 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2000 05 29 | 704 | 0.7− | 0.2+ | 2004 03 21 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2000 05 29 | 704 | 0.5+ | 0.7− | 2004 03 21 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.5+ |
| 2001 09 11 | 699 | 0.4+ | 0.9+ | 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.7+ |
| 2001 09 11 | 699 | 0.2− | 1.3+ | 2004 03 22 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 2001 09 11 | 699 | 0.5+ | 1.2+ | 2004 03 22 | 704 | 0.6+ | 1.0+ | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2001 09 11 | 699 | 0.1+ | 0.4+ | 2004 03 22 | 704 | (1.6+ | 1.5+) | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2001 09 16 | 704 | 0.1+ | 0.3− | 2004 03 22 | 704 | 1.4+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 1.1− | 0.5+ | 2004 03 22 | 704 | 1.1+ | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 1.1− | 1.2− | 2006 09 21 | 699 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 10 06 | 644 | 0.1+ | 1.2+ | 2006 09 21 | 699 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.5− |
| 2001 10 06 | 644 | 0.1+ | 0.1+ | 2006 09 21 | 699 | (1.2+ | 1.6+) | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 10 06 | 644 | 0.2+ | 0.5+ | 2006 09 21 | 699 | 0.7− | 0.9+ | 2006 10 22 | 703 | 0.9− | 0.1+ |
| 2001 10 20 | 704 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.6+ | 0.3− |
| 2001 10 20 | 704 | 0.9− | 0.5+ | 2006 09 25 | 699 | 1.1+ | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2001 10 20 | 704 | 1.2− | 0.9+ | 2006 09 25 | 699 | 0.9+ | 0.5− | 2006 10 22 | 703 | 0.0 | 0.3− |
| 2001 10 20 | 704 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.7− | 0.8+ | 2006 11 11 | 703 | 0.6− | 0.7− |
| 2001 10 20 | 704 | 0.2− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.4− | 2006 11 11 | 703 | (1.6− | 0.5+) |
| 2004 02 23 | 704 | 0.9− | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.4+ | 0.9+ |
| 2004 02 23 | 704 | 0.4+ | 0.4− | 2006 09 27 | 691 | 0.9− | 0.6− | 2006 11 11 | 703 | (1.9− | 0.6−) |
| 2004 02 23 | 704 | 0.4− | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2004 02 23 | 704 | 1.3+ | 1.1+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.7+ | 0.4− |
| 2004 03 19 | 291 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2004 03 19 | 704 | 0.7− | 1.0− | 2006 09 29 | 699 | 0.4+ | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.5− |

**2004 FM$_{55}$ = 2004 FX$_{162}$ = 2006 RE$_{66}$**

Id. Minor Planet Center (d, *MPO* 77916; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.99647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21455274 | $\omega$ | 312.43203 | | +0.87682512 | +0.48040165 | |
| $a$ | 2.7634186 | $\Omega$ | 18.88304 | | −0.42122482 | +0.78736676 | |
| $e$ | 0.0273614 | $i$ | 3.50716 | | −0.23183476 | +0.38635197 | |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.2− | 0.4− | 2004 03 31 | 691 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 1995 03 27 | 691 | 0.1− | 0.2− | 2004 03 31 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 1995 03 27 | 691 | 0.0 | 0.3− | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2001 08 23 | 699 | (1.8+ | 0.7+) | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 2001 08 23 | 699 | (1.6− | 1.4+) | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2001 08 23 | 699 | 0.1− | 1.1+ | 2006 09 14 | 703 | (0.1+ | 1.6+) | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2001 08 23 | 699 | 0.9− | 0.8+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 08 25 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.8− | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 1.0− | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.2+ | 2006 10 17 | 703 | 1.2+ | 0.1− |
| 2001 08 25 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2006 09 14 | 703 | (0.4+ | 1.8+) | 2006 10 17 | 703 | 0.9+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2002 12 06 | 704 | 0.2− | 0.5− | 2006 09 14 | 703 | 0.5− | 0.8− | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2002 12 06 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 691 | 0.7− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 0.3− | 1.1− | 2006 09 19 | 691 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2004 03 19 | 704 | 0.7+ | 0.2+ | 2006 09 19 | 691 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 0.8− | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 03 20 | 699 | (0.3− | 1.5−) | 2006 09 20 | 644 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 03 20 | 699 | 1.2+ | 1.2+ | 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.8+ | 0.9− |
| 2004 03 20 | 699 | 0.4− | 1.1+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2004 03 20 | 699 | 0.8− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2004 03 21 | 691 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2004 03 21 | 691 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 11 16 | 701 | 0.4+ | 0.0 |
| 2004 03 21 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 701 | 0.8+ | 0.6− |
| 2004 03 31 | 691 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 16 | 701 | 0.3− | 0.0 |

**2004 FO$_{56}$ = 2006 UF$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.78759 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18967647 | $\omega$ | 21.93065 | | −0.95483079 | | −0.29602890 |
| $a$ | 3.0000402 | $\Omega$ | 140.82080 | | +0.26620628 | | −0.89073326 |
| $e$ | 0.0817863 | $i$ | 2.33951 | | +0.13203171 | | −0.34490746 |
| $P$ | 5.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 07 | 691 | 0.5− | 0.1+ | 2004 03 22 | 704 | 0.5+ | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.3− |
| 1991 11 07 | 691 | 0.2+ | 0.6+ | 2004 04 20 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.4− | 0.4− |
| 1991 11 07 | 691 | 0.2+ | 0.5− | 2004 04 20 | 691 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2001 09 11 | 691 | 0.2− | 0.2− | 2004 04 20 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 09 11 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2001 09 11 | 691 | 0.5+ | 0.1− | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 03 16 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.4+ |
| 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2004 03 22 | 704 | 0.6+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.2+ |

**2004 FC$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.30647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23024569 | $\omega$ | 312.38819 | | +0.99822760 | | +0.03715209 |
| $a$ | 2.6363822 | $\Omega$ | 45.54124 | | −0.01300451 | | +0.89849630 |
| $e$ | 0.1075619 | $i$ | 3.73462 | | −0.05807356 | | +0.43740613 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.5+ | 0.0 | 2004 03 22 | 704 | (1.7+ | 0.1+) | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2000 04 06 | 704 | 0.7− | 0.9+ | 2004 03 23 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2000 04 06 | 691 | 0.3− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2000 04 06 | 704 | 0.9− | 1.2+ | 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2000 04 06 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2000 04 06 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2000 04 06 | 704 | 0.7+ | 0.5− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.2− |
| 2000 04 06 | 691 | 0.2− | 0.1− | 2006 10 13 | 291 | 0.5− | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2001 07 14 | 644 | 0.0 | 0.4− | 2006 10 13 | 291 | 0.6− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2001 07 14 | 644 | 0.1− | 0.1+ | 2006 10 13 | 291 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2001 07 14 | 644 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2001 07 27 | 644 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2001 07 27 | 644 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.6− | 0.8− |
| 2001 07 27 | 644 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.9+ | 0.6− |
| 2001 08 12 | 644 | 0.1+ | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2001 08 12 | 644 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 1.3+ | 0.4+ |
| 2001 08 12 | 644 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.6− |
| 2002 12 11 | 704 | 0.4+ | 0.2− | 2006 10 28 | 704 | 0.9− | 0.4− | 2006 11 18 | 704 | 0.8+ | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.9− | 2006 10 28 | 704 | 0.5+ | 0.8− | 2006 11 18 | 704 | 0.6+ | 1.1+ |
| 2002 12 11 | 704 | 0.2− | 0.0 | 2006 10 28 | 704 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.3+ |
| 2002 12 11 | 704 | 0.9+ | 1.0− | 2006 10 28 | 704 | 0.3− | 0.6+ | 2006 11 18 | 704 | 0.8+ | 0.1+ |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.1+ |
| 2002 12 11 | 704 | 0.6+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.8+ |
| 2002 12 11 | 704 | 0.8+ | 0.6− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | (0.0 | 1.8+) |
| 2003 01 05 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2003 01 05 | 704 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2003 01 05 | 704 | 0.7− | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.6− | 2006 11 21 | 704 | 1.2− | 0.7+ |
| 2003 01 05 | 704 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.9+ | 0.3+ |
| 2003 01 05 | 704 | 0.6− | 1.0+ | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.4+ |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.3− | 0.7+ |
| 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.6− | 1.5+ |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.1− | 2006 11 29 | 704 | 1.2− | 0.4+ |
| 2004 03 22 | 704 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.2− | | | | |
| 2004 03 22 | 704 | 1.0+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.2− | | | | |

**2004 FZ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.05757 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26720015 | $\omega$ | 331.46523 | | −0.56697034 | | −0.82348225 |
| $a$ | 2.3873252 | $\Omega$ | 153.05853 | | +0.76411528 | | −0.53507993 |
| $e$ | 0.1833533 | $i$ | 2.59748 | | +0.30768892 | | −0.18859068 |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.4− | 0.1+ | 2004 03 29 | 704 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2004 03 12 | 644 | 0.4− | 0.2+ | 2004 04 12 | 691 | 0.1− | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2004 03 12 | 644 | 0.1− | 0.0 | 2004 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.4+ |
| 2004 03 19 | 704 | 0.4+ | 0.7− | 2004 04 12 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2004 03 19 | 704 | 1.0+ | 0.8− | 2004 04 14 | 621 | 0.9− | 0.4− | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2004 03 19 | 704 | (1.8+ | 0.1−) | 2004 04 14 | 621 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2004 03 19 | 704 | 1.1+ | 0.3− | 2004 04 14 | 621 | 1.4− | 1.3− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2004 03 22 | 704 | 0.3− | 0.5− | 2004 04 15 | 621 | 1.0+ | 0.3+ | 2006 10 31 | 691 | 0.6+ | 0.1+ |
| 2004 03 22 | 704 | 0.1+ | 0.7− | 2004 04 15 | 621 | 0.5− | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2004 03 22 | 704 | (2.0+ | 1.0+) | 2004 04 15 | 621 | (3.2− | 0.8−) | 2006 11 15 | G96 | 0.8+ | 0.1− |
| 2004 03 22 | 704 | 0.2− | 0.0 | 2004 04 19 | 691 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2004 03 28 | 704 | 0.4+ | 0.9− | 2004 04 19 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.3− | 0.8− |
| 2004 03 28 | 704 | 0.2+ | 0.5+ | 2004 04 19 | 691 | 0.7+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.1+ |
| 2004 03 28 | 704 | (2.4+ | 1.0+) | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2004 03 28 | 704 | 0.9+ | 0.8+ | 2006 10 19 | 691 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2004 03 29 | 704 | 1.1− | 0.1+ | 2006 10 19 | 691 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 03 29 | 704 | 0.8− | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.3+ | | | | |

**2004 FF$_{62}$ = 2004 GN$_{78}$ = 2006 QW$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.50586 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20471578 | $\omega$ | 42.71238 | | +0.50410816 | | −0.86006933 |
| $a$ | 2.8512491 | $\Omega$ | 17.48351 | | +0.70506330 | | +0.35738033 |
| $e$ | 0.1347674 | $i$ | 15.13845 | | +0.49875916 | | +0.36408797 |
| $P$ | 4.81 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.3+ | 0.1− | 2004 04 21 | 704 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.2− | 1.2− |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.5− |
| 2004 03 14 | 691 | 0.3− | 0.3− | 2006 08 30 | 699 | 0.5+ | 1.2+ | 2006 09 26 | 703 | (2.6− | 0.5+) |
| 2004 03 19 | 704 | 0.0 | 0.8+ | 2006 08 30 | 699 | 0.9− | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2004 03 19 | 704 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.5+ |
| 2004 03 19 | 704 | 0.9− | 0.2− | 2006 08 30 | 699 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.6+ |
| 2004 03 19 | 704 | 1.0+ | 1.1+ | 2006 09 14 | 703 | 1.0− | 0.1− | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2004 04 11 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.9+ | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.4+ |
| 2004 04 11 | 644 | 0.0 | 0.6− | 2006 09 14 | 703 | 1.0+ | 1.0− | 2006 11 27 | G96 | 0.2− | 0.2+ |
| 2004 04 11 | 644 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2004 04 21 | 704 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.4− | 0.5− | | | | |

**2004 FM$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.23125 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18061960 | $\omega$ | 100.92915 | +0.05209012 | | +0.99819863 | |
| $a$ | 3.0995082 | $\Omega$ | 171.87810 | −0.97865237 | | +0.05695903 | |
| $e$ | 0.1528387 | $i$ | 12.16343 | −0.19881188 | | −0.01884594 | |
| $P$ | 5.46 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 1.2− | 0.9− | 2004 03 22 | 704 | 0.3− | 0.8+ | 2006 09 18 | 703 | (0.6− | 2.0−) | |
| 2004 02 26 | 704 | 0.5+ | 0.1+ | 2004 03 28 | 704 | (0.2+ | 1.8−) | 2006 09 18 | 703 | 0.3− | 0.2− | |
| 2004 02 26 | 704 | 1.3+ | 0.5+ | 2004 03 28 | 704 | 0.6+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.4+ | |
| 2004 02 26 | 704 | 0.5+ | 0.3+ | 2004 03 28 | 704 | 0.9+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1+ | |
| 2004 02 26 | 695 | 0.3− | 0.4− | 2004 03 28 | 704 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.4+ | |
| 2004 02 26 | 695 | 0.4− | 0.4− | 2004 03 28 | 704 | 1.0− | 0.2− | 2006 10 04 | G96 | 0.3− | 0.2+ | |
| 2004 03 19 | 704 | 0.6− | 1.0+ | 2004 03 29 | 691 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ | |
| 2004 03 19 | 704 | 0.5− | 0.3− | 2004 03 29 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.5+ | |
| 2004 03 19 | 704 | 0.4− | 0.9+ | 2004 03 29 | 691 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.7+ | |
| 2004 03 19 | 704 | 0.1+ | 0.6+ | 2004 04 19 | 704 | 1.4+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.2− | |
| 2004 03 22 | 704 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.5+ | 0.6+ | 2006 10 22 | 703 | 0.5+ | 0.1+ | |
| 2004 03 22 | 704 | 0.2+ | 0.4+ | 2004 04 19 | 704 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.6− | 1.5− | |
| 2004 03 22 | 704 | 0.8+ | 0.9+ | 2006 09 18 | 703 | (0.6− | 1.6+) | 2006 10 22 | 703 | 1.0+ | 0.7− | |
| 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 703 | (2.6− | 1.0−) | | | | | |

**2004 FF$_{63}$ = 2006 QJ$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.64085 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18495992 | $\omega$ | 41.53272 | −0.74431544 | | −0.66629697 | |
| $a$ | 3.0508274 | $\Omega$ | 96.62617 | +0.60009385 | | −0.69698891 | |
| $e$ | 0.1206534 | $i$ | 2.60799 | +0.29305615 | | −0.26505624 | |
| $P$ | 5.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.2+ | 1.0− | 2004 03 22 | 704 | 0.4+ | 1.0+ | 2006 08 21 | 691 | 0.3− | 0.1− | |
| 2000 07 31 | 807 | 0.1+ | 1.1− | 2004 03 22 | 704 | 0.2− | 0.1− | 2006 08 21 | 691 | 0.2− | 0.3+ | |
| 2004 03 19 | 704 | 0.4+ | 0.3+ | 2004 04 11 | 644 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.2+ | |
| 2004 03 19 | 704 | 0.3+ | 0.2+ | 2004 04 11 | 644 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.1− | |
| 2004 03 19 | 704 | 0.6− | 0.5− | 2004 04 11 | 644 | 0.6+ | 0.3+ | 2006 08 28 | 691 | 0.2+ | 0.2+ | |
| 2004 03 19 | 704 | 0.4+ | 0.8+ | 2004 07 16 | 807 | 0.5− | 0.4− | 2006 08 28 | 691 | 0.1− | 0.5+ | |
| 2004 03 22 | 704 | 0.4+ | 0.8+ | 2004 07 17 | 807 | 0.4− | 0.3− | | | | | |

**2004 FZ$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.34702 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21737227 | $\omega$ | 157.24869 | −0.97594840 | | +0.19521287 | |
| $a$ | 2.7394704 | $\Omega$ | 34.46046 | −0.21691346 | | −0.82514435 | |
| $e$ | 0.0742786 | $i$ | 9.87488 | −0.02175496 | | −0.53012144 | |
| $P$ | 4.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 703 | 0.2+ | 0.2− | 2004 04 09 | E12 | 0.0 | 0.7− | 2004 04 22 | 704 | 0.7+ | 0.1+ | |
| 2004 03 14 | 703 | 0.9+ | 1.4− | 2004 04 09 | E12 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.1− | 0.0 | |
| 2004 03 14 | 703 | 0.6+ | 0.9− | 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 | |
| 2004 03 14 | 703 | 1.2− | 0.7+ | 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.5+ | |
| 2004 03 19 | 704 | 0.1− | 0.1− | 2004 04 13 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 | |
| 2004 03 19 | 704 | 1.4+ | 0.3− | 2004 04 16 | 704 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.2+ | 0.4+ | |
| 2004 03 19 | 704 | 0.4+ | 0.6+ | 2004 04 16 | 704 | 0.9+ | 0.2+ | 2006 10 19 | 644 | 0.5+ | 0.5+ | |
| 2004 03 19 | 704 | (1.7+ | 0.4+) | 2004 04 16 | 704 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 | |
| 2004 03 22 | 704 | 0.3− | 0.1+ | 2004 04 16 | 704 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.0 | |
| 2004 03 22 | 704 | 0.1− | 0.3+ | 2004 04 19 | 704 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.0 | |
| 2004 03 22 | 704 | 0.1+ | 0.2+ | 2004 04 19 | 704 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 2004 03 22 | 704 | 0.4+ | 0.4+ | 2004 04 19 | 704 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 2004 03 22 | 704 | 0.3− | 0.7+ | 2004 04 19 | 704 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2004 03 28 | 704 | 1.3+ | 0.3− | 2004 04 19 | 704 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.4− | |
| 2004 03 28 | 704 | 0.7− | 0.2+ | 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.2− | |
| 2004 03 28 | 704 | 0.7− | 0.4+ | 2004 04 20 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.2− | 0.2− | |
| 2004 03 28 | 704 | 0.5− | 0.3− | 2004 04 20 | 691 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.0 | |
| 2004 04 09 | E12 | 0.3− | 0.5− | 2004 04 22 | 704 | 0.6+ | 0.5+ | | | | | |
| 2004 04 09 | E12 | 0.1− | 0.4− | 2004 04 22 | 704 | 0.8+ | 0.6− | | | | | |

**2004 FA$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.18048 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22602361 | $\omega$ | 73.40436 | −0.10063160 | | −0.98292501 | |
| $a$ | 2.6691123 | $\Omega$ | 24.04318 | +0.70599212 | | −0.17964621 | |
| $e$ | 0.0680698 | $i$ | 22.21659 | +0.70103381 | | +0.03982046 | |
| $P$ | 4.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.3+ | 0.6− | 2004 04 09 | E12 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.4− | |
| 2004 03 19 | 704 | 0.3− | 0.0 | 2004 04 09 | E12 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.2+ | |
| 2004 03 19 | 704 | 1.1+ | 0.3− | 2004 04 09 | E12 | 0.6+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.3+ | |
| 2004 03 19 | 704 | 0.1+ | 0.4+ | 2004 04 09 | E12 | 0.1− | 0.5− | 2006 10 21 | 691 | 0.0 | 0.1+ | |
| 2004 03 22 | 704 | 0.0 | 0.7+ | 2004 04 13 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.9− | |
| 2004 03 22 | 704 | 0.6+ | 0.5+ | 2004 04 13 | 691 | 0.3− | 0.3− | 2006 11 14 | 703 | 0.7+ | 1.8− | |
| 2004 03 22 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 691 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.1− | 0.8− | |
| 2004 03 22 | 704 | 0.7− | 0.8+ | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 1.1+ | |
| 2004 03 28 | 704 | 0.0 | 1.1− | 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 11 23 | 703 | 0.6− | 0.0 | |
| 2004 03 28 | 704 | 0.8+ | 0.3− | 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.7+ | |
| 2004 03 28 | 704 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 23 | 703 | 0.6− | 0.5− | |
| 2004 03 28 | 704 | 0.9− | 0.8− | 2006 10 19 | 644 | 0.7+ | 0.1− | 2006 11 23 | 703 | 0.7+ | 1.1+ | |

**2004 FS$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.90147 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23072245 | $\omega$ | 108.68410 | −0.97651536 | | −0.21037575 | |
| $a$ | 2.6327492 | $\Omega$ | 59.19515 | +0.17160579 | | −0.88991360 | |
| $e$ | 0.1329198 | $i$ | 3.10163 | +0.13026589 | | −0.40471697 | |
| $P$ | 4.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 1.2+ | 0.1− | 2004 04 16 | 644 | 0.3− | 0.7− | 2006 10 11 | 691 | 0.0 | 0.6+ | |
| 2004 03 19 | 704 | 0.5+ | 1.1− | 2004 04 19 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.4+ | |
| 2004 03 19 | 704 | 0.0 | 0.5+ | 2004 04 19 | 704 | 0.0 | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.4+ | |
| 2004 03 19 | 704 | 0.1− | 1.0+ | 2004 04 19 | 704 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.2+ | |
| 2004 03 22 | 704 | 0.0 | 0.7− | 2004 04 19 | 704 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.2+ | |
| 2004 03 22 | 704 | 0.8+ | 0.0 | 2004 04 19 | 704 | 0.5+ | 0.7− | 2006 10 15 | 691 | 0.2+ | 0.5+ | |
| 2004 03 22 | 704 | 0.0 | 0.9− | 2004 04 22 | 704 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1+ | |
| 2004 03 22 | 704 | 0.6− | 0.1− | 2004 04 22 | 704 | 0.3− | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.1− | |
| 2004 03 28 | 704 | (0.1+ | 1.6−) | 2004 04 22 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | |
| 2004 03 28 | 704 | 1.3+ | 1.2− | 2004 04 22 | 704 | 0.4− | 0.4+ | 2006 10 23 | 691 | 0.8− | 0.1− | |
| 2004 03 28 | 704 | 0.2− | 0.4− | 2004 05 15 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.0 | |
| 2004 04 16 | 691 | 0.3− | 0.0 | 2004 05 15 | 691 | 0.3− | 0.8+ | 2006 10 23 | 691 | 1.2− | 0.3+ | |
| 2004 04 16 | 691 | 0.4− | 0.1− | 2004 05 15 | 691 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.5+ | 0.4− | |
| 2004 04 16 | 691 | 0.1− | 0.1+ | 2004 05 23 | 691 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1− | |
| 2004 04 16 | 704 | 0.1+ | 0.4+ | 2004 05 23 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | |
| 2004 04 16 | 704 | 0.0 | 0.1+ | 2004 05 23 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | (0.4+ | 1.5−) | |
| 2004 04 16 | 644 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.1+ | |
| 2004 04 16 | 704 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 11 | 703 | (0.3+ | 1.6+) | |
| 2004 04 16 | 704 | 0.3+ | 1.3+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.7+ | |
| 2004 04 16 | 644 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.5+ | 0.3− | | | | | |

**2004 FX$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.42217 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23604695 | $\omega$ | 313.13598 | −0.76197190 | | −0.64718628 | |
| $a$ | 2.5930076 | $\Omega$ | 186.65701 | +0.63721880 | | −0.74280114 | |
| $e$ | 0.1136520 | $i$ | 11.65819 | +0.11554666 | | −0.17145376 | |
| $P$ | 4.18 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.3+ | 0.4+ | 2004 04 20 | 704 | 0.5+ | 0.6− | 2006 10 16 | 703 | (0.1+ | 2.8+) |
| 2004 03 19 | 704 | 0.7+ | 0.6− | 2004 04 20 | 704 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.1+ | 1.2+ |
| 2004 03 19 | 704 | 0.7+ | 0.0 | 2004 04 20 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | (0.4− | 1.8+) |
| 2004 03 19 | 704 | 1.3+ | 0.7+ | 2004 04 20 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.5+ |
| 2004 03 22 | 704 | 0.5+ | 0.9− | 2004 04 21 | 703 | 1.1− | 0.4− | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2004 03 22 | 704 | 0.1− | 0.1− | 2004 04 21 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | (2.1− | 0.1−) |
| 2004 03 22 | 704 | 0.1+ | 0.2+ | 2004 04 21 | 703 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.2− |
| 2004 03 22 | 704 | 0.9+ | 0.4− | 2004 04 21 | 703 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2004 03 28 | 704 | 0.1− | 1.0+ | 2004 04 22 | 704 | 0.3− | 1.1− | 2006 11 01 | 703 | 0.1− | 0.3+ |
| 2004 03 28 | 704 | 0.1+ | 0.1+ | 2004 04 22 | 704 | 0.0 | 1.2− | 2006 11 01 | 703 | 0.4− | 0.6− |
| 2004 03 28 | 704 | 0.1− | 0.5+ | 2004 04 22 | 704 | 0.0 | 0.4+ | 2006 11 01 | 703 | (0.6− | 1.8+) |
| 2004 03 28 | 704 | 0.4− | 1.2− | 2004 04 22 | 704 | 0.8− | 0.8− | 2006 11 01 | 703 | 0.3− | 0.7+ |
| 2004 03 28 | 704 | 0.2− | 0.6+ | 2004 04 23 | 691 | 0.3− | 0.4+ | 2006 11 13 | 703 | (1.8− | 2.9+) |
| 2004 03 31 | 691 | 0.0 | 0.2+ | 2004 04 23 | 691 | 0.2− | 0.1− | 2006 11 13 | 703 | (1.3+ | 4.7+) |
| 2004 03 31 | 691 | 0.2− | 0.3+ | 2004 04 23 | 691 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.5+ | 0.1− |
| 2004 03 31 | 691 | 0.2− | 0.2+ | 2004 04 28 | 608 | 0.8+ | 0.3+ | 2006 11 13 | 703 | 0.1− | 1.3+ |
| 2004 04 16 | 704 | 0.3+ | 0.5− | 2004 04 28 | 608 | 0.5+ | 0.7+ | 2006 11 19 | 703 | 0.7− | 0.3− |
| 2004 04 16 | 704 | 0.6+ | 0.0 | 2004 04 28 | 608 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.9− | 0.1− |
| 2004 04 16 | 704 | 0.6+ | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.0 | 2006 11 19 | 703 | 1.6+ | 0.6+ |
| 2004 04 16 | 704 | (2.7+ | 0.2−) | 2005 07 29 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.8+ | 1.9− |
| 2004 04 20 | 704 | 0.1+ | 0.3− | 2005 07 29 | 644 | 0.1− | 0.4+ | | | | |

**2004 FD$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.06338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23015419 | $\omega$ | 350.05078 | | −0.99406993 | | −0.10818043 |
| $a$ | 2.6370809 | $\Omega$ | 183.79151 | | +0.10767088 | | −0.96495863 |
| $e$ | 0.1277801 | $i$ | 9.61418 | | +0.01523008 | | −0.23906452 |
| $P$ | 4.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.2− | 0.3+ | 2004 04 16 | 704 | 0.6− | 0.3+ | 2004 05 23 | 704 | 0.8+ | 0.0 |
| 2002 12 12 | 644 | 0.2− | 0.4+ | 2004 04 16 | 704 | 0.9− | 0.2− | 2004 05 23 | 704 | 0.3− | 0.2+ |
| 2002 12 12 | 644 | 0.4+ | 0.7+ | 2004 04 16 | 704 | 0.3+ | 0.0 | 2004 05 23 | 704 | 0.7− | 0.6+ |
| 2004 03 19 | 704 | 0.7+ | 0.4− | 2004 04 16 | 704 | 0.4− | 0.0 | 2004 05 23 | 704 | 0.4− | 1.1+ |
| 2004 03 19 | 704 | 0.5+ | 0.5+ | 2004 04 16 | 704 | 0.4− | 0.2+ | 2005 07 30 | 644 | 0.0 | 0.6+ |
| 2004 03 19 | 704 | 0.1+ | 0.1+ | 2004 04 20 | 704 | 0.1+ | 0.6− | 2005 07 30 | 644 | 0.4− | 0.4+ |
| 2004 03 19 | 704 | 0.3+ | 1.0+ | 2004 04 20 | 704 | 0.2− | 0.3− | 2005 07 30 | 644 | 0.0 | 0.5+ |
| 2004 03 22 | 704 | 0.9+ | 0.1− | 2004 04 20 | 704 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2004 03 22 | 704 | 0.4+ | 0.0 | 2004 04 20 | 704 | 0.4+ | 0.3− | 2006 10 22 | 703 | 0.6+ | 0.2+ |
| 2004 03 22 | 704 | 0.1+ | 0.4+ | 2004 04 20 | 704 | 0.1+ | 0.7− | 2006 10 22 | 703 | (0.3+ | 1.8+) |
| 2004 03 22 | 704 | 0.1+ | 0.0 | 2004 04 22 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 1.3− | 0.1+ |
| 2004 03 22 | 704 | 0.4+ | 0.0 | 2004 04 22 | 704 | 0.5+ | 0.5− | 2006 11 25 | G96 | 0.2+ | 0.4+ |
| 2004 04 11 | 644 | 0.0 | 0.1+ | 2004 04 22 | 704 | 0.7− | 0.5+ | 2006 11 25 | G96 | 0.3+ | 0.4+ |
| 2004 04 11 | 644 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3+ |
| 2004 04 11 | 644 | 0.2− | 0.1− | 2004 04 22 | 704 | 0.3− | 0.5+ | 2006 11 25 | G96 | 0.2+ | 0.3+ |

**2004 FE$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.05893 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27573796 | $\omega$ | 253.88657 | | −0.57367518 | | +0.80769983 |
| $a$ | 2.3377874 | $\Omega$ | 339.25827 | | −0.52401216 | | −0.48960043 |
| $e$ | 0.1881287 | $i$ | 22.59641 | | −0.62953002 | | −0.32850024 |
| $P$ | 3.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.1− | 0.1+ | 2004 03 22 | 704 | 0.3+ | 1.1+ | 2005 09 05 | 703 | 1.5− | 0.3+ |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.2− | 0.1+ | 2005 09 05 | 703 | 0.2− | 0.4− |
| 2004 02 11 | 644 | 0.0 | 0.2− | 2005 07 29 | 644 | 0.1− | 0.0 | 2005 09 23 | 691 | 0.2+ | 0.3+ |
| 2004 03 20 | 704 | 0.3+ | 1.0− | 2005 07 29 | 644 | 0.3− | 0.0 | 2005 09 23 | 691 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 0.1+ | 0.0 | 2005 08 29 | 704 | 0.6+ | 0.4+ | 2005 09 23 | 691 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 0.4+ | 0.2− | 2005 08 29 | 704 | 0.5+ | 0.6+ | 2005 11 01 | G96 | 0.0 | 0.1− |
| 2004 03 20 | 704 | 0.7+ | 0.3− | 2005 08 29 | 704 | 0.1+ | 0.1− | 2005 11 01 | G96 | 0.7− | 0.1− |
| 2004 03 20 | 704 | 0.6− | 0.6− | 2005 08 29 | 704 | 0.5+ | 0.1− | 2005 11 01 | G96 | 0.1+ | 0.1− |
| 2004 03 22 | 704 | 1.1− | 0.8+ | 2005 08 29 | 704 | 0.3− | 0.2+ | 2005 11 01 | G96 | 0.2+ | 0.1− |
| 2004 03 22 | 704 | 0.1− | 0.5+ | 2005 09 05 | 703 | 1.2+ | 1.6− | | | | |
| 2004 03 22 | 704 | 0.1+ | 0.3− | 2005 09 05 | 703 | 0.3+ | 1.0− | | | | |

**2004 FM$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.23880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25384548 | $\omega$ | 142.90752 | | −0.93230227 | | +0.35613583 |
| $a$ | 2.4703383 | $\Omega$ | 58.07043 | | −0.34710831 | | −0.83201415 |
| $e$ | 0.1599189 | $i$ | 4.26282 | | −0.10162822 | | −0.42534659 |
| $P$ | 3.88 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 291 | 0.1− | 0.1+ | 2004 03 20 | 704 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.6− | 0.8− |
| 2002 11 13 | 291 | 0.0 | 0.2+ | 2004 03 20 | 704 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2002 11 13 | 291 | 0.1+ | 0.3− | 2004 03 20 | 704 | 0.5+ | 0.5− | 2006 11 11 | G96 | 0.6− | 0.0 |
| 2004 02 15 | 703 | 0.3+ | 0.2+ | 2004 03 20 | 704 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2004 02 15 | 703 | (1.2+ | 2.1−) | 2004 03 22 | 704 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.3− | 0.1+ |
| 2004 02 15 | 703 | 0.0 | 0.3+ | 2004 03 22 | 704 | (0.3− | 1.6+) | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2004 02 15 | 703 | 1.0− | 0.5+ | 2004 03 22 | 704 | 0.7− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2004 02 17 | 704 | 0.1+ | 0.4− | 2004 03 22 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 703 | 1.3+ | 0.3+ |
| 2004 02 17 | 704 | 1.0+ | 0.6+ | 2004 03 25 | 704 | 0.4+ | 0.8− | 2006 11 16 | 703 | 0.0 | 0.7− |
| 2004 02 17 | 704 | 1.0+ | 0.4+ | 2004 03 25 | 704 | 0.7− | 0.9− | 2006 11 16 | 703 | 0.6+ | 0.1+ |
| 2004 02 17 | 704 | 0.5+ | 0.4+ | 2004 03 25 | 704 | (0.2+ | 1.6−) | 2006 11 16 | 703 | 0.3+ | 0.3− |
| 2004 02 17 | 704 | (2.1+ | 1.1+) | 2004 03 25 | 704 | 0.1+ | 0.6− | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2004 03 10 | 644 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2004 03 10 | 644 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.5+ | 2006 11 27 | G96 | 0.7− | 0.3− |
| 2004 03 10 | 644 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.1− |

**2004 FF$_{67}$ = 2006 QF$_{62}$ = 2006 RU$_{101}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.80471 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17866851 | $\omega$ | 154.17960 | | +0.64376803 | | +0.76001219 |
| $a$ | 3.1220321 | $\Omega$ | 155.57748 | | −0.73411941 | | +0.64626859 |
| $e$ | 0.0510541 | $i$ | 12.44899 | | −0.21594308 | | +0.06869047 |
| $P$ | 5.52 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 18 | 809 | 1.8− | 0.4− | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 20 | 012 | 0.1− | 0.3− |
| 2000 09 03 | 704 | 0.7+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 20 | 012 | 0.2+ | 0.4− |
| 2000 09 03 | 704 | 0.8+ | 0.3+ | 2006 08 28 | 704 | 0.2+ | 1.1+ | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2000 09 03 | 704 | 0.0 | 0.0 | 2006 08 28 | 704 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2001 10 15 | 644 | 0.0 | 1.1+ | 2006 08 28 | 704 | 0.5− | 0.1− | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 2001 10 15 | 644 | 0.4+ | 0.8+ | 2006 08 28 | 699 | 0.4+ | 0.8+ | 2006 09 20 | 012 | 0.3− | 0.4− |
| 2001 10 15 | 644 | 0.1+ | 0.7+ | 2006 08 28 | 699 | 0.9− | 0.5− | 2006 09 20 | 012 | 0.4− | 0.2− |
| 2001 10 23 | 644 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.5− | 1.2+ | 2006 09 20 | 012 | 0.1+ | 0.7− |
| 2001 10 23 | 644 | 0.4+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.7+ | 2006 09 20 | 012 | 0.6− | 1.1− |
| 2001 10 23 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 09 20 | 012 | 0.3+ | 0.9− |
| 2001 11 11 | 645 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.8+ | 2006 09 20 | 012 | 0.5− | 0.5− |
| 2001 11 11 | 645 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.9+ | 2006 09 21 | 012 | 0.8+ | 0.8− |
| 2002 01 14 | 645 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 09 21 | 012 | 0.0 | 0.6− |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2006 09 16 | 704 | 0.6− | 0.4+ | 2006 09 21 | 012 | 1.0+ | 1.2− |
| 2004 03 20 | 704 | 0.1+ | 0.7+ | 2006 09 16 | 704 | 0.1− | 0.2− | 2006 09 21 | 012 | 0.3+ | 0.4− |
| 2004 03 20 | 704 | 0.1+ | 0.8+ | 2006 09 16 | 704 | 0.3+ | 0.3+ | 2006 09 21 | 012 | 1.7+ | 0.5− |
| 2004 03 20 | 704 | 0.6+ | 0.1+ | 2006 09 16 | 704 | 0.4+ | 0.5− | 2006 09 26 | 704 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 1.2+ | 0.6+ | 2006 09 18 | 703 | (5.3+ | 3.0+) | 2006 09 26 | 704 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.2− | 1.4+ | 2006 09 26 | 704 | 0.2− | 0.4− |
| 2004 03 22 | 704 | 0.5+ | 0.1− | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.2− |
| 2004 03 22 | 704 | 0.0 | 1.2+ | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.4− | 0.9+ |
| 2004 03 22 | 704 | 0.3− | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.5+ | 2006 10 02 | 703 | 1.1− | 0.3+ |
| 2004 03 22 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.4− | 0.6+ | 2006 10 02 | 703 | 0.9− | 0.7+ |
| 2004 03 22 | 704 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.6+ | 0.4+ | 2006 10 02 | 703 | 0.1− | 0.4+ |
| 2004 03 28 | 703 | 0.7+ | 0.5+ | 2006 09 18 | 699 | 1.0− | 0.8+ | 2006 10 02 | 703 | 1.0− | 0.2+ |
| 2004 03 28 | 703 | 1.0+ | 0.3− | 2006 09 19 | 012 | 0.4− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2004 03 28 | 703 | 1.5− | 0.7+ | 2006 09 19 | 012 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2004 03 28 | 703 | 0.3+ | 0.1− | 2006 09 20 | 012 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 20 | 012 | 0.0 | 0.3− | | | | |

**2004 FJ$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.64001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21184671 | $\omega$ | 348.33520 | | −0.17353780 | −0.98130191 | |
| $a$ | 2.7869012 | $\Omega$ | 111.61444 | | +0.91061068 | −0.19208065 | |
| $e$ | 0.0594320 | $i$ | 5.13776 | | +0.37506376 | +0.01231183 | |
| $P$ | 4.65 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.2+ | 1.0− | 2004 03 22 | 704 | 0.4− | 0.5+ | 2004 04 20 | 704 | 0.3+ | 0.3+ |
| 2004 03 20 | 704 | 0.2− | 0.2− | 2004 03 24 | 699 | 1.9− | 0.6+ | 2006 09 28 | 704 | 0.9− | 0.2− |
| 2004 03 20 | 704 | 1.1+ | 0.8− | 2004 03 24 | 699 | 0.1− | 0.9+ | 2006 09 28 | 704 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 0.9+ | 0.9− | 2004 03 24 | 699 | 1.4− | 1.1+ | 2006 09 28 | 704 | 0.2− | 1.0− |
| 2004 03 22 | 704 | 0.3− | 0.1+ | 2004 03 24 | 699 | 0.2− | 0.5− | 2006 10 02 | G96 | 0.0 | 0.5+ |
| 2004 03 22 | 704 | 1.0+ | 0.4+ | 2004 04 20 | 704 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 2004 03 22 | 704 | 0.3+ | 0.5+ | 2004 04 20 | 704 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.5+ | 0.2+ |
| 2004 03 22 | 704 | 0.6+ | 0.6− | 2004 04 20 | 704 | 0.2− | 0.6− | 2006 10 02 | G96 | 0.3+ | 0.1+ |

**2004 FQ$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.00362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21920359 | $\omega$ | 274.48406 | | +0.13867439 | −0.98972732 | |
| $a$ | 2.7241913 | $\Omega$ | 167.38407 | | +0.96000858 | +0.12572111 | |
| $e$ | 0.0292482 | $i$ | 9.16119 | | +0.24321377 | +0.06807381 | |
| $P$ | 4.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 1.2− | 1.0+ | 2004 04 16 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.2+ |
| 2004 03 20 | 704 | 0.5+ | 0.5+ | 2004 04 16 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2004 03 20 | 704 | 0.3+ | 0.4− | 2004 04 16 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.8− | 0.3+ |
| 2004 03 22 | 704 | 0.4− | 0.5− | 2004 04 21 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 1.5+ | 0.0 |
| 2004 03 22 | 704 | 0.4+ | 0.2− | 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.6+ |
| 2004 03 22 | 704 | 0.2+ | 0.5− | 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.6+ | 1.0− |
| 2004 03 22 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 1.2− | 0.9+ | 2006 10 22 | 703 | 0.4− | 0.4− |

**2004 FJ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.46874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21577233 | $\omega$ | 139.20645 | | −0.98166635 | +0.13681572 | |
| $a$ | 2.7529958 | $\Omega$ | 49.17111 | | −0.18532910 | −0.84783432 | |
| $e$ | 0.1095958 | $i$ | 10.10144 | | +0.04454553 | −0.51230697 | |
| $P$ | 4.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.8+ | 0.5+ | 2004 04 19 | 704 | 0.4+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.3+ |
| 2004 03 20 | 704 | 0.4− | 0.7− | 2004 04 19 | 704 | 0.8+ | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.2+ |
| 2004 03 20 | 704 | 1.0+ | 0.7+ | 2004 04 19 | 704 | 0.4+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2004 03 20 | 704 | 0.2− | 0.9− | 2004 04 19 | 704 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.7+ |
| 2004 03 22 | 704 | 0.4+ | 0.2− | 2004 04 19 | 704 | 0.9+ | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.0 |
| 2004 03 22 | 704 | 0.3− | 0.4+ | 2004 04 22 | 704 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 2004 03 22 | 704 | 0.2− | 0.8− | 2004 04 22 | 704 | 0.1+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2004 03 22 | 704 | 1.1+ | 0.7+ | 2004 04 22 | 704 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2004 03 31 | 704 | 0.8+ | 0.4+ | 2004 04 25 | 703 | 0.6− | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2004 03 31 | 704 | 1.0+ | 1.0+ | 2004 04 25 | 703 | 0.4− | 0.9− | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2004 03 31 | 704 | (1.9+ | 1.4−) | 2004 04 25 | 703 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2004 03 31 | 704 | 1.2+ | 0.0 | 2004 04 25 | 703 | 0.2− | 0.7− | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 2004 04 12 | 699 | 0.1+ | 0.6+ | 2004 05 13 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2004 04 12 | 699 | 0.3+ | 0.6− | 2004 05 13 | 691 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.0 |
| 2004 04 12 | 699 | 1.2− | 0.0 | 2004 05 13 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2004 04 12 | 699 | 0.6+ | 0.3+ | 2004 05 21 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.6+ | 0.1− |
| 2004 04 15 | 699 | 0.4− | 0.2− | 2004 05 21 | 691 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.5− | 0.1+ |
| 2004 04 15 | 699 | 0.2+ | 0.1− | 2004 05 21 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2004 04 15 | 699 | 0.1+ | 0.3+ | 2004 05 29 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.4+ | 0.3+ |
| 2004 04 15 | 699 | 0.2+ | 1.1− | 2004 05 29 | 691 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2004 04 16 | 704 | 0.1+ | 0.1+ | 2004 05 29 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2004 04 16 | 704 | 0.7+ | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2004 04 16 | 704 | (0.5− | 1.8+) | 2006 09 30 | G96 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.6− |
| 2004 04 16 | 704 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.6− | 0.3− |
| 2004 04 16 | 704 | 0.3+ | 0.7− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.2− |

**2004 FM$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.48660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22131246 | $\omega$ | 14.90439 | | −0.99927398 | −0.01314870 | |
| $a$ | 2.7068580 | $\Omega$ | 164.21155 | | +0.00267975 | −0.96049054 | |
| $e$ | 0.0451355 | $i$ | 7.55171 | | +0.03800435 | −0.27800186 | |
| $P$ | 4.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 291 | 0.1− | 0.6− | 2004 03 20 | 699 | 1.8− | 0.5− | 2004 03 31 | 691 | 0.3− | 0.3− |
| 2004 02 13 | 291 | 0.0 | 0.4+ | 2004 03 20 | 699 | 0.1+ | 0.3− | 2004 03 31 | 691 | 0.1− | 0.0 |
| 2004 02 13 | 291 | 0.2− | 0.1+ | 2004 03 20 | 699 | 0.7− | 0.2+ | 2004 03 31 | 691 | 0.0 | 0.0 |
| 2004 02 26 | 704 | 1.0+ | 0.0 | 2004 03 21 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.8− |
| 2004 02 26 | 704 | 0.9+ | 0.5+ | 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 1.6+ | 0.6+ |
| 2004 02 26 | 704 | 0.0 | 0.1− | 2004 03 21 | 691 | 0.6+ | 0.0 | 2006 10 16 | 703 | 1.5+ | 1.5− |
| 2004 02 26 | 704 | 0.8− | 0.2− | 2004 03 22 | 704 | 0.7+ | 1.0− | 2006 10 16 | 703 | 1.1− | 0.2+ |
| 2004 03 18 | 704 | (3.1+ | 0.9−) | 2004 03 22 | 704 | 0.5+ | 0.9− | 2006 10 22 | 703 | 0.7− | 0.8+ |
| 2004 03 18 | 704 | 1.9+ | 0.6+ | 2004 03 22 | 704 | 0.1− | 0.7+ | 2006 10 22 | 703 | 1.3− | 0.7+ |
| 2004 03 18 | 704 | 0.0 | 0.3− | 2004 03 30 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | (2.8− | 0.9+) |
| 2004 03 18 | 704 | 0.5+ | 0.4+ | 2004 03 30 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2004 03 20 | 699 | 0.9− | 0.3− | 2004 03 30 | 691 | 0.0 | 0.2+ | | | | |

**2004 FL$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.45861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17769032 | $\omega$ | 189.85423 | | −0.74048040 | +0.67160360 | |
| $a$ | 3.1334796 | $\Omega$ | 32.38210 | | −0.61336591 | −0.65996073 | |
| $e$ | 0.1326793 | $i$ | 2.70193 | | −0.27471992 | −0.33674981 | |
| $P$ | 5.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 291 | 0.1+ | 0.1− | 2004 04 15 | 699 | 1.0+ | 1.4− | 2006 10 02 | 291 | 0.1− | 0.2+ |
| 2001 10 15 | 291 | 0.3+ | 0.1+ | 2004 04 15 | 699 | 0.1+ | 1.0− | 2006 10 02 | 291 | 0.3+ | 0.3− |
| 2001 10 15 | 291 | 0.5− | 0.4+ | 2004 04 20 | 691 | 0.1− | 0.6+ | 2006 10 02 | 291 | 0.0 | 0.2+ |
| 2004 03 16 | 691 | 0.1− | 0.4− | 2004 04 20 | 691 | 0.2+ | 0.6+ | 2006 10 02 | 291 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.1+ | 0.1+ | 2004 04 20 | 691 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.5− | 0.2+ |
| 2004 03 16 | 691 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.3− | 0.3+ |
| 2004 03 23 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.5− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | (3.2− | 1.1+) |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.2+ |
| 2004 03 27 | 291 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.5+ | 0.7+ |
| 2004 03 27 | 291 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2004 03 27 | 291 | 0.4− | 1.1+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.4+ |
| 2004 04 15 | 699 | (1.9− | 0.8+) | 2006 10 02 | 291 | 0.0 | 0.0 | | | | |
| 2004 04 15 | 699 | 0.9− | 0.7− | 2006 10 02 | 291 | 0.4+ | 0.1− | | | | |

**2004 FV$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.83459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18173617 | $\omega$ | 169.24871 | | +0.99395518 | −0.09790325 | |
| $a$ | 3.0867999 | $\Omega$ | 196.61575 | | +0.08334656 | +0.96743941 | |
| $e$ | 0.1114370 | $i$ | 10.00499 | | +0.07145945 | +0.23340082 | |
| $P$ | 5.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 809 | 0.1− | 0.8+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.9+ | 0.7− |
| 2001 12 11 | 704 | 0.4+ | 1.4+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.7− | 1.3− |
| 2001 12 11 | 704 | 0.2+ | 0.8+ | 2006 09 17 | 703 | 0.8− | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.4− |
| 2001 12 11 | 704 | 0.5− | 1.4+ | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.8− | 0.4− |
| 2001 12 11 | 704 | 0.0 | 1.1+ | 2006 09 17 | 703 | 0.8− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2004 03 16 | 691 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2004 03 16 | 691 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2004 03 23 | 691 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.6+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2004 04 13 | 691 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2004 04 13 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2004 04 20 | 691 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2004 05 09 | 691 | 0.4+ | 0.8+ | 2006 10 09 | 644 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 05 09 | 691 | 0.1+ | 0.6+ | 2006 10 17 | G96 | 1.0+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2004 05 09 | 691 | 0.5+ | 0.8+ | 2006 10 17 | G96 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | (1.6− | 0.6−) | 2006 11 21 | G96 | 0.4+ | 0.5+ |

**2004 FE$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.87645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26800268 | $\omega$ | 272.93302 | | −0.32117840 | | −0.94698521 |
| $a$ | 2.3825570 | $\Omega$ | 195.80822 | | +0.88007485 | | −0.29535795 |
| $e$ | 0.1596217 | $i$ | 1.67550 | | +0.34973232 | | −0.12642268 |
| $P$ | 3.68 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 291 | 0.4− | 0.4+ | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 291 | 0.2− | 0.5+ | 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 291 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.5− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2004 03 23 | 691 | 0.0 | 0.5− | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.5− | 0.1− |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2004 04 13 | 691 | 0.3− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2004 04 13 | 691 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.4+ | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | | | | |

**2004 FG$_{72}$ = 2006 TR$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.65557 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22812420 | $\omega$ | 246.69346 | | +0.72860793 | | −0.68457295 |
| $a$ | 2.6527021 | $\Omega$ | 156.48944 | | +0.64694767 | | +0.67722596 |
| $e$ | 0.1003177 | $i$ | 3.18213 | | +0.22492042 | | +0.26967549 |
| $P$ | 4.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1− | 0.2+ | 2004 07 16 | 807 | 0.3+ | 0.4+ | 2006 10 15 | 703 | 0.1+ | 0.1− |
| 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.2− |
| 2004 03 17 | 691 | 0.5− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.0− | 0.5− |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.0 | 0.3− |
| 2004 03 23 | 691 | 0.4+ | 0.0 | 2006 10 15 | 703 | (1.6− | 1.5−) | | | | |
| 2004 07 15 | 807 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.5− | 1.0+ | | | | |

**2004 FZ$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.53993 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27930128 | $\omega$ | 40.60985 | | +0.84046209 | | −0.54177228 |
| $a$ | 2.3178612 | $\Omega$ | 352.17429 | | +0.47549237 | | +0.74649776 |
| $e$ | 0.1736350 | $i$ | 4.34225 | | +0.25986628 | | +0.38629508 |
| $P$ | 3.53 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (2.3− | 0.2+) | 2002 10 11 | 704 | 0.0 | 0.2− | 2004 03 23 | 691 | 0.0 | 0.2− |
| 2002 09 28 | 608 | (2.7− | 0.9+) | 2002 10 11 | 704 | 0.2− | 0.0 | 2004 03 23 | 691 | 0.1− | 0.1− |
| 2002 09 28 | 608 | 1.8− | 0.5+ | 2002 10 11 | 704 | 0.3+ | 0.1− | 2004 03 23 | 691 | 0.0 | 0.2− |
| 2002 10 04 | 704 | (0.7− | 2.7+) | 2002 10 11 | 704 | 0.5− | 0.2− | 2004 04 13 | 691 | 0.0 | 0.2− |
| 2002 10 04 | 704 | 0.6+ | 0.4− | 2002 10 11 | 704 | 0.2+ | 0.1+ | 2004 04 13 | 691 | 0.1+ | 0.3− |
| 2002 10 04 | 704 | 0.6+ | 0.2− | 2004 03 17 | 691 | 0.3+ | 0.0 | 2004 04 13 | 691 | 0.2− | 0.5+ |
| 2002 10 04 | 704 | (0.2+ | 2.7+) | 2004 03 17 | 691 | 0.0 | 0.2+ | | | | |
| 2002 10 04 | 704 | 0.7+ | 0.6+ | 2004 03 17 | 691 | 0.1− | 0.3+ | | | | |

**2004 FG$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.76153 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21973334 | $\omega$ | 167.28235 | | +0.98977152 | | −0.14175389 |
| $a$ | 2.7198111 | $\Omega$ | 200.88745 | | +0.12662613 | | +0.92480789 |
| $e$ | 0.0877243 | $i$ | 2.58300 | | +0.06571272 | | +0.35303852 |
| $P$ | 4.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.9− | 0.3− | 2006 09 25 | G96 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.4− |
| 2004 03 17 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.4− |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.4− |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2004 03 28 | 291 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2004 03 28 | 291 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2004 03 28 | 291 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2004 04 25 | 691 | 0.5+ | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.3− |
| 2004 04 25 | 691 | 0.5+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.4− |
| 2004 04 25 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2006 07 22 | G96 | 0.0 | 0.9+ | 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.5− |
| 2006 07 22 | G96 | 0.4+ | 0.6− | 2006 10 19 | 691 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2006 07 22 | G96 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 1.2− | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 1.1− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.6− |
| 2006 09 19 | J75 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.6− |
| 2006 09 19 | J75 | 0.8+ | 1.2− | 2006 10 21 | 703 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.5− |
| 2006 09 19 | J75 | 0.2− | 0.6+ | 2006 10 21 | 703 | 0.5− | 1.0+ | 2006 11 16 | G96 | 0.6+ | 0.6− |
| 2006 09 21 | J75 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.9+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2006 09 21 | J75 | 0.7− | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.3+ | 0.2− |
| 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.4+ | 0.1− |
| 2006 09 24 | 691 | 0.8− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 | | | | |

**2004 FB$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.95052 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21388996 | $\omega$ | 211.14875 | | +0.97262028 | | −0.23146098 |
| $a$ | 2.7691243 | $\Omega$ | 162.19841 | | +0.22479351 | | +0.91419628 |
| $e$ | 0.1083745 | $i$ | 3.91450 | | +0.05897167 | | +0.33267247 |
| $P$ | 4.61 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 309 | 0.3− | 0.2− | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 691 | 0.0 | 0.2+ |
| 2004 01 21 | 309 | 0.2− | 0.2− | 2004 03 23 | 691 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.3− | 0.2− |
| 2004 01 22 | 309 | 0.2− | 0.2− | 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2004 01 22 | 309 | 0.2− | 0.3− | 2006 07 21 | G96 | 0.6− | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2004 01 23 | 309 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 09 27 | G92 | 0.3− | 0.4− |
| 2004 01 23 | 309 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.2+ | 0.3+ | 2006 09 27 | G92 | 0.4+ | 0.5+ |
| 2004 01 30 | 568 | 0.3− | 0.2+ | 2006 07 21 | G96 | 0.7− | 0.9+ | 2006 09 27 | G92 | 0.1+ | 0.1− |
| 2004 01 30 | 568 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2004 01 30 | 568 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | G92 | 0.2− | 0.8− |
| 2004 01 30 | 568 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2004 01 30 | 568 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 28 | G92 | 0.0 | 0.0 |
| 2004 01 30 | 568 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2004 03 17 | 291 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.6+ | 0.1+ | 2006 09 28 | G92 | 0.1+ | 0.4+ |
| 2004 03 17 | 291 | 0.4+ | 0.1+ | 2006 09 20 | 691 | 0.4+ | 0.1− | | | | |
| 2004 03 17 | 291 | 0.4+ | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.4− | | | | |

**2004 FZ$_{75}$ = 2006 ST$_{294}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.27326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21348541 | $\omega$ | 99.19343 | | +0.11837221 | −0.99289719 | |
| $a$ | 2.7726215 | $\Omega$ | 343.99360 | | +0.89314310 | +0.11173029 | |
| $e$ | 0.0524381 | $i$ | 2.48719 | | +0.43391637 | +0.04088414 | |
| $P$ | 4.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.2+ | 0.3+ | 2004 04 22 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2004 03 17 | 691 | 0.4+ | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 2004 03 17 | 691 | 0.2+ | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2004 03 23 | 291 | 0.1− | 0.3− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.5− | 0.3− |
| 2004 03 23 | 291 | 0.3− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.3+ | 0.0 |
| 2004 03 23 | 291 | 0.6− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.3− |

**2004 FM$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.24151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27497610 | $\omega$ | 74.01905 | | +0.30279032 | −0.95305546 | |
| $a$ | 2.3421035 | $\Omega$ | 358.35235 | | +0.84845000 | +0.27042467 | |
| $e$ | 0.1074240 | $i$ | 3.62564 | | +0.43410900 | +0.13621961 | |
| $P$ | 3.58 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.5+ | 1.2+ | 2002 10 28 | 291 | 0.2+ | 0.3− | 2004 03 23 | 291 | 0.2− | 0.2+ |
| 2002 10 03 | 704 | 0.7+ | 0.8+ | 2002 10 28 | 291 | 0.2− | 0.4− | 2004 03 23 | 291 | 0.6− | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.5+ | 2002 10 28 | 291 | 0.5− | 0.4− | 2004 03 23 | 291 | 0.1− | 0.2+ |
| 2002 10 03 | 704 | (0.0 | 2.2+) | 2004 03 18 | 704 | 0.5+ | 0.9− | 2004 03 26 | 691 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.4+ | 1.2+ | 2004 03 18 | 704 | 0.5− | 0.8− | 2004 03 26 | 691 | 0.1+ | 0.1+ |
| 2002 10 11 | 704 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.4− | 0.1+ | 2004 03 26 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 704 | 0.1+ | 0.7+ | 2004 03 18 | 704 | 0.4− | 0.3+ | 2004 04 22 | 691 | 0.4+ | 0.5+ |
| 2002 10 11 | 704 | 1.0− | 0.3+ | 2004 03 19 | 291 | 0.1+ | 0.0 | 2004 04 22 | 691 | 0.3+ | 0.0 |
| 2002 10 11 | 704 | 0.2− | 1.5+ | 2004 03 19 | 291 | 0.2+ | 0.1− | 2004 04 22 | 691 | 0.1− | 0.4+ |
| 2002 10 11 | 704 | 0.2− | 1.5+ | 2004 03 19 | 291 | 0.2+ | 0.0 | | | | |

**2004 FK$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.61656 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22418663 | $\omega$ | 259.75569 | | +0.09533216 | −0.99544264 | |
| $a$ | 2.6836729 | $\Omega$ | 184.77582 | | +0.92419689 | +0.08940263 | |
| $e$ | 0.0399671 | $i$ | 1.64884 | | +0.36982682 | +0.03318327 | |
| $P$ | 4.40 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 291 | 0.1− | 0.0 | 2004 04 19 | 691 | 0.3− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2004 03 19 | 291 | 0.3− | 0.0 | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2004 03 19 | 291 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.4+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.5− |
| 2004 03 23 | 291 | 0.6+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2004 03 23 | 291 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.5+ |
| 2004 03 23 | 291 | 0.3+ | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.3+ |
| 2004 03 26 | 691 | 0.1− | 0.1− | 2006 09 24 | 691 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.2− | 2006 11 20 | G96 | (1.7+ | 0.9−) |
| 2004 03 26 | 691 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.4− | 0.3+ | 2006 11 20 | G96 | 0.4+ | 1.1− |
| 2004 04 12 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 1.5+ | 0.2− |
| 2004 04 12 | 691 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.8+ |
| 2004 04 12 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.3− | | | | |
| 2004 04 19 | 691 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.2− | | | | |

**2004 FZ$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.98361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17029795 | $\omega$ | 240.07467 | | −0.19631404 | +0.98052436 | |
| $a$ | 3.2235156 | $\Omega$ | 18.60643 | | −0.89333086 | −0.17644387 | |
| $e$ | 0.1145053 | $i$ | 1.02797 | | −0.40425334 | −0.08625272 | |
| $P$ | 5.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 291 | 0.1+ | 0.1− | 2004 03 29 | 291 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2004 03 19 | 291 | 0.2+ | 0.0 | 2004 03 29 | 291 | 0.4+ | 0.1− | 2006 09 25 | G96 | 0.7+ | 0.2− |
| 2004 03 19 | 291 | 0.1+ | 0.1+ | 2004 04 12 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.7− | 0.1− |
| 2004 03 23 | 291 | 0.0 | 0.3+ | 2004 04 12 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2004 03 23 | 291 | 0.7− | 0.4− | 2004 04 12 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.3+ |
| 2004 03 23 | 291 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.6+ | 0.2− | | | | |
| 2004 03 29 | 291 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.0 | | | | |

**2004 FS$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.21835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25825407 | $\omega$ | 111.58407 | | −0.99765606 | −0.04287114 | |
| $a$ | 2.4421440 | $\Omega$ | 65.99171 | | +0.01661995 | −0.90788339 | |
| $e$ | 0.1368835 | $i$ | 3.34709 | | +0.06637894 | −0.41702496 | |
| $P$ | 3.82 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 699 | 0.1+ | 0.7− | 2004 04 16 | 704 | 0.4+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2004 03 20 | 699 | 0.1+ | 0.7− | 2004 04 19 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2004 03 20 | 699 | 0.5+ | 1.0+ | 2004 04 19 | 704 | 0.4− | 1.0+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2004 03 20 | 699 | (2.0− | 0.5+) | 2004 04 19 | 704 | 0.5+ | 1.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2004 03 22 | 704 | 0.0 | 0.5− | 2004 04 20 | 691 | 0.5− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2004 03 22 | 704 | 0.3+ | 1.1− | 2004 04 20 | 691 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2004 03 22 | 704 | 1.1+ | 0.4− | 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2004 03 22 | 704 | 0.5+ | 0.7− | 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.3− |
| 2004 03 23 | 691 | 0.3− | 0.1− | 2004 05 09 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2004 03 23 | 691 | 0.3− | 0.3− | 2004 05 09 | 691 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 1.3− | 0.6+ |
| 2004 03 23 | 691 | 0.5− | 0.0 | 2004 05 24 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.7+ | 0.2+ |
| 2004 04 16 | 704 | 1.5+ | 1.0− | 2004 05 24 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.4+ | 0.2+ |
| 2004 04 16 | 704 | 0.1+ | 0.5+ | 2004 05 24 | 691 | 0.2+ | 0.1− | | | | |

**2004 FT$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.36086 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17987590 | $\omega$ | 202.90218 | | −0.53189567 | +0.83239325 | |
| $a$ | 3.1080457 | $\Omega$ | 35.52126 | | −0.72957243 | −0.35717787 | |
| $e$ | 0.2564887 | $i$ | 15.53315 | | −0.42989658 | −0.42372804 | |
| $P$ | 5.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | (0.3+ | 1.6+) | 2004 04 20 | 704 | 0.3+ | 0.6+ | 2004 05 23 | 699 | 0.6+ | 0.2− |
| 2004 03 16 | 704 | 0.7+ | 0.6+ | 2004 04 20 | 704 | 0.5− | 0.6+ | 2004 05 23 | 699 | 0.2− | 0.5− |
| 2004 03 16 | 704 | 1.4+ | 0.1+ | 2004 04 20 | 704 | 0.8+ | 0.3− | 2004 05 23 | 699 | 0.4− | 0.8+ |
| 2004 03 16 | 704 | 0.2− | 0.1+ | 2004 04 20 | 704 | 0.4+ | 0.6− | 2004 05 23 | 699 | 0.6+ | 1.0+ |
| 2004 03 16 | 704 | 0.3+ | 0.5− | 2004 04 20 | E12 | 0.1+ | 0.5− | 2005 08 05 | 644 | 0.8− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.4− | 0.0 | 2004 04 20 | E12 | 0.1− | 0.1− | 2005 08 05 | 644 | 0.0 | 0.8+ |
| 2004 03 18 | 691 | 0.4− | 0.0 | 2004 04 20 | E12 | 0.6+ | 0.5− | 2005 08 05 | 644 | 0.5− | 0.6+ |
| 2004 03 18 | 691 | 0.4− | 0.1+ | 2004 04 20 | E12 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.6+ |
| 2004 03 23 | 704 | 0.3+ | 0.2− | 2004 04 21 | 703 | (1.4+ | 2.6+) | 2006 10 16 | 691 | 0.4− | 0.3+ |
| 2004 03 23 | 704 | 0.4− | 0.9− | 2004 04 21 | 703 | 0.8+ | 1.2+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2004 03 23 | 704 | 0.3+ | 0.2− | 2004 04 21 | 703 | (3.4+ | 0.9+) | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2004 03 23 | 704 | 0.5+ | 0.2− | 2004 04 21 | 703 | 1.3+ | 1.3+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2004 03 23 | 704 | 0.7+ | 0.3− | 2004 04 22 | 704 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2004 04 22 | 704 | 1.3+ | 1.6+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2004 03 26 | 691 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.5+ | 1.2− | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2004 03 26 | 691 | 0.0 | 0.0 | 2004 04 22 | 704 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2004 03 30 | 703 | 0.6− | 0.0 | 2004 04 22 | 704 | 0.1− | 0.9− | 2006 10 28 | G96 | 0.5− | 0.0 |
| 2004 03 30 | 703 | 0.4+ | 0.8− | 2004 04 25 | 699 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2004 03 30 | 703 | 0.4− | 1.4+ | 2004 04 25 | 699 | 1.0− | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2004 03 30 | 703 | (2.1+ | 1.5+) | 2004 04 25 | 699 | 0.0 | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2004 04 20 | 704 | 0.7+ | 0.8+ | 2004 04 25 | 699 | 0.6− | 0.3+ | 2006 10 29 | 691 | 0.6− | 0.0 |

**2004 FU$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.73370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27116298 | $\omega$ | 115.89662 | | −0.80750646 | +0.58230406 | |
| $a$ | 2.3640089 | $\Omega$ | 99.85491 | | −0.56959002 | −0.72831066 | |
| $e$ | 0.2402870 | $i$ | 5.48079 | | −0.15329883 | −0.36122784 | |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 13 | 691 | 0.0 | 0.0 | 2004 03 30 | 703 | 0.5− | 0.5+ | 2004 05 13 | 704 | 1.0+ | 0.5+ |
| 2000 01 13 | 691 | 0.0 | 0.0 | 2004 03 30 | 703 | 0.0 | 0.1+ | 2004 05 13 | 704 | 0.6+ | 0.4− |
| 2000 01 13 | 691 | 0.0 | 0.0 | 2004 04 12 | 703 | 0.1− | 0.0 | 2004 05 13 | 704 | 0.6+ | 0.3+ |
| 2004 01 23 | 704 | 0.7+ | 0.5+ | 2004 04 12 | 703 | 0.4− | 0.1+ | 2004 05 13 | 704 | 1.0+ | 0.0 |
| 2004 01 23 | 704 | 0.4+ | 0.3+ | 2004 04 12 | 703 | 0.7+ | 0.3+ | 2004 05 13 | 704 | 0.1+ | 1.1− |
| 2004 01 23 | 704 | 0.3+ | 0.1+ | 2004 04 12 | 703 | 0.0 | 0.3+ | 2004 05 23 | 704 | 0.3+ | 0.1+ |
| 2004 01 23 | 704 | 0.8+ | 0.7+ | 2004 04 15 | 704 | 0.3− | 0.3+ | 2004 05 23 | 704 | 0.7+ | 0.0 |
| 2004 03 16 | 704 | 1.4+ | 0.0 | 2004 04 15 | 704 | 0.1+ | 0.4+ | 2004 05 23 | 704 | 1.1+ | 0.3+ |
| 2004 03 16 | 704 | 0.7+ | 0.5+ | 2004 04 15 | 704 | 0.2− | 0.1+ | 2004 05 23 | 704 | 0.1− | 0.0 |
| 2004 03 16 | 704 | 0.7+ | 0.4+ | 2004 04 15 | 704 | 0.4+ | 0.8+ | 2004 05 23 | 704 | 0.6+ | 0.3− |
| 2004 03 16 | 704 | 1.2+ | 0.8+ | 2004 04 15 | 704 | 0.0 | 0.1+ | 2004 05 24 | 699 | 0.7− | 0.4+ |
| 2004 03 16 | 704 | 0.6+ | 0.1+ | 2004 04 23 | 703 | 0.5+ | 1.1− | 2004 05 24 | 699 | 0.9− | 0.4+ |
| 2004 03 22 | 699 | 0.2− | 0.2+ | 2004 04 23 | 703 | 0.5− | 1.0− | 2004 05 24 | 699 | 0.2− | 0.6− |
| 2004 03 22 | 699 | 0.9− | 0.0 | 2004 04 23 | 703 | 0.1− | 0.1+ | 2004 05 24 | 699 | 0.7+ | 1.6− |
| 2004 03 22 | 699 | 0.3− | 0.5− | 2004 04 23 | 703 | 0.7− | 0.0 | 2004 06 13 | 704 | 0.5+ | 0.1− |
| 2004 03 22 | 699 | 0.5− | 0.4− | 2004 04 25 | 699 | 0.3− | 0.7− | 2004 06 13 | 704 | 0.9+ | 0.3− |
| 2004 03 23 | 704 | 0.3+ | 0.2+ | 2004 04 25 | 699 | 0.7− | 0.6− | 2004 06 13 | 704 | 1.6+ | 1.0+ |
| 2004 03 23 | 704 | 0.2+ | 0.1+ | 2004 04 25 | 699 | 0.2− | 0.1− | 2004 06 18 | 704 | 0.1− | 2.0+ |
| 2004 03 23 | 704 | 0.5+ | 0.2− | 2004 04 25 | 699 | 0.6− | 0.1+ | 2004 06 18 | 704 | 0.1+ | 0.7+ |
| 2004 03 23 | 704 | 0.4+ | 0.2+ | 2004 04 26 | 691 | 0.1− | 0.1− | 2004 06 18 | 704 | 0.4− | 0.1− |
| 2004 03 23 | 704 | 0.1+ | 0.0 | 2004 04 26 | 691 | 0.4− | 0.1− | 2004 06 18 | 704 | 0.1− | 0.4+ |
| 2004 03 26 | 691 | 0.3− | 0.1− | 2004 04 26 | 691 | 0.3− | 0.2− | 2005 10 01 | G96 | 0.0 | 0.2+ |
| 2004 03 26 | 691 | 0.2− | 0.0 | 2004 05 09 | 703 | 0.2− | 0.2+ | 2005 10 01 | G96 | 0.1− | 0.2+ |
| 2004 03 26 | 691 | 0.3− | 0.1− | 2004 05 09 | 703 | 0.4+ | 0.1+ | 2005 10 01 | G96 | 0.1− | 0.4+ |
| 2004 03 30 | 703 | 0.0 | 0.2+ | 2004 05 09 | 703 | 1.0− | 0.1+ | 2005 10 01 | G96 | 0.2− | 0.4+ |
| 2004 03 30 | 703 | 0.0 | 0.3+ | 2004 05 09 | 703 | 0.4− | 0.3− | | | | |

**2004 FF$_{85}$ = 2006 WR$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.86734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26336812 | $\omega$ | 49.73669 | | −0.68320702 | −0.72209221 | |
| $a$ | 2.4104266 | $\Omega$ | 83.71591 | | +0.63239346 | −0.65949969 | |
| $e$ | 0.1215293 | $i$ | 6.27701 | | +0.36511187 | −0.20890906 | |
| $P$ | 3.74 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 688 | 0.0 | 0.2+ | 2004 03 26 | 704 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.3+ |
| 2000 03 04 | 688 | 0.1+ | 0.0 | 2004 03 26 | 704 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2004 03 18 | 691 | 0.1+ | 0.1+ | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2+ |
| 2004 03 18 | 691 | 0.3− | 0.5− | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.1− |
| 2004 03 23 | 704 | 0.7+ | 0.0 | 2004 03 27 | 704 | 0.8− | 0.6+ | 2006 11 12 | G96 | 0.4+ | 0.3+ |
| 2004 03 23 | 704 | 0.5− | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.8+ | 2006 11 20 | 704 | 0.0 | 0.4− |
| 2004 03 23 | 704 | 0.4+ | 0.3− | 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2004 03 23 | 704 | 0.3+ | 0.2− | 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2004 03 23 | 704 | 0.1+ | 0.1+ | 2004 03 28 | 704 | 1.4− | 0.2− | 2006 11 27 | 703 | 0.3− | 0.5− |
| 2004 03 26 | 704 | 0.7+ | 0.3− | 2004 03 28 | 704 | 0.5+ | 0.4− | 2006 11 27 | 703 | 0.1− | 0.7− |
| 2004 03 26 | 704 | 0.9+ | 0.1+ | 2004 03 28 | 704 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.4− | 0.1− |
| 2004 03 26 | 704 | 0.0 | 0.7− | 2006 10 23 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.3− | 0.1− |

**2004 FJ$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.89943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27313662 | $\omega$ | 116.14695 | | −0.99270070 | −0.08370194 | |
| $a$ | 2.3526073 | $\Omega$ | 59.16318 | | +0.03674237 | −0.89562153 | |
| $e$ | 0.0650467 | $i$ | 5.80396 | | +0.11487085 | −0.43687076 | |
| $P$ | 3.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 644 | 0.4− | 0.6+ | 2004 03 15 | 704 | 0.3+ | 1.0+ | 2004 03 23 | 704 | 0.5+ | 0.3+ |
| 2002 10 11 | 644 | 0.4− | 0.9+ | 2004 03 15 | 704 | 0.2− | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2002 10 11 | 644 | 0.4− | 1.1+ | 2004 03 15 | 704 | 0.8+ | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2003 12 25 | 691 | 0.1+ | 0.2+ | 2004 03 15 | 704 | 0.7− | 1.4− | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2003 12 25 | 691 | 0.0 | 0.2− | 2004 03 15 | 704 | 1.2− | 0.8+ | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2003 12 25 | 691 | 0.1+ | 0.0 | 2004 03 19 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 1.0+ |
| 2004 02 13 | 691 | 0.0 | 0.1− | 2004 03 19 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2004 03 19 | 644 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.3− |
| 2004 02 13 | 691 | 0.3+ | 0.0 | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.3− |
| 2004 02 29 | 691 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.1− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2004 02 29 | 691 | 0.2− | 0.1+ | 2004 03 23 | 704 | 0.6+ | 0.2+ | | | | |
| 2004 02 29 | 691 | 0.3− | 0.0 | 2004 03 23 | 704 | 0.2+ | 0.1− | | | | |

**2004 FL$_{86}$ = 2006 UU$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.05641 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24012942 | $\omega$ | 212.77345 | | −0.49854200 | +0.86293093 | |
| $a$ | 2.5635343 | $\Omega$ | 27.58764 | | −0.75203861 | −0.38320642 | |
| $e$ | 0.0858752 | $i$ | 10.26163 | | −0.43115403 | −0.32939802 | |
| $P$ | 4.10 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.2− | 0.2+ | 2004 03 23 | 704 | 1.1+ | 1.0+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2004 02 13 | 691 | 0.3− | 0.0 | 2005 07 03 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2004 02 13 | 691 | 0.1+ | 0.3− | 2005 07 03 | 644 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2004 03 19 | 644 | 0.5+ | 0.0 | 2005 07 03 | 644 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2004 03 19 | 644 | 0.2− | 0.8− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2004 03 19 | 644 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2004 03 23 | 704 | 0.5+ | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.0 | | | | |
| 2004 03 23 | 704 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.1+ | | | | |

**2004 FS$_{86}$ = 2006 VU$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.83852 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24422748 | $\omega$ | 233.96590 | | +0.98884138 | +0.03640887 | |
| $a$ | 2.5347766 | $\Omega$ | 123.52218 | | +0.00932856 | +0.95263793 | |
| $e$ | 0.0873085 | $i$ | 9.97829 | | −0.14867986 | +0.30191946 | |
| $P$ | 4.04 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.1− | 0.1− | 2004 03 23 | 704 | 0.6− | 0.8+ | 2006 09 18 | 703 | 0.3− | 0.0 |
| 2004 02 13 | 691 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 0.7− | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.3− |
| 2004 02 13 | 691 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2006 09 18 | 703 | 0.5+ | 0.2+ |
| 2004 03 17 | 691 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.9+ | 0.3+ | 2006 11 13 | 703 | 1.1+ | 0.2− |
| 2004 03 17 | 691 | 0.1− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.9− | 0.3− |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2004 03 23 | 704 | 1.2+ | 0.1+ | 2006 11 13 | 703 | (2.0+ | 0.7+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 644 | 0.1− | 0.2+ | 2004 03 23 | 704 | 0.8− | 1.0+ | 2006 11 13 | 703 | 0.7+ | 0.3− | | |
| 2004 03 19 | 644 | 0.2+ | 0.1− | 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 11 19 | 703 | 0.7− | 0.3− | | |
| 2004 03 19 | 644 | 0.1+ | 0.3− | 2004 03 27 | 691 | 0.2− | 0.3− | 2006 11 19 | 703 | 1.1+ | 0.5+ | | |
| 2004 03 19 | 644 | 0.1− | 0.4+ | 2004 03 27 | 691 | 0.2+ | 0.0 | 2006 11 19 | 703 | 1.0− | 0.8− | | |
| 2004 03 19 | 644 | 0.1− | 0.3− | 2004 03 27 | 691 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.4− | 0.2+ | | |
| 2004 03 19 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.4− | 1.8+ | | | | | | |

**2004 FV$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.86382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27572360 | $\omega$ | 74.37049 | | −0.61753385 | −0.77678182 | |
| $a$ | 2.3378686 | $\Omega$ | 54.43078 | | +0.65087408 | −0.59285793 | |
| $e$ | 0.0555205 | $i$ | 8.73575 | | +0.44160489 | −0.21243698 | |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.1− | 2004 03 23 | 704 | 0.3− | 0.1− | 2004 03 27 | 691 | 0.0 | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 03 23 | 704 | 1.0− | 0.3− | 2006 11 12 | G96 | (6.7+ | 0.5+) |
| 2002 10 15 | 644 | 0.1− | 1.2+ | 2004 03 23 | 704 | 0.2− | 0.0 | 2006 11 12 | G96 | (6.4+ | 0.6+) |
| 2002 10 15 | 644 | 0.5+ | 1.5+ | 2004 03 23 | 704 | 0.1+ | 0.9− | 2006 11 12 | G96 | (7.1+ | 0.4+) |
| 2002 10 15 | 644 | (0.3− | 1.5+) | 2004 03 23 | 704 | 0.1− | 0.8− | 2006 11 12 | G96 | (7.2+ | 0.6+) |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 03 25 | 704 | 1.2+ | 0.9+ | 2006 11 17 | 691 | (7.5+ | 1.2+) |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 03 25 | 704 | 0.0 | 1.5+ | 2006 11 17 | 691 | (7.1+ | 1.0+) |
| 2004 03 19 | 644 | 0.7+ | 0.2+ | 2004 03 25 | 704 | (0.7− | 2.1+) | 2006 11 17 | 691 | (7.2+ | 0.7+) |
| 2004 03 19 | 644 | 0.3− | 0.2+ | 2004 03 27 | 691 | 0.1− | 0.1− | | | | |
| 2004 03 19 | 644 | 0.3+ | 0.2+ | 2004 03 27 | 691 | 0.0 | 0.1− | | | | |

**2004 FP$_{87}$ = 2006 WA$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.20911 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23110362 | $\omega$ | 116.69081 | | −0.90240344 | −0.40342267 | |
| $a$ | 2.6298534 | $\Omega$ | 40.02419 | | +0.26138705 | −0.79182566 | |
| $e$ | 0.0991058 | $i$ | 13.61513 | | +0.34255634 | −0.45854364 | |
| $P$ | 4.26 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 644 | 0.0 | 0.5− | 2004 03 23 | 704 | 0.5+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2004 03 19 | 644 | 0.2+ | 0.3− | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2004 03 19 | 644 | 0.2+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2004 03 23 | 704 | 1.2− | 0.5− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2004 03 23 | 704 | 0.1+ | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1− |

**2004 FU$_{87}$ = 2006 ST$_{327}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.07098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24195033 | $\omega$ | 56.62376 | | −0.92906984 | −0.36743006 | |
| $a$ | 2.5506561 | $\Omega$ | 101.78744 | | +0.32323638 | −0.86256924 | |
| $e$ | 0.1214452 | $i$ | 2.50078 | | +0.17985404 | −0.34780665 | |
| $P$ | 4.07 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.5− | 0.0 | 2004 03 23 | 704 | 1.2− | 0.7+ | 2006 09 27 | 691 | 0.4+ | 0.1+ |
| 2004 03 15 | 703 | 0.1+ | 0.5− | 2004 03 23 | 704 | 0.4+ | 0.7− | 2006 10 01 | 691 | 0.4+ | 0.1− |
| 2004 03 15 | 703 | 0.1+ | 0.4+ | 2004 03 23 | 704 | 0.3+ | 0.8− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 703 | (0.6+ | 2.2−) | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.4+ |
| 2004 03 19 | 704 | 0.5+ | 0.6− | 2006 09 19 | 691 | 0.3− | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2004 03 19 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2004 03 19 | 704 | 1.0+ | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2004 03 23 | 704 | 1.0− | 0.7+ | 2006 09 27 | 691 | 0.5− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |

**2004 FF$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.34380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24574559 | $\omega$ | 264.78244 | | +0.64308349 | −0.75070294 | |
| $a$ | 2.5243267 | $\Omega$ | 143.71401 | | +0.76390949 | +0.61499705 | |
| $e$ | 0.1123951 | $i$ | 14.81134 | | +0.05372070 | +0.24129595 | |
| $P$ | 4.01 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.0 | 1.1+ | 2002 11 04 | 644 | 0.4+ | 1.0− | 2006 08 28 | 699 | (1.1+ | 2.1+) |
| 2000 03 05 | 704 | 0.8+ | 0.4− | 2004 02 17 | 704 | 0.6− | 0.3+ | 2006 08 28 | 699 | 0.5+ | 1.1+ |
| 2000 03 05 | 704 | 0.0 | 0.1+ | 2004 02 17 | 704 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 1.1− | 0.6+ |
| 2000 03 05 | 704 | 0.5− | 1.2+ | 2004 02 17 | 704 | 0.5+ | 0.2− | 2006 08 28 | 699 | (2.5+ | 0.2+) |
| 2002 08 24 | 644 | 0.3+ | 0.6+ | 2004 02 17 | 704 | 0.8+ | 0.3− | 2006 09 24 | 699 | 0.3− | 1.1+ |
| 2002 08 24 | 644 | 0.4+ | 1.0+ | 2004 02 17 | 704 | 0.1+ | 0.5− | 2006 09 24 | 699 | (1.5+ | 1.9+) |
| 2002 08 24 | 644 | 0.3+ | 0.3+ | 2004 03 20 | 704 | 0.4− | 0.1− | 2006 09 24 | 699 | 0.4+ | 1.3+ |
| 2002 10 02 | 608 | 0.7− | 0.6− | 2004 03 20 | 704 | 0.1− | 0.4+ | 2006 09 24 | 699 | 0.7+ | 1.0+ |
| 2002 10 02 | 608 | 0.7− | 0.6− | 2004 03 20 | 704 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.8− | 0.1− |
| 2002 10 02 | 608 | 0.7− | 0.7− | 2004 03 20 | 704 | 1.0− | 0.3+ | 2006 09 25 | 703 | 1.0− | 0.5− |
| 2002 10 28 | 704 | 0.4− | 0.7+ | 2004 03 23 | 704 | 0.5− | 0.7− | 2006 09 25 | 703 | 0.4+ | 0.3− |
| 2002 10 28 | 704 | 0.6+ | 0.3− | 2004 03 23 | 704 | (1.8+ | 0.4−) | 2006 09 25 | 703 | 0.3− | 0.9− |
| 2002 10 28 | 704 | 0.9+ | 0.1− | 2004 03 23 | 704 | 0.7+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 11 04 | 644 | 0.2+ | 0.8− | 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 2002 11 04 | 644 | 0.3+ | 0.5− | 2004 03 23 | 704 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |

**2004 FK$_{91}$ = 2004 GG$_{88}$**

Id. Minor Planet Center (d, *MPO* 87832)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.51849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18959529 | $\omega$ | 284.98585 | | +0.88315433 | −0.46572916 | |
| $a$ | 3.0008965 | $\Omega$ | 102.79851 | | +0.44941777 | +0.80588505 | |
| $e$ | 0.0243319 | $i$ | 3.29148 | | +0.13439528 | +0.36557577 | |
| $P$ | 5.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 291 | 0.4+ | 0.1+ | 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2+ |
| 2001 10 18 | 291 | 0.1+ | 0.0 | 2004 04 11 | 644 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.6− | 0.3− |
| 2001 10 18 | 291 | 0.6− | 0.0 | 2004 04 11 | 644 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.7− | 0.4+ |
| 2004 03 21 | 691 | 0.2+ | 0.1+ | 2004 04 11 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | (2.6− | 0.4+) |
| 2004 03 21 | 691 | 0.1− | 0.1+ | 2004 04 20 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.0− | 0.3− |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2004 04 20 | 691 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.4− |
| 2004 03 23 | 704 | 0.6+ | 0.9+ | 2004 04 20 | 691 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 2004 03 23 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.2+ | 1.0+ | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2004 03 23 | 704 | (2.7+ | 0.3−) | 2006 09 30 | 703 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.6+ | 0.1+ |
| 2004 03 23 | 704 | 1.5+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.3+ |
| 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.5− | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2004 03 28 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.5− | 0.3+ | | | | |

**2004 FJ$_{92}$ = 2001 TZ$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.01330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17590132 | $\omega$ | 68.32973 | | −0.71291733 | +0.70114975 | |
| $a$ | 3.1546897 | $\Omega$ | 156.18452 | | −0.65365549 | −0.65837527 | |
| $e$ | 0.1309899 | $i$ | 1.66658 | | −0.25393579 | −0.27373534 | |
| $P$ | 5.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 691 | 0.2− | 0.1+ | 2004 03 24 | 699 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.4+ |
| 2001 10 10 | 691 | 0.1+ | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2001 10 10 | 691 | 0.1+ | 0.1− | 2004 03 26 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.3+ |
| 2004 02 26 | 704 | 1.1+ | 0.1− | 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2004 02 26 | 704 | 1.3+ | 1.0+ | 2004 03 27 | 704 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2004 02 26 | 704 | 0.6+ | 0.5− | 2004 03 27 | 704 | 0.6+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.4− |
| 2004 02 26 | 704 | 0.7+ | 0.0 | 2004 03 27 | 704 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2004 03 27 | 704 | 0.6+ | 1.0+ | 2006 09 26 | G96 | 0.7+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.1+ | 0.5+ | 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.8+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.1− | 0.4+ | 2004 04 22 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2+ | | |
| 2004 03 18 | 704 | 0.8− | 1.2+ | 2004 04 22 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.4+ | | |
| 2004 03 18 | 704 | 0.7+ | 0.5+ | 2004 04 22 | 691 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.9− | 0.3+ | | |
| 2004 03 24 | 699 | 0.5− | 0.5− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.1+ | | |
| 2004 03 24 | 699 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 691 | 0.5− | 0.2+ | | |
| 2004 03 24 | 699 | 0.2− | 0.6− | 2006 09 19 | 691 | 0.1− | 0.5+ | | | | | | |

**2004 FQ$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 113.86562 | | (2000.0) | | −0.34381377 | +0.93865288 |
| $n$ | 0.18279341 | $\omega$ | 58.48509 | | −0.90079941 | −0.33776544 |
| $a$ | 3.0748860 | $\Omega$ | 191.50021 | | −0.26524047 | −0.06960806 |
| $e$ | 0.0744706 | $i$ | 7.75021 | | | |
| $P$ | 5.39 | $H$ | 15.1 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 0.2+ | 0.1+ | 2004 04 15 | 699 | 0.4− | 0.6− | 2006 09 25 | 691 | 0.1− | 0.2+ | | |
| 2001 10 24 | 704 | 0.2− | 0.7+ | 2004 04 15 | 699 | 0.9− | 0.6− | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 2001 10 24 | 704 | 0.0 | 0.4− | 2004 04 15 | 699 | 0.8− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.0 | | |
| 2004 03 18 | 704 | 0.6+ | 0.4− | 2004 04 15 | 699 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.0 | | |
| 2004 03 18 | 704 | 1.1+ | 0.3− | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | | |
| 2004 03 18 | 704 | 0.3+ | 0.2− | 2004 04 21 | 704 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.1− | | |
| 2004 03 18 | 704 | 0.4+ | 0.2+ | 2004 04 21 | 704 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.0 | | |
| 2004 03 18 | 704 | 0.8+ | 0.6+ | 2004 04 21 | 704 | 0.7+ | 0.4+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | | |
| 2004 03 24 | 699 | 0.6− | 0.0 | 2004 04 22 | 704 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.4− | 0.1+ | | |
| 2004 03 24 | 699 | 0.9− | 0.2− | 2004 04 22 | 704 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.2+ | | |
| 2004 03 24 | 699 | 0.3− | 0.7+ | 2004 04 22 | 704 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2004 03 24 | 699 | 0.1− | 0.1+ | 2004 04 22 | 704 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.5+ | | |
| 2004 03 27 | 704 | 0.1− | 0.6+ | 2004 04 23 | 691 | 0.1+ | 0.0 | 2006 10 16 | 106 | 0.2+ | 0.6− | | |
| 2004 03 27 | 704 | 0.1− | 0.2+ | 2004 04 23 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 106 | 0.0 | 0.3− | | |
| 2004 03 27 | 704 | 0.0 | 0.5+ | 2004 04 23 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 106 | 0.5+ | 0.3+ | | |
| 2004 03 27 | 704 | 0.1+ | 0.0 | 2006 09 05 | 163 | 0.1+ | 0.4+ | 2006 10 16 | 106 | 0.3+ | 0.4+ | | |
| 2004 03 27 | 704 | 0.8+ | 0.5+ | 2006 09 05 | 163 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.2+ | | |
| 2004 04 11 | 703 | 0.4− | 1.1+ | 2006 09 05 | 163 | (1.5+ | 0.1−) | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2004 04 11 | 703 | (1.2− | 1.6+) | 2006 09 14 | 691 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2004 04 11 | 703 | (1.3− | 1.5+) | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.3− | | |
| 2004 04 11 | 703 | 0.5+ | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.3+ | | |
| 2004 04 12 | 699 | 1.3− | 0.8− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2004 04 12 | 699 | 0.7− | 0.5+ | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.7− | 0.5− | | |
| 2004 04 12 | 699 | 0.5− | 0.6− | 2006 09 18 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2004 04 12 | 699 | 0.6+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.1− | | | | | | |

**2004 FK$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 247.16320 | | (2000.0) | | −0.73907977 | −0.67337253 |
| $n$ | 0.21630679 | $\omega$ | 131.06014 | | +0.56167079 | −0.63092838 |
| $a$ | 2.7484591 | $\Omega$ | 6.68464 | | +0.37186961 | −0.38535543 |
| $e$ | 0.1296530 | $i$ | 8.98531 | | | |
| $P$ | 4.56 | $H$ | 15.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.7− | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.1+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2004 04 19 | 704 | 0.2− | 0.1+ | 2006 09 28 | 291 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.2− | 1.1+ | 2004 04 19 | 704 | 0.6+ | 0.9+ | 2006 09 28 | 291 | 0.2− | 0.0 | | |
| 2002 12 05 | 704 | 0.1− | 0.7+ | 2004 04 19 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 291 | 0.4− | 0.2+ | | |
| 2004 03 17 | 703 | 0.9− | 1.2+ | 2004 04 19 | 704 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2004 03 17 | 703 | (1.9− | 1.2+) | 2004 04 20 | 703 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.3+ | | |
| 2004 03 17 | 703 | 1.1+ | 0.1− | 2004 04 20 | 703 | 0.0 | 1.1− | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2004 03 17 | 703 | 1.2+ | 0.9+ | 2004 04 20 | 703 | 1.0− | 0.4− | 2006 10 17 | 703 | (0.1+ | 2.4+) | | |
| 2004 03 20 | 699 | 0.4+ | 0.3+ | 2004 04 20 | 703 | 0.7+ | 0.7− | 2006 10 17 | 703 | 0.1− | 0.7+ | | |
| 2004 03 20 | 699 | 0.6− | 1.2+ | 2004 04 21 | 704 | (1.7+ | 0.4−) | 2006 10 17 | 703 | (1.9− | 0.2+) | | |
| 2004 03 20 | 699 | 0.2− | 1.2+ | 2004 04 21 | 704 | 1.0+ | 0.5+ | 2006 10 17 | 703 | 1.5− | 1.2+ | | |
| 2004 03 20 | 704 | 1.4+ | 0.8+ | 2004 04 21 | 704 | 0.8+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.2− | | |
| 2004 03 20 | 704 | 0.9+ | 0.8+ | 2004 04 21 | 704 | 0.8+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2004 03 20 | 699 | (0.5− | 1.5+) | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.5− | | |
| 2004 03 20 | 704 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.5+ | 2006 10 19 | G96 | 0.6+ | 0.2− | | |
| 2004 03 20 | 704 | 0.1+ | 1.0+ | 2006 09 15 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2+ | | |
| 2004 03 24 | 699 | 1.0− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.4+ | | |
| 2004 03 24 | 699 | 1.5− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.6− | 0.1+ | | |
| 2004 03 24 | 699 | 0.3− | 0.4− | 2006 09 19 | 691 | 0.3− | 0.1− | 2006 10 27 | G98 | 0.0 | 0.2+ | | |
| 2004 03 24 | 699 | 1.0− | 0.1+ | 2006 09 22 | 621 | 0.1− | 0.1− | 2006 10 27 | G98 | 0.2− | 0.4+ | | |
| 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 09 22 | 621 | 0.2− | 0.2+ | 2006 10 27 | G98 | 0.0 | 0.4+ | | |
| 2004 03 27 | 704 | 0.7+ | 0.7+ | 2006 09 22 | 621 | 0.0 | 0.1− | 2006 10 27 | G98 | 0.0 | 0.2+ | | |
| 2004 03 27 | 704 | 0.1+ | 0.9+ | 2006 09 24 | 621 | 0.2+ | 0.4+ | 2006 10 27 | G98 | 0.6− | 0.4− | | |
| 2004 04 12 | 644 | 0.5+ | 0.5+ | 2006 09 24 | 621 | 0.3+ | 0.2+ | 2006 10 27 | G98 | 0.2+ | 0.4+ | | |
| 2004 04 12 | 644 | 0.2+ | 0.2+ | 2006 09 24 | 621 | 0.2− | 0.2+ | 2006 10 27 | G98 | 0.3+ | 0.4− | | |
| 2004 04 12 | 644 | 0.2+ | 0.4+ | 2006 09 24 | 621 | 0.1− | 0.2− | 2006 10 27 | G98 | 0.6+ | 0.5+ | | |
| 2004 04 17 | 704 | 0.3+ | 0.2− | 2006 09 24 | 621 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.4− | | |
| 2004 04 17 | 704 | 0.6+ | 0.6+ | 2006 09 25 | 621 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.2+ | 1.1+ | | |
| 2004 04 17 | 704 | 0.4+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.3− | | |
| 2004 04 17 | 704 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.3− | | |

**2004 FK$_{96}$ = 2006 SQ$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 189.21300 | | (2000.0) | | −0.94695789 | +0.29815605 |
| $n$ | 0.22554482 | $\omega$ | 174.62667 | | −0.30479539 | −0.71508298 |
| $a$ | 2.6728883 | $\Omega$ | 23.81189 | | −0.10183580 | −0.63226522 |
| $e$ | 0.1288755 | $i$ | 17.27470 | | | |
| $P$ | 4.37 | $H$ | 16.4 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 0.6− | 0.7+ | 2004 03 26 | 704 | 1.0+ | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.4− | | |
| 2004 03 15 | 704 | 0.3+ | 0.7+ | 2004 03 26 | 704 | 0.8+ | 1.2+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | | |
| 2004 03 15 | 704 | (0.6− | 1.8−) | 2004 03 26 | 704 | 0.1− | 1.2+ | 2006 10 20 | 691 | 0.4− | 0.0 | | |
| 2004 03 15 | 704 | 0.5+ | 0.5− | 2004 03 26 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.0 | | |
| 2004 03 23 | 704 | (1.8+ | 0.2−) | 2004 03 26 | 704 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2004 03 23 | 704 | (1.6+ | 0.3−) | 2004 03 26 | 703 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.5+ | | |
| 2004 03 23 | 704 | 0.1− | 0.5− | 2004 03 26 | 703 | 0.6+ | 0.9+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | | |
| 2004 03 23 | 704 | 0.0 | 0.1+ | 2004 03 26 | 703 | 0.5+ | 1.0− | 2006 10 29 | 691 | 0.3+ | 0.3+ | | |
| 2004 03 23 | 704 | (0.3+ | 2.1−) | 2004 03 26 | 703 | 0.4− | 0.9+ | 2006 11 16 | 691 | 0.0 | 0.2− | | |
| 2004 03 25 | 704 | 0.4− | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 25 | 704 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.2− | 0.2− | | |
| 2004 03 25 | 704 | 0.4+ | 0.7− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2− | | |
| 2004 03 25 | 704 | 0.1+ | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 11 25 | G96 | 0.1+ | 0.1− | | |
| 2004 03 25 | 704 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.5+ | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.1− | | |
| 2004 03 26 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.2− | 0.3+ | | |
| 2004 03 26 | 691 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.2− | 0.2− | | | | | | |
| 2004 03 26 | 691 | 0.4− | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.3− | | | | | | |

**2004 FU$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.79626 | | (2000.0) | | +0.91169429 | −0.37286811 |
| $n$ | 0.22944670 | $\omega$ | 336.76325 | | +0.40438469 | +0.73998449 |
| $a$ | 2.6424991 | $\Omega$ | 46.31987 | | +0.07270860 | +0.55981454 |
| $e$ | 0.1817647 | $i$ | 13.80556 | | | |
| $P$ | 4.30 | $H$ | 14.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.1− | 0.6− | 2006 09 28 | G92 | 0.1− | 0.1− | 2006 10 31 | 704 | 0.8− | 0.6+ | | |
| 2002 09 07 | 704 | 0.0 | 0.5+ | 2006 09 28 | G92 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.1− | | |
| 2002 09 07 | 704 | 0.8+ | 0.5− | 2006 09 28 | G92 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.0 | | |
| 2002 09 07 | 704 | 0.4− | 0.4+ | 2006 09 28 | G92 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.0 | 0.1− | | |
| 2002 11 12 | 704 | 1.5+ | 0.2+ | 2006 09 29 | G92 | 0.5− | 0.3− | 2006 11 13 | 703 | 0.1+ | 0.5+ | | |
| 2002 11 12 | 704 | 0.3− | 0.2− | 2006 09 29 | G92 | 0.5− | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.0 | | |
| 2002 11 12 | 704 | 0.0 | 0.0 | 2006 09 29 | G92 | 0.4− | 0.5− | 2006 11 13 | 703 | 0.6+ | 0.8+ | | |
| 2002 11 12 | 704 | 0.4+ | 0.4− | 2006 09 29 | 699 | 0.6+ | 1.2+ | 2006 11 13 | 703 | 0.0 | 0.3+ | | |
| 2002 11 12 | 704 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.0 | 0.0 | | |
| 2002 12 05 | 704 | 0.4+ | 0.3− | 2006 09 29 | 699 | 0.2+ | 0.4+ | 2006 11 14 | 704 | 1.1+ | 1.1+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.1+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.1− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 15 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.4+ |
| 2002 12 15 | 704 | 0.3+ | 0.5− | 2006 09 30 | 703 | 0.4+ | 0.2− | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2002 12 15 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2002 12 15 | 704 | 0.5− | 0.7− | 2006 10 01 | 704 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2003 01 04 | 704 | 0.8− | 0.1− | 2006 10 01 | 704 | 0.6− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2003 01 04 | 704 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2003 01 04 | 704 | 0.3− | 0.8− | 2006 10 01 | 704 | 0.6− | 0.5− | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2003 01 04 | 704 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2004 03 23 | 704 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2004 03 23 | 704 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2004 03 23 | 704 | 1.0+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2004 03 23 | 704 | 0.4+ | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2004 03 23 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.3− |
| 2004 03 25 | 704 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 1.0+ | 0.3+ |
| 2004 03 25 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 704 | 0.7− | 0.1− | 2006 11 20 | 704 | 0.9+ | 0.1− |
| 2004 03 25 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 704 | 1.1− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.3+ |
| 2004 03 29 | 704 | 0.3+ | 1.0+ | 2006 10 22 | 704 | 1.0− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2004 03 29 | 704 | 1.3+ | 0.1+ | 2006 10 22 | 704 | 0.9− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2004 03 29 | 704 | (2.0+ | 0.3+) | 2006 10 22 | 704 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2004 03 29 | 704 | 0.3+ | 0.9+ | 2006 10 27 | 704 | 0.3− | 1.0+ | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2004 03 29 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2005 01 22 | 809 | 0.3− | 0.6+ | 2006 10 27 | 704 | 0.0 | 0.5+ | 2006 11 26 | 704 | 1.5− | 0.1+ |
| 2005 01 22 | 809 | 0.2− | 0.5+ | 2006 10 27 | 704 | 0.1+ | 0.3+ | 2006 11 26 | 704 | 0.4+ | 0.3+ |
| 2006 09 27 | G92 | 0.2+ | 0.2+ | 2006 10 27 | 704 | 0.0 | 0.4+ | 2006 11 26 | 704 | 0.8− | 0.8+ |
| 2006 09 27 | G92 | 0.1+ | 0.2− | 2006 10 31 | 704 | 0.5− | 1.0+ | 2006 11 27 | 703 | 0.1+ | 0.3− |
| 2006 09 27 | G92 | 0.2− | 0.1− | 2006 10 31 | 704 | 0.6+ | 0.7+ | 2006 11 27 | 703 | 0.2+ | 0.9− |
| 2006 09 28 | G92 | 0.0 | 0.1− | 2006 10 31 | 704 | 0.1− | 1.0+ | 2006 11 27 | 703 | 0.2+ | 0.0 |
| 2006 09 28 | G92 | 0.1− | 0.1− | 2006 10 31 | 704 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.4− |

### 2004 FQ$_{97}$ = 2006 SF$_{193}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.70756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21631339 | $\omega$ | 299.15185 | | −0.11334553 | | −0.98696602 |
| $a$ | 2.7484032 | $\Omega$ | 156.51470 | | +0.98174105 | | −0.12893402 |
| $e$ | 0.1280995 | $i$ | 16.65846 | | +0.15276554 | | +0.09630206 |
| $P$ | 4.56 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 644 | 0.1+ | 0.0 | 2004 03 25 | 704 | (1.6+ | 0.6+) | 2006 09 14 | 703 | 0.2+ | 1.0− |
| 2002 11 06 | 644 | 0.1− | 0.4+ | 2004 03 25 | 704 | 0.4− | 0.2− | 2006 09 26 | 703 | (0.2+ | 3.2+) |
| 2002 11 06 | 644 | 0.2+ | 0.0 | 2004 03 25 | 704 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.5+ | 0.1− |
| 2002 11 16 | 644 | 0.1− | 0.2− | 2004 03 25 | 704 | 0.1− | 0.6+ | 2006 09 26 | 703 | (2.5− | 0.0 ) |
| 2002 11 16 | 644 | 0.2− | 0.0 | 2004 03 25 | 704 | 0.2− | 0.0 | 2006 09 26 | 703 | 1.0+ | 0.6+ |
| 2002 11 16 | 644 | 0.1− | 0.1− | 2004 03 25 | 704 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2004 03 12 | 644 | 0.4+ | 0.3− | 2004 03 25 | 704 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.3+ |
| 2004 03 12 | 644 | 0.0 | 0.5− | 2004 03 28 | 703 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 2004 03 12 | 644 | 0.0 | 0.6− | 2004 03 28 | 703 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.5− |
| 2004 03 23 | 704 | 0.2− | 0.2+ | 2004 03 28 | 703 | 0.2+ | 0.2− | 2006 09 27 | 703 | 1.4− | 0.1− |
| 2004 03 23 | 704 | 0.7+ | 0.6− | 2004 03 28 | 703 | 0.3− | 0.4+ | 2006 09 27 | 703 | (2.1+ | 0.3+) |
| 2004 03 23 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.9+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.7− |
| 2004 03 23 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.1+ | 1.1+ | 2006 09 27 | 703 | 0.3+ | 0.2− |
| 2004 03 23 | 704 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.0 | | | | |

### 2004 FX$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.68596 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22474080 | $\omega$ | 103.86540 | | −0.95043440 | | −0.30189829 |
| $a$ | 2.6792594 | $\Omega$ | 58.60970 | | +0.24086013 | | −0.86615720 |
| $e$ | 0.0363605 | $i$ | 4.99845 | | +0.19662362 | | −0.39828271 |
| $P$ | 4.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 704 | 0.9+ | 0.2− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.4+ |
| 2004 03 22 | 704 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.6+ | 0.1+ |
| 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | (2.2− | 0.7+) |
| 2004 03 22 | 704 | 1.2+ | 0.4− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2004 03 26 | 691 | 0.1− | 0.2− | 2006 10 03 | 291 | 0.2− | 0.2+ | 2006 11 13 | G96 | (1.0− | 2.0−) |
| 2004 03 26 | 691 | 0.1− | 0.1− | 2006 10 03 | 291 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.7+ | 1.5− |
| 2004 03 26 | 691 | 0.3− | 0.3− | 2006 10 03 | 291 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.9− |
| 2004 04 11 | 644 | 0.3+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 1.1− | 0.3− |
| 2004 04 11 | 644 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2004 04 11 | 644 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 1.0− | 0.5− |
| 2004 04 19 | 704 | 1.0+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.4− |
| 2004 04 19 | 704 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.6− | 1.2+ |
| 2004 04 19 | 704 | 0.5− | 0.9+ | 2006 10 31 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2004 04 19 | 704 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.2+ |
| 2004 04 26 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.3− |
| 2004 04 26 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.1− | | | | |
| 2004 04 26 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.0+ | 0.1− | | | | |

### 2004 FA$_{101}$ = 2006 QE$_{156}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.95626 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18102312 | $\omega$ | 241.30374 | | +0.63488543 | | −0.77192362 |
| $a$ | 3.0949005 | $\Omega$ | 169.10179 | | +0.75517229 | | +0.61113276 |
| $e$ | 0.0309513 | $i$ | 9.88952 | | +0.16320327 | | +0.17507334 |
| $P$ | 5.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.2− | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.1− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.3− | 0.2+ | 2006 08 29 | 691 | 0.5− | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2004 04 16 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2001 10 24 | 644 | 0.2+ | 1.1+ | 2004 04 16 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 644 | 0.0 | 1.2+ | 2004 04 16 | 691 | 0.6+ | 0.5− | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 644 | 0.5− | 1.1+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2004 03 23 | 704 | 0.3+ | 0.4− | 2006 08 19 | 691 | 0.1− | 0.5+ | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 2004 03 23 | 704 | 0.1− | 0.9+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2004 03 23 | 704 | 0.3− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.6+ | 0.9− |

### 2004 FN$_{102}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.61937 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28040595 | $\omega$ | 283.42004 | | −0.87737616 | | −0.40643244 |
| $a$ | 2.3117697 | $\Omega$ | 233.20431 | | +0.45940096 | | −0.86493687 |
| $e$ | 0.2329796 | $i$ | 18.56848 | | −0.13842627 | | −0.29444333 |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | E12 | (1.0+ | 2.4−) | 2004 04 26 | 608 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2004 03 20 | E12 | 0.6+ | 0.8− | 2004 04 26 | 608 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.7− |
| 2004 03 20 | E12 | 0.2− | 0.5+ | 2004 04 26 | 608 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2004 03 20 | E12 | 0.7+ | 1.2− | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2004 03 26 | 704 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2004 03 26 | 704 | 0.3+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2004 03 26 | 704 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.9− |
| 2004 03 26 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 2004 04 12 | E12 | 0.8− | 0.7+ | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 17 | 704 | 0.9− | 0.0 |
| 2004 04 12 | E12 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 17 | 704 | (0.1− | 2.0+) |
| 2004 04 12 | E12 | 0.8− | 0.6+ | 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 04 12 | E12 | 0.5− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2004 04 13 | 644 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.5− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 04 13 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1− | 2006 11 20 | 704 | 1.3+ | 1.3+ |
| 2004 04 13 | 644 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 20 | 704 | (0.5+ | 1.8+) |
| 2004 04 13 | 644 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | (0.3− | 2.6+) |
| 2004 04 13 | 644 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.2− | 2006 11 20 | 704 | 0.9+ | 0.7+ |
| 2004 04 13 | 644 | 0.2− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2004 04 17 | E12 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2004 04 17 | E12 | 0.7+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.5+ | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2004 04 17 | E12 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.9− | 0.7+ |
| 2004 04 17 | E12 | 0.6+ | 1.4− | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.5− | 0.5− |
| 2004 04 17 | E12 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.6+ | 0.2− | 2006 11 28 | 704 | 0.4− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | E12 | 0.3− | 0.6− | 2006 11 11 | 703 | 0.8+ | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.7+ | | |
| 2004 04 17 | E12 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.7− | 2006 11 28 | 704 | 0.1− | 0.1+ | | |
| 2004 04 17 | E12 | 0.2+ | 0.4− | 2006 11 11 | 703 | (1.5− | 0.2−) | | | | | | |

**2004 FW**$_{105}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.65925 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23432810 | $\omega$ | 77.76235 | | −0.87568871 | | +0.45491809 |
| $a$ | 2.6056723 | $\Omega$ | 129.06473 | | −0.48270480 | | −0.83362477 |
| $e$ | 0.1364520 | $i$ | 12.03715 | | +0.01285927 | | −0.31323996 |
| $P$ | 4.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 08 | 704 | 0.3+ | 0.7− | 2004 03 15 | 704 | 0.1+ | 0.3+ | 2004 04 14 | 703 | 0.3+ | 0.0 |
| 2000 04 08 | 704 | 1.1− | 0.5+ | 2004 03 25 | 704 | 0.7− | 0.3− | 2004 05 14 | 608 | 0.0 | 0.9+ |
| 2000 04 08 | 704 | 0.6+ | 0.5− | 2004 03 25 | 704 | 0.9− | 0.4− | 2004 05 14 | 608 | 0.4− | 0.3− |
| 2004 02 17 | 704 | 0.0 | 0.0 | 2004 03 25 | 704 | 0.7− | 0.2+ | 2004 05 14 | 608 | 0.1− | 0.1− |
| 2004 02 17 | 704 | 0.2− | 0.1− | 2004 03 26 | 703 | 0.1+ | 0.8+ | 2005 07 05 | G96 | 0.2− | 0.1+ |
| 2004 02 17 | 704 | (1.9− | 0.6−) | 2004 03 26 | 703 | 0.2+ | 0.3+ | 2005 07 05 | G96 | 0.1− | 0.2+ |
| 2004 02 17 | 704 | (2.0− | 0.3−) | 2004 03 26 | 703 | 0.2− | 0.8+ | 2005 07 05 | G96 | 0.1− | 0.0 |
| 2004 02 18 | 608 | 0.3− | 0.2− | 2004 03 26 | 703 | 0.2+ | 0.0 | 2005 07 05 | G96 | 0.1− | 0.1+ |
| 2004 02 18 | 608 | 0.0 | 0.7− | 2004 04 14 | 644 | 0.1− | 0.2− | 2005 07 18 | 644 | 0.7+ | 0.2+ |
| 2004 02 18 | 608 | 0.2+ | 0.2− | 2004 04 14 | 644 | 0.1− | 1.0− | 2005 07 18 | 644 | 0.4+ | 0.0 |
| 2004 03 15 | 704 | 0.6+ | 0.4+ | 2004 04 14 | 644 | 0.1− | 0.0 | 2005 07 18 | 644 | 0.0 | 0.0 |
| 2004 03 15 | 704 | 0.6+ | 0.3− | 2004 04 14 | 703 | 0.5− | 0.9+ | 2005 09 01 | 644 | 0.1− | 0.2− |
| 2004 03 15 | 704 | 1.3+ | 0.1− | 2004 04 14 | 703 | 0.4+ | 0.7− | 2005 09 01 | 644 | 0.5− | 0.1− |
| 2004 03 15 | 704 | 0.3− | 0.6+ | 2004 04 14 | 703 | 0.6+ | 0.0 | 2005 09 01 | 644 | 0.1− | 0.0 |

**2004 FE**$_{107}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.79614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23085625 | $\omega$ | 74.87783 | | +0.76698395 | | −0.64145575 |
| $a$ | 2.6317318 | $\Omega$ | 325.01804 | | +0.57716100 | | +0.70084724 |
| $e$ | 0.0688604 | $i$ | 1.64276 | | +0.28039399 | | +0.31200588 |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 691 | 0.0 | 0.4− | 2004 03 27 | 704 | 0.4+ | 1.5+ | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 1998 12 11 | 691 | 0.2+ | 0.6− | 2004 03 27 | 704 | 0.4− | 0.7+ | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 1998 12 11 | 691 | 0.4− | 0.1− | 2004 03 27 | 704 | 0.2+ | 1.2+ | 2006 11 11 | 703 | 1.0− | 0.8− |
| 1999 01 10 | 691 | 0.5− | 1.1− | 2004 04 23 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.5+ | 0.3+ |
| 1999 01 10 | 691 | 0.1+ | 0.2− | 2004 04 23 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 1999 01 10 | 691 | 0.1+ | 0.1− | 2004 04 23 | 691 | 0.3+ | 0.9+ | 2006 11 17 | 704 | 0.9+ | 1.0+ |
| 2002 12 05 | 704 | 0.7− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.8+ | 1.0+ |
| 2002 12 05 | 704 | 0.9− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.8+ | 0.0 |
| 2002 12 05 | 704 | 0.4− | 1.3+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.6+ | 0.4+ |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2002 12 14 | 704 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2002 12 14 | 704 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 12 14 | 704 | 0.1− | 1.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.0+ | 0.3+ |
| 2003 01 04 | 704 | 0.4− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 10 21 | 691 | 1.5− | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2003 01 04 | 704 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.9+ |
| 2003 01 04 | 704 | 0.7+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2004 03 20 | 704 | 1.5+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2004 03 20 | 704 | 1.0+ | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2004 03 20 | 704 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.6+ | | | | |

**2004 FN**$_{107}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.31938 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17668949 | $\omega$ | 19.60336 | | −0.71555738 | | +0.69326095 |
| $a$ | 3.1453012 | $\Omega$ | 204.95005 | | −0.66499784 | | −0.71364699 |
| $e$ | 0.2100005 | $i$ | 11.74013 | | −0.21390538 | | −0.10048501 |
| $P$ | 5.58 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.8− | 0.6− | 2004 04 15 | 699 | 0.5− | 0.3− | 2004 05 12 | 699 | 0.9− | 1.2+ |
| 2004 03 20 | 704 | 0.9− | 0.4− | 2004 04 15 | 699 | 0.4− | 0.0 | 2004 05 12 | 699 | 0.3− | 0.7+ |
| 2004 03 20 | 704 | 0.5− | 0.5− | 2004 04 15 | 699 | 0.7− | 0.8− | 2004 05 23 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | 0.7− | 0.2+ | 2004 04 15 | 699 | 0.3+ | 0.2+ | 2004 05 23 | 691 | 0.1− | 0.4− |
| 2004 03 27 | 704 | 1.1+ | 0.7+ | 2004 04 16 | 644 | 0.2+ | 0.2+ | 2004 05 23 | 691 | 0.0 | 0.0 |
| 2004 03 27 | 704 | 0.9+ | 0.7+ | 2004 04 16 | 644 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.4+ |
| 2004 03 27 | 704 | 0.8+ | 0.4+ | 2004 04 16 | 644 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.4− |
| 2004 03 27 | 704 | 1.4+ | 0.5+ | 2004 04 17 | 704 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.0 |
| 2004 03 27 | 704 | 0.5+ | 0.0 | 2004 04 17 | 704 | 0.2+ | 0.7+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2004 03 31 | 704 | 0.5+ | 0.1+ | 2004 04 17 | 704 | 1.2+ | 0.7+ | 2006 10 27 | G96 | 0.4− | 0.3+ |
| 2004 03 31 | 704 | 0.5+ | 0.8+ | 2004 04 21 | 704 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2004 03 31 | 704 | 0.3+ | 0.3+ | 2004 04 21 | 704 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.0 | 0.6+ |
| 2004 03 31 | 704 | 0.0 | 0.0 | 2004 04 21 | 704 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.6+ |
| 2004 04 12 | 699 | 0.5− | 0.2− | 2004 04 21 | 704 | (0.4− | 1.7−) | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2004 04 12 | 699 | 0.4− | 0.7− | 2004 04 21 | 704 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2004 04 12 | 699 | 0.2− | 1.0+ | 2004 05 12 | 699 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2004 04 12 | 699 | 0.3+ | 0.5+ | 2004 05 12 | 699 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.2+ |

**2004 FC**$_{108}$ **= 2006 SQ**$_{230}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.57364 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17999030 | $\omega$ | 243.29395 | | −0.72733612 | | +0.68559927 |
| $a$ | 3.1067286 | $\Omega$ | 339.94048 | | −0.59370113 | | −0.65095095 |
| $e$ | 0.1546279 | $i$ | 5.11686 | | −0.34423993 | | −0.32590873 |
| $P$ | 5.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.7+ | 0.9+ | 2004 03 27 | 704 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 03 23 | 704 | 0.6− | 0.8+ | 2004 04 25 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2004 03 23 | 704 | 0.5+ | 0.7− | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 1.1+ | 0.3− |
| 2004 03 23 | 704 | 1.0− | 0.3− | 2004 04 25 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2004 03 23 | 704 | 0.1+ | 0.9− | 2006 09 26 | 691 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.4− | 0.4− |
| 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.7− |
| 2004 03 27 | 704 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.2+ | | | | |
| 2004 03 27 | 704 | 0.9+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.1+ | | | | |

**2004 FQ**$_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.19774 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25786959 | $\omega$ | 87.52643 | | −0.65706199 | | −0.75348424 |
| $a$ | 2.4445708 | $\Omega$ | 43.57902 | | +0.67766749 | | −0.60378568 |
| $e$ | 0.1350570 | $i$ | 1.91570 | | +0.33020647 | | −0.26020062 |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2004 03 23 | 691 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 18 | 691 | 0.6+ | 0.2+ |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2004 03 27 | 704 | 0.7+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2004 03 27 | 704 | 0.1+ | 0.7− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2004 03 27 | 704 | 0.3− | 0.7+ | 2006 10 21 | 691 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.6− | 1.2+ |
| 2004 04 12 | 699 | 0.2+ | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.5− | 2006 11 20 | 704 | (1.1+ | 1.5+) |
| 2004 04 12 | 699 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | (1.9− | 0.0 ) |
| 2004 04 12 | 699 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2004 04 12 | 699 | 1.3+ | 1.0− | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.7− |
| 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.5− | 0.4− |
| 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.4− | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 18 | 691 | 0.1− | 0.2+ | | | | |

**2004 FB$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.68115 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21931483 | $\omega$ | 332.29922 | −0.98579846 | | −0.15180717 | |
| $a$ | 2.7232701 | $\Omega$ | 199.37256 | +0.16337849 | | −0.96587440 | |
| $e$ | 0.1620809 | $i$ | 12.50180 | −0.03884416 | | −0.20986001 | |
| $P$ | 4.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2004 04 10 | 703 | 1.1+ | 0.7− | 2004 04 22 | 704 | 0.7− | 0.5− |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2004 04 12 | 699 | 0.4+ | 0.1+ | 2004 04 22 | 704 | 0.5− | 0.4− |
| 2004 03 23 | 691 | 0.5− | 0.3+ | 2004 04 12 | 699 | 0.9− | 0.4− | 2004 05 09 | 691 | 0.0 | 0.2+ |
| 2004 03 25 | 699 | 0.7+ | 0.3+ | 2004 04 12 | 699 | 1.2− | 0.2+ | 2004 05 09 | 691 | 0.2+ | 0.3+ |
| 2004 03 25 | 699 | 0.4+ | 0.4+ | 2004 04 12 | 699 | 0.1− | 0.1+ | 2004 05 09 | 691 | 0.2+ | 0.2+ |
| 2004 03 25 | 699 | 0.0 | 0.0 | 2004 04 16 | 704 | (1.9+ | 1.5+) | 2006 09 19 | 691 | 0.2− | 0.4+ |
| 2004 03 25 | 699 | 0.6+ | 0.1− | 2004 04 16 | 704 | 1.3+ | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.3+ |
| 2004 03 27 | 704 | 0.6− | 0.1+ | 2004 04 16 | 704 | 1.4+ | 0.8− | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2004 03 27 | 704 | 0.2− | 0.2− | 2004 04 16 | 704 | 0.8− | 0.8+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2004 03 27 | 704 | 0.5+ | 0.4− | 2004 04 16 | 704 | 0.9+ | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.1− |
| 2004 03 27 | 704 | 0.1+ | 0.6+ | 2004 04 20 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2004 03 27 | 704 | 0.1+ | 0.1+ | 2004 04 20 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.4− |
| 2004 04 09 | E12 | 0.2− | 0.6+ | 2004 04 20 | 703 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2− | 0.3− |
| 2004 04 09 | E12 | 0.3− | 0.6+ | 2004 04 20 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.5+ |
| 2004 04 09 | E12 | 0.1− | 0.2− | 2004 04 20 | 703 | (0.6+ | 1.6+) | 2006 10 16 | 691 | 0.3+ | 0.2+ |
| 2004 04 09 | E12 | 0.2+ | 0.3+ | 2004 04 20 | 703 | 0.2− | 0.6− | 2006 10 16 | 691 | 0.7− | 0.1+ |
| 2004 04 10 | 703 | (2.0+ | 0.7+) | 2004 04 20 | 703 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2004 04 10 | 703 | 0.2− | 0.2+ | 2004 04 22 | 704 | 0.6− | 0.7− | 2006 10 20 | 695 | 0.5+ | 0.3+ |
| 2004 04 10 | 703 | (0.1+ | 2.0+) | 2004 04 22 | 704 | (0.7− | 1.6−) | 2006 10 20 | 695 | 0.4+ | 0.4+ |

**2004 FN$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.54112 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21389408 | $\omega$ | 334.28202 | −0.97832906 | | −0.20615706 | |
| $a$ | 2.7690888 | $\Omega$ | 193.86171 | +0.20113755 | | −0.92413920 | |
| $e$ | 0.0550489 | $i$ | 4.61458 | +0.04915214 | | −0.32166133 | |
| $P$ | 4.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 23 | 691 | 0.6+ | 0.2− | 2004 04 16 | 644 | 0.3− | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.4+ |
| 1997 10 23 | 691 | 0.2− | 0.4− | 2004 04 16 | 644 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.2− |
| 1997 10 23 | 691 | 0.1− | 0.5− | 2004 04 20 | 691 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2004 04 20 | 691 | 0.3+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.2− | 2004 04 20 | 691 | 0.4+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.9+ | 2004 04 21 | 704 | 0.5+ | 0.9+ | 2006 10 21 | 703 | 0.6+ | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 0.0 | 2004 04 21 | 704 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.6+ | 0.2+ |
| 2004 03 18 | 704 | 0.2+ | 0.8+ | 2004 04 21 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | (0.3+ | 1.7+) | 2004 04 21 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 703 | (2.5− | 1.2+) |
| 2004 03 18 | 704 | 0.0 | 0.4− | 2004 04 24 | E12 | 0.0 | 1.5− | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2004 03 18 | 704 | 0.3− | 0.7+ | 2004 04 24 | E12 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 03 18 | 704 | 0.5+ | 1.2+ | 2004 04 24 | E12 | 0.9− | 0.8− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2004 03 20 | 699 | (0.9− | 1.5−) | 2004 04 24 | E12 | 0.9− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 699 | 0.6− | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2004 03 20 | 699 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 03 20 | 699 | 0.7− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2004 03 24 | 699 | 0.9− | 0.8+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | (1.8− | 0.2−) |
| 2004 03 24 | 699 | 1.1+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.0 | 1.4+ |
| 2004 03 24 | 699 | 0.2+ | 0.7− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.6− |
| 2004 03 24 | 699 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2004 03 27 | 704 | 0.0 | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 03 27 | 704 | 0.1+ | 1.0+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | | | | |
| 2004 04 16 | 644 | 0.1+ | 0.8+ | 2006 10 11 | 691 | 0.1− | 0.2+ | | | | |

**2004 FU$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.49540 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19049367 | $\omega$ | 180.09821 | −0.92535713 | | +0.37810265 | |
| $a$ | 2.9914541 | $\Omega$ | 22.17977 | −0.34776469 | | −0.81784563 | |
| $e$ | 0.1599800 | $i$ | 4.16719 | −0.15091021 | | −0.43378211 | |
| $P$ | 5.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.0 | 0.3+ | 2004 04 11 | 644 | 0.3+ | 0.2− | 2004 05 12 | 699 | 0.9− | 0.4+ |
| 2004 03 16 | 691 | 0.1− | 0.1+ | 2004 04 11 | 644 | 0.3+ | 0.1− | 2004 05 12 | 699 | 0.5+ | 0.6+ |
| 2004 03 16 | 691 | 0.0 | 0.5+ | 2004 04 11 | 644 | 0.2+ | 0.0 | 2004 05 12 | 699 | 0.2− | 0.0 |
| 2004 03 24 | 699 | 0.1+ | 0.9− | 2004 04 12 | 699 | 0.4+ | 1.0− | 2004 05 16 | 691 | 0.1+ | 0.3+ |
| 2004 03 24 | 699 | (2.0− | 0.7+) | 2004 04 12 | 699 | 0.3− | 0.1− | 2004 05 16 | 691 | 0.4− | 0.2+ |
| 2004 03 24 | 699 | 1.0− | 0.6+ | 2004 04 12 | 699 | 0.5+ | 0.9− | 2004 05 16 | 691 | 0.3− | 0.1+ |
| 2004 03 24 | 699 | 1.2− | 0.6+ | 2004 04 12 | 699 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.2− | 0.1− |
| 2004 03 27 | 704 | 0.1+ | 0.3− | 2004 04 16 | 704 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 0.1− | 0.2− | 2004 04 16 | 704 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.6+ | 0.6+ |
| 2004 03 27 | 704 | 0.4− | 0.4+ | 2004 04 16 | 704 | 0.7+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 0.1+ | 0.7+ | 2004 04 16 | 704 | 0.9+ | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.3− |
| 2004 03 27 | 704 | 0.3+ | 0.2− | 2004 04 16 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 691 | 0.4− | 0.4+ |
| 2004 03 28 | 704 | 1.2+ | 0.5+ | 2004 04 21 | 704 | 0.5+ | 0.8+ | 2006 09 26 | 691 | 0.5− | 0.1+ |
| 2004 03 28 | 704 | 0.0 | 1.1+ | 2004 04 21 | 704 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2004 03 28 | 704 | 0.6− | 0.0 | 2004 04 21 | 704 | 0.6+ | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2004 03 29 | 704 | 0.5+ | 0.8+ | 2004 04 21 | 704 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2004 03 29 | 704 | 0.8+ | 0.2− | 2004 05 09 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2004 03 29 | 704 | 0.2+ | 0.1− | 2004 05 09 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.5− | 0.3+ |
| 2004 03 29 | 704 | 0.3+ | 0.3+ | 2004 05 09 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2004 03 29 | 704 | 1.1+ | 0.7− | 2004 05 11 | 699 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2004 04 10 | 703 | 0.2+ | 0.0 | 2004 05 11 | 699 | 0.4− | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2004 04 10 | 703 | 0.3+ | 0.1+ | 2004 05 11 | 699 | 0.3− | 0.6− | 2006 09 30 | 691 | 0.5+ | 0.1+ |
| 2004 04 10 | 703 | 0.4− | 0.5− | 2004 05 11 | 699 | 1.1− | 0.0 | | | | |
| 2004 04 10 | 703 | 0.4+ | 0.5− | 2004 05 12 | 699 | 0.1− | 0.1− | | | | |

**2004 FX$_{111}$ = 2006 SJ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.71877 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18251429 | $\omega$ | 105.62347 | +0.27913136 | | +0.96025102 | |
| $a$ | 3.0780202 | $\Omega$ | 180.59511 | −0.93640648 | | +0.27175784 | |
| $e$ | 0.0549178 | $i$ | 10.61243 | −0.21267013 | | +0.06376247 | |
| $P$ | 5.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 291 | 0.3+ | 0.2+ | 2004 04 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.3− | 0.0 |
| 2004 03 26 | 291 | 0.0 | 0.3+ | 2004 04 19 | 691 | 0.2+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2004 03 26 | 291 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.0 |
| 2004 03 27 | 704 | 1.3− | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 699 | 0.2− | 0.8+ |
| 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 0.5− | 0.2− |
| 2004 03 27 | 704 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 699 | 0.7− | 0.4− |
| 2004 03 27 | 704 | 1.0+ | 1.2+ | 2006 09 23 | 691 | 0.4+ | 0.0 | 2006 09 28 | 699 | 0.3+ | 0.4+ |
| 2004 03 27 | 704 | 0.8− | 1.0+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2004 04 15 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2004 04 15 | 644 | 0.7+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.5− | 0.3+ |
| 2004 04 15 | 644 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | | | | |
| 2004 04 19 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.2− | | | | |

**2004 FA$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.74882 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17891956 | $\omega$ | 82.19912 | −0.07364735 | | +0.99727034 | |
| $a$ | 3.1191110 | $\Omega$ | 183.59010 | −0.94503444 | | −0.07148089 | |
| $e$ | 0.0869461 | $i$ | 4.84229 | −0.31856862 | | −0.01850279 | |
| $P$ | 5.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 809 | 0.2+ | 0.7+ | 2004 04 19 | 691 | 0.2+ | 0.5− | 2006 09 25 | 691 | 0.5+ | 0.3− |
| 2004 03 26 | 691 | 0.3+ | 0.2+ | 2004 04 22 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.2− |
| 2004 03 26 | 691 | 0.2+ | 0.2+ | 2004 04 22 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.6+ | 0.2− |
| 2004 03 26 | 691 | 0.0 | 0.1+ | 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 0.2+ | 0.1− | 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.2+ |
| 2004 03 27 | 704 | 0.5− | 0.2− | 2006 09 17 | 691 | 0.5− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2004 03 27 | 704 | 0.7+ | 0.8− | 2006 09 17 | 691 | 0.6− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 1.0− | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2004 03 27 | 704 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.9− | 0.1+ |
| 2004 04 12 | 691 | 0.0 | 0.5+ | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.1− |
| 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2004 04 19 | 691 | 0.1+ | 0.5− | 2006 09 24 | 691 | 0.2+ | 0.0 | | | | |
| 2004 04 19 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.2− | | | | |

**2004 FL$_{112}$ = 2006 UM$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.21352 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23862602 | $\omega$ | 310.19261 | | −0.98174951 | −0.18843079 | |
| $a$ | 2.5742903 | $\Omega$ | 218.96598 | | +0.18454355 | −0.91122207 | |
| $e$ | 0.1397043 | $i$ | 2.34439 | | +0.04595183 | −0.36628974 | |
| $P$ | 4.13 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2004 03 30 | 704 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2004 03 26 | 691 | 0.1+ | 0.1+ | 2004 03 30 | 704 | 0.1− | 1.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2004 03 26 | 691 | 0.3+ | 0.1− | 2004 04 12 | 691 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.9+ | 0.1+ |
| 2004 03 27 | 704 | 0.3− | 0.7− | 2004 04 12 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2004 03 27 | 704 | 0.1+ | 0.5− | 2004 04 12 | 691 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.2− | 0.2− |
| 2004 03 27 | 704 | 0.6− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.5+ | 0.6+ |
| 2004 03 27 | 704 | 0.6− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 11 10 | 691 | 0.8− | 0.0 |
| 2004 03 27 | 704 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2004 03 28 | 704 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.5− | 0.3− |
| 2004 03 28 | 704 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.7− | 0.7− |
| 2004 03 28 | 704 | 0.5+ | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2004 03 28 | 704 | 1.5− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2004 03 28 | 704 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.7+ | 0.1− | | | | |
| 2004 03 30 | 704 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.4− | | | | |

**2004 FN$_{112}$ = 2006 RB$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.56753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22146405 | $\omega$ | 283.86668 | | −0.53873671 | −0.84225485 | |
| $a$ | 2.7056226 | $\Omega$ | 198.76895 | | +0.79419304 | −0.50011688 | |
| $e$ | 0.0391974 | $i$ | 3.42512 | | +0.28110526 | −0.20122095 | |
| $P$ | 4.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.1− | 0.1− | 2004 04 22 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1− |
| 2004 03 26 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2004 03 26 | 691 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2004 03 27 | 704 | 0.1− | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.3− | 0.3− |
| 2004 03 27 | 704 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.3− | 0.3− |
| 2004 03 27 | 704 | 0.3+ | 0.8+ | 2006 09 19 | 691 | 0.2− | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.3− |
| 2004 04 22 | 691 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2004 04 22 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.4+ |

**2004 FP$_{112}$ = 2006 SN$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.55448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17757442 | $\omega$ | 67.86128 | | −0.19356655 | +0.98052683 | |
| $a$ | 3.1348428 | $\Omega$ | 191.13280 | | −0.95148759 | −0.19585734 | |
| $e$ | 0.0928272 | $i$ | 9.88683 | | −0.23917223 | −0.01438868 | |
| $P$ | 5.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.2− | 0.4+ | 2004 04 12 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.4+ | 0.3− |
| 2004 03 26 | 691 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2004 03 27 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2004 03 27 | 704 | 0.1− | 0.8− | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.3− | 0.7+ |
| 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 09 25 | 691 | 0.4− | 0.5+ | 2006 11 14 | G96 | 0.8− | 0.0 |
| 2004 03 27 | 704 | 0.1+ | 1.3− | 2006 09 25 | 691 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2004 04 12 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.0 |

**2004 FR$_{112}$ = 2004 EY$_{77}$**

Id. Minor Planet Center (d, *MPO* 77916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.85424 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27050084 | $\omega$ | 132.18159 | | −0.53566059 | −0.84442576 | |
| $a$ | 2.3678652 | $\Omega$ | 350.20523 | | +0.76840173 | −0.48566366 | |
| $e$ | 0.1311903 | $i$ | 1.20875 | | +0.35018070 | −0.22599991 | |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.1+ | 0.1− | 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 291 | 0.2− | 0.2+ |
| 2004 03 15 | 703 | (0.7+ | 2.4+) | 2004 04 12 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 1.1+ | 0.2+ |
| 2004 03 15 | 703 | (2.5+ | 1.9+) | 2004 04 12 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 1.1+ | 0.5+ |
| 2004 03 15 | 703 | 0.5+ | 0.9+ | 2004 04 12 | 691 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2004 03 19 | 704 | 0.9+ | 0.1+ | 2004 04 19 | 691 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 1.4+ | 0.0 | 2004 04 19 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 0.0 | 0.4+ | 2004 04 19 | 691 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 0.6+ | 0.1− | 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2004 03 26 | 691 | 0.0 | 0.0 | 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.3+ |
| 2004 03 26 | 691 | 0.0 | 0.1− | 2004 04 22 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 1.0− | 0.8− |
| 2004 03 26 | 691 | 0.0 | 0.1− | 2005 07 05 | 691 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.3+ |
| 2004 03 27 | 704 | 0.7− | 0.1− | 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 03 27 | 704 | (0.6− | 1.6+) | 2005 07 05 | 691 | 0.0 | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 03 27 | 704 | 0.8− | 0.5− | 2006 09 27 | 291 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 1.2− | 0.7+ | 2006 09 27 | 291 | 0.1+ | 0.3+ | | | | |

**2004 FM$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.91277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23001242 | $\omega$ | 128.77240 | | +0.39358026 | +0.91693428 | |
| $a$ | 2.6381644 | $\Omega$ | 164.01826 | | −0.90002568 | +0.39891546 | |
| $e$ | 0.0921935 | $i$ | 13.82087 | | −0.18721204 | +0.00989828 | |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6− | 0.4+ | 2001 10 10 | 644 | 0.8− | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.6+ | 0.9− | 2004 03 14 | 691 | 0.1− | 0.3+ | 2005 08 06 | 644 | 0.0 | 0.2− |
| 2001 09 12 | 704 | 0.4− | 1.0+ | 2004 03 14 | 691 | 0.2+ | 0.6+ | 2005 08 06 | 644 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.9+ | 1.1+ | 2004 03 14 | 691 | 0.1+ | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.3+ | 2004 03 21 | 691 | 0.2− | 0.2− | 2005 08 06 | 644 | 0.1− | 0.3− |
| 2001 09 12 | 704 | 0.7+ | 0.5+ | 2004 03 21 | 691 | 0.1− | 0.2− | 2005 08 24 | 644 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.7+ | 1.9− | 2004 03 21 | 691 | 0.2− | 0.1− | 2005 08 24 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.5+ | 0.4− | 2004 03 28 | 691 | 0.3+ | 0.0 | 2005 08 24 | 644 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 1.9+ | 2004 03 28 | 691 | 0.0 | 0.2− | 2005 08 24 | 644 | 0.1− | 0.3− |
| 2001 10 10 | 644 | 0.8− | 0.4− | 2004 03 28 | 691 | 0.1+ | 0.2− | 2005 08 24 | 644 | 0.3+ | 0.0 |
| 2001 10 10 | 644 | 0.9− | 0.4− | 2005 08 06 | 644 | 0.0 | 0.2+ | 2005 08 24 | 644 | 0.1− | 0.2− |

### 2004 FG$_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 317.60928 | | (2000.0) | | | |
| $n$ | 0.26781889 | $\omega$ | 66.09653 | | −0.27993900 | −0.95676626 |
| $a$ | 2.3836469 | $\Omega$ | 40.42341 | | +0.83058357 | −0.28261384 |
| $e$ | 0.1002567 | $i$ | 6.99308 | | +0.48141986 | −0.06875865 |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 704 | 0.5− | 1.2+ | 2004 04 15 | 699 | 0.0 | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2004 03 22 | 704 | 0.4+ | 0.1− | 2004 04 15 | 699 | (1.8− | 0.9+) | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2004 03 22 | 704 | 0.4− | 0.2− | 2004 04 15 | 699 | 1.1+ | 0.5− | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2004 03 28 | 704 | 1.4+ | 0.4+ | 2004 04 19 | 704 | 0.4+ | 0.7+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2004 03 28 | 704 | 0.9+ | 0.0 | 2004 04 19 | 704 | 0.9+ | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2004 03 28 | 704 | 0.0 | 0.9− | 2004 04 19 | 704 | 1.2+ | 0.8+ | 2006 11 19 | 704 | 1.5+ | 0.1+ |
| 2004 03 28 | 691 | 0.2+ | 0.1+ | 2004 04 19 | 704 | (2.4+ | 0.7−) | 2006 11 19 | 704 | 0.4− | 0.9+ |
| 2004 03 28 | 691 | 0.2− | 0.1− | 2004 04 20 | 691 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.1+ | 0.4− |
| 2004 03 28 | 691 | 0.4− | 0.2− | 2004 04 20 | 691 | 0.3− | 0.2− | 2006 11 25 | 691 | 0.0 | 0.6+ |
| 2004 04 15 | 699 | 0.0 | 0.5− | 2004 04 20 | 691 | 0.4− | 0.1+ | 2006 11 25 | 691 | 0.2− | 0.3− |

### 2004 FM$_{115}$ = 2006 ST$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 167.89961 | | (2000.0) | | | |
| $n$ | 0.21412549 | $\omega$ | 187.28733 | | −0.82796729 | +0.54956999 |
| $a$ | 2.7670933 | $\Omega$ | 27.00212 | | −0.50131070 | −0.63623198 |
| $e$ | 0.1148061 | $i$ | 14.22251 | | −0.25131207 | −0.54146254 |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.3+ | 0.1− | 2004 03 30 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2004 03 23 | 704 | 0.9+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.6+ | 0.1− |
| 2004 03 23 | 704 | 0.9+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2004 03 23 | 704 | 0.6+ | 0.8− | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2004 03 23 | 704 | 0.4− | 0.8+ | 2006 09 25 | G96 | 0.5− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2004 03 28 | 703 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2004 03 28 | 703 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.3+ | 0.2+ |
| 2004 03 28 | 703 | 0.5+ | 0.2− | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.2− | 0.6− |
| 2004 03 28 | 703 | 0.6+ | 0.6− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2004 03 30 | 691 | 0.4− | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.3+ | | | | |

### 2004 FY$_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 203.53137 | | (2000.0) | | | |
| $n$ | 0.30406086 | $\omega$ | 161.24084 | | +0.22276855 | +0.96793613 |
| $a$ | 2.1902601 | $\Omega$ | 121.48089 | | −0.91093637 | +0.24908793 |
| $e$ | 0.1914936 | $i$ | 7.82283 | | −0.34723062 | −0.03247851 |
| $P$ | 3.24 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 691 | 0.1− | 0.6− | 2001 06 15 | 704 | 0.5+ | 0.1− | 2004 03 30 | 704 | 1.0+ | 0.2− |
| 1997 02 01 | 691 | 0.1− | 0.5− | 2001 06 15 | 704 | 0.3+ | 1.5+ | 2004 03 30 | 704 | 0.6+ | 0.5+ |
| 1997 02 01 | 691 | 0.0 | 0.2+ | 2004 03 23 | 704 | 0.3+ | 0.3− | 2004 03 30 | 704 | 1.2+ | 0.8+ |
| 2001 05 15 | 608 | 0.1+ | 0.6− | 2004 03 23 | 704 | 0.9+ | 0.2− | 2004 04 10 | 699 | 0.0 | 0.5+ |
| 2001 05 15 | 608 | 0.1+ | 1.0− | 2004 03 23 | 704 | 0.8+ | 0.6+ | 2004 04 10 | 699 | 0.5+ | 1.6+ |
| 2001 05 15 | 608 | 0.2− | 0.3− | 2004 03 23 | 704 | 0.2− | 0.7− | 2004 04 10 | 699 | 1.9− | 0.2− |
| 2001 05 26 | 704 | 0.7+ | 0.2− | 2004 03 23 | 704 | 0.5+ | 1.1− | 2004 04 10 | 699 | 1.9− | 0.2+ |
| 2001 05 26 | 704 | 0.0 | 0.5− | 2004 03 28 | 703 | 1.4− | 1.1+ | 2005 10 25 | 703 | 0.7− | 0.8+ |
| 2001 05 26 | 704 | 0.5− | 0.7− | 2004 03 28 | 703 | 0.0 | 0.3− | 2005 10 25 | 703 | 0.9− | 0.2+ |
| 2001 05 26 | 704 | 0.0 | 0.1+ | 2004 03 28 | 703 | 0.2− | 0.3− | 2005 10 25 | 703 | 1.2− | 2.0− |
| 2001 05 26 | 704 | 0.6− | 0.2− | 2004 03 28 | 703 | 0.5− | 0.2− | 2005 10 25 | 703 | (3.9+ | 2.5−) |
| 2001 06 12 | 699 | 0.7− | 1.0− | 2004 03 30 | 704 | 0.5− | 0.9+ | 2005 11 29 | 644 | 0.0 | 0.3+ |
| 2001 06 12 | 699 | 0.1+ | 0.1− | 2004 03 30 | 704 | 0.4+ | 0.6+ | 2005 11 29 | 644 | 0.1− | 0.3+ |
| 2001 06 12 | 699 | 0.4− | 0.1− | 2004 03 30 | 704 | 0.2+ | 0.6+ | 2005 11 29 | 644 | 0.1− | 0.7+ |
| 2001 06 12 | 699 | 0.8− | 0.6+ | 2004 03 30 | 704 | 0.3+ | 0.3− | | | | |
| 2001 06 15 | 704 | 0.5+ | 1.8− | 2004 03 30 | 704 | 0.5+ | 0.6− | | | | |

### 2004 FQ$_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 225.25872 | | (2000.0) | | | |
| $n$ | 0.21167257 | $\omega$ | 328.40688 | | −0.96505822 | −0.25590231 |
| $a$ | 2.7884294 | $\Omega$ | 197.04207 | | +0.26200823 | −0.93926565 |
| $e$ | 0.1551429 | $i$ | 11.08776 | | +0.00378388 | −0.22867891 |
| $P$ | 4.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2004 04 20 | 704 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.4+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2004 04 20 | 704 | 0.4− | 0.3+ | 2006 09 18 | 691 | 0.5− | 0.0 |
| 2004 03 22 | 704 | 0.0 | 0.1+ | 2004 04 20 | 704 | (2.0+ | 0.2+) | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2004 03 22 | 704 | 0.2+ | 0.3+ | 2004 04 20 | 704 | 1.2+ | 1.3+ | 2006 09 25 | G96 | 0.5− | 0.0 |
| 2004 03 22 | 704 | 0.8+ | 0.8+ | 2004 04 20 | 704 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.5− |
| 2004 03 28 | 704 | 0.5− | 0.3+ | 2004 04 22 | 704 | 0.1− | 0.8+ | 2006 09 25 | G96 | 0.4+ | 0.5− |
| 2004 03 28 | 704 | 0.5− | 0.3+ | 2004 04 22 | 704 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.4+ |
| 2004 03 28 | 704 | 1.4− | 0.0 | 2004 04 22 | 704 | (2.1− | 0.6+) | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2004 03 28 | 704 | 0.4− | 0.4− | 2004 04 22 | 704 | (1.9− | 1.1+) | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2004 03 28 | 704 | 0.6+ | 0.4+ | 2004 04 25 | 704 | (1.2+ | 2.2−) | 2006 11 11 | 691 | 0.6+ | 0.1+ |
| 2004 04 16 | 644 | 0.2+ | 0.2+ | 2004 04 25 | 704 | (0.3− | 2.1−) | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2004 04 16 | 644 | 0.3+ | 0.1+ | 2004 04 25 | 704 | 1.3+ | 1.2− | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2004 04 16 | 644 | 0.1+ | 0.5+ | 2004 04 25 | 704 | (1.6+ | 1.3−) | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2004 04 19 | 704 | 0.7− | 0.9+ | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 1.2− | 0.1− |
| 2004 04 19 | 704 | (0.3+ | 2.3−) | 2006 09 14 | 691 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.4− | 0.3+ |
| 2004 04 19 | 704 | (0.3− | 1.9+) | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2004 04 19 | 704 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1− | | | | |

### 2004 FZ$_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 254.51258 | | (2000.0) | | | |
| $n$ | 0.23560877 | $\omega$ | 310.70405 | | −0.82814795 | −0.55802287 |
| $a$ | 2.5962215 | $\Omega$ | 195.61143 | | +0.55496048 | −0.80310434 |
| $e$ | 0.2826542 | $i$ | 11.30175 | | +0.07867556 | −0.20888728 |
| $P$ | 4.18 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 699 | 1.3+ | 2.0+ | 2004 04 22 | 704 | 0.8+ | 0.8+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1998 11 14 | 699 | 0.4+ | 0.7+ | 2004 04 22 | 704 | 0.2+ | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 1998 11 14 | 699 | 2.0− | 1.2+ | 2004 04 22 | 704 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2004 03 22 | 704 | 1.1+ | 1.1− | 2004 04 22 | 704 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2004 03 22 | 704 | 0.0 | 0.2− | 2004 05 01 | 703 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 03 22 | 704 | 0.8+ | 0.8+ | 2004 05 01 | 703 | 1.4− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2004 03 22 | 704 | 0.4+ | 0.4− | 2004 05 01 | 703 | (1.8− | 1.5−) | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2004 03 28 | 704 | 0.3+ | 0.1+ | 2004 05 01 | 703 | 0.9− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2004 03 28 | 704 | 0.7− | 0.4− | 2004 05 14 | 704 | 1.2+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 03 28 | 704 | 0.6+ | 0.5+ | 2004 05 14 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 703 | 0.1+ | 0.5− |
| 2004 03 28 | 704 | 0.3+ | 0.6+ | 2004 05 14 | 704 | 0.7− | 0.4+ | 2006 10 15 | 703 | 0.2+ | 0.3+ |
| 2004 03 28 | 704 | 0.0 | 0.1− | 2004 05 14 | 704 | 0.0 | 0.7+ | 2006 10 15 | 703 | (0.2+ | 1.7+) |
| 2004 03 31 | 704 | 0.7+ | 1.4+ | 2004 05 14 | 704 | 0.0 | 0.2+ | 2006 10 15 | 703 | (1.9+ | 1.1+) |
| 2004 03 31 | 704 | 0.7+ | 1.1+ | 2004 05 23 | 704 | 0.6+ | 0.5− | 2006 10 16 | G96 | 0.0 | 0.1+ |
| 2004 03 31 | 704 | 0.1+ | 0.1− | 2004 05 23 | 704 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2004 03 31 | 704 | 0.4− | 0.7− | 2004 05 23 | 704 | 0.3− | 1.0− | 2006 10 16 | G96 | 0.5+ | 0.1− |
| 2004 04 20 | 704 | 0.1+ | 0.1− | 2004 05 23 | 704 | 0.1− | 0.5+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2004 04 20 | 704 | 0.0 | 0.1− | 2004 05 23 | 704 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2004 04 20 | 704 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2004 04 20 | 704 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.9− | 0.4− | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2004 04 20 | 704 | 0.2+ | 1.4+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2004 04 21 | 608 | 0.4− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2004 04 21 | 608 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2004 04 21 | 608 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2004 04 22 | 704 | 0.9− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.0 |

**2004 FQ$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 195.85419 | | (2000.0) | | | |
| $n$ | 0.21496294 | $\omega$ | 170.42500 | | −0.99049885 | +0.13463571 |
| $a$ | 2.7599020 | $\Omega$ | 17.38764 | | −0.13156339 | −0.86838070 |
| $e$ | 0.1006267 | $i$ | 5.38067 | | −0.04003885 | −0.47727160 |
| $P$ | 4.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 291 | 0.0 | 0.2− | 2004 03 27 | 704 | 0.7+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.4+ |
| 2004 03 19 | 291 | 0.0 | 0.0 | 2004 03 27 | 704 | (0.7+ | 1.6+) | 2006 09 28 | 691 | 0.3+ | 0.3− |
| 2004 03 19 | 291 | 0.1− | 0.1− | 2004 03 27 | 704 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.4− | 0.1+ |
| 2004 03 23 | 704 | 0.2− | 1.2+ | 2004 03 29 | 291 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.1+ |
| 2004 03 23 | 704 | 0.3− | 0.4+ | 2004 03 29 | 291 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.2− |
| 2004 03 23 | 704 | 1.3− | 1.5+ | 2004 03 29 | 291 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2− |
| 2004 03 23 | 704 | 0.6− | 1.0+ | 2004 04 14 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.8− | 0.3− |
| 2004 03 27 | 704 | 0.5− | 1.2− | 2004 04 14 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.1− |
| 2004 03 27 | 704 | 0.4+ | 0.6− | 2004 04 14 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2004 03 27 | 704 | 0.1+ | 0.4− | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2004 03 27 | 704 | 1.1+ | 0.2− | 2006 09 24 | 691 | 0.2− | 0.1+ | | | | |
| 2004 03 27 | 704 | 0.9+ | 0.3− | 2006 09 24 | 691 | 0.0 | 0.1+ | | | | |

**2004 FQ$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 202.70452 | | (2000.0) | | | |
| $n$ | 0.22990632 | $\omega$ | 298.84679 | | −0.87237760 | +0.43996244 |
| $a$ | 2.6389760 | $\Omega$ | 267.96405 | | −0.34020594 | −0.85940505 |
| $e$ | 0.2193431 | $i$ | 12.30905 | | −0.35102313 | −0.26049189 |
| $P$ | 4.29 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 05 | 644 | 0.7− | 0.3+ | 2004 04 16 | 699 | 0.2− | 0.0 | 2004 05 13 | 703 | 0.5− | 0.1− |
| 2001 10 05 | 644 | 0.1+ | 0.5+ | 2004 04 16 | 699 | 0.7+ | 0.4+ | 2004 05 13 | 703 | 0.4− | 0.4+ |
| 2001 10 05 | 644 | 0.2− | 0.5+ | 2004 04 22 | E12 | 0.3+ | 0.3+ | 2004 05 13 | 703 | 0.1− | 0.3− |
| 2004 03 18 | E12 | (1.7− | 1.8+) | 2004 04 22 | E12 | 0.1+ | 0.3− | 2004 05 13 | 703 | 0.3− | 0.1− |
| 2004 03 18 | E12 | 0.8− | 1.0+ | 2004 04 22 | E12 | 0.8+ | 0.2− | 2005 11 04 | G96 | 0.6+ | 0.1− |
| 2004 03 18 | E12 | (1.5− | 1.6+) | 2004 04 22 | E12 | 0.1+ | 0.8− | 2005 11 04 | G96 | 0.1+ | 0.3+ |
| 2004 03 18 | E12 | 1.5− | 1.0+ | 2004 04 24 | E12 | 0.3+ | 0.1− | 2005 11 04 | G96 | 0.5− | 0.2+ |
| 2004 03 26 | 704 | 0.5+ | 0.0 | 2004 04 24 | E12 | 0.7− | 0.1+ | 2005 11 04 | G96 | 0.2+ | 0.1+ |
| 2004 03 26 | 704 | 0.2+ | 0.4− | 2004 04 24 | E12 | 0.4− | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.3+ |
| 2004 03 26 | 704 | 0.6+ | 0.0 | 2004 04 24 | E12 | 0.7− | 0.2+ | 2006 11 02 | G96 | 0.4− | 0.0 |
| 2004 03 26 | 704 | 0.4− | 0.3− | 2004 04 26 | E12 | 0.4− | 0.1+ | 2006 11 02 | G96 | 0.4− | 0.1+ |
| 2004 03 28 | 699 | 0.5+ | 0.7+ | 2004 04 26 | E12 | 0.9− | 1.2+ | 2006 11 02 | G96 | 0.1+ | 0.0 |
| 2004 03 28 | 699 | 1.4+ | 0.1− | 2004 04 26 | E12 | 0.8− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2004 03 28 | 699 | 0.8+ | 0.1− | 2004 04 26 | E12 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2004 03 28 | 699 | 0.1− | 0.6− | 2004 05 13 | 644 | 0.8+ | 0.8+ | 2006 11 27 | G96 | 0.5+ | 0.2− |
| 2004 04 16 | 699 | 0.6+ | 0.4− | 2004 05 13 | 644 | 0.1+ | 0.6− | 2006 11 27 | G96 | 0.0 | 0.2+ |
| 2004 04 16 | 699 | 0.8+ | 0.1− | 2004 05 13 | 644 | 0.2+ | 0.2− | | | | |

**2004 FT$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 172.59374 | | (2000.0) | | | |
| $n$ | 0.21683505 | $\omega$ | 354.56926 | | −0.77609448 | +0.62976834 |
| $a$ | 2.7439934 | $\Omega$ | 224.51981 | | −0.57680963 | −0.72987761 |
| $e$ | 0.1308371 | $i$ | 2.67297 | | −0.25488821 | −0.26583928 |
| $P$ | 4.55 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 24 | 699 | (1.9− | 1.2+) | 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2004 03 24 | 699 | 0.9+ | 0.3− | 2004 04 19 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2004 03 24 | 699 | 0.8− | 0.1− | 2004 04 19 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2004 03 24 | 699 | 0.8− | 0.3− | 2004 04 19 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 0.4− | 0.3− | 2004 04 23 | 291 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2004 03 27 | 704 | 0.2− | 0.6+ | 2004 04 23 | 291 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.1− | 0.1+ | 2004 04 23 | 291 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 1.1− |
| 2004 03 27 | 704 | 0.2+ | 0.2− | 2004 04 28 | 691 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2004 03 27 | 704 | 0.2− | 0.3+ | 2004 04 28 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2004 03 28 | 704 | 1.0+ | 0.1− | 2004 04 28 | 691 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2004 03 28 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.8− |
| 2004 03 28 | 704 | 0.6+ | 1.5+ | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.1+ |
| 2004 04 12 | 691 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.5− |
| 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.9+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.2+ |

**2004 FH$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.44235 | | (2000.0) | | | |
| $n$ | 0.23171500 | $\omega$ | 115.73103 | | −0.50344375 | −0.86387443 |
| $a$ | 2.6252255 | $\Omega$ | 4.59705 | | +0.70189518 | −0.41989580 |
| $e$ | 0.1490142 | $i$ | 11.72708 | | +0.50387255 | −0.27822382 |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.2+ | 0.4+ | 2004 03 27 | 704 | 0.5+ | 0.8+ | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2004 03 18 | 704 | 0.4+ | 0.1− | 2004 03 27 | 704 | 0.3+ | 1.0+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2004 03 18 | 704 | 1.2+ | 0.5+ | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2004 03 18 | 704 | 0.4+ | 0.5+ | 2004 03 29 | 691 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2004 03 18 | 704 | 0.8+ | 0.7+ | 2004 03 29 | 691 | 0.2− | 0.5+ | 2006 09 27 | 699 | 0.9− | 0.6− |
| 2004 03 20 | 704 | (0.2+ | 2.7+) | 2004 04 11 | 644 | 0.4+ | 0.3+ | 2006 09 27 | 699 | (2.2− | 1.4+) |
| 2004 03 20 | 704 | 0.5+ | 1.5+ | 2004 04 11 | 644 | 0.5+ | 0.3+ | 2006 09 27 | 699 | 0.7− | 1.1− |
| 2004 03 20 | 704 | 0.2+ | 0.8+ | 2004 04 11 | 644 | 0.5+ | 0.2+ | 2006 09 27 | 699 | 1.3− | 0.8+ |
| 2004 03 20 | 704 | 0.5+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 2004 03 27 | 699 | (2.3+ | 0.9+) | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2004 03 27 | 699 | 1.2+ | 0.3− | 2006 09 15 | 691 | 0.5+ | 0.1+ | 2006 09 30 | 691 | 0.4− | 0.5+ |
| 2004 03 27 | 699 | (1.1+ | 1.5+) | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.4+ | 0.5+ |
| 2004 03 27 | 699 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.6− |
| 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.5− | 0.1+ |
| 2004 03 27 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.3+ |
| 2004 03 27 | 704 | 0.7+ | 0.9+ | 2006 09 25 | 691 | 0.4− | 0.3+ | | | | |

**2004 FE$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 198.69787 | | (2000.0) | | | |
| $n$ | 0.22061361 | $\omega$ | 4.82193 | | −0.97512037 | +0.22096982 |
| $a$ | 2.7125714 | $\Omega$ | 188.01001 | | −0.20739088 | −0.93754453 |
| $e$ | 0.0498553 | $i$ | 7.28960 | | −0.07828984 | −0.26866818 |
| $P$ | 4.47 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.4− | 0.4+ | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 03 27 | 704 | 0.1+ | 0.2− | 2004 04 20 | 691 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.3− |
| 2004 03 27 | 704 | 0.2+ | 0.3+ | 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2004 03 27 | 704 | 0.3− | 0.6− | 2004 04 23 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2004 03 27 | 704 | 0.2− | 0.6+ | 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.7+ | 0.5− |
| 2004 03 29 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 1.2− | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2004 03 29 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.3− | 2006 11 01 | G96 | 0.6+ | 0.2− |
| 2004 03 29 | 691 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.7− | 1.4+ | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2004 03 31 | 291 | (1.7− | 2.5−) | 2006 10 16 | 703 | 0.9+ | 0.2− | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2004 03 31 | 291 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2004 03 31 | 291 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.5− | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2004 04 20 | 691 | 0.2+ | 0.3− | 2006 10 18 | 691 | 0.3− | 0.7+ | | | | |

**2004 FG$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 254.20293 | | (2000.0) | | | |
| $n$ | 0.22912504 | $\omega$ | 120.75386 | | −0.79685990 | −0.60388919 |
| $a$ | 2.6449716 | $\Omega$ | 22.11341 | | +0.53644414 | −0.72109549 |
| $e$ | 0.0261179 | $i$ | 2.77499 | | +0.27792443 | −0.33961618 |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 184 | 1.3− | 0.2+ | 2004 03 30 | 704 | 0.5− | 0.5− | 2006 10 20 | 691 | 0.3− | 0.3+ |
| 2004 03 16 | 184 | 1.0− | 0.4− | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2004 03 16 | 184 | 0.7+ | 0.2− | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2004 03 17 | 184 | 0.3+ | 0.1+ | 2004 04 20 | 691 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2004 03 17 | 184 | 0.3− | 0.5+ | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 184 | 0.3− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2004 03 27 | 704 | 0.1− | 1.2+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2004 03 27 | 704 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2004 03 27 | 704 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2004 03 29 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 03 30 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2004 03 30 | 704 | 0.2+ | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2004 03 30 | 704 | 1.0+ | 0.8− | 2006 10 20 | 691 | 0.1+ | 0.5− | | | | |

**2004 FM$_{126}$ = 2006 TM$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.82577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22732461 | $\omega$ | 37.33493 | | +0.62236223 | | −0.78045454 |
| $a$ | 2.6589188 | $\Omega$ | 14.49547 | | +0.64832617 | | +0.47131133 |
| $e$ | 0.0905753 | $i$ | 13.78260 | | +0.43856406 | | +0.41079964 |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.1+ | 0.1+ | 2004 04 23 | 691 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.2− |
| 2004 03 13 | 644 | 0.0 | 0.0 | 2004 04 23 | 691 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.5+ | 0.0 |
| 2004 03 13 | 644 | 0.2− | 0.3− | 2004 04 23 | 291 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2004 03 27 | 704 | 0.8+ | 0.7− | 2004 04 23 | 691 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.4− |
| 2004 03 27 | 704 | 0.2− | 0.8− | 2004 04 23 | 291 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.2− |
| 2004 03 27 | 704 | 0.6+ | 0.1− | 2004 04 23 | 291 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.6+ | 0.3+ |
| 2004 03 27 | 704 | 0.8+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 1.2+ | 0.8+ |
| 2004 03 27 | 704 | 0.3+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 1.4− | 1.0− |
| 2004 03 29 | 691 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.5+ | 0.0 |
| 2004 03 29 | 691 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.2− | 0.1− | 2006 11 23 | 703 | 1.0+ | 0.7+ |
| 2004 03 29 | 691 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.6− | 0.1− | 2006 11 23 | 703 | 0.9− | 0.2− |
| 2004 03 30 | 291 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.4− | 0.0 |
| 2004 03 30 | 291 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.8− | 0.4− |
| 2004 03 30 | 291 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 26 | 104 | 0.3+ | 0.0 |
| 2004 04 14 | 691 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.3+ | 2006 11 26 | 104 | 0.0 | 0.0 |
| 2004 04 14 | 691 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.2+ | 2006 11 26 | 104 | 0.5+ | 0.4− |
| 2004 04 14 | 691 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.1− | 0.1+ | | | | |

**2004 FR$_{126}$ = 2169 T-2**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.19897 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27323580 | $\omega$ | 57.30536 | | +0.37809799 | | −0.92567094 |
| $a$ | 2.3520379 | $\Omega$ | 10.50378 | | +0.82321467 | | +0.32963916 |
| $e$ | 0.1050656 | $i$ | 4.16390 | | +0.42350858 | | +0.18566457 |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 29 | 675 | 0.7+ | 0.9− | 2002 10 11 | 704 | (2.1+ | 0.5+) | 2004 03 27 | 704 | 0.0 | 0.7+ |
| 1973 09 29 | 675 | 0.0 | 0.8+ | 2002 10 11 | 704 | 0.1− | 1.4+ | 2004 03 29 | 691 | 0.1+ | 0.0 |
| 1973 09 30 | 675 | 0.7+ | 0.0 | 2002 10 11 | 704 | 0.9− | 1.0+ | 2004 03 29 | 691 | 0.2+ | 0.0 |
| 1973 09 30 | 675 | 1.1− | 0.8− | 2002 10 31 | 699 | (1.6+ | 2.3+) | 2004 03 29 | 691 | 0.1+ | 0.0 |
| 1973 10 04 | 675 | 1.0+ | 0.8− | 2002 10 31 | 699 | 0.6+ | 0.4− | 2004 04 23 | 691 | 0.0 | 0.1+ |
| 2000 02 03 | 704 | 1.0− | 0.3− | 2002 10 31 | 699 | 0.1+ | 1.1+ | 2004 04 23 | 691 | 0.1+ | 0.5+ |
| 2000 02 03 | 704 | 0.4+ | 1.0− | 2002 10 31 | 699 | 0.5− | 0.6+ | 2004 04 23 | 691 | 0.1+ | 0.0 |
| 2000 02 03 | 704 | 0.4− | 1.6+ | 2002 10 31 | 608 | 0.4− | 0.2− | 2006 10 21 | G96 | 1.1+ | 0.5− |
| 2000 02 03 | 704 | 0.7− | 0.1+ | 2002 10 31 | 608 | 0.8− | 0.4+ | 2006 10 21 | G96 | 1.2+ | 1.0− |
| 2002 10 09 | 704 | 0.9− | 0.9+ | 2002 10 31 | 608 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.3− | 0.6− |
| 2002 10 09 | 704 | 0.3− | 0.8+ | 2004 03 27 | 704 | (0.0 | 1.6+) | 2006 10 21 | G96 | 0.2+ | 0.9− |
| 2002 10 09 | 704 | 0.1− | 0.6+ | 2004 03 27 | 704 | 0.6+ | 0.2+ | | | | |

**2004 FY$_{126}$ = 2002 RL$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.70210 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23658563 | $\omega$ | 256.83353 | | +0.13321319 | | −0.99104098 |
| $a$ | 2.5890701 | $\Omega$ | 185.53807 | | +0.94345870 | | +0.12976994 |
| $e$ | 0.2694528 | $i$ | 5.70472 | | +0.30354560 | | +0.03158392 |
| $P$ | 4.17 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.1+ | 0.1− | 2002 09 17 | 644 | 0.1+ | 0.2+ | 2004 03 27 | 704 | 0.4+ | 1.3− |
| 1998 09 14 | 691 | 0.2− | 0.5+ | 2002 09 17 | 644 | 0.2− | 0.3+ | 2004 03 29 | 691 | 0.0 | 0.6+ |
| 1998 09 14 | 691 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.5+ | 1.4+ | 2004 03 29 | 691 | 0.1+ | 0.2− |
| 2000 03 27 | 691 | 0.2+ | 0.1− | 2004 03 18 | 704 | 0.8− | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.1+ |
| 2000 03 27 | 691 | 0.5− | 0.3− | 2004 03 18 | 704 | 0.9+ | 0.6+ | 2004 03 31 | 691 | 0.2+ | 0.0 |
| 2000 03 27 | 691 | 0.3+ | 0.3+ | 2004 03 18 | 704 | 0.0 | 0.1+ | 2004 03 31 | 691 | 0.4− | 0.1− |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2004 03 26 | 699 | (2.3− | 3.2−) | 2004 03 31 | 691 | 0.2− | 0.5+ |
| 2002 09 14 | 644 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.8+ | 0.5+ | | | | |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2004 03 27 | 704 | 0.5+ | 0.4− | | | | |

**2004 FE$_{128}$ = 2006 VG$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.12424 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23232911 | $\omega$ | 15.37350 | | +0.82146242 | | −0.56666577 |
| $a$ | 2.6205974 | $\Omega$ | 19.55890 | | +0.50099485 | | +0.66356389 |
| $e$ | 0.0586100 | $i$ | 11.01224 | | +0.27240348 | | +0.48843921 |
| $P$ | 4.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.4− | 0.6+ | 2004 03 29 | 704 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.5+ |
| 2001 08 14 | 644 | 0.6− | 0.9+ | 2004 04 11 | 644 | 0.3+ | 0.0 | 2006 11 02 | 703 | 1.0+ | 0.1+ |
| 2001 08 14 | 644 | 0.2− | 0.9+ | 2004 04 11 | 644 | 0.4+ | 0.1+ | 2006 11 02 | 703 | 0.8− | 0.1+ |
| 2004 03 27 | 704 | 0.6+ | 0.5− | 2004 04 11 | 644 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.8− | 0.1− |
| 2004 03 27 | 704 | 0.4+ | 0.1+ | 2004 04 11 | 703 | 0.5− | 0.9+ | 2006 11 15 | 703 | 0.5− | 0.3+ |
| 2004 03 27 | 704 | 0.9+ | 0.7+ | 2004 04 11 | 703 | 0.7+ | 0.5− | 2006 11 15 | 703 | 0.1− | 0.1+ |
| 2004 03 28 | 704 | 0.8+ | 0.5+ | 2004 04 11 | 703 | 0.5+ | 0.8+ | 2006 11 15 | 703 | 0.8+ | 0.1− |
| 2004 03 28 | 704 | 0.3− | 0.1+ | 2004 04 11 | 703 | 0.6+ | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.0 |
| 2004 03 28 | 704 | 0.5+ | 0.5+ | 2004 04 16 | 644 | 0.1− | 0.2− | 2006 11 21 | 703 | 0.9− | 1.0+ |
| 2004 03 28 | 704 | 0.5+ | 0.1+ | 2004 04 16 | 644 | 0.3− | 0.1+ | 2006 11 21 | 703 | 0.5− | 0.7+ |
| 2004 03 29 | 704 | 0.4− | 0.0 | 2004 04 16 | 644 | 0.4+ | 0.1+ | 2006 11 21 | 703 | 0.1+ | 0.3+ |
| 2004 03 29 | 704 | 1.0− | 1.1− | 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 11 21 | 703 | (1.1− | 1.6+) |
| 2004 03 29 | 704 | 0.1− | 0.9− | 2004 04 20 | 691 | 0.2− | 0.2+ | | | | |
| 2004 03 29 | 704 | 0.9− | 0.4+ | 2004 04 20 | 691 | 0.0 | 0.1+ | | | | |

**2004 FY$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.92991 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24396643 | $\omega$ | 107.22448 | | −0.95594150 | | +0.21045546 |
| $a$ | 2.5365845 | $\Omega$ | 85.29343 | | −0.27841170 | | −0.87100917 |
| $e$ | 0.0887356 | $i$ | 11.84994 | | +0.09307407 | | −0.44390486 |
| $P$ | 4.04 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2004 03 22 | 699 | 0.7+ | 0.2− | 2004 05 12 | 644 | 0.1− | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2004 03 28 | 703 | 0.9+ | 0.1+ | 2004 05 12 | 644 | 0.3+ | 0.5+ |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2004 03 28 | 703 | 1.1+ | 0.4+ | 2004 05 12 | 644 | 0.0 | 0.3+ |
| 2004 03 16 | 704 | 0.1− | 0.4− | 2004 03 28 | 703 | 0.1+ | 1.4+ | 2006 11 16 | 691 | 1.0− | 1.2+ |
| 2004 03 16 | 704 | 0.2− | 0.4+ | 2004 03 28 | 703 | 0.7+ | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.3− |
| 2004 03 16 | 704 | (0.1− | 2.5+) | 2004 04 13 | 703 | 0.2− | 0.8− | 2006 11 16 | 691 | 0.3+ | 0.3− |
| 2004 03 17 | 704 | 0.7− | 0.5− | 2004 04 13 | 703 | 0.5− | 1.0− | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2004 03 17 | 704 | 0.6− | 0.5− | 2004 04 13 | 703 | 0.1− | 0.7− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2004 03 17 | 704 | 0.2+ | 0.3+ | 2004 04 13 | 703 | 0.5− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 03 17 | 704 | 0.2− | 0.2+ | 2004 04 24 | 703 | (0.5+ | 2.1−) | 2006 11 20 | 704 | 0.6− | 1.3− |
| 2004 03 22 | 699 | 0.2− | 0.3+ | 2004 04 24 | 703 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.7− |
| 2004 03 22 | 699 | 0.1− | 0.2+ | 2004 04 24 | 703 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.4− |
| 2004 03 22 | 699 | 0.0 | 0.4+ | 2004 04 24 | 703 | 0.3− | 0.6− | | | | |

**2004 FC$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 188.03552 | | | (2000.0) | | |
| $n$ | 0.23362220 | $\omega$ | 136.32736 | | −0.69696314 | +0.67833372 |
| $a$ | 2.6109185 | $\Omega$ | 87.95429 | | −0.70512738 | −0.58922368 |
| $e$ | 0.1491001 | $i$ | 13.45931 | | −0.13052874 | −0.43895195 |
| $P$ | 4.22 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 06 | 291 | 0.1+ | 0.1+ | 2004 03 28 | 704 | 0.2+ | 0.7+ | 2004 04 14 | 704 | 0.9+ | 0.4− |
| 2003 01 06 | 291 | 0.1+ | 0.1+ | 2004 03 28 | 704 | 1.5− | 0.7+ | 2004 04 14 | 704 | 1.7+ | 0.3− |
| 2003 01 06 | 291 | 0.3− | 0.1− | 2004 03 28 | 704 | 0.6+ | 0.4+ | 2004 04 24 | 704 | 0.4+ | 1.0− |
| 2004 02 17 | 704 | 0.0 | 0.3+ | 2004 04 09 | 644 | 0.3− | 0.1+ | 2004 04 24 | 703 | 0.4− | 0.2+ |
| 2004 02 17 | 704 | 0.8+ | 0.4+ | 2004 04 09 | 644 | 0.0 | 0.0 | 2004 04 24 | 704 | 0.7+ | 0.7− |
| 2004 02 17 | 704 | 0.3+ | 0.2+ | 2004 04 09 | 644 | 0.0 | 0.1+ | 2004 04 24 | 703 | 0.6− | 0.5+ |
| 2004 02 17 | 704 | 0.8− | 1.3− | 2004 04 13 | 703 | 0.8+ | 0.1− | 2004 04 24 | 704 | 0.2+ | 0.2+ |
| 2004 03 22 | 699 | 1.2− | 0.2− | 2004 04 13 | 703 | 0.4− | 0.2− | 2004 04 24 | 703 | 0.3− | 0.1− |
| 2004 03 22 | 699 | 0.5− | 0.5+ | 2004 04 13 | 703 | 0.5+ | 0.1− | 2004 04 24 | 703 | 0.6− | 0.0 |
| 2004 03 22 | 699 | 0.8− | 0.2− | 2004 04 13 | 703 | 0.3+ | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2004 03 22 | 699 | 0.5− | 0.5+ | 2004 04 14 | 704 | 0.5− | 0.9− | 2006 11 23 | G96 | 0.7+ | 0.2+ |
| 2004 03 28 | 704 | 0.2− | 0.1+ | 2004 04 14 | 704 | 1.2+ | 0.2− | 2006 11 23 | G96 | 0.5− | 0.2− |

**2004 FG$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 224.51535 | | | (2000.0) | | |
| $n$ | 0.25472903 | $\omega$ | 118.64604 | | −0.94261639 | +0.30843413 |
| $a$ | 2.4646226 | $\Omega$ | 79.55996 | | −0.33326913 | −0.84608772 |
| $e$ | 0.1015415 | $i$ | 7.46905 | | −0.02015004 | −0.43474586 |
| $P$ | 3.87 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 0.1− | 0.5+ | 2004 03 23 | 704 | 0.1+ | 0.6− | 2004 04 25 | 699 | 1.0+ | 0.3− |
| 2004 03 15 | 704 | 0.5+ | 0.4+ | 2004 04 21 | 703 | 1.0− | 0.4− | 2004 04 25 | 699 | 0.8− | 0.1− |
| 2004 03 15 | 704 | 0.8+ | 0.2− | 2004 04 21 | 703 | 0.5+ | 0.5+ | 2006 11 15 | 691 | 0.4+ | 0.3− |
| 2004 03 22 | 699 | 1.0− | 0.0 | 2004 04 21 | 703 | (1.6− | 1.5+) | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2004 03 22 | 699 | 0.4+ | 0.3+ | 2004 04 21 | 703 | 0.2+ | 0.6− | 2006 11 15 | 691 | 0.5− | 0.6− |
| 2004 03 22 | 699 | 0.5− | 0.2+ | 2004 04 23 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2004 03 22 | 699 | 1.4− | 0.4+ | 2004 04 23 | 704 | (1.6+ | 0.2+) | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 03 23 | 704 | 0.6+ | 0.1+ | 2004 04 23 | 704 | 0.5+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.5+ |
| 2004 03 23 | 704 | 0.4+ | 0.7− | 2004 04 23 | 704 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.6+ | 0.0 |
| 2004 03 23 | 704 | 0.2− | 0.5+ | 2004 04 25 | 699 | 1.4+ | 0.1− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2004 03 23 | 704 | 0.2− | 0.8− | 2004 04 25 | 699 | 1.2− | 0.3+ | 2006 12 01 | 691 | 0.4− | 0.2− |

**2004 FQ$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.52134 | | | (2000.0) | | |
| $n$ | 0.18786605 | $\omega$ | 151.85726 | | −0.36063425 | +0.92602459 |
| $a$ | 3.0192832 | $\Omega$ | 96.82166 | | −0.87542204 | −0.29482787 |
| $e$ | 0.1868201 | $i$ | 6.44480 | | −0.32183722 | −0.23570104 |
| $P$ | 5.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 850 | 0.1+ | 1.2+ | 2004 04 14 | 691 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.3− | 0.2+ |
| 2004 03 23 | 850 | 0.5+ | 0.9+ | 2004 04 17 | 699 | 0.4− | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.6+ |
| 2004 03 24 | 850 | (1.9+ | 1.4−) | 2004 04 17 | 699 | 0.7− | 0.6+ | 2006 11 16 | G96 | 0.6+ | 0.0 |
| 2004 03 24 | 850 | (2.4− | 2.4−) | 2004 04 17 | 699 | 0.7− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2004 03 30 | 704 | 0.1− | 0.2− | 2004 04 17 | 699 | 0.7− | 1.3− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 03 30 | 704 | 0.2+ | 0.7− | 2004 04 23 | 704 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.6+ | 0.4− |
| 2004 03 30 | 704 | 0.6+ | 1.3− | 2004 04 23 | 704 | 0.6− | 0.5− | 2006 11 23 | G96 | 0.5− | 0.2+ |
| 2004 03 30 | 704 | 0.7+ | 0.2− | 2004 04 23 | 704 | 0.7+ | 0.2− | 2006 11 23 | G96 | 0.6+ | 0.2− |
| 2004 04 14 | 691 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.6− | 0.2− | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.0 |

**2004 FD$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.59114 | | | (2000.0) | | |
| $n$ | 0.27786559 | $\omega$ | 249.21198 | | −0.25223385 | −0.96289989 |
| $a$ | 2.3258384 | $\Omega$ | 215.83617 | | +0.93755357 | −0.21864306 |
| $e$ | 0.1578950 | $i$ | 9.43017 | | +0.23952327 | −0.15817403 |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.7+ | 0.2+ | 2004 03 27 | 704 | 1.2+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.5+ | 0.2− | 2004 03 27 | 704 | 0.2+ | 0.6+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2002 09 13 | 644 | 0.1− | 0.1+ | 2004 03 27 | 703 | 0.3+ | 1.4+ | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2002 11 08 | 645 | 0.1− | 0.2+ | 2004 03 27 | 704 | 0.5+ | 0.2+ | 2006 11 25 | 683 | 1.0− | 0.1+ |
| 2002 11 08 | 645 | 0.1− | 0.1+ | 2004 03 27 | 704 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.4− | 0.1− |
| 2004 03 16 | 703 | 0.2+ | 0.9− | 2004 03 27 | 703 | 0.7+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2004 03 16 | 703 | 0.3− | 0.7+ | 2004 03 27 | 704 | 0.3+ | 0.2+ | 2006 11 25 | 683 | 1.5+ | 0.9+ |
| 2004 03 16 | 703 | (1.7− | 0.1−) | 2004 03 27 | 704 | 0.5+ | 0.2− | 2006 11 25 | G96 | 0.4− | 0.0 |
| 2004 03 16 | 703 | 0.8− | 1.1+ | 2004 03 27 | 703 | 0.9− | 0.1− | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2004 03 17 | 704 | 0.1− | 0.4+ | 2004 04 16 | 644 | 0.2+ | 0.9+ | 2006 11 25 | 703 | 0.3+ | 0.1− |
| 2004 03 17 | 704 | 0.9− | 0.5− | 2004 04 16 | 644 | 0.8+ | 0.3+ | 2006 11 25 | 703 | 0.7− | 0.1− |
| 2004 03 17 | 704 | 0.4+ | 0.4− | 2004 04 16 | 644 | 0.2+ | 0.3+ | 2006 11 25 | 703 | 0.2− | 0.4− |
| 2004 03 17 | 704 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 25 | 703 | 0.6− | 0.4− |
| 2004 03 26 | 699 | 1.2− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 0.4− | 0.1− |
| 2004 03 26 | 699 | 0.8− | 0.4− | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 25 | 703 | 0.4− | 0.3− |
| 2004 03 26 | 699 | (1.7− | 0.9+) | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 25 | 703 | 0.3− | 0.5+ |
| 2004 03 26 | 699 | 0.8− | 0.6− | 2006 11 17 | 704 | 0.6− | 0.2− | 2006 11 25 | 703 | 0.4− | 0.1+ |
| 2004 03 27 | 704 | 0.2+ | 1.1+ | 2006 11 17 | 704 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.0 |
| 2004 03 27 | 704 | 0.5+ | 0.8+ | 2006 11 17 | 704 | 1.0+ | 0.6− | 2006 11 28 | 704 | 0.6+ | 0.5+ |
| 2004 03 27 | 704 | (1.5+ | 1.2+) | 2006 11 17 | 704 | 0.7+ | 0.4+ | 2006 11 28 | 704 | 0.2− | 0.7− |
| 2004 03 27 | 704 | 0.5+ | 0.2− | 2006 11 17 | 704 | 0.2+ | 1.4+ | 2006 11 28 | 704 | 1.0+ | 0.3− |
| 2004 03 27 | 703 | 0.4+ | 0.2− | 2006 11 22 | G96 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.1+ |

**2004 FO$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 216.01651 | | | (2000.0) | | |
| $n$ | 0.28125783 | $\omega$ | 192.23042 | | −0.30872769 | +0.93634675 |
| $a$ | 2.3070993 | $\Omega$ | 59.99472 | | −0.85559080 | −0.19661409 |
| $e$ | 0.1727039 | $i$ | 11.12957 | | −0.41551365 | −0.29085676 |
| $P$ | 3.50 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.1+ | 0.1− | 2004 04 13 | 683 | (0.0 | 1.6−) | 2004 04 23 | 683 | (0.8− | 2.1+) |
| 2001 08 14 | 644 | 0.2− | 0.3− | 2004 04 13 | 683 | 0.4− | 1.4− | 2004 04 23 | 704 | 0.4+ | 0.3+ |
| 2001 08 14 | 644 | 0.4+ | 0.3− | 2004 04 14 | 683 | 0.1+ | 0.2− | 2004 04 24 | 683 | 0.7+ | 1.1− |
| 2004 03 23 | 704 | 0.0 | 0.4− | 2004 04 14 | 683 | 0.6+ | 0.0 | 2004 04 24 | 683 | (1.9+ | 0.1−) |
| 2004 03 23 | 704 | 0.1+ | 0.3− | 2004 04 14 | 683 | 0.2+ | 0.3+ | 2004 04 24 | 683 | 0.4+ | 1.1− |
| 2004 03 23 | 704 | 0.3+ | 0.2− | 2004 04 16 | 683 | (0.4+ | 2.7−) | 2004 04 29 | 683 | 0.3− | 0.0 |
| 2004 03 23 | 704 | 0.1+ | 0.2− | 2004 04 16 | 683 | 0.0 | 1.3− | 2004 04 29 | 683 | 1.2− | 1.2+ |
| 2004 03 23 | 704 | 0.3+ | 0.3+ | 2004 04 16 | 683 | 1.1− | 0.5− | 2004 04 29 | 683 | 0.7− | 0.8+ |
| 2004 03 27 | 699 | 0.4+ | 0.4+ | 2004 04 20 | 683 | 0.4+ | 0.2+ | 2004 05 18 | 704 | 0.4+ | 0.6+ |
| 2004 03 27 | 699 | 0.8− | 0.4− | 2004 04 20 | 683 | 1.2+ | 0.1− | 2004 05 18 | 704 | 0.5+ | 0.3− |
| 2004 03 27 | 699 | 1.4− | 0.0 | 2004 04 20 | 683 | 0.3− | 0.9+ | 2004 05 18 | 704 | 0.5+ | 0.4+ |
| 2004 03 27 | 699 | 0.2− | 1.4+ | 2004 04 21 | 683 | 1.1+ | 0.8− | 2004 05 18 | 704 | 0.2− | 0.6− |
| 2004 03 29 | 683 | 0.0 | 0.8− | 2004 04 21 | 683 | 0.4+ | 0.1+ | 2004 05 22 | 704 | 0.4+ | 0.4+ |
| 2004 03 29 | 683 | 1.2− | 0.9+ | 2004 04 21 | 683 | 1.1+ | 1.0+ | 2004 05 22 | 704 | 0.3− | 0.0 |
| 2004 03 29 | 683 | 1.1− | 0.9+ | 2004 04 22 | 683 | (2.0+ | 2.0−) | 2004 05 22 | 704 | 0.7+ | 0.2− |
| 2004 03 30 | 683 | 0.2+ | 2.2− | 2004 04 22 | 683 | (2.3+ | 0.0 ) | 2004 05 22 | 704 | 0.8+ | 0.0 |
| 2004 03 30 | 683 | 1.3− | 1.2− | 2004 04 22 | 683 | (2.9+ | 0.6−) | 2005 10 31 | 699 | (3.1− | 2.1−) |
| 2004 03 30 | 683 | 0.4+ | 2.5+ | 2004 04 23 | 683 | 0.4− | 0.0 | 2005 10 31 | 699 | 0.3− | 0.5− |
| 2004 04 10 | 644 | 0.2− | 0.2− | 2004 04 23 | 704 | 0.0 | 1.2+ | 2005 10 31 | 699 | (0.0 | 2.1+) |
| 2004 04 10 | 644 | 0.2− | 0.2− | 2004 04 23 | 683 | (3.3− | 1.8+) | 2005 10 31 | 699 | 0.2− | 1.3+ |
| 2004 04 10 | 644 | 0.4− | 0.1− | 2004 04 23 | 704 | 0.2+ | 0.5+ | | | | |
| 2004 04 13 | 683 | (0.3− | 2.2−) | 2004 04 23 | 704 | 0.1+ | 0.2− | | | | |

**2004 FQ$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 132.48403 | | | (2000.0) | | |
| $n$ | 0.17789176 | $\omega$ | 203.71146 | | −0.44724343 | +0.88584315 |
| $a$ | 3.1311136 | $\Omega$ | 40.02953 | | −0.78682568 | −0.32401211 |
| $e$ | 0.1579493 | $i$ | 11.07144 | | −0.42529833 | −0.33211153 |
| $P$ | 5.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 704 | 1.1+ | 0.6+ | 2004 04 12 | 699 | 0.1+ | 0.4+ | 2004 04 25 | 704 | 0.8− | 0.2− |
| 2004 03 22 | 704 | 0.4+ | 0.5− | 2004 04 12 | 699 | (1.6− | 1.6−) | 2004 04 25 | 704 | 0.5+ | 0.1− |
| 2004 03 22 | 704 | 0.6+ | 0.3+ | 2004 04 16 | 691 | 0.0 | 0.1+ | 2004 04 25 | 704 | 0.5− | 0.2+ |
| 2004 03 22 | 704 | (1.0+ | 2.9−) | 2004 04 16 | 691 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.1+ | 0.2+ |
| 2004 03 27 | 699 | 0.6+ | 0.5+ | 2004 04 16 | 691 | 0.1− | 0.0 | 2004 04 25 | 704 | 0.2− | 0.5+ |
| 2004 03 27 | 699 | 0.0 | 1.0+ | 2004 04 16 | 704 | 0.5+ | 0.2+ | 2004 04 25 | 704 | 0.4− | 0.4+ |
| 2004 03 27 | 699 | 0.5+ | 0.5+ | 2004 04 16 | 704 | 0.5− | 0.9+ | 2004 05 15 | 691 | 0.8+ | 0.4+ |
| 2004 03 27 | 699 | 0.4+ | 0.4− | 2004 04 16 | 704 | 0.1− | 0.9− | 2004 05 15 | 691 | 0.1− | 0.9+ |
| 2004 03 28 | 704 | 0.1+ | 0.0 | 2004 04 16 | 704 | 0.3+ | 0.1+ | 2004 05 15 | 691 | 0.0 | 0.7+ |
| 2004 03 28 | 704 | 0.2+ | 0.4− | 2004 04 16 | 644 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2004 03 28 | 704 | 0.8− | 0.0 | 2004 04 16 | 644 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.4+ |
| 2004 03 31 | 704 | 1.0+ | 1.2− | 2004 04 16 | 644 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.4+ |
| 2004 03 31 | 704 | 0.6+ | 0.8− | 2004 04 19 | 704 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 1.0+ |
| 2004 03 31 | 704 | 0.2− | 0.3+ | 2004 04 19 | 704 | 0.6+ | 0.5− | 2006 10 23 | 691 | 0.0 | 0.4+ |
| 2004 03 31 | 691 | 0.2− | 0.0 | 2004 04 19 | 704 | 0.7+ | 0.3− | 2006 10 23 | 691 | 0.5− | 0.6+ |
| 2004 03 31 | 691 | 0.5− | 0.0 | 2004 04 19 | 704 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2004 03 31 | 691 | 0.1+ | 0.1+ | 2004 04 19 | 704 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2004 04 11 | 703 | 0.3+ | 0.2+ | 2004 04 22 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 2004 04 11 | 703 | (0.3− | 1.9−) | 2004 04 22 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2004 04 11 | 703 | 1.0+ | 1.1− | 2004 04 22 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.5− | 0.0 |
| 2004 04 11 | 703 | 0.2+ | 0.2− | 2004 04 25 | 704 | 0.1− | 0.3+ | 2006 11 14 | G96 | 1.0− | 0.0 |
| 2004 04 12 | 699 | 0.5− | 1.2+ | 2004 04 25 | 704 | 0.7− | 0.6− | 2006 11 14 | G96 | 0.5− | 0.3− |
| 2004 04 12 | 699 | 0.2+ | 0.0 | 2004 04 25 | 704 | 0.7+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.1− |

**2004 FD$_{138}$ = 2006 RS$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.94936 | | | (2000.0) | | |
| $n$ | 0.22640260 | $\omega$ | 310.26571 | | −0.44098713 | −0.89744307 |
| $a$ | 2.6661328 | $\Omega$ | 165.88855 | | +0.83681025 | −0.41565538 |
| $e$ | 0.0884522 | $i$ | 2.64185 | | +0.32446719 | −0.14773810 |
| $P$ | 4.35 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.6+ | 0.9− |
| 2001 08 24 | 691 | 0.2− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2001 08 24 | 691 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.3+ |
| 2004 03 29 | 691 | 0.4− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.6− |
| 2004 03 29 | 691 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.5− | 0.5+ | 2006 10 31 | G96 | 0.6+ | 0.4− |
| 2004 03 29 | 691 | 0.3− | 0.1+ | 2006 09 18 | 691 | 1.3− | 1.0− | 2006 10 31 | G96 | 0.5+ | 0.5− |
| 2004 03 30 | 291 | 0.5+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2004 03 30 | 291 | 1.1+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2004 03 30 | 291 | 0.7+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2004 04 20 | 691 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.7+ | 0.1− |
| 2004 04 20 | 691 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.7+ | 2006 11 16 | G96 | 0.6+ | 0.5− |

**2004 FF$_{138}$ = 2006 UV$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 204.12416 | | | (2000.0) | | |
| $n$ | 0.21845510 | $\omega$ | 162.31211 | | −0.99752853 | +0.06668629 |
| $a$ | 2.7304104 | $\Omega$ | 21.54809 | | −0.06952029 | −0.89108799 |
| $e$ | 0.1149608 | $i$ | 3.45450 | | −0.01018653 | −0.44890436 |
| $P$ | 4.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 29 | 691 | 0.4+ | 0.3− | 2004 03 31 | 291 | 0.4− | 0.2+ | 2006 10 23 | 691 | (2.7+ | 0.9+) |
| 2004 03 29 | 691 | 0.5+ | 0.5− | 2004 03 31 | 291 | 0.5− | 0.2+ | 2006 10 23 | 691 | (3.3+ | 0.6+) |
| 2004 03 29 | 691 | 0.4+ | 0.2− | 2005 07 31 | E12 | 1.1+ | 0.8− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2004 03 30 | 704 | 1.1− | 0.1+ | 2005 07 31 | E12 | 0.9+ | 0.8− | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2004 03 30 | 704 | 0.3+ | 0.3− | 2005 07 31 | E12 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2004 03 30 | 704 | 0.5+ | 0.6+ | 2005 07 31 | E12 | 1.5− | 1.2+ | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2004 03 31 | 291 | 0.4− | 0.3+ | 2006 10 23 | 691 | (2.9+ | 0.6+) | | | | |

**2004 FJ$_{138}$ = 2004 FK$_{164}$ = 2006 UV$_{73}$**

Id. Minor Planet Center (d, *MPO* 87832; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.84936 | | | (2000.0) | | |
| $n$ | 0.20305742 | $\omega$ | 353.79994 | | +0.86748248 | +0.49641157 |
| $a$ | 2.8667521 | $\Omega$ | 336.35116 | | −0.45287767 | +0.76109957 |
| $e$ | 0.0452886 | $i$ | 4.63280 | | −0.20585421 | +0.41749612 |
| $P$ | 4.85 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.1− | 0.0 | 2004 03 31 | 291 | 0.6+ | 0.1+ | 2006 10 25 | A44 | 0.2− | 0.1+ |
| 2001 09 28 | 644 | 0.1− | 0.1+ | 2004 03 31 | 291 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 09 28 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.5+ |
| 2004 03 29 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.3− | 0.1+ |
| 2004 03 29 | 691 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2004 03 29 | 691 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.4− | 0.2− |
| 2004 03 30 | 291 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2004 03 30 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2004 03 30 | 291 | 0.2+ | 0.2− | 2006 10 25 | A44 | 0.2− | 0.0 | | | | |
| 2004 03 31 | 291 | 0.2− | 0.1− | 2006 10 25 | A44 | 0.6− | 0.2− | | | | |

**2004 FR$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 213.42983 | | | (2000.0) | | |
| $n$ | 0.22491081 | $\omega$ | 327.91841 | | −0.99273185 | −0.02965504 |
| $a$ | 2.6779091 | $\Omega$ | 211.03139 | | +0.05378872 | −0.97630978 |
| $e$ | 0.1976338 | $i$ | 13.07671 | | −0.10765799 | −0.21433571 |
| $P$ | 4.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 704 | 0.1− | 0.1− | 2004 04 11 | 703 | 0.5+ | 0.5− | 2004 05 16 | 704 | 0.3− | 0.3+ |
| 2004 03 17 | 704 | 0.0 | 0.4+ | 2004 04 16 | 644 | 0.0 | 0.2+ | 2004 05 16 | 704 | 0.2− | 0.7+ |
| 2004 03 17 | 704 | 1.4+ | 0.0 | 2004 04 16 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.3+ |
| 2004 03 17 | 704 | 0.0 | 0.0 | 2004 04 16 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2004 03 17 | 704 | 0.4− | 0.0 | 2004 04 17 | 704 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.2− |
| 2004 03 20 | 699 | 0.3− | 0.7− | 2004 04 17 | 704 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.2+ | 0.2− |
| 2004 03 20 | 699 | 1.4− | 0.5− | 2004 04 17 | 704 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2004 03 20 | 699 | (2.8− | 1.1−) | 2004 04 17 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2004 03 20 | 699 | (2.9− | 1.4+) | 2004 04 20 | 704 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.4+ |
| 2004 03 31 | 704 | 1.1+ | 0.5+ | 2004 04 20 | 704 | (0.6− | 1.6+) | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2004 03 31 | 704 | 1.4− | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.1+ |
| 2004 03 31 | 704 | 0.2+ | 0.4+ | 2004 04 26 | 699 | 1.1+ | 1.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2004 03 31 | 704 | 0.1− | 0.6+ | 2004 04 26 | 699 | 0.3+ | 1.4+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2004 03 31 | 704 | 0.7+ | 1.0− | 2004 04 26 | 699 | 0.6− | 1.0− | 2006 10 31 | 691 | 0.4− | 0.2+ |
| 2004 04 11 | 703 | 0.2− | 0.2− | 2004 04 26 | 699 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2004 04 11 | 703 | 0.3+ | 1.1+ | 2004 05 16 | 704 | 0.7− | 0.1− | | | | |
| 2004 04 11 | 703 | 0.0 | 1.4− | 2004 05 16 | 704 | 0.7− | 0.5− | | | | |

**2004 FV$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 208.23419 | | | (2000.0) | | |
| $n$ | 0.21740340 | $\omega$ | 287.54223 | | −0.98104578 | −0.19277827 |
| $a$ | 2.7392089 | $\Omega$ | 241.34668 | | +0.18519310 | −0.90293422 |
| $e$ | 0.0195101 | $i$ | 1.28240 | | +0.05703234 | −0.38411760 |
| $P$ | 4.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2− | 0.2− | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2+ |
| 2004 03 15 | 691 | 0.4− | 0.4− | 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2004 04 21 | 691 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.4+ |
| 2004 03 18 | 704 | 0.4− | 0.0 | 2004 04 21 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2004 03 18 | 704 | 0.3− | 0.8+ | 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2004 03 18 | 704 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.3+ | 0.1− |
| 2004 03 20 | 699 | (1.6− | 1.0−) | 2006 09 19 | 691 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.4− |
| 2004 03 20 | 699 | 0.7− | 0.7+ | 2006 09 26 | 691 | 0.4− | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2004 03 20 | 699 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 03 20 | 699 | 1.1+ | 1.4− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.2− |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.3− | 0.6+ |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.6− |

**2004 FA**$_{140}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.31310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18307774 | $\omega$ | 177.39686 | | −0.99204231 | | +0.09409990 |
| $a$ | 3.0717016 | $\Omega$ | 9.33925 | | −0.12281347 | | −0.57691108 |
| $e$ | 0.2275599 | $i$ | 31.02860 | | −0.02772924 | | −0.81136848 |
| $P$ | 5.38 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 608 | 0.6+ | 0.4− | 2004 04 21 | E12 | 0.6− | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2004 01 19 | 608 | 0.1+ | 0.1+ | 2004 04 21 | E12 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.1− | 0.3− |
| 2004 01 19 | 608 | 0.9+ | 0.2+ | 2004 04 30 | E12 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 1.0+ | 1.4− |
| 2004 03 26 | 704 | 0.5− | 0.4− | 2004 04 30 | E12 | 0.4+ | 0.4− | 2006 09 23 | 691 | 0.2+ | 0.2+ |
| 2004 03 26 | 704 | 0.1+ | 0.1+ | 2004 04 30 | E12 | 1.4+ | 0.8− | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2004 03 26 | 704 | 0.1+ | 0.6− | 2004 04 30 | E12 | 1.3+ | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2004 03 26 | 699 | 0.2+ | 0.0 | 2004 05 11 | E12 | 0.9+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2004 03 26 | 704 | 0.4− | 0.5+ | 2004 05 11 | E12 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2004 03 26 | 699 | 0.6− | 0.2+ | 2004 05 11 | E12 | 0.0 | 0.8− | 2006 09 26 | G96 | 0.0 | 0.6− |
| 2004 03 26 | 699 | 1.0+ | 0.5− | 2004 05 11 | E12 | 0.8− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2004 03 26 | 699 | 0.2− | 0.1− | 2004 05 19 | E12 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.4− | 0.1+ |
| 2004 03 30 | E12 | 0.1+ | 0.2− | 2004 05 19 | E12 | 0.1− | 1.1− | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2004 03 30 | E12 | 0.5− | 0.8+ | 2004 05 19 | E12 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2004 03 30 | E12 | 0.4− | 0.2+ | 2004 05 19 | E12 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2004 03 30 | E12 | 0.5− | 1.1+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2004 04 15 | E12 | 0.3− | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.3− | 0.5− |
| 2004 04 15 | E12 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2004 04 15 | E12 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.4+ |
| 2004 04 15 | E12 | 0.4− | 0.5+ | 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.4− | 0.1+ |
| 2004 04 21 | E12 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2004 04 21 | E12 | 0.0 | 0.4+ | 2006 09 19 | 703 | 1.0− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.0 |

**2004 FG**$_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.82871 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24236774 | $\omega$ | 163.70637 | | −0.99759574 | | −0.06292038 |
| $a$ | 2.5477267 | $\Omega$ | 12.79163 | | +0.03923167 | | −0.85825482 |
| $e$ | 0.1980844 | $i$ | 7.53875 | | +0.05712811 | | −0.50935223 |
| $P$ | 4.07 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.3− | 0.3+ | 2004 04 02 | 608 | 0.4− | 0.8+ | 2004 04 24 | E12 | 0.0 | 1.0+ |
| 2004 03 18 | 704 | 0.6− | 0.2+ | 2004 04 02 | 608 | 1.1− | 0.3+ | 2004 04 24 | E12 | 0.6− | 0.7+ |
| 2004 03 18 | 704 | 0.8− | 0.7+ | 2004 04 02 | 608 | 0.3− | 0.4+ | 2004 04 24 | E12 | 0.1+ | 1.1+ |
| 2004 03 18 | 704 | 0.3− | 0.1+ | 2004 04 11 | 703 | 0.6+ | 0.6+ | 2004 04 24 | E12 | 0.5− | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2004 04 11 | 703 | 0.4+ | 1.0− | 2004 04 26 | 699 | 0.9+ | 1.4− |
| 2004 03 27 | 704 | 1.4+ | 0.7− | 2004 04 11 | 703 | 0.4+ | 0.2+ | 2004 04 26 | 699 | (2.5+ | 0.2−) |
| 2004 03 27 | 704 | 0.9+ | 0.4− | 2004 04 11 | 703 | 0.5+ | 1.5− | 2004 04 26 | 699 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 1.2+ | 0.2− | 2004 04 16 | 704 | 0.2− | 0.9− | 2004 04 26 | 699 | 1.3− | 0.9− |
| 2004 03 27 | 704 | 0.9+ | 0.3− | 2004 04 16 | 704 | 0.8+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.5− |
| 2004 03 27 | 704 | 0.6+ | 0.2− | 2004 04 16 | 704 | 0.0 | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.7+ |
| 2004 03 31 | 704 | 0.9− | 0.1− | 2004 04 20 | 704 | 0.7− | 0.7− | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2004 03 31 | 704 | 0.4+ | 0.6− | 2004 04 20 | 704 | 0.4− | 0.3− | 2006 10 21 | 691 | 0.4− | 0.1+ |
| 2004 03 31 | 704 | 0.4+ | 0.0 | 2004 04 20 | 704 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.6+ | 0.5− |
| 2004 03 31 | 704 | 0.2− | 0.2+ | 2004 04 20 | 704 | 0.6− | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2004 03 31 | 704 | 0.5− | 0.2− | 2004 04 20 | 704 | 0.0 | 0.5+ | | | | |

**2004 FQ**$_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.13517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23191066 | $\omega$ | 318.86379 | | −0.97026815 | | −0.21815653 |
| $a$ | 2.6237487 | $\Omega$ | 209.04132 | | +0.23629689 | | −0.94755318 |
| $e$ | 0.2013470 | $i$ | 12.47008 | | −0.05237837 | | −0.23356091 |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 704 | 0.5+ | 0.5+ | 2004 04 17 | 704 | 0.1+ | 0.2+ | 2004 05 14 | 704 | 0.3+ | 0.0 |
| 2004 03 17 | 703 | 1.3− | 0.4− | 2004 04 17 | 704 | 0.1− | 0.0 | 2004 05 14 | 704 | (1.9+ | 0.8−) |
| 2004 03 17 | 704 | 0.0 | 0.4+ | 2004 04 19 | 691 | 0.0 | 0.0 | 2004 05 17 | 704 | 0.3+ | 0.6− |
| 2004 03 17 | 703 | 0.9− | 0.2+ | 2004 04 19 | 691 | 0.0 | 0.0 | 2004 05 17 | 704 | 0.3+ | 0.6− |
| 2004 03 17 | 704 | 0.1+ | 0.2+ | 2004 04 19 | 691 | 0.1+ | 0.2− | 2004 05 17 | 704 | 0.7+ | 0.0 |
| 2004 03 17 | 703 | 0.8− | 0.6− | 2004 04 20 | 703 | 0.9+ | 0.6+ | 2004 05 17 | 704 | 1.1+ | 1.3+ |
| 2004 03 17 | 704 | 0.1− | 0.1− | 2004 04 20 | 703 | 0.1+ | 0.5− | 2004 05 19 | 691 | 0.2− | 0.0 |
| 2004 03 17 | 703 | 1.2− | 0.0 | 2004 04 20 | 703 | 0.0 | 0.5− | 2004 05 19 | 691 | 0.2− | 0.0 |
| 2004 03 17 | 704 | 0.2+ | 0.2+ | 2004 04 20 | 703 | 0.0 | 0.1− | 2004 05 19 | 691 | 0.1− | 0.0 |
| 2004 03 27 | 704 | 0.2+ | 0.0 | 2004 04 21 | 704 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.5+ | 0.8− |
| 2004 03 27 | 704 | 0.3− | 1.4− | 2004 04 21 | 704 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.5+ |
| 2004 03 27 | 704 | (2.7+ | 1.1+) | 2004 04 21 | 704 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.4− | 0.5+ |
| 2004 03 27 | 704 | 1.0+ | 0.7+ | 2004 04 21 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2004 03 31 | 704 | 0.4+ | 0.2+ | 2004 04 21 | 704 | 1.1+ | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 2004 03 31 | 704 | 0.3+ | 0.5− | 2004 05 07 | 703 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2004 03 31 | 704 | 0.3+ | 0.1− | 2004 05 07 | 703 | (1.4+ | 1.5+) | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2004 03 31 | 704 | 0.0 | 0.0 | 2004 05 07 | 703 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2004 03 31 | 704 | 0.8+ | 0.1− | 2004 05 07 | 703 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2004 04 12 | 644 | 0.2+ | 0.2+ | 2004 05 11 | 699 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2004 04 12 | 644 | 0.2+ | 0.2+ | 2004 05 11 | 699 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.6− | 0.9− |
| 2004 04 12 | 644 | 0.1+ | 0.2+ | 2004 05 11 | 699 | 1.3− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2004 04 12 | 691 | 0.0 | 0.1+ | 2004 05 11 | 699 | 0.9− | 1.0+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2004 04 12 | 691 | 0.0 | 0.2+ | 2004 05 12 | 699 | 0.3− | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 04 12 | 691 | 0.1− | 0.0 | 2004 05 12 | 699 | 0.4− | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 04 16 | 644 | 0.0 | 0.1− | 2004 05 12 | 699 | 0.4− | 0.9− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2004 04 16 | 644 | 0.1+ | 0.0 | 2004 05 12 | 699 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2004 04 16 | 644 | 0.0 | 0.0 | 2004 05 14 | 704 | 0.1+ | 0.7− | | | | |
| 2004 04 17 | 704 | 0.1− | 0.1− | 2004 05 14 | 704 | 0.4+ | 0.9− | | | | |

**2004 FC**$_{142}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.96902 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20354932 | $\omega$ | 257.55134 | | +0.02060700 | | −0.99907907 |
| $a$ | 2.8621317 | $\Omega$ | 191.46900 | | +0.97499557 | | +0.02841256 |
| $e$ | 0.1090023 | $i$ | 10.91033 | | +0.22126677 | | −0.03215170 |
| $P$ | 4.84 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.6+ | 0.0 | 2006 08 29 | 703 | 0.5− | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.4− |
| 2004 03 27 | 704 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.6− | 2006 09 18 | 703 | (2.1− | 0.1−) |
| 2004 03 27 | 704 | 0.1+ | 0.5− | 2006 08 29 | 703 | 0.7+ | 0.7+ | 2006 09 18 | 703 | (0.0 | 2.3−) |
| 2004 03 27 | 704 | 1.4+ | 0.0 | 2006 08 29 | 703 | 0.4+ | 1.3− | 2006 09 18 | 703 | (1.0− | 2.3−) |
| 2004 03 31 | 291 | 0.1− | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.6+ |
| 2004 03 31 | 291 | 0.1− | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.5− | 0.6+ |
| 2004 03 31 | 291 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.2− | 0.6+ |
| 2004 04 23 | 691 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.6− | 0.5+ |
| 2004 04 23 | 691 | 0.2− | 0.2− | 2006 09 13 | 644 | 0.3+ | 0.3+ | | | | |
| 2004 04 23 | 691 | 0.1− | 0.2− | 2006 09 13 | 644 | 0.3− | 0.4+ | | | | |

**2004 FD$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.38452 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25801023 | $\omega$ | 110.29596 | | −0.56192097 | | −0.82715728 |
| $a$ | 2.4436824 | $\Omega$ | 13.90031 | | +0.74687652 | | −0.51121837 |
| $e$ | 0.1371638 | $i$ | 1.77956 | | +0.35555630 | | −0.23338084 |
| $P$ | 3.82 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.2+ | 0.3− | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2004 03 27 | 704 | 0.8+ | 0.6− | 2006 10 17 | 691 | 0.6+ | 0.4+ | 2006 11 02 | 691 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 0.9+ | 0.9− | 2006 10 17 | 691 | 0.1+ | 0.9− | 2006 11 02 | G96 | 0.1+ | 0.3− |
| 2004 03 27 | 704 | 0.2− | 0.7− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 12 | 703 | 0.6− | 0.1+ |
| 2004 03 31 | 291 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.2− | 2006 11 12 | 703 | 0.6− | 0.6+ |
| 2004 03 31 | 291 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 12 | 703 | 0.4− | 0.8− |
| 2004 03 31 | 291 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.8− | 0.5− |
| 2004 04 14 | 691 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2004 04 14 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.3− | 0.1− |
| 2004 04 14 | 691 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2004 04 23 | 691 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 12 | G96 | 0.2− | 0.1− |
| 2004 04 23 | 691 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.4+ |
| 2004 04 23 | 691 | 0.1− | 0.1+ | 2006 11 02 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 02 | G96 | 0.4− | 0.1+ | 2006 11 17 | 703 | 1.1+ | 0.6− |
| 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 02 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.5+ |

**2004 FG$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.67097 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21345128 | $\omega$ | 137.73594 | | −0.94504458 | | −0.32616998 |
| $a$ | 2.7729170 | $\Omega$ | 23.25623 | | +0.28269548 | | −0.84971088 |
| $e$ | 0.2007413 | $i$ | 3.25910 | | +0.16423765 | | −0.41425181 |
| $P$ | 4.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.1+ | 1.3+ | 2004 04 09 | E12 | 0.6− | 0.2+ | 2004 04 17 | 704 | 0.3+ | 1.4− |
| 2004 03 15 | 703 | (1.2− | 2.0−) | 2004 04 09 | E12 | 0.2− | 0.2− | 2004 04 22 | 333 | 0.3− | 0.5− |
| 2004 03 15 | 703 | 0.0 | 0.4+ | 2004 04 10 | 703 | (0.8− | 1.7+) | 2004 04 22 | 333 | 0.8− | 0.2+ |
| 2004 03 15 | 703 | 0.6− | 0.4+ | 2004 04 10 | 703 | 0.4− | 0.7+ | 2004 05 09 | 691 | 0.0 | 0.2+ |
| 2004 03 27 | 704 | 0.1+ | 0.4− | 2004 04 10 | 703 | 0.3+ | 0.3− | 2004 05 09 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.4+ | 0.3+ | 2004 04 10 | 703 | 1.0− | 1.5+ | 2004 05 09 | 691 | 0.0 | 0.4+ |
| 2004 03 27 | 704 | 1.3+ | 0.3+ | 2004 04 12 | 699 | 0.5+ | 0.7− | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2004 03 27 | 704 | 0.6+ | 0.6− | 2004 04 12 | 699 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 0.2+ | 0.0 | 2004 04 12 | 699 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2004 03 31 | 704 | 0.3− | 0.2− | 2004 04 12 | 699 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.3− | 0.3+ |
| 2004 03 31 | 704 | 0.1+ | 0.4+ | 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2004 03 31 | 704 | 0.7− | 0.7+ | 2004 04 13 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2004 03 31 | 704 | 0.0 | 0.7− | 2004 04 13 | 691 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2004 03 31 | 704 | 0.4− | 0.2+ | 2004 04 17 | 704 | 0.8+ | 0.6− | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2004 04 09 | E12 | 0.3− | 1.4+ | 2004 04 17 | 704 | 0.0 | 0.8− | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2004 04 09 | E12 | 0.3− | 0.1+ | 2004 04 17 | 704 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.3− |

**2004 FL$_{142}$ = 2006 SJ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.48672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15836128 | $\omega$ | 74.64285 | | +0.01222508 | | +0.99729927 |
| $a$ | 3.3835302 | $\Omega$ | 196.57407 | | −0.98687396 | | +0.00037031 |
| $e$ | 0.0967113 | $i$ | 14.70722 | | −0.16102896 | | +0.07344404 |
| $P$ | 6.22 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.3+ | 0.8+ | 2004 04 16 | 704 | 0.3− | 0.9+ | 2006 09 18 | 704 | 0.1− | 0.3− |
| 2000 10 01 | 704 | 0.2+ | 1.3+ | 2004 04 19 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.2+ | 0.8+ | 2004 04 19 | 704 | 0.3− | 0.8− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 0.7− | 1.3+ | 2004 04 19 | 704 | 1.2− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.3− |
| 2000 10 01 | 704 | 0.6− | 0.7+ | 2004 04 19 | 704 | 0.5− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2004 03 27 | 704 | (1.8+ | 0.2−) | 2004 04 19 | 704 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2+ | 0.2+ |
| 2004 03 27 | 704 | 0.7+ | 1.0+ | 2004 04 20 | 703 | 0.4+ | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | (1.9+ | 1.1+) | 2004 04 20 | 703 | 1.1− | 1.2+ | 2006 10 17 | 703 | (0.8− | 1.6+) |
| 2004 03 27 | 704 | 1.3+ | 0.1+ | 2004 04 20 | 703 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2004 03 27 | 704 | 1.1+ | 0.7+ | 2004 04 20 | 703 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2004 03 31 | 704 | 0.3+ | 0.4− | 2004 04 22 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 703 | (1.8− | 0.8+) |
| 2004 03 31 | 704 | 0.2− | 0.1+ | 2004 04 22 | 704 | 0.4+ | 0.4− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2004 03 31 | 704 | 1.3+ | 1.0+ | 2004 04 22 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.4− | 0.6+ |
| 2004 04 09 | E12 | (0.6+ | 2.1−) | 2004 04 22 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2004 04 09 | E12 | 0.3− | 1.4− | 2006 09 17 | 703 | 0.3− | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 2004 04 09 | E12 | 0.5− | 0.6− | 2006 09 17 | 703 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2004 04 09 | E12 | (0.6+ | 2.1−) | 2006 09 17 | 703 | 0.8− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2004 04 12 | 691 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.2− | 0.2+ |
| 2004 04 16 | 704 | 0.5− | 1.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2004 04 16 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | (0.0 | 1.7−) | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2004 04 16 | 704 | 0.3− | 0.0 | 2006 09 18 | 704 | (2.1+ | 1.3−) | | | | |
| 2004 04 16 | 704 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.2− | 0.5− | | | | |

**2004 FC$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.38483 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17304570 | $\omega$ | 200.23717 | | −0.54853408 | | +0.77588968 |
| $a$ | 3.1893010 | $\Omega$ | 38.45858 | | −0.68153279 | | −0.19899646 |
| $e$ | 0.2025677 | $i$ | 30.06846 | | −0.48437941 | | −0.59866152 |
| $P$ | 5.70 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.5− | 0.6− | 2004 04 20 | 704 | 0.2− | 0.1− | 2004 05 12 | 699 | (1.6+ | 0.2−) |
| 2004 03 23 | 704 | 0.3+ | 0.5− | 2004 04 21 | 703 | 0.3− | 0.2− | 2004 05 12 | 699 | 0.4+ | 0.1− |
| 2004 03 23 | 704 | 0.3− | 0.3− | 2004 04 21 | 703 | 0.3+ | 0.5− | 2004 05 15 | 691 | 0.1+ | 0.1+ |
| 2004 03 27 | 699 | 1.4− | 1.1+ | 2004 04 21 | 703 | 1.1− | 0.1+ | 2004 05 15 | 691 | 0.3+ | 0.0 |
| 2004 03 27 | 699 | 0.7+ | 0.5+ | 2004 04 21 | 703 | 0.2− | 1.2− | 2004 05 15 | 691 | 0.1− | 0.2+ |
| 2004 03 27 | 699 | 0.0 | 0.3+ | 2004 04 22 | 704 | 0.5− | 0.4− | 2004 05 23 | 691 | 0.1+ | 0.1+ |
| 2004 03 27 | 699 | 0.5− | 0.9− | 2004 04 22 | 704 | 0.9+ | 0.6− | 2004 05 23 | 691 | 0.1+ | 0.3+ |
| 2004 03 31 | 704 | 0.2+ | 0.6+ | 2004 04 22 | 704 | 0.2− | 0.1+ | 2004 05 23 | 691 | 0.1+ | 0.2+ |
| 2004 03 31 | 704 | 0.5+ | 0.7+ | 2004 04 22 | 704 | 0.4+ | 0.4− | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2004 03 31 | 704 | 0.9+ | 0.6− | 2004 04 23 | 691 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.1− |
| 2004 03 31 | 704 | 0.7+ | 0.9+ | 2004 04 23 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2004 03 31 | 704 | 0.7+ | 0.3+ | 2004 04 23 | 691 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.3+ |
| 2004 03 31 | 704 | 1.0+ | 0.5+ | 2004 04 28 | 608 | 0.1+ | 1.4− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2004 03 31 | 704 | 0.6+ | 0.2+ | 2004 04 28 | 608 | 0.8+ | 1.4− | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2004 03 31 | 704 | 0.6+ | 0.2+ | 2004 04 28 | 608 | (0.7+ | 1.7−) | 2006 10 21 | G96 | 0.4− | 0.2+ |
| 2004 03 31 | 704 | 1.2+ | 0.4− | 2004 05 09 | 703 | 0.8− | 0.7+ | 2006 10 21 | G96 | 0.4− | 0.4+ |
| 2004 03 31 | 704 | 0.0 | 0.6+ | 2004 05 09 | 703 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.7− | 0.7+ |
| 2004 04 16 | 704 | 0.5− | 0.3+ | 2004 05 09 | 703 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.4− |
| 2004 04 16 | 704 | 0.8+ | 1.5+ | 2004 05 09 | 703 | 0.9+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.5+ |
| 2004 04 16 | 704 | 0.5− | 1.0+ | 2004 05 11 | 699 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.9− | 0.2− |
| 2004 04 16 | 704 | 0.5− | 0.5+ | 2004 05 11 | 699 | 1.2+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.4+ |
| 2004 04 16 | 704 | 0.1+ | 0.4+ | 2004 05 11 | 699 | 0.6− | 0.3− | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2004 04 20 | 704 | 0.0 | 0.1+ | 2004 05 11 | 699 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2004 04 20 | 704 | 0.6− | 0.7− | 2004 05 12 | 699 | 0.9− | 0.2+ | | | | |
| 2004 04 20 | 704 | 0.3− | 0.1− | 2004 05 12 | 699 | 0.5− | 0.2− | | | | |

**2004 FT$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.36808 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23659912 | $\omega$ | 126.36946 | | −0.97346164 | | −0.17552385 |
| $a$ | 2.5889717 | $\Omega$ | 44.06211 | | +0.07290682 | | −0.84609562 |
| $e$ | 0.1377614 | $i$ | 12.19014 | | +0.21692632 | | −0.50330267 |
| $P$ | 4.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 0.0 | 0.8+ | 2004 04 22 | 704 | 1.0+ | 0.2+ | 2004 05 29 | 691 | 0.4+ | 0.1+ |
| 2004 02 25 | 704 | 0.6− | 0.5+ | 2004 04 22 | 704 | 0.6+ | 0.2+ | 2006 09 25 | G96 | 0.6− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 0.2− | 0.9+ | 2004 04 22 | 704 | 0.5+ | 0.7+ | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 2004 02 25 | 704 | 0.6− | 0.1− | 2004 04 22 | 704 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2004 03 20 | 704 | 0.3− | 0.1+ | 2004 04 22 | 704 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 0.7− | 0.5+ | 2004 04 24 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.0 |
| 2004 03 20 | 704 | 0.0 | 0.7− | 2004 04 24 | 691 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.2+ |
| 2004 03 20 | 704 | 0.3+ | 0.8− | 2004 04 24 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.4+ |
| 2004 03 20 | 704 | 0.3− | 1.0− | 2004 04 25 | 703 | 0.4− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2004 03 28 | 704 | 0.6+ | 0.0 | 2004 04 25 | 703 | 0.7− | 0.4− | 2006 10 16 | 691 | 0.2− | 0.3− |
| 2004 03 28 | 704 | 0.3+ | 0.0 | 2004 04 25 | 703 | 0.7− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2004 03 28 | 704 | 0.1+ | 0.0 | 2004 04 25 | 703 | 1.2− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 03 28 | 704 | 0.3+ | 0.4− | 2004 04 29 | 608 | (1.0+ | 1.7−) | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2004 03 28 | 704 | 0.5+ | 0.0 | 2004 04 29 | 608 | (1.8+ | 0.7−) | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2004 03 31 | 704 | 0.4+ | 0.7− | 2004 04 29 | 608 | (2.0+ | 1.1−) | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2004 03 31 | 704 | 0.2+ | 0.8− | 2004 05 12 | 699 | 1.2− | 0.4− | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2004 03 31 | 704 | 1.0+ | 0.5+ | 2004 05 12 | 699 | 0.8− | 0.4− | 2006 11 08 | 644 | 0.3− | 0.3+ |
| 2004 03 31 | 704 | 0.0 | 0.6− | 2004 05 12 | 699 | 0.6− | 0.8− | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2004 03 31 | 704 | 0.3+ | 0.4+ | 2004 05 12 | 699 | 1.5− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2004 04 11 | 703 | 0.3− | 1.0− | 2004 05 15 | 704 | 0.3+ | 1.0− | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2004 04 11 | 703 | 0.2− | 0.3− | 2004 05 15 | 704 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2004 04 11 | 703 | 0.1+ | 0.4+ | 2004 05 15 | 704 | (0.3+ | 1.6−) | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2004 04 11 | 703 | 1.4+ | 1.5+ | 2004 05 15 | 704 | 0.6− | 0.5− | 2006 11 11 | 703 | 1.3− | 1.2− |
| 2004 04 14 | 699 | 0.6− | 0.1− | 2004 05 15 | 704 | 0.6+ | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2004 04 14 | 699 | 0.6− | 0.3− | 2004 05 16 | 704 | 0.4+ | 1.1+ | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2004 04 14 | 699 | 0.2− | 0.4− | 2004 05 16 | 704 | 0.1+ | 1.2+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2004 04 14 | 699 | 0.3− | 0.6− | 2004 05 16 | 704 | (2.4+ | 0.5+) | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2004 04 17 | 704 | 0.5− | 0.3+ | 2004 05 16 | 704 | 0.4− | 0.5− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2004 04 17 | 704 | 0.5+ | 0.9− | 2004 05 21 | 704 | 0.1− | 0.6+ | 2006 11 15 | 704 | 0.1+ | 0.1+ |
| 2004 04 17 | 704 | 0.4− | 0.3+ | 2004 05 21 | 704 | 1.2+ | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.6+ |
| 2004 04 19 | 704 | 0.6− | 0.5+ | 2004 05 21 | 704 | 1.4+ | 0.6+ | 2006 11 15 | 704 | 0.3+ | 0.0 |
| 2004 04 19 | 704 | 0.8− | 0.8+ | 2004 05 21 | 704 | 1.2+ | 0.6− | 2006 11 22 | 704 | (2.1+ | 0.7+) |
| 2004 04 19 | 704 | 0.6− | 0.4+ | 2004 05 21 | 704 | (1.6+ | 0.9−) | 2006 11 22 | 704 | 0.2+ | 1.1+ |
| 2004 04 19 | 704 | 0.3− | 0.5+ | 2004 05 29 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2004 04 19 | 704 | 1.0− | 0.1+ | 2004 05 29 | 691 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.7+ | 0.4+ |

**2004 FX$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.68809 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17803323 | $\omega$ | 38.74121 | | −0.51074932 | | +0.85378863 |
| $a$ | 3.1294547 | $\Omega$ | 201.14370 | | −0.84189362 | | −0.52047819 |
| $e$ | 0.1600219 | $i$ | 16.24337 | | −0.17421326 | | +0.01214209 |
| $P$ | 5.54 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 691 | 0.1− | 0.1− | 2004 04 17 | 704 | 0.4− | 0.0 | 2004 05 14 | 704 | 0.1− | 0.6+ |
| 2000 09 26 | 691 | 0.0 | 0.1+ | 2004 04 20 | 704 | 0.1+ | 0.4− | 2004 05 14 | 704 | 0.5+ | 0.4+ |
| 2000 09 26 | 691 | 0.1+ | 0.1− | 2004 04 20 | 704 | 0.2+ | 0.4− | 2004 05 14 | 704 | 0.5+ | 0.0 |
| 2004 03 19 | 704 | 0.4− | 1.2− | 2004 04 20 | 704 | 0.6+ | 0.8− | 2004 05 23 | 704 | 0.4+ | 0.0 |
| 2004 03 19 | 704 | 0.5+ | 0.6− | 2004 04 20 | 704 | (0.8− | 1.5−) | 2004 05 23 | 704 | 0.2+ | 0.7+ |
| 2004 03 19 | 704 | 0.1+ | 0.2+ | 2004 04 20 | 704 | 0.5− | 0.0 | 2004 05 23 | 704 | 0.7+ | 0.3+ |
| 2004 03 19 | 704 | 0.5+ | 0.2+ | 2004 04 22 | 704 | 0.6+ | 0.5− | 2004 05 23 | 704 | 0.4+ | 0.5+ |
| 2004 03 19 | 704 | 0.1+ | 0.9+ | 2004 04 22 | 704 | 0.1+ | 0.6− | 2004 05 23 | 704 | 0.2+ | 0.5+ |
| 2004 03 28 | 704 | 0.4− | 1.0+ | 2004 04 22 | 704 | 0.0 | 0.5− | 2006 10 02 | G96 | 0.0 | 0.3+ |
| 2004 03 28 | 704 | 0.8− | 0.1− | 2004 04 22 | 704 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.4+ |
| 2004 03 28 | 704 | 0.4− | 1.4+ | 2004 04 22 | 704 | 0.7+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.4+ |
| 2004 03 28 | 704 | 0.1+ | 0.9+ | 2004 05 01 | 703 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.2+ |
| 2004 03 28 | 704 | 0.7− | 0.7+ | 2004 05 01 | 703 | 1.4− | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.4+ |
| 2004 03 31 | 704 | 0.8+ | 0.2− | 2004 05 01 | 703 | 0.6− | 0.9− | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2004 03 31 | 704 | 0.3− | 0.5− | 2004 05 01 | 703 | 0.3− | 0.6+ | 2006 10 21 | G96 | 0.3− | 0.3+ |
| 2004 03 31 | 704 | 0.9+ | 0.6+ | 2004 05 13 | 699 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2004 03 31 | 704 | 0.1+ | 0.7+ | 2004 05 13 | 699 | 0.1− | 1.0− | 2006 11 09 | 644 | 0.2+ | 0.7+ |
| 2004 03 31 | 704 | 0.3− | 0.8+ | 2004 05 13 | 699 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.2− | 0.7+ |
| 2004 04 17 | 704 | 0.3+ | 0.2+ | 2004 05 13 | 699 | 0.8− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2004 04 17 | 704 | 1.1− | 0.1+ | 2004 05 14 | 704 | 0.4+ | 0.1− | | | | |

**2004 FC$_{144}$ = 2006 SS$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.62916 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23931179 | $\omega$ | 263.66331 | | −0.50014762 | | −0.86547151 |
| $a$ | 2.5693700 | $\Omega$ | 216.39146 | | +0.81225879 | | −0.45748652 |
| $e$ | 0.1307112 | $i$ | 2.75195 | | +0.30014666 | | −0.20412042 |
| $P$ | 4.12 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 691 | 0.8+ | 0.1+ | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1− | 0.0 |
| 1998 10 14 | 691 | 0.5− | 0.2− | 2004 03 29 | 691 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 1998 10 14 | 691 | 0.4− | 0.2+ | 2004 03 31 | 691 | 0.8+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 691 | 0.1+ | 0.3− | 2004 03 31 | 691 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2004 03 17 | 691 | 0.0 | 0.2− | 2004 03 31 | 691 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2004 03 17 | 691 | 0.1− | 0.4− | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2004 03 29 | 691 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2− |

**2004 FB$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.73602 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24568427 | $\omega$ | 188.18963 | | +0.28925814 | | −0.95608940 |
| $a$ | 2.5247467 | $\Omega$ | 245.00728 | | +0.88118190 | | +0.28518965 |
| $e$ | 0.1692301 | $i$ | 2.98172 | | +0.37396281 | | +0.06752725 |
| $P$ | 4.01 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 691 | 0.2+ | 0.5− | 2004 03 31 | 291 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1998 10 16 | 691 | 0.4+ | 0.3− | 2004 03 31 | 291 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 1998 10 16 | 691 | 0.3+ | 0.3− | 2004 03 31 | 291 | 0.4+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1998 10 29 | 691 | 0.1+ | 0.1− | 2004 04 23 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.0 |
| 1998 10 29 | 691 | 0.1− | 0.3− | 2004 04 23 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.2+ |
| 1998 10 29 | 691 | 0.3− | 0.4− | 2004 04 23 | 691 | 0.3+ | 1.0+ | 2006 11 17 | 703 | (0.9− | 1.9+) |
| 2002 10 16 | 644 | 0.4− | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.9+ | 0.2+ |
| 2002 10 16 | 644 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.9− |
| 2002 10 16 | 644 | 0.3− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2002 10 28 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.8+ | 0.5+ |
| 2002 10 28 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2002 10 28 | 644 | 0.5+ | 1.1+ | 2006 10 21 | 644 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2002 11 11 | 049 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 11 11 | 049 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 11 11 | 049 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 03 29 | 691 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.3− | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 03 29 | 691 | 0.4− | 0.1− | 2006 11 07 | 644 | 0.2− | 0.2+ | | | | |
| 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.1− | | | | |

**2004 FS$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.85010 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22293606 | $\omega$ | 150.95213 | | −0.99313042 | | −0.02965487 |
| $a$ | 2.6936997 | $\Omega$ | 28.04148 | | −0.04195589 | | −0.81278471 |
| $e$ | 0.1296370 | $i$ | 13.93249 | | +0.10923219 | | −0.58180891 |
| $P$ | 4.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 31 | 704 | 0.7+ | 0.8+ | 2004 04 28 | 608 | 0.4+ | 0.4− | 2006 10 15 | 691 | 0.2+ | 0.1+ |
| 2004 03 31 | 704 | 0.1− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2004 03 31 | 704 | 1.1− | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2004 03 31 | 704 | 0.4+ | 0.4− | 2006 09 28 | G96 | 0.1− | 0.7− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2004 04 20 | 704 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.6+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.4+ |
| 2004 04 20 | 704 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.6+ | 0.5− | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2004 04 20 | 704 | 0.0 | 0.9− | 2006 10 03 | G96 | 0.4+ | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2004 04 20 | 704 | 0.7− | 0.7+ | 2006 10 03 | G96 | 0.4+ | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2004 04 28 | 608 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.5+ | 0.6− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2004 04 28 | 608 | 0.3+ | 0.1− | 2006 10 15 | 691 | 0.7− | 0.1+ | | | | |

**2004 FV$_{149}$ = 2006 SM$_{287}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 185.09277 | | (2000.0) | | | |
| $n$ | 0.22527380 | $\omega$ | 250.64858 | | −0.98142124 | +0.01709531 |
| $a$ | 2.6750317 | $\Omega$ | 289.95820 | | +0.07275937 | −0.88846495 |
| $e$ | 0.0507593 | $i$ | 11.73076 | | −0.17753431 | −0.45862597 |
| $P$ | 4.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.2+ | 0.0 | 2004 03 16 | 704 | 0.2+ | 0.2− | 2006 09 14 | 644 | 0.4+ | 0.2− |
| 2002 11 25 | 644 | 0.0 | 0.3− | 2004 03 16 | 704 | 0.9+ | 0.5− | 2006 09 22 | 699 | 0.1+ | 0.5− |
| 2002 11 25 | 644 | 0.0 | 0.3− | 2004 03 16 | 704 | 0.1+ | 0.1− | 2006 09 22 | 699 | 0.1− | 0.6+ |
| 2004 01 14 | 644 | 0.1− | 0.1− | 2004 03 16 | 704 | 0.0 | 0.0 | 2006 09 22 | 699 | 0.7+ | 0.4− |
| 2004 01 14 | 644 | 0.4+ | 0.1+ | 2004 03 16 | 704 | 0.1+ | 0.3− | 2006 09 22 | 699 | 0.9+ | 0.2− |
| 2004 01 14 | 644 | 0.1+ | 0.3+ | 2004 03 26 | 049 | 0.4− | 0.7− | 2006 09 28 | 703 | 1.7− | 0.2+ |
| 2004 03 01 | 703 | 0.2+ | 0.6− | 2004 03 26 | 049 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.8− | 0.4+ |
| 2004 03 01 | 703 | 0.7− | 0.5+ | 2004 03 26 | 049 | 0.2+ | 0.6− | 2006 09 28 | 703 | 0.3− | 0.4+ |
| 2004 03 01 | 703 | 0.3− | 1.4+ | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.3− | 1.0+ |
| 2004 03 01 | 703 | 0.5− | 0.6+ | 2006 09 14 | 644 | 0.7+ | 0.5− | | | | |

**2004 FL$_{152}$ = 2001 SZ$_{329}$ = 2006 SK$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.49987 | | (2000.0) | | | |
| $n$ | 0.20362809 | $\omega$ | 158.64225 | | +0.98963754 | −0.14308416 |
| $a$ | 2.8613935 | $\Omega$ | 209.59199 | | +0.12796231 | +0.91682011 |
| $e$ | 0.0802271 | $i$ | 1.39466 | | +0.06513973 | +0.37278387 |
| $P$ | 4.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.1− | 0.0 | 2004 03 12 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 08 19 | 807 | 0.0 | 0.0 | 2004 03 12 | 644 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 09 12 | 704 | (0.5+ | 1.7+) | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 0.6− | 0.9+ |
| 2001 09 12 | 704 | 0.9− | 0.5+ | 2004 03 17 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 1.0+ | 0.7+ |
| 2001 09 12 | 704 | 0.4− | 0.6+ | 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.7+ | 1.0+ |
| 2001 09 19 | 691 | 0.2− | 0.1+ | 2004 03 28 | 291 | 0.1− | 0.4+ | 2006 09 27 | 704 | (0.9+ | 1.9+) |
| 2001 09 19 | 691 | 0.1− | 0.2+ | 2004 03 28 | 291 | 0.3+ | 0.3+ | 2006 09 28 | 699 | 1.6− | 2.8+ |
| 2001 09 19 | 691 | 0.0 | 0.3+ | 2004 03 28 | 291 | 0.3+ | 0.5+ | 2006 09 28 | 699 | 0.8− | 0.8+ |
| 2001 09 20 | 704 | 0.6+ | 1.0+ | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 09 28 | 699 | 1.1+ | 0.7+ |
| 2001 09 20 | 704 | 0.3− | 0.3− | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 09 28 | 699 | 0.8− | 0.4− |
| 2001 09 20 | 704 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.7+ | 0.0 | 2006 10 02 | G96 | 0.5− | 0.1− |
| 2001 09 20 | 704 | 0.3+ | 0.2− | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.6− | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2004 03 12 | 644 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.3− | 0.1− |

**2004 FR$_{158}$ = 2006 SA$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 299.53253 | | (2000.0) | | | |
| $n$ | 0.23453465 | $\omega$ | 82.64701 | | +0.39090606 | −0.91325617 |
| $a$ | 2.6041423 | $\Omega$ | 342.89647 | | +0.61243932 | +0.35109912 |
| $e$ | 0.0623214 | $i$ | 22.95434 | | +0.68710300 | +0.20662181 |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 704 | 1.4+ | 1.3+ | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 08 21 | 691 | 0.4− | 0.1+ |
| 2004 02 16 | 704 | 0.5+ | 1.3+ | 2004 03 18 | 691 | 0.3− | 0.4− | 2006 08 21 | 691 | 0.1− | 0.1+ |
| 2004 02 16 | 704 | 1.0+ | 0.3+ | 2004 03 18 | 691 | 0.3− | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.0 |
| 2004 02 16 | 704 | 0.9+ | 0.9+ | 2004 03 27 | 691 | 0.5+ | 0.2− | 2006 09 17 | 703 | 1.3+ | 0.8− |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2004 03 27 | 691 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.3− | 0.4+ |
| 2004 02 16 | 691 | 0.3− | 0.2− | 2004 03 27 | 691 | 0.1− | 0.3+ | 2006 09 17 | 703 | 0.9+ | 0.6+ |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.5+ |
| 2004 02 16 | 691 | 0.0 | 0.3− | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 20 | 699 | 1.4+ | 0.6+ |
| 2004 02 16 | 691 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.4− | 0.8− | 2006 09 20 | 699 | 0.6+ | 0.8− |
| 2004 02 16 | 691 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.8− | 0.1− |

**2004 FJ$_{160}$ = 2006 QU$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.85344 | | (2000.0) | | | |
| $n$ | 0.20431836 | $\omega$ | 113.90069 | | +0.62674694 | −0.73946438 |
| $a$ | 2.8549452 | $\Omega$ | 294.96892 | | +0.57922969 | +0.65305504 |
| $e$ | 0.0825714 | $i$ | 15.72728 | | +0.52123051 | +0.16343665 |
| $P$ | 4.82 | $H$ | 14.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.4+ | 0.8− | 2004 03 18 | 704 | 0.5+ | 0.0 | 2006 09 01 | 704 | 0.4− | 0.3+ |
| 2001 07 25 | 608 | 0.1+ | 0.1− | 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.6− | 0.4+ |
| 2001 07 25 | 608 | 0.1+ | 1.4− | 2004 03 18 | 704 | 0.0 | 0.5− | 2006 09 01 | 704 | 0.1− | 0.5+ |
| 2001 08 24 | 699 | 0.3− | 0.0 | 2004 03 18 | 704 | 0.7+ | 0.1+ | 2006 09 01 | 704 | 0.1− | 0.0 |
| 2001 08 24 | 699 | 0.3− | 0.3− | 2004 03 26 | 704 | 1.3− | 0.4− | 2006 09 16 | 703 | 1.4+ | 1.3− |
| 2001 08 24 | 699 | 0.6− | 0.0 | 2004 03 26 | 704 | 0.5− | 0.5+ | 2006 09 16 | 703 | 0.3+ | 0.6− |
| 2001 08 24 | 699 | 0.2− | 0.8+ | 2004 03 26 | 704 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.1+ | 0.6− |
| 2001 09 21 | 699 | 0.5+ | 0.4+ | 2004 03 26 | 704 | 0.2− | 0.3− | 2006 09 16 | 703 | 0.3+ | 0.4− |
| 2001 09 21 | 699 | 0.3− | 1.6+ | 2006 08 29 | 699 | 0.2− | 0.4+ | 2006 09 28 | 703 | 0.5− | 0.0 |
| 2001 09 21 | 699 | 0.4− | 1.1+ | 2006 08 29 | 699 | 0.8+ | 0.2+ | 2006 09 28 | 703 | 0.4− | 0.9− |
| 2001 09 21 | 699 | 0.4+ | 0.4− | 2006 08 29 | 699 | 0.0 | 0.8+ | 2006 09 28 | 703 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 08 29 | 699 | 0.3+ | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.2+ |

**2004 FE$_{165}$ = 2000 KD$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 253.31139 | | (2000.0) | | | |
| $n$ | 0.23309716 | $\omega$ | 86.97627 | | −0.67414001 | −0.63508769 |
| $a$ | 2.6148376 | $\Omega$ | 53.22724 | | +0.33566645 | −0.71821148 |
| $e$ | 0.1417562 | $i$ | 28.08416 | | +0.65792346 | −0.28431653 |
| $P$ | 4.23 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 26 | 691 | 1.0+ | 0.3− | 2004 03 29 | 703 | 1.1− | 0.2+ | 2004 04 13 | 703 | 0.4− | 1.3+ |
| 2000 05 26 | 691 | 0.4+ | 0.3− | 2004 03 29 | 704 | 0.0 | 0.1+ | 2004 04 13 | 703 | 0.5+ | 0.2+ |
| 2000 05 26 | 691 | 0.0 | 0.3+ | 2004 03 29 | 704 | 0.4− | 0.3− | 2004 04 13 | 703 | 0.6+ | 0.3+ |
| 2000 06 01 | 691 | 0.6− | 0.4+ | 2004 03 29 | 703 | 0.8+ | 0.1+ | 2004 04 26 | 704 | 0.3+ | 0.3− |
| 2000 06 01 | 691 | 0.3− | 0.4+ | 2004 03 29 | 704 | 0.2+ | 0.1+ | 2004 04 26 | 704 | 0.0 | 0.1+ |
| 2000 06 01 | 691 | 0.1− | 0.1− | 2004 03 29 | 703 | 0.3− | 0.3+ | 2004 04 26 | 704 | 0.5+ | 0.2+ |
| 2002 11 05 | 644 | 0.6− | 0.7+ | 2004 03 29 | 704 | 0.1+ | 0.6− | 2004 04 26 | 704 | 1.2− | 0.7− |
| 2002 11 05 | 644 | 0.3− | 0.5+ | 2004 03 29 | 703 | 0.1− | 0.4+ | | | | |
| 2002 11 05 | 644 | 0.6− | 0.5+ | 2004 04 13 | 703 | 0.6+ | 1.1− | | | | |

**2004 FF$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 168.95607 | | (2000.0) | | | |
| $n$ | 0.24272927 | $\omega$ | 135.52564 | | −0.05108469 | +0.99210275 |
| $a$ | 2.5451963 | $\Omega$ | 131.19358 | | −0.95346826 | −0.01432263 |
| $e$ | 0.1765978 | $i$ | 8.75634 | | −0.29713403 | −0.12460737 |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.5− | 0.8− | 2004 03 23 | 704 | 1.1+ | 0.7+ | 2004 04 25 | 699 | 1.2+ | 0.8− |
| 2000 03 25 | 691 | 0.3− | 0.8− | 2004 03 23 | 704 | 0.1+ | 0.0 | 2004 04 25 | 699 | 1.6− | 0.8+ |
| 2000 03 25 | 691 | 0.4− | 0.6− | 2004 04 15 | 704 | 0.5+ | 0.4+ | 2004 04 25 | 699 | 0.1− | 1.4+ |
| 2000 04 27 | 699 | 1.0+ | 0.1+ | 2004 04 15 | 704 | 0.1− | 0.1− | 2004 05 12 | 644 | 0.3− | 1.3+ |
| 2000 04 27 | 699 | 0.0 | 0.1+ | 2004 04 15 | 704 | 0.3+ | 0.3+ | 2004 05 12 | 644 | 0.3− | 0.5+ |
| 2000 04 27 | 699 | 0.6+ | 0.6+ | 2004 04 15 | 704 | 1.0+ | 1.3+ | 2004 05 12 | 644 | 0.1− | 0.8+ |
| 2000 04 27 | 699 | 0.4+ | 0.4+ | 2004 04 15 | 644 | 0.1− | 0.1− | 2005 08 31 | 644 | 0.1+ | 0.2− |
| 2004 03 23 | 704 | 0.4+ | 0.1− | 2004 04 15 | 644 | 0.0 | 0.1− | 2005 08 31 | 644 | 0.3+ | 0.6− |
| 2004 03 23 | 704 | 0.7+ | 0.5+ | 2004 04 15 | 644 | 0.0 | 0.1− | 2005 08 31 | 644 | 0.0 | 0.5− |
| 2004 03 23 | 704 | 0.1+ | 0.2+ | 2004 04 25 | 699 | 0.7− | 0.4− | | | | |

**2004 FG$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.13835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21739762 | $\omega$ | 98.39016 | | +0.36124395 | +0.93205827 | |
| $a$ | 2.7392575 | $\Omega$ | 192.89181 | | −0.89699236 | +0.33921369 | |
| $e$ | 0.1217447 | $i$ | 7.14541 | | −0.25476954 | +0.12728492 | |
| $P$ | 4.53 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 06 | 695 | 0.0 | 0.3+ | 2004 04 14 | 691 | 0.0 | 0.4− | 2005 09 03 | 644 | 0.4− | 0.6+ |
| 1995 04 06 | 695 | 0.3− | 1.1+ | 2004 04 14 | 691 | 0.1+ | 0.1+ | 2005 09 03 | 644 | 0.2− | 0.5+ |
| 2001 10 21 | 691 | 0.2+ | 0.8+ | 2005 07 08 | 691 | 0.1− | 0.0 | 2005 09 03 | 644 | 0.2− | 0.6+ |
| 2001 10 21 | 691 | 0.1− | 0.6+ | 2005 07 08 | 691 | 0.4− | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2001 10 21 | 691 | 0.3− | 0.5+ | 2005 07 08 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.1+ |
| 2004 03 27 | 704 | 0.1+ | 0.1+ | 2005 07 29 | 699 | (2.3+ | 0.3+) | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2004 03 27 | 704 | 0.9+ | 0.2− | 2005 07 29 | 699 | 0.0 | 0.6+ | 2006 10 23 | G96 | 0.7− | 0.2− |
| 2004 03 27 | 704 | 0.7+ | 0.5− | 2005 07 29 | 699 | 1.4+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4+ |
| 2004 03 31 | 291 | 0.2+ | 0.7+ | 2005 07 29 | 699 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.7+ |
| 2004 03 31 | 291 | 0.0 | 0.7+ | 2005 07 30 | 644 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.5+ |
| 2004 03 31 | 291 | 0.2+ | 0.6+ | 2005 07 30 | 644 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.7+ |
| 2004 04 14 | 691 | 0.1+ | 0.8+ | 2005 07 30 | 644 | 0.2− | 0.4+ | | | | |

**2004 GJ**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.48051 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22013844 | $\omega$ | 108.60388 | | −0.74260524 | +0.62453080 | |
| $a$ | 2.7164734 | $\Omega$ | 110.79274 | | −0.66933627 | −0.67971008 | |
| $e$ | 0.1377203 | $i$ | 14.99383 | | −0.02294355 | −0.38464983 | |
| $P$ | 4.48 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 704 | 0.5+ | 0.3+ | 2004 04 10 | 703 | 1.5− | 0.0 | 2004 06 20 | 699 | 0.6+ | 0.8+ |
| 2004 02 18 | 704 | 0.4+ | 0.4− | 2004 04 10 | 703 | 0.0 | 0.1+ | 2004 06 20 | 699 | 0.9+ | 0.6+ |
| 2004 02 18 | 704 | 0.3+ | 0.3+ | 2004 04 15 | 704 | 0.4+ | 0.8− | 2004 06 20 | 699 | 0.8− | 1.2+ |
| 2004 02 18 | 704 | 0.3− | 0.5+ | 2004 04 15 | 704 | 1.2− | 0.1+ | 2004 06 20 | 699 | 0.8+ | 1.0− |
| 2004 02 18 | 704 | 0.1− | 0.1− | 2004 04 15 | 704 | 0.1− | 0.1− | 2004 06 21 | 699 | 0.9+ | 0.3+ |
| 2004 03 15 | 704 | 0.6+ | 0.4+ | 2004 04 15 | 704 | 0.2+ | 0.7− | 2004 06 21 | 699 | 0.4+ | 1.2+ |
| 2004 03 15 | 704 | 0.7+ | 0.7+ | 2004 04 15 | 704 | 0.2+ | 0.5− | 2004 06 21 | 699 | 0.3− | 0.3+ |
| 2004 03 15 | 704 | 0.8+ | 0.6+ | 2004 04 26 | 704 | 0.5+ | 0.5+ | 2004 06 21 | 699 | 0.9+ | 0.5+ |
| 2004 03 15 | 704 | 0.6+ | 0.6+ | 2004 04 26 | 704 | 0.3+ | 0.3+ | 2005 08 28 | E12 | 0.1− | 0.3+ |
| 2004 03 29 | 704 | 1.1− | 0.2− | 2004 04 26 | 704 | 0.9+ | 0.4+ | 2005 08 28 | E12 | (0.1+ | 1.9+) |
| 2004 03 29 | 704 | 1.1− | 0.4+ | 2004 04 26 | 704 | 0.9+ | 0.5+ | 2005 08 28 | E12 | 0.1− | 0.7+ |
| 2004 03 29 | 704 | 1.4− | 0.2+ | 2004 04 26 | 704 | 0.5+ | 0.5− | 2005 08 28 | E12 | 0.5− | 0.1+ |
| 2004 03 29 | 704 | 1.2− | 0.3+ | 2004 05 13 | 704 | 0.2− | 0.1+ | 2006 11 16 | 703 | 1.1− | 1.1+ |
| 2004 04 09 | 644 | 0.1− | 0.2+ | 2004 05 13 | 704 | 0.3+ | 0.1+ | 2006 11 16 | 703 | (2.0− | 0.7+) |
| 2004 04 09 | 644 | 0.3− | 0.2− | 2004 05 13 | 704 | 0.1− | 0.1− | 2006 11 16 | 703 | 1.0− | 1.3+ |
| 2004 04 09 | 644 | 0.3− | 0.2− | 2004 05 13 | 704 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.2− | 0.8+ |
| 2004 04 09 | 644 | 0.3− | 0.1− | 2004 05 13 | 704 | 0.5+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.5+ |
| 2004 04 09 | 644 | 0.0 | 0.2− | 2004 06 14 | 703 | 0.5+ | 0.9+ | 2006 12 01 | G96 | 0.5+ | 0.3+ |
| 2004 04 09 | 644 | 0.2− | 0.1− | 2004 06 14 | 703 | 1.4+ | 0.5+ | 2006 12 01 | G96 | 0.2+ | 0.4+ |
| 2004 04 10 | 703 | 0.6− | 0.4− | 2004 06 14 | 703 | 0.6− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.7+ |
| 2004 04 10 | 703 | 0.2− | 1.0− | 2004 06 14 | 703 | 0.1− | 0.2− | | | | |

**2004 GY**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.71062 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.56542345 | $\omega$ | 182.76933 | | −0.59517450 | +0.74189683 | |
| $a$ | 1.4483944 | $\Omega$ | 50.92595 | | −0.72942997 | −0.33752252 | |
| $e$ | 0.2181552 | $i$ | 23.43858 | | −0.33719316 | −0.57936831 | |
| $P$ | 1.74 | $H$ | 20.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 11 | 703 | 0.8+ | 0.4+ | 2004 04 14 | 649 | 0.1− | 0.4− | 2004 04 28 | 113 | 0.4− | 0.1+ |
| 2004 04 11 | 703 | 1.1+ | 1.4− | 2004 04 14 | 649 | 0.2+ | 0.2− | 2004 04 28 | 113 | 0.3+ | 0.3+ |
| 2004 04 11 | 703 | 0.2+ | 0.2− | 2004 04 14 | 649 | 0.4+ | 0.1− | 2004 04 28 | 113 | 0.4+ | 0.3+ |
| 2004 04 11 | 703 | 0.3− | 0.2+ | 2004 04 14 | 649 | 0.1+ | 0.0 | 2004 04 28 | H41 | 0.4+ | 0.5− |
| 2004 04 11 | 946 | 0.6− | 0.1− | 2004 04 14 | 704 | 0.1− | 0.2+ | 2004 04 28 | H41 | 1.1+ | 2.0+ |
| 2004 04 11 | 946 | 0.5+ | 1.0+ | 2004 04 14 | 704 | 0.6− | 0.7− | 2004 04 28 | H41 | 1.2+ | 0.0 |
| 2004 04 11 | 246 | 0.3− | 0.2+ | 2004 04 14 | 704 | 0.0 | 0.3+ | 2004 04 28 | H41 | 0.0 | 0.1− |
| 2004 04 11 | 246 | 0.2− | 0.0 | 2004 04 14 | 704 | (2.2− | 0.3+) | 2004 04 28 | H41 | 0.8+ | 1.4+ |
| 2004 04 11 | 246 | 0.2− | 0.8+ | 2004 04 15 | 012 | 0.0 | 0.1− | 2004 05 02 | 926 | 0.2+ | 1.1+ |
| 2004 04 11 | 246 | 0.2− | 0.4+ | 2004 04 15 | 012 | 0.3− | 0.5− | 2004 05 02 | 926 | 0.2+ | 0.2+ |
| 2004 04 12 | 198 | 0.2+ | 0.3− | 2004 04 15 | 012 | 0.3− | 0.0 | 2004 05 02 | 926 | 0.0 | 0.0 |
| 2004 04 12 | 198 | 0.1− | 0.6− | 2004 04 15 | 012 | 0.1− | 0.0 | 2004 05 04 | 448 | 0.5− | 0.1− |
| 2004 04 12 | 198 | 0.3− | 0.5− | 2004 04 15 | 012 | 0.2+ | 0.4+ | 2004 05 04 | 448 | 1.3− | 0.1− |
| 2004 04 12 | 198 | 0.4− | 0.4− | 2004 04 19 | 941 | 0.0 | 0.1− | 2004 05 04 | 448 | 0.3− | 0.7− |
| 2004 04 12 | 621 | 0.1+ | 0.0 | 2004 04 19 | 941 | 0.0 | 0.1+ | 2004 05 04 | H41 | 0.9− | 0.3− |
| 2004 04 12 | 941 | 0.0 | 0.3+ | 2004 04 19 | 941 | 0.2+ | 0.5− | 2004 05 04 | H41 | 0.4− | 0.7+ |
| 2004 04 12 | 941 | 0.1− | 0.2+ | 2004 04 19 | 941 | 0.1+ | 0.3− | 2004 05 04 | H41 | 0.7− | 0.9− |
| 2004 04 12 | 941 | 0.0 | 0.2+ | 2004 04 19 | 941 | 0.1+ | 0.5− | 2004 05 04 | H41 | 0.0 | 0.3− |
| 2004 04 12 | 621 | 0.2− | 0.4− | 2004 04 21 | 170 | 0.3− | 0.0 | 2004 05 04 | H41 | 0.2+ | 0.3+ |
| 2004 04 12 | 941 | 0.2− | 0.3+ | 2004 04 22 | 170 | 0.2− | 0.2− | 2004 05 04 | 926 | 0.7+ | 0.4+ |
| 2004 04 12 | 621 | 0.2− | 0.4− | 2004 04 22 | 170 | 0.2− | 0.1− | 2004 05 04 | 926 | 0.2+ | 0.2+ |
| 2004 04 12 | 673 | 0.4− | 0.3+ | 2004 04 25 | G70 | 0.2+ | 0.0 | 2004 05 04 | 926 | 0.5+ | 0.2− |
| 2004 04 12 | 673 | 0.1− | 0.2+ | 2004 04 25 | G70 | 0.6+ | 0.1+ | 2004 05 14 | E14 | 0.4− | 0.1− |
| 2004 04 12 | 673 | 0.0 | 0.2− | 2004 04 25 | G70 | 0.1− | 0.5+ | 2004 05 14 | E14 | 0.0 | 0.1+ |
| 2004 04 12 | 673 | 0.1− | 0.3− | 2004 04 26 | H41 | 0.6+ | 0.1− | 2004 05 14 | E14 | 0.4− | 0.2− |
| 2004 04 12 | 854 | 0.1+ | 0.5+ | 2004 04 26 | 704 | 0.4+ | 0.1− | 2004 05 23 | 859 | 1.3+ | 1.9− |
| 2004 04 12 | 854 | 0.2− | 0.6+ | 2004 04 26 | H41 | 0.2+ | 0.8+ | 2004 05 23 | 859 | 0.6+ | 1.0− |
| 2004 04 12 | 854 | 0.4− | 0.4+ | 2004 04 26 | H41 | 0.4+ | 0.4− | 2004 05 23 | 859 | 0.3− | 0.5− |
| 2004 04 12 | 290 | 0.0 | 0.1+ | 2004 04 26 | H41 | 0.3+ | 0.2− | 2004 07 16 | 413 | 0.1+ | 0.0 |
| 2004 04 12 | 290 | 0.1− | 0.0 | 2004 04 26 | H41 | 0.0 | 0.2− | 2004 07 16 | 413 | 0.3+ | 0.2+ |
| 2004 04 12 | 290 | 0.0 | 0.0 | 2004 04 26 | 704 | 0.4+ | 0.1− | 2004 07 17 | 474 | 0.2+ | 0.1+ |
| 2004 04 12 | 290 | 0.1+ | 0.1− | 2004 04 26 | 704 | 0.1− | 0.2+ | 2004 07 17 | 474 | 0.4+ | 0.1+ |
| 2004 04 12 | 290 | 0.0 | 0.0 | 2004 04 26 | 704 | 0.2+ | 0.1− | 2004 07 17 | 474 | 0.5+ | 0.3+ |
| 2004 04 12 | 290 | 0.0 | 0.1+ | 2004 04 26 | 704 | 0.3+ | 0.1− | 2006 09 27 | 291 | 0.5+ | 1.1− |
| 2004 04 14 | J95 | 0.7− | 0.3− | 2004 04 26 | G70 | 0.1+ | 0.1− | 2006 09 27 | 291 | 0.1− | 0.1+ |
| 2004 04 14 | J95 | 0.4− | 0.3− | 2004 04 26 | G70 | 0.5+ | 0.1− | 2006 09 27 | 291 | 0.5+ | 0.2+ |
| 2004 04 14 | J95 | 0.3− | 0.1+ | 2004 04 26 | G70 | 0.5+ | 0.1+ | | | | |

**2004 GH$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.09856 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21888470 | $\omega$ | 124.71945 | | −0.85389576 | −0.51915661 | |
| $a$ | 2.7268366 | $\Omega$ | 24.06761 | | +0.44335050 | −0.76242590 | |
| $e$ | 0.0528019 | $i$ | 5.14690 | | +0.27258462 | −0.38624236 | |
| $P$ | 4.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 09 | E12 | 0.9+ | 0.1+ | 2004 04 25 | 691 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.5+ | 0.1− |
| 2004 04 09 | E12 | 0.4+ | 0.3+ | 2004 04 25 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2004 04 09 | E12 | 0.1+ | 0.5+ | 2004 05 24 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 04 09 | E12 | 0.2+ | 0.1+ | 2004 05 24 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2004 04 12 | 644 | 0.4+ | 0.4+ | 2004 05 24 | 691 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2004 04 12 | 644 | 0.5+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 04 12 | 644 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.5+ | 0.2+ | 2006 11 09 | 691 | 0.5− | 0.0 |
| 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 09 | 691 | 0.2+ | 0.2− |
| 2004 04 12 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.3+ | 0.5− |
| 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2004 04 19 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2004 04 19 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2004 04 19 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1+ | | | | |
| 2004 04 25 | 691 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.2+ | | | | |

**2004 GS$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.55111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17929310 | $\omega$ | 162.37965 | | −0.99388846 | +0.11036448 | |
| $a$ | 3.1147773 | $\Omega$ | 23.95704 | | −0.10195769 | −0.90969027 | |
| $e$ | 0.1216742 | $i$ | 0.32845 | | −0.04231272 | −0.40035395 | |
| $P$ | 5.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 09 | E12 | 1.4+ | 0.4− | 2004 04 17 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 691 | 0.3− | 0.2+ |
| 2004 04 09 | E12 | 0.2− | 1.4− | 2004 04 17 | 704 | 0.1− | 0.2+ | 2006 09 16 | 691 | 0.1+ | 0.1+ |
| 2004 04 09 | E12 | 0.1+ | 0.8− | 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 09 16 | 691 | 0.4+ | 0.1+ |
| 2004 04 09 | E12 | 0.3− | 0.9− | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.3− |
| 2004 04 12 | 644 | 0.1+ | 0.3+ | 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2004 04 12 | 644 | 0.2− | 0.4+ | 2004 04 25 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.7− | 0.2− |
| 2004 04 12 | 644 | 0.3− | 0.0 | 2004 04 25 | 691 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.4− |
| 2004 04 15 | 152 | (2.1+ | 1.2−) | 2004 04 25 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2004 04 15 | 152 | 1.4− | 0.0 | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.8− |
| 2004 04 15 | 152 | (2.3+ | 0.8+) | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.5+ | 1.0− |
| 2004 04 17 | 704 | 1.1− | 0.4+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.8+ | 0.4− |

### 2004 $GF_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 40.59712 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18371964 | $\omega$ | 125.72253 | | +0.87682685 | | +0.47527743 | | |
| $a$ | 3.0645426 | $\Omega$ | 206.12957 | | −0.47695863 | | +0.84071605 | | |
| $e$ | 0.0674045 | $i$ | 9.50234 | | −0.06070528 | | +0.25943762 | | |
| $P$ | 5.36 | $H$ | 15.5 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.0 | 2004 05 24 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.3− | 1.5− |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2004 05 24 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2001 11 19 | 699 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 11 19 | 699 | 0.8+ | 0.6+ | 2006 09 19 | 691 | (0.1− | 2.0+) | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 11 19 | 699 | (0.3+ | 1.7+) | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2001 11 19 | 699 | 0.6− | 1.0+ | 2006 09 26 | 683 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 683 | 1.0− | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2004 03 23 | 691 | 0.2− | 0.3+ | 2006 09 26 | 683 | 0.7+ | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2004 03 23 | 691 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2004 04 09 | E12 | 0.4+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2004 04 09 | E12 | (1.2+ | 2.4−) | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2004 04 09 | E12 | 1.4+ | 1.5− | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 04 09 | E12 | 0.4− | 1.4− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.8+ | 0.3− |
| 2004 04 10 | 703 | 0.5+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2004 04 10 | 703 | 1.2+ | 0.5+ | 2006 10 15 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 04 10 | 703 | 0.0 | 1.0+ | 2006 10 15 | 691 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2004 04 10 | 703 | 1.5+ | 0.3− | 2006 10 15 | 691 | 0.2− | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 04 13 | 691 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.5− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2004 04 13 | 691 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.5− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2004 04 13 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.6− |
| 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2004 04 19 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 1.5− | 0.9+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.2− | | | | |
| 2004 05 24 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | (2.0− | 1.6−) | | | | |

### 2004 $GB_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 111.22581 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18056911 | $\omega$ | 127.25112 | | +0.07497478 | | +0.99628617 | | |
| $a$ | 3.1000860 | $\Omega$ | 146.97333 | | −0.93773567 | | +0.08488255 | | |
| $e$ | 0.1340256 | $i$ | 4.45541 | | −0.33916160 | | −0.01445052 | | |
| $P$ | 5.46 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 07 | 691 | 0.0 | 1.0− | 2004 04 20 | 691 | 0.2+ | 0.5+ | 2005 08 27 | 644 | 0.2− | 0.2+ |
| 1994 06 07 | 691 | 0.1− | 1.3− | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2005 08 27 | 644 | 0.0 | 0.4+ |
| 2000 09 29 | 691 | 0.3− | 0.4+ | 2004 04 20 | 691 | 0.3+ | 0.5+ | 2005 08 27 | 644 | 0.4− | 0.2+ |
| 2000 09 29 | 691 | 0.0 | 0.5+ | 2005 07 04 | G96 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.5+ | 0.3+ |
| 2000 09 29 | 691 | 0.0 | 0.5+ | 2005 07 04 | G96 | 0.4− | 0.3+ | 2005 10 25 | G96 | 0.4+ | 0.8− |
| 2000 10 02 | 645 | 0.0 | 0.2+ | 2005 07 04 | G96 | 0.0 | 0.2− | 2005 10 25 | G96 | 0.1− | 0.4− |
| 2000 10 02 | 645 | 0.1+ | 0.1+ | 2005 07 04 | G96 | 0.3− | 0.0 | 2005 10 25 | G96 | 0.1− | 0.5− |
| 2004 04 11 | 644 | 0.1− | 0.3+ | 2005 07 28 | 644 | 0.3− | 0.3+ | 2006 11 17 | G96 | 1.3− | 0.5+ |
| 2004 04 11 | 644 | 0.5+ | 0.1+ | 2005 07 28 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2004 04 11 | 644 | 0.5+ | 0.6+ | 2005 07 28 | 644 | 0.0 | 0.8+ | 2006 11 17 | G96 | 0.5− | 0.4− |
| 2004 04 13 | 691 | 0.1− | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.5− | 0.2− |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.4+ | | | | |
| 2004 04 13 | 691 | 0.3+ | 0.4+ | 2005 08 06 | 644 | 0.2− | 0.4+ | | | | |

### 2004 $GX_6$ = 2006 $SL_{244}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 320.39622 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21550001 | $\omega$ | 18.40514 | | +0.65975567 | | −0.74893038 | | |
| $a$ | 2.7553145 | $\Omega$ | 30.40488 | | +0.67321119 | | +0.55246021 | | |
| $e$ | 0.0205849 | $i$ | 7.01980 | | +0.33392985 | | +0.36591120 | | |
| $P$ | 4.57 | $H$ | 17.2 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 291 | 0.2+ | 0.1− | 2004 04 12 | 291 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2004 03 16 | 291 | 0.2+ | 0.0 | 2004 04 12 | 291 | 0.5− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2004 03 16 | 291 | 0.3+ | 0.2− | 2004 04 13 | 291 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2004 03 27 | 691 | 0.2+ | 0.3− | 2004 04 13 | 291 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 691 | 0.3− | 0.2+ | 2004 04 13 | 291 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2004 03 27 | 691 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2004 04 12 | 291 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.3− |

### 2004 $GH_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 240.82260 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24010604 | $\omega$ | 21.11619 | | −0.99742543 | | −0.06654703 | | |
| $a$ | 2.5637007 | $\Omega$ | 155.02279 | | +0.05331223 | | −0.93732605 | | |
| $e$ | 0.1352813 | $i$ | 3.62813 | | +0.04796153 | | −0.34204000 | | |
| $P$ | 4.10 | $H$ | 16.4 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.4− | 0.8+ | 2004 04 19 | 704 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 1997 08 11 | 691 | 0.0 | 0.5+ | 2004 04 22 | 704 | 1.4+ | 1.4− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 1997 08 11 | 691 | 0.1− | 0.0 | 2004 04 22 | 704 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2004 03 28 | 704 | 0.5+ | 0.1+ | 2004 04 22 | 704 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2004 03 28 | 704 | 0.2− | 0.7+ | 2004 04 22 | 704 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2004 03 28 | 704 | 0.1+ | 0.5+ | 2004 04 22 | 704 | (1.5+ | 1.6+) | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 04 12 | 644 | 0.5+ | 0.9+ | 2004 04 25 | 703 | 0.8− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 04 12 | 644 | 0.6+ | 0.8+ | 2004 04 25 | 703 | (0.5+ | 2.2+) | 2006 11 16 | G96 | 0.6+ | 0.1+ |
| 2004 04 12 | 644 | 0.6+ | 0.9+ | 2004 04 25 | 703 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 2004 04 13 | 691 | 0.0 | 0.6+ | 2004 04 25 | 703 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.7+ |
| 2004 04 13 | 691 | 0.0 | 0.4+ | 2005 08 06 | 644 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 04 13 | 691 | 0.1+ | 0.4+ | 2005 08 06 | 644 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2004 04 19 | 704 | 0.0 | 0.1+ | 2005 08 06 | 644 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2004 04 19 | 704 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2004 04 19 | 704 | 0.8− | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.7− | | | | |
| 2004 04 19 | 704 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.1− | | | | |

### 2004 $GM_8$ = 2006 $SK_{368}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 347.06591 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21237474 | $\omega$ | 9.41794 | | +0.73762537 | | −0.67419974 | | |
| $a$ | 2.7822799 | $\Omega$ | 33.06990 | | +0.61500515 | | +0.64827603 | | |
| $e$ | 0.0931570 | $i$ | 3.88028 | | +0.27870679 | | +0.35382609 | | |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2004 04 12 | 644 | 0.1− | 0.2− | 2006 10 16 | 104 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2004 04 12 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 104 | 0.4+ | 1.3+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2004 04 12 | 691 | 0.2− | 0.2− | 2006 10 16 | 104 | 0.7+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.0 | 0.9+ |
| 2004 04 12 | 691 | 1.3+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5+ | | |
| 2004 04 13 | 691 | 0.2− | 0.4+ | 2006 10 29 | G96 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.9+ | 0.1+ | | |
| 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.4+ | 0.6− | 2006 11 13 | 691 | 0.1+ | 0.1− | | |
| 2004 04 25 | 691 | 0.2− | 0.3− | 2006 10 29 | G96 | 0.5+ | 0.5− | 2006 11 13 | 691 | 0.1− | 0.2+ | | |
| 2004 04 25 | 691 | 0.5− | 0.2− | 2006 10 29 | G96 | 0.3+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.1− | | |
| 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.7− | | |
| 2006 09 25 | G96 | 0.3− | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.6+ | 1.3+ | | |
| 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.1+ | | |
| 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.6− | 0.1− | | |
| 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | (0.2+ | 1.8+) | | |
| 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 21 | 704 | (1.7+ | 1.1+) | | |
| 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.6+ | | |

**2004 GK$_9$ = 2006 UZ$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.04066 | | (2000.0) | | | |
| $n$ | 0.16811713 | $\omega$ | 80.58724 | | +0.33323611 | +0.94064590 |
| $a$ | 3.2513326 | $\Omega$ | 209.13424 | | −0.90858902 | +0.30215536 |
| $e$ | 0.1515711 | $i$ | 7.59346 | | −0.25183264 | +0.15455557 |
| $P$ | 5.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 05 | 691 | 0.0 | 0.7− | 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− | | |
| 2000 10 05 | 691 | 0.1+ | 0.2− | 2005 05 13 | G96 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.9+ | 0.6+ | | |
| 2000 10 05 | 691 | 0.2+ | 0.3− | 2005 05 13 | G96 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2004 04 12 | 291 | 0.2+ | 0.1− | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.7− | | |
| 2004 04 12 | 291 | 0.4+ | 0.1+ | 2005 05 13 | G96 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.6− | 0.6− | | |
| 2004 04 12 | 291 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 28 | G96 | 0.3− | 0.5− | | |
| 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.5− | 2006 10 29 | 691 | 0.2+ | 0.2+ | | |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.2+ | | |
| 2004 04 13 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ | | |
| 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.7− | 0.5− | | |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.0 | | |
| 2004 04 19 | 691 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2004 04 25 | 691 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2− | 0.6− | | |
| 2004 04 25 | 691 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.8− | | | | | | |

**2004 GM$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 104.02132 | | (2000.0) | | | |
| $n$ | 0.17863048 | $\omega$ | 48.81483 | | −0.00526635 | +0.99267979 |
| $a$ | 3.1224752 | $\Omega$ | 221.36246 | | −0.96342660 | −0.03736523 |
| $e$ | 0.1036203 | $i$ | 10.52082 | | −0.26792061 | +0.11485064 |
| $P$ | 5.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 644 | 0.2+ | 0.4+ | 2004 05 19 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.1− | | |
| 2004 04 13 | 644 | 0.5+ | 0.1+ | 2004 05 19 | 691 | 0.8+ | 1.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2004 04 13 | 644 | 0.5+ | 0.3+ | 2004 05 19 | 691 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.3+ | | |
| 2004 04 14 | 699 | 0.5− | 0.9+ | 2004 05 24 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | | |
| 2004 04 14 | 699 | 0.7− | 0.0 | 2004 05 24 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.3+ | | |
| 2004 04 14 | 699 | 0.6+ | 0.2− | 2004 05 24 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.3+ | | |
| 2004 04 14 | 699 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.5− | 0.4+ | 2006 11 15 | 691 | 0.5+ | 0.1+ | | |
| 2004 04 25 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.5+ | | |
| 2004 04 25 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 10 03 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2004 05 10 | 691 | 0.2− | 0.0 | 2006 10 03 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.8+ | 0.1− | | |
| 2004 05 10 | 691 | 0.3− | 0.1− | 2006 10 03 | 691 | 0.5− | 0.2+ | | | | | | |
| 2004 05 10 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ | | | | | | |

**2004 GU$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 170.57374 | | (2000.0) | | | |
| $n$ | 0.18822604 | $\omega$ | 185.92385 | | −0.82943817 | +0.54048804 |
| $a$ | 3.0154322 | $\Omega$ | 28.26209 | | −0.49949480 | −0.60456057 |
| $e$ | 0.1271470 | $i$ | 17.33504 | | −0.25007452 | −0.58513177 |
| $P$ | 5.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 699 | 0.8− | 1.0+ | 2004 04 21 | 704 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.8+ | 1.1+ | | |
| 2004 03 22 | 699 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.9+ | 0.2− | | |
| 2004 03 22 | 699 | 1.0+ | 1.2− | 2004 05 12 | E12 | 1.0+ | 0.5− | 2006 10 21 | 703 | 1.0− | 0.0 | | |
| 2004 03 22 | 699 | 0.4+ | 0.4+ | 2004 05 12 | E12 | (1.8+ | 0.5−) | 2006 10 21 | 703 | 0.3− | 0.7+ | | |
| 2004 04 13 | 644 | 0.0 | 0.2+ | 2004 05 12 | E12 | 0.1+ | 0.6− | 2006 10 29 | 691 | 0.4+ | 0.1+ | | |
| 2004 04 13 | 644 | 0.1− | 0.1+ | 2004 05 12 | E12 | 0.4+ | 0.8− | 2006 10 29 | 691 | 0.5+ | 0.2− | | |
| 2004 04 13 | 644 | 0.3− | 0.3+ | 2004 05 15 | 704 | 1.1+ | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.1− | | |
| 2004 04 14 | 699 | 0.1− | 0.1− | 2004 05 15 | 704 | 0.4+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2004 04 14 | 699 | 1.1+ | 0.8− | 2004 05 15 | 704 | (0.5+ | 1.6+) | 2006 11 15 | 691 | 0.2− | 0.0 | | |
| 2004 04 14 | 699 | 1.0− | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.2+ | | |
| 2004 04 14 | 699 | 0.8− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.2+ | | |
| 2004 04 17 | 704 | 0.5− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.5− | 0.1− | | |
| 2004 04 17 | 704 | 0.5− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2004 04 17 | 704 | 0.9− | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.1+ | | | | | | |
| 2004 04 21 | 704 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.2− | | | | | | |

**2004 GF$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 206.60947 | | (2000.0) | | | |
| $n$ | 0.23216708 | $\omega$ | 163.85568 | | −0.93500124 | +0.18624463 |
| $a$ | 2.6218165 | $\Omega$ | 32.18399 | | −0.35417879 | −0.53397494 |
| $e$ | 0.2088049 | $i$ | 34.51481 | | +0.01816787 | −0.82473250 |
| $P$ | 4.25 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 699 | 0.1− | 1.1+ | 2004 04 16 | 704 | 0.4+ | 0.0 | 2004 05 14 | 704 | 0.3+ | 0.6+ | | |
| 2004 03 22 | 699 | 1.3− | 0.8+ | 2004 04 16 | 704 | 0.4+ | 0.2+ | 2004 05 14 | 704 | 0.4− | 0.1+ | | |
| 2004 03 22 | 699 | 0.2− | 1.2+ | 2004 04 16 | 704 | 0.4+ | 0.0 | 2004 05 14 | 704 | 0.8− | 0.0 | | |
| 2004 03 22 | 699 | 0.7+ | 0.3− | 2004 04 16 | 704 | 0.4+ | 0.1+ | 2004 05 21 | 704 | 1.6+ | 0.8+ | | |
| 2004 03 28 | 608 | 0.3− | 0.6− | 2004 04 17 | 704 | 0.2+ | 0.2− | 2004 05 21 | 704 | 0.9− | 1.0− | | |
| 2004 03 28 | 608 | 0.1+ | 0.4− | 2004 04 17 | 704 | 0.4+ | 0.3+ | 2004 05 21 | 704 | 0.4− | 0.2+ | | |
| 2004 03 28 | 608 | 0.2+ | 0.2+ | 2004 04 17 | 704 | 0.3+ | 0.4− | 2004 05 21 | 704 | 0.6+ | 0.6+ | | |
| 2004 04 13 | 703 | 0.9− | 0.4− | 2004 04 17 | 704 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.3+ | | |
| 2004 04 13 | 703 | 0.2+ | 0.8− | 2004 04 23 | 704 | 0.6− | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.3− | | |
| 2004 04 13 | 703 | 0.0 | 1.0− | 2004 04 23 | 704 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2− | | |
| 2004 04 13 | 703 | 0.6− | 0.2− | 2004 04 23 | 704 | 0.7− | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.6+ | | |
| 2004 04 15 | 704 | 0.2+ | 0.0 | 2004 04 23 | 704 | 0.8− | 0.2+ | 2006 10 03 | G96 | 0.4− | 0.1− | | |
| 2004 04 15 | 704 | 0.5+ | 0.3− | 2004 04 23 | 704 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.0 | | |
| 2004 04 15 | 704 | 0.3− | 0.3− | 2004 04 23 | 703 | 0.7+ | 0.2− | 2006 10 03 | G96 | 0.4− | 0.1+ | | |
| 2004 04 15 | 704 | 1.9+ | 0.3− | 2004 04 23 | 703 | 1.4+ | 0.3− | 2006 10 03 | G96 | 0.5+ | 0.3− | | |
| 2004 04 15 | 704 | 0.3− | 0.4+ | 2004 04 23 | 703 | 0.7− | 0.5− | | | | | | |
| 2004 04 16 | 704 | 0.1+ | 0.1− | 2004 04 23 | 703 | 1.5− | 0.4− | | | | | | |

**2004 GO$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 185.41702 | | (2000.0) | | | |
| $n$ | 0.17953681 | $\omega$ | 2.29610 | | −0.99386557 | −0.10104850 |
| $a$ | 3.1119579 | $\Omega$ | 171.50131 | | +0.09600398 | −0.99004313 |
| $e$ | 0.1555266 | $i$ | 17.70694 | | +0.05490408 | −0.09799903 |
| $P$ | 5.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.1− | 2004 04 15 | 704 | 0.7− | 0.5− | 2004 04 26 | 699 | 0.9− | 0.3− | | |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2004 04 24 | 704 | 0.2− | 0.1− | 2004 04 26 | 699 | 0.1− | 0.4+ | | |
| 2004 03 23 | 704 | 0.4− | 0.1+ | 2004 04 24 | 704 | 0.3− | 0.6− | 2004 05 13 | 704 | 0.2+ | 1.3+ | | |
| 2004 03 23 | 704 | 0.7− | 0.3+ | 2004 04 24 | 704 | 0.3+ | 0.2+ | 2004 05 13 | 704 | 0.2− | 0.2+ | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.8− | 1.1+ | 2004 04 24 | 704 | 0.2+ | 0.2+ | 2004 05 13 | 704 | 0.4+ | 0.4− |
| 2004 03 23 | 704 | 0.0 | 0.2+ | 2004 04 24 | 704 | 0.2− | 0.0 | 2004 05 13 | 704 | 0.3− | 0.7− |
| 2004 03 23 | 704 | 0.4+ | 0.2+ | 2004 04 25 | 704 | 0.5+ | 0.4+ | 2006 08 27 | 691 | 0.4+ | 0.1+ |
| 2004 04 10 | 644 | 0.3+ | 0.3+ | 2004 04 25 | 704 | 0.2+ | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 2004 04 10 | 644 | 0.2+ | 0.5+ | 2004 04 25 | 704 | 0.6+ | 0.1− | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2004 04 10 | 644 | 0.3+ | 0.2+ | 2004 04 25 | 704 | 1.1+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2004 04 15 | 704 | 0.7+ | 0.2− | 2004 04 25 | 704 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2004 04 15 | 704 | 0.3− | 0.7+ | 2004 04 26 | 699 | 0.7− | 1.3− | 2006 09 26 | 691 | 0.4− | 0.1+ |
| 2004 04 15 | 704 | 0.8− | 0.8− | 2004 04 26 | 699 | 0.8+ | 0.5− | | | | |

**2004 GY$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.96546 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21754993 | $\omega$ | 341.07014 | | −0.97280199 | −0.23127096 |
| $a$ | 2.7379788 | $\Omega$ | 185.60664 | | +0.22600118 | −0.93527994 |
| $e$ | 0.0789766 | $i$ | 7.66998 | | +0.05079124 | −0.26789022 |
| $P$ | 4.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.2− | 0.0 | 2004 04 19 | 704 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2004 04 12 | 691 | 0.1+ | 0.2+ | 2004 04 22 | 704 | 1.1+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2004 04 12 | 691 | 0.2+ | 0.2+ | 2004 04 22 | 704 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2004 04 14 | 691 | 0.3− | 0.0 | 2004 04 22 | 704 | 0.6− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 04 14 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2004 04 14 | 691 | 0.1+ | 0.6− | 2006 10 17 | G96 | 0.8− | 1.1− | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2004 04 19 | 704 | 0.3− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2004 04 19 | 704 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.6+ | 0.6+ | | | | |
| 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1+ | | | | |

**2004 GE$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.51347 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22882565 | $\omega$ | 131.25656 | | −0.97969885 | −0.00301851 |
| $a$ | 2.6472782 | $\Omega$ | 49.58541 | | −0.10798669 | −0.83448544 |
| $e$ | 0.1189286 | $i$ | 15.26460 | | +0.16890542 | −0.55102172 |
| $P$ | 4.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 11 | 644 | 0.2− | 0.2− | 2004 05 27 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2004 04 11 | 644 | 0.4− | 0.4− | 2004 05 27 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2004 04 11 | 644 | 0.4+ | 0.3− | 2004 05 27 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2004 04 16 | 704 | 0.1+ | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2004 04 16 | 704 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2004 04 16 | 704 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2004 05 09 | 608 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2004 05 09 | 608 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.4+ | 0.4+ | | | | |
| 2004 05 09 | 608 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.1+ | | | | |

**2004 GO$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.97319 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23242668 | $\omega$ | 156.47716 | | −0.69484939 | +0.67570694 |
| $a$ | 2.6198639 | $\Omega$ | 68.44319 | | −0.69467657 | −0.54209469 |
| $e$ | 0.1320989 | $i$ | 15.34878 | | −0.18603436 | −0.49955328 |
| $P$ | 4.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 30 | 291 | 0.1− | 0.4+ | 2004 04 20 | G92 | 0.2− | 0.0 | 2004 05 22 | 704 | 0.1− | 0.3− |
| 2004 03 30 | 291 | 0.1− | 0.2+ | 2004 05 01 | 703 | 0.0 | 0.2− | 2004 05 22 | 704 | 0.6+ | 0.9− |
| 2004 03 30 | 291 | 0.1− | 0.9− | 2004 05 01 | 703 | 0.1− | 0.2− | 2004 05 22 | 704 | 1.3+ | 1.1+ |
| 2004 04 11 | 644 | 0.1+ | 0.5+ | 2004 05 01 | 703 | 0.5− | 0.4− | 2004 05 22 | 704 | 0.3+ | 0.5− |
| 2004 04 11 | 644 | 0.2− | 0.1+ | 2004 05 01 | 703 | 0.3− | 1.3− | 2004 05 22 | 704 | 0.3+ | 0.5+ |
| 2004 04 11 | 644 | 0.1+ | 0.1+ | 2004 05 13 | 699 | 0.4− | 1.1− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2004 04 16 | 704 | 0.2− | 0.2+ | 2004 05 13 | 699 | 0.8+ | 0.1+ | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2004 04 16 | 704 | 1.5+ | 0.1− | 2004 05 13 | 699 | 0.5− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2004 04 16 | 704 | 0.6+ | 0.2+ | 2004 05 13 | 699 | 0.5− | 0.7− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2004 04 16 | 704 | 0.8+ | 0.5+ | 2004 05 14 | 704 | 0.4− | 0.9+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 04 16 | 704 | 0.5+ | 0.6+ | 2004 05 14 | 704 | 1.0− | 0.4+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2004 04 20 | G92 | 0.1− | 0.2+ | 2004 05 14 | 704 | 0.7− | 0.7+ | | | | |
| 2004 04 20 | G92 | 0.1+ | 0.2+ | 2004 05 14 | 704 | 0.6− | 0.7+ | | | | |

**2004 GC$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.09260 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22045221 | $\omega$ | 123.43056 | | −0.98566916 | −0.15757848 |
| $a$ | 2.7138952 | $\Omega$ | 47.58168 | | +0.11453641 | −0.88720757 |
| $e$ | 0.0439581 | $i$ | 4.67823 | | +0.12384554 | −0.43362628 |
| $P$ | 4.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.4− | 0.2+ |
| 2004 03 19 | 704 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2004 03 19 | 704 | 0.9− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2004 03 19 | 704 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2004 04 12 | 691 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2004 04 12 | 691 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.0 |
| 2004 04 12 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2004 04 16 | 704 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2004 04 16 | 704 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2004 04 16 | 704 | 0.6− | 0.6− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2004 04 16 | 704 | 0.8+ | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2004 04 19 | 704 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2004 04 19 | 704 | 0.7+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.6− | 0.0 |
| 2004 04 19 | 704 | 0.5+ | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | (4.2+ | 2.9−) |
| 2004 04 19 | 704 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.5− |
| 2004 05 28 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.8− | 0.1− |
| 2004 05 28 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.5+ | | | | |
| 2004 05 28 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2− | | | | |

**2004 GD$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.28070 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21670888 | $\omega$ | 112.83259 | | −0.05115775 | +0.99849111 |
| $a$ | 2.7450583 | $\Omega$ | 154.21078 | | −0.93227838 | −0.04057978 |
| $e$ | 0.0462669 | $i$ | 2.62954 | | −0.35810600 | −0.03699718 |
| $P$ | 4.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.0 | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2004 04 12 | 691 | 0.1+ | 0.5+ | 2005 07 18 | 644 | 0.0 | 0.5+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2004 04 12 | 691 | 0.1+ | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 04 16 | 704 | 0.6− | 0.0 | 2005 07 28 | 644 | 0.2− | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 04 16 | 704 | 0.1− | 0.5+ | 2005 07 28 | 644 | 0.0 | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 04 16 | 704 | 0.0 | 0.2− | 2005 07 28 | 644 | 0.5− | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2004 04 19 | 704 | 0.6+ | 0.6+ | 2005 08 06 | 644 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.6− | 0.1+ |
| 2004 04 19 | 704 | 0.1+ | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.8+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 04 19 | 704 | 0.4+ | 1.3+ | 2005 08 06 | 644 | 0.0 | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2004 04 19 | 704 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.5− | 0.1+ |
| 2004 05 19 | 691 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.4+ |
| 2004 05 19 | 691 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2005 06 29 | 644 | 0.6− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2005 06 29 | 644 | 0.6− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2005 06 29 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.4+ | | | | |

**2004 GX$_{25}$ = 2001 YB$_{20}$ = 2003 BO$_{42}$ = 2006 SC$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.24550 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.15814167 | $\omega$ | 270.63809 | −0.11634571 | | −0.99284392 | |
| $a$ | 3.3866618 | $\Omega$ | 186.23857 | +0.98098737 | | −0.11063314 | |
| $e$ | 0.0578089 | $i$ | 14.34246 | +0.15533014 | | −0.04495851 | |
| $P$ | 6.23 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 691 | 0.1− | 0.3+ | 2003 01 30 | 704 | 0.1+ | 0.9+ | 2004 04 20 | 704 | 0.1− | 0.2− |
| 1994 09 12 | 691 | 0.5+ | 0.3+ | 2003 01 30 | 704 | 0.6− | 0.5+ | 2004 04 20 | 703 | (0.9+ | 1.6+) |
| 1994 09 12 | 691 | 0.4+ | 0.2+ | 2003 01 30 | 704 | 0.2+ | 0.6+ | 2004 04 20 | 704 | 0.8− | 1.1+ |
| 1994 09 27 | 691 | 0.4− | 0.1+ | 2004 03 22 | 704 | 1.3+ | 1.3+ | 2004 04 20 | 703 | 0.6− | 1.3+ |
| 1994 09 27 | 691 | 0.4− | 0.6− | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2004 04 20 | 703 | 0.3− | 0.1− |
| 1994 09 27 | 691 | 0.1+ | 0.2− | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 08 22 | 644 | 0.3− | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2004 04 14 | 691 | 0.4− | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.5− | 1.5+ | 2004 04 14 | 691 | 0.2− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.7+ |
| 2001 12 18 | 704 | 0.5− | 0.1− | 2004 04 14 | 691 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.6+ |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2004 04 16 | 704 | 0.5+ | 0.9− | 2006 09 23 | 691 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.1+ | 0.3− | 2004 04 16 | 704 | 0.9+ | 0.3− | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2004 04 16 | 704 | 1.3+ | 1.4− | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2003 01 28 | 704 | 0.5+ | 1.0+ | 2004 04 16 | 704 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2003 01 28 | 704 | 0.9+ | 0.0 | 2004 04 20 | 704 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2003 01 28 | 704 | 0.6+ | 0.9+ | 2004 04 20 | 704 | 0.2− | 0.0 | | | | |
| 2003 01 30 | 704 | 0.3− | 1.4+ | 2004 04 20 | 703 | 0.1+ | 0.5+ | | | | |

**2004 GP$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.49142 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22399890 | $\omega$ | 87.44919 | −0.84762380 | | −0.48201652 | |
| $a$ | 2.6851721 | $\Omega$ | 63.65245 | +0.33236728 | | −0.80818121 | |
| $e$ | 0.0680802 | $i$ | 14.33014 | +0.41360112 | | −0.33838323 | |
| $P$ | 4.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 699 | 0.0 | 0.1+ | 2004 05 22 | 704 | 0.5− | 0.6+ | 2006 11 14 | 683 | (1.5+ | 2.3−) |
| 2004 04 14 | 699 | 1.2− | 0.3+ | 2004 05 22 | 704 | 0.6− | 0.5+ | 2006 11 14 | 704 | 0.4+ | 1.3+ |
| 2004 04 14 | 699 | 0.1+ | 0.7− | 2004 05 22 | 704 | 0.4− | 0.4+ | 2006 11 14 | 683 | 1.0+ | 1.1+ |
| 2004 04 14 | 699 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.8− | 2006 11 14 | 704 | (2.2− | 0.0 ) |
| 2004 04 16 | 704 | (3.3+ | 0.5−) | 2006 10 16 | 703 | 1.1− | 0.4− | 2006 11 14 | 683 | 0.3− | 1.0+ |
| 2004 04 16 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | (1.6− | 0.8−) | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 2004 04 16 | 704 | (2.0+ | 2.3−) | 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 15 | 683 | 0.2− | 0.4− |
| 2004 04 21 | 599 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2+ | 2006 11 15 | 683 | 0.1− | 1.2− |
| 2004 04 21 | 599 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.3+ | 2006 11 15 | 683 | 1.0− | 0.1− |
| 2004 04 21 | 599 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.8− |
| 2004 04 21 | 599 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2004 04 23 | 704 | 0.1+ | 1.4+ | 2006 11 02 | 703 | 1.0− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2004 04 23 | 704 | 1.1+ | 0.5+ | 2006 11 02 | 703 | 0.2+ | 1.0+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2004 04 23 | 704 | 0.5+ | 0.1+ | 2006 11 02 | 703 | 0.3− | 0.6− | 2006 11 20 | 704 | 1.4+ | 0.3+ |
| 2004 04 23 | 704 | 0.9+ | 0.0 | 2006 11 02 | 703 | 0.8− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2004 04 23 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.8− |
| 2004 04 30 | 608 | 0.4− | 1.3− | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.1+ |
| 2004 04 30 | 608 | 0.7− | 1.5− | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 20 | 704 | 1.1+ | 0.1+ |
| 2004 04 30 | 608 | 0.1− | 0.8− | 2006 11 11 | 683 | 1.5+ | 0.8+ | 2006 11 28 | 704 | 1.4− | 0.2+ |
| 2004 05 18 | 704 | 0.8+ | 0.1− | 2006 11 11 | 683 | (1.8+ | 0.9−) | 2006 11 28 | 704 | 0.5− | 0.8− |
| 2004 05 18 | 704 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.5− |
| 2004 05 18 | 704 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.7− | 0.3− | 2006 11 28 | 704 | 0.6− | 0.3− |
| 2004 05 18 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.5− | 0.2+ |
| 2004 05 18 | 704 | 0.7− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.1− | | | | |
| 2004 05 22 | 704 | 0.4+ | 0.2+ | 2006 11 14 | 704 | 0.1− | 0.7+ | | | | |

**2004 GT$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.15346 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27677209 | $\omega$ | 78.69565 | −0.44584499 | | −0.86145495 | |
| $a$ | 2.3319605 | $\Omega$ | 40.76907 | +0.60458696 | | −0.49012363 | |
| $e$ | 0.3000816 | $i$ | 21.85988 | +0.66007337 | | −0.13294433 | |
| $P$ | 3.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 704 | 0.4+ | 0.7− | 2006 09 30 | 703 | 1.3− | 0.1− | 2006 11 14 | 703 | 0.6− | 0.6+ |
| 1999 12 17 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 1.2− | 0.1− | 2006 11 14 | 703 | 0.3− | 0.0 |
| 1999 12 17 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 14 | 703 | 0.5+ | 0.9+ |
| 2004 04 14 | 699 | 0.8− | 0.6− | 2006 10 03 | G96 | 0.1− | 0.7− | 2006 11 14 | 703 | (0.4+ | 1.5−) |
| 2004 04 14 | 699 | 0.7− | 0.2+ | 2006 10 03 | G96 | 0.3− | 0.5− | 2006 11 16 | 704 | 1.0+ | 0.7+ |
| 2004 04 14 | 699 | 0.3+ | 0.5− | 2006 10 03 | G96 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2004 04 14 | 699 | 1.2− | 0.5+ | 2006 10 03 | G96 | 0.4− | 0.9− | 2006 11 16 | 704 | 1.1+ | 0.4+ |
| 2004 04 20 | 704 | 0.2+ | 0.6+ | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 11 16 | 704 | (0.1− | 1.7+) |
| 2004 04 20 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2004 04 20 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2004 04 20 | 704 | 0.1− | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 04 20 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2004 04 20 | 704 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.5− | 0.7− |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2004 04 22 | 704 | 1.2− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.5− |
| 2004 04 22 | 704 | 1.0+ | 1.0+ | 2006 11 01 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.6− |
| 2004 04 22 | 704 | 1.1+ | 0.9+ | 2006 11 01 | 691 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2004 04 22 | 704 | 1.2+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 1.6− | 0.5+ |
| 2004 04 25 | 703 | 0.9+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.5− | 1.0+ |
| 2004 04 25 | 703 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.4+ | 2006 11 22 | 704 | 0.7− | 0.8+ |
| 2004 04 25 | 703 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2004 04 25 | 703 | (1.7+ | 0.8+) | 2006 11 14 | 703 | 0.3+ | 0.6− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2004 05 21 | 691 | 0.5+ | 0.4+ | 2006 11 14 | 703 | 1.3− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2004 05 21 | 691 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.5− | 0.9+ | 2006 11 23 | G96 | 0.2− | 0.4+ |
| 2004 05 21 | 691 | 0.6+ | 0.5+ | 2006 11 14 | 703 | 0.0 | 0.2− | | | | |

**2004 GB$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.93990 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18199618 | $\omega$ | 72.79611 | +0.06470961 | | +0.99675402 | |
| $a$ | 3.0838592 | $\Omega$ | 201.08970 | −0.95867507 | | +0.04876874 | |
| $e$ | 0.2754196 | $i$ | 7.64931 | −0.27704652 | | +0.06405491 | |
| $P$ | 5.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2004 04 21 | 704 | 0.8+ | 0.6+ | 2005 10 01 | 703 | 0.7− | 0.4− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2004 04 21 | 704 | 0.2+ | 0.9+ | 2005 10 01 | 703 | 0.2− | 0.3+ |
| 2004 03 27 | 704 | 0.6+ | 0.3− | 2005 08 30 | 704 | 0.4+ | 0.9+ | 2005 10 01 | 703 | 0.7− | 0.2+ |
| 2004 03 27 | 704 | 0.7− | 0.1+ | 2005 08 30 | 704 | 0.1− | 0.9+ | 2005 11 01 | G96 | 0.1− | 0.1− |
| 2004 03 27 | 704 | 0.0 | 0.1+ | 2005 08 30 | 704 | 0.1+ | 0.2− | 2005 11 01 | G96 | 0.3− | 0.4− |
| 2004 03 27 | 704 | 0.1− | 1.0− | 2005 08 30 | 704 | 0.2− | 0.0 | 2005 11 01 | G96 | 0.1+ | 0.5− |
| 2004 03 27 | 704 | 0.0 | 1.0− | 2005 09 09 | 704 | 0.6+ | 0.2+ | 2005 11 01 | G96 | 0.1+ | 0.2− |
| 2004 04 11 | 644 | 0.3+ | 0.5+ | 2005 09 09 | 704 | 0.5+ | 0.9+ | 2006 11 18 | G96 | 0.6− | 0.8+ |
| 2004 04 11 | 644 | 0.6+ | 0.6+ | 2005 09 09 | 704 | 1.0− | 1.1+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2004 04 11 | 644 | 0.4+ | 0.7+ | 2005 09 09 | 704 | 0.5+ | 1.3+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2004 04 15 | 699 | 1.0− | 0.7+ | 2005 09 09 | 704 | 0.3+ | 1.0+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2004 04 15 | 699 | 0.6− | 0.1+ | 2005 09 22 | 644 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2004 04 15 | 699 | 0.3− | 1.1+ | 2005 09 22 | 644 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.7− | 0.5− |
| 2004 04 15 | 699 | 0.4− | 1.0+ | 2005 09 22 | 644 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.5+ | 1.1− |
| 2004 04 21 | 704 | 1.4+ | 0.2− | 2005 10 01 | 703 | 0.7− | 0.9+ | 2006 11 24 | G96 | 0.3+ | 0.2− |

### 2004 $GQ_{29}$ = 2006 $SQ_{321}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 105.92315 | | | (2000.0) | | |
| $n$ | 0.17910974 | $\omega$ | 233.85431 | | −0.08055124 | +0.99270067 |
| $a$ | 3.1169027 | $\Omega$ | 31.88199 | | −0.85120298 | −0.02165426 |
| $e$ | 0.0264362 | $i$ | 9.78462 | | −0.51861834 | −0.11864428 |
| $P$ | 5.50 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.4+ | 0.0 | 2004 04 22 | 691 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2004 04 12 | 644 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 04 12 | 644 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 04 14 | 291 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2004 04 14 | 291 | 0.3− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2004 04 14 | 291 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 04 15 | 699 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2004 04 15 | 699 | 0.4− | 0.4+ | 2006 10 15 | 703 | 0.9− | 0.5− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 04 15 | 699 | 0.2− | 0.2− | 2006 10 15 | 703 | 0.2+ | 1.3− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 04 15 | 699 | 0.6− | 0.4+ | 2006 10 15 | 703 | 1.4− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2004 04 21 | 704 | 0.3+ | 0.3− | 2006 10 15 | 703 | 0.8+ | 0.3+ | 2006 11 14 | G96 | 0.5+ | 0.3+ |
| 2004 04 21 | 704 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.2− | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.2+ |
| 2004 04 21 | 704 | 0.4+ | 0.9− | 2006 10 19 | 644 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2004 04 21 | 704 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2004 04 22 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.3+ | | | | |
| 2004 04 22 | 691 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.3+ | | | | |

### 2004 $GN_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 245.99054 | | | (2000.0) | | |
| $n$ | 0.23881703 | $\omega$ | 117.58469 | | −0.95835823 | −0.27926267 |
| $a$ | 2.5729175 | $\Omega$ | 46.26732 | | +0.22412879 | −0.86506703 |
| $e$ | 0.1432351 | $i$ | 4.73778 | | +0.17696268 | −0.41673901 |
| $P$ | 4.13 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 15 | 699 | (2.1− | 1.3+) | 2004 04 25 | 704 | 0.9+ | 0.6− | 2006 11 12 | G96 | 0.4+ | 0.0 |
| 2004 04 15 | 699 | 0.5− | 1.1+ | 2004 04 25 | 704 | 0.7+ | 0.3+ | 2006 11 12 | G96 | 0.9+ | 0.9+ |
| 2004 04 15 | 699 | 0.0 | 0.9− | 2004 04 25 | 704 | 1.5+ | 0.3− | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2004 04 15 | 699 | 0.0 | 0.3− | 2004 05 15 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2004 04 16 | 691 | 0.0 | 0.1− | 2004 05 15 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2004 04 16 | 691 | 0.0 | 0.1+ | 2004 05 15 | 691 | 0.4− | 1.1− | 2006 11 13 | G96 | 0.2− | 0.4+ |
| 2004 04 16 | 691 | 0.2+ | 0.1+ | 2004 05 23 | 691 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2004 04 16 | 644 | 0.2+ | 0.3+ | 2004 05 23 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2004 04 16 | 644 | 0.0 | 0.3+ | 2004 05 23 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2004 04 16 | 644 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.8+ | 0.2+ |
| 2004 04 21 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.2+ |
| 2004 04 21 | 704 | (0.1+ | 1.7+) | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2004 04 21 | 704 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2004 04 21 | 704 | 0.5+ | 0.8+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2004 04 22 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2004 04 22 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2004 04 22 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 04 25 | 704 | 0.8+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2004 04 25 | 704 | 0.2− | 0.0 | 2006 10 27 | G96 | (2.9+ | 0.0 ) | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2004 04 25 | 704 | (1.2+ | 1.8+) | 2006 11 12 | G96 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.8− | 0.4− |
| 2004 04 25 | 704 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2004 04 25 | 704 | (1.1+ | 2.4+) | 2006 11 12 | G96 | 0.0 | 0.1− | | | | |

### 2004 $GD_{32}$ = 2006 $TK_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.21935 | | | (2000.0) | | |
| $n$ | 0.23934422 | $\omega$ | 143.57701 | | +0.99791813 | +0.03969114 |
| $a$ | 2.5691379 | $\Omega$ | 214.25438 | | −0.05420729 | +0.94323760 |
| $e$ | 0.0033414 | $i$ | 5.18150 | | +0.03494237 | +0.32973845 |
| $P$ | 4.12 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2004 04 12 | 691 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.5− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2004 04 12 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2004 04 17 | 691 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 2004 04 17 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.5− | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.2− |
| 2004 04 17 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 10 | 644 | 0.2+ | 0.2− |
| 2004 04 24 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.4− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.2− |
| 2004 04 24 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 10 | 291 | 0.2+ | 0.2+ |
| 2004 04 24 | 691 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 10 | 291 | 0.3+ | 0.4+ |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.4+ | 2006 11 10 | 291 | 0.1− | 0.4+ |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.6+ | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.8+ | 0.5− |
| 2006 10 16 | 691 | 0.6− | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.8− |
| 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2+ | | | | |

### 2004 $GY_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 235.68172 | | | (2000.0) | | |
| $n$ | 0.23075021 | $\omega$ | 336.88733 | | −0.98174259 | −0.18995154 |
| $a$ | 2.6325380 | $\Omega$ | 192.17543 | | +0.18108128 | −0.91722739 |
| $e$ | 0.1297672 | $i$ | 2.71626 | | +0.05823276 | −0.35016043 |
| $P$ | 4.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.4+ | 0.1− | 2004 04 21 | 704 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2004 04 12 | 644 | 0.2+ | 0.3+ | 2004 04 21 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2004 04 12 | 644 | 0.5+ | 0.1+ | 2004 04 21 | 704 | 0.4− | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.4+ |
| 2004 04 12 | 699 | 1.0− | 0.7+ | 2004 04 22 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 2004 04 12 | 699 | 0.8− | 0.2+ | 2004 04 22 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.3− |
| 2004 04 12 | 699 | 0.9+ | 1.4− | 2004 04 22 | 691 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2004 04 12 | 699 | 1.3+ | 0.0 | 2004 05 23 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2004 04 17 | 704 | 0.3− | 0.3+ | 2004 05 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2004 04 17 | 704 | 0.4+ | 0.9− | 2004 05 23 | 691 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.5− | 0.2+ |
| 2004 04 17 | 704 | 1.1− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 10 31 | 691 | 1.0+ | 0.8− |
| 2004 04 17 | 704 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2004 04 21 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 691 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1− |

### 2004 $GD_{33}$ = 2006 $VH_{102}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 209.15425 | | | (2000.0) | | |
| $n$ | 0.22860241 | $\omega$ | 269.21615 | | −0.97119909 | +0.23514183 |
| $a$ | 2.6490014 | $\Omega$ | 284.38322 | | −0.19974902 | −0.89154054 |
| $e$ | 0.1270941 | $i$ | 2.27663 | | −0.12989476 | −0.38712245 |
| $P$ | 4.31 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 0.2+ | 0.4− | 2004 04 16 | 644 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 1995 03 10 | 691 | 0.0 | 0.2+ | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 1995 03 10 | 691 | 0.1− | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2004 04 12 | 699 | 0.7− | 0.8− | 2006 10 13 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2004 04 12 | 699 | (1.3− | 2.1−) | 2006 11 12 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2004 04 12 | 699 | 0.3+ | 0.3+ | 2006 11 12 | G96 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2004 04 12 | 699 | 0.5− | 0.3+ | 2006 11 12 | G96 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2004 04 16 | 644 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1+ | | | | |
| 2004 04 16 | 644 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1+ | | | | |

**2004 GB$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.31503 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22397664 | $\omega$ | 110.29274 | | −0.97293278 | −0.11180613 | |
| $a$ | 2.6853500 | $\Omega$ | 63.74953 | | +0.00129689 | −0.87779318 | |
| $e$ | 0.1100769 | $i$ | 13.03205 | | +0.23108467 | −0.46580954 | |
| $P$ | 4.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.4+ | 0.3+ | 2004 05 17 | 704 | 0.2− | 0.7− | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2004 04 12 | 644 | 0.4+ | 0.0 | 2004 05 21 | 691 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.2+ |
| 2004 04 12 | 644 | 0.2+ | 0.0 | 2004 05 21 | 691 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2004 04 17 | 704 | 0.7+ | 0.1− | 2004 05 21 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2004 04 17 | 704 | 0.6+ | 0.3+ | 2004 05 21 | 704 | 1.5+ | 0.8+ | 2006 11 17 | 703 | 0.4− | 0.8+ |
| 2004 04 17 | 704 | 0.9+ | 0.0 | 2004 05 21 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.5+ |
| 2004 04 17 | 704 | 0.2− | 0.4− | 2004 05 21 | 704 | (0.1− | 2.4+) | 2006 11 17 | 703 | 0.9− | 0.8− |
| 2004 04 20 | 704 | 1.4+ | 0.3+ | 2004 05 21 | 704 | 1.1+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2004 04 20 | 704 | 0.4+ | 0.0 | 2004 06 13 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 1.0− | 0.3+ |
| 2004 04 20 | 704 | 0.3+ | 0.6− | 2004 06 13 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.1− |
| 2004 04 20 | 704 | 0.5+ | 0.1− | 2004 06 13 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2004 04 20 | 704 | 0.1− | 0.5+ | 2004 06 14 | 704 | 0.3+ | 0.6+ | 2006 11 18 | 704 | 1.1+ | 1.3+ |
| 2004 05 11 | 699 | 0.2+ | 0.2+ | 2004 06 14 | 704 | 0.4− | 1.0+ | 2006 11 18 | 704 | 0.9+ | 0.2+ |
| 2004 05 11 | 699 | 0.2− | 0.2− | 2004 06 14 | 704 | 0.2+ | 0.8+ | 2006 11 18 | 704 | (0.9+ | 1.8+) |
| 2004 05 11 | 699 | 0.8− | 0.3+ | 2006 10 17 | G96 | 0.4− | 0.3− | 2006 11 18 | 704 | 0.6+ | 1.5+ |
| 2004 05 11 | 699 | 0.9− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2004 05 12 | 699 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.4− | 0.7− | 2006 11 19 | 704 | 0.9+ | 0.1− |
| 2004 05 12 | 699 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2004 05 12 | 699 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 1.2+ |
| 2004 05 12 | 699 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.6+ |
| 2004 05 15 | 704 | 0.5+ | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2004 05 15 | 704 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2004 05 15 | 704 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.4− | 0.1+ |
| 2004 05 15 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2004 05 15 | 704 | 0.5+ | 0.8− | 2006 11 13 | 703 | 0.6+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2004 05 17 | 704 | 0.4+ | 0.1+ | 2006 11 13 | 703 | 0.9− | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2004 05 17 | 704 | 0.4− | 0.1− | 2006 11 13 | 703 | 1.2− | 0.3− | | | | |
| 2004 05 17 | 704 | 0.1+ | 0.5− | 2006 11 13 | 703 | 0.3+ | 0.4− | | | | |

**2004 GW$_{34}$ = 2006 UH$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.79219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26527184 | $\omega$ | 258.88485 | | −0.80402017 | −0.57259958 | |
| $a$ | 2.3988805 | $\Omega$ | 245.99236 | | +0.59064824 | −0.73809111 | |
| $e$ | 0.2022554 | $i$ | 10.10368 | | +0.06845595 | −0.35686305 | |
| $P$ | 3.72 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 644 | 0.1+ | 0.2− | 2004 04 13 | 644 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 644 | 0.2− | 0.3− | 2004 04 17 | 704 | 0.1− | 0.5− | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2004 03 15 | 644 | 0.2+ | 0.6+ | 2004 04 17 | 704 | 0.6+ | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2004 04 13 | 644 | 0.3− | 0.0 | 2004 04 17 | 704 | 0.0 | 0.7+ | 2006 10 31 | 691 | 0.5+ | 0.3− |
| 2004 04 13 | 644 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 |

**2004 GY$_{34}$ = 2006 VN$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.85320 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23955139 | $\omega$ | 295.83271 | | −0.94509695 | −0.25488695 | |
| $a$ | 2.5676565 | $\Omega$ | 230.11584 | | +0.29902557 | −0.92695210 | |
| $e$ | 0.0984522 | $i$ | 15.45714 | | −0.13181600 | −0.27530427 | |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.2− | 0.5+ | 2004 04 17 | 704 | 1.1+ | 0.6+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2002 12 10 | 644 | 0.3+ | 0.1+ | 2004 04 17 | 704 | 0.5+ | 0.7− | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 03 15 | 644 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.4− | 0.3− | 2006 11 12 | 703 | 0.1+ | 0.7+ |
| 2004 03 15 | 644 | 0.3− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 12 | 703 | 0.6+ | 0.6− |
| 2004 03 15 | 644 | 0.6− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.3− | 0.1+ |
| 2004 04 13 | 644 | 0.3− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2004 04 13 | 644 | 0.3− | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2004 04 13 | 644 | 0.1− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 04 17 | 704 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.2− | 0.3− |

**2004 GG$_{35}$ = 2006 SF$_{185}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.41399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23138844 | $\omega$ | 144.51114 | | −0.98457499 | −0.17185088 | |
| $a$ | 2.6276949 | $\Omega$ | 25.65253 | | +0.13782775 | −0.87747351 | |
| $e$ | 0.1791348 | $i$ | 4.35236 | | +0.10777570 | −0.44778065 | |
| $P$ | 4.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.0 | 0.6− | 2004 04 15 | 152 | 1.4− | 0.8− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2004 03 27 | 704 | 0.4+ | 0.3− | 2004 04 15 | 152 | 0.5+ | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 0.5+ | 1.0+ | 2004 04 16 | 644 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3+ |
| 2004 04 13 | 691 | 0.3− | 0.2− | 2004 04 16 | 644 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 04 13 | 691 | 0.5− | 0.2− | 2004 04 16 | 644 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2004 04 19 | G92 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.8− |
| 2004 04 15 | 699 | 0.7+ | 1.3+ | 2004 04 19 | G92 | 0.8+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.6− |
| 2004 04 15 | 699 | 0.6+ | 0.0 | 2004 04 19 | G92 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.2+ |
| 2004 04 15 | 699 | 0.6− | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.5+ |
| 2004 04 15 | 699 | (3.3− | 0.7−) | 2006 09 25 | G96 | 0.4− | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2004 04 15 | 152 | (2.4+ | 0.0 ) | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |

**2004 GP$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.84400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22510254 | $\omega$ | 172.43420 | | −0.90689760 | +0.41057297 | |
| $a$ | 2.6763883 | $\Omega$ | 32.33402 | | −0.39526232 | −0.75113307 | |
| $e$ | 0.1911118 | $i$ | 10.19755 | | −0.14596039 | −0.51694191 | |
| $P$ | 4.38 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 1.4+ | 0.3− | 2004 04 25 | 704 | 0.5+ | 0.3− | 2006 10 19 | 691 | 0.3+ | 0.2+ |
| 2004 03 27 | 704 | 0.4+ | 0.8+ | 2004 04 25 | 704 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 1.5+ | 0.1− | 2004 04 26 | 699 | 0.6− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 2004 03 27 | 704 | 0.6+ | 0.4+ | 2004 04 26 | 699 | 1.0− | 0.2− | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2004 03 27 | 704 | 0.1− | 0.7+ | 2004 04 26 | 699 | 0.8− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.4+ |
| 2004 04 13 | 644 | 0.3− | 0.2− | 2004 04 26 | 699 | 0.5− | 0.2+ | 2006 10 27 | 691 | 0.4+ | 0.3+ |
| 2004 04 13 | 644 | 0.1− | 0.3− | 2004 05 12 | 699 | 0.5+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2004 04 13 | 644 | 0.4− | 0.2− | 2004 05 12 | 699 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2004 04 17 | 704 | 0.4+ | 0.0 | 2004 05 12 | 699 | 0.9− | 0.5+ | 2006 11 14 | G96 | 0.2− | 0.7− |
| 2004 04 17 | 704 | 0.2+ | 0.3+ | 2004 05 12 | 699 | 0.7+ | 0.6− | 2006 11 14 | G96 | 0.4+ | 0.6− |
| 2004 04 17 | 704 | 0.1− | 0.2− | 2004 05 13 | 644 | 0.4+ | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.7− |
| 2004 04 20 | 704 | 0.9− | 0.6− | 2004 05 13 | 644 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.7− |
| 2004 04 20 | 704 | 0.1− | 0.1+ | 2004 05 13 | 644 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.4− |
| 2004 04 20 | 704 | 0.3− | 0.6− | 2004 05 15 | 704 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2004 04 20 | 704 | 0.2+ | 0.0 | 2004 05 15 | 704 | 0.8− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2004 04 25 | 704 | 0.1+ | 0.3− | 2004 05 15 | 704 | 0.7+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2004 04 25 | 704 | 0.6− | 0.1+ | 2004 05 15 | 704 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 04 25 | 704 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |

**2004 GR$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.50788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24274335 | $\omega$ | 143.89743 | | −0.98785346 | +0.05998968 | |
| $a$ | 2.5450979 | $\Omega$ | 40.28819 | | −0.12918135 | −0.82972323 | |
| $e$ | 0.1856447 | $i$ | 12.80736 | | +0.08635813 | −0.55494197 | |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.1− | 0.3− | 2004 04 25 | 704 | 0.8+ | 0.1− | 2004 05 16 | 691 | 0.1+ | 0.3+ |
| 2002 11 25 | 644 | 0.2− | 0.1− | 2004 04 25 | 704 | 0.1+ | 0.3− | 2004 06 10 | 699 | 0.5+ | 1.3+ |
| 2002 11 25 | 644 | 0.6+ | 0.4− | 2004 04 25 | 704 | 0.7+ | 0.7− | 2004 06 10 | 699 | (1.8+ | 0.0 ) |
| 2004 04 13 | 644 | 0.1− | 0.1+ | 2004 04 29 | 926 | 0.0 | 0.3− | 2004 06 10 | 699 | 1.0+ | 0.8− |
| 2004 04 13 | 644 | 0.2− | 0.2+ | 2004 04 29 | 926 | 0.1− | 0.5− | 2004 06 10 | 699 | 0.9+ | 0.1− |
| 2004 04 13 | 644 | 0.1− | 0.4− | 2004 04 29 | 926 | 0.1− | 0.5− | 2006 10 04 | G96 | 0.5− | 0.1− |
| 2004 04 17 | 704 | 0.6+ | 0.3+ | 2004 04 30 | 291 | 0.7− | 0.0 | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2004 04 17 | 704 | 0.6+ | 0.2− | 2004 04 30 | 291 | 0.6− | 0.3− | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2004 04 17 | 704 | 1.4+ | 0.3+ | 2004 04 30 | 291 | 0.6− | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2004 04 17 | 704 | 1.4+ | 0.4− | 2004 05 01 | 291 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.7+ |
| 2004 04 17 | 704 | 1.4+ | 0.6+ | 2004 05 01 | 291 | 0.6− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.4+ |
| 2004 04 21 | 704 | 0.4+ | 0.5− | 2004 05 01 | 291 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2004 04 21 | 704 | 1.5+ | 0.3+ | 2004 05 15 | 704 | 0.2+ | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 04 21 | 704 | 0.2+ | 1.3+ | 2004 05 15 | 704 | 0.6+ | 0.4− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2004 04 21 | 704 | 0.2− | 0.2− | 2004 05 15 | 704 | 0.4+ | 0.6− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2004 04 23 | 704 | 1.2+ | 0.3+ | 2004 05 15 | 704 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.2− | 0.6− |
| 2004 04 23 | 704 | 0.5+ | 0.2− | 2004 05 15 | 704 | 0.1− | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 04 23 | 704 | (1.8− | 0.3+) | 2004 05 16 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2004 04 23 | 704 | 0.7− | 1.3+ | 2004 05 16 | 691 | 0.0 | 0.3+ | | | | |

**2004 GK$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.36730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22038556 | $\omega$ | 292.15326 | | −0.59207394 | −0.80491347 | |
| $a$ | 2.7144424 | $\Omega$ | 194.36013 | | +0.78559426 | −0.56553481 | |
| $e$ | 0.0837043 | $i$ | 9.17158 | | +0.17969447 | −0.17967938 | |
| $P$ | 4.47 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 699 | 0.3− | 0.3+ | 2004 04 22 | 704 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.7+ | 0.9+ |
| 2004 04 12 | 699 | 0.2+ | 0.1− | 2004 04 22 | 704 | 0.4+ | 0.6− | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 2004 04 12 | 699 | 0.8− | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2004 04 12 | 699 | 1.0+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2004 04 16 | 644 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2004 04 16 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2004 04 16 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.5+ | 0.3− |
| 2004 04 19 | 704 | 0.7+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2004 04 19 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2004 04 19 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.3− |
| 2004 04 19 | 704 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 04 19 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.6+ | 0.0 |
| 2004 04 19 | 704 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2004 04 19 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.6+ | 0.2+ |
| 2004 04 22 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | | | |
| 2004 04 22 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.4− | | | | |

**2004 GP$_{40}$ = 2006 VL$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.52447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26708136 | $\omega$ | 62.34105 | | −0.55898962 | −0.82766198 | |
| $a$ | 2.3880330 | $\Omega$ | 61.73210 | | +0.73932288 | −0.52484200 | |
| $e$ | 0.1597253 | $i$ | 3.25852 | | +0.37540949 | −0.19878760 | |
| $P$ | 3.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.1− | 0.0 | 2004 04 19 | 691 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.2− | 0.2+ | 2004 05 10 | 691 | 0.4+ | 0.5− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.1+ | 2004 05 10 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2004 04 16 | 644 | 0.7+ | 0.3+ | 2004 05 10 | 691 | 0.3− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2004 04 16 | 644 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.5− | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2004 04 16 | 644 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.7+ | 2006 11 15 | 691 | 0.4− | 0.2+ |
| 2004 04 19 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2− | | | | |
| 2004 04 19 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.1+ | | | | |

**2004 GF$_{41}$ = 2006 RL$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.50781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18974978 | $\omega$ | 162.48690 | | −0.43253409 | −0.88238193 | |
| $a$ | 2.9992674 | $\Omega$ | 312.68874 | | +0.79411942 | −0.27554223 | |
| $e$ | 0.1965043 | $i$ | 14.59708 | | +0.42695269 | −0.38141658 | |
| $P$ | 5.19 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.1− | 0.4+ | 2003 02 22 | 621 | 0.2− | 0.4+ | 2004 04 26 | E12 | 0.6+ | 1.2+ |
| 1993 01 22 | 691 | 0.1+ | 0.5− | 2003 02 22 | 621 | 2.8− | 2.0+ | 2004 04 26 | E12 | 0.8+ | 1.4+ |
| 1993 01 22 | 691 | 0.3− | 0.3− | 2004 04 12 | E12 | 0.6+ | 0.5+ | 2004 04 26 | E12 | 1.1+ | 1.0+ |
| 2003 01 29 | 644 | 0.4+ | 1.5+ | 2004 04 12 | E12 | 0.1− | 0.7− | 2006 09 15 | 691 | 0.1− | 0.3+ |
| 2003 01 29 | 644 | 0.1− | 1.2+ | 2004 04 12 | E12 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.3+ |
| 2003 01 29 | 644 | 0.6− | 2.4+ | 2004 04 12 | E12 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.6+ |
| 2003 02 21 | 621 | 0.2+ | 0.6+ | 2004 04 16 | 699 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2003 02 21 | 621 | 0.0 | 0.0 | 2004 04 16 | 699 | 1.0+ | 0.8+ | 2006 09 17 | 691 | 0.6− | 0.6+ |
| 2003 02 21 | 621 | 0.3+ | 0.2+ | 2004 04 16 | 699 | 0.6− | 0.5+ | 2006 09 17 | 691 | 0.4− | 0.1+ |
| 2003 02 21 | 621 | 1.1+ | 0.8+ | 2004 04 16 | 699 | 0.7+ | 1.1+ | | | | |
| 2003 02 22 | 621 | 0.0 | 1.3+ | 2004 04 26 | E12 | 0.7+ | 1.5+ | | | | |

**2004 GR$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.76651 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29674342 | $\omega$ | 134.27524 | | −0.79436084 | +0.59195955 | |
| $a$ | 2.2261204 | $\Omega$ | 82.48948 | | −0.58910800 | −0.69602642 | |
| $e$ | 0.1163753 | $i$ | 7.90139 | | −0.14813039 | −0.40636328 | |
| $P$ | 3.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 699 | 1.2− | 0.3− | 2004 04 17 | 699 | 0.7− | 0.5− | 2004 05 24 | 699 | 2.0+ | 0.5− |
| 2004 03 27 | 699 | 0.7+ | 0.1+ | 2004 04 21 | 703 | 0.4+ | 0.5+ | 2004 05 24 | 699 | 0.9+ | 1.9+ |
| 2004 03 27 | 699 | 1.1+ | 0.5− | 2004 04 21 | 703 | 0.5− | 0.0 | 2004 05 24 | 699 | 0.6+ | 1.0+ |
| 2004 03 27 | 699 | 0.7+ | 1.4− | 2004 04 21 | 703 | 0.2− | 0.4+ | 2005 08 31 | 644 | 0.3− | 0.5+ |
| 2004 04 13 | 703 | 0.4− | 0.1+ | 2004 04 21 | 703 | 0.8+ | 0.4+ | 2005 08 31 | 644 | 0.1− | 0.5+ |
| 2004 04 13 | 703 | 0.3+ | 0.2+ | 2004 04 23 | 704 | 0.7− | 0.3+ | 2005 08 31 | 644 | 0.5− | 0.8+ |
| 2004 04 13 | 703 | 0.4− | 0.9+ | 2004 04 23 | 704 | 0.3− | 0.4− | 2006 11 28 | 291 | 0.2+ | 0.2+ |
| 2004 04 13 | 703 | 0.1+ | 0.3+ | 2004 04 23 | 704 | 0.4− | 1.1− | 2006 11 28 | 291 | 0.2+ | 0.3+ |
| 2004 04 17 | 699 | 0.8− | 0.6+ | 2004 04 23 | 704 | 0.2− | 0.7− | 2006 11 28 | 291 | 0.3− | 0.0 |
| 2004 04 17 | 699 | 0.5− | 0.4+ | 2004 04 23 | 704 | 0.5+ | 0.5− | | | | |
| 2004 04 17 | 699 | 0.6− | 0.2− | 2004 05 24 | 699 | 0.2− | 0.4+ | | | | |

**2004 GS$_{41}$ = 2006 UQ$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.75798 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18482703 | $\omega$ | 201.79146 | | −0.23751144 | +0.94333490 | |
| $a$ | 3.0522895 | $\Omega$ | 55.19865 | | −0.84435297 | −0.08253418 | |
| $e$ | 0.1349599 | $i$ | 16.39333 | | −0.48026699 | −0.32141466 | |
| $P$ | 5.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.1− | 0.1− | 2004 04 23 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2004 04 23 | 704 | 0.3+ | 0.9+ | 2006 10 22 | 691 | 0.0 | 0.5− |
| 2004 04 13 | 691 | 0.2− | 0.0 | 2004 04 23 | 704 | 0.9+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 04 17 | 699 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 04 17 | 699 | 0.8− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2004 04 17 | 699 | (0.4− | 1.7+) | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2004 04 17 | 699 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1+ | | | | |

**2004 GT$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 255.76030 | | (2000.0) | | | |
| $n$ | 0.24124944 | $\omega$ | 202.83513 | | −0.85910396 | −0.50863233 |
| $a$ | 2.5555939 | $\Omega$ | 306.46856 | | +0.47980846 | −0.76174857 |
| $e$ | 0.2389015 | $i$ | 4.05480 | | +0.17811297 | −0.40128827 |
| $P$ | 4.09 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 644 | 0.5− | 0.2− | 2004 04 21 | 704 | 0.9− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2004 04 13 | 644 | 0.2− | 0.2− | 2004 04 21 | 704 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.3+ | 0.1+ |
| 2004 04 13 | 644 | 0.3− | 0.2+ | 2004 04 21 | 704 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.5− |
| 2004 04 17 | 644 | 0.4− | 0.6+ | 2004 04 21 | 704 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2004 04 17 | 644 | 0.3+ | 0.2+ | 2004 04 25 | 704 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2004 04 17 | 644 | 0.4+ | 0.1+ | 2004 04 25 | 704 | 1.3+ | 1.1− | 2006 10 17 | 691 | 0.4+ | 0.2+ |
| 2004 04 17 | 644 | 0.0 | 0.9+ | 2004 04 25 | 704 | 0.2− | 0.6− | 2006 10 17 | 691 | 0.3− | 0.4+ |
| 2004 04 17 | 644 | 0.3− | 0.5− | 2004 04 25 | 704 | 0.7+ | 0.1− | 2006 10 17 | 691 | 0.4− | 0.6− |
| 2004 04 17 | 644 | 0.2+ | 0.2+ | 2004 04 25 | 704 | (0.5+ | 3.3−) | | | | |
| 2004 04 21 | 704 | 0.1− | 1.0+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | | | | |

**2004 GF$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 248.10066 | | (2000.0) | | | |
| $n$ | 0.31365554 | $\omega$ | 169.97955 | | −0.28810073 | +0.95225796 |
| $a$ | 2.1453628 | $\Omega$ | 83.22254 | | −0.88547116 | −0.22475200 |
| $e$ | 0.2160060 | $i$ | 5.83819 | | −0.36460772 | −0.20661878 |
| $P$ | 3.14 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 22 | 691 | 0.4− | 0.6+ | 2004 04 21 | 703 | 0.5− | 0.7− | 2004 04 26 | 704 | 0.5+ | 0.8+ |
| 1995 06 22 | 691 | 0.1− | 0.5+ | 2004 04 21 | 703 | 0.2− | 1.6+ | 2004 04 26 | 704 | 0.5− | 0.1+ |
| 2004 03 15 | 691 | 0.9+ | 0.0 | 2004 04 21 | 703 | 0.4+ | 0.5− | 2004 05 14 | 704 | 0.7+ | 0.8− |
| 2004 03 15 | 691 | 0.7+ | 0.1+ | 2004 04 25 | 704 | 0.0 | 0.5− | 2004 05 14 | 704 | 0.0 | 0.3+ |
| 2004 03 15 | 691 | 0.4+ | 0.2+ | 2004 04 25 | 704 | 0.5− | 0.4+ | 2004 05 14 | 704 | 0.1− | 0.7− |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.8+ | 0.1+ | 2004 05 14 | 704 | 0.2− | 0.4− |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.4− | 0.4− | 2004 05 22 | 704 | 1.1− | 0.7+ |
| 2004 04 14 | 691 | 0.1− | 0.2+ | 2004 04 26 | 704 | 0.2+ | 0.4− | 2004 05 22 | 704 | 0.5− | 0.8+ |
| 2004 04 17 | 699 | 0.2− | 0.5− | 2004 04 26 | 704 | 0.0 | 0.9+ | 2004 05 22 | 704 | 0.7+ | 0.4− |
| 2004 04 17 | 699 | 0.9− | 0.1+ | 2004 04 26 | 704 | 0.4+ | 0.3+ | 2005 10 27 | 691 | 0.4− | 0.2+ |
| 2004 04 17 | 699 | 0.5+ | 0.9+ | 2004 04 26 | 704 | 0.4− | 0.2− | 2005 10 27 | 691 | 0.0 | 0.9+ |
| 2004 04 17 | 699 | 0.6− | 0.0 | 2004 04 26 | 704 | 0.9− | 1.0+ | 2005 10 27 | 691 | 0.1− | 0.6+ |
| 2004 04 21 | 703 | 0.3− | 0.8− | 2004 04 26 | 704 | 1.5− | 0.4+ | | | | |

**2004 GH$_{43}$ = 2006 SS$_{237}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 239.37973 | | (2000.0) | | | |
| $n$ | 0.22012103 | $\omega$ | 105.42928 | | −0.73905505 | −0.67281810 |
| $a$ | 2.7166166 | $\Omega$ | 32.30726 | | +0.59164609 | −0.67198218 |
| $e$ | 0.1092131 | $i$ | 3.57952 | | +0.32210641 | −0.30944427 |
| $P$ | 4.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.1+ | 0.2+ | 2004 04 19 | 691 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 2004 04 12 | 691 | 0.4+ | 0.0 | 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.2− |
| 2004 04 19 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |

**2004 GC$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 254.26066 | | (2000.0) | | | |
| $n$ | 0.26463232 | $\omega$ | 140.86123 | | −0.98301652 | −0.18264846 |
| $a$ | 2.4027438 | $\Omega$ | 28.62971 | | +0.15764273 | −0.89017580 |
| $e$ | 0.1232835 | $i$ | 2.13312 | | +0.09395371 | −0.41740459 |
| $P$ | 3.72 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.4− | 1.0+ | 2004 04 19 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.3− | 0.2− |
| 2004 03 27 | 704 | 0.4+ | 0.0 | 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2004 03 27 | 704 | 0.2+ | 0.3− | 2004 04 28 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2004 03 27 | 704 | 0.3+ | 0.2− | 2004 04 28 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 03 27 | 704 | 1.0+ | 0.6+ | 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2004 04 12 | 691 | 0.5− | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.1− | 2006 11 25 | H07 | 0.3− | 1.1− |
| 2004 04 12 | 691 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.3+ | 2006 11 25 | H07 | 0.1− | 0.4− |
| 2004 04 12 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 25 | H07 | (2.0+ | 0.6+) |
| 2004 04 19 | 691 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.3− | 0.1+ | | | | |

**2004 GD$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 166.88575 | | (2000.0) | | | |
| $n$ | 0.21044683 | $\omega$ | 10.00752 | | −0.75899044 | +0.64759035 |
| $a$ | 2.7992464 | $\Omega$ | 210.68578 | | −0.60614850 | −0.74064708 |
| $e$ | 0.1525857 | $i$ | 7.60401 | | −0.23773413 | −0.17907722 |
| $P$ | 4.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 699 | 0.5− | 0.1+ | 2004 04 16 | 704 | (1.9− | 0.6−) | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 699 | 0.7+ | 0.9− | 2004 04 16 | 704 | 0.8− | 0.2+ | 2006 10 20 | 691 | 0.4+ | 0.3− |
| 2004 03 27 | 699 | 0.5− | 0.2− | 2004 04 19 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.6+ |
| 2004 03 27 | 699 | 0.2+ | 0.2− | 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5− | 1.1+ |
| 2004 04 12 | 691 | 0.4− | 0.4+ | 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2004 04 12 | 691 | 0.2+ | 0.1+ | 2004 04 28 | 691 | 0.1− | 0.3− | 2006 10 29 | G96 | 0.5− | 0.2− |
| 2004 04 12 | 691 | 0.3+ | 0.1− | 2004 04 28 | 691 | 0.3− | 0.0 | 2006 10 29 | G96 | 0.5− | 0.2+ |
| 2004 04 16 | 704 | (0.2− | 1.6+) | 2004 04 28 | 691 | 0.0 | 0.2+ | 2006 10 29 | G96 | 0.6+ | 0.0 |
| 2004 04 16 | 704 | 0.7− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.1− |

**2004 GB$_{46}$ = 2006 WS$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 250.34173 | | (2000.0) | | | |
| $n$ | 0.25577579 | $\omega$ | 102.63686 | | −0.99656099 | −0.07204130 |
| $a$ | 2.4578937 | $\Omega$ | 73.24291 | | +0.04908873 | −0.91133701 |
| $e$ | 0.1146520 | $i$ | 2.45058 | | +0.06675699 | −0.40530840 |
| $P$ | 3.85 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 24 | 691 | 0.2− | 0.1− | 2004 04 19 | 704 | (2.3− | 1.2+) | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1998 10 24 | 691 | 0.1− | 0.4+ | 2004 04 19 | 704 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 1998 10 24 | 691 | 0.2+ | 0.2− | 2004 04 19 | 704 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2004 04 12 | 691 | 0.0 | 0.2− | 2004 04 25 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.3− |
| 2004 04 12 | 691 | 0.1− | 0.2+ | 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.2− |
| 2004 04 12 | 691 | 0.2+ | 0.1+ | 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.4+ | 0.1+ |
| 2004 04 19 | 691 | 0.1− | 0.2+ | 2004 05 10 | 691 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.5+ |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2004 05 10 | 691 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2004 05 10 | 691 | 0.1− | 0.2− | | | | |
| 2004 04 19 | 704 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.3− | 0.0 | | | | |

**2004 GC$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 221.73994 | | (2000.0) | | | |
| $n$ | 0.21063610 | $\omega$ | 135.19049 | | −0.96597925 | −0.24131340 |
| $a$ | 2.7975693 | $\Omega$ | 31.19785 | | +0.15659062 | −0.83198748 |
| $e$ | 0.0573026 | $i$ | 10.34465 | | +0.20582387 | −0.49956449 |
| $P$ | 4.68 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.2− | 0.1− | 2004 04 25 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.7+ |
| 2004 04 12 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.1− |
| 2004 04 12 | 691 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.4+ | 0.2− |
| 2004 04 19 | 691 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.3+ | 0.4+ |
| 2004 04 19 | 691 | 0.2− | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.7+ |
| 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.6− |
| 2004 04 25 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1− | 0.3− |

**2004 GW$_{46}$ = 2006 UD$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 285.07647 | | (2000.0) | | | |
| $n$ | 0.20918547 | $\omega$ | 263.86523 | | −0.13323284 | −0.99097505 |
| $a$ | 2.8104878 | $\Omega$ | 193.81741 | | +0.93197630 | −0.12021137 |
| $e$ | 0.0696849 | $i$ | 3.53996 | | +0.33714862 | −0.05930997 |
| $P$ | 4.71 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.0 | 2006 10 29 | 291 | 0.4+ | 0.2+ |
| 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.5− | 2006 10 29 | 291 | 0.3− | 0.0 |
| 2004 04 12 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.4− | 0.4− |
| 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.7− |
| 2004 04 19 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 1.0− | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 04 25 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.5+ | 1.0+ | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2004 04 25 | 691 | 0.4− | 0.1− | 2006 10 15 | 703 | (0.4+ | 2.6+) | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 04 25 | 691 | 0.4− | 0.2− | 2006 10 15 | 703 | (0.1+ | 1.6+) | 2006 11 11 | G96 | 0.5− | 0.3− |
| 2004 04 26 | 568 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2004 04 26 | 568 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2004 04 26 | 568 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5− | 0.0 | 2006 11 14 | G96 | 0.7+ | 0.3+ |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4+ |
| 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 291 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.3+ |

**2004 GX$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 81.26258 | | (2000.0) | | | |
| $n$ | 0.17330258 | $\omega$ | 131.51198 | | +0.23597373 | +0.97171866 |
| $a$ | 3.1861486 | $\Omega$ | 152.13331 | | −0.89714874 | +0.22136700 |
| $e$ | 0.0574207 | $i$ | 1.09129 | | −0.37341737 | +0.08221619 |
| $P$ | 5.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.3+ | 0.4− | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 02 | 291 | 0.1− | 0.2− |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 10 02 | 291 | 0.0 | 0.1− |
| 2004 04 12 | 691 | 0.2+ | 0.3− | 2006 07 21 | G96 | 0.5+ | 0.6− | 2006 10 02 | 291 | 0.0 | 0.0 |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.2+ | 0.6− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 09 14 | 691 | (4.1− | 0.9−) | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2004 04 19 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.7+ | 0.1− |
| 2004 04 25 | 691 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.8+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 04 25 | 691 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2004 04 25 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2004 04 26 | 568 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2004 04 26 | 568 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2004 04 26 | 568 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.1− | | | | |
| 2004 04 27 | 568 | 0.4+ | 0.1− | 2006 09 25 | 691 | 0.5− | 0.2+ | | | | |

**2004 GK$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.49480 | | (2000.0) | | | |
| $n$ | 0.19645491 | $\omega$ | 289.89457 | | +0.76408243 | +0.64337297 |
| $a$ | 2.9306287 | $\Omega$ | 30.11882 | | −0.55088981 | +0.68896763 |
| $e$ | 0.1022415 | $i$ | 5.42331 | | −0.33570589 | +0.33375862 |
| $P$ | 5.02 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.2+ | 0.0 | 2004 05 24 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.7+ | 0.4+ |
| 2004 04 12 | 691 | 0.1− | 0.2− | 2004 05 24 | 691 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2004 04 12 | 691 | 0.0 | 0.1+ | 2004 05 24 | 691 | 0.5− | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.8+ |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.3− | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.5+ |
| 2004 04 19 | 691 | 0.2− | 0.2+ | 2006 11 09 | 691 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.2− | 0.2− |
| 2004 04 19 | 691 | 0.2− | 0.4+ | 2006 11 09 | 691 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2004 04 25 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.0− | 2.4− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2004 04 25 | 691 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.5− | | | | |
| 2004 04 25 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.9+ | | | | |

**2004 GS$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 268.68176 | | (2000.0) | | | |
| $n$ | 0.19980150 | $\omega$ | 53.86048 | | −0.10139189 | −0.99432099 |
| $a$ | 2.8978120 | $\Omega$ | 41.99521 | | +0.89652706 | −0.10541117 |
| $e$ | 0.1615767 | $i$ | 2.76996 | | +0.43122953 | −0.01463750 |
| $P$ | 4.93 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2003 01 05 | 704 | (4.0+ | 2.0−) | 2004 05 28 | 691 | 0.5− | 0.5− |
| 2001 09 19 | 704 | 0.2+ | 0.6+ | 2003 01 05 | 704 | (3.6+ | 0.8−) | 2004 07 16 | 807 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.9− | 0.3+ | 2003 01 05 | 704 | (3.4+ | 0.3−) | 2004 07 17 | 807 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.4+ | 0.1− | 2003 01 05 | 704 | (3.5+ | 1.1−) | 2006 10 22 | G96 | 0.0 | 1.2+ |
| 2002 12 05 | 704 | 1.1+ | 0.4+ | 2003 01 05 | 704 | (2.9+ | 0.4−) | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 1.0+ | 0.6− | 2004 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.8+ | 0.5+ | 2004 04 12 | 691 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.8+ | 0.1+ | 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2002 12 14 | 704 | 0.9− | 0.7+ | 2004 04 19 | 691 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.4+ |
| 2002 12 14 | 704 | 0.8− | 0.3+ | 2004 04 19 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.7− |
| 2002 12 14 | 704 | 0.4− | 0.3+ | 2004 04 19 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 1.1− | 0.5− | 2004 05 28 | 691 | 0.1− | 0.3− | | | | |
| 2002 12 14 | 704 | 0.7− | 0.2+ | 2004 05 28 | 691 | 0.5+ | 0.2+ | | | | |

**2004 GU$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 271.92141 | | (2000.0) | | | |
| $n$ | 0.22485086 | $\omega$ | 84.93229 | | −0.49383511 | −0.86781459 |
| $a$ | 2.6783850 | $\Omega$ | 34.83501 | | +0.75478557 | −0.45920221 |
| $e$ | 0.1171293 | $i$ | 5.52508 | | +0.43177034 | −0.18981877 |
| $P$ | 4.38 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | (4.0+ | 0.1−) | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.0− | 0.7+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2004 04 12 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 1.0+ | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2004 04 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3− | 1.0− | 2006 11 16 | 691 | 0.4− | 0.4+ |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2004 04 25 | 691 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2004 04 26 | 568 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.6− |
| 2004 04 26 | 568 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2004 04 26 | 568 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2004 04 27 | 568 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.4− | | | | |

**2004 GJ$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 239.35968 | | (2000.0) | | | |
| $n$ | 0.22793476 | $\omega$ | 296.49377 | | −0.96155253 | −0.27384669 |
| $a$ | 2.6541717 | $\Omega$ | 227.62057 | | +0.26084847 | −0.88728657 |
| $e$ | 0.0532209 | $i$ | 1.59871 | | +0.08587672 | −0.37112064 |
| $P$ | 4.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.0 | 0.2+ | 2004 05 10 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2004 04 12 | 691 | 0.1− | 0.1+ | 2004 05 10 | 691 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.0 | 2004 05 10 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2004 04 12 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2004 04 12 | 291 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 12 | 703 | 0.5− | 0.1− |
| 2004 04 12 | 291 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 12 | 703 | 0.0 | 0.3− |
| 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 12 | 703 | 0.4− | 1.4+ |
| 2004 04 19 | 691 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 12 | 703 | 0.8− | 0.6− |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2004 04 25 | 691 | 0.4− | 0.5− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2004 04 25 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2004 04 25 | 691 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 |

**2004 GX$_{48}$ = 2006 SN$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 158.27786 | | (2000.0) | | | |
| $n$ | 0.17673651 | $\omega$ | 358.85902 | | −0.91449075 | +0.39496793 |
| $a$ | 3.1447433 | $\Omega$ | 204.98145 | | −0.36955355 | −0.90370488 |
| $e$ | 0.0098232 | $i$ | 11.99767 | | −0.16473263 | −0.16528104 |
| $P$ | 5.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 645 | 0.1+ | 0.0 | 2004 04 19 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 11 13 | 645 | 0.1− | 0.0 | 2004 04 25 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.4− |
| 2004 04 12 | 691 | 0.2− | 0.1+ | 2004 04 25 | 691 | 0.6+ | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.2+ |
| 2004 04 12 | 691 | 0.3− | 0.2+ | 2004 04 25 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.1+ |
| 2004 04 12 | 691 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.7− | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | | | | |

**2004 GJ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.09985 | | (2000.0) | | | |
| $n$ | 0.22889424 | $\omega$ | 230.17263 | | +0.11670488 | −0.98754256 |
| $a$ | 2.6467493 | $\Omega$ | 213.57554 | | +0.95953610 | +0.13953512 |
| $e$ | 0.1421833 | $i$ | 11.00215 | | +0.25626245 | −0.07272993 |
| $P$ | 4.31 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2004 04 12 | 691 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2004 04 12 | 691 | 0.2− | 0.1+ | 2006 10 15 | 104 | 1.1− | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 104 | 0.9+ | 0.9+ | 2006 10 31 | 691 | 0.4+ | 0.4+ |
| 2004 04 19 | 691 | 0.2− | 0.3+ | 2006 10 17 | 104 | 0.4− | 0.3− | 2006 10 31 | 691 | (1.8+ | 0.3+) |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 104 | 0.1+ | 1.5+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 104 | 0.1− | 0.4+ | 2006 11 11 | 703 | 1.0+ | 0.6− |
| 2004 04 25 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.8+ |
| 2004 04 25 | 691 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2004 05 24 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2004 05 24 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.4− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2004 05 24 | 691 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.6− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.2+ |
| 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 22 | 683 | 0.3+ | 0.4− | 2006 11 13 | G96 | 0.5+ | 0.0 |
| 2006 10 11 | 644 | 0.3− | 0.1− | 2006 10 22 | 683 | 0.8+ | 0.3− | | | | |
| 2006 10 12 | 644 | 0.2− | 0.0 | 2006 10 22 | 683 | (1.6+ | 0.2−) | | | | |

**2004 GN$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.64414 | | (2000.0) | | | |
| $n$ | 0.20091325 | $\omega$ | 100.51289 | | −0.41434071 | −0.90898468 |
| $a$ | 2.8871122 | $\Omega$ | 14.22794 | | +0.74579060 | −0.36774638 |
| $e$ | 0.0264933 | $i$ | 10.66416 | | +0.52164946 | −0.19623823 |
| $P$ | 4.91 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.3+ | 0.1+ | 2004 04 25 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.2+ | 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.3− |
| 2004 04 12 | 691 | 0.5+ | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.3− |
| 2004 04 19 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 2004 04 19 | 691 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.3− |
| 2004 04 19 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.5+ |

**2004 GM$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 84.71782 | | (2000.0) | | | |
| $n$ | 0.18682410 | $\omega$ | 262.56907 | | +0.45852167 | +0.88152145 |
| $a$ | 3.0304988 | $\Omega$ | 35.43073 | | −0.71936405 | +0.44256201 |
| $e$ | 0.1203910 | $i$ | 11.19945 | | −0.52179808 | +0.16449560 |
| $P$ | 5.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.2− | 0.1− | 2004 05 24 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2004 04 13 | 691 | 0.4+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 04 19 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2004 04 25 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2004 04 25 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2004 04 25 | 691 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.9+ |
| 2004 05 24 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2004 05 24 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.2+ |

**2004 GT$_{54}$ = 2001 UL$_{208}$ = 2006 UO$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 83.75068 | | (2000.0) | | | |
| $n$ | 0.21502639 | $\omega$ | 101.29685 | | +0.71385579 | +0.69812403 |
| $a$ | 2.7593590 | $\Omega$ | 214.46855 | | −0.67446962 | +0.66424526 |
| $e$ | 0.0442122 | $i$ | 5.58403 | | −0.18841611 | +0.26720981 |
| $P$ | 4.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 691 | 0.3− | 0.4+ | 2004 04 19 | 691 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 2001 10 20 | 691 | 0.0 | 0.4+ | 2004 05 24 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 1.1+ | 0.3+ |
| 2001 10 20 | 691 | 0.2− | 0.3+ | 2004 05 24 | 691 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.4+ |
| 2001 10 21 | 704 | 0.1− | 0.1+ | 2004 05 24 | 691 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.5+ |
| 2001 10 21 | 704 | 0.1− | 0.1− | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.5+ | 1.2+ | 2005 07 04 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2004 04 13 | 691 | 0.3+ | 0.3+ | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2004 04 13 | 691 | 0.4+ | 0.0 | 2005 08 01 | 599 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2004 04 13 | 691 | 0.3+ | 0.3+ | 2005 08 01 | 599 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.8+ |
| 2004 04 19 | 691 | 0.0 | 0.4+ | 2005 08 01 | 599 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.3− | 0.3+ |
| 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.3− | | | | |

**2004 GZ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.84275 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17384413 | $\omega$ | 335.77664 | +0.89946956 | | +0.43697848 | |
| $a$ | 3.1795283 | $\Omega$ | 358.30785 | −0.38855625 | | +0.79760287 | |
| $e$ | 0.0924820 | $i$ | 4.03747 | −0.19994638 | | +0.41578778 | |
| $P$ | 5.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.6+ | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 1996 12 13 | 691 | 0.2− | 0.1+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 09 30 | 691 | 0.4+ | 0.2− |
| 1996 12 13 | 691 | 0.1− | 0.1+ | 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 1.0+ | 0.1+ |
| 2000 08 31 | 704 | 0.4+ | 0.6+ | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.3− |
| 2000 08 31 | 704 | 0.5+ | 0.9+ | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2000 08 31 | 704 | 0.6− | 0.0 | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.8− | 1.4+ |
| 2000 09 19 | 691 | 0.1− | 0.0 | 2004 05 09 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.5+ |
| 2000 09 19 | 691 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2000 09 19 | 691 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 1.5+ |
| 2000 09 23 | 699 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2000 09 23 | 699 | 0.2+ | 0.6− | 2006 07 21 | G96 | 0.5− | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.3+ |
| 2000 09 23 | 699 | 0.7− | 0.4− | 2006 09 15 | 691 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2000 09 23 | 699 | 1.4+ | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2001 12 15 | 704 | 0.7− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2001 12 15 | 704 | 0.7− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2001 12 15 | 704 | (1.2− | 1.6+) | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.2− |
| 2004 04 13 | 691 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.2− |

**2004 GM$_{56}$ = 2006 TX$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.11431 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18353184 | $\omega$ | 128.64070 | +0.93881671 | | +0.32899464 | |
| $a$ | 3.0666327 | $\Omega$ | 212.52043 | −0.34420273 | | +0.90665917 | |
| $e$ | 0.0736230 | $i$ | 10.92741 | +0.01215180 | | +0.26406755 | |
| $P$ | 5.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2004 04 13 | 691 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.5− | 0.4+ | 2006 10 27 | 691 | 0.3− | 0.3+ |
| 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.1− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 04 19 | 691 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.5− | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 1.2− | 0.8− | 2006 11 22 | G96 | 0.1− | 0.3+ |
| 2004 04 25 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 1.0+ | 2006 11 22 | G96 | 0.1+ | 0.3+ |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.5+ |
| 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.5+ | | | | |

**2004 GT$_{56}$ = 2006 SW$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.63970 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18696318 | $\omega$ | 9.16704 | +0.92739189 | | −0.37168512 | |
| $a$ | 3.0289958 | $\Omega$ | 12.89987 | +0.33007500 | | +0.75971899 | |
| $e$ | 0.0834231 | $i$ | 10.93811 | +0.17605332 | | +0.53355153 | |
| $P$ | 5.27 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.4− | 0.1− |
| 2004 04 13 | 691 | 0.6− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.1+ |
| 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2004 04 19 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2+ |
| 2004 04 19 | 691 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.5− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.3+ |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2004 04 25 | 691 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.4+ |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.2− | | | | |

**2004 GN$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.95560 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18471165 | $\omega$ | 57.69569 | −0.26786368 | | +0.95990959 | |
| $a$ | 3.0535604 | $\Omega$ | 197.35268 | −0.95057966 | | −0.27728050 | |
| $e$ | 0.1566146 | $i$ | 16.07789 | −0.15699478 | | +0.04109879 | |
| $P$ | 5.34 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 691 | 0.0 | 0.1− | 2004 04 23 | 291 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.4+ |
| 2004 04 14 | 691 | 0.3+ | 0.1+ | 2004 04 23 | 291 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2+ |
| 2004 04 14 | 691 | 0.3− | 0.2+ | 2004 04 23 | 291 | 0.6+ | 0.3− | 2006 10 31 | G96 | 0.5− | 0.8− |
| 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.1+ | 2006 10 31 | G96 | 1.2+ | 0.2− |
| 2004 04 19 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4+ |
| 2004 04 19 | 691 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.0 | | | | |

**2004 GX$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.44792 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20149616 | $\omega$ | 284.78030 | −0.76745954 | | −0.63898404 | |
| $a$ | 2.8815414 | $\Omega$ | 215.54788 | +0.61722517 | | −0.71451334 | |
| $e$ | 0.0686521 | $i$ | 5.13269 | +0.17331746 | | −0.28490364 | |
| $P$ | 4.89 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2− | 0.0 | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.6− | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2001 09 20 | 704 | 0.4+ | 0.9+ | 2004 05 19 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 0.6+ | 2004 05 19 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.8− | 0.8− |
| 2001 09 20 | 704 | 0.0 | 1.0+ | 2004 05 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2004 04 15 | 699 | 0.4+ | 0.1− | 2005 06 17 | 691 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.7+ | 0.3− |
| 2004 04 15 | 699 | (1.9+ | 0.4−) | 2005 06 17 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2004 04 15 | 699 | 1.1+ | 0.6+ | 2005 06 17 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2004 04 15 | 699 | 0.6+ | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2004 04 21 | 704 | 0.5− | 0.1− | 2006 09 19 | 691 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.6+ | 1.3− |
| 2004 04 21 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 2.0+ | 0.4− |
| 2004 04 21 | 704 | 0.2− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2004 04 25 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3+ |

**2004 GC$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.33383 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20918403 | $\omega$ | 89.65492 | −0.06696728 | | +0.99774846 | |
| $a$ | 2.8105007 | $\Omega$ | 176.49896 | −0.93760753 | | −0.06167563 | |
| $e$ | 0.1467042 | $i$ | 3.43570 | −0.34118543 | | −0.02634626 | |
| $P$ | 4.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 18 | 691 | 0.2− | 0.3+ | 2004 04 12 | 691 | 0.4+ | 0.2+ | 2005 08 29 | 691 | 0.7− | 0.6+ |
| 1999 03 18 | 691 | 0.0 | 0.2− | 2004 04 12 | 699 | 0.4− | 0.7+ | 2005 09 13 | 691 | 0.9+ | 1.3+ |
| 1999 03 18 | 691 | 0.3+ | 0.1− | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2005 09 13 | 691 | 0.2− | 0.3+ |
| 2000 07 10 | 691 | 0.1+ | 0.0 | 2004 04 12 | 699 | 0.0 | 0.4+ | 2005 09 13 | 691 | 0.1− | 0.3+ |
| 2000 07 10 | 691 | 0.2+ | 0.1− | 2004 04 12 | 691 | 0.2+ | 0.1+ | 2005 09 30 | G96 | 0.3+ | 0.1+ |
| 2000 07 10 | 691 | 0.6− | 0.2+ | 2004 04 19 | 704 | 1.0− | 0.8+ | 2005 09 30 | G96 | 0.3− | 0.0 |
| 2000 08 01 | 704 | 0.6+ | 0.5+ | 2004 04 19 | 704 | 1.0− | 1.3+ | 2005 09 30 | G96 | 0.1− | 0.0 |
| 2000 08 01 | 704 | 0.8− | 0.2− | 2004 04 19 | 704 | 1.2+ | 0.2+ | 2005 09 30 | G96 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.9+ | 0.3+ | 2004 04 19 | 704 | 0.6+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2000 08 01 | 704 | 0.5− | 0.2+ | 2004 05 10 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.4− | 1.0+ | 2004 05 10 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2001 11 20 | 704 | 0.5+ | 0.7+ | 2004 05 10 | 691 | 0.3+ | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2001 11 20 | 704 | 1.0+ | 0.5+ | 2005 07 30 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 1.5+ | 1.4− |
| 2003 01 25 | 645 | 0.1− | 0.3+ | 2005 07 30 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2003 01 25 | 645 | 0.0 | 0.3+ | 2005 07 30 | 644 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2004 04 12 | 699 | 0.1− | 0.8+ | 2005 08 29 | 691 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5+ |
| 2004 04 12 | 699 | 0.3+ | 0.4+ | 2005 08 29 | 691 | 0.4− | 0.1+ | | | | |

**2004 GQ$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.44414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18084571 | $\omega$ | 61.38026 | | −0.31927722 | +0.94663152 | |
| $a$ | 3.0969242 | $\Omega$ | 190.29451 | | −0.93267005 | −0.32214233 | |
| $e$ | 0.0081150 | $i$ | 14.30904 | | −0.16789471 | −0.01063395 | |
| $P$ | 5.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.2− | 0.2+ | 2004 04 19 | 704 | 0.8− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2004 03 16 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 1.0+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2004 03 28 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 699 | (1.9+ | 0.5+) | 2006 10 20 | G96 | 0.3− | 0.2+ |
| 2004 03 28 | 704 | 1.3+ | 0.8+ | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 10 20 | G96 | 0.3− | 0.2+ |
| 2004 03 28 | 704 | 0.0 | 1.2− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.4− | 0.2+ |
| 2004 03 28 | 704 | 0.2− | 1.1+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2+ |
| 2004 03 28 | 704 | 0.7+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.4− | 0.0 |
| 2004 04 13 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.0 |
| 2004 04 13 | 691 | 0.2− | 0.3− | 2006 10 17 | 703 | 1.0− | 0.6− | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2004 04 13 | 691 | 0.2− | 0.2− | 2006 10 17 | 703 | 1.2+ | 1.1+ | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 1.1− | 2006 11 21 | G96 | 0.6− | 0.1+ |
| 2004 04 19 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.1+ | 1.2− | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2004 04 19 | 704 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.5− | 0.0 |

**2004 GD$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.99139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21278891 | $\omega$ | 356.32029 | | −0.08901317 | −0.99423305 | |
| $a$ | 2.7786684 | $\Omega$ | 98.77986 | | +0.91537812 | −0.10532887 | |
| $e$ | 0.0376459 | $i$ | 3.46964 | | +0.39263156 | +0.02016114 | |
| $P$ | 4.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 704 | 1.3+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 11 13 | 703 | 1.1+ | 0.9− |
| 2004 03 22 | 704 | 0.3− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.7− | 0.2+ |
| 2004 03 22 | 704 | 0.8+ | 0.7− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.1+ | 1.3− |
| 2004 04 14 | 691 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2004 04 14 | 691 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2004 04 14 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2004 04 19 | 704 | 0.3− | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 04 19 | 704 | 0.0 | 1.1+ | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 1.4+ | 0.8+ |
| 2004 04 19 | 704 | 1.3+ | 1.5+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 1.3− | 0.8+ |
| 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | (1.8− | 0.4+) |
| 2006 10 16 | 703 | 0.1+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2006 10 16 | 703 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.9− | 0.4+ | | | | |

**2004 GF$_{60}$ = 2006 QK$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.59692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21156758 | $\omega$ | 285.92031 | | −0.17299218 | −0.98483592 | |
| $a$ | 2.7893519 | $\Omega$ | 173.99538 | | +0.94480254 | −0.16969154 | |
| $e$ | 0.2442654 | $i$ | 7.20045 | | +0.27824784 | −0.03609702 | |
| $P$ | 4.66 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.2− | 0.0 | 2002 11 30 | 704 | 0.7− | 0.0 | 2004 04 19 | 704 | 0.8+ | 0.7+ |
| 1999 03 19 | 691 | 0.0 | 0.1+ | 2002 11 30 | 704 | 0.8− | 0.7+ | 2004 04 19 | 704 | 0.2− | 1.4+ |
| 1999 03 19 | 691 | 0.0 | 0.4− | 2002 12 08 | 644 | 0.1− | 1.4+ | 2004 04 19 | 704 | 0.5+ | 0.8+ |
| 2002 10 09 | 704 | 0.5− | 0.2− | 2002 12 08 | 644 | 0.3− | 0.9+ | 2004 04 19 | 704 | 0.2+ | 1.3+ |
| 2002 10 09 | 704 | 0.1− | 0.5− | 2002 12 08 | 644 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 0.9− | 0.0 |
| 2002 10 09 | 704 | 0.2+ | 0.0 | 2002 12 08 | 608 | 0.9+ | 1.0+ | 2006 08 28 | 703 | 1.0− | 0.3+ |
| 2002 10 09 | 704 | 0.3− | 0.9− | 2002 12 08 | 608 | 0.9+ | 1.3+ | 2006 08 28 | 703 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | 0.2+ | 1.1+ | 2002 12 08 | 608 | 0.9+ | 1.3+ | 2006 08 28 | 703 | (2.4− | 2.1+) |
| 2002 11 11 | 704 | 0.3− | 1.3+ | 2004 03 22 | 704 | 1.0+ | 1.6+ | 2006 08 28 | 699 | 1.2+ | 0.5+ |
| 2002 11 11 | 704 | 0.3− | 0.8+ | 2004 03 22 | 704 | 0.9+ | 0.1− | 2006 08 28 | 699 | 0.0 | 0.5− |
| 2002 11 11 | 704 | 0.6− | 1.0+ | 2004 03 22 | 704 | 0.3+ | 0.4+ | 2006 08 28 | 699 | 0.4+ | 1.3+ |
| 2002 11 11 | 704 | 0.1− | 0.7+ | 2004 03 22 | 704 | 0.4+ | 0.4− | 2006 08 28 | 699 | 0.5+ | 0.0 |
| 2002 11 30 | 704 | 0.3− | 0.7− | 2004 04 14 | 691 | 0.0 | 0.6+ | 2006 08 29 | 704 | 0.7− | 1.0+ |
| 2002 11 30 | 704 | 0.1+ | 1.1− | 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 08 29 | 704 | 1.1− | 0.9+ |
| 2002 11 30 | 704 | 0.1− | 0.2+ | 2004 04 14 | 691 | 0.1− | 0.6+ | 2006 08 29 | 704 | 0.6− | 1.2+ |

**2004 GA$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.57266 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20964838 | $\omega$ | 75.74820 | | −0.37315377 | −0.92679371 | |
| $a$ | 2.8063492 | $\Omega$ | 36.25378 | | +0.82107097 | −0.35124061 | |
| $e$ | 0.0534186 | $i$ | 4.12520 | | +0.43197075 | −0.13297916 | |
| $P$ | 4.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.8− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 2004 04 13 | 691 | 0.2+ | 0.5− | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | (0.4+ | 1.8+) |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2004 05 09 | 691 | 0.4+ | 0.3+ | 2006 10 03 | 691 | 0.6+ | 0.3+ | 2006 11 01 | 691 | 0.4+ | 0.3− |
| 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2004 05 09 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.5+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2004 05 16 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 1.1− | 0.6− | 2006 11 22 | G96 | 0.4− | 0.1− |
| 2004 05 16 | 691 | 0.4− | 0.2− | 2006 10 15 | 703 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.1+ |
| 2004 05 16 | 691 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.1− | 0.5+ | 2006 11 22 | G96 | 0.6− | 0.1+ |
| 2006 09 18 | 691 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.6+ | | | | |

**2004 GZ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.89875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24304102 | $\omega$ | 178.50821 | | −0.96616668 | −0.25749705 | |
| $a$ | 2.5430194 | $\Omega$ | 346.54250 | | +0.23597494 | −0.85945593 | |
| $e$ | 0.2320177 | $i$ | 3.63101 | | +0.10410467 | −0.44162289 | |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 699 | 0.0 | 0.5+ | 2004 04 20 | 704 | 0.2− | 0.1+ | 2004 04 25 | 704 | 1.2+ | 0.5+ |
| 2004 03 22 | 699 | 1.3− | 1.0− | 2004 04 20 | 704 | 0.4− | 0.4+ | 2004 04 25 | 704 | 1.0+ | 0.9+ |
| 2004 03 22 | 699 | (2.5− | 0.0 ) | 2004 04 20 | 704 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2004 03 22 | 699 | 1.4− | 0.6− | 2004 04 20 | 704 | 0.3+ | 0.8+ | 2006 10 02 | G96 | 0.5+ | 0.3− |
| 2004 03 27 | 704 | 1.2− | 0.0 | 2004 04 20 | 704 | 0.0 | 0.4− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2004 03 27 | 704 | 0.3− | 0.7+ | 2004 04 20 | 704 | 0.3− | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 1.0+ | 0.9+ | 2004 04 20 | 704 | 0.6+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2004 04 13 | 644 | 0.6− | 0.0 | 2004 04 20 | 704 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2004 04 13 | 644 | 0.5− | 0.3− | 2004 04 21 | 704 | 0.3+ | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 2004 04 13 | 644 | 0.4− | 0.2+ | 2004 04 21 | 704 | 0.5+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2004 04 17 | 704 | 1.4+ | 0.5+ | 2004 04 21 | 704 | 0.3+ | 0.9− | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2004 04 17 | 704 | 0.2− | 0.9+ | 2004 04 21 | 704 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2004 04 17 | 704 | (1.1− | 1.7+) | 2004 04 21 | 704 | 0.0 | 0.4− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2004 04 20 | 704 | 0.3− | 0.2− | 2004 04 25 | 704 | 0.5+ | 0.6+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2004 04 20 | 704 | 0.3+ | 0.0 | 2004 04 25 | 704 | 0.1+ | 0.5+ | 2006 11 15 | 691 | 0.7− | 0.1− |

**2004 GW$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.56102 | | (2000.0) | | | |
| $n$ | 0.21092260 | $\omega$ | 269.33430 | | +0.98276374 | +0.15966246 |
| $a$ | 2.7950354 | $\Omega$ | 81.47543 | | −0.10845114 | +0.90614721 |
| $e$ | 0.0806024 | $i$ | 5.40673 | | −0.14971231 | +0.39166968 |
| $P$ | 4.67 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.2− | 1.1+ | 2005 08 12 | E12 | 0.0 | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2001 10 10 | 644 | 0.0 | 1.4+ | 2005 08 12 | E12 | 0.0 | 1.2+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 10 10 | 644 | 0.5− | 1.3+ | 2005 08 12 | E12 | 0.7− | 0.1+ | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2001 10 16 | 704 | 0.3− | 0.8+ | 2006 09 28 | G96 | 0.6+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2001 10 16 | 704 | 1.4− | 1.0+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | (1.8+ | 0.3−) |
| 2001 10 16 | 704 | 0.4− | 1.4+ | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.6− |
| 2001 10 16 | 704 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.4− | 0.7− | 2006 11 21 | 704 | 0.3+ | 0.3− |
| 2001 10 16 | 704 | 0.4+ | 1.1− | 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 11 21 | 704 | 1.4+ | 0.2− |
| 2001 10 24 | 644 | 0.7− | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2001 10 24 | 644 | 0.6− | 0.9+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 10 24 | 644 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.5− | 0.4+ |
| 2004 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2004 04 14 | 691 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.5− | 2006 11 27 | 703 | 0.6− | 0.5− |
| 2004 04 14 | 691 | 0.2+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.3+ | 0.1− |
| 2004 04 20 | 704 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.2− | 0.6− |
| 2004 04 20 | 704 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.3+ | 0.6+ |
| 2004 04 20 | 704 | 0.9+ | 0.4+ | 2006 11 11 | 691 | 0.7− | 0.1− | 2006 12 01 | 691 | 0.5− | 0.2+ |
| 2004 04 23 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2004 04 23 | 691 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.1− | 0.5+ |
| 2004 04 23 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.3− | | | | |
| 2005 08 12 | E12 | 0.3+ | 0.5− | 2006 11 12 | G96 | 0.6+ | 0.2− | | | | |

**2004 GX$_{72}$ = 2006 SU$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 285.35054 | | (2000.0) | | | |
| $n$ | 0.22139192 | $\omega$ | 272.45961 | | −0.34693156 | −0.93512467 |
| $a$ | 2.7062103 | $\Omega$ | 198.34988 | | +0.92544628 | −0.32885928 |
| $e$ | 0.1265959 | $i$ | 13.21598 | | +0.15227500 | −0.13188415 |
| $P$ | 4.45 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 19 | 691 | 0.1− | 0.5− | 2004 04 22 | 704 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.2− |
| 1994 01 19 | 691 | 0.8+ | 0.6− | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.5− | 0.2− |
| 1994 01 19 | 691 | 1.0− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 1999 02 23 | 699 | 1.4+ | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.2+ |
| 1999 02 23 | 699 | 0.3+ | 0.6− | 2006 09 19 | 683 | 1.2− | 0.8− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 1999 02 23 | 699 | (2.1+ | 0.3+) | 2006 09 19 | 683 | 0.3− | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 09 19 | 683 | (2.5− | 1.7+) | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 09 20 | 645 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 11 30 | 704 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 11 30 | 704 | 0.7+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 11 30 | 704 | 0.7+ | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2002 11 30 | 704 | 1.0+ | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2004 04 14 | 699 | 0.6+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.0 | 2006 11 13 | 703 | (2.2− | 0.2−) |
| 2004 04 14 | 699 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.2− | 2006 11 13 | 703 | (2.1− | 0.3−) |
| 2004 04 14 | 699 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.8+ |
| 2004 04 14 | 699 | 0.7− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.5− | 2006 11 13 | 703 | 0.5+ | 0.1+ |
| 2004 04 20 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.3+ | 0.1− |
| 2004 04 20 | 704 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.1+ |
| 2004 04 20 | 704 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 14 | 704 | 0.3+ | 0.3− |
| 2004 04 20 | 704 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 14 | 704 | (1.7− | 0.3+) |
| 2004 04 22 | 704 | 0.1− | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2004 04 22 | 704 | 0.4− | 0.8− | 2006 10 20 | 644 | 0.2− | 0.5+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2004 04 22 | 704 | 0.4− | 1.0+ | 2006 10 21 | 703 | 1.0− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2004 04 22 | 704 | 0.5+ | 0.7− | 2006 10 21 | 703 | 0.7− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.2− |

**2004 GB$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 254.54404 | | (2000.0) | | | |
| $n$ | 0.26535186 | $\omega$ | 93.79331 | | −0.99725687 | +0.05787226 |
| $a$ | 2.3983982 | $\Omega$ | 89.52843 | | −0.07148605 | −0.91472564 |
| $e$ | 0.1640993 | $i$ | 2.64505 | | +0.01919587 | −0.39990975 |
| $P$ | 3.71 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 31 | 691 | 0.1+ | 0.1+ | 2004 04 21 | 704 | 0.1+ | 0.3− | 2004 05 13 | 691 | 0.1− | 0.2+ |
| 2004 03 31 | 691 | 0.1− | 0.1+ | 2004 04 21 | 704 | 0.7+ | 1.8− | 2004 05 13 | 691 | 0.2− | 0.1+ |
| 2004 03 31 | 691 | 0.3− | 0.1− | 2004 04 21 | 704 | 0.4− | 0.8− | 2004 05 21 | 691 | 0.2+ | 0.0 |
| 2004 04 12 | 699 | 0.4− | 0.3− | 2004 04 21 | 704 | 0.1+ | 0.1+ | 2004 05 21 | 691 | 0.1− | 0.1− |
| 2004 04 12 | 699 | 0.8+ | 0.7− | 2004 04 21 | 599 | 0.3− | 0.1+ | 2004 05 21 | 691 | 0.0 | 0.1− |
| 2004 04 12 | 699 | 0.9+ | 0.4+ | 2004 04 21 | 599 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2004 04 12 | 699 | 0.5− | 1.0+ | 2004 04 21 | 599 | 0.5− | 0.5+ | 2006 11 17 | 691 | 0.3+ | 0.1− |
| 2004 04 20 | 704 | 0.3− | 0.5+ | 2004 04 22 | 704 | 0.7+ | 0.9+ | 2006 11 17 | 691 | 0.0 | 0.7− |
| 2004 04 20 | 704 | 0.0 | 0.1+ | 2004 04 22 | 704 | 1.8+ | 0.6+ | 2006 11 25 | 691 | 0.7− | 0.3+ |
| 2004 04 20 | 704 | 0.1+ | 0.2− | 2004 04 22 | 704 | 0.5+ | 0.6− | 2006 11 25 | 691 | 0.1− | 0.1+ |
| 2004 04 20 | 704 | 0.1− | 0.6− | 2004 04 22 | 704 | 0.5+ | 0.3+ | 2006 11 25 | 691 | 0.3+ | 0.1+ |
| 2004 04 20 | 704 | 1.0− | 0.0 | 2004 05 13 | 691 | 0.2− | 0.2− | | | | |

**2004 GA$_{79}$ = 2006 SB$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 154.30530 | | (2000.0) | | | |
| $n$ | 0.18123899 | $\omega$ | 33.75103 | | −0.86345760 | +0.50425730 |
| $a$ | 3.0924424 | $\Omega$ | 176.45637 | | −0.49647351 | −0.84506581 |
| $e$ | 0.1126693 | $i$ | 12.01498 | | −0.08919099 | −0.17773111 |
| $P$ | 5.44 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 11 | 644 | 0.3− | 0.2− | 2004 04 20 | E12 | (0.2− | 2.1−) | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2004 04 11 | 644 | 0.2− | 0.0 | 2004 04 20 | E12 | (0.5− | 2.9−) | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2004 04 11 | 644 | 0.3− | 0.5− | 2004 04 20 | E12 | (2.4− | 1.3−) | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2004 04 20 | 704 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2004 04 20 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2004 04 20 | 704 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.4+ | 0.0 | | | | |
| 2004 04 20 | E12 | (0.0 | 1.8−) | 2006 09 26 | 691 | 0.0 | 0.1+ | | | | |

**2004 GZ$_{81}$ = 2006 TD$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.44980 | | (2000.0) | | | |
| $n$ | 0.21221700 | $\omega$ | 287.71291 | | +0.22632336 | −0.97068935 |
| $a$ | 2.7836584 | $\Omega$ | 148.84972 | | +0.94240706 | +0.19722391 |
| $e$ | 0.0817914 | $i$ | 8.99425 | | +0.24626543 | +0.13734964 |
| $P$ | 4.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 703 | 1.1− | 0.3+ | 2004 04 23 | 704 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.6− | 0.6+ |
| 2004 04 13 | 703 | 1.2− | 0.8+ | 2004 04 23 | 704 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2004 04 13 | 703 | 0.7− | 1.0+ | 2004 04 23 | 704 | 0.5+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2005 06 04 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.1− |
| 2004 04 13 | 703 | 0.2+ | 0.1− | 2005 06 04 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.5− | 1.3+ |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2005 06 04 | 691 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.2− | 0.7+ |
| 2004 04 13 | 691 | 0.0 | 0.1− | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.7+ | 1.2+ |
| 2004 04 19 | 291 | 0.1+ | 0.3+ | 2005 06 13 | 691 | 0.4− | 0.3+ | 2006 11 17 | 644 | 0.8− | 0.2+ |
| 2004 04 19 | 291 | 0.3+ | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.7− | 0.2+ |
| 2004 04 19 | 291 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.0 |
| 2004 04 23 | 704 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.2+ | | | | |
| 2004 04 23 | 704 | 0.1+ | 1.2+ | 2006 10 10 | 644 | 0.0 | 0.6+ | | | | |

**2004 GB$_{82}$ = 2006 VX$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.73729 | | (2000.0) | | −0.69693871 | −0.71390809 |
| $n$ | 0.26514724 | $\omega$ | 191.70307 | | −0.69693871 | −0.71390809 |
| $a$ | 2.3996320 | $\Omega$ | 302.52325 | | +0.66428219 | −0.60699832 |
| $e$ | 0.1709987 | $i$ | 4.61961 | | +0.27019551 | −0.34912501 |
| $P$ | 3.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 1.2+ | 0.2+ | 2004 05 13 | 644 | 0.6+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2000 03 11 | 699 | 0.5− | 0.2− | 2004 05 13 | 644 | 0.5+ | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.3+ |
| 2000 03 11 | 699 | 0.3+ | 0.3+ | 2005 07 05 | G96 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2000 03 11 | 699 | 0.6− | 0.2+ | 2005 07 05 | G96 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.2− |
| 2004 04 13 | 644 | 0.0 | 0.2− | 2005 07 05 | G96 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.5− | 0.2+ |
| 2004 04 13 | 644 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.2− |
| 2004 04 13 | 644 | 0.1+ | 0.2− | 2005 07 28 | 644 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.7− | 0.7− |
| 2004 04 25 | 704 | 0.4+ | 0.4− | 2005 07 28 | 644 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.1− | 1.2− |
| 2004 04 25 | 704 | 0.1+ | 0.6+ | 2005 07 28 | 644 | 0.5− | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.1+ |
| 2004 04 25 | 704 | 0.6− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2004 04 25 | 704 | 0.9− | 1.2+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2004 05 13 | 644 | 0.7+ | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.2+ | | | | |

**2004 GD$_{84}$ = 2006 SS$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.20370 | | (2000.0) | | −0.48084945 | −0.87680282 |
| $n$ | 0.19139898 | $\omega$ | 296.71969 | | −0.48084945 | −0.87680282 |
| $a$ | 2.9820137 | $\Omega$ | 182.02172 | | +0.81217538 | −0.44506813 |
| $e$ | 0.0428481 | $i$ | 1.27926 | | +0.33038608 | −0.18201970 |
| $P$ | 5.15 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2004 04 14 | 291 | 0.2+ | 0.8+ | 2006 09 14 | 691 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.3+ | 0.1+ |
| 2004 04 14 | 291 | 0.3+ | 0.6+ | 2006 09 14 | 691 | 0.0 | 0.6+ | 2006 09 28 | G96 | 0.5− | 0.5+ |
| 2004 04 14 | 291 | 0.5+ | 0.7+ | 2006 09 25 | 691 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.4+ | 0.6+ |
| 2004 04 22 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.5− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2004 04 22 | 691 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.5− | 0.5+ | 2006 10 16 | G96 | 0.5− | 0.1− |
| 2004 04 22 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2004 05 23 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2004 05 23 | 691 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.5− | 0.1− | | | | |

**2004 GK$_{87}$ = 2006 UC$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 138.58616 | | (2000.0) | | −0.29229012 | +0.95039014 |
| $n$ | 0.21610486 | $\omega$ | 164.21777 | | −0.29229012 | +0.95039014 |
| $a$ | 2.7501710 | $\Omega$ | 88.69454 | | −0.88852947 | −0.22872813 |
| $e$ | 0.0231367 | $i$ | 6.11053 | | −0.35366915 | −0.21081275 |
| $P$ | 4.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.1− | 0.4+ | 2004 04 26 | 691 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2004 04 26 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.7+ |
| 2004 03 18 | 691 | 0.2− | 0.1+ | 2004 04 26 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2004 03 26 | 691 | 0.1+ | 0.1− | 2005 07 02 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2004 03 26 | 691 | 0.5+ | 0.2− | 2005 07 02 | 691 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.7+ | 0.1− |
| 2004 03 26 | 691 | 0.3+ | 0.4+ | 2005 07 02 | 691 | 0.3− | 0.6+ | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2004 04 15 | 644 | 0.1+ | 0.6+ | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.6− |
| 2004 04 15 | 644 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.3− | 0.2+ | | | | |
| 2004 04 15 | 644 | 0.6+ | 0.5+ | 2006 10 18 | 691 | 0.2− | 0.3+ | | | | |

**2004 GP$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 79.27475 | | (2000.0) | | +0.66370506 | +0.74136745 |
| $n$ | 0.17081875 | $\omega$ | 272.56095 | | +0.66370506 | +0.74136745 |
| $a$ | 3.2169602 | $\Omega$ | 39.62071 | | −0.60934430 | +0.61291954 |
| $e$ | 0.0949415 | $i$ | 8.96259 | | −0.43381461 | +0.27332022 |
| $P$ | 5.77 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.3− | 0.1− | 2004 05 16 | 704 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2000 10 01 | 704 | 0.2+ | 0.4− | 2005 07 27 | 644 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2000 10 01 | 704 | 0.5− | 0.5− | 2005 07 27 | 644 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2000 10 01 | 704 | 0.3+ | 1.0− | 2005 07 27 | 644 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2000 11 24 | 691 | 0.4+ | 0.1− | 2005 08 08 | E12 | 0.1− | 0.5− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2000 11 24 | 691 | 0.0 | 0.1− | 2005 08 08 | E12 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2000 11 24 | 691 | 0.2+ | 0.2− | 2005 08 08 | E12 | 0.6− | 1.3− | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2004 04 12 | 691 | 0.7+ | 0.1− | 2005 08 08 | E12 | 0.4+ | 0.7+ | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2004 04 12 | 691 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2004 04 12 | 691 | 0.6− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2004 04 21 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2004 04 21 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2004 04 21 | 691 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2004 05 13 | 644 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2004 05 13 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2004 05 13 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.7− | 0.0 |
| 2004 05 16 | 704 | (1.8+ | 1.3−) | 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.6− |
| 2004 05 16 | 704 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.2+ | | | | |

**2004 GQ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 51.06063 | | (2000.0) | | +0.92472896 | +0.32943547 |
| $n$ | 0.17704007 | $\omega$ | 292.94524 | | +0.92472896 | +0.32943547 |
| $a$ | 3.1411475 | $\Omega$ | 48.40381 | | −0.18149427 | +0.82191960 |
| $e$ | 0.0543942 | $i$ | 14.76989 | | −0.33456865 | +0.46467240 |
| $P$ | 5.57 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.6+ | 1.2− | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2004 04 12 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2004 04 21 | 691 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2004 04 21 | 691 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.8− |
| 2004 04 21 | 691 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.6+ |
| 2004 04 30 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | (0.5− | 2.5+) |
| 2004 04 30 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | (0.3+ | 1.6+) |
| 2004 04 30 | 691 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1− | 1.2+ |
| 2004 05 16 | 704 | 0.2− | 0.5− | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2004 05 16 | 704 | 0.9− | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2004 05 16 | 704 | 0.7− | 0.4− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 05 16 | 704 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 06 06 | 644 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.5+ |
| 2004 06 06 | 644 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2004 06 06 | 644 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 06 12 | E12 | (1.1+ | 1.8+) | 2006 11 10 | 644 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2004 06 12 | E12 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.7− | 0.8+ |
| 2004 06 12 | E12 | 1.4+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.2+ | 0.5− |
| 2004 06 12 | E12 | 0.4− | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.1+ | 0.4+ |
| 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.9+ | 0.8+ |

**2004 HW$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 237.33529 | | (2000.0) | | | |
| $n$ | 0.21541853 | $\omega$ | 119.40336 | | −0.92801225 | −0.33777813 |
| $a$ | 2.7560093 | $\Omega$ | 41.42007 | | +0.20189591 | −0.81051049 |
| $e$ | 0.1036124 | $i$ | 13.74223 | | +0.31309951 | −0.47851717 |
| $P$ | 4.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 28 | 704 | 0.6+ | 0.6+ | 2004 05 14 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.6− |
| 2004 03 28 | 704 | 0.4+ | 0.1+ | 2004 05 14 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2004 03 28 | 704 | 1.3+ | 0.4− | 2004 05 15 | 704 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2004 03 28 | 704 | 0.5+ | 0.1+ | 2004 05 15 | 704 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2004 04 20 | 333 | 0.4+ | 0.2+ | 2004 05 15 | 704 | 0.3− | 1.4+ | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 2004 04 20 | 333 | 0.2− | 0.3+ | 2004 05 15 | 704 | 1.3+ | 0.9+ | 2006 11 13 | 691 | 0.1− | 0.6+ |
| 2004 04 20 | 333 | 0.0 | 0.3+ | 2004 05 16 | 704 | 0.3− | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.5+ |
| 2004 04 21 | 333 | 0.2+ | 0.1+ | 2004 05 16 | 704 | 0.4+ | 0.1− | 2006 11 17 | 703 | 1.4− | 0.3− |
| 2004 04 21 | 704 | 1.2+ | 1.3+ | 2004 05 16 | 704 | 0.2− | 0.4− | 2006 11 17 | 703 | (1.8− | 0.6−) |
| 2004 04 21 | 333 | 0.6− | 0.9+ | 2004 05 19 | 704 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (1.6+ | 0.3−) |
| 2004 04 21 | 704 | 0.1− | 0.4+ | 2004 05 19 | 704 | 0.3+ | 0.4− | 2006 11 17 | 703 | 1.1+ | 0.6− |
| 2004 04 21 | 333 | 0.4− | 0.2+ | 2004 05 19 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2004 04 21 | 704 | 1.2+ | 0.8+ | 2004 05 19 | 704 | 0.4− | 0.6+ | 2006 11 22 | 691 | 0.5+ | 0.6+ |
| 2004 04 21 | 333 | 0.2+ | 0.1+ | 2004 05 23 | 691 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 2004 04 21 | 704 | (0.3− | 1.7+) | 2004 05 23 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2004 04 26 | 699 | 0.3+ | 1.0+ | 2004 05 23 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2004 04 26 | 699 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 22 | G96 | 1.2− | 1.1− |
| 2004 04 26 | 699 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.5+ | 0.1− |
| 2004 04 26 | 699 | 0.3− | 0.1+ | 2006 10 17 | G96 | 1.0− | 0.7− | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2004 05 13 | 333 | 0.1− | 0.5− | 2006 10 17 | G96 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2004 05 13 | 333 | 0.7− | 0.2− | 2006 10 22 | 691 | 0.6− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.5+ |
| 2004 05 13 | 333 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.6− | 0.3+ | | | | |
| 2004 05 14 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.7− | 0.1+ | | | | |

**2004 HX$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 186.19816 | | (2000.0) | | | |
| $n$ | 0.18609839 | $\omega$ | 117.32016 | | −0.99503894 | +0.09339965 |
| $a$ | 3.0383722 | $\Omega$ | 68.05578 | | −0.09922194 | −0.90659504 |
| $e$ | 0.1889636 | $i$ | 2.11700 | | −0.00724644 | −0.41153607 |
| $P$ | 5.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 01 | 291 | 0.3+ | 0.3+ | 2004 04 26 | 699 | 1.3+ | 0.5− | 2004 05 16 | 704 | 0.5+ | 0.1− |
| 2004 03 01 | 291 | 0.1+ | 0.2+ | 2004 04 26 | 699 | 0.6+ | 1.0+ | 2004 05 16 | 704 | 0.2+ | 0.0 |
| 2004 03 01 | 291 | 0.3+ | 0.3+ | 2004 04 26 | 699 | 0.9− | 1.3− | 2004 05 16 | 704 | 0.8+ | 0.2− |
| 2004 03 31 | 704 | 0.3+ | 1.3+ | 2004 04 26 | 699 | 0.9+ | 0.2− | 2004 05 23 | 691 | 0.0 | 0.1+ |
| 2004 03 31 | 704 | 0.0 | 0.7+ | 2004 05 12 | 699 | 0.3− | 0.7+ | 2004 05 23 | 691 | 0.0 | 0.0 |
| 2004 03 31 | 704 | 1.0− | 0.8+ | 2004 05 12 | 699 | (1.6− | 2.2+) | 2004 05 23 | 691 | 0.2+ | 0.0 |
| 2004 04 20 | 333 | 0.8− | 0.7− | 2004 05 12 | 699 | (2.8− | 1.1−) | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2004 04 20 | 333 | 0.5− | 0.8− | 2004 05 12 | 699 | 0.7− | 0.7+ | 2006 09 18 | 691 | 0.2+ | 0.1− |
| 2004 04 20 | 333 | 0.5− | 0.5− | 2004 05 13 | 333 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.5− | 0.1− |
| 2004 04 21 | 704 | 0.1+ | 0.3− | 2004 05 13 | 333 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2004 04 21 | 333 | 0.3+ | 0.0 | 2004 05 13 | 333 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.3+ | 0.0 |
| 2004 04 21 | 333 | 0.6− | 0.1− | 2004 05 14 | 691 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2004 04 21 | 704 | 1.1+ | 0.3+ | 2004 05 14 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2004 04 21 | 333 | 0.5− | 0.3− | 2004 05 14 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2004 04 21 | 333 | 0.8− | 0.0 | 2004 05 16 | 704 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 04 21 | 704 | 0.5+ | 0.0 | 2004 05 16 | 704 | 0.2+ | 0.6+ | | | | |

**2004 HZ$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 213.90869 | | (2000.0) | | | |
| $n$ | 0.30285293 | $\omega$ | 240.29497 | | +0.30718800 | +0.95003862 |
| $a$ | 2.1960802 | $\Omega$ | 47.70331 | | −0.84523474 | +0.29909532 |
| $e$ | 0.1727715 | $i$ | 4.29046 | | −0.43727997 | +0.08926709 |
| $P$ | 3.25 | $H$ | 18.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 333 | 0.2+ | 0.3+ | 2004 04 21 | 333 | 0.3+ | 0.0 | 2005 11 03 | 691 | 0.1+ | 0.3+ |
| 2004 04 20 | 333 | 0.2− | 0.6+ | 2004 04 21 | 333 | 0.2− | 0.4− | 2005 11 12 | 691 | 0.2− | 0.5− |
| 2004 04 21 | 333 | 0.7+ | 1.4− | 2004 04 21 | 704 | 0.2+ | 0.0 | 2005 11 12 | 691 | 0.3− | 0.2+ |
| 2004 04 21 | 704 | 0.2− | 0.2− | 2004 05 14 | 926 | 0.0 | 0.2− | 2005 11 12 | 691 | 0.6+ | 0.2+ |
| 2004 04 21 | 333 | (2.2− | 1.9−) | 2004 05 14 | 926 | 0.2− | 0.4− | 2005 11 21 | 691 | 0.3− | 0.1+ |
| 2004 04 21 | 333 | 0.1+ | 0.0 | 2004 05 14 | 926 | 0.1− | 0.2− | 2005 11 21 | 691 | 0.2− | 0.0 |
| 2004 04 21 | 704 | 0.1+ | 0.3− | 2004 05 27 | 691 | 0.1+ | 0.1− | 2005 11 21 | 691 | 0.3+ | 0.2+ |
| 2004 04 21 | 333 | 1.2− | 0.2+ | 2004 05 27 | 691 | 0.1− | 0.0 | 2005 12 05 | G96 | 0.1+ | 0.4− |
| 2004 04 21 | 333 | 0.2− | 0.1+ | 2004 05 27 | 691 | 0.3+ | 0.4+ | 2005 12 05 | G96 | 0.2− | 0.4− |
| 2004 04 21 | 704 | 0.7+ | 1.8+ | 2005 11 03 | 691 | 0.2− | 0.4+ | 2005 12 05 | G96 | 0.0 | 0.3− |
| 2004 04 21 | 333 | 0.8− | 0.7− | 2005 11 03 | 691 | 0.4+ | 0.3− | 2005 12 05 | G96 | 0.4− | 0.4− |

**2004 HZ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 145.99871 | | (2000.0) | | | |
| $n$ | 0.23201603 | $\omega$ | 162.98807 | | +0.20355628 | +0.97749245 |
| $a$ | 2.6229543 | $\Omega$ | 118.72690 | | −0.90546993 | +0.20949153 |
| $e$ | 0.1195480 | $i$ | 3.62458 | | −0.37240978 | +0.02493610 |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.9− | 0.3− | 2004 04 17 | 699 | 1.3− | 0.4− | 2005 09 23 | 703 | 1.0− | 0.2− |
| 2000 05 27 | 704 | 0.2− | 0.4+ | 2004 04 21 | 703 | 1.0+ | 1.2− | 2005 10 01 | 704 | 0.1− | 1.3+ |
| 2000 05 27 | 704 | 1.4+ | 1.0+ | 2004 04 21 | 703 | 0.9+ | 1.3− | 2005 10 01 | 704 | 0.1− | 0.3+ |
| 2004 03 31 | 704 | 1.9− | 1.4+ | 2004 04 21 | 703 | (0.6+ | 2.8−) | 2005 10 01 | 704 | 1.1− | 0.2+ |
| 2004 03 31 | 704 | (2.1− | 3.1+) | 2004 04 21 | 703 | 0.8− | 1.4+ | 2005 10 01 | 704 | 0.1− | 0.5+ |
| 2004 03 31 | 704 | (1.2− | 2.9+) | 2005 08 25 | 644 | 0.2+ | 0.0 | 2005 10 01 | 703 | 0.8− | 0.4− |
| 2004 04 16 | 704 | 0.4+ | 0.7+ | 2005 08 25 | 644 | 0.3− | 0.3− | 2005 10 01 | 703 | 0.4+ | 1.3− |
| 2004 04 16 | 704 | 0.4+ | 0.5+ | 2005 08 25 | 644 | 0.2+ | 0.1+ | 2005 10 01 | 703 | 1.0− | 0.7− |
| 2004 04 16 | 704 | 0.0 | 0.4− | 2005 09 13 | 691 | 0.4+ | 0.0 | 2005 10 01 | 703 | 0.4− | 1.0− |
| 2004 04 16 | 704 | 0.3+ | 1.1− | 2005 09 13 | 691 | 0.4+ | 0.1− | 2005 10 12 | 691 | 0.2− | 0.3+ |
| 2004 04 16 | 704 | 0.3− | 0.0 | 2005 09 13 | 691 | 0.4+ | 0.2− | 2005 10 12 | 691 | 0.4+ | 0.2+ |
| 2004 04 17 | 699 | (2.2− | 1.5−) | 2005 09 23 | 703 | 1.4− | 0.1− | 2005 10 12 | 691 | 0.1− | 0.2− |
| 2004 04 17 | 699 | 0.1− | 0.5+ | 2005 09 23 | 703 | 0.2− | 1.1+ | | | | |
| 2004 04 17 | 699 | 0.8+ | 1.4− | 2005 09 23 | 703 | 0.9+ | 0.3− | | | | |

**2004 HB$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 298.93481 | | (2000.0) | | | |
| $n$ | 0.23275449 | $\omega$ | 68.30583 | | −0.35253512 | −0.92771593 |
| $a$ | 2.6174035 | $\Omega$ | 42.97169 | | +0.77820040 | −0.36347069 |
| $e$ | 0.0708763 | $i$ | 10.37261 | | +0.51973372 | −0.08504241 |
| $P$ | 4.23 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 644 | 0.5− | 0.8+ | 2004 04 25 | 703 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.7+ |
| 2001 08 23 | 644 | 0.4− | 0.5+ | 2004 04 25 | 703 | 0.3− | 0.6− | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2001 08 23 | 644 | 0.0 | 0.4+ | 2004 04 25 | 703 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.9− | 0.2− |
| 2004 03 22 | 704 | 0.2− | 0.8+ | 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.9+ |
| 2004 03 22 | 704 | 0.3− | 0.2− | 2004 05 13 | 691 | 0.6+ | 1.1+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2004 03 22 | 704 | 0.7+ | 0.1+ | 2004 05 13 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.7+ |
| 2004 03 22 | 704 | 1.1− | 0.5− | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.4+ |
| 2004 03 28 | 704 | 1.1− | 0.3− | 2006 09 27 | G96 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.1+ | 1.1− |
| 2004 03 28 | 704 | 1.0+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.4+ |
| 2004 03 28 | 704 | (0.0 | 1.8−) | 2006 09 27 | G96 | 0.3− | 0.1+ | 2006 11 22 | 704 | 1.0− | 0.4+ |
| 2004 03 28 | 704 | 0.4+ | 0.6− | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 152 | 0.6− | 0.6+ | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.1+ | | |
| 2004 04 16 | 152 | (3.0+ | 0.4−) | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.6− | 0.5− | | |
| 2004 04 16 | 152 | 1.1+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.7− | 0.3+ | | |
| 2004 04 16 | 152 | 0.6− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.5− | 1.2− | | |
| 2004 04 17 | 152 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.5+ | 0.8− | | |
| 2004 04 17 | 152 | (0.9+ | 1.8+) | 2006 11 13 | 644 | 0.0 | 0.1− | 2006 11 24 | 703 | 0.1− | 0.1− | | |
| 2004 04 17 | 152 | (0.3+ | 1.8−) | 2006 11 13 | 644 | 0.2− | 0.3+ | 2006 11 24 | 703 | 0.5− | 0.2− | | |
| 2004 04 19 | 152 | (2.2− | 2.1+) | 2006 11 13 | 644 | 0.1+ | 0.2+ | 2006 11 24 | 703 | 0.5− | 1.5+ | | |
| 2004 04 19 | 704 | 0.3− | 0.2+ | 2006 11 16 | 704 | 1.1+ | 0.1− | 2006 11 24 | 703 | 0.4− | 0.1− | | |
| 2004 04 19 | 704 | 0.1− | 1.2+ | 2006 11 16 | 704 | 0.4+ | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.0 | | |
| 2004 04 19 | 704 | 0.2− | 0.1− | 2006 11 16 | 704 | (5.7+ | 0.3+) | 2006 12 01 | G96 | 0.9− | 0.6− | | |
| 2004 04 19 | 704 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.4+ | 1.0− | 2006 12 01 | G96 | 0.0 | 0.8− | | |
| 2004 04 19 | 704 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.9+ | 2006 12 01 | G96 | 1.4+ | 0.5− | | |
| 2004 04 25 | 703 | 0.5+ | 0.9− | 2006 11 16 | 704 | 0.3− | 1.3+ | | | | | | |

**2004 HF$_4$ = 2006 SB$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.79379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21395737 | $\omega$ | 332.57003 | | −0.99042112 | −0.10944559 | |
| $a$ | 2.7685427 | $\Omega$ | 201.64452 | | +0.12394013 | −0.97341286 | |
| $e$ | 0.1171425 | $i$ | 13.19391 | | −0.06086753 | −0.20121897 | |
| $P$ | 4.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.5− | 0.3− | | |
| 2004 04 16 | 691 | 0.1+ | 0.2− | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.2− | | |
| 2004 04 16 | 691 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2004 04 19 | 704 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2004 04 19 | 704 | 0.2+ | 0.9+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.7− | 0.2− | | |
| 2004 04 19 | 704 | 0.4− | 0.4− | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2004 04 19 | 704 | 0.7− | 0.2− | 2006 10 17 | G96 | 1.2− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 2004 04 22 | 704 | 1.0+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.0 | | |
| 2004 04 22 | 704 | 0.1− | 0.6− | 2006 10 17 | G96 | 1.3+ | 0.5− | 2006 10 31 | G96 | 0.5+ | 0.2− | | |
| 2004 04 22 | 704 | 0.7− | 0.4+ | 2006 10 17 | G96 | 0.6+ | 0.4− | 2006 11 18 | G96 | 0.5+ | 0.2+ | | |
| 2004 04 22 | 704 | (2.5− | 0.7−) | 2006 10 19 | 691 | 0.2+ | 0.4+ | 2006 11 18 | G96 | 0.7+ | 0.2+ | | |
| 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.6+ | 0.4+ | | |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ | | | | | | |

**2004 HG$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.93052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22643162 | $\omega$ | 143.04108 | | −0.91745468 | +0.39365917 | |
| $a$ | 2.6659050 | $\Omega$ | 60.23637 | | −0.37902517 | −0.82093709 | |
| $e$ | 0.0533236 | $i$ | 3.79974 | | −0.12090006 | −0.41363602 | |
| $P$ | 4.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 04 | 691 | 0.2− | 0.0 | 2004 04 25 | 704 | 0.6− | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.4− | | |
| 1995 04 04 | 691 | 0.0 | 0.2− | 2004 04 25 | 704 | 0.4+ | 1.3+ | 2006 11 11 | G96 | 0.4− | 0.0 | | |
| 1995 04 04 | 691 | 0.1− | 0.6− | 2004 04 25 | 704 | 0.8− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2004 03 31 | 691 | 0.1− | 0.1+ | 2004 04 25 | 704 | 1.1+ | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.2− | | |
| 2004 03 31 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | (3.9+ | 7.6−) | 2006 11 18 | 691 | 0.1+ | 0.4+ | | |
| 2004 03 31 | 691 | 0.4− | 0.1+ | 2006 10 17 | G96 | (4.9+ | 6.7−) | 2006 11 18 | 691 | 0.4− | 0.2+ | | |
| 2004 04 16 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.5− | 1.3− | 2006 11 18 | 691 | 0.1+ | 0.4+ | | |
| 2004 04 16 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.4− | 0.8− | 2006 11 22 | 691 | 0.0 | 0.2+ | | |
| 2004 04 16 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 22 | 691 | 0.0 | 0.5+ | | |
| 2004 04 16 | 644 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 11 22 | 691 | 0.2− | 0.3+ | | |
| 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2004 04 16 | 644 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.7− | 2006 11 24 | G96 | 0.0 | 0.0 | | |
| 2004 04 19 | 704 | 0.5+ | 1.1+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.2+ | | |
| 2004 04 19 | 704 | 0.2+ | 0.9+ | 2006 11 10 | 691 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2004 04 19 | 704 | 0.6− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.6− | | | | | | |

**2004 HN$_4$ = 2006 WN$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.68982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24164774 | $\omega$ | 36.68517 | | −0.98804471 | +0.15158210 | |
| $a$ | 2.5527849 | $\Omega$ | 151.99430 | | −0.15181490 | −0.92490984 | |
| $e$ | 0.1251423 | $i$ | 3.43278 | | −0.02683064 | −0.34866122 | |
| $P$ | 4.08 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 699 | 0.9− | 0.0 | 2004 04 19 | 704 | 0.2− | 0.6− | 2006 11 12 | G96 | 0.4− | 0.3− | | |
| 2000 05 01 | 699 | 0.9+ | 0.1− | 2004 04 19 | 704 | 0.4− | 0.7+ | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 2000 05 01 | 699 | 0.6− | 0.3− | 2004 04 19 | 704 | 0.6+ | 0.4+ | 2006 11 12 | G96 | 0.4+ | 0.2− | | |
| 2000 05 01 | 699 | 0.3+ | 0.4− | 2004 04 19 | 704 | 0.7+ | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1+ | | |
| 2004 03 27 | 703 | (0.4+ | 2.9−) | 2004 04 19 | 704 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2004 03 27 | 703 | 1.1− | 0.1− | 2004 04 22 | 704 | 0.1− | 0.9+ | 2006 11 20 | 691 | 0.1+ | 0.0 | | |
| 2004 03 27 | 703 | 0.4+ | 0.4− | 2004 04 22 | 704 | 0.0 | 0.4− | 2006 11 24 | 691 | 0.1+ | 0.3− | | |
| 2004 03 27 | 703 | (5.0− | 1.5−) | 2004 04 22 | 704 | 0.2− | 0.3+ | 2006 11 24 | 691 | 0.4− | 0.4+ | | |
| 2004 04 16 | 704 | 0.4+ | 0.1+ | 2006 10 22 | G96 | 0.5− | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.0 | | |
| 2004 04 16 | 704 | 0.5+ | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.3+ | 2006 11 24 | 691 | 0.2+ | 0.1− | | |
| 2004 04 16 | 704 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.0 | | |
| 2004 04 16 | 704 | (0.2− | 1.5+) | 2006 10 22 | G96 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.1− | | |
| 2004 04 16 | 704 | 0.3− | 0.6− | 2006 11 12 | G96 | 0.2+ | 0.2− | | | | | | |

**2004 HL$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.65234 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27667040 | $\omega$ | 109.58455 | | −0.99572140 | −0.00484845 | |
| $a$ | 2.3325318 | $\Omega$ | 70.22476 | | −0.03510611 | −0.90390053 | |
| $e$ | 0.1718966 | $i$ | 5.62757 | | +0.08547775 | −0.42771523 | |
| $P$ | 3.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 704 | 0.2+ | 0.3− | 2004 05 19 | 704 | 0.6− | 0.1− | 2004 06 12 | E12 | 0.9+ | 0.7+ | | |
| 2004 04 17 | 704 | 0.8+ | 0.1+ | 2004 05 19 | 704 | 0.0 | 0.1+ | 2004 06 12 | E12 | (2.3+ | 0.6+) | | |
| 2004 04 17 | 704 | 0.4+ | 0.7+ | 2004 05 19 | 599 | 0.3+ | 0.2− | 2004 06 12 | E12 | 1.3+ | 1.0+ | | |
| 2004 04 19 | 704 | 0.2+ | 0.8− | 2004 05 19 | 599 | 0.1+ | 0.1− | 2004 06 14 | 704 | (0.4+ | 2.5−) | | |
| 2004 04 19 | 704 | 0.6+ | 0.4+ | 2004 05 20 | 599 | 0.0 | 0.1− | 2004 06 14 | 704 | 1.0− | 0.6− | | |
| 2004 04 19 | 704 | 0.1− | 0.2+ | 2004 05 20 | 599 | 0.0 | 0.1− | 2004 06 14 | 704 | 1.6− | 1.0+ | | |
| 2004 04 25 | 704 | 0.4− | 0.5− | 2004 06 07 | 699 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− | | |
| 2004 04 25 | 704 | 0.8− | 0.6− | 2004 06 07 | 699 | 0.6− | 0.5− | 2006 10 23 | G96 | 0.2+ | 0.1+ | | |
| 2004 04 25 | 704 | 1.0− | 1.3+ | 2004 06 07 | 699 | 0.1− | 0.5− | 2006 10 23 | G96 | 0.4+ | 0.3− | | |
| 2004 04 29 | 704 | 0.5+ | 0.2− | 2004 06 07 | 699 | 1.3− | 0.3− | 2006 10 23 | G96 | 0.4− | 0.5− | | |
| 2004 04 29 | 704 | 0.5+ | 0.9− | 2004 06 09 | E12 | 0.7+ | 0.4− | 2006 11 22 | G96 | 0.3− | 0.0 | | |
| 2004 04 29 | 704 | 1.0− | 1.2+ | 2004 06 09 | E12 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.1− | 0.0 | | |
| 2004 05 19 | 704 | 0.2+ | 0.1− | 2004 06 09 | E12 | 0.3+ | 1.0− | 2006 11 22 | G96 | 0.4+ | 0.3+ | | |
| 2004 05 19 | 704 | 0.4− | 0.1+ | 2004 06 09 | E12 | 0.5+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.1+ | | |
| 2004 05 19 | 704 | 0.1+ | 0.1+ | 2004 06 12 | E12 | 1.6+ | 1.0+ | | | | | | |

**2004 HM$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.10535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23621279 | $\omega$ | 119.84596 | | −0.97510899 | −0.01518211 | |
| $a$ | 2.5917938 | $\Omega$ | 60.10244 | | −0.10034020 | −0.85943527 | |
| $e$ | 0.1204655 | $i$ | 14.78326 | | +0.19772278 | −0.51101909 | |
| $P$ | 4.17 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 704 | 0.3− | 0.5+ | 2004 05 16 | 704 | 0.4+ | 0.4− | 2006 11 16 | 704 | 0.8− | 0.6+ | | |
| 2004 04 17 | 704 | 0.2− | 0.1+ | 2004 05 16 | 704 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.3− | | |
| 2004 04 17 | 704 | 0.1− | 0.0 | 2004 05 16 | 704 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.5− | | |
| 2004 04 17 | 704 | 0.2+ | 0.2− | 2004 05 16 | 704 | 0.3+ | 0.5− | 2006 11 16 | 704 | 0.6+ | 0.2+ | | |
| 2004 04 17 | 704 | 0.8+ | 0.7− | 2004 05 16 | 704 | 0.4+ | 0.6− | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2004 04 19 | 704 | 0.2+ | 0.4+ | 2004 05 16 | E12 | 0.7− | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.0 | | |
| 2004 04 19 | 704 | 0.3+ | 0.3+ | 2004 05 16 | E12 | 1.0− | 0.8+ | 2006 11 19 | 704 | 0.1− | 1.7− | | |
| 2004 04 19 | 704 | 1.0− | 0.1+ | 2004 05 16 | E12 | 0.9− | 0.5+ | 2006 11 19 | 704 | 0.5− | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 704 | 0.3+ | 0.4− | 2004 05 16 | E12 | 0.7− | 0.7+ | 2006 11 19 | 704 | 0.3+ | 0.8+ | | |
| 2004 04 19 | 704 | 0.3− | 0.2+ | 2004 05 19 | 704 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.8+ | 0.6+ | | |
| 2004 04 22 | 704 | (0.7− | 2.2+) | 2004 05 19 | 704 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.9− | | |
| 2004 04 22 | 704 | (6.5− | 4.0+) | 2004 05 19 | 704 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.4+ | | |
| 2004 04 22 | 704 | (6.2− | 2.1+) | 2004 05 19 | 704 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.5+ | | |
| 2004 04 25 | 704 | 0.9+ | 0.8+ | 2004 05 19 | 704 | 0.2− | 0.7− | 2006 11 19 | 704 | 1.2− | 0.5− | | |
| 2004 04 25 | 704 | 0.0 | 0.3+ | 2004 06 09 | E12 | (0.6+ | 2.4−) | 2006 11 19 | 704 | 0.4− | 0.2− | | |
| 2004 04 25 | 704 | 0.2+ | 0.4+ | 2004 06 09 | E12 | (1.6+ | 2.1−) | 2006 11 19 | 704 | 0.3+ | 0.2+ | | |
| 2004 04 29 | 704 | 0.3+ | 0.0 | 2004 06 09 | E12 | (1.2+ | 1.9−) | 2006 11 19 | 704 | 1.3− | 0.1− | | |
| 2004 04 29 | 704 | 0.8+ | 0.3+ | 2004 06 09 | E12 | (1.4+ | 1.8−) | 2006 11 19 | 704 | 2.4+ | 0.5+ | | |
| 2004 04 29 | 704 | 0.0 | 0.4− | 2004 06 12 | E12 | 0.3− | 0.6+ | 2006 11 20 | 691 | 0.3− | 0.0 | | |
| 2004 04 29 | 704 | 0.7− | 0.2− | 2004 06 12 | E12 | (2.1− | 1.5+) | 2006 11 20 | 691 | 0.2− | 0.2− | | |
| 2004 04 29 | 704 | 0.6− | 0.2− | 2004 06 12 | E12 | 0.7− | 0.8+ | 2006 11 20 | 691 | 0.1− | 0.1− | | |
| 2004 05 10 | 644 | 0.3− | 0.1+ | 2004 06 12 | E12 | 1.4− | 1.4+ | 2006 11 22 | 704 | 0.9+ | 0.0 | | |
| 2004 05 10 | 644 | 0.2+ | 0.1+ | 2004 06 14 | 704 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.1− | | |
| 2004 05 10 | 644 | 0.2− | 0.1− | 2004 06 14 | 704 | 1.2+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.2+ | | |
| 2004 05 15 | 704 | 0.5+ | 0.5+ | 2004 06 14 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.2+ | | |
| 2004 05 15 | 704 | 0.3− | 0.6− | 2004 06 14 | 704 | 0.8+ | 0.6− | 2006 11 22 | 704 | 0.2+ | 0.7+ | | |
| 2004 05 15 | 704 | 0.2− | 0.2− | 2004 06 17 | 691 | 0.2− | 0.6+ | 2006 11 25 | 691 | 0.2+ | 0.2− | | |
| 2004 05 15 | 704 | 0.6+ | 0.2− | 2004 06 17 | 691 | 0.4+ | 0.5− | 2006 11 25 | 691 | 0.1+ | 0.2− | | |
| 2004 05 15 | 704 | 0.7− | 0.3− | 2004 06 17 | 691 | 0.5+ | 0.5− | 2006 11 25 | 691 | 0.4− | 0.6+ | | |

**2004 HN$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.87874 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21568899 | $\omega$ | 157.81809 | | −0.69579710 | | +0.70290953 |
| $a$ | 2.7537049 | $\Omega$ | 67.73328 | | −0.68060304 | | −0.57961811 |
| $e$ | 0.1368809 | $i$ | 9.17725 | | −0.22944695 | | −0.41226332 |
| $P$ | 4.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 704 | 0.7− | 0.4− | 2004 05 15 | 704 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1+ | | |
| 2004 04 17 | 704 | 0.0 | 1.0− | 2004 05 15 | 704 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.5− | 0.2− | | |
| 2004 04 17 | 704 | 0.9− | 0.8− | 2004 05 15 | 704 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.1− | | |
| 2004 04 17 | 704 | 0.2+ | 0.1− | 2004 05 15 | 704 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− | | |
| 2004 04 19 | 704 | 0.4− | 0.5+ | 2004 05 17 | 704 | 0.4+ | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.1− | | |
| 2004 04 19 | 704 | 1.2+ | 0.9+ | 2004 05 17 | 704 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2004 04 19 | 704 | 0.9+ | 0.5− | 2004 05 17 | 704 | 0.6+ | 0.4− | 2006 10 31 | G96 | 0.4− | 0.1− | | |
| 2004 04 19 | 704 | 1.0+ | 0.2+ | 2004 05 17 | 704 | 0.8+ | 0.2− | 2006 11 11 | 691 | 0.1− | 0.3+ | | |
| 2004 04 22 | 704 | 0.7− | 0.3+ | 2004 05 17 | 704 | 0.2+ | 1.0− | 2006 11 11 | 691 | 0.1− | 0.6+ | | |
| 2004 04 22 | 704 | 0.6+ | 1.4+ | 2004 05 21 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 2004 04 22 | 704 | (2.0− | 2.1+) | 2004 05 21 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.8+ | | |
| 2004 04 22 | 704 | 1.3− | 1.0+ | 2004 05 21 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 691 | (0.4− | 1.7+) | | |
| 2004 04 22 | 704 | 0.8− | 1.2+ | 2004 05 21 | 704 | 0.1+ | 0.9+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2004 04 23 | 599 | 0.3+ | 0.2− | 2004 05 21 | 704 | 0.6+ | 0.8+ | 2006 11 19 | 691 | 0.3− | 0.3+ | | |
| 2004 04 23 | 599 | 0.1+ | 0.2− | 2004 05 21 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.5+ | | |
| 2004 04 23 | 599 | 0.3+ | 0.1− | 2004 05 21 | 704 | 0.6+ | 0.5+ | 2006 11 19 | 691 | 0.3− | 0.3+ | | |
| 2004 04 23 | 599 | 1.1− | 0.7− | 2004 05 21 | 704 | 0.0 | 1.0+ | 2006 11 23 | 691 | 0.2− | 0.2+ | | |
| 2004 04 29 | 704 | 0.4− | 0.6+ | 2004 06 14 | 704 | (1.5+ | 0.5−) | 2006 11 23 | 691 | 0.2− | 0.2+ | | |
| 2004 04 29 | 704 | 0.5− | 0.5− | 2004 06 14 | 704 | 1.1+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2004 04 29 | 704 | 0.5− | 0.2+ | 2004 06 14 | 704 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.1+ | | |
| 2004 04 29 | 704 | 0.4− | 0.3− | 2004 06 14 | 704 | 0.2+ | 0.6+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2004 04 29 | 704 | 0.7− | 0.2− | 2005 08 31 | 644 | 0.3− | 0.6+ | 2006 11 24 | G96 | 0.1− | 0.2+ | | |
| 2004 05 10 | 703 | 0.3+ | 1.3+ | 2005 08 31 | 644 | 0.6− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.0 | | |
| 2004 05 10 | 703 | 0.1+ | 0.8+ | 2005 08 31 | 644 | 0.2− | 0.7+ | 2006 11 27 | 703 | 0.3− | 1.4− | | |
| 2004 05 10 | 703 | 0.8+ | 0.4− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2004 05 10 | 703 | 0.7+ | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 27 | 703 | 1.2+ | 0.8− | | |
| 2004 05 11 | 699 | 0.4− | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.9− | | |
| 2004 05 11 | 699 | 0.1− | 0.6− | 2006 09 28 | G96 | 0.4+ | 0.7+ | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2004 05 11 | 699 | 0.3− | 0.0 | 2006 10 20 | 695 | 0.3− | 0.4+ | 2006 11 27 | 703 | 1.2− | 0.6− | | |
| 2004 05 11 | 699 | 0.0 | 1.0− | 2006 10 20 | 695 | (3.2+ | 1.7−) | 2006 11 27 | 691 | 0.3+ | 0.2+ | | |
| 2004 05 15 | 704 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.2− | | | | | | |

**2004 HH$_7$ = 2006 SX$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.79711 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21329581 | $\omega$ | 242.64885 | | −0.02829362 | | −0.99891185 |
| $a$ | 2.7742643 | $\Omega$ | 209.04465 | | +0.94198197 | | −0.01423388 |
| $e$ | 0.1290378 | $i$ | 4.37977 | | +0.33446890 | | −0.04441302 |
| $P$ | 4.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 10 | 691 | 0.4+ | 0.4+ | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.2− | | |
| 1997 10 10 | 691 | 0.8− | 0.0 | 2004 05 09 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.1− | | |
| 1997 10 10 | 691 | 0.2+ | 0.1+ | 2004 05 09 | 691 | 0.6+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.0 | | |
| 2004 04 19 | 691 | 0.0 | 0.1− | 2004 05 09 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.2− | | |
| 2004 04 19 | 691 | 0.0 | 0.2− | 2004 05 24 | 691 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.7+ | 0.9+ | | |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2004 05 24 | 691 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.2− | 0.3− | | |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2004 05 24 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.4− | | |
| 2004 04 20 | 691 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.7− | 0.3+ | | |

**2004 HF$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.84219 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27234889 | $\omega$ | 215.68600 | | −0.76090456 | | −0.64820418 |
| $a$ | 2.3571414 | $\Omega$ | 283.88072 | | +0.60209390 | | −0.68853638 |
| $e$ | 0.1288350 | $i$ | 1.72660 | | +0.24188257 | | −0.32519070 |
| $P$ | 3.62 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 809 | 0.1+ | 0.3+ | 2002 10 28 | 644 | 0.3+ | 0.2+ | 2004 04 20 | 704 | 0.3+ | 0.3+ | | |
| 2002 10 13 | 291 | 0.2− | 0.1+ | 2002 11 09 | 695 | 0.1+ | 0.6− | 2004 04 20 | 704 | 0.8+ | 0.2+ | | |
| 2002 10 13 | 291 | 0.0 | 0.1+ | 2002 11 09 | 695 | 0.4+ | 0.4− | 2004 04 20 | 704 | 0.7+ | 0.4− | | |
| 2002 10 13 | 291 | 0.1+ | 0.0 | 2004 04 16 | 691 | 0.3− | 0.0 | 2004 04 22 | 691 | 0.0 | 0.1− | | |
| 2002 10 28 | 644 | 0.3− | 0.1+ | 2004 04 16 | 691 | 0.0 | 0.2− | 2004 04 22 | 691 | 0.1+ | 0.2− | | |
| 2002 10 28 | 644 | 0.0 | 0.0 | 2004 04 16 | 691 | 0.1− | 0.3− | 2004 04 22 | 691 | 0.1− | 0.6+ | | |

**2004 HG$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.97944 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21697881 | $\omega$ | 344.54308 | | +0.17825199 | | +0.98325990 |
| $a$ | 2.7427812 | $\Omega$ | 295.71259 | | −0.89828670 | | +0.14694221 |
| $e$ | 0.1638217 | $i$ | 2.40229 | | −0.40163073 | | +0.10774025 |
| $P$ | 4.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 291 | 0.1+ | 0.0 | 2004 05 23 | 691 | 0.3+ | 0.2+ | 2005 09 14 | 691 | 0.2− | 0.0 | | |
| 2003 01 11 | 291 | 0.2+ | 0.5+ | 2004 05 23 | 691 | 0.6+ | 0.1+ | 2005 09 23 | 703 | 0.5+ | 1.6+ | | |
| 2003 01 11 | 291 | 0.1− | 0.5+ | 2005 08 25 | 644 | 0.4− | 0.0 | 2005 09 23 | 703 | 1.0− | 0.2− | | |
| 2004 04 16 | 691 | 0.2− | 0.0 | 2005 08 25 | 644 | 0.0 | 0.2− | 2005 09 23 | 703 | 0.3− | 0.8− | | |
| 2004 04 16 | 691 | 0.1+ | 0.2− | 2005 08 25 | 644 | 0.3− | 0.1+ | 2005 09 23 | 703 | 0.5+ | 0.7− | | |
| 2004 04 16 | 691 | 0.0 | 0.6+ | 2005 08 31 | 691 | 0.0 | 0.2− | 2005 10 30 | G96 | 0.0 | 0.3− | | |
| 2004 04 20 | 704 | 0.1+ | 0.2+ | 2005 08 31 | 691 | 0.3+ | 1.6+ | 2005 10 30 | G96 | 0.3+ | 0.3− | | |
| 2004 04 20 | 704 | 1.2− | 0.3+ | 2005 08 31 | 691 | 0.1+ | 0.1− | 2005 10 30 | G96 | 0.5− | 0.3− | | |
| 2004 04 20 | 704 | 0.8− | 1.0+ | 2005 09 14 | 691 | 0.2− | 0.2+ | 2005 10 30 | G96 | 0.0 | 0.4− | | |
| 2004 05 23 | 691 | 0.3+ | 0.1− | 2005 09 14 | 691 | 0.2− | 0.1+ | | | | | | |

**2004 HD$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.06826 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17420253 | $\omega$ | 24.06666 | | −0.49716020 | | +0.81915708 |
| $a$ | 3.1751658 | $\Omega$ | 218.00152 | | −0.85221298 | | −0.52293883 |
| $e$ | 0.1371544 | $i$ | 27.68270 | | −0.16298703 | | +0.23561972 |
| $P$ | 5.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 704 | 0.7− | 0.1+ | 2004 05 10 | 703 | 0.4+ | 0.7+ | 2004 06 09 | 699 | (2.2+ | 1.0+) |
| 2004 04 17 | 704 | 0.1+ | 0.2+ | 2004 05 10 | 703 | 0.9− | 1.3+ | 2004 06 09 | 699 | 0.6− | 0.5− |
| 2004 04 17 | 704 | 0.1− | 1.1+ | 2004 05 10 | 703 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2004 04 17 | 704 | 0.4− | 0.8− | 2004 05 12 | 699 | 0.1− | 0.9− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2004 04 17 | 704 | 0.9+ | 0.3− | 2004 05 12 | 699 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2004 04 17 | 704 | 0.3+ | 0.4− | 2004 05 12 | 699 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.4− |
| 2004 04 17 | 704 | 0.8− | 0.8− | 2004 05 12 | 699 | 0.8+ | 1.0− | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2004 04 17 | 704 | 0.1− | 0.4+ | 2004 05 23 | 704 | 0.4+ | 0.7− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2004 04 20 | 704 | 0.2+ | 0.3+ | 2004 05 23 | 704 | 0.4− | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2004 04 20 | 704 | 0.4+ | 0.2+ | 2004 05 23 | 704 | 0.4+ | 0.7+ | 2006 11 13 | G96 | 0.2− | 0.1− |
| 2004 04 20 | 704 | 0.0 | 0.2− | 2004 05 23 | 704 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 2004 04 20 | 704 | 0.3− | 0.2− | 2004 05 23 | 704 | (1.6+ | 1.4+) | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2004 04 20 | 704 | 0.1− | 0.0 | 2004 06 09 | 699 | 1.3+ | 0.1+ | 2006 11 13 | G96 | 0.5− | 0.2+ |
| 2004 05 10 | 703 | 0.2− | 0.1+ | 2004 06 09 | 699 | (1.2+ | 2.3+) | | | | |

**2004 HB$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.06864 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17374306 | $\omega$ | 44.70859 | | −0.20049223 | | +0.96474903 |
| $a$ | 3.1807612 | $\Omega$ | 214.79583 | | −0.96152548 | | −0.22712943 |
| $e$ | 0.1022763 | $i$ | 17.38186 | | −0.18780738 | | +0.13293431 |
| $P$ | 5.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 691 | 0.3+ | 0.1− | 2004 05 18 | 704 | 0.0 | 0.9− | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2000 09 22 | 691 | 0.2− | 0.3+ | 2004 05 18 | 704 | 1.1+ | 0.5− | 2006 10 11 | 691 | 0.2+ | 0.3− |
| 2000 09 22 | 691 | 0.1− | 0.2− | 2004 05 22 | 704 | 0.3− | 0.6+ | 2006 10 15 | 691 | 0.4+ | 0.5− |
| 2004 04 19 | 704 | 1.0− | 1.0+ | 2004 05 22 | 704 | 1.2− | 0.8− | 2006 10 15 | 691 | 0.1+ | 0.4− |
| 2004 04 19 | 704 | 0.6+ | 0.4− | 2004 05 22 | 704 | 0.6− | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.5+ |
| 2004 04 19 | 704 | 1.0+ | 0.0 | 2004 05 22 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.7+ | 0.5+ |
| 2004 04 19 | 704 | 0.6+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2004 04 19 | 704 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.6− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2004 04 20 | 704 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2004 04 20 | 704 | 0.8− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.6+ |
| 2004 04 20 | 704 | 0.1− | 1.5+ | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2004 04 20 | 704 | 0.5+ | 0.6+ | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2004 04 20 | 704 | 0.5− | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2004 05 18 | 704 | 0.7+ | 0.4+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2004 05 18 | 704 | 0.2− | 0.2− | 2006 10 11 | 691 | 0.9− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.3− |

**2004 HK$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.65779 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.60742978 | $\omega$ | 275.53607 | | −0.56956059 | | −0.80573641 |
| $a$ | 1.3808251 | $\Omega$ | 211.02694 | | +0.82182327 | | −0.55477882 |
| $e$ | 0.0482107 | $i$ | 18.37074 | | +0.01439609 | | −0.20738682 |
| $P$ | 1.62 | $H$ | 19.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 704 | 0.3− | 0.0 | 2004 04 22 | 704 | 0.8+ | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.3− |
| 2004 04 21 | 704 | 0.3− | 0.6+ | 2004 04 22 | 704 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2004 04 21 | 704 | 0.3− | 0.2+ | 2004 04 22 | 704 | 0.3− | 0.4+ | 2006 10 20 | 691 | 1.2− | 1.1+ |
| 2004 04 21 | 246 | 1.4+ | 0.3+ | 2004 04 22 | E14 | 0.9− | 0.8− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 04 21 | 246 | 0.8+ | 0.1+ | 2004 04 22 | E14 | 0.8− | 0.6− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 04 21 | 246 | 0.1− | 0.2− | 2004 04 22 | E14 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 04 21 | 246 | 0.7+ | 0.2+ | 2004 04 25 | 474 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 04 22 | 704 | 0.2+ | 0.1+ | 2004 04 25 | 474 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2004 04 22 | 704 | 0.1− | 0.7+ | 2004 04 25 | 474 | 0.3− | 1.5+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 04 22 | 704 | 0.7− | 0.2+ | 2004 04 25 | 474 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 04 22 | 704 | 0.2+ | 0.2+ | 2004 04 30 | 413 | 0.7− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 04 22 | 704 | 0.2+ | 0.1+ | 2004 04 30 | 413 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2004 04 22 | 704 | 0.4− | 0.1− | 2004 06 08 | 413 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 04 22 | 704 | 0.2+ | 0.3− | 2004 06 08 | 413 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2004 04 22 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 04 22 | 704 | 0.6+ | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.5+ | 1.4− |
| 2004 04 22 | 704 | 0.4− | 0.7− | 2006 10 17 | 691 | 0.1+ | 0.0 | | | | |

**2004 HP$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.00250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26442635 | $\omega$ | 8.65403 | | −0.53037173 | | −0.84706441 |
| $a$ | 2.4039913 | $\Omega$ | 113.38312 | | +0.77554482 | | −0.50120727 |
| $e$ | 0.1347535 | $i$ | 2.15178 | | +0.34239752 | | −0.17684217 |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 704 | 0.1− | 0.3+ | 2004 04 22 | 599 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2004 04 19 | 704 | 0.2+ | 1.2− | 2004 04 22 | 599 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2004 04 19 | 704 | 0.8+ | 0.5+ | 2004 05 13 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2004 04 21 | 599 | 0.3− | 0.2+ | 2004 05 13 | 691 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2004 04 21 | 599 | 0.2− | 0.2+ | 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2004 04 21 | 599 | 0.2+ | 0.4− | 2004 05 21 | 691 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2004 04 21 | 599 | 0.0 | 0.0 | 2004 05 21 | 691 | 0.1+ | 0.2+ | | | | |
| 2004 04 22 | 599 | 0.7− | 0.1+ | 2004 05 21 | 691 | 0.1− | 0.2− | | | | |

**2004 HG$_{15}$ = 2006 SX$_{347}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.30833 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20330242 | $\omega$ | 110.62854 | | +0.17347030 | | −0.98479482 |
| $a$ | 2.8644485 | $\Omega$ | 329.37715 | | +0.89660970 | | +0.16184552 |
| $e$ | 0.0450973 | $i$ | 1.05053 | | +0.40742987 | | +0.06312837 |
| $P$ | 4.85 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 2004 04 16 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2004 04 16 | 691 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.5+ | 0.3+ |
| 2004 04 21 | 291 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.3− | 0.3− |
| 2004 04 21 | 291 | 0.2+ | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 04 21 | 291 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.5− | 0.0 |
| 2004 04 22 | 691 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.4+ | 0.4+ |
| 2004 04 22 | 691 | 0.2− | 0.6− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2004 04 22 | 691 | 0.5+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 11 16 | 691 | 0.4− | 0.5− |
| 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.7+ | 0.2− |
| 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.3+ |

**2004 HT$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.55624 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22026701 | $\omega$ | 17.09093 | | −0.41357281 | | +0.89535439 |
| $a$ | 2.7154163 | $\Omega$ | 228.81868 | | −0.85890404 | | −0.44387586 |
| $e$ | 0.2187734 | $i$ | 12.68115 | | −0.30206187 | | +0.03625925 |
| $P$ | 4.47 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 704 | 0.4− | 0.3+ | 2004 05 16 | 704 | 1.2− | 1.5− | 2004 06 10 | 703 | 0.9− | 0.1− |
| 2004 04 17 | 704 | 0.2+ | 0.2− | 2004 05 16 | 704 | 0.0 | 0.2− | 2004 06 14 | 704 | 0.1+ | 0.3− |
| 2004 04 17 | 704 | 1.2− | 0.7− | 2004 05 16 | 704 | 0.1+ | 0.2− | 2004 06 14 | 704 | 0.2+ | 0.1+ |
| 2004 04 17 | 704 | 0.6− | 0.0 | 2004 05 18 | 704 | 1.5+ | 0.5+ | 2004 06 14 | 704 | 1.1+ | 0.2+ |
| 2004 04 21 | 704 | 0.6− | 0.2+ | 2004 05 18 | 704 | 1.1+ | 0.2+ | 2004 06 14 | 704 | 0.5− | 0.8+ |
| 2004 04 21 | 704 | 0.4+ | 0.6+ | 2004 05 18 | 704 | 0.3+ | 0.1+ | 2005 09 01 | 644 | 0.1+ | 0.3+ |
| 2004 04 21 | 704 | 0.1+ | 0.6+ | 2004 05 18 | 704 | 0.9+ | 0.4+ | 2005 09 01 | 644 | 0.3− | 0.3+ |
| 2004 04 25 | 704 | 0.4+ | 0.5− | 2004 05 18 | 704 | 0.5+ | 0.3+ | 2005 09 01 | 644 | 0.0 | 0.0 |
| 2004 04 25 | 704 | 0.1− | 0.4− | 2004 05 23 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2004 04 25 | 704 | 0.5− | 0.8+ | 2004 05 23 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 704 | 0.0 | 0.5− | 2004 05 23 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2004 04 25 | 704 | 0.2+ | 0.2+ | 2004 05 27 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2004 04 29 | 608 | 0.6+ | 0.2+ | 2004 05 27 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3− | 0.4+ |
| 2004 04 29 | 608 | (2.2+ | 0.1+) | 2004 05 27 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.8− | 0.0 |
| 2004 04 29 | 608 | (1.7+ | 0.2+) | 2004 05 29 | 703 | 1.3− | 0.3− | 2006 11 17 | G96 | 0.3− | 0.5+ |
| 2004 05 15 | 704 | 0.1+ | 0.0 | 2004 05 29 | 703 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.3+ |
| 2004 05 15 | 704 | 0.1− | 0.2− | 2004 05 29 | 703 | 0.6+ | 1.3+ | 2006 11 20 | G96 | 0.0 | 0.2+ |
| 2004 05 15 | 704 | (1.6+ | 0.7+) | 2004 05 29 | 703 | 0.0 | 0.6− | 2006 11 20 | G96 | 0.4+ | 0.1− |
| 2004 05 15 | 704 | 0.6+ | 0.1− | 2004 06 10 | 703 | 0.0 | 0.7− | 2006 11 20 | G96 | 0.8+ | 1.5− |
| 2004 05 16 | 704 | 0.1+ | 0.4− | 2004 06 10 | 703 | 0.6− | 0.9− | 2006 11 20 | G96 | 0.4+ | 0.4+ |
| 2004 05 16 | 704 | 0.1− | 0.4− | 2004 06 10 | 703 | 0.4− | 0.3+ | | | | |

**2004 HR$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.75090 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21762918 | $\omega$ | 324.08800 | | −0.84545205 | | +0.52116503 |
| $a$ | 2.7373141 | $\Omega$ | 247.72439 | | −0.45586643 | | −0.81800897 |
| $e$ | 0.2228433 | $i$ | 7.23932 | | −0.27820250 | | −0.24340979 |
| $P$ | 4.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 704 | 0.0 | 0.3− | 2004 04 25 | 704 | 0.4− | 0.4+ | 2004 05 19 | 704 | 0.1+ | 0.1− |
| 2004 04 17 | 704 | 0.3− | 0.2− | 2004 04 25 | 704 | 0.7− | 0.1+ | 2004 05 19 | 704 | 0.3− | 0.3+ |
| 2004 04 17 | 704 | 0.1− | 0.3− | 2004 04 25 | 704 | 0.2− | 0.3− | 2004 06 09 | 703 | 0.4− | 1.3− |
| 2004 04 17 | 704 | 0.0 | 0.1+ | 2004 05 09 | 703 | 0.5+ | 0.2− | 2004 06 09 | 703 | 0.3− | 0.3− |
| 2004 04 17 | 704 | 1.1− | 0.4− | 2004 05 09 | 703 | 0.2+ | 0.1− | 2004 06 09 | 703 | 0.0 | 0.3− |
| 2004 04 17 | 704 | 0.3− | 0.2− | 2004 05 09 | 703 | 0.0 | 0.8+ | 2004 06 09 | 703 | 0.2− | 1.8− |
| 2004 04 17 | 704 | 0.2− | 0.2− | 2004 05 09 | 703 | 0.1− | 0.1+ | 2004 06 14 | 704 | 0.4+ | 0.5− |
| 2004 04 17 | 704 | 0.0 | 0.2− | 2004 05 14 | 699 | 0.8+ | 1.0+ | 2004 06 14 | 704 | 0.8− | 0.4− |
| 2004 04 17 | 704 | 0.7− | 0.0 | 2004 05 14 | 699 | 0.2− | 0.2− | 2004 06 14 | 704 | 0.6− | 0.4+ |
| 2004 04 17 | 704 | 0.1+ | 0.5− | 2004 05 14 | 699 | 0.4+ | 0.1− | 2004 06 14 | 704 | 0.1+ | 0.3+ |
| 2004 04 17 | E12 | 1.0+ | 0.3− | 2004 05 14 | 699 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.1+ |
| 2004 04 17 | E12 | 0.7+ | 0.4− | 2004 05 15 | 704 | 1.1+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 04 17 | E12 | 0.8+ | 0.7− | 2004 05 15 | 704 | 0.7+ | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2004 04 17 | E12 | 0.2+ | 0.3− | 2004 05 15 | 704 | 0.8+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2004 04 21 | 704 | 1.3− | 1.4+ | 2004 05 15 | 704 | 0.3+ | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2004 04 21 | 704 | 1.3+ | 1.0− | 2004 05 15 | 704 | 0.1− | 1.0+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2004 04 21 | 704 | 1.0− | 0.9+ | 2004 05 19 | 704 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2004 04 25 | 704 | 0.2− | 0.6+ | 2004 05 19 | 704 | 0.5+ | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2004 04 25 | 704 | 0.5− | 0.2+ | 2004 05 19 | 704 | 0.1+ | 0.3+ | | | | |

**2004 HQ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.69973 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24055675 | $\omega$ | 44.40940 | | +0.38585531 | | −0.92133496 |
| $a$ | 2.5604975 | $\Omega$ | 23.01961 | | +0.80900753 | | +0.31315970 |
| $e$ | 0.1606084 | $i$ | 6.97893 | | +0.44342136 | | +0.23037553 |
| $P$ | 4.10 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 16 | 704 | 0.0 | 0.2− | 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | 644 | 0.1− | 0.0 |
| 1999 01 16 | 704 | 1.2− | 2.0− | 2004 04 16 | 691 | 0.1+ | 0.1− | 2006 11 17 | 644 | 0.1− | 0.1− |
| 1999 01 16 | 704 | 0.4+ | 1.0− | 2004 04 16 | 691 | 0.4− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.2− |
| 1999 01 16 | 704 | 0.3+ | 1.4− | 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.9+ |
| 2002 11 12 | 704 | 1.0+ | 0.0 | 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 11 12 | 704 | 1.2+ | 0.9+ | 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2002 11 12 | 704 | 0.9+ | 0.6− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2002 11 12 | 704 | 1.4+ | 0.3− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.1− | 1.1+ |
| 2002 12 05 | 704 | 1.3− | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | (0.3− | 1.5+) |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 11 15 | 704 | 1.0+ | 0.2+ | 2006 11 22 | 704 | 0.5− | 1.0+ |
| 2002 12 05 | 704 | 1.1− | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.6− | 0.7+ |
| 2002 12 15 | 704 | (2.0− | 0.6+) | 2006 11 15 | 704 | (0.4+ | 2.5+) | 2006 11 22 | 704 | 0.9− | 0.1+ |
| 2002 12 15 | 704 | (1.8− | 0.5+) | 2006 11 15 | 704 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.4− | 0.3− |
| 2002 12 15 | 704 | (2.1− | 0.5+) | 2006 11 15 | 704 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2002 12 15 | 704 | 0.6− | 0.1+ | 2006 11 15 | 704 | (2.1− | 1.1+) | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2003 01 04 | 704 | 0.5+ | 0.7− | 2006 11 15 | 704 | 1.3+ | 1.0+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2003 01 04 | 704 | (1.7+ | 1.2−) | 2006 11 15 | 704 | 0.1− | 1.1+ | 2006 11 29 | 704 | 0.8− | 0.9+ |
| 2003 01 04 | 704 | 0.0 | 0.4− | 2006 11 16 | 704 | (0.2+ | 1.9+) | 2006 11 29 | 704 | 0.9− | 0.4− |
| 2003 01 04 | 704 | 0.2− | 0.9− | 2006 11 16 | 704 | 0.2− | 0.6+ | 2006 11 29 | 704 | 0.2− | 0.3+ |
| 2004 03 23 | 291 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.8+ |
| 2004 03 23 | 291 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.6+ |
| 2004 03 23 | 291 | 0.3+ | 0.3+ | 2006 11 16 | 704 | 0.6+ | 0.2+ | | | | |

**2004 HR$_{23}$ = 2006 UL$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.09195 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21985216 | $\omega$ | 85.79271 | | −0.35725137 | | −0.92766776 |
| $a$ | 2.7188310 | $\Omega$ | 25.97855 | | +0.72794157 | | −0.34942514 |
| $e$ | 0.1597435 | $i$ | 14.36102 | | +0.58521152 | | −0.13166093 |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2004 04 16 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | 1.3− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.3+ |
| 2004 04 16 | 691 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.1− | 1.3+ | 2006 10 18 | 106 | 1.3+ | 0.3+ |
| 2004 04 22 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.6+ | 2006 10 18 | 106 | 0.0 | 0.0 |
| 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 18 | 106 | 0.1+ | 1.5− |
| 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 18 | 106 | 0.4− | 0.8− |
| 2004 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2004 04 30 | 691 | 0.3− | 0.3+ | 2006 09 30 | 703 | 2.6+ | 0.5− | 2006 10 21 | 644 | 0.6− | 0.4+ |
| 2004 04 30 | 691 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.3− | 1.0− | 2006 10 21 | 644 | 0.4− | 0.5+ |

**2004 HS$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.42114 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18187662 | $\omega$ | 225.57677 | | −0.43651027 | | +0.89917705 |
| $a$ | 3.0852105 | $\Omega$ | 18.60888 | | −0.79576859 | | −0.36996703 |
| $e$ | 0.0985998 | $i$ | 5.51173 | | −0.41977509 | | −0.23367720 |
| $P$ | 5.42 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 291 | 0.5+ | 0.3+ | 2004 04 22 | 691 | 0.4+ | 0.4− | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2004 03 23 | 291 | 0.5− | 0.0 | 2004 04 22 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4+ |
| 2004 03 23 | 291 | 0.2− | 0.3+ | 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.3+ |
| 2004 04 16 | 691 | 0.2+ | 0.0 | 2004 05 13 | 691 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.2− |
| 2004 04 16 | 691 | 0.1+ | 0.3− | 2004 05 13 | 691 | 0.3− | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2004 04 16 | 691 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.2− | 0.4− | | | | |
| 2004 04 22 | 691 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.3− | 0.0 | | | | |

**2004 HH$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.95861 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23483155 | $\omega$ | 36.36127 | | +0.30750150 | | −0.93880019 |
| $a$ | 2.6019468 | $\Omega$ | 36.46499 | | +0.79979352 | | +0.16661373 |
| $e$ | 0.0786451 | $i$ | 15.14056 | | +0.51553191 | | +0.30148644 |
| $P$ | 4.20 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.8− | 0.6− | 2004 04 16 | 644 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.3− | 0.5+ |
| 2004 03 19 | 704 | 0.6+ | 0.8+ | 2004 04 22 | 704 | 0.4− | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 0.6+ | 0.2+ | 2004 04 22 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.0 | 0.6− |
| 2004 03 19 | 704 | 0.0 | 0.2+ | 2004 04 22 | 704 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.2− |
| 2004 03 19 | 704 | 1.0− | 0.7− | 2004 05 15 | 691 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.8+ | 0.8+ |
| 2004 03 28 | 704 | 0.4+ | 0.2− | 2004 05 15 | 691 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.1+ | 1.0+ |
| 2004 03 28 | 704 | 0.4+ | 0.1− | 2004 05 15 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.2− |
| 2004 03 28 | 704 | 0.3− | 0.3+ | 2004 05 16 | 704 | 0.4+ | 0.2− | 2006 11 22 | 703 | 0.5+ | 0.5− |
| 2004 03 28 | 704 | 0.3+ | 0.7− | 2004 05 16 | 704 | 0.1− | 0.8− | 2006 11 22 | 703 | 1.0− | 0.2+ |
| 2004 04 16 | 644 | 0.4+ | 0.1+ | 2004 05 16 | 704 | 0.5− | 0.8− | 2006 11 22 | 703 | 0.2+ | 0.8− |
| 2004 04 16 | 644 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.2− | | | | |

**2004 HT$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.19248 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26274696 | $\omega$ | 112.78743 | −0.57423341 | | −0.81851539 | |
| $a$ | 2.4142241 | $\Omega$ | 12.30230 | +0.71886484 | | −0.51403493 | |
| $e$ | 0.1438025 | $i$ | 4.57265 | +0.39177715 | | −0.25651635 | |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 1.1+ | 0.2+ | 2004 04 19 | 691 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 1.0+ | 0.3+ | 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.6+ | 0.2+ | 2004 04 19 | 691 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2004 03 18 | 704 | 0.3− | 1.0− | 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 03 18 | 704 | 0.7+ | 0.6+ | 2004 04 22 | 691 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2004 03 27 | 704 | 1.0− | 0.1+ | 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2004 03 27 | 704 | 0.3− | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2004 03 27 | 704 | 0.5− | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.1− | | | | |
| 2004 03 27 | 704 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.2− | | | | |

**2004 HW$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.00214 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18034522 | $\omega$ | 161.52223 | −0.80678317 | | +0.56826990 | |
| $a$ | 3.1026513 | $\Omega$ | 54.19099 | −0.56412820 | | −0.65945835 | |
| $e$ | 0.2174700 | $i$ | 11.50652 | −0.17567096 | | −0.49212194 | |
| $P$ | 5.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 31 | 704 | 0.1+ | 0.5− | 2004 05 01 | 703 | 1.7+ | 0.7+ | 2004 05 21 | 704 | 0.9− | 0.9− |
| 2004 03 31 | 704 | 0.2− | 0.2− | 2004 05 01 | 703 | 0.9+ | 0.3− | 2004 05 21 | 704 | 1.1− | 1.1− |
| 2004 03 31 | 704 | 0.1− | 0.2− | 2004 05 11 | 699 | 0.1− | 0.6− | 2004 05 21 | 704 | 1.4− | 0.3− |
| 2004 03 31 | 704 | 0.3− | 0.6− | 2004 05 11 | 699 | 0.6− | 0.5− | 2004 06 14 | 704 | 0.4+ | 1.1+ |
| 2004 04 19 | 704 | 0.1− | 0.3− | 2004 05 11 | 699 | 0.5− | 0.1+ | 2004 06 14 | 704 | 0.3+ | 0.0 |
| 2004 04 19 | 704 | 0.1− | 0.2+ | 2004 05 11 | 699 | 1.2− | 0.2− | 2004 06 14 | 704 | 1.4+ | 0.2+ |
| 2004 04 19 | 704 | 0.1− | 0.4+ | 2004 05 15 | 704 | 0.1+ | 0.0 | 2004 06 14 | 704 | 1.4+ | 0.3+ |
| 2004 04 19 | 704 | 0.2+ | 0.4+ | 2004 05 15 | 704 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.7− |
| 2004 04 19 | 704 | 0.7− | 0.2+ | 2004 05 15 | 704 | 0.5− | 0.7+ | 2006 10 02 | G96 | 0.4+ | 0.2+ |
| 2004 04 22 | 704 | 0.1+ | 0.4+ | 2004 05 15 | 704 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2004 04 22 | 704 | 0.5+ | 0.7+ | 2004 05 15 | 704 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2004 04 22 | 704 | 0.2+ | 0.5− | 2004 05 17 | 704 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2004 04 22 | 704 | 0.4− | 0.8+ | 2004 05 17 | 704 | 0.0 | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2004 04 22 | 704 | 0.6+ | 0.7+ | 2004 05 17 | 704 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2004 05 01 | 703 | 0.1− | 0.5− | 2004 05 17 | 704 | 0.1+ | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 05 01 | 703 | 0.8+ | 1.3− | 2004 05 21 | 704 | 0.9− | 0.2− | | | | |

**2004 HZ$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.11146 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23205687 | $\omega$ | 134.39210 | −0.97534131 | | +0.12009645 | |
| $a$ | 2.6226465 | $\Omega$ | 53.38056 | −0.20020678 | | −0.83452717 | |
| $e$ | 0.1014579 | $i$ | 13.33843 | +0.09287938 | | −0.53771856 | |
| $P$ | 4.25 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 11 | 644 | 0.6+ | 0.4− | 2004 04 22 | 704 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.4+ |
| 2004 04 11 | 644 | 0.2− | 0.2+ | 2004 04 25 | 703 | 0.4+ | 0.2− | 2006 11 10 | 691 | 0.9− | 0.2− |
| 2004 04 11 | 644 | 0.1+ | 0.0 | 2004 04 25 | 703 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2004 04 11 | 644 | 0.1− | 0.3+ | 2004 04 25 | 703 | 0.5+ | 0.4+ | 2006 11 20 | 703 | 0.0 | 0.7+ |
| 2004 04 11 | 644 | 0.3+ | 0.3+ | 2004 04 25 | 703 | 0.7+ | 0.3+ | 2006 11 20 | 703 | 0.0 | 0.9− |
| 2004 04 11 | 644 | 0.1+ | 0.3+ | 2004 05 29 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 1.0+ | 0.4+ |
| 2004 04 20 | 704 | 1.4− | 0.3− | 2004 05 29 | 691 | 0.1− | 0.2+ | 2006 11 20 | 703 | 0.0 | 0.3+ |
| 2004 04 20 | 691 | 0.2− | 0.0 | 2004 05 29 | 691 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2004 04 20 | 704 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2004 04 20 | 704 | 1.4+ | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 04 20 | 691 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.6− | 2006 12 01 | G96 | 0.1− | 0.8− |
| 2004 04 20 | 704 | 0.1− | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.8− | 0.2− |
| 2004 04 20 | 691 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2004 04 22 | 704 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.7+ | 0.1− | 2006 12 01 | G96 | 0.5− | 0.5− |
| 2004 04 22 | 704 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.0 | | | | |
| 2004 04 22 | 704 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.2− | | | | |

**2004 HH$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.95632 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21122226 | $\omega$ | 336.21027 | −0.96248621 | | +0.27061345 | |
| $a$ | 2.7923912 | $\Omega$ | 219.50714 | −0.24370434 | | −0.89414498 | |
| $e$ | 0.1152990 | $i$ | 1.77579 | −0.11928319 | | −0.35675357 | |
| $P$ | 4.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 291 | 0.2+ | 0.3+ | 2004 05 13 | 691 | 0.7+ | 0.1− | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 2004 04 21 | 291 | 0.2+ | 0.2+ | 2004 05 21 | 691 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.4+ |
| 2004 04 21 | 291 | 0.3+ | 0.0 | 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.5+ |
| 2004 04 22 | 691 | 0.4− | 0.1− | 2004 05 21 | 691 | 0.5− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.3+ |
| 2004 04 22 | 691 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.6− |
| 2004 04 22 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 1.2+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2004 05 13 | 691 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 1.4+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 | | | | |

**2004 HZ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.92680 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23543044 | $\omega$ | 197.53163 | −0.98452140 | | +0.17450233 | |
| $a$ | 2.5975324 | $\Omega$ | 352.46148 | −0.14216911 | | −0.84961796 | |
| $e$ | 0.1241300 | $i$ | 7.14877 | −0.10249664 | | −0.49769293 | |
| $P$ | 4.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 691 | 0.3+ | 0.1+ | 2004 04 23 | 428 | 0.4+ | 0.6− | 2004 05 13 | 703 | (2.9− | 1.9−) |
| 2001 08 28 | 691 | 0.3− | 0.0 | 2004 04 23 | 428 | 0.4+ | 0.6− | 2004 05 13 | 703 | (0.2+ | 2.1−) |
| 2001 08 28 | 691 | 0.1− | 0.3+ | 2004 04 23 | 428 | 0.1− | 0.4− | 2004 05 13 | 703 | 0.5− | 0.2+ |
| 2004 04 14 | E12 | 0.6− | 0.3+ | 2004 04 23 | 428 | 0.1+ | 0.4− | 2004 05 13 | 703 | 0.4+ | 0.2+ |
| 2004 04 14 | E12 | 0.2− | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.3− | 2005 10 06 | G96 | 0.1+ | 0.4− |
| 2004 04 14 | E12 | 0.7− | 0.1− | 2004 04 25 | 704 | 0.1− | 0.0 | 2005 10 06 | G96 | 0.3− | 0.0 |
| 2004 04 14 | E12 | 0.2− | 0.1− | 2004 04 25 | 704 | 0.2+ | 0.1+ | 2005 10 06 | G96 | 0.4+ | 0.2− |
| 2004 04 21 | 428 | 0.6− | 0.2+ | 2004 04 25 | 704 | 0.4+ | 0.0 | 2005 10 06 | G96 | 0.4+ | 0.1− |
| 2004 04 21 | 428 | 0.0 | 0.1+ | 2004 04 25 | 704 | 0.3+ | 0.4− | 2006 11 22 | 703 | 0.5− | 0.3+ |
| 2004 04 22 | 428 | 0.4+ | 0.3− | 2004 05 12 | E12 | 0.5+ | 0.8+ | 2006 11 22 | 703 | 0.2+ | 0.1+ |
| 2004 04 22 | 428 | 0.1+ | 0.5− | 2004 05 12 | E12 | 0.0 | 0.4+ | 2006 11 22 | 703 | (3.4− | 1.4−) |
| 2004 04 22 | 428 | 0.5− | 0.3− | 2004 05 12 | E12 | 0.9+ | 0.4+ | 2006 11 22 | 703 | 0.9− | 0.1− |
| 2004 04 22 | E12 | 0.0 | 1.1+ | 2004 05 12 | E12 | 1.4+ | 0.5− | 2006 11 23 | G96 | 0.1+ | 0.3+ |
| 2004 04 22 | E12 | 0.3+ | 0.5+ | 2004 05 13 | 699 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.1− | 0.3+ |
| 2004 04 22 | E12 | 1.0− | 0.8+ | 2004 05 13 | 699 | 0.7− | 0.7+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2004 04 22 | E12 | 0.3− | 0.1+ | 2004 05 13 | 699 | 0.4− | 0.4+ | 2006 11 23 | G96 | 0.5+ | 0.6+ |
| 2004 04 23 | 428 | 0.0 | 0.1− | 2004 05 13 | 699 | 0.3+ | 0.0 | | | | |

**2004 HH$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.33359 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.61347726 | $\omega$ | 174.42706 | −0.81378253 | | +0.49834127 | |
| $a$ | 1.3717356 | $\Omega$ | 40.39979 | −0.54944803 | | −0.49205398 | |
| $e$ | 0.1134186 | $i$ | 27.47554 | −0.18938016 | | −0.71381991 | |
| $P$ | 1.61 | $H$ | 20.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 23 | 608 | 0.1− | 0.1− | 2004 04 25 | J95 | 0.3+ | 0.2+ | 2004 04 27 | 176 | 0.5− | 0.0 |
| 2004 04 23 | 608 | 0.4+ | 0.2+ | 2004 04 25 | J95 | 0.0 | 0.0 | 2004 04 27 | 176 | 0.5− | 0.0 |
| 2004 04 23 | 608 | 0.2+ | 0.3+ | 2004 04 25 | J95 | 0.2− | 0.1− | 2004 04 27 | 176 | 0.5− | 0.0 |
| 2004 04 23 | J95 | 0.1+ | 0.2− | 2004 04 25 | 704 | 0.7+ | 0.7+ | 2004 05 01 | 926 | 0.3+ | 0.6+ |
| 2004 04 23 | J95 | 0.3− | 0.2− | 2004 04 25 | 704 | 0.0 | 1.0+ | 2004 05 01 | 926 | 0.1+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 23 | J95 | 0.1− | 0.1− | 2004 04 25 | 704 | 0.2+ | 0.5+ | 2004 05 01 | 926 | 0.1+ | 0.1+ | | |
| 2004 04 24 | 651 | 0.4− | 0.3+ | 2004 04 25 | 704 | 0.1+ | 0.3+ | 2004 05 05 | 448 | 0.5+ | 0.0 | | |
| 2004 04 24 | 651 | 0.2− | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.3+ | 2004 05 05 | 448 | 0.5− | 0.7+ | | |
| 2004 04 24 | 651 | 0.1+ | 0.1− | 2004 04 25 | E14 | 0.7− | 0.4− | 2004 05 05 | 448 | 0.4− | 0.5+ | | |
| 2004 04 24 | G70 | 0.2+ | 0.4+ | 2004 04 25 | E14 | 0.4− | 1.1+ | 2004 05 05 | 649 | 0.7+ | 0.6+ | | |
| 2004 04 24 | 704 | 0.5+ | 0.1+ | 2004 04 25 | E14 | 0.1− | 0.4+ | 2004 05 05 | 649 | 0.2− | 1.0+ | | |
| 2004 04 24 | G70 | 1.0+ | 0.4+ | 2004 04 25 | A83 | 0.6− | 0.2− | 2004 05 05 | 649 | 0.8+ | 0.9− | | |
| 2004 04 24 | 704 | 0.0 | 0.1− | 2004 04 25 | A83 | 0.5− | 0.3− | 2004 05 09 | E14 | 0.1+ | 0.6− | | |
| 2004 04 24 | G70 | 0.8+ | 1.2+ | 2004 04 26 | 699 | 0.8+ | 0.3+ | 2004 05 09 | E14 | 0.0 | 0.5− | | |
| 2004 04 24 | 704 | 0.4− | 0.4+ | 2004 04 26 | 699 | 0.3− | 0.0 | 2004 05 09 | E14 | 0.1− | 0.3+ | | |
| 2004 04 24 | 704 | 0.3+ | 0.1+ | 2004 04 26 | 699 | 0.1− | 0.3− | 2004 05 10 | E14 | 0.0 | 0.6− | | |
| 2004 04 24 | 926 | 0.4+ | 1.4+ | 2004 04 26 | 699 | 0.2− | 0.3− | 2004 05 10 | E14 | 0.3+ | 0.4− | | |
| 2004 04 24 | 926 | 0.1− | 0.1+ | 2004 04 26 | 704 | 0.5− | 0.0 | 2004 05 10 | E14 | 0.3+ | 0.1− | | |
| 2004 04 24 | 926 | 0.8− | 0.4− | 2004 04 26 | 704 | 0.4+ | 0.0 | 2004 05 13 | E14 | 0.8+ | 0.1− | | |
| 2004 04 24 | 608 | 0.9− | 0.6− | 2004 04 26 | 704 | 0.0 | 0.3− | 2004 05 13 | E14 | 0.5+ | 0.3− | | |
| 2004 04 24 | 608 | 0.5+ | 0.5− | 2004 04 26 | 704 | 0.4+ | 0.1+ | 2004 05 13 | E14 | 0.8+ | 0.6− | | |
| 2004 04 24 | 608 | 0.1+ | 0.6− | 2004 04 26 | 704 | 0.2+ | 0.1− | 2004 06 07 | 413 | 1.5+ | 0.3+ | | |
| 2004 04 24 | J87 | 0.3+ | 0.4− | 2004 04 26 | 704 | 0.6+ | 0.5− | 2004 06 07 | 413 | 1.2+ | 0.2+ | | |
| 2004 04 24 | J87 | 1.3− | 0.5− | 2004 04 26 | 704 | 0.3+ | 0.1− | 2006 10 15 | 291 | 0.1− | 0.1+ | | |
| 2004 04 24 | J87 | 0.0 | 0.1+ | 2004 04 26 | 704 | 1.0+ | 0.7+ | 2006 10 15 | 291 | 1.2− | 1.4− | | |
| 2004 04 24 | 026 | 1.1+ | 0.2+ | 2004 04 26 | 704 | 0.9+ | 0.0 | 2006 10 15 | 291 | 0.0 | 0.8− | | |
| 2004 04 25 | 859 | 0.7− | 0.4− | 2004 04 26 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 291 | 1.3+ | 2.8+ | | |
| 2004 04 25 | 859 | 0.2− | 0.1− | 2004 04 27 | 176 | 0.5− | 0.1− | 2006 10 16 | 291 | 1.9− | 2.6+ | | |
| 2004 04 25 | 859 | 0.7− | 0.2− | 2004 04 27 | 176 | 0.5− | 0.1− | 2006 10 16 | 291 | 0.4+ | 0.8− | | |

### 2004 $HR_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.81907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23866678 | $\omega$ | 133.07423 | | −0.94505774 | +0.26430901 | |
| $a$ | 2.5739972 | $\Omega$ | 63.10524 | | −0.32546550 | −0.81587401 | |
| $e$ | 0.1218756 | $i$ | 12.45669 | | +0.03062803 | −0.51428625 | |
| $P$ | 4.13 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 704 | 0.7− | 0.3− | 2004 05 13 | 699 | 0.4+ | 0.5− | 2006 10 28 | G96 | 0.6+ | 0.3− | | |
| 2004 04 16 | 704 | 0.3− | 0.1+ | 2004 05 13 | 699 | 0.4+ | 1.0+ | 2006 10 28 | G96 | 0.3+ | 0.2+ | | |
| 2004 04 16 | 704 | 0.4− | 0.0 | 2004 05 13 | 699 | 0.1− | 0.5− | 2006 11 11 | 691 | 0.5− | 0.1+ | | |
| 2004 04 16 | 704 | 0.4+ | 0.6+ | 2004 05 13 | 699 | 0.1− | 1.0− | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2004 04 23 | 704 | 0.5+ | 1.0+ | 2004 05 18 | 704 | 0.6+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.0 | | |
| 2004 04 23 | 704 | 0.8+ | 0.3+ | 2004 05 18 | 704 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.6− | 0.2− | | |
| 2004 04 23 | 704 | 0.5+ | 0.9+ | 2004 05 18 | 704 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.4− | | |
| 2004 04 24 | 704 | 0.8− | 0.2+ | 2004 05 18 | 704 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2004 04 24 | 704 | 0.8− | 0.3+ | 2004 05 18 | 704 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.7+ | 0.1− | | |
| 2004 04 24 | 704 | 0.3− | 0.8− | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2004 04 24 | 704 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 15 | 691 | 0.4− | 0.3+ | | |
| 2004 04 24 | 704 | 0.9− | 0.1− | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ | | |
| 2004 04 25 | 704 | 0.9− | 0.7− | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2004 04 25 | 704 | (0.3− | 1.7−) | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2004 04 25 | 704 | 0.8− | 1.3− | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2004 05 01 | 703 | 0.8+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.1− | | |
| 2004 05 01 | 703 | 0.3+ | 0.9− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.4− | | |
| 2004 05 01 | 703 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.0 | | |
| 2004 05 01 | 703 | 0.1+ | 0.9+ | 2006 10 28 | G96 | 0.3+ | 0.2+ | | | | | | |

### 2004 $HG_{35}$ = 2006 $TA_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.94223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24186654 | $\omega$ | 54.52148 | | −0.10616363 | −0.99229610 | |
| $a$ | 2.5512451 | $\Omega$ | 41.71685 | | +0.87839154 | −0.12368639 | |
| $e$ | 0.0732754 | $i$ | 5.50663 | | +0.46600171 | +0.00708008 | |
| $P$ | 4.08 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.3+ | 0.4+ | 2004 04 23 | 291 | 0.1− | 0.0 | 2006 10 13 | 291 | 0.2− | 0.1+ | | |
| 2004 03 14 | 691 | 0.3− | 0.4− | 2004 04 23 | 291 | 0.1− | 0.1− | 2006 10 13 | 291 | 0.6− | 0.0 | | |
| 2004 03 14 | 691 | 0.1− | 0.1− | 2004 04 23 | 291 | 0.1− | 0.2− | 2006 10 13 | 291 | 0.0 | 0.2− | | |
| 2004 03 28 | 691 | 0.0 | 0.2− | 2006 10 12 | 291 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.8− | 0.1+ | | |
| 2004 03 28 | 691 | 0.1+ | 0.2− | 2006 10 12 | 291 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2004 03 28 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.0 | | |
| 2004 04 20 | 691 | 0.3− | 0.4+ | 2006 10 12 | 291 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2− | | |
| 2004 04 20 | 691 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.1+ | | |
| 2004 04 20 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.4+ | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.2− | | |

### 2004 $HU_{37}$ = 2006 $UP_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.81605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22505810 | $\omega$ | 178.24616 | | −0.99993268 | +0.01137562 | |
| $a$ | 2.6767406 | $\Omega$ | 2.40919 | | −0.01119803 | −0.89443072 | |
| $e$ | 0.2087402 | $i$ | 3.11915 | | −0.00303984 | −0.44706184 | |
| $P$ | 4.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.0 | 0.1+ | 2004 05 15 | 704 | 1.1+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1+ | | |
| 2004 04 22 | 691 | 0.0 | 0.1− | 2004 05 15 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.2+ | | |
| 2004 04 22 | 691 | 0.0 | 0.1− | 2004 05 15 | 704 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− | | |
| 2004 04 23 | E12 | 0.7− | 0.7+ | 2004 05 15 | 704 | 1.1+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.1− | | |
| 2004 04 23 | E12 | 0.1+ | 1.1+ | 2004 05 15 | 704 | 0.9− | 1.0− | 2006 10 28 | 691 | 0.2− | 0.3+ | | |
| 2004 04 23 | E12 | (0.9− | 2.8+) | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.0 | | |
| 2004 04 23 | E12 | 0.6− | 0.6+ | 2006 10 19 | 691 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.2− | | |

### 2004 $HA_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.41404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17921801 | $\omega$ | 294.79846 | | −0.78634658 | −0.61402933 | |
| $a$ | 3.1156473 | $\Omega$ | 207.47348 | | +0.60658619 | −0.74652655 | |
| $e$ | 0.0541661 | $i$ | 8.47893 | | +0.11709934 | −0.25625394 | |
| $P$ | 5.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 291 | 0.2− | 0.3+ | 2004 05 14 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ | | |
| 2004 04 20 | 291 | 0.4− | 0.3+ | 2004 05 14 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.4+ | | |
| 2004 04 20 | 291 | 0.6− | 0.4+ | 2004 05 14 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ | | |
| 2004 04 24 | 691 | 0.1+ | 0.1+ | 2005 06 11 | 691 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.3− | 0.2+ | | |
| 2004 04 24 | 691 | 0.3+ | 0.0 | 2005 06 11 | 691 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2004 04 24 | 691 | 0.2+ | 0.2+ | 2005 06 11 | 691 | 0.0 | 0.6− | 2006 10 01 | 691 | 0.2− | 0.1+ | | |

### 2004 $HK_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.89893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22466447 | $\omega$ | 72.53874 | | −0.35338867 | −0.92612686 | |
| $a$ | 2.6798663 | $\Omega$ | 38.97570 | | +0.75883299 | −0.36626921 | |
| $e$ | 0.0270496 | $i$ | 12.10761 | | +0.54707307 | −0.09019924 | |
| $P$ | 4.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 644 | 0.0 | 1.0− | 2004 05 12 | 699 | 0.9− | 1.1− | 2006 10 23 | 691 | 0.3− | 0.3+ | | |
| 2003 01 10 | 644 | 0.2+ | 0.9− | 2004 05 12 | 699 | 0.4− | 0.5− | 2006 10 23 | 691 | 0.0 | 0.3+ | | |
| 2003 01 10 | 644 | 0.2− | 0.8− | 2004 05 12 | 699 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 22 | 704 | 0.9− | 0.8+ | 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.8− | 0.0 | | |
| 2004 03 22 | 704 | (2.0− | 1.2+) | 2004 05 13 | 691 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.4− | 0.3+ | | |
| 2004 03 22 | 704 | 0.6− | 0.3+ | 2004 05 13 | 691 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.7− | 0.4+ | | |
| 2004 03 31 | 704 | 0.5+ | 0.3+ | 2004 05 21 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 0.2− | 1.3− | | |
| 2004 03 31 | 704 | 1.1+ | 0.4+ | 2004 05 21 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.7+ | | |
| 2004 03 31 | 704 | 0.4+ | 0.2− | 2004 05 21 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.6+ | | |
| 2004 04 20 | 704 | 0.8− | 0.7− | 2004 05 29 | 691 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.8− | 1.2+ | | |
| 2004 04 20 | 704 | (2.0− | 0.4−) | 2004 05 29 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.1− | | |
| 2004 04 20 | 704 | 1.4− | 1.2− | 2004 05 29 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.1+ | | |
| 2004 04 20 | 704 | (1.6− | 0.0 ) | 2006 09 30 | G96 | 0.3− | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.2+ | | |
| 2004 04 22 | 704 | 0.5− | 0.9+ | 2006 09 30 | G96 | 0.5− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2004 04 22 | 704 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 1.1+ | 1.1+ | | |
| 2004 04 22 | 704 | (0.9+ | 2.3+) | 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.7+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 703 | 0.8+ | 0.9+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.6− | 0.8+ | | |
| 2004 04 25 | 703 | 1.4+ | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.0 | | |
| 2004 04 25 | 703 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.5+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.4− | | |
| 2004 04 25 | 703 | 0.6− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.4− | | | | | | |
| 2004 05 12 | 699 | 1.0− | 0.1+ | 2006 10 19 | 691 | 0.6+ | 0.1+ | | | | | | |

**2004 HQ$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.61640 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23181807 | $\omega$ | 331.62537 | | −0.95690365 | +0.25245357 | |
| $a$ | 2.6244473 | $\Omega$ | 223.78299 | | −0.21140510 | −0.94442949 | |
| $e$ | 0.1108555 | $i$ | 11.97257 | | −0.19910625 | −0.21052348 | |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 704 | 0.1− | 0.4− | 2004 04 29 | 608 | 0.4+ | 0.3− | 2006 10 22 | G96 | 0.4− | 0.0 | | |
| 2004 04 20 | 704 | 0.6− | 0.3− | 2004 04 29 | 608 | 0.3+ | 0.5− | 2006 10 22 | G96 | 0.2+ | 0.1+ | | |
| 2004 04 20 | 704 | 0.2− | 0.1+ | 2004 05 11 | 699 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.4− | | |
| 2004 04 24 | 691 | 0.1− | 0.1+ | 2004 05 11 | 699 | 0.0 | 0.9− | 2006 11 12 | G96 | 0.0 | 0.5− | | |
| 2004 04 24 | 691 | 0.0 | 0.0 | 2004 05 11 | 699 | 0.3− | 0.9− | 2006 11 12 | G96 | 0.3+ | 0.2− | | |
| 2004 04 24 | 691 | 0.1− | 0.1+ | 2004 05 11 | 699 | 0.0 | 0.6− | 2006 11 12 | G96 | 0.2+ | 0.4− | | |
| 2004 04 25 | 704 | 0.1− | 1.0+ | 2004 05 15 | 704 | 0.5+ | 1.2+ | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2004 04 25 | 704 | 1.0+ | 0.3− | 2004 05 15 | 704 | 0.0 | 0.4− | 2006 11 16 | 691 | 0.5− | 0.9+ | | |
| 2004 04 25 | 704 | 0.2+ | 0.5+ | 2004 05 15 | 704 | 1.1+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2004 04 25 | 704 | 0.6− | 0.4+ | 2004 05 15 | 704 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2004 04 25 | 703 | 0.1+ | 0.6− | 2004 05 27 | 691 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.2− | | |
| 2004 04 25 | 703 | 0.7− | 0.2− | 2004 05 27 | 691 | 0.3− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.2− | | |
| 2004 04 25 | 703 | 0.6+ | 0.6+ | 2004 05 27 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.8+ | 0.1+ | | |
| 2004 04 25 | 703 | (0.2− | 2.1−) | 2006 10 22 | G96 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.8+ | | |
| 2004 04 29 | 608 | 0.2+ | 0.5− | 2006 10 22 | G96 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.9− | | |

**2004 HZ$_{43}$ = 2006 SH$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.49299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21686886 | $\omega$ | 125.17639 | | −0.74382861 | −0.66737593 | |
| $a$ | 2.7437082 | $\Omega$ | 13.08946 | | +0.54889906 | −0.64107373 | |
| $e$ | 0.1385958 | $i$ | 9.26103 | | +0.38135130 | −0.37899056 | |
| $P$ | 4.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 704 | 0.4+ | 0.2+ | 2006 09 25 | 152 | 0.9+ | 0.9− | 2006 10 19 | G96 | 0.4+ | 0.3− | | |
| 2004 04 21 | 704 | 0.6− | 0.7− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.8+ | 0.5− | | |
| 2004 04 21 | 704 | 0.6+ | 0.7− | 2006 09 26 | G96 | 0.5+ | 0.4− | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2004 04 21 | 704 | 0.5+ | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2004 04 21 | 704 | 0.5+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.5+ | | |
| 2004 04 25 | 704 | 0.9− | 0.7+ | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.7− | 0.5+ | | |
| 2004 04 25 | 704 | 1.2− | 0.4− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.6+ | | |
| 2004 04 25 | 704 | 0.5− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2004 04 26 | 704 | 0.5+ | 0.5+ | 2006 09 30 | 691 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.8+ | | |
| 2004 04 26 | 704 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.6+ | | |
| 2004 04 26 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2004 04 26 | 704 | 0.6+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ | | |
| 2004 04 26 | 704 | 0.3− | 0.3− | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2004 04 26 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 2004 04 26 | 704 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2004 04 26 | 704 | 0.9+ | 0.8− | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 2004 04 26 | 704 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.4− | 0.3− | | |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.6− | | |
| 2006 09 25 | 152 | 1.3+ | 0.8+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.2− | 0.1+ | | |
| 2006 09 25 | 152 | (1.6+ | 0.0 ) | 2006 10 19 | G96 | 0.1+ | 0.5− | | | | | | |

**2004 HA$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.32404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22772044 | $\omega$ | 313.56022 | | −0.75377075 | +0.65346158 | |
| $a$ | 2.6558367 | $\Omega$ | 267.36893 | | −0.58111122 | −0.71215228 | |
| $e$ | 0.1850869 | $i$ | 3.98425 | | −0.30682145 | −0.25656793 | |
| $P$ | 4.33 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.1+ | 0.6− | 2004 04 21 | 704 | 0.3+ | 0.8+ | 2004 05 14 | 699 | 0.1+ | 1.5+ | | |
| 1995 02 25 | 691 | 0.1− | 0.3+ | 2004 04 21 | 704 | 0.7− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.1+ | | |
| 1995 02 25 | 691 | 0.1+ | 0.5+ | 2004 04 21 | 704 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.4− | | |
| 1996 06 23 | 691 | 0.0 | 0.4+ | 2004 04 25 | 704 | 0.7+ | 0.3− | 2006 11 01 | G96 | 0.1− | 0.0 | | |
| 1996 06 23 | 691 | 0.4− | 0.5+ | 2004 04 25 | 704 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.2− | 0.1− | | |
| 1996 06 23 | 691 | 0.2+ | 0.2− | 2004 04 25 | 704 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2004 04 13 | 644 | 0.3− | 0.1− | 2004 04 25 | 704 | 0.1− | 0.6− | 2006 11 18 | 691 | 0.1− | 0.2+ | | |
| 2004 04 13 | 644 | 0.2+ | 0.1+ | 2004 04 25 | 704 | 0.5+ | 0.6− | 2006 11 18 | 691 | 0.0 | 0.6+ | | |
| 2004 04 13 | 644 | 0.1+ | 0.4+ | 2004 05 14 | 699 | 0.3+ | 1.3+ | 2006 11 22 | 691 | 0.3− | 0.0 | | |
| 2004 04 21 | 704 | 0.2− | 0.2+ | 2004 05 14 | 699 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.1− | 0.5+ | | |
| 2004 04 21 | 704 | 0.1+ | 0.2− | 2004 05 14 | 699 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.0 | | |

**2004 HB$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.31340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21295365 | $\omega$ | 141.61569 | | −0.85432807 | −0.51948983 | |
| $a$ | 2.7772352 | $\Omega$ | 7.14015 | | +0.43956047 | −0.73855875 | |
| $e$ | 0.1340875 | $i$ | 7.36481 | | +0.27732679 | −0.42972234 | |
| $P$ | 4.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.2− | | |
| 2004 04 21 | 704 | 0.9− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.7+ | 0.2+ | | |
| 2004 04 21 | 704 | 0.5+ | 0.6− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2004 04 21 | 704 | 0.2− | 0.0 | 2006 09 23 | 152 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | | |
| 2004 04 21 | 704 | 0.0 | 0.1+ | 2006 09 23 | 152 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.5+ | 0.4+ | | |
| 2004 04 25 | 704 | 0.1− | 0.1+ | 2006 09 23 | 152 | 0.4+ | 0.4+ | 2006 10 27 | 691 | 1.4− | 0.7+ | | |
| 2004 04 25 | 704 | 0.6+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.0 | | |
| 2004 04 25 | 704 | (2.3− | 0.2+) | 2006 09 26 | 691 | 0.4− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.3− | | |
| 2004 04 25 | 704 | 0.4+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.4− | | |
| 2004 05 14 | 699 | 0.9− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2004 05 14 | 699 | (1.9− | 1.1+) | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.4− | | |
| 2004 05 14 | 699 | 0.6+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2004 05 14 | 699 | 0.1− | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.3− | | | | | | |

**2004 HQ$_{44}$ = 2004 HZ$_{10}$**

Id. Minor Planet Center (d, *MPO* 77916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.25044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23091273 | $\omega$ | 229.36528 | | −0.97954487 | −0.19679943 | |
| $a$ | 2.6313026 | $\Omega$ | 299.24641 | | +0.19607894 | −0.88661847 | |
| $e$ | 0.2032313 | $i$ | 2.75735 | | +0.04522043 | −0.41854232 | |
| $P$ | 4.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 17 | 644 | 0.0 | 0.0 | 2004 05 13 | 644 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2004 04 17 | 644 | 0.2− | 0.0 | 2004 05 13 | 644 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.3+ | 0.3− | | |
| 2004 04 17 | 644 | 0.0 | 0.3− | 2004 05 15 | 704 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2004 04 21 | 704 | 0.3+ | 0.3+ | 2004 05 15 | 704 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.0 | | |
| 2004 04 21 | 704 | 0.4+ | 1.1− | 2004 05 15 | 704 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2004 04 21 | 704 | 0.2− | 0.0 | 2004 05 15 | 704 | 0.9− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2004 04 25 | 704 | 1.2+ | 0.2− | 2004 05 15 | 704 | 1.3− | 0.7+ | 2006 11 13 | 691 | 0.2− | 0.3+ | | |
| 2004 04 25 | 704 | 0.4+ | 0.0 | 2004 05 19 | 704 | 0.6+ | 0.3− | 2006 11 13 | 691 | 0.0 | 0.1+ | | |
| 2004 04 25 | 704 | 0.4+ | 0.4− | 2004 05 19 | 704 | 0.7+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.2+ | | |
| 2004 04 25 | 704 | (1.8+ | 0.2+) | 2004 05 19 | 704 | 0.7+ | 0.2− | 2006 11 18 | G96 | 0.3− | 0.3− | | |
| 2004 04 25 | 704 | 0.4+ | 0.5− | 2004 05 19 | 704 | 1.3+ | 0.2− | 2006 11 18 | G96 | 0.3− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 12 | E12 | 0.2− | 1.3+ | 2006 10 19 | 691 | 0.5− | 0.0 | 2006 11 18 | G96 | 0.3− | 0.1− | | |
| 2004 05 12 | E12 | (0.8− | 1.8+) | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.5− | | |
| 2004 05 12 | E12 | 1.0− | 0.9+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.0 | | |
| 2004 05 12 | E12 | 1.0− | 0.5+ | 2006 10 23 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.3+ | | |
| 2004 05 13 | 699 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.1+ | | |
| 2004 05 13 | 699 | 0.4− | 0.5− | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1+ | | |
| 2004 05 13 | 699 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3+ | | |
| 2004 05 13 | 699 | 0.4− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.3− | 0.0 | | |
| 2004 05 13 | 644 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.4+ | 0.1− | | | | | | |

### 2004 HV$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.34337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26696700 | $\omega$ | 147.28634 | | −0.99659392 | +0.03125543 | |
| $a$ | 2.3887150 | $\Omega$ | 34.75226 | | −0.06508460 | −0.86638618 | |
| $e$ | 0.1852547 | $i$ | 7.69359 | | +0.05064137 | −0.49839552 | |
| $P$ | 3.69 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 699 | 0.3+ | 0.1+ | 2004 04 12 | 644 | 0.2+ | 0.3+ | 2004 04 30 | 291 | 0.7+ | 0.2+ |
| 2004 03 22 | 699 | 1.6− | 0.5− | 2004 04 21 | 704 | 0.3+ | 0.0 | 2004 05 12 | 699 | 0.7− | 0.6− |
| 2004 03 22 | 699 | 0.0 | 1.1− | 2004 04 21 | 704 | 0.4+ | 0.1− | 2004 05 12 | 699 | 0.2− | 0.8− |
| 2004 03 22 | 699 | (3.2− | 1.3+) | 2004 04 21 | 704 | 0.0 | 0.0 | 2004 05 12 | 699 | 0.8+ | 0.2− |
| 2004 03 31 | 704 | 0.4− | 0.7+ | 2004 04 21 | 704 | (1.7− | 0.6−) | 2004 05 12 | 699 | 0.6− | 1.4+ |
| 2004 03 31 | 704 | 0.4+ | 0.3− | 2004 04 25 | 703 | 0.5− | 0.7+ | 2005 12 02 | 695 | 0.5− | 0.7+ |
| 2004 03 31 | 704 | 0.7− | 0.4− | 2004 04 25 | 703 | 0.7− | 0.2− | 2005 12 02 | 695 | 0.4− | 0.7+ |
| 2004 03 31 | 704 | 0.4− | 0.1− | 2004 04 25 | 703 | 0.6− | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.4+ |
| 2004 03 31 | 704 | 0.4+ | 0.0 | 2004 04 25 | 703 | 1.2− | 0.5+ | 2006 11 17 | 691 | 0.2− | 0.5+ |
| 2004 04 12 | 644 | 0.1+ | 0.2+ | 2004 04 30 | 291 | 0.5+ | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.4− |
| 2004 04 12 | 644 | 0.2+ | 0.2+ | 2004 04 30 | 291 | 0.8+ | 0.1− | | | | |

### 2004 HD$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.20638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18407706 | $\omega$ | 57.77186 | | −0.02561616 | +0.98974305 | |
| $a$ | 3.0605744 | $\Omega$ | 211.68860 | | −0.98339334 | −0.05021682 | |
| $e$ | 0.1556545 | $i$ | 15.51841 | | −0.17967011 | +0.13374219 | |
| $P$ | 5.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 704 | 0.5− | 0.4− | 2004 05 15 | 704 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2004 04 21 | 704 | 0.6− | 0.8− | 2004 05 15 | 704 | 1.2+ | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.0 |
| 2004 04 21 | 704 | 0.0 | 0.8+ | 2004 05 21 | 704 | 0.5+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2004 04 24 | 691 | 0.1− | 0.1+ | 2004 05 21 | 704 | 0.8+ | 0.4− | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2004 04 24 | 691 | 0.1+ | 0.1+ | 2004 05 21 | 704 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2004 04 24 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2004 05 12 | 699 | (1.7− | 0.5−) | 2006 09 30 | G96 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2004 05 12 | 699 | (1.0+ | 2.4−) | 2006 09 30 | G96 | 0.9− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2004 05 12 | 699 | 1.2− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.7+ | 0.4− |
| 2004 05 12 | 699 | 1.0+ | 0.9− | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2004 05 15 | 704 | (0.3− | 2.0−) | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2004 05 15 | 704 | 0.5+ | 0.6+ | 2006 10 02 | G96 | 0.4− | 0.5+ | | | | |

### 2004 HQ$_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.19757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17950414 | $\omega$ | 302.58038 | | +0.90660706 | +0.38838777 | |
| $a$ | 3.1123355 | $\Omega$ | 35.36696 | | −0.22278640 | +0.77259298 | |
| $e$ | 0.0736216 | $i$ | 16.56085 | | −0.35837112 | +0.50224997 | |
| $P$ | 5.49 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | (1.2+ | 2.9−) | 2005 07 03 | E12 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 1998 03 25 | 704 | (2.6+ | 1.3+) | 2005 07 03 | E12 | 0.9− | 0.1− | 2006 10 21 | G96 | 0.4− | 0.1− |
| 1998 03 25 | 704 | 1.7+ | 1.6− | 2005 07 03 | E12 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.7− | 0.3+ |
| 1998 03 25 | 704 | 1.3− | 0.8− | 2005 07 03 | E12 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2001 10 15 | 704 | 0.9+ | 0.1+ | 2005 07 03 | E12 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2001 10 15 | 704 | 0.2− | 0.9+ | 2005 07 03 | E12 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 10 15 | 704 | (1.6− | 0.3+) | 2006 09 20 | 699 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 12 09 | 704 | 0.5− | 0.9− | 2006 09 20 | 699 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2001 12 09 | 704 | 0.4− | 0.6− | 2006 09 20 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.7+ |
| 2001 12 09 | 704 | (2.2− | 0.4−) | 2006 09 20 | 699 | 0.2− | 0.1− | 2006 10 23 | 704 | 1.1+ | 1.0− |
| 2001 12 09 | 704 | 0.1− | 1.1− | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 23 | 704 | 0.8− | 0.3+ |
| 2001 12 09 | 704 | 0.0 | 1.0− | 2006 09 23 | 691 | 0.1− | 0.4+ | 2006 10 23 | 704 | 0.7+ | 0.4+ |
| 2003 03 07 | 645 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.4+ | 2006 10 23 | 704 | 0.3+ | 0.2+ |
| 2003 03 07 | 645 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.9+ | 0.0 | 2006 11 07 | 644 | 0.4− | 0.4+ |
| 2003 04 26 | 645 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.5− | 0.2− | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2003 04 26 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.3− |
| 2004 03 22 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.3+ | 0.6− | 2006 11 07 | 644 | 0.0 | 0.3+ |
| 2004 03 22 | 704 | 1.0+ | 0.6+ | 2006 09 26 | 704 | 0.1+ | 0.8+ | 2006 11 07 | 644 | 0.0 | 0.3+ |
| 2004 03 22 | 704 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.4− | 0.3+ | 2006 11 07 | 644 | 0.5− | 0.7+ |
| 2004 04 12 | 644 | 0.5+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.3+ |
| 2004 04 12 | 644 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.3− | 1.3+ |
| 2004 04 12 | 644 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 11 11 | 703 | 1.3− | 0.6− |
| 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.8+ | 2006 11 11 | 703 | (1.1+ | 1.8+) |
| 2004 04 22 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2004 04 22 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.5− | 0.9+ |
| 2004 04 25 | 291 | 0.3+ | 0.9+ | 2006 10 15 | 703 | 0.3− | 0.5+ | 2006 11 17 | 703 | 1.2− | 0.2− |
| 2004 04 25 | 291 | 0.3+ | 0.8+ | 2006 10 15 | 703 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.7+ |
| 2004 04 25 | 291 | 0.5+ | 0.8+ | 2006 10 15 | 703 | 1.2− | 0.6+ | 2006 11 18 | 704 | 0.2− | 1.4+ |
| 2004 05 13 | 691 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | (0.1+ | 2.0+) |
| 2004 05 13 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.3+ | 2006 11 18 | 704 | (0.2+ | 1.9+) |
| 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | (0.8+ | 1.9+) |
| 2004 05 23 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.6+ | 1.0+ |
| 2004 05 23 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.5+ |
| 2004 05 23 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.3+ |
| 2004 05 23 | 291 | 0.5+ | 0.6+ | 2006 10 21 | 703 | 0.0 | 1.1+ | 2006 11 21 | 691 | 0.1− | 0.5+ |
| 2004 05 23 | 291 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.1− | 2006 11 27 | 703 | 0.9− | 0.5+ |
| 2004 05 23 | 291 | 0.5+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.2− | 0.4− |
| 2005 07 03 | E12 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.4− | 0.0 |
| 2005 07 03 | E12 | 0.7− | 0.4− | 2006 10 21 | G96 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.4− | 0.6+ |

### 2004 HH$_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.93142 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22874548 | $\omega$ | 306.62283 | | −0.77935442 | +0.59419674 | |
| $a$ | 2.6478967 | $\Omega$ | 270.68588 | | −0.49243492 | −0.77706522 | |
| $e$ | 0.1900550 | $i$ | 11.46990 | | −0.38744618 | −0.20760511 | |
| $P$ | 4.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | E12 | 0.6− | 0.6+ | 2004 04 22 | E12 | 1.0− | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2004 04 13 | E12 | 0.9+ | 0.4− | 2004 04 22 | E12 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.4+ |
| 2004 04 13 | E12 | 0.1− | 0.4− | 2004 04 25 | 704 | 0.3− | 0.5+ | 2006 11 20 | G96 | 0.4+ | 0.0 |
| 2004 04 13 | E12 | 0.3+ | 0.3+ | 2004 04 25 | 704 | 1.0+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2004 04 22 | E12 | 0.1+ | 0.2+ | 2004 04 25 | 704 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2004 04 22 | E12 | 0.3− | 0.4− | 2006 11 20 | G96 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.2− | 0.0 |

### 2004 HL$_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.92861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29396960 | $\omega$ | 264.16784 | | −0.70259736 | −0.65522356 | |
| $a$ | 2.2401019 | $\Omega$ | 234.51866 | | +0.70885874 | −0.67859189 | |
| $e$ | 0.3195363 | $i$ | 19.92892 | | −0.06225950 | −0.33195651 | |
| $P$ | 3.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 12 | 644 | 0.2+ | 1.0− | 2004 05 13 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.6+ |
| 2004 01 12 | 644 | 0.7+ | 0.6− | 2004 05 13 | 644 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.1− | 0.4+ |
| 2004 01 12 | 644 | 0.5+ | 0.7− | 2004 05 13 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.1− | 0.1+ |
| 2004 04 15 | E12 | 1.0− | 0.8+ | 2004 05 14 | 699 | 0.5+ | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 15 | E12 | 0.8− | 0.6+ | 2004 05 14 | 699 | 0.6− | 0.1+ | 2006 11 14 | 704 | 0.6+ | 0.0 | | |
| 2004 04 15 | E12 | 0.7− | 0.2+ | 2004 05 14 | 699 | 0.1− | 0.8− | 2006 11 17 | 704 | 0.0 | 0.7− | | |
| 2004 04 15 | E12 | 0.7− | 0.4+ | 2004 05 14 | 699 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.3− | 0.3− | | |
| 2004 04 15 | E12 | 1.0− | 0.3+ | 2004 05 15 | 704 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.1+ | | |
| 2004 04 15 | E12 | 0.8− | 0.3+ | 2004 05 15 | 704 | 0.8+ | 0.4+ | 2006 11 17 | 704 | 0.5− | 0.4− | | |
| 2004 04 15 | E12 | 0.9− | 1.4+ | 2004 05 15 | 704 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.2+ | 0.6− | | |
| 2004 04 15 | E12 | 0.8− | 0.9+ | 2004 05 15 | 704 | 1.2+ | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1+ | | |
| 2004 04 22 | E12 | 0.3+ | 0.7+ | 2004 05 15 | 704 | 1.1+ | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.2+ | | |
| 2004 04 22 | E12 | 0.1+ | 0.4+ | 2004 06 14 | 704 | 0.2− | 1.3+ | 2006 11 17 | 644 | 0.1+ | 0.2+ | | |
| 2004 04 22 | E12 | 0.8+ | 0.9+ | 2004 06 14 | 704 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.0 | 0.5+ | | |
| 2004 04 22 | E12 | 0.1+ | 0.4+ | 2004 06 14 | 704 | 0.4− | 0.5+ | 2006 11 18 | 704 | 0.2− | 0.3− | | |
| 2004 04 25 | 704 | 0.2+ | 0.1+ | 2004 06 14 | 704 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.2+ | | |
| 2004 04 25 | 704 | 0.1− | 0.3− | 2004 06 14 | 704 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.1+ | | |
| 2004 04 25 | 704 | 0.1+ | 0.1+ | 2004 06 16 | 704 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.7− | 1.1+ | | |
| 2004 04 25 | 704 | 0.2− | 0.2− | 2004 06 16 | 704 | 0.6+ | 0.5+ | 2006 11 20 | 704 | 0.3− | 0.5+ | | |
| 2004 04 25 | 704 | 0.3+ | 0.0 | 2004 06 16 | 704 | (1.6+ | 0.1+) | 2006 11 20 | 704 | 0.2+ | 0.8+ | | |
| 2004 04 27 | 704 | 0.2− | 0.6− | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.5+ | | |
| 2004 04 27 | 704 | 0.3+ | 0.8− | 2006 11 11 | 691 | (0.2+ | 1.7+) | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2004 04 27 | 704 | 0.0 | 0.8− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.5+ | | |
| 2004 04 27 | 704 | 0.0 | 1.2− | 2006 11 11 | G96 | 0.4+ | 0.2− | 2006 11 25 | 704 | 0.6+ | 0.5+ | | |
| 2004 04 27 | 704 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 25 | 704 | 0.8+ | 0.3− | | |
| 2004 04 27 | 704 | 0.1+ | 0.6− | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 25 | 704 | 0.7+ | 0.3+ | | |
| 2004 04 27 | 704 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 25 | 704 | 0.4− | 0.3+ | | |
| 2004 04 27 | 704 | 0.1+ | 0.2− | 2006 11 12 | 703 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.3− | 0.2− | | |
| 2004 04 27 | 704 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.6− | 1.4− | 2006 11 28 | 704 | 0.2− | 0.1− | | |
| 2004 04 27 | 704 | 0.1+ | 0.6− | 2006 11 12 | G96 | 0.4− | 0.3− | 2006 11 28 | 704 | 1.1+ | 1.3− | | |
| 2004 05 06 | 644 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.4− | 0.3− | 2006 11 28 | 704 | 0.5− | 0.4+ | | |
| 2004 05 06 | 644 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.1− | | |
| 2004 05 06 | 644 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2− | | | | | | |

### 2004 $HB_{51}$ = 2000 $CZ_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.46090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27929481 | $\omega$ | 255.35993 | | −0.97557369 | +0.08910273 | |
| $a$ | 2.3178970 | $\Omega$ | 289.43774 | | +0.01198588 | −0.89109096 | |
| $e$ | 0.0838000 | $i$ | 12.29389 | | −0.21934519 | −0.44499169 | |
| $P$ | 3.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 1.5+ | 0.7− | 2002 12 03 | 644 | 0.1+ | 0.0 | 2004 04 24 | E12 | 0.3− | 0.4− | | |
| 2000 02 02 | 704 | 0.6+ | 0.1− | 2002 12 03 | 644 | 0.1− | 0.3− | 2004 04 24 | E12 | 0.1+ | 0.1+ | | |
| 2000 02 02 | 704 | 0.5− | 0.2+ | 2002 12 03 | 644 | 0.2+ | 0.8+ | 2004 04 24 | E12 | 0.6− | 0.1− | | |
| 2000 02 02 | 704 | 0.3− | 0.3− | 2002 12 03 | 644 | 0.1+ | 0.6− | 2004 04 24 | E12 | 0.1+ | 0.5+ | | |
| 2000 02 03 | 704 | 0.2− | 0.1+ | 2002 12 03 | 644 | 0.1+ | 0.5+ | 2004 04 26 | E12 | 0.5− | 0.0 | | |
| 2000 02 03 | 704 | 0.8− | 0.5+ | 2002 12 11 | 644 | 0.5+ | 0.2+ | 2004 04 26 | E12 | 0.2− | 0.0 | | |
| 2000 02 03 | 704 | 0.8− | 0.1− | 2002 12 11 | 644 | 0.0 | 0.3+ | 2004 04 26 | E12 | 0.0 | 0.3+ | | |
| 2000 02 03 | 704 | 0.5+ | 0.3+ | 2002 12 11 | 644 | 0.4− | 0.5+ | 2004 04 26 | E12 | 0.1− | 0.6+ | | |
| 2002 11 25 | 644 | 0.5− | 0.4− | 2004 04 23 | E12 | 0.7+ | 0.1− | 2006 11 22 | G96 | (6.5− | 2.7+) | | |
| 2002 11 25 | 644 | 0.3− | 0.2− | 2004 04 23 | E12 | 0.8+ | 0.4− | 2006 11 22 | G96 | (6.4− | 2.3+) | | |
| 2002 11 25 | 644 | 0.3+ | 0.5− | 2004 04 23 | E12 | 0.1− | 0.4− | 2006 11 22 | G96 | (6.4− | 2.3+) | | |
| 2002 12 03 | 644 | 0.1− | 0.2− | 2004 04 23 | E12 | (1.7+ | 0.3−) | 2006 11 22 | G96 | (6.3− | 2.1+) | | |

### 2004 $HC_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.01182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28245796 | $\omega$ | 283.66466 | | −0.98672362 | −0.13906369 | |
| $a$ | 2.3005597 | $\Omega$ | 248.39350 | | +0.16030348 | −0.91683589 | |
| $e$ | 0.1315798 | $i$ | 5.17694 | | −0.02606333 | −0.37426359 | |
| $P$ | 3.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 23 | E12 | 0.6− | 0.2+ | 2004 05 15 | 704 | 0.6+ | 0.4− | 2004 05 23 | 691 | 0.3+ | 0.1− | | |
| 2004 04 23 | E12 | 0.9− | 0.0 | 2004 05 15 | 704 | 0.2+ | 0.8+ | 2005 10 01 | 691 | 0.1− | 0.1+ | | |
| 2004 04 23 | E12 | 1.4− | 0.8+ | 2004 05 15 | 704 | 0.2− | 0.5+ | 2005 10 01 | 691 | 0.1+ | 0.1+ | | |
| 2004 04 23 | E12 | 0.1+ | 0.0 | 2004 05 15 | 704 | 0.5+ | 0.4+ | 2005 10 01 | 691 | 0.1− | 0.2+ | | |
| 2004 04 25 | 704 | 0.5− | 1.0+ | 2004 05 16 | 704 | 0.1+ | 0.7+ | 2006 11 18 | G96 | 0.3+ | 0.4+ | | |
| 2004 04 25 | 704 | 0.2− | 1.0− | 2004 05 16 | 704 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.5+ | | |
| 2004 04 25 | 704 | 0.8+ | 0.3− | 2004 05 16 | 704 | 0.2+ | 0.8+ | 2006 11 18 | G96 | 0.1+ | 0.4+ | | |
| 2004 04 25 | 704 | 0.2− | 0.5− | 2004 05 16 | 704 | 0.6+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.5+ | | |
| 2004 04 25 | 704 | 0.3− | 0.2+ | 2004 05 23 | 691 | 0.1+ | 0.2− | | | | | | |
| 2004 05 15 | 704 | 0.0 | 0.0 | 2004 05 23 | 691 | 0.2+ | 0.0 | | | | | | |

### 2004 $HD_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.45418 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22429977 | $\omega$ | 352.53369 | | −0.75786575 | +0.62586736 | |
| $a$ | 2.6827703 | $\Omega$ | 227.92422 | | −0.58501628 | −0.77690308 | |
| $e$ | 0.0948567 | $i$ | 14.36872 | | −0.28878272 | −0.06864149 | |
| $P$ | 4.39 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 23 | E12 | 0.2− | 1.0− | 2004 05 14 | 704 | 0.3+ | 1.2+ | 2006 09 28 | G96 | 0.2+ | 0.2− | | |
| 2004 04 23 | E12 | 0.4+ | 0.7− | 2004 05 14 | 704 | 0.1+ | 1.2+ | 2006 09 28 | G96 | 0.0 | 0.1+ | | |
| 2004 04 23 | E12 | 0.3− | 0.8− | 2004 05 14 | 704 | 0.1+ | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.0 | | |
| 2004 04 23 | E12 | 0.1+ | 0.6− | 2004 05 15 | 704 | (2.1− | 3.5+) | 2006 11 17 | G96 | 0.2+ | 0.2+ | | |
| 2004 04 25 | 704 | 1.4− | 0.6− | 2004 05 15 | 704 | (0.8− | 2.0+) | 2006 11 17 | G96 | 0.5+ | 0.2+ | | |
| 2004 04 25 | 704 | 1.4− | 0.2+ | 2004 05 15 | 704 | (1.6− | 0.8+) | 2006 11 17 | G96 | 0.3+ | 0.1+ | | |
| 2004 04 25 | 704 | (1.8− | 0.6+) | 2004 05 16 | 691 | 0.3+ | 0.8+ | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2004 04 25 | 704 | 1.0− | 1.3+ | 2004 05 16 | 691 | 0.0 | 0.9+ | 2006 11 20 | G96 | 0.4+ | 0.2+ | | |
| 2004 05 09 | 691 | 0.5+ | 0.3+ | 2004 05 16 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.7+ | 0.3+ | | |
| 2004 05 09 | 691 | 0.4+ | 0.3+ | 2004 05 19 | 691 | 0.0 | 0.3− | 2006 11 20 | G96 | 0.5+ | 0.3+ | | |
| 2004 05 09 | 691 | 0.6− | 0.1+ | 2004 05 19 | 691 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.3+ | 0.3+ | | |
| 2004 05 10 | 608 | 0.6+ | 0.3− | 2004 05 19 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.2+ | 0.4+ | | |
| 2004 05 10 | 608 | 0.2− | 1.2− | 2005 08 30 | 644 | 0.2− | 0.6+ | 2006 11 20 | G96 | 0.5+ | 0.3+ | | |
| 2004 05 10 | 608 | 1.0− | 0.8− | 2005 08 30 | 644 | 0.4− | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.0 | | |
| 2004 05 12 | E12 | 1.4+ | 0.7− | 2005 08 30 | 644 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.2+ | 0.3+ | | |
| 2004 05 12 | E12 | 0.6+ | 0.5+ | 2005 08 30 | 644 | 0.6− | 0.3+ | 2006 11 25 | 291 | 0.5− | 0.4+ | | |
| 2004 05 12 | E12 | 0.1+ | 0.3− | 2005 08 30 | 644 | 0.1− | 0.5+ | 2006 11 25 | 291 | 0.2− | 0.6+ | | |
| 2004 05 12 | E12 | 0.4+ | 0.2− | 2005 08 30 | 644 | 0.1− | 0.2+ | 2006 11 25 | 291 | 0.3− | 0.5+ | | |
| 2004 05 14 | 704 | 0.3− | 0.2+ | 2005 11 04 | G96 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.0 | | |
| 2004 05 14 | 704 | (0.6+ | 1.6+) | 2005 11 04 | G96 | 0.2− | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.0 | | |
| 2004 05 14 | 704 | (0.5+ | 1.9+) | 2005 11 04 | G96 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.1+ | | |
| 2004 05 14 | 704 | 0.2− | 0.9+ | 2005 11 04 | G96 | 0.1+ | 0.5+ | 2006 11 25 | G96 | 0.1− | 0.0 | | |
| 2004 05 14 | 704 | 0.0 | 1.2+ | 2006 09 28 | G96 | 0.4+ | 0.4+ | | | | | | |

### 2004 $HH_{53}$ = 2006 $SC_{165}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.45584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18064119 | $\omega$ | 291.91929 | | −0.89283443 | −0.44255556 | |
| $a$ | 3.0992612 | $\Omega$ | 221.93883 | | +0.44543121 | −0.84020451 | |
| $e$ | 0.0857890 | $i$ | 7.18694 | | +0.06661616 | −0.31337032 | |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.1− | 0.6+ | 2004 04 25 | 291 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.5− | 0.1+ | | |
| 2004 04 12 | 644 | 0.2− | 0.6+ | 2004 04 25 | 703 | 0.9+ | 0.7+ | 2006 08 29 | 703 | 1.4− | 0.3+ | | |
| 2004 04 12 | 644 | 0.3− | 0.4+ | 2004 04 25 | 703 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.4+ | | |
| 2004 04 20 | 704 | 0.8+ | 0.4+ | 2004 04 26 | 704 | (0.8− | 2.1+) | 2006 09 25 | 691 | 0.3+ | 0.3+ | | |
| 2004 04 20 | 704 | 0.1+ | 0.2− | 2004 04 26 | 704 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.3+ | | |
| 2004 04 20 | 704 | 0.4+ | 0.6− | 2004 04 26 | 704 | 0.6− | 0.3+ | 2006 09 27 | 691 | 0.5+ | 0.4+ | | |
| 2004 04 20 | 704 | 0.5− | 0.1+ | 2004 04 26 | 704 | 0.3+ | 0.9+ | 2006 09 27 | 691 | 1.4− | 0.8− | | |
| 2004 04 20 | 704 | (2.1− | 1.9+) | 2005 06 13 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.4+ | | |
| 2004 04 25 | 291 | 0.1− | 0.1+ | 2005 06 13 | 691 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.1+ | | |
| 2004 04 25 | 291 | 0.1+ | 0.0 | 2005 06 13 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.2+ | | |
| 2004 04 25 | 703 | 0.5− | 0.6+ | 2006 08 29 | 703 | (0.6− | 1.7+) | 2006 10 01 | 691 | 0.1− | 0.2− | | |
| 2004 04 25 | 703 | (1.3+ | 2.1+) | 2006 08 29 | 703 | 0.0 | 0.3− | | | | | | |

**2004 HK$_{53}$ = 2006 UP$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 281.07335 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.18724663 | $\omega$ | 54.77947 | | | −0.24565347 | | −0.96113569 | | | |
| $a$ | 3.0259381 | $\Omega$ | 49.94565 | | | +0.82728374 | | −0.27561075 | | | |
| $e$ | 0.0187521 | $i$ | 9.47369 | | | +0.50522865 | | −0.01602844 | | | |
| $P$ | 5.26 | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 691 | 0.5− | 0.0 | 2004 05 16 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2004 04 25 | 691 | 0.4− | 0.0 | 2004 05 16 | 691 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2004 04 25 | 691 | 0.2− | 0.1+ | 2004 05 16 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2004 04 26 | 291 | 0.0 | 0.2+ | 2004 05 19 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2004 04 26 | 291 | 0.0 | 0.1− | 2004 05 19 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.8+ | 0.2+ |
| 2004 04 26 | 291 | 0.4+ | 0.3+ | 2004 05 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2004 04 26 | 291 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2004 04 26 | 291 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2004 04 26 | 291 | 0.4+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.5− | | | | |

**2004 HS$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 217.81884 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.21724200 | $\omega$ | 322.93219 | | | −0.99696012 | | +0.07233027 | | | |
| $a$ | 2.7405655 | $\Omega$ | 221.24483 | | | −0.05669605 | | −0.92845711 | | | |
| $e$ | 0.1282067 | $i$ | 2.51787 | | | −0.05344219 | | −0.36432915 | | | |
| $P$ | 4.54 | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 4 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.0 | 0.0 | 2004 05 16 | 704 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2004 05 16 | 704 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2004 04 21 | 704 | 0.6+ | 0.6+ | 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2004 04 21 | 704 | 0.0 | 1.2+ | 2006 09 27 | G96 | 0.6+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2004 04 21 | 704 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2004 04 21 | 704 | 0.1+ | 0.8+ | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2004 04 21 | 704 | 0.5+ | 1.4+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.7+ |
| 2004 04 26 | 699 | 0.6− | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.1+ |
| 2004 04 26 | 699 | 0.5+ | 0.1− | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2004 04 26 | 699 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.2+ |
| 2004 04 26 | 699 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2004 05 14 | 691 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.5− | 0.1+ |
| 2004 05 14 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.4+ |
| 2004 05 14 | 691 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.5− | 0.0 |
| 2004 05 16 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.1+ |

**2004 HJ$_{56}$ = 2006 WQ$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 213.45085 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23169768 | $\omega$ | 290.79843 | | | −0.87400605 | | +0.45180476 | | | |
| $a$ | 2.6253564 | $\Omega$ | 276.43176 | | | −0.35131399 | | −0.84181916 | | | |
| $e$ | 0.1401680 | $i$ | 10.36852 | | | −0.33569615 | | −0.29531840 | | | |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 4 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | E12 | 0.9− | 0.2− | 2004 04 27 | 704 | 0.1− | 0.3+ | 2004 05 22 | 704 | 0.2− | 0.0 |
| 2004 04 19 | E12 | 0.1+ | 0.6− | 2004 04 27 | 704 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2004 04 19 | E12 | 0.3+ | 1.2− | 2004 04 27 | 704 | 0.4+ | 0.9+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2004 04 19 | E12 | 0.4+ | 0.4− | 2004 05 09 | E12 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2004 04 25 | 704 | 0.1+ | 0.4− | 2004 05 09 | E12 | 1.6+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2004 04 25 | 704 | 0.2− | 0.4+ | 2004 05 09 | E12 | 0.3− | 0.5− | 2006 11 25 | 691 | 0.0 | 0.3+ |
| 2004 04 25 | 704 | 0.8− | 0.9+ | 2004 05 09 | E12 | 0.5+ | 0.3+ | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2004 04 25 | 704 | 0.5+ | 0.4+ | 2004 05 22 | 704 | 0.2− | 0.0 | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2004 04 27 | 704 | 1.0− | 0.6+ | 2004 05 22 | 704 | 0.0 | 0.1− | | | | |

**2004 HP$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 107.75226 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.17175701 | $\omega$ | 141.90483 | | | +0.18200750 | | +0.98315384 | | | |
| $a$ | 3.2052339 | $\Omega$ | 138.57423 | | | −0.90826965 | | +0.17463608 | | | |
| $e$ | 0.1067547 | $i$ | 1.45381 | | | −0.37672207 | | +0.05395151 | | | |
| $P$ | 5.74 | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 691 | 0.1− | 0.3+ | 2004 05 21 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.6+ | 0.2− |
| 2004 04 21 | 691 | 0.2+ | 0.2− | 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2004 04 21 | 691 | 0.1− | 0.3+ | 2004 05 21 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2004 04 28 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.5− | 0.2− |
| 2004 04 28 | 691 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.6+ | 0.3− | | | | |
| 2004 04 28 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.3− | | | | |

**2004 HG$_{58}$ = 2006 UB$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 334.46054 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22669340 | $\omega$ | 330.95852 | | | +0.23040471 | | −0.97303929 | | | |
| $a$ | 2.6638522 | $\Omega$ | 105.71898 | | | +0.89487089 | | +0.20767172 | | | |
| $e$ | 0.1451389 | $i$ | 0.61919 | | | +0.38225614 | | +0.10033444 | | | |
| $P$ | 4.35 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.6+ |
| 2004 04 22 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2004 04 28 | 291 | 0.7+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 2004 04 28 | 291 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.0+ | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.1+ |
| 2004 04 28 | 291 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 1.0+ | 2006 11 21 | 704 | 0.4+ | 0.6− |
| 2004 05 09 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.6− |
| 2004 05 09 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2004 05 09 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 11 21 | 704 | 0.4+ | 1.2+ |
| 2005 06 13 | G96 | 0.1− | 0.7+ | 2006 11 11 | 703 | 1.4− | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2005 06 13 | G96 | 0.6− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.6− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2005 06 13 | G96 | 0.1− | 0.7+ | 2006 11 11 | 703 | 1.4− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2005 06 13 | G96 | 0.1− | 1.0+ | 2006 11 18 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.5+ | 0.2− |
| 2006 09 27 | G96 | 0.2− | 0.3+ | 2006 11 18 | 704 | 1.3+ | 0.1+ | 2006 11 24 | G96 | 0.9− | 0.5− |
| 2006 09 27 | G96 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.0 | 0.5− |
| 2006 10 27 | G96 | 0.6+ | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.2− | 2006 11 27 | 703 | 0.6− | 0.2− |
| 2006 10 27 | G96 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.6+ | 2006 11 27 | 703 | 0.6− | 0.3+ |
| 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | (0.2+ | 1.5−) | 2006 11 27 | 703 | 0.2− | 0.4+ |
| 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 1.0+ | | | | |

**2004 HS$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 19.51455 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.12600387 | $\omega$ | 288.22477 | | | +0.94567905 | | +0.31539225 | | | |
| $a$ | 3.9404588 | $\Omega$ | 53.46397 | | | −0.24866636 | | +0.85798963 | | | |
| $e$ | 0.2050759 | $i$ | 5.63250 | | | −0.20941866 | | +0.40543992 | | | |
| $P$ | 7.82 | $H$ | 14.4 | $G$ | 0.15 | | $U$ | 0 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 699 | 0.8− | 0.8− | 2006 09 21 | 699 | 0.2+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 1998 09 24 | 699 | 1.3+ | 1.6− | 2006 09 21 | 699 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.8+ | 0.4− |
| 1998 09 24 | 699 | 0.4+ | 0.7+ | 2006 09 22 | 704 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.0− | 0.1− |
| 1999 12 12 | 704 | 0.7− | 1.0− | 2006 09 22 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 1999 12 12 | 704 | 0.6− | 1.0+ | 2006 09 22 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.1− |
| 1999 12 12 | 704 | 0.9+ | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 1999 12 12 | 704 | 0.0 | 1.3+ | 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2004 04 24 | 291 | 0.5− | 0.4+ | 2006 09 25 | 699 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 1.0− |
| 2004 04 24 | 291 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 24 | 291 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 10 17 | 557 | 0.3+ | 0.3− |
| 2004 04 28 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.5+ | 2006 10 17 | 557 | 0.3− | 0.3+ |
| 2004 04 28 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 17 | 557 | 1.2+ | 1.3− |
| 2004 04 28 | 691 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 17 | 557 | 0.6+ | 0.6− |
| 2004 05 13 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2004 05 13 | 691 | 0.1+ | 0.0 | 2006 09 28 | 291 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2004 05 13 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 291 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2004 06 08 | 691 | 0.1+ | 0.3− | 2006 09 28 | 291 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 06 08 | 691 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2004 06 08 | 691 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 06 15 | 691 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.5− | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2004 06 15 | 691 | 0.8− | 0.3− | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2004 06 15 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.5− | 1.1− |
| 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.8− |
| 2006 09 18 | 703 | 0.4− | 0.0 | 2006 10 01 | 704 | 1.0− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.9− | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2006 09 21 | 699 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 21 | 699 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.0 | 0.1+ | | | | |

**2004 HC$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.11292 | | $\omega$ | 286.15458 | +0.91394387 | +0.37420732 |
| $n$ | 0.17660361 | | $\Omega$ | 52.14117 | −0.25246941 | +0.82728558 |
| $a$ | 3.1463208 | | $i$ | 11.47618 | −0.31775116 | +0.41900769 |
| $e$ | 0.0325528 | | | | | |
| $P$ | 5.58 | $H$ | 16.2 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 24 | 291 | 0.2+ | 0.1− | 2004 05 13 | 691 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.4+ |
| 2004 04 24 | 291 | 0.5+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2004 04 24 | 291 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.5− | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.3+ |
| 2004 04 28 | 691 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.3− | 0.2+ |
| 2004 04 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2004 04 28 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2004 05 13 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.7+ | 0.2− |

**2004 HM$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 216.44589 | | $\omega$ | 344.96530 | −0.89528361 | +0.42357717 |
| $n$ | 0.22382658 | | $\Omega$ | 220.99564 | −0.38394655 | −0.89075773 |
| $a$ | 2.6865501 | | $i$ | 12.14559 | −0.22594758 | −0.16472113 |
| $e$ | 0.1900964 | | | | | |
| $P$ | 4.40 | $H$ | 15.9 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 704 | 0.9+ | 1.3+ | 2004 05 18 | 704 | (0.8− | 1.9−) | 2006 11 12 | G96 | 0.1− | 0.1+ |
| 2004 04 25 | 704 | 0.1+ | 0.1+ | 2004 05 18 | 704 | 0.8+ | 0.7+ | 2006 11 12 | G96 | 0.6+ | 0.1+ |
| 2004 04 25 | 704 | 0.6+ | 1.3+ | 2004 05 18 | 704 | (0.8− | 1.9−) | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2004 04 29 | 704 | 0.3− | 0.3+ | 2004 05 18 | 704 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.4− | 0.2+ |
| 2004 04 29 | 704 | 0.3+ | 0.3+ | 2004 05 18 | 704 | (0.3+ | 2.6−) | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2004 04 29 | 704 | 0.7+ | 1.3+ | 2004 06 10 | 599 | 0.9− | 0.4+ | 2006 11 16 | 691 | 0.4− | 0.5+ |
| 2004 04 29 | 704 | 0.5+ | 0.7+ | 2004 06 10 | 599 | 0.6− | 0.8+ | 2006 11 16 | 691 | 0.4− | 0.5+ |
| 2004 05 15 | 704 | 0.8− | 0.6− | 2004 06 10 | 599 | 0.1− | 1.1+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2004 05 15 | 704 | 0.6+ | 1.0− | 2004 06 15 | 691 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 2004 05 15 | 704 | 0.1− | 0.5− | 2004 06 15 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2004 05 15 | 704 | 0.2+ | 0.2− | 2004 06 15 | 691 | 0.0 | 0.7− | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2004 05 18 | 704 | 0.2− | 0.1+ | 2004 06 22 | 691 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.3+ | 0.2+ |
| 2004 05 18 | 704 | (0.4+ | 2.0−) | 2004 06 22 | 691 | 0.0 | 0.4+ | 2006 11 24 | 691 | 0.4+ | 0.2+ |
| 2004 05 18 | 704 | 0.1+ | 0.7− | 2004 06 22 | 691 | 0.1− | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |

**2004 HW$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 184.45078 | | $\omega$ | 126.15217 | −0.83253502 | +0.54465864 |
| $n$ | 0.20520321 | | $\Omega$ | 87.05642 | −0.53522281 | −0.74372937 |
| $a$ | 2.8467322 | | $i$ | 5.81340 | −0.14290552 | −0.38757399 |
| $e$ | 0.0923944 | | | | | |
| $P$ | 4.80 | $H$ | 16.3 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 704 | 0.1+ | 0.4+ | 2004 05 18 | 704 | 1.0− | 0.1+ | 2006 10 22 | 691 | 0.2+ | 0.2− |
| 2004 04 20 | 704 | 1.1− | 0.2− | 2004 05 18 | 704 | 1.0+ | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2004 04 20 | 704 | 0.2− | 0.1+ | 2004 05 18 | 704 | 0.0 | 0.3− | 2006 11 16 | G96 | (1.7+ | 0.5+) |
| 2004 04 20 | 704 | 0.8+ | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | (1.5+ | 0.0 ) |
| 2004 04 25 | 621 | 0.3− | 0.6− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | (2.0+ | 0.4+) |
| 2004 04 25 | 621 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.5+ | 0.2− | 2006 11 16 | G96 | (1.9+ | 0.2+) |
| 2004 04 25 | 621 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.0 | | | | |

**2004 HZ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 205.69578 | | $\omega$ | 157.05099 | +0.36290200 | +0.92804518 |
| $n$ | 0.30034538 | | $\Omega$ | 134.10974 | −0.87203002 | +0.36995888 |
| $a$ | 2.2082865 | | $i$ | 6.70805 | −0.32842926 | +0.04315754 |
| $e$ | 0.1635400 | | | | | |
| $P$ | 3.28 | $H$ | 16.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.1+ | 0.2+ | 2004 04 26 | 699 | 0.1+ | 0.2− | 2004 05 23 | 704 | 0.7+ | 0.6− |
| 1997 01 31 | 691 | 0.6− | 0.3− | 2004 04 30 | 608 | 0.3− | 0.2+ | 2004 05 23 | 704 | 0.3− | 0.4+ |
| 1997 01 31 | 691 | 0.3+ | 0.2− | 2004 04 30 | 608 | 0.5− | 0.6+ | 2004 06 13 | 704 | 0.2+ | 0.8+ |
| 2004 03 23 | 704 | 0.9− | 1.0+ | 2004 04 30 | 608 | 0.9+ | 0.4− | 2004 06 13 | 704 | 0.5− | 0.2− |
| 2004 03 23 | 704 | 0.1− | 1.5+ | 2004 05 09 | 608 | 0.5− | 0.2+ | 2004 06 13 | 704 | 0.2− | 0.3− |
| 2004 03 23 | 704 | 1.4− | 1.4+ | 2004 05 09 | 608 | 0.3− | 0.1+ | 2005 10 25 | 703 | 0.1− | 1.1+ |
| 2004 04 16 | 704 | 0.4+ | 0.1− | 2004 05 09 | 608 | 0.2− | 0.2+ | 2005 10 25 | 703 | 0.0 | 0.0 |
| 2004 04 16 | 704 | 0.8+ | 0.1+ | 2004 05 14 | 704 | 0.4+ | 0.3+ | 2005 10 25 | 703 | 0.0 | 1.0+ |
| 2004 04 16 | 704 | 0.5+ | 0.4− | 2004 05 14 | 704 | 0.4− | 0.3− | 2005 10 25 | 703 | 0.5− | 0.1+ |
| 2004 04 16 | 704 | 0.3+ | 0.0 | 2004 05 14 | 704 | 0.2− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.2+ |
| 2004 04 16 | 704 | 0.5+ | 0.5− | 2004 05 14 | 704 | 0.4− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.2+ |
| 2004 04 26 | 699 | 1.1+ | 0.9+ | 2004 05 14 | 704 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2004 04 26 | 699 | 0.1− | 0.3+ | 2004 05 23 | 704 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2004 04 26 | 699 | 0.0 | 0.8− | 2004 05 23 | 704 | 0.4+ | 0.4− | | | | |

**2004 HB$_{65}$ = 2006 SA$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.40891 | | $\omega$ | 359.88086 | +0.92269644 | −0.36673003 |
| $n$ | 0.18038337 | | $\Omega$ | 22.78983 | +0.35396778 | +0.68363568 |
| $a$ | 3.1022138 | | $i$ | 17.87794 | +0.15276807 | +0.63099235 |
| $e$ | 0.1247781 | | | | | |
| $P$ | 5.46 | $H$ | 15.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 699 | (1.3− | 1.9+) | 2004 04 25 | 691 | 0.5+ | 0.0 | 2006 09 18 | 699 | (1.7− | 1.2+) |
| 2001 12 18 | 699 | 0.7− | 1.0+ | 2004 04 25 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.4+ |
| 2001 12 18 | 699 | (1.7− | 2.1−) | 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.3+ |
| 2001 12 18 | 699 | 0.4− | 0.3+ | 2004 05 19 | 691 | 0.3+ | 0.9+ | 2006 09 19 | 703 | 0.1− | 0.7+ |
| 2002 01 14 | 644 | 0.4− | 0.9+ | 2004 05 19 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.8− | 0.2+ |
| 2002 01 14 | 644 | 0.3− | 0.6+ | 2006 08 27 | D35 | 0.8− | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.6+ |
| 2002 01 14 | 644 | 0.6− | 0.7+ | 2006 08 27 | D35 | 0.4− | 0.2− | 2006 10 02 | 703 | 0.9− | 0.4+ |
| 2003 02 01 | 644 | 1.0+ | 0.7+ | 2006 08 27 | D35 | 0.6− | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.7+ |
| 2003 02 01 | 644 | 0.7+ | 0.8+ | 2006 08 28 | 699 | 0.3+ | 1.2+ | 2006 10 02 | 703 | 0.1− | 0.7+ |
| 2003 02 01 | 644 | 0.3− | 0.7+ | 2006 08 28 | 699 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.6− | 0.2+ |
| 2004 04 16 | 644 | 0.8+ | 0.1− | 2006 08 28 | 699 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.5− | 0.2− |
| 2004 04 16 | 644 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.8+ | 1.0+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2004 04 16 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.0 |

**2004 HS$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 166.92779 | | | (2000.0) | | |
| $n$ | 0.22306411 | $\omega$ | 327.69282 | | −0.45459424 | +0.86514963 |
| $a$ | 2.6926687 | $\Omega$ | 274.48313 | | −0.76536619 | −0.50105194 |
| $e$ | 0.2249917 | $i$ | 12.26610 | | −0.45558607 | −0.02151916 |
| $P$ | 4.42 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.0 | 0.0 | 2004 04 17 | 704 | 0.5− | 0.8− | 2004 05 15 | 704 | 0.9+ | 1.0+ |
| 1996 09 06 | 691 | 0.5+ | 0.4− | 2004 04 17 | 704 | 0.1+ | 1.0− | 2004 05 15 | 704 | 0.3− | 0.5+ |
| 1996 09 06 | 691 | 0.1− | 0.2− | 2004 04 17 | 704 | 0.2+ | 1.1− | 2004 07 21 | E12 | 0.6− | 0.8+ |
| 2004 03 15 | 644 | 0.2− | 0.0 | 2004 04 17 | 704 | 0.1− | 1.1− | 2004 07 21 | E12 | (1.9+ | 0.8+) |
| 2004 03 15 | 644 | 0.0 | 0.1+ | 2004 04 17 | E12 | 0.2+ | 0.4+ | 2004 07 21 | E12 | 0.2− | 0.4− |
| 2004 03 15 | 644 | 0.0 | 0.2− | 2004 04 17 | E12 | 1.1− | 1.2+ | 2004 07 21 | E12 | 0.1− | 0.1− |
| 2004 03 26 | 704 | 0.2− | 0.0 | 2004 04 17 | E12 | 0.2+ | 0.3+ | 2005 08 29 | 599 | 0.2− | 0.5+ |
| 2004 03 26 | 704 | 0.3+ | 0.7+ | 2004 04 17 | E12 | 1.5− | 1.4+ | 2005 08 29 | 599 | 0.2− | 0.5+ |
| 2004 03 26 | 704 | 0.0 | 0.4+ | 2004 04 25 | 608 | 0.1+ | 1.0− | 2005 08 29 | 599 | 0.2− | 0.3+ |
| 2004 03 26 | 704 | 0.2+ | 0.1+ | 2004 04 25 | 608 | 0.1− | 1.1− | 2005 08 29 | 599 | 0.2− | 0.4+ |
| 2004 03 26 | 704 | 0.1+ | 0.1+ | 2004 04 25 | 608 | 0.1+ | 0.6− | 2006 11 21 | G96 | 0.2+ | 0.6− |
| 2004 04 17 | 644 | 0.1− | 0.1− | 2004 05 15 | 704 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2004 04 17 | 644 | 0.1− | 0.1− | 2004 05 15 | 704 | 1.1+ | 0.1+ | 2006 11 21 | G96 | 0.5+ | 0.3− |
| 2004 04 17 | 644 | 0.0 | 0.1− | 2004 05 15 | 704 | 0.8+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.1− |

**2004 HR$_{66}$ = 2006 SJ$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.25739 | | | (2000.0) | | |
| $n$ | 0.22655194 | $\omega$ | 26.71523 | | +0.55181232 | −0.82950899 |
| $a$ | 2.6649610 | $\Omega$ | 30.02370 | | +0.73106869 | +0.43144502 |
| $e$ | 0.1552384 | $i$ | 9.91182 | | +0.40130005 | +0.35464071 |
| $P$ | 4.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 291 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.4+ |
| 2004 04 21 | 291 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.8+ |
| 2004 04 21 | 291 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.5− | 0.1− | 2006 11 16 | 704 | 0.7− | 0.3+ |
| 2004 04 30 | 291 | 0.1+ | 0.0 | 2006 10 19 | A50 | 0.3− | 0.8− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2004 04 30 | 291 | 0.4+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2004 04 30 | 291 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.7− | 2006 11 19 | 704 | 0.4+ | 1.0+ |
| 2004 05 23 | 691 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.8− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2004 05 23 | 691 | 0.5− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2004 05 23 | 691 | 0.4+ | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.9+ | 0.0 |
| 2006 08 28 | 703 | 1.0− | 1.4+ | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2006 08 28 | 703 | (2.3− | 0.5+) | 2006 11 15 | 691 | (0.7+ | 2.4−) | 2006 11 22 | 704 | 0.5− | 0.8+ |
| 2006 08 28 | 703 | 0.6− | 1.0+ | 2006 11 15 | 704 | 0.4+ | 0.6+ | 2006 11 22 | 703 | 0.3+ | 0.8− |
| 2006 08 28 | 703 | 1.4− | 0.8+ | 2006 11 15 | 704 | 0.2+ | 1.5+ | 2006 11 22 | 704 | 0.5− | 1.0+ |
| 2006 09 16 | 703 | (1.8− | 0.2−) | 2006 11 15 | 704 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.3+ | 0.7− |
| 2006 09 16 | 703 | 0.6+ | 0.5+ | 2006 11 15 | 704 | 0.0 | 0.7− | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2006 09 16 | 703 | (2.9+ | 0.1−) | 2006 11 16 | 704 | 1.2− | 0.0 | 2006 11 22 | 703 | 0.1− | 0.9− |
| 2006 09 16 | 703 | 0.7+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2006 09 27 | G96 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.7− | 2006 11 22 | 703 | 0.1+ | 0.6− |
| 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.6+ | 2006 11 22 | 703 | 0.2− | 0.2− |
| 2006 09 27 | G96 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.6+ | 2006 11 22 | 703 | 0.5+ | 0.4− |
| 2006 09 27 | G96 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.6− |
| 2006 09 30 | G96 | 0.5− | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.1+ | | | | |

**2004 HU$_{67}$ = 2006 SH$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 191.61162 | | | (2000.0) | | |
| $n$ | 0.18494969 | $\omega$ | 324.07254 | | −0.98878419 | −0.14621457 |
| $a$ | 3.0509399 | $\Omega$ | 207.56687 | | +0.14772664 | −0.92749725 |
| $e$ | 0.0525193 | $i$ | 3.77248 | | +0.02196951 | −0.34404964 |
| $P$ | 5.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 691 | 0.3− | 0.3+ | 2004 04 20 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1− | 0.3− |
| 1996 11 18 | 691 | 0.2+ | 0.6+ | 2004 05 09 | 691 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 1996 11 18 | 691 | 0.1− | 0.1+ | 2004 05 09 | 691 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2004 03 16 | 691 | 0.1+ | 0.1+ | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.5− | 0.7+ |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 16 | 691 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.6+ |
| 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 09 16 | 691 | 0.2− | 0.2− | | | | |
| 2004 04 20 | 691 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.5+ | 0.0 | | | | |

**2004 HW$_{67}$ = 2006 RS$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 152.05455 | | | (2000.0) | | |
| $n$ | 0.18779474 | $\omega$ | 201.48381 | | −0.78373996 | +0.61893790 |
| $a$ | 3.0200475 | $\Omega$ | 17.06639 | | −0.54112365 | −0.63965100 |
| $e$ | 0.0515416 | $i$ | 10.13604 | | −0.30485548 | −0.45580969 |
| $P$ | 5.25 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.1+ | 0.1− | 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.0 |
| 1996 12 13 | 691 | 0.1− | 0.2+ | 2004 04 20 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 1996 12 13 | 691 | 0.2− | 0.2+ | 2004 05 09 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.6+ |
| 2004 03 16 | 691 | 0.1− | 0.1− | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2004 03 16 | 691 | 0.3+ | 0.5+ | 2004 05 09 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2004 03 16 | 691 | 0.6+ | 0.5+ | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2004 03 27 | 704 | 0.2− | 0.5− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2004 03 27 | 704 | 0.3+ | 1.1+ | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2004 03 27 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2004 03 27 | 704 | 0.9+ | 0.7− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.2+ |
| 2004 04 12 | 699 | 1.0+ | 0.8− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4+ |
| 2004 04 12 | 699 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2004 04 12 | 699 | (1.6− | 1.1−) | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2004 04 12 | 699 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.3+ | | | | |

**2004 HW$_{76}$ = 2005 WT$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 146.71355 | | | (2000.0) | | |
| $n$ | 0.26675785 | $\omega$ | 262.79852 | | +0.72798111 | +0.68494679 |
| $a$ | 2.3899634 | $\Omega$ | 53.96462 | | −0.61355413 | +0.67029868 |
| $e$ | 0.1885061 | $i$ | 2.11591 | | −0.30593273 | +0.28556537 |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | (7.3− | 22.4+) | 2005 10 01 | G96 | 0.2+ | 0.2− | 2005 10 31 | 691 | 0.3+ | 0.2+ |
| 2002 12 31 | 645 | (6.9− | 22.2+) | 2005 10 01 | G96 | 0.8− | 0.4− | 2005 11 25 | G96 | 0.4+ | 0.6− |
| 2004 04 25 | 691 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.3− | 0.4− | 2005 11 25 | G96 | 0.1+ | 0.7− |
| 2004 04 25 | 691 | 0.1+ | 0.2− | 2005 10 01 | G96 | 0.2− | 0.4− | 2005 11 25 | G96 | 0.1− | 0.7− |
| 2004 04 25 | 691 | 0.2− | 0.0 | 2005 10 22 | 691 | 0.3+ | 0.2+ | 2005 11 25 | G96 | 0.2− | 0.1− |
| 2004 04 26 | 568 | 0.2− | 0.3+ | 2005 10 22 | 691 | 0.3− | 0.1− | 2005 11 30 | 691 | 0.3− | 0.2+ |
| 2004 04 26 | 568 | 0.1+ | 0.2+ | 2005 10 22 | 691 | 0.0 | 0.2+ | 2005 11 30 | 691 | 0.5+ | 0.3− |
| 2004 04 26 | 568 | 0.1− | 0.3+ | 2005 10 31 | 691 | 0.1+ | 0.2+ | 2005 11 30 | 691 | 0.3− | 0.2+ |
| 2004 04 27 | 568 | 0.3+ | 0.4+ | 2005 10 31 | 691 | 0.2− | 0.2+ | | | | |

**2004 HC$_{78}$ = 2005 TE$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 114.11911 | | | (2000.0) | | |
| $n$ | 0.18185880 | $\omega$ | 105.70771 | | +0.54793403 | +0.82521824 |
| $a$ | 3.0854121 | $\Omega$ | 199.48259 | | −0.83360915 | +0.55230767 |
| $e$ | 0.3515466 | $i$ | 24.26292 | | +0.06974293 | +0.11819939 |
| $P$ | 5.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 704 | 0.8− | 0.1− | 2004 05 24 | 704 | 1.0+ | 0.9+ | 2005 10 10 | 703 | 0.0 | 0.1+ |
| 2004 04 16 | 704 | 0.5− | 1.0+ | 2004 05 24 | 704 | 0.1− | 0.5+ | 2005 10 10 | 703 | 0.9− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 704 | 0.2− | 0.1+ | 2004 05 24 | 704 | 1.3+ | 0.1+ | 2005 10 10 | 703 | (2.9− | 0.7−) |
| 2004 04 16 | 704 | 0.2+ | 0.7+ | 2004 05 24 | 704 | 1.2− | 1.1− | 2005 10 10 | 703 | 1.1+ | 1.1− |
| 2004 05 12 | 683 | (1.4− | 1.7+) | 2005 10 01 | 703 | 0.9− | 0.3+ | 2005 11 03 | 703 | 0.5+ | 0.4− |
| 2004 05 12 | 683 | (1.0− | 2.4+) | 2005 10 01 | 703 | 0.2+ | 0.4− | 2005 11 03 | 703 | 0.0 | 0.1− |
| 2004 05 12 | 683 | 0.3− | 0.2+ | 2005 10 01 | 703 | 0.1− | 0.5+ | 2005 11 03 | 703 | 0.5− | 0.5− |
| 2004 05 14 | 704 | 0.0 | 0.1+ | 2005 10 01 | 703 | 1.3+ | 0.0 | 2005 11 03 | 703 | 0.6− | 0.9+ |
| 2004 05 14 | 704 | 0.3− | 0.2+ | 2005 10 07 | 699 | 1.0− | 0.2+ | 2005 11 29 | 703 | 1.0+ | 0.3− |
| 2004 05 14 | 704 | 0.8+ | 0.9− | 2005 10 07 | 699 | (2.2+ | 1.8+) | 2005 11 29 | 703 | 0.9− | 0.5+ |
| 2004 05 14 | 704 | 0.2+ | 0.0 | 2005 10 07 | 699 | 1.2+ | 1.3+ | 2005 11 29 | 703 | 0.7− | 0.2− |
| 2004 05 14 | 704 | 0.3− | 0.6− | 2005 10 07 | 699 | 0.4+ | 0.5− | 2005 11 29 | 703 | 0.1− | 0.1+ |

### 2004 $HD_{78}$ = 2000 $NR_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.23430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22365016 | $\omega$ | 134.41998 | | −0.03208015 | +0.98727487 | |
| $a$ | 2.6879627 | $\Omega$ | 133.05395 | | −0.96686736 | +0.00883201 | |
| $e$ | 0.1404501 | $i$ | 12.30722 | | −0.25325555 | −0.15877760 | |
| $P$ | 4.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 04 | 691 | 0.1+ | 0.1− | 2003 01 31 | 291 | 0.2+ | 0.1− | 2004 05 14 | 699 | 0.4− | 0.4+ |
| 2000 07 04 | 691 | 0.3+ | 0.1− | 2003 01 31 | 291 | 0.0 | 0.1− | 2004 05 14 | 699 | 0.6+ | 0.1− |
| 2000 07 04 | 691 | 0.2+ | 0.3− | 2003 01 31 | 291 | 0.0 | 0.1+ | 2004 05 24 | 704 | 1.9+ | 1.0− |
| 2000 07 10 | 691 | 0.4− | 0.4+ | 2004 04 16 | 704 | 0.5+ | 0.2− | 2004 05 24 | 704 | 0.8+ | 0.0 |
| 2000 07 10 | 691 | 0.1+ | 0.2− | 2004 04 16 | 704 | 0.9− | 0.4+ | 2004 05 24 | 704 | 0.4+ | 0.1+ |
| 2000 07 10 | 691 | 0.2− | 0.3+ | 2004 04 16 | 704 | 1.8− | 0.2+ | 2004 06 09 | 699 | 1.6− | 1.6+ |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2004 04 19 | 691 | 0.0 | 0.4+ | 2004 06 09 | 699 | 0.5− | 0.4+ |
| 2001 11 12 | 645 | 0.1− | 0.1+ | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2004 06 09 | 699 | 1.3− | 0.4− |
| 2003 01 30 | 644 | 0.0 | 0.2+ | 2004 04 19 | 691 | 0.0 | 0.2+ | 2004 06 09 | 699 | 0.1− | 0.8− |
| 2003 01 30 | 644 | 0.2+ | 0.3+ | 2004 05 14 | 699 | 1.0+ | 1.0+ | | | | |
| 2003 01 30 | 644 | 0.2+ | 0.1+ | 2004 05 14 | 699 | 1.4+ | 0.4− | | | | |

### 2004 $HE_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.57410 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36957861 | $\omega$ | 245.42616 | | +0.90606684 | −0.30059790 | |
| $a$ | 1.9230836 | $\Omega$ | 130.55469 | | +0.35097834 | +0.92701273 | |
| $e$ | 0.0926156 | $i$ | 23.07591 | | −0.23634102 | +0.22425053 | |
| $P$ | 2.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 704 | 0.0 | 0.5+ | 2004 04 25 | 645 | 0.0 | 0.1+ | 2006 01 04 | G96 | 0.2+ | 0.5− |
| 1999 08 12 | 704 | 0.7+ | 0.0 | 2004 04 25 | 645 | 0.0 | 0.1+ | 2006 02 03 | 704 | 0.5+ | 0.8+ |
| 1999 08 12 | 704 | 0.0 | 0.6− | 2004 04 28 | 703 | 0.3+ | 0.1+ | 2006 02 03 | 704 | 0.8+ | 0.8+ |
| 2001 02 02 | 704 | 0.3− | 0.3+ | 2004 04 28 | 703 | 0.1− | 1.2− | 2006 02 03 | 704 | 0.6+ | 0.0 |
| 2001 02 02 | 704 | 0.8− | 0.5− | 2004 04 28 | 703 | (0.3+ | 2.5+) | 2006 02 03 | 704 | 1.4+ | 0.2+ |
| 2001 02 02 | 704 | 0.1− | 0.2− | 2004 04 28 | 703 | 0.2+ | 0.2− | 2006 03 26 | G96 | 0.0 | 0.0 |
| 2001 02 02 | 704 | 0.7+ | 0.1+ | 2004 06 14 | 645 | 0.0 | 0.0 | 2006 03 26 | G96 | 0.3+ | 0.4− |
| 2001 02 02 | 704 | 0.5+ | 0.1+ | 2004 06 14 | 645 | 0.0 | 0.1+ | 2006 03 26 | G96 | 0.1+ | 0.3− |
| 2003 01 29 | 704 | 0.9− | 1.1+ | 2005 12 08 | 703 | 0.5− | 0.7+ | 2006 03 26 | G96 | 0.3+ | 0.2− |
| 2003 01 29 | 704 | 1.3− | 0.1− | 2005 12 08 | 703 | 0.4− | 0.2+ | 2006 04 03 | G96 | 0.1− | 0.3− |
| 2003 01 29 | 704 | 0.4+ | 0.6− | 2005 12 08 | 703 | 0.1− | 0.3− | 2006 04 03 | G96 | 0.5+ | 0.3− |
| 2003 01 29 | 704 | 0.7− | 0.9+ | 2005 12 08 | 703 | 2.6− | 1.2+ | 2006 04 03 | G96 | 0.3− | 0.2− |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2006 01 04 | G96 | 0.1+ | 0.5− | | | | |
| 2004 04 16 | 645 | 0.0 | 0.1− | 2006 01 04 | G96 | 0.1+ | 0.4− | | | | |

### 2004 $HF_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.38510 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20311340 | $\omega$ | 308.81187 | | +0.97230347 | +0.23227578 | |
| $a$ | 2.8662254 | $\Omega$ | 37.77735 | | −0.19914993 | +0.88149092 | |
| $e$ | 0.0772979 | $i$ | 2.42876 | | −0.12233260 | +0.41112251 | |
| $P$ | 4.85 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 15 | 691 | 0.2− | 0.1− | 2004 04 28 | 691 | 0.2− | 0.4− | 2005 08 10 | 807 | 0.1+ | 0.1− |
| 1994 03 15 | 691 | 0.4− | 0.2− | 2004 05 14 | 291 | 0.1− | 0.1+ | 2005 08 10 | 807 | 0.1− | 0.2− |
| 1994 03 15 | 691 | 0.5+ | 0.1+ | 2004 05 14 | 291 | 0.2− | 0.2+ | 2005 08 27 | 644 | 0.1+ | 0.1+ |
| 1996 11 09 | 691 | 0.1+ | 0.3− | 2004 05 14 | 291 | 0.1− | 0.3+ | 2005 08 27 | 644 | 0.1− | 0.3− |
| 1996 11 09 | 691 | 0.1+ | 0.5− | 2004 06 13 | 691 | 0.6+ | 0.1+ | 2005 08 27 | 644 | 0.1− | 0.2− |
| 1996 11 09 | 691 | 0.1+ | 0.2− | 2004 06 13 | 691 | 0.1+ | 0.2− | 2005 11 06 | G96 | 0.1− | 0.5− |
| 2004 04 21 | 691 | 0.4+ | 0.0 | 2004 06 13 | 691 | 0.0 | 0.3− | 2005 11 06 | G96 | 0.2− | 0.1− |
| 2004 04 21 | 691 | 0.1− | 0.5− | 2005 08 05 | 644 | 0.2+ | 0.4+ | 2005 11 06 | G96 | 0.2− | 0.3+ |
| 2004 04 21 | 691 | 0.5− | 0.5− | 2005 08 05 | 644 | 0.2+ | 0.1− | 2005 11 06 | G96 | 0.2− | 0.7− |
| 2004 04 28 | 691 | 0.4− | 0.1− | 2005 08 05 | 644 | 0.2+ | 0.5+ | | | | |
| 2004 04 28 | 691 | 0.1+ | 0.1+ | 2005 08 09 | 807 | 0.1+ | 0.0 | | | | |

### 2004 JD = 2006 $RD_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.94677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21466104 | $\omega$ | 240.99571 | | −0.14994311 | −0.98815193 | |
| $a$ | 2.7624890 | $\Omega$ | 217.67244 | | +0.92473453 | −0.12844410 | |
| $e$ | 0.1650084 | $i$ | 3.07221 | | +0.34983297 | −0.08401116 | |
| $P$ | 4.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.3− | 0.1+ | 2004 05 19 | 673 | 0.5− | 0.4+ | 2006 10 15 | 703 | 0.4− | 0.1− |
| 1992 10 01 | 691 | 0.4+ | 0.1+ | 2004 05 23 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.9− | 0.2+ |
| 1992 10 01 | 691 | 0.1+ | 0.4− | 2004 05 23 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.5+ |
| 1997 11 06 | 704 | (2.0− | 2.3+) | 2004 05 23 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 1997 11 06 | 704 | 1.0− | 1.5− | 2005 07 05 | G96 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.5− | 0.9− |
| 1997 11 06 | 704 | 0.6− | 0.9+ | 2005 07 05 | G96 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.6− | 0.5− |
| 1997 11 06 | 704 | 1.3+ | 1.2− | 2005 07 05 | G96 | 1.2− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2001 08 22 | 691 | 0.0 | 0.1− | 2005 07 05 | G96 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.6− | 0.2+ |
| 2001 08 22 | 691 | 0.2− | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2001 08 22 | 691 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1− | 1.0+ |
| 2001 09 12 | 704 | 0.6+ | 1.2− | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 1.5+ | 0.6− | 2006 09 18 | 699 | 0.4− | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | (2.1+ | 0.9−) | 2006 09 18 | 699 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.8+ | 1.3+ | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.6+ | 1.4+ |
| 2001 09 20 | 704 | 0.9− | 1.0+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2001 09 20 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.6− | 0.2+ |
| 2004 05 08 | 673 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.1+ |
| 2004 05 08 | 673 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.6− | 0.4− |
| 2004 05 08 | 673 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.3+ |
| 2004 05 10 | 673 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.9− | 0.8− |
| 2004 05 10 | 673 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 23 | 291 | 0.6+ | 0.3+ |
| 2004 05 10 | 673 | 0.5+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 23 | 291 | 0.1+ | 0.3+ |
| 2004 05 19 | 673 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 23 | 291 | 0.1+ | 0.5+ |
| 2004 05 19 | 673 | 0.5+ | 0.2+ | 2006 10 15 | 703 | 0.8− | 0.2− | | | | |

### 2004 JL = 2006 $UE_{157}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.04447 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19246544 | $\omega$ | 37.71353 | | −0.30947198 | −0.94877386 | |
| $a$ | 2.9709879 | $\Omega$ | 70.39332 | | +0.85516728 | −0.30697358 | |
| $e$ | 0.0289233 | $i$ | 3.87618 | | +0.41583172 | −0.07480229 | |
| $P$ | 5.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 691 | 0.2+ | 0.5− | 2004 05 10 | 291 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2− |
| 1999 05 17 | 691 | 0.2− | 0.7− | 2004 05 10 | 291 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 1999 05 17 | 691 | 0.6− | 0.2− | 2004 05 14 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.7+ | 0.1− |
| 2001 10 24 | 291 | 0.1+ | 0.1− | 2004 05 14 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.7+ | 0.1+ |
| 2001 10 24 | 291 | 0.2− | 0.2− | 2004 05 14 | 691 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2001 10 24 | 291 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.6− | 0.1− |
| 2004 05 09 | 291 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2004 05 09 | 291 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.4+ | 0.4+ | 2006 10 22 | 691 | 1.2− | 0.2+ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2004 05 09 | 291 | 0.6+ | 0.4+ | 2006 09 27 | 691 | 0.4+ | 0.0 |
| 2004 05 10 | 291 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.3+ |

**2004 JJ$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.05641 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18444724 | $\omega$ | 201.65031 | | +0.17332964 | | +0.98374519 |
| $a$ | 3.0564780 | $\Omega$ | 78.35531 | | −0.89641765 | | +0.17731993 |
| $e$ | 0.0877442 | $i$ | 2.74634 | | −0.40791204 | | +0.02833818 |
| $P$ | 5.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 291 | 0.1− | 0.3+ | 2004 05 14 | 291 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2001 11 20 | 291 | 0.2+ | 0.0 | 2004 05 14 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2001 11 20 | 291 | 0.2− | 0.0 | 2004 05 14 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2004 04 20 | 291 | 0.0 | 0.6− | 2004 05 14 | 691 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2004 04 20 | 291 | 0.1− | 0.6− | 2004 05 23 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2004 04 20 | 291 | 0.2+ | 0.6− | 2004 05 23 | 691 | 0.1+ | 0.6+ | 2006 10 18 | 691 | 0.5− | 0.3− |
| 2004 05 09 | 291 | 0.4+ | 0.1+ | 2004 05 23 | 691 | 0.5+ | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.1+ |
| 2004 05 09 | 291 | 0.0 | 0.0 | 2004 05 28 | 291 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.5+ | 0.3− |
| 2004 05 09 | 291 | 0.1− | 0.0 | 2004 05 28 | 291 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2004 05 13 | 291 | 0.2− | 0.1+ | 2004 05 28 | 291 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2004 05 13 | 291 | 0.9− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2004 05 13 | 291 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 11 11 | 291 | 0.3+ | 0.4+ |
| 2004 05 14 | 291 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2+ | 2006 11 11 | 291 | 0.2− | 0.0 |
| 2004 05 14 | 291 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 11 | 291 | 0.0 | 0.7+ |

**2004 JV$_3$ = 2006 UE$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.63434 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20920214 | $\omega$ | 320.95556 | | +0.43141210 | | −0.90131382 |
| $a$ | 2.8103385 | $\Omega$ | 103.45602 | | +0.83742210 | | +0.38402455 |
| $e$ | 0.1290252 | $i$ | 2.29519 | | +0.33557090 | | +0.20039596 |
| $P$ | 4.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 09 | 291 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2004 05 09 | 291 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3− | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2004 05 09 | 291 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.9+ |
| 2004 05 13 | 291 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2004 05 13 | 291 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.4− | 2006 10 22 | 691 | 0.4+ | 0.2− |
| 2004 05 13 | 291 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2004 05 14 | 291 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.8− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2004 05 14 | 291 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2004 05 14 | 291 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.2− | | | | |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 18 | 691 | 0.3+ | 0.1+ | | | | |

**2004 JH$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.86298 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17038779 | $\omega$ | 91.93718 | | +0.73892478 | | +0.67169853 |
| $a$ | 3.2223824 | $\Omega$ | 225.86965 | | −0.64383341 | | +0.68068271 |
| $e$ | 0.1434643 | $i$ | 4.23634 | | −0.19866732 | | +0.29239038 |
| $P$ | 5.78 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 691 | 0.6+ | 0.2− | 2004 05 13 | 291 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.4+ |
| 2000 11 30 | 691 | 0.1+ | 0.1− | 2004 05 16 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2000 11 30 | 691 | 0.5+ | 0.1+ | 2004 05 16 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2000 11 30 | 645 | 0.2− | 0.1+ | 2004 05 16 | 691 | 0.5+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2000 11 30 | 645 | 0.1− | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.0 |
| 2004 05 09 | 691 | 0.3+ | 0.2+ | 2005 07 29 | 644 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2+ |
| 2004 05 09 | 691 | 0.1− | 0.7+ | 2005 07 29 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.3+ |
| 2004 05 09 | 691 | 0.1+ | 0.7+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2004 05 13 | 926 | 0.3+ | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2004 05 13 | 926 | 0.0 | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2004 05 13 | 926 | 0.3− | 0.4+ | 2005 09 03 | 644 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2004 05 13 | 926 | 0.6− | 0.1+ | 2005 09 03 | 644 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.4− | 0.5+ |
| 2004 05 13 | 291 | 0.2− | 0.3+ | 2005 09 03 | 644 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.1− | 0.6+ |
| 2004 05 13 | 926 | 0.8− | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 14 | 691 | (0.0 | 1.7+) |
| 2004 05 13 | 291 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.0 | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2004 05 13 | 926 | 0.7− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2004 05 13 | 926 | 0.3+ | 0.6− | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.4− | 0.2− |
| 2004 05 13 | 926 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.3+ |

**2004 JT$_8$ = 2000 SA$_{251}$ = 2006 UA$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.07986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18010422 | $\omega$ | 290.98265 | | +0.79317631 | | +0.60166336 |
| $a$ | 3.1054184 | $\Omega$ | 32.24320 | | −0.47230775 | | +0.70539139 |
| $e$ | 0.1270098 | $i$ | 10.16912 | | −0.38444340 | | +0.37473215 |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.3+ | 0.2− | 2004 05 13 | 699 | (1.7+ | 0.2−) | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1995 11 24 | 691 | 0.0 | 0.1− | 2004 05 14 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1995 11 24 | 691 | 0.1+ | 0.0 | 2004 05 14 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2000 09 02 | 704 | 0.5+ | 0.2− | 2004 05 14 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 1.0− | 0.3+ |
| 2000 09 02 | 704 | 0.5+ | 0.1− | 2005 08 04 | 644 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.8− | 0.2+ |
| 2000 09 02 | 704 | 0.4− | 0.6+ | 2005 08 04 | 644 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.3+ | 0.4+ |
| 2000 09 24 | 704 | 0.4+ | 1.8− | 2005 08 04 | 644 | 0.3− | 0.4+ | 2006 11 14 | 703 | 0.1− | 1.4− |
| 2000 09 24 | 704 | 0.3+ | 0.4− | 2005 09 08 | E12 | 0.1− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2000 09 24 | 704 | 0.6− | 0.2− | 2005 09 08 | E12 | 0.5+ | 0.5+ | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2000 10 01 | 699 | 1.1− | 0.1+ | 2005 09 08 | E12 | 0.3− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.7+ |
| 2000 10 01 | 699 | 0.2+ | 0.5+ | 2005 09 08 | E12 | 0.6+ | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 699 | 1.1− | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.4+ |
| 2000 10 01 | 699 | 0.0 | 1.0+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2000 10 02 | 704 | 1.1− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2000 10 02 | 704 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2000 10 02 | 704 | 0.7− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2000 10 02 | 704 | 0.4− | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.4− | 1.0+ |
| 2000 10 02 | 704 | 0.8− | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.8− | 0.4− |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 1.2− | 0.9+ |
| 2000 10 02 | 645 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 1.0+ |
| 2004 04 26 | 699 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.7+ |
| 2004 04 26 | 699 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2004 04 26 | 699 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.3+ | 0.3− |
| 2004 04 26 | 699 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2004 05 13 | 699 | (2.2+ | 0.2+) | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2004 05 13 | 699 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 | | | | |
| 2004 05 13 | 699 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.3− | 0.2− | | | | |

**2004 JU$_8$ = 2006 UR$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.92904 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16134058 | $\omega$ | 100.75796 | | +0.65393281 | | +0.75238618 |
| $a$ | 3.3417476 | $\Omega$ | 210.54548 | | −0.74069770 | | +0.61535894 |
| $e$ | 0.1736669 | $i$ | 8.97564 | | −0.15407401 | | +0.23504981 |
| $P$ | 6.11 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.1+ | 0.0 | 2005 07 11 | 703 | 1.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 1994 12 01 | 691 | 0.1+ | 0.1− | 2005 07 11 | 703 | (0.9− | 1.8−) | 2006 11 08 | 644 | 0.3− | 0.6+ |
| 1994 12 01 | 691 | 0.2− | 0.6+ | 2005 07 30 | 644 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2004 05 13 | 291 | 0.3− | 0.2+ | 2005 07 30 | 644 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2004 05 13 | 291 | 0.5− | 0.2+ | 2005 07 30 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 104 | 1.3+ | 0.3+ |
| 2004 05 13 | 291 | 0.6− | 0.1+ | 2005 07 30 | 644 | 0.0 | 0.2− | 2006 11 13 | 104 | 0.4+ | 0.1− |
| 2004 05 14 | 691 | 0.4+ | 0.4+ | 2005 07 30 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 104 | 0.2− | 0.3+ |
| 2004 05 14 | 691 | 0.2+ | 0.3+ | 2005 07 30 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2004 05 14 | 691 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 23 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2004 05 23 | 691 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2005 06 28 | 644 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2005 06 28 | 644 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2005 06 28 | 644 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2005 07 11 | 703 | (1.9+ | 1.4−) | 2006 10 22 | 691 | 0.2− | 0.7+ | | | | |
| 2005 07 11 | 703 | 1.0− | 1.0+ | 2006 10 22 | 691 | 0.2− | 0.4+ | | | | |

**2004 JX$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.78734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35185957 | $\omega$ | 137.20296 | | −0.28212265 | +0.87853848 | |
| $a$ | 1.9871156 | $\Omega$ | 112.94643 | | −0.95377365 | −0.21347523 | |
| $e$ | 0.0162082 | $i$ | 24.74491 | | −0.10355011 | −0.42731541 | |
| $P$ | 2.80 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 699 | 0.4+ | 0.4+ | 2004 05 14 | 704 | 0.0 | 0.3− | 2004 06 08 | 703 | 1.8− | 0.2+ |
| 2001 03 31 | 699 | 0.9− | 0.5− | 2004 05 26 | 699 | 1.2+ | 0.8− | 2004 06 08 | 703 | (2.8+ | 2.5+) |
| 2001 03 31 | 699 | 0.8− | 0.4− | 2004 05 26 | 699 | 0.2− | 1.3+ | 2004 06 08 | 703 | 0.8− | 1.5− |
| 2001 03 31 | 699 | 0.9+ | 0.4− | 2004 05 26 | 699 | 0.1+ | 0.1− | 2004 06 08 | 703 | 0.2− | 1.3− |
| 2004 03 30 | 704 | 0.0 | 0.8+ | 2004 05 26 | 699 | 1.3+ | 0.1− | 2004 06 10 | 704 | 0.1+ | 0.6− |
| 2004 03 30 | 704 | 0.1+ | 1.2+ | 2004 05 28 | 704 | 0.4+ | 0.1+ | 2004 06 10 | 704 | 0.5− | 1.3− |
| 2004 03 30 | 704 | 0.2− | 0.8+ | 2004 05 28 | 704 | 0.5− | 0.1− | 2004 06 10 | 704 | 0.0 | 1.0− |
| 2004 05 13 | 704 | 0.4− | 0.2+ | 2004 05 28 | 704 | 0.3− | 0.2+ | 2004 06 10 | 704 | 0.9+ | 1.8− |
| 2004 05 13 | 704 | 1.2+ | 1.2+ | 2004 05 28 | 704 | 0.0 | 0.3− | 2004 06 10 | 704 | 0.6+ | 0.5+ |
| 2004 05 13 | 704 | 0.4− | 0.3+ | 2004 05 28 | 704 | 0.1− | 0.1− | 2004 07 03 | 185 | 0.3− | 0.1− |
| 2004 05 13 | 704 | 0.2− | 0.1− | 2004 05 29 | 704 | 0.3− | 0.3+ | 2004 07 03 | 185 | 0.8− | 0.5+ |
| 2004 05 13 | 704 | 0.2− | 1.0+ | 2004 05 29 | 704 | 0.2+ | 0.9+ | 2005 12 29 | 644 | 0.8+ | 0.4− |
| 2004 05 14 | 704 | 0.0 | 0.0 | 2004 05 29 | 704 | 0.1− | 0.7− | 2005 12 29 | 644 | 0.4+ | 0.8− |
| 2004 05 14 | 704 | 0.7+ | 0.0 | 2004 05 29 | 704 | 0.3+ | 0.5+ | 2005 12 29 | 644 | 0.4− | 0.6− |

**2004 JV$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.99774 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23836843 | $\omega$ | 129.78609 | | −0.96427603 | −0.16954295 | |
| $a$ | 2.5761445 | $\Omega$ | 41.63900 | | +0.01783326 | −0.80815691 | |
| $e$ | 0.2248441 | $i$ | 17.83817 | | +0.26429855 | −0.56403687 | |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.0 | 0.3+ | 2004 05 13 | 644 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.7+ |
| 2004 03 27 | 704 | 0.5+ | 1.0− | 2004 05 13 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.7+ | 0.1+ |
| 2004 03 27 | 704 | 0.6− | 0.1+ | 2004 05 13 | 428 | 0.3− | 0.8+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2004 04 17 | 704 | 0.2− | 0.1+ | 2004 05 13 | 428 | 0.8− | 1.4+ | 2006 10 20 | 691 | 0.1+ | 0.5+ |
| 2004 04 17 | 704 | 0.4+ | 0.3+ | 2004 05 15 | E12 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.6− |
| 2004 04 17 | 704 | 0.4+ | 0.3+ | 2004 05 15 | E12 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2004 04 17 | 704 | 0.5− | 0.1+ | 2004 05 15 | 428 | 0.3− | 0.6− | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2004 04 25 | 704 | (1.7− | 0.3+) | 2004 05 15 | E12 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2004 04 25 | 704 | 0.9+ | 0.5+ | 2004 05 15 | E12 | 0.2− | 0.4− | 2006 11 08 | 644 | 0.2− | 0.3− |
| 2004 04 25 | 704 | 0.1− | 0.4− | 2004 05 15 | 428 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.5+ |
| 2004 04 25 | 704 | 0.8− | 0.2+ | 2004 05 15 | 428 | 0.9+ | 0.7− | 2006 11 08 | 644 | 0.4− | 0.5+ |
| 2004 04 25 | 704 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.8+ | 0.4− | | | | |
| 2004 05 13 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.5− | | | | |

**2004 JV$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.91435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22537794 | $\omega$ | 316.56345 | | −0.98844968 | −0.00727342 | |
| $a$ | 2.6742076 | $\Omega$ | 223.71801 | | +0.04432558 | −0.96904407 | |
| $e$ | 0.1983642 | $i$ | 12.65216 | | −0.14492233 | −0.24678067 | |
| $P$ | 4.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.5− | 0.4+ | 2004 05 16 | 691 | 0.1+ | 0.1+ | 2006 10 03 | G96 | 0.7+ | 0.4− |
| 2004 04 22 | 691 | 0.2+ | 0.0 | 2004 05 16 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2004 04 22 | 691 | 0.3+ | 0.1− | 2004 05 16 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2004 05 09 | 691 | 0.1+ | 0.0 | 2004 05 19 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2− |
| 2004 05 09 | 691 | 0.1+ | 0.0 | 2004 05 19 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 05 09 | 691 | 0.3+ | 0.0 | 2004 05 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.6+ |
| 2004 05 15 | 704 | 0.3+ | 0.6+ | 2006 10 03 | G96 | 0.8+ | 0.5− | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2004 05 15 | 704 | 1.1+ | 0.7− | 2006 10 03 | G96 | 0.3+ | 0.8− | | | | |
| 2004 05 15 | 704 | 0.5+ | 0.5− | 2006 10 03 | G96 | 0.8+ | 0.3− | | | | |

**2004 JH$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.00098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17556216 | $\omega$ | 194.82404 | | +0.41629300 | +0.90755310 | |
| $a$ | 3.1587513 | $\Omega$ | 99.80168 | | −0.82839756 | +0.40361008 | |
| $e$ | 0.1245959 | $i$ | 3.21151 | | −0.37477675 | +0.11595809 | |
| $P$ | 5.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 10 | 644 | 0.5+ | 0.6− | 2004 05 18 | 704 | 1.0+ | 0.6− | 2006 11 13 | 291 | 0.6− | 0.4+ |
| 2004 05 10 | 644 | 0.1+ | 0.1− | 2004 05 18 | 704 | 0.5− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2004 05 10 | 644 | 0.2+ | 0.3− | 2004 05 18 | 704 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2004 05 12 | 699 | 0.5− | 1.5+ | 2004 05 18 | 704 | 0.4− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2004 05 12 | 699 | 0.8− | 0.7− | 2004 05 18 | 704 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.4− |
| 2004 05 12 | 699 | (1.1− | 1.7+) | 2004 05 20 | 599 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.6+ | 0.0 |
| 2004 05 12 | 699 | 1.1+ | 1.1− | 2004 05 20 | 599 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 05 15 | 704 | 0.5+ | 0.1+ | 2004 05 20 | 599 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2004 05 15 | 704 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.2− | 0.6− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2004 05 15 | 704 | 0.9− | 0.7+ | 2006 10 21 | G96 | 0.6+ | 0.9− | 2006 11 23 | 691 | 0.2− | 0.8− |
| 2004 05 18 | 704 | 0.6+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2004 05 18 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.6+ | 0.5− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2004 05 18 | 704 | 0.1+ | 0.1+ | 2006 11 13 | 291 | 0.4− | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2004 05 18 | 704 | 0.9− | 0.5+ | 2006 11 13 | 291 | 0.3− | 0.2+ | | | | |

**2004 JE$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.37082 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17503245 | $\omega$ | 77.69773 | | +0.41413632 | +0.89543901 | |
| $a$ | 3.1651211 | $\Omega$ | 218.12762 | | −0.90354292 | +0.38273900 | |
| $e$ | 0.2222813 | $i$ | 15.34053 | | −0.11000593 | +0.22737598 | |
| $P$ | 5.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.0 | 0.1− | 2004 05 12 | 699 | 0.8− | 0.1− | 2005 09 12 | 704 | 0.1+ | 0.0 |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2004 05 15 | 704 | 0.2+ | 0.8+ | 2005 09 26 | 703 | 0.6− | 0.5− |
| 2004 04 13 | 644 | 0.0 | 0.6+ | 2004 05 15 | 704 | 0.4− | 0.0 | 2005 09 26 | 703 | 0.1+ | 0.0 |
| 2004 04 13 | 644 | 0.2+ | 0.3+ | 2004 05 15 | 704 | 0.6− | 1.0+ | 2005 09 26 | 703 | 0.7− | 0.2+ |
| 2004 04 13 | 644 | 0.0 | 0.1− | 2004 05 15 | 704 | 0.4+ | 0.5+ | 2005 09 26 | 703 | 0.1+ | 0.2+ |
| 2004 04 13 | 644 | 0.3− | 0.3+ | 2004 05 15 | 704 | 0.4+ | 0.3+ | 2005 09 30 | 683 | 0.4− | 0.4− |
| 2004 04 13 | 644 | 0.2− | 0.5+ | 2004 05 21 | 704 | (0.6− | 2.3+) | 2005 09 30 | 683 | (1.5+ | 2.2+) |
| 2004 04 13 | 644 | 0.0 | 0.4+ | 2004 05 21 | 704 | (0.3− | 1.9+) | 2005 09 30 | 683 | 0.8− | 0.4+ |
| 2004 05 11 | 699 | 0.5− | 0.1− | 2004 05 21 | 704 | (0.1+ | 2.3+) | 2005 11 26 | 291 | 0.2+ | 0.3+ |
| 2004 05 11 | 699 | 0.3− | 0.1+ | 2004 05 21 | 704 | 0.8+ | 0.2+ | 2005 11 26 | 291 | 0.2+ | 0.5+ |
| 2004 05 11 | 699 | 0.6+ | 0.1− | 2004 05 21 | 704 | 0.3+ | 0.9+ | 2005 11 26 | 291 | 0.1+ | 0.4+ |
| 2004 05 11 | 699 | (2.3− | 0.6−) | 2005 09 12 | 704 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2004 05 12 | 699 | 0.7+ | 0.2− | 2005 09 12 | 704 | 0.1+ | 0.9+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2004 05 12 | 699 | 0.9+ | 0.8− | 2005 09 12 | 704 | 0.6− | 0.6+ | 2006 11 25 | G96 | 0.3− | 1.6+ |
| 2004 05 12 | 699 | 1.3− | 0.7− | 2005 09 12 | 704 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.3− | 0.3− |

**2004 JS$_{16}$ = 2006 SA$_{306}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.46380 | | (2000.0) | | −0.96112385 | −0.25690736 |
| $n$ | 0.18045342 | $\omega$ | 101.67232 | | −0.25690736 | |
| $a$ | 3.1014108 | $\Omega$ | 63.50986 | | +0.18802991 | −0.87734065 |
| $e$ | 0.1130232 | $i$ | 6.49179 | | +0.20220215 | −0.40530481 |
| $P$ | 5.46 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 24 | 691 | 0.0 | 0.7− | 2004 04 22 | 704 | (2.6− | 1.4+) | 2004 05 15 | 704 | 0.3+ | 0.0 |
| 1993 05 24 | 691 | 0.0 | 0.5+ | 2004 04 28 | 691 | 0.1+ | 0.1− | 2004 05 15 | 704 | 0.5+ | 0.8− |
| 1993 05 24 | 691 | 0.1+ | 0.4+ | 2004 04 28 | 691 | 0.0 | 0.1+ | 2004 05 15 | 704 | 0.7+ | 0.4− |
| 2003 03 07 | 644 | 0.2− | 0.3+ | 2004 04 28 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2003 03 07 | 644 | 0.1+ | 0.3+ | 2004 05 11 | 699 | 1.2− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2003 03 07 | 644 | 0.3+ | 0.0 | 2004 05 11 | 699 | 0.6+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2004 04 22 | 704 | 0.7− | 0.8+ | 2004 05 11 | 699 | (2.0− | 0.2−) | 2006 10 01 | 691 | 0.0 | 0.2− |
| 2004 04 22 | 704 | 0.5+ | 0.0 | 2004 05 11 | 699 | 0.2+ | 0.6− | 2006 10 01 | 691 | 0.0 | 0.2− |
| 2004 04 22 | 704 | 1.4− | 0.4+ | 2004 05 15 | 704 | 0.6+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2004 04 22 | 704 | 0.7− | 0.3+ | 2004 05 15 | 704 | 0.3+ | 0.2+ | | | | |

**2004 JW$_{17}$ = 2006 WX$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 224.11906 | | (2000.0) | | −0.89100263 | +0.42009324 |
| $n$ | 0.24088017 | $\omega$ | 323.54931 | | −0.35677484 | −0.88240061 |
| $a$ | 2.5582050 | $\Omega$ | 242.15351 | | −0.28075973 | −0.21187457 |
| $e$ | 0.2081892 | $i$ | 11.22699 | | | |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 12 | E12 | 0.3− | 0.1+ | 2004 05 16 | 704 | (1.7+ | 0.5−) | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2004 05 12 | E12 | 0.6+ | 0.0 | 2004 05 20 | E12 | (1.0− | 1.8+) | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 05 12 | E12 | 0.5− | 0.2− | 2004 05 20 | E12 | (1.2− | 2.3+) | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2004 05 12 | E12 | 0.2− | 1.2+ | 2004 05 20 | E12 | (1.6− | 1.6+) | 2006 11 24 | G96 | 0.6+ | 0.2− |
| 2004 05 15 | 704 | 0.5+ | 0.1− | 2004 05 20 | E12 | (2.2− | 2.4+) | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2004 05 15 | 704 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2004 05 15 | 704 | 0.5− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2004 05 15 | 704 | 0.9+ | 0.5− | 2006 10 28 | G96 | 0.0 | 0.7+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2004 05 15 | 704 | 0.3− | 0.6− | 2006 10 28 | G96 | 0.9+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2004 05 16 | 704 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2004 05 16 | 704 | 0.2+ | 0.6+ | 2006 11 15 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2004 05 16 | 704 | 0.8+ | 0.8+ | 2006 11 15 | 691 | 0.6− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2004 05 16 | 704 | 0.4− | 0.8− | 2006 11 23 | 691 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 |

**2004 JZ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 203.53331 | | (2000.0) | | −0.84714422 | +0.51304747 |
| $n$ | 0.23015596 | $\omega$ | 354.43741 | | −0.47833559 | −0.84966396 |
| $a$ | 2.6370674 | $\Omega$ | 217.49338 | | −0.23139088 | −0.12187469 |
| $e$ | 0.1188089 | $i$ | 13.13399 | | | |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 703 | (0.8− | 1.9−) | 2004 05 15 | 704 | 0.6+ | 1.4+ | 2005 08 05 | 644 | 0.1− | 0.6+ |
| 2004 04 25 | 703 | 1.0− | 0.9+ | 2004 05 15 | 704 | 1.3+ | 0.7+ | 2005 08 05 | 644 | 0.2− | 0.4+ |
| 2004 04 25 | 703 | (2.6− | 1.0−) | 2004 05 21 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.5+ |
| 2004 04 25 | 703 | 0.6− | 0.9+ | 2004 05 21 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.6+ |
| 2004 05 13 | 691 | 0.1− | 0.1+ | 2004 05 21 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.4+ |
| 2004 05 13 | 691 | 0.2− | 0.0 | 2005 08 05 | 644 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.2+ |
| 2004 05 13 | 691 | 0.1+ | 0.1+ | 2005 08 05 | 644 | 0.0 | 0.6+ | 2006 11 22 | G96 | 0.1+ | 0.3+ |
| 2004 05 15 | 704 | 0.6+ | 0.3− | 2005 08 05 | 644 | 0.4− | 0.6+ | 2006 11 22 | G96 | 0.3− | 0.3+ |
| 2004 05 15 | 704 | 0.8+ | 0.3+ | 2005 08 05 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.1− |

**2004 JU$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.81933 | | (2000.0) | | −0.26613498 | +0.96248878 |
| $n$ | 0.21489958 | $\omega$ | 217.64985 | | −0.86170986 | −0.21300688 |
| $a$ | 2.7604444 | $\Omega$ | 36.99998 | | −0.43200497 | −0.16805779 |
| $e$ | 0.0780722 | $i$ | 5.03301 | | | |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 691 | 0.6− | 0.0 | 2001 11 19 | 704 | 0.2+ | 0.2− | 2004 05 16 | 704 | 0.4− | 0.4− |
| 2001 10 21 | 691 | 0.1− | 0.1+ | 2004 05 13 | 691 | 0.3− | 0.7+ | 2004 05 16 | 704 | 0.3+ | 0.9+ |
| 2001 10 21 | 691 | 0.4− | 0.0 | 2004 05 13 | 691 | 0.0 | 0.0 | 2004 05 16 | 704 | 0.4− | 0.4+ |
| 2001 11 11 | 691 | 0.2+ | 0.1+ | 2004 05 13 | 691 | 0.1+ | 0.2+ | 2005 08 26 | 699 | 0.1+ | 0.1− |
| 2001 11 11 | 691 | 0.3+ | 0.1+ | 2004 05 15 | 704 | 0.3+ | 0.8− | 2005 08 26 | 699 | (2.4− | 2.0+) |
| 2001 11 11 | 691 | 0.1+ | 0.4+ | 2004 05 15 | 704 | 0.2+ | 0.2+ | 2005 08 26 | 699 | 0.3− | 0.4− |
| 2001 11 19 | 704 | 0.0 | 0.6+ | 2004 05 15 | 704 | 1.0+ | 0.3− | 2005 08 26 | 699 | 1.3+ | 0.4− |
| 2001 11 19 | 704 | 0.0 | 0.2− | 2004 05 15 | 704 | 0.0 | 0.9− | 2005 09 01 | 691 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.4+ | 2004 05 15 | 704 | 0.4+ | 0.4− | 2005 09 01 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.2− | 0.0 | 2004 05 16 | 704 | 0.4+ | 0.2+ | 2005 09 01 | 691 | 0.0 | 0.0 |

**2004 JR$_{21}$ = 2006 VQ$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.82142 | | (2000.0) | | −0.74619607 | −0.66337994 |
| $n$ | 0.21408774 | $\omega$ | 93.21406 | | −0.66337994 | |
| $a$ | 2.7674186 | $\Omega$ | 45.23723 | | +0.57529212 | −0.68477003 |
| $e$ | 0.0411144 | $i$ | 4.51095 | | +0.33500807 | −0.30169034 |
| $P$ | 4.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.1− | 0.3+ | 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.2+ | 1.3+ |
| 1992 10 25 | 691 | 0.1− | 0.3+ | 2004 05 19 | 691 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 1.0+ |
| 1992 10 25 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2001 09 18 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 1.3+ |
| 2001 09 18 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.2− | 0.8+ |
| 2001 09 18 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 27 | 703 | (2.0− | 3.3−) |
| 2004 05 09 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.7+ | 2006 11 27 | 703 | 2.4+ | 2.7− |
| 2004 05 09 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 0.9− | 0.2+ |
| 2004 05 09 | 691 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.7+ | 2006 12 01 | G96 | 0.3− | 0.1+ |
| 2004 05 16 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 703 | 0.4− | 0.4+ | 2006 12 01 | G96 | 0.6− | 0.2− |
| 2004 05 16 | 691 | 0.0 | 0.4+ | 2006 11 16 | 703 | 1.0− | 0.8+ | 2006 12 01 | G96 | 0.1− | 0.3+ |
| 2004 05 16 | 691 | 0.5+ | 0.5+ | 2006 11 16 | 703 | 1.2− | 0.8+ | 2006 12 01 | G96 | 0.1− | 0.2+ |
| 2004 05 19 | 691 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.3− | 0.5+ | | | | |

**2004 JY$_{21}$ = 2006 UH$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 269.42763 | | (2000.0) | | −0.54997904 | −0.82233382 |
| $n$ | 0.19954126 | $\omega$ | 74.11839 | | −0.82233382 | |
| $a$ | 2.9003311 | $\Omega$ | 50.17517 | | +0.67500691 | −0.54054895 |
| $e$ | 0.0442617 | $i$ | 10.95205 | | +0.49182185 | −0.17769053 |
| $P$ | 4.94 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 645 | 0.0 | 0.0 | 2004 05 19 | 691 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2004 05 19 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2004 05 09 | 691 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.8+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2004 05 09 | 691 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.7+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.5+ |
| 2004 05 09 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.4+ |
| 2004 05 16 | 691 | 0.3+ | 0.5− | 2006 10 03 | G96 | 0.6+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.4+ |
| 2004 05 16 | 691 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2004 05 16 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1− | | | | |
| 2004 05 19 | 691 | 0.1− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.0 | | | | |

**2004 JM$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.14515 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17765299 | $\omega$ | 54.60868 | | +0.25888761 | | +0.89552109 |
| $a$ | 3.1339185 | $\Omega$ | 234.54200 | | −0.96561425 | | +0.23071674 |
| $e$ | 0.1398775 | $i$ | 26.38368 | | −0.02379753 | | +0.38054140 |
| $P$ | 5.55 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 704 | 1.0+ | 0.8+ | 2006 09 30 | G96 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.4+ | 1.0− |
| 2004 04 25 | 704 | 0.6− | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 2004 04 25 | 704 | 0.8− | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.7− |
| 2004 05 13 | 644 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.6− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2004 05 13 | 644 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.7− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2004 05 13 | 644 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.6− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 05 16 | 704 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.5− | 0.4− | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2004 05 16 | 704 | 0.7− | 1.1− | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.4− | 0.2+ |
| 2004 05 16 | 704 | 0.8− | 1.4− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2004 05 16 | 704 | 0.4+ | 0.7− | 2006 10 31 | G96 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 06 08 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.3− | 0.2− |
| 2004 06 08 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.3− |
| 2004 06 08 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.6+ | 0.2+ | 2006 11 27 | 691 | 0.4− | 0.0 |
| 2006 09 30 | G96 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.3− | | | | |

**2004 JF$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.45021 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22685850 | $\omega$ | 318.81208 | | −0.93821796 | | +0.30997895 |
| $a$ | 2.6625596 | $\Omega$ | 239.87231 | | −0.25216840 | | −0.91684119 |
| $e$ | 0.1311263 | $i$ | 10.24417 | | −0.23697712 | | −0.25162529 |
| $P$ | 4.34 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 17 | 691 | 0.0 | 0.4+ | 2004 05 15 | 704 | 0.3− | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.6− |
| 1993 12 17 | 691 | 0.5+ | 0.5+ | 2004 05 16 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.4− |
| 1993 12 17 | 691 | 0.6− | 0.4+ | 2004 05 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 09 18 | 645 | 0.0 | 0.1+ | 2004 05 16 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2004 04 16 | E12 | (0.8+ | 1.8−) | 2006 10 29 | G96 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2004 04 16 | E12 | (0.7+ | 1.9−) | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2004 04 16 | E12 | 0.6+ | 1.5− | 2006 10 29 | G96 | 0.8− | 0.5− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2004 04 16 | E12 | (0.0 | 1.6−) | 2006 10 29 | 291 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2004 05 15 | 704 | 0.5+ | 0.6+ | 2006 10 29 | 291 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2004 05 15 | 704 | 0.6− | 0.0 | 2006 10 29 | 291 | 0.4− | 0.6+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2004 05 15 | 704 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.9− | 2006 11 24 | G96 | 0.2− | 0.3− |

**2004 JG$_{25}$ = 2003 AR$_{31}$ = 2006 TY$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.41209 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22083074 | $\omega$ | 88.35774 | | −0.61909073 | | −0.78281533 |
| $a$ | 2.7107931 | $\Omega$ | 40.11513 | | +0.67630423 | | −0.57200995 |
| $e$ | 0.0996720 | $i$ | 5.58117 | | +0.39917322 | | −0.24495873 |
| $P$ | 4.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.0 | 0.2+ | 2004 05 16 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.2− |
| 2003 01 05 | 704 | 0.6− | 0.1+ | 2004 05 16 | 704 | 0.3+ | 0.8+ | 2006 10 23 | 691 | 0.6− | 0.1− |
| 2003 01 05 | 704 | 0.4− | 0.7+ | 2004 05 16 | 704 | 0.4+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.5− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.5+ |
| 2003 01 08 | 704 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2003 01 08 | 704 | 0.0 | 0.6− | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2003 01 08 | 704 | 0.9+ | 0.6+ | 2006 10 15 | 691 | 0.6+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2003 01 08 | 704 | 0.6+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2003 01 08 | 704 | 0.6+ | 1.1− | 2006 10 19 | 691 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 04 21 | 704 | 0.8− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2004 04 21 | 704 | 0.8+ | 1.0+ | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 04 21 | 704 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2004 05 15 | 704 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2004 05 15 | 704 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.6+ |
| 2004 05 15 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 05 15 | 704 | 1.0+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2004 05 16 | 704 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.9+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2004 05 16 | 704 | 0.4+ | 0.8+ | 2006 10 23 | 691 | 0.7− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.1+ |

**2004 JT$_{26}$ = 2006 VX$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.39593 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21609327 | $\omega$ | 291.51498 | | −0.95472525 | | +0.29501404 |
| $a$ | 2.7502693 | $\Omega$ | 265.65958 | | −0.25675348 | | −0.88215483 |
| $e$ | 0.1270643 | $i$ | 2.20092 | | −0.15025760 | | −0.36710976 |
| $P$ | 4.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.2− | 0.2+ | 2004 06 14 | 704 | 0.3+ | 0.3− | 2006 10 29 | G96 | 0.3− | 0.2− |
| 1994 01 10 | 691 | 0.6+ | 0.0 | 2004 06 14 | 704 | 1.2+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3− |
| 1994 01 10 | 691 | 0.3− | 0.3+ | 2004 06 14 | 704 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.4+ |
| 2004 05 15 | 704 | (2.6− | 0.1+) | 2004 06 14 | 704 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.4− |
| 2004 05 15 | 704 | 0.9− | 0.6− | 2005 08 08 | 807 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.3− | 0.5− |
| 2004 05 15 | 704 | (2.5− | 0.0 ) | 2005 08 08 | 807 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2004 05 15 | 704 | (2.7− | 0.5−) | 2005 08 29 | 691 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.3+ |
| 2004 05 16 | 704 | 0.8+ | 0.4− | 2005 08 29 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2004 05 16 | 704 | 0.6− | 0.3+ | 2005 08 29 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.7+ | 0.1+ |
| 2004 05 16 | 704 | 0.0 | 0.3+ | 2005 09 26 | 691 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2004 05 16 | 704 | 0.2− | 0.1− | 2005 09 26 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 06 12 | E12 | 0.2+ | 0.1− | 2005 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2004 06 12 | E12 | 0.0 | 0.9+ | 2006 10 29 | G96 | 0.8− | 0.0 | 2006 11 22 | 691 | 0.4− | 0.0 |
| 2004 06 12 | E12 | 0.8− | 0.6− | 2006 10 29 | G96 | 0.0 | 0.2− | | | | |
| 2004 06 12 | E12 | 0.3+ | 0.5− | 2006 10 29 | G96 | 0.3− | 0.1− | | | | |

**2004 JW$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.32075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17778106 | $\omega$ | 227.85489 | | +0.07169433 | | +0.98216526 |
| $a$ | 3.1324133 | $\Omega$ | 47.14724 | | −0.83086973 | | +0.15521976 |
| $e$ | 0.1070289 | $i$ | 13.71505 | | −0.55182915 | | −0.10610480 |
| $P$ | 5.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 12 | 699 | 0.6+ | 0.4+ | 2004 05 18 | 704 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2004 05 12 | 699 | (0.2− | 2.1+) | 2004 05 22 | 704 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.2+ | 0.3− |
| 2004 05 12 | 699 | 0.1+ | 0.4+ | 2004 05 22 | 704 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2004 05 12 | 699 | 1.4+ | 1.0+ | 2004 05 22 | 704 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2004 05 15 | E12 | 0.2+ | 0.7+ | 2004 05 22 | 704 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.2+ |
| 2004 05 15 | E12 | 0.8+ | 1.0+ | 2004 06 12 | E12 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.8− |
| 2004 05 15 | E12 | 0.8− | 0.1+ | 2004 06 12 | E12 | 0.4− | 1.3− | 2006 11 11 | 703 | 0.7− | 0.2+ |
| 2004 05 15 | E12 | 0.2− | 1.4+ | 2004 06 12 | E12 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.4− | 0.5+ |
| 2004 05 16 | 704 | 1.1+ | 1.1− | 2004 06 12 | E12 | 0.4− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2004 05 16 | 704 | 0.0 | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2004 05 16 | 704 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2004 05 16 | 704 | 0.1+ | 0.7− | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2004 05 17 | 428 | 0.9− | 0.3− | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.6+ |
| 2004 05 17 | 428 | 0.7− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2004 05 18 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2004 05 18 | 704 | 0.5+ | 1.1− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2004 05 18 | 704 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 05 18 | 704 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− | | | | |

**2004 JD$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 101.71794 | | (2000.0) | | | |
| $n$ | 0.17590623 | $\omega$ | 76.90525 | | +0.45228668 | +0.87723995 |
| $a$ | 3.1546310 | $\Omega$ | 221.23974 | | −0.88323505 | +0.41551156 |
| $e$ | 0.1568812 | $i$ | 14.12690 | | −0.12382486 | +0.24041675 |
| $P$ | 5.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 645 | 0.0 | 0.0 | 2004 05 17 | 704 | 0.5− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2000 11 30 | 645 | 0.0 | 0.0 | 2004 05 17 | 704 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2004 04 30 | 691 | 0.0 | 0.1+ | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2004 04 30 | 691 | 0.3− | 0.6+ | 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2004 04 30 | 691 | 0.2− | 0.3+ | 2004 05 21 | 704 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2004 05 15 | 704 | 0.3− | 0.4+ | 2004 05 21 | 704 | 0.3− | 0.5+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2004 05 15 | 704 | 0.1+ | 0.0 | 2004 05 21 | 704 | 0.4− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2004 05 15 | 704 | 0.8+ | 0.6+ | 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2004 05 15 | 704 | 0.1+ | 0.1− | 2005 08 30 | 644 | 0.2− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2004 05 15 | 704 | 0.5+ | 0.3− | 2005 08 30 | 644 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2004 05 17 | 704 | 0.1+ | 0.0 | 2005 08 30 | 644 | 0.3− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2004 05 17 | 704 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.3+ |

**2004 JY$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 112.57527 | | (2000.0) | | | |
| $n$ | 0.17468343 | $\omega$ | 218.08238 | | +0.17447326 | +0.88259887 |
| $a$ | 3.1693357 | $\Omega$ | 65.98039 | | −0.74471249 | +0.40832468 |
| $e$ | 0.1564957 | $i$ | 28.55091 | | −0.64417574 | −0.23300255 |
| $P$ | 5.64 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 645 | 0.0 | 0.1+ | 2004 05 18 | 704 | 0.8+ | 0.6+ | 2004 06 15 | 704 | 0.7− | 0.6− |
| 2000 11 27 | 645 | 0.1− | 0.1+ | 2004 05 18 | 704 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2004 04 16 | 704 | 0.3+ | 0.5− | 2004 05 18 | 704 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2004 04 16 | 704 | 0.8− | 0.5+ | 2004 05 22 | 704 | 0.5− | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2004 04 16 | 704 | 0.2+ | 0.2− | 2004 05 22 | 704 | 0.7+ | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2004 04 16 | 704 | (2.9− | 0.1+) | 2004 05 22 | 704 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2004 05 15 | 704 | 0.1+ | 0.1− | 2004 05 22 | 704 | 0.4+ | 0.5+ | 2006 11 19 | 691 | 0.2− | 0.4+ |
| 2004 05 15 | 704 | 0.2− | 0.4+ | 2004 05 22 | 704 | 0.2− | 0.7− | 2006 11 19 | 691 | 0.2+ | 0.3+ |
| 2004 05 15 | 704 | 0.7+ | 0.8+ | 2004 06 11 | 691 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.2− | 0.4+ |
| 2004 05 15 | 704 | 0.4+ | 0.5− | 2004 06 11 | 691 | 0.2+ | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2004 05 15 | 704 | 0.4+ | 0.2+ | 2004 06 11 | 691 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.5+ |
| 2004 05 15 | 704 | (2.3+ | 0.0 ) | 2004 06 12 | 644 | 0.3+ | 0.7+ | 2006 11 27 | 703 | 1.4− | 0.9+ |
| 2004 05 15 | 704 | 0.6+ | 1.0+ | 2004 06 12 | 644 | 0.4+ | 0.8+ | 2006 11 27 | 703 | 1.3− | 0.4− |
| 2004 05 15 | 704 | 1.0+ | 0.2− | 2004 06 12 | 644 | 0.3+ | 0.5+ | 2006 11 27 | 703 | 0.2+ | 0.1− |
| 2004 05 15 | 704 | 0.5+ | 0.6− | 2004 06 15 | 704 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.3− | 0.4− |
| 2004 05 18 | 704 | 1.5+ | 0.2+ | 2004 06 15 | 704 | 0.8− | 0.6− | | | | |
| 2004 05 18 | 704 | 0.4+ | 0.1− | 2004 06 15 | 704 | 0.5+ | 1.2− | | | | |

**2004 JU$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 138.46821 | | (2000.0) | | | |
| $n$ | 0.18097605 | $\omega$ | 36.71090 | | −0.22480160 | +0.95494932 |
| $a$ | 3.0954371 | $\Omega$ | 221.31752 | | −0.94916912 | −0.25956524 |
| $e$ | 0.0969079 | $i$ | 17.06437 | | −0.22032299 | +0.14386687 |
| $P$ | 5.45 | $H$ | 14.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 704 | 0.4+ | 0.0 | 2004 05 22 | 704 | 0.6+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2004 05 15 | 704 | 0.0 | 0.1+ | 2004 05 22 | 704 | 1.1+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2004 05 15 | 704 | 0.3− | 0.2+ | 2004 05 22 | 704 | 0.8+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 2004 05 15 | 704 | 0.1+ | 0.1− | 2004 06 17 | 644 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.0 |
| 2004 05 15 | 704 | 0.4− | 0.1− | 2004 06 17 | 644 | 0.4+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2004 05 18 | 704 | 0.6− | 1.3− | 2004 06 17 | 644 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 05 18 | 704 | 0.5− | 0.3− | 2006 10 12 | 691 | 0.2− | 0.4− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 05 18 | 704 | 0.9− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2004 05 18 | 704 | 0.4− | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 05 18 | 704 | 0.7− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | | | | |
| 2004 05 22 | 704 | 0.6+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2+ | | | | |

**2004 JB$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 190.86148 | | (2000.0) | | | |
| $n$ | 0.23567608 | $\omega$ | 94.68698 | | −0.10383081 | +0.99415775 |
| $a$ | 2.5957272 | $\Omega$ | 169.21891 | | −0.96356179 | −0.09319859 |
| $e$ | 0.2214994 | $i$ | 9.06996 | | −0.24651136 | −0.05444617 |
| $P$ | 4.18 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 25 | 704 | 0.1+ | 1.4− | 2004 05 19 | 691 | 0.0 | 0.1+ | 2004 06 12 | 704 | 0.0 | 0.3+ |
| 2000 06 25 | 704 | 0.3+ | 0.9− | 2004 05 19 | 691 | 0.0 | 0.1+ | 2004 06 19 | 703 | 0.2− | 0.3− |
| 2000 06 25 | 704 | 0.5− | 0.0 | 2004 05 19 | 691 | 0.1+ | 0.1+ | 2004 06 19 | 703 | 0.2− | 0.1+ |
| 2001 10 18 | 291 | 0.2+ | 0.2+ | 2004 05 24 | 704 | 0.4+ | 0.5+ | 2004 06 19 | 703 | 0.3− | 0.0 |
| 2001 10 18 | 291 | 0.6+ | 0.2+ | 2004 05 24 | 704 | 0.1+ | 1.0+ | 2004 06 19 | 703 | 0.9− | 0.6− |
| 2001 10 18 | 291 | 0.7− | 0.3+ | 2004 05 24 | 704 | 0.6− | 0.5+ | 2004 06 26 | 691 | 0.2− | 0.0 |
| 2004 03 23 | 704 | 1.4− | 1.2− | 2004 05 24 | 704 | 0.2+ | 0.4+ | 2004 06 26 | 691 | 0.1− | 0.0 |
| 2004 03 23 | 704 | 0.1− | 0.9− | 2004 05 24 | 704 | (1.9− | 0.9+) | 2004 06 26 | 691 | 0.0 | 0.1− |
| 2004 03 23 | 704 | 0.4+ | 0.1− | 2004 06 11 | 644 | 0.3− | 0.3+ | 2004 07 09 | 644 | 0.1+ | 0.0 |
| 2004 04 17 | 704 | 0.5+ | 0.5− | 2004 06 11 | 644 | 0.4− | 0.1+ | 2004 07 09 | 644 | 0.1+ | 0.1+ |
| 2004 04 17 | 704 | 0.6+ | 0.5+ | 2004 06 11 | 644 | 0.1− | 0.3+ | 2004 07 09 | 644 | 0.2+ | 0.1− |
| 2004 04 17 | 704 | 0.9+ | 0.5− | 2004 06 12 | 704 | 0.0 | 0.5+ | 2005 11 03 | 703 | 0.3− | 0.3+ |
| 2004 05 14 | 704 | 1.2+ | 0.5+ | 2004 06 12 | 704 | 0.0 | 0.6+ | 2005 11 03 | 703 | (1.2+ | 2.3−) |
| 2004 05 14 | 704 | 0.3+ | 0.2+ | 2004 06 12 | 704 | 0.4− | 0.3+ | 2005 11 03 | 703 | 0.9− | 0.4− |
| 2004 05 14 | 704 | 1.0+ | 0.8+ | 2004 06 12 | 704 | 0.1+ | 0.1− | 2005 11 03 | 703 | 0.7+ | 0.3+ |

**2004 JZ$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 258.36824 | | (2000.0) | | | |
| $n$ | 0.17569930 | $\omega$ | 26.85561 | | −0.36603284 | −0.88061336 |
| $a$ | 3.1571075 | $\Omega$ | 85.91387 | | +0.79039909 | −0.46485894 |
| $e$ | 0.1073306 | $i$ | 17.55767 | | +0.49121201 | +0.09179475 |
| $P$ | 5.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 699 | 1.1− | 1.0+ | 2003 02 19 | 644 | 0.0 | 0.6+ | 2004 05 14 | 691 | 0.5+ | 0.0 |
| 2001 11 20 | 699 | 0.3+ | 0.1+ | 2003 03 03 | 644 | 0.6+ | 0.5+ | 2004 05 14 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 699 | 1.0− | 1.3− | 2003 03 03 | 644 | 0.4+ | 0.5+ | 2004 05 19 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 699 | 1.0+ | 1.6+ | 2003 03 03 | 644 | 0.5+ | 0.5+ | 2004 05 19 | 691 | 0.1− | 0.1+ |
| 2003 02 01 | 644 | 0.4+ | 1.6+ | 2003 03 07 | 645 | 0.1− | 0.1− | 2004 05 19 | 691 | 0.2+ | 0.2+ |
| 2003 02 01 | 644 | 0.3+ | 1.8+ | 2003 03 07 | 645 | 0.1− | 0.1− | 2004 06 16 | 691 | 0.3− | 0.2− |
| 2003 02 01 | 644 | 0.4+ | 1.4+ | 2003 04 26 | 645 | 0.0 | 0.1− | 2004 06 16 | 691 | 0.2− | 0.1− |
| 2003 02 19 | 644 | 0.2+ | 0.4+ | 2003 04 26 | 645 | 0.0 | 0.1− | 2004 06 16 | 691 | 0.4+ | 0.2+ |
| 2003 02 19 | 644 | 0.2+ | 0.3+ | 2004 05 14 | 691 | 0.2+ | 0.2+ | | | | |

**2004 JV$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 141.90650 | | (2000.0) | | | |
| $n$ | 0.17441639 | $\omega$ | 12.50449 | | −0.31224120 | +0.91978430 |
| $a$ | 3.1725698 | $\Omega$ | 239.73616 | | −0.89359680 | −0.36929321 |
| $e$ | 0.1122221 | $i$ | 15.97449 | | −0.32247512 | +0.13273793 |
| $P$ | 5.65 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 704 | 0.5+ | 1.0+ | 2004 06 15 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.2+ |
| 2004 04 25 | 704 | 0.2− | 0.5+ | 2004 06 15 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 04 25 | 704 | 0.7− | 0.0 | 2004 06 15 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.5+ | 0.0 |
| 2004 05 15 | 704 | 0.2+ | 0.1− | 2004 06 18 | 704 | 0.5− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2004 05 15 | 704 | 0.1− | 1.1− | 2004 06 18 | 704 | 0.4− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2004 05 15 | 704 | 0.1+ | 0.2+ | 2004 06 18 | 704 | 0.5+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2004 05 15 | 704 | 0.9+ | 0.2− | 2004 06 18 | 704 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1− | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 19 | 704 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2004 05 19 | 704 | 0.9− | 0.5− | 2006 10 19 | 691 | 0.5− | 0.7+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2004 05 19 | 704 | 0.1+ | 0.5− | 2006 10 19 | 691 | 0.2+ | 0.0 | | | | |
| 2004 05 19 | 704 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.3− | 0.2− | | | | |

**2004 JE$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.89149 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23519252 | $\omega$ | 99.61448 | | −0.93292787 | | −0.29823404 |
| $a$ | 2.5992839 | $\Omega$ | 63.26526 | | +0.17097387 | | −0.86003800 |
| $e$ | 0.1130529 | $i$ | 13.05557 | | +0.31688092 | | −0.41399407 |
| $P$ | 4.19 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 11 | 699 | 0.1+ | 0.1+ | 2004 06 13 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2004 05 11 | 699 | 0.6+ | 1.2+ | 2006 10 29 | G96 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2004 05 11 | 699 | 0.5+ | 0.4+ | 2006 10 29 | G96 | 0.9− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2004 05 11 | 699 | 0.7− | 1.1− | 2006 10 29 | G96 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.5+ | 1.1+ |
| 2004 05 15 | 704 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.6+ |
| 2004 05 15 | 704 | 0.1+ | 0.6− | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2004 05 15 | 704 | 1.1+ | 0.2− | 2006 11 11 | 691 | 0.5− | 0.3+ | 2006 11 21 | 704 | 1.3− | 0.5+ |
| 2004 05 15 | 599 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.5+ | 0.7− | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2004 05 15 | 599 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.7− | 0.1− |
| 2004 05 15 | 599 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.7− |
| 2004 05 21 | 704 | 1.0− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.3− |
| 2004 05 21 | 704 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 05 21 | 704 | 0.6− | 0.7− | 2006 11 15 | 703 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 05 21 | 704 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.7+ | 0.4− | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2004 05 21 | 704 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.5+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2004 06 13 | 691 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.7+ | 0.4+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2004 06 13 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.2+ | | | | |

**2004 JT$_{47}$ = 2006 UP$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.19205 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22996479 | $\omega$ | 65.09831 | | −0.68091677 | | −0.71780159 |
| $a$ | 2.6385287 | $\Omega$ | 68.63179 | | +0.60296768 | | −0.66207781 |
| $e$ | 0.1578459 | $i$ | 8.97652 | | +0.41567093 | | −0.21543873 |
| $P$ | 4.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 691 | 0.1+ | 0.3− | 2004 05 21 | 691 | 0.4− | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.2+ |
| 2004 05 13 | 691 | 0.3+ | 0.0 | 2004 06 13 | 691 | 0.7+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.4− |
| 2004 05 13 | 691 | 0.0 | 0.0 | 2004 06 13 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2004 05 21 | 691 | 0.3− | 0.0 | 2004 06 13 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2004 05 21 | 691 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 |

**2004 JZ$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.84134 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21436778 | $\omega$ | 315.02851 | | +0.99355423 | | −0.08682928 |
| $a$ | 2.7650079 | $\Omega$ | 50.09389 | | +0.11050516 | | +0.88520045 |
| $e$ | 0.0689176 | $i$ | 5.45133 | | −0.02527075 | | +0.45703483 |
| $P$ | 4.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 1.2− | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.4+ |
| 2001 09 16 | 704 | 1.1+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 1.2+ | 0.2+ |
| 2001 09 16 | 704 | 1.1− | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2001 09 16 | 704 | 1.0− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.5− | 0.8+ |
| 2001 10 07 | 644 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.7+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2001 10 07 | 644 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2001 10 07 | 644 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2001 10 17 | 644 | 1.2− | 1.0+ | 2006 10 20 | 926 | 0.3+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 644 | 1.0− | 0.7+ | 2006 10 20 | 926 | 0.1− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2001 10 17 | 644 | 1.2− | 1.1+ | 2006 10 20 | 926 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2001 12 10 | 645 | 0.1+ | 0.0 | 2006 10 21 | 926 | 0.2+ | 0.1− | 2006 11 20 | 703 | 0.2− | 0.9− |
| 2001 12 10 | 645 | 0.1+ | 0.1− | 2006 10 21 | 926 | 0.1− | 0.6+ | 2006 11 20 | 703 | 0.2− | 0.2− |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 10 21 | 926 | 0.4− | 0.6+ | 2006 11 20 | 703 | 1.2− | 0.2− |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.4− | 0.3− | 2006 11 20 | 704 | (0.1+ | 1.7−) |
| 2004 04 19 | 704 | 0.2− | 0.2+ | 2006 11 09 | 691 | 0.6− | 0.4− | 2006 11 20 | 703 | 0.3+ | 0.5+ |
| 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 11 09 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.1− |
| 2004 04 19 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 20 | 704 | 1.0+ | 1.0− |
| 2004 04 19 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 1.3+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 1.3+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2004 04 19 | 704 | 0.2− | 0.9+ | 2006 11 11 | 703 | 0.7− | 0.8− | 2006 11 20 | 704 | 0.3+ | 0.2+ |
| 2004 04 19 | 691 | 0.1− | 0.8+ | 2006 11 13 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 1.1− | 0.0 |
| 2004 05 10 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2004 05 10 | 691 | 0.5+ | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.7− | 0.1+ |
| 2004 05 10 | 691 | 0.0 | 0.6+ | 2006 11 13 | 644 | 0.3− | 0.6+ | 2006 11 20 | 704 | 0.6− | 0.0 |
| 2004 05 19 | 691 | 0.6+ | 0.1− | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2004 05 19 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2004 05 19 | 691 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.1− |
| 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.6− |
| 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.8+ | 2006 12 01 | G96 | 0.5+ | 0.1− |
| 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.8+ | | | | |

**2004 JH$_{55}$ = 2006 SU$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.51862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23159506 | $\omega$ | 128.29484 | | −0.70965981 | | −0.70446391 |
| $a$ | 2.6261318 | $\Omega$ | 6.94245 | | +0.61575950 | | −0.62750931 |
| $e$ | 0.2061184 | $i$ | 5.05780 | | +0.34237873 | | −0.33160619 |
| $P$ | 4.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.2− | 0.7+ | 2004 05 10 | 691 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 2002 10 15 | 644 | 0.3− | 0.9+ | 2004 05 10 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2002 10 15 | 644 | 0.4− | 0.6+ | 2004 05 19 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 04 13 | 291 | 0.3+ | 0.1+ | 2004 05 19 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.4− | 0.0 |
| 2004 04 13 | 291 | 0.4+ | 0.2+ | 2004 05 19 | 691 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2004 04 13 | 291 | 0.5+ | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2004 04 19 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2004 04 19 | 691 | 0.4− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.1+ | | | | |
| 2004 05 10 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | | | |

**2004 JX$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.37984 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22512751 | $\omega$ | 15.68801 | | −0.99181483 | | −0.10209131 |
| $a$ | 2.6761904 | $\Omega$ | 158.01206 | | +0.08352508 | | −0.97301429 |
| $e$ | 0.1132515 | $i$ | 11.81878 | | +0.09657591 | | −0.20693127 |
| $P$ | 4.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 684 | 0.0 | 1.1+ | 2004 05 24 | 704 | 0.1− | 0.0 | 2004 06 26 | 691 | 0.2− | 0.0 |
| 1999 03 10 | 684 | 0.2+ | 0.1+ | 2004 05 24 | 704 | 0.1− | 0.2+ | 2004 06 26 | 691 | 0.1− | 0.0 |
| 2003 01 05 | 704 | 0.5− | 1.9+ | 2004 05 24 | 704 | 0.3+ | 0.6+ | 2005 07 06 | 291 | 0.4− | 0.0 |
| 2003 01 05 | 704 | 0.0 | 0.6+ | 2004 05 24 | 704 | 0.3+ | 0.7− | 2005 07 06 | 291 | 0.3− | 0.1− |
| 2003 01 05 | 704 | 0.5+ | 0.3− | 2004 06 12 | 691 | 0.1+ | 0.1− | 2005 07 06 | 291 | 0.2− | 0.0 |
| 2004 05 14 | 644 | 0.1+ | 0.7+ | 2004 06 12 | 691 | 0.2− | 0.0 | 2005 08 30 | 691 | 0.0 | 0.3+ |
| 2004 05 14 | 644 | 0.2+ | 0.2+ | 2004 06 12 | 691 | 0.1− | 0.1− | 2005 08 30 | 691 | 0.2+ | 0.2+ |
| 2004 05 14 | 644 | 1.0+ | 0.2+ | 2004 06 26 | 691 | 0.1+ | 0.3+ | 2005 08 30 | 691 | 0.3+ | 0.2+ |

**2004 KC**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.49491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23511257 | $\omega$ | 323.97375 | | −0.67159404 | | +0.71866395 |
| $a$ | 2.5998731 | $\Omega$ | 263.08113 | | −0.63020784 | | −0.68199890 |
| $e$ | 0.1301414 | $i$ | 10.46030 | | −0.38961459 | | −0.13564525 |
| $P$ | 4.19 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 704 | 0.4+ | 0.5+ | 2004 05 22 | 704 | 0.5− | 1.2+ | 2004 06 12 | E12 | 0.5+ | 0.8− |
| 2004 04 25 | 704 | 0.0 | 0.9− | 2004 05 22 | 704 | 0.0 | 1.4+ | 2004 06 12 | E12 | 1.3+ | 1.2− |
| 2004 04 25 | 704 | 0.5+ | 0.3− | 2004 05 28 | 428 | 1.6− | 0.3− | 2004 06 12 | E12 | 0.7+ | 0.4− |
| 2004 05 09 | 644 | 0.3− | 0.3+ | 2004 05 28 | 428 | 0.1− | 0.1+ | 2005 09 01 | 644 | 0.2+ | 0.2+ |
| 2004 05 09 | 644 | 0.2− | 0.1− | 2004 06 05 | 644 | 0.3+ | 0.4+ | 2005 09 01 | 644 | 0.2− | 0.1+ |
| 2004 05 09 | 644 | 0.1− | 0.0 | 2004 06 05 | 644 | 0.1+ | 0.4+ | 2005 09 01 | 644 | 0.2− | 0.2+ |
| 2004 05 16 | 428 | 1.4− | 0.9− | 2004 06 05 | 644 | 0.3− | 0.2+ | 2006 11 25 | 691 | 0.2+ | 0.0 |
| 2004 05 16 | 428 | 0.1− | 0.5+ | 2004 06 11 | 704 | 0.4+ | 0.6+ | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2004 05 17 | 428 | 0.0 | 0.1− | 2004 06 11 | 704 | 0.4+ | 0.4− | 2006 11 25 | 691 | 0.3− | 0.3+ |
| 2004 05 17 | 428 | 0.3− | 0.6+ | 2004 06 11 | 704 | 0.2− | 0.0 | | | | |
| 2004 05 22 | 704 | 0.4− | 0.1+ | 2004 06 12 | E12 | 1.3+ | 0.6− | | | | |

**2004 KQ$_1$ = 2006 TL$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.80850 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18282782 | $\omega$ | 24.82271 | | +0.62519728 | | −0.77617151 |
| $a$ | 3.0745002 | $\Omega$ | 26.71139 | | +0.68225018 | | +0.49263206 |
| $e$ | 0.0432303 | $i$ | 10.48115 | | +0.37902909 | | +0.39353710 |
| $P$ | 5.39 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 18 | 460 | 1.1− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2004 05 18 | 460 | 1.1− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2004 05 20 | 460 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2004 05 20 | 460 | 1.0+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2004 05 20 | 460 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2004 05 22 | 460 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2004 05 22 | 460 | 0.9+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.8− |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.3+ | 0.6− |
| 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.9− |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 11 | 703 | 1.2+ | 0.2− |
| 2006 10 01 | 701 | 0.3+ | 0.6− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.7+ |
| 2006 10 01 | 701 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.5− | 1.1+ |
| 2006 10 01 | 701 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.6− |
| 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.4− |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.4+ | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.3− |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.3− |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.0 | 0.2+ | | | | |

**2004 KR$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.45097 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22131388 | $\omega$ | 334.94288 | | −0.66429407 | | +0.72706387 |
| $a$ | 2.7068464 | $\Omega$ | 252.91156 | | −0.65158264 | | −0.67698501 |
| $e$ | 0.1748491 | $i$ | 10.45604 | | −0.36626963 | | −0.11432162 |
| $P$ | 4.45 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 05 18 | 704 | 0.7+ | 0.3+ | 2004 06 12 | E12 | (1.4− | 2.0+) |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 05 22 | 704 | 0.1− | 0.4− | 2004 06 23 | E12 | 0.2− | 0.5+ |
| 2004 04 25 | 704 | 0.2+ | 0.1− | 2004 05 22 | 704 | 0.5+ | 0.1+ | 2004 06 23 | E12 | 0.0 | 0.1− |
| 2004 04 25 | 704 | 0.2− | 0.0 | 2004 05 22 | 704 | 0.2+ | 0.4+ | 2004 06 23 | E12 | 0.3− | 0.5+ |
| 2004 04 25 | 704 | 0.9− | 0.2+ | 2004 05 22 | 704 | 0.5+ | 0.3− | 2004 06 23 | E12 | 0.4− | 1.1+ |
| 2004 05 09 | 644 | 0.4− | 0.0 | 2004 05 22 | 704 | 0.0 | 1.2− | 2006 11 16 | 691 | 0.2− | 0.4+ |
| 2004 05 09 | 644 | 0.2− | 0.1+ | 2004 06 11 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2004 05 09 | 644 | 0.2− | 0.1+ | 2004 06 11 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2004 05 18 | 704 | 0.2+ | 0.3+ | 2004 06 11 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.4+ |
| 2004 05 18 | 704 | 0.3+ | 0.2+ | 2004 06 12 | E12 | 0.1− | 1.1+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2004 05 18 | 704 | (2.1+ | 0.1−) | 2004 06 12 | E12 | 0.7− | 1.0+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 05 18 | 704 | 0.3+ | 0.0 | 2004 06 12 | E12 | (1.0− | 2.3+) | | | | |

**2004 KJ$_{10}$ = 2006 TE$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.43590 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18429407 | $\omega$ | 189.93107 | | −0.79019064 | | +0.60787274 |
| $a$ | 3.0581713 | $\Omega$ | 27.97088 | | −0.55025859 | | −0.64763684 |
| $e$ | 0.0478510 | $i$ | 9.57730 | | −0.26984112 | | −0.45940968 |
| $P$ | 5.35 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 699 | (2.7+ | 0.7−) | 2006 10 16 | 691 | 1.1− | 0.4− | 2006 11 09 | 691 | 0.3− | 0.3+ |
| 2004 05 13 | 699 | (2.0+ | 1.0+) | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2004 05 13 | 699 | 0.9− | 1.4+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2004 05 13 | 699 | 1.3+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2004 05 19 | E12 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2004 05 19 | E12 | (3.1+ | 0.9−) | 2006 10 20 | 691 | 1.3+ | 1.4− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2004 05 19 | E12 | (2.4+ | 0.2+) | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 1.3− |
| 2004 05 20 | E12 | 0.9+ | 0.4+ | 2006 10 20 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.4− |
| 2004 05 20 | E12 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.7− | 1.1− |
| 2004 05 20 | E12 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 1.0+ | 0.5− |
| 2004 05 20 | E12 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.3− | 0.2− |
| 2004 05 22 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2004 05 22 | 704 | 0.4− | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2004 05 22 | 704 | 0.5+ | 1.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2004 05 22 | 704 | 1.0− | 1.0− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2006 09 26 | G96 | 0.5+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.0 | | | | |

**2004 KT$_{15}$ = 2006 SK$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.30210 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18663411 | $\omega$ | 130.91728 | | −0.98414312 | | −0.17507327 |
| $a$ | 3.0325551 | $\Omega$ | 39.02438 | | +0.14608708 | | −0.89111443 |
| $e$ | 0.1266052 | $i$ | 2.59333 | | +0.10060256 | | −0.41864594 |
| $P$ | 5.28 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.2+ | 0.3+ | 2004 05 23 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.7− |
| 1996 10 05 | 691 | 0.4− | 0.8+ | 2004 05 23 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 1996 10 05 | 691 | 0.3− | 0.3+ | 2004 05 23 | 691 | 0.5− | 0.6− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2004 04 15 | 699 | 0.1− | 0.5+ | 2004 05 28 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.4+ | 0.3+ |
| 2004 04 15 | 699 | 0.6+ | 1.0+ | 2004 05 28 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.4+ | 0.0 |
| 2004 04 15 | 699 | 0.6− | 0.9+ | 2004 05 28 | 691 | 0.4− | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.8+ |
| 2004 04 15 | 699 | (1.3+ | 1.8−) | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2004 05 15 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2004 05 15 | 691 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.6− | 0.2− |
| 2004 05 15 | 691 | 0.7+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.0 | 0.2+ |

**2004 LK$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 233.52416 | | (2000.0) | | | |
| $n$ | 0.22916627 | $\omega$ | 299.09742 | | −0.98065109 | +0.14359270 |
| $a$ | 2.6446544 | $\Omega$ | 249.42604 | | −0.08944520 | −0.93324909 |
| $e$ | 0.1752669 | $i$ | 8.17073 | | −0.17413498 | −0.32928296 |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 16 | 704 | 1.0− | 1.3+ | 2004 06 14 | 704 | 0.1+ | 1.3− | 2006 11 10 | 691 | 0.2− | 0.4− |
| 2004 05 16 | 704 | 0.6− | 1.5+ | 2004 06 14 | 704 | 0.1− | 0.8+ | 2006 11 14 | 691 | 0.2+ | 0.3− |
| 2004 05 16 | 704 | 0.5− | 1.0+ | 2004 06 14 | 704 | 0.2+ | 0.9− | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2004 05 16 | 704 | 0.9− | 0.4− | 2004 06 14 | 704 | 0.1+ | 0.9− | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2004 06 06 | 644 | 0.4+ | 0.5− | 2006 10 23 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 2004 06 06 | 644 | 0.7+ | 0.2− | 2006 10 23 | 691 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2004 06 06 | 644 | 0.4− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2004 06 09 | E12 | 1.2+ | 0.8+ | 2006 10 27 | 691 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.2− | 0.4+ |
| 2004 06 09 | E12 | 0.3+ | 1.0+ | 2006 10 27 | 691 | 0.5+ | 0.4+ | 2006 11 22 | 691 | 0.2− | 0.6+ |
| 2004 06 09 | E12 | 0.1+ | 0.8+ | 2006 10 27 | 691 | 0.3+ | 0.2+ | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 2004 06 09 | E12 | 0.5+ | 0.7+ | 2006 11 10 | 691 | 0.2+ | 0.2− | | | | |
| 2004 06 14 | 704 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2− | | | | |

**2004 LT$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 139.65569 | | (2000.0) | | | |
| $n$ | 0.18222291 | $\omega$ | 112.24633 | | +0.02144615 | +0.99601913 |
| $a$ | 3.0813005 | $\Omega$ | 158.43474 | | −0.98189000 | +0.03727737 |
| $e$ | 0.1173083 | $i$ | 13.61482 | | −0.18823415 | −0.08097093 |
| $P$ | 5.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 291 | 0.3− | 0.1+ | 2004 05 14 | 704 | 1.5− | 0.1− | 2004 06 13 | 704 | 0.8+ | 0.4− |
| 2003 01 28 | 291 | 0.2+ | 0.7+ | 2004 05 14 | 704 | 0.4− | 0.8+ | 2004 06 13 | 704 | 1.0+ | 0.5− |
| 2003 01 28 | 291 | 0.4− | 0.2+ | 2004 05 24 | 704 | 0.8− | 0.8− | 2004 06 16 | 691 | 0.1− | 0.1+ |
| 2003 03 24 | 691 | 0.2+ | 0.0 | 2004 05 24 | 704 | 0.9+ | 0.1− | 2004 06 16 | 691 | 0.1− | 0.4+ |
| 2003 03 24 | 691 | 0.0 | 0.1+ | 2004 05 24 | 704 | 0.6− | 0.9− | 2004 06 16 | 691 | 0.1+ | 0.2+ |
| 2003 03 24 | 691 | 0.1+ | 0.2− | 2004 05 24 | 704 | 0.4+ | 0.8− | 2005 08 30 | 691 | 0.3− | 0.9+ |
| 2003 03 31 | 645 | 0.1− | 0.0 | 2004 05 24 | 704 | 0.4+ | 0.3− | 2005 08 30 | 691 | 0.1− | 0.9+ |
| 2003 03 31 | 645 | 0.1− | 0.2− | 2004 06 11 | 644 | 0.3+ | 0.2+ | 2005 08 30 | 691 | 0.2− | 0.9+ |
| 2003 04 05 | 691 | 0.4+ | 1.3+ | 2004 06 11 | 644 | 0.6+ | 0.2+ | 2005 09 22 | 644 | 0.2− | 0.4+ |
| 2003 04 05 | 691 | 0.6+ | 1.3+ | 2004 06 11 | 644 | 0.2+ | 0.3+ | 2005 09 22 | 644 | 0.1− | 0.7+ |
| 2003 04 05 | 691 | 0.6+ | 1.0+ | 2004 06 13 | 704 | 0.3− | 0.9+ | 2005 09 22 | 644 | 0.1− | 0.5+ |
| 2004 05 14 | 704 | 0.8+ | 0.3− | 2004 06 13 | 704 | 0.7− | 0.7− | | | | |
| 2004 05 14 | 704 | 0.4− | 1.8+ | 2004 06 13 | 704 | 0.2− | 0.0 | | | | |

**2004 LL$_6$ = 2006 VD$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 81.82719 | | (2000.0) | | | |
| $n$ | 0.19300223 | $\omega$ | 264.37702 | | +0.86129954 | +0.47399427 |
| $a$ | 2.9654765 | $\Omega$ | 67.21206 | | −0.35091252 | +0.81540817 |
| $e$ | 0.0578372 | $i$ | 11.44949 | | −0.36745544 | +0.33232358 |
| $P$ | 5.11 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 20 | 910 | 0.3+ | 0.1+ | 2004 06 14 | 704 | 0.4− | 0.0 | 2005 10 02 | E12 | 0.7+ | 1.6− |
| 1998 02 20 | 910 | 0.5+ | 0.2− | 2004 06 14 | 704 | 0.0 | 0.3− | 2005 10 02 | E12 | 0.3+ | 0.7+ |
| 1998 02 20 | 910 | 0.0 | 0.3+ | 2004 06 14 | 704 | 1.0+ | 0.5+ | 2005 10 02 | E12 | 0.1+ | 0.4− |
| 2003 03 08 | 644 | 0.3+ | 0.7+ | 2004 06 14 | 704 | 0.6+ | 0.4− | 2005 10 02 | E12 | 0.6− | 0.5+ |
| 2003 03 08 | 644 | 0.0 | 0.5+ | 2005 07 28 | 644 | 0.2− | 0.5+ | 2006 11 15 | 703 | 1.2+ | 1.4− |
| 2003 03 08 | 644 | 1.5− | 0.1+ | 2005 07 28 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.8− |
| 2004 06 09 | E12 | 0.2− | 0.2+ | 2005 07 28 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.1− | 0.6+ |
| 2004 06 09 | E12 | 0.3+ | 0.4− | 2005 08 30 | 699 | 0.6− | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.9− |
| 2004 06 09 | E12 | 0.5− | 0.4+ | 2005 08 30 | 699 | 0.8− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2004 06 09 | E12 | 0.0 | 0.2+ | 2005 08 30 | 699 | 0.6− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2004 06 14 | 704 | 0.1+ | 0.4− | 2005 08 30 | 699 | 0.5+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.3+ |

**2004 LT$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 133.19153 | | (2000.0) | | | |
| $n$ | 0.17586988 | $\omega$ | 6.37434 | | −0.08269271 | +0.98331204 |
| $a$ | 3.1550657 | $\Omega$ | 258.96827 | | −0.92147628 | −0.13736901 |
| $e$ | 0.1611452 | $i$ | 9.50294 | | −0.37953046 | +0.11927778 |
| $P$ | 5.60 | $H$ | 14.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 704 | 0.6+ | 0.2− | 2004 06 12 | E12 | 0.5+ | 0.5− | 2004 08 19 | E12 | 0.1+ | 0.7− |
| 2004 04 21 | 704 | 0.1+ | 0.7+ | 2004 06 14 | 704 | 0.1− | 0.4+ | 2005 08 29 | 644 | 0.1+ | 0.0 |
| 2004 04 21 | 704 | 1.2− | 0.3+ | 2004 06 14 | 704 | 0.1− | 0.4+ | 2005 08 29 | 644 | 0.2+ | 0.3− |
| 2004 04 25 | 704 | 0.4+ | 0.7+ | 2004 06 14 | 704 | 0.2− | 0.6+ | 2005 08 29 | 644 | 0.4+ | 0.3− |
| 2004 04 25 | 704 | 0.1− | 0.2+ | 2004 06 14 | 704 | 0.9+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.6+ |
| 2004 04 25 | 704 | 0.1+ | 0.4+ | 2004 06 15 | 704 | 0.8− | 0.1+ | 2006 10 19 | 691 | 0.6− | 0.3− |
| 2004 04 25 | 704 | 0.6+ | 0.3+ | 2004 06 15 | 704 | 0.8− | 0.1+ | 2006 10 19 | 691 | 0.7− | 0.6+ |
| 2004 04 25 | 704 | 0.3− | 0.7+ | 2004 06 15 | 704 | 0.0 | 0.6− | 2006 10 23 | 691 | 0.2+ | 0.1+ |
| 2004 05 18 | 704 | 0.5− | 0.9− | 2004 06 16 | 704 | 0.3+ | 1.2− | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2004 05 18 | 704 | (1.5+ | 0.7+) | 2004 06 16 | 704 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2004 05 18 | 704 | 0.4+ | 1.0+ | 2004 06 16 | 704 | 0.4− | 0.6− | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2004 05 18 | 704 | 0.9+ | 1.2+ | 2004 06 16 | 704 | 0.7− | 0.6+ | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2004 05 18 | 704 | (1.0+ | 1.6+) | 2004 06 16 | 704 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2004 05 22 | 704 | 0.5+ | 0.3− | 2004 06 18 | 704 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 2004 05 22 | 704 | 0.0 | 0.1− | 2004 06 18 | 704 | 0.3− | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.3+ |
| 2004 05 22 | 704 | 0.1− | 0.2− | 2004 06 18 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2004 05 22 | 704 | 0.1− | 0.2− | 2004 06 18 | 704 | 0.3+ | 0.8+ | 2006 11 23 | 703 | 0.9− | 0.1− |
| 2004 05 22 | 704 | 0.2+ | 0.4− | 2004 06 18 | 704 | 0.2+ | 0.7+ | 2006 11 23 | 703 | 0.1+ | 0.4− |
| 2004 06 11 | 704 | (1.0− | 2.0+) | 2004 06 18 | 704 | 0.1− | 0.5+ | 2006 11 23 | 703 | 0.6− | 0.2+ |
| 2004 06 11 | 704 | 1.3− | 0.3+ | 2004 06 18 | 704 | 1.0− | 0.0 | 2006 11 23 | 703 | 0.4+ | 0.0 |
| 2004 06 11 | 704 | 1.3− | 0.9+ | 2004 06 18 | 704 | 0.3+ | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2004 06 12 | E12 | 1.2+ | 0.1+ | 2004 08 19 | E12 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2004 06 12 | E12 | 1.4+ | 0.1+ | 2004 08 19 | E12 | 0.3− | 0.9− | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2004 06 12 | E12 | 1.2+ | 0.1+ | 2004 08 19 | E12 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.4− |

**2004 LC$_{10}$ = 2006 VP$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 216.82169 | | (2000.0) | | | |
| $n$ | 0.22320276 | $\omega$ | 304.33546 | | −0.83090293 | +0.54371357 |
| $a$ | 2.6915534 | $\Omega$ | 268.87183 | | −0.46374329 | −0.79410988 |
| $e$ | 0.1544535 | $i$ | 6.79069 | | −0.30747761 | −0.27159723 |
| $P$ | 4.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 05 | 691 | 0.3− | 0.1− | 2004 06 14 | 428 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2000 07 05 | 691 | 0.1+ | 0.2+ | 2004 06 14 | 428 | 0.6− | 0.9+ | 2006 11 10 | 691 | 0.5− | 0.2+ |
| 2000 07 05 | 691 | 0.2+ | 0.0 | 2004 06 15 | 428 | 0.4+ | 0.6− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2004 06 14 | 704 | 0.1− | 0.3+ | 2004 06 15 | 428 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 06 14 | 704 | 0.2+ | 0.4+ | 2004 06 19 | 428 | 1.4− | 1.1− | 2006 11 16 | 691 | 0.1− | 0.3− |
| 2004 06 14 | 704 | 1.0+ | 0.5− | 2004 06 19 | 428 | 0.4− | 0.3− | 2006 11 24 | 691 | 0.5+ | 0.7+ |
| 2004 06 14 | 704 | 0.7+ | 0.2− | 2004 06 25 | 428 | 0.4+ | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.3− |
| 2004 06 14 | 704 | 0.2− | 0.5− | 2006 11 10 | 691 | 0.0 | 0.9− | 2006 11 24 | 691 | 0.0 | 0.1+ |

**2004 LM$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 104.16664 | | (2000.0) | | | |
| $n$ | 0.16898497 | $\omega$ | 57.59447 | | +0.28069606 | +0.88697642 |
| $a$ | 3.2401914 | $\Omega$ | 233.24277 | | −0.95978324 | +0.26142026 |
| $e$ | 0.2147423 | $i$ | 27.24035 | | +0.00508537 | +0.38069973 |
| $P$ | 5.83 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 704 | 1.0+ | 0.6− | 2004 06 14 | 704 | 0.6− | 0.3− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2004 05 15 | 704 | 0.0 | 0.4+ | 2004 06 14 | 704 | (2.8+ | 1.4−) | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2004 05 15 | 704 | 0.3− | 0.6+ | 2004 06 14 | 704 | 0.2− | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2004 05 28 | 691 | 0.0 | 0.1− | 2004 06 14 | 704 | 0.3− | 0.3+ | 2006 11 18 | G96 | 0.7+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 28 | 691 | 0.0 | 0.1− | 2004 06 15 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2004 05 28 | 691 | (3.5− | 1.1−) | 2004 06 15 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2004 06 08 | 691 | 0.1+ | 0.0 | 2004 06 15 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2004 06 08 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2004 06 08 | 691 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.0 | 0.1− |

**2004 LG$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 15.88912 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.29618826 | $\omega$ | 287.54001 | | −0.40848174 | −0.91270442 |
| $a$ | 2.2289012 | $\Omega$ | 186.59906 | | +0.86864973 | −0.38513027 |
| $e$ | 0.0780121 | $i$ | 5.31487 | | +0.28033964 | −0.13654790 |
| $P$ | 3.33 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 20 | 691 | 0.0 | 0.5− | 2004 06 10 | 599 | 1.8− | 0.5+ | 2005 10 01 | 691 | 0.0 | 0.0 |
| 1992 11 20 | 691 | 0.0 | 0.3+ | 2004 06 15 | 691 | 0.4+ | 0.4+ | 2005 10 01 | G96 | 0.2− | 0.3− |
| 1992 11 20 | 691 | 0.4− | 0.2− | 2004 06 15 | 691 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.4− | 0.1− |
| 1998 08 25 | 910 | 0.9+ | 0.1+ | 2004 06 15 | 691 | 0.2+ | 0.1+ | 2005 10 01 | G96 | 0.0 | 0.2− |
| 1998 08 25 | 910 | 1.4+ | 0.0 | 2004 06 22 | 691 | 0.3+ | 0.0 | 2005 10 01 | G96 | 0.7− | 0.0 |
| 1998 08 26 | 910 | 1.0+ | 0.0 | 2004 06 22 | 691 | 0.4+ | 0.0 | 2005 10 01 | G96 | 0.2− | 0.2− |
| 2002 11 28 | 608 | 1.1+ | 1.3+ | 2004 06 22 | 691 | 0.0 | 0.3+ | 2005 10 12 | 691 | 0.2+ | 0.1+ |
| 2002 11 28 | 608 | 0.4+ | 1.1+ | 2005 08 30 | 644 | 0.4− | 0.3+ | 2005 10 12 | 691 | 0.1− | 0.0 |
| 2002 11 28 | 608 | 0.2+ | 1.6+ | 2005 08 30 | 644 | 0.4+ | 0.5+ | 2005 10 12 | 691 | 0.2− | 0.1+ |
| 2002 12 10 | 644 | 0.4+ | 0.8+ | 2005 08 30 | 644 | 0.4+ | 0.4+ | 2005 10 30 | G96 | 0.2− | 0.3− |
| 2002 12 10 | 644 | 0.6+ | 0.7+ | 2005 10 01 | 691 | 0.2− | 0.0 | 2005 10 30 | G96 | 0.4− | 0.9− |
| 2002 12 10 | 644 | 0.8+ | 0.3+ | 2005 10 01 | 691 | 0.3− | 0.0 | 2005 10 30 | G96 | 0.6+ | 0.3− |
| 2004 06 10 | 599 | 1.3− | 0.5+ | 2005 10 01 | G96 | 0.3− | 0.1+ | 2005 10 30 | G96 | 0.1− | 0.3− |
| 2004 06 10 | 599 | 1.3− | 0.1+ | 2005 10 01 | G96 | 0.1+ | 0.0 | | | | |
| 2004 06 10 | 599 | 1.4− | 0.7+ | 2005 10 01 | G96 | 0.6− | 0.0 | | | | |

**2004 LY$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 210.06522 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22865603 | $\omega$ | 135.24201 | | −0.53241746 | +0.81127977 |
| $a$ | 2.6485872 | $\Omega$ | 101.13787 | | −0.82912871 | −0.44232599 |
| $e$ | 0.1230362 | $i$ | 14.25328 | | −0.17052045 | −0.38232559 |
| $P$ | 4.31 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.4+ | 1.0+ | 2003 01 09 | 704 | 0.8+ | 0.0 | 2004 06 11 | 704 | 0.1+ | 1.1− |
| 2001 10 28 | 644 | 0.5+ | 1.3+ | 2003 01 09 | 704 | 2.8+ | 0.1+ | 2004 06 11 | 704 | 1.0+ | 0.7− |
| 2001 10 28 | 644 | 0.0 | 1.2+ | 2003 01 29 | 645 | 0.0 | 0.0 | 2004 06 16 | 704 | 0.1− | 0.7+ |
| 2001 12 07 | 704 | 0.4− | 1.3+ | 2003 01 29 | 645 | 0.0 | 0.0 | 2004 06 16 | 704 | 0.3+ | 1.3+ |
| 2001 12 07 | 704 | 0.7− | 2.0+ | 2003 01 31 | 704 | 0.1+ | 1.1+ | 2004 06 16 | 704 | 0.7+ | 0.9+ |
| 2001 12 07 | 704 | 1.1− | 0.9+ | 2003 01 31 | 704 | 0.1+ | 0.0 | 2004 06 16 | 704 | 0.7− | 1.3+ |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2003 01 31 | 704 | 0.4+ | 0.5− | 2004 06 16 | 704 | 0.2− | 1.0+ |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2003 01 31 | 704 | 0.7− | 0.2+ | 2004 06 18 | 704 | 0.3+ | 1.1+ |
| 2002 12 31 | 704 | 1.0− | 0.1+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2004 06 18 | 704 | (0.9− | 2.2+) |
| 2002 12 31 | 704 | 1.5− | 0.3+ | 2003 02 01 | 645 | 0.0 | 0.0 | 2004 06 18 | 704 | 0.5+ | 0.1+ |
| 2002 12 31 | 704 | 0.6+ | 1.3+ | 2004 06 11 | 704 | 0.3− | 0.7+ | 2004 06 18 | 704 | 0.1+ | 0.5+ |
| 2003 01 09 | 704 | 0.4+ | 0.1− | 2004 06 11 | 704 | 0.4− | 0.0 | | | | |
| 2003 01 09 | 704 | 0.1− | 0.4− | 2004 06 11 | 704 | 0.4+ | 0.1+ | | | | |

**2004 LN$_{14}$ = 2006 WP$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 241.50202 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.21603360 | $\omega$ | 90.93014 | | −0.96635208 | +0.05367783 |
| $a$ | 2.7507757 | $\Omega$ | 92.17683 | | −0.14872938 | −0.91452612 |
| $e$ | 0.1265520 | $i$ | 14.58059 | | +0.20986477 | −0.40094972 |
| $P$ | 4.56 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 699 | 0.2− | 0.3+ | 2004 06 15 | 704 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2003 01 31 | 699 | 0.4− | 0.5+ | 2004 06 15 | 704 | 0.3− | 1.1+ | 2006 11 21 | G96 | 0.6+ | 0.2+ |
| 2003 01 31 | 699 | 0.3+ | 0.3+ | 2004 06 15 | 704 | 0.5+ | 0.7− | 2006 11 21 | G96 | 0.5+ | 0.1+ |
| 2003 01 31 | 699 | 0.3+ | 0.5− | 2004 06 18 | 704 | 0.4+ | 0.7+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2004 02 18 | 493 | 0.6+ | 0.0 | 2004 06 18 | 704 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2004 02 18 | 493 | 1.2+ | 0.3+ | 2004 06 18 | 704 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2004 02 18 | 493 | 0.6− | 0.2+ | 2004 06 18 | 704 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2004 02 18 | 493 | 0.5− | 0.3− | 2006 11 15 | 703 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.6− | 0.5+ |
| 2004 06 11 | 704 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.9− | 0.1− | 2006 11 28 | 704 | 0.8− | 0.2+ |
| 2004 06 11 | 704 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.1+ | 1.0+ | 2006 11 28 | 704 | 1.0− | 0.4+ |
| 2004 06 11 | 704 | 0.3+ | 0.4− | 2006 11 15 | 703 | 0.1+ | 0.6− | 2006 11 28 | 704 | 0.9− | 0.2+ |
| 2004 06 15 | 704 | 0.4+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.0 | | | | |

**2004 LW$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 223.70939 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.30152083 | $\omega$ | 237.13681 | | +0.44019829 | +0.89606153 |
| $a$ | 2.2025436 | $\Omega$ | 59.08294 | | −0.79982038 | +0.42038284 |
| $e$ | 0.2354666 | $i$ | 3.83892 | | −0.40805983 | +0.14266043 |
| $P$ | 3.27 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 644 | 0.1+ | 0.1+ | 2001 09 11 | 704 | 0.2− | 0.0 | 2004 06 14 | 704 | 0.4− | 0.3− |
| 2001 08 25 | 644 | 0.2+ | 0.1+ | 2001 09 11 | 704 | 0.6− | 1.1+ | 2004 06 14 | 704 | 0.5+ | 0.5+ |
| 2001 08 25 | 644 | 0.2− | 0.2− | 2001 09 19 | 704 | 0.1+ | 0.1+ | 2004 06 14 | 704 | 0.0 | 0.4− |
| 2001 08 25 | 699 | 0.3+ | 0.1− | 2001 09 19 | 704 | 0.1− | 0.2− | 2004 06 14 | 704 | 0.2− | 0.4+ |
| 2001 08 25 | 699 | 0.0 | 0.0 | 2001 09 19 | 704 | 0.1+ | 1.1− | 2004 06 16 | 704 | 0.1+ | 0.8− |
| 2001 08 25 | 699 | 0.1+ | 0.5− | 2004 05 16 | 704 | 0.1+ | 0.7+ | 2004 06 16 | 704 | 0.5− | 0.2+ |
| 2001 08 25 | 699 | 0.3− | 0.1− | 2004 05 16 | 704 | 0.0 | 0.7− | 2004 06 16 | 704 | 0.4− | 0.1− |
| 2001 09 11 | 704 | 0.5+ | 0.9+ | 2004 05 16 | 704 | 0.1+ | 0.3+ | 2004 06 16 | 704 | 0.6+ | 0.3+ |

**2004 LH$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 245.52595 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27612546 | $\omega$ | 325.18090 | | −0.54500129 | +0.83372341 |
| $a$ | 2.3355997 | $\Omega$ | 271.64014 | | −0.74767274 | −0.53118098 |
| $e$ | 0.1079871 | $i$ | 5.09454 | | −0.37941937 | −0.15083783 |
| $P$ | 3.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.5+ | 0.3− | 2001 09 11 | 704 | 0.8− | 0.9+ | 2004 06 16 | 704 | 1.9− | 1.9+ |
| 2001 08 25 | 704 | 0.4− | 1.4− | 2001 09 11 | 704 | 0.1+ | 0.2+ | 2004 06 16 | 704 | 0.2− | 0.8− |
| 2001 08 25 | 704 | 0.4− | 0.5− | 2001 09 11 | 704 | 0.1+ | 0.6+ | 2004 07 16 | E12 | 1.9+ | 1.5− |
| 2001 08 25 | 704 | 0.3− | 1.2− | 2004 06 14 | 704 | 0.2+ | 0.7− | 2004 07 16 | E12 | 0.3+ | 0.3+ |
| 2001 09 11 | 699 | 0.4+ | 0.8+ | 2004 06 14 | 704 | 0.6+ | 0.0 | 2004 07 16 | E12 | 0.1− | 0.4− |
| 2001 09 11 | 699 | 0.1+ | 0.3+ | 2004 06 14 | 704 | 0.2+ | 1.1− | 2004 07 16 | E12 | 0.7− | 0.6− |
| 2001 09 11 | 699 | 0.1+ | 0.8+ | 2004 06 14 | 704 | 0.4+ | 0.2+ | 2005 11 02 | G96 | 0.1− | 0.1− |
| 2001 09 11 | 704 | 0.1− | 0.1− | 2004 06 14 | 704 | 0.4+ | 0.6+ | 2005 11 02 | G96 | 0.1+ | 0.1+ |
| 2001 09 11 | 699 | 0.4+ | 0.5− | 2004 06 16 | 704 | 0.4− | 0.5+ | 2005 11 02 | G96 | 0.1+ | 0.1+ |
| 2001 09 11 | 704 | 0.3+ | 0.5+ | 2004 06 16 | 704 | 0.5− | 1.7+ | 2005 11 02 | G96 | 0.2− | 0.3+ |

**2004 LA$_{18}$ = 2006 WM$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 204.14184 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22066233 | $\omega$ | 108.88002 | | −0.77182881 | +0.62268354 |
| $a$ | 2.7121722 | $\Omega$ | 109.84203 | | −0.62262484 | −0.69915521 |
| $e$ | 0.2015609 | $i$ | 7.85969 | | −0.12891312 | −0.35135054 |
| $P$ | 4.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 23 | 704 | 0.4+ | 0.1− | 2004 06 16 | 704 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.4+ |
| 2004 05 23 | 704 | 0.6+ | 0.5− | 2004 06 16 | 704 | 0.1− | 0.8+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 05 23 | 704 | 0.1+ | 0.5− | 2004 06 16 | 704 | 0.6+ | 0.2− | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2004 05 23 | 704 | 0.2+ | 0.9+ | 2004 06 22 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.3− |
| 2004 05 23 | 704 | 0.4− | 0.6+ | 2004 06 22 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.1+ |
| 2004 06 15 | 691 | 0.2+ | 0.1− | 2004 06 22 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2004 06 15 | 691 | 0.5+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.4+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 15 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2004 06 16 | 704 | 0.5− | 0.3− | 2006 10 23 | G96 | 0.2− | 0.0 | | | | |

**2004 LY$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.80735 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25592780 | $\omega$ | 34.31088 | | −0.67962194 | | −0.72987877 |
| $a$ | 2.4569203 | $\Omega$ | 98.62354 | | +0.65528250 | | −0.64903896 |
| $e$ | 0.1460847 | $i$ | 4.25887 | | +0.32972543 | | −0.21453534 |
| $P$ | 3.85 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 05 | 691 | 0.6− | 0.2− | 2002 12 31 | 704 | 0.2+ | 1.1+ | 2004 06 11 | 691 | 0.2+ | 0.4+ |
| 1994 10 05 | 691 | 0.5− | 0.3+ | 2002 12 31 | 699 | 1.1+ | 1.4+ | 2004 06 11 | 691 | 0.0 | 0.5+ |
| 1994 10 05 | 691 | 0.2− | 0.3+ | 2002 12 31 | 704 | (1.4− | 2.3+) | 2004 06 17 | 691 | 0.2− | 0.4+ |
| 2002 11 14 | 704 | 1.1+ | 1.1+ | 2002 12 31 | 704 | 0.3+ | 0.2− | 2004 06 17 | 691 | 0.3+ | 0.2+ |
| 2002 11 14 | 704 | 1.1+ | 0.5− | 2002 12 31 | 699 | 0.8− | 0.4+ | 2004 06 17 | 691 | 0.1− | 0.6+ |
| 2002 11 14 | 704 | 1.2+ | 0.4+ | 2002 12 31 | 704 | 0.2− | 0.6+ | 2005 07 28 | 644 | 0.3+ | 0.0 |
| 2002 11 14 | 704 | 0.7+ | 0.2+ | 2003 01 29 | 291 | 0.4+ | 0.5+ | 2005 07 28 | 644 | 0.1+ | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2003 01 29 | 291 | 0.5+ | 0.3− | 2005 07 28 | 644 | 0.2− | 0.6+ |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2003 01 29 | 291 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.2+ | 0.3− |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2004 05 21 | 704 | 1.0+ | 1.4− | 2005 08 05 | 644 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.9+ | 2004 05 21 | 704 | 0.6+ | 0.3+ | 2005 08 05 | 644 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.5+ | 0.1− | 2004 05 21 | 704 | 0.4− | 0.5+ | 2006 11 26 | 691 | 0.3− | 0.0 |
| 2002 12 11 | 704 | 0.2− | 0.1+ | 2004 05 21 | 704 | 1.0+ | 1.2+ | 2006 11 26 | 691 | 0.3− | 0.2− |
| 2002 12 31 | 699 | 0.3− | 0.5+ | 2004 05 21 | 704 | (0.9+ | 1.6+) | 2006 11 26 | 691 | 1.1− | 1.0+ |
| 2002 12 31 | 699 | 0.6+ | 0.4− | 2004 06 11 | 691 | 0.3+ | 0.5+ | | | | |

**2004 LT$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.83057 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29329214 | $\omega$ | 276.15710 | | +0.63444638 | | −0.76808976 |
| $a$ | 2.2435501 | $\Omega$ | 134.07597 | | +0.74831261 | | +0.58223407 |
| $e$ | 0.0826810 | $i$ | 6.93100 | | +0.19366471 | | +0.26653631 |
| $P$ | 3.36 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.2− | 0.4− | 2001 10 16 | 644 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.1+ | 0.0 |
| 1995 11 30 | 691 | 0.3+ | 0.1+ | 2001 10 16 | 644 | 0.5− | 0.3+ | 2006 01 23 | G96 | 0.3− | 0.1− |
| 1995 11 30 | 691 | 0.1− | 0.4− | 2003 03 11 | 644 | 0.1+ | 0.8+ | 2006 01 23 | G96 | 0.6− | 0.3+ |
| 1996 02 17 | 691 | 0.0 | 0.4− | 2003 03 11 | 644 | 0.1− | 0.8+ | 2006 02 04 | G96 | 0.1− | 0.1+ |
| 1996 02 17 | 691 | 0.2+ | 0.5− | 2003 03 11 | 644 | 0.0 | 0.8+ | 2006 02 04 | G96 | 1.0− | 0.3− |
| 1996 02 17 | 691 | 0.5− | 0.4− | 2003 03 23 | 645 | 0.1+ | 0.2+ | 2006 02 04 | G96 | 0.0 | 0.8− |
| 2001 05 24 | 807 | 0.6+ | 0.3+ | 2003 03 23 | 645 | 0.1+ | 0.2+ | 2006 02 04 | G96 | 0.2− | 0.0 |
| 2001 05 24 | 807 | 0.6− | 0.5+ | 2004 06 14 | 691 | 0.2− | 0.0 | 2006 02 04 | G96 | 0.0 | 0.0 |
| 2001 08 26 | 644 | 0.4+ | 0.2+ | 2004 06 14 | 691 | 0.1+ | 0.2− | 2006 02 04 | G96 | 0.1− | 0.1+ |
| 2001 08 26 | 644 | 0.8+ | 0.3+ | 2004 06 14 | 691 | 0.2+ | 0.1− | 2006 02 04 | G96 | 0.3− | 0.2+ |
| 2001 08 26 | 644 | 0.3+ | 0.0 | 2004 06 19 | 691 | 0.1+ | 0.1+ | 2006 02 20 | G96 | 0.2+ | 0.5+ |
| 2001 09 12 | 704 | 0.4− | 0.9+ | 2004 06 19 | 691 | 0.3+ | 0.2+ | 2006 02 20 | G96 | 0.0 | 0.8+ |
| 2001 09 12 | 704 | 0.8− | 0.0 | 2004 06 19 | 691 | 0.1+ | 0.0 | 2006 02 20 | G96 | 1.1+ | 0.6+ |
| 2001 09 12 | 704 | 0.2− | 1.2+ | 2004 07 21 | E12 | 0.5− | 0.4− | 2006 02 20 | G96 | 0.3+ | 0.2+ |
| 2001 09 12 | 704 | 0.3− | 1.5+ | 2004 07 21 | E12 | 0.7− | 0.5− | 2006 03 24 | G96 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 0.8− | 0.3+ | 2004 07 21 | E12 | 0.2− | 1.6+ | 2006 03 24 | G96 | 0.3− | 0.8+ |
| 2001 09 25 | 704 | 0.1− | 1.2+ | 2004 07 21 | E12 | 0.9− | 0.8+ | 2006 03 24 | G96 | 0.3− | 0.4+ |
| 2001 09 25 | 704 | 0.1− | 0.6− | 2005 12 29 | 291 | 0.0 | 0.3+ | 2006 03 24 | G96 | 0.2− | 0.5+ |
| 2001 09 25 | 704 | 0.1+ | 0.0 | 2005 12 29 | 291 | 0.2+ | 0.4+ | | | | |
| 2001 10 16 | 644 | 0.4− | 0.7+ | 2005 12 29 | 291 | 0.4+ | 0.5+ | | | | |

**2004 LO$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.12426 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23968654 | $\omega$ | 207.40621 | | −0.03893060 | | +0.98979444 |
| $a$ | 2.5666911 | $\Omega$ | 60.64893 | | −0.88558218 | | +0.02936811 |
| $e$ | 0.2695911 | $i$ | 9.04847 | | −0.46284837 | | −0.13944344 |
| $P$ | 4.11 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 699 | 0.9+ | 1.8− | 2004 06 30 | E12 | 0.3− | 0.8+ | 2004 08 20 | E12 | 0.6+ | 0.2− |
| 2000 07 10 | 699 | 0.0 | 0.4− | 2004 06 30 | E12 | 0.9− | 0.3− | 2004 09 10 | E12 | 0.2− | 0.7+ |
| 2000 07 10 | 699 | 0.0 | 0.4− | 2004 07 13 | E12 | 0.1+ | 0.0 | 2004 09 10 | E12 | 0.1− | 0.1+ |
| 2000 07 10 | 699 | 0.9+ | 1.1− | 2004 07 13 | E12 | 0.0 | 0.2+ | 2004 09 10 | E12 | 1.4+ | 1.1+ |
| 2004 06 14 | 704 | 0.3− | 0.5− | 2004 07 13 | E12 | 0.4− | 0.0 | 2004 09 10 | E12 | 0.8− | 0.2+ |
| 2004 06 14 | 704 | (0.1− | 2.2+) | 2004 07 13 | E12 | 0.4− | 0.3− | 2005 11 25 | G96 | 0.1+ | 0.1+ |
| 2004 06 14 | 704 | 0.3+ | 0.3+ | 2004 08 09 | E12 | 0.5+ | 0.1+ | 2005 11 25 | G96 | 0.1− | 0.0 |
| 2004 06 14 | 704 | 0.5+ | 0.9+ | 2004 08 09 | E12 | 0.1+ | 0.1+ | 2005 11 25 | G96 | 0.0 | 0.2+ |
| 2004 06 14 | 704 | 0.8+ | 0.2− | 2004 08 09 | E12 | 0.0 | 0.1+ | 2005 11 25 | G96 | 0.1− | 0.8+ |
| 2004 06 14 | 704 | 0.6− | 0.1− | 2004 08 09 | E12 | 0.8− | 0.8+ | 2005 12 04 | G96 | 0.3+ | 0.3− |
| 2004 06 14 | 704 | 0.8+ | 0.5− | 2004 08 20 | E12 | 0.0 | 0.0 | 2005 12 04 | G96 | 0.2− | 0.1− |
| 2004 06 30 | E12 | 0.5− | 0.9+ | 2004 08 20 | E12 | 0.2− | 0.5− | 2005 12 04 | G96 | 0.3− | 0.5− |
| 2004 06 30 | E12 | 0.1− | 0.1− | 2004 08 20 | E12 | 0.2+ | 0.4+ | 2005 12 04 | G96 | 0.1+ | 0.2+ |

**2004 MH$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.02920 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26424340 | $\omega$ | 277.92236 | | +0.09582429 | | +0.99535090 |
| $a$ | 2.4051008 | $\Omega$ | 357.51365 | | −0.80212984 | | +0.07143865 |
| $e$ | 0.2397746 | $i$ | 12.93477 | | −0.58941108 | | +0.06459961 |
| $P$ | 3.73 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1− | 0.0 | 2004 06 16 | E12 | 0.1+ | 0.2+ | 2004 08 09 | E12 | 0.2− | 0.3− |
| 2001 11 11 | 704 | 0.5− | 0.4− | 2004 06 16 | E12 | 1.0+ | 0.1+ | 2004 08 09 | E12 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.8+ | 0.1+ | 2004 07 01 | E12 | 0.7+ | 0.0 | 2004 08 09 | E12 | 0.3− | 0.2− |
| 2001 11 11 | 704 | 0.0 | 0.2+ | 2004 07 01 | E12 | 0.1+ | 0.4− | 2004 08 31 | E12 | 0.3+ | 0.7+ |
| 2001 11 11 | 704 | 0.1+ | 0.7− | 2004 07 01 | E12 | 0.3− | 0.9− | 2004 08 31 | E12 | 0.2+ | 0.2− |
| 2003 01 29 | 645 | 0.0 | 0.1+ | 2004 07 01 | E12 | 0.4+ | 0.1− | 2004 08 31 | E12 | 0.1− | 0.0 |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2004 07 14 | E12 | 0.2− | 0.3− | 2004 08 31 | E12 | 0.2+ | 0.1+ |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2004 07 14 | E12 | 0.1− | 0.1− | 2004 09 18 | E12 | 0.2+ | 0.6+ |
| 2003 02 01 | 645 | 0.1− | 0.0 | 2004 07 14 | E12 | 0.4− | 0.0 | 2004 09 18 | E12 | 0.1− | 0.3− |
| 2004 06 16 | E12 | 0.0 | 0.6+ | 2004 07 14 | E12 | 0.1− | 0.1− | 2004 09 18 | E12 | 0.9− | 0.3+ |
| 2004 06 16 | E12 | 0.5+ | 0.3+ | 2004 08 09 | E12 | 0.1− | 0.3− | 2004 09 18 | E12 | 0.5− | 0.2− |

**2004 MJ$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.94090 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24486555 | $\omega$ | 241.22370 | | +0.65482646 | | +0.71706701 |
| $a$ | 2.5303713 | $\Omega$ | 71.74264 | | −0.57561153 | | +0.67791980 |
| $e$ | 0.2198396 | $i$ | 14.56277 | | −0.48976900 | | +0.16198656 |
| $P$ | 4.03 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.1− | 0.2− | 2004 07 16 | 704 | 0.7+ | 0.9+ | 2005 12 02 | 704 | 0.4− | 0.7− |
| 2001 11 12 | 704 | 0.6+ | 0.9+ | 2004 07 16 | 704 | 0.4− | 0.7+ | 2005 12 02 | 704 | 0.3− | 0.3− |
| 2001 11 12 | 704 | 0.5+ | 1.0+ | 2004 07 16 | 704 | 1.4+ | 0.7− | 2005 12 02 | 704 | 0.6+ | 0.5− |
| 2003 03 08 | 699 | 0.2− | 0.5+ | 2004 08 09 | E12 | 0.0 | 0.2− | 2005 12 02 | 704 | 0.0 | 0.1− |
| 2003 03 08 | 699 | 0.4+ | 1.5+ | 2004 08 09 | E12 | 0.1− | 0.0 | 2005 12 10 | 691 | 0.1+ | 0.4+ |
| 2003 03 08 | 699 | 1.3+ | 0.3+ | 2004 08 09 | E12 | 0.1+ | 0.1− | 2005 12 10 | 691 | 0.1+ | 0.3+ |
| 2003 03 08 | 699 | 0.6− | 0.6+ | 2004 08 09 | E12 | 0.1− | 0.3− | 2005 12 10 | 691 | 0.1− | 0.5+ |
| 2004 06 17 | E12 | 0.6− | 0.7+ | 2004 08 20 | E12 | 0.5+ | 0.6+ | 2005 12 29 | 704 | 0.2− | 1.1+ |
| 2004 06 17 | E12 | 0.9− | 1.4+ | 2004 08 20 | E12 | 0.1+ | 0.1+ | 2005 12 29 | 704 | 0.4− | 0.6+ |
| 2004 06 17 | E12 | 1.4− | 1.5+ | 2004 08 20 | E12 | 0.4− | 0.0 | 2005 12 29 | 704 | 0.7− | 0.2+ |
| 2004 06 17 | E12 | 0.8− | 1.3+ | 2004 08 20 | E12 | 0.0 | 0.3+ | | | | |
| 2004 07 16 | 704 | 1.1+ | 0.6+ | 2005 12 02 | 704 | 0.0 | 0.0 | | | | |

### 2004 $MK_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.88415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26176076 | $\omega$ | 264.33928 | | −0.01498277 | +0.99988569 | |
| $a$ | 2.4202841 | $\Omega$ | 4.80364 | | −0.90751290 | −0.01274596 | |
| $e$ | 0.1628930 | $i$ | 1.38955 | | −0.41975691 | −0.00813312 | |
| $P$ | 3.77 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.1+ | 0.2+ | 2004 07 22 | 699 | 1.1− | 1.1+ | 2004 08 12 | 704 | 0.2+ | 0.4+ |
| 2001 10 16 | 291 | 0.2− | 0.2+ | 2004 07 22 | 699 | 0.3+ | 0.5+ | 2004 08 12 | 704 | 0.0 | 0.3− |
| 2001 10 16 | 291 | 0.1− | 0.5+ | 2004 07 22 | 699 | 0.0 | 0.3− | 2005 11 12 | 691 | 0.0 | 0.2− |
| 2004 06 27 | E12 | 0.2+ | 0.7+ | 2004 08 03 | E12 | 0.4− | 0.2+ | 2005 11 12 | 691 | 0.2+ | 0.2− |
| 2004 06 27 | E12 | 0.7− | 0.2+ | 2004 08 03 | E12 | 0.2− | 0.6− | 2005 11 12 | 691 | 0.1+ | 0.0 |
| 2004 06 27 | E12 | 0.5+ | 0.4+ | 2004 08 03 | E12 | 0.5+ | 1.2− | 2005 11 25 | 691 | 0.0 | 0.0 |
| 2004 06 27 | E12 | 0.4+ | 0.3+ | 2004 08 03 | E12 | 0.1− | 0.8− | 2005 11 25 | 691 | 0.1− | 0.3− |
| 2004 07 22 | 699 | 0.1+ | 0.4− | 2004 08 12 | 704 | 0.6+ | 0.9− | 2005 11 25 | 691 | 0.2− | 0.2− |

### 2004 $ML_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.95926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24096970 | $\omega$ | 176.43024 | | +0.71795741 | +0.67923913 | |
| $a$ | 2.5575713 | $\Omega$ | 139.36348 | | −0.64429669 | +0.73122832 | |
| $e$ | 0.1409579 | $i$ | 13.51703 | | −0.26347472 | +0.06276419 | |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.1− | 0.5+ | 2000 09 02 | 704 | 0.3− | 0.2− | 2004 07 18 | 704 | 1.0+ | 0.6− |
| 2000 08 21 | 699 | 0.1+ | 1.2+ | 2004 06 16 | 691 | 0.0 | 0.1− | 2004 07 18 | 704 | 0.7+ | 0.7+ |
| 2000 08 21 | 699 | 0.6+ | 0.1− | 2004 06 16 | 691 | 0.0 | 0.1+ | 2004 07 18 | 704 | 0.4+ | 0.4− |
| 2000 08 21 | 699 | 1.7− | 0.3+ | 2004 06 16 | 691 | 0.1+ | 0.0 | 2004 08 22 | 691 | 0.4− | 0.3− |
| 2000 08 21 | 699 | 0.8+ | 0.1+ | 2004 07 11 | 704 | 0.3+ | 0.4+ | 2004 08 22 | 691 | 0.2− | 0.1− |
| 2000 08 21 | 699 | 0.2− | 0.6+ | 2004 07 11 | 704 | 0.1− | 0.0 | 2004 08 22 | 691 | 0.2− | 0.2− |
| 2000 08 21 | 699 | 1.7− | 0.9− | 2004 07 11 | 704 | 0.5− | 0.3+ | 2004 09 09 | 704 | 0.2+ | 1.2− |
| 2000 08 21 | 699 | 1.3+ | 0.1− | 2004 07 11 | 704 | 0.4+ | 0.2+ | 2004 09 09 | 704 | 0.4− | 0.5+ |
| 2000 09 02 | 704 | 0.8+ | 0.4+ | 2004 07 18 | 704 | 1.3+ | 1.0+ | 2004 09 09 | 704 | 0.2+ | 0.3− |
| 2000 09 02 | 704 | 0.1+ | 0.4+ | 2004 07 18 | 704 | (2.0+ | 1.9−) | 2004 09 09 | 704 | 0.2− | 0.7− |

### 2004 $NL_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.50110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23699186 | $\omega$ | 254.65410 | | +0.86720424 | +0.49103505 | |
| $a$ | 2.5861106 | $\Omega$ | 75.87574 | | −0.41786992 | +0.80796541 | |
| $e$ | 0.1976271 | $i$ | 4.89276 | | −0.27081641 | +0.32569385 | |
| $P$ | 4.16 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.5− | 0.2+ | 2000 09 19 | 608 | 0.2− | 0.2− | 2004 07 16 | 704 | 0.7+ | 0.0 |
| 2000 08 26 | 704 | 0.6+ | 1.7− | 2000 09 19 | 608 | 0.5− | 0.1− | 2004 07 16 | 704 | 0.2− | 0.7− |
| 2000 08 26 | 704 | 0.6− | 0.3− | 2004 07 09 | E12 | 1.0+ | 1.0− | 2004 07 16 | 704 | 0.6− | 0.2− |
| 2000 08 26 | 704 | 0.3− | 0.0 | 2004 07 09 | E12 | 0.1− | 0.4− | 2005 11 30 | 691 | 0.3+ | 0.0 |
| 2000 08 26 | 704 | 0.3− | 0.3+ | 2004 07 09 | E12 | 0.4+ | 0.3− | 2005 11 30 | 691 | 0.2+ | 0.1+ |
| 2000 09 04 | 704 | 1.5+ | 0.7− | 2004 07 09 | E12 | 0.1− | 0.3− | 2005 11 30 | 691 | 0.0 | 0.1+ |
| 2000 09 04 | 704 | 0.1− | 1.2+ | 2004 07 11 | 704 | 0.2+ | 1.3+ | 2005 12 28 | 691 | 0.2− | 0.0 |
| 2000 09 04 | 704 | 0.7+ | 0.7+ | 2004 07 11 | 704 | 0.4− | 0.9+ | 2005 12 28 | 691 | 0.1− | 0.0 |
| 2000 09 19 | 608 | 0.2− | 0.1+ | 2004 07 11 | 704 | 1.2− | 1.6+ | 2005 12 28 | 691 | 0.2− | 0.1− |

### 2004 $NR_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.92177 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21121526 | $\omega$ | 9.91102 | | +0.15434702 | +0.97759982 | |
| $a$ | 2.7924529 | $\Omega$ | 269.07065 | | −0.91600396 | +0.08730976 | |
| $e$ | 0.2081325 | $i$ | 8.22795 | | −0.37028873 | +0.19150876 | |
| $P$ | 4.67 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 0.3+ | 0.2− | 2004 07 17 | 704 | 0.6+ | 0.1+ | 2004 08 13 | 704 | 0.1− | 0.2+ |
| 1999 06 15 | 704 | 0.4− | 0.0 | 2004 07 17 | 704 | 0.3− | 0.1− | 2004 08 13 | 704 | 1.1− | 0.1+ |
| 1999 06 15 | 704 | 0.2− | 0.1− | 2004 07 17 | 704 | 0.2+ | 0.1− | 2004 08 13 | 704 | 0.4− | 0.1− |
| 1999 06 15 | 704 | 0.4+ | 0.2− | 2004 07 17 | 704 | 0.4+ | 0.1− | 2004 08 13 | 704 | 0.1− | 0.2+ |
| 1999 06 15 | 704 | 0.1− | 0.1+ | 2004 07 17 | 704 | 0.8− | 0.4+ | 2004 08 13 | 704 | 0.2− | 0.1− |
| 2003 03 27 | 644 | 0.0 | 0.7+ | 2004 07 18 | 704 | 0.7− | 0.3− | 2004 08 13 | 704 | 0.0 | 0.3− |
| 2003 03 27 | 644 | 0.3+ | 0.4+ | 2004 07 18 | 704 | 0.2− | 0.2+ | 2004 09 09 | 704 | 0.8+ | 0.1− |
| 2003 03 27 | 644 | 0.5+ | 0.6+ | 2004 07 18 | 704 | 0.1+ | 0.4− | 2004 09 09 | 704 | 0.4+ | 0.2− |
| 2004 07 09 | 644 | 0.1− | 0.2− | 2004 07 18 | 704 | (3.3− | 1.6+) | 2004 09 09 | 704 | 0.1+ | 0.2+ |
| 2004 07 09 | 644 | 0.0 | 0.2− | 2004 08 09 | 704 | 0.7+ | 0.2+ | 2004 09 09 | 704 | 1.3− | 1.2+ |
| 2004 07 09 | 644 | 0.2+ | 0.1− | 2004 08 09 | 704 | 0.6+ | 0.1+ | 2006 01 07 | G96 | 0.1− | 0.2+ |
| 2004 07 14 | 704 | 0.2+ | 0.2+ | 2004 08 09 | 704 | 0.1+ | 0.3+ | 2006 01 07 | G96 | 0.6− | 0.0 |
| 2004 07 14 | 704 | 0.2+ | 0.4− | 2004 08 09 | 704 | 0.4+ | 0.1+ | 2006 01 07 | G96 | 0.1+ | 0.3− |
| 2004 07 14 | 704 | 0.1− | 0.1+ | 2004 08 09 | 704 | 0.1− | 0.3+ | 2006 01 07 | G96 | 0.3+ | 0.2+ |
| 2004 07 14 | 704 | 0.0 | 0.0 | 2004 08 13 | 704 | 0.3− | 0.2− | | | | |
| 2004 07 14 | 704 | 0.4+ | 0.2+ | 2004 08 13 | 704 | 0.2− | 0.2+ | | | | |

### 2004 $NY_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.80181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17889088 | $\omega$ | 41.79164 | | +0.90358433 | +0.39096820 | |
| $a$ | 3.1194444 | $\Omega$ | 294.40210 | | −0.42603980 | +0.77710043 | |
| $e$ | 0.1413312 | $i$ | 11.08918 | | −0.04500497 | +0.49321271 | |
| $P$ | 5.51 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 09 | 644 | 0.3− | 0.3+ | 2004 08 12 | 704 | 0.4+ | 0.1+ | 2004 09 10 | 704 | 0.1− | 0.6− |
| 2004 07 09 | 644 | 0.1− | 0.1+ | 2004 08 12 | 704 | 0.2+ | 0.3+ | 2004 09 10 | 704 | 0.9− | 0.5− |
| 2004 07 09 | 644 | 0.2− | 0.3+ | 2004 08 12 | 704 | 0.1+ | 0.1− | 2004 09 10 | 704 | 1.2− | 0.6− |
| 2004 07 14 | 704 | 0.2+ | 0.3+ | 2004 08 12 | 704 | 1.1+ | 0.6− | 2004 09 18 | 704 | 0.3+ | 0.2+ |
| 2004 07 14 | 704 | 0.8− | 1.4+ | 2004 08 13 | 704 | 0.0 | 0.8− | 2004 09 18 | 704 | 0.1− | 0.4+ |
| 2004 07 14 | 704 | 0.4− | 0.7+ | 2004 08 13 | 704 | 0.5− | 0.8+ | 2004 09 18 | 704 | 0.6− | 0.3+ |
| 2004 07 14 | 704 | 0.6+ | 0.6+ | 2004 08 13 | 704 | 0.2− | 0.4− | 2004 09 18 | 704 | 0.1− | 0.3− |
| 2004 07 14 | 704 | 0.1− | 1.5+ | 2004 08 13 | 704 | 0.3+ | 0.7− | 2005 12 22 | 703 | 0.4+ | 0.2− |
| 2004 07 17 | 704 | 1.1+ | 0.3+ | 2004 08 23 | 691 | 0.3+ | 0.3− | 2005 12 22 | 703 | 1.0− | 0.8− |
| 2004 07 17 | 704 | 0.0 | 0.2+ | 2004 08 23 | 691 | 0.1+ | 0.3− | 2005 12 22 | 703 | 0.2+ | 1.0+ |
| 2004 07 17 | 704 | 2.0+ | 0.4− | 2004 08 23 | 691 | 0.1+ | 0.3− | 2005 12 22 | 703 | 0.7+ | 0.6+ |
| 2004 07 17 | 704 | 1.7+ | 0.1+ | 2004 09 08 | 704 | 0.8+ | 1.1− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2004 08 09 | 704 | 0.9− | 0.4+ | 2004 09 08 | 704 | 1.0− | 0.6− | 2006 11 21 | G96 | 0.3− | 0.3+ |
| 2004 08 09 | 704 | 0.4− | 0.6+ | 2004 09 08 | 704 | 0.0 | 1.1+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2004 08 09 | 704 | 1.7− | 0.8+ | 2004 09 08 | 704 | 1.1− | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2004 08 12 | 704 | 0.1− | 0.6− | 2004 09 10 | 704 | 0.1− | 0.3− | | | | |

### 2004 $NV_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.19514 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18380129 | $\omega$ | 100.13777 | | −0.72730997 | +0.67820311 | |
| $a$ | 3.0636349 | $\Omega$ | 122.65618 | | −0.66840007 | −0.66518630 | |
| $e$ | 0.2554021 | $i$ | 7.17593 | | −0.15576121 | −0.31235833 | |
| $P$ | 5.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.8+ | 0.2− | 2003 01 30 | 608 | 0.9+ | 0.8+ | 2004 07 11 | 704 | 0.2+ | 0.3+ |
| 1998 04 24 | 704 | 2.5+ | 1.1+ | 2003 02 21 | 644 | 0.0 | 0.9− | 2004 07 11 | 704 | 0.4− | 0.3− |
| 1998 04 24 | 704 | 1.4+ | 1.8− | 2003 02 21 | 644 | 0.6− | 0.5− | 2004 07 16 | 704 | 0.3+ | 0.4+ |
| 1998 04 24 | 704 | 0.5− | 0.5+ | 2003 02 21 | 644 | 0.5− | 0.5− | 2004 07 16 | 704 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | (4.6− | 0.9−) | 2003 03 07 | 644 | 0.1+ | 0.6+ | 2004 07 16 | 704 | 0.0 | 0.1+ | | |
| 2003 01 26 | 608 | 0.9− | 0.4+ | 2003 03 07 | 644 | 0.1+ | 0.3+ | 2004 07 21 | E12 | 0.3+ | 0.6+ | | |
| 2003 01 26 | 608 | 0.0 | 0.3+ | 2003 03 07 | 644 | 0.3+ | 0.6+ | 2004 07 21 | E12 | 0.3− | 0.2+ | | |
| 2003 01 26 | 608 | 0.1− | 0.0 | 2004 07 11 | 704 | 0.7+ | 0.3− | 2004 07 21 | E12 | 0.3− | 1.6+ | | |
| 2003 01 30 | 608 | 0.9+ | 1.2+ | 2004 07 11 | 704 | 0.1+ | 0.1+ | 2004 07 21 | E12 | 0.6− | 0.5+ | | |
| 2003 01 30 | 608 | 0.6+ | 1.0+ | 2004 07 11 | 704 | 0.1− | 0.5− | | | | | | |

**2004 NO$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.81015 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22524548 | $\omega$ | 86.92374 | | −0.80513052 | +0.54855279 | |
| $a$ | 2.6752559 | $\Omega$ | 126.22585 | | −0.59115585 | −0.77296531 | |
| $e$ | 0.1063484 | $i$ | 16.23324 | | +0.04795420 | −0.31877024 | |
| $P$ | 4.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 14 | 704 | 0.3− | 0.2+ | 2003 01 28 | 645 | 0.2− | 0.1− | 2004 07 11 | 704 | 0.4+ | 0.1+ | | |
| 1999 05 14 | 704 | 0.9+ | 2.0− | 2003 01 28 | 645 | 0.2− | 0.1− | 2004 07 11 | 704 | 0.2+ | 0.2− | | |
| 1999 05 14 | 704 | (3.0− | 1.1−) | 2003 03 08 | 644 | 0.0 | 0.3+ | 2004 07 11 | 704 | 0.1− | 0.5+ | | |
| 1999 05 14 | 704 | 2.4+ | 0.4+ | 2003 03 08 | 644 | 0.2+ | 0.0 | 2004 07 11 | 704 | 0.1+ | 0.9+ | | |
| 1999 05 14 | 704 | 1.3− | 2.1− | 2003 03 08 | 644 | 0.2+ | 0.2+ | 2004 07 16 | 704 | 0.3− | 0.2+ | | |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2003 03 22 | 644 | 0.1+ | 0.2+ | 2004 07 16 | 704 | 0.0 | 0.6+ | | |
| 2002 12 14 | 645 | 0.1+ | 0.0 | 2003 03 22 | 644 | 0.1+ | 0.2+ | 2004 07 16 | 704 | 1.1+ | 0.7+ | | |
| 2003 01 27 | 704 | 2.0+ | 0.8+ | 2003 03 22 | 644 | 0.5− | 0.1− | 2004 07 18 | 704 | 0.2− | 0.9− | | |
| 2003 01 27 | 704 | 2.1+ | 1.1+ | 2003 03 26 | 704 | 0.1+ | 1.7+ | 2004 07 18 | 704 | 0.1+ | 0.9+ | | |
| 2003 01 27 | 704 | 1.5+ | 2.1+ | 2003 03 26 | 704 | 0.5+ | 0.3− | 2004 07 18 | 704 | 0.4− | 0.5+ | | |
| 2003 01 27 | 704 | 1.0+ | 1.5+ | 2003 03 26 | 704 | 0.1− | 0.1+ | 2004 07 18 | 704 | 0.0 | 1.5+ | | |
| 2003 01 27 | 704 | 0.2+ | 1.1+ | 2003 03 26 | 704 | 0.8+ | 1.1+ | 2004 07 18 | 704 | 0.1− | 0.4+ | | |

**2004 NE$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.58070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27947884 | $\omega$ | 40.65788 | | +0.59186206 | +0.80042541 | |
| $a$ | 2.3168794 | $\Omega$ | 265.84153 | | −0.76200996 | +0.51722854 | |
| $e$ | 0.2241112 | $i$ | 5.46377 | | −0.26275487 | +0.30297491 | |
| $P$ | 3.53 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 291 | 0.1− | 0.4+ | 2004 08 09 | 704 | 0.9+ | 0.1+ | 2004 08 26 | 683 | 0.7+ | 0.6+ | | |
| 2001 12 18 | 291 | 0.1− | 0.1+ | 2004 08 09 | 704 | 0.2− | 0.7+ | 2004 08 26 | 683 | (2.2− | 0.9+) | | |
| 2001 12 18 | 291 | 0.1+ | 0.3− | 2004 08 09 | 704 | 0.7− | 0.1− | 2004 08 26 | 683 | 0.1− | 1.7+ | | |
| 2004 07 14 | 704 | 0.1+ | 0.0 | 2004 08 09 | 704 | 0.0 | 0.1+ | 2004 09 08 | 704 | 0.7− | 0.3− | | |
| 2004 07 14 | 704 | 0.1− | 0.0 | 2004 08 09 | 704 | 0.2+ | 0.6+ | 2004 09 08 | 704 | 0.3− | 0.0 | | |
| 2004 07 14 | 704 | 0.4+ | 0.6− | 2004 08 13 | 644 | 0.1− | 0.3+ | 2004 09 08 | 704 | 0.4− | 0.9− | | |
| 2004 07 14 | 704 | 0.1− | 0.7− | 2004 08 13 | 644 | 0.2− | 0.1+ | 2004 09 08 | 704 | 0.2− | 0.8− | | |
| 2004 07 14 | 704 | 0.1− | 0.4+ | 2004 08 13 | 644 | 0.0 | 0.1− | 2004 09 08 | 704 | 0.4− | 0.1+ | | |
| 2004 07 17 | 704 | 0.3− | 0.8− | 2004 08 15 | 185 | 0.1− | 0.5− | 2004 09 10 | 704 | 0.5− | 0.8− | | |
| 2004 07 17 | 704 | 0.2− | 0.1+ | 2004 08 15 | 185 | 0.9+ | 1.3− | 2004 09 10 | 704 | 0.1+ | 0.6− | | |
| 2004 07 17 | 704 | 0.5+ | 0.4− | 2004 08 15 | 185 | 0.0 | 0.1+ | 2004 09 10 | 704 | 0.0 | 0.0 | | |
| 2004 07 17 | 704 | 0.8− | 1.0+ | 2004 08 20 | 683 | 0.4+ | 0.4− | 2004 09 10 | 704 | 0.3− | 0.6− | | |
| 2004 07 17 | 704 | 0.1− | 0.2+ | 2004 08 20 | 683 | 0.1+ | 0.0 | 2004 09 10 | 704 | 0.4− | 0.9− | | |
| 2004 07 17 | 704 | 0.4− | 0.4− | 2004 08 20 | 683 | 0.2− | 0.8+ | 2004 09 18 | 704 | 0.9+ | 0.3+ | | |
| 2004 07 17 | 704 | 0.7+ | 0.1− | 2004 08 21 | 683 | 0.2+ | 0.8+ | 2004 09 18 | 704 | 0.2+ | 0.5− | | |
| 2004 07 17 | 704 | 0.8+ | 0.2− | 2004 08 21 | 703 | 0.5+ | 1.0+ | 2004 09 18 | 704 | 0.2+ | 0.0 | | |
| 2004 07 17 | 704 | 0.2+ | 0.2− | 2004 08 21 | 703 | 0.1− | 1.0+ | 2004 09 18 | 704 | 0.1− | 1.6− | | |
| 2004 07 17 | 704 | 0.2− | 0.1+ | 2004 08 21 | 683 | 0.3− | 1.0− | 2006 01 25 | G96 | 0.0 | 0.1+ | | |
| 2004 07 17 | 704 | 0.6− | 1.1+ | 2004 08 21 | 703 | 0.4− | 0.2+ | 2006 01 25 | G96 | 0.3+ | 0.4+ | | |
| 2004 07 17 | 704 | 0.4− | 0.0 | 2004 08 21 | 703 | 0.3− | 0.2+ | 2006 01 25 | G96 | 0.1− | 0.2+ | | |
| 2004 08 05 | 644 | 0.2+ | 0.1+ | 2004 08 22 | 683 | 0.8+ | 0.6+ | 2006 01 25 | G96 | 0.0 | 0.1+ | | |
| 2004 08 05 | 644 | 0.2+ | 0.0 | 2004 08 22 | 683 | 0.3− | 0.9+ | | | | | | |
| 2004 08 05 | 644 | 0.1+ | 0.1− | 2004 08 22 | 683 | 0.2− | 0.7+ | | | | | | |

**2004 NZ$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.63226 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21917888 | $\omega$ | 313.54451 | | +0.64905283 | +0.76063655 | |
| $a$ | 2.7243960 | $\Omega$ | 356.84411 | | −0.61402019 | +0.51390619 | |
| $e$ | 0.2033958 | $i$ | 13.38677 | | −0.44912096 | +0.39665157 | |
| $P$ | 4.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 644 | 0.5+ | 1.0+ | 2004 09 09 | 704 | 1.7− | 0.6− | 2004 10 09 | 704 | 0.0 | 0.2+ | | |
| 2003 03 23 | 644 | 0.5+ | 0.6+ | 2004 09 09 | 704 | 1.0− | 0.8− | 2004 10 10 | 608 | 0.0 | 0.5− | | |
| 2003 03 23 | 644 | 0.2+ | 0.9+ | 2004 09 09 | 704 | 0.3− | 0.2− | 2004 10 10 | 608 | 0.6+ | 0.9− | | |
| 2004 07 15 | 704 | 0.7− | 0.1+ | 2004 09 09 | 704 | 0.4− | 0.6− | 2004 10 10 | 608 | 0.3+ | 0.6− | | |
| 2004 07 15 | 704 | 0.3− | 0.1+ | 2004 09 09 | 704 | 0.6− | 0.3− | 2004 10 11 | 644 | 0.0 | 0.2+ | | |
| 2004 07 15 | 704 | 0.3+ | 0.3− | 2004 09 09 | 704 | 0.4− | 0.5− | 2004 10 11 | 644 | 0.1− | 0.1+ | | |
| 2004 07 15 | 704 | 0.2− | 0.4+ | 2004 09 09 | 704 | 0.7− | 0.1− | 2004 10 11 | 644 | 0.2+ | 0.0 | | |
| 2004 07 15 | 704 | 0.2+ | 0.3+ | 2004 09 10 | 704 | 0.1− | 0.5+ | 2004 10 12 | 683 | 1.6+ | 0.6− | | |
| 2004 07 17 | 704 | 0.4+ | 0.8+ | 2004 09 10 | 704 | 0.5− | 1.4− | 2004 10 12 | 683 | 0.6+ | 0.4+ | | |
| 2004 07 17 | 704 | 0.1+ | 1.0− | 2004 09 10 | 704 | 0.1− | 1.3+ | 2004 10 12 | 683 | 0.6− | 0.4+ | | |
| 2004 07 17 | 704 | 0.4+ | 0.0 | 2004 09 10 | 704 | 0.4− | 0.0 | 2004 10 13 | 683 | 0.3− | 0.6− | | |
| 2004 08 09 | 704 | 0.2+ | 0.2− | 2004 09 10 | 704 | 0.5− | 0.7− | 2004 10 13 | 683 | 0.6− | 1.0+ | | |
| 2004 08 09 | 704 | 0.2+ | 0.1− | 2004 09 17 | 704 | 0.4+ | 0.2+ | 2004 10 13 | 683 | 0.4− | 0.9+ | | |
| 2004 08 09 | 704 | 0.2+ | 1.3+ | 2004 09 17 | 704 | 0.3+ | 0.4− | 2004 10 14 | 683 | 0.7+ | 1.7− | | |
| 2004 08 10 | 704 | 1.0+ | 0.2− | 2004 09 17 | 704 | 0.4+ | 0.8+ | 2004 10 14 | 683 | 0.5− | 0.0 | | |
| 2004 08 10 | 704 | 0.8+ | 0.4+ | 2004 09 17 | 704 | 0.0 | 0.6+ | 2004 10 14 | 683 | (4.8− | 0.6−) | | |
| 2004 08 10 | 704 | 1.7+ | 0.6+ | 2004 09 17 | 704 | 0.4+ | 0.6+ | 2004 10 17 | 703 | 0.1+ | 0.7+ | | |
| 2004 08 10 | 704 | 0.1− | 0.0 | 2004 09 18 | 106 | 0.7+ | 0.8− | 2004 10 17 | 703 | 0.9+ | 0.1− | | |
| 2004 08 10 | 704 | 0.3− | 1.6+ | 2004 09 18 | 106 | 0.6+ | 0.6− | 2004 10 17 | 703 | 1.3+ | 1.0+ | | |
| 2004 08 12 | 704 | 0.5− | 1.0+ | 2004 09 18 | 106 | 0.6+ | 0.4− | 2004 10 17 | 703 | 0.3+ | 0.3+ | | |
| 2004 08 12 | 704 | 0.8+ | 1.3+ | 2004 09 21 | 691 | 0.1+ | 0.2− | 2004 10 18 | 683 | 0.3− | 0.5− | | |
| 2004 08 12 | 704 | 0.8− | 0.1+ | 2004 09 21 | 691 | 0.1+ | 0.1− | 2004 10 18 | 683 | 0.1− | 0.1+ | | |
| 2004 08 12 | 704 | 0.1− | 0.4+ | 2004 09 21 | 691 | 0.3+ | 0.1− | 2004 10 18 | 683 | 0.1+ | 0.0 | | |
| 2004 08 12 | 704 | 0.7− | 0.1+ | 2004 10 03 | 683 | 0.9+ | 0.6− | 2004 10 20 | 683 | 0.1+ | 1.8+ | | |
| 2004 08 26 | 703 | 0.1− | 0.1− | 2004 10 03 | 683 | 0.7+ | 1.3− | 2004 10 20 | 683 | 0.1+ | 0.7+ | | |
| 2004 08 26 | 703 | 0.3− | 0.6− | 2004 10 04 | 683 | (0.6− | 2.1+) | 2004 10 20 | 683 | 0.4− | 0.9+ | | |
| 2004 08 26 | 703 | 0.7− | 0.6− | 2004 10 04 | 683 | 0.1− | 1.8+ | 2004 10 23 | 683 | 1.0+ | 1.2− | | |
| 2004 08 26 | 703 | 1.0− | 0.8− | 2004 10 04 | 683 | 0.4− | 1.5+ | 2004 10 23 | 683 | 0.2+ | 0.1+ | | |
| 2004 08 27 | 699 | 0.2+ | 0.0 | 2004 10 05 | 683 | 0.5+ | 0.0 | 2004 10 23 | 683 | 1.3− | 0.0 | | |
| 2004 08 27 | 699 | 1.3− | 0.3+ | 2004 10 05 | 683 | 1.0+ | 0.3+ | 2004 11 02 | 699 | 0.1− | 0.1− | | |
| 2004 08 27 | 699 | 0.1+ | 0.3+ | 2004 10 05 | 683 | 0.3+ | 0.9+ | 2004 11 02 | 699 | 1.1+ | 0.5+ | | |
| 2004 08 27 | 699 | 0.2+ | 0.3− | 2004 10 07 | 704 | 0.4− | 0.2+ | 2004 11 02 | 699 | 1.0+ | 0.4+ | | |
| 2004 09 08 | 704 | 0.9− | 0.0 | 2004 10 07 | 704 | 0.3+ | 0.6− | 2004 11 02 | 699 | 0.1− | 0.3− | | |
| 2004 09 08 | 704 | 1.3− | 0.4− | 2004 10 07 | 704 | 0.4+ | 0.5− | 2004 11 04 | 699 | 0.1+ | 0.8− | | |
| 2004 09 08 | 704 | 0.4− | 0.7+ | 2004 10 07 | 704 | 0.3+ | 0.2− | 2004 11 04 | 699 | 0.8− | 0.8+ | | |
| 2004 09 08 | 704 | 1.5− | 0.3+ | 2004 10 07 | 704 | 0.2+ | 0.4− | 2004 11 04 | 699 | 0.2+ | 0.3+ | | |
| 2004 09 08 | 704 | 1.3− | 0.6+ | 2004 10 08 | 683 | 0.0 | 0.1− | 2004 11 04 | 699 | 0.2+ | 0.6+ | | |
| 2004 09 09 | 106 | 0.3+ | 0.1+ | 2004 10 08 | 683 | 0.1+ | 0.3+ | 2005 12 30 | 703 | 0.8+ | 0.3+ | | |
| 2004 09 09 | 106 | 0.5− | 1.4− | 2004 10 08 | 683 | 0.1− | 0.8+ | 2005 12 30 | 703 | 0.7− | 0.4+ | | |
| 2004 09 09 | 106 | 0.8+ | 1.1− | 2004 10 09 | 704 | 0.0 | 0.2+ | 2005 12 30 | 703 | 0.1− | 1.1+ | | |
| 2004 09 09 | 704 | 1.0− | 0.4− | 2004 10 09 | 704 | 0.0 | 0.0 | 2005 12 30 | 703 | 0.4+ | 0.5+ | | |
| 2004 09 09 | 704 | 1.5− | 0.7− | 2004 10 09 | 704 | 0.1+ | 0.4+ | | | | | | |
| 2004 09 09 | 704 | 1.4− | 0.7− | 2004 10 09 | 704 | 0.3+ | 0.1− | | | | | | |

**2004 NM$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.32571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26982477 | $\omega$ | 196.98223 | | +0.47863778 | +0.85467656 | |
| $a$ | 2.3718188 | $\Omega$ | 102.01321 | | −0.77978975 | +0.51904990 | |
| $e$ | 0.2055059 | $i$ | 11.86369 | | −0.40352674 | +0.01073212 | |
| $P$ | 3.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 04 | 699 | 0.1+ | 0.5+ | 2004 07 11 | 699 | 0.0 | 0.2+ | 2004 08 15 | 428 | 0.1+ | 0.3+ | | |
| 2000 06 04 | 699 | 0.4+ | 0.3+ | 2004 07 11 | 699 | 0.5+ | 1.3− | 2004 09 03 | 699 | 0.6− | 0.5+ | | |
| 2000 06 04 | 699 | 0.3− | 0.1− | 2004 07 11 | 699 | 0.0 | 0.1− | 2004 09 03 | 699 | 0.3− | 0.2− | | |
| 2000 06 04 | 699 | 0.4+ | 0.7+ | 2004 07 11 | 699 | 1.2− | 0.5− | 2004 09 03 | 699 | 1.3+ | 0.8− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.2+ | 0.2− | 2004 07 16 | 704 | 0.2− | 0.3− | 2004 09 03 | 699 | 0.3+ | 0.2+ |
| 2001 12 11 | 704 | 0.9+ | 1.0+ | 2004 07 16 | 704 | 0.4− | 1.2+ | 2004 09 03 | E12 | 0.4+ | 0.1+ |
| 2001 12 11 | 704 | 1.4− | 0.1+ | 2004 07 16 | 704 | 0.0 | 1.3+ | 2004 09 03 | E12 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | 0.1− | 0.3− | 2004 07 16 | 704 | 0.2− | 1.1+ | 2004 09 03 | E12 | 0.3+ | 0.1+ |
| 2004 06 15 | 704 | (0.7+ | 2.1+) | 2004 07 25 | 699 | (1.8+ | 1.1+) | 2004 09 03 | E12 | 0.4− | 0.3− |
| 2004 06 15 | 704 | 0.4− | 0.1− | 2004 07 25 | 699 | 0.4+ | 0.2+ | 2005 12 01 | 691 | 0.0 | 0.1− |
| 2004 06 15 | 704 | 0.4− | 0.0 | 2004 07 25 | 699 | 0.1+ | 0.1− | 2005 12 01 | 691 | 0.1− | 0.4+ |
| 2004 06 15 | 704 | 0.4+ | 0.5− | 2004 07 25 | 699 | 0.0 | 0.3− | 2005 12 01 | 691 | 0.1+ | 0.2+ |

### 2004 $NP_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.46112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27088800 | $\omega$ | 185.04520 | | +0.77252035 | +0.62918605 | |
| $a$ | 2.3656085 | $\Omega$ | 135.57733 | | −0.57822736 | +0.75278229 | |
| $e$ | 0.1310633 | $i$ | 7.02933 | | −0.26242223 | +0.19350385 | |
| $P$ | 3.64 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 691 | 0.2− | 0.1+ | 2004 07 16 | 704 | 0.3+ | 0.4+ | 2004 08 08 | 704 | 0.3+ | 0.4+ |
| 1999 01 23 | 691 | 0.1− | 0.0 | 2004 07 16 | 704 | 0.9− | 1.8+ | 2004 08 08 | 704 | 0.6− | 0.3+ |
| 1999 01 23 | 691 | 0.4+ | 0.3+ | 2004 07 16 | 704 | 0.3+ | 0.2− | 2004 08 21 | E12 | 0.4− | 0.0 |
| 2003 03 23 | 645 | 0.1+ | 0.0 | 2004 07 16 | 704 | 0.4+ | 0.2− | 2004 08 21 | E12 | 0.1+ | 0.2+ |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2004 07 17 | H07 | 0.3+ | 0.5− | 2004 08 21 | E12 | 0.2+ | 0.2+ |
| 2004 07 10 | 703 | 0.4− | 0.6+ | 2004 07 17 | H07 | 0.2− | 0.7− | 2004 08 21 | E12 | 0.4+ | 0.1+ |
| 2004 07 10 | 703 | 0.1+ | 0.0 | 2004 07 17 | H07 | 0.2+ | 0.4− | 2004 09 09 | 704 | 0.2+ | 0.2+ |
| 2004 07 10 | 703 | 0.1+ | 0.4+ | 2004 08 08 | 704 | 0.1+ | 0.3+ | 2004 09 09 | 704 | 0.0 | 0.1− |
| 2004 07 10 | 703 | 0.2− | 1.3− | 2004 08 08 | 704 | 0.1− | 0.2+ | 2004 09 09 | 704 | 0.5− | 0.5− |

### 2004 $OS_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.42188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30691356 | $\omega$ | 29.30821 | | +0.84750065 | +0.52487733 | |
| $a$ | 2.1766670 | $\Omega$ | 298.82190 | | −0.50287121 | +0.74630829 | |
| $e$ | 0.2480605 | $i$ | 5.17565 | | −0.16989169 | +0.40930151 | |
| $P$ | 3.21 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.6− | 0.0 | 2001 11 17 | 704 | 0.1− | 0.7+ | 2004 07 19 | 699 | 0.3− | 0.3+ |
| 2001 09 25 | 704 | 0.3+ | 0.9+ | 2001 11 17 | 704 | 1.1+ | 0.0 | 2004 07 21 | E12 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.6+ | 0.4+ | 2004 07 08 | E12 | 0.2− | 0.7− | 2004 07 21 | E12 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.7− | 0.3+ | 2004 07 08 | E12 | 0.7+ | 0.0 | 2004 07 21 | E12 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.5+ | 0.1− | 2004 07 08 | E12 | 0.6+ | 0.5+ | 2004 07 21 | E12 | 0.2+ | 0.2+ |
| 2001 10 13 | 644 | 0.2− | 0.3+ | 2004 07 08 | E12 | (3.2+ | 0.6−) | 2004 08 08 | 704 | 0.2+ | 0.1− |
| 2001 10 13 | 644 | 0.5− | 0.1− | 2004 07 16 | 704 | 0.3− | 0.1+ | 2004 08 08 | 704 | 0.3+ | 0.0 |
| 2001 10 13 | 644 | 0.6− | 0.5+ | 2004 07 16 | 704 | 0.2+ | 1.2+ | 2004 08 08 | 704 | 0.2+ | 0.4− |
| 2001 10 20 | 699 | 0.5− | 0.7− | 2004 07 16 | 704 | 0.6− | 0.2− | 2004 08 08 | 704 | 0.6− | 0.4+ |
| 2001 10 20 | 699 | 0.9+ | 0.4− | 2004 07 16 | 704 | 0.7− | 0.0 | 2006 01 31 | G96 | 0.2+ | 0.1+ |
| 2001 10 20 | 699 | 0.2− | 0.8− | 2004 07 16 | 704 | 0.9− | 0.6− | 2006 01 31 | G96 | 0.4− | 0.2+ |
| 2001 10 20 | 699 | 0.3− | 0.6− | 2004 07 19 | 699 | 1.1− | 0.4+ | 2006 01 31 | G96 | 0.5− | 0.3− |
| 2001 11 17 | 704 | 0.8+ | 0.0 | 2004 07 19 | 699 | 0.4− | 0.5− | 2006 01 31 | G96 | 0.6+ | 0.1+ |
| 2001 11 17 | 704 | 0.0 | 0.4− | 2004 07 19 | 699 | 0.3− | 0.2− | | | | |

### 2004 $OU_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.57675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29969646 | $\omega$ | 60.78293 | | +0.95857181 | +0.23135759 | |
| $a$ | 2.2114730 | $\Omega$ | 285.42485 | | −0.28176381 | +0.85577446 | |
| $e$ | 0.1454450 | $i$ | 9.92641 | | +0.04182395 | +0.46273506 | |
| $P$ | 3.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.1− | 0.0 | 2001 09 29 | 644 | 0.1− | 0.0 | 2004 07 18 | 704 | 0.1+ | 0.2− |
| 2001 08 14 | 644 | 0.0 | 0.2− | 2001 09 29 | 644 | 0.0 | 0.2+ | 2004 07 18 | 704 | 0.3− | 0.1+ |
| 2001 08 14 | 644 | 0.1− | 0.3− | 2001 09 29 | 644 | 0.1− | 0.2− | 2004 07 18 | 704 | 0.1− | 0.2+ |
| 2001 08 22 | 704 | 1.3+ | 0.6+ | 2001 10 26 | 608 | 0.7− | 0.8− | 2004 07 18 | 704 | 0.4− | 1.0+ |
| 2001 08 22 | 704 | 0.5+ | 0.1− | 2001 10 26 | 608 | 0.5− | 0.8− | 2004 07 18 | 704 | 0.2− | 0.3+ |
| 2001 08 22 | 704 | 0.5+ | 0.3− | 2001 10 26 | 608 | 0.5− | 0.6− | 2004 07 18 | 704 | 0.1− | 0.8+ |
| 2001 09 10 | 699 | 0.1− | 0.7+ | 2004 07 11 | 704 | 0.0 | 0.7− | 2004 07 21 | E12 | 0.3+ | 0.2− |
| 2001 09 10 | 699 | 0.3+ | 0.6− | 2004 07 11 | 704 | 1.4+ | 1.3+ | 2004 07 21 | E12 | 0.5+ | 1.4− |
| 2001 09 10 | 699 | 2.0+ | 0.5− | 2004 07 11 | 704 | 0.2− | 0.3− | 2004 07 21 | E12 | 0.1+ | 0.4− |
| 2001 09 10 | 699 | 0.5− | 0.9+ | 2004 07 11 | 704 | 0.1+ | 0.3− | 2004 07 21 | E12 | 0.1− | 0.5+ |
| 2001 09 21 | 699 | 0.2− | 0.2+ | 2004 07 11 | 704 | 0.2+ | 1.1− | 2005 11 06 | G96 | 0.2+ | 0.1− |
| 2001 09 21 | 699 | 0.1− | 0.3+ | 2004 07 18 | 704 | 0.7− | 0.5− | 2005 11 06 | G96 | 0.4− | 0.0 |
| 2001 09 21 | 699 | 0.3− | 0.1+ | 2004 07 18 | 704 | 0.9− | 1.1+ | 2005 11 06 | G96 | 0.1+ | 0.1+ |
| 2001 09 21 | 699 | 0.8− | 0.8+ | 2004 07 18 | 704 | (0.2− | 2.1+) | 2005 11 06 | G96 | 0.6+ | 0.5+ |

### 2004 $OE_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.21793 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18495105 | $\omega$ | 262.49925 | | +0.88094354 | +0.46946061 | |
| $a$ | 3.0509249 | $\Omega$ | 69.48541 | | −0.40523214 | +0.81335922 | |
| $e$ | 0.1473227 | $i$ | 3.64494 | | −0.24438777 | +0.34358918 | |
| $P$ | 5.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 20 | 691 | 0.1+ | 0.4+ | 2004 08 22 | E12 | 0.3+ | 0.2− | 2005 11 22 | 691 | 0.0 | 0.3+ |
| 1998 06 20 | 691 | 0.2+ | 0.5+ | 2004 08 22 | E12 | 0.2+ | 0.5+ | 2005 11 22 | 291 | 0.8− | 0.4+ |
| 1998 06 20 | 691 | 0.2+ | 0.5+ | 2005 10 26 | 691 | 0.8− | 0.4+ | 2005 11 22 | 291 | 0.3− | 0.0 |
| 2004 07 21 | E12 | 0.0 | 1.0− | 2005 10 26 | 691 | 0.1− | 0.2+ | 2005 11 22 | 291 | 0.6− | 0.2+ |
| 2004 07 21 | E12 | 0.9− | 0.1+ | 2005 10 26 | 691 | 0.1+ | 0.3+ | 2005 11 29 | G96 | 0.0 | 0.5− |
| 2004 07 21 | E12 | 0.8+ | 0.6− | 2005 11 03 | 691 | 0.3+ | 0.0 | 2005 11 29 | G96 | 0.4+ | 0.4− |
| 2004 07 21 | E12 | 0.5+ | 0.2+ | 2005 11 03 | 691 | 0.4+ | 0.0 | 2005 11 29 | G96 | 0.2+ | 0.3− |
| 2004 08 07 | E12 | 0.7+ | 0.2− | 2005 11 03 | 691 | 0.6+ | 0.1+ | 2005 11 29 | G96 | 0.1+ | 0.2− |
| 2004 08 07 | E12 | 0.3+ | 0.5+ | 2005 11 12 | 691 | 0.1+ | 0.3− | 2006 01 21 | G96 | 0.2+ | 0.2− |
| 2004 08 07 | E12 | 0.8− | 0.1+ | 2005 11 12 | 691 | 0.1− | 0.2− | 2006 01 21 | G96 | 0.3+ | 0.0 |
| 2004 08 07 | E12 | 0.7− | 0.0 | 2005 11 12 | 691 | 0.4+ | 0.1+ | 2006 01 21 | G96 | 0.1− | 0.0 |
| 2004 08 22 | E12 | 0.1− | 0.1+ | 2005 11 22 | 691 | 0.2+ | 0.1+ | 2006 01 21 | G96 | 0.6+ | 0.3− |
| 2004 08 22 | E12 | 0.0 | 0.4− | 2005 11 22 | 691 | 0.1+ | 0.0 | | | | |

### 2004 $OF_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.54636 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21905127 | $\omega$ | 215.33051 | | +0.98082906 | +0.14262685 | |
| $a$ | 2.7254541 | $\Omega$ | 135.86570 | | −0.10354463 | +0.95869719 | |
| $e$ | 0.2643361 | $i$ | 10.99303 | | −0.16508442 | +0.24608390 | |
| $P$ | 4.50 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 16 | 807 | 0.1+ | 0.4− | 2004 08 21 | 703 | (0.3+ | 2.0+) | 2004 09 21 | 704 | 0.2+ | 0.2− |
| 2004 07 16 | 807 | 0.3+ | 0.6− | 2004 08 21 | 703 | 1.0− | 0.1+ | 2004 09 21 | 704 | (1.6− | 3.0−) |
| 2004 08 11 | 704 | 0.0 | 0.4+ | 2004 09 07 | 704 | 0.4+ | 0.1− | 2006 01 09 | 691 | 0.2− | 0.0 |
| 2004 08 11 | 704 | 0.1− | 0.5+ | 2004 09 07 | 704 | 0.3− | 0.9− | 2006 01 09 | 691 | 0.0 | 0.0 |
| 2004 08 11 | 704 | 0.0 | 0.6− | 2004 09 07 | 704 | 0.7− | 0.4+ | 2006 01 09 | 691 | 0.0 | 0.1+ |
| 2004 08 11 | 704 | 0.2− | 0.7+ | 2004 09 07 | 704 | 1.6+ | 1.7+ | 2006 02 04 | G96 | 0.4+ | 0.3+ |
| 2004 08 11 | 704 | 0.3− | 0.1+ | 2004 09 21 | 704 | 0.5− | 0.9− | 2006 02 04 | G96 | 0.0 | 0.1− |
| 2004 08 21 | 703 | 0.3+ | 1.2+ | 2004 09 21 | 704 | 0.0 | 0.8− | 2006 02 04 | G96 | 0.1− | 0.3− |
| 2004 08 21 | 703 | 0.8+ | 0.2+ | 2004 09 21 | 704 | 0.8− | 0.8− | 2006 02 04 | G96 | 0.1+ | 0.0 |

### 2004 $PF_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.71180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28195950 | $\omega$ | 144.07708 | | +0.75475344 | +0.65592405 | |
| $a$ | 2.3032703 | $\Omega$ | 174.89472 | | −0.62611240 | +0.72505497 | |
| $e$ | 0.1328327 | $i$ | 6.79604 | | −0.19578179 | +0.20990218 | |
| $P$ | 3.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.2− | 0.1− | 2004 08 09 | 704 | 0.4− | 0.3− | 2004 09 07 | 704 | 0.1− | 0.2− |
| 2001 11 19 | 699 | 0.2− | 0.4+ | 2004 08 09 | 704 | 0.1+ | 0.4+ | 2004 09 07 | 704 | 0.4+ | 0.3− |
| 2001 11 19 | 699 | 0.3− | 0.1− | 2004 08 09 | 704 | 0.4− | 0.2− | 2004 09 07 | 704 | 0.1+ | 1.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.8+ | 0.8− | 2004 08 09 | 699 | 0.4− | 0.2+ | 2004 09 07 | 704 | 0.8+ | 0.8− |
| 2004 06 16 | 704 | 0.2+ | 0.7+ | 2004 08 09 | 699 | 1.1− | 0.6− | 2004 09 07 | 704 | 0.1+ | 0.2+ |
| 2004 06 16 | 704 | 0.9+ | 0.7+ | 2004 08 09 | 699 | 0.2− | 0.6− | 2004 09 10 | 704 | 0.3+ | 1.0+ |
| 2004 06 16 | 704 | 1.2+ | 1.0+ | 2004 08 09 | 699 | 0.3− | 0.5+ | 2004 09 10 | 704 | 0.6+ | 0.4+ |
| 2004 07 17 | 704 | 0.5− | 0.4+ | 2004 08 12 | 704 | 0.1− | 0.3− | 2004 09 10 | 704 | 0.5+ | 0.1− |
| 2004 07 17 | 704 | 0.4− | 0.9− | 2004 08 12 | 704 | 0.0 | 0.3− | 2004 09 10 | 704 | 0.2+ | 0.4+ |
| 2004 07 17 | 704 | 0.1+ | 0.3− | 2004 08 12 | 704 | 0.3− | 0.4− | 2004 09 10 | 704 | 0.9+ | 1.1+ |
| 2004 07 17 | 704 | 0.8− | 0.0 | 2004 08 12 | 704 | 0.0 | 0.1− | 2006 02 04 | G96 | 0.4+ | 0.7+ |
| 2004 08 06 | 644 | 0.3− | 0.3− | 2004 08 12 | 704 | 0.1+ | 0.1− | 2006 02 04 | G96 | 0.3+ | 0.1+ |
| 2004 08 06 | 644 | 0.2− | 0.2− | 2004 08 25 | 691 | 0.0 | 0.0 | 2006 02 04 | G96 | 0.1+ | 0.5+ |
| 2004 08 06 | 644 | 0.3− | 0.0 | 2004 08 25 | 691 | 0.1− | 0.1− | 2006 02 04 | G96 | 0.6− | 0.9+ |
| 2004 08 09 | 704 | 0.5− | 0.3− | 2004 08 25 | 691 | 0.1+ | 0.0 | | | | |

**2004 PW$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 166.34849 | | (2000.0) | | +0.98241633 | −0.16280497 |
| $n$ | 0.26419462 | $\omega$ | 245.44522 | | +0.18442507 | +0.92245020 |
| $a$ | 2.4053969 | $\Omega$ | 123.80289 | | −0.02907815 | +0.35011450 |
| $e$ | 0.1701075 | $i$ | 6.31447 | | | |
| $P$ | 3.73 | $H$ | 17.2 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 08 | 644 | 0.4− | 0.6+ | 2004 08 12 | 704 | 0.6+ | 0.4− | 2006 01 23 | G96 | 0.4− | 0.2+ |
| 2004 08 08 | 644 | 0.1− | 0.3+ | 2005 12 06 | G96 | 0.8+ | 0.2− | 2006 01 23 | G96 | 0.4− | 0.4− |
| 2004 08 08 | 644 | 0.0 | 0.1+ | 2005 12 06 | G96 | 0.0 | 0.2− | 2006 01 23 | G96 | 0.0 | 0.2− |
| 2004 08 09 | 699 | 0.8− | 0.0 | 2005 12 06 | G96 | 0.3− | 0.1− | 2006 02 02 | 691 | 0.1− | 0.2+ |
| 2004 08 09 | 699 | 0.4− | 0.3− | 2005 12 06 | G96 | 0.4+ | 0.2− | 2006 02 02 | 691 | 0.0 | 0.4+ |
| 2004 08 09 | 699 | 0.1+ | 0.4+ | 2006 01 05 | G96 | 0.3+ | 0.1+ | 2006 02 02 | 691 | 0.1+ | 0.4+ |
| 2004 08 09 | 699 | 0.1+ | 0.4+ | 2006 01 05 | G96 | 0.5− | 0.0 | 2006 02 06 | G96 | 0.2− | 0.6+ |
| 2004 08 12 | 704 | 0.3− | 0.1+ | 2006 01 05 | G96 | 0.2+ | 0.2+ | 2006 02 06 | G96 | 0.0 | 0.6− |
| 2004 08 12 | 704 | 0.7+ | 0.4− | 2006 01 05 | G96 | 0.5+ | 0.6− | 2006 02 06 | G96 | 0.8+ | 0.6− |
| 2004 08 12 | 704 | 0.1+ | 0.5+ | 2006 01 23 | G96 | 0.4− | 0.1− | 2006 02 06 | G96 | 0.0 | 0.5− |

**2004 PJ$_{22}$ = 2005 YO$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 191.90828 | | (2000.0) | | +0.86036310 | +0.50960512 |
| $n$ | 0.25960001 | $\omega$ | 63.23476 | | −0.47071060 | +0.78781552 |
| $a$ | 2.4336956 | $\Omega$ | 266.12653 | | −0.19546579 | +0.34590362 |
| $e$ | 0.1897045 | $i$ | 0.50706 | | | |
| $P$ | 3.80 | $H$ | 17.4 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 19 | 699 | 0.9+ | 0.7+ | 2004 08 08 | 704 | 0.6+ | 0.1+ | 2004 08 21 | E12 | 0.2+ | 0.1+ |
| 2004 07 19 | 699 | 0.0 | 1.4− | 2004 08 08 | 704 | 0.6+ | 0.4+ | 2004 08 21 | E12 | 0.1− | 0.2− |
| 2004 07 19 | 699 | 0.0 | 0.1− | 2004 08 08 | 704 | 0.4+ | 0.5+ | 2005 12 24 | 691 | 0.0 | 0.2+ |
| 2004 07 19 | 699 | 1.4− | 0.7+ | 2004 08 08 | 704 | 0.2+ | 0.5+ | 2005 12 24 | 691 | 0.1+ | 0.1− |
| 2004 08 08 | 644 | 0.0 | 0.2+ | 2004 08 09 | 699 | 0.4+ | 0.8− | 2005 12 24 | 691 | 0.0 | 0.0 |
| 2004 08 08 | 644 | 0.3− | 0.4+ | 2004 08 09 | 699 | 1.1− | 0.8− | 2006 01 05 | 691 | 0.1− | 0.1− |
| 2004 08 08 | 644 | 0.2+ | 0.1− | 2004 08 09 | 699 | 0.2− | 0.1+ | 2006 01 05 | 691 | 0.1− | 0.1− |
| 2004 08 08 | 644 | 0.2+ | 0.1+ | 2004 08 09 | 699 | 0.3− | 0.0 | 2006 01 05 | 691 | 0.2+ | 0.2+ |
| 2004 08 08 | 644 | 0.1+ | 0.1+ | 2004 08 21 | E12 | 0.1− | 0.1+ | | | | |
| 2004 08 08 | 644 | 0.2+ | 0.0 | 2004 08 21 | E12 | 0.5− | 0.6− | | | | |

**2004 PD$_{37}$ = 2006 EO$_{37}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 272.42673 | | (2000.0) | | −0.65662397 | +0.73994177 |
| $n$ | 0.23338167 | $\omega$ | 263.95942 | | −0.55716049 | −0.60640254 |
| $a$ | 2.6127121 | $\Omega$ | 323.60366 | | −0.50834747 | −0.29113938 |
| $e$ | 0.0550668 | $i$ | 14.24925 | | | |
| $P$ | 4.22 | $H$ | 16.2 | $G$ 0.15 | $U$ 6 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 09 | 704 | 0.3− | 0.4+ | 2004 08 10 | 704 | 0.2+ | 0.2− | 2004 08 12 | 704 | 0.1− | 0.1+ |
| 2004 08 09 | 704 | 0.3− | 0.7− | 2004 08 10 | 704 | 1.1+ | 0.5− | 2004 08 12 | 704 | 0.2− | 0.0 |
| 2004 08 09 | 704 | 0.2− | 0.1− | 2004 08 10 | 704 | 0.1− | 0.6+ | 2004 08 13 | 704 | 0.1+ | 0.5− |
| 2004 08 09 | 704 | 0.4+ | 0.5+ | 2004 08 11 | 704 | 0.8− | 0.5+ | 2004 08 13 | 704 | 0.0 | 0.6+ |
| 2004 08 10 | 704 | 0.7− | 0.1− | 2004 08 11 | 704 | 0.9+ | 0.1+ | 2004 08 13 | 704 | 0.0 | 0.6− |
| 2004 08 10 | 704 | 0.5− | 0.1− | 2004 08 11 | 704 | 0.7− | 0.4+ | 2006 03 04 | G96 | 0.1+ | 0.2− |
| 2004 08 10 | 704 | 0.0 | 0.5+ | 2004 08 11 | 704 | 1.3− | 0.4+ | 2006 03 04 | G96 | 0.5+ | 0.2− |
| 2004 08 10 | 704 | 0.8− | 0.7+ | 2004 08 11 | 704 | 0.8− | 0.2− | 2006 03 04 | G96 | 0.2− | 0.0 |
| 2004 08 10 | 704 | 0.2+ | 0.2− | 2004 08 11 | 704 | 1.6+ | 0.0 | 2006 03 04 | G96 | 0.4− | 0.5+ |
| 2004 08 10 | 704 | 0.2− | 1.1− | 2004 08 11 | 704 | 0.0 | 0.1− | 2006 03 05 | G96 | 0.1− | 0.7− |
| 2004 08 10 | 704 | 0.5+ | 0.1+ | 2004 08 11 | 704 | 0.9+ | 0.4+ | 2006 03 05 | G96 | 0.1− | 0.2+ |
| 2004 08 10 | 704 | 0.8+ | 0.6+ | 2004 08 11 | 704 | 0.2− | 0.4− | 2006 03 05 | G96 | 0.2− | 0.1+ |
| 2004 08 10 | 704 | 0.0 | 0.6− | 2004 08 12 | 704 | 0.5+ | 0.1− | 2006 03 05 | G96 | 0.3+ | 0.3+ |
| 2004 08 10 | 704 | 0.6+ | 0.5− | 2004 08 12 | 704 | 0.5− | 0.1+ | | | | |

**2004 PS$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 189.86483 | | (2000.0) | | +0.98647698 | +0.16029909 |
| $n$ | 0.25854006 | $\omega$ | 136.50084 | | −0.16201641 | +0.92220518 |
| $a$ | 2.4403427 | $\Omega$ | 214.31853 | | −0.02477608 | +0.35191164 |
| $e$ | 0.1636612 | $i$ | 3.47435 | | | |
| $P$ | 3.81 | $H$ | 17.1 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 29 | 691 | 0.8+ | 0.0 | 2004 09 09 | 699 | 0.2+ | 0.1− | 2004 09 18 | 704 | 0.1+ | 0.6+ |
| 2003 04 29 | 691 | 0.3− | 0.6+ | 2004 09 09 | 699 | 0.2+ | 0.1− | 2004 09 18 | 704 | 0.1+ | 0.2− |
| 2003 04 29 | 691 | 0.0 | 0.5+ | 2004 09 10 | 704 | 0.7− | 1.0+ | 2004 09 18 | 704 | 1.9+ | 0.4+ |
| 2004 08 07 | 644 | 0.4+ | 0.1− | 2004 09 10 | 704 | 0.3+ | 0.6+ | 2004 09 18 | 704 | 0.1− | 0.5+ |
| 2004 08 07 | 644 | 0.8+ | 0.1+ | 2004 09 10 | 704 | 0.0 | 0.3+ | 2004 09 23 | 691 | 0.2− | 0.3− |
| 2004 08 07 | 644 | 0.6+ | 0.3− | 2004 09 10 | 704 | 0.4+ | 0.1+ | 2004 09 23 | 691 | 0.1+ | 0.3− |
| 2004 08 11 | 704 | 0.8+ | 0.2+ | 2004 09 10 | 704 | 0.1+ | 0.9+ | 2004 09 23 | 691 | 1.1− | 0.3− |
| 2004 08 11 | 704 | 0.6+ | 0.0 | 2004 09 13 | 704 | 0.8− | 1.0+ | 2004 10 05 | 699 | 1.9+ | 1.1+ |
| 2004 08 11 | 704 | 0.3− | 0.2− | 2004 09 13 | 704 | 1.3− | 0.5+ | 2004 10 05 | 699 | 1.4− | 0.5+ |
| 2004 08 25 | 691 | 0.2+ | 0.3− | 2004 09 13 | 704 | 1.2− | 0.2− | 2004 10 05 | 699 | 0.8+ | 0.6− |
| 2004 08 25 | 691 | 0.0 | 0.1− | 2004 09 13 | 704 | 0.5+ | 1.0+ | 2004 10 05 | 699 | 0.8− | 0.3+ |
| 2004 08 25 | 691 | 0.1+ | 0.2− | 2004 09 14 | 699 | 0.0 | 0.4− | 2004 10 09 | 691 | 0.1+ | 0.1+ |
| 2004 09 08 | 704 | 0.2− | 1.0+ | 2004 09 14 | 699 | 0.4− | 0.1− | 2004 10 09 | 691 | 0.0 | 0.1+ |
| 2004 09 08 | 704 | 0.1+ | 0.7+ | 2004 09 14 | 699 | 0.9− | 0.3− | 2004 10 09 | 691 | 0.0 | 0.3+ |
| 2004 09 08 | 704 | 0.4− | 0.3− | 2004 09 14 | 699 | 1.0+ | 0.1− | 2006 02 02 | G96 | 0.2+ | 1.0+ |
| 2004 09 08 | 704 | 0.9− | 0.8+ | 2004 09 17 | 691 | 0.1+ | 0.2− | 2006 02 02 | G96 | 0.2+ | 0.8+ |
| 2004 09 08 | 704 | 0.5− | 0.7+ | 2004 09 17 | 691 | 0.1+ | 0.2− | 2006 02 02 | G96 | 0.3+ | 0.8+ |
| 2004 09 09 | 699 | 0.2− | 0.7+ | 2004 09 17 | 691 | 0.1+ | 0.2− | 2006 02 02 | G96 | 0.2+ | 1.0+ |
| 2004 09 09 | 699 | 0.5− | 0.5+ | 2004 09 18 | 704 | 0.1− | 0.7+ | | | | |

**2004 PD$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 229.01847 | | (2000.0) | | +0.47010599 | +0.87345375 |
| $n$ | 0.28572854 | $\omega$ | 197.22719 | | −0.79380160 | +0.48122462 |
| $a$ | 2.2829705 | $\Omega$ | 100.97220 | | −0.38584891 | +0.07417144 |
| $e$ | 0.1432527 | $i$ | 7.42127 | | | |
| $P$ | 3.45 | $H$ | 17.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 02 | 704 | 0.2− | 0.1+ | 2001 11 11 | 645 | 0.0 | 0.0 | 2004 08 07 | E12 | 0.1− | 0.1− |
| 1997 07 02 | 704 | 0.3+ | 1.5+ | 2001 11 18 | 645 | 0.0 | 0.0 | 2004 08 11 | 704 | 0.4+ | 0.6− |
| 1997 07 02 | 704 | 0.3+ | 0.7+ | 2001 11 18 | 645 | 0.0 | 0.1− | 2004 08 11 | 704 | 0.4− | 0.0 |
| 1997 07 02 | 704 | 0.2+ | 1.7+ | 2004 07 09 | 704 | 0.6+ | 0.7− | 2004 08 11 | 704 | 0.2+ | 0.7− |
| 1997 07 02 | 704 | 0.2− | 1.0+ | 2004 07 09 | 704 | 0.5+ | 0.9− | 2005 12 05 | 691 | 0.2+ | 0.3+ |
| 2001 10 23 | 644 | 0.8− | 0.6+ | 2004 07 09 | 704 | 0.4− | 0.3+ | 2005 12 05 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 644 | 0.8− | 0.7+ | 2004 08 07 | E12 | 0.6− | 0.4− | 2005 12 05 | 691 | 0.2− | 0.3+ |
| 2001 10 23 | 644 | 0.5− | 0.8+ | 2004 08 07 | E12 | 0.0 | 0.3+ | | | | |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2004 08 07 | E12 | 0.3+ | 0.1+ | | | | |

**2004 PF$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 197.31466 | | | (2000.0) | | |
| $n$ | 0.25615695 | $\omega$ | 318.38374 | | +0.78437177 | +0.62026889 |
| $a$ | 2.4554548 | $\Omega$ | 3.29356 | | −0.54230154 | +0.68982725 |
| $e$ | 0.2085854 | $i$ | 5.23114 | | −0.30111455 | +0.37336963 |
| $P$ | 3.85 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 07 | 691 | 0.3+ | 0.3+ | 2004 08 23 | 699 | 0.1− | 0.4+ | 2004 09 16 | E12 | 0.2− | 0.4− |
| 2003 04 07 | 691 | 0.4+ | 0.9+ | 2004 08 23 | 699 | 0.9− | 0.0 | 2004 09 16 | E12 | 0.0 | 0.1− |
| 2003 04 07 | 691 | 0.0 | 0.4+ | 2004 08 23 | 699 | 0.2− | 0.3− | 2004 09 16 | E12 | 0.1− | 0.3+ |
| 2004 08 08 | 704 | 0.5− | 0.1− | 2004 09 07 | 704 | 0.1− | 0.1− | 2004 09 17 | 704 | 0.2+ | 0.0 |
| 2004 08 08 | 704 | 0.2− | 0.6− | 2004 09 07 | 704 | 0.0 | 0.5− | 2004 09 17 | 704 | 0.6+ | 0.1− |
| 2004 08 08 | 704 | 0.0 | 0.2+ | 2004 09 07 | 704 | 0.1− | 0.1+ | 2004 09 17 | 704 | 0.6+ | 0.1− |
| 2004 08 08 | 704 | 0.1− | 0.3+ | 2004 09 07 | 704 | 0.3− | 0.2− | 2004 09 17 | 704 | 0.9+ | 0.1+ |
| 2004 08 08 | 704 | 0.2− | 0.0 | 2004 09 09 | 704 | 0.0 | 0.6− | 2004 09 17 | 704 | 0.2− | 0.6+ |
| 2004 08 11 | 704 | 0.1− | 1.7+ | 2004 09 09 | 704 | 0.1− | 0.7− | 2004 12 13 | 291 | 0.0 | 0.7+ |
| 2004 08 11 | 704 | 0.2− | 1.9+ | 2004 09 09 | 704 | 0.2− | 1.0− | 2004 12 13 | 291 | 0.1+ | 0.4+ |
| 2004 08 11 | 704 | 0.2− | 1.5+ | 2004 09 09 | 704 | 0.4+ | 0.5− | 2004 12 13 | 291 | 0.4− | 0.2+ |
| 2004 08 11 | 704 | 0.0 | 1.6+ | 2004 09 09 | 704 | 0.2+ | 0.7− | 2005 12 30 | 691 | 0.1+ | 0.1+ |
| 2004 08 11 | 704 | 0.1+ | 0.6+ | 2004 09 12 | 704 | 0.5− | 0.1− | 2005 12 30 | 691 | 0.0 | 0.2+ |
| 2004 08 22 | E12 | 0.1− | 0.2+ | 2004 09 12 | 704 | 0.0 | 0.1− | 2005 12 30 | 691 | 0.0 | 0.0 |
| 2004 08 22 | E12 | 0.1+ | 0.3+ | 2004 09 12 | 704 | 0.1− | 0.1− | 2005 12 30 | 691 | 0.1+ | 0.3+ |
| 2004 08 22 | E12 | 0.2− | 0.1− | 2004 09 12 | 704 | 0.2+ | 0.2− | 2005 12 30 | 691 | 0.0 | 0.2+ |
| 2004 08 22 | E12 | 0.1− | 0.5+ | 2004 09 12 | 704 | 0.9− | 0.1− | 2005 12 30 | 691 | 0.1+ | 0.3+ |
| 2004 08 23 | 699 | 0.1− | 0.0 | 2004 09 16 | E12 | 0.5+ | 0.1− | | | | |

**2004 PD$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 153.93560 | | | (2000.0) | | |
| $n$ | 0.17814744 | $\omega$ | 18.76253 | | +0.53418139 | +0.84222383 |
| $a$ | 3.1281170 | $\Omega$ | 283.58552 | | −0.78488709 | +0.46210112 |
| $e$ | 0.1465120 | $i$ | 4.29904 | | −0.31401034 | +0.27770772 |
| $P$ | 5.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.7+ | 0.5+ | 2004 08 09 | 699 | 0.1− | 0.1− | 2004 09 13 | 704 | 1.0− | 0.7+ |
| 2002 02 11 | 704 | 0.7+ | 1.2+ | 2004 08 09 | 699 | 1.1− | 0.3+ | 2004 09 13 | 704 | 0.7− | 0.4+ |
| 2002 02 11 | 704 | 0.6+ | 0.2+ | 2004 08 09 | 699 | 0.9− | 0.4− | 2004 09 15 | 699 | 0.6− | 1.0+ |
| 2002 02 11 | 704 | 0.2− | 0.0 | 2004 08 09 | 699 | 0.4+ | 0.4+ | 2004 09 15 | 699 | 0.9+ | 0.7− |
| 2002 02 11 | 704 | 0.6− | 1.2+ | 2004 08 11 | 704 | 0.1+ | 0.2+ | 2004 09 15 | 699 | 0.0 | 0.2− |
| 2003 03 31 | 644 | 0.2+ | 0.7+ | 2004 08 11 | 704 | 0.2+ | 0.2+ | 2004 09 15 | 699 | 0.1− | 0.9+ |
| 2003 03 31 | 644 | 0.5+ | 0.3+ | 2004 08 11 | 704 | 0.4− | 0.5+ | 2004 09 21 | 704 | 0.5− | 0.6− |
| 2003 03 31 | 644 | 0.2− | 0.6+ | 2004 09 07 | 704 | 1.0+ | 1.1+ | 2004 09 21 | 704 | 0.2+ | 0.2− |
| 2004 07 17 | 704 | 0.3− | 0.0 | 2004 09 07 | 704 | 0.6+ | 0.4+ | 2004 09 21 | 704 | 0.9− | 0.3− |
| 2004 07 17 | 704 | 0.2+ | 0.1− | 2004 09 07 | 704 | 1.2+ | 0.7− | 2004 09 21 | 704 | (1.8+ | 1.4−) |
| 2004 07 17 | 704 | 0.3+ | 0.6+ | 2004 09 07 | 704 | 0.7+ | 0.2+ | 2004 09 21 | 704 | 0.1− | 1.1− |
| 2004 08 09 | 704 | 0.2− | 0.1− | 2004 09 10 | 704 | 0.2+ | 0.6+ | 2005 10 28 | 691 | 0.1− | 0.2+ |
| 2004 08 09 | 704 | 0.1+ | 0.4+ | 2004 09 10 | 704 | 0.5+ | 0.1+ | 2005 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 08 09 | 704 | 0.1− | 0.1+ | 2004 09 10 | 704 | 0.4− | 0.1− | 2005 10 28 | 691 | 0.0 | 0.2+ |
| 2004 08 09 | 704 | 0.2− | 0.3+ | 2004 09 13 | 704 | 0.5− | 0.9− | | | | |

**2004 PW$_{65}$ = 2004 RA$_{28}$**

Id. Minor Planet Center (d, *MPO* 77916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 206.00120 | | | (2000.0) | | |
| $n$ | 0.28816759 | $\omega$ | 180.41713 | | +0.99033564 | +0.13754858 |
| $a$ | 2.2700702 | $\Omega$ | 171.61400 | | −0.12689151 | +0.95032194 |
| $e$ | 0.1369532 | $i$ | 6.99787 | | −0.05598095 | +0.27922858 |
| $P$ | 3.42 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.0 | 0.0 | 2004 09 06 | E12 | 0.3− | 0.1− | 2004 09 21 | 704 | 0.2+ | 0.6+ |
| 1996 03 11 | 691 | 0.0 | 0.1+ | 2004 09 06 | E12 | 0.2− | 0.5− | 2004 09 21 | 704 | 0.2+ | 0.2+ |
| 1996 03 11 | 691 | 0.2+ | 0.4+ | 2004 09 06 | E12 | 0.0 | 0.3− | 2004 09 21 | 704 | 0.3− | 0.4+ |
| 2000 05 13 | 691 | 0.3+ | 0.2− | 2004 09 09 | 704 | 0.2+ | 0.4+ | 2004 09 22 | 691 | 0.3− | 0.1+ |
| 2000 05 13 | 691 | 0.0 | 0.3+ | 2004 09 09 | 704 | 0.0 | 0.7+ | 2004 09 22 | 691 | 0.3− | 0.1− |
| 2000 05 13 | 691 | 0.3− | 0.0 | 2004 09 09 | 704 | 0.5+ | 0.4− | 2004 09 22 | 691 | 0.3− | 0.1− |
| 2004 08 10 | 699 | 0.7+ | 1.5− | 2004 09 09 | 704 | 0.6+ | 0.7+ | 2004 10 04 | 691 | 0.2+ | 0.0 |
| 2004 08 10 | 699 | 0.3− | 0.4+ | 2004 09 16 | 691 | 0.1+ | 0.2+ | 2004 10 04 | 691 | 0.1+ | 0.0 |
| 2004 08 10 | 699 | 0.0 | 0.6− | 2004 09 16 | 691 | 0.0 | 0.4+ | 2004 10 04 | 691 | 0.0 | 0.0 |
| 2004 08 10 | 699 | 0.6+ | 0.4− | 2004 09 16 | 691 | 0.2+ | 0.2+ | 2004 10 14 | 691 | 0.1− | 0.2+ |
| 2004 08 11 | 704 | 0.7+ | 0.3+ | 2004 09 18 | E12 | 0.4− | 0.3+ | 2004 10 14 | 691 | 0.0 | 0.3− |
| 2004 08 11 | 704 | 0.4− | 0.4− | 2004 09 18 | E12 | 0.4− | 0.3+ | 2004 10 14 | 691 | 0.2− | 0.3− |
| 2004 08 11 | 704 | 0.2+ | 0.6+ | 2004 09 18 | E12 | 0.2+ | 0.5+ | | | | |
| 2004 09 06 | E12 | 0.3− | 0.3− | 2004 09 18 | E12 | 0.3+ | 0.6− | | | | |

**2004 PF$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.23881 | | | (2000.0) | | |
| $n$ | 0.17900387 | $\omega$ | 257.48990 | | +0.66112494 | −0.73666077 |
| $a$ | 3.1181316 | $\Omega$ | 149.58468 | | +0.74982389 | +0.64215540 |
| $e$ | 0.1485995 | $i$ | 16.32268 | | +0.02603736 | +0.21205508 |
| $P$ | 5.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.1− | 2004 08 12 | 704 | 0.3+ | 0.2+ | 2004 09 08 | 704 | 0.1+ | 0.9+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2004 08 12 | 704 | 0.2+ | 0.3+ | 2004 09 08 | 704 | 0.5− | 0.1− |
| 2001 03 25 | 695 | 0.2+ | 0.3+ | 2004 08 12 | 704 | 0.3− | 0.7+ | 2004 09 17 | 704 | 0.0 | 0.1+ |
| 2001 03 25 | 695 | 0.0 | 0.5+ | 2004 08 12 | 704 | 0.2− | 0.6+ | 2004 09 17 | 704 | 0.3− | 0.0 |
| 2004 07 16 | 807 | 0.4− | 0.2− | 2004 08 21 | 703 | 0.6− | 0.9+ | 2004 09 17 | 704 | 0.2− | 0.1− |
| 2004 07 16 | 807 | 0.3− | 0.1− | 2004 08 21 | 703 | 0.8− | 0.2− | 2004 09 17 | 704 | 0.4− | 0.9− |
| 2004 08 09 | 704 | 0.1+ | 0.2+ | 2004 08 21 | 703 | (1.7− | 1.6−) | 2004 09 17 | 704 | 1.3+ | 0.7− |
| 2004 08 09 | 704 | 0.9− | 1.1+ | 2004 08 21 | 703 | 0.0 | 1.3− | 2004 09 21 | 704 | 0.5− | 0.0 |
| 2004 08 09 | 704 | 0.5− | 0.3− | 2004 09 07 | 704 | 0.9+ | 0.2+ | 2004 09 21 | 704 | 0.4+ | 0.7+ |
| 2004 08 09 | 704 | 0.4+ | 0.5+ | 2004 09 07 | 704 | 0.6+ | 0.5− | 2004 09 21 | 704 | 0.4+ | 0.6+ |
| 2004 08 12 | 599 | 0.0 | 0.1− | 2004 09 07 | 704 | 0.0 | 0.6+ | 2004 09 21 | 704 | 0.0 | 0.9+ |
| 2004 08 12 | 599 | 0.0 | 0.1+ | 2004 09 07 | 704 | 0.1− | 0.2− | 2005 12 06 | 704 | 0.1− | 1.2+ |
| 2004 08 12 | 599 | 0.0 | 0.1− | 2004 09 08 | 704 | 0.8+ | 0.1− | 2005 12 06 | 704 | 0.2− | 0.7+ |
| 2004 08 12 | 599 | 0.2− | 0.2+ | 2004 09 08 | 704 | 0.3+ | 0.1+ | 2005 12 06 | 704 | 0.3− | 1.2+ |

**2004 PX$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 200.45986 | | | (2000.0) | | |
| $n$ | 0.23979808 | $\omega$ | 110.09734 | | +0.44843661 | +0.89377038 |
| $a$ | 2.5658952 | $\Omega$ | 186.56694 | | −0.84636899 | +0.42141256 |
| $e$ | 0.2896855 | $i$ | 4.46055 | | −0.28733978 | +0.15357720 |
| $P$ | 4.11 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 691 | 0.2− | 0.0 | 2004 08 07 | 599 | 0.3+ | 0.2− | 2004 09 08 | 704 | 1.0+ | 0.8+ |
| 2000 08 26 | 691 | 0.3+ | 0.0 | 2004 08 12 | 704 | 0.6+ | 1.3− | 2004 09 10 | 704 | 0.6+ | 0.4− |
| 2000 08 26 | 691 | 0.0 | 0.1− | 2004 08 12 | 704 | 0.2− | 0.7+ | 2004 09 10 | 704 | 0.4+ | 0.5+ |
| 2000 10 01 | 704 | 0.6+ | 0.5+ | 2004 08 12 | 704 | 0.3− | 0.2+ | 2004 09 10 | 704 | 0.3+ | 0.1− |
| 2000 10 01 | 704 | 0.4+ | 0.2− | 2004 08 12 | 704 | 0.5+ | 0.1− | 2004 09 10 | 704 | 0.0 | 0.1+ |
| 2000 10 01 | 704 | 0.0 | 0.3− | 2004 08 22 | 691 | 0.1− | 0.1− | 2004 09 10 | 704 | 0.1+ | 0.2+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2004 08 22 | 691 | 0.1− | 0.1− | 2004 10 04 | 644 | 0.0 | 0.4+ |
| 2000 10 02 | 645 | 0.1− | 0.0 | 2004 08 22 | 691 | 0.1− | 0.1− | 2004 10 04 | 644 | 0.0 | 0.2+ |
| 2004 08 07 | 599 | 0.0 | 0.1+ | 2004 09 08 | 704 | 1.9− | 0.4+ | 2004 10 04 | 644 | 0.1+ | 0.9+ |
| 2004 08 07 | 599 | 0.1− | 0.2− | 2004 09 08 | 704 | 0.3− | 0.8+ | | | | |
| 2004 08 07 | 599 | 0.2+ | 0.2+ | 2004 09 08 | 704 | 0.1− | 0.5− | | | | |

**2004 PT$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.92534 | | | (2000.0) | | |
| $n$ | 0.17217309 | $\omega$ | 126.23748 | | −0.08929328 | −0.99002136 |
| $a$ | 3.2000679 | $\Omega$ | 328.35439 | | +0.83412384 | −0.01451679 |
| $e$ | 0.1027379 | $i$ | 11.99240 | | +0.54430151 | −0.14016762 |
| $P$ | 5.72 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.1+ | 0.1− | 2004 08 08 | 704 | 0.9− | 0.9+ | 2005 10 10 | 703 | 0.3+ | 0.3− |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2004 08 08 | 644 | 0.1− | 0.5+ | 2005 10 10 | 703 | 0.7− | 0.6+ |
| 2000 11 24 | 699 | 0.8− | 0.5+ | 2004 08 08 | 644 | 0.4− | 0.5+ | 2005 10 10 | 703 | 0.1+ | 0.0 |
| 2000 11 24 | 699 | 0.7+ | 1.1+ | 2004 08 08 | 644 | 0.2− | 0.4+ | 2005 10 25 | 703 | 0.2− | 0.6− |
| 2000 11 24 | 699 | 1.0+ | 0.1+ | 2004 08 12 | 704 | 0.2+ | 0.1+ | 2005 10 25 | 703 | 0.1− | 0.0 |
| 2000 11 24 | 699 | 1.2+ | 0.6+ | 2004 08 12 | 704 | 0.1+ | 0.4+ | 2005 10 25 | 703 | 0.3− | 0.1+ |
| 2000 11 27 | 645 | 0.1− | 0.0 | 2004 08 12 | 704 | 0.4− | 0.0 | 2005 10 25 | 703 | 0.1− | 0.5+ |
| 2000 11 27 | 645 | 0.1− | 0.0 | 2004 08 21 | E12 | 0.1+ | 0.0 | 2005 11 04 | 699 | 1.0+ | 0.8+ |
| 2001 01 24 | 704 | 1.0+ | 0.6+ | 2004 08 21 | E12 | 0.2+ | 0.0 | 2005 11 04 | 699 | 0.9+ | 0.3+ |
| 2001 01 24 | 704 | 0.4− | 0.8− | 2004 08 21 | E12 | 0.2− | 0.0 | 2005 11 04 | 699 | 0.9+ | 0.8+ |
| 2001 01 24 | 704 | 0.6− | 0.1+ | 2004 08 21 | E12 | 0.2− | 0.3− | 2005 11 04 | 699 | 0.3+ | 1.1+ |
| 2001 01 24 | 704 | 0.3− | 0.5+ | 2005 09 29 | 703 | 0.5− | 0.3− | 2005 11 22 | 703 | 0.4− | 0.3+ |
| 2001 02 17 | 704 | 1.1+ | 1.1− | 2005 09 29 | 703 | 0.3− | 0.4− | 2005 11 22 | 703 | 0.4+ | 0.7+ |
| 2001 02 17 | 704 | 0.3− | 0.2+ | 2005 09 29 | 703 | 0.4+ | 0.3− | 2005 11 22 | 703 | 0.8− | 1.2− |
| 2001 02 17 | 704 | 0.0 | 0.3+ | 2005 09 29 | 703 | 0.3− | 0.2− | 2005 11 22 | 703 | 1.0− | 0.1− |
| 2002 04 08 | 644 | 0.4+ | 0.6+ | 2005 09 29 | 703 | 1.4+ | 0.6− | 2005 11 28 | 703 | 0.7− | 1.1+ |
| 2002 04 08 | 644 | 0.2+ | 0.3+ | 2005 09 29 | 703 | 0.1− | 0.3− | 2005 11 28 | 703 | 0.1− | 0.3+ |
| 2002 04 08 | 644 | 0.3+ | 0.3+ | 2005 09 29 | 703 | 0.3+ | 0.1− | 2005 11 28 | 703 | 1.4− | 0.7+ |
| 2004 08 08 | 704 | 0.1− | 0.2+ | 2005 09 29 | 703 | 0.3− | 0.3− | 2005 11 28 | 703 | 0.9− | 0.2− |
| 2004 08 08 | 704 | 0.1− | 0.5+ | 2005 10 10 | 703 | 0.3+ | 0.6+ | | | | |

### 2004 PZ$_{73}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.56577 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18465160 | $\omega$ | 208.35497 | | −0.97389143 | −0.10269525 | |
| $a$ | 3.0542225 | $\Omega$ | 323.92751 | | +0.20964056 | −0.74901724 | |
| $e$ | 0.2605721 | $i$ | 20.11120 | | −0.08709947 | −0.65454325 | |
| $P$ | 5.34 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.4− | 0.2− | 2002 02 02 | 644 | 0.0 | 0.3+ | 2004 08 12 | 704 | 0.2+ | 0.2− |
| 2001 12 23 | 704 | 0.2− | 0.5− | 2002 02 02 | 644 | 0.1+ | 0.2+ | 2004 08 12 | 704 | 0.8+ | 0.3− |
| 2001 12 23 | 704 | 0.2+ | 0.7− | 2002 02 02 | 644 | 0.1+ | 0.4+ | 2004 08 12 | 704 | 0.1+ | 0.6− |
| 2001 12 23 | 644 | 0.2− | 1.1+ | 2002 02 10 | 704 | 0.0 | 0.2+ | 2004 08 12 | 704 | 0.4+ | 0.1− |
| 2001 12 23 | 644 | 0.0 | 1.3+ | 2002 02 10 | 704 | 0.4− | 0.0 | 2004 08 12 | 704 | 0.4+ | 0.4− |
| 2001 12 23 | 704 | 0.3− | 0.4− | 2002 02 10 | 704 | 0.2+ | 0.1− | 2004 08 12 | 704 | 0.4− | 0.0 |
| 2001 12 23 | 644 | 0.1− | 1.0+ | 2002 03 05 | 704 | 0.2− | 0.1+ | 2004 08 13 | 704 | 0.8− | 0.6+ |
| 2001 12 23 | 704 | 0.1+ | 0.3− | 2002 03 05 | 704 | 0.4− | 0.1− | 2004 08 13 | 704 | 0.9− | 0.3+ |
| 2002 01 06 | 704 | 0.3− | 0.2+ | 2002 03 05 | 704 | 0.7− | 0.2− | 2004 08 13 | 704 | 0.1− | 0.8− |
| 2002 01 06 | 704 | 0.0 | 0.3− | 2002 03 05 | 704 | 0.4+ | 0.5− | 2004 08 22 | E12 | 0.0 | 0.6+ |
| 2002 01 06 | 704 | 0.3+ | 0.7− | 2004 08 08 | 704 | 0.6+ | 0.3+ | 2004 08 22 | E12 | 0.1− | 0.2+ |
| 2002 01 06 | 704 | (2.2+ | 0.4−) | 2004 08 08 | 704 | 0.0 | 0.4− | 2004 08 22 | E12 | 0.3+ | 0.4+ |
| 2002 01 25 | 704 | 0.9+ | 0.5− | 2004 08 08 | 704 | 0.3+ | 0.7+ | 2004 08 22 | E12 | 0.5+ | 0.6− |
| 2002 01 25 | 704 | 0.3+ | 0.2− | 2004 08 08 | 704 | 0.3− | 0.1+ | | | | |
| 2002 01 25 | 704 | 0.7+ | 0.3− | 2004 08 12 | 704 | 0.7− | 0.1− | | | | |

### 2004 PK$_{74}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.59125 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26292918 | $\omega$ | 299.70826 | | +0.83742879 | +0.54618399 | |
| $a$ | 2.4131086 | $\Omega$ | 27.20082 | | −0.48520279 | +0.75970511 | |
| $e$ | 0.2059685 | $i$ | 2.49533 | | −0.25157757 | +0.35288978 | |
| $P$ | 3.75 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 691 | 0.2+ | 0.9+ | 2004 08 23 | 691 | 0.1− | 0.1− | 2004 09 21 | 704 | 0.1− | 0.4− |
| 2003 04 05 | 691 | 0.3+ | 0.8+ | 2004 09 07 | 704 | 0.1− | 0.4+ | 2004 09 21 | 704 | 0.6− | 0.4− |
| 2003 04 05 | 691 | 0.7+ | 0.7+ | 2004 09 07 | 704 | 0.2+ | 0.5+ | 2004 09 21 | 704 | 1.0− | 0.7− |
| 2004 08 08 | 704 | 0.4− | 0.5− | 2004 09 07 | 704 | 0.4− | 0.5+ | 2004 09 21 | 704 | 0.6− | 0.0 |
| 2004 08 08 | 704 | 0.6− | 0.5− | 2004 09 07 | 704 | 0.0 | 0.1+ | 2004 09 23 | 291 | 0.1+ | 0.2+ |
| 2004 08 08 | 704 | 0.6− | 0.2+ | 2004 09 07 | 704 | 0.1+ | 0.5+ | 2004 09 23 | 291 | 0.0 | 0.2+ |
| 2004 08 12 | 704 | 0.0 | 0.2+ | 2004 09 09 | 704 | 0.6+ | 0.4+ | 2004 09 23 | 291 | 0.0 | 0.1+ |
| 2004 08 12 | 704 | 0.3− | 0.4+ | 2004 09 09 | 704 | 0.6+ | 0.2+ | 2004 10 15 | 691 | 0.2+ | 0.5+ |
| 2004 08 12 | 704 | 0.0 | 0.2+ | 2004 09 09 | 704 | 0.1+ | 0.3+ | 2004 10 15 | 691 | 0.2− | 0.1+ |
| 2004 08 12 | 704 | 0.3− | 0.4+ | 2004 09 09 | 704 | 0.3+ | 0.1+ | 2004 10 15 | 691 | 0.0 | 0.3+ |
| 2004 08 12 | 704 | 0.2− | 0.1− | 2004 09 09 | 704 | 0.1+ | 0.4+ | 2005 12 25 | 691 | 0.2+ | 0.5+ |
| 2004 08 14 | 807 | 0.3− | 0.3− | 2004 09 17 | 704 | 0.6− | 1.2+ | 2005 12 25 | 691 | 0.1+ | 0.3+ |
| 2004 08 14 | 807 | 0.3− | 0.2− | 2004 09 17 | 704 | 0.5+ | 0.6+ | 2005 12 25 | 691 | 0.1+ | 0.4+ |
| 2004 08 23 | 691 | 0.0 | 0.8+ | 2004 09 17 | 704 | 1.0+ | 0.8− | | | | |
| 2004 08 23 | 691 | 0.1− | 0.1− | 2004 09 21 | 704 | 0.4− | 0.9− | | | | |

### 2004 PJ$_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.42859 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21182075 | $\omega$ | 153.78130 | | +0.29903332 | +0.94780781 | |
| $a$ | 2.7871289 | $\Omega$ | 133.39367 | | −0.90007866 | +0.31866220 | |
| $e$ | 0.1974434 | $i$ | 8.75729 | | −0.31691873 | −0.01071231 | |
| $P$ | 4.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.0 | 0.1− | 2004 08 10 | 704 | 0.3− | 0.3+ | 2004 09 09 | 704 | 0.5+ | 0.9− |
| 2003 04 01 | 645 | 0.0 | 0.1− | 2004 08 10 | 704 | 0.1+ | 1.1+ | 2004 09 09 | 704 | 0.2− | 0.4− |
| 2003 04 11 | 291 | 0.4+ | 0.0 | 2004 08 10 | 704 | 0.7− | 0.2+ | 2004 09 09 | 704 | 0.3+ | 0.6− |
| 2003 04 11 | 291 | 0.0 | 0.4+ | 2004 08 10 | 704 | 0.1+ | 0.6+ | 2004 09 09 | 704 | 0.1− | 0.5+ |
| 2003 04 11 | 291 | 0.1− | 0.2+ | 2004 08 12 | 704 | 0.2− | 0.3+ | 2004 09 09 | 704 | 0.2− | 0.4− |
| 2004 06 27 | 703 | 0.1+ | 1.1+ | 2004 08 12 | 704 | 0.0 | 0.1+ | 2004 09 21 | 704 | 0.6− | 0.2+ |
| 2004 06 27 | 703 | 0.6+ | 0.4− | 2004 08 12 | 704 | 0.6− | 0.1+ | 2004 09 21 | 704 | 0.3+ | 0.1+ |
| 2004 06 27 | 703 | (2.4+ | 0.5+) | 2004 08 12 | 704 | 0.7− | 0.0 | 2004 09 21 | 704 | 0.2+ | 0.3− |
| 2004 06 27 | 703 | 0.1+ | 1.4− | 2004 08 12 | 704 | 0.3− | 0.2+ | 2004 09 21 | 704 | 0.5+ | 0.0 |
| 2004 08 08 | 699 | 1.2+ | 1.2− | 2004 09 07 | 704 | 0.5− | 1.2+ | 2004 09 21 | 704 | 0.3+ | 1.0− |
| 2004 08 08 | 699 | 0.5+ | 0.8+ | 2004 09 07 | 704 | 0.4+ | 0.2+ | 2006 11 21 | G96 | 0.6− | 0.7+ |
| 2004 08 08 | 699 | 0.6+ | 0.4+ | 2004 09 07 | 704 | 0.6− | 1.4− | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2004 08 08 | 699 | 0.8− | 0.1− | 2004 09 07 | 704 | 0.0 | 0.9+ | 2006 11 21 | G96 | 0.3+ | 0.5+ |
| 2004 08 10 | 704 | 0.4− | 1.2+ | 2004 09 07 | 704 | 0.3+ | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.2+ |

### 2004 PU$_{83}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.31311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21090098 | $\omega$ | 182.50004 | | +0.91289825 | +0.40110556 | |
| $a$ | 2.7952263 | $\Omega$ | 153.44852 | | −0.37150451 | +0.89328494 | |
| $e$ | 0.1571169 | $i$ | 9.75059 | | −0.16911884 | +0.20287026 | |
| $P$ | 4.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.3+ | 0.1+ | 2004 09 08 | 704 | 0.2− | 0.9+ | 2004 09 21 | 704 | 0.2+ | 0.6− |
| 1997 03 04 | 691 | 0.2− | 0.4+ | 2004 09 08 | 704 | 0.2+ | 0.0 | 2004 09 22 | 704 | 0.4− | 0.2− |
| 1997 03 04 | 691 | 0.0 | 0.4+ | 2004 09 08 | 704 | 0.3+ | 1.0+ | 2004 09 22 | 704 | 0.5− | 1.1− |
| 2002 02 13 | 691 | 0.1+ | 0.2+ | 2004 09 09 | 704 | 0.4− | 0.3+ | 2004 09 22 | 704 | 0.4− | 0.5− |
| 2002 02 13 | 691 | 0.2− | 0.5− | 2004 09 09 | 704 | 0.2+ | 1.2+ | 2004 09 22 | 704 | 1.1− | 1.0− |
| 2002 02 13 | 691 | 0.1+ | 0.2+ | 2004 09 09 | 704 | 0.3+ | 0.4+ | 2004 09 22 | 704 | 0.3− | 0.2− |
| 2004 07 15 | 704 | 0.9+ | 0.9+ | 2004 09 09 | 704 | 0.3+ | 0.5+ | 2004 09 23 | 704 | 0.4− | 0.3+ |
| 2004 07 15 | 704 | 0.2− | 1.0+ | 2004 09 09 | 704 | 0.2+ | 0.4+ | 2004 09 23 | 704 | 0.2+ | 0.8+ |
| 2004 07 15 | 704 | 0.0 | 0.9+ | 2004 09 12 | 704 | 0.1+ | 0.6− | 2004 09 23 | 704 | 0.2− | 0.8+ |
| 2004 07 15 | 704 | 1.1+ | 1.2+ | 2004 09 12 | 704 | 0.8+ | 0.0 | 2004 09 23 | 704 | 0.1+ | 0.4+ |
| 2004 07 15 | 704 | 0.2+ | 0.2+ | 2004 09 12 | 704 | 1.0+ | 0.4+ | 2004 09 23 | 704 | 0.3− | 0.0 |
| 2004 08 10 | 704 | 1.1− | 0.7+ | 2004 09 12 | 704 | 0.5+ | 1.1+ | 2004 09 24 | 704 | 0.1− | 0.0 |
| 2004 08 10 | 704 | 0.2+ | 0.6− | 2004 09 12 | 704 | 0.4+ | 0.3+ | 2004 09 24 | 704 | 0.4− | 0.1+ |
| 2004 08 10 | 704 | 0.2+ | 0.2+ | 2004 09 14 | 699 | 0.5+ | 0.3+ | 2004 09 24 | 704 | 0.4− | 0.5− |
| 2004 08 10 | 704 | 0.7+ | 0.6+ | 2004 09 14 | 699 | 0.0 | 0.2− | 2004 09 24 | 704 | 0.9+ | 0.4− |
| 2004 08 10 | 704 | 0.8− | 0.7− | 2004 09 14 | 699 | 0.3+ | 0.3− | 2004 09 24 | 704 | 0.3+ | 0.3− |
| 2004 08 12 | 704 | 0.1− | 0.0 | 2004 09 14 | 699 | 1.1+ | 0.2− | 2004 10 04 | 644 | 0.1− | 0.4− |
| 2004 08 12 | 704 | 0.1+ | 0.1+ | 2004 09 17 | 704 | 0.4+ | 0.3− | 2004 10 04 | 644 | 0.1− | 0.6− |
| 2004 08 12 | 704 | 0.2− | 0.0 | 2004 09 17 | 704 | 0.5+ | 0.9− | 2004 10 04 | 644 | 0.1− | 0.3− |
| 2004 08 12 | 704 | 0.4− | 0.6+ | 2004 09 17 | 704 | 0.1+ | 0.3− | 2004 10 09 | 704 | 0.5− | 0.2− |
| 2004 08 12 | 704 | 0.0 | 0.1− | 2004 09 17 | 704 | 0.0 | 0.1+ | 2004 10 09 | 704 | 1.1− | 0.6+ |
| 2004 08 27 | 699 | 0.4− | 0.2+ | 2004 09 17 | 704 | 0.4+ | 0.4− | 2004 10 09 | 704 | 0.4− | 0.1− |
| 2004 08 27 | 699 | 1.4− | 1.2− | 2004 09 21 | 704 | 0.0 | 0.2− | 2004 10 20 | 703 | 0.0 | 1.1− |
| 2004 08 27 | 699 | 0.4+ | 0.0 | 2004 09 21 | 704 | 0.6− | 0.3+ | 2004 10 20 | 703 | 1.7− | 0.8− |
| 2004 08 27 | 699 | 0.5+ | 0.9+ | 2004 09 21 | 704 | 0.3− | 0.2− | 2004 10 20 | 703 | 0.8+ | 0.8− |
| 2004 09 08 | 704 | 0.6− | 0.2+ | 2004 09 21 | 704 | 0.2+ | 0.1− | 2004 10 20 | 703 | 0.2+ | 0.3− |

**2004 PU$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 215.13674 | | (2000.0) | | +0.99685283 | +0.05537154 |
| $n$ | 0.27874973 | $\omega$ | 210.36561 | | −0.03456092 | +0.94759556 |
| $a$ | 2.3209177 | $\Omega$ | 146.31616 | | −0.07134405 | +0.31463733 |
| $e$ | 0.2960901 | $i$ | 5.87107 | | | |
| $P$ | 3.54 | $H$ | 17.5 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 08 | 291 | 0.5+ | 1.2+ | 2004 09 24 | 704 | 0.3− | 0.4+ | 2004 11 02 | 699 | 0.7+ | 0.4+ |
| 2003 04 08 | 291 | 0.2+ | 0.4+ | 2004 09 26 | 699 | 0.6− | 0.7+ | 2004 11 02 | 699 | 0.2− | 0.7− |
| 2003 04 08 | 291 | 0.1+ | 0.9+ | 2004 09 26 | 699 | 1.2− | 1.0+ | 2004 11 02 | 644 | 0.0 | 0.0 |
| 2004 08 10 | 704 | 0.5+ | 0.9+ | 2004 09 26 | 699 | 0.0 | 1.2− | 2004 11 02 | 644 | 0.2+ | 0.1+ |
| 2004 08 10 | 704 | 0.3− | 0.8+ | 2004 09 26 | 699 | 0.8− | 0.1− | 2004 11 02 | 644 | 0.4+ | 0.1+ |
| 2004 08 10 | 704 | 0.0 | 0.1− | 2004 10 05 | 644 | 0.1+ | 0.3+ | 2004 11 03 | 683 | 0.0 | 0.7+ |
| 2004 08 12 | 704 | 0.3− | 0.4+ | 2004 10 05 | 644 | 0.2− | 0.1+ | 2004 11 03 | 683 | 1.6− | 0.1+ |
| 2004 08 12 | 704 | 0.9− | 0.1− | 2004 10 05 | 644 | 0.2+ | 0.1+ | 2004 11 03 | 683 | 1.3+ | 0.2+ |
| 2004 08 12 | 704 | 1.0− | 0.2+ | 2004 10 07 | 704 | 0.0 | 0.2+ | 2004 11 04 | 683 | 0.8+ | 0.2+ |
| 2004 09 12 | 704 | 0.1− | 0.0 | 2004 10 07 | 704 | 0.4+ | 0.3− | 2004 11 04 | 683 | 0.7+ | 0.6− |
| 2004 09 12 | 704 | 0.0 | 0.1− | 2004 10 07 | 704 | 0.5+ | 0.6+ | 2004 11 04 | 683 | 0.7− | 1.6− |
| 2004 09 12 | 704 | 0.0 | 0.4+ | 2004 10 07 | 704 | 1.0+ | 0.1− | 2004 11 06 | 704 | 0.0 | 0.1− |
| 2004 09 12 | 704 | 0.1− | 0.7+ | 2004 10 08 | 699 | 0.4− | 0.0 | 2004 11 06 | 704 | 0.2− | 0.2− |
| 2004 09 12 | 704 | 0.4+ | 0.6+ | 2004 10 08 | 699 | 0.6− | 0.7− | 2004 11 06 | 704 | 0.3− | 0.1+ |
| 2004 09 17 | 704 | 1.0− | 0.0 | 2004 10 08 | 699 | 0.7+ | 0.3− | 2004 11 06 | 704 | 1.0+ | 0.7+ |
| 2004 09 17 | 704 | 0.6− | 0.4+ | 2004 10 08 | 699 | 0.4+ | 0.3+ | 2004 11 06 | 704 | 0.3+ | 0.2− |
| 2004 09 17 | 704 | 0.0 | 0.6+ | 2004 10 18 | 704 | 0.1− | 0.4− | 2004 11 12 | 704 | 0.0 | 0.4− |
| 2004 09 17 | 704 | 0.6− | 0.8+ | 2004 10 18 | 704 | 0.2+ | 0.3+ | 2004 11 12 | 704 | 0.2− | 0.3− |
| 2004 09 22 | 704 | 0.1+ | 0.6+ | 2004 10 18 | 704 | 0.1− | 0.3− | 2004 11 12 | 704 | 0.0 | 0.2− |
| 2004 09 22 | 704 | 0.5− | 0.1+ | 2004 10 18 | 704 | 0.5− | 0.1+ | 2004 11 12 | 704 | 0.5− | 1.0− |
| 2004 09 22 | 704 | 0.4− | 0.3− | 2004 11 02 | 683 | 0.7− | 1.5+ | 2006 03 02 | 691 | 0.3− | 0.1+ |
| 2004 09 24 | 704 | 0.5− | 0.1+ | 2004 11 02 | 683 | 0.5+ | 1.8+ | 2006 03 02 | 691 | 0.0 | 0.7+ |
| 2004 09 24 | 704 | 0.4+ | 0.9+ | 2004 11 02 | 683 | 1.3− | 1.5+ | 2006 03 02 | 691 | 0.5+ | 0.0 |
| 2004 09 24 | 704 | 0.2− | 0.6+ | 2004 11 02 | 699 | 1.3+ | 0.3− | | | | |
| 2004 09 24 | 704 | 0.1− | 0.4+ | 2004 11 02 | 699 | 0.8+ | 0.2− | | | | |

**2004 PR$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.23322 | | (2000.0) | | −0.56380774 | +0.82413573 |
| $n$ | 0.30553088 | $\omega$ | 26.24691 | | −0.77573939 | −0.55088592 |
| $a$ | 2.1832291 | $\Omega$ | 209.52471 | | −0.28345940 | −0.13162450 |
| $e$ | 0.1136754 | $i$ | 6.29655 | | | |
| $P$ | 3.23 | $H$ | 17.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 30 | 691 | 0.1+ | 0.4+ | 2001 10 11 | 644 | 0.2− | 0.6+ | 2004 08 07 | 599 | 0.3− | 0.5+ |
| 1997 04 30 | 691 | 0.1+ | 0.4+ | 2001 10 21 | 704 | 2.2− | 1.9− | 2004 08 07 | 599 | 0.2+ | 0.4+ |
| 1997 04 30 | 691 | 0.1+ | 0.6+ | 2001 10 21 | 704 | 0.1+ | 0.1− | 2004 08 13 | 644 | 0.3+ | 0.4+ |
| 2000 03 06 | 608 | (0.4− | 3.1−) | 2001 10 21 | 704 | 1.2+ | 1.8+ | 2004 08 13 | 644 | 0.3+ | 0.5+ |
| 2000 03 06 | 608 | 0.1+ | 1.1− | 2003 01 27 | 608 | 0.4+ | 0.1+ | 2004 08 13 | 644 | 0.4+ | 0.2+ |
| 2000 03 06 | 608 | 0.1+ | 0.8− | 2003 01 27 | 608 | 0.5+ | 0.3+ | 2004 08 21 | 703 | 0.4− | 2.1+ |
| 2001 09 16 | 704 | 0.1− | 0.9− | 2003 01 27 | 608 | 0.1+ | 0.1− | 2004 08 21 | 703 | 0.9− | 0.3− |
| 2001 09 16 | 704 | 0.8+ | 0.6− | 2003 01 28 | 645 | 0.0 | 0.3+ | 2004 08 21 | 703 | 1.0− | 1.6+ |
| 2001 09 16 | 704 | 0.0 | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.3+ | 2004 08 21 | 703 | 0.0 | 1.6+ |
| 2001 10 11 | 644 | 0.1− | 0.6+ | 2004 08 07 | 599 | 0.0 | 0.1− | | | | |
| 2001 10 11 | 644 | 0.3− | 0.9+ | 2004 08 07 | 599 | 0.2− | 0.2+ | | | | |

**2004 PQ$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 282.50938 | | (2000.0) | | −0.94915931 | +0.28497280 |
| $n$ | 0.21815651 | $\omega$ | 51.36852 | | −0.30845368 | −0.92677934 |
| $a$ | 2.7329012 | $\Omega$ | 144.60546 | | +0.06287242 | −0.24468461 |
| $e$ | 0.1189111 | $i$ | 13.35053 | | | |
| $P$ | 4.52 | $H$ | 16.4 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.0 | 2003 04 09 | 704 | 0.2− | 0.1+ | 2004 08 11 | 599 | 0.1− | 0.3− |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2003 04 27 | 645 | 0.1− | 0.2− | 2004 08 11 | 599 | 0.0 | 0.2− |
| 2003 04 01 | 645 | 0.1− | 0.0 | 2003 04 27 | 645 | 0.0 | 0.1− | 2004 08 14 | 599 | 0.2+ | 0.0 |
| 2003 04 01 | 645 | 0.2− | 0.0 | 2003 04 30 | 704 | 0.6+ | 0.4+ | 2004 08 14 | 599 | 0.0 | 0.2− |
| 2003 04 05 | 699 | 0.4+ | 1.1+ | 2003 04 30 | 704 | 0.5+ | 0.5+ | 2004 08 15 | 599 | 0.4+ | 0.1+ |
| 2003 04 05 | 699 | 0.8+ | 0.6− | 2003 04 30 | 704 | 0.1+ | 0.3+ | 2004 08 15 | 599 | 0.2+ | 0.5+ |
| 2003 04 05 | 699 | 0.2+ | 0.6+ | 2003 04 30 | 704 | 0.1+ | 0.8+ | 2004 08 21 | E12 | 0.2+ | 0.1+ |
| 2003 04 05 | 699 | (3.6+ | 2.5+) | 2003 04 30 | 704 | 0.7+ | 0.6+ | 2004 08 21 | E12 | 0.3+ | 0.7+ |
| 2003 04 09 | 704 | 0.6+ | 0.6+ | 2004 08 11 | 599 | 0.1− | 0.1+ | 2004 08 21 | E12 | 0.6− | 0.3− |
| 2003 04 09 | 704 | 0.0 | 0.3− | 2004 08 11 | 599 | 0.0 | 0.3− | 2004 08 21 | E12 | 0.5− | 0.3+ |

**2004 PA$_{99}$ = 1976 JV$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 97.32655 | | (2000.0) | | +0.94393109 | −0.30815895 |
| $n$ | 0.18488593 | $\omega$ | 345.65628 | | +0.32025260 | +0.76751694 |
| $a$ | 3.0516412 | $\Omega$ | 33.05334 | | +0.08020202 | +0.56209947 |
| $e$ | 0.0311939 | $i$ | 12.54380 | | | |
| $P$ | 5.33 | $H$ | 14.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 05 02 | 809 | 2.8− | 0.5+ | 2002 03 20 | 704 | 0.3− | 1.1+ | 2004 08 15 | 644 | 0.4− | 0.4+ |
| 1994 10 11 | 691 | 0.5+ | 0.1− | 2002 03 20 | 704 | 0.3+ | 0.1− | 2004 08 21 | E12 | 0.3− | 0.5+ |
| 1994 10 11 | 691 | 0.5+ | 0.0 | 2002 04 01 | 644 | 0.4+ | 1.0+ | 2004 08 21 | E12 | 1.1− | 0.8+ |
| 1994 10 11 | 691 | 0.5+ | 0.3+ | 2002 04 01 | 644 | 0.2+ | 0.8+ | 2004 08 21 | E12 | 0.5− | 0.1+ |
| 1999 09 08 | 703 | 1.4− | 0.4− | 2002 04 01 | 644 | 0.1+ | 0.7+ | 2004 08 21 | E12 | 0.8− | 0.5+ |
| 1999 09 08 | 703 | 0.5− | 1.8+ | 2002 04 16 | 704 | 1.0+ | 0.4− | 2005 10 30 | 704 | 0.7+ | 0.6+ |
| 1999 09 08 | 703 | 1.3+ | 0.2− | 2002 04 16 | 704 | 0.8− | 0.7+ | 2005 10 30 | 704 | 0.2− | 1.0+ |
| 1999 09 08 | 703 | 0.3+ | 1.2− | 2002 04 16 | 704 | 1.4+ | 0.1+ | 2005 10 30 | 704 | 2.0− | 0.3+ |
| 2002 02 10 | 704 | 1.0+ | 0.9− | 2002 04 16 | 704 | 1.2+ | 1.2+ | 2005 10 30 | 704 | 0.1+ | 1.1+ |
| 2002 02 10 | 704 | 0.3+ | 0.0 | 2004 08 08 | 704 | 0.1+ | 0.9+ | 2005 10 30 | 704 | 1.8− | 0.7+ |
| 2002 02 10 | 704 | 0.1− | 0.5− | 2004 08 08 | 704 | 0.2+ | 0.3+ | 2005 11 21 | 703 | 0.9− | 0.1− |
| 2002 03 09 | 699 | 1.3+ | 0.3− | 2004 08 08 | 704 | 0.4− | 0.8+ | 2005 11 21 | 703 | 0.3− | 0.5− |
| 2002 03 09 | 699 | 0.1+ | 0.0 | 2004 08 08 | 704 | 1.6− | 1.9+ | 2005 11 21 | 703 | 0.1− | 0.1− |
| 2002 03 09 | 699 | 2.0+ | 0.4+ | 2004 08 08 | 644 | 0.0 | 0.3+ | 2005 11 21 | 703 | 0.8− | 0.6+ |
| 2002 03 09 | 699 | 0.2+ | 0.3+ | 2004 08 08 | 644 | 0.6− | 0.2+ | 2005 11 21 | 644 | 0.6− | 0.3− |
| 2002 03 20 | 704 | 0.7+ | 1.6+ | 2004 08 08 | 644 | 0.5− | 0.4+ | 2005 11 21 | 644 | 0.2− | 0.2− |
| 2002 03 20 | 704 | 0.4− | 1.6+ | 2004 08 15 | 644 | 0.2− | 0.6+ | 2005 11 21 | 644 | 0.6− | 0.3− |
| 2002 03 20 | 704 | 0.0 | 0.3− | 2004 08 15 | 644 | 0.2+ | 0.6+ | | | | |

**2004 PA$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 225.26544 | | (2000.0) | | +0.96994112 | +0.24204623 |
| $n$ | 0.27642918 | $\omega$ | 104.92430 | | −0.23281615 | +0.89310760 |
| $a$ | 2.3338886 | $\Omega$ | 241.07381 | | −0.07078746 | +0.37917336 |
| $e$ | 0.2374826 | $i$ | 1.64051 | | | |
| $P$ | 3.57 | $H$ | 16.4 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 06 | 691 | 0.7+ | 1.6+ | 2004 10 09 | 704 | (2.3+ | 1.5+) | 2004 11 04 | 703 | 0.6− | 0.2+ |
| 2003 05 06 | 691 | 0.4+ | 1.7+ | 2004 10 09 | 704 | 0.2+ | 0.1+ | 2004 11 04 | 703 | 0.2+ | 0.3+ |
| 2003 05 06 | 691 | 0.9+ | 1.8+ | 2004 10 09 | 704 | 0.5+ | 0.2+ | 2004 11 04 | 703 | 0.2− | 0.3+ |
| 2004 08 11 | 704 | 0.0 | 0.1− | 2004 10 10 | 691 | 0.5− | 0.1+ | 2004 11 07 | 704 | 0.1+ | 0.4+ |
| 2004 08 11 | 704 | 0.9− | 1.1+ | 2004 10 10 | 691 | 0.3− | 0.2+ | 2004 11 07 | 704 | 0.1+ | 0.3+ |
| 2004 08 11 | 704 | 0.1− | 1.8+ | 2004 10 10 | 691 | 0.2− | 0.2+ | 2004 11 07 | 704 | 0.4+ | 0.0 |
| 2004 08 17 | 704 | 0.4− | 0.2+ | 2004 10 14 | 704 | 0.1− | 0.2+ | 2004 11 10 | 608 | 0.4− | 0.1+ |
| 2004 08 17 | 704 | 0.9+ | 0.4+ | 2004 10 14 | 704 | 0.2+ | 0.4+ | 2004 11 10 | 608 | 0.0 | 0.3− |
| 2004 08 17 | 704 | 0.1− | 0.5+ | 2004 10 14 | 704 | 0.4− | 0.1− | 2004 11 10 | 608 | 0.2− | 0.2− |
| 2004 08 27 | 703 | 1.8− | 0.0 | 2004 10 14 | 704 | 0.4− | 0.3+ | 2004 11 12 | 703 | 0.2− | 0.1+ |
| 2004 08 27 | 703 | 0.2− | 0.3− | 2004 10 14 | 704 | 0.6− | 0.5− | 2004 11 12 | 703 | 0.2− | 0.2− |
| 2004 08 27 | 703 | 0.6− | 0.3+ | 2004 10 14 | 691 | 0.1− | 0.2+ | 2004 11 12 | 703 | 0.1+ | 0.3+ |
| 2004 08 27 | 703 | 0.1+ | 0.1− | 2004 10 14 | 691 | 0.2− | 0.2+ | 2004 11 12 | 703 | 0.6− | 0.0 |
| 2004 09 13 | 704 | 0.7+ | 0.2− | 2004 10 14 | 691 | 0.2− | 0.2+ | 2004 11 18 | 704 | 0.3− | 0.2+ |
| 2004 09 13 | 704 | 0.0 | 0.0 | 2004 10 20 | 704 | 0.1+ | 0.4+ | 2004 11 18 | 704 | 0.2− | 0.5+ |
| 2004 09 13 | 704 | 0.6+ | 0.4− | 2004 10 20 | 704 | 0.3− | 0.3+ | 2004 11 18 | 704 | 0.5− | 0.4+ |
| 2004 09 13 | 704 | 0.7+ | 0.6+ | 2004 10 20 | 704 | 0.1+ | 0.1+ | 2004 11 18 | 704 | 0.5− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 13 | 704 | 0.8+ | 0.8+ | 2004 10 20 | 704 | 0.2− | 0.0 | 2004 11 18 | 704 | 0.4+ | 0.2+ |
| 2004 09 16 | 699 | 0.8+ | 0.2− | 2004 10 20 | 704 | 0.3− | 0.7+ | 2004 11 19 | 703 | 0.6− | 0.9− |
| 2004 09 16 | 699 | 0.1− | 0.7+ | 2004 10 24 | 699 | 0.9+ | 0.4+ | 2004 11 19 | 703 | 0.1− | 0.1+ |
| 2004 09 16 | 699 | 0.2+ | 0.1+ | 2004 10 24 | 699 | 0.6− | 0.1+ | 2004 11 19 | 703 | 1.0− | 0.2+ |
| 2004 09 16 | 699 | 0.6+ | 0.0 | 2004 10 24 | 699 | 1.0+ | 0.3− | 2004 11 19 | 703 | 0.5− | 0.0 |
| 2004 10 06 | 691 | 0.3+ | 0.2+ | 2004 10 24 | 699 | 0.5+ | 0.3+ | 2006 02 02 | 691 | 0.0 | 0.1− |
| 2004 10 06 | 691 | 0.4+ | 0.2+ | 2004 11 04 | 333 | 0.0 | 0.3− | 2006 02 02 | 691 | 0.0 | 0.2− |
| 2004 10 06 | 691 | 0.2+ | 0.2+ | 2004 11 04 | 333 | 0.1− | 0.3+ | 2006 02 02 | 691 | 0.1− | 0.1+ |
| 2004 10 09 | 704 | 0.4− | 0.4+ | 2004 11 04 | 333 | 0.2+ | 0.1+ | | | | |
| 2004 10 09 | 704 | 1.2+ | 1.0+ | 2004 11 04 | 703 | 0.2− | 0.3− | | | | |

### 2004 PA$_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.49489 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.00248815 | $\omega$ | 294.40810 | | +0.33118065 | | −0.94346552 |
| $a$ | 53.9367429 | $\Omega$ | 136.24376 | | +0.87280523 | | +0.30072841 |
| $e$ | 0.4571049 | $i$ | 1.14862 | | +0.35851137 | | +0.13941034 |
| $P$ | 396 | $H$ | 6.3 | $G$ | 0.15 | $U$ | 7 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 14 | 807 | 0.3+ | 0.1+ | 2004 09 13 | 304 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.1− | 0.1+ |
| 2004 08 14 | 807 | 0.1+ | 0.1+ | 2004 09 13 | 304 | 0.1+ | 0.0 | 2006 10 20 | 695 | 0.1− | 0.1− |
| 2004 08 15 | 807 | 0.3− | 0.1− | 2006 10 19 | 695 | 0.1− | 0.2− | | | | |

### 2004 PW$_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.67508 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30351152 | $\omega$ | 39.36668 | | +0.95522032 | | −0.29341674 |
| $a$ | 2.1929022 | $\Omega$ | 337.60691 | | +0.23981435 | | +0.84335501 |
| $e$ | 0.1855266 | $i$ | 5.75789 | | +0.17332977 | | +0.45017658 |
| $P$ | 3.25 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1+ | 0.3− | 2004 08 10 | 704 | 0.1− | 1.0+ | 2004 09 09 | 704 | 0.1+ | 0.5+ |
| 2001 11 11 | 699 | 0.0 | 0.0 | 2004 08 12 | 807 | 0.0 | 0.2− | 2004 09 09 | 699 | 0.5− | 0.8+ |
| 2001 11 11 | 704 | 0.2+ | 0.4− | 2004 08 12 | 807 | 0.0 | 0.3− | 2004 09 09 | 699 | 0.1− | 1.0− |
| 2001 11 11 | 699 | 0.7− | 1.3+ | 2004 09 07 | 691 | 0.0 | 0.1+ | 2004 09 09 | 699 | 1.2+ | 0.1+ |
| 2001 11 11 | 704 | 0.0 | 0.3− | 2004 09 07 | 691 | 0.1− | 0.1+ | 2004 09 09 | 699 | 0.5− | 0.6+ |
| 2001 11 11 | 704 | 0.6+ | 0.2+ | 2004 09 07 | 691 | 0.0 | 0.1+ | 2004 09 17 | 704 | 0.0 | 0.0 |
| 2001 11 11 | 699 | 0.3+ | 0.3+ | 2004 09 08 | 704 | 0.0 | 0.2− | 2004 09 17 | 704 | 0.1+ | 0.9+ |
| 2001 11 11 | 704 | 0.0 | 0.0 | 2004 09 08 | 704 | 0.3− | 0.2+ | 2004 09 17 | 704 | 1.4− | 0.7− |
| 2001 11 11 | 699 | 0.7− | 0.0 | 2004 09 08 | 704 | 0.4− | 0.7+ | 2004 09 17 | 704 | 0.5− | 0.5− |
| 2004 07 16 | 807 | 0.1+ | 0.3+ | 2004 09 08 | 704 | (1.8− | 0.2+) | 2004 09 17 | 704 | 0.5+ | 0.6+ |
| 2004 07 16 | 807 | 0.2− | 0.1− | 2004 09 09 | 704 | 0.4− | 0.5− | 2006 03 02 | 691 | 0.4+ | 0.5+ |
| 2004 08 10 | 704 | 0.3− | 0.2+ | 2004 09 09 | 704 | 0.2+ | 0.2− | 2006 03 02 | 691 | 0.6+ | 0.5+ |
| 2004 08 10 | 704 | 0.5+ | 0.9+ | 2004 09 09 | 704 | 0.1− | 0.6+ | 2006 03 02 | 691 | 0.1− | 0.6+ |

### 2004 PJ$_{111}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.28846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25855331 | $\omega$ | 297.40808 | | +0.99900041 | | +0.00036618 |
| $a$ | 2.4402593 | $\Omega$ | 62.60063 | | +0.01839402 | | +0.90801658 |
| $e$ | 0.2200700 | $i$ | 2.88592 | | −0.04074123 | | +0.41893407 |
| $P$ | 3.81 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 05 | 691 | 0.2+ | 0.1+ | 2004 09 08 | 704 | 0.2− | 0.3+ | 2004 09 17 | 704 | 0.1− | 1.5+ |
| 2003 05 05 | 691 | 0.1+ | 0.4+ | 2004 09 08 | 704 | 0.6− | 0.3+ | 2004 09 17 | 704 | 0.2+ | 0.8+ |
| 2003 05 05 | 691 | 0.0 | 0.2+ | 2004 09 09 | 704 | 0.2− | 0.1− | 2004 09 17 | 704 | 0.1− | 0.6+ |
| 2004 08 15 | 807 | 0.1+ | 0.1+ | 2004 09 09 | 704 | 0.3+ | 0.0 | 2004 09 21 | 704 | 0.7+ | 0.8− |
| 2004 08 15 | 807 | 0.0 | 0.2+ | 2004 09 09 | 704 | 0.4+ | 0.4+ | 2004 09 21 | 704 | 0.4+ | 0.1+ |
| 2004 08 21 | 703 | 1.4− | 1.1− | 2004 09 09 | 704 | 0.1+ | 0.3+ | 2004 09 21 | 704 | 0.1+ | 1.3− |
| 2004 08 21 | 703 | 1.9− | 0.8− | 2004 09 09 | 699 | 0.2− | 0.1+ | 2004 09 21 | 704 | 0.4+ | 0.7− |
| 2004 08 21 | 703 | 0.4+ | 0.9− | 2004 09 09 | 699 | 0.5− | 0.0 | 2004 09 21 | 704 | 0.5+ | 0.0 |
| 2004 08 21 | 703 | 0.0 | 0.4− | 2004 09 09 | 699 | 0.3+ | 0.1+ | 2004 11 13 | 703 | 0.1− | 0.6− |
| 2004 09 07 | 704 | 0.2+ | 0.5+ | 2004 09 09 | 699 | 0.7+ | 0.1+ | 2004 11 13 | 703 | 0.7+ | 0.8+ |
| 2004 09 07 | 704 | 0.4+ | 0.4+ | 2004 09 12 | 704 | 0.0 | 0.0 | 2004 11 13 | 703 | 0.2− | 0.5+ |
| 2004 09 07 | 704 | 0.4+ | 0.1+ | 2004 09 12 | 704 | 0.0 | 0.7+ | 2004 11 13 | 703 | 0.6− | 0.3+ |
| 2004 09 07 | 704 | 0.3− | 0.6+ | 2004 09 12 | 704 | 0.5− | 0.2− | 2006 02 01 | 691 | 0.2+ | 0.1+ |
| 2004 09 07 | 704 | 0.2+ | 0.5+ | 2004 09 12 | 704 | 0.2− | 0.0 | 2006 02 01 | 691 | 0.2+ | 0.5+ |
| 2004 09 08 | 704 | 0.2+ | 0.2+ | 2004 09 12 | 704 | 0.7− | 0.2+ | 2006 02 01 | 691 | 0.0 | 0.4+ |
| 2004 09 08 | 704 | 0.8− | 0.5+ | 2004 09 17 | 704 | 0.4+ | 0.1− | | | | |
| 2004 09 08 | 704 | 0.9− | 0.2+ | 2004 09 17 | 704 | 0.6+ | 0.8+ | | | | |

### 2004 PV$_{113}$ = 1993 OO$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.75567 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26963536 | $\omega$ | 187.08544 | | +0.98427165 | | +0.17569793 |
| $a$ | 2.3729294 | $\Omega$ | 162.76216 | | −0.15888002 | | +0.92597919 |
| $e$ | 0.2489208 | $i$ | 3.56503 | | −0.07724279 | | +0.33420468 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 24 | 691 | 0.3+ | 0.9+ | 2004 08 26 | 703 | 1.3− | 0.1− | 2004 09 17 | 704 | 0.5+ | 0.2+ |
| 1993 07 24 | 691 | 0.5+ | 0.6+ | 2004 08 26 | 703 | 0.6− | 0.2+ | 2004 09 17 | 704 | 1.2+ | 0.4− |
| 1993 07 24 | 691 | 0.4− | 0.1+ | 2004 08 26 | 703 | 0.6− | 0.3+ | 2004 09 17 | 704 | 0.4+ | 0.7− |
| 1993 07 25 | 691 | 0.3− | 0.8− | 2004 08 26 | 703 | 0.7− | 1.5+ | 2004 09 17 | 704 | 0.5+ | 0.4− |
| 1993 07 25 | 691 | 0.2− | 0.5− | 2004 09 09 | 704 | 0.5+ | 0.1+ | 2006 02 01 | 691 | 0.3+ | 0.3+ |
| 1993 07 25 | 691 | 0.1+ | 0.1+ | 2004 09 09 | 704 | 0.5− | 0.0 | 2006 02 01 | 691 | 0.3+ | 0.4+ |
| 1996 04 17 | 691 | 0.5− | 0.1− | 2004 09 09 | 704 | 0.3− | 0.4− | 2006 02 01 | 691 | 0.0 | 0.3+ |
| 1996 04 17 | 691 | 0.1+ | 0.1− | 2004 09 09 | 704 | 0.2− | 0.5− | 2006 02 01 | G96 | 0.2− | 0.1− |
| 1996 04 17 | 691 | 0.4+ | 0.1+ | 2004 09 09 | 704 | 0.2+ | 0.1+ | 2006 02 01 | G96 | 0.7− | 0.4− |
| 2004 08 09 | 699 | 0.0 | 0.2− | 2004 09 09 | 699 | 0.2+ | 0.2+ | 2006 02 01 | G96 | 0.6− | 0.2+ |
| 2004 08 09 | 699 | 0.3+ | 0.4+ | 2004 09 09 | 699 | 0.5+ | 0.4+ | 2006 02 01 | G96 | 0.1+ | 0.2+ |
| 2004 08 09 | 699 | 0.4+ | 0.2+ | 2004 09 09 | 699 | 0.5− | 0.7+ | | | | |
| 2004 08 09 | 699 | 0.0 | 0.6+ | 2004 09 09 | 699 | 0.0 | 0.9− | | | | |

### 2004 PW$_{113}$ = 2003 LF$_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.62336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18226257 | $\omega$ | 149.20573 | | +0.52693668 | | +0.84378395 |
| $a$ | 3.0808536 | $\Omega$ | 152.20548 | | −0.81746328 | | +0.53595555 |
| $e$ | 0.1321102 | $i$ | 12.61194 | | −0.23257585 | | +0.02793381 |
| $P$ | 5.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 16 | 644 | 0.5+ | 0.7+ | 2003 06 05 | 691 | 0.7− | 0.6− | 2004 09 09 | 704 | 0.4− | 0.5+ |
| 2002 02 16 | 644 | 0.1− | 0.9+ | 2004 08 10 | 704 | 0.3− | 0.7+ | 2004 09 09 | 704 | 0.2+ | 0.2+ |
| 2002 02 16 | 644 | 0.0 | 0.9+ | 2004 08 10 | 704 | 0.2− | 0.1+ | 2004 09 09 | 704 | 0.2− | 0.0 |
| 2003 06 02 | 691 | 0.4+ | 1.0+ | 2004 08 10 | 704 | 0.5− | 0.3+ | 2004 09 09 | 704 | 0.7− | 0.1+ |
| 2003 06 02 | 691 | 0.8+ | 0.6+ | 2004 08 23 | 691 | 0.1+ | 0.0 | 2004 09 09 | 699 | 0.1+ | 1.1+ |
| 2003 06 02 | 691 | 0.6+ | 0.2+ | 2004 08 23 | 691 | 0.1− | 0.1+ | 2004 09 09 | 699 | 0.1− | 0.6− |
| 2003 06 05 | 691 | 0.7− | 0.6− | 2004 08 23 | 691 | 0.1+ | 0.0 | 2004 09 09 | 699 | 1.7+ | 0.9− |
| 2003 06 05 | 691 | 0.4− | 0.6− | 2004 09 09 | 704 | 0.0 | 0.1+ | 2004 09 09 | 699 | 0.4− | 0.5+ |

### 2004 PX$_{113}$ = 2002 CQ$_{142}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.04017 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23488804 | $\omega$ | 193.95164 | | +0.83562343 | | +0.53209251 |
| $a$ | 2.6015296 | $\Omega$ | 133.05367 | | −0.48437518 | | +0.83089668 |
| $e$ | 0.0795622 | $i$ | 10.76010 | | −0.25906402 | | +0.16275217 |
| $P$ | 4.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.8+ | 0.7− | 2002 02 11 | 704 | 1.2− | 0.5+ | 2004 08 23 | 699 | 1.2− | 0.2− |
| 2000 10 01 | 704 | 0.3− | 0.4− | 2002 02 11 | 704 | 0.2+ | 1.1+ | 2004 09 07 | 704 | 0.7− | 0.8+ |
| 2000 10 01 | 704 | 0.0 | 0.3− | 2004 08 11 | 704 | 1.3+ | 0.4+ | 2004 09 07 | 704 | 0.2− | 0.2+ |
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2004 08 11 | 704 | 1.3− | 0.4+ | 2004 09 07 | 704 | 0.1+ | 0.6+ |
| 2002 02 09 | 704 | 0.8+ | 0.6− | 2004 08 11 | 704 | 0.2+ | 0.2− | 2004 09 07 | 704 | 0.1− | 0.7+ |
| 2002 02 09 | 704 | 0.1+ | 0.3− | 2004 08 11 | 704 | 1.2+ | 0.1− | 2004 09 07 | 704 | 0.3+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 09 | 704 | 0.0 | 0.3− | 2004 08 11 | 704 | 0.0 | 0.3− | 2004 09 21 | 704 | 0.6+ | 0.2− | | |
| 2002 02 09 | 704 | 0.1− | 0.3+ | 2004 08 23 | 699 | 0.4− | 0.5− | 2004 09 21 | 704 | 0.2+ | 0.0 | | |
| 2002 02 11 | 704 | 0.2+ | 0.4− | 2004 08 23 | 699 | 1.2− | 0.2+ | 2004 09 21 | 704 | 0.7+ | 0.5− | | |
| 2002 02 11 | 704 | 0.1+ | 0.8+ | 2004 08 23 | 699 | 0.3+ | 0.6+ | | | | | | |

### 2004 PY$_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.58564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17590981 | $\omega$ | 259.03865 | | +0.98243688 | +0.11954425 | |
| $a$ | 3.1545882 | $\Omega$ | 93.98205 | | −0.05604629 | +0.92142081 | |
| $e$ | 0.1734603 | $i$ | 8.25732 | | −0.17797919 | +0.36971998 | |
| $P$ | 5.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 1.1− | 0.4+ | 2004 08 22 | E12 | 0.2+ | 1.0+ | 2005 12 01 | 691 | 0.3− | 0.4+ | | |
| 1999 10 19 | 704 | 1.9+ | 1.1− | 2004 08 22 | E12 | 0.6+ | 0.2− | 2006 01 22 | G96 | 0.1+ | 0.3− | | |
| 1999 10 19 | 704 | 0.1− | 0.3− | 2004 08 22 | E12 | 0.2− | 0.5− | 2006 01 22 | G96 | 0.3+ | 0.0 | | |
| 1999 10 19 | 704 | 0.2− | 0.5− | 2004 08 22 | E12 | 0.5+ | 0.1+ | 2006 01 22 | G96 | 0.5+ | 0.0 | | |
| 1999 10 19 | 704 | 0.2+ | 0.2− | 2004 08 23 | 699 | 0.4+ | 0.4+ | 2006 01 22 | G96 | 0.3+ | 0.0 | | |
| 2002 03 12 | 645 | 0.0 | 0.1− | 2004 08 23 | 699 | 1.5− | 0.1+ | 2006 02 20 | G96 | 0.3− | 0.1+ | | |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2004 08 23 | 699 | 1.0− | 0.1+ | 2006 02 20 | G96 | 0.1+ | 0.1+ | | |
| 2003 04 05 | 691 | 0.3− | 0.4+ | 2004 08 23 | 699 | 0.5+ | 0.7+ | 2006 02 20 | G96 | 0.0 | 0.0 | | |
| 2003 04 05 | 691 | 0.3+ | 0.5+ | 2004 09 15 | E12 | 0.6+ | 0.5− | 2006 02 20 | G96 | 0.2− | 0.4+ | | |
| 2003 04 05 | 691 | 0.4+ | 0.8+ | 2004 09 15 | E12 | 0.6+ | 0.6+ | 2006 03 05 | G96 | 0.0 | 0.3− | | |
| 2004 08 08 | 704 | 0.6+ | 0.4+ | 2004 09 15 | E12 | 0.3− | 0.8+ | 2006 03 05 | G96 | 0.1− | 0.4+ | | |
| 2004 08 08 | 704 | 0.5− | 0.8− | 2004 09 15 | E12 | 0.7− | 0.2+ | 2006 03 05 | G96 | 0.2+ | 0.2+ | | |
| 2004 08 08 | 704 | 0.0 | 0.1− | 2005 12 01 | 691 | 0.1+ | 0.4+ | 2006 03 05 | G96 | 0.4− | 0.1+ | | |
| 2004 08 08 | 704 | 0.1− | 0.1+ | 2005 12 01 | 691 | 0.3− | 0.8+ | | | | | | |

### 2004 PZ$_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.09994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21452561 | $\omega$ | 281.12787 | | +0.36446375 | +0.93079887 | |
| $a$ | 2.7636516 | $\Omega$ | 10.37820 | | −0.78240877 | +0.32234457 | |
| $e$ | 0.1309336 | $i$ | 8.91668 | | −0.50497791 | +0.17235848 | |
| $P$ | 4.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 644 | 0.0 | 0.6+ | 2004 08 08 | 704 | 0.0 | 0.5− | 2004 09 07 | 704 | 0.3− | 0.7+ | | |
| 2002 01 13 | 644 | 0.0 | 0.5+ | 2004 08 21 | E12 | 0.6+ | 0.4+ | 2004 09 07 | 704 | 0.2− | 0.3− | | |
| 2002 01 13 | 644 | 0.2− | 0.5+ | 2004 08 21 | E12 | 0.1− | 0.4+ | 2004 09 17 | 704 | 0.4− | 0.2+ | | |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2004 08 21 | E12 | 0.2+ | 0.6+ | 2004 09 17 | 704 | 0.4− | 1.1− | | |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2004 08 21 | E12 | 0.4− | 0.0 | 2004 09 17 | 704 | 0.2− | 1.9− | | |
| 2003 04 24 | 691 | 0.1+ | 0.2+ | 2004 08 23 | 699 | 1.0− | 0.7− | 2004 09 17 | 699 | 0.1− | 0.9+ | | |
| 2003 04 24 | 691 | 0.1− | 0.0 | 2004 08 23 | 699 | 0.5+ | 0.5+ | 2004 09 17 | 699 | 0.7+ | 1.1+ | | |
| 2003 04 24 | 691 | 0.0 | 0.2− | 2004 08 23 | 699 | 0.7+ | 0.8− | 2004 09 17 | 699 | 1.1− | 0.5− | | |
| 2004 08 08 | 704 | 0.4+ | 0.4+ | 2004 08 23 | 699 | 0.7+ | 0.6+ | 2004 09 17 | 699 | 1.3+ | 0.4− | | |
| 2004 08 08 | 704 | 0.2− | 0.4− | 2004 09 07 | 704 | 0.8− | 0.6+ | | | | | | |

### 2004 PA$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.31700 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23135336 | $\omega$ | 179.03104 | | +0.88559838 | +0.45154689 | |
| $a$ | 2.6279606 | $\Omega$ | 153.26640 | | −0.42773554 | +0.88415021 | |
| $e$ | 0.1783526 | $i$ | 13.98651 | | −0.18099123 | +0.11993248 | |
| $P$ | 4.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 1.0+ | 0.3+ | 2004 09 08 | 704 | 0.5+ | 0.4+ | 2004 09 21 | 699 | 1.2− | 0.2− | | |
| 2002 02 11 | 704 | 0.9+ | 0.5+ | 2004 09 08 | 704 | 0.5+ | 0.1+ | 2004 10 06 | 704 | 1.1− | 1.1+ | | |
| 2002 02 11 | 704 | 0.1− | 0.4+ | 2004 09 08 | 704 | 0.2+ | 0.0 | 2004 10 06 | 704 | 0.3− | 0.5+ | | |
| 2002 02 11 | 704 | 0.5− | 0.3− | 2004 09 08 | 704 | 0.5+ | 0.2+ | 2004 10 06 | 704 | 0.5− | 1.1− | | |
| 2002 03 13 | 644 | 0.4− | 0.1− | 2004 09 14 | 699 | 1.4+ | 0.7− | 2004 10 06 | 704 | 0.3− | 0.5− | | |
| 2002 03 13 | 644 | 0.6− | 0.1− | 2004 09 14 | 699 | 1.1+ | 0.7+ | 2004 12 01 | 699 | 0.6+ | 1.8− | | |
| 2002 03 13 | 644 | 0.3− | 0.0 | 2004 09 14 | 699 | 0.4+ | 0.5− | 2004 12 01 | 699 | 0.7+ | 0.7+ | | |
| 2004 08 09 | 704 | 0.2+ | 0.8+ | 2004 09 14 | 699 | 1.6+ | 0.2− | 2004 12 01 | 699 | 1.0− | 0.9+ | | |
| 2004 08 09 | 704 | 0.8− | 0.6+ | 2004 09 21 | 699 | 0.3+ | 0.6− | 2004 12 01 | 699 | 1.2− | 0.4− | | |
| 2004 08 09 | 704 | 0.1− | 0.5+ | 2004 09 21 | 699 | 0.0 | 0.8+ | | | | | | |
| 2004 09 08 | 704 | 0.2+ | 0.0 | 2004 09 21 | 699 | 1.9− | 0.7− | | | | | | |

### 2004 PB$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.36804 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29437948 | $\omega$ | 92.78237 | | +0.38821201 | −0.91976093 | |
| $a$ | 2.2380221 | $\Omega$ | 334.13597 | | +0.78421916 | +0.36259902 | |
| $e$ | 0.0767639 | $i$ | 7.60291 | | +0.48403692 | +0.15020578 | |
| $P$ | 3.35 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 699 | 1.2− | 0.6− | 2004 09 23 | 691 | 0.4+ | 0.8− | 2006 02 25 | G96 | 0.3− | 0.4+ | | |
| 2001 10 13 | 699 | 0.6+ | 1.0+ | 2006 02 01 | 691 | 0.4+ | 0.0 | 2006 02 25 | G96 | 0.1+ | 0.4+ | | |
| 2001 10 13 | 699 | 0.0 | 0.2− | 2006 02 01 | 691 | 0.0 | 0.1− | 2006 02 25 | G96 | 0.0 | 0.3+ | | |
| 2001 10 13 | 699 | 0.5+ | 0.1+ | 2006 02 01 | 691 | 0.1+ | 0.1− | 2006 03 09 | G96 | 0.4+ | 0.3+ | | |
| 2004 08 10 | 704 | 0.6− | 0.6+ | 2006 02 20 | 703 | 0.1+ | 1.4− | 2006 03 09 | G96 | 0.3− | 0.5+ | | |
| 2004 08 10 | 704 | 0.3− | 1.4+ | 2006 02 20 | 703 | 0.7+ | 1.5+ | 2006 03 09 | G96 | 0.5+ | 0.1− | | |
| 2004 08 10 | 704 | 0.0 | 0.2+ | 2006 02 20 | 703 | 0.5+ | 0.1+ | 2006 03 09 | G96 | 0.2− | 0.9− | | |
| 2004 08 10 | 704 | 0.2+ | 1.2+ | 2006 02 20 | 703 | 0.4− | 0.6+ | 2006 03 25 | G96 | 0.0 | 0.4+ | | |
| 2004 08 22 | 691 | 0.1− | 0.1+ | 2006 02 25 | G96 | 0.0 | 0.3+ | 2006 03 25 | G96 | 0.3− | 0.8+ | | |
| 2004 08 22 | 691 | 0.0 | 0.1+ | 2006 02 25 | G96 | 0.2+ | 0.4+ | 2006 03 25 | G96 | 0.6− | 0.7+ | | |
| 2004 08 22 | 691 | 0.2− | 0.2+ | 2006 02 25 | G96 | 0.1+ | 0.2+ | 2006 03 25 | G96 | 0.0 | 0.2+ | | |
| 2004 09 23 | 691 | 0.1− | 0.1− | 2006 02 25 | G96 | 0.1+ | 0.2+ | | | | | | |
| 2004 09 23 | 691 | 0.3− | 0.7+ | 2006 02 25 | G96 | 0.2− | 0.2+ | | | | | | |

### 2004 PC$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.79892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21341578 | $\omega$ | 292.44670 | | −0.52254499 | +0.83532753 | |
| $a$ | 2.7732245 | $\Omega$ | 304.92606 | | −0.68545869 | −0.53072133 | |
| $e$ | 0.1653418 | $i$ | 12.02435 | | −0.50704351 | −0.14339729 | |
| $P$ | 4.62 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.3− | 0.0 | 2003 03 30 | 699 | 1.0− | 0.4+ | 2004 09 08 | 704 | 0.8+ | 0.1+ | | |
| 1999 07 16 | 704 | 0.3− | 0.4− | 2003 03 30 | 699 | 0.3− | 1.1+ | 2004 09 08 | 704 | 0.3+ | 1.2+ | | |
| 1999 07 16 | 704 | 0.3+ | 0.3+ | 2003 03 30 | 699 | 0.7− | 0.1− | 2004 09 18 | 704 | 0.6− | 0.7− | | |
| 2001 12 22 | 704 | (0.8+ | 1.9+) | 2004 08 12 | 704 | 0.3+ | 1.3+ | 2004 09 18 | 704 | 1.1− | 0.2+ | | |
| 2001 12 22 | 704 | 0.2− | 1.2+ | 2004 08 12 | 704 | 0.2− | 0.7+ | 2004 09 18 | 704 | 0.4+ | 0.1− | | |
| 2001 12 22 | 704 | 0.2+ | 0.5+ | 2004 08 12 | 704 | 0.2+ | 1.1− | 2006 11 22 | G96 | 0.1− | 0.2+ | | |
| 2001 12 22 | 704 | 0.7+ | 0.6+ | 2004 08 25 | 691 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.4+ | | |
| 2003 03 12 | 704 | 1.3+ | 0.7+ | 2004 08 25 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.2+ | | |
| 2003 03 12 | 704 | 1.2+ | 0.1− | 2004 08 25 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.3− | 0.2+ | | |
| 2003 03 12 | 704 | 0.3+ | 1.0+ | 2004 09 08 | 704 | 0.5+ | 1.2+ | | | | | | |
| 2003 03 30 | 699 | 1.2+ | 0.5+ | 2004 09 08 | 704 | 0.4+ | 0.4+ | | | | | | |

### 2004 PD$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.90863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17080641 | $\omega$ | 200.26114 | | +0.73253050 | +0.62860975 | |
| $a$ | 3.2171152 | $\Omega$ | 118.00297 | | −0.57668730 | +0.77696363 | |
| $e$ | 0.1204022 | $i$ | 17.21068 | | −0.36170543 | +0.03431180 | |
| $P$ | 5.77 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 31 | 691 | 0.4− | 0.2+ | 2004 08 15 | 644 | 0.1+ | 0.2+ | 2004 09 21 | 704 | 0.5− | 1.2+ | | |
| 2000 12 31 | 691 | 0.3− | 0.3+ | 2004 08 15 | 644 | 0.3+ | 0.1+ | 2004 10 09 | 644 | 0.1+ | 0.4+ | | |
| 2000 12 31 | 691 | 0.3− | 0.5+ | 2004 09 06 | 644 | 0.2− | 0.1+ | 2004 10 09 | 644 | 0.0 | 0.3+ | | |
| 2001 02 02 | 691 | 0.3+ | 0.3− | 2004 09 06 | 644 | 0.1+ | 0.2− | 2004 10 09 | 644 | 0.3+ | 0.7+ | | |
| 2001 02 02 | 691 | 0.3+ | 0.6− | 2004 09 06 | 644 | 0.0 | 0.1− | 2005 12 22 | 703 | 1.1− | 0.3+ | | |
| 2001 02 02 | 691 | 0.5+ | 0.1− | 2004 09 07 | 704 | 0.3+ | 0.5+ | 2005 12 22 | 703 | 0.3+ | 0.3− | | |
| 2002 03 10 | 644 | (0.6+ | 1.8+) | 2004 09 07 | 704 | 0.8− | 0.5+ | 2005 12 22 | 703 | 1.0− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 644 | 0.7+ | 1.5+ | 2004 09 07 | 704 | 1.1+ | 0.0 | 2005 12 22 | 703 | (1.9+ | 0.1+) |
| 2002 03 10 | 644 | 0.8+ | 1.4+ | 2004 09 07 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.4+ | 0.3+ |
| 2003 07 08 | 691 | 0.0 | 0.4+ | 2004 09 21 | 704 | 1.2− | 0.5− | 2006 10 22 | 691 | 0.1− | 0.6+ |
| 2003 07 08 | 691 | 0.1− | 0.2+ | 2004 09 21 | 704 | 0.5− | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2003 07 08 | 691 | 0.0 | 0.2+ | 2004 09 21 | 704 | 0.2+ | 0.5+ | | | | |
| 2004 08 15 | 644 | 0.1+ | 0.5+ | 2004 09 21 | 704 | 0.3+ | 0.0 | | | | |

### 2004 $PN_{114}$ = 2626 T-3

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.02042 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18060411 | $\omega$ | 0.07656 | | +0.96685999 | −0.24256833 | |
| $a$ | 3.0996855 | $\Omega$ | 14.71906 | | +0.23407284 | +0.71766475 | |
| $e$ | 0.1620450 | $i$ | 18.26672 | | +0.10193952 | +0.65277708 | |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 0.9+ | 1.8− | 1999 10 12 | 704 | 0.9− | 0.3− | 2004 08 23 | 699 | 1.3− | 0.7+ |
| 1977 10 16 | 675 | 2.0+ | 0.3− | 1999 10 12 | 704 | 0.7− | 0.8+ | 2004 08 23 | 699 | 0.0 | 0.0 |
| 1977 10 17 | 675 | 0.6− | 0.3+ | 2004 08 09 | 644 | 0.0 | 0.0 | 2004 09 07 | 704 | 0.6− | 0.1+ |
| 1977 10 17 | 675 | 1.0− | 1.1+ | 2004 08 09 | 644 | 0.1+ | 0.2+ | 2004 09 07 | 704 | 0.0 | 0.7+ |
| 1977 10 21 | 675 | 1.0+ | 1.6− | 2004 08 09 | 644 | 0.4− | 0.1+ | 2004 09 07 | 704 | 0.2+ | 0.8− |
| 1977 10 21 | 675 | 0.5+ | 0.7− | 2004 08 21 | E12 | 0.2+ | 0.1− | 2004 09 07 | 704 | 0.3− | 0.1− |
| 1977 10 22 | 675 | 0.6− | 0.4+ | 2004 08 21 | E12 | 0.3− | 0.1− | 2004 09 21 | 704 | 0.1+ | 0.6+ |
| 1977 10 22 | 675 | (3.0− | 0.1−) | 2004 08 21 | E12 | 0.4+ | 0.1+ | 2004 09 21 | 704 | 0.2− | 0.5+ |
| 1999 10 12 | 704 | 0.2− | 0.9+ | 2004 08 21 | E12 | 0.5+ | 0.9− | 2004 09 21 | 704 | 1.0+ | 0.6− |
| 1999 10 12 | 704 | 0.8+ | 1.2+ | 2004 08 23 | 699 | (0.1+ | 3.1+) | 2004 09 21 | 704 | 0.4+ | 0.1+ |
| 1999 10 12 | 704 | 0.6− | 0.0 | 2004 08 23 | 699 | 0.1− | 0.2+ | 2004 09 21 | 704 | 0.3− | 0.1− |

### 2004 $PO_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.47352 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18648356 | $\omega$ | 182.03322 | | +0.87046626 | +0.48416410 | |
| $a$ | 3.0341871 | $\Omega$ | 148.51102 | | −0.44917914 | +0.85505091 | |
| $e$ | 0.0934930 | $i$ | 9.78075 | | −0.20131217 | +0.18566925 | |
| $P$ | 5.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 695 | 0.0 | 0.6+ | 2003 06 02 | 691 | 0.0 | 0.5− | 2004 09 10 | 704 | 0.1+ | 0.1− |
| 2002 02 06 | 695 | 0.1− | 0.6+ | 2004 08 10 | 704 | 0.4− | 0.8+ | 2004 09 10 | 704 | (1.6+ | 1.4−) |
| 2002 02 13 | 691 | 0.1− | 0.3+ | 2004 08 10 | 704 | 0.9− | 0.3+ | 2004 09 11 | 691 | 0.2+ | 0.1+ |
| 2002 02 13 | 691 | 0.3+ | 0.5+ | 2004 08 10 | 704 | 0.8− | 0.3+ | 2004 09 11 | 691 | 0.6− | 0.1+ |
| 2002 02 13 | 691 | 0.1+ | 0.4+ | 2004 08 10 | 704 | 0.6+ | 0.3+ | 2004 09 11 | 691 | 0.0 | 0.3+ |
| 2002 02 22 | 644 | 0.3+ | 0.1+ | 2004 08 20 | 691 | 0.1+ | 0.2+ | 2004 09 23 | 691 | 0.1− | 0.1− |
| 2002 02 22 | 644 | 0.6− | 0.2− | 2004 08 20 | 691 | 0.1+ | 0.2+ | 2004 09 23 | 691 | 0.3+ | 0.2− |
| 2002 02 22 | 644 | 0.1− | 0.3− | 2004 08 20 | 691 | 0.1+ | 0.2+ | 2004 09 23 | 691 | 0.2+ | 0.0 |
| 2003 06 02 | 691 | 0.2− | 0.1− | 2004 09 10 | 704 | 0.2− | 0.5− | | | | |
| 2003 06 02 | 691 | 0.2+ | 0.4+ | 2004 09 10 | 704 | 0.4− | 0.5+ | | | | |

### 2004 $QL_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.69233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17453945 | $\omega$ | 21.80997 | | +0.74145250 | +0.64448697 | |
| $a$ | 3.1710784 | $\Omega$ | 296.67533 | | −0.64238899 | +0.60135772 | |
| $e$ | 0.1597119 | $i$ | 12.06504 | | −0.19386743 | +0.47223452 | |
| $P$ | 5.65 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 18 | 807 | 0.4− | 0.4+ | 2004 09 10 | 704 | 0.0 | 0.3− | 2004 10 04 | 683 | 0.2− | 0.7+ |
| 2002 02 18 | 807 | 0.4+ | 0.4+ | 2004 09 10 | 704 | 1.0− | 0.0 | 2004 10 05 | 683 | 1.0+ | 1.1+ |
| 2002 02 18 | 807 | 0.3+ | 0.3+ | 2004 09 10 | 704 | 0.7− | 0.1+ | 2004 10 05 | 683 | 1.3− | 0.9+ |
| 2002 02 18 | 807 | 0.5+ | 0.3+ | 2004 09 10 | 704 | 0.5− | 0.1+ | 2004 10 05 | 683 | (3.0− | 2.2+) |
| 2004 07 14 | 704 | 0.4+ | 0.9+ | 2004 09 10 | 704 | 0.6− | 0.0 | 2004 10 07 | 699 | 0.1− | 0.2+ |
| 2004 07 14 | 704 | 0.2+ | 1.0+ | 2004 09 13 | 704 | 0.7− | 0.0 | 2004 10 07 | 699 | 0.2+ | 0.3− |
| 2004 07 14 | 704 | 0.7+ | 0.0 | 2004 09 13 | 704 | 0.7− | 0.1− | 2004 10 07 | 699 | 0.2− | 0.3− |
| 2004 07 14 | 704 | 0.0 | 0.1− | 2004 09 13 | 704 | 1.2− | 0.4− | 2004 10 07 | 699 | 0.2+ | 0.2− |
| 2004 08 21 | 703 | 0.2− | 0.6− | 2004 09 13 | 704 | 0.3− | 0.2− | 2006 10 20 | 695 | 0.1+ | 0.1+ |
| 2004 08 21 | 703 | 0.4+ | 0.1− | 2004 09 16 | 699 | 0.1+ | 0.1+ | 2006 10 20 | 695 | 0.4+ | 0.4+ |
| 2004 08 21 | 703 | 0.8− | 0.6− | 2004 09 16 | 699 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2004 08 21 | 703 | 0.1+ | 0.2+ | 2004 09 16 | 699 | 0.1+ | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2004 08 25 | 691 | 0.2+ | 0.1− | 2004 09 16 | 699 | 0.3+ | 0.6− | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2004 08 25 | 691 | 0.3+ | 0.1− | 2004 09 18 | 704 | 0.1− | 0.9+ | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2004 08 25 | 691 | 0.2+ | 0.2− | 2004 09 18 | 704 | 0.2+ | 0.6− | 2006 11 20 | G96 | 0.1+ | 0.1+ |
| 2004 09 08 | 704 | 0.2+ | 0.0 | 2004 09 18 | 704 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.5+ | 0.1+ |
| 2004 09 08 | 704 | 0.2− | 0.0 | 2004 09 18 | 704 | 0.6+ | 0.2− | 2006 11 20 | G96 | 0.3− | 0.5− |
| 2004 09 08 | 704 | 0.2+ | 0.3+ | 2004 09 18 | 704 | 0.5+ | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2004 09 08 | 704 | 0.7− | 1.1+ | 2004 10 04 | 683 | 0.4− | 1.1− | | | | |
| 2004 09 08 | 704 | 0.6− | 0.0 | 2004 10 04 | 683 | 1.5+ | 0.5− | | | | |

### 2004 $QZ_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.11542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23878426 | $\omega$ | 284.45678 | | +0.71291846 | +0.66448165 | |
| $a$ | 2.5731528 | $\Omega$ | 34.77266 | | −0.38911945 | +0.64069005 | |
| $e$ | 0.1823501 | $i$ | 23.13503 | | −0.58338095 | +0.38468220 | |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 644 | 0.4+ | 0.2+ | 2004 08 24 | E12 | 0.6− | 0.6− | 2004 09 01 | 413 | 0.3− | 0.1− |
| 2003 04 09 | 644 | 0.1+ | 0.2+ | 2004 08 24 | E12 | 0.0 | 0.3+ | 2004 09 20 | E12 | 0.2− | 0.1+ |
| 2003 04 09 | 644 | 0.0 | 0.0 | 2004 08 24 | E12 | 0.1− | 0.2− | 2004 09 20 | E12 | 0.0 | 0.1+ |
| 2004 07 22 | E12 | 0.1+ | 0.4− | 2004 08 28 | 413 | 0.1− | 0.1− | 2004 09 20 | E12 | 0.2+ | 0.9+ |
| 2004 07 22 | E12 | 0.2+ | 0.3+ | 2004 08 28 | 413 | 0.0 | 0.3+ | 2004 09 20 | E12 | 0.8+ | 0.3+ |
| 2004 07 22 | E12 | 0.0 | 0.2− | 2004 08 28 | 413 | 0.2+ | 0.3+ | 2005 12 21 | 704 | 0.1+ | 0.3− |
| 2004 07 22 | E12 | 0.0 | 0.1+ | 2004 09 01 | 413 | 0.0 | 0.2− | 2005 12 21 | 704 | 0.3+ | 0.3+ |
| 2004 08 24 | E12 | 0.1− | 0.1− | 2004 09 01 | 413 | 0.1− | 0.0 | 2005 12 21 | 704 | 0.5− | 0.3+ |

### 2004 $QR_{26}$ = 1994 $UD_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.63634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28942140 | $\omega$ | 353.65727 | | +0.96167248 | −0.27140358 | |
| $a$ | 2.2635093 | $\Omega$ | 22.21032 | | +0.25589761 | +0.83714465 | |
| $e$ | 0.1406709 | $i$ | 5.93193 | | +0.09850104 | +0.47489888 | |
| $P$ | 3.41 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.0 | 0.3− | 2001 12 22 | 704 | 0.5+ | 0.2+ | 2004 09 15 | 699 | 0.5− | 0.2+ |
| 1994 10 28 | 691 | 0.2+ | 0.4+ | 2003 04 05 | 691 | 0.5+ | 0.4+ | 2004 09 15 | 699 | 0.1+ | 0.7+ |
| 1994 10 28 | 691 | 0.1− | 0.2+ | 2003 04 05 | 691 | 0.5+ | 0.2+ | 2004 09 15 | 699 | 0.4− | 1.1+ |
| 1994 11 05 | 691 | 0.2− | 0.6+ | 2003 04 05 | 691 | 0.4+ | 0.3+ | 2004 09 15 | 699 | 0.5+ | 1.0− |
| 1994 11 05 | 691 | 0.3− | 0.1+ | 2004 08 23 | 699 | 1.0+ | 0.7+ | 2004 10 05 | 699 | 0.3+ | 0.3− |
| 1994 11 05 | 691 | 0.3− | 0.0 | 2004 08 23 | 699 | 0.2+ | 0.1+ | 2004 10 05 | 699 | 0.3− | 0.4+ |
| 2001 12 09 | 704 | 0.8+ | 0.9+ | 2004 08 23 | 699 | 0.7+ | 0.8+ | 2004 10 05 | 699 | 0.4− | 0.2− |
| 2001 12 09 | 704 | 0.3+ | 0.8− | 2004 08 23 | 699 | 0.5+ | 0.5− | 2004 10 05 | 699 | 0.3− | 1.3+ |
| 2001 12 09 | 704 | 0.7+ | 0.0 | 2004 09 07 | 704 | 0.4− | 0.3+ | 2006 01 28 | 691 | 0.6− | 0.0 |
| 2001 12 09 | 704 | 2.5+ | 1.1− | 2004 09 07 | 704 | 0.3− | 0.4− | 2006 01 28 | 691 | 0.1+ | 0.4+ |
| 2001 12 22 | 704 | 0.9− | 0.0 | 2004 09 07 | 704 | 1.1− | 0.1+ | 2006 01 28 | 691 | 0.2− | 1.0+ |
| 2001 12 22 | 704 | 0.0 | 0.2− | 2004 09 07 | 704 | 0.4− | 0.4+ | | | | |
| 2001 12 22 | 704 | 0.3− | 0.4− | 2004 09 07 | 704 | 1.6− | 0.5− | | | | |

### 2004 $QS_{26}$ = 2005 $YZ_{156}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.41188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29259452 | $\omega$ | 107.36362 | | −0.20703423 | +0.97801011 | |
| $a$ | 2.2471148 | $\Omega$ | 150.65165 | | −0.91596695 | −0.18473667 | |
| $e$ | 0.1116703 | $i$ | 2.94262 | | −0.34371701 | −0.09679149 | |
| $P$ | 3.37 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 23 | 691 | 0.2+ | 0.3− | 2004 09 22 | 691 | 0.1+ | 0.4− | 2005 12 27 | 691 | 0.1− | 0.1− |
| 2004 08 23 | 691 | 0.1− | 0.1− | 2004 09 22 | 691 | 0.2− | 0.1+ | 2005 12 27 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 23 | 691 | 0.1+ | 0.3− | 2004 09 22 | 691 | (3.0− | 1.5+) | 2005 12 27 | 691 | 0.3+ | 0.3− | | |
| 2004 09 06 | 644 | 0.3+ | 0.2+ | 2004 10 04 | 691 | 0.1+ | 0.2− | 2005 12 31 | 691 | 0.1− | 0.2+ | | |
| 2004 09 06 | 644 | 0.4− | 0.6+ | 2004 10 04 | 691 | 0.0 | 0.2+ | 2005 12 31 | 691 | 0.2− | 0.1− | | |
| 2004 09 06 | 644 | 0.1− | 0.4+ | 2004 10 04 | 691 | 0.1+ | 0.2− | 2005 12 31 | 691 | 0.0 | 0.1+ | | |

### 2004 $QT_{26}$ = 2000 $XL_{40}$ = 2006 $CK_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.20390 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24340973 | $\omega$ | 6.86451 | | +0.92651491 | +0.35967653 | |
| $a$ | 2.5404507 | $\Omega$ | 331.26874 | | −0.35521454 | +0.73933941 | |
| $e$ | 0.3518692 | $i$ | 13.28548 | | −0.12406751 | +0.56921879 | |
| $P$ | 4.05 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 05 | 704 | 0.3− | 0.7− | 2004 09 06 | 704 | 0.4− | 0.7+ | 2004 11 10 | 704 | 0.3− | 0.7− |
| 2000 12 05 | 704 | 0.4+ | 0.3+ | 2004 10 16 | 704 | 0.3− | 0.4+ | 2004 11 10 | 704 | 0.8+ | 1.2− |
| 2000 12 05 | 704 | 0.6+ | 0.6− | 2004 10 16 | 704 | 0.5− | 1.1+ | 2006 02 02 | G96 | 0.6− | 0.6− |
| 2000 12 05 | 704 | 0.2− | 0.4+ | 2004 10 16 | 704 | 0.3− | 0.4+ | 2006 02 02 | G96 | 0.4− | 0.4− |
| 2000 12 05 | 704 | 0.4+ | 0.4+ | 2004 10 16 | 704 | 0.3− | 0.1+ | 2006 02 02 | G96 | 0.3− | 0.6− |
| 2000 12 07 | 704 | 0.2+ | 0.2+ | 2004 10 16 | 704 | 0.2− | 0.5+ | 2006 02 02 | G96 | 0.7− | 0.3− |
| 2000 12 07 | 704 | 0.7− | 0.2− | 2004 10 23 | 704 | 1.2+ | 0.0 | 2006 02 04 | 691 | 0.2− | 0.4+ |
| 2000 12 07 | 704 | 0.9− | 0.1+ | 2004 10 23 | 704 | 0.4+ | 0.7− | 2006 02 04 | 691 | 0.0 | 0.1− |
| 2000 12 07 | 704 | 0.3+ | 0.4+ | 2004 10 23 | 704 | 0.3+ | 0.4− | 2006 02 04 | 691 | 0.2+ | 0.4+ |
| 2004 08 26 | 704 | 0.1+ | 0.6+ | 2004 10 23 | 704 | 0.3+ | 0.6− | 2006 02 25 | G96 | 0.3− | 0.3− |
| 2004 08 26 | 704 | 0.1− | 0.2+ | 2004 10 23 | 704 | 0.5+ | 1.1− | 2006 02 25 | G96 | 0.2− | 0.0 |
| 2004 08 26 | 704 | 0.2− | 0.0 | 2004 11 03 | 704 | (1.7+ | 1.3−) | 2006 02 25 | G96 | 0.5− | 0.0 |
| 2004 08 26 | 704 | 0.0 | 0.5− | 2004 11 03 | 704 | 0.3+ | 0.3+ | 2006 02 25 | G96 | 1.2+ | 0.1+ |
| 2004 08 26 | 704 | 0.6− | 1.0+ | 2004 11 03 | 704 | 0.4+ | 0.0 | 2006 03 05 | 691 | 0.3+ | 0.1+ |
| 2004 09 06 | 704 | 1.2− | 0.4− | 2004 11 03 | 704 | 0.6+ | 0.2− | 2006 03 05 | 691 | 0.2+ | 0.2+ |
| 2004 09 06 | 704 | 1.0− | 0.1+ | 2004 11 03 | 704 | 0.8+ | 1.0+ | 2006 03 05 | 691 | 0.2+ | 0.1− |
| 2004 09 06 | 704 | 0.2+ | 0.7+ | 2004 11 10 | 704 | 1.1− | 0.5− | | | | |

### 2004 $QU_{26}$ = 2006 $AX_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.03227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26906187 | $\omega$ | 175.61461 | | +0.29882970 | +0.93916147 | |
| $a$ | 2.3763001 | $\Omega$ | 111.70129 | | −0.88100928 | +0.33969970 | |
| $e$ | 0.2066159 | $i$ | 10.50138 | | −0.36677440 | −0.05079212 | |
| $P$ | 3.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.1− | 1.5+ | 2004 09 07 | 704 | 0.8− | 0.0 | 2004 10 06 | 704 | 0.5− | 0.4+ |
| 2000 07 07 | 704 | 0.3− | 0.3− | 2004 09 07 | 704 | 0.5− | 1.1+ | 2006 01 05 | 691 | 0.0 | 0.2− |
| 2000 07 07 | 704 | 0.5+ | 0.1− | 2004 09 21 | 704 | 0.2+ | 1.2− | 2006 01 05 | 691 | 0.1− | 0.2+ |
| 2004 08 27 | 699 | 1.6+ | 1.4− | 2004 09 21 | 704 | 0.1− | 0.9− | 2006 01 05 | 691 | 0.3+ | 0.0 |
| 2004 08 27 | 699 | 0.1− | 0.8+ | 2004 09 21 | 704 | 0.5+ | 0.5− | 2006 01 06 | 691 | 0.4− | 0.3+ |
| 2004 08 27 | 699 | 1.3+ | 0.1+ | 2004 09 21 | 704 | 0.0 | 0.6− | 2006 01 06 | 691 | 0.3+ | 0.0 |
| 2004 08 27 | 699 | 0.1+ | 0.7+ | 2004 10 06 | 704 | 0.4− | 0.4− | 2006 01 06 | 691 | 0.0 | 0.2+ |
| 2004 09 07 | 704 | 0.4− | 0.1− | 2004 10 06 | 704 | 0.1+ | 0.9+ | | | | |
| 2004 09 07 | 704 | 0.7− | 1.2+ | 2004 10 06 | 704 | 0.1− | 0.1− | | | | |

### 2004 $QV_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.73479 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20029053 | $\omega$ | 231.61510 | | +0.35831052 | +0.93182129 | |
| $a$ | 2.8930933 | $\Omega$ | 59.47429 | | −0.83434577 | +0.34730891 | |
| $e$ | 0.1790204 | $i$ | 3.83693 | | −0.41890418 | +0.10528817 | |
| $P$ | 4.92 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 704 | 0.9+ | 1.1+ | 2003 05 05 | 704 | 0.4+ | 0.3+ | 2004 09 09 | 704 | 0.0 | 0.3− |
| 1998 05 01 | 704 | 0.7− | 0.3+ | 2003 05 05 | 704 | 0.8+ | 0.5+ | 2004 09 09 | 704 | 1.1+ | 0.1+ |
| 1998 05 01 | 704 | 2.0+ | 1.0+ | 2004 08 19 | E12 | 1.0+ | 1.4− | 2004 09 13 | 699 | 0.9− | 0.9− |
| 1998 05 01 | 704 | 1.3− | 0.0 | 2004 08 19 | E12 | 1.0− | 0.1− | 2004 09 13 | 699 | 0.7+ | 0.3+ |
| 2003 04 29 | 704 | 0.3− | 0.5+ | 2004 08 19 | E12 | 0.6− | 0.5+ | 2004 09 13 | 699 | 0.9+ | 0.5− |
| 2003 04 29 | 704 | 1.1− | 0.5− | 2004 08 19 | E12 | 0.2− | 0.5− | 2004 09 13 | 699 | 0.7− | 0.5− |
| 2003 04 29 | 704 | 0.3− | 0.2+ | 2004 09 08 | 704 | 0.2+ | 0.2+ | 2004 10 15 | 691 | 0.1+ | 0.3+ |
| 2003 04 29 | 704 | 0.6− | 0.9+ | 2004 09 08 | 704 | 0.1− | 1.4+ | 2004 10 15 | 691 | 0.1− | 0.2+ |
| 2003 04 29 | 704 | 1.1− | 0.2− | 2004 09 08 | 704 | 0.2+ | 0.3+ | 2004 10 15 | 691 | 0.1+ | 0.2+ |
| 2003 05 05 | 704 | 0.6+ | 0.3+ | 2004 09 08 | 704 | 0.5− | 0.6+ | 2005 12 07 | 691 | 0.1+ | 0.2+ |
| 2003 05 05 | 704 | 0.5+ | 0.3− | 2004 09 08 | 704 | 0.7− | 0.1− | 2005 12 07 | 691 | 0.0 | 0.1+ |
| 2003 05 05 | 704 | 1.1+ | 1.1− | 2004 09 09 | 704 | 0.7− | 0.2+ | 2005 12 07 | 691 | 0.1− | 0.2+ |

### 2004 $QW_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.10255 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17858739 | $\omega$ | 49.68323 | | +0.86849027 | +0.47018034 | |
| $a$ | 3.1229775 | $\Omega$ | 281.73713 | | −0.48938733 | +0.76285204 | |
| $e$ | 0.0370355 | $i$ | 9.22853 | | −0.07889672 | +0.44383242 | |
| $P$ | 5.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 644 | 0.3− | 0.2− | 2004 09 10 | 704 | 0.0 | 0.3+ | 2004 10 04 | 291 | 0.2+ | 0.1+ |
| 2002 03 09 | 644 | 0.0 | 0.1− | 2004 09 10 | 704 | 0.1+ | 0.0 | 2005 11 10 | 599 | 0.7+ | 0.9+ |
| 2002 03 09 | 644 | 0.3+ | 0.0 | 2004 09 10 | 704 | 0.8− | 0.1− | 2005 11 10 | 599 | 0.2+ | 0.2+ |
| 2004 08 21 | 703 | 0.1+ | 1.7− | 2004 09 10 | 704 | 0.4− | 0.3+ | 2005 11 10 | 599 | 0.4+ | 0.4+ |
| 2004 08 21 | 703 | 0.6− | 0.3+ | 2004 09 18 | 704 | 0.1− | 0.6− | 2005 11 10 | 599 | 0.2+ | 0.4+ |
| 2004 08 21 | 703 | 0.1− | 0.4+ | 2004 09 18 | 704 | 0.5− | 0.5− | 2005 11 28 | 703 | 0.3+ | 0.2+ |
| 2004 08 21 | 703 | 0.1− | 0.1− | 2004 09 18 | 704 | 0.5+ | 1.9− | 2005 11 28 | 703 | 0.6− | 0.7− |
| 2004 09 08 | 704 | 0.1− | 0.5− | 2004 09 18 | 704 | 0.9+ | 0.0 | 2005 11 28 | 703 | 0.1− | 0.6− |
| 2004 09 08 | 704 | 0.6− | 0.7+ | 2004 10 04 | 291 | 0.2+ | 0.1+ | 2005 11 28 | 703 | 0.9− | 0.9− |
| 2004 09 08 | 704 | 0.1+ | 1.7+ | 2004 10 04 | 291 | 0.1+ | 0.1+ | | | | |

### 2004 $QX_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.24708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27423695 | $\omega$ | 356.68356 | | +0.76854557 | −0.63701058 | |
| $a$ | 2.3463101 | $\Omega$ | 43.07947 | | +0.58899107 | +0.66804393 | |
| $e$ | 0.2113443 | $i$ | 5.00820 | | +0.24985442 | +0.38462296 | |
| $P$ | 3.59 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1− | 2004 08 23 | 699 | 0.1+ | 1.1− | 2004 09 21 | 704 | 0.6+ | 0.7− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 08 23 | 699 | 0.2− | 0.5− | 2006 02 25 | 691 | 0.1− | 0.4− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 08 23 | 699 | 1.4− | 0.7− | 2006 02 25 | 691 | 0.2− | 0.4− |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2004 09 04 | 644 | 0.8− | 1.2+ | 2006 02 25 | 691 | 0.5− | 0.8+ |
| 2004 08 21 | E12 | 0.0 | 0.4+ | 2004 09 04 | 644 | 0.2− | 0.7+ | 2006 03 04 | 691 | 0.2− | 0.6+ |
| 2004 08 21 | E12 | 0.1− | 0.2+ | 2004 09 04 | 644 | 0.3+ | 0.2+ | 2006 03 04 | 691 | 0.8+ | 0.6− |
| 2004 08 21 | E12 | 0.2− | 0.4− | 2004 09 21 | 704 | 0.8+ | 0.7+ | 2006 03 04 | 691 | 0.1+ | 0.2+ |
| 2004 08 21 | E12 | 0.8+ | 0.1+ | 2004 09 21 | 704 | 0.6+ | 1.7+ | | | | |
| 2004 08 23 | 699 | 1.0+ | 0.9− | 2004 09 21 | 704 | 1.5− | 0.2− | | | | |

### 2004 $QY_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.04077 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36066965 | $\omega$ | 319.66513 | | +0.64431395 | +0.76269825 | |
| $a$ | 1.9546229 | $\Omega$ | 349.99859 | | −0.59167696 | +0.45064080 | |
| $e$ | 0.0867313 | $i$ | 18.85728 | | −0.48453887 | +0.46391189 | |
| $P$ | 2.73 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 21 | E12 | 0.3+ | 0.4− | 2004 09 07 | 704 | 0.9+ | 0.3− | 2006 02 25 | 691 | 0.1− | 0.3+ |
| 2004 08 21 | E12 | 0.2+ | 0.1− | 2004 09 08 | 704 | 0.4+ | 0.5− | 2006 02 25 | 691 | 0.1+ | 0.1+ |
| 2004 08 21 | E12 | 0.6− | 0.2− | 2004 09 08 | 704 | 0.0 | 0.6+ | 2006 03 25 | G96 | 0.7+ | 0.2− |
| 2004 08 21 | E12 | 0.1+ | 0.0 | 2004 09 08 | 704 | 0.1− | 0.1+ | 2006 03 25 | G96 | 0.1− | 0.0 |
| 2004 09 07 | 704 | 0.4− | 0.6− | 2004 09 08 | 704 | 1.0− | 0.4+ | 2006 03 25 | G96 | 0.6+ | 0.1+ |
| 2004 09 07 | 704 | 0.3− | 1.9+ | 2004 10 11 | 695 | 0.4− | 0.4− | 2006 03 25 | G96 | 0.7+ | 0.1+ |
| 2004 09 07 | 704 | 0.1− | 0.7+ | 2004 10 11 | 695 | 0.8− | 0.6+ | | | | |
| 2004 09 07 | 704 | 0.1+ | 0.2+ | 2006 02 25 | 691 | 0.0 | 0.1+ | | | | |

### 2004 QZ$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.52831 | | (2000.0) | | | |
| $n$ | 0.17847346 | $\omega$ | 152.11115 | | −0.08297296 | −0.98986491 |
| $a$ | 3.1243064 | $\Omega$ | 302.43573 | | +0.88703042 | −0.02064910 |
| $e$ | 0.0636029 | $i$ | 7.84856 | | +0.45419437 | −0.14050294 |
| $P$ | 5.52 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.0 | 0.2− | 2004 08 22 | 691 | 0.1− | 0.1+ | 2004 09 23 | 291 | 0.1+ | 0.2− |
| 2001 01 21 | 704 | 0.3+ | 0.2+ | 2004 08 22 | 691 | 0.1+ | 0.3+ | 2004 09 23 | 291 | 0.2− | 0.2− |
| 2001 01 21 | 704 | 0.6+ | 0.2− | 2004 09 12 | 691 | 0.3− | 0.1+ | 2005 12 02 | 691 | 0.0 | 0.1− |
| 2001 01 21 | 704 | 0.3− | 0.6+ | 2004 09 12 | 691 | 0.3− | 0.1+ | 2005 12 02 | 691 | 0.2− | 0.1− |
| 2001 01 21 | 704 | 1.0+ | 0.4+ | 2004 09 12 | 691 | 0.0 | 0.3+ | 2005 12 02 | 691 | 0.0 | 0.0 |
| 2001 01 21 | 704 | 0.2− | 0.2+ | 2004 09 23 | 691 | 0.4+ | 0.1+ | 2006 02 02 | G96 | 0.3+ | 0.5− |
| 2001 01 21 | 704 | 0.4− | 0.2− | 2004 09 23 | 691 | 0.1− | 0.2− | 2006 02 02 | G96 | 0.3+ | 0.5− |
| 2001 01 21 | 704 | 0.3+ | 2.5+ | 2004 09 23 | 691 | 0.2+ | 0.2− | 2006 02 02 | G96 | 0.3+ | 0.8− |
| 2004 08 22 | 691 | 0.0 | 0.2+ | 2004 09 23 | 291 | 0.0 | 0.1+ | 2006 02 02 | G96 | 0.1− | 0.7− |

### 2004 QA$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.30748 | | (2000.0) | | | |
| $n$ | 0.19630661 | $\omega$ | 310.10577 | | +0.24550781 | −0.93536535 |
| $a$ | 2.9321044 | $\Omega$ | 123.86680 | | +0.95626867 | +0.19060948 |
| $e$ | 0.0690588 | $i$ | 17.85533 | | +0.15898472 | +0.29792563 |
| $P$ | 5.02 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.3− | 0.0 | 2004 08 23 | 699 | 0.4− | 0.2− | 2004 09 15 | E12 | 0.0 | 0.6+ |
| 2001 01 04 | 704 | 0.4+ | 0.3+ | 2004 08 23 | 699 | 0.2− | 1.3+ | 2004 09 17 | 699 | 1.0+ | 1.1+ |
| 2001 01 04 | 704 | 0.8+ | 0.3− | 2004 09 07 | 704 | 0.4− | 0.3+ | 2004 09 17 | 699 | 1.0+ | 0.7− |
| 2001 01 04 | 704 | 0.5− | 0.4− | 2004 09 07 | 704 | 0.3+ | 0.2+ | 2004 09 17 | 699 | 1.5− | 0.0 |
| 2001 01 04 | 704 | 0.1+ | 0.8− | 2004 09 07 | 704 | 0.4+ | 0.8− | 2004 09 17 | 699 | 0.9− | 0.5+ |
| 2002 04 10 | 644 | 0.2+ | 0.8+ | 2004 09 07 | 704 | 0.9+ | 0.1+ | 2006 01 02 | 704 | 0.9− | 1.3+ |
| 2002 04 10 | 644 | 0.2+ | 0.9+ | 2004 09 07 | 704 | 0.7− | 0.4− | 2006 01 02 | 704 | 0.3− | 1.1+ |
| 2002 04 10 | 644 | 0.2+ | 1.0+ | 2004 09 15 | E12 | 0.3− | 0.3+ | 2006 01 02 | 704 | 0.7+ | 0.2− |
| 2004 08 23 | 699 | 0.8− | 1.2+ | 2004 09 15 | E12 | 0.8+ | 0.0 | | | | |
| 2004 08 23 | 699 | 0.7+ | 0.7− | 2004 09 15 | E12 | 0.5− | 0.0 | | | | |

### 2004 QB$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 93.98214 | | (2000.0) | | | |
| $n$ | 0.22201646 | $\omega$ | 175.40572 | | +0.41923460 | −0.90514505 |
| $a$ | 2.7011328 | $\Omega$ | 249.79464 | | +0.83055366 | +0.41368457 |
| $e$ | 0.0446563 | $i$ | 4.30157 | | +0.36663738 | +0.09786477 |
| $P$ | 4.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 06 | 644 | 0.5+ | 1.1+ | 2004 09 12 | 691 | 0.0 | 0.3+ | 2005 10 30 | G96 | 0.7− | 0.4+ |
| 2002 03 06 | 644 | 0.0 | 1.4+ | 2004 09 15 | 683 | (3.0− | 0.6−) | 2005 10 30 | G96 | 0.5− | 0.2− |
| 2002 03 06 | 644 | 0.7+ | 0.6+ | 2004 09 15 | 683 | (2.6− | 0.7+) | 2005 10 30 | G96 | 0.9− | 0.2+ |
| 2004 08 23 | 691 | 0.2− | 0.1− | 2004 09 15 | 683 | 0.4+ | 1.8+ | 2005 12 01 | G96 | 0.5+ | 0.1− |
| 2004 08 23 | 691 | 0.1+ | 0.0 | 2004 09 23 | 691 | 0.0 | 0.1− | 2005 12 01 | G96 | 0.2+ | 0.2− |
| 2004 08 23 | 691 | 0.2− | 0.3− | 2004 09 23 | 691 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.5+ | 1.1− |
| 2004 09 12 | 691 | 0.1− | 0.1+ | 2004 09 23 | 691 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.9+ | 0.1− |
| 2004 09 12 | 691 | 0.1+ | 0.2+ | 2005 10 30 | G96 | 0.8− | 0.4+ | | | | |

### 2004 QC$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 122.40880 | | (2000.0) | | | |
| $n$ | 0.17630188 | $\omega$ | 167.40785 | | +0.94195305 | +0.33090344 |
| $a$ | 3.1499096 | $\Omega$ | 172.49612 | | −0.33321931 | +0.94210208 |
| $e$ | 0.3397494 | $i$ | 25.78615 | | −0.04110160 | −0.05428253 |
| $P$ | 5.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.1+ | 0.0 | 2004 09 08 | 704 | 0.2− | 0.9+ | 2004 09 14 | 704 | 1.0+ | 0.5− |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2004 09 08 | 704 | (0.2+ | 2.5+) | 2004 10 07 | 704 | 0.2+ | 0.0 |
| 2003 04 27 | 645 | 0.0 | 0.1+ | 2004 09 08 | 704 | (0.0 | 2.4+) | 2004 10 07 | 704 | 0.8+ | 0.8+ |
| 2003 04 27 | 645 | 0.1− | 0.0 | 2004 09 08 | 704 | (0.3+ | 2.5+) | 2004 10 07 | 704 | 1.0− | 0.5+ |
| 2004 08 24 | 704 | 0.1− | 0.1+ | 2004 09 08 | 704 | (0.6+ | 2.6+) | 2004 10 07 | 704 | 1.2+ | 0.1+ |
| 2004 08 24 | 704 | 0.2− | 0.2− | 2004 09 14 | 704 | 0.2− | 1.0− | 2004 10 10 | 704 | (0.1+ | 2.6−) |
| 2004 08 24 | 704 | 0.1+ | 0.4− | 2004 09 14 | 704 | 0.0 | 0.8− | 2004 10 10 | 704 | 0.0 | 0.2− |
| 2004 08 24 | 704 | 0.0 | 0.7+ | 2004 09 14 | 704 | 0.1+ | 0.6− | 2004 10 10 | 704 | 0.8− | 0.8+ |
| 2004 08 24 | 704 | 0.7− | 1.0+ | 2004 09 14 | 704 | 0.3− | 0.9− | | | | |

### 2004 QD$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.80616 | | (2000.0) | | | |
| $n$ | 0.21108465 | $\omega$ | 271.29912 | | −0.56048047 | −0.82740690 |
| $a$ | 2.7936047 | $\Omega$ | 212.87029 | | +0.78346150 | −0.51584850 |
| $e$ | 0.0106859 | $i$ | 3.74917 | | +0.26842079 | −0.22203187 |
| $P$ | 4.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.4+ | 0.2+ | 2003 06 04 | 291 | 0.3+ | 0.2+ | 2004 09 07 | 621 | 0.0 | 0.5− |
| 1995 10 02 | 691 | 0.4+ | 0.2+ | 2003 06 04 | 291 | 0.0 | 0.0 | 2004 09 17 | 691 | 0.1+ | 0.4+ |
| 1995 10 02 | 691 | 0.1− | 0.3+ | 2003 06 04 | 291 | 0.2− | 0.4+ | 2004 09 17 | 691 | 0.0 | 0.1+ |
| 1995 10 15 | 691 | 0.1− | 0.2+ | 2004 08 25 | 691 | 0.3− | 0.2− | 2004 09 17 | 691 | 0.2+ | 0.8+ |
| 1995 10 15 | 691 | 0.2− | 0.5− | 2004 08 25 | 691 | 0.4− | 0.2+ | 2004 10 08 | 691 | 0.1− | 0.4+ |
| 1995 10 15 | 691 | 0.5− | 0.2− | 2004 08 25 | 691 | 0.3− | 0.4+ | 2004 10 08 | 691 | 0.1+ | 0.1+ |
| 2002 03 05 | 645 | 0.1+ | 0.2+ | 2004 09 07 | 621 | 0.8− | 0.1+ | 2004 10 08 | 691 | 0.0 | 0.1− |
| 2002 03 05 | 645 | 0.1+ | 0.2+ | 2004 09 07 | 621 | 0.5+ | 0.0 | | | | |

### 2004 QF$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 174.75771 | | (2000.0) | | | |
| $n$ | 0.25330752 | $\omega$ | 265.69970 | | +0.90182384 | −0.42087017 |
| $a$ | 2.4738346 | $\Omega$ | 119.16377 | | +0.42741688 | +0.83557497 |
| $e$ | 0.2382663 | $i$ | 6.43631 | | +0.06347102 | +0.35310449 |
| $P$ | 3.89 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.5− | 0.1− | 2004 09 14 | 699 | 0.3+ | 0.1+ | 2004 10 14 | 699 | 0.4− | 0.6− |
| 2000 08 29 | 704 | 1.2− | 0.6− | 2004 09 14 | 699 | 0.4− | 0.3− | 2004 10 14 | 699 | 0.9+ | 0.7− |
| 2000 08 29 | 704 | 1.9+ | 0.2+ | 2004 09 14 | 699 | 0.5− | 1.0+ | 2004 10 14 | 699 | 1.1+ | 0.2− |
| 2004 08 19 | E12 | 0.1+ | 0.2+ | 2004 09 14 | 699 | 0.4− | 0.4− | 2004 10 14 | 699 | 1.7− | 0.2+ |
| 2004 08 19 | E12 | 0.5− | 0.2+ | 2004 10 06 | A50 | 0.7+ | 0.5+ | 2004 11 11 | 699 | 1.5− | 0.1+ |
| 2004 08 19 | E12 | 0.2+ | 0.0 | 2004 10 06 | A50 | 2.0+ | 1.1+ | 2004 11 11 | 699 | 0.2+ | 0.7+ |
| 2004 08 19 | E12 | 0.2+ | 0.3+ | 2004 10 06 | A50 | 0.3+ | 1.4+ | 2004 11 11 | 699 | 0.8+ | 0.7− |
| 2004 09 08 | 704 | 0.5− | 0.0 | 2004 10 07 | 704 | 0.2− | 0.1− | 2004 11 11 | 699 | 0.7− | 0.4+ |
| 2004 09 08 | 704 | 0.1− | 0.3− | 2004 10 07 | 704 | 0.1+ | 0.3− | 2005 10 31 | 568 | 0.1− | 0.2− |
| 2004 09 08 | 704 | 0.9− | 0.2+ | 2004 10 07 | 704 | 0.2+ | 1.1− | 2005 10 31 | 568 | 0.1− | 0.2− |
| 2004 09 08 | 704 | 0.6+ | 0.1+ | 2004 10 07 | 704 | 0.2− | 0.5− | | | | |
| 2004 09 08 | 704 | 0.3+ | 0.4− | 2004 10 07 | 704 | 0.5− | 0.6− | | | | |

**2004 QJ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.95450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17685551 | $\omega$ | 240.83945 | | −0.33087727 | +0.94246700 | |
| $a$ | 3.1433325 | $\Omega$ | 10.18582 | | −0.74467415 | −0.22971476 | |
| $e$ | 0.1740901 | $i$ | 15.65158 | | −0.57963837 | −0.24287258 | |
| $P$ | 5.57 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 19 | 704 | 0.9+ | 0.0 | 2004 08 21 | E12 | 0.8− | 0.2− | 2004 09 16 | E12 | 0.6+ | 0.5+ |
| 2002 01 19 | 704 | 0.8+ | 0.9+ | 2004 08 23 | 699 | (0.2− | 6.0−) | 2004 09 16 | E12 | 0.9+ | 1.7+ |
| 2002 01 19 | 704 | 1.0+ | 1.2− | 2004 08 23 | 699 | 1.4− | 1.3− | 2004 09 16 | E12 | 0.2− | 0.5+ |
| 2002 01 19 | 704 | 0.1− | 0.9− | 2004 08 23 | 699 | 0.8− | 0.1− | 2004 09 16 | E12 | 0.5+ | 0.3− |
| 2002 02 12 | 644 | 0.7− | 0.4+ | 2004 08 23 | 699 | 1.5− | 0.6− | 2004 09 21 | 704 | 0.6− | 0.8− |
| 2002 02 12 | 644 | 0.9− | 0.4+ | 2004 09 07 | 704 | 0.6+ | 0.3− | 2004 09 21 | 704 | (0.4− | 2.7+) |
| 2002 02 12 | 644 | 0.9− | 0.2+ | 2004 09 07 | 704 | 0.8+ | 0.2− | 2004 09 21 | 704 | 0.0 | 0.5+ |
| 2004 08 21 | E12 | 0.0 | 0.4− | 2004 09 07 | 704 | 0.5+ | 0.5+ | 2004 09 21 | 704 | 0.0 | 1.0+ |
| 2004 08 21 | E12 | 0.2− | 0.0 | 2004 09 07 | 704 | 1.1+ | 0.4− | | | | |
| 2004 08 21 | E12 | 0.5− | 0.1− | 2004 09 07 | 704 | 1.0+ | 0.2− | | | | |

**2004 QL$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.94433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17341164 | $\omega$ | 263.34057 | | +0.97733287 | −0.14993497 | |
| $a$ | 3.1848126 | $\Omega$ | 105.20433 | | +0.19463430 | +0.91410583 | |
| $e$ | 0.1465352 | $i$ | 8.91025 | | −0.08329432 | +0.37673603 | |
| $P$ | 5.68 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 23 | 699 | 0.2− | 0.2− | 2004 09 21 | 704 | 0.4− | 0.2+ | 2005 12 04 | 691 | 0.2− | 0.0 |
| 2004 08 23 | 699 | 0.5+ | 1.5+ | 2004 09 21 | 704 | 0.2− | 0.4− | 2005 12 04 | 691 | 0.1− | 0.1− |
| 2004 08 23 | 699 | 0.6+ | 0.2− | 2004 09 21 | 704 | 0.7− | 0.2− | 2005 12 04 | 691 | 0.1− | 0.0 |
| 2004 08 23 | 699 | 0.2− | 1.4+ | 2004 09 21 | 704 | 0.3− | 0.5− | 2005 12 28 | 691 | 0.4− | 0.1+ |
| 2004 09 07 | 704 | 0.4− | 0.5+ | 2004 10 09 | 644 | 0.2+ | 0.3− | 2005 12 28 | 691 | 0.2− | 0.3+ |
| 2004 09 07 | 704 | 0.5− | 0.1+ | 2004 10 09 | 644 | 0.4+ | 0.3− | 2005 12 28 | 691 | 1.1+ | 0.5− |
| 2004 09 07 | 704 | 0.0 | 0.4+ | 2004 10 09 | 644 | 0.5+ | 0.6− | 2006 01 25 | 691 | 0.3− | 0.1+ |
| 2004 09 07 | 704 | 0.1− | 0.3− | 2004 10 13 | 704 | 0.5+ | 0.0 | 2006 01 25 | 691 | 0.1− | 0.3+ |
| 2004 09 07 | 704 | 0.1− | 0.1− | 2004 10 13 | 704 | 0.0 | 0.5− | 2006 01 25 | 691 | 0.1+ | 0.2− |
| 2004 09 21 | 704 | 0.3− | 0.3− | 2004 10 13 | 704 | 0.5+ | 0.1− | | | | |

**2004 RK$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.88747 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21422565 | $\omega$ | 337.00172 | | +0.94044437 | +0.33951650 | |
| $a$ | 2.7662307 | $\Omega$ | 3.29691 | | −0.24683224 | +0.71659899 | |
| $e$ | 0.2268890 | $i$ | 17.31385 | | −0.23374823 | +0.60927369 | |
| $P$ | 4.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 644 | 0.9+ | 0.8+ | 2004 09 17 | 704 | 0.1+ | 0.2+ | 2004 10 10 | 644 | 0.1+ | 0.2− |
| 2003 03 31 | 644 | 0.2+ | 0.9+ | 2004 09 17 | 704 | 0.0 | 0.0 | 2004 10 12 | 695 | 0.1+ | 0.6− |
| 2003 03 31 | 644 | 0.5+ | 0.7+ | 2004 09 17 | 704 | 0.1+ | 0.0 | 2004 10 12 | 695 | 0.3− | 0.4− |
| 2004 09 04 | 644 | 0.4− | 0.1− | 2004 09 17 | 704 | 0.2+ | 0.1+ | 2004 10 18 | 704 | 0.1− | 0.0 |
| 2004 09 04 | 644 | 0.5− | 0.0 | 2004 09 17 | 704 | 0.4+ | 0.1+ | 2004 10 18 | 704 | 0.1− | 0.1− |
| 2004 09 04 | 644 | 0.4− | 0.2+ | 2004 09 18 | 704 | 0.2+ | 0.2− | 2004 10 18 | 704 | 0.2+ | 0.1+ |
| 2004 09 06 | 644 | 0.3+ | 0.0 | 2004 09 18 | 704 | 0.3+ | 0.2+ | 2004 10 18 | 704 | 0.0 | 0.0 |
| 2004 09 06 | 644 | 0.3+ | 0.0 | 2004 09 18 | 704 | 0.1+ | 0.1+ | 2004 10 18 | 704 | 0.6− | 0.4− |
| 2004 09 06 | 644 | 0.2+ | 0.1+ | 2004 09 18 | 704 | 0.1+ | 0.2− | 2004 10 31 | 699 | 0.5+ | 0.3− |
| 2004 09 07 | 704 | 0.2− | 0.1+ | 2004 09 18 | 704 | 0.1+ | 0.2− | 2004 10 31 | 699 | 0.8− | 0.6+ |
| 2004 09 07 | 704 | 0.7− | 0.1+ | 2004 09 18 | 704 | 0.3+ | 0.2− | 2004 10 31 | 699 | 0.5+ | 0.4+ |
| 2004 09 07 | 704 | 0.3− | 0.3+ | 2004 09 18 | 704 | 0.1+ | 0.1+ | 2004 10 31 | 699 | 1.1+ | 0.3− |
| 2004 09 07 | 704 | 0.3− | 0.1+ | 2004 09 18 | 704 | 0.3+ | 0.2− | 2004 11 04 | 699 | 0.4+ | 0.3+ |
| 2004 09 07 | 704 | 0.9− | 0.2+ | 2004 09 18 | 704 | 0.1+ | 0.0 | 2004 11 04 | 699 | 0.2+ | 0.4− |
| 2004 09 09 | 704 | 0.6− | 0.2+ | 2004 09 18 | 704 | 0.3+ | 0.1− | 2004 11 04 | 699 | 0.2+ | 0.6− |
| 2004 09 09 | 704 | 0.3− | 0.1+ | 2004 09 21 | 704 | 0.0 | 0.0 | 2004 11 04 | 699 | 0.8+ | 0.1− |
| 2004 09 09 | 704 | 0.3− | 0.1+ | 2004 09 21 | 704 | 0.1+ | 0.1+ | 2004 11 07 | 704 | 0.8+ | 1.4+ |
| 2004 09 09 | 704 | 0.4− | 0.3+ | 2004 09 21 | 704 | 0.2− | 0.6− | 2004 11 07 | 704 | 0.5+ | 0.2+ |
| 2004 09 09 | 704 | 0.5− | 0.3+ | 2004 09 21 | 704 | 0.8+ | 0.2− | 2004 11 07 | 704 | 0.8− | 0.0 |
| 2004 09 12 | 704 | 0.9+ | 0.3− | 2004 09 21 | 704 | 0.2+ | 0.1− | 2004 11 07 | 704 | 0.3+ | 0.2+ |
| 2004 09 12 | 704 | 1.5− | 1.1− | 2004 10 04 | 644 | 0.1− | 0.1+ | 2004 11 12 | 704 | 0.1− | 0.2− |
| 2004 09 12 | 704 | 0.3+ | 0.5+ | 2004 10 04 | 644 | 0.1+ | 0.1+ | 2004 11 12 | 704 | 0.2+ | 0.8+ |
| 2004 09 12 | 704 | 0.0 | 0.3+ | 2004 10 04 | 644 | 0.1+ | 0.1− | 2004 11 12 | 704 | 0.2+ | 0.6+ |
| 2004 09 12 | 704 | 0.1+ | 0.6+ | 2004 10 07 | 704 | 0.2+ | 0.1− | 2004 12 07 | 704 | 0.0 | 0.1+ |
| 2004 09 13 | 699 | 0.2+ | 0.2− | 2004 10 07 | 704 | 0.2+ | 0.0 | 2004 12 07 | 704 | 0.2− | 0.3− |
| 2004 09 13 | 691 | 0.1+ | 0.0 | 2004 10 07 | 704 | 0.3− | 0.5+ | 2004 12 07 | 704 | 1.0− | 0.1+ |
| 2004 09 13 | 699 | 0.1− | 0.5+ | 2004 10 07 | 704 | 0.7− | 0.4+ | 2004 12 07 | 704 | 0.5− | 0.2− |
| 2004 09 13 | 699 | 0.1− | 0.3− | 2004 10 07 | 704 | 0.1− | 0.3+ | 2005 12 30 | 703 | 0.9+ | 1.0+ |
| 2004 09 13 | 691 | 0.1+ | 0.0 | 2004 10 09 | 704 | 0.0 | 0.0 | 2005 12 30 | 703 | 0.7+ | 0.6+ |
| 2004 09 13 | 699 | 0.3− | 0.2− | 2004 10 09 | 704 | 0.2− | 0.2+ | 2005 12 30 | 703 | 1.0− | 0.8− |
| 2004 09 13 | 691 | 0.1+ | 0.0 | 2004 10 09 | 704 | 0.1− | 0.3+ | 2005 12 30 | 703 | 0.4− | 0.6− |
| 2004 09 14 | 699 | 0.4− | 0.0 | 2004 10 09 | 704 | 0.1− | 0.1+ | 2005 12 30 | 703 | 0.3+ | 0.3+ |
| 2004 09 14 | 699 | 0.3− | 0.3− | 2004 10 09 | 704 | 0.2− | 0.0 | 2005 12 30 | 703 | 0.5+ | 1.3+ |
| 2004 09 14 | 699 | 0.3+ | 0.1− | 2004 10 10 | 644 | 0.1− | 0.1− | 2005 12 30 | 703 | 0.8− | 0.4− |
| 2004 09 14 | 699 | 0.1+ | 0.1+ | 2004 10 10 | 644 | 0.0 | 0.2− | 2005 12 30 | 703 | 0.6+ | 0.5+ |

**2004 RJ$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.29705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27989268 | $\omega$ | 14.17095 | | +0.99179074 | +0.12192908 | |
| $a$ | 2.3145951 | $\Omega$ | 338.71084 | | −0.12520693 | +0.86480443 | |
| $e$ | 0.1435088 | $i$ | 6.09150 | | −0.02596828 | +0.48707966 | |
| $P$ | 3.52 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 06 | A44 | 0.1+ | 0.3− | 2004 11 12 | 703 | 0.4+ | 0.8+ | 2006 03 03 | 691 | 0.2+ | 0.1+ |
| 2004 09 07 | A44 | 0.5− | 0.1+ | 2004 11 12 | 703 | 0.3+ | 0.0 | 2006 03 03 | 691 | 0.1− | 0.2+ |
| 2004 09 07 | A44 | 0.2− | 0.5+ | 2004 11 12 | 703 | 1.1− | 0.3− | 2006 03 03 | 691 | 0.0 | 0.0 |
| 2004 09 07 | A44 | 0.2+ | 0.1+ | 2004 11 12 | 703 | (3.7− | 1.1−) | 2006 03 25 | G96 | 0.2+ | 0.4− |
| 2004 09 07 | A44 | 0.2+ | 0.1− | 2006 02 06 | G96 | 0.0 | 0.4− | 2006 03 25 | G96 | 0.3− | 0.1− |
| 2004 09 08 | A44 | 0.1− | 0.0 | 2006 02 06 | G96 | 0.3+ | 0.2− | 2006 03 25 | G96 | 0.3− | 0.2− |
| 2004 09 09 | A44 | 0.1+ | 0.2− | 2006 02 06 | G96 | 0.4− | 0.2− | 2006 03 25 | G96 | 0.4+ | 0.3− |
| 2004 09 09 | A44 | 0.1− | 0.0 | 2006 02 06 | G96 | 0.5− | 0.1+ | 2006 04 02 | G96 | 0.2+ | 0.2+ |
| 2004 09 10 | A44 | 0.4+ | 0.2− | 2006 02 21 | G96 | 0.0 | 0.0 | 2006 04 02 | G96 | 0.4− | 0.6− |
| 2004 09 17 | A44 | 0.0 | 0.3− | 2006 02 21 | G96 | 0.2− | 0.2− | 2006 04 02 | G96 | 0.3+ | 0.4+ |
| 2004 09 17 | A44 | 0.1+ | 0.4− | 2006 02 21 | G96 | 0.1+ | 0.0 | 2006 04 02 | G96 | 0.5− | 0.5− |
| 2004 09 17 | A44 | 0.4+ | 0.2− | 2006 02 21 | G96 | 0.1+ | 0.5+ | | | | |

**2004 RM$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.82322 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26961721 | $\omega$ | 129.87950 | | +0.79009526 | +0.61297374 | |
| $a$ | 2.3730359 | $\Omega$ | 192.31704 | | −0.56737432 | +0.72909626 | |
| $e$ | 0.1947171 | $i$ | 0.95642 | | −0.23202556 | +0.30443693 | |
| $P$ | 3.66 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 691 | 0.1+ | 0.1+ | 2004 09 07 | 704 | 0.3+ | 0.4− | 2004 09 13 | 699 | 1.2+ | 0.0 |
| 2001 12 19 | 691 | 0.1− | 0.1− | 2004 09 07 | 704 | 0.4+ | 0.5− | 2004 09 13 | 699 | 0.3− | 0.2+ |
| 2001 12 19 | 691 | 0.0 | 0.1− | 2004 09 08 | 704 | 0.6− | 0.7+ | 2004 09 13 | 699 | 0.1+ | 0.3+ |
| 2004 08 10 | 704 | 0.5+ | 0.7+ | 2004 09 08 | 704 | 0.6− | 0.5+ | 2004 09 13 | 699 | 0.3+ | 0.0 |
| 2004 08 10 | 704 | 0.1− | 1.0+ | 2004 09 08 | 704 | 0.2− | 0.0 | 2004 09 18 | E12 | 0.2− | 0.2− |
| 2004 08 10 | 704 | 0.4− | 0.2+ | 2004 09 08 | 704 | 0.0 | 0.0 | 2004 09 18 | E12 | 0.3+ | 0.5+ |
| 2004 08 10 | 704 | 0.2− | 0.1+ | 2004 09 09 | 704 | 0.7− | 0.4+ | 2004 09 18 | E12 | 0.0 | 0.0 |
| 2004 08 10 | 704 | 0.5− | 0.3− | 2004 09 09 | 704 | 0.4+ | 0.4− | 2004 09 18 | E12 | 0.6+ | 0.3+ |
| 2004 08 23 | 691 | 0.0 | 0.0 | 2004 09 09 | 704 | 0.2+ | 0.4− | 2004 10 10 | 695 | 0.1− | 0.1+ |
| 2004 08 23 | 691 | 0.0 | 0.1+ | 2004 09 09 | 704 | 0.2+ | 0.0 | 2004 10 10 | 695 | 0.1− | 0.0 |
| 2004 08 23 | 691 | 0.1+ | 0.0 | 2004 09 09 | 704 | 1.0− | 0.6+ | 2006 02 06 | G96 | 0.8+ | 0.9+ |
| 2004 09 07 | 704 | 0.3+ | 0.7− | 2004 09 13 | 691 | 0.2− | 0.1− | 2006 02 06 | G96 | 0.1+ | 0.0 |
| 2004 09 07 | 704 | 0.5+ | 0.6− | 2004 09 13 | 691 | 0.2− | 0.2− | 2006 02 06 | G96 | 0.2− | 0.6+ |
| 2004 09 07 | 704 | 0.2− | 0.2+ | 2004 09 13 | 691 | 0.0 | 0.3− | 2006 02 06 | G96 | 0.5− | 0.2+ |

**2004 RB$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.82474 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20956943 | $\omega$ | 133.53623 | | +0.13139645 | +0.98763942 | |
| $a$ | 2.8070539 | $\Omega$ | 143.75401 | | −0.94611250 | +0.15067525 | |
| $e$ | 0.1884317 | $i$ | 8.31063 | | −0.29598328 | −0.04318970 | |
| $P$ | 4.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.2− | 0.7− | 2003 04 09 | 644 | 0.5+ | 0.8+ | 2004 09 09 | 704 | 0.1+ | 0.1− |
| 1999 07 13 | 704 | 0.2+ | 0.1+ | 2003 04 21 | 691 | 0.1− | 0.0 | 2004 09 09 | 704 | 0.2+ | 0.8+ |
| 1999 07 13 | 704 | 0.5− | 1.7+ | 2003 04 21 | 691 | 0.3− | 0.1+ | 2004 09 09 | 704 | 0.2+ | 0.5− |
| 1999 07 13 | 704 | 0.2+ | 0.6− | 2003 04 21 | 691 | 0.1+ | 0.0 | 2004 09 15 | 699 | 0.1+ | 0.3− |
| 1999 07 13 | 704 | 0.2+ | 0.4− | 2004 09 07 | 704 | 0.1− | 0.4+ | 2004 09 15 | 699 | 0.4− | 0.6− |
| 2003 04 01 | 704 | 0.5− | 1.8− | 2004 09 07 | 704 | 0.2+ | 0.1− | 2004 09 15 | 699 | 1.7+ | 0.1− |
| 2003 04 01 | 704 | 0.3− | 0.4− | 2004 09 07 | 704 | 0.0 | 0.9+ | 2004 09 15 | 699 | 0.6− | 0.3− |
| 2003 04 01 | 704 | 0.1− | 0.1− | 2004 09 07 | 704 | 0.4+ | 0.6− | 2004 09 21 | 704 | 0.4+ | 1.3+ |
| 2003 04 01 | 704 | 0.5+ | 1.2− | 2004 09 07 | 704 | 0.2− | 0.5− | 2004 09 21 | 704 | 0.3+ | 0.3+ |
| 2003 04 09 | 644 | 0.5+ | 0.9+ | 2004 09 09 | 704 | 0.4− | 1.1− | 2004 09 21 | 704 | 0.9− | 0.2+ |
| 2003 04 09 | 644 | 0.5+ | 0.9+ | 2004 09 09 | 704 | 0.8− | 0.0 | 2004 09 21 | 704 | 0.0 | 0.1+ |

**2004 RU$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.19119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17323302 | $\omega$ | 8.40813 | | −0.97882662 | −0.17494028 | |
| $a$ | 3.1870015 | $\Omega$ | 160.51441 | | +0.16434071 | −0.98116946 | |
| $e$ | 0.0540414 | $i$ | 18.57820 | | +0.12202699 | −0.08186807 | |
| $P$ | 5.69 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 25 | 691 | 0.0 | 0.3− | 2002 04 16 | 704 | 0.9− | 0.4+ | 2004 09 09 | 704 | 0.6− | 0.7+ |
| 1996 01 25 | 691 | 0.2+ | 0.3− | 2002 04 16 | 704 | 0.2− | 0.2+ | 2004 09 09 | 704 | 0.1− | 0.4+ |
| 1996 01 25 | 691 | 0.3− | 0.3− | 2002 04 16 | 704 | 0.7+ | 1.3+ | 2004 09 09 | 704 | 0.7+ | 0.4+ |
| 2002 03 20 | 704 | 0.2+ | 0.5+ | 2002 05 06 | 644 | 0.1− | 0.2− | 2004 09 11 | 691 | 0.1− | 0.3− |
| 2002 03 20 | 704 | 0.3+ | 0.3− | 2002 05 06 | 644 | 0.2+ | 0.4− | 2004 09 11 | 691 | 0.1− | 0.4− |
| 2002 03 20 | 704 | 0.0 | 0.4+ | 2002 05 06 | 644 | 0.8+ | 0.4− | 2004 09 11 | 691 | 0.2− | 0.2− |
| 2002 03 20 | 704 | 0.3+ | 0.5+ | 2004 09 08 | 704 | 0.1− | 0.5+ | 2005 10 27 | 703 | 0.7+ | 1.0+ |
| 2002 04 12 | 644 | 0.0 | 0.6+ | 2004 09 08 | 704 | 0.4+ | 0.0 | 2005 10 27 | 703 | 0.5− | 1.7+ |
| 2002 04 12 | 644 | 0.2− | 0.4+ | 2004 09 08 | 704 | 0.5− | 0.5+ | 2005 10 27 | 703 | 0.7+ | 0.4+ |
| 2002 04 12 | 644 | 0.3+ | 0.4+ | 2004 09 08 | 704 | 0.2− | 0.9+ | 2005 10 27 | 703 | 1.0− | 0.2− |
| 2002 04 16 | 704 | 0.9− | 1.0+ | 2004 09 09 | 704 | 1.5+ | 0.1− | | | | |

**2004 RN$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.38372 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22117057 | $\omega$ | 347.09771 | | +0.91185700 | +0.40979318 | |
| $a$ | 2.7080156 | $\Omega$ | 348.61910 | | −0.36489462 | +0.78210130 | |
| $e$ | 0.2887845 | $i$ | 7.04864 | | −0.18806575 | +0.46945405 | |
| $P$ | 4.46 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 644 | 0.8+ | 1.0+ | 2004 09 11 | 691 | 0.2− | 0.1− | 2004 10 05 | 699 | 0.5+ | 0.0 |
| 2003 04 09 | 644 | 0.5+ | 0.7+ | 2004 09 11 | 691 | 0.2− | 0.0 | 2004 10 05 | 699 | 0.8+ | 0.1− |
| 2003 04 09 | 644 | 0.0 | 1.0+ | 2004 09 11 | 691 | 0.4− | 0.1− | 2004 10 05 | 699 | 0.7+ | 0.1+ |
| 2004 08 12 | 704 | 0.1− | 0.4− | 2004 09 13 | 699 | 0.4− | 0.1− | 2004 10 05 | 699 | 0.3+ | 0.5− |
| 2004 08 12 | 704 | 0.6− | 0.0 | 2004 09 13 | 699 | 0.1− | 0.0 | 2004 10 07 | 704 | 0.3+ | 0.8+ |
| 2004 08 12 | 704 | 1.2− | 0.2+ | 2004 09 13 | 699 | 0.2+ | 0.2+ | 2004 10 07 | 704 | 0.3+ | 0.7+ |
| 2004 08 12 | 704 | 0.1+ | 0.8+ | 2004 09 13 | 699 | 0.3− | 0.0 | 2004 10 07 | 704 | 0.1+ | 0.2− |
| 2004 08 12 | 704 | 1.2− | 0.4+ | 2004 09 14 | 699 | 0.3− | 0.1+ | 2004 10 09 | 704 | 0.1+ | 0.0 |
| 2004 08 12 | 704 | 0.9+ | 0.4− | 2004 09 14 | 699 | 0.0 | 0.1− | 2004 10 09 | 704 | 0.1− | 0.1+ |
| 2004 08 12 | 704 | 0.6+ | 1.2+ | 2004 09 14 | 699 | 0.2− | 0.2+ | 2004 10 09 | 704 | 0.5− | 0.1+ |
| 2004 08 12 | 704 | 0.0 | 0.4+ | 2004 09 14 | 699 | 0.0 | 0.1+ | 2004 10 09 | 704 | 0.3− | 0.4+ |
| 2004 08 12 | 704 | 0.8− | 1.5+ | 2004 09 16 | 691 | 0.2+ | 0.0 | 2004 10 09 | 704 | 0.4− | 0.5+ |
| 2004 09 08 | 704 | 0.2+ | 0.4− | 2004 09 16 | 691 | 0.6+ | 0.0 | 2004 10 10 | 691 | 0.2+ | 0.2+ |
| 2004 09 08 | 704 | 0.1+ | 0.3− | 2004 09 16 | 691 | 0.2+ | 0.0 | 2004 10 10 | 691 | 0.1+ | 0.1+ |
| 2004 09 08 | 704 | 0.6− | 0.5− | 2004 09 17 | 704 | 0.1+ | 0.4− | 2004 10 10 | 691 | 0.1+ | 0.2+ |
| 2004 09 08 | 704 | 0.2− | 0.1+ | 2004 09 17 | 704 | 0.1+ | 0.4− | 2004 10 31 | 699 | 0.1− | 0.4− |
| 2004 09 08 | 704 | 0.2− | 0.4− | 2004 09 17 | 704 | 0.2+ | 0.2− | 2004 10 31 | 699 | 0.9+ | 0.6− |
| 2004 09 09 | 704 | 0.1− | 0.4− | 2004 09 17 | 704 | 0.1+ | 0.1− | 2004 10 31 | 699 | 1.2− | 0.1− |
| 2004 09 09 | 704 | 0.3− | 0.5+ | 2004 09 17 | 704 | 0.2+ | 0.4− | 2004 10 31 | 699 | 1.6− | 0.0 |
| 2004 09 09 | 704 | 0.5− | 0.3− | 2004 09 30 | 644 | 0.2+ | 0.2+ | 2006 01 06 | 291 | 0.0 | 0.3+ |
| 2004 09 09 | 704 | 0.4− | 0.1− | 2004 09 30 | 644 | 0.1+ | 0.1+ | 2006 01 06 | 291 | 0.0 | 0.4+ |
| 2004 09 09 | 704 | 0.5− | 0.0 | 2004 09 30 | 644 | 0.8+ | 0.5+ | 2006 01 06 | 291 | 0.2+ | 0.1+ |

**2004 RL$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.12318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26107234 | $\omega$ | 187.55565 | | +0.92454360 | +0.37968221 | |
| $a$ | 2.4245369 | $\Omega$ | 150.06503 | | −0.34612866 | +0.87243395 | |
| $e$ | 0.2034086 | $i$ | 3.74179 | | −0.15941791 | +0.30773433 | |
| $P$ | 3.78 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 691 | 0.2− | 0.1− | 2004 09 13 | 699 | 0.3− | 0.6+ | 2004 10 05 | 699 | 0.8+ | 0.0 |
| 2002 01 08 | 691 | 0.3+ | 0.1− | 2004 09 13 | 699 | 0.2− | 0.1− | 2004 10 05 | 699 | 0.8+ | 0.0 |
| 2002 01 08 | 691 | 0.2− | 0.2− | 2004 09 14 | 699 | 0.3− | 0.0 | 2004 10 06 | 704 | 0.9− | 0.1− |
| 2004 08 27 | 699 | 0.5+ | 1.1+ | 2004 09 14 | 699 | 0.1+ | 0.3− | 2004 10 06 | 704 | 0.9− | 1.1+ |
| 2004 08 27 | 699 | 0.2+ | 0.1+ | 2004 09 14 | 699 | 0.2+ | 0.4+ | 2004 10 06 | 704 | 2.0− | 0.7+ |
| 2004 08 27 | 699 | 1.0− | 0.8+ | 2004 09 14 | 699 | 0.5− | 0.3− | 2004 10 06 | 704 | 0.6− | 0.6+ |
| 2004 08 27 | 699 | 0.4− | 1.0+ | 2004 09 15 | 691 | 0.1+ | 0.2− | 2004 10 09 | 704 | 0.5− | 0.7− |
| 2004 09 08 | 704 | 0.0 | 0.7+ | 2004 09 15 | 691 | 0.2+ | 0.0 | 2004 10 09 | 704 | 0.6− | 0.6− |
| 2004 09 08 | 704 | 0.1+ | 0.1+ | 2004 09 15 | 691 | 0.2+ | 0.0 | 2004 10 09 | 704 | 0.4+ | 0.1+ |
| 2004 09 08 | 704 | 0.5− | 0.1+ | 2004 09 16 | 691 | 0.0 | 0.1− | 2004 10 09 | 704 | 0.9− | 0.5+ |
| 2004 09 08 | 704 | 0.3− | 0.5+ | 2004 09 16 | 691 | 0.1+ | 0.1− | 2004 10 12 | 691 | 0.4+ | 0.1− |
| 2004 09 08 | 704 | 0.3− | 0.1− | 2004 09 16 | 691 | 0.1+ | 0.1− | 2004 10 12 | 691 | 0.4+ | 0.5− |
| 2004 09 09 | 704 | 1.3− | 0.6− | 2004 09 17 | 704 | 1.0− | 0.6+ | 2004 10 12 | 691 | 0.4+ | 0.1− |
| 2004 09 09 | 704 | 0.9− | 0.8− | 2004 09 17 | 704 | 0.3− | 0.1− | 2004 11 13 | 703 | 1.6− | 0.4− |
| 2004 09 09 | 704 | 0.7− | 0.7− | 2004 09 17 | 704 | 1.1− | 1.3+ | 2004 11 13 | 703 | 0.1+ | 0.1− |
| 2004 09 09 | 704 | 0.5− | 0.2− | 2004 09 17 | 704 | 0.5+ | 0.0 | 2004 11 13 | 703 | 0.2− | 0.7+ |
| 2004 09 09 | 704 | 1.3− | 0.8+ | 2004 09 17 | 704 | 0.5+ | 0.5+ | 2004 11 13 | 703 | 0.3+ | 0.8− |
| 2004 09 10 | 691 | 0.0 | 0.1+ | 2004 09 22 | 691 | 0.1+ | 0.0 | 2006 02 01 | 691 | 0.3+ | 0.0 |
| 2004 09 10 | 691 | 0.0 | 0.0 | 2004 09 22 | 691 | 0.4+ | 0.3− | 2006 02 01 | 691 | 0.6− | 0.6+ |
| 2004 09 10 | 691 | 0.0 | 0.0 | 2004 09 22 | 691 | 0.2+ | 0.2+ | 2006 02 01 | 691 | 0.4+ | 0.3+ |
| 2004 09 13 | 699 | 0.8+ | 0.3− | 2004 10 05 | 699 | 2.3+ | 0.3+ | | | | |
| 2004 09 13 | 699 | 0.9+ | 0.4− | 2004 10 05 | 699 | 0.3− | 0.2+ | | | | |

**2004 RT$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.76013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26933803 | $\omega$ | 243.70174 | | +0.99406603 | +0.09139686 | |
| $a$ | 2.3746754 | $\Omega$ | 111.00673 | | −0.06267006 | +0.92441623 | |
| $e$ | 0.2442724 | $i$ | 3.62267 | | −0.08891114 | +0.37027185 | |
| $P$ | 3.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 291 | 0.2+ | 0.3+ | 2004 09 09 | 704 | 0.1− | 1.6+ | 2004 10 06 | 699 | 0.5+ | 0.3− |
| 2002 02 06 | 291 | 0.3− | 0.0 | 2004 09 09 | 704 | 0.2+ | 0.2+ | 2004 10 06 | 699 | 0.2+ | 0.4− |
| 2002 02 06 | 291 | 0.2+ | 0.5+ | 2004 09 12 | 704 | 0.1− | 0.1− | 2004 10 06 | 699 | 0.9+ | 0.8− |
| 2004 08 10 | 704 | 0.4+ | 0.0 | 2004 09 12 | 704 | 0.6− | 0.2− | 2004 10 06 | 699 | 0.1− | 0.5− |
| 2004 08 10 | 704 | 0.4− | 1.5+ | 2004 09 12 | 704 | 0.2− | 0.2+ | 2004 10 06 | 704 | 0.0 | 0.2− |
| 2004 08 10 | 704 | 0.6− | 0.9+ | 2004 09 12 | 704 | 0.0 | 0.2− | 2004 10 06 | 704 | 0.6− | 0.1− |
| 2004 08 27 | 699 | 0.4+ | 0.2+ | 2004 09 12 | 704 | 0.0 | 0.5− | 2004 10 06 | 704 | 0.6− | 0.1− |
| 2004 08 27 | 699 | 0.1− | 1.4− | 2004 09 14 | 699 | 0.1− | 0.2+ | 2004 10 06 | 704 | 0.7− | 0.5+ |
| 2004 08 27 | 699 | 1.0− | 0.2+ | 2004 09 14 | 699 | 0.4− | 0.1− | 2004 10 09 | 704 | 0.1+ | 0.6− |
| 2004 08 27 | 699 | 0.5+ | 1.2− | 2004 09 14 | 699 | 0.0 | 0.1− | 2004 10 09 | 704 | 0.0 | 0.1+ |
| 2004 09 08 | 704 | 0.2+ | 0.7+ | 2004 09 14 | 699 | 0.3− | 0.0 | 2004 10 09 | 704 | 0.3+ | 0.2− |
| 2004 09 08 | 704 | 0.3− | 1.2+ | 2004 09 17 | 704 | 0.2− | 0.3+ | 2004 10 09 | 704 | 0.0 | 0.4− |
| 2004 09 08 | 704 | 0.5+ | 0.4+ | 2004 09 17 | 704 | 0.1− | 0.3+ | 2004 10 09 | 704 | 0.2+ | 0.3− |
| 2004 09 08 | 704 | 0.4− | 0.4+ | 2004 09 17 | 704 | 0.3+ | 0.2+ | 2006 02 01 | 691 | 0.2− | 0.2− |
| 2004 09 08 | 704 | 0.0 | 0.4− | 2004 09 17 | 704 | 0.4+ | 0.4+ | 2006 02 01 | 691 | 0.2+ | 0.0 |
| 2004 09 09 | 704 | 0.4+ | 0.2+ | 2004 10 03 | 644 | 0.4+ | 0.6− | 2006 02 01 | 691 | 0.1− | 0.2− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 09 09 | 704 | 0.4+ | 0.1− | 2004 10 03 | 644 | 0.3+ | 0.4− | |
| 2004 09 09 | 704 | 0.1− | 0.2+ | 2004 10 03 | 644 | 0.4+ | 0.3− | |

**2004 RG$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.83732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22287298 | $\omega$ | 356.07133 | | +0.97383006 | +0.22423200 | |
| $a$ | 2.6942079 | $\Omega$ | 350.71743 | | −0.20175642 | +0.77777808 | |
| $e$ | 0.0828449 | $i$ | 13.29034 | | −0.10463923 | +0.58718078 | |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 910 | 0.7+ | 0.7+ | 2004 09 10 | 691 | 0.0 | 0.0 | 2004 09 17 | 704 | 0.1− | 0.9+ |
| 1998 03 24 | 910 | 0.4+ | 0.7+ | 2004 09 10 | 691 | 0.1+ | 0.1− | 2004 09 18 | A50 | 0.5− | 0.4+ |
| 1998 03 25 | 910 | 0.4+ | 0.6+ | 2004 09 10 | 691 | 0.1+ | 0.1− | 2004 09 18 | A50 | 0.5− | 0.1− |
| 2000 11 30 | 699 | 0.2− | 0.9− | 2004 09 13 | 699 | 0.0 | 0.0 | 2004 09 18 | A50 | 0.2+ | 0.3+ |
| 2000 11 30 | 699 | 0.1− | 0.0 | 2004 09 13 | 699 | 1.0+ | 0.5− | 2004 09 18 | A50 | 0.3− | 0.1+ |
| 2000 11 30 | 699 | 0.2+ | 0.7+ | 2004 09 13 | 699 | 0.2− | 0.5+ | 2004 09 22 | 691 | 0.0 | 0.2+ |
| 2000 11 30 | 699 | 0.4+ | 0.3− | 2004 09 13 | 699 | 0.4− | 0.6+ | 2004 09 22 | 691 | 0.0 | 0.0 |
| 2004 08 10 | 704 | 0.9− | 1.0− | 2004 09 14 | 699 | 0.0 | 0.4− | 2004 09 22 | 691 | 0.1− | 0.1+ |
| 2004 08 10 | 704 | 0.3− | 0.3− | 2004 09 14 | 699 | 0.4− | 0.8+ | 2004 10 09 | 704 | 0.1+ | 0.3+ |
| 2004 08 10 | 704 | 0.1+ | 0.6− | 2004 09 14 | 699 | 0.2− | 0.2− | 2004 10 09 | 704 | 0.7+ | 0.6+ |
| 2004 08 10 | 704 | 0.1− | 0.5+ | 2004 09 14 | 699 | 0.1+ | 0.6− | 2004 10 09 | 704 | 0.7+ | 0.5+ |
| 2004 09 08 | 704 | 0.1− | 0.5+ | 2004 09 15 | 691 | 0.0 | 0.0 | 2004 10 09 | 704 | 0.8+ | 0.0 |
| 2004 09 08 | 704 | 0.3− | 0.2+ | 2004 09 15 | 691 | 0.0 | 0.1− | 2004 10 09 | 704 | 0.4+ | 0.6− |
| 2004 09 08 | 704 | 0.2− | 0.3+ | 2004 09 15 | 691 | 0.1+ | 0.1− | 2004 10 12 | 691 | 0.3− | 0.0 |
| 2004 09 08 | 704 | 0.3− | 0.3− | 2004 09 16 | 691 | 0.0 | 0.0 | 2004 10 12 | 691 | 0.2− | 0.1− |
| 2004 09 08 | 704 | 0.0 | 0.4+ | 2004 09 16 | 691 | 0.0 | 0.0 | 2004 10 12 | 691 | 0.1− | 0.2− |
| 2004 09 09 | 704 | 0.0 | 0.2+ | 2004 09 16 | 691 | 0.2+ | 0.0 | 2005 12 30 | 703 | 1.5− | 1.3+ |
| 2004 09 09 | 704 | 0.2− | 0.1+ | 2004 09 17 | 704 | 0.3− | 0.5+ | 2005 12 30 | 703 | 1.1+ | 0.3+ |
| 2004 09 09 | 704 | 0.2+ | 0.4+ | 2004 09 17 | 704 | 0.2+ | 0.2− | 2005 12 30 | 703 | 0.7+ | 0.1+ |
| 2004 09 09 | 704 | 0.1+ | 0.2+ | 2004 09 17 | 704 | 0.3+ | 0.3− | 2005 12 30 | 703 | 0.1− | 0.8− |
| 2004 09 09 | 704 | 0.2+ | 0.1+ | 2004 09 17 | 704 | 0.6− | 0.2− | | | | |

**2004 RC$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.83538 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26740846 | $\omega$ | 59.32787 | | −0.21182152 | +0.97721753 | |
| $a$ | 2.3860852 | $\Omega$ | 198.45715 | | −0.91044663 | −0.20226776 | |
| $e$ | 0.1536427 | $i$ | 2.41209 | | −0.35527255 | −0.06429347 | |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 23 | 691 | 0.0 | 0.0 | 2003 04 11 | 691 | 0.4+ | 0.8+ | 2004 09 16 | 691 | 0.2− | 0.3+ |
| 2000 06 23 | 691 | 0.2+ | 0.2+ | 2003 04 11 | 691 | 0.6+ | 1.1+ | 2004 09 16 | 691 | 0.4− | 0.3+ |
| 2000 06 23 | 691 | 0.2+ | 0.2+ | 2004 09 09 | 704 | 0.6− | 0.1+ | 2004 09 16 | 691 | 0.1− | 0.1+ |
| 2000 07 03 | 691 | 0.1− | 0.0 | 2004 09 09 | 704 | 0.4− | 0.4+ | 2004 09 17 | 704 | 1.2+ | 0.1+ |
| 2000 07 03 | 691 | 0.1− | 0.7− | 2004 09 09 | 704 | 0.4− | 0.7+ | 2004 09 17 | 704 | 0.5+ | 0.7+ |
| 2000 07 03 | 691 | 0.2− | 0.0 | 2004 09 10 | 691 | 0.0 | 0.0 | 2004 09 17 | 704 | 0.2− | 1.7+ |
| 2003 03 26 | 644 | 0.2− | 0.3+ | 2004 09 10 | 691 | 0.1+ | 0.0 | 2004 09 17 | 704 | 0.7+ | 0.6+ |
| 2003 03 26 | 644 | 0.1− | 0.5+ | 2004 09 10 | 691 | 0.0 | 0.0 | 2004 09 17 | 704 | 1.2+ | 1.2+ |
| 2003 03 26 | 644 | 0.6− | 0.4+ | 2004 09 13 | 699 | 0.9+ | 0.6+ | 2004 09 22 | 691 | 0.8− | 0.3+ |
| 2003 04 01 | 695 | 0.2− | 0.7+ | 2004 09 13 | 699 | 0.4+ | 0.3+ | 2004 09 22 | 691 | 0.4− | 0.1+ |
| 2003 04 01 | 695 | 0.3− | 0.7+ | 2004 09 13 | 699 | 0.6+ | 0.1− | 2004 09 22 | 691 | 0.1− | 0.2+ |
| 2003 04 11 | 691 | 0.6+ | 0.6+ | 2004 09 13 | 699 | 1.1− | 0.8+ | | | | |

**2004 RP$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.71406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27305023 | $\omega$ | 344.50174 | | +0.54114293 | −0.83006185 | |
| $a$ | 2.3531034 | $\Omega$ | 72.56245 | | +0.78577532 | +0.44203202 | |
| $e$ | 0.1095665 | $i$ | 8.12057 | | +0.29953542 | +0.34000738 | |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 645 | 0.1− | 0.0 | 2003 05 05 | 704 | 0.3+ | 1.2+ | 2004 09 15 | 699 | 1.6− | 0.8+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2003 05 05 | 704 | 0.8+ | 1.1+ | 2004 09 15 | 699 | 0.1+ | 0.3− |
| 2001 12 17 | 704 | 0.1+ | 0.8+ | 2004 09 07 | 704 | 0.8− | 0.2− | 2004 09 15 | 699 | 0.5− | 0.3− |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2004 09 07 | 704 | 0.8− | 1.2+ | 2004 09 15 | 699 | 1.0− | 0.2− |
| 2001 12 17 | 704 | 0.2− | 0.6+ | 2004 09 07 | 704 | 0.9− | 1.5+ | 2004 09 21 | 704 | 1.0+ | 1.3+ |
| 2001 12 18 | 699 | 0.6+ | 0.5+ | 2004 09 07 | 704 | 1.2+ | 0.2− | 2004 09 21 | 704 | 0.3+ | 0.7+ |
| 2001 12 18 | 699 | 0.2+ | 0.3+ | 2004 09 08 | 704 | 0.6+ | 0.2− | 2004 09 21 | 704 | 1.0+ | 1.2− |
| 2001 12 18 | 699 | 0.5+ | 0.8− | 2004 09 08 | 704 | 0.4+ | 0.1− | 2006 02 21 | 703 | 0.9+ | 0.1− |
| 2001 12 18 | 699 | 1.3− | 0.5+ | 2004 09 08 | 704 | 0.3− | 0.4− | 2006 02 21 | 703 | 0.3+ | 0.7+ |
| 2002 01 08 | 704 | 0.8+ | 0.5+ | 2004 09 10 | 704 | 0.2+ | 0.8+ | 2006 02 21 | 703 | 0.2+ | 0.6+ |
| 2002 01 08 | 704 | 0.3+ | 0.7+ | 2004 09 10 | 704 | 0.2+ | 0.8+ | 2006 02 21 | 703 | 0.4− | 0.8+ |
| 2002 01 08 | 704 | 1.3+ | 0.2− | 2004 09 10 | 704 | 0.6− | 0.3− | | | | |
| 2003 05 05 | 704 | 0.1− | 1.7+ | 2004 09 10 | 704 | 0.5− | 0.7+ | | | | |

**2004 RZ$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.44530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22724853 | $\omega$ | 77.35060 | | +0.35076423 | −0.93377664 | |
| $a$ | 2.6595122 | $\Omega$ | 351.08683 | | +0.57768141 | +0.27533867 | |
| $e$ | 0.3901490 | $i$ | 27.22919 | | +0.73705403 | +0.22858217 | |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3− | 0.2+ | 2004 09 12 | H36 | 1.2+ | 0.3− | 2004 11 02 | 704 | 0.7+ | 0.8− |
| 1995 09 26 | 691 | 0.2− | 0.1+ | 2004 09 12 | 704 | 0.2− | 1.3+ | 2004 11 22 | 084 | 0.3+ | 0.6− |
| 1995 09 26 | 691 | 0.1− | 0.2+ | 2004 09 12 | 704 | 0.1+ | 0.5+ | 2004 11 30 | 704 | 1.0− | 1.2+ |
| 2001 03 03 | 691 | 0.1+ | 0.2+ | 2004 09 12 | H36 | (3.5− | 1.7−) | 2004 11 30 | 704 | 0.7+ | 0.4+ |
| 2001 03 03 | 691 | 0.2+ | 0.5+ | 2004 09 12 | H36 | 0.5− | 1.3− | 2004 11 30 | 704 | 0.1− | 0.6+ |
| 2001 03 03 | 691 | 0.7+ | 0.1− | 2004 09 12 | 704 | 0.5− | 0.9+ | 2004 11 30 | 704 | 0.2− | 0.4− |
| 2004 09 11 | 704 | 0.0 | 0.0 | 2004 09 12 | 704 | 0.1+ | 0.5+ | 2004 11 30 | 704 | 0.0 | 0.1− |
| 2004 09 11 | 704 | 0.7− | 0.1− | 2004 09 12 | 704 | 0.4+ | 0.1+ | 2004 12 13 | 084 | 0.1+ | 0.2+ |
| 2004 09 11 | 704 | 0.5− | 0.1− | 2004 09 12 | 704 | 0.0 | 0.8+ | 2004 12 20 | 704 | 0.0 | 0.5+ |
| 2004 09 11 | 704 | 0.3− | 0.3+ | 2004 09 12 | 704 | 0.3+ | 0.8− | 2004 12 20 | 704 | 0.3− | 0.6− |
| 2004 09 11 | 704 | 1.0− | 0.6+ | 2004 09 12 | 704 | 0.7+ | 0.1+ | 2004 12 20 | 704 | 0.5− | 0.1+ |
| 2004 09 12 | J95 | 0.3+ | 0.1− | 2004 09 12 | 704 | 0.3+ | 0.7+ | 2004 12 20 | 704 | 0.5− | 0.0 |
| 2004 09 12 | J95 | 0.1− | 0.2+ | 2004 09 12 | 704 | 0.2− | 0.6+ | 2004 12 20 | 704 | 0.4− | 0.1− |
| 2004 09 12 | J95 | 0.1+ | 0.4− | 2004 09 14 | 704 | 0.2− | 0.2+ | 2004 12 31 | 084 | 0.0 | 0.1+ |
| 2004 09 12 | 941 | 0.2− | 0.2− | 2004 09 14 | 704 | 0.1+ | 0.4− | 2005 01 12 | 084 | 0.7− | 0.4− |
| 2004 09 12 | 941 | 0.3+ | 0.3− | 2004 09 14 | 704 | 0.4− | 0.2− | 2005 01 29 | 704 | 0.6− | 0.5− |
| 2004 09 12 | 941 | 0.7+ | 0.3− | 2004 09 14 | 704 | 0.3+ | 0.7+ | 2005 01 29 | 704 | 0.2− | 0.3− |
| 2004 09 12 | G90 | 0.4+ | 0.4− | 2004 09 14 | 704 | 0.3+ | 0.2− | 2005 01 29 | 704 | 0.3− | 0.4− |
| 2004 09 12 | G90 | 0.4+ | 0.4+ | 2004 09 15 | 704 | 0.2+ | 0.4− | 2005 01 29 | 704 | 0.4− | 0.7+ |
| 2004 09 12 | G90 | 0.5− | 0.1+ | 2004 09 15 | 704 | 0.2+ | 0.2− | 2005 01 29 | 704 | 0.1+ | 0.9+ |
| 2004 09 12 | 651 | 1.8+ | 1.1+ | 2004 09 15 | 704 | 0.4+ | 0.2+ | 2005 01 29 | 084 | 0.3+ | 0.3− |
| 2004 09 12 | 651 | 0.3+ | 0.6− | 2004 09 15 | 704 | 0.3+ | 0.1− | 2005 02 03 | 084 | 0.4+ | 0.5− |
| 2004 09 12 | 651 | 1.0− | 2.1− | 2004 10 12 | 704 | 0.4+ | 0.5+ | 2005 02 03 | 084 | 0.7+ | 0.1+ |
| 2004 09 12 | 704 | 0.2+ | 0.1+ | 2004 10 12 | 704 | 0.3+ | 1.4+ | 2005 02 28 | 704 | 0.6+ | 0.9− |
| 2004 09 12 | 704 | 0.9+ | 1.1+ | 2004 10 12 | 704 | 0.3− | 0.2− | 2005 02 28 | 704 | 0.3+ | 0.0 |
| 2004 09 12 | 704 | 0.0 | 0.5+ | 2004 10 12 | 704 | 0.3+ | 0.2+ | 2005 02 28 | 704 | 0.2+ | 1.0+ |
| 2004 09 12 | 704 | 0.3− | 0.1+ | 2004 11 02 | 704 | 0.1− | 0.0 | 2005 02 28 | 704 | 0.3+ | 0.5− |
| 2004 09 12 | H36 | 0.5− | 0.4+ | 2004 11 02 | 704 | 0.3− | 0.3− | | | | |

**2004 RJ$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.68725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17654190 | $\omega$ | 202.25162 | | +0.99042101 | +0.05062747 | |
| $a$ | 3.1470539 | $\Omega$ | 153.83044 | | −0.03233516 | +0.98952752 | |
| $e$ | 0.1525971 | $i$ | 16.93479 | | −0.13424108 | +0.13517451 | |
| $P$ | 5.58 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 30 | 621 | 0.3− | 0.3− | 2004 08 10 | 704 | 0.3+ | 0.1− | 2004 09 21 | 704 | 0.4− | 0.1+ |
| 1998 07 30 | 621 | 0.1+ | 0.4− | 2004 08 10 | 704 | 0.1+ | 0.3− | 2004 09 21 | 704 | 0.2+ | 0.5− |
| 1998 07 30 | 621 | 0.3+ | 0.0 | 2004 09 07 | 704 | 0.7+ | 0.1+ | 2004 09 21 | 704 | 0.2− | 0.3− |
| 2002 04 04 | B18 | 0.3− | 0.1+ | 2004 09 07 | 704 | 0.5− | 0.2+ | 2004 09 21 | 704 | 0.4− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | B18 | 0.3− | 0.3+ | 2004 09 07 | 704 | 0.2+ | 0.4+ | 2004 10 10 | 644 | 0.7+ | 0.1− | | |
| 2002 04 05 | B18 | (0.5+ | 3.6+) | 2004 09 07 | 704 | 0.0 | 0.4+ | 2004 10 10 | 644 | 0.5+ | 0.2− | | |
| 2002 04 05 | B18 | 0.7+ | 0.3+ | 2004 09 07 | 704 | 0.1+ | 0.6+ | 2004 10 10 | 644 | 0.4+ | 0.2+ | | |
| 2004 07 15 | 704 | 0.7+ | 0.5+ | 2004 09 12 | 704 | 1.0− | 1.2− | 2004 10 13 | 704 | 0.2+ | 0.3+ | | |
| 2004 07 15 | 704 | 0.5+ | 0.3+ | 2004 09 12 | 704 | 0.6− | 0.5− | 2004 10 13 | 704 | 0.6− | 0.1− | | |
| 2004 07 15 | 704 | 1.7− | 0.8+ | 2004 09 12 | 704 | 0.6− | 0.6− | 2004 10 13 | 704 | 0.1+ | 0.6+ | | |
| 2004 08 10 | 704 | 0.4+ | 0.4+ | 2004 09 12 | 704 | 0.7+ | 0.1+ | | | | | | |
| 2004 08 10 | 704 | 1.5+ | 0.4+ | 2004 09 21 | 704 | 1.0− | 0.1− | | | | | | |

**2004 RX$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.06879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17273648 | $\omega$ | 345.70584 | | −0.82535657 | | −0.55435523 |
| $a$ | 3.1931060 | $\Omega$ | 159.50042 | | +0.54340916 | | −0.83144066 |
| $e$ | 0.1413731 | $i$ | 17.81293 | | +0.15327432 | | −0.03737258 |
| $P$ | 5.71 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 11 | 644 | 0.3− | 0.0 | 2002 05 05 | 644 | 0.0 | 0.0 | 2004 10 08 | 691 | 0.1+ | 0.1− | | |
| 2002 04 11 | 644 | 0.1− | 0.0 | 2002 05 13 | 644 | 0.1+ | 0.2+ | 2004 10 08 | 691 | 0.4+ | 0.2− | | |
| 2002 04 11 | 644 | 0.7+ | 0.3− | 2002 05 13 | 644 | 0.3+ | 0.0 | 2005 10 27 | 703 | 0.4+ | 0.2+ | | |
| 2002 04 17 | 704 | 0.1+ | 0.0 | 2002 05 13 | 644 | 0.0 | 0.4+ | 2005 10 27 | 703 | 1.1+ | 1.3+ | | |
| 2002 04 17 | 704 | 0.5− | 0.1+ | 2004 09 07 | 691 | 0.2− | 0.0 | 2005 10 27 | 703 | 0.3− | 0.1− | | |
| 2002 04 17 | 704 | 0.2− | 0.1− | 2004 09 07 | 691 | 0.1− | 0.2− | 2005 10 27 | 703 | 0.1− | 0.2+ | | |
| 2002 04 22 | 644 | 0.1− | 0.2− | 2004 09 07 | 691 | 0.0 | 0.2+ | 2005 11 01 | 703 | 0.4− | 0.8− | | |
| 2002 04 22 | 644 | 0.0 | 0.0 | 2004 09 12 | 691 | 0.3+ | 0.2+ | 2005 11 01 | 703 | 0.8− | 1.1− | | |
| 2002 04 22 | 644 | 0.3+ | 0.1+ | 2004 09 12 | 691 | 0.4− | 0.0 | 2005 11 01 | 703 | 0.6+ | 0.4+ | | |
| 2002 05 05 | 644 | 0.1− | 0.2+ | 2004 09 12 | 691 | 0.0 | 0.1− | 2005 11 01 | 703 | 0.4− | 0.4+ | | |
| 2002 05 05 | 644 | 0.2− | 0.1+ | 2004 10 08 | 691 | 0.0 | 0.3+ | | | | | | |

**2004 RM$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.81276 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25150160 | $\omega$ | 254.90674 | | −0.18300633 | | +0.98306369 |
| $a$ | 2.4856628 | $\Omega$ | 4.58173 | | −0.84879484 | | −0.15300719 |
| $e$ | 0.1330803 | $i$ | 6.98874 | | −0.49604031 | | −0.10086915 |
| $P$ | 3.92 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 691 | 0.2+ | 0.2+ | 2003 04 07 | 691 | 0.2+ | 0.5+ | 2004 09 11 | 691 | 0.2− | 0.1− | | |
| 2003 03 24 | 691 | 0.1+ | 0.3− | 2003 05 01 | 691 | 0.2− | 0.1+ | 2004 09 11 | 691 | 0.0 | 0.1+ | | |
| 2003 03 24 | 691 | 0.3− | 0.1− | 2003 05 01 | 691 | 0.1− | 0.4− | 2004 10 15 | G96 | 0.2− | 0.3− | | |
| 2003 03 31 | 291 | 0.0 | 0.6− | 2003 05 01 | 691 | 0.5− | 0.3− | 2004 10 15 | G96 | 0.2+ | 0.0 | | |
| 2003 03 31 | 291 | 0.1− | 0.4− | 2004 09 07 | 691 | 0.1+ | 0.1+ | 2004 10 15 | G96 | 0.0 | 0.5− | | |
| 2003 03 31 | 291 | 0.1− | 0.5− | 2004 09 07 | 691 | 0.1− | 0.0 | 2004 10 15 | G96 | 0.5+ | 0.2− | | |
| 2003 04 07 | 691 | 0.1+ | 0.8+ | 2004 09 07 | 691 | 0.0 | 0.1+ | | | | | | |
| 2003 04 07 | 691 | 0.5+ | 0.8+ | 2004 09 11 | 691 | 0.0 | 0.0 | | | | | | |

**2004 RA$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.39614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18825448 | $\omega$ | 162.81028 | | +0.81579151 | | +0.57626331 |
| $a$ | 3.0151285 | $\Omega$ | 161.74251 | | −0.54732326 | | +0.79664914 |
| $e$ | 0.1839456 | $i$ | 9.00552 | | −0.18687284 | | +0.18240271 |
| $P$ | 5.24 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 691 | 0.2+ | 0.8+ | 2004 09 17 | 704 | 0.3− | 0.6+ | 2004 10 07 | 704 | 0.3− | 0.7− | | |
| 2002 03 05 | 691 | 0.2+ | 0.7+ | 2004 09 17 | 704 | 0.5+ | 0.4+ | 2004 10 07 | 699 | 0.2+ | 0.5− | | |
| 2002 03 05 | 691 | 0.3+ | 0.7+ | 2004 09 17 | 704 | 0.3+ | 0.9+ | 2004 10 07 | 704 | 0.0 | 0.1− | | |
| 2003 07 08 | 691 | 0.1+ | 0.2+ | 2004 09 17 | 683 | 2.2+ | 1.5+ | 2004 10 07 | 704 | 0.2− | 0.1− | | |
| 2003 07 08 | 691 | 0.0 | 0.3+ | 2004 09 17 | 683 | 0.2+ | 0.1− | 2004 10 07 | 699 | 0.0 | 0.6+ | | |
| 2003 07 08 | 691 | 0.0 | 0.3+ | 2004 09 17 | 683 | 0.2− | 0.2+ | 2004 10 07 | 704 | 0.1− | 0.3+ | | |
| 2004 08 10 | 704 | 0.8− | 0.3− | 2004 09 17 | 699 | 0.2+ | 0.5− | 2004 10 09 | 704 | 0.4+ | 1.4− | | |
| 2004 08 10 | 704 | 0.4− | 0.4− | 2004 09 17 | 699 | 0.2+ | 0.1+ | 2004 10 09 | 704 | 1.0− | 0.1− | | |
| 2004 08 10 | 704 | 0.7+ | 0.1+ | 2004 09 17 | 699 | 0.5− | 0.2+ | 2004 10 09 | 704 | 0.3− | 0.7+ | | |
| 2004 08 10 | 704 | 0.8− | 0.2+ | 2004 09 17 | 699 | 0.4− | 0.7− | 2004 10 09 | 704 | 0.1− | 0.1+ | | |
| 2004 09 08 | 704 | 0.3+ | 0.7+ | 2004 09 20 | 683 | 0.2− | 0.2+ | 2004 10 18 | 704 | 0.8− | 0.5− | | |
| 2004 09 08 | 704 | 0.2− | 0.9+ | 2004 09 20 | 683 | 1.0+ | 1.1− | 2004 10 18 | 704 | 0.3− | 0.1− | | |
| 2004 09 08 | 704 | 0.0 | 0.7+ | 2004 09 20 | 683 | 0.1+ | 0.1− | 2004 10 18 | 704 | 0.3− | 0.2− | | |
| 2004 09 08 | 704 | 0.9− | 0.2+ | 2004 10 05 | 699 | 0.4+ | 0.4+ | 2004 10 18 | 704 | 0.0 | 0.3− | | |
| 2004 09 12 | 704 | 0.2+ | 0.9+ | 2004 10 05 | 699 | 0.3+ | 0.1+ | 2004 10 18 | 704 | 1.1− | 0.2− | | |
| 2004 09 12 | 704 | 0.0 | 1.1+ | 2004 10 05 | 699 | 0.3+ | 0.0 | 2004 11 06 | 704 | 0.2− | 0.1+ | | |
| 2004 09 12 | 704 | 0.8− | 0.7+ | 2004 10 05 | 699 | 0.2− | 0.3+ | 2004 11 06 | 704 | 0.6+ | 0.4+ | | |
| 2004 09 12 | 704 | 0.1+ | 1.2+ | 2004 10 07 | 699 | 0.0 | 0.1− | 2004 11 06 | 704 | 0.7− | 0.4− | | |
| 2004 09 12 | 704 | 0.2+ | 0.9+ | 2004 10 07 | 699 | 0.6− | 0.5+ | | | | | | |
| 2004 09 17 | 704 | 1.1+ | 1.4+ | 2004 10 07 | 704 | 0.6− | 0.6+ | | | | | | |

**2004 RJ$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.17883 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21963478 | $\omega$ | 239.41313 | | +0.76099232 | | −0.64812852 |
| $a$ | 2.7206247 | $\Omega$ | 160.93937 | | +0.62121141 | | +0.71523996 |
| $e$ | 0.1207816 | $i$ | 5.03083 | | +0.18704829 | | +0.26145977 |
| $P$ | 4.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 06 | 691 | 0.8− | 0.5− | 2004 09 09 | 704 | 0.5− | 1.0+ | 2006 01 05 | 691 | 0.3+ | 0.6+ | | |
| 2000 12 06 | 691 | 0.5+ | 0.2− | 2004 09 09 | 704 | 0.8+ | 0.2+ | 2006 01 05 | 691 | 0.0 | 0.1− | | |
| 2000 12 06 | 691 | 0.4+ | 0.2+ | 2004 09 09 | 704 | 0.8+ | 0.0 | 2006 01 09 | 691 | 0.2+ | 0.0 | | |
| 2002 02 12 | 691 | 0.1+ | 0.4+ | 2004 09 09 | 699 | 0.2− | 0.4+ | 2006 01 09 | 691 | 0.2+ | 0.1+ | | |
| 2002 02 12 | 691 | 0.2+ | 0.3+ | 2004 09 09 | 699 | 0.1− | 1.2+ | 2006 01 09 | 691 | 0.4+ | 0.1− | | |
| 2002 02 12 | 691 | 0.3+ | 0.6+ | 2004 09 09 | 699 | 0.1+ | 1.7+ | 2006 01 31 | G96 | 0.1+ | 0.0 | | |
| 2002 03 10 | 209 | 1.4− | 0.4− | 2004 09 09 | 699 | 0.6− | 0.3+ | 2006 01 31 | G96 | 0.2+ | 0.2− | | |
| 2002 03 10 | 209 | 0.7− | 0.7− | 2004 09 11 | 691 | 0.0 | 0.2+ | 2006 01 31 | G96 | 0.3+ | 0.1− | | |
| 2002 03 11 | 209 | 0.8+ | 0.1− | 2004 09 11 | 691 | 0.1− | 0.1+ | 2006 01 31 | G96 | 0.5+ | 0.1+ | | |
| 2002 04 11 | 695 | 0.1− | 0.5+ | 2004 09 11 | 691 | 0.0 | 0.2+ | 2006 03 03 | G96 | 0.0 | 0.3+ | | |
| 2002 04 11 | 695 | 0.2+ | 0.7+ | 2004 09 23 | 691 | 0.2− | 0.0 | 2006 03 03 | G96 | 0.0 | 0.1+ | | |
| 2004 08 22 | 621 | 0.1+ | 0.3− | 2004 09 23 | 691 | 0.1− | 0.0 | 2006 03 03 | G96 | 0.1− | 0.0 | | |
| 2004 08 22 | 621 | 0.4+ | 0.7− | 2004 09 23 | 691 | 0.2− | 0.1+ | 2006 03 03 | G96 | 0.3+ | 0.1+ | | |
| 2004 08 22 | 621 | 0.2− | 0.4− | 2006 01 05 | 691 | 1.5− | 0.0 | | | | | | |

**2004 RS$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.11572 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22490101 | $\omega$ | 229.72344 | | +0.63611734 | | −0.77158938 |
| $a$ | 2.6779869 | $\Omega$ | 180.78316 | | +0.74682119 | | +0.61638839 |
| $e$ | 0.0049001 | $i$ | 8.98348 | | +0.19394027 | | +0.15721065 |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 645 | 0.0 | 0.0 | 2002 03 06 | 644 | 0.1+ | 0.0 | 2004 09 11 | 691 | 0.1− | 0.0 | | |
| 2002 02 13 | 645 | 0.0 | 0.0 | 2002 03 06 | 644 | 0.6+ | 0.4+ | 2004 09 11 | 691 | 0.3− | 0.1− | | |
| 2002 02 16 | 608 | 0.3+ | 0.1+ | 2004 09 09 | 704 | 0.7− | 0.8+ | 2004 09 17 | 704 | 0.3+ | 0.2− | | |
| 2002 02 16 | 608 | 0.2+ | 0.1− | 2004 09 09 | 704 | 0.1− | 0.5+ | 2004 09 17 | 704 | 1.2+ | 0.6+ | | |
| 2002 02 16 | 608 | 0.3− | 0.2+ | 2004 09 09 | 704 | 0.6+ | 0.6− | 2004 09 17 | 704 | 0.8+ | 0.3+ | | |
| 2002 03 06 | 644 | 0.3− | 0.0 | 2004 09 11 | 691 | 0.1− | 0.1− | 2004 09 17 | 704 | 0.3− | 0.6− | | |

**2004 RQ$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.33378 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29419396 | $\omega$ | 53.34019 | | +0.95249677 | | −0.29945911 |
| $a$ | 2.2389628 | $\Omega$ | 323.99101 | | +0.24056618 | | +0.85145423 |
| $e$ | 0.1808333 | $i$ | 5.41151 | | +0.18675605 | | +0.43052285 |
| $P$ | 3.35 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 691 | 0.3− | 0.7− | 2004 09 12 | 704 | 1.1+ | 0.5+ | 2004 09 22 | 704 | 0.9+ | 1.0+ | | |
| 1999 02 13 | 691 | 0.6− | 0.7− | 2004 09 12 | 704 | 0.0 | 0.0 | 2004 09 22 | 704 | 0.0 | 0.5+ | | |
| 1999 02 13 | 691 | 0.0 | 0.8− | 2004 09 13 | 704 | 0.8+ | 0.0 | 2004 09 22 | 704 | 1.0+ | 0.8− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 15 | 599 | 0.4− | 0.3− | 2004 09 13 | 704 | 0.5+ | 0.6− | 2004 09 22 | 704 | 0.0 | 1.1+ |
| 2004 08 15 | 599 | 0.3− | 0.4− | 2004 09 13 | 704 | 0.1− | 0.2+ | 2004 09 24 | 704 | 0.4− | 0.2+ |
| 2004 09 10 | 704 | 0.3− | 0.5+ | 2004 09 13 | 704 | 0.0 | 0.5+ | 2004 09 24 | 704 | 1.0− | 1.5− |
| 2004 09 10 | 704 | 0.5− | 0.2+ | 2004 09 13 | 704 | 0.2− | 0.2− | 2004 09 24 | 704 | 0.6+ | 0.2+ |
| 2004 09 10 | 704 | 0.0 | 0.3− | 2004 09 16 | 699 | 0.7− | 0.5+ | 2004 09 24 | 704 | 0.0 | 0.5− |
| 2004 09 10 | 704 | 0.7− | 0.9+ | 2004 09 16 | 699 | 0.6− | 0.1+ | 2004 09 24 | 704 | 0.6+ | 1.4− |
| 2004 09 11 | 704 | 0.0 | 0.0 | 2004 09 16 | 699 | 0.7+ | 0.6− | 2004 10 16 | 699 | 1.3− | 0.4− |
| 2004 09 11 | 704 | 0.0 | 0.4− | 2004 09 16 | 699 | 0.1+ | 0.2+ | 2004 10 16 | 699 | 1.3− | 0.1+ |
| 2004 09 11 | 704 | 0.2− | 0.2− | 2004 09 18 | 704 | 0.0 | 0.2− | 2004 10 16 | 699 | 1.0+ | 1.4+ |
| 2004 09 11 | 704 | 0.3+ | 0.8− | 2004 09 18 | 704 | 0.1+ | 0.0 | 2004 10 16 | 699 | 1.0+ | 0.7+ |
| 2004 09 11 | 704 | 0.9− | 0.6− | 2004 09 18 | 704 | 0.1− | 0.0 | 2005 10 24 | 568 | 0.1− | 0.4+ |
| 2004 09 12 | 704 | 0.0 | 0.2+ | 2004 09 18 | 704 | 0.6+ | 0.6+ | 2005 10 24 | 568 | 0.0 | 0.0 |
| 2004 09 12 | 704 | 0.2− | 0.5− | 2004 09 18 | 704 | 0.2− | 0.1− | 2005 10 24 | 568 | 0.3+ | 0.0 |

### 2004 $RP_{157}$ = 2002 $CW_{313}$ = 2006 $AL_{101}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.86284 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22449292 | $\omega$ | 122.62000 | | +0.19022039 | −0.97330436 | |
| $a$ | 2.6812313 | $\Omega$ | 315.82694 | | +0.82764825 | +0.22934730 | |
| $e$ | 0.0428727 | $i$ | 10.62089 | | +0.52802895 | −0.00885662 | |
| $P$ | 4.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.5+ | 0.4+ | 2004 09 12 | 691 | 0.1+ | 0.1− | 2006 01 20 | 291 | 0.1+ | 0.2− |
| 2002 02 06 | 644 | 0.2+ | 0.0 | 2004 09 18 | 704 | 1.0− | 0.1− | 2006 01 20 | 291 | 0.3+ | 0.1− |
| 2002 02 06 | 644 | 0.1+ | 0.1+ | 2004 09 18 | 704 | 0.6+ | 0.4+ | 2006 01 20 | 291 | 0.2+ | 0.5− |
| 2002 02 16 | 644 | 0.0 | 0.1+ | 2004 09 18 | 704 | 0.7+ | 0.9+ | 2006 02 02 | 691 | 0.2− | 0.1− |
| 2002 02 16 | 644 | 0.1+ | 0.2− | 2005 12 26 | 691 | 0.1− | 0.6+ | 2006 02 02 | 691 | 0.1− | 0.0 |
| 2002 02 16 | 644 | 0.1+ | 1.3+ | 2005 12 26 | 691 | 0.1+ | 0.3+ | 2006 02 02 | 691 | 0.0 | 0.2+ |
| 2004 09 10 | 704 | 0.9− | 0.8− | 2005 12 26 | 691 | 0.0 | 0.1+ | 2006 03 26 | G96 | 0.1+ | 0.4+ |
| 2004 09 10 | 704 | 0.5+ | 0.1− | 2006 01 05 | 703 | 0.2+ | 0.1− | 2006 03 26 | G96 | 0.3+ | 0.2− |
| 2004 09 10 | 704 | 0.1− | 0.0 | 2006 01 05 | 703 | 0.3− | 0.4− | 2006 03 26 | G96 | 0.4+ | 0.0 |
| 2004 09 12 | 691 | 0.1− | 0.1+ | 2006 01 05 | 703 | 0.2+ | 0.4− | 2006 03 26 | G96 | 0.3− | 0.2− |
| 2004 09 12 | 691 | 0.1− | 0.2+ | 2006 01 05 | 703 | 1.2− | 1.4− | | | | |

### 2004 $RB_{171}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.18345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27054580 | $\omega$ | 222.03801 | | +0.84959606 | −0.52703620 | |
| $a$ | 2.3676028 | $\Omega$ | 169.70846 | | +0.50929122 | +0.80965713 | |
| $e$ | 0.1279999 | $i$ | 6.58199 | | +0.13714584 | +0.25824054 | |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 01 | 691 | 0.0 | 0.1+ | 2004 09 09 | 704 | 0.1− | 0.4− | 2004 09 21 | 704 | 0.2+ | 0.4+ |
| 2003 05 01 | 691 | 0.1+ | 0.2+ | 2004 09 09 | 704 | 0.1+ | 0.2− | 2004 09 21 | 704 | 0.0 | 0.3+ |
| 2003 05 01 | 691 | 0.0 | 0.3+ | 2004 09 09 | 704 | 0.4− | 0.3− | 2004 09 21 | 704 | 0.0 | 1.1+ |
| 2004 08 11 | 704 | 0.1− | 0.2+ | 2004 09 09 | 704 | 0.1+ | 0.2− | 2004 09 22 | 691 | 0.1+ | 0.2+ |
| 2004 08 11 | 704 | 0.2+ | 0.4+ | 2004 09 13 | 691 | 0.1+ | 0.0 | 2004 09 22 | 691 | 0.0 | 0.1+ |
| 2004 08 11 | 704 | 0.0 | 0.4− | 2004 09 13 | 691 | 0.1− | 0.1− | 2004 09 22 | 691 | 0.1− | 0.0 |
| 2004 08 11 | 704 | 0.2+ | 0.1− | 2004 09 13 | 691 | 0.1+ | 0.1− | 2004 10 10 | 644 | 0.7− | 0.3− |
| 2004 08 27 | 703 | 1.7− | 0.1+ | 2004 09 16 | 691 | 0.1+ | 0.0 | 2004 10 10 | 644 | 0.8− | 0.2+ |
| 2004 08 27 | 703 | 0.2− | 0.2+ | 2004 09 16 | 691 | 0.0 | 0.1− | 2004 10 10 | 644 | 0.9− | 0.1+ |
| 2004 08 27 | 703 | 0.9+ | 1.1+ | 2004 09 16 | 691 | 0.1+ | 0.1+ | 2006 02 02 | 691 | 0.2+ | 0.5+ |
| 2004 08 27 | 703 | 0.7+ | 1.1+ | 2004 09 21 | 704 | 0.0 | 1.4+ | 2006 02 02 | 691 | 0.0 | 0.5+ |
| 2004 09 09 | 704 | 0.1− | 0.6+ | 2004 09 21 | 704 | 0.1− | 0.1− | 2006 02 02 | 691 | 0.2+ | 0.4+ |

### 2004 $RA_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.10563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22942012 | $\omega$ | 53.22375 | | +0.90323736 | −0.41922182 | |
| $a$ | 2.6427032 | $\Omega$ | 331.22881 | | +0.30724872 | +0.78097285 | |
| $e$ | 0.3103381 | $i$ | 10.98743 | | +0.29960057 | +0.46296271 | |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.0 | 0.0 | 2004 09 18 | 704 | 0.3+ | 1.1− | 2004 11 05 | 644 | 0.2+ | 0.1+ |
| 1997 02 02 | 691 | 0.3− | 0.3− | 2004 09 18 | 704 | 0.7− | 1.5− | 2004 11 05 | 644 | 0.2+ | 0.1− |
| 1997 02 02 | 691 | 0.1+ | 0.1− | 2004 09 22 | 699 | 0.2− | 0.1− | 2004 11 05 | 644 | 0.1+ | 0.2+ |
| 2004 09 10 | 704 | 0.9− | 0.6+ | 2004 09 22 | 699 | 0.2+ | 0.5+ | 2004 11 05 | 644 | 0.3+ | 0.5− |
| 2004 09 10 | 704 | 0.6+ | 0.2− | 2004 09 22 | 699 | 0.5− | 0.2− | 2004 11 05 | 644 | 0.1+ | 0.4+ |
| 2004 09 10 | 704 | 0.3− | 0.4− | 2004 09 22 | 699 | 0.6+ | 0.2+ | 2004 11 10 | 704 | 0.0 | 1.0+ |
| 2004 09 10 | 704 | 1.1+ | 0.1− | 2004 09 23 | 704 | 0.5+ | 0.9+ | 2004 11 10 | 704 | 0.4+ | 1.4+ |
| 2004 09 10 | 704 | 0.4− | 1.0− | 2004 09 23 | 704 | 1.1+ | 0.5+ | 2004 11 10 | 704 | 0.2+ | 0.9+ |
| 2004 09 13 | 704 | 0.1+ | 0.2− | 2004 09 23 | 704 | 0.7+ | 0.5+ | 2004 11 10 | 704 | 0.7− | 0.1+ |
| 2004 09 13 | 704 | 0.4− | 0.4+ | 2004 09 23 | 704 | 0.3+ | 0.5+ | 2004 12 02 | 703 | 0.0 | 0.7− |
| 2004 09 13 | 704 | 0.4− | 0.1+ | 2004 10 07 | 644 | 0.1+ | 0.1− | 2004 12 02 | 703 | 0.1+ | 0.2+ |
| 2004 09 13 | 704 | 0.4− | 0.1+ | 2004 10 07 | 644 | 0.1− | 0.0 | 2004 12 02 | 703 | 0.1− | 0.4+ |
| 2004 09 13 | 704 | 0.4− | 0.2− | 2004 10 07 | 644 | 0.1+ | 0.1− | 2004 12 02 | 703 | 1.5− | 0.6− |
| 2004 09 14 | 704 | 0.7− | 1.4− | 2004 10 12 | 699 | 0.0 | 0.4+ | 2004 12 16 | 703 | 0.3− | 0.4− |
| 2004 09 14 | 704 | 0.2− | 0.2+ | 2004 10 12 | 699 | 0.2− | 0.2+ | 2004 12 16 | 703 | 0.5+ | 0.0 |
| 2004 09 14 | 704 | 0.5+ | 0.0 | 2004 10 12 | 699 | 0.0 | 0.2− | 2004 12 16 | 703 | 0.5− | 0.1− |
| 2004 09 14 | 704 | 0.4+ | 0.2+ | 2004 10 12 | 699 | 0.3− | 0.8− | 2004 12 16 | 703 | 0.7− | 0.1− |
| 2004 09 14 | 704 | 0.4+ | 0.4− | 2004 10 14 | 644 | 0.0 | 0.1+ | 2005 10 31 | 568 | 0.1− | 0.0 |
| 2004 09 18 | 704 | 0.1− | 0.0 | 2004 10 14 | 644 | 0.1+ | 0.0 | 2005 10 31 | 568 | 0.1+ | 0.2+ |
| 2004 09 18 | 704 | 0.0 | 0.3+ | 2004 10 14 | 644 | 0.2+ | 0.1+ | 2005 10 31 | 568 | 0.1+ | 0.1− |
| 2004 09 18 | 704 | 0.4− | 0.4− | 2004 11 05 | 644 | 0.5+ | 0.0 | | | | |

### 2004 $RX_{198}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.24241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17398611 | $\omega$ | 43.46500 | | +0.90714915 | −0.41274965 | |
| $a$ | 3.1777983 | $\Omega$ | 340.44819 | | +0.28677076 | +0.74890534 | |
| $e$ | 0.1953750 | $i$ | 14.17702 | | +0.30796582 | +0.51843854 | |
| $P$ | 5.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 1.0− | 0.7+ | 2004 09 14 | 704 | 0.1+ | 0.4+ | 2004 11 10 | 704 | 0.1− | 0.2− |
| 1998 09 25 | 699 | 0.2+ | 0.4− | 2004 09 14 | 704 | 1.2+ | 0.0 | 2004 11 10 | 704 | 0.1− | 0.3+ |
| 1998 09 25 | 699 | 0.4+ | 0.3+ | 2004 09 14 | 704 | 0.7− | 0.2+ | 2004 11 10 | 704 | 0.7+ | 0.6− |
| 2004 09 10 | 704 | 0.2− | 0.0 | 2004 09 14 | 704 | 0.5+ | 0.2+ | 2004 12 14 | 201 | 0.0 | 0.0 |
| 2004 09 10 | 704 | 0.4+ | 0.8+ | 2004 11 03 | 703 | 0.7− | 0.4− | 2004 12 14 | 201 | 0.3− | 0.1− |
| 2004 09 10 | 704 | 0.2+ | 0.2+ | 2004 11 03 | 703 | 0.7− | 0.0 | 2004 12 14 | 201 | 0.0 | 0.2− |
| 2004 09 10 | 704 | 0.0 | 0.1− | 2004 11 03 | 703 | 0.9− | 0.1− | 2004 12 14 | 201 | 0.3+ | 0.1+ |
| 2004 09 10 | 704 | 0.3− | 0.1+ | 2004 11 03 | 703 | 0.3− | 0.8− | 2004 12 14 | 201 | 0.1+ | 0.0 |
| 2004 09 13 | 704 | 0.2− | 0.4+ | 2004 11 04 | 704 | 0.1− | 0.7+ | 2006 01 26 | 703 | 0.0 | 0.9− |
| 2004 09 13 | 704 | 1.2+ | 0.2− | 2004 11 04 | 704 | 0.2+ | 0.1− | 2006 01 26 | 703 | 0.5− | 0.6+ |
| 2004 09 13 | 704 | 0.5− | 1.0− | 2004 11 04 | 704 | 0.0 | 0.5+ | 2006 01 26 | 703 | 0.4+ | 1.6+ |
| 2004 09 13 | 704 | 0.5− | 0.3− | 2004 11 04 | 704 | 0.0 | 0.0 | 2006 01 26 | 703 | 0.3+ | 1.0− |
| 2004 09 13 | 704 | 0.1− | 1.1− | 2004 11 10 | 704 | 0.3+ | 0.3+ | | | | |
| 2004 09 14 | 704 | 1.2+ | 0.1− | 2004 11 10 | 704 | 0.0 | 0.5+ | | | | |

### 2004 $RY_{201}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.63225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21288657 | $\omega$ | 4.29615 | | +0.48279120 | +0.85654270 | |
| $a$ | 2.7778186 | $\Omega$ | 294.66232 | | −0.80933198 | +0.35687347 | |
| $e$ | 0.1821983 | $i$ | 11.57440 | | −0.33450622 | +0.37279477 | |
| $P$ | 4.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 691 | 0.3+ | 0.2− | 2004 09 11 | 704 | 0.0 | 0.1− | 2004 09 18 | 704 | 0.3+ | 0.5− |
| 2002 01 05 | 691 | 0.0 | 0.5+ | 2004 09 11 | 704 | 0.2− | 0.0 | 2004 09 18 | 704 | 0.8− | 0.2− |
| 2002 01 05 | 691 | 0.0 | 0.4+ | 2004 09 11 | 704 | 0.1+ | 0.1− | 2004 09 22 | 704 | 0.2− | 0.4+ |
| 2004 06 18 | 704 | 0.6− | 0.3+ | 2004 09 11 | 704 | 0.4+ | 0.3− | 2004 09 22 | 704 | 1.1+ | 0.1− |
| 2004 06 18 | 704 | 0.4+ | 0.1+ | 2004 09 11 | 704 | 1.4− | 0.2− | 2004 09 22 | 704 | 0.6+ | 0.6+ |
| 2004 06 18 | 704 | 0.4+ | 0.3+ | 2004 09 11 | 704 | 0.0 | 0.2− | 2004 09 22 | 704 | 0.3+ | 0.7+ |
| 2004 08 21 | 703 | 0.1+ | 0.6+ | 2004 09 11 | 704 | 1.3− | 0.6− | 2004 09 24 | 704 | 0.2+ | 0.0 |
| 2004 08 21 | 703 | 0.3+ | 0.2− | 2004 09 13 | 704 | 1.0− | 0.6+ | 2004 09 24 | 704 | 0.3− | 0.9+ |
| 2004 08 21 | 703 | 0.3+ | 1.2− | 2004 09 13 | 704 | 1.0− | 0.5+ | 2004 09 24 | 704 | 0.3− | 0.3+ |
| 2004 08 21 | 703 | 0.4− | 0.0 | 2004 09 13 | 704 | 0.3+ | 1.1+ | 2004 09 24 | 704 | 0.6− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 11 | 704 | 0.4+ | 0.2+ | 2004 09 14 | 704 | 0.3+ | 0.0 | 2004 09 24 | 704 | 0.0 | 0.5+ | | |
| 2004 09 11 | 704 | 0.3+ | 0.0 | 2004 09 14 | 704 | 0.2+ | 0.3+ | 2004 10 05 | 644 | 0.5+ | 0.3− | | |
| 2004 09 11 | 704 | 0.1− | 0.4− | 2004 09 14 | 704 | 0.2+ | 0.4+ | 2004 10 05 | 644 | 0.4+ | 0.9− | | |
| 2004 09 11 | 704 | 0.3− | 0.2− | 2004 09 14 | 704 | 0.2+ | 0.1+ | 2004 10 05 | 644 | 0.5+ | 0.3− | | |
| 2004 09 11 | 704 | 0.2+ | 0.2− | 2004 09 14 | 704 | 0.1− | 0.2− | 2006 02 02 | G96 | 0.2+ | 0.5− | | |
| 2004 09 11 | 704 | 0.9− | 0.1+ | 2004 09 18 | 704 | 0.0 | 0.5− | 2006 02 02 | G96 | 0.5− | 0.5− | | |
| 2004 09 11 | 704 | 0.3− | 0.1− | 2004 09 18 | 704 | 0.6+ | 0.2− | 2006 02 02 | G96 | 0.2+ | 0.9− | | |
| 2004 09 11 | 704 | 0.4+ | 0.0 | 2004 09 18 | 704 | 0.4+ | 0.4− | 2006 02 02 | G96 | 0.0 | 0.5− | | |

**2004 RZ$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.79428 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17867045 | $\omega$ | 351.69323 | | +0.71987892 | | +0.68138026 |
| $a$ | 3.1220095 | $\Omega$ | 324.17099 | | −0.62313377 | | +0.55049348 |
| $e$ | 0.1095232 | $i$ | 13.05933 | | −0.30574277 | | +0.48236696 |
| $P$ | 5.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.6+ | 0.6+ | 2004 10 06 | 644 | 0.3− | 0.0 | 2004 11 04 | 703 | 0.1+ | 0.2+ | | |
| 2002 04 08 | 644 | 0.0 | 0.4+ | 2004 10 06 | 644 | 0.1− | 0.2+ | 2004 11 04 | 703 | 0.8− | 0.1− | | |
| 2002 04 08 | 644 | 0.5+ | 0.6+ | 2004 10 06 | 644 | 0.2− | 0.0 | 2004 12 04 | 201 | 0.1− | 0.6− | | |
| 2004 08 19 | 704 | 0.4− | 0.0 | 2004 10 06 | 644 | 0.2− | 0.1+ | 2004 12 04 | 201 | 0.1+ | 0.0 | | |
| 2004 08 19 | 704 | 0.5− | 0.1+ | 2004 10 06 | 644 | 0.2+ | 0.0 | 2004 12 04 | 201 | 0.2+ | 0.6− | | |
| 2004 08 19 | 704 | 0.3+ | 0.1+ | 2004 10 06 | 644 | 0.3− | 0.4+ | 2004 12 04 | 201 | 0.1− | 0.1− | | |
| 2004 08 19 | 704 | 0.0 | 0.2+ | 2004 10 09 | 699 | 0.6+ | 0.1+ | 2004 12 04 | 201 | 0.3+ | 0.3− | | |
| 2004 09 11 | 704 | 0.1− | 1.1+ | 2004 10 09 | 699 | 0.1− | 0.3− | 2004 12 04 | 201 | 0.2− | 0.0 | | |
| 2004 09 11 | 704 | 0.1− | 0.6+ | 2004 10 09 | 699 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.5+ | | |
| 2004 09 11 | 704 | 0.4− | 0.6+ | 2004 10 09 | 699 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.5+ | | |
| 2004 09 11 | 704 | 0.4+ | 0.3+ | 2004 10 15 | 704 | 0.7+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.4+ | | |
| 2004 09 11 | 704 | 0.1− | 0.9+ | 2004 10 15 | 704 | 0.6+ | 0.5− | 2006 11 01 | G96 | 0.1− | 0.5− | | |
| 2004 09 14 | 704 | 0.3− | 0.0 | 2004 10 15 | 704 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.2+ | | |
| 2004 09 14 | 704 | 0.4− | 0.5+ | 2004 10 15 | 704 | 0.8+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.2+ | | |
| 2004 09 14 | 704 | 1.1− | 0.1− | 2004 10 15 | 704 | 0.6+ | 0.6− | 2006 11 16 | G96 | 0.3− | 0.2+ | | |
| 2004 09 14 | 704 | 0.5− | 0.3+ | 2004 11 04 | 703 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.3− | | |
| 2004 09 14 | 704 | 0.4− | 0.3+ | 2004 11 04 | 703 | 0.1+ | 0.0 | | | | | | |

**2004 RA$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.08807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23989493 | $\omega$ | 340.86277 | | +0.52776049 | | +0.84144966 |
| $a$ | 2.5652045 | $\Omega$ | 320.75505 | | −0.75346381 | | +0.40078859 |
| $e$ | 0.2046529 | $i$ | 10.55570 | | −0.39212389 | | +0.36239615 |
| $P$ | 4.11 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 644 | 0.0 | 0.0 | 2004 09 14 | 704 | 0.5− | 0.0 | 2004 10 10 | 704 | 0.6− | 0.1+ | | |
| 2003 03 23 | 644 | 0.3+ | 0.4+ | 2004 09 14 | 704 | 0.5− | 0.3− | 2004 10 10 | 704 | 0.5+ | 0.4+ | | |
| 2003 03 23 | 644 | 0.1+ | 0.3+ | 2004 09 14 | 704 | 0.3− | 0.2+ | 2004 10 10 | 704 | 0.0 | 0.7+ | | |
| 2004 08 19 | 704 | 0.0 | 0.7+ | 2004 09 14 | 704 | 0.0 | 0.4+ | 2004 10 10 | 704 | 0.5− | 0.2+ | | |
| 2004 08 19 | 704 | 0.3+ | 0.2+ | 2004 09 22 | 699 | 0.2− | 0.4+ | 2004 11 04 | 703 | 0.3+ | 0.5+ | | |
| 2004 08 19 | 704 | 0.3+ | 0.6+ | 2004 09 22 | 699 | 0.3+ | 0.1− | 2004 11 04 | 703 | 0.3+ | 0.4+ | | |
| 2004 09 11 | 704 | 0.5+ | 0.1+ | 2004 09 22 | 699 | 0.0 | 1.1− | 2004 11 04 | 703 | 0.5− | 0.5+ | | |
| 2004 09 11 | 704 | 0.2− | 1.3− | 2004 09 22 | 699 | 0.8+ | 0.4+ | 2004 11 04 | 703 | 0.4− | 1.2− | | |
| 2004 09 11 | 704 | 0.3+ | 0.7+ | 2004 10 04 | 705 | 0.1+ | 0.5− | 2006 01 07 | 691 | 0.2− | 0.0 | | |
| 2004 09 11 | 704 | 1.2− | 0.6+ | 2004 10 04 | 705 | 0.2+ | 0.4− | 2006 01 07 | 691 | 0.0 | 0.0 | | |
| 2004 09 11 | 704 | 0.3+ | 0.0 | 2004 10 04 | 705 | 0.4+ | 0.5− | 2006 01 07 | 691 | 0.1+ | 0.1+ | | |
| 2004 09 14 | 704 | 0.2− | 0.5− | 2004 10 10 | 704 | 0.1− | 0.0 | | | | | | |

**2004 RC$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.79624 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22828721 | $\omega$ | 74.88202 | | +0.91553460 | | −0.37263591 |
| $a$ | 2.6514392 | $\Omega$ | 306.76380 | | +0.25626940 | | +0.83058666 |
| $e$ | 0.1488146 | $i$ | 10.89779 | | +0.31003612 | | +0.41384572 |
| $P$ | 4.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 08 | 691 | 0.1− | 0.5+ | 2004 09 14 | 704 | 0.2+ | 0.2+ | 2004 10 24 | 699 | 0.2+ | 0.6− | | |
| 1996 12 08 | 691 | 0.1− | 0.3− | 2004 09 14 | 704 | 0.1− | 0.4− | 2004 10 24 | 699 | 0.9+ | 0.2+ | | |
| 1996 12 08 | 691 | 0.0 | 0.5− | 2004 09 14 | 704 | 0.7+ | 0.4+ | 2004 10 24 | 699 | 0.1+ | 0.6− | | |
| 2000 12 19 | 704 | 0.0 | 0.5+ | 2004 09 14 | 704 | 0.5+ | 0.1− | 2004 10 24 | 699 | 0.0 | 0.3− | | |
| 2000 12 19 | 704 | 0.7+ | 0.9+ | 2004 09 25 | 699 | 0.1+ | 0.5− | 2004 11 05 | 644 | 0.0 | 0.4+ | | |
| 2000 12 19 | 704 | 0.6+ | 0.3− | 2004 09 25 | 699 | 0.1− | 0.3− | 2004 11 05 | 644 | 0.1+ | 0.4+ | | |
| 2000 12 19 | 704 | 1.0− | 0.4+ | 2004 09 25 | 699 | 0.5− | 0.5− | 2004 11 05 | 644 | 0.4− | 0.3+ | | |
| 2004 08 19 | 704 | 0.3+ | 0.0 | 2004 09 25 | 699 | 0.7− | 0.4− | 2004 12 11 | 703 | 0.4+ | 0.3− | | |
| 2004 08 19 | 704 | 1.0− | 0.7+ | 2004 10 04 | 704 | 0.5+ | 0.1− | 2004 12 11 | 703 | 1.3− | 0.0 | | |
| 2004 08 19 | 704 | 1.0− | 0.3− | 2004 10 04 | 704 | 0.3+ | 0.8− | 2004 12 11 | 703 | 0.8− | 0.2+ | | |
| 2004 09 11 | 704 | 0.4+ | 0.4+ | 2004 10 04 | 704 | 0.3+ | 0.4+ | 2004 12 11 | 703 | 0.1− | 0.1+ | | |
| 2004 09 11 | 704 | 0.7− | 0.1+ | 2004 10 04 | 704 | 0.1+ | 0.1− | 2006 01 09 | G96 | 0.2+ | 0.1− | | |
| 2004 09 11 | 704 | 0.5− | 0.6+ | 2004 10 08 | 704 | 0.9+ | 0.6+ | 2006 01 09 | G96 | 0.0 | 0.2− | | |
| 2004 09 11 | 704 | 0.3− | 0.3+ | 2004 10 08 | 704 | 0.5+ | 0.0 | 2006 01 09 | G96 | 0.1+ | 0.2+ | | |
| 2004 09 11 | 704 | 0.1− | 0.5+ | 2004 10 08 | 704 | (0.2+ | 1.7−) | 2006 01 09 | G96 | 0.0 | 0.5+ | | |
| 2004 09 14 | 704 | 0.1+ | 0.3− | 2004 10 08 | 704 | 0.4+ | 0.3− | | | | | | |

**2004 RB$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.58589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27025479 | $\omega$ | 281.54548 | | +0.24729712 | | +0.96892585 |
| $a$ | 2.3693022 | $\Omega$ | 2.78817 | | −0.84231427 | | +0.21761846 |
| $e$ | 0.1063698 | $i$ | 6.11295 | | −0.47890583 | | +0.11757934 |
| $P$ | 3.65 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 11 | 291 | 0.0 | 0.1− | 2003 04 07 | 691 | 0.2+ | 0.1− | 2004 09 10 | 691 | 0.1+ | 0.1− | | |
| 2003 03 11 | 291 | 0.0 | 0.1− | 2003 04 07 | 691 | 0.0 | 0.1+ | 2004 09 15 | 691 | 0.3− | 0.1+ | | |
| 2003 03 11 | 291 | 0.1− | 0.0 | 2003 04 29 | 691 | 0.2− | 0.1− | 2004 09 15 | 691 | 0.2− | 0.3− | | |
| 2003 03 24 | 691 | 0.2+ | 0.1+ | 2003 04 29 | 691 | 0.3− | 0.0 | 2004 09 15 | 691 | 0.2− | 0.1+ | | |
| 2003 03 24 | 691 | 0.5− | 0.0 | 2003 04 29 | 691 | 0.5+ | 0.0 | 2004 09 16 | 691 | 0.2+ | 0.1+ | | |
| 2003 03 24 | 691 | 0.4+ | 0.2+ | 2004 09 10 | 691 | 0.1+ | 0.1− | 2004 09 16 | 691 | 0.1+ | 0.1+ | | |
| 2003 04 07 | 691 | 0.2− | 0.1+ | 2004 09 10 | 691 | 0.0 | 0.0 | 2004 09 16 | 691 | 0.3+ | 0.1+ | | |

**2004 RV$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.86824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38241944 | $\omega$ | 146.35158 | | +0.37359259 | | −0.87306543 |
| $a$ | 1.8797903 | $\Omega$ | 279.94850 | | +0.76542401 | | +0.48097606 |
| $e$ | 0.0844174 | $i$ | 18.54981 | | +0.52397963 | | −0.08011733 |
| $P$ | 2.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.5− | 0.0 | 2003 01 14 | 644 | 0.1+ | 0.1− | 2004 09 16 | 704 | 0.2+ | 0.3− | | |
| 2003 01 02 | 704 | 0.1+ | 0.2+ | 2003 01 14 | 644 | 0.0 | 0.1− | 2004 09 16 | 704 | 0.4− | 0.2− | | |
| 2003 01 02 | 704 | 0.5+ | 0.1− | 2003 02 07 | 644 | 0.3+ | 0.3+ | 2004 09 16 | 704 | 0.3+ | 0.1+ | | |
| 2003 01 02 | 704 | 0.2+ | 0.1− | 2003 02 07 | 644 | 0.2− | 0.4− | 2004 09 23 | 704 | 0.5+ | 0.5+ | | |
| 2003 01 02 | 704 | 0.9− | 0.0 | 2003 02 07 | 644 | 0.3− | 0.1+ | 2004 09 23 | 704 | 0.3− | 0.5+ | | |
| 2003 01 08 | 699 | 1.0+ | 1.1+ | 2004 09 15 | 704 | 0.2− | 0.4+ | 2004 09 23 | 704 | 0.2+ | 0.4+ | | |
| 2003 01 08 | 699 | 0.3− | 1.2− | 2004 09 15 | 704 | 0.4− | 0.8− | 2004 09 23 | 704 | 1.0+ | 0.5− | | |
| 2003 01 08 | 699 | 0.3+ | 0.8+ | 2004 09 15 | 704 | 0.9− | 0.1+ | 2004 09 23 | 704 | (2.4+ | 1.6−) | | |
| 2003 01 08 | 699 | 0.3− | 0.4− | 2004 09 15 | 704 | 0.6− | 0.5+ | | | | | | |
| 2003 01 14 | 644 | 0.0 | 0.1− | 2004 09 16 | 704 | 0.6+ | 0.6− | | | | | | |

**2004 RU$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.30464 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35244133 | $\omega$ | 340.00904 | | +0.92789034 | | −0.29156689 |
| $a$ | 1.9849283 | $\Omega$ | 39.43883 | | +0.37201600 | | +0.68222465 |
| $e$ | 0.0985018 | $i$ | 21.45885 | | +0.02497216 | | +0.67049108 |
| $P$ | 2.80 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 06 | 644 | 0.1− | 0.1− | 2004 10 20 | 703 | 0.2− | 0.0 | 2006 05 22 | G96 | 0.4− | 0.1− |
| 2004 09 06 | 644 | 0.1− | 0.1− | 2006 04 06 | 703 | 0.3− | 0.7+ | 2006 05 22 | G96 | 0.3+ | 0.0 |
| 2004 09 06 | 644 | 0.0 | 0.1+ | 2006 04 06 | 703 | 1.1+ | 1.3− | 2006 05 22 | G96 | 0.2− | 0.4− |
| 2004 09 07 | 704 | 0.2+ | 0.3+ | 2006 04 06 | 703 | (2.4− | 0.7+) | 2006 05 22 | G96 | 0.2− | 0.3+ |
| 2004 09 07 | 704 | 0.5− | 1.1+ | 2006 04 06 | 703 | 0.0 | 0.0 | 2006 05 22 | G96 | 0.1− | 0.1+ |
| 2004 09 07 | 704 | 0.5+ | 0.1− | 2006 04 30 | 699 | 0.1− | 0.5− | 2006 05 22 | G96 | 0.2− | 0.4+ |
| 2004 09 21 | 704 | 0.1+ | 0.7− | 2006 04 30 | 699 | 0.1+ | 0.8− | 2006 05 22 | G96 | 0.1+ | 0.1+ |
| 2004 09 21 | 704 | 0.5+ | 0.2− | 2006 04 30 | 699 | 1.1+ | 0.3+ | 2006 05 22 | G96 | 0.0 | 0.0 |
| 2004 09 21 | 704 | 0.2+ | 0.1+ | 2006 04 30 | 699 | 0.5− | 1.2+ | 2006 05 31 | G96 | 0.2+ | 0.0 |
| 2004 09 21 | 704 | 1.0− | 0.4− | 2006 05 07 | G96 | 0.2− | 0.1− | 2006 05 31 | G96 | 0.2− | 0.0 |
| 2004 10 20 | 703 | 0.8+ | 0.0 | 2006 05 07 | G96 | 0.1+ | 0.1− | 2006 05 31 | G96 | 0.1− | 0.3+ |
| 2004 10 20 | 703 | 0.5− | 0.2− | 2006 05 07 | G96 | 0.3− | 0.0 | 2006 05 31 | G96 | 0.0 | 0.0 |
| 2004 10 20 | 703 | 0.3+ | 0.0 | 2006 05 07 | G96 | 0.4− | 0.1− | | | | |

**2004 RU$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.73103 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25635698 | $\omega$ | 121.52771 | | −0.53160339 | | −0.84699264 |
| $a$ | 2.4541774 | $\Omega$ | 0.58982 | | +0.73453268 | | −0.46169129 |
| $e$ | 0.0585377 | $i$ | 6.38230 | | +0.42173401 | | −0.26352347 |
| $P$ | 3.84 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 17 | 807 | 0.4+ | 0.5− | 2004 09 16 | 691 | 0.2− | 0.1− | 2006 01 25 | 703 | 1.1+ | 0.4+ |
| 2004 07 17 | 807 | 0.8+ | 0.3− | 2004 09 16 | 691 | 0.0 | 0.2− | 2006 02 01 | 291 | 0.2+ | 0.1− |
| 2004 09 11 | 691 | 0.3+ | 0.2+ | 2006 01 09 | G96 | 0.1+ | 0.2+ | 2006 02 01 | 291 | 0.1+ | 0.0 |
| 2004 09 11 | 691 | 0.0 | 0.1− | 2006 01 09 | G96 | 0.4− | 0.1− | 2006 02 01 | 291 | 0.6+ | 0.2+ |
| 2004 09 11 | 691 | 0.0 | 0.1+ | 2006 01 09 | G96 | 0.8− | 0.2− | 2006 02 18 | 699 | 0.8+ | 0.7+ |
| 2004 09 11 | 291 | 0.1+ | 0.2+ | 2006 01 09 | G96 | 0.4− | 0.1+ | 2006 02 18 | 699 | 0.5− | 0.8− |
| 2004 09 11 | 291 | 0.1− | 0.0 | 2006 01 25 | 703 | 1.9− | 1.3− | 2006 02 18 | 699 | 0.6− | 0.7+ |
| 2004 09 11 | 291 | 0.0 | 0.3+ | 2006 01 25 | 703 | 1.2− | 0.0 | 2006 02 18 | 699 | 0.2+ | 0.0 |
| 2004 09 16 | 691 | 0.3− | 0.2− | 2006 01 25 | 703 | (3.5− | 0.3−) | | | | |

**2004 RF$_{279}$ = 2006 GB$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.61071 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29989749 | $\omega$ | 240.92503 | | +0.33926790 | | −0.94052699 |
| $a$ | 2.2104846 | $\Omega$ | 189.29331 | | +0.89635534 | | +0.32886641 |
| $e$ | 0.0581362 | $i$ | 6.22141 | | +0.28538464 | | +0.08518136 |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 15 | 691 | 0.1− | 0.1− | 2004 09 18 | 704 | 0.3+ | 0.1+ | 2006 04 02 | 691 | 0.2− | 0.1+ |
| 2004 09 15 | 691 | 0.1+ | 0.0 | 2004 09 18 | 704 | 0.5− | 0.7+ | 2006 04 02 | 691 | 0.4− | 0.3+ |
| 2004 09 15 | 691 | 0.1+ | 0.1− | 2004 09 18 | 704 | 0.0 | 1.0− | 2006 04 02 | 691 | 0.3− | 0.8+ |
| 2004 09 16 | 699 | 0.1− | 0.6+ | 2004 09 18 | 704 | 0.6− | 0.8+ | 2006 04 02 | 691 | 0.1− | 0.2+ |
| 2004 09 16 | 699 | 0.6+ | 0.4− | 2004 09 18 | 704 | 1.1− | 0.6+ | 2006 04 02 | 691 | 0.1− | 0.1+ |
| 2004 09 16 | 699 | 0.6+ | 0.5− | 2004 09 18 | 704 | 0.6− | 0.1+ | 2006 04 02 | G96 | 0.1− | 0.3− |
| 2004 09 16 | 699 | 1.0+ | 0.2+ | 2004 09 18 | 704 | 0.2− | 0.2+ | 2006 04 02 | G96 | 0.0 | 0.1− |
| 2004 09 16 | 691 | 0.0 | 0.0 | 2004 09 18 | 704 | 0.7+ | 0.0 | 2006 04 02 | G96 | 0.3+ | 0.2− |
| 2004 09 16 | 691 | 0.2− | 0.1+ | 2004 09 18 | 704 | (1.1− | 2.4−) | 2006 04 02 | G96 | 0.4− | 0.3− |
| 2004 09 16 | 691 | 0.0 | 0.0 | 2004 09 18 | 704 | 0.2− | 0.8+ | 2006 04 06 | 691 | 0.3+ | 0.3− |
| 2004 09 17 | 704 | 0.1+ | 0.4+ | 2004 10 13 | 691 | 0.3− | 0.8− | 2006 04 06 | 691 | 0.9+ | 0.1− |
| 2004 09 17 | 704 | 0.4+ | 0.3+ | 2004 10 13 | 691 | 0.1+ | 0.4+ | 2006 04 06 | 691 | 0.3+ | 0.4− |
| 2004 09 17 | 704 | 0.7− | 0.1− | 2004 10 13 | 691 | 0.2+ | 0.4+ | | | | |
| 2004 09 17 | 704 | (2.6− | 1.5−) | 2006 04 02 | 691 | 0.1− | 0.2+ | | | | |

**2004 RC$_{285}$ = 2002 CC$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.16371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25843871 | $\omega$ | 298.99184 | | +0.48418639 | | −0.87453277 |
| $a$ | 2.4409807 | $\Omega$ | 122.02343 | | +0.81362597 | | +0.43846187 |
| $e$ | 0.1616797 | $i$ | 1.85842 | | +0.32183277 | | +0.20722845 |
| $P$ | 3.81 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.1+ | 0.1− | 2004 09 15 | 691 | 0.2+ | 0.4+ | 2006 02 25 | G96 | 0.1+ | 0.2+ |
| 2000 07 30 | 807 | 0.5− | 0.4+ | 2004 09 15 | 691 | 0.1− | 0.3+ | 2006 02 25 | G96 | 0.1+ | 0.2− |
| 2002 02 07 | 291 | 0.3− | 0.1− | 2004 09 16 | 691 | 0.0 | 0.3+ | 2006 03 03 | 691 | 0.3+ | 1.8+ |
| 2002 02 07 | 291 | 0.0 | 0.1− | 2004 09 16 | 691 | 0.1− | 0.3+ | 2006 03 03 | 691 | 0.6+ | 0.3+ |
| 2002 02 07 | 291 | 0.1+ | 0.1− | 2004 09 16 | 691 | 0.1+ | 0.1+ | 2006 03 03 | 691 | 0.1+ | 0.1+ |
| 2002 02 10 | 704 | 0.8+ | 0.2+ | 2004 09 17 | 704 | 0.3+ | 0.5− | 2006 03 29 | 691 | 0.3+ | 0.3+ |
| 2002 02 10 | 704 | 0.7+ | 0.4− | 2004 09 17 | 704 | 1.4− | 1.4− | 2006 03 29 | 691 | 0.1− | 0.5+ |
| 2002 02 10 | 704 | 0.4+ | 0.8− | 2004 09 17 | 704 | 1.7− | 1.4+ | 2006 03 29 | 691 | 0.0 | 0.2+ |
| 2002 02 12 | 704 | 1.0− | 0.2− | 2004 09 17 | 704 | 0.3− | 1.0+ | 2006 04 07 | G96 | 0.2+ | 0.1+ |
| 2002 02 12 | 704 | 0.4− | 0.1+ | 2004 09 22 | 691 | 0.5+ | 0.4+ | 2006 04 07 | G96 | 0.1− | 0.2+ |
| 2002 02 12 | 704 | 0.9− | 0.3− | 2004 09 22 | 691 | 0.7− | 0.6+ | 2006 04 07 | G96 | 0.4− | 1.1+ |
| 2002 02 12 | 704 | 0.6+ | 0.7− | 2004 09 22 | 691 | 0.2− | 0.2+ | 2006 04 07 | G96 | 0.0 | 0.7+ |
| 2002 02 12 | 704 | 0.2− | 0.8+ | 2006 02 25 | G96 | 0.2+ | 0.4− | | | | |
| 2004 09 15 | 691 | 0.0 | 0.1+ | 2006 02 25 | G96 | 0.1+ | 0.2+ | | | | |

**2004 RN$_{293}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.68075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19874491 | $\omega$ | 256.77809 | | −0.97693557 | | +0.20840743 |
| $a$ | 2.9080735 | $\Omega$ | 295.23492 | | −0.17054475 | | −0.89259319 |
| $e$ | 0.0886118 | $i$ | 2.94731 | | −0.12849665 | | −0.39980462 |
| $P$ | 4.96 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.7+ | 0.8+ | 2002 03 10 | 291 | 0.2− | 0.1+ | 2004 09 17 | 691 | 0.1+ | 0.3− |
| 2002 02 11 | 704 | 0.6+ | 0.2− | 2002 03 10 | 291 | 0.1− | 0.1+ | 2004 09 17 | 691 | 0.1− | 0.1− |
| 2002 02 11 | 704 | 0.2+ | 1.0− | 2004 08 25 | 691 | 0.2+ | 0.3+ | 2005 10 30 | G96 | 0.4− | 0.5+ |
| 2002 02 11 | 704 | 1.0+ | 1.0+ | 2004 08 25 | 691 | 0.0 | 0.0 | 2005 10 30 | G96 | 0.2+ | 0.2− |
| 2002 02 11 | 704 | 1.2− | 0.2+ | 2004 08 25 | 691 | 0.0 | 0.1+ | 2005 10 30 | G96 | 0.2− | 0.2− |
| 2002 02 20 | 691 | 0.2+ | 0.1+ | 2004 09 11 | 691 | 0.2− | 0.2+ | 2005 10 30 | G96 | 0.1− | 0.5− |
| 2002 02 20 | 691 | 0.0 | 0.1− | 2004 09 11 | 691 | 0.1− | 0.0 | 2005 11 21 | 691 | 0.1+ | 0.0 |
| 2002 02 20 | 691 | 0.1+ | 0.2− | 2004 09 11 | 691 | 0.1− | 0.1+ | 2005 11 21 | 691 | 0.2+ | 0.1− |
| 2002 03 10 | 291 | 0.4− | 0.0 | 2004 09 17 | 691 | 0.1+ | 0.0 | 2005 11 21 | 691 | 0.2− | 0.1+ |

**2004 RE$_{294}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.95856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24631375 | $\omega$ | 88.05861 | | +0.16624958 | | +0.98565492 |
| $a$ | 2.5204434 | $\Omega$ | 191.63362 | | −0.95232409 | | +0.15283841 |
| $e$ | 0.1289388 | $i$ | 8.29051 | | −0.25581225 | | +0.07158773 |
| $P$ | 4.00 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 691 | 0.0 | 0.9+ | 2003 04 24 | 691 | 0.2− | 0.0 | 2004 09 16 | 699 | 0.7+ | 1.1+ |
| 1999 03 24 | 691 | 0.3+ | 0.4+ | 2003 04 24 | 691 | 0.2− | 0.3+ | 2004 09 16 | 699 | 1.7+ | 0.2− |
| 1999 03 24 | 691 | 0.1+ | 0.6+ | 2003 04 24 | 691 | 0.5− | 0.3+ | 2004 09 16 | 699 | 0.4+ | 0.6− |
| 2003 03 24 | 291 | 0.3− | 0.3− | 2003 05 08 | 691 | 0.1− | 0.0 | 2004 09 16 | 699 | (1.1− | 2.3+) |
| 2003 03 24 | 291 | 0.2− | 0.2− | 2003 05 08 | 691 | 0.2+ | 0.0 | 2004 09 17 | 691 | 0.1+ | 0.1− |
| 2003 03 24 | 291 | 0.4− | 0.1− | 2003 05 08 | 691 | 0.2− | 0.3+ | 2004 09 17 | 691 | 0.1− | 0.0 |
| 2003 04 06 | 691 | 0.4+ | 0.5− | 2004 09 11 | 691 | 0.1− | 0.1− | 2004 09 17 | 691 | 0.1+ | 0.0 |
| 2003 04 06 | 691 | 1.2+ | 0.8− | 2004 09 11 | 691 | 0.2− | 0.2− | 2004 10 15 | 695 | 0.2− | 0.3+ |
| 2003 04 06 | 691 | 0.2− | 0.8− | 2004 09 11 | 691 | 0.4− | 0.1+ | 2004 10 15 | 695 | 0.5− | 0.2+ |

**2004 RH$_{300}$ = 2006 AJ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.49784 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21206908 | $\omega$ | 76.01982 | −0.03975549 | | −0.99907332 | |
| $a$ | 2.7849527 | $\Omega$ | 16.28561 | +0.89255887 | | −0.04292712 | |
| $e$ | 0.0577278 | $i$ | 3.37165 | +0.44917497 | | −0.00312500 | |
| $P$ | 4.65 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 06 | 644 | 1.2− | 0.0 | 2004 09 11 | 691 | 0.2− | 0.3+ | 2006 01 06 | 704 | 0.3+ | 0.1− |
| 2002 03 06 | 644 | 1.0− | 0.1− | 2004 09 11 | 691 | 0.1− | 0.1− | 2006 01 06 | 704 | 0.3− | 1.1+ |
| 2002 03 06 | 644 | 1.2− | 0.0 | 2004 09 11 | 691 | 0.0 | 0.1+ | 2006 01 06 | 704 | 0.4+ | 0.7+ |
| 2002 04 04 | 691 | 0.7+ | 0.1+ | 2004 09 17 | 691 | 0.0 | 0.2+ | 2006 01 06 | 704 | 0.3+ | 1.1+ |
| 2002 04 04 | 691 | 0.7+ | 0.6+ | 2004 09 17 | 691 | 0.1− | 0.1+ | 2006 01 07 | 691 | 0.1− | 0.2− |
| 2002 04 04 | 691 | 0.4+ | 0.6+ | 2004 09 17 | 691 | 0.2− | 0.9+ | 2006 01 07 | 691 | 0.1− | 0.3− |
| 2002 04 04 | 644 | 0.4− | 0.2+ | 2005 12 30 | 691 | 0.1+ | 0.2+ | 2006 01 07 | 691 | 0.0 | 0.3− |
| 2002 04 04 | 644 | 0.1− | 0.2+ | 2005 12 30 | 691 | 0.0 | 0.1+ | | | | |
| 2002 04 04 | 644 | 0.2− | 0.3+ | 2005 12 30 | 691 | 0.0 | 0.0 | | | | |

**2004 RA$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.99909 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27570434 | $\omega$ | 93.11381 | +0.99114799 | | +0.02830028 | |
| $a$ | 2.3379775 | $\Omega$ | 265.29088 | −0.07659691 | | +0.91990379 | |
| $e$ | 0.1871738 | $i$ | 7.47824 | +0.10843692 | | +0.39112160 | |
| $P$ | 3.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 704 | 0.4− | 0.2− | 2004 09 18 | 704 | 0.4+ | 0.5+ | 2004 11 04 | 703 | (0.7− | 1.8−) |
| 2000 08 02 | 704 | 0.6− | 0.1− | 2004 09 18 | 704 | 0.4− | 0.1− | 2004 11 04 | 703 | 0.6+ | 0.0 |
| 2000 08 02 | 704 | 0.8+ | 1.3+ | 2004 09 18 | 704 | 0.1− | 0.3− | 2004 11 04 | 703 | 0.1− | 0.8− |
| 2000 08 02 | 704 | 0.5− | 0.7+ | 2004 10 08 | 704 | 0.1+ | 0.3+ | 2004 11 19 | 704 | 0.0 | 0.0 |
| 2002 02 16 | 644 | 0.2+ | 0.5+ | 2004 10 08 | 704 | 0.2+ | 0.4− | 2004 11 19 | 704 | 0.1+ | 0.3+ |
| 2002 02 16 | 644 | 0.4+ | 0.6+ | 2004 10 08 | 704 | 0.5− | 0.1+ | 2004 11 19 | 704 | 0.2+ | 0.1+ |
| 2002 02 16 | 644 | 0.2+ | 0.6+ | 2004 10 08 | 704 | 0.1+ | 0.4+ | 2004 11 19 | 704 | 0.1− | 0.6− |
| 2004 09 10 | 704 | (2.4+ | 0.8+) | 2004 10 08 | 704 | 0.0 | 0.0 | 2004 12 01 | 644 | 0.4− | 0.1− |
| 2004 09 10 | 704 | 1.1+ | 0.4− | 2004 10 15 | 704 | 0.3− | 0.1+ | 2004 12 01 | 644 | 0.4− | 0.0 |
| 2004 09 10 | 704 | 0.6− | 0.0 | 2004 10 15 | 704 | 0.5− | 0.1− | 2004 12 01 | 644 | 0.2− | 0.0 |
| 2004 09 10 | 704 | 0.9+ | 0.0 | 2004 10 15 | 704 | 0.1− | 0.7− | 2004 12 14 | 699 | 0.5+ | 0.3+ |
| 2004 09 10 | 704 | 0.1+ | 1.2+ | 2004 10 15 | 704 | 0.4− | 0.3+ | 2004 12 14 | 699 | (1.9− | 0.5+) |
| 2004 09 13 | 704 | 0.8− | 0.7− | 2004 10 15 | 704 | 0.6− | 0.2+ | 2004 12 14 | 699 | 1.1− | 0.3− |
| 2004 09 13 | 704 | 0.2+ | 0.3+ | 2004 11 04 | 699 | 0.6+ | 0.1− | 2004 12 14 | 699 | 0.6− | 0.6+ |
| 2004 09 13 | 704 | 0.0 | 0.2− | 2004 11 04 | 699 | 0.1+ | 0.2+ | 2006 02 06 | G96 | 0.1+ | 0.1− |
| 2004 09 13 | 704 | 0.7+ | 0.5+ | 2004 11 04 | 699 | 0.5+ | 0.1+ | 2006 02 06 | G96 | 0.2+ | 0.2+ |
| 2004 09 18 | 704 | 0.4+ | 0.2+ | 2004 11 04 | 699 | 0.1− | 1.0+ | 2006 02 06 | G96 | 0.0 | 0.3− |
| 2004 09 18 | 704 | 0.9+ | 1.1− | 2004 11 04 | 703 | 0.3− | 0.4− | 2006 02 06 | G96 | 0.0 | 0.2+ |

**2004 RW$_{335}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.57975 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21529334 | $\omega$ | 201.80374 | +0.41847393 | | −0.90528987 | |
| $a$ | 2.7570776 | $\Omega$ | 223.54884 | +0.84815647 | | +0.41827890 | |
| $e$ | 0.2008623 | $i$ | 6.08266 | +0.32482330 | | +0.07411492 | |
| $P$ | 4.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 20 | 608 | 0.1− | 0.5− | 2004 10 04 | 691 | 0.0 | 0.0 | 2004 10 24 | 704 | 0.3+ | 0.9+ |
| 2001 01 20 | 608 | 0.2+ | 0.7− | 2004 10 10 | 704 | 0.8+ | 0.3− | 2004 10 24 | 704 | 0.3− | 1.7+ |
| 2001 01 20 | 608 | 0.4− | 0.3− | 2004 10 10 | 704 | 0.1− | 1.1+ | 2004 10 24 | 704 | 0.7+ | 0.6+ |
| 2004 09 15 | 691 | 0.2− | 0.1− | 2004 10 10 | 704 | 0.7+ | 0.9+ | 2004 12 10 | 701 | 0.4+ | 0.0 |
| 2004 09 15 | 691 | 0.1− | 0.1− | 2004 10 14 | 691 | 0.3− | 0.1− | 2004 12 10 | 701 | 0.0 | 0.1− |
| 2004 09 15 | 691 | 0.0 | 0.4− | 2004 10 14 | 691 | 0.1− | 0.1− | 2004 12 10 | 701 | 0.3+ | 0.2− |
| 2004 09 22 | 691 | 0.5+ | 0.1− | 2004 10 14 | 691 | 0.1+ | 0.1− | 2006 02 06 | G96 | 0.1+ | 0.4+ |
| 2004 09 22 | 691 | 0.2+ | 0.0 | 2004 10 21 | 704 | 0.8− | 0.6+ | 2006 02 06 | G96 | 0.0 | 0.8+ |
| 2004 09 22 | 691 | 0.1+ | 0.0 | 2004 10 21 | 704 | 0.4− | 0.7+ | 2006 02 06 | G96 | 0.1− | 0.1− |
| 2004 10 04 | 691 | 0.5− | 0.5− | 2004 10 21 | 704 | 0.4− | 0.1− | 2006 02 06 | G96 | 0.4+ | 0.5+ |
| 2004 10 04 | 691 | 0.1+ | 0.1− | 2004 10 21 | 704 | 0.4− | 1.4+ | | | | |

**2004 RG$_{345}$ = 1993 TY$_{7}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.66136 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17960136 | $\omega$ | 316.95636 | +0.85219751 | | +0.52047236 | |
| $a$ | 3.1112122 | $\Omega$ | 12.02245 | −0.38243505 | | +0.68947303 | |
| $e$ | 0.2200213 | $i$ | 14.89818 | −0.35707540 | | +0.50372161 | |
| $P$ | 5.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 691 | 0.3− | 0.0 | 2004 09 07 | 691 | 0.1− | 0.1+ | 2004 10 04 | 691 | 0.0 | 0.2− |
| 1993 10 10 | 691 | 0.2− | 0.0 | 2004 09 07 | 691 | 0.0 | 0.1− | 2004 10 04 | 691 | 0.1− | 0.5− |
| 1993 10 10 | 691 | 0.0 | 0.0 | 2004 09 07 | 691 | 0.0 | 0.0 | 2004 10 04 | 691 | 0.0 | 0.2− |
| 1993 10 15 | 691 | 0.2+ | 0.5+ | 2004 09 22 | 691 | 0.1− | 0.2+ | 2004 10 12 | 691 | 0.0 | 0.1+ |
| 1993 10 15 | 691 | 0.2+ | 0.1+ | 2004 09 22 | 691 | 0.1+ | 0.2+ | 2004 10 12 | 691 | 0.1− | 0.3+ |
| 1993 10 15 | 691 | 0.0 | 0.5− | 2004 09 22 | 691 | 0.3+ | 0.0 | 2004 10 12 | 691 | 0.0 | 0.1+ |

**2004 RJ$_{345}$ = 2000 UB$_{93}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.92664 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23683450 | $\omega$ | 166.78507 | +0.62595129 | | −0.76973657 | |
| $a$ | 2.5872560 | $\Omega$ | 244.31581 | +0.70227603 | | +0.62620121 | |
| $e$ | 0.2475872 | $i$ | 7.98971 | +0.33910671 | | +0.12400669 | |
| $P$ | 4.16 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.5− | 0.3+ | 2004 09 10 | 704 | 1.2− | 0.0 | 2004 09 22 | 699 | 0.2+ | 0.1+ |
| 2000 10 25 | 704 | 1.2+ | 0.2+ | 2004 09 10 | 704 | 1.3− | 0.6+ | 2004 09 22 | 699 | 1.3+ | 0.0 |
| 2000 10 25 | 704 | 0.0 | 0.3+ | 2004 09 10 | 704 | 0.1− | 1.1− | 2004 09 22 | 699 | 0.1+ | 0.2+ |
| 2000 10 25 | 704 | 0.0 | 0.1− | 2004 09 10 | 704 | 0.0 | 0.1+ | 2004 09 22 | 699 | 0.5− | 0.5− |
| 2000 11 03 | 704 | 0.1+ | 0.0 | 2004 09 18 | 704 | 0.1+ | 0.0 | 2004 10 15 | 704 | 0.2+ | 0.6− |
| 2000 11 03 | 704 | 0.3− | 0.5− | 2004 09 18 | 704 | 0.2− | 0.9− | 2004 10 15 | 704 | 0.1− | 0.2+ |
| 2000 11 03 | 704 | 0.7− | 0.3+ | 2004 09 18 | 704 | 0.4+ | 0.1+ | 2004 10 15 | 704 | 0.4− | 0.4+ |
| 2000 11 03 | 704 | 0.1+ | 0.3− | 2004 09 18 | 704 | 0.3+ | 0.5− | 2004 10 15 | 704 | 0.3− | 0.3− |
| 2004 09 10 | 704 | 0.5+ | 0.6+ | 2004 09 18 | 704 | 0.7+ | 1.2+ | 2004 10 15 | 704 | 0.2+ | 0.3+ |

**2004 RK$_{345}$ = 2005 XQ$_{89}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.92844 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21269856 | $\omega$ | 13.38359 | +0.64128165 | | +0.76474587 | |
| $a$ | 2.7794552 | $\Omega$ | 296.54180 | −0.71027726 | | +0.56076384 | |
| $e$ | 0.1523099 | $i$ | 4.01399 | −0.29028272 | | +0.31734473 | |
| $P$ | 4.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 10 | 704 | 0.3− | 0.4+ | 2004 09 18 | 704 | 1.3+ | 1.0− | 2004 09 24 | 704 | 0.2− | 0.9+ |
| 2004 09 10 | 704 | 0.2+ | 0.9+ | 2004 09 18 | 704 | 0.2− | 0.1+ | 2004 09 24 | 704 | 0.1+ | 0.1+ |
| 2004 09 10 | 704 | 0.0 | 0.1+ | 2004 09 18 | 704 | 0.4+ | 0.6− | 2004 09 24 | 704 | (2.7− | 0.6−) |
| 2004 09 10 | 704 | 0.3+ | 0.5− | 2004 09 18 | 704 | 1.4− | 0.1+ | 2005 12 08 | 691 | 0.2+ | 0.6+ |
| 2004 09 10 | 704 | 0.4+ | 0.6− | 2004 09 21 | 704 | 1.0− | 0.0 | 2005 12 08 | 691 | 0.3+ | 0.2+ |
| 2004 09 14 | 699 | (1.4+ | 2.5+) | 2004 09 21 | 704 | 0.3− | 0.6− | 2005 12 08 | 691 | 0.5− | 0.2+ |
| 2004 09 14 | 699 | 0.5− | 0.5+ | 2004 09 21 | 704 | 0.4− | 0.3+ | 2005 12 21 | 691 | 0.1+ | 0.2− |
| 2004 09 14 | 699 | 0.7+ | 0.2+ | 2004 09 21 | 704 | 0.1− | 0.0 | 2005 12 21 | 691 | 0.0 | 0.4− |
| 2004 09 14 | 699 | 0.3+ | 1.7− | 2004 09 24 | 704 | 1.0+ | 1.5+ | 2005 12 21 | 691 | 0.2− | 0.5− |

**2004 RL$_{345}$ = 2005 YL$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.00270 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18773203 | $\omega$ | 188.84553 | −0.97665320 | | −0.20872333 | |
| $a$ | 3.0207200 | $\Omega$ | 338.89813 | +0.20472134 | | −0.83261510 | |
| $e$ | 0.0115851 | $i$ | 8.11543 | +0.06509768 | | −0.51301722 | |
| $P$ | 5.25 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.0 | 0.8+ | 2004 09 10 | 704 | 0.3+ | 1.1+ | 2004 10 10 | 704 | 0.0 | 0.6− |
| 2001 01 04 | 704 | 0.8+ | 0.6+ | 2004 09 10 | 704 | 1.5+ | 0.8− | 2004 10 10 | 704 | 0.3+ | 0.5− |
| 2001 01 04 | 704 | 0.4− | 0.0 | 2004 09 10 | 704 | 0.1− | 0.2+ | 2004 10 10 | 704 | 1.5− | 0.5− |
| 2001 01 04 | 704 | 0.0 | 0.5+ | 2004 09 13 | 699 | 0.7+ | 1.8+ | 2004 10 10 | 704 | 0.7− | 0.1− |
| 2002 04 09 | 704 | 0.4− | 0.9+ | 2004 09 13 | 699 | 0.8− | 0.3+ | 2004 10 10 | 704 | 0.7− | 0.6− |
| 2002 04 09 | 704 | 0.0 | 0.6+ | 2004 09 13 | 699 | 1.8+ | 0.5− | 2005 12 24 | 704 | 0.2+ | 1.1− |
| 2002 04 09 | 704 | 0.1+ | 0.4+ | 2004 09 13 | 699 | 0.3− | 0.7+ | 2005 12 24 | 704 | 0.6− | 0.0 |
| 2002 04 09 | 704 | 0.6+ | 2.4− | 2004 09 22 | 704 | 0.1+ | 0.4− | 2005 12 24 | 704 | 0.3− | 0.1+ |
| 2003 07 07 | 644 | 0.4− | 0.7+ | 2004 09 22 | 704 | 0.2+ | 0.5+ | 2006 01 07 | 704 | (2.4− | 0.2−) |
| 2003 07 07 | 644 | 0.4− | 0.7+ | 2004 09 22 | 704 | 0.8− | 0.1− | 2006 01 07 | 704 | 0.2+ | 0.5+ |
| 2003 07 07 | 644 | 0.5− | 0.7+ | 2004 09 22 | 704 | 0.3− | 0.3− | 2006 01 07 | 704 | 0.1+ | 1.0+ |
| 2004 09 10 | 704 | 0.6+ | 0.9+ | 2004 09 22 | 704 | 0.7+ | 0.7− | | | | |

### 2004 RM$_{345}$ = 1995 UJ$_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 133.86191 | | (2000.0) | | | |
| $n$ | 0.22094041 | $\omega$ | 193.44149 | | +0.68430986 | −0.72910437 |
| $a$ | 2.7098960 | $\Omega$ | 213.37926 | | +0.67089840 | +0.63558046 |
| $e$ | 0.0789572 | $i$ | 1.17288 | | +0.28568400 | +0.25385881 |
| $P$ | 4.46 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.5− | 0.3+ | 2004 09 10 | 691 | 0.4− | 0.3− | 2006 01 05 | G96 | 0.1− | 0.1+ |
| 1995 10 16 | 691 | 0.4− | 0.1+ | 2004 09 10 | 691 | 0.2+ | 0.0 | 2006 01 05 | G96 | 0.1− | 0.1− |
| 1995 10 16 | 691 | 0.1− | 0.1− | 2004 09 23 | 691 | 0.2− | 0.1+ | 2006 02 01 | 691 | 0.1− | 0.2+ |
| 1995 10 21 | 691 | 0.3+ | 0.0 | 2004 09 23 | 691 | 0.0 | 0.0 | 2006 02 01 | 691 | 0.1+ | 0.2+ |
| 1995 10 21 | 691 | 0.1+ | 0.1− | 2004 09 23 | 691 | 0.0 | 0.1+ | 2006 02 01 | 691 | 0.4+ | 0.3+ |
| 1995 10 21 | 691 | 0.3+ | 0.1+ | 2004 10 11 | 691 | 0.2+ | 0.3+ | 2006 02 01 | G96 | 0.0 | 0.4− |
| 1999 09 05 | 691 | 0.5+ | 0.3− | 2004 10 11 | 691 | 0.0 | 0.0 | 2006 02 01 | G96 | 0.1+ | 0.3− |
| 1999 09 05 | 691 | 0.0 | 0.3− | 2004 10 11 | 691 | 0.1− | 0.4+ | 2006 02 01 | G96 | 0.2+ | 0.0 |
| 1999 09 05 | 691 | 0.0 | 0.5− | 2004 11 10 | 691 | 0.2− | 0.0 | 2006 02 01 | G96 | 0.3− | 0.2− |
| 2000 12 18 | 691 | 0.2+ | 0.5− | 2004 11 10 | 691 | 0.2+ | 0.0 | 2006 02 24 | G96 | 0.3− | 0.1+ |
| 2000 12 18 | 691 | 0.1+ | 0.4− | 2004 11 10 | 691 | 0.6− | 0.2+ | 2006 02 24 | G96 | 0.1− | 0.1+ |
| 2000 12 18 | 691 | 0.2+ | 0.5− | 2006 01 05 | G96 | 0.4− | 0.1− | 2006 02 24 | G96 | 0.5− | 0.1− |
| 2004 09 10 | 691 | 0.4+ | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.4− | 2006 02 24 | G96 | 0.4− | 0.1+ |

### 2004 RO$_{345}$ = 2006 DY$_{167}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 198.10029 | | (2000.0) | | | |
| $n$ | 0.29037235 | $\omega$ | 311.91750 | | +0.92497022 | −0.37489246 |
| $a$ | 2.2585648 | $\Omega$ | 70.18555 | | +0.36534460 | +0.83199099 |
| $e$ | 0.1697381 | $i$ | 3.79911 | | +0.10465854 | +0.40895798 |
| $P$ | 3.39 | $H$ | 17.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 14 | 699 | 0.7+ | 0.6+ | 2004 10 09 | 704 | 0.3− | 1.5− | 2006 02 27 | 691 | 0.4− | 0.6+ |
| 2004 09 14 | 699 | 0.4− | 1.2− | 2004 10 09 | 704 | 0.8− | 0.2− | 2006 02 27 | 691 | 0.3+ | 0.3+ |
| 2004 09 14 | 699 | 0.8+ | 0.1− | 2004 10 09 | 704 | 1.0− | 0.4− | 2006 02 27 | 691 | 0.6+ | 0.0 |
| 2004 09 14 | 699 | 0.0 | 1.2+ | 2004 10 20 | 703 | 0.3+ | 0.6+ | 2006 03 03 | 691 | 0.1− | 0.1− |
| 2004 09 17 | 704 | 0.7− | 0.6+ | 2004 10 20 | 703 | 0.7+ | 0.3+ | 2006 03 03 | 691 | 0.4− | 0.1− |
| 2004 09 17 | 704 | 0.3− | 0.4+ | 2004 10 20 | 703 | 1.1+ | 0.2− | 2006 03 03 | 691 | 0.3+ | 0.0 |
| 2004 09 17 | 704 | 0.4− | 0.3− | 2004 10 20 | 703 | 0.1+ | 0.7+ | | | | |

### 2004 RP$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 217.58056 | | (2000.0) | | | |
| $n$ | 0.21278554 | $\omega$ | 214.76107 | | +0.32752144 | +0.94027445 |
| $a$ | 2.7786977 | $\Omega$ | 74.51229 | | −0.84357014 | +0.33524591 |
| $e$ | 0.0371984 | $i$ | 5.52655 | | −0.42558092 | +0.05911120 |
| $P$ | 4.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 691 | 0.0 | 0.2− | 2004 09 13 | 699 | 0.4+ | 1.1− | 2005 11 29 | 691 | (2.9+ | 0.7+) |
| 2000 11 20 | 691 | 0.1− | 0.0 | 2004 09 21 | 704 | 1.2− | 0.4+ | 2005 12 31 | 691 | 0.4− | 0.2+ |
| 2000 11 20 | 691 | 0.2+ | 0.2− | 2004 09 21 | 704 | 0.1− | 0.2+ | 2005 12 31 | 691 | 0.2+ | 0.1− |
| 2004 09 04 | 644 | 0.1+ | 0.4+ | 2004 09 21 | 704 | 0.9+ | 0.2+ | 2005 12 31 | 691 | 0.1+ | 0.1− |
| 2004 09 04 | 644 | 0.1− | 0.1− | 2004 10 04 | 644 | 0.1+ | 0.1+ | 2006 01 31 | G96 | 0.2− | 0.1− |
| 2004 09 04 | 644 | 0.1+ | 0.6+ | 2004 10 04 | 644 | 0.1+ | 0.0 | 2006 01 31 | G96 | 0.1− | 0.0 |
| 2004 09 13 | 699 | 0.2+ | 0.6− | 2004 10 04 | 644 | 0.1+ | 0.2− | 2006 01 31 | G96 | 0.0 | 0.1− |
| 2004 09 13 | 699 | 0.3− | 0.4+ | 2005 11 29 | 691 | 0.3+ | 0.1+ | 2006 01 31 | G96 | 0.9− | 0.3− |
| 2004 09 13 | 699 | 0.6− | 0.2+ | 2005 11 29 | 691 | 0.2+ | 0.3+ | | | | |

### 2004 RQ$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 216.43960 | | (2000.0) | | | |
| $n$ | 0.29205934 | $\omega$ | 307.20420 | | +0.99037070 | +0.10305139 |
| $a$ | 2.2498591 | $\Omega$ | 47.08489 | | −0.04732508 | +0.87954600 |
| $e$ | 0.1470536 | $i$ | 7.25179 | | −0.13010082 | +0.46452045 |
| $P$ | 3.37 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 05 | 691 | 0.5+ | 0.3− | 2004 09 07 | 704 | 0.1− | 1.4+ | 2004 09 21 | 704 | (1.7− | 3.3+) |
| 1994 10 05 | 691 | 0.2− | 0.2− | 2004 09 07 | 704 | 0.2− | 0.1+ | 2004 09 21 | 704 | 1.1− | 0.7+ |
| 1994 10 05 | 691 | 0.2+ | 0.5− | 2004 09 07 | 704 | 0.4− | 1.0+ | 2004 09 21 | 704 | 0.7− | 0.5+ |
| 2001 12 17 | 704 | 1.7− | 0.7+ | 2004 09 07 | 704 | 0.5+ | 0.3− | 2004 09 21 | 704 | 1.0− | 0.0 |
| 2001 12 17 | 704 | 0.7+ | 1.2+ | 2004 09 15 | 699 | 0.1+ | 1.2− | 2004 10 04 | 644 | 0.0 | 0.3+ |
| 2001 12 17 | 704 | 0.5+ | 1.0+ | 2004 09 15 | 699 | 0.7+ | 0.6+ | 2004 10 04 | 644 | 0.4+ | 0.6+ |
| 2003 04 09 | 691 | 0.1+ | 0.1+ | 2004 09 15 | 699 | 0.6+ | 0.1+ | 2004 10 04 | 644 | 0.3+ | 0.4+ |
| 2003 04 09 | 691 | 0.3− | 0.2+ | 2004 09 15 | 699 | 0.6− | 0.6+ | | | | |
| 2003 04 09 | 691 | 0.5+ | 0.4+ | 2004 09 21 | 704 | 1.3− | 0.5+ | | | | |

### 2004 RR$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 196.63741 | | (2000.0) | | | |
| $n$ | 0.24284284 | $\omega$ | 281.96165 | | +0.87490838 | +0.44582009 |
| $a$ | 2.5444027 | $\Omega$ | 51.86834 | | −0.29480151 | +0.80015973 |
| $e$ | 0.1616029 | $i$ | 13.91452 | | −0.38422310 | +0.40123417 |
| $P$ | 4.06 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 25 | 691 | 0.0 | 0.2− | 2004 09 07 | 704 | 0.3− | 1.4+ | 2004 09 21 | 704 | 0.6− | 0.4+ |
| 1995 05 25 | 691 | 0.2− | 0.1− | 2004 09 07 | 704 | 0.3− | 1.1+ | 2004 10 13 | 704 | 0.0 | 0.1+ |
| 1995 05 25 | 691 | 0.1+ | 0.1+ | 2004 09 07 | 704 | 0.1+ | 0.6+ | 2004 10 13 | 704 | 0.6+ | 0.4− |
| 2000 09 27 | 645 | 0.1+ | 0.2− | 2004 09 07 | 704 | 0.4+ | 0.1+ | 2004 10 13 | 704 | 0.4− | 0.1+ |
| 2000 09 27 | 645 | 0.1+ | 0.2− | 2004 09 07 | 704 | 0.8+ | 0.1− | 2004 10 13 | 704 | 0.7− | 0.8+ |
| 2000 09 29 | 699 | 0.4− | 1.2+ | 2004 09 21 | 704 | 0.1− | 0.2− | 2004 10 13 | 704 | 0.2+ | 0.6+ |
| 2000 09 29 | 699 | 1.1− | 0.9+ | 2004 09 21 | 704 | 0.8+ | 0.9− | 2004 10 31 | 644 | 1.5− | 0.2+ |
| 2000 09 29 | 699 | 0.6− | 0.7+ | 2004 09 21 | 704 | 0.5− | 0.2− | 2004 10 31 | 644 | 0.9− | 0.3− |
| 2000 09 29 | 699 | 0.0 | 0.4+ | 2004 09 21 | 704 | 0.1− | 0.7+ | 2004 10 31 | 644 | 0.2− | 0.1+ |

### 2004 RS$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.20461 | | (2000.0) | | | |
| $n$ | 0.17965723 | $\omega$ | 92.43265 | | −0.44906840 | −0.88610322 |
| $a$ | 3.1105672 | $\Omega$ | 25.26206 | | +0.67503830 | −0.42057478 |
| $e$ | 0.2074459 | $i$ | 15.59264 | | +0.58537241 | −0.19477664 |
| $P$ | 5.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 695 | 0.0 | 0.2+ | 2004 10 04 | 691 | 0.2+ | 0.0 | 2006 01 08 | G96 | 0.3− | 0.4− |
| 2001 03 26 | 695 | 0.4+ | 0.3+ | 2004 10 04 | 691 | 0.1+ | 0.3+ | 2006 01 08 | G96 | 0.7− | 0.5− |
| 2004 09 07 | 691 | 0.0 | 0.2+ | 2004 10 04 | 691 | 0.1+ | 0.2+ | 2006 02 24 | 699 | 0.4+ | 0.2+ |
| 2004 09 07 | 691 | 0.1− | 0.2− | 2004 10 14 | 691 | 0.1− | 0.0 | 2006 02 24 | 699 | 0.8+ | 0.2− |
| 2004 09 07 | 691 | 0.7− | 0.3− | 2004 10 14 | 691 | 0.0 | 0.0 | 2006 02 24 | 699 | 0.4+ | 1.1+ |
| 2004 09 22 | 691 | 0.1+ | 0.0 | 2004 10 14 | 691 | 0.2− | 0.0 | 2006 02 24 | 699 | 0.0 | 1.0+ |
| 2004 09 22 | 691 | 0.5+ | 0.1− | 2006 01 08 | G96 | 0.5− | 0.6− | | | | |
| 2004 09 22 | 691 | 0.2− | 0.1+ | 2006 01 08 | G96 | 0.3− | 0.5− | | | | |

**2004 RT**$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 128.30414 | | (2000.0) | | +0.98358344 | −0.17180560 |
| $n$ | 0.19880790 | $\omega$ | 267.07403 | | +0.17971608 | +0.90498536 |
| $a$ | 2.9074592 | $\Omega$ | 102.81414 | | +0.01630153 | +0.38920990 |
| $e$ | 0.0361330 | $i$ | 3.24493 | | | |
| $P$ | 4.96 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 645 | 0.0 | 0.0 | 2004 09 09 | 704 | 0.3+ | 0.0 | 2005 11 30 | 691 | 0.4+ | 0.5+ |
| 2002 03 05 | 645 | 0.0 | 0.1− | 2004 09 09 | 704 | 0.3+ | 0.4− | 2005 11 30 | 691 | 0.9− | 1.2− |
| 2002 03 16 | 704 | 0.8+ | 0.6+ | 2004 09 09 | 704 | 0.3− | 0.5+ | 2006 01 22 | G96 | 0.4+ | 0.2+ |
| 2002 03 16 | 704 | 0.2− | 0.7+ | 2004 09 09 | 704 | 0.2− | 0.4+ | 2006 01 22 | G96 | 0.3− | 0.4+ |
| 2002 03 16 | 704 | 0.5+ | 1.5+ | 2004 09 23 | 691 | 0.2+ | 0.2+ | 2006 01 22 | G96 | 0.5+ | 0.1+ |
| 2002 03 16 | 704 | 0.8− | 0.8+ | 2004 09 23 | 691 | 0.2− | 0.0 | 2006 01 22 | G96 | 0.3+ | 0.1− |
| 2004 09 08 | 704 | 0.5− | 0.7− | 2004 09 23 | 691 | 0.3− | 0.1+ | 2006 02 20 | G96 | 0.1+ | 0.1+ |
| 2004 09 08 | 704 | 0.9− | 0.4− | 2004 10 11 | 691 | 0.2+ | 0.0 | 2006 02 20 | G96 | 0.2+ | 0.0 |
| 2004 09 08 | 704 | 0.3− | 0.6+ | 2004 10 11 | 691 | 0.2+ | 0.2+ | 2006 02 20 | G96 | 0.3+ | 0.0 |
| 2004 09 08 | 704 | 1.6− | 1.0− | 2004 10 11 | 691 | 0.5+ | 0.2− | 2006 02 20 | G96 | 0.1− | 0.4+ |
| 2004 09 08 | 704 | 0.5+ | 0.6+ | 2005 11 30 | 691 | 0.2+ | 0.5+ | | | | |

**2004 RU**$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 248.73635 | | (2000.0) | | +0.52130917 | +0.85085199 |
| $n$ | 0.28327056 | $\omega$ | 160.29852 | | −0.79625290 | +0.51258413 |
| $a$ | 2.2961579 | $\Omega$ | 141.04423 | | −0.30694963 | +0.11536207 |
| $e$ | 0.2232551 | $i$ | 5.97810 | | | |
| $P$ | 3.48 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 691 | 0.0 | 0.3− | 2004 09 08 | 704 | (2.3+ | 0.8−) | 2004 10 07 | 704 | 0.9− | 0.2+ |
| 2000 04 10 | 691 | 0.3+ | 0.1+ | 2004 09 12 | 704 | 0.4+ | 0.8+ | 2004 10 07 | 704 | 0.0 | 0.4− |
| 2000 04 10 | 691 | 0.0 | 0.4+ | 2004 09 12 | 704 | 0.6+ | 0.4+ | 2004 10 20 | 703 | 1.2− | 0.1− |
| 2003 03 23 | 645 | 0.2− | 0.1+ | 2004 09 12 | 704 | 0.2+ | 0.3+ | 2004 10 20 | 703 | 0.1− | 0.6− |
| 2003 03 23 | 645 | 0.1+ | 0.0 | 2004 09 12 | 704 | 0.3− | 0.0 | 2004 10 20 | 703 | 0.7− | 0.3− |
| 2003 03 30 | 645 | 0.0 | 0.2+ | 2004 09 14 | 699 | 0.1+ | 0.8+ | 2004 10 20 | 703 | 0.4+ | 0.6+ |
| 2003 03 30 | 645 | 0.1− | 0.0 | 2004 09 14 | 699 | 0.3− | 0.3+ | 2006 01 23 | G96 | 0.7+ | 0.3− |
| 2004 09 08 | 704 | 0.1− | 0.2− | 2004 09 14 | 699 | 0.4+ | 0.2+ | 2006 01 23 | G96 | 0.7+ | 0.2− |
| 2004 09 08 | 704 | 0.0 | 0.1+ | 2004 09 14 | 699 | 0.7+ | 0.1+ | 2006 01 23 | G96 | 1.0+ | 0.3− |
| 2004 09 08 | 704 | 0.9− | 1.1+ | 2004 10 07 | 704 | 0.6− | 0.3+ | 2006 01 23 | G96 | 0.4+ | 0.2− |
| 2004 09 08 | 704 | 0.2− | 0.9+ | 2004 10 07 | 704 | 0.1+ | 0.6− | | | | |

**2004 RV**$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 206.18560 | | (2000.0) | | +0.60984410 | +0.77210566 |
| $n$ | 0.21514194 | $\omega$ | 174.35504 | | −0.73636085 | +0.63541331 |
| $a$ | 2.7583709 | $\Omega$ | 133.06550 | | −0.29302369 | +0.01013772 |
| $e$ | 0.1796274 | $i$ | 14.16045 | | | |
| $P$ | 4.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.1+ | 0.6+ | 2002 02 10 | 704 | 0.6+ | 1.4+ | 2004 10 14 | 699 | (2.5+ | 0.3−) |
| 1999 07 13 | 704 | 0.3+ | 0.1− | 2004 09 08 | 704 | 1.2− | 0.6+ | 2004 10 14 | 699 | 0.3− | 0.7− |
| 1999 07 13 | 704 | 0.5− | 0.6+ | 2004 09 08 | 704 | 0.6+ | 0.3+ | 2004 10 14 | 699 | 0.5− | 1.1− |
| 1999 07 13 | 704 | 0.3+ | 0.5+ | 2004 09 08 | 704 | 0.5+ | 0.3+ | 2004 10 14 | 699 | 0.9− | 0.6+ |
| 1999 07 13 | 704 | 0.1− | 0.6− | 2004 10 04 | 644 | 0.2− | 0.0 | 2004 10 20 | 703 | 0.9+ | 0.4− |
| 1999 08 13 | 699 | 0.3− | 0.2− | 2004 10 04 | 644 | 0.2+ | 0.1− | 2004 10 20 | 703 | 0.6− | 0.2− |
| 1999 08 13 | 699 | 0.0 | 1.1+ | 2004 10 04 | 644 | 0.2− | 0.2− | 2004 10 20 | 703 | 0.4+ | 1.1+ |
| 1999 08 13 | 699 | 0.0 | 0.7− | 2004 10 04 | 644 | 0.2+ | 0.2− | 2004 10 20 | 703 | 0.3+ | 0.6+ |
| 2002 02 10 | 704 | 0.4− | 0.7− | 2004 10 04 | 644 | 0.1+ | 0.3− | | | | |
| 2002 02 10 | 704 | 0.0 | 1.1+ | 2004 10 04 | 644 | 0.4+ | 0.1+ | | | | |

**2004 RW**$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 133.19235 | | (2000.0) | | +0.46115834 | −0.86925863 |
| $n$ | 0.22326058 | $\omega$ | 285.17506 | | +0.88017814 | +0.42272508 |
| $a$ | 2.6910887 | $\Omega$ | 135.90862 | | +0.11233622 | +0.25630633 |
| $e$ | 0.2177027 | $i$ | 14.83130 | | | |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 07 | 691 | 0.1− | 0.3− | 2002 04 11 | 644 | 0.3+ | 0.5+ | 2004 10 06 | 704 | 0.4− | 0.8− |
| 1997 03 07 | 691 | 0.1− | 0.2− | 2002 04 11 | 644 | 0.2+ | 0.4+ | 2004 10 06 | 704 | 0.7+ | 0.5+ |
| 1997 03 07 | 691 | 0.0 | 0.2− | 2004 09 08 | 704 | 0.7+ | 1.4+ | 2004 10 06 | 704 | 0.4+ | 1.7+ |
| 2001 01 19 | 704 | 0.0 | 0.5+ | 2004 09 08 | 704 | 0.7+ | 0.0 | 2004 10 06 | 704 | 0.2+ | 0.3− |
| 2001 01 19 | 704 | 0.5− | 0.2+ | 2004 09 08 | 704 | 0.6+ | 0.4− | 2004 10 06 | 704 | 0.9− | 0.3− |
| 2001 01 19 | 704 | 0.1+ | 0.2+ | 2004 09 21 | 699 | 1.0− | 1.0− | 2004 10 10 | 644 | 0.5− | 0.0 |
| 2001 01 19 | 704 | 0.1+ | 0.5+ | 2004 09 21 | 699 | 0.1− | 0.5− | 2004 10 10 | 644 | 0.4− | 0.3+ |
| 2001 01 19 | 704 | 0.4+ | 0.3+ | 2004 09 21 | 699 | 0.2− | 0.8− | 2004 10 10 | 644 | (0.4− | 2.1+) |
| 2002 04 11 | 644 | 0.2+ | 0.9+ | 2004 09 21 | 699 | 0.3+ | 0.3− | | | | |

**2004 RX**$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 189.17690 | | (2000.0) | | +0.91721188 | −0.32146750 |
| $n$ | 0.26163905 | $\omega$ | 298.27183 | | +0.39421097 | +0.81774520 |
| $a$ | 2.4210347 | $\Omega$ | 81.29643 | | −0.05762017 | +0.47744260 |
| $e$ | 0.2095688 | $i$ | 13.77285 | | | |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 09 21 | 699 | 0.2+ | 0.1+ | 2004 11 01 | 644 | 0.1− | 0.3+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 09 21 | 699 | 0.5+ | 0.8− | 2004 11 01 | 644 | 0.1− | 0.2+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 09 21 | 699 | 0.0 | 0.8+ | 2004 11 01 | 644 | 1.0+ | 0.5− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 10 06 | 704 | 0.7− | 0.2+ | 2004 11 20 | 703 | 0.3− | 1.0+ |
| 2003 05 22 | 691 | 0.4+ | 0.3+ | 2004 10 06 | 704 | 1.3− | 0.3− | 2004 11 20 | 703 | 0.8− | 0.7+ |
| 2003 05 22 | 691 | 0.2+ | 0.3+ | 2004 10 06 | 704 | 0.4− | 0.7− | 2004 11 20 | 703 | 0.6− | 0.4+ |
| 2003 05 22 | 691 | 0.3− | 0.1+ | 2004 10 06 | 704 | 1.1− | 0.1+ | 2004 11 20 | 703 | 0.4− | 0.7+ |
| 2004 09 08 | 704 | 0.7− | 0.2− | 2004 10 06 | 704 | 0.4+ | 1.5− | 2004 12 07 | 704 | 0.6− | 0.9+ |
| 2004 09 08 | 704 | 0.2+ | 0.2− | 2004 10 13 | 699 | 0.9+ | 0.2− | 2004 12 07 | 704 | 0.8+ | 0.2+ |
| 2004 09 08 | 704 | 0.4+ | 0.7+ | 2004 10 13 | 699 | 0.4+ | 0.2+ | 2004 12 07 | 704 | 0.2− | 0.3+ |
| 2004 09 08 | 704 | 0.3− | 0.2+ | 2004 10 13 | 699 | 0.4+ | 0.0 | 2004 12 07 | 704 | 0.5+ | 0.2− |
| 2004 09 21 | 699 | 1.8+ | 0.4− | 2004 10 13 | 699 | 0.3− | 0.4+ | 2004 12 07 | 704 | 0.5− | 0.0 |

**2004 RY**$_{345}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 219.38510 | | (2000.0) | | +0.27182044 | +0.96197000 |
| $n$ | 0.21375336 | $\omega$ | 113.16905 | | −0.94086188 | +0.27153613 |
| $a$ | 2.7703039 | $\Omega$ | 172.45048 | | −0.20221912 | +0.02969606 |
| $e$ | 0.1222451 | $i$ | 11.84571 | | | |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 691 | 0.0 | 0.1− | 2003 06 03 | 704 | 0.7− | 0.7+ | 2004 09 17 | 704 | 0.0 | 0.6+ |
| 1998 03 25 | 691 | 0.2− | 0.4− | 2004 09 09 | 704 | 0.1− | 0.4+ | 2004 09 17 | 704 | 0.1− | 0.0 |
| 1998 03 25 | 691 | 0.2+ | 0.5+ | 2004 09 09 | 704 | 0.2− | 0.6+ | 2004 09 17 | 704 | 0.9− | 1.0+ |
| 2002 02 07 | 644 | 0.2+ | 1.2+ | 2004 09 09 | 704 | 0.7− | 0.4− | 2004 09 17 | 704 | 0.2− | 0.2− |
| 2002 02 07 | 644 | 0.4+ | 1.5+ | 2004 09 13 | 699 | 0.3− | 0.6+ | 2004 10 07 | 704 | 0.1− | 0.1+ |
| 2002 02 07 | 644 | 0.0 | 0.9+ | 2004 09 13 | 699 | 0.9+ | 0.5+ | 2004 10 07 | 704 | 0.1+ | 0.9+ |
| 2003 06 03 | 704 | 0.2− | 1.3+ | 2004 09 13 | 699 | 0.4+ | 0.1+ | 2004 10 07 | 704 | 0.1− | 0.2− |
| 2003 06 03 | 704 | 0.7+ | 0.5+ | 2004 09 13 | 699 | 0.5+ | 0.2+ | | | | |
| 2003 06 03 | 704 | 0.6+ | 0.4+ | 2004 09 17 | 704 | 0.0 | 0.6− | | | | |

**2004 RZ$_{345}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 263.27170 | | (2000.0) | | | |
| $n$ | 0.29836857 | $\omega$ | 145.76378 | | +0.50390791 | +0.86188821 |
| $a$ | 2.2180296 | $\Omega$ | 154.35553 | | −0.81894948 | +0.49763601 |
| $e$ | 0.2587590 | $i$ | 7.54058 | | −0.27458800 | +0.09750440 |
| $P$ | 3.30 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 01 | 566 | 1.0+ | 0.2+ | 2004 09 09 | 704 | 0.3− | 0.9− | 2004 10 07 | 704 | 0.1+ | 0.2+ |
| 1997 06 01 | 566 | 0.1+ | 0.3− | 2004 09 09 | 704 | 0.2+ | 0.1+ | 2004 10 07 | 704 | 0.2− | 0.1− |
| 1997 06 01 | 566 | 0.1+ | 0.5− | 2004 09 17 | 704 | 0.7+ | 0.6+ | 2004 10 07 | 704 | 0.2− | 0.4+ |
| 1997 07 12 | 691 | 0.1+ | 0.4+ | 2004 09 17 | 704 | 0.7− | 0.7+ | 2004 10 07 | 704 | 0.3+ | 0.4+ |
| 1997 07 12 | 691 | 0.3− | 0.1+ | 2004 09 17 | 704 | 0.4+ | 0.3+ | 2006 02 20 | 691 | 0.0 | 0.6+ |
| 1997 07 12 | 691 | 0.1− | 0.3+ | 2004 09 17 | 704 | 0.4+ | 0.3− | 2006 02 20 | 691 | 0.0 | 0.3+ |
| 2000 05 29 | 691 | 0.3− | 0.6+ | 2004 10 05 | 699 | (0.9− | 2.7+) | 2006 02 20 | 691 | 0.4+ | 0.1− |
| 2000 05 29 | 691 | 0.2− | 0.2+ | 2004 10 05 | 699 | 0.5− | 1.1+ | 2006 03 03 | G96 | 1.3− | 1.1+ |
| 2000 05 29 | 691 | 0.6+ | 0.2+ | 2004 10 05 | 699 | 0.5+ | 0.2− | 2006 03 03 | G96 | 0.4+ | 0.0 |
| 2004 09 09 | 704 | 0.2+ | 0.5+ | 2004 10 05 | 699 | 1.6− | 0.7− | 2006 03 03 | G96 | 0.1+ | 0.1+ |
| 2004 09 09 | 704 | 0.4− | 1.6+ | 2004 10 07 | 704 | 0.5− | 0.5+ | 2006 03 03 | G96 | 0.2+ | 0.1+ |

**2004 RA$_{346}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.70581 | | (2000.0) | | | |
| $n$ | 0.37714412 | $\omega$ | 312.29512 | | +0.64562340 | +0.76352974 |
| $a$ | 1.8972788 | $\Omega$ | 357.77498 | | −0.55204338 | +0.45407871 |
| $e$ | 0.0436007 | $i$ | 20.95371 | | −0.52765380 | +0.45916758 |
| $P$ | 2.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.1− | 0.1+ | 2004 09 10 | 704 | 0.3− | 0.1+ | 2004 09 18 | 704 | 0.1+ | 1.0− |
| 2003 02 01 | 644 | 0.1− | 0.1− | 2004 09 13 | 704 | 0.1+ | 0.3+ | 2004 09 18 | 704 | 0.9− | 0.3− |
| 2003 02 01 | 644 | 0.1− | 0.1+ | 2004 09 13 | 704 | 0.2− | 1.5+ | 2004 09 21 | 704 | 0.1+ | 0.4+ |
| 2003 03 08 | 644 | 0.2+ | 0.1− | 2004 09 13 | 704 | 1.1+ | 0.0 | 2004 09 21 | 704 | 0.3+ | 0.4+ |
| 2003 03 08 | 644 | 0.2+ | 0.1+ | 2004 09 13 | 704 | 1.6− | 1.5+ | 2004 09 21 | 704 | 0.4− | 0.5+ |
| 2003 03 08 | 644 | 0.0 | 0.2+ | 2004 09 13 | 704 | 0.6− | 0.8− | 2004 09 21 | 704 | 0.6+ | 0.7+ |
| 2004 09 10 | 704 | 0.5− | 0.5− | 2004 09 18 | 704 | 0.3+ | 0.9− | 2004 11 04 | 644 | 0.1− | 0.3+ |
| 2004 09 10 | 704 | 0.2− | 0.4− | 2004 09 18 | 704 | 1.5+ | 1.2− | 2004 11 04 | 644 | 0.4+ | 0.0 |
| 2004 09 10 | 704 | 0.5− | 0.4+ | 2004 09 18 | 704 | 0.6+ | 0.7− | 2004 11 04 | 644 | 0.0 | 0.1+ |

**2004 RB$_{346}$ = 2002 CF$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 147.54025 | | (2000.0) | | | |
| $n$ | 0.27558941 | $\omega$ | 10.05664 | | +0.09821888 | −0.98830353 |
| $a$ | 2.3386274 | $\Omega$ | 74.37804 | | +0.90442565 | +0.03974282 |
| $e$ | 0.2465803 | $i$ | 6.95750 | | +0.41517141 | +0.14722990 |
| $P$ | 3.58 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 2.3+ | 0.7+ | 2002 02 11 | 704 | 0.4− | 0.5+ | 2004 10 09 | 699 | 0.1+ | 0.0 |
| 1997 11 06 | 704 | 0.6+ | 0.8− | 2002 02 12 | 704 | 0.9− | 0.6+ | 2004 10 09 | 699 | 0.4+ | 0.7+ |
| 1997 11 06 | 704 | 2.3− | 1.4− | 2002 02 12 | 704 | 0.1+ | 0.1− | 2004 10 20 | 703 | 1.1− | 0.4− |
| 1997 11 06 | 704 | 0.4− | 0.1− | 2002 02 12 | 704 | 0.6+ | 0.8+ | 2004 10 20 | 703 | 0.3+ | 1.1+ |
| 2002 02 10 | 704 | 0.0 | 0.6− | 2002 02 12 | 704 | 0.4+ | 0.1+ | 2004 10 20 | 703 | 0.1+ | 0.7− |
| 2002 02 10 | 704 | (1.9+ | 0.2−) | 2004 09 11 | 644 | 0.1− | 0.3+ | 2004 10 20 | 703 | 0.6− | 0.4+ |
| 2002 02 10 | 704 | 0.7+ | 0.4+ | 2004 09 11 | 644 | 0.4− | 0.3+ | 2006 04 24 | 691 | 0.2− | 0.0 |
| 2002 02 10 | 704 | 1.0+ | 0.2+ | 2004 09 11 | 644 | 0.0 | 0.7+ | 2006 04 24 | 691 | 0.9+ | 0.1− |
| 2002 02 10 | 704 | 0.8+ | 0.1− | 2004 09 24 | 291 | 0.2− | 0.6+ | 2006 04 24 | 691 | 0.3− | 0.4+ |
| 2002 02 11 | 704 | 1.7+ | 1.5+ | 2004 09 24 | 291 | 0.2− | 0.7+ | 2006 05 01 | 691 | 0.3− | 0.3+ |
| 2002 02 11 | 704 | 1.0− | 1.1+ | 2004 09 24 | 291 | 0.2− | 0.6+ | 2006 05 01 | 691 | 0.3+ | 0.4+ |
| 2002 02 11 | 704 | 0.4− | 0.2+ | 2004 10 09 | 699 | 0.4− | 0.6+ | 2006 05 01 | 691 | 0.1− | 0.4+ |
| 2002 02 11 | 704 | 1.1+ | 0.8+ | 2004 10 09 | 699 | 0.3− | 0.3− | | | | |

**2004 RC$_{346}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 216.77948 | | (2000.0) | | | |
| $n$ | 0.26626501 | $\omega$ | 43.65067 | | +0.91900073 | +0.38975259 |
| $a$ | 2.3929116 | $\Omega$ | 293.32357 | | −0.37716034 | +0.82521109 |
| $e$ | 0.2540068 | $i$ | 3.70999 | | −0.11483785 | +0.40880261 |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.1− | 2004 09 18 | 704 | 0.3+ | 0.8+ | 2004 10 21 | 704 | 0.3+ | 0.3+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 09 18 | 704 | 0.7− | 0.6+ | 2004 10 21 | 704 | 0.2− | 0.2+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2004 09 18 | 704 | 0.5− | 0.2+ | 2004 10 21 | 704 | 0.1+ | 0.2+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 09 18 | 704 | 0.5− | 0.6− | 2004 10 21 | 704 | 0.3+ | 0.8+ |
| 2004 09 13 | 704 | 1.0+ | 0.8− | 2004 10 10 | 704 | 0.6− | 0.0 | 2004 11 13 | 703 | 0.8− | 0.6− |
| 2004 09 13 | 704 | 0.0 | 0.9− | 2004 10 10 | 704 | 0.7− | 0.2− | 2004 11 13 | 703 | 0.5+ | 0.4− |
| 2004 09 13 | 704 | 0.9+ | 0.0 | 2004 10 10 | 704 | 0.4+ | 0.2− | 2004 11 13 | 703 | 0.1+ | 0.1− |
| 2004 09 13 | 704 | 0.4+ | 0.7− | 2004 10 10 | 704 | 0.3− | 0.3+ | 2004 11 13 | 703 | 0.6+ | 0.1− |
| 2004 09 13 | 704 | 0.7− | 0.6+ | 2004 10 10 | 704 | 0.3+ | 0.2− | | | | |
| 2004 09 18 | 704 | 0.2+ | 0.1+ | 2004 10 21 | 704 | 0.2− | 0.3+ | | | | |

**2004 RD$_{346}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 84.42408 | | (2000.0) | | | |
| $n$ | 0.19215425 | $\omega$ | 154.67880 | | −0.05605562 | −0.98322973 |
| $a$ | 2.9741946 | $\Omega$ | 298.11156 | | +0.87930719 | +0.03371855 |
| $e$ | 0.1784481 | $i$ | 11.34717 | | +0.47294464 | −0.17922714 |
| $P$ | 5.13 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.6+ | 0.1− | 2004 10 14 | 644 | 0.2− | 0.2+ | 2006 01 31 | 703 | 0.1− | 0.4+ |
| 1999 10 14 | 704 | 0.8− | 1.4− | 2004 11 05 | 644 | 0.3− | 0.0 | 2006 01 31 | 703 | 0.6− | 0.1+ |
| 1999 10 14 | 704 | 0.8+ | 0.5− | 2004 11 05 | 644 | 0.1− | 0.2+ | 2006 01 31 | 703 | 0.7− | 0.4− |
| 1999 10 14 | 704 | 0.6+ | 0.3− | 2004 11 05 | 644 | 0.0 | 0.2+ | 2006 01 31 | 703 | 0.2− | 0.3+ |
| 2001 03 21 | 699 | 1.0+ | 1.8+ | 2005 10 24 | 568 | 0.4− | 0.2+ | 2006 02 07 | 703 | 2.0− | 0.6+ |
| 2001 03 21 | 699 | 0.0 | 0.3+ | 2005 10 24 | 568 | 0.3− | 0.2+ | 2006 02 07 | 703 | 0.8− | 0.7− |
| 2001 03 21 | 699 | 1.4− | 1.2+ | 2005 10 24 | 568 | 0.4− | 0.2+ | 2006 02 07 | 703 | 1.5+ | 0.1− |
| 2001 03 21 | 699 | 1.1+ | 0.7− | 2005 11 01 | 691 | 0.6− | 0.2+ | 2006 02 07 | 703 | 2.7+ | 0.2− |
| 2004 09 14 | 704 | 0.4+ | 1.4+ | 2005 11 01 | 691 | 0.5+ | 0.2+ | 2006 02 22 | 703 | 0.0 | 0.1+ |
| 2004 09 14 | 704 | 0.8− | 0.0 | 2005 11 01 | 691 | 0.1+ | 0.1− | 2006 02 22 | 703 | 0.5− | 0.8− |
| 2004 09 14 | 704 | 0.6+ | 0.8− | 2005 11 07 | 568 | 0.0 | 0.2+ | 2006 02 22 | 703 | 0.3− | 0.4− |
| 2004 09 14 | 704 | 0.5− | 0.8+ | 2005 11 07 | 568 | 0.0 | 0.2+ | 2006 02 22 | 703 | 0.3− | 0.7− |
| 2004 10 14 | 644 | 0.0 | 0.1+ | 2005 11 07 | 568 | 0.0 | 0.2+ | 2006 03 07 | D35 | 0.4− | 0.3+ |
| 2004 10 14 | 644 | 0.3− | 0.1+ | 2006 01 23 | 703 | 2.1+ | 0.2+ | 2006 03 07 | D35 | 0.1− | 0.0 |
| 2004 10 14 | 644 | 0.2+ | 0.3+ | 2006 01 23 | 703 | 0.7+ | 0.2− | 2006 03 07 | D35 | 0.5− | 0.2+ |
| 2004 10 14 | 644 | 0.2− | 0.1+ | 2006 01 23 | 703 | 0.3+ | 1.1− | | | | |
| 2004 10 14 | 644 | 0.6− | 0.6+ | 2006 01 23 | 703 | 0.5− | 0.2− | | | | |

**2004 RQ$_{346}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 222.02817 | | (2000.0) | | | |
| $n$ | 0.24198752 | $\omega$ | 62.46364 | | +0.78474230 | +0.61343770 |
| $a$ | 2.5503947 | $\Omega$ | 259.56321 | | −0.59574281 | +0.70697133 |
| $e$ | 0.2786619 | $i$ | 5.17665 | | −0.17108483 | +0.35197405 |
| $P$ | 4.07 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.3− | 1.3+ | 2004 10 21 | 704 | 0.6+ | 0.5− | 2004 11 19 | 704 | 0.6+ | 0.3+ |
| 2000 11 20 | 704 | 0.2+ | 0.5+ | 2004 10 21 | 704 | 0.8+ | 0.3− | 2004 11 19 | 704 | 0.2− | 0.3− |
| 2000 11 20 | 704 | 0.1− | 0.2− | 2004 10 21 | 704 | 0.6+ | 0.7+ | 2004 11 19 | 704 | 1.0− | 0.9− |
| 2003 04 29 | 608 | 0.2+ | 0.6− | 2004 10 21 | 704 | 0.1− | 0.5− | 2004 12 02 | 644 | 0.6+ | 0.3+ |
| 2003 04 29 | 608 | 0.4− | 0.2− | 2004 11 09 | 703 | 0.9− | 1.3− | 2004 12 02 | 644 | 1.3+ | 0.3+ |
| 2003 04 29 | 608 | 0.3− | 0.4− | 2004 11 09 | 703 | 0.6− | 0.4− | 2004 12 02 | 644 | 0.6+ | 0.5+ |
| 2004 09 10 | 704 | 0.4− | 1.0+ | 2004 11 09 | 703 | 0.8− | 0.1+ | 2004 12 16 | 691 | 0.0 | 0.0 |
| 2004 09 10 | 704 | 0.0 | 0.5− | 2004 11 09 | 703 | 2.0− | 1.5− | 2004 12 16 | 691 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 10 | 704 | 0.6− | 0.4− | 2004 11 19 | 704 | 0.3+ | 0.5+ | 2004 12 16 | 691 | 0.0 | 0.1− |
| 2004 10 21 | 704 | 0.6+ | 0.2+ | 2004 11 19 | 704 | 0.7+ | 0.2− | | | | |

**2004 RV$_{346}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.12093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18625361 | $\omega$ | 250.28977 | | +0.62150970 | | −0.78338709 |
| $a$ | 3.0366839 | $\Omega$ | 161.28051 | | +0.72503811 | | +0.57252514 |
| $e$ | 0.1524462 | $i$ | 0.98383 | | +0.29672449 | | +0.24190832 |
| $P$ | 5.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.2+ | 0.1− | 2004 09 23 | 691 | 0.1− | 0.0 | 2004 11 11 | 691 | 0.1− | 0.0 |
| 1999 11 17 | 691 | 0.0 | 0.6− | 2004 10 06 | 691 | 0.2+ | 0.0 | 2004 11 11 | 691 | 0.1− | 0.0 |
| 1999 11 17 | 691 | 0.1− | 0.2+ | 2004 10 06 | 691 | 0.2+ | 0.1+ | 2006 01 22 | G96 | 0.2+ | 0.4+ |
| 2004 09 12 | 291 | 0.2− | 0.0 | 2004 10 06 | 691 | 0.2+ | 0.0 | 2006 01 22 | G96 | 0.3− | 0.2+ |
| 2004 09 12 | 291 | 0.1− | 0.0 | 2004 10 15 | 691 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.1− | 0.3+ |
| 2004 09 12 | 291 | 0.1+ | 0.2+ | 2004 10 15 | 691 | 0.0 | 0.2+ | 2006 01 22 | G96 | 0.5+ | 0.2+ |
| 2004 09 23 | 691 | 0.2− | 0.0 | 2004 10 15 | 691 | 0.1− | 0.0 | | | | |
| 2004 09 23 | 691 | 0.0 | 0.2− | 2004 11 11 | 691 | 0.1− | 0.2+ | | | | |

**2004 RD$_{347}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.73709 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18099224 | $\omega$ | 115.76509 | | +0.87229480 | | −0.34411218 |
| $a$ | 3.0952525 | $\Omega$ | 266.02798 | | +0.21945253 | | +0.91039402 |
| $e$ | 0.1991351 | $i$ | 20.37965 | | +0.43696954 | | +0.22971622 |
| $P$ | 5.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3− | 0.2+ | 2004 10 23 | 704 | 0.1− | 0.5− | 2004 11 03 | 703 | 0.9− | 0.0 |
| 1999 12 07 | 704 | 0.3− | 0.4+ | 2004 10 23 | 704 | 1.2− | 0.1+ | 2004 11 04 | 704 | 0.3− | 0.3− |
| 1999 12 07 | 704 | 0.1+ | 0.0 | 2004 10 23 | 704 | 0.7− | 0.2+ | 2004 11 04 | 704 | 0.5− | 0.2+ |
| 1999 12 27 | 691 | 0.1− | 0.1+ | 2004 10 23 | 704 | 1.2+ | 1.2− | 2004 11 04 | 704 | 0.3− | 0.9+ |
| 1999 12 27 | 691 | 0.2− | 0.1+ | 2004 10 24 | 704 | 0.6+ | 0.5− | 2004 11 04 | 704 | 0.0 | 0.0 |
| 1999 12 27 | 691 | 0.4+ | 0.4− | 2004 10 24 | 704 | 0.8− | 0.5− | 2004 11 04 | 704 | (1.1− | 3.4+) |
| 2004 09 15 | 704 | 1.1+ | 0.0 | 2004 10 24 | 704 | 0.0 | 0.6+ | 2004 11 19 | 699 | 1.4+ | 0.3+ |
| 2004 09 15 | 704 | 0.7+ | 0.0 | 2004 11 03 | 703 | 0.9− | 0.3− | 2004 11 19 | 699 | 0.4+ | 0.4− |
| 2004 09 15 | 704 | 0.3+ | 0.2+ | 2004 11 03 | 703 | 0.4− | 1.3+ | 2004 11 19 | 699 | 1.2+ | 1.0+ |
| 2004 09 15 | 704 | 0.1− | 0.0 | 2004 11 03 | 703 | 1.0− | 0.8− | 2004 11 19 | 699 | 0.6+ | 0.4− |

**2004 SP$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.50357 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20190686 | $\omega$ | 295.64931 | | +0.95901050 | | +0.20438542 |
| $a$ | 2.8776325 | $\Omega$ | 53.17562 | | −0.07475665 | | +0.85059985 |
| $e$ | 0.2144380 | $i$ | 14.19382 | | −0.27333185 | | +0.48446517 |
| $P$ | 4.88 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.7+ | 0.3− | 2004 09 16 | E12 | 0.1− | 0.0 | 2004 10 13 | 704 | 0.3+ | 0.2− |
| 1999 09 11 | 704 | 0.0 | 0.9− | 2004 09 16 | E12 | 0.0 | 0.3− | 2004 10 13 | 704 | 0.6+ | 0.0 |
| 1999 09 11 | 704 | 0.4− | 0.4+ | 2004 09 16 | E12 | 0.5+ | 0.4− | 2004 11 05 | 704 | 1.2− | 0.1+ |
| 1999 09 11 | 704 | 0.4− | 1.1+ | 2004 09 16 | E12 | 0.1+ | 0.1+ | 2004 11 05 | 704 | 0.1+ | 0.5− |
| 2003 05 10 | 291 | 0.1+ | 0.2+ | 2004 09 21 | 704 | 0.2− | 0.4+ | 2004 11 05 | 704 | 1.2− | 0.1− |
| 2003 05 10 | 291 | 0.1+ | 0.2+ | 2004 09 21 | 704 | 0.1− | 0.9+ | 2004 11 05 | 704 | (1.9− | 0.3+) |
| 2003 05 10 | 291 | 0.2+ | 0.4+ | 2004 09 21 | 704 | 0.1+ | 0.2+ | 2004 11 05 | 704 | 0.5− | 0.9+ |
| 2004 07 20 | E12 | 0.3+ | 0.5− | 2004 09 21 | 704 | 0.1+ | 0.6+ | 2004 11 05 | 704 | 0.8− | 1.1+ |
| 2004 07 20 | E12 | 0.1+ | 0.9− | 2004 09 21 | 704 | 0.1+ | 0.1− | 2004 11 05 | 704 | 0.3− | 0.7+ |
| 2004 07 20 | E12 | 0.2+ | 0.5− | 2004 10 06 | 704 | 0.5− | 0.1− | 2004 11 05 | 704 | 1.4− | 0.3+ |
| 2004 07 20 | E12 | 0.0 | 0.1− | 2004 10 06 | 704 | 0.1− | 0.7+ | 2004 11 05 | 704 | 0.2+ | 0.7+ |
| 2004 08 26 | E12 | 1.4+ | 0.0 | 2004 10 06 | 704 | 0.1+ | 0.6− | 2005 01 13 | 703 | 0.4− | 0.2− |
| 2004 08 26 | E12 | 1.4− | 1.2+ | 2004 10 06 | 704 | 0.9− | 0.3+ | 2005 01 13 | 703 | 0.8+ | 0.5+ |
| 2004 08 26 | E12 | 0.4− | 0.1− | 2004 10 06 | 704 | 1.3+ | 0.4− | 2005 01 13 | 703 | (1.4+ | 2.6−) |
| 2004 08 26 | E12 | 0.1+ | 0.1− | 2004 10 09 | 644 | 0.2− | 0.2+ | 2005 01 13 | 703 | (1.4+ | 2.3−) |
| 2004 09 07 | 704 | 0.2+ | 0.5− | 2004 10 09 | 644 | 0.3− | 0.0 | 2005 12 30 | 703 | 0.1− | 0.1+ |
| 2004 09 07 | 704 | 0.1+ | 0.0 | 2004 10 09 | 644 | 0.1+ | 0.2+ | 2005 12 30 | 703 | 0.5+ | 0.3+ |
| 2004 09 07 | 704 | 0.4− | 0.4− | 2004 10 13 | 704 | 0.6+ | 0.2− | 2005 12 30 | 703 | 0.2− | 1.3+ |
| 2004 09 07 | 704 | 0.1− | 0.0 | 2004 10 13 | 704 | 0.8+ | 0.0 | 2005 12 30 | 703 | (2.2− | 0.8+) |
| 2004 09 07 | 704 | 0.2+ | 0.1− | 2004 10 13 | 704 | 0.4+ | 0.9− | | | | |

**2004 SK$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.92044 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22261784 | $\omega$ | 103.06866 | | +0.70649113 | | −0.70449188 |
| $a$ | 2.6962661 | $\Omega$ | 301.76892 | | +0.61464776 | | +0.65808475 |
| $e$ | 0.0600772 | $i$ | 4.55641 | | +0.35082534 | | +0.26573607 |
| $P$ | 4.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 02 | 691 | 1.0+ | 0.3− | 2004 08 11 | 704 | 1.0− | 0.4+ | 2005 12 04 | 691 | 0.3− | 0.3+ |
| 1995 07 02 | 691 | 0.2− | 0.0 | 2004 08 11 | 704 | 1.0+ | 0.3− | 2005 12 08 | 691 | 0.2+ | 0.0 |
| 1995 07 02 | 691 | 0.7− | 0.3+ | 2004 08 11 | 704 | 0.4− | 0.0 | 2005 12 08 | 691 | 1.2− | 0.3− |
| 2000 11 30 | 645 | 0.1+ | 0.2− | 2004 09 16 | 691 | 0.3− | 0.0 | 2005 12 08 | 691 | 0.3+ | 0.1− |
| 2000 11 30 | 645 | 0.0 | 0.2− | 2004 09 16 | 691 | 0.2− | 0.0 | 2005 12 25 | 691 | 0.3+ | 0.2+ |
| 2002 02 11 | 704 | 0.4− | 0.4+ | 2004 09 16 | 691 | 0.2− | 0.5+ | 2005 12 25 | 691 | 0.2+ | 0.3+ |
| 2002 02 11 | 704 | 0.0 | 1.1+ | 2004 09 22 | 691 | 0.3+ | 1.0+ | 2005 12 25 | 691 | 0.4+ | 0.1+ |
| 2002 02 11 | 704 | 0.3+ | 0.6+ | 2004 09 22 | 691 | 0.1− | 0.2+ | 2006 01 28 | 691 | 0.3+ | 0.1+ |
| 2002 02 11 | 704 | 0.1− | 0.2− | 2004 09 22 | 691 | 0.0 | 0.0 | 2006 01 28 | 691 | 0.1+ | 0.1− |
| 2002 02 11 | 704 | 0.1+ | 0.3− | 2005 12 04 | 691 | 0.1− | 0.3+ | 2006 01 28 | 691 | 0.1+ | 0.2+ |
| 2004 08 11 | 704 | 0.9− | 0.7+ | 2005 12 04 | 691 | 0.2+ | 0.5+ | | | | |

**2004 SC$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.31104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27389288 | $\omega$ | 321.41889 | | −0.56909077 | | +0.82190821 |
| $a$ | 2.3482746 | $\Omega$ | 273.88114 | | −0.74818753 | | −0.52996886 |
| $e$ | 0.1688967 | $i$ | 1.40986 | | −0.34110279 | | −0.20880592 |
| $P$ | 3.60 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 14 | 691 | 0.8− | 1.4+ | 2003 03 06 | 699 | 0.4+ | 1.5+ | 2004 09 23 | 691 | 0.1+ | 0.4− |
| 1993 08 14 | 691 | 0.0 | 0.2+ | 2003 03 06 | 699 | 0.8+ | 0.8+ | 2004 09 23 | 691 | 0.0 | 0.1+ |
| 1993 08 14 | 691 | 0.4− | 1.1+ | 2003 03 24 | 691 | 0.2+ | 0.3+ | 2004 09 23 | 691 | 0.2− | 0.2+ |
| 2001 11 11 | 691 | 0.2+ | 0.4+ | 2003 03 24 | 691 | 0.6+ | 0.2− | 2004 10 10 | 691 | 0.6− | 0.2+ |
| 2001 11 11 | 691 | 0.0 | 0.4+ | 2003 03 24 | 691 | 0.4+ | 0.1+ | 2004 10 10 | 691 | 0.4− | 0.6+ |
| 2001 11 11 | 691 | 0.2+ | 0.3+ | 2003 04 05 | 691 | 0.6+ | 1.4+ | 2004 10 10 | 691 | 0.0 | 0.9+ |
| 2003 02 21 | 644 | 0.2+ | 0.9− | 2003 04 05 | 691 | 0.4+ | 1.6+ | 2005 12 21 | 691 | 0.2− | 0.5+ |
| 2003 02 21 | 644 | 0.0 | 0.7− | 2003 04 05 | 691 | 0.3+ | 1.4+ | 2005 12 21 | 691 | 0.3− | 0.4+ |
| 2003 02 21 | 644 | 0.3+ | 1.3+ | 2004 09 16 | 691 | 0.0 | 0.3+ | 2005 12 21 | 691 | 0.3− | 0.3− |
| 2003 03 06 | 699 | 1.5− | 1.4+ | 2004 09 16 | 691 | 0.0 | 0.3+ | | | | |
| 2003 03 06 | 699 | 0.1− | 0.1− | 2004 09 16 | 691 | 0.1− | 0.6+ | | | | |

**2004 SJ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.89947 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27698105 | $\omega$ | 319.04970 | | +0.99034083 | | −0.13031030 |
| $a$ | 2.3307875 | $\Omega$ | 48.50329 | | +0.13788387 | | +0.88960012 |
| $e$ | 0.2170183 | $i$ | 3.62637 | | +0.01459740 | | +0.43775661 |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | 0.3+ | 0.9+ | 2004 09 22 | 704 | 0.1− | 0.7− | 2004 10 14 | 704 | 0.0 | 0.3− |
| 2003 04 25 | 691 | 0.3+ | 0.4+ | 2004 09 22 | 704 | 0.3+ | 0.4+ | 2004 10 20 | 704 | 0.0 | 0.1+ |
| 2003 04 25 | 691 | 0.1+ | 0.7+ | 2004 09 22 | 704 | 0.3− | 0.0 | 2004 10 20 | 704 | 0.0 | 0.1+ |
| 2004 08 26 | 703 | 0.0 | 0.4− | 2004 09 22 | 704 | 0.8− | 0.2− | 2004 10 20 | 704 | 0.4+ | 0.5+ |
| 2004 08 26 | 703 | 1.3+ | 0.2+ | 2004 10 07 | 704 | 0.3− | 0.5+ | 2004 10 20 | 704 | 0.2+ | 0.6+ |
| 2004 08 26 | 703 | 0.5+ | 0.6− | 2004 10 07 | 704 | 0.5− | 0.3+ | 2004 11 04 | 699 | 0.6+ | 0.9+ |
| 2004 08 26 | 703 | 1.9− | 1.6+ | 2004 10 07 | 704 | 0.3− | 0.4+ | 2004 11 04 | 699 | 0.5− | 0.9+ |
| 2004 09 17 | 704 | 0.6+ | 0.3− | 2004 10 07 | 704 | 0.1+ | 0.3+ | 2004 11 04 | 699 | 0.7− | 0.6+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 17 | 704 | 0.2+ | 0.4+ | 2004 10 07 | 704 | 0.2− | 0.1+ | 2004 11 04 | 699 | 1.0− | 0.3+ | 2004 09 25 | 176 | 0.3− | 0.2− |
| 2004 09 17 | 704 | 0.6− | 0.8− | 2004 10 09 | 704 | 0.2+ | 0.1+ | 2004 12 12 | 201 | 0.6− | 0.0 | 2004 09 25 | 176 | 0.3− | 0.1− |
| 2004 09 17 | 704 | 0.7− | 0.5− | 2004 10 09 | 704 | 0.4+ | 0.4− | 2004 12 12 | 201 | 0.2+ | 1.0+ | 2004 09 25 | 176 | 0.3− | 0.0 |
| 2004 09 17 | 704 | 0.8+ | 0.0 | 2004 10 09 | 704 | 0.7− | 0.7+ | 2004 12 12 | 201 | 0.3+ | 0.3+ | 2004 09 25 | 176 | 0.4− | 0.0 |
| 2004 09 17 | 699 | 0.3+ | 0.4− | 2004 10 09 | 704 | 0.8+ | 0.1+ | 2006 03 09 | G96 | 1.0+ | 0.5+ | 2004 09 26 | 734 | 0.4+ | 0.2+ |
| 2004 09 17 | 699 | 0.6− | 0.1+ | 2004 10 09 | 704 | 0.3+ | 0.9+ | 2006 03 09 | G96 | 0.3+ | 0.3+ | 2004 09 26 | 734 | 0.2+ | 0.0 |
| 2004 09 17 | 699 | 0.3− | 0.3+ | 2004 10 14 | 704 | 0.4− | 0.0 | 2006 03 09 | G96 | 0.1− | 0.1+ | 2004 09 26 | 734 | 0.6+ | 0.0 |
| 2004 09 17 | 699 | 0.3− | 0.1+ | 2004 10 14 | 704 | 0.1+ | 0.1− | 2006 03 09 | G96 | 0.5− | 0.5+ | 2004 09 26 | 734 | 0.5+ | 0.0 |
| 2004 09 22 | 704 | 0.1− | 0.5− | 2004 10 14 | 704 | 0.4+ | 0.2+ | | | | | 2004 09 26 | 704 | 0.2− | 0.3+ |
| | | | | | | | | | | | | 2004 09 26 | 704 | 0.5− | 0.7+ |
| | | | | | | | | | | | | 2004 09 26 | 854 | 0.6− | 0.0 |
| | | | | | | | | | | | | 2004 09 26 | 854 | 0.4− | 0.3+ |
| | | | | | | | | | | | | 2004 09 26 | 854 | 0.3+ | 0.1+ |
| | | | | | | | | | | | | 2004 09 26 | 854 | 1.1− | 0.2+ |
| | | | | | | | | | | | | 2004 09 26 | 704 | 0.3+ | 0.2+ |
| | | | | | | | | | | | | 2004 09 26 | A13 | 0.7− | 0.1+ |
| | | | | | | | | | | | | 2004 09 26 | A13 | (5.3+ | 0.0 ) |
| | | | | | | | | | | | | 2004 09 26 | A13 | (5.3+ | 1.3+) |
| | | | | | | | | | | | | 2004 09 26 | A13 | (6.5− | 0.3−) |
| | | | | | | | | | | | | 2004 09 28 | G72 | (3.2− | 0.7−) |
| | | | | | | | | | | | | 2004 09 28 | G72 | 1.5+ | 0.5− |
| | | | | | | | | | | | | 2004 09 28 | G72 | 0.0 | 0.5+ |
| | | | | | | | | | | | | 2004 09 28 | G72 | (5.0− | 0.8−) |
| | | | | | | | | | | | | 2004 09 28 | G72 | (6.1+ | 0.1+) |
| | | | | | | | | | | | | 2004 09 28 | 938 | 0.6+ | 0.5− |
| | | | | | | | | | | | | 2004 09 28 | 938 | 0.4− | 0.5− |
| | | | | | | | | | | | | 2004 09 28 | 938 | 0.2+ | 0.5+ |
| | | | | | | | | | | | | 2004 09 28 | 938 | 0.4+ | 0.4+ |
| | | | | | | | | | | | | 2004 09 28 | A13 | (2.4− | 0.8−) |
| | | | | | | | | | | | | 2004 09 28 | A13 | (2.3− | 0.6−) |
| | | | | | | | | | | | | 2004 09 28 | A13 | 1.9− | 0.5− |
| | | | | | | | | | | | | 2004 09 28 | A13 | (2.4− | 0.3+) |
| | | | | | | | | | | | | 2004 09 29 | 938 | 0.6− | 0.6− |
| | | | | | | | | | | | | 2004 09 29 | 938 | 0.3− | 0.0 |
| | | | | | | | | | | | | 2004 09 29 | 938 | 0.5+ | 0.0 |
| | | | | | | | | | | | | 2004 09 29 | 938 | 0.4− | 0.4+ |
| | | | | | | | | | | | | 2004 09 29 | 938 | 0.1− | 0.5− |
| | | | | | | | | | | | | 2004 09 29 | 938 | 0.2+ | 0.1+ |
| | | | | | | | | | | | | 2004 10 01 | H06 | 0.1+ | 0.1+ |
| | | | | | | | | | | | | 2004 10 01 | H06 | 0.2− | 0.1+ |
| | | | | | | | | | | | | 2004 10 01 | H06 | 0.3+ | 0.3+ |
| | | | | | | | | | | | | 2004 10 01 | 176 | 0.4− | 0.2− |
| | | | | | | | | | | | | 2004 10 01 | 176 | 0.4− | 0.2− |
| | | | | | | | | | | | | 2004 10 01 | 176 | 0.3− | 0.2− |
| | | | | | | | | | | | | 2004 10 01 | 176 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2004 10 01 | 176 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2004 10 01 | 941 | 0.3− | 0.2+ |
| | | | | | | | | | | | | 2004 10 01 | 941 | 0.2− | 0.1+ |
| | | | | | | | | | | | | 2004 10 01 | 941 | 0.4− | 0.3+ |
| | | | | | | | | | | | | 2004 10 01 | 941 | 0.1− | 0.1+ |
| | | | | | | | | | | | | 2004 10 02 | G72 | (3.6− | 0.8−) |
| | | | | | | | | | | | | 2004 10 02 | G72 | 0.7+ | 1.2+ |

**2004 SU$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.15185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23539825 | $\omega$ | 311.33879 | | +0.99768804 | +0.03986643 | |
| $a$ | 2.5977692 | $\Omega$ | 46.45568 | | −0.01126090 | +0.89564712 | |
| $e$ | 0.2746166 | $i$ | 4.35476 | | −0.06702063 | +0.44297507 | |
| $P$ | 4.19 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 01 | 291 | 0.4+ | 0.9+ | 2004 09 22 | 704 | 1.0− | 0.5+ | 2004 10 09 | 704 | 0.5− | 0.1− | 2004 09 25 | 176 | 0.3− | 0.2− |
| 2003 05 01 | 291 | 0.2+ | 0.5+ | 2004 09 22 | 704 | 0.1+ | 0.2+ | 2004 10 09 | 704 | 0.3− | 0.1+ | 2004 10 02 | G72 | 0.0 | 0.7− |
| 2003 05 01 | 291 | 0.2+ | 0.5+ | 2004 09 22 | 704 | 0.3+ | 0.3− | 2004 10 09 | 704 | 1.0− | 0.2+ | 2004 10 02 | G72 | 1.0+ | 0.1− |
| 2004 08 19 | E12 | 0.8− | 0.1+ | 2004 10 07 | 699 | 0.5− | 0.2− | 2004 10 20 | 704 | 0.2+ | 0.1+ | 2004 10 03 | G70 | 0.2− | 0.2+ |
| 2004 08 19 | E12 | 0.0 | 0.7− | 2004 10 07 | 699 | 0.1− | 0.2+ | 2004 10 20 | 704 | 0.0 | 0.8− | 2004 10 03 | G70 | 0.0 | 0.2+ |
| 2004 08 19 | E12 | 0.8+ | 1.4− | 2004 10 07 | 704 | 0.4− | 0.6+ | 2004 10 20 | 704 | 0.2+ | 0.3− | 2004 10 03 | G70 | 0.0 | 0.0 |
| 2004 08 19 | E12 | 0.0 | 0.1+ | 2004 10 07 | 699 | 0.1− | 0.5+ | 2004 10 20 | 704 | 0.4+ | 0.1− | 2004 10 03 | A35 | 0.0 | 0.2+ |
| 2004 09 17 | 704 | 0.9+ | 0.8+ | 2004 10 07 | 704 | 0.1− | 0.3+ | 2004 11 11 | 691 | 0.1+ | 0.3+ | 2004 10 03 | A35 | 0.5+ | 0.6+ |
| 2004 09 17 | 704 | 0.4− | 0.3+ | 2004 10 07 | 704 | 0.1− | 0.7+ | 2004 11 11 | 691 | 0.2+ | 0.1+ | 2004 10 03 | A35 | 0.3+ | 1.2+ |
| 2004 09 17 | 704 | 0.5− | 0.7− | 2004 10 07 | 699 | 0.2+ | 0.4+ | 2004 11 11 | 691 | 0.1+ | 0.0 | 2004 10 03 | A35 | 0.6− | 0.6+ |
| 2004 09 17 | 704 | 0.0 | 0.6+ | 2004 10 07 | 704 | 0.2+ | 0.5+ | 2006 02 01 | 691 | 0.1− | 0.4+ | 2004 10 03 | 246 | 1.1+ | 0.8+ |
| 2004 09 22 | 704 | 0.6− | 1.6+ | 2004 10 07 | 704 | 0.7− | 0.1− | 2006 02 01 | 691 | 0.2+ | 0.3+ | 2004 10 03 | 246 | 0.6+ | 0.7+ |
| 2004 09 22 | 704 | 0.4− | 0.8+ | 2004 10 09 | 704 | 0.3− | 0.5+ | 2006 02 01 | 691 | 0.3+ | 0.2+ | 2004 10 03 | 246 | 0.6+ | 1.0+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 1.0+ | 1.0+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 0.7+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 1.2+ | 1.1+ |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.4− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1− | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1− | 0.4− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1+ | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.5− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.3− | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.3− | 0.1+ |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.4− | 0.1+ |
| | | | | | | | | | | | | 2004 10 04 | 185 | 0.1− | 0.5− |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.2+ | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.3+ | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.4+ | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.3+ | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.1+ | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.0 | 0.0 |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.5− | 0.3− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | A35 | 0.5− | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | A35 | 0.4+ | 0.3+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3+ | 0.1+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1− | 0.4+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.5− | 0.3+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.4+ | 0.9+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.5+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.6− | 0.1+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1− | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1+ | 0.7+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.0 | 0.1+ |

**2004 SN$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.35386 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27730290 | $\omega$ | 56.20877 | | +0.89896173 | −0.43597559 | |
| $a$ | 2.3289837 | $\Omega$ | 329.57584 | | +0.36914901 | +0.80609325 | |
| $e$ | 0.2475280 | $i$ | 4.79666 | | +0.23578976 | +0.40017366 | |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 695 | 0.6− | 0.0 | 2004 10 21 | 704 | 0.1+ | 0.6− | 2004 12 02 | 704 | 0.3+ | 0.6− | 2004 09 25 | 176 | 0.3− | 0.2− |
| 2002 02 07 | 695 | 0.8+ | 0.3+ | 2004 10 21 | 704 | 0.2+ | 1.1+ | 2004 12 11 | 703 | 0.5+ | 0.2− | 2004 10 02 | G72 | 0.0 | 0.7− |
| 2004 09 18 | 704 | 0.7− | 1.4+ | 2004 10 21 | 704 | 0.9+ | 0.9+ | 2004 12 11 | 703 | 0.1+ | 0.4+ | 2004 10 02 | G72 | 1.0+ | 0.1− |
| 2004 09 18 | 704 | 0.4− | 0.3+ | 2004 10 21 | 704 | 0.1− | 0.2+ | 2004 12 11 | 703 | 0.6− | 0.6− | 2004 10 03 | G70 | 0.2− | 0.2+ |
| 2004 09 18 | 704 | 0.5− | 1.4+ | 2004 10 21 | 704 | 0.9− | 0.3− | 2004 12 11 | 703 | 0.1+ | 0.4+ | 2004 10 03 | G70 | 0.0 | 0.2+ |
| 2004 09 23 | 704 | 0.1+ | 0.6+ | 2004 12 02 | 704 | 0.7+ | 0.8− | 2006 03 05 | 691 | 0.3+ | 0.1+ | 2004 10 03 | G70 | 0.0 | 0.0 |
| 2004 09 23 | 704 | 0.1+ | 0.7+ | 2004 12 02 | 704 | 0.9− | 0.4− | 2006 03 05 | 691 | 0.0 | 0.3+ | 2004 10 03 | A35 | 0.0 | 0.2+ |
| 2004 09 23 | 704 | 0.7+ | 0.3− | 2004 12 02 | 704 | 0.0 | 1.0− | 2006 03 05 | 691 | 0.1+ | 0.5+ | 2004 10 03 | A35 | 0.5+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 03 | A35 | 0.3+ | 1.2+ |
| | | | | | | | | | | | | 2004 10 03 | A35 | 0.6− | 0.6+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 1.1+ | 0.8+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 0.6+ | 0.7+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 0.6+ | 1.0+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 1.0+ | 1.0+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 0.7+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 1.2+ | 1.1+ |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.4− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1− | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1− | 0.4− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1+ | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.5− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.3− | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.3− | 0.1+ |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.4− | 0.1+ |
| | | | | | | | | | | | | 2004 10 04 | 185 | 0.1− | 0.5− |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.2+ | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.3+ | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.4+ | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.3+ | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.1+ | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.0 | 0.0 |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.5− | 0.3− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | A35 | 0.5− | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | A35 | 0.4+ | 0.3+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3+ | 0.1+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1− | 0.4+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.5− | 0.3+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.4+ | 0.9+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.5+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.6− | 0.1+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1− | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1+ | 0.7+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.0 | 0.1+ |

**2004 SC$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.26296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 1.46699777 | $\omega$ | 322.48783 | | −0.96451836 | −0.26211763 | |
| $a$ | 0.7670961 | $\Omega$ | 202.37829 | | +0.25785479 | −0.90953045 | |
| $e$ | 0.4289268 | $i$ | 4.76135 | | +0.05670313 | −0.32256581 | |
| $P$ | 0.67 | $H$ | 22.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 25 | 704 | 0.1− | 0.8+ | 2004 10 02 | G72 | (7.4+ | 2.8+) | 2004 10 05 | 185 | 0.2+ | 0.1− | 2004 09 25 | 176 | 0.2− | 0.2− |
| 2004 09 25 | 704 | 0.1− | 0.6+ | 2004 10 02 | G72 | (4.4− | 3.0−) | 2004 10 05 | 185 | 0.8− | 0.9− | 2004 10 02 | G72 | (6.1− | 3.2−) |
| 2004 09 25 | 704 | 0.5− | 0.4+ | 2004 10 02 | G72 | (5.1− | 1.0−) | 2004 10 05 | 185 | 0.6+ | 0.9+ | 2004 10 05 | A35 | 0.4+ | 0.3+ |
| 2004 09 25 | 704 | 0.1+ | 0.6+ | 2004 10 02 | G72 | 0.9− | 1.4− | 2004 10 05 | A35 | 0.3+ | 1.0+ | | | | |

**2004 SC$_{57}$ = 2005 YV$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.32708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21217601 | $\omega$ | 202.24589 | | +0.98008450 | +0.19261627 | |
| $a$ | 2.7840169 | $\Omega$ | 146.53403 | | −0.16644453 | +0.92947365 | |
| $e$ | 0.1018525 | $i$ | 5.02538 | | −0.10830781 | +0.31460722 | |
| $P$ | 4.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 691 | (3.7+ | 1.8−) | 2003 04 28 | 691 | 1.0+ | 0.4+ | 2005 12 31 | 691 | 0.1+ | 0.6+ | 2004 09 25 | 176 | 0.3− | 0.2− |
| 1997 01 10 | 691 | 1.9− | 0.4− | 2003 04 28 | 691 | 0.9+ | 0.3+ | 2005 12 31 | 691 | 0.2+ | 0.9+ | 2004 10 02 | G72 | 0.0 | 0.7− |
| 1997 01 10 | 691 | 0.0 | 0.9− | 2004 09 14 | 699 | 0.8− | 0.3+ | 2005 12 31 | 691 | 0.1+ | 0.7+ | 2004 10 02 | G72 | 1.0+ | 0.1− |
| 1999 08 13 | 691 | 0.7− | 0.2− | 2004 09 14 | 699 | 1.0+ | 0.7+ | 2006 01 02 | G96 | 0.6− | 0.0 | 2004 10 03 | G70 | 0.2− | 0.2+ |
| | | | | | | | | | | | | 2004 10 03 | G70 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2004 10 03 | G70 | 0.0 | 0.0 |
| | | | | | | | | | | | | 2004 10 03 | A35 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2004 10 03 | A35 | 0.5+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 03 | A35 | 0.3+ | 1.2+ |
| | | | | | | | | | | | | 2004 10 03 | A35 | 0.6− | 0.6+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 1.1+ | 0.8+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 0.6+ | 0.7+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 0.6+ | 1.0+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 1.0+ | 1.0+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 0.7+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 03 | 246 | 1.2+ | 1.1+ |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.4− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1− | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1− | 0.4− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.1+ | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | 649 | 0.5− | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.3− | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.3− | 0.1+ |
| | | | | | | | | | | | | 2004 10 04 | G70 | 0.4− | 0.1+ |
| | | | | | | | | | | | | 2004 10 04 | 185 | 0.1− | 0.5− |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.2+ | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.3+ | 0.0 |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.4+ | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | A13 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.3+ | 0.2+ |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.1+ | 0.2− |
| | | | | | | | | | | | | 2004 10 04 | J95 | 0.0 | 0.0 |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.5− | 0.3− |
| | | | | | | | | | | | | 2004 10 05 | 649 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | A35 | 0.5− | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | A35 | 0.4+ | 0.3+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3− | 0.1− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3+ | 0.1+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1− | 0.4+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.5− | 0.3+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.4+ | 0.9+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.5+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.6− | 0.1+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.3+ | 0.6+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1− | 0.2− |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.1+ | 0.7+ |
| | | | | | | | | | | | | 2004 10 05 | 185 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 691 | 0.2− | 0.1+ | 2004 09 14 | 699 | 0.3− | 0.6+ | 2006 01 02 | G96 | 0.1+ | 0.2+ |
| 1999 08 13 | 691 | 0.9− | 0.2+ | 2004 09 14 | 699 | 1.6+ | 1.8+ | 2006 01 02 | G96 | 0.2+ | 0.1+ |
| 2002 01 22 | 291 | 0.9− | 0.9+ | 2004 09 16 | 699 | 0.5+ | 0.1+ | 2006 01 02 | G96 | 0.2− | 0.4+ |
| 2002 01 22 | 291 | 0.3− | 0.2+ | 2004 09 16 | 699 | 1.3− | 1.0+ | 2006 01 09 | G96 | 0.0 | 0.3+ |
| 2002 01 22 | 291 | 0.6− | 0.7+ | 2004 09 16 | 699 | 0.1+ | 0.6+ | 2006 01 09 | G96 | 0.1− | 0.5+ |
| 2002 03 05 | 691 | 0.3− | 1.0+ | 2004 09 16 | 699 | 1.2− | 1.2+ | 2006 01 09 | G96 | 0.4− | 0.6+ |
| 2002 03 05 | 691 | 0.1− | 0.2+ | 2004 09 17 | 704 | 0.3+ | 0.1+ | 2006 01 09 | G96 | 0.0 | 0.6+ |
| 2002 03 05 | 691 | 0.4− | 0.7+ | 2004 09 17 | 704 | 0.4− | 1.0+ | | | | |
| 2003 04 28 | 691 | 0.6+ | 0.4+ | 2004 09 17 | 704 | 0.4+ | 1.0+ | | | | |

**2004 $SO_{60}$ = 2001 $BN_{78}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.06512 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23407620 | $\omega$ | 263.06787 | | −0.68610653 | | −0.71585301 |
| $a$ | 2.6075414 | $\Omega$ | 231.11117 | | +0.71577559 | | −0.63236965 |
| $e$ | 0.2310533 | $i$ | 9.58919 | | +0.13008892 | | −0.29607952 |
| $P$ | 4.21 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 24 | 608 | 0.8− | 1.3− | 2004 09 16 | 691 | 0.1+ | 0.1− | 2004 12 11 | 704 | 0.7− | 0.5+ |
| 2001 01 24 | 608 | 0.4− | 1.0− | 2004 09 16 | 691 | 0.2+ | 0.2− | 2004 12 11 | 704 | 0.9+ | 0.5− |
| 2001 01 24 | 608 | (0.2− | 2.2−) | 2004 09 16 | 691 | 0.2− | 0.2− | 2004 12 18 | 704 | 0.2+ | 0.2+ |
| 2001 01 26 | 704 | 0.2− | 0.4+ | 2004 12 02 | 644 | 0.3− | 0.0 | 2004 12 18 | 704 | 0.2+ | 0.2+ |
| 2001 01 26 | 704 | 0.2− | 0.4+ | 2004 12 02 | 644 | 0.2− | 0.3− | 2004 12 18 | 704 | 0.5− | 0.5− |
| 2001 01 26 | 704 | 0.1+ | 0.1+ | 2004 12 02 | 644 | 0.2− | 0.1− | 2005 02 04 | 691 | 0.2+ | 0.1− |
| 2001 01 26 | 704 | 1.2+ | 0.7+ | 2004 12 11 | 704 | 0.5+ | 1.4+ | 2005 02 04 | 691 | 0.1+ | 0.1− |
| 2001 01 26 | 704 | 0.2+ | 0.6+ | 2004 12 11 | 704 | 0.3− | 0.3− | 2005 02 04 | 691 | 0.0 | 0.2− |

**2004 $SP_{60}$ = 2002 $LN_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.38526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18524428 | $\omega$ | 236.76868 | | +0.49716553 | | +0.85020075 |
| $a$ | 3.0477044 | $\Omega$ | 63.97864 | | −0.71808705 | | +0.51520512 |
| $e$ | 0.0935037 | $i$ | 11.11014 | | −0.48700864 | | +0.10826991 |
| $P$ | 5.32 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 704 | 0.8− | 0.5+ | 2003 08 31 | 704 | 1.7+ | 1.5+ | 2004 12 10 | 704 | 1.4+ | 0.5+ |
| 2002 06 06 | 704 | 0.7+ | 0.8+ | 2003 08 31 | 608 | 0.7− | 0.7− | 2004 12 10 | 704 | 0.4+ | 1.4+ |
| 2002 06 06 | 704 | 0.3+ | 1.3+ | 2003 08 31 | 608 | 0.9− | 0.8− | 2004 12 10 | 704 | 1.2+ | 1.2+ |
| 2002 06 06 | 704 | 0.9+ | 0.4+ | 2003 08 31 | 608 | 0.0 | 1.1− | 2004 12 14 | 704 | 2.4− | 0.3− |
| 2002 06 08 | 704 | (0.8− | 2.3+) | 2004 09 16 | 691 | 0.3− | 0.4− | 2004 12 14 | 704 | 0.7− | 0.7+ |
| 2002 06 08 | 704 | 0.6+ | 1.2+ | 2004 09 16 | 691 | 0.3+ | 0.1+ | 2004 12 14 | 704 | 0.4+ | 0.5+ |
| 2002 06 08 | 704 | 0.9+ | 1.1+ | 2004 09 16 | 691 | 0.0 | 0.2− | 2004 12 21 | 691 | 0.2+ | 0.2− |
| 2002 06 08 | 704 | 0.2− | 0.7+ | 2004 11 20 | 691 | 0.0 | 0.1− | 2004 12 21 | 691 | 0.0 | 0.2+ |
| 2002 06 08 | 704 | 0.5− | 0.3− | 2004 11 20 | 691 | 0.1− | 0.0 | 2004 12 21 | 691 | 0.2− | 0.1− |
| 2003 08 31 | 704 | 0.6+ | 0.2+ | 2004 11 20 | 691 | 0.1+ | 0.1+ | 2006 01 27 | 703 | 0.2− | 0.1+ |
| 2003 08 31 | 704 | 0.3− | 0.3+ | 2004 12 10 | 691 | 0.3− | 0.2+ | 2006 01 27 | 703 | 0.5+ | 0.1+ |
| 2003 08 31 | 704 | 0.4− | 1.1+ | 2004 12 10 | 691 | 0.1− | 0.4+ | 2006 01 27 | 703 | 0.5− | 0.0 |
| 2003 08 31 | 704 | 0.0 | 0.0 | 2004 12 10 | 691 | 0.1− | 0.3+ | 2006 01 27 | 703 | 0.0 | 0.7− |

**2004 $SQ_{60}$ = 6885 P-L = 1996 $FE_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.45338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18077571 | $\omega$ | 166.91842 | | +0.92431507 | | +0.37979117 |
| $a$ | 3.0977236 | $\Omega$ | 170.50125 | | −0.36737354 | | +0.91204809 |
| $e$ | 0.1166980 | $i$ | 13.10623 | | −0.10333606 | | +0.15468339 |
| $P$ | 5.45 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.1+ | 0.8+ | 1996 03 21 | 709 | 0.1− | 0.9− | 2004 10 18 | 704 | 0.0 | 0.1+ |
| 1960 09 24 | 675 | 0.3− | 0.9+ | 1996 03 21 | 709 | 0.1+ | 1.2− | 2004 10 18 | 704 | 0.7− | 0.6+ |
| 1960 09 26 | 675 | 0.4− | 0.3+ | 2004 09 17 | 704 | 0.1− | 0.9− | 2004 11 01 | 644 | 0.8+ | 0.1+ |
| 1960 09 26 | 675 | 0.1+ | 1.2− | 2004 09 17 | 704 | 0.4− | 0.3+ | 2004 11 01 | 644 | 0.2+ | 0.1− |
| 1960 09 27 | 675 | (0.4+ | 3.2−) | 2004 09 17 | 704 | 0.6− | 0.1− | 2004 11 01 | 644 | 0.8+ | 0.2+ |
| 1960 09 28 | 675 | 0.3− | 1.7− | 2004 09 17 | 704 | 1.1+ | 0.0 | 2004 11 06 | 704 | (0.9− | 2.1+) |
| 1960 09 28 | 675 | 0.9+ | 0.8+ | 2004 10 05 | 699 | 0.7+ | 0.1+ | 2004 11 06 | 704 | 0.1− | 0.3− |
| 1996 03 20 | 709 | 0.1− | 1.0+ | 2004 10 05 | 699 | 0.2+ | 0.9+ | 2004 11 06 | 704 | 1.0− | 1.6− |
| 1996 03 20 | 709 | 0.6− | 1.3+ | 2004 10 05 | 699 | 1.4− | 0.4+ | 2005 01 18 | 809 | 0.1− | 0.5− |
| 1996 03 20 | 709 | 0.8+ | 1.1+ | 2004 10 05 | 699 | 0.7+ | 0.7+ | 2005 01 18 | 809 | 0.2+ | 0.4− |
| 1996 03 20 | 709 | 0.2+ | 1.0+ | 2004 10 18 | 704 | 0.2+ | 0.1+ | 2005 01 18 | 809 | 0.2+ | 0.5− |
| 1996 03 21 | 709 | 0.1− | 1.0− | 2004 10 18 | 704 | 0.2− | 0.8+ | | | | |
| 1996 03 21 | 709 | 0.0 | 0.6− | 2004 10 18 | 704 | 0.6− | 0.0 | | | | |

**2004 $SR_{60}$ = 1994 $UP_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.36944 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19625248 | $\omega$ | 167.39936 | | +0.82729978 | | −0.53318162 |
| $a$ | 2.9326435 | $\Omega$ | 226.28609 | | +0.49183468 | | +0.83962171 |
| $e$ | 0.0988466 | $i$ | 14.16637 | | +0.27142903 | | +0.10369546 |
| $P$ | 5.02 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 29 | 691 | 0.4+ | 0.2+ | 1999 11 05 | 704 | 0.4− | 0.5− | 2004 10 10 | 704 | 1.2+ | 1.8+ |
| 1994 10 29 | 691 | 0.7+ | 0.5− | 2000 12 31 | 608 | 0.8− | 0.3− | 2004 10 10 | 704 | 1.2− | 0.3+ |
| 1994 10 29 | 691 | 0.5+ | 0.4− | 2000 12 31 | 608 | 0.2+ | 0.6− | 2004 10 10 | 704 | 0.1− | 1.1+ |
| 1994 11 01 | 691 | 0.5− | 0.2− | 2000 12 31 | 608 | 0.1− | 0.1− | 2004 10 21 | 704 | 0.2− | 1.0+ |
| 1994 11 01 | 691 | 0.5− | 0.3− | 2001 01 17 | 608 | 0.2+ | 0.5+ | 2004 10 21 | 704 | 0.2+ | 0.4+ |
| 1994 11 01 | 691 | 0.5− | 0.5− | 2001 01 17 | 608 | 0.4+ | 0.5+ | 2004 10 21 | 704 | 0.6+ | 1.0+ |
| 1999 10 10 | 704 | 0.5− | 0.0 | 2001 01 17 | 608 | 0.3+ | 0.6+ | 2004 10 21 | 704 | 0.4− | 1.3+ |
| 1999 10 10 | 704 | 0.5+ | 0.7− | 2004 09 18 | 704 | 0.3+ | 0.6+ | 2004 10 21 | 704 | 0.9+ | 0.6+ |
| 1999 10 10 | 704 | 1.1+ | 0.3+ | 2004 09 18 | 704 | 0.1+ | 1.0− | 2004 11 13 | 703 | 1.0− | 0.6+ |
| 1999 10 10 | 704 | 0.8+ | 0.6− | 2004 09 18 | 704 | 0.6− | 0.0 | 2004 11 13 | 703 | 0.3− | 0.4+ |
| 1999 11 05 | 704 | 0.3− | 0.1+ | 2004 09 18 | 704 | 0.3+ | 0.5− | 2004 11 13 | 703 | 0.4− | 1.2+ |
| 1999 11 05 | 704 | 0.6+ | 1.0− | 2004 10 10 | 704 | 0.3− | 0.2+ | 2004 11 13 | 703 | 1.4− | 0.1+ |

**2004 $SS_{60}$ = 1999 $TA_{272}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.49696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20665245 | $\omega$ | 75.88613 | | +0.96879905 | | −0.21503382 |
| $a$ | 2.8334073 | $\Omega$ | 296.40952 | | +0.13853550 | | +0.88214274 |
| $e$ | 0.1496923 | $i$ | 7.90921 | | +0.20551476 | | +0.41902821 |
| $P$ | 4.77 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.0 | 0.8+ | 2004 09 18 | 704 | 0.6+ | 0.4− | 2004 11 19 | 704 | 1.4+ | 1.5− |
| 1999 10 03 | 704 | 1.2+ | 0.9− | 2004 09 18 | 704 | 0.6− | 0.0 | 2004 12 02 | 703 | 0.6− | 0.3− |
| 1999 10 03 | 704 | 0.3+ | 0.4+ | 2004 09 18 | 704 | 0.6− | 0.0 | 2004 12 02 | 703 | 0.3− | 0.2+ |
| 1999 10 03 | 704 | 0.2− | 0.3+ | 2004 11 04 | 704 | 0.8− | 1.0+ | 2004 12 02 | 703 | 0.1+ | 1.0− |
| 1999 10 12 | 704 | 0.4− | 0.3− | 2004 11 04 | 704 | 0.1+ | 1.4+ | 2004 12 02 | 703 | 1.0+ | 0.6− |
| 1999 10 12 | 704 | 1.1− | 0.3− | 2004 11 04 | 704 | 1.0− | 1.1+ | 2004 12 11 | 703 | 0.1+ | 0.4+ |
| 1999 10 12 | 704 | 0.2− | 0.5− | 2004 11 04 | 704 | 0.6− | 0.4− | 2004 12 11 | 703 | 0.2+ | 0.0 |
| 1999 10 12 | 704 | 0.3+ | 0.2+ | 2004 11 04 | 704 | 0.7− | 0.3+ | 2004 12 11 | 703 | 0.0 | 0.1− |
| 1999 10 12 | 704 | 0.3+ | 0.2− | 2004 11 19 | 704 | 0.4+ | 0.3+ | 2004 12 11 | 703 | 0.5+ | 0.1+ |
| 2004 09 18 | 704 | 1.2+ | 0.5+ | 2004 11 19 | 704 | 0.1− | 0.5− | | | | |

**2004 $ST_{60}$ = 2000 $TM_{64}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.20902 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24387216 | $\omega$ | 283.45222 | | +0.42568288 | | −0.89201522 |
| $a$ | 2.5372381 | $\Omega$ | 140.22060 | | +0.89458874 | | +0.38961288 |
| $e$ | 0.1592817 | $i$ | 13.74236 | | +0.13603336 | | +0.22915203 |
| $P$ | 4.04 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 05 | 704 | 0.0 | 0.8+ | 2004 09 21 | 699 | 0.8− | 0.6+ | 2004 10 06 | 644 | 0.2+ | 0.2− |
| 2000 10 05 | 704 | 0.6+ | 0.6+ | 2004 09 21 | 699 | 0.3+ | 0.1− | 2004 10 06 | 644 | 0.2+ | 0.1− |
| 2000 10 05 | 704 | 0.8− | 0.3− | 2004 10 06 | 644 | 0.4+ | 0.4− | 2004 10 13 | 699 | 0.3− | 0.9+ |
| 2000 10 06 | 608 | 0.2+ | 0.4− | 2004 10 06 | 704 | 0.0 | 0.1− | 2004 10 13 | 699 | 0.1− | 0.2+ |
| 2000 10 06 | 608 | 0.0 | 0.4− | 2004 10 06 | 704 | 1.0− | 0.6+ | 2004 10 13 | 699 | 0.4− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 608 | 0.0 | 0.2− | 2004 10 06 | 704 | 0.3+ | 0.6− | 2004 10 13 | 699 | 0.2− | 1.2− | | |
| 2004 09 21 | 699 | 0.5+ | 0.1− | 2004 10 06 | 704 | 0.1+ | 1.7+ | | | | | | |
| 2004 09 21 | 699 | 0.2− | 0.3− | 2004 10 06 | 704 | 1.0+ | 1.0− | | | | | | |

**2004 SU$_{60}$ = 2006 BD$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.99484 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17454791 | $\omega$ | 309.79718 | | +0.65814680 | −0.69650409 | |
| $a$ | 3.1709759 | $\Omega$ | 96.53864 | | +0.74825141 | +0.56302349 | |
| $e$ | 0.1291360 | $i$ | 16.72314 | | +0.08344224 | +0.44484447 | |
| $P$ | 5.65 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.1+ | 0.8+ | 2004 11 21 | 608 | 0.7+ | 0.5+ | 2005 01 13 | 704 | 0.5− | 0.1+ |
| 2000 01 29 | 704 | 0.2+ | 1.1+ | 2004 11 21 | 608 | 0.2+ | 0.3+ | 2005 01 13 | 704 | 1.1− | 0.2+ |
| 2000 01 29 | 704 | 0.5+ | 0.5− | 2004 11 21 | 608 | 0.4+ | 0.5+ | 2005 01 13 | 704 | 0.9− | 0.1− |
| 2000 01 29 | 704 | 0.8− | 0.7+ | 2004 12 02 | 699 | 0.4+ | 0.5+ | 2005 01 13 | 704 | 0.8− | 0.4+ |
| 2004 09 24 | 704 | 1.7+ | 0.2+ | 2004 12 02 | 699 | 0.4+ | 1.0− | 2006 01 27 | 703 | 1.0− | 0.7− |
| 2004 09 24 | 704 | 0.1− | 0.1− | 2004 12 02 | 699 | 0.3+ | 1.5− | 2006 01 27 | 703 | 0.9− | 0.9+ |
| 2004 09 24 | 704 | 0.5+ | 0.2− | 2004 12 02 | 699 | 1.3+ | 0.0 | 2006 01 27 | 703 | 0.6− | 0.7− |
| 2004 09 24 | 704 | 1.4+ | 0.0 | 2004 12 18 | 704 | 0.6− | 0.4+ | 2006 01 27 | 703 | 0.3− | 0.4− |
| 2004 11 03 | 699 | 0.7+ | 0.9− | 2004 12 18 | 704 | 0.1− | 0.3+ | 2006 02 04 | 703 | 1.6+ | 1.1− |
| 2004 11 03 | 699 | 0.0 | 0.7+ | 2004 12 18 | 704 | 0.5− | 0.0 | 2006 02 04 | 703 | 0.2+ | 0.2− |
| 2004 11 03 | 699 | 0.4− | 0.2+ | 2004 12 18 | 704 | 2.1− | 1.3− | 2006 02 04 | 703 | 0.2− | 0.5− |
| 2004 11 03 | 699 | 0.3+ | 0.2− | 2004 12 18 | 704 | 0.6− | 0.1+ | 2006 02 04 | 703 | 0.4+ | 0.1+ |

**2004 SV$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.90050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19048940 | $\omega$ | 330.01379 | | +0.75766574 | −0.62646282 | |
| $a$ | 2.9914989 | $\Omega$ | 69.93121 | | +0.63081836 | +0.63104933 | |
| $e$ | 0.0829266 | $i$ | 11.23444 | | +0.16736436 | +0.45751621 | |
| $P$ | 5.17 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 02 | 691 | 0.0 | 0.2− | 2004 09 21 | 704 | 0.9− | 0.0 | 2004 10 20 | 703 | 0.2+ | 0.1+ |
| 1997 05 02 | 691 | 0.1+ | 0.1+ | 2004 09 21 | 704 | 0.0 | 1.0+ | 2006 01 07 | 704 | 0.3+ | 0.2− |
| 1997 05 02 | 691 | 0.1− | 0.2+ | 2004 09 21 | 704 | 0.6− | 0.3+ | 2006 01 07 | 704 | 0.8+ | 0.1− |
| 2001 01 18 | 704 | 0.4− | 0.6+ | 2004 09 21 | 704 | 0.2− | 0.8+ | 2006 01 07 | 703 | 0.4+ | 0.3+ |
| 2001 01 18 | 704 | 0.3− | 0.7+ | 2004 09 21 | 704 | 0.1− | 0.1− | 2006 01 07 | 703 | 0.7− | 0.3− |
| 2001 01 18 | 704 | 0.9+ | 1.4+ | 2004 10 09 | 699 | 0.3− | 0.1− | 2006 01 07 | 704 | 0.2+ | 0.0 |
| 2001 01 18 | 704 | 0.2− | 0.6+ | 2004 10 09 | 699 | 0.1− | 0.5− | 2006 01 07 | 703 | 0.0 | 0.6− |
| 2001 01 18 | 704 | 0.9+ | 1.4+ | 2004 10 09 | 699 | (2.2+ | 0.5+) | 2006 01 07 | 703 | 0.8− | 2.9− |
| 2004 09 17 | 699 | 0.4+ | 0.4+ | 2004 10 09 | 699 | 0.3+ | 0.2+ | 2006 01 07 | 704 | 0.1− | 0.0 |
| 2004 09 17 | 699 | 0.5+ | 1.0+ | 2004 10 20 | 703 | 0.3+ | 0.4− | 2006 01 07 | 704 | 0.0 | 0.3− |
| 2004 09 17 | 699 | 0.1+ | 0.8− | 2004 10 20 | 703 | 0.3+ | 0.8+ | | | | |
| 2004 09 17 | 699 | 0.3− | 1.3− | 2004 10 20 | 703 | 0.4− | 0.1+ | | | | |

**2004 SW$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.48234 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19132148 | $\omega$ | 213.08440 | | +0.89259943 | +0.42975392 | |
| $a$ | 2.9828190 | $\Omega$ | 120.88312 | | −0.37144255 | +0.87232296 | |
| $e$ | 0.1157574 | $i$ | 9.13832 | | −0.25553217 | +0.23316138 | |
| $P$ | 5.15 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1+ | 0.3+ | 2004 10 18 | 704 | 1.5− | 0.8− | 2006 01 21 | G96 | 0.4− | 0.1− |
| 1999 10 09 | 704 | 0.1− | 0.2+ | 2004 10 23 | 291 | 0.4+ | 0.4+ | 2006 01 21 | G96 | 0.3+ | 0.3− |
| 1999 10 09 | 704 | 0.2− | 0.2+ | 2004 10 23 | 291 | 0.5+ | 0.2+ | 2006 01 21 | G96 | 0.0 | 0.4− |
| 2000 12 22 | 691 | 0.4+ | 0.2+ | 2004 10 23 | 291 | 0.4+ | 0.3+ | 2006 01 21 | G96 | 0.3+ | 0.5− |
| 2000 12 22 | 691 | 0.1− | 0.2+ | 2004 12 04 | 699 | 0.4+ | 0.3+ | 2006 01 30 | 691 | 0.2+ | 0.2− |
| 2000 12 22 | 691 | 0.3− | 0.3+ | 2004 12 04 | 699 | 0.2− | 0.4− | 2006 01 30 | 691 | 0.1+ | 0.2+ |
| 2004 09 17 | 699 | 0.1+ | 1.8+ | 2004 12 04 | 699 | 1.0− | 1.6− | 2006 01 30 | 691 | 0.3+ | 0.2− |
| 2004 09 17 | 699 | 0.3+ | 0.9+ | 2004 12 04 | 699 | 0.9− | 0.8+ | 2006 02 04 | 691 | 0.1− | 0.0 |
| 2004 09 17 | 699 | 0.5+ | 0.2+ | 2005 12 27 | G96 | 1.0− | 0.4− | 2006 02 04 | 691 | 0.1− | 0.2− |
| 2004 09 17 | 699 | 0.3− | 0.5− | 2005 12 27 | G96 | 0.4− | 0.3− | 2006 02 04 | 691 | 0.3+ | 0.7+ |
| 2004 10 07 | 704 | 1.1+ | 0.2+ | 2005 12 27 | G96 | 0.5− | 0.2− | 2006 02 04 | G96 | 0.2+ | 0.4− |
| 2004 10 07 | 704 | 0.0 | 0.5− | 2005 12 27 | G96 | 0.0 | 0.5− | 2006 02 04 | G96 | 0.4+ | 0.1+ |
| 2004 10 07 | 704 | 0.3− | 0.7− | 2006 01 06 | 691 | 0.9− | 0.8− | 2006 02 04 | G96 | 0.1+ | 0.1− |
| 2004 10 07 | 704 | 0.1+ | 0.1− | 2006 01 06 | 691 | 0.0 | 0.2+ | 2006 02 04 | G96 | 0.0 | 0.2− |
| 2004 10 07 | 704 | 0.2− | 0.5− | 2006 01 06 | 691 | 0.3+ | 0.3+ | 2006 03 24 | G96 | 0.1− | 0.5+ |
| 2004 10 18 | 704 | 0.6− | 0.6− | 2006 01 06 | G96 | 0.4+ | 0.8+ | 2006 03 24 | G96 | 0.2− | 0.1− |
| 2004 10 18 | 704 | 0.2− | 0.8− | 2006 01 06 | G96 | 0.7+ | 0.1+ | 2006 03 24 | G96 | 0.1− | 0.0 |
| 2004 10 18 | 704 | 1.5− | 1.3− | 2006 01 06 | G96 | 0.0 | 0.3− | 2006 03 24 | G96 | 0.1− | 0.1− |
| 2004 10 18 | 704 | 1.1− | 0.4− | 2006 01 06 | G96 | 0.3+ | 0.1− | | | | |

**2004 SX$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.91438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30947109 | $\omega$ | 299.68396 | | +0.97331298 | −0.22414495 | |
| $a$ | 2.1646582 | $\Omega$ | 73.30546 | | +0.22427728 | +0.88371415 | |
| $e$ | 0.0916716 | $i$ | 2.94444 | | +0.04859573 | +0.41086291 | |
| $P$ | 3.18 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 691 | 0.0 | 0.5− | 2004 11 10 | 691 | 0.1+ | 0.0 | 2006 04 26 | 691 | 0.4+ | 0.2+ |
| 1993 03 20 | 691 | 0.2− | 0.5− | 2004 11 20 | 691 | 0.1− | 0.2+ | 2006 04 26 | 691 | 0.1+ | 0.2+ |
| 1993 03 20 | 691 | 0.4− | 0.5− | 2004 11 20 | 691 | 0.1− | 0.2+ | 2006 05 06 | 691 | 0.4+ | 0.0 |
| 2003 06 01 | 291 | 0.1− | 0.2+ | 2004 11 20 | 691 | 0.1− | 0.1+ | 2006 05 06 | 691 | 0.2+ | 0.5+ |
| 2003 06 01 | 291 | 0.2+ | 0.3− | 2004 12 14 | 599 | 0.2− | 0.0 | 2006 05 06 | 691 | 0.0 | 0.3+ |
| 2003 06 01 | 291 | 0.0 | 0.1+ | 2004 12 14 | 599 | 0.3− | 0.2+ | 2006 05 26 | G96 | 0.3− | 0.1+ |
| 2004 09 17 | 291 | 0.2− | 0.4− | 2004 12 14 | 599 | 0.1− | 0.6+ | 2006 05 26 | G96 | 0.1− | 0.1+ |
| 2004 09 17 | 291 | 0.1+ | 0.6+ | 2006 04 02 | 691 | 0.0 | 0.6+ | 2006 05 26 | G96 | 0.5− | 0.1+ |
| 2004 09 17 | 291 | 0.4− | 0.2+ | 2006 04 02 | 691 | 0.1− | 0.4+ | 2006 05 26 | G96 | 0.3− | 0.4− |
| 2004 11 10 | 691 | 0.2+ | 0.4+ | 2006 04 02 | 691 | 0.2+ | 0.3+ | | | | |
| 2004 11 10 | 691 | 0.2+ | 0.1+ | 2006 04 26 | 691 | 0.1+ | 0.3+ | | | | |

**2004 SY$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.88414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26098181 | $\omega$ | 268.48945 | | +0.70097119 | +0.71090888 | |
| $a$ | 2.4250976 | $\Omega$ | 46.19680 | | −0.61891870 | +0.64607576 | |
| $e$ | 0.1110449 | $i$ | 4.52908 | | −0.35437132 | +0.27783930 | |
| $P$ | 3.78 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.1+ | 0.0 | 2004 09 17 | 691 | 0.2+ | 0.2+ | 2004 11 10 | 695 | 0.1+ | 0.1− |
| 2000 09 05 | 645 | 0.1+ | 0.0 | 2004 09 17 | 691 | 0.1− | 0.3− | 2004 11 10 | 695 | 0.1+ | 0.0 |
| 2000 09 26 | 691 | 0.5− | 0.4+ | 2004 10 05 | 691 | 0.4− | 0.2+ | 2004 11 10 | 695 | 0.3− | 0.1− |
| 2000 09 26 | 691 | 0.5− | 0.2+ | 2004 10 05 | 691 | 0.0 | 0.2− | 2006 01 31 | 691 | 0.5− | 0.3− |
| 2000 09 26 | 691 | 0.3− | 0.1+ | 2004 10 05 | 691 | 0.4− | 0.1− | 2006 01 31 | 691 | 1.0+ | 0.5+ |
| 2003 03 30 | 695 | 0.2+ | 1.0+ | 2004 10 23 | 291 | 0.3+ | 0.1− | 2006 01 31 | 691 | 0.3− | 0.2+ |
| 2003 03 30 | 695 | 0.4+ | 1.2+ | 2004 10 23 | 291 | 0.1+ | 0.0 | | | | |
| 2004 09 17 | 691 | 0.1− | 0.2+ | 2004 10 23 | 291 | 0.4+ | 0.1+ | | | | |

**2004 SZ$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.30960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24120530 | $\omega$ | 76.57307 | | +0.40061979 | +0.90188238 | |
| $a$ | 2.5559057 | $\Omega$ | 218.35278 | | −0.90863300 | +0.36837890 | |
| $e$ | 0.1846392 | $i$ | 15.09507 | | −0.11785526 | +0.22562174 | |
| $P$ | 4.09 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 17 | 691 | 0.1+ | 0.2− | 2000 11 23 | 691 | 0.6− | 0.5− | 2004 10 16 | 704 | 0.9+ | 0.8+ |
| 1992 11 17 | 691 | 0.4+ | 0.2− | 2003 05 29 | 691 | 0.0 | 0.0 | 2004 10 16 | 704 | 0.9− | 0.0 |
| 1992 11 17 | 691 | 0.1+ | 0.3− | 2003 05 29 | 691 | 0.1− | 0.5− | 2004 10 16 | 704 | 0.6+ | 1.7+ |
| 1996 10 18 | 691 | 0.3− | 0.3− | 2003 05 29 | 691 | 0.0 | 0.0 | 2004 10 16 | 704 | 0.3− | 0.8− |
| 1996 10 18 | 691 | 0.3− | 0.1− | 2004 09 18 | 704 | 0.5− | 0.6− | 2004 10 16 | 704 | 0.4− | 0.3+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 18 | 691 | 0.2− | 0.3+ | 2004 09 18 | 704 | 0.5+ | 1.6− | 2004 10 21 | 704 | (2.1− | 0.9+) | | | |
| 2000 11 02 | 691 | 0.6+ | 0.1− | 2004 09 18 | 704 | 0.3+ | 0.4− | 2004 10 21 | 704 | 0.3+ | 0.3+ | | | |
| 2000 11 02 | 691 | 0.4− | 0.3− | 2004 10 16 | 704 | 0.8+ | 0.2+ | 2004 10 21 | 704 | (1.5− | 2.3+) | | | |
| 2000 11 02 | 691 | 0.5− | 0.0 | 2004 10 16 | 704 | 0.4− | 0.3− | 2004 11 11 | 691 | 0.2+ | 0.2− | | | |
| 2000 11 23 | 691 | 0.8+ | 0.7+ | 2004 10 16 | 704 | (0.9− | 2.1−) | 2004 11 11 | 691 | 0.5− | 0.0 | | | |
| 2000 11 23 | 691 | 0.0 | 0.4+ | 2004 10 16 | 704 | 0.9+ | 0.4+ | 2004 11 11 | 691 | 0.2+ | 0.1+ | | | |

**2004 SA$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.22084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22909898 | $\omega$ | 66.05200 | | +0.57157871 | −0.81941356 | |
| $a$ | 2.6451721 | $\Omega$ | 348.77836 | | +0.64900536 | +0.48361490 | |
| $e$ | 0.1324835 | $i$ | 12.80119 | | +0.50208547 | +0.30769799 | |
| $P$ | 4.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 18 | 704 | 0.1− | 0.9− | 2006 02 02 | G96 | 0.2+ | 0.2− | 2006 03 06 | G96 | 0.1+ | 0.2+ | | | |
| 2004 09 18 | 704 | 0.6+ | 0.9− | 2006 02 02 | G96 | 0.1+ | 0.2− | 2006 03 06 | G96 | 0.2− | 0.1+ | | | |
| 2004 09 18 | 704 | 0.7+ | 0.1+ | 2006 02 02 | G96 | 0.2− | 0.0 | 2006 03 06 | G96 | 0.5− | 0.1+ | | | |
| 2004 09 18 | 704 | 1.2− | 0.2− | 2006 02 02 | G96 | 0.4− | 0.2− | 2006 03 23 | G96 | 0.7+ | 0.1− | | | |
| 2004 09 18 | 704 | 0.1+ | 0.3+ | 2006 02 25 | G96 | 0.3− | 0.2+ | 2006 03 23 | G96 | 0.3− | 0.3− | | | |
| 2004 10 12 | 699 | 0.6+ | 0.2− | 2006 02 25 | G96 | 0.2+ | 0.0 | 2006 03 23 | G96 | 0.3+ | 0.0 | | | |
| 2004 10 12 | 699 | 0.7+ | 0.1+ | 2006 02 25 | G96 | 0.1+ | 0.1− | 2006 03 23 | G96 | 0.3+ | 0.6+ | | | |
| 2004 10 12 | 699 | 0.3+ | 0.1+ | 2006 02 25 | G96 | 0.3+ | 0.0 | 2006 04 07 | G96 | 0.4+ | 0.5+ | | | |
| 2004 10 12 | 699 | 0.9− | 1.4+ | 2006 03 06 | G96 | 0.1+ | 0.3+ | 2006 04 07 | G96 | 0.1− | 0.2− | | | |
| 2004 12 16 | 703 | 0.7− | 0.8+ | 2006 03 06 | G96 | 0.0 | 0.1− | 2006 04 07 | G96 | 0.5− | 0.8− | | | |
| 2004 12 16 | 703 | 0.2− | 0.2+ | 2006 03 06 | G96 | 0.1− | 0.1+ | 2006 04 07 | G96 | 0.1+ | 0.6− | | | |
| 2004 12 16 | 703 | 0.4− | 0.3− | 2006 03 06 | G96 | 0.2− | 0.1+ | | | | | | | |
| 2004 12 16 | 703 | 0.5+ | 0.9− | 2006 03 06 | G96 | 0.3− | 0.1+ | | | | | | | |

**2004 SB$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.36235 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19161769 | $\omega$ | 273.18315 | | +0.74777564 | −0.63962656 | |
| $a$ | 2.9797442 | $\Omega$ | 126.66372 | | +0.66238413 | +0.70026146 | |
| $e$ | 0.2447722 | $i$ | 12.82604 | | +0.04559448 | +0.31703589 | |
| $P$ | 5.14 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 07 | 704 | 0.4+ | 0.1+ | 2004 10 20 | 703 | 0.3+ | 0.6− | 2004 11 11 | 704 | 0.2− | 0.5+ |
| 1999 11 07 | 704 | 0.5− | 0.8− | 2004 10 20 | 703 | 0.6+ | 1.0− | 2004 11 11 | 704 | 0.8+ | 1.4+ |
| 1999 11 07 | 704 | 0.5+ | 0.6− | 2004 10 20 | 703 | 0.6+ | 0.6− | 2004 11 11 | 704 | 0.0 | 0.4− |
| 2004 09 21 | 704 | 0.3+ | 0.2+ | 2004 10 20 | 703 | 0.4+ | 0.1− | 2004 11 11 | 704 | 0.4− | 0.3+ |
| 2004 09 21 | 704 | 0.1+ | 0.6+ | 2004 11 05 | 704 | 0.4+ | 1.8+ | 2006 02 20 | 703 | 2.0+ | 0.9+ |
| 2004 09 21 | 704 | 0.1+ | 0.5+ | 2004 11 05 | 704 | 0.1− | 0.2+ | 2006 02 20 | 703 | 0.2+ | 0.1+ |
| 2004 09 21 | 704 | 0.8− | 0.2+ | 2004 11 05 | 704 | 0.3− | 1.1+ | 2006 02 20 | 703 | 0.4+ | 0.3− |
| 2004 09 21 | 704 | 0.5− | 0.5+ | 2004 11 05 | 704 | 0.7+ | 0.6− | 2006 02 20 | 703 | 1.1− | 0.2+ |
| 2004 10 06 | 704 | 0.7− | 0.6− | 2004 11 11 | 703 | 0.0 | 1.1− | 2006 02 28 | 703 | 1.3− | 1.5+ |
| 2004 10 06 | 704 | 1.7− | 0.4+ | 2004 11 11 | 703 | 0.8+ | 0.2− | 2006 02 28 | 703 | 1.5− | 0.2+ |
| 2004 10 06 | 704 | 0.1− | 0.0 | 2004 11 11 | 703 | 0.8− | 0.3− | 2006 02 28 | 703 | 1.4+ | 0.1− |
| 2004 10 06 | 704 | 0.4− | 0.7+ | 2004 11 11 | 703 | 0.4+ | 0.7− | 2006 02 28 | 703 | 0.0 | 1.3− |

**2004 SC$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.59382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28267641 | $\omega$ | 351.44652 | | +0.57575593 | −0.81562814 | |
| $a$ | 2.2993743 | $\Omega$ | 63.38189 | | +0.75387862 | +0.50256010 | |
| $e$ | 0.1926110 | $i$ | 3.65937 | | +0.31649981 | +0.28667766 | |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.0 | 0.2+ | 2004 09 22 | 704 | 0.6− | 0.2− | 2004 10 18 | 704 | 0.7+ | 0.9− |
| 2002 01 09 | 704 | 0.8+ | 1.1− | 2004 10 07 | 704 | 0.5− | 0.7+ | 2004 11 02 | 644 | 0.0 | 0.7− |
| 2002 01 09 | 704 | 0.0 | 0.3− | 2004 10 07 | 704 | 0.7− | 0.3− | 2004 11 02 | 644 | 0.2+ | 0.2− |
| 2002 02 08 | 704 | 0.0 | 1.2+ | 2004 10 07 | 704 | 0.3− | 0.0 | 2004 11 02 | 644 | 0.0 | 0.4− |
| 2002 02 08 | 704 | 0.7− | 1.3+ | 2004 10 07 | 704 | 0.3+ | 0.0 | 2004 12 12 | 703 | 0.7+ | 0.8+ |
| 2002 02 08 | 704 | 0.1+ | 0.1+ | 2004 10 09 | 704 | 0.6− | 0.2+ | 2004 12 12 | 703 | 1.4+ | 0.0 |
| 2002 02 08 | 704 | 0.3− | 0.8− | 2004 10 09 | 704 | 1.5− | 0.0 | 2004 12 12 | 703 | 0.4− | 0.4+ |
| 2002 02 08 | 704 | 0.1+ | 0.6− | 2004 10 09 | 704 | 0.0 | 0.0 | 2004 12 12 | 703 | 0.0 | 0.5− |
| 2004 09 22 | 704 | 0.8+ | 0.7+ | 2004 10 09 | 704 | 1.7− | 0.4+ | 2006 04 02 | 691 | 0.4+ | 0.4+ |
| 2004 09 22 | 704 | 0.5+ | 0.5+ | 2004 10 18 | 704 | 0.8− | 0.2+ | 2006 04 02 | 691 | 0.0 | 0.4+ |
| 2004 09 22 | 704 | 0.4+ | 0.2+ | 2004 10 18 | 704 | 0.6+ | 1.0+ | 2006 04 02 | 691 | 0.1+ | 0.1+ |
| 2004 09 22 | 704 | 1.1+ | 0.4+ | 2004 10 18 | 704 | 0.5− | 1.3+ | | | | |

**2004 SD$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.20890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27730563 | $\omega$ | 242.27995 | | +0.98945481 | −0.10770183 | |
| $a$ | 2.3289684 | $\Omega$ | 123.75121 | | +0.13434288 | +0.93234157 | |
| $e$ | 0.2139342 | $i$ | 6.68897 | | −0.05414023 | +0.34516591 | |
| $P$ | 3.55 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 691 | 0.6+ | 0.3− | 2004 10 07 | 699 | 0.3− | 0.2− | 2004 11 12 | 704 | 0.9− | 0.4+ |
| 2002 02 11 | 691 | 0.2− | 0.1+ | 2004 10 07 | 699 | 0.4− | 0.3+ | 2004 11 12 | 704 | 1.3− | 0.6+ |
| 2002 02 11 | 691 | 0.1− | 0.2+ | 2004 10 07 | 699 | 1.7− | 0.9+ | 2004 11 12 | 704 | 0.9− | 1.4+ |
| 2003 04 29 | 691 | 0.5+ | 1.8+ | 2004 10 07 | 704 | 1.2− | 0.6+ | 2004 11 12 | 704 | 1.3− | 0.2+ |
| 2003 04 29 | 691 | 0.4+ | 1.7+ | 2004 10 07 | 704 | 1.5− | 0.6+ | 2004 11 12 | 704 | 0.9− | 1.2+ |
| 2003 04 29 | 691 | 0.4+ | 1.7+ | 2004 10 07 | 704 | 0.0 | 0.1+ | 2004 11 20 | 703 | 0.2+ | 0.3+ |
| 2004 09 23 | 683 | 1.4− | 1.1+ | 2004 10 07 | 704 | 0.7− | 0.4+ | 2004 11 20 | 703 | 0.5+ | 0.8+ |
| 2004 09 23 | 683 | (1.8+ | 2.1+) | 2004 10 07 | 704 | 0.0 | 0.5+ | 2004 11 20 | 703 | 1.5+ | 0.4− |
| 2004 09 23 | 683 | 0.2+ | 0.4− | 2004 10 18 | 704 | 0.2− | 0.6+ | 2004 11 20 | 703 | 0.4− | 0.2− |
| 2004 09 24 | 683 | 1.2+ | 1.3− | 2004 10 18 | 704 | 0.1− | 1.4+ | 2004 12 04 | 699 | 0.4− | 0.9+ |
| 2004 09 24 | 683 | (2.9+ | 0.6−) | 2004 10 18 | 704 | 1.0− | 0.5+ | 2004 12 04 | 699 | (2.1− | 0.9−) |
| 2004 09 24 | 683 | 0.8+ | 1.1+ | 2004 10 18 | 704 | 0.5+ | 0.9+ | 2004 12 04 | 699 | (2.2− | 1.2+) |
| 2004 10 05 | 699 | (2.6− | 0.4+) | 2004 10 18 | 704 | 0.7− | 0.6+ | 2004 12 04 | 699 | 0.4+ | 0.5+ |
| 2004 10 05 | 699 | 1.1+ | 1.0+ | 2004 11 02 | 699 | 0.5+ | 0.1+ | 2006 03 04 | 691 | 0.5+ | 0.4− |
| 2004 10 05 | 699 | 0.9+ | 0.5− | 2004 11 02 | 699 | 0.9+ | 0.8+ | 2006 03 04 | 691 | 0.4+ | 0.1− |
| 2004 10 05 | 699 | (0.5+ | 2.1+) | 2004 11 02 | 699 | 0.1+ | 0.7− | 2006 03 04 | 691 | 0.3− | 0.9+ |
| 2004 10 07 | 699 | 1.0− | 1.7+ | 2004 11 02 | 699 | 0.9+ | 1.1+ | | | | |

**2004 SK$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.95623 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18089595 | $\omega$ | 221.95668 | | +0.40042830 | +0.91494830 | |
| $a$ | 3.0963508 | $\Omega$ | 71.70395 | | −0.82600725 | +0.38416404 | |
| $e$ | 0.0804912 | $i$ | 3.03486 | | −0.39669786 | +0.12364299 | |
| $P$ | 5.45 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 699 | 0.1− | 1.3+ | 2004 09 17 | 699 | 0.2− | 0.1+ | 2004 10 20 | 704 | 0.7+ | 0.8+ |
| 2002 04 05 | 699 | (0.3− | 1.6+) | 2004 09 22 | 704 | (1.6− | 0.1−) | 2004 10 20 | 704 | (0.4+ | 1.9+) |
| 2002 04 05 | 699 | (1.8+ | 1.1+) | 2004 09 22 | 704 | 1.1− | 0.1+ | 2005 11 30 | 691 | 0.3− | 0.2+ |
| 2002 04 05 | 699 | 0.3− | 0.5+ | 2004 09 22 | 704 | 1.1+ | 0.1− | 2005 11 30 | 691 | 0.2− | 0.3+ |
| 2002 04 14 | 644 | 0.1+ | 0.4+ | 2004 09 22 | 704 | 0.6− | 1.0+ | 2005 11 30 | 691 | 0.2− | 0.2+ |
| 2002 04 14 | 644 | 0.2+ | 0.0 | 2004 10 07 | 704 | 0.7+ | 0.3− | 2005 12 24 | 691 | 0.1+ | 0.1− |
| 2002 04 14 | 644 | 0.1+ | 0.1− | 2004 10 07 | 704 | 0.3− | 1.1+ | 2005 12 24 | 691 | 0.0 | 0.0 |
| 2002 04 20 | 644 | 0.4+ | 0.8+ | 2004 10 07 | 704 | 0.3− | 0.9+ | 2005 12 24 | 691 | 0.0 | 0.0 |
| 2002 04 20 | 644 | 1.3+ | 0.9+ | 2004 10 07 | 704 | 0.0 | 0.5+ | 2006 01 27 | G96 | 0.7+ | 0.6− |
| 2002 04 20 | 644 | 0.4+ | 1.0+ | 2004 10 12 | 291 | 0.2− | 0.0 | 2006 01 27 | G96 | 0.7+ | 0.5− |
| 2004 09 17 | 699 | 1.3− | 0.7− | 2004 10 12 | 291 | 0.2− | 0.1− | 2006 01 27 | G96 | 0.6+ | 0.3− |
| 2004 09 17 | 699 | 0.4− | 0.1− | 2004 10 12 | 291 | 0.1− | 0.1− | 2006 01 27 | G96 | 0.5+ | 0.5− |
| 2004 09 17 | 699 | 1.0+ | 1.5+ | 2004 10 20 | 704 | 0.5+ | 0.4+ | | | | |

**2004 TN**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 283.52913 | | (2000.0) | | | |
| $n$ | 0.57740300 | $\omega$ | 159.85772 | | −0.99564945 | −0.05937063 |
| $a$ | 1.4282910 | $\Omega$ | 17.21511 | | +0.00459667 | −0.80107853 |
| $e$ | 0.4357500 | $i$ | 14.04293 | | +0.09306470 | −0.59560752 |
| $P$ | 1.71 | $H$ | 19.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 04 | 691 | 0.1+ | 0.1+ | 2004 10 07 | 291 | 0.5+ | 0.2+ | 2004 10 23 | F65 | 0.3− | 0.1+ |
| 2004 10 04 | 691 | 0.2− | 0.1+ | 2004 10 07 | 291 | 0.1+ | 0.1+ | 2004 10 23 | F65 | 0.7+ | 0.3+ |
| 2004 10 04 | 691 | 0.2+ | 0.0 | 2004 10 07 | 291 | 0.2+ | 0.3+ | 2004 11 03 | 291 | 0.5+ | 0.6− |
| 2004 10 04 | 673 | 0.8+ | 0.0 | 2004 10 08 | 715 | 1.3− | 0.4− | 2004 11 03 | 291 | 0.7+ | 0.9− |
| 2004 10 04 | 673 | 1.3− | 0.1− | 2004 10 08 | 715 | 0.5− | 0.2+ | 2004 11 03 | 291 | 1.2+ | 1.3+ |
| 2004 10 04 | 673 | (1.6− | 0.1+) | 2004 10 09 | 291 | 0.0 | 0.1+ | 2004 11 10 | 696 | 0.6− | 0.5+ |
| 2004 10 04 | 673 | 1.2+ | 0.3+ | 2004 10 09 | 291 | 0.1+ | 0.1+ | 2004 11 10 | 696 | 0.8− | 0.4+ |
| 2004 10 05 | J95 | 0.4− | 0.7− | 2004 10 09 | 291 | 0.2− | 0.3+ | 2004 12 11 | 291 | 0.7− | 0.1− |
| 2004 10 05 | J95 | 0.4+ | 0.9− | 2004 10 09 | 696 | 0.0 | 0.1+ | 2004 12 11 | 291 | 0.1+ | 0.8+ |
| 2004 10 05 | J95 | 0.5− | 1.2− | 2004 10 09 | 696 | 0.0 | 0.1+ | 2004 12 11 | 291 | 0.1− | 0.8− |
| 2004 10 05 | 649 | 0.9− | 0.3− | 2004 10 10 | 691 | 1.0− | 0.2− | 2006 10 30 | G96 | 0.0 | 0.1− |
| 2004 10 05 | 649 | 0.0 | 1.3+ | 2004 10 10 | 691 | 0.0 | 0.4+ | 2006 10 30 | G96 | 0.1− | 0.2− |
| 2004 10 05 | 649 | 0.2+ | 0.2+ | 2004 10 10 | 691 | 0.2+ | 0.2+ | 2006 10 30 | G96 | 0.1+ | 0.0 |
| 2004 10 05 | 291 | 0.0 | 0.3− | 2004 10 13 | 291 | 0.2− | 0.0 | 2006 10 30 | G96 | 0.1− | 0.1+ |
| 2004 10 05 | 649 | 1.0+ | 0.1+ | 2004 10 13 | 291 | 0.2− | 0.1+ | 2006 10 30 | 696 | 0.3+ | 0.1+ |
| 2004 10 05 | 291 | 0.2− | 0.1− | 2004 10 13 | 291 | 0.1− | 0.1+ | 2006 10 30 | 696 | 0.2+ | 0.0 |
| 2004 10 05 | 649 | 1.5− | 0.7+ | 2004 10 14 | 291 | 0.3+ | 0.4+ | 2006 10 30 | G96 | 0.3− | 0.1+ |
| 2004 10 05 | 291 | 0.3− | 0.1− | 2004 10 14 | 291 | 0.1+ | 0.3+ | 2006 10 30 | G96 | 0.4+ | 0.1+ |
| 2004 10 05 | 854 | (2.4+ | 1.3−) | 2004 10 14 | 291 | 0.0 | 0.5+ | 2006 10 30 | G96 | 0.1− | 0.0 |
| 2004 10 05 | 854 | 1.0− | 0.7+ | 2004 10 23 | F65 | 0.3+ | 0.1+ | 2006 10 30 | G96 | 0.3− | 0.1− |
| 2004 10 05 | 854 | 0.3− | 0.2− | 2004 10 23 | F65 | 0.2+ | 0.3− | | | | |

**2004 TL$_2$ = 1998 BK$_{37}$ = 2006 DS$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 167.38596 | | (2000.0) | | | |
| $n$ | 0.26158060 | $\omega$ | 270.78109 | | +0.76095765 | −0.64830664 |
| $a$ | 2.4213953 | $\Omega$ | 129.63339 | | +0.60758333 | +0.69837337 |
| $e$ | 0.1777618 | $i$ | 1.88530 | | +0.22756526 | +0.30327073 |
| $P$ | 3.77 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 29 | 691 | 0.5− | 0.3− | 2004 10 05 | 699 | 0.1+ | 0.1+ | 2005 12 03 | 568 | 0.5+ | 0.1+ |
| 1998 01 29 | 691 | 0.4− | 0.4− | 2004 10 07 | 704 | 0.2− | 0.7+ | 2005 12 03 | 568 | 0.4+ | 0.1+ |
| 1998 01 29 | 691 | 0.3− | 0.3− | 2004 10 07 | 704 | 0.4− | 1.4+ | 2005 12 03 | 568 | 0.5+ | 0.2+ |
| 1998 02 03 | 691 | 0.4+ | 0.1− | 2004 10 07 | 704 | 0.3− | 1.2+ | 2006 02 20 | 691 | 0.5+ | 0.0 |
| 1998 02 03 | 691 | 0.2+ | 0.1+ | 2004 10 07 | 704 | 0.2− | 1.1+ | 2006 02 20 | 691 | 0.2− | 0.4+ |
| 1998 02 03 | 691 | 0.5+ | 0.1− | 2004 10 07 | 704 | 0.1+ | 1.2+ | 2006 02 20 | 691 | 0.5+ | 0.1− |
| 2000 08 26 | 807 | 0.2+ | 0.3+ | 2004 10 09 | 704 | 0.1+ | 1.6+ | 2006 02 24 | 691 | 0.3+ | 0.7+ |
| 2000 08 26 | 807 | 0.3− | 0.0 | 2004 10 09 | 704 | 0.1− | 1.3+ | 2006 02 24 | 691 | 0.1− | 0.3+ |
| 2004 10 04 | 691 | 0.0 | 0.0 | 2004 10 09 | 704 | 0.7− | 1.4+ | 2006 02 24 | 691 | 0.0 | 1.0+ |
| 2004 10 04 | 691 | 0.2− | 0.0 | 2004 10 09 | 704 | 0.6− | 0.1+ | 2006 03 06 | 691 | 0.1+ | 0.1+ |
| 2004 10 04 | 691 | 0.1− | 0.0 | 2004 10 09 | 704 | 0.6− | 0.9+ | 2006 03 06 | 691 | 0.1− | 0.3+ |
| 2004 10 05 | 699 | 1.4+ | 0.5+ | 2004 10 10 | 691 | 0.1− | 0.0 | 2006 03 06 | 691 | 0.1+ | 0.4+ |
| 2004 10 05 | 699 | 0.4+ | 0.7− | 2004 10 10 | 691 | 0.0 | 0.0 | | | | |
| 2004 10 05 | 699 | 1.3− | 1.2− | 2004 10 10 | 691 | 0.2+ | 0.4− | | | | |

**2004 TQ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.11717 | | (2000.0) | | | |
| $n$ | 0.26456450 | $\omega$ | 305.69822 | | −0.89765986 | −0.43343589 |
| $a$ | 2.4031544 | $\Omega$ | 208.86105 | | +0.43847797 | −0.86037954 |
| $e$ | 0.1504999 | $i$ | 9.49500 | | +0.04408916 | −0.26810516 |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 10 | 644 | 0.1+ | 0.3+ | 2004 09 15 | 691 | 0.1+ | 0.3+ | 2004 10 10 | 691 | 0.1+ | 0.1+ |
| 2002 01 10 | 644 | 0.2+ | 0.3+ | 2004 09 15 | 691 | 0.2+ | 0.1+ | 2004 10 14 | 691 | 0.4− | 0.0 |
| 2002 01 10 | 644 | 0.5+ | 0.2+ | 2004 09 15 | 691 | 0.3+ | 0.1+ | 2004 10 14 | 691 | 0.3− | 0.1+ |
| 2002 02 08 | 644 | 0.2− | 0.2+ | 2004 10 04 | 691 | 0.5+ | 0.1− | 2004 10 14 | 691 | 0.6− | 0.0 |
| 2002 02 08 | 644 | 0.4− | 0.5+ | 2004 10 04 | 691 | 0.1− | 0.3− | 2006 04 19 | 644 | 0.0 | 0.3+ |
| 2002 02 08 | 644 | 0.3− | 0.2+ | 2004 10 04 | 691 | 0.2+ | 0.7− | 2006 04 19 | 644 | 0.0 | 0.6+ |
| 2002 02 13 | 645 | 0.0 | 0.1− | 2004 10 06 | 691 | 0.1− | 0.1+ | 2006 04 19 | 644 | 0.7+ | 0.4+ |
| 2002 02 13 | 645 | 0.0 | 0.1− | 2004 10 06 | 691 | 0.1− | 0.2+ | 2006 05 21 | G96 | 0.0 | 0.2+ |
| 2002 02 20 | 644 | 0.0 | 1.1+ | 2004 10 06 | 691 | 0.0 | 0.1+ | 2006 05 21 | G96 | 0.2+ | 0.5+ |
| 2002 02 20 | 644 | 0.1+ | 0.9+ | 2004 10 10 | 691 | 0.1− | 0.3+ | 2006 05 21 | G96 | 0.1− | 0.2+ |
| 2002 02 20 | 644 | 0.2+ | 1.1+ | 2004 10 10 | 691 | 0.2+ | 0.2+ | 2006 05 21 | G96 | 0.3− | 0.0 |

**2004 TY$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 149.34700 | | (2000.0) | | | |
| $n$ | 0.18173425 | $\omega$ | 331.58116 | | +0.94625836 | −0.29402390 |
| $a$ | 3.0868216 | $\Omega$ | 46.18780 | | +0.32064811 | +0.79858921 |
| $e$ | 0.2356595 | $i$ | 10.75853 | | +0.04218897 | +0.52517161 |
| $P$ | 5.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 291 | 0.2+ | 0.6+ | 2004 10 20 | 704 | 0.6− | 0.5− | 2004 12 02 | 704 | 0.1− | 0.5+ |
| 2002 04 08 | 291 | 0.2+ | 0.3+ | 2004 11 09 | 703 | 0.5− | 0.3− | 2004 12 02 | 703 | (3.2− | 0.4+) |
| 2002 04 08 | 291 | 0.2+ | 0.4+ | 2004 11 09 | 703 | 0.2− | 1.3+ | 2004 12 02 | 703 | 0.6− | 0.1+ |
| 2004 09 17 | 704 | 1.7− | 0.9+ | 2004 11 09 | 703 | 0.0 | 0.3+ | 2004 12 02 | 703 | (2.0+ | 0.5+) |
| 2004 09 17 | 704 | 0.5− | 0.0 | 2004 11 09 | 703 | 0.1− | 0.1− | 2004 12 11 | 704 | 0.0 | 0.4+ |
| 2004 09 17 | 704 | 0.6− | 1.3+ | 2004 11 11 | 691 | 0.1+ | 0.1+ | 2004 12 11 | 704 | 0.3+ | 0.2− |
| 2004 09 17 | 704 | 0.3− | 0.3− | 2004 11 11 | 691 | 0.2+ | 0.0 | 2004 12 11 | 704 | 0.2− | 0.4+ |
| 2004 10 08 | A50 | 1.0− | 0.6− | 2004 11 11 | 691 | 0.0 | 0.1+ | 2004 12 11 | 704 | 1.0− | 0.4+ |
| 2004 10 08 | A50 | 0.1− | 0.1− | 2004 11 19 | 704 | 0.7+ | 0.5− | 2004 12 15 | 704 | 0.3+ | 0.2− |
| 2004 10 08 | A50 | 0.6− | 0.6+ | 2004 11 19 | 704 | 0.2+ | 0.2− | 2004 12 15 | 704 | 0.0 | 0.4+ |
| 2004 10 08 | A50 | 0.3− | 0.1− | 2004 11 19 | 704 | 0.3+ | 0.0 | 2004 12 15 | 704 | 0.0 | 0.0 |
| 2004 10 09 | 704 | 1.5+ | 0.1+ | 2004 11 19 | 704 | 1.2+ | 0.4+ | 2004 12 15 | 704 | 0.0 | 0.1+ |
| 2004 10 09 | 704 | 1.8+ | 0.2− | 2004 11 19 | 704 | 1.5+ | 0.1+ | 2004 12 15 | 704 | 0.4− | 0.0 |
| 2004 10 09 | 704 | (2.2+ | 0.0 ) | 2004 11 30 | 699 | 0.2− | 0.2− | 2004 12 17 | 704 | 0.3+ | 0.5− |
| 2004 10 13 | A50 | 0.4− | 0.3+ | 2004 11 30 | 699 | 0.3+ | 0.8− | 2004 12 17 | 704 | 0.2+ | 0.2− |
| 2004 10 13 | A50 | 0.1− | 0.1+ | 2004 11 30 | 699 | 0.4− | 0.1− | 2004 12 17 | 704 | 0.2− | 0.1− |
| 2004 10 13 | A50 | 0.6− | 0.1+ | 2004 11 30 | 699 | 0.2+ | 0.4+ | 2004 12 17 | 704 | 0.2− | 0.1− |
| 2004 10 13 | A50 | 0.3− | 0.7+ | 2004 12 02 | 704 | 0.5− | 0.2+ | 2004 12 17 | 704 | 0.2− | 0.0 |
| 2004 10 20 | 704 | 0.1− | 0.5− | 2004 12 02 | 704 | 0.4+ | 0.7+ | 2006 01 27 | 703 | 0.6− | 1.6− |
| 2004 10 20 | 704 | 0.3+ | 0.3− | 2004 12 02 | 704 | 0.2− | 0.4+ | 2006 01 27 | 703 | 0.2+ | 0.0 |
| 2004 10 20 | 704 | 0.3+ | 0.3+ | 2004 12 02 | 704 | 0.5− | 0.1+ | 2006 01 27 | 703 | 0.2− | 0.8+ |
| 2004 10 20 | 704 | 0.9− | 0.1− | 2004 12 02 | 703 | 0.3− | 0.5− | 2006 01 27 | 703 | 0.0 | 0.3− |

**2004 TQ$_{19}$ = 2005 YB$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 82.38835 | | (2000.0) | | | |
| $n$ | 0.18151455 | $\omega$ | 23.65606 | | +0.29913084 | −0.94528118 |
| $a$ | 3.0893118 | $\Omega$ | 49.21028 | | +0.84572162 | +0.19942709 |
| $e$ | 0.0603024 | $i$ | 9.90593 | | +0.44190008 | +0.25820985 |
| $P$ | 5.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.3− | 0.5− | 2004 10 09 | 704 | 0.6− | 0.5+ | 2004 10 23 | 683 | 0.4+ | 0.1− |
| 1996 04 12 | 691 | 0.0 | 0.1− | 2004 10 09 | 704 | 0.5− | 0.2− | 2004 10 23 | 683 | (0.1− | 2.0+) |
| 1996 04 12 | 691 | 0.1− | 0.1− | 2004 10 09 | 704 | 0.3− | 0.9+ | 2004 10 23 | 683 | (0.9+ | 1.8−) |
| 2002 04 08 | 291 | 0.1+ | 0.2+ | 2004 10 10 | 704 | 0.2− | 0.2+ | 2005 12 29 | 644 | 0.0 | 0.2+ |
| 2002 04 08 | 291 | 0.0 | 0.5+ | 2004 10 10 | 704 | 0.1− | 0.4+ | 2005 12 29 | 644 | 0.1+ | 0.3+ |
| 2002 04 08 | 291 | 0.1− | 0.3+ | 2004 10 10 | 704 | 0.3− | 0.5+ | 2005 12 29 | 644 | 0.5+ | 0.7+ |
| 2002 04 22 | 691 | 0.2+ | 0.1+ | 2004 10 13 | 683 | 0.5+ | 0.6− | 2006 01 06 | 703 | 0.5+ | 0.0 |
| 2002 04 22 | 691 | 0.1+ | 0.3+ | 2004 10 13 | 683 | (1.8− | 0.9−) | 2006 01 06 | 703 | 0.2+ | 0.0 |
| 2002 04 22 | 691 | 0.3+ | 0.0 | 2004 10 13 | 683 | 0.0 | 0.8− | 2006 01 06 | 703 | 0.1− | 0.6− |
| 2004 10 09 | 704 | 0.4− | 1.0− | 2004 10 15 | 683 | 0.2+ | 1.3+ | 2006 01 06 | 703 | 0.5− | 0.9+ |
| 2004 10 09 | 704 | 1.1+ | 0.5+ | 2004 10 15 | 683 | 1.0− | 0.2+ | 2006 02 15 | 644 | 0.1+ | 0.8+ |
| 2004 10 09 | 704 | 0.3− | 0.0 | 2004 10 15 | 683 | 0.6− | 0.9+ | 2006 02 15 | 644 | 0.1− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 09 | 704 | 0.6− | 0.3+ | 2004 10 20 | 683 | 1.3+ | 0.5− | 2006 02 15 | 644 | 0.3− | 0.1+ |
| 2004 10 09 | 704 | 0.6− | 1.3− | 2004 10 20 | 683 | 0.6+ | 0.5+ | | | | |
| 2004 10 09 | 704 | 0.1− | 0.7+ | 2004 10 20 | 683 | (1.7− | 2.1+) | | | | |

**2004 TP$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.63221 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17091234 | $\omega$ | 233.02748 | | −0.97746388 | | +0.20769396 |
| $a$ | 3.2157857 | $\Omega$ | 318.92147 | | −0.17076796 | | −0.88315800 |
| $e$ | 0.1147328 | $i$ | 3.29637 | | −0.12410750 | | −0.42058907 |
| $P$ | 5.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 28 | 691 | 0.3+ | 0.0 | 2004 10 04 | 691 | 0.2− | 0.1− | 2005 12 06 | 691 | 0.0 | 0.1− |
| 2000 12 28 | 691 | 0.2− | 0.0 | 2004 10 08 | 691 | 0.5− | 0.0 | 2005 12 06 | 691 | 1.1− | 1.2+ |
| 2000 12 28 | 691 | 0.5− | 0.1− | 2004 10 08 | 691 | 0.1− | 0.3+ | 2005 12 06 | 691 | 0.3+ | 0.0 |
| 2001 01 24 | 691 | 0.0 | 0.3− | 2004 10 08 | 691 | 0.2− | 0.1+ | 2005 12 10 | 691 | 0.1+ | 0.1− |
| 2001 01 24 | 691 | 0.0 | 0.1− | 2004 10 12 | 691 | 0.4+ | 0.2− | 2005 12 10 | 691 | 0.0 | 0.3− |
| 2001 01 24 | 691 | 0.1+ | 0.1− | 2004 10 12 | 691 | 0.0 | 0.3− | 2005 12 10 | 691 | 0.6+ | 0.3− |
| 2003 08 26 | 807 | 0.0 | 0.2+ | 2004 10 12 | 691 | 0.5+ | 0.2− | 2005 12 30 | G96 | 0.1+ | 0.7− |
| 2003 08 26 | 807 | 0.1− | 0.2+ | 2005 11 28 | 691 | 0.4+ | 0.0 | 2005 12 30 | G96 | 0.1+ | 0.2+ |
| 2004 10 04 | 691 | 0.1− | 0.3− | 2005 11 28 | 691 | 0.5− | 0.6+ | 2005 12 30 | G96 | 0.8+ | 0.2− |
| 2004 10 04 | 691 | 0.4+ | 0.0 | 2005 11 28 | 691 | 0.1− | 0.1+ | 2005 12 30 | G96 | 0.4+ | 0.5− |

**2004 TD$_{24}$ = 2005 YN**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.88769 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20102186 | $\omega$ | 14.09545 | | −0.04274642 | | +0.99861204 |
| $a$ | 2.8860722 | $\Omega$ | 253.46151 | | −0.91972474 | | −0.05136122 |
| $e$ | 0.1081696 | $i$ | 1.83934 | | −0.39022961 | | +0.01166261 |
| $P$ | 4.90 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 02 | 809 | 0.5+ | 0.3+ | 2002 03 12 | 645 | 0.1+ | 0.1− | 2005 12 20 | G98 | 1.1− | 0.4+ |
| 1998 06 02 | 809 | 2.0− | 1.4+ | 2002 03 13 | 704 | 0.6− | 0.8+ | 2005 12 20 | G98 | 0.7− | 0.0 |
| 1998 06 02 | 809 | 1.8− | 1.1+ | 2002 03 13 | 704 | 0.4− | 0.3− | 2005 12 20 | G98 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 1.3+ | 0.2− | 2002 03 13 | 704 | 0.4+ | 0.2+ | 2005 12 20 | G98 | 0.4+ | 0.1+ |
| 1999 10 06 | 704 | 0.0 | 0.1− | 2004 10 04 | 691 | 0.0 | 0.1− | 2005 12 20 | G98 | 0.2− | 0.5+ |
| 1999 10 06 | 704 | 0.4+ | 0.5+ | 2004 10 04 | 691 | 0.1+ | 0.1− | 2005 12 20 | G98 | 0.5− | 0.0 |
| 1999 10 06 | 704 | 0.3− | 0.3+ | 2004 10 04 | 691 | 0.0 | 0.1− | 2005 12 20 | G98 | 0.6− | 0.2− |
| 2002 02 11 | 704 | 0.2− | 0.4− | 2004 10 08 | 691 | 0.3+ | 0.1− | 2005 12 21 | G98 | 1.4− | 0.3+ |
| 2002 02 11 | 704 | 1.0+ | 0.2− | 2004 10 08 | 691 | 0.1+ | 0.1− | 2005 12 21 | G98 | 0.5− | 0.2+ |
| 2002 02 11 | 704 | 1.3+ | 0.4+ | 2004 10 08 | 691 | 0.2+ | 0.0 | 2005 12 21 | G98 | 1.2− | 0.2+ |
| 2002 02 11 | 704 | 0.2+ | 0.1+ | 2004 10 09 | 704 | 0.4+ | 0.9+ | 2005 12 21 | G98 | 1.0− | 0.3+ |
| 2002 03 05 | 644 | 0.8+ | 0.2− | 2004 10 09 | 704 | 0.7− | 0.9+ | 2005 12 21 | G98 | 0.2− | 0.3+ |
| 2002 03 05 | 644 | 0.9+ | 0.0 | 2004 10 09 | 704 | 0.1− | 0.7+ | 2005 12 21 | G98 | 0.0 | 0.0 |
| 2002 03 05 | 644 | 0.4+ | 0.1− | 2004 10 09 | 704 | 1.0+ | 1.2+ | 2005 12 21 | G98 | 0.5− | 0.7+ |
| 2002 03 12 | 645 | 0.0 | 0.1− | 2005 12 20 | G98 | 0.3− | 0.3− | | | | |

**2004 TV$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.34276 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28728082 | $\omega$ | 114.80872 | | +0.29607071 | | +0.95509299 |
| $a$ | 2.2747393 | $\Omega$ | 172.38432 | | −0.90538012 | | +0.28455764 |
| $e$ | 0.0974514 | $i$ | 5.11351 | | −0.30435008 | | +0.08260956 |
| $P$ | 3.43 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 23 | 691 | 0.2− | 0.3− | 2003 04 25 | 691 | 0.1− | 0.6− | 2004 10 08 | 691 | 0.1+ | 0.3+ |
| 1993 05 23 | 691 | 0.1+ | 0.1+ | 2003 05 05 | 691 | 0.4− | 1.5+ | 2004 10 08 | 691 | 0.1− | 0.3+ |
| 1993 05 23 | 691 | 0.1− | 1.1− | 2003 05 05 | 691 | 0.2+ | 1.7+ | 2004 10 14 | 691 | 0.2− | 0.4+ |
| 2003 03 27 | 644 | 0.4+ | 0.0 | 2003 05 05 | 691 | 0.1− | 1.1+ | 2004 10 14 | 691 | 0.0 | 0.2+ |
| 2003 03 27 | 644 | 0.3+ | 0.2+ | 2004 10 02 | 735 | 1.6+ | 0.9− | 2004 10 14 | 691 | 0.0 | 0.3+ |
| 2003 03 27 | 644 | 0.0 | 0.1+ | 2004 10 02 | 735 | 0.4− | 0.1+ | 2006 02 02 | G96 | 0.2− | 0.4− |
| 2003 04 08 | 691 | 0.2+ | 0.3+ | 2004 10 02 | 735 | 2.2− | 2.5− | 2006 02 02 | G96 | 0.0 | 0.4− |
| 2003 04 08 | 691 | 0.2+ | 0.2+ | 2004 10 04 | 691 | 0.1− | 0.4+ | 2006 02 02 | G96 | 2.5− | 0.1− |
| 2003 04 08 | 691 | 0.2+ | 0.0 | 2004 10 04 | 691 | 0.1− | 0.5+ | 2006 02 02 | G96 | 2.6+ | 2.1− |
| 2003 04 25 | 691 | 0.4+ | 0.2− | 2004 10 04 | 691 | 0.2− | 0.4+ | | | | |
| 2003 04 25 | 691 | 0.3+ | 0.1+ | 2004 10 08 | 691 | 0.0 | 0.5+ | | | | |

**2004 TO$_{30}$ = 2006 DO$_{105}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.89745 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23869726 | $\omega$ | 244.50102 | | +0.68111057 | | −0.73187432 |
| $a$ | 2.5737781 | $\Omega$ | 162.51570 | | +0.69452630 | | +0.63665745 |
| $e$ | 0.2174543 | $i$ | 4.04147 | | +0.23177922 | | +0.24295530 |
| $P$ | 4.13 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 04 | 691 | 0.0 | 0.0 | 2004 10 08 | 704 | 0.1+ | 0.4+ | 2006 02 25 | G96 | 0.0 | 0.2− |
| 2004 10 04 | 691 | 0.1− | 0.2− | 2004 10 08 | 704 | 0.5− | 0.8+ | 2006 02 25 | G96 | 0.2− | 0.4+ |
| 2004 10 04 | 691 | 0.1− | 0.3− | 2004 10 08 | 704 | 0.1+ | 0.3− | 2006 02 25 | G96 | 0.2+ | 0.2− |
| 2004 10 07 | 704 | 0.2+ | 0.3− | 2004 10 08 | 704 | 0.6− | 1.1+ | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 2004 10 07 | 704 | 0.1− | 1.1− | 2004 10 09 | 704 | 0.4+ | 0.1− | 2006 03 02 | 691 | 0.3− | 0.2+ |
| 2004 10 07 | 704 | 0.1+ | 0.5− | 2004 10 09 | 704 | 0.7− | 0.3+ | 2006 03 02 | 691 | 0.1− | 0.3+ |
| 2004 10 07 | 704 | 0.2− | 0.1− | 2004 10 09 | 704 | 0.8+ | 0.4− | | | | |
| 2004 10 08 | 704 | 0.5+ | 0.7+ | 2006 02 25 | G96 | 0.2+ | 0.7− | | | | |

**2004 TO$_{34}$ = 1997 SP$_{21}$ = 2006 BW$_{226}$**

Id. Minor Planet Center (*MPO* 73270, unpublished), S. Foglia

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.71782 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27921056 | $\omega$ | 314.57103 | | −0.96854828 | | +0.24837794 |
| $a$ | 2.3183633 | $\Omega$ | 239.81586 | | −0.22312285 | | −0.89348025 |
| $e$ | 0.1012620 | $i$ | 0.98905 | | −0.11013824 | | −0.37416766 |
| $P$ | 3.53 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 29 | 691 | 0.6− | 0.6− | 2004 10 08 | 691 | 0.4+ | 0.3+ | 2006 02 04 | G96 | 0.6− | 0.2− |
| 1997 09 29 | 691 | 0.5− | 0.4− | 2004 10 08 | 691 | 0.4− | 0.6− | 2006 02 07 | 691 | 0.1+ | 0.0 |
| 1997 09 29 | 691 | 0.1− | 0.4− | 2004 10 08 | 691 | 0.4− | 0.4+ | 2006 02 07 | 691 | 0.0 | 0.1+ |
| 1997 10 03 | 691 | 0.8+ | 0.8− | 2004 10 14 | 691 | 0.2− | 0.3+ | 2006 02 07 | 691 | 0.1− | 0.0 |
| 1997 10 03 | 691 | 0.5+ | 0.4− | 2004 10 14 | 691 | 0.2+ | 0.3+ | 2006 02 20 | 703 | 0.5− | 1.0− |
| 1997 10 03 | 691 | 0.9+ | 0.4− | 2004 10 14 | 691 | 0.2+ | 0.3+ | 2006 02 20 | 703 | 1.0− | 0.5− |
| 2004 09 15 | 691 | 0.2− | 0.3+ | 2005 10 24 | 568 | 0.1− | 0.1+ | 2006 02 20 | 703 | 0.0 | 0.8− |
| 2004 09 15 | 691 | 0.6− | 0.9+ | 2005 10 24 | 568 | 0.1− | 0.1+ | 2006 02 20 | 703 | (2.2− | 0.9−) |
| 2004 09 15 | 691 | 0.3− | 0.1+ | 2005 10 24 | 568 | 0.1+ | 0.0 | 2006 02 23 | G96 | 0.5− | 0.2− |
| 2004 10 04 | 691 | 0.5+ | 0.3+ | 2006 01 30 | 691 | 0.2+ | 0.1− | 2006 02 23 | G96 | 0.4− | 0.1+ |
| 2004 10 04 | 691 | 0.3+ | 0.3+ | 2006 01 30 | 691 | 0.1− | 0.2+ | 2006 02 23 | G96 | 0.3− | 0.0 |
| 2004 10 04 | 691 | 0.2+ | 0.2+ | 2006 01 30 | 691 | 0.2+ | 0.1+ | 2006 02 23 | G96 | 0.3+ | 0.1− |
| 2004 10 05 | 291 | 0.1− | 0.4+ | 2006 02 04 | G96 | 0.2− | 0.2− | 2006 03 26 | 691 | 0.3+ | 0.1+ |
| 2004 10 05 | 291 | 0.5− | 0.0 | 2006 02 04 | G96 | 0.1+ | 0.2− | 2006 03 26 | 691 | 0.3+ | 0.6+ |
| 2004 10 05 | 291 | 0.4− | 0.1+ | 2006 02 04 | G96 | 0.4− | 0.2− | 2006 03 26 | 691 | 0.2+ | 0.5+ |

**2004 TW$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.20092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29164033 | $\omega$ | 325.59324 | | −0.95351791 | | −0.30092723 |
| $a$ | 2.2520135 | $\Omega$ | 196.91446 | | +0.28717897 | | −0.89170675 |
| $e$ | 0.0943148 | $i$ | 3.09274 | | +0.09127890 | | −0.33808559 |
| $P$ | 3.38 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.1+ | 0.5− | 2004 10 14 | 691 | 0.1+ | 0.1+ | 2006 03 25 | G96 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2004 10 14 | 691 | 0.3− | 0.4− | 2006 03 25 | G96 | 0.4+ | 0.5+ |
| 2001 12 17 | 704 | 0.3− | 0.0 | 2006 02 25 | G96 | 0.1− | 0.1− | 2006 03 25 | G96 | 0.0 | 0.1+ |
| 2004 10 04 | 691 | 0.1+ | 0.2+ | 2006 02 25 | G96 | 0.5− | 0.6+ | 2006 04 19 | G96 | 0.0 | 0.6+ |
| 2004 10 04 | 691 | 0.1− | 0.3− | 2006 02 25 | G96 | 0.3− | 0.7+ | 2006 04 19 | G96 | 0.2− | 0.4+ |
| 2004 10 04 | 691 | 0.0 | 0.1+ | 2006 02 25 | G96 | 0.7− | 0.3+ | 2006 04 19 | G96 | 0.2+ | 0.1+ |
| 2004 10 08 | 691 | 0.2+ | 0.1− | 2006 02 25 | 691 | 0.3+ | 0.0 | 2006 04 19 | G96 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 08 | 691 | 0.2+ | 0.3+ | 2006 02 25 | 691 | 0.0 | 0.1− | 2006 05 25 | G96 | 0.1− | 0.3− |
| 2004 10 08 | 691 | 0.0 | 0.3+ | 2006 02 25 | 691 | 0.2+ | 0.2− | 2006 05 25 | G96 | 0.1− | 0.5− |
| 2004 10 10 | 291 | 0.4− | 0.1+ | 2006 03 09 | 691 | 0.4+ | 0.2− | 2006 05 25 | G96 | 0.2+ | 0.1+ |
| 2004 10 10 | 291 | 0.0 | 0.3+ | 2006 03 09 | 691 | 0.3− | 0.2+ | 2006 05 25 | G96 | 0.1+ | 0.0 |
| 2004 10 10 | 291 | 0.5− | 0.1+ | 2006 03 09 | 691 | 0.1− | 0.3+ | | | | |
| 2004 10 14 | 691 | 0.3+ | 0.3+ | 2006 03 25 | G96 | 0.2+ | 0.3+ | | | | |

**2004 TC$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.70088 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29341274 | $\omega$ | 174.73689 | | −0.65156196 | | +0.75834399 |
| $a$ | 2.2429353 | $\Omega$ | 54.60202 | | −0.69686897 | | −0.58817426 |
| $e$ | 0.1026216 | $i$ | 1.37285 | | −0.29973432 | | −0.28100788 |
| $P$ | 3.36 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 691 | 0.7+ | 0.0 | 2004 09 09 | 691 | 0.4+ | 0.9+ | 2006 01 23 | 691 | 0.3+ | 0.7+ |
| 2003 04 26 | 691 | 0.5+ | 0.1− | 2004 09 09 | 691 | 1.2− | 0.8+ | 2006 02 03 | G96 | 0.1+ | 0.0 |
| 2003 04 26 | 691 | 0.4+ | 0.1− | 2004 10 04 | 691 | 0.6− | 0.8+ | 2006 02 03 | G96 | 0.4+ | 0.0 |
| 2003 05 03 | 691 | 0.1+ | 0.2+ | 2004 10 04 | 691 | 0.0 | 0.7+ | 2006 02 03 | G96 | 0.1+ | 0.0 |
| 2003 05 03 | 691 | 0.2+ | 0.4+ | 2004 10 04 | 691 | 0.4− | 0.5+ | 2006 02 03 | G96 | 0.4+ | 0.1+ |
| 2003 05 03 | 691 | 0.4+ | 0.0 | 2004 10 08 | 691 | 0.1− | 0.8+ | 2006 03 02 | G96 | 0.4+ | 0.4+ |
| 2003 05 22 | 691 | 0.1− | 1.7+ | 2004 10 08 | 691 | 0.2− | 0.9+ | 2006 03 02 | G96 | 0.7+ | 0.3+ |
| 2003 05 22 | 691 | 0.2− | 1.4+ | 2004 10 08 | 691 | 0.5− | 1.0+ | 2006 03 02 | G96 | 0.1+ | 0.6+ |
| 2003 05 22 | 691 | 0.3− | 1.4+ | 2006 01 23 | 691 | 0.2+ | 0.7+ | 2006 03 02 | G96 | 0.3+ | 0.6+ |
| 2004 09 09 | 691 | 0.2− | 0.4+ | 2006 01 23 | 691 | 0.0 | 0.9+ | | | | |

**2004 TM$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.15007 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27791645 | $\omega$ | 9.07112 | | −0.57735000 | | +0.81513995 |
| $a$ | 2.3255546 | $\Omega$ | 225.68164 | | −0.75318499 | | −0.55394591 |
| $e$ | 0.0886316 | $i$ | 3.77067 | | −0.31524491 | | −0.16938356 |
| $P$ | 3.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 30 | 704 | 0.4− | 0.6+ | 2004 10 12 | 691 | 0.2+ | 0.4+ | 2006 02 22 | 703 | 1.1− | 0.4− |
| 2003 05 30 | 704 | 0.1− | 0.1− | 2004 10 12 | 691 | 0.2− | 0.5+ | 2006 02 22 | 703 | 0.8− | 0.1− |
| 2003 05 30 | 704 | 0.5+ | 0.6+ | 2004 10 12 | 691 | 0.3− | 0.2+ | 2006 02 22 | 703 | 0.3− | 0.2− |
| 2003 05 30 | 704 | 0.1+ | 0.7+ | 2006 02 02 | 691 | 0.2+ | 0.3+ | 2006 02 22 | 703 | 1.1+ | 0.7− |
| 2004 10 04 | 691 | 0.1+ | 0.3− | 2006 02 02 | 691 | 0.1+ | 0.4+ | 2006 02 22 | 699 | 1.0+ | 1.5− |
| 2004 10 04 | 691 | 0.1+ | 0.5− | 2006 02 02 | 691 | 0.0 | 0.1+ | 2006 02 22 | 699 | 1.0+ | 0.7+ |
| 2004 10 04 | 691 | 0.2+ | 0.0 | 2006 02 07 | 703 | 0.0 | 0.5− | 2006 02 22 | 699 | 0.6+ | 1.3− |
| 2004 10 08 | 691 | 0.0 | 0.1+ | 2006 02 07 | 703 | 1.3− | 0.3− | 2006 02 22 | 699 | 0.4− | 0.7+ |
| 2004 10 08 | 691 | 0.3− | 0.1− | 2006 02 07 | 703 | 0.1+ | 0.9+ | | | | |
| 2004 10 08 | 691 | 0.1+ | 0.2+ | 2006 02 07 | 703 | 1.1− | 0.7+ | | | | |

**2004 TX$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.78882 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27497044 | $\omega$ | 254.87173 | | +0.20753050 | | +0.97722860 |
| $a$ | 2.3421357 | $\Omega$ | 27.22708 | | −0.85630255 | | +0.20333288 |
| $e$ | 0.1335434 | $i$ | 5.54633 | | −0.47294506 | | +0.06066302 |
| $P$ | 3.58 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | 0.1− | 0.2+ | 2003 05 25 | 691 | 0.2− | 0.1+ | 2004 10 08 | 691 | 0.3− | 0.4+ |
| 2003 04 25 | 691 | 0.4+ | 0.3+ | 2003 05 25 | 691 | 0.3+ | 0.2+ | 2004 10 08 | 691 | 0.1+ | 0.1+ |
| 2003 04 25 | 691 | 0.1+ | 0.2+ | 2003 05 25 | 691 | 0.1− | 0.2− | 2004 10 08 | 691 | 0.4− | 0.1+ |
| 2003 05 11 | 691 | 0.2+ | 0.0 | 2004 10 04 | 691 | 0.3+ | 0.3− | 2004 10 12 | 691 | 0.1+ | 0.1+ |
| 2003 05 11 | 691 | 0.4− | 0.0 | 2004 10 04 | 691 | 0.2− | 0.2− | 2004 10 12 | 691 | 0.0 | 0.0 |
| 2003 05 11 | 691 | 0.0 | 0.3− | 2004 10 04 | 691 | 0.3+ | 0.1− | 2004 10 12 | 691 | 0.0 | 0.3+ |

**2004 TL$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.10375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26641680 | $\omega$ | 301.99496 | | −0.20655642 | | −0.97835275 |
| $a$ | 2.3920026 | $\Omega$ | 159.91406 | | +0.90967628 | | −0.19679062 |
| $e$ | 0.1723017 | $i$ | 2.11304 | | +0.36031030 | | −0.06402615 |
| $P$ | 3.70 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.5+ | 0.4+ | 2002 03 14 | 704 | 0.1− | 0.5+ | 2004 10 12 | 691 | 0.0 | 0.1+ |
| 2002 02 11 | 704 | 0.4− | 0.7− | 2002 03 14 | 704 | 0.7− | 0.3+ | 2004 10 12 | 691 | 0.2− | 0.6+ |
| 2002 02 11 | 704 | 0.4+ | 0.2− | 2002 03 20 | 291 | 0.3− | 0.3+ | 2004 10 15 | G96 | 0.2+ | 0.4− |
| 2002 02 11 | 704 | 1.2+ | 0.0 | 2002 03 20 | 291 | 0.1+ | 0.2− | 2004 10 15 | G96 | 0.4+ | 0.3− |
| 2002 02 11 | 704 | 0.6+ | 0.5− | 2002 03 20 | 291 | 0.2− | 0.1− | 2004 10 15 | G96 | 0.2+ | 0.1− |
| 2002 02 20 | 704 | 1.2+ | 0.2+ | 2004 10 05 | 691 | 0.1− | 0.0 | 2004 10 15 | G96 | 0.4+ | 0.1− |
| 2002 02 20 | 704 | 0.7+ | 0.3− | 2004 10 05 | 691 | 0.3− | 0.2− | 2006 04 09 | 691 | 0.4+ | 0.6+ |
| 2002 02 20 | 704 | 1.2− | 0.3− | 2004 10 05 | 691 | 0.0 | 0.1+ | 2006 04 09 | 691 | 0.6− | 0.0 |
| 2002 02 20 | 704 | 0.9+ | 0.4+ | 2004 10 08 | 691 | 0.0 | 0.4+ | 2006 04 09 | 691 | 0.3+ | 0.1− |
| 2002 03 14 | 704 | 0.7− | 0.3+ | 2004 10 08 | 691 | 0.1+ | 0.2+ | 2006 04 30 | 691 | 0.1− | 0.1+ |
| 2002 03 14 | 704 | 0.2− | 0.3+ | 2004 10 08 | 691 | 0.4− | 0.2+ | 2006 04 30 | 691 | 0.4+ | 0.3+ |
| 2002 03 14 | 704 | 0.6− | 0.3+ | 2004 10 12 | 691 | 0.0 | 0.1+ | 2006 04 30 | 691 | 0.0 | 0.3+ |

**2004 TQ$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.41952 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28411534 | $\omega$ | 69.72780 | | +0.13371752 | | −0.99069352 |
| $a$ | 2.2916041 | $\Omega$ | 12.66787 | | +0.86050930 | | +0.10334839 |
| $e$ | 0.1645394 | $i$ | 6.65536 | | +0.49157234 | | +0.08857462 |
| $P$ | 3.47 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 0.1− | 0.3− | 2002 02 03 | 644 | 0.2+ | 0.0 | 2004 10 07 | 704 | 1.1− | 0.6− |
| 2001 12 22 | 704 | 0.1+ | 0.2+ | 2002 02 03 | 644 | 0.3− | 0.3− | 2004 10 07 | 704 | 0.7+ | 0.2− |
| 2001 12 22 | 704 | 0.0 | 0.2+ | 2002 02 08 | 704 | 0.8+ | 0.7+ | 2004 10 09 | 704 | 0.2+ | 0.4− |
| 2001 12 22 | 704 | 0.9+ | 0.1+ | 2002 02 08 | 704 | 0.2− | 0.1+ | 2004 10 09 | 704 | 0.3− | 0.2+ |
| 2002 01 14 | 644 | 0.4− | 0.1+ | 2002 02 08 | 704 | 1.1+ | 0.3+ | 2004 10 09 | 704 | 0.1+ | 0.7+ |
| 2002 01 14 | 644 | 0.6− | 0.1− | 2004 09 22 | 704 | 0.2+ | 0.6+ | 2004 10 09 | 704 | 0.2− | 0.4− |
| 2002 01 14 | 644 | 0.6− | 0.1+ | 2004 09 22 | 704 | 0.7− | 0.9+ | 2004 10 09 | 704 | 0.7− | 0.3+ |
| 2002 01 21 | 699 | 0.4+ | 0.0 | 2004 09 22 | 704 | 0.1+ | 0.6− | 2004 10 10 | 691 | 0.2+ | 0.0 |
| 2002 01 21 | 699 | 0.9− | 0.8+ | 2004 09 22 | 704 | 0.9− | 0.4− | 2004 10 10 | 691 | 0.0 | 0.1− |
| 2002 01 21 | 699 | 0.0 | 1.1− | 2004 10 05 | 699 | 0.8− | 0.5− | 2004 10 10 | 691 | 0.1+ | 0.1+ |
| 2002 01 21 | 699 | 0.4+ | 0.8− | 2004 10 05 | 699 | 0.9+ | 0.3+ | 2006 05 07 | G96 | 0.3+ | 0.1− |
| 2002 02 03 | 644 | 0.3− | 0.0 | 2004 10 05 | 699 | 0.9+ | 0.5+ | 2006 05 07 | G96 | 0.1+ | 0.1− |
| 2002 02 03 | 644 | 0.0 | 0.2+ | 2004 10 05 | 699 | 0.3− | 0.1+ | 2006 05 07 | G96 | 0.2− | 0.0 |
| 2002 02 03 | 644 | 0.2− | 0.0 | 2004 10 07 | 704 | 0.3− | 0.2+ | 2006 05 07 | G96 | 0.0 | 0.5+ |
| 2002 02 03 | 644 | 0.0 | 0.1+ | 2004 10 07 | 704 | 0.9+ | 0.0 | | | | |

**2004 TC$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.40364 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22347824 | $\omega$ | 236.66593 | | +0.87608546 | | +0.47005184 |
| $a$ | 2.6893411 | $\Omega$ | 95.08923 | | −0.39876599 | | +0.83153964 |
| $e$ | 0.2688560 | $i$ | 6.18747 | | −0.27103495 | | +0.29596130 |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 11 | 691 | 0.1− | 0.1+ | 2004 10 07 | 699 | 0.7+ | 0.3− | 2004 11 02 | 699 | 0.7− | 0.2− |
| 2003 04 11 | 691 | 0.2+ | 0.1+ | 2004 10 07 | 699 | 0.7+ | 0.1− | 2004 11 02 | 699 | 1.6− | 2.0− |
| 2003 04 11 | 691 | 0.0 | 0.2+ | 2004 10 07 | 699 | 0.9+ | 0.1+ | 2004 11 02 | 644 | 0.3− | 0.4− |
| 2004 08 11 | 704 | 1.0− | 0.3− | 2004 10 07 | 704 | 0.8+ | 0.5+ | 2004 11 02 | 699 | 0.2+ | 0.1− |
| 2004 08 11 | 704 | 0.2+ | 0.3+ | 2004 10 07 | 704 | 0.0 | 0.3+ | 2004 11 02 | 644 | 0.1+ | 0.2+ |
| 2004 08 11 | 704 | 0.4− | 1.2+ | 2004 10 07 | 704 | 0.3+ | 1.3+ | 2004 11 02 | 644 | 0.1+ | 0.3+ |
| 2004 08 11 | 704 | 0.6− | 0.8+ | 2004 10 07 | 704 | 0.6− | 0.1− | 2004 12 10 | 201 | 0.5+ | 0.1+ |
| 2004 10 05 | 699 | 0.3+ | 0.0 | 2004 10 07 | 704 | 0.2+ | 0.8− | 2004 12 10 | 201 | 1.2+ | 0.1− |
| 2004 10 05 | 699 | 0.1+ | 0.4+ | 2004 10 09 | 704 | 0.6− | 0.6+ | 2006 01 07 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 05 | 699 | 0.6− | 0.1+ | 2004 10 09 | 704 | 0.1+ | 0.2+ | 2006 01 07 | 691 | 0.1+ | 0.2+ |
| 2004 10 05 | 699 | 0.8− | 0.0 | 2004 10 09 | 704 | 0.4− | 0.1− | 2006 01 07 | 691 | 0.0 | 0.1+ |
| 2004 10 07 | 699 | 0.1− | 0.7+ | 2004 11 02 | 699 | 0.4+ | 0.4− | | | | |

**2004 TK$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.60588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21403409 | $\omega$ | 36.92630 | | +0.68981939 | | −0.72375086 |
| $a$ | 2.7678810 | $\Omega$ | 9.50608 | | +0.63499252 | | +0.59271310 |
| $e$ | 0.1001698 | $i$ | 6.35246 | | +0.34775525 | | +0.35337780 |
| $P$ | 4.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 17 | 691 | 0.3+ | 0.7+ | 2004 09 22 | 704 | 0.9− | 0.3+ | 2004 10 08 | 691 | 0.0 | 0.6+ |
| 2002 03 17 | 691 | 0.5+ | 0.9+ | 2004 09 22 | 704 | 0.3+ | 0.3− | 2004 10 08 | 699 | 0.6− | 0.1+ |
| 2002 03 17 | 691 | 0.5+ | 0.4+ | 2004 10 07 | 704 | 0.4+ | 0.8+ | 2004 10 08 | 699 | 1.0− | 0.1− |
| 2002 04 02 | 691 | 0.6+ | 0.2+ | 2004 10 07 | 704 | 0.1+ | 0.4+ | 2004 10 08 | 699 | 0.5+ | 0.8− |
| 2002 04 02 | 691 | 0.4− | 0.4+ | 2004 10 07 | 704 | 0.6− | 0.2+ | 2006 01 26 | 703 | 0.8+ | 0.6+ |
| 2002 04 02 | 691 | 0.0 | 0.1+ | 2004 10 07 | 704 | 0.7− | 0.3− | 2006 01 26 | 703 | 0.1+ | 0.3− |
| 2002 04 08 | 807 | 0.1+ | 0.0 | 2004 10 07 | 704 | 0.1+ | 0.9+ | 2006 01 26 | 703 | 1.3− | 0.4− |
| 2002 04 08 | 807 | 0.4+ | 0.2+ | 2004 10 08 | 691 | 0.0 | 0.6+ | 2006 01 26 | 703 | 0.1− | 1.0− |
| 2004 09 22 | 704 | 1.5− | 1.0+ | 2004 10 08 | 691 | 0.1− | 0.6+ | | | | |
| 2004 09 22 | 704 | 0.0 | 0.9− | 2004 10 08 | 699 | 1.3− | 1.2+ | | | | |

**2004 TX$_{89}$ = 2000 WZ$_{103}$ = 2006 BK$_{122}$**

Id. Minor Planet Center (*MPO* 73310, unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.98160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22555484 | $\omega$ | 255.82795 | | +0.73173717 | | −0.67979643 |
| $a$ | 2.6728092 | $\Omega$ | 146.95696 | | +0.65505544 | | +0.68139279 |
| $e$ | 0.1836060 | $i$ | 5.19495 | | +0.18831645 | | +0.27125760 |
| $P$ | 4.37 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.6+ | 0.5− | 2004 10 05 | 699 | 0.5− | 1.1− | 2006 01 26 | 691 | 0.6− | 0.4+ |
| 2000 11 27 | 704 | 0.9− | 0.1+ | 2004 10 05 | 699 | 0.5+ | 0.4+ | 2006 01 26 | 691 | 0.3+ | 0.5− |
| 2000 11 27 | 704 | 0.3+ | 0.3− | 2004 10 05 | 699 | 0.5− | 0.5+ | 2006 01 30 | 691 | 0.3+ | 0.1+ |
| 2000 11 27 | 704 | 0.6+ | 0.2+ | 2004 10 05 | 699 | 0.7− | 0.5+ | 2006 01 30 | 691 | 0.1+ | 0.1+ |
| 2000 11 27 | 704 | 1.5+ | 0.9+ | 2004 10 08 | 699 | 0.5+ | 1.1− | 2006 01 30 | 691 | 0.2+ | 0.0 |
| 2000 11 27 | 704 | (2.3+ | 0.1+) | 2004 10 08 | 699 | 0.5− | 0.2+ | 2006 02 20 | G96 | 0.5− | 0.3+ |
| 2000 11 27 | 704 | 0.4− | 1.3− | 2004 10 08 | 699 | 0.5− | 0.2− | 2006 02 20 | G96 | 0.6− | 0.1− |
| 2000 11 27 | 704 | (3.5− | 1.8−) | 2004 10 08 | 699 | 0.1+ | 0.9+ | 2006 02 20 | G96 | 0.6− | 0.6+ |
| 2000 11 29 | 704 | 0.4− | 0.9− | 2004 10 09 | 704 | 0.3− | 0.9+ | 2006 02 20 | G96 | 0.0 | 0.2− |
| 2000 11 29 | 704 | 0.1− | 0.2+ | 2004 10 09 | 704 | 0.8+ | 0.3+ | 2006 03 05 | G96 | 0.3+ | 0.1+ |
| 2000 11 29 | 704 | 0.6− | 0.1+ | 2004 10 09 | 704 | 0.7+ | 0.7+ | 2006 03 05 | G96 | 0.0 | 0.0 |
| 2000 11 29 | 704 | 0.3− | 1.1+ | 2004 10 09 | 704 | 0.1+ | 0.8− | 2006 03 05 | G96 | 0.2− | 0.3+ |
| 2000 11 29 | 704 | 0.2− | 0.2− | 2006 01 26 | 691 | 0.5+ | 0.2− | 2006 03 05 | G96 | 1.4− | 0.0 |

**2004 TO$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.66445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28538242 | $\omega$ | 285.28225 | | −0.39148867 | | +0.91980747 |
| $a$ | 2.2848160 | $\Omega$ | 321.63715 | | −0.82716894 | | −0.36428681 |
| $e$ | 0.1312530 | $i$ | 2.42717 | | −0.40314782 | | −0.14577150 |
| $P$ | 3.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.1+ | 0.1+ | 2003 05 20 | 699 | 0.1+ | 0.2+ | 2006 01 05 | G96 | 0.1− | 0.4+ |
| 2000 07 29 | 807 | 0.1+ | 0.2+ | 2003 06 05 | 691 | 0.3+ | 1.0+ | 2006 01 05 | G96 | 0.1+ | 0.6+ |
| 2001 12 19 | 704 | 0.7− | 0.9+ | 2003 06 05 | 691 | 0.3+ | 0.8+ | 2006 01 05 | G96 | 0.4+ | 0.5+ |
| 2001 12 19 | 704 | 0.8− | 1.1+ | 2003 06 05 | 691 | 0.6+ | 1.0+ | 2006 01 05 | G96 | 0.2+ | 0.4+ |
| 2001 12 19 | 704 | 0.1+ | 1.3+ | 2004 10 05 | 691 | 0.4− | 0.2+ | 2006 01 26 | G96 | 0.3+ | 0.2+ |
| 2001 12 19 | 704 | 0.6+ | 0.7+ | 2004 10 05 | 691 | 0.1− | 0.1+ | 2006 01 26 | G96 | 0.0 | 0.7+ |
| 2003 04 29 | 704 | 0.8+ | 0.0 | 2004 10 05 | 691 | 0.4− | 0.2+ | 2006 01 26 | G96 | 0.4+ | 0.2+ |
| 2003 04 29 | 704 | 0.7− | 0.6− | 2004 10 09 | 691 | 0.3− | 0.1+ | 2006 01 26 | G96 | 0.0 | 0.1+ |
| 2003 04 29 | 704 | 0.2− | 0.3+ | 2004 10 09 | 691 | 0.1− | 0.3+ | 2006 03 23 | G96 | 0.1+ | 0.1+ |
| 2003 04 29 | 704 | 0.2+ | 0.3+ | 2004 10 09 | 691 | 0.1+ | 0.4+ | 2006 03 23 | G96 | 0.1− | 0.0 |
| 2003 05 20 | 699 | 0.5+ | 0.3− | 2004 10 13 | 691 | 0.0 | 0.5+ | 2006 03 23 | G96 | 0.2+ | 0.0 |
| 2003 05 20 | 699 | 0.2+ | 0.4+ | 2004 10 13 | 691 | 0.0 | 0.5+ | 2006 03 23 | G96 | 0.1− | 0.3− |
| 2003 05 20 | 699 | 0.8− | 0.7+ | 2004 10 13 | 691 | 0.1+ | 0.5+ | | | | |

**2004 TE$_{96}$ = 2006 DR$_{203}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.65259 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22765021 | $\omega$ | 93.40069 | | −0.50156549 | | −0.86269971 |
| $a$ | 2.6563829 | $\Omega$ | 27.00932 | | +0.72640735 | | −0.46056145 |
| $e$ | 0.0582447 | $i$ | 8.18598 | | +0.46985574 | | −0.20888363 |
| $P$ | 4.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 05 | 691 | 0.2− | 0.3− | 2004 10 13 | 691 | 0.1− | 0.1+ | 2006 02 22 | 704 | 0.5− | 0.5+ |
| 2004 10 05 | 691 | 0.3− | 0.1+ | 2004 10 13 | 691 | 0.2− | 0.0 | 2006 02 22 | 704 | 0.5+ | 0.2− |
| 2004 10 05 | 691 | 0.5− | 0.0 | 2004 10 13 | 691 | 0.0 | 0.0 | 2006 02 22 | 704 | 0.1− | 0.0 |
| 2004 10 09 | 691 | 0.4− | 0.1− | 2004 10 15 | G96 | 0.2+ | 0.7− | 2006 02 22 | 704 | 0.4+ | 0.0 |
| 2004 10 09 | 691 | 0.3− | 0.2− | 2004 10 15 | G96 | 0.1+ | 0.8− | 2006 03 06 | 703 | 0.3− | 0.5− |
| 2004 10 09 | 691 | 0.2− | 0.0 | 2004 10 15 | G96 | 0.4+ | 0.8− | 2006 03 06 | 703 | 0.3− | 0.3+ |
| 2004 10 12 | 699 | 0.5+ | 0.8+ | 2004 10 15 | G96 | 0.1+ | 0.7− | 2006 03 06 | 703 | (0.7− | 2.3−) |
| 2004 10 12 | 699 | 0.0 | 1.7+ | 2004 10 21 | 704 | 0.1− | 0.5+ | 2006 03 06 | 703 | 0.2+ | 0.2− |
| 2004 10 12 | 699 | 0.8+ | 0.8− | 2004 10 21 | 704 | 1.0− | 0.0 | | | | |
| 2004 10 12 | 699 | 0.9+ | 0.6+ | 2004 10 21 | 704 | 0.1+ | 0.6+ | | | | |

**2004 TJ$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.46216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26827691 | $\omega$ | 184.86426 | | −0.35260412 | | +0.93510094 |
| $a$ | 2.3809330 | $\Omega$ | 64.49268 | | −0.85722435 | | −0.30758302 |
| $e$ | 0.1519710 | $i$ | 2.25095 | | −0.37528224 | | −0.17600830 |
| $P$ | 3.67 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 29 | 704 | 0.7+ | 0.6− | 2003 05 24 | 691 | 0.2− | 0.1− | 2004 10 09 | 691 | 0.0 | 0.2+ |
| 2003 04 29 | 704 | 0.7+ | 0.3− | 2003 05 24 | 691 | 0.1+ | 0.1− | 2004 10 09 | 691 | 0.2− | 0.1+ |
| 2003 04 29 | 704 | 0.6+ | 0.1− | 2004 10 06 | 291 | 0.1+ | 0.3− | 2004 10 09 | 691 | 0.5− | 0.1+ |
| 2003 04 29 | 704 | 0.8+ | 0.3+ | 2004 10 06 | 291 | 0.1− | 0.6− | 2004 10 13 | 691 | 0.2+ | 0.3− |
| 2003 05 01 | 691 | 0.1+ | 0.2+ | 2004 10 06 | 291 | 0.1− | 0.4− | 2004 10 13 | 691 | 0.5+ | 0.1− |
| 2003 05 01 | 691 | 0.4− | 0.1+ | 2004 10 09 | 291 | 0.2− | 0.5+ | 2004 10 13 | 691 | 0.2+ | 0.1+ |
| 2003 05 01 | 691 | 0.1− | 0.2+ | 2004 10 09 | 291 | 0.2+ | 0.6+ | | | | |
| 2003 05 24 | 691 | 0.1− | 0.0 | 2004 10 09 | 291 | 0.2− | 0.3+ | | | | |

**2004 TS$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.14709 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26403334 | $\omega$ | 326.13967 | | +0.97445312 | | −0.21350350 |
| $a$ | 2.4063763 | $\Omega$ | 46.35197 | | +0.22143609 | | +0.86150309 |
| $e$ | 0.2077667 | $i$ | 5.52716 | | +0.03751232 | | +0.46068285 |
| $P$ | 3.73 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.2+ | 1.3+ | 2004 10 09 | 704 | 0.7− | 0.3− | 2004 11 04 | 699 | 0.8+ | 0.1− |
| 2002 02 07 | 644 | 0.8+ | 1.2+ | 2004 10 09 | 704 | 0.2− | 0.5− | 2004 11 04 | 699 | 0.6+ | 0.9− |
| 2002 02 07 | 644 | 0.5+ | 1.1+ | 2004 10 09 | 704 | 0.3− | 0.2− | 2004 11 06 | 704 | 0.4+ | 1.5+ |
| 2003 05 30 | 807 | 0.3+ | 0.6+ | 2004 10 14 | 704 | 0.5− | 0.5− | 2004 11 06 | 704 | 0.5− | 0.9+ |
| 2003 05 30 | 807 | 0.0 | 0.6+ | 2004 10 14 | 704 | 0.1− | 0.3− | 2004 11 06 | 704 | 0.2+ | 1.7+ |
| 2004 08 20 | 703 | 1.1− | 1.2+ | 2004 10 14 | 704 | 0.4− | 0.4+ | 2004 11 06 | 704 | 0.7+ | 1.5+ |
| 2004 08 20 | 703 | 1.4− | 1.9+ | 2004 10 14 | 704 | 0.2− | 0.2+ | 2004 11 18 | 704 | 0.3+ | 0.3− |
| 2004 08 20 | 703 | 0.3− | 0.5+ | 2004 10 14 | 704 | 0.4− | 0.5− | 2004 11 18 | 704 | 0.5+ | 0.6+ |
| 2004 08 20 | 703 | 0.7− | 0.3+ | 2004 10 20 | 704 | 0.0 | 0.2− | 2004 11 18 | 704 | 1.1+ | 0.6+ |
| 2004 09 08 | 644 | 0.1− | 0.0 | 2004 10 20 | 704 | 0.1− | 0.4− | 2004 12 02 | 699 | 0.1− | 0.8− |
| 2004 09 08 | 644 | 0.0 | 0.1− | 2004 10 20 | 704 | 0.2+ | 0.2− | 2004 12 02 | 699 | 0.3+ | 0.6− |
| 2004 09 08 | 644 | 0.3− | 0.2+ | 2004 10 20 | 704 | 0.1− | 0.8− | 2004 12 02 | 699 | 0.4+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 04 | 699 | 0.4+ | 1.2+ | 2004 10 20 | 704 | 0.0 | 0.2+ | 2004 12 02 | 699 | 1.0+ | 0.0 | | |
| 2004 10 04 | 699 | 1.0+ | 0.0 | 2004 11 03 | 644 | 0.1+ | 0.1+ | 2004 12 14 | 703 | 0.5− | 1.1− | | |
| 2004 10 04 | 699 | 0.5− | 0.1− | 2004 11 03 | 644 | 0.2+ | 0.0 | 2004 12 14 | 703 | 0.2− | 0.8− | | |
| 2004 10 04 | 699 | 0.4+ | 0.1+ | 2004 11 03 | 644 | 0.2+ | 0.0 | 2004 12 14 | 703 | 0.4− | 0.1+ | | |
| 2004 10 09 | 704 | 0.6− | 0.2+ | 2004 11 04 | 699 | 0.1+ | 0.5− | 2004 12 14 | 703 | 0.1− | 0.4− | | |
| 2004 10 09 | 704 | 0.1+ | 0.2− | 2004 11 04 | 699 | 1.3− | 0.9− | | | | | | |

**2004 TO$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.28563 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17320243 | $\omega$ | 183.90020 | | +0.50906712 | | +0.85087716 |
| $a$ | 3.1873767 | $\Omega$ | 116.74449 | | −0.78571544 | | +0.52097589 |
| $e$ | 0.1832991 | $i$ | 8.36017 | | −0.35142840 | | +0.06776567 |
| $P$ | 5.69 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 644 | 0.5+ | 1.3+ | 2004 09 14 | 699 | 0.5− | 0.2− | 2004 10 20 | 703 | 0.0 | 0.5− | | |
| 2002 03 11 | 644 | 0.4+ | 1.4+ | 2004 09 14 | 699 | 0.3− | 0.0 | 2004 10 20 | 703 | 0.5− | 0.3+ | | |
| 2002 03 11 | 644 | (0.6+ | 1.6+) | 2004 09 14 | 699 | 0.9+ | 0.2+ | 2004 11 11 | 699 | 0.9− | 0.2− | | |
| 2004 08 15 | E12 | 0.2− | 0.5− | 2004 10 05 | 704 | 0.7+ | 0.7+ | 2004 11 11 | 699 | 0.5+ | 1.2+ | | |
| 2004 08 15 | E12 | (0.5− | 1.6−) | 2004 10 05 | 644 | 0.5+ | 0.2− | 2004 11 11 | 699 | 0.4+ | 0.2− | | |
| 2004 08 15 | E12 | 1.0− | 0.3− | 2004 10 05 | 704 | 1.1− | 0.4+ | 2004 11 11 | 699 | 0.7+ | 1.2− | | |
| 2004 08 15 | E12 | 1.3− | 0.5+ | 2004 10 05 | 704 | 0.5− | 0.7+ | 2006 01 31 | G96 | 0.2− | 0.1− | | |
| 2004 09 08 | 704 | 0.2+ | 0.9+ | 2004 10 05 | 644 | 0.4+ | 0.1− | 2006 01 31 | G96 | 0.2+ | 0.1+ | | |
| 2004 09 08 | 704 | 0.2− | 0.5+ | 2004 10 05 | 644 | 0.5+ | 0.0 | 2006 01 31 | G96 | 0.2+ | 0.1− | | |
| 2004 09 08 | 704 | 1.3− | 0.6− | 2004 10 09 | 699 | 0.3+ | 0.3− | 2006 01 31 | G96 | 0.1+ | 0.0 | | |
| 2004 09 08 | 704 | 0.5+ | 0.4− | 2004 10 09 | 699 | 1.0+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.2− | | |
| 2004 09 13 | 644 | 0.1− | 0.0 | 2004 10 09 | 699 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1− | 0.1− | | |
| 2004 09 13 | 644 | 1.1+ | 1.0+ | 2004 10 09 | 699 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.3− | 0.1− | | |
| 2004 09 13 | 644 | 1.1+ | 0.8+ | 2004 10 20 | 703 | 0.4− | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.1− | | |
| 2004 09 14 | 699 | 1.4− | 0.3− | 2004 10 20 | 703 | 0.2+ | 0.1+ | | | | | | |

**2004 TH$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.38839 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22207479 | $\omega$ | 256.47510 | | +0.43538063 | | +0.89671955 |
| $a$ | 2.7006597 | $\Omega$ | 39.64337 | | −0.77016771 | | +0.41680110 |
| $e$ | 0.2604873 | $i$ | 7.16801 | | −0.46613883 | | +0.14889893 |
| $P$ | 4.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 691 | 0.3+ | 1.0− | 2004 09 12 | 704 | 0.8− | 0.6− | 2004 10 07 | 704 | 1.0− | 0.7+ | | |
| 2003 03 27 | 691 | 0.5+ | 0.3+ | 2004 09 12 | 704 | 1.0− | 0.0 | 2004 10 07 | 704 | (2.0+ | 2.7+) | | |
| 2003 03 27 | 691 | 0.5+ | 0.1+ | 2004 09 12 | 704 | 1.4+ | 0.5− | 2004 10 07 | 704 | 1.0+ | 0.3− | | |
| 2003 04 09 | 691 | 0.1− | 0.3+ | 2004 09 12 | 704 | 1.3− | 0.9− | 2004 10 09 | 704 | 0.0 | 0.8+ | | |
| 2003 04 09 | 691 | 0.5− | 0.7+ | 2004 10 05 | 699 | 0.2− | 0.3− | 2004 10 09 | 704 | 0.6− | 0.6+ | | |
| 2003 04 09 | 691 | 0.2− | 0.4+ | 2004 10 05 | 699 | 0.5+ | 0.8+ | 2004 10 09 | 704 | 0.2− | 0.6+ | | |
| 2004 08 23 | E12 | 0.1+ | 0.1+ | 2004 10 05 | 699 | 0.4− | 0.2− | 2004 11 04 | 691 | 0.0 | 0.2+ | | |
| 2004 08 23 | E12 | 0.4− | 0.2+ | 2004 10 05 | 699 | 1.0+ | 0.6+ | 2004 11 04 | 691 | 0.1+ | 0.2+ | | |
| 2004 08 23 | E12 | 0.6− | 0.2+ | 2004 10 07 | 704 | 0.2+ | 0.4+ | 2004 11 04 | 691 | 0.4+ | 0.1+ | | |
| 2004 08 23 | E12 | 1.5− | 0.8− | 2004 10 07 | 704 | 0.3− | 0.5+ | | | | | | |

**2004 TM$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.75730 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28101802 | $\omega$ | 358.84271 | | +0.71035524 | | −0.69780227 |
| $a$ | 2.3084117 | $\Omega$ | 45.88372 | | +0.64678900 | | +0.59560746 |
| $e$ | 0.1291099 | $i$ | 7.36400 | | +0.27759581 | | +0.39789916 |
| $P$ | 3.51 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8− | 1.0− | 2002 01 19 | 699 | (3.3+ | 1.1−) | 2004 10 09 | 704 | 0.1+ | 0.7− | | |
| 2001 12 09 | 704 | 0.0 | 0.4+ | 2002 01 19 | 699 | 1.3+ | 0.8+ | 2004 10 09 | 704 | 0.0 | 0.4+ | | |
| 2001 12 09 | 704 | 0.8+ | 0.8+ | 2002 01 19 | 699 | 0.7− | 0.2− | 2004 10 09 | 704 | 0.3+ | 0.8+ | | |
| 2001 12 19 | 644 | 0.5− | 0.2− | 2002 01 19 | 699 | 0.3− | 1.0− | 2004 10 09 | 704 | 0.3+ | 1.0− | | |
| 2001 12 19 | 644 | 0.5− | 0.0 | 2004 10 07 | 704 | 0.9− | 0.5− | 2004 10 09 | 704 | 0.3+ | 0.6− | | |
| 2001 12 19 | 644 | 0.2− | 0.4− | 2004 10 07 | 704 | 0.2− | 0.2− | 2004 10 18 | 704 | 1.0+ | 0.2+ | | |
| 2002 01 08 | 644 | 0.2+ | 0.4+ | 2004 10 07 | 704 | 1.6− | 0.3+ | 2004 10 18 | 704 | 0.7+ | 0.3+ | | |
| 2002 01 08 | 644 | 0.3+ | 0.3+ | 2004 10 07 | 704 | 0.5− | 0.1+ | 2004 10 18 | 704 | 0.2+ | 0.6+ | | |
| 2002 01 08 | 644 | 0.2+ | 0.2+ | 2004 10 07 | 704 | 0.2− | 0.3+ | 2004 10 18 | 704 | 0.5+ | 0.2+ | | |

**2004 TX$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.96088 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27584379 | $\omega$ | 8.96186 | | +0.55583396 | | −0.82622436 |
| $a$ | 2.3371894 | $\Omega$ | 47.33153 | | +0.75476401 | | +0.45537437 |
| $e$ | 0.1076338 | $i$ | 7.16120 | | +0.34839618 | | +0.33164361 |
| $P$ | 3.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 09 | 691 | 0.2− | 0.1− | 2001 12 19 | 644 | 0.2+ | 0.6− | 2004 10 07 | 704 | 0.2− | 1.0− | | |
| 1999 03 09 | 691 | 0.2− | 0.1− | 2002 01 13 | 644 | 0.3+ | 0.1− | 2004 10 07 | 704 | 0.5− | 0.3− | | |
| 1999 03 09 | 691 | 0.2+ | 0.3− | 2002 01 13 | 644 | 0.4+ | 0.1+ | 2004 10 07 | 704 | 0.4− | 0.1− | | |
| 2001 12 09 | 704 | 0.2+ | 0.5+ | 2002 01 13 | 644 | 0.6+ | 0.0 | 2004 10 07 | 704 | 0.2+ | 0.2− | | |
| 2001 12 09 | 704 | 0.8− | 1.1+ | 2004 09 08 | 704 | 1.5+ | 1.4− | 2004 10 09 | 704 | 0.2+ | 0.5− | | |
| 2001 12 09 | 704 | 0.9− | 0.8+ | 2004 09 08 | 704 | 0.3− | 1.0+ | 2004 10 09 | 704 | 1.0+ | 0.4− | | |
| 2001 12 19 | 644 | 0.2− | 0.7− | 2004 09 08 | 704 | 0.2+ | 0.7+ | 2004 10 09 | 704 | 0.5− | 0.4− | | |
| 2001 12 19 | 644 | 0.1− | 0.7− | 2004 09 08 | 704 | 1.2− | 0.2− | 2004 10 09 | 704 | 1.3+ | 0.8+ | | |

**2004 TJ$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.05517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29393846 | $\omega$ | 144.48757 | | +0.93635969 | | +0.34988548 |
| $a$ | 2.2402601 | $\Omega$ | 195.10975 | | −0.34200874 | | +0.89097719 |
| $e$ | 0.2745260 | $i$ | 6.27085 | | −0.07912368 | | +0.28937829 |
| $P$ | 3.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 291 | 0.9+ | 0.3− | 2004 09 17 | 704 | 0.6− | 1.1+ | 2004 10 24 | 699 | 0.8− | 0.6− | | |
| 2003 03 24 | 291 | 0.3+ | 0.2− | 2004 09 17 | 704 | 0.0 | 0.5+ | 2004 10 24 | 699 | 0.0 | 0.6− | | |
| 2003 03 24 | 291 | 0.2+ | 0.2+ | 2004 10 07 | 699 | 0.4+ | 0.0 | 2004 10 24 | 699 | 1.1− | 0.9− | | |
| 2003 04 26 | 691 | 0.1− | 0.9+ | 2004 10 07 | 699 | 0.2+ | 0.1+ | 2004 10 24 | 699 | 0.4− | 1.1− | | |
| 2003 04 26 | 691 | 0.2− | 0.8+ | 2004 10 07 | 699 | 0.3+ | 0.4+ | 2004 11 03 | 644 | 0.8− | 0.5− | | |
| 2003 04 26 | 691 | 0.3− | 1.2+ | 2004 10 07 | 644 | 0.0 | 0.5+ | 2004 11 03 | 644 | 0.6− | 0.5− | | |
| 2004 08 11 | 704 | (1.3− | 2.9+) | 2004 10 07 | 699 | 0.4− | 0.3+ | 2004 11 03 | 644 | 0.6− | 0.4− | | |
| 2004 08 11 | 704 | (1.2− | 2.8+) | 2004 10 07 | 644 | 0.1+ | 0.5+ | 2004 11 18 | 704 | 1.9− | 0.5+ | | |
| 2004 08 11 | 704 | 0.9− | 1.9+ | 2004 10 07 | 644 | 0.0 | 0.6+ | 2004 11 18 | 704 | 0.4+ | 0.2− | | |
| 2004 09 09 | 704 | 0.7+ | 1.8+ | 2004 10 07 | 644 | 0.3+ | 0.5+ | 2004 11 18 | 704 | 0.1− | 0.8− | | |
| 2004 09 09 | 704 | 1.5+ | 1.6+ | 2004 10 07 | 644 | 0.0 | 0.4+ | 2004 11 18 | 704 | 0.2− | 1.3− | | |
| 2004 09 09 | 704 | (0.2+ | 2.4+) | 2004 10 07 | 644 | 0.1− | 0.5+ | 2004 12 03 | 699 | 0.6+ | 1.1+ | | |
| 2004 09 09 | 704 | 1.3+ | 1.2+ | 2004 10 09 | 704 | 0.0 | 0.0 | 2004 12 03 | 699 | 0.2− | 0.2+ | | |
| 2004 09 09 | 704 | 1.8+ | 1.8+ | 2004 10 09 | 704 | 1.0+ | 0.4− | 2004 12 03 | 699 | 0.8+ | 0.3− | | |
| 2004 09 17 | 704 | 0.8− | 0.4+ | 2004 10 09 | 704 | 0.2+ | 0.2− | 2004 12 03 | 699 | 0.7+ | 0.3+ | | |
| 2004 09 17 | 704 | 0.7− | 1.0+ | 2004 10 09 | 704 | 0.1− | 0.3− | | | | | | |
| 2004 09 17 | 704 | 0.7+ | 1.3+ | 2004 10 09 | 704 | 0.4− | 0.3+ | | | | | | |

**2004 TD$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.55633 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22298959 | $\omega$ | 354.72098 | | +0.76103988 | | −0.62557629 |
| $a$ | 2.6932685 | $\Omega$ | 45.55252 | | +0.60363001 | | +0.58598400 |
| $e$ | 0.1884590 | $i$ | 13.91479 | | +0.23759023 | | +0.51505054 |
| $P$ | 4.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 699 | 0.1+ | 0.8+ | 2004 10 09 | 704 | 0.8− | 0.9+ | 2004 11 22 | 704 | 0.0 | 0.6+ | | |
| 2001 02 22 | 699 | (1.8+ | 1.3+) | 2004 10 09 | 704 | 0.7+ | 0.8+ | 2004 11 22 | 704 | 0.3− | 0.3+ | | |
| 2001 02 22 | 699 | (0.3− | 1.6+) | 2004 10 09 | 704 | 0.2− | 1.0+ | 2004 11 22 | 704 | 0.2− | 0.0 | | |
| 2001 02 22 | 699 | 0.0 | 1.0− | 2004 10 09 | 704 | 0.8− | 0.9+ | 2004 12 02 | 704 | 0.4+ | 0.1+ | | |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2004 10 09 | 704 | 0.5− | 1.0+ | 2004 12 02 | 704 | 0.0 | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 645 | 0.0 | 0.1− | 2004 10 20 | 704 | 0.3+ | 0.5− | 2004 12 02 | 704 | 0.1− | 0.1+ | | |
| 2002 04 21 | 691 | 0.7+ | 0.7+ | 2004 10 20 | 704 | 0.1+ | 0.6− | 2004 12 11 | 704 | 0.1+ | 0.2− | | |
| 2002 04 21 | 691 | 0.8+ | 0.6+ | 2004 10 20 | 704 | 0.4+ | 0.5+ | 2004 12 11 | 704 | 0.5− | 0.9+ | | |
| 2002 04 21 | 691 | 0.1− | 0.9+ | 2004 10 20 | 704 | 0.7+ | 0.3− | 2004 12 11 | 704 | 0.7+ | 0.2+ | | |
| 2004 09 17 | 291 | 0.1+ | 0.1− | 2004 10 20 | 704 | 0.9− | 0.4− | 2004 12 11 | 704 | 0.7+ | 0.3+ | | |
| 2004 09 17 | 291 | 0.4− | 0.1+ | 2004 11 19 | 704 | 0.3− | 0.1− | 2004 12 11 | 704 | 0.4+ | 0.4− | | |
| 2004 09 17 | 291 | 0.6− | 0.2− | 2004 11 19 | 704 | 0.3− | 0.4+ | 2004 12 11 | 704 | 0.3+ | 0.8+ | | |
| 2004 10 08 | A50 | (0.4+ | 1.6+) | 2004 11 19 | 704 | 0.3− | 0.1− | 2004 12 11 | 704 | 0.1+ | 0.2+ | | |
| 2004 10 08 | A50 | 0.3− | 1.2+ | 2004 11 19 | 704 | 0.6− | 0.0 | 2004 12 11 | 704 | 0.4+ | 0.4+ | | |
| 2004 10 08 | A50 | 0.1− | 1.5+ | 2004 11 19 | 704 | 0.4− | 0.2+ | 2004 12 17 | 699 | (1.0− | 2.5−) | | |
| 2004 10 08 | A50 | 0.2+ | 0.9+ | 2004 11 22 | 704 | 0.2− | 0.4+ | 2004 12 17 | 699 | 0.8+ | 0.0 | | |
| 2004 10 08 | 644 | 0.4− | 0.0 | 2004 11 22 | 704 | 0.8− | 0.1− | 2004 12 17 | 699 | 0.2− | 0.1− | | |
| 2004 10 08 | 644 | 0.6− | 0.6− | 2004 11 22 | 704 | 0.2+ | 0.2− | 2004 12 17 | 699 | 1.2+ | 0.7+ | | |
| 2004 10 08 | 644 | 0.4− | 0.2− | 2004 11 22 | 704 | 0.0 | 0.1− | | | | | | |

**2004 TQ$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 124.48975 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22296189 | $\omega$ | 196.47596 | | +0.52277675 | −0.83090576 |
| $a$ | 2.6934916 | $\Omega$ | 222.52635 | | +0.81047827 | +0.55373411 |
| $e$ | 0.1513808 | $i$ | 16.37199 | | +0.26425262 | −0.05453587 |
| $P$ | 4.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 704 | 0.5+ | 0.5− | 2004 09 22 | 699 | 0.9+ | 0.4+ | 2004 10 15 | 704 | 0.0 | 0.4+ | | |
| 2000 11 26 | 704 | 0.3− | 0.2− | 2004 10 09 | 699 | 0.5+ | 0.3+ | 2004 11 03 | 644 | 0.1+ | 0.1− | | |
| 2000 11 26 | 704 | 0.4− | 0.9+ | 2004 10 09 | 699 | 0.2− | 0.8+ | 2004 11 03 | 644 | 0.2+ | 0.1− | | |
| 2002 04 08 | 644 | 0.0 | 0.7+ | 2004 10 09 | 699 | 0.8− | 0.4− | 2004 11 03 | 644 | 0.0 | 0.3− | | |
| 2002 04 08 | 644 | 0.6+ | 0.9+ | 2004 10 09 | 699 | 0.2+ | 0.5+ | 2004 11 10 | 699 | 1.3+ | 1.4− | | |
| 2002 04 08 | 644 | 0.4+ | 0.7+ | 2004 10 10 | 704 | 0.6− | 1.1+ | 2004 11 10 | 699 | 1.2− | 0.1− | | |
| 2004 09 11 | 704 | (2.2− | 1.5+) | 2004 10 10 | 704 | 0.2+ | 0.0 | 2004 11 10 | 699 | 0.6+ | 0.1− | | |
| 2004 09 11 | 704 | (2.8− | 1.5+) | 2004 10 10 | 704 | 1.2+ | 0.8+ | 2004 11 10 | 699 | 0.1− | 1.2− | | |
| 2004 09 11 | 704 | 1.1− | 1.2+ | 2004 10 10 | 704 | 0.2+ | 0.3+ | 2006 02 25 | 703 | 0.3− | 1.2+ | | |
| 2004 09 11 | 704 | 0.2+ | 0.1− | 2004 10 10 | 704 | 0.4− | 0.0 | 2006 02 25 | 703 | 0.4− | 0.2− | | |
| 2004 09 11 | 704 | 0.5− | 0.0 | 2004 10 15 | 704 | 0.2− | 0.1+ | 2006 02 25 | 703 | 0.9+ | 0.0 | | |
| 2004 09 22 | 699 | 0.6+ | 0.0 | 2004 10 15 | 704 | 0.8− | 0.3+ | 2006 02 25 | 703 | 0.3− | 0.1+ | | |
| 2004 09 22 | 699 | 0.3+ | 0.0 | 2004 10 15 | 704 | 0.6− | 0.4− | | | | | | |
| 2004 09 22 | 699 | 0.4− | 0.7+ | 2004 10 15 | 704 | 0.2+ | 0.3− | | | | | | |

**2004 TQ$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 153.05570 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.19230674 | $\omega$ | 358.77483 | | +0.95277748 | −0.29787688 |
| $a$ | 2.9726222 | $\Omega$ | 18.88139 | | +0.28013962 | +0.78716035 |
| $e$ | 0.1249275 | $i$ | 10.51007 | | +0.11720441 | +0.54004440 |
| $P$ | 5.13 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.2+ | 0.3+ | 2004 10 13 | 152 | 0.5− | 0.1+ | 2004 11 19 | 704 | 0.4+ | 0.4+ | | |
| 2002 04 08 | 644 | 0.1+ | 0.6+ | 2004 10 13 | 152 | 0.4− | 0.4− | 2004 11 19 | 704 | 0.2− | 0.3+ | | |
| 2002 04 08 | 644 | 0.2+ | 0.1− | 2004 10 14 | 152 | 0.3+ | 0.2+ | 2004 11 19 | 704 | 0.0 | 0.7+ | | |
| 2004 09 18 | 704 | 0.7− | 0.4+ | 2004 10 14 | 152 | 0.1− | 0.0 | 2004 12 02 | 703 | 0.9+ | 0.3− | | |
| 2004 09 18 | 704 | 0.1− | 0.3+ | 2004 10 14 | 152 | 0.1+ | 0.0 | 2004 12 02 | 703 | 0.3− | 0.2− | | |
| 2004 09 18 | 704 | 1.1− | 0.6+ | 2004 10 21 | 704 | 0.8+ | 0.1+ | 2004 12 02 | 703 | 0.1− | 1.2− | | |
| 2004 10 04 | 691 | 0.1+ | 0.4− | 2004 10 21 | 704 | 0.4+ | 0.7+ | 2004 12 02 | 703 | 1.2+ | 0.6+ | | |
| 2004 10 04 | 691 | 0.1+ | 0.3− | 2004 10 21 | 704 | 0.5− | 0.5+ | 2004 12 11 | 703 | 0.9− | 0.5− | | |
| 2004 10 04 | 691 | 0.2+ | 0.4− | 2004 10 21 | 704 | 0.1− | 0.8+ | 2004 12 11 | 703 | 1.0− | 0.0 | | |
| 2004 10 09 | 699 | 0.0 | 0.4+ | 2004 10 21 | 704 | 0.6− | 0.4− | 2004 12 11 | 703 | 0.8− | 0.7− | | |
| 2004 10 09 | 699 | 0.9− | 0.3+ | 2004 11 09 | 703 | 0.4+ | 0.0 | 2004 12 11 | 703 | 0.6− | 0.1− | | |
| 2004 10 09 | 699 | 0.3+ | 1.2− | 2004 11 09 | 703 | 0.2+ | 0.2+ | 2006 01 22 | 703 | 0.2+ | 1.2− | | |
| 2004 10 09 | 699 | 0.0 | 1.2+ | 2004 11 09 | 703 | 0.6+ | 0.7+ | 2006 01 22 | 703 | 0.0 | 0.5+ | | |
| 2004 10 12 | 152 | 0.5+ | 0.9+ | 2004 11 09 | 703 | 0.1+ | 0.5+ | 2006 01 22 | 703 | 0.4+ | 0.4+ | | |
| 2004 10 12 | 152 | 1.0+ | 0.4− | 2004 11 19 | 704 | 0.2− | 0.3− | 2006 01 22 | 703 | 0.8− | 0.2+ | | |
| 2004 10 12 | 152 | (2.2+ | 0.5+) | 2004 11 19 | 704 | 0.2− | 0.7+ | | | | | | |

**2004 TL$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 300.55139 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.18073704 | $\omega$ | 203.53394 | | −0.87702657 | +0.48008053 |
| $a$ | 3.0981654 | $\Omega$ | 5.27109 | | −0.40228216 | −0.71259700 |
| $e$ | 0.1539873 | $i$ | 11.70020 | | −0.26266605 | −0.51159378 |
| $P$ | 5.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 09 | 691 | 0.1+ | 0.2+ | 2004 10 10 | 691 | 0.4− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.2+ | | |
| 2004 09 09 | 691 | 0.0 | 0.1− | 2004 10 10 | 691 | 0.1− | 0.5+ | 2006 11 20 | G96 | 0.2− | 0.1− | | |
| 2004 09 09 | 691 | 0.0 | 0.1− | 2004 10 14 | 691 | 0.0 | 0.3− | 2006 11 20 | G96 | 0.0 | 0.2+ | | |
| 2004 10 06 | 691 | 0.2+ | 0.2− | 2004 10 14 | 691 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.1+ | | |
| 2004 10 06 | 691 | 0.3− | 0.2− | 2004 10 14 | 691 | 0.3+ | 0.1− | 2006 11 20 | G96 | 0.1− | 0.3− | | |
| 2004 10 06 | 691 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.4− | | | | | | |
| 2004 10 10 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.3+ | | | | | | |

**2004 TY$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 322.91675 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23846586 | $\omega$ | 195.47863 | | −0.73881016 | +0.66981594 |
| $a$ | 2.5754428 | $\Omega$ | 27.02941 | | −0.59967584 | −0.60318679 |
| $e$ | 0.1067871 | $i$ | 9.39749 | | −0.30748731 | −0.43302691 |
| $P$ | 4.13 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 12 | 691 | 0.4− | 0.1− | 2004 10 06 | 691 | 0.1+ | 0.1+ | 2004 11 11 | 691 | 0.2− | 0.0 | | |
| 1994 02 12 | 691 | 0.0 | 0.3− | 2004 10 06 | 691 | 0.0 | 0.1+ | 2004 11 11 | 691 | 0.1− | 0.2− | | |
| 1994 02 12 | 691 | 0.3+ | 0.1+ | 2004 10 06 | 691 | 0.3+ | 0.2+ | 2004 11 11 | 691 | 0.2− | 0.3− | | |
| 2004 09 09 | 691 | 0.5− | 0.3− | 2004 10 10 | 691 | 0.2+ | 0.3+ | 2006 01 24 | 699 | 0.8− | 0.4− | | |
| 2004 09 09 | 691 | 0.0 | 0.0 | 2004 10 10 | 691 | 0.3+ | 0.2+ | 2006 01 24 | 699 | 1.1+ | 0.4− | | |
| 2004 09 09 | 691 | 0.6− | 0.3− | 2004 10 10 | 691 | 0.3+ | 0.2− | 2006 01 24 | 699 | 0.4− | 1.3+ | | |
| 2004 09 22 | 691 | 0.2− | 0.2+ | 2004 10 14 | 691 | 0.0 | 0.1+ | 2006 01 24 | 699 | 0.2+ | 0.3+ | | |
| 2004 09 22 | 691 | 0.1+ | 0.1− | 2004 10 14 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2004 09 22 | 691 | 0.1− | 0.1− | 2004 10 14 | 691 | 0.1+ | 0.1− | | | | | | |

**2004 TY$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 178.32819 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23146168 | $\omega$ | 183.35048 | | +0.99938904 | +0.03309066 |
| $a$ | 2.6271406 | $\Omega$ | 174.71376 | | −0.02855239 | +0.95862257 |
| $e$ | 0.2690103 | $i$ | 7.01380 | | −0.02015728 | +0.28275039 |
| $P$ | 4.26 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 26 | 691 | 0.1+ | 1.3+ | 2004 10 07 | 704 | 0.5+ | 0.5+ | 2004 11 03 | 699 | 0.2+ | 0.6+ | | |
| 2003 05 26 | 691 | 0.0 | 0.4+ | 2004 10 07 | 704 | 0.6+ | 0.1+ | 2004 11 03 | 699 | 0.2+ | 0.3− | | |
| 2003 05 26 | 691 | 0.4+ | 0.3+ | 2004 10 07 | 704 | 0.2+ | 0.2+ | 2004 11 03 | 699 | 1.6+ | 0.1+ | | |
| 2004 08 13 | 704 | 0.4− | 0.7+ | 2004 10 07 | 704 | 0.4− | 0.2+ | 2004 11 03 | 699 | 0.2− | 0.4− | | |
| 2004 08 13 | 704 | 0.2− | 0.5+ | 2004 10 09 | 704 | 0.3− | 0.3+ | 2004 11 06 | 704 | 0.0 | 0.6+ | | |
| 2004 08 13 | 704 | 0.6+ | 0.1− | 2004 10 09 | 704 | 0.4+ | 0.3+ | 2004 11 06 | 704 | 0.3− | 0.4+ | | |
| 2004 08 13 | 704 | 0.3− | 0.5− | 2004 10 09 | 704 | 0.2+ | 0.3+ | 2004 11 06 | 704 | 0.1+ | 0.0 | | |
| 2004 09 13 | 644 | 0.0 | 0.1+ | 2004 10 09 | 704 | 0.3+ | 0.4+ | 2004 11 06 | 704 | 0.1+ | 0.0 | | |
| 2004 09 13 | 644 | 0.1+ | 0.1+ | 2004 10 09 | 704 | 0.2+ | 0.2+ | 2004 11 12 | 704 | 0.0 | 0.2+ | | |
| 2004 09 13 | 644 | 0.0 | 0.2+ | 2004 10 18 | 704 | 0.1− | 0.4+ | 2004 11 12 | 704 | 0.8− | 0.3− | | |
| 2004 09 22 | 704 | 0.5− | 0.1+ | 2004 10 18 | 704 | 0.2− | 0.1− | 2004 11 12 | 704 | 0.2− | 0.7− | | |
| 2004 09 22 | 704 | 0.5− | 0.0 | 2004 10 18 | 704 | 1.4− | 0.1− | 2004 12 04 | 699 | 2.0+ | 0.7+ | | |
| 2004 09 22 | 704 | 1.2− | 0.3+ | 2004 10 18 | 704 | 0.5− | 0.5+ | 2004 12 04 | 699 | 0.1− | 1.2+ | | |
| 2004 09 22 | 704 | 0.9− | 0.3+ | 2004 10 23 | 683 | 1.2+ | 0.3− | 2004 12 04 | 699 | 1.7− | 0.1+ | | |
| 2004 09 22 | 704 | 1.1− | 0.4− | 2004 10 23 | 683 | 0.1+ | 0.0 | 2004 12 04 | 699 | 0.2+ | 0.6+ | | |
| 2004 10 04 | 699 | 0.4− | 0.6− | 2004 10 23 | 683 | 0.8+ | 0.1+ | 2006 02 02 | 691 | 0.1− | 0.6+ | | |
| 2004 10 04 | 699 | 0.5− | 1.4− | 2004 10 31 | 699 | 0.8+ | 0.5− | 2006 02 02 | 691 | 0.2+ | 0.3+ | | |
| 2004 10 04 | 699 | 0.3+ | 0.8+ | 2004 10 31 | 699 | 0.9− | 0.0 | 2006 02 02 | 691 | 0.1+ | 0.0 | | |
| 2004 10 04 | 699 | 0.6+ | 0.7+ | 2004 10 31 | 699 | (1.0+ | 2.0+) | | | | | | |
| 2004 10 07 | 704 | 0.8− | 0.7+ | 2004 10 31 | 699 | 0.5+ | 0.6+ | | | | | | |

**2004 TU$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.58038 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22977281 | $\omega$ | 203.87173 | | +0.59828980 | | +0.79796229 |
| $a$ | 2.6399982 | $\Omega$ | 102.95470 | | −0.72260429 | | +0.57659319 |
| $e$ | 0.0774458 | $i$ | 4.28635 | | −0.34625475 | | +0.17548924 |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 18 | 691 | 0.0 | 0.2+ | 2002 02 20 | 704 | 0.2− | 0.3+ | 2004 10 09 | 704 | 0.8− | 0.3+ |
| 1999 06 18 | 691 | 0.2+ | 0.5+ | 2002 02 20 | 704 | 0.3− | 0.3+ | 2004 10 09 | 704 | 0.3+ | 1.3+ |
| 1999 06 18 | 691 | 0.4− | 0.6+ | 2002 02 20 | 704 | 0.3+ | 0.9+ | 2006 01 08 | 691 | 0.2+ | 0.4+ |
| 2000 11 24 | 699 | 0.9+ | 0.9+ | 2004 09 17 | 704 | 0.8− | 0.7+ | 2006 01 08 | 691 | 0.1+ | 0.4+ |
| 2000 11 24 | 699 | 0.6− | 0.3+ | 2004 09 17 | 704 | 0.1+ | 1.4+ | 2006 01 08 | 691 | 0.2+ | 0.1+ |
| 2000 11 24 | 699 | 1.2− | 1.1+ | 2004 09 17 | 704 | 1.4− | 0.9+ | 2006 01 26 | G96 | 0.1+ | 0.2− |
| 2000 11 24 | 699 | 0.9− | 0.6+ | 2004 09 17 | 704 | 0.3+ | 0.1+ | 2006 01 26 | G96 | 0.2− | 0.1− |
| 2000 12 01 | 691 | 0.2+ | 0.5− | 2004 10 07 | 699 | 0.4+ | 0.1+ | 2006 01 26 | G96 | 0.1+ | 0.1− |
| 2000 12 01 | 691 | 0.3+ | 0.3− | 2004 10 07 | 699 | 1.0+ | 0.3− | 2006 01 26 | G96 | 0.3− | 0.0 |
| 2000 12 01 | 691 | 0.1+ | 0.3− | 2004 10 07 | 699 | 0.8+ | 0.3− | 2006 02 07 | G96 | 0.0 | 0.2− |
| 2002 02 10 | 704 | 0.2+ | 0.2− | 2004 10 07 | 699 | (2.7+ | 0.5−) | 2006 02 07 | G96 | 0.1+ | 0.3− |
| 2002 02 10 | 704 | 0.3+ | 0.6+ | 2004 10 07 | 704 | 0.3− | 0.0 | 2006 02 07 | G96 | 0.4− | 0.1+ |
| 2002 02 10 | 704 | 0.6+ | 0.2+ | 2004 10 07 | 704 | 0.0 | 0.5+ | 2006 02 07 | G96 | 0.1+ | 0.2− |
| 2002 02 10 | 704 | 0.0 | 0.2+ | 2004 10 07 | 704 | 0.1− | 0.5− | 2006 03 04 | G96 | 0.3− | 0.1+ |
| 2002 02 10 | 704 | 0.3+ | 1.1+ | 2004 10 09 | 704 | 0.1+ | 0.4+ | 2006 03 04 | G96 | 0.5− | 0.1+ |
| 2002 02 20 | 704 | 0.3+ | 0.4+ | 2004 10 09 | 704 | 1.2− | 0.0 | 2006 03 04 | G96 | 0.1− | 0.4+ |
| 2002 02 20 | 704 | 0.5+ | 0.0 | 2004 10 09 | 704 | 0.3+ | 0.3+ | 2006 03 04 | G96 | 0.4− | 0.1− |

**2004 TQ$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.34870 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23697293 | $\omega$ | 211.44587 | | +0.50210648 | | −0.86449871 |
| $a$ | 2.5862483 | $\Omega$ | 208.43395 | | +0.80314911 | | +0.47602435 |
| $e$ | 0.1991721 | $i$ | 2.77411 | | +0.32068770 | | +0.16137778 |
| $P$ | 4.16 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 691 | 0.1+ | 0.5− | 2001 01 22 | 691 | 0.1− | 0.1− | 2004 10 20 | 704 | 0.1+ | 0.5+ |
| 2000 11 03 | 691 | 0.5− | 0.1+ | 2001 01 22 | 691 | 0.5− | 0.3− | 2004 10 20 | 704 | 0.4+ | 1.2+ |
| 2000 11 03 | 691 | 0.1+ | 0.5− | 2001 01 22 | 691 | 0.1+ | 0.2+ | 2004 10 20 | 704 | 0.7+ | 0.7+ |
| 2000 11 21 | 704 | 0.6+ | 0.0 | 2004 10 09 | 704 | 0.4− | 1.0+ | 2004 10 20 | 704 | 0.2− | 1.1+ |
| 2000 11 21 | 704 | 0.4+ | 0.4− | 2004 10 09 | 704 | 0.2+ | 0.0 | 2006 01 07 | 291 | 0.2+ | 0.8+ |
| 2000 11 21 | 704 | 0.3− | 0.2+ | 2004 10 09 | 704 | 0.9+ | 0.9+ | 2006 01 07 | 291 | 0.3+ | 1.5+ |
| 2000 12 06 | 691 | 0.2− | 0.1− | 2004 10 11 | 691 | 0.2− | 0.1+ | 2006 01 07 | 291 | 0.0 | 1.0+ |
| 2000 12 06 | 691 | 0.0 | 0.1− | 2004 10 11 | 691 | 0.0 | 0.3+ | 2006 04 02 | G96 | 0.2+ | 0.2− |
| 2000 12 06 | 691 | 0.3− | 0.1− | 2004 10 11 | 691 | 0.3− | 0.3+ | 2006 04 02 | G96 | 1.0+ | 0.6− |
| 2000 12 16 | 691 | 0.3+ | 0.3− | 2004 10 11 | 691 | 0.2− | 0.3+ | 2006 04 02 | G96 | 0.6+ | 0.1− |
| 2000 12 16 | 691 | 0.6+ | 0.2− | 2004 10 11 | 691 | 0.7− | 0.3+ | 2006 04 02 | G96 | 0.1− | 0.4+ |
| 2000 12 16 | 691 | 0.4+ | 0.3− | 2004 10 11 | 691 | 0.1+ | 0.5+ | | | | |

**2004 TE$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.99627 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28029770 | $\omega$ | 272.25720 | | +0.91976111 | | +0.38885596 |
| $a$ | 2.3123648 | $\Omega$ | 64.86330 | | −0.33268018 | | +0.84435154 |
| $e$ | 0.2700567 | $i$ | 3.36912 | | −0.20823878 | | +0.36859398 |
| $P$ | 3.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 691 | 0.3+ | 0.1+ | 2004 10 20 | 704 | 1.0− | 0.2+ | 2004 11 18 | 704 | 0.4− | 0.1+ |
| 2003 04 09 | 691 | 0.1− | 0.2+ | 2004 10 20 | 704 | 0.8− | 0.8+ | 2004 11 19 | 703 | 0.1− | 0.4− |
| 2003 04 09 | 691 | 0.1− | 0.0 | 2004 10 20 | 704 | 0.3− | 0.9+ | 2004 11 19 | 703 | 0.1− | 0.5− |
| 2004 10 07 | 699 | 0.2+ | 0.0 | 2004 10 20 | 704 | 0.4− | 0.5+ | 2004 11 19 | 703 | 0.4− | 0.5+ |
| 2004 10 07 | 699 | 1.1− | 0.1+ | 2004 10 20 | 704 | 0.6+ | 0.8+ | 2004 11 19 | 703 | 0.6− | 0.5− |
| 2004 10 07 | 699 | 0.5− | 0.2− | 2004 10 23 | 691 | 0.2− | 0.1− | 2004 12 09 | 703 | 0.6− | 1.4+ |
| 2004 10 07 | 699 | 0.1+ | 0.3+ | 2004 10 23 | 691 | 0.1− | 0.0 | 2004 12 09 | 703 | 1.0+ | 0.1+ |
| 2004 10 09 | 704 | 1.2+ | 0.2+ | 2004 10 23 | 691 | 0.2− | 0.0 | 2004 12 09 | 703 | 0.4− | 0.7+ |
| 2004 10 09 | 704 | 1.0+ | 1.0+ | 2004 11 03 | 691 | 0.2− | 0.0 | 2004 12 09 | 703 | 0.6− | 1.2− |
| 2004 10 09 | 704 | 1.1+ | 0.4+ | 2004 11 03 | 691 | 0.2− | 0.1+ | 2004 12 13 | 691 | 0.4+ | 0.2− |
| 2004 10 09 | 704 | 0.4+ | 0.1+ | 2004 11 03 | 691 | 0.1− | 0.1+ | 2004 12 13 | 691 | 0.2+ | 0.2− |
| 2004 10 09 | 704 | 0.2+ | 0.1− | 2004 11 18 | 704 | 0.6+ | 0.1+ | 2004 12 13 | 691 | 0.2+ | 0.1− |
| 2004 10 10 | 691 | 0.8+ | 0.5− | 2004 11 18 | 704 | 0.4+ | 0.2+ | 2006 04 26 | 807 | 0.1+ | 0.1− |
| 2004 10 10 | 691 | 0.1− | 0.1− | 2004 11 18 | 704 | 1.0+ | 0.6+ | 2006 04 26 | 807 | 0.0 | 0.0 |
| 2004 10 10 | 691 | 0.3− | 0.3− | 2004 11 18 | 704 | 0.4− | 0.4− | | | | |

**2004 TX$_{178}$ = 2005 YD$_{63}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.82065 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22896178 | $\omega$ | 224.72780 | | +0.04032486 | | +0.99909701 |
| $a$ | 2.6462287 | $\Omega$ | 47.58817 | | −0.91158755 | | +0.04226985 |
| $e$ | 0.0613467 | $i$ | 1.03850 | | −0.40912351 | | +0.00429156 |
| $P$ | 4.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 07 | 691 | 0.4− | 0.2+ | 2004 10 15 | 691 | 0.1+ | 0.3− | 2005 12 28 | G96 | 0.1− | 0.0 |
| 2004 10 07 | 691 | 0.4− | 0.2+ | 2005 12 24 | 691 | 0.2+ | 0.1+ | 2005 12 28 | 691 | 0.1+ | 0.1− |
| 2004 10 07 | 691 | 0.4− | 0.0 | 2005 12 24 | 691 | 0.5+ | 0.0 | 2005 12 28 | 691 | 0.0 | 0.2+ |
| 2004 10 11 | 691 | 0.4+ | 0.2− | 2005 12 24 | 691 | 0.3+ | 0.2+ | 2006 01 05 | 691 | 0.1+ | 0.1+ |
| 2004 10 11 | 691 | 0.4+ | 0.2+ | 2005 12 28 | G96 | 0.4− | 0.4− | 2006 01 05 | 691 | 0.0 | 0.1+ |
| 2004 10 11 | 691 | 0.0 | 0.1− | 2005 12 28 | G96 | 0.1− | 0.2− | 2006 01 05 | 691 | 0.1− | 0.1+ |
| 2004 10 15 | 691 | 0.2− | 0.1+ | 2005 12 28 | G96 | 0.4− | 0.3− | | | | |
| 2004 10 15 | 691 | 0.5+ | 0.1− | 2005 12 28 | 691 | 0.0 | 0.0 | | | | |

**2004 TX$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.41376 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26163005 | $\omega$ | 132.18790 | | +0.49249654 | | +0.87027366 |
| $a$ | 2.4210902 | $\Omega$ | 167.30903 | | −0.80937064 | | +0.46154533 |
| $e$ | 0.2345289 | $i$ | 2.19689 | | −0.31994739 | | +0.17204555 |
| $P$ | 3.77 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 699 | 0.2− | 0.6+ | 2003 03 13 | 291 | 0.2+ | 0.7+ | 2004 09 22 | 683 | (1.8+ | 0.1+) |
| 2000 07 29 | 699 | 0.4− | 0.5− | 2003 03 13 | 291 | 0.4+ | 0.5+ | 2004 10 07 | 691 | 0.4− | 0.3+ |
| 2000 07 29 | 699 | 0.0 | 0.8− | 2003 03 30 | 695 | 0.4+ | 0.0 | 2004 10 07 | 691 | 0.1− | 0.1+ |
| 2000 07 29 | 699 | (6.5+ | 2.8−) | 2003 03 30 | 695 | 0.0 | 0.3+ | 2004 10 07 | 691 | 0.3− | 0.2+ |
| 2000 08 01 | 704 | 0.1− | 1.7+ | 2004 09 09 | 699 | (1.6+ | 2.2+) | 2004 10 15 | 691 | 0.0 | 0.3+ |
| 2000 08 01 | 704 | 0.4− | 0.4+ | 2004 09 09 | 699 | 0.8− | 0.6− | 2004 10 15 | 691 | 0.2− | 0.2+ |
| 2000 08 01 | 704 | 0.3+ | 0.0 | 2004 09 09 | 699 | 0.5+ | 0.2− | 2004 10 15 | 691 | 0.1+ | 0.1+ |
| 2000 08 26 | 807 | 0.0 | 0.3+ | 2004 09 09 | 699 | 0.7+ | 0.7+ | 2004 10 18 | 704 | 1.3+ | 0.3− |
| 2000 08 26 | 807 | 0.2+ | 0.4+ | 2004 09 22 | 683 | (2.8− | 0.1−) | 2004 10 18 | 704 | 0.4+ | 0.5+ |
| 2003 03 13 | 291 | 0.1− | 0.5+ | 2004 09 22 | 683 | 0.3+ | 0.3− | 2004 10 18 | 704 | (0.2− | 1.6+) |

**2004 TA$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.75703 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23603602 | $\omega$ | 69.79004 | | +0.03984356 | | −0.99627622 |
| $a$ | 2.5930876 | $\Omega$ | 18.43140 | | +0.80252126 | | −0.01368168 |
| $e$ | 0.2038853 | $i$ | 13.99479 | | +0.59529162 | | +0.08512639 |
| $P$ | 4.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 1.6+ | 0.1+ | 2002 04 14 | 704 | 0.8− | 0.8+ | 2004 10 11 | 691 | 0.5− | 0.3+ |
| 2000 10 25 | 704 | 0.4+ | 0.1− | 2002 04 14 | 704 | 0.8+ | 1.2+ | 2004 10 11 | 691 | 0.5− | 0.3+ |
| 2000 10 25 | 704 | 0.2− | 0.3− | 2002 04 14 | 704 | 0.4+ | 2.0+ | 2006 03 05 | 704 | 0.5+ | 0.2− |
| 2000 10 25 | 704 | 1.7− | 0.7+ | 2004 09 14 | 699 | 1.6+ | 1.5+ | 2006 03 05 | 704 | 2.0+ | 0.9+ |
| 2002 04 02 | 691 | 0.3+ | 0.3− | 2004 09 14 | 699 | 0.6+ | 0.2+ | 2006 03 05 | 704 | 3.0+ | 1.9+ |
| 2002 04 02 | 691 | 0.0 | 0.1− | 2004 09 14 | 699 | 0.0 | 0.9+ | 2006 03 05 | 704 | 0.0 | 1.8+ |
| 2002 04 02 | 691 | 0.4+ | 0.1− | 2004 09 14 | 699 | 0.8− | 0.4+ | 2006 03 05 | 704 | 0.7+ | 0.4+ |
| 2002 04 08 | 691 | 0.2+ | 0.4+ | 2004 10 07 | 691 | 0.5− | 0.4+ | 2006 03 23 | 703 | 1.0− | 0.8− |
| 2002 04 08 | 691 | 0.2+ | 0.5+ | 2004 10 07 | 691 | 0.4− | 0.6+ | 2006 03 23 | 703 | 0.9− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 691 | 0.2+ | 0.6+ | 2004 10 07 | 691 | 0.4− | 0.6+ | 2006 03 23 | 703 | 0.2+ | 0.7+ |
| 2002 04 14 | 704 | 0.2− | 0.7+ | 2004 10 11 | 691 | 0.4− | 0.2+ | 2006 03 23 | 703 | 0.4+ | 0.1− |

**2004 TR$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.11249 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18128696 | $\omega$ | 60.00606 | | +0.41611313 | −0.90926075 | |
| $a$ | 3.0918969 | $\Omega$ | 5.43188 | | +0.79484201 | +0.35850940 | |
| $e$ | 0.1329182 | $i$ | 5.90211 | | +0.44167412 | +0.21146135 | |
| $P$ | 5.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 691 | 0.1+ | 0.2+ | 2004 10 07 | 691 | 0.1− | 0.0 | 2004 10 20 | 704 | 0.9+ | 1.3+ |
| 2001 03 20 | 691 | 0.4+ | 0.0 | 2004 10 07 | 691 | 0.2− | 0.0 | 2004 11 10 | 691 | 0.1+ | 0.2− |
| 2001 03 20 | 691 | 0.0 | 0.6+ | 2004 10 11 | 691 | 0.1+ | 0.1+ | 2004 11 10 | 691 | 0.2+ | 0.1+ |
| 2004 09 10 | 691 | 0.1+ | 0.1+ | 2004 10 11 | 691 | 0.2− | 0.1− | 2004 11 10 | 691 | 0.2+ | 0.1+ |
| 2004 09 10 | 691 | 0.2− | 0.1+ | 2004 10 11 | 691 | 0.2− | 0.1− | 2006 02 02 | 703 | 0.3+ | 1.2− |
| 2004 09 10 | 691 | 0.1− | 0.3+ | 2004 10 15 | 691 | 0.1+ | 0.1+ | 2006 02 02 | 703 | 0.7+ | 0.7+ |
| 2004 09 22 | 704 | 1.2− | 0.5+ | 2004 10 15 | 691 | 0.4+ | 0.0 | 2006 02 02 | 703 | 0.9− | 0.5+ |
| 2004 09 22 | 704 | 0.0 | 0.2− | 2004 10 15 | 691 | 0.4+ | 0.0 | 2006 02 02 | 703 | 0.5− | 1.2− |
| 2004 09 22 | 704 | 0.0 | 0.3+ | 2004 10 20 | 704 | 1.9− | 1.8− | | | | |
| 2004 10 07 | 691 | 0.0 | 0.1+ | 2004 10 20 | 704 | 0.5− | 0.2− | | | | |

**2004 TJ$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.64728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21816717 | $\omega$ | 191.75553 | | −0.25018406 | +0.96757488 | |
| $a$ | 2.7328122 | $\Omega$ | 63.76418 | | −0.88513644 | −0.21403348 | |
| $e$ | 0.0394692 | $i$ | 2.21954 | | −0.39235368 | −0.13412129 | |
| $P$ | 4.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 07 | 691 | 0.3− | 0.1− | 2004 10 15 | 691 | 0.0 | 0.0 | 2006 01 07 | G96 | 0.4− | 0.2− |
| 2004 10 07 | 691 | 0.3− | 0.0 | 2005 12 28 | G96 | 0.6− | 0.6− | 2006 01 07 | G96 | 0.9− | 0.6− |
| 2004 10 07 | 691 | 0.0 | 0.0 | 2005 12 28 | G96 | 0.1− | 0.1+ | 2006 01 07 | G96 | 0.4− | 1.0− |
| 2004 10 11 | 691 | 0.0 | 0.2+ | 2005 12 28 | G96 | 0.3− | 0.5− | 2006 01 07 | G96 | 0.9− | 0.1− |
| 2004 10 11 | 691 | 0.0 | 0.0 | 2005 12 28 | G96 | 0.4− | 0.3− | 2006 02 04 | 691 | 0.1− | 0.2− |
| 2004 10 11 | 691 | 0.3+ | 0.2+ | 2005 12 28 | 691 | 0.0 | 0.2+ | 2006 02 04 | 691 | 0.0 | 0.0 |
| 2004 10 15 | 691 | 0.0 | 0.2− | 2005 12 28 | 691 | 0.4+ | 0.1− | 2006 02 04 | 691 | 0.1+ | 0.3+ |
| 2004 10 15 | 691 | 0.2+ | 0.0 | 2005 12 28 | 691 | 0.6+ | 0.7+ | | | | |

**2004 TD$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.65102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22391051 | $\omega$ | 171.39577 | | −0.79801862 | +0.60174653 | |
| $a$ | 2.6858787 | $\Omega$ | 45.65229 | | −0.55558807 | −0.71363950 | |
| $e$ | 0.0301865 | $i$ | 2.61857 | | −0.23342704 | −0.35863600 | |
| $P$ | 4.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 704 | 0.4+ | 0.0 | 2004 10 11 | 691 | 0.1+ | 0.2− | 2006 01 28 | G96 | 0.3+ | 0.3− |
| 2002 02 12 | 704 | 0.2− | 0.1+ | 2004 10 11 | 691 | 0.2+ | 0.1− | 2006 01 28 | G96 | 0.1+ | 0.2− |
| 2002 02 12 | 704 | 0.0 | 0.6+ | 2005 12 28 | G96 | 0.1+ | 0.4+ | 2006 01 28 | G96 | 0.1+ | 0.4− |
| 2002 03 16 | 704 | 0.1+ | 0.7− | 2005 12 28 | G96 | 0.2+ | 0.1− | 2006 01 28 | G96 | 0.1− | 0.1+ |
| 2002 03 16 | 704 | 0.1+ | 0.8+ | 2005 12 28 | G96 | 0.1− | 0.1+ | 2006 02 07 | G96 | 0.3+ | 0.1− |
| 2002 03 16 | 704 | 0.1+ | 0.3+ | 2005 12 28 | G96 | 0.0 | 0.4+ | 2006 02 07 | G96 | 0.1+ | 0.2− |
| 2004 10 07 | 691 | 0.1− | 0.2− | 2006 01 18 | 703 | 0.7− | 0.8+ | 2006 02 07 | G96 | 0.1+ | 1.3− |
| 2004 10 07 | 691 | 0.1+ | 0.0 | 2006 01 18 | 703 | 0.3+ | 1.4− | 2006 02 07 | G96 | 0.1+ | 0.5− |
| 2004 10 07 | 691 | 0.6− | 0.7+ | 2006 01 18 | 703 | 1.1− | 0.3+ | | | | |
| 2004 10 11 | 691 | 0.2+ | 0.0 | 2006 01 18 | 703 | 0.4+ | 1.4+ | | | | |

**2004 TE$_{194}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.77483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22894594 | $\omega$ | 124.28666 | | −0.36536573 | −0.93074275 | |
| $a$ | 2.6463508 | $\Omega$ | 347.11766 | | +0.83037000 | −0.31858336 | |
| $e$ | 0.1762943 | $i$ | 3.86467 | | +0.42070600 | −0.17950645 | |
| $P$ | 4.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 07 | 691 | 0.1− | 0.0 | 2004 10 15 | 152 | (0.6− | 2.5+) | 2006 01 28 | G96 | 0.4− | 0.2− |
| 2004 10 07 | 691 | 0.2+ | 0.0 | 2004 10 15 | 152 | 0.2+ | 0.3− | 2006 02 25 | G96 | 0.1+ | 0.4− |
| 2004 10 07 | 691 | 0.3− | 0.1+ | 2004 10 15 | 152 | 1.8+ | 0.0 | 2006 02 25 | G96 | 0.3− | 0.2− |
| 2004 10 11 | 691 | 0.1− | 0.1− | 2004 10 15 | 691 | 0.0 | 0.0 | 2006 02 25 | G96 | 0.1− | 0.1− |
| 2004 10 11 | 691 | 0.0 | 0.2− | 2004 10 15 | 691 | 0.1− | 0.2− | 2006 02 25 | G96 | 0.1+ | 0.2− |
| 2004 10 11 | 691 | 0.4+ | 0.1+ | 2004 10 15 | 691 | 0.2− | 0.2− | 2006 02 25 | 691 | 0.2+ | 0.2+ |
| 2004 10 12 | 152 | 0.3+ | 1.1− | 2004 10 21 | 704 | 0.3+ | 1.4+ | 2006 02 25 | 691 | 0.3− | 0.3− |
| 2004 10 12 | 152 | 0.8− | 0.8− | 2004 10 21 | 704 | 0.0 | 1.4+ | 2006 02 25 | 691 | 0.3+ | 0.2− |
| 2004 10 12 | 152 | 0.1− | 0.7− | 2004 10 21 | 704 | 0.3− | 1.6+ | 2006 03 09 | 691 | 0.4+ | 0.2+ |
| 2004 10 13 | 152 | 0.4+ | 0.4+ | 2006 01 28 | G96 | 0.0 | 0.1+ | 2006 03 09 | 691 | 0.1− | 0.0 |
| 2004 10 13 | 152 | 1.7− | 1.1+ | 2006 01 28 | G96 | 0.0 | 0.5− | 2006 03 09 | 691 | 0.1− | 0.5+ |
| 2004 10 13 | 152 | 0.2+ | 0.2− | 2006 01 28 | G96 | 0.9− | 0.1− | | | | |

**2004 TN$_{198}$ = 2004 TZ$_{363}$**

Id. Minor Planet Center (d, *MPO* 77916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.16337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23740960 | $\omega$ | 271.55704 | | −0.23198667 | −0.97262642 | |
| $a$ | 2.5830761 | $\Omega$ | 191.88279 | | +0.91635944 | −0.21389743 | |
| $e$ | 0.1615495 | $i$ | 3.73617 | | +0.32629369 | −0.09080604 | |
| $P$ | 4.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 704 | 0.1+ | 0.9+ | 2002 04 22 | 644 | 0.1+ | 0.4+ | 2004 10 20 | 704 | 1.1− | 1.3+ |
| 2000 11 02 | 704 | 0.4− | 0.8+ | 2004 10 07 | 691 | 0.0 | 0.2+ | 2004 10 20 | 704 | 0.7− | 1.0+ |
| 2000 11 02 | 704 | 0.8− | 1.1+ | 2004 10 07 | 691 | 0.2− | 0.2+ | 2006 02 25 | G96 | 0.2− | 0.3+ |
| 2000 11 02 | 704 | 1.1+ | 1.6− | 2004 10 07 | 691 | 0.1− | 0.2+ | 2006 02 25 | G96 | 0.5− | 0.3+ |
| 2000 11 16 | 691 | 0.1+ | 0.3− | 2004 10 11 | 691 | 0.0 | 0.1+ | 2006 02 25 | G96 | 0.7− | 0.9+ |
| 2000 11 16 | 691 | 0.2+ | 0.4− | 2004 10 11 | 691 | 0.1− | 1.2+ | 2006 02 25 | G96 | 0.5− | 0.6+ |
| 2000 11 16 | 691 | 0.1− | 0.6− | 2004 10 11 | 691 | 0.1− | 0.1+ | 2006 03 23 | G96 | 0.1− | 0.1+ |
| 2002 04 04 | 691 | 0.3+ | 0.5+ | 2004 10 12 | 699 | 1.1− | 1.8+ | 2006 03 23 | G96 | 0.3+ | 0.1+ |
| 2002 04 04 | 691 | 0.2+ | 0.3+ | 2004 10 12 | 699 | 0.2− | 1.0+ | 2006 03 23 | G96 | 0.3+ | 0.4+ |
| 2002 04 04 | 691 | 0.2+ | 0.4+ | 2004 10 12 | 699 | 1.4+ | 0.1+ | 2006 03 23 | G96 | 0.1− | 0.3+ |
| 2002 04 09 | 644 | 0.0 | 0.5+ | 2004 10 12 | 699 | 1.3+ | 0.4+ | 2006 04 19 | G96 | 1.2+ | 0.4+ |
| 2002 04 09 | 644 | 0.1− | 0.6+ | 2004 10 15 | 691 | 0.0 | 0.2+ | 2006 04 19 | G96 | 0.3+ | 0.6+ |
| 2002 04 09 | 644 | 0.1− | 0.6+ | 2004 10 15 | 691 | 0.1− | 0.0 | 2006 04 19 | G96 | 0.6+ | 0.5+ |
| 2002 04 22 | 644 | 0.2− | 0.7+ | 2004 10 15 | 691 | 0.1− | 0.1+ | 2006 04 19 | G96 | 0.9+ | 0.5+ |
| 2002 04 22 | 644 | 0.0 | 0.4+ | 2004 10 20 | 704 | 1.2− | 2.1+ | | | | |

**2004 TM$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.14381 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20999146 | $\omega$ | 326.47852 | | +0.95612869 | +0.29229075 | |
| $a$ | 2.8032917 | $\Omega$ | 16.56001 | | −0.25140239 | +0.85303675 | |
| $e$ | 0.1190617 | $i$ | 3.94256 | | −0.15038204 | +0.43231288 | |
| $P$ | 4.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 691 | 0.8+ | 0.3+ | 2004 10 07 | 691 | 0.2+ | 0.1− | 2006 01 23 | 691 | 0.1− | 0.1− |
| 2002 03 20 | 691 | 0.0 | 0.2+ | 2004 10 07 | 691 | 0.1+ | 0.0 | 2006 01 23 | 691 | 0.3− | 0.3− |
| 2002 03 20 | 691 | 0.2+ | 0.2− | 2004 10 07 | 691 | 0.0 | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.0 |
| 2002 04 09 | 691 | 0.3+ | 0.2+ | 2004 10 11 | 691 | 0.1+ | 0.1+ | 2006 02 04 | 691 | 0.1− | 0.2+ |
| 2002 04 09 | 691 | 0.4− | 0.4+ | 2004 10 11 | 691 | 0.0 | 0.2+ | 2006 02 04 | 691 | 0.2+ | 0.2+ |
| 2002 04 09 | 691 | 0.2− | 0.2+ | 2004 10 11 | 691 | 0.2+ | 0.3+ | 2006 02 04 | 691 | 0.1+ | 0.1+ |
| 2002 04 19 | 291 | 0.0 | 0.1+ | 2004 11 11 | 691 | 0.3− | 0.2+ | 2006 03 05 | 691 | 0.4+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 19 | 291 | 0.1− | 0.1+ | 2004 11 11 | 691 | 0.2− | 0.3+ | 2006 03 05 | 691 | 0.4− | 0.5− |
| 2002 04 19 | 291 | 0.2+ | 0.1− | 2004 11 11 | 691 | 0.2− | 0.0 | 2006 03 05 | 691 | 0.2− | 0.4− |

**2004 TH$_{209}$ = 2006 AZ$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.15607 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27117008 | $\omega$ | 291.72078 | | +0.43954928 | | +0.89821786 |
| $a$ | 2.3639677 | $\Omega$ | 4.35478 | | −0.81888699 | | +0.40120959 |
| $e$ | 0.1612302 | $i$ | 0.79503 | | −0.36908066 | | +0.17954260 |
| $P$ | 3.63 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 291 | 0.0 | 0.5+ | 2003 04 29 | 691 | 1.1+ | 0.5+ | 2004 10 12 | 691 | 0.4− | 0.5+ |
| 2003 03 10 | 291 | 0.2+ | 0.7+ | 2003 04 29 | 691 | 1.1+ | 0.7+ | 2006 01 07 | G96 | 0.2− | 0.3− |
| 2003 03 10 | 291 | 0.1+ | 0.4+ | 2004 10 08 | 691 | 0.2+ | 0.6+ | 2006 01 07 | G96 | 0.0 | 0.4− |
| 2003 03 24 | 691 | 0.1− | 0.3+ | 2004 10 08 | 691 | 0.0 | 0.6+ | 2006 01 07 | G96 | 0.0 | 1.0− |
| 2003 03 24 | 691 | 0.1− | 0.1+ | 2004 10 08 | 691 | 0.0 | 0.3+ | 2006 01 07 | G96 | 0.4− | 0.1+ |
| 2003 03 24 | 691 | 0.2+ | 0.1− | 2004 10 09 | 704 | 1.1− | 0.4+ | 2006 01 08 | 691 | 0.0 | 0.3− |
| 2003 04 07 | 691 | (0.8− | 2.2+) | 2004 10 09 | 704 | 1.0− | 1.2+ | 2006 01 08 | 691 | 0.1+ | 0.2+ |
| 2003 04 07 | 691 | 0.2− | 1.9+ | 2004 10 09 | 704 | 0.7− | 0.8+ | 2006 01 08 | 691 | 0.1− | 0.0 |
| 2003 04 07 | 691 | (0.3− | 2.4+) | 2004 10 12 | 691 | 0.5− | 1.0+ | | | | |
| 2003 04 29 | 691 | (2.3− | 1.4−) | 2004 10 12 | 691 | 0.4− | 0.7+ | | | | |

**2004 TB$_{231}$ = 2005 YU$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.43382 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19020632 | $\omega$ | 253.60440 | | −0.90828825 | | +0.41617679 |
| $a$ | 2.9944663 | $\Omega$ | 310.96772 | | −0.35911080 | | −0.82779880 |
| $e$ | 0.0756569 | $i$ | 3.22939 | | −0.21459705 | | −0.37622603 |
| $P$ | 5.18 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 25 | 691 | 0.1− | 0.0 | 2005 12 24 | 691 | 0.3+ | 0.0 | 2006 01 04 | G96 | 0.3+ | 0.5− |
| 2001 01 25 | 691 | 0.1+ | 0.1+ | 2005 12 24 | 691 | 0.1+ | 0.1− | 2006 01 04 | G96 | 0.1− | 0.3− |
| 2001 01 25 | 691 | 0.1− | 0.4− | 2005 12 25 | G96 | (1.6− | 0.7−) | 2006 01 04 | G96 | 0.0 | 0.2− |
| 2004 10 08 | 691 | 0.2+ | 0.3− | 2005 12 25 | G96 | 0.1− | 0.5− | 2006 01 04 | 691 | 0.3+ | 0.4+ |
| 2004 10 08 | 691 | 0.3+ | 0.2+ | 2005 12 25 | G96 | 0.6− | 0.1+ | 2006 01 04 | 691 | 0.5− | 0.3− |
| 2004 10 08 | 691 | 0.3+ | 0.2− | 2005 12 25 | G96 | 0.4− | 0.4− | 2006 01 04 | 691 | 0.0 | 0.1− |
| 2004 10 12 | 691 | 0.2− | 0.3+ | 2005 12 28 | 691 | 0.1+ | 0.1− | 2006 01 05 | 691 | 0.0 | 0.1− |
| 2004 10 12 | 691 | 0.1+ | 0.3− | 2005 12 28 | 691 | 0.2+ | 0.1− | 2006 01 05 | 691 | 0.1− | 0.2+ |
| 2004 10 12 | 691 | 0.2− | 0.2− | 2005 12 28 | 691 | 0.1+ | 0.1+ | 2006 01 05 | 691 | 0.0 | 0.2+ |
| 2004 11 05 | 291 | 0.4− | 0.2+ | 2005 12 30 | 691 | 0.1+ | 0.1+ | 2006 01 10 | G96 | 0.8− | 0.6+ |
| 2004 11 05 | 291 | 0.3+ | 0.0 | 2005 12 30 | 691 | 0.1− | 0.0 | 2006 01 10 | G96 | 0.6− | 0.9+ |
| 2004 11 05 | 291 | 0.5− | 0.2+ | 2005 12 30 | 691 | 0.2+ | 0.0 | 2006 01 10 | G96 | (1.0− | 1.6−) |
| 2005 12 24 | 691 | 0.2+ | 0.1+ | 2006 01 04 | G96 | 0.4− | 0.5− | | | | |

**2004 TR$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.22328 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28699138 | $\omega$ | 226.64082 | | +0.09829227 | | +0.99400022 |
| $a$ | 2.2762685 | $\Omega$ | 49.06387 | | −0.89368678 | | +0.10937803 |
| $e$ | 0.1665077 | $i$ | 3.64155 | | −0.43779283 | | −0.00010773 |
| $P$ | 3.43 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 691 | 0.1+ | 0.3+ | 2003 04 25 | 691 | 0.2+ | 0.5− | 2004 10 08 | 691 | 0.4+ | 0.0 |
| 2003 03 27 | 691 | 0.4+ | 0.0 | 2003 04 25 | 691 | 0.0 | 0.5− | 2004 10 12 | 691 | 0.3− | 0.2− |
| 2003 03 27 | 691 | 0.0 | 0.0 | 2003 05 05 | 691 | 0.4+ | 0.3+ | 2004 10 12 | 691 | 0.1+ | 0.1+ |
| 2003 04 09 | 691 | 0.4− | 0.1+ | 2003 05 05 | 691 | 0.0 | 0.3+ | 2004 10 12 | 691 | 0.3− | 0.0 |
| 2003 04 09 | 691 | 0.4− | 0.1− | 2003 05 05 | 691 | 0.2+ | 0.6+ | 2004 10 15 | 691 | 0.2− | 0.0 |
| 2003 04 09 | 691 | 0.3− | 0.0 | 2004 10 08 | 691 | 0.3+ | 0.2− | 2004 10 15 | 691 | 0.1− | 0.2+ |
| 2003 04 25 | 691 | 0.1+ | 0.3− | 2004 10 08 | 691 | 0.2+ | 0.1− | 2004 10 15 | 691 | 0.2− | 0.2+ |

**2004 TC$_{239}$ = 2004 TV$_{364}$**

Id. Minor Planet Center (d, *MPO* 87832)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.09063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20602220 | $\omega$ | 150.43690 | | +0.90156050 | | −0.43234484 |
| $a$ | 2.8391829 | $\Omega$ | 235.18854 | | +0.39294634 | | +0.83402980 |
| $e$ | 0.0802593 | $i$ | 1.13953 | | +0.18105757 | | +0.34274222 |
| $P$ | 4.78 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 09 | 691 | 0.2+ | 0.3− | 2004 10 15 | G96 | 0.0 | 0.3− | 2006 02 01 | 691 | 0.1+ | 0.2− |
| 2004 10 09 | 691 | 0.0 | 0.2+ | 2004 10 15 | G96 | 0.2− | 0.5− | 2006 02 07 | G96 | 0.1− | 0.9− |
| 2004 10 09 | 691 | 0.1− | 0.1+ | 2006 01 05 | G96 | 0.6− | 0.2− | 2006 02 07 | G96 | 0.3− | 0.5− |
| 2004 10 12 | 691 | 0.1+ | 0.2+ | 2006 01 05 | G96 | 0.4− | 0.3− | 2006 02 07 | G96 | 0.1+ | 1.0− |
| 2004 10 12 | 691 | 0.1− | 0.1+ | 2006 01 05 | G96 | 0.3+ | 0.0 | 2006 02 07 | G96 | 0.2− | 0.5− |
| 2004 10 12 | 691 | 0.0 | 0.1+ | 2006 01 05 | G96 | 0.0 | 0.6− | 2006 02 24 | 691 | 0.3+ | 0.2+ |
| 2004 10 15 | G96 | 0.2+ | 0.2− | 2006 02 01 | 691 | 0.1+ | 0.2+ | 2006 02 24 | 691 | 0.1− | 0.5+ |
| 2004 10 15 | G96 | 0.2− | 0.2− | 2006 02 01 | 691 | 0.0 | 0.3+ | 2006 02 24 | 691 | 0.1− | 0.0 |

**2004 TQ$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.65782 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16998379 | $\omega$ | 98.62241 | | +0.49735363 | | +0.86542572 |
| $a$ | 3.2274861 | $\Omega$ | 201.53261 | | −0.84670216 | | +0.46898403 |
| $e$ | 0.0599672 | $i$ | 9.51051 | | −0.18903654 | | +0.17633011 |
| $P$ | 5.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 691 | 0.2+ | 0.0 | 2002 04 19 | 691 | 0.3+ | 0.2− | 2004 10 09 | 691 | 0.1− | 0.1+ |
| 2002 04 04 | 691 | 0.1− | 0.4+ | 2002 04 19 | 691 | 0.2+ | 0.2+ | 2004 10 09 | 691 | 0.5− | 0.1− |
| 2002 04 04 | 691 | 0.6− | 0.1+ | 2002 04 19 | 691 | 0.1− | 0.2− | 2004 10 09 | 691 | 0.1− | 0.2+ |
| 2002 04 09 | 644 | 0.3+ | 0.3+ | 2004 09 24 | 291 | 0.2+ | 0.2− | 2004 10 13 | 691 | 0.1− | 0.1+ |
| 2002 04 09 | 644 | 0.0 | 0.1− | 2004 09 24 | 291 | 0.3+ | 0.0 | 2004 10 13 | 691 | 0.1− | 0.0 |
| 2002 04 09 | 644 | 0.1+ | 0.3− | 2004 09 24 | 291 | 0.6+ | 0.1− | 2004 10 13 | 691 | 0.3− | 0.2+ |

**2004 TS$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.74986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25718198 | $\omega$ | 238.27787 | | +0.51167656 | | −0.85917609 |
| $a$ | 2.4489262 | $\Omega$ | 180.95262 | | +0.82161830 | | +0.48994756 |
| $e$ | 0.1053532 | $i$ | 6.50033 | | +0.25125778 | | +0.14753928 |
| $P$ | 3.83 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 09 | 691 | 0.4+ | 0.4+ | 2004 10 13 | 691 | 0.2− | 0.5− | 2006 03 09 | 691 | 0.5− | 0.1− |
| 2004 10 09 | 691 | 0.4+ | 0.3+ | 2006 02 25 | G96 | 0.4− | 0.6− | 2006 03 09 | 691 | 0.2+ | 0.0 |
| 2004 10 09 | 691 | 0.3+ | 0.3+ | 2006 02 25 | G96 | 0.2+ | 0.4− | 2006 03 09 | 691 | 0.4+ | 0.3+ |
| 2004 10 09 | 704 | 0.6− | 1.1+ | 2006 02 25 | G96 | 0.1+ | 0.5− | 2006 04 21 | G96 | 0.1+ | 0.3+ |
| 2004 10 09 | 704 | 0.4− | 0.6− | 2006 02 25 | G96 | 0.2+ | 0.4− | 2006 04 21 | G96 | 0.1− | 0.3− |
| 2004 10 09 | 704 | 0.0 | 0.3+ | 2006 03 05 | 691 | 0.2+ | 0.0 | 2006 04 21 | G96 | 0.3+ | 0.1− |
| 2004 10 13 | 691 | 0.2− | 0.4− | 2006 03 05 | 691 | 0.4− | 0.2+ | 2006 04 21 | G96 | 0.1− | 0.7− |
| 2004 10 13 | 691 | 0.4− | 0.2− | 2006 03 05 | 691 | 0.0 | 0.2+ | | | | |

**2004 TH$_{263}$ = 2006 DF$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.14967 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23034292 | $\omega$ | 163.92307 | | −0.98295809 | | +0.15976233 |
| $a$ | 2.6356403 | $\Omega$ | 25.80606 | | −0.18310268 | | −0.80693416 |
| $e$ | 0.1141983 | $i$ | 12.05743 | | −0.01633394 | | −0.56862400 |
| $P$ | 4.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 699 | 0.7− | 0.2+ | 2002 04 14 | 644 | 1.0+ | 1.2+ | 2006 02 27 | 703 | 1.1+ | 0.0 |
| 2002 03 10 | 699 | 0.9− | 0.2− | 2004 10 09 | 691 | 0.1− | 0.2+ | 2006 02 27 | 703 | 0.8− | 1.1− |
| 2002 03 10 | 699 | 0.4− | 0.8+ | 2004 10 09 | 691 | 0.1+ | 0.1− | 2006 02 27 | 703 | 0.6+ | 0.2+ |
| 2002 03 10 | 699 | 0.2+ | 0.3+ | 2004 10 09 | 691 | 0.6− | 0.2+ | 2006 02 27 | 703 | 0.6+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 19 | 699 | 2.8+ | 0.6+ | 2004 10 09 | 691 | 0.3+ | 0.2+ | 2006 03 06 | 703 | 1.3− | 1.7+ |
| 2002 03 19 | 699 | 0.2+ | 0.7− | 2004 10 09 | 691 | 0.4− | 0.3+ | 2006 03 06 | 703 | 1.0− | 1.4− |
| 2002 03 19 | 699 | 1.1+ | 0.2− | 2004 10 09 | 691 | 0.2− | 0.1+ | 2006 03 06 | 703 | 1.0− | 1.6− |
| 2002 03 19 | 699 | 0.3− | 1.0+ | 2004 10 13 | 691 | 0.1+ | 0.1+ | 2006 03 06 | 703 | 0.4+ | 0.3− |
| 2002 04 14 | 644 | 0.0 | 1.0+ | 2004 10 13 | 691 | 0.1+ | 0.0 | | | | |
| 2002 04 14 | 644 | 0.7+ | 1.3+ | 2004 10 13 | 691 | 0.0 | 0.1+ | | | | |

**2004 TH$_{267}$ = 2004 VJ$_{112}$ = 2005 YP$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.37341 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18094340 | $\omega$ | 157.56109 | | −0.96744842 | | +0.18578698 |
| $a$ | 3.0958094 | $\Omega$ | 34.58496 | | −0.25253277 | | −0.75288633 |
| $e$ | 0.0969610 | $i$ | 17.62118 | | +0.01645457 | | −0.63138369 |
| $P$ | 5.45 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 09 | 691 | 0.3+ | 0.1+ | 2004 10 15 | G96 | 0.6+ | 0.9− | 2005 12 24 | 703 | 0.3+ | 0.0 |
| 2004 10 09 | 691 | 0.2+ | 0.1+ | 2004 11 04 | 703 | 1.1− | 0.8+ | 2005 12 24 | 703 | 1.2+ | 0.0 |
| 2004 10 09 | 691 | 0.1+ | 0.0 | 2004 11 04 | 703 | 0.5+ | 0.1− | 2005 12 24 | 703 | 0.9+ | 0.1+ |
| 2004 10 13 | 691 | 0.2− | 0.1+ | 2004 11 04 | 703 | 0.4− | 0.5− | 2005 12 24 | 703 | 0.7+ | 1.2+ |
| 2004 10 13 | 691 | 0.3− | 0.1+ | 2004 11 04 | 703 | 0.6− | 0.1− | 2005 12 30 | 703 | 1.5− | 1.1− |
| 2004 10 13 | 691 | 0.4− | 0.2+ | 2004 11 19 | 703 | 0.2− | 0.6+ | 2005 12 30 | 703 | 1.6− | 0.7+ |
| 2004 10 15 | G96 | 0.4+ | 0.4− | 2004 11 19 | 703 | 0.5− | 0.3+ | 2005 12 30 | 703 | 0.8− | 0.7− |
| 2004 10 15 | G96 | 0.1+ | 0.6− | 2004 11 19 | 703 | 1.2+ | 1.1− | 2005 12 30 | 703 | 0.8+ | 0.2− |
| 2004 10 15 | G96 | 0.5+ | 0.5− | 2004 11 19 | 703 | 1.0+ | 0.2+ | | | | |

**2004 TE$_{282}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.91445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.00489204 | $\omega$ | 80.56042 | | −0.54737463 | | −0.79750220 |
| $a$ | 34.3670982 | $\Omega$ | 45.81880 | | +0.55905601 | | −0.57404626 |
| $e$ | 0.1579067 | $i$ | 20.71915 | | +0.62276592 | | −0.18563710 |
| $P$ | 201 | $H$ | 7.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 15 | 695 | 0.2+ | 0.3+ | 2004 11 09 | 695 | 0.0 | 0.2+ | 2006 08 21 | 807 | 0.1− | 0.1− |
| 2004 10 15 | 695 | 0.2− | 0.0 | 2005 12 02 | 695 | 0.1+ | 0.1− | 2006 08 22 | 807 | 0.2+ | 0.3− |
| 2004 10 16 | 695 | 0.0 | 0.0 | 2005 12 02 | 695 | 0.0 | 0.0 | 2006 08 23 | 807 | 0.2− | 0.5+ |
| 2004 11 09 | 695 | 0.0 | 0.4− | 2005 12 02 | 695 | 0.0 | 0.0 | | | | |

**2004 TY$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.38854 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27481025 | $\omega$ | 154.49559 | | +0.78895967 | | +0.61430364 |
| $a$ | 2.3430457 | $\Omega$ | 167.57659 | | −0.57371471 | | +0.74417079 |
| $e$ | 0.1510823 | $i$ | 3.51208 | | −0.21998653 | | +0.26237544 |
| $P$ | 3.59 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 691 | 0.0 | 0.3+ | 2004 10 09 | 704 | 0.3− | 0.5+ | 2004 11 11 | 691 | 0.1− | 0.0 |
| 1996 05 11 | 691 | 0.0 | 0.1− | 2004 10 09 | 704 | 0.9+ | 0.6+ | 2006 02 01 | G96 | 0.1+ | 0.1− |
| 1996 05 11 | 691 | 0.1+ | 0.1+ | 2004 10 14 | 691 | 0.3− | 0.0 | 2006 02 01 | G96 | 0.4+ | 0.5+ |
| 2004 09 09 | 691 | 0.2− | 0.0 | 2004 10 14 | 691 | 0.1+ | 0.2− | 2006 02 01 | G96 | 0.0 | 0.1+ |
| 2004 09 09 | 691 | 0.3− | 0.1− | 2004 10 14 | 691 | 0.5− | 0.0 | 2006 02 01 | G96 | 0.3− | 0.4+ |
| 2004 09 09 | 691 | 0.7+ | 0.4+ | 2004 11 11 | 691 | 0.3+ | 0.2+ | | | | |
| 2004 10 09 | 704 | 0.4− | 0.1+ | 2004 11 11 | 691 | 0.2+ | 0.0 | | | | |

**2004 TF$_{310}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.79682 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19416278 | $\omega$ | 33.21218 | | +0.96340511 | | +0.23775570 |
| $a$ | 2.9536479 | $\Omega$ | 312.51648 | | −0.26758638 | | +0.82590993 |
| $e$ | 0.1215427 | $i$ | 9.66804 | | −0.01575216 | | +0.51121915 |
| $P$ | 5.08 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.3+ | 0.4− | 2004 10 15 | 704 | 0.0 | 0.6+ | 2006 01 31 | 104 | 0.1+ | 0.2− |
| 1999 10 14 | 704 | 0.9+ | 0.4− | 2004 10 15 | 704 | 0.0 | 0.1− | 2006 01 31 | 104 | 2.7+ | 0.7− |
| 1999 10 14 | 704 | 0.2− | 0.2− | 2004 11 11 | 703 | 0.2+ | 0.3+ | 2006 01 31 | 104 | 0.5+ | 2.0− |
| 1999 10 14 | 704 | 0.7+ | 0.7− | 2004 11 11 | 703 | 0.5− | 0.4+ | 2006 01 31 | 104 | 0.1− | 1.7+ |
| 1999 10 14 | 704 | 0.4− | 0.2− | 2004 11 11 | 703 | 0.5+ | 0.1− | 2006 02 06 | G96 | 0.2− | 0.2− |
| 1999 10 14 | 704 | 0.7− | 0.2− | 2004 11 11 | 703 | 0.1− | 2.1+ | 2006 02 06 | G96 | 0.1+ | 0.2− |
| 1999 10 14 | 704 | 0.3+ | 0.8− | 2005 12 30 | G96 | 0.2− | 0.3− | 2006 02 06 | G96 | 0.4− | 0.6− |
| 2004 10 10 | 704 | 0.4+ | 0.1+ | 2005 12 30 | G96 | 0.3− | 0.1− | 2006 02 06 | G96 | 0.0 | 0.2− |
| 2004 10 10 | 704 | 0.0 | 0.5− | 2005 12 30 | G96 | 0.3− | 0.4+ | 2006 02 23 | G96 | 0.6− | 0.0 |
| 2004 10 10 | 704 | 0.8− | 0.8− | 2005 12 30 | G96 | 0.0 | 0.2+ | 2006 02 23 | G96 | 1.4− | 0.4+ |
| 2004 10 15 | 704 | 0.1− | 0.2+ | 2006 01 07 | 691 | 0.1+ | 0.1+ | 2006 02 23 | G96 | 0.3+ | 0.0 |
| 2004 10 15 | 704 | 0.2+ | 0.7+ | 2006 01 07 | 691 | 0.1− | 0.2+ | 2006 02 23 | G96 | 0.3+ | 0.7+ |
| 2004 10 15 | 704 | 0.9− | 0.3− | 2006 01 07 | 691 | 0.1− | 0.0 | | | | |

**2004 TT$_{330}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.65275 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22457102 | $\omega$ | 317.98526 | | +0.97698573 | | −0.20296646 |
| $a$ | 2.6806096 | $\Omega$ | 53.84130 | | +0.21086816 | | +0.87266361 |
| $e$ | 0.1275368 | $i$ | 4.66049 | | +0.03214813 | | +0.44414282 |
| $P$ | 4.39 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 21 | 691 | 0.2+ | 0.3− | 2004 10 23 | 691 | 0.4− | 0.1+ | 2004 11 18 | 704 | 0.3− | 0.2+ |
| 1996 01 21 | 691 | 0.4+ | 0.1− | 2004 10 23 | 691 | 0.3− | 0.2+ | 2004 11 18 | 704 | 0.3+ | 0.8+ |
| 1996 01 21 | 691 | 0.1+ | 0.7− | 2004 11 04 | 691 | 0.1+ | 0.1+ | 2004 11 18 | 704 | 0.5+ | 0.2− |
| 2002 04 12 | 644 | 0.1+ | 0.0 | 2004 11 04 | 691 | 0.0 | 0.2+ | 2004 11 19 | 703 | 0.5+ | 0.4− |
| 2002 04 12 | 644 | 0.2+ | 0.7+ | 2004 11 04 | 691 | 0.0 | 0.0 | 2004 11 19 | 703 | 0.2+ | 0.3− |
| 2002 04 12 | 644 | 0.0 | 0.5+ | 2004 11 07 | 704 | 0.4+ | 0.7+ | 2004 11 19 | 703 | 0.0 | 0.4− |
| 2004 10 09 | 704 | 0.3− | 0.5− | 2004 11 07 | 704 | 0.1− | 0.2+ | 2004 11 19 | 703 | 0.3+ | 0.3− |
| 2004 10 09 | 704 | 0.7+ | 0.6+ | 2004 11 07 | 704 | 0.7+ | 1.1− | 2004 12 09 | 703 | 1.1− | 0.1− |
| 2004 10 09 | 704 | 0.1− | 0.1+ | 2004 11 10 | 691 | 0.0 | 0.0 | 2004 12 09 | 703 | 0.5− | 0.0 |
| 2004 10 09 | 704 | 0.0 | 0.3+ | 2004 11 10 | 691 | 0.1+ | 0.0 | 2004 12 09 | 703 | 0.8− | 0.3+ |
| 2004 10 09 | 704 | 0.3− | 0.2+ | 2004 11 10 | 691 | 0.1− | 0.1+ | 2004 12 09 | 703 | 0.0 | 0.0 |
| 2004 10 15 | G96 | 0.1− | 0.2− | 2004 11 14 | 185 | 1.1+ | 0.6+ | 2006 01 23 | 691 | 0.1− | 0.0 |
| 2004 10 15 | G96 | 0.1− | 0.1− | 2004 11 14 | 185 | 0.7+ | 0.7+ | 2006 01 23 | 691 | 0.1− | 0.2− |
| 2004 10 15 | G96 | 0.1− | 0.1− | 2004 11 14 | 185 | 0.6+ | 0.9− | 2006 01 23 | 691 | 0.2+ | 0.0 |
| 2004 10 15 | G96 | 0.2− | 0.2− | 2004 11 18 | 704 | 0.0 | 0.1+ | | | | |
| 2004 10 23 | 691 | 0.3− | 0.1+ | 2004 11 18 | 704 | 0.0 | 0.7+ | | | | |

**2004 TT$_{348}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.71654 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26483877 | $\omega$ | 157.56897 | | −0.34980022 | | +0.93602798 |
| $a$ | 2.4014949 | $\Omega$ | 91.93851 | | −0.86527801 | | −0.30701055 |
| $e$ | 0.1565193 | $i$ | 2.21452 | | −0.35907350 | | −0.17203529 |
| $P$ | 3.72 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 0.2+ | 1.1+ | 2004 10 23 | 691 | 0.0 | 0.3+ | 2006 02 20 | 703 | 0.5− | 0.5− |
| 1999 05 13 | 704 | 0.8− | 1.2− | 2004 10 23 | 691 | 0.1+ | 0.5+ | 2006 02 20 | 703 | 0.2+ | 0.2− |
| 1999 05 13 | 704 | 2.9+ | 0.9+ | 2004 10 23 | 691 | 0.1− | 0.4+ | 2006 02 20 | 703 | 0.4− | 0.5− |
| 1999 05 13 | 704 | (1.9+ | 3.2+) | 2004 11 10 | 691 | 0.1+ | 0.3− | 2006 02 27 | G96 | 0.3− | 0.1− |
| 1999 05 13 | 704 | 2.8− | 0.2+ | 2004 11 10 | 691 | 0.2+ | 0.0 | 2006 02 27 | G96 | 0.1− | 0.1− |
| 2001 12 23 | 691 | 0.4− | 0.1− | 2004 11 10 | 691 | 0.0 | 0.0 | 2006 02 27 | G96 | 0.0 | 0.2− |
| 2001 12 23 | 691 | 0.7+ | 0.2+ | 2006 01 23 | 691 | 0.2− | 0.0 | 2006 02 27 | G96 | 0.1+ | 0.0 |
| 2001 12 23 | 691 | 0.2− | 0.2+ | 2006 01 23 | 691 | 0.2+ | 0.0 | 2006 02 27 | G96 | 0.2− | 0.2− |
| 2004 10 07 | 691 | 0.3− | 0.3− | 2006 01 23 | 691 | 0.4− | 0.0 | 2006 02 27 | G96 | 0.1+ | 0.2− |
| 2004 10 07 | 691 | 0.4− | 0.2+ | 2006 02 20 | 691 | 0.3+ | 0.1− | 2006 02 27 | G96 | 0.2− | 0.1− |
| 2004 10 07 | 691 | 0.0 | 0.2+ | 2006 02 20 | 691 | 0.1+ | 0.1+ | 2006 02 27 | G96 | 0.1+ | 0.4− |
| 2004 10 10 | 695 | 0.0 | 0.2+ | 2006 02 20 | 691 | 0.1+ | 0.4+ | | | | |
| 2004 10 10 | 695 | 0.2− | 0.1+ | 2006 02 20 | 703 | 0.3+ | 0.6− | | | | |

**2004 TT$_{357}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.04370 | | (2000.0) | | | |
| $n$ | 0.00243036 | $\omega$ | 180.42136 | | +0.63925648 | −0.75963823 |
| $a$ | 54.7883901 | $\Omega$ | 229.84740 | | +0.70599473 | +0.64139116 |
| $e$ | 0.4274036 | $i$ | 9.00144 | | +0.30483208 | +0.10755062 |
| $P$ | 406 | $H$ | 7.9 | $G$ | 0.15 | $U$ 7 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 15 | 695 | 0.1− | 0.0 | 2004 11 09 | 695 | 0.6+ | 0.3+ | 2006 10 19 | 695 | 0.1+ | 0.1+ |
| 2004 10 15 | 695 | 0.1− | 0.0 | 2004 11 20 | 568 | 0.3− | 0.5− | 2006 10 20 | 695 | 0.3− | 0.3− |
| 2004 11 09 | 695 | 0.2+ | 0.6+ | 2004 11 21 | 568 | 0.1− | 0.3− | 2006 10 20 | 695 | 0.4+ | 0.3+ |

**2004 TX$_{357}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.69194 | | (2000.0) | | | |
| $n$ | 0.00448032 | $\omega$ | 36.22149 | | +0.31279235 | −0.93513242 |
| $a$ | 36.4415284 | $\Omega$ | 36.39754 | | +0.79216720 | +0.16018123 |
| $e$ | 0.2081201 | $i$ | 16.28539 | | +0.52405350 | +0.31602109 |
| $P$ | 220 | $H$ | 8.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 15 | 695 | 0.0 | 0.1+ | 2004 12 10 | 688 | 1.1− | 1.1− | 2006 08 21 | 807 | 0.0 | 0.4+ |
| 2004 10 15 | 695 | 0.0 | 0.3− | 2004 12 11 | 688 | 0.6+ | 0.7+ | 2006 08 22 | 807 | 0.4+ | 0.5− |
| 2004 11 09 | 695 | 0.2− | 0.1+ | 2004 12 11 | 688 | 0.6+ | 0.0 | 2006 08 23 | 807 | 0.1+ | 0.4− |
| 2004 11 09 | 695 | 0.1− | 0.2+ | 2005 12 01 | 695 | 0.0 | 0.1+ | 2006 10 19 | 695 | 0.2− | 0.0 |
| 2004 11 10 | 695 | 0.1− | 0.2+ | 2005 12 01 | 695 | 0.1+ | 0.3+ | 2006 10 20 | 695 | 0.1− | 0.0 |
| 2004 12 10 | 688 | 0.4+ | 0.1− | 2005 12 01 | 695 | 0.1− | 0.0 | 2006 10 20 | 695 | 0.1− | 0.1+ |

**2004 TE$_{366}$ = 1999 TP$_{22}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 132.81195 | | (2000.0) | | | |
| $n$ | 0.21053036 | $\omega$ | 23.17804 | | +0.56572472 | −0.82281645 |
| $a$ | 2.7985059 | $\Omega$ | 32.44413 | | +0.73987988 | +0.47753651 |
| $e$ | 0.0141499 | $i$ | 5.78953 | | +0.36405124 | +0.30811032 |
| $P$ | 4.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.0 | 0.2+ | 2004 10 08 | 691 | 0.4− | 0.1+ | 2004 11 04 | 703 | 0.7− | 0.2+ |
| 1999 10 03 | 691 | 0.1+ | 0.0 | 2004 10 08 | 691 | 0.4− | 0.2− | 2004 11 19 | 703 | 0.3+ | 0.1− |
| 1999 10 03 | 691 | 0.3+ | 0.0 | 2004 10 18 | 695 | 0.2+ | 0.1+ | 2004 11 19 | 703 | 1.1+ | 0.1− |
| 1999 10 06 | 691 | 0.0 | 0.2− | 2004 10 18 | 695 | 0.3+ | 0.1+ | 2004 11 19 | 703 | 0.4+ | 0.2− |
| 1999 10 06 | 691 | 0.2− | 0.0 | 2004 11 04 | 703 | 0.7− | 0.3− | 2004 11 19 | 703 | 0.3− | 0.2+ |
| 1999 10 06 | 691 | 0.1− | 0.2− | 2004 11 04 | 703 | 0.7+ | 0.4− | | | | |
| 2004 10 08 | 691 | 0.3− | 0.1+ | 2004 11 04 | 703 | 0.3− | 0.6+ | | | | |

**2004 TF$_{366}$ = 2006 CS$_{15}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 169.73793 | | (2000.0) | | | |
| $n$ | 0.20899636 | $\omega$ | 339.15379 | | +0.99495413 | −0.09282516 |
| $a$ | 2.8121830 | $\Omega$ | 26.26064 | | +0.09984041 | +0.87854581 |
| $e$ | 0.2089649 | $i$ | 4.93673 | | +0.00990798 | +0.46855175 |
| $P$ | 4.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 08 | 691 | 0.0 | 0.0 | 2004 10 23 | 691 | 0.2+ | 0.0 | 2004 11 04 | 291 | 0.5− | 0.2+ |
| 2004 10 08 | 691 | 0.1− | 0.1− | 2004 11 04 | 703 | 0.1+ | 0.4− | 2006 02 01 | 691 | 0.1+ | 0.6+ |
| 2004 10 08 | 691 | 0.2− | 0.1+ | 2004 11 04 | 703 | 0.1− | 0.1− | 2006 02 01 | 691 | 0.3+ | 0.2− |
| 2004 10 15 | 695 | 0.1− | 0.0 | 2004 11 04 | 703 | 0.4− | 0.3+ | 2006 02 01 | 691 | 0.2− | 0.0 |
| 2004 10 15 | 695 | 0.2− | 0.0 | 2004 11 04 | 703 | 0.5+ | 0.6− | 2006 02 04 | 691 | 0.2+ | 0.1+ |
| 2004 10 23 | 691 | 0.3+ | 0.0 | 2004 11 04 | 291 | 0.1− | 0.3+ | 2006 02 04 | 691 | 0.2− | 0.3− |
| 2004 10 23 | 691 | 0.5+ | 0.2+ | 2004 11 04 | 291 | 0.1− | 0.1+ | 2006 02 04 | 691 | 0.2− | 0.2− |

**2004 TG$_{366}$ = 2001 YM$_{1}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 252.03968 | | (2000.0) | | | |
| $n$ | 0.30679423 | $\omega$ | 255.04573 | | +0.94174901 | +0.32178223 |
| $a$ | 2.1772314 | $\Omega$ | 86.10847 | | −0.25840510 | +0.87843653 |
| $e$ | 0.2382636 | $i$ | 5.62556 | | −0.21525707 | +0.35327815 |
| $P$ | 3.21 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.1− | 0.1− | 2001 12 19 | 704 | 0.6+ | 0.8− | 2004 12 03 | 699 | 0.2− | 0.6+ |
| 2001 12 17 | 704 | 1.0− | 0.2+ | 2004 10 09 | 704 | 1.0+ | 0.1+ | 2004 12 03 | 699 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.1+ | 2004 10 09 | 704 | 0.6− | 0.4+ | 2004 12 03 | 699 | 0.6− | 0.1− |
| 2001 12 17 | 704 | 0.2− | 0.2+ | 2004 10 09 | 704 | 0.5− | 0.5− | 2004 12 03 | 699 | 0.2− | 0.9+ |
| 2001 12 17 | 704 | 0.6− | 0.5+ | 2004 11 18 | E12 | 0.3+ | 0.1− | 2004 12 15 | 691 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2004 11 18 | E12 | 0.3+ | 0.0 | 2004 12 15 | 691 | 0.1− | 0.2− |
| 2001 12 19 | 704 | 0.3+ | 0.0 | 2004 11 18 | E12 | 0.0 | 0.2+ | 2004 12 15 | 691 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.6+ | 0.4− | 2004 11 18 | E12 | 0.4+ | 0.9− | | | | |

**2004 TH$_{366}$ = 2005 YY$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 243.60516 | | (2000.0) | | | |
| $n$ | 0.17855128 | $\omega$ | 240.26750 | | +0.17449862 | +0.98275109 |
| $a$ | 3.1233985 | $\Omega$ | 39.92998 | | −0.86724482 | +0.18284732 |
| $e$ | 0.0502442 | $i$ | 5.47514 | | −0.46630104 | +0.02769738 |
| $P$ | 5.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.2− | 2004 10 23 | 691 | 0.1+ | 0.2− | 2004 12 12 | 691 | 0.5− | 0.2− |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2004 10 23 | 691 | 0.2− | 0.3+ | 2005 12 25 | 691 | 0.1+ | 0.1+ |
| 2002 05 30 | 644 | 0.2+ | 0.4+ | 2004 10 23 | 691 | 0.1− | 0.0 | 2005 12 25 | 691 | 0.1+ | 0.1− |
| 2002 05 30 | 644 | 0.2+ | 0.0 | 2004 11 04 | 691 | 0.1+ | 0.1+ | 2005 12 25 | 691 | 0.1+ | 0.1− |
| 2002 05 30 | 644 | 0.1− | 0.4+ | 2004 11 04 | 691 | 0.2+ | 0.0 | 2006 01 06 | 704 | 0.1− | 0.9− |
| 2004 10 09 | 691 | 0.1+ | 0.1+ | 2004 11 04 | 691 | 0.5+ | 0.0 | 2006 01 06 | 704 | 0.1− | 0.4− |
| 2004 10 09 | 691 | 0.2− | 0.4+ | 2004 12 12 | 691 | 0.2− | 0.2+ | 2006 01 06 | 704 | 1.0− | 0.4− |
| 2004 10 09 | 691 | 0.0 | 0.0 | 2004 12 12 | 691 | 0.3− | 0.3+ | 2006 01 06 | 704 | 0.8− | 0.5− |

**2004 TJ$_{366}$ = 1995 VR$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.51955 | | (2000.0) | | | |
| $n$ | 0.22256264 | $\omega$ | 211.64237 | | +0.17560314 | −0.98398521 |
| $a$ | 2.6967118 | $\Omega$ | 228.26304 | | +0.91156828 | +0.17426194 |
| $e$ | 0.0996567 | $i$ | 2.35056 | | +0.37176177 | +0.03749509 |
| $P$ | 4.43 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.1− | 0.8− | 2004 10 23 | 691 | 0.1− | 0.0 | 2004 12 12 | 691 | 0.1+ | 0.1+ |
| 1995 11 15 | 691 | 0.4− | 0.8− | 2004 10 23 | 691 | 0.0 | 0.3+ | 2006 01 10 | G96 | 0.7− | 0.1+ |
| 1995 11 15 | 691 | 0.4− | 0.4− | 2004 10 23 | 691 | 0.1− | 0.1+ | 2006 01 10 | G96 | 0.2− | 0.1− |
| 1995 11 20 | 691 | 1.0+ | 0.3− | 2004 11 07 | 704 | 0.8+ | 1.5+ | 2006 01 10 | G96 | 0.3+ | 0.1+ |
| 1995 11 20 | 691 | 0.4+ | 0.2− | 2004 11 07 | 704 | 0.4+ | 0.5+ | 2006 01 10 | G96 | 0.3− | 0.1− |
| 1995 11 20 | 691 | 0.4+ | 0.1+ | 2004 11 07 | 704 | 1.1− | 1.0+ | 2006 03 05 | 691 | 2.7+ | 0.4− |
| 1997 03 15 | 691 | 0.4− | 0.6− | 2004 11 19 | 703 | 0.7+ | 0.2+ | 2006 03 05 | 691 | 0.2− | 0.2+ |
| 1997 03 15 | 691 | 0.3− | 0.8− | 2004 11 19 | 703 | 1.2− | 1.0+ | 2006 03 05 | 691 | 0.1− | 0.2+ |
| 1997 03 15 | 691 | 0.1− | 0.6− | 2004 11 19 | 703 | 0.2+ | 0.3+ | 2006 03 09 | 691 | 0.4− | 0.4+ |
| 2004 10 09 | 691 | 0.2+ | 0.1+ | 2004 11 19 | 703 | 1.8− | 1.2− | 2006 03 09 | 691 | 1.1− | 0.5+ |
| 2004 10 09 | 691 | 0.1+ | 0.0 | 2004 12 12 | 691 | 0.1− | 0.2+ | 2006 03 09 | 691 | 0.1− | 0.8+ |
| 2004 10 09 | 691 | 0.2− | 0.6+ | 2004 12 12 | 691 | 0.1− | 0.2+ | | | | |

**2004 TK$_{366}$ = 2006 CH$_{35}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 209.06645 | | (2000.0) | | | |
| $n$ | 0.21963573 | $\omega$ | 59.92223 | | +0.89777733 | +0.43217990 |
| $a$ | 2.7206169 | $\Omega$ | 274.35630 | | −0.42772908 | +0.80946160 |
| $e$ | 0.0793421 | $i$ | 4.88727 | | −0.10508901 | +0.39748264 |
| $P$ | 4.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 09 | 699 | 1.1− | 0.2+ | 2004 10 21 | 704 | 0.1− | 0.0 | 2006 02 02 | G96 | 0.2− | 0.2− |
| 2004 10 09 | 699 | 0.8+ | 0.1+ | 2004 10 21 | 704 | 0.9+ | 0.2+ | 2006 02 02 | G96 | 0.2− | 0.2+ |
| 2004 10 09 | 699 | 0.0 | 0.7+ | 2004 11 19 | 704 | 0.6− | 0.4+ | 2006 02 02 | G96 | 0.2− | 0.0 |
| 2004 10 09 | 699 | 1.0− | 0.7− | 2004 11 19 | 704 | 0.0 | 1.1+ | 2006 02 02 | G96 | 0.1− | 0.2− |
| 2004 10 14 | 644 | 0.0 | 0.2+ | 2004 11 19 | 704 | 0.2+ | 0.5− | 2006 02 03 | G96 | 0.1+ | 0.0 |
| 2004 10 14 | 644 | 0.3+ | 0.0 | 2004 11 19 | 703 | 1.4− | 0.4+ | 2006 02 03 | G96 | 0.3+ | 0.0 |
| 2004 10 14 | 644 | 0.1− | 0.4− | 2004 11 19 | 703 | 0.7+ | 1.1− | 2006 02 03 | G96 | 0.1+ | 0.0 |
| 2004 10 21 | 704 | 1.8+ | 0.4− | 2004 11 19 | 703 | 0.8+ | 0.4+ | 2006 02 03 | G96 | 0.1+ | 0.3+ |
| 2004 10 21 | 704 | 1.2− | 0.2+ | 2004 11 19 | 703 | 0.1− | 0.8− | | | | |

**2004 TL$_{366}$ = 2000 SG$_{198}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 171.75326 | | (2000.0) | | | |
| $n$ | 0.25807056 | $\omega$ | 18.63288 | | +0.61345464 | −0.78967933 |
| $a$ | 2.4433015 | $\Omega$ | 33.52908 | | +0.72249018 | +0.55661576 |
| $e$ | 0.2098407 | $i$ | 0.92754 | | +0.31887511 | +0.25804157 |
| $P$ | 3.82 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.7− | 0.2+ | 2004 10 10 | 695 | 0.0 | 0.0 | 2004 11 07 | 704 | 0.3+ | 0.4+ |
| 2000 09 24 | 704 | 0.1− | 0.4− | 2004 10 10 | 695 | 0.1+ | 0.2− | 2004 11 12 | 703 | 0.0 | 0.1+ |
| 2000 09 24 | 704 | 0.0 | 1.1+ | 2004 10 18 | 695 | 0.1− | 0.3− | 2004 11 12 | 703 | 1.6− | 0.2+ |
| 2000 09 24 | 704 | 0.7− | 1.3+ | 2004 10 18 | 695 | 0.0 | 0.3− | 2004 11 12 | 703 | 0.9+ | 1.4− |
| 2000 10 01 | 704 | 0.0 | 1.0− | 2004 11 07 | 704 | 0.3− | 0.1+ | 2004 11 12 | 703 | (2.8+ | 0.8+) |
| 2000 10 01 | 704 | 0.6+ | 0.8− | 2004 11 07 | 704 | 0.3+ | 0.8+ | | | | |
| 2000 10 01 | 704 | 0.8+ | 0.5− | 2004 11 07 | 704 | 0.4+ | 0.5+ | | | | |

**2004 TM$_{366}$ = 2000 VK$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 255.46141 | | (2000.0) | | | |
| $n$ | 0.25253469 | $\omega$ | 63.47578 | | +0.69271280 | +0.71684230 |
| $a$ | 2.4788791 | $\Omega$ | 250.60720 | | −0.68800852 | +0.62384211 |
| $e$ | 0.1353549 | $i$ | 4.82161 | | −0.21631748 | +0.31138102 |
| $P$ | 3.90 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 691 | 0.0 | 0.5− | 2003 07 08 | 644 | 0.2+ | 0.3− | 2004 11 07 | 704 | 0.1− | 0.3+ |
| 1999 06 15 | 691 | 0.1+ | 0.1+ | 2003 07 08 | 644 | 0.0 | 0.0 | 2004 11 07 | 704 | 0.9− | 0.3+ |
| 1999 06 15 | 691 | 0.1− | 0.6+ | 2003 07 08 | 644 | 0.3− | 0.3− | 2004 11 07 | 704 | 0.3− | 0.1− |
| 2000 11 01 | 704 | 0.5+ | 0.2+ | 2004 10 15 | 691 | 0.1− | 0.2− | 2004 11 09 | 703 | 0.2− | 0.5+ |
| 2000 11 01 | 704 | 0.3− | 0.1+ | 2004 10 15 | 691 | 0.1+ | 0.1− | 2004 11 09 | 703 | 0.7− | 0.0 |
| 2000 11 01 | 704 | 0.3+ | 0.9− | 2004 10 15 | 691 | 0.3+ | 0.3− | 2004 11 09 | 703 | 1.5− | 0.3+ |
| 2000 11 03 | 704 | 0.6− | 0.8+ | 2004 10 23 | 691 | 0.6+ | 0.0 | 2004 11 09 | 703 | 0.3− | 1.8− |
| 2000 11 03 | 704 | 0.1+ | 1.4+ | 2004 10 23 | 691 | 0.2+ | 0.2− | | | | |
| 2000 11 03 | 704 | 0.7− | 0.9+ | 2004 10 23 | 691 | 0.0 | 0.0 | | | | |

**2004 TN$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 252.42067 | | (2000.0) | | | |
| $n$ | 0.27854915 | $\omega$ | 41.08825 | | +0.75592230 | +0.65341782 |
| $a$ | 2.3220318 | $\Omega$ | 278.06506 | | −0.61078669 | +0.68174783 |
| $e$ | 0.2124332 | $i$ | 2.33455 | | −0.23562915 | +0.32903655 |
| $P$ | 3.54 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.2+ | 1.4− | 2003 04 08 | 691 | 0.1+ | 0.3+ | 2004 11 04 | 691 | 0.4− | 0.0 |
| 2000 07 07 | 704 | 2.2− | 1.5− | 2003 04 08 | 691 | 0.3+ | 0.4+ | 2004 12 10 | 691 | 0.4+ | 0.6+ |
| 2000 07 07 | 704 | 0.8+ | 0.6+ | 2004 10 04 | 691 | 0.2+ | 0.3− | 2004 12 10 | 691 | 0.2+ | 0.3+ |
| 2000 07 07 | 704 | 0.0 | 0.3− | 2004 10 04 | 691 | 0.3− | 0.0 | 2004 12 10 | 691 | 0.2+ | 0.3+ |
| 2000 08 01 | 704 | 0.3+ | 1.3+ | 2004 10 04 | 691 | 0.1− | 0.4− | 2005 10 24 | 568 | 0.0 | 0.1+ |
| 2000 08 01 | 704 | 0.0 | 0.4+ | 2004 10 21 | 704 | 0.7− | 0.6+ | 2005 10 24 | 568 | 0.2− | 0.2+ |
| 2000 08 01 | 704 | 0.8+ | 0.7+ | 2004 10 21 | 704 | 0.6+ | 0.0 | 2005 10 24 | 568 | 0.1− | 0.1+ |
| 2000 08 01 | 704 | 0.1+ | 0.4+ | 2004 10 21 | 704 | 0.1− | 0.1+ | 2005 11 07 | 568 | 0.1− | 0.3+ |
| 2001 12 20 | 691 | 0.2+ | 0.1− | 2004 10 21 | 704 | 0.2+ | 0.5+ | 2005 11 07 | 568 | 0.0 | 0.3+ |
| 2001 12 20 | 691 | 0.2− | 0.2− | 2004 10 21 | 704 | 0.9+ | 1.1+ | 2006 01 30 | 691 | 0.2− | 0.1+ |
| 2001 12 20 | 691 | 0.1− | 0.1− | 2004 11 04 | 691 | 0.2− | 0.0 | 2006 01 30 | 691 | 0.2+ | 0.3− |
| 2003 04 08 | 691 | 0.1+ | 0.4+ | 2004 11 04 | 691 | 0.3− | 0.1+ | 2006 01 30 | 691 | 0.2− | 0.1− |

**2004 TO$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 154.40100 | | (2000.0) | | | |
| $n$ | 0.25802919 | $\omega$ | 11.62113 | | +0.40824341 | −0.89075283 |
| $a$ | 2.4435627 | $\Omega$ | 54.59816 | | +0.81668407 | +0.25861321 |
| $e$ | 0.1956871 | $i$ | 14.18472 | | +0.40787797 | +0.37373600 |
| $P$ | 3.82 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.7− | 1.3+ | 2004 10 07 | 704 | 0.3− | 0.5+ | 2004 10 31 | 699 | 0.2+ | 0.0 |
| 2000 09 23 | 704 | 0.7− | 0.7+ | 2004 10 07 | 704 | 0.4− | 0.8+ | 2004 10 31 | 699 | 0.5− | 0.1− |
| 2000 09 23 | 704 | 0.3+ | 0.8− | 2004 10 07 | 704 | 0.7− | 0.3− | 2004 11 12 | 704 | 0.9− | 0.1+ |
| 2000 09 30 | 699 | 2.3− | 0.1− | 2004 10 07 | 704 | 0.5− | 0.2+ | 2004 11 12 | 704 | 0.1+ | 0.1+ |
| 2000 09 30 | 699 | 1.3+ | 0.6− | 2004 10 18 | 704 | 0.6+ | 0.6+ | 2004 11 12 | 704 | 0.5+ | 0.6+ |
| 2000 09 30 | 699 | 1.2+ | 0.5+ | 2004 10 18 | 704 | 0.7+ | 0.2+ | 2004 11 12 | 704 | 0.1+ | 0.9− |
| 2000 09 30 | 699 | 0.2− | 0.1− | 2004 10 18 | 704 | 0.4+ | 0.4− | 2004 11 12 | 704 | 0.1− | 0.2+ |
| 2002 03 10 | 644 | 0.1+ | 0.0 | 2004 10 18 | 704 | 0.9+ | 0.4+ | 2006 04 07 | 291 | 0.1+ | 0.3+ |
| 2002 03 10 | 644 | 0.5+ | 0.0 | 2004 10 18 | 704 | 0.1− | 0.1+ | 2006 04 07 | 291 | 0.2+ | 0.2+ |
| 2002 03 10 | 644 | 0.3+ | 0.2+ | 2004 10 31 | 699 | 1.0− | 0.5− | 2006 04 07 | 291 | 0.1+ | 0.2+ |
| 2004 10 07 | 704 | 0.1+ | 0.0 | 2004 10 31 | 699 | 0.1+ | 0.2+ | | | | |

**2004 TP$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 141.15180 | | (2000.0) | | | |
| $n$ | 0.22116023 | $\omega$ | 75.80722 | | +0.52790456 | −0.84905236 |
| $a$ | 2.7081000 | $\Omega$ | 342.28286 | | +0.75069605 | +0.47785170 |
| $e$ | 0.0899768 | $i$ | 3.89289 | | +0.39720551 | +0.22531718 |
| $P$ | 4.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 08 | 691 | 0.3− | 0.2+ | 2004 11 09 | 703 | 0.9− | 0.4+ | 2006 02 21 | G96 | 0.3− | 0.3− |
| 2004 10 08 | 691 | 0.1+ | 0.1− | 2004 11 09 | 703 | 1.1+ | 0.7− | 2006 02 21 | G96 | 0.3+ | 0.5− |
| 2004 10 08 | 691 | 0.6− | 0.1− | 2004 11 09 | 703 | 0.7+ | 0.3+ | 2006 03 03 | 691 | 0.1− | 0.1+ |
| 2004 10 08 | 691 | 0.3+ | 0.4− | 2006 01 30 | 691 | 0.1− | 0.1+ | 2006 03 03 | 691 | 0.0 | 0.1− |
| 2004 10 08 | 691 | 0.1− | 0.2+ | 2006 01 30 | 691 | 0.1− | 0.1+ | 2006 03 03 | 691 | 0.2− | 0.1− |
| 2004 10 08 | 691 | 0.2+ | 0.1− | 2006 01 30 | 691 | 0.2+ | 0.1+ | 2006 03 06 | G96 | 0.0 | 0.3− |
| 2004 10 18 | 695 | 0.2+ | 0.1+ | 2006 02 07 | 691 | 0.3+ | 0.1+ | 2006 03 06 | G96 | 0.3− | 0.0 |
| 2004 10 18 | 695 | 0.0 | 0.2+ | 2006 02 07 | 691 | 0.4+ | 0.2+ | 2006 03 06 | G96 | 0.5− | 0.1− |
| 2004 10 18 | 695 | 0.1+ | 0.2+ | 2006 02 07 | 691 | 0.1− | 0.1− | 2006 03 06 | G96 | 0.4− | 0.0 |
| 2004 10 18 | 695 | 0.2+ | 0.2+ | 2006 02 21 | G96 | 0.2+ | 0.2− | | | | |
| 2004 11 09 | 703 | (2.4− | 0.2+) | 2006 02 21 | G96 | 0.6− | 0.5− | | | | |

**2004 TQ$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 156.03078 | | (2000.0) | | | |
| $n$ | 0.17762110 | $\omega$ | 184.58060 | | +0.97354412 | −0.22667025 |
| $a$ | 3.1342937 | $\Omega$ | 188.68373 | | +0.21524639 | +0.95211622 |
| $e$ | 0.2190198 | $i$ | 11.01695 | | +0.07668667 | +0.20517139 |
| $P$ | 5.55 | $H$ | 14.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 699 | 0.3− | 1.8− | 2004 12 12 | 704 | 0.1+ | 0.8+ | 2004 12 12 | 704 | 0.7− | 0.2+ |
| 1998 09 15 | 699 | 0.4− | 0.8+ | 2004 12 12 | 704 | 0.2+ | 0.5− | 2004 12 19 | 699 | 0.5+ | 0.4+ |
| 1998 09 15 | 699 | 0.3+ | 0.6+ | 2004 12 12 | 704 | 1.6− | 0.1+ | 2004 12 19 | 699 | 0.0 | 0.4− |
| 1998 10 19 | 699 | 0.2+ | 1.4+ | 2004 12 12 | 704 | 0.6− | 0.9− | 2004 12 19 | 699 | 1.5+ | 0.6− |
| 1998 10 19 | 699 | 0.4− | 0.9+ | 2004 12 12 | 704 | 0.3− | 0.4+ | 2004 12 19 | 699 | 1.3+ | 0.6− |
| 1998 10 19 | 699 | 0.3− | 1.7+ | 2004 12 12 | 704 | (2.3− | 1.0−) | 2006 03 03 | 291 | 0.0 | 0.2+ |
| 2004 10 08 | 644 | 0.1+ | 0.5− | 2004 12 12 | 704 | (2.8− | 1.7−) | 2006 03 03 | 291 | 0.0 | 0.4+ |
| 2004 10 08 | 644 | 0.1+ | 0.6− | 2004 12 12 | 704 | 0.2− | 0.4− | 2006 03 03 | 291 | 0.2+ | 0.3+ |
| 2004 10 08 | 644 | 0.0 | 0.8− | 2004 12 12 | 704 | 0.1− | 0.2+ | | | | |

**2004 TR$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.29961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22533939 | $\omega$ | 263.78234 | | +0.81030378 | +0.58009456 | |
| $a$ | 2.6745126 | $\Omega$ | 60.73027 | | −0.49294455 | +0.75137615 | |
| $e$ | 0.1001506 | $i$ | 5.46343 | | −0.31688081 | +0.31452215 | |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 644 | 0.1+ | 0.5+ | 2004 11 03 | 691 | 0.0 | 0.3− | 2004 11 19 | 703 | 0.8− | 1.2− |
| 2002 03 11 | 644 | 0.1− | 0.7+ | 2004 11 03 | 691 | 0.0 | 0.2− | 2004 12 10 | 691 | 0.1− | 0.2+ |
| 2002 03 11 | 644 | 0.2− | 0.4+ | 2004 11 03 | 691 | 0.1− | 0.2− | 2004 12 10 | 691 | 0.2+ | 0.2+ |
| 2002 04 02 | 644 | 0.3+ | 0.8+ | 2004 11 12 | 703 | 0.9+ | 0.1− | 2004 12 10 | 691 | 0.3+ | 0.3+ |
| 2002 04 02 | 644 | 0.5+ | 0.7+ | 2004 11 12 | 703 | 0.5− | 0.3+ | 2006 01 26 | 703 | 0.8+ | 0.1− |
| 2002 04 02 | 644 | 0.6+ | 0.2− | 2004 11 12 | 703 | 0.2+ | 0.1− | 2006 01 26 | 703 | 0.2− | 0.4− |
| 2004 10 09 | 704 | 0.0 | 0.3+ | 2004 11 12 | 703 | 1.0− | 1.9+ | 2006 01 26 | 703 | 1.7− | 0.4− |
| 2004 10 09 | 704 | 0.5− | 0.2− | 2004 11 19 | 703 | 0.3+ | 0.5+ | 2006 01 26 | 703 | 0.4+ | 1.5− |
| 2004 10 09 | 704 | 0.1+ | 0.0 | 2004 11 19 | 703 | 0.5− | 0.2− | | | | |
| 2004 10 09 | 704 | 0.1− | 1.4+ | 2004 11 19 | 703 | 0.2+ | 0.6− | | | | |

**2004 TS$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.32617 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24137678 | $\omega$ | 328.25530 | | −0.61275333 | −0.79015024 | |
| $a$ | 2.5546950 | $\Omega$ | 159.52287 | | +0.73317959 | −0.57500536 | |
| $e$ | 0.1212000 | $i$ | 2.29330 | | +0.29492550 | −0.21220613 | |
| $P$ | 4.08 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 29 | 691 | 0.0 | 0.5− | 2004 11 03 | 691 | 0.2− | 0.2+ | 2006 04 08 | 691 | 0.2+ | 0.3+ |
| 2000 10 29 | 691 | 0.2− | 0.1− | 2004 11 03 | 691 | 0.0 | 0.0 | 2006 04 08 | 691 | 0.1+ | 0.1+ |
| 2000 10 29 | 691 | 0.2− | 0.1− | 2004 11 03 | 691 | 0.2+ | 0.4+ | 2006 04 08 | 691 | 0.1+ | 0.5+ |
| 2002 04 08 | 644 | 0.9+ | 0.1+ | 2004 11 19 | 703 | 0.5− | 0.2+ | 2006 04 25 | 691 | 0.2+ | 0.1− |
| 2002 04 08 | 644 | 0.8+ | 0.1− | 2004 11 19 | 703 | 0.4− | 0.2+ | 2006 04 25 | 691 | 0.1− | 0.1− |
| 2002 04 08 | 644 | 0.7+ | 0.2+ | 2004 11 19 | 703 | 1.7+ | 0.3+ | 2006 04 25 | 691 | 0.0 | 0.0 |
| 2003 06 01 | 807 | 0.7− | 0.8+ | 2004 11 19 | 703 | 0.6− | 0.5+ | 2006 05 01 | 691 | 0.1+ | 0.1+ |
| 2003 06 01 | 807 | 0.7− | 0.9+ | 2006 03 25 | G96 | 0.5− | 0.0 | 2006 05 01 | 691 | 0.3− | 0.1+ |
| 2004 10 09 | 691 | 0.1− | 0.5+ | 2006 03 25 | G96 | 0.2− | 0.2− | 2006 05 01 | 691 | 0.1− | 0.2+ |
| 2004 10 09 | 691 | 0.0 | 0.2+ | 2006 03 25 | G96 | 0.1− | 0.1+ | | | | |
| 2004 10 09 | 691 | 0.1+ | 0.4+ | 2006 03 25 | G96 | 0.5− | 0.1+ | | | | |

**2004 TT$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.43838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18941317 | $\omega$ | 283.39474 | | +0.74942032 | −0.66119263 | |
| $a$ | 3.0028198 | $\Omega$ | 118.00812 | | +0.62159661 | +0.68465388 | |
| $e$ | 0.1245085 | $i$ | 2.24254 | | +0.22800622 | +0.30671381 | |
| $P$ | 5.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 0.0 | 0.3+ | 2004 11 03 | 691 | 0.2+ | 0.2+ | 2006 01 07 | G96 | 0.5− | 0.2+ |
| 2001 03 16 | 691 | 0.1+ | 0.2− | 2004 11 04 | 703 | 1.2+ | 0.1+ | 2006 01 26 | G96 | 0.4+ | 0.2+ |
| 2001 03 16 | 691 | 0.2− | 0.4− | 2004 11 04 | 703 | 0.8− | 0.1+ | 2006 01 26 | G96 | 0.2+ | 0.2+ |
| 2004 10 09 | 691 | 0.1− | 0.1− | 2004 11 04 | 703 | 1.5− | 0.0 | 2006 01 26 | G96 | 0.7− | 0.4− |
| 2004 10 09 | 691 | 0.1− | 0.5− | 2004 11 04 | 703 | 1.2− | 0.3− | 2006 01 26 | G96 | 0.1+ | 0.1− |
| 2004 10 09 | 691 | 0.4+ | 0.4− | 2004 12 13 | 691 | 0.3− | 0.0 | 2006 03 02 | G96 | 0.2+ | 0.1+ |
| 2004 10 23 | 691 | 0.0 | 0.1+ | 2004 12 13 | 691 | 0.0 | 0.0 | 2006 03 02 | G96 | 0.4+ | 0.4+ |
| 2004 10 23 | 691 | 0.2+ | 0.1+ | 2004 12 13 | 691 | 0.2+ | 0.1− | 2006 03 02 | G96 | 0.2− | 0.4− |
| 2004 10 23 | 691 | 0.0 | 0.3+ | 2006 01 07 | G96 | 0.1+ | 0.2+ | 2006 03 02 | G96 | 0.5+ | 0.3+ |
| 2004 11 03 | 691 | 0.1+ | 0.1− | 2006 01 07 | G96 | 0.4− | 0.0 | | | | |
| 2004 11 03 | 691 | 0.0 | 0.2+ | 2006 01 07 | G96 | 0.1+ | 0.2+ | | | | |

**2004 TU$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.27351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22731254 | $\omega$ | 68.89969 | | +0.86403086 | −0.49306988 | |
| $a$ | 2.6590129 | $\Omega$ | 320.44945 | | +0.38197923 | +0.77359643 | |
| $e$ | 0.0806934 | $i$ | 9.18582 | | +0.32793680 | +0.39803348 | |
| $P$ | 4.34 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.7+ | 0.9− | 2004 10 10 | 704 | 0.6− | 0.9+ | 2004 12 20 | 703 | 0.7+ | 1.0− |
| 2001 01 04 | 704 | 0.4− | 0.2− | 2004 12 02 | 704 | 0.2− | 0.2− | 2004 12 20 | 703 | 1.0+ | 0.6− |
| 2001 01 04 | 704 | 0.6+ | 0.3+ | 2004 12 02 | 704 | 0.3+ | 0.9+ | 2004 12 20 | 703 | 1.1+ | 0.3− |
| 2001 01 04 | 704 | 0.6− | 0.4+ | 2004 12 02 | 704 | 0.5− | 0.6+ | 2006 03 25 | 644 | 0.2+ | 0.3+ |
| 2001 01 19 | 704 | 0.4− | 0.7+ | 2004 12 02 | 704 | 1.7+ | 1.5+ | 2006 03 25 | 644 | 0.0 | 0.0 |
| 2001 01 19 | 704 | 0.5+ | 0.1− | 2004 12 15 | 703 | 0.5− | 0.2− | 2006 03 25 | 644 | 0.1− | 0.0 |
| 2001 01 19 | 704 | 0.4+ | 0.6+ | 2004 12 15 | 703 | 0.9− | 1.6− | 2006 04 08 | G96 | 0.3− | 0.3− |
| 2001 01 19 | 704 | 0.2− | 1.4+ | 2004 12 15 | 703 | 0.7− | 0.9− | 2006 04 08 | G96 | 0.2− | 0.6− |
| 2004 10 10 | 704 | 1.9− | 0.3+ | 2004 12 15 | 703 | (2.3+ | 1.1+) | 2006 04 08 | G96 | 0.1− | 0.4− |
| 2004 10 10 | 704 | (2.3− | 0.9+) | 2004 12 20 | 703 | 0.6+ | 1.1− | 2006 04 08 | G96 | 0.0 | 0.0 |

**2004 TV$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.96204 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20103859 | $\omega$ | 354.64091 | | −0.76685914 | −0.64127010 | |
| $a$ | 2.8859120 | $\Omega$ | 145.42662 | | +0.59057240 | −0.72117020 | |
| $e$ | 0.0071155 | $i$ | 2.67179 | | +0.25129922 | −0.26208052 | |
| $P$ | 4.90 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.1+ | 0.8+ | 2004 10 14 | 691 | 0.0 | 0.2− | 2006 01 22 | G96 | 0.5+ | 0.1− |
| 1994 10 09 | 691 | 1.2− | 0.4+ | 2004 10 14 | 691 | 0.0 | 0.4− | 2006 01 22 | G96 | 0.6+ | 0.1− |
| 1994 10 09 | 691 | 0.5+ | 0.4+ | 2004 12 10 | 691 | 0.2+ | 0.0 | 2006 01 22 | G96 | 0.2+ | 0.2− |
| 2002 04 13 | 644 | 0.4+ | 2.2+ | 2004 12 10 | 691 | 0.1+ | 0.2+ | 2006 02 05 | G96 | 0.1− | 0.1+ |
| 2002 04 13 | 644 | 0.9+ | 0.6+ | 2004 12 10 | 691 | 0.2+ | 0.4− | 2006 02 05 | G96 | 0.3+ | 0.1+ |
| 2002 04 13 | 644 | 0.2− | 0.4+ | 2006 01 05 | G96 | 0.9− | 0.5+ | 2006 02 05 | G96 | 0.4− | 0.0 |
| 2004 10 10 | 691 | 0.2− | 0.1+ | 2006 01 05 | G96 | 0.1+ | 0.2+ | 2006 02 23 | G96 | 0.2− | 0.2+ |
| 2004 10 10 | 691 | 0.2− | 0.0 | 2006 01 05 | G96 | 0.6+ | 0.0 | 2006 02 23 | G96 | 0.0 | 0.2+ |
| 2004 10 10 | 691 | 0.1+ | 0.1− | 2006 01 05 | G96 | 0.2+ | 0.1+ | 2006 02 23 | G96 | 0.1+ | 0.6+ |
| 2004 10 14 | 691 | 0.2+ | 0.1+ | 2006 01 22 | G96 | 0.1− | 0.1− | 2006 02 23 | G96 | 0.4− | 0.4+ |

**2004 TX$_{366}$ = 2000 SG$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.58613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25527558 | $\omega$ | 189.24857 | | +0.90611940 | −0.42293139 | |
| $a$ | 2.4611035 | $\Omega$ | 195.78003 | | +0.39014440 | +0.84351632 | |
| $e$ | 0.1944942 | $i$ | 1.84505 | | +0.16350832 | +0.33107289 | |
| $P$ | 3.86 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 0.0 | 0.2− | 2000 10 02 | 704 | 0.3+ | 0.4+ | 2004 12 03 | 699 | 0.3+ | 0.5+ |
| 2000 09 27 | 704 | 0.0 | 0.1+ | 2004 10 15 | G96 | 0.7+ | 0.6− | 2004 12 03 | 699 | 0.2+ | 0.1− |
| 2000 09 27 | 704 | 0.3+ | 0.8+ | 2004 10 15 | G96 | 0.6+ | 0.6− | 2004 12 03 | 699 | 0.4− | 0.0 |
| 2000 09 27 | 704 | 0.3− | 0.0 | 2004 10 15 | G96 | 0.3+ | 0.7− | 2004 12 03 | 699 | 1.4+ | 0.9+ |
| 2000 09 27 | 704 | 0.0 | 0.3+ | 2004 10 15 | G96 | 0.5+ | 0.6− | 2006 02 25 | 691 | 0.0 | 0.1+ |
| 2000 10 01 | 704 | 0.0 | 0.3+ | 2004 11 04 | 703 | 0.3− | 0.0 | 2006 02 25 | 691 | 0.0 | 0.1+ |
| 2000 10 01 | 704 | 0.0 | 0.2− | 2004 11 04 | 703 | 0.4− | 0.2+ | 2006 02 25 | 691 | 0.4+ | 0.2+ |
| 2000 10 01 | 704 | 0.5− | 0.1+ | 2004 11 04 | 703 | 0.3+ | 0.2− | 2006 03 25 | G96 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.3− | 0.1+ | 2004 11 04 | 703 | 0.3+ | 0.4+ | 2006 03 25 | G96 | 0.4− | 0.9+ | | |
| 2000 10 01 | 704 | 0.1− | 0.7+ | 2004 11 19 | 703 | 1.4− | 0.9− | 2006 03 25 | G96 | 0.2+ | 0.4+ | | |
| 2000 10 02 | 704 | 0.2− | 1.8+ | 2004 11 19 | 703 | 0.9− | 0.6− | 2006 03 25 | G96 | 0.4− | 0.2+ | | |
| 2000 10 02 | 704 | 0.0 | 0.5+ | 2004 11 19 | 703 | 0.0 | 0.4+ | | | | | | |
| 2000 10 02 | 704 | 0.7− | 0.8− | 2004 11 19 | 703 | 0.5− | 0.1− | | | | | | |

**2004 TY$_{366}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.94886 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28189808 | $\omega$ | 186.67920 | | +0.77467987 | | −0.63048002 |
| $a$ | 2.3036048 | $\Omega$ | 212.56798 | | +0.58427362 | | +0.74307823 |
| $e$ | 0.1584691 | $i$ | 5.18445 | | +0.24185829 | | +0.22434281 |
| $P$ | 3.50 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 645 | 0.0 | 0.0 | 2004 11 10 | 691 | 0.1− | 0.2− | 2004 11 18 | E12 | 1.1+ | 0.3− | | |
| 2002 03 05 | 645 | 0.0 | 0.0 | 2004 11 10 | 691 | 0.2− | 0.3+ | 2004 11 18 | E12 | 0.0 | 0.9+ | | |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2004 11 15 | 246 | 1.2+ | 0.5+ | 2004 11 18 | E12 | (2.1− | 0.7+) | | |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2004 11 15 | 246 | 0.2+ | 0.1+ | 2004 12 14 | 699 | 0.2+ | 0.2− | | |
| 2004 10 15 | G96 | 0.2+ | 0.1− | 2004 11 15 | 246 | 0.3− | 0.7+ | 2004 12 14 | 699 | 0.3+ | 0.6+ | | |
| 2004 10 15 | G96 | 0.0 | 0.3− | 2004 11 15 | 246 | 0.3− | 0.1+ | 2004 12 14 | 699 | 0.8+ | 0.8− | | |
| 2004 10 15 | G96 | 0.0 | 0.2− | 2004 11 15 | 246 | 0.5− | 0.1− | 2004 12 14 | 699 | 0.5− | 0.2− | | |
| 2004 10 15 | G96 | 0.1+ | 0.2− | 2004 11 15 | 246 | 0.0 | 0.5− | | | | | | |
| 2004 11 10 | 691 | 0.1− | 0.1− | 2004 11 18 | E12 | 0.6− | 0.2− | | | | | | |

**2004 UM$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.67873 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21679942 | $\omega$ | 331.18362 | | +0.77191415 | | +0.63503037 |
| $a$ | 2.7442941 | $\Omega$ | 349.23898 | | −0.54844875 | | +0.64154592 |
| $e$ | 0.1415321 | $i$ | 9.16782 | | −0.32148485 | | +0.43029670 |
| $P$ | 4.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 16 | 644 | 0.7− | 1.2+ | 2004 09 18 | 704 | 0.1− | 1.0− | 2004 10 19 | 704 | 0.3− | 0.8+ | | |
| 2002 02 16 | 644 | 0.7− | 0.7+ | 2004 09 18 | 704 | 0.4+ | 0.9− | 2004 10 20 | 704 | 0.3+ | 1.1+ | | |
| 2002 02 16 | 644 | 0.5− | 1.3+ | 2004 10 10 | 704 | 0.3+ | 0.3− | 2004 10 20 | 704 | 0.1+ | 0.8+ | | |
| 2002 03 12 | 691 | 0.1+ | 0.1− | 2004 10 10 | 704 | 0.9+ | 1.2− | 2004 10 20 | 704 | 0.9− | 0.4− | | |
| 2002 03 12 | 691 | 0.1+ | 0.4− | 2004 10 10 | 704 | 1.1+ | 0.2+ | 2004 10 20 | 704 | 0.1+ | 0.5+ | | |
| 2002 03 12 | 691 | 0.3+ | 0.3− | 2004 10 10 | 704 | 0.5+ | 1.5− | 2004 10 20 | 704 | 0.1+ | 0.6+ | | |
| 2004 08 11 | 704 | 1.0− | 0.2− | 2004 10 10 | 704 | 0.6+ | 0.3− | 2004 10 21 | 704 | 0.3+ | 0.6− | | |
| 2004 08 11 | 704 | 1.3− | 0.3+ | 2004 10 19 | 704 | 0.7− | 1.2+ | 2004 10 21 | 704 | 0.1+ | 0.1+ | | |
| 2004 08 11 | 704 | 0.4+ | 0.4− | 2004 10 19 | 704 | 0.7− | 0.4+ | 2004 10 21 | 704 | 0.3− | 0.2− | | |
| 2004 08 11 | 704 | 1.3+ | 1.4+ | 2004 10 19 | 704 | 0.4− | 0.6− | 2004 10 21 | 704 | 0.7− | 0.0 | | |
| 2004 09 18 | 704 | 0.4+ | 0.0 | 2004 10 19 | 704 | 0.1+ | 0.3+ | 2004 10 21 | 704 | 0.6− | 0.3− | | |

**2004 UK$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.74558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17397827 | $\omega$ | 333.39927 | | +0.53372774 | | +0.83079341 |
| $a$ | 3.1778938 | $\Omega$ | 328.12874 | | −0.71284480 | | +0.34157500 |
| $e$ | 0.1800595 | $i$ | 17.39477 | | −0.45495823 | | +0.43944150 |
| $P$ | 5.67 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 26 | 704 | 0.4− | 0.9− | 2004 10 23 | 704 | 0.6− | 0.6+ | 2004 11 04 | 704 | 0.5+ | 0.3+ | | |
| 2004 08 26 | 704 | 1.1− | 0.4+ | 2004 10 23 | 704 | 0.2+ | 1.3+ | 2004 11 04 | 704 | 1.4+ | 0.2+ | | |
| 2004 08 26 | 704 | 0.0 | 0.1+ | 2004 10 23 | 704 | 0.1− | 0.2+ | 2004 11 04 | 704 | 0.4+ | 0.5+ | | |
| 2004 08 26 | 704 | 0.3+ | 0.6+ | 2004 10 23 | 704 | 0.7− | 0.5− | 2004 11 04 | 704 | 0.8+ | 0.5− | | |
| 2004 08 26 | 704 | 0.4− | 0.2− | 2004 10 23 | 704 | 0.1+ | 0.5− | 2004 12 14 | 201 | 0.3+ | 0.3− | | |
| 2004 09 14 | 704 | 0.2− | 0.5+ | 2004 10 24 | 704 | 0.6− | 0.6− | 2004 12 14 | 201 | 0.8− | 0.4− | | |
| 2004 09 14 | 704 | 0.0 | 0.7− | 2004 10 24 | 704 | 0.8− | 0.4− | 2004 12 14 | 201 | 0.4+ | 0.2− | | |
| 2004 09 14 | 704 | 0.6+ | 0.3− | 2004 10 24 | 704 | 0.7+ | 0.2− | 2005 12 30 | 703 | 0.5+ | 0.7− | | |
| 2004 09 14 | 704 | 1.1+ | 0.3+ | 2004 10 24 | 704 | 0.4− | 0.6+ | 2005 12 30 | 703 | 0.1+ | 0.7+ | | |
| 2004 09 14 | 704 | 0.4+ | 0.4+ | 2004 10 24 | 704 | 0.1− | 0.5+ | 2005 12 30 | 703 | 0.2+ | 0.3− | | |
| 2004 10 08 | 704 | 0.5− | 0.6+ | 2004 10 24 | 704 | 0.4+ | 0.3− | 2005 12 30 | 703 | 0.8− | 0.3+ | | |
| 2004 10 08 | 704 | 0.4+ | 0.2+ | 2004 10 24 | 704 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2004 10 08 | 704 | 0.3− | 0.8+ | 2004 10 24 | 704 | 0.3+ | 1.1− | 2006 11 24 | G96 | 0.8− | 0.1− | | |
| 2004 10 08 | 704 | 0.3+ | 0.3− | 2004 10 24 | 704 | 1.0− | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2004 10 16 | 704 | 0.3+ | 0.5+ | 2004 10 24 | 704 | 0.2− | 0.8− | 2006 11 24 | G96 | 0.4+ | 0.1− | | |
| 2004 10 16 | 704 | 0.5+ | 0.3+ | 2004 11 03 | 703 | 0.4+ | 0.3− | 2006 12 01 | G96 | 0.0 | 0.1− | | |
| 2004 10 16 | 704 | 0.2+ | 0.5− | 2004 11 03 | 703 | 0.6− | 0.3+ | 2006 12 01 | G96 | 0.2+ | 0.5+ | | |
| 2004 10 16 | 704 | 1.1− | 0.2− | 2004 11 03 | 703 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.1+ | | |
| 2004 10 16 | 704 | 0.3− | 0.4− | 2004 11 03 | 703 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.1+ | | |

**2004 US$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.33875 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29855977 | $\omega$ | 274.14300 | | −0.60265505 | | −0.79713472 |
| $a$ | 2.2170825 | $\Omega$ | 213.00836 | | +0.75656713 | | −0.55592045 |
| $e$ | 0.1067382 | $i$ | 3.91457 | | +0.25379730 | | −0.23564525 |
| $P$ | 3.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 13 | 691 | 0.0 | 0.0 | 2006 03 26 | 691 | 0.2+ | 0.4+ | 2006 05 01 | 704 | 1.2+ | 0.1+ | | |
| 2004 10 13 | 691 | 0.1+ | 0.2− | 2006 03 26 | 691 | 0.3+ | 0.1+ | 2006 05 04 | G96 | 0.2− | 0.4− | | |
| 2004 10 13 | 691 | 0.0 | 0.1− | 2006 03 26 | 691 | 0.4− | 0.3− | 2006 05 04 | G96 | 0.3− | 0.3− | | |
| 2004 10 20 | 704 | 0.9+ | 0.0 | 2006 04 19 | G96 | 0.1+ | 0.1+ | 2006 05 04 | G96 | 0.1− | 0.1− | | |
| 2004 10 20 | 704 | 1.1− | 0.5+ | 2006 04 19 | G96 | 0.3− | 0.3− | 2006 05 04 | G96 | 0.4+ | 0.7+ | | |
| 2004 10 20 | 704 | 0.5− | 0.1− | 2006 04 19 | G96 | 0.3+ | 0.5− | 2006 05 22 | G96 | 0.3− | 0.1− | | |
| 2004 10 21 | 704 | 0.1+ | 0.4+ | 2006 04 19 | G96 | 0.2− | 0.2− | 2006 05 22 | G96 | 0.4+ | 0.2− | | |
| 2004 10 21 | 704 | (0.3+ | 3.2+) | 2006 05 01 | 704 | 0.2− | 0.3+ | 2006 05 22 | G96 | 0.4− | 0.1− | | |
| 2004 10 21 | 704 | 0.2− | 0.3− | 2006 05 01 | 704 | 0.5− | 0.5+ | 2006 05 22 | G96 | 0.0 | 0.2+ | | |
| 2004 10 21 | 704 | 0.1− | 1.3+ | 2006 05 01 | 704 | 0.3+ | 0.4+ | | | | | | |

**2004 UD$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.52925 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26209029 | $\omega$ | 215.07941 | | −0.17130413 | | −0.98107508 |
| $a$ | 2.4182550 | $\Omega$ | 244.93495 | | +0.92517064 | | −0.12869268 |
| $e$ | 0.1450857 | $i$ | 5.71855 | | +0.33869481 | | −0.14467161 |
| $P$ | 3.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 644 | 0.0 | 0.3+ | 2004 10 23 | 691 | 0.1− | 0.0 | 2004 11 19 | 703 | 0.5− | 0.2+ | | |
| 2002 04 05 | 644 | 0.2+ | 0.1+ | 2004 10 23 | 691 | 0.1+ | 0.0 | 2004 11 19 | 703 | 0.5− | 0.1+ | | |
| 2002 04 05 | 644 | 0.0 | 0.1+ | 2004 10 23 | 691 | 0.0 | 0.0 | 2004 12 13 | 691 | 0.1− | 0.2− | | |
| 2004 10 13 | 691 | 0.1+ | 0.1+ | 2004 11 09 | 703 | 0.4+ | 0.2− | 2004 12 13 | 691 | 0.1− | 0.0 | | |
| 2004 10 13 | 691 | 0.1+ | 0.2− | 2004 11 09 | 703 | 0.4+ | 0.6− | 2004 12 13 | 691 | 0.0 | 0.3− | | |
| 2004 10 13 | 691 | 0.2+ | 0.2− | 2004 11 09 | 703 | 0.4+ | 0.0 | 2006 05 31 | G96 | 0.0 | 0.0 | | |
| 2004 10 21 | 704 | 0.8+ | 1.9+ | 2004 11 09 | 703 | 0.3− | 0.0 | 2006 05 31 | G96 | 0.1− | 0.3− | | |
| 2004 10 21 | 704 | 0.8− | 0.5+ | 2004 11 19 | 703 | 0.0 | 0.6+ | 2006 05 31 | G96 | 0.0 | 0.2+ | | |
| 2004 10 21 | 704 | 0.3− | 0.5+ | 2004 11 19 | 703 | 0.3− | 0.2+ | 2006 05 31 | G96 | 0.0 | 0.1− | | |

**2004 UY$_{10}$ = 2006 BC$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.21826 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18738170 | $\omega$ | 265.69873 | | +0.95707335 | | +0.05283682 |
| $a$ | 3.0244838 | $\Omega$ | 91.09403 | | +0.06100791 | | +0.92449431 |
| $e$ | 0.1018529 | $i$ | 16.56131 | | −0.28335250 | | +0.37751627 |
| $P$ | 5.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 01 | 691 | 0.2+ | 0.1− | 2004 11 04 | 683 | (1.6− | 2.4+) | 2004 12 04 | 699 | 0.8+ | 0.2+ | | |
| 1997 06 01 | 691 | 0.4− | 0.3+ | 2004 11 05 | 699 | (0.8+ | 2.2+) | 2004 12 04 | 699 | 1.0+ | 0.3− | | |
| 1997 06 01 | 691 | 0.2+ | 0.1− | 2004 11 05 | 699 | 0.8− | 0.2+ | 2004 12 04 | 699 | 0.3− | 1.3+ | | |
| 1999 12 08 | 704 | 0.5− | 0.4− | 2004 11 05 | 699 | 0.4+ | 0.8+ | 2004 12 04 | 699 | (2.7+ | 0.8−) | | |
| 1999 12 08 | 704 | 1.3+ | 0.9− | 2004 11 05 | 699 | 1.1− | 0.2+ | 2006 01 22 | 703 | (4.3− | 0.1+) | | |
| 1999 12 08 | 704 | 0.8+ | 0.8− | 2004 11 10 | 683 | (0.2− | 2.0−) | 2006 01 22 | 703 | (3.8− | 0.5−) | | |
| 1999 12 08 | 704 | 0.8− | 1.1− | 2004 11 10 | 683 | (1.0+ | 2.0−) | 2006 01 22 | 703 | (4.6− | 1.7−) | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 704 | 0.8+ | 0.4− | 2004 11 10 | 683 | 0.8− | 0.6− | 2006 01 22 | 703 | 0.2− | 0.8+ |
| 2004 10 24 | 699 | 0.7− | 1.5+ | 2004 11 12 | 704 | 0.7− | 0.4− | 2006 01 27 | 703 | 1.3+ | 0.6− |
| 2004 10 24 | 699 | 1.2− | 0.7+ | 2004 11 12 | 704 | 1.0− | 0.3− | 2006 01 27 | 703 | 0.9− | 1.3+ |
| 2004 10 24 | 699 | 0.1+ | 0.0 | 2004 11 12 | 704 | 1.4− | 0.3+ | 2006 01 27 | 703 | 0.2− | 0.2+ |
| 2004 10 24 | 699 | (2.0− | 1.2+) | 2004 11 20 | 683 | 1.6+ | 1.4− | 2006 01 27 | 703 | 0.4+ | 0.5+ |
| 2004 11 04 | 683 | 1.3+ | 0.2+ | 2004 11 20 | 683 | (3.4+ | 0.9−) | | | | |
| 2004 11 04 | 683 | 1.6− | 1.5+ | 2004 11 20 | 683 | 0.6− | 0.0 | | | | |

**2004 UZ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.04682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22566341 | $\omega$ | 180.02317 | | +0.67043414 | −0.72420558 | |
| $a$ | 2.6719518 | $\Omega$ | 227.87681 | | +0.68077828 | +0.68691098 | |
| $e$ | 0.2588230 | $i$ | 12.56714 | | +0.29505761 | +0.06065960 | |
| $P$ | 4.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 28 | 608 | 0.6− | 0.4− | 2004 10 19 | 704 | 0.5+ | 0.7− | 2004 12 12 | 704 | 0.2+ | 1.5− |
| 2000 12 28 | 608 | 0.2− | 0.6− | 2004 10 19 | 704 | 0.5− | 0.7− | 2004 12 12 | 704 | 0.5− | 0.9+ |
| 2000 12 28 | 608 | 0.6− | 0.2− | 2004 11 18 | 704 | 0.5− | 0.2+ | 2004 12 18 | 704 | 0.1− | 0.3− |
| 2001 01 19 | 608 | 0.7+ | 0.3+ | 2004 11 18 | 704 | 0.2− | 0.4+ | 2004 12 18 | 704 | 0.3− | 0.2− |
| 2001 01 19 | 608 | 0.6+ | 0.5+ | 2004 11 18 | 704 | 0.7− | 0.6− | 2004 12 18 | 704 | 0.1− | 0.1+ |
| 2001 01 19 | 608 | 0.1− | 0.6+ | 2004 11 18 | 704 | 0.5− | 1.3+ | 2004 12 18 | 704 | 0.3− | 0.1+ |
| 2004 10 19 | 704 | 1.3+ | 0.2+ | 2004 12 12 | 704 | 1.0+ | 0.6+ | 2004 12 18 | 704 | 0.6+ | 0.0 |
| 2004 10 19 | 704 | 0.4− | 1.1+ | 2004 12 12 | 704 | 0.7+ | 0.9− | | | | |

**2004 UA$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.26584 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17743875 | $\omega$ | 116.95810 | | +0.99176882 | −0.11501683 | |
| $a$ | 3.1364406 | $\Omega$ | 249.69067 | | +0.08546848 | +0.92187025 | |
| $e$ | 0.1012477 | $i$ | 3.43950 | | +0.09534017 | +0.37003562 | |
| $P$ | 5.55 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 644 | 0.3+ | 0.9+ | 2004 11 10 | 704 | 1.1− | 1.8+ | 2004 12 09 | 703 | 0.2+ | 0.1− |
| 2002 05 17 | 644 | 0.1− | 0.7+ | 2004 11 10 | 704 | 1.1− | 1.1+ | 2004 12 09 | 703 | 0.8+ | 0.1− |
| 2002 05 17 | 644 | 0.2+ | 0.6+ | 2004 11 19 | 703 | 0.9+ | 1.0+ | 2006 01 09 | 691 | 0.1− | 0.2− |
| 2004 10 23 | 691 | 0.1− | 0.0 | 2004 11 19 | 703 | 0.1+ | 0.4− | 2006 01 09 | 691 | 0.3+ | 0.1+ |
| 2004 10 23 | 691 | 0.1+ | 0.0 | 2004 11 19 | 703 | 0.7+ | 0.5+ | 2006 01 09 | 691 | 0.1+ | 0.2+ |
| 2004 10 23 | 691 | 0.2+ | 0.1− | 2004 11 19 | 703 | 0.3+ | 0.4− | 2006 02 01 | G96 | 0.6− | 0.3− |
| 2004 11 09 | 703 | 0.5− | 0.0 | 2004 12 02 | 644 | 0.0 | 0.4− | 2006 02 01 | G96 | 0.2− | 0.1− |
| 2004 11 09 | 703 | 0.2− | 0.0 | 2004 12 02 | 644 | 0.5+ | 0.2+ | 2006 02 01 | G96 | 0.5− | 0.0 |
| 2004 11 09 | 703 | 1.4− | 0.3− | 2004 12 02 | 644 | 0.5+ | 0.1+ | 2006 02 01 | G96 | 0.2− | 0.0 |
| 2004 11 09 | 703 | 1.9+ | 0.7− | 2004 12 09 | 703 | 1.3− | 0.7+ | | | | |
| 2004 11 10 | 704 | 0.7− | 0.4+ | 2004 12 09 | 703 | 0.6− | 1.0− | | | | |

**2004 UD$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.47571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18191160 | $\omega$ | 269.95483 | | +0.56587759 | −0.80953787 | |
| $a$ | 3.0848150 | $\Omega$ | 144.09434 | | +0.82185759 | +0.53870760 | |
| $e$ | 0.3555470 | $i$ | 15.45758 | | +0.06582290 | +0.23332931 | |
| $P$ | 5.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.6+ | 0.6− | 2004 10 18 | 704 | 0.9− | 0.1− | 2004 12 11 | 699 | 0.2− | 0.3− |
| 2000 02 02 | 704 | 0.5+ | 0.2+ | 2004 11 11 | 699 | 0.1+ | 0.4− | 2004 12 11 | 699 | 0.5+ | 0.2− |
| 2000 02 02 | 704 | 0.0 | 0.7+ | 2004 11 11 | 699 | 0.8+ | 0.8+ | 2004 12 11 | 699 | 0.7+ | 0.3+ |
| 2000 03 01 | 691 | 0.1− | 0.1− | 2004 11 11 | 699 | 0.0 | 0.9+ | 2005 01 15 | 699 | 1.3− | 0.4+ |
| 2000 03 01 | 691 | 0.1− | 0.1+ | 2004 11 11 | 699 | 1.0− | 0.0 | 2005 01 15 | 699 | 0.1+ | 0.1+ |
| 2000 03 01 | 691 | 0.1− | 0.1− | 2004 11 30 | 644 | 0.0 | 0.7− | 2005 01 15 | 699 | 0.5− | 0.6− |
| 2004 10 18 | 704 | 0.5+ | 0.4+ | 2004 11 30 | 644 | 0.3+ | 0.4− | 2005 01 15 | 699 | 0.5+ | 0.4+ |
| 2004 10 18 | 704 | 0.2− | 0.0 | 2004 11 30 | 644 | 0.3+ | 0.1− | | | | |
| 2004 10 18 | 704 | 0.3− | 0.4− | 2004 12 11 | 699 | 0.1+ | 0.2+ | | | | |

**2004 UF$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.69258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29756145 | $\omega$ | 36.63845 | | +0.79118883 | −0.61156860 | |
| $a$ | 2.2220386 | $\Omega$ | 1.07092 | | +0.53231470 | +0.68702371 | |
| $e$ | 0.1577544 | $i$ | 6.20592 | | +0.30110013 | +0.39240576 | |
| $P$ | 3.31 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 644 | 0.4− | 0.2+ | 2004 11 04 | 704 | 1.0+ | 0.3− | 2004 12 02 | 703 | 0.1− | 0.3− |
| 2002 01 14 | 644 | 0.0 | 0.2+ | 2004 11 04 | 704 | 1.3+ | 1.1− | 2004 12 02 | 703 | 1.1− | 0.8− |
| 2002 01 14 | 644 | 0.4+ | 0.3+ | 2004 11 04 | 704 | (1.2+ | 2.3−) | 2004 12 11 | 703 | 0.2− | 0.4− |
| 2002 02 06 | 704 | 0.5+ | 0.1− | 2004 12 02 | 704 | 0.2− | 0.0 | 2004 12 11 | 703 | 0.1+ | 0.8− |
| 2002 02 06 | 704 | 0.2− | 0.5− | 2004 12 02 | 704 | 0.1− | 0.2− | 2004 12 11 | 703 | 1.5− | 0.1− |
| 2002 02 06 | 704 | 0.2− | 0.1− | 2004 12 02 | 704 | 0.1+ | 1.9+ | 2004 12 11 | 703 | 1.0− | 0.5+ |
| 2004 10 21 | 704 | 0.8− | 0.4− | 2004 12 02 | 704 | 0.7− | 0.1+ | 2004 12 17 | 699 | (1.6+ | 2.4+) |
| 2004 10 21 | 704 | 0.2− | 0.3+ | 2004 12 02 | 703 | 0.1+ | 0.4− | 2004 12 17 | 699 | 1.4+ | 0.5+ |
| 2004 10 21 | 704 | 0.4− | 0.6+ | 2004 12 02 | 704 | 0.5− | 0.4+ | 2004 12 17 | 699 | 1.8+ | 0.7+ |
| 2004 10 21 | 704 | 0.8+ | 0.6+ | 2004 12 02 | 703 | 0.2+ | 0.7− | 2004 12 17 | 699 | 0.0 | 0.1− |

**2004 VT$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.18249 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19014699 | $\omega$ | 77.80491 | | −0.08180891 | −0.99483710 | |
| $a$ | 2.9950890 | $\Omega$ | 17.23333 | | +0.81734456 | −0.10144916 | |
| $e$ | 0.2471815 | $i$ | 11.69511 | | +0.57031147 | +0.00268692 | |
| $P$ | 5.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.2− | 0.7− | 2004 12 02 | 704 | 0.1− | 0.2+ | 2006 03 24 | G96 | 1.0− | 0.4− |
| 1999 12 13 | 704 | 0.5+ | 0.9− | 2004 12 02 | 704 | 0.0 | 0.9+ | 2006 04 09 | 691 | 0.6+ | 0.4+ |
| 1999 12 13 | 704 | 0.1+ | 1.2− | 2004 12 02 | 703 | 0.6− | 0.3− | 2006 04 09 | 691 | 0.4+ | 0.4+ |
| 2004 11 03 | 699 | 0.2− | 0.1+ | 2004 12 02 | 703 | 0.4− | 0.1+ | 2006 04 09 | 691 | 0.0 | 0.3+ |
| 2004 11 03 | 699 | 0.4+ | 0.6+ | 2004 12 02 | 703 | 0.8− | 0.2− | 2006 04 26 | 691 | 0.0 | 0.3+ |
| 2004 11 03 | 699 | 0.6− | 0.8+ | 2004 12 02 | 703 | 0.1+ | 0.6− | 2006 04 26 | 691 | 0.4+ | 0.0 |
| 2004 11 03 | 699 | 0.0 | 0.2− | 2006 03 02 | G96 | 0.1+ | 0.3− | 2006 04 26 | 691 | 0.5+ | 0.0 |
| 2004 11 04 | 704 | 0.0 | 0.9+ | 2006 03 02 | G96 | 0.4+ | 0.5− | 2006 04 26 | G96 | 0.0 | 0.4− |
| 2004 11 04 | 704 | 0.3− | 0.8+ | 2006 03 02 | G96 | 0.3− | 0.4− | 2006 04 26 | G96 | 0.5− | 0.2− |
| 2004 11 04 | 704 | 0.3− | 1.3+ | 2006 03 02 | G96 | 0.3− | 0.1+ | 2006 04 26 | G96 | 0.6− | 0.2− |
| 2004 11 04 | 704 | 0.0 | 1.0+ | 2006 03 24 | G96 | 0.3− | 0.2+ | 2006 04 26 | G96 | 1.3− | 0.6− |
| 2004 11 04 | 704 | 0.7− | 1.0+ | 2006 03 24 | G96 | 0.3− | 0.3+ | | | | |
| 2004 12 02 | 704 | 1.4+ | 1.6− | 2006 03 24 | G96 | 0.4− | 0.2− | | | | |

**2004 VJ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.42076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22430952 | $\omega$ | 254.05850 | | +0.73339789 | −0.67747133 | |
| $a$ | 2.6826926 | $\Omega$ | 148.52297 | | +0.65760756 | +0.68606963 | |
| $e$ | 0.0261119 | $i$ | 6.18040 | | +0.17227836 | +0.26521890 | |
| $P$ | 4.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.3+ | 0.5+ | 2004 11 12 | 735 | 0.7− | 0.6− | 2006 02 20 | G96 | 0.2+ | 0.2− |
| 1999 09 03 | 691 | 0.5− | 0.8+ | 2004 11 12 | 735 | 0.8− | 1.1+ | 2006 02 20 | G96 | 0.1− | 0.4− |
| 1999 09 03 | 691 | 0.3− | 0.3+ | 2004 11 12 | 735 | 0.8− | 1.4+ | 2006 02 20 | G96 | 0.1− | 0.6− |
| 2002 03 10 | 291 | 0.3+ | 0.6+ | 2006 01 05 | G96 | 0.1+ | 0.0 | 2006 02 20 | G96 | 0.2+ | 0.3− |
| 2002 03 10 | 291 | 0.3+ | 0.3+ | 2006 01 05 | G96 | 0.3+ | 0.0 | 2006 03 05 | G96 | 0.0 | 0.2+ |
| 2002 03 10 | 291 | 0.0 | 0.3+ | 2006 01 05 | G96 | 0.0 | 0.0 | 2006 03 05 | G96 | 0.3− | 0.0 |
| 2004 11 04 | 735 | 0.6− | 0.4+ | 2006 01 05 | G96 | 0.4− | 0.3+ | 2006 03 05 | G96 | 0.4− | 0.0 |
| 2004 11 04 | 735 | 0.4+ | 0.1− | 2006 01 21 | G96 | 0.0 | 0.2+ | 2006 03 09 | G96 | 0.3− | 0.5+ |
| 2004 11 04 | 735 | 0.3+ | 1.3− | 2006 01 21 | G96 | 0.1+ | 0.5+ | 2006 03 09 | G96 | 0.4− | 0.2+ |
| 2004 11 06 | 735 | (3.8+ | 2.1+) | 2006 01 21 | G96 | 0.4− | 0.3+ | 2006 03 09 | G96 | 0.5− | 0.5− |
| 2004 11 06 | 735 | 1.2+ | 0.4− | 2006 01 21 | G96 | 0.3− | 0.0 | 2006 03 09 | G96 | 0.4+ | 0.3− |
| 2004 11 06 | 735 | 0.7+ | 1.1− | 2006 02 03 | 691 | 0.9+ | 0.1+ | 2006 03 24 | G96 | 0.1− | 0.0 |
| 2004 11 07 | 735 | 0.7− | 0.1+ | 2006 02 03 | 691 | 0.0 | 0.0 | 2006 03 24 | G96 | 0.2− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 07 | 735 | 0.2+ | 0.8+ | 2006 02 03 | 691 | 0.3− | 0.3+ | 2006 03 24 | G96 | 0.2+ | 0.1− |
| 2004 11 07 | 735 | 0.0 | 1.0+ | 2006 02 07 | 691 | 0.4− | 0.3+ | 2006 03 24 | G96 | 0.1+ | 0.1+ |
| 2004 11 07 | 735 | 0.5+ | 0.8+ | 2006 02 07 | 691 | 0.5+ | 0.2− | | | | |
| 2004 11 07 | 735 | 0.2+ | 0.1+ | 2006 02 07 | 691 | 0.3− | 0.3+ | | | | |

**2004 VZ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.13002 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22928441 | $\omega$ | 282.19731 | | +0.98958889 | −0.13290092 | |
| $a$ | 2.6437459 | $\Omega$ | 85.45866 | | +0.14388403 | +0.90462306 | |
| $e$ | 0.2266181 | $i$ | 3.17647 | | +0.00334961 | +0.40496231 | |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 30 | 807 | 0.4− | 0.3+ | 2004 11 30 | 699 | 0.4+ | 0.2+ | 2004 12 12 | 599 | 0.0 | 0.1+ |
| 2003 05 30 | 807 | 0.4+ | 0.0 | 2004 11 30 | 699 | 0.5− | 1.0+ | 2004 12 14 | 703 | 0.0 | 0.5− |
| 2004 11 04 | 703 | 0.8+ | 1.5− | 2004 11 30 | 699 | 0.3+ | 0.4− | 2004 12 14 | 703 | 0.8− | 0.7− |
| 2004 11 04 | 703 | 0.1− | 0.7− | 2004 12 10 | 599 | 0.2− | 0.1− | 2004 12 14 | 703 | 0.1+ | 0.4− |
| 2004 11 04 | 703 | 0.6− | 0.9− | 2004 12 10 | 599 | 0.6− | 0.1− | 2004 12 14 | 703 | 0.1+ | 0.1− |
| 2004 11 04 | 703 | 1.0+ | 0.1− | 2004 12 10 | 599 | 0.1+ | 0.1− | 2005 03 13 | G96 | 0.1− | 0.1− |
| 2004 11 07 | 704 | 0.4+ | 1.7+ | 2004 12 10 | 599 | 0.1+ | 0.1+ | 2005 03 13 | G96 | 0.1+ | 0.6− |
| 2004 11 07 | 704 | 0.6− | 1.3+ | 2004 12 11 | 599 | 0.3− | 0.0 | 2005 03 13 | G96 | 0.0 | 0.4+ |
| 2004 11 07 | 704 | 0.6− | 0.8+ | 2004 12 11 | 599 | 0.3+ | 0.0 | 2005 03 13 | G96 | 0.2+ | 0.3− |
| 2004 11 19 | 703 | 0.1+ | 0.3+ | 2004 12 11 | 599 | 0.4+ | 0.2+ | 2006 03 04 | G96 | 0.1− | 0.1− |
| 2004 11 19 | 703 | 0.7− | 0.4+ | 2004 12 11 | 599 | 0.1+ | 0.2− | 2006 03 04 | G96 | 0.2+ | 0.1+ |
| 2004 11 19 | 703 | 0.7− | 0.8− | 2004 12 12 | 599 | 0.1+ | 0.1− | 2006 03 04 | G96 | 0.0 | 0.2+ |
| 2004 11 19 | 703 | 0.6− | 0.4− | 2004 12 12 | 599 | 0.1+ | 0.1− | 2006 03 04 | G96 | 0.1+ | 0.3+ |
| 2004 11 30 | 699 | 1.5+ | 1.5+ | 2004 12 12 | 599 | 0.1+ | 0.0 | | | | |

**2004 VO$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.56183 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30333756 | $\omega$ | 144.91041 | | +0.70688743 | +0.70720795 | |
| $a$ | 2.1937405 | $\Omega$ | 170.04928 | | −0.66486287 | +0.67057586 | |
| $e$ | 0.1813954 | $i$ | 4.28974 | | −0.24138667 | +0.22401994 | |
| $P$ | 3.25 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 06 | 691 | 0.4+ | 0.1+ | 2003 04 21 | 691 | 0.6+ | 0.0 | 2004 11 12 | 703 | 0.0 | 1.9− |
| 2003 04 06 | 691 | 0.2− | 0.7+ | 2004 11 04 | 691 | 0.1+ | 0.2+ | 2004 11 12 | 703 | 0.0 | 1.1− |
| 2003 04 06 | 691 | 0.1− | 0.1+ | 2004 11 04 | 691 | 0.1+ | 0.5+ | 2004 11 12 | 703 | 1.2− | 0.2+ |
| 2003 04 11 | 691 | 0.2− | 0.4− | 2004 11 04 | 691 | 0.3+ | 0.3+ | 2004 11 19 | 703 | 0.1− | 1.0− |
| 2003 04 11 | 691 | 0.4− | 0.2− | 2004 11 10 | 691 | 0.1+ | 0.0 | 2004 11 19 | 703 | 0.2− | 0.5+ |
| 2003 04 11 | 691 | 0.6− | 0.1− | 2004 11 10 | 691 | 0.1+ | 0.2+ | 2004 11 19 | 703 | 1.0− | 0.1− |
| 2003 04 21 | 691 | 0.2+ | 0.0 | 2004 11 10 | 691 | 0.1+ | 0.0 | 2004 11 19 | 703 | 0.9− | 1.2− |
| 2003 04 21 | 691 | 0.3+ | 0.0 | 2004 11 12 | 703 | (3.0− | 3.3−) | | | | |

**2004 VU$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.10118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27555541 | $\omega$ | 334.08817 | | +0.71788817 | −0.68687656 | |
| $a$ | 2.3388198 | $\Omega$ | 69.78398 | | +0.65786316 | +0.61611670 | |
| $e$ | 0.2440176 | $i$ | 6.93476 | | +0.22771174 | +0.38548774 | |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 30 | 807 | 0.0 | 0.6+ | 2004 12 03 | 291 | 0.2− | 0.2− | 2004 12 19 | 704 | 1.6+ | 0.9+ |
| 2003 05 30 | 807 | 0.3+ | 0.6+ | 2004 12 03 | 291 | 0.2− | 0.2− | 2004 12 19 | 704 | 1.7+ | 0.7+ |
| 2004 10 09 | 704 | 0.3− | 0.3− | 2004 12 03 | 291 | (2.3+ | 0.4+) | 2004 12 19 | 704 | 1.4+ | 1.3+ |
| 2004 10 09 | 704 | 0.2+ | 0.1+ | 2004 12 08 | 704 | (0.4+ | 2.3+) | 2004 12 19 | 704 | 0.8+ | 1.0+ |
| 2004 10 09 | 704 | 0.9+ | 0.5− | 2004 12 08 | 704 | 0.1− | 0.7+ | 2004 12 19 | 704 | 1.3+ | 0.0 |
| 2004 10 09 | 704 | 0.5+ | 0.7− | 2004 12 08 | 704 | 0.1+ | 0.6+ | 2004 12 19 | 704 | 1.7+ | 0.5+ |
| 2004 10 19 | 704 | 1.3− | 1.1+ | 2004 12 08 | 704 | 0.0 | 0.0 | 2004 12 19 | 704 | 0.4+ | 0.4+ |
| 2004 10 19 | 704 | 0.2− | 0.5− | 2004 12 08 | 704 | 0.0 | 0.5+ | 2004 12 19 | 704 | 1.3+ | 1.0+ |
| 2004 10 19 | 704 | 0.4+ | 0.4− | 2004 12 10 | 704 | 0.1+ | 0.4− | 2005 01 06 | 704 | 0.5+ | 1.3− |
| 2004 10 19 | 704 | 1.0− | 0.6+ | 2004 12 10 | 704 | 0.1+ | 0.8− | 2005 01 06 | 704 | 0.5+ | 0.7− |
| 2004 11 07 | 704 | 1.1+ | 0.0 | 2004 12 10 | 704 | 0.2+ | 0.7− | 2005 01 06 | 704 | 0.7+ | 0.3− |
| 2004 11 07 | 704 | 0.4− | 0.3+ | 2004 12 10 | 704 | 0.8+ | 0.9− | 2005 01 06 | 704 | 0.3+ | 0.2+ |
| 2004 11 07 | 704 | 0.1+ | 0.2+ | 2004 12 10 | 704 | 0.1+ | 0.3− | 2005 01 06 | 704 | 0.6− | 0.7+ |
| 2004 11 07 | 704 | 0.0 | 0.3+ | 2004 12 14 | 704 | 0.5− | 0.5− | 2005 01 12 | 704 | 0.3+ | 0.6− |
| 2004 11 11 | 691 | 0.0 | 0.0 | 2004 12 14 | 704 | 0.2− | 0.2+ | 2005 01 12 | 704 | 0.9+ | 0.4+ |
| 2004 11 11 | 691 | 0.1− | 0.1− | 2004 12 14 | 704 | 0.4− | 0.5+ | 2005 01 12 | 704 | 0.2+ | 0.2− |
| 2004 11 11 | 691 | 0.1+ | 0.1− | 2004 12 14 | 704 | 0.9− | 0.3− | 2005 01 12 | 704 | 1.1+ | 0.8− |
| 2004 11 18 | 704 | 0.5+ | 0.0 | 2004 12 14 | 704 | 0.4− | 0.8− | 2005 01 12 | 704 | 0.4+ | 0.8+ |
| 2004 11 18 | 704 | 0.2− | 0.0 | 2004 12 16 | 704 | 1.4− | 0.7− | 2005 01 17 | 703 | 0.4− | 0.4− |
| 2004 11 18 | 704 | 0.3+ | 0.5+ | 2004 12 16 | 704 | 0.4− | 0.6+ | 2005 01 17 | 703 | 1.3− | 0.8− |
| 2004 11 18 | 704 | 1.1+ | 0.1+ | 2004 12 16 | 704 | 0.8− | 0.5+ | 2005 01 17 | 703 | 1.3− | 0.9− |
| 2004 11 18 | 704 | 0.5+ | 0.4− | 2004 12 16 | 704 | 0.5− | 0.4+ | 2005 01 17 | 703 | 1.0− | 0.1− |
| 2004 12 02 | 704 | 1.3− | 0.1+ | 2004 12 16 | 704 | 0.6− | 0.2− | 2006 05 30 | G96 | 0.1+ | 0.2− |
| 2004 12 02 | 704 | 0.1− | 0.3+ | 2004 12 17 | 608 | 1.8− | 0.7+ | 2006 05 30 | G96 | 0.1+ | 0.5+ |
| 2004 12 02 | 704 | 0.2− | 0.0 | 2004 12 17 | 608 | 1.6− | 0.3+ | 2006 05 30 | G96 | 0.0 | 0.2− |
| 2004 12 02 | 704 | 0.2− | 0.0 | 2004 12 17 | 608 | 1.2− | 0.3+ | 2006 05 30 | G96 | 0.1− | 0.0 |
| 2004 12 02 | 704 | 0.7− | 0.2− | 2004 12 19 | 704 | 1.2+ | 0.9+ | | | | |

**2004 VS$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.44903 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26828112 | $\omega$ | 319.79627 | | +0.55096528 | −0.83153908 | |
| $a$ | 2.3809082 | $\Omega$ | 96.65915 | | +0.78275053 | +0.48560787 | |
| $e$ | 0.1669650 | $i$ | 4.07421 | | +0.28937669 | +0.26968083 | |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 02 | 644 | 0.1+ | 0.2+ | 2004 11 03 | 644 | 0.1− | 0.5+ | 2004 11 18 | 704 | 0.4+ | 1.4+ |
| 2002 04 02 | 644 | 0.2− | 0.1− | 2004 11 14 | 850 | 0.1+ | 0.2− | 2004 11 18 | 704 | 0.1+ | 1.0+ |
| 2002 04 02 | 644 | 0.0 | 0.3− | 2004 11 14 | 850 | (0.6− | 2.0−) | 2004 11 18 | 704 | 2.0+ | 1.4+ |
| 2004 10 07 | 699 | 0.4+ | 0.2− | 2004 11 14 | 850 | 0.6+ | 0.8− | 2004 11 18 | 704 | (0.7+ | 2.6+) |
| 2004 10 07 | 699 | 0.3+ | 0.1− | 2004 11 14 | 850 | (2.2+ | 1.2+) | 2004 12 15 | 691 | 0.3+ | 0.1− |
| 2004 10 07 | 699 | 0.1+ | 0.2+ | 2004 11 15 | 850 | 1.6− | 0.2− | 2004 12 15 | 691 | 0.2+ | 0.2− |
| 2004 10 07 | 699 | 0.2+ | 0.8− | 2004 11 15 | 850 | 1.5− | 0.1+ | 2004 12 15 | 691 | 0.2+ | 0.2− |
| 2004 11 03 | 644 | 0.5− | 0.4+ | 2004 11 15 | 850 | 1.3− | 0.1− | 2006 03 25 | 691 | 0.2− | 0.0 |
| 2004 11 03 | 644 | 0.2− | 0.3+ | 2004 11 16 | 850 | 0.1− | 0.0 | 2006 03 25 | 691 | 0.2+ | 0.1+ |
| 2004 11 03 | 644 | 0.3− | 0.2+ | 2004 11 16 | 850 | 0.1+ | 0.6− | 2006 03 25 | 691 | 0.1+ | 0.2+ |
| 2004 11 03 | 644 | 0.3− | 0.4+ | 2004 11 16 | 850 | 0.1− | 0.4− | | | | |
| 2004 11 03 | 644 | 0.3− | 0.4+ | 2004 11 16 | 850 | 0.2− | 0.3− | | | | |

**2004 VR$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.25093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26739126 | $\omega$ | 337.34693 | | −0.29165554 | −0.95543351 | |
| $a$ | 2.3861876 | $\Omega$ | 129.57895 | | +0.88641734 | −0.28790535 | |
| $e$ | 0.1439030 | $i$ | 3.39546 | | +0.35944588 | −0.06524815 | |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.4+ | 0.2− | 2002 03 19 | 699 | 2.5+ | 1.8− | 2006 04 08 | 691 | 0.1− | 0.2− |
| 1993 12 14 | 691 | 0.3− | 0.3− | 2004 11 04 | 703 | 0.3− | 0.4+ | 2006 04 08 | 691 | 0.2+ | 0.1− |
| 1993 12 14 | 691 | 0.3− | 1.0− | 2004 11 04 | 703 | 0.8− | 0.6+ | 2006 04 08 | 691 | 0.1− | 0.2+ |
| 1994 01 11 | 691 | 0.8+ | 0.7+ | 2004 11 04 | 703 | 0.6+ | 0.6+ | 2006 04 21 | 691 | 0.2+ | 0.7+ |
| 1994 01 11 | 691 | 0.2+ | 0.9+ | 2004 11 04 | 703 | 0.6− | 0.3+ | 2006 04 21 | 691 | 0.0 | 0.2+ |
| 1994 01 11 | 691 | 0.9− | 0.6+ | 2004 11 12 | 703 | 0.8+ | 0.7+ | 2006 04 21 | 691 | 0.2− | 0.3+ |
| 2000 10 19 | 691 | 0.0 | 0.5+ | 2004 11 12 | 703 | 1.0− | 0.2+ | 2006 05 07 | 691 | 0.5− | 0.1− |
| 2000 10 19 | 691 | 0.1− | 0.2+ | 2004 11 12 | 703 | (0.9+ | 2.6+) | 2006 05 07 | 691 | 0.1+ | 0.5+ |
| 2000 10 19 | 691 | 0.1+ | 0.3− | 2004 11 12 | 703 | 1.1− | 0.6+ | 2006 05 07 | 691 | 0.2− | 0.2+ |
| 2002 03 16 | 704 | 1.5− | 1.1− | 2004 11 17 | E12 | 0.2− | 0.7+ | 2006 05 08 | 691 | 0.2+ | 0.6− |
| 2002 03 16 | 704 | 0.3− | 0.6+ | 2004 11 17 | E12 | 0.3− | 0.6+ | 2006 05 08 | 691 | 0.4+ | 0.2− |
| 2002 03 16 | 704 | 0.5− | 0.3+ | 2004 11 17 | E12 | 0.0 | 0.2+ | 2006 05 08 | 691 | 1.3+ | 1.9+ |
| 2002 03 16 | 704 | 0.5− | 0.1+ | 2004 11 17 | E12 | 0.4− | 0.4+ | 2006 05 26 | G96 | 0.6− | 0.0 |
| 2002 03 16 | 704 | 1.0− | 0.3+ | 2004 11 18 | E12 | 0.6+ | 0.3+ | 2006 05 26 | G96 | 1.1− | 0.1− |
| 2002 03 19 | 699 | 0.8− | 0.6− | 2004 11 18 | E12 | 0.2+ | 0.1+ | 2006 05 26 | G96 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 19 | 699 | 1.6+ | 0.7− | 2004 11 18 | E12 | 0.8+ | 0.0 | 2006 05 26 | G96 | 0.7− | 0.2+ |
| 2002 03 19 | 699 | 0.2+ | 0.4− | 2004 11 18 | E12 | 0.1+ | 0.3+ | | | | |

**2004 VS$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.06064 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00332782 | $\omega$ | 292.49814 | | +0.71677666 | +0.69539895 | |
| $a$ | 44.4320124 | $\Omega$ | 23.54444 | | −0.58298914 | +0.63814859 | |
| $e$ | 0.1026967 | $i$ | 7.40639 | | −0.38256356 | +0.33043408 | |
| $P$ | 296 | $H$ | 6.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 695 | 0.2+ | 0.1− | 2004 11 10 | 695 | 0.0 | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.1− |
| 2003 11 20 | 695 | 0.1+ | 0.3− | 2004 11 18 | 568 | 0.1+ | 0.0 | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2004 11 09 | 695 | 0.5+ | 0.6+ | 2004 11 18 | 568 | 0.0 | 0.0 | 2006 10 20 | 695 | 0.1+ | 0.1− |
| 2004 11 09 | 695 | 0.9− | 0.1+ | 2006 10 19 | 695 | 0.1+ | 0.0 | | | | |

**2004 VU$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.83155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00354195 | $\omega$ | 43.76134 | | −0.11608584 | −0.99213959 | |
| $a$ | 42.6227033 | $\Omega$ | 52.95953 | | +0.89441713 | −0.12487608 | |
| $e$ | 0.0542559 | $i$ | 3.35576 | | +0.43190516 | −0.00806208 | |
| $P$ | 278 | $H$ | 6.5 | $G$ | 0.15 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 09 | 695 | 0.2+ | 0.2+ | 2004 12 10 | 688 | 0.2− | 0.4− | 2006 10 20 | 695 | 0.3+ | 0.1− |
| 2004 11 10 | 695 | 0.0 | 0.2+ | 2004 12 11 | 688 | 0.6+ | 0.4− | 2006 10 20 | 695 | 0.1+ | 0.0 |
| 2004 11 10 | 695 | 0.3− | 0.0 | 2004 12 11 | 688 | 0.1+ | 0.1− | | | | |
| 2004 12 10 | 688 | 0.4− | 0.5+ | 2006 10 19 | 695 | 0.4− | 0.1+ | | | | |

**2004 VZ$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.65694 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00399383 | $\omega$ | 13.38388 | | −0.99913450 | +0.03874838 | |
| $a$ | 39.3438146 | $\Omega$ | 168.80387 | | −0.04156419 | −0.94429948 | |
| $e$ | 0.1939276 | $i$ | 4.46816 | | +0.00163464 | −0.32679817 | |
| $P$ | 247 | $H$ | 5.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 09 | 695 | 0.2+ | 0.1+ | 2005 11 03 | 695 | 0.0 | 0.0 | 2006 08 21 | 807 | 0.3+ | 0.0 |
| 2004 11 10 | 695 | 0.1− | 0.0 | 2005 11 03 | 695 | 0.1− | 0.1− | 2006 08 22 | 807 | 0.5− | 0.2+ |
| 2004 11 10 | 695 | 0.2− | 0.0 | 2005 12 23 | 568 | 0.1+ | 0.0 | 2006 08 23 | 807 | 0.2+ | 0.1− |
| 2005 11 03 | 695 | 0.0 | 0.0 | 2005 12 23 | 568 | 0.1− | 0.0 | | | | |

**2004 VR$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.38439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17810189 | $\omega$ | 37.29602 | | +0.55319325 | −0.82668998 | |
| $a$ | 3.1286504 | $\Omega$ | 19.78106 | | +0.67224520 | +0.37014142 | |
| $e$ | 0.2272995 | $i$ | 17.67750 | | +0.49199961 | +0.42376764 | |
| $P$ | 5.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 13 | 691 | 0.1+ | 0.3+ | 2004 10 15 | 704 | 0.4+ | 0.8+ | 2004 12 01 | 703 | 0.6− | 1.2− |
| 2001 04 13 | 691 | 0.3− | 0.3− | 2004 11 03 | 699 | 0.3+ | 0.6− | 2004 12 01 | 703 | 0.2− | 0.4− |
| 2001 04 13 | 691 | 0.3+ | 0.2+ | 2004 11 03 | 699 | 1.5− | 0.8− | 2004 12 01 | 703 | (4.9− | 0.7+) |
| 2004 09 18 | 704 | 0.5− | 0.3− | 2004 11 03 | 699 | 0.8− | 0.5+ | 2004 12 02 | 704 | 0.4− | 0.3+ |
| 2004 09 18 | 704 | 1.0− | 0.4+ | 2004 11 03 | 699 | 0.3− | 0.3+ | 2004 12 02 | 704 | 0.8− | 0.9+ |
| 2004 09 18 | 704 | 1.9− | 0.6− | 2004 11 03 | 703 | 0.3− | 0.3− | 2004 12 02 | 704 | 0.1+ | 0.1− |
| 2004 09 18 | 704 | 0.3− | 0.1+ | 2004 11 03 | 703 | 0.6− | 0.7− | 2004 12 02 | 704 | 0.3− | 0.6+ |
| 2004 10 08 | 704 | 1.9+ | 0.0 | 2004 11 03 | 703 | 1.0− | 0.4− | 2004 12 11 | 703 | 0.5− | 0.4− |
| 2004 10 08 | 704 | 1.3+ | 0.4+ | 2004 11 03 | 703 | 0.1+ | 0.0 | 2004 12 11 | 703 | 1.3− | 0.4− |
| 2004 10 08 | 704 | 1.9+ | 0.1− | 2004 11 04 | 704 | 0.6+ | 1.5+ | 2004 12 11 | 703 | 0.7− | 0.1− |
| 2004 10 08 | 704 | 1.6+ | 0.5− | 2004 11 04 | 704 | 0.2− | 0.4+ | 2004 12 11 | 703 | 0.1− | 0.1− |
| 2004 10 08 | 704 | 1.8+ | 0.0 | 2004 11 04 | 704 | 0.1+ | 0.9− | 2005 12 07 | 291 | 0.5− | 0.2− |
| 2004 10 15 | 704 | 0.2+ | 0.0 | 2004 11 04 | 704 | 0.6+ | 0.9+ | 2005 12 07 | 291 | 0.5− | 0.5− |
| 2004 10 15 | 704 | 0.6+ | 1.4+ | 2004 11 04 | 704 | 0.8+ | 0.3+ | 2005 12 07 | 291 | 0.8+ | 0.5+ |
| 2004 10 15 | 704 | 0.7+ | 0.1+ | 2004 12 01 | 703 | 0.1− | 1.1− | | | | |

**2004 VS$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.31298 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19524579 | $\omega$ | 44.37624 | | +0.79940044 | −0.60020908 | |
| $a$ | 2.9427154 | $\Omega$ | 352.37083 | | +0.48025419 | +0.66499223 | |
| $e$ | 0.0637689 | $i$ | 11.56168 | | +0.36099149 | +0.44444841 | |
| $P$ | 5.05 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 704 | 0.6− | 0.4− | 2004 12 15 | 703 | 0.3+ | 0.2+ | 2006 02 25 | 704 | 0.7+ | 1.6+ |
| 1999 12 13 | 704 | 0.3+ | 0.1+ | 2006 01 23 | 691 | 0.2− | 0.0 | 2006 02 25 | 704 | 1.0+ | 0.7+ |
| 1999 12 13 | 704 | 0.0 | 0.2− | 2006 01 23 | 691 | 0.3− | 0.1+ | 2006 03 08 | 691 | 0.0 | 0.2− |
| 1999 12 13 | 704 | 0.3+ | 0.8+ | 2006 01 23 | 691 | 0.2− | 0.1− | 2006 03 08 | 691 | 0.2+ | 0.0 |
| 2004 11 03 | 703 | 0.7− | 1.1+ | 2006 02 01 | 691 | 0.1− | 0.3− | 2006 03 08 | 691 | 0.3+ | 0.1− |
| 2004 11 03 | 703 | 0.7− | 1.3− | 2006 02 01 | 691 | 0.0 | 0.1− | 2006 03 26 | 691 | 0.4− | 0.3− |
| 2004 12 15 | 703 | 0.3+ | 0.7+ | 2006 02 01 | 691 | 0.1+ | 0.0 | 2006 03 26 | 691 | 0.2− | 0.2+ |
| 2004 12 15 | 703 | 1.0+ | 0.5− | 2006 02 25 | 704 | 1.1+ | 0.2+ | 2006 03 26 | 691 | 0.1− | 0.1+ |
| 2004 12 15 | 703 | 0.2− | 0.1− | 2006 02 25 | 704 | 0.0 | 0.4+ | | | | |

**2004 VC$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.88819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17633649 | $\omega$ | 284.40659 | | −0.05042054 | −0.99705414 | |
| $a$ | 3.1494974 | $\Omega$ | 168.02715 | | +0.98957543 | −0.05769185 | |
| $e$ | 0.2665408 | $i$ | 16.17803 | | +0.13490087 | +0.05054402 | |
| $P$ | 5.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 910 | 0.3− | 1.0+ | 2004 11 12 | 704 | 0.5+ | 0.3+ | 2004 12 10 | 703 | 0.6− | 0.3+ |
| 1998 09 24 | 910 | 0.2− | 0.7+ | 2004 11 12 | 704 | 1.0+ | 0.9+ | 2004 12 10 | 703 | 0.2− | 0.3− |
| 1998 09 24 | 910 | 0.4− | 0.3+ | 2004 11 12 | 704 | 0.6+ | 0.1− | 2004 12 10 | 703 | 0.1+ | 0.4+ |
| 2000 02 12 | 704 | 0.5+ | 1.1+ | 2004 11 12 | 704 | 1.4− | 2.2+ | 2004 12 10 | 699 | 0.8− | 0.8+ |
| 2000 02 12 | 704 | 0.1+ | 1.3+ | 2004 11 19 | 699 | 0.5− | 0.1− | 2004 12 10 | 699 | 0.8+ | 0.3+ |
| 2000 02 12 | 704 | 0.6+ | 1.3+ | 2004 11 19 | 699 | 1.1− | 0.1+ | 2004 12 10 | 699 | 1.3+ | 1.8+ |
| 2000 02 12 | 704 | 0.7+ | 1.0+ | 2004 11 19 | 699 | 0.1+ | 0.1− | 2004 12 10 | 699 | 0.8+ | 0.0 |
| 2000 02 12 | 704 | 0.5− | 1.6+ | 2004 11 19 | 699 | 0.4− | 0.1− | 2006 04 08 | G96 | 0.5+ | 0.1− |
| 2001 05 23 | 645 | 0.0 | 0.2+ | 2004 12 02 | E12 | 0.7− | 1.2− | 2006 04 08 | G96 | 0.1− | 0.0 |
| 2001 05 23 | 645 | 0.0 | 0.2+ | 2004 12 02 | E12 | 0.6+ | 0.0 | 2006 04 08 | G96 | 0.1+ | 0.4− |
| 2003 10 02 | 291 | 0.0 | 0.2+ | 2004 12 02 | E12 | 0.6− | 0.1+ | 2006 04 08 | G96 | 0.0 | 0.2+ |
| 2003 10 02 | 291 | 0.4− | 0.9+ | 2004 12 02 | E12 | 0.3+ | 0.4− | | | | |
| 2003 10 02 | 291 | 0.6+ | 0.7+ | 2004 12 10 | 703 | 0.8− | 0.4+ | | | | |

**2004 VF$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.31217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27615195 | $\omega$ | 5.09844 | | +0.42611708 | −0.90340085 | |
| $a$ | 2.3354504 | $\Omega$ | 59.68765 | | +0.82804440 | +0.36816908 | |
| $e$ | 0.1550139 | $i$ | 3.17845 | | +0.36437167 | +0.21981453 | |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 04 | 703 | 1.2+ | 0.2− | 2004 12 02 | 699 | 0.2− | 0.3+ | 2004 12 14 | 704 | 1.0− | 0.1− |
| 2004 11 04 | 703 | 0.2− | 0.3− | 2004 12 02 | 699 | 1.1+ | 1.0− | 2006 04 02 | 691 | 0.1+ | 0.4− |
| 2004 11 04 | 703 | 0.6− | 0.1+ | 2004 12 02 | 699 | 0.9− | 0.4+ | 2006 04 02 | 691 | 0.2− | 0.2+ |
| 2004 11 04 | 703 | 0.8− | 0.6− | 2004 12 11 | 703 | (0.7− | 2.6−) | 2006 04 02 | 691 | 0.1− | 0.2− |
| 2004 11 09 | 703 | 0.3− | 0.2− | 2004 12 11 | 703 | 0.5+ | 0.2+ | 2006 04 26 | 691 | 0.3+ | 0.4+ |
| 2004 11 09 | 703 | 0.2− | 0.5+ | 2004 12 11 | 703 | 1.0+ | 0.5− | 2006 04 26 | 691 | 0.2− | 0.0 |
| 2004 11 09 | 703 | 0.9+ | 0.2+ | 2004 12 11 | 703 | 1.0+ | 0.2− | 2006 04 26 | 691 | 0.2+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 11 09 | 703 | 0.8+ | 0.1− | 2004 12 14 | 704 | 0.3− | 0.0 | |
| 2004 12 02 | 699 | 1.2− | 1.0+ | 2004 12 14 | 704 | 0.8− | 0.3+ | |

**2004 WA$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.78225 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17902981 | $\omega$ | 193.58187 | | −0.05678496 | | +0.98066994 |
| $a$ | 3.1178303 | $\Omega$ | 73.41173 | | −0.89678307 | | +0.03233155 |
| $e$ | 0.0591626 | $i$ | 11.26691 | | −0.43881157 | | −0.19297961 |
| $P$ | 5.51 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 644 | 0.7− | 0.2− | 2003 07 08 | 644 | 0.1+ | 0.0 | 2005 03 11 | 695 | 0.1+ | 0.1+ |
| 2002 05 12 | 644 | 0.7− | 0.0 | 2003 07 08 | 644 | 0.2− | 0.1+ | 2005 03 11 | 695 | 0.1+ | 0.1+ |
| 2002 05 12 | 644 | 0.2− | 0.3− | 2004 11 03 | 644 | 0.0 | 0.5+ | 2005 03 11 | 695 | 0.1+ | 0.3+ |
| 2002 05 21 | 704 | 0.7− | 1.0+ | 2004 11 03 | 644 | 0.5− | 0.3+ | 2005 03 11 | 695 | 0.1− | 0.2+ |
| 2002 05 21 | 704 | 0.0 | 0.0 | 2004 11 03 | 644 | 0.5− | 0.6+ | 2005 03 11 | 695 | 0.0 | 0.0 |
| 2002 05 21 | 704 | 0.1− | 0.4+ | 2004 11 17 | E12 | 0.4+ | 0.6− | 2005 03 11 | 695 | 0.3+ | 0.2+ |
| 2002 05 21 | 704 | 0.2− | 0.1+ | 2004 11 17 | E12 | 0.4− | 0.3+ | 2005 03 11 | 695 | 0.1− | 0.3+ |
| 2002 06 11 | 704 | 1.4+ | 1.0+ | 2004 11 17 | E12 | 1.2+ | 0.4− | 2005 03 11 | 695 | 0.1− | 0.0 |
| 2002 06 11 | 704 | 0.2+ | 0.4− | 2004 11 17 | E12 | 0.1− | 0.0 | 2006 01 06 | 704 | 0.1+ | 0.3+ |
| 2002 06 11 | 704 | 0.7+ | 1.1− | 2004 11 19 | 703 | 0.1− | 0.1− | 2006 01 06 | 704 | 0.1− | 0.4+ |
| 2002 06 11 | 644 | 0.2+ | 0.0 | 2004 11 19 | 703 | 0.2− | 0.3+ | 2006 01 06 | 704 | 0.2+ | 0.1+ |
| 2002 06 11 | 644 | 0.4+ | 0.2+ | 2004 11 19 | 703 | 0.1+ | 0.9+ | 2006 01 06 | 704 | 0.2− | 0.2− |
| 2002 06 11 | 644 | 0.4+ | 0.7+ | 2004 11 19 | 703 | 0.8− | 1.3− | | | | |
| 2003 07 08 | 644 | 0.2+ | 0.2+ | 2005 03 11 | 695 | 0.1+ | 0.0 | | | | |

**2004 WF$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.12626 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26478779 | $\omega$ | 43.78485 | | +0.42597814 | | −0.90411366 |
| $a$ | 2.4018032 | $\Omega$ | 21.07101 | | +0.80233455 | | +0.36040416 |
| $e$ | 0.2112100 | $i$ | 5.34379 | | +0.41809317 | | +0.22953722 |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3− | 0.6+ | 2004 11 09 | 703 | 1.3+ | 0.7+ | 2004 12 02 | 703 | 0.8− | 0.3+ |
| 2000 09 24 | 704 | 0.7− | 1.1+ | 2004 11 09 | 703 | 0.4+ | 0.2− | 2004 12 02 | 703 | 0.2− | 0.1− |
| 2000 09 24 | 704 | 0.7− | 1.0+ | 2004 11 09 | 703 | 0.7− | 0.5+ | 2004 12 11 | 703 | 0.7− | 0.3− |
| 2002 04 19 | 691 | 0.0 | 0.3+ | 2004 11 19 | 704 | 0.4− | 0.6+ | 2004 12 11 | 703 | (0.6+ | 1.8−) |
| 2002 04 19 | 691 | 0.2+ | 0.1+ | 2004 11 19 | 704 | 0.0 | 0.2+ | 2004 12 11 | 703 | (1.7+ | 0.0 ) |
| 2002 04 19 | 691 | 0.5+ | 0.6+ | 2004 11 19 | 704 | 0.5− | 0.1+ | 2004 12 11 | 703 | (1.6+ | 1.3−) |
| 2004 10 10 | 691 | 0.1+ | 0.1+ | 2004 11 19 | 704 | 0.7− | 0.2+ | 2004 12 15 | 704 | 0.1+ | 1.2− |
| 2004 10 10 | 691 | 0.1+ | 0.1+ | 2004 11 19 | 704 | 0.8− | 1.0+ | 2004 12 15 | 704 | 0.4− | 0.5− |
| 2004 10 10 | 691 | 0.1+ | 0.2− | 2004 11 20 | 691 | 0.2+ | 0.1− | 2004 12 15 | 704 | 0.2− | 0.1+ |
| 2004 10 23 | 691 | 0.1+ | 0.1− | 2004 11 20 | 691 | 0.1+ | 0.1− | 2004 12 15 | 704 | 0.9− | 0.0 |
| 2004 10 23 | 691 | 0.2+ | 0.1− | 2004 11 20 | 691 | 0.1+ | 0.1− | 2004 12 15 | 704 | 0.7− | 0.1− |
| 2004 10 23 | 691 | 0.2+ | 0.0 | 2004 12 02 | 704 | 0.5− | 0.6− | 2006 04 25 | G96 | 0.2− | 0.5− |
| 2004 11 04 | 699 | 0.0 | 0.2+ | 2004 12 02 | 704 | 0.3− | 0.8+ | 2006 04 25 | G96 | 0.2− | 0.3− |
| 2004 11 04 | 699 | 1.2+ | 0.4− | 2004 12 02 | 704 | 0.3− | 0.2− | 2006 04 25 | G96 | 0.2− | 0.4− |
| 2004 11 04 | 699 | 0.0 | 0.0 | 2004 12 02 | 704 | 0.3− | 0.5+ | 2006 04 25 | G96 | 0.3− | 0.1+ |
| 2004 11 04 | 699 | 0.2+ | 0.2− | 2004 12 02 | 703 | 0.4− | 0.3− | | | | |
| 2004 11 09 | 703 | (1.9− | 1.2+) | 2004 12 02 | 703 | 0.8+ | 0.2+ | | | | |

**2004 WG$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.06162 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26505092 | $\omega$ | 51.27319 | | −0.77765945 | | −0.62729839 |
| $a$ | 2.4002133 | $\Omega$ | 89.83560 | | +0.56307961 | | −0.72450192 |
| $e$ | 0.1252684 | $i$ | 2.39243 | | +0.27961962 | | −0.28564611 |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 704 | 0.0 | 0.1− | 2002 04 15 | 704 | 0.4− | 0.6− | 2004 11 20 | 691 | 0.1− | 0.1+ |
| 2002 03 16 | 704 | 1.0+ | 0.3+ | 2002 04 15 | 704 | 0.8− | 0.7+ | 2004 11 20 | 691 | 0.1− | 0.1+ |
| 2002 03 16 | 704 | 0.1− | 1.0− | 2004 11 19 | 691 | 0.2+ | 0.0 | 2004 11 20 | 691 | 0.0 | 0.1− |
| 2002 03 16 | 704 | 1.6+ | 0.4+ | 2004 11 19 | 691 | 0.1+ | 0.3− | 2006 04 24 | 691 | 0.0 | 0.0 |
| 2002 04 04 | 608 | 0.9− | 0.6− | 2004 11 19 | 691 | 0.0 | 0.1+ | 2006 04 24 | 691 | 0.1+ | 0.3− |
| 2002 04 04 | 608 | 0.7− | 0.8− | 2004 11 19 | 703 | 0.6− | 0.5+ | 2006 04 24 | 691 | 0.2+ | 0.1+ |
| 2002 04 04 | 608 | 0.9− | 0.5− | 2004 11 19 | 703 | 1.2+ | 0.2− | 2006 05 05 | 691 | 0.0 | 0.4+ |
| 2002 04 15 | 704 | 1.1+ | 0.9+ | 2004 11 19 | 703 | 0.6− | 1.1+ | 2006 05 05 | 691 | 0.2− | 0.2+ |
| 2002 04 15 | 704 | 0.1− | 0.8+ | 2004 11 19 | 703 | 0.6− | 1.1+ | 2006 05 05 | 691 | 0.0 | 0.2+ |

**2004 WJ$_{12}$ = 1997 WV$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.75510 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27319210 | $\omega$ | 173.54109 | | −0.63935064 | | −0.76715517 |
| $a$ | 2.3522887 | $\Omega$ | 316.18594 | | +0.70206273 | | −0.55484720 |
| $e$ | 0.1742511 | $i$ | 4.30729 | | +0.31359001 | | −0.32189676 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 25 | 691 | 0.0 | 0.4− | 2002 04 09 | 704 | 0.1+ | 0.3+ | 2004 12 07 | 704 | 0.3+ | 1.2− |
| 1997 11 25 | 691 | 0.1+ | 0.4− | 2002 04 09 | 704 | 0.1− | 0.9+ | 2004 12 14 | 703 | 0.0 | 0.0 |
| 1997 11 25 | 691 | 0.4− | 0.3− | 2004 11 19 | 704 | 0.4+ | 0.2+ | 2004 12 14 | 703 | 0.4+ | 0.4− |
| 1997 11 30 | 691 | 0.0 | 0.4− | 2004 11 19 | 704 | 0.1− | 0.5+ | 2004 12 14 | 703 | 0.6− | 2.1− |
| 1997 11 30 | 691 | 0.4− | 0.3− | 2004 11 19 | 704 | 0.4− | 1.0+ | 2004 12 15 | 704 | 0.3− | 1.4+ |
| 1997 11 30 | 691 | 0.1− | 0.6− | 2004 11 19 | 704 | 0.2− | 0.5+ | 2004 12 15 | 704 | 0.3− | 1.9+ |
| 2000 09 07 | 691 | 0.6+ | 0.5− | 2004 11 19 | 704 | 0.5− | 0.4+ | 2004 12 15 | 704 | 0.9− | 1.0+ |
| 2000 09 07 | 691 | 0.4− | 0.0 | 2004 12 07 | 704 | 0.1+ | 1.9+ | 2004 12 15 | 704 | 0.7− | 0.7+ |
| 2000 09 07 | 691 | 0.1+ | 0.0 | 2004 12 07 | 704 | 0.4− | 0.7+ | 2004 12 15 | 704 | 0.7+ | 1.3+ |
| 2002 04 09 | 704 | 0.9+ | 0.5+ | 2004 12 07 | 704 | 0.5+ | 1.4+ | | | | |
| 2002 04 09 | 704 | 0.2+ | 0.7+ | 2004 12 07 | 704 | 0.5+ | 0.9+ | | | | |

**2004 WL$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.92856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27336545 | $\omega$ | 141.71801 | | +0.16729894 | | −0.98117808 |
| $a$ | 2.3512941 | $\Omega$ | 298.46010 | | +0.87536644 | | +0.19283287 |
| $e$ | 0.0977922 | $i$ | 6.29784 | | +0.45359086 | | −0.01025014 |
| $P$ | 3.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 1.1− | 0.0 | 2002 02 15 | 704 | 0.1+ | 0.4− | 2004 12 02 | 704 | 0.1− | 1.4+ |
| 2000 09 23 | 699 | 1.2+ | 0.5+ | 2002 02 15 | 704 | 0.0 | 0.3− | 2004 12 02 | 703 | 0.2+ | 1.7− |
| 2000 09 23 | 699 | 0.0 | 1.4− | 2002 03 06 | 644 | 0.4− | 0.3− | 2004 12 02 | 704 | 0.1− | 1.2+ |
| 2000 09 23 | 704 | 0.2− | 0.3− | 2002 03 06 | 644 | 0.0 | 0.2+ | 2004 12 02 | 703 | 0.6− | 0.9− |
| 2000 09 23 | 699 | 0.6− | 0.2+ | 2002 03 06 | 644 | 0.0 | 0.0 | 2004 12 02 | 703 | 0.5− | 0.4− |
| 2000 09 23 | 704 | 0.4+ | 1.6+ | 2004 11 19 | 704 | 0.7− | 0.0 | 2004 12 02 | 703 | 0.2+ | 0.1− |
| 2000 09 23 | 699 | 0.2− | 0.7− | 2004 11 19 | 704 | 0.2+ | 0.1− | 2004 12 15 | 704 | 0.1+ | 0.4+ |
| 2000 09 23 | 704 | 0.8+ | 0.4− | 2004 11 19 | 704 | 0.0 | 0.2− | 2004 12 15 | 704 | 0.2− | 0.7− |
| 2002 02 15 | 704 | 0.2− | 1.0− | 2004 11 19 | 704 | 0.8− | 0.8+ | 2004 12 15 | 704 | 1.3+ | 0.6− |
| 2002 02 15 | 704 | 0.1− | 0.7+ | 2004 11 19 | 704 | 0.1+ | 0.6+ | 2004 12 15 | 704 | 0.6+ | 0.5− |
| 2002 02 15 | 704 | 0.4+ | 0.8+ | 2004 12 02 | 704 | 0.3+ | 1.1+ | | | | |

**2004 XL$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.01610 | | (2000.0) | | **P** | | **Q** |
| $n$ | 1.48749997 | $\omega$ | 157.51327 | | −0.42446600 | | +0.82853804 |
| $a$ | 0.7600312 | $\Omega$ | 85.68140 | | −0.87644379 | | −0.27471724 |
| $e$ | 0.4097174 | $i$ | 21.48241 | | −0.22732112 | | −0.48790896 |
| $P$ | 0.66 | $H$ | 21.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 10 | 703 | 0.2− | 0.3+ | 2004 12 12 | 046 | 0.2+ | 0.4− | 2004 12 15 | H41 | 0.7+ | 0.7− |
| 2004 12 10 | 703 | 0.3+ | 0.8− | 2004 12 12 | 046 | 0.1− | 0.5+ | 2004 12 15 | H41 | (1.6+ | 2.0−) |
| 2004 12 10 | 703 | 0.4− | 0.2− | 2004 12 12 | 046 | 0.2− | 0.2− | 2004 12 15 | H41 | (1.9+ | 1.0−) |
| 2004 12 10 | 703 | 0.7− | 0.3+ | 2004 12 12 | 046 | 0.3− | 0.2+ | 2004 12 15 | H41 | 0.1− | 0.7− |
| 2004 12 10 | 703 | 0.8− | 0.3− | 2004 12 12 | 046 | 0.5− | 0.2− | 2004 12 15 | 246 | 0.3− | 0.6+ |
| 2004 12 10 | 703 | 0.5− | 0.0 | 2004 12 12 | 046 | 0.6− | 0.5− | 2004 12 15 | 246 | 0.5+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 10 | 703 | 0.2+ | 0.1+ | 2004 12 13 | H41 | 0.3− | 0.3+ | 2004 12 15 | 246 | 1.0+ | 0.4− |
| 2004 12 10 | 703 | 0.6− | 0.1− | 2004 12 13 | H41 | 0.8− | 0.7+ | 2004 12 15 | 246 | 1.0+ | 0.2− |
| 2004 12 10 | 703 | 0.8− | 0.3− | 2004 12 13 | H41 | 0.7− | 0.8+ | 2004 12 15 | 246 | 0.5+ | 0.3− |
| 2004 12 10 | 703 | 0.0 | 0.2+ | 2004 12 13 | H41 | 0.1+ | 0.0 | 2004 12 15 | 246 | 0.4− | 0.6+ |
| 2004 12 10 | 246 | 0.4+ | 0.3+ | 2004 12 13 | H41 | 0.6− | 0.1− | 2004 12 15 | 240 | 0.1+ | 0.0 |
| 2004 12 10 | 246 | 0.5+ | 0.1− | 2004 12 13 | H41 | 0.3− | 0.6+ | 2004 12 15 | 240 | 0.9− | 0.2+ |
| 2004 12 10 | 246 | 0.1+ | 0.2+ | 2004 12 13 | 246 | 0.5+ | 0.3− | 2004 12 15 | 240 | 0.2+ | 0.0 |
| 2004 12 10 | 246 | 1.2+ | 0.6− | 2004 12 13 | 246 | 1.4+ | 0.8− | 2004 12 15 | 240 | 0.1+ | 0.4− |
| 2004 12 10 | 246 | 1.4+ | 0.3− | 2004 12 13 | 246 | 0.7+ | 0.4− | 2004 12 15 | 240 | 0.5+ | 0.0 |
| 2004 12 10 | 246 | 1.0+ | 0.2− | 2004 12 13 | 246 | 1.2+ | 0.6− | 2004 12 15 | 240 | 0.3+ | 0.5− |
| 2004 12 11 | H06 | (3.2+ | 1.5−) | 2004 12 13 | 246 | 0.1+ | 0.1+ | 2004 12 15 | 240 | 0.9+ | 0.6− |
| 2004 12 11 | H06 | 0.6+ | 0.4+ | 2004 12 13 | A48 | 0.7− | 0.5+ | 2004 12 15 | 240 | 0.2+ | 0.4− |
| 2004 12 11 | H06 | 1.3+ | 0.7− | 2004 12 13 | A48 | 0.2− | 0.2+ | 2004 12 16 | H41 | (3.1+ | 2.9−) |
| 2004 12 11 | 734 | 0.2+ | 0.1+ | 2004 12 13 | A48 | 0.2− | 0.2+ | 2004 12 16 | H41 | (1.7+ | 0.3−) |
| 2004 12 11 | 734 | 1.0+ | 0.1− | 2004 12 14 | 734 | 0.9− | 0.1+ | 2004 12 16 | H41 | 0.5− | 1.2− |
| 2004 12 11 | 734 | 0.6+ | 0.5− | 2004 12 14 | 734 | (2.0− | 0.7+) | 2004 12 16 | H41 | 0.6+ | 0.5− |
| 2004 12 11 | 734 | 0.7− | 1.0+ | 2004 12 14 | 734 | 0.5− | 0.2+ | 2004 12 17 | 951 | 0.5− | 0.3− |
| 2004 12 11 | 734 | 0.2− | 0.1− | 2004 12 14 | 734 | 0.4− | 0.1− | 2004 12 17 | 951 | 1.0+ | 0.4− |
| 2004 12 11 | 734 | (1.9− | 0.9+) | 2004 12 14 | 734 | 0.2+ | 0.0 | 2004 12 17 | 951 | (2.3− | 0.5+) |
| 2004 12 11 | 670 | 0.2+ | 0.1+ | 2004 12 14 | 246 | 0.1+ | 0.3+ | 2004 12 17 | 951 | (2.1− | 1.2+) |
| 2004 12 11 | 670 | 0.0 | 0.1− | 2004 12 14 | 246 | 1.2+ | 0.3− | 2004 12 17 | 951 | 1.0− | 1.3+ |
| 2004 12 11 | 704 | 0.2+ | 0.7+ | 2004 12 14 | 246 | 0.5− | 0.6+ | 2004 12 18 | 941 | 0.1+ | 1.0+ |
| 2004 12 11 | 670 | 0.4− | 0.4− | 2004 12 14 | 246 | 0.3− | 0.3+ | 2004 12 18 | 941 | 0.1+ | 0.9+ |
| 2004 12 11 | 670 | 0.4− | 0.0 | 2004 12 14 | 246 | 1.2+ | 0.3− | 2004 12 18 | 941 | 0.0 | 0.3+ |
| 2004 12 11 | 704 | 0.1− | 0.6+ | 2004 12 14 | 246 | 0.2+ | 0.0 | 2004 12 18 | 941 | 0.1− | 0.1− |
| 2004 12 11 | 854 | (0.8− | 1.9−) | 2004 12 14 | 587 | 1.2− | 0.7+ | 2004 12 18 | 941 | 0.2− | 0.2− |
| 2004 12 11 | 854 | (4.0− | 0.4−) | 2004 12 14 | 587 | 0.9− | 0.2+ | 2004 12 23 | 448 | 0.2+ | 0.1− |
| 2004 12 11 | 704 | 0.0 | 0.6+ | 2004 12 14 | 587 | 1.3− | 0.5+ | 2004 12 23 | 448 | 0.0 | 0.2− |
| 2004 12 11 | 854 | (3.1− | 1.9−) | 2004 12 15 | H36 | 0.6+ | 0.2− | 2004 12 23 | 448 | 0.0 | 0.3− |
| 2004 12 11 | 704 | 0.2− | 0.7+ | 2004 12 15 | H36 | 0.1+ | 0.1− | 2004 12 31 | 734 | 0.2− | 0.0 |
| 2004 12 11 | 448 | 0.1− | 0.2− | 2004 12 15 | 649 | 0.4− | 0.1− | 2004 12 31 | 734 | 1.0− | 0.1+ |
| 2004 12 11 | 448 | 0.1− | 0.0 | 2004 12 15 | 649 | 0.4− | 0.0 | 2004 12 31 | 734 | 0.6+ | 0.1− |
| 2004 12 11 | 448 | 0.2− | 0.3+ | 2004 12 15 | 649 | 0.4− | 0.2+ | 2006 11 25 | 291 | (3.2+ | 1.9−) |
| 2004 12 12 | 104 | (2.0− | 1.0+) | 2004 12 15 | 649 | 0.2− | 0.0 | 2006 11 25 | 291 | 0.9− | 0.0 |
| 2004 12 12 | 104 | 0.3− | 0.0 | 2004 12 15 | 649 | 0.3− | 0.1− | 2006 11 25 | 291 | 1.0+ | 0.2− |
| 2004 12 12 | 104 | 1.4− | 0.7+ | 2004 12 15 | 649 | 0.3− | 0.0 | | | | |
| 2004 12 12 | 104 | 0.1− | 0.1+ | 2004 12 15 | H41 | 1.4+ | 0.9− | | | | |

**2004 XD$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.30725 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21935367 | $\omega$ | 135.82449 | | −0.14433769 | | −0.98847505 |
| $a$ | 2.7229486 | $\Omega$ | 322.40544 | | +0.88587263 | | −0.10852586 |
| $e$ | 0.1269342 | $i$ | 4.29110 | | +0.44090398 | | −0.10554251 |
| $P$ | 4.49 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 01 | 691 | 0.0 | 0.2+ | 2003 07 24 | 644 | 0.5− | 0.0 | 2004 12 11 | 704 | 0.3− | 1.2+ |
| 1994 09 01 | 691 | 0.6− | 0.2− | 2003 07 24 | 644 | 0.7− | 0.3+ | 2004 12 11 | 704 | 0.2− | 1.1+ |
| 1994 09 01 | 691 | 0.5− | 2.4+ | 2003 07 24 | 644 | 0.6− | 0.1+ | 2004 12 11 | 704 | 0.3− | 0.9+ |
| 2001 02 19 | 704 | 1.7+ | 0.3+ | 2003 09 19 | 291 | 0.3+ | 0.3+ | 2004 12 11 | 704 | 0.4− | 0.4+ |
| 2001 02 19 | 704 | 0.4− | 0.4+ | 2003 09 19 | 291 | 0.2+ | 0.4+ | 2004 12 14 | 691 | 0.1+ | 0.2− |
| 2001 02 19 | 704 | 0.6+ | 0.8+ | 2003 09 19 | 291 | 0.1+ | 0.4+ | 2004 12 14 | 691 | 0.0 | 0.2− |
| 2001 02 19 | 704 | 0.9+ | 0.4+ | 2003 10 01 | 691 | 0.4− | 0.1− | 2004 12 14 | 691 | 0.0 | 0.3− |
| 2001 02 19 | 704 | 0.1+ | 1.2+ | 2003 10 01 | 691 | 0.1+ | 0.2− | 2004 12 17 | 704 | 0.3− | 0.8+ |
| 2001 02 28 | 461 | 0.6+ | 0.8+ | 2003 10 01 | 691 | 0.3− | 0.1+ | 2004 12 17 | 704 | 0.5+ | 1.3+ |
| 2001 02 28 | 461 | 0.7+ | 1.0+ | 2004 12 10 | 691 | 0.0 | 0.0 | 2004 12 17 | 704 | 0.0 | 0.6+ |
| 2001 02 28 | 461 | 0.9+ | 0.9+ | 2004 12 10 | 691 | 0.0 | 0.2− | 2004 12 17 | 704 | 1.0+ | 0.3+ |
| 2001 02 28 | 461 | 0.6+ | 0.7+ | 2004 12 10 | 691 | 0.1− | 0.2− | 2005 01 16 | 704 | 0.2+ | 0.7− |
| 2001 03 18 | 704 | 1.0− | 1.1+ | 2004 12 10 | 704 | 0.8− | 0.8+ | 2005 01 16 | 704 | 0.3− | 0.0 |
| 2001 03 18 | 704 | 0.8+ | 2.3+ | 2004 12 10 | 704 | 0.2− | 0.5+ | 2005 01 16 | 704 | 0.9+ | 0.5− |
| 2001 03 18 | 704 | 1.0− | 0.9+ | 2004 12 10 | 704 | 0.1− | 0.9− | | | | |
| 2001 03 18 | 704 | 1.2+ | 1.2+ | 2004 12 10 | 704 | 0.2− | 0.2+ | | | | |

**2004 XY$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.82419 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29734907 | $\omega$ | 345.75385 | | +0.98064076 | | −0.19572019 |
| $a$ | 2.2230966 | $\Omega$ | 25.53540 | | +0.18101564 | | +0.89418690 |
| $e$ | 0.0936897 | $i$ | 0.81183 | | +0.07467956 | | +0.40264550 |
| $P$ | 3.31 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 04 | 910 | 0.1− | 0.3− | 2002 02 07 | 704 | 0.6+ | 0.6− | 2004 12 13 | 599 | 0.3+ | 0.0 |
| 1997 09 05 | 910 | 0.4+ | 0.4− | 2004 12 02 | 703 | 0.6− | 0.7− | 2004 12 13 | 599 | 0.1+ | 0.0 |
| 1997 09 05 | 910 | 0.1+ | 0.2− | 2004 12 02 | 703 | 0.2− | 0.7+ | 2006 03 23 | G96 | 0.0 | 0.3− |
| 2001 12 18 | 704 | 0.5+ | 0.4+ | 2004 12 02 | 703 | 0.9− | 0.2+ | 2006 03 23 | G96 | 0.1+ | 0.3− |
| 2001 12 18 | 704 | 0.0 | 0.4+ | 2004 12 02 | 703 | 1.7+ | 0.5+ | 2006 03 23 | G96 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.6+ | 2004 12 08 | 704 | 2.6− | 2.1− | 2006 03 23 | G96 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2004 12 08 | 704 | 0.8+ | 0.4− | 2006 04 19 | G96 | 0.5+ | 0.3+ |
| 2002 01 04 | 691 | 0.3− | 0.5+ | 2004 12 08 | 704 | 0.5+ | 0.3− | 2006 04 19 | G96 | 0.2− | 0.2+ |
| 2002 01 04 | 691 | 0.6− | 0.4+ | 2004 12 10 | 704 | 0.3+ | 1.1+ | 2006 04 19 | G96 | 0.1− | 0.4+ |
| 2002 01 04 | 691 | 0.1− | 0.3+ | 2004 12 10 | 704 | 0.1+ | 0.6+ | 2006 04 19 | G96 | 0.2+ | 0.4+ |
| 2002 01 14 | 704 | 1.3+ | 0.6− | 2004 12 10 | 704 | 0.2− | 0.2+ | 2006 05 05 | G96 | 0.1+ | 0.1+ |
| 2002 01 14 | 704 | 1.4+ | 0.7− | 2004 12 10 | 704 | 0.4− | 1.1+ | 2006 05 05 | G96 | 0.1+ | 0.1+ |
| 2002 01 14 | 704 | 0.8+ | 1.1− | 2004 12 10 | 704 | 0.4− | 0.9+ | 2006 05 05 | G96 | 0.5+ | 0.5+ |
| 2002 01 14 | 704 | 0.9+ | 0.9− | 2004 12 11 | 599 | 0.1+ | 0.0 | 2006 05 05 | G96 | 0.0 | 0.4+ |
| 2002 01 14 | 704 | 0.3+ | 1.7− | 2004 12 11 | 599 | 0.1+ | 0.0 | 2006 05 22 | G96 | 0.0 | 0.1+ |
| 2002 02 07 | 704 | 1.0− | 1.8− | 2004 12 11 | 599 | 0.3+ | 0.1+ | 2006 05 22 | G96 | 0.4+ | 0.0 |
| 2002 02 07 | 704 | 0.4− | 0.3− | 2004 12 11 | 599 | 0.1+ | 0.1+ | 2006 05 22 | G96 | 0.2− | 0.1− |
| 2002 02 07 | 704 | 0.8− | 0.5− | 2004 12 13 | 599 | 0.5+ | 0.3+ | 2006 05 22 | G96 | 0.3− | 0.2− |

**2004 XV$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.35865 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22521585 | $\omega$ | 49.32872 | | −0.18648383 | | −0.91246241 |
| $a$ | 2.6754905 | $\Omega$ | 55.21265 | | +0.71313385 | | −0.38069564 |
| $e$ | 0.3298005 | $i$ | 26.32405 | | +0.67576911 | | +0.14994391 |
| $P$ | 4.38 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 25 | 691 | 0.2− | 0.2+ | 2004 12 12 | 704 | 0.2− | 0.3− | 2004 12 19 | 704 | 0.0 | 0.3− |
| 1995 11 25 | 691 | 0.0 | 0.0 | 2004 12 12 | 704 | 0.2− | 0.2+ | 2004 12 19 | 704 | 0.2− | 0.5− |
| 1995 11 25 | 691 | 0.1+ | 0.0 | 2004 12 12 | 704 | 0.1+ | 0.6+ | 2004 12 19 | 704 | 0.0 | 0.2− |
| 2001 03 25 | 699 | 0.1+ | 0.3− | 2004 12 13 | 704 | 0.6− | 0.3− | 2004 12 21 | 704 | 0.4+ | 0.3− |
| 2001 03 25 | 699 | 0.5− | 0.9+ | 2004 12 13 | 704 | 0.0 | 0.4− | 2004 12 21 | 704 | 0.3+ | 0.7− |
| 2001 03 25 | 699 | 1.7+ | 0.7+ | 2004 12 13 | 704 | 0.6+ | 1.2− | 2004 12 21 | 704 | 0.4+ | 0.6− |
| 2001 03 25 | 699 | 0.1+ | 0.2+ | 2004 12 13 | 703 | 0.3+ | 1.5+ | 2004 12 21 | 704 | 0.5− | 0.3− |
| 2004 10 21 | 704 | 0.4− | 0.2− | 2004 12 13 | 703 | 0.2− | 2.0+ | 2004 12 21 | 704 | 0.4+ | 0.3− |
| 2004 10 21 | 704 | 0.8− | 0.4− | 2004 12 13 | 704 | 0.4− | 0.1+ | 2005 01 18 | 699 | 0.9+ | 0.2− |
| 2004 10 21 | 704 | 0.8− | 0.1+ | 2004 12 13 | 703 | 0.1+ | 1.0+ | 2005 01 18 | 699 | 1.3+ | 0.8− |
| 2004 12 10 | 704 | 0.2+ | 0.3− | 2004 12 13 | 703 | 0.3+ | 1.7+ | 2005 01 18 | 699 | 0.6− | 0.9− |
| 2004 12 10 | 704 | 0.5− | 0.2+ | 2004 12 14 | 703 | 0.4− | 0.1+ | 2005 01 18 | 699 | 0.4+ | 0.1+ |
| 2004 12 10 | 704 | 0.1+ | 0.1− | 2004 12 14 | 703 | 0.8− | 0.2+ | 2005 01 29 | 704 | 0.2+ | 0.0 |
| 2004 12 10 | 704 | 0.3+ | 0.2− | 2004 12 14 | 703 | 0.3− | 0.1− | 2005 01 29 | 704 | 0.1+ | 0.4+ |
| 2004 12 10 | 704 | 0.0 | 0.8+ | 2004 12 14 | 703 | 0.4− | 0.0 | 2005 01 29 | 704 | 1.0+ | 0.4− |
| 2004 12 12 | 704 | 0.1+ | 0.4+ | 2004 12 19 | 704 | 0.5+ | 0.1− | 2005 01 29 | 704 | 0.4− | 0.3− |
| 2004 12 12 | 704 | 0.3− | 0.3− | 2004 12 19 | 704 | 0.4+ | 0.4− | | | | |

**2004 XW$_{34}$ = 2002 CO$_{307}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.12974 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30195363 | $\omega$ | 85.21408 | | −0.96371509 | | −0.25473033 |
| $a$ | 2.2004384 | $\Omega$ | 80.01231 | | +0.20132434 | | −0.88988325 |
| $e$ | 0.0878594 | $i$ | 4.64679 | | +0.17527615 | | −0.37844454 |
| $P$ | 3.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 704 | 0.7− | 0.1+ | 2002 03 17 | 704 | 0.3+ | 0.1+ | 2002 04 09 | 291 | 0.2− | 0.3− |
| 2002 02 08 | 704 | 0.8+ | 0.5− | 2002 03 17 | 704 | 0.1+ | 1.3+ | 2002 04 09 | 291 | 0.1+ | 0.3− |
| 2002 02 08 | 704 | 0.3+ | 0.3+ | 2002 03 17 | 704 | 0.6− | 0.1− | 2004 12 11 | 691 | 0.1− | 0.2− |
| 2002 02 08 | 704 | 0.4− | 0.3+ | 2002 03 17 | 704 | 0.1− | 0.4+ | 2004 12 11 | 691 | 0.0 | 0.2− |
| 2002 02 08 | 704 | 0.6− | 0.2− | 2002 04 02 | 644 | 0.3− | 0.4+ | 2004 12 11 | 691 | 0.0 | 0.0 |
| 2002 02 16 | 644 | 0.3+ | 0.1+ | 2002 04 02 | 644 | 0.1+ | 0.1− | 2004 12 12 | 691 | 0.1+ | 0.2+ |
| 2002 02 16 | 644 | 0.7+ | 0.1− | 2002 04 02 | 644 | 0.1+ | 0.0 | 2004 12 12 | 691 | 0.1− | 0.1+ |
| 2002 02 16 | 644 | 0.4+ | 0.1+ | 2002 04 02 | 644 | 0.1− | 0.0 | 2004 12 12 | 691 | 0.0 | 0.2+ |
| 2002 03 11 | 644 | 0.3+ | 0.3+ | 2002 04 02 | 644 | 0.2− | 0.1+ | 2004 12 16 | 691 | 0.1+ | 0.3− |
| 2002 03 11 | 644 | 0.3+ | 0.1+ | 2002 04 02 | 644 | 0.2+ | 0.2+ | 2004 12 16 | 691 | 0.1+ | 0.1− |
| 2002 03 11 | 644 | 0.1− | 0.3− | 2002 04 09 | 291 | 0.1− | 0.1− | 2004 12 16 | 691 | 0.1− | 0.1+ |

**2004 XH$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.92768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25555415 | $\omega$ | 111.66290 | | −0.98939945 | +0.05771814 | |
| $a$ | 2.4593146 | $\Omega$ | 71.84491 | | −0.11060493 | −0.89412803 | |
| $e$ | 0.1731542 | $i$ | 8.06163 | | +0.09410249 | −0.44407620 | |
| $P$ | 3.86 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 691 | 0.0 | 0.2+ | 2002 05 08 | 704 | 0.8− | 0.6+ | 2004 12 13 | 701 | 0.0 | 0.1+ |
| 2000 11 20 | 691 | 0.1− | 0.2+ | 2002 05 08 | 704 | 1.0− | 0.3+ | 2004 12 13 | 701 | 0.1+ | 0.2+ |
| 2000 11 20 | 691 | 0.3− | 0.6+ | 2002 05 19 | 644 | 0.6+ | 0.9+ | 2004 12 13 | 701 | 0.3+ | 0.2+ |
| 2002 04 10 | 704 | 0.7− | 0.2+ | 2002 05 19 | 644 | 1.1+ | 1.0+ | 2004 12 13 | 701 | 0.7+ | 0.0 |
| 2002 04 10 | 704 | 0.3+ | 0.0 | 2002 05 19 | 644 | 0.5+ | 1.0+ | 2004 12 15 | 701 | 0.1− | 0.0 |
| 2002 04 10 | 704 | 0.2− | 0.0 | 2004 12 10 | 701 | 0.9− | 0.3− | 2004 12 15 | 701 | 0.4− | 0.2+ |
| 2002 04 16 | 704 | 0.2− | 0.2− | 2004 12 10 | 701 | 0.4+ | 0.1− | 2004 12 15 | 701 | 0.1+ | 0.3− |
| 2002 04 16 | 704 | 0.9+ | 0.9− | 2004 12 12 | 701 | 0.8+ | 0.2− | 2004 12 16 | 701 | 0.5+ | 0.2− |
| 2002 04 16 | 704 | 1.1+ | 0.2− | 2004 12 12 | 701 | (1.3+ | 3.7+) | 2004 12 16 | 701 | 0.1− | 0.1− |
| 2002 04 16 | 704 | 0.5+ | 0.8− | 2004 12 12 | 701 | 0.1+ | 0.5− | 2004 12 20 | 701 | 0.8− | 0.2+ |
| 2002 04 16 | 704 | 0.1+ | 0.5− | 2004 12 13 | 701 | 0.4− | 0.4+ | 2004 12 20 | 701 | 0.3− | 0.5− |
| 2002 05 08 | 704 | 1.1− | 1.0+ | 2004 12 13 | 701 | 0.3+ | 0.2− | | | | |

**2004 XE$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.77596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23555396 | $\omega$ | 244.98075 | | −0.68663890 | −0.72532059 | |
| $a$ | 2.5966243 | $\Omega$ | 248.47757 | | +0.68467551 | −0.62234186 | |
| $e$ | 0.1542796 | $i$ | 3.04193 | | +0.24443091 | −0.29427989 | |
| $P$ | 4.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 10 | 691 | 0.1− | 0.1− | 2004 12 13 | 599 | 0.1− | 0.3+ | 2006 05 20 | 691 | 0.1+ | 0.2+ |
| 2004 11 10 | 691 | 0.1− | 0.1+ | 2004 12 13 | 599 | 0.1− | 0.1− | 2006 05 20 | 691 | 0.2+ | 0.2+ |
| 2004 11 10 | 691 | 0.2− | 0.2+ | 2004 12 13 | 599 | 0.1− | 0.3+ | 2006 06 02 | 691 | 0.4+ | 0.3+ |
| 2004 12 03 | H55 | 0.3+ | 1.2+ | 2004 12 15 | H55 | 0.0 | 0.3− | 2006 06 02 | 691 | 0.2+ | 0.3+ |
| 2004 12 03 | H55 | 0.4+ | 0.9+ | 2004 12 15 | H55 | 0.1− | 0.3− | 2006 06 02 | 691 | 0.3− | 0.3+ |
| 2004 12 03 | H55 | 0.9− | 0.7+ | 2004 12 15 | H55 | 0.6+ | 1.2− | 2006 06 02 | G96 | 0.4− | 0.1− |
| 2004 12 10 | 704 | 0.7+ | 0.2− | 2006 04 07 | 691 | 0.2− | 0.3− | 2006 06 02 | G96 | 0.4− | 0.0 |
| 2004 12 10 | 704 | 0.6+ | 0.5+ | 2006 04 07 | 691 | 0.2+ | 0.3− | 2006 06 02 | G96 | 0.7− | 0.3− |
| 2004 12 10 | 704 | 1.0+ | 0.2− | 2006 04 07 | 691 | 0.2− | 0.3− | 2006 06 02 | G96 | 0.1− | 0.4+ |
| 2004 12 10 | 704 | 0.9− | 0.2+ | 2006 05 20 | 691 | 0.2+ | 0.2+ | | | | |

**2004 XA$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.40574 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.51399194 | $\omega$ | 83.37209 | | −0.45726157 | −0.80314731 | |
| $a$ | 1.5434711 | $\Omega$ | 41.84073 | | +0.40107417 | −0.56953161 | |
| $e$ | 0.5003762 | $i$ | 34.92802 | | +0.79375775 | −0.17489464 | |
| $P$ | 1.92 | $H$ | 20.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 12 | 568 | 0.2− | 0.0 | 2004 12 14 | 568 | 0.1+ | 0.1− | 2006 10 20 | 474 | 0.4+ | 0.4− |
| 2004 12 12 | 568 | 0.1− | 0.1− | 2005 01 09 | 568 | 0.0 | 0.0 | 2006 10 28 | 448 | 0.3+ | 0.1− |
| 2004 12 12 | 568 | 0.1− | 0.0 | 2005 01 09 | 568 | 0.1+ | 0.1+ | 2006 10 28 | 448 | 0.5− | 0.5− |
| 2004 12 13 | 568 | 0.1+ | 0.0 | 2005 01 09 | 568 | 0.1+ | 0.0 | 2006 10 28 | 448 | 1.3+ | 1.0− |
| 2004 12 13 | 568 | 0.1− | 0.2+ | 2005 01 09 | 568 | 0.2+ | 0.0 | 2006 11 11 | F84 | 1.1− | 0.2+ |
| 2004 12 13 | 568 | 0.0 | 0.2+ | 2005 04 18 | 704 | 0.1+ | 0.7+ | 2006 11 11 | F84 | 0.2+ | 0.3− |
| 2004 12 13 | 568 | 0.1− | 0.1− | 2005 04 18 | 704 | 1.2+ | 1.0+ | 2006 11 13 | G96 | 0.2− | 0.6− |
| 2004 12 13 | 568 | 0.1− | 0.0 | 2005 04 18 | 704 | 1.4+ | 1.0+ | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2004 12 13 | 568 | 0.1− | 0.2+ | 2005 04 18 | 704 | 0.3+ | 0.3− | 2006 11 13 | G96 | 0.5− | 0.1− |
| 2004 12 13 | 568 | 0.1− | 0.0 | 2005 04 18 | 704 | 1.4+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2004 12 13 | 568 | 0.3− | 0.2+ | 2006 10 20 | 474 | 0.4− | 0.2− | 2006 11 28 | 568 | 0.0 | 0.0 |
| 2004 12 14 | 568 | 0.1+ | 0.0 | 2006 10 20 | 474 | 0.4+ | 0.0 | 2006 11 28 | 568 | 0.0 | 0.0 |
| 2004 12 14 | 568 | 0.1+ | 0.1− | 2006 10 20 | 474 | 0.6+ | 0.4+ | | | | |

**2004 XD$_{46}$ = 2006 HV$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.21277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22351802 | $\omega$ | 330.06312 | | −0.18353253 | −0.98127336 | |
| $a$ | 2.6890220 | $\Omega$ | 130.44705 | | +0.91646227 | −0.19231654 | |
| $e$ | 0.1391844 | $i$ | 4.40630 | | +0.35554565 | −0.01081360 | |
| $P$ | 4.41 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.1+ | 0.5+ | 2001 02 21 | 691 | 0.4+ | 0.1− | 2006 04 21 | 691 | 0.4− | 0.3− |
| 2001 01 26 | 691 | 0.1− | 0.1+ | 2001 02 21 | 691 | 0.5+ | 0.4+ | 2006 04 21 | 691 | 0.1− | 0.2− |
| 2001 01 26 | 691 | 0.1− | 0.1− | 2004 12 09 | 691 | 0.3+ | 0.2− | 2006 04 21 | 691 | 0.0 | 0.1− |
| 2001 02 16 | 699 | 1.0− | 1.9− | 2004 12 09 | 691 | 0.2− | 0.3− | 2006 04 24 | 691 | 0.5+ | 0.1+ |
| 2001 02 16 | 699 | 0.1− | 0.3+ | 2004 12 09 | 691 | 0.0 | 0.1+ | 2006 04 24 | 691 | 0.2+ | 0.2+ |
| 2001 02 16 | 699 | 2.5− | 0.3− | 2004 12 13 | 691 | 0.1− | 0.3+ | 2006 04 24 | 691 | 0.1− | 0.2+ |
| 2001 02 16 | 699 | 0.7− | 0.5+ | 2004 12 13 | 691 | 0.0 | 0.1+ | | | | |
| 2001 02 21 | 691 | 0.2+ | 0.2− | 2004 12 13 | 691 | 0.1− | 0.1− | | | | |

**2004 XL$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.97457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28716758 | $\omega$ | 230.49990 | | +0.95767405 | −0.27846482 | |
| $a$ | 2.2753373 | $\Omega$ | 145.48996 | | +0.28739026 | +0.91055184 | |
| $e$ | 0.1191944 | $i$ | 7.39528 | | +0.01634763 | +0.30553673 | |
| $P$ | 3.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 644 | 0.8− | 0.5+ | 2002 02 11 | 704 | 0.5+ | 1.3− | 2004 12 04 | 699 | 0.1+ | 0.8− |
| 2002 01 05 | 644 | 0.7− | 0.6+ | 2003 04 30 | 291 | 0.1− | 0.4+ | 2004 12 04 | 699 | 0.8− | 1.5+ |
| 2002 01 05 | 644 | 0.8− | 1.1+ | 2003 04 30 | 291 | 0.0 | 0.4+ | 2004 12 12 | 644 | 0.1+ | 0.4+ |
| 2002 01 14 | 704 | 0.9− | 0.3+ | 2003 04 30 | 291 | 0.2+ | 0.4+ | 2004 12 12 | 644 | 0.1+ | 0.5+ |
| 2002 01 14 | 704 | 0.3− | 0.0 | 2004 09 24 | 704 | 1.3+ | 0.2+ | 2004 12 12 | 644 | 0.2− | 0.6+ |
| 2002 01 14 | 704 | 0.3+ | 0.8+ | 2004 09 24 | 704 | 0.2+ | 0.9+ | 2004 12 13 | 703 | 1.2− | 0.8− |
| 2002 01 14 | 704 | 0.5+ | 0.5− | 2004 09 24 | 704 | 0.6+ | 0.8+ | 2004 12 13 | 703 | 0.5+ | 1.0− |
| 2002 02 06 | 644 | 0.7− | 0.7+ | 2004 09 24 | 704 | 0.1+ | 0.6− | 2004 12 13 | 703 | 1.0− | 0.4− |
| 2002 02 06 | 644 | 0.8− | 0.3+ | 2004 10 07 | 704 | 0.5− | 0.7+ | 2004 12 13 | 703 | 0.7− | 0.2− |
| 2002 02 06 | 644 | 0.8− | 0.4+ | 2004 10 07 | 704 | 0.0 | 0.9+ | 2006 03 26 | 699 | 0.7− | 1.7+ |
| 2002 02 11 | 704 | 1.4+ | 1.1− | 2004 10 07 | 704 | 0.1− | 0.6+ | 2006 03 26 | 699 | 1.1− | 0.3− |
| 2002 02 11 | 704 | 1.3+ | 0.2+ | 2004 10 07 | 704 | 0.8+ | 0.4+ | 2006 03 26 | 699 | 1.8+ | 1.1− |
| 2002 02 11 | 704 | 1.4+ | 0.5− | 2004 12 04 | 699 | 0.5− | 0.7+ | 2006 03 26 | 699 | 1.1+ | 1.0+ |
| 2002 02 11 | 704 | 1.0+ | 1.5− | 2004 12 04 | 699 | 0.0 | 0.3+ | | | | |

**2004 XC$_{52}$ = 2006 DX$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.38045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17515880 | $\omega$ | 176.39701 | | +0.64257638 | −0.74610851 | |
| $a$ | 3.1635989 | $\Omega$ | 233.52878 | | +0.69746191 | +0.66380071 | |
| $e$ | 0.0569945 | $i$ | 12.52595 | | +0.31724198 | +0.05187208 | |
| $P$ | 5.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 09 | 910 | 0.6+ | 0.7+ | 2003 10 21 | 644 | 0.3− | 0.3+ | 2006 02 24 | 644 | 0.4+ | 0.1− |
| 1998 11 09 | 910 | 0.7+ | 0.5+ | 2003 10 21 | 644 | 0.2+ | 0.4+ | 2006 02 24 | 703 | 0.2− | 0.1+ |
| 1998 11 10 | 910 | 0.3+ | 0.1+ | 2004 12 12 | 599 | 0.2+ | 0.0 | 2006 02 24 | 703 | 0.8− | 0.3− |
| 1998 11 19 | 691 | 0.1+ | 0.5− | 2004 12 12 | 599 | 0.3− | 0.0 | 2006 02 24 | 703 | 1.2+ | 0.4− |
| 1998 11 19 | 691 | 0.3+ | 0.3− | 2004 12 12 | 599 | 0.0 | 0.0 | 2006 02 24 | 703 | 0.1− | 1.3+ |
| 1998 11 19 | 691 | 1.3+ | 0.8+ | 2004 12 14 | 599 | 0.1+ | 0.3− | 2006 02 24 | 644 | 0.4+ | 0.1+ |
| 1998 11 26 | 691 | 0.6− | 0.3− | 2004 12 14 | 599 | 0.0 | 0.1− | 2006 03 04 | 703 | 0.2− | 0.5+ |
| 1998 11 26 | 691 | 0.7− | 0.0 | 2004 12 14 | 599 | 0.0 | 0.2+ | 2006 03 04 | 703 | 0.8− | 0.1+ |
| 1998 11 26 | 691 | 0.8− | 0.2− | 2004 12 14 | 599 | 0.2− | 0.1+ | 2006 03 04 | 703 | 0.2− | 0.5− |
| 2003 10 21 | 644 | 0.3− | 0.6+ | 2006 02 24 | 644 | 0.7+ | 0.1− | 2006 03 04 | 703 | 0.0 | 0.6+ |

## 2004 XT$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.38405 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19969455 | $\omega$ | 203.32152 | | +0.80831915 | −0.58871209 | |
| $a$ | 2.8988466 | $\Omega$ | 192.74978 | | +0.54447822 | +0.75149717 | |
| $e$ | 0.1053430 | $i$ | 1.60528 | | +0.22397235 | +0.29777522 | |
| $P$ | 4.94 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 01 | 691 | 0.1+ | 0.3− | 2004 12 19 | 691 | 0.1+ | 0.2− | 2006 03 25 | G96 | 0.0 | 0.6− |
| 1998 09 01 | 691 | 0.0 | 0.1− | 2004 12 19 | 691 | 0.2+ | 0.1− | 2006 03 25 | G96 | 0.2− | 0.3− |
| 1998 09 01 | 691 | 0.1+ | 0.0 | 2004 12 19 | 691 | 0.2− | 0.1− | 2006 03 25 | G96 | 0.2− | 0.4− |
| 2004 12 10 | 691 | 0.1− | 0.1+ | 2006 02 25 | 691 | 0.2+ | 0.3+ | 2006 03 25 | G96 | 0.0 | 0.3− |
| 2004 12 10 | 691 | 0.3+ | 0.0 | 2006 02 25 | 691 | 0.7+ | 0.0 | 2006 04 07 | G96 | 0.4− | 0.3− |
| 2004 12 10 | 691 | 0.0 | 0.1− | 2006 02 25 | 691 | 0.5− | 0.3+ | 2006 04 07 | G96 | 0.1+ | 0.9+ |
| 2004 12 14 | 691 | 0.0 | 0.2+ | 2006 03 04 | 691 | 0.1− | 0.2− | 2006 04 07 | G96 | 0.4− | 0.4− |
| 2004 12 14 | 691 | 0.3− | 0.1+ | 2006 03 04 | 691 | 0.5− | 0.4− | 2006 04 07 | G96 | 0.3− | 0.2− |
| 2004 12 14 | 691 | 0.1− | 0.1− | 2006 03 04 | 691 | 0.4+ | 0.0 | | | | |

## 2004 XG$_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.36483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22896035 | $\omega$ | 61.27139 | | +0.98700549 | −0.03760971 | |
| $a$ | 2.6462398 | $\Omega$ | 300.49051 | | −0.04179328 | +0.87867771 | |
| $e$ | 0.3042564 | $i$ | 10.44512 | | +0.15515631 | +0.47593170 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.8− | 1.4− | 1999 09 05 | 699 | 0.0 | 0.0 | 2004 12 10 | 691 | 0.4+ | 0.1+ |
| 1999 07 13 | 704 | 0.5− | 0.4+ | 1999 09 05 | 699 | 0.1+ | 0.8− | 2004 12 14 | 691 | 0.2+ | 0.0 |
| 1999 07 13 | 704 | 0.4+ | 0.8− | 1999 09 05 | 699 | 0.3− | 0.6− | 2004 12 14 | 691 | 0.2+ | 0.1− |
| 1999 07 13 | 704 | 1.3− | 0.4− | 1999 09 08 | 704 | 0.5+ | 0.6− | 2004 12 14 | 691 | 0.0 | 0.2+ |
| 1999 07 13 | 704 | 0.8+ | 0.5− | 1999 09 08 | 704 | 0.0 | 0.8+ | 2004 12 19 | 691 | 0.2− | 0.0 |
| 1999 07 20 | 699 | 0.5+ | 1.1+ | 1999 09 08 | 704 | 0.3+ | 0.4+ | 2004 12 19 | 691 | 0.2− | 0.3+ |
| 1999 07 20 | 699 | 0.0 | 1.1+ | 2004 12 10 | 691 | 0.5− | 0.0 | 2004 12 19 | 691 | 0.0 | 0.2− |
| 1999 07 20 | 699 | 0.1+ | 1.5+ | 2004 12 10 | 691 | 0.2+ | 0.1− | | | | |

## 2004 XP$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.23313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24237334 | $\omega$ | 75.34465 | | −0.36212055 | −0.93161213 | |
| $a$ | 2.5476875 | $\Omega$ | 35.93490 | | +0.83352128 | −0.33856969 | |
| $e$ | 0.0872123 | $i$ | 3.03826 | | +0.41726608 | −0.13217190 | |
| $P$ | 4.07 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 704 | 0.4+ | 0.1+ | 2001 02 27 | 691 | 0.6− | 0.1− | 2004 12 17 | 704 | 0.5+ | 0.5+ |
| 2000 12 22 | 704 | 0.5+ | 1.3+ | 2002 05 11 | 704 | 0.8+ | 0.2− | 2004 12 17 | 704 | 0.5+ | 0.2+ |
| 2000 12 22 | 704 | 0.2+ | 0.2+ | 2002 05 11 | 704 | 0.1− | 0.1+ | 2004 12 17 | 704 | 0.7+ | 0.5+ |
| 2000 12 22 | 704 | 0.9− | 0.4+ | 2002 05 11 | 704 | 0.2− | 0.0 | 2004 12 17 | 704 | 1.3− | 0.2+ |
| 2000 12 22 | 704 | 0.7+ | 0.1− | 2002 05 11 | 704 | 0.6− | 0.2− | 2004 12 17 | 704 | 1.8− | 0.0 |
| 2001 01 04 | 704 | 0.2− | 0.0 | 2002 05 11 | 704 | 0.1+ | 0.4− | 2006 04 30 | 691 | 0.0 | 0.1− |
| 2001 01 04 | 704 | 0.4+ | 0.3+ | 2003 10 01 | 691 | 0.1+ | 0.3− | 2006 04 30 | 691 | 0.1+ | 0.0 |
| 2001 01 04 | 704 | 0.0 | 0.7+ | 2003 10 01 | 691 | 0.1+ | 0.2+ | 2006 04 30 | 691 | 0.2− | 0.1− |
| 2001 01 04 | 704 | 0.6+ | 0.4− | 2003 10 01 | 691 | 0.3− | 0.3+ | 2006 05 20 | 691 | 0.2+ | 0.3+ |
| 2001 01 04 | 704 | 0.2+ | 0.8− | 2004 12 11 | 704 | 0.2− | 0.0 | 2006 05 20 | 691 | 0.2+ | 0.2+ |
| 2001 01 19 | 704 | 0.6− | 0.5− | 2004 12 11 | 704 | 0.1− | 0.4+ | 2006 05 20 | 691 | 0.1+ | 0.3+ |
| 2001 01 19 | 704 | 0.2+ | 0.6+ | 2004 12 11 | 704 | 0.6− | 1.1+ | 2006 06 02 | G96 | 0.3− | 0.1+ |
| 2001 01 19 | 704 | 1.0+ | 1.0− | 2004 12 11 | 704 | 0.2+ | 0.2+ | 2006 06 02 | G96 | 0.4+ | 0.2+ |
| 2001 01 19 | 704 | 0.9+ | 0.1− | 2004 12 15 | 704 | 1.4+ | 0.4− | 2006 06 02 | G96 | 0.1− | 0.1+ |
| 2001 01 19 | 704 | 0.7+ | 0.7− | 2004 12 15 | 704 | 0.9− | 0.2+ | 2006 06 02 | G96 | 0.4− | 0.0 |
| 2001 02 27 | 691 | 0.4− | 0.0 | 2004 12 15 | 704 | 0.7+ | 0.2+ | | | | |
| 2001 02 27 | 691 | 0.3− | 0.1− | 2004 12 15 | 704 | 0.9+ | 0.5− | | | | |

## 2004 XX$_{71}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.29432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23985006 | $\omega$ | 37.15362 | | +0.95294118 | +0.25215281 | |
| $a$ | 2.5655245 | $\Omega$ | 307.38902 | | −0.30304853 | +0.80706874 | |
| $e$ | 0.1893441 | $i$ | 12.22859 | | +0.00804294 | +0.53390918 | |
| $P$ | 4.11 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 08 | 644 | 0.2− | 0.4− | 2003 07 25 | 704 | 0.8+ | 0.8+ | 2004 12 14 | 691 | 0.4+ | 0.3+ |
| 2003 07 08 | 644 | 0.5− | 0.3+ | 2003 08 05 | 691 | 0.3− | 0.4+ | 2004 12 14 | 691 | 0.4+ | 0.2+ |
| 2003 07 08 | 644 | 0.3− | 0.2+ | 2003 08 05 | 691 | 0.0 | 0.2− | 2004 12 14 | 691 | 0.2− | 0.1− |
| 2003 07 25 | 704 | 0.1− | 0.1+ | 2003 08 05 | 691 | 0.0 | 0.2− | 2004 12 19 | 691 | 0.1+ | 0.3+ |
| 2003 07 25 | 704 | 0.3+ | 0.5− | 2004 12 12 | 291 | 0.1− | 0.1+ | 2004 12 19 | 691 | 0.3− | 0.2− |
| 2003 07 25 | 704 | 0.2− | 1.0− | 2004 12 12 | 291 | 0.1− | 0.3− | 2004 12 19 | 691 | 0.3− | 0.4− |
| 2003 07 25 | 704 | 1.3+ | 0.4+ | 2004 12 12 | 291 | 0.2+ | 0.2− | | | | |

## 2004 XM$_{72}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.95892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20809032 | $\omega$ | 253.72511 | | +0.45637871 | −0.88966067 | |
| $a$ | 2.8203400 | $\Omega$ | 169.08486 | | +0.84348112 | +0.42723202 | |
| $e$ | 0.0507213 | $i$ | 4.51683 | | +0.28329856 | +0.16117288 | |
| $P$ | 4.74 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 10 | 691 | 0.2− | 0.4− | 2006 01 30 | 691 | 0.2− | 0.2+ | 2006 03 06 | G96 | 0.1− | 0.0 |
| 2004 11 10 | 691 | 0.2− | 0.0 | 2006 01 30 | 691 | 0.1− | 0.1− | 2006 03 06 | G96 | 0.3− | 0.2+ |
| 2004 11 10 | 691 | 0.2− | 0.3− | 2006 01 30 | 691 | 0.1+ | 0.1+ | 2006 03 06 | G96 | 0.1+ | 0.4+ |
| 2004 12 14 | 291 | 0.1− | 0.2+ | 2006 02 07 | 691 | 0.3+ | 0.0 | 2006 03 06 | G96 | 0.4+ | 0.0 |
| 2004 12 14 | 291 | 0.3− | 0.0 | 2006 02 07 | 691 | 0.3+ | 0.5− | 2006 03 23 | G96 | 0.4− | 0.2− |
| 2004 12 14 | 291 | 0.1+ | 0.3+ | 2006 02 07 | 691 | 0.1+ | 0.6− | 2006 03 23 | G96 | 0.6− | 0.0 |
| 2004 12 16 | 291 | 0.2+ | 0.2+ | 2006 03 03 | 691 | 0.1+ | 0.3+ | 2006 03 23 | G96 | 0.4− | 0.2+ |
| 2004 12 16 | 291 | 0.5+ | 0.3+ | 2006 03 03 | 691 | 0.0 | 0.3+ | 2006 03 23 | G96 | 0.3− | 0.2+ |
| 2004 12 16 | 291 | 0.1+ | 0.2− | 2006 03 03 | 691 | 0.2− | 0.0 | | | | |

## 2004 XA$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.96778 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26288350 | $\omega$ | 89.00896 | | +0.98428528 | +0.15452153 | |
| $a$ | 2.4133881 | $\Omega$ | 262.09829 | | −0.17567880 | +0.90586785 | |
| $e$ | 0.1395519 | $i$ | 4.95032 | | +0.01787291 | +0.39436852 | |
| $P$ | 3.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 1.2− | 0.0 | 2000 11 20 | 704 | 0.9+ | 0.9+ | 2004 12 14 | 704 | 0.1+ | 0.1− |
| 2000 10 25 | 704 | 1.1+ | 0.3+ | 2000 11 20 | 704 | 0.9+ | 0.1+ | 2004 12 14 | 704 | 0.2+ | 0.7+ |
| 2000 10 25 | 704 | 0.7− | 0.2+ | 2000 11 20 | 704 | 0.5− | 0.1+ | 2004 12 14 | 704 | 0.1+ | 0.6+ |
| 2000 10 25 | 704 | 1.0+ | 0.6− | 2000 11 20 | 704 | 0.4+ | 0.4+ | 2004 12 14 | 704 | 0.3+ | 0.4+ |
| 2000 11 05 | 704 | 0.5+ | 0.4+ | 2000 11 20 | 704 | 1.1− | 1.0− | 2004 12 16 | 704 | 1.0− | 0.2+ |
| 2000 11 05 | 704 | 0.5− | 0.2+ | 2004 12 09 | 691 | 0.2− | 0.1+ | 2004 12 16 | 704 | 0.3− | 0.7− |
| 2000 11 05 | 704 | 0.3− | 0.4− | 2004 12 09 | 691 | 0.1+ | 0.1− | 2004 12 16 | 704 | 0.2+ | 0.2− |
| 2000 11 05 | 704 | 0.4− | 0.4− | 2004 12 09 | 691 | 0.2+ | 0.3− | | | | |

**2004 XE$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.04431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18011806 | $\omega$ | 114.98560 | | +0.97503599 | | +0.17988988 |
| $a$ | 3.1052593 | $\Omega$ | 234.90732 | | −0.21227822 | | +0.92713647 |
| $e$ | 0.0563686 | $i$ | 9.15406 | | +0.06513658 | | +0.32872114 |
| $P$ | 5.47 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 23 | 644 | 0.2− | 0.3+ | 2003 09 29 | 691 | 0.1+ | 0.1− | 2004 12 14 | 704 | 1.1− | 0.7− |
| 2003 07 23 | 644 | 0.1− | 0.2+ | 2003 09 29 | 691 | 0.2+ | 0.1− | 2004 12 14 | 704 | 0.2+ | 0.6+ |
| 2003 07 23 | 644 | 0.2− | 0.1+ | 2004 12 09 | 703 | 1.0− | 1.0− | 2004 12 14 | 704 | 0.2− | 0.1− |
| 2003 09 16 | 691 | 0.0 | 0.0 | 2004 12 09 | 703 | 1.1+ | 0.6+ | 2004 12 19 | G96 | 0.0 | 0.3− |
| 2003 09 16 | 691 | 0.1+ | 0.1− | 2004 12 09 | 703 | 0.4− | 1.0− | 2004 12 19 | G96 | 0.3+ | 0.6− |
| 2003 09 16 | 691 | 0.0 | 0.0 | 2004 12 09 | 703 | 0.2+ | 1.3+ | 2004 12 19 | G96 | 0.3+ | 0.3− |
| 2003 09 27 | 699 | 0.6− | 0.8− | 2004 12 10 | 704 | 0.3+ | 0.8+ | 2004 12 19 | G96 | 0.1− | 0.4− |
| 2003 09 27 | 699 | 0.5− | 0.1+ | 2004 12 10 | 704 | 0.0 | 0.3+ | 2006 03 04 | 703 | 0.1+ | 0.6+ |
| 2003 09 27 | 699 | 0.1+ | 0.2− | 2004 12 10 | 704 | 0.9+ | 0.9+ | 2006 03 04 | 703 | 0.7+ | 0.8− |
| 2003 09 27 | 699 | (2.2+ | 0.5−) | 2004 12 10 | 704 | 0.7− | 0.1− | 2006 03 04 | 703 | 1.7− | 0.1− |
| 2003 09 29 | 691 | 0.2+ | 0.1+ | 2004 12 14 | 704 | 0.1+ | 0.6+ | 2006 03 04 | 703 | 0.5+ | 0.7− |

**2004 XW$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.52105 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19300964 | $\omega$ | 131.52233 | | +0.77632755 | | −0.61095048 |
| $a$ | 2.9654007 | $\Omega$ | 266.71976 | | +0.52211937 | | +0.76113489 |
| $e$ | 0.1015536 | $i$ | 8.93718 | | +0.35313864 | | +0.21774569 |
| $P$ | 5.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 23 | 644 | 0.3− | 0.4+ | 2003 09 29 | 691 | 0.1+ | 0.1+ | 2004 12 15 | 691 | 0.2− | 0.2− |
| 2003 07 23 | 644 | 0.4− | 0.6+ | 2003 10 17 | 645 | 0.1− | 0.1− | 2004 12 15 | 704 | 0.6− | 0.8+ |
| 2003 07 23 | 644 | 0.2+ | 0.8+ | 2003 10 17 | 645 | 0.0 | 0.0 | 2004 12 15 | 704 | 1.2+ | 0.2+ |
| 2003 08 21 | 599 | 0.1+ | 0.3+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2004 12 15 | 704 | 0.6+ | 0.6+ |
| 2003 08 21 | 599 | 0.1− | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2004 12 15 | 704 | 0.2+ | 0.3+ |
| 2003 08 21 | 599 | 0.1+ | 0.5+ | 2004 12 11 | 691 | 0.2− | 0.0 | 2004 12 15 | 704 | 0.6− | 0.6+ |
| 2003 08 21 | 599 | 0.5− | 0.2+ | 2004 12 11 | 691 | 0.2− | 0.0 | 2004 12 16 | 704 | 1.9+ | 0.2− |
| 2003 09 02 | 704 | 0.5+ | 0.0 | 2004 12 11 | 691 | 0.0 | 0.0 | 2004 12 16 | 704 | 0.8+ | 0.1− |
| 2003 09 02 | 704 | 0.2+ | 0.0 | 2004 12 14 | 704 | 0.3− | 0.3+ | 2004 12 16 | 704 | 1.4+ | 1.0− |
| 2003 09 02 | 704 | 0.4+ | 0.6− | 2004 12 14 | 704 | 0.6− | 0.8+ | 2006 02 06 | G96 | 1.7+ | 1.5+ |
| 2003 09 16 | 691 | 0.1− | 0.3+ | 2004 12 14 | 704 | 0.6− | 0.3− | 2006 02 06 | G96 | 0.1− | 0.1+ |
| 2003 09 16 | 691 | 0.1+ | 0.3+ | 2004 12 14 | 704 | 0.2− | 0.3+ | 2006 02 06 | G96 | 0.3− | 0.9+ |
| 2003 09 16 | 691 | 0.1+ | 0.3+ | 2004 12 14 | 704 | 0.0 | 0.4+ | 2006 02 06 | G96 | 0.1+ | 0.8+ |
| 2003 09 29 | 691 | 0.0 | 0.1+ | 2004 12 15 | 691 | 0.1− | 0.0 | | | | |
| 2003 09 29 | 691 | 0.0 | 0.2+ | 2004 12 15 | 691 | 0.1− | 0.1− | | | | |

**2004 XP$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.27287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23226114 | $\omega$ | 180.33098 | | +0.44030361 | | −0.89589925 |
| $a$ | 2.6211086 | $\Omega$ | 243.54649 | | +0.82391201 | | +0.42934193 |
| $e$ | 0.2170912 | $i$ | 3.78736 | | +0.35679369 | | +0.11414918 |
| $P$ | 4.24 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 26 | 644 | 0.3− | 0.6+ | 2005 01 13 | 704 | 0.3+ | 0.5+ | 2005 01 16 | 291 | 0.0 | 0.1+ |
| 2003 07 26 | 644 | 0.0 | 0.6+ | 2005 01 13 | 703 | 0.7− | 0.1− | 2005 01 17 | 333 | 0.1+ | 0.3− |
| 2003 07 26 | 644 | 0.1− | 0.1+ | 2005 01 13 | 704 | 0.7+ | 0.3+ | 2005 01 17 | 333 | 0.2+ | 0.2− |
| 2004 12 13 | 691 | 0.1+ | 0.0 | 2005 01 13 | 703 | 0.4+ | 0.5+ | 2005 03 17 | G96 | 0.1+ | 0.1− |
| 2004 12 13 | 691 | 0.2− | 0.1+ | 2005 01 13 | 703 | 0.7− | 0.2+ | 2005 03 17 | G96 | 0.1+ | 0.4− |
| 2004 12 13 | 691 | 0.1− | 0.0 | 2005 01 13 | 704 | 1.3+ | 0.1+ | 2005 03 17 | G96 | 0.2+ | 0.2− |
| 2004 12 14 | 704 | 0.3+ | 0.2− | 2005 01 13 | 704 | 0.6+ | 0.2+ | 2005 03 17 | G96 | 0.2− | 0.2− |
| 2004 12 14 | 704 | 0.1− | 0.4− | 2005 01 16 | 333 | 0.1+ | 0.2− | 2006 05 31 | G96 | 0.5+ | 0.8+ |
| 2004 12 14 | 704 | 0.4− | 0.7− | 2005 01 16 | 333 | 0.1+ | 0.3− | 2006 05 31 | G96 | 0.1− | 0.3− |
| 2004 12 14 | 704 | 0.1+ | 0.2+ | 2005 01 16 | 333 | 0.1− | 0.1− | 2006 05 31 | G96 | 0.3− | 0.1+ |
| 2005 01 13 | 704 | 1.1+ | 0.4+ | 2005 01 16 | 291 | 0.2− | 0.1+ | 2006 05 31 | G96 | 0.1+ | 0.1− |
| 2005 01 13 | 703 | 0.9− | 0.1+ | 2005 01 16 | 291 | 0.1− | 0.1+ | | | | |

**2004 XW$_{90}$ = 1996 TA$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.70289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27172412 | $\omega$ | 259.84499 | | −0.99085538 | | −0.09002823 |
| $a$ | 2.3607532 | $\Omega$ | 274.93823 | | +0.12331545 | | −0.90653593 |
| $e$ | 0.1766146 | $i$ | 5.78961 | | −0.05476241 | | −0.41241668 |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.8− | 0.1+ | 2002 05 03 | 699 | 0.1+ | 0.4+ | 2003 09 18 | 691 | 0.1− | 0.8− |
| 1996 10 07 | 691 | 0.6− | 0.1+ | 2002 05 03 | 699 | 1.1− | 0.2− | 2004 12 03 | 691 | 0.2+ | 0.1+ |
| 1996 10 07 | 691 | 0.1− | 0.3− | 2002 05 03 | 699 | 1.0+ | 0.7− | 2004 12 03 | 691 | 0.2− | 0.0 |
| 1996 10 08 | 691 | 0.3+ | 0.3+ | 2002 05 11 | 644 | 0.1− | 0.5+ | 2004 12 03 | 691 | 0.0 | 0.0 |
| 1996 10 08 | 691 | 0.3+ | 0.4+ | 2002 05 11 | 644 | 0.2+ | 0.7+ | 2004 12 11 | 691 | 0.2− | 0.8+ |
| 1996 10 08 | 691 | 0.4+ | 0.3+ | 2002 05 11 | 644 | 0.6+ | 0.6+ | 2004 12 11 | 691 | 0.4− | 0.1− |
| 2002 04 21 | 704 | 0.2+ | 0.8+ | 2002 05 17 | 644 | 0.1+ | 0.4+ | 2004 12 11 | 691 | 0.1+ | 0.1+ |
| 2002 04 21 | 704 | 0.3+ | 0.1− | 2002 05 17 | 644 | 0.1− | 0.5+ | 2004 12 15 | 691 | 0.2+ | 0.1+ |
| 2002 04 21 | 704 | 0.4+ | 1.2+ | 2002 05 17 | 644 | 0.5+ | 0.2+ | 2004 12 15 | 691 | 0.2+ | 0.1+ |
| 2002 04 21 | 704 | 0.2+ | 2.4+ | 2003 09 18 | 691 | 0.0 | 1.0+ | 2004 12 15 | 691 | 0.1+ | 0.0 |
| 2002 05 03 | 699 | 0.4− | 0.3− | 2003 09 18 | 691 | 0.0 | 0.3+ | | | | |

**2004 XJ$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.56093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27166653 | $\omega$ | 354.30764 | | +0.72608263 | | −0.68341851 |
| $a$ | 2.3610868 | $\Omega$ | 49.10189 | | +0.63475720 | | +0.62381834 |
| $e$ | 0.1856888 | $i$ | 5.75411 | | +0.26436209 | | +0.37919628 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 0.8+ | 0.6− | 2004 12 15 | 691 | 0.0 | 0.1+ | 2006 04 07 | 691 | 0.0 | 0.1− |
| 2000 09 24 | 699 | 0.3− | 0.2− | 2004 12 15 | 691 | 0.0 | 0.0 | 2006 04 07 | 691 | 0.1+ | 0.2− |
| 2000 09 24 | 699 | 0.8− | 1.3− | 2004 12 15 | 691 | 0.0 | 0.0 | 2006 04 07 | 691 | 0.5+ | 0.0 |
| 2000 09 24 | 704 | 0.0 | 1.3+ | 2004 12 15 | 704 | 0.4+ | 1.5+ | 2006 04 27 | 807 | 0.2− | 0.4+ |
| 2000 09 24 | 699 | 0.5− | 1.4+ | 2004 12 15 | 704 | 0.7+ | 1.4+ | 2006 04 27 | 807 | 0.3− | 0.2+ |
| 2000 09 24 | 704 | 0.2+ | 0.0 | 2004 12 15 | 704 | 0.9+ | 0.8+ | 2006 05 06 | G96 | 0.4+ | 0.1− |
| 2000 09 24 | 704 | 0.5+ | 1.0+ | 2004 12 17 | 704 | 0.8− | 1.1+ | 2006 05 06 | G96 | 0.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.2− | 0.9− | 2004 12 17 | 704 | (1.4+ | 2.3−) | 2006 05 06 | G96 | 0.7− | 0.4+ |
| 2004 12 11 | 704 | 0.8− | 0.4− | 2004 12 17 | 704 | 1.3− | 1.0+ | 2006 05 06 | G96 | 0.2+ | 0.2+ |
| 2004 12 11 | 704 | 0.1+ | 0.3− | 2004 12 17 | 704 | 1.3+ | 0.1− | 2006 05 24 | G96 | 0.3− | 0.3+ |
| 2004 12 11 | 704 | 0.4− | 0.5− | 2004 12 17 | 704 | 0.3− | 1.9− | 2006 05 24 | G96 | 0.4− | 0.2+ |
| 2004 12 11 | 704 | 0.0 | 0.4− | 2004 12 17 | 704 | 0.1+ | 1.3− | 2006 05 24 | G96 | 0.5− | 0.3+ |
| 2004 12 11 | 704 | 0.7− | 0.2− | 2004 12 17 | 704 | 0.4+ | 0.9− | 2006 05 24 | G96 | 0.1− | 0.3+ |

**2004 XY$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.04398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21746709 | $\omega$ | 140.01356 | | −0.87529041 | | +0.47439804 |
| $a$ | 2.7386741 | $\Omega$ | 68.54359 | | −0.46547215 | | −0.77380790 |
| $e$ | 0.0534678 | $i$ | 5.78923 | | −0.13115783 | | −0.41972352 |
| $P$ | 4.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 599 | 0.5− | 0.1− | 2004 12 15 | 691 | 0.0 | 0.2− | 2006 04 30 | 699 | 0.7+ | 0.4+ |
| 2003 09 18 | 599 | 0.4− | 0.4+ | 2005 01 06 | 703 | 1.7− | 0.5+ | 2006 04 30 | 699 | 0.8+ | 0.3+ |
| 2003 09 18 | 599 | 0.3+ | 0.5+ | 2005 01 06 | 703 | 1.0− | 0.5− | 2006 05 07 | G96 | 0.6+ | 0.1− |
| 2003 09 19 | 599 | 0.2− | 0.3+ | 2005 01 06 | 703 | 0.5+ | 1.1− | 2006 05 07 | G96 | 0.4+ | 0.1+ |
| 2003 10 23 | 645 | 0.1+ | 0.0 | 2005 01 06 | 703 | 0.9− | 1.2+ | 2006 05 07 | G96 | 0.2+ | 0.1+ |
| 2003 10 23 | 645 | 0.0 | 0.1− | 2006 04 19 | 703 | 0.4− | 0.9− | 2006 05 07 | G96 | 0.0 | 0.1+ |
| 2004 12 11 | 691 | 0.2+ | 0.0 | 2006 04 19 | 703 | 0.2+ | 0.5+ | 2006 05 24 | G96 | 0.1+ | 0.1+ |
| 2004 12 11 | 691 | 0.2+ | 0.1− | 2006 04 19 | 703 | 1.1− | 1.5− | 2006 05 24 | G96 | 0.4+ | 0.1+ |
| 2004 12 11 | 691 | 0.2+ | 0.1+ | 2006 04 19 | 703 | 1.2− | 0.1− | 2006 05 24 | G96 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 15 | 691 | 0.1− | 0.0 | 2006 04 30 | 699 | 0.3+ | 0.9+ | 2006 05 24 | G96 | 0.0 | 0.0 |
| 2004 12 15 | 691 | 0.3+ | 0.1+ | 2006 04 30 | 699 | 1.0− | 0.2+ | | | | |

**2004 XU$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.88478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28106757 | $\omega$ | 71.43010 | | +0.55510153 | −0.83127574 | |
| $a$ | 2.3081404 | $\Omega$ | 344.74719 | | +0.71547234 | +0.49499133 | |
| $e$ | 0.1631055 | $i$ | 6.33609 | | +0.42421884 | +0.25291151 | |
| $P$ | 3.51 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.1+ | 0.8− | 2004 10 24 | 704 | 1.4− | 1.3+ | 2004 12 15 | 703 | 0.9+ | 0.6+ |
| 2002 02 10 | 704 | 1.2+ | 0.8− | 2004 11 04 | 704 | 0.2− | 0.3+ | 2004 12 15 | 703 | 0.1− | 0.2+ |
| 2002 02 10 | 704 | 0.6+ | 0.6+ | 2004 11 04 | 704 | 0.2+ | 1.3− | 2004 12 15 | 703 | 0.5+ | 0.1− |
| 2002 02 10 | 704 | 0.5− | 0.3− | 2004 11 04 | 704 | 0.7+ | 0.5− | 2004 12 15 | 703 | 0.1+ | 0.0 |
| 2002 02 13 | 645 | 0.1− | 0.0 | 2004 11 04 | 704 | 0.0 | 0.3+ | 2004 12 15 | 703 | 0.5+ | 0.2+ |
| 2002 02 13 | 645 | 0.0 | 0.1− | 2004 11 04 | 704 | 0.2+ | 0.5− | 2004 12 15 | 703 | 0.0 | 1.0+ |
| 2002 02 22 | 644 | 0.4+ | 0.7+ | 2004 12 01 | 703 | 0.1− | 0.5− | 2004 12 15 | 703 | 0.7+ | 0.3+ |
| 2002 02 22 | 644 | 0.4+ | 0.4+ | 2004 12 01 | 703 | 0.1+ | 0.9− | 2004 12 15 | 703 | 0.5+ | 0.6− |
| 2002 02 22 | 644 | 0.3+ | 0.9+ | 2004 12 01 | 703 | 0.8− | 1.1− | 2004 12 20 | 703 | (4.7+ | 0.6+) |
| 2002 03 12 | 645 | 0.1− | 0.0 | 2004 12 01 | 703 | (1.8− | 3.3−) | 2004 12 20 | 703 | 0.4+ | 0.0 |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2004 12 02 | 704 | 0.6+ | 0.6+ | 2004 12 20 | 703 | 0.2+ | 0.9− |
| 2004 10 21 | 704 | 0.4− | 0.7− | 2004 12 02 | 704 | 0.3+ | 0.0 | 2004 12 20 | 703 | 0.0 | 0.8− |
| 2004 10 21 | 704 | 0.2− | 0.5− | 2004 12 02 | 704 | 0.2+ | 0.4+ | 2005 01 17 | 703 | 0.1+ | 0.6− |
| 2004 10 21 | 704 | 0.9+ | 0.1+ | 2004 12 02 | 704 | 0.2+ | 0.4+ | 2005 01 17 | 703 | 0.1− | 1.1+ |
| 2004 10 21 | 704 | 0.3+ | 0.3+ | 2004 12 14 | 703 | 0.8− | 0.3+ | 2005 01 17 | 703 | 0.4− | 0.3+ |
| 2004 10 21 | 704 | 1.5− | 0.0 | 2004 12 14 | 703 | 0.0 | 0.2− | 2005 01 17 | 703 | 1.4− | 0.4+ |
| 2004 10 24 | 704 | 0.9+ | 1.2+ | 2004 12 14 | 703 | 0.4+ | 0.2− | | | | |
| 2004 10 24 | 704 | 1.4− | 0.8+ | 2004 12 14 | 703 | 1.1− | 0.1− | | | | |

**2004 XL$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.11649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28748652 | $\omega$ | 297.91327 | | −0.93658518 | +0.33137696 | |
| $a$ | 2.2736541 | $\Omega$ | 261.62657 | | −0.26714472 | −0.88568509 | |
| $e$ | 0.0518789 | $i$ | 6.61718 | | −0.22680806 | −0.32519415 | |
| $P$ | 3.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 15 | 704 | 0.4+ | 0.1+ | 2002 03 12 | 699 | 0.6− | 0.1+ | 2004 12 15 | 704 | 1.0+ | 0.6− |
| 2002 02 15 | 704 | 0.7+ | 0.3− | 2002 03 12 | 699 | 0.8− | 0.5+ | 2004 12 15 | 704 | 0.1+ | 0.3+ |
| 2002 02 15 | 704 | 0.7− | 0.3+ | 2002 03 12 | 699 | 0.2+ | 0.1+ | 2004 12 15 | 704 | 0.5− | 0.3+ |
| 2002 02 15 | 704 | 0.1− | 0.5+ | 2002 03 12 | 699 | 0.8+ | 0.2+ | 2004 12 17 | 704 | 0.4+ | 1.0+ |
| 2002 02 15 | 704 | 0.4− | 0.5− | 2004 12 14 | 704 | 0.3+ | 1.2+ | 2004 12 17 | 704 | 0.4− | 0.7− |
| 2002 03 06 | 644 | 0.0 | 0.4− | 2004 12 14 | 704 | 0.2+ | 0.7− | 2004 12 17 | 704 | 0.2− | 0.2+ |
| 2002 03 06 | 644 | 0.1− | 0.5− | 2004 12 14 | 704 | 0.3+ | 0.3− | 2004 12 17 | 704 | 1.1− | 0.6− |
| 2002 03 06 | 644 | 0.4+ | 0.1− | 2004 12 15 | 704 | 0.3− | 0.0 | | | | |

**2004 XY$_{121}$ = 2006 HH$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.98506 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21648034 | $\omega$ | 22.42490 | | −0.05418046 | −0.98505645 | |
| $a$ | 2.7469900 | $\Omega$ | 70.99272 | | +0.88789493 | −0.12243562 | |
| $e$ | 0.0824549 | $i$ | 9.95738 | | +0.45684470 | +0.12113340 | |
| $P$ | 4.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 699 | 1.0− | 0.0 | 2004 12 16 | 691 | 0.1+ | 0.0 | 2006 04 09 | G96 | 0.4− | 0.2− |
| 2003 09 19 | 699 | 0.9+ | 0.7+ | 2004 12 17 | 704 | 1.3+ | 0.1− | 2006 04 09 | G96 | 0.4− | 0.2+ |
| 2003 09 19 | 699 | 0.0 | 1.6+ | 2004 12 17 | 704 | 0.4− | 0.2+ | 2006 04 19 | 703 | (1.7− | 0.8−) |
| 2003 09 19 | 699 | 0.7− | 0.3− | 2004 12 17 | 704 | 0.3+ | 0.5+ | 2006 04 19 | 703 | (2.2− | 0.1−) |
| 2004 12 15 | 704 | 0.2− | 0.3+ | 2004 12 17 | 704 | 0.3+ | 0.2− | 2006 04 19 | 703 | 0.7− | 0.2− |
| 2004 12 15 | 704 | 0.7+ | 0.1+ | 2004 12 17 | 704 | 0.1− | 0.2− | 2006 04 19 | 703 | 1.3− | 0.3− |
| 2004 12 15 | 704 | 0.0 | 0.9+ | 2004 12 21 | 691 | 0.3− | 0.3− | 2006 04 20 | 699 | 0.9+ | 0.2− |
| 2004 12 15 | 704 | 0.2+ | 0.6− | 2004 12 21 | 691 | 0.8− | 0.4+ | 2006 04 20 | 699 | 0.6+ | 1.2+ |
| 2004 12 15 | 704 | 0.4+ | 1.3+ | 2004 12 21 | 691 | 0.7− | 0.3− | 2006 04 20 | 699 | 1.1+ | 0.3+ |
| 2004 12 16 | 691 | 0.8+ | 0.2− | 2006 04 09 | G96 | 0.4− | 0.1+ | 2006 04 20 | 699 | 1.4+ | 1.1+ |
| 2004 12 16 | 691 | 0.3+ | 0.2+ | 2006 04 09 | G96 | 0.1+ | 0.0 | | | | |

**2004 XM$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.30340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27816972 | $\omega$ | 189.81355 | | −0.74065426 | −0.56356119 | |
| $a$ | 2.3241428 | $\Omega$ | 309.32822 | | +0.64405526 | −0.44042414 | |
| $e$ | 0.4660530 | $i$ | 28.22493 | | +0.19137419 | −0.69887435 | |
| $P$ | 3.54 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 14 | 703 | 0.3− | 0.6− | 2004 12 16 | 703 | 0.0 | 0.3− | 2005 01 31 | 413 | 0.0 | 0.0 |
| 2004 12 14 | 703 | 1.1− | 0.0 | 2004 12 16 | 703 | 0.6− | 0.3+ | 2005 02 04 | 474 | 0.1− | 0.1+ |
| 2004 12 14 | 703 | 0.6+ | 0.6− | 2004 12 17 | 734 | (3.3+ | 1.9−) | 2005 02 04 | 474 | 0.2− | 0.1+ |
| 2004 12 14 | 703 | 0.6− | 0.3− | 2004 12 17 | 734 | (2.6+ | 2.1−) | 2005 02 04 | 474 | 0.2− | 0.2+ |
| 2004 12 15 | 703 | 0.3− | 0.9+ | 2004 12 18 | J95 | 0.3− | 0.7+ | 2005 02 04 | 474 | 0.2− | 0.1+ |
| 2004 12 15 | 703 | 0.1+ | 0.4− | 2004 12 18 | J95 | 0.1+ | 0.6− | 2005 03 15 | 474 | 0.2+ | 0.1+ |
| 2004 12 15 | 703 | 0.4− | 0.6+ | 2004 12 18 | 701 | 0.1− | 0.1− | 2005 03 15 | 474 | 0.1+ | 0.1− |
| 2004 12 15 | 703 | 0.4+ | 0.1− | 2004 12 18 | 701 | (4.4+ | 3.0−) | 2005 03 15 | 474 | 0.1− | 0.3+ |
| 2004 12 16 | 246 | 1.7+ | 0.7+ | 2004 12 18 | 701 | 1.1+ | 0.7− | 2005 04 17 | 474 | 0.2− | 1.5+ |
| 2004 12 16 | 246 | 1.0+ | 0.5+ | 2004 12 19 | 734 | (1.9+ | 3.1−) | 2005 04 17 | 474 | 0.4− | 0.8− |
| 2004 12 16 | 246 | 0.5+ | 0.2− | 2004 12 19 | 734 | (2.8− | 1.8+) | 2005 04 17 | 474 | 0.4+ | 0.3− |
| 2004 12 16 | 246 | 0.2+ | 0.2+ | 2004 12 19 | 734 | (2.4+ | 1.4−) | 2005 04 17 | 474 | 0.4− | 0.3+ |
| 2004 12 16 | 246 | 0.3+ | 0.2+ | 2004 12 19 | 734 | (2.3+ | 1.6−) | 2005 05 30 | 474 | 0.1+ | 0.6+ |
| 2004 12 16 | 246 | 0.6+ | 1.3+ | 2004 12 19 | G96 | 0.3− | 0.1− | 2005 05 30 | 474 | 0.3+ | 0.1− |
| 2004 12 16 | 854 | 0.0 | 0.3− | 2004 12 19 | G96 | 0.4− | 0.0 | 2005 05 30 | 474 | 0.3− | 0.2− |
| 2004 12 16 | 854 | 0.0 | 0.3+ | 2004 12 19 | G96 | 0.2− | 0.2− | 2005 05 30 | 474 | 0.0 | 0.9− |
| 2004 12 16 | H06 | 0.3− | 0.3− | 2004 12 19 | G96 | 0.3− | 0.1− | 2005 06 30 | 474 | 0.1+ | 0.5− |
| 2004 12 16 | H06 | 0.7− | 0.2− | 2005 01 07 | F65 | 0.1+ | 0.0 | 2005 06 30 | 474 | 0.1+ | 0.3+ |
| 2004 12 16 | H36 | 0.5− | 0.3− | 2005 01 07 | F65 | 0.2+ | 0.1− | 2005 06 30 | 474 | 0.6+ | 0.6− |
| 2004 12 16 | H36 | 0.7+ | 0.3− | 2005 01 07 | F65 | 0.4+ | 0.3+ | 2006 08 28 | 291 | 1.7+ | 0.6+ |
| 2004 12 16 | H36 | 1.0+ | 1.4− | 2005 01 07 | F65 | 0.1− | 0.1+ | 2006 08 28 | 291 | 0.0 | 0.6− |
| 2004 12 16 | 703 | 0.1+ | 0.6+ | 2005 01 07 | F65 | 0.1+ | 0.1+ | 2006 08 29 | 291 | 0.4− | 0.4− |
| 2004 12 16 | 703 | 0.3− | 0.1+ | 2005 01 31 | 413 | 0.1− | 0.1+ | 2006 08 29 | 291 | 1.6− | 0.7+ |

**2004 XR$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.01469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22541560 | $\omega$ | 230.66142 | | −0.99643292 | +0.04140775 | |
| $a$ | 2.6739097 | $\Omega$ | 311.58006 | | −0.00336143 | −0.89012418 | |
| $e$ | 0.0559624 | $i$ | 5.64128 | | −0.08432167 | −0.45383295 | |
| $P$ | 4.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 08 05 | 621 | 0.9+ | 0.8+ | 2004 12 17 | 704 | 0.4+ | 0.1+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 08 05 | 621 | 1.7+ | 0.4− | 2004 12 17 | 704 | 0.6+ | 0.5+ |
| 2001 01 21 | 704 | 0.6+ | 0.1+ | 2003 08 28 | 644 | 0.3− | 0.3+ | 2004 12 17 | 704 | 0.1+ | 0.3− |
| 2001 01 21 | 704 | 0.9+ | 0.7+ | 2003 08 28 | 644 | 0.5− | 0.2+ | 2004 12 17 | 704 | 0.5− | 0.4+ |
| 2001 01 21 | 704 | 0.5+ | 0.4− | 2003 08 28 | 644 | 0.3− | 0.1− | 2004 12 17 | 704 | 0.5+ | 1.5+ |
| 2001 01 21 | 704 | 0.4+ | 0.8− | 2003 08 28 | 644 | 0.4− | 0.2+ | 2004 12 17 | 704 | 0.4+ | 0.1− |
| 2001 01 21 | 704 | 0.5+ | 0.6+ | 2003 08 28 | 644 | 0.2− | 0.1+ | 2004 12 17 | 704 | 0.4− | 0.0 |
| 2001 02 01 | 691 | 0.3− | 0.2+ | 2003 08 28 | 644 | 0.3− | 0.2+ | 2004 12 17 | 704 | 0.2+ | 0.4+ |
| 2001 02 01 | 691 | 0.2− | 0.3+ | 2003 09 18 | 691 | 0.1− | 0.0 | 2004 12 17 | 704 | 0.1− | 0.6+ |
| 2001 02 01 | 691 | 0.4+ | 0.0 | 2003 09 18 | 691 | 0.1− | 0.1+ | 2004 12 17 | 704 | 0.3− | 0.4+ |
| 2002 05 17 | 704 | 0.5− | 1.0+ | 2003 09 18 | 691 | 0.1+ | 0.3+ | 2004 12 17 | 704 | 0.4+ | 0.8+ |
| 2002 05 17 | 704 | 0.7+ | 0.1+ | 2003 09 18 | 644 | 0.2− | 0.3+ | 2004 12 17 | 704 | 0.3+ | 0.1− |
| 2002 05 17 | 704 | 0.4+ | 1.0+ | 2003 09 18 | 644 | 0.1− | 0.3+ | 2004 12 19 | 691 | 0.3− | 0.0 |
| 2002 05 17 | 704 | 0.9+ | 1.4+ | 2003 09 18 | 644 | 0.0 | 0.4+ | 2004 12 19 | 691 | 0.2− | 0.1+ |
| 2002 05 17 | 704 | 1.1− | 0.5+ | 2004 12 09 | 691 | 0.4− | 0.0 | 2004 12 19 | 691 | 0.0 | 0.2+ |
| 2002 06 06 | 704 | 0.2− | 0.6+ | 2004 12 09 | 691 | 0.3− | 0.1+ | 2004 12 20 | 691 | 0.3− | 0.1+ |
| 2002 06 06 | 704 | 0.8− | 0.7+ | 2004 12 09 | 691 | 0.3− | 0.0 | 2004 12 20 | 691 | 0.1− | 0.0 |
| 2002 06 06 | 704 | 0.6+ | 1.3+ | 2004 12 11 | 704 | 0.9+ | 0.2+ | 2004 12 20 | 691 | 0.1− | 0.1+ |
| 2002 06 18 | 644 | 0.1+ | 0.9+ | 2004 12 11 | 704 | 0.4+ | 0.5− | 2006 03 05 | 699 | 1.1+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 644 | 0.1− | 0.8+ | 2004 12 11 | 704 | 0.1+ | 0.5− | 2006 03 05 | 699 | 0.4− | 0.7+ |
| 2002 06 18 | 644 | 0.0 | 1.0+ | 2004 12 11 | 704 | 0.2− | 1.1+ | 2006 03 05 | 699 | 0.1+ | 0.9− |
| 2003 07 29 | 621 | 0.2+ | 0.4+ | 2004 12 15 | 704 | (0.4− | 2.2+) | 2006 03 05 | 699 | 0.6+ | 0.2− |
| 2003 07 29 | 621 | 0.4− | 0.3+ | 2004 12 15 | 704 | 1.8+ | 1.3+ | 2006 03 25 | 644 | 0.0 | 0.3+ |
| 2003 07 29 | 621 | 0.7+ | 1.0+ | 2004 12 15 | 704 | 0.1+ | 0.3+ | 2006 03 25 | 644 | 0.2− | 0.3+ |
| 2003 08 05 | 621 | 0.3− | 1.1+ | 2004 12 15 | 704 | 0.6+ | 0.8− | 2006 03 25 | 644 | 0.2+ | 0.5+ |

**2004 XP$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 136.81252 | | | (2000.0) | | |
| $n$ | 0.23286628 | $\omega$ | 68.45100 | | −0.11942673 | −0.99146653 |
| $a$ | 2.6165657 | $\Omega$ | 28.56183 | | +0.86568448 | −0.12976106 |
| $e$ | 0.0762970 | $i$ | 6.27563 | | +0.48613540 | −0.01249750 |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.5− | 0.0 | 2004 12 17 | 704 | 0.3− | 0.2+ | 2006 04 09 | 691 | 0.5+ | 0.2− |
| 1995 10 01 | 691 | 0.2− | 0.0 | 2004 12 17 | 704 | 0.4+ | 0.6+ | 2006 04 09 | 691 | 0.7+ | 0.3− |
| 1995 10 01 | 691 | 0.1− | 0.3− | 2004 12 17 | 704 | 0.3− | 0.9− | 2006 04 09 | 691 | 0.2− | 0.5+ |
| 1995 10 20 | 691 | 0.4+ | 0.3+ | 2004 12 17 | 704 | 0.6+ | 0.3+ | 2006 04 19 | G96 | 0.2− | 0.5+ |
| 1995 10 20 | 691 | 0.1− | 0.3+ | 2004 12 17 | 704 | 0.8− | 0.6− | 2006 04 19 | G96 | 0.1− | 0.6+ |
| 1995 10 20 | 691 | 0.2+ | 0.3+ | 2006 03 24 | 691 | 0.1− | 0.0 | 2006 04 19 | G96 | 0.4− | 0.5+ |
| 2004 11 20 | 291 | 0.1+ | 0.2− | 2006 03 24 | 691 | 0.0 | 0.1+ | 2006 04 19 | G96 | 0.2− | 0.4+ |
| 2004 11 20 | 291 | 0.4− | 0.0 | 2006 03 24 | 691 | 0.3+ | 0.0 | 2006 05 05 | G96 | 1.5− | 0.0 |
| 2004 11 20 | 291 | 0.4+ | 0.1− | 2006 03 24 | G96 | 0.0 | 0.0 | 2006 05 05 | G96 | 0.4+ | 0.8− |
| 2004 12 15 | 704 | 1.0+ | 1.2+ | 2006 03 24 | G96 | 0.1− | 0.1+ | 2006 05 05 | G96 | 0.4− | 0.4+ |
| 2004 12 15 | 704 | 0.9− | 0.6+ | 2006 03 24 | G96 | 0.3− | 0.2− | 2006 05 05 | G96 | 0.2− | 0.6+ |
| 2004 12 15 | 704 | 0.1− | 0.3+ | 2006 03 24 | G96 | 0.4− | 0.2− | | | | |

**2004 XM$_{136}$ = 2006 KA$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.92855 | | | (2000.0) | | |
| $n$ | 0.23198274 | $\omega$ | 289.39445 | | −0.82112258 | +0.33053848 |
| $a$ | 2.6232052 | $\Omega$ | 272.24153 | | −0.15967372 | −0.91571990 |
| $e$ | 0.3399392 | $i$ | 27.75256 | | −0.54796169 | −0.22847622 |
| $P$ | 4.25 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 19 | 608 | 0.3− | 0.3− | 2004 12 17 | 704 | 0.2− | 0.4− | 2006 05 29 | 734 | 0.2+ | 0.2− |
| 2000 12 19 | 608 | 0.5− | 0.5− | 2004 12 17 | 704 | 0.6− | 0.4+ | 2006 05 29 | G96 | 0.3− | 0.1− |
| 2000 12 19 | 608 | 0.3− | 0.4− | 2004 12 17 | 704 | 0.4+ | 0.0 | 2006 05 29 | G96 | 0.4− | 0.0 |
| 2002 07 08 | 644 | 0.2− | 0.5+ | 2004 12 21 | 691 | (1.7− | 0.3+) | 2006 05 29 | G96 | 0.2− | 0.1− |
| 2002 07 08 | 644 | 0.0 | 0.3+ | 2004 12 21 | 691 | 0.2+ | 0.1− | 2006 05 29 | G96 | 0.0 | 0.1− |
| 2002 07 08 | 644 | 1.9+ | 0.0 | 2004 12 21 | 691 | 0.4+ | 0.0 | 2006 05 29 | 854 | 0.7+ | 0.9+ |
| 2002 07 18 | 644 | 0.2− | 0.3− | 2006 05 27 | G96 | 0.1− | 0.1− | 2006 05 29 | 854 | 0.4+ | 0.4+ |
| 2002 07 18 | 644 | 0.1− | 0.1− | 2006 05 27 | G96 | 0.4− | 0.0 | 2006 05 29 | 854 | 0.6+ | 0.6+ |
| 2002 07 18 | 644 | 0.1− | 0.2− | 2006 05 27 | G96 | 0.6− | 0.1− | 2006 05 29 | 673 | 0.2+ | 0.5+ |
| 2002 08 13 | 291 | 0.0 | 0.1− | 2006 05 27 | G96 | 0.3− | 0.1− | 2006 05 29 | 673 | 0.0 | 0.4+ |
| 2002 08 13 | 291 | 0.3+ | 0.1− | 2006 05 27 | G96 | 0.3− | 0.1+ | 2006 05 29 | 673 | 0.2+ | 0.6+ |
| 2002 08 13 | 291 | 0.2− | 0.2− | 2006 05 27 | G96 | 0.4− | 0.1− | 2006 05 29 | 673 | 0.0 | 0.4+ |
| 2004 12 15 | 704 | 0.2− | 0.6− | 2006 05 27 | G96 | 0.5− | 0.3+ | 2006 06 18 | 644 | 0.0 | 0.1+ |
| 2004 12 15 | 704 | 0.1+ | 0.2− | 2006 05 28 | I77 | 0.1+ | 1.5− | 2006 06 18 | 644 | 0.3+ | 0.0 |
| 2004 12 15 | 704 | 0.2− | 0.5+ | 2006 05 28 | I77 | (0.1+ | 2.0−) | 2006 06 18 | 644 | 0.1+ | 0.1+ |
| 2004 12 17 | 704 | 0.3− | 1.3+ | 2006 05 28 | 703 | 0.2− | 0.8+ | 2006 06 18 | 644 | 0.2− | 0.0 |
| 2004 12 17 | 704 | 0.1+ | 0.1+ | 2006 05 28 | 703 | 0.6− | 0.4− | 2006 06 18 | 644 | 0.3− | 0.0 |
| 2004 12 17 | 704 | 1.3− | 0.7+ | 2006 05 28 | 703 | 0.3− | 0.1− | 2006 06 18 | 644 | 0.0 | 0.2+ |
| 2004 12 17 | 704 | 0.7+ | 0.6+ | 2006 05 29 | 734 | 0.1+ | 0.7− | | | | |
| 2004 12 17 | 704 | 0.5+ | 0.8+ | 2006 05 29 | 734 | 0.0 | 0.0 | | | | |

**2004 XZ$_{141}$ = 2006 HQ$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.40646 | | | (2000.0) | | |
| $n$ | 0.22316329 | $\omega$ | 61.61632 | | +0.25509299 | −0.96683154 |
| $a$ | 2.6918708 | $\Omega$ | 13.62278 | | +0.86699254 | +0.22284119 |
| $e$ | 0.0732111 | $i$ | 3.12003 | | +0.42807886 | +0.12481415 |
| $P$ | 4.42 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 09 21 | 691 | 0.6− | 0.2+ | 2004 12 18 | 691 | 0.2+ | 0.1+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 09 21 | 691 | 0.1+ | 0.2+ | 2006 04 25 | G96 | 0.6− | 0.7− |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2004 12 14 | 703 | 1.5− | 0.3− | 2006 04 25 | G96 | 0.1+ | 0.6− |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2004 12 14 | 703 | 0.9− | 1.0+ | 2006 04 25 | G96 | 0.2− | 0.2− |
| 1999 10 20 | 691 | 0.2+ | 0.3− | 2004 12 14 | 703 | 0.0 | 0.7+ | 2006 04 25 | G96 | 0.3+ | 0.5− |
| 1999 10 20 | 691 | 0.0 | 0.3− | 2004 12 14 | 703 | 1.0− | 0.6− | 2006 05 06 | G96 | 0.3− | 0.1+ |
| 1999 10 20 | 691 | 0.1+ | 0.1− | 2004 12 14 | 691 | 0.0 | 0.2− | 2006 05 06 | G96 | 0.5+ | 0.1− |
| 2001 02 17 | 691 | 0.1− | 0.1− | 2004 12 14 | 691 | 0.2+ | 0.1+ | 2006 05 06 | G96 | 0.1− | 0.1− |
| 2001 02 17 | 691 | 0.0 | 0.2+ | 2004 12 14 | 691 | 0.3+ | 0.0 | 2006 05 06 | G96 | 0.3− | 0.0 |
| 2001 02 17 | 691 | 0.1+ | 0.1+ | 2004 12 18 | 691 | 0.2+ | 0.1+ | | | | |
| 2003 09 21 | 691 | 0.1+ | 0.3+ | 2004 12 18 | 691 | 0.1+ | 0.1+ | | | | |

**2004 XN$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.14565 | | | (2000.0) | | |
| $n$ | 0.18107838 | $\omega$ | 225.96894 | | −0.93322743 | −0.30695225 |
| $a$ | 3.0942708 | $\Omega$ | 295.33758 | | +0.35923352 | −0.80607413 |
| $e$ | 0.1187050 | $i$ | 11.92326 | | −0.00615149 | −0.50598895 |
| $P$ | 5.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 644 | 0.1− | 0.2+ | 2005 01 01 | 703 | 0.2− | 0.3+ | 2005 02 01 | 703 | 0.1− | 0.1+ |
| 2003 10 21 | 644 | 0.1+ | 0.0 | 2005 01 06 | 704 | 1.2− | 1.5+ | 2005 02 02 | 704 | 0.8+ | 0.2− |
| 2003 10 21 | 644 | 0.1+ | 0.4− | 2005 01 06 | 704 | 0.9+ | 0.0 | 2005 02 02 | 704 | 0.1+ | 0.5− |
| 2004 12 14 | 599 | 0.1+ | 0.2+ | 2005 01 06 | 704 | 0.2+ | 1.1+ | 2005 02 02 | 704 | 0.2+ | 1.3− |
| 2004 12 14 | 599 | 0.6+ | 0.2+ | 2005 01 06 | 704 | 0.0 | 0.0 | 2005 02 02 | 704 | 0.2+ | 0.3+ |
| 2004 12 14 | 599 | 0.1+ | 0.1− | 2005 01 11 | 704 | 0.4− | 0.4+ | 2005 02 03 | 704 | 0.3+ | 0.0 |
| 2004 12 14 | 599 | 0.1+ | 0.2− | 2005 01 11 | 704 | 0.3+ | 0.1− | 2005 02 03 | 704 | 0.2− | 0.0 |
| 2004 12 18 | G96 | 0.2+ | 0.3− | 2005 01 11 | 704 | 0.7− | 0.8− | 2005 02 03 | 704 | 0.1− | 0.9+ |
| 2004 12 18 | G96 | 0.1+ | 0.3− | 2005 01 11 | 704 | 0.5+ | 0.7+ | 2005 02 03 | 704 | 0.5− | 0.4+ |
| 2004 12 18 | G96 | 0.1+ | 0.2− | 2005 01 15 | 704 | 0.5+ | 0.4− | 2005 02 03 | 704 | 0.3+ | 0.0 |
| 2004 12 18 | G96 | 0.2+ | 0.2− | 2005 01 15 | 704 | 0.1+ | 0.0 | 2005 03 13 | G96 | 0.2− | 0.4− |
| 2004 12 19 | G96 | 0.5+ | 0.4− | 2005 01 15 | 704 | 0.3+ | 0.5− | 2005 03 13 | G96 | 0.2− | 0.3− |
| 2004 12 19 | G96 | 0.0 | 0.5− | 2005 01 15 | 704 | 0.5+ | 0.9− | 2005 03 13 | G96 | 0.3− | 0.3− |
| 2004 12 19 | G96 | 0.2− | 0.4− | 2005 01 15 | 704 | 0.4− | 0.4− | 2005 03 13 | G96 | 0.2− | 0.2− |
| 2004 12 19 | G96 | 0.2− | 0.4− | 2005 01 17 | 704 | 0.1+ | 0.5− | 2005 03 17 | G96 | 0.1− | 0.3− |
| 2004 12 21 | 703 | 0.6+ | 0.5+ | 2005 01 17 | 704 | 0.8+ | 0.0 | 2005 03 17 | G96 | 0.5− | 0.2− |
| 2004 12 21 | 703 | 0.2+ | 0.1− | 2005 01 17 | 704 | 0.1− | 0.2+ | 2005 03 17 | G96 | 0.2− | 0.4− |
| 2004 12 21 | 703 | 0.6− | 0.4+ | 2005 01 17 | 704 | 0.4− | 0.2+ | 2005 03 17 | G96 | 0.4− | 0.5− |
| 2004 12 21 | 703 | 0.3− | 1.0+ | 2005 01 17 | 704 | 0.3− | 0.3+ | 2006 03 25 | E12 | 0.1+ | 0.8+ |
| 2005 01 01 | 703 | 0.4+ | 0.5+ | 2005 02 01 | 703 | 0.2+ | 0.7− | 2006 03 25 | E12 | 1.0+ | 0.5− |
| 2005 01 01 | 703 | 0.3− | 1.3+ | 2005 02 01 | 703 | 0.7− | 0.2− | 2006 03 25 | E12 | 0.5+ | 0.5+ |
| 2005 01 01 | 703 | 0.1+ | 0.4+ | 2005 02 01 | 703 | 0.8− | 0.5+ | 2006 03 25 | E12 | 1.5− | 0.1− |

**2004 XQ$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 171.14275 | | | (2000.0) | | |
| $n$ | 0.23368763 | $\omega$ | 17.65732 | | −0.09547171 | −0.96486871 |
| $a$ | 2.6104311 | $\Omega$ | 78.36400 | | +0.88048650 | −0.19656210 |
| $e$ | 0.0941661 | $i$ | 14.47209 | | +0.46435835 | +0.17433219 |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 25 | 644 | 0.0 | 0.4+ | 2005 01 17 | 704 | 0.6+ | 0.5− | 2005 03 08 | 703 | 1.3− | 0.7− |
| 2003 09 25 | 644 | 0.0 | 0.2− | 2005 01 17 | 704 | 0.8+ | 0.8+ | 2005 03 08 | 703 | 1.0− | 0.5− |
| 2003 09 25 | 644 | 0.2− | 0.3+ | 2005 02 11 | 460 | 0.4− | 0.8− | 2006 05 06 | G96 | 0.2+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 14 | 703 | 0.2− | 1.1− | 2005 02 11 | 460 | 0.6− | 0.7− | 2006 05 06 | G96 | 0.1− | 0.0 |
| 2004 12 14 | 703 | 0.1+ | 0.0 | 2005 02 14 | 704 | 0.8+ | 0.5− | 2006 05 06 | G96 | 0.1− | 0.5+ |
| 2004 12 14 | 703 | 1.0− | 0.5− | 2005 02 14 | 704 | 0.2+ | 0.1+ | 2006 05 06 | G96 | 0.2+ | 0.3+ |
| 2004 12 14 | 703 | 0.5− | 0.5− | 2005 02 14 | 704 | 0.1+ | 0.1− | 2006 06 20 | 691 | 0.2− | 0.0 |
| 2004 12 19 | 699 | 0.4− | 0.6+ | 2005 02 14 | 704 | 0.4+ | 0.7− | 2006 06 20 | 691 | 0.0 | 0.1+ |
| 2004 12 19 | 699 | 0.1+ | 1.3+ | 2005 03 01 | 704 | 0.6+ | 0.4− | 2006 06 20 | 691 | 0.1+ | 0.1− |
| 2004 12 19 | 699 | 1.0+ | 0.3+ | 2005 03 01 | 704 | 0.3+ | 1.6+ | 2006 06 20 | 691 | 0.2− | 0.1− |
| 2004 12 19 | 699 | 0.5− | 1.4+ | 2005 03 01 | 704 | 1.0+ | 0.5+ | 2006 06 20 | 691 | 0.3+ | 0.2+ |
| 2005 01 17 | 704 | 0.5+ | 0.8+ | 2005 03 08 | 703 | 0.8− | 0.3+ | 2006 06 20 | 691 | 0.1+ | 0.2− |
| 2005 01 17 | 704 | 0.4+ | 0.2− | 2005 03 08 | 703 | 0.4− | 0.1− | | | | |

**2004 XZ$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.84889 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36993844 | $\omega$ | 173.65999 | | −0.58761493 | | −0.77686073 |
| $a$ | 1.9218364 | $\Omega$ | 312.05229 | | +0.72834471 | | −0.38603101 |
| $e$ | 0.0601282 | $i$ | 17.74137 | | +0.35245237 | | −0.49746102 |
| $P$ | 2.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 0.1− | 0.8+ | 2004 12 20 | G96 | 0.2− | 0.6− | 2005 03 13 | 703 | 0.2+ | 0.2− |
| 2001 10 16 | 704 | 0.2+ | 0.9+ | 2005 01 06 | 704 | 0.4+ | 0.0 | 2005 04 11 | 699 | 1.1− | 0.5+ |
| 2001 10 16 | 704 | 0.8+ | 0.2+ | 2005 01 06 | 704 | 0.5+ | 0.5+ | 2005 04 11 | 699 | 0.2− | 0.1− |
| 2001 10 16 | 704 | (1.0+ | 1.8+) | 2005 01 06 | 704 | 0.2− | 0.5− | 2005 04 11 | 699 | 0.9+ | 0.7− |
| 2001 10 16 | 704 | (1.3+ | 1.6+) | 2005 01 06 | 704 | 0.1+ | 0.6+ | 2005 04 11 | 699 | 0.4+ | 0.1+ |
| 2001 12 23 | 704 | 0.5− | 0.6− | 2005 01 06 | 704 | 0.4+ | 0.6+ | 2006 08 29 | 699 | 0.2+ | 0.6− |
| 2001 12 23 | 704 | 0.2− | 0.7− | 2005 01 18 | A50 | 0.1+ | 0.8+ | 2006 08 29 | 699 | 0.0 | 1.1+ |
| 2001 12 23 | 704 | 0.5+ | 0.0 | 2005 01 18 | A50 | 0.3+ | 0.7− | 2006 08 29 | 699 | 0.4+ | 0.5+ |
| 2001 12 23 | 704 | 0.6− | 0.5− | 2005 01 18 | A50 | 0.8+ | 0.6− | 2006 08 29 | 699 | 0.5+ | 0.6− |
| 2001 12 23 | 704 | 0.7+ | 0.3− | 2005 01 18 | A50 | 1.0+ | 0.1− | 2006 09 16 | 703 | 0.2+ | 0.2+ |
| 2002 01 06 | 704 | 0.3+ | 0.8− | 2005 02 02 | 704 | 0.6+ | 0.3+ | 2006 09 16 | 703 | 0.6− | 0.2+ |
| 2002 01 06 | 704 | 0.5+ | 0.2− | 2005 02 02 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.6+ |
| 2002 01 06 | 704 | 0.1− | 1.1− | 2005 02 02 | 704 | 1.0+ | 0.1+ | 2006 09 16 | 703 | 0.5− | 0.6+ |
| 2002 01 06 | 704 | (0.1− | 2.2−) | 2005 02 02 | 704 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.5+ | 0.5− |
| 2004 12 15 | 704 | 0.6+ | 1.3+ | 2005 02 02 | 704 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.6− | 0.2− |
| 2004 12 15 | 704 | 0.9− | 0.1+ | 2005 02 14 | 703 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.6− | 1.0− |
| 2004 12 15 | 704 | 0.3+ | 0.7+ | 2005 02 14 | 703 | 1.1− | 0.0 | 2006 09 28 | 703 | 0.7− | 0.5− |
| 2004 12 15 | 704 | 0.2− | 0.4+ | 2005 02 14 | 703 | 0.0 | 0.3+ | 2006 10 16 | 106 | 0.2+ | 0.3+ |
| 2004 12 18 | 704 | 0.7+ | 0.3− | 2005 02 14 | 703 | 0.6− | 0.4+ | 2006 10 16 | 106 | 0.2+ | 0.0 |
| 2004 12 18 | 704 | 0.2+ | 0.6+ | 2005 03 04 | 703 | 0.3− | 0.1− | 2006 10 16 | 106 | 0.5+ | 0.3+ |
| 2004 12 18 | 704 | 0.3+ | 0.0 | 2005 03 04 | 703 | 0.3− | 0.3− | 2006 10 16 | 106 | 0.7+ | 0.1− |
| 2004 12 18 | 704 | 0.5+ | 0.2+ | 2005 03 04 | 703 | 0.3− | 0.4− | 2006 10 20 | 703 | 1.2− | 0.2+ |
| 2004 12 18 | 704 | 0.9+ | 0.8+ | 2005 03 04 | 703 | 0.2+ | 0.5− | 2006 10 20 | 703 | 0.3+ | 0.1+ |
| 2004 12 20 | G96 | 0.6− | 0.7− | 2005 03 13 | 703 | (0.3+ | 3.8−) | 2006 10 20 | 703 | 0.4− | 0.1− |
| 2004 12 20 | G96 | 0.4− | 0.5− | 2005 03 13 | 703 | (3.8+ | 2.7−) | 2006 10 20 | 703 | 0.1− | 0.9+ |
| 2004 12 20 | G96 | 0.3− | 0.5− | 2005 03 13 | 703 | 0.8− | 0.8+ | | | | |

**2004 XD$_{155}$ = 2006 KJ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.36193 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27279998 | $\omega$ | 217.52167 | | −0.75086936 | | −0.66016475 |
| $a$ | 2.3545423 | $\Omega$ | 281.15425 | | +0.61064974 | | −0.68273967 |
| $e$ | 0.0597543 | $i$ | 1.13504 | | +0.25159909 | | −0.31312784 |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.1− | 0.3+ | 2002 04 04 | 644 | 0.5+ | 0.4− | 2004 12 20 | 691 | 0.0 | 0.3+ |
| 1996 09 06 | 691 | 0.1− | 0.4+ | 2002 04 04 | 644 | 0.4+ | 0.3− | 2004 12 20 | 691 | 0.0 | 0.3+ |
| 1996 09 06 | 691 | 0.2− | 0.7+ | 2002 04 12 | 704 | 1.0+ | 0.7− | 2006 05 21 | E12 | 0.6− | 1.0+ |
| 1997 12 21 | 691 | 0.2− | 0.2− | 2002 04 12 | 704 | 0.2+ | 0.7+ | 2006 05 21 | E12 | 0.6− | 0.2− |
| 1997 12 21 | 691 | 0.4− | 0.1− | 2002 04 12 | 704 | 1.2+ | 0.1+ | 2006 05 21 | E12 | 0.3− | 1.2+ |
| 1997 12 21 | 691 | 0.3− | 0.2− | 2002 04 12 | 704 | 0.4+ | 0.4+ | 2006 05 21 | E12 | 0.6− | 0.7+ |
| 2002 03 13 | 704 | 0.2+ | 1.4+ | 2004 12 15 | 691 | 0.0 | 0.4+ | 2006 05 23 | G96 | 0.0 | 0.2− |
| 2002 03 13 | 704 | 1.3+ | 1.8+ | 2004 12 15 | 691 | 0.4+ | 0.2− | 2006 05 23 | G96 | 0.1+ | 0.1− |
| 2002 03 13 | 704 | 0.4− | 1.6+ | 2004 12 15 | 691 | 0.1− | 0.3+ | 2006 05 23 | G96 | 0.1+ | 0.1− |
| 2002 04 04 | 644 | 0.4+ | 0.4− | 2004 12 20 | 691 | 0.1− | 0.3+ | | | | |

**2004 XQ$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.63918 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22551619 | $\omega$ | 270.35726 | | +0.93433619 | | −0.34381550 |
| $a$ | 2.6731146 | $\Omega$ | 109.75404 | | +0.35358851 | | +0.86130231 |
| $e$ | 0.1362383 | $i$ | 5.72260 | | +0.04462112 | | +0.37409790 |
| $P$ | 4.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 08 | 644 | 0.2− | 0.6+ | 2004 12 19 | 691 | 0.1− | 0.0 | 2005 03 12 | G96 | 0.2− | 0.2+ |
| 2003 07 08 | 644 | 0.2− | 0.5+ | 2005 01 17 | 691 | 0.2+ | 0.1− | 2005 03 12 | G96 | 0.3− | 0.0 |
| 2003 07 08 | 644 | 0.2− | 0.7+ | 2005 01 17 | 691 | 0.2+ | 0.2+ | 2005 03 12 | G96 | 0.0 | 0.1− |
| 2004 12 12 | 691 | 0.3− | 0.1− | 2005 01 17 | 691 | 0.2+ | 0.2− | 2005 03 12 | G96 | 0.6− | 0.5− |
| 2004 12 12 | 691 | 0.2− | 0.1+ | 2005 01 17 | 704 | 1.2+ | 0.2+ | 2006 04 08 | G96 | 0.1− | 0.4+ |
| 2004 12 12 | 691 | 0.3− | 0.0 | 2005 01 17 | 704 | 0.2+ | 0.6+ | 2006 04 08 | G96 | 0.2+ | 0.2+ |
| 2004 12 19 | 691 | 0.1− | 0.0 | 2005 01 17 | 704 | 0.4− | 0.5+ | 2006 04 08 | G96 | 0.2+ | 0.2+ |
| 2004 12 19 | 691 | 0.0 | 0.1+ | 2005 01 17 | 704 | 1.0+ | 0.4+ | 2006 04 08 | G96 | 0.1+ | 0.2+ |

**2004 XJ$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.68777 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29020180 | $\omega$ | 24.16567 | | +0.22524025 | | −0.97296538 |
| $a$ | 2.2594496 | $\Omega$ | 52.85670 | | +0.88315529 | | +0.18176416 |
| $e$ | 0.1440431 | $i$ | 3.67123 | | +0.41146515 | | +0.14247862 |
| $P$ | 3.40 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 291 | 0.3− | 0.2− | 2004 12 19 | 691 | 0.2+ | 0.1− | 2005 01 19 | 691 | 0.1− | 0.0 |
| 2002 03 10 | 291 | 0.1− | 0.2+ | 2004 12 19 | 691 | 0.2− | 0.0 | 2005 01 19 | 691 | 0.1− | 0.1− |
| 2002 03 10 | 291 | 0.4+ | 0.0 | 2005 01 07 | 704 | 0.1− | 0.1+ | 2006 05 25 | 568 | 0.3+ | 0.4− |
| 2004 12 15 | 691 | 0.0 | 0.0 | 2005 01 07 | 704 | 0.2− | 0.1+ | 2006 05 25 | 568 | 0.0 | 0.2− |
| 2004 12 15 | 691 | 0.0 | 0.0 | 2005 01 07 | 704 | 1.0+ | 0.1+ | 2006 05 25 | 568 | 0.0 | 0.1− |
| 2004 12 15 | 691 | 0.3− | 0.1+ | 2005 01 07 | 704 | 0.2+ | 0.4+ | 2006 05 26 | 568 | 0.3− | 0.5+ |
| 2004 12 19 | 691 | 0.2+ | 0.2− | 2005 01 19 | 691 | 0.0 | 0.0 | | | | |

**2004 XP$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.29545 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30668081 | $\omega$ | 310.33208 | | +0.17178196 | | −0.93594517 |
| $a$ | 2.1777682 | $\Omega$ | 127.03455 | | +0.97955210 | | +0.12910584 |
| $e$ | 0.4126580 | $i$ | 22.64916 | | +0.10473124 | | +0.32762526 |
| $P$ | 3.21 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 12 | 703 | 0.4+ | 1.1+ | 2005 01 08 | 704 | 0.2− | 0.7+ | 2005 02 15 | H36 | 0.6− | 0.7− |
| 2004 12 12 | 703 | 0.2− | 0.8− | 2005 01 11 | 118 | 0.4+ | 0.5− | 2005 02 15 | H36 | 0.2− | 0.3+ |
| 2004 12 12 | 703 | 1.3− | 0.5− | 2005 01 11 | 118 | 0.6+ | 0.6− | 2005 02 27 | A68 | 0.9− | 0.5− |
| 2004 12 12 | 703 | 1.8− | 0.1− | 2005 01 11 | 118 | 0.0 | 0.3− | 2005 02 27 | A68 | 0.5− | 0.7− |
| 2005 01 07 | 704 | 0.3+ | 0.1− | 2005 01 16 | 703 | 0.3+ | 0.0 | 2005 02 27 | A68 | 0.2− | 1.0− |
| 2005 01 07 | 704 | 0.2+ | 0.8− | 2005 01 16 | 703 | 0.4+ | 0.4− | 2005 03 08 | 703 | 0.4− | 0.3+ |
| 2005 01 07 | 704 | 0.5+ | 0.2+ | 2005 01 16 | 703 | 0.4− | 0.6− | 2005 03 08 | 703 | 0.2− | 0.4− |
| 2005 01 07 | 704 | 0.9+ | 0.1+ | 2005 01 16 | 703 | 0.6− | 0.1− | 2005 03 08 | 703 | 0.6− | 0.4− |
| 2005 01 08 | 118 | 0.2− | 0.5+ | 2005 01 18 | 246 | 0.4+ | 0.1+ | 2005 03 08 | 703 | 0.1− | 0.2+ |
| 2005 01 08 | 118 | 0.3+ | 0.5− | 2005 01 18 | 246 | 0.2+ | 0.1− | 2005 03 12 | 704 | 0.6+ | 0.6− |
| 2005 01 08 | 118 | 0.3− | 0.0 | 2005 01 18 | 246 | 0.2+ | 0.1+ | 2005 03 12 | 704 | 0.2− | 0.7+ |
| 2005 01 08 | J87 | 0.7− | 0.0 | 2005 01 18 | 246 | 0.5+ | 0.5+ | 2005 03 12 | 704 | 0.4− | 0.1− |
| 2005 01 08 | 118 | 0.1− | 0.4+ | 2005 01 18 | 246 | 0.2+ | 0.2+ | 2005 03 12 | 704 | 0.4+ | 1.1+ |
| 2005 01 08 | 118 | 1.2− | 0.4+ | 2005 01 18 | 246 | 0.2+ | 0.2− | 2005 03 12 | 704 | 1.2+ | 1.4+ |
| 2005 01 08 | J87 | 0.1− | 0.3+ | 2005 01 23 | 941 | 0.7+ | 0.3− | 2006 06 01 | 291 | 0.9+ | 0.1+ |
| 2005 01 08 | J87 | 0.0 | 0.5+ | 2005 01 23 | 941 | 0.4+ | 0.0 | 2006 06 01 | 291 | 0.8+ | 0.5− |
| 2005 01 08 | 704 | 0.3+ | 0.7+ | 2005 01 23 | 941 | 0.1− | 0.3+ | 2006 06 01 | 291 | 1.7− | 0.5+ |
| 2005 01 08 | 704 | 0.9+ | 0.8+ | 2005 01 23 | 941 | 0.2− | 0.3+ | | | | |
| 2005 01 08 | 704 | 0.6+ | 0.2+ | 2005 02 15 | H36 | 0.1− | 0.6− | | | | |

**2004 XH$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.98075 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21521618 | $\omega$ | 185.37058 | +0.18654045 | | −0.97437524 | |
| $a$ | 2.7577365 | $\Omega$ | 253.92352 | +0.90617739 | | +0.22006466 | |
| $e$ | 0.0315956 | $i$ | 7.51556 | +0.37953287 | | −0.04652357 | |
| $P$ | 4.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 27 | 691 | 0.6− | 1.7+ | 2004 10 21 | 704 | 0.5+ | 0.2− | 2004 11 19 | 704 | 0.4− | 1.2+ |
| 1992 01 27 | 691 | 1.2+ | 0.2+ | 2004 10 21 | 704 | 0.2− | 0.6+ | 2004 12 10 | 691 | 0.3− | 0.2− |
| 1992 01 27 | 691 | 0.2− | 0.7− | 2004 10 21 | 704 | 0.5− | 0.1+ | 2004 12 10 | 691 | 0.2+ | 0.2− |
| 2000 12 30 | 704 | 0.0 | 0.5+ | 2004 11 04 | 699 | 0.2− | 0.6− | 2004 12 10 | 691 | 0.2+ | 0.0 |
| 2000 12 30 | 704 | 0.8+ | 0.0 | 2004 11 04 | 699 | 1.6− | 0.4− | 2004 12 20 | 691 | 0.3+ | 0.2+ |
| 2000 12 30 | 704 | 0.1− | 0.1− | 2004 11 04 | 699 | 0.3+ | 0.5+ | 2004 12 20 | 691 | 0.4+ | 0.3+ |
| 2002 05 17 | 644 | 0.8+ | 1.0+ | 2004 11 04 | 699 | 0.3− | 0.3− | 2004 12 20 | 691 | 0.3+ | 0.3+ |
| 2002 05 17 | 644 | 0.6+ | 1.2+ | 2004 11 09 | 703 | 0.6+ | 0.2+ | 2006 02 22 | 703 | 0.9− | 0.3+ |
| 2002 05 17 | 644 | 0.5+ | 0.7+ | 2004 11 09 | 703 | 0.3− | 0.2− | 2006 02 22 | 703 | 0.1− | 0.0 |
| 2003 07 06 | 691 | 0.0 | 0.6+ | 2004 11 09 | 703 | 0.3+ | 0.2− | 2006 02 22 | 703 | 0.5− | 0.1+ |
| 2003 07 06 | 691 | 0.3− | 0.3+ | 2004 11 09 | 703 | 1.7− | 1.2− | 2006 02 22 | 703 | 0.3− | 0.6− |
| 2003 07 06 | 691 | 0.3− | 0.8+ | 2004 11 19 | 704 | 1.2− | 1.4+ | 2006 03 09 | D35 | 0.0 | 0.1+ |
| 2004 10 21 | 704 | 0.7+ | 0.0 | 2004 11 19 | 704 | 0.3− | 1.7+ | 2006 03 09 | D35 | 0.1− | 0.0 |
| 2004 10 21 | 704 | 1.3− | 0.0 | 2004 11 19 | 704 | 0.5+ | 0.4+ | 2006 03 09 | D35 | 1.4+ | 0.9+ |

**2004 XF$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.51039 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17593801 | $\omega$ | 52.12597 | +0.44848760 | | −0.89365124 | |
| $a$ | 3.1542511 | $\Omega$ | 11.25930 | +0.79272648 | | +0.38960372 | |
| $e$ | 0.1215759 | $i$ | 4.61065 | +0.41284817 | | +0.22270250 | |
| $P$ | 5.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1− | 0.2+ | 2004 12 10 | 691 | 0.2+ | 0.3+ | 2006 03 26 | G96 | 0.5+ | 0.0 |
| 2003 09 18 | 691 | 0.2+ | 0.3+ | 2004 12 18 | 691 | 0.3+ | 0.0 | 2006 03 26 | G96 | 0.2− | 0.1+ |
| 2003 09 18 | 691 | 0.1+ | 0.2+ | 2004 12 18 | 691 | 0.6− | 0.2− | 2006 04 07 | G96 | 0.9− | 0.1+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2004 12 18 | 691 | 0.2+ | 0.0 | 2006 04 07 | G96 | 0.4+ | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2005 01 19 | 691 | 0.0 | 0.2+ | 2006 04 07 | G96 | 0.2− | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.1+ | 2005 01 19 | 691 | 0.1− | 0.2− | 2006 04 07 | G96 | 0.0 | 0.6+ |
| 2003 09 28 | 645 | 0.1− | 0.1+ | 2005 01 19 | 691 | 0.2− | 0.0 | 2006 04 25 | 691 | 0.3+ | 0.5+ |
| 2004 12 10 | 691 | 0.1+ | 0.3+ | 2006 03 26 | G96 | 0.7+ | 0.1+ | 2006 04 25 | 691 | 0.5+ | 0.2+ |
| 2004 12 10 | 691 | 0.3+ | 0.2− | 2006 03 26 | G96 | 0.1+ | 0.3+ | 2006 04 25 | 691 | 0.0 | 0.7+ |

**2004 XN$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.33356 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17243180 | $\omega$ | 108.50769 | −0.99268589 | | +0.07862010 | |
| $a$ | 3.1968664 | $\Omega$ | 76.08062 | −0.10993270 | | −0.90231079 | |
| $e$ | 0.1023336 | $i$ | 5.41612 | +0.04989522 | | −0.42385624 | |
| $P$ | 5.72 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 644 | 0.3+ | 0.8+ | 2004 12 11 | 599 | 0.1+ | 0.2+ | 2006 02 03 | 699 | 0.3+ | 0.3− |
| 2001 05 29 | 644 | 0.1+ | 0.6+ | 2004 12 11 | 599 | 0.4+ | 0.2− | 2006 02 04 | 704 | 1.1− | 2.1+ |
| 2001 05 29 | 644 | 0.4+ | 0.6+ | 2004 12 11 | 599 | 0.1− | 0.1− | 2006 02 04 | 704 | 0.6− | 0.6+ |
| 2003 09 22 | 691 | 0.3− | 0.6+ | 2004 12 20 | G96 | 0.0 | 0.7− | 2006 02 04 | 704 | 0.1− | 1.0+ |
| 2003 09 22 | 691 | 0.3− | 0.6+ | 2004 12 20 | G96 | 0.2+ | 0.4− | 2006 02 04 | 704 | 1.2− | 0.1+ |
| 2003 09 22 | 691 | 0.1− | 0.3+ | 2004 12 20 | G96 | 0.2− | 0.5− | 2006 02 04 | 704 | 0.5+ | 0.9+ |
| 2004 09 17 | 291 | 0.5+ | 0.1+ | 2004 12 20 | G96 | 0.1+ | 0.3− | 2006 02 28 | 703 | 0.4+ | 0.6− |
| 2004 09 17 | 291 | 0.4− | 0.5− | 2005 11 04 | 691 | 0.4+ | 0.2− | 2006 02 28 | 703 | 0.9− | 0.5− |
| 2004 09 17 | 291 | 0.4− | 0.6+ | 2005 11 04 | 691 | 0.2+ | 0.3+ | 2006 02 28 | 703 | 0.1− | 0.7− |
| 2004 11 20 | 691 | 0.1− | 0.1− | 2005 11 04 | 691 | 0.2+ | 0.2+ | 2006 02 28 | 703 | 0.9− | 0.5− |
| 2004 11 20 | 691 | 0.0 | 0.1− | 2006 02 03 | 699 | 0.8+ | 0.7− | 2006 03 09 | 644 | 0.5+ | 0.1− |
| 2004 11 20 | 691 | 0.2+ | 0.1− | 2006 02 03 | 699 | 0.9+ | 1.2+ | 2006 03 09 | 644 | 0.7+ | 0.3− |
| 2004 12 11 | 599 | 0.1+ | 0.0 | 2006 02 03 | 699 | 0.5+ | 1.4+ | 2006 03 09 | 644 | 0.6+ | 0.4+ |

**2004 XE$_{191}$ = 1999 RC$_{234}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.32304 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21543343 | $\omega$ | 326.28421 | +0.99310982 | | −0.07045371 | |
| $a$ | 2.7558822 | $\Omega$ | 38.09741 | +0.10824841 | | +0.85762585 | |
| $e$ | 0.2328995 | $i$ | 8.72967 | −0.04489052 | | +0.50942534 | |
| $P$ | 4.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.5+ | 0.4+ | 1999 09 13 | 704 | 0.7+ | 1.1− | 2004 12 11 | 704 | 0.1− | 0.1− |
| 1999 09 08 | 703 | 0.0 | 0.3+ | 2004 12 02 | 704 | 0.2+ | 0.0 | 2004 12 15 | 704 | 0.1+ | 0.5+ |
| 1999 09 08 | 703 | 1.6− | 0.0 | 2004 12 02 | 704 | 0.4+ | 0.2− | 2004 12 15 | 704 | 0.0 | 0.3+ |
| 1999 09 08 | 703 | 0.8+ | 0.2− | 2004 12 02 | 704 | 0.1+ | 0.4− | 2004 12 15 | 704 | 0.3− | 1.0− |
| 1999 09 13 | 704 | 0.1− | 0.0 | 2004 12 02 | 704 | 0.8+ | 0.5+ | 2004 12 15 | 703 | 0.2− | 1.0− |
| 1999 09 13 | 704 | 0.7− | 0.1− | 2004 12 11 | 704 | 1.3+ | 0.4+ | 2004 12 15 | 703 | 0.1− | 0.0 |
| 1999 09 13 | 704 | 0.2− | 0.5+ | 2004 12 11 | 704 | 0.4+ | 0.8− | 2004 12 15 | 703 | 1.6− | 0.9+ |
| 1999 09 13 | 704 | 0.5+ | 0.3+ | 2004 12 11 | 704 | 0.4+ | 0.9− | 2004 12 15 | 703 | 1.5− | 1.9+ |

**2004 XH$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.04349 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23484013 | $\omega$ | 340.70528 | +0.68967646 | | −0.68890380 | |
| $a$ | 2.6018834 | $\Omega$ | 64.95654 | +0.69251985 | | +0.53750022 | |
| $e$ | 0.2029073 | $i$ | 14.25347 | +0.21157184 | | +0.48631786 | |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 17 | 704 | 0.0 | 0.6+ | 2002 04 03 | 691 | 0.1− | 0.1− | 2005 01 15 | 703 | (1.7− | 2.5−) |
| 2001 01 17 | 704 | 0.8+ | 0.7− | 2004 12 02 | 703 | 0.7− | 0.0 | 2005 01 15 | 703 | (0.1− | 2.8−) |
| 2001 01 17 | 704 | 0.5+ | 0.4+ | 2004 12 02 | 703 | 0.7− | 0.2+ | 2005 01 17 | 704 | 0.3− | 0.2+ |
| 2001 01 17 | 704 | 0.4− | 0.7− | 2004 12 02 | 703 | 0.6− | 0.3− | 2005 01 17 | 704 | 0.1− | 0.3+ |
| 2001 01 17 | 704 | 1.0− | 1.3− | 2004 12 02 | 703 | 0.1+ | 0.6− | 2005 01 17 | 704 | 0.0 | 1.1+ |
| 2001 02 22 | 699 | 0.4+ | 0.7+ | 2004 12 15 | 704 | 1.0+ | 0.7+ | 2005 01 31 | 704 | 0.2+ | 0.6+ |
| 2001 02 22 | 699 | 0.8+ | 0.1+ | 2004 12 15 | 704 | 0.5+ | 0.5− | 2005 01 31 | 704 | 0.3− | 0.5− |
| 2001 02 22 | 699 | 0.5− | 0.1− | 2004 12 15 | 704 | (2.3+ | 0.4+) | 2005 01 31 | 704 | 0.1+ | 0.5− |
| 2001 02 22 | 699 | 0.9− | 0.1+ | 2004 12 15 | 704 | 1.9+ | 1.2+ | 2005 01 31 | 704 | 0.2− | 1.1− |
| 2002 04 03 | 691 | 0.1+ | 0.1+ | 2005 01 15 | 703 | 0.5− | 0.3− | 2005 01 31 | 704 | 0.0 | 0.2+ |
| 2002 04 03 | 691 | 0.1+ | 0.1+ | 2005 01 15 | 703 | 0.7− | 0.2+ | | | | |

**2004 XJ$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.27097 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.36057784 | $\omega$ | 118.93151 | +0.66645861 | | −0.67921755 | |
| $a$ | 1.9549547 | $\Omega$ | 285.78580 | +0.52289152 | | +0.71974939 | |
| $e$ | 0.0993080 | $i$ | 18.62971 | +0.53142956 | | +0.14361175 | |
| $P$ | 2.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 08 | 704 | 1.0− | 0.4+ | 2004 12 16 | 704 | 0.3− | 0.5+ | 2005 02 14 | 703 | 0.5− | 0.5− |
| 2004 12 08 | 704 | 0.5− | 0.7+ | 2004 12 16 | 704 | 0.7+ | 0.3− | 2006 06 03 | G96 | 0.1− | 0.3− |
| 2004 12 08 | 704 | 1.8+ | 0.3− | 2004 12 16 | 704 | 0.2+ | 0.9+ | 2006 06 03 | G96 | 0.2+ | 0.1+ |
| 2004 12 14 | 704 | 0.0 | 0.9− | 2004 12 16 | 704 | 1.0− | 0.2+ | 2006 06 03 | G96 | 0.2+ | 0.4− |
| 2004 12 14 | 704 | 0.3+ | 1.5− | 2004 12 16 | 704 | 1.1− | 0.2− | 2006 06 03 | G96 | 0.5+ | 0.9− |
| 2004 12 14 | 704 | 0.1− | 0.8+ | 2005 02 14 | 703 | 0.3+ | 0.3+ | 2006 06 22 | 691 | 0.0 | 0.3+ |
| 2004 12 14 | 704 | 0.7+ | 0.2− | 2005 02 14 | 703 | 0.5+ | 0.2+ | 2006 06 22 | 691 | 0.1− | 0.2+ |
| 2004 12 14 | 704 | 0.1+ | 0.7+ | 2005 02 14 | 703 | 0.4+ | 0.1+ | 2006 06 22 | 691 | 0.1− | 0.1+ |

**2004 XK**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.97372 | | | (2000.0) | | |
| $n$ | 0.18803713 | $\omega$ | 315.21386 | | −0.24035715 | +0.96761259 |
| $a$ | 3.0174516 | $\Omega$ | 300.73416 | | −0.86353736 | −0.24945487 |
| $e$ | 0.1302201 | $i$ | 5.15055 | | −0.44331891 | −0.03870578 |
| $P$ | 5.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.0 | 0.3− | 2004 12 11 | 291 | 0.3− | 0.1+ | 2005 03 03 | 703 | 1.0+ | 0.1− |
| 1997 11 23 | 691 | 0.0 | 0.2− | 2005 02 02 | 691 | 0.2+ | 0.1− | 2005 03 10 | 703 | 1.4+ | 0.7− |
| 1997 11 23 | 691 | 0.4+ | 0.2− | 2005 02 02 | 691 | 0.3+ | 0.0 | 2005 03 10 | 703 | 0.7+ | 0.4− |
| 2002 11 28 | 695 | 0.4− | 1.0+ | 2005 02 02 | 691 | 0.1+ | 0.1− | 2005 03 10 | 703 | 0.2− | 0.5+ |
| 2002 11 28 | 695 | 0.5− | 0.5+ | 2005 02 16 | 809 | 0.3− | 0.6− | 2005 03 10 | 703 | 0.8+ | 0.9+ |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2005 02 16 | 809 | 0.3− | 0.5− | 2005 03 30 | 703 | 0.7− | 1.0− |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2005 02 16 | 809 | 0.3− | 0.7− | 2005 03 30 | 703 | 0.3− | 0.6− |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2005 03 03 | 703 | 0.7− | 0.3+ | 2005 03 30 | 703 | 0.6− | 1.1+ |
| 2004 12 11 | 291 | 0.2− | 0.2+ | 2005 03 03 | 703 | 0.7− | 1.2+ | 2005 03 30 | 703 | 0.3+ | 0.8− |
| 2004 12 11 | 291 | 0.2− | 0.1+ | 2005 03 03 | 703 | 0.8− | 0.5+ | | | | |

**2004 XL**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.51537 | | | (2000.0) | | |
| $n$ | 0.28496151 | $\omega$ | 257.49513 | | +0.83243955 | +0.54980349 |
| $a$ | 2.2870654 | $\Omega$ | 69.11344 | | −0.47539098 | +0.77258733 |
| $e$ | 0.0762293 | $i$ | 4.23510 | | −0.28468896 | +0.31752943 |
| $P$ | 3.46 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 608 | 0.2− | 0.0 | 2005 01 07 | 704 | 0.7− | 0.0 | 2006 04 24 | 691 | 0.1+ | 0.1+ |
| 2000 10 06 | 608 | 0.1− | 0.1+ | 2005 01 07 | 704 | 0.4− | 1.2+ | 2006 04 24 | 691 | 0.1+ | 0.2+ |
| 2000 10 06 | 608 | 0.2+ | 0.1− | 2005 01 07 | 704 | 0.6− | 1.0+ | 2006 05 02 | 691 | 0.2− | 0.2+ |
| 2002 03 05 | 699 | 0.4− | 0.5+ | 2005 01 19 | 691 | 0.1+ | 0.2− | 2006 05 02 | 691 | 0.6+ | 0.1+ |
| 2002 03 05 | 699 | 0.2+ | 0.5− | 2005 01 19 | 691 | 0.0 | 0.2− | 2006 05 02 | 691 | 0.2+ | 0.0 |
| 2002 03 05 | 699 | 0.1− | 0.2− | 2005 01 19 | 691 | 0.1+ | 0.2− | 2006 05 21 | 691 | 0.1− | 0.1− |
| 2002 03 05 | 699 | 0.3+ | 0.4+ | 2005 01 19 | 691 | 0.1+ | 0.2− | 2006 05 21 | 691 | 0.1− | 0.1− |
| 2002 04 02 | 644 | 0.1− | 0.4+ | 2005 01 19 | 691 | 0.1+ | 0.2− | 2006 05 21 | 691 | 0.1− | 0.1− |
| 2002 04 02 | 644 | 0.2+ | 0.3− | 2005 01 19 | 691 | 0.1− | 0.1− | 2006 06 19 | G96 | 0.5− | 0.2− |
| 2002 04 02 | 644 | 0.1+ | 0.1− | 2006 03 05 | G96 | 0.3− | 0.4− | 2006 06 19 | G96 | 0.2− | 0.1− |
| 2004 12 15 | 691 | 0.1+ | 0.2+ | 2006 03 05 | G96 | 0.7− | 0.3− | 2006 06 19 | G96 | 0.5− | 0.4− |
| 2004 12 15 | 691 | 0.2+ | 0.2+ | 2006 03 05 | G96 | 0.4− | 0.4− | 2006 06 19 | G96 | 0.3− | 0.0 |
| 2004 12 15 | 691 | 0.1+ | 0.2+ | 2006 03 05 | G96 | 0.5− | 0.1− | | | | |
| 2005 01 07 | 704 | 0.7− | 0.1+ | 2006 04 24 | 691 | 0.1+ | 0.2+ | | | | |

**2004 XO**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 122.03520 | | | (2000.0) | | |
| $n$ | 0.23353040 | $\omega$ | 176.11755 | | −0.70070446 | −0.70978512 |
| $a$ | 2.6116026 | $\Omega$ | 318.34460 | | +0.65161699 | −0.59545404 |
| $e$ | 0.0620407 | $i$ | 6.23958 | | +0.29053152 | −0.37635031 |
| $P$ | 4.22 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.1+ | 0.2− | 2003 10 22 | 691 | 0.1+ | 0.1+ | 2005 01 06 | 703 | (1.5− | 0.2−) |
| 1999 10 14 | 645 | 0.1+ | 0.1− | 2003 10 22 | 691 | 0.2− | 0.5+ | 2005 01 06 | 703 | (2.3− | 1.8−) |
| 2001 02 13 | 691 | 0.3+ | 0.2− | 2003 10 22 | 645 | 0.1− | 0.1− | 2005 01 06 | 703 | 0.0 | 1.1− |
| 2001 02 13 | 691 | 0.3+ | 0.1− | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 01 06 | 703 | (2.4+ | 1.3−) |
| 2001 02 13 | 691 | 0.4+ | 0.3− | 2003 10 24 | 645 | 0.0 | 0.1− | 2005 01 07 | 704 | 1.0+ | 0.8+ |
| 2001 03 02 | 691 | 0.7− | 0.3− | 2003 10 24 | 645 | 0.0 | 0.2− | 2005 01 07 | 704 | 0.2− | 1.2+ |
| 2001 03 02 | 691 | 0.4− | 0.4− | 2003 11 19 | 645 | 0.1− | 0.0 | 2005 01 07 | 704 | 0.3+ | 0.8+ |
| 2001 03 02 | 691 | 1.0− | 0.8− | 2003 11 19 | 645 | 0.1+ | 0.0 | 2005 01 07 | 704 | 0.8+ | 1.2+ |
| 2003 09 18 | 691 | 0.5+ | 0.2+ | 2004 12 10 | 691 | 0.1− | 0.0 | 2005 01 07 | 704 | 0.2+ | 0.0 |
| 2003 09 18 | 691 | 0.2+ | 0.5+ | 2004 12 10 | 691 | 0.2− | 0.4+ | 2005 01 16 | 704 | 0.4+ | 1.0+ |
| 2003 09 18 | 691 | 0.6+ | 0.4+ | 2004 12 10 | 691 | 0.1+ | 0.3+ | 2005 01 16 | 704 | 0.9+ | 0.2+ |
| 2003 09 30 | 691 | 0.1− | 0.5+ | 2004 12 21 | 703 | 0.2− | 0.1+ | 2005 01 16 | 704 | 0.4+ | 0.5+ |
| 2003 09 30 | 691 | 0.1− | 0.4+ | 2004 12 21 | 703 | 0.4− | 0.4+ | 2005 01 16 | 704 | 0.5+ | 0.3+ |
| 2003 09 30 | 691 | 0.3− | 0.2+ | 2004 12 21 | 703 | 0.1+ | 0.2+ | | | | |
| 2003 10 22 | 691 | 0.5− | 0.4+ | 2004 12 21 | 703 | 0.5− | 0.6− | | | | |

**2004 XP**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 211.17406 | | | (2000.0) | | |
| $n$ | 0.22358245 | $\omega$ | 274.54191 | | +0.81529712 | −0.54762747 |
| $a$ | 2.6885054 | $\Omega$ | 118.77333 | | +0.57877155 | +0.76075839 |
| $e$ | 0.0778656 | $i$ | 12.39416 | | +0.01772273 | +0.34835444 |
| $P$ | 4.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 608 | 0.4+ | 0.1− | 2004 12 11 | 291 | 0.0 | 0.2+ | 2005 01 06 | 704 | 0.1− | 0.1+ |
| 2003 09 21 | 608 | 0.9+ | 0.1+ | 2004 12 11 | 291 | 0.2+ | 0.0 | 2005 01 15 | 704 | 0.0 | 0.5+ |
| 2003 09 21 | 608 | 0.7+ | 0.2+ | 2004 12 11 | 291 | 0.0 | 0.2− | 2005 01 15 | 704 | 0.2+ | 0.2+ |
| 2003 09 25 | 644 | 0.2− | 0.3− | 2005 01 01 | 703 | (0.5+ | 2.2−) | 2005 01 15 | 704 | 0.5+ | 0.4+ |
| 2003 09 25 | 644 | 0.5− | 0.1+ | 2005 01 01 | 703 | 0.8− | 0.1+ | 2005 01 15 | 704 | 0.1+ | 0.4− |
| 2003 09 25 | 644 | 0.5− | 0.1+ | 2005 01 01 | 703 | 0.9− | 0.0 | 2005 01 17 | 704 | 0.6+ | 0.6+ |
| 2003 09 27 | 699 | 1.7− | 1.6+ | 2005 01 01 | 703 | 0.7+ | 0.1− | 2005 01 17 | 704 | 0.3− | 0.3+ |
| 2003 09 27 | 699 | 1.0+ | 0.3− | 2005 01 06 | 704 | 1.1− | 0.0 | 2005 01 17 | 704 | 0.4− | 0.5+ |
| 2003 09 27 | 699 | 0.9+ | 0.2− | 2005 01 06 | 704 | 0.2− | 0.1− | 2005 01 17 | 704 | 0.7+ | 1.8− |
| 2003 09 27 | 699 | 1.1− | 1.1− | 2005 01 06 | 704 | 0.6+ | 0.3− | | | | |

**2004 XQ**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.24839 | | | (2000.0) | | |
| $n$ | 0.22959257 | $\omega$ | 54.79425 | | −0.20726940 | −0.95991938 |
| $a$ | 2.6413796 | $\Omega$ | 48.32965 | | +0.79527033 | −0.27764257 |
| $e$ | 0.1370436 | $i$ | 14.62955 | | +0.56972318 | +0.03833262 |
| $P$ | 4.29 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1− | 0.0 | 2005 01 15 | 699 | 0.3− | 0.2− | 2005 01 31 | 704 | 0.7+ | 0.5− |
| 1999 10 09 | 704 | 0.4− | 0.7+ | 2005 01 15 | 699 | 0.1− | 0.1+ | 2005 01 31 | 704 | 0.5+ | 0.1+ |
| 1999 10 09 | 704 | 1.1+ | 0.2+ | 2005 01 15 | 699 | 0.1+ | 0.1− | 2005 01 31 | 704 | 0.1− | 0.4+ |
| 1999 10 09 | 704 | 0.4− | 1.1− | 2005 01 15 | 699 | 0.2− | 0.0 | 2005 02 14 | 704 | 0.1− | 0.3+ |
| 2001 02 15 | 704 | 0.1− | 0.4− | 2005 01 15 | 704 | 0.0 | 0.2− | 2005 02 14 | 704 | 0.8+ | 0.1+ |
| 2001 02 15 | 704 | 0.4− | 0.3− | 2005 01 15 | 704 | 0.3− | 0.4+ | 2005 02 14 | 704 | 0.1− | 0.6+ |
| 2001 02 15 | 704 | 0.5− | 0.6− | 2005 01 15 | 704 | 0.0 | 1.2− | 2005 02 14 | 704 | 0.5− | 1.2+ |
| 2004 12 11 | 703 | 0.9− | 0.8− | 2005 01 15 | 704 | 0.2+ | 0.2− | 2005 03 01 | 704 | 0.5− | 0.5− |
| 2004 12 11 | 703 | 0.8− | 0.0 | 2005 01 15 | 704 | 0.3+ | 0.0 | 2005 03 01 | 704 | 0.2− | 0.5+ |
| 2004 12 11 | 703 | 0.2+ | 0.9+ | 2005 01 31 | 704 | 0.2+ | 0.3+ | 2005 03 01 | 704 | 0.3− | 0.4− |
| 2004 12 11 | 703 | 0.2+ | 0.8− | 2005 01 31 | 704 | 0.5+ | 0.3+ | 2005 03 01 | 704 | 0.1+ | 1.0+ |

**2004 YX**$_{3}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 93.34681 | | | (2000.0) | | |
| $n$ | 0.21811990 | $\omega$ | 238.00501 | | −0.97067439 | −0.21392105 |
| $a$ | 2.7332070 | $\Omega$ | 289.44378 | | +0.24037543 | −0.86994438 |
| $e$ | 0.1654591 | $i$ | 6.67920 | | −0.00329834 | −0.44433608 |
| $P$ | 4.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 608 | 0.4− | 0.1− | 2004 12 18 | G96 | 0.5− | 0.2− | 2005 01 16 | 691 | 0.0 | 0.1+ |
| 2001 03 21 | 608 | 0.2− | 0.6− | 2004 12 19 | G96 | 0.5− | 0.3− | 2005 01 16 | 691 | 0.2+ | 0.0 |
| 2001 03 21 | 608 | 0.2+ | 0.2− | 2004 12 19 | G96 | 0.1− | 0.3− | 2005 01 16 | 691 | 0.2+ | 0.0 |
| 2003 09 25 | 644 | 0.2+ | 0.2− | 2004 12 19 | G96 | 0.2− | 0.2− | 2005 01 17 | 704 | 0.5− | 0.6+ |
| 2003 09 25 | 644 | 0.2+ | 0.3− | 2004 12 19 | G96 | 0.1+ | 0.4− | 2005 01 17 | 704 | 0.2+ | 0.5− |
| 2003 09 25 | 644 | 0.3− | 0.2− | 2005 01 11 | 704 | 0.6+ | 0.4+ | 2005 01 17 | 704 | 0.7− | 0.3+ |
| 2004 12 16 | 691 | 0.1+ | 0.1− | 2005 01 11 | 704 | 0.2− | 0.3− | 2005 03 13 | G96 | 0.6− | 0.0 |
| 2004 12 16 | 691 | 0.0 | 0.2+ | 2005 01 11 | 704 | 0.3+ | 0.3+ | 2005 03 13 | G96 | 0.2− | 0.0 |
| 2004 12 16 | 691 | 0.1− | 0.2− | 2005 01 15 | 704 | 0.0 | 0.4+ | 2005 03 13 | G96 | 0.0 | 0.1+ |
| 2004 12 18 | G96 | 0.0 | 0.2− | 2005 01 15 | 704 | 0.2+ | 0.1+ | 2005 03 13 | G96 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 18 | G96 | 0.2− | 0.3− | 2005 01 15 | 704 | 0.4+ | 0.2− | | | | | | |
| 2004 12 18 | G96 | 0.4− | 0.3− | 2005 01 15 | 704 | 0.6+ | 0.4+ | | | | | | |

**2004 YJ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.48378 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18059084 | $\omega$ | 214.59086 | | −0.98617777 | | +0.07470673 |
| $a$ | 3.0998373 | $\Omega$ | 328.67808 | | +0.03031423 | | −0.79616684 |
| $e$ | 0.2233410 | $i$ | 16.52859 | | −0.16289400 | | −0.60044756 |
| $P$ | 5.46 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 699 | 0.2+ | 0.5− | 2005 02 04 | 704 | 0.0 | 0.1− | 2005 04 03 | 704 | 0.4− | 0.7+ | | |
| 1998 12 17 | 699 | 0.6+ | 0.4+ | 2005 02 04 | 704 | 0.2+ | 1.1− | 2005 04 03 | 704 | 0.2− | 0.1− | | |
| 1998 12 17 | 699 | 0.9− | 0.2− | 2005 03 02 | 704 | 0.7+ | 0.9− | 2005 04 14 | 703 | 0.5− | 0.1+ | | |
| 2004 12 15 | 703 | 1.2+ | 1.3− | 2005 03 02 | 704 | 1.1+ | 1.4− | 2005 04 14 | 703 | 0.9− | 0.1+ | | |
| 2004 12 15 | 703 | 0.4− | 1.8+ | 2005 03 02 | 704 | 0.5+ | 1.7− | 2005 04 14 | 703 | 0.9− | 0.3− | | |
| 2004 12 15 | 703 | 0.8− | 0.3+ | 2005 03 02 | 704 | 0.8+ | 0.6− | 2005 04 14 | 703 | 1.0− | 0.5+ | | |
| 2004 12 15 | 703 | 1.6− | 0.9+ | 2005 03 02 | 704 | 1.5+ | 1.3− | 2005 04 15 | 699 | 0.4− | 0.2− | | |
| 2004 12 16 | 703 | 0.5− | 0.6+ | 2005 03 09 | E12 | 0.2− | 0.0 | 2005 04 15 | 699 | 0.0 | 0.3− | | |
| 2004 12 16 | 703 | 0.5− | 0.5− | 2005 03 09 | E12 | 0.2− | 0.1+ | 2005 04 15 | 699 | 0.1+ | 0.6+ | | |
| 2004 12 16 | 703 | 0.3+ | 0.1+ | 2005 03 09 | E12 | 0.3+ | 0.2+ | 2005 04 15 | 699 | 0.0 | 0.6− | | |
| 2004 12 16 | 703 | 0.8− | 0.5+ | 2005 03 09 | E12 | 0.0 | 1.1+ | 2005 04 18 | E12 | 0.1− | 0.8+ | | |
| 2004 12 19 | 703 | 0.2− | 0.1+ | 2005 03 13 | 699 | 0.5+ | 0.8+ | 2005 04 18 | E12 | 0.5− | 0.7+ | | |
| 2004 12 19 | 703 | 0.1− | 0.3+ | 2005 03 13 | 699 | 0.4+ | 0.3− | 2005 04 18 | E12 | 0.3− | 0.8+ | | |
| 2004 12 19 | 703 | 0.0 | 1.4− | 2005 03 13 | 699 | 0.0 | 0.1+ | 2005 04 18 | E12 | 0.0 | 0.3+ | | |
| 2004 12 19 | 703 | 0.8− | 0.4+ | 2005 03 13 | 699 | 1.1+ | 0.3+ | 2006 07 20 | E12 | 0.4+ | 0.4− | | |
| 2005 01 13 | 699 | 0.2+ | 1.8− | 2005 03 31 | 644 | 0.1+ | 0.4+ | 2006 07 20 | E12 | 0.4+ | 0.4− | | |
| 2005 01 13 | 699 | 0.1− | 0.0 | 2005 03 31 | 644 | 0.3+ | 0.8+ | 2006 07 20 | E12 | 0.5+ | 0.1− | | |
| 2005 01 13 | 699 | 1.6+ | 0.4+ | 2005 03 31 | 644 | 0.4+ | 0.9+ | 2006 07 20 | E12 | 0.2− | 0.1+ | | |
| 2005 01 13 | 699 | 0.1− | 0.8− | 2005 04 03 | 704 | 0.3+ | 1.3− | 2006 07 20 | E12 | 0.6− | 0.5− | | |
| 2005 02 04 | 704 | 0.3+ | 0.4− | 2005 04 03 | 704 | 0.4− | 0.4+ | | | | | | |
| 2005 02 04 | 704 | 0.6− | 0.4+ | 2005 04 03 | 704 | 0.5− | 0.2+ | | | | | | |

**2004 YT$_{23}$ = 2006 KD$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.01216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27879047 | $\omega$ | 253.85522 | | +0.97060560 | | −0.21447220 |
| $a$ | 2.3206916 | $\Omega$ | 118.41834 | | +0.23923655 | | +0.90930660 |
| $e$ | 0.1199509 | $i$ | 7.13291 | | −0.02628008 | | +0.35659947 |
| $P$ | 3.54 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.7+ | 0.6+ | 2003 07 25 | 644 | 0.2− | 1.2+ | 2005 01 19 | 691 | 0.2− | 0.6+ | | |
| 2000 11 20 | 704 | 0.1− | 0.8+ | 2003 07 25 | 644 | 0.2+ | 0.4+ | 2005 01 19 | 691 | 0.3+ | 0.1+ | | |
| 2000 11 20 | 704 | 0.9− | 0.0 | 2004 12 18 | G96 | 0.0 | 0.1− | 2005 01 19 | 691 | 0.1+ | 0.4+ | | |
| 2003 07 06 | 691 | 0.0 | 0.1+ | 2004 12 18 | G96 | 0.5− | 0.3− | 2006 05 22 | 691 | 0.5− | 0.2+ | | |
| 2003 07 06 | 691 | 0.0 | 0.1+ | 2004 12 18 | G96 | 0.0 | 0.2− | 2006 05 22 | 691 | 0.1+ | 0.1+ | | |
| 2003 07 06 | 691 | 0.2+ | 0.4+ | 2004 12 18 | G96 | 0.1− | 0.1+ | 2006 05 22 | 691 | 0.1+ | 0.2+ | | |
| 2003 07 08 | 644 | 0.8− | 0.5+ | 2004 12 19 | G96 | 0.7+ | 0.1− | 2006 05 26 | 691 | 0.2+ | 0.0 | | |
| 2003 07 08 | 644 | 0.3− | 0.2+ | 2004 12 19 | G96 | 0.2− | 0.2+ | 2006 05 26 | 691 | 0.1+ | 0.1− | | |
| 2003 07 08 | 644 | 0.9− | 1.1− | 2004 12 19 | G96 | 0.0 | 0.3+ | 2006 05 26 | 691 | 0.1+ | 0.1− | | |
| 2003 07 25 | 644 | 0.2+ | 0.0 | 2004 12 19 | G96 | 0.0 | 0.1− | | | | | | |

**2004 YA$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.96375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22766658 | $\omega$ | 185.11081 | | −0.61494282 | | +0.76968153 |
| $a$ | 2.6562556 | $\Omega$ | 47.07324 | | −0.71494413 | | −0.45237406 |
| $e$ | 0.1289170 | $i$ | 13.55101 | | −0.33271644 | | −0.45049757 |
| $P$ | 4.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 608 | 0.9− | 0.8− | 2005 03 15 | 703 | 0.4+ | 0.2+ | 2005 04 16 | 703 | 0.7+ | 0.2− | | |
| 2001 05 22 | 608 | 0.2+ | 0.3− | 2005 03 15 | 703 | 0.5− | 0.3− | 2005 04 16 | 703 | 0.5− | 0.2− | | |
| 2001 05 22 | 608 | 0.5− | 1.0− | 2005 03 15 | 703 | 0.3+ | 0.4+ | 2005 04 16 | 703 | 0.1+ | 0.0 | | |
| 2004 12 19 | G96 | 0.3+ | 0.4− | 2005 03 30 | 703 | 0.1+ | 0.0 | 2005 05 03 | 703 | 0.6+ | 1.1+ | | |
| 2004 12 19 | G96 | 0.5+ | 0.0 | 2005 03 30 | 703 | 0.4+ | 1.1− | 2005 05 03 | 703 | 0.3+ | 0.7+ | | |
| 2004 12 19 | G96 | 0.9− | 0.4− | 2005 03 30 | 703 | 1.0+ | 1.3+ | 2005 05 03 | 703 | 0.2− | 0.7+ | | |
| 2004 12 19 | G96 | 0.0 | 0.8− | 2005 03 30 | 703 | 0.2+ | 0.2− | 2005 05 03 | 703 | 1.3− | 1.4+ | | |
| 2004 12 20 | G96 | 0.1− | 0.0 | 2005 04 06 | 703 | 0.3− | 0.5− | 2005 05 22 | 644 | 0.4+ | 0.1− | | |
| 2004 12 20 | G96 | 0.1+ | 0.0 | 2005 04 06 | 703 | 1.3− | 0.3− | 2005 05 22 | 644 | 0.0 | 0.1+ | | |
| 2004 12 20 | G96 | 0.2+ | 0.4+ | 2005 04 06 | 703 | 0.7− | 0.0 | 2005 05 22 | 644 | 0.3+ | 0.2+ | | |
| 2004 12 20 | G96 | 0.4+ | 0.3− | 2005 04 06 | 703 | 0.7− | 0.0 | 2006 07 29 | E12 | 0.2− | 0.4+ | | |
| 2005 03 03 | 703 | 1.7+ | 0.6− | 2005 04 06 | 703 | 0.6− | 0.1+ | 2006 07 29 | E12 | 1.6− | 0.6+ | | |
| 2005 03 03 | 703 | 0.5− | 0.1+ | 2005 04 06 | 703 | 0.2+ | 0.3+ | 2006 07 29 | E12 | 0.7+ | 0.7+ | | |
| 2005 03 03 | 703 | 0.4− | 0.1+ | 2005 04 06 | 703 | 0.5+ | 0.7− | 2006 07 29 | E12 | 0.1+ | 0.1+ | | |
| 2005 03 03 | 703 | 0.4− | 0.1+ | 2005 04 06 | 703 | 0.2+ | 0.4+ | | | | | | |
| 2005 03 15 | 703 | 1.5+ | 1.5+ | 2005 04 16 | 703 | 0.1+ | 0.5− | | | | | | |

**2004 YB$_{36}$ = 2003 RD$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.36152 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23298483 | $\omega$ | 153.27666 | | −0.11598232 | | −0.97286408 |
| $a$ | 2.6156780 | $\Omega$ | 302.75680 | | +0.86339753 | | +0.00089551 |
| $e$ | 0.0759066 | $i$ | 13.77252 | | +0.49101203 | | −0.23137563 |
| $P$ | 4.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 704 | 1.7+ | 0.5+ | 2003 09 21 | 704 | 1.1+ | 1.8+ | 2005 01 15 | 704 | 0.2+ | 0.4+ | | |
| 2001 02 20 | 704 | 0.7+ | 1.0− | 2004 12 21 | 703 | 0.8− | 0.1− | 2005 01 15 | 704 | 0.1+ | 0.2− | | |
| 2001 02 20 | 704 | 0.7+ | 1.6− | 2004 12 21 | 703 | 0.5− | 0.8− | 2005 01 15 | 704 | 0.2+ | 0.7+ | | |
| 2001 02 20 | 704 | 0.1− | 0.8− | 2004 12 21 | 703 | 0.9− | 0.3+ | 2005 01 17 | 704 | 0.1− | 0.4+ | | |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2004 12 21 | 703 | 0.5− | 0.4+ | 2005 01 17 | 704 | 1.0+ | 0.1+ | | |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2005 01 07 | 704 | 1.1+ | 0.7− | 2005 01 17 | 704 | 0.4+ | 0.2+ | | |
| 2003 09 15 | 644 | 0.2− | 0.1+ | 2005 01 07 | 704 | 0.2− | 0.5+ | 2005 01 17 | 704 | 0.1+ | 0.4+ | | |
| 2003 09 15 | 644 | 0.4− | 0.0 | 2005 01 07 | 704 | 0.3− | 0.3+ | 2005 01 17 | 704 | 0.2+ | 0.2+ | | |
| 2003 09 15 | 644 | 0.4− | 0.2+ | 2005 01 07 | 704 | 0.7− | 0.1− | 2005 03 09 | G96 | 0.4+ | 0.2− | | |
| 2003 09 21 | 704 | 1.5− | 0.6− | 2005 01 07 | 704 | 0.2− | 0.0 | 2005 03 09 | G96 | 0.0 | 0.2− | | |
| 2003 09 21 | 704 | 0.2+ | 0.9− | 2005 01 15 | 704 | 0.1− | 1.3− | 2005 03 09 | G96 | 0.2+ | 0.4− | | |
| 2003 09 21 | 704 | 0.9+ | 0.2− | 2005 01 15 | 704 | 0.2+ | 0.2− | 2005 03 09 | G96 | 0.2+ | 0.1− | | |

**2004 YD$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.49672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22140521 | $\omega$ | 318.86225 | | +0.70686549 | | −0.70530760 |
| $a$ | 2.7061020 | $\Omega$ | 86.08021 | | +0.66224803 | | +0.63321914 |
| $e$ | 0.0857689 | $i$ | 3.08478 | | +0.24853314 | | +0.31870787 |
| $P$ | 4.45 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 19 | G96 | 0.2− | 0.1+ | 2006 03 23 | 691 | 0.0 | 0.4− | 2006 04 09 | G96 | 0.3+ | 0.3+ | | |
| 2004 12 19 | G96 | 0.2− | 0.1− | 2006 03 23 | 691 | 0.2+ | 0.3+ | 2006 04 09 | G96 | 0.2− | 0.3+ | | |
| 2004 12 19 | G96 | 0.2− | 0.5− | 2006 03 23 | 691 | 0.2− | 0.2+ | 2006 04 09 | G96 | 0.1+ | 0.1− | | |
| 2004 12 19 | G96 | 0.2− | 0.3− | 2006 04 02 | G96 | 0.8+ | 0.6− | 2006 04 09 | G96 | 0.1+ | 0.1− | | |
| 2005 01 17 | 691 | 0.0 | 0.1+ | 2006 04 02 | G96 | 0.5− | 0.3− | 2006 04 20 | 291 | 0.3+ | 0.5+ | | |
| 2005 01 17 | 691 | 0.0 | 0.0 | 2006 04 02 | G96 | 0.3− | 0.2− | 2006 04 20 | 291 | 0.4+ | 0.1+ | | |
| 2005 01 17 | 691 | 0.2+ | 0.2+ | 2006 04 02 | G96 | 1.0− | 0.1+ | 2006 04 20 | 291 | 0.3+ | 0.3+ | | |
| 2005 03 16 | G96 | 0.1− | 0.0 | 2006 04 02 | G96 | 0.2+ | 1.2− | 2006 05 26 | G96 | 0.5− | 0.1+ | | |
| 2005 03 16 | G96 | 0.3+ | 0.1+ | 2006 04 02 | G96 | 0.6− | 0.5− | 2006 05 26 | G96 | 0.8− | 0.2− | | |
| 2005 03 16 | G96 | 0.0 | 0.4− | 2006 04 02 | G96 | 0.1+ | 0.5− | 2006 05 26 | G96 | 0.1− | 0.8− | | |
| 2005 03 16 | G96 | 0.1− | 0.2− | 2006 04 02 | G96 | 1.1− | 0.2− | 2006 05 26 | G96 | 0.6− | 0.3− | | |

**2004 YE$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.76514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20260445 | $\omega$ | 166.49462 | | −0.53296298 | | +0.80357618 |
| $a$ | 2.8710234 | $\Omega$ | 70.69717 | | −0.80006444 | | −0.37666210 |
| $e$ | 0.0969388 | $i$ | 16.30593 | | −0.27540399 | | −0.46085897 |
| $P$ | 4.86 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 291 | 0.4+ | 0.0 | 2004 12 21 | 703 | 1.0+ | 0.2− | 2005 03 08 | 704 | 0.3+ | 0.5+ |
| 2003 12 14 | 291 | 0.4+ | 0.2+ | 2004 12 21 | 703 | 0.2− | 0.5− | 2005 03 14 | 703 | (2.4+ | 0.4−) |
| 2003 12 14 | 691 | 0.5− | 0.0 | 2004 12 21 | 703 | 0.3+ | 0.8− | 2005 03 14 | 703 | 1.1+ | 1.2− |
| 2003 12 14 | 291 | 0.5+ | 0.1+ | 2005 03 08 | 703 | 1.6− | 0.1− | 2005 03 14 | 703 | 0.2− | 0.5− |
| 2003 12 14 | 691 | 0.2− | 0.1+ | 2005 03 08 | 703 | 0.4+ | 1.3+ | 2005 03 14 | 703 | 1.2− | 1.7− |
| 2003 12 14 | 691 | 0.0 | 0.0 | 2005 03 08 | 703 | 0.0 | 0.3+ | 2005 03 31 | 703 | 0.2− | 0.1− |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2005 03 08 | 703 | 0.0 | 0.2+ | 2005 03 31 | 703 | 0.8+ | 1.3+ |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2005 03 08 | 704 | 0.4− | 1.0− | 2005 03 31 | 703 | 0.4− | 0.8+ |
| 2003 12 19 | 691 | 0.5− | 0.1− | 2005 03 08 | 704 | 0.4+ | 0.4+ | 2005 03 31 | 703 | 1.0+ | 0.5− |
| 2004 12 21 | 703 | 1.1− | 1.0+ | 2005 03 08 | 704 | 0.2+ | 0.7+ | | | | |

**2004 YF$_{36}$ = 2000 SR$_{363}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 245.12741 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26926157 | $\omega$ | 271.02694 | | +0.76527218 | | +0.64071513 | | |
| $a$ | 2.3751250 | $\Omega$ | 49.13129 | | −0.55318103 | | +0.70383749 | | |
| $e$ | 0.2519093 | $i$ | 4.70198 | | −0.32916446 | | +0.30675220 | | |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.1− | 0.1− | 2000 09 24 | 699 | 0.1− | 0.6+ | 2004 11 10 | 691 | 0.1− | 0.1+ |
| 2000 08 26 | 704 | 0.3− | 0.2− | 2003 04 26 | 691 | 0.1+ | 0.8+ | 2004 11 19 | 703 | 0.7+ | 0.9+ |
| 2000 08 26 | 704 | 0.0 | 0.3+ | 2003 04 26 | 691 | 0.4+ | 0.8+ | 2004 11 19 | 703 | 0.9− | 0.6− |
| 2000 08 26 | 704 | 0.1+ | 0.7+ | 2003 04 26 | 691 | 0.5+ | 0.9+ | 2004 11 19 | 703 | 0.7− | 0.8− |
| 2000 09 20 | 704 | 0.4− | 0.7+ | 2004 10 11 | 691 | 0.0 | 0.3+ | 2004 11 19 | 703 | 0.0 | 0.1+ |
| 2000 09 20 | 704 | 0.0 | 0.3+ | 2004 10 11 | 691 | 0.0 | 0.3+ | 2004 12 16 | 691 | 0.2+ | 0.3+ |
| 2000 09 20 | 704 | 1.0− | 0.2− | 2004 10 11 | 691 | 0.2+ | 0.3− | 2004 12 16 | 691 | 0.1− | 0.2+ |
| 2000 09 20 | 704 | 0.3+ | 0.9+ | 2004 10 23 | 691 | 0.2− | 0.1+ | 2004 12 16 | 691 | 0.3− | 0.2+ |
| 2000 09 20 | 704 | 0.2− | 0.1− | 2004 10 23 | 691 | 0.1− | 0.4+ | 2006 02 01 | 691 | 0.2+ | 0.0 |
| 2000 09 24 | 699 | 0.4+ | 0.4+ | 2004 10 23 | 691 | 0.1− | 0.0 | 2006 02 01 | 691 | 0.1+ | 0.0 |
| 2000 09 24 | 699 | 0.8− | 0.8+ | 2004 11 10 | 691 | 0.2+ | 0.1− | 2006 02 01 | 691 | 0.0 | 0.3+ |
| 2000 09 24 | 699 | 0.2+ | 1.1+ | 2004 11 10 | 691 | 0.1+ | 0.1+ | | | | |

**2004 YG$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 136.26251 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26066444 | $\omega$ | 277.94337 | | −0.93189319 | | −0.34911477 | | |
| $a$ | 2.4270656 | $\Omega$ | 241.67012 | | +0.36096648 | | −0.86578580 | | |
| $e$ | 0.1696355 | $i$ | 6.42224 | | +0.03575299 | | −0.35851614 | | |
| $P$ | 3.78 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 05 | 691 | 0.2− | 0.1− | 2000 12 30 | 704 | 0.5− | 0.8+ | 2005 01 18 | 703 | 1.4− | 0.7− |
| 1996 12 05 | 691 | 0.2− | 0.3− | 2004 12 18 | 704 | 1.0+ | 0.9+ | 2005 01 18 | 703 | 0.5− | 0.8− |
| 1996 12 05 | 691 | 0.1+ | 0.3− | 2004 12 18 | 704 | 0.2+ | 0.4− | 2005 01 18 | 703 | 0.0 | 0.6− |
| 1998 06 27 | 691 | 0.4+ | 1.6− | 2004 12 18 | 704 | 1.2+ | 0.1− | 2005 01 18 | 703 | 0.5− | 0.0 |
| 1998 06 27 | 691 | 0.2− | 0.1+ | 2004 12 18 | 704 | 0.6+ | 0.3− | 2005 02 02 | 703 | 0.0 | 0.6− |
| 1998 06 27 | 691 | 0.3− | 0.2+ | 2005 01 07 | 703 | 0.2− | 0.2+ | 2005 02 02 | 703 | 0.6− | 0.9− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2005 01 07 | 703 | 0.4− | 0.1+ | 2005 02 02 | 703 | 0.9− | 0.6− |
| 1999 10 13 | 645 | 0.1+ | 0.0 | 2005 01 07 | 703 | 1.3− | 1.1− | 2005 02 02 | 703 | 0.8− | 0.5− |
| 1999 10 16 | 645 | 0.0 | 0.0 | 2005 01 07 | 703 | 0.2− | 0.4+ | 2005 03 03 | 703 | (0.7+ | 2.3+) |
| 1999 10 16 | 645 | 0.0 | 0.1− | 2005 01 15 | 699 | 1.0+ | 0.7+ | 2005 03 03 | 703 | 0.9+ | 1.9+ |
| 2000 12 30 | 704 | 2.0+ | 0.9− | 2005 01 15 | 699 | 0.5+ | 0.2− | 2005 03 03 | 703 | 0.6− | 0.1− |
| 2000 12 30 | 704 | 0.4− | 0.3− | 2005 01 15 | 699 | 1.5+ | 0.5+ | 2005 03 03 | 703 | 0.1− | 0.2+ |
| 2000 12 30 | 704 | 0.7+ | 0.2+ | 2005 01 15 | 699 | 0.4− | 0.2− | | | | |

**2004 YH$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 166.09830 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21527451 | $\omega$ | 352.66422 | | −0.10332540 | | −0.99336814 | | |
| $a$ | 2.7572384 | $\Omega$ | 103.25685 | | +0.91518281 | | −0.11480777 | | |
| $e$ | 0.0600927 | $i$ | 2.97010 | | +0.38956935 | | +0.00623752 | | |
| $P$ | 4.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 691 | 0.0 | 0.3+ | 2004 12 20 | G96 | 0.3+ | 0.2− | 2005 02 09 | 699 | (1.2− | 2.0+) |
| 2003 10 20 | 691 | 0.0 | 0.2+ | 2005 01 13 | 691 | 0.3+ | 0.2− | 2005 02 14 | 704 | 0.5− | 0.2+ |
| 2003 10 20 | 691 | 0.4− | 0.2+ | 2005 01 13 | 691 | 0.1+ | 0.0 | 2005 02 14 | 704 | 0.2− | 0.6+ |
| 2003 10 21 | 699 | 0.2+ | 0.1− | 2005 01 13 | 691 | 0.5− | 0.0 | 2005 02 14 | 704 | 0.0 | 0.7+ |
| 2003 10 21 | 699 | 0.2+ | 0.4+ | 2005 02 02 | 691 | 0.0 | 0.0 | 2005 02 14 | 704 | 0.5+ | 0.5+ |
| 2003 10 21 | 699 | (1.1− | 1.6+) | 2005 02 02 | 691 | 0.1− | 0.1+ | 2006 05 24 | 691 | 0.0 | 0.3+ |
| 2003 10 21 | 699 | (4.8− | 0.5−) | 2005 02 02 | 691 | 0.2− | 0.2+ | 2006 05 24 | 691 | 0.1+ | 0.2+ |
| 2004 12 20 | G96 | 0.1+ | 0.1+ | 2005 02 09 | 699 | 0.8+ | 0.5− | 2006 05 24 | 691 | 0.1+ | 0.2+ |
| 2004 12 20 | G96 | 0.2+ | 0.1− | 2005 02 09 | 699 | 1.1+ | 0.2+ | | | | |
| 2004 12 20 | G96 | 0.5+ | 0.2+ | 2005 02 09 | 699 | (1.8+ | 0.6+) | | | | |

**2005 AD$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 119.45338 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26382728 | $\omega$ | 277.12369 | | −0.82148954 | | +0.52247146 | | |
| $a$ | 2.4076291 | $\Omega$ | 294.61785 | | −0.37133425 | | −0.79416938 | | |
| $e$ | 0.5005543 | $i$ | 14.55235 | | −0.43274220 | | −0.31035232 | | |
| $P$ | 3.74 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 06 | 704 | 0.2− | 0.2+ | 2005 01 17 | 704 | 0.6+ | 0.2+ | 2005 03 12 | 448 | 0.1+ | 0.7+ |
| 2005 01 06 | 704 | 1.3− | 0.3− | 2005 01 29 | A13 | 0.8− | 0.1+ | 2005 03 12 | 448 | 1.2− | 0.5− |
| 2005 01 06 | 704 | 0.7− | 0.2+ | 2005 01 29 | A13 | 0.5− | 0.1− | 2005 03 12 | 448 | 0.1+ | 0.8− |
| 2005 01 06 | 704 | 0.1+ | 1.0+ | 2005 01 29 | A13 | 0.5− | 0.1− | 2005 05 01 | 413 | 0.3+ | 0.4+ |
| 2005 01 07 | 704 | 0.7+ | 0.0 | 2005 01 29 | A13 | 0.4− | 0.5− | 2005 05 01 | 413 | 0.1+ | 0.3+ |
| 2005 01 07 | 704 | 0.3+ | 0.3− | 2005 01 29 | A13 | 0.4− | 1.6− | 2005 06 18 | G96 | 0.3+ | 0.4− |
| 2005 01 07 | 704 | 0.0 | 0.3− | 2005 01 29 | A13 | 0.2+ | 0.5− | 2005 06 18 | G96 | 0.1− | 0.3+ |
| 2005 01 08 | 704 | 0.0 | 0.4+ | 2005 02 02 | 704 | 0.7+ | 0.7+ | 2005 06 18 | G96 | 0.0 | 0.1− |
| 2005 01 08 | 704 | 0.1− | 0.5+ | 2005 02 02 | 704 | 0.3+ | 0.4+ | 2005 06 18 | G96 | 0.4− | 0.3+ |
| 2005 01 08 | 704 | 1.3+ | 0.8− | 2005 02 02 | 704 | 0.5− | 0.4− | 2006 09 19 | 291 | 0.6− | 0.3+ |
| 2005 01 08 | 704 | 0.2− | 0.5+ | 2005 02 09 | 118 | 0.0 | 0.2− | 2006 09 19 | 291 | 0.3− | 0.6− |
| 2005 01 17 | 704 | 0.4+ | 0.6+ | 2005 02 09 | 118 | 0.0 | 0.4− | 2006 09 19 | 291 | 0.9+ | 0.2+ |
| 2005 01 17 | 704 | 0.4+ | 0.1+ | 2005 02 09 | 118 | 0.1+ | 0.2+ | | | | |
| 2005 01 17 | 704 | 0.6+ | 0.6+ | 2005 02 09 | 118 | 0.4+ | 0.1+ | | | | |

**2005 AA$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 191.38143 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.37053701 | $\omega$ | 210.88245 | | −0.93530349 | | −0.25375460 | | |
| $a$ | 1.9197661 | $\Omega$ | 312.25655 | | +0.35223935 | | −0.73403968 | | |
| $e$ | 0.0629883 | $i$ | 19.46262 | | −0.03368717 | | −0.62991615 | | |
| $P$ | 2.66 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 06 | 703 | 0.3− | 0.0 | 2005 01 19 | 704 | 0.1+ | 1.3+ | 2005 02 02 | 704 | 1.0+ | 0.7+ |
| 2005 01 06 | 703 | 0.3− | 0.0 | 2005 01 19 | 704 | 0.0 | 0.3+ | 2005 02 02 | 704 | 0.2+ | 0.4+ |
| 2005 01 06 | 703 | 0.4− | 0.6− | 2005 01 19 | 704 | 0.6+ | 0.1− | 2005 02 02 | 704 | 0.4− | 0.5− |
| 2005 01 06 | 703 | 0.0 | 0.0 | 2005 01 20 | 699 | 1.9− | 0.6− | 2005 02 02 | 704 | 0.4+ | 0.6+ |
| 2005 01 07 | 704 | 0.6+ | 1.1+ | 2005 01 20 | 704 | 0.5+ | 0.2+ | 2005 02 09 | 699 | 0.3− | 0.4+ |
| 2005 01 07 | 704 | 0.4+ | 0.4+ | 2005 01 20 | 704 | 0.4+ | 0.1− | 2005 02 09 | 699 | 0.0 | 0.2− |
| 2005 01 07 | 704 | 0.7+ | 1.1+ | 2005 01 20 | 699 | 0.1− | 0.2− | 2005 02 09 | 699 | 0.1+ | 0.7− |
| 2005 01 07 | 704 | 0.1− | 0.3− | 2005 01 20 | 704 | (0.1+ | 3.3−) | 2005 02 09 | 699 | 0.0 | 0.8+ |
| 2005 01 07 | 704 | 0.2− | 1.6+ | 2005 01 20 | 704 | 0.4− | 0.2− | 2006 09 16 | 703 | 0.1− | 0.6− |
| 2005 01 18 | 691 | 0.2− | 0.1− | 2005 01 20 | 699 | 0.8+ | 0.2− | 2006 09 16 | 703 | 0.7+ | 0.6+ |
| 2005 01 18 | 691 | 0.0 | 0.3− | 2005 01 20 | 704 | 0.7− | 0.9− | 2006 09 16 | 703 | 1.1+ | 0.1+ |
| 2005 01 18 | 691 | 0.3− | 0.3− | 2005 01 20 | 699 | 0.3− | 0.5− | 2006 09 16 | 703 | 1.8− | 0.1− |
| 2005 01 19 | 704 | 0.1− | 1.2− | 2005 02 02 | 704 | 1.4+ | 0.2+ | | | | |

**2005 AU$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 210.17226 | | (2000.0) | | | |
| $n$ | 0.24335887 | $\omega$ | 8.48958 | | +0.65473403 | −0.75314755 |
| $a$ | 2.5408046 | $\Omega$ | 40.64616 | | +0.68759282 | +0.55831620 |
| $e$ | 0.1453247 | $i$ | 5.63585 | | +0.31390996 | +0.34792498 |
| $P$ | 4.05 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 18 | 691 | 0.5+ | 0.2− | 2003 07 25 | 644 | 0.6− | 1.0+ | 2006 04 24 | G96 | 0.2− | 0.3− |
| 1998 06 18 | 691 | 0.7− | 1.4+ | 2003 07 25 | 644 | 0.3− | 0.6+ | 2006 04 24 | G96 | 0.5+ | 0.4− |
| 1998 06 18 | 691 | 0.2− | 0.4+ | 2003 07 25 | 644 | 0.4− | 0.7+ | 2006 04 24 | G96 | 0.1− | 0.6− |
| 2001 01 18 | 704 | 1.9+ | 0.7+ | 2003 08 23 | 644 | 0.0 | 0.9+ | 2006 04 24 | G96 | 0.3+ | 0.2− |
| 2001 01 18 | 704 | 0.8+ | 0.5+ | 2003 08 23 | 644 | 0.1− | 0.8+ | 2006 05 03 | G96 | 0.4− | 0.2− |
| 2001 01 18 | 704 | 0.9+ | 0.7+ | 2003 08 23 | 644 | 0.0 | 0.8+ | 2006 05 03 | G96 | 0.5− | 0.4− |
| 2001 01 18 | 704 | 0.0 | 0.6+ | 2005 01 06 | 703 | 0.1− | 0.7+ | 2006 05 03 | G96 | 0.7− | 0.0 |
| 2001 01 18 | 704 | 0.8+ | 1.1+ | 2005 01 06 | 703 | 0.7+ | 0.1− | 2006 05 03 | G96 | 0.1− | 0.3− |
| 2001 02 02 | 699 | 0.9+ | 0.4− | 2005 01 06 | 703 | 0.7− | 0.7+ | 2006 05 20 | 691 | 0.4+ | 0.2+ |
| 2001 02 02 | 699 | 0.7+ | 1.7− | 2005 01 06 | 703 | 1.2− | 0.4+ | 2006 05 20 | 691 | 0.6+ | 0.1+ |
| 2001 02 02 | 699 | 0.0 | 0.6− | 2005 01 07 | 704 | 1.2+ | 0.8+ | 2006 05 20 | 691 | 0.5+ | 0.1− |
| 2001 02 02 | 699 | 0.5− | 0.1− | 2005 01 07 | 704 | 0.3− | 2.0+ | 2006 06 02 | 691 | 0.1+ | 0.2+ |
| 2001 02 16 | 704 | 0.2− | 0.6− | 2005 01 07 | 704 | 0.6− | 0.2+ | 2006 06 02 | 691 | 0.0 | 0.1+ |
| 2001 02 16 | 704 | 0.2+ | 0.0 | 2005 01 07 | 704 | 0.7− | 0.3+ | 2006 06 02 | 691 | 0.2+ | 0.4+ |
| 2001 02 16 | 704 | 0.1+ | 0.3+ | 2005 01 07 | 704 | 0.3+ | 0.7+ | 2006 06 02 | G96 | 0.3− | 0.2− |
| 2001 02 16 | 704 | 0.1+ | 0.2+ | 2005 01 16 | 704 | 0.0 | 0.3+ | 2006 06 02 | G96 | 0.2− | 0.3− |
| 2001 02 16 | 704 | 0.1− | 0.3− | 2005 01 16 | 704 | 0.9− | 0.4+ | 2006 06 02 | G96 | 0.6− | 0.7− |
| 2002 05 10 | 291 | 0.2− | 0.5− | 2005 01 16 | 704 | 0.2− | 0.2+ | 2006 06 02 | G96 | 0.6− | 0.2− |
| 2002 05 10 | 291 | 0.2− | 0.2+ | 2005 01 16 | 704 | 0.4− | 0.4− | | | | |
| 2002 05 10 | 291 | 0.1− | 0.4− | 2005 01 16 | 704 | 0.5− | 0.6− | | | | |

**2005 AY$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 175.56482 | | (2000.0) | | | |
| $n$ | 0.22891338 | $\omega$ | 307.84400 | | +0.43912739 | −0.89733718 |
| $a$ | 2.6466018 | $\Omega$ | 116.05299 | | +0.83897011 | +0.39197375 |
| $e$ | 0.2251914 | $i$ | 2.81968 | | +0.32139740 | +0.20283631 |
| $P$ | 4.31 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.1+ | 0.5+ | 2005 01 06 | 704 | 1.3− | 0.4+ | 2005 01 17 | 704 | 0.0 | 0.1− |
| 1999 09 14 | 704 | 0.4+ | 0.3− | 2005 01 06 | 704 | 1.1− | 0.7+ | 2005 01 17 | 704 | 0.8+ | 0.1+ |
| 1999 09 14 | 704 | 0.8− | 0.0 | 2005 01 06 | 704 | (0.6− | 1.7+) | 2005 01 17 | 704 | 0.2− | 0.6+ |
| 1999 09 14 | 704 | 0.9+ | 0.2+ | 2005 01 06 | 704 | 1.1− | 1.2+ | 2005 01 17 | 704 | 0.2+ | 0.2− |
| 1999 09 14 | 704 | 1.3− | 0.5+ | 2005 01 11 | 704 | 0.0 | 0.5− | 2005 02 02 | 704 | 0.6+ | 0.2− |
| 1999 09 14 | 704 | 1.0+ | 0.8+ | 2005 01 11 | 704 | 0.5− | 1.4+ | 2005 02 02 | 704 | 0.2− | 0.4+ |
| 1999 09 14 | 704 | 0.7− | 0.4− | 2005 01 11 | 704 | 0.7− | 0.1+ | 2005 02 02 | 704 | 0.3+ | 0.4− |
| 2003 08 04 | 704 | 0.2+ | 0.7+ | 2005 01 11 | 704 | 0.6− | 0.4+ | 2005 02 02 | 704 | 0.3+ | 0.0 |
| 2003 08 04 | 704 | 0.6− | 1.1+ | 2005 01 15 | 704 | 0.9+ | 0.5+ | 2005 02 02 | 704 | 0.4+ | 0.0 |
| 2003 08 04 | 704 | 0.5− | 1.7+ | 2005 01 15 | 704 | 1.1+ | 0.1− | 2006 05 07 | 691 | 0.5+ | 0.6− |
| 2004 11 27 | 644 | 0.0 | 0.3+ | 2005 01 15 | 704 | 0.2+ | 0.9+ | 2006 05 07 | 691 | 0.4− | 0.3+ |
| 2004 11 27 | 644 | 0.4+ | 0.3+ | 2005 01 15 | 704 | 0.2+ | 0.1+ | 2006 05 07 | 691 | 0.6+ | 0.3+ |
| 2004 11 27 | 644 | 0.1+ | 0.3+ | 2005 01 15 | 704 | 1.1+ | 0.1+ | 2006 05 24 | G96 | 0.6− | 0.4+ |
| 2004 12 14 | 704 | 0.2+ | 1.3− | 2005 01 17 | 704 | 0.3+ | 0.3+ | 2006 05 24 | G96 | 0.2− | 0.5+ |
| 2004 12 14 | 704 | 0.6+ | 0.7− | 2005 01 17 | 704 | 0.2− | 0.2+ | 2006 05 24 | G96 | 0.2− | 0.5+ |
| 2004 12 14 | 704 | 0.1+ | 0.8− | 2005 01 17 | 704 | 0.0 | 0.2+ | 2006 05 24 | G96 | 1.2− | 0.2+ |
| 2004 12 14 | 704 | 0.5+ | 0.4− | 2005 01 17 | 704 | 0.1+ | 0.2− | | | | |
| 2005 01 06 | 704 | 1.5− | 0.3+ | 2005 01 17 | 704 | 0.2+ | 0.2+ | | | | |

**2005 AL$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 111.06512 | | (2000.0) | | | |
| $n$ | 0.21497374 | $\omega$ | 214.11869 | | −0.77867708 | −0.61713805 |
| $a$ | 2.7598095 | $\Omega$ | 287.36698 | | +0.59886010 | −0.67724631 |
| $e$ | 0.1949255 | $i$ | 6.80862 | | +0.18715925 | −0.40059714 |
| $P$ | 4.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 608 | 0.0 | 0.9− | 2005 01 06 | 704 | 0.3+ | 1.2− | 2005 01 31 | 704 | 0.5− | 0.0 |
| 2001 03 29 | 608 | 0.5− | 1.0− | 2005 01 06 | 704 | 0.1− | 0.3− | 2005 01 31 | 704 | 0.2+ | 0.2+ |
| 2001 03 29 | 608 | 0.3− | 0.4− | 2005 01 06 | 704 | 0.6+ | 0.5− | 2005 01 31 | 704 | 1.2+ | 1.3+ |
| 2003 09 19 | 691 | 0.4+ | 0.0 | 2005 01 11 | 704 | 0.1+ | 0.3+ | 2005 02 01 | 703 | 0.4− | 0.3− |
| 2003 09 19 | 691 | 0.2− | 0.2− | 2005 01 11 | 704 | 0.4+ | 0.6− | 2005 02 01 | 703 | 0.9− | 0.1+ |
| 2003 09 19 | 691 | 0.1− | 0.3− | 2005 01 11 | 704 | 0.1− | 0.6− | 2005 02 01 | 703 | 1.3− | 0.1+ |
| 2004 12 14 | 704 | 0.5+ | 1.2+ | 2005 01 11 | 704 | 0.1− | 1.0− | 2005 02 01 | 703 | 0.3− | 0.2+ |
| 2004 12 14 | 704 | 0.1+ | 0.5− | 2005 01 13 | 291 | 0.0 | 0.0 | 2005 02 02 | 704 | 0.6− | 0.8+ |
| 2004 12 14 | 704 | 0.3− | 0.2− | 2005 01 13 | 291 | 0.2+ | 0.3− | 2005 02 02 | 704 | 1.2− | 0.7+ |
| 2004 12 14 | 704 | 0.7+ | 0.2+ | 2005 01 13 | 291 | 0.5− | 0.2+ | 2005 02 02 | 704 | 0.8− | 0.9+ |
| 2004 12 14 | 704 | 1.1+ | 0.6− | 2005 01 15 | 704 | 0.4+ | 1.4+ | 2005 02 02 | 704 | 0.4− | 0.7+ |
| 2004 12 14 | 703 | 0.3+ | 1.0+ | 2005 01 15 | 704 | 1.0− | 0.0 | 2005 03 13 | G96 | 0.4− | 0.0 |
| 2004 12 14 | 703 | 0.4+ | 0.8− | 2005 01 15 | 704 | 0.3+ | 0.9+ | 2005 03 13 | G96 | 0.4− | 0.2− |
| 2004 12 14 | 703 | 0.5+ | 0.4− | 2005 01 15 | 704 | 0.1+ | 1.1+ | 2005 03 13 | G96 | 0.4− | 0.1− |
| 2004 12 14 | 703 | 0.0 | 0.7− | 2005 01 15 | 704 | 0.8+ | 0.8+ | 2005 03 13 | G96 | 0.4− | 0.0 |
| 2004 12 21 | 703 | 0.7− | 0.1− | 2005 01 17 | 704 | 1.0+ | 0.1− | 2005 03 17 | G96 | 0.3− | 0.4+ |
| 2004 12 21 | 703 | 0.8− | 0.6+ | 2005 01 17 | 704 | 1.4+ | 0.4− | 2005 03 17 | G96 | 0.6+ | 0.2− |
| 2004 12 21 | 703 | 0.8− | 1.7− | 2005 01 17 | 704 | 0.2+ | 0.4− | 2005 03 17 | G96 | 0.0 | 0.0 |
| 2004 12 21 | 703 | (0.2+ | 2.8−) | 2005 01 17 | 704 | 0.2+ | 0.1− | 2005 03 17 | G96 | 0.5+ | 0.5+ |
| 2005 01 06 | 704 | 0.8+ | 1.4− | 2005 01 17 | 704 | 0.0 | 1.1− | | | | |

**2005 AG$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 190.85266 | | (2000.0) | | | |
| $n$ | 0.26826611 | $\omega$ | 288.95827 | | +0.01665099 | −0.99930619 |
| $a$ | 2.3809970 | $\Omega$ | 159.99952 | | +0.95009641 | +0.00543261 |
| $e$ | 0.1722935 | $i$ | 5.58969 | | +0.31151174 | +0.03684591 |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 691 | 0.2− | 0.7− | 2000 12 19 | 608 | 0.0 | 0.1− | 2005 01 13 | 704 | 0.7+ | 0.3+ |
| 1998 03 25 | 691 | 0.2+ | 0.7− | 2000 12 19 | 608 | 0.2− | 0.1− | 2005 01 13 | 704 | 0.5+ | 0.1− |
| 1998 03 25 | 691 | 0.3− | 0.5+ | 2000 12 19 | 608 | 0.1+ | 0.2− | 2005 01 13 | 704 | 0.6+ | 0.1+ |
| 2000 11 20 | 699 | 0.1+ | 1.1+ | 2000 12 19 | 608 | 0.5+ | 0.1− | 2005 02 09 | 699 | 0.3+ | 0.2+ |
| 2000 11 20 | 704 | 0.0 | 0.1+ | 2000 12 19 | 608 | 0.2− | 0.6− | 2005 02 09 | 699 | 0.3− | 0.0 |
| 2000 11 20 | 699 | 0.7− | 1.3+ | 2000 12 19 | 608 | 0.1+ | 0.4− | 2005 02 09 | 699 | 0.3− | 0.4+ |
| 2000 11 20 | 704 | 0.1+ | 0.1+ | 2002 03 23 | 691 | 0.3+ | 0.8+ | 2005 02 09 | 699 | 0.0 | 0.1+ |
| 2000 11 20 | 699 | 0.9− | 1.4+ | 2002 03 23 | 691 | 0.1+ | 0.4+ | 2005 03 09 | G96 | 0.1− | 0.1− |
| 2000 11 20 | 704 | 0.9− | 0.1+ | 2002 03 23 | 691 | 0.2+ | 1.4+ | 2005 03 09 | G96 | 0.1− | 0.3− |
| 2000 11 20 | 699 | 0.2− | 0.8+ | 2005 01 07 | 703 | 0.4− | 0.4− | 2005 03 09 | G96 | 0.1− | 0.4− |
| 2000 12 03 | 608 | 0.5+ | 0.5+ | 2005 01 07 | 703 | 0.8− | 0.5+ | 2005 03 09 | G96 | 0.2− | 0.3− |
| 2000 12 03 | 608 | 0.4+ | 0.2+ | 2005 01 07 | 703 | 0.2+ | 0.3− | | | | |
| 2000 12 03 | 608 | 0.3+ | 0.5+ | 2005 01 07 | 703 | 0.1+ | 0.1+ | | | | |

**2005 AZ$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 195.36777 | | (2000.0) | | | |
| $n$ | 0.23251845 | $\omega$ | 304.86379 | | +0.36467135 | −0.90170292 |
| $a$ | 2.6191745 | $\Omega$ | 122.10030 | | +0.91847909 | +0.30735482 |
| $e$ | 0.1621894 | $i$ | 15.91323 | | +0.15300641 | +0.30408035 |
| $P$ | 4.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 22 | 644 | 0.1− | 1.1+ | 2005 01 07 | 703 | 0.2+ | 0.2+ | 2005 02 09 | G96 | 0.1− | 0.2− |
| 2003 10 22 | 644 | 0.3− | 0.7+ | 2005 01 07 | 703 | 0.3− | 0.1+ | 2005 02 09 | G96 | 0.2+ | 0.2− |
| 2003 10 22 | 644 | 0.0 | 0.4+ | 2005 01 07 | 703 | 0.2+ | 0.9+ | 2005 02 09 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 20 | G96 | 0.3− | 0.2+ | 2005 01 07 | 703 | 0.3+ | 0.6− | 2005 02 09 | G96 | 0.1+ | 0.1− |
| 2004 12 20 | G96 | 0.2− | 0.3− | 2005 01 13 | 691 | 0.1+ | 0.4+ | 2005 03 01 | 703 | 0.2+ | 0.4+ |
| 2004 12 20 | G96 | 0.3− | 0.5− | 2005 01 13 | 691 | 0.2+ | 0.2+ | 2005 03 01 | 703 | 1.1− | 0.5− |
| 2004 12 20 | G96 | 0.3− | 0.3− | 2005 01 13 | 691 | 0.1+ | 0.4+ | 2005 03 01 | 703 | 0.5+ | 0.9− |
| 2005 01 07 | 704 | 0.1− | 0.1+ | 2005 02 01 | 703 | 1.4+ | 1.0− | 2005 03 01 | 703 | 0.5− | 0.4+ |
| 2005 01 07 | 704 | 0.5+ | 0.3− | 2005 02 01 | 703 | 1.2− | 0.7− | 2006 04 30 | 691 | 0.1+ | 0.2− |
| 2005 01 07 | 704 | 1.1+ | 0.6+ | 2005 02 01 | 703 | 0.4− | 0.3+ | 2006 04 30 | 691 | 0.1− | 0.4+ |
| 2005 01 07 | 704 | 0.4− | 0.7+ | 2005 02 01 | 703 | 0.7− | 0.4− | 2006 04 30 | 691 | 0.1+ | 0.2+ |

### 2005 $AC_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.54211 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17232745 | $\omega$ | 70.92365 | | −0.69480007 | | −0.68278817 |
| $a$ | 3.1981567 | $\Omega$ | 65.27824 | | +0.53009678 | | −0.69850297 |
| $e$ | 0.1148216 | $i$ | 14.40340 | | +0.48605583 | | −0.21422865 |
| $P$ | 5.72 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 699 | 1.0+ | 0.6+ | 2005 01 15 | 699 | 0.7+ | 0.0 | 2005 03 08 | 703 | 0.7+ | 0.3− |
| 2000 04 07 | 699 | 0.8− | 0.4− | 2005 01 15 | 699 | 0.3+ | 0.5+ | 2005 03 08 | 703 | 0.8− | 0.5− |
| 2000 04 07 | 699 | 0.6+ | 0.9− | 2005 01 31 | 704 | 0.2+ | 0.4− | 2005 03 08 | 703 | 0.4− | 0.6− |
| 2000 04 07 | 699 | 0.5− | 1.2+ | 2005 01 31 | 704 | 0.6− | 0.1+ | 2005 03 14 | 703 | 0.3− | 1.3+ |
| 2005 01 09 | 703 | 0.1+ | 0.3− | 2005 01 31 | 704 | 0.1+ | 0.1− | 2005 03 14 | 703 | 0.5+ | 0.9− |
| 2005 01 09 | 703 | 0.4+ | 0.7− | 2005 02 14 | 704 | 0.1− | 0.0 | 2005 03 14 | 703 | (2.4− | 0.3+) |
| 2005 01 09 | 703 | 0.2+ | 0.8+ | 2005 02 14 | 704 | 0.4− | 0.3+ | 2005 03 14 | 703 | 0.2− | 0.4− |
| 2005 01 09 | 703 | 0.5− | 0.5+ | 2005 02 14 | 704 | 0.5+ | 0.2+ | 2006 04 21 | 691 | 0.1− | 0.1+ |
| 2005 01 15 | 699 | 0.2− | 0.4− | 2005 02 14 | 704 | 0.5− | 1.2+ | 2006 04 21 | 691 | 0.1+ | 0.0 |
| 2005 01 15 | 699 | 0.1− | 0.1− | 2005 03 08 | 703 | 0.5+ | 0.7− | 2006 04 21 | 691 | 0.0 | 0.2− |

### 2005 $AN_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.12356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23042853 | $\omega$ | 186.96177 | | −0.93324301 | | −0.30110722 |
| $a$ | 2.6349875 | $\Omega$ | 332.85643 | | +0.34682952 | | −0.61302398 |
| $e$ | 0.1425296 | $i$ | 25.43463 | | +0.09363099 | | −0.73043551 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 608 | 0.3− | 0.6− | 2005 01 17 | 704 | 0.4− | 0.4+ | 2005 03 09 | 703 | 0.6+ | 0.2− |
| 2001 03 24 | 608 | 0.2− | 0.1+ | 2005 01 17 | 704 | 0.3+ | 0.4+ | 2005 03 09 | 703 | 0.2− | 1.1− |
| 2001 03 24 | 608 | 0.6− | 0.5− | 2005 01 17 | 704 | 0.1+ | 0.2+ | 2005 03 12 | 699 | 0.9− | 0.2− |
| 2003 10 18 | 644 | 0.2+ | 0.0 | 2005 01 17 | 704 | 0.1− | 0.0 | 2005 03 12 | 699 | 0.3+ | 1.2+ |
| 2003 10 18 | 644 | 0.1− | 0.1− | 2005 03 01 | 703 | 0.7− | 0.1− | 2005 03 12 | 699 | 0.4− | 0.2− |
| 2003 10 18 | 644 | 0.1+ | 0.2− | 2005 03 01 | 703 | 0.2− | 0.3+ | 2005 03 12 | 699 | 1.1− | 0.3+ |
| 2005 01 09 | 703 | 0.8− | 0.2+ | 2005 03 01 | 703 | 0.5− | 0.5+ | 2005 03 13 | 691 | 0.3+ | 0.0 |
| 2005 01 09 | 703 | 0.5− | 0.9− | 2005 03 01 | 703 | 0.4− | 0.1+ | 2005 03 13 | 691 | 0.2+ | 0.4− |
| 2005 01 09 | 703 | 0.3+ | 0.2+ | 2005 03 04 | 704 | 1.4+ | 0.5− | 2005 03 13 | 691 | 0.4+ | 0.1− |
| 2005 01 09 | 703 | 0.4− | 0.2− | 2005 03 04 | 704 | 0.5+ | 0.1+ | 2005 03 16 | 703 | 0.3+ | 0.8+ |
| 2005 01 16 | 703 | 0.7− | 0.1− | 2005 03 04 | 704 | 1.1+ | 0.7+ | 2005 03 16 | 703 | 0.3− | 0.9− |
| 2005 01 16 | 703 | 0.7− | 0.2+ | 2005 03 04 | 704 | 1.2+ | 1.1+ | 2005 03 16 | 703 | 0.0 | 0.1− |
| 2005 01 16 | 703 | 1.3− | 0.8+ | 2005 03 09 | 703 | 0.1+ | 0.2+ | 2005 03 16 | 703 | 0.0 | 0.3+ |
| 2005 01 16 | 703 | 0.0 | 0.5− | 2005 03 09 | 703 | 0.3+ | 0.2+ | | | | |

### 2005 $AW_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.65504 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37997264 | $\omega$ | 248.10818 | | −0.96225649 | | +0.13117704 |
| $a$ | 1.8878515 | $\Omega$ | 298.71808 | | +0.00670999 | | −0.86446172 |
| $e$ | 0.0532638 | $i$ | 15.77655 | | −0.27206143 | | −0.48528190 |
| $P$ | 2.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 13 | 699 | 0.0 | 1.2− | 2005 01 15 | 699 | 0.9+ | 0.1+ | 2005 02 09 | 704 | 1.2+ | 0.1+ |
| 2004 12 13 | 699 | 0.5+ | 0.1− | 2005 01 17 | 106 | 1.1− | 0.6− | 2005 03 03 | 703 | 0.8− | 0.0 |
| 2004 12 13 | 699 | (1.7− | 1.7−) | 2005 01 17 | 106 | 0.6+ | 0.7− | 2005 03 03 | 703 | 0.5− | 0.7− |
| 2004 12 13 | 699 | 0.4+ | 0.4+ | 2005 01 17 | 106 | 0.1− | 0.2− | 2005 03 03 | 703 | (1.9− | 0.8−) |
| 2005 01 06 | 704 | 0.2+ | 0.1− | 2005 01 17 | 691 | 0.2− | 0.1− | 2005 03 03 | 703 | 0.4− | 0.7− |
| 2005 01 06 | 704 | 0.1+ | 0.2+ | 2005 01 17 | 691 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.3− | 0.5− |
| 2005 01 06 | 704 | 0.3− | 0.4+ | 2005 01 17 | 691 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.5+ |
| 2005 01 06 | 704 | 0.3+ | 0.3+ | 2005 02 02 | 703 | (1.0− | 2.2+) | 2006 09 17 | 703 | 0.5− | 0.4− |
| 2005 01 06 | 704 | 0.3+ | 0.2+ | 2005 02 02 | 704 | 0.7− | 0.5+ | 2006 10 20 | 703 | 0.3− | 0.1− |
| 2005 01 11 | 704 | 0.2− | 0.0 | 2005 02 02 | 703 | 0.7− | 0.4+ | 2006 10 20 | 703 | 1.1− | 0.6− |
| 2005 01 11 | 704 | 0.8+ | 0.6+ | 2005 02 02 | 703 | (2.6− | 1.3+) | 2006 10 20 | 703 | 0.8+ | 0.7+ |
| 2005 01 11 | 704 | 0.2− | 0.2+ | 2005 02 02 | 704 | 0.1− | 0.4+ | 2006 10 20 | 703 | 0.0 | 0.6− |
| 2005 01 11 | 704 | 0.4+ | 0.2− | 2005 02 02 | 703 | 0.9− | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2005 01 11 | 704 | 0.2− | 0.0 | 2005 02 02 | 704 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.5+ | 0.0 |
| 2005 01 15 | 699 | 0.2− | 0.2+ | 2005 02 02 | 704 | 0.1+ | 0.3− | 2006 11 15 | 703 | 1.0+ | 0.8+ |
| 2005 01 15 | 699 | 0.6+ | 0.6+ | 2005 02 09 | 704 | 0.7+ | 0.1− | 2006 11 15 | 703 | (2.0+ | 0.7+) |
| 2005 01 15 | 699 | 0.5+ | 0.1+ | 2005 02 09 | 704 | 1.0+ | 0.5+ | | | | |

### 2005 $AT_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.20519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17806511 | $\omega$ | 98.93064 | | +0.92803518 | | −0.34382743 |
| $a$ | 3.1290811 | $\Omega$ | 281.27932 | | +0.25763456 | | +0.87031720 |
| $e$ | 0.0888987 | $i$ | 8.40197 | | +0.26902627 | | +0.35260556 |
| $P$ | 5.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 644 | 0.0 | 0.2− | 2003 11 02 | 691 | 0.0 | 0.2− | 2005 01 15 | 704 | 0.5− | 0.4− |
| 2003 10 20 | 644 | 0.0 | 0.1− | 2003 11 02 | 691 | 0.1− | 0.2− | 2005 01 15 | 704 | 0.6− | 0.8− |
| 2003 10 20 | 644 | 0.3+ | 0.3− | 2004 12 15 | 599 | 0.1+ | 0.4+ | 2005 01 15 | 704 | 0.7− | 0.1+ |
| 2003 10 29 | 699 | 0.1− | 0.6+ | 2004 12 15 | 599 | 0.1+ | 0.1− | 2005 01 15 | 704 | 1.2− | 0.8+ |
| 2003 10 29 | 699 | (0.1+ | 2.2+) | 2005 01 13 | 691 | 0.1− | 0.1− | 2005 01 19 | 691 | 0.5+ | 0.0 |
| 2003 10 29 | 699 | 0.3+ | 1.8+ | 2005 01 13 | 691 | 0.0 | 0.3− | 2005 01 19 | 691 | 0.2+ | 0.2+ |
| 2003 10 29 | 699 | 0.9+ | 0.6+ | 2005 01 13 | 691 | 0.1− | 0.2+ | 2005 01 19 | 691 | 0.1+ | 0.0 |
| 2003 11 02 | 691 | 0.2− | 0.2− | 2005 01 15 | 704 | (2.2− | 0.2−) | | | | |

### 2005 $AF_{35}$ = 2006 $HV_{104}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.64907 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22767375 | $\omega$ | 173.78247 | | +0.39196123 | | +0.88607016 |
| $a$ | 2.6561998 | $\Omega$ | 119.05311 | | −0.85579407 | | +0.44989274 |
| $e$ | 0.1420477 | $i$ | 16.44544 | | −0.33761354 | | −0.11169692 |
| $P$ | 4.33 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 704 | 1.1+ | 0.1+ | 2002 06 16 | 704 | 0.6+ | 1.1+ | 2005 01 16 | 691 | 0.1− | 0.0 |
| 2002 05 07 | 704 | 0.9+ | 0.2− | 2003 09 01 | 704 | 1.2− | 1.1+ | 2005 01 16 | 691 | 0.2− | 0.1+ |
| 2002 05 07 | 704 | 0.9+ | 0.8+ | 2003 09 01 | 704 | 1.5− | 1.1+ | 2005 01 17 | 704 | 0.3+ | 0.8+ |
| 2002 05 07 | 704 | 1.0+ | 0.0 | 2003 09 01 | 704 | 0.4− | 1.0+ | 2005 01 17 | 704 | 0.1+ | 0.0 |
| 2002 05 07 | 704 | 0.6+ | 1.0+ | 2003 09 01 | 704 | 0.8− | 0.5− | 2005 01 17 | 704 | 0.1+ | 0.0 |
| 2002 05 15 | 704 | 1.2+ | 0.5+ | 2003 09 17 | 704 | 0.3+ | 0.7+ | 2005 01 17 | 704 | 0.4− | 0.8+ |
| 2002 05 15 | 704 | 1.0+ | 0.4+ | 2003 09 17 | 704 | 0.6+ | 1.4+ | 2006 01 05 | 291 | 0.5+ | 0.2+ |
| 2002 05 15 | 704 | 0.9+ | 0.1+ | 2003 09 17 | 704 | 0.3− | 1.2+ | 2006 01 05 | 291 | 0.5+ | 0.2+ |
| 2002 05 15 | 704 | 1.0+ | 0.2− | 2003 09 17 | 704 | 2.0− | 0.4+ | 2006 01 05 | 291 | 0.6+ | 0.3+ |
| 2002 05 15 | 704 | 0.5+ | 0.2+ | 2003 09 28 | 608 | 0.3− | 0.1− | 2006 03 04 | 703 | 0.4− | 0.3+ |
| 2002 05 29 | 644 | 1.1+ | 0.4+ | 2003 09 28 | 608 | 0.0 | 0.7+ | 2006 03 04 | 703 | 0.3+ | 0.3+ |
| 2002 05 29 | 644 | 0.8+ | 0.5+ | 2003 09 28 | 608 | 0.5− | 0.3+ | 2006 03 04 | 703 | 1.5− | 0.6+ |
| 2002 05 29 | 644 | 1.0+ | 0.5+ | 2003 10 26 | 699 | 0.4− | 1.6− | 2006 03 04 | 703 | 0.3+ | 0.3+ |
| 2002 06 03 | 704 | (4.1− | 0.6−) | 2003 10 26 | 699 | 0.7+ | 0.2− | 2006 03 25 | 703 | 0.8+ | 0.9− |
| 2002 06 03 | 704 | (3.3− | 0.1−) | 2003 10 26 | 699 | 0.8+ | 0.9− | 2006 03 25 | 703 | 0.1− | 0.0 |
| 2002 06 03 | 704 | 2.7− | 0.1− | 2003 10 26 | 699 | 0.5+ | 0.2− | 2006 03 25 | 703 | 0.3− | 1.4− |
| 2002 06 03 | 704 | (3.2− | 0.1+) | 2003 11 26 | 704 | 0.1− | 0.9+ | 2006 04 19 | 704 | 0.7+ | 0.1− |
| 2002 06 03 | 704 | (3.2− | 0.3+) | 2003 11 26 | 704 | 0.0 | 1.4+ | 2006 04 19 | 704 | 1.3+ | 0.6+ |
| 2002 06 07 | 644 | 0.8+ | 0.4+ | 2003 11 26 | 704 | 0.3+ | 1.5+ | 2006 04 19 | 704 | 0.0 | 1.5+ |
| 2002 06 07 | 644 | 0.7+ | 0.3+ | 2003 11 26 | 704 | 0.2+ | 0.8+ | 2006 04 19 | 704 | 0.1− | 0.8+ |
| 2002 06 07 | 644 | 0.8+ | 0.4+ | 2005 01 13 | 704 | 0.7+ | 0.4+ | 2006 05 04 | 703 | 1.6− | 0.0 |
| 2002 06 16 | 704 | 1.3+ | 1.4+ | 2005 01 13 | 704 | 0.8+ | 0.2− | 2006 05 04 | 703 | 1.6− | 0.8− |
| 2002 06 16 | 704 | 1.4+ | 0.8− | 2005 01 13 | 704 | 0.1− | 0.6+ | 2006 05 04 | 703 | 1.1− | 0.4− |
| 2002 06 16 | 704 | 1.3+ | 0.5+ | 2005 01 16 | 691 | 0.2− | 0.2+ | 2006 05 04 | 703 | 0.2− | 0.3+ |

**2005 AV$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.03708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23855646 | $\omega$ | 51.49936 | | +0.88531020 | +0.39993900 | |
| $a$ | 2.5747907 | $\Omega$ | 283.77640 | | −0.46495178 | +0.76877594 | |
| $e$ | 0.1417038 | $i$ | 14.13747 | | +0.00676043 | +0.49903141 | |
| $P$ | 4.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.7− | 1.1− | 2003 09 15 | 644 | 0.6− | 0.3+ | 2004 12 20 | G96 | 0.2− | 0.5− |
| 1999 10 14 | 704 | 0.8+ | 0.4− | 2003 09 15 | 644 | 0.1+ | 0.2− | 2004 12 20 | G96 | 0.1+ | 0.2+ |
| 1999 10 14 | 704 | 0.2− | 0.8+ | 2003 09 22 | 704 | 0.3− | 0.1+ | 2004 12 20 | G96 | 0.2− | 0.0 |
| 1999 10 14 | 704 | 0.3+ | 0.1− | 2003 09 22 | 704 | 0.5− | 0.3− | 2004 12 20 | G96 | 0.2− | 0.1− |
| 2003 07 28 | 644 | 0.2− | 0.6+ | 2003 09 22 | 704 | 0.1− | 0.3+ | 2005 01 13 | 703 | 1.4− | 1.0+ |
| 2003 07 28 | 644 | 0.2− | 0.5+ | 2003 09 22 | 704 | 0.2+ | 0.1+ | 2005 01 13 | 703 | 0.2+ | 0.3− |
| 2003 07 28 | 644 | 0.1− | 0.5+ | 2003 09 22 | 704 | 0.1− | 0.1− | 2005 01 13 | 703 | 0.9− | 0.4− |
| 2003 09 15 | 644 | 0.4− | 0.0 | 2003 09 28 | 699 | 0.9+ | 0.4− | 2005 01 13 | 703 | 0.7− | 0.5+ |
| 2003 09 15 | 644 | 0.2− | 0.2+ | 2003 09 28 | 699 | 0.6+ | 1.0+ | 2005 01 16 | 691 | 0.2+ | 0.0 |
| 2003 09 15 | 644 | 0.5− | 0.2+ | 2003 09 28 | 699 | 0.6+ | 0.2− | 2005 01 16 | 691 | 0.4+ | 0.1+ |
| 2003 09 15 | 644 | 0.2+ | 0.1+ | 2003 09 28 | 699 | 0.1+ | 1.1− | 2005 01 16 | 691 | 0.3+ | 0.0 |

**2005 AO$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.39919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29396119 | $\omega$ | 83.73640 | | +0.02799007 | −0.99956313 | |
| $a$ | 2.2401446 | $\Omega$ | 4.69117 | | +0.86510185 | +0.01946507 | |
| $e$ | 0.1879664 | $i$ | 6.66497 | | +0.50081468 | +0.02224090 | |
| $P$ | 3.35 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 291 | 0.2− | 0.2− | 2002 04 04 | 644 | 0.8+ | 0.4+ | 2005 01 15 | 703 | 0.5− | 0.4− |
| 2002 03 21 | 291 | 0.2− | 0.1− | 2004 12 22 | 703 | 0.4− | 0.7− | 2005 01 15 | 703 | 0.6− | 0.1+ |
| 2002 03 21 | 291 | 0.2− | 0.1− | 2004 12 22 | 703 | 0.9− | 0.8− | 2005 01 16 | 699 | (2.7+ | 0.9+) |
| 2002 03 21 | 599 | 0.0 | 0.3− | 2004 12 22 | 703 | 0.3+ | 0.7− | 2005 01 16 | 699 | 0.2+ | 0.3+ |
| 2002 03 21 | 599 | 0.2+ | 0.1+ | 2004 12 22 | 703 | 0.1+ | 0.8+ | 2005 01 16 | 699 | 1.4+ | 0.6+ |
| 2002 04 04 | 644 | 0.5+ | 0.6+ | 2005 01 15 | 703 | 0.2− | 0.1+ | 2005 01 16 | 699 | 1.5+ | 0.6+ |
| 2002 04 04 | 644 | 0.5+ | 0.4+ | 2005 01 15 | 703 | 1.1− | 0.3+ | | | | |

**2005 AT$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.56906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20503927 | $\omega$ | 52.00641 | | −0.86332569 | +0.49909843 | |
| $a$ | 2.8482494 | $\Omega$ | 157.63364 | | −0.50223463 | −0.83530837 | |
| $e$ | 0.6167431 | $i$ | 11.31017 | | −0.04928611 | −0.23056603 | |
| $P$ | 4.81 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 20 | 699 | 0.3+ | 0.5+ | 2005 03 01 | 379 | 0.0 | 0.5+ | 2005 04 02 | A56 | 0.9− | 0.6+ |
| 2004 12 20 | 699 | 0.1− | 0.1+ | 2005 03 01 | 084 | 0.0 | 0.3+ | 2005 04 02 | A56 | 0.5+ | 0.0 |
| 2004 12 20 | 699 | 0.2− | 0.6+ | 2005 03 01 | 084 | 0.3+ | 0.5− | 2005 04 03 | 084 | 0.5− | 0.1+ |
| 2004 12 20 | 699 | 0.9− | 0.3+ | 2005 03 01 | A35 | 0.2+ | 0.4+ | 2005 04 03 | 084 | 0.0 | 0.3+ |
| 2005 01 15 | 699 | 0.5+ | 0.1− | 2005 03 01 | A35 | 0.3+ | 0.4+ | 2005 04 04 | 379 | 0.3+ | 0.2+ |
| 2005 01 15 | 699 | 0.3+ | 0.5+ | 2005 03 01 | A35 | 0.3+ | 0.4+ | 2005 04 04 | 379 | 0.2+ | 0.5+ |
| 2005 01 15 | 699 | 0.5+ | 1.8− | 2005 03 01 | A53 | 0.4+ | 0.6+ | 2005 04 04 | 379 | 0.2− | 0.0 |
| 2005 01 15 | 699 | 0.2+ | 0.5+ | 2005 03 01 | A53 | 0.3+ | 0.1+ | 2005 04 04 | 379 | 0.3+ | 0.5− |
| 2005 01 16 | 608 | 0.8+ | 1.5+ | 2005 03 01 | A53 | 0.2+ | 1.0+ | 2005 04 04 | 084 | 0.0 | 0.3+ |
| 2005 01 16 | 608 | 0.6+ | 1.5+ | 2005 03 01 | A53 | 0.0 | 0.7+ | 2005 04 04 | 084 | 0.0 | 0.2+ |
| 2005 01 16 | 608 | 0.5+ | 1.3+ | 2005 03 01 | A76 | 0.0 | 0.6+ | 2005 04 06 | 084 | 0.1− | 0.3− |
| 2005 01 18 | 703 | 0.4− | 0.1− | 2005 03 01 | A76 | 0.3+ | 0.2− | 2005 04 06 | 084 | 0.3− | 0.2− |
| 2005 01 18 | 703 | 0.3− | 0.2+ | 2005 03 01 | 084 | 0.2− | 0.4− | 2005 04 09 | 941 | 0.1− | 0.2− |
| 2005 01 18 | 703 | 0.5− | 0.4+ | 2005 03 01 | 084 | 0.2− | 0.2+ | 2005 04 09 | 941 | 0.1− | 0.2− |
| 2005 01 18 | 703 | 0.3− | 0.0 | 2005 03 01 | A76 | 0.1+ | 0.1− | 2005 04 09 | 941 | 0.0 | 0.1− |
| 2005 01 22 | J87 | 0.4+ | 0.0 | 2005 03 02 | H45 | 0.4− | 0.4+ | 2005 04 09 | 941 | 0.1+ | 0.2− |
| 2005 01 22 | J87 | 0.0 | 0.3+ | 2005 03 02 | 703 | 0.0 | 0.1− | 2005 04 09 | 941 | 0.1+ | 0.2− |
| 2005 01 22 | J87 | 0.1− | 0.2+ | 2005 03 02 | 703 | 0.2− | 0.2+ | 2005 04 10 | 703 | 0.2− | 0.5+ |
| 2005 01 22 | A56 | 0.3+ | 0.8+ | 2005 03 02 | 703 | 0.1+ | 0.2− | 2005 04 10 | 703 | 0.2− | 0.3− |
| 2005 01 22 | J87 | 0.2− | 0.0 | 2005 03 02 | 084 | 0.4+ | 0.1+ | 2005 04 10 | 703 | 0.2− | 0.2− |
| 2005 01 22 | A56 | 0.0 | 0.7+ | 2005 03 02 | A62 | 0.2− | 0.1+ | 2005 04 10 | 703 | 0.2− | 0.3− |
| 2005 01 22 | A56 | 0.8− | 1.0+ | 2005 03 02 | A62 | 0.0 | 0.1+ | 2005 04 10 | A06 | 0.9− | 1.2− |
| 2005 01 22 | A56 | 0.2− | 0.6− | 2005 03 02 | 084 | 0.4+ | 0.1− | 2005 04 10 | A06 | 0.2− | 1.0− |
| 2005 01 22 | A53 | 0.0 | 0.0 | 2005 03 02 | A62 | 0.1− | 0.2− | 2005 04 13 | 434 | 1.6− | 1.7− |
| 2005 01 22 | A53 | 0.3+ | 0.3+ | 2005 03 02 | A62 | 0.2− | 0.2+ | 2005 04 13 | 434 | 0.3+ | 0.6− |
| 2005 01 22 | A53 | 0.3+ | 0.0 | 2005 03 02 | A62 | 0.1− | 0.3− | 2005 04 13 | 434 | 1.0+ | 1.0+ |
| 2005 01 22 | A53 | 0.1− | 0.1+ | 2005 03 02 | A62 | 0.0 | 0.2− | 2005 04 13 | 434 | 0.5+ | 0.8− |
| 2005 01 23 | H41 | 0.8− | 0.2− | 2005 03 02 | A62 | 0.1− | 0.1− | 2005 04 14 | 704 | 0.1+ | 0.1+ |
| 2005 01 23 | H41 | 0.6− | 0.4− | 2005 03 02 | A62 | 0.0 | 0.1+ | 2005 04 14 | 704 | 0.1+ | 0.1+ |
| 2005 01 23 | H41 | 1.3− | 0.0 | 2005 03 03 | 084 | 0.3+ | 0.0 | 2005 04 14 | 704 | 0.4+ | 0.1− |
| 2005 01 23 | H41 | 0.2− | 0.2− | 2005 03 03 | 084 | 0.1+ | 0.2− | 2005 04 14 | 704 | 0.1+ | 0.2+ |
| 2005 01 23 | H41 | 0.5− | 0.2− | 2005 03 04 | H45 | 0.0 | 0.3− | 2005 04 14 | 704 | 0.0 | 0.4+ |
| 2005 01 24 | H41 | 1.6− | 0.2− | 2005 03 04 | H45 | 0.2+ | 0.4− | 2005 04 14 | 084 | 0.3− | 0.2− |
| 2005 01 24 | H41 | 1.3− | 0.5− | 2005 03 04 | H45 | 0.4− | 0.2− | 2005 04 14 | 084 | 0.3− | 0.3+ |
| 2005 01 24 | H41 | 0.2− | 0.5+ | 2005 03 04 | H45 | 0.8− | 0.4+ | 2005 04 15 | H45 | 0.1− | 0.0 |
| 2005 01 24 | H41 | 0.8− | 0.2+ | 2005 03 04 | H45 | 0.6− | 0.4− | 2005 04 15 | H45 | 0.1− | 0.1− |
| 2005 01 24 | H41 | 0.3− | 0.3− | 2005 03 04 | 084 | 0.2− | 0.1+ | 2005 04 15 | H45 | 0.4− | 0.2+ |
| 2005 01 29 | A53 | 0.7+ | 1.0+ | 2005 03 04 | 084 | 0.1+ | 0.4+ | 2005 04 15 | H45 | 0.0 | 0.1− |
| 2005 01 29 | A53 | 0.5− | 0.0 | 2005 03 04 | 246 | 0.6+ | 0.1+ | 2005 04 15 | H45 | 0.1+ | 0.0 |
| 2005 01 29 | A53 | 0.2+ | 0.1− | 2005 03 04 | 246 | 0.6+ | 0.1+ | 2005 04 15 | 084 | 0.4− | 0.3+ |
| 2005 01 29 | 084 | 0.1+ | 0.3+ | 2005 03 04 | 246 | 0.5+ | 0.2+ | 2005 04 17 | 084 | 0.4+ | 0.0 |
| 2005 01 29 | 084 | 0.0 | 0.1+ | 2005 03 04 | 246 | 0.4+ | 0.1+ | 2005 04 19 | 084 | 0.1+ | 0.4− |
| 2005 01 31 | 458 | 0.2+ | 0.6− | 2005 03 04 | 246 | 0.4+ | 0.2+ | 2005 04 19 | 084 | 0.4− | 0.5− |
| 2005 01 31 | 458 | 0.7− | 1.5− | 2005 03 04 | 246 | 0.6+ | 0.4+ | 2005 04 22 | 198 | 0.2− | 0.0 |
| 2005 02 01 | 203 | 0.5− | 0.3+ | 2005 03 04 | 246 | 0.5+ | 0.2+ | 2005 04 22 | 198 | 0.0 | 0.1+ |
| 2005 02 01 | 203 | 0.7− | 0.1− | 2005 03 04 | A62 | 0.1+ | 0.2− | 2005 04 22 | 198 | 0.0 | 0.3+ |
| 2005 02 01 | 560 | 0.1+ | 0.4+ | 2005 03 04 | A62 | 0.1+ | 0.1+ | 2005 04 22 | 198 | 0.0 | 0.4+ |
| 2005 02 01 | 560 | 0.2+ | 0.3+ | 2005 03 04 | A62 | 0.0 | 0.2+ | 2005 04 22 | 084 | 0.8+ | 0.2+ |
| 2005 02 01 | 560 | 0.1+ | 0.2+ | 2005 03 04 | A62 | 0.1+ | 0.1+ | 2005 04 24 | H45 | 0.6+ | 0.1− |
| 2005 02 02 | 703 | 0.1− | 1.0+ | 2005 03 04 | A62 | 0.2+ | 0.1+ | 2005 04 24 | H45 | 0.4+ | 0.8− |
| 2005 02 02 | 703 | 0.2+ | 0.4+ | 2005 03 04 | A62 | 0.2+ | 0.1+ | 2005 04 24 | H45 | 0.0 | 0.1− |
| 2005 02 02 | 703 | 0.6− | 0.2− | 2005 03 04 | A62 | 0.1+ | 0.2− | 2005 04 24 | H45 | 0.4+ | 0.5− |
| 2005 02 02 | 703 | 0.1− | 0.4+ | 2005 03 04 | A62 | 0.3+ | 0.0 | 2005 04 24 | H45 | 0.2+ | 0.3− |
| 2005 02 02 | 203 | 0.3− | 0.1+ | 2005 03 04 | A62 | 0.4+ | 0.2+ | 2005 04 26 | 300 | 0.3− | 0.2+ |
| 2005 02 02 | 203 | 0.1− | 0.1− | 2005 03 04 | J87 | 0.2− | 0.2− | 2005 04 26 | 300 | 0.2+ | 0.0 |
| 2005 02 03 | 203 | 0.1+ | 0.0 | 2005 03 04 | J87 | 0.1− | 0.2− | 2005 04 26 | 300 | 0.2− | 0.4− |
| 2005 02 03 | 084 | 0.2− | 0.1− | 2005 03 04 | J87 | 0.1+ | 0.0 | 2005 04 26 | 300 | 0.5− | 0.2+ |
| 2005 02 03 | 084 | 0.4− | 0.2− | 2005 03 05 | H45 | 0.6− | 0.1− | 2005 04 26 | 300 | 0.2− | 0.1+ |
| 2005 02 03 | 084 | 0.5− | 0.0 | 2005 03 05 | H45 | 0.5− | 0.4− | 2005 04 26 | A16 | 0.9+ | 0.3− |
| 2005 02 03 | A53 | 0.5+ | 0.3+ | 2005 03 05 | H45 | 0.1− | 0.4+ | 2005 04 26 | A16 | 1.4+ | 0.4+ |
| 2005 02 03 | A53 | 0.9+ | 0.4+ | 2005 03 05 | H45 | 0.3− | 0.2+ | 2005 04 26 | A16 | 0.8− | 0.0 |
| 2005 02 03 | 203 | 0.2+ | 0.4− | 2005 03 05 | H45 | 0.2− | 0.0 | 2005 04 30 | A06 | 0.9− | 0.5− |
| 2005 02 03 | A53 | 0.1+ | 0.1− | 2005 03 06 | 726 | 0.1+ | 0.2+ | 2005 04 30 | A06 | 0.7− | 0.7− |
| 2005 02 04 | 644 | 0.5+ | 0.3+ | 2005 03 06 | 726 | 0.7− | 0.1+ | 2005 04 30 | A06 | 0.6− | 0.7− |
| 2005 02 04 | 644 | 0.3+ | 0.3+ | 2005 03 06 | 726 | 0.7− | 0.1+ | 2005 05 01 | H45 | 0.0 | 0.3− |
| 2005 02 04 | 644 | 0.3+ | 0.1+ | 2005 03 06 | 726 | 0.5+ | 0.0 | 2005 05 01 | H45 | 0.2− | 0.1+ |
| 2005 02 04 | J87 | 0.0 | 0.1+ | 2005 03 06 | 726 | 0.5+ | 0.6− | 2005 05 01 | H45 | 0.5− | 0.2− |
| 2005 02 04 | J87 | 0.2− | 0.0 | 2005 03 06 | 726 | 0.5− | 0.5− | 2005 05 01 | H45 | 0.5+ | 0.5− |
| 2005 02 04 | J87 | 0.1− | 0.1− | 2005 03 06 | 379 | 0.5+ | 0.1− | 2005 05 01 | 704 | 0.7+ | 0.3− |
| 2005 02 04 | 127 | 0.3+ | 0.0 | 2005 03 06 | 379 | 0.1− | 0.3+ | 2005 05 01 | H45 | 0.2− | 0.2− |
| 2005 02 04 | 127 | 0.4+ | 0.0 | 2005 03 06 | 379 | 0.1+ | 0.3− | 2005 05 01 | 704 | 0.2+ | 0.0 |
| 2005 02 04 | J87 | 0.0 | 0.1+ | 2005 03 07 | H45 | 0.6+ | 0.4− | 2005 05 01 | 704 | 0.1+ | 0.2− |
| 2005 02 04 | 127 | 0.0 | 0.2− | 2005 03 07 | H45 | 0.1+ | 1.4− | 2005 05 01 | 108 | 0.7− | 2.0− |
| 2005 02 04 | J87 | 0.3− | 0.1+ | 2005 03 07 | 726 | 0.1+ | 0.8− | 2005 05 01 | 108 | 1.4+ | 1.2+ |
| 2005 02 05 | 379 | 0.2+ | 1.0− | 2005 03 07 | H45 | 0.4+ | 0.5− | 2005 05 01 | 108 | 0.1− | 0.4+ |
| 2005 02 05 | 379 | 0.9+ | 0.6− | 2005 03 07 | H45 | 0.0 | 0.8− | 2005 05 01 | 108 | 0.1− | 0.3− |
| 2005 02 05 | 639 | 0.2+ | 0.2+ | 2005 03 07 | H45 | 0.1− | 0.8− | 2005 05 06 | 203 | 0.1+ | 0.2− |
| 2005 02 05 | 639 | 0.1+ | 0.5+ | 2005 03 07 | 726 | 0.0 | 0.1+ | 2005 05 06 | 203 | 0.2+ | 0.3− |
| 2005 02 05 | 639 | 0.2+ | 0.2+ | 2005 03 07 | 726 | 0.6+ | 0.7− | 2005 05 07 | 355 | 0.2− | 0.1− |
| 2005 02 05 | 639 | 0.5+ | 0.2+ | 2005 03 07 | 726 | 1.6+ | 0.4+ | 2005 05 07 | 355 | 1.2− | 0.1− |
| 2005 02 05 | 639 | 0.5+ | 0.1+ | 2005 03 07 | 726 | 0.3− | 0.3− | 2005 05 07 | 355 | 0.0 | 0.5+ |
| 2005 02 05 | 639 | 0.3+ | 0.2+ | 2005 03 07 | 379 | 0.7+ | 0.3− | 2005 05 08 | 203 | 0.2− | 0.1− |
| 2005 02 05 | A30 | 0.2− | 0.0 | 2005 03 07 | 379 | 0.2+ | 0.3− | 2005 05 08 | 203 | 0.3+ | 0.1− |
| 2005 02 05 | A30 | 0.1− | 0.1+ | 2005 03 07 | 170 | 0.2+ | 0.1+ | 2005 05 09 | 084 | 0.1+ | 0.3− |
| 2005 02 05 | A30 | 0.4− | 0.2+ | 2005 03 07 | 170 | 0.2+ | 0.3+ | 2005 05 11 | 434 | 0.2+ | 0.0 |
| 2005 02 05 | A30 | 0.5− | 0.3+ | 2005 03 07 | 170 | 0.0 | 0.0 | 2005 05 11 | 434 | 0.3− | 0.0 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 05 | A56 | 0.7− | 0.3− | 2005 03 07 | 170 | 0.1+ | 0.2+ | 2005 05 11 | 434 | 0.1+ | 0.3+ | 2005 02 12 | 927 | 0.9− | 0.1+ | 2005 03 14 | 084 | 0.1− | 0.3− | 2005 06 18 | 704 | 0.6+ | 0.0 |
| 2005 02 05 | A56 | 0.6+ | 0.1− | 2005 03 07 | 170 | 0.0 | 0.2+ | 2005 05 11 | 434 | 0.2− | 0.8− | 2005 02 12 | 927 | 1.3− | 0.2+ | 2005 03 14 | 084 | 0.3− | 0.3+ | 2005 06 18 | 704 | 0.8+ | 0.0 |
| 2005 02 05 | A56 | 0.3+ | 0.2+ | 2005 03 07 | A48 | 0.2+ | 0.1+ | 2005 05 14 | 084 | 0.5+ | 0.0 | 2005 02 12 | 927 | 1.0− | 1.0+ | 2005 03 15 | 841 | 0.5− | 1.8− | 2005 06 18 | 704 | 0.6+ | 0.2+ |
| 2005 02 05 | A56 | 0.6+ | 0.5+ | 2005 03 07 | A48 | 0.6+ | 0.3+ | 2005 05 19 | 084 | 0.1+ | 0.2− | 2005 02 13 | I77 | 0.7+ | 0.0 | 2005 03 15 | 842 | 0.2+ | 0.4+ | 2005 06 18 | 704 | 0.8+ | 0.1+ |
| 2005 02 05 | A56 | 0.4+ | 0.2+ | 2005 03 07 | A48 | 0.4+ | 0.3+ | 2005 05 19 | 203 | 0.1− | 0.0 | 2005 02 13 | I77 | 0.1− | 0.3− | 2005 03 15 | 842 | 0.3+ | 0.4+ | 2005 06 18 | 240 | 0.0 | 0.0 |
| 2005 02 05 | A41 | 0.7+ | 0.1− | 2005 03 07 | A48 | 0.1+ | 0.6+ | 2005 05 19 | 203 | 0.1− | 0.0 | 2005 02 13 | I77 | 0.1− | 0.2− | 2005 03 15 | 842 | 0.8− | 2.3− | 2005 06 18 | 240 | 0.1− | 0.2− |
| 2005 02 05 | A41 | 0.3+ | 0.2+ | 2005 03 08 | 726 | 0.2+ | 0.1+ | 2005 05 20 | 084 | 0.3− | 0.6− | 2005 02 13 | I77 | 0.8− | 0.1− | 2005 03 15 | 841 | 0.2− | 2.2− | 2005 06 18 | 240 | 0.1− | 0.1− |
| 2005 02 05 | A41 | 0.5+ | 0.1− | 2005 03 08 | 726 | 0.8+ | 0.0 | 2005 05 20 | 084 | 0.1− | 0.0 | 2005 02 14 | H41 | 0.5− | 0.1+ | 2005 03 15 | 842 | 0.4− | 0.7− | 2005 06 18 | 240 | 0.0 | 0.0 |
| 2005 02 06 | 130 | 0.1+ | 0.1− | 2005 03 08 | 726 | 0.0 | 0.3+ | 2005 05 21 | 084 | 0.6− | 0.1+ | 2005 02 14 | H41 | 0.5− | 0.2− | 2005 03 15 | 841 | 0.1+ | 2.1− | 2005 06 18 | 240 | 0.2+ | 0.0 |
| 2005 02 06 | 130 | 0.0 | 0.3+ | 2005 03 08 | 726 | 0.6+ | 0.2+ | 2005 05 22 | 084 | 0.8+ | 0.2− | 2005 02 14 | H41 | 0.0 | 0.0 | 2005 03 15 | 084 | 0.2− | 0.1− | 2005 06 18 | 240 | 0.1+ | 0.1+ |
| 2005 02 06 | 130 | 0.3+ | 0.4− | 2005 03 08 | 726 | 0.3+ | 0.5+ | 2005 05 24 | A35 | 0.1+ | 0.1+ | 2005 02 14 | H41 | 0.3+ | 0.0 | 2005 03 15 | 084 | 0.2− | 0.0 | 2005 06 18 | 240 | 0.2+ | 0.1+ |
| 2005 02 06 | 130 | 0.1+ | 0.1+ | 2005 03 08 | 160 | 0.0 | 0.3− | 2005 05 24 | A35 | 0.0 | 0.3− | 2005 02 14 | H41 | 0.1+ | 0.7− | 2005 03 15 | A53 | 0.2− | 2.7− | 2005 06 18 | 240 | 0.1+ | 0.1+ |
| 2005 02 06 | 379 | 0.7+ | 0.2+ | 2005 03 08 | 160 | 0.2− | 0.1+ | 2005 05 24 | A35 | 0.1− | 0.2− | 2005 02 14 | H41 | 0.3+ | 0.2− | 2005 03 15 | 160 | 0.3+ | 0.2− | 2005 06 18 | 240 | 0.2+ | 0.0 |
| 2005 02 06 | 379 | 0.8+ | 1.1+ | 2005 03 08 | 160 | 0.1− | 0.1+ | 2005 05 24 | A35 | 0.1− | 0.1− | 2005 02 14 | A30 | 0.1− | 0.1+ | 2005 03 15 | 160 | 0.1+ | 0.2− | 2005 06 18 | 240 | 0.3+ | 0.0 |
| 2005 02 06 | 160 | 0.2− | 0.0 | 2005 03 08 | A53 | 0.7+ | 0.5+ | 2005 05 24 | A35 | 0.1+ | 0.2− | 2005 02 14 | A30 | 0.2− | 0.1+ | 2005 03 15 | 160 | 0.2− | 0.1+ | 2005 06 18 | 240 | 0.3+ | 0.3+ |
| 2005 02 06 | 160 | 0.1− | 0.0 | 2005 03 08 | A53 | 0.7+ | 0.2+ | 2005 05 25 | 084 | 0.6− | 0.7− | 2005 02 14 | A30 | 0.1− | 0.1− | 2005 03 15 | A53 | 0.0 | 2.8− | 2005 06 25 | 232 | 0.4− | 0.1− |
| 2005 02 06 | 160 | 0.0 | 0.1+ | 2005 03 08 | A53 | 0.3+ | 0.0 | 2005 05 25 | 203 | 0.3+ | 0.2− | 2005 02 14 | A30 | 0.1− | 0.1+ | 2005 03 16 | 151 | 0.5+ | 0.1− | 2005 06 25 | 232 | 0.1− | 0.4− |
| 2005 02 06 | 160 | 0.1− | 0.0 | 2005 03 09 | 726 | 0.1+ | 0.2− | 2005 05 25 | 203 | 0.1− | 0.2− | 2005 02 15 | 560 | 0.0 | 0.5+ | 2005 03 16 | 151 | 0.5− | 0.1− | 2005 06 25 | 232 | 0.5+ | 0.1− |
| 2005 02 06 | 639 | 0.1+ | 0.2+ | 2005 03 09 | 726 | 1.3+ | 1.2+ | 2005 05 26 | A48 | 0.6+ | 0.1+ | 2005 02 15 | 560 | 0.1− | 0.4+ | 2005 03 16 | 151 | 0.0 | 0.3− | 2005 06 26 | A56 | 1.6+ | 0.8− |
| 2005 02 06 | 639 | 0.0 | 0.3+ | 2005 03 09 | 726 | 0.2+ | 0.2− | 2005 05 26 | A48 | 0.4+ | 0.0 | 2005 02 15 | 560 | 0.1− | 0.4+ | 2005 03 16 | 071 | 0.5− | 0.7+ | 2005 06 26 | A56 | 0.6+ | 0.7+ |
| 2005 02 06 | 639 | 0.3+ | 0.3+ | 2005 03 09 | 726 | 0.1− | 0.1− | 2005 05 26 | A48 | 0.4+ | 0.1+ | 2005 02 16 | A53 | 0.1+ | 0.2+ | 2005 03 16 | 151 | 0.4+ | 0.8− | 2005 06 26 | A56 | 0.5+ | 0.2− |
| 2005 02 06 | 639 | 0.3+ | 0.2+ | 2005 03 09 | 084 | 0.1+ | 0.3+ | 2005 05 26 | A48 | 0.2+ | 0.2+ | 2005 02 16 | A53 | 0.0 | 0.4+ | 2005 03 16 | 071 | 0.5− | 0.6+ | 2005 06 26 | A56 | 0.7+ | 0.6− |
| 2005 02 06 | 639 | 0.3+ | 0.0 | 2005 03 09 | 084 | 0.2+ | 0.1+ | 2005 05 27 | 048 | 1.9+ | 0.0 | 2005 02 16 | A53 | 0.1− | 0.5+ | 2005 03 16 | 071 | 0.6− | 0.7+ | 2005 07 02 | 160 | 0.9− | 0.0 |
| 2005 02 06 | 639 | 0.3+ | 0.2+ | 2005 03 10 | A35 | 0.2+ | 0.3+ | 2005 05 27 | 048 | 1.0+ | 0.3+ | 2005 02 23 | 084 | 0.6− | 0.4+ | 2005 03 16 | 084 | 0.3− | 0.4+ | 2005 07 02 | 160 | 0.4+ | 0.1− |
| 2005 02 07 | 246 | 0.4+ | 0.2+ | 2005 03 10 | A35 | 0.2+ | 0.4+ | 2005 05 27 | 048 | 0.8+ | 0.6+ | 2005 02 23 | 084 | 0.2− | 0.2− | 2005 03 16 | 084 | 0.0 | 0.4+ | 2005 07 02 | 160 | 1.7+ | 0.6− |
| 2005 02 07 | 246 | 0.5+ | 0.2+ | 2005 03 10 | A35 | 0.1+ | 0.4+ | 2005 05 27 | 048 | 1.6+ | 0.1− | 2005 02 23 | 084 | 0.6− | 0.0 | 2005 03 19 | H97 | 0.3− | 0.0 | 2005 07 02 | 941 | 0.1+ | 0.3− |
| 2005 02 07 | 246 | 0.5+ | 0.2+ | 2005 03 10 | A62 | 0.3− | 0.0 | 2005 05 27 | 048 | 1.4+ | 0.2+ | 2005 02 24 | 084 | 0.6+ | 0.2− | 2005 03 19 | H97 | 0.0 | 0.0 | 2005 07 02 | 941 | 0.0 | 0.2− |
| 2005 02 07 | 246 | 0.3+ | 0.2+ | 2005 03 10 | A62 | 0.3− | 0.0 | 2005 05 27 | 048 | 1.6+ | 0.1+ | 2005 02 24 | 084 | 0.5+ | 0.0 | 2005 03 19 | H97 | 0.2− | 0.1+ | 2005 07 02 | 941 | 0.0 | 0.3− |
| 2005 02 07 | 246 | 0.3+ | 0.2+ | 2005 03 10 | A62 | 0.1− | 0.4+ | 2005 05 27 | 048 | 1.6+ | 0.7+ | 2005 02 25 | H45 | 0.1+ | 0.4+ | 2005 03 19 | H97 | 0.6− | 1.6+ | 2005 07 02 | 941 | 0.1+ | 0.3− |
| 2005 02 07 | 246 | 0.4+ | 0.3+ | 2005 03 10 | A62 | 0.1− | 0.1+ | 2005 05 27 | 048 | 1.3+ | 0.9+ | 2005 02 25 | H45 | 0.4− | 0.2− | 2005 03 19 | A56 | 0.6+ | 0.9− | 2005 07 02 | 941 | 0.0 | 0.3− |
| 2005 02 07 | 246 | 0.5+ | 0.1+ | 2005 03 10 | A62 | 0.2− | 0.1+ | 2005 05 27 | A06 | 2.3− | 0.7+ | 2005 02 25 | H45 | 0.1+ | 0.2− | 2005 03 19 | A56 | 0.8− | 0.1− | 2005 07 02 | A06 | 2.8− | 2.1+ |
| 2005 02 08 | 379 | 0.4− | 0.0 | 2005 03 10 | A62 | 0.2− | 0.4+ | 2005 05 27 | A06 | (3.3− | 1.0+) | 2005 02 25 | H45 | 0.4− | 0.5− | 2005 03 19 | A56 | 0.4− | 0.1− | 2005 07 02 | A06 | 2.6− | 1.9+ |
| 2005 02 08 | 379 | 0.5− | 0.1− | 2005 03 10 | A62 | 0.5− | 0.0 | 2005 05 27 | A06 | (3.8− | 1.5+) | 2005 02 25 | H45 | 0.8− | 0.4− | 2005 03 19 | A56 | 0.2− | 0.9+ | 2005 07 02 | A06 | 2.6− | 1.8+ |
| 2005 02 08 | 379 | 0.3− | 0.5− | 2005 03 10 | A62 | 0.2− | 0.1+ | 2005 05 28 | A48 | 0.5+ | 0.0 | 2005 02 25 | 084 | 0.0 | 0.3+ | 2005 03 19 | A56 | 0.4+ | 0.2+ | 2005 07 03 | 703 | 0.6− | 0.4− |
| 2005 02 08 | 379 | 0.1+ | 0.6− | 2005 03 10 | A53 | 0.1+ | 1.1+ | 2005 05 28 | A48 | 0.2+ | 0.1+ | 2005 02 25 | 084 | 0.1+ | 0.3+ | 2005 03 22 | 841 | 0.3+ | 0.3+ | 2005 07 03 | 703 | 0.2+ | 0.2− |
| 2005 02 08 | 071 | 0.3− | 0.4+ | 2005 03 10 | A53 | 0.0 | 1.6+ | 2005 05 28 | A48 | 0.1+ | 0.2+ | 2005 02 25 | 084 | 0.2− | 0.4+ | 2005 03 22 | 841 | 0.8− | 0.1− | 2005 07 03 | 703 | 0.5− | 0.1+ |
| 2005 02 08 | 071 | 0.3+ | 0.2− | 2005 03 10 | A53 | 0.1− | 1.4+ | 2005 05 28 | A48 | 0.2+ | 0.2+ | 2005 02 25 | 084 | 0.1+ | 0.1− | 2005 03 22 | 841 | 0.0 | 1.0− | 2005 07 03 | 703 | 0.1− | 0.2− |
| 2005 02 08 | 071 | 0.3− | 0.1+ | 2005 03 10 | 084 | 0.1+ | 0.0 | 2005 05 28 | 048 | 0.8+ | 0.0 | 2005 02 26 | 941 | 0.1− | 0.0 | 2005 03 23 | 151 | 0.1+ | 0.8+ | 2005 07 05 | 703 | 0.5− | 0.0 |
| 2005 02 08 | 071 | 0.2− | 0.3− | 2005 03 11 | 726 | (1.2+ | 4.1−) | 2005 05 28 | 048 | 0.4− | 0.3+ | 2005 02 26 | 941 | 0.0 | 0.0 | 2005 03 23 | 151 | 0.3− | 0.9+ | 2005 07 05 | 703 | 0.4− | 0.1− |
| 2005 02 08 | 071 | 0.0 | 0.5− | 2005 03 11 | 726 | 0.6+ | 0.3− | 2005 05 28 | 048 | 0.7+ | 0.0 | 2005 02 26 | 941 | 0.1− | 0.1− | 2005 03 23 | 151 | 0.7− | 0.9+ | 2005 07 05 | 703 | 0.5+ | 0.1+ |
| 2005 02 08 | 071 | 0.5− | 0.0 | 2005 03 11 | 726 | 0.9+ | 0.6+ | 2005 05 28 | 048 | 0.8+ | 0.4− | 2005 02 26 | 941 | 0.0 | 0.1− | 2005 03 24 | 941 | 0.3− | 0.0 | 2005 07 05 | 703 | 0.8− | 1.1+ |
| 2005 02 08 | 203 | 0.1+ | 0.1+ | 2005 03 11 | 726 | 1.0+ | 0.1− | 2005 05 28 | 048 | 0.2+ | 0.0 | 2005 02 26 | 941 | 0.1− | 0.2− | 2005 03 24 | 941 | 0.3− | 0.0 | 2005 07 05 | A30 | 0.2+ | 0.2+ |
| 2005 02 08 | 203 | 0.0 | 0.2− | 2005 03 11 | G96 | 0.2− | 0.1− | 2005 05 29 | 434 | 0.4+ | 0.3+ | 2005 02 27 | 240 | 0.0 | 0.1+ | 2005 03 24 | 941 | 0.3− | 0.0 | 2005 07 05 | A30 | 0.4+ | 0.0 |
| 2005 02 09 | 469 | 0.2+ | 0.8− | 2005 03 11 | G96 | 0.1− | 0.1− | 2005 05 29 | 434 | 0.2+ | 0.9+ | 2005 02 27 | 240 | 0.1− | 0.2+ | 2005 03 24 | 941 | 0.4− | 0.1+ | 2005 07 05 | A30 | 0.4+ | 0.1+ |
| 2005 02 09 | 469 | 0.1− | 0.4− | 2005 03 11 | G96 | 0.2− | 0.1− | 2005 05 29 | 434 | 0.4+ | 0.5− | 2005 02 27 | 240 | 0.2− | 0.3+ | 2005 03 24 | 941 | 0.3− | 0.3+ | 2005 07 05 | A30 | 0.4+ | 0.3+ |
| 2005 02 09 | 469 | 0.6+ | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.1− | 2005 05 29 | 434 | 0.3− | 0.2+ | 2005 02 27 | 240 | 0.0 | 0.1− | 2005 03 25 | 841 | 0.1− | 0.2+ | 2005 07 08 | 699 | 0.5+ | 0.0 |
| 2005 02 09 | 469 | 0.7− | 0.3+ | 2005 03 12 | 726 | 0.3− | 0.4− | 2005 05 31 | 379 | 0.2− | 0.1− | 2005 02 27 | 240 | 0.2+ | 0.3+ | 2005 03 25 | 841 | 0.1+ | 0.7+ | 2005 07 08 | 699 | 0.7+ | 0.2− |
| 2005 02 09 | 469 | 0.0 | 0.2− | 2005 03 12 | 726 | 0.3+ | 0.4+ | 2005 05 31 | 379 | 0.4− | 0.2− | 2005 02 27 | 240 | 0.1− | 0.2+ | 2005 03 27 | 699 | 0.1− | 0.4+ | 2005 07 08 | 699 | 0.6+ | 0.4− |
| 2005 02 09 | 084 | 0.6− | 0.2+ | 2005 03 12 | 726 | 0.0 | 0.1− | 2005 06 02 | A53 | 2.6+ | 0.5− | 2005 02 27 | 240 | 0.1− | 0.1+ | 2005 03 27 | 699 | 0.1− | 0.4+ | 2005 07 08 | A35 | 0.1+ | 0.2− |
| 2005 02 09 | 084 | 0.3− | 0.0 | 2005 03 12 | 726 | 0.3− | 0.4+ | 2005 06 02 | A53 | 1.5+ | 0.4+ | 2005 02 27 | 084 | 0.0 | 0.3+ | 2005 03 27 | 699 | 0.4+ | 0.1+ | 2005 07 08 | A35 | 0.1+ | 0.2− |
| 2005 02 09 | 071 | 2.3− | 0.4− | 2005 03 12 | 726 | 0.2− | 0.5+ | 2005 06 02 | A48 | 0.5+ | 0.3+ | 2005 02 28 | 185 | 0.2+ | 0.3− | 2005 03 27 | 699 | 0.2− | 0.7+ | 2005 07 08 | A35 | 0.0 | 0.3+ |
| 2005 02 09 | 071 | 0.3− | 0.3− | 2005 03 12 | 726 | 0.1− | 0.5− | 2005 06 02 | A53 | 0.5+ | 0.2+ | 2005 02 28 | 185 | 0.0 | 0.3− | 2005 03 27 | 941 | 0.2+ | 0.2− | 2005 07 08 | A35 | 0.3− | 0.0 |
| 2005 02 09 | 071 | 0.5− | 0.3− | 2005 03 13 | H45 | 0.3− | 0.7− | 2005 06 02 | A48 | 0.2+ | 0.2+ | 2005 02 28 | 185 | 0.1+ | 0.4− | 2005 03 27 | 941 | 0.1+ | 0.1− | 2005 07 09 | 703 | 0.0 | 0.3− |
| 2005 02 09 | 071 | 0.4− | 0.4− | 2005 03 13 | H45 | 0.0 | 0.1+ | 2005 06 02 | A48 | 0.4+ | 0.4+ | 2005 02 28 | 185 | 0.0 | 0.2− | 2005 03 27 | 941 | 0.1+ | 0.2− | 2005 07 09 | 703 | 0.5− | 0.1− |
| 2005 02 09 | 071 | 0.4− | 0.3− | 2005 03 13 | H45 | 0.0 | 0.4− | 2005 06 02 | A48 | 0.5+ | 0.4+ | 2005 02 28 | 185 | 0.1− | 1.5+ | 2005 03 27 | 941 | 0.1+ | 0.1− | 2005 07 09 | 703 | 0.1+ | 1.3− |
| 2005 02 09 | 203 | 0.0 | 0.1+ | 2005 03 13 | H45 | 0.0 | 0.3− | 2005 06 06 | 703 | 0.0 | 0.2− | 2005 02 28 | 084 | 0.8+ | 0.4+ | 2005 03 27 | 941 | 0.0 | 0.1− | 2005 07 09 | 703 | 0.7− | 0.4− |
| 2005 02 09 | 560 | 0.4+ | 0.0 | 2005 03 13 | H45 | 0.6+ | 0.2− | 2005 06 06 | 703 | 0.2+ | 0.3− | 2005 02 28 | 084 | 0.8+ | 0.0 | 2005 03 28 | 084 | 0.2+ | 0.6+ | 2005 07 14 | 941 | 0.5− | 0.8− |
| 2005 02 09 | 560 | 0.5+ | 0.1+ | 2005 03 13 | A30 | 0.0 | 0.2− | 2005 06 06 | 703 | 0.1+ | 0.1− | 2005 02 28 | A62 | 0.4− | 0.1− | 2005 03 28 | 084 | 0.4+ | 0.5+ | 2005 07 14 | 941 | 0.3− | 0.6− |
| 2005 02 09 | 560 | 0.6+ | 0.1+ | 2005 03 13 | A30 | 0.1− | 0.2− | 2005 06 06 | 703 | 0.2− | 0.2− | 2005 02 28 | A62 | 0.1− | 0.3+ | 2005 03 29 | 084 | 0.2− | 0.0 | 2005 07 14 | 941 | 0.1− | 0.5− |
| 2005 02 09 | 203 | 0.1+ | 0.2− | 2005 03 13 | A30 | 0.0 | 0.2− | 2005 06 11 | H45 | 0.3+ | 0.3− | 2005 02 28 | A62 | 0.0 | 0.1+ | 2005 03 29 | 084 | 0.2+ | 0.2+ | 2005 07 14 | 941 | 0.1+ | 0.3− |
| 2005 02 09 | 204 | 0.1+ | 0.0 | 2005 03 13 | A30 | 0.1− | 0.1− | 2005 06 11 | H45 | 0.5+ | 0.6+ | 2005 02 28 | A62 | 0.0 | 0.3+ | 2005 03 30 | 084 | 0.1+ | 0.0 | 2005 07 31 | A78 | 0.3+ | 0.2+ |
| 2005 02 09 | 204 | 0.1− | 0.1− | 2005 03 13 | A30 | 0.0 | 0.2− | 2005 06 11 | H45 | 0.3+ | 0.3+ | 2005 02 28 | A62 | 0.0 | 0.1− | 2005 03 31 | 084 | 0.3+ | 0.2+ | 2005 07 31 | A78 | 0.2− | 0.6+ |
| 2005 02 09 | 204 | 0.1− | 0.1− | 2005 03 13 | A76 | 0.6+ | 0.2+ | 2005 06 11 | H45 | 0.2+ | 0.1+ | 2005 02 28 | A62 | 0.2− | 0.0 | 2005 03 31 | 084 | 0.5+ | 0.6+ | 2005 07 31 | A78 | 0.4+ | 0.5+ |
| 2005 02 10 | 104 | 0.5+ | 0.1− | 2005 03 13 | A76 | 1.0− | 0.2+ | 2005 06 11 | H45 | 0.0 | 0.2− | 2005 02 28 | A62 | 0.1− | 0.0 | 2005 04 01 | 703 | 0.6− | 0.2+ | 2005 07 31 | A78 | 0.0 | 0.1+ |
| 2005 02 10 | 104 | 0.3+ | 0.2+ | 2005 03 13 | A76 | 0.9− | 0.6+ | 2005 06 17 | A06 | (3.5− | 1.9+) | 2005 02 28 | A62 | 0.2− | 0.0 | 2005 04 01 | 703 | 0.4− | 0.2+ | 2005 08 08 | A78 | 0.2− | 0.4+ |
| 2005 02 10 | 104 | 0.7+ | 0.1− | 2005 03 14 | 379 | 0.7+ | 0.3− | 2005 06 17 | A06 | (3.5− | 1.9+) | 2005 02 28 | A62 | 0.2− | 0.1− | 2005 04 01 | 703 | 0.6− | 0.1+ | 2005 08 08 | A78 | 0.5− | 0.4+ |
| 2005 02 10 | A57 | 0.5− | 0.0 | 2005 03 14 | 379 | 0.2+ | 0.3− | 2005 06 17 | A06 | (3.3− | 1.8+) | 2005 02 28 | A62 | 0.3− | 0.0 | 2005 04 01 | 703 | 0.3− | 0.2+ | 2005 08 08 | A78 | 0.9− | 0.1+ |
| 2005 02 10 | A57 | 0.2− | 0.1− | 2005 03 14 | 379 | 0.5+ | 0.6− | 2005 06 18 | 704 | 0.7+ | 0.3+ | 2005 02 28 | A62 | 0.3− | 0.0 | 2005 04 01 | 127 | 0.4+ | 0.3− | 2005 08 08 | A78 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 28 | A62 | 0.0 | 0.1− | 2005 04 01 | 127 | 0.5+ | 0.3− | 2005 08 09 | 185 | 0.0 | 0.6− | | |
| 2005 02 28 | A62 | 0.1+ | 0.2− | 2005 04 01 | 113 | 0.1− | 0.0 | 2005 08 09 | 185 | 0.2+ | 0.5− | | |
| 2005 02 28 | A62 | 0.1− | 0.2− | 2005 04 01 | 113 | 0.1+ | 0.4+ | 2005 08 09 | 185 | 0.5− | 0.1− | | |
| 2005 02 28 | A68 | 0.1− | 0.1+ | 2005 04 01 | 113 | 0.0 | 0.1+ | 2005 08 09 | 185 | 0.3+ | 0.4− | | |
| 2005 02 28 | A68 | 0.1− | 0.5− | 2005 04 01 | 127 | 0.4+ | 0.3− | 2005 08 09 | 185 | 0.0 | 0.4− | | |
| 2005 02 28 | A68 | 0.5− | 0.8+ | 2005 04 01 | 113 | 0.1+ | 0.0 | 2005 08 09 | 185 | 0.0 | 0.2− | | |
| 2005 03 01 | H45 | 0.4− | 0.2− | 2005 04 01 | 113 | 0.0 | 0.2− | 2005 08 31 | 704 | 0.1+ | 0.4+ | | |
| 2005 03 01 | H45 | 0.1− | 0.0 | 2005 04 02 | 127 | 0.1− | 0.5− | 2005 08 31 | 704 | 0.8+ | 0.2+ | | |
| 2005 03 01 | H45 | 0.5− | 0.0 | 2005 04 02 | 127 | 0.1− | 0.5− | 2005 08 31 | 704 | 0.1− | 1.0+ | | |
| 2005 03 01 | H45 | 0.1− | 0.1− | 2005 04 02 | 127 | 0.3− | 0.5− | 2005 08 31 | 704 | 0.2− | 0.2− | | |
| 2005 03 01 | H45 | 0.0 | 0.0 | 2005 04 02 | 127 | 0.2− | 0.5− | 2006 10 16 | 291 | 1.0+ | 0.5+ | | |
| 2005 03 01 | 379 | 0.1+ | 0.4− | 2005 04 02 | A56 | 0.0 | 0.4+ | 2006 10 16 | 291 | 1.0− | 1.1+ | | |
| 2005 03 01 | 379 | 0.6+ | 0.2+ | 2005 04 02 | A56 | 0.5+ | 0.2+ | 2006 10 16 | 291 | 0.2− | 0.2− | | |

**2005 AM$_{47}$ = 2006 LA$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 34.84618 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23121880 | $\omega$ | 325.22363 | | −0.51494426 | | +0.83690704 | |
| $a$ | 2.6289800 | $\Omega$ | 273.11748 | | −0.73829976 | | −0.54296978 | |
| $e$ | 0.1532203 | $i$ | 10.70769 | | −0.43559828 | | −0.06906827 | |
| $P$ | 4.26 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 18 | 608 | 0.3+ | 0.7− | 2002 07 05 | 704 | 2.4+ | 0.3+ | 2005 01 18 | 703 | 0.2− | 0.6+ |
| 2001 02 18 | 608 | 0.3+ | 1.0− | 2002 07 05 | 704 | 1.2+ | 1.5+ | 2005 01 18 | 703 | 1.3+ | 0.0 |
| 2001 02 18 | 608 | 0.1− | 0.5− | 2002 07 05 | 704 | (2.3+ | 3.9+) | 2005 01 18 | 703 | 0.4+ | 1.1− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 07 14 | 704 | 1.0− | 0.5− | 2005 01 19 | 691 | 0.2+ | 0.5+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2002 07 14 | 704 | 0.5− | 0.5− | 2005 01 19 | 691 | 0.2+ | 0.2+ |
| 2002 06 11 | 644 | 1.1− | 0.3− | 2002 07 14 | 704 | 1.2− | 0.5− | 2005 01 19 | 691 | 0.1+ | 0.3+ |
| 2002 06 11 | 644 | 1.1− | 0.1+ | 2002 07 14 | 704 | 0.8− | 0.8+ | 2006 06 07 | E12 | 0.5− | 0.0 |
| 2002 06 11 | 644 | 0.8− | 0.1− | 2005 01 13 | 691 | 0.6− | 0.1+ | 2006 06 07 | E12 | 0.2− | 1.4− |
| 2002 06 16 | 644 | 0.6− | 0.0 | 2005 01 13 | 691 | 0.1+ | 0.3+ | 2006 06 14 | 644 | 0.4+ | 0.2+ |
| 2002 06 16 | 644 | 0.5− | 0.4+ | 2005 01 13 | 691 | 0.2+ | 0.3+ | 2006 06 14 | 644 | 0.3+ | 0.5+ |
| 2002 06 16 | 644 | 0.8− | 0.1+ | 2005 01 18 | 703 | 0.3− | 0.5+ | 2006 06 14 | 644 | 0.1+ | 0.4+ |

**2005 AX$_{47}$ = 2006 RE$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 79.98105 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27344422 | $\omega$ | 301.03530 | | −0.62463731 | | +0.77353531 | |
| $a$ | 2.3508426 | $\Omega$ | 289.92329 | | −0.67202708 | | −0.60231802 | |
| $e$ | 0.2284513 | $i$ | 6.54149 | | −0.39775349 | | −0.19711956 | |
| $P$ | 3.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 15 | 691 | 0.1− | 0.1− | 2004 12 18 | G96 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.0 | 0.1− |
| 2001 01 15 | 691 | 0.3+ | 0.1+ | 2004 12 18 | G96 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.6+ |
| 2001 01 15 | 691 | 0.2− | 0.0 | 2005 01 13 | 691 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.8− | 0.7+ |
| 2003 10 17 | 691 | 0.1− | 0.0 | 2005 01 13 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.5− | 1.3+ |
| 2003 10 17 | 691 | 0.3+ | 0.2− | 2005 01 13 | 691 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2003 10 17 | 691 | 0.1− | 0.3− | 2005 01 17 | 704 | 0.3+ | 0.6− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2004 12 18 | G96 | 0.3− | 0.4− | 2005 01 17 | 704 | 0.3− | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2004 12 18 | G96 | 0.3− | 0.1− | 2005 01 17 | 704 | 1.1+ | 1.0+ | | | | |

**2005 AL$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 135.15673 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26073262 | $\omega$ | 355.18276 | | −0.94698608 | | −0.32096965 | |
| $a$ | 2.4266425 | $\Omega$ | 166.07112 | | +0.29667172 | | −0.89035473 | |
| $e$ | 0.1339234 | $i$ | 3.33294 | | +0.12330152 | | −0.32287293 | |
| $P$ | 3.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 645 | 0.0 | 0.1− | 2005 02 02 | 703 | 0.4− | 0.2− | 2005 03 03 | 699 | (3.0− | 1.3−) |
| 2003 09 29 | 645 | 0.1+ | 0.0 | 2005 02 02 | 703 | 0.1− | 0.4− | 2005 03 03 | 699 | 0.4+ | 0.3+ |
| 2003 10 24 | 691 | 0.1+ | 0.2+ | 2005 02 04 | 691 | 0.1− | 0.0 | 2005 03 03 | 699 | 0.8− | 0.1− |
| 2003 10 24 | 691 | 0.0 | 0.3+ | 2005 02 04 | 691 | 0.1− | 0.0 | 2005 03 03 | 699 | 0.6− | 0.5− |
| 2003 10 24 | 691 | 0.1− | 0.1+ | 2005 02 04 | 691 | 0.1− | 0.0 | 2005 03 09 | G96 | 0.1− | 0.3− |
| 2005 01 13 | 704 | 0.0 | 0.2− | 2005 02 04 | 699 | 1.2− | 0.9+ | 2005 03 09 | G96 | 0.1− | 0.3− |
| 2005 01 13 | 704 | 0.2− | 0.3− | 2005 02 04 | 699 | 0.5+ | 0.8+ | 2005 03 09 | G96 | 0.2− | 0.2− |
| 2005 01 13 | 704 | 0.6+ | 0.2− | 2005 02 04 | 699 | 0.2− | 0.5+ | 2005 03 09 | G96 | 0.7− | 0.2+ |
| 2005 01 17 | 691 | 0.1− | 0.1− | 2005 02 04 | 699 | 0.0 | 0.1− | 2005 04 05 | G96 | 0.0 | 0.3− |
| 2005 01 17 | 691 | 0.2+ | 0.1− | 2005 02 09 | 699 | 0.9+ | 0.0 | 2005 04 05 | G96 | 0.1+ | 0.0 |
| 2005 01 17 | 691 | 0.1+ | 0.0 | 2005 02 09 | 699 | 0.5+ | 0.1+ | 2005 04 05 | G96 | 0.2− | 0.4− |
| 2005 01 20 | 699 | (2.3+ | 1.0−) | 2005 02 09 | 699 | 0.3+ | 0.2− | 2005 04 05 | G96 | 0.1+ | 0.3− |
| 2005 01 20 | 699 | (0.3− | 2.1−) | 2005 02 09 | 699 | 0.0 | 0.1+ | 2005 04 05 | G96 | 0.1+ | 0.2− |
| 2005 01 20 | 699 | 1.0+ | 0.0 | 2005 02 09 | 704 | 0.1+ | 0.5− | 2005 04 05 | G96 | 0.2+ | 0.4− |
| 2005 01 20 | 699 | 0.2+ | 0.3+ | 2005 02 09 | 704 | 0.2− | 0.1− | 2005 04 05 | G96 | 0.3+ | 0.1− |
| 2005 02 02 | 704 | 0.3+ | 0.0 | 2005 02 09 | 704 | 0.3− | 0.3− | 2005 04 05 | G96 | 0.1+ | 0.2− |
| 2005 02 02 | 704 | 0.1− | 0.2+ | 2005 02 09 | 704 | 0.6− | 0.0 | 2005 04 06 | G96 | 0.4+ | 0.1+ |
| 2005 02 02 | 703 | 0.6− | 1.0+ | 2005 03 02 | 691 | 0.0 | 0.1+ | 2005 04 06 | G96 | 0.1− | 0.4+ |
| 2005 02 02 | 704 | 0.1− | 0.1− | 2005 03 02 | 691 | 0.2+ | 0.1+ | 2005 04 06 | G96 | 0.3− | 0.0 |
| 2005 02 02 | 703 | 0.2+ | 0.2+ | 2005 03 02 | 691 | 0.1+ | 0.0 | 2005 04 06 | G96 | 0.1+ | 0.1− |

**2005 AH$_{56}$ = 1999 FV$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 109.96428 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.30404162 | $\omega$ | 97.23807 | | −0.94839206 | | +0.30234972 | |
| $a$ | 2.1903526 | $\Omega$ | 100.39598 | | −0.31551063 | | −0.86959850 | |
| $e$ | 0.0946686 | $i$ | 5.57702 | | −0.03171025 | | −0.39036277 | |
| $P$ | 3.24 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1− | 0.1− | 2002 03 11 | 644 | 0.1+ | 0.0 | 2005 01 15 | 704 | 0.5− | 0.3+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2002 03 11 | 644 | 0.0 | 0.0 | 2005 01 15 | 704 | 1.3− | 0.2+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2002 04 02 | 644 | 0.3− | 1.2+ | 2005 01 15 | 704 | 0.2+ | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2002 04 02 | 644 | 0.0 | 0.6+ | 2005 01 15 | 704 | 0.2+ | 0.9+ |
| 2002 02 16 | 644 | 0.2+ | 0.3+ | 2002 04 02 | 644 | 0.1+ | 1.1+ | 2005 01 18 | 691 | 0.0 | 0.2− |
| 2002 02 16 | 644 | 0.3+ | 0.5+ | 2004 12 20 | 621 | 0.3− | 0.7− | 2005 01 18 | 691 | 0.1+ | 0.3− |
| 2002 02 16 | 644 | 0.4+ | 0.4+ | 2004 12 20 | 621 | 0.8+ | 0.1− | 2005 01 18 | 691 | 0.2+ | 0.2− |
| 2002 03 11 | 644 | 0.0 | 0.3+ | 2004 12 20 | 621 | 0.1− | 0.4− | | | | |

**2005 AL$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 159.28471 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21603217 | $\omega$ | 129.99400 | | +0.06518559 | | −0.99677615 | |
| $a$ | 2.7507879 | $\Omega$ | 316.19887 | | +0.89370236 | | +0.07916967 | |
| $e$ | 0.1309386 | $i$ | 3.87514 | | +0.44389968 | | −0.01301799 | |
| $P$ | 4.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.1− | 0.1+ | 2003 09 28 | 691 | 0.2− | 0.4+ | 2005 01 16 | 568 | 0.1− | 0.2+ |
| 2003 09 16 | 691 | 0.1− | 0.3− | 2005 01 06 | 704 | 0.1− | 0.5− | 2005 01 16 | 568 | 0.2− | 0.2+ |
| 2003 09 16 | 691 | 0.4+ | 0.5+ | 2005 01 06 | 704 | 0.0 | 0.0 | 2005 01 16 | 568 | 0.1− | 0.1− |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2005 01 06 | 704 | 0.1− | 0.1+ | 2005 01 17 | 568 | 0.4− | 0.2+ |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2005 01 15 | 704 | 0.1+ | 0.1− | 2005 01 18 | 691 | 0.2+ | 0.0 |
| 2003 09 28 | 691 | 0.7+ | 0.0 | 2005 01 15 | 704 | 0.0 | 0.9+ | 2005 01 18 | 691 | 0.1+ | 0.1− |
| 2003 09 28 | 691 | 0.5+ | 0.2+ | 2005 01 15 | 704 | 0.8− | 0.1− | 2005 01 18 | 691 | 0.1+ | 0.1− |

**2005 AP$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 228.30492 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21732013 | $\omega$ | 71.90166 | | +0.77480560 | | −0.59564340 | |
| $a$ | 2.7399086 | $\Omega$ | 323.79088 | | +0.35288008 | | +0.68552637 | |
| $e$ | 0.0068361 | $i$ | 21.01674 | | +0.52454927 | | +0.41864369 | |
| $P$ | 4.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 16 | 010 | 0.8− | 0.8− | 2005 02 01 | 703 | 0.8+ | 1.5− | 2005 02 09 | 699 | 1.0+ | 0.2− |
| 1996 02 16 | 010 | 0.2+ | 0.3− | 2005 02 01 | 703 | 0.2+ | 0.2− | 2005 02 09 | 699 | 1.6+ | 1.0+ |
| 1996 02 16 | 010 | 0.4− | 0.2− | 2005 02 01 | 703 | 0.5− | 0.6− | 2005 03 03 | 691 | 0.2− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 22 | 699 | 1.2+ | 0.7− | 2005 02 01 | 703 | 0.0 | 0.3− | 2005 03 03 | 691 | 0.0 | 0.2+ |
| 2003 10 22 | 699 | 1.2− | 0.2+ | 2005 02 03 | 704 | 0.2− | 0.3+ | 2005 03 03 | 691 | 0.0 | 0.2+ |
| 2003 10 22 | 699 | 0.1+ | 0.6− | 2005 02 03 | 704 | 0.3+ | 0.7+ | 2005 03 13 | 691 | 0.3− | 0.3+ |
| 2003 10 22 | 699 | 0.0 | 0.9+ | 2005 02 03 | 704 | 0.1+ | 1.1+ | 2005 03 13 | 691 | 0.3− | 0.1+ |
| 2005 01 15 | 691 | 0.1+ | 0.1− | 2005 02 04 | G96 | 0.2− | 0.2− | 2005 03 13 | 691 | 0.2− | 0.2+ |
| 2005 01 15 | 691 | 0.2− | 0.1− | 2005 02 04 | G96 | 0.2− | 0.2− | 2005 04 05 | G96 | 0.6− | 0.2− |
| 2005 01 15 | 691 | 0.1+ | 0.0 | 2005 02 04 | G96 | 0.4− | 0.4− | 2005 04 05 | G96 | 0.2+ | 0.3− |
| 2005 01 18 | 703 | 1.3+ | 0.1− | 2005 02 04 | G96 | 0.2− | 0.2− | 2005 04 05 | G96 | 0.0 | 0.4− |
| 2005 01 18 | 703 | 0.5− | 0.7+ | 2005 02 04 | 699 | 0.3+ | 0.7+ | 2005 04 05 | G96 | 0.2− | 0.5− |
| 2005 01 18 | 703 | 0.1− | 0.6− | 2005 02 04 | 699 | 0.3+ | 0.3+ | 2005 04 06 | G96 | 0.2− | 0.2− |
| 2005 01 18 | 703 | 0.4− | 0.2− | 2005 02 04 | 699 | 0.2− | 0.8+ | 2005 04 06 | G96 | 0.0 | 0.3− |
| 2005 01 19 | 691 | 0.0 | 0.1− | 2005 02 04 | 699 | 0.1− | 0.2− | 2005 04 06 | G96 | 0.2− | 0.3− |
| 2005 01 19 | 691 | 0.1+ | 0.2− | 2005 02 09 | 699 | 1.1+ | 0.5+ | 2005 04 06 | G96 | 0.2− | 0.3− |
| 2005 01 19 | 691 | 0.2− | 0.2− | 2005 02 09 | 699 | 1.3+ | 0.1− | | | | |

**2005 AL$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.91773 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37631412 | $\omega$ | 132.69011 | | −0.55729684 | −0.82869684 | |
| $a$ | 1.9000676 | $\Omega$ | 350.74557 | | +0.63604005 | −0.38598013 | |
| $e$ | 0.0927952 | $i$ | 18.78475 | | +0.53373523 | −0.40531579 | |
| $P$ | 2.62 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 15 | 703 | 0.3+ | 0.4+ | 2005 03 01 | 703 | 0.0 | 0.1− | 2006 09 14 | 703 | 1.5− | 0.7+ |
| 2005 01 15 | 703 | 0.1− | 0.6− | 2005 03 09 | 703 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 2005 01 15 | 703 | 0.3− | 0.1− | 2005 03 09 | 703 | 0.5− | 0.5+ | 2006 09 14 | 703 | 0.4− | 1.5+ |
| 2005 01 15 | 703 | 0.4+ | 0.7− | 2005 03 09 | 703 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.2− | 0.5+ |
| 2005 01 19 | 704 | 0.4+ | 0.2+ | 2005 03 09 | 703 | 0.1− | 0.0 | 2006 09 14 | 703 | 1.2+ | 0.2− |
| 2005 01 19 | 704 | 0.5+ | 0.0 | 2005 04 12 | 568 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.0 |
| 2005 01 19 | 704 | 0.2+ | 0.3+ | 2005 04 12 | 568 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2005 03 01 | 703 | 0.4− | 0.6+ | 2005 04 12 | 568 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.5− |
| 2005 03 01 | 703 | 0.3− | 0.7+ | 2006 09 14 | 703 | 0.5− | 0.7− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2005 03 01 | 703 | 0.8− | 1.5− | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.6− |

**2005 AP$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.12763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19260049 | $\omega$ | 243.58688 | | +0.98777152 | −0.00098211 | |
| $a$ | 2.9695989 | $\Omega$ | 116.12175 | | +0.05169872 | +0.94546578 | |
| $e$ | 0.1044520 | $i$ | 9.99958 | | −0.14708729 | +0.32571997 | |
| $P$ | 5.12 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.4+ | 0.3+ | 2002 07 14 | 704 | 0.2− | 0.3+ | 2005 01 15 | 691 | 0.6− | 0.7− |
| 2002 06 16 | 644 | 0.3+ | 0.3− | 2002 07 14 | 704 | 0.2− | 1.1+ | 2005 01 19 | 691 | 0.2+ | 0.3+ |
| 2002 06 16 | 644 | 0.3+ | 0.3+ | 2002 07 14 | 704 | 0.5− | 1.7+ | 2005 01 19 | 691 | 0.3+ | 0.1+ |
| 2002 07 05 | 291 | 0.1− | 0.1− | 2003 10 19 | 699 | 0.5+ | 0.4− | 2005 01 19 | 691 | 0.4+ | 0.5+ |
| 2002 07 05 | 291 | 0.1− | 0.1− | 2003 10 19 | 699 | 0.5+ | 0.3− | 2005 02 01 | 703 | 0.7− | 0.7− |
| 2002 07 05 | 291 | 0.1− | 0.0 | 2003 10 19 | 699 | 0.3− | 0.9+ | 2005 02 01 | 703 | (3.8− | 0.4+) |
| 2002 07 14 | 644 | 0.5+ | 0.6− | 2003 10 19 | 699 | 0.7− | 0.2− | 2005 02 01 | 703 | 0.0 | 0.2− |
| 2002 07 14 | 644 | 0.4+ | 1.1− | 2005 01 15 | 691 | 0.0 | 0.0 | 2005 02 01 | 703 | 0.4− | 0.4− |
| 2002 07 14 | 644 | 0.5+ | 0.8− | 2005 01 15 | 691 | 0.0 | 0.1+ | | | | |

**2005 AH$_{81}$ = 2006 RL$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.06402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36752248 | $\omega$ | 20.71477 | | +0.95665381 | −0.29028197 | |
| $a$ | 1.9302495 | $\Omega$ | 355.93661 | | +0.19810289 | +0.70765523 | |
| $e$ | 0.0788615 | $i$ | 19.32477 | | +0.21346833 | +0.64417424 | |
| $P$ | 2.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 15 | 703 | 1.3− | 0.4− | 2006 07 29 | E12 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.0 |
| 2005 01 15 | 703 | 0.9− | 0.2+ | 2006 07 29 | E12 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.3+ | 0.2− |
| 2005 01 15 | 703 | 0.1+ | 0.4+ | 2006 07 29 | E12 | 0.0 | 0.7+ | 2006 09 14 | 644 | 0.1+ | 0.2− |
| 2005 01 15 | 703 | 0.6− | 0.2− | 2006 07 29 | E12 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2005 01 31 | 704 | 1.0+ | 0.6− | 2006 08 25 | E12 | 0.5− | 0.5+ | 2006 10 22 | G96 | 0.5− | 0.1− |
| 2005 01 31 | 704 | 0.4+ | 0.0 | 2006 08 25 | E12 | 0.7+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2005 01 31 | 704 | 0.7+ | 0.4+ | 2006 08 25 | E12 | 0.3− | 0.8− | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 2005 03 08 | 703 | 0.1+ | 0.5+ | 2006 08 25 | E12 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.3− | 0.4+ |
| 2005 03 08 | 703 | 1.0− | 1.1− | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2005 03 08 | 703 | 1.0+ | 0.7+ | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.1− | 0.8+ |
| 2005 03 08 | 703 | 0.3+ | 0.7+ | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |

**2005 AY$_{81}$ = 2006 KE$_{68}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.52904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17254584 | $\omega$ | 16.90589 | | −0.22055409 | −0.93310298 | |
| $a$ | 3.1954576 | $\Omega$ | 86.54157 | | +0.85874751 | −0.32384929 | |
| $e$ | 0.2163878 | $i$ | 16.53202 | | +0.46250254 | +0.15633448 | |
| $P$ | 5.71 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 07 | 703 | 1.0− | 0.3− | 2005 01 17 | 704 | 0.1− | 0.4+ | 2005 03 01 | 704 | 0.7− | 0.2− |
| 2005 01 07 | 703 | 0.0 | 0.5− | 2005 01 31 | 704 | 1.0+ | 0.7+ | 2006 05 20 | 691 | 0.2+ | 0.4− |
| 2005 01 07 | 703 | 0.5− | 0.1+ | 2005 01 31 | 704 | 0.8+ | 0.5+ | 2006 05 20 | 691 | 0.2− | 0.1− |
| 2005 01 07 | 703 | 0.1− | 0.1− | 2005 01 31 | 704 | 0.2+ | 0.5+ | 2006 05 20 | 691 | 0.2− | 0.2− |
| 2005 01 17 | 704 | 0.2+ | 0.2+ | 2005 03 01 | 704 | 0.6+ | 0.5+ | 2006 05 26 | 691 | 0.1+ | 0.6+ |
| 2005 01 17 | 704 | 0.4+ | 0.1− | 2005 03 01 | 704 | 0.3− | 1.1− | 2006 05 26 | 691 | 0.0 | 0.3+ |
| 2005 01 17 | 704 | 0.2+ | 0.2− | 2005 03 01 | 704 | 0.7− | 0.3− | 2006 05 26 | 691 | 0.1+ | 0.2− |

**2005 AZ$_{81}$ = 2003 UR$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.62976 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17940641 | $\omega$ | 104.42573 | | −0.92357563 | −0.31053740 | |
| $a$ | 3.1134657 | $\Omega$ | 57.93830 | | +0.15883109 | −0.84371482 | |
| $e$ | 0.2382534 | $i$ | 15.38845 | | +0.34897098 | −0.43784910 | |
| $P$ | 5.49 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 699 | 0.5+ | 0.0 | 2003 10 23 | 291 | 0.3+ | 0.2+ | 2005 02 14 | 704 | 0.2− | 0.1− |
| 2000 04 07 | 699 | 0.0 | 0.8− | 2003 10 23 | 291 | 0.0 | 0.2+ | 2005 02 14 | 704 | 0.6+ | 0.5+ |
| 2000 04 07 | 699 | 0.7+ | 0.1− | 2005 01 15 | 704 | 0.4+ | 0.4+ | 2005 02 14 | 704 | 0.3+ | 0.6+ |
| 2000 04 07 | 699 | 0.5+ | 0.3+ | 2005 01 15 | 704 | 0.0 | 0.7+ | 2005 02 14 | 704 | 0.9− | 0.3+ |
| 2000 04 27 | 699 | 0.6− | 0.1+ | 2005 01 15 | 704 | 0.7+ | 0.8− | 2005 03 08 | 704 | 0.5+ | 0.2− |
| 2000 04 27 | 699 | 0.3− | 0.4+ | 2005 01 15 | 704 | 0.2+ | 0.3− | 2005 03 08 | 704 | 0.2− | 0.5− |
| 2000 04 27 | 699 | 0.5− | 1.1+ | 2005 01 15 | 704 | 0.3+ | 0.1− | 2005 03 08 | 704 | 0.0 | 0.2+ |
| 2000 04 27 | 699 | 0.5+ | 0.4+ | 2005 01 31 | 704 | 0.0 | 0.5− | 2005 03 08 | 704 | 0.5+ | 0.1+ |
| 2003 10 22 | 691 | 0.2+ | 0.2− | 2005 01 31 | 704 | 0.5− | 0.3− | 2005 04 11 | 703 | 0.3+ | 1.1− |
| 2003 10 22 | 691 | 0.1− | 0.3− | 2005 01 31 | 704 | 0.1− | 0.1+ | 2005 04 11 | 703 | 0.3+ | 0.5− |
| 2003 10 22 | 691 | 0.7− | 0.4+ | 2005 01 31 | 704 | 0.2+ | 0.3+ | 2005 04 11 | 703 | 1.1− | 0.3− |
| 2003 10 23 | 291 | 0.1+ | 0.0 | 2005 01 31 | 704 | 0.4− | 0.6+ | 2005 04 11 | 703 | 1.5− | 0.2+ |

**2005 AA$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.35380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30587487 | $\omega$ | 324.54937 | | +0.81438012 | −0.57573936 | |
| $a$ | 2.1815919 | $\Omega$ | 70.76295 | | +0.54866270 | +0.72293624 | |
| $e$ | 0.0821283 | $i$ | 4.42611 | | +0.18908797 | +0.38195208 | |
| $P$ | 3.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.5+ | 0.0 | 2005 01 06 | 703 | 0.0 | 0.5− | 2005 02 03 | 704 | 0.1+ | 0.9+ |
| 1996 04 18 | 691 | 0.1− | 0.1− | 2005 01 06 | 703 | 1.4− | 0.2− | 2005 02 03 | 704 | 0.5+ | 0.5+ |
| 1996 04 18 | 691 | 0.3− | 0.2− | 2005 01 06 | 703 | 1.5− | 0.3+ | 2005 02 03 | 704 | 0.7− | 0.5+ |
| 2000 09 24 | 699 | 0.7+ | 0.3− | 2005 01 06 | 703 | 0.3+ | 0.8− | 2005 02 09 | 699 | 0.5− | 0.5+ |
| 2000 09 24 | 699 | 0.2− | 0.3+ | 2005 01 19 | 704 | 0.6+ | 0.2− | 2005 02 09 | 699 | 0.2+ | 1.0+ |
| 2000 09 24 | 699 | 0.1− | 0.1− | 2005 01 19 | 704 | 0.8+ | 0.5− | 2005 02 09 | 699 | 0.3+ | 0.3+ |
| 2000 09 24 | 699 | 0.5− | 0.2− | 2005 01 19 | 704 | 0.1+ | 0.1+ | 2005 02 09 | 699 | (2.2− | 1.2−) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 644 | 0.0 | 0.1+ | 2005 02 01 | 703 | 1.5− | 0.3+ | 2005 02 14 | 704 | 0.5+ | 0.3− |
| 2002 03 11 | 644 | 0.3− | 0.1− | 2005 02 01 | 703 | 0.2+ | 1.8− | 2005 02 14 | 704 | 0.1+ | 0.3− |
| 2002 03 11 | 644 | 0.1− | 0.2+ | 2005 02 01 | 703 | (3.7− | 1.8−) | 2005 02 14 | 704 | 0.4+ | 0.1− |
| 2002 04 02 | 644 | 0.5− | 0.3+ | 2005 02 01 | 703 | (0.9+ | 3.0−) | 2005 02 14 | 704 | 0.1+ | 0.3− |
| 2002 04 02 | 644 | 0.3− | 0.6+ | 2005 02 03 | 704 | 0.4+ | 0.5+ | 2005 02 14 | 704 | 0.4+ | 0.6− |
| 2002 04 02 | 644 | 0.3− | 0.4+ | 2005 02 03 | 704 | 1.3+ | 0.3− | | | | |

**2005 $AB_{82}$ = 2006 $QP_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 103.16317 | | (2000.0) | | −0.86148232 | +0.50437920 |
| $n$ | 0.27310028 | $\omega$ | 343.41916 | | −0.45629847 | −0.81968454 |
| $a$ | 2.3528159 | $\Omega$ | 227.02129 | | −0.22280017 | −0.27151222 |
| $e$ | 0.1759355 | $i$ | 4.60480 | | | |
| $P$ | 3.61 | $H$ | 16.2 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 0.5− | 0.6− | 2005 01 07 | 703 | 0.2− | 0.4+ | 2005 02 09 | 704 | 0.8+ | 0.3− |
| 1998 03 04 | 704 | 2.0− | 0.8− | 2005 01 07 | 703 | 0.1− | 0.4+ | 2005 03 02 | 703 | 0.6+ | 0.5+ |
| 1998 03 04 | 704 | 2.5− | 0.1− | 2005 01 07 | 703 | 1.0− | 0.1− | 2005 03 02 | 703 | 0.1+ | 0.7− |
| 1998 03 04 | 704 | 2.4− | 0.6+ | 2005 01 15 | 699 | 0.5+ | 1.2+ | 2005 03 02 | 703 | 0.9+ | 0.3+ |
| 1998 03 04 | 704 | (6.3− | 0.0 ) | 2005 01 15 | 699 | 1.9+ | 0.6+ | 2005 03 02 | 703 | 0.1+ | 0.4− |
| 1998 03 31 | 704 | 2.3+ | 0.5+ | 2005 01 15 | 699 | 0.3+ | 0.6+ | 2006 08 14 | 644 | 0.3− | 0.1− |
| 1998 03 31 | 704 | (3.2+ | 0.3+) | 2005 01 15 | 699 | 0.9− | 0.3− | 2006 08 14 | 644 | 0.2− | 0.1− |
| 1998 03 31 | 704 | (3.3+ | 0.5+) | 2005 02 01 | 106 | (2.4+ | 1.3+) | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 1998 03 31 | 704 | 2.5+ | 0.6− | 2005 02 01 | 106 | 0.1+ | 1.2+ | 2006 08 16 | 644 | 0.3− | 0.3− |
| 1998 03 31 | 704 | 2.0+ | 1.0− | 2005 02 01 | 106 | 1.1− | 0.5− | 2006 08 16 | 644 | 0.4− | 0.2− |
| 2003 09 28 | 691 | 0.1+ | 0.1− | 2005 02 02 | 703 | 0.4+ | 0.9− | 2006 08 16 | 644 | 0.4− | 0.2− |
| 2003 09 28 | 691 | 0.1+ | 0.0 | 2005 02 02 | 703 | 0.5+ | 0.5− | 2006 08 19 | 699 | 0.9− | 1.7+ |
| 2003 09 28 | 691 | 0.1− | 0.1− | 2005 02 02 | 703 | 0.0 | 0.6+ | 2006 08 19 | 699 | 0.7+ | 1.4+ |
| 2003 10 16 | 644 | 0.4+ | 0.2− | 2005 02 02 | 703 | 0.5+ | 0.1+ | 2006 08 19 | 699 | 0.9+ | 0.4− |
| 2003 10 16 | 644 | 0.4− | 0.1+ | 2005 02 09 | 704 | 0.1+ | 0.7+ | 2006 08 19 | 699 | 0.0 | 0.6+ |
| 2003 10 16 | 644 | 0.1+ | 0.1+ | 2005 02 09 | 704 | 0.8− | 0.9+ | | | | |
| 2005 01 07 | 703 | 0.8− | 0.5− | 2005 02 09 | 704 | 0.4− | 0.4+ | | | | |

**2005 $AC_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.17980 | | (2000.0) | | −0.45821294 | −0.88585689 |
| $n$ | 0.17689735 | $\omega$ | 142.74985 | | +0.76977033 | −0.35455116 |
| $a$ | 3.1428368 | $\Omega$ | 334.28235 | | +0.44440357 | −0.29925080 |
| $e$ | 0.1837635 | $i$ | 9.65672 | | | |
| $P$ | 5.57 | $H$ | 16.1 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 18 | 691 | 0.1− | 0.0 | 2005 02 01 | 703 | 0.5− | 0.6+ | 2005 02 07 | 246 | 0.8+ | 0.1+ |
| 2003 10 18 | 691 | 0.1− | 0.3− | 2005 02 01 | 703 | 1.0− | 0.5+ | 2005 02 14 | 704 | 0.6+ | 0.5− |
| 2003 10 18 | 691 | 0.0 | 0.0 | 2005 02 01 | 703 | 1.5− | 0.4+ | 2005 02 14 | 704 | 0.1− | 1.0− |
| 2003 11 02 | 691 | 0.1+ | 0.0 | 2005 02 04 | G96 | 0.5− | 0.1+ | 2005 02 14 | 704 | 0.5− | 1.2+ |
| 2003 11 02 | 691 | 0.2+ | 0.2+ | 2005 02 04 | G96 | 0.4+ | 0.1− | 2005 02 14 | 704 | 0.0 | 1.4+ |
| 2003 11 02 | 691 | 0.1− | 0.1+ | 2005 02 04 | G96 | 0.1− | 0.7− | 2005 03 10 | G96 | 0.0 | 0.2− |
| 2005 01 13 | 691 | 0.3+ | 0.0 | 2005 02 04 | G96 | 0.0 | 0.8− | 2005 03 10 | G96 | 0.1+ | 0.1− |
| 2005 01 13 | 691 | 0.2+ | 0.1− | 2005 02 07 | 246 | 0.2− | 0.6− | 2005 03 10 | G96 | 0.1− | 0.2− |
| 2005 01 13 | 691 | 0.1− | 0.0 | 2005 02 07 | 246 | 0.3− | 0.5+ | 2005 03 10 | G96 | 0.0 | 0.3− |
| 2005 02 01 | 703 | 0.5+ | 0.1+ | 2005 02 07 | 246 | 0.6+ | 0.3− | | | | |

**2005 $AD_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 241.65462 | | (2000.0) | | +0.95270682 | −0.28184545 |
| $n$ | 0.21993474 | $\omega$ | 266.83716 | | +0.30389046 | +0.88291188 |
| $a$ | 2.7181504 | $\Omega$ | 109.51057 | | +0.00055276 | +0.37553928 |
| $e$ | 0.0697530 | $i$ | 6.92426 | | | |
| $P$ | 4.48 | $H$ | 16.7 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 16 | 691 | 0.8+ | 0.2+ | 2003 09 28 | 699 | 0.4− | 0.9+ | 2005 02 04 | G96 | 0.4− | 0.5− |
| 1996 02 16 | 691 | 0.3+ | 1.1− | 2005 01 15 | 691 | 0.2− | 0.2+ | 2005 02 04 | G96 | 0.6− | 0.2− |
| 1996 02 16 | 691 | 0.0 | 1.0− | 2005 01 15 | 691 | 0.3− | 0.4+ | 2005 03 02 | 691 | 0.2+ | 0.0 |
| 1997 05 09 | 691 | 0.4− | 0.5+ | 2005 01 15 | 691 | 0.1− | 0.2+ | 2005 03 02 | 691 | 0.3+ | 0.1+ |
| 1997 05 09 | 691 | 0.3− | 0.4− | 2005 01 19 | 691 | 0.2− | 0.3+ | 2005 03 02 | 691 | 0.1− | 0.6+ |
| 1997 05 09 | 691 | 1.0− | 0.2− | 2005 01 19 | 691 | 0.1− | 0.4+ | 2006 05 05 | 691 | 0.6+ | 0.2+ |
| 2003 09 28 | 699 | 1.1+ | 0.6− | 2005 01 19 | 691 | 0.1+ | 0.0 | 2006 05 05 | 691 | 0.3+ | 0.6+ |
| 2003 09 28 | 699 | 0.5− | 0.8− | 2005 02 04 | G96 | 0.9− | 0.2− | 2006 05 05 | 691 | 0.6+ | 1.0− |
| 2003 09 28 | 699 | 0.2− | 0.5− | 2005 02 04 | G96 | 0.2− | 0.1− | | | | |

**2005 BF = 1997 $TL_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 260.04348 | | (2000.0) | | +0.93130718 | −0.36312488 |
| $n$ | 0.29728039 | $\omega$ | 175.52928 | | +0.33212357 | +0.87863981 |
| $a$ | 2.2234389 | $\Omega$ | 205.81983 | | +0.14953549 | +0.31005225 |
| $e$ | 0.1300154 | $i$ | 3.74029 | | | |
| $P$ | 3.32 | $H$ | 17.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 13 | 691 | 0.9− | 0.8− | 2000 08 31 | 704 | 0.6− | 0.5+ | 2005 01 17 | 333 | 0.0 | 0.6+ |
| 1996 05 13 | 691 | 0.1− | 0.4− | 2000 08 31 | 704 | 0.9+ | 1.3− | 2005 01 17 | 333 | 0.0 | 0.9+ |
| 1996 05 13 | 691 | 0.0 | 0.0 | 2000 09 03 | 645 | 0.1− | 0.1+ | 2005 01 17 | 333 | 0.2− | 0.5+ |
| 1997 10 05 | 910 | 1.4+ | 1.1+ | 2000 09 03 | 645 | 0.1− | 0.1+ | 2005 01 19 | 691 | 0.0 | 0.1+ |
| 1997 10 05 | 910 | 1.3+ | 1.2+ | 2000 10 29 | 691 | 0.4+ | 0.1− | 2005 01 19 | 691 | 0.1− | 0.2− |
| 1997 10 05 | 910 | 1.2+ | 1.3+ | 2000 10 29 | 691 | 0.2+ | 0.4− | 2005 01 19 | 691 | 0.1− | 0.1− |
| 1997 10 29 | 704 | 0.2+ | 0.4− | 2000 10 29 | 691 | 0.0 | 1.2+ | 2006 04 02 | G96 | 0.2− | 0.5+ |
| 1997 10 29 | 704 | 0.0 | 0.1− | 2002 02 11 | 704 | 0.3+ | 0.2+ | 2006 04 02 | G96 | 0.3− | 0.6+ |
| 1997 10 29 | 704 | 0.3− | 0.2+ | 2002 02 11 | 704 | 1.8+ | 0.5+ | 2006 04 02 | G96 | 0.1− | 0.2− |
| 1997 10 29 | 704 | 0.9+ | 0.4+ | 2002 02 11 | 704 | 0.8+ | 0.2+ | 2006 04 02 | G96 | 0.8− | 0.3+ |
| 1997 10 29 | 704 | 1.6− | 0.8+ | 2002 02 11 | 704 | 1.2+ | 0.6+ | 2006 04 24 | G96 | 0.4− | 0.4− |
| 1997 10 31 | 704 | (3.2+ | 0.9+) | 2002 02 11 | 704 | 1.4+ | 1.4+ | 2006 04 24 | G96 | 0.4+ | 0.4− |
| 1997 10 31 | 704 | (5.0+ | 0.3+) | 2002 03 13 | 704 | (1.3+ | 2.1+) | 2006 04 24 | G96 | 0.0 | 0.2− |
| 1997 10 31 | 704 | (3.8+ | 1.2−) | 2002 03 13 | 704 | 0.3+ | 1.9+ | 2006 04 24 | G96 | 1.0− | 0.5− |
| 1997 10 31 | 704 | (2.3+ | 1.9+) | 2002 03 13 | 704 | 0.0 | 2.0+ | 2006 05 19 | 703 | 1.0− | 0.6+ |
| 1997 10 31 | 704 | 1.2− | 0.3− | 2005 01 13 | 704 | 0.1+ | 0.9+ | 2006 05 19 | 703 | (1.5− | 2.3+) |
| 1997 11 06 | 704 | (2.5+ | 1.5+) | 2005 01 13 | 703 | 0.8− | 0.4+ | 2006 05 19 | 703 | 0.8− | 0.2+ |
| 1997 11 06 | 704 | (3.6+ | 1.2+) | 2005 01 13 | 704 | 1.7+ | 0.1− | 2006 05 19 | 703 | 1.5+ | 0.4− |
| 1997 11 06 | 704 | (2.6+ | 1.1+) | 2005 01 13 | 703 | 1.0− | 0.1− | 2006 05 21 | 691 | 1.0+ | 0.8+ |
| 1997 11 06 | 704 | (3.7+ | 1.0+) | 2005 01 13 | 704 | 0.8+ | 0.2+ | 2006 05 21 | 691 | 0.1+ | 0.4+ |
| 1997 11 06 | 704 | (2.8+ | 0.1+) | 2005 01 13 | 703 | 0.0 | 0.5− | 2006 05 21 | 691 | 0.0 | 0.5+ |
| 2000 08 25 | 704 | 0.9− | 0.4− | 2005 01 13 | 703 | 1.6− | 0.8− | 2006 05 29 | 691 | 0.2+ | 0.3+ |
| 2000 08 25 | 704 | 0.1− | 1.3+ | 2005 01 13 | 704 | 0.8+ | 0.5+ | 2006 05 29 | 691 | 0.2+ | 0.2+ |
| 2000 08 25 | 704 | (1.0+ | 2.1+) | 2005 01 16 | 333 | 0.8− | 0.2+ | 2006 05 29 | 691 | 0.4+ | 0.3+ |
| 2000 08 31 | 704 | 0.4− | 0.1+ | 2005 01 16 | 333 | 0.9− | 0.4+ | | | | |
| 2000 08 31 | 704 | 0.3− | 0.6+ | 2005 01 16 | 333 | 0.9− | 0.4+ | | | | |

**2005 BK = 2000 $UW_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.57509 | | (2000.0) | | +0.45658265 | −0.88876547 |
| $n$ | 0.26948815 | $\omega$ | 341.91644 | | +0.82122911 | +0.40357364 |
| $a$ | 2.3737935 | $\Omega$ | 80.90026 | | +0.34222072 | +0.21731142 |
| $e$ | 0.1697520 | $i$ | 2.34207 | | | |
| $P$ | 3.66 | $H$ | 17.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 16 | 691 | 0.2− | 0.0 | 2000 11 27 | 704 | 1.1− | 1.5+ | 2005 01 16 | 704 | 0.3− | 1.2+ |
| 1994 01 16 | 691 | 0.2+ | 0.1− | 2000 12 04 | 691 | 0.3+ | 0.2− | 2005 01 17 | 333 | 0.1+ | 0.1+ |
| 1994 01 16 | 691 | 0.1− | 0.3− | 2000 12 04 | 691 | 0.3+ | 0.1− | 2005 01 17 | 333 | 0.4− | 0.0 |
| 2000 10 24 | 704 | 0.6− | 0.6− | 2000 12 04 | 691 | 0.1+ | 0.3− | 2005 01 18 | 691 | 0.0 | 0.1− |
| 2000 10 24 | 704 | 0.8− | 0.5− | 2005 01 15 | 704 | 0.0 | 0.2+ | 2005 01 18 | 691 | 0.0 | 0.1− |
| 2000 10 24 | 704 | 0.3+ | 0.7+ | 2005 01 15 | 704 | 0.7+ | 0.1− | 2005 01 18 | 691 | 0.1+ | 0.0 |
| 2000 10 24 | 704 | 1.4− | 1.2+ | 2005 01 15 | 704 | 1.4+ | 1.2+ | 2005 03 14 | G96 | 0.5− | 0.3− |
| 2000 11 01 | 704 | 0.2+ | 1.0+ | 2005 01 15 | 704 | 0.2+ | 0.1− | 2005 03 14 | G96 | 0.2− | 0.0 |
| 2000 11 01 | 704 | 0.4− | 0.7+ | 2005 01 16 | 333 | 0.3− | 0.2+ | 2005 03 14 | G96 | 0.1− | 0.5− |
| 2000 11 01 | 704 | 0.3+ | 0.4+ | 2005 01 16 | 333 | 0.3− | 0.2+ | 2005 03 14 | G96 | 0.2− | 0.4− |
| 2000 11 18 | 691 | 0.1+ | 0.2− | 2005 01 16 | 333 | 0.2− | 0.2− | 2006 06 01 | 691 | 0.2− | 0.1+ |
| 2000 11 18 | 691 | 0.4+ | 0.1− | 2005 01 16 | 704 | 0.6+ | 0.0 | 2006 06 01 | 691 | 0.1+ | 0.3+ |
| 2000 11 18 | 691 | 0.1+ | 0.3− | 2005 01 16 | 704 | 0.8+ | 0.9+ | 2006 06 01 | 691 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.2− | 0.4+ | 2005 01 16 | 704 | 0.5− | 0.9+ | | | | | | |
| 2000 11 27 | 704 | 1.5− | 0.5+ | 2005 01 16 | 704 | 0.9− | 0.5− | | | | | | |

**2005 BE$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.66818 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35869396 | $\omega$ | 293.92814 | | +0.46447705 | | +0.88523897 |
| $a$ | 1.9617937 | $\Omega$ | 4.01603 | | −0.62794524 | | +0.34893425 |
| $e$ | 0.0501029 | $i$ | 20.70335 | | −0.62445644 | | +0.30756603 |
| $P$ | 2.75 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 16 | 703 | 1.0− | 0.5− | 2005 03 14 | 703 | 0.1+ | 1.0− | 2006 09 26 | 703 | 0.9− | 0.4− | | |
| 2004 12 16 | 703 | 0.3− | 0.5− | 2006 08 30 | 699 | 0.3− | 1.0− | 2006 09 26 | 703 | 1.0− | 0.8− | | |
| 2004 12 16 | 703 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1− | | |
| 2004 12 16 | 703 | 0.6− | 0.8− | 2006 08 30 | 699 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.3− | 0.6− | | |
| 2005 01 16 | 704 | 0.1− | 0.3− | 2006 09 12 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.8+ | | |
| 2005 01 16 | 704 | 0.9+ | 0.6+ | 2006 09 12 | 704 | 0.7− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.2− | | |
| 2005 01 16 | 704 | 1.0+ | 0.2+ | 2006 09 12 | 704 | 0.6− | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | | |
| 2005 01 16 | 704 | 0.3+ | 0.2+ | 2006 09 12 | 704 | 0.7− | 0.0 | 2006 10 09 | 644 | 0.2− | 0.0 | | |
| 2005 01 16 | 704 | 0.5+ | 0.3− | 2006 09 12 | 704 | (1.6− | 0.7+) | 2006 10 20 | 644 | 0.3− | 0.2− | | |
| 2005 01 17 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2005 01 17 | 704 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2005 01 17 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.3− | | |
| 2005 01 17 | 704 | 0.1− | 0.6− | 2006 09 14 | 703 | 1.2− | 0.6− | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 2005 01 17 | 704 | 0.6− | 0.9+ | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.3− | | |
| 2005 01 17 | 704 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 2005 01 17 | 704 | 1.0− | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.3+ | 2006 10 23 | 701 | 0.1+ | 0.4− | | |
| 2005 01 17 | 704 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 10 23 | 701 | 0.0 | 0.5− | | |
| 2005 01 17 | 704 | 0.3− | 0.3− | 2006 09 15 | 704 | 0.2+ | 0.4+ | 2006 10 23 | 701 | 0.5+ | 0.6− | | |
| 2005 01 17 | 704 | 0.1+ | 0.2+ | 2006 09 15 | 704 | 0.7+ | 0.5+ | 2006 10 23 | 701 | 0.2+ | 0.1− | | |
| 2005 01 20 | 704 | 0.7+ | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.9+ | 2006 10 27 | G96 | 0.2− | 0.1− | | |
| 2005 01 20 | 704 | 0.3+ | 0.5+ | 2006 09 21 | 699 | (1.2− | 1.8+) | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2005 01 20 | 704 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2005 01 20 | 704 | 1.1+ | 0.3− | 2006 09 21 | 699 | 0.1− | 0.1+ | 2006 11 10 | 704 | 0.0 | 0.3+ | | |
| 2005 01 20 | 704 | 0.1+ | 1.3+ | 2006 09 22 | 704 | 0.3− | 1.0− | 2006 11 10 | 704 | 0.1+ | 0.9− | | |
| 2005 03 01 | 704 | 0.1− | 0.3− | 2006 09 22 | 704 | 0.8+ | 0.9+ | 2006 11 10 | 704 | 0.9− | 1.1+ | | |
| 2005 03 01 | 704 | 0.7− | 0.6− | 2006 09 22 | 704 | 0.7− | 0.8+ | 2006 11 10 | 704 | 0.3+ | 0.3+ | | |
| 2005 03 01 | 704 | 1.3+ | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.8+ | 2006 11 11 | 291 | 0.4+ | 0.1+ | | |
| 2005 03 01 | 704 | 0.7+ | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.2+ | 2006 11 11 | 291 | 0.3+ | 0.1+ | | |
| 2005 03 08 | 704 | 1.2+ | 0.9+ | 2006 09 26 | 704 | 1.2+ | 0.3+ | 2006 11 11 | 291 | 0.4+ | 0.1+ | | |
| 2005 03 08 | 704 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.9+ | | |
| 2005 03 08 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.3− | 2006 11 11 | 703 | (1.9+ | 1.4+) | | |
| 2005 03 08 | 704 | 0.3+ | 0.7+ | 2006 09 26 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.2+ | 1.0+ | | |
| 2005 03 14 | 703 | 1.1− | 0.2− | 2006 09 26 | 704 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.9+ | 0.1+ | | |
| 2005 03 14 | 703 | 1.0− | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.3− | | | | | | |
| 2005 03 14 | 703 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.6− | | | | | | |

**2005 BJ$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.46375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35710970 | $\omega$ | 256.98659 | | +0.53020182 | | +0.79876757 |
| $a$ | 1.9675916 | $\Omega$ | 48.78680 | | −0.55419167 | | +0.58029917 |
| $e$ | 0.0626426 | $i$ | 22.20962 | | −0.64168343 | | +0.15881827 |
| $P$ | 2.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 645 | 0.0 | 0.1− | 2005 01 17 | 704 | 0.1+ | 0.9+ | 2006 10 04 | 703 | 0.3− | 0.5+ | | |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2005 03 11 | 703 | 0.4− | 0.6− | 2006 10 04 | 703 | (1.0− | 1.6+) | | |
| 2001 12 23 | 704 | 0.2− | 0.5− | 2005 03 11 | 703 | 0.1− | 1.2+ | 2006 10 09 | 644 | 0.3− | 0.1+ | | |
| 2001 12 23 | 704 | 0.1+ | 0.4− | 2005 03 11 | 703 | 0.9− | 1.0− | 2006 10 09 | 644 | 0.3− | 0.1+ | | |
| 2001 12 23 | 704 | 0.6+ | 1.1− | 2005 03 11 | 703 | 0.7− | 0.0 | 2006 10 09 | 644 | 0.5− | 0.2+ | | |
| 2001 12 23 | 704 | 0.1− | 0.1+ | 2005 03 31 | 703 | 0.7− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 1.3+ | | |
| 2002 01 13 | 699 | 0.1+ | 0.7+ | 2005 03 31 | 703 | 0.3+ | 0.5− | 2006 10 21 | 703 | 0.1− | 1.0+ | | |
| 2002 01 13 | 699 | (1.6− | 0.5−) | 2005 03 31 | 703 | 0.4− | 0.1+ | 2006 10 21 | 703 | 1.2+ | 0.3+ | | |
| 2002 01 13 | 699 | 0.1− | 1.2+ | 2005 03 31 | 703 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.5+ | | |
| 2002 01 13 | 699 | 0.0 | 0.2+ | 2005 04 11 | 703 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.5+ | | |
| 2005 01 16 | 704 | 0.7+ | 0.3+ | 2005 04 11 | 703 | 0.9− | 0.4+ | 2006 10 28 | 703 | 0.6+ | 0.4− | | |
| 2005 01 16 | 704 | 1.4+ | 0.6− | 2005 04 11 | 703 | 0.6− | 0.5+ | 2006 10 28 | 703 | 0.7− | 0.3− | | |
| 2005 01 16 | 704 | 0.4+ | 0.2+ | 2005 04 11 | 703 | 0.6− | 0.4− | 2006 10 28 | 703 | 0.6+ | 1.2− | | |
| 2005 01 16 | 704 | 1.1+ | 0.3− | 2006 09 25 | 703 | 0.2+ | 0.3− | 2006 11 10 | 704 | (1.1+ | 3.3+) | | |
| 2005 01 16 | 704 | 1.4+ | 0.0 | 2006 09 25 | 703 | 0.9− | 0.4− | 2006 11 10 | 704 | (0.8+ | 3.5+) | | |
| 2005 01 17 | 704 | 1.1+ | 1.2+ | 2006 09 25 | 703 | 0.1− | 0.5− | 2006 11 10 | 704 | (0.9+ | 5.1+) | | |
| 2005 01 17 | 704 | 1.3+ | 0.4− | 2006 09 25 | 703 | 0.1− | 0.4− | 2006 11 16 | 703 | 0.2+ | 0.5+ | | |
| 2005 01 17 | 704 | 0.1+ | 0.1− | 2006 10 04 | 703 | 0.4− | 0.6− | 2006 11 16 | 703 | 0.3− | 0.2+ | | |
| 2005 01 17 | 704 | 0.9+ | 0.9+ | 2006 10 04 | 703 | 0.7− | 0.5− | 2006 11 16 | 703 | 0.4− | 0.8+ | | |

**2005 BW$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.23028 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22449354 | $\omega$ | 245.17769 | | −0.92094870 | | +0.36223752 |
| $a$ | 2.6812264 | $\Omega$ | 315.67528 | | −0.23964274 | | −0.81716470 |
| $e$ | 0.2115072 | $i$ | 11.86461 | | −0.30728628 | | −0.44835905 |
| $P$ | 4.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.7− | 0.5+ | 2005 01 20 | H36 | 0.2− | 0.0 | 2005 02 09 | 704 | 1.1+ | 1.0+ | | |
| 2002 08 28 | 644 | 0.2+ | 0.7+ | 2005 01 20 | H36 | 0.5− | 0.3− | 2005 02 10 | 568 | 0.3− | 0.5− | | |
| 2002 08 28 | 644 | 0.7− | 0.6+ | 2005 01 20 | 699 | 1.9− | 0.0 | 2005 02 10 | 568 | 0.2− | 0.4− | | |
| 2005 01 07 | 704 | 0.3+ | 0.2− | 2005 01 20 | 699 | 0.3− | 0.1− | 2005 02 10 | 568 | 0.2− | 0.5− | | |
| 2005 01 07 | 704 | 1.3+ | 0.6+ | 2005 01 20 | H36 | 1.3− | 0.4− | 2005 02 11 | 734 | 0.1+ | 0.4− | | |
| 2005 01 07 | 704 | 0.4+ | 0.1− | 2005 01 21 | H36 | 0.6− | 0.3+ | 2005 02 11 | 734 | 0.2− | 0.3+ | | |
| 2005 01 15 | 704 | 0.3− | 1.2+ | 2005 01 21 | H36 | 0.7− | 0.2− | 2005 02 11 | 734 | 0.3+ | 0.1− | | |
| 2005 01 15 | 704 | 0.6+ | 0.5+ | 2005 02 01 | 703 | 0.4− | 0.4− | 2005 02 11 | 734 | 0.4+ | 1.1− | | |
| 2005 01 15 | 704 | 0.4− | 0.4+ | 2005 02 01 | 703 | 0.0 | 0.3+ | 2005 02 11 | 734 | 0.3+ | 0.3− | | |
| 2005 01 15 | 704 | 0.5+ | 0.5− | 2005 02 01 | 703 | 0.3− | 0.5+ | 2005 02 26 | H36 | 0.2− | 0.4+ | | |
| 2005 01 15 | 704 | 0.3+ | 1.0+ | 2005 02 01 | 703 | 0.0 | 0.1+ | 2005 02 26 | H36 | 0.0 | 0.0 | | |
| 2005 01 17 | 704 | 0.5+ | 1.5+ | 2005 02 02 | 704 | 0.6+ | 0.3+ | 2005 02 26 | H36 | 0.6− | 0.2− | | |
| 2005 01 17 | 704 | 1.7+ | 0.2+ | 2005 02 02 | 704 | 0.5+ | 0.7− | 2005 03 02 | 703 | 0.4− | 0.2− | | |
| 2005 01 17 | 704 | 1.5+ | 0.0 | 2005 02 02 | 704 | 0.5+ | 0.1− | 2005 03 02 | 703 | 0.2− | 0.6− | | |
| 2005 01 17 | 704 | (2.1+ | 0.1+) | 2005 02 02 | 704 | 0.2+ | 0.0 | 2005 03 02 | 703 | 0.1− | 0.7+ | | |
| 2005 01 18 | H36 | 0.1− | 0.3− | 2005 02 04 | 704 | 0.8+ | 0.5+ | 2005 03 02 | 703 | (1.1− | 2.1+) | | |
| 2005 01 18 | H36 | 0.1− | 0.5+ | 2005 02 04 | 704 | 0.1+ | 0.0 | 2005 03 09 | G96 | 0.3− | 0.5+ | | |
| 2005 01 18 | H36 | 0.2+ | 0.3− | 2005 02 04 | 704 | 0.0 | 0.1− | 2005 03 09 | G96 | 0.4− | 0.4+ | | |
| 2005 01 18 | H36 | 0.3+ | 0.2− | 2005 02 04 | 704 | 0.1+ | 1.1+ | 2005 03 09 | G96 | 0.1− | 0.8− | | |
| 2005 01 19 | 691 | 0.2+ | 0.3− | 2005 02 04 | 704 | 0.0 | 1.4+ | 2005 03 09 | G96 | 0.6+ | 0.5− | | |
| 2005 01 19 | 691 | 0.2− | 0.3− | 2005 02 04 | 704 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.1+ | 0.2+ | | |
| 2005 01 19 | 691 | 0.1+ | 0.3− | 2005 02 04 | 704 | 0.4+ | 0.9+ | 2005 03 11 | G96 | 0.1− | 0.3+ | | |
| 2005 01 19 | 691 | 0.4− | 0.4− | 2005 02 04 | 704 | 0.0 | 0.8+ | 2005 03 11 | G96 | 0.1− | 0.6+ | | |
| 2005 01 19 | 691 | 0.0 | 0.1+ | 2005 02 04 | 704 | 1.2− | 1.2+ | 2005 03 11 | G96 | 0.3− | 0.1+ | | |
| 2005 01 19 | 691 | 0.6− | 0.4− | 2005 02 04 | 704 | 1.3+ | 0.2+ | 2006 07 04 | D35 | 0.4− | 0.7+ | | |
| 2005 01 20 | 699 | 0.9+ | 0.2+ | 2005 02 09 | 704 | 1.0+ | 0.0 | 2006 07 04 | D35 | 0.4− | 0.8+ | | |
| 2005 01 20 | H36 | 0.4+ | 0.7+ | 2005 02 09 | 704 | 0.3+ | 0.1− | 2006 07 04 | D35 | 0.3− | 0.6+ | | |
| 2005 01 20 | 699 | 0.4− | 0.7+ | 2005 02 09 | 704 | 0.4+ | 0.2− | | | | | | |

**2005 BZ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.32537 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23378925 | $\omega$ | 137.15445 | | −0.34260750 | | −0.93692965 |
| $a$ | 2.6096746 | $\Omega$ | 332.66430 | | +0.81607913 | | −0.26032876 |
| $e$ | 0.0818547 | $i$ | 8.66205 | | +0.46544060 | | −0.23322043 |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.0 | 0.1− | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 01 16 | 704 | 1.1+ | 0.8+ | | |
| 1999 10 14 | 645 | 0.1+ | 0.2− | 2003 10 22 | 691 | 0.1− | 0.0 | 2005 01 16 | 704 | 0.5+ | 1.0+ | | |
| 2001 01 24 | 691 | 0.3+ | 0.3− | 2003 10 22 | 691 | 0.3+ | 0.2+ | 2005 01 16 | 704 | 0.5+ | 0.5+ | | |
| 2001 01 24 | 691 | 0.2+ | 0.2− | 2003 10 22 | 691 | 0.1+ | 0.0 | 2005 01 17 | 704 | 0.1− | 0.4+ | | |
| 2001 01 24 | 691 | 0.1+ | 0.2− | 2003 10 22 | 645 | 0.1− | 0.0 | 2005 01 17 | 704 | 0.5+ | 0.1+ | | |
| 2001 02 17 | 691 | 0.1− | 0.2+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 01 17 | 704 | 0.7+ | 0.9− | | |
| 2001 02 17 | 691 | 0.2− | 0.1+ | 2003 10 24 | 645 | 0.1− | 0.0 | 2005 01 17 | 704 | 0.5+ | 0.9+ | | |
| 2001 02 17 | 691 | 0.3− | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.3− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 691 | 0.3− | 0.3+ | 2003 11 20 | 645 | 0.0 | 0.1+ | 2005 03 16 | G96 | 0.0 | 0.0 |
| 2003 09 30 | 691 | 0.1− | 0.5+ | 2003 11 20 | 645 | 0.0 | 0.1+ | 2005 03 16 | G96 | 0.2+ | 0.3− |
| 2003 09 30 | 691 | 0.2− | 0.4+ | 2005 01 16 | 704 | 1.8− | 1.0− | 2005 03 16 | G96 | 0.1+ | 0.3− |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2005 01 16 | 704 | 1.0− | 0.9+ | | | | |

**2005 BR$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.92247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22614444 | $\omega$ | 320.23890 | | −0.05355363 | −0.98397955 | |
| $a$ | 2.6681615 | $\Omega$ | 132.10637 | | +0.96455180 | −0.09504106 | |
| $e$ | 0.1220275 | $i$ | 13.25030 | | +0.25840247 | +0.15083584 | |
| $P$ | 4.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 16 | 691 | 0.1− | 0.0 | 2005 02 02 | 704 | 0.1− | 0.1− | 2006 05 28 | G96 | 0.3− | 0.3− |
| 2005 01 16 | 691 | 0.0 | 0.2− | 2005 02 02 | 704 | 0.5+ | 1.1− | 2006 05 28 | G96 | 0.3− | 0.3− |
| 2005 01 16 | 691 | 0.2− | 0.1− | 2006 04 30 | 691 | 0.1− | 0.1+ | 2006 05 28 | G96 | 0.2− | 0.4− |
| 2005 01 17 | 704 | 0.1+ | 1.1+ | 2006 04 30 | 691 | 0.1+ | 0.2+ | 2006 05 28 | G96 | 0.1− | 0.2− |
| 2005 01 17 | 704 | 0.2− | 0.9− | 2006 04 30 | 691 | 0.2− | 0.0 | 2006 05 28 | G96 | 0.2− | 0.1− |
| 2005 01 17 | 704 | 0.4+ | 1.4+ | 2006 05 08 | 691 | 0.1− | 0.1− | 2006 05 28 | G96 | 0.4− | 0.3− |
| 2005 02 02 | 704 | 0.2− | 0.6+ | 2006 05 08 | 691 | 0.2− | 0.5+ | 2006 05 28 | G96 | 0.5− | 0.3− |
| 2005 02 02 | 704 | 0.3− | 0.2− | 2006 05 08 | 691 | 1.0+ | 0.2− | | | | |
| 2005 02 02 | 704 | 0.9+ | 0.6+ | 2006 05 28 | G96 | 0.1+ | 0.1+ | | | | |

**2005 BC$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.21861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29609780 | $\omega$ | 25.55349 | | +0.74058600 | +0.66453925 | |
| $a$ | 2.2293552 | $\Omega$ | 292.42617 | | −0.63352386 | +0.64109857 | |
| $e$ | 0.1263181 | $i$ | 6.18550 | | −0.22400867 | +0.38390130 | |
| $P$ | 3.33 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 05 | 704 | 0.2+ | 0.1− | 2003 08 24 | 704 | 0.4− | 0.1+ | 2005 01 16 | 568 | 0.0 | 0.2− |
| 2003 08 05 | 704 | 0.2+ | 0.6+ | 2003 09 02 | 704 | 0.1− | 0.4+ | 2005 01 16 | 691 | 0.1+ | 0.1+ |
| 2003 08 05 | 704 | 1.1− | 0.4+ | 2003 09 02 | 704 | 0.6− | 0.2− | 2005 01 16 | 568 | 0.1+ | 0.1− |
| 2003 08 05 | 704 | 0.1+ | 0.5− | 2003 09 02 | 704 | 0.2+ | 0.5+ | 2005 01 17 | 568 | 0.0 | 0.3+ |
| 2003 08 05 | 704 | 0.2+ | 0.3− | 2005 01 16 | 568 | 0.0 | 0.1− | 2005 01 19 | 691 | 0.2− | 0.0 |
| 2003 08 24 | 704 | 0.9+ | 0.7− | 2005 01 16 | 691 | 0.1+ | 0.0 | 2005 01 19 | 691 | 0.1+ | 0.1− |
| 2003 08 24 | 704 | 0.2+ | 0.2− | 2005 01 16 | 691 | 0.0 | 0.1− | 2005 01 19 | 691 | 0.2− | 0.0 |

**2005 BO$_{19}$ = 2006 KO$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.49741 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29357624 | $\omega$ | 189.07423 | | +0.68166439 | +0.72255986 | |
| $a$ | 2.2421024 | $\Omega$ | 123.99879 | | −0.66228159 | +0.67619156 | |
| $e$ | 0.1791341 | $i$ | 7.97821 | | −0.31099315 | +0.14377842 | |
| $P$ | 3.36 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.1+ | 0.7− | 2004 12 18 | G96 | 0.2− | 0.3+ | 2005 01 19 | 691 | 0.2− | 0.2+ |
| 1995 01 29 | 691 | 0.3+ | 0.2− | 2004 12 18 | G96 | 0.3− | 0.2+ | 2006 05 30 | G92 | 0.1− | 0.1+ |
| 1995 01 29 | 691 | 0.4− | 0.3− | 2004 12 18 | G96 | 0.1+ | 0.2− | 2006 05 30 | G92 | 0.4− | 0.4− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2005 01 16 | 691 | 0.1+ | 0.3+ | 2006 05 30 | G92 | 0.2− | 0.2− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2005 01 16 | 568 | 0.4− | 0.3− | 2006 05 31 | G92 | 0.3+ | 0.1− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 01 16 | 691 | 0.3+ | 0.0 | 2006 05 31 | G92 | 0.1− | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 01 16 | 568 | 0.3− | 0.3− | 2006 05 31 | G92 | 0.6+ | 0.1+ |
| 2003 09 27 | 699 | 0.8− | 0.0 | 2005 01 16 | 691 | 0.4+ | 0.5+ | 2006 06 01 | G92 | 0.7+ | 0.2− |
| 2003 09 27 | 699 | 0.4− | 0.6+ | 2005 01 16 | 568 | 0.4− | 0.3− | 2006 06 01 | G92 | (2.5− | 0.8−) |
| 2003 09 27 | 699 | 0.3+ | 1.3+ | 2005 01 17 | 568 | 0.7− | 0.1+ | 2006 06 01 | G92 | 0.4− | 0.2+ |
| 2003 09 27 | 699 | 0.2+ | 0.2− | 2005 01 19 | 691 | 0.1+ | 0.2+ | | | | |
| 2004 12 18 | G96 | 0.3− | 0.4− | 2005 01 19 | 691 | 0.0 | 0.3+ | | | | |

**2005 BY$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.37170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12540076 | $\omega$ | 70.53147 | | +0.64430861 | −0.76462645 | |
| $a$ | 3.9530830 | $\Omega$ | 339.33336 | | +0.68524522 | +0.58567806 | |
| $e$ | 0.2749696 | $i$ | 2.36897 | | +0.33956649 | +0.26893792 | |
| $P$ | 7.86 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 691 | 0.1− | 0.0 | 2003 11 20 | 704 | 0.1− | 0.2− | 2005 04 09 | G96 | 0.8− | 0.3− |
| 2003 10 21 | 691 | 0.1− | 0.1− | 2003 11 30 | 691 | 0.1+ | 0.0 | 2005 04 09 | G96 | 0.3+ | 0.4− |
| 2003 10 21 | 691 | 0.1+ | 0.2+ | 2003 11 30 | 691 | 0.0 | 0.1− | 2005 04 09 | G96 | 0.3− | 0.3− |
| 2003 10 24 | 704 | 0.9− | 2.0+ | 2003 11 30 | 691 | 0.2+ | 0.2− | 2006 02 25 | 691 | 0.1− | 0.3− |
| 2003 10 24 | 704 | 1.1− | 0.8+ | 2005 01 16 | 691 | 0.1− | 0.2− | 2006 02 25 | 691 | 0.3− | 0.3− |
| 2003 10 24 | 704 | 0.0 | 0.5− | 2005 01 16 | 691 | 0.1+ | 0.1− | 2006 02 25 | 691 | 0.2− | 0.1− |
| 2003 10 24 | 704 | 0.2− | 0.1+ | 2005 01 16 | 691 | 0.4− | 0.2− | 2006 03 04 | 691 | 1.1+ | 0.6+ |
| 2003 11 20 | 704 | 0.5− | 0.7− | 2005 01 19 | 291 | 0.1+ | 0.4+ | 2006 03 04 | 691 | 0.3+ | 0.2+ |
| 2003 11 20 | 704 | 0.2+ | 0.5+ | 2005 01 19 | 291 | 0.6+ | 0.1+ | 2006 03 04 | 691 | 0.5− | 0.4+ |
| 2003 11 20 | 704 | 1.5+ | 0.5+ | 2005 01 19 | 291 | 0.2− | 0.0 | | | | |
| 2003 11 20 | 704 | 0.0 | 0.8− | 2005 04 09 | G96 | 0.3− | 0.6− | | | | |

**2005 BE$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.41944 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17391440 | $\omega$ | 128.25547 | | −0.68468486 | −0.72872926 | |
| $a$ | 3.1786717 | $\Omega$ | 5.01232 | | +0.61523094 | −0.58718574 | |
| $e$ | 0.1637908 | $i$ | 8.33234 | | +0.39076531 | −0.35237278 | |
| $P$ | 5.67 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.5− | 0.2− | 2002 09 15 | 644 | 0.2− | 0.4− | 2005 01 31 | 644 | 0.3+ | 0.1+ |
| 2002 08 18 | 644 | 0.4− | 0.2+ | 2002 09 15 | 644 | 0.1− | 0.5+ | 2005 01 31 | 644 | 0.1+ | 0.3− |
| 2002 08 29 | 644 | 0.2+ | 0.7+ | 2002 09 15 | 644 | 0.3+ | 0.6− | 2005 02 01 | 703 | 0.1− | 0.6+ |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2003 11 24 | 704 | 0.6− | 0.4− | 2005 02 01 | 703 | 0.1+ | 0.3− |
| 2002 08 29 | 644 | 0.6+ | 0.1+ | 2003 11 24 | 704 | 0.6+ | 0.5− | 2005 02 01 | 703 | 0.3+ | 0.0 |
| 2002 08 30 | 644 | 0.1− | 0.0 | 2003 11 24 | 704 | 0.1− | 1.0+ | 2005 02 01 | 703 | 0.5− | 0.2+ |
| 2002 08 30 | 644 | 0.0 | 0.2− | 2005 01 06 | 703 | (1.8− | 0.0 ) | 2005 03 09 | 703 | 0.9− | 0.1+ |
| 2002 08 30 | 644 | 0.0 | 0.1+ | 2005 01 06 | 703 | 0.5+ | 0.1+ | 2005 03 09 | 703 | (0.3− | 2.0+) |
| 2002 08 30 | 644 | 0.5+ | 0.0 | 2005 01 06 | 703 | 0.4− | 0.2− | 2005 03 09 | 703 | 0.2− | 0.0 |
| 2002 08 30 | 644 | 0.1− | 0.3+ | 2005 01 06 | 703 | 0.3− | 0.7− | 2005 03 09 | 703 | 0.6+ | 0.2+ |
| 2002 08 30 | 644 | 0.3− | 0.4− | 2005 01 31 | 644 | 0.3+ | 0.1+ | | | | |

**2005 BC$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.32268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17803825 | $\omega$ | 108.63840 | | −0.68103903 | +0.71492714 | |
| $a$ | 3.1293958 | $\Omega$ | 117.37266 | | −0.72089757 | −0.61670464 | |
| $e$ | 0.0349029 | $i$ | 10.26962 | | −0.12842326 | −0.32947620 | |
| $P$ | 5.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.4+ | 0.0 | 2002 08 30 | 644 | 0.6− | 0.5+ | 2005 01 15 | 691 | 0.1+ | 0.3+ |
| 2002 08 19 | 644 | 0.1+ | 0.3− | 2002 08 30 | 644 | 0.0 | 0.5+ | 2005 01 15 | 691 | 0.3+ | 0.4+ |
| 2002 08 19 | 644 | 0.0 | 0.0 | 2002 09 16 | 644 | 0.0 | 0.1+ | 2005 01 16 | 568 | 0.2− | 1.7− |
| 2002 08 26 | 644 | 0.2− | 0.7− | 2002 09 16 | 644 | 0.5+ | 0.0 | 2005 01 16 | 568 | 0.4− | 1.3− |
| 2002 08 26 | 644 | 0.0 | 0.3− | 2002 09 16 | 644 | 0.6− | 0.0 | 2005 01 16 | 568 | 0.4− | 1.4− |
| 2002 08 30 | 644 | 0.5+ | 0.1+ | 2005 01 15 | 691 | 0.1− | 0.4+ | 2005 01 17 | 568 | 0.4− | 0.1+ |

### 2005 BE$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.55140 | | (2000.0) | | | |
| $n$ | 0.22181262 | $\omega$ | 209.33709 | | +0.99958968 | −0.02126575 |
| $a$ | 2.7027873 | $\Omega$ | 151.86193 | | +0.02680038 | +0.93080694 |
| $e$ | 0.0984131 | $i$ | 2.33202 | | −0.01010972 | +0.36489204 |
| $P$ | 4.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 599 | 0.2+ | 0.5− | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.8+ | 0.6+ |
| 2003 09 20 | 599 | 0.1− | 0.0 | 2005 01 16 | 568 | 0.2− | 0.3− | 2006 03 24 | G96 | 0.1+ | 0.8+ |
| 2003 09 20 | 599 | 0.3+ | 0.1+ | 2005 01 16 | 568 | 0.2− | 0.3− | 2006 03 24 | G96 | 0.1− | 0.3+ |
| 2003 09 20 | 599 | 0.1+ | 0.1+ | 2005 01 16 | 568 | 0.1− | 0.3− | 2006 03 24 | G96 | 0.3+ | 0.8+ |
| 2003 10 19 | 691 | 0.2+ | 0.3+ | 2005 01 17 | 568 | 0.1− | 0.2− | 2006 05 24 | G96 | 0.9− | 0.0 |
| 2003 10 19 | 691 | 0.0 | 0.4+ | 2005 01 19 | 691 | 0.1− | 0.4+ | 2006 05 24 | G96 | 0.3− | 0.2− |
| 2003 10 19 | 691 | 0.3− | 0.6+ | 2005 01 19 | 691 | 0.2+ | 0.2− | 2006 05 24 | G96 | 0.1+ | 0.3− |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2005 01 19 | 691 | 0.1+ | 0.2+ | 2006 05 24 | G96 | 0.6+ | 0.3+ |

### 2005 BF$_{43}$ = 2006 GZ$_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 220.29978 | | (2000.0) | | | |
| $n$ | 0.24109194 | $\omega$ | 253.91707 | | +0.82739929 | −0.56088596 |
| $a$ | 2.5567068 | $\Omega$ | 140.18778 | | +0.53083146 | +0.76441270 |
| $e$ | 0.1613028 | $i$ | 2.55922 | | +0.18338042 | +0.31793106 |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 24 | 809 | 0.7− | 0.5− | 2001 03 25 | 695 | 0.4− | 0.2+ | 2005 01 17 | 568 | 0.5− | 0.5− |
| 1995 08 25 | 809 | 0.5+ | 0.5+ | 2001 03 25 | 695 | 0.6− | 0.4+ | 2005 01 17 | 704 | 1.1− | 1.3+ |
| 1995 08 25 | 809 | 0.5+ | 0.7− | 2003 07 24 | 644 | 0.0 | 0.8+ | 2005 01 17 | 704 | 0.1+ | 1.4+ |
| 1995 08 26 | 809 | 0.7+ | 0.4− | 2003 07 24 | 644 | 0.1+ | 0.8+ | 2005 02 02 | 704 | 0.7+ | 0.5+ |
| 1995 08 27 | 809 | 0.8− | 0.1+ | 2003 07 24 | 644 | 0.1+ | 0.9+ | 2005 02 02 | 704 | 0.2− | 1.0+ |
| 1995 09 20 | 809 | 0.0 | 0.2+ | 2003 08 04 | 704 | 0.1− | 1.2+ | 2005 02 02 | 704 | 0.0 | 0.3+ |
| 1995 09 22 | 809 | 0.4− | 0.2+ | 2003 08 04 | 704 | 0.4− | 1.5+ | 2005 02 02 | 704 | 0.1+ | 0.1− |
| 1995 09 22 | 809 | 0.1− | 0.5− | 2003 08 04 | 704 | 0.4− | 0.9+ | 2005 02 02 | 704 | 0.8+ | 0.9+ |
| 1995 09 23 | 809 | 0.6− | 0.3− | 2003 08 22 | 704 | 0.3− | 1.1+ | 2006 04 02 | 691 | 0.1+ | 0.2+ |
| 1999 09 07 | 704 | 0.4− | 0.2+ | 2003 08 22 | 704 | 0.5+ | 1.3+ | 2006 04 02 | 691 | 0.4− | 0.0 |
| 1999 09 07 | 704 | 0.2+ | 0.6− | 2003 08 22 | 704 | 0.0 | 1.4+ | 2006 04 02 | 691 | 0.2− | 0.1+ |
| 1999 09 07 | 704 | 1.1− | 0.7+ | 2005 01 16 | 568 | 0.4− | 0.5+ | 2006 04 07 | 691 | 0.1− | 0.2+ |
| 1999 09 07 | 704 | 0.1+ | 1.3+ | 2005 01 16 | 568 | 0.3− | 0.4+ | 2006 04 07 | 691 | 0.2− | 0.3+ |
| 2001 01 04 | 608 | 2.6+ | 1.7+ | 2005 01 16 | 568 | 0.2− | 0.4+ | 2006 04 07 | 691 | 0.5+ | 0.1+ |
| 2001 01 04 | 608 | 2.2+ | 1.1+ | 2005 01 17 | 704 | 1.8− | 0.8+ | | | | |
| 2001 01 04 | 608 | 2.7+ | 0.8+ | 2005 01 17 | 704 | 0.3+ | 0.8− | | | | |

### 2005 BG$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 152.63930 | | (2000.0) | | | |
| $n$ | 0.17635092 | $\omega$ | 253.95793 | | +0.28712981 | −0.95788043 |
| $a$ | 3.1493256 | $\Omega$ | 179.30295 | | +0.95776579 | +0.28701013 |
| $e$ | 0.0693544 | $i$ | 22.43214 | | +0.01552924 | +0.00950055 |
| $P$ | 5.59 | $H$ | 14.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.1− | 2002 08 31 | 644 | 0.1− | 0.3+ | 2003 10 01 | 699 | 1.3− | 0.7− |
| 2000 03 03 | 645 | 0.0 | 0.2− | 2002 08 31 | 644 | 0.1− | 0.2+ | 2003 10 16 | 699 | 0.1+ | 0.1+ |
| 2000 03 11 | 704 | 0.2+ | 0.3+ | 2002 08 31 | 644 | 0.3− | 0.4+ | 2003 10 16 | 699 | 0.2+ | 0.4− |
| 2000 03 11 | 704 | 0.1− | 0.3+ | 2003 08 23 | 704 | 0.1− | 0.1+ | 2003 10 16 | 699 | 1.1− | 0.6− |
| 2000 03 11 | 704 | 0.3+ | 0.8+ | 2003 08 23 | 704 | 0.0 | 0.3+ | 2003 10 16 | 699 | 1.1+ | 0.7+ |
| 2000 03 11 | 704 | 0.2+ | 0.2+ | 2003 08 23 | 704 | 0.6− | 0.9+ | 2003 12 14 | 644 | 0.2+ | 0.0 |
| 2000 03 11 | 704 | 0.1− | 0.3+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2003 12 14 | 644 | 0.1+ | 0.1− |
| 2000 04 05 | 704 | 0.7+ | 1.1+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2003 12 14 | 644 | 0.5+ | 0.2+ |
| 2000 04 05 | 704 | 0.2− | 1.1+ | 2003 09 27 | 645 | 0.0 | 0.0 | 2005 01 19 | 703 | 0.4+ | 0.1+ |
| 2000 04 05 | 704 | 0.0 | 1.2+ | 2003 09 27 | 645 | 0.0 | 0.1+ | 2005 01 19 | 703 | 0.5− | 0.7+ |
| 2000 04 05 | 704 | 0.5− | 0.9+ | 2003 09 30 | 645 | 0.0 | 0.0 | 2005 01 19 | 703 | 0.9− | 0.3− |
| 2000 04 05 | 704 | 0.2− | 1.1+ | 2003 09 30 | 645 | 0.0 | 0.1− | 2005 01 19 | 703 | 0.6− | 0.4− |
| 2002 08 14 | 644 | 0.1+ | 0.4+ | 2003 10 01 | 699 | 0.1− | 2.0+ | 2005 02 06 | 644 | 0.2+ | 0.3+ |
| 2002 08 14 | 644 | 0.3+ | 0.1+ | 2003 10 01 | 699 | 0.4− | 0.1− | 2005 02 06 | 644 | 0.6+ | 0.4+ |
| 2002 08 14 | 644 | 0.0 | 0.1+ | 2003 10 01 | 699 | 0.0 | 0.4+ | 2005 02 06 | 644 | 0.7+ | 0.3+ |

### 2005 BU$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 185.67924 | | (2000.0) | | | |
| $n$ | 0.17137541 | $\omega$ | 87.20194 | | +0.77326470 | −0.62127166 |
| $a$ | 3.2099902 | $\Omega$ | 311.16872 | | +0.49396803 | +0.71562368 |
| $e$ | 0.0497050 | $i$ | 9.69885 | | +0.39756419 | +0.31922450 |
| $P$ | 5.75 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.0 | 0.4+ | 2003 10 17 | 699 | 0.1− | 0.7− | 2005 01 16 | 568 | 0.4− | 0.9− |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2003 10 17 | 699 | 0.7− | 0.2+ | 2005 01 16 | 568 | 0.3− | 1.0− |
| 2002 07 22 | 644 | 0.1+ | 0.8+ | 2003 10 17 | 699 | 0.6+ | 1.6− | 2005 01 17 | 568 | 0.4− | 1.0− |
| 2002 07 29 | 644 | 0.8− | 0.2+ | 2003 12 17 | 644 | 0.4+ | 0.1− | 2005 02 03 | 704 | 0.1− | 0.3+ |
| 2002 07 29 | 644 | 1.0− | 0.3+ | 2003 12 17 | 644 | 0.5+ | 0.2− | 2005 02 03 | 704 | 0.7+ | 1.3+ |
| 2002 07 29 | 644 | 0.4− | 0.2+ | 2003 12 17 | 644 | 0.3+ | 0.1− | 2005 02 03 | 704 | 0.6− | 2.0+ |
| 2002 08 06 | 644 | 0.2− | 1.2− | 2005 01 07 | 691 | 0.2+ | 0.3+ | 2005 02 03 | 704 | 0.2− | 0.7+ |
| 2002 08 06 | 644 | 0.2+ | 0.6+ | 2005 01 07 | 691 | 0.1+ | 0.1+ | 2005 02 03 | 704 | 0.2− | 1.7+ |
| 2002 08 06 | 644 | 0.1+ | 0.1+ | 2005 01 07 | 691 | 0.1− | 0.3+ | 2005 03 08 | G96 | 0.1− | 0.2− |
| 2002 08 27 | 644 | 0.1+ | 0.6+ | 2005 01 15 | 704 | 0.8+ | 1.0− | 2005 03 08 | G96 | 0.1+ | 0.2− |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2005 01 15 | 704 | 0.2− | 0.6− | 2005 03 08 | G96 | 0.1− | 0.1− |
| 2002 08 27 | 644 | 0.0 | 1.0+ | 2005 01 15 | 704 | 1.1+ | 0.2− | 2005 03 08 | G96 | 0.1− | 0.3− |
| 2002 08 27 | 644 | 0.3− | 0.4+ | 2005 01 15 | 691 | 0.2+ | 0.2+ | 2006 04 30 | 703 | 0.3+ | 1.1− |
| 2002 08 27 | 644 | 0.4− | 0.4+ | 2005 01 15 | 691 | 0.4+ | 0.3+ | 2006 04 30 | 703 | 1.5− | 0.6+ |
| 2002 08 27 | 644 | 0.2− | 0.5+ | 2005 01 15 | 691 | 0.1+ | 0.3+ | 2006 04 30 | 703 | 0.2− | 1.8− |
| 2003 10 17 | 699 | 0.2− | 0.3− | 2005 01 16 | 568 | 0.5− | 0.8− | 2006 04 30 | 703 | 0.6+ | 1.1+ |

### 2005 BJ$_{48}$ = 1994 AJ$_{5}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 108.86950 | | (2000.0) | | | |
| $n$ | 0.18452926 | $\omega$ | 204.52636 | | −0.81352109 | −0.57615734 |
| $a$ | 3.0555722 | $\Omega$ | 300.06272 | | +0.54747148 | −0.71302908 |
| $e$ | 0.0677324 | $i$ | 5.23094 | | +0.19610817 | −0.39954005 |
| $P$ | 5.34 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 05 | 691 | 0.2+ | 0.1+ | 2005 01 18 | 703 | 0.4+ | 0.2− | 2005 02 09 | 704 | 0.6+ | 0.5+ |
| 1994 01 05 | 691 | 0.3+ | 0.4+ | 2005 01 18 | 703 | 1.3− | 0.4− | 2005 02 09 | 704 | 1.0− | 0.7+ |
| 1994 01 05 | 691 | 1.1− | 0.2− | 2005 01 18 | 703 | (2.4− | 0.9−) | 2005 02 09 | 704 | 0.1+ | 0.6+ |
| 1994 01 06 | 691 | 0.3− | 0.4+ | 2005 01 19 | 691 | 0.5+ | 0.0 | 2005 02 09 | 704 | 0.8− | 0.6+ |
| 1994 01 06 | 691 | 0.4+ | 0.5− | 2005 01 19 | 691 | 0.1− | 0.0 | 2005 03 13 | G96 | (2.0+ | 2.7−) |
| 1994 01 06 | 691 | 0.4+ | 0.8− | 2005 01 19 | 691 | 0.2+ | 0.0 | 2005 03 13 | G96 | 0.3− | 0.4− |
| 2003 11 24 | 704 | 0.2+ | 0.0 | 2005 02 02 | 703 | 0.8− | 0.6− | 2005 03 13 | G96 | 0.0 | 0.4− |
| 2003 11 24 | 704 | 0.2+ | 0.7− | 2005 02 02 | 704 | 1.4+ | 1.1+ | 2005 03 13 | G96 | 0.4− | 0.4− |
| 2003 11 24 | 704 | 0.6− | 0.2+ | 2005 02 02 | 703 | 0.2− | 0.5+ | 2005 03 13 | G96 | 0.0 | 0.3− |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2005 02 02 | 703 | 0.6+ | 0.5+ | 2005 03 13 | G96 | 0.3− | 0.4− |
| 2003 12 01 | 691 | 0.0 | 0.2+ | 2005 02 02 | 703 | 0.6− | 0.3− | 2005 03 13 | G96 | 0.1+ | 0.5− |
| 2003 12 01 | 691 | 0.1− | 0.1+ | 2005 02 02 | 704 | 0.8+ | 0.8+ | 2005 03 13 | G96 | 0.2− | 0.1− |
| 2005 01 18 | 703 | 0.2− | 0.2+ | 2005 02 02 | 704 | 0.7+ | 0.0 | | | | |

### 2005 BK$_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.45777 | | (2000.0) | | | |
| $n$ | 0.18185946 | $\omega$ | 137.08691 | | +0.96512886 | +0.25677387 |
| $a$ | 3.0854046 | $\Omega$ | 208.15401 | | −0.25974786 | +0.91519243 |
| $e$ | 0.0727453 | $i$ | 6.19601 | | −0.03251664 | +0.31062841 |
| $P$ | 5.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.0 | 0.5+ | 2005 04 02 | G96 | 0.8− | 0.2− | 2005 04 30 | 691 | 0.3+ | 0.2+ |
| 2002 12 03 | 644 | 0.1− | 1.1+ | 2005 04 02 | G96 | 0.3− | 0.4− | 2005 05 11 | G96 | 0.7− | 0.4− |
| 2002 12 03 | 644 | 0.1+ | 0.5+ | 2005 04 02 | G96 | 0.3− | 0.4− | 2005 05 11 | G96 | 0.2− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 691 | 0.0 | 0.1+ | 2005 04 02 | G96 | 0.1+ | 0.6− | 2005 05 11 | G96 | 0.7− | 0.3− |
| 2004 02 18 | 691 | 0.4+ | 0.2+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2005 05 11 | G96 | 0.6− | 0.2− |
| 2004 02 18 | 691 | 0.1− | 0.5+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 06 20 | 691 | 0.4+ | 0.3− |
| 2005 01 17 | 809 | 0.0 | 0.9− | 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 06 20 | 691 | 0.2− | 1.0+ |
| 2005 01 17 | 809 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 06 20 | 691 | 0.5− | 0.4+ |
| 2005 01 17 | 809 | 0.0 | 0.2+ | 2005 04 30 | 691 | 0.1+ | 0.1+ | | | | |

**2005 BL$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.61427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17152834 | $\omega$ | 341.63260 | | −0.53523834 | | −0.84205122 |
| $a$ | 3.2080820 | $\Omega$ | 140.65195 | | +0.78761516 | | −0.52610280 |
| $e$ | 0.1923350 | $i$ | 6.05283 | | +0.30525773 | | −0.11901929 |
| $P$ | 5.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 691 | 0.1− | 0.2+ | 2005 02 04 | 691 | 0.1+ | 0.1− | 2005 04 09 | G96 | 0.3− | 0.1+ |
| 2003 10 20 | 691 | 0.1+ | 0.4+ | 2005 02 04 | 691 | 0.1+ | 0.1− | 2005 04 09 | G96 | 0.6+ | 0.0 |
| 2003 10 20 | 691 | 0.4− | 0.3+ | 2005 02 09 | 704 | 1.0− | 2.0+ | 2005 04 09 | G96 | 0.2− | 0.2− |
| 2003 11 20 | 645 | 0.0 | 0.1+ | 2005 02 09 | 704 | 0.8+ | 0.3+ | 2005 04 09 | G96 | 0.0 | 0.1+ |
| 2003 11 20 | 645 | 0.0 | 0.0 | 2005 02 09 | 704 | 0.4+ | 1.1− | 2006 04 29 | 691 | 0.0 | 0.5+ |
| 2005 01 17 | 691 | 0.2+ | 0.1+ | 2005 03 04 | G96 | 0.0 | 0.4− | 2006 04 29 | 691 | 0.2+ | 0.5+ |
| 2005 01 17 | 691 | 0.2− | 0.1+ | 2005 03 04 | G96 | 0.2− | 0.3− | 2006 04 29 | 691 | 0.2+ | 0.5+ |
| 2005 01 17 | 691 | 0.2− | 0.4+ | 2005 03 04 | G96 | 0.2− | 0.3− | | | | |
| 2005 02 04 | 691 | 0.2+ | 0.1− | 2005 03 04 | G96 | 0.1− | 0.2− | | | | |

**2005 BM$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.79732 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21754969 | $\omega$ | 50.17781 | | −0.93546619 | | +0.35115728 |
| $a$ | 2.7379808 | $\Omega$ | 150.31724 | | −0.34385732 | | −0.87827095 |
| $e$ | 0.0353025 | $i$ | 4.62091 | | −0.08164033 | | −0.32454385 |
| $P$ | 4.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 28 | 691 | 0.1+ | 0.1+ | 2005 01 19 | 691 | 0.0 | 0.0 | 2005 02 09 | 704 | 0.3+ | 0.9+ |
| 1992 04 28 | 691 | 0.4− | 0.1− | 2005 01 19 | 691 | 0.1+ | 0.1+ | 2005 02 09 | 704 | 0.6− | 0.5− |
| 1992 04 28 | 691 | 0.2+ | 0.3− | 2005 01 19 | 691 | 0.3+ | 0.2+ | 2005 03 04 | G96 | 0.4− | 0.2− |
| 2002 07 17 | 644 | 0.1+ | 0.5+ | 2005 02 02 | 704 | 0.4− | 1.1− | 2005 03 04 | G96 | 0.5− | 0.1− |
| 2002 07 17 | 644 | 0.3+ | 0.3+ | 2005 02 02 | 704 | 1.7+ | 0.6+ | 2005 03 04 | G96 | 0.5− | 0.1− |
| 2002 07 17 | 644 | 0.0 | 0.4+ | 2005 02 02 | 704 | 0.5+ | 0.3− | 2005 03 04 | G96 | 0.5− | 0.0 |
| 2002 08 02 | 599 | 0.0 | 0.3+ | 2005 02 02 | 704 | 0.4− | 1.5+ | 2006 06 04 | G96 | 0.8+ | 0.8+ |
| 2002 08 02 | 599 | 0.2− | 0.9+ | 2005 02 09 | 699 | 0.4+ | 0.4− | 2006 06 04 | G96 | 0.7− | 0.3+ |
| 2002 08 02 | 599 | 0.0 | 0.9+ | 2005 02 09 | 699 | 0.4+ | 0.7− | 2006 06 04 | G96 | 0.3− | 0.2+ |
| 2003 10 24 | 691 | 0.1− | 0.2+ | 2005 02 09 | 699 | 0.1+ | 0.3+ | 2006 06 04 | G96 | 0.2− | 0.4+ |
| 2003 10 24 | 691 | 0.0 | 0.1+ | 2005 02 09 | 699 | 0.5− | 1.0+ | | | | |
| 2003 10 24 | 691 | 0.1− | 0.0 | 2005 02 09 | 704 | 0.5+ | 1.9+ | | | | |

**2005 BN$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.49104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27893421 | $\omega$ | 292.67255 | | −0.35254305 | | −0.93579483 |
| $a$ | 2.3198943 | $\Omega$ | 177.96925 | | +0.87050228 | | −0.32841438 |
| $e$ | 0.1551777 | $i$ | 1.93657 | | +0.34342274 | | −0.12818746 |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 26 | 807 | 0.2− | 0.0 | 2005 02 02 | 703 | 0.3− | 0.2− | 2005 03 01 | 691 | 0.1+ | 0.5+ |
| 2003 08 26 | 807 | 0.3− | 0.2− | 2005 02 02 | 703 | 0.1− | 0.2+ | 2005 03 01 | 691 | 0.2+ | 0.5+ |
| 2003 09 19 | 291 | 0.1− | 0.4+ | 2005 02 02 | 703 | 1.6− | 1.2− | 2005 03 01 | 691 | 0.1+ | 0.3+ |
| 2003 09 19 | 291 | 0.1− | 0.3+ | 2005 02 02 | 703 | 0.2− | 0.4− | 2005 03 09 | G96 | 0.1− | 0.3+ |
| 2003 09 19 | 291 | 0.0 | 0.3+ | 2005 02 09 | 704 | 1.2+ | 0.4− | 2005 03 09 | G96 | 0.2− | 0.3+ |
| 2005 01 19 | 691 | 0.1− | 0.1+ | 2005 02 09 | 704 | 1.5+ | 0.8− | 2005 03 09 | G96 | 0.0 | 0.3+ |
| 2005 01 19 | 691 | 0.1+ | 0.0 | 2005 02 09 | 704 | 0.5+ | 0.4− | 2005 03 09 | G96 | 0.1+ | 0.2+ |
| 2005 01 19 | 691 | 0.0 | 0.0 | 2005 02 09 | 704 | 1.1− | 0.4− | | | | |

**2005 CG$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.43297 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22931000 | $\omega$ | 287.77547 | | +0.27681644 | | −0.95267336 |
| $a$ | 2.6435491 | $\Omega$ | 145.35441 | | +0.94393975 | | +0.24511586 |
| $e$ | 0.3208061 | $i$ | 12.76826 | | +0.17986219 | | +0.17981014 |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 13 | 691 | 0.3− | 0.2+ | 2005 02 09 | 704 | 0.3+ | 0.2+ | 2005 03 09 | 699 | 0.2+ | 0.4− |
| 1997 04 13 | 691 | 0.0 | 0.1− | 2005 02 09 | 691 | 0.0 | 0.1+ | 2005 03 09 | 704 | 0.9+ | 0.2+ |
| 1997 04 13 | 691 | 0.2+ | 0.3− | 2005 02 09 | 704 | 0.6+ | 0.0 | 2005 03 09 | 704 | 0.2− | 0.1− |
| 2003 07 24 | 644 | 0.0 | 0.7+ | 2005 02 09 | 704 | 0.5+ | 0.2− | 2005 03 09 | 704 | 0.0 | 0.6+ |
| 2003 07 24 | 644 | 0.2− | 0.9+ | 2005 02 09 | 691 | 0.0 | 0.0 | 2005 03 09 | 704 | 0.4+ | 0.0 |
| 2003 07 24 | 644 | 0.0 | 0.4+ | 2005 02 14 | 704 | 0.4+ | 0.1− | 2005 03 09 | 704 | 0.5+ | 0.4− |
| 2005 01 06 | 704 | 0.4+ | 0.2+ | 2005 02 14 | 704 | 0.4+ | 0.6− | 2005 03 11 | 699 | 0.1+ | 0.4+ |
| 2005 01 06 | 704 | 0.6+ | 0.3+ | 2005 02 14 | 704 | 0.2+ | 0.0 | 2005 03 11 | 699 | 0.1− | 0.2− |
| 2005 01 06 | 704 | 0.1+ | 0.3+ | 2005 02 14 | 704 | 0.3− | 0.2+ | 2005 03 11 | 699 | 0.4− | 0.1− |
| 2005 02 01 | 691 | 0.1− | 0.1+ | 2005 02 14 | 704 | 0.5+ | 1.3− | 2005 03 11 | 699 | 0.4− | 0.4+ |
| 2005 02 01 | 691 | 0.3− | 0.1− | 2005 03 02 | 703 | 1.5− | 0.8− | 2005 03 12 | 704 | 0.1− | 0.2+ |
| 2005 02 01 | 691 | 0.2− | 0.0 | 2005 03 02 | 703 | (1.9− | 0.6−) | 2005 03 12 | 704 | 0.0 | 0.9+ |
| 2005 02 02 | 704 | 0.7+ | 0.6− | 2005 03 02 | 703 | 0.8− | 0.3− | 2005 03 12 | 704 | 0.0 | 0.5+ |
| 2005 02 02 | 704 | 0.3+ | 0.5+ | 2005 03 02 | 703 | 0.3− | 1.1− | 2005 03 12 | 704 | 0.1− | 0.3+ |
| 2005 02 02 | 704 | 1.0+ | 0.1− | 2005 03 04 | 704 | 0.6+ | 0.0 | 2005 03 12 | 704 | 0.3+ | 0.2+ |
| 2005 02 02 | 704 | 0.8+ | 0.2+ | 2005 03 04 | 704 | 0.4+ | 0.0 | 2005 03 16 | 703 | 0.4− | 0.1− |
| 2005 02 02 | 704 | 1.2+ | 0.2− | 2005 03 04 | 704 | 0.2+ | 0.3+ | 2005 03 16 | 703 | 1.2− | 0.3− |
| 2005 02 02 | 703 | 1.1− | 0.2+ | 2005 03 08 | 699 | 0.4− | 1.3+ | 2005 03 16 | 703 | 0.5− | 0.2+ |
| 2005 02 02 | 703 | 0.2− | 0.6− | 2005 03 08 | 699 | 0.9− | 1.3+ | 2005 03 16 | 703 | 0.7− | 0.3− |
| 2005 02 02 | 703 | (1.9− | 0.9−) | 2005 03 08 | 699 | 0.0 | 1.1+ | 2006 05 08 | G96 | 0.1− | 0.2− |
| 2005 02 02 | 703 | 0.8− | 0.4− | 2005 03 08 | 699 | 0.6+ | 0.1− | 2006 05 08 | G96 | 0.6+ | 0.0 |
| 2005 02 09 | 704 | 0.6+ | 0.3− | 2005 03 09 | 699 | 0.6− | 0.9+ | 2006 05 08 | G96 | 0.1− | 0.2− |
| 2005 02 09 | 691 | 0.0 | 0.2+ | 2005 03 09 | 699 | 0.2− | 0.5+ | 2006 05 08 | G96 | 0.5− | 0.2+ |
| 2005 02 09 | 704 | 0.4+ | 0.7− | 2005 03 09 | 699 | 1.0+ | 0.5− | | | | |

**2005 CO$_7$ = 2006 SM**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.99181 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35085917 | $\omega$ | 12.50044 | | −0.50825887 | | +0.82431310 |
| $a$ | 1.9908910 | $\Omega$ | 227.57454 | | −0.81637167 | | −0.55336606 |
| $e$ | 0.0342149 | $i$ | 19.74387 | | −0.27424480 | | +0.11955716 |
| $P$ | 2.81 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 04 | 704 | 0.0 | 0.4− | 2005 02 05 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.5+ |
| 2005 02 04 | 704 | 0.3− | 0.1− | 2005 02 05 | 644 | 0.0 | 0.3+ | 2006 09 18 | 734 | 0.4+ | 0.6− |
| 2005 02 04 | 704 | 0.8+ | 0.2+ | 2005 03 02 | 704 | (0.7+ | 2.7−) | 2006 09 18 | 734 | 0.2+ | 0.2− |
| 2005 02 04 | 644 | 0.1+ | 0.2− | 2005 03 02 | 704 | (1.6+ | 0.4+) | 2006 09 18 | 734 | 0.0 | 0.1− |
| 2005 02 04 | 704 | 0.7− | 0.8− | 2005 03 02 | 704 | 1.3+ | 0.6+ | 2006 09 18 | 734 | 0.8+ | 0.1+ |
| 2005 02 04 | 644 | 0.4− | 0.5− | 2005 03 02 | 704 | 0.0 | 0.3+ | 2006 09 19 | 734 | 0.0 | 0.0 |
| 2005 02 04 | 644 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 09 19 | 734 | 0.3+ | 0.0 |
| 2005 02 05 | J87 | 0.3− | 1.1+ | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 09 19 | 734 | 0.3+ | 0.2− |
| 2005 02 05 | J87 | (0.7− | 1.8+) | 2006 09 16 | 703 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.2+ | 0.4− |
| 2005 02 05 | 673 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.6− | 0.4+ | 2006 11 14 | 703 | 0.7− | 0.7+ |
| 2005 02 05 | 673 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 1.1+ | 0.4+ |
| 2005 02 05 | 673 | 0.1− | 0.0 | 2006 09 16 | 703 | 1.0− | 0.5+ | 2006 11 14 | 703 | 0.8− | 0.3− |
| 2005 02 05 | 673 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.2+ | 0.4+ | | | | |
| 2005 02 05 | 644 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.9− | 0.9− | | | | |

### 2005 $CV_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.76182 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27664668 | $\omega$ | 339.03226 | | −0.99992804 | | −0.00721274 |
| $a$ | 2.3326652 | $\Omega$ | 200.56148 | | +0.01027592 | | −0.92729793 |
| $e$ | 0.1124344 | $i$ | 1.56399 | | −0.00618996 | | −0.37425463 |
| $P$ | 3.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 691 | 0.1− | 0.1+ | 2005 02 04 | 704 | 0.7+ | 0.2− | 2005 03 17 | 143 | 0.5+ | 0.2− |
| 2003 09 21 | 691 | 0.3− | 0.2+ | 2005 02 04 | 704 | (1.8+ | 0.3+) | 2005 03 17 | 143 | 0.5+ | 0.1− |
| 2003 09 21 | 691 | 0.3+ | 0.1+ | 2005 02 04 | 704 | (0.7+ | 2.1+) | 2005 03 17 | 143 | 0.0 | 0.0 |
| 2005 01 18 | 703 | (2.3− | 0.6+) | 2005 02 09 | 699 | 0.2− | 0.1+ | 2005 04 05 | G96 | 0.3− | 0.2+ |
| 2005 01 18 | 703 | 0.3− | 1.2+ | 2005 02 09 | 704 | 0.1− | 1.4+ | 2005 04 05 | G96 | 0.0 | 0.0 |
| 2005 01 18 | 703 | 0.9− | 1.3+ | 2005 02 09 | 704 | 0.5+ | 0.7+ | 2005 04 05 | G96 | 0.5− | 0.0 |
| 2005 01 18 | 703 | 0.8+ | 0.6+ | 2005 02 09 | 699 | 0.7− | 0.7+ | 2005 04 05 | G96 | 0.2+ | 0.0 |
| 2005 01 19 | 691 | 0.2+ | 0.4− | 2005 02 09 | 704 | 0.5− | 1.0+ | 2005 04 06 | G96 | 0.2− | 0.0 |
| 2005 01 19 | 691 | 0.1+ | 0.3− | 2005 02 09 | 699 | 0.0 | 0.1− | 2005 04 06 | G96 | 0.3− | 0.1− |
| 2005 01 19 | 691 | 0.0 | 0.4− | 2005 02 09 | 704 | 0.4− | 0.3+ | 2005 04 06 | G96 | 0.0 | 0.2− |
| 2005 02 02 | 703 | 0.8− | 0.2+ | 2005 02 09 | 699 | 0.2+ | 0.2− | 2005 04 06 | G96 | 1.4+ | 0.0 |
| 2005 02 02 | 704 | 1.3+ | 0.6+ | 2005 03 09 | G96 | 0.2− | 0.3− | 2006 05 26 | G96 | 0.3− | 0.5+ |
| 2005 02 02 | 703 | 1.3− | 1.5− | 2005 03 09 | G96 | 0.0 | 0.5− | 2006 05 26 | G96 | 0.3− | 0.5+ |
| 2005 02 02 | 703 | (1.7− | 1.2−) | 2005 03 09 | G96 | 0.0 | 0.2− | 2006 05 26 | G96 | 0.1+ | 0.6+ |
| 2005 02 02 | 704 | 0.5+ | 1.1+ | 2005 03 09 | G96 | 0.3− | 0.5− | 2006 05 26 | G96 | 0.0 | 0.6+ |
| 2005 02 02 | 703 | 1.2− | 0.9− | 2005 03 16 | 143 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2005 02 02 | 704 | 0.2+ | 0.7+ | 2005 03 16 | 143 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2005 02 02 | 704 | 0.3+ | 0.7+ | 2005 03 16 | 143 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.6+ |
| 2005 02 04 | 704 | 1.3+ | 0.6+ | 2005 03 17 | 143 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.6+ |

### 2005 $CM_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.27134 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26720948 | $\omega$ | 209.55041 | | −0.97191939 | | −0.04057805 |
| $a$ | 2.3872696 | $\Omega$ | 325.63734 | | +0.19048082 | | −0.71402657 |
| $e$ | 0.2747166 | $i$ | 24.24636 | | −0.13816571 | | −0.69894168 |
| $P$ | 3.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 11 | 703 | 1.1− | 0.6− | 2005 02 14 | 704 | 0.2+ | 0.0 | 2005 03 16 | 704 | 0.0 | 0.6− |
| 2004 12 11 | 703 | 0.7− | 1.0− | 2005 02 14 | 704 | 0.1+ | 0.2+ | 2005 03 16 | 704 | 0.9+ | 0.2− |
| 2004 12 11 | 703 | 0.5− | 0.9− | 2005 02 14 | 704 | 0.2+ | 0.1− | 2005 03 16 | 704 | 0.3− | 0.6− |
| 2004 12 11 | 703 | 0.8− | 0.0 | 2005 03 01 | 691 | 0.3+ | 0.1+ | 2005 03 16 | 704 | 0.4+ | 0.4+ |
| 2004 12 23 | 699 | 0.2− | 0.1− | 2005 03 01 | 691 | 0.0 | 0.1+ | 2005 04 01 | I10 | 0.8− | 0.7− |
| 2004 12 23 | 699 | 1.7+ | 0.1− | 2005 03 01 | 691 | 0.1+ | 0.0 | 2005 04 01 | I10 | 1.3− | 0.5+ |
| 2004 12 23 | 699 | 1.4− | 1.2+ | 2005 03 03 | 699 | 0.1+ | 0.3− | 2005 04 01 | I10 | 0.0 | 1.1+ |
| 2004 12 23 | 699 | 0.8+ | 1.2+ | 2005 03 03 | 699 | 0.2+ | 0.3+ | 2005 04 06 | 703 | 0.7− | 0.1+ |
| 2005 01 09 | 703 | 0.2− | 0.5− | 2005 03 03 | 699 | 0.9+ | 0.3− | 2005 04 06 | 703 | 0.6− | 0.7+ |
| 2005 01 09 | 703 | 0.2− | 0.5− | 2005 03 03 | 699 | 0.8+ | 0.2+ | 2005 04 06 | 703 | 0.6− | 1.3+ |
| 2005 01 09 | 703 | 0.6+ | 0.2+ | 2005 03 09 | G96 | 0.1+ | 0.2− | 2005 04 06 | 703 | 1.3− | 1.6+ |
| 2005 01 09 | 703 | 0.6− | 0.5− | 2005 03 09 | G96 | 0.1+ | 0.2− | 2005 04 06 | 704 | 0.6+ | 0.2+ |
| 2005 01 17 | 704 | 0.2− | 0.4+ | 2005 03 09 | G96 | 0.1+ | 0.3− | 2005 04 06 | 704 | 0.2+ | 0.4− |
| 2005 01 17 | 704 | 0.2+ | 0.4+ | 2005 03 09 | G96 | 0.2+ | 0.1− | 2005 04 06 | 704 | 0.3+ | 0.3+ |
| 2005 01 17 | 704 | 0.3+ | 0.6− | 2005 03 11 | 703 | 0.0 | 0.0 | 2005 04 06 | 704 | 0.3+ | 0.1− |
| 2005 01 17 | 704 | 0.0 | 0.3+ | 2005 03 11 | 703 | 0.3+ | 0.2+ | 2005 04 06 | 704 | 1.5+ | 0.0 |
| 2005 02 01 | 703 | 0.5− | 0.1− | 2005 03 11 | 703 | 0.8− | 0.1+ | 2005 04 16 | 703 | 0.1− | 1.6− |
| 2005 02 01 | 703 | 0.1− | 0.5− | 2005 03 11 | 703 | 0.5− | 0.4− | 2005 04 16 | 703 | 0.3+ | 1.3− |
| 2005 02 01 | 703 | 0.3− | 0.1+ | 2005 03 11 | G96 | 0.0 | 0.9− | 2005 04 16 | 703 | 0.8+ | 0.3− |
| 2005 02 01 | 703 | 0.4− | 0.2− | 2005 03 11 | G96 | 0.0 | 0.2− | 2005 04 16 | 703 | 0.1+ | 0.1− |
| 2005 02 03 | 704 | 0.1+ | 0.1− | 2005 03 11 | G96 | 0.0 | 0.2− | 2006 08 21 | 807 | 0.5− | 0.6+ |
| 2005 02 03 | 704 | 0.6+ | 1.4+ | 2005 03 11 | G96 | 0.1− | 0.2− | 2006 08 21 | 807 | 0.3− | 0.5+ |
| 2005 02 03 | 704 | 0.1+ | 0.3+ | 2005 03 16 | 703 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.5− | 0.5+ |
| 2005 02 03 | 704 | 0.6+ | 1.1+ | 2005 03 16 | 703 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.5+ |
| 2005 02 03 | 704 | 0.6+ | 1.5+ | 2005 03 16 | 703 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.7− | 0.4+ |
| 2005 02 14 | 704 | 0.1+ | 0.2− | 2005 03 16 | 703 | 1.0− | 0.1− | 2006 09 26 | G96 | 0.8− | 0.7+ |
| 2005 02 14 | 704 | 0.1+ | 0.1+ | 2005 03 16 | 704 | 0.1+ | 0.6+ | | | | |

### 2005 $CK_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.27278 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19302011 | $\omega$ | 307.62348 | | −0.91616593 | | +0.36988532 |
| $a$ | 2.9652935 | $\Omega$ | 254.55413 | | −0.29837589 | | −0.88656615 |
| $e$ | 0.0676895 | $i$ | 9.21483 | | −0.26760384 | | −0.27782246 |
| $P$ | 5.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 04 | 644 | 0.1− | 0.1− | 2003 10 25 | 691 | 0.0 | 0.0 | 2005 02 02 | 703 | 0.1+ | 0.4− |
| 2002 08 04 | 644 | 0.1− | 0.4+ | 2003 10 25 | 691 | 0.1+ | 0.3− | 2005 02 04 | 644 | 0.4+ | 0.4+ |
| 2002 08 04 | 644 | 0.2− | 0.4+ | 2003 10 25 | 691 | 0.2+ | 0.1− | 2005 02 04 | 644 | 0.1− | 0.2+ |
| 2002 08 15 | 644 | 0.1+ | 0.4− | 2003 11 19 | 691 | 0.1+ | 0.2+ | 2005 02 04 | 644 | 0.4+ | 0.5+ |
| 2002 08 15 | 644 | 0.0 | 0.2+ | 2003 11 19 | 691 | 0.2+ | 0.1− | 2005 02 05 | 644 | 0.6+ | 0.3+ |
| 2002 08 15 | 644 | 0.3− | 0.5+ | 2003 11 19 | 691 | 0.5− | 0.2+ | 2005 02 05 | 644 | 0.2+ | 0.4+ |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2003 12 01 | 691 | 0.3− | 0.1+ | 2005 02 05 | 644 | 0.4+ | 0.2+ |
| 2002 08 18 | 644 | 0.2− | 0.7+ | 2003 12 01 | 691 | 0.0 | 0.2− | 2006 06 02 | G96 | 0.5+ | 0.1− |
| 2002 08 18 | 644 | 0.6− | 0.5+ | 2003 12 01 | 691 | 0.1+ | 0.0 | 2006 06 02 | G96 | 0.5− | 0.3+ |
| 2002 08 26 | 644 | 0.2− | 0.1− | 2005 02 02 | 703 | 0.3− | 0.8+ | 2006 06 02 | G96 | 0.1− | 0.1+ |
| 2002 08 26 | 644 | 0.1+ | 0.4+ | 2005 02 02 | 703 | 0.2+ | 0.3− | 2006 06 02 | G96 | 0.2+ | 0.2+ |
| 2002 08 26 | 644 | 0.3+ | 0.2+ | 2005 02 02 | 703 | 0.6− | 0.9+ | | | | |

### 2005 $CY_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.82525 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18050905 | $\omega$ | 185.35279 | | +0.20872251 | | +0.95427018 |
| $a$ | 3.1007736 | $\Omega$ | 96.82230 | | −0.88908642 | | +0.27631042 |
| $e$ | 0.1091492 | $i$ | 12.44741 | | −0.40738219 | | −0.11410950 |
| $P$ | 5.46 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.4+ | 0.1+ | 2005 02 06 | 012 | 0.9− | 0.5+ | 2006 05 01 | A50 | 0.4− | 0.9+ |
| 2000 03 12 | 704 | 0.5− | 0.4− | 2005 02 06 | 012 | 0.8− | 0.3+ | 2006 05 01 | A50 | 0.0 | 0.8+ |
| 2000 03 12 | 704 | 0.3+ | 0.7+ | 2005 02 06 | 012 | 0.2− | 0.5− | 2006 05 01 | A50 | 0.2− | 0.6+ |
| 2000 03 12 | 704 | 0.3− | 0.2− | 2005 02 06 | 012 | 1.5+ | 0.2+ | 2006 05 01 | A50 | 0.7+ | 0.2+ |
| 2002 10 08 | 644 | 0.3− | 0.9+ | 2005 02 07 | 012 | 0.1− | 0.4+ | 2006 05 01 | A50 | 0.2+ | 0.7− |
| 2002 10 08 | 644 | 0.4− | 1.0+ | 2005 02 07 | 012 | 0.8− | 0.3+ | 2006 05 01 | A50 | 0.7− | 0.5− |
| 2002 10 08 | 644 | 0.4− | 0.7+ | 2005 02 07 | 012 | 0.0 | 0.6− | 2006 05 01 | A50 | 1.2− | 0.7− |
| 2005 02 05 | 012 | 0.3+ | 0.5− | 2005 02 07 | 012 | 1.4+ | 0.7+ | 2006 05 21 | 691 | 0.1+ | 0.1+ |
| 2005 02 05 | 012 | 1.0+ | 0.4− | 2005 02 07 | 012 | 0.1− | 0.4+ | 2006 05 21 | 691 | 0.0 | 0.3+ |
| 2005 02 05 | 012 | 0.4− | 0.4+ | 2005 02 07 | 012 | 0.8+ | 0.9+ | 2006 05 21 | 691 | 0.1+ | 0.0 |
| 2005 02 05 | 012 | 0.1− | 0.4− | 2006 05 01 | 703 | 0.1− | 0.3− | 2006 05 31 | 691 | 0.3+ | 0.0 |
| 2005 02 05 | 012 | 0.0 | 0.2+ | 2006 05 01 | 703 | 0.1+ | 0.3− | 2006 05 31 | 691 | 0.2+ | 0.1+ |
| 2005 02 06 | 012 | 0.2+ | 0.1− | 2006 05 01 | 703 | 0.7− | 0.4− | 2006 05 31 | 691 | 0.1+ | 0.0 |
| 2005 02 06 | 012 | 1.2− | 0.0 | 2006 05 01 | 703 | 0.5− | 0.1+ | | | | |

### 2005 $CC_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.31499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21498798 | $\omega$ | 284.39597 | | +0.41764423 | | −0.89732553 |
| $a$ | 2.7596876 | $\Omega$ | 139.93500 | | +0.89545206 | | +0.37984104 |
| $e$ | 0.1178261 | $i$ | 12.81443 | | +0.15407435 | | +0.22478360 |
| $P$ | 4.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 644 | 0.4− | 0.2+ | 2003 09 25 | 644 | 0.5− | 0.4+ | 2005 01 13 | 704 | 1.1+ | 0.6+ |
| 2002 06 18 | 644 | 0.1− | 0.2+ | 2003 09 25 | 644 | 0.4− | 0.1− | 2005 01 13 | 703 | 0.5− | 0.1− |
| 2002 06 18 | 644 | 0.6+ | 0.0 | 2003 09 25 | 644 | 0.4− | 0.2− | 2005 01 13 | 703 | 0.2+ | 0.2− |
| 2003 08 23 | 704 | 0.2− | 0.5+ | 2003 10 02 | 608 | 0.7+ | 1.0− | 2005 02 01 | 703 | 0.1− | 0.9+ |
| 2003 08 23 | 704 | 0.8− | 0.5+ | 2003 10 02 | 608 | 0.2+ | 1.2− | 2005 02 01 | 703 | 0.1− | 0.6− |
| 2003 08 23 | 704 | 0.0 | 0.1+ | 2003 10 02 | 608 | 0.3+ | 1.6− | 2005 02 01 | 703 | 0.9− | 0.5− |
| 2003 08 23 | 704 | 1.0− | 0.1+ | 2003 10 16 | 699 | 0.6+ | 0.3− | 2005 02 01 | 703 | 1.0− | 0.0 |
| 2003 09 01 | 704 | 0.6+ | 0.1+ | 2003 10 16 | 699 | 1.0− | 1.6+ | 2005 02 02 | 704 | 1.4+ | 1.2+ |
| 2003 09 01 | 704 | 0.3+ | 0.5+ | 2003 10 16 | 699 | 0.3− | 1.9− | 2005 02 02 | 704 | 0.4+ | 0.3+ |
| 2003 09 01 | 704 | 0.4+ | 0.3+ | 2003 10 16 | 699 | 0.3− | 0.8− | 2005 02 02 | 704 | 0.1+ | 1.0− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 01 | 704 | 0.1+ | 0.5+ | 2005 01 13 | 704 | 0.4+ | 0.1− | 2006 05 01 | 703 | 0.6+ | 1.1− |
| 2003 09 01 | 704 | 0.6− | 0.5− | 2005 01 13 | 704 | 0.1+ | 0.1+ | 2006 05 01 | 703 | 0.4− | 0.4− |
| 2003 09 17 | 704 | 0.3− | 0.4+ | 2005 01 13 | 704 | 0.2+ | 0.6+ | 2006 05 01 | 703 | 0.8+ | 0.7− |
| 2003 09 17 | 704 | 0.6+ | 0.9+ | 2005 01 13 | 703 | 0.7− | 0.8− | 2006 05 01 | 703 | 1.1− | 1.9+ |
| 2003 09 17 | 704 | 0.0 | 0.7+ | 2005 01 13 | 704 | 0.2+ | 0.1− | | | | |
| 2003 09 17 | 704 | 1.6+ | 1.1+ | 2005 01 13 | 703 | 1.1− | 0.6+ | | | | |

**2005 CG$_{31}$ = 2006 RH$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.39278 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31368351 | $\omega$ | 189.89260 | | +0.32706981 | | +0.94318197 |
| $a$ | 2.1452352 | $\Omega$ | 99.21655 | | −0.86291369 | | +0.32336042 |
| $e$ | 0.1861043 | $i$ | 3.40303 | | −0.38523409 | | +0.07645796 |
| $P$ | 3.14 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 644 | 0.4+ | 0.7+ | 2006 09 12 | 703 | 1.5+ | 0.4− | 2006 10 01 | 704 | 0.4+ | 0.8+ |
| 2002 03 11 | 644 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.5+ | 1.0+ | 2006 10 01 | 704 | 0.4+ | 0.6+ |
| 2002 03 11 | 644 | 0.1+ | 0.9+ | 2006 09 12 | 703 | 0.4− | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.7+ |
| 2003 10 22 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.3+ | 0.3− | 2006 10 15 | 106 | (1.1+ | 1.8−) |
| 2003 10 22 | 691 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 10 15 | 106 | 0.4+ | 0.3− |
| 2003 10 22 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | (0.9+ | 1.6+) | 2006 10 15 | 106 | 0.4− | 0.6− |
| 2004 12 20 | G96 | 1.0− | 0.5− | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 10 15 | 106 | 1.0+ | 0.0 |
| 2004 12 20 | G96 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 10 16 | 703 | (0.7− | 3.1+) |
| 2004 12 20 | G96 | 0.5− | 0.6− | 2006 09 18 | 699 | 0.7+ | 0.3− | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2004 12 20 | G96 | 0.1+ | 0.6− | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 16 | 703 | (0.2+ | 3.4+) |
| 2005 02 01 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.6+ | 2006 10 16 | 703 | (0.6− | 1.7+) |
| 2005 02 01 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.7− | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.2− |
| 2005 02 01 | 691 | 0.1− | 0.4+ | 2006 09 26 | 704 | 1.2− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2005 02 04 | G96 | 0.6− | 0.5− | 2006 09 26 | 704 | 0.3− | 0.8− | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2005 02 04 | G96 | 0.3− | 0.5− | 2006 09 26 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.4− |
| 2005 02 04 | G96 | 0.2− | 0.8− | 2006 09 26 | 704 | (0.3− | 1.8−) | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2005 02 04 | G96 | 0.3+ | 0.7− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3− |
| 2005 02 09 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.9− | 0.3− |
| 2005 02 09 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.5+ |
| 2005 02 09 | 691 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.9+ | 0.1− | 2006 10 22 | 703 | 1.2− | 0.2− |
| 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.9+ | 0.9− | 2006 10 22 | 703 | (2.5− | 1.4−) |
| 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.3+ | 0.6− | | | | |
| 2006 08 24 | 644 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.0 | | | | |

**2005 CM$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.06084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18458823 | $\omega$ | 294.85889 | | +0.58731088 | | −0.80643107 |
| $a$ | 3.0549214 | $\Omega$ | 119.00038 | | +0.76807611 | | +0.52852769 |
| $e$ | 0.1058907 | $i$ | 4.51240 | | +0.25519606 | | +0.26519315 |
| $P$ | 5.34 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 807 | 0.1− | 0.5+ | 2005 02 01 | 691 | 0.2+ | 0.4+ | 2005 02 09 | 691 | 0.2+ | 0.2− |
| 2002 08 11 | 807 | 0.1− | 0.4+ | 2005 02 01 | 691 | 0.0 | 0.6+ | 2005 03 14 | G96 | 1.1− | 0.2+ |
| 2003 11 29 | 691 | 0.0 | 0.2+ | 2005 02 01 | 691 | 0.2+ | 0.3+ | 2005 03 14 | G96 | 0.1+ | 1.2− |
| 2003 11 29 | 691 | 0.3− | 0.2+ | 2005 02 04 | G96 | 0.4− | 0.2− | 2005 03 14 | G96 | 0.9− | 0.2+ |
| 2003 11 29 | 691 | 0.1+ | 0.3+ | 2005 02 04 | G96 | 0.5− | 0.5− | 2005 03 14 | G96 | 2.1+ | 2.6− |
| 2004 12 20 | G96 | 0.3− | 0.1+ | 2005 02 04 | G96 | 0.2− | 0.1− | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 2004 12 20 | G96 | 0.5− | 0.2+ | 2005 02 04 | G96 | 0.4− | 0.0 | 2006 04 30 | 691 | 0.4+ | 0.4+ |
| 2004 12 20 | G96 | 0.0 | 0.2+ | 2005 02 09 | 691 | 0.1+ | 0.1− | 2006 04 30 | 691 | 0.2− | 0.3+ |
| 2004 12 20 | G96 | 0.1+ | 0.2+ | 2005 02 09 | 691 | 0.2− | 0.1− | | | | |

**2005 CV$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.40766 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17324973 | $\omega$ | 335.14737 | | −0.20006245 | | −0.97440293 |
| $a$ | 3.1867965 | $\Omega$ | 126.23246 | | +0.91884782 | | −0.22292080 |
| $e$ | 0.1443533 | $i$ | 7.30315 | | +0.34013778 | | +0.02907309 |
| $P$ | 5.69 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 691 | 0.2+ | 0.2+ | 2005 02 04 | G96 | 0.4− | 0.0 | 2005 02 09 | G96 | 0.6− | 0.1− |
| 2000 03 10 | 691 | 0.2− | 0.2− | 2005 02 04 | G96 | 0.5− | 0.1− | 2005 02 09 | G96 | 0.4− | 0.3− |
| 2000 03 10 | 691 | 0.0 | 0.2− | 2005 02 04 | G96 | 0.4− | 0.2− | 2005 02 14 | 704 | 0.4+ | 0.0 |
| 2003 11 19 | 644 | 0.1+ | 0.2− | 2005 02 04 | G96 | 0.0 | 0.7− | 2005 02 14 | 704 | 0.6+ | 0.5+ |
| 2003 11 19 | 644 | 0.1+ | 0.1− | 2005 02 09 | 691 | 0.0 | 0.0 | 2005 02 14 | 704 | 0.5+ | 0.3+ |
| 2003 11 19 | 644 | 0.0 | 0.0 | 2005 02 09 | 691 | 0.1+ | 0.1+ | 2005 02 14 | 704 | 1.0+ | 0.4− |
| 2004 12 20 | G96 | 0.0 | 0.3− | 2005 02 09 | 691 | 0.2− | 0.1− | 2005 02 14 | 704 | 1.0+ | 0.6− |
| 2004 12 20 | G96 | 0.0 | 0.3− | 2005 02 09 | G96 | 0.3− | 0.2+ | 2005 03 12 | 704 | 1.2+ | 0.6+ |
| 2004 12 20 | G96 | 0.0 | 0.4− | 2005 02 09 | G96 | 0.5− | 0.0 | 2005 03 12 | 704 | 0.7+ | 0.5+ |
| 2004 12 20 | G96 | 0.2+ | 0.6− | 2005 02 09 | G96 | 0.2− | 0.3− | 2005 03 12 | 704 | 0.0 | 0.1+ |
| 2005 02 01 | 691 | 0.1+ | 0.1+ | 2005 02 09 | G96 | 0.5− | 0.1− | 2005 03 12 | 704 | 0.7+ | 0.4+ |
| 2005 02 01 | 691 | 0.3− | 0.3+ | 2005 02 09 | G96 | 0.7− | 0.1− | 2005 03 12 | 704 | 0.2+ | 0.0 |
| 2005 02 01 | 691 | 0.1+ | 0.3+ | 2005 02 09 | G96 | 0.6− | 0.3− | | | | |

**2005 CB$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.32077 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17658500 | $\omega$ | 283.23251 | | −0.21631165 | | +0.97298074 |
| $a$ | 3.1465418 | $\Omega$ | 333.84864 | | −0.80976665 | | −0.22499015 |
| $e$ | 0.0588669 | $i$ | 10.55466 | | −0.54542391 | | −0.05184510 |
| $P$ | 5.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.4+ | 0.2+ | 2002 09 28 | 608 | 1.5− | 0.9− | 2005 01 13 | 691 | 0.1− | 0.1+ |
| 2002 09 11 | 644 | 0.2+ | 0.4− | 2002 09 28 | 608 | (1.8− | 0.1−) | 2005 02 02 | 691 | 0.4+ | 0.4− |
| 2002 09 11 | 644 | 0.3+ | 0.1− | 2002 09 28 | 608 | (2.0− | 0.2−) | 2005 02 02 | 691 | 0.1+ | 0.0 |
| 2002 09 13 | 644 | 0.0 | 0.4− | 2002 11 06 | 291 | 0.3− | 0.1− | 2005 02 02 | 691 | 0.1+ | 0.3+ |
| 2002 09 13 | 644 | 0.3+ | 0.0 | 2002 11 06 | 291 | 0.2+ | 0.1− | 2005 02 04 | G96 | 0.3− | 0.7− |
| 2002 09 13 | 644 | 0.3+ | 0.3+ | 2002 11 06 | 291 | 0.1− | 0.3+ | 2005 02 04 | G96 | 0.0 | 0.6− |
| 2002 09 17 | 644 | 0.3+ | 0.3+ | 2005 01 13 | 691 | 0.1+ | 0.0 | 2005 02 04 | G96 | 0.1− | 0.6− |
| 2002 09 17 | 644 | 0.3+ | 0.5+ | 2005 01 13 | 691 | 0.6− | 0.3+ | 2005 02 04 | G96 | 0.2− | 0.9− |
| 2002 09 17 | 644 | 0.4+ | 0.1− | 2005 01 13 | 691 | 0.2+ | 0.2+ | 2005 02 07 | 118 | 0.2+ | 0.2− |
| 2002 09 18 | 644 | 0.2− | 0.0 | 2005 01 13 | 691 | 0.3− | 0.1− | 2005 02 07 | 118 | 0.1+ | 0.4+ |
| 2002 09 18 | 644 | 0.0 | 0.1− | 2005 01 13 | 691 | 0.1+ | 0.2+ | | | | |

**2005 CK$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.43069 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22912957 | $\omega$ | 233.21970 | | −0.92876313 | | +0.34430656 |
| $a$ | 2.6449367 | $\Omega$ | 326.29062 | | −0.20859387 | | −0.79167247 |
| $e$ | 0.0530623 | $i$ | 14.32377 | | −0.30641092 | | −0.50468573 |
| $P$ | 4.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.2− | 0.2− | 2005 02 03 | 704 | 1.1+ | 0.7− | 2005 03 09 | 691 | 0.1+ | 0.3+ |
| 2001 03 19 | 699 | 1.0+ | 0.4− | 2005 02 04 | G96 | 0.3− | 0.1+ | 2005 04 05 | G96 | 0.3− | 0.4− |
| 2001 03 19 | 699 | 0.6+ | 1.5+ | 2005 02 04 | G96 | 0.1− | 0.2− | 2005 04 05 | G96 | 0.4− | 0.4− |
| 2001 03 19 | 699 | 0.9− | 0.2− | 2005 02 04 | G96 | 0.4− | 0.0 | 2005 04 05 | G96 | 0.5− | 0.1− |
| 2003 10 04 | 691 | 0.1+ | 0.0 | 2005 02 04 | G96 | 0.3− | 0.1− | 2005 04 05 | G96 | 0.5− | 0.2+ |
| 2003 10 04 | 691 | 0.1+ | 0.0 | 2005 03 08 | G96 | 0.4− | 0.0 | 2005 04 06 | G96 | 0.1+ | 0.2− |
| 2003 10 04 | 691 | 0.2− | 0.1+ | 2005 03 08 | G96 | 0.4− | 0.2− | 2005 04 06 | G96 | 0.1− | 0.2− |
| 2005 02 03 | 704 | 1.1+ | 0.9− | 2005 03 08 | G96 | 0.5− | 0.1− | 2005 04 06 | G96 | 0.2− | 0.3− |
| 2005 02 03 | 704 | 1.0+ | 0.5− | 2005 03 08 | G96 | 0.5− | 0.1− | 2005 04 06 | G96 | 0.1− | 0.5− |
| 2005 02 03 | 704 | 0.6+ | 0.3+ | 2005 03 09 | 691 | 0.1− | 0.3+ | | | | |
| 2005 02 03 | 704 | 0.5+ | 0.1− | 2005 03 09 | 691 | 0.1− | 0.3+ | | | | |

**2005 $CL_{40}$ = 2005 $CJ_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.83143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21548523 | $\omega$ | 342.55663 | | +0.67282394 | | −0.73689149 |
| $a$ | 2.7554405 | $\Omega$ | 65.10287 | | +0.68708346 | | +0.58956206 |
| $e$ | 0.1031109 | $i$ | 4.14515 | | +0.27427041 | | +0.33076806 |
| $P$ | 4.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.1+ | 0.0 | 2005 02 09 | 809 | 0.3− | 0.2+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 02 10 | 809 | 0.0 | 0.1+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 01 19 | 691 | 0.0 | 0.2− | 2005 02 10 | 809 | 0.2− | 0.3+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 01 19 | 691 | 0.2+ | 0.2− | 2005 02 10 | 809 | 0.3− | 0.2+ |
| 2003 10 02 | 691 | 0.1+ | 0.1− | 2005 01 19 | 691 | 0.3+ | 0.2+ | 2005 02 18 | 809 | 0.4− | 0.1− |
| 2003 10 02 | 691 | 0.1+ | 0.3+ | 2005 02 09 | 809 | 0.4− | 0.2+ | 2005 02 18 | 809 | 0.1− | 0.1− |
| 2003 10 02 | 691 | 0.1+ | 0.2+ | 2005 02 09 | 809 | 0.2+ | 0.1+ | 2005 02 18 | 809 | 0.3− | 0.0 |

**2005 $CY_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.70451 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26720816 | $\omega$ | 216.18281 | | −0.99467309 | | −0.10214003 |
| $a$ | 2.3872775 | $\Omega$ | 317.94808 | | +0.09877375 | | −0.90589764 |
| $e$ | 0.0729035 | $i$ | 1.18805 | | +0.02948219 | | −0.41099499 |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.5+ | 0.3+ | 2003 10 19 | 691 | 0.1− | 0.2+ | 2005 02 02 | 691 | 0.3+ | 0.3+ |
| 1998 04 21 | 704 | 0.0 | 1.0− | 2003 10 19 | 691 | 0.0 | 0.0 | 2005 02 02 | 691 | 0.2− | 0.6+ |
| 1998 04 21 | 704 | 0.6+ | 1.2+ | 2003 10 24 | 704 | 0.5− | 0.5+ | 2005 02 09 | 699 | 0.8+ | 0.7+ |
| 1998 04 21 | 704 | 0.7− | 0.8+ | 2003 10 24 | 704 | 0.0 | 0.3− | 2005 02 09 | 699 | 0.7− | 0.6+ |
| 1999 08 21 | 691 | 0.3− | 0.6+ | 2003 10 24 | 704 | 0.2− | 0.7+ | 2005 02 09 | 699 | (1.0+ | 2.1+) |
| 1999 08 21 | 691 | (1.5− | 3.4+) | 2003 10 24 | 704 | 0.2− | 0.2+ | 2005 02 09 | 704 | 0.5+ | 1.0+ |
| 1999 08 21 | 691 | 0.0 | 0.1+ | 2004 12 20 | G96 | 0.3− | 0.1+ | 2005 02 09 | 704 | 0.8+ | 0.6+ |
| 2003 09 30 | 691 | 0.2+ | 0.3− | 2004 12 20 | G96 | 0.3− | 0.0 | 2005 02 09 | 699 | 0.3+ | 0.6+ |
| 2003 09 30 | 691 | 0.5+ | 0.5− | 2004 12 20 | G96 | 0.1+ | 0.3− | 2005 02 09 | 704 | 0.8+ | 1.1+ |
| 2003 09 30 | 691 | 0.1− | 0.3− | 2004 12 20 | G96 | 0.1+ | 0.2+ | 2005 02 09 | 704 | 1.1+ | 0.8+ |
| 2003 10 19 | 691 | 0.0 | 0.2− | 2005 02 02 | 691 | 0.0 | 0.6+ | 2005 02 09 | 704 | 0.9+ | 0.9+ |

**2005 $CM_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.87541 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27296452 | $\omega$ | 33.05421 | | −0.61176153 | | −0.78543626 |
| $a$ | 2.3535960 | $\Omega$ | 94.83857 | | +0.70376058 | | −0.59466972 |
| $e$ | 0.0703157 | $i$ | 5.41364 | | +0.36120475 | | −0.17163279 |
| $P$ | 3.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 09 | 691 | 0.5+ | 0.2+ | 2005 01 18 | 703 | 1.4− | 0.8− | 2005 02 14 | 704 | 0.1+ | 0.3− |
| 1996 10 09 | 691 | 0.2− | 0.0 | 2005 01 18 | 703 | 0.5− | 0.5+ | 2005 02 14 | 704 | 0.2+ | 0.3+ |
| 1996 10 09 | 691 | 0.3− | 0.1− | 2005 01 18 | 703 | 0.1+ | 0.3− | 2005 03 01 | 703 | 0.9+ | 1.0+ |
| 2003 09 21 | 691 | 0.2− | 0.0 | 2005 02 03 | 704 | 1.4+ | 1.4+ | 2005 03 01 | 703 | 0.7+ | 0.4− |
| 2003 09 21 | 691 | 0.1+ | 0.1− | 2005 02 03 | 704 | 0.6+ | 0.3+ | 2005 03 01 | 703 | 0.4− | 0.5− |
| 2003 09 21 | 691 | 0.1+ | 0.0 | 2005 02 03 | 704 | 0.8+ | 2.0+ | 2005 03 01 | 703 | 1.2− | 0.8− |
| 2004 12 20 | G96 | 0.2+ | 0.3− | 2005 02 09 | G96 | 0.1− | 0.2− | 2005 03 13 | G96 | 0.4− | 0.1− |
| 2004 12 20 | G96 | 0.1− | 0.6− | 2005 02 09 | G96 | 0.1− | 0.2− | 2005 03 13 | G96 | 0.3− | 0.2− |
| 2004 12 20 | G96 | 0.2+ | 0.2− | 2005 02 09 | G96 | 0.2− | 0.2− | 2005 03 13 | G96 | 0.3− | 0.0 |
| 2004 12 20 | G96 | 0.0 | 0.3− | 2005 02 09 | G96 | 0.2− | 0.4− | 2005 03 13 | G96 | 0.1− | 0.1− |
| 2005 01 18 | 703 | 1.3− | 0.0 | 2005 02 14 | 704 | 1.0+ | 0.2− | | | | |

**2005 $CT_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.72499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23052066 | $\omega$ | 116.66420 | | −0.21965250 | | +0.97424457 |
| $a$ | 2.6342853 | $\Omega$ | 140.53961 | | −0.92117629 | | −0.18990956 |
| $e$ | 0.0574197 | $i$ | 4.60210 | | −0.32122737 | | −0.12158079 |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 26 | 691 | 0.0 | 0.2+ | 2005 02 04 | 691 | 0.1− | 0.0 | 2005 03 04 | G96 | 0.3− | 0.3− |
| 1993 05 26 | 691 | 0.0 | 0.4− | 2005 02 04 | 691 | 0.2− | 0.1− | 2005 03 04 | G96 | 0.1− | 0.2− |
| 2001 03 16 | 691 | 0.1+ | 0.4+ | 2005 02 09 | 704 | 0.6+ | 0.4− | 2005 03 04 | G96 | 0.4− | 0.3− |
| 2001 03 16 | 691 | 0.0 | 0.1+ | 2005 02 09 | 704 | 0.7− | 0.7+ | 2005 04 09 | G96 | 0.1+ | 0.4− |
| 2001 03 16 | 691 | 0.0 | 0.1+ | 2005 02 09 | 704 | 0.5− | 0.1− | 2005 04 09 | G96 | 0.0 | 0.2− |
| 2005 01 17 | 691 | 0.2+ | 0.1+ | 2005 03 04 | 691 | 0.2+ | 0.0 | 2005 04 09 | G96 | 0.1− | 0.1− |
| 2005 01 17 | 691 | 0.1+ | 0.0 | 2005 03 04 | 691 | 0.3+ | 0.2+ | 2005 04 09 | G96 | 0.1+ | 0.0 |
| 2005 01 17 | 691 | 0.0 | 0.1− | 2005 03 04 | 691 | 0.0 | 0.4− | | | | |
| 2005 02 04 | 691 | 0.0 | 0.1+ | 2005 03 04 | G96 | 0.6− | 0.2− | | | | |

**2005 $CD_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.56918 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17977693 | $\omega$ | 333.26347 | | +0.73572322 | | −0.67627760 |
| $a$ | 3.1091863 | $\Omega$ | 69.34049 | | +0.62823440 | | +0.66108725 |
| $e$ | 0.1865313 | $i$ | 2.25873 | | +0.25304721 | | +0.32498039 |
| $P$ | 5.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 691 | 0.1+ | 0.1− | 2003 11 19 | 691 | 0.4+ | 0.1+ | 2005 02 09 | 691 | 0.5+ | 0.2− |
| 2003 10 21 | 691 | 0.1− | 0.1− | 2003 11 30 | 691 | 0.2− | 0.0 | 2005 02 09 | 691 | 0.2+ | 0.4+ |
| 2003 10 21 | 691 | 0.0 | 0.1− | 2003 11 30 | 691 | 0.1+ | 0.1+ | 2005 02 09 | 691 | 0.1+ | 0.1+ |
| 2003 10 28 | 704 | 0.7+ | 0.2+ | 2003 11 30 | 691 | 0.5− | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.0 |
| 2003 10 28 | 704 | 0.1+ | 0.1+ | 2005 02 04 | G96 | 0.5− | 0.1+ | 2005 03 10 | G96 | 0.7− | 0.7− |
| 2003 10 28 | 704 | 0.1− | 0.4− | 2005 02 04 | G96 | 1.1− | 0.0 | 2005 03 10 | G96 | 0.2− | 0.0 |
| 2003 11 19 | 691 | 0.2− | 0.2− | 2005 02 04 | G96 | 1.0− | 0.1− | 2005 03 10 | G96 | 0.4+ | 0.9− |
| 2003 11 19 | 691 | 0.2+ | 0.0 | 2005 02 04 | G96 | 0.3− | 0.0 | | | | |

**2005 $CU_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.44037 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23150972 | $\omega$ | 237.25079 | | +0.98272604 | | −0.02723365 |
| $a$ | 2.6267771 | $\Omega$ | 123.67787 | | +0.07798010 | | +0.95795405 |
| $e$ | 0.1792157 | $i$ | 12.70723 | | −0.16783517 | | +0.28562626 |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.5+ | 1.7+ | 2003 10 02 | 608 | 0.9+ | 0.5− | 2005 02 03 | 704 | 0.4− | 0.3− |
| 1999 11 01 | 703 | 0.5− | 0.8+ | 2003 10 02 | 608 | 0.7+ | 0.5− | 2005 02 03 | 704 | 0.0 | 0.5+ |
| 1999 11 01 | 703 | 0.2+ | 0.8− | 2003 10 02 | 608 | 0.8+ | 0.6− | 2005 02 04 | 699 | 0.4− | 0.3+ |
| 1999 11 01 | 703 | 0.8− | 0.1+ | 2003 11 26 | 704 | 0.4− | 0.6+ | 2005 02 04 | 699 | 0.4+ | 0.1+ |
| 2003 08 31 | 608 | 0.1+ | 0.3− | 2003 11 26 | 704 | 0.8− | 0.4− | 2005 02 04 | 699 | 0.7− | 0.3+ |
| 2003 08 31 | 608 | 0.2+ | 0.0 | 2003 11 26 | 704 | 0.0 | 0.3+ | 2005 02 04 | 699 | 0.1+ | 0.4− |
| 2003 08 31 | 608 | 0.4+ | 0.2+ | 2003 11 26 | 704 | 0.5− | 0.3− | 2005 02 09 | 699 | 1.4+ | 1.3− |
| 2003 09 17 | 704 | 0.5− | 0.2− | 2003 11 26 | 704 | 0.2− | 0.5− | 2005 02 09 | 699 | 0.4+ | 0.2+ |
| 2003 09 17 | 704 | 0.4− | 0.0 | 2005 02 03 | 704 | (2.4− | 0.0 ) | 2005 02 09 | 699 | 0.7+ | 0.6+ |
| 2003 09 17 | 704 | 0.1+ | 0.1+ | 2005 02 03 | 704 | 0.2+ | 1.6− | 2005 02 09 | 699 | 1.8− | 0.2− |

**2005 CE$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.80595 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27827694 | $\omega$ | 271.93170 | | +0.96067646 | | −0.27040462 |
| $a$ | 2.3235458 | $\Omega$ | 103.76076 | | +0.27352236 | | +0.88242949 |
| $e$ | 0.1767573 | $i$ | 3.72505 | | +0.04781489 | | +0.38496694 |
| $P$ | 3.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 28 | 691 | 0.1+ | 0.2+ | 2003 08 26 | 704 | 0.5− | 0.8+ | 2004 12 20 | G96 | 0.2− | 0.3− |
| 1995 04 28 | 691 | 0.1+ | 0.3+ | 2003 08 31 | 704 | 0.7+ | 0.6− | 2005 02 01 | 691 | 0.2+ | 0.3+ |
| 1995 04 28 | 691 | 0.2+ | 0.2+ | 2003 08 31 | 704 | 0.1− | 0.2+ | 2005 02 01 | 691 | 0.1+ | 0.4+ |
| 2000 12 30 | 704 | 0.5− | 0.3+ | 2003 08 31 | 704 | 0.1+ | 0.2− | 2005 02 01 | 691 | 0.0 | 0.3+ |
| 2000 12 30 | 704 | 0.7− | 0.5+ | 2003 08 31 | 704 | 1.1+ | 0.8− | 2005 02 09 | 691 | 0.2+ | 0.1− |
| 2000 12 30 | 704 | 0.0 | 0.7+ | 2003 09 15 | 699 | 0.1+ | 0.7+ | 2005 02 09 | 691 | 0.1+ | 0.3− |
| 2000 12 30 | 704 | 0.5+ | 0.4− | 2003 09 15 | 699 | 0.8+ | 0.6− | 2005 02 09 | 691 | 0.0 | 0.1− |
| 2003 08 01 | 608 | 0.3+ | 1.0− | 2003 09 15 | 699 | 0.9+ | 3.0+ | 2006 04 26 | G96 | 0.2− | 0.1+ |
| 2003 08 01 | 608 | 0.4− | 0.9− | 2003 09 15 | 699 | (3.2− | 1.7+) | 2006 04 26 | G96 | 0.4− | 0.1+ |
| 2003 08 01 | 608 | 0.6+ | 0.6− | 2004 12 20 | G96 | 0.9− | 0.0 | 2006 04 26 | G96 | 0.5− | 0.4− |
| 2003 08 26 | 704 | 0.8− | 0.4+ | 2004 12 20 | G96 | 0.2+ | 0.0 | 2006 04 26 | G96 | 0.0 | 0.3+ |
| 2003 08 26 | 704 | 0.0 | 1.4+ | 2004 12 20 | G96 | 0.1− | 0.4− | | | | |

**2005 CJ$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.57388 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23283263 | $\omega$ | 167.99136 | | −0.30828404 | | +0.94525049 |
| $a$ | 2.6168178 | $\Omega$ | 83.98035 | | −0.88146331 | | −0.24151528 |
| $e$ | 0.2103161 | $i$ | 6.18024 | | −0.35774765 | | −0.21948092 |
| $P$ | 4.23 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.6− | 1.0+ | 2005 04 19 | 704 | 0.2+ | 0.1+ | 2005 06 26 | 699 | 0.2− | 0.5− |
| 2002 10 31 | 704 | 0.2+ | 0.9+ | 2005 04 22 | 608 | 0.1− | 0.8+ | 2005 07 29 | E12 | 0.4− | 0.2− |
| 2002 10 31 | 704 | 0.9− | 0.8+ | 2005 04 22 | 608 | 0.4− | 1.2+ | 2005 07 29 | E12 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.3− | 0.9+ | 2005 04 22 | 608 | 0.1+ | 0.8+ | 2005 07 29 | E12 | 0.2− | 0.0 |
| 2005 02 01 | 691 | 0.1+ | 0.2+ | 2005 05 03 | 704 | (1.0− | 2.4−) | 2005 07 29 | E12 | 0.6− | 0.5− |
| 2005 02 01 | 691 | 0.1− | 0.2+ | 2005 05 03 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.6− | 0.0 |
| 2005 02 01 | 691 | 0.1− | 0.1+ | 2005 05 03 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.6− | 0.2+ |
| 2005 02 09 | 691 | 0.3+ | 0.3+ | 2005 05 03 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 1.2− | 0.5− |
| 2005 02 09 | 691 | 0.5+ | 0.2+ | 2005 05 03 | 704 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.0 | 0.9+ |
| 2005 02 09 | 691 | 0.2+ | 0.4+ | 2005 05 08 | 704 | 0.5+ | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.4+ |
| 2005 03 07 | 704 | 0.6− | 0.6− | 2005 05 08 | 704 | 0.1+ | 0.8− | 2006 09 25 | 699 | 0.2− | 0.4− |
| 2005 03 07 | 704 | 0.4+ | 0.9+ | 2005 05 08 | 704 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.8− | 0.9+ |
| 2005 03 07 | 704 | (0.3− | 2.0−) | 2005 05 12 | 704 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2005 03 07 | 704 | 0.0 | 0.4+ | 2005 05 12 | 704 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2005 03 07 | 704 | 0.5+ | 0.0 | 2005 05 12 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2005 04 05 | 704 | (1.7+ | 0.4−) | 2005 05 12 | 704 | 0.2+ | 1.2+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 2005 04 05 | 704 | 0.7+ | 0.4+ | 2005 05 12 | 704 | 1.0+ | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.4+ |
| 2005 04 05 | 704 | (0.7+ | 1.8+) | 2005 05 14 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1+ | 1.4+ |
| 2005 04 05 | 704 | 0.4+ | 0.5− | 2005 05 14 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2005 04 05 | 704 | 0.6+ | 0.7− | 2005 05 14 | 704 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2005 04 07 | 704 | (1.5+ | 0.7−) | 2005 05 14 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 1.0− | 0.8− |
| 2005 04 07 | 704 | 1.2− | 0.0 | 2005 05 14 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2005 04 07 | 704 | 0.5+ | 0.6− | 2005 06 01 | 699 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2005 04 07 | 704 | 0.3+ | 0.2+ | 2005 06 01 | 699 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 04 13 | 704 | 0.5+ | 0.3+ | 2005 06 01 | 699 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2005 04 13 | 704 | 0.5+ | 0.6− | 2005 06 04 | 703 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.5+ |
| 2005 04 13 | 704 | 0.6− | 0.5− | 2005 06 04 | 703 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2005 04 13 | 704 | 0.3+ | 0.1+ | 2005 06 04 | 703 | 1.1− | 0.2+ | 2006 10 22 | 703 | 1.1+ | 1.1+ |
| 2005 04 13 | 704 | 0.2+ | 0.1+ | 2005 06 04 | 703 | 0.7− | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2005 04 15 | 691 | 0.0 | 0.2+ | 2005 06 22 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | (1.6− | 2.4+) |
| 2005 04 15 | 691 | 0.1+ | 0.1+ | 2005 06 22 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | (0.5− | 1.8+) |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2005 06 22 | 644 | 0.1+ | 0.1− | 2006 11 06 | 644 | 0.3− | 0.3+ |
| 2005 04 19 | 704 | 0.0 | 0.5− | 2005 06 26 | 699 | 0.4+ | 0.4− | 2006 11 06 | 644 | 0.3− | 0.2− |
| 2005 04 19 | 704 | 0.5− | 0.6− | 2005 06 26 | 699 | 0.4− | 0.2− | 2006 11 06 | 644 | 0.1− | 0.5+ |
| 2005 04 19 | 704 | 0.4+ | 0.7− | 2005 06 26 | 699 | 0.1+ | 0.5+ | | | | |

**2005 CL$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.15448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21635894 | $\omega$ | 341.20974 | | −0.72385692 | | −0.68657386 |
| $a$ | 2.7480175 | $\Omega$ | 155.01617 | | +0.65189761 | | −0.71294821 |
| $e$ | 0.1028802 | $i$ | 9.28861 | | +0.22596606 | | −0.14255239 |
| $P$ | 4.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.2− | 0.5+ | 2005 02 02 | 691 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.1− | 0.2− |
| 2003 10 23 | 691 | 0.1− | 0.3+ | 2005 02 02 | 704 | 1.1+ | 0.8+ | 2005 03 11 | G96 | 0.1− | 0.1− |
| 2003 10 23 | 691 | 0.0 | 0.4+ | 2005 02 02 | 704 | 0.3− | 0.7+ | 2005 03 11 | G96 | 0.1+ | 0.3− |
| 2005 01 13 | 703 | 1.3− | 0.2− | 2005 02 02 | 703 | 0.8+ | 1.1+ | 2005 03 11 | G96 | 0.2+ | 0.2− |
| 2005 01 13 | 703 | 0.7− | 0.3− | 2005 02 02 | 704 | 0.1+ | 0.1− | 2005 04 05 | G96 | 0.2− | 0.3− |
| 2005 01 13 | 703 | 1.4− | 1.6+ | 2005 02 02 | 703 | 0.4− | 1.4+ | 2005 04 05 | G96 | 0.3+ | 0.1− |
| 2005 01 13 | 703 | 0.2+ | 1.1+ | 2005 02 02 | 703 | 0.3+ | 0.3+ | 2005 04 05 | G96 | 0.5+ | 0.4− |
| 2005 01 13 | 691 | 0.1− | 0.2− | 2005 02 02 | 703 | 0.1+ | 1.2+ | 2005 04 05 | G96 | 0.1+ | 0.3− |
| 2005 01 13 | 691 | 0.0 | 0.4− | 2005 02 09 | 704 | 0.6− | 0.1− | 2006 06 15 | 691 | 0.1− | 0.3+ |
| 2005 01 13 | 691 | 0.2+ | 0.6− | 2005 02 09 | 704 | 0.4+ | 0.4+ | 2006 06 15 | 691 | 0.0 | 0.5+ |
| 2005 02 02 | 691 | 0.2+ | 0.1+ | 2005 02 09 | 704 | 0.3− | 0.6+ | 2006 06 15 | 691 | 0.2+ | 0.5+ |
| 2005 02 02 | 691 | 0.2+ | 0.0 | 2005 02 09 | 704 | 0.4− | 0.9+ | | | | |

**2005 CM$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.42820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26219903 | $\omega$ | 299.92399 | | −0.91704710 | | −0.38595737 |
| $a$ | 2.4175864 | $\Omega$ | 217.62961 | | +0.39839336 | | −0.87564584 |
| $e$ | 0.0932375 | $i$ | 9.45591 | | +0.01753144 | | −0.29031238 |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 0.1+ | 0.7+ | 2003 08 30 | 704 | 1.2− | 1.2+ | 2005 01 16 | 703 | 1.0− | 0.7+ |
| 1998 04 22 | 704 | 1.0+ | 0.9− | 2003 09 18 | 691 | 0.1+ | 0.2+ | 2005 01 16 | 703 | 0.7− | 0.7+ |
| 1998 04 22 | 704 | 2.3− | 1.8− | 2003 09 18 | 691 | 0.1− | 0.1+ | 2005 02 02 | 644 | 0.2+ | 0.6+ |
| 1998 04 22 | 704 | 0.7+ | 0.3+ | 2003 09 18 | 691 | 0.0 | 0.2+ | 2005 02 02 | 644 | 0.9+ | 0.3+ |
| 2002 05 09 | 704 | 0.2+ | 1.1+ | 2003 09 30 | 691 | 0.1− | 0.1+ | 2005 02 02 | 644 | 0.7+ | 0.4+ |
| 2002 05 09 | 704 | 0.1+ | 1.6+ | 2003 09 30 | 691 | 0.2− | 0.2+ | 2005 02 02 | 644 | 0.4+ | 0.3+ |
| 2002 05 09 | 704 | 0.3+ | 2.6+ | 2003 09 30 | 704 | 0.7+ | 0.6+ | 2005 02 02 | 644 | 0.9+ | 0.1+ |
| 2002 05 09 | 704 | 0.8+ | 0.3+ | 2003 09 30 | 691 | 0.1− | 0.3+ | 2005 02 02 | 644 | 0.7+ | 0.6+ |
| 2002 05 09 | 704 | 1.2− | 2.5+ | 2003 09 30 | 704 | 0.7− | 1.0+ | 2005 02 04 | 644 | 0.3+ | 1.0+ |
| 2002 06 02 | 644 | 0.1− | 0.3− | 2003 09 30 | 704 | 1.7+ | 1.0+ | 2005 02 04 | 644 | 0.1+ | 1.0+ |
| 2002 06 02 | 644 | 0.2− | 0.2− | 2003 09 30 | 704 | 0.1− | 0.2− | 2005 02 04 | 644 | 0.1− | 0.8+ |
| 2002 06 02 | 644 | 0.2− | 0.1− | 2003 10 22 | 691 | 0.4+ | 0.0 | 2005 02 04 | 703 | 0.2− | 0.0 |
| 2002 07 03 | 644 | 0.3+ | 0.2+ | 2003 10 22 | 691 | 0.2+ | 0.0 | 2005 02 04 | 703 | 0.7− | 0.4+ |
| 2002 07 03 | 644 | 0.8+ | 0.1+ | 2003 10 22 | 691 | 0.1− | 0.1+ | 2005 02 04 | 703 | 0.3− | 0.3− |
| 2002 07 03 | 644 | 0.1− | 0.5+ | 2003 11 19 | 645 | 0.1− | 0.1− | 2005 02 04 | 703 | 0.1− | 1.2+ |
| 2003 08 30 | 704 | 0.4+ | 1.1+ | 2003 11 19 | 645 | 0.2− | 0.1− | | | | |
| 2003 08 30 | 704 | 0.2+ | 2.1+ | 2005 01 16 | 703 | 1.0+ | 0.6+ | | | | |

**2005 CN$_{75}$ = 2006 KS$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.60915 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22867743 | $\omega$ | 229.92684 | | +0.98447785 | | +0.01493639 |
| $a$ | 2.6484220 | $\Omega$ | 128.48743 | | +0.03157030 | | +0.96504943 |
| $e$ | 0.1567555 | $i$ | 12.90933 | | −0.17264608 | | +0.26164192 |
| $P$ | 4.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 699 | 0.7+ | 0.4− | 2003 10 24 | 699 | 0.0 | 0.1+ | 2005 02 09 | G96 | 0.1− | 0.6− |
| 2003 10 01 | 699 | 0.6− | 0.4+ | 2003 10 24 | 699 | 0.6+ | 0.2− | 2005 02 09 | G96 | 0.2− | 0.5− |
| 2003 10 01 | 699 | 1.9− | 0.6− | 2003 11 24 | 644 | 0.0 | 0.4+ | 2005 02 09 | G96 | 0.3+ | 0.4− |
| 2003 10 01 | 699 | 0.6+ | 0.3− | 2003 11 24 | 644 | 0.3+ | 0.7+ | 2006 05 28 | 691 | 0.2+ | 0.1+ |
| 2003 10 16 | 644 | 0.1− | 0.2+ | 2003 11 24 | 644 | 0.1− | 0.5+ | 2006 05 28 | 691 | 0.1− | 0.0 |
| 2003 10 16 | 644 | 0.2− | 0.0 | 2005 02 02 | 691 | 0.1+ | 0.2+ | 2006 05 28 | 691 | 0.1+ | 0.4+ |
| 2003 10 16 | 644 | 0.1+ | 0.2+ | 2005 02 02 | 691 | 0.2− | 0.1+ | 2006 05 31 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 699 | 0.3+ | 1.0+ | 2005 02 02 | 691 | 0.2+ | 0.1+ | 2006 05 31 | 691 | 0.1− | 0.0 |
| 2003 10 24 | 699 | 0.1− | 1.3− | 2005 02 09 | G96 | 0.2− | 0.1− | 2006 05 31 | 691 | 0.0 | 0.1− |

**2005 $CT_{78}$ = 2000 $YA_{80}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 212.58873 | | (2000.0) | | | |
| $n$ | 0.27330969 | $\omega$ | 169.58255 | | −0.02411803 | −0.99918321 |
| $a$ | 2.3516139 | $\Omega$ | 281.79388 | | +0.91481641 | −0.00897957 |
| $e$ | 0.1528316 | $i$ | 1.89810 | | +0.40314918 | −0.03939900 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.4+ | 0.4− | 2001 01 03 | 704 | 0.3− | 0.5− | 2005 04 04 | 703 | 0.7− | 0.6+ |
| 2000 12 30 | 704 | 0.1+ | 0.5+ | 2005 02 09 | 704 | 0.5+ | 1.1+ | 2005 04 04 | 703 | 0.8− | 1.6+ |
| 2000 12 30 | 704 | 0.7− | 0.6− | 2005 02 09 | 704 | 1.0+ | 0.4+ | 2005 04 09 | 691 | 0.4+ | 0.1− |
| 2000 12 30 | 704 | 0.1− | 0.4− | 2005 02 09 | 704 | 0.3− | 0.4+ | 2005 04 09 | 691 | 0.2+ | 0.1+ |
| 2000 12 30 | 704 | 0.1− | 0.7+ | 2005 03 17 | G96 | 0.0 | 0.3− | 2005 04 09 | 691 | 0.5+ | 0.1+ |
| 2001 01 03 | 691 | 0.2+ | 0.3− | 2005 03 17 | G96 | 0.2+ | 0.5− | 2005 05 14 | G96 | 0.1+ | 0.5− |
| 2001 01 03 | 691 | 0.1+ | 0.2+ | 2005 03 17 | G96 | 0.1− | 0.4− | 2005 05 14 | G96 | 0.5− | 0.4− |
| 2001 01 03 | 691 | 0.1− | 0.1− | 2005 03 17 | G96 | 0.0 | 0.4− | 2005 05 14 | G96 | 0.3+ | 0.1+ |
| 2001 01 03 | 704 | 0.3− | 0.3+ | 2005 04 04 | 703 | 0.8− | 1.5− | 2005 05 14 | G96 | 0.1− | 0.4− |
| 2001 01 03 | 704 | 0.7+ | 0.0 | 2005 04 04 | 703 | (2.3− | 1.5−) | | | | |

**2005 $CU_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.28806 | | (2000.0) | | | |
| $n$ | 0.12480407 | $\omega$ | 299.29448 | | −0.11509688 | +0.99315488 |
| $a$ | 3.9656730 | $\Omega$ | 324.07932 | | −0.89921178 | −0.11268153 |
| $e$ | 0.1799377 | $i$ | 1.94409 | | −0.42210294 | −0.03076138 |
| $P$ | 7.90 | $H$ | 14.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 09 | G96 | 0.4− | 0.3− | 2006 03 26 | 691 | 0.2+ | 0.1+ | 2006 05 04 | G96 | 0.7− | 0.1− |
| 2005 02 09 | G96 | 0.5− | 0.0 | 2006 03 26 | 691 | 0.2+ | 0.3+ | 2006 05 04 | G96 | 0.6− | 0.2+ |
| 2005 02 09 | G96 | 0.1− | 0.0 | 2006 03 26 | 691 | 0.3+ | 0.3+ | 2006 05 04 | G96 | 0.1+ | 0.4− |
| 2005 02 09 | G96 | 0.0 | 0.3− | 2006 04 21 | 703 | 1.1− | 1.0− | 2006 05 23 | 699 | 0.2+ | 0.7− |
| 2005 03 08 | G96 | 0.2− | 0.1− | 2006 04 21 | 703 | 0.4− | 0.1− | 2006 05 23 | 699 | 1.0− | 1.0+ |
| 2005 03 08 | G96 | 0.2+ | 0.2− | 2006 04 21 | 703 | 0.2− | 0.4− | 2006 05 23 | 699 | 1.5+ | 1.5+ |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 04 21 | 703 | 0.6− | 1.2− | 2006 05 23 | 699 | 1.3+ | 0.2− |
| 2005 03 08 | G96 | 0.1+ | 0.1+ | 2006 04 30 | 699 | 1.7+ | 0.4+ | 2006 05 31 | G96 | 0.3− | 0.2− |
| 2005 04 02 | G96 | 0.6+ | 0.3− | 2006 04 30 | 699 | (0.7− | 2.2+) | 2006 05 31 | G96 | 0.2− | 0.4− |
| 2005 04 02 | G96 | 0.1+ | 0.3+ | 2006 04 30 | 699 | 1.3− | 0.1− | 2006 05 31 | G96 | 0.1− | 0.5− |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 04 30 | 699 | (2.5− | 1.0+) | 2006 05 31 | G96 | 0.6− | 0.4− |
| 2005 04 02 | G96 | 0.1+ | 0.3+ | 2006 05 04 | G96 | 0.2+ | 0.3− | | | | |

**2005 $CX_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 152.93339 | | (2000.0) | | | |
| $n$ | 0.21138518 | $\omega$ | 275.53643 | | −0.35601645 | −0.93387048 |
| $a$ | 2.7909563 | $\Omega$ | 195.45028 | | +0.89967262 | −0.33277061 |
| $e$ | 0.1909526 | $i$ | 7.27553 | | +0.25266866 | −0.13095667 |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 599 | 0.4− | 0.2+ | 2005 02 02 | 704 | 0.6+ | 0.5+ | 2005 03 17 | 703 | 0.9− | 0.6− |
| 2003 09 20 | 599 | 0.4− | 0.1− | 2005 02 02 | 704 | 0.9+ | 0.8− | 2005 03 17 | 703 | 0.3− | 0.3− |
| 2003 09 20 | 599 | 0.1− | 0.2− | 2005 02 15 | 809 | 0.1− | 0.1+ | 2005 03 17 | 703 | 0.4− | 0.0 |
| 2003 09 20 | 599 | 0.4− | 0.1− | 2005 02 15 | 809 | 0.0 | 0.1+ | 2005 03 30 | 644 | 0.4+ | 0.1− |
| 2003 09 29 | 704 | 0.1− | 0.1− | 2005 02 15 | 809 | 0.1− | 0.2+ | 2005 03 30 | 703 | (1.0+ | 2.8−) |
| 2003 09 29 | 704 | 0.4+ | 0.1− | 2005 03 01 | 683 | 0.5− | 0.3+ | 2005 03 30 | 703 | 0.9+ | 0.2+ |
| 2003 09 29 | 704 | 0.1+ | 0.3+ | 2005 03 01 | 683 | 0.6− | 1.2+ | 2005 03 30 | 703 | 0.9+ | 1.3+ |
| 2003 10 19 | 691 | 0.2+ | 0.1− | 2005 03 01 | 683 | 0.2+ | 1.2− | 2005 03 30 | 644 | 0.3+ | 0.3− |
| 2003 10 19 | 691 | 0.1+ | 0.1+ | 2005 03 04 | 683 | (0.2+ | 2.5−) | 2005 03 30 | 703 | 0.0 | 0.0 |
| 2003 10 19 | 691 | 0.0 | 0.0 | 2005 03 04 | 683 | (0.7+ | 1.8−) | 2005 03 30 | 644 | 0.1+ | 0.1+ |
| 2005 02 02 | 704 | 0.7+ | 1.2+ | 2005 03 04 | 683 | 0.5− | 0.6− | | | | |
| 2005 02 02 | 704 | 0.3− | 1.2− | 2005 03 17 | 703 | 0.7− | 0.0 | | | | |

**2005 $DJ_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.88763 | | (2000.0) | | | |
| $n$ | 0.23520381 | $\omega$ | 129.52111 | | +0.97292634 | +0.17262817 |
| $a$ | 2.5992007 | $\Omega$ | 221.21021 | | −0.20465757 | +0.95243007 |
| $e$ | 0.2347912 | $i$ | 13.48825 | | +0.10737603 | +0.25115031 |
| $P$ | 4.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 16 | 809 | 0.2+ | 0.1− | 2005 06 15 | 691 | 0.6+ | 0.1+ | 2006 11 15 | 703 | 0.9− | 0.4+ |
| 2005 02 16 | 809 | 0.0 | 0.1− | 2005 06 15 | 691 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.3+ |
| 2005 02 16 | 809 | 0.1+ | 0.2− | 2005 06 15 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2005 02 18 | 809 | 0.3+ | 0.0 | 2005 07 01 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2005 02 18 | 809 | 0.2+ | 0.0 | 2005 07 01 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2005 02 18 | 809 | 0.3+ | 0.0 | 2005 07 01 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2005 06 02 | E12 | 0.2− | 0.1− | 2005 07 27 | 644 | 0.2− | 0.5− | 2006 11 25 | 703 | 0.2+ | 0.2− |
| 2005 06 02 | E12 | 0.1+ | 0.3− | 2005 07 27 | 644 | 0.1+ | 0.3− | 2006 11 25 | 703 | 0.3+ | 0.5− |
| 2005 06 02 | E12 | 0.1− | 0.3− | 2005 07 27 | 644 | 0.1+ | 0.3− | 2006 11 25 | 703 | 1.6− | 0.8+ |
| 2005 06 02 | E12 | 0.3− | 0.4+ | 2005 08 05 | 644 | 0.2− | 0.6− | 2006 11 25 | 703 | 0.9− | 0.8+ |
| 2005 06 09 | 703 | 0.2+ | 0.4− | 2005 08 05 | 644 | 0.4− | 0.3− | 2006 11 28 | 704 | 0.4+ | 1.0+ |
| 2005 06 09 | 703 | 0.6− | 0.6+ | 2005 08 05 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.4+ |
| 2005 06 09 | 703 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2005 06 09 | 703 | 0.5− | 0.2− | 2006 11 15 | 703 | 0.4+ | 0.2+ | 2006 11 28 | 704 | 0.8+ | 0.7− |

**2005 $DN_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 140.87744 | | (2000.0) | | | |
| $n$ | 0.19908340 | $\omega$ | 152.11662 | | −0.65355527 | −0.75575860 |
| $a$ | 2.9047762 | $\Omega$ | 338.61111 | | +0.67173443 | −0.55411484 |
| $e$ | 0.0829912 | $i$ | 6.48085 | | +0.34876692 | −0.34897804 |
| $P$ | 4.95 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.1− | 0.6− | 2003 12 01 | 691 | 0.4+ | 0.3− | 2005 03 08 | G96 | 0.1− | 0.0 |
| 2000 02 11 | 691 | 0.7+ | 0.3+ | 2003 12 01 | 691 | 0.1+ | 0.0 | 2005 03 08 | G96 | 0.3− | 0.1− |
| 2000 02 11 | 691 | 0.7− | 0.1− | 2003 12 01 | 691 | 0.4+ | 0.1− | 2005 04 09 | G96 | 0.0 | 0.1+ |
| 2000 03 03 | 704 | 0.2+ | 0.4− | 2005 02 18 | 809 | 0.1− | 0.1− | 2005 04 09 | G96 | 0.2+ | 0.8+ |
| 2000 03 03 | 704 | 1.0− | 0.3+ | 2005 02 18 | 809 | 0.2− | 0.1− | 2005 04 09 | G96 | 0.2− | 0.1− |
| 2000 03 03 | 704 | 0.5+ | 1.0+ | 2005 02 18 | 809 | 0.1− | 0.0 | 2005 04 09 | G96 | 0.3+ | 0.8− |
| 2000 03 03 | 704 | 0.7+ | 1.5+ | 2005 02 18 | 809 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.3− | 0.3− |
| 2003 11 18 | 691 | 0.1− | 0.1+ | 2005 02 18 | 809 | 0.1+ | 0.1− | 2005 05 14 | G96 | 0.1+ | 0.3− |
| 2003 11 18 | 691 | 0.4− | 0.3+ | 2005 03 08 | G96 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.2+ | 0.4+ |
| 2003 11 18 | 691 | 0.3− | 0.1+ | 2005 03 08 | G96 | 0.1− | 0.2− | 2005 05 14 | G96 | 0.2+ | 0.2− |

**2005 $EF_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.68065 | | (2000.0) | | | |
| $n$ | 0.38372370 | $\omega$ | 341.23423 | | +0.87927237 | +0.47395207 |
| $a$ | 1.8755284 | $\Omega$ | 350.06433 | | −0.39424136 | +0.66826088 |
| $e$ | 0.0499155 | $i$ | 15.95517 | | −0.26730855 | +0.57340809 |
| $P$ | 2.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 02 | 703 | 0.4+ | 0.5+ | 2005 03 08 | 699 | 0.1+ | 0.2− | 2005 04 09 | G96 | 0.1− | 0.1− |
| 2005 03 02 | 703 | 0.8− | 0.7− | 2005 03 08 | 704 | 0.4+ | 0.2− | 2005 04 12 | G96 | 0.0 | 0.2− |
| 2005 03 02 | 703 | 0.1+ | 0.2+ | 2005 03 08 | 704 | 0.8+ | 0.8− | 2005 04 12 | G96 | 0.1− | 0.1− |
| 2005 03 02 | 703 | 0.1− | 0.6+ | 2005 03 08 | 704 | 1.0+ | 0.2− | 2005 04 12 | G96 | 0.2+ | 0.2− |
| 2005 03 04 | 704 | 0.0 | 0.3− | 2005 03 08 | 704 | 0.2+ | 1.0− | 2005 04 12 | G96 | 0.1− | 0.1− |
| 2005 03 04 | 704 | 0.4− | 0.1+ | 2005 03 08 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 703 | 0.5+ | 0.4− |
| 2005 03 04 | 704 | 0.1+ | 0.1+ | 2005 03 12 | 704 | 0.8− | 1.2+ | 2006 10 31 | 703 | 0.4− | 0.2− |
| 2005 03 04 | 704 | 0.4− | 0.5− | 2005 03 12 | 704 | 1.1+ | 1.2+ | 2006 10 31 | 703 | 1.4− | 0.1+ |
| 2005 03 04 | 704 | 0.7+ | 0.4+ | 2005 03 12 | 704 | 0.8+ | 0.9+ | 2006 10 31 | 703 | 0.9− | 1.0− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 07 | 704 | 0.7− | 1.1+ | 2005 03 16 | 703 | 0.2+ | 0.5− | 2006 10 31 | 703 | (0.0 | 1.9−) |
| 2005 03 07 | 704 | 0.4− | 0.9− | 2005 03 16 | 703 | 0.1− | 0.8− | 2006 10 31 | 703 | 0.9+ | 0.1+ |
| 2005 03 07 | 704 | 0.4− | 0.8− | 2005 03 16 | 703 | 1.0− | 0.5+ | 2006 10 31 | 703 | 0.1− | 0.0 |
| 2005 03 07 | 704 | (0.2+ | 1.7−) | 2005 03 16 | 703 | 0.3− | 0.2− | 2006 10 31 | 703 | (2.0− | 0.2+) |
| 2005 03 08 | 699 | 0.9− | 0.8+ | 2005 04 09 | G96 | 0.2− | 0.1+ | 2006 11 13 | 704 | 0.7+ | 0.7+ |
| 2005 03 08 | 699 | (0.1− | 1.7−) | 2005 04 09 | G96 | 0.3− | 0.1+ | 2006 11 13 | 704 | 0.6+ | 0.8+ |
| 2005 03 08 | 699 | 0.7+ | 0.7− | 2005 04 09 | G96 | 0.3− | 0.4+ | 2006 11 13 | 704 | 0.2+ | 0.1− |

**2005 EG$_2$ = 2006 QT$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.75417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36553151 | $\omega$ | 25.38459 | | +0.98897936 | | −0.09494424 |
| $a$ | 1.9372522 | $\Omega$ | 339.09862 | | −0.00170851 | | +0.75993416 |
| $e$ | 0.0786435 | $i$ | 18.56780 | | +0.14804360 | | +0.64302851 |
| $P$ | 2.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.2+ | 0.2− | 2005 03 07 | 704 | 0.8+ | 1.2+ | 2006 08 29 | 699 | 0.8+ | 0.9+ |
| 2001 12 23 | 704 | 0.0 | 0.0 | 2005 03 07 | 704 | 0.0 | 0.3+ | 2006 08 29 | 699 | 0.3− | 1.0+ |
| 2001 12 23 | 704 | 0.4− | 1.0− | 2005 03 08 | 704 | 0.1− | 0.3− | 2006 08 29 | 699 | 0.1+ | 0.2− |
| 2001 12 23 | 704 | 0.9− | 0.4− | 2005 03 08 | 704 | (1.6+ | 0.7+) | 2006 09 17 | 703 | 0.1− | 0.2+ |
| 2001 12 23 | 704 | 0.2− | 0.2− | 2005 03 08 | 704 | 0.4− | 1.0− | 2006 09 17 | 703 | 0.5− | 0.2− |
| 2005 03 03 | 703 | 0.6− | 0.4− | 2005 03 08 | 704 | 0.1+ | 1.3+ | 2006 09 17 | 703 | 0.4− | 0.1+ |
| 2005 03 03 | 703 | 0.9− | 0.3+ | 2005 03 08 | 704 | 1.2+ | 0.8− | 2006 09 17 | 703 | 0.8− | 0.9− |
| 2005 03 03 | 703 | (1.8− | 0.5−) | 2005 03 08 | 704 | 0.6+ | 1.5+ | 2006 09 22 | 699 | 0.5+ | 0.4+ |
| 2005 03 03 | 703 | 0.5− | 0.4− | 2005 03 08 | 704 | (1.7+ | 0.4+) | 2006 09 22 | 699 | 0.0 | 0.8+ |
| 2005 03 03 | 704 | 0.8+ | 0.2+ | 2005 03 08 | 704 | 1.2+ | 0.3+ | 2006 09 22 | 699 | 1.0− | 0.7+ |
| 2005 03 03 | 704 | (1.6+ | 0.7+) | 2005 03 10 | 699 | 0.6− | 0.1− | 2006 09 22 | 699 | 0.0 | 0.8+ |
| 2005 03 03 | 703 | 0.1− | 0.1+ | 2005 03 10 | 699 | 1.3+ | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.6+ |
| 2005 03 03 | 704 | 0.4+ | 0.0 | 2005 03 10 | 699 | (2.0+ | 0.0 ) | 2006 09 28 | 703 | 0.4− | 0.9+ |
| 2005 03 03 | 703 | 0.9− | 0.1+ | 2005 03 10 | 699 | (1.7+ | 0.1+) | 2006 09 28 | 703 | 0.8− | 0.4+ |
| 2005 03 03 | 703 | 0.8− | 0.1+ | 2005 03 17 | 703 | 1.2− | 0.2+ | 2006 09 28 | 703 | 0.2+ | 0.2+ |
| 2005 03 03 | 703 | 0.4− | 0.6− | 2005 03 17 | 703 | (1.7− | 0.0 ) | 2006 10 20 | 703 | 0.4+ | 0.4− |
| 2005 03 04 | 704 | 0.6+ | 0.4+ | 2005 03 17 | 703 | 1.0− | 0.5+ | 2006 10 20 | 703 | 0.9− | 0.0 |
| 2005 03 04 | 704 | 0.6+ | 0.3+ | 2005 03 17 | 703 | (2.3− | 1.5−) | 2006 10 20 | 703 | 0.4+ | 0.1+ |
| 2005 03 04 | 704 | 0.8+ | 0.3− | 2006 08 25 | 704 | (1.0− | 2.8+) | 2006 10 20 | 703 | 0.5+ | 0.3− |
| 2005 03 04 | 704 | 1.3+ | 1.3+ | 2006 08 25 | 704 | (0.7− | 2.8+) | 2006 10 27 | 703 | 0.9− | 0.6− |
| 2005 03 04 | 704 | 0.5+ | 0.2− | 2006 08 25 | 704 | (0.7− | 3.2+) | 2006 10 27 | 703 | 0.5+ | 0.6− |
| 2005 03 07 | 704 | 1.1+ | 0.4+ | 2006 08 25 | 704 | (0.3− | 3.3+) | 2006 10 27 | 703 | 0.6− | 0.4− |
| 2005 03 07 | 704 | (0.4+ | 2.1+) | 2006 08 25 | 704 | (0.3+ | 2.5+) | 2006 10 27 | 703 | 0.2+ | 0.5− |
| 2005 03 07 | 704 | 0.5+ | 0.3− | 2006 08 29 | 699 | 0.1+ | 0.9+ | | | | |

**2005 EK$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.63908 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27922902 | $\omega$ | 74.27532 | | −0.78863255 | | +0.61437576 |
| $a$ | 2.3182611 | $\Omega$ | 143.62128 | | −0.57877248 | | −0.72828911 |
| $e$ | 0.1529621 | $i$ | 2.36911 | | −0.20755990 | | −0.30354143 |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 01 | 691 | 0.2− | 0.0 | 2005 03 10 | 143 | 0.1+ | 0.8+ | 2006 08 19 | 691 | 0.5− | 0.7+ |
| 2005 02 01 | 691 | 0.1+ | 0.0 | 2005 03 10 | 143 | 0.9− | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.4+ |
| 2005 02 01 | 691 | 0.2+ | 0.4+ | 2005 03 10 | 143 | 1.4− | 0.6+ | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 2005 03 01 | 143 | 0.1+ | 0.9− | 2005 03 16 | 703 | (1.7+ | 2.2−) | 2006 08 23 | 807 | 0.2− | 0.2+ |
| 2005 03 01 | 143 | 0.2− | 0.2+ | 2005 03 16 | 703 | (2.7− | 0.8+) | 2006 08 23 | 807 | 0.3− | 0.2+ |
| 2005 03 01 | 143 | 0.3− | 0.1− | 2005 03 16 | 703 | (1.6− | 0.0 ) | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2005 03 04 | 568 | 0.1+ | 0.0 | 2005 03 16 | 703 | (2.4+ | 2.1+) | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2005 03 04 | 568 | 0.0 | 0.0 | 2005 03 18 | 143 | 1.4− | 0.6+ | 2006 09 30 | G96 | 0.6+ | 0.1+ |
| 2005 03 04 | 143 | 0.1− | 1.1− | 2005 03 18 | 143 | 0.5+ | 1.0+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2005 03 04 | 143 | 0.7+ | 0.1+ | 2005 03 19 | 143 | 0.4− | 0.3− | | | | |
| 2005 03 04 | 143 | 0.3+ | 0.0 | 2005 03 19 | 143 | 0.3− | 0.4+ | | | | |

**2005 EF$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.03264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28281596 | $\omega$ | 186.25187 | | −0.35542033 | | +0.93342838 |
| $a$ | 2.2986178 | $\Omega$ | 62.93788 | | −0.85518201 | | −0.30363496 |
| $e$ | 0.1474429 | $i$ | 3.14560 | | −0.37727990 | | −0.19109491 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | 691 | 0.4+ | 0.2− | 2005 03 09 | 699 | (1.6+ | 1.8+) | 2005 05 10 | G96 | 0.1− | 0.0 |
| 2005 03 01 | 691 | 0.0 | 0.2− | 2005 03 12 | 704 | 0.8+ | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.4+ |
| 2005 03 01 | 691 | 0.0 | 0.1− | 2005 03 12 | 704 | 0.1+ | 0.9− | 2006 09 19 | 703 | 0.1+ | 0.5− |
| 2005 03 03 | 703 | 0.3− | 1.0− | 2005 03 12 | 704 | 0.7+ | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.3+ |
| 2005 03 03 | 703 | 0.5− | 0.4− | 2005 03 12 | 704 | (1.7+ | 1.0+) | 2006 09 19 | 703 | 0.4+ | 0.5+ |
| 2005 03 03 | 703 | 0.5− | 0.6− | 2005 03 12 | 704 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2005 03 03 | 703 | 0.4− | 0.3− | 2005 03 16 | 704 | 0.5+ | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2005 03 08 | 699 | 1.2− | 0.5− | 2005 03 16 | 704 | (0.3+ | 1.9+) | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2005 03 08 | 699 | 0.1− | 0.1− | 2005 03 16 | 704 | 0.8− | 1.0+ | 2006 10 16 | 012 | (2.0− | 0.4−) |
| 2005 03 08 | 699 | 1.3− | 1.3+ | 2005 03 16 | 704 | 0.2+ | 1.1+ | 2006 10 16 | 012 | 0.0 | 1.4− |
| 2005 03 08 | 699 | 0.0 | 0.4+ | 2005 03 16 | 704 | 0.3+ | 1.1+ | 2006 10 16 | 012 | 0.5− | 1.2+ |
| 2005 03 09 | 699 | 1.2+ | 1.1+ | 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 10 16 | 012 | 0.6− | 0.9− |
| 2005 03 09 | 699 | (2.9+ | 0.8−) | 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 10 16 | 012 | 0.4+ | 1.3+ |
| 2005 03 09 | 699 | 0.4+ | 0.8− | 2005 05 10 | G96 | 0.2− | 0.3+ | | | | |

**2005 EJ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.31554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27599841 | $\omega$ | 143.07806 | | +0.10319210 | | +0.99288153 |
| $a$ | 2.3363164 | $\Omega$ | 132.76146 | | −0.93084938 | | +0.11747228 |
| $e$ | 0.1084825 | $i$ | 4.64675 | | −0.35052936 | | −0.01966017 |
| $P$ | 3.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | 691 | 0.3+ | 0.0 | 2005 03 09 | 704 | 0.5− | 0.7+ | 2005 03 30 | 703 | 0.0 | 0.9− |
| 2005 03 01 | 691 | 0.2− | 0.0 | 2005 03 12 | 704 | 0.3− | 0.2+ | 2006 08 24 | 644 | 0.6+ | 0.2+ |
| 2005 03 01 | 691 | 0.1− | 0.1+ | 2005 03 12 | 704 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.5+ |
| 2005 03 03 | 703 | 0.4− | 0.2− | 2005 03 12 | 704 | 0.2+ | 0.3+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2005 03 03 | 703 | (1.6− | 0.2−) | 2005 03 12 | 704 | 0.7+ | 0.2− | 2006 09 14 | 703 | 0.2− | 1.2+ |
| 2005 03 03 | 703 | 0.8− | 0.3− | 2005 03 12 | 704 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2005 03 03 | 703 | 1.3− | 1.2− | 2005 03 16 | 704 | 0.3− | 0.9− | 2006 09 14 | 703 | 0.5+ | 0.6+ |
| 2005 03 08 | 699 | (0.8− | 2.1+) | 2005 03 16 | 704 | 0.8+ | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.6− |
| 2005 03 08 | 699 | 0.1+ | 0.2− | 2005 03 16 | 704 | 1.3+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.5− |
| 2005 03 08 | 699 | 0.6− | 0.9+ | 2005 03 16 | 704 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.5− |
| 2005 03 08 | 699 | 0.8+ | 0.9+ | 2005 03 30 | 703 | (0.9+ | 1.9−) | 2006 09 30 | 703 | (0.9+ | 2.6−) |
| 2005 03 09 | 704 | 0.8+ | 0.3+ | 2005 03 30 | 703 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.5+ | 1.0− |
| 2005 03 09 | 704 | 0.5− | 0.5+ | 2005 03 30 | 703 | 0.1− | 1.0− | | | | |

**2005 EH$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.54717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27441971 | $\omega$ | 46.79899 | | −0.88217978 | | +0.46937890 |
| $a$ | 2.3452682 | $\Omega$ | 161.09583 | | −0.45887107 | | −0.83870068 |
| $e$ | 0.0883671 | $i$ | 6.73165 | | −0.10581199 | | −0.27616049 |
| $P$ | 3.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.2+ | 0.4− | 2005 03 08 | 699 | 0.1− | 0.1− | 2005 03 16 | 704 | 0.4+ | 0.7+ |
| 1996 12 12 | 691 | 0.2− | 0.0 | 2005 03 08 | 704 | 0.1+ | 0.0 | 2005 03 16 | 704 | 0.2− | 0.8+ |
| 1996 12 12 | 691 | 0.0 | 0.0 | 2005 03 08 | 704 | 0.1+ | 0.2+ | 2005 03 16 | G96 | 0.2− | 0.1− |
| 1998 04 23 | 704 | 0.6+ | 2.4− | 2005 03 08 | 704 | 0.6+ | 0.1− | 2005 03 16 | G96 | 0.0 | 0.1− |
| 1998 04 23 | 704 | 0.5+ | 0.3+ | 2005 03 08 | 704 | 0.2+ | 0.1− | 2005 03 16 | G96 | 0.2− | 0.1− |
| 1998 04 23 | 704 | 1.4− | 1.2− | 2005 03 10 | G96 | 0.6− | 0.2+ | 2005 03 16 | G96 | 0.2− | 0.1+ |
| 1998 04 23 | 704 | 0.3− | 0.1+ | 2005 03 10 | G96 | 0.3− | 0.2− | 2005 04 06 | 703 | 1.0− | 0.8+ |
| 2005 01 17 | 291 | 0.3+ | 0.4+ | 2005 03 10 | G96 | 0.4− | 0.4− | 2005 04 06 | 703 | 1.0− | 0.7− |
| 2005 01 17 | 291 | 0.3+ | 0.5+ | 2005 03 10 | G96 | 0.5− | 0.3− | 2005 04 06 | 703 | 0.3− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 17 | 291 | 0.2+ | 0.5+ | 2005 03 11 | 704 | 0.2− | 0.9+ | 2005 04 06 | 703 | 1.3− | 0.9− |
| 2005 03 01 | 691 | 0.2+ | 0.3+ | 2005 03 11 | 704 | 0.4− | 0.6− | 2006 08 19 | 691 | 0.2− | 0.7+ |
| 2005 03 01 | 691 | 0.3+ | 0.2+ | 2005 03 11 | 704 | 0.5− | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.5+ |
| 2005 03 01 | 691 | 0.3+ | 0.3+ | 2005 03 11 | 704 | 0.4− | 0.3− | 2006 08 19 | 691 | 0.2− | 0.8+ |
| 2005 03 04 | 691 | 0.0 | 0.3− | 2005 03 11 | 704 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2005 03 04 | 691 | 0.2− | 0.2+ | 2005 03 14 | 704 | 0.2+ | 1.0+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2005 03 04 | 691 | 0.3− | 0.1+ | 2005 03 14 | 704 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.3+ |
| 2005 03 07 | J95 | 0.0 | 0.8− | 2005 03 14 | 704 | 0.5− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.3+ |
| 2005 03 07 | J95 | 1.1+ | 0.1+ | 2005 03 14 | 704 | 0.2+ | 1.2+ | 2006 09 30 | G96 | 1.0− | 0.3− |
| 2005 03 08 | 699 | 0.3+ | 0.7+ | 2005 03 14 | 704 | (0.1− | 1.8+) | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2005 03 08 | 699 | 1.1− | 0.0 | 2005 03 16 | 704 | (1.3+ | 2.9+) | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2005 03 08 | 699 | 0.6− | 0.7+ | 2005 03 16 | 704 | 1.3+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.0 |

### 2005 EV$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.16462 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29234155 | $\omega$ | 272.72885 | | +0.16737478 | | +0.98585797 |
| $a$ | 2.2484109 | $\Omega$ | 6.92319 | | −0.87478079 | | +0.15241255 |
| $e$ | 0.1598492 | $i$ | 3.97274 | | −0.45469137 | | +0.06967406 |
| $P$ | 3.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | 691 | 0.4+ | 0.2+ | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.5+ |
| 2005 03 01 | 691 | 0.6+ | 0.0 | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2005 03 01 | 691 | 0.3+ | 0.1− | 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2005 03 04 | G96 | 0.4− | 0.0 | 2005 04 02 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2005 03 04 | G96 | 0.7− | 0.3− | 2005 04 04 | 703 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2005 03 04 | G96 | 0.6− | 0.1+ | 2005 04 04 | 703 | 0.8− | 1.2+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2005 03 04 | G96 | 0.6− | 0.3+ | 2005 04 04 | 703 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2005 03 12 | 691 | 0.0 | 0.0 | 2005 04 04 | 703 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.3+ | 1.2+ |
| 2005 03 12 | 691 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.4+ | 0.5+ |
| 2005 03 12 | 691 | 0.2+ | 0.0 | 2005 05 08 | G96 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 2005 03 13 | 703 | 0.4− | 0.4− | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2005 03 13 | 703 | 0.3− | 0.1− | 2005 05 08 | G96 | 0.6− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2005 03 13 | 703 | 1.0− | 0.7− | 2006 07 21 | G96 | 0.8+ | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2005 03 13 | 703 | 1.1− | 0.7+ | 2006 07 21 | G96 | 1.4− | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2005 03 17 | 691 | 0.4+ | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2005 03 17 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.3− |
| 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.5− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2006 10 03 | 691 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.4− | 0.2+ | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 2005 04 02 | G96 | 0.3+ | 0.0 | 2006 10 03 | 691 | 0.6− | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2005 04 02 | G96 | 0.6+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.4− |

### 2005 EV$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.24849 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17908865 | $\omega$ | 307.20884 | | −0.78720548 | | −0.61658442 |
| $a$ | 3.1171475 | $\Omega$ | 194.73537 | | +0.57911099 | | −0.73272299 |
| $e$ | 0.2283296 | $i$ | 2.58093 | | +0.21198583 | | −0.28799423 |
| $P$ | 5.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 0.0 | 0.2+ | 2005 03 08 | 704 | 0.8+ | 0.1+ | 2005 04 06 | G96 | 0.4− | 0.3− |
| 2000 04 28 | 691 | 0.1+ | 0.2+ | 2005 03 08 | 704 | 0.6+ | 0.8+ | 2005 04 06 | G96 | 0.2− | 0.1− |
| 2000 04 28 | 691 | 0.1+ | 0.4+ | 2005 03 11 | 704 | 0.5− | 0.1+ | 2005 04 06 | G96 | 0.3− | 0.2− |
| 2003 11 16 | 691 | 0.1− | 0.0 | 2005 03 11 | G96 | 0.3− | 0.3− | 2005 04 09 | 699 | 0.6− | 1.6− |
| 2003 11 16 | 691 | 0.3− | 0.3+ | 2005 03 11 | G96 | 0.3− | 0.7− | 2005 04 09 | 699 | 0.2+ | 0.3+ |
| 2003 11 16 | 691 | 0.3+ | 0.2+ | 2005 03 11 | 704 | 0.1+ | 0.0 | 2005 04 09 | 699 | 0.5+ | 0.3− |
| 2005 03 02 | 691 | 0.3+ | 0.2− | 2005 03 11 | G96 | 0.3− | 0.3− | 2005 04 09 | 699 | 1.7+ | 0.6− |
| 2005 03 02 | 691 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.2− | 0.4− | 2005 04 13 | 691 | 0.1+ | 0.1+ |
| 2005 03 02 | 691 | 0.1+ | 0.1− | 2005 03 11 | 704 | 0.3− | 0.2− | 2005 04 13 | 691 | 0.0 | 0.1+ |
| 2005 03 03 | 703 | 0.4− | 0.3+ | 2005 03 11 | 704 | 0.4− | 0.2− | 2005 04 13 | 691 | 0.0 | 0.1− |
| 2005 03 03 | 703 | 0.7− | 0.3+ | 2005 03 11 | 704 | 0.2+ | 0.2+ | 2005 05 04 | G96 | 0.3− | 0.8− |
| 2005 03 03 | 703 | 0.2− | 0.2− | 2005 03 13 | 683 | 0.1+ | 0.8+ | 2005 05 04 | G96 | 0.3− | 0.6− |
| 2005 03 03 | 703 | 0.8− | 0.1+ | 2005 03 13 | 683 | 0.2+ | 0.6+ | 2005 05 04 | G96 | 0.3− | 0.2− |
| 2005 03 08 | 699 | 0.1− | 0.4− | 2005 03 13 | 683 | 0.0 | 1.1+ | 2005 05 04 | G96 | 0.5− | 0.3− |
| 2005 03 08 | 699 | 0.9− | 0.3− | 2005 03 14 | 704 | 0.9+ | 0.7+ | 2005 05 13 | G96 | 0.0 | 0.1− |
| 2005 03 08 | 699 | 0.4− | 0.4+ | 2005 03 14 | 704 | 0.7+ | 0.6+ | 2005 05 13 | G96 | 0.1+ | 0.4− |
| 2005 03 08 | 704 | 0.2+ | 0.5+ | 2005 03 14 | 704 | 0.0 | 0.5− | 2005 05 13 | G96 | 0.1− | 0.2− |
| 2005 03 08 | 704 | 0.3+ | 0.1+ | 2005 03 14 | 704 | 0.6− | 1.2+ | 2005 05 13 | G96 | 0.1+ | 0.2− |
| 2005 03 08 | 699 | 0.5− | 0.1+ | 2005 03 14 | 704 | 0.0 | 0.3+ | | | | |
| 2005 03 08 | 704 | 1.0+ | 0.3+ | 2005 04 06 | G96 | 0.6− | 0.1− | | | | |

### 2005 EX$_9$ = 2006 SC$_{28}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.70424 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21772923 | $\omega$ | 58.44128 | | −0.62906044 | | +0.77700905 |
| $a$ | 2.7364754 | $\Omega$ | 172.44775 | | −0.75961282 | | −0.60807726 |
| $e$ | 0.2035977 | $i$ | 10.18283 | | −0.16514031 | | −0.16278505 |
| $P$ | 4.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 02 | 691 | 0.1+ | 0.2− | 2005 03 08 | 704 | 0.1+ | 0.1− | 2005 03 14 | 704 | 0.5+ | 0.2− |
| 2005 03 02 | 691 | 0.0 | 0.3− | 2005 03 08 | G96 | 0.4− | 0.3− | 2005 03 14 | 704 | 0.4+ | 1.3− |
| 2005 03 02 | 691 | 0.3− | 0.3+ | 2005 03 08 | G96 | 0.3− | 0.1− | 2005 05 11 | G96 | 0.1+ | 0.0 |
| 2005 03 03 | 703 | 0.3− | 0.2+ | 2005 03 08 | 704 | (1.7− | 0.1−) | 2005 05 11 | G96 | 0.1− | 0.3+ |
| 2005 03 03 | 703 | 1.2+ | 0.6− | 2005 03 08 | 704 | 0.1− | 0.8− | 2005 05 11 | G96 | 0.2+ | 0.2− |
| 2005 03 03 | 703 | 1.2− | 0.3+ | 2005 03 08 | 704 | 0.6+ | 1.2− | 2005 05 11 | G96 | 0.3− | 0.2+ |
| 2005 03 03 | 703 | 0.4− | 0.5− | 2005 03 09 | 699 | (1.9− | 0.7−) | 2006 09 17 | 691 | 0.0 | 0.3− |
| 2005 03 08 | 699 | 0.2+ | 0.9+ | 2005 03 09 | 699 | 0.0 | 0.5+ | 2006 09 17 | 691 | 0.4+ | 0.3+ |
| 2005 03 08 | 699 | 0.5+ | 1.4+ | 2005 03 09 | 699 | 0.7+ | 0.8+ | 2006 09 17 | 691 | 0.6− | 0.1− |
| 2005 03 08 | 699 | 0.6− | 0.9+ | 2005 03 09 | 699 | 0.8+ | 0.5+ | 2006 09 19 | 691 | 0.4+ | 0.1+ |
| 2005 03 08 | 699 | 1.1+ | 0.6+ | 2005 03 14 | 704 | (0.2+ | 1.7+) | 2006 09 19 | 691 | 0.1− | 0.4− |
| 2005 03 08 | G96 | 0.3− | 0.2− | 2005 03 14 | 704 | 1.1− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 2005 03 08 | G96 | 0.6− | 0.1− | 2005 03 14 | 704 | 0.3− | 0.7− | | | | |

### 2005 EW$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.34953 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27393104 | $\omega$ | 79.61320 | | −0.65900134 | | +0.75185929 |
| $a$ | 2.3480566 | $\Omega$ | 149.13201 | | −0.70484193 | | −0.60776219 |
| $e$ | 0.1506245 | $i$ | 2.30241 | | −0.26251684 | | −0.25560267 |
| $P$ | 3.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 695 | 0.3+ | 0.5+ | 2005 03 08 | 704 | 0.3+ | 1.2+ | 2005 04 11 | G96 | 0.7− | 0.2− |
| 2003 10 24 | 695 | 0.5− | 0.2+ | 2005 03 08 | 704 | 0.5+ | 0.1+ | 2006 08 18 | 691 | 0.3+ | 0.0 |
| 2005 03 03 | 691 | 0.2+ | 0.3+ | 2005 03 08 | 704 | 1.0+ | 0.1− | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 2005 03 03 | 691 | 0.0 | 0.3+ | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 08 18 | 691 | 0.2+ | 0.1− |
| 2005 03 03 | 691 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 2005 03 04 | G96 | 0.2− | 0.1− | 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.5+ |
| 2005 03 04 | G96 | 0.1− | 0.1− | 2005 03 10 | G96 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.3− | 0.4+ |
| 2005 03 04 | G96 | 0.3− | 0.0 | 2005 04 04 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.6− | 0.4+ |
| 2005 03 04 | G96 | 0.0 | 0.0 | 2005 04 04 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2005 03 08 | 699 | 0.3− | 0.0 | 2005 04 04 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2005 03 08 | 699 | (1.6+ | 0.4+) | 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2005 03 08 | 699 | 1.2+ | 1.2− | 2005 04 11 | G96 | 0.1+ | 0.3+ | | | | |
| 2005 03 08 | 699 | 0.1+ | 0.6+ | 2005 04 11 | G96 | 0.5− | 0.2− | | | | |

### 2005 EF$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.96081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27210447 | $\omega$ | 229.60591 | | −0.30145228 | | +0.95343197 |
| $a$ | 2.3585528 | $\Omega$ | 22.85478 | | −0.86706533 | | −0.26988673 |
| $e$ | 0.1480607 | $i$ | 1.43046 | | −0.39664119 | | −0.13464264 |
| $P$ | 3.62 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 03 | 691 | 0.2+ | 0.3+ | 2005 03 10 | G96 | 0.2− | 0.1− | 2005 04 11 | G96 | 0.3− | 0.6− |
| 2005 03 03 | 691 | 0.4+ | 0.0 | 2005 03 10 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.4+ |
| 2005 03 03 | 691 | 0.1+ | 0.5− | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2005 03 04 | G96 | 0.8− | 0.7+ | 2005 04 04 | G96 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2005 03 04 | G96 | 0.6− | 0.2+ | 2005 04 04 | G96 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.4− | 0.1+ |
| 2005 03 04 | G96 | 0.5− | 0.1− | 2005 04 04 | G96 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.7+ | 0.2+ |
| 2005 03 04 | G96 | 0.6− | 0.2+ | 2005 04 11 | G96 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2005 03 10 | G96 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.4− |

**2005 EN$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.30711 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29087805 | $\omega$ | 261.37108 | | −0.27952649 | | +0.96009073 |
| $a$ | 2.2559463 | $\Omega$ | 352.37677 | | −0.85025943 | | −0.25213368 |
| $e$ | 0.1708917 | $i$ | 4.11761 | | −0.44600880 | | −0.12105534 |
| $P$ | 3.39 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.3− | 0.2+ | 2005 03 16 | G96 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 1999 09 03 | 691 | 0.2− | 0.9+ | 2005 03 16 | G96 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.3+ |
| 1999 09 03 | 691 | 0.1− | 0.1+ | 2005 03 16 | G96 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2005 03 03 | 691 | 0.7− | 0.1+ | 2005 03 16 | G96 | 0.3− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2005 03 03 | 691 | 0.2+ | 0.3+ | 2005 04 04 | 703 | (2.3− | 0.5−) | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2005 03 03 | 691 | 0.2+ | 0.1+ | 2005 04 04 | 703 | 0.2− | 1.1− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2005 03 04 | G96 | 0.1− | 0.3+ | 2005 04 04 | 703 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2005 03 04 | G96 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2005 03 04 | G96 | 0.1− | 0.2+ | 2005 04 06 | G96 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.9+ |
| 2005 03 04 | G96 | 0.5− | 0.2− | 2005 04 06 | G96 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2005 03 08 | G96 | (1.8+ | 0.1+) | 2005 04 06 | G96 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2005 03 08 | G96 | 0.1− | 0.3− | 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2005 03 08 | G96 | 0.0 | 0.3− | 2005 05 12 | G96 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2005 03 08 | G96 | 0.5− | 0.2− | 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.5− |
| 2005 03 09 | 691 | 0.2+ | 0.2− | 2005 05 12 | G96 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.7+ | 0.0 |
| 2005 03 09 | 691 | 0.5+ | 0.3+ | 2005 05 12 | G96 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.5− | 1.0− |
| 2005 03 09 | 691 | 0.5+ | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.4− | 0.2+ |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1− | | | | |

**2005 EA$_{19}$ = 1995 SC$_{81}$ = 2006 QU$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.69732 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26399782 | $\omega$ | 107.29313 | | +0.10972178 | | +0.99372423 |
| $a$ | 2.4065921 | $\Omega$ | 168.93805 | | −0.94958036 | | +0.11126470 |
| $e$ | 0.1024468 | $i$ | 6.51045 | | −0.29369757 | | +0.01150304 |
| $P$ | 3.73 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.4+ | 0.1+ | 2005 03 04 | G96 | 1.0− | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.1+ |
| 1995 09 26 | 691 | 0.0 | 0.0 | 2005 03 04 | G96 | 0.2− | 0.3− | 2006 08 27 | 691 | 0.1+ | 0.6+ |
| 1995 09 26 | 691 | 0.2+ | 0.3+ | 2005 03 04 | G96 | 0.1− | 0.6− | 2006 08 27 | 691 | 0.4− | 0.4+ |
| 1995 09 30 | 691 | 0.2− | 0.5+ | 2005 03 04 | G96 | 1.0− | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.3+ |
| 1995 09 30 | 691 | 0.1− | 0.4+ | 2005 03 12 | 691 | 0.1+ | 1.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1995 09 30 | 691 | 0.7− | 0.2+ | 2005 03 12 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2005 03 03 | 691 | 0.2+ | 0.4+ | 2005 03 12 | 691 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2005 03 03 | 691 | 0.4+ | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2005 03 03 | 691 | 0.6+ | 0.0 | 2006 08 19 | 691 | 0.3− | 0.1− | | | | |

**2005 EF$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.34186 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20375447 | $\omega$ | 178.99938 | | +0.93643401 | | +0.35058108 |
| $a$ | 2.8602102 | $\Omega$ | 160.46090 | | −0.32217413 | | +0.87458622 |
| $e$ | 0.0788264 | $i$ | 2.32602 | | −0.13890708 | | +0.33495051 |
| $P$ | 4.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.2− | 0.2− | 2002 10 08 | 291 | 0.3− | 0.4+ | 2005 03 04 | G96 | 0.2+ | 0.1− |
| 2000 02 27 | 691 | 0.2+ | 0.1+ | 2002 10 08 | 291 | 0.2+ | 0.5+ | 2005 03 04 | G96 | 0.4− | 0.2− |
| 2000 02 27 | 691 | 0.0 | 0.2+ | 2004 01 30 | 691 | 0.0 | 0.1+ | 2005 04 04 | G96 | 0.2− | 0.1− |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.0 | 0.1− | 2005 04 04 | 703 | 1.2− | 0.3+ |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2004 01 30 | 691 | 0.0 | 0.2− | 2005 04 04 | G96 | 0.3+ | 0.1+ |
| 2002 10 03 | 704 | 0.9− | 0.0 | 2005 03 03 | 691 | 0.5+ | 0.2+ | 2005 04 04 | 703 | 0.2+ | 0.1− |
| 2002 10 03 | 704 | 1.2− | 0.8− | 2005 03 03 | 691 | 0.5+ | 0.1− | 2005 04 04 | G96 | 0.6− | 0.2− |
| 2002 10 03 | 704 | 1.5− | 1.2− | 2005 03 03 | 691 | 0.4+ | 0.4+ | 2005 04 04 | 703 | 1.7− | 1.2+ |
| 2002 10 03 | 704 | 0.0 | 1.3− | 2005 03 04 | G96 | 0.3+ | 0.1+ | 2005 04 04 | G96 | 0.0 | 0.1+ |
| 2002 10 08 | 291 | 0.1− | 0.5+ | 2005 03 04 | G96 | 0.2− | 0.6− | 2005 04 04 | 703 | 0.8− | 0.1− |

**2005 EG$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.12006 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29355431 | $\omega$ | 237.95677 | | −0.59220656 | | +0.80574142 |
| $a$ | 2.2422141 | $\Omega$ | 355.70038 | | −0.69582063 | | −0.51667614 |
| $e$ | 0.0956678 | $i$ | 6.50586 | | −0.40635579 | | −0.28952812 |
| $P$ | 3.36 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 691 | 0.2− | 0.1− | 2005 03 12 | 691 | 0.3+ | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.4+ |
| 1996 09 17 | 691 | 0.2− | 0.5+ | 2005 03 17 | G96 | 0.0 | 0.2− | 2006 08 28 | 691 | 0.2− | 0.4+ |
| 1996 09 17 | 691 | 0.0 | 0.4+ | 2005 03 17 | G96 | 0.5+ | 0.0 | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 2005 03 03 | 691 | 0.3+ | 0.2+ | 2005 03 17 | G96 | 0.5− | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2005 03 03 | 691 | 0.3+ | 0.2+ | 2005 03 17 | G96 | 0.4+ | 1.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ |
| 2005 03 03 | 691 | 0.4+ | 0.4+ | 2005 04 06 | G96 | 0.4− | 0.1− | 2006 09 15 | 691 | (1.0+ | 1.7+) |
| 2005 03 04 | G96 | 0.0 | 0.4− | 2005 04 06 | G96 | 0.6− | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.3+ |
| 2005 03 04 | G96 | 0.3− | 0.6− | 2005 04 06 | G96 | 0.4− | 0.3− | 2006 09 25 | G96 | 0.3− | 0.2+ |
| 2005 03 04 | G96 | 1.2− | 0.2− | 2005 04 06 | G96 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.5− | 0.1− |
| 2005 03 04 | G96 | 0.1+ | 0.2− | 2005 04 12 | G96 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2005 03 09 | G96 | 0.1+ | 0.1+ | 2005 04 12 | G96 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2005 03 09 | G96 | 0.0 | 0.1− | 2005 04 12 | G96 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.7− | 0.9− |
| 2005 03 09 | G96 | 0.1− | 0.4− | 2005 04 12 | G96 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.5− |
| 2005 03 09 | G96 | 0.0 | 0.2− | 2005 05 14 | G96 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.7− | 0.4− |
| 2005 03 12 | 691 | 0.2+ | 0.4+ | 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.1+ |
| 2005 03 12 | 691 | 0.3+ | 0.3+ | 2005 05 14 | G96 | 0.1− | 0.2+ | | | | |

**2005 ES$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.78879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26126784 | $\omega$ | 10.63758 | | −0.87170527 | | +0.48987578 |
| $a$ | 2.4233273 | $\Omega$ | 198.71011 | | −0.45236604 | | −0.81411218 |
| $e$ | 0.1412701 | $i$ | 2.20007 | | −0.18840088 | | −0.31183823 |
| $P$ | 3.77 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 695 | 0.0 | 0.1+ | 2005 03 09 | 699 | 0.0 | 0.3+ | 2005 03 17 | 704 | 0.3− | 0.6+ |
| 2003 10 24 | 695 | 0.0 | 0.1+ | 2005 03 09 | 699 | 1.2+ | 0.7− | 2005 03 17 | 704 | 0.5+ | 0.7+ |
| 2005 03 03 | 691 | 0.2− | 0.2− | 2005 03 11 | G96 | 0.5− | 0.3− | 2005 04 06 | G96 | 0.1− | 0.1− |
| 2005 03 03 | 691 | 0.4− | 0.2− | 2005 03 11 | G96 | 0.4− | 0.4− | 2005 04 06 | G96 | 0.2− | 0.5− |
| 2005 03 03 | 691 | 0.2− | 0.2− | 2005 03 11 | G96 | 0.5− | 0.3− | 2005 04 06 | G96 | 0.3− | 0.1− |
| 2005 03 04 | 703 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.6− | 0.4− | 2005 04 06 | G96 | 0.5− | 0.5− |
| 2005 03 04 | 703 | 0.5− | 0.1+ | 2005 03 11 | 704 | 1.1+ | 1.3+ | 2005 05 04 | G96 | 1.2+ | 0.4− |
| 2005 03 04 | 703 | 0.1− | 0.3− | 2005 03 11 | 704 | 0.3+ | 0.5+ | 2005 05 04 | G96 | 0.3+ | 0.0 |
| 2005 03 04 | 703 | 1.3+ | 0.2− | 2005 03 11 | 704 | 0.3+ | 0.1+ | 2005 05 04 | G96 | 0.4− | 0.0 |
| 2005 03 08 | 699 | 0.9+ | 0.0 | 2005 03 11 | 704 | (2.9+ | 0.3+) | 2005 05 04 | G96 | 1.0− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 699 | 1.3+ | 0.1+ | 2005 03 13 | 691 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.2− | 0.6− |
| 2005 03 08 | 699 | (2.1+ | 0.1+) | 2005 03 13 | 691 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.3+ | 0.3− |
| 2005 03 08 | 699 | 0.5+ | 0.3+ | 2005 03 13 | 691 | 0.2− | 0.0 | 2005 05 13 | G96 | 0.2+ | 0.2+ |
| 2005 03 08 | 704 | 0.2− | 1.8+ | 2005 03 14 | 704 | 0.2+ | 0.1− | 2005 05 13 | G96 | 0.0 | 0.2− |
| 2005 03 08 | 704 | 0.1+ | 2.0+ | 2005 03 14 | 704 | 0.3− | 0.9+ | 2006 09 27 | G96 | 0.5− | 0.3+ |
| 2005 03 08 | 704 | 1.7+ | 1.6+ | 2005 03 14 | 704 | 1.1− | 0.3− | 2006 09 27 | G96 | 0.0 | 1.7+ |
| 2005 03 09 | 699 | 1.0+ | 0.4− | 2005 03 14 | 704 | 1.0− | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.5+ |
| 2005 03 09 | 699 | 1.6+ | 0.1+ | 2005 03 17 | 704 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.4− | 1.0+ |

### 2005 EW$_{21}$ = 1995 UF$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.45745 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24471581 | $\omega$ | 95.53780 | | +0.05285854 | −0.99856285 | |
| $a$ | 2.5314034 | $\Omega$ | 351.41724 | | +0.89113853 | +0.05116480 | |
| $e$ | 0.1417031 | $i$ | 3.39722 | | +0.45064187 | +0.01594981 | |
| $P$ | 4.03 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 09 | 691 | 0.9+ | 0.2− | 2001 03 26 | 695 | 0.8+ | 0.6+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 1991 10 09 | 691 | 0.7+ | 0.3− | 2001 03 26 | 695 | 0.9+ | 0.6+ | 2003 10 24 | 704 | 0.6+ | 0.4+ |
| 1991 10 09 | 691 | 0.4− | 0.0 | 2003 09 18 | 691 | 0.2− | 0.1+ | 2003 10 24 | 645 | 0.0 | 0.0 |
| 1995 10 23 | 691 | 0.2+ | 0.0 | 2003 09 18 | 691 | 0.0 | 0.0 | 2005 03 03 | 703 | 0.3− | 0.4+ |
| 1995 10 23 | 691 | 0.0 | 0.1+ | 2003 09 18 | 691 | 0.0 | 0.2+ | 2005 03 03 | 703 | 1.1− | 0.3+ |
| 1995 10 23 | 691 | 0.2+ | 0.3− | 2003 09 26 | 704 | 0.4+ | 1.2+ | 2005 03 03 | 703 | 0.7+ | 0.1− |
| 1995 10 27 | 691 | 1.2− | 0.1+ | 2003 09 26 | 704 | 0.2− | 0.7+ | 2005 03 03 | 703 | 0.1+ | 0.9− |
| 1995 10 27 | 691 | 0.7− | 0.3+ | 2003 09 26 | 704 | 0.1+ | 0.7+ | 2005 03 04 | G96 | 0.2+ | 0.1− |
| 1999 09 14 | 691 | 0.3− | 0.2− | 2003 10 19 | 645 | 0.0 | 0.1− | 2005 03 04 | G96 | 0.3− | 0.3+ |
| 1999 09 14 | 691 | 0.2− | 0.1− | 2003 10 19 | 645 | 0.0 | 0.0 | 2005 03 04 | G96 | 0.3− | 0.1+ |
| 1999 09 14 | 691 | 0.1− | 0.0 | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 03 04 | G96 | 0.1+ | 0.1+ |
| 1999 10 06 | 704 | 0.1+ | 0.6+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 05 04 | G96 | 0.0 | 0.0 |
| 1999 10 06 | 704 | 0.3+ | 0.1+ | 2003 10 24 | 704 | 0.3+ | 0.1+ | 2005 05 04 | G96 | 0.2+ | 0.0 |
| 1999 10 06 | 704 | 0.3− | 0.1− | 2003 10 24 | 704 | 0.7+ | 0.9+ | 2005 05 04 | G96 | 0.3− | 0.3− |
| 1999 10 06 | 704 | 0.1− | 0.5− | 2003 10 24 | 704 | 0.8+ | 0.4+ | 2005 05 04 | G96 | 0.0 | 0.4+ |

### 2005 ED$_{23}$ = 2005 EO$_{65}$ = 2006 QH$_{67}$

Id. Minor Planet Center (d, *MPO* 77916; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.84034 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27790881 | $\omega$ | 224.84981 | | −0.89547457 | +0.44501741 | |
| $a$ | 2.3255973 | $\Omega$ | 341.56856 | | −0.39977731 | −0.81319339 | |
| $e$ | 0.1427235 | $i$ | 1.66898 | | −0.19571253 | −0.37506801 | |
| $P$ | 3.55 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 03 | 703 | 0.9− | 0.0 | 2005 03 08 | 704 | 1.2+ | 0.8+ | 2005 03 13 | 704 | 0.6− | 0.3+ |
| 2005 03 03 | 703 | (1.7− | 0.1+) | 2005 03 08 | G96 | 0.1− | 0.0 | 2005 04 09 | 691 | 0.4− | 0.2− |
| 2005 03 03 | 703 | 0.6+ | 0.2− | 2005 03 08 | 704 | 0.4+ | 1.2+ | 2005 04 09 | 691 | 0.1+ | 0.1− |
| 2005 03 03 | 703 | 0.2− | 0.6+ | 2005 03 08 | G96 | 0.1+ | 0.0 | 2005 04 09 | G96 | 0.4− | 0.1+ |
| 2005 03 04 | 691 | 0.1+ | 0.3+ | 2005 03 08 | 704 | (2.0+ | 1.4+) | 2005 04 09 | G96 | 0.6− | 0.0 |
| 2005 03 04 | 691 | 0.0 | 0.4+ | 2005 03 09 | 699 | 0.4+ | 0.3− | 2005 04 09 | G96 | 0.5− | 0.1+ |
| 2005 03 04 | 691 | 0.2+ | 0.3+ | 2005 03 09 | 699 | 0.8+ | 1.3− | 2005 04 09 | 691 | 0.1+ | 0.7− |
| 2005 03 04 | G96 | 0.4− | 0.1+ | 2005 03 09 | 699 | 0.9+ | 0.5+ | 2005 04 09 | G96 | 0.5− | 0.2+ |
| 2005 03 04 | G96 | 0.1− | 0.0 | 2005 03 09 | 699 | 0.9− | 0.0 | 2006 08 21 | 691 | 0.2+ | 0.2+ |
| 2005 03 04 | G96 | 0.1− | 0.1− | 2005 03 11 | 704 | (2.5+ | 0.6+) | 2006 08 21 | 691 | 0.0 | 0.1+ |
| 2005 03 04 | G96 | 0.3− | 0.0 | 2005 03 11 | 704 | 1.1+ | 0.3− | 2006 08 21 | 691 | 0.1− | 0.1− |
| 2005 03 08 | 704 | 1.2+ | 0.9+ | 2005 03 11 | 704 | (2.8+ | 0.1−) | 2006 08 28 | 691 | 0.4− | 0.4+ |
| 2005 03 08 | G96 | 0.1− | 0.2+ | 2005 03 13 | 704 | 0.5+ | 1.5+ | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 2005 03 08 | G96 | 0.3− | 0.0 | 2005 03 13 | 704 | (0.5+ | 1.6+) | 2006 08 28 | 691 | 0.4− | 0.4+ |

### 2005 EJ$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.46468 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28146008 | $\omega$ | 335.66658 | | +0.16040111 | +0.98656539 | |
| $a$ | 2.3059940 | $\Omega$ | 303.54982 | | −0.89939919 | +0.13315175 | |
| $e$ | 0.0801013 | $i$ | 2.13083 | | −0.40663568 | +0.09465377 | |
| $P$ | 3.50 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 03 | 703 | 0.5+ | 0.1− | 2005 04 12 | G96 | 0.4− | 0.0 | 2006 08 28 | 703 | (0.9− | 1.6−) |
| 2005 03 03 | 703 | 0.6+ | 1.2+ | 2005 04 12 | G96 | 0.4− | 0.4− | 2006 09 26 | 291 | 0.0 | 0.2+ |
| 2005 03 03 | 703 | 1.2+ | 0.8− | 2005 04 12 | G96 | 0.0 | 0.1− | 2006 09 26 | 291 | 0.2+ | 0.3+ |
| 2005 03 03 | 703 | 0.2− | 0.7+ | 2005 04 12 | G96 | 0.2+ | 0.1− | 2006 09 26 | 291 | 0.1+ | 0.5+ |
| 2005 03 04 | 691 | 0.0 | 0.3+ | 2006 06 20 | G96 | 0.5+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2005 03 04 | 691 | 0.1+ | 0.4+ | 2006 06 20 | G96 | 0.2+ | 0.4− | 2006 09 27 | G96 | 0.4− | 0.2− |
| 2005 03 04 | 691 | 0.2− | 0.1+ | 2006 06 20 | G96 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 2005 03 08 | 704 | 0.9+ | 0.3+ | 2006 06 20 | G96 | 0.5+ | 0.5− | 2006 09 27 | G96 | 0.8− | 0.1+ |
| 2005 03 08 | 704 | 0.3− | 0.8+ | 2006 08 19 | 691 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.6− | 0.4− |
| 2005 03 08 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.5− | 0.5− |
| 2005 03 11 | G96 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.4+ |
| 2005 03 11 | G96 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 1.3− | 2006 10 19 | G96 | 0.5− | 0.0 |
| 2005 03 11 | G96 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.3+ | 0.3− | | | | |
| 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.8+ | 0.7− | | | | |

### 2005 EU$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.16426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21679534 | $\omega$ | 217.47606 | | −0.49787436 | +0.86534238 | |
| $a$ | 2.7443284 | $\Omega$ | 22.83636 | | −0.75553588 | −0.40024957 | |
| $e$ | 0.2234979 | $i$ | 8.51684 | | −0.42577770 | −0.30163363 | |
| $P$ | 4.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.5− | 0.5− | 2005 03 09 | 704 | 1.0+ | 0.8− | 2005 03 30 | 703 | 0.8− | 0.6− |
| 1996 03 12 | 691 | 0.3− | 0.6− | 2005 03 09 | 704 | 0.4+ | 0.3+ | 2005 03 30 | 703 | 0.6− | 0.6+ |
| 1996 03 12 | 691 | 0.2− | 0.5− | 2005 03 09 | 704 | 0.2+ | 0.7+ | 2005 03 30 | 703 | 0.7− | 0.3+ |
| 2002 10 28 | 291 | 0.3+ | 0.3+ | 2005 03 09 | 704 | 1.2+ | 0.4+ | 2005 04 16 | 691 | 0.2+ | 0.6+ |
| 2002 10 28 | 291 | 0.1− | 0.3+ | 2005 03 12 | 704 | 0.3+ | 0.2− | 2005 04 16 | 691 | 0.3+ | 0.2+ |
| 2002 10 28 | 291 | 0.4− | 0.2− | 2005 03 12 | 704 | 0.1− | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.0 |
| 2005 03 03 | 703 | 0.7+ | 0.3− | 2005 03 12 | 704 | 0.1− | 0.2− | 2005 05 10 | G96 | 0.0 | 0.1+ |
| 2005 03 03 | 703 | 0.4− | 0.0 | 2005 03 12 | 704 | 0.3− | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.2+ |
| 2005 03 03 | 703 | 0.4− | 0.4− | 2005 03 12 | 704 | 0.2− | 0.5+ | 2005 05 10 | G96 | 0.0 | 0.1+ |
| 2005 03 03 | 703 | 0.4− | 0.1− | 2005 03 16 | 704 | 0.6+ | 0.7+ | 2005 05 10 | G96 | 0.1− | 0.2+ |
| 2005 03 04 | 704 | 0.2+ | 0.5+ | 2005 03 16 | 704 | 1.3+ | 1.4+ | 2006 08 28 | E12 | 1.7− | 1.4+ |
| 2005 03 04 | 704 | 0.8+ | 0.7+ | 2005 03 16 | 704 | 0.5+ | 0.7+ | 2006 08 28 | E12 | 1.2− | 0.5+ |
| 2005 03 04 | 704 | 0.3− | 1.2+ | 2005 03 16 | 704 | (2.7− | 1.6+) | 2006 08 28 | E12 | 0.3+ | 1.5+ |
| 2005 03 04 | 704 | 0.3− | 0.3+ | 2005 03 16 | 704 | 1.2+ | 0.7+ | 2006 08 28 | E12 | 0.2− | 1.2+ |
| 2005 03 04 | 704 | 0.7+ | 1.4+ | 2005 03 30 | 703 | 0.3− | 0.3+ | | | | |

### 2005 EV$_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.93095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31176090 | $\omega$ | 115.12073 | | −0.24224060 | −0.97005421 | |
| $a$ | 2.1540459 | $\Omega$ | 348.85453 | | +0.85385675 | −0.20447566 | |
| $e$ | 0.0269706 | $i$ | 5.26245 | | +0.46070396 | −0.13108979 | |
| $P$ | 3.16 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 704 | 0.5− | 0.3− | 2005 03 09 | 699 | 0.2+ | 0.3− | 2005 04 09 | 691 | 0.4+ | 0.2+ |
| 2003 09 29 | 704 | 0.0 | 0.4+ | 2005 03 09 | 699 | 0.5− | 0.7+ | 2005 05 08 | G96 | 0.4− | 0.6− |
| 2003 09 29 | 704 | 0.3+ | 0.3+ | 2005 03 09 | 699 | 0.3− | 0.5− | 2005 05 08 | G96 | 0.8− | 0.3− |
| 2005 03 03 | 703 | 0.5− | 0.5− | 2005 03 09 | 699 | 0.8+ | 1.6+ | 2005 05 08 | G96 | 0.3− | 1.3− |
| 2005 03 03 | 703 | 1.1− | 0.3− | 2005 04 02 | G96 | 1.5− | 0.3+ | 2005 05 08 | G96 | 0.1− | 0.2+ |
| 2005 03 03 | 703 | 0.7− | 0.0 | 2005 04 02 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.9+ | 0.8− |
| 2005 03 03 | 703 | 0.7− | 1.6− | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | 1.4− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 691 | 0.3+ | 0.2+ | 2005 04 02 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 1.0− | 0.5− | | |
| 2005 03 04 | 691 | 0.2− | 0.1− | 2005 04 09 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 1.3+ | 0.9+ | | |
| 2005 03 04 | 691 | 0.5+ | 0.2+ | 2005 04 09 | 691 | 0.4+ | 0.2+ | | | | | | |

**2005 ED$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 228.07462 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.38193959 | $\omega$ | 167.87837 | −0.89820981 | −0.43159394 |
| $a$ | 1.8813644 | $\Omega$ | 345.65299 | +0.36996178 | −0.63987867 |
| $e$ | 0.0433653 | $i$ | 19.65368 | +0.23737612 | −0.63583171 |
| $P$ | 2.58 | $H$ | 17.2 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 03 | 704 | 0.1+ | 0.6+ | 2005 03 08 | 704 | 0.9+ | 0.3+ | 2005 03 17 | 683 | 0.3− | 0.1+ | | |
| 2005 02 03 | 704 | 0.0 | 0.9+ | 2005 03 08 | 704 | 0.5+ | 0.2+ | 2005 03 17 | 683 | 0.2+ | 0.7+ | | |
| 2005 02 03 | 704 | 0.6+ | 0.3− | 2005 03 08 | 704 | (2.1+ | 0.3+) | 2005 03 17 | 683 | (1.5+ | 0.4−) | | |
| 2005 02 03 | 704 | 0.2+ | 0.1− | 2005 03 08 | 704 | 0.9− | 0.8− | 2005 03 17 | 703 | 0.1+ | 0.2+ | | |
| 2005 02 03 | 704 | 0.3− | 0.5− | 2005 03 08 | 704 | 1.2+ | 0.1− | 2005 03 17 | 703 | 0.9− | 0.3+ | | |
| 2005 03 03 | 703 | 0.6− | 0.5− | 2005 03 08 | 704 | 0.5+ | 0.3− | 2005 03 17 | 703 | 1.4− | 0.2− | | |
| 2005 03 03 | 703 | 0.1− | 0.7− | 2005 03 08 | 704 | 1.3+ | 0.2+ | 2005 04 04 | 703 | 0.6+ | 0.8− | | |
| 2005 03 03 | 704 | 0.1− | 0.7+ | 2005 03 08 | 704 | 0.9+ | 0.1+ | 2005 04 04 | 703 | 0.0 | 0.3+ | | |
| 2005 03 03 | 703 | 1.0− | 0.5− | 2005 03 09 | 699 | 0.7− | 0.0 | 2005 04 04 | 703 | 1.0− | 0.3+ | | |
| 2005 03 03 | 703 | 0.6− | 0.2− | 2005 03 09 | 699 | 0.1− | 0.2+ | 2005 04 04 | 703 | 0.5− | 0.2+ | | |
| 2005 03 03 | 704 | 0.6+ | 0.3+ | 2005 03 09 | 699 | 0.0 | 0.0 | 2005 04 11 | 699 | 0.4+ | 0.8+ | | |
| 2005 03 03 | 704 | 0.8+ | 0.1+ | 2005 03 09 | 699 | 0.4+ | 0.3+ | 2005 04 11 | 699 | (0.1− | 1.7−) | | |
| 2005 03 03 | 704 | 0.8+ | 0.5− | 2005 03 11 | 704 | 0.5+ | 1.3− | 2005 04 11 | 699 | 1.4− | 0.3+ | | |
| 2005 03 04 | 691 | 0.0 | 0.2− | 2005 03 11 | G96 | 0.4− | 0.4− | 2005 04 11 | 699 | 0.5− | 0.5− | | |
| 2005 03 04 | 691 | 0.1− | 0.2− | 2005 03 11 | G96 | 0.3− | 0.4− | 2006 09 25 | 703 | 1.1− | 0.5+ | | |
| 2005 03 04 | 691 | 0.1− | 0.3− | 2005 03 11 | 704 | 0.4+ | 1.1− | 2006 09 25 | 703 | 0.4+ | 0.3+ | | |
| 2005 03 04 | 704 | 1.0− | 0.7+ | 2005 03 11 | G96 | 0.3− | 0.4− | 2006 09 25 | 703 | 0.6+ | 1.3− | | |
| 2005 03 04 | 704 | 0.2− | 0.1+ | 2005 03 11 | G96 | 0.4− | 0.4− | 2006 09 25 | 703 | 0.4+ | 0.0 | | |
| 2005 03 04 | 704 | 0.3− | 0.0 | 2005 03 11 | 704 | 0.0 | 1.4− | 2006 10 29 | 703 | 0.0 | 1.5+ | | |
| 2005 03 04 | 704 | 0.1+ | 0.6+ | 2005 03 11 | 704 | (0.1+ | 1.6−) | 2006 10 29 | 703 | (2.1+ | 0.3+) | | |
| 2005 03 04 | 704 | 0.3− | 0.1− | 2005 03 11 | 704 | 0.2− | 1.5+ | 2006 10 29 | 703 | 0.8+ | 0.1− | | |
| 2005 03 08 | 699 | 0.4+ | 0.4+ | 2005 03 14 | 704 | 0.1− | 0.5+ | 2006 10 29 | 703 | 0.5+ | 0.2− | | |
| 2005 03 08 | 699 | 0.3− | 0.2+ | 2005 03 14 | 704 | 0.4+ | 0.6+ | 2006 11 16 | 703 | 0.4− | 0.3− | | |
| 2005 03 08 | 704 | 0.1+ | 0.5+ | 2005 03 14 | 704 | 0.8+ | 0.7+ | 2006 11 16 | 703 | 0.2+ | 0.9− | | |
| 2005 03 08 | 704 | 0.3+ | 0.4+ | 2005 03 14 | 704 | 0.7+ | 0.5+ | 2006 11 16 | 703 | (0.5− | 2.6+) | | |
| 2005 03 08 | 699 | 0.4− | 0.0 | 2005 03 14 | 704 | 0.7+ | 0.4+ | 2006 11 16 | 703 | 1.1− | 0.0 | | |

**2005 EF$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 117.35238 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27267528 | $\omega$ | 208.70251 | −0.74090009 | +0.67144316 |
| $a$ | 2.3552601 | $\Omega$ | 13.50963 | −0.60309455 | −0.65517892 |
| $e$ | 0.1952188 | $i$ | 3.73147 | −0.29554023 | −0.34627253 |
| $P$ | 3.61 | $H$ | 17.4 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 13 | 691 | 0.0 | 0.3− | 2005 03 11 | 704 | 0.6− | 0.6− | 2005 05 04 | G96 | 0.2− | 0.2− | | |
| 1994 02 13 | 691 | 0.4− | 0.0 | 2005 03 16 | G96 | 0.2− | 0.0 | 2005 05 04 | G96 | 0.2+ | 1.1− | | |
| 1994 02 13 | 691 | 0.2+ | 0.0 | 2005 03 16 | G96 | 0.4− | 0.2+ | 2005 05 04 | G96 | 0.4− | 0.2− | | |
| 2005 03 03 | 703 | (0.1− | 1.8+) | 2005 03 16 | G96 | 0.7− | 0.0 | 2005 05 04 | G96 | 0.4− | 0.3− | | |
| 2005 03 03 | 703 | 1.1+ | 0.8+ | 2005 03 16 | G96 | 0.3− | 0.1+ | 2005 05 13 | G96 | 0.1+ | 0.4− | | |
| 2005 03 03 | 703 | 0.4− | 0.1− | 2005 03 30 | 703 | 1.1− | 0.7− | 2005 05 13 | G96 | 0.5− | 0.1+ | | |
| 2005 03 03 | 703 | 0.3+ | 0.2+ | 2005 03 30 | 703 | 0.8+ | 0.8+ | 2005 05 13 | G96 | 0.1− | 0.1− | | |
| 2005 03 04 | 704 | 1.3+ | 1.2+ | 2005 03 30 | 703 | (0.2− | 3.3−) | 2005 05 13 | G96 | 0.1− | 0.1+ | | |
| 2005 03 04 | 704 | 1.4+ | 0.1+ | 2005 03 30 | 703 | 0.1+ | 0.6+ | 2006 08 21 | 807 | 0.2− | 0.4+ | | |
| 2005 03 04 | 704 | 0.6+ | 0.5+ | 2005 04 09 | G96 | (0.0 | 2.4+) | 2006 08 21 | 807 | 0.2− | 0.5+ | | |
| 2005 03 09 | 699 | 0.9+ | 0.1+ | 2005 04 09 | G96 | 0.1− | 1.1+ | 2006 08 22 | 807 | 0.1− | 0.3+ | | |
| 2005 03 09 | 699 | 0.7+ | 1.3− | 2005 04 09 | G96 | 0.6− | 0.6+ | 2006 08 27 | 691 | 0.3− | 0.2+ | | |
| 2005 03 09 | 699 | 0.0 | 0.3+ | 2005 04 09 | G96 | 0.2− | 0.1− | 2006 08 27 | 691 | 0.0 | 0.3+ | | |
| 2005 03 09 | 699 | 0.5− | 0.2+ | 2005 04 13 | 691 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.0 | 0.0 | | |
| 2005 03 11 | 704 | 0.6+ | 0.7+ | 2005 04 13 | 691 | 0.0 | 0.0 | | | | | | |
| 2005 03 11 | 704 | 0.4+ | 0.5+ | 2005 04 13 | 691 | 0.0 | 0.1+ | | | | | | |

**2005 EY$_{30}$ = 2000 YV$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 257.58272 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.28032197 | $\omega$ | 197.53599 | +0.66495142 | −0.74659887 |
| $a$ | 2.3122314 | $\Omega$ | 210.79512 | +0.69001653 | +0.62470641 |
| $e$ | 0.1661854 | $i$ | 2.32058 | +0.28586149 | +0.22876195 |
| $P$ | 3.52 | $H$ | 16.8 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.2− | 0.2+ | 2002 04 09 | 291 | 0.2+ | 0.3+ | 2003 09 18 | 699 | 0.3+ | 0.2− | | |
| 2000 12 30 | 704 | 0.6+ | 0.4+ | 2003 08 25 | 704 | 0.2+ | 1.2+ | 2003 09 18 | 699 | 0.0 | 0.2− | | |
| 2000 12 30 | 704 | 0.0 | 0.8+ | 2003 08 25 | 704 | 0.2− | 0.2+ | 2003 09 24 | 644 | 0.0 | 0.2− | | |
| 2000 12 30 | 704 | 0.5− | 0.3+ | 2003 08 25 | 704 | 0.3− | 0.3+ | 2003 09 24 | 644 | 0.0 | 0.3+ | | |
| 2001 01 03 | 704 | 0.3+ | 1.6+ | 2003 09 01 | 704 | 1.7− | 0.4+ | 2003 09 24 | 644 | 0.2− | 0.0 | | |
| 2001 01 03 | 704 | 0.2+ | 0.3− | 2003 09 01 | 704 | 0.2− | 1.2+ | 2005 03 01 | 735 | 0.0 | 0.1− | | |
| 2001 01 03 | 704 | 1.3− | 0.3+ | 2003 09 01 | 704 | 0.5+ | 0.6+ | 2005 03 01 | 735 | 0.3− | 0.1+ | | |
| 2001 01 03 | 704 | 0.5+ | 1.2+ | 2003 09 01 | 704 | 0.5− | 0.5− | 2005 03 11 | G96 | 0.1− | 0.1− | | |
| 2001 01 03 | 704 | 0.4+ | 0.1+ | 2003 09 01 | 704 | 0.3+ | 1.1+ | 2005 03 11 | G96 | 0.0 | 0.2− | | |
| 2002 04 09 | 291 | 0.0 | 0.7+ | 2003 09 18 | 699 | 1.0+ | 0.6+ | 2005 03 11 | G96 | 0.1+ | 0.2− | | |
| 2002 04 09 | 291 | 0.1+ | 0.3+ | 2003 09 18 | 699 | 0.6− | 1.0− | 2005 03 11 | G96 | 0.1+ | 0.0 | | |

**2005 EA$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 114.56937 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27356774 | $\omega$ | 205.60584 | −0.72486990 | +0.68829842 |
| $a$ | 2.3501349 | $\Omega$ | 17.98330 | −0.61514750 | −0.62814375 |
| $e$ | 0.1540252 | $i$ | 5.28561 | −0.31009220 | −0.36287837 |
| $P$ | 3.60 | $H$ | 17.3 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | 691 | 0.2− | 0.1+ | 2005 03 12 | 704 | 0.4+ | 0.6− | 2005 03 30 | 703 | 0.2− | 0.6+ | | |
| 2005 03 01 | 691 | 0.2− | 0.0 | 2005 03 12 | 704 | 0.5+ | 0.0 | 2005 03 30 | 703 | 0.8− | 0.3+ | | |
| 2005 03 01 | 691 | 0.1− | 0.1+ | 2005 03 12 | 704 | 0.3+ | 0.3− | 2005 05 06 | G96 | 0.2+ | 0.1− | | |
| 2005 03 03 | 703 | 0.9− | 0.1− | 2005 03 16 | 704 | 0.3− | 0.1− | 2005 05 06 | G96 | 0.1− | 0.1− | | |
| 2005 03 03 | 703 | 1.7+ | 0.9− | 2005 03 16 | 704 | 1.1+ | 0.9+ | 2005 05 06 | G96 | 0.3− | 0.1− | | |
| 2005 03 03 | 703 | (1.7− | 2.6−) | 2005 03 16 | 704 | 0.0 | 1.1+ | 2005 05 06 | G96 | 0.0 | 0.3− | | |
| 2005 03 03 | 703 | 1.1− | 1.4− | 2005 03 16 | 704 | 1.0+ | 1.1+ | 2006 10 19 | 695 | 0.1− | 0.1+ | | |
| 2005 03 12 | 704 | 0.2+ | 0.6− | 2005 03 30 | 703 | 0.1+ | 0.7− | 2006 10 20 | 695 | 0.2− | 0.3+ | | |
| 2005 03 12 | 704 | 1.5+ | 0.1+ | 2005 03 30 | 703 | 0.8− | 0.7+ | 2006 10 20 | 695 | 0.1− | 0.2+ | | |

**2005 ER$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 2.95182 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23538058 | $\omega$ | 145.78944 | +0.52103272 | +0.84917562 |
| $a$ | 2.5978992 | $\Omega$ | 155.27407 | −0.82193476 | +0.52639556 |
| $e$ | 0.0593396 | $i$ | 11.88903 | −0.23010465 | +0.04252618 |
| $P$ | 4.19 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 31 | 691 | 0.2+ | 0.1− | 2002 08 03 | 644 | 0.1+ | 0.9+ | 2005 03 08 | 704 | 0.4+ | 0.5+ | | |
| 1998 08 31 | 691 | 0.2− | 0.2− | 2002 08 26 | 644 | 0.1− | 0.1+ | 2005 03 08 | 704 | 0.1+ | 1.4− | | |
| 1998 08 31 | 691 | 0.1− | 0.0 | 2002 08 26 | 644 | 0.2− | 0.2+ | 2005 03 09 | 704 | 0.6+ | 0.8− | | |
| 2001 03 19 | 645 | 0.0 | 0.2− | 2002 08 26 | 644 | 0.0 | 0.4+ | 2005 03 09 | 704 | 0.6+ | 1.0+ | | |
| 2001 03 19 | 645 | 0.0 | 0.2− | 2005 03 03 | 691 | 0.1+ | 0.1+ | 2005 03 09 | 704 | 0.6+ | 1.6− | | |
| 2002 07 12 | 644 | 0.1− | 0.0 | 2005 03 03 | 691 | 0.5− | 0.5+ | 2005 03 09 | 704 | 0.3− | 0.7+ | | |
| 2002 07 12 | 644 | 0.2− | 0.3− | 2005 03 03 | 691 | 0.5− | 0.4+ | 2005 03 09 | 704 | 0.1+ | 0.0 | | |
| 2002 07 12 | 644 | 0.2+ | 0.1+ | 2005 03 04 | 704 | 0.2+ | 0.3+ | 2005 03 12 | 704 | 0.2+ | 1.9+ | | |
| 2002 07 21 | 644 | 0.1− | 0.4+ | 2005 03 04 | 704 | 0.4+ | 0.4+ | 2005 03 12 | 704 | 0.3+ | 0.5+ | | |
| 2002 07 21 | 644 | 0.1+ | 0.3+ | 2005 03 04 | 704 | 0.3− | 1.2+ | 2005 03 12 | 704 | 0.1+ | 0.9+ | | |
| 2002 07 21 | 644 | 0.1− | 0.4+ | 2005 03 04 | 704 | (1.3+ | 3.1+) | 2005 03 12 | 704 | 0.7+ | 1.1+ | | |
| 2002 08 03 | 644 | 0.1+ | 0.8+ | 2005 03 08 | 704 | 1.2+ | 1.1+ | | | | | | |
| 2002 08 03 | 644 | 0.1+ | 1.1+ | 2005 03 08 | 704 | 0.3+ | 0.7+ | | | | | | |

**2005 ET$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.53349 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21127326 | $\omega$ | 312.95493 | | +0.48606806 | −0.87067730 | |
| $a$ | 2.7919418 | $\Omega$ | 107.81967 | | +0.82305327 | +0.42713802 | |
| $e$ | 0.0929042 | $i$ | 4.53203 | | +0.29380462 | +0.24387325 | |
| $P$ | 4.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.1− | 1.4+ | 2003 11 24 | 699 | 0.3− | 0.7− | 2005 03 04 | 704 | 0.4+ | 0.6+ | |
| 2000 02 03 | 704 | 0.2+ | 1.1+ | 2003 11 24 | 699 | 0.1+ | 0.3− | 2005 03 04 | 704 | 1.4+ | 0.5− | |
| 2000 02 03 | 704 | 0.7+ | 0.8+ | 2003 11 24 | 699 | 0.7− | 0.2− | 2005 03 04 | 704 | 0.0 | 0.2− | |
| 2001 04 17 | 691 | 0.2− | 0.3+ | 2003 11 24 | 699 | 0.1+ | 1.2+ | 2005 03 04 | 704 | 2.0− | 0.8− | |
| 2001 04 17 | 691 | 0.1+ | 0.1− | 2003 12 03 | 704 | 0.2− | 0.5− | 2005 03 09 | 704 | 1.0+ | 0.2− | |
| 2001 04 17 | 691 | 0.0 | 0.3+ | 2003 12 03 | 704 | 0.6− | 0.2+ | 2005 03 09 | 704 | 0.3+ | 1.0− | |
| 2001 05 25 | 691 | 0.3+ | 0.1+ | 2003 12 03 | 704 | 0.4− | 0.9+ | 2005 03 09 | 704 | 0.1+ | 0.3+ | |
| 2001 05 25 | 691 | 0.2− | 0.6+ | 2003 12 21 | 691 | 0.1+ | 0.1+ | 2005 03 09 | 704 | 0.3− | 0.6+ | |
| 2001 05 25 | 691 | 0.4+ | 0.0 | 2003 12 21 | 704 | 0.0 | 1.6+ | 2005 03 10 | 699 | 1.2− | 0.2− | |
| 2003 11 16 | 703 | 1.4− | 0.2− | 2003 12 21 | 691 | 0.2+ | 0.2+ | 2005 03 10 | 699 | (2.1− | 0.2−) | |
| 2003 11 16 | 703 | 1.6− | 0.1− | 2003 12 21 | 704 | 0.1− | 0.1+ | 2005 03 10 | 699 | 0.5− | 0.0 | |
| 2003 11 16 | 703 | 0.1− | 1.1− | 2003 12 21 | 704 | 0.5+ | 0.1− | 2005 03 10 | 699 | 0.9− | 0.1+ | |
| 2003 11 16 | 703 | 1.1+ | 2.9− | 2003 12 21 | 691 | 0.1− | 0.1+ | 2005 04 13 | 691 | 0.2− | 0.3− | |
| 2003 11 19 | 699 | 0.5+ | 0.3+ | 2003 12 21 | 704 | 0.7− | 0.5+ | 2005 04 13 | 691 | 0.0 | 0.5− | |
| 2003 11 19 | 699 | 0.9+ | 0.5+ | 2005 03 03 | 691 | 0.2+ | 0.1+ | 2005 04 13 | 691 | 0.5− | 0.3− | |
| 2003 11 19 | 699 | 0.6+ | 0.3+ | 2005 03 03 | 691 | 0.0 | 0.1+ | | | | | |
| 2003 11 19 | 699 | 0.7+ | 0.4+ | 2005 03 03 | 691 | 0.4+ | 0.1− | | | | | |

**2005 EU$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.21172 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19034370 | $\omega$ | 227.88120 | | +0.86113824 | −0.50481199 | |
| $a$ | 2.9930252 | $\Omega$ | 162.17330 | | +0.50478525 | +0.83507441 | |
| $e$ | 0.0752843 | $i$ | 11.31173 | | +0.06027254 | +0.21866774 | |
| $P$ | 5.18 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.0 | 0.0 | 2005 03 04 | G96 | 1.8+ | 1.9+ | |
| 2002 08 17 | 644 | 0.0 | 0.1− | 2002 09 14 | 644 | 0.2− | 0.1+ | 2005 03 04 | G96 | 0.2− | 0.2− | |
| 2002 09 01 | 644 | 0.0 | 0.0 | 2005 03 03 | 691 | 0.1+ | 0.3− | 2005 03 04 | G96 | 0.7− | 0.6− | |
| 2002 09 01 | 644 | 0.1− | 0.0 | 2005 03 03 | 691 | 0.1− | 0.5+ | 2005 03 04 | G96 | 0.7− | 0.5− | |
| 2002 09 14 | 644 | 0.2+ | 0.1− | 2005 03 03 | 691 | 0.0 | 0.3− | | | | | |

**2005 EK$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.48583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28824033 | $\omega$ | 239.20312 | | −0.26717888 | +0.96327659 | |
| $a$ | 2.2696883 | $\Omega$ | 15.36934 | | −0.84611326 | −0.22123370 | |
| $e$ | 0.2302435 | $i$ | 5.78488 | | −0.46120256 | −0.15216394 | |
| $P$ | 3.42 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 691 | 0.0 | 0.1+ | 2005 03 09 | 704 | 0.5− | 0.9− | 2006 09 19 | 691 | 0.5− | 0.2− | |
| 2003 12 01 | 691 | 0.0 | 0.0 | 2005 03 09 | 704 | 0.5− | 0.7− | 2006 09 25 | G96 | 0.2− | 0.3− | |
| 2003 12 01 | 691 | 0.0 | 0.2+ | 2005 03 09 | 704 | 0.2+ | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.1− | |
| 2005 02 14 | 704 | 0.2+ | 0.4− | 2005 03 09 | 704 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.1− | |
| 2005 02 14 | 704 | 0.2+ | 0.4− | 2005 03 12 | 704 | 0.4+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.2− | |
| 2005 02 14 | 704 | 0.3− | 0.2− | 2005 03 12 | 704 | 0.9+ | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.2+ | |
| 2005 02 14 | 704 | 0.2− | 0.1− | 2005 03 12 | 704 | 1.0+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.0 | |
| 2005 03 04 | 704 | 0.4− | 0.7+ | 2005 03 12 | 704 | 0.3− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.1+ | |
| 2005 03 04 | 704 | 0.8+ | 0.3+ | 2005 03 16 | 703 | (1.8− | 0.5−) | 2006 10 17 | G96 | 0.9− | 1.5− | |
| 2005 03 04 | 704 | 0.1− | 0.5− | 2005 03 16 | 703 | 0.9− | 0.8+ | 2006 10 17 | G96 | 0.3+ | 0.2− | |
| 2005 03 04 | 704 | 0.2− | 0.4+ | 2005 03 16 | 703 | (2.2− | 0.2−) | 2006 10 17 | G96 | 0.6− | 0.3− | |
| 2005 03 04 | 704 | 0.2− | 0.6+ | 2005 03 16 | 703 | 1.2− | 0.2− | 2006 10 17 | G96 | 1.2+ | 0.0 | |
| 2005 03 07 | 704 | 0.6+ | 0.1+ | 2006 09 14 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.8+ | 0.4− | |
| 2005 03 07 | 704 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.4+ | |
| 2005 03 07 | 704 | 0.1+ | 0.5− | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.9+ | |
| 2005 03 07 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.3− | |
| 2005 03 08 | 704 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− | |
| 2005 03 08 | 704 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− | |
| 2005 03 08 | 704 | 0.2+ | 0.6− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.2− | |
| 2005 03 08 | 704 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.0 | |

**2005 EM$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.12238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38930097 | $\omega$ | 107.70854 | | −0.18173211 | −0.98242725 | |
| $a$ | 1.8575723 | $\Omega$ | 352.37358 | | +0.73611440 | −0.10722619 | |
| $e$ | 0.1225646 | $i$ | 18.69817 | | +0.65200386 | −0.15277185 | |
| $P$ | 2.53 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 0.8+ | 0.3+ | 2005 03 09 | 704 | 0.5+ | 0.4+ | 2005 03 16 | G96 | 0.8− | 0.5− | |
| 2000 03 10 | 704 | 0.5+ | 0.1+ | 2005 03 09 | 704 | 1.0+ | 0.4+ | 2005 04 02 | 691 | 0.4+ | 0.0 | |
| 2000 03 10 | 704 | 1.0+ | 0.9+ | 2005 03 09 | 704 | 1.2+ | 0.1− | 2005 04 02 | 691 | 0.1+ | 0.1+ | |
| 2000 03 10 | 704 | 0.9+ | 1.1+ | 2005 03 09 | 704 | 0.8+ | 0.5+ | 2005 04 02 | 691 | 0.2+ | 0.1+ | |
| 2000 03 10 | 704 | 0.0 | 0.9+ | 2005 03 09 | 704 | 0.4+ | 0.1+ | 2005 04 15 | 691 | 0.1− | 0.2+ | |
| 2001 09 10 | 704 | (0.6− | 1.8−) | 2005 03 11 | 704 | 0.2+ | 0.4+ | 2005 04 15 | 691 | 0.0 | 0.3+ | |
| 2001 09 10 | 704 | 0.8− | 0.8− | 2005 03 11 | 704 | 0.0 | 0.9+ | 2005 04 15 | 691 | 0.1+ | 0.2+ | |
| 2001 09 10 | 704 | 0.4− | 1.1+ | 2005 03 11 | 704 | 0.1+ | 0.2+ | 2006 08 18 | 691 | 0.7− | 0.3+ | |
| 2001 09 10 | 704 | 1.1+ | 0.6− | 2005 03 11 | 704 | 0.8− | 0.2− | 2006 08 18 | 691 | 0.3− | 0.2+ | |
| 2005 03 04 | 704 | 0.0 | 0.2+ | 2005 03 12 | 704 | 0.4+ | 0.5+ | 2006 08 18 | 691 | 1.0− | 0.3+ | |
| 2005 03 04 | 704 | 0.6+ | 0.4+ | 2005 03 12 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.9+ | |
| 2005 03 04 | 704 | 0.1+ | 0.2+ | 2005 03 12 | 704 | 1.3+ | 1.0+ | 2006 09 16 | 699 | 0.7+ | 0.3+ | |
| 2005 03 04 | 704 | 0.1− | 0.5+ | 2005 03 12 | 704 | 1.0+ | 0.3− | 2006 09 16 | 699 | (1.8− | 0.7+) | |
| 2005 03 04 | 704 | 0.3+ | 0.3+ | 2005 03 12 | 704 | 0.9+ | 0.8+ | 2006 09 16 | 699 | (1.2− | 1.6+) | |
| 2005 03 07 | 704 | 0.3− | 0.3+ | 2005 03 16 | 704 | 0.1+ | 0.8+ | 2006 09 19 | 703 | 0.1+ | 1.2+ | |
| 2005 03 07 | 704 | 0.3− | 0.0 | 2005 03 16 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 1.4− | 1.3+ | |
| 2005 03 07 | 704 | 0.1− | 0.7− | 2005 03 16 | 704 | 0.3− | 0.2+ | 2006 09 19 | 703 | (0.9− | 1.8+) | |
| 2005 03 07 | 704 | 0.0 | 0.8− | 2005 03 16 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.6− | |
| 2005 03 07 | 704 | 0.3+ | 0.1+ | 2005 03 16 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 691 | 0.9− | 0.6+ | |
| 2005 03 08 | 699 | 0.0 | 1.1− | 2005 03 16 | G96 | 0.4− | 0.2− | 2006 09 20 | 691 | 0.2− | 0.2+ | |
| 2005 03 08 | 699 | 0.3+ | 0.3− | 2005 03 16 | G96 | 0.5− | 0.2− | 2006 09 20 | 691 | 0.1+ | 0.5+ | |
| 2005 03 08 | 699 | 0.0 | 0.3− | 2005 03 16 | G96 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.4− | |
| 2005 03 08 | 699 | 1.1− | 0.2+ | 2005 03 16 | G96 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.7+ | 0.2− | |
| 2005 03 08 | 704 | 0.8+ | 0.2+ | 2005 03 16 | G96 | 1.1− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.8+ | |
| 2005 03 08 | 704 | 0.4+ | 0.1− | 2005 03 16 | G96 | 0.7− | 0.3− | 2006 10 17 | 703 | 0.9+ | 0.8+ | |
| 2005 03 08 | 704 | 0.3+ | 0.0 | 2005 03 16 | G96 | 0.9− | 0.2− | | | | | |

**2005 EZ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.63682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30523061 | $\omega$ | 279.66371 | | −0.09511604 | +0.99516919 | |
| $a$ | 2.1846607 | $\Omega$ | 344.81412 | | −0.87305697 | −0.09512984 | |
| $e$ | 0.1653483 | $i$ | 5.32599 | | −0.47825146 | −0.02426084 | |
| $P$ | 3.23 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 691 | 0.3− | 0.0 | 2005 03 03 | 691 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1+ | |
| 1996 09 13 | 691 | 0.4− | 0.2+ | 2005 03 03 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.0 | |
| 1996 09 13 | 691 | 0.5− | 0.1+ | 2005 03 07 | 704 | 0.6+ | 0.6+ | 2006 10 04 | G96 | 0.0 | 0.5− | |
| 1999 07 14 | 704 | 0.8+ | 0.4+ | 2005 03 07 | 704 | 1.1+ | 0.8+ | 2006 10 04 | G96 | 0.2− | 0.1− | |
| 1999 07 14 | 704 | 0.1− | 0.6+ | 2005 03 07 | 704 | 0.8+ | 0.5+ | 2006 10 04 | G96 | 0.3− | 0.3− | |
| 1999 07 14 | 704 | 0.4− | 0.4+ | 2005 03 14 | G96 | 0.6− | 0.2− | 2006 10 04 | G96 | 0.7+ | 0.2+ | |
| 1999 08 12 | 699 | 1.3+ | 0.8− | 2005 03 14 | G96 | 0.8− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.2+ | |
| 1999 08 12 | 699 | 0.2+ | 0.3− | 2005 03 14 | G96 | 0.3− | 0.3− | 2006 10 13 | 691 | 0.5− | 0.1+ | |
| 1999 08 12 | 699 | 1.3+ | 0.3+ | 2005 03 14 | G96 | 0.5− | 0.0 | 2006 10 13 | 691 | 0.3− | 0.1+ | |
| 2002 06 18 | 644 | 0.1− | 0.7+ | 2005 03 14 | G96 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.4+ | |
| 2002 06 18 | 644 | 0.1+ | 0.4+ | 2005 03 14 | G96 | 0.6− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.4+ | |
| 2002 06 18 | 644 | 0.1− | 0.5+ | 2005 03 14 | G96 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.5+ | |
| 2002 07 06 | 644 | 0.3+ | 0.4+ | 2005 03 14 | G96 | 0.4− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.2− | |
| 2002 07 06 | 644 | 0.2+ | 0.4+ | 2005 04 13 | 699 | 0.5+ | 0.8+ | 2006 10 31 | 691 | 0.1− | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.2+ | 0.2+ | 2005 04 13 | 699 | 0.6− | 0.7+ | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2003 12 18 | 691 | (1.9+ | 0.1−) | 2005 04 13 | 699 | 0.9+ | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2003 12 18 | 691 | 0.6+ | 0.4+ | 2005 04 13 | 699 | 0.5+ | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2003 12 18 | 691 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2005 03 03 | 691 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.5− |

**2005 EP$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.14735 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21500448 | $\omega$ | 352.98534 | | −0.95493400 | | +0.29491225 |
| $a$ | 2.7595465 | $\Omega$ | 204.24881 | | −0.26819900 | | −0.90579146 |
| $e$ | 0.1450351 | $i$ | 4.69034 | | −0.12716272 | | −0.30425088 |
| $P$ | 4.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.7+ | 0.2+ | 2005 03 09 | 699 | 1.1+ | 0.8− | 2005 04 04 | 703 | 0.6− | 0.3+ |
| 2000 02 02 | 704 | 0.2+ | 0.3+ | 2005 03 09 | 699 | 0.3+ | 0.1− | 2005 04 04 | 704 | 0.8− | 1.1+ |
| 2000 02 02 | 704 | 0.6− | 0.5+ | 2005 03 09 | 699 | 1.4+ | 1.1+ | 2005 04 04 | 703 | 0.1− | 0.2− |
| 2003 11 23 | 691 | 0.2− | 0.5+ | 2005 03 09 | 699 | 0.5− | 0.0 | 2005 04 04 | 703 | 0.0 | 1.0− |
| 2003 11 23 | 691 | 0.1− | 0.1− | 2005 03 13 | 691 | 0.0 | 0.1− | 2005 04 04 | 704 | (1.3− | 1.7−) |
| 2003 11 23 | 691 | 0.2+ | 0.3− | 2005 03 13 | 691 | 0.1− | 0.0 | 2005 05 12 | G96 | 0.0 | 0.2− |
| 2005 03 04 | 703 | 1.4− | 1.2+ | 2005 03 13 | 691 | 0.1+ | 0.1− | 2005 05 12 | G96 | 0.3− | 0.1− |
| 2005 03 04 | 703 | 0.1+ | 0.0 | 2005 03 17 | 703 | 0.2− | 0.4+ | 2005 05 12 | G96 | 0.1− | 0.0 |
| 2005 03 04 | 703 | 0.2− | 0.3− | 2005 03 17 | 703 | 1.5− | 0.4+ | 2005 05 12 | G96 | 0.2+ | 0.0 |
| 2005 03 04 | 703 | 0.8− | 0.6+ | 2005 03 17 | 703 | (1.5− | 1.0+) | 2006 07 21 | D35 | 0.2− | 0.7+ |
| 2005 03 07 | 704 | 0.4+ | 0.7+ | 2005 03 17 | 703 | 0.6+ | 0.4+ | 2006 07 21 | D35 | 0.1+ | 0.5+ |
| 2005 03 07 | 704 | 1.0+ | 0.1+ | 2005 04 04 | 703 | 1.1+ | 1.0− | 2006 07 21 | D35 | 0.3− | 0.6+ |
| 2005 03 07 | 704 | 0.4+ | 1.1− | 2005 04 04 | 704 | (1.8+ | 0.1−) | | | | |

**2005 ET$_{37}$ = 2006 MK$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.23653 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27539253 | $\omega$ | 27.75668 | | +0.76604615 | | +0.63467894 |
| $a$ | 2.3397419 | $\Omega$ | 292.47738 | | −0.60826572 | | +0.66458041 |
| $e$ | 0.1290408 | $i$ | 6.32285 | | −0.20781267 | | +0.39435456 |
| $P$ | 3.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 11 | 691 | 0.1+ | 0.0 | 2003 11 03 | 704 | 0.3− | 0.1− | 2005 03 11 | G96 | 0.3− | 0.1+ |
| 1994 02 11 | 691 | 0.2− | 0.6− | 2003 11 03 | 704 | 0.2− | 0.2− | 2005 03 11 | G96 | 0.5− | 0.3+ |
| 1994 02 11 | 691 | 0.3+ | 0.3− | 2003 11 19 | 704 | 0.1+ | 0.3+ | 2006 06 19 | G96 | 0.2− | 0.2− |
| 1999 09 09 | 704 | 1.2+ | 0.3− | 2003 11 19 | 704 | 0.3+ | 0.9+ | 2006 06 19 | G96 | 0.3− | 0.1− |
| 1999 09 09 | 704 | 0.0 | 0.5− | 2003 11 19 | 704 | 0.2− | 0.1+ | 2006 06 19 | G96 | 0.3− | 0.3− |
| 1999 09 09 | 704 | 1.3+ | 0.9− | 2003 11 19 | 704 | 0.2− | 1.1+ | 2006 06 19 | G96 | 0.2+ | 0.3− |
| 1999 09 09 | 704 | 0.4− | 1.4− | 2003 11 24 | 704 | 0.6+ | 0.1− | 2006 06 21 | 644 | 0.1+ | 0.5+ |
| 1999 09 09 | 704 | 0.8− | 0.5− | 2003 11 24 | 704 | 0.9+ | 0.5+ | 2006 06 21 | 644 | 0.2+ | 0.4+ |
| 1999 10 01 | 703 | 0.4− | 0.5+ | 2003 11 24 | 704 | 0.6− | 0.9− | 2006 06 21 | 644 | 0.0 | 0.2+ |
| 1999 10 01 | 703 | 1.1+ | 0.5− | 2003 11 24 | 704 | 0.0 | 0.4− | 2006 08 13 | 644 | 0.3+ | 0.4+ |
| 1999 10 01 | 703 | 1.4− | 0.1− | 2003 12 01 | 691 | 0.2− | 0.0 | 2006 08 13 | 644 | 0.2+ | 0.3+ |
| 1999 10 01 | 703 | 0.7− | 1.0+ | 2003 12 01 | 691 | 0.3− | 0.1+ | 2006 08 13 | 644 | 0.2− | 0.3+ |
| 2002 06 13 | 644 | 0.1+ | 0.1− | 2003 12 01 | 691 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.0 |
| 2002 06 13 | 644 | 0.3− | 0.2+ | 2005 03 03 | G92 | 1.4+ | 0.4− | 2006 08 30 | 704 | 0.1− | 1.4+ |
| 2002 06 13 | 644 | 0.5− | 0.3+ | 2005 03 03 | G92 | 0.0 | 0.9+ | 2006 08 30 | 704 | 0.4− | 0.3+ |
| 2002 06 13 | 644 | 0.1+ | 0.5+ | 2005 03 03 | G92 | 0.4+ | 0.8+ | 2006 08 30 | 704 | 0.4+ | 0.4+ |
| 2002 06 13 | 644 | 0.3− | 0.3+ | 2005 03 08 | G92 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2002 06 13 | 644 | 0.3− | 0.4− | 2005 03 08 | G92 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2003 11 03 | 704 | 0.6− | 0.3+ | 2005 03 08 | G92 | (2.0+ | 0.5+) | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 2003 11 03 | 704 | 1.0+ | 0.5+ | 2005 03 11 | G96 | 0.6− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2003 11 03 | 704 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.2− | 0.3+ | | | | |

**2005 EF$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.46945 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35769388 | $\omega$ | 103.45883 | | −0.14589904 | | −0.98879503 |
| $a$ | 1.9654487 | $\Omega$ | 354.62178 | | +0.72602346 | | −0.08532731 |
| $e$ | 0.0803203 | $i$ | 19.69549 | | +0.67201444 | | −0.12248936 |
| $P$ | 2.76 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | 691 | 0.2+ | 0.1+ | 2005 03 09 | 704 | 1.2+ | 0.2− | 2005 03 14 | 704 | 0.3+ | 0.7+ |
| 2005 03 01 | 691 | 0.5− | 0.0 | 2005 03 09 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 1.2+ |
| 2005 03 01 | 691 | 0.0 | 0.2− | 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.5+ |
| 2005 03 08 | 699 | 0.5− | 0.4− | 2005 03 10 | G96 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.7− | 0.6− |
| 2005 03 08 | 699 | 1.2− | 1.3+ | 2005 03 10 | G96 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.3+ |
| 2005 03 08 | 699 | (0.1+ | 1.6+) | 2005 03 10 | G96 | 0.5+ | 1.5+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2005 03 08 | 704 | 0.9+ | 0.0 | 2005 03 11 | 704 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2005 03 08 | 704 | 0.8+ | 0.2+ | 2005 03 11 | 704 | 0.4− | 1.3− | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2005 03 08 | 699 | 0.1+ | 0.5+ | 2005 03 11 | 704 | 0.4− | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.4+ |
| 2005 03 08 | 704 | 0.2− | 1.0− | 2005 03 14 | 704 | 0.3+ | 0.3− | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2005 03 08 | 704 | 0.1+ | 0.8+ | 2005 03 14 | 704 | 0.7+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.3+ |
| 2005 03 08 | 704 | 0.6+ | 0.3+ | 2005 03 14 | 704 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.3− | 1.0− |
| 2005 03 09 | 704 | 0.2+ | 0.3− | 2005 03 14 | 704 | 0.6+ | 0.2− | | | | |

**2005 ES$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.15981 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37263283 | $\omega$ | 273.28052 | | +0.52138866 | | −0.81557938 |
| $a$ | 1.9125610 | $\Omega$ | 141.66583 | | +0.85030682 | | +0.52126109 |
| $e$ | 0.1076861 | $i$ | 23.86753 | | −0.07163925 | | +0.25123127 |
| $P$ | 2.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 246 | 0.0 | 0.8− | 2005 03 09 | 703 | (0.6+ | 1.7+) | 2005 04 02 | 246 | 0.7− | 0.4− |
| 2005 03 04 | 246 | 0.7− | 0.3+ | 2005 03 09 | 703 | 1.4+ | 1.0+ | 2005 04 02 | 246 | 0.1− | 0.2− |
| 2005 03 04 | 246 | 0.8+ | 0.2+ | 2005 03 09 | 703 | 0.1+ | 0.3+ | 2005 04 11 | 703 | (1.6− | 0.6−) |
| 2005 03 04 | 246 | 0.3− | 0.0 | 2005 03 09 | 703 | 0.2+ | 0.7+ | 2005 04 11 | 703 | 0.6− | 0.3− |
| 2005 03 04 | 246 | 0.5− | 0.3− | 2005 03 31 | 246 | 0.6− | 1.0− | 2005 04 11 | 703 | 0.1+ | 0.4− |
| 2005 03 04 | 246 | 0.1+ | 0.4+ | 2005 03 31 | 246 | 0.2− | 0.7+ | 2005 04 11 | 703 | 0.6− | 1.1+ |
| 2005 03 04 | 246 | 0.3− | 0.2− | 2005 03 31 | 246 | 0.7− | 0.4+ | 2006 10 02 | E12 | 1.0+ | 0.1− |
| 2005 03 04 | 246 | 0.2− | 0.0 | 2005 03 31 | 246 | 0.1+ | 0.2+ | 2006 10 02 | E12 | 0.7− | 0.2− |
| 2005 03 04 | 246 | 0.1− | 0.5− | 2005 03 31 | 246 | 0.8+ | 0.4− | 2006 10 02 | E12 | 0.4+ | 0.4+ |
| 2005 03 04 | 246 | 0.2− | 0.3+ | 2005 03 31 | 246 | 0.4− | 0.2− | 2006 10 02 | E12 | 0.6+ | 0.3− |
| 2005 03 04 | 246 | 0.2− | 0.9− | 2005 03 31 | 246 | 0.6+ | 0.0 | 2006 10 12 | E12 | 0.0 | 0.3+ |
| 2005 03 04 | 246 | 0.2+ | 0.0 | 2005 03 31 | 246 | 0.0 | 0.2+ | 2006 10 12 | E12 | 0.3− | 0.4− |
| 2005 03 04 | 246 | 0.3+ | 0.9− | 2005 03 31 | 246 | 0.4+ | 0.1+ | 2006 10 12 | E12 | 0.1− | 0.9+ |
| 2005 03 04 | 246 | 0.2+ | 0.4+ | 2005 03 31 | 246 | 0.5− | 0.4+ | 2006 10 12 | E12 | 0.7+ | 0.3− |
| 2005 03 04 | 246 | 0.6− | 0.2+ | 2005 03 31 | 246 | 0.2− | 1.0− | 2006 10 28 | E12 | 0.4− | 0.5+ |
| 2005 03 04 | 246 | 0.3− | 0.1− | 2005 04 02 | 246 | 0.4+ | 0.1+ | 2006 10 28 | E12 | 0.2− | 0.5+ |
| 2005 03 04 | 246 | 0.3+ | 0.1− | 2005 04 02 | 246 | 0.8+ | 0.2+ | 2006 10 28 | E12 | 0.6− | 1.1− |
| 2005 03 04 | 246 | 0.6+ | 0.5+ | 2005 04 02 | 246 | 0.3+ | 0.3− | 2006 10 28 | E12 | 0.4− | 0.4− |
| 2005 03 04 | 246 | 0.5− | 0.0 | 2005 04 02 | 246 | 0.5+ | 0.1+ | | | | |

**2005 EF$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.56742 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28496333 | $\omega$ | 249.79440 | | −0.54843402 | | +0.83613954 |
| $a$ | 2.2870557 | $\Omega$ | 346.93303 | | −0.75060228 | | −0.49728710 |
| $e$ | 0.1672722 | $i$ | 2.41534 | | −0.36853268 | | −0.23146533 |
| $P$ | 3.46 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 695 | 0.2+ | 0.4− | 2005 03 13 | 683 | (2.2+ | 0.5+) | 2006 09 17 | 691 | 0.3− | 0.1− |
| 2003 11 21 | 695 | 0.0 | 0.4− | 2005 03 13 | 683 | 0.4− | 1.2+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2005 03 03 | 691 | 1.2+ | 0.6− | 2005 04 06 | G96 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2005 03 03 | 691 | 0.1+ | 0.3+ | 2005 04 06 | G96 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 03 | 691 | 0.0 | 0.5+ | 2005 04 06 | G96 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.4+ |
| 2005 03 08 | G96 | 0.6− | 0.1− | 2005 04 06 | G96 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.4+ | 0.1− |
| 2005 03 08 | G96 | 0.6− | 0.2− | 2005 05 08 | G96 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2005 03 08 | G96 | 0.9− | 0.0 | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2005 03 08 | G96 | 0.5− | 0.2− | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.6− | 0.2− |
| 2005 03 13 | 683 | 1.1− | 0.3− | 2005 05 08 | G96 | 0.1+ | 0.8− | 2006 09 26 | G96 | 0.3− | 0.6− |

**2005 EO$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.92283 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26197050 | $\omega$ | 321.01115 | | −0.68180832 | −0.73122737 | |
| $a$ | 2.4189921 | $\Omega$ | 171.89598 | | +0.70300406 | −0.66291359 | |
| $e$ | 0.1518481 | $i$ | 8.59587 | | +0.20229361 | −0.16078590 | |
| $P$ | 3.76 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 691 | 0.3− | 0.4+ | 2005 03 03 | 703 | 0.3− | 0.3− | 2005 03 11 | 704 | 0.7+ | 1.4+ |
| 2003 09 21 | 691 | 0.2− | 0.2+ | 2005 03 03 | 703 | 1.5− | 0.0 | 2005 03 11 | 704 | 0.7− | 0.3+ |
| 2003 09 21 | 691 | 0.0 | 0.4+ | 2005 03 03 | 703 | 0.8− | 0.1− | 2005 03 11 | 704 | 0.1+ | 0.6− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2005 03 08 | G96 | 0.3− | 0.4− | 2005 03 14 | 704 | 0.2+ | 1.4+ |
| 2003 09 26 | 645 | 0.1+ | 0.1− | 2005 03 08 | G96 | 0.4− | 0.4− | 2005 03 14 | 704 | 0.7+ | 1.0+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 03 08 | 704 | 0.7− | 1.1+ | 2005 03 14 | 704 | 0.4− | 1.6+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 03 08 | G96 | 0.0 | 0.5− | 2005 03 14 | 704 | (2.1+ | 0.8+) |
| 2005 03 03 | 691 | 0.3+ | 0.1+ | 2005 03 08 | G96 | 0.3− | 0.4− | 2005 05 11 | G96 | 0.1− | 0.3− |
| 2005 03 03 | 691 | 0.5+ | 0.1− | 2005 03 08 | 704 | 0.7+ | 0.4+ | 2005 05 11 | G96 | 0.1− | 0.4− |
| 2005 03 03 | 691 | 0.3+ | 0.5− | 2005 03 08 | 704 | 0.7− | 0.3− | 2005 05 11 | G96 | 0.2+ | 0.3− |
| 2005 03 03 | 703 | 1.0− | 0.5− | 2005 03 08 | 704 | 0.5+ | 0.7− | 2005 05 11 | G96 | 0.1− | 0.1− |

**2005 EZ$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.78398 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22221078 | $\omega$ | 62.62989 | | −0.31108248 | +0.94992712 | |
| $a$ | 2.6995579 | $\Omega$ | 189.38888 | | −0.92320891 | −0.30939506 | |
| $e$ | 0.1086734 | $i$ | 10.39348 | | −0.22563907 | −0.04373979 | |
| $P$ | 4.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.2+ | 0.3+ | 2005 04 02 | 691 | 0.0 | 0.0 | 2005 05 15 | 644 | 0.2− | 0.0 |
| 1996 03 20 | 691 | 0.1− | 0.3+ | 2005 04 02 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 1.3− | 1.0+ |
| 1996 03 20 | 691 | 0.0 | 0.3+ | 2005 04 02 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.6− | 0.6+ |
| 1997 07 09 | 691 | 0.1− | 0.1+ | 2005 04 02 | 644 | 0.6+ | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.0 |
| 1997 07 09 | 691 | 0.1− | 0.3− | 2005 04 02 | 644 | 1.0+ | 1.0− | 2006 08 29 | 703 | 0.2+ | 0.1− |
| 1997 07 09 | 691 | 0.3+ | 0.7− | 2005 04 11 | G96 | 0.7− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.3+ |
| 2005 03 03 | 691 | 0.1+ | 0.2+ | 2005 04 11 | G96 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.4+ |
| 2005 03 03 | 691 | 0.6+ | 0.3− | 2005 04 11 | G96 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.5+ | 0.1+ |
| 2005 03 03 | 691 | 0.2+ | 0.1− | 2005 04 11 | G96 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2005 03 08 | G96 | 0.7− | 0.1+ | 2005 04 12 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 691 | 0.3+ | 0.4+ |
| 2005 03 08 | G96 | 0.4− | 0.1− | 2005 04 12 | 691 | 0.7− | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2005 03 08 | G96 | 0.5− | 0.1+ | 2005 04 12 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2005 03 08 | G96 | 0.7− | 0.0 | 2005 05 15 | 644 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2005 04 02 | 691 | 0.1− | 0.3− | 2005 05 15 | 644 | 0.2− | 0.2+ | 2006 09 19 | 691 | 1.3− | 0.4− |

**2005 EJ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.68450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27860308 | $\omega$ | 86.21718 | | +0.11336568 | +0.99353095 | |
| $a$ | 2.3217321 | $\Omega$ | 190.29935 | | −0.92573276 | +0.10318743 | |
| $e$ | 0.1776615 | $i$ | 2.13770 | | −0.36078676 | +0.04741950 | |
| $P$ | 3.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.1+ | 0.2+ | 2005 04 10 | 691 | 0.3− | 0.7+ | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 2003 12 14 | 691 | 0.0 | 0.3− | 2005 05 04 | G96 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2003 12 14 | 691 | 0.1− | 0.2− | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2005 03 04 | 691 | 0.1+ | 0.2+ | 2005 05 04 | G96 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.5+ | 0.0 |
| 2005 03 04 | 691 | 0.2+ | 0.2+ | 2005 05 04 | G96 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2005 03 04 | 691 | 0.5+ | 0.1− | 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2005 03 08 | 704 | 0.5+ | 0.4− | 2005 05 13 | G96 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 2005 03 08 | 704 | (1.6+ | 0.5−) | 2005 05 13 | G96 | 0.6− | 0.5− | 2006 10 27 | G96 | 0.9+ | 0.5− |
| 2005 03 08 | 704 | (2.5+ | 1.2+) | 2005 05 13 | G96 | 0.7− | 0.5− | 2006 10 27 | G96 | 1.2− | 0.2− |
| 2005 03 08 | 704 | 0.9+ | 0.0 | 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2005 04 02 | G96 | 0.4− | 0.2− | 2006 07 22 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2005 04 02 | G96 | 0.1− | 0.2− | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.5− | 0.2− |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 07 22 | G96 | 1.2+ | 0.3− | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2005 04 02 | G96 | 0.6− | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2005 04 10 | 691 | 0.1− | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2005 04 10 | 691 | 0.5+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.3+ | | | | |

**2005 ES$_{55}$ = 2006 SG$_{238}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.99961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28419481 | $\omega$ | 106.62777 | | +0.11282182 | +0.99355518 | |
| $a$ | 2.2911769 | $\Omega$ | 169.83154 | | −0.93358478 | +0.10976283 | |
| $e$ | 0.1683643 | $i$ | 3.54773 | | −0.34013335 | +0.02828829 | |
| $P$ | 3.47 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.2+ | 0.3− | 2005 03 08 | G96 | 0.7− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 1998 03 02 | 691 | 0.3− | 0.1− | 2005 03 08 | G96 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.2− |
| 1998 03 02 | 691 | 0.1− | 0.1− | 2005 03 08 | G96 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2002 06 09 | 644 | 0.3− | 0.2+ | 2005 03 08 | G96 | 0.6− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2002 06 09 | 644 | 0.1− | 0.1+ | 2005 04 04 | G96 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2002 06 09 | 644 | 0.4+ | 0.3− | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2005 03 04 | 691 | 0.5+ | 0.4+ | 2005 04 04 | G96 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2005 03 04 | 691 | 0.0 | 0.4+ | 2005 04 04 | G96 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2005 03 04 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.4− | 0.3+ | | | | |

**2005 EW$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.08696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27495053 | $\omega$ | 246.76738 | | −0.50195875 | +0.86468522 | |
| $a$ | 2.3422487 | $\Omega$ | 353.01306 | | −0.72587912 | −0.43305545 | |
| $e$ | 0.1669937 | $i$ | 8.93437 | | −0.47025198 | −0.25452397 | |
| $P$ | 3.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.0 | 0.0 | 2005 03 13 | 703 | 0.1+ | 0.8+ | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2005 03 13 | 703 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2005 03 13 | 703 | 0.1+ | 1.0+ | 2006 09 25 | 691 | 0.8− | 0.4+ |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2005 03 17 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 2005 03 04 | 691 | 0.1+ | 0.2+ | 2005 03 17 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2005 03 04 | 691 | 0.4+ | 0.4+ | 2005 03 17 | 691 | 0.5+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2005 03 04 | 691 | 0.4+ | 0.1+ | 2005 03 31 | 699 | 1.1− | 0.6+ | 2006 09 27 | 691 | 0.5− | 0.2+ |
| 2005 03 08 | 699 | 0.5+ | 1.1+ | 2005 03 31 | 699 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2005 03 08 | 699 | 0.5+ | 0.1+ | 2005 03 31 | 699 | 0.3+ | 0.8− | 2006 10 01 | 691 | 0.3+ | 0.2+ |
| 2005 03 08 | 699 | 0.5+ | 0.2+ | 2005 03 31 | 699 | 0.1− | 1.1+ | 2006 10 01 | 691 | 0.3+ | 0.4+ |
| 2005 03 08 | 699 | 1.5+ | 1.0+ | 2005 04 04 | 703 | (0.2+ | 1.6+) | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2005 03 12 | 691 | 0.2+ | 0.2+ | 2005 04 04 | 703 | 0.4− | 1.1− | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2005 03 12 | 691 | 0.1+ | 0.2+ | 2005 04 04 | 703 | 1.5− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2005 04 04 | 703 | 1.0− | 0.6− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2005 03 13 | 703 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.3− |

**2005 EA$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.03501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25238376 | $\omega$ | 203.47260 | | +0.99845551 | +0.01896070 | |
| $a$ | 2.4798673 | $\Omega$ | 155.26897 | | −0.00296874 | +0.95682610 | |
| $e$ | 0.1211545 | $i$ | 7.17062 | | −0.05547768 | +0.29004191 | |
| $P$ | 3.91 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 06 | 291 | 0.1− | 0.2+ | 2003 11 28 | 645 | 0.1+ | 0.1+ | 2005 04 02 | G96 | 0.1− | 0.0 |
| 2002 05 06 | 291 | 0.1+ | 0.6− | 2003 11 28 | 645 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.3− | 0.0 |
| 2002 05 06 | 291 | 0.1− | 0.1+ | 2005 03 04 | G96 | 0.3+ | 0.1− | 2005 04 02 | G96 | 0.1− | 0.8+ |
| 2003 10 20 | 683 | 1.3− | 0.3+ | 2005 03 04 | G96 | 0.1+ | 0.3+ | 2006 05 26 | G96 | 0.3− | 0.4+ |
| 2003 10 20 | 683 | 0.5+ | 1.4+ | 2005 03 04 | G96 | 0.2+ | 0.2+ | 2006 05 26 | G96 | 0.3− | 0.4+ |
| 2003 10 20 | 683 | 0.4+ | 1.0+ | 2005 03 04 | G96 | 0.5+ | 0.1− | 2006 05 26 | G96 | 0.2+ | 0.2+ |
| 2003 10 21 | 691 | 0.1− | 0.1+ | 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 06 17 | 691 | 0.0 | 0.2+ |
| 2003 10 21 | 691 | 0.0 | 0.2+ | 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 06 17 | 691 | 0.0 | 0.5+ |
| 2003 10 21 | 691 | 0.1− | 0.3+ | 2005 03 08 | G96 | 0.1− | 0.3+ | 2006 06 17 | 691 | 0.2+ | 0.4− |
| 2003 11 20 | 645 | 0.1− | 0.1− | 2005 03 08 | G96 | 0.3− | 0.6+ | | | | |
| 2003 11 20 | 645 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.2+ | 0.1+ | | | | |

**2005 EZ$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.95585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26363970 | $\omega$ | 73.81253 | | −0.42650975 | | +0.90447569 |
| $a$ | 2.4087710 | $\Omega$ | 170.93867 | | −0.83839590 | | −0.39383857 |
| $e$ | 0.1478908 | $i$ | 1.31956 | | −0.33938438 | | −0.16375256 |
| $P$ | 3.74 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 695 | 0.6− | 0.2+ | 2005 03 03 | 703 | (2.5+ | 1.1+) | 2005 04 02 | G96 | 0.1− | 0.0 |
| 2003 11 21 | 695 | 0.5+ | 0.5+ | 2005 03 04 | G96 | 0.2+ | 0.3+ | 2005 04 02 | G96 | 0.2− | 0.1− |
| 2005 02 17 | 809 | 0.1− | 0.1+ | 2005 03 04 | G96 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.2− | 0.0 |
| 2005 02 17 | 809 | 0.0 | 0.1+ | 2005 03 04 | G96 | 0.0 | 0.1+ | 2005 04 02 | G96 | 0.1+ | 0.0 |
| 2005 02 17 | 809 | 0.0 | 0.1+ | 2005 03 04 | G96 | 0.4− | 0.3+ | 2005 05 04 | G96 | 0.2− | 0.3+ |
| 2005 02 18 | 809 | 0.1− | 0.6+ | 2005 03 08 | G96 | 0.3− | 0.3− | 2005 05 04 | G96 | 0.1+ | 0.7− |
| 2005 02 18 | 809 | 0.1+ | 0.3+ | 2005 03 08 | G96 | 0.5− | 0.2− | 2005 05 04 | G96 | 1.3− | 0.0 |
| 2005 02 18 | 809 | 0.1− | 0.1+ | 2005 03 08 | G96 | 0.2− | 0.3− | 2005 05 04 | G96 | 0.4+ | 0.1+ |
| 2005 02 18 | 809 | 0.0 | 0.2+ | 2005 03 08 | G96 | 0.4− | 0.2− | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 2005 03 03 | 703 | 0.0 | 0.3− | 2005 04 02 | 691 | 0.4+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 2005 03 03 | 703 | 1.0− | 0.8+ | 2005 04 02 | 691 | 0.4+ | 0.6+ | 2006 08 27 | 691 | 0.4− | 0.6+ |
| 2005 03 03 | 703 | 0.9+ | 0.2+ | 2005 04 02 | 691 | 0.5+ | 0.0 | | | | |

**2005 EG$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.58490 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22834805 | $\omega$ | 316.22554 | | −0.45091074 | | −0.89108322 |
| $a$ | 2.6509682 | $\Omega$ | 160.40026 | | +0.85533460 | | −0.44786614 |
| $e$ | 0.0553460 | $i$ | 8.82789 | | +0.25511219 | | −0.07339355 |
| $P$ | 4.32 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 08 | 644 | 0.3− | 0.6+ | 2005 03 04 | G96 | 0.4− | 0.1− | 2005 03 09 | 699 | 0.7+ | 0.2+ |
| 2002 07 08 | 644 | 0.0 | 0.6+ | 2005 03 04 | G96 | 0.5− | 0.3− | 2005 03 17 | 703 | 0.1− | 0.1+ |
| 2002 07 08 | 644 | 0.3+ | 0.2+ | 2005 03 04 | G96 | 0.8− | 0.3− | 2005 03 17 | 703 | 1.1+ | 0.9+ |
| 2003 11 19 | 644 | 0.2− | 0.2+ | 2005 03 04 | G96 | 0.7− | 0.2− | 2005 03 17 | 703 | 1.8− | 0.4− |
| 2003 11 19 | 644 | 0.3− | 0.0 | 2005 03 08 | 699 | 1.2+ | 0.2+ | 2005 03 17 | 703 | (2.8− | 0.8−) |
| 2003 11 19 | 644 | 0.2+ | 0.5+ | 2005 03 08 | 699 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.2− | 0.5− |
| 2005 02 09 | 704 | 0.2− | 0.4− | 2005 03 08 | 699 | 0.4+ | 0.8− | 2005 04 11 | G96 | 0.2− | 0.5− |
| 2005 02 09 | 704 | 0.8+ | 0.3+ | 2005 03 08 | 699 | 1.0+ | 0.0 | 2005 04 11 | G96 | 0.0 | 0.5− |
| 2005 02 09 | 704 | 0.5+ | 1.3+ | 2005 03 08 | 704 | 0.9+ | 0.4+ | 2005 04 11 | G96 | 0.4− | 0.6− |
| 2005 02 18 | 809 | 0.3− | 0.1+ | 2005 03 08 | 704 | 0.7+ | 0.3− | 2005 04 15 | 691 | 0.0 | 0.2+ |
| 2005 02 18 | 809 | 0.4− | 0.1+ | 2005 03 08 | 704 | 0.9+ | 0.1+ | 2005 04 15 | 691 | 0.2− | 0.1− |
| 2005 02 18 | 809 | 0.2− | 0.2+ | 2005 03 09 | 699 | 0.0 | 0.8+ | 2005 04 15 | 691 | 0.4− | 0.1+ |
| 2005 02 18 | 809 | 0.3− | 0.2+ | 2005 03 09 | 699 | 0.5− | 0.7+ | | | | |
| 2005 02 18 | 809 | 0.4− | 0.1+ | 2005 03 09 | 699 | 1.5+ | 0.4− | | | | |

**2005 EW$_{65}$ = 2006 SX$_{238}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.51256 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30033230 | $\omega$ | 142.93944 | | +0.65021086 | | +0.75961319 |
| $a$ | 2.2083506 | $\Omega$ | 167.59544 | | −0.71235568 | | +0.61622256 |
| $e$ | 0.1386725 | $i$ | 3.90152 | | −0.26415000 | | +0.20798450 |
| $P$ | 3.28 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 691 | 0.1+ | 0.0 | 2005 04 04 | G96 | 0.6− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2002 04 14 | 691 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.3− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2002 04 14 | 691 | 0.3− | 0.1+ | 2005 04 04 | G96 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2005 03 04 | G96 | 0.6+ | 0.6− | 2006 08 28 | 691 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.5− |
| 2005 03 04 | G96 | 0.1− | 0.8+ | 2006 08 28 | 691 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2005 03 04 | G96 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2005 03 04 | G96 | 0.4+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2005 03 08 | G96 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.4+ | 0.9+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2005 03 08 | G96 | 0.6+ | 0.7+ | 2006 09 26 | 691 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2005 03 08 | G96 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2005 04 04 | G96 | 0.6+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1− | | | | |

**2005 EQ$_{66}$ = 2005 GN$_{83}$ = 2006 QU$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.87367 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26185648 | $\omega$ | 96.63540 | | −0.08031239 | | +0.99672229 |
| $a$ | 2.4196943 | $\Omega$ | 168.74424 | | −0.93307808 | | −0.07174501 |
| $e$ | 0.1562245 | $i$ | 2.85614 | | −0.35059266 | | −0.03738083 |
| $P$ | 3.76 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.2+ | 0.1+ | 2005 03 08 | G96 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.3+ |
| 2002 08 06 | 644 | 0.5− | 0.1− | 2005 04 04 | G96 | 0.2+ | 0.4+ | 2006 08 19 | 691 | 0.3+ | 0.2+ |
| 2002 08 06 | 644 | 0.2+ | 0.2+ | 2005 04 04 | G96 | 0.2+ | 0.3− | 2006 08 28 | 691 | 0.4− | 0.0 |
| 2005 03 04 | G96 | 0.1+ | 0.4+ | 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 08 28 | 691 | 0.5− | 0.0 |
| 2005 03 04 | G96 | 0.1− | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.4+ | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2005 03 04 | G96 | 0.4+ | 0.7+ | 2005 05 10 | G96 | 0.7− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2005 03 04 | G96 | 0.4+ | 0.2+ | 2005 05 10 | G96 | 0.5− | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2005 05 10 | G96 | 0.9+ | 0.6− | 2006 09 26 | G96 | 0.2+ | 0.7− |
| 2005 03 08 | G96 | 0.4− | 0.2+ | 2005 05 10 | G96 | 0.0 | 1.0− | 2006 09 26 | G96 | 0.2+ | 0.2+ |
| 2005 03 08 | G96 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.4+ | 0.0 | | | | |

**2005 EU$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.69015 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22979805 | $\omega$ | 47.09664 | | +0.80974382 | | −0.58531123 |
| $a$ | 2.6398049 | $\Omega$ | 348.51777 | | +0.45896942 | | +0.67588435 |
| $e$ | 0.1907838 | $i$ | 12.04528 | | +0.36559815 | | +0.44787399 |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 704 | 0.0 | 0.9+ | 2003 11 14 | 644 | 0.1+ | 0.5+ | 2005 03 08 | G96 | 0.2+ | 0.0 |
| 2003 09 30 | 704 | 0.4+ | 0.6+ | 2003 11 21 | 644 | 0.2+ | 0.3+ | 2005 03 08 | G96 | 0.0 | 0.7− |
| 2003 09 30 | 704 | 0.3+ | 1.3− | 2003 11 21 | 644 | 0.1− | 0.0 | 2005 03 08 | G96 | 0.0 | 0.1− |
| 2003 10 19 | 644 | 0.2− | 0.2− | 2003 11 21 | 644 | 0.0 | 0.1− | 2005 03 08 | G96 | 0.1+ | 0.1+ |
| 2003 10 19 | 644 | 0.1− | 0.1− | 2005 03 04 | G96 | 0.0 | 0.3− | 2005 04 09 | G96 | 0.5+ | 0.0 |
| 2003 10 19 | 644 | 0.1− | 0.2− | 2005 03 04 | G96 | 0.2+ | 0.0 | 2005 04 09 | G96 | 0.0 | 0.1− |
| 2003 11 14 | 644 | 0.1− | 0.0 | 2005 03 04 | G96 | 0.4− | 0.6+ | 2005 04 09 | G96 | 0.0 | 0.2+ |
| 2003 11 14 | 644 | 0.2− | 0.4− | 2005 03 04 | G96 | 0.3− | 0.1+ | 2005 04 09 | G96 | 0.2− | 0.1+ |

**2005 EV$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 148.03241 | | | (2000.0) | | |
| $n$ | 0.29783621 | $\omega$ | 313.95064 | | −0.93550083 | +0.35010664 |
| $a$ | 2.2206718 | $\Omega$ | 246.59560 | | −0.30750897 | −0.87309237 |
| $e$ | 0.0939252 | $i$ | 2.97165 | | −0.17400121 | −0.33931556 |
| $P$ | 3.31 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 691 | 0.1− | 0.3− | 2003 11 24 | 691 | 0.3+ | 0.2+ | 2005 04 09 | 704 | 1.4+ | 0.0 | |
| 2000 11 30 | 691 | 0.1− | 0.2− | 2003 11 24 | 691 | 0.1+ | 0.2+ | 2005 04 09 | 704 | 0.0 | 0.7+ | |
| 2000 11 30 | 691 | 0.2− | 0.5− | 2003 11 24 | 691 | 0.2− | 0.2+ | 2005 04 09 | 704 | 0.7− | 0.5+ | |
| 2002 05 11 | 704 | 0.2− | 0.8+ | 2005 03 07 | 704 | 0.5+ | 1.3+ | 2005 04 09 | E12 | 0.1+ | 0.1− | |
| 2002 05 11 | 704 | 0.3+ | 0.4+ | 2005 03 07 | 704 | 0.3− | 0.2+ | 2005 04 09 | E12 | 0.5− | 0.3+ | |
| 2002 05 11 | 704 | 0.4+ | 0.7+ | 2005 03 07 | 704 | 0.1− | 0.8+ | 2005 04 09 | E12 | 0.0 | 0.4− | |
| 2003 09 22 | 691 | 0.3− | 0.1+ | 2005 03 08 | 691 | 0.0 | 0.1− | 2005 04 09 | E12 | 0.6− | 0.2− | |
| 2003 09 22 | 691 | 0.2− | 0.1+ | 2005 03 08 | 691 | 0.2− | 0.6+ | 2005 04 15 | 703 | 1.2− | 0.2+ | |
| 2003 09 22 | 691 | 0.3− | 0.4+ | 2005 03 08 | 691 | 0.1+ | 0.2− | 2005 04 15 | 703 | (2.3− | 0.6−) | |
| 2003 09 27 | 691 | 0.3+ | 0.3+ | 2005 03 09 | 699 | 1.4+ | 0.3− | 2005 04 15 | 703 | (1.7− | 0.8+) | |
| 2003 09 27 | 691 | 0.1+ | 0.2+ | 2005 03 09 | 699 | 0.3+ | 0.3+ | 2005 04 15 | 703 | (3.8− | 0.1−) | |
| 2003 09 27 | 691 | 0.1− | 0.5+ | 2005 03 09 | 699 | 0.4+ | 0.9− | 2006 09 19 | 703 | 1.2− | 0.4− | |
| 2003 10 24 | 704 | 1.0+ | 0.8+ | 2005 03 09 | 699 | 0.0 | 1.2+ | 2006 09 19 | 703 | 0.5− | 1.4− | |
| 2003 10 24 | 704 | 0.2+ | 1.0+ | 2005 04 02 | 644 | 0.6+ | 0.3+ | 2006 09 19 | 703 | (3.5− | 0.3−) | |
| 2003 10 24 | 704 | 0.1− | 1.4+ | 2005 04 02 | 644 | 0.7+ | 0.2+ | 2006 09 19 | 703 | (1.7− | 0.4+) | |
| 2003 10 24 | 704 | 0.1− | 0.8+ | 2005 04 02 | 644 | 0.6+ | 0.4+ | | | | | |

**2005 EU$_{69}$ = 2006 SY$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 295.70096 | | | (2000.0) | | |
| $n$ | 0.38017480 | $\omega$ | 118.23680 | | +0.25004074 | −0.94565975 |
| $a$ | 1.8871822 | $\Omega$ | 315.62907 | | +0.75106328 | +0.32492099 |
| $e$ | 0.0836259 | $i$ | 17.29220 | | +0.61105121 | −0.01240937 |
| $P$ | 2.59 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.4− | 0.3− | 2006 09 16 | 703 | (0.8− | 1.8−) | 2006 09 29 | G96 | 0.4+ | 0.2− | |
| 2001 12 23 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.6− | 0.9+ | 2006 09 29 | G96 | 0.0 | 0.3− | |
| 2001 12 23 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | (1.6− | 0.0 ) | 2006 09 29 | H55 | (1.8− | 0.6−) | |
| 2001 12 23 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 703 | 0.5− | 0.4+ | 2006 09 29 | G96 | 0.2+ | 0.3− | |
| 2005 03 07 | 704 | 1.1+ | 0.5+ | 2006 09 17 | 703 | 0.2− | 1.4+ | 2006 09 29 | H55 | (1.8− | 0.6−) | |
| 2005 03 07 | 704 | 0.0 | 0.7+ | 2006 09 17 | 703 | 0.6− | 0.4− | 2006 09 29 | G96 | 0.1− | 0.3− | |
| 2005 03 07 | 704 | 0.3− | 0.4− | 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 09 29 | H55 | (1.7− | 0.7−) | |
| 2005 03 09 | 704 | 1.0− | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.3− | 2006 09 29 | 448 | 0.1− | 0.1− | |
| 2005 03 09 | 704 | 0.1+ | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.4+ | 2006 09 29 | 448 | 0.6+ | 0.4− | |
| 2005 03 09 | 704 | 0.8+ | 0.8− | 2006 09 28 | 703 | (2.8− | 0.7+) | 2006 09 29 | 850 | 0.2+ | 0.2− | |
| 2005 03 13 | 699 | 0.7− | 1.0+ | 2006 09 28 | 703 | (1.3− | 3.6−) | 2006 09 29 | 448 | 0.4+ | 0.0 | |
| 2005 03 13 | 699 | 0.2+ | 0.9− | 2006 09 28 | 118 | 0.0 | 0.0 | 2006 09 29 | 850 | 0.4+ | 0.1− | |
| 2005 03 13 | 699 | 0.4− | 1.1+ | 2006 09 28 | 118 | 0.1+ | 0.0 | 2006 09 29 | 850 | 0.4− | 0.5− | |
| 2005 03 13 | 699 | 1.2+ | 0.5− | 2006 09 28 | 118 | 0.3− | 0.3− | 2006 09 29 | 850 | 0.0 | 0.9− | |
| 2006 08 29 | 699 | 0.1+ | 0.7+ | 2006 09 29 | 673 | 0.1+ | 0.0 | 2006 10 18 | 106 | 0.1− | 0.4+ | |
| 2006 08 29 | 699 | 0.0 | 0.5+ | 2006 09 29 | 734 | 0.1− | 0.4− | 2006 10 18 | 106 | 0.1− | 0.8− | |
| 2006 08 29 | 699 | 1.0− | 0.8+ | 2006 09 29 | 734 | 0.2− | 0.2− | 2006 10 18 | 106 | 0.1+ | 0.4+ | |
| 2006 08 29 | 699 | 0.6− | 0.1− | 2006 09 29 | 673 | 0.2+ | 0.0 | 2006 10 18 | 106 | 0.9+ | 0.5+ | |
| 2006 09 16 | 703 | 1.1+ | 0.3+ | 2006 09 29 | 734 | (1.6− | 0.4+) | 2006 10 20 | 703 | 0.9− | 0.8− | |
| 2006 09 16 | 703 | 1.2− | 0.1− | 2006 09 29 | 673 | 0.4+ | 0.1+ | 2006 10 20 | 703 | 1.1+ | 0.5− | |
| 2006 09 16 | 703 | 0.0 | 0.2+ | 2006 09 29 | H55 | (1.6− | 0.3−) | 2006 10 20 | 703 | 0.2+ | 0.4+ | |
| 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 09 29 | 673 | 0.6+ | 0.1+ | 2006 10 20 | 703 | 0.2− | 0.7+ | |

**2005 ED$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 227.86157 | | | (2000.0) | | |
| $n$ | 0.36824783 | $\omega$ | 328.02622 | | −0.83608934 | −0.54850518 |
| $a$ | 1.9277139 | $\Omega$ | 178.59001 | | +0.54854617 | −0.83611816 |
| $e$ | 0.0556171 | $i$ | 23.55322 | | +0.00719158 | +0.00696339 |
| $P$ | 2.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 07 | 704 | 1.2+ | 0.4+ | 2005 03 17 | 703 | 0.5− | 0.5− | 2006 09 21 | 699 | 0.7+ | 1.1+ | |
| 2005 03 07 | 704 | 0.6+ | 0.3+ | 2005 03 17 | 703 | 0.9− | 0.3+ | 2006 09 21 | 699 | 0.6+ | 0.1− | |
| 2005 03 07 | 704 | 0.5− | 0.7− | 2005 04 04 | 704 | 1.5− | 0.4− | 2006 09 21 | 699 | 0.3− | 0.0 | |
| 2005 03 07 | 704 | 0.3+ | 1.3+ | 2005 04 04 | 704 | 1.2+ | 0.6+ | 2006 09 25 | 699 | 0.8− | 0.9+ | |
| 2005 03 09 | 704 | 0.0 | 0.0 | 2005 04 04 | 704 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.4+ | 0.1+ | |
| 2005 03 09 | 704 | 1.0+ | 0.5− | 2005 04 04 | 704 | 0.2+ | 0.3− | 2006 09 25 | 699 | 0.3− | 1.0− | |
| 2005 03 09 | 704 | 0.3+ | 0.1− | 2005 04 04 | 704 | (0.9+ | 1.7+) | 2006 09 25 | 699 | 1.0+ | 0.9− | |
| 2005 03 09 | 704 | 1.2+ | 0.0 | 2005 04 06 | 699 | 0.6− | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.5− | |
| 2005 03 09 | 704 | 0.5+ | 0.3− | 2005 04 06 | 699 | (2.1− | 1.2+) | 2006 09 26 | 703 | 0.2+ | 0.4+ | |
| 2005 03 10 | 699 | 0.4+ | 0.1− | 2005 04 06 | 699 | 0.1+ | 0.5+ | 2006 09 26 | 703 | (0.6+ | 1.7−) | |
| 2005 03 10 | 699 | 0.7+ | 0.3− | 2005 04 06 | 699 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.8− | 1.0− | |
| 2005 03 10 | 699 | 0.1− | 0.0 | 2005 04 13 | 691 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.7− | 0.2+ | |
| 2005 03 10 | 699 | 0.2− | 0.4− | 2005 04 13 | 691 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.5+ | |
| 2005 03 17 | 703 | 1.2− | 0.3+ | 2005 04 13 | 691 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.2− | 1.0+ | |
| 2005 03 17 | 703 | 0.8− | 0.7− | 2006 09 21 | 699 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.4+ | |

**2005 EQ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 172.45395 | | | (2000.0) | | |
| $n$ | 0.27730467 | $\omega$ | 61.93897 | | −0.70170296 | −0.70659351 |
| $a$ | 2.3289737 | $\Omega$ | 72.93587 | | +0.61555767 | −0.66579187 |
| $e$ | 0.1202662 | $i$ | 5.48130 | | +0.35875020 | −0.23968061 |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.0 | 0.0 | 2005 03 02 | 703 | (2.1− | 0.4−) | 2005 03 12 | 699 | 1.1+ | 0.3− | |
| 2000 11 24 | 691 | 0.1− | 0.1+ | 2005 03 02 | 703 | 0.5+ | 0.2− | 2005 03 12 | 699 | 0.9+ | 0.1− | |
| 2000 11 24 | 691 | 0.2+ | 0.1− | 2005 03 02 | 703 | 0.5+ | 0.3− | 2005 04 02 | 703 | (2.6+ | 1.9+) | |
| 2002 06 05 | 291 | 0.2+ | 0.2− | 2005 03 02 | 703 | 0.5− | 0.3− | 2005 04 02 | 703 | 0.9+ | 1.4+ | |
| 2002 06 05 | 291 | 0.3− | 0.3− | 2005 03 09 | 703 | 0.1+ | 0.7− | 2005 04 02 | 703 | 0.6− | 0.3+ | |
| 2002 06 05 | 291 | 0.1− | 0.1+ | 2005 03 09 | 703 | 1.0− | 0.0 | 2005 04 02 | 703 | 0.4− | 0.6− | |
| 2005 02 01 | 703 | 1.7− | 0.4− | 2005 03 09 | 703 | 0.7− | 0.8+ | 2005 04 12 | 704 | 0.5− | 1.2+ | |
| 2005 02 01 | 703 | 1.0− | 0.1− | 2005 03 09 | 703 | 0.2− | 0.2+ | 2005 04 12 | 704 | 0.9+ | 0.5+ | |
| 2005 02 01 | 703 | 0.1− | 0.4− | 2005 03 12 | 699 | 0.7+ | 0.1+ | 2005 04 12 | 704 | 0.7− | 0.7− | |
| 2005 02 01 | 703 | 1.0− | 0.7− | 2005 03 12 | 699 | 1.6+ | 0.1− | 2005 04 12 | 704 | 1.5+ | 1.1+ | |

**2005 EX$_{71}$ = 2005 EH$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 156.67904 | | | (2000.0) | | |
| $n$ | 0.26446469 | $\omega$ | 68.75258 | | −0.82326940 | −0.56436197 |
| $a$ | 2.4037590 | $\Omega$ | 76.84127 | | +0.49481443 | −0.76615295 |
| $e$ | 0.0628781 | $i$ | 3.59263 | | +0.27818371 | −0.30741703 |
| $P$ | 3.73 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 1.0− | 1.5+ | 2003 09 26 | 645 | 0.0 | 0.1− | 2005 03 02 | 703 | 0.3+ | 0.7− | |
| 1994 04 03 | 691 | 0.5+ | 0.9− | 2003 09 26 | 645 | 0.0 | 0.0 | 2005 03 02 | 703 | 1.5− | 0.3− | |
| 1994 04 03 | 691 | 0.4+ | 0.9− | 2003 09 28 | 645 | 0.0 | 0.0 | 2005 03 09 | 704 | 0.7+ | 0.7− | |
| 2000 12 30 | 704 | 0.7− | 0.1− | 2003 09 28 | 645 | 0.0 | 0.0 | 2005 03 09 | 704 | 0.1− | 0.1+ | |
| 2000 12 30 | 704 | 0.0 | 0.1+ | 2005 02 01 | 691 | 0.0 | 0.0 | 2005 03 09 | 704 | 0.3+ | 0.1+ | |
| 2000 12 30 | 704 | 0.7+ | 0.5+ | 2005 02 01 | 691 | 0.0 | 0.1− | 2005 03 12 | 704 | 0.1+ | 0.7− | |
| 2003 09 19 | 644 | 0.0 | 0.5+ | 2005 02 01 | 691 | 0.1− | 0.1+ | 2005 03 12 | 704 | 0.1− | 0.0 | |
| 2003 09 19 | 644 | 0.2+ | 0.4+ | 2005 03 02 | 703 | 0.1− | 0.3− | 2005 03 12 | 704 | 1.1+ | 0.7+ | |
| 2003 09 19 | 644 | 0.2− | 0.4+ | 2005 03 02 | 703 | 0.6− | 0.8+ | 2005 03 12 | 704 | 0.0 | 0.9+ | |

**2005 EZ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.54594 | | (2000.0) | | | |
| $n$ | 0.23985797 | $\omega$ | 308.42960 | | −0.24707504 | −0.94051242 |
| $a$ | 2.5654681 | $\Omega$ | 152.91621 | | +0.96884159 | −0.23547263 |
| $e$ | 0.2564411 | $i$ | 30.81286 | | −0.01731729 | +0.24492657 |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | 0.2+ | 0.4+ | 2001 03 16 | 704 | 1.0− | 0.4+ | 2005 03 09 | G96 | (0.9+ | 6.0+) |
| 2001 01 26 | 704 | 0.2+ | 0.1+ | 2001 03 16 | 704 | 1.1− | 0.5+ | 2005 03 09 | G96 | (0.3+ | 6.1+) |
| 2001 01 26 | 704 | 1.0+ | 1.1− | 2001 03 16 | 704 | 0.2− | 0.9− | 2005 03 09 | G96 | (0.7+ | 7.6+) |
| 2001 01 26 | 704 | 0.0 | 0.2+ | 2001 03 16 | 704 | 0.0 | 0.3− | 2005 03 09 | G96 | (0.8+ | 7.6+) |
| 2001 01 26 | 704 | 0.5+ | 0.2− | 2003 08 26 | 807 | 0.1+ | 0.6+ | 2005 04 02 | 703 | 0.6− | 0.5+ |
| 2001 02 20 | 704 | 0.3− | 0.1+ | 2003 08 26 | 807 | 0.0 | 0.3+ | 2005 04 02 | 703 | 0.5+ | 0.8+ |
| 2001 02 20 | 704 | 0.8+ | 0.2− | 2005 01 19 | 703 | 0.4− | 0.3− | 2005 04 02 | 703 | 0.7+ | 0.1+ |
| 2001 02 20 | 704 | 0.0 | 0.6− | 2005 01 19 | 703 | 0.2− | 0.6− | 2005 04 02 | 703 | 0.6− | 0.3+ |
| 2001 03 04 | 704 | 0.1− | 0.4+ | 2005 01 19 | 703 | 0.0 | 0.9+ | 2005 04 09 | 703 | 0.2− | 0.3− |
| 2001 03 04 | 704 | 0.1+ | 0.4− | 2005 01 19 | 703 | 0.1− | 1.1+ | 2005 04 09 | 703 | 1.8− | 2.0+ |
| 2001 03 04 | 704 | 0.1+ | 0.0 | 2005 03 02 | 699 | 1.4+ | 0.3− | 2005 04 09 | 703 | 0.7− | 0.5+ |
| 2001 03 04 | 704 | 0.2− | 0.2− | 2005 03 02 | 699 | 1.0+ | 0.0 | 2005 04 09 | 703 | 0.3− | 0.0 |
| 2001 03 04 | 704 | 0.5+ | 0.9− | 2005 03 02 | 699 | 0.7+ | 0.1− | | | | |
| 2001 03 16 | 704 | 0.1+ | 0.3+ | 2005 03 02 | 699 | 1.0− | 0.5− | | | | |

**2005 EH$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 74.12020 | | (2000.0) | | | |
| $n$ | 0.29611822 | $\omega$ | 298.53843 | | +0.37016457 | +0.92890492 |
| $a$ | 2.2292527 | $\Omega$ | 353.16138 | | −0.81793154 | +0.32045391 |
| $e$ | 0.2233822 | $i$ | 5.14098 | | −0.44041593 | +0.18559349 |
| $P$ | 3.33 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.9+ | 1.0+ | 2005 03 09 | G96 | 0.5− | 0.9− | 2005 05 12 | G96 | 0.7− | 0.4− |
| 1999 09 07 | 704 | 1.0− | 1.1+ | 2005 03 12 | 691 | 0.0 | 0.2+ | 2005 05 12 | G96 | 0.3− | 1.0− |
| 1999 09 07 | 704 | 1.3− | 1.0+ | 2005 03 12 | 691 | 0.0 | 0.1+ | 2005 05 12 | G96 | 0.1+ | 0.0 |
| 2002 06 05 | 644 | 0.1+ | 0.3− | 2005 03 12 | 691 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.7+ | 0.6+ |
| 2002 06 05 | 644 | 0.3− | 0.1− | 2005 03 16 | 691 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2002 06 05 | 644 | 0.0 | 0.0 | 2005 03 16 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.4− |
| 2005 03 03 | 691 | 0.4+ | 0.2+ | 2005 03 16 | 691 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2005 03 03 | 691 | 0.2+ | 0.3+ | 2005 04 06 | G96 | 0.4+ | 0.4− | 2006 11 25 | G96 | 0.4− | 0.1+ |
| 2005 03 03 | 691 | 0.6+ | 0.1+ | 2005 04 06 | G96 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2005 03 09 | G96 | 0.2− | 0.4− | 2005 04 06 | G96 | 0.6− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.2+ |
| 2005 03 09 | G96 | 0.2− | 0.4− | 2005 04 06 | G96 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2005 03 09 | G96 | 0.1− | 0.3− | 2005 05 12 | G96 | 0.7− | 0.1− | | | | |

**2005 EG$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 108.47222 | | (2000.0) | | | |
| $n$ | 0.24216747 | $\omega$ | 256.07411 | | −0.92398490 | +0.38223769 |
| $a$ | 2.5491312 | $\Omega$ | 306.39689 | | −0.34481576 | −0.84636736 |
| $e$ | 0.0356759 | $i$ | 0.86088 | | −0.16539046 | −0.37088628 |
| $P$ | 4.07 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 09 | 807 | 0.2− | 0.2+ | 2005 03 11 | G96 | 0.1− | 0.2− | 2005 04 06 | G96 | 0.3− | 0.0 |
| 2002 08 09 | 807 | 0.1+ | 0.4+ | 2005 03 11 | G96 | 0.7− | 0.2− | 2005 04 06 | G96 | 0.3− | 0.2+ |
| 2003 11 18 | 691 | 0.4− | 0.3+ | 2005 03 11 | G96 | 0.5− | 0.1− | 2005 05 08 | G96 | 0.5− | 0.2+ |
| 2003 11 18 | 691 | 0.0 | 0.2− | 2005 03 13 | 691 | 0.1+ | 0.2+ | 2005 05 08 | G96 | 0.8− | 0.2− |
| 2003 11 18 | 691 | 0.3+ | 0.1+ | 2005 03 13 | 691 | 0.1+ | 0.4+ | 2005 05 08 | G96 | 0.0 | 0.1− |
| 2005 03 03 | 691 | 0.3+ | 0.2− | 2005 03 13 | 691 | 0.2+ | 0.0 | 2005 05 08 | G96 | 0.1− | 0.3− |
| 2005 03 03 | 691 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.4− | 0.0 |
| 2005 03 03 | 691 | 0.3+ | 0.3+ | 2005 03 16 | G96 | 0.5− | 0.2− | 2006 07 21 | G96 | 0.0 | 0.3+ |
| 2005 03 09 | 691 | 0.5+ | 0.7− | 2005 03 16 | G96 | 0.5− | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.1+ |
| 2005 03 09 | 691 | 0.0 | 0.4+ | 2005 03 16 | G96 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.0 | 0.3+ |
| 2005 03 09 | 691 | 0.1+ | 0.3+ | 2005 04 06 | G96 | 0.2− | 0.1+ | | | | |
| 2005 03 11 | G96 | 0.2− | 0.1− | 2005 04 06 | G96 | 1.1− | 0.5+ | | | | |

**2005 EJ$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.22331 | | (2000.0) | | | |
| $n$ | 0.25963291 | $\omega$ | 327.56954 | | +0.24626580 | +0.96875854 |
| $a$ | 2.4334899 | $\Omega$ | 316.66724 | | −0.87986086 | +0.21077334 |
| $e$ | 0.1806684 | $i$ | 2.44931 | | −0.40644560 | +0.13069619 |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 691 | 0.2+ | 0.3+ | 2005 04 09 | G96 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.4+ | 0.9+ |
| 2005 03 04 | 691 | 0.3+ | 0.2+ | 2005 04 09 | G96 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.0 | 0.7+ |
| 2005 03 04 | 691 | 0.4+ | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.7+ | 0.4+ |
| 2005 03 09 | G96 | 0.2− | 0.0 | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2005 03 09 | G96 | 0.3+ | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.2− |
| 2005 03 09 | G96 | 0.3+ | 0.1− | 2006 08 28 | 703 | (1.8+ | 0.4+) | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2005 03 09 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | (2.0− | 0.9−) | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2005 03 11 | G96 | 0.6− | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.4− | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2005 03 11 | G96 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.9− | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.5− | 0.5+ | 2006 11 16 | G96 | 0.4− | 0.6− |
| 2005 03 11 | G96 | 0.4− | 0.1− | 2006 09 13 | 644 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2005 04 09 | G96 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.1− | 0.2+ | | | | |
| 2005 04 09 | G96 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.8+ | 0.4+ | | | | |

**2005 EM$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 128.14766 | | (2000.0) | | | |
| $n$ | 0.28412917 | $\omega$ | 281.38791 | | −0.85331839 | +0.52034142 |
| $a$ | 2.2915297 | $\Omega$ | 289.97495 | | −0.46360506 | −0.78622777 |
| $e$ | 0.1174271 | $i$ | 2.01547 | | −0.23857510 | −0.33330271 |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 691 | 0.1− | 0.1+ | 2005 03 10 | 703 | 1.1− | 1.2− | 2005 05 14 | G96 | 0.2− | 0.4− |
| 2005 03 04 | 691 | 0.0 | 0.1+ | 2005 03 13 | 691 | 0.3+ | 0.3+ | 2005 05 14 | G96 | 0.1+ | 0.6− |
| 2005 03 04 | 691 | 0.1+ | 0.1− | 2005 03 13 | 691 | 0.3+ | 0.1+ | 2005 05 14 | G96 | 0.1+ | 0.9− |
| 2005 03 09 | 691 | 0.3+ | 0.1+ | 2005 03 13 | 691 | 0.3+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.2+ |
| 2005 03 09 | 691 | 0.1+ | 0.3+ | 2005 03 17 | 703 | 1.5− | 0.3− | 2006 08 19 | 691 | 0.3− | 0.2+ |
| 2005 03 09 | 691 | 0.1+ | 0.5+ | 2005 03 17 | 703 | 0.2− | 0.3− | 2006 08 19 | 691 | 0.1− | 0.0 |
| 2005 03 10 | 703 | 0.2+ | 0.5+ | 2005 03 17 | 703 | 0.5− | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2005 03 10 | 703 | 0.1− | 0.2− | 2005 03 17 | 703 | 0.5− | 0.4− | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2005 03 10 | 703 | (0.2− | 2.1−) | 2005 05 14 | G96 | 0.2+ | 0.3− | 2006 08 29 | 691 | 0.2− | 0.4+ |

**2005 ES$_{82}$ = 2006 RF$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.17685 | | (2000.0) | | | |
| $n$ | 0.29037043 | $\omega$ | 80.28518 | | +0.03104506 | +0.99934178 |
| $a$ | 2.2585747 | $\Omega$ | 191.54369 | | −0.94987961 | +0.02365444 |
| $e$ | 0.1395051 | $i$ | 5.38131 | | −0.31107061 | +0.02750423 |
| $P$ | 3.39 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 02 | 644 | 0.2− | 0.0 | 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.4− |
| 2002 06 02 | 644 | 0.0 | 0.3+ | 2005 03 13 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2002 06 02 | 644 | 0.1+ | 0.6+ | 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2002 06 09 | 704 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2002 06 09 | 704 | 0.4+ | 0.5+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2002 06 09 | 704 | 0.2− | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.6+ |
| 2005 03 04 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.8− | 0.3+ |
| 2005 03 04 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2005 03 04 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2005 03 09 | 691 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3− |

2005 03 09 691 0.1+ 0.1+ 2006 09 25 G96 0.2+ 0.0 2006 10 21 G96 0.1− 0.0
2005 03 09 691 0.3+ 0.0 2006 09 25 G96 0.5+ 0.0

**2005 EU$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.20726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30008388 | $\omega$ | 277.21925 | | −0.74959532 | +0.65245006 | |
| $a$ | 2.2095692 | $\Omega$ | 303.57849 | | −0.54217286 | −0.70181149 | |
| $e$ | 0.1073758 | $i$ | 7.68600 | | −0.37967808 | −0.28595374 | |
| $P$ | 3.28 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

2005 03 04 703 0.5− 0.3− 2005 03 10 703 0.4+ 1.0− 2006 09 14 703 0.6− 0.4−
2005 03 04 703 0.1+ 0.2− 2005 03 10 703 0.8+ 0.2− 2006 09 19 703 1.4− 0.5−
2005 03 04 703 0.1+ 0.3− 2005 03 17 703 0.4+ 0.3+ 2006 09 19 703 1.1− 0.7+
2005 03 04 703 0.7− 0.6− 2005 03 17 703 0.4− 0.4− 2006 09 19 703 1.0− 0.6−
2005 03 09 691 0.2+ 0.2+ 2005 03 17 703 0.7− 0.0 2006 09 20 699 1.0+ 0.3−
2005 03 09 691 0.1− 0.2+ 2005 03 17 703 0.4− 0.2+ 2006 09 20 699 0.3+ 0.1−
2005 03 09 691 0.0 0.3+ 2006 09 14 703 0.4+ 0.5− 2006 09 20 699 0.9+ 1.1+
2005 03 10 703 0.2− 0.1− 2006 09 14 703 0.3− 0.2− 2006 09 20 699 0.8+ 1.0+
2005 03 10 703 0.2+ 0.5− 2006 09 14 703 1.1+ 0.4−

**2005 EG$_{87}$ = 2006 QJ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.78679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26170978 | $\omega$ | 306.31317 | | +0.64757230 | +0.76200267 | |
| $a$ | 2.4205984 | $\Omega$ | 4.04652 | | −0.69246925 | +0.58926187 | |
| $e$ | 0.1758322 | $i$ | 1.16114 | | −0.31801958 | +0.26855609 | |
| $P$ | 3.77 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

1995 10 22 691 1.3+ 0.6+ 2005 04 02 G96 0.1− 0.0 2006 09 12 703 0.5− 0.9+
1995 10 22 691 0.4− 0.3− 2005 04 02 G96 0.7+ 0.2− 2006 09 12 703 0.3− 0.9−
1995 10 22 691 0.7− 0.4+ 2006 07 25 G96 0.2+ 0.0 2006 09 12 703 0.1− 0.6−
1995 11 16 691 0.1− 0.1− 2006 07 25 G96 0.4+ 0.6− 2006 09 12 703 0.8+ 0.0
1995 11 16 691 0.1− 0.1− 2006 07 25 G96 0.4+ 0.4− 2006 09 13 644 0.6− 0.1−
1995 11 16 691 0.1+ 0.6− 2006 07 25 G96 0.1− 0.1+ 2006 09 13 644 0.3+ 0.2+
2005 03 04 G96 0.1+ 0.3+ 2006 08 18 691 0.1+ 0.2+ 2006 09 13 644 0.1− 0.3+
2005 03 04 G96 1.0+ 0.1− 2006 08 18 691 0.0 0.0 2006 09 19 703 0.6− 0.2+
2005 03 04 G96 0.5+ 0.1+ 2006 08 18 691 0.2+ 0.3+ 2006 09 19 703 0.2+ 0.1+
2005 03 04 G96 0.4− 0.7+ 2006 08 27 691 0.1+ 0.2+ 2006 09 19 703 (1.6− 0.6−)
2005 03 09 G96 0.2− 0.1+ 2006 08 27 691 0.0 0.2+ 2006 09 19 703 0.9+ 0.9−
2005 03 09 G96 0.2− 0.6+ 2006 08 27 691 0.1− 0.0 2006 11 15 G96 0.7− 0.2−
2005 03 09 G96 0.0 0.4− 2006 08 28 703 0.3− 1.1− 2006 11 15 G96 0.8+ 0.4+
2005 03 09 G96 0.5− 0.3+ 2006 08 28 703 0.6− 1.2− 2006 11 15 G96 0.1+ 0.5+
2005 04 02 G96 0.4− 0.2− 2006 08 28 703 1.0− 0.6+ 2006 11 15 G96 0.0 0.2+
2005 04 02 G96 0.2+ 0.1+ 2006 08 28 703 (0.4− 3.4−)

**2005 EC$_{89}$ = 2006 SS$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.21004 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28039780 | $\omega$ | 16.11710 | | +0.01838699 | +0.99895952 | |
| $a$ | 2.3118145 | $\Omega$ | 254.95081 | | −0.92203309 | +0.00079828 | |
| $e$ | 0.1521148 | $i$ | 2.47692 | | −0.38667416 | +0.04559864 | |
| $P$ | 3.52 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

2005 03 08 691 0.2− 0.1− 2005 05 14 G96 0.4+ 0.1− 2006 09 25 691 0.2+ 0.0
2005 03 08 691 0.0 0.1− 2005 05 14 G96 0.6− 0.6− 2006 09 27 691 0.4+ 0.1+
2005 03 08 691 0.1− 0.2− 2005 05 14 G96 0.3− 0.3− 2006 09 27 691 0.1+ 0.1+
2005 03 09 691 0.1+ 0.3− 2005 05 14 G96 0.1+ 0.0 2006 09 27 691 0.0 0.0
2005 03 09 691 0.0 0.1− 2006 09 17 691 0.1− 0.0 2006 10 01 691 0.2− 0.5−
2005 03 09 691 0.2− 0.0 2006 09 17 691 0.1+ 0.4+ 2006 10 01 691 0.0 0.6−
2005 03 13 691 0.0 0.1+ 2006 09 17 691 0.3− 0.0 2006 10 01 691 0.1− 0.1+
2005 03 13 691 0.3+ 0.3− 2006 09 25 691 0.0 0.1+
2005 03 13 691 0.1+ 1.1+ 2006 09 25 691 0.0 0.3+

**2005 EB$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.40575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26710293 | $\omega$ | 29.71591 | | −0.95216122 | −0.30417516 | |
| $a$ | 2.3879045 | $\Omega$ | 132.54481 | | +0.27191152 | −0.88723094 | |
| $e$ | 0.1275147 | $i$ | 2.28980 | | +0.13947449 | −0.34684108 | |
| $P$ | 3.69 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2000 12 21 691 0.2− 0.3− 2005 03 09 704 0.5+ 0.8+ 2005 03 16 704 1.0+ 0.1−
2000 12 21 691 0.1+ 0.2− 2005 03 09 704 0.0 1.5+ 2005 03 16 G96 0.4− 0.5−
2000 12 21 691 0.1− 0.5− 2005 03 09 704 1.0+ 0.8+ 2005 03 16 G96 0.3− 0.3−
2003 10 16 691 0.1+ 0.3+ 2005 03 12 704 0.3+ 0.2+ 2005 03 16 G96 0.3− 0.5−
2003 10 16 691 0.3− 0.8+ 2005 03 12 704 0.4+ 1.2+ 2005 03 16 G96 0.5− 0.4−
2003 10 16 691 0.3− 0.4+ 2005 03 12 704 0.1+ 0.1− 2005 04 13 691 0.3− 0.4+
2005 03 08 699 0.2+ 0.1− 2005 03 12 704 0.3+ 1.2+ 2005 04 13 691 0.0 0.1−
2005 03 08 699 (2.1+ 1.3+) 2005 03 12 704 0.5+ 0.8+ 2005 04 13 691 0.2− 0.1+
2005 03 08 699 0.6− 0.2+ 2005 03 16 704 0.4+ 0.7− 2005 05 10 G96 0.1+ 0.2−
2005 03 08 699 0.2+ 0.1+ 2005 03 16 704 0.7+ 0.1− 2005 05 10 G96 0.0 0.0
2005 03 09 704 0.0 0.5+ 2005 03 16 704 0.7+ 0.1+ 2005 05 10 G96 0.2− 0.9−
2005 03 09 704 0.6+ 0.9+ 2005 03 16 704 0.4+ 0.3+ 2005 05 10 G96 1.4− 0.5−

**2005 ER$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.04383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21991497 | $\omega$ | 130.54260 | | +0.66180156 | −0.74500812 | |
| $a$ | 2.7183134 | $\Omega$ | 277.81465 | | +0.65980487 | +0.63174778 | |
| $e$ | 0.0533741 | $i$ | 4.83803 | | +0.35591603 | +0.21414398 | |
| $P$ | 4.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

1993 07 24 691 0.4− 0.5+ 2002 08 26 644 0.3+ 0.3+ 2005 03 08 691 0.1+ 0.4+
1993 07 24 691 0.3+ 0.1− 2002 08 26 644 0.0 0.0 2005 03 08 691 0.1+ 0.3+
1993 07 24 691 0.1− 0.3+ 2003 11 20 704 0.2− 0.3− 2005 03 09 691 0.3− 0.1+
2002 08 06 644 0.4− 0.2+ 2003 11 20 704 0.6+ 0.3+ 2005 03 09 691 0.3+ 0.0
2002 08 06 644 0.6− 0.3+ 2003 11 20 704 0.1− 1.0− 2005 03 09 691 0.4+ 0.1−
2002 08 06 644 0.5− 0.4+ 2003 11 20 704 1.1+ 1.5+ 2005 03 09 691 0.1− 0.3−
2002 08 17 644 0.0 0.7+ 2003 12 19 691 0.3− 0.3+ 2005 03 09 691 0.2− 0.2+
2002 08 17 644 0.0 0.2+ 2003 12 19 691 0.1− 0.2+ 2005 03 09 691 0.3+ 0.0
2002 08 17 644 0.1+ 0.7+ 2003 12 19 691 0.1− 0.3+
2002 08 26 644 0.0 0.3+ 2005 03 08 691 0.0 0.7+

**2005 EL$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.14306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24400707 | $\omega$ | 59.79271 | | +0.81489315 | −0.57831075 | |
| $a$ | 2.5363029 | $\Omega$ | 335.47490 | | +0.49445458 | +0.72854242 | |
| $e$ | 0.1513748 | $i$ | 5.36416 | | +0.30242987 | +0.36712753 | |
| $P$ | 4.04 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2003 09 20 644 0.6+ 0.1− 2003 11 02 691 0.0 0.1− 2005 03 09 G96 0.3+ 0.2+
2003 09 20 644 0.1− 0.3+ 2003 11 02 691 0.0 0.1− 2005 03 09 G96 0.3+ 0.2+
2003 09 20 644 0.5+ 0.5+ 2005 03 08 G96 0.2− 0.2− 2005 03 09 G96 0.2− 0.0
2003 10 18 691 0.1− 0.1+ 2005 03 08 G96 0.4− 0.3− 2005 04 09 G96 0.0 0.5+
2003 10 18 691 0.1− 0.1+ 2005 03 08 G96 0.5− 0.3− 2005 04 09 G96 0.1+ 0.1−
2003 10 18 691 0.4− 0.0 2005 03 08 G96 0.4− 0.5− 2005 04 09 G96 0.2+ 0.6+
2003 11 02 691 0.3+ 0.1− 2005 03 09 G96 0.5+ 0.1− 2005 04 09 G96 0.8+ 0.5+

**2005 EL$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.23453 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23935081 | $\omega$ | 47.43759 | | −0.70785382 | | +0.70633898 |
| $a$ | 2.5690908 | $\Omega$ | 177.48258 | | −0.67833082 | | −0.67764973 |
| $e$ | 0.2569651 | $i$ | 6.94638 | | −0.19700321 | | −0.20463651 |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 699 | 1.2− | 0.9− | 2005 03 18 | 703 | 1.1− | 0.2− | 2005 04 08 | 704 | 0.2− | 0.2− |
| 2001 05 15 | 699 | 0.1+ | 0.6− | 2005 03 18 | 703 | 0.3− | 1.1− | 2005 04 08 | 704 | 0.8− | 0.2+ |
| 2001 05 15 | 699 | 0.2+ | 0.4− | 2005 04 04 | 703 | 0.7− | 0.5− | 2005 04 09 | 704 | 0.5+ | 0.5+ |
| 2001 05 15 | 699 | 0.6+ | 0.7+ | 2005 04 04 | 703 | 0.6− | 0.4− | 2005 04 09 | 704 | 1.4+ | 1.7+ |
| 2005 03 08 | G96 | 0.0 | 0.2− | 2005 04 04 | 704 | 0.8+ | 0.9+ | 2005 04 09 | 704 | 0.5+ | 0.6+ |
| 2005 03 08 | G96 | 0.0 | 0.1− | 2005 04 04 | 703 | 0.2− | 1.4− | 2005 04 09 | 704 | 0.5+ | 1.0+ |
| 2005 03 08 | G96 | 0.2− | 0.1− | 2005 04 04 | 704 | 0.3+ | 0.4− | 2005 04 18 | 703 | 1.8− | 0.6− |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.5− | 0.3+ | 2005 04 18 | 703 | 0.7+ | 1.6+ |
| 2005 03 09 | G96 | 0.2− | 0.1− | 2005 04 04 | 704 | 0.2− | 0.2− | 2005 04 18 | 703 | 0.8− | 0.0 |
| 2005 03 09 | G96 | 0.4+ | 0.2+ | 2005 04 04 | 704 | 0.1− | 1.0+ | 2005 04 18 | 703 | 0.7+ | 0.1− |
| 2005 03 09 | G96 | 0.6+ | 0.2− | 2005 04 04 | 704 | 0.1− | 0.2− | 2005 05 15 | 644 | 0.5− | 0.1− |
| 2005 03 09 | G96 | 0.2− | 0.1+ | 2005 04 05 | 704 | 2.3+ | 0.5+ | 2005 05 15 | 644 | 0.2− | 0.1+ |
| 2005 03 12 | 691 | 0.1+ | 0.0 | 2005 04 05 | 704 | 0.9+ | 0.1− | 2005 05 15 | 644 | 0.2− | 0.0 |
| 2005 03 12 | 691 | 0.2+ | 0.1− | 2005 04 05 | 704 | 0.3+ | 0.5− | 2006 09 30 | G96 | 0.4− | 0.3+ |
| 2005 03 12 | 691 | 0.1− | 0.0 | 2005 04 05 | 704 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.7+ |
| 2005 03 18 | 703 | 1.3− | 0.0 | 2005 04 05 | 704 | 0.2− | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.4+ |
| 2005 03 18 | 703 | 0.2− | 0.1+ | 2005 04 08 | 704 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.1+ |

**2005 EN$_{94}$ = 1999 TM$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.96032 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27421537 | $\omega$ | 212.49640 | | −0.98677112 | | +0.15791434 |
| $a$ | 2.3464332 | $\Omega$ | 336.50668 | | −0.12199005 | | −0.87229299 |
| $e$ | 0.1260825 | $i$ | 5.28015 | | −0.10677631 | | −0.46278289 |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 691 | 0.0 | 0.1− | 2005 03 11 | H06 | 1.7+ | 1.4− | 2005 04 09 | 704 | 1.0+ | 0.7+ |
| 1999 10 11 | 691 | 0.2+ | 0.2− | 2005 03 12 | H06 | 0.1+ | 0.1+ | 2005 04 09 | 704 | 0.0 | 0.1+ |
| 1999 10 11 | 691 | 0.0 | 0.1− | 2005 03 12 | H06 | 0.4− | 0.5+ | 2005 04 09 | 704 | 0.7− | 1.2+ |
| 2005 03 08 | 691 | 0.0 | 0.1+ | 2005 03 12 | H06 | 1.0+ | 0.6− | 2006 08 19 | 691 | 0.0 | 0.2− |
| 2005 03 08 | 691 | 0.1− | 0.2+ | 2005 03 13 | 691 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.0 | 0.0 |
| 2005 03 08 | 691 | 0.1+ | 0.0 | 2005 03 13 | 691 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.1− | 0.1− |
| 2005 03 11 | H06 | 0.3− | 0.8− | 2005 03 13 | 691 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.5+ | 0.2− |
| 2005 03 11 | H06 | 0.1+ | 0.2− | 2005 03 17 | 691 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2005 03 11 | H06 | 0.7− | 0.7− | 2005 03 17 | 691 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 2005 03 11 | H06 | (0.1− | 3.6−) | 2005 03 17 | 691 | 0.3− | 0.0 | | | | |

**2005 ED$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.80529 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28778628 | $\omega$ | 208.94035 | | −0.35178743 | | +0.93282561 |
| $a$ | 2.2720750 | $\Omega$ | 40.60181 | | −0.83412119 | | −0.27456944 |
| $e$ | 0.0525671 | $i$ | 6.88246 | | −0.42483814 | | −0.23334096 |
| $P$ | 3.42 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 691 | 0.0 | 0.1− | 2005 03 03 | 703 | 1.3+ | 0.8− | 2005 03 10 | 152 | 0.4− | 0.2− |
| 2003 10 21 | 691 | 0.1+ | 0.1+ | 2005 03 03 | 703 | 0.8− | 0.5− | 2005 03 13 | 152 | 0.2− | 0.1+ |
| 2003 10 21 | 691 | 0.2− | 0.0 | 2005 03 03 | 703 | 0.0 | 0.9+ | 2005 03 13 | 152 | 1.0− | 1.4+ |
| 2003 11 15 | 291 | 0.0 | 0.2− | 2005 03 10 | 699 | 0.3+ | 0.7+ | 2005 03 13 | 152 | 0.7− | 0.2− |
| 2003 11 15 | 291 | 0.1− | 0.0 | 2005 03 10 | 699 | 0.6+ | 0.2+ | 2005 03 13 | 152 | 1.3− | 0.4− |
| 2003 11 15 | 291 | 0.2+ | 0.1− | 2005 03 10 | 699 | 1.7+ | 0.4+ | 2005 03 16 | 703 | 0.6+ | 0.7− |
| 2003 11 21 | 704 | 0.1+ | 1.2+ | 2005 03 10 | 699 | 0.7+ | 0.3+ | 2005 03 16 | 703 | 0.4− | 0.5+ |
| 2003 11 21 | 704 | 0.0 | 0.0 | 2005 03 10 | 152 | 1.2+ | 0.6− | 2005 03 16 | 703 | 0.9− | 1.3− |
| 2003 11 21 | 704 | 0.2+ | 0.1− | 2005 03 10 | 152 | 0.4− | 0.1+ | 2005 03 16 | 703 | 0.6− | 1.0− |
| 2005 03 03 | 703 | 0.3+ | 0.8+ | 2005 03 10 | 152 | 0.0 | 0.1+ | | | | |

**2005 EZ$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.24187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27609276 | $\omega$ | 279.65156 | | −0.75300920 | | −0.65162068 |
| $a$ | 2.3357841 | $\Omega$ | 219.76774 | | +0.64577131 | | −0.70514044 |
| $e$ | 0.0515263 | $i$ | 8.22157 | | +0.12631928 | | −0.27958443 |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.3− | 1.6+ | 2002 05 09 | 644 | 0.5+ | 1.2+ | 2005 02 14 | 703 | 0.2+ | 0.2− |
| 2000 11 27 | 704 | 0.4− | 0.3+ | 2003 09 21 | 644 | 0.2− | 0.6+ | 2005 02 14 | 703 | 0.7− | 0.2− |
| 2000 11 27 | 704 | 0.7− | 1.5− | 2003 09 21 | 644 | 0.3− | 0.3+ | 2005 02 14 | 703 | 0.3+ | 0.3+ |
| 2000 11 27 | 704 | 0.9+ | 0.2+ | 2003 09 21 | 644 | 0.1+ | 0.2+ | 2005 02 14 | 703 | 0.5+ | 0.6+ |
| 2000 11 27 | 704 | 0.4+ | 0.8− | 2003 09 30 | 704 | 0.1− | 1.6+ | 2005 02 14 | 703 | 0.1− | 0.5+ |
| 2002 04 14 | 704 | 0.9− | 0.4+ | 2003 09 30 | 704 | 0.2+ | 0.8+ | 2005 02 14 | 703 | 0.1+ | 0.5+ |
| 2002 04 14 | 704 | 0.2+ | 0.1+ | 2003 09 30 | 704 | 0.7− | 0.8+ | 2005 03 03 | 703 | 0.7+ | 0.1+ |
| 2002 04 14 | 704 | 0.5− | 0.4+ | 2003 10 22 | 691 | 0.4+ | 0.3+ | 2005 03 03 | 703 | 0.1− | 0.0 |
| 2002 04 14 | 704 | 0.2− | 0.1+ | 2003 10 22 | 691 | 0.4+ | 0.2+ | 2005 03 03 | 703 | 0.5− | 0.2+ |
| 2002 04 18 | 644 | 0.2− | 0.0 | 2003 10 22 | 691 | 0.1+ | 0.2+ | 2005 03 03 | 703 | 0.2− | 0.0 |
| 2002 04 18 | 644 | 0.2+ | 0.2− | 2003 11 19 | 645 | 0.1− | 0.0 | 2005 03 10 | 703 | 0.5+ | 0.6+ |
| 2002 04 18 | 644 | 0.0 | 0.4− | 2003 11 19 | 645 | 0.2− | 0.0 | 2005 03 10 | 703 | 0.6+ | 1.0+ |
| 2002 05 09 | 644 | 0.8+ | 1.2+ | 2005 02 14 | 703 | 0.3− | 0.3+ | 2005 03 10 | 703 | 0.3+ | 0.9+ |
| 2002 05 09 | 644 | 0.7+ | 1.2+ | 2005 02 14 | 703 | 0.3− | 0.1+ | 2005 03 10 | 703 | 0.7+ | 0.3+ |

**2005 EX$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.48045 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23410230 | $\omega$ | 214.06785 | | −0.73978774 | | −0.65373811 |
| $a$ | 2.6073476 | $\Omega$ | 284.27725 | | +0.64812042 | | −0.62883617 |
| $e$ | 0.1777830 | $i$ | 9.45429 | | +0.18070425 | | −0.42094126 |
| $P$ | 4.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 699 | 0.8+ | 0.8+ | 2005 01 13 | 704 | 0.4− | 0.2+ | 2005 03 03 | 703 | 0.3+ | 0.3− |
| 2001 03 24 | 699 | 0.6− | 0.1+ | 2005 01 13 | 704 | 0.0 | 0.2− | 2005 03 10 | 703 | 0.2+ | 0.4− |
| 2001 03 24 | 699 | 0.2+ | 0.0 | 2005 01 13 | 704 | 0.3+ | 0.6− | 2005 03 10 | 703 | 0.6+ | 0.1− |
| 2001 03 24 | 699 | 0.0 | 0.1− | 2005 02 02 | 644 | 0.3+ | 0.3+ | 2005 03 10 | 703 | 0.0 | 0.2− |
| 2003 10 20 | 644 | 0.0 | 0.3+ | 2005 02 02 | 644 | 0.3+ | 0.1+ | 2005 03 10 | 703 | 0.1+ | 0.7− |
| 2003 10 20 | 644 | 0.0 | 0.0 | 2005 02 02 | 644 | 0.9+ | 0.1+ | 2005 03 17 | 703 | 0.3− | 0.2− |
| 2003 10 20 | 644 | 0.2− | 0.1+ | 2005 03 03 | 703 | 0.0 | 0.6− | 2005 03 17 | 703 | 1.1− | 0.5+ |
| 2005 01 13 | 704 | 0.7− | 1.6+ | 2005 03 03 | 703 | 0.0 | 0.3+ | 2005 03 17 | 703 | 0.3− | 0.7− |
| 2005 01 13 | 704 | 0.7− | 0.6− | 2005 03 03 | 703 | 0.2+ | 0.1+ | 2005 03 17 | 703 | 0.0 | 1.0+ |

**2005 ET$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.12946 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.32140453 | $\omega$ | 256.80543 | | −0.99492221 | | −0.07427383 |
| $a$ | 2.1107399 | $\Omega$ | 278.90442 | | +0.09558642 | | −0.90859244 |
| $e$ | 0.0397340 | $i$ | 3.94214 | | −0.03151233 | | −0.41102697 |
| $P$ | 3.07 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 19 | 291 | 0.1+ | 0.1+ | 2003 10 22 | 645 | 0.0 | 0.2+ | 2005 03 10 | 703 | 0.0 | 0.7+ |
| 2002 01 19 | 291 | 0.2+ | 0.3+ | 2003 10 24 | 645 | 0.1− | 0.1− | 2005 03 10 | 699 | 0.1+ | 0.2+ |
| 2002 01 19 | 291 | 0.2+ | 0.3+ | 2003 10 24 | 645 | 0.0 | 0.1− | 2005 03 10 | 703 | 0.1+ | 0.2+ |
| 2002 03 16 | 704 | 0.4+ | 0.1+ | 2005 03 03 | 703 | 0.0 | 0.5+ | 2005 03 10 | 703 | 0.8− | 0.7+ |
| 2002 03 16 | 704 | 0.2+ | 0.9+ | 2005 03 03 | 703 | 0.6− | 0.9+ | 2005 03 17 | 703 | 1.4− | 0.7− |
| 2002 03 16 | 704 | 0.3− | 0.5+ | 2005 03 03 | 703 | 0.8− | 0.1− | 2005 03 17 | 703 | 0.5− | 1.0+ |
| 2003 09 20 | 691 | 0.3− | 0.5+ | 2005 03 03 | 703 | 1.5− | 0.2+ | 2005 03 17 | 703 | 0.6+ | 0.1+ |
| 2003 09 20 | 691 | 0.3− | 0.4+ | 2005 03 08 | 683 | 1.9+ | 1.8− | 2005 03 17 | 703 | 0.0 | 0.1− |
| 2003 09 20 | 691 | 0.1+ | 0.0 | 2005 03 08 | 683 | 1.0− | 0.7− | 2006 08 29 | 703 | 0.2− | 0.2+ |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2005 03 08 | 683 | 0.3− | 0.6− | 2006 08 29 | 703 | 0.1− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2005 03 10 | 699 | 1.2+ | 0.4− | 2006 08 29 | 703 | 0.1+ | 0.4+ |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2005 03 10 | 699 | 1.7+ | 0.9− | 2006 08 29 | 703 | 0.3− | 0.5+ |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2005 03 10 | 699 | 1.3+ | 0.0 | | | | |
| 2003 10 22 | 645 | 0.0 | 0.1− | 2005 03 10 | 703 | 0.6− | 0.3+ | | | | |

**2005 EL$_{101}$ = 2006 VE$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.78606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29785630 | $\omega$ | 333.41705 | | +0.91229326 | +0.40950389 | |
| $a$ | 2.2205720 | $\Omega$ | 2.42762 | | −0.35021321 | +0.78672389 | |
| $e$ | 0.2373305 | $i$ | 7.12126 | | −0.21230100 | +0.46192216 | |
| $P$ | 3.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.1− | 0.5− | 2005 03 10 | G96 | 0.5− | 0.4+ | 2005 05 14 | G96 | 0.0 | 0.4− |
| 1995 03 27 | 691 | 0.0 | 0.1+ | 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 1995 03 27 | 691 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.5+ | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2005 03 03 | 691 | 0.1+ | 0.7+ | 2005 04 30 | 691 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.5+ | 0.4+ |
| 2005 03 03 | 691 | 0.6+ | 0.3− | 2005 04 30 | 691 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.2+ | 0.5− |
| 2005 03 03 | 691 | 0.6− | 0.1− | 2005 05 14 | G96 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2005 03 10 | G96 | 0.4− | 0.0 | 2005 05 14 | G96 | 0.1− | 0.4− | 2006 11 15 | 703 | 0.2− | 0.7− |
| 2005 03 10 | G96 | 0.2+ | 0.2+ | 2005 05 14 | G96 | 0.5− | 0.4− | 2006 11 15 | 703 | 0.8− | 0.1+ |

**2005 EF$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.19009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22363695 | $\omega$ | 231.41545 | | −0.54479912 | +0.83831405 | |
| $a$ | 2.6880685 | $\Omega$ | 5.68888 | | −0.69027574 | −0.43438850 | |
| $e$ | 0.2596899 | $i$ | 11.98169 | | −0.47614423 | −0.32944831 | |
| $P$ | 4.41 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 03 | 691 | 0.3+ | 0.2− | 2005 03 13 | 691 | 0.1+ | 0.1+ | 2005 05 14 | 644 | 0.2+ | 0.3− |
| 2005 03 03 | 691 | 0.0 | 0.4− | 2005 04 05 | 699 | 0.5+ | 0.1− | 2005 05 14 | 644 | 0.1+ | 0.5− |
| 2005 03 03 | 691 | 0.2+ | 0.1− | 2005 04 05 | 699 | 0.3+ | 0.7+ | 2005 05 14 | 644 | 0.3+ | 0.7− |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2005 04 05 | 699 | 0.9+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2005 03 10 | G96 | 0.0 | 0.2− | 2005 04 05 | 699 | 0.1+ | 1.4+ | 2006 09 26 | G96 | 0.3− | 0.2+ |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 04 14 | 703 | 0.5− | 0.9+ | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2005 03 10 | G96 | 0.4− | 0.0 | 2005 04 14 | 703 | 1.0− | 0.7− | 2006 09 26 | G96 | 0.5− | 0.0 |
| 2005 03 13 | 703 | 0.5− | 0.6− | 2005 04 14 | 703 | 0.5+ | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3+ |
| 2005 03 13 | 703 | 0.4− | 1.0+ | 2005 04 14 | 703 | 0.4− | 0.3− | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 2005 03 13 | 703 | 0.9− | 1.1− | 2005 05 04 | E12 | 0.7− | 0.1− | 2006 10 16 | G96 | 0.6− | 0.5+ |
| 2005 03 13 | 703 | 0.9− | 0.7+ | 2005 05 04 | E12 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.8+ | 0.1− |
| 2005 03 13 | 691 | 0.1+ | 0.1+ | 2005 05 04 | E12 | 0.4+ | 0.0 | | | | |
| 2005 03 13 | 691 | 0.2+ | 0.3+ | 2005 05 04 | E12 | 0.2− | 0.4+ | | | | |

**2005 EG$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.91676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23540548 | $\omega$ | 64.65925 | | +0.35821762 | −0.93362408 | |
| $a$ | 2.5977160 | $\Omega$ | 4.35954 | | +0.83056205 | +0.31616017 | |
| $e$ | 0.1597471 | $i$ | 3.86169 | | +0.42643501 | +0.16848981 | |
| $P$ | 4.19 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.9+ | 0.9− | 2003 10 19 | 691 | 0.2+ | 0.1+ | 2005 03 04 | 691 | 0.2+ | 0.1+ |
| 1999 10 13 | 704 | 0.5− | 0.1+ | 2003 10 19 | 691 | 0.1+ | 0.1+ | 2005 03 04 | 691 | 0.3− | 0.1+ |
| 1999 10 13 | 704 | 0.1+ | 0.5− | 2003 10 19 | 691 | 0.2+ | 0.1− | 2005 03 10 | G96 | 0.4− | 0.6− |
| 2003 09 18 | 291 | 0.1+ | 0.1+ | 2003 10 24 | 704 | 0.4− | 0.3− | 2005 03 10 | G96 | 0.6− | 0.7− |
| 2003 09 18 | 291 | 0.2− | 0.0 | 2003 10 24 | 704 | 1.4− | 0.2− | 2005 03 10 | G96 | 0.4− | 0.4− |
| 2003 09 18 | 291 | 0.3− | 0.1+ | 2003 10 24 | 704 | 0.1− | 0.8+ | 2005 03 10 | G96 | 0.5− | 0.7− |
| 2003 09 30 | 691 | 0.2+ | 0.2+ | 2003 10 24 | 704 | 0.7− | 0.2− | 2005 04 11 | 691 | 0.6+ | 0.4+ |
| 2003 09 30 | 691 | 0.1− | 0.1+ | 2003 10 24 | 704 | 0.3− | 0.1+ | 2005 04 11 | 691 | 0.5+ | 0.1+ |
| 2003 09 30 | 691 | 0.1+ | 0.1+ | 2005 03 04 | 691 | 0.3− | 0.2+ | 2005 04 11 | 691 | 0.1+ | 0.3+ |

**2005 ED$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.28458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27200341 | $\omega$ | 262.51308 | | +0.30932205 | +0.95089565 | |
| $a$ | 2.3591370 | $\Omega$ | 25.51343 | | −0.86226840 | +0.28525889 | |
| $e$ | 0.1829066 | $i$ | 1.44102 | | −0.40101506 | +0.12010339 | |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 691 | 0.2+ | 0.2− | 2005 04 13 | 691 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.0 |
| 2005 03 04 | 691 | 0.3− | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.6− |
| 2005 03 04 | 691 | 0.4+ | 0.0 | 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2005 03 10 | G96 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 2005 03 10 | G96 | 0.2− | 0.2− | 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 03 10 | G96 | 0.4− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.6− |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2005 04 11 | G96 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2005 04 11 | G96 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2005 04 11 | G96 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2005 04 11 | G96 | 0.5− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2005 04 13 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.6+ |
| 2005 04 13 | 691 | 0.1+ | 0.7+ | 2006 09 23 | 691 | 0.1− | 0.1+ | | | | |

**2005 EF$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.32122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18167265 | $\omega$ | 222.56409 | | +0.86995049 | −0.49083897 | |
| $a$ | 3.0875193 | $\Omega$ | 166.59300 | | +0.48936431 | +0.84735142 | |
| $e$ | 0.2341053 | $i$ | 11.83981 | | +0.06089914 | +0.20266392 | |
| $P$ | 5.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.1− | 2002 08 26 | 644 | 0.6− | 0.4+ | 2005 03 04 | 691 | 0.2+ | 0.0 |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2002 08 26 | 644 | 0.8− | 0.5+ | 2005 03 04 | G96 | 0.6− | 0.0 |
| 2002 07 18 | 704 | 1.4+ | 0.2+ | 2002 08 26 | 644 | 0.9− | 0.5+ | 2005 03 04 | G96 | 0.7− | 0.3− |
| 2002 07 18 | 704 | 0.9+ | 0.3+ | 2004 01 11 | 644 | 0.3− | 0.5+ | 2005 03 04 | G96 | 0.7− | 0.3− |
| 2002 07 18 | 704 | 2.1+ | 0.9+ | 2004 01 11 | 644 | 0.1− | 0.3+ | 2005 03 04 | G96 | 0.8− | 0.0 |
| 2002 07 28 | 608 | 0.1− | 0.4+ | 2004 01 11 | 644 | 0.2+ | 0.3+ | 2005 03 10 | G96 | 0.1− | 0.2− |
| 2002 07 28 | 608 | 0.9− | 0.3− | 2005 01 17 | 291 | 0.3+ | 0.5+ | 2005 03 10 | G96 | 0.3− | 0.2− |
| 2002 07 28 | 608 | 0.1− | 0.0 | 2005 01 17 | 291 | 0.3+ | 0.5+ | 2005 03 10 | G96 | 0.5− | 0.1− |
| 2002 08 05 | 644 | 0.7− | 0.4+ | 2005 01 17 | 291 | 0.1+ | 0.9+ | 2005 03 10 | G96 | 0.2− | 0.3− |
| 2002 08 05 | 644 | 0.4− | 0.5+ | 2005 03 04 | 691 | 0.0 | 0.3+ | | | | |
| 2002 08 05 | 644 | 0.3− | 0.6+ | 2005 03 04 | 691 | 0.6+ | 0.1+ | | | | |

**2005 EQ$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.76871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22160984 | $\omega$ | 87.18145 | | −0.60051485 | +0.78757395 | |
| $a$ | 2.7044359 | $\Omega$ | 144.70127 | | −0.79515614 | −0.56994720 | |
| $e$ | 0.2863543 | $i$ | 13.84104 | | −0.08431268 | −0.23428071 | |
| $P$ | 4.45 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 699 | 0.1+ | 1.2+ | 2001 06 22 | 644 | 0.4− | 0.2− | 2005 03 10 | G96 | 0.4+ | 0.7− |
| 2001 05 21 | 699 | 0.2+ | 0.2+ | 2001 06 22 | 644 | 0.6− | 0.0 | 2005 03 10 | G96 | 0.6+ | 0.7− |
| 2001 05 21 | 699 | 0.1− | 0.5+ | 2005 03 04 | G96 | 1.5− | 1.0+ | 2005 03 10 | G96 | 0.5+ | 0.5− |
| 2001 05 21 | 699 | 0.0 | 0.0 | 2005 03 04 | G96 | 1.6− | 1.5+ | 2005 03 10 | G96 | 0.2+ | 0.6− |
| 2001 06 13 | 699 | 0.6+ | 0.9− | 2005 03 04 | G96 | 1.2− | 1.1+ | 2005 03 10 | G96 | 0.3+ | 0.5− |
| 2001 06 13 | 699 | 0.1− | 0.2+ | 2005 03 04 | G96 | 0.9− | 1.1+ | 2005 03 11 | G96 | 0.4+ | 0.2− |
| 2001 06 13 | 699 | 0.3− | 0.8− | 2005 03 10 | G96 | 0.3+ | 0.4− | 2005 03 11 | G96 | 0.3+ | 0.3− |
| 2001 06 13 | 699 | 1.0+ | 0.2+ | 2005 03 10 | G96 | 0.4+ | 0.5− | 2005 03 11 | G96 | 0.8+ | 0.0 |
| 2001 06 22 | 644 | 0.4− | 0.4− | 2005 03 10 | G96 | 0.5+ | 0.5− | 2005 03 11 | G96 | 0.9+ | 0.4− |

**2005 EL$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.51433 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29930739 | $\omega$ | 317.13004 | | +0.14833926 | | +0.98766619 |
| $a$ | 2.2133890 | $\Omega$ | 321.32135 | | −0.88425122 | | +0.10977713 |
| $e$ | 0.1360253 | $i$ | 4.59899 | | −0.44282643 | | +0.11164445 |
| $P$ | 3.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 644 | 0.3+ | 0.3+ | 2005 03 04 | 691 | 0.3+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 05 10 | 644 | 0.2+ | 0.4+ | 2005 03 04 | 691 | 0.4+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 2002 05 10 | 644 | 0.0 | 0.5+ | 2005 03 10 | 703 | 0.2+ | 0.8− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2003 11 18 | 691 | 0.2− | 0.1− | 2005 03 10 | 703 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2003 11 18 | 691 | 0.4+ | 0.2+ | 2005 03 10 | 703 | 1.0− | 0.2− | 2006 10 11 | 644 | 0.3− | 0.6+ |
| 2003 11 18 | 691 | 0.3+ | 0.1− | 2005 03 10 | 703 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2003 11 20 | 704 | 0.1+ | 0.2− | 2005 03 17 | 703 | 0.6− | 0.6− | 2006 10 17 | 703 | 0.2+ | 1.1− |
| 2003 11 20 | 704 | 0.1− | 0.7+ | 2005 03 17 | 703 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2003 11 20 | 704 | (2.3− | 1.4+) | 2005 03 17 | 703 | 1.0− | 0.2+ | 2006 10 17 | 703 | (2.1+ | 0.6+) |
| 2003 11 24 | 704 | 1.4− | 0.2− | 2005 03 17 | 703 | 0.5− | 1.2− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2003 11 24 | 704 | 0.3− | 0.7− | 2006 09 16 | 703 | 1.2− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2003 11 24 | 704 | 0.9− | 0.0 | 2006 09 16 | 703 | 0.0 | 1.1− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2003 11 24 | 704 | 0.7+ | 0.4+ | 2006 09 16 | 703 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2005 03 04 | 691 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.4+ | 0.2− | | | | |

**2005 EM$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.00638 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17195677 | $\omega$ | 296.52715 | | −0.46751587 | | +0.86502862 |
| $a$ | 3.2027512 | $\Omega$ | 304.41327 | | −0.71199242 | | −0.49056021 |
| $e$ | 0.0918117 | $i$ | 12.75085 | | −0.52392338 | | −0.10524337 |
| $P$ | 5.73 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 699 | 0.1+ | 0.9+ | 2001 09 10 | 704 | 0.0 | 0.2+ | 2005 03 04 | 703 | 0.1+ | 0.1− |
| 2001 07 16 | 699 | 0.5+ | 0.3+ | 2001 09 10 | 704 | 0.4− | 0.3+ | 2005 03 10 | 699 | 0.2− | 0.0 |
| 2001 07 16 | 699 | 0.3+ | 0.8+ | 2001 09 10 | 704 | 0.6+ | 0.2+ | 2005 03 10 | 699 | 0.7+ | 0.3+ |
| 2001 07 16 | 699 | 0.2+ | 0.3+ | 2001 09 10 | 704 | 0.1− | 0.4− | 2005 03 10 | 699 | 0.8+ | 0.3+ |
| 2001 07 27 | 699 | 0.2− | 0.2− | 2001 09 20 | 704 | 0.5+ | 0.0 | 2005 03 10 | 703 | 0.3+ | 0.4− |
| 2001 07 27 | 699 | 0.3− | 0.3− | 2001 09 20 | 704 | 0.5+ | 0.0 | 2005 03 10 | 703 | 0.1+ | 0.4− |
| 2001 07 27 | 699 | 0.5− | 0.5− | 2001 09 20 | 704 | 0.1− | 0.0 | 2005 03 10 | 699 | 1.3+ | 0.5− |
| 2001 07 27 | 699 | 0.2+ | 1.0+ | 2001 09 20 | 704 | 0.6+ | 0.6+ | 2005 03 10 | 703 | 0.1+ | 0.5+ |
| 2001 08 13 | 608 | 0.6− | 0.9− | 2003 12 28 | 704 | 0.0 | 0.8+ | 2005 03 10 | 703 | 0.1+ | 0.3+ |
| 2001 08 13 | 608 | 0.0 | 0.5− | 2003 12 28 | 704 | 0.5+ | 0.3+ | 2005 03 17 | 703 | 0.1+ | 1.1+ |
| 2001 08 13 | 608 | 0.1− | 0.7− | 2003 12 28 | 704 | 0.3− | 0.0 | 2005 03 17 | 703 | 1.3− | 0.3+ |
| 2001 08 24 | 699 | 0.5− | 0.1+ | 2003 12 28 | 704 | 0.0 | 0.5+ | 2005 03 17 | 703 | 0.5− | 0.1− |
| 2001 08 24 | 699 | 0.7− | 0.5+ | 2005 03 04 | 703 | 0.2+ | 0.3− | 2005 03 17 | 703 | 0.2+ | 0.1− |
| 2001 08 24 | 699 | 1.1− | 0.8+ | 2005 03 04 | 703 | 0.3− | 0.5+ | | | | |
| 2001 08 24 | 699 | 0.4− | 0.9+ | 2005 03 04 | 703 | 0.1− | 1.0+ | | | | |

**2005 EC$_{108}$ = 2006 RW$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.16634 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26928969 | $\omega$ | 286.59821 | | +0.03180116 | | +0.99923298 |
| $a$ | 2.3749596 | $\Omega$ | 345.16803 | | −0.87962574 | | +0.01712426 |
| $e$ | 0.2103489 | $i$ | 5.12124 | | −0.47460220 | | +0.03521649 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 09 | G96 | 0.0 | 0.2+ | 2005 03 10 | G96 | 0.1− | 0.7+ | 2006 09 12 | 703 | 0.7− | 0.9+ |
| 2005 02 09 | G96 | 0.0 | 0.2+ | 2005 04 02 | G96 | 0.6− | 0.4− | 2006 09 13 | 644 | 0.2+ | 0.3+ |
| 2005 02 09 | G96 | 0.2− | 0.6− | 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 09 13 | 644 | 0.5+ | 0.1+ |
| 2005 02 09 | G96 | 0.0 | 0.2− | 2005 04 02 | G96 | 0.5+ | 0.2+ | 2006 09 13 | 644 | 0.3+ | 0.1+ |
| 2005 03 04 | G96 | 0.1+ | 0.4+ | 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.0 |
| 2005 03 04 | G96 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.2+ | 0.3+ | 2006 09 13 | 644 | 0.3+ | 0.2− |
| 2005 03 04 | G96 | 0.4+ | 0.2+ | 2006 08 18 | 691 | 0.0 | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2005 03 04 | G96 | 0.2− | 0.0 | 2006 08 18 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.6− |
| 2005 03 10 | G96 | 0.1+ | 0.5− | 2006 09 12 | 703 | 0.6+ | 0.5− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2005 03 10 | G96 | 0.2− | 0.2− | 2006 09 12 | 703 | 0.6− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2005 03 10 | G96 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.4− | 1.1+ | 2006 09 25 | G96 | 0.3− | 0.4− |

**2005 EA$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.08775 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28225120 | $\omega$ | 313.29731 | | −0.81156359 | | +0.57592047 |
| $a$ | 2.3016831 | $\Omega$ | 262.10260 | | −0.50317616 | | −0.77453460 |
| $e$ | 0.0775971 | $i$ | 5.70058 | | −0.29694830 | | −0.26155643 |
| $P$ | 3.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 703 | 0.4− | 0.5+ | 2005 03 10 | 703 | 0.5+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.2− |
| 2005 03 04 | 703 | 0.3+ | 0.5− | 2005 03 10 | 699 | 0.5− | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.3+ |
| 2005 03 04 | 703 | 0.6− | 0.5− | 2005 03 10 | 703 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 2005 03 04 | 703 | 0.4− | 0.2− | 2005 03 17 | 703 | 0.7− | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.1− |
| 2005 03 10 | 699 | 0.3+ | 1.3− | 2005 03 17 | 703 | 0.9+ | 1.0+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2005 03 10 | 699 | 0.0 | 1.0+ | 2005 03 17 | 703 | (2.0− | 2.1+) | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2005 03 10 | 699 | 0.5+ | 0.4− | 2005 03 17 | 703 | (1.9+ | 1.5+) | 2006 09 28 | 691 | 0.3+ | 0.4− |
| 2005 03 10 | 703 | 0.6+ | 0.3− | 2006 08 16 | 644 | 0.0 | 0.1− | | | | |
| 2005 03 10 | 703 | 0.5− | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.1− | | | | |

**2005 EC$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.77874 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27503671 | $\omega$ | 306.94191 | | +0.45992337 | | +0.88790893 |
| $a$ | 2.3417594 | $\Omega$ | 350.42657 | | −0.79567862 | | +0.40740806 |
| $e$ | 0.0814758 | $i$ | 3.23744 | | −0.39416497 | | +0.21362677 |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | 0.4+ | 0.1+ | 2003 11 20 | 704 | 0.1− | 0.6+ | 2005 03 04 | G96 | 0.0 | 0.1+ |
| 2003 10 25 | 704 | 0.7− | 0.0 | 2003 11 20 | 704 | 0.2− | 0.4− | 2005 03 04 | G96 | 0.1− | 0.1+ |
| 2003 10 25 | 704 | 0.2+ | 0.3+ | 2003 11 20 | 704 | 0.9− | 0.8+ | 2005 03 04 | G96 | 0.3− | 0.2− |
| 2003 10 25 | 704 | 0.6+ | 0.2− | 2003 11 20 | 704 | 0.9+ | 0.8− | 2005 03 10 | G96 | 0.1+ | 0.3− |
| 2003 10 25 | 704 | 1.4+ | 1.0− | 2003 11 20 | 704 | 0.7+ | 1.1+ | 2005 03 10 | G96 | 0.2− | 0.1− |
| 2003 10 30 | 704 | 1.1− | 0.6− | 2005 02 01 | 691 | 0.0 | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.2− |
| 2003 10 30 | 704 | 1.6+ | 0.0 | 2005 02 01 | 691 | 0.1+ | 0.0 | 2005 03 10 | G96 | 0.1+ | 0.2− |
| 2003 10 30 | 704 | 1.6− | 0.5+ | 2005 02 01 | 691 | 0.0 | 0.0 | | | | |
| 2003 10 30 | 704 | 1.0− | 0.5− | 2005 03 04 | G96 | 0.2− | 0.1+ | | | | |

**2005 EL$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.40064 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26586151 | $\omega$ | 133.54052 | | −0.84939731 | | +0.52617717 |
| $a$ | 2.3953321 | $\Omega$ | 78.24642 | | −0.49541834 | | −0.76835031 |
| $e$ | 0.1288632 | $i$ | 2.38638 | | −0.18189249 | | −0.36438357 |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 691 | 0.2− | 0.0 | 2005 03 11 | 691 | 0.3− | 0.2+ | 2005 03 18 | 703 | 0.7+ | 1.1− |
| 2001 01 04 | 691 | 0.2+ | 0.0 | 2005 03 11 | 691 | 0.1− | 0.3+ | 2005 03 31 | 699 | 0.5+ | 0.6− |
| 2001 01 04 | 691 | 0.0 | 0.2− | 2005 03 16 | 704 | 0.2+ | 0.1− | 2005 03 31 | 699 | 0.9+ | 1.1+ |
| 2003 11 23 | 291 | 0.2− | 0.1+ | 2005 03 16 | 704 | 0.8+ | 0.2− | 2005 03 31 | 699 | 0.9− | 0.9− |
| 2003 11 23 | 291 | 0.1− | 0.3+ | 2005 03 16 | 704 | 0.2− | 0.1− | 2005 03 31 | 699 | (2.6− | 0.3−) |
| 2003 11 23 | 291 | 0.4+ | 0.3− | 2005 03 16 | 704 | 0.6+ | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.2− |
| 2005 03 04 | 704 | 0.5+ | 0.3− | 2005 03 16 | 704 | 0.5+ | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.3− |
| 2005 03 04 | 704 | 1.1+ | 0.4− | 2005 03 18 | 703 | 0.8− | 1.1+ | 2005 05 10 | G96 | 0.1− | 0.3− |
| 2005 03 04 | 704 | 0.6+ | 0.6+ | 2005 03 18 | 703 | 0.6− | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.1+ |
| 2005 03 11 | 691 | 0.3− | 0.0 | 2005 03 18 | 703 | 0.5− | 0.8− | | | | |

**2005 EB$_{115}$ = 2006 SG$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.34427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29609122 | $\omega$ | 301.59769 | | +0.59328271 | +0.80495225 | |
| $a$ | 2.2293882 | $\Omega$ | 4.81704 | | −0.70145235 | +0.52195240 | |
| $e$ | 0.1836020 | $i$ | 5.61458 | | −0.39494332 | +0.28216585 | |
| $P$ | 3.33 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 691 | 0.3+ | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.2− |
| 1996 10 10 | 691 | 0.4+ | 0.5− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1− |
| 1996 10 10 | 691 | 0.1+ | 0.4− | 2006 09 25 | 683 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 03 04 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 683 | 0.2+ | 1.0− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 03 04 | 691 | 0.2+ | 0.1− | 2006 09 25 | 683 | (0.2− | 2.5+) | 2006 10 21 | 644 | 0.4− | 0.9+ |
| 2005 03 04 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 2005 03 10 | G96 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.3+ |
| 2005 03 10 | G96 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.2− | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.4− |
| 2005 04 04 | G96 | 0.0 | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2005 04 04 | G96 | 0.1− | 0.3− | 2006 10 11 | 691 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.2+ |

**2005 EB$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.69769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23915404 | $\omega$ | 32.86112 | | −0.55517313 | +0.82625460 | |
| $a$ | 2.5704998 | $\Omega$ | 203.84132 | | −0.80491614 | −0.56259995 | |
| $e$ | 0.1153342 | $i$ | 13.64020 | | −0.20950608 | −0.02801145 | |
| $P$ | 4.12 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 07 | 566 | 0.9− | 0.0 | 2001 04 15 | 699 | 0.8+ | 0.7+ | 2005 03 07 | 704 | 0.3− | 0.3− |
| 1997 04 07 | 566 | 0.9− | 0.4+ | 2002 07 09 | 644 | 0.6+ | 0.2+ | 2005 03 07 | 704 | 0.5− | 0.1− |
| 1997 04 07 | 566 | 0.1+ | 0.4+ | 2002 07 09 | 644 | 0.5+ | 0.2+ | 2005 03 07 | 704 | 0.9− | 0.0 |
| 1997 05 09 | 691 | 0.2− | 0.1− | 2002 07 09 | 644 | 0.2+ | 0.3+ | 2005 03 10 | 699 | 0.4+ | 0.6+ |
| 1997 05 09 | 691 | 0.2+ | 0.2− | 2002 08 03 | 644 | 0.5+ | 0.1+ | 2005 03 10 | 699 | 0.8+ | 0.1+ |
| 1997 05 09 | 691 | 0.2+ | 0.1− | 2002 08 03 | 644 | 0.3+ | 0.1+ | 2005 03 10 | 699 | 0.3− | 0.1+ |
| 2001 03 15 | 608 | 0.5+ | 1.7+ | 2002 08 03 | 644 | 0.6+ | 0.2+ | 2005 03 10 | 699 | 0.9− | 0.3+ |
| 2001 03 15 | 608 | 0.1+ | 0.5+ | 2002 08 11 | 704 | 0.7− | 0.1− | 2005 03 13 | 703 | 0.2− | 0.4− |
| 2001 03 15 | 608 | 0.2+ | 0.0 | 2002 08 11 | 704 | 0.9− | 0.2− | 2005 03 13 | 703 | 0.1− | 0.2+ |
| 2001 03 26 | 608 | 0.1+ | 0.7− | 2002 08 11 | 704 | 1.3− | 1.8− | 2005 03 13 | 703 | 0.5+ | 0.4− |
| 2001 03 26 | 608 | 0.0 | 0.5− | 2002 08 25 | 644 | 0.2− | 0.6+ | 2005 03 13 | 703 | 0.1− | 0.1− |
| 2001 03 26 | 608 | 0.2− | 0.3− | 2002 08 25 | 644 | 0.2+ | 0.6+ | 2005 05 04 | 703 | 1.9+ | 1.3− |
| 2001 04 15 | 699 | 0.2+ | 0.0 | 2002 08 25 | 644 | 0.5+ | 0.7+ | 2005 05 04 | 703 | 0.5+ | 1.4− |
| 2001 04 15 | 699 | 0.3− | 0.7+ | 2005 03 07 | 704 | 0.1− | 0.0 | 2005 05 04 | 703 | 1.4− | 0.0 |
| 2001 04 15 | 699 | 1.2+ | 0.0 | 2005 03 07 | 704 | 0.2− | 0.3− | 2005 05 04 | 703 | 0.5− | 1.7+ |

**2005 EX$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.96054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29082523 | $\omega$ | 229.32727 | | −0.96706631 | −0.23626685 | |
| $a$ | 2.2562194 | $\Omega$ | 296.81288 | | +0.25355034 | −0.86175081 | |
| $e$ | 0.1259001 | $i$ | 6.08851 | | +0.02224818 | −0.44895826 | |
| $P$ | 3.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 691 | 0.0 | 0.2+ | 2005 03 30 | G92 | 0.3+ | 0.5− | 2005 04 07 | 704 | 0.2− | 0.3+ |
| 2003 10 01 | 691 | 0.2− | 0.4+ | 2005 03 30 | G92 | 0.1+ | 0.1+ | 2005 04 15 | 703 | 1.3− | 0.4− |
| 2003 10 01 | 691 | 0.1− | 0.2+ | 2005 03 30 | G92 | 0.1+ | 0.1+ | 2005 04 15 | 703 | 0.6− | 0.9+ |
| 2004 12 10 | 291 | 0.0 | 1.0+ | 2005 03 31 | G92 | 0.3− | 0.4+ | 2005 04 15 | 703 | 0.6− | 0.9+ |
| 2004 12 10 | 291 | 0.2+ | 0.6+ | 2005 03 31 | G92 | 0.3+ | 0.3+ | 2005 04 15 | 703 | (1.8− | 0.3+) |
| 2004 12 10 | 291 | 0.1− | 0.8+ | 2005 03 31 | G92 | 1.0+ | 0.4+ | 2006 08 29 | 691 | 0.4− | 0.5+ |
| 2005 03 07 | 704 | 1.1+ | 0.0 | 2005 04 01 | 699 | 0.4+ | 0.1+ | 2006 08 29 | 691 | 0.5− | 0.4+ |
| 2005 03 07 | 704 | 0.4+ | 0.1+ | 2005 04 01 | 699 | 0.9+ | 0.3− | 2006 08 29 | 691 | 0.2− | 0.3+ |
| 2005 03 07 | 704 | 0.7+ | 0.5+ | 2005 04 01 | 699 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.3− | 0.3− |
| 2005 03 07 | 704 | 1.0+ | 0.1+ | 2005 04 01 | 699 | 0.3+ | 1.0− | 2006 09 15 | 691 | 0.2+ | 0.3+ |
| 2005 03 11 | 699 | 0.3− | 0.8+ | 2005 04 02 | 644 | 0.3+ | 0.4− | 2006 09 15 | 691 | 0.0 | 0.4− |
| 2005 03 11 | 699 | 0.0 | 0.3+ | 2005 04 02 | 644 | 0.3+ | 0.3− | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2005 03 11 | 699 | 0.0 | 0.4+ | 2005 04 02 | 644 | 0.4+ | 0.4− | 2006 09 17 | 691 | 0.4+ | 0.4+ |
| 2005 03 11 | 699 | 0.3− | 1.1+ | 2005 04 05 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.3+ |
| 2005 03 13 | 703 | 0.6− | 0.1+ | 2005 04 05 | 644 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.4− | 0.1+ |
| 2005 03 13 | 703 | 0.6− | 0.4+ | 2005 04 05 | 644 | 0.6+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.5+ |
| 2005 03 13 | 703 | 0.2+ | 0.7+ | 2005 04 07 | 704 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.5+ |
| 2005 03 13 | 703 | 0.3+ | 0.6+ | 2005 04 07 | 704 | 0.7+ | 0.1+ | | | | |

**2005 EV$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.59764 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23001385 | $\omega$ | 119.38556 | | −0.65144707 | −0.75861226 | |
| $a$ | 2.6381535 | $\Omega$ | 11.28612 | | +0.67486548 | −0.58611619 | |
| $e$ | 0.1902647 | $i$ | 3.26382 | | +0.34666020 | −0.28456152 | |
| $P$ | 4.28 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 30 | 691 | 0.5+ | 0.6+ | 2005 03 07 | 704 | 0.3− | 0.6+ | 2005 03 16 | G96 | 0.1− | 0.5− |
| 2001 04 30 | 691 | 0.0 | 0.2+ | 2005 03 07 | 704 | 0.7− | 0.8+ | 2005 03 16 | G96 | 0.2+ | 0.5− |
| 2001 04 30 | 691 | 0.0 | 0.3+ | 2005 03 08 | 699 | 0.3+ | 0.6+ | 2005 03 16 | G96 | 0.1+ | 0.5− |
| 2003 10 19 | 691 | 0.4− | 0.6+ | 2005 03 08 | 699 | 0.0 | 0.1+ | 2005 03 16 | G96 | 0.1− | 0.6− |
| 2003 10 19 | 691 | 0.2− | 0.1+ | 2005 03 08 | 699 | 0.5+ | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.3− |
| 2003 10 19 | 691 | 0.1− | 0.6+ | 2005 03 08 | 699 | 0.3+ | 0.6+ | 2005 05 10 | G96 | 0.3− | 0.3− |
| 2005 02 01 | 691 | 0.1+ | 0.1+ | 2005 03 11 | 704 | 0.4− | 0.6+ | 2005 05 10 | G96 | 0.3− | 0.1− |
| 2005 02 01 | 691 | 0.1+ | 0.1− | 2005 03 11 | 704 | 0.6− | 0.7+ | 2005 05 10 | G96 | 0.6+ | 0.4− |
| 2005 02 01 | 691 | 0.1+ | 0.2+ | 2005 03 11 | 704 | 0.3− | 1.5− | | | | |
| 2005 03 07 | 704 | 0.2+ | 0.6+ | 2005 03 11 | 704 | 0.3+ | 0.1+ | | | | |

**2005 EY$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.40373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22936073 | $\omega$ | 85.54944 | | −0.61302731 | +0.78953899 | |
| $a$ | 2.6431593 | $\Omega$ | 146.58758 | | −0.74398871 | −0.56465759 | |
| $e$ | 0.0766493 | $i$ | 2.99121 | | −0.26585394 | −0.24039550 | |
| $P$ | 4.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2003 12 14 | 691 | 0.7− | 0.1− | 2005 03 14 | 704 | 1.6+ | 0.6− |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2003 12 14 | 691 | 0.0 | 0.2+ | 2005 03 14 | 704 | 0.5+ | 0.4+ |
| 2001 05 24 | 645 | 0.1− | 0.0 | 2005 03 08 | 704 | 0.6+ | 0.2− | 2005 04 11 | G96 | 0.1+ | 0.0 |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2005 03 08 | 704 | 0.5+ | 0.7+ | 2005 04 11 | G96 | 0.2− | 0.1− |
| 2002 08 18 | 644 | 0.2+ | 0.1+ | 2005 03 08 | 704 | 1.4+ | 1.2+ | 2005 04 11 | G96 | 0.4− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2005 03 10 | G96 | 0.1+ | 0.1− | 2005 04 11 | G96 | 0.6− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.7− | 0.8+ | 2005 05 11 | G96 | 0.4− | 0.1+ |
| 2003 11 23 | 691 | 0.6+ | 0.0 | 2005 03 10 | G96 | 0.9+ | 0.1− | 2005 05 11 | G96 | 0.7− | 0.4− |
| 2003 11 23 | 691 | 0.2− | 0.1− | 2005 03 10 | G96 | 0.1− | 0.1− | 2005 05 11 | G96 | 0.4− | 0.1− |
| 2003 11 23 | 691 | 0.2− | 0.4+ | 2005 03 11 | 704 | 0.8− | 0.5− | 2005 05 11 | G96 | 0.2− | 0.1− |
| 2003 12 01 | 704 | 0.2− | 0.1+ | 2005 03 11 | 704 | 0.6+ | 0.3− | 2006 06 22 | 691 | 0.0 | 0.2+ |
| 2003 12 01 | 704 | 0.4− | 0.7+ | 2005 03 11 | 704 | 1.1+ | 0.3− | 2006 06 22 | 691 | 0.2− | 0.3+ |
| 2003 12 01 | 704 | 0.7+ | 0.7+ | 2005 03 11 | 704 | 1.1− | 0.2− | 2006 06 22 | 691 | 0.1− | 0.4+ |
| 2003 12 01 | 704 | 0.9− | 0.4− | 2005 03 14 | 704 | 0.7+ | 0.6− | | | | |
| 2003 12 14 | 691 | 0.1− | 0.2+ | 2005 03 14 | 704 | 0.1− | 0.4+ | | | | |

**2005 EF$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.69824 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22800289 | $\omega$ | 121.72308 | | +0.50635581 | +0.86232205 | |
| $a$ | 2.6536429 | $\Omega$ | 178.69277 | | −0.81921636 | +0.48180691 | |
| $e$ | 0.0333876 | $i$ | 5.31863 | | −0.26923659 | +0.15576516 | |
| $P$ | 4.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 18 | 691 | 0.1+ | 0.1− | 2005 03 08 | G96 | 0.1+ | 0.0 | 2005 04 06 | G96 | 0.4− | 0.2− |
| 2001 04 18 | 691 | 0.1+ | 0.1+ | 2005 03 08 | G96 | 0.1− | 0.6+ | 2005 04 06 | G96 | 0.0 | 0.6− |
| 2001 04 18 | 691 | 0.1− | 0.5+ | 2005 03 11 | G96 | 0.4+ | 0.3+ | 2005 04 12 | 695 | 0.3+ | 0.0 |
| 2003 11 21 | 291 | 0.1+ | 0.4− | 2005 03 11 | G96 | 0.3− | 0.2+ | 2005 04 12 | 695 | 0.3+ | 0.1+ |
| 2003 11 21 | 291 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.2− | 0.0 | 2005 05 09 | G96 | 0.3− | 0.9− |
| 2003 11 21 | 291 | 0.2− | 0.5+ | 2005 03 11 | G96 | 0.4− | 0.0 | 2005 05 09 | G96 | 0.4− | 0.2− |
| 2005 03 08 | G96 | 0.6+ | 0.0 | 2005 04 06 | G96 | 0.6+ | 0.4+ | 2005 05 09 | G96 | 0.3− | 0.0 |
| 2005 03 08 | G96 | 0.0 | 0.3− | 2005 04 06 | G96 | 0.2− | 0.4− | 2005 05 09 | G96 | 0.1− | 0.6− |

**2005 EP$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.37827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23866609 | $\omega$ | 200.43419 | | +0.93118497 | −0.36454585 | |
| $a$ | 2.5740021 | $\Omega$ | 180.94698 | | +0.34184229 | +0.87407842 | |
| $e$ | 0.0612910 | $i$ | 3.24857 | | +0.12664281 | +0.32108135 | |
| $P$ | 4.13 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 691 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.2+ | 0.1− | 2005 04 04 | G96 | 0.0 | 0.2− |
| 2001 03 20 | 691 | 0.1+ | 0.1− | 2005 03 11 | G96 | 0.3− | 0.0 | 2005 05 06 | G96 | 0.5− | 0.4+ |
| 2001 03 20 | 691 | 0.2− | 0.0 | 2005 03 11 | G96 | 0.1+ | 0.1− | 2005 05 06 | G96 | 0.0 | 0.3+ |
| 2002 08 06 | 644 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.0 | 0.2− | 2005 05 06 | G96 | 0.6+ | 0.3+ |
| 2002 08 06 | 644 | 0.1− | 0.2− | 2005 03 17 | 691 | 0.3+ | 0.2+ | 2005 05 06 | G96 | 0.2− | 0.6+ |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2005 03 17 | 691 | 0.2+ | 0.2+ | 2005 05 12 | G96 | 0.4− | 0.2− |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2005 03 17 | 691 | 0.4+ | 0.2+ | 2005 05 12 | G96 | 0.2+ | 0.2+ |
| 2005 03 08 | G96 | 0.3− | 0.1− | 2005 04 04 | G96 | 1.7− | 0.3− | 2005 05 12 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.1− | 0.3− | 2005 04 04 | G96 | 0.4− | 1.1− | 2005 05 12 | G96 | 0.0 | 0.4− |
| 2005 03 08 | G96 | 0.3− | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.0 | | | | |

**2005 EH$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.08033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36914270 | $\omega$ | 142.94705 | | −0.33449361 | −0.92587978 | |
| $a$ | 1.9245973 | $\Omega$ | 325.57266 | | +0.77292240 | −0.16288174 | |
| $e$ | 0.0780422 | $i$ | 18.10296 | | +0.53917065 | −0.34090492 | |
| $P$ | 2.67 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 03 | 704 | 0.3− | 0.3− | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 09 14 | 691 | 0.0 | 0.0 |
| 2005 02 03 | 704 | 1.5+ | 1.2− | 2005 03 11 | G96 | 0.6− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.0 |
| 2005 02 03 | 704 | 0.4+ | 0.3− | 2005 03 11 | G96 | 0.5− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2005 02 03 | 704 | 0.2+ | 0.1+ | 2005 03 13 | G96 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2005 02 14 | 704 | 0.3+ | 0.3+ | 2005 03 13 | G96 | 0.5− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2− |
| 2005 02 14 | 704 | 0.3− | 0.3− | 2005 03 13 | G96 | 0.1− | 0.2− | 2006 09 22 | 691 | 0.0 | 0.0 |
| 2005 02 14 | 704 | 0.2+ | 1.1+ | 2005 03 13 | G96 | 0.4− | 0.1− | 2006 09 22 | 691 | 0.1− | 0.1+ |
| 2005 03 09 | G96 | 0.4− | 0.1− | 2006 08 29 | 691 | 0.3+ | 0.3− | 2006 09 22 | 691 | 0.0 | 0.1− |
| 2005 03 09 | G96 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.6+ |
| 2005 03 09 | G96 | 0.2− | 0.2− | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2005 03 09 | G96 | 0.6− | 0.1− | 2006 09 14 | 691 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.2− | 0.2− |

**2005 EN$_{131}$ = 2006 JU$_{79}$ = 1998 SB$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.16708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21885745 | $\omega$ | 127.33293 | | +0.91781729 | +0.39662821 | |
| $a$ | 2.7270629 | $\Omega$ | 209.31101 | | −0.37447842 | +0.85050036 | |
| $e$ | 0.1811807 | $i$ | 2.01905 | | −0.13182311 | +0.34544926 | |
| $P$ | 4.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 1.3+ | 0.7+ | 2005 03 09 | G96 | 0.3− | 0.2− | 2006 04 19 | G96 | 0.5− | 0.3+ |
| 1998 09 26 | 704 | 0.2− | 0.6+ | 2005 03 09 | G96 | 0.3+ | 0.1+ | 2006 04 19 | G96 | 0.0 | 0.2+ |
| 1998 09 26 | 704 | 1.0+ | 0.5− | 2005 03 09 | G96 | 0.3− | 0.3− | 2006 04 19 | G96 | 1.1+ | 0.4+ |
| 1998 09 26 | 704 | 0.7− | 0.3+ | 2005 03 09 | G96 | 0.1− | 0.1− | 2006 05 03 | G96 | 0.5+ | 0.3− |
| 1998 09 26 | 704 | 0.3− | 1.8− | 2005 03 10 | G96 | 0.1+ | 0.3− | 2006 05 03 | G96 | 0.3+ | 0.3+ |
| 1998 09 27 | 704 | 1.4− | 0.3− | 2005 03 10 | G96 | 0.2− | 0.3− | 2006 05 03 | G96 | 0.0 | 0.0 |
| 1998 09 27 | 704 | 1.2+ | 1.4+ | 2005 03 10 | G96 | 0.1+ | 0.3− | 2006 05 03 | G96 | 0.3− | 0.4− |
| 1998 09 27 | 704 | 0.6− | 1.2− | 2005 03 10 | G96 | 0.1+ | 0.1+ | 2006 05 03 | G96 | 0.1+ | 0.1+ |
| 1998 09 27 | 704 | (2.3− | 0.1−) | 2005 03 11 | G96 | 0.3+ | 0.5− | 2006 05 03 | G96 | 0.0 | 0.1+ |
| 2003 11 20 | 695 | 0.1− | 0.1− | 2005 03 11 | G96 | 0.3+ | 0.2+ | 2006 05 03 | G96 | 0.1− | 0.1+ |
| 2003 11 20 | 695 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.0 | 0.4− | 2006 05 03 | G96 | 0.2− | 0.1+ |
| 2003 12 14 | 691 | 0.2− | 0.0 | 2005 03 11 | G96 | 0.2+ | 0.4− | 2006 05 22 | G96 | 0.1− | 0.5+ |
| 2003 12 14 | 691 | 0.6− | 0.0 | 2005 03 11 | G96 | 0.2− | 0.2− | 2006 05 22 | G96 | 0.1− | 0.1− |
| 2003 12 14 | 691 | 0.3− | 0.0 | 2005 03 11 | G96 | 0.7− | 0.0 | 2006 05 22 | G96 | 0.3+ | 0.1+ |
| 2003 12 22 | 291 | 0.5+ | 0.5+ | 2005 03 11 | G96 | 0.0 | 0.3+ | 2006 05 22 | G96 | 0.4− | 0.1+ |
| 2003 12 22 | 291 | 0.8+ | 0.3+ | 2005 03 11 | G96 | 0.4− | 0.1− | | | | |
| 2003 12 22 | 291 | 0.3− | 0.2− | 2006 04 19 | G96 | 0.0 | 0.8+ | | | | |

**2005 EU$_{133}$ = 2006 RP$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.21024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27897347 | $\omega$ | 14.41955 | | −0.71967932 | +0.69218761 | |
| $a$ | 2.3196766 | $\Omega$ | 209.61368 | | −0.64738600 | −0.69720782 | |
| $e$ | 0.0649176 | $i$ | 6.29744 | | −0.25090446 | −0.18648742 | |
| $P$ | 3.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.2+ | 0.2− | 2005 03 13 | 703 | 0.3− | 1.3+ | 2006 08 29 | 703 | 0.7− | 0.3− |
| 2003 11 19 | 691 | 0.3− | 0.1+ | 2005 03 13 | 703 | 0.1− | 0.4+ | 2006 08 29 | 703 | 0.7− | 0.2− |
| 2003 11 19 | 691 | 0.2+ | 0.1+ | 2005 03 17 | 703 | 0.5− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.1− |
| 2005 03 09 | 704 | 0.5+ | 0.5+ | 2005 03 17 | 703 | 0.1+ | 0.8− | 2006 09 15 | 691 | 0.1− | 0.3− |
| 2005 03 09 | 704 | 1.1+ | 0.2− | 2005 03 17 | 703 | 0.4− | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 2005 03 09 | 704 | 1.2+ | 0.6− | 2005 03 17 | 703 | 0.5− | 0.6− | 2006 09 17 | 691 | 0.3+ | 0.0 |
| 2005 03 10 | 699 | 0.0 | 1.3− | 2006 08 29 | 703 | 0.8+ | 0.4+ | 2006 09 17 | 691 | 0.5− | 0.4− |
| 2005 03 10 | 699 | (2.0+ | 0.5+) | 2006 08 29 | 703 | 0.0 | 0.6− | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2005 03 10 | 699 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.3+ | 0.7− | 2006 09 27 | 691 | 0.4+ | 0.5+ |
| 2005 03 10 | 699 | 0.2− | 0.4− | 2006 08 29 | 703 | (1.6+ | 1.1−) | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2005 03 13 | 703 | 0.3− | 0.5+ | 2006 08 29 | 703 | 0.3− | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2005 03 13 | 703 | 0.6− | 0.2+ | 2006 08 29 | 703 | 0.7− | 0.7− | | | | |

**2005 EX$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.68748 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26647525 | $\omega$ | 145.14013 | | −0.12551995 | +0.99070685 | |
| $a$ | 2.3916528 | $\Omega$ | 117.59792 | | −0.92313819 | −0.09728976 | |
| $e$ | 0.1650624 | $i$ | 3.38907 | | −0.36340146 | −0.09505074 | |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | 0.1+ | 0.0 | 2002 07 14 | 644 | 0.3+ | 0.0 | 2005 03 11 | G96 | 0.2− | 0.3− |
| 1998 04 27 | 691 | 0.1− | 0.0 | 2002 07 14 | 644 | 0.1+ | 0.4+ | 2005 03 11 | G96 | 0.0 | 0.2− |
| 1998 04 27 | 691 | 0.0 | 0.0 | 2002 07 14 | 704 | 1.1+ | 1.1− | 2005 04 04 | 691 | 0.0 | 0.1− |
| 2002 06 16 | 644 | 0.2+ | 0.6+ | 2002 07 14 | 704 | 0.9+ | 0.6+ | 2005 04 04 | 691 | 0.1+ | 0.1+ |
| 2002 06 16 | 644 | 0.2− | 0.1+ | 2002 07 14 | 704 | 1.1+ | 0.4− | 2005 04 04 | 691 | 0.1+ | 0.3− |
| 2002 06 16 | 644 | 0.5+ | 0.1+ | 2005 03 09 | 704 | 0.0 | 0.5− | 2005 04 15 | 691 | 0.3− | 0.4+ |
| 2002 07 05 | 291 | 0.4− | 0.0 | 2005 03 09 | 704 | 0.1+ | 0.0 | 2005 04 15 | 691 | 0.1− | 0.3+ |
| 2002 07 05 | 291 | 0.3− | 0.1− | 2005 03 09 | 704 | 1.9− | 0.2− | 2005 04 15 | 691 | 0.7+ | 0.0 |
| 2002 07 05 | 291 | 0.3− | 0.2− | 2005 03 11 | G96 | 0.0 | 0.1− | | | | |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.2+ | 0.1− | | | | |

**2005 EJ$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.05921 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28084760 | $\omega$ | 265.17238 | | −0.46703698 | −0.88249363 | |
| $a$ | 2.3093454 | $\Omega$ | 212.85376 | | +0.84641874 | −0.42801637 | |
| $e$ | 0.1686376 | $i$ | 5.87305 | | +0.25583545 | −0.19495377 | |
| $P$ | 3.51 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 691 | 0.3− | 0.1+ | 2005 03 09 | 691 | 0.0 | 0.1+ | 2005 03 10 | 691 | 0.1+ | 0.2+ |
| 2003 09 20 | 691 | 0.1− | 0.0 | 2005 03 09 | 691 | 0.1+ | 0.1+ | 2005 03 10 | 691 | 0.1+ | 0.0 |
| 2003 09 20 | 691 | 0.1− | 0.2+ | 2005 03 09 | 699 | 1.1+ | 1.2− | 2005 03 10 | 691 | 0.3+ | 0.6+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2005 03 09 | 691 | 0.0 | 0.2− | 2005 03 10 | 691 | 0.1+ | 0.1− |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2005 03 09 | 699 | 0.5+ | 0.5+ | 2005 03 11 | 691 | 0.1+ | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 03 09 | 691 | 0.5− | 0.1− | 2005 03 11 | 691 | 0.0 | 0.0 |
| 2003 09 28 | 645 | 0.2+ | 0.1+ | 2005 03 09 | 691 | 0.1+ | 0.0 | 2005 03 11 | 691 | 0.0 | 0.1+ |
| 2005 03 09 | 691 | 0.0 | 0.1+ | 2005 03 09 | 699 | 1.1− | 0.4+ | 2005 03 13 | 703 | 0.5+ | 0.0 |
| 2005 03 09 | 691 | 0.0 | 0.1− | 2005 03 09 | 699 | 0.4− | 0.2+ | 2005 03 13 | 703 | 0.8− | 0.5− |
| 2005 03 09 | 691 | 0.1+ | 0.2− | 2005 03 10 | 691 | 0.2+ | 0.1− | 2005 03 13 | 703 | 1.9− | 0.5− |
| 2005 03 09 | 691 | 0.0 | 0.2+ | 2005 03 10 | 691 | 0.1− | 0.1− | 2005 03 13 | 703 | 0.3− | 1.1− |

**2005 EY$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.73033 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21412001 | $\omega$ | 238.15216 | | −0.16069189 | | +0.98394885 |
| $a$ | 2.7671405 | $\Omega$ | 22.98469 | | −0.82505958 | | −0.09075514 |
| $e$ | 0.1769367 | $i$ | 11.46353 | | −0.54171469 | | −0.15364951 |
| $P$ | 4.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.4− | 0.2− | 2005 04 07 | 704 | 0.3+ | 0.6+ | 2005 04 18 | 703 | (2.0− | 1.8−) |
| 2005 03 09 | G96 | 0.2− | 0.3− | 2005 04 09 | G96 | 0.7− | 0.0 | 2005 05 04 | 691 | 0.1+ | 0.2+ |
| 2005 03 09 | G96 | 0.4− | 0.1− | 2005 04 09 | G96 | 0.6− | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.0 |
| 2005 03 09 | G96 | 0.6− | 0.2− | 2005 04 09 | G96 | 0.0 | 0.1+ | 2005 05 04 | 691 | 0.3+ | 0.0 |
| 2005 03 10 | 699 | 0.9+ | 0.0 | 2005 04 09 | G96 | 0.6− | 0.1+ | 2005 05 08 | G96 | 0.5− | 0.4− |
| 2005 03 10 | 699 | 0.7+ | 0.2− | 2005 04 09 | 704 | 0.2+ | 0.3+ | 2005 05 08 | G96 | 0.4− | 0.5− |
| 2005 03 10 | 699 | 0.6+ | 0.3+ | 2005 04 09 | 704 | 1.1+ | 1.0+ | 2005 05 08 | G96 | 0.5− | 0.5− |
| 2005 03 10 | 699 | (1.4+ | 1.7−) | 2005 04 09 | 704 | 0.2+ | 0.0 | 2005 05 08 | G96 | 0.4− | 0.5− |
| 2005 04 01 | 699 | 0.4+ | 0.7− | 2005 04 09 | 704 | 0.6+ | 0.1+ | 2006 08 19 | 644 | 0.2+ | 0.0 |
| 2005 04 01 | 699 | 0.9− | 0.6+ | 2005 04 09 | 704 | 0.4+ | 0.5+ | 2006 08 19 | 644 | 0.2− | 0.0 |
| 2005 04 01 | 699 | 0.3− | 0.6+ | 2005 04 12 | 704 | 0.0 | 0.2− | 2006 08 19 | 644 | 0.7+ | 0.1− |
| 2005 04 01 | 699 | 0.1+ | 0.3+ | 2005 04 12 | 704 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2005 04 02 | 691 | 0.2− | 0.1− | 2005 04 12 | 704 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.1− |
| 2005 04 02 | 691 | 0.3− | 0.2− | 2005 04 12 | 704 | 0.4+ | 0.2− | 2006 09 14 | 703 | (1.7+ | 0.3+) |
| 2005 04 02 | 691 | 0.3− | 0.0 | 2005 04 12 | 704 | 0.7+ | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.6+ |
| 2005 04 04 | 704 | 0.0 | 0.1+ | 2005 04 13 | 704 | 0.5+ | 0.8+ | 2006 09 20 | 703 | 1.0− | 0.3− |
| 2005 04 04 | 704 | 0.4− | 0.8− | 2005 04 13 | 704 | 0.3− | 0.5− | 2006 09 20 | 703 | 0.7− | 0.3+ |
| 2005 04 04 | 704 | 0.1− | 0.4+ | 2005 04 13 | 704 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.0 | 0.3− |
| 2005 04 04 | 704 | 0.6+ | 0.5+ | 2005 04 13 | 704 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.2− |
| 2005 04 04 | 704 | 1.4+ | 0.9− | 2005 04 13 | 704 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2005 04 07 | 704 | 0.6− | 0.3+ | 2005 04 18 | 703 | (2.3+ | 1.5+) | 2006 10 12 | 644 | 0.4+ | 0.2− |
| 2005 04 07 | 704 | 0.9− | 0.6− | 2005 04 18 | 703 | (1.7− | 0.1−) | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2005 04 07 | 704 | 0.0 | 0.4− | 2005 04 18 | 703 | (1.9− | 2.1−) | | | | |

**2005 EZ$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.72626 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21794192 | $\omega$ | 265.55198 | | +0.38115250 | | +0.92404698 |
| $a$ | 2.7346948 | $\Omega$ | 26.91188 | | −0.82045655 | | +0.35270246 |
| $e$ | 0.2413574 | $i$ | 3.71474 | | −0.42611480 | | +0.14743863 |
| $P$ | 4.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.5− | 0.2+ | 2005 05 04 | G96 | 0.4− | 0.3− | 2006 10 11 | 291 | 0.1− | 0.3+ |
| 2005 03 09 | G96 | 0.4− | 0.1+ | 2005 05 04 | G96 | 0.1− | 0.2− | 2006 10 11 | 291 | 0.2+ | 0.3+ |
| 2005 03 09 | G96 | 0.8− | 0.4+ | 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 10 11 | 291 | 0.0 | 0.3+ |
| 2005 03 09 | G96 | 0.1− | 0.1− | 2005 05 13 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2005 03 11 | 691 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2005 03 11 | 691 | 0.6+ | 0.1− | 2005 05 13 | G96 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.2+ |
| 2005 03 11 | 691 | 0.5+ | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.6+ |
| 2005 04 02 | 691 | 0.1− | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2005 04 09 | G96 | 0.3− | 0.0 | 2006 09 20 | 704 | (2.2− | 2.8+) | 2006 10 27 | G96 | 0.3− | 0.3+ |
| 2005 04 09 | G96 | 0.5− | 0.2+ | 2006 09 20 | 704 | 1.1− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2005 04 09 | G96 | 0.3− | 0.1+ | 2006 09 20 | 704 | 1.2+ | 0.8− | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2005 04 09 | G96 | 0.5− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2005 04 11 | 699 | (1.8+ | 2.5+) | 2006 09 26 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2005 04 11 | 699 | 0.1+ | 1.0+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2005 04 11 | 699 | 1.1+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2005 04 11 | 699 | 1.3+ | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2005 05 04 | G96 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2+ | | | | |

**2005 EL$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.24479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21776208 | $\omega$ | 182.68370 | | −0.57609631 | | +0.81605220 |
| $a$ | 2.7362002 | $\Omega$ | 52.14438 | | −0.74882956 | | −0.50406557 |
| $e$ | 0.0299831 | $i$ | 3.38381 | | −0.32766956 | | −0.28280154 |
| $P$ | 4.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 691 | 0.0 | 0.1+ | 2005 03 09 | G96 | 1.2− | 0.1− | 2005 04 11 | 691 | 0.0 | 0.1+ |
| 1998 11 24 | 691 | 0.0 | 0.0 | 2005 03 11 | 691 | 0.0 | 0.4− | 2005 05 08 | 691 | 0.2− | 0.3+ |
| 1998 11 24 | 691 | 0.1− | 0.2+ | 2005 03 11 | 691 | 0.1+ | 0.3+ | 2005 05 08 | 691 | 0.3+ | 0.1+ |
| 2002 10 04 | 644 | 0.4− | 0.2+ | 2005 03 11 | 691 | 0.0 | 0.3+ | 2005 05 08 | 691 | 0.4+ | 0.5+ |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2005 04 01 | 691 | 0.1+ | 0.0 | 2005 05 10 | G96 | 0.2− | 0.1− |
| 2002 10 04 | 644 | 0.2− | 0.6+ | 2005 04 01 | 691 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.6− | 0.1+ |
| 2005 03 09 | G96 | 0.4− | 0.6− | 2005 04 01 | 691 | 0.1+ | 0.6− | 2005 05 10 | G96 | 0.1− | 0.1+ |
| 2005 03 09 | G96 | 0.1− | 0.2− | 2005 04 11 | 691 | 0.0 | 0.0 | 2005 05 10 | G96 | 0.8− | 0.1+ |
| 2005 03 09 | G96 | 0.6+ | 0.4+ | 2005 04 11 | 691 | 0.1+ | 0.0 | | | | |

**2005 EM$_{141}$ = 2005 FX**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.97871 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22361732 | $\omega$ | 282.72656 | | +0.71544447 | | −0.69778011 |
| $a$ | 2.6882259 | $\Omega$ | 121.53546 | | +0.65599201 | | +0.65352674 |
| $e$ | 0.1030488 | $i$ | 2.36990 | | +0.24044478 | | +0.29326732 |
| $P$ | 4.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1− | 2005 01 17 | 691 | 0.7+ | 0.7+ | 2005 03 16 | G96 | 0.2− | 0.2− |
| 2001 04 16 | 645 | 0.1− | 0.1− | 2005 01 17 | 691 | 0.2+ | 0.3− | 2005 03 16 | G96 | 0.4− | 0.1− |
| 2003 09 21 | 691 | 0.1− | 0.2+ | 2005 01 17 | 691 | 0.7+ | 0.5+ | 2005 03 17 | G96 | 0.2− | 0.4+ |
| 2003 09 21 | 691 | 0.3− | 0.2+ | 2005 03 10 | G96 | 0.6− | 0.3+ | 2005 03 17 | G96 | 0.4− | 0.3− |
| 2003 09 21 | 691 | 0.2− | 0.3+ | 2005 03 10 | G96 | 0.1− | 0.6+ | 2005 03 17 | G96 | 0.6− | 0.1+ |
| 2003 09 28 | 704 | 0.1− | 0.0 | 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 03 17 | G96 | 0.1+ | 0.3+ |
| 2003 09 28 | 704 | 1.8+ | 0.7+ | 2005 03 10 | G96 | 0.5− | 0.1+ | 2006 04 24 | 691 | 0.2+ | 0.4+ |
| 2003 09 28 | 704 | 1.8+ | 0.5+ | 2005 03 11 | G96 | 0.5− | 0.2− | 2006 04 24 | 691 | 0.5− | 0.4+ |
| 2003 09 28 | 704 | 0.0 | 0.5+ | 2005 03 11 | G96 | 0.8− | 0.2+ | 2006 04 24 | 691 | 0.0 | 0.2− |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.6− | 0.3+ | 2006 05 21 | 691 | 0.6+ | 1.0+ |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.2− | 0.4+ | 2006 05 21 | 691 | 0.0 | 0.0 |
| 2003 10 22 | 645 | 0.0 | 0.0 | 2005 03 16 | G96 | 0.0 | 0.0 | 2006 05 21 | 691 | 0.3+ | 0.1+ |
| 2003 10 22 | 645 | 0.1− | 0.0 | 2005 03 16 | G96 | 0.3+ | 0.4+ | | | | |

**2005 EB$_{142}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.02136 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19626561 | $\omega$ | 80.11699 | | +0.89099469 | | −0.43854898 |
| $a$ | 2.9325128 | $\Omega$ | 305.80077 | | +0.33867114 | | +0.81434235 |
| $e$ | 0.0367265 | $i$ | 8.32901 | | +0.30237447 | | +0.38015961 |
| $P$ | 5.02 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.2− | 0.1− | 2003 12 17 | 704 | 0.4+ | 0.1+ | 2005 03 10 | 703 | 0.6+ | 0.3+ |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2003 12 17 | 704 | 0.6+ | 0.1+ | 2005 03 10 | 703 | 0.9+ | 1.4+ |
| 2002 08 28 | 644 | 0.0 | 0.2+ | 2003 12 17 | 704 | 0.2+ | 0.8− | 2005 03 10 | 703 | 0.8+ | 1.1+ |
| 2002 09 06 | 704 | 0.1− | 0.6+ | 2003 12 17 | 704 | 0.4+ | 0.3+ | 2005 03 10 | 703 | 0.5− | 0.3− |
| 2002 09 06 | 704 | 0.5− | 0.1− | 2003 12 23 | 704 | 0.7− | 1.0+ | 2005 03 11 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.1+ | 0.1+ | 2003 12 23 | 704 | 0.4+ | 0.0 | 2005 03 11 | G96 | 0.4+ | 0.0 |
| 2002 09 06 | 704 | 0.6+ | 0.5+ | 2003 12 23 | 704 | 0.9− | 0.0 | 2005 03 11 | G96 | 0.4+ | 0.2− |
| 2002 09 13 | 644 | 0.5− | 0.2+ | 2003 12 23 | 704 | 0.2− | 0.6+ | 2005 03 11 | G96 | 0.0 | 0.1− |
| 2002 09 13 | 644 | 0.4− | 0.9+ | 2003 12 23 | 704 | 0.3− | 0.1− | 2005 03 12 | G96 | 0.3+ | 0.2− |
| 2002 09 13 | 644 | 0.5− | 0.7+ | 2005 03 04 | 703 | 0.7− | 1.9+ | 2005 03 12 | G96 | 0.4+ | 0.2− |
| 2003 12 03 | 704 | 1.5+ | 0.0 | 2005 03 04 | 703 | 0.5− | 0.2− | 2005 03 12 | G96 | 0.2+ | 0.2− |
| 2003 12 03 | 704 | 0.1− | 0.4− | 2005 03 04 | 703 | 0.6− | 0.1+ | 2005 03 12 | G96 | 0.2+ | 0.3+ |
| 2003 12 03 | 704 | 1.4− | 0.7− | 2005 03 04 | 703 | 0.4− | 0.5− | | | | |

**2005 EX$_{143}$ = 2006 QF$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.94800 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25475921 | $\omega$ | 234.13048 | | −0.24819201 | | +0.96857362 |
| $a$ | 2.4644279 | $\Omega$ | 21.51635 | | −0.87382937 | | −0.21658558 |
| $e$ | 0.1775657 | $i$ | 2.54810 | | −0.41811835 | | −0.12229405 |
| $P$ | 3.87 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.2− | 0.3− | 2005 04 04 | G96 | 0.5− | 0.2− | 2006 08 27 | 691 | 0.3− | 0.3− |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2005 04 04 | G96 | 0.4− | 0.0 | 2006 08 27 | 691 | 0.3− | 0.1+ |
| 2005 03 10 | G96 | 0.5− | 0.3− | 2005 04 04 | G96 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.2+ |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2005 04 04 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.1+ |
| 2005 03 11 | 691 | 0.2+ | 0.0 | 2006 08 21 | 807 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2005 03 11 | 691 | 0.4+ | 0.0 | 2006 08 21 | 807 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | | | | |

**2005 EW$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.70121 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27673994 | $\omega$ | 191.52944 | | −0.89830130 | | +0.43886071 |
| $a$ | 2.3321411 | $\Omega$ | 14.55857 | | −0.39606771 | | −0.78775108 |
| $e$ | 0.1665406 | $i$ | 4.87352 | | −0.19022394 | | −0.43226093 |
| $P$ | 3.56 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.2− | 0.2− | 2005 03 12 | 691 | 0.0 | 0.1+ | 2005 04 05 | G96 | 0.4+ | 0.6− |
| 2005 03 10 | G96 | 0.5− | 0.2− | 2005 03 12 | 691 | 0.0 | 0.0 | 2005 04 05 | G96 | 0.3− | 0.1− |
| 2005 03 10 | G96 | 0.3− | 0.3− | 2005 03 12 | 691 | 0.0 | 0.0 | 2005 04 05 | G96 | 0.1+ | 0.1+ |
| 2005 03 10 | G96 | 0.4− | 0.2− | 2005 04 04 | G96 | 0.2+ | 0.3+ | 2005 04 05 | G96 | 0.1+ | 0.2− |
| 2005 03 10 | G96 | 0.5− | 0.2− | 2005 04 04 | G96 | 0.2+ | 0.1− | 2005 05 08 | G96 | 0.1+ | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.3− | 2005 04 04 | G96 | 0.3− | 0.3− | 2005 05 08 | G96 | 0.4− | 0.2+ |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.1+ | 2005 05 08 | G96 | 0.4− | 0.2+ |
| 2005 03 10 | G96 | 0.2− | 0.3− | 2005 04 04 | G96 | 0.2− | 0.1+ | 2005 05 08 | G96 | 0.4+ | 0.0 |
| 2005 03 11 | 691 | 0.1+ | 0.0 | 2005 04 04 | G96 | 0.2+ | 0.0 | 2006 10 19 | 695 | 0.4− | 0.3+ |
| 2005 03 11 | 691 | 0.2+ | 0.3+ | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 10 20 | 695 | 0.4− | 0.3+ |
| 2005 03 11 | 691 | 0.5+ | 0.3+ | 2005 04 04 | G96 | 0.0 | 0.0 | 2006 10 20 | 695 | 0.3+ | 0.3+ |

**2005 EE$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.30235 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26058563 | $\omega$ | 91.07557 | | −0.10548624 | | +0.99413831 |
| $a$ | 2.4275550 | $\Omega$ | 172.74006 | | −0.97058330 | | −0.09774138 |
| $e$ | 0.1760007 | $i$ | 10.80931 | | −0.21642714 | | −0.04621306 |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 03 17 | 703 | 1.5− | 0.5+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 03 10 | G96 | 0.1+ | 0.1+ | 2005 03 17 | 703 | 1.2− | 0.9− |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2005 03 11 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2005 03 11 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.3+ |
| 2002 09 14 | 644 | 0.1+ | 0.5+ | 2005 03 11 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1− |
| 2005 03 01 | 691 | 0.2+ | 0.3− | 2005 03 16 | 691 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2005 03 01 | 691 | 0.3+ | 0.3− | 2005 03 16 | 691 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.5+ |
| 2005 03 01 | 691 | 0.3+ | 0.1− | 2005 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 03 17 | 703 | (2.3− | 1.4+) | | | | |
| 2005 03 10 | G96 | 0.3− | 0.1− | 2005 03 17 | 703 | 0.4− | 0.4− | | | | |

**2005 EJ$_{146}$ = 2006 QS$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.56821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26316318 | $\omega$ | 317.17218 | | +0.79984977 | | +0.59956633 |
| $a$ | 2.4116779 | $\Omega$ | 6.17745 | | −0.45766116 | | +0.63898008 |
| $e$ | 0.1920938 | $i$ | 14.84980 | | −0.38831252 | | +0.48189695 |
| $P$ | 3.75 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 03 | 645 | 0.1− | 0.0 | 2005 04 05 | G96 | 0.5+ | 0.2− | 2006 09 20 | 644 | 0.4− | 0.0 |
| 2003 11 03 | 645 | 0.1+ | 0.0 | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.3− | 0.1− |
| 2005 03 10 | G96 | 0.3− | 0.2+ | 2005 04 05 | G96 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.3− | 0.8+ |
| 2005 03 10 | G96 | 0.6− | 0.2− | 2006 07 31 | E12 | 1.2+ | 0.6+ | 2006 09 21 | 699 | 0.0 | 0.3+ |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 07 31 | E12 | 0.6+ | 0.3− | 2006 09 21 | 699 | 0.7− | 0.8+ |
| 2005 03 10 | G96 | 0.5− | 0.0 | 2006 07 31 | E12 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.4− | 0.1− |
| 2005 03 11 | 691 | 0.5+ | 0.3+ | 2006 07 31 | E12 | 1.4− | 0.6− | 2006 09 22 | 704 | 0.1+ | 0.9+ |
| 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.1+ | 0.3+ |
| 2005 03 11 | 691 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.3+ | 0.3− | 2006 09 22 | 704 | (0.5− | 2.0+) |
| 2005 03 12 | 691 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.4+ | 0.0 | 2006 09 22 | 704 | 0.3+ | 0.7+ |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | (0.8+ | 2.0+) |
| 2005 03 12 | 691 | 0.4+ | 0.4+ | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | (1.6− | 1.5+) |
| 2005 04 02 | G96 | 0.3− | 0.1− | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | (1.8− | 0.6+) |
| 2005 04 02 | G96 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.8− | 1.1− | 2006 09 26 | 704 | 0.9+ | 0.9+ |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2006 08 30 | 699 | 0.4− | 0.9+ | 2006 09 26 | 704 | 1.2+ | 0.7+ |
| 2005 04 02 | G96 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.3− | 0.5+ | 2006 09 30 | 703 | 1.1+ | 1.4+ |
| 2005 04 02 | G96 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.8− |
| 2005 04 02 | G96 | 0.3− | 0.3− | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1− |
| 2005 04 02 | G96 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2005 04 02 | G96 | 0.3− | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | G96 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2005 04 02 | G96 | 0.4− | 0.4− | 2006 09 14 | 703 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.1+ |
| 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.4+ |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 14 | 703 | 1.1− | 1.4− | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2005 04 04 | G96 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.4+ |
| 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.8− | 0.6+ | | | | |
| 2005 04 05 | G96 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.8− | 0.1− | | | | |

**2005 EY$_{146}$ = 2006 SP$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.55576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25674754 | $\omega$ | 234.68106 | | −0.39522052 | | +0.91806968 |
| $a$ | 2.4516879 | $\Omega$ | 12.15445 | | −0.78815693 | | −0.32168935 |
| $e$ | 0.1887231 | $i$ | 8.41242 | | −0.47181499 | | −0.23165497 |
| $P$ | 3.84 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.1− | 0.2+ | 2005 04 10 | 695 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2005 03 10 | G96 | 0.2− | 0.4+ | 2005 05 14 | G96 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2005 03 10 | G96 | 0.4− | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2005 03 10 | G96 | 0.3− | 0.4+ | 2005 05 14 | G96 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2005 03 11 | 691 | 0.2+ | 0.2+ | 2005 05 14 | G96 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2005 03 11 | 691 | 0.3+ | 0.3− | 2006 09 19 | 691 | 0.6− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2005 03 11 | 691 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2005 03 13 | 703 | (1.8− | 1.0+) | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.6− |
| 2005 03 13 | 703 | 0.3− | 0.5+ | 2006 09 23 | 691 | 0.9+ | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.2+ |
| 2005 03 13 | 703 | 0.3+ | 0.9+ | 2006 09 23 | 691 | 0.1− | 0.7+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2005 03 13 | 703 | (1.5− | 1.7+) | 2006 09 23 | 691 | 0.1− | 0.2+ | | | | |
| 2005 04 10 | 695 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.3− | | | | |

**2005 EE$_{147}$ = 2006 TP$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.26030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29601313 | $\omega$ | 337.16882 | | +0.94705234 | +0.32100184 | |
| $a$ | 2.2297803 | $\Omega$ | 4.12695 | | −0.27739800 | +0.82906755 | |
| $e$ | 0.1755901 | $i$ | 5.62034 | | −0.16168551 | +0.45782619 | |
| $P$ | 3.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.9− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2005 03 10 | G96 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2005 03 10 | G96 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2005 03 10 | G96 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2005 03 11 | G96 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 2005 03 11 | G96 | 0.3− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2005 03 11 | G96 | 0.7− | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.4− |
| 2005 03 11 | G96 | 0.8− | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.7+ | 0.9+ |
| 2005 03 13 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.8− | 0.6+ | 2006 11 16 | 704 | 0.5− | 0.7− |
| 2005 03 13 | 691 | 0.5+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2005 03 13 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.6+ | 0.3− |
| 2005 03 17 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2005 03 17 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.5− |
| 2005 03 17 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.5− | 2006 11 19 | 704 | (0.4− | 2.1+) |
| 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 10 27 | 703 | 0.7+ | 0.5− | 2006 11 19 | 704 | 0.3− | 0.7− |
| 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 10 27 | 703 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 1.2+ |
| 2006 10 02 | G96 | 0.2− | 0.5− | 2006 10 27 | 703 | 0.3+ | 1.0− | 2006 11 19 | 704 | (0.4− | 2.0+) |
| 2006 10 02 | G96 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.9− | 0.5+ |
| 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 1.2− | 0.8− |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2006 10 13 | 691 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.7+ |
| 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.5− | 0.3+ |

**2005 EX$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.87168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27370264 | $\omega$ | 144.53190 | | −0.23420789 | +0.97155386 | |
| $a$ | 2.3493626 | $\Omega$ | 111.90050 | | −0.90046034 | −0.20318915 | |
| $e$ | 0.1561201 | $i$ | 2.16605 | | −0.36649398 | −0.12164404 | |
| $P$ | 3.60 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 691 | 0.1− | 0.1+ | 2005 04 10 | G96 | 0.1− | 0.7− | 2006 09 18 | 691 | 0.0 | 0.2− |
| 2005 03 10 | 691 | 0.5− | 0.3+ | 2005 04 10 | G96 | 0.0 | 0.7− | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2005 03 10 | 691 | 0.2+ | 0.1+ | 2005 04 10 | G96 | 0.1+ | 0.7− | 2006 10 02 | 691 | 0.2+ | 0.4− |
| 2005 03 11 | 691 | 0.1+ | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.8+ |
| 2005 03 11 | 691 | 0.3+ | 0.1− | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.1− |
| 2005 03 11 | 691 | 0.1+ | 0.1− | 2005 04 30 | 691 | 0.1− | 0.3+ | | | | |
| 2005 04 10 | G96 | 0.1− | 0.9− | 2006 09 18 | 691 | 0.3+ | 0.2− | | | | |

**2005 EC$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.78906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18332585 | $\omega$ | 213.15649 | | −0.50761944 | +0.85836239 | |
| $a$ | 3.0689295 | $\Omega$ | 26.56458 | | −0.74986636 | −0.39762002 | |
| $e$ | 0.0491504 | $i$ | 9.57762 | | −0.42429111 | −0.32421032 | |
| $P$ | 5.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 644 | 0.6− | 0.9+ | 2005 03 11 | 691 | 0.6+ | 0.1− | 2005 04 30 | 691 | 0.2+ | 0.1− |
| 2002 10 28 | 644 | 0.4− | 0.8+ | 2005 03 11 | 691 | 0.1+ | 0.2− | 2005 04 30 | 691 | 0.1+ | 0.1− |
| 2002 10 28 | 644 | 0.3− | 0.7+ | 2005 04 04 | 703 | 0.0 | 0.5+ | 2005 04 30 | 691 | 0.1+ | 0.0 |
| 2003 12 27 | 691 | 0.1+ | 0.2− | 2005 04 04 | 703 | 0.1− | 0.2+ | 2005 05 09 | G96 | 0.1+ | 0.7− |
| 2003 12 27 | 691 | 0.3− | 0.1− | 2005 04 04 | 703 | 0.4− | 0.6+ | 2005 05 09 | G96 | 0.0 | 0.7− |
| 2003 12 27 | 691 | 0.2+ | 0.2+ | 2005 04 04 | 703 | 0.1+ | 0.0 | 2005 05 09 | G96 | 0.2+ | 0.2− |
| 2005 03 10 | 691 | 0.1− | 0.1+ | 2005 04 10 | G96 | 0.5− | 0.1+ | 2005 05 09 | G96 | 0.0 | 0.4− |
| 2005 03 10 | 691 | 0.1− | 0.1− | 2005 04 10 | G96 | 0.5− | 0.0 | 2005 05 10 | 691 | 1.0− | 0.5+ |
| 2005 03 10 | 691 | 0.0 | 0.1− | 2005 04 10 | G96 | 0.5− | 0.2− | 2005 05 10 | 691 | 0.9+ | 1.0+ |
| 2005 03 11 | 691 | 0.1+ | 0.0 | 2005 04 10 | G96 | 1.9− | 0.7− | 2005 05 10 | 691 | 0.4+ | 0.1+ |

**2005 EK$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.84726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26011748 | $\omega$ | 161.59744 | | +0.25010386 | +0.96683149 | |
| $a$ | 2.4304668 | $\Omega$ | 122.85633 | | −0.89588981 | +0.25138470 | |
| $e$ | 0.2200534 | $i$ | 3.53646 | | −0.36719137 | +0.04519522 | |
| $P$ | 3.79 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 691 | 0.1+ | 0.0 | 2005 04 04 | 703 | 0.3+ | 0.6− | 2006 09 30 | 703 | 0.2− | 0.2− |
| 2005 03 10 | 691 | 0.0 | 0.1+ | 2005 04 04 | 703 | 1.3− | 0.4+ | 2006 09 30 | 703 | 0.2− | 1.6+ |
| 2005 03 10 | 691 | 0.0 | 0.2− | 2005 04 09 | 683 | 1.7+ | 1.6− | 2006 09 30 | 703 | 0.1− | 0.6+ |
| 2005 03 11 | 691 | 0.4+ | 0.0 | 2005 04 09 | 683 | (2.9+ | 1.5−) | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2005 03 11 | 691 | 0.2+ | 0.2+ | 2005 04 09 | 683 | (0.2+ | 2.7+) | 2006 10 02 | G96 | 0.2+ | 0.2+ |
| 2005 03 11 | 691 | 0.0 | 0.1+ | 2005 05 10 | 691 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2005 04 04 | 703 | 0.3− | 1.0− | 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2005 04 04 | 703 | 0.9− | 0.6− | 2005 05 10 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− |

**2005 ER$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.53733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29053160 | $\omega$ | 256.21246 | | +0.29931516 | +0.95196789 | |
| $a$ | 2.2577393 | $\Omega$ | 31.43805 | | −0.82062933 | +0.29135796 | |
| $e$ | 0.1691617 | $i$ | 7.10988 | | −0.48680379 | +0.09416839 | |
| $P$ | 3.39 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 691 | 0.1− | 0.0 | 2005 05 09 | G96 | 0.2− | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2005 03 10 | 691 | 0.0 | 0.2+ | 2005 05 09 | G96 | 0.4− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2005 03 10 | 691 | 0.4− | 0.3+ | 2005 05 09 | G96 | 0.4− | 0.3− | 2006 10 12 | 691 | 0.4− | 0.3+ |
| 2005 03 11 | 691 | 0.4+ | 0.2− | 2005 05 12 | G96 | 0.1− | 0.5− | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2005 03 11 | 691 | 0.3+ | 0.2− | 2005 05 12 | G96 | 1.0− | 0.5− | 2006 10 16 | 691 | 0.5− | 0.2+ |
| 2005 03 11 | 691 | 0.0 | 0.1− | 2005 05 12 | G96 | 0.6− | 0.3+ | 2006 10 16 | 691 | 0.4− | 0.1− |
| 2005 04 05 | 699 | 0.0 | 1.1− | 2005 05 12 | G96 | 0.5+ | 0.7+ | 2006 10 16 | 691 | 0.4− | 0.0 |
| 2005 04 05 | 699 | 0.7− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.3− |
| 2005 04 05 | 699 | (2.0− | 0.4+) | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2005 04 05 | 699 | 0.1+ | 1.1+ | 2006 09 25 | G96 | 0.5+ | 1.2− | 2006 10 28 | 691 | 0.0 | 0.3− |
| 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 04 30 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.6+ | 0.5− | 2006 11 01 | 691 | 0.5+ | 0.6+ |
| 2005 04 30 | 691 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2005 05 09 | G96 | 0.3− | 0.5− | 2006 10 04 | G96 | 0.1+ | 0.7− | | | | |

**2005 EE$_{149}$ = 2006 QQ$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.64456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21993684 | $\omega$ | 158.83124 | | +0.48762065 | +0.87128633 | |
| $a$ | 2.7181331 | $\Omega$ | 140.29573 | | −0.81298614 | +0.47634519 | |
| $e$ | 0.2208276 | $i$ | 4.98889 | | −0.31824462 | +0.11813293 | |
| $P$ | 4.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.7− | 0.6− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.1+ |
| 2001 06 15 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.6− |
| 2001 06 15 | 704 | 0.4+ | 1.3+ | 2006 09 14 | 703 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.9+ |
| 2004 02 13 | 291 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.4+ | 1.5− | 2006 09 29 | 704 | 0.9+ | 0.7− |
| 2004 02 13 | 291 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.7+ |
| 2004 02 13 | 291 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.7− | 1.2+ | 2006 09 30 | 703 | 0.7− | 0.9− |
| 2004 02 17 | 645 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.8− | 0.0 |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 19 | 704 | 0.0 | 1.2+ | 2006 09 30 | 703 | (1.5− | 0.0 ) |
| 2005 03 10 | 691 | 0.2− | 0.5+ | 2006 09 19 | 704 | 0.5+ | 0.4− | 2006 09 30 | 703 | 0.6− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.6+ | 2006 10 10 | 644 | 0.6− | 0.3+ | | |
| 2005 03 10 | 691 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.5+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 704 | (1.7+ | 1.1−) | 2006 10 10 | 644 | 0.1− | 0.2− | | |
| 2005 03 11 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.2+ | | |
| 2005 03 11 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.3+ | | |
| 2005 04 04 | 703 | 0.3− | 0.6− | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 2005 04 04 | 703 | (1.6− | 0.4−) | 2006 09 22 | 704 | 1.0+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2005 04 04 | 703 | 0.7− | 1.4− | 2006 09 22 | 704 | 0.6+ | 1.0+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 2005 04 04 | 703 | (2.0− | 0.8−) | 2006 09 22 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 09 22 | 704 | (2.3+ | 0.5−) | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2006 08 16 | 644 | 0.6− | 0.3+ | 2006 09 26 | 704 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.7+ | | | | | | |
| 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.4− | 0.3− | | | | | | |

### 2005 EL$_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 87.19109 | | (2000.0) | | | |
| $n$ | 0.28876160 | $\omega$ | 229.57101 | | +0.13385028 | +0.98907259 |
| $a$ | 2.2669560 | $\Omega$ | 48.23403 | | −0.88229372 | +0.14733367 |
| $e$ | 0.1476691 | $i$ | 4.75292 | | −0.45126699 | +0.00530965 |
| $P$ | 3.41 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 691 | 0.5+ | 0.1+ | 2005 05 11 | G96 | 0.6− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.4− | | |
| 2005 03 10 | 691 | 0.2+ | 0.2+ | 2005 05 11 | G96 | (2.2− | 0.1−) | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2005 03 10 | 691 | 0.5− | 0.2− | 2005 05 12 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− | | |
| 2005 03 11 | 695 | 0.0 | 0.2− | 2005 05 12 | 691 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2005 03 11 | 691 | 0.2+ | 0.2− | 2005 05 12 | 691 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.0 | | |
| 2005 03 11 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.3+ | | |
| 2005 03 11 | 691 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.4+ | 0.1+ | | |
| 2005 03 11 | 695 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− | | |
| 2005 04 01 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.7− | | |
| 2005 04 01 | 691 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.1− | | |
| 2005 04 01 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.1− | | |
| 2005 05 11 | G96 | 0.4− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.0 | | | | | | |
| 2005 05 11 | G96 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.1− | 0.1+ | | | | | | |

### 2005 ES$_{151}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.61473 | | (2000.0) | | | |
| $n$ | 0.23011826 | $\omega$ | 258.86606 | | +0.99522586 | −0.07856897 |
| $a$ | 2.6373555 | $\Omega$ | 105.62092 | | +0.09480295 | +0.91920179 |
| $e$ | 0.0787528 | $i$ | 3.44673 | | −0.02319225 | +0.38586914 |
| $P$ | 4.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 699 | (3.5− | 0.4+) | 2002 08 28 | 291 | 0.5+ | 0.6− | 2005 03 11 | 691 | 0.4− | 0.6− | | |
| 2002 08 15 | 699 | (2.2− | 0.9+) | 2002 08 28 | 291 | 0.5+ | 1.1− | 2005 03 11 | 691 | 0.6− | 0.6− | | |
| 2002 08 15 | 699 | 0.8− | 0.9+ | 2002 08 28 | 291 | 0.6+ | 0.3− | 2005 05 13 | 691 | 1.1+ | 0.5+ | | |
| 2002 08 15 | 699 | (3.3+ | 1.1+) | 2002 08 30 | 644 | 0.9+ | 1.3− | 2005 05 13 | 691 | 1.4+ | 0.9+ | | |
| 2002 08 18 | 644 | 0.5− | 0.4+ | 2002 08 30 | 644 | 1.0+ | 1.3− | 2005 05 13 | 691 | 1.4+ | 0.7+ | | |
| 2002 08 18 | 644 | 0.6− | 0.2+ | 2002 08 30 | 644 | 0.7+ | 1.2− | 2006 07 23 | 644 | 0.6+ | 1.4+ | | |
| 2002 08 18 | 644 | 0.4− | 0.6+ | 2005 03 10 | 691 | 0.8− | 0.3− | 2006 07 23 | 644 | 0.6− | 0.9− | | |
| 2002 08 28 | 291 | 0.2− | 0.9+ | 2005 03 10 | 691 | 1.0− | 0.5− | 2006 07 23 | 644 | (1.3− | 2.4−) | | |
| 2002 08 28 | 291 | 0.4− | 0.5+ | 2005 03 10 | 691 | 0.7− | 0.4− | | | | | | |
| 2002 08 28 | 291 | 0.8− | 0.2− | 2005 03 11 | 691 | 0.7− | 0.5− | | | | | | |

### 2005 EV$_{152}$ = 2006 SB$_{236}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.12868 | | (2000.0) | | | |
| $n$ | 0.22117187 | $\omega$ | 88.16331 | | −0.30573934 | +0.95149771 |
| $a$ | 2.7080050 | $\Omega$ | 163.90598 | | −0.91532718 | −0.28382211 |
| $e$ | 0.1847025 | $i$ | 7.10466 | | −0.26210608 | −0.11873129 |
| $P$ | 4.46 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 691 | 0.0 | 0.1+ | 2005 04 04 | 703 | 1.2− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.2+ | | |
| 2005 03 10 | 691 | 0.4+ | 0.2+ | 2005 04 04 | 703 | 2.0− | 1.0− | 2006 09 26 | G96 | 0.3+ | 0.5− | | |
| 2005 03 10 | 691 | 0.1+ | 0.4+ | 2005 05 13 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.1− | | |
| 2005 03 11 | 691 | 0.0 | 0.0 | 2005 05 13 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.7+ | 0.1+ | | |
| 2005 03 11 | 691 | 0.0 | 0.1− | 2005 05 13 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.4− | | |
| 2005 03 11 | 691 | 0.0 | 0.3− | 2006 08 27 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.1+ | | |
| 2005 04 04 | 703 | 0.1− | 0.4− | 2006 08 27 | 691 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.5− | 0.1+ | | |
| 2005 04 04 | 703 | 0.6− | 1.5+ | 2006 08 27 | 691 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.4− | | |

### 2005 EK$_{153}$ = 2006 UV$_{176}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.15221 | | (2000.0) | | | |
| $n$ | 0.37139617 | $\omega$ | 344.01538 | | +0.93867200 | −0.27132355 |
| $a$ | 1.9168043 | $\Omega$ | 34.14069 | | +0.34303803 | +0.67231253 |
| $e$ | 0.0270502 | $i$ | 22.28083 | | +0.03492556 | +0.68875205 |
| $P$ | 2.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 699 | 0.0 | 0.5+ | 2005 03 16 | 704 | 0.1− | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 1998 09 27 | 699 | 0.2− | 0.7− | 2006 09 26 | 703 | 0.3+ | 0.7− | 2006 10 23 | 644 | 0.3+ | 0.4+ | | |
| 1998 09 27 | 699 | 0.1+ | 0.8− | 2006 09 26 | 703 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.3+ | | |
| 1998 10 18 | 699 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.3+ | 2006 11 06 | 644 | 0.2+ | 0.2+ | | |
| 1998 10 18 | 699 | 1.0+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.5− | 2006 11 06 | 644 | 0.3− | 0.3+ | | |
| 1998 10 18 | 699 | 0.8+ | 0.8− | 2006 10 16 | 703 | 0.5− | 0.9+ | 2006 11 06 | 644 | 0.2− | 0.4+ | | |
| 2005 03 08 | 703 | 1.3− | 0.0 | 2006 10 16 | 703 | 0.6− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2005 03 08 | 703 | 0.7− | 1.0+ | 2006 10 16 | 703 | 0.6− | 0.8− | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2005 03 08 | 703 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.2+ | | |
| 2005 03 08 | 703 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.0 | | |
| 2005 03 12 | 704 | 1.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.6+ | 0.0 | | |
| 2005 03 12 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.1− | | |
| 2005 03 12 | 704 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.7− | 0.5− | 2006 11 11 | 703 | 0.8− | 0.7+ | | |
| 2005 03 12 | 704 | 0.6+ | 0.3− | 2006 10 22 | 703 | 0.9− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.3− | | |
| 2005 03 12 | 704 | 0.2− | 0.6− | 2006 10 22 | 703 | 0.4− | 0.9+ | 2006 11 13 | 691 | 0.0 | 0.1− | | |
| 2005 03 14 | 703 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.4+ | 0.1− | | |
| 2005 03 14 | 703 | 0.6− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | | |
| 2005 03 14 | 703 | 0.6− | 0.6− | 2006 10 22 | 644 | 0.4− | 0.2+ | 2006 11 17 | 703 | (0.7+ | 1.9−) | | |
| 2005 03 14 | 703 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.9− | | |
| 2005 03 16 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.6− | | |
| 2005 03 16 | 704 | 1.4+ | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.3+ | | |
| 2005 03 16 | 704 | 1.0+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ | | | | | | |

### 2005 EN$_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.26484 | | (2000.0) | | | |
| $n$ | 0.36963290 | $\omega$ | 101.79293 | | −0.68132740 | −0.69970287 |
| $a$ | 1.9228953 | $\Omega$ | 34.49452 | | +0.43082311 | −0.62074708 |
| $e$ | 0.0625380 | $i$ | 22.30723 | | +0.59176382 | −0.35367917 |
| $P$ | 2.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 703 | (1.8− | 0.6−) | 2005 03 16 | 704 | 0.5+ | 0.3+ | 2005 03 31 | 703 | 1.0− | 0.0 | | |
| 2005 03 08 | 703 | (2.0− | 0.7−) | 2005 03 16 | 704 | 0.6+ | 0.4+ | 2005 03 31 | 703 | (2.1− | 1.3−) | | |
| 2005 03 08 | 703 | 0.9− | 1.4− | 2005 03 16 | 704 | 0.5+ | 0.1− | 2005 04 01 | 703 | 0.1− | 0.5+ | | |
| 2005 03 08 | 703 | 1.0− | 1.0− | 2005 03 16 | 704 | 0.8+ | 0.3− | 2005 04 01 | 703 | 0.9− | 0.3− | | |
| 2005 03 12 | 704 | 0.3+ | 0.6− | 2005 03 16 | 704 | 0.5+ | 0.1− | 2005 04 01 | 703 | 0.3− | 0.1− | | |
| 2005 03 12 | 704 | 0.5− | 0.5− | 2005 03 16 | 704 | 0.1− | 0.6+ | 2005 04 01 | 703 | 0.6− | 0.6− | | |
| 2005 03 12 | 704 | 0.1+ | 0.7− | 2005 03 16 | 704 | 0.3− | 0.5+ | 2005 04 13 | 704 | 0.2+ | 0.4+ | | |
| 2005 03 12 | 704 | 0.4− | 0.2+ | 2005 03 17 | 704 | 0.2+ | 0.5+ | 2005 04 13 | 704 | 0.7− | 1.1+ | | |
| 2005 03 12 | 704 | 0.3+ | 0.5− | 2005 03 17 | 704 | 0.5+ | 1.2+ | 2005 04 13 | 704 | 0.2+ | 1.1− | | |
| 2005 03 13 | 704 | 0.6+ | 1.0− | 2005 03 17 | 704 | 0.3+ | 0.5+ | 2005 04 13 | 704 | 1.0− | 0.1− | | |
| 2005 03 13 | 704 | 0.2+ | 0.6− | 2005 03 17 | 704 | 0.1− | 0.7+ | 2006 09 25 | 703 | 0.2+ | 1.0+ | | |
| 2005 03 13 | 704 | 0.4− | 0.1− | 2005 03 17 | 704 | 0.6+ | 0.6+ | 2006 09 25 | 703 | 0.4+ | 0.5+ | | |
| 2005 03 16 | 704 | 0.1− | 0.4− | 2005 03 17 | 704 | 0.4+ | 0.8+ | 2006 09 25 | 703 | 1.1+ | 1.4− | | |
| 2005 03 16 | 704 | 0.3+ | 0.4− | 2005 03 17 | 704 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.4− | 1.3+ | | |
| 2005 03 16 | 704 | 0.4+ | 0.0 | 2005 03 17 | 704 | 0.4+ | 0.2− | 2006 10 21 | 703 | 0.4− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | 704 | 0.4+ | 0.4+ | 2005 03 17 | 704 | 0.6− | 0.8+ | 2006 10 21 | 703 | 0.5+ | 0.4+ | | |
| 2005 03 16 | 704 | 0.3+ | 0.1+ | 2005 03 17 | 704 | 0.4− | 0.7+ | 2006 10 21 | 703 | 0.8− | 0.0 | | |
| 2005 03 16 | 704 | 0.2+ | 0.0 | 2005 03 17 | 704 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.3+ | | |
| 2005 03 16 | 704 | 0.2+ | 0.5− | 2005 03 17 | 704 | 0.6+ | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.8− | | |
| 2005 03 16 | 704 | 0.4+ | 0.4− | 2005 03 17 | 704 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.3− | | |
| 2005 03 16 | 704 | 0.4+ | 0.1− | 2005 03 17 | 704 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.2− | | |
| 2005 03 16 | 704 | 0.3+ | 0.2+ | 2005 03 17 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.5− | | |
| 2005 03 16 | 704 | 0.5− | 0.7− | 2005 03 31 | 703 | 0.7− | 0.6− | 2006 10 23 | 644 | 0.2− | 0.3− | | |
| 2005 03 16 | 704 | 0.0 | 0.2+ | 2005 03 31 | 703 | 0.2− | 0.7− | 2006 10 23 | 644 | 0.3− | 0.2− | | |

**2005 EW**$_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.54016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36613654 | $\omega$ | 12.18194 | | +0.46273977 | −0.82857367 | |
| $a$ | 1.9351175 | $\Omega$ | 51.15889 | | +0.77559516 | +0.20621485 | |
| $e$ | 0.0983153 | $i$ | 23.86932 | | +0.42932976 | +0.52052004 | |
| $P$ | 2.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | 703 | 0.7− | 0.4− | 2005 03 16 | 704 | 0.1− | 0.3− | 2005 04 17 | 703 | 0.9− | 0.3+ | | |
| 2005 03 01 | 703 | 0.8− | 0.1+ | 2005 03 16 | 704 | 0.2− | 0.1− | 2005 05 10 | 703 | 0.3+ | 0.4+ | | |
| 2005 03 01 | 703 | 0.7+ | 0.3+ | 2005 03 16 | 704 | 0.3− | 0.2+ | 2005 05 10 | 703 | 0.3− | 0.6+ | | |
| 2005 03 01 | 703 | 0.7− | 0.1− | 2005 03 16 | 704 | 0.3+ | 0.3− | 2005 05 10 | 703 | 0.6+ | 0.8+ | | |
| 2005 03 09 | 703 | 0.5+ | 0.3+ | 2005 03 16 | 704 | 0.0 | 0.2+ | 2005 05 10 | 703 | (1.6− | 0.6+) | | |
| 2005 03 09 | 703 | 0.7− | 0.1+ | 2005 03 17 | 704 | 0.1+ | 0.4+ | 2006 10 03 | E12 | 0.7− | 0.8− | | |
| 2005 03 09 | 703 | 0.4− | 0.3+ | 2005 03 17 | 704 | 0.1+ | 0.3− | 2006 10 03 | E12 | 0.4− | 0.2+ | | |
| 2005 03 09 | 703 | 0.2+ | 0.1+ | 2005 03 17 | 704 | 0.4+ | 0.3+ | 2006 10 03 | E12 | 0.7+ | 0.1+ | | |
| 2005 03 12 | 704 | 1.4+ | 0.2+ | 2005 03 17 | 704 | 0.7+ | 0.5+ | 2006 10 03 | E12 | 1.0− | 1.0+ | | |
| 2005 03 12 | 704 | 0.8+ | 0.7− | 2005 03 17 | 704 | 0.8+ | 0.1− | 2006 10 11 | E12 | 0.1− | 0.2− | | |
| 2005 03 12 | 704 | 1.0+ | 0.0 | 2005 03 17 | 704 | 0.0 | 0.1− | 2006 10 11 | E12 | 0.2+ | 0.2− | | |
| 2005 03 16 | 704 | 0.1+ | 0.3+ | 2005 03 17 | 704 | 0.1+ | 0.2+ | 2006 10 11 | E12 | 0.3+ | 0.3− | | |
| 2005 03 16 | 704 | 0.5− | 0.4− | 2005 03 17 | 704 | 0.0 | 0.5− | 2006 10 11 | E12 | 0.1− | 0.2+ | | |
| 2005 03 16 | 704 | 0.5− | 0.4− | 2005 03 17 | 704 | 0.7+ | 0.0 | 2006 10 31 | 703 | 0.3− | 0.3− | | |
| 2005 03 16 | 704 | 0.4+ | 0.2+ | 2005 03 17 | 704 | 0.5+ | 0.2+ | 2006 10 31 | 703 | 0.2+ | 0.1+ | | |
| 2005 03 16 | 704 | 0.7+ | 0.9− | 2005 04 01 | 703 | 0.9− | 0.0 | 2006 10 31 | 703 | 0.9− | 0.2− | | |
| 2005 03 16 | 704 | 0.3+ | 0.6− | 2005 04 01 | 703 | 0.2− | 0.3+ | 2006 10 31 | 703 | 0.4− | 0.4+ | | |
| 2005 03 16 | 704 | 0.3+ | 0.4+ | 2005 04 01 | 703 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.2− | | |
| 2005 03 16 | 704 | 1.1− | 0.2+ | 2005 04 01 | 703 | 1.5− | 1.0− | 2006 11 13 | 644 | 0.1+ | 0.3+ | | |
| 2005 03 16 | 704 | 0.0 | 0.4− | 2005 04 07 | 644 | 0.1− | 0.6+ | 2006 11 13 | 644 | 0.3+ | 0.2+ | | |
| 2005 03 16 | 704 | 0.9+ | 0.6− | 2005 04 07 | 644 | 0.0 | 0.6+ | 2006 11 19 | 703 | 0.3− | 0.7+ | | |
| 2005 03 16 | 704 | 0.1+ | 0.6− | 2005 04 07 | 644 | 0.3− | 0.6+ | 2006 11 19 | 703 | 0.5− | 0.0 | | |
| 2005 03 16 | 704 | 0.1+ | 0.7+ | 2005 04 07 | 644 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 0.2− | 0.8− | | |
| 2005 03 16 | 704 | 0.7+ | 0.8− | 2005 04 07 | 644 | 0.3− | 0.7+ | 2006 11 19 | 703 | 0.2+ | 0.5+ | | |
| 2005 03 16 | 704 | 1.2− | 0.8− | 2005 04 07 | 644 | 0.1− | 0.7+ | 2006 11 23 | 703 | 0.7+ | 1.2+ | | |
| 2005 03 16 | 704 | 0.0 | 0.2+ | 2005 04 17 | 703 | 0.6− | 1.0− | 2006 11 23 | 703 | 0.4+ | 0.6− | | |
| 2005 03 16 | 704 | 0.3+ | 0.0 | 2005 04 17 | 703 | (0.7− | 2.1−) | 2006 11 23 | 703 | 1.3+ | 0.0 | | |
| 2005 03 16 | 704 | 0.9+ | 0.1+ | 2005 04 17 | 703 | 0.9− | 0.8− | 2006 11 23 | 703 | 0.1− | 0.4− | | |

**2005 ES**$_{154}$ **= 2006 UV**$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.22466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26357710 | $\omega$ | 230.23908 | | +0.02810339 | +0.99940949 | |
| $a$ | 2.4091524 | $\Omega$ | 41.38437 | | −0.90773282 | +0.03379799 | |
| $e$ | 0.1966104 | $i$ | 1.71368 | | −0.41860640 | −0.00619376 | |
| $P$ | 3.74 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 291 | 0.0 | 0.5+ | 2005 05 04 | G96 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 09 | 291 | 0.2+ | 0.0 | 2005 05 04 | G96 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.0 | | |
| 2002 10 09 | 291 | 0.4− | 0.2+ | 2005 05 04 | G96 | 0.5− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.0 | | |
| 2005 03 08 | G96 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.0 | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.1− | | |
| 2005 03 08 | G96 | 0.1+ | 0.1+ | 2005 05 13 | G96 | 0.1+ | 0.6+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | | |
| 2005 03 08 | G96 | 0.1− | 0.4+ | 2005 05 13 | G96 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.3+ | 0.2− | | |
| 2005 03 08 | G96 | 0.3− | 0.2+ | 2005 05 13 | G96 | 0.0 | 0.8+ | 2006 10 19 | 691 | 0.4+ | 0.0 | | |
| 2005 03 12 | 691 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− | | |
| 2005 03 12 | 691 | 0.5+ | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.3+ | | |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.0 | | |
| 2005 05 04 | G96 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.1+ | | |

**2005 EB**$_{155}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.00907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27585675 | $\omega$ | 68.05407 | | −0.32683534 | +0.94505701 | |
| $a$ | 2.3371162 | $\Omega$ | 182.89480 | | −0.90904952 | −0.31632743 | |
| $e$ | 0.1823370 | $i$ | 7.71115 | | −0.25847173 | −0.08248765 | |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.0 | 0.3− | 2002 08 26 | 644 | 0.1+ | 0.2+ | 2005 04 04 | 703 | 1.5− | 0.3− | | |
| 2002 07 12 | 644 | 0.1− | 0.1+ | 2005 03 08 | G96 | 0.7− | 0.0 | 2005 05 03 | 691 | 0.0 | 0.1− | | |
| 2002 07 12 | 644 | 0.1− | 0.2− | 2005 03 08 | G96 | 0.2− | 0.2+ | 2005 05 03 | 691 | 0.1− | 0.1+ | | |
| 2002 07 21 | 644 | 0.4+ | 0.0 | 2005 03 08 | G96 | 0.4− | 0.2+ | 2005 05 03 | 691 | 0.1+ | 0.2+ | | |
| 2002 07 21 | 644 | 0.3− | 0.3− | 2005 03 08 | G96 | 0.3− | 0.1+ | 2006 09 18 | 691 | (11.1− | 2.1−) | | |
| 2002 07 21 | 644 | 0.1+ | 0.3+ | 2005 03 12 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | (10.1− | 2.3−) | | |
| 2002 08 05 | 644 | 0.1+ | 0.0 | 2005 03 12 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | (10.7− | 2.1−) | | |
| 2002 08 05 | 644 | 0.0 | 0.0 | 2005 03 12 | 691 | 0.3+ | 0.1− | 2006 10 22 | G96 | (10.8− | 2.6−) | | |
| 2002 08 05 | 644 | 0.1− | 0.1− | 2005 04 04 | 703 | 0.8+ | 0.0 | 2006 10 22 | G96 | (11.1− | 2.9−) | | |
| 2002 08 26 | 644 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.5− | 0.1− | 2006 10 22 | G96 | (11.6− | 3.1−) | | |
| 2002 08 26 | 644 | 0.1− | 0.1+ | 2005 04 04 | 703 | 0.2− | 0.3− | 2006 10 22 | G96 | (11.5− | 3.1−) | | |

**2005 EW**$_{155}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.39820 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18652126 | $\omega$ | 262.18325 | | +0.14016156 | +0.98887668 | |
| $a$ | 3.0337782 | $\Omega$ | 16.13173 | | −0.82311192 | +0.14431271 | |
| $e$ | 0.0818170 | $i$ | 10.32022 | | −0.55031036 | +0.03601056 | |
| $P$ | 5.28 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.2− | 0.4+ | 2005 03 13 | 703 | 1.2− | 0.7+ | 2005 04 09 | G96 | 0.4− | 0.2− | | |
| 1991 10 08 | 691 | 0.1− | 0.1+ | 2005 04 02 | 691 | 0.4+ | 0.2+ | 2005 04 09 | G96 | 0.5− | 0.3− | | |
| 2004 01 17 | 644 | 0.1+ | 0.5+ | 2005 04 02 | 691 | 0.3+ | 0.2+ | 2005 04 09 | G96 | 0.4− | 0.2− | | |
| 2004 01 17 | 644 | 0.1+ | 0.7+ | 2005 04 02 | 691 | 0.2+ | 0.0 | 2005 05 03 | 691 | 0.2+ | 0.4+ | | |
| 2004 01 17 | 644 | 0.2+ | 0.4+ | 2005 04 02 | 644 | 0.3+ | 0.4+ | 2005 05 03 | 691 | 0.3− | 0.4+ | | |
| 2005 03 08 | G96 | 0.8− | 0.3− | 2005 04 02 | 644 | 0.1+ | 0.2− | 2005 05 03 | 691 | 0.2+ | 0.3+ | | |
| 2005 03 08 | G96 | 0.8− | 0.2− | 2005 04 02 | 644 | 0.1+ | 0.5+ | 2005 05 08 | G96 | 0.3− | 0.0 | | |
| 2005 03 08 | G96 | 0.6− | 0.3− | 2005 04 02 | 185 | 0.9− | 0.4− | 2005 05 08 | G96 | 0.4− | 0.4− | | |
| 2005 03 08 | G96 | 0.4− | 0.2− | 2005 04 02 | 185 | 0.2− | 0.4+ | 2005 05 08 | G96 | 0.2− | 0.1− | | |
| 2005 03 12 | 691 | 0.3+ | 0.2− | 2005 04 03 | 185 | (1.9− | 0.7+) | 2005 05 08 | G96 | 0.2− | 0.4− | | |
| 2005 03 12 | 691 | 0.2+ | 0.0 | 2005 04 04 | 704 | 0.0 | 0.1+ | 2006 06 26 | E12 | 0.2− | 0.9+ | | |
| 2005 03 12 | 691 | 0.2+ | 0.2− | 2005 04 04 | 704 | 1.2+ | 0.3− | 2006 06 26 | E12 | 0.1− | 0.1+ | | |
| 2005 03 13 | 703 | (2.1− | 2.6+) | 2005 04 04 | 704 | 0.1− | 0.7− | 2006 06 26 | E12 | 0.4+ | 0.5− | | |
| 2005 03 13 | 703 | (0.6+ | 2.3+) | 2005 04 04 | 704 | 0.1+ | 0.7− | 2006 06 26 | E12 | 0.5− | 0.7+ | | |
| 2005 03 13 | 703 | (1.6− | 1.0−) | 2005 04 09 | G96 | 0.3− | 0.0 | | | | | | |

**2005 EB**$_{156}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.91001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24120627 | $\omega$ | 81.26996 | | −0.12405540 | +0.99227106 | |
| $a$ | 2.5558988 | $\Omega$ | 181.61237 | | −0.94607878 | −0.11915992 | |
| $e$ | 0.2013896 | $i$ | 5.91041 | | −0.29924104 | −0.03462729 | |
| $P$ | 4.09 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.7− | 0.1− | 2005 04 09 | 704 | 0.3− | 1.1+ | 2005 05 15 | 644 | 0.0 | 0.0 | | |
| 2005 03 08 | G96 | 0.4− | 0.2+ | 2005 04 09 | 704 | 0.5+ | 0.1+ | 2005 05 15 | 644 | 0.1+ | 0.1+ | | |
| 2005 03 08 | G96 | 0.3− | 0.4+ | 2005 04 09 | 704 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.3+ | 0.0 | | |
| 2005 03 08 | G96 | 0.4− | 0.2+ | 2005 04 11 | G96 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.3+ | 0.3+ | | |
| 2005 03 12 | 691 | 0.2+ | 0.1+ | 2005 04 11 | G96 | 0.4− | 0.3− | 2006 09 15 | 691 | 0.1− | 0.0 | | |
| 2005 03 12 | 691 | 0.2+ | 0.1+ | 2005 04 11 | G96 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.1− | | |
| 2005 03 12 | 691 | 0.1+ | 0.2+ | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 699 | 1.1+ | 0.5+ | 2005 04 12 | 691 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.3+ | 0.0 | |
| 2005 04 01 | 699 | (1.7+ | 0.5−) | 2005 04 12 | 691 | 0.0 | 0.4− | 2006 09 24 | 691 | 0.6− | 0.0 | |
| 2005 04 01 | 699 | (1.8+ | 1.3+) | 2005 04 12 | 691 | 0.1+ | 0.3− | 2006 09 24 | 691 | 0.2− | 0.2+ | |
| 2005 04 01 | 699 | 0.2+ | 0.1+ | 2005 04 12 | 704 | 0.5− | 0.6+ | 2006 09 24 | 691 | 0.4− | 0.3+ | |
| 2005 04 02 | 691 | 0.1− | 0.1+ | 2005 04 12 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | |
| 2005 04 02 | 691 | 0.2− | 0.0 | 2005 04 12 | 704 | (2.0+ | 1.3−) | 2006 09 25 | 691 | 0.4+ | 0.2− | |
| 2005 04 02 | 691 | 0.0 | 0.2+ | 2005 04 12 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.0 | |
| 2005 04 02 | 644 | 0.2+ | 0.2+ | 2005 04 19 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1+ | |
| 2005 04 02 | 644 | 0.3+ | 0.2+ | 2005 04 19 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.6− | 0.3+ | |
| 2005 04 02 | 644 | 0.3+ | 0.3+ | 2005 04 19 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.3− | |
| 2005 04 09 | 704 | 0.2+ | 0.2+ | 2005 05 15 | 644 | 0.1− | 0.1− | | | | | |

**2005 ER$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.53908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36874131 | $\omega$ | 250.76504 | | −0.44316894 | +0.89547128 | |
| $a$ | 1.9259936 | $\Omega$ | 352.51583 | | −0.65446368 | −0.35492599 | |
| $e$ | 0.0619553 | $i$ | 18.63619 | | −0.61259985 | −0.26862377 | |
| $P$ | 2.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 15 | 703 | 0.6− | 0.7− | 2005 03 16 | 703 | 0.6+ | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.0 | |
| 2005 01 15 | 703 | 0.5− | 0.4+ | 2005 03 16 | 703 | 0.9− | 0.9+ | 2006 09 17 | 703 | 0.4− | 0.4− | |
| 2005 01 15 | 703 | 0.3+ | 0.4− | 2005 04 02 | 699 | 0.7+ | 0.2+ | 2006 09 17 | 703 | 0.7− | 0.2+ | |
| 2005 01 15 | 703 | 0.2− | 0.3+ | 2005 04 02 | 699 | 1.4+ | 0.2− | 2006 09 17 | 703 | 0.5− | 0.5− | |
| 2005 03 01 | 703 | 0.1− | 0.1+ | 2005 04 02 | 699 | 1.0+ | 0.5− | 2006 09 28 | 703 | 0.1− | 0.4+ | |
| 2005 03 01 | 703 | 0.2+ | 0.1− | 2005 04 02 | 699 | 0.5− | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.3− | |
| 2005 03 01 | 703 | 0.1+ | 0.3+ | 2005 04 02 | 703 | 1.1− | 0.2− | 2006 09 28 | 703 | 0.1+ | 0.2+ | |
| 2005 03 01 | 703 | 0.6− | 1.5+ | 2005 04 02 | 703 | 0.2− | 1.2− | 2006 09 28 | 703 | 0.1+ | 0.1− | |
| 2005 03 09 | 703 | 0.5− | 1.0− | 2005 04 02 | 703 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.6+ | |
| 2005 03 09 | 703 | 0.3− | 0.5− | 2005 04 02 | 703 | 0.9+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.9− | |
| 2005 03 09 | 703 | 0.3− | 0.7− | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.1− | 2.2− | |
| 2005 03 09 | 703 | 0.5− | 0.1+ | 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.8+ | 0.4− | |
| 2005 03 12 | 699 | 0.4+ | 0.4+ | 2006 07 22 | G96 | 0.5− | 0.6− | 2006 10 27 | 703 | 0.8− | 0.7+ | |
| 2005 03 12 | 699 | 0.4+ | 0.7− | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.3− | 1.2+ | |
| 2005 03 12 | 699 | 0.8+ | 0.8+ | 2006 09 16 | 703 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.8− | |
| 2005 03 12 | 699 | 0.0 | 0.6+ | 2006 09 16 | 703 | 1.0+ | 0.8+ | 2006 10 27 | 703 | 0.2+ | 0.9+ | |
| 2005 03 16 | 703 | (1.0− | 2.0+) | 2006 09 16 | 703 | 0.3− | 1.2+ | | | | | |
| 2005 03 16 | 703 | 0.1+ | 0.7+ | 2006 09 16 | 703 | (1.9+ | 0.5−) | | | | | |

**2005 EB$_{159}$ = 2006 SJ$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.71203 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28001668 | $\omega$ | 116.08797 | | +0.40910436 | +0.91247834 | |
| $a$ | 2.3139117 | $\Omega$ | 178.04657 | | −0.87436754 | +0.39329866 | |
| $e$ | 0.1305455 | $i$ | 6.92916 | | −0.26098855 | +0.11269186 | |
| $P$ | 3.52 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.0 | 0.4− | 2006 09 16 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.4− | |
| 1999 10 03 | 691 | 0.1+ | 0.3− | 2006 09 16 | 691 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.3− | |
| 1999 10 03 | 691 | 0.2+ | 0.3− | 2006 09 16 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | |
| 2005 03 09 | G96 | 0.2− | 0.6+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ | |
| 2005 03 09 | G96 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.3+ | |
| 2005 03 09 | G96 | 0.7− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ | |
| 2005 03 09 | G96 | 0.4+ | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 18 | 291 | 0.4+ | 0.0 | |
| 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.4− | 0.4+ | 2006 10 18 | 291 | 0.0 | 0.3+ | |
| 2005 03 12 | 691 | 0.4+ | 0.4+ | 2006 09 23 | 691 | 0.3− | 0.3+ | 2006 10 18 | 291 | 0.2− | 0.1+ | |
| 2005 03 12 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.0 | |
| 2005 04 02 | G96 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.7− | 0.0 | |
| 2005 04 02 | G96 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.5− | 0.2+ | |
| 2005 04 02 | G96 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.5− | 0.1− | |
| 2005 04 02 | G96 | 0.7− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | | | | |

**2005 EU$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.89216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23525384 | $\omega$ | 214.79314 | | −0.42012979 | +0.90691832 | |
| $a$ | 2.5988321 | $\Omega$ | 30.39935 | | −0.81783108 | −0.36337838 | |
| $e$ | 0.2488533 | $i$ | 3.56513 | | −0.39324710 | −0.21320251 | |
| $P$ | 4.19 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.3− | 0.2− | 2005 04 01 | 699 | 1.2+ | 0.4− | 2005 04 09 | 704 | 0.6+ | 0.9+ | |
| 2005 03 09 | G96 | 0.2− | 0.0 | 2005 04 01 | 699 | 1.1+ | 0.9− | 2006 09 18 | 691 | 0.2− | 0.2+ | |
| 2005 03 09 | G96 | 0.2− | 0.1− | 2005 04 01 | 699 | 0.3− | 0.8− | 2006 09 18 | 691 | 0.3+ | 0.2+ | |
| 2005 03 09 | G96 | 0.3− | 0.1− | 2005 04 02 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.2− | |
| 2005 03 12 | 691 | 0.2+ | 0.2+ | 2005 04 02 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1− | |
| 2005 03 12 | 691 | 0.1+ | 0.1+ | 2005 04 02 | 691 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.4− | |
| 2005 03 12 | 691 | 0.1+ | 0.1+ | 2005 04 09 | 704 | 0.6− | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | |
| 2005 04 01 | 699 | 0.0 | 1.2− | 2005 04 09 | 704 | 0.5+ | 0.5+ | | | | | |

**2005 EC$_{161}$ = 2006 SB$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.09762 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26860120 | $\omega$ | 75.29812 | | −0.61649221 | +0.78728420 | |
| $a$ | 2.3790163 | $\Omega$ | 156.63072 | | −0.73263755 | −0.56847252 | |
| $e$ | 0.1473626 | $i$ | 1.58869 | | −0.28840870 | −0.23879401 | |
| $P$ | 3.67 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.0 | 0.3+ | 2005 04 10 | G96 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2− | |
| 2001 03 25 | 695 | 0.2+ | 0.4+ | 2005 04 10 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.9− | 0.1+ | |
| 2005 03 09 | G96 | 0.4− | 0.3− | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.4− | 0.3− | |
| 2005 03 09 | G96 | 0.1+ | 0.1− | 2005 04 11 | G96 | 0.2− | 0.3− | 2006 09 26 | G96 | 1.0− | 0.1+ | |
| 2005 03 09 | G96 | 0.4− | 0.3− | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.0 | |
| 2005 03 09 | G96 | 0.2− | 0.0 | 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.0 | |
| 2005 03 12 | 691 | 0.1+ | 0.2+ | 2005 05 06 | G96 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.0 | |
| 2005 03 12 | 691 | 0.4+ | 0.4+ | 2005 05 06 | G96 | 0.9+ | 1.2+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | |
| 2005 03 12 | 691 | 0.2+ | 0.0 | 2005 05 06 | G96 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.5+ | |
| 2005 04 10 | G96 | 0.2− | 0.1+ | 2005 05 06 | G96 | 0.7− | 0.5− | 2006 09 27 | 691 | 0.3+ | 0.3+ | |
| 2005 04 10 | G96 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.1+ | | | | | |

**2005 EP$_{161}$ = 2006 SN$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.03766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26957577 | $\omega$ | 215.84990 | | +0.09720492 | +0.99458122 | |
| $a$ | 2.3732791 | $\Omega$ | 59.75488 | | −0.90290635 | +0.10370888 | |
| $e$ | 0.1749324 | $i$ | 2.44612 | | −0.41870195 | +0.00725763 | |
| $P$ | 3.66 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.3− | 0.3− | 2005 03 12 | 691 | 0.8+ | 0.4+ | 2006 09 19 | 691 | 0.5− | 0.4+ | |
| 1994 04 03 | 691 | 0.3+ | 0.8+ | 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.5+ | 0.1− | |
| 1994 04 03 | 691 | 0.3− | 1.1− | 2005 04 01 | 691 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.3+ | 0.3− | |
| 2005 03 09 | G96 | 0.8− | 0.2+ | 2005 04 01 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.4− | |
| 2005 03 09 | G96 | 0.1− | 0.2− | 2005 04 11 | G96 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.4− | |
| 2005 03 09 | G96 | 0.1− | 0.1− | 2005 04 11 | G96 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.2+ | |
| 2005 03 09 | G96 | 0.1− | 0.0 | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1+ | |
| 2005 03 12 | 691 | 0.7− | 0.5− | 2005 04 11 | G96 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.0 | 0.3+ | |
| 2005 03 12 | 691 | 0.6+ | 0.2+ | 2006 09 19 | 691 | 0.4+ | 0.3+ | | | | | |

**2005 EF$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.13001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22908461 | $\omega$ | 264.22424 | | −0.46370832 | +0.88312087 | |
| $a$ | 2.6452828 | $\Omega$ | 337.71409 | | −0.72027320 | −0.42256553 | |
| $e$ | 0.2360605 | $i$ | 10.82438 | | −0.51592743 | −0.20380361 | |
| $P$ | 4.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 1.1+ | 0.2+ | 2005 04 12 | I10 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.3− | 0.0 |
| 2002 10 10 | 704 | 0.7− | 0.8+ | 2005 04 12 | I10 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.3+ | 0.7+ |
| 2002 10 10 | 704 | 1.1− | 0.5+ | 2005 04 15 | 703 | 0.3− | 0.3− | 2006 09 17 | 703 | (1.1+ | 4.1−) |
| 2005 03 09 | E12 | 0.8− | 0.1− | 2005 04 15 | 703 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.1− | 0.6+ |
| 2005 03 09 | E12 | 0.6− | 0.1+ | 2005 04 15 | 703 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.7+ |
| 2005 03 09 | E12 | 0.2+ | 0.3+ | 2005 04 15 | 703 | (1.8− | 2.1−) | 2006 09 18 | 691 | 0.3+ | 0.2+ |
| 2005 03 09 | E12 | (1.7− | 1.7−) | 2005 05 08 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2005 03 12 | 699 | 0.5+ | 0.2− | 2005 05 08 | 699 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2005 03 12 | 699 | 0.5+ | 0.1+ | 2005 05 08 | 699 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.5− | 1.1− |
| 2005 03 12 | 699 | 0.2+ | 0.1+ | 2005 05 08 | 699 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 2005 03 12 | 699 | 0.7+ | 0.1− | 2005 05 11 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 1.1+ |
| 2005 04 02 | E12 | 0.1+ | 0.1+ | 2005 05 11 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.8+ |
| 2005 04 02 | E12 | 0.1+ | 0.1+ | 2005 05 11 | 644 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2005 04 02 | E12 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2005 04 02 | E12 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.6− | 0.4+ | 2006 09 26 | 691 | 0.8+ | 0.8− |
| 2005 04 06 | 699 | 0.4− | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.3− | 2006 09 27 | 703 | 0.5+ | 0.0 |
| 2005 04 06 | 699 | 0.2+ | 0.2− | 2006 08 29 | 703 | 1.4− | 0.1− | 2006 09 27 | 703 | 0.1− | 0.5− |
| 2005 04 06 | 699 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.6− | 2006 09 27 | 703 | 0.5+ | 0.9− |
| 2005 04 06 | 699 | 0.7− | 0.0 | 2006 09 16 | 703 | 1.2− | 0.6− | 2006 09 27 | 703 | 0.1− | 0.2− |
| 2005 04 12 | I10 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.3+ | | | | |

**2005 EL$_{162}$ = 2006 QY$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.74191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18430577 | $\omega$ | 128.68001 | | +0.39998962 | +0.91631942 | |
| $a$ | 3.0580418 | $\Omega$ | 164.86318 | | −0.86202929 | +0.38322667 | |
| $e$ | 0.2942620 | $i$ | 4.20744 | | −0.31130983 | +0.11617250 | |
| $P$ | 5.35 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.0 | 0.0 | 2005 03 10 | G96 | 0.0 | 0.1+ | 2006 07 25 | 644 | 0.0 | 0.4+ |
| 2000 04 12 | 691 | 0.2− | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 07 25 | 644 | 0.3− | 0.1+ |
| 2000 04 12 | 691 | 0.3+ | 0.1− | 2005 03 12 | 691 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.2+ |
| 2001 09 18 | 691 | 0.1− | 0.1+ | 2005 03 12 | 691 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 2001 09 18 | 691 | 0.1− | 0.4− | 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.2+ | 0.3+ |
| 2001 09 18 | 691 | 0.4− | 0.2− | 2005 04 02 | G96 | 0.4− | 0.2− | 2006 08 18 | 644 | 0.1+ | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.5− | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.1+ |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.3+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.8− | 0.5− | 2006 10 17 | G96 | 0.7− | 0.0 |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2005 04 11 | G96 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.3− | 0.6− |
| 2001 11 12 | 645 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.0 |
| 2005 03 10 | G96 | 0.5+ | 0.4+ | 2005 04 11 | G96 | 0.2− | 0.4+ | | | | |
| 2005 03 10 | G96 | 0.5− | 0.2− | 2006 07 25 | 644 | 0.1− | 0.3− | | | | |

**2005 EL$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.35292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22841476 | $\omega$ | 238.99593 | | +0.11400521 | −0.99337976 | |
| $a$ | 2.6504520 | $\Omega$ | 204.46972 | | +0.92273077 | +0.11114437 | |
| $e$ | 0.1749420 | $i$ | 1.95395 | | +0.36819931 | +0.02904442 | |
| $P$ | 4.31 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 691 | 0.4+ | 0.0 | 2003 10 23 | 291 | 0.1+ | 0.1− | 2005 03 12 | 691 | 0.0 | 0.2+ |
| 2003 09 29 | 691 | 0.3+ | 0.2− | 2003 10 23 | 291 | 0.2+ | 0.3+ | 2005 03 12 | 691 | 0.3+ | 0.2− |
| 2003 09 29 | 691 | 0.6− | 0.2− | 2005 03 11 | G96 | 0.4− | 0.2− | 2005 04 06 | G96 | 1.0− | 0.0 |
| 2003 10 18 | 691 | 0.1− | 0.1+ | 2005 03 11 | G96 | 0.5− | 0.2− | 2005 04 06 | G96 | 0.4+ | 1.0− |
| 2003 10 18 | 691 | 0.4+ | 0.0 | 2005 03 11 | G96 | 0.1− | 0.1− | 2005 04 06 | G96 | 0.1+ | 0.7− |
| 2003 10 18 | 691 | 0.5− | 0.2− | 2005 03 11 | G96 | 0.1− | 0.0 | 2005 04 06 | G96 | 0.6− | 0.3+ |
| 2003 10 23 | 291 | 0.0 | 0.0 | 2005 03 12 | 691 | 0.2+ | 0.3+ | | | | |

**2005 EZ$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.52029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37371849 | $\omega$ | 95.99571 | | −0.01576173 | −0.99935121 | |
| $a$ | 1.9088552 | $\Omega$ | 354.58109 | | +0.72669722 | +0.01079678 | |
| $e$ | 0.1063993 | $i$ | 20.05475 | | +0.68677705 | −0.03435975 | |
| $P$ | 2.64 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.2− | 0.1− | 2005 03 12 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2005 03 11 | G96 | 0.1− | 0.2− | 2005 03 17 | 691 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.7− | 0.2− |
| 2005 03 11 | G96 | 0.1− | 0.2+ | 2005 03 17 | 691 | 0.5+ | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.3− |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2005 03 17 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2005 03 12 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | | | | |
| 2005 03 12 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.3+ | 0.2− | | | | |

**2005 EU$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.09740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29472925 | $\omega$ | 61.80431 | | −0.23243541 | +0.97242148 | |
| $a$ | 2.2362510 | $\Omega$ | 194.79289 | | −0.91669077 | −0.22564005 | |
| $e$ | 0.1315509 | $i$ | 4.32200 | | −0.32504126 | −0.05901724 | |
| $P$ | 3.34 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 26 | 691 | 2.3+ | 0.4+ | 2005 03 11 | G96 | 0.6− | 0.3− | 2005 05 06 | G96 | 0.0 | 0.3+ |
| 2003 11 26 | 691 | 0.8+ | 0.4+ | 2005 03 12 | 691 | 0.2+ | 0.0 | 2005 05 06 | G96 | 0.2+ | 0.3+ |
| 2003 11 26 | 691 | (3.0− | 0.9−) | 2005 03 12 | 691 | 0.0 | 0.3+ | 2005 05 06 | G96 | 0.1+ | 0.4+ |
| 2005 03 03 | 691 | 0.3+ | 0.3− | 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.6− | 0.1+ |
| 2005 03 03 | 691 | 0.2− | 0.0 | 2005 04 05 | G96 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.2+ |
| 2005 03 03 | 691 | 0.1+ | 0.1+ | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.5− | 0.0 |
| 2005 03 11 | G96 | 0.5− | 0.3+ | 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.7+ | 0.2+ |
| 2005 03 11 | G96 | 0.3− | 0.3− | 2005 04 05 | G96 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2005 03 11 | G96 | 0.3− | 0.1− | 2005 05 06 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |

**2005 EF$_{170}$ = 2006 QD$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.84219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20532167 | $\omega$ | 193.43843 | | +0.34153071 | +0.93633423 | |
| $a$ | 2.8456372 | $\Omega$ | 96.57913 | | −0.85455723 | +0.34544016 | |
| $e$ | 0.1288077 | $i$ | 4.70327 | | −0.39126553 | +0.06284354 | |
| $P$ | 4.80 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.0 | 0.6+ | 2005 03 13 | 683 | 1.8+ | 2.3− | 2006 07 25 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 644 | 0.2− | 0.1− | 2005 03 13 | 683 | 1.3− | 0.3− | 2006 07 25 | 644 | 0.2− | 0.3+ |
| 2002 11 14 | 644 | 0.0 | 0.1+ | 2005 03 13 | 683 | 1.9+ | 2.3− | 2006 07 25 | 644 | 0.1+ | 0.3+ |
| 2004 01 22 | 704 | 0.0 | 1.1+ | 2005 03 18 | 703 | 0.9+ | 0.7− | 2006 08 20 | 644 | 0.2+ | 0.4+ |
| 2004 01 22 | 704 | 0.9+ | 2.4+ | 2005 03 18 | 703 | 0.6− | 0.2− | 2006 08 20 | 644 | 0.4+ | 1.0+ |
| 2004 01 22 | 704 | 0.6− | 0.3+ | 2005 03 18 | 703 | 1.4− | 0.2− | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.1+ | 0.2− | 2005 03 18 | 703 | 1.4− | 0.1+ | 2006 08 23 | 704 | 0.4− | 0.4− |
| 2005 03 11 | 691 | 0.0 | 0.7+ | 2006 05 31 | G92 | 0.8+ | 0.5+ | 2006 08 23 | 704 | 0.1− | 0.4+ |
| 2005 03 11 | 691 | 0.1+ | 0.6+ | 2006 05 31 | G92 | 0.4− | 0.7+ | 2006 08 23 | 704 | 0.0 | 0.3+ |
| 2005 03 11 | 691 | 0.1+ | 0.6+ | 2006 05 31 | G92 | 0.8− | 0.1+ | | | | |

**2005 ER$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.70184 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22886666 | $\omega$ | 175.41929 | | −0.08205574 | | −0.97406439 |
| $a$ | 2.6469619 | $\Omega$ | 279.18284 | | +0.90746833 | | +0.01444942 |
| $e$ | 0.1376519 | $i$ | 12.33375 | | +0.41202923 | | −0.22580915 |
| $P$ | 4.31 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.7+ | 0.2− | 2003 10 05 | 704 | 0.5− | 0.0 | 2003 11 22 | 704 | 0.0 | 0.6+ |
| 1999 11 01 | 704 | 0.6− | 0.6− | 2003 10 05 | 704 | 0.3− | 0.3+ | 2005 03 07 | 704 | 1.1+ | 0.2+ |
| 1999 11 01 | 704 | 0.5+ | 0.5− | 2003 10 05 | 704 | 0.6− | 1.1− | 2005 03 07 | 704 | 0.8− | 0.5+ |
| 1999 11 01 | 704 | 0.9− | 1.0+ | 2003 10 05 | 704 | 0.3− | 0.1− | 2005 03 07 | 704 | 0.0 | 0.1+ |
| 1999 11 01 | 704 | 1.4− | 0.8− | 2003 10 05 | 704 | 0.5− | 0.0 | 2005 03 13 | 703 | 0.9− | 0.3− |
| 1999 12 07 | 703 | 0.2− | 0.7− | 2003 10 19 | 699 | 0.1+ | 0.5− | 2005 03 13 | 703 | 0.0 | 0.4− |
| 1999 12 07 | 703 | 1.7+ | 1.5− | 2003 10 19 | 699 | 0.4+ | 0.7+ | 2005 03 13 | 703 | 0.1− | 0.2− |
| 1999 12 07 | 703 | (0.0 | 3.6+) | 2003 10 19 | 699 | 0.1+ | 0.2+ | 2005 03 13 | 703 | 0.3− | 0.1− |
| 2003 09 19 | 644 | 0.3− | 0.2+ | 2003 10 19 | 699 | 0.6+ | 0.0 | 2005 04 02 | 644 | 0.3+ | 0.3+ |
| 2003 09 19 | 644 | 0.1− | 0.2+ | 2003 11 22 | 704 | 0.2+ | 0.3− | 2005 04 02 | 644 | 0.3+ | 0.1+ |
| 2003 09 19 | 644 | 0.5+ | 0.1− | 2003 11 22 | 704 | 0.9+ | 0.1− | 2005 04 02 | 644 | 0.4+ | 0.4− |

**2005 EA$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.68427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28398580 | $\omega$ | 308.33494 | | +0.22927083 | | +0.97248781 |
| $a$ | 2.2923009 | $\Omega$ | 334.82661 | | −0.86004489 | | +0.18254761 |
| $e$ | 0.1997247 | $i$ | 5.56641 | | −0.45580443 | | +0.14471986 |
| $P$ | 3.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 691 | 0.2− | 0.0 | 2005 04 15 | 703 | (2.2− | 0.5−) | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2005 03 08 | 691 | 0.0 | 0.0 | 2005 04 15 | 703 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 03 08 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2005 03 13 | 691 | 0.4− | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2005 03 13 | 691 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 31 | 703 | 0.0 | 0.6+ |
| 2005 03 13 | 691 | 0.4− | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.0 | 2006 10 31 | 703 | 0.7− | 0.9+ |
| 2005 03 17 | 691 | 0.1+ | 0.9− | 2006 10 19 | 703 | 0.5− | 0.4+ | 2006 10 31 | 703 | 1.2− | 0.6+ |
| 2005 03 17 | 691 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.2− | 2006 10 31 | 703 | 0.8− | 0.1+ |
| 2005 03 17 | 691 | 0.7+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.5− | 2006 11 14 | 703 | (1.8− | 0.1+) |
| 2005 03 31 | 699 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | (2.0+ | 1.9+) |
| 2005 03 31 | 699 | 0.3+ | 0.7+ | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 14 | 703 | (2.0− | 0.1+) |
| 2005 03 31 | 699 | 1.4+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.2+ |
| 2005 03 31 | 699 | 0.8+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 18 | 185 | 0.4+ | 1.2− |
| 2005 04 15 | 703 | 1.0− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 11 18 | 185 | 0.1− | 0.1+ |
| 2005 04 15 | 703 | 0.0 | 0.8− | 2006 10 20 | G96 | 0.1− | 0.4− | | | | |

**2005 EC$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.03125 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27003641 | $\omega$ | 331.09044 | | −0.79754376 | | +0.60273529 |
| $a$ | 2.3705794 | $\Omega$ | 245.99743 | | −0.54804545 | | −0.74136037 |
| $e$ | 0.1556843 | $i$ | 1.57958 | | −0.25213116 | | −0.29511856 |
| $P$ | 3.65 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 30 | 291 | 0.4+ | 0.6+ | 2005 03 12 | 704 | 0.5− | 0.3+ | 2005 05 14 | G96 | 0.0 | 0.2+ |
| 2003 11 30 | 291 | 0.6− | 0.6− | 2005 03 17 | 703 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.1+ | 0.1+ |
| 2003 11 30 | 291 | 0.2+ | 0.1+ | 2005 03 17 | 703 | 0.1− | 0.2+ | 2005 05 14 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | 704 | 0.0 | 0.4+ | 2005 03 17 | 703 | 1.1− | 0.5+ | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2005 03 08 | 704 | (2.4+ | 1.2−) | 2005 03 17 | 703 | 0.7− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2005 03 08 | 704 | 0.4+ | 0.5− | 2005 05 08 | G96 | 0.2− | 0.2− | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2005 03 08 | 704 | 1.4+ | 0.2− | 2005 05 08 | G96 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2005 03 12 | 704 | 0.1− | 1.3+ | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 1.1− |
| 2005 03 12 | 704 | 0.3+ | 0.2+ | 2005 05 08 | G96 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 2005 03 12 | 704 | 0.7+ | 0.1− | 2005 05 14 | G96 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.5− | 0.2+ |

**2005 EK$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.31924 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22993787 | $\omega$ | 86.62561 | | +0.15512608 | | +0.98776685 |
| $a$ | 2.6387346 | $\Omega$ | 192.33278 | | −0.93335501 | | +0.14127182 |
| $e$ | 0.2143022 | $i$ | 4.26696 | | −0.32370407 | | +0.06602213 |
| $P$ | 4.29 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 19 | 644 | 0.5− | 0.0 | 2005 04 12 | 704 | 0.5+ | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2001 06 19 | 644 | 0.3+ | 0.4+ | 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.6+ | 0.1+ |
| 2001 06 19 | 644 | 0.3+ | 0.2+ | 2005 05 08 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2005 03 08 | G96 | 0.6− | 0.0 | 2005 05 08 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.7− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2005 03 08 | G96 | 0.7− | 0.2+ | 2005 05 10 | G96 | 0.8− | 0.6− | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2005 03 08 | G96 | 0.4− | 0.1+ | 2005 05 10 | G96 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.4+ |
| 2005 03 13 | 691 | 0.3+ | 0.1+ | 2005 05 10 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.1+ |
| 2005 03 13 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.7+ |
| 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2005 04 02 | G96 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.9+ | 0.9+ |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 1.0− | 0.1− |
| 2005 04 12 | 704 | 0.2− | 1.3− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.8− | 0.2− |
| 2005 04 12 | 704 | 0.4+ | 1.2+ | 2006 10 16 | G96 | 0.2+ | 0.2− | | | | |

**2005 EN$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.16390 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24138768 | $\omega$ | 275.75132 | | +0.31817764 | | +0.94776291 |
| $a$ | 2.5546181 | $\Omega$ | 12.87025 | | −0.82481344 | | +0.28847111 |
| $e$ | 0.2615561 | $i$ | 5.81012 | | −0.46738183 | | +0.13612450 |
| $P$ | 4.08 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.5− | 0.5− | 2005 04 17 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2005 03 08 | G96 | 0.0 | 0.4− | 2005 04 17 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2005 03 08 | G96 | 0.5− | 0.0 | 2005 04 17 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.5− |
| 2005 03 08 | G96 | 0.6− | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.6+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2005 03 13 | 691 | 0.7+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.5− |
| 2005 03 13 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.4+ | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2005 03 13 | 691 | 0.7+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.7− |
| 2005 04 05 | 699 | 1.2+ | 0.5− | 2006 10 15 | 691 | 0.4− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.7− |
| 2005 04 05 | 699 | 0.5+ | 0.6− | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.4+ | 0.1− |
| 2005 04 05 | 699 | 0.5− | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.4− | 0.6− |
| 2005 04 05 | 699 | 1.0− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2005 04 09 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2005 04 09 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2005 04 09 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.8− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 04 11 | 699 | 0.4+ | 0.6+ | 2006 10 23 | 691 | 0.6− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2005 04 11 | 699 | 0.8+ | 1.1− | 2006 10 28 | 691 | 0.9+ | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2005 04 11 | 699 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.3+ | | | | |
| 2005 04 11 | 699 | 1.2− | 0.8+ | 2006 10 28 | 691 | 1.4− | 0.3− | | | | |

**2005 ES$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.37097 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29349713 | $\omega$ | 347.21689 | | −0.80898888 | | +0.58692294 |
| $a$ | 2.2425053 | $\Omega$ | 228.77066 | | −0.53543911 | | −0.75860454 |
| $e$ | 0.1494444 | $i$ | 2.47932 | | −0.24257359 | | −0.28291451 |
| $P$ | 3.36 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 691 | 0.3+ | 0.1+ | 2005 03 17 | 703 | 0.4+ | 2.0− | 2006 09 20 | 691 | 0.1− | 0.2+ |
| 2005 03 09 | 691 | 0.2+ | 0.3+ | 2005 03 17 | 703 | 0.8− | 1.7+ | 2006 09 20 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 691 | 0.2+ | 0.0 | 2005 03 17 | 703 | 1.0− | 1.0− | 2006 09 20 | 691 | 0.3− | 0.0 | | |
| 2005 03 13 | 691 | 0.1− | 0.0 | 2005 05 12 | G96 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− | | |
| 2005 03 13 | 691 | 0.1+ | 0.1− | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.8+ | 0.5− | | |
| 2005 03 13 | 691 | 0.2− | 0.0 | 2005 05 12 | G96 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.6+ | 0.5− | | |
| 2005 03 17 | 703 | 0.9− | 0.3− | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.5+ | 0.4− | | |

**2005 EL**$_{182}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.26320 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38597498 | $\omega$ | 303.76118 | | −0.58486861 | | −0.81100552 |
| $a$ | 1.8682283 | $\Omega$ | 182.19092 | | +0.81094084 | | −0.58427188 |
| $e$ | 0.0354352 | $i$ | 21.64011 | | +0.01742616 | | −0.02994016 |
| $P$ | 2.55 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 699 | 0.1+ | 0.1− | 2005 03 13 | 703 | 0.3− | 0.2+ | 2006 10 20 | 703 | (1.7+ | 1.4+) | | |
| 2000 04 07 | 699 | 1.3− | 1.3+ | 2005 03 13 | 703 | 0.3+ | 0.1+ | 2006 10 20 | 703 | 0.3− | 1.1− | | |
| 2000 04 07 | 699 | 0.1+ | 0.6− | 2005 03 13 | 703 | 0.4− | 0.5+ | 2006 10 20 | 703 | 0.4+ | 0.6+ | | |
| 2000 04 07 | 699 | 1.0+ | 0.3+ | 2005 03 13 | 703 | 0.3− | 0.7+ | 2006 11 01 | 703 | 1.2− | 1.4+ | | |
| 2003 07 22 | 644 | 0.1− | 0.7+ | 2005 04 04 | 703 | 0.4− | 1.1− | 2006 11 01 | 703 | 0.4+ | 1.4+ | | |
| 2003 07 22 | 644 | 0.3− | 0.4+ | 2005 04 04 | 703 | 0.1− | 0.3− | 2006 11 01 | 703 | 1.0+ | 0.4− | | |
| 2003 07 22 | 644 | 0.4+ | 1.0+ | 2005 04 04 | 703 | 0.8− | 0.1+ | 2006 11 01 | 703 | 1.0− | 0.5+ | | |
| 2005 03 09 | 699 | 0.7− | 0.2− | 2005 04 04 | 703 | 0.1+ | 0.3− | 2006 11 18 | 703 | 0.6+ | 0.1+ | | |
| 2005 03 09 | 699 | 0.2− | 1.1+ | 2005 04 08 | 704 | 0.4+ | 0.3− | 2006 11 18 | 703 | 0.1− | 0.6+ | | |
| 2005 03 09 | 699 | 0.8+ | 1.4+ | 2005 04 08 | 704 | 0.9+ | 0.1+ | 2006 11 18 | 703 | 0.2− | 0.4− | | |
| 2005 03 09 | 699 | 0.4+ | 0.0 | 2005 04 08 | 704 | 0.7+ | 0.1− | 2006 11 18 | 703 | 0.0 | 0.5− | | |

**2005 EW**$_{182}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.94990 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23315024 | $\omega$ | 84.56100 | | +0.08405320 | | +0.99641096 |
| $a$ | 2.6144407 | $\Omega$ | 190.27668 | | −0.93502276 | | +0.07539283 |
| $e$ | 0.2138560 | $i$ | 3.21758 | | −0.34448148 | | +0.03848542 |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | 691 | 0.3+ | 0.0 | 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | | |
| 2005 03 01 | 691 | 0.1+ | 0.3+ | 2005 04 05 | G96 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.1+ | | |
| 2005 03 01 | 691 | 0.1− | 0.6+ | 2005 04 05 | G96 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1+ | | |
| 2005 03 09 | G96 | 0.4− | 0.2− | 2005 04 05 | G96 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− | | |
| 2005 03 09 | G96 | 1.2− | 0.3− | 2005 04 05 | G96 | 0.9− | 0.5− | 2006 10 27 | G96 | 0.8+ | 0.2− | | |
| 2005 03 09 | G96 | 1.1− | 0.2− | 2005 05 06 | G96 | 0.3− | 0.5− | 2006 10 27 | G96 | 0.5− | 0.3− | | |
| 2005 03 09 | G96 | 1.0− | 0.5− | 2005 05 06 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.0 | | |
| 2005 03 13 | 691 | 0.2+ | 0.5+ | 2005 05 06 | G96 | 0.4− | 0.5− | 2006 10 27 | G96 | 0.3− | 0.2+ | | |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2005 05 06 | G96 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.7− | 0.4+ | | |
| 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.7− | 0.1− | | |
| 2005 03 17 | 691 | 0.3+ | 0.0 | 2006 08 28 | 691 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.4− | 0.3+ | | |
| 2005 03 17 | 691 | 0.7+ | 0.2+ | 2006 08 28 | 691 | 0.3− | 0.6+ | 2006 11 21 | G96 | 0.8− | 0.2+ | | |

**2005 EX**$_{184}$ **= 2006 QL**$_{167}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.93683 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22147560 | $\omega$ | 303.14442 | | +0.56754448 | | +0.82332695 |
| $a$ | 2.7055286 | $\Omega$ | 1.46469 | | −0.67325863 | | +0.46764475 |
| $e$ | 0.1958468 | $i$ | 11.50641 | | −0.47393680 | | +0.32162264 |
| $P$ | 4.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 691 | 0.6+ | 0.0 | 2006 09 14 | 703 | 1.0+ | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.3+ | | |
| 2005 03 09 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.8+ | 2006 10 20 | G96 | 0.5+ | 0.2+ | | |
| 2005 03 09 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.8− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.1+ | | |
| 2005 03 13 | 691 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.9− | 1.0− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.5− | | |
| 2005 03 13 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 2005 03 17 | G96 | 0.9− | 0.1− | 2006 09 19 | 699 | 0.7+ | 1.1+ | 2006 11 11 | G96 | 0.5− | 0.5+ | | |
| 2005 03 17 | G96 | 0.8− | 0.2+ | 2006 09 19 | 699 | (0.5− | 1.8+) | 2006 11 11 | G96 | 0.4− | 0.1− | | |
| 2005 03 17 | G96 | 0.7− | 0.2− | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.8− | 0.4+ | | |
| 2005 03 17 | G96 | 0.9− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2+ | | |
| 2006 08 30 | 699 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 13 | G96 | 0.9− | 0.6− | | |
| 2006 08 30 | 699 | 0.5+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 1.0+ | 0.2− | | |
| 2006 08 30 | 699 | 0.9− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.1+ | 2006 11 13 | G96 | 1.0− | 0.1− | | |
| 2006 08 30 | 699 | 0.1− | 0.5− | 2006 10 20 | G96 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.8+ | 0.3− | | |

**2005 EY**$_{184}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.79174 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22449274 | $\omega$ | 231.15527 | | −0.62672139 | | +0.77924340 |
| $a$ | 2.6812328 | $\Omega$ | 0.03691 | | −0.63374895 | | −0.50960344 |
| $e$ | 0.1462556 | $i$ | 12.14857 | | −0.45341214 | | −0.36480687 |
| $P$ | 4.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 691 | 0.4− | 0.3+ | 2005 04 14 | 703 | 1.5− | 0.5− | 2005 05 23 | 644 | 0.1+ | 0.3+ | | |
| 2005 03 09 | 691 | 0.0 | 0.1− | 2005 04 14 | 703 | 0.0 | 0.3− | 2005 05 23 | 644 | 0.2+ | 0.1− | | |
| 2005 03 09 | 691 | 0.1− | 0.1− | 2005 04 14 | 703 | 0.5− | 0.5− | 2005 05 23 | 644 | 0.3+ | 0.0 | | |
| 2005 03 13 | 691 | 0.2− | 0.1+ | 2005 04 14 | 703 | 0.5− | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.0 | | |
| 2005 03 13 | 691 | 0.0 | 0.0 | 2005 05 04 | E12 | 0.9+ | 0.3+ | 2006 08 20 | 644 | 0.3− | 0.1+ | | |
| 2005 03 13 | 691 | 0.1+ | 0.1− | 2005 05 04 | E12 | 0.2+ | 0.0 | 2006 08 20 | 644 | 0.1− | 0.1− | | |
| 2005 03 17 | G96 | 0.4− | 0.4− | 2005 05 04 | E12 | 0.2+ | 1.1+ | 2006 11 16 | G96 | 0.2− | 0.0 | | |
| 2005 03 17 | G96 | 0.5− | 0.2− | 2005 05 04 | E12 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.5− | 1.1+ | | |
| 2005 03 17 | G96 | 0.4− | 0.2− | 2005 05 14 | 644 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3+ | | |
| 2005 03 17 | G96 | 0.3− | 0.3− | 2005 05 14 | 703 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2005 03 17 | 704 | 0.5+ | 0.2+ | 2005 05 14 | 644 | 0.6+ | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.3− | | |
| 2005 03 17 | 704 | 1.5+ | 0.4− | 2005 05 14 | 703 | 0.3− | 1.0− | 2006 11 23 | G96 | 0.1+ | 0.6− | | |
| 2005 03 17 | 704 | 1.0+ | 0.1+ | 2005 05 14 | 703 | 1.1− | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.7− | | |
| 2005 03 17 | 704 | 1.5+ | 1.2+ | 2005 05 14 | 644 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.9+ | 0.5+ | | |
| 2005 03 17 | 704 | 0.7+ | 0.1+ | 2005 05 14 | 703 | 1.0− | 0.1− | | | | | | |

**2005 EA**$_{185}$ **= 2006 UN**$_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.66322 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28109556 | $\omega$ | 323.36461 | | +0.69752975 | | +0.71631988 |
| $a$ | 2.3079872 | $\Omega$ | 350.81387 | | −0.62705838 | | +0.59778989 |
| $e$ | 0.1646531 | $i$ | 6.61365 | | −0.34677086 | | +0.35990702 |
| $P$ | 3.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 691 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.4− | 0.7− | 2006 10 31 | 703 | (0.5+ | 1.6+) | | |
| 2005 03 09 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.7− | 2006 10 31 | 703 | 0.0 | 0.2− | | |
| 2005 03 09 | 691 | 0.1+ | 0.1− | 2006 10 19 | 703 | 1.4− | 0.2+ | 2006 10 31 | 703 | 1.1+ | 0.1− | | |
| 2005 03 13 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.1− | 0.4− | | |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.1+ | 1.1− | | |
| 2005 03 13 | 691 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.6+ | | |
| 2005 03 17 | G96 | 0.9− | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 14 | 703 | (0.3− | 1.7+) | | |
| 2005 03 17 | G96 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.8+ | 0.2+ | | |
| 2005 03 17 | G96 | (0.8+ | 1.8−) | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.7− | 1.2+ | | |
| 2005 03 17 | G96 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.7− | 0.5+ | | |
| 2006 10 19 | 703 | 0.2+ | 0.5+ | 2006 10 31 | 703 | (1.0+ | 1.9+) | 2006 11 14 | 703 | 0.1− | 0.0 | | |

**2005 ER**$_{186}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.12966 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21575261 | $\omega$ | 212.51603 | | −0.33190570 | | +0.94276480 |
| $a$ | 2.7531635 | $\Omega$ | 38.12681 | | −0.85395982 | | −0.28581696 |
| $e$ | 0.0433515 | $i$ | 2.98421 | | −0.40073836 | | −0.17176498 |
| $P$ | 4.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.3− | 0.4+ | 2005 03 13 | 703 | 0.3+ | 1.3+ | 2005 04 04 | G96 | 0.6+ | 0.4− | | |
| 2002 09 13 | 644 | 0.2− | 0.4+ | 2005 03 13 | 703 | 1.2− | 1.1+ | 2005 04 04 | G96 | 0.5− | 0.7− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2005 03 13 | 703 | 1.1− | 0.4+ | 2005 04 04 | G96 | 0.1+ | 0.3− | | |
| 2004 01 19 | 691 | 0.1− | 0.2− | 2005 03 13 | 703 | 0.3− | 0.3+ | 2005 05 09 | G96 | 0.1− | 0.2− | | |
| 2004 01 19 | 691 | 0.2+ | 0.1+ | 2005 03 14 | G96 | 0.1− | 0.1− | 2005 05 09 | G96 | 0.2+ | 0.2− | | |
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2005 03 14 | G96 | 0.1+ | 0.2− | 2005 05 09 | G96 | 0.0 | 0.2− | | |
| 2005 03 01 | 691 | 0.4+ | 0.3+ | 2005 03 14 | G96 | 0.1− | 0.1+ | 2005 05 09 | G96 | 0.2− | 0.3− | | |
| 2005 03 01 | 691 | 0.4+ | 0.3+ | 2005 03 14 | G96 | 0.4+ | 0.2+ | 2006 07 22 | G96 | 0.1+ | 0.3+ | | |
| 2005 03 01 | 691 | 0.1− | 0.1+ | 2005 04 04 | 703 | 1.2− | 0.5− | 2006 07 22 | G96 | 0.4− | 0.4+ | | |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2005 04 04 | 703 | 0.4− | 0.1− | 2006 07 22 | G96 | 0.6+ | 0.1− | | |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 04 04 | 703 | (2.2− | 0.4+) | 2006 07 22 | G96 | 0.4− | 0.2− | | |
| 2005 03 10 | G96 | 0.1+ | 0.1+ | 2005 04 04 | 703 | 1.3+ | 0.9− | | | | | | |
| 2005 03 10 | G96 | 0.0 | 0.4− | 2005 04 04 | G96 | 0.3+ | 0.0 | | | | | | |

**2005 EV$_{187}$ = 2006 RJ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.79520 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22849011 | $\omega$ | 294.64047 | | +0.58323189 | +0.81111194 | |
| $a$ | 2.6498692 | $\Omega$ | 11.35785 | | −0.64076381 | +0.49269872 | |
| $e$ | 0.2106087 | $i$ | 12.91689 | | −0.49926175 | +0.31519106 | |
| $P$ | 4.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2002 11 25 | 644 | 0.5− | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.8− | 2006 09 28 | 704 | 1.2+ | 0.9+ |
| 2002 11 25 | 644 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.3+ | 2006 09 28 | G92 | 0.1− | 0.2+ |
| 2002 12 03 | 644 | 0.1− | 0.7+ | 2006 09 20 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 291 | 0.0 | 0.2+ |
| 2002 12 03 | 644 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 291 | 0.0 | 0.0 |
| 2002 12 03 | 644 | 0.2+ | 0.5+ | 2006 09 20 | 691 | 0.1+ | 0.1− | 2006 09 29 | 291 | 0.2− | 0.1+ |
| 2005 03 10 | G96 | 0.9− | 0.4− | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 10 01 | 704 | 0.2− | 1.4+ |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 09 20 | 691 | 0.2− | 0.6− | 2006 10 01 | 704 | 0.7− | 0.4+ |
| 2005 03 10 | G96 | 0.6− | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.7− | 0.9+ |
| 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.7− | 1.0+ |
| 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2005 03 13 | 691 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 2005 04 04 | 691 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.3− | 0.2− |
| 2005 04 04 | 691 | 0.2+ | 0.3+ | 2006 09 27 | G92 | 0.3− | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2005 04 04 | 691 | 0.5+ | 0.3+ | 2006 09 27 | 704 | (0.9+ | 2.0−) | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2006 08 23 | 644 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.0 | 0.8− | 2006 10 16 | G96 | 0.3− | 0.2+ |
| 2006 08 23 | 644 | 0.4+ | 0.3− | 2006 09 27 | G92 | 0.7+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2006 08 23 | 644 | 0.1+ | 0.6− | 2006 09 27 | 704 | (0.2− | 1.7−) | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 12 | 703 | 0.0 | 0.4+ | 2006 09 27 | 704 | (1.6+ | 1.1−) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2006 09 12 | 703 | (1.9+ | 0.2−) | 2006 09 27 | 704 | 0.1− | 0.6− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2006 09 12 | 703 | 0.5+ | 1.3+ | 2006 09 27 | G92 | 0.5− | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2006 09 12 | 703 | 0.2+ | 1.2+ | 2006 09 28 | G92 | 0.3+ | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2006 09 17 | 704 | 0.4− | 1.3+ | 2006 09 28 | 691 | 0.5− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2006 09 17 | 704 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2006 09 17 | 704 | 0.3− | 1.2− | 2006 09 28 | 704 | 0.5− | 0.6− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 17 | 704 | 0.4− | 1.2+ | 2006 09 28 | G92 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.5− | | | | |

**2005 ED$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.19294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26992040 | $\omega$ | 130.99439 | | +0.85680965 | +0.51447925 | |
| $a$ | 2.3712585 | $\Omega$ | 198.12688 | | −0.50008581 | +0.81282373 | |
| $e$ | 0.1260127 | $i$ | 6.36139 | | −0.12566388 | +0.27318252 | |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 691 | 0.2+ | 0.0 | 2005 04 09 | G96 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.1+ |
| 1999 10 15 | 691 | 0.1− | 0.1+ | 2005 05 04 | G96 | 0.1− | 0.1− | 2006 09 25 | 691 | (1.9− | 1.1+) |
| 1999 10 15 | 691 | 0.1+ | 0.1− | 2005 05 04 | G96 | 0.4+ | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2001 02 22 | 645 | 0.0 | 0.2+ | 2005 05 04 | G96 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2001 02 22 | 645 | 0.0 | 0.1+ | 2005 05 04 | G96 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.3− | 0.1+ |
| 2005 03 10 | G96 | 0.9− | 0.2− | 2005 05 06 | G96 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.3+ | 1.1+ |
| 2005 03 10 | G96 | 0.6− | 0.4+ | 2005 05 06 | G96 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.0 |
| 2005 03 10 | G96 | 0.2+ | 0.8− | 2005 05 06 | G96 | (0.4− | 1.5+) | 2006 09 27 | 704 | (1.4− | 1.6−) |
| 2005 03 10 | G96 | 0.6− | 0.1− | 2005 05 06 | G96 | 0.8− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2005 03 13 | 691 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.3− | 0.5+ | 2006 10 01 | 691 | 0.2+ | 0.5+ |
| 2005 03 13 | 691 | 0.3+ | 0.7+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.3− |
| 2005 04 04 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2005 04 04 | 691 | 0.2+ | 0.7+ | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2005 04 04 | 691 | 0.5+ | 0.3− | 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2005 04 09 | G96 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.5+ | 1.0+ | 2006 10 09 | 644 | 0.4− | 0.4+ |
| 2005 04 09 | G96 | 0.4− | 0.3− | 2006 09 19 | 699 | 1.0− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 2005 04 09 | G96 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.9+ | | | | |

**2005 EM$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.70859 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27504073 | $\omega$ | 358.15129 | | −0.98810639 | +0.13266935 | |
| $a$ | 2.3417366 | $\Omega$ | 190.48201 | | −0.13503067 | −0.99050227 | |
| $e$ | 0.1606732 | $i$ | 25.29975 | | −0.07356961 | +0.03611219 | |
| $P$ | 3.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.6− | 0.2− | 2005 04 05 | 704 | 0.4+ | 0.2− | 2005 04 30 | 699 | 0.9− | 0.3− |
| 2005 03 10 | G96 | 0.4− | 0.2− | 2005 04 13 | 704 | 0.4+ | 0.2+ | 2005 04 30 | 699 | 0.4− | 0.6+ |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2005 04 13 | 704 | 1.0+ | 0.2+ | 2005 04 30 | 699 | 1.1− | 0.6+ |
| 2005 03 10 | G96 | 0.4− | 0.2− | 2005 04 13 | 704 | 0.3+ | 0.0 | 2005 05 08 | 703 | 1.1− | 0.2+ |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 704 | 0.3+ | 0.3+ | 2005 05 08 | 703 | 1.3− | 1.2− |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 704 | 0.3+ | 0.1+ | 2005 05 08 | 703 | 0.1− | 0.5− |
| 2005 03 13 | 691 | 0.4+ | 0.2+ | 2005 04 14 | 683 | 0.0 | 0.3− | 2005 05 08 | 703 | 0.1+ | 0.5− |
| 2005 03 23 | 608 | 0.4+ | 0.8− | 2005 04 14 | 683 | 0.3− | 0.5− | 2005 05 12 | 704 | 0.8+ | 1.1+ |
| 2005 03 23 | 608 | 0.3+ | 0.9− | 2005 04 14 | 683 | 0.5− | 0.5+ | 2005 05 12 | 704 | 1.5+ | 0.8+ |
| 2005 03 23 | 608 | 0.2+ | 0.8− | 2005 04 15 | 699 | 0.2− | 0.3+ | 2005 05 12 | 704 | 0.4+ | 0.2+ |
| 2005 04 01 | 699 | 0.0 | 0.2− | 2005 04 15 | 699 | 0.3+ | 0.3+ | 2005 05 12 | 704 | 0.0 | 0.3+ |
| 2005 04 01 | 699 | 0.2− | 0.4+ | 2005 04 15 | 699 | 0.2+ | 0.5+ | 2005 05 12 | 704 | 0.5+ | 0.3+ |
| 2005 04 01 | 699 | 0.9− | 0.0 | 2005 04 15 | 699 | 0.1+ | 0.2− | 2005 06 08 | 703 | 0.2+ | 0.1− |
| 2005 04 01 | 699 | 0.1+ | 0.0 | 2005 04 18 | 703 | 0.8− | 0.1+ | 2005 06 08 | 703 | 0.7+ | 1.0− |
| 2005 04 04 | 703 | 0.6− | 0.0 | 2005 04 18 | 703 | 0.5− | 0.5+ | 2005 06 08 | 703 | 0.1+ | 0.7− |
| 2005 04 04 | 703 | 0.6− | 0.7− | 2005 04 18 | 703 | 1.1− | 0.1+ | 2005 06 08 | 703 | 0.6− | 0.4− |
| 2005 04 04 | 703 | 0.7− | 0.1− | 2005 04 18 | 704 | 0.5+ | 0.3− | 2006 10 16 | A44 | 0.4− | 0.4+ |
| 2005 04 04 | 703 | 0.3− | 0.1+ | 2005 04 18 | 703 | 0.6− | 0.2− | 2006 10 16 | A44 | 0.1− | 0.6− |
| 2005 04 05 | 704 | 0.7+ | 0.2+ | 2005 04 18 | 704 | 0.7+ | 0.0 | 2006 10 16 | A44 | 0.4− | 0.2+ |
| 2005 04 05 | 704 | 0.2+ | 0.2+ | 2005 04 18 | 704 | 1.0+ | 0.1− | 2006 11 20 | 291 | 0.1+ | 0.1+ |
| 2005 04 05 | 704 | 0.2+ | 0.6+ | 2005 04 18 | 704 | 0.1− | 0.4− | 2006 11 20 | 291 | 0.0 | 0.4+ |
| 2005 04 05 | 704 | 0.3− | 0.4+ | 2005 04 18 | 704 | 0.7+ | 0.0 | 2006 11 20 | 291 | 0.2+ | 0.1− |

**2005 ED$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.84006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22882767 | $\omega$ | 253.16467 | | −0.93430483 | −0.29719020 | |
| $a$ | 2.6472626 | $\Omega$ | 269.20599 | | +0.35258473 | −0.85178419 | |
| $e$ | 0.2312897 | $i$ | 11.35430 | | −0.05252129 | −0.43144139 | |
| $P$ | 4.31 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 644 | 0.1+ | 0.3+ | 2005 03 10 | E12 | 0.1+ | 0.1+ | 2005 04 04 | 644 | 0.6+ | 0.1+ |
| 2001 05 14 | 644 | 0.2+ | 0.2+ | 2005 03 10 | E12 | 0.9− | 0.2− | 2005 04 04 | 644 | 0.5+ | 0.1− |
| 2001 05 14 | 644 | 0.2− | 0.1+ | 2005 03 10 | E12 | 1.7− | 0.5+ | 2005 04 04 | 644 | 0.5+ | 0.2− |
| 2005 02 04 | 704 | 0.6− | 1.6+ | 2005 03 13 | 699 | 0.6+ | 0.5− | 2005 04 15 | 703 | 0.6− | 0.2− |
| 2005 02 04 | 704 | 0.7+ | 0.5− | 2005 03 13 | 699 | 0.6+ | 0.4− | 2005 04 15 | 703 | 0.7− | 1.3− |
| 2005 02 04 | 704 | 0.7− | 0.7− | 2005 03 13 | 699 | 0.7+ | 0.2+ | 2005 04 15 | 703 | 0.3− | 0.2− |
| 2005 03 02 | 704 | 0.2+ | 1.2+ | 2005 03 13 | 699 | 0.5+ | 0.2+ | 2005 04 15 | 703 | 0.7− | 0.4− |
| 2005 03 02 | 704 | 0.4− | 0.5+ | 2005 03 17 | 704 | 0.7+ | 0.6+ | 2006 05 30 | G96 | 0.6− | 0.3+ |
| 2005 03 02 | 704 | 0.0 | 0.4+ | 2005 03 17 | 704 | 0.2+ | 1.2+ | 2006 05 30 | G96 | 0.5− | 0.2− |
| 2005 03 02 | 704 | 0.4− | 0.3+ | 2005 03 17 | 704 | 0.3+ | 1.0− | 2006 05 30 | G96 | 0.4+ | 0.1+ |
| 2005 03 02 | 704 | 0.5+ | 0.3+ | 2005 03 17 | 704 | 0.0 | 0.6− | 2006 05 30 | G96 | 0.6+ | 0.1+ |
| 2005 03 10 | E12 | 0.1− | 0.5− | 2005 03 17 | 704 | 0.2− | 0.7− | | | | |

**2005 EZ$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.49574 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23542624 | $\omega$ | 281.38306 | | −0.11238803 | −0.99364705 | |
| $a$ | 2.5975633 | $\Omega$ | 175.05861 | | +0.93618331 | −0.10786511 | |
| $e$ | 0.1735742 | $i$ | 3.90804 | | +0.33306117 | −0.03210377 | |
| $P$ | 4.19 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 09 | 691 | 0.0 | 0.1− | 2005 02 02 | 703 | 0.0 | 1.2− | 2005 03 13 | 691 | 0.0 | 0.1+ |
| 1991 11 09 | 691 | 0.6− | 0.1− | 2005 02 02 | 703 | 0.2+ | 0.7− | 2005 04 05 | G96 | 0.1+ | 0.2+ |
| 1991 11 09 | 691 | 0.6+ | 0.0 | 2005 03 02 | 691 | 0.1− | 0.1+ | 2005 04 05 | G96 | 0.2+ | 0.6− |
| 1999 09 03 | 691 | 0.2+ | 0.1+ | 2005 03 02 | 691 | 0.0 | 0.3+ | 2005 04 05 | G96 | 0.2− | 0.1+ |
| 1999 09 03 | 691 | 0.2− | 0.1+ | 2005 03 02 | 691 | 0.2+ | 0.1+ | 2005 04 05 | G96 | 0.2+ | 0.5− |
| 1999 09 03 | 691 | 0.1− | 0.2+ | 2005 03 11 | G96 | 0.1− | 0.3− | 2005 04 06 | G96 | 0.1+ | 0.1− |
| 2005 02 02 | 691 | 0.1− | 0.0 | 2005 03 11 | G96 | 0.4− | 0.2− | 2005 04 06 | G96 | 0.0 | 0.3− |
| 2005 02 02 | 691 | 0.2+ | 0.2+ | 2005 03 11 | G96 | 0.1− | 0.2− | 2005 04 06 | G96 | 0.2+ | 0.5− |
| 2005 02 02 | 691 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.2− | 2005 04 06 | G96 | 0.2− | 0.3− |
| 2005 02 02 | 703 | 0.1− | 0.3+ | 2005 03 13 | 691 | 0.0 | 0.0 | | | | |
| 2005 02 02 | 703 | 0.2− | 0.0 | 2005 03 13 | 691 | 0.0 | 0.2+ | | | | |

**2005 EE$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.42638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21214643 | $\omega$ | 210.71781 | | +0.93952567 | −0.34208470 | |
| $a$ | 2.7842756 | $\Omega$ | 169.24819 | | +0.32938157 | +0.88942676 | |
| $e$ | 0.1291610 | $i$ | 5.04914 | | +0.09380457 | +0.30314699 | |
| $P$ | 4.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 08 | 691 | 0.5+ | 1.0+ | 2003 10 05 | 291 | 1.1− | 0.0 | 2005 03 13 | 691 | 0.3+ | 0.1+ |
| 1997 05 08 | 691 | 0.5− | 2.2− | 2003 10 15 | 644 | 0.3+ | 0.4+ | 2005 03 13 | 691 | 0.2+ | 0.1+ |
| 1997 05 08 | 691 | 0.1− | 0.3+ | 2003 10 15 | 644 | 0.6+ | 0.3+ | 2005 03 13 | 691 | 0.0 | 0.3+ |
| 2001 03 21 | 691 | 0.2+ | 0.9+ | 2003 10 15 | 644 | 0.4+ | 0.3+ | 2005 04 05 | G96 | 0.4− | 0.2− |
| 2001 03 21 | 691 | 0.3+ | 0.6+ | 2003 10 29 | 699 | 0.2− | 0.0 | 2005 04 05 | G96 | 0.2− | 0.0 |
| 2001 03 21 | 691 | 0.0 | 0.3+ | 2003 10 29 | 699 | 0.1− | 0.1− | 2005 04 05 | G96 | 0.2+ | 0.2+ |
| 2003 09 16 | 691 | 0.3+ | 0.5+ | 2003 10 29 | 699 | 0.3+ | 0.2− | 2005 04 05 | G96 | 0.6+ | 0.3+ |
| 2003 09 16 | 691 | 0.4+ | 0.2+ | 2003 10 29 | 699 | 0.1− | 0.1+ | 2006 04 20 | 691 | 0.3+ | 0.7+ |
| 2003 09 16 | 691 | 0.5+ | 0.4+ | 2005 02 02 | 691 | 0.5+ | 0.2− | 2006 04 20 | 691 | 0.5+ | 0.6+ |
| 2003 09 28 | 704 | 1.1+ | 1.8+ | 2005 02 02 | 691 | 0.1− | 0.0 | 2006 04 20 | 691 | 0.0 | 0.7+ |
| 2003 09 28 | 704 | 0.0 | 1.9+ | 2005 02 02 | 691 | 0.3− | 0.2− | 2006 05 30 | G96 | 0.3− | 0.9+ |
| 2003 09 28 | 704 | 0.2+ | 0.6+ | 2005 03 11 | G96 | 0.8− | 0.0 | 2006 05 30 | G96 | 0.2+ | 0.5+ |
| 2003 09 28 | 704 | 0.5− | 0.4+ | 2005 03 11 | G96 | 0.6− | 0.0 | 2006 05 30 | G96 | 0.5− | 0.1+ |
| 2003 10 05 | 291 | 0.7− | 0.3+ | 2005 03 11 | G96 | 0.5− | 0.4− | 2006 05 30 | G96 | 0.0 | 0.6+ |
| 2003 10 05 | 291 | 0.7− | 0.3+ | 2005 03 11 | G96 | 0.6− | 0.5− | | | | |

**2005 EU$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.10451 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28533450 | $\omega$ | 84.30151 | | +0.05700822 | +0.99823443 | |
| $a$ | 2.2850718 | $\Omega$ | 189.01740 | | −0.95293817 | +0.04942463 | |
| $e$ | 0.2281346 | $i$ | 6.10764 | | −0.29775645 | +0.03294286 | |
| $P$ | 3.45 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.1+ | 0.8− | 2005 03 17 | 703 | 1.0− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.5+ |
| 1999 11 05 | 691 | 0.1+ | 0.3− | 2005 03 17 | 703 | (3.1− | 0.2+) | 2006 10 02 | 691 | 0.4− | 0.4+ |
| 1999 11 05 | 691 | 0.3+ | 0.5− | 2005 03 17 | 703 | 0.0 | 1.1+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2002 07 09 | 704 | 0.3+ | 0.5− | 2005 05 04 | G96 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 07 09 | 704 | 0.2− | 0.6+ | 2005 05 04 | G96 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2002 07 09 | 704 | 0.1+ | 0.6+ | 2005 05 04 | G96 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2005 03 02 | 691 | 0.5+ | 0.6+ | 2005 05 04 | G96 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2005 03 02 | 691 | 0.3+ | 0.1+ | 2005 05 13 | G96 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2005 03 02 | 691 | 0.4+ | 0.3− | 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2005 05 13 | G96 | 0.8− | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2005 05 13 | G96 | 0.5+ | 0.6+ | 2006 10 31 | G96 | 0.8+ | 0.1+ |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.5+ | 0.7− |
| 2005 03 11 | G96 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.9− |
| 2005 03 13 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.7− | 0.5− |
| 2005 03 13 | 691 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.7− |
| 2005 03 13 | 691 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.3+ | | | | |
| 2005 03 17 | 703 | 0.4− | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.4+ | | | | |

**2005 EB$_{193}$ = 2006 UN$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.95918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27020878 | $\omega$ | 42.56575 | | +0.52642548 | +0.84994650 | |
| $a$ | 2.3695711 | $\Omega$ | 259.20934 | | −0.78586364 | +0.47671803 | |
| $e$ | 0.2155221 | $i$ | 1.26079 | | −0.32449122 | +0.22434543 | |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 695 | 0.3+ | 0.2− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.0 |
| 2005 03 10 | 695 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2005 03 11 | G96 | 0.5+ | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.1+ |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2005 03 11 | G96 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.5− | 0.2− |
| 2005 03 11 | G96 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.5+ | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2005 03 13 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 1.0− | 0.6+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2005 03 13 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.1− | | | | |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.5+ | 0.3− | | | | |

**2005 EV$_{195}$ = 2006 SD$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.44080 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29070695 | $\omega$ | 136.09548 | | +0.82235184 | +0.56859762 | |
| $a$ | 2.2568314 | $\Omega$ | 189.31956 | | −0.55106253 | +0.78680427 | |
| $e$ | 0.1615931 | $i$ | 7.39294 | | −0.14165993 | +0.24007454 | |
| $P$ | 3.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 04 | 644 | 0.1− | 0.8+ | 2006 09 16 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2002 05 04 | 644 | 0.1+ | 1.0+ | 2006 09 16 | 644 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2002 05 04 | 644 | 0.2+ | 0.8+ | 2006 09 16 | 644 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2002 05 10 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2002 05 10 | 644 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.1+ |
| 2002 05 10 | 644 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 704 | 0.7+ | 0.2− |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.7+ | 1.3+ | 2006 09 27 | 704 | 0.1+ | 0.9+ |
| 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 09 18 | 699 | (0.4+ | 1.7+) | 2006 09 27 | 704 | 1.0+ | 0.2+ |
| 2005 03 11 | G96 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.6− | 0.3− | 2006 10 01 | 704 | (0.3− | 1.6+) |
| 2005 03 11 | G96 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.3− | 0.8+ | 2006 10 01 | 704 | (0.7− | 1.6+) |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 10 01 | 704 | 0.9− | 1.1+ |
| 2005 03 13 | 691 | 0.3+ | 0.2+ | 2006 09 18 | J75 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.6− | 1.2+ |
| 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 09 19 | J75 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.6− | 1.2+ |
| 2005 03 17 | 691 | 0.5+ | 0.5+ | 2006 09 19 | J75 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2005 03 17 | 691 | 0.2− | 1.1+ | 2006 09 20 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2005 03 17 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.5− | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.8+ |
| 2006 08 24 | 644 | 0.5+ | 0.2− | 2006 09 20 | 704 | 0.1− | 0.6− | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.3− | 1.0+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2006 08 24 | 644 | 0.6+ | 0.2− | 2006 09 20 | 704 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.4− | 0.1+ |
| 2006 09 15 | 704 | 0.2− | 0.9+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.2+ |
| 2006 09 15 | 704 | 1.1− | 1.2− | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |
| 2006 09 15 | 704 | (1.1+ | 1.5−) | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |

**2005 ED$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 242.08356 | | | (2000.0) | | |
| $n$ | 0.26937371 | $\omega$ | 112.87315 | | +0.17602317 | −0.98421101 |
| $a$ | 2.3744657 | $\Omega$ | 326.97169 | | +0.89021670 | +0.16720402 |
| $e$ | 0.1605591 | $i$ | 1.95155 | | +0.42015483 | +0.05806462 |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 704 | 0.8− | 0.0 | 2003 10 24 | 704 | 0.3− | 0.2+ | 2005 03 11 | G96 | 0.1+ | 0.0 |
| 2003 09 27 | 704 | 0.0 | 0.5− | 2003 10 24 | 704 | 0.1+ | 0.5+ | 2005 03 11 | G96 | 0.4+ | 0.3− |
| 2003 09 27 | 704 | 0.7+ | 0.0 | 2003 10 24 | 704 | 0.4− | 0.0 | 2005 03 11 | G96 | 0.9− | 0.0 |
| 2003 09 27 | 704 | 0.1+ | 0.5+ | 2003 10 24 | 704 | 0.3+ | 0.2− | 2005 03 13 | 691 | 0.0 | 0.1− |
| 2003 10 19 | 691 | 0.1− | 0.1− | 2003 10 24 | 704 | 1.0+ | 0.3+ | 2005 03 13 | 691 | 0.1+ | 0.3+ |
| 2003 10 19 | 691 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.1+ | 0.5− | 2005 03 13 | 691 | 0.3+ | 0.0 |
| 2003 10 19 | 691 | 0.1− | 0.1+ | 2003 10 24 | 704 | 1.7− | 0.4+ | 2005 03 17 | 691 | 0.2+ | 0.3+ |
| 2003 10 24 | 704 | 0.0 | 0.8− | 2003 10 24 | 704 | 1.6+ | 0.2+ | 2005 03 17 | 691 | 0.2− | 0.3− |
| 2003 10 24 | 704 | 0.4− | 0.2− | 2005 03 11 | G96 | 0.6− | 0.2+ | 2005 03 17 | 691 | 0.1− | 0.1− |

**2005 EM$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.45958 | | | (2000.0) | | |
| $n$ | 0.29941820 | $\omega$ | 277.80286 | | +0.10745665 | +0.99420369 |
| $a$ | 2.2128429 | $\Omega$ | 358.35380 | | −0.85779053 | +0.09094282 |
| $e$ | 0.1000266 | $i$ | 6.95421 | | −0.50264151 | +0.05734486 |
| $P$ | 3.29 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.3− | 0.3− | 2005 03 17 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2005 03 11 | G96 | 0.3− | 0.6− | 2005 03 17 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2005 03 11 | G96 | 0.1− | 0.8− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2005 03 11 | G96 | 0.3− | 0.4− | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2005 03 13 | 703 | 0.4− | 0.2− | 2006 09 28 | 691 | (1.7− | 0.2−) | 2006 10 17 | 703 | 0.8+ | 0.6+ |
| 2005 03 13 | 703 | (0.6− | 1.8−) | 2006 10 02 | 691 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2005 03 13 | 703 | 0.8− | 0.8− | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2005 03 13 | 703 | 0.4− | 0.9− | 2006 10 02 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2005 03 13 | 691 | 0.2− | 0.0 | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2005 03 13 | 691 | 0.4+ | 1.2+ | 2006 10 03 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2005 03 13 | 691 | 0.3+ | 0.1− | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2005 03 17 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2− |

**2005 EV$_{198}$ = 2006 QE$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 153.69520 | | | (2000.0) | | |
| $n$ | 0.28182703 | $\omega$ | 244.52371 | | −0.97294173 | +0.23060313 |
| $a$ | 2.3039919 | $\Omega$ | 308.80552 | | −0.20481041 | −0.88956856 |
| $e$ | 0.0571762 | $i$ | 1.05682 | | −0.10694430 | −0.39432216 |
| $P$ | 3.50 | $H$ | 17.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 17 | 691 | 0.8+ | 0.4+ | 2005 03 11 | G96 | 0.7− | 0.1− | 2005 05 13 | 691 | 0.5+ | 0.7+ |
| 1994 01 17 | 691 | 1.1− | 0.3+ | 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 1994 01 17 | 691 | 0.4+ | 0.2+ | 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 2001 02 13 | 691 | 0.1− | 0.4− | 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.0 |
| 2001 02 13 | 691 | 0.0 | 0.4+ | 2005 03 17 | 691 | 0.1− | 0.4+ | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2001 02 13 | 691 | 0.1+ | 0.3+ | 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.9+ |
| 2003 11 16 | 691 | 0.1− | 0.0 | 2005 03 17 | 691 | 0.2− | 1.2− | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2003 11 16 | 691 | 0.0 | 0.5+ | 2005 04 04 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2003 11 16 | 691 | 0.1+ | 0.1− | 2005 04 04 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2005 03 11 | G96 | 0.7− | 0.2− | 2005 04 04 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2005 03 11 | G96 | 0.4− | 0.1+ | 2005 05 13 | 691 | 0.5+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2005 03 11 | G96 | 0.1− | 0.3− | 2005 05 13 | 691 | 0.3+ | 0.2+ | | | | |

**2005 EW$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 107.23302 | | | (2000.0) | | |
| $n$ | 0.26126203 | $\omega$ | 29.95385 | | −0.47568522 | +0.87943329 |
| $a$ | 2.4233633 | $\Omega$ | 211.65211 | | −0.81365753 | −0.44765927 |
| $e$ | 0.1652567 | $i$ | 1.95555 | | −0.33419304 | −0.16185879 |
| $P$ | 3.77 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 15 | 691 | 0.2+ | 0.0 | 2005 04 01 | 699 | 1.4+ | 0.9+ | 2005 05 04 | G96 | 0.2− | 0.1+ |
| 1997 02 15 | 691 | 0.1− | 0.1+ | 2005 04 01 | 699 | 1.5+ | 0.7− | 2005 05 08 | G96 | 0.5− | 0.1− |
| 1997 02 15 | 691 | 0.4+ | 0.0 | 2005 04 01 | 699 | 0.1+ | 0.4+ | 2005 05 08 | G96 | 0.4− | 0.1− |
| 2001 02 20 | 645 | 0.1− | 0.1+ | 2005 04 04 | 691 | 0.4+ | 0.0 | 2005 05 08 | G96 | 0.3− | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 04 04 | 691 | 0.0 | 0.2+ | 2005 05 08 | G96 | 0.4− | 0.2− |
| 2005 03 11 | G96 | 0.3− | 0.1− | 2005 04 04 | 691 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.5+ |
| 2005 03 11 | G96 | 0.5− | 0.0 | 2005 04 05 | 699 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.3+ |
| 2005 03 11 | G96 | 0.3− | 0.1+ | 2005 04 05 | 699 | 0.7− | 0.5− | 2006 09 17 | 691 | 0.1+ | 0.6+ |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2005 04 05 | 699 | 0.2+ | 0.4− | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.1+ | 2005 04 05 | 699 | 0.7− | 0.3+ | 2006 09 25 | 691 | 0.4− | 0.2+ |
| 2005 03 13 | 691 | 0.3+ | 0.0 | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2005 03 13 | 691 | 0.0 | 0.5− | 2005 05 04 | 691 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2005 03 17 | 691 | 0.3+ | 0.2+ | 2005 05 04 | 691 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2005 03 17 | 691 | 0.2+ | 0.2+ | 2005 05 04 | G96 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2005 03 17 | 691 | 0.0 | 0.2+ | 2005 05 04 | G96 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2005 04 01 | 699 | (1.8+ | 0.4+) | 2005 05 04 | G96 | 0.1− | 0.4+ | | | | |

**2005 ED$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.09049 | | | (2000.0) | | |
| $n$ | 0.29307984 | $\omega$ | 143.67684 | | +0.97989960 | +0.19507980 |
| $a$ | 2.2446334 | $\Omega$ | 205.17030 | | −0.19820682 | +0.92836650 |
| $e$ | 0.1369642 | $i$ | 5.62950 | | −0.02260146 | +0.31635346 |
| $P$ | 3.36 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 566 | 0.0 | 0.2+ | 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.1− |
| 1996 10 12 | 566 | 0.5− | 0.3− | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.1+ |
| 1996 10 12 | 566 | 0.5+ | 0.3+ | 2006 09 16 | 644 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.3− |
| 2002 06 06 | 704 | 0.1− | 0.3+ | 2006 09 18 | 704 | 1.0+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.1+ |
| 2002 06 06 | 704 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.5− | 0.0 |
| 2002 06 06 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 704 | 0.5− | 0.7− | 2006 10 17 | G96 | 0.1− | 0.1+ |
| 2005 03 11 | G96 | 0.5− | 0.2− | 2006 09 18 | 704 | 0.6+ | 1.0− | 2006 10 17 | G96 | 0.0 | 0.0 |
| 2005 03 11 | G96 | 0.7− | 0.1+ | 2006 09 18 | 704 | 1.3− | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 2005 03 11 | G96 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.2− |
| 2005 03 11 | G96 | 0.7− | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2005 03 13 | 691 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.8− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 1.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2005 04 09 | 691 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.3− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 04 09 | 691 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 04 09 | 691 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.2− | 0.6+ | 2006 11 06 | 644 | 0.4− | 0.0 |
| 2005 04 11 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.7+ | 1.4+ | 2006 11 06 | 644 | 0.3− | 0.2+ |
| 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 704 | (1.2− | 2.1+) | 2006 11 06 | 644 | 0.6− | 0.3+ |
| 2005 04 11 | 691 | 1.0+ | 0.4+ | 2006 09 29 | 704 | 1.2+ | 0.7− | 2006 11 11 | 703 | 1.2+ | 0.6+ |
| 2005 05 04 | G96 | 0.6− | 0.2− | 2006 09 29 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2005 05 04 | G96 | 0.7− | 0.5− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.7− |
| 2005 05 04 | G96 | 0.7− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.6− | 0.4−) |
| 2005 05 04 | G96 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2005 05 13 | G96 | 0.6− | 0.3− | 2006 10 15 | 703 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2005 05 13 | G96 | 0.3− | 0.1− | 2006 10 15 | 703 | 0.4− | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2005 05 13 | G96 | 0.5− | 0.3− | 2006 10 15 | 703 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.0 | 0.3+ |
| 2005 05 13 | G96 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.4− | 0.1+ | | | | |

**2005 EU$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.82252 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30020068 | $\omega$ | 207.39801 | | −0.44142875 | +0.89685697 | |
| $a$ | 2.2089960 | $\Omega$ | 36.42643 | | −0.81435655 | −0.38729162 | |
| $e$ | 0.1217452 | $i$ | 2.71005 | | −0.37678119 | −0.21366509 | |
| $P$ | 3.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.3+ | 0.1+ | 2005 03 14 | G96 | 0.5− | 0.7− | 2005 04 09 | G96 | 0.3− | 0.3+ |
| 2005 03 10 | G96 | 0.1− | 0.3− | 2005 03 14 | G96 | 0.3− | 0.2− | 2005 04 09 | G96 | 0.3− | 0.1− |
| 2005 03 10 | G96 | 0.6+ | 0.3+ | 2005 03 14 | G96 | 0.3− | 0.3− | 2006 09 14 | 691 | 0.2− | 0.2+ |
| 2005 03 10 | G96 | 0.1+ | 0.1− | 2005 04 04 | 703 | 0.9+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1− |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2005 04 04 | 703 | 0.8+ | 0.0 | 2006 09 14 | 691 | 0.0 | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2005 04 04 | 703 | 1.2− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.2− |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 04 04 | 703 | 0.7− | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.0 |
| 2005 03 10 | G96 | 0.1− | 0.1− | 2005 04 04 | G96 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.1− |
| 2005 03 13 | 703 | 1.3+ | 1.0+ | 2005 04 04 | G96 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.1− |
| 2005 03 13 | 703 | 1.3− | 0.0 | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2005 03 13 | 703 | (1.1− | 2.9+) | 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2005 03 13 | 703 | 1.7+ | 0.3− | 2005 04 09 | G96 | 0.0 | 0.2− | | | | |
| 2005 03 14 | G96 | 0.4− | 0.1+ | 2005 04 09 | G96 | 0.6+ | 0.8+ | | | | |

**2005 EW$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.14073 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27723654 | $\omega$ | 49.56715 | | −0.76958733 | +0.63801879 | |
| $a$ | 2.3293553 | $\Omega$ | 169.98406 | | −0.62156672 | −0.73924902 | |
| $e$ | 0.0895753 | $i$ | 8.54204 | | −0.14625373 | −0.21550617 | |
| $P$ | 3.56 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.0 | 0.2+ | 2005 03 31 | 699 | 0.5+ | 1.3+ | 2006 08 28 | 691 | 0.3− | 0.3+ |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 03 31 | 699 | 0.5− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 2005 03 10 | G96 | 0.3− | 0.2+ | 2005 04 04 | 703 | 0.5− | 0.1+ | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 04 04 | 703 | 1.2+ | 1.5− | 2006 09 25 | G96 | 0.2− | 0.6− |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2005 04 04 | 703 | 1.2− | 1.3− | 2006 09 25 | G96 | 1.0− | 0.7− |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 04 04 | 703 | 0.9+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2005 04 13 | 704 | 0.7+ | 0.6+ | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 04 13 | 704 | 0.0 | 1.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2005 03 14 | G96 | 0.3− | 0.4+ | 2005 04 13 | 704 | 0.2+ | 0.8− | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2005 03 14 | G96 | 0.1− | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2005 03 14 | G96 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.5− | 0.3+ |
| 2005 03 14 | G96 | 0.3− | 0.1− | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2005 03 31 | 699 | 0.8+ | 1.2− | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.3+ |
| 2005 03 31 | 699 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.2− | | | | |

**2005 EC$_{203}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.82057 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28123473 | $\omega$ | 111.79600 | | +0.17252942 | +0.98478339 | |
| $a$ | 2.3072257 | $\Omega$ | 168.08186 | | −0.93692975 | +0.17060841 | |
| $e$ | 0.1128473 | $i$ | 5.79830 | | −0.30396751 | +0.03308251 | |
| $P$ | 3.50 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2005 04 04 | 703 | 0.5− | 0.9+ | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 2005 03 10 | G96 | 0.5+ | 0.2+ | 2005 04 04 | 703 | 1.3− | 0.6− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2005 03 10 | G96 | 0.2+ | 0.1− | 2005 04 04 | 703 | 0.6+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2005 03 10 | G96 | 0.4+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2005 03 14 | G96 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2005 03 14 | G96 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2005 03 14 | G96 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 03 14 | G96 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.4− | 0.9− | | | | |
| 2005 04 04 | 703 | 0.9+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.8+ | | | | |

**2005 EQ$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.98726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26858524 | $\omega$ | 50.20950 | | +0.29671517 | +0.95464304 | |
| $a$ | 2.3791105 | $\Omega$ | 237.06786 | | −0.88495986 | +0.26509705 | |
| $e$ | 0.2122176 | $i$ | 1.69561 | | −0.35889573 | +0.13557370 | |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 01 | 608 | 0.2− | 0.1− | 2005 03 14 | G96 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2002 09 01 | 608 | 0.4− | 0.2− | 2005 03 14 | G96 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2002 09 01 | 608 | 0.5− | 0.1− | 2005 03 14 | G96 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 699 | 0.4− | 0.1− | 2005 03 14 | G96 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 09 05 | 699 | 0.7+ | 0.5+ | 2005 03 17 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 09 05 | 699 | 0.3+ | 0.2+ | 2005 03 17 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2002 09 05 | 699 | 0.3− | 0.7− | 2005 03 17 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2005 05 12 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2002 09 14 | 644 | 0.3+ | 0.4+ | 2005 05 12 | G96 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.6+ | 2005 05 12 | G96 | 0.2+ | 0.5− | 2006 10 29 | 691 | 0.2+ | 0.4+ |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2005 03 11 | G96 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.7+ | 0.4− | 2006 11 13 | G96 | 0.2− | 0.2+ |
| 2005 03 11 | G96 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.2− | 0.7− |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2005 03 11 | G96 | 0.0 | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2005 03 11 | G96 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2005 03 11 | G96 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.5− | 0.1− | | | | |

**2005 ES$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.58446 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25682124 | $\omega$ | 250.30478 | | +0.96759413 | −0.23903385 | |
| $a$ | 2.4512189 | $\Omega$ | 123.44564 | | +0.25233903 | +0.90345103 | |
| $e$ | 0.2049028 | $i$ | 5.59768 | | +0.00930636 | +0.35586382 | |
| $P$ | 3.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 26 | 691 | 0.2+ | 0.2+ | 2003 08 04 | 704 | 0.5+ | 0.0 | 2005 03 14 | G96 | 0.6− | 0.0 |
| 2000 12 26 | 691 | 0.0 | 0.8+ | 2003 08 04 | 704 | 0.3− | 0.4+ | 2005 03 14 | G96 | 0.3− | 0.0 |
| 2000 12 26 | 691 | 0.3+ | 0.1− | 2003 08 04 | 704 | 0.4+ | 0.2− | 2005 03 14 | G96 | 0.0 | 0.4− |
| 2001 02 13 | 691 | 0.2+ | 0.1+ | 2003 08 04 | 704 | 0.0 | 0.1+ | 2006 05 07 | G96 | 0.6+ | 0.2+ |
| 2001 02 13 | 691 | 0.1− | 0.2− | 2003 08 04 | 704 | 0.7+ | 0.1+ | 2006 05 07 | G96 | 0.4− | 0.2+ |
| 2001 02 13 | 691 | 0.4− | 0.3+ | 2005 01 16 | 691 | 0.2− | 0.2+ | 2006 05 07 | G96 | 0.1+ | 0.2− |
| 2003 07 08 | 644 | 0.7− | 0.5+ | 2005 01 16 | 691 | 0.1+ | 0.2+ | 2006 05 07 | G96 | 0.3+ | 0.1+ |
| 2003 07 08 | 644 | 0.5− | 0.4+ | 2005 01 16 | 691 | 0.1+ | 0.0 | 2006 05 30 | G96 | 0.5+ | 0.2+ |
| 2003 07 08 | 644 | 0.6− | 0.4+ | 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 05 30 | G96 | 0.2+ | 0.3+ |
| 2003 07 25 | 644 | 0.4− | 0.9+ | 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 05 30 | G96 | 0.2− | 0.1+ |
| 2003 07 25 | 644 | 0.2− | 0.9+ | 2005 03 13 | 691 | 0.0 | 0.4− | 2006 05 30 | G96 | 0.4− | 0.5+ |
| 2003 07 25 | 644 | 0.1− | 0.8+ | 2005 03 14 | G96 | 0.1+ | 0.1+ | | | | |

**2005 ED$_{206}$ = 2006 RZ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.42676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28752173 | $\omega$ | 293.02202 | | +0.25723691 | +0.96618340 | |
| $a$ | 2.2734685 | $\Omega$ | 351.82276 | | −0.83429008 | +0.21272182 | |
| $e$ | 0.0266720 | $i$ | 7.21161 | | −0.48763638 | +0.14573632 | |
| $P$ | 3.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.9− | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.5+ |
| 2001 01 26 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 09 20 | 704 | 0.8+ | 0.2+ |
| 2003 11 19 | 704 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.7+ |
| 2003 11 19 | 704 | 0.1− | 0.2+ | 2006 09 03 | 152 | 0.7− | 0.7+ | 2006 09 25 | 699 | 0.3+ | 0.6+ |
| 2003 11 19 | 704 | 0.1+ | 0.4+ | 2006 09 03 | 152 | 0.6− | 1.0+ | 2006 09 25 | 699 | 0.3− | 0.1+ |
| 2003 11 19 | 704 | 0.0 | 0.3+ | 2006 09 03 | 152 | 0.2− | 1.3+ | 2006 09 25 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.0 | 0.5+ | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 2005 03 03 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2005 03 03 | 691 | 0.7+ | 0.1− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 03 03 | 691 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.4− | 0.9+ |
| 2005 03 13 | 703 | 0.5− | 1.5− | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.7+ | 0.1− |
| 2005 03 13 | 703 | (2.3− | 0.5+) | 2006 09 17 | 704 | 0.5− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.4+ |
| 2005 03 13 | 703 | (1.8− | 0.9+) | 2006 09 17 | 704 | 1.3− | 0.8+ | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2005 03 13 | 703 | 1.4− | 0.3+ | 2006 09 17 | 704 | 1.3− | 0.4+ | 2006 09 27 | 704 | 0.8+ | 1.5+ |
| 2005 03 14 | G96 | 0.2− | 0.1+ | 2006 09 19 | 699 | 1.0− | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.5− |
| 2005 03 14 | G96 | 0.6− | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2005 03 14 | G96 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.0 |
| 2005 03 14 | G96 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.2− | 2006 10 19 | G96 | 0.4− | 0.2− |
| 2005 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.3− | 1.1− |
| 2005 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.6+ | 2006 11 14 | G96 | 0.4+ | 0.0 |
| 2005 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.6+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2006 08 28 | 703 | 1.0− | 0.5− | 2006 09 19 | 699 | 0.1+ | 1.2− | 2006 11 14 | G96 | 0.0 | 0.4− |

**2005 ET$_{206}$ = 2006 VA$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.08338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30574815 | $\omega$ | 346.07328 | | +0.88781461 | | +0.45977634 |
| $a$ | 2.1821947 | $\Omega$ | 346.50150 | | −0.41370237 | | +0.77855300 |
| $e$ | 0.2006535 | $i$ | 4.85912 | | −0.20158263 | | +0.42715448 |
| $P$ | 3.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 1.3− | 0.1+ | 2006 11 16 | 704 | 0.7− | 1.0+ |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.3− | 0.7− | 2006 11 16 | 704 | (1.1− | 2.4−) |
| 2004 01 19 | 691 | 0.3− | 0.2+ | 2006 09 26 | 152 | 1.0+ | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.5+ |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 09 26 | 152 | 0.2− | 1.0− | 2006 11 22 | 703 | 0.1− | 0.8− |
| 2004 01 19 | 691 | 0.2− | 0.0 | 2006 09 26 | 152 | (1.1+ | 1.7+) | 2006 11 22 | 703 | 0.2− | 0.6− |
| 2005 03 03 | 691 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.8+ | 0.6+ | 2006 11 22 | 703 | 0.3+ | 0.1+ |
| 2005 03 03 | 691 | 0.4+ | 0.3− | 2006 10 19 | 703 | 0.5+ | 1.3+ | 2006 11 22 | 703 | 0.2+ | 0.1− |
| 2005 03 03 | 691 | 0.3+ | 0.2− | 2006 10 19 | 703 | 0.6+ | 0.9+ | 2006 11 22 | 703 | 0.1+ | 0.4+ |
| 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.8+ | 0.7+ | 2006 11 22 | 703 | 0.3+ | 0.1− |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 22 | 703 | 0.4− | 0.4+ |
| 2005 03 13 | 691 | 0.9− | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 22 | 703 | 0.4+ | 0.1+ |
| 2005 03 14 | G96 | 0.6− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.9+ | 0.0 |
| 2005 03 14 | G96 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.4+ |
| 2005 03 14 | G96 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.0 | 0.5− |
| 2005 03 14 | G96 | 0.6− | 0.3+ | 2006 11 13 | 644 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.2+ | 0.4− |
| 2005 03 17 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 0.5+ | 0.8+ | 2006 11 28 | 704 | 0.9− | 0.1− |
| 2005 03 17 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.7+ | 0.5+ | 2006 11 28 | 704 | 1.4− | 0.4+ |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.7+ | 0.7− | 2006 11 28 | 704 | 2.7− | 0.7− |
| 2006 09 18 | 703 | 0.3+ | 0.9− | 2006 11 14 | 703 | 0.2+ | 0.9+ | 2006 11 28 | 704 | 0.6− | 0.2+ |
| 2006 09 18 | 703 | 0.7+ | 0.2+ | 2006 11 16 | 704 | 1.1− | 0.5− | 2006 11 28 | 704 | 0.4− | 0.8− |

**2005 EZ$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.46710 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23253260 | $\omega$ | 224.96068 | | −0.82057866 | | +0.57140107 |
| $a$ | 2.6190683 | $\Omega$ | 349.86602 | | −0.50274594 | | −0.73189196 |
| $e$ | 0.2112113 | $i$ | 4.01109 | | −0.27184036 | | −0.37126132 |
| $P$ | 4.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.3+ | 0.0 | 2005 04 07 | 704 | (2.2+ | 0.5+) | 2005 05 01 | 644 | 0.1+ | 0.3− |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2005 04 10 | 691 | 0.0 | 0.1− | 2005 06 08 | 699 | 1.2+ | 0.0 |
| 2005 03 13 | 691 | 0.2+ | 0.2+ | 2005 04 10 | 691 | 0.1+ | 0.0 | 2005 06 08 | 699 | (1.3− | 2.4−) |
| 2005 03 14 | G96 | 0.4− | 0.3− | 2005 04 10 | 691 | 0.0 | 0.1+ | 2005 06 08 | 699 | 1.0− | 0.6+ |
| 2005 03 14 | G96 | 0.2− | 0.1− | 2005 04 11 | 699 | 0.2− | 0.0 | 2005 06 08 | 699 | 0.1− | 0.5+ |
| 2005 03 14 | G96 | 0.5− | 0.1− | 2005 04 11 | 699 | 0.6+ | 0.3− | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2005 03 14 | G96 | 0.3− | 0.1− | 2005 04 11 | 699 | 0.4+ | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.4+ |
| 2005 03 17 | G96 | 0.6− | 0.3− | 2005 04 11 | 699 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2005 03 17 | G96 | 0.3− | 0.1− | 2005 04 15 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2005 03 17 | G96 | 0.6− | 0.1− | 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2005 03 17 | G96 | 0.6− | 0.1− | 2005 04 15 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2005 04 06 | 691 | 0.5+ | 0.0 | 2005 04 18 | 703 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2005 04 06 | 691 | 0.0 | 0.1− | 2005 04 18 | 703 | 0.7− | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.5− |
| 2005 04 06 | 691 | 0.1− | 0.1− | 2005 04 18 | 703 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.4+ | 0.3− |
| 2005 04 07 | 704 | (4.3+ | 0.6+) | 2005 04 18 | 703 | 0.4− | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.7− |
| 2005 04 07 | 704 | (3.6+ | 2.5+) | 2005 05 01 | 644 | 0.2− | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.2+ |
| 2005 04 07 | 704 | (3.0+ | 2.4+) | 2005 05 01 | 644 | 0.3− | 0.2− | | | | |

**2005 EU$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.90271 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26469223 | $\omega$ | 294.20008 | | −0.90764603 | | +0.41900000 |
| $a$ | 2.4023812 | $\Omega$ | 270.57938 | | −0.37552087 | | −0.83706136 |
| $e$ | 0.1439639 | $i$ | 1.42420 | | −0.18751735 | | −0.35180575 |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 691 | 0.3+ | 0.3− | 2005 03 14 | 704 | 1.5+ | 0.5+ | 2005 04 04 | 703 | 0.1− | 0.3− |
| 2003 11 20 | 691 | 0.1− | 0.5+ | 2005 03 14 | 704 | 0.5+ | 0.4− | 2005 05 12 | G96 | 0.0 | 0.2− |
| 2003 11 20 | 691 | 0.2− | 0.1− | 2005 03 17 | 703 | 1.4− | 0.4− | 2005 05 12 | G96 | 0.1− | 0.3− |
| 2005 03 13 | 703 | 1.2− | 0.2+ | 2005 03 17 | 703 | 0.6+ | 0.3− | 2005 05 12 | G96 | 0.3+ | 0.3+ |
| 2005 03 13 | 703 | 0.0 | 0.2+ | 2005 03 17 | 703 | 0.4+ | 0.1+ | 2005 05 12 | G96 | 0.1+ | 0.3+ |
| 2005 03 13 | 703 | 1.4− | 1.4− | 2005 03 17 | 703 | 0.7− | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.2+ |
| 2005 03 13 | 703 | 0.8− | 0.0 | 2005 04 04 | 703 | 1.0− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.3+ |
| 2005 03 14 | 704 | 1.7+ | 1.5+ | 2005 04 04 | 703 | 1.6+ | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.3+ |
| 2005 03 14 | 704 | 1.5+ | 0.2+ | 2005 04 04 | 703 | 1.1− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.0 |

**2005 ED$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.18269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27143362 | $\omega$ | 251.76791 | | +0.62252376 | | −0.78105772 |
| $a$ | 2.3624373 | $\Omega$ | 159.49038 | | +0.76052129 | | +0.58896302 |
| $e$ | 0.2186869 | $i$ | 8.05962 | | +0.18458476 | | +0.20753650 |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 24 | 644 | 0.2− | 0.4− | 2003 08 25 | 704 | 0.7+ | 0.1+ | 2005 03 04 | 691 | 0.2+ | 0.3+ |
| 2003 07 24 | 644 | 0.1− | 0.6− | 2003 08 25 | 704 | 1.4− | 0.7+ | 2005 03 04 | 691 | 0.3+ | 0.5− |
| 2003 07 24 | 644 | 0.0 | 0.5− | 2003 08 25 | 704 | 0.0 | 0.1− | 2005 03 12 | 704 | 1.1+ | 1.0+ |
| 2003 08 18 | 599 | 0.4− | 0.2− | 2003 09 15 | 699 | 0.5− | 0.3+ | 2005 03 12 | 704 | 0.3+ | 0.5+ |
| 2003 08 18 | 599 | 0.4− | 0.2− | 2003 09 15 | 699 | 0.7− | 1.6+ | 2005 03 12 | 704 | 0.7+ | 1.2+ |
| 2003 08 18 | 599 | 0.1− | 0.2+ | 2003 09 15 | 699 | 0.8+ | 0.7− | 2005 04 11 | 691 | 0.5− | 0.2− |
| 2003 08 25 | 704 | 1.1+ | 0.1+ | 2003 09 15 | 699 | 1.0+ | 1.3+ | 2005 04 11 | 691 | 0.5− | 0.1+ |
| 2003 08 25 | 704 | 0.2− | 0.0 | 2005 03 04 | 691 | 0.1− | 0.2+ | 2005 04 11 | 691 | 0.1− | 0.1− |

**2005 ET$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.19699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28225160 | $\omega$ | 315.30788 | | +0.19624438 | | +0.97969535 |
| $a$ | 2.3016808 | $\Omega$ | 325.94763 | | −0.87788782 | | +0.15689343 |
| $e$ | 0.1680676 | $i$ | 4.20420 | | −0.43680787 | | +0.12482576 |
| $P$ | 3.49 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 691 | 0.3+ | 0.2− | 2005 04 12 | G96 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.9− |
| 2003 11 21 | 691 | 0.7− | 0.2− | 2005 04 12 | G96 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.3− |
| 2003 11 21 | 691 | 0.4+ | 0.1− | 2005 04 12 | G96 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.3− | 0.2− |
| 2005 03 04 | 691 | 0.1− | 0.2+ | 2006 07 22 | G96 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.3− |
| 2005 03 04 | 691 | 0.2− | 0.2+ | 2006 07 22 | G96 | 0.7+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.4− |
| 2005 03 04 | 691 | 0.0 | 0.4+ | 2006 07 22 | G96 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.3− |
| 2005 03 11 | G96 | 0.5− | 0.4+ | 2006 07 22 | G96 | 0.2+ | 0.7+ | 2006 09 27 | 691 | 0.2− | 0.2− |
| 2005 03 11 | G96 | 0.3− | 0.2− | 2006 08 28 | 703 | (2.2+ | 0.2+) | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2005 03 11 | G96 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.6− | 0.8+ | 2006 10 23 | G96 | 0.5− | 0.6− |
| 2005 03 11 | G96 | 0.5− | 0.2− | 2006 08 28 | 703 | 1.3+ | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2005 04 04 | 691 | 0.7+ | 0.2+ | 2006 08 28 | 703 | (1.7− | 0.1−) | 2006 10 23 | G96 | 0.4− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 691 | 0.5+ | 0.4− | 2006 09 19 | 699 | 0.2− | 1.2+ | 2006 10 24 | J95 | 0.0 | 1.6+ | | |
| 2005 04 04 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.9− | 2006 10 24 | J95 | 0.1+ | 0.7+ | | |
| 2005 04 12 | G96 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.9− | 1.1+ | | | | | | |

**2005 EK$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.98785 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17852294 | $\omega$ | 147.03231 | | −0.23483628 | | −0.91538570 |
| $a$ | 3.1237291 | $\Omega$ | 314.03870 | | +0.76396771 | | +0.03417872 |
| $e$ | 0.1453409 | $i$ | 27.05613 | | +0.60100354 | | −0.40112445 |
| $P$ | 5.52 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 704 | 0.8− | 0.9+ | 2002 08 02 | 599 | 0.1+ | 0.4+ | 2005 01 13 | 704 | 1.2+ | 0.0 | | |
| 1998 12 12 | 704 | 1.3− | 2.1− | 2002 08 02 | 599 | 0.8− | 0.0 | 2005 01 13 | 704 | 0.5+ | 0.8− | | |
| 1998 12 12 | 704 | 0.0 | 1.6− | 2002 08 16 | 644 | 0.6+ | 0.3+ | 2005 03 04 | 703 | 0.0 | 0.3− | | |
| 1998 12 12 | 704 | 0.2− | 1.0− | 2002 08 16 | 644 | 0.2− | 0.9+ | 2005 03 04 | 703 | 0.0 | 0.8− | | |
| 1998 12 12 | 704 | (3.1− | 2.0+) | 2002 08 16 | 644 | 0.0 | 1.0+ | 2005 03 04 | 703 | 0.2− | 0.5− | | |
| 1999 01 19 | 704 | (4.0+ | 2.2+) | 2002 08 26 | 644 | 0.1+ | 0.5− | 2005 03 04 | 703 | 0.9− | 0.1− | | |
| 1999 01 19 | 704 | 0.8+ | 0.8− | 2002 08 26 | 644 | 0.8− | 0.1− | 2005 03 13 | 703 | 0.9− | 0.5+ | | |
| 1999 01 19 | 704 | 1.2+ | 0.4− | 2002 08 26 | 644 | 0.8− | 0.3− | 2005 03 13 | 703 | 0.1+ | 0.1+ | | |
| 1999 01 19 | 704 | 1.1− | 1.6+ | 2005 01 13 | 704 | 2.0+ | 1.7+ | 2005 03 13 | 703 | 0.5− | 0.2+ | | |
| 2002 08 02 | 599 | 0.1− | 0.0 | 2005 01 13 | 704 | 1.0+ | 0.0 | 2005 03 13 | 703 | 0.6− | 1.3+ | | |

**2005 EG$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.59709 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28455533 | $\omega$ | 264.85703 | | −0.95972844 | | +0.26908434 |
| $a$ | 2.2892413 | $\Omega$ | 290.73415 | | −0.21119406 | | −0.88053631 |
| $e$ | 0.1000211 | $i$ | 4.95107 | | −0.18525224 | | −0.39019152 |
| $P$ | 3.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 17 | 691 | 0.2− | 0.1+ | 2005 03 09 | 704 | 1.3− | 0.5+ | 2005 04 04 | 703 | 0.3+ | 0.4− | | |
| 2003 10 17 | 691 | 0.0 | 0.1− | 2005 03 13 | 703 | 0.2− | 0.4− | 2005 04 04 | 703 | 1.0+ | 0.5+ | | |
| 2003 10 17 | 691 | 0.3+ | 0.0 | 2005 03 13 | 703 | 1.1− | 0.5− | 2006 08 29 | 691 | 0.1+ | 0.2− | | |
| 2005 03 04 | 703 | 0.2− | 0.5− | 2005 03 13 | 703 | 0.5− | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.1− | | |
| 2005 03 04 | 703 | 0.7− | 0.1+ | 2005 03 13 | 703 | 0.6− | 0.2+ | 2006 08 29 | 691 | 0.1+ | 0.3− | | |
| 2005 03 04 | 703 | 0.4− | 0.5− | 2005 03 13 | 703 | 0.8+ | 0.4+ | 2006 09 17 | 691 | 0.2+ | 0.2+ | | |
| 2005 03 04 | 703 | 0.4+ | 0.6− | 2005 03 13 | 703 | 1.3+ | 0.0 | 2006 09 17 | 691 | 0.3− | 0.2+ | | |
| 2005 03 09 | 704 | 1.2+ | 0.5+ | 2005 03 13 | 703 | 0.7+ | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.2− | | |
| 2005 03 09 | 704 | 0.7− | 0.3+ | 2005 03 13 | 703 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | | |
| 2005 03 09 | 704 | 0.7− | 0.7− | 2005 04 04 | 703 | (0.5+ | 1.8−) | 2006 09 19 | 691 | 0.1− | 0.0 | | |
| 2005 03 09 | 704 | 0.3+ | 0.5+ | 2005 04 04 | 703 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.3+ | | |

**2005 EJ$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.02811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28460219 | $\omega$ | 69.44006 | | −0.62106325 | | +0.78363966 |
| $a$ | 2.2889900 | $\Omega$ | 162.14497 | | −0.73476595 | | −0.57603979 |
| $e$ | 0.1123878 | $i$ | 2.57211 | | −0.27276261 | | −0.23256623 |
| $P$ | 3.46 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | G96 | 0.1− | 0.1− | 2005 04 02 | G96 | 0.0 | 0.3− | 2005 05 09 | G96 | 0.0 | 0.6− | | |
| 2005 03 04 | G96 | 0.6− | 0.1+ | 2005 04 02 | G96 | 0.1− | 0.1− | 2005 05 09 | G96 | 0.4− | 0.4− | | |
| 2005 03 04 | G96 | 0.6− | 0.1+ | 2005 04 02 | G96 | 0.6− | 0.1− | 2005 05 09 | G96 | 0.0 | 0.2− | | |
| 2005 03 04 | G96 | 0.4+ | 0.4+ | 2005 04 04 | G96 | 0.2− | 0.2− | 2005 05 09 | G96 | 0.0 | 0.0 | | |
| 2005 03 12 | 691 | 0.1− | 0.5+ | 2005 04 04 | G96 | 0.2− | 0.0 | 2006 08 28 | 691 | 0.2+ | 0.4+ | | |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2005 04 04 | G96 | 0.3− | 0.5− | 2006 08 28 | 691 | 0.4− | 0.6+ | | |
| 2005 03 12 | 691 | 0.4+ | 0.3+ | 2005 04 04 | G96 | 0.1− | 0.6− | 2006 08 28 | 691 | 0.4− | 0.2+ | | |
| 2005 03 16 | 691 | 0.5+ | 0.5+ | 2005 04 11 | G96 | 0.1− | 0.6− | 2006 09 15 | 691 | 0.0 | 0.2+ | | |
| 2005 03 16 | 691 | 0.1+ | 0.5+ | 2005 04 11 | G96 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1− | 0.6+ | | |
| 2005 03 16 | 691 | 0.4+ | 0.5+ | 2005 04 11 | G96 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.0 | | |
| 2005 04 02 | G96 | 0.1− | 0.2− | 2005 04 11 | G96 | 0.1+ | 0.1− | | | | | | |

**2005 EO$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.52769 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26394451 | $\omega$ | 203.22227 | | −0.74660168 | | +0.65114259 |
| $a$ | 2.4069162 | $\Omega$ | 19.46270 | | −0.52794402 | | −0.45516805 |
| $e$ | 0.2505004 | $i$ | 24.16146 | | −0.40479753 | | −0.60731819 |
| $P$ | 3.73 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 704 | 0.1− | 0.8− | 2005 04 02 | E12 | 0.2− | 0.6+ | 2005 04 20 | E12 | 0.2− | 0.0 | | |
| 2005 03 04 | 704 | 0.8+ | 0.5+ | 2005 04 06 | 704 | 0.1+ | 0.7+ | 2005 05 09 | E12 | 0.5− | 0.7− | | |
| 2005 03 04 | 704 | 0.5+ | 1.1− | 2005 04 06 | 704 | 0.1− | 0.2− | 2005 05 09 | E12 | 0.0 | 0.2− | | |
| 2005 03 04 | 704 | 0.3+ | 1.2+ | 2005 04 06 | 704 | 0.8+ | 1.8− | 2005 05 09 | E12 | 0.0 | 0.6+ | | |
| 2005 03 08 | 699 | 0.7+ | 0.4+ | 2005 04 19 | 703 | 0.0 | 0.4− | 2005 05 09 | E12 | 0.1+ | 0.4− | | |
| 2005 03 08 | 699 | 0.6− | 0.4− | 2005 04 19 | 703 | 0.4− | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.5− | | |
| 2005 03 08 | 699 | 0.8− | 0.2+ | 2005 04 19 | 703 | 0.1− | 0.7− | 2006 09 28 | 691 | 0.3− | 0.6+ | | |
| 2005 03 08 | 699 | 0.1+ | 0.6− | 2005 04 19 | 703 | 0.6+ | 0.9− | 2006 09 28 | 691 | 0.4− | 0.4− | | |
| 2005 04 02 | E12 | 0.2− | 0.5+ | 2005 04 20 | E12 | 0.2+ | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.2− | | |
| 2005 04 02 | E12 | 0.0 | 0.6+ | 2005 04 20 | E12 | 0.1− | 0.8+ | 2006 10 02 | 691 | 0.7+ | 0.4+ | | |
| 2005 04 02 | E12 | 0.2− | 0.4+ | 2005 04 20 | E12 | 0.1− | 0.5+ | 2006 10 02 | 691 | 0.0 | 0.1+ | | |

**2005 ES$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.41837 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28460904 | $\omega$ | 4.10151 | | −0.31287193 | | +0.94967652 |
| $a$ | 2.2889532 | $\Omega$ | 247.66663 | | −0.87188157 | | −0.29344401 |
| $e$ | 0.1414991 | $i$ | 0.93054 | | −0.37674088 | | −0.10956789 |
| $P$ | 3.46 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | G96 | 0.1+ | 0.3− | 2005 03 14 | G96 | 0.2+ | 0.5− | 2005 04 07 | G96 | 0.5− | 0.3− | | |
| 2005 03 04 | G96 | 0.4− | 0.6− | 2005 03 14 | G96 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.2− | | |
| 2005 03 04 | G96 | 0.8− | 0.6− | 2005 03 14 | G96 | 0.1+ | 0.6− | 2006 09 19 | 691 | 0.1− | 0.3− | | |
| 2005 03 04 | G96 | 0.2− | 0.2− | 2005 03 17 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1− | | |
| 2005 03 13 | 703 | 0.3+ | 1.0+ | 2005 03 17 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | | |
| 2005 03 13 | 703 | 0.6+ | 0.4− | 2005 03 17 | 691 | 0.5− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2005 03 13 | 703 | 0.7+ | 1.0− | 2005 04 07 | G96 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ | | |
| 2005 03 13 | 703 | 1.7− | 0.5+ | 2005 04 07 | G96 | 0.1+ | 0.5− | | | | | | |
| 2005 03 14 | G96 | 0.5+ | 1.0− | 2005 04 07 | G96 | 0.1− | 0.2− | | | | | | |

**2005 ES$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.02643 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28620769 | $\omega$ | 255.83719 | | +0.17651236 | | +0.98420306 |
| $a$ | 2.2804218 | $\Omega$ | 24.34235 | | −0.88977145 | | +0.16549780 |
| $e$ | 0.1376532 | $i$ | 1.90489 | | −0.42089209 | | +0.06288734 |
| $P$ | 3.44 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.2− | 0.2+ | 2005 04 02 | G96 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.1+ | | |
| 2002 07 05 | 644 | 0.1− | 0.4+ | 2005 04 02 | G96 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.3+ | | |
| 2002 07 05 | 644 | 0.1− | 0.3+ | 2005 04 02 | G96 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.7+ | 0.7− | | |
| 2002 07 14 | 644 | (0.1− | 1.9+) | 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2002 07 14 | 644 | 0.3+ | 0.4+ | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 07 14 | 644 | 0.0 | 0.2+ | 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.3+ | | |
| 2002 07 27 | 644 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.3+ | | |
| 2002 07 27 | 644 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.2+ | | |
| 2002 07 27 | 644 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 11 15 | 691 | 0.4+ | 0.1+ | | |
| 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 17 | 691 | 0.3− | 0.4+ | | |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.1− | 0.3+ | | |
| 2005 03 08 | G96 | 0.6− | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.4− | 0.4+ | | |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.8− | 0.3− | 2006 11 21 | 691 | 0.4+ | 0.0 | | |
| 2005 03 13 | 691 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.7+ | 2006 11 21 | 691 | 0.1− | 0.3− | | |
| 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 691 | 0.4+ | 0.2− | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | |
| 2005 04 02 | G96 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2+ | |

**2005 ET$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.42636 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22293842 | $\omega$ | 64.70992 | | −0.24611268 | | +0.96868461 |
| $a$ | 2.6936806 | $\Omega$ | 191.19202 | | −0.93896996 | | −0.24669172 |
| $e$ | 0.1948757 | $i$ | 9.74186 | | −0.24034135 | | −0.02816600 |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 20 | 691 | 0.0 | 0.4+ | 2005 04 13 | 704 | 0.0 | 1.0− | 2005 05 11 | 699 | 0.6− | 0.8− |
| 1996 03 20 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 704 | 0.0 | 0.3− | 2005 05 11 | 699 | 0.7− | 0.7+ |
| 1996 03 20 | 691 | 0.1+ | 0.0 | 2005 04 13 | 704 | 0.4+ | 0.8− | 2005 05 11 | 699 | 1.1− | 0.7+ |
| 2005 03 08 | G96 | 0.6− | 0.2− | 2005 04 13 | 704 | 0.6− | 0.3− | 2005 05 13 | 703 | 1.4− | 0.4− |
| 2005 03 08 | G96 | 0.6− | 0.4− | 2005 04 13 | 704 | 0.5− | 0.3− | 2005 05 13 | 703 | 0.1+ | 0.8− |
| 2005 03 08 | G96 | 0.7− | 0.3− | 2005 04 14 | 691 | 0.0 | 0.0 | 2005 05 13 | 703 | 0.3− | 0.1+ |
| 2005 03 08 | G96 | 0.7− | 0.3− | 2005 04 14 | 691 | 0.0 | 0.1+ | 2005 05 13 | 703 | 0.2− | 0.3− |
| 2005 03 13 | 703 | 0.6− | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.0 | 2005 05 15 | 644 | 0.1+ | 0.1+ |
| 2005 03 13 | 703 | (2.4− | 0.1−) | 2005 04 18 | 703 | 0.2+ | 0.4− | 2005 05 15 | 644 | 0.0 | 0.1+ |
| 2005 03 13 | 703 | (2.9− | 1.2+) | 2005 04 18 | 703 | 0.6+ | 0.1+ | 2005 05 15 | 644 | 0.1+ | 0.0 |
| 2005 03 13 | 703 | (2.3− | 0.7+) | 2005 04 18 | 703 | (3.6− | 0.9+) | 2006 08 21 | 691 | (1.9+ | 2.5−) |
| 2005 03 17 | 704 | 0.4− | 0.4− | 2005 04 18 | 703 | (2.2− | 0.6−) | 2006 08 21 | 691 | 0.1− | 0.2+ |
| 2005 03 17 | 704 | 0.1− | 0.2+ | 2005 04 18 | 704 | 0.0 | 0.7− | 2006 08 21 | 691 | 0.3+ | 0.0 |
| 2005 03 17 | 704 | 0.4+ | 0.2+ | 2005 04 18 | 704 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.8+ | 0.5− |
| 2005 04 04 | 704 | 1.0+ | 0.6+ | 2005 04 18 | 704 | 0.6+ | 0.6− | 2006 09 19 | 703 | 0.5+ | 1.0− |
| 2005 04 04 | 704 | 0.7+ | 0.7+ | 2005 04 19 | 691 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.2+ |
| 2005 04 04 | 704 | 0.6+ | 1.3+ | 2005 04 19 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.8+ |
| 2005 04 04 | 704 | 0.7+ | 1.1+ | 2005 04 19 | 691 | 0.2− | 0.1+ | 2006 10 01 | 704 | 1.0− | 1.1+ |
| 2005 04 05 | 703 | 0.6− | 0.0 | 2005 04 19 | 704 | 0.3+ | 1.1− | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 2005 04 05 | 703 | 0.4− | 0.6+ | 2005 04 19 | 704 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2005 04 05 | 703 | 0.3− | 1.2+ | 2005 04 19 | 704 | 0.9− | 0.2− | 2006 10 20 | G96 | 0.3− | 0.1+ |
| 2005 04 05 | 703 | 0.1− | 0.0 | 2005 05 03 | 704 | 0.3− | 0.5+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2005 04 07 | 704 | 1.1+ | 0.3− | 2005 05 03 | 704 | 0.5+ | 0.5− | 2006 10 20 | G96 | 0.3− | 0.2+ |
| 2005 04 07 | 704 | 0.3+ | 0.2+ | 2005 05 03 | 704 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.6− | 0.2+ |
| 2005 04 07 | 704 | 0.0 | 0.2− | 2005 05 03 | 704 | 1.0+ | 0.3− | 2006 10 23 | G96 | 0.1− | 0.3+ |
| 2005 04 07 | 704 | 0.7+ | 0.7+ | 2005 05 04 | 691 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.3+ |
| 2005 04 07 | 704 | 0.7+ | 0.2− | 2005 05 04 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.4+ |
| 2005 04 07 | 704 | (1.4− | 2.2−) | 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2005 04 07 | 704 | 0.0 | 0.7+ | 2005 05 08 | 703 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.4+ |
| 2005 04 07 | 704 | 0.3+ | 0.1− | 2005 05 08 | 703 | 0.8− | 0.9+ | 2006 11 21 | G96 | 0.2− | 0.3+ |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2005 05 08 | 703 | 0.6− | 0.4− | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2005 05 08 | 703 | 0.9− | 0.5− | 2006 11 21 | G96 | 0.3− | 0.4+ |
| 2005 04 11 | 691 | 0.0 | 0.1+ | 2005 05 11 | 699 | 0.9− | 0.6+ | | | | |

**2005 EC$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.79327 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23257416 | $\omega$ | 104.31399 | | +0.15291674 | | +0.98798806 |
| $a$ | 2.6187562 | $\Omega$ | 174.33893 | | −0.97121914 | | +0.15440975 |
| $e$ | 0.2120334 | $i$ | 13.04923 | | −0.18261944 | | +0.00610125 |
| $P$ | 4.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.1+ | 0.6+ | 2005 05 06 | 704 | 0.3+ | 0.3− | 2005 06 06 | 704 | 0.9+ | 0.2+ |
| 2002 10 31 | 704 | 0.4− | 0.2+ | 2005 05 06 | 704 | 0.4+ | 0.3− | 2006 09 18 | 703 | 0.0 | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.6+ | 2005 05 06 | 704 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.3− | 0.5+ |
| 2002 10 31 | 704 | 0.3+ | 0.5− | 2005 05 06 | 704 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.6− | 0.5+ |
| 2005 03 09 | 699 | 0.4+ | 0.2+ | 2005 05 06 | 704 | 0.3− | 0.7− | 2006 09 18 | 703 | 0.4− | 1.3+ |
| 2005 03 09 | 699 | 0.2+ | 0.1+ | 2005 05 07 | 683 | 1.0− | 0.6+ | 2006 09 29 | 699 | 1.2− | 0.5− |
| 2005 03 09 | 699 | 0.1+ | 0.5+ | 2005 05 07 | 683 | 0.4− | 0.4+ | 2006 09 29 | 699 | 0.3+ | 0.3+ |
| 2005 03 09 | 699 | 0.1+ | 0.5+ | 2005 05 07 | 683 | 0.4+ | 1.0+ | 2006 09 29 | 699 | (1.7+ | 0.4+) |
| 2005 03 13 | 703 | (1.6+ | 2.2−) | 2005 05 10 | 683 | 0.2+ | 1.1+ | 2006 09 29 | 699 | (0.2− | 1.6+) |
| 2005 03 13 | 703 | 0.9− | 0.2− | 2005 05 10 | 683 | 0.5+ | 1.0− | 2006 09 30 | 703 | 0.8− | 0.4− |
| 2005 03 13 | 703 | 0.1+ | 0.3+ | 2005 05 10 | 683 | 0.0 | 1.0+ | 2006 09 30 | 703 | 0.4+ | 0.4+ |
| 2005 03 13 | 703 | 0.1+ | 0.2+ | 2005 05 11 | 703 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.0 | 0.2− |
| 2005 03 31 | 691 | 0.2+ | 0.2+ | 2005 05 11 | 703 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.6+ |
| 2005 03 31 | 691 | 0.3+ | 0.3+ | 2005 05 11 | 703 | 0.6− | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2005 03 31 | 691 | 0.2+ | 0.2+ | 2005 05 11 | 703 | 0.5− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2005 04 05 | 703 | 0.4− | 0.7− | 2005 05 12 | 608 | 0.9+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2005 04 05 | 703 | 0.5− | 0.2+ | 2005 05 12 | 608 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2005 04 05 | 703 | 0.9− | 0.9+ | 2005 05 12 | 608 | 1.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2005 04 05 | 703 | 0.5− | 0.2+ | 2005 05 13 | 699 | 0.6+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2005 04 09 | 704 | 0.2+ | 0.5− | 2005 05 13 | 704 | 0.4− | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2005 04 09 | 704 | 0.7+ | 0.1+ | 2005 05 13 | 699 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.6− |
| 2005 04 09 | 704 | 1.1+ | 0.2+ | 2005 05 13 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2005 04 09 | 704 | 0.7+ | 0.4− | 2005 05 13 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.6+ | 1.0− |
| 2005 04 09 | 704 | 0.5+ | 0.2− | 2005 05 13 | 699 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.8+ | 0.3+ |
| 2005 04 12 | 699 | 0.3+ | 0.4+ | 2005 05 13 | 704 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2005 04 12 | 699 | 0.0 | 0.7+ | 2005 05 13 | 704 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2005 04 12 | 699 | 0.1+ | 0.5+ | 2005 05 19 | 703 | 1.4− | 1.2− | 2006 10 22 | 703 | 0.8− | 0.9− |
| 2005 04 12 | 699 | 0.0 | 0.1− | 2005 05 19 | 703 | 0.3− | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2005 04 18 | 703 | 0.1+ | 0.4− | 2005 05 19 | 703 | 0.9− | 1.1− | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2005 04 18 | 703 | 0.0 | 0.0 | 2005 05 19 | 703 | 1.4− | 0.7− | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2005 04 18 | 703 | 0.4+ | 0.0 | 2005 05 31 | 703 | 0.4− | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.3− |
| 2005 04 18 | 703 | 0.0 | 0.6+ | 2005 05 31 | 703 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.5− | 0.4+ |
| 2005 05 04 | 703 | 0.0 | 0.4− | 2005 05 31 | 703 | 0.9− | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.4+ |
| 2005 05 04 | 703 | 0.5− | 0.1+ | 2005 05 31 | 703 | 0.9− | 0.1− | 2006 10 28 | 703 | 0.1− | 0.7+ |
| 2005 05 04 | 703 | 0.6− | 0.1+ | 2005 06 06 | 704 | (1.8+ | 0.1−) | 2006 11 16 | 703 | (2.5− | 2.5+) |
| 2005 05 04 | 703 | 0.6− | 0.5+ | 2005 06 06 | 704 | (2.0+ | 1.1+) | 2006 11 16 | 703 | (1.5+ | 3.7+) |
| 2005 05 06 | 683 | 0.7− | 0.2− | 2005 06 06 | 704 | 1.1+ | 0.1+ | 2006 11 16 | 703 | 0.2+ | 0.0 |
| 2005 05 06 | 683 | (0.8− | 2.1+) | 2005 06 06 | 704 | 1.5+ | 0.7− | 2006 11 16 | 703 | 1.0+ | 0.2+ |

**2005 EY$_{219}$ = 1997 LS$_7$ = 2006 QR$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.48671 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23619418 | $\omega$ | 0.99218 | | −0.66621564 | | +0.72699298 |
| $a$ | 2.5919299 | $\Omega$ | 227.25752 | | −0.68577039 | | −0.68480661 |
| $e$ | 0.1259327 | $i$ | 13.08328 | | −0.29304555 | | −0.05021063 |
| $P$ | 4.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 07 | 809 | (1.5+ | 3.7+) | 2002 09 11 | 644 | 0.1− | 0.2+ | 2005 03 11 | 699 | 0.4+ | 0.7+ |
| 1997 06 07 | 809 | (0.9+ | 3.6+) | 2002 09 11 | 644 | 0.2− | 0.3+ | 2005 03 11 | 699 | 0.6− | 1.1+ |
| 1997 06 07 | 809 | (0.9+ | 2.9+) | 2002 09 11 | 644 | 0.1− | 0.1+ | 2005 03 11 | 699 | 0.3− | 1.2+ |
| 1997 06 08 | 809 | (1.6+ | 2.7+) | 2002 10 05 | 644 | 1.0− | 0.1− | 2005 04 07 | 704 | 1.6+ | 2.2+ |
| 1997 06 08 | 809 | (3.0+ | 0.6+) | 2002 10 05 | 644 | 0.1− | 0.6+ | 2005 04 07 | 704 | 0.0 | 1.5+ |
| 1997 06 08 | 809 | (2.5+ | 2.6+) | 2002 10 05 | 644 | 0.1− | 0.4+ | 2005 04 07 | 704 | 0.0 | 0.5− |
| 2001 03 26 | 704 | 0.3+ | 1.4− | 2003 11 24 | 691 | 0.1+ | 0.3+ | 2005 04 07 | 704 | 0.8+ | 0.3+ |
| 2001 03 26 | 704 | 0.5− | 0.8− | 2003 11 24 | 691 | 0.1− | 0.3+ | 2005 04 07 | 704 | 0.9+ | 0.5+ |
| 2001 03 26 | 704 | 0.4+ | 0.4− | 2003 11 24 | 691 | 0.1+ | 0.2+ | 2006 06 21 | 703 | 0.3+ | 0.8+ |
| 2001 03 26 | 704 | 2.5− | 1.2− | 2003 12 01 | 704 | 1.4+ | 0.0 | 2006 06 21 | 703 | 0.2+ | 0.4+ |
| 2001 03 26 | 704 | 2.1− | 0.8+ | 2003 12 01 | 704 | 0.1+ | 0.3− | 2006 06 21 | 703 | 1.2− | 0.9+ |
| 2001 04 15 | 608 | 1.0+ | 0.2− | 2003 12 01 | 704 | 0.7+ | 0.7+ | 2006 06 21 | 703 | 0.9+ | 0.3+ |
| 2001 04 15 | 608 | 0.9+ | 0.0 | 2003 12 01 | 704 | 0.3− | 0.5+ | 2006 08 19 | 699 | 0.1− | 1.0+ |
| 2001 04 15 | 608 | 0.8+ | 0.1+ | 2003 12 17 | 691 | 0.2− | 0.2+ | 2006 08 19 | 699 | (0.3− | 2.9+) |
| 2001 04 24 | 608 | 0.5+ | 0.2+ | 2003 12 17 | 691 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.2− | 0.5+ |
| 2001 04 24 | 608 | 0.5+ | 0.0 | 2003 12 17 | 691 | 0.2− | 0.0 | 2006 08 19 | 699 | (2.4− | 0.0 ) |
| 2001 04 24 | 608 | 0.4+ | 0.4− | 2005 03 10 | E12 | 0.4− | 0.5+ | 2006 08 23 | 644 | 0.1− | 0.5+ |
| 2001 05 18 | 699 | 0.2− | 0.9+ | 2005 03 10 | E12 | 0.1+ | 0.2− | 2006 08 23 | 644 | 0.0 | 0.2+ |
| 2001 05 18 | 699 | 0.5+ | 1.2+ | 2005 03 10 | E12 | 0.8− | 0.6− | 2006 08 23 | 644 | 0.4− | 0.3+ |
| 2001 05 18 | 699 | 0.3+ | 0.6+ | 2005 03 10 | E12 | 0.6− | 0.2+ | | | | |
| 2001 05 18 | 699 | 0.2+ | 0.7+ | 2005 03 11 | 699 | 0.5+ | 0.2− | | | | |

**2005 EW$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.84445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29753142 | $\omega$ | 108.82428 | | +0.58534966 | | +0.81017630 |
| $a$ | 2.2221881 | $\Omega$ | 197.11520 | | −0.77817060 | | +0.55054639 |
| $e$ | 0.1462629 | $i$ | 6.10670 | | −0.22763191 | | +0.20127848 |
| $P$ | 3.31 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.4− | 0.3− | 2005 04 05 | G96 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2005 04 06 | G96 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.7− |
| 2005 03 11 | G96 | 0.2− | 0.4− | 2005 04 06 | G96 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 2005 03 11 | G96 | 0.0 | 0.6− | 2005 04 06 | G96 | 0.2+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2005 03 14 | G96 | 0.2− | 0.2+ | 2005 04 06 | G96 | 0.0 | 0.6− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2005 03 14 | G96 | 0.3− | 0.4− | 2005 05 13 | G96 | 0.6− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2005 03 14 | G96 | 0.0 | 0.8− | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.6+ |
| 2005 03 14 | G96 | 0.4− | 0.3− | 2005 05 13 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2005 03 17 | 691 | 0.5+ | 0.3+ | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.3− |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2005 04 05 | G96 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | | | |
| 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.2− | 1.1− | | | | |

**2005 EZ$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.70072 | | (2000.0) | | | |
| $n$ | 0.21698617 | $\omega$ | 75.65324 | | +0.02094826 | +0.99903867 |
| $a$ | 2.7427192 | $\Omega$ | 195.70001 | | −0.96335864 | +0.00986852 |
| $e$ | 0.2453070 | $i$ | 8.18142 | | −0.26739729 | +0.04271247 |
| $P$ | 4.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.0 | 0.2− | 2005 05 02 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.2+ |
| 1996 04 12 | 691 | 0.1− | 0.2− | 2005 05 04 | 703 | 1.1− | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.6+ |
| 1996 04 12 | 691 | 0.0 | 0.2− | 2005 05 04 | 703 | 1.1− | 0.8+ | 2006 09 27 | 704 | 0.4− | 0.3+ |
| 2005 03 11 | G96 | 0.7− | 0.6+ | 2005 05 04 | 703 | 0.8− | 0.4− | 2006 09 27 | 704 | 0.0 | 0.1+ |
| 2005 03 11 | G96 | 0.5− | 0.5+ | 2005 05 04 | 703 | 0.7+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.2+ |
| 2005 03 11 | G96 | 0.7− | 0.7+ | 2005 05 06 | G96 | 0.5− | 0.4+ | 2006 09 29 | 704 | 0.8− | 1.4+ |
| 2005 03 11 | G96 | 0.7− | 0.6+ | 2005 05 06 | G96 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.2− | 0.6+ |
| 2005 03 13 | 703 | 0.2+ | 0.7+ | 2005 05 06 | G96 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2005 03 13 | 703 | 1.3− | 1.0+ | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 2005 03 13 | 703 | 1.4+ | 0.1+ | 2005 05 09 | G96 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.4− | 0.6+ |
| 2005 03 13 | 703 | (1.1− | 2.2+) | 2005 05 09 | G96 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.1− | 1.1+ |
| 2005 03 13 | 703 | 1.0+ | 1.0− | 2005 05 09 | G96 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.8− | 0.2+ |
| 2005 03 13 | 703 | 1.1− | 0.7− | 2005 05 09 | G96 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2− |
| 2005 03 13 | 703 | 0.4− | 0.8− | 2005 05 15 | 644 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2005 03 13 | 703 | (2.1− | 0.6−) | 2005 05 15 | 644 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.5+ |
| 2005 04 04 | 704 | 0.3+ | 0.5+ | 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.6− |
| 2005 04 04 | 704 | 0.8+ | 0.1− | 2006 09 06 | 644 | 0.4− | 0.4− | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2005 04 04 | 704 | 0.1− | 0.7+ | 2006 09 06 | 644 | 0.3− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.5− |
| 2005 04 04 | 704 | 0.5+ | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.5− | 2006 10 17 | G96 | (0.2+ | 2.7+) |
| 2005 04 07 | 704 | 0.0 | 0.6+ | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2005 04 07 | 704 | 0.4− | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.8− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2005 04 07 | 704 | 0.2+ | 0.1− | 2006 09 17 | 703 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2005 04 07 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2005 04 09 | 704 | (2.2+ | 0.3+) | 2006 09 19 | 699 | 0.3+ | 1.1− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2005 04 09 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2005 04 09 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 04 09 | 704 | 1.1+ | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2005 04 12 | 704 | 1.3+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 04 12 | 704 | 0.7+ | 0.2+ | 2006 09 25 | 704 | 0.7− | 0.9+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2005 04 12 | 704 | 1.0+ | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2005 04 12 | 704 | 1.2+ | 0.8+ | 2006 09 25 | 704 | 0.6− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2005 04 12 | 704 | (1.6+ | 0.6+) | 2006 09 25 | 691 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2005 05 02 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.1+ | | | | |
| 2005 05 02 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.4− | | | | |

**2005 ED$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.54848 | | (2000.0) | | | |
| $n$ | 0.25931738 | $\omega$ | 265.11563 | | +0.08050023 | +0.99653066 |
| $a$ | 2.4354635 | $\Omega$ | 9.57882 | | −0.85678998 | +0.08001199 |
| $e$ | 0.1216911 | $i$ | 7.29413 | | −0.50934334 | +0.02290689 |
| $P$ | 3.80 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | G96 | 0.2− | 0.0 | 2005 04 02 | G96 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.5− | 0.6− |
| 2005 03 04 | G96 | 0.3− | 0.4+ | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.8− | 0.1+ |
| 2005 03 04 | G96 | 0.1− | 0.1− | 2005 04 02 | G96 | 0.0 | 0.3− | 2006 09 16 | 699 | 1.0+ | 0.7+ |
| 2005 03 04 | G96 | 0.0 | 0.1+ | 2005 04 02 | G96 | 0.3− | 0.1− | 2006 09 16 | 699 | 0.7+ | 0.6+ |
| 2005 03 12 | G96 | 0.2− | 0.2− | 2005 04 03 | 947 | 0.2− | 0.1− | 2006 09 16 | 699 | 1.1+ | 0.1− |
| 2005 03 12 | G96 | 0.1− | 0.4+ | 2005 04 03 | 947 | 0.4+ | 0.4− | 2006 09 16 | 699 | 1.3− | 1.2+ |
| 2005 03 12 | G96 | 0.1+ | 0.2+ | 2005 04 04 | 703 | 0.5+ | 1.3+ | 2006 09 30 | 703 | (0.7− | 1.8+) |
| 2005 03 12 | G96 | 0.1+ | 0.1− | 2005 04 04 | 703 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2005 03 12 | G96 | 0.1+ | 0.4− | 2005 04 04 | 703 | 0.5− | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.9+ |
| 2005 03 12 | G96 | 0.4+ | 0.1+ | 2005 04 04 | 703 | 1.1− | 0.4+ | 2006 09 30 | 703 | 0.3+ | 1.0+ |
| 2005 03 12 | G96 | 0.1− | 0.0 | 2005 04 04 | 704 | 1.5+ | 0.4− | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2005 03 12 | G96 | 0.6+ | 0.2− | 2005 04 04 | 704 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.1− | 0.2+ |
| 2005 03 13 | 703 | (0.6− | 2.1+) | 2005 04 04 | 704 | 1.0+ | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2005 03 13 | 703 | (1.1+ | 2.1+) | 2005 04 04 | 704 | 0.9+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2005 03 13 | 703 | 0.0 | 0.6− | 2006 08 28 | 703 | (1.8− | 0.5−) | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2005 03 13 | 703 | 0.1− | 0.8+ | 2006 08 28 | 703 | 0.4− | 1.5− | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.3− | 1.0− | 2006 11 11 | G96 | 0.5− | 0.0 |
| 2005 04 02 | G96 | 0.5− | 0.2− | 2006 08 28 | 703 | 1.1+ | 0.3− | 2006 11 11 | G96 | 0.2− | 0.2+ |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1− | 0.4− | | | | |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.8− | 0.8+ | | | | |

**2005 EC$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 245.51809 | | (2000.0) | | | |
| $n$ | 0.20251244 | $\omega$ | 269.59666 | | +0.68052998 | −0.70076530 |
| $a$ | 2.8718929 | $\Omega$ | 134.87307 | | +0.73262951 | +0.65536704 |
| $e$ | 0.0946197 | $i$ | 17.57834 | | −0.01153023 | +0.28181917 |
| $P$ | 4.87 | $H$ | 14.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 644 | 0.1+ | 0.4− | 2002 09 09 | 644 | 0.1− | 0.3− | 2005 04 02 | 703 | 0.0 | 0.0 |
| 2001 07 25 | 644 | 0.1+ | 0.1− | 2002 09 09 | 644 | 0.2− | 0.0 | 2005 04 02 | 699 | 0.6+ | 1.2+ |
| 2001 07 25 | 644 | 0.2− | 0.2+ | 2005 03 10 | 703 | 0.4− | 0.2− | 2005 04 02 | 703 | 0.5+ | 0.0 |
| 2002 08 19 | 644 | 0.4+ | 0.9+ | 2005 03 10 | 703 | 0.3− | 0.2+ | 2005 04 02 | 703 | 1.1+ | 0.3− |
| 2002 08 19 | 644 | 0.1+ | 0.6+ | 2005 03 10 | 703 | 0.7− | 1.1+ | 2005 04 02 | 699 | 0.8+ | 0.3+ |
| 2002 08 19 | 644 | 0.2+ | 0.5+ | 2005 03 10 | 703 | 0.6− | 0.3+ | 2005 04 02 | 703 | 0.3− | 0.1− |
| 2002 08 30 | 644 | 0.2+ | 0.1− | 2005 03 15 | 703 | 0.1− | 0.3− | 2005 04 02 | 699 | 0.1+ | 0.8− |
| 2002 08 30 | 644 | 0.2+ | 0.0 | 2005 03 15 | 703 | 0.8− | 0.3− | 2005 04 02 | 699 | 0.9+ | 1.0+ |
| 2002 08 30 | 644 | 0.1− | 1.1− | 2005 03 15 | 703 | 0.2+ | 1.2− | | | | |
| 2002 09 09 | 644 | 0.7− | 0.4− | 2005 03 15 | 703 | 0.9− | 0.7− | | | | |

**2005 ES$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 240.49824 | | (2000.0) | | | |
| $n$ | 0.37847515 | $\omega$ | 118.01688 | | −0.80049270 | −0.57252509 |
| $a$ | 1.8928279 | $\Omega$ | 28.18256 | | +0.32638413 | −0.66449658 |
| $e$ | 0.0702784 | $i$ | 22.04645 | | +0.50267766 | −0.48027004 |
| $P$ | 2.60 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 704 | 0.3+ | 0.1+ | 2005 04 06 | 703 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.5+ |
| 2005 03 08 | 704 | 1.0+ | 0.0 | 2005 04 06 | 703 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2005 03 08 | 704 | 0.2+ | 0.3+ | 2005 04 16 | 703 | 0.6+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2005 03 08 | 704 | 0.5+ | 0.1+ | 2005 04 16 | 703 | 0.4− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2005 03 16 | 704 | 0.1+ | 0.3+ | 2005 04 16 | 703 | 1.1− | 1.4− | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2005 03 16 | 704 | 0.8− | 0.4− | 2005 04 16 | 703 | 0.9− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | 704 | 0.5+ | 1.2+ | 2005 05 08 | 703 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.1+ | | |
| 2005 03 16 | 704 | 0.3+ | 0.3− | 2005 05 08 | 703 | 1.2− | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.0 | | |
| 2005 03 30 | 703 | 0.1− | 0.8− | 2005 05 08 | 703 | 1.1− | 0.9− | 2006 10 20 | 644 | 0.3+ | 0.4− | | |
| 2005 03 30 | 703 | 0.1− | 0.7+ | 2005 05 08 | 703 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.6+ | 0.5− | | |
| 2005 03 30 | 703 | 0.1− | 0.9− | 2005 05 12 | G96 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.0 | | |
| 2005 03 30 | 703 | 0.3+ | 0.5− | 2005 05 12 | G96 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.5− | 0.2+ | | |
| 2005 04 06 | 703 | 0.4+ | 0.6+ | 2005 05 12 | G96 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.9− | 0.4− | | |
| 2005 04 06 | 703 | 0.0 | 0.9− | 2005 05 12 | G96 | 0.3+ | 0.8+ | 2006 10 21 | 703 | 0.8+ | 0.1+ | | |
| 2005 04 06 | 703 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.4− | 0.4− | 2006 10 21 | 703 | 0.0 | 0.2− | | |
| 2005 04 06 | 703 | 0.1− | 1.0− | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2005 04 06 | 703 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2005 04 06 | 703 | 0.0 | 0.4− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2005 04 06 | 703 | (2.1− | 0.1+) | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1− | | |
| 2005 04 06 | 703 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.5+ | 0.1+ | | |
| 2005 04 06 | 703 | 0.7+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.4+ | 0.1− | | |
| 2005 04 06 | 703 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | | | | | |

### 2005 EZ$_{226}$ = 2006 PM$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.57893 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22573421 | $\omega$ | 315.11039 | | +0.63505902 | | +0.77244180 |
| $a$ | 2.6713931 | $\Omega$ | 354.30507 | | −0.69128382 | | +0.56494936 |
| $e$ | 0.2089993 | $i$ | 3.35410 | | −0.34471251 | | +0.29011358 |
| $P$ | 4.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.2− | 0.6+ | 2005 03 16 | 691 | 0.2− | 0.2+ | 2006 08 14 | 644 | 0.1− | 0.3+ | | |
| 2002 10 04 | 644 | 0.1− | 0.6+ | 2005 03 16 | 691 | 0.8+ | 0.6+ | 2006 08 15 | 644 | 0.0 | 0.1+ | | |
| 2002 10 04 | 644 | 0.9− | 1.3+ | 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 08 15 | 644 | 0.0 | 0.5+ | | |
| 2005 03 09 | G96 | 0.2+ | 0.2− | 2005 04 02 | G96 | 0.6− | 0.4− | 2006 08 15 | 644 | 0.2− | 0.3+ | | |
| 2005 03 09 | G96 | 0.1− | 0.1+ | 2005 04 02 | G96 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.2− | | |
| 2005 03 09 | G96 | 0.3− | 0.1− | 2005 04 02 | G96 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.3− | | |
| 2005 03 09 | G96 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.3+ | | |
| 2005 03 16 | 691 | 0.1+ | 0.5+ | 2006 08 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1− | | |

### 2005 EL$_{230}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.36041 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30972940 | $\omega$ | 231.12521 | | −0.67089392 | | +0.74153156 |
| $a$ | 2.1634545 | $\Omega$ | 356.72167 | | −0.64588182 | | −0.58808586 |
| $e$ | 0.1296891 | $i$ | 5.70214 | | −0.36433229 | | −0.32293337 |
| $P$ | 3.18 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 09 | 691 | 0.5− | 0.5− | 2005 03 16 | G96 | 0.2− | 0.2− | 2006 09 27 | 291 | 0.1− | 0.1− | | |
| 2005 02 09 | 691 | 0.8+ | 0.8+ | 2005 03 16 | G96 | 0.6− | 0.1− | 2006 09 27 | 291 | 0.0 | 0.2+ | | |
| 2005 02 09 | 691 | 0.3− | 0.4− | 2005 04 04 | G96 | 0.2+ | 0.2+ | 2006 09 27 | 291 | 0.1− | 0.1− | | |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 04 04 | G96 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.9− | | |
| 2005 03 10 | G96 | 0.3+ | 0.1− | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2005 03 10 | G96 | 0.0 | 0.3+ | 2005 04 04 | G96 | 0.4+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.6− | | |
| 2005 03 10 | G96 | 0.2+ | 0.4+ | 2006 09 16 | 691 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.1− | 0.3− | | |
| 2005 03 16 | G96 | 0.1− | 0.2+ | 2006 09 16 | 691 | 0.0 | 0.0 | | | | | | |
| 2005 03 16 | G96 | 0.2− | 0.1+ | 2006 09 16 | 691 | 0.2+ | 0.2+ | | | | | | |

### 2005 EU$_{230}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.83092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29568245 | $\omega$ | 40.71881 | | −0.97104544 | | +0.23322035 |
| $a$ | 2.2314424 | $\Omega$ | 152.63740 | | −0.23778305 | | −0.92268922 |
| $e$ | 0.0951816 | $i$ | 6.46598 | | −0.02302134 | | −0.30700630 |
| $P$ | 3.33 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 02 | 691 | 0.3− | 0.0 | 2005 03 10 | G96 | 0.3+ | 0.1− | 2005 03 16 | 703 | 0.1+ | 0.3− | | |
| 2005 02 02 | 691 | 0.1+ | 0.1+ | 2005 03 10 | G96 | 0.2+ | 0.1− | 2005 03 16 | 704 | 1.0+ | 0.7− | | |
| 2005 02 02 | 691 | 0.4+ | 0.1+ | 2005 03 10 | G96 | 0.0 | 0.4− | 2006 08 19 | 691 | 0.0 | 0.1+ | | |
| 2005 03 03 | 703 | 1.4− | 0.6+ | 2005 03 16 | 704 | 0.0 | 1.2+ | 2006 08 19 | 691 | 0.2+ | 0.1− | | |
| 2005 03 03 | 703 | 0.2− | 0.6− | 2005 03 16 | 703 | 0.2+ | 0.4− | 2006 08 19 | 691 | 0.1+ | 0.0 | | |
| 2005 03 03 | 703 | 0.5− | 0.3+ | 2005 03 16 | 703 | 0.8− | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.1− | | |
| 2005 03 03 | 703 | 0.3+ | 0.1+ | 2005 03 16 | 703 | 0.2+ | 0.4− | 2006 08 28 | 691 | 0.4− | 0.1+ | | |
| 2005 03 10 | G96 | 0.2+ | 0.0 | 2005 03 16 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.3+ | | |

### 2005 EH$_{237}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.10733 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20982829 | $\omega$ | 258.91181 | | +0.57776797 | | −0.81545519 |
| $a$ | 2.8047448 | $\Omega$ | 155.69240 | | +0.77803404 | | +0.53732990 |
| $e$ | 0.0637926 | $i$ | 4.86158 | | +0.24667225 | | +0.21519623 |
| $P$ | 4.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.2− | 0.4− | 2002 08 17 | 644 | 0.3− | 0.3− | 2005 03 11 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 07 | 644 | 0.0 | 0.1+ | 2002 08 17 | 644 | 0.8− | 0.5− | 2005 03 16 | G96 | 0.1− | 0.0 | | |
| 2002 08 08 | 644 | 0.1− | 0.4+ | 2002 08 27 | 644 | 0.2+ | 0.1+ | 2005 03 16 | G96 | 0.2− | 0.1+ | | |
| 2002 08 08 | 644 | 0.3+ | 0.2− | 2002 08 27 | 644 | 0.1− | 0.0 | 2005 03 16 | G96 | 0.1− | 0.2− | | |
| 2002 08 08 | 644 | 0.4+ | 0.1− | 2002 08 27 | 644 | 0.4+ | 0.5+ | 2005 03 16 | G96 | 0.3− | 0.7− | | |
| 2002 08 08 | 644 | 0.3+ | 0.7+ | 2005 03 11 | 691 | 0.0 | 0.1+ | | | | | | |
| 2002 08 17 | 644 | 0.1− | 0.2− | 2005 03 11 | 691 | 0.1+ | 0.0 | | | | | | |

### 2005 EB$_{242}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.38645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22878646 | $\omega$ | 154.76227 | | −0.99260273 | | +0.06563562 |
| $a$ | 2.6475805 | $\Omega$ | 29.55647 | | −0.11158205 | | −0.82473285 |
| $e$ | 0.0872628 | $i$ | 11.94980 | | +0.04784627 | | −0.56170072 |
| $P$ | 4.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 691 | 0.2+ | 0.6+ | 2003 11 14 | 644 | 0.4− | 0.5+ | 2005 03 11 | 703 | 1.0− | 0.9− | | |
| 2001 03 19 | 691 | 0.4+ | 0.4+ | 2003 11 14 | 644 | 0.4− | 0.8+ | 2005 03 11 | 703 | 1.1− | 1.5− | | |
| 2001 03 19 | 691 | 0.1− | 0.5+ | 2003 11 24 | 704 | 0.0 | 0.3+ | 2005 03 11 | 703 | 0.2− | 0.7− | | |
| 2001 04 16 | 699 | 0.2+ | 0.3− | 2003 11 24 | 704 | 1.0+ | 0.5+ | 2005 03 16 | 703 | 0.1+ | 0.6+ | | |
| 2001 04 16 | 699 | 0.1+ | 0.2+ | 2003 11 24 | 704 | 0.0 | 0.5+ | 2005 03 16 | 703 | 0.1− | 0.2− | | |
| 2001 04 16 | 699 | 0.1− | 0.9+ | 2003 11 24 | 704 | 0.4− | 0.4+ | 2005 03 16 | 703 | 0.1− | 0.3− | | |
| 2001 04 16 | 699 | 0.7− | 0.5+ | 2003 11 24 | 704 | 0.2+ | 0.5− | 2005 03 16 | 703 | 0.1− | 0.2− | | |
| 2001 04 24 | 291 | 0.1+ | 0.0 | 2003 12 01 | 691 | 0.2− | 0.1+ | 2005 04 02 | 703 | 0.9− | 0.8− | | |
| 2001 04 24 | 291 | 0.4+ | 0.1− | 2003 12 01 | 691 | 0.4− | 0.1+ | 2005 04 02 | 703 | 0.5− | 0.3+ | | |
| 2001 04 24 | 291 | 0.1+ | 0.1− | 2003 12 01 | 691 | 0.2+ | 0.0 | 2005 04 02 | 703 | 1.4+ | 1.0+ | | |
| 2003 11 14 | 644 | 0.8− | 0.7+ | 2005 03 11 | 703 | 0.1+ | 0.6− | 2005 04 02 | 703 | 0.3+ | 0.1+ | | |

### 2005 EX$_{242}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.04335 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22841821 | $\omega$ | 207.19098 | | +0.85034369 | | +0.48377520 |
| $a$ | 2.6504253 | $\Omega$ | 122.36466 | | −0.42717755 | | +0.86438900 |
| $e$ | 0.1846596 | $i$ | 14.19070 | | −0.30730271 | | +0.13708833 |
| $P$ | 4.31 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 1.7− | 0.1− | 2002 08 15 | 699 | 0.5+ | 0.5− | 2005 03 11 | 703 | 1.0+ | 0.4+ | | |
| 1996 01 15 | 691 | (3.5+ | 1.4−) | 2002 08 20 | 644 | 0.2− | 0.6− | 2005 03 11 | 703 | 0.4− | 1.1+ | | |
| 1996 01 15 | 691 | 1.9− | 0.1− | 2002 08 20 | 644 | 0.1− | 0.7− | 2005 03 16 | 703 | 0.3− | 0.4− | | |
| 1998 10 18 | 699 | 0.2− | 0.1− | 2002 08 20 | 644 | 0.2− | 0.6− | 2005 03 16 | 703 | 0.8+ | 0.7+ | | |
| 1998 10 18 | 699 | 0.5− | 1.3+ | 2002 09 09 | 644 | 0.1+ | 0.3− | 2005 03 16 | 703 | 0.9− | 0.8− | | |
| 1998 10 18 | 699 | 0.3− | 0.5− | 2002 09 09 | 644 | 0.1+ | 0.2− | 2005 03 16 | 703 | 1.4− | 0.0 | | |
| 2002 06 27 | 644 | 0.1+ | 0.2+ | 2002 09 09 | 644 | 0.0 | 0.2− | 2005 04 09 | 703 | 0.7+ | 0.1+ | | |
| 2002 06 27 | 644 | 0.1− | 0.3+ | 2002 09 26 | 704 | 0.8− | 0.3− | 2005 04 09 | 703 | 0.2− | 1.4− | | |
| 2002 06 27 | 644 | 0.1+ | 0.5+ | 2002 09 26 | 704 | 0.4+ | 0.6− | 2005 04 09 | 703 | 0.0 | 0.9− | | |
| 2002 08 15 | 699 | 0.6+ | 0.6− | 2002 09 26 | 704 | 0.2+ | 0.4− | 2005 04 09 | 703 | 1.3− | 0.8+ | | |

2002 08 15 699 0.3+ 1.1− 2005 03 11 703 0.6+ 0.5−
2002 08 15 699 0.5+ 0.6− 2005 03 11 703 0.6+ 0.2−

**2005 ET$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.75865 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26723448 | $\omega$ | 270.19120 | | +0.27156618 | | +0.96204952 |
| $a$ | 2.3871207 | $\Omega$ | 15.64515 | | −0.83894771 | | +0.25022629 |
| $e$ | 0.1268576 | $i$ | 5.68058 | | −0.47161271 | | +0.10884638 |
| $P$ | 3.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

1995 09 19 691 0.7+ 0.6+ 2005 04 04 G96 0.0 0.0 2006 09 19 703 0.7− 0.5+
1995 09 19 691 0.4− 0.1− 2005 04 04 G96 0.4− 0.2− 2006 09 19 703 (1.4− 2.2−)
1995 09 19 691 0.5− 0.2− 2005 04 04 G96 0.7− 0.5− 2006 09 26 691 0.2+ 0.6+
2005 03 11 691 0.4+ 0.5+ 2005 04 04 G96 0.5+ 0.4− 2006 09 26 691 0.2+ 0.1+
2005 03 11 691 0.1+ 0.4+ 2006 08 20 691 0.6− 0.2− 2006 09 26 691 0.1+ 0.5+
2005 03 11 691 0.0 0.2+ 2006 08 20 691 0.7− 0.1− 2006 10 20 G96 0.2+ 0.3+
2005 03 16 691 0.2+ 0.1+ 2006 08 20 691 0.1+ 0.4− 2006 10 20 G96 0.5+ 0.7+
2005 03 16 691 0.1+ 0.2+ 2006 09 19 703 (0.0 1.5+) 2006 10 20 G96 0.5+ 0.0
2005 03 16 691 0.2+ 0.4+ 2006 09 19 703 0.5− 1.1+ 2006 10 20 G96 0.2+ 0.5+

**2005 EY$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.14783 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27645400 | $\omega$ | 111.06133 | | +0.12261161 | | +0.99237973 |
| $a$ | 2.3337489 | $\Omega$ | 165.96498 | | −0.92821599 | | +0.11901790 |
| $e$ | 0.1590455 | $i$ | 2.88389 | | −0.35125699 | | +0.03189389 |
| $P$ | 3.57 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2005 03 03 691 0.1+ 0.2− 2005 04 04 G96 0.4− 0.2+ 2006 09 26 691 0.1+ 0.3−
2005 03 03 691 0.7− 1.2+ 2005 04 04 G96 0.1− 0.5+ 2006 09 26 691 0.3+ 0.0
2005 03 03 691 0.2+ 0.5− 2006 09 15 691 0.1+ 0.1+ 2006 09 26 691 0.1+ 0.1−
2005 03 12 691 0.2+ 0.0 2006 09 15 691 0.1− 0.3+ 2006 09 26 G96 0.4− 0.2−
2005 03 12 691 0.0 0.1+ 2006 09 15 691 0.1+ 0.3+ 2006 09 26 G96 0.2+ 0.3−
2005 03 12 691 0.1+ 0.6− 2006 09 18 691 0.1− 0.3+ 2006 09 26 G96 0.5− 0.1+
2005 03 16 691 0.1+ 0.3− 2006 09 18 691 0.0 0.1− 2006 09 26 G96 0.1− 0.3−
2005 03 16 691 0.3+ 0.3+ 2006 09 18 691 0.3− 0.0 2006 09 30 691 0.1+ 0.1+
2005 03 16 691 0.0 0.1− 2006 09 19 691 0.0 0.1+ 2006 09 30 691 0.2+ 0.1+
2005 04 04 G96 0.0 0.1+ 2006 09 19 691 0.0 0.1− 2006 09 30 691 0.2− 0.2−
2005 04 04 G96 0.4− 0.0 2006 09 19 691 0.0 0.1−

**2005 EO$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.26383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26616688 | $\omega$ | 47.27718 | | −0.75714831 | | +0.65317850 |
| $a$ | 2.3934997 | $\Omega$ | 173.48541 | | −0.62049820 | | −0.71473029 |
| $e$ | 0.1321354 | $i$ | 4.64133 | | −0.20422639 | | −0.25003690 |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2005 03 12 691 0.0 0.0 2005 04 04 G96 0.3− 0.4− 2006 08 19 691 0.0 0.0
2005 03 12 691 0.0 0.1+ 2005 04 04 G96 0.2− 0.3− 2006 08 28 691 0.1− 0.2+
2005 03 12 691 0.1+ 0.0 2005 04 04 G96 0.2− 0.3− 2006 08 28 691 0.1+ 0.3+
2005 03 13 703 0.4+ 0.7+ 2005 04 04 G96 0.0 0.5− 2006 08 28 691 0.2+ 0.1−
2005 03 13 703 0.7− 0.7− 2005 05 11 G96 0.2+ 0.4− 2006 09 25 G96 0.1− 0.1−
2005 03 13 703 1.2− 0.2+ 2005 05 11 G96 0.2+ 0.4− 2006 09 25 G96 0.3+ 0.3−
2005 03 13 703 1.0− 0.3− 2005 05 11 G96 0.3− 0.7− 2006 09 25 G96 0.1− 0.1+
2005 03 16 691 0.3+ 0.3+ 2005 05 11 G96 0.6+ 0.3− 2006 09 25 G96 0.3− 0.3−
2005 03 16 691 0.2+ 0.2+ 2006 08 19 691 0.3− 0.1+
2005 03 16 691 0.2+ 0.5+ 2006 08 19 691 0.0 0.2+

**2005 ED$_{249}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.11305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25579982 | $\omega$ | 122.06426 | | +0.33457386 | | −0.94235018 |
| $a$ | 2.4577397 | $\Omega$ | 308.38791 | | +0.86198890 | | +0.30861973 |
| $e$ | 0.1648229 | $i$ | 0.44149 | | +0.38083523 | | +0.12934453 |
| $P$ | 3.85 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

1997 02 06 910 0.2+ 0.2− 2003 09 28 645 0.1− 0.0 2005 03 13 691 0.4+ 0.1+
1997 02 06 910 0.5+ 0.4− 2003 09 28 645 0.2− 0.0 2005 03 16 G96 0.2+ 0.1−
1997 02 07 910 0.5+ 0.4− 2003 09 28 291 0.0 0.2+ 2005 03 16 G96 0.3− 0.1−
2001 02 21 691 0.3− 0.2+ 2003 10 19 645 0.0 0.1+ 2005 03 16 G96 0.2− 0.1+
2001 02 21 691 0.1− 0.2+ 2003 10 19 645 0.1− 0.0 2005 03 16 G96 0.3− 0.1−
2001 02 21 691 0.2− 0.2+ 2003 10 22 645 0.1+ 0.1− 2005 04 02 G96 0.1− 0.2−
2003 09 18 691 0.2+ 0.3+ 2003 10 22 645 0.1+ 0.1− 2005 04 02 G96 0.5− 0.2−
2003 09 18 691 0.3− 0.2+ 2003 10 23 645 0.1+ 0.0 2005 04 02 G96 0.0 0.0
2003 09 18 691 0.0 0.2+ 2003 10 23 645 0.1+ 0.1− 2005 04 02 G96 0.2+ 0.1−
2003 09 28 291 0.0 0.2+ 2005 03 13 691 0.3+ 0.3+
2003 09 28 291 0.0 0.2+ 2005 03 13 691 0.3+ 0.4+

**2005 EP$_{250}$ = 2006 WW$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.26526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36966424 | $\omega$ | 233.69825 | | +0.43011841 | | +0.83157403 |
| $a$ | 1.9227866 | $\Omega$ | 65.44745 | | −0.65361163 | | +0.55534854 |
| $e$ | 0.0210115 | $i$ | 22.72653 | | −0.62272786 | | −0.00852213 |
| $P$ | 2.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2005 03 13 704 (1.4− 1.9+) 2005 03 17 704 0.5− 0.2+ 2005 05 10 704 0.3− 0.1−
2005 03 13 704 (2.0− 1.6+) 2005 03 17 704 1.2+ 0.3+ 2006 10 17 703 0.0 0.4−
2005 03 13 704 (1.2− 1.9+) 2005 03 17 704 0.6− 0.2+ 2006 10 17 703 0.0 0.6+
2005 03 13 704 0.5− 1.5+ 2005 03 17 704 0.3− 0.3− 2006 10 17 703 0.4− 0.1+
2005 03 17 704 0.0 0.5− 2005 03 17 704 0.2+ 0.1− 2006 10 17 703 0.1+ 0.5+
2005 03 17 704 0.9+ 0.6− 2005 03 31 703 (1.8− 1.2−) 2006 10 28 703 (0.1+ 1.7−)
2005 03 17 704 0.1− 0.3− 2005 03 31 703 0.0 0.5− 2006 10 28 703 (0.1+ 1.9−)
2005 03 17 704 0.3− 0.5− 2005 03 31 703 0.1− 0.7+ 2006 10 28 703 0.1+ 0.6−
2005 03 17 704 0.7+ 0.6− 2005 03 31 703 1.1− 0.2− 2006 10 28 703 0.0 0.2−
2005 03 17 704 0.1+ 0.4− 2005 04 14 704 0.4− 0.1− 2006 11 13 703 0.2+ 1.2+
2005 03 17 704 0.6+ 0.1− 2005 04 14 704 0.7− 0.2+ 2006 11 13 703 0.1+ 0.2−
2005 03 17 704 0.0 0.6− 2005 04 14 704 0.0 0.7− 2006 11 13 703 0.6+ 0.0
2005 03 17 704 0.2− 0.1− 2005 04 14 704 0.2+ 0.1− 2006 11 13 703 0.4+ 0.0
2005 03 17 704 0.3− 0.2− 2005 04 30 703 0.7− 0.1+ 2006 11 19 703 0.6− 1.0−
2005 03 17 704 0.4+ 0.3+ 2005 04 30 703 0.0 0.1+ 2006 11 19 703 0.2− 0.1+
2005 03 17 704 0.7+ 0.3+ 2005 04 30 703 0.4+ 0.8+ 2006 11 19 703 0.8− 0.3−
2005 03 17 704 0.4+ 1.2− 2005 04 30 703 0.6− 0.1+ 2006 11 19 703 0.9− 0.2+
2005 03 17 704 0.1+ 0.8+ 2005 05 05 644 0.0 0.2+ 2006 11 24 G96 0.3+ 0.1+
2005 03 17 704 0.2+ 0.5+ 2005 05 05 644 0.1− 0.3− 2006 11 24 G96 0.6+ 0.1+
2005 03 17 704 0.8− 0.1+ 2005 05 05 644 0.1+ 0.1− 2006 11 24 G96 0.2+ 0.1+
2005 03 17 704 0.0 0.7+ 2005 05 10 704 0.3+ 0.0 2006 11 24 G96 0.2+ 0.1−
2005 03 17 704 0.1+ 0.3+ 2005 05 10 704 0.9+ 0.2+

**2005 EJ$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.01737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25669932 | $\omega$ | 65.73922 | | −0.96309869 | | −0.24081344 |
| $a$ | 2.4519950 | $\Omega$ | 100.14745 | | +0.18053673 | | −0.90925030 |
| $e$ | 0.0742042 | $i$ | 7.01433 | | +0.19961813 | | −0.33951846 |
| $P$ | 3.84 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

2001 02 02 699 1.1+ 0.7− 2001 02 19 699 0.3+ 1.4+ 2005 03 16 704 0.1+ 0.6+
2001 02 02 699 0.1− 0.8− 2001 02 19 699 1.3− 0.7+ 2005 03 16 704 0.2+ 0.5+
2001 02 02 699 0.6+ 0.2+ 2001 02 19 699 0.9− 0.4− 2005 04 02 699 0.2− 0.1−

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 699 | 0.3+ | 0.3+ | 2001 02 19 | 699 | 0.8+ | 1.2− | 2005 04 02 | 699 | 1.9− | 0.4− |
| 2001 02 16 | 704 | 0.9+ | 0.5+ | 2005 03 10 | 699 | 0.2− | 0.9− | 2005 04 02 | 699 | 1.0+ | 0.9+ |
| 2001 02 16 | 704 | 0.3+ | 0.3− | 2005 03 10 | 699 | 0.1− | 0.3+ | 2005 04 02 | 699 | 0.0 | 0.0 |
| 2001 02 16 | 704 | 0.4+ | 0.1− | 2005 03 10 | 699 | 0.6+ | 0.8+ | 2005 04 09 | 703 | 0.4+ | 0.5+ |
| 2001 02 16 | 704 | 0.5+ | 0.3+ | 2005 03 10 | 699 | 0.1− | 0.7− | 2005 04 09 | 703 | 0.1− | 0.8+ |
| 2001 02 18 | 912 | 1.0− | 1.4+ | 2005 03 16 | 704 | 0.3− | 0.9− | 2005 04 09 | 703 | 0.1− | 0.9− |
| 2001 02 18 | 912 | (0.7− | 3.6−) | 2005 03 16 | 704 | 0.2+ | 0.0 | 2005 04 09 | 703 | 0.9+ | 1.2− |
| 2001 02 18 | 912 | 1.9− | 1.5− | 2005 03 16 | 704 | 0.5− | 0.7+ | | | | |

**2005 EC$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.96682 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30400935 | $\omega$ | 165.49714 | | −0.27745989 | | +0.94840887 |
| $a$ | 2.1905075 | $\Omega$ | 88.21722 | | −0.89604332 | | −0.19784876 |
| $e$ | 0.1785039 | $i$ | 8.82928 | | −0.34658675 | | −0.24774278 |
| $P$ | 3.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.0 | 0.2+ | 2005 04 06 | 703 | 0.4− | 0.2+ | 2005 04 30 | 699 | 0.4− | 1.3+ |
| 2003 12 14 | 691 | 0.0 | 0.2+ | 2005 04 08 | 704 | 0.3+ | 0.2− | 2005 04 30 | 699 | 0.7+ | 0.1− |
| 2003 12 14 | 691 | 0.2− | 0.2+ | 2005 04 08 | 704 | 0.3+ | 0.6− | 2005 04 30 | 699 | 0.7+ | 1.0+ |
| 2005 03 10 | 703 | 0.6− | 0.5− | 2005 04 08 | 704 | 0.5+ | 0.7− | 2005 04 30 | 699 | 0.7− | 0.7+ |
| 2005 03 10 | 703 | 0.2− | 0.5− | 2005 04 08 | 704 | 0.8+ | 0.2+ | 2005 05 13 | 704 | 0.3− | 0.4+ |
| 2005 03 10 | 703 | 0.8− | 0.1+ | 2005 04 08 | 704 | 1.3+ | 0.4+ | 2005 05 13 | 704 | 0.3+ | 0.3+ |
| 2005 03 10 | 703 | 0.6− | 0.1− | 2005 04 11 | 704 | 0.4+ | 0.1+ | 2005 05 13 | 704 | 0.6− | 0.0 |
| 2005 03 17 | 703 | 0.5− | 0.1+ | 2005 04 11 | 704 | 0.1− | 0.8− | 2005 05 18 | 644 | 0.1− | 0.4+ |
| 2005 03 17 | 703 | 1.5− | 0.2+ | 2005 04 11 | 704 | 1.0+ | 1.1− | 2005 05 18 | 644 | 0.2+ | 0.2+ |
| 2005 03 17 | 703 | 0.0 | 0.3+ | 2005 04 11 | 704 | 0.6+ | 1.0− | 2005 05 18 | 644 | 0.4− | 0.2+ |
| 2005 03 17 | 703 | 0.8− | 0.0 | 2005 04 11 | 704 | 0.6+ | 0.4− | 2005 06 28 | 644 | 0.2+ | 0.4+ |
| 2005 04 01 | 699 | 0.4+ | 0.4+ | 2005 04 15 | 699 | 0.7+ | 0.4− | 2005 06 28 | 644 | 0.3− | 0.5+ |
| 2005 04 01 | 699 | 0.5+ | 0.4+ | 2005 04 15 | 699 | 0.3+ | 0.7+ | 2005 06 28 | 644 | 0.1+ | 0.2+ |
| 2005 04 01 | 699 | 0.2− | 0.3+ | 2005 04 15 | 699 | 0.1− | 0.9+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2005 04 01 | 699 | 0.6+ | 0.2+ | 2005 04 16 | 703 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 04 06 | 703 | 0.7− | 0.3− | 2005 04 16 | 703 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2005 04 06 | 703 | 0.0 | 0.7− | 2005 04 16 | 703 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2005 04 06 | 703 | 0.7− | 0.2− | 2005 04 16 | 703 | 0.4− | 0.0 | | | | |

**2005 EA$_{254}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.68586 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23761928 | $\omega$ | 54.73660 | | +0.92083445 | | −0.38476602 |
| $a$ | 2.5815563 | $\Omega$ | 327.75722 | | +0.30793047 | | +0.81721749 |
| $e$ | 0.1548446 | $i$ | 6.82448 | | +0.23925456 | | +0.42908121 |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.3+ | 0.6− | 2003 10 22 | 704 | 0.9+ | 0.8− | 2005 02 02 | 691 | 0.2+ | 0.1− |
| 1999 12 07 | 703 | 0.2− | 0.1− | 2003 10 22 | 704 | 0.1− | 0.6− | 2005 02 02 | 691 | 0.6+ | 0.1+ |
| 1999 12 07 | 703 | 0.9− | 0.0 | 2003 10 22 | 704 | 0.5+ | 0.9− | 2005 02 02 | 691 | 0.2+ | 0.2+ |
| 1999 12 07 | 703 | 1.1+ | 0.4− | 2003 10 22 | 704 | 0.6+ | 1.6− | 2005 03 03 | 703 | 0.4+ | 0.4+ |
| 2003 09 30 | 704 | 1.4+ | 0.3− | 2003 11 02 | 704 | 0.6+ | 1.0+ | 2005 03 03 | 703 | 0.4− | 0.1− |
| 2003 09 30 | 704 | 0.6− | 0.0 | 2003 11 02 | 704 | 0.3+ | 0.3+ | 2005 03 03 | 703 | 0.7+ | 0.2− |
| 2003 09 30 | 704 | 0.3− | 0.4− | 2003 11 02 | 704 | 0.3− | 0.5+ | 2005 03 03 | 703 | 0.1− | 0.5− |
| 2003 09 30 | 704 | 0.1+ | 0.2+ | 2003 11 02 | 704 | 1.3+ | 0.1+ | 2005 03 11 | G96 | 0.9− | 0.7− |
| 2003 10 17 | 691 | 0.1− | 0.1− | 2003 11 02 | 704 | 0.5− | 0.4+ | 2005 03 11 | G96 | 0.2+ | 0.4− |
| 2003 10 17 | 699 | 0.0 | 0.2− | 2003 11 19 | 704 | (1.0− | 3.7+) | 2005 03 11 | G96 | 0.3− | 0.1− |
| 2003 10 17 | 699 | 0.1+ | 0.6+ | 2003 11 19 | 704 | 0.4− | 1.3+ | 2005 03 11 | G96 | 0.2− | 0.1− |
| 2003 10 17 | 699 | 0.9− | 0.1− | 2003 11 19 | 704 | 0.8+ | 0.7− | 2005 03 17 | G96 | 0.7− | 0.3+ |
| 2003 10 17 | 691 | 0.1− | 0.1− | 2003 11 22 | 691 | 0.1− | 0.0 | 2005 03 17 | G96 | 0.8− | 0.2+ |
| 2003 10 17 | 699 | 0.6− | 0.2− | 2003 11 22 | 691 | 0.1+ | 0.1− | 2005 03 17 | G96 | 1.0− | 0.0 |
| 2003 10 17 | 691 | 0.2− | 0.1− | 2003 11 22 | 691 | 0.1− | 0.1− | 2005 03 17 | G96 | 1.1− | 0.0 |

**2005 EK$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.58309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21544654 | $\omega$ | 133.81710 | | +0.77498110 | | +0.63185965 |
| $a$ | 2.7557704 | $\Omega$ | 187.02850 | | −0.60529411 | | +0.73639209 |
| $e$ | 0.0528026 | $i$ | 5.88995 | | −0.18172321 | | +0.24182654 |
| $P$ | 4.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 644 | (0.7− | 3.1+) | 2002 08 18 | 644 | 0.1+ | 0.1− | 2005 03 17 | G96 | 0.3− | 0.1− |
| 2001 05 29 | 644 | 0.0 | 1.0+ | 2002 08 27 | 644 | 0.1− | 0.4− | 2005 03 17 | G96 | 0.1+ | 0.0 |
| 2001 05 29 | 644 | 0.2+ | 0.4− | 2002 08 27 | 644 | 0.3− | 0.1+ | 2005 03 17 | G96 | 0.1− | 0.1+ |
| 2002 08 16 | 644 | 0.3+ | 0.0 | 2002 08 27 | 644 | 0.1− | 0.2− | 2005 03 17 | G96 | 0.0 | 0.0 |
| 2002 08 16 | 644 | 0.3+ | 0.1+ | 2005 03 11 | G96 | 0.4+ | 0.4+ | 2005 04 12 | G96 | 0.0 | 0.8− |
| 2002 08 16 | 644 | 0.3+ | 0.2− | 2005 03 11 | G96 | 0.2+ | 0.1+ | 2005 04 12 | G96 | 0.7− | 0.5− |
| 2002 08 18 | 644 | 0.1+ | 0.1+ | 2005 03 11 | G96 | 0.4+ | 0.0 | 2005 04 12 | G96 | 0.3+ | 0.5− |
| 2002 08 18 | 644 | 0.5− | 0.3− | 2005 03 11 | G96 | 0.3+ | 0.4+ | 2005 04 12 | G96 | 1.0− | 0.5− |

**2005 EW$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.03358 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26739976 | $\omega$ | 177.98024 | | +0.67541885 | | −0.73697811 |
| $a$ | 2.3861370 | $\Omega$ | 229.53187 | | +0.67610393 | | +0.63290531 |
| $e$ | 0.1860639 | $i$ | 1.95366 | | +0.29443651 | | +0.23726385 |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.3+ | 0.2− | 2003 08 28 | 644 | 0.2− | 0.2+ | 2005 03 11 | G96 | 0.2+ | 0.0 |
| 1992 10 01 | 691 | 0.2+ | 0.1+ | 2003 08 28 | 644 | 0.3− | 0.2+ | 2005 03 17 | G96 | 0.5− | 0.0 |
| 1992 10 01 | 691 | 0.1− | 0.6− | 2003 08 28 | 644 | 0.1− | 0.5+ | 2005 03 17 | G96 | 0.0 | 0.4− |
| 2001 02 02 | 704 | 0.9+ | 1.5+ | 2003 09 02 | 704 | 0.5− | 0.3+ | 2005 03 17 | G96 | 0.1+ | 0.6− |
| 2001 02 02 | 704 | 0.2+ | 0.4+ | 2003 09 02 | 704 | 0.0 | 0.0 | 2005 03 17 | G96 | 0.2− | 0.3− |
| 2001 02 02 | 704 | 0.8− | 0.0 | 2003 09 02 | 704 | 0.8+ | 0.9+ | 2005 04 12 | G96 | 0.0 | 0.5+ |
| 2003 08 22 | 644 | 0.3− | 0.3+ | 2005 03 11 | G96 | 0.1− | 0.1− | 2005 04 12 | G96 | 0.5+ | 0.2− |
| 2003 08 22 | 644 | 0.4− | 0.3+ | 2005 03 11 | G96 | 0.3+ | 0.2− | 2005 04 12 | G96 | 0.6− | 0.1+ |
| 2003 08 22 | 644 | 0.3− | 0.6+ | 2005 03 11 | G96 | 0.5+ | 0.1+ | 2005 04 12 | G96 | 0.7− | 0.0 |

**2005 ER$_{256}$ = 2006 SL$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.37695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23862513 | $\omega$ | 278.97603 | | −0.46957766 | | +0.87580238 |
| $a$ | 2.5742967 | $\Omega$ | 322.35525 | | −0.72108505 | | −0.45341275 |
| $e$ | 0.2389038 | $i$ | 10.53367 | | −0.50944398 | | −0.16549038 |
| $P$ | 4.13 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.8+ | 0.1+ | 2005 04 05 | 644 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.2+ |
| 2002 10 05 | 704 | 0.2+ | 0.7− | 2005 04 07 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 1.2− | 0.6− |
| 2002 10 05 | 704 | 0.3− | 0.6− | 2005 04 07 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.8− |
| 2005 03 11 | 699 | 0.5+ | 0.0 | 2005 04 07 | 704 | 0.7+ | 0.2− | 2006 09 17 | 703 | 0.5+ | 0.8− |
| 2005 03 11 | 699 | 0.8− | 0.0 | 2005 04 07 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.2+ |
| 2005 03 11 | 699 | 0.4+ | 1.2+ | 2005 04 07 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | (2.3− | 1.7−) |
| 2005 03 11 | 699 | 0.3+ | 0.5+ | 2005 06 01 | E12 | 1.1+ | 0.6− | 2006 09 19 | 699 | 0.0 | 0.8+ |
| 2005 03 17 | 704 | 0.6− | 0.0 | 2005 06 01 | E12 | 1.2− | 0.2− | 2006 09 19 | 699 | 0.2− | 0.6+ |
| 2005 03 17 | 704 | 0.4− | 0.3− | 2005 06 01 | E12 | 0.3+ | 0.7− | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2005 03 17 | 704 | 0.1− | 0.1+ | 2005 06 01 | E12 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2005 03 17 | 704 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.6+ | 0.1− | 2006 10 12 | 644 | 0.0 | 1.0− |
| 2005 03 17 | 704 | 0.3+ | 0.6+ | 2006 08 29 | 699 | 1.0− | 1.2+ | 2006 10 19 | 691 | 0.3+ | 0.3+ |
| 2005 04 05 | 644 | 0.3− | 0.5+ | 2006 08 29 | 699 | 1.4+ | 1.4+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2005 04 05 | 644 | 0.1+ | 0.1− | 2006 08 29 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.8− | 0.0 |

**2005 ES$_{256}$ = 2006 SJ$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.07801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28999924 | $\omega$ | 312.34453 | | −0.79716364 | +0.59305936 | |
| $a$ | 2.2605016 | $\Omega$ | 264.34004 | | −0.51510691 | −0.76584185 | |
| $e$ | 0.0982985 | $i$ | 6.53090 | | −0.31495238 | −0.24852939 | |
| $P$ | 3.40 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.0 | 0.1− | 2005 03 11 | 699 | 0.4− | 0.5− | 2005 04 15 | 699 | 0.5+ | 0.2+ |
| 2003 10 23 | 691 | 0.2+ | 0.2− | 2005 03 11 | 699 | 0.2− | 0.9+ | 2005 04 15 | 699 | 0.2− | 0.1− |
| 2003 10 23 | 691 | 0.1+ | 0.3− | 2005 03 17 | 704 | 0.3+ | 0.2− | 2006 09 17 | 703 | (0.6− | 2.1−) |
| 2003 11 18 | 644 | 0.4− | 0.3+ | 2005 03 17 | 704 | 0.2+ | 0.5− | 2006 09 17 | 703 | (1.0− | 2.0−) |
| 2003 11 18 | 644 | 0.3− | 0.3+ | 2005 03 17 | 704 | 0.2− | 0.0 | 2006 09 17 | 703 | (3.6− | 3.1−) |
| 2003 11 18 | 644 | 0.1− | 0.3+ | 2005 04 06 | 699 | 1.6+ | 0.4+ | 2006 09 17 | 703 | 0.3− | 0.7− |
| 2003 11 24 | 691 | 0.1− | 0.2+ | 2005 04 06 | 699 | 0.3− | 1.3− | 2006 09 22 | 703 | 0.4+ | 0.9+ |
| 2003 11 24 | 691 | 0.0 | 0.3+ | 2005 04 06 | 699 | 0.6+ | 0.1− | 2006 09 22 | 703 | 0.4+ | 0.7+ |
| 2003 11 24 | 691 | 0.0 | 0.1− | 2005 04 06 | 699 | 0.1− | 0.5+ | 2006 09 22 | 703 | 0.7− | 0.2− |
| 2005 03 11 | 699 | 0.8− | 0.5− | 2005 04 15 | 699 | 0.8− | 1.1+ | 2006 09 22 | 703 | (0.4+ | 1.6+) |
| 2005 03 11 | 699 | 0.0 | 0.6+ | 2005 04 15 | 699 | 0.1+ | 0.1− | | | | |

**2005 EH$_{257}$ = 2006 TO$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.60253 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24211872 | $\omega$ | 311.95895 | | +0.40872211 | +0.91235201 | |
| $a$ | 2.5494733 | $\Omega$ | 342.12299 | | −0.81289103 | +0.35213160 | |
| $e$ | 0.2394990 | $i$ | 4.42144 | | −0.41491495 | +0.20884717 | |
| $P$ | 4.07 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.3− | 0.1+ | 2005 04 12 | G96 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.5+ | 2005 04 12 | G96 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 03 11 | G96 | 0.2− | 0.1− | 2006 07 22 | G96 | 0.7− | 2.4+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 07 22 | G96 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2005 03 17 | 691 | 0.4+ | 0.4+ | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2005 03 17 | 691 | 0.3+ | 0.4+ | 2006 07 22 | G96 | 0.5− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2005 03 17 | 691 | 0.5+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2005 04 12 | G96 | 0.7− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.4+ |

**2005 EB$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.72348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24500545 | $\omega$ | 37.18798 | | +0.91968177 | −0.39236440 | |
| $a$ | 2.5294080 | $\Omega$ | 345.88972 | | +0.34342801 | +0.82270023 | |
| $e$ | 0.1873054 | $i$ | 3.61000 | | +0.19037503 | +0.41135691 | |
| $P$ | 4.02 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 704 | 0.1+ | 1.0− | 2003 12 18 | 704 | 1.6+ | 0.5− | 2005 03 11 | G96 | 0.4− | 0.7− |
| 1999 12 16 | 704 | 0.4+ | 0.1− | 2003 12 28 | 704 | 0.1− | 1.5− | 2005 03 11 | G96 | 0.2− | 0.1− |
| 1999 12 16 | 704 | 0.3− | 0.1− | 2003 12 28 | 704 | 0.4− | 0.7− | 2005 03 17 | 691 | 0.2+ | 0.2+ |
| 1999 12 16 | 704 | 0.2− | 0.0 | 2003 12 28 | 704 | 0.3− | 0.7+ | 2005 03 17 | 691 | 0.4+ | 0.1+ |
| 2003 10 25 | 704 | 0.2− | 1.5+ | 2003 12 28 | 704 | 0.7− | 0.6+ | 2005 03 17 | 691 | 0.3+ | 0.1+ |
| 2003 10 25 | 704 | 0.2− | 0.1+ | 2004 01 18 | 691 | 0.0 | 0.1+ | 2005 05 12 | G96 | 0.6− | 0.1+ |
| 2003 10 25 | 704 | 0.0 | 0.4+ | 2004 01 18 | 691 | 0.1− | 0.0 | 2005 05 12 | G96 | 0.3− | 0.2− |
| 2003 12 18 | 704 | 0.0 | 0.0 | 2004 01 18 | 691 | 0.0 | 0.2+ | 2005 05 12 | G96 | 0.3− | 0.1+ |
| 2003 12 18 | 704 | 0.3+ | 0.2− | 2005 03 11 | G96 | 0.6− | 0.0 | 2005 05 12 | G96 | 0.7− | 0.2+ |
| 2003 12 18 | 704 | 0.2+ | 0.0 | 2005 03 11 | G96 | 0.2− | 0.4− | | | | |

**2005 EL$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.89921 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21940144 | $\omega$ | 80.16003 | | +0.04296332 | +0.99859717 | |
| $a$ | 2.7225533 | $\Omega$ | 192.42874 | | −0.96372890 | +0.03325628 | |
| $e$ | 0.2186890 | $i$ | 8.26767 | | −0.26340227 | +0.04120320 | |
| $P$ | 4.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.6− | 0.5− | 2005 04 05 | G96 | 0.5− | 0.2− | 2005 05 09 | G96 | 0.6+ | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.1− | 2005 04 06 | G96 | 0.0 | 0.1− | 2005 05 09 | G96 | 0.0 | 0.1+ |
| 2005 03 11 | G96 | 0.4− | 0.1+ | 2005 04 06 | G96 | 0.4− | 0.2+ | 2005 05 09 | G96 | 0.2+ | 0.0 |
| 2005 03 11 | G96 | 0.9− | 0.3− | 2005 04 06 | G96 | 0.3− | 0.6− | 2006 09 20 | 691 | 0.2+ | 0.1+ |
| 2005 03 17 | 691 | 0.0 | 0.1+ | 2005 04 06 | G96 | 0.1+ | 0.3+ | 2006 09 20 | 691 | 0.1+ | 0.1− |
| 2005 03 17 | 691 | 0.3+ | 0.1+ | 2005 04 07 | G96 | 0.0 | 0.1− | 2006 09 20 | 691 | 0.0 | 0.5+ |
| 2005 03 17 | 691 | 0.1+ | 0.2+ | 2005 04 07 | G96 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.4− | 0.8− |
| 2005 04 05 | G96 | 0.3+ | 0.0 | 2005 04 07 | G96 | 0.5− | 0.4− | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2005 04 05 | G96 | 0.5+ | 0.2− | 2005 04 07 | G96 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2005 04 05 | G96 | 0.0 | 0.0 | 2005 05 09 | G96 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.3− | 0.5− |

**2005 EJ$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.09260 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28851251 | $\omega$ | 67.55893 | | −0.23991706 | +0.97070936 | |
| $a$ | 2.2682606 | $\Omega$ | 188.58928 | | −0.91917135 | −0.23137316 | |
| $e$ | 0.1713164 | $i$ | 4.90618 | | −0.31235210 | −0.06472872 | |
| $P$ | 3.42 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2005 04 04 | 703 | 0.3+ | 0.5− | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2005 03 13 | 703 | 0.9− | 0.6+ | 2005 04 05 | G96 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2005 04 05 | G96 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2− |
| 2005 03 13 | 703 | 0.5− | 0.4+ | 2005 04 05 | G96 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2005 03 13 | 703 | (1.8− | 1.0+) | 2005 04 05 | G96 | 0.3− | 0.1+ | 2006 10 16 | 291 | 0.1+ | 0.1+ |
| 2005 03 13 | 703 | (1.7− | 0.4−) | 2005 04 11 | 695 | 0.0 | 0.4+ | 2006 10 16 | 291 | 0.3+ | 0.0 |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2005 04 11 | 695 | 0.1+ | 0.4+ | 2006 10 16 | 291 | 0.3+ | 0.6− |
| 2005 03 17 | 691 | 0.2− | 0.1− | 2005 05 06 | G96 | 0.0 | 0.0 | 2006 10 29 | 291 | 0.1− | 0.0 |
| 2005 03 17 | 691 | 0.1− | 0.5− | 2005 05 06 | G96 | 0.1− | 0.0 | 2006 10 29 | 291 | 0.2− | 0.3+ |
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2005 05 06 | G96 | 0.1− | 0.1+ | 2006 10 29 | 291 | 0.5− | 0.7+ |
| 2005 03 19 | 143 | 0.6+ | 0.2+ | 2005 05 06 | G96 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2005 03 19 | 143 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2005 03 19 | 143 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2005 04 04 | 703 | 0.0 | 1.0− | 2006 09 18 | 691 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2005 04 04 | 703 | 0.8− | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.5+ | | | | |
| 2005 04 04 | 703 | 1.2+ | 0.4− | 2006 09 25 | 691 | 0.1+ | 0.1+ | | | | |

**2005 EW$_{264}$ = 2006 UH$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.20500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28200400 | $\omega$ | 77.39909 | | +0.11331989 | +0.99305448 | |
| $a$ | 2.3030279 | $\Omega$ | 199.19356 | | −0.94485467 | +0.09786064 | |
| $e$ | 0.1896549 | $i$ | 5.52357 | | −0.30725925 | +0.06531533 | |
| $P$ | 3.50 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.0 | 0.0 | 2005 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.6− | 0.1+ |
| 1999 10 04 | 691 | 0.1+ | 0.4− | 2005 04 05 | G96 | 0.4+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 1999 10 04 | 691 | 0.1− | 0.1− | 2005 04 05 | G96 | 0.3− | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2005 03 13 | 691 | 0.0 | 0.2+ | 2005 04 05 | G96 | 0.4− | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2005 03 13 | 691 | 0.2− | 0.2− | 2005 04 05 | G96 | 0.5− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 03 13 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2005 03 17 | 691 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.0 | | | | |

**2005 EU$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.71482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28628663 | $\omega$ | 271.12564 | | +0.02943409 | | +0.99956661 |
| $a$ | 2.2800026 | $\Omega$ | 0.56170 | | −0.89700846 | | +0.02662108 |
| $e$ | 0.1575239 | $i$ | 2.74202 | | −0.44103227 | | +0.01256596 |
| $P$ | 3.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.1− | 2005 04 05 | G96 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.4+ | 0.0 |
| 1999 10 06 | 704 | 1.3+ | 0.5− | 2005 04 05 | G96 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.3+ |
| 1999 10 06 | 704 | 0.8− | 0.1− | 2005 04 05 | G96 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1− |
| 1999 10 06 | 704 | 0.1− | 0.5− | 2005 04 06 | G96 | 0.2+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2001 01 21 | 691 | 0.1− | 0.0 | 2005 04 06 | G96 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.2+ |
| 2001 01 21 | 691 | 0.0 | 0.4− | 2005 04 06 | G96 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.4− | 0.3+ |
| 2001 01 21 | 691 | 0.1− | 0.2− | 2005 04 06 | G96 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.4− |
| 2005 03 04 | G96 | 0.6− | 0.1− | 2005 04 07 | G96 | 0.2− | 0.0 | 2006 10 15 | 691 | 0.6− | 0.1− |
| 2005 03 04 | G96 | 0.6− | 0.2− | 2005 04 07 | G96 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2005 03 04 | G96 | 1.0− | 0.3− | 2005 04 07 | G96 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2005 03 04 | G96 | 1.0− | 0.4+ | 2005 04 07 | G96 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.4− |
| 2005 03 13 | 703 | 0.3− | 0.1− | 2005 05 08 | G96 | 0.4+ | 0.0 | 2006 10 21 | 703 | 1.3− | 0.1− |
| 2005 03 13 | 703 | 1.2− | 0.6+ | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.6+ |
| 2005 03 13 | 703 | (1.6− | 0.5−) | 2005 05 08 | G96 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.5− |
| 2005 03 13 | 703 | 0.7− | 0.2− | 2005 05 08 | G96 | 0.4+ | 0.0 | 2006 10 21 | 703 | 1.1+ | 0.3− |
| 2005 03 17 | 691 | 0.5+ | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.8+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2005 03 17 | 691 | 0.5+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2005 04 04 | 704 | 0.1+ | 0.9+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2005 04 04 | 704 | 0.7+ | 1.4+ | 2006 09 24 | 691 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.6− | 0.8+ |
| 2005 04 04 | 704 | 0.6+ | 0.1− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2005 04 05 | G96 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2+ |

**2005 EP$_{266}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.65228 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21577988 | $\omega$ | 112.82249 | | +0.59044835 | | +0.80630659 |
| $a$ | 2.7529315 | $\Omega$ | 193.54086 | | −0.78461930 | | +0.56325045 |
| $e$ | 0.1634708 | $i$ | 8.65137 | | −0.18905899 | | +0.18060622 |
| $P$ | 4.57 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.2− | 0.1+ | 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.9+ |
| 2000 02 12 | 645 | 0.2+ | 0.2− | 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.4− | 1.1+ |
| 2004 01 28 | 645 | 0.1+ | 0.3+ | 2005 04 02 | G96 | 0.3− | 0.3+ | 2006 09 11 | 703 | 1.0+ | 1.4− |
| 2004 01 28 | 645 | 0.0 | 0.3+ | 2005 04 02 | G96 | 0.0 | 0.4+ | 2006 09 11 | 703 | 0.2− | 0.2+ |
| 2005 03 13 | 691 | 0.2+ | 0.4+ | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 09 11 | 703 | 0.3− | 0.8+ |
| 2005 03 13 | 691 | 0.2− | 0.2+ | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 09 11 | 703 | 0.3+ | 0.7− |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2005 04 11 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 1.0− | 1.3+ |
| 2005 03 17 | 691 | 0.1+ | 0.5+ | 2005 05 10 | G96 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.8+ |
| 2005 03 17 | 691 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.6− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.5+ |
| 2005 03 17 | 691 | 0.4+ | 0.2+ | 2005 05 10 | G96 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2005 04 02 | 691 | 0.0 | 0.0 | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2005 04 02 | 691 | 0.0 | 0.4+ | 2006 08 29 | 703 | 1.0− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 703 | (0.8− | 1.7+) | | | | |

**2005 EX$_{267}$ = 2006 RQ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.12549 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28679923 | $\omega$ | 329.32509 | | −0.16392398 | | +0.98592862 |
| $a$ | 2.2772851 | $\Omega$ | 291.22311 | | −0.89778839 | | −0.16286934 |
| $e$ | 0.1553554 | $i$ | 2.01443 | | −0.40878471 | | −0.03766075 |
| $P$ | 3.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 910 | 0.8+ | 0.5− | 2005 03 13 | 703 | 0.6+ | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 1998 03 02 | 910 | 0.3+ | 0.0 | 2005 03 13 | 703 | (2.2− | 0.2−) | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 1998 03 02 | 910 | 0.0 | 0.5− | 2005 03 14 | G96 | 0.5+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 1999 10 11 | 704 | 0.3− | 0.5− | 2005 03 14 | G96 | 0.6− | 0.1− | 2006 10 11 | 691 | 0.3− | 0.3+ |
| 1999 10 11 | 704 | 0.6+ | 0.5− | 2005 03 14 | G96 | 0.4− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1+ |
| 1999 10 11 | 704 | 0.4− | 0.7− | 2005 03 14 | G96 | 0.6− | 0.4+ | 2006 10 17 | 703 | 0.9− | 1.2− |
| 1999 10 11 | 704 | 0.4+ | 0.4− | 2005 03 17 | 691 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 1.4− |
| 1999 10 11 | 704 | 0.3− | 0.7− | 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 703 | (4.0− | 6.5−) |
| 2003 11 30 | 691 | 0.1− | 0.1− | 2005 03 17 | 691 | 0.1+ | 0.6+ | 2006 10 17 | 703 | (1.7+ | 4.0−) |
| 2003 11 30 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.3− | 0.1+ |
| 2003 11 30 | 691 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.5− | 0.4+ |
| 2003 12 14 | 291 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2003 12 14 | 291 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2003 12 14 | 291 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.0 |
| 2005 03 03 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2005 03 03 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 03 03 | 691 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2005 03 13 | 703 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2005 03 13 | 703 | 0.6+ | 1.2+ | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.3+ |

**2005 EN$_{268}$ = 2006 QN$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.72907 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23666518 | $\omega$ | 340.72326 | | −0.53087219 | | +0.84676858 |
| $a$ | 2.5884899 | $\Omega$ | 257.19908 | | −0.77286809 | | −0.50022989 |
| $e$ | 0.1571498 | $i$ | 1.99958 | | −0.34763434 | | −0.18097799 |
| $P$ | 4.16 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 291 | 0.1− | 0.1+ | 2005 03 17 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2003 12 19 | 291 | 0.1− | 0.4+ | 2005 03 17 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2003 12 19 | 291 | 0.1+ | 0.3+ | 2005 05 12 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 691 | 0.3− | 0.3+ |
| 2005 03 14 | G96 | 0.6− | 0.0 | 2005 05 12 | 691 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.3+ |
| 2005 03 14 | G96 | 0.5− | 0.3− | 2005 05 12 | 691 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2005 03 14 | G96 | 0.6− | 0.2− | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.6− | 0.0 |
| 2005 03 14 | G96 | 0.6− | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.1+ | | | | |

**2005 EH$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.37290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23077375 | $\omega$ | 276.20984 | | +0.36867735 | | +0.92723898 |
| $a$ | 2.6323590 | $\Omega$ | 15.91320 | | −0.72981981 | | +0.33245129 |
| $e$ | 0.1842950 | $i$ | 13.84526 | | −0.57570831 | | +0.17234851 |
| $P$ | 4.27 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 15 | G96 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2005 03 15 | G96 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2005 03 15 | G96 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.0 | 0.1+ |
| 2005 03 15 | G96 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.5+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.1+ |
| 2005 03 17 | G96 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.4− | 0.4− |
| 2005 03 17 | G96 | 0.7− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.3− |
| 2005 03 17 | G96 | 0.8− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.8+ | 0.7− |
| 2005 03 17 | G96 | 1.1− | 0.3− | 2006 09 25 | 691 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.6− | 0.6+ |
| 2005 04 12 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2+ |
| 2005 04 12 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2005 04 12 | 691 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.7− | 0.0 |
| 2005 04 14 | 703 | 1.2− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.4− | 1.3− |
| 2005 04 14 | 703 | 0.1+ | 0.7− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2005 04 14 | 703 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.6− | 0.0 |
| 2005 04 14 | 703 | 0.9− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.5− | 0.0 |
| 2005 04 16 | 691 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 1.0+ |
| 2005 04 16 | 691 | (2.0+ | 0.3−) | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 08 24 | 644 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.0 | |
| 2006 08 24 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ | |

**2005 EO$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.00563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22145681 | $\omega$ | 197.97158 | | −0.32690925 | +0.94277961 | |
| $a$ | 2.7056816 | $\Omega$ | 52.99754 | | −0.85668624 | −0.26634101 | |
| $e$ | 0.2113977 | $i$ | 4.70822 | | −0.39902258 | −0.20057184 | |
| $P$ | 4.45 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 15 | 691 | 0.2− | 0.1+ | 2005 04 09 | 704 | 0.1− | 0.5− | 2005 05 10 | G96 | 0.1− | 0.1+ |
| 2005 03 15 | 691 | 0.3− | 0.1+ | 2005 04 13 | 704 | 0.3+ | 1.4+ | 2005 05 10 | G96 | 0.5− | 0.1− |
| 2005 03 15 | 691 | 0.7+ | 0.6+ | 2005 04 13 | 704 | 0.7+ | 1.3+ | 2005 05 11 | 699 | 0.9+ | 0.1+ |
| 2005 03 18 | 703 | 0.6− | 0.1− | 2005 04 13 | 704 | 0.8+ | 0.2+ | 2005 05 11 | 699 | 1.0− | 0.2+ |
| 2005 03 18 | 703 | 0.2− | 0.2− | 2005 04 13 | 704 | 0.5+ | 0.6+ | 2005 05 11 | 699 | 0.3− | 1.3+ |
| 2005 03 18 | 703 | 0.3− | 0.2+ | 2005 04 15 | 699 | 0.3+ | 0.4− | 2005 05 11 | 699 | 0.1− | 0.2+ |
| 2005 03 18 | 703 | 0.1− | 1.0− | 2005 04 15 | 699 | 0.1+ | 1.0+ | 2006 08 29 | 691 | 0.5− | 0.0 |
| 2005 04 01 | 699 | 0.2+ | 0.0 | 2005 04 15 | 699 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2005 04 01 | 699 | 0.6− | 0.3+ | 2005 04 15 | 699 | 0.3+ | 0.2− | 2006 08 29 | 691 | 0.1− | 0.1− |
| 2005 04 01 | 699 | 0.3− | 1.2− | 2005 04 18 | 703 | 0.7− | 0.4− | 2006 09 18 | 699 | 0.2+ | 0.3+ |
| 2005 04 01 | 699 | 0.2− | 0.6+ | 2005 04 18 | 703 | 0.3− | 0.2+ | 2006 09 18 | 699 | (0.5+ | 2.2−) |
| 2005 04 02 | 644 | 0.3+ | 0.4− | 2005 04 18 | 703 | 1.9− | 1.8− | 2006 09 18 | 699 | 0.6+ | 0.1+ |
| 2005 04 02 | 644 | 0.3+ | 0.1− | 2005 04 18 | 703 | 1.7− | 1.2− | 2006 09 18 | 699 | 1.1− | 0.1+ |
| 2005 04 02 | 644 | 0.3+ | 0.0 | 2005 04 19 | 691 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.9+ | 1.7+ |
| 2005 04 05 | 704 | 1.1+ | 0.3− | 2005 04 19 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.6+ | 1.6− |
| 2005 04 05 | 704 | 1.5+ | 1.7+ | 2005 04 19 | 691 | 0.0 | 0.4− | 2006 09 25 | 699 | 1.3− | 0.2+ |
| 2005 04 05 | 704 | 1.3+ | 0.1+ | 2005 05 08 | 703 | 1.0− | 1.0− | 2006 09 25 | 699 | 0.2+ | 0.4+ |
| 2005 04 05 | 704 | 1.0+ | 0.5− | 2005 05 08 | 703 | 0.5− | 0.8− | 2006 10 03 | G96 | 1.0+ | 0.2− |
| 2005 04 05 | 704 | 0.6+ | 1.3+ | 2005 05 08 | 703 | 1.1+ | 0.3+ | 2006 10 03 | G96 | 0.8+ | 0.0 |
| 2005 04 09 | 704 | 0.3+ | 1.4− | 2005 05 08 | 703 | 0.5− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2005 04 09 | 704 | 0.1− | 0.1− | 2005 05 10 | G96 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.7+ | 0.4− |
| 2005 04 09 | 704 | 0.1+ | 0.7− | 2005 05 10 | G96 | 0.1− | 0.3+ | | | | |

**2005 EL$_{272}$ = 2006 KY$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.45795 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12506184 | $\omega$ | 195.22904 | | −0.38183575 | +0.92292315 | |
| $a$ | 3.9602217 | $\Omega$ | 52.34837 | | −0.84134816 | −0.32509785 | |
| $e$ | 0.1492528 | $i$ | 3.55810 | | −0.38253723 | −0.20621409 | |
| $P$ | 7.88 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 291 | 0.0 | 0.4+ | 2004 02 17 | 691 | 0.0 | 0.2+ | 2005 03 11 | 691 | 0.1+ | 0.3− |
| 2001 11 12 | 291 | 0.1− | 0.3+ | 2004 02 17 | 691 | 0.2− | 0.2+ | 2006 05 25 | 568 | 0.0 | 0.4+ |
| 2001 11 12 | 291 | 0.1− | 0.1− | 2005 03 01 | 691 | 0.1+ | 0.2+ | 2006 05 25 | 568 | 0.2+ | 0.5+ |
| 2004 01 19 | 691 | 0.2+ | 0.3− | 2005 03 01 | 691 | 0.0 | 0.1− | 2006 05 25 | 568 | 0.1+ | 0.5+ |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2005 03 01 | 691 | 0.2− | 0.1+ | 2006 05 26 | 568 | 0.1+ | 0.6+ |
| 2004 01 19 | 691 | 0.2− | 0.3− | 2005 03 11 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2005 03 11 | 691 | 0.0 | 0.2+ | | | | |

**2005 EY$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.72348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17309519 | $\omega$ | 331.57801 | | +0.90564139 | +0.42390929 | |
| $a$ | 3.1886931 | $\Omega$ | 3.39462 | | −0.34673238 | +0.75482061 | |
| $e$ | 0.0759579 | $i$ | 10.41534 | | −0.24411132 | +0.50054645 | |
| $P$ | 5.69 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.4− | 0.9+ | 2002 10 18 | 644 | 0.1+ | 0.5− | 2005 03 03 | 691 | 0.3+ | 0.0 |
| 2001 07 19 | 644 | 0.3− | 0.6+ | 2002 10 18 | 644 | 0.1− | 0.6− | 2005 03 12 | 704 | 0.9+ | 1.1+ |
| 2001 07 19 | 644 | 0.4− | 1.4+ | 2002 10 31 | 644 | 0.0 | 1.4+ | 2005 03 12 | 704 | 0.5+ | 0.0 |
| 2002 10 03 | 644 | 0.5− | 0.6+ | 2002 10 31 | 644 | 0.0 | 1.2+ | 2005 03 12 | 704 | (0.6+ | 2.9−) |
| 2002 10 03 | 644 | 0.1− | 0.1+ | 2002 10 31 | 644 | 0.2+ | 1.3+ | 2005 03 12 | 704 | 0.1− | 0.6+ |
| 2002 10 03 | 644 | 0.2+ | 0.3+ | 2003 12 30 | 704 | 0.4− | 0.2+ | 2005 04 13 | 691 | 0.0 | 0.4+ |
| 2002 10 10 | 644 | 0.7− | 0.1+ | 2003 12 30 | 704 | 0.4− | 0.4− | 2005 04 13 | 691 | 0.0 | 0.2+ |
| 2002 10 10 | 644 | 0.6− | 0.3+ | 2003 12 30 | 704 | 0.5+ | 0.1− | 2005 04 13 | 691 | 0.3+ | 0.1− |
| 2002 10 10 | 644 | 0.1− | 0.6+ | 2005 03 03 | 691 | 0.2− | 0.2+ | | | | |
| 2002 10 18 | 644 | 0.6− | 0.5− | 2005 03 03 | 691 | 0.1+ | 0.1+ | | | | |

**2005 EY$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.10218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29242671 | $\omega$ | 298.88488 | | −0.25190761 | +0.96708620 | |
| $a$ | 2.2479744 | $\Omega$ | 316.47623 | | −0.86876505 | −0.24231715 | |
| $e$ | 0.1337226 | $i$ | 2.98593 | | −0.42636820 | −0.07763171 | |
| $P$ | 3.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 703 | 0.4− | 0.0 | 2005 04 04 | 703 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.4+ |
| 2005 03 04 | 703 | 0.8− | 0.5− | 2005 04 04 | 703 | 0.5+ | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.6− |
| 2005 03 04 | 703 | 0.1− | 0.4+ | 2005 04 04 | 703 | 0.8+ | 0.8+ | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2005 03 04 | 703 | 0.1+ | 0.2+ | 2005 04 15 | 703 | 1.4+ | 0.6+ | 2006 09 17 | 703 | 0.4+ | 0.5+ |
| 2005 03 08 | 699 | (2.2+ | 0.2−) | 2005 04 15 | 703 | 0.4+ | 1.2− | 2006 10 20 | 644 | 0.1− | 0.7+ |
| 2005 03 08 | 699 | 0.2+ | 0.5+ | 2005 04 15 | 703 | 1.4− | 1.2− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2005 03 08 | 699 | 0.3− | 0.6+ | 2005 04 15 | 703 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2005 03 08 | 699 | 0.9+ | 0.4+ | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2005 03 17 | 703 | 0.2− | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2005 03 17 | 703 | 0.2− | 1.1− | 2005 05 14 | G96 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 03 17 | 703 | 0.3− | 0.3− | 2005 05 14 | G96 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2005 03 17 | 703 | 0.4− | 0.4− | 2006 09 17 | 703 | 0.2− | 0.8+ | | | | |
| 2005 04 04 | 703 | 0.8+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.2− | | | | |

**2005 EM$_{276}$ = 2005 GX$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.98852 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23676445 | $\omega$ | 276.06868 | | +0.94734930 | +0.19990948 | |
| $a$ | 2.5877663 | $\Omega$ | 72.60585 | | −0.06696105 | +0.88757963 | |
| $e$ | 0.1059147 | $i$ | 15.19574 | | −0.31312220 | +0.41501638 | |
| $P$ | 4.16 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 25 | 699 | 0.5− | 0.1+ | 2003 12 23 | 704 | 0.5− | 0.7− | 2005 04 02 | 699 | 0.1+ | 0.6+ |
| 2001 04 25 | 699 | 0.6+ | 0.4− | 2003 12 23 | 704 | 0.1+ | 0.1− | 2005 04 02 | 703 | 0.6− | 0.8− |
| 2001 04 25 | 699 | 0.9+ | 0.7+ | 2003 12 28 | 704 | 0.2− | 0.4+ | 2005 04 02 | 703 | 0.7− | 0.5− |
| 2001 04 25 | 699 | 1.0− | 0.3− | 2003 12 28 | 704 | 0.1− | 0.0 | 2005 04 02 | 703 | 0.3− | 0.1+ |
| 2003 11 24 | 704 | 0.0 | 0.3− | 2003 12 28 | 704 | 0.1− | 0.4+ | 2005 04 02 | 699 | 0.8+ | 0.8− |
| 2003 11 24 | 704 | 0.3− | 0.4− | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2005 04 02 | 703 | 1.0+ | 0.6− |
| 2003 11 24 | 704 | 0.3− | 0.4+ | 2003 12 28 | 704 | 0.0 | 1.5+ | 2005 04 02 | 699 | 0.2+ | 1.2+ |
| 2003 11 24 | 704 | 0.8− | 0.4+ | 2005 03 08 | 704 | 0.5+ | 0.4− | 2005 04 02 | 699 | 0.7− | 1.3+ |
| 2003 12 18 | 704 | 0.3+ | 0.7− | 2005 03 08 | 704 | 0.0 | 0.4+ | 2005 04 09 | 703 | 0.5+ | 1.0− |
| 2003 12 18 | 704 | 0.4+ | 0.8− | 2005 03 08 | 704 | 0.8+ | 1.6+ | 2005 04 09 | 703 | (2.9− | 1.6+) |
| 2003 12 18 | 704 | 1.0+ | 0.1+ | 2005 03 15 | 703 | 0.2− | 0.1− | 2005 04 09 | 703 | 0.2− | 0.0 |
| 2003 12 23 | 704 | 0.1− | 0.1− | 2005 03 15 | 703 | (1.4− | 2.9−) | 2005 04 09 | 703 | 1.0− | 0.7− |
| 2003 12 23 | 704 | 0.2+ | 0.3− | 2005 03 15 | 703 | (0.5+ | 4.8−) | | | | |
| 2003 12 23 | 704 | 0.0 | 0.2+ | 2005 03 15 | 703 | 0.2− | 0.4− | | | | |

**2005 EG$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.85540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35567361 | $\omega$ | 271.29217 | | +0.63027348 | +0.73548528 | |
| $a$ | 1.9728843 | $\Omega$ | 41.45193 | | −0.47410268 | +0.61821386 | |
| $e$ | 0.0654325 | $i$ | 22.06007 | | −0.61480240 | +0.27725985 | |
| $P$ | 2.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 703 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.7− | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 2005 03 09 | 703 | 0.5− | 0.2− | 2006 09 30 | 703 | 1.0+ | 1.1− | 2006 11 09 | 644 | 0.2+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 703 | 1.0− | 1.3− | 2006 09 30 | 703 | 1.3+ | 0.9+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 2005 03 09 | 703 | 0.8− | 0.7+ | 2006 09 30 | 703 | (2.3+ | 0.7−) | 2006 11 14 | 703 | 0.2+ | 0.9− |
| 2005 03 15 | 703 | 0.3− | 0.7− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.4− | 0.4+ |
| 2005 03 15 | 703 | 0.7− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.0 |
| 2005 03 15 | 703 | 0.8+ | 1.4+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.1+ |
| 2005 03 15 | 703 | (1.9− | 1.0−) | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.5− | 0.3− |
| 2005 04 02 | 703 | 0.6− | 1.4− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.6− | 0.3− |
| 2005 04 02 | 699 | 0.6+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2005 04 02 | 703 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2005 04 02 | 703 | 0.2+ | 1.2+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2005 04 02 | 703 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2005 04 02 | 699 | 1.2+ | 0.1+ | 2006 10 27 | 703 | 0.8− | 0.6− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2005 04 02 | 699 | 1.0+ | 0.3+ | 2006 10 27 | 703 | 0.7− | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2005 04 02 | 699 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 1.1+ | 0.1− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2005 05 02 | 703 | 0.9− | 0.2− | 2006 10 27 | 703 | 0.7+ | 0.1− | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2005 05 02 | 703 | 1.3+ | 0.4− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 22 | 703 | 0.3+ | 0.2− |
| 2005 05 02 | 703 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 22 | 703 | 0.2+ | 0.3− |
| 2005 05 02 | 703 | 1.0+ | 0.8− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 22 | 703 | 0.7+ | 0.3+ |
| 2005 05 02 | 703 | 0.8− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2005 05 02 | 703 | 0.5− | 0.6+ | 2006 11 08 | 644 | 0.0 | 0.5+ | 2006 11 25 | G96 | 0.3+ | 0.0 |
| 2005 05 02 | 703 | 1.0− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2005 05 02 | 703 | 0.5− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.1+ |

**2005 EM$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.69668 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22289960 | $\omega$ | 225.40541 | | −0.97658009 | | −0.13445723 |
| $a$ | 2.6939933 | $\Omega$ | 306.14970 | | +0.20209026 | | −0.84113008 |
| $e$ | 0.1981123 | $i$ | 12.00593 | | −0.07382983 | | −0.52385250 |
| $P$ | 4.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 20 | 691 | 0.0 | 0.1− | 2005 02 02 | 704 | 1.0+ | 0.4− | 2005 03 10 | 703 | 0.2− | 0.3− |
| 1995 12 20 | 691 | 0.2− | 0.1− | 2005 02 02 | 704 | 0.8+ | 0.5+ | 2005 03 10 | 703 | 0.5+ | 0.3+ |
| 1995 12 20 | 691 | 0.1+ | 0.1− | 2005 02 02 | 704 | 1.7+ | 1.3+ | 2005 03 10 | 703 | 0.5− | 0.5+ |
| 2003 10 04 | 691 | 0.1+ | 0.2+ | 2005 02 03 | 683 | 0.7+ | 0.1+ | 2005 03 10 | 703 | 0.0 | 0.6− |
| 2003 10 04 | 691 | 0.2− | 0.2+ | 2005 02 03 | 683 | 1.7− | 0.2− | 2005 03 10 | 703 | 0.5− | 0.0 |
| 2003 10 04 | 691 | 0.0 | 0.1− | 2005 02 03 | 683 | 0.6− | 0.9+ | 2005 03 10 | 703 | 0.0 | 0.1− |
| 2004 12 20 | G96 | 0.5− | 0.4− | 2005 02 09 | 699 | (2.2+ | 0.7−) | 2005 03 10 | 703 | 0.4+ | 0.7− |
| 2004 12 20 | G96 | 0.5− | 0.2− | 2005 02 09 | 699 | 0.5− | 0.7+ | 2005 03 17 | 703 | 0.2+ | 0.1+ |
| 2004 12 20 | G96 | 0.8− | 0.2− | 2005 02 09 | 699 | 1.3+ | 0.6− | 2005 03 17 | 703 | 0.6− | 0.3+ |
| 2004 12 20 | G96 | 1.0− | 0.4− | 2005 02 09 | 699 | 1.0+ | 0.9− | 2005 03 17 | 703 | 0.7− | 0.1− |
| 2005 02 02 | 704 | 0.3+ | 0.5+ | 2005 03 10 | 703 | 0.2− | 0.7+ | 2005 03 17 | 703 | 0.1+ | 0.1− |

**2005 ES$_{280}$ = 2006 QA$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.25790 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26365529 | $\omega$ | 278.08247 | | +0.34019654 | | +0.93928261 |
| $a$ | 2.4086760 | $\Omega$ | 12.09993 | | −0.75622297 | | +0.30164003 |
| $e$ | 0.2388657 | $i$ | 12.36385 | | −0.55892141 | | +0.16358933 |
| $P$ | 3.74 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 699 | 0.5+ | 0.1+ | 2006 09 16 | 704 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2005 03 10 | 699 | 0.4+ | 0.6− | 2006 09 16 | 704 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.6+ | 0.4− |
| 2005 03 10 | 699 | 1.3− | 0.1− | 2006 09 16 | 704 | 0.0 | 0.2+ | 2006 09 28 | 704 | 0.9+ | 0.7+ |
| 2005 03 10 | 699 | 0.7+ | 0.2+ | 2006 09 16 | 704 | 0.8− | 0.5− | 2006 10 01 | 704 | 0.4+ | 1.0+ |
| 2005 03 16 | 704 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.3+ | 1.2+ |
| 2005 03 16 | 703 | 0.9− | 0.2− | 2006 09 18 | 691 | (0.5− | 3.9+) | 2006 10 01 | 704 | 0.5+ | 1.2+ |
| 2005 03 16 | 703 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.6− | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.8+ |
| 2005 03 16 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.3− | 1.5+ |
| 2005 03 16 | 703 | 1.5− | 0.7− | 2006 09 18 | 703 | (1.8− | 0.4−) | 2006 10 16 | 703 | 0.6+ | 1.3+ |
| 2005 03 16 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 703 | 0.8− | 1.5− | 2006 10 16 | 703 | 0.4+ | 1.6+ |
| 2005 03 16 | 703 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.8+ | 1.0− | 2006 10 16 | 703 | 0.1− | 0.8+ |
| 2005 03 16 | 704 | 0.5+ | 0.5+ | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.9+ |
| 2005 03 16 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.6− |
| 2005 03 30 | 703 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.3+ | 1.2− |
| 2005 03 30 | 703 | (1.4− | 1.7+) | 2006 09 19 | 703 | 0.0 | 0.7− | 2006 10 17 | G96 | 0.0 | 0.4− |
| 2005 03 30 | 703 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.6+ | 1.0+ | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2005 03 30 | 703 | (1.6− | 0.2−) | 2006 09 20 | 704 | 0.3+ | 1.5+ | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2005 04 06 | 703 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.9+ | 2006 10 19 | 644 | 0.5− | 0.1− |
| 2005 04 06 | 703 | (1.8− | 0.4+) | 2006 09 20 | 704 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.5− | 0.3− |
| 2005 04 06 | 703 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 04 06 | 703 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2005 04 10 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2005 04 10 | 691 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2006 08 23 | 644 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 08 23 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 08 23 | 644 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2006 08 24 | 644 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2006 08 24 | 644 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 1.0− | 0.6− |
| 2006 08 31 | 704 | 1.2− | 0.3− | 2006 09 27 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.0 |
| 2006 08 31 | 704 | 0.8− | 0.3− | 2006 09 27 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.6− |
| 2006 08 31 | 704 | 1.1− | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.6− |
| 2006 09 12 | 703 | 0.1− | 0.6− | 2006 09 27 | 704 | 0.3− | 0.7+ | 2006 11 20 | G96 | 0.3− | 0.4− |
| 2006 09 12 | 703 | 0.6− | 0.2− | 2006 09 27 | 704 | 0.6+ | 0.4+ | 2006 11 20 | G96 | 0.2+ | 0.7− |
| 2006 09 12 | 703 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.7+ | 0.3+ |
| 2006 09 12 | 703 | 0.5− | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.5− |

**2005 EB$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.74219 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25738838 | $\omega$ | 210.26477 | | +0.56844110 | | +0.80220102 |
| $a$ | 2.4476168 | $\Omega$ | 94.97144 | | −0.71331178 | | +0.59115300 |
| $e$ | 0.0413517 | $i$ | 10.56230 | | −0.40995247 | | +0.08373564 |
| $P$ | 3.83 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 691 | 0.2− | 0.2− | 2003 12 16 | 691 | 0.1− | 0.2− | 2005 03 16 | 703 | 0.2− | 0.2+ |
| 2003 11 23 | 691 | 0.0 | 0.1− | 2003 12 16 | 691 | 0.1+ | 0.0 | 2005 03 16 | 704 | 0.5+ | 0.1+ |
| 2003 11 23 | 691 | 0.2− | 0.1− | 2005 03 10 | 699 | 1.8+ | 0.3+ | 2005 03 16 | 704 | 0.1+ | 0.1− |
| 2003 12 01 | 704 | 0.9+ | 0.9+ | 2005 03 10 | 699 | 0.4+ | 0.0 | 2005 03 16 | 704 | 0.1+ | 0.1+ |
| 2003 12 01 | 704 | 0.3− | 0.5+ | 2005 03 10 | 699 | 0.4+ | 0.3+ | 2005 03 16 | 704 | 0.7+ | 0.7− |
| 2003 12 01 | 704 | 0.2+ | 0.6+ | 2005 03 10 | 699 | 0.2− | 0.1− | 2005 04 09 | 703 | 0.9− | 0.4− |
| 2003 12 01 | 704 | 0.1− | 0.9+ | 2005 03 16 | 703 | 0.1− | 0.7− | 2005 04 09 | 703 | 0.5− | 0.0 |
| 2003 12 01 | 704 | 0.9− | 0.3+ | 2005 03 16 | 703 | 0.8− | 1.9+ | 2005 04 09 | 703 | 0.6− | 0.5− |
| 2003 12 16 | 691 | 0.6+ | 0.3− | 2005 03 16 | 703 | (1.5− | 3.2−) | 2005 04 09 | 703 | 0.6− | 0.6− |

**2005 EY$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.56061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26784485 | $\omega$ | 235.76382 | | +0.09192214 | | +0.99349096 |
| $a$ | 2.3834928 | $\Omega$ | 39.67947 | | −0.87544509 | | +0.11282438 |
| $e$ | 0.2064673 | $i$ | 6.04829 | | −0.47449575 | | −0.01569611 |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 25 | 691 | 0.1− | 0.1+ | 2005 04 04 | 703 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 1995 11 25 | 691 | 0.1+ | 0.2− | 2005 04 04 | 703 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.6+ |
| 1995 11 25 | 691 | 0.2+ | 0.2− | 2005 04 04 | 703 | (0.5+ | 1.6−) | 2006 10 20 | 644 | 1.1− | 0.9+ |
| 2002 08 12 | 608 | 0.6− | 0.1+ | 2005 04 04 | 703 | (2.3+ | 1.2+) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 08 12 | 608 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2002 08 12 | 608 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 08 30 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.8+ |
| 2002 08 30 | 644 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.4+ | 2006 10 21 | 703 | 1.0− | 0.3− |
| 2002 09 08 | 599 | 0.3− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.1− |
| 2002 09 08 | 599 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.4− | 0.8+ |
| 2002 09 08 | 599 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2005 03 11 | 691 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.4− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | 691 | 0.5+ | 0.2+ | 2006 10 13 | D35 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.6+ | | | |
| 2005 03 11 | 691 | 0.2+ | 0.3+ | 2006 10 13 | D35 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.5+ | 0.3− | | | |
| 2005 03 18 | 703 | 0.7+ | 0.1− | 2006 10 13 | D35 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.6+ | 0.5− | | | |
| 2005 03 18 | 703 | (0.4+ | 2.4+) | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 11 | G96 | 0.2− | 0.5− | | | |
| 2005 03 18 | 703 | 1.4− | 0.5− | 2006 10 17 | G96 | 0.6+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.6− | | | |
| 2005 03 18 | 703 | 0.6− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.2− | | | | | | | |

**2005 EJ$_{287}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 183.95153 | | (2000.0) | | −0.79292559 | −0.60920325 |
| $n$ | 0.27148055 | $\omega$ | 117.83536 | | +0.54856470 | −0.72219497 |
| $a$ | 2.3621650 | $\Omega$ | 24.63841 | | +0.26522781 | −0.32757568 |
| $e$ | 0.1317340 | $i$ | 1.62880 | | | |
| $P$ | 3.63 | $H$ | 17.5 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 11 | 691 | (4.1+ | 6.3−) | 2001 01 19 | 704 | 0.4− | 0.2+ | 2005 03 17 | 691 | 0.0 | 0.3+ | |
| 1994 03 11 | 691 | 0.0 | 0.5− | 2001 02 17 | 691 | 0.2+ | 0.0 | 2005 03 17 | 691 | 0.3+ | 0.2+ | |
| 1994 03 11 | 691 | 0.4− | 0.4− | 2001 02 17 | 691 | 0.3+ | 0.2+ | 2005 03 17 | 691 | 0.1− | 0.1+ | |
| 2001 01 04 | 704 | 0.3+ | 0.0 | 2001 02 17 | 691 | 0.2+ | 0.1+ | 2005 03 31 | 699 | 0.3+ | 0.4− | |
| 2001 01 04 | 704 | 0.3− | 0.2+ | 2005 03 05 | 097 | 1.2− | 1.0+ | 2005 03 31 | 699 | 1.2+ | 1.1− | |
| 2001 01 04 | 704 | 1.0+ | 0.4− | 2005 03 05 | 097 | 0.4− | 1.4+ | 2005 03 31 | 699 | 1.6+ | 0.0 | |
| 2001 01 04 | 704 | 1.0− | 0.0 | 2005 03 05 | 097 | (0.1− | 3.0+) | 2005 03 31 | 699 | 0.5− | 0.8− | |
| 2001 01 19 | 704 | 0.2− | 0.1− | 2005 03 08 | G96 | 0.3− | 0.5− | 2005 04 30 | 691 | 0.1+ | 0.1+ | |
| 2001 01 19 | 704 | 0.9− | 0.5+ | 2005 03 08 | G96 | 0.6− | 0.2− | 2005 04 30 | 691 | 0.3+ | 0.2+ | |
| 2001 01 19 | 704 | 0.3− | 0.0 | 2005 03 08 | G96 | 0.5− | 0.4− | 2005 04 30 | 691 | 0.0 | 0.2+ | |
| 2001 01 19 | 704 | 0.3− | 0.4+ | 2005 03 08 | G96 | 0.6− | 0.3− | | | | | |

**2005 EM$_{287}$ = 2006 SX$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.80289 | | (2000.0) | | −0.62991770 | +0.76711907 |
| $n$ | 0.23807512 | $\omega$ | 274.03839 | | −0.62482814 | −0.59336609 |
| $a$ | 2.5782600 | $\Omega$ | 316.12491 | | −0.46129544 | −0.24381348 |
| $e$ | 0.1475037 | $i$ | 10.08580 | | | |
| $P$ | 4.14 | $H$ | 16.6 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 04 02 | 644 | 0.7+ | 0.2− | 2006 08 18 | 644 | 0.6− | 0.1+ | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 04 02 | 644 | 0.4+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.1− | |
| 2005 03 07 | 704 | 0.1− | 0.1− | 2005 04 02 | 644 | 0.7+ | 0.1− | 2006 08 18 | 644 | 0.2+ | 0.2+ | |
| 2005 03 07 | 704 | 0.7− | 0.6− | 2006 07 18 | G96 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | |
| 2005 03 07 | 704 | 0.3+ | 0.0 | 2006 07 18 | G96 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ | |
| 2005 03 07 | 704 | (1.8+ | 1.6−) | 2006 07 18 | G96 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.1+ | |
| 2005 03 13 | 703 | 0.5− | 0.2+ | 2006 07 18 | G96 | 0.4+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.1− | |
| 2005 03 13 | 703 | 0.7− | 1.0+ | 2006 08 13 | 644 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1+ | |
| 2005 03 13 | 703 | 1.1− | 0.1− | 2006 08 13 | 644 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1− | |
| 2005 03 13 | 703 | (1.6− | 0.3−) | 2006 08 13 | 644 | 0.6+ | 0.3− | 2006 09 28 | G96 | 0.1− | 0.5− | |
| 2005 04 02 | 644 | 0.3+ | 0.1− | 2006 08 13 | 644 | 0.5− | 0.0 | 2006 09 28 | G96 | 0.7− | 0.4− | |
| 2005 04 02 | 644 | 0.4+ | 0.1− | 2006 08 13 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.3− | |
| 2005 04 02 | 644 | 0.2+ | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.1− | |

**2005 EU$_{287}$ = 1999 TP$_{159}$ = 2006 QT$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.87145 | | (2000.0) | | +0.24418701 | +0.96856594 |
| $n$ | 0.27437818 | $\omega$ | 80.70862 | | −0.92976168 | +0.21993587 |
| $a$ | 2.3455049 | $\Omega$ | 203.58993 | | −0.27552845 | +0.11622496 |
| $e$ | 0.1010169 | $i$ | 6.81140 | | | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 20 | 691 | 0.3+ | 0.4+ | 2005 03 08 | 691 | 0.5− | 0.1− | 2006 08 24 | 704 | 0.7− | 0.1+ | |
| 1992 10 20 | 691 | (0.6− | 4.2−) | 2005 03 08 | 691 | 1.0+ | 0.9− | 2006 08 24 | 704 | 0.3− | 1.1+ | |
| 1999 10 09 | 704 | 0.4+ | 1.0+ | 2005 03 10 | 703 | (1.4− | 1.9−) | 2006 08 29 | 703 | 1.0− | 0.5− | |
| 1999 10 09 | 704 | 0.6+ | 0.2+ | 2005 03 10 | 703 | (1.2+ | 2.2−) | 2006 08 29 | 703 | 1.2− | 0.5− | |
| 1999 10 09 | 704 | 1.6+ | 1.1+ | 2005 03 10 | 703 | 0.9− | 0.2− | 2006 08 29 | 703 | 0.8− | 1.0+ | |
| 1999 10 09 | 704 | 0.1+ | 0.1+ | 2005 03 10 | 703 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.3− | 0.3+ | |
| 1999 10 09 | 704 | 0.6+ | 2.0+ | 2005 05 14 | G96 | 0.7− | 0.2− | 2006 08 29 | 703 | 0.1+ | 0.3+ | |
| 1999 10 13 | 704 | 1.5+ | 1.1+ | 2005 05 14 | G96 | 0.5− | 0.5− | 2006 08 29 | 703 | 0.9− | 1.0− | |
| 1999 10 13 | 704 | 0.5+ | 1.0+ | 2005 05 14 | G96 | 0.6− | 0.3− | 2006 08 29 | 703 | 0.4− | 0.5− | |
| 1999 10 13 | 704 | 1.2+ | 0.2+ | 2005 05 14 | G96 | 0.0 | 0.4− | 2006 08 29 | 703 | 0.1+ | 0.1− | |
| 1999 10 13 | 704 | 0.1− | 0.6+ | 2006 05 25 | G96 | 0.4− | 0.2− | 2006 09 11 | 703 | 1.4+ | 0.1+ | |
| 2003 12 22 | 691 | 0.3+ | 1.0+ | 2006 05 25 | G96 | 0.4− | 0.2− | 2006 09 11 | 703 | 2.3+ | 0.3+ | |
| 2003 12 22 | 691 | 0.6− | 0.6+ | 2006 05 25 | G96 | 0.3− | 0.0 | 2006 09 11 | 703 | 0.4+ | 0.7− | |
| 2003 12 22 | 691 | 0.2− | 0.5+ | 2006 05 25 | G96 | 0.4− | 0.1− | 2006 09 11 | 703 | 0.8+ | 1.3− | |
| 2005 03 08 | 691 | 0.2− | 0.0 | 2006 08 24 | 704 | 1.6− | 0.4− | | | | | |

**2005 EP$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 116.94941 | | (2000.0) | | −0.89436357 | +0.38843720 |
| $n$ | 0.23625027 | $\omega$ | 81.37857 | | −0.43829039 | −0.86015235 |
| $a$ | 2.5915196 | $\Omega$ | 121.20608 | | +0.08952843 | −0.33053666 |
| $e$ | 0.1216377 | $i$ | 15.03529 | | | |
| $P$ | 4.17 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 05 | 691 | 0.0 | 0.1+ | 2005 03 08 | 704 | 0.6+ | 0.1− | 2005 04 09 | 703 | 0.8− | 0.2+ | |
| 1997 06 05 | 691 | 0.1+ | 0.1− | 2005 03 08 | 704 | 0.3+ | 0.1− | 2005 04 13 | 704 | 0.5+ | 1.4+ | |
| 1997 06 05 | 691 | 0.0 | 0.2+ | 2005 03 08 | 704 | 0.6+ | 0.3− | 2005 04 13 | 704 | 0.6+ | 0.5− | |
| 2003 11 20 | 644 | 0.1− | 0.1− | 2005 03 15 | 703 | 0.3− | 1.1− | 2005 04 13 | 704 | 1.0+ | 0.6− | |
| 2003 11 20 | 644 | 0.0 | 0.3− | 2005 03 15 | 703 | 1.0− | 0.3− | 2005 04 13 | 704 | 0.6+ | 1.4− | |
| 2003 11 20 | 644 | 0.4+ | 0.3− | 2005 03 15 | 703 | 0.2− | 2.5+ | 2005 04 14 | 704 | 0.6+ | 2.9− | |
| 2005 01 07 | 291 | 0.1+ | 0.1+ | 2005 03 15 | 703 | 1.5− | 1.2+ | 2005 04 14 | 704 | 0.7+ | 0.5− | |
| 2005 01 07 | 291 | 0.8− | 0.4+ | 2005 04 09 | 703 | 0.6− | 0.3+ | 2005 04 14 | 704 | 0.8+ | 0.5+ | |
| 2005 01 07 | 291 | 0.3+ | 0.2+ | 2005 04 09 | 703 | 0.9− | 0.8− | 2005 04 14 | 704 | 0.3+ | 0.2+ | |
| 2005 03 08 | 704 | 1.8+ | 0.1+ | 2005 04 09 | 703 | 0.3− | 0.5− | 2005 04 14 | 704 | 1.7− | 0.1− | |

**2005 EL$_{289}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 112.00148 | | (2000.0) | | −0.77742197 | +0.61954283 |
| $n$ | 0.28451121 | $\omega$ | 126.05439 | | −0.60636169 | −0.69236041 |
| $a$ | 2.2894779 | $\Omega$ | 92.48287 | | −0.16715439 | −0.36986990 |
| $e$ | 0.1070706 | $i$ | 6.23726 | | | |
| $P$ | 3.46 | $H$ | 17.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 26 | 691 | 0.2− | 0.6− | 2002 06 05 | 704 | 0.2+ | 0.2+ | 2005 03 02 | 703 | 1.0+ | 0.4− | |
| 1995 06 26 | 691 | 0.7− | 1.1− | 2002 06 16 | 644 | 0.4− | 0.4+ | 2005 03 09 | 703 | 0.0 | 0.7− | |
| 1995 06 26 | 691 | 0.0 | 0.8− | 2002 06 16 | 644 | 0.0 | 0.9+ | 2005 03 09 | 703 | 0.2− | 0.3− | |
| 2002 05 16 | 704 | 1.5+ | 0.7+ | 2002 06 16 | 644 | 0.6− | 0.7+ | 2005 03 09 | 703 | 0.9+ | 0.2− | |
| 2002 05 16 | 704 | 0.1+ | 1.0+ | 2003 10 20 | 644 | 0.1− | 0.1+ | 2005 03 09 | 703 | 0.7+ | 0.6+ | |
| 2002 05 16 | 704 | 0.8+ | 1.8+ | 2003 10 20 | 644 | 0.1+ | 0.4− | 2005 03 16 | 703 | (2.2− | 1.2−) | |
| 2002 05 16 | 704 | 0.3− | 1.0+ | 2003 10 20 | 644 | 0.1+ | 0.1− | 2005 03 16 | 703 | 0.8− | 0.3+ | |
| 2002 06 05 | 704 | 0.2+ | 0.9+ | 2005 03 02 | 703 | 0.5+ | 0.2− | 2005 03 16 | 703 | 0.4− | 0.4− | |
| 2002 06 05 | 704 | 0.2− | 0.1− | 2005 03 02 | 703 | 0.5− | 0.4+ | 2005 03 16 | 703 | 0.4+ | 0.8− | |
| 2002 06 05 | 704 | 0.9+ | 1.5+ | 2005 03 02 | 703 | 1.5− | 1.2+ | | | | | |

**2005 EF$_{290}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.53624 | | (2000.0) | | −0.48248099 | +0.87541859 |
| $n$ | 0.20699549 | $\omega$ | 99.08845 | | −0.82113177 | −0.44044145 |
| $a$ | 2.8302760 | $\Omega$ | 142.01911 | | −0.30488477 | −0.19913217 |
| $e$ | 0.0131239 | $i$ | 2.72243 | | | |
| $P$ | 4.76 | $H$ | 15.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 704 | 0.0 | 0.0 | 2005 04 10 | 691 | 0.0 | 0.3+ | 2005 04 18 | 691 | 0.1+ | 0.3− | |
| 2000 03 10 | 704 | 1.0+ | 0.6+ | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.2+ | |
| 2000 03 10 | 704 | 0.9− | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.1+ | 2005 05 04 | 691 | 0.2− | 0.4+ | |
| 2000 03 10 | 704 | 0.4+ | 0.3+ | 2005 04 11 | 691 | 0.2+ | 0.0 | 2005 05 04 | 691 | 0.3+ | 0.2+ | |
| 2002 10 02 | 704 | 0.6− | 0.4+ | 2005 04 11 | 691 | 0.0 | 0.1− | 2005 05 08 | 703 | 0.3− | 1.0− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.3+ | 0.4+ | 2005 04 11 | 691 | 0.0 | 0.1+ | 2005 05 08 | 703 | 1.2− | 1.2− |
| 2002 10 02 | 704 | (0.5+ | 2.5+) | 2005 04 12 | 691 | 0.1− | 0.1− | 2005 05 08 | 703 | (2.1− | 0.1−) |
| 2005 03 09 | G96 | 0.1+ | 0.4− | 2005 04 12 | 691 | 0.1+ | 0.1+ | 2005 05 08 | 703 | 0.8− | 1.4+ |
| 2005 03 09 | G96 | 0.1− | 0.9− | 2005 04 12 | 691 | 0.2+ | 0.0 | 2006 05 25 | G96 | 0.3+ | 0.3+ |
| 2005 03 09 | G96 | 0.7− | 1.4− | 2005 04 14 | 691 | 0.0 | 0.0 | 2006 05 25 | G96 | 0.0 | 0.2− |
| 2005 03 09 | G96 | 0.2− | 0.7− | 2005 04 14 | 691 | 0.2− | 0.2+ | 2006 05 25 | G96 | 0.4− | 0.2+ |
| 2005 03 17 | 691 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 05 25 | G96 | 0.1− | 0.2+ |
| 2005 03 17 | 691 | 0.1− | 0.1+ | 2005 04 18 | 691 | 0.8− | 0.6− | 2006 06 19 | G96 | 0.3− | 0.2+ |
| 2005 03 17 | 691 | 0.2− | 0.3+ | 2005 04 18 | 691 | 0.2− | 0.0 | 2006 06 19 | G96 | 0.1+ | 0.0 |
| 2005 04 01 | 691 | 0.5+ | 0.1+ | 2005 04 18 | 691 | 0.2+ | 0.1− | 2006 06 19 | G96 | 0.0 | 0.3− |
| 2005 04 01 | 691 | 0.3+ | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.4− | 2006 06 19 | G96 | 0.3+ | 0.0 |
| 2005 04 01 | 691 | 0.3+ | 0.3+ | 2005 04 18 | 691 | 0.1− | 0.3− | | | | |

**2005 EE$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.28176 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28934570 | $\omega$ | 11.81993 | | −0.83192368 | | −0.54899931 |
| $a$ | 2.2639041 | $\Omega$ | 134.57390 | | +0.49943328 | | −0.80415894 |
| $e$ | 0.0724805 | $i$ | 6.49998 | | +0.24180443 | | −0.22787751 |
| $P$ | 3.41 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 691 | 0.1+ | 0.1+ | 2005 03 10 | 703 | 0.4+ | 0.8+ | 2005 03 18 | 703 | 0.1+ | 0.1+ |
| 2003 10 20 | 691 | 0.0 | 0.3+ | 2005 03 10 | 703 | 0.1+ | 0.2+ | 2005 04 04 | 703 | 0.8+ | 0.6+ |
| 2003 10 20 | 691 | 0.2− | 0.2+ | 2005 03 10 | 703 | 0.9+ | 0.3+ | 2005 04 04 | 703 | 0.1+ | 0.2+ |
| 2003 10 22 | 645 | 0.0 | 0.0 | 2005 03 10 | 703 | 0.3+ | 0.5+ | 2005 04 04 | 703 | 0.0 | 0.8+ |
| 2003 10 22 | 645 | 0.0 | 0.1− | 2005 03 18 | 703 | (0.8+ | 2.3−) | 2005 04 04 | 703 | 0.3− | 0.6− |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2005 03 18 | 703 | 0.8− | 1.6− | | | | |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2005 03 18 | 703 | 1.3− | 1.2− | | | | |

**2005 EK$_{292}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.72377 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29596828 | $\omega$ | 93.75859 | | −0.95117085 | | +0.29895670 |
| $a$ | 2.2300055 | $\Omega$ | 103.64832 | | −0.30516559 | | −0.87344876 |
| $e$ | 0.1062778 | $i$ | 4.53316 | | −0.04634621 | | −0.38433340 |
| $P$ | 3.33 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 703 | 0.2+ | 0.3− | 2005 04 05 | 704 | 0.1+ | 0.3− | 2005 04 14 | 683 | 1.7− | 1.9− |
| 2005 03 10 | 703 | (2.3+ | 1.3−) | 2005 04 05 | 704 | 0.7+ | 0.3− | 2005 04 14 | 704 | 0.0 | 0.3+ |
| 2005 03 10 | 703 | 0.2+ | 0.6+ | 2005 04 05 | 704 | 1.0+ | 1.2+ | 2005 04 14 | 704 | 0.3− | 0.2− |
| 2005 03 10 | 703 | 0.2− | 0.5− | 2005 04 09 | 699 | 0.7+ | 0.2+ | 2005 04 14 | 704 | 0.3+ | 0.4+ |
| 2005 03 18 | 703 | 0.7+ | 0.7+ | 2005 04 09 | 699 | 1.4− | 0.3− | 2005 04 14 | 704 | 0.4− | 0.3+ |
| 2005 03 18 | 703 | 0.6− | 0.2− | 2005 04 09 | 699 | 0.3− | 0.2− | 2005 04 14 | 704 | 0.1+ | 0.5− |
| 2005 03 18 | 703 | 0.9− | 0.1+ | 2005 04 09 | 699 | 0.7+ | 0.1− | 2005 04 14 | 704 | 0.3− | 0.7+ |
| 2005 03 18 | 703 | 0.6− | 0.7− | 2005 04 11 | 683 | 0.3+ | 1.6− | 2005 04 14 | 704 | 0.3− | 0.4− |
| 2005 04 01 | 699 | 0.4− | 0.8+ | 2005 04 11 | 683 | 0.9− | 0.0 | 2005 04 14 | 704 | 0.4− | 0.8− |
| 2005 04 01 | 699 | 0.9+ | 0.3− | 2005 04 11 | 683 | 0.2+ | 0.1− | 2006 09 25 | 152 | 1.0+ | 0.7+ |
| 2005 04 01 | 699 | 0.3+ | 0.5+ | 2005 04 13 | 704 | 0.7− | 0.7+ | 2006 09 25 | 152 | 1.9− | 0.0 |
| 2005 04 01 | 699 | 1.9+ | 0.3− | 2005 04 13 | 704 | 0.0 | 0.1+ | 2006 09 25 | 152 | 0.7+ | 0.1+ |
| 2005 04 05 | 699 | 0.6− | 0.8+ | 2005 04 13 | 704 | 1.2+ | 1.5+ | 2006 09 25 | 152 | 1.0− | 1.1− |
| 2005 04 05 | 699 | 1.1− | 0.3− | 2005 04 13 | 704 | 0.6+ | 0.3+ | 2006 10 03 | G96 | 0.6+ | 0.1+ |
| 2005 04 05 | 699 | 0.5− | 0.4+ | 2005 04 13 | 704 | 0.0 | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2005 04 05 | 699 | 0.5+ | 0.3− | 2005 04 14 | 683 | (1.3+ | 2.2−) | 2006 10 03 | G96 | 0.5+ | 0.5+ |
| 2005 04 05 | 704 | 1.0+ | 0.2− | 2005 04 14 | 683 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.0 |

**2005 EG$_{293}$ = 2006 SW$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.60088 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36887942 | $\omega$ | 279.45192 | | −0.09142728 | | −0.99537270 |
| $a$ | 1.9255129 | $\Omega$ | 175.46807 | | +0.99538267 | | −0.09221913 |
| $e$ | 0.1168161 | $i$ | 21.97505 | | +0.02922997 | | +0.02699660 |
| $P$ | 2.67 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 691 | 0.4+ | 0.0 | 2005 04 16 | 703 | 0.7+ | 2.9+ | 2006 09 20 | 691 | 0.1− | 0.1+ |
| 2005 03 10 | 691 | 0.3+ | 0.0 | 2005 04 16 | 703 | 0.6− | 1.2− | 2006 09 20 | 691 | 0.3+ | 0.1+ |
| 2005 03 10 | 691 | 0.1+ | 0.1+ | 2005 04 16 | 703 | 0.2− | 0.0 | 2006 09 28 | 699 | 0.1+ | 0.9+ |
| 2005 03 18 | 703 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.6− | 2006 09 28 | 699 | 0.7− | 1.2+ |
| 2005 03 18 | 703 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 09 28 | 699 | 0.1+ | 0.7− |
| 2005 03 18 | 703 | 0.7− | 0.3− | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 09 28 | 699 | 0.7− | 0.3+ |
| 2005 03 18 | 703 | 0.8− | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.6− |
| 2005 04 06 | 703 | 0.4+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.4− |
| 2005 04 06 | 703 | 0.8− | 0.3− | 2006 09 18 | 699 | 0.5− | 0.3+ | 2006 10 02 | 703 | 0.2+ | 0.1− |
| 2005 04 06 | 703 | 0.5− | 0.2− | 2006 09 18 | 699 | 1.1+ | 0.6+ | 2006 10 02 | 703 | 0.7− | 0.7+ |
| 2005 04 06 | 703 | 1.0+ | 0.2+ | 2006 09 18 | 699 | 0.5+ | 0.0 | | | | |
| 2005 04 16 | 703 | 1.4− | 1.1− | 2006 09 20 | 691 | 0.1+ | 0.4− | | | | |

**2005 EN$_{293}$ = 2003 YD$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.18638 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22093765 | $\omega$ | 333.09933 | | +0.99774533 | | −0.02994080 |
| $a$ | 2.7099185 | $\Omega$ | 28.80853 | | +0.05581454 | | +0.86716596 |
| $e$ | 0.1034761 | $i$ | 7.16032 | | −0.03726915 | | +0.49711844 |
| $P$ | 4.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 809 | 0.2− | 1.3+ | 2002 08 31 | 704 | 1.0+ | 0.3+ | 2005 03 11 | 691 | 0.4+ | 0.5+ |
| 1998 09 21 | 809 | 1.2− | 2.3+ | 2003 12 17 | 704 | 0.0 | 0.6− | 2005 03 18 | 703 | 0.7− | 0.2+ |
| 1998 09 21 | 809 | 1.3− | 1.8+ | 2003 12 17 | 704 | 0.1+ | 0.5− | 2005 03 18 | 703 | 0.0 | 0.2− |
| 2002 08 13 | 644 | 0.5− | 0.1− | 2003 12 17 | 704 | 0.5+ | 0.7− | 2005 03 18 | 703 | 0.2− | 0.7+ |
| 2002 08 13 | 644 | 0.4− | 0.1− | 2003 12 17 | 704 | 0.6+ | 0.6− | 2005 03 18 | 703 | 1.2− | 1.9− |
| 2002 08 13 | 644 | 0.3− | 0.0 | 2003 12 17 | 704 | 0.3− | 0.1− | 2005 05 09 | G96 | 0.0 | 0.2− |
| 2002 08 19 | 644 | 0.3− | 0.4+ | 2003 12 29 | 704 | 0.3+ | 0.4+ | 2005 05 09 | G96 | 0.5+ | 0.1+ |
| 2002 08 19 | 644 | 0.0 | 0.3+ | 2003 12 29 | 704 | 1.0− | 0.4− | 2005 05 09 | G96 | 0.6+ | 0.2+ |
| 2002 08 19 | 644 | 0.2− | 0.2+ | 2003 12 29 | 704 | 0.2− | 0.4+ | 2005 05 09 | G96 | 0.1+ | 0.1− |
| 2002 08 31 | 704 | 0.0 | 0.1+ | 2005 03 11 | 691 | 0.3+ | 0.6+ | | | | |
| 2002 08 31 | 704 | 0.5+ | 1.0− | 2005 03 11 | 691 | 0.4+ | 0.5+ | | | | |

**2005 EX$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.39170 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29657110 | $\omega$ | 256.76929 | | +0.98268101 | | +0.18242344 |
| $a$ | 2.2269826 | $\Omega$ | 92.71268 | | −0.15488466 | | +0.90502781 |
| $e$ | 0.2047328 | $i$ | 1.86760 | | −0.10172897 | | +0.38424777 |
| $P$ | 3.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 695 | 0.2− | 0.3− | 2006 09 26 | 704 | (1.2+ | 2.0−) | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2005 03 09 | G96 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.8+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2005 03 09 | G96 | 0.3− | 0.5− | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2005 03 09 | G96 | 0.4− | 0.5− | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2005 03 09 | G96 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.6− | 0.3+ |
| 2005 03 09 | 695 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.5− | 0.5− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2005 03 10 | 695 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.4− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2005 04 02 | 691 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2005 04 02 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2005 04 11 | G96 | 0.6− | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 2005 04 11 | G96 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.3+ | 2006 11 18 | 704 | 1.1+ | 0.2− |
| 2005 04 11 | G96 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 1.0+ | 0.4− |
| 2005 04 12 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.3+ |
| 2005 04 12 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.9+ | 1.3− |
| 2005 04 12 | 691 | 0.1+ | 0.6+ | 2006 10 28 | 704 | 0.2− | 1.2+ | 2006 11 18 | 704 | 0.3+ | 0.7− |
| 2006 09 15 | 644 | 0.8− | 0.5+ | 2006 10 28 | 704 | 0.2− | 1.2+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2006 09 15 | 644 | 0.2− | 0.3+ | 2006 10 28 | 704 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2006 09 15 | 644 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.7− | 0.9+ | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2006 09 26 | 704 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.6− | 0.6+ | 2006 11 21 | 704 | 0.6+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 26 | 704 | 1.0+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1− | 0.3+ | | |
| 2006 09 26 | 704 | 0.4+ | 0.7− | 2006 11 10 | 691 | 0.2− | 0.2− | | | | | | |

**2005 ER$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.77061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20455808 | $\omega$ | 150.32951 | | +0.14579584 | +0.98859646 | |
| $a$ | 2.8527144 | $\Omega$ | 128.02799 | | −0.91683998 | +0.14933050 | |
| $e$ | 0.0819516 | $i$ | 2.74259 | | −0.37168269 | +0.01942806 | |
| $P$ | 4.82 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 01 | 691 | 0.4+ | 0.3+ | 2005 03 14 | G96 | 0.1− | 0.4− | 2005 05 12 | G96 | 0.4− | 0.4− | |
| 2005 03 01 | 691 | 0.4+ | 0.3+ | 2005 03 14 | G96 | 0.5− | 0.4− | 2005 05 12 | G96 | 0.3+ | 0.4− | |
| 2005 03 01 | 691 | 0.2− | 0.6+ | 2005 03 14 | G96 | 0.0 | 0.1− | 2006 05 25 | G96 | 0.2− | 0.0 | |
| 2005 03 11 | 695 | 0.0 | 0.2+ | 2005 03 14 | G96 | 0.1− | 0.2+ | 2006 05 25 | G96 | 0.3− | 0.1− | |
| 2005 03 12 | 695 | 0.1− | 0.2+ | 2005 04 05 | G96 | 0.0 | 0.1− | 2006 05 25 | G96 | 0.1+ | 0.1− | |
| 2005 03 12 | 695 | 0.1+ | 0.1+ | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 05 25 | G96 | 0.5+ | 0.0 | |
| 2005 03 13 | 703 | 0.3+ | 0.1− | 2005 04 05 | G96 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.1+ | |
| 2005 03 13 | 703 | 2.0− | 0.0 | 2005 04 05 | G96 | 0.7− | 0.0 | 2006 07 21 | G96 | 0.1− | 0.1+ | |
| 2005 03 13 | 703 | 1.0− | 1.5− | 2005 05 12 | G96 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.1+ | |
| 2005 03 13 | 703 | 1.4+ | 2.0− | 2005 05 12 | G96 | 0.3+ | 0.0 | 2006 07 21 | G96 | 0.2− | 0.3+ | |

**2005 EE$_{311}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.81934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23894923 | $\omega$ | 101.13324 | | −0.25684059 | +0.96085413 | |
| $a$ | 2.5719684 | $\Omega$ | 153.27534 | | −0.95213391 | −0.23313345 | |
| $e$ | 0.1419577 | $i$ | 13.35651 | | −0.16575259 | −0.14969349 | |
| $P$ | 4.12 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.1+ | 0.1− | 2002 08 08 | 644 | 0.5− | 0.2− | 2002 09 14 | 644 | 0.1+ | 0.2+ | |
| 2002 07 12 | 644 | 0.1+ | 0.0 | 2002 08 17 | 644 | 0.3− | 0.1+ | 2002 09 14 | 644 | 0.2− | 0.0 | |
| 2002 07 23 | 644 | 0.3+ | 0.4+ | 2002 08 17 | 644 | 0.2− | 0.5− | 2002 09 14 | 644 | 0.0 | 0.0 | |
| 2002 07 23 | 644 | 0.2− | 0.1− | 2002 08 17 | 644 | 0.5+ | 0.3+ | 2005 03 10 | G96 | 0.4− | 0.0 | |
| 2002 07 23 | 644 | 0.1− | 0.5+ | 2002 08 17 | 644 | 0.5+ | 0.5− | 2005 03 10 | G96 | 0.2− | 0.0 | |
| 2002 07 23 | 644 | 0.1+ | 0.6+ | 2002 08 17 | 644 | 0.1− | 0.3+ | 2005 03 10 | G96 | 0.1+ | 0.2− | |
| 2002 08 07 | 644 | 0.3− | 0.0 | 2002 08 17 | 644 | 0.2+ | 0.6+ | 2005 03 10 | G96 | 0.2+ | 0.0 | |
| 2002 08 07 | 644 | 0.1− | 0.4− | 2002 08 27 | 644 | 0.1− | 0.2+ | 2005 03 11 | 695 | 0.1+ | 0.1+ | |
| 2002 08 08 | 644 | 0.2− | 0.7− | 2002 08 27 | 644 | 0.2+ | 0.4+ | 2005 03 11 | 695 | 0.2+ | 0.1+ | |
| 2002 08 08 | 644 | 0.0 | 0.8− | 2002 08 27 | 644 | 0.2+ | 0.3− | | | | | |

**2005 EV$_{313}$ = 2005 GF$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.11924 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26448817 | $\omega$ | 323.21481 | | +0.99283288 | −0.11820556 | |
| $a$ | 2.4036167 | $\Omega$ | 43.58414 | | +0.11483312 | +0.90271613 | |
| $e$ | 0.0285979 | $i$ | 1.46416 | | +0.03310932 | +0.41367987 | |
| $P$ | 3.73 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.4+ | 0.2− | 2003 11 16 | 691 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.7− | 0.4− | |
| 1999 10 04 | 691 | 0.0 | 0.7− | 2003 11 16 | 691 | 0.0 | 0.0 | 2005 03 11 | 695 | 0.1− | 0.1− | |
| 1999 10 04 | 691 | 0.1− | 0.1+ | 2003 11 16 | 691 | 0.2+ | 0.2− | 2005 03 11 | 695 | 0.2+ | 0.2− | |
| 2001 03 02 | 691 | 0.1+ | 0.1+ | 2003 11 21 | 291 | 0.5− | 0.1+ | 2005 04 04 | G96 | 0.2− | 0.2− | |
| 2001 03 02 | 691 | 0.1− | 0.2− | 2003 11 21 | 291 | 0.3+ | 0.1+ | 2005 04 04 | G96 | 0.6+ | 0.2− | |
| 2001 03 02 | 691 | 0.0 | 0.1+ | 2003 11 21 | 291 | 0.5− | 0.3+ | 2005 04 04 | G96 | 0.5− | 0.3− | |
| 2003 10 23 | 691 | 0.2+ | 0.0 | 2005 03 10 | G96 | 0.3− | 0.5− | 2005 04 04 | G96 | 0.2+ | 0.2− | |
| 2003 10 23 | 691 | 0.2+ | 0.1+ | 2005 03 10 | G96 | 0.2− | 0.3− | | | | | |
| 2003 10 23 | 691 | 0.1− | 0.0 | 2005 03 10 | G96 | 0.1− | 0.2− | | | | | |

**2005 EY$_{317}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.04501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36343749 | $\omega$ | 261.60397 | | +0.01274668 | −0.99857159 | |
| $a$ | 1.9446863 | $\Omega$ | 188.21833 | | +0.99904694 | +0.01488486 | |
| $e$ | 0.0832278 | $i$ | 21.28376 | | +0.04174608 | −0.05131494 | |
| $P$ | 2.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 703 | 0.6− | 0.2− | 2006 09 17 | 703 | 0.5+ | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.3− | |
| 2005 03 13 | 703 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 10 01 | 704 | 0.2− | 1.0− | |
| 2005 03 13 | 703 | 0.6− | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.7− | 2006 10 01 | 704 | 0.2+ | 0.3− | |
| 2005 03 13 | 703 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.1− | 1.2+ | 2006 10 01 | 704 | 0.2+ | 0.0 | |
| 2005 04 04 | 703 | 0.2− | 0.6+ | 2006 09 18 | 704 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.2− | |
| 2005 04 04 | 703 | 0.5− | 1.0+ | 2006 09 18 | 704 | 1.0− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.3− | |
| 2005 04 04 | 703 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.7+ | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.4− | |
| 2005 04 04 | 703 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.6− | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.2− | |
| 2005 04 04 | 704 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.3− | |
| 2005 04 04 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 699 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.0 | 0.4+ | |
| 2005 04 04 | 704 | 1.2+ | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.1− | |
| 2005 04 04 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 699 | 1.2− | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.2+ | |
| 2005 04 12 | 683 | (0.7+ | 3.1−) | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ | |
| 2005 04 12 | 683 | 0.1+ | 0.9− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2− | |
| 2005 04 12 | 683 | 0.3− | 0.1− | 2006 09 25 | 704 | 1.0+ | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.1− | |
| 2006 08 29 | 703 | 1.0− | 0.2− | 2006 09 25 | 704 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | |
| 2006 08 29 | 703 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 22 | 704 | 0.1− | 1.5+ | |
| 2006 08 29 | 703 | 0.4+ | 1.3+ | 2006 09 25 | 704 | 0.0 | 0.4+ | 2006 10 22 | 704 | 0.1− | 0.7+ | |
| 2006 08 29 | 703 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.1+ | |
| 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 704 | 0.3+ | 0.5+ | |
| 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 27 | 699 | 0.3+ | 1.0+ | 2006 10 22 | 704 | 0.4− | 0.1+ | |
| 2006 09 06 | 644 | 0.2− | 0.4− | 2006 09 27 | 699 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ | |
| 2006 09 15 | 704 | 0.4+ | 0.8− | 2006 09 27 | 699 | 1.0− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.2− | |
| 2006 09 15 | 704 | 0.5− | 0.8− | 2006 09 29 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.2− | |
| 2006 09 15 | 704 | 0.5− | 0.7− | 2006 09 29 | 704 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.6− | |
| 2006 09 15 | 704 | 0.1− | 1.0+ | 2006 09 29 | 704 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.4− | |
| 2006 09 17 | 703 | 0.9+ | 0.7− | 2006 09 29 | 704 | 0.1+ | 0.1− | | | | | |

**2005 EG$_{318}$ = 2005 GD$_{215}$ = 1999 AC$_{28}$ = 2003 YY$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.87993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18645936 | $\omega$ | 352.50452 | | −0.72529995 | −0.68816848 | |
| $a$ | 3.0344496 | $\Omega$ | 143.98593 | | +0.63329699 | −0.67782412 | |
| $e$ | 0.1281618 | $i$ | 1.85979 | | +0.26995354 | −0.25880225 | |
| $P$ | 5.29 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 1.1− | 0.2− | 2000 05 28 | 704 | (2.3+ | 0.3−) | 2005 04 06 | 691 | 0.1− | 0.3+ | |
| 1992 11 26 | 691 | 1.0− | 0.1+ | 2000 05 28 | 704 | 0.3+ | 0.1+ | 2005 04 06 | 691 | 0.2+ | 0.5+ | |
| 1992 11 26 | 691 | 0.3− | 0.0 | 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 04 11 | G96 | 0.6− | 0.4+ | |
| 1992 11 26 | 691 | 0.2+ | 0.1+ | 2002 10 31 | 645 | 0.1+ | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.4+ | |
| 1992 11 26 | 691 | 0.6+ | 0.1+ | 2003 12 19 | 704 | 0.1+ | 1.2+ | 2005 04 11 | G96 | 0.2− | 0.1− | |
| 1992 11 26 | 691 | 0.0 | 0.2+ | 2003 12 19 | 704 | 0.8+ | 0.7+ | 2005 04 11 | G96 | 0.1− | 0.0 | |
| 1994 03 04 | 691 | 0.4+ | 0.5− | 2003 12 19 | 704 | 0.4+ | 0.2− | 2005 04 13 | 699 | 0.7− | 0.4+ | |
| 1994 03 04 | 691 | 0.0 | 0.4− | 2003 12 19 | 704 | 0.2− | 0.8+ | 2005 04 13 | 699 | (1.7+ | 0.7+) | |
| 1994 03 04 | 691 | 0.3+ | 0.2− | 2003 12 19 | 704 | 0.0 | 0.4+ | 2005 04 13 | 699 | 1.0− | 1.5− | |
| 1999 01 11 | 691 | 0.1+ | 0.3− | 2003 12 21 | 704 | (0.7− | 1.7+) | 2005 04 13 | 699 | (0.4+ | 2.4+) | |
| 1999 01 11 | 691 | 0.0 | 0.1− | 2003 12 21 | 704 | 0.1− | 0.2+ | 2005 04 17 | 691 | 0.1− | 0.2+ | |
| 1999 01 11 | 691 | 0.1+ | 0.1− | 2003 12 21 | 704 | 0.0 | 0.0 | 2005 04 17 | 691 | 0.1+ | 0.2+ | |
| 1999 01 18 | 691 | 0.3− | 0.0 | 2005 03 13 | G96 | 0.6− | 0.1+ | 2005 04 17 | 691 | 0.1+ | 0.3+ | |
| 1999 01 18 | 691 | 0.3− | 0.2− | 2005 03 13 | G96 | 0.5− | 0.1− | 2005 05 12 | 699 | 1.1− | 0.5− | |
| 1999 01 18 | 691 | 0.7+ | 0.5+ | 2005 03 13 | G96 | 0.6− | 0.1− | 2005 05 12 | 699 | 1.0− | 0.3+ | |
| 2000 05 28 | 704 | 1.3+ | 0.9+ | 2005 03 13 | G96 | 0.3− | 0.1+ | 2005 05 12 | 699 | (2.1− | 0.1+) | |
| 2000 05 28 | 704 | 0.2− | 0.3+ | 2005 04 06 | 691 | 0.5+ | 0.8+ | 2005 05 12 | 699 | 1.4+ | 0.9+ | |

**2005 EY$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.81292 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17502282 | $\omega$ | 14.01577 | −0.95320472 | | −0.28890033 | |
| $a$ | 3.1652372 | $\Omega$ | 148.74410 | +0.25819996 | | −0.93122631 | |
| $e$ | 0.0404246 | $i$ | 9.88705 | +0.15726898 | | −0.22215795 | |
| $P$ | 5.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 01 | 691 | 0.2+ | 0.1+ | 2005 03 09 | 704 | 0.2+ | 0.8− | 2006 05 09 | G96 | 0.4− | 0.7− |
| 2005 02 01 | 691 | 0.0 | 0.0 | 2005 03 16 | 703 | 1.5− | 0.0 | 2006 05 27 | 691 | 0.0 | 0.0 |
| 2005 02 01 | 691 | 0.0 | 0.1− | 2005 03 16 | 703 | 0.2+ | 0.5+ | 2006 05 27 | 691 | 0.2− | 0.1− |
| 2005 03 04 | 704 | 0.4− | 0.7− | 2005 03 16 | 703 | 0.5+ | 1.1+ | 2006 05 27 | 691 | 0.4− | 0.5− |
| 2005 03 04 | 704 | 0.1− | 0.1− | 2005 03 16 | 703 | 0.9− | 0.9− | 2006 06 04 | 691 | 0.2+ | 0.1+ |
| 2005 03 04 | 704 | 0.1− | 0.6+ | 2005 04 15 | 691 | 0.2− | 0.0 | 2006 06 04 | 691 | 0.1− | 0.1+ |
| 2005 03 04 | 704 | 0.0 | 0.5+ | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 06 04 | 691 | 0.4+ | 0.1+ |
| 2005 03 09 | 704 | (2.2+ | 1.6+) | 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 06 15 | 691 | 0.1+ | 0.1+ |
| 2005 03 09 | 704 | 0.8+ | 0.2+ | 2006 05 09 | G96 | 0.6− | 0.1− | 2006 06 15 | 691 | 0.1+ | 0.1+ |
| 2005 03 09 | 704 | 0.2+ | 0.7+ | 2006 05 09 | G96 | 0.3− | 0.2− | 2006 06 15 | 691 | 0.1+ | 0.4+ |
| 2005 03 09 | 704 | 0.9+ | 0.8− | 2006 05 09 | G96 | 0.2− | 0.1− | | | | |

**2005 EM$_{323}$ = 2002 RL$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.37717 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19631822 | $\omega$ | 128.65773 | −0.56716753 | | −0.82359453 | |
| $a$ | 2.9319888 | $\Omega$ | 355.89027 | +0.73912519 | | −0.50705364 | |
| $e$ | 0.0763263 | $i$ | 2.88839 | +0.36333861 | | −0.25414300 | |
| $P$ | 5.02 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 06 | 691 | 0.6− | 0.0 | 2002 09 12 | 644 | 0.1+ | 0.4+ | 2005 03 08 | 699 | 2.5+ | 0.1− |
| 1995 04 06 | 691 | 0.0 | 0.7− | 2002 09 12 | 644 | 0.5− | 0.2+ | 2005 03 08 | 699 | 0.2− | 0.9+ |
| 1995 04 06 | 691 | 0.2+ | 0.3− | 2002 09 14 | 644 | 0.1+ | 0.6− | 2005 03 13 | 691 | 0.2− | 0.5+ |
| 1997 10 03 | 691 | 0.1− | 0.3+ | 2002 09 14 | 644 | 0.3− | 0.1+ | 2005 03 13 | 691 | 0.0 | 0.3+ |
| 1997 10 03 | 691 | 0.4− | 0.3+ | 2002 09 14 | 644 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.3+ | 0.2+ |
| 1997 10 03 | 691 | 0.1+ | 0.6+ | 2005 03 01 | 691 | 0.4+ | 0.3− | 2005 04 05 | G96 | 0.5− | 0.1+ |
| 2000 04 05 | 704 | 0.1+ | 0.1− | 2005 03 01 | 691 | 0.2− | 0.2+ | 2005 04 05 | G96 | 0.5− | 0.0 |
| 2000 04 05 | 704 | 1.2− | 0.4+ | 2005 03 01 | 691 | 0.2+ | 0.3− | 2005 04 05 | G96 | 0.5− | 0.4+ |
| 2000 04 05 | 704 | 0.1+ | 1.0+ | 2005 03 08 | 699 | 1.0+ | 2.7+ | 2005 04 05 | G96 | 0.6− | 0.2+ |
| 2002 09 12 | 644 | 0.1− | 0.0 | 2005 03 08 | 699 | 1.1+ | 0.5+ | | | | |

**2005 EN$_{323}$ = 1999 TG$_{322}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.94123 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22763584 | $\omega$ | 267.35791 | +0.41070222 | | −0.91038627 | |
| $a$ | 2.6564947 | $\Omega$ | 158.17914 | +0.88099153 | | +0.38205045 | |
| $e$ | 0.2861835 | $i$ | 7.76244 | +0.23489914 | | +0.15885305 | |
| $P$ | 4.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 703 | 1.9− | 1.3− | 2005 03 04 | G96 | 0.1− | 0.2− | 2005 03 17 | 703 | 0.5− | 0.9− |
| 1999 10 03 | 703 | 0.7− | 1.1− | 2005 03 04 | G96 | 0.2− | 0.2− | 2005 03 17 | 703 | 0.6+ | 1.2− |
| 1999 10 03 | 703 | (1.0+ | 2.6+) | 2005 03 04 | G96 | 0.1− | 0.2− | 2005 03 17 | 703 | 1.5− | 0.4− |
| 1999 10 03 | 703 | 0.8+ | 0.4− | 2005 03 04 | G96 | 0.2− | 0.4− | 2005 04 11 | G96 | 0.1+ | 0.1+ |
| 1999 10 08 | 704 | 0.5+ | 0.4+ | 2005 03 08 | 704 | 0.7− | 0.2− | 2005 04 11 | G96 | 0.1− | 0.4+ |
| 1999 10 08 | 704 | 0.6+ | 0.7+ | 2005 03 08 | 704 | 0.1+ | 0.7+ | 2005 04 11 | G96 | 0.1− | 0.4+ |
| 1999 10 08 | 704 | 0.4+ | 1.0− | 2005 03 08 | 704 | 0.7+ | 0.1− | 2005 04 11 | G96 | 0.3+ | 0.3+ |
| 1999 10 08 | 704 | 0.1− | 1.4+ | 2005 03 08 | 704 | 1.6+ | 1.9+ | | | | |
| 1999 10 08 | 704 | 0.4+ | 1.1+ | 2005 03 17 | 703 | (2.2+ | 0.3+) | | | | |

**2005 EO$_{323}$ = 2000 AS$_{165}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.47372 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23100438 | $\omega$ | 323.01472 | −0.30907340 | | −0.93822340 | |
| $a$ | 2.6306066 | $\Omega$ | 144.22600 | +0.92379853 | | −0.33505219 | |
| $e$ | 0.1530810 | $i$ | 15.43618 | +0.22598651 | | +0.08646897 | |
| $P$ | 4.27 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.1− | 0.5− | 2000 01 10 | 704 | 0.2+ | 0.2+ | 2005 04 06 | 703 | 0.1− | 0.4− |
| 2000 01 08 | 704 | 0.8− | 0.4− | 2005 03 10 | 703 | (2.5+ | 1.3−) | 2005 04 06 | 703 | 0.0 | 0.2− |
| 2000 01 08 | 704 | 0.9+ | 0.8− | 2005 03 10 | 703 | 1.3+ | 0.5− | 2005 04 06 | 703 | 1.0+ | 0.2− |
| 2000 01 08 | 704 | 0.7− | 0.3+ | 2005 03 10 | 703 | 0.9− | 0.3+ | 2005 04 06 | 703 | 1.2+ | 0.9− |
| 2000 01 08 | 704 | 0.9+ | 1.4+ | 2005 03 10 | 703 | 0.2− | 0.6− | 2005 04 16 | 703 | 0.2+ | 0.1+ |
| 2000 01 10 | 704 | 0.7− | 0.6− | 2005 03 18 | 703 | 0.7+ | 1.3+ | 2005 04 16 | 703 | 1.0− | 0.1− |
| 2000 01 10 | 704 | 0.1+ | 0.4+ | 2005 03 18 | 703 | 0.0 | 0.6− | 2005 04 16 | 703 | 0.5− | 1.2+ |
| 2000 01 10 | 704 | 1.0− | 0.2+ | 2005 03 18 | 703 | 0.0 | 0.8+ | 2005 04 16 | 703 | 0.9− | 0.3+ |
| 2000 01 10 | 704 | 1.0+ | 0.0 | 2005 03 18 | 703 | 0.8− | 0.5− | | | | |

**2005 EP$_{323}$ = 2000 HK$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.92070 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19269588 | $\omega$ | 66.54066 | +0.09533118 | | +0.99104395 | |
| $a$ | 2.9686187 | $\Omega$ | 209.40443 | −0.96862352 | | +0.07069319 | |
| $e$ | 0.1187286 | $i$ | 10.97942 | −0.22952219 | | +0.11328885 | |
| $P$ | 5.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 691 | 0.1+ | 0.1+ | 2005 03 10 | G96 | 0.4− | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.1− |
| 1996 10 11 | 691 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.5− | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.2− |
| 1996 10 11 | 691 | 0.2− | 0.3+ | 2005 03 10 | G96 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.2+ | 0.1+ |
| 2000 04 25 | 691 | 0.1− | 0.3− | 2005 03 10 | G96 | 0.1+ | 0.0 | 2005 04 30 | 691 | 0.2+ | 0.2+ |
| 2000 04 25 | 691 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.2+ |
| 2000 04 25 | 691 | 0.0 | 0.2− | 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 2000 05 03 | 691 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.5− |
| 2000 05 03 | 691 | 0.0 | 0.1− | 2005 04 02 | G96 | 0.4− | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.1− |
| 2000 05 03 | 691 | 0.0 | 0.3+ | 2005 04 16 | 691 | 0.4− | 0.1+ | | | | |

**2005 EQ$_{323}$ = 2002 TD$_{318}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.40058 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22286025 | $\omega$ | 340.26900 | −0.99456883 | | −0.09030086 | |
| $a$ | 2.6943105 | $\Omega$ | 194.83622 | +0.09924866 | | −0.97258511 | |
| $e$ | 0.1330671 | $i$ | 11.66119 | −0.03134571 | | −0.21429876 | |
| $P$ | 4.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 03 13 | G96 | 0.2− | 0.1− | 2005 04 18 | 691 | 0.4+ | 0.1+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2005 03 13 | G96 | 0.2− | 0.1+ | 2005 04 18 | 691 | 0.5+ | 0.1+ |
| 2002 10 10 | 645 | 0.1− | 0.1+ | 2005 04 06 | 691 | 0.2+ | 0.4+ | 2005 05 08 | 703 | 1.2+ | 1.2− |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2005 04 06 | 691 | 0.2+ | 0.1+ | 2005 05 08 | 703 | 0.4+ | 0.5− |
| 2005 03 13 | G96 | 0.4− | 0.1+ | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2005 05 08 | 703 | 1.0− | 0.8+ |
| 2005 03 13 | G96 | 0.4− | 0.1− | 2005 04 18 | 691 | 0.3+ | 0.0 | 2005 05 08 | 703 | 1.4− | 0.2+ |

**2005 ER$_{323}$ = 1998 HR$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.61993 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28493476 | $\omega$ | 236.48342 | −0.87229021 | | +0.48866256 | |
| $a$ | 2.2872085 | $\Omega$ | 332.75666 | −0.43471252 | | −0.79166889 | |
| $e$ | 0.1830726 | $i$ | 2.23494 | −0.22390803 | | −0.36670052 | |
| $P$ | 3.46 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 0.5+ | 1.4− | 2005 03 14 | G96 | 1.2− | 0.1− | 2005 05 19 | 644 | 0.2− | 0.2− |
| 1998 04 22 | 704 | 0.7+ | 1.2− | 2005 03 14 | G96 | 0.6− | 0.0 | 2005 05 19 | 644 | 0.3+ | 0.2− |
| 1998 04 22 | 704 | 0.6+ | 0.9− | 2005 03 14 | G96 | 0.8− | 0.0 | 2005 05 19 | 644 | 0.1+ | 0.1− |
| 1998 04 22 | 704 | (2.7+ | 0.4−) | 2005 03 14 | G96 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.2− |
| 1998 04 22 | 704 | 0.8+ | 0.5− | 2005 05 08 | E12 | 0.6+ | 0.4+ | 2006 09 26 | 691 | 0.6+ | 0.0 |
| 1998 04 24 | 691 | 0.2− | 0.2+ | 2005 05 08 | E12 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.4+ | 0.0 |
| 1998 04 24 | 691 | 0.2− | 0.3+ | 2005 05 08 | E12 | 0.0 | 0.6− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1998 04 24 | 691 | 0.3− | 0.3+ | 2005 05 08 | E12 | 0.4− | 0.3− | 2006 09 30 | 691 | 0.4− | 0.3− |
| 2002 08 29 | 291 | 0.1+ | 0.2− | 2005 05 11 | 644 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.4− | 0.5− |
| 2002 08 29 | 291 | 0.2− | 0.4+ | 2005 05 11 | 644 | 0.1+ | 0.1− | | | | |
| 2002 08 29 | 291 | 0.2− | 0.1+ | 2005 05 11 | 644 | 0.2+ | 0.0 | | | | |

**2005 EU$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.63316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17046106 | $\omega$ | 333.74591 | | −0.90823016 | −0.41844702 | |
| $a$ | 3.2214589 | $\Omega$ | 181.53879 | | +0.40727541 | −0.88142162 | |
| $e$ | 0.0459013 | $i$ | 9.60248 | | +0.09614945 | −0.21908450 | |
| $P$ | 5.78 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 645 | 0.0 | 0.0 | 2005 03 17 | G96 | 0.2+ | 0.2+ | 2005 04 12 | G96 | 0.4− | 0.3− |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2005 03 17 | G96 | 0.1+ | 0.1+ | 2005 04 12 | G96 | 0.3− | 0.3− |
| 2002 11 08 | 645 | 0.1− | 0.0 | 2005 03 17 | 703 | 0.2− | 1.4+ | 2005 04 12 | G96 | 0.1− | 0.0 |
| 2002 11 08 | 645 | 0.1− | 0.1+ | 2005 03 17 | 703 | 0.1− | 0.9− | 2005 05 08 | G96 | 0.8− | 0.7− |
| 2005 03 03 | 703 | 1.4− | 1.2− | 2005 03 17 | 703 | 0.2+ | 1.0+ | 2005 05 08 | G96 | 0.4− | 0.3− |
| 2005 03 03 | 703 | 0.1− | 0.1+ | 2005 03 17 | 703 | 0.3+ | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.0 |
| 2005 03 03 | 703 | 0.0 | 0.3+ | 2005 04 04 | 691 | 0.4+ | 0.4+ | 2005 05 08 | G96 | 0.7− | 0.6− |
| 2005 03 03 | 703 | (2.2− | 1.4+) | 2005 04 04 | 691 | 0.5+ | 0.1+ | 2006 05 27 | 691 | 0.2+ | 0.1+ |
| 2005 03 17 | G96 | 0.1+ | 0.1− | 2005 04 04 | 691 | 0.2+ | 0.2+ | 2006 05 27 | 691 | 0.0 | 0.0 |
| 2005 03 17 | G96 | 0.1− | 0.3+ | 2005 04 12 | G96 | 0.4− | 0.2− | 2006 05 27 | 691 | 0.1− | 0.1+ |

**2005 EV$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.54596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26632515 | $\omega$ | 341.59602 | | −0.99071237 | +0.13170536 | |
| $a$ | 2.3925513 | $\Omega$ | 206.04361 | | −0.11307537 | −0.93607594 | |
| $e$ | 0.0971841 | $i$ | 4.41569 | | −0.07551791 | −0.32621395 | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.8+ | 2005 03 04 | 691 | 0.0 | 0.1+ | 2005 04 04 | 703 | (2.0+ | 0.0 ) |
| 1999 10 06 | 704 | 0.7− | 1.2+ | 2005 03 04 | 703 | 0.8+ | 0.3− | 2005 04 04 | 703 | 1.5− | 0.0 |
| 1999 10 06 | 704 | 0.2− | 0.7− | 2005 03 04 | 703 | 0.5+ | 0.3+ | 2005 04 04 | 703 | 0.8− | 0.2+ |
| 1999 10 06 | 704 | 0.6+ | 0.0 | 2005 03 04 | 703 | 0.4− | 0.1− | 2005 04 04 | 703 | 1.1− | 0.4+ |
| 1999 10 06 | 704 | 0.9− | 0.1− | 2005 03 04 | 691 | 0.1+ | 0.0 | 2005 04 09 | 699 | 0.8+ | 1.5+ |
| 2001 02 19 | 608 | 0.0 | 0.5− | 2005 03 04 | 703 | 0.7+ | 0.5+ | 2005 04 09 | 699 | 0.2+ | 0.4+ |
| 2001 02 19 | 608 | 0.4+ | 0.6− | 2005 03 04 | G92 | 0.0 | 0.2+ | 2005 04 09 | 699 | 0.3+ | 0.2− |
| 2001 02 19 | 608 | 0.3+ | 0.2+ | 2005 03 04 | 691 | 0.2+ | 0.1− | 2005 04 09 | 699 | 0.5+ | 0.4− |
| 2003 10 21 | 691 | 0.1+ | 0.0 | 2005 03 17 | 703 | 0.2− | 0.3− | 2005 05 08 | G96 | 0.3− | 0.2+ |
| 2003 10 21 | 691 | 0.0 | 0.3+ | 2005 03 17 | 703 | 0.9− | 0.2+ | 2005 05 08 | G96 | 0.2− | 0.1+ |
| 2003 10 21 | 691 | 0.1+ | 0.2+ | 2005 03 17 | 703 | 1.1− | 0.0 | 2005 05 08 | G96 | 0.4− | 0.1− |
| 2003 11 19 | 691 | 0.1+ | 0.2− | 2005 03 17 | 703 | 0.2− | 0.3+ | 2005 05 08 | G96 | 0.6− | 0.3+ |
| 2003 11 19 | 691 | 0.4− | 0.1+ | 2005 04 01 | 699 | 0.5− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2003 11 19 | 691 | 0.2− | 0.1− | 2005 04 01 | 699 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.3+ |
| 2005 03 04 | G92 | 0.8+ | 0.2+ | 2005 04 01 | 699 | 1.2+ | 0.6+ | 2006 09 28 | G96 | 0.4+ | 1.2+ |
| 2005 03 04 | G92 | 0.3+ | 0.4+ | 2005 04 01 | 699 | 1.3+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.5+ |

**2005 EW$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.21421 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26156845 | $\omega$ | 345.73783 | | −0.95945170 | −0.28185275 | |
| $a$ | 2.4214703 | $\Omega$ | 177.88237 | | +0.26676045 | −0.91182464 | |
| $e$ | 0.1407345 | $i$ | 5.25612 | | +0.09105654 | −0.29855461 | |
| $P$ | 3.77 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 06 | 691 | 0.0 | 0.4+ | 2005 03 04 | G96 | 0.1− | 0.3− | 2005 04 04 | G96 | 0.4+ | 0.1+ |
| 1994 06 06 | 691 | 0.0 | 0.4+ | 2005 03 12 | G96 | 0.3− | 0.2− | 2005 04 04 | 704 | 0.4− | 0.3+ |
| 1994 06 06 | 691 | 0.1+ | 0.2+ | 2005 03 12 | G96 | 0.4− | 0.1− | 2005 04 04 | G96 | 0.0 | 0.1− |
| 2001 02 19 | 704 | 1.1+ | 0.9+ | 2005 03 12 | G96 | 0.2− | 0.3− | 2005 04 04 | G96 | 0.0 | 0.2− |
| 2001 02 19 | 704 | 0.0 | 1.1+ | 2005 03 12 | G96 | 0.1− | 0.2− | 2005 04 04 | 704 | 0.8+ | 0.4− |
| 2001 02 19 | 704 | 1.2− | 0.0 | 2005 03 12 | G96 | 0.4− | 0.2− | 2005 04 04 | G96 | 0.1+ | 0.0 |
| 2001 02 19 | 704 | 1.0+ | 0.0 | 2005 03 12 | G96 | 0.3− | 0.3− | 2005 04 04 | 704 | 1.0+ | 0.4+ |
| 2001 02 19 | 704 | 0.3+ | 0.8+ | 2005 03 12 | G96 | 0.4− | 0.3− | 2005 04 04 | 704 | 0.3+ | 0.3− |
| 2003 09 28 | 691 | 0.0 | 0.0 | 2005 03 12 | G96 | 0.3− | 0.3− | 2005 04 04 | 704 | 0.3+ | 0.1− |
| 2003 09 28 | 691 | 0.1− | 0.0 | 2005 03 13 | 703 | 0.5− | 0.7+ | 2005 04 13 | 699 | 1.7− | 1.4+ |
| 2003 09 28 | 691 | 0.0 | 0.1+ | 2005 03 13 | 703 | 0.2+ | 0.1− | 2005 04 13 | 699 | 1.4+ | 1.4− |
| 2003 10 21 | 691 | 0.5− | 0.3+ | 2005 03 13 | 703 | 0.4− | 0.2+ | 2005 04 13 | 699 | 0.9+ | 1.5+ |
| 2003 10 21 | 691 | 0.3+ | 0.3+ | 2005 03 13 | 703 | 0.4− | 0.3+ | 2005 04 13 | 699 | 1.5− | 1.0+ |
| 2003 10 21 | 691 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.3− | 0.5− | 2005 05 12 | G96 | 0.7+ | 0.3− |
| 2005 03 04 | G96 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.1+ | 0.5+ | 2005 05 12 | G96 | 0.6+ | 0.4− |
| 2005 03 04 | G96 | 0.0 | 0.0 | 2005 04 04 | 703 | 0.5+ | 0.8− | 2005 05 12 | G96 | 0.6+ | 0.1− |
| 2005 03 04 | G96 | 0.2− | 0.2− | 2005 04 04 | 703 | 0.8− | 0.6− | 2005 05 12 | G96 | 0.7+ | 0.1− |

**2005 EX$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.02557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28285543 | $\omega$ | 17.67576 | | −0.51839047 | +0.85492108 | |
| $a$ | 2.2984040 | $\Omega$ | 221.10579 | | −0.78812271 | −0.48649869 | |
| $e$ | 0.1679003 | $i$ | 1.70191 | | −0.33186428 | −0.18008047 | |
| $P$ | 3.48 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.0 | 0.2− | 2005 05 29 | E12 | 1.2− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 1999 10 14 | 645 | 0.0 | 0.2− | 2005 05 29 | E12 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.4− |
| 1999 11 05 | 691 | 0.0 | 0.2− | 2005 05 29 | E12 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.5+ |
| 1999 11 05 | 691 | 0.4+ | 0.4− | 2005 06 06 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− |
| 1999 11 05 | 691 | 0.2+ | 0.1− | 2005 06 06 | 691 | 0.4+ | 0.2− | 2006 10 29 | G96 | 0.4+ | 0.5− |
| 2002 08 10 | 807 | 0.3− | 0.2− | 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.4+ | 0.4− |
| 2002 08 10 | 807 | 0.2− | 0.3+ | 2005 07 05 | 644 | 0.2− | 0.1− | 2006 10 29 | G96 | 0.3+ | 0.2− |
| 2005 03 11 | G96 | 0.7− | 0.0 | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.2− | 0.2− |
| 2005 03 11 | G96 | 0.3+ | 0.4+ | 2005 07 05 | 644 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2005 03 11 | G96 | 0.8− | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2005 05 04 | 704 | 1.2− | 0.4− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.4− | 0.2+ |
| 2005 05 04 | 704 | 1.0+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2005 05 04 | 704 | 0.6+ | 0.4+ | 2006 10 12 | 691 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2005 05 14 | 704 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2005 05 14 | 704 | 0.9+ | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.9+ |
| 2005 05 14 | 704 | 0.4− | 1.4+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2005 05 29 | E12 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.9+ | | | | |

**2005 EY$_{323}$ = 2006 SQ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.00946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30958358 | $\omega$ | 124.77575 | | −0.94672612 | +0.32011572 | |
| $a$ | 2.1641338 | $\Omega$ | 73.91636 | | −0.30612945 | −0.86069205 | |
| $e$ | 0.0808960 | $i$ | 2.09650 | | −0.09997207 | −0.39589786 | |
| $P$ | 3.18 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 18 | 691 | 0.3+ | 0.1− | 2005 06 14 | G96 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.6− |
| 1999 06 18 | 691 | 0.2+ | 0.3+ | 2005 06 14 | G96 | 0.6+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 1999 06 18 | 691 | 0.6− | 0.1+ | 2005 06 14 | G96 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.2− |
| 2003 11 29 | 691 | 0.1− | 0.0 | 2005 06 27 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2003 11 29 | 691 | 0.3− | 0.4+ | 2005 06 27 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 11 29 | 691 | 0.0 | 0.1+ | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2003 12 16 | 291 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2003 12 16 | 291 | 0.3− | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1− |
| 2003 12 16 | 291 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 2005 03 12 | G96 | 0.1− | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.8− |
| 2005 03 12 | G96 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.7+ |
| 2005 03 12 | G96 | 0.2− | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2005 03 12 | G96 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.4− |
| 2005 04 17 | 703 | 0.6− | 1.0+ | 2006 09 28 | 691 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.5− |
| 2005 04 17 | 703 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2005 04 17 | 703 | (0.9− | 4.8+) | 2006 10 02 | 691 | 0.0 | 1.1+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2005 04 17 | 703 | (0.6+ | 4.7+) | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2005 05 04 | 704 | 0.4+ | 0.5+ | 2006 10 02 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2005 05 04 | 704 | 0.6− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2005 05 04 | 704 | 1.4− | 1.3+ | 2006 10 11 | 691 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2005 05 09 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.4− | 2006 11 11 | 703 | 1.0− | 1.0+ |
| 2005 05 09 | 704 | (2.3+ | 0.2+) | 2006 10 11 | 644 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.5+ |
| 2005 05 09 | 704 | 1.1+ | 1.2− | 2006 10 11 | 644 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 2005 05 09 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.5+ | 0.1− | 2006 11 11 | 703 | (2.0− | 0.5−) |
| 2005 06 04 | 703 | 0.5− | 0.4− | 2006 10 12 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.5+ | 0.9− |
| 2005 06 04 | 704 | 1.3+ | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 1.5− | 1.0− |
| 2005 06 04 | 703 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.9+ | 0.3− | 2006 11 17 | 703 | 0.7− | 0.7+ |
| 2005 06 04 | 704 | 0.9+ | 0.7+ | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.7+ | 1.2− |
| 2005 06 04 | 703 | 0.8− | 1.0− | 2006 10 15 | 691 | 0.5+ | 0.4− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2005 06 04 | 703 | 1.3− | 0.6− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2005 06 04 | 704 | (1.7+ | 0.1+) | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2005 06 04 | 704 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.5− | | | | |
| 2005 06 14 | G96 | 0.5− | 0.8+ | 2006 10 17 | G96 | 0.4+ | 0.4− | | | | |

**2005 EZ$_{323}$ = 2006 SJ$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.41585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23038697 | $\omega$ | 7.30159 | | −0.01750805 | +0.98070191 | |
| $a$ | 2.6353043 | $\Omega$ | 261.83609 | | −0.92699950 | −0.08889785 | |
| $e$ | 0.2130621 | $i$ | 11.34504 | | −0.37465370 | +0.17412905 | |
| $P$ | 4.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 04 | 644 | 0.8− | 0.0 | 2005 04 06 | 699 | 0.1− | 0.4− | 2006 09 06 | 644 | 0.2+ | 0.1− |
| 2001 05 04 | 644 | 0.6− | 0.3+ | 2005 04 06 | 699 | 0.2+ | 0.9+ | 2006 09 16 | 703 | 0.0 | 0.1− |
| 2001 05 04 | 644 | 0.6− | 0.7+ | 2005 04 06 | 699 | 0.1− | 0.5+ | 2006 09 16 | 703 | 0.0 | 0.6+ |
| 2001 06 16 | 704 | 0.3+ | 0.3− | 2005 04 06 | 699 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 1.1+ | 0.2+ |
| 2001 06 16 | 704 | 0.2− | 0.1− | 2005 04 12 | E12 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.1+ | 0.4− |
| 2001 06 16 | 704 | 1.3+ | 0.8− | 2005 04 12 | E12 | 0.4+ | 0.1+ | 2006 09 21 | 699 | 0.8+ | 0.7− |
| 2001 06 16 | 704 | 0.9+ | 1.0+ | 2005 04 12 | E12 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 0.2+ | 0.3− |
| 2002 10 05 | 704 | 0.9− | 0.1+ | 2005 04 12 | E12 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.0 | 0.5+ |
| 2002 10 05 | 704 | 0.4+ | 0.1+ | 2005 05 12 | 703 | 1.2− | 0.7− | 2006 09 21 | 699 | 1.4− | 0.3+ |
| 2002 10 05 | 704 | 0.2+ | 0.4− | 2005 05 12 | 703 | 1.3− | 0.7− | 2006 09 28 | 703 | 0.4− | 0.3− |
| 2005 03 13 | 699 | 0.1− | 0.7− | 2005 05 12 | 703 | 0.8− | 0.7− | 2006 09 28 | 703 | 0.3+ | 0.2− |
| 2005 03 13 | 699 | 0.6+ | 0.7+ | 2005 05 12 | 703 | 0.2+ | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.4− |
| 2005 03 13 | 699 | 0.3+ | 0.5− | 2006 08 29 | 699 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.7+ |
| 2005 03 13 | 699 | 0.8+ | 0.4− | 2006 08 29 | 699 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.6− | 0.2− |
| 2005 03 19 | E12 | (3.5+ | 1.2+) | 2006 08 29 | 699 | 0.1+ | 0.7− | 2006 10 23 | 703 | 0.8− | 1.0+ |
| 2005 03 19 | E12 | 0.3+ | 0.8+ | 2006 08 29 | 699 | 0.4+ | 0.6+ | 2006 10 23 | 703 | 0.2− | 0.9+ |
| 2005 03 19 | E12 | 0.2− | 0.8+ | 2006 09 06 | 644 | 0.2+ | 0.2− | 2006 10 23 | 703 | 0.3− | 0.5+ |
| 2005 03 19 | E12 | (2.1− | 3.0+) | 2006 09 06 | 644 | 0.3+ | 0.1− | | | | |

**2005 EF$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.46330 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27291032 | $\omega$ | 199.25635 | | −0.73515581 | +0.67657663 | |
| $a$ | 2.3539076 | $\Omega$ | 23.48600 | | −0.60720240 | −0.62945510 | |
| $e$ | 0.1738481 | $i$ | 6.09415 | | −0.30141531 | −0.38213917 | |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 645 | 0.0 | 0.0 | 2005 03 31 | 699 | 0.3+ | 0.0 | 2005 05 06 | G96 | 0.1+ | 0.0 |
| 2001 02 21 | 645 | 0.0 | 0.0 | 2005 04 04 | 703 | (3.0+ | 0.4−) | 2005 05 06 | G96 | 0.5− | 0.2− |
| 2005 03 04 | 704 | 0.3+ | 0.5+ | 2005 04 04 | 703 | 0.2− | 0.1− | 2005 05 06 | G96 | 0.1+ | 0.1+ |
| 2005 03 04 | 704 | 0.6+ | 0.6+ | 2005 04 04 | 703 | 0.6− | 0.1− | 2005 05 06 | G96 | 0.1− | 0.1− |
| 2005 03 04 | 704 | 0.6+ | 1.1+ | 2005 04 04 | 703 | 0.5− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2005 03 04 | 704 | 0.1+ | 0.7− | 2005 04 09 | G96 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.4+ |
| 2005 03 18 | 703 | (2.0− | 1.9−) | 2005 04 09 | G96 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.3+ |
| 2005 03 18 | 703 | 0.6− | 0.3− | 2005 04 09 | G96 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2005 03 18 | 703 | 0.1− | 0.4− | 2005 04 09 | G96 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2005 03 18 | 703 | 0.2− | 0.7− | 2005 04 12 | 704 | (0.1+ | 1.7+) | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2005 03 31 | 699 | 0.1+ | 0.0 | 2005 04 12 | 704 | 0.5+ | 1.2+ | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2005 03 31 | 699 | 0.4+ | 0.0 | 2005 04 12 | 704 | 0.8+ | 0.4− | 2006 10 20 | G96 | 0.6+ | 0.0 |
| 2005 03 31 | 699 | 0.0 | 0.3+ | 2005 04 12 | 704 | 0.4− | 0.2− | | | | |

**2005 EG$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.61299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30425588 | $\omega$ | 46.08979 | | −0.70435427 | +0.70984847 | |
| $a$ | 2.1893241 | $\Omega$ | 179.13239 | | −0.65979755 | −0.65444765 | |
| $e$ | 0.1398525 | $i$ | 1.76846 | | −0.26182485 | −0.26041011 | |
| $P$ | 3.24 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 644 | 0.2+ | 0.1− | 2005 03 13 | 683 | 1.6− | 1.8− | 2005 04 16 | 691 | 0.6+ | 0.4+ |
| 2002 05 17 | 644 | 0.7− | 0.1− | 2005 03 13 | 683 | (2.3+ | 1.0+) | 2005 05 06 | G96 | 1.0− | 0.8+ |
| 2002 05 17 | 644 | 0.4+ | 0.0 | 2005 03 13 | 683 | 0.9+ | 1.2− | 2005 05 06 | G96 | 0.1− | 0.2− |
| 2003 10 22 | 695 | 0.6− | 0.6+ | 2005 04 04 | G96 | 0.0 | 0.2− | 2005 05 06 | G96 | 0.5− | 0.2− |
| 2003 10 22 | 695 | 0.2+ | 0.6+ | 2005 04 04 | G96 | 0.1+ | 0.1− | 2005 05 06 | G96 | 0.5− | 0.2+ |
| 2005 03 08 | G96 | 0.1− | 0.1+ | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2+ |
| 2005 03 08 | G96 | 0.1− | 0.1− | 2005 04 04 | G96 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.2+ |
| 2005 03 08 | G96 | 0.1− | 0.3+ | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.4− |
| 2005 03 08 | G96 | 0.5− | 0.2+ | 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.6− |

**2005 EJ$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.80013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28385158 | $\omega$ | 211.27816 | | −0.23692547 | +0.96800723 | |
| $a$ | 2.2930235 | $\Omega$ | 45.16457 | | −0.86556372 | −0.17169216 | |
| $e$ | 0.2078002 | $i$ | 6.69173 | | −0.44120944 | −0.18298579 | |
| $P$ | 3.47 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.0 | 0.2+ | 2005 04 04 | 703 | 0.2+ | 0.0 | 2005 05 15 | 644 | 0.1− | 0.8+ |
| 2002 07 16 | 644 | 0.2+ | 0.3+ | 2005 04 04 | 703 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.3+ |
| 2002 07 16 | 644 | 0.0 | 0.0 | 2005 04 05 | 699 | 0.2− | 0.7+ | 2006 10 23 | 691 | 0.6− | 0.6+ |
| 2002 07 29 | 644 | 0.5− | 0.3+ | 2005 04 05 | 699 | (2.0+ | 0.1−) | 2006 10 23 | 691 | 0.4− | 0.4+ |
| 2002 07 29 | 644 | 0.0 | 0.2+ | 2005 04 05 | 699 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 07 29 | 644 | 0.0 | 0.0 | 2005 04 05 | 699 | (0.0 | 2.5−) | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2005 03 10 | 683 | (1.8+ | 0.6−) | 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2005 03 10 | 683 | 1.5+ | 0.0 | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.2+ |
| 2005 03 10 | 683 | (0.4+ | 1.8+) | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2005 04 04 | 703 | 0.0 | 0.7− | 2005 05 15 | 644 | 0.2− | 0.5+ | 2006 11 14 | G96 | 0.7+ | 0.6− |
| 2005 04 04 | 703 | 0.5− | 0.9− | 2005 05 15 | 644 | 0.0 | 0.6+ | 2006 11 14 | G96 | 0.5+ | 0.6+ |

**2005 EL$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.48466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27342518 | $\omega$ | 30.39786 | | −0.46012476 | +0.88428870 | |
| $a$ | 2.3509517 | $\Omega$ | 212.40042 | | −0.84153283 | −0.46290845 | |
| $e$ | 0.2684630 | $i$ | 8.53126 | | −0.28303302 | −0.06123125 | |
| $P$ | 3.60 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 30 | 608 | 0.2+ | 0.1+ | 2005 05 16 | 704 | 0.4+ | 0.3− | 2005 06 11 | 691 | 0.1+ | 0.2+ |
| 2001 01 30 | 608 | 0.1+ | 0.1+ | 2005 05 16 | 704 | 0.1+ | 0.3+ | 2005 06 27 | 691 | 0.1+ | 0.2− |
| 2001 01 30 | 608 | 0.2− | 0.1+ | 2005 05 16 | 704 | 0.4+ | 0.3+ | 2005 06 27 | 691 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 1.0+ | 0.2− | 2005 06 03 | E12 | 0.2− | 0.5− | 2005 06 27 | 691 | 0.1+ | 0.0 |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2005 06 03 | E12 | 0.6− | 1.0− | 2006 09 26 | G96 | 0.4+ | 0.3+ |
| 2005 03 10 | G96 | 0.5− | 0.2+ | 2005 06 03 | E12 | 0.4− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2005 03 10 | G96 | 0.5− | 0.3− | 2005 06 03 | E12 | 0.6− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.2+ |
| 2005 05 03 | 704 | 0.6− | 0.2+ | 2005 06 09 | 703 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2005 05 03 | 704 | 0.2+ | 0.8+ | 2005 06 09 | 703 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.8− | 0.3+ |
| 2005 05 03 | 704 | 0.3+ | 0.9+ | 2005 06 09 | 703 | 0.4− | 0.2+ | 2006 11 15 | G96 | 1.5+ | 0.3+ |
| 2005 05 03 | 704 | 0.5+ | 0.1− | 2005 06 09 | 703 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2005 05 16 | 704 | 0.0 | 0.5− | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.8− | 0.0 |
| 2005 05 16 | 704 | 0.4+ | 0.2− | 2005 06 11 | 691 | 0.1− | 0.4+ | | | | |

**2005 EN$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.59547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30725147 | $\omega$ | 248.45442 | | −0.02148818 | +0.99949694 | |
| $a$ | 2.1750708 | $\Omega$ | 20.35604 | | −0.89067305 | −0.00853991 | |
| $e$ | 0.1779495 | $i$ | 3.84503 | | −0.45413630 | −0.03054392 | |
| $P$ | 3.21 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.5− | 0.2− | 2005 05 06 | 703 | 0.9− | 0.1+ | 2005 05 19 | 644 | 0.2+ | 0.2+ |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2005 05 10 | 699 | 0.9+ | 0.1− | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2005 03 11 | G96 | 0.5− | 0.3− | 2005 05 10 | 699 | 0.0 | 1.3+ | 2006 10 23 | 691 | 0.7− | 0.3− |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2005 05 10 | 699 | 0.9+ | 0.9+ | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2005 05 01 | 644 | 0.1+ | 0.0 | 2005 05 10 | 699 | (0.5+ | 2.0+) | 2006 10 27 | 691 | 0.7+ | 0.3+ |
| 2005 05 01 | 644 | 0.2− | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.4− |
| 2005 05 01 | 644 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.6+ | 0.1− |
| 2005 05 06 | 703 | 0.1+ | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2005 05 06 | 703 | 1.3+ | 0.3− | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.6+ |
| 2005 05 06 | 703 | 1.0− | 0.8− | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 691 | 0.2− | 0.0 |

**2005 EO$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.81138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23907993 | $\omega$ | 267.27822 | | +0.56863552 | +0.80816680 | |
| $a$ | 2.5710309 | $\Omega$ | 38.71627 | | −0.62305770 | +0.54488033 | |
| $e$ | 0.1959116 | $i$ | 14.19353 | | −0.53707797 | +0.22354382 | |
| $P$ | 4.12 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.4+ | 0.1− | 2005 05 14 | G96 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.4− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2005 03 11 | G96 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2005 03 11 | G96 | 0.7− | 0.3+ | 2006 10 17 | G96 | 0.9+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2005 04 06 | G96 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.3+ | 1.0− | 2006 11 11 | G96 | 0.6+ | 0.0 |
| 2005 04 06 | G96 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2005 04 06 | G96 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.3− |
| 2005 04 06 | G96 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2005 04 16 | 691 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2005 04 16 | 691 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2005 04 16 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.4+ |
| 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.7− | 0.0 | 2006 11 17 | 691 | 0.4+ | 0.3+ |
| 2005 05 01 | 644 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2005 05 01 | 644 | 0.5+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2005 05 14 | G96 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2005 05 14 | G96 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | | | | |

**2005 EP$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.74009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27017395 | $\omega$ | 220.52187 | | −0.94660380 | +0.32237117 | |
| $a$ | 2.3697747 | $\Omega$ | 338.28339 | | −0.29274634 | −0.86498926 | |
| $e$ | 0.1289752 | $i$ | 0.65839 | | −0.13505862 | −0.38453922 | |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 16 | 691 | 0.3− | 0.2+ | 2005 04 04 | 704 | 0.1+ | 0.3+ | 2005 05 08 | G96 | 0.3− | 0.3− |
| 2003 11 16 | 691 | 0.1− | 0.2+ | 2005 04 04 | 704 | 0.1+ | 0.8− | 2005 05 08 | G96 | 0.1− | 0.2− |
| 2003 11 16 | 691 | 0.2+ | 0.2+ | 2005 04 09 | 704 | (2.7+ | 0.2+) | 2005 05 08 | G96 | 0.5− | 0.5− |
| 2005 03 12 | 691 | 0.1+ | 0.3+ | 2005 04 09 | 704 | 1.5+ | 0.1− | 2006 08 18 | 691 | 0.0 | 0.3+ |
| 2005 03 12 | 691 | 0.1+ | 0.3+ | 2005 04 09 | 704 | 0.0 | 0.9+ | 2006 08 18 | 691 | 0.0 | 0.4+ |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2005 04 12 | 704 | 0.5+ | 0.2− | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 2005 03 13 | 703 | 1.3− | 1.1+ | 2005 04 12 | 704 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2005 03 13 | 703 | (3.2− | 0.1+) | 2005 04 12 | 704 | 0.2+ | 0.3− | 2006 09 25 | G96 | 0.7− | 0.0 |
| 2005 03 13 | 703 | (2.1− | 0.5+) | 2005 04 12 | 704 | 0.1+ | 1.0+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2005 03 13 | 703 | 0.4− | 0.3− | 2005 04 12 | 695 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.1+ |
| 2005 04 04 | 704 | 0.2+ | 0.1+ | 2005 04 12 | 695 | 0.3− | 0.3+ | | | | |
| 2005 04 04 | 704 | 0.7+ | 0.3+ | 2005 05 08 | G96 | 0.3− | 0.4− | | | | |

**2005 ER$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.02979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18739548 | $\omega$ | 273.96123 | | +0.49909415 | +0.85985556 | |
| $a$ | 3.0243355 | $\Omega$ | 26.83889 | | −0.67012200 | +0.46162371 | |
| $e$ | 0.3616366 | $i$ | 13.77296 | | −0.54940107 | +0.21806415 | |
| $P$ | 5.26 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | G96 | 0.1− | 0.1+ | 2005 05 01 | 644 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2005 03 13 | G96 | 0.6− | 0.1+ | 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2005 03 13 | G96 | 0.3− | 0.0 | 2005 05 08 | 703 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2005 03 13 | G96 | 0.2− | 0.2− | 2005 05 08 | 703 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.1+ | 0.5− | 2005 05 08 | 703 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 04 02 | G96 | 0.1− | 0.4− | 2005 05 08 | 703 | 1.4− | 0.9− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2005 04 02 | G96 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2005 04 02 | G96 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2005 04 17 | 691 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | | | | |
| 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | | | | |

**2005 FT$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.56256 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28286588 | $\omega$ | 162.00860 | | −0.82021631 | +0.57047204 | |
| $a$ | 2.2983474 | $\Omega$ | 52.84984 | | −0.53118350 | −0.73192901 | |
| $e$ | 0.1612587 | $i$ | 3.05705 | | −0.21234240 | −0.37261452 | |
| $P$ | 3.48 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.2− | 0.4− | 2005 04 11 | 699 | 0.8+ | 0.4− | 2005 05 08 | 703 | 1.0− | 1.5+ |
| 2005 03 16 | G96 | 0.4− | 0.2− | 2005 04 11 | 691 | 0.4+ | 0.1− | 2005 05 10 | G96 | 0.1− | 0.4− |
| 2005 03 16 | G96 | 0.4− | 0.1+ | 2005 04 11 | 691 | 0.4+ | 0.1+ | 2005 05 10 | G96 | 0.3− | 0.5− |
| 2005 03 16 | G96 | 0.3− | 0.3− | 2005 04 11 | 691 | 0.1+ | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.3− |
| 2005 03 17 | 691 | 0.2+ | 0.1+ | 2005 04 12 | 704 | 0.7+ | 0.7+ | 2005 05 10 | G96 | 0.2− | 0.5− |
| 2005 03 17 | 691 | 0.1− | 0.1+ | 2005 04 12 | 704 | 0.2+ | 0.6+ | 2005 06 13 | G96 | 1.2− | 0.4− |
| 2005 03 17 | 691 | 0.8− | 1.1+ | 2005 04 12 | 704 | 0.8+ | 1.4+ | 2005 06 13 | G96 | 0.9− | 0.4− |
| 2005 04 01 | 691 | 0.4+ | 0.1+ | 2005 04 14 | 691 | 0.2+ | 0.1− | 2005 06 13 | G96 | 0.7− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.0 | 0.2+ | 2005 04 14 | 691 | 0.3+ | 0.1− | 2005 06 13 | G96 | 1.0− | 0.3− |
| 2005 04 01 | 691 | 0.2+ | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2005 04 10 | 691 | 0.3− | 0.5+ | 2005 04 29 | 185 | 0.2− | 0.4− | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2005 04 10 | 691 | 0.1+ | 0.1− | 2005 04 29 | 185 | 0.5− | 1.5− | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2005 04 10 | 691 | 0.2+ | 0.0 | 2005 04 29 | 185 | 0.8− | 0.6− | 2006 09 30 | 691 | 0.2− | 0.5+ |
| 2005 04 11 | 699 | 1.4+ | 0.9− | 2005 05 08 | 703 | 0.8− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2005 04 11 | 699 | 0.6+ | 0.4+ | 2005 05 08 | 703 | 1.9− | 0.7+ | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2005 04 11 | 699 | 1.8+ | 1.3+ | 2005 05 08 | 703 | 0.5− | 0.2+ | | | | |

**2005 FQ$_2$ = 2006 RH$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.59569 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27577022 | $\omega$ | 256.91606 | | +0.18855292 | | +0.98059460 |
| $a$ | 2.3376050 | $\Omega$ | 24.15335 | | −0.84253038 | | +0.18960731 |
| $e$ | 0.1331671 | $i$ | 7.53895 | | −0.50456947 | | +0.04983269 |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 704 | 0.1+ | 1.1+ | 2005 05 09 | G96 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.1+ |
| 2005 03 04 | 704 | 1.4+ | 0.5+ | 2006 09 12 | 703 | (2.5− | 1.5+) | 2006 09 30 | 703 | 0.5− | 0.2− |
| 2005 03 04 | 704 | 1.0+ | 0.4− | 2006 09 12 | 703 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.8− |
| 2005 03 16 | 704 | 0.7+ | 0.8− | 2006 09 12 | 703 | (1.0+ | 2.6+) | 2006 09 30 | 703 | 1.0− | 0.5− |
| 2005 03 16 | 704 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.7− | 0.8+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2005 03 16 | 704 | 0.7+ | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2005 03 18 | 704 | 0.2− | 1.3+ | 2006 09 18 | 703 | 0.4− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2005 03 18 | 704 | 0.4− | 0.5+ | 2006 09 18 | 703 | 0.7+ | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2005 03 18 | 704 | (0.1− | 2.7+) | 2006 09 18 | 703 | 0.0 | 1.0+ | 2006 11 17 | G96 | 0.3+ | 0.1+ |
| 2005 05 09 | G96 | 0.4− | 0.5+ | 2006 09 20 | 644 | 0.7− | 0.6+ | 2006 11 17 | G96 | 0.5+ | 0.2+ |
| 2005 05 09 | G96 | 0.3− | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.3+ | 0.7+ |
| 2005 05 09 | G96 | 0.5− | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.5+ | 2006 11 17 | G96 | 0.6+ | 0.4+ |

**2005 FA$_4$ = 2006 SE$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.44614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26188544 | $\omega$ | 221.95477 | | −0.05560142 | | +0.99010380 |
| $a$ | 2.4195159 | $\Omega$ | 45.30949 | | −0.86109203 | | +0.01777280 |
| $e$ | 0.1428646 | $i$ | 10.44249 | | −0.50539983 | | −0.13920701 |
| $P$ | 3.76 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 18 | 703 | 0.6− | 0.9− | 2005 04 06 | 703 | 1.0+ | 0.2+ | 2006 08 28 | D35 | 0.2− | 0.1+ |
| 2005 03 18 | 703 | 0.4− | 0.2+ | 2005 04 06 | 703 | 0.1− | 1.3+ | 2006 09 17 | 699 | 0.6+ | 0.6− |
| 2005 03 18 | 703 | 0.2+ | 0.3+ | 2005 04 06 | 703 | 0.4− | 1.4+ | 2006 09 17 | 699 | 0.2+ | 0.6− |
| 2005 03 18 | 703 | (2.1+ | 0.9−) | 2005 04 16 | 703 | 0.6+ | 0.6+ | 2006 09 17 | 699 | 1.2+ | 0.9− |
| 2005 03 30 | 703 | 1.0+ | 0.3− | 2005 04 16 | 703 | (3.0− | 0.4−) | 2006 09 17 | 699 | (0.4− | 2.1−) |
| 2005 03 30 | 703 | 0.0 | 0.1− | 2005 04 16 | 703 | 0.3+ | 0.4− | 2006 09 25 | 703 | 1.2+ | 0.4+ |
| 2005 03 30 | 703 | 0.9− | 0.2− | 2005 04 16 | 703 | 1.2− | 1.2− | 2006 09 25 | 703 | 1.2− | 0.2+ |
| 2005 03 30 | 703 | 1.2+ | 0.3− | 2006 08 28 | D35 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.7− | 0.7+ |
| 2005 04 06 | 703 | 0.4− | 0.3− | 2006 08 28 | D35 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.8− | 0.9+ |

**2005 FB$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.28546 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28381144 | $\omega$ | 197.15863 | | −0.75266316 | | +0.65804187 |
| $a$ | 2.2932397 | $\Omega$ | 24.03488 | | −0.59759394 | | −0.66881384 |
| $e$ | 0.1835052 | $i$ | 3.08052 | | −0.27636869 | | −0.34593200 |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 10 | 807 | 0.1+ | 0.4− | 2005 04 04 | 704 | 0.5+ | 0.1+ | 2005 05 08 | 703 | 0.9− | 0.1+ |
| 2002 08 10 | 807 | 0.2+ | 0.4− | 2005 04 04 | 704 | (0.4+ | 2.2+) | 2005 05 08 | 703 | 1.0− | 0.3− |
| 2005 03 30 | 185 | 1.3+ | 0.1− | 2005 04 04 | 704 | 0.7+ | 0.3− | 2005 05 08 | 703 | (1.7− | 0.9−) |
| 2005 03 30 | 185 | 0.1− | 0.3+ | 2005 04 09 | 691 | 0.1+ | 0.2+ | 2005 05 08 | 703 | 1.2− | 0.8+ |
| 2005 03 31 | 185 | 0.2− | 0.6− | 2005 04 09 | 691 | 0.2+ | 0.2+ | 2005 05 08 | J95 | 0.4+ | 0.3+ |
| 2005 04 02 | 926 | 0.2− | 0.1− | 2005 04 09 | 691 | 0.1+ | 0.1+ | 2005 05 08 | J95 | 1.3+ | 0.5+ |
| 2005 04 02 | 926 | 0.1− | 0.0 | 2005 04 12 | 704 | 0.3− | 0.6− | 2005 05 12 | G96 | 0.2− | 0.9− |
| 2005 04 02 | 926 | 0.4− | 0.0 | 2005 04 12 | 704 | 0.6+ | 0.0 | 2005 05 12 | G96 | 0.1− | 0.9− |
| 2005 04 02 | 926 | 0.3− | 0.4− | 2005 04 12 | 704 | 0.2+ | 0.3− | 2005 05 12 | G96 | 0.2− | 0.4− |
| 2005 04 02 | 926 | 0.5− | 0.4− | 2005 04 12 | 704 | 0.4+ | 0.7+ | 2005 05 12 | G96 | 0.2− | 0.3− |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2005 04 13 | 926 | 0.5− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.5− | 0.1− | 2005 04 13 | 926 | 0.9− | 0.8− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2005 04 13 | 926 | 0.3− | 0.7− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2005 04 02 | G96 | 0.5− | 0.2− | 2005 04 13 | 926 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.4+ |
| 2005 04 03 | 644 | 0.2+ | 0.5+ | 2005 04 13 | 926 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2005 04 03 | 644 | 0.4+ | 0.4+ | 2005 05 07 | J95 | 1.2− | 1.1+ | 2006 09 26 | G96 | 0.1− | 0.3+ |
| 2005 04 03 | 644 | 0.3+ | 0.4+ | 2005 05 07 | J95 | 0.1+ | 0.8− | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2005 04 04 | 704 | 0.2− | 0.2+ | 2005 05 07 | J95 | 0.3+ | 0.3− | | | | |

**2005 FL$_5$ = 2006 QQ$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.36321 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27299013 | $\omega$ | 235.95680 | | −0.39501381 | | +0.91848396 |
| $a$ | 2.3534488 | $\Omega$ | 10.82481 | | −0.80655199 | | −0.33696314 |
| $e$ | 0.0797181 | $i$ | 5.72761 | | −0.43981584 | | −0.20698563 |
| $P$ | 3.61 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.0 | 0.2+ | 2005 04 01 | 621 | 1.3− | 0.0 | 2005 05 10 | G96 | 0.2− | 0.2− |
| 1999 11 01 | 691 | 0.1− | 0.1− | 2005 04 01 | 621 | 0.2− | 0.0 | 2005 05 10 | G96 | 0.1− | 0.0 |
| 1999 11 01 | 691 | 0.1+ | 0.1− | 2005 04 01 | 621 | 1.0+ | 1.0− | 2006 08 25 | 568 | 0.0 | 0.4+ |
| 2003 10 25 | 691 | 0.1− | 0.0 | 2005 04 09 | 691 | 0.4+ | 0.0 | 2006 08 25 | 568 | 0.1+ | 0.4+ |
| 2003 10 25 | 691 | 0.3+ | 0.0 | 2005 04 09 | 691 | 0.0 | 0.3+ | 2006 08 25 | 568 | 0.1− | 0.3+ |
| 2003 10 25 | 691 | 0.2+ | 0.1+ | 2005 04 09 | 691 | 0.0 | 0.3+ | 2006 08 28 | 568 | 0.1− | 0.0 |
| 2003 11 21 | 691 | 0.3− | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 08 28 | 568 | 0.1− | 0.0 |
| 2003 11 21 | 691 | 0.1− | 0.0 | 2005 04 11 | G96 | 0.0 | 0.3− | 2006 08 28 | 568 | 0.0 | 0.0 |
| 2003 11 21 | 691 | 0.2− | 0.1− | 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 08 28 | 568 | 0.1− | 0.0 |
| 2005 03 31 | 621 | 0.6+ | 0.1+ | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 08 28 | 568 | 0.1− | 0.1− |
| 2005 03 31 | 621 | 0.5− | 0.1− | 2005 05 10 | G96 | 0.0 | 0.3+ | | | | |
| 2005 03 31 | 621 | 0.0 | 0.0 | 2005 05 10 | G96 | 0.1− | 0.1− | | | | |

**2005 FC$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.97831 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21447127 | $\omega$ | 191.59970 | | −0.08380134 | | +0.99366169 |
| $a$ | 2.7641183 | $\Omega$ | 73.62708 | | −0.90789532 | | −0.04514325 |
| $e$ | 0.2350096 | $i$ | 4.47890 | | −0.41073521 | | −0.10294916 |
| $P$ | 4.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 691 | 0.1− | 0.2− | 2005 04 04 | 703 | 0.5− | 0.2− | 2005 04 13 | 699 | 0.4+ | 0.6+ |
| 1996 03 24 | 691 | 0.2− | 0.2− | 2005 04 04 | 703 | 0.1+ | 0.0 | 2005 04 13 | 704 | 1.3+ | 0.5− |
| 1996 03 24 | 691 | 0.1+ | 0.3− | 2005 04 04 | 703 | 0.7− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.4+ |
| 2002 11 02 | 950 | 0.1+ | 0.2− | 2005 04 04 | 703 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.5− | 0.4+ |
| 2002 11 03 | 950 | 0.1+ | 0.1− | 2005 04 13 | 699 | (2.0+ | 0.4+) | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2002 11 03 | 950 | 0.1+ | 0.0 | 2005 04 13 | 699 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.0 |
| 2005 03 31 | 699 | (1.3+ | 1.7+) | 2005 04 13 | 704 | 0.5+ | 1.4+ | 2006 09 19 | 699 | 0.3+ | 0.3+ |
| 2005 03 31 | 699 | 0.1− | 0.2− | 2005 04 13 | 699 | 0.0 | 0.1+ | 2006 09 19 | 699 | 1.0+ | 0.7+ |
| 2005 03 31 | 699 | 0.2+ | 0.8+ | 2005 04 13 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.7− |
| 2005 03 31 | 699 | 0.4− | 0.0 | 2005 04 13 | 704 | (1.2+ | 1.6+) | 2006 09 19 | 699 | 0.4− | 0.4− |

**2005 FM$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.23930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23534194 | $\omega$ | 216.06471 | | −0.21576790 | | +0.96543317 |
| $a$ | 2.5981835 | $\Omega$ | 42.03245 | | −0.83692771 | | −0.10570993 |
| $e$ | 0.2328638 | $i$ | 12.61501 | | −0.50298730 | | −0.23825239 |
| $P$ | 4.19 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 608 | 0.0 | 0.3− | 2005 03 10 | 703 | 1.5− | 0.2− | 2005 04 06 | 703 | 0.4− | 0.4− |
| 2001 04 24 | 608 | 0.6− | 0.2+ | 2005 03 10 | 703 | 0.8− | 0.4− | 2005 04 06 | 703 | 0.1+ | 0.7− |
| 2001 04 24 | 608 | 0.2− | 0.3+ | 2005 03 10 | 703 | (3.1− | 2.5+) | 2005 04 06 | 703 | 0.2+ | 0.0 |
| 2001 04 30 | 704 | 0.4+ | 1.7+ | 2005 03 30 | 703 | 1.0− | 0.6− | 2005 04 06 | 703 | 0.4− | 0.6− |
| 2001 04 30 | 704 | 0.5+ | 0.2− | 2005 03 30 | 703 | 0.3+ | 0.1+ | 2005 04 08 | 704 | 0.9+ | 0.9+ |
| 2001 04 30 | 704 | (1.5− | 2.3−) | 2005 03 30 | 703 | 1.0− | 0.6− | 2005 04 08 | 704 | 1.3+ | 0.5+ |
| 2001 05 15 | 699 | 0.5− | 0.3− | 2005 03 30 | 703 | 0.1− | 0.1+ | 2005 04 08 | 704 | 0.9+ | 0.4− |
| 2001 05 15 | 699 | 0.6+ | 0.3− | 2005 04 05 | 699 | 0.7+ | 0.6+ | 2006 09 26 | 703 | 0.4+ | 0.3− |
| 2001 05 15 | 699 | 0.2+ | 0.3− | 2005 04 05 | 699 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.5− |
| 2001 05 15 | 699 | 0.7− | 1.1− | 2005 04 05 | 699 | 1.6+ | 0.8+ | 2006 09 26 | 703 | 0.7− | 1.2+ |
| 2005 03 10 | 703 | 0.4− | 0.6− | 2005 04 05 | 699 | 0.1− | 1.3+ | 2006 09 26 | 703 | 0.7+ | 0.5− |

### 2005 $FP_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 107.40123 | | | | | |
| $n$ | 0.30320089 | $\omega$ | 132.96734 | | −0.25337514 | +0.96199064 |
| $a$ | 2.1943997 | $\Omega$ | 122.08883 | | −0.91885912 | −0.20640721 |
| $e$ | 0.0820146 | $i$ | 6.90510 | | −0.30248793 | −0.17880174 |
| $P$ | 3.25 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 18 | 703 | 0.4+ | 0.6+ | 2005 04 05 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.8− | 0.7− |
| 2005 03 18 | 703 | 0.3+ | 0.7− | 2005 04 05 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.5− |
| 2005 03 18 | 703 | 0.1+ | 0.4+ | 2005 04 05 | 644 | 0.6+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2005 03 18 | 703 | 0.4+ | 0.2− | 2005 04 06 | 703 | 1.1+ | 0.2+ | 2006 09 26 | 703 | (4.0+ | 0.3−) |
| 2005 03 30 | 703 | 0.5− | 0.6− | 2005 04 06 | 703 | 0.4− | 0.3+ | 2006 09 26 | 703 | 1.4+ | 0.8+ |
| 2005 03 30 | 703 | 0.6− | 0.2+ | 2005 04 06 | 703 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.4+ | 1.4+ |
| 2005 03 30 | 703 | 0.6− | 0.2+ | 2005 04 06 | 703 | 0.5− | 0.1+ | | | | |
| 2005 03 30 | 703 | 0.7− | 1.4− | 2006 09 20 | 644 | 1.1− | 0.7− | | | | |

### 2005 $FN_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 186.85045 | | | | | |
| $n$ | 0.24046890 | $\omega$ | 256.86043 | | +0.04628566 | −0.99882761 |
| $a$ | 2.5611211 | $\Omega$ | 190.51745 | | +0.94395663 | +0.04837784 |
| $e$ | 0.1446499 | $i$ | 4.45508 | | +0.32680807 | +0.00172827 |
| $P$ | 4.10 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 1.5+ | 2.2− | 2000 12 23 | 645 | 0.0 | 0.0 | 2005 02 02 | 703 | 0.8− | 0.5− |
| 1993 03 20 | 809 | 1.2+ | 0.5+ | 2003 09 18 | 644 | 0.2− | 0.6+ | 2005 02 02 | 703 | 1.2− | 0.5− |
| 1993 04 18 | 691 | 0.7− | 0.6− | 2003 09 18 | 644 | 0.2− | 0.4+ | 2005 02 14 | 691 | 0.2+ | 0.4+ |
| 1993 04 18 | 691 | 0.2− | 0.5+ | 2003 09 18 | 644 | 0.1+ | 0.5+ | 2005 02 14 | 691 | 0.4+ | 0.5+ |
| 1993 04 18 | 691 | 0.2− | 0.9− | 2003 09 28 | 691 | 0.0 | 0.2+ | 2005 02 14 | 691 | 0.2+ | 0.4+ |
| 1995 09 17 | 691 | 0.1+ | 0.7− | 2003 09 28 | 691 | 0.1− | 0.4+ | 2005 03 03 | 703 | 0.2+ | 0.1− |
| 1995 09 17 | 691 | 0.1− | 0.3− | 2003 09 28 | 691 | 0.0 | 0.0 | 2005 03 03 | 703 | 0.1− | 0.5− |
| 1995 09 17 | 691 | 0.5+ | 0.3− | 2005 01 20 | 699 | 0.9+ | 0.3− | 2005 03 03 | 703 | 0.1− | 0.4− |
| 1999 10 09 | 704 | 0.1+ | 0.9− | 2005 01 20 | 699 | (0.2+ | 1.7−) | 2005 03 03 | 703 | 0.4− | 0.7− |
| 1999 10 09 | 704 | 0.4− | 0.4− | 2005 01 20 | 699 | 0.9− | 1.2− | 2005 03 17 | 703 | 0.8− | 0.5+ |
| 1999 10 09 | 704 | 0.5− | 1.5− | 2005 01 20 | 699 | 1.1+ | 0.9− | 2005 03 17 | 703 | 0.7− | 0.6− |
| 1999 10 09 | 704 | 0.7+ | 0.2− | 2005 02 02 | 703 | 1.2+ | 0.3− | 2005 03 17 | 703 | 0.3− | 0.4+ |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2005 02 02 | 703 | 0.7− | 0.0 | 2005 03 17 | 703 | 0.1− | 0.1− |

### 2005 $FG_{11}$ = 1993 $YP_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 145.25692 | | | | | |
| $n$ | 0.28584235 | $\omega$ | 108.47664 | | −0.98696172 | +0.12185336 |
| $a$ | 2.2823645 | $\Omega$ | 78.62593 | | −0.15490130 | −0.89658868 |
| $e$ | 0.1041195 | $i$ | 6.15769 | | +0.04372814 | −0.42577046 |
| $P$ | 3.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 0.1+ | 0.0 | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 04 02 | 699 | 0.2− | 0.4+ |
| 1993 12 16 | 691 | 0.2+ | 0.1+ | 2003 10 23 | 691 | 0.0 | 0.5+ | 2005 04 02 | 703 | 0.1− | 0.5− |
| 1993 12 16 | 691 | 0.6+ | 0.0 | 2003 10 23 | 645 | 0.0 | 0.1− | 2005 04 02 | 703 | 0.6− | 0.8− |
| 1993 12 17 | 691 | 0.2− | 0.0 | 2003 10 23 | 645 | 0.0 | 0.1− | 2005 04 02 | 703 | 0.7− | 0.6− |
| 1993 12 17 | 691 | 0.5− | 0.5− | 2003 10 23 | 691 | 0.0 | 0.5+ | 2005 04 02 | 699 | 0.3+ | 0.5+ |
| 2000 12 30 | 704 | 1.1− | 0.3+ | 2003 10 23 | 691 | 0.1− | 0.4+ | 2005 04 02 | 703 | 0.4− | 0.5− |
| 2000 12 30 | 704 | 0.6− | 0.6+ | 2005 03 16 | 703 | 0.3− | 0.3− | 2005 04 09 | 703 | 0.7− | 0.7+ |
| 2000 12 30 | 704 | 0.1+ | 0.6+ | 2005 03 16 | 703 | 0.1+ | 0.5+ | 2005 04 09 | 703 | 0.3− | 1.7− |
| 2002 06 04 | 644 | 0.4− | 0.3− | 2005 03 16 | 703 | 0.5+ | 0.5+ | 2005 04 09 | 703 | 0.9+ | 1.7− |
| 2002 06 04 | 644 | 0.0 | 0.3+ | 2005 03 16 | 703 | 0.2− | 0.2+ | 2005 04 09 | 703 | 1.2− | 0.2+ |
| 2002 06 04 | 644 | 0.0 | 0.1+ | 2005 04 02 | 699 | 0.6+ | 0.8+ | | | | |
| 2003 10 22 | 645 | 0.1+ | 0.0 | 2005 04 02 | 699 | 2.4+ | 0.7+ | | | | |

### 2005 $FH_{11}$ = 1999 $TS_{278}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.90814 | | | | | |
| $n$ | 0.27680770 | $\omega$ | 302.42603 | | +0.88120765 | +0.47010355 |
| $a$ | 2.3317605 | $\Omega$ | 29.62032 | | −0.39285496 | +0.78679165 |
| $e$ | 0.1685978 | $i$ | 5.77783 | | −0.26294118 | +0.39995194 |
| $P$ | 3.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 27 | 691 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 1.4− | 0.4− |
| 1998 05 27 | 691 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 1998 05 27 | 691 | 0.3+ | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 1999 10 06 | 704 | (1.4+ | 3.1−) | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.1+ | 1.2− | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.6+ |
| 1999 10 06 | 704 | 0.7+ | 1.6− | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.5+ | 1.5− | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1999 10 12 | 704 | 0.4+ | 0.9− | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 1999 10 12 | 704 | 0.2+ | 1.1− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 1999 10 12 | 704 | 0.2− | 2.0− | 2006 10 11 | 691 | 0.2+ | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 1999 10 12 | 704 | 0.9+ | 0.8− | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 10 12 | 704 | 1.3+ | 1.5− | 2006 10 15 | 691 | 0.4+ | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.3+ |
| 2005 03 17 | 691 | 0.9+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2005 03 17 | 691 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.4− | 0.1+ |
| 2005 03 17 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2005 04 05 | G96 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.9− | 0.2− |
| 2005 04 05 | G96 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.3+ |
| 2005 04 05 | G96 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.7+ |
| 2005 04 05 | G96 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 1.6− | 1.1− |
| 2005 04 18 | 691 | 0.3+ | 0.8+ | 2006 10 21 | 703 | 1.0− | 1.0+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2005 04 18 | 691 | 0.8+ | 0.8+ | 2006 10 21 | 703 | (3.1− | 1.8+) | 2006 11 17 | 703 | 1.0− | 0.8+ |
| 2005 04 18 | 691 | 0.0 | 0.7+ | 2006 10 21 | 703 | (2.4+ | 3.0+) | 2006 11 17 | 703 | 0.4+ | 0.3+ |
| 2005 05 04 | G96 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2005 05 04 | G96 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.8+ | 1.1+ |
| 2005 05 04 | G96 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.9+ | 0.8+ |
| 2005 05 04 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.7+ |
| 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2+ | | | | |
| 2006 09 19 | 691 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.0 | | | | |

### 2005 $FJ_{11}$ = 2002 $UU_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.91122 | | | | | |
| $n$ | 0.20443852 | $\omega$ | 109.94202 | | −0.94238523 | +0.28115521 |
| $a$ | 2.8538265 | $\Omega$ | 86.72538 | | −0.33186250 | −0.85400354 |
| $e$ | 0.0538396 | $i$ | 10.46150 | | +0.04215878 | −0.43775530 |
| $P$ | 4.82 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 01 13 | 699 | 0.8− | 0.4+ | 2005 04 30 | 691 | 0.2− | 0.1− |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 01 13 | 699 | 0.6− | 1.0+ | 2005 05 07 | 703 | 1.3− | 0.9+ |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2004 01 13 | 699 | 0.3− | 0.0 | 2005 05 07 | 703 | 0.5− | 1.1+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 01 13 | 699 | 1.2+ | 1.5− | 2005 05 07 | 703 | 0.0 | 1.5+ |
| 2003 12 28 | 704 | 0.3− | 0.2− | 2005 03 31 | 691 | 0.0 | 0.3− | 2005 05 07 | 703 | 0.1+ | 0.1+ |
| 2003 12 28 | 704 | 0.2− | 0.1− | 2005 03 31 | 691 | 0.3+ | 0.1+ | 2005 05 14 | 644 | 0.6+ | 0.1− |
| 2003 12 28 | 704 | 0.2+ | 0.5+ | 2005 03 31 | 691 | 0.2+ | 0.1− | 2005 05 14 | 644 | 0.3+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 1.1+ | 0.5− | 2005 04 30 | 691 | 0.2− | 0.1− | 2005 05 14 | 644 | 0.7+ | 0.2− |
| 2003 12 28 | 704 | 0.3− | 0.8+ | 2005 04 30 | 691 | 0.1+ | 0.1− | | | | |

**2005 FL$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.50426 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18671440 | $\omega$ | 325.28672 | | −0.99398411 | | +0.04989963 |
| $a$ | 3.0316857 | $\Omega$ | 217.94042 | | −0.02094249 | | −0.96035109 |
| $e$ | 0.0312745 | $i$ | 9.12403 | | −0.10750351 | | −0.27429148 |
| $P$ | 5.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.0 | 0.2+ | 2004 01 18 | 644 | 0.1+ | 0.8+ | 2005 05 01 | 644 | 0.4+ | 0.3+ |
| 2001 08 23 | 691 | 0.0 | 0.2+ | 2005 03 17 | G96 | 0.1− | 0.3+ | 2005 05 01 | 644 | 0.5+ | 0.2+ |
| 2001 08 23 | 691 | 0.2− | 0.4+ | 2005 03 17 | G96 | 0.4− | 0.6+ | 2005 05 01 | 644 | 0.3+ | 0.3+ |
| 2002 10 30 | 291 | 0.1+ | 0.2+ | 2005 03 17 | G96 | 0.6− | 0.3+ | 2005 05 11 | G96 | 0.3− | 1.4− |
| 2002 10 30 | 291 | 0.1− | 0.5+ | 2005 03 17 | G96 | 0.4− | 0.3+ | 2005 05 11 | G96 | 0.4− | 0.1− |
| 2002 10 30 | 291 | 0.2− | 0.4+ | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2005 05 11 | G96 | 0.2− | 0.5+ |
| 2004 01 18 | 644 | 0.1+ | 0.7+ | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2005 05 11 | G96 | 0.5− | 0.1− |
| 2004 01 18 | 644 | 0.3+ | 0.7+ | 2005 04 17 | 691 | 0.3+ | 0.4+ | | | | |

**2005 FM$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.80498 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29650462 | $\omega$ | 23.14443 | | −0.66516658 | | −0.73879943 |
| $a$ | 2.2273155 | $\Omega$ | 108.73834 | | +0.66595685 | | −0.65256997 |
| $e$ | 0.1034391 | $i$ | 6.56679 | | +0.33772013 | | −0.16830875 |
| $P$ | 3.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 12 | 461 | 0.5− | 0.5+ | 2005 03 31 | 691 | 0.4− | 0.0 | 2005 04 18 | 691 | 0.2+ | 0.0 |
| 2003 11 12 | 461 | 0.4− | 1.1+ | 2005 04 10 | 691 | 0.1+ | 0.3− | 2005 04 18 | 691 | 0.1+ | 0.1+ |
| 2003 11 12 | 461 | 0.1− | 1.0+ | 2005 04 10 | 691 | 0.0 | 0.1+ | 2005 04 18 | 691 | 0.2+ | 0.0 |
| 2003 11 20 | 645 | 0.0 | 0.1− | 2005 04 10 | 691 | 0.2− | 0.1− | 2005 05 07 | 703 | 0.6− | 0.1+ |
| 2003 11 20 | 645 | 0.0 | 0.1− | 2005 04 10 | 691 | 0.1− | 0.1+ | 2005 05 07 | 703 | 0.3− | 0.8+ |
| 2005 03 31 | 691 | 0.1− | 0.3+ | 2005 04 10 | 691 | 0.0 | 0.1− | 2005 05 07 | 703 | 0.4− | 1.3− |
| 2005 03 31 | 691 | 0.7+ | 0.2− | 2005 04 10 | 691 | 0.0 | 0.1+ | 2005 05 07 | 703 | 0.1− | 0.3+ |

**2005 GW**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.44038 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28240010 | $\omega$ | 280.83299 | | +0.64003242 | | +0.76642089 |
| $a$ | 2.3008739 | $\Omega$ | 29.18442 | | −0.65417228 | | +0.58068249 |
| $e$ | 0.1462935 | $i$ | 6.40336 | | −0.40301008 | | +0.27460310 |
| $P$ | 3.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 461 | 0.9+ | 0.2− | 2005 04 06 | 461 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.9+ | 0.5− |
| 2005 04 01 | 461 | 0.0 | 0.1+ | 2005 04 06 | 461 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.3− |
| 2005 04 01 | 461 | 0.1− | 0.1− | 2005 04 06 | 461 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.9+ | 0.9+ |
| 2005 04 01 | 461 | 0.1+ | 0.5− | 2005 04 06 | 461 | 1.3− | 0.1− | 2006 09 28 | 704 | 0.5+ | 0.7+ |
| 2005 04 01 | 461 | 0.2− | 0.3+ | 2005 04 06 | 461 | 0.4+ | 0.1− | 2006 09 28 | 704 | 0.1− | 0.2− |
| 2005 04 02 | 461 | 0.5+ | 0.1+ | 2005 05 09 | G96 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.7− | 0.6+ |
| 2005 04 02 | 461 | 0.3+ | 0.3+ | 2005 05 09 | G96 | 0.6+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.7+ |
| 2005 04 02 | 461 | 0.1+ | 0.1+ | 2005 05 09 | G96 | 0.1− | 0.4− | 2006 09 30 | 703 | (0.9+ | 2.1+) |
| 2005 04 02 | 461 | 0.1+ | 0.1− | 2005 05 09 | G96 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2005 04 02 | 461 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.1+ | 1.0− | 2006 09 30 | 703 | 0.2− | 0.8+ |
| 2005 04 03 | 461 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.1+ | 0.4− | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2005 04 03 | 461 | 0.4+ | 0.1− | 2006 09 12 | 703 | 0.1− | 0.6− | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2005 04 04 | 461 | 0.4− | 0.5− | 2006 09 12 | 703 | 0.7− | 0.1− | 2006 09 30 | 704 | 0.3+ | 0.3+ |
| 2005 04 04 | 461 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.8− | 2006 09 30 | 704 | 0.3+ | 0.6+ |
| 2005 04 04 | 461 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.6− | 1.0− | 2006 09 30 | 704 | 1.0− | 0.3− |
| 2005 04 04 | 461 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.3+ | 0.7+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2005 04 04 | 461 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.5+ | 0.3− |
| 2005 04 05 | 461 | 0.4+ | 0.2− | 2006 09 26 | 704 | 0.7− | 1.4− | 2006 11 21 | G96 | 0.1− | 0.5− |
| 2005 04 05 | 461 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.7− |

**2005 GV$_1$ = 2006 OB$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.95672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26227466 | $\omega$ | 164.63328 | | +0.17494130 | | +0.96130567 |
| $a$ | 2.4171216 | $\Omega$ | 115.05128 | | −0.92628740 | | +0.23395971 |
| $e$ | 0.2170035 | $i$ | 13.58602 | | −0.33374719 | | −0.14544505 |
| $P$ | 3.76 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 03 | 704 | (2.5− | 0.1−) | 2002 08 13 | 704 | 0.7+ | 0.4+ | 2006 07 31 | E12 | 0.8− | 0.1− |
| 1998 06 03 | 704 | (0.6− | 2.5+) | 2002 08 13 | 704 | 1.1+ | 0.2− | 2006 07 31 | E12 | 0.4+ | 0.1+ |
| 1998 06 03 | 704 | (1.4+ | 2.3+) | 2002 08 13 | 644 | 0.2− | 0.3− | 2006 07 31 | E12 | 0.5+ | 0.1− |
| 1998 06 03 | 704 | 0.7− | 0.5+ | 2002 08 13 | 644 | 0.1− | 0.4− | 2006 08 05 | E12 | 0.1+ | 0.6+ |
| 1998 06 25 | 704 | (0.3+ | 2.3−) | 2002 08 13 | 644 | 0.1− | 0.3− | 2006 08 05 | E12 | 0.5− | 1.0+ |
| 1998 06 25 | 704 | 0.8+ | 0.4− | 2002 08 19 | 644 | 0.2− | 0.0 | 2006 08 05 | E12 | 0.0 | 0.1+ |
| 1998 06 25 | 704 | 0.4− | 0.6+ | 2002 08 19 | 644 | 0.4− | 0.2+ | 2006 08 05 | E12 | 1.0− | 0.2− |
| 1998 06 25 | 704 | 0.5+ | 0.1− | 2002 08 19 | 644 | 0.2− | 0.2+ | 2006 09 22 | 703 | (2.0+ | 2.3−) |
| 2002 06 26 | 644 | 0.3− | 0.5− | 2005 03 09 | 703 | 0.4− | 0.4+ | 2006 09 22 | 703 | 0.7− | 0.9+ |
| 2002 06 26 | 644 | 0.3− | 0.2− | 2005 03 09 | 703 | 0.4+ | 0.1+ | 2006 09 22 | 703 | (1.6− | 2.0+) |
| 2002 06 26 | 644 | 0.2− | 0.2+ | 2005 03 09 | 703 | 0.3+ | 0.3+ | 2006 09 22 | 703 | (0.5+ | 3.4+) |
| 2002 07 05 | 704 | 0.1− | 0.1+ | 2005 03 09 | 703 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.7+ | 0.1− |
| 2002 07 05 | 704 | 1.2− | 0.3− | 2005 04 01 | 703 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.7− | 0.5− |
| 2002 07 05 | 704 | 0.2+ | 0.4− | 2005 04 01 | 703 | 0.5+ | 0.4+ | 2006 09 27 | 703 | 0.5+ | 0.3− |
| 2002 07 05 | 704 | 0.1+ | 0.0 | 2005 04 01 | 703 | (2.1+ | 0.9+) | 2006 09 27 | 703 | 0.3+ | 0.2− |
| 2002 07 15 | 644 | 0.4− | 0.1+ | 2005 04 01 | 703 | 0.3+ | 0.0 | 2006 10 12 | E12 | 0.6+ | 0.1− |
| 2002 07 15 | 644 | 0.4− | 0.1− | 2005 04 02 | 699 | 0.4+ | 0.3− | 2006 10 12 | E12 | 0.0 | 0.6+ |
| 2002 07 15 | 644 | 0.1− | 0.3− | 2005 04 02 | 699 | 0.0 | 0.4− | 2006 10 12 | E12 | 0.2− | 0.0 |
| 2002 08 13 | 704 | 0.7+ | 0.4+ | 2005 04 02 | 699 | 0.8− | 0.3+ | 2006 10 12 | E12 | 0.4− | 0.2+ |
| 2002 08 13 | 704 | 0.4+ | 0.2+ | 2005 04 02 | 699 | 0.7− | 0.3+ | | | | |
| 2002 08 13 | 704 | 0.6+ | 0.3+ | 2006 07 31 | E12 | 0.2+ | 0.1+ | | | | |

**2005 GR$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.63690 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25386735 | $\omega$ | 177.34438 | | −0.53811716 | | +0.84128245 |
| $a$ | 2.4701964 | $\Omega$ | 60.09520 | | −0.77441336 | | −0.46926266 |
| $e$ | 0.1414224 | $i$ | 3.41976 | | −0.33273693 | | −0.26839597 |
| $P$ | 3.88 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.0 | 0.1+ | 2005 04 12 | 704 | 1.2+ | 0.7+ | 2006 08 18 | 691 | 0.1− | 0.0 |
| 2005 04 01 | 691 | 0.0 | 0.3+ | 2005 04 15 | 699 | 0.8− | 0.2+ | 2006 08 18 | 691 | 0.2− | 0.2− |
| 2005 04 01 | 691 | 0.1− | 0.2+ | 2005 04 15 | 699 | 1.0+ | 0.2− | 2006 08 18 | 691 | 0.1− | 0.3− |
| 2005 04 02 | 644 | 0.2+ | 0.3+ | 2005 04 15 | 699 | 0.3− | 0.1− | 2006 08 27 | 691 | 0.0 | 0.5+ |
| 2005 04 02 | 644 | 0.1+ | 0.5+ | 2005 04 15 | 699 | 1.1− | 0.3− | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2005 04 02 | 644 | 0.2+ | 0.7+ | 2005 04 19 | 691 | 0.3+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 2005 04 12 | 691 | 0.1− | 0.0 | 2005 04 19 | 691 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.8+ | 0.0 |
| 2005 04 12 | 691 | 0.2− | 0.1− | 2005 04 19 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 0.5+ |
| 2005 04 12 | 691 | 0.2− | 0.1− | 2005 05 11 | G96 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.1+ | 1.3− |
| 2005 04 12 | 704 | 0.4+ | 1.2− | 2005 05 11 | G96 | 0.5− | 0.1+ | 2006 09 18 | 703 | (1.8+ | 1.5−) |
| 2005 04 12 | 704 | 0.0 | 0.4− | 2005 05 11 | G96 | 0.5− | 0.2+ | | | | |
| 2005 04 12 | 704 | 0.5+ | 0.3− | 2005 05 11 | G96 | 0.5− | 0.2− | | | | |

**2005 GW$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.91979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26637245 | $\omega$ | 25.85789 | | −0.77186175 | | +0.63539799 |
| $a$ | 2.3922681 | $\Omega$ | 193.66233 | | −0.59850253 | | −0.73799857 |
| $e$ | 0.1633891 | $i$ | 5.42593 | | −0.21453243 | | −0.22721688 |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 699 | 0.9+ | 1.1+ | 2005 04 10 | 691 | 0.2+ | 0.1+ | 2005 05 03 | 691 | 0.2− | 0.1− |
| 2005 04 01 | 699 | 1.1− | 0.1− | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2005 05 03 | 691 | 0.3+ | 0.1− |
| 2005 04 01 | 699 | 1.0+ | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.1+ | 2005 05 03 | 691 | 0.1+ | 0.0 |
| 2005 04 01 | 699 | 1.3+ | 0.8+ | 2005 04 10 | 691 | 0.0 | 0.1+ | 2005 05 08 | 703 | 0.3− | 0.3− |
| 2005 04 02 | G96 | 0.6− | 0.4− | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2005 05 08 | 703 | 0.4− | 0.4− |
| 2005 04 02 | G96 | 0.6− | 0.1− | 2005 04 11 | 691 | 0.0 | 0.1+ | 2005 05 08 | 703 | 0.7− | 0.5− |
| 2005 04 02 | G96 | 0.6− | 0.3− | 2005 04 11 | 691 | 0.2− | 0.2+ | 2005 05 08 | 703 | 0.4− | 0.6− |
| 2005 04 02 | G96 | 0.5− | 0.2− | 2005 04 11 | 691 | 0.6− | 0.5− | 2005 05 13 | 703 | 0.4− | 0.5− |
| 2005 04 05 | G96 | 0.2− | 0.3− | 2005 04 14 | 691 | 0.0 | 0.2+ | 2005 05 13 | 703 | 1.3− | 1.0− |
| 2005 04 05 | G96 | 0.2− | 0.2− | 2005 04 14 | 691 | 0.1− | 0.2+ | 2005 05 13 | 703 | 0.4− | 0.0 |
| 2005 04 05 | G96 | 0.6− | 0.2− | 2005 04 14 | 691 | 0.2− | 0.3+ | 2005 05 13 | 703 | 0.6− | 0.6− |
| 2005 04 05 | G96 | 0.6− | 0.2− | 2005 04 15 | A50 | 0.4− | 1.3− | 2005 05 14 | 691 | 0.2+ | 0.1− |
| 2005 04 06 | G96 | 0.4− | 0.1− | 2005 04 15 | A50 | (1.5− | 2.8+) | 2005 05 14 | 691 | 0.3+ | 0.2+ |
| 2005 04 06 | G96 | 0.6− | 0.5− | 2005 04 15 | A50 | 1.2− | 1.4+ | 2005 05 14 | 691 | 0.1+ | 0.1+ |
| 2005 04 06 | G96 | 0.4− | 0.2− | 2005 04 18 | 691 | 0.3+ | 0.1+ | 2005 05 18 | 644 | 0.3+ | 0.0 |
| 2005 04 06 | G96 | 0.3− | 0.3+ | 2005 04 18 | 691 | 0.2+ | 0.4+ | 2005 05 18 | 644 | 0.7+ | 0.5− |
| 2005 04 09 | 691 | 0.1+ | 0.2+ | 2005 04 18 | 691 | 0.0 | 0.2+ | 2005 05 18 | 644 | 0.0 | 0.2+ |
| 2005 04 09 | 691 | 0.2+ | 0.1+ | 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 2005 04 09 | 691 | 1.2+ | 1.4− | 2005 04 18 | 703 | 0.4− | 1.4− | 2006 09 28 | 691 | 0.3+ | 0.1+ |
| 2005 04 10 | G96 | 0.4− | 0.1− | 2005 04 18 | 703 | 0.4+ | 0.6− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2005 04 10 | G96 | 0.3− | 0.1+ | 2005 04 18 | 703 | 0.2+ | 0.8− | 2006 10 20 | G96 | 0.8− | 0.8+ |
| 2005 04 10 | G96 | 0.5− | 0.1− | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.7− | 0.5− |
| 2005 04 10 | G96 | 0.7− | 0.8+ | 2005 04 18 | 703 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.6+ | 0.4− |
| 2005 04 10 | 691 | 0.3+ | 0.6+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.4− |

**2005 GX$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.69881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26854104 | $\omega$ | 275.09332 | | +0.95075382 | +0.30057274 | |
| $a$ | 2.3793716 | $\Omega$ | 67.43123 | | −0.24187876 | +0.87213811 | |
| $e$ | 0.0229689 | $i$ | 4.69926 | | −0.19380876 | +0.38604551 | |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.5+ | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.6+ |
| 2005 04 01 | 691 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.0 | 0.3+ | 2006 09 20 | 703 | (0.0 | 1.8+) |
| 2005 04 01 | 691 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.1− | 0.5− | 2006 09 20 | 703 | 1.1− | 0.9+ |
| 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.5− | 0.2− |
| 2005 04 02 | 691 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.1− | 2006 09 25 | 699 | (2.3+ | 0.0 ) |
| 2005 04 02 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.7− | 2006 09 25 | 699 | 1.4+ | 0.2− |
| 2005 04 15 | 699 | 0.8+ | 0.9+ | 2006 08 29 | 703 | 0.3+ | 0.7− | 2006 09 25 | 699 | (1.6+ | 0.0 ) |
| 2005 04 15 | 699 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.4+ | 0.4− |
| 2005 04 15 | 699 | 0.9+ | 1.5+ | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.4+ |
| 2005 04 15 | 699 | 0.2+ | 0.5+ | 2006 09 14 | 703 | (1.8+ | 0.4−) | 2006 09 26 | 703 | 0.7+ | 0.1+ |
| 2005 05 03 | 691 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.2− | 2006 09 26 | 703 | 0.5+ | 0.5+ |
| 2005 05 03 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.1+ |
| 2005 05 03 | 691 | 0.4− | 0.4− | 2006 09 14 | 703 | 1.3− | 0.5− | | | | |
| 2006 08 29 | 703 | 0.6+ | 0.1− | 2006 09 14 | 703 | 1.1− | 0.6+ | | | | |

**2005 GU$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.19708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26118600 | $\omega$ | 262.20806 | | +0.81478352 | +0.56866574 | |
| $a$ | 2.4238335 | $\Omega$ | 63.06689 | | −0.46940963 | +0.76135714 | |
| $e$ | 0.1606818 | $i$ | 7.27540 | | −0.34026815 | +0.31137532 | |
| $P$ | 3.77 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.3− | 0.6− | 2006 09 18 | 703 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2002 08 20 | 644 | 0.5− | 0.9− | 2006 09 18 | 703 | 0.6− | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.5− |
| 2002 08 20 | 644 | 0.6− | 0.9− | 2006 09 21 | 699 | 1.3+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 09 03 | 608 | 1.0+ | 0.6+ | 2006 09 21 | 699 | 0.9− | 1.5+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2002 09 03 | 608 | 1.3+ | 0.9+ | 2006 09 21 | 699 | 1.2− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 09 03 | 608 | (2.3+ | 0.7+) | 2006 09 21 | 699 | (0.6+ | 2.6−) | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 09 12 | 644 | 0.2− | 0.6+ | 2006 09 25 | 699 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 09 12 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.0 | 1.4+ | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 2002 09 12 | 644 | 0.5− | 0.0 | 2006 09 25 | 699 | (1.9− | 1.7+) | 2006 10 22 | 703 | 0.7+ | 1.2− |
| 2005 04 01 | 691 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.2+ | 1.1− |
| 2005 04 01 | 691 | 0.2− | 0.1− | 2006 09 29 | 699 | 0.9+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.9− |
| 2005 04 01 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 1.3− | 0.3+ |
| 2005 04 02 | 691 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.2− | 0.7+ | 2006 11 13 | 703 | (1.6+ | 1.1−) |
| 2005 04 02 | 691 | 0.0 | 0.2− | 2006 09 29 | 699 | 1.2+ | 0.1− | 2006 11 13 | 703 | 0.2− | 1.2− |
| 2005 04 02 | 691 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 13 | 703 | 0.4− | 0.5+ |
| 2005 05 13 | 691 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.2− | 0.5− |
| 2005 05 13 | 691 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.3+ |
| 2005 05 13 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.2+ |
| 2006 09 18 | 703 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.6− | 0.7− | 2006 11 23 | G96 | 0.1+ | 0.1− |

**2005 GX$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.03914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29470892 | $\omega$ | 234.38876 | | +0.58301158 | +0.80927144 | |
| $a$ | 2.2363539 | $\Omega$ | 71.43082 | | −0.71872113 | +0.55501424 | |
| $e$ | 0.1886768 | $i$ | 4.35320 | | −0.37886335 | +0.19245502 | |
| $P$ | 3.34 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.2− | 0.0 | 2005 05 08 | 703 | 0.7+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2005 04 01 | 691 | 0.7+ | 0.4− | 2005 05 08 | 703 | 0.1+ | 0.5− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2005 04 01 | 691 | 0.3− | 0.1− | 2005 05 08 | 703 | 1.5− | 0.7+ | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2005 04 02 | 691 | 0.0 | 0.0 | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2005 04 02 | 691 | 0.3+ | 0.3+ | 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2005 04 02 | 691 | 0.6− | 0.2+ | 2005 05 13 | 691 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2005 04 02 | 644 | 0.4+ | 0.0 | 2006 10 20 | 695 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 04 02 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 695 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | 644 | 0.7+ | 0.1− | 2006 10 20 | 695 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2005 04 10 | 691 | 0.1− | 0.1+ | 2006 10 20 | 695 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2005 04 10 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2005 04 10 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 04 15 | 699 | (2.5− | 4.3+) | 2006 10 21 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2005 04 15 | 699 | 0.7+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2005 04 15 | 699 | 0.3+ | 0.8− | 2006 10 31 | G96 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 04 15 | 699 | (1.6− | 0.6−) | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2005 05 08 | 703 | 1.3− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.6− | | | | |

**2005 GE$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.17331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29144922 | $\omega$ | 231.34454 | | +0.59767923 | +0.79758645 | |
| $a$ | 2.2529979 | $\Omega$ | 75.55111 | | −0.70697479 | +0.57222642 | |
| $e$ | 0.1603434 | $i$ | 4.82534 | | −0.37810869 | +0.19082133 | |
| $P$ | 3.38 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.2+ | 0.2− | 2005 04 10 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | (4.6− | 0.2−) |
| 2005 04 01 | 691 | 0.1− | 0.2− | 2005 04 18 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 1.4+ | 0.5+ |
| 2005 04 01 | 691 | 0.1− | 0.4+ | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | (0.1+ | 2.3+) |
| 2005 04 02 | 691 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.0 |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 1.2+ | 0.6− |
| 2005 04 02 | 691 | 0.3+ | 0.5− | 2005 05 13 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 1.4− | 0.1+ |
| 2005 04 10 | 691 | 0.0 | 0.0 | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2005 04 10 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.7+ | | | | |

**2005 GX$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.21911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26403339 | $\omega$ | 200.19071 | | −0.47649100 | | +0.87304975 |
| $a$ | 2.4063760 | $\Omega$ | 41.53595 | | −0.78365386 | | −0.36832090 |
| $e$ | 0.2043144 | $i$ | 8.99178 | | −0.39855107 | | −0.31956821 |
| $P$ | 3.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 608 | 0.2+ | 0.3+ | 2005 04 11 | 699 | 0.2+ | 0.1+ | 2005 04 18 | 704 | 0.1− | 0.5+ |
| 2001 02 02 | 608 | 0.1+ | 0.5+ | 2005 04 11 | 699 | 0.1+ | 0.4+ | 2005 04 18 | 704 | 0.3− | 0.3− |
| 2001 02 02 | 608 | 0.1+ | 0.2− | 2005 04 11 | 699 | 0.3− | 0.4+ | 2005 04 20 | 705 | 0.3+ | 0.1− |
| 2005 04 01 | 691 | 0.2+ | 0.1− | 2005 04 11 | 699 | 0.5+ | 0.4− | 2005 04 20 | 705 | 0.1− | 0.4− |
| 2005 04 01 | 699 | 0.1+ | 0.3− | 2005 04 13 | 704 | 0.8+ | 0.8− | 2005 04 20 | 705 | 0.1− | 0.1− |
| 2005 04 01 | 691 | 0.1+ | 0.1− | 2005 04 13 | 704 | 0.1+ | 0.3+ | 2005 05 06 | G96 | 0.4− | 0.0 |
| 2005 04 01 | 699 | 0.2− | 0.4+ | 2005 04 13 | 704 | 1.0+ | 0.3+ | 2005 05 06 | G96 | 0.5− | 0.1+ |
| 2005 04 01 | 691 | 0.1+ | 0.1− | 2005 04 14 | 691 | 0.0 | 0.2+ | 2005 05 06 | G96 | 0.3− | 0.1+ |
| 2005 04 01 | 699 | 0.1+ | 0.6+ | 2005 04 14 | 691 | 0.0 | 0.1+ | 2005 05 06 | G96 | 0.0 | 0.2+ |
| 2005 04 01 | 699 | 0.7− | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2005 04 02 | 691 | 0.2+ | 0.2− | 2005 04 15 | 699 | (1.8+ | 0.1+) | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2005 04 02 | 691 | 0.2+ | 0.2− | 2005 04 15 | 699 | 0.7− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2005 04 02 | 691 | 0.1+ | 0.2− | 2005 04 15 | 699 | 0.4− | 0.6− | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2005 04 05 | 703 | 0.0 | 0.1− | 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.4+ |
| 2005 04 05 | 703 | 0.4− | 0.8− | 2005 04 18 | 703 | 1.2+ | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.4− |
| 2005 04 05 | 703 | 1.2− | 0.9+ | 2005 04 18 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2005 04 05 | 703 | (0.5− | 2.1−) | 2005 04 18 | 703 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2005 04 07 | 704 | 0.4− | 0.7− | 2005 04 18 | 703 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.0 |
| 2005 04 07 | 704 | 0.4− | 0.3− | 2005 04 18 | 703 | 0.5− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2005 04 07 | 704 | 0.9− | 0.9+ | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2005 04 10 | 691 | 0.0 | 0.0 | 2005 04 18 | 704 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 04 10 | 691 | 0.1+ | 0.1− | 2005 04 18 | 704 | 0.5+ | 1.4+ | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2005 04 10 | 691 | 0.0 | 0.0 | 2005 04 18 | 704 | 0.8− | 0.9− | 2006 11 16 | G96 | 0.2− | 0.5− |

**2005 GG$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.04181 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26252172 | $\omega$ | 54.70198 | | −0.63171382 | | +0.77517304 |
| $a$ | 2.4156048 | $\Omega$ | 176.10159 | | −0.73925797 | | −0.59981361 |
| $e$ | 0.1917825 | $i$ | 5.62509 | | −0.23331375 | | −0.19831889 |
| $P$ | 3.75 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 04 10 | 691 | 0.0 | 0.0 | 2005 04 18 | 691 | 0.3− | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 04 11 | 699 | 0.4− | 0.0 | 2005 05 12 | 691 | 0.1− | 0.0 |
| 2005 04 01 | 691 | 0.0 | 0.5+ | 2005 04 11 | 699 | 1.3+ | 0.1+ | 2005 05 12 | 691 | 0.2− | 0.1− |
| 2005 04 01 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 699 | 0.4+ | 0.7+ | 2005 05 12 | 691 | 0.1− | 0.1− |
| 2005 04 01 | 691 | 0.1− | 0.1− | 2005 04 11 | 699 | 0.7+ | 0.6− | 2006 09 25 | 691 | 0.5− | 0.3+ |
| 2005 04 02 | 691 | 0.0 | 0.1+ | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.4+ |
| 2005 04 02 | 691 | 0.2+ | 0.1+ | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2005 04 02 | 691 | 0.0 | 0.1+ | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.4+ |
| 2005 04 10 | 691 | 0.1+ | 0.1+ | 2005 04 18 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2005 04 10 | 691 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.4+ |

**2005 GQ$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.46739 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22330882 | $\omega$ | 237.77712 | | +0.52522106 | | +0.83588777 |
| $a$ | 2.6907011 | $\Omega$ | 64.71702 | | −0.70929704 | | +0.53356885 |
| $e$ | 0.2339889 | $i$ | 10.15881 | | −0.47014950 | | +0.12882511 |
| $P$ | 4.41 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 05 08 | 260 | 1.2+ | 0.6+ | 2005 05 07 | 703 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.8− | 0.6+ |
| 1983 05 08 | 260 | 1.1− | 0.4+ | 2005 05 07 | 703 | 0.4− | 0.5− | 2006 10 22 | 703 | 0.0 | 0.0 |
| 1993 11 21 | 691 | 0.9+ | 0.0 | 2005 05 07 | 703 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 1993 11 21 | 691 | 0.5− | 0.2− | 2005 05 11 | 699 | 1.0+ | 0.3− | 2006 10 22 | 703 | 0.3− | 0.3− |
| 1993 11 21 | 691 | 0.3− | 0.7+ | 2005 05 11 | 699 | 0.5+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2005 04 01 | 699 | 0.7− | 0.2+ | 2005 05 11 | 699 | 0.3+ | 0.5− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2005 04 01 | 699 | 0.5+ | 0.8+ | 2005 05 11 | 699 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.5− | 0.1− |
| 2005 04 01 | 699 | 0.3+ | 0.0 | 2005 05 12 | 704 | 0.4+ | 1.0+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2005 04 01 | 699 | 1.3+ | 0.5+ | 2005 05 12 | 704 | 1.1+ | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2005 04 02 | 644 | 0.7+ | 0.0 | 2005 05 12 | 704 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2005 04 02 | 644 | 0.4+ | 0.0 | 2005 05 12 | 704 | 0.7+ | 0.8+ | 2006 10 28 | 703 | 0.2− | 0.0 |
| 2005 04 02 | 644 | 0.8+ | 0.0 | 2005 05 12 | 704 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.7− | 0.1+ |
| 2005 04 05 | 704 | 1.0+ | 1.0− | 2006 09 28 | G92 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.3+ |
| 2005 04 05 | 704 | (2.0+ | 0.1+) | 2006 09 28 | G92 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.2− | 0.6+ |
| 2005 04 05 | 704 | 1.1+ | 0.1− | 2006 09 28 | G92 | 0.2+ | 0.2+ | 2006 11 13 | 703 | 0.8− | 0.6− |
| 2005 04 05 | 704 | 0.0 | 0.0 | 2006 09 30 | G92 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.7− | 1.0− |
| 2005 04 07 | 691 | 0.0 | 0.2+ | 2006 09 30 | G92 | 0.6− | 0.4+ | 2006 11 13 | 703 | 0.3+ | 0.9+ |
| 2005 04 07 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.5− | 2006 11 13 | 703 | 0.7− | 0.6+ |
| 2005 04 07 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.5− | 2006 11 14 | 704 | (0.1+ | 2.1+) |
| 2005 04 15 | 691 | 0.0 | 0.5+ | 2006 09 30 | G92 | 0.7− | 0.3+ | 2006 11 14 | 704 | 0.3− | 0.8+ |
| 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 1.1− | 2006 11 14 | 704 | 0.4− | 1.2+ |
| 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 11 14 | 704 | 0.1− | 0.4+ |
| 2005 04 18 | 703 | 1.2− | 0.5− | 2006 10 15 | 461 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 1.0+ | 0.4+ |
| 2005 04 18 | 703 | 0.4− | 0.4− | 2006 10 16 | 461 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2005 04 18 | 703 | 0.8− | 0.3− | 2006 10 16 | 461 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2005 04 18 | 703 | 1.1− | 0.9− | 2006 10 16 | 461 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2005 05 03 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 461 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2005 05 03 | 704 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2005 05 03 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2005 05 03 | 704 | 0.6− | 1.3+ | 2006 10 16 | 703 | 0.9− | 0.9+ | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2005 05 07 | 703 | 0.1+ | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.5+ | | | | |

**2005 GU$_8$ = 2006 SH$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.39971 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29877800 | $\omega$ | 124.37335 | | +0.51778265 | | +0.85549063 |
| $a$ | 2.2160028 | $\Omega$ | 176.79201 | | −0.81624181 | | +0.49612928 |
| $e$ | 0.1289721 | $i$ | 6.23225 | | −0.25622340 | | +0.14829538 |
| $P$ | 3.30 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 04 | 644 | 0.0 | 0.4+ | 2005 04 04 | 461 | 0.4+ | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 2002 05 04 | 644 | 0.2+ | 0.7+ | 2005 04 04 | 461 | 0.5+ | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.0 |
| 2002 05 04 | 644 | 0.3+ | 0.6+ | 2005 04 04 | 461 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.3− | 0.1+ |
| 2002 05 23 | 644 | 0.0 | 0.0 | 2005 04 04 | 461 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 05 23 | 644 | 0.4− | 0.6− | 2005 04 04 | 461 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2002 05 23 | 644 | 0.1+ | 0.1+ | 2005 04 05 | 461 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.4+ |
| 2002 06 10 | 644 | (0.7+ | 1.5+) | 2005 04 05 | 461 | 0.2+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2002 06 10 | 644 | (0.6+ | 1.7+) | 2005 04 05 | 461 | 0.3+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 06 10 | 644 | (0.8+ | 1.6+) | 2005 04 05 | 461 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2003 11 24 | 691 | 0.0 | 0.1− | 2005 04 05 | 461 | 0.7− | 1.2+ | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2003 11 24 | 691 | 0.0 | 0.1+ | 2005 04 06 | 461 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2003 11 24 | 691 | 0.3+ | 0.1− | 2005 04 06 | 461 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2003 12 17 | 691 | 0.2− | 0.1+ | 2005 04 06 | 461 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.8+ | 1.0− |
| 2003 12 17 | 691 | 0.4− | 0.1+ | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.1− | 1.0− |
| 2003 12 17 | 691 | 0.3+ | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2005 03 04 | G96 | 0.4+ | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.2− |
| 2005 03 04 | G96 | 0.6− | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2005 03 04 | G96 | 0.3− | 0.7− | 2006 09 14 | 703 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2005 03 04 | G96 | 0.8− | 0.3− | 2006 09 14 | 703 | 1.0− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2005 04 02 | 461 | 0.1+ | 0.4+ | 2006 09 14 | 703 | (1.6− | 1.3+) | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2005 04 02 | 461 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2005 04 02 | 461 | 0.2− | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2005 04 02 | 461 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2005 04 02 | 461 | 0.9+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | | | | |

**2005 GF$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.25611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17647287 | $\omega$ | 74.72561 | | −0.50868123 | +0.85902238 | |
| $a$ | 3.1478746 | $\Omega$ | 164.29870 | | −0.84882524 | −0.48918771 | |
| $e$ | 0.2129615 | $i$ | 12.30065 | | −0.14401086 | −0.15091698 | |
| $P$ | 5.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 645 | 0.1− | 0.0 | 2005 05 15 | 644 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.2+ | |
| 2001 09 21 | 645 | 0.1+ | 0.1+ | 2005 05 15 | 644 | 0.2+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.2+ | |
| 2005 04 02 | 621 | 0.1+ | 0.0 | 2005 05 19 | 703 | 0.1− | 1.2+ | 2006 08 27 | 691 | 0.2− | 0.2+ | |
| 2005 04 02 | 621 | 0.4− | 0.0 | 2005 05 19 | 703 | 1.0− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.5− | |
| 2005 04 02 | 621 | 0.1− | 0.1− | 2005 05 19 | 703 | (0.5+ | 2.2−) | 2006 09 26 | G96 | 0.2+ | 0.4− | |
| 2005 04 03 | 621 | 0.1+ | 0.3− | 2005 05 19 | 703 | 0.2+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.2− | |
| 2005 04 03 | 621 | 0.1− | 0.3− | 2005 05 20 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.0 | |
| 2005 04 03 | 621 | 0.3+ | 0.1+ | 2005 05 20 | 644 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.3− | 0.6− | |
| 2005 05 04 | 703 | 1.1− | 0.2+ | 2005 05 20 | 644 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.1− | |
| 2005 05 04 | 703 | 0.2− | 0.3− | 2005 05 31 | 699 | (2.5+ | 0.3−) | 2006 09 30 | G96 | 0.3+ | 0.5− | |
| 2005 05 04 | 703 | 0.5− | 0.6+ | 2005 05 31 | 699 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.6+ | 0.5− | |
| 2005 05 04 | 703 | 0.2− | 0.3− | 2005 05 31 | 699 | (2.1+ | 1.5+) | 2006 10 20 | G96 | 1.0+ | 0.4+ | |
| 2005 05 13 | 703 | 0.8+ | 0.2+ | 2005 05 31 | 703 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.4+ | 0.3+ | |
| 2005 05 13 | 703 | 0.7+ | 1.1+ | 2005 05 31 | 703 | 0.6− | 0.9− | 2006 10 20 | G96 | 0.3− | 0.3− | |
| 2005 05 13 | 703 | 0.1+ | 1.3+ | 2005 05 31 | 699 | 1.2+ | 0.6− | 2006 10 20 | G96 | 0.3− | 0.8− | |
| 2005 05 13 | 703 | 0.5− | 0.6+ | 2005 05 31 | 703 | 1.0+ | 1.0− | | | | | |
| 2005 05 15 | 644 | 0.1+ | 0.0 | 2005 05 31 | 703 | 0.8− | 0.8− | | | | | |

**2005 GP$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.62115 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26610804 | $\omega$ | 280.24763 | | +0.35021527 | +0.93242914 | |
| $a$ | 2.3938525 | $\Omega$ | 11.51876 | | −0.58478738 | +0.29190262 | |
| $e$ | 0.1828834 | $i$ | 26.47522 | | −0.73169187 | +0.21299944 | |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 03 | 461 | 0.3+ | 0.3− | 2005 04 06 | 461 | 1.0− | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.2− | |
| 2005 04 03 | 461 | 0.2− | 0.0 | 2005 04 09 | G96 | 0.2− | 0.7+ | 2006 09 20 | 704 | 0.4+ | 0.5− | |
| 2005 04 03 | 461 | 1.2+ | 0.0 | 2005 04 09 | G96 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.8+ | 1.0− | |
| 2005 04 03 | 461 | 0.1+ | 0.1+ | 2005 04 09 | G96 | (0.5− | 2.9−) | 2006 09 20 | 704 | 0.7+ | 0.3− | |
| 2005 04 04 | 461 | 0.1+ | 0.1+ | 2005 04 09 | G96 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.2+ | |
| 2005 04 04 | 461 | 0.1− | 0.4+ | 2005 04 28 | 461 | 0.1− | 0.5− | 2006 09 25 | 691 | 0.6− | 0.1+ | |
| 2005 04 04 | 461 | 0.8− | 0.7+ | 2005 04 28 | 461 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.3− | 0.2+ | |
| 2005 04 04 | 461 | 0.5+ | 0.1− | 2005 05 12 | 461 | 0.1− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.5− | |
| 2005 04 04 | 461 | 0.2− | 0.1+ | 2005 05 12 | 461 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.2− | |
| 2005 04 04 | 461 | 1.4+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− | |
| 2005 04 05 | 461 | 0.1− | 0.4− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− | |
| 2005 04 05 | 461 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 1.1+ | 0.4+ | |
| 2005 04 05 | 461 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 0.7+ | 0.2+ | |
| 2005 04 06 | 461 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.7− | 2006 10 17 | 703 | 0.4+ | 1.1+ | |
| 2005 04 06 | 461 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.9− | 0.5− | 2006 10 17 | 703 | 0.6+ | 0.1+ | |
| 2005 04 06 | 461 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.4− | | | | | |

**2005 GU$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.00979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28973474 | $\omega$ | 202.48164 | | −0.74948508 | +0.66099862 | |
| $a$ | 2.2618771 | $\Omega$ | 19.04136 | | −0.58895460 | −0.64036166 | |
| $e$ | 0.1121953 | $i$ | 6.47346 | | −0.30233195 | −0.39117487 | |
| $P$ | 3.40 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 16 | 691 | 0.1+ | 0.3+ | 2005 04 05 | 926 | 0.4− | 0.1− | 2006 09 19 | 703 | (1.1− | 2.3−) | |
| 2003 11 16 | 691 | 0.4− | 0.9+ | 2005 04 05 | 926 | 0.9+ | 0.2− | 2006 09 19 | 703 | 0.8− | 0.2− | |
| 2003 11 16 | 691 | 0.0 | 0.5− | 2005 04 07 | 704 | 0.3− | 0.9+ | 2006 09 24 | 291 | 0.0 | 0.3+ | |
| 2005 03 09 | G96 | 0.1− | 0.0 | 2005 04 07 | 704 | 0.4− | 0.9− | 2006 09 24 | 291 | 0.1+ | 0.5+ | |
| 2005 03 09 | G96 | 0.4− | 0.2+ | 2005 04 07 | 704 | 0.3− | 0.6− | 2006 09 24 | 291 | 0.0 | 0.1− | |
| 2005 03 09 | G96 | 0.3− | 0.1+ | 2005 04 11 | 926 | 0.0 | 0.1+ | 2006 09 25 | 291 | 0.0 | 0.3+ | |
| 2005 03 09 | G96 | 0.6− | 0.2− | 2005 04 11 | 926 | 0.0 | 0.4+ | 2006 09 25 | 291 | 0.4− | 0.2+ | |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 926 | 0.1− | 0.3+ | 2006 09 25 | 291 | 0.3− | 0.2+ | |
| 2005 04 02 | 691 | 0.2+ | 0.3+ | 2005 04 11 | 926 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | |
| 2005 04 02 | 691 | 0.2+ | 0.4+ | 2005 04 11 | 926 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.5− | 0.3− | |
| 2005 04 03 | 185 | 0.8+ | 0.5− | 2005 04 14 | 185 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.3− | |
| 2005 04 03 | 185 | 0.7+ | 0.0 | 2005 04 14 | 185 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.4− | 0.4− | |
| 2005 04 04 | 185 | 0.2+ | 0.2+ | 2005 04 15 | 926 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | |
| 2005 04 04 | 185 | 0.1+ | 0.2− | 2005 04 15 | 926 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1− | |
| 2005 04 05 | 699 | 0.7− | 0.1+ | 2005 04 15 | 926 | 0.5− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | |
| 2005 04 05 | 699 | 1.3+ | 0.4+ | 2005 05 06 | 926 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.1− | |
| 2005 04 05 | 699 | 1.1+ | 0.9− | 2005 05 06 | 926 | 0.3− | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.3− | |
| 2005 04 05 | 699 | 0.9− | 1.3+ | 2005 05 06 | 926 | 0.1+ | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.5− | |
| 2005 04 05 | 926 | 1.3+ | 0.2+ | 2006 09 19 | 703 | (0.7− | 1.6−) | 2006 10 21 | G96 | 0.2− | 0.2− | |

**2005 GZ$_9$ = 2006 SJ$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.65788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37946278 | $\omega$ | 198.68239 | | −0.36061064 | −0.88720868 | |
| $a$ | 1.8895422 | $\Omega$ | 273.29158 | | +0.88827624 | −0.23256795 | |
| $e$ | 0.0898783 | $i$ | 16.75390 | | +0.28447372 | −0.39846318 | |
| $P$ | 2.60 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | E12 | 0.1+ | 0.5+ | 2005 04 06 | 413 | 0.2− | 0.3− | 2006 09 25 | 703 | 0.9− | 0.5+ | |
| 2005 04 01 | E12 | 0.4− | 0.0 | 2006 09 18 | 703 | (1.9+ | 0.5−) | 2006 09 25 | 703 | 0.6− | 0.8+ | |
| 2005 04 01 | E12 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.5− | 2006 09 25 | 703 | 0.1+ | 0.1+ | |
| 2005 04 01 | E12 | 0.6+ | 0.8+ | 2006 09 18 | 703 | 0.3+ | 0.9+ | 2006 10 20 | 703 | 0.4− | 0.2− | |
| 2005 04 02 | 413 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.6− | 2006 10 20 | 703 | 0.8− | 0.4− | |
| 2005 04 02 | 413 | 0.2+ | 0.3− | 2006 09 22 | 699 | 0.7+ | 0.3+ | 2006 10 20 | 703 | 0.1+ | 0.7− | |
| 2005 04 03 | 413 | 0.1+ | 0.2− | 2006 09 22 | 699 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.0 | |
| 2005 04 03 | 413 | 0.8− | 0.1− | 2006 09 22 | 699 | 0.2− | 1.0− | 2006 10 27 | 703 | 0.0 | 0.0 | |
| 2005 04 06 | 413 | 0.2− | 0.3− | 2006 09 22 | 699 | 0.3+ | 0.3− | 2006 10 27 | 703 | 0.5+ | 0.3+ | |
| 2005 04 06 | 413 | 0.2− | 0.3− | 2006 09 25 | 703 | 1.0+ | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.0 | |

**2005 GD$_{10}$ = 2006 RE$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.98713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23361034 | $\omega$ | 262.62628 | | −0.25677641 | +0.96581563 | |
| $a$ | 2.6110069 | $\Omega$ | 352.21500 | | −0.75027713 | −0.22240904 | |
| $e$ | 0.1874596 | $i$ | 15.22905 | | −0.60922090 | −0.13317052 | |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 703 | 0.0 | 0.7− | 2005 04 06 | G92 | 0.5+ | 0.3− | 2006 08 27 | 699 | 1.2+ | 0.2+ | |
| 2005 03 13 | 703 | 0.1+ | 0.6− | 2005 04 06 | G92 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 1.0− | 0.7− | |
| 2005 03 13 | 703 | 0.1+ | 0.9+ | 2005 04 06 | G92 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.1− | 0.2+ | |
| 2005 03 13 | 703 | 0.3− | 0.2− | 2005 04 06 | 704 | 0.8+ | 0.4+ | 2006 09 12 | 703 | 0.2− | 0.1− | |
| 2005 04 04 | G92 | 0.6+ | 0.2− | 2005 04 06 | 704 | 0.5+ | 0.0 | 2006 09 12 | 703 | 1.0− | 1.2− | |
| 2005 04 04 | G92 | 0.0 | 0.5− | 2005 04 06 | 704 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1− | |
| 2005 04 04 | G92 | 0.2+ | 0.2− | 2005 04 06 | 704 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.3+ | 0.0 | |
| 2005 04 05 | G92 | (2.7− | 1.8+) | 2006 08 27 | 699 | 0.4+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | |
| 2005 04 05 | G92 | (2.1− | 1.4+) | 2006 08 27 | 699 | (2.4+ | 0.3+) | 2006 09 16 | 699 | (0.4+ | 2.3+) | |
| 2005 04 05 | G92 | 1.4− | 1.0+ | 2006 08 27 | 699 | (2.9+ | 0.6+) | 2006 09 16 | 699 | (0.1+ | 1.9+) | |
| 2005 04 05 | 703 | 0.9− | 0.9+ | 2006 08 27 | 699 | (0.8+ | 1.8+) | 2006 09 16 | 699 | 0.1− | 0.5+ | |
| 2005 04 05 | 703 | 0.0 | 0.3+ | 2006 08 27 | 699 | 0.1− | 0.1− | 2006 09 16 | 699 | (0.0 | 3.1+) | |
| 2005 04 05 | 703 | 0.0 | 0.3− | 2006 08 27 | 699 | (2.8+ | 0.6+) | | | | | |
| 2005 04 05 | 703 | 0.6− | 0.8− | 2006 08 27 | 699 | 0.6− | 0.7+ | | | | | |

**2005 GX$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 191.96523 | | (2000.0) | | | |
| $n$ | 0.25813649 | $\omega$ | 17.37990 | | −0.60051354 | −0.79882903 |
| $a$ | 2.4428855 | $\Omega$ | 109.54105 | | +0.72909194 | −0.56521000 |
| $e$ | 0.1403030 | $i$ | 2.15490 | | +0.32834194 | −0.20593649 |
| $P$ | 3.82 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.1+ | 0.0 | 2005 03 12 | 691 | 0.1− | 0.2− | 2005 05 04 | 691 | 0.0 | 0.0 |
| 2001 03 15 | 691 | 0.1+ | 0.1− | 2005 04 01 | 691 | 0.0 | 0.2+ | 2005 05 04 | 691 | 0.1− | 0.3+ |
| 2001 03 15 | 691 | 0.3− | 0.0 | 2005 04 01 | 691 | 0.1− | 0.1+ | 2005 05 04 | 691 | 0.2+ | 0.1+ |
| 2003 10 20 | 691 | 0.1− | 0.0 | 2005 04 01 | 691 | 0.1− | 0.5+ | 2005 05 11 | G96 | 0.2+ | 0.4− |
| 2003 10 20 | 691 | 0.1+ | 0.2+ | 2005 04 04 | 703 | 0.1− | 0.8− | 2005 05 11 | G96 | 0.4− | 0.0 |
| 2003 10 20 | 691 | 0.1− | 0.2+ | 2005 04 04 | 703 | 0.3+ | 0.1+ | 2005 05 11 | G96 | 0.5− | 0.4− |
| 2005 03 12 | 691 | 0.4+ | 0.1+ | 2005 04 04 | 703 | 0.4− | 0.2− | 2005 05 11 | G96 | 0.3− | 0.0 |
| 2005 03 12 | 691 | 0.0 | 0.2− | 2005 04 04 | 703 | 1.1+ | 0.3+ | | | | |

**2005 GP$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 62.32684 | | (2000.0) | | | |
| $n$ | 0.22990047 | $\omega$ | 185.63178 | | +0.46211281 | +0.87597410 |
| $a$ | 2.6390208 | $\Omega$ | 111.95749 | | −0.80771173 | +0.48011766 |
| $e$ | 0.2608534 | $i$ | 8.57444 | | −0.36613319 | +0.04643715 |
| $P$ | 4.29 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 699 | 1.4+ | 0.7+ | 2005 05 02 | 683 | 0.4− | 1.0− | 2006 10 12 | 644 | 0.6+ | 0.6+ |
| 2005 04 01 | 699 | 1.2+ | 0.5+ | 2005 05 04 | 703 | 0.7− | 1.0− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2005 04 01 | 699 | 0.2− | 1.5+ | 2005 05 04 | 703 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.6− |
| 2005 04 01 | 699 | 0.7+ | 0.2− | 2005 05 04 | 703 | (0.2− | 3.9−) | 2006 10 16 | 703 | 0.6− | 1.0− |
| 2005 04 04 | 703 | 0.2− | 0.1+ | 2005 05 04 | 703 | 1.2− | 0.1− | 2006 10 16 | 703 | 0.6− | 1.2+ |
| 2005 04 04 | 703 | 0.5− | 0.8− | 2005 05 11 | 703 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2005 04 04 | 703 | 0.6− | 0.1− | 2005 05 11 | 703 | 0.8+ | 1.3+ | 2006 10 22 | 703 | 0.8− | 0.0 |
| 2005 04 04 | 703 | 0.3− | 0.2+ | 2005 05 11 | 703 | 0.1+ | 0.1− | 2006 10 22 | 703 | (1.0+ | 1.6−) |
| 2005 04 13 | 703 | 0.0 | 1.0− | 2005 05 11 | 703 | (1.3− | 2.3+) | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2005 04 13 | 703 | 0.4+ | 0.7− | 2005 05 13 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | (1.5− | 0.7+) |
| 2005 04 13 | 703 | (0.8− | 2.4−) | 2005 05 13 | 704 | 0.3+ | 0.8+ | 2006 11 17 | 644 | 0.5+ | 0.2− |
| 2005 04 13 | 703 | 0.1− | 0.1− | 2005 05 13 | 704 | 0.7+ | 0.4+ | 2006 11 17 | 644 | 0.3+ | 0.0 |
| 2005 05 02 | 683 | (0.7− | 1.7−) | 2005 05 13 | 704 | 0.4− | 0.5− | 2006 11 17 | 644 | 0.2+ | 0.1− |
| 2005 05 02 | 683 | (1.7+ | 1.1+) | 2006 10 12 | 644 | 0.3+ | 0.5+ | | | | |

**2005 GW$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.85590 | | (2000.0) | | | |
| $n$ | 0.23214311 | $\omega$ | 223.24266 | | +0.23723588 | +0.94443609 |
| $a$ | 2.6219970 | $\Omega$ | 61.69228 | | −0.80594499 | +0.32209780 |
| $e$ | 0.1781476 | $i$ | 14.97572 | | −0.54237608 | −0.06552461 |
| $P$ | 4.25 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 699 | (1.8− | 1.8+) | 2005 05 04 | 703 | 0.0 | 0.4− | 2006 09 25 | 703 | 0.3+ | 1.0+ |
| 2005 04 01 | 699 | 0.5− | 0.1+ | 2005 05 04 | 703 | 0.5− | 0.4− | 2006 09 25 | 703 | 0.7− | 0.7+ |
| 2005 04 01 | 699 | 0.8+ | 0.3+ | 2005 05 04 | 703 | 0.5− | 0.4+ | 2006 09 25 | 703 | 1.0+ | 0.8+ |
| 2005 04 01 | 699 | 0.3− | 0.4+ | 2005 05 10 | 291 | 0.2+ | 0.2− | 2006 09 25 | 703 | 0.1+ | 0.0 |
| 2005 04 04 | 703 | 0.9− | 0.2+ | 2005 05 10 | 291 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2005 04 04 | 703 | 0.3+ | 0.4− | 2005 05 10 | 291 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.3− |
| 2005 04 04 | 703 | 0.6− | 0.2− | 2005 05 15 | 644 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2005 04 04 | 703 | 0.2+ | 0.6+ | 2005 05 15 | 644 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.7− |
| 2005 04 09 | 704 | 0.1− | 1.2− | 2005 05 15 | 644 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.5− |
| 2005 04 09 | 704 | 0.3− | 0.9+ | 2005 06 03 | 703 | 1.0− | 0.9+ | 2006 10 21 | 703 | 0.3+ | 0.5− |
| 2005 04 09 | 704 | 0.7+ | 0.3+ | 2005 06 03 | 703 | (1.7− | 2.4+) | 2006 10 21 | 703 | 1.0− | 0.4− |
| 2005 04 09 | 704 | 0.3− | 0.4− | 2005 06 03 | 703 | (2.2− | 0.7+) | | | | |
| 2005 05 04 | 703 | 0.0 | 0.4+ | 2005 06 03 | 703 | (2.1− | 0.3+) | | | | |

**2005 GT$_{16}$ = 2006 ST$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 144.02851 | | (2000.0) | | | |
| $n$ | 0.29555125 | $\omega$ | 23.32601 | | −0.84918790 | +0.52805412 |
| $a$ | 2.2321028 | $\Omega$ | 188.55614 | | −0.49086505 | −0.79361981 |
| $e$ | 0.1594433 | $i$ | 2.39783 | | −0.19475986 | −0.30220264 |
| $P$ | 3.33 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 699 | 0.4− | 0.2+ | 2005 04 04 | 704 | 0.3+ | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2005 03 08 | 699 | 1.4− | 0.1− | 2005 04 04 | 704 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2005 03 08 | 699 | (1.4+ | 2.3−) | 2005 04 30 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1− | 0.8+ |
| 2005 03 08 | 699 | 0.2− | 0.4+ | 2005 04 30 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 2005 03 17 | 691 | 0.2− | 0.6+ | 2005 04 30 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2005 03 17 | 691 | 1.1+ | 0.6− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.5− | 0.4− |
| 2005 03 17 | 691 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 16 | G96 | 0.3− | 0.3+ |
| 2005 04 02 | 644 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2005 04 02 | 644 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.4− | 0.3+ |
| 2005 04 02 | 644 | 0.4+ | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.1− | | | | |
| 2005 04 04 | 704 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.0 | | | | |

**2005 GF$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.66214 | | (2000.0) | | | |
| $n$ | 0.28914283 | $\omega$ | 188.78369 | | +0.98837862 | −0.15201215 |
| $a$ | 2.2649629 | $\Omega$ | 179.95961 | | +0.14532930 | +0.94477608 |
| $e$ | 0.0366582 | $i$ | 6.35787 | | +0.04457684 | +0.29032820 |
| $P$ | 3.41 | $H$ | 18.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 05 | 691 | 0.1+ | 0.3− | 2003 10 16 | 691 | 0.4− | 0.4+ | 2005 04 02 | G96 | 0.4− | 0.0 |
| 1996 09 05 | 691 | 0.2+ | 0.4− | 2003 10 16 | 691 | 0.7− | 0.1+ | 2005 04 02 | G96 | 0.2+ | 0.0 |
| 1996 09 05 | 691 | 0.1− | 0.0 | 2003 10 16 | 691 | 0.7− | 0.3+ | 2005 04 02 | G96 | 0.2− | 0.2− |
| 2003 09 21 | 291 | 0.3+ | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.1− | 2005 04 02 | G96 | 0.1− | 0.3+ |
| 2003 09 21 | 291 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.2− | 2005 04 04 | G96 | 0.1− | 0.1− |
| 2003 09 21 | 291 | 0.4+ | 0.0 | 2005 03 11 | G96 | 0.2+ | 0.1+ | 2005 04 04 | G96 | 0.1+ | 0.1+ |
| 2003 09 28 | 691 | 0.1− | 0.4+ | 2005 03 11 | G96 | 0.2− | 0.4− | 2005 04 04 | G96 | 0.1− | 0.1− |
| 2003 09 28 | 691 | 0.3+ | 0.1+ | 2005 03 11 | G96 | 0.1+ | 0.1+ | 2005 04 04 | G96 | 0.5+ | 0.2− |
| 2003 09 28 | 691 | 0.4+ | 0.3+ | 2005 03 11 | G96 | 0.2− | 0.1− | | | | |

**2005 GO$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.31783 | | (2000.0) | | | |
| $n$ | 0.27632535 | $\omega$ | 87.10459 | | +0.30239912 | +0.95172773 |
| $a$ | 2.3344732 | $\Omega$ | 200.73342 | | −0.92290624 | +0.27854426 |
| $e$ | 0.0528679 | $i$ | 8.54822 | | −0.23832509 | +0.12894736 |
| $P$ | 3.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.3− | 0.0 | 2005 04 04 | G96 | 0.4− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2005 03 11 | G96 | 0.0 | 0.3+ | 2005 04 04 | G96 | 0.5− | 0.3− | 2006 10 01 | 691 | 0.1− | 0.3− |
| 2005 03 11 | G96 | 0.1+ | 0.4+ | 2005 04 09 | 691 | 0.6+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2005 03 11 | G96 | 0.5− | 0.4+ | 2005 04 09 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2005 04 02 | G96 | 0.6− | 0.1+ | 2005 04 09 | 691 | 0.5+ | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2005 04 02 | G96 | 0.4− | 0.3− | 2006 09 25 | 691 | 0.3+ | 0.6+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.8− |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.7+ | 0.3− |
| 2005 04 04 | G96 | 1.0− | 1.1− | 2006 09 27 | 691 | 0.2+ | 0.2− | | | | |
| 2005 04 04 | G96 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.6− | | | | |

**2005 GU$_{19}$ = 2006 SH$_{203}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.83873 | | | (2000.0) | | |
| $n$ | 0.26547798 | $\omega$ | 53.19407 | | −0.68968200 | +0.72410516 |
| $a$ | 2.3976385 | $\Omega$ | 173.19819 | | −0.67275330 | −0.63910668 |
| $e$ | 0.1248123 | $i$ | 1.56460 | | −0.26784647 | −0.25925735 |
| $P$ | 3.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 291 | 0.1− | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2002 08 13 | 291 | 0.0 | 0.1+ | 2005 04 04 | G96 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.2− | 0.5− |
| 2002 08 13 | 291 | 0.0 | 0.1+ | 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2003 12 19 | 691 | 0.1− | 0.7+ | 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.6+ |
| 2003 12 19 | 691 | 0.2− | 0.3− | 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2003 12 19 | 691 | 0.2+ | 0.1+ | 2005 04 17 | 691 | 0.5+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2005 04 18 | 703 | 0.8− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2005 04 02 | G96 | 0.1− | 0.3− | 2005 04 18 | 703 | 1.0− | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.5− |
| 2005 04 02 | G96 | 0.1+ | 0.4− | 2005 04 18 | 703 | 0.5− | 0.2− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2005 04 02 | G96 | 0.2− | 0.1− | 2005 04 18 | 703 | 1.3− | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2005 04 04 | G96 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.2− | | | | |

**2005 GX$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.93516 | | | (2000.0) | | |
| $n$ | 0.22929769 | $\omega$ | 71.46155 | | +0.02748256 | +0.99852543 |
| $a$ | 2.6436438 | $\Omega$ | 200.28584 | | −0.96050757 | +0.01340553 |
| $e$ | 0.1524546 | $i$ | 7.76035 | | −0.27689335 | +0.05260480 |
| $P$ | 4.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.3+ | 0.1+ | 2005 04 18 | 704 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2− |
| 2005 03 10 | G96 | 0.1+ | 0.1+ | 2005 04 18 | 704 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 0.2+ | 0.1− | 2005 05 09 | 704 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2005 03 10 | G96 | 0.2+ | 0.0 | 2005 05 09 | 704 | 0.6+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2005 04 02 | G96 | 0.1− | 0.2− | 2005 05 09 | 704 | 0.6− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2005 05 09 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2005 04 02 | G96 | 0.3− | 0.3− | 2005 05 09 | 704 | 0.6+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2005 05 09 | 704 | 1.0+ | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2005 04 04 | G96 | 0.3− | 0.3− | 2006 09 17 | 703 | 1.2− | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2005 04 04 | G96 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.5+ | 0.8− | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.2+ | 0.5− | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2005 04 04 | G96 | 0.2− | 0.3− | 2006 09 17 | 703 | (1.1− | 1.5−) | 2006 10 23 | G96 | 0.5+ | 0.0 |
| 2005 04 17 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | 1.4− | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.5− |
| 2005 04 17 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | (1.0− | 1.9+) | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2005 04 17 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.1+ |
| 2005 04 18 | 704 | 0.7+ | 0.0 | 2006 09 19 | 699 | 0.8− | 1.3+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2005 04 18 | 704 | 0.5− | 0.9− | 2006 09 25 | 691 | 0.2− | 0.1− | | | | |

**2005 GR$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.04298 | | | (2000.0) | | |
| $n$ | 0.28582608 | $\omega$ | 224.58076 | | −0.15642084 | +0.98517921 |
| $a$ | 2.2824511 | $\Omega$ | 36.58980 | | −0.87002217 | −0.10370079 |
| $e$ | 0.0922963 | $i$ | 6.78155 | | −0.46754032 | −0.13663115 |
| $P$ | 3.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.5− | 0.3− | 2005 04 18 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2002 08 30 | 644 | 0.1+ | 0.0 | 2005 04 18 | 691 | 0.4+ | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.4− |
| 2002 08 30 | 644 | 0.4+ | 0.2+ | 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2005 03 12 | G96 | 0.2− | 0.1+ | 2005 05 07 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.5− |
| 2005 03 12 | G96 | 0.1− | 0.2− | 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2005 03 12 | G96 | 0.5− | 0.1− | 2005 05 09 | 699 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2005 03 12 | G96 | 0.6− | 0.1− | 2005 05 09 | 699 | 0.8− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2005 04 02 | G96 | 0.1− | 0.3− | 2005 05 09 | 699 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2005 05 09 | 699 | 0.5− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2005 04 02 | G96 | 0.3− | 0.3+ | 2005 05 16 | G96 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2005 04 02 | G96 | 0.5− | 0.2+ | 2005 05 16 | G96 | 0.5+ | 0.4− | 2006 11 13 | G96 | 0.4+ | 0.1− |
| 2005 04 04 | G96 | 0.3− | 0.1+ | 2005 05 16 | G96 | 0.4− | 0.2− | 2006 11 13 | G96 | 0.8− | 0.1+ |
| 2005 04 04 | G96 | 0.2− | 0.2− | 2005 05 16 | G96 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.3+ | 0.3+ |
| 2005 04 04 | G96 | 0.4− | 0.2− | 2005 05 19 | 644 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.3− | 0.5+ |
| 2005 04 04 | G96 | 0.3− | 0.0 | 2005 05 19 | 644 | 0.4+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2005 04 18 | 691 | 0.4+ | 0.0 | 2005 05 19 | 644 | 0.2+ | 0.0 | | | | |

**2005 GY$_{21}$ = 2006 SR$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 116.99028 | | | (2000.0) | | |
| $n$ | 0.29447830 | $\omega$ | 116.75233 | | −0.39248803 | +0.91431953 |
| $a$ | 2.2375213 | $\Omega$ | 129.77533 | | −0.88327270 | −0.34441317 |
| $e$ | 0.0564981 | $i$ | 7.46598 | | −0.25648097 | −0.21307124 |
| $P$ | 3.35 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 10 | 691 | 0.0 | 0.4− | 2005 04 05 | 683 | 0.5+ | 1.0+ | 2005 04 13 | 703 | 0.2− | 0.2+ |
| 1993 12 10 | 691 | 0.3+ | 0.3− | 2005 04 05 | 683 | 0.6+ | 0.4− | 2006 09 26 | 703 | 0.1+ | 0.0 |
| 1993 12 10 | 691 | 0.1− | 0.4− | 2005 04 06 | 683 | 0.6− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.4+ |
| 2003 12 21 | 691 | 0.1− | 0.2+ | 2005 04 06 | 683 | 0.7+ | 1.1+ | 2006 09 26 | 703 | 0.9+ | 0.6+ |
| 2003 12 21 | 691 | 0.1+ | 0.4+ | 2005 04 06 | 683 | 0.6+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 1.2+ |
| 2003 12 21 | 691 | 0.2− | 0.5+ | 2005 04 09 | 683 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.9− | 0.4− |
| 2005 04 04 | 703 | 0.1+ | 0.2+ | 2005 04 09 | 683 | (3.3− | 0.7+) | 2006 09 29 | 699 | 0.3− | 0.3− |
| 2005 04 04 | 703 | 0.7− | 0.4+ | 2005 04 09 | 683 | 0.2− | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.1− |
| 2005 04 04 | 703 | 0.6− | 0.2+ | 2005 04 13 | 703 | 0.0 | 0.7− | 2006 09 29 | 699 | 0.1− | 0.4− |
| 2005 04 04 | 703 | 0.1+ | 0.5− | 2005 04 13 | 703 | 0.3− | 0.4− | | | | |
| 2005 04 05 | 683 | 0.2− | 0.4+ | 2005 04 13 | 703 | 1.1+ | 1.1− | | | | |

**2005 GC$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.94305 | | | (2000.0) | | |
| $n$ | 0.28630791 | $\omega$ | 133.48325 | | +0.81843404 | +0.57421166 |
| $a$ | 2.2798896 | $\Omega$ | 191.52627 | | −0.55298973 | +0.77712706 |
| $e$ | 0.1948464 | $i$ | 6.07161 | | −0.15610279 | +0.25759366 |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.4− | 0.5+ | 2005 04 06 | G96 | 0.3− | 0.2− | 2006 10 17 | 461 | 0.0 | 1.3+ |
| 2005 03 10 | G96 | 0.1+ | 0.2+ | 2005 04 06 | G96 | 0.2− | 0.1− | 2006 10 17 | 461 | (0.4+ | 1.8+) |
| 2005 03 10 | G96 | 0.4− | 0.1+ | 2005 04 06 | G96 | 0.3− | 0.4− | 2006 10 19 | 703 | 0.4+ | 0.3+ |
| 2005 03 10 | G96 | 0.0 | 0.1+ | 2005 04 07 | 461 | 0.1+ | 0.2− | 2006 10 19 | 703 | (0.1− | 2.2−) |
| 2005 04 05 | 461 | 0.2+ | 0.3+ | 2005 04 07 | 461 | 0.3− | 0.4+ | 2006 10 19 | 703 | 1.1+ | 0.1− |
| 2005 04 05 | 461 | 0.5− | 0.1+ | 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.3− |
| 2005 04 05 | 461 | 0.3− | 0.2+ | 2005 04 18 | 691 | 0.4+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2005 04 06 | 461 | 0.7+ | 0.2+ | 2005 04 18 | 691 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2005 04 06 | 461 | 0.3+ | 0.1+ | 2006 10 15 | 461 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 2005 04 06 | 691 | 0.5− | 0.1− | 2006 10 15 | 461 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2005 04 06 | 691 | 0.1− | 0.2− | 2006 10 15 | 461 | 0.2+ | 0.3+ | 2006 11 15 | 683 | (1.8− | 0.4−) |
| 2005 04 06 | 691 | 0.0 | 0.1+ | 2006 10 16 | 461 | 0.5+ | 0.9+ | 2006 11 15 | 683 | 1.3− | 1.1− |
| 2005 04 06 | G96 | 0.0 | 0.1+ | 2006 10 17 | 461 | 0.1− | 0.2+ | 2006 11 15 | 683 | 0.4+ | 1.2− |

**2005 GV$_{22}$ = 2004 AF$_4$ = 2003 YM$_{181}$ = 2006 PV$_6$**

Id. Minor Planet Center (*MPO* 103686; d, unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.23988 | | | (2000.0) | | |
| $n$ | 0.21397285 | $\omega$ | 193.45872 | | +0.58847515 | +0.79036296 |
| $a$ | 2.7684091 | $\Omega$ | 112.85259 | | −0.72363134 | +0.60885306 |
| $e$ | 0.1036284 | $i$ | 10.65378 | | −0.36063095 | +0.06800249 |
| $P$ | 4.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.6− | 0.6+ | 2004 01 22 | 704 | 0.2− | 0.7− | 2005 04 06 | 703 | 0.5+ | 0.1+ |
| 2002 10 15 | 644 | 0.4− | 0.7+ | 2004 01 22 | 704 | 0.3+ | 1.0− | 2005 04 06 | 703 | 0.6+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.2− | 0.5+ | 2004 01 22 | 704 | 0.1+ | 0.5− | 2005 04 16 | 703 | 1.1− | 0.9+ |
| 2002 10 30 | 704 | 0.5− | 1.5+ | 2004 01 22 | 704 | 0.1− | 0.6+ | 2005 04 16 | 703 | 0.9− | 0.9+ |
| 2002 10 30 | 704 | 0.6− | 1.5+ | 2004 01 22 | 704 | 0.2− | 0.3− | 2005 04 16 | 703 | 1.3− | 1.5+ |
| 2002 10 30 | 704 | (0.5− | 2.1+) | 2004 01 24 | 704 | 0.1+ | 0.4+ | 2005 04 16 | 703 | 0.3− | 1.8+ |
| 2003 12 28 | 333 | 0.1− | 0.3+ | 2004 01 24 | 704 | 0.2+ | 0.5+ | 2006 08 12 | 644 | 0.0 | 0.2+ |
| 2003 12 28 | 333 | 0.3− | 0.1+ | 2004 01 24 | 704 | 0.5+ | 0.4+ | 2006 08 12 | 644 | 0.1− | 0.1+ |
| 2003 12 28 | 333 | 0.3+ | 1.3− | 2004 01 24 | 704 | 1.0− | 0.7+ | 2006 08 12 | 644 | 0.0 | 0.0 |
| 2003 12 28 | 333 | 0.1+ | 0.2− | 2005 04 01 | 699 | 1.1+ | 0.8+ | 2006 08 19 | 644 | 0.1+ | 0.2+ |
| 2003 12 28 | 333 | 0.1+ | 0.4− | 2005 04 01 | 699 | 0.7+ | 0.7+ | 2006 08 19 | 644 | 0.1+ | 0.2+ |
| 2003 12 28 | 333 | 0.2+ | 0.2− | 2005 04 01 | 699 | 0.7+ | 0.5+ | 2006 08 19 | 644 | 0.4+ | 0.3+ |
| 2004 01 15 | 691 | 0.1+ | 0.2+ | 2005 04 01 | 699 | 0.3+ | 0.3− | 2006 08 28 | E12 | 0.5+ | 0.3− |
| 2004 01 15 | 691 | 0.3+ | 0.3+ | 2005 04 05 | 644 | 0.9+ | 0.1+ | 2006 08 28 | E12 | 0.7− | 0.0 |
| 2004 01 15 | 691 | 0.0 | 0.5+ | 2005 04 05 | 644 | 0.9+ | 0.3+ | 2006 08 28 | E12 | 0.7− | 0.0 |
| 2004 01 16 | 691 | 0.2+ | 0.4+ | 2005 04 05 | 644 | 1.0+ | 0.3+ | 2006 08 28 | E12 | 0.3+ | 0.9+ |
| 2004 01 16 | 691 | 0.1+ | 0.3+ | 2005 04 06 | 703 | 0.6− | 0.6− | | | | |
| 2004 01 16 | 691 | 0.1+ | 0.2+ | 2005 04 06 | 703 | 0.5− | 1.2− | | | | |

**2005 GL$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.07337 | | (2000.0) | | | |
| $n$ | 0.29502935 | $\omega$ | 217.34420 | | +0.08925307 | +0.99541899 |
| $a$ | 2.2347344 | $\Omega$ | 57.80068 | | −0.90376814 | +0.09540347 |
| $e$ | 0.1574265 | $i$ | 2.32153 | | −0.41861323 | +0.00626254 |
| $P$ | 3.34 | $H$ | 18.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.7+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2005 04 01 | 691 | 0.8+ | 0.6− | 2005 04 18 | 691 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2005 04 01 | 691 | 0.2+ | 0.1− | 2005 05 07 | 691 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2005 04 05 | G96 | 0.6− | 0.2− | 2005 05 07 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2005 04 05 | G96 | 0.5− | 0.1− | 2005 05 07 | 691 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.2− | 0.9− |
| 2005 04 05 | G96 | 1.0− | 0.6+ | 2005 05 08 | 691 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.0 | 1.4− |
| 2005 04 05 | G96 | 0.9− | 0.3+ | 2005 05 08 | 691 | 0.0 | 0.0 | 2006 10 29 | 291 | 0.2− | 0.4+ |
| 2005 04 10 | 695 | 0.6− | 0.2+ | 2005 05 08 | 691 | 0.4+ | 0.1− | 2006 10 29 | 291 | 0.1+ | 0.2+ |
| 2005 04 10 | 695 | 0.4− | 0.1− | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 10 29 | 291 | 0.2+ | 0.6+ |
| 2005 04 11 | 691 | 0.3− | 0.2+ | 2005 05 10 | G96 | 0.7− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.6+ |
| 2005 04 11 | 691 | 0.2− | 0.1+ | 2005 05 10 | G96 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.5− |
| 2005 04 11 | 691 | 0.6− | 0.2+ | 2005 05 10 | G96 | 0.6− | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.6− |
| 2005 04 11 | 695 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 11 21 | G96 | 0.8+ | 0.1− |
| 2005 04 18 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.5− | | | | |

**2005 GG$_{25}$ = 2006 QV$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.77834 | | (2000.0) | | | |
| $n$ | 0.21236760 | $\omega$ | 87.61035 | | +0.17886602 | +0.98370934 |
| $a$ | 2.7823422 | $\Omega$ | 192.73605 | | −0.93198223 | +0.16355110 |
| $e$ | 0.1280935 | $i$ | 4.67520 | | −0.31530313 | +0.07461219 |
| $P$ | 4.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.1+ | 0.1− | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.4+ |
| 1993 12 14 | 691 | 0.2− | 0.3+ | 2005 04 11 | 691 | 0.2− | 0.2+ | 2006 09 14 | 703 | 1.5− | 1.1− |
| 1993 12 14 | 691 | 0.1+ | 0.3− | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 1.0− | 1.1+ |
| 2005 04 02 | G96 | 0.0 | 0.3− | 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2005 05 10 | G96 | 1.1− | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.3+ |
| 2005 04 02 | G96 | 0.2+ | 0.0 | 2005 05 10 | G96 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.1+ |
| 2005 04 02 | G96 | 0.3+ | 0.1− | 2005 05 10 | G96 | 0.8+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2005 04 05 | G96 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.6+ | 0.1− |
| 2005 04 05 | G96 | 0.7− | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.2+ |
| 2005 04 05 | G96 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.6− | 0.9− | 2006 10 21 | G96 | 0.4+ | 0.3+ |
| 2005 04 05 | G96 | 0.5− | 0.9− | 2006 08 28 | 703 | 0.7− | 1.2− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2005 04 09 | 691 | 0.0 | 0.3− | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2005 04 09 | 691 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.3+ | 0.0 | | | | |
| 2005 04 09 | 691 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.5+ | 0.2+ | | | | |

**2005 GM$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.85289 | | (2000.0) | | | |
| $n$ | 0.21713814 | $\omega$ | 84.40813 | | +0.20332928 | +0.97906991 |
| $a$ | 2.7414393 | $\Omega$ | 197.33133 | | −0.90973643 | +0.18555195 |
| $e$ | 0.1721220 | $i$ | 1.71313 | | −0.36199009 | +0.08362165 |
| $P$ | 4.54 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.5+ | 0.1− | 2005 04 17 | 691 | 0.1+ | 0.1+ | 2005 05 08 | G96 | 0.6− | 0.3− |
| 2005 04 02 | G96 | 0.5− | 0.4− | 2005 04 17 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2005 05 04 | 568 | 0.5+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2005 04 02 | G96 | 0.1− | 0.6− | 2005 05 04 | 568 | 0.5+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2005 04 05 | G96 | 0.3− | 0.6− | 2005 05 04 | 568 | 0.6+ | 0.5+ | 2006 10 16 | G96 | 1.2+ | 0.4− |
| 2005 04 05 | G96 | 0.6− | 0.2− | 2005 05 05 | 568 | 0.0 | 0.9+ | 2006 10 16 | G96 | 0.9− | 0.6− |
| 2005 04 05 | G96 | 0.6− | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.3− | 2006 10 16 | G96 | 0.6+ | 0.5− |
| 2005 04 05 | G96 | 0.4+ | 0.0 | 2005 05 08 | G96 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2005 05 08 | G96 | 0.5− | 0.4− | | | | |

**2005 GV$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 134.10831 | | (2000.0) | | | |
| $n$ | 0.29721411 | $\omega$ | 58.54715 | | −0.53558463 | +0.84448033 |
| $a$ | 2.2237695 | $\Omega$ | 179.06558 | | −0.80172776 | −0.50793173 |
| $e$ | 0.1261906 | $i$ | 5.07789 | | −0.26529552 | −0.16987741 |
| $P$ | 3.32 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 691 | 0.0 | 0.5+ | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2005 06 13 | 699 | 0.1+ | 1.1+ |
| 2003 12 22 | 691 | 0.2− | 0.5+ | 2005 05 03 | 704 | 0.6+ | 1.3+ | 2006 07 22 | G96 | 0.3− | 0.1− |
| 2003 12 22 | 691 | 0.1− | 0.5+ | 2005 05 03 | 704 | 0.3− | 1.4+ | 2006 07 22 | G96 | 0.8− | 0.2+ |
| 2005 03 14 | G96 | 0.2− | 0.2+ | 2005 05 03 | 704 | 0.3+ | 1.1+ | 2006 07 22 | G96 | 1.0− | 0.2+ |
| 2005 03 14 | G96 | 0.3− | 0.0 | 2005 05 03 | 704 | (1.6+ | 1.6+) | 2006 07 22 | G96 | 1.5− | 0.0 |
| 2005 03 14 | G96 | 0.3− | 0.2− | 2005 05 03 | 704 | 0.5+ | 1.4+ | 2006 09 23 | 691 | 0.4− | 0.6+ |
| 2005 03 14 | G96 | 0.2− | 0.2− | 2005 05 08 | 704 | 0.5+ | 0.8+ | 2006 09 23 | 691 | 0.5− | 0.5+ |
| 2005 04 02 | 699 | 0.4− | 0.3+ | 2005 05 08 | 704 | 1.3+ | 0.2− | 2006 09 23 | 691 | 0.1− | 0.6+ |
| 2005 04 02 | 699 | 0.7+ | 0.2− | 2005 05 08 | 704 | 0.5− | 0.9− | 2006 09 27 | 691 | 0.2+ | 0.4+ |
| 2005 04 02 | 699 | 0.8+ | 0.6+ | 2005 05 08 | 703 | (1.8− | 0.3+) | 2006 09 27 | 691 | 0.4+ | 0.2+ |
| 2005 04 02 | 699 | 0.3+ | 0.7+ | 2005 05 08 | 703 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.3+ | 0.4+ |
| 2005 04 05 | 704 | 0.6+ | 0.7+ | 2005 05 08 | 703 | 0.7− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2005 04 05 | 704 | 0.5+ | 0.1+ | 2005 05 08 | 703 | (1.8− | 0.9−) | 2006 10 21 | G96 | 0.5+ | 0.1+ |
| 2005 04 05 | 704 | 0.3+ | 0.3− | 2005 05 09 | 699 | 0.5− | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2005 04 06 | 691 | 0.2+ | 0.8− | 2005 05 09 | 699 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2005 04 06 | 691 | 0.2− | 0.2+ | 2005 05 09 | 699 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2005 04 06 | 691 | 0.1+ | 0.1+ | 2005 05 09 | 699 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2005 04 13 | 699 | 0.8− | 0.1+ | 2005 05 14 | 704 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2005 04 13 | 699 | 0.2+ | 0.0 | 2005 05 14 | 704 | 0.7− | 1.0+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2005 04 13 | 699 | 0.0 | 0.8− | 2005 05 14 | 704 | 1.4+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 04 13 | 699 | 0.9+ | 0.1− | 2005 06 13 | 699 | 1.1− | 1.0+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2005 04 14 | 691 | 0.0 | 0.5+ | 2005 06 13 | 699 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.2+ |
| 2005 04 14 | 691 | 0.2− | 0.2+ | 2005 06 13 | 699 | 0.0 | 0.8+ | | | | |

**2005 GN$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.25282 | | (2000.0) | | | |
| $n$ | 0.17461588 | $\omega$ | 38.33545 | | −0.94855921 | +0.31638858 |
| $a$ | 3.1701530 | $\Omega$ | 160.09991 | | −0.29821184 | −0.88060625 |
| $e$ | 0.1356032 | $i$ | 1.94668 | | −0.10632557 | −0.35274765 |
| $P$ | 5.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.1− | 0.0 | 2005 04 05 | G96 | 0.4− | 0.3− | 2005 04 09 | 691 | 0.1− | 0.1− |
| 1999 02 09 | 691 | 0.1+ | 0.2− | 2005 04 05 | G96 | 0.3− | 0.3− | 2005 04 11 | 691 | 0.3+ | 0.1+ |
| 1999 02 09 | 691 | 0.2− | 0.2− | 2005 04 05 | G96 | 0.0 | 0.1− | 2005 04 11 | 691 | 0.4+ | 0.0 |
| 2005 03 08 | G96 | 0.1+ | 0.1− | 2005 04 05 | G96 | 0.5− | 0.5− | 2005 04 11 | 691 | 0.3+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.4− | 0.3− | 2005 04 05 | G96 | 0.1− | 0.4− | 2005 05 08 | 703 | 0.6− | 0.5− | | |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2005 04 05 | G96 | 0.2+ | 0.2− | 2005 05 08 | 703 | 0.9− | 0.0 | | |
| 2005 03 08 | G96 | 0.1− | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.2− | 2005 05 08 | 703 | 0.9− | 0.2+ | | |
| 2005 04 03 | 644 | 0.5+ | 0.2+ | 2005 04 06 | G96 | 0.3− | 0.2− | 2005 05 08 | 703 | 0.1− | 1.2+ | | |
| 2005 04 03 | 644 | 0.8+ | 0.3+ | 2005 04 06 | G96 | 0.4− | 0.1− | 2006 06 18 | 691 | 0.1+ | 0.3+ | | |
| 2005 04 03 | 644 | 0.9+ | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.2− | 2006 06 18 | 691 | 0.3− | 0.5− | | |
| 2005 04 05 | G96 | 0.4− | 0.1+ | 2005 04 09 | 691 | 0.0 | 0.0 | 2006 06 18 | 691 | 0.2+ | 0.1− | | |
| 2005 04 05 | G96 | 0.6− | 0.2− | 2005 04 09 | 691 | 0.2+ | 0.1+ | | | | | | |

**2005 GX$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.98435 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27946593 | $\omega$ | 39.94386 | | −0.09401150 | | +0.99534498 |
| $a$ | 2.3169508 | $\Omega$ | 224.67355 | | −0.92095308 | | −0.09504106 |
| $e$ | 0.1362141 | $i$ | 1.72942 | | −0.37816301 | | −0.01598654 |
| $P$ | 3.53 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.0 | 2005 04 17 | 691 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.4+ | 0.7+ | | |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.5− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.1+ | | |
| 2005 03 11 | G96 | 0.3+ | 0.0 | 2005 05 12 | G96 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.2− | | |
| 2005 03 11 | G96 | 0.7− | 0.0 | 2005 05 12 | G96 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.3− | | |
| 2005 03 11 | G96 | 0.5− | 0.0 | 2005 05 12 | G96 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2005 03 11 | G96 | 0.2− | 0.3+ | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.1+ | | |
| 2005 04 04 | 691 | 0.2+ | 0.5+ | 2005 06 13 | G96 | 1.2+ | 0.2+ | 2006 10 27 | 691 | 0.4− | 0.4+ | | |
| 2005 04 04 | 691 | 0.5+ | 0.4+ | 2005 06 13 | G96 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.5+ | | |
| 2005 04 04 | 691 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.5− | 0.2+ | | |
| 2005 04 05 | G96 | 0.5− | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.0 | | |
| 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.4+ | | |
| 2005 04 05 | G96 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1+ | | |
| 2005 04 05 | G96 | 0.3− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.1− | | |
| 2005 04 17 | 691 | 0.0 | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.2+ | | | | | | |
| 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 09 28 | 691 | 0.4+ | 0.3+ | | | | | | |

**2005 GJ$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.75398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29570725 | $\omega$ | 217.01447 | | −0.82075184 | | +0.57127123 |
| $a$ | 2.2313177 | $\Omega$ | 357.81303 | | −0.49624060 | | −0.71634473 |
| $e$ | 0.0977199 | $i$ | 5.93906 | | −0.28304008 | | −0.40062377 |
| $P$ | 3.33 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.5+ | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.2+ | | |
| 2005 04 04 | 691 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.5− | 2006 09 28 | 691 | 0.2+ | 0.1+ | | |
| 2005 04 04 | 691 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.4− | 0.0 | 2006 09 30 | 941 | 0.2− | 0.0 | | |
| 2005 04 05 | 699 | 0.7− | 0.3+ | 2006 09 15 | 691 | 0.5− | 0.1+ | 2006 09 30 | 941 | 0.1− | 0.3+ | | |
| 2005 04 05 | 699 | (1.9− | 0.7+) | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 941 | 0.1− | 0.2− | | |
| 2005 04 05 | 699 | 0.1+ | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 941 | 0.2− | 0.1+ | | |
| 2005 04 05 | 699 | 0.4− | 0.8+ | 2006 09 24 | 691 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.2− | 0.3+ | | |
| 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.8− | | |
| 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 09 25 | 941 | 0.1− | 0.7+ | 2006 10 02 | 691 | (3.4+ | 3.0−) | | |
| 2005 04 10 | 691 | 0.1− | 0.0 | 2006 09 25 | 941 | 0.7+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.5− | | |
| 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 25 | 941 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.4− | | |
| 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 25 | 941 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.5− | | |
| 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | 941 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.1− | | |
| 2006 07 21 | G96 | 0.3+ | 0.4− | 2006 09 25 | 941 | 0.3+ | 0.9+ | | | | | | |
| 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.2+ | 0.3+ | | | | | | |

**2005 GV$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.34662 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29565543 | $\omega$ | 48.76937 | | −0.76657775 | | +0.64207467 |
| $a$ | 2.2315784 | $\Omega$ | 171.16149 | | −0.60681101 | | −0.71924201 |
| $e$ | 0.1354781 | $i$ | 3.70663 | | −0.21009273 | | −0.26538849 |
| $P$ | 3.33 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.3− | 0.1+ | 2005 04 12 | 704 | 0.6+ | 0.5+ | 2006 07 21 | G96 | 0.2− | 0.3− | | |
| 2005 03 08 | G96 | 0.0 | 0.3+ | 2005 04 12 | 704 | 0.5+ | 0.7− | 2006 07 21 | G96 | 0.5− | 0.3− | | |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2005 04 12 | 704 | 0.4− | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.4− | | |
| 2005 03 08 | G96 | 0.1− | 0.2+ | 2005 04 12 | 704 | 0.3− | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.4+ | | |
| 2005 04 04 | 703 | 1.0− | 0.3+ | 2005 04 12 | 704 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.3− | | |
| 2005 04 04 | 703 | 0.2+ | 0.3− | 2005 04 18 | 703 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1− | | |
| 2005 04 04 | 703 | 0.8− | 0.0 | 2005 04 18 | 703 | 0.9− | 0.5− | 2006 09 18 | 691 | 0.3+ | 0.1− | | |
| 2005 04 04 | 703 | 1.3− | 0.5− | 2005 04 18 | 703 | 1.8+ | 1.6+ | 2006 09 26 | G96 | 0.1+ | 0.2− | | |
| 2005 04 05 | 699 | 0.5+ | 0.4− | 2005 04 18 | 703 | (1.1+ | 2.7−) | 2006 09 26 | G96 | 0.5− | 0.2− | | |
| 2005 04 05 | 699 | 0.1− | 0.3+ | 2005 05 04 | 644 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4− | 0.2− | | |
| 2005 04 05 | 699 | 1.3+ | 0.1+ | 2005 05 04 | 644 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.5− | 0.3− | | |
| 2005 04 05 | 699 | 1.3+ | 0.1+ | 2005 05 04 | 644 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.6+ | | |
| 2005 04 09 | 704 | 0.5+ | 0.4− | 2005 05 15 | 644 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.5+ | | |
| 2005 04 09 | 704 | 0.5− | 0.0 | 2005 05 15 | 644 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.3+ | | |
| 2005 04 09 | 704 | 0.1− | 0.7+ | 2005 05 15 | 644 | 0.1− | 0.0 | | | | | | |

**2005 GR$_{30}$ = 2001 AN$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.22577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29002909 | $\omega$ | 44.72954 | | +0.39738643 | | −0.90117584 |
| $a$ | 2.2603465 | $\Omega$ | 23.57599 | | +0.67303625 | | +0.15799243 |
| $e$ | 0.2368440 | $i$ | 25.64577 | | +0.62378380 | | +0.40363411 |
| $P$ | 3.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 15 | 704 | 0.3+ | 0.2− | 2003 09 16 | 704 | 0.2+ | 0.2− | 2005 04 04 | G96 | 0.1+ | 0.1+ | | |
| 2001 01 15 | 704 | 0.3− | 0.4+ | 2003 09 16 | 704 | 0.2− | 0.5+ | 2005 04 04 | G96 | 0.1− | 0.1− | | |
| 2001 01 15 | 704 | 0.1− | 0.1+ | 2003 09 26 | 644 | 0.4− | 0.1+ | 2005 04 04 | G96 | 0.8− | 0.1+ | | |
| 2001 01 15 | 704 | 0.8− | 0.7+ | 2003 09 26 | 644 | 0.0 | 0.3− | 2005 04 05 | G96 | 0.2+ | 0.3− | | |
| 2001 01 18 | 704 | 0.4− | 0.3+ | 2003 09 26 | 644 | 0.3+ | 0.2− | 2005 04 05 | G96 | 0.7− | 0.2+ | | |
| 2001 01 18 | 704 | 0.0 | 0.2− | 2003 09 27 | 699 | 0.7− | 0.8+ | 2005 04 05 | G96 | 0.3− | 0.1− | | |
| 2001 01 18 | 704 | 0.8+ | 0.2− | 2003 09 27 | 699 | 0.2− | 0.5+ | 2005 04 05 | G96 | 0.3− | 0.2− | | |
| 2001 01 18 | 704 | 0.4+ | 0.5− | 2003 09 27 | 699 | 0.3+ | 0.0 | 2005 04 11 | 691 | 0.1+ | 0.2+ | | |
| 2003 09 16 | 704 | 0.5− | 1.2− | 2003 09 27 | 699 | 1.1+ | 1.1+ | 2005 04 11 | 691 | 0.2+ | 0.0 | | |
| 2003 09 16 | 704 | 0.2− | 0.6− | 2005 04 04 | G96 | 0.6− | 0.5− | 2005 04 11 | 691 | 0.4+ | 0.1+ | | |

**2005 GX$_{31}$ = 2006 SB$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.25741 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36774150 | $\omega$ | 267.38430 | | −0.12891609 | | −0.98921000 |
| $a$ | 1.9294830 | $\Omega$ | 190.79731 | | +0.99133338 | | −0.12676760 |
| $e$ | 0.0966873 | $i$ | 21.80991 | | +0.02527396 | | −0.07344079 |
| $P$ | 2.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 703 | 1.1− | 0.3+ | 2005 04 08 | 704 | 0.6− | 1.2+ | 2006 09 29 | 704 | 0.4+ | 0.3− | | |
| 2005 04 04 | 703 | 0.5− | 0.4− | 2005 04 09 | 704 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.3+ | | |
| 2005 04 04 | 703 | 0.8− | 0.3+ | 2005 04 09 | 704 | 0.3+ | 0.7− | 2006 10 09 | 644 | 0.2+ | 0.4+ | | |
| 2005 04 04 | 703 | 0.3− | 0.4− | 2005 04 09 | 704 | (1.6+ | 0.2−) | 2006 10 09 | 644 | 0.0 | 0.2+ | | |
| 2005 04 04 | 704 | (1.5+ | 2.7+) | 2005 04 09 | 704 | 1.0+ | 0.8+ | 2006 10 09 | 644 | 0.1+ | 0.0 | | |
| 2005 04 04 | 704 | (2.1+ | 2.4+) | 2006 09 16 | 644 | 0.5− | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.1+ | | |
| 2005 04 04 | 704 | (2.5+ | 2.4+) | 2006 09 16 | 644 | 0.4− | 0.1− | 2006 10 09 | 644 | 0.4+ | 0.0 | | |
| 2005 04 05 | G96 | 0.4− | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.3+ | 0.1− | | |
| 2005 04 05 | G96 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.3− | | |
| 2005 04 05 | G96 | 0.5− | 0.3+ | 2006 09 17 | 703 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.2− | | |
| 2005 04 05 | G96 | 0.8− | 0.3+ | 2006 09 17 | 703 | 0.8− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 704 | 1.2+ | 0.9+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2005 04 06 | 704 | 1.0− | 0.0 | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2005 04 06 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2005 04 06 | 704 | (2.2+ | 0.9−) | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.8+ | 0.9+ |
| 2005 04 06 | 704 | 0.0 | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 1.3+ |
| 2005 04 07 | 704 | 0.6+ | 1.0− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.4+ | 1.2+ |
| 2005 04 07 | 704 | 0.8+ | 0.7+ | 2006 09 27 | 699 | 1.0+ | 0.7+ | 2006 10 17 | 703 | 1.1+ | 0.0 |
| 2005 04 07 | 704 | 0.3+ | 0.9+ | 2006 09 27 | 699 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2005 04 08 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 699 | 0.4− | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.4− |
| 2005 04 08 | 704 | 0.7+ | 0.3+ | 2006 09 29 | 704 | 1.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2005 04 08 | 704 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.7+ | 0.2+ | | | | |
| 2005 04 08 | 704 | 0.6+ | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.3− | | | | |

**2005 GC$_{32}$ = 2006 SN$_{290}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.68107 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30211427 | $\omega$ | 283.50771 | | +0.26748368 | | +0.96355757 |
| $a$ | 2.1996583 | $\Omega$ | 2.01453 | | −0.84714028 | | +0.23667059 |
| $e$ | 0.1229664 | $i$ | 4.97226 | | −0.45913595 | | +0.12467492 |
| $P$ | 3.26 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.1+ | 0.1− | 2005 04 06 | G96 | 0.1− | 0.1− | 2006 09 27 | 152 | (0.9+ | 1.8+) |
| 2005 04 04 | G96 | 0.2− | 0.0 | 2005 04 06 | G96 | 0.2+ | 0.2− | 2006 09 27 | 152 | 1.2− | 1.0− |
| 2005 04 04 | G96 | 0.2− | 0.1− | 2005 04 07 | G96 | 0.2+ | 0.0 | 2006 09 27 | 152 | 0.7− | 0.0 |
| 2005 04 04 | G96 | 0.3− | 0.4+ | 2005 04 07 | G96 | 0.1− | 0.0 | 2006 09 27 | 152 | 0.5− | 1.2+ |
| 2005 04 05 | G96 | 0.1− | 0.2+ | 2005 04 07 | G96 | 0.3+ | 0.1− | 2006 09 27 | 152 | 0.7+ | 0.6− |
| 2005 04 05 | G96 | 0.2+ | 0.2+ | 2005 04 07 | G96 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.4+ | 0.0 |
| 2005 04 05 | G96 | 0.3+ | 0.1+ | 2005 04 07 | G96 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.5+ | 0.2+ |
| 2005 04 05 | G96 | 0.3+ | 0.0 | 2005 04 07 | G96 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2005 04 06 | G96 | 0.4− | 0.3− | 2005 04 07 | G96 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2005 04 06 | G96 | 0.1+ | 0.0 | 2005 04 07 | G96 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2− |
| 2005 04 06 | G96 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2005 04 06 | G96 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2005 04 06 | G96 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2005 04 06 | G96 | 0.2− | 0.2+ | 2006 09 27 | 152 | (1.8+ | 2.7−) | 2006 11 01 | 691 | 0.1− | 0.2− |

**2005 GM$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.51260 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27996880 | $\omega$ | 51.74263 | | −0.37820395 | | +0.91849284 |
| $a$ | 2.3141755 | $\Omega$ | 197.17315 | | −0.92339229 | | −0.38315005 |
| $e$ | 0.1626661 | $i$ | 23.02103 | | −0.06563877 | | +0.09781072 |
| $P$ | 3.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.2− | 1.8+ | 2005 04 05 | 699 | 0.4+ | 0.2+ | 2005 04 11 | 699 | 0.8− | 0.2+ |
| 1998 03 29 | 704 | 0.1− | 1.3+ | 2005 04 05 | 699 | 0.5− | 0.1− | 2005 04 18 | 704 | 1.4+ | 0.6+ |
| 1998 03 29 | 704 | 0.0 | 1.0+ | 2005 04 06 | 701 | 0.1− | 1.0+ | 2005 04 18 | 704 | 0.3+ | 0.8+ |
| 1998 03 29 | 704 | 0.5− | 1.0+ | 2005 04 06 | 701 | 0.4+ | 0.4+ | 2005 04 18 | 704 | 0.2+ | 0.9+ |
| 1998 03 29 | 704 | (4.8− | 1.3+) | 2005 04 07 | 704 | (0.0 | 1.8+) | 2005 04 19 | 691 | 0.1+ | 0.2+ |
| 1998 04 21 | 704 | 0.7− | 0.9− | 2005 04 07 | 704 | 0.4+ | 0.5− | 2005 04 19 | 691 | 0.2− | 0.1− |
| 1998 04 21 | 704 | 0.1+ | 1.2− | 2005 04 07 | 704 | 0.8+ | 0.2+ | 2005 04 19 | 691 | 0.1+ | 0.1+ |
| 1998 04 21 | 704 | 0.9+ | 0.6− | 2005 04 07 | 704 | 0.7+ | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 1998 04 21 | 704 | 1.4+ | 0.2− | 2005 04 09 | G96 | 0.6− | 0.3− | 2006 09 25 | G96 | 0.6− | 0.0 |
| 1998 04 21 | 704 | (2.3− | 0.0 ) | 2005 04 09 | G96 | 1.0− | 0.1+ | 2006 09 25 | G96 | 0.7− | 1.1+ |
| 2005 03 12 | 691 | 0.2+ | 0.0 | 2005 04 09 | G96 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.1− | 0.4+ |
| 2005 03 12 | 691 | 0.0 | 0.0 | 2005 04 09 | G96 | 0.2− | 0.5− | 2006 10 03 | 691 | 0.4+ | 0.5+ |
| 2005 03 12 | 691 | 0.7− | 0.3− | 2005 04 09 | 704 | 0.2+ | 0.3− | 2006 10 03 | 691 | 0.4+ | 0.2+ |
| 2005 04 04 | 704 | 0.9+ | 0.2− | 2005 04 09 | 704 | 1.1+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.6+ |
| 2005 04 04 | 704 | 0.4+ | 0.3− | 2005 04 09 | 704 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.6− | 0.2+ |
| 2005 04 04 | 704 | 0.3+ | 0.4+ | 2005 04 09 | 704 | 0.3− | 0.6+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2005 04 04 | 704 | 0.5− | 0.6− | 2005 04 11 | 699 | 1.1− | 0.5+ | 2006 10 22 | G96 | 0.7− | 0.0 |
| 2005 04 05 | 699 | (1.7− | 0.9−) | 2005 04 11 | 699 | 1.2− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2005 04 05 | 699 | 0.7+ | 0.2+ | 2005 04 11 | 699 | (1.7− | 0.0 ) | | | | |

**2005 GW$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.51562 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21806164 | $\omega$ | 136.10756 | | +0.37521078 | | +0.92055353 |
| $a$ | 2.7336938 | $\Omega$ | 155.31517 | | −0.90593050 | | +0.38898713 |
| $e$ | 0.1992304 | $i$ | 15.07518 | | −0.19623149 | | −0.03564004 |
| $P$ | 4.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.8− | 0.5+ | 2005 04 07 | H06 | 0.3− | 1.1− | 2005 05 08 | 703 | 1.0− | 0.8+ |
| 2000 03 04 | 704 | 0.4+ | 0.7+ | 2005 04 07 | H06 | 0.3+ | 1.3− | 2005 05 08 | 703 | 0.8− | 0.4+ |
| 2000 03 04 | 704 | 0.5+ | 0.5− | 2005 04 07 | H06 | 0.1− | 0.1− | 2005 05 08 | 703 | 0.0 | 0.5− |
| 2005 03 17 | 703 | 0.6+ | 0.3+ | 2005 04 08 | 704 | 0.9+ | 1.2+ | 2006 09 17 | 699 | 0.7− | 0.1+ |
| 2005 03 17 | 703 | 0.1+ | 0.1− | 2005 04 08 | 704 | (0.1+ | 1.6+) | 2006 09 17 | 699 | 1.0+ | 1.3+ |
| 2005 03 17 | 703 | 0.1+ | 0.9+ | 2005 04 08 | 704 | 0.6+ | 0.5+ | 2006 09 17 | 699 | (0.0 | 1.5−) |
| 2005 03 17 | 703 | 0.9− | 1.1+ | 2005 04 08 | 704 | 0.8+ | 1.2+ | 2006 09 19 | 703 | 0.4− | 0.4− |
| 2005 04 01 | 699 | 0.9+ | 0.8− | 2005 04 08 | 704 | 0.0 | 1.3+ | 2006 09 19 | 703 | 0.5− | 0.1+ |
| 2005 04 01 | 699 | 1.2+ | 0.9+ | 2005 04 16 | 703 | 0.6− | 0.3− | 2006 09 19 | 703 | 0.7− | 0.2− |
| 2005 04 01 | 699 | 0.9+ | 0.4+ | 2005 04 16 | 703 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.8− | 0.6− |
| 2005 04 01 | 699 | 0.3+ | 0.7− | 2005 04 16 | 703 | 1.5− | 0.6+ | 2006 09 25 | 703 | 1.2+ | 0.0 |
| 2005 04 06 | H06 | 0.1− | 0.5− | 2005 04 16 | 703 | 0.4+ | 0.0 | 2006 09 25 | 703 | 0.8+ | 0.8+ |
| 2005 04 06 | H06 | 0.3+ | 0.0 | 2005 04 27 | H06 | 0.7+ | 0.2− | 2006 09 25 | 703 | 0.1− | 0.5+ |
| 2005 04 06 | H06 | 0.2− | 0.4− | 2005 04 27 | H06 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.6+ | 1.0+ |
| 2005 04 06 | 703 | 1.0− | 0.7− | 2005 04 27 | H06 | 0.5+ | 0.1− | 2006 10 21 | 703 | 0.6− | 1.1− |
| 2005 04 06 | 703 | 1.0− | 0.3− | 2005 05 08 | H06 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.4+ | 1.2− |
| 2005 04 06 | 703 | 0.0 | 0.1− | 2005 05 08 | H06 | 0.0 | 0.7− | 2006 10 21 | 703 | 0.1− | 0.8+ |
| 2005 04 06 | 703 | 0.0 | 0.1+ | 2005 05 08 | 703 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.5− | 0.5+ |

**2005 GU$_{36}$ = 2006 TN$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.65448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28631762 | $\omega$ | 253.13264 | | +0.23576947 | | +0.97108413 |
| $a$ | 2.2798380 | $\Omega$ | 30.58255 | | −0.86118372 | | +0.22666888 |
| $e$ | 0.1105976 | $i$ | 4.23007 | | −0.45030586 | | +0.07494560 |
| $P$ | 3.44 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 691 | 0.9− | 0.2+ | 2005 04 06 | 691 | 0.6+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 1999 10 19 | 691 | 0.9+ | 0.2+ | 2005 04 10 | 691 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.0 |
| 1999 10 19 | 691 | 0.1− | 0.1− | 2005 04 10 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 1999 10 31 | 691 | 0.0 | 0.2+ | 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.4− | 0.2− |
| 1999 10 31 | 691 | 0.3− | 0.3+ | 2005 05 12 | G96 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 1999 10 31 | 691 | 0.1+ | 0.1− | 2005 05 12 | G96 | 0.6− | 0.5+ | 2006 10 15 | 691 | 0.3− | 0.1+ |
| 2005 04 02 | G96 | 0.0 | 0.2− | 2005 05 12 | G96 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.2+ |
| 2005 04 02 | G96 | 0.4− | 0.3− | 2005 05 12 | G96 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.6+ |
| 2005 04 02 | G96 | 0.1− | 0.2− | 2005 05 12 | G96 | 0.4− | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2005 04 02 | G96 | 1.0− | 0.4− | 2005 05 12 | G96 | 0.1− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2005 04 06 | 691 | 0.4+ | 0.6+ | 2005 05 12 | G96 | 0.5− | 0.1+ | | | | |
| 2005 04 06 | 691 | 0.2+ | 0.9+ | 2005 05 12 | G96 | 0.4− | 0.6+ | | | | |

**2005 GV$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.79811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22748825 | $\omega$ | 262.46408 | | −0.00729487 | | +0.99966291 |
| $a$ | 2.6576436 | $\Omega$ | 7.25889 | | −0.82198934 | | +0.00819520 |
| $e$ | 0.2236192 | $i$ | 11.37330 | | −0.56945615 | | −0.02463540 |
| $P$ | 4.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | E12 | 0.4+ | 0.1+ | 2005 05 16 | 644 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2005 04 02 | E12 | 0.0 | 0.5+ | 2005 05 16 | 644 | 1.0+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2005 04 02 | E12 | 0.6− | 0.6+ | 2005 05 16 | 644 | 0.9+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2005 04 02 | E12 | 0.8− | 0.6+ | 2005 06 02 | 699 | 1.3− | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2005 04 06 | 704 | 0.2− | 0.4− | 2005 06 02 | 699 | 0.8− | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2005 04 06 | 704 | 0.8+ | 0.1+ | 2005 06 02 | 699 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 704 | 0.6+ | 0.8− | 2005 06 02 | 699 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2005 04 06 | 704 | 0.3+ | 1.3− | 2005 06 26 | E12 | 0.5− | 0.6− | 2006 10 17 | 703 | 0.6+ | 0.2− |
| 2005 04 19 | 703 | 0.4+ | 0.2+ | 2005 06 26 | E12 | 0.0 | 0.4− | 2006 10 17 | 703 | 1.2− | 1.3− |
| 2005 04 19 | 703 | 0.9− | 0.8− | 2005 06 26 | E12 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2005 04 19 | 703 | 0.2+ | 0.4− | 2005 06 26 | E12 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 04 19 | 703 | (0.9− | 1.5+) | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 05 08 | E12 | 0.3− | 0.8+ | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 05 08 | E12 | 0.3+ | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.1− |
| 2005 05 08 | E12 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 14 | 703 | 1.2+ | 0.7− |
| 2005 05 10 | 699 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.8− | 2006 11 14 | 703 | 0.9− | 1.0− |
| 2005 05 10 | 699 | 0.3+ | 0.9+ | 2006 09 14 | 703 | 0.4+ | 0.5+ | 2006 11 14 | 703 | (0.9− | 1.7+) |
| 2005 05 10 | 699 | 0.5+ | 0.4− | 2006 09 14 | 703 | 0.9+ | 1.3− | | | | |
| 2005 05 10 | 699 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.2− | | | | |

**2005 GA$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.84004 | | (2000.0) | | | |
| $n$ | 0.28083793 | $\omega$ | 54.45349 | | +0.52228009 | +0.84808219 |
| $a$ | 2.3093985 | $\Omega$ | 247.26918 | | −0.81040370 | +0.46099081 |
| $e$ | 0.1684815 | $i$ | 5.55804 | | −0.26546063 | +0.26123567 |
| $P$ | 3.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.5− | 0.0 | 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.8− | 0.4− |
| 1999 10 07 | 704 | 0.6+ | 0.2+ | 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 1999 10 07 | 704 | 0.8+ | 0.6+ | 2004 01 28 | 691 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 1999 10 21 | 704 | 0.6+ | 0.3+ | 2005 04 03 | 644 | 0.2+ | 1.1+ | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 1999 10 21 | 704 | 0.4− | 0.6− | 2005 04 03 | 644 | 0.2− | 0.9+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 1999 10 21 | 704 | 0.1− | 0.6+ | 2005 04 03 | 644 | 0.8+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 1999 11 04 | 704 | 0.4+ | 0.8− | 2005 04 06 | 699 | 0.1+ | 0.7+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1999 11 04 | 704 | 0.4+ | 0.5− | 2005 04 06 | 699 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 1999 11 04 | 704 | 0.9+ | 1.0− | 2005 04 06 | 699 | (1.4− | 1.7+) | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 1999 11 04 | 703 | 0.8− | 0.4+ | 2005 04 06 | 699 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.0 |
| 1999 11 04 | 704 | 0.5+ | 0.1− | 2005 04 12 | G92 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 1999 11 04 | 703 | 0.3+ | 0.8− | 2005 04 12 | G92 | 0.6+ | 0.8+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 1999 11 04 | 704 | 0.4− | 1.8− | 2005 04 12 | G92 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1999 11 04 | 703 | 0.4− | 0.0 | 2006 09 20 | 699 | (2.0+ | 0.7+) | 2006 10 25 | A44 | 0.9− | 0.8+ |
| 1999 11 04 | 703 | 0.3− | 1.5− | 2006 09 20 | 699 | 0.8+ | 0.2− | 2006 10 25 | A44 | 0.9− | 0.9+ |
| 2002 06 10 | 704 | 0.0 | 0.9+ | 2006 09 20 | 699 | 1.0− | 1.0+ | 2006 10 25 | A44 | 1.1− | 0.8+ |
| 2002 06 10 | 704 | 0.2− | 1.2+ | 2006 09 20 | 699 | 0.8+ | 0.7− | 2006 10 25 | 106 | 0.3+ | 0.8+ |
| 2002 06 10 | 704 | 0.3− | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 25 | 106 | 0.0 | 0.2− |
| 2002 06 10 | 704 | (0.8− | 1.8+) | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 25 | 106 | 0.5− | 0.5+ |
| 2002 07 05 | 704 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 26 | 106 | 0.2− | 1.4− |
| 2002 07 05 | 704 | 0.2− | 0.7− | 2006 09 28 | 703 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2002 07 05 | 704 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.3− | 0.6− | 2006 10 29 | 691 | 0.3+ | 0.3+ |
| 2002 07 05 | 704 | (2.2+ | 0.5+) | 2006 09 28 | 703 | 0.2+ | 0.9− | 2006 10 29 | 691 | 0.2+ | 0.3+ |

**2005 GA$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.05504 | | (2000.0) | | | |
| $n$ | 0.26149403 | $\omega$ | 226.07236 | | +0.90807432 | −0.41598228 |
| $a$ | 2.4219297 | $\Omega$ | 158.36839 | | +0.41200546 | +0.86647095 |
| $e$ | 0.0959048 | $i$ | 7.57222 | | +0.07518330 | +0.27601962 |
| $P$ | 3.77 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 809 | 0.8− | 0.7+ | 2001 03 19 | 691 | 0.3+ | 0.3− | 2005 04 01 | 683 | 1.0+ | 0.6− |
| 1995 08 26 | 809 | 0.7− | 0.9− | 2001 03 19 | 691 | 0.2+ | 0.2− | 2005 04 01 | 683 | 1.0− | 0.6+ |
| 1995 09 22 | 809 | 0.9− | 0.5− | 2003 11 23 | 699 | 0.6+ | 0.9− | 2005 04 04 | 703 | 0.7+ | 0.4− |
| 1995 09 22 | 809 | 2.6+ | 1.6+ | 2003 11 23 | 699 | 0.4− | 0.6− | 2005 04 04 | 703 | 1.3+ | 0.4+ |
| 1999 10 09 | 704 | 0.1+ | 0.2− | 2003 11 23 | 699 | 0.0 | 0.2− | 2005 04 04 | 703 | (2.3+ | 0.1−) |
| 1999 10 09 | 704 | 0.2− | 0.4− | 2003 11 23 | 699 | 1.1− | 0.7+ | 2005 04 04 | 703 | 0.6+ | 1.4+ |
| 1999 10 09 | 704 | 0.3+ | 0.1+ | 2003 11 30 | 704 | 0.6+ | 0.8+ | 2005 04 06 | G96 | 0.1+ | 0.1− |
| 1999 10 09 | 704 | 0.2− | 0.4− | 2003 11 30 | 704 | 0.4− | 0.2+ | 2005 04 06 | G96 | 0.5− | 0.1− |
| 1999 10 09 | 704 | 0.4+ | 0.6− | 2003 11 30 | 704 | 0.0 | 0.2+ | 2005 04 06 | G96 | 0.1− | 0.0 |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2003 11 30 | 704 | 0.3− | 0.4+ | 2005 04 06 | G96 | 0.2− | 0.3− |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2003 12 21 | 703 | 0.4− | 1.6+ | 2006 06 20 | 691 | 0.0 | 0.6+ |
| 2001 01 31 | 691 | 0.3− | 1.0+ | 2003 12 21 | 703 | 0.2+ | 0.3+ | 2006 06 20 | 691 | 0.2− | 0.3+ |
| 2001 01 31 | 691 | 0.5− | 0.9+ | 2003 12 21 | 703 | 0.1− | 0.9+ | 2006 06 20 | 691 | 0.2− | 0.7+ |
| 2001 01 31 | 691 | 0.5− | 0.5+ | 2003 12 21 | 703 | 0.7+ | 0.0 | | | | |
| 2001 03 19 | 691 | 0.2+ | 0.2− | 2005 04 01 | 683 | (1.0− | 4.1−) | | | | |

**2005 GB$_{40}$ = 2006 SX$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.05897 | | (2000.0) | | | |
| $n$ | 0.28197231 | $\omega$ | 84.79164 | | +0.14178592 | +0.98960012 |
| $a$ | 2.3032005 | $\Omega$ | 193.43276 | | −0.94455056 | +0.12791872 |
| $e$ | 0.1086042 | $i$ | 5.99343 | | −0.29617731 | +0.06579055 |
| $P$ | 3.50 | $H$ | 18.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.2+ | 0.1+ | 2005 04 07 | G96 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 04 04 | G96 | 0.5+ | 0.1− | 2005 04 07 | G96 | 0.1− | 0.8+ | 2006 09 25 | G96 | 0.3+ | 0.3+ |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2005 04 18 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2005 04 04 | G96 | 0.3− | 0.4− | 2005 04 18 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.1− |
| 2005 04 06 | G96 | 0.4− | 0.1+ | 2005 04 18 | 691 | 0.3+ | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.2+ |
| 2005 04 06 | G96 | 0.6− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2005 04 06 | G96 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2005 04 06 | G96 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2005 04 07 | G96 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.7− | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.4− | | | | |

**2005 GH$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.42424 | | (2000.0) | | | |
| $n$ | 0.23609370 | $\omega$ | 127.45793 | | +0.61045053 | +0.79205437 |
| $a$ | 2.5926653 | $\Omega$ | 180.16434 | | −0.74085792 | +0.57093171 |
| $e$ | 0.1522311 | $i$ | 2.72007 | | −0.28014225 | +0.21607140 |
| $P$ | 4.17 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 691 | 0.1+ | 0.0 | 2005 05 10 | 807 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2001 05 18 | 691 | 0.1− | 0.1+ | 2005 05 10 | G96 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.2+ |
| 2001 05 18 | 691 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ |
| 2002 10 10 | 291 | 0.1− | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.0 |
| 2002 10 10 | 291 | 0.0 | 0.1+ | 2005 05 10 | 807 | 0.2− | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.1+ |
| 2002 10 10 | 291 | 0.1+ | 0.1− | 2005 05 10 | G96 | 0.4− | 0.1− | 2006 09 16 | 691 | 0.0 | 0.0 |
| 2005 04 04 | G96 | 0.4− | 0.3+ | 2005 05 10 | 807 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2005 04 04 | G96 | 0.2− | 0.3− | 2005 05 10 | 807 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2005 04 04 | G96 | 0.6− | 0.1+ | 2005 05 11 | 807 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 04 04 | G96 | 0.3− | 0.1+ | 2006 07 22 | G96 | 0.7+ | 0.5− | 2006 09 25 | G96 | 0.3− | 0.3− |
| 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2005 04 06 | 691 | 0.4+ | 0.1+ | 2006 07 22 | G96 | 0.3+ | 0.5− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2005 04 06 | 691 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.0 | 0.1+ |

**2005 GH$_{44}$ = 2006 QL$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.23338 | | (2000.0) | | | |
| $n$ | 0.21958948 | $\omega$ | 359.47109 | | +0.18994497 | +0.97890333 |
| $a$ | 2.7209989 | $\Omega$ | 281.47693 | | −0.90049671 | +0.14314703 |
| $e$ | 0.1623457 | $i$ | 4.40638 | | −0.39118612 | +0.14579847 |
| $P$ | 4.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.0 | 0.0 | 2005 04 06 | 691 | 0.1− | 0.1− | 2006 08 29 | 703 | 0.6− | 1.0+ |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2005 04 06 | 691 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.3− |
| 2005 04 05 | 699 | 0.4− | 0.6− | 2005 04 06 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 2005 04 05 | 699 | 0.9+ | 0.8+ | 2005 04 14 | 703 | 1.0− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 2005 04 05 | 644 | 0.3+ | 0.2+ | 2005 04 14 | 703 | (2.8− | 1.6−) | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 2005 04 05 | 699 | 0.8+ | 0.4+ | 2005 04 14 | 703 | (2.0− | 0.2+) | 2006 09 18 | 703 | 0.9+ | 2.0− |
| 2005 04 05 | 644 | 0.0 | 0.0 | 2005 04 14 | 703 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.7− | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | 699 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.9+ | 0.7− |
| 2005 04 05 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.2− |

**2005 GU$_{44}$ = 2006 PB$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.06437 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22585109 | $\omega$ | 341.49433 | | +0.72768831 | | +0.68582449 |
| $a$ | 2.6704713 | $\Omega$ | 335.19500 | | −0.62604444 | | +0.65772400 |
| $e$ | 0.1981854 | $i$ | 1.46143 | | −0.28024647 | | +0.31151871 |
| $P$ | 4.36 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | G96 | 0.0 | 0.5− | 2005 04 07 | G96 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.1+ |
| 2005 04 05 | G96 | 0.3+ | 0.2+ | 2005 04 07 | G96 | 0.2− | 0.2+ | 2006 08 14 | 644 | 0.3− | 0.1− |
| 2005 04 05 | G96 | 0.0 | 0.1− | 2005 04 07 | G96 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2005 04 05 | G96 | 0.1+ | 0.1− | 2005 04 07 | G96 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2+ |
| 2005 04 06 | G96 | 0.1− | 0.0 | 2006 08 12 | 644 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.5− | 0.3− |
| 2005 04 06 | G96 | 0.1− | 0.2− | 2006 08 12 | 644 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.1+ |
| 2005 04 06 | G96 | (1.6+ | 0.1−) | 2006 08 12 | 644 | 0.1+ | 0.1− | | | | |
| 2005 04 06 | G96 | 0.9− | 0.3− | 2006 08 14 | 644 | 0.1+ | 0.0 | | | | |

**2005 GO$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.66598 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28220976 | $\omega$ | 291.97672 | | +0.46851526 | | +0.88337434 |
| $a$ | 2.3019083 | $\Omega$ | 6.00257 | | −0.76247114 | | +0.41115988 |
| $e$ | 0.1316436 | $i$ | 6.57135 | | −0.44624120 | | +0.22493848 |
| $P$ | 3.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.5+ | 0.1+ | 2005 04 06 | G96 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 1999 10 06 | 704 | 0.0 | 1.0+ | 2005 04 06 | G96 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 1999 10 06 | 704 | 0.5− | 0.1− | 2005 04 06 | G96 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.2− |
| 1999 10 06 | 704 | 0.2− | 0.1− | 2005 04 06 | G96 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 1999 10 06 | 704 | 0.0 | 0.4− | 2005 05 12 | G96 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.3− | 0.2− |
| 2005 03 17 | 691 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2005 03 17 | 691 | 0.5+ | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2005 03 17 | 691 | 0.4+ | 0.1+ | 2005 05 12 | G96 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 2005 04 05 | G96 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2005 04 05 | G96 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2005 04 05 | G96 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2005 04 05 | G96 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− |

**2005 GN$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.82226 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23135596 | $\omega$ | 217.42580 | | −0.08053902 | | +0.99585775 |
| $a$ | 2.6279409 | $\Omega$ | 47.99654 | | −0.90022506 | | −0.05449867 |
| $e$ | 0.1947811 | $i$ | 3.25549 | | −0.42791157 | | −0.07278218 |
| $P$ | 4.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | G96 | 0.1− | 0.4− | 2005 04 07 | G96 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2005 04 05 | G96 | 0.2− | 0.3+ | 2005 04 11 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2005 04 05 | G96 | 0.0 | 0.0 | 2005 04 11 | 691 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.6+ | 0.0 |
| 2005 04 05 | G96 | 0.5+ | 0.3− | 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2+ |
| 2005 04 06 | G96 | 0.2− | 0.0 | 2005 04 18 | 691 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.1+ |
| 2005 04 06 | G96 | 0.1− | 0.1− | 2005 04 18 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.1+ |
| 2005 04 06 | G96 | 0.0 | 0.5− | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2005 04 06 | G96 | 0.3− | 0.6− | 2005 06 13 | G96 | 0.2− | 0.4− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2005 04 06 | G96 | 0.2− | 0.0 | 2005 06 13 | G96 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2005 04 06 | G96 | 0.3− | 0.3− | 2005 06 13 | G96 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.7− | 0.2− |
| 2005 04 06 | G96 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.7− | 0.4− | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 2005 04 06 | G96 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.7+ | 0.4− |
| 2005 04 07 | G96 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2005 04 07 | G96 | 0.6+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | | | | |
| 2005 04 07 | G96 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | | | | |

**2005 GQ$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.99670 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29640629 | $\omega$ | 45.98360 | | −0.67871700 | | +0.73439837 |
| $a$ | 2.2278080 | $\Omega$ | 181.27580 | | −0.69166626 | | −0.63991136 |
| $e$ | 0.0885873 | $i$ | 3.87802 | | −0.24686232 | | −0.22621338 |
| $P$ | 3.33 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | G96 | 0.0 | 0.4− | 2005 04 14 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2005 04 05 | G96 | 0.2− | 1.2− | 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2005 04 05 | G96 | 0.1− | 1.3− | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2005 04 05 | G96 | 0.2− | 0.1− | 2005 04 15 | 699 | (0.1− | 2.0+) | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2005 04 06 | G96 | 0.5− | 0.0 | 2005 04 15 | 699 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2005 04 06 | G96 | 0.6− | 0.2− | 2005 04 15 | 699 | 0.0 | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2005 04 06 | G96 | 0.4− | 0.1− | 2005 04 15 | 699 | 0.4+ | 0.4+ | 2006 10 22 | G96 | (0.5+ | 0.2−) |
| 2005 04 06 | G96 | 0.6− | 0.0 | 2005 05 04 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | (0.5+ | 0.1−) |
| 2005 04 11 | 691 | 0.0 | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.7− |
| 2005 04 11 | 691 | 0.1+ | 0.0 | 2005 05 04 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1+ | | | | |

**2005 GV$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.64331 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30686083 | $\omega$ | 123.62757 | | +0.15877222 | | +0.98723974 |
| $a$ | 2.1769164 | $\Omega$ | 155.49938 | | −0.91531629 | | +0.15181858 |
| $e$ | 0.1139650 | $i$ | 1.68715 | | −0.37011817 | | +0.04805014 |
| $P$ | 3.21 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | G96 | 0.0 | 0.2− | 2005 04 10 | G96 | 0.3− | 0.6− | 2005 04 18 | 691 | 0.3+ | 0.2+ |
| 2005 04 05 | G96 | 0.1+ | 0.4− | 2005 04 10 | G96 | 0.5− | 0.3− | 2005 04 18 | 691 | 0.3− | 0.2+ |
| 2005 04 05 | G96 | 0.3− | 0.4− | 2005 04 10 | G96 | 0.6− | 0.2− | 2005 04 18 | 691 | 0.1− | 0.2− |
| 2005 04 05 | G96 | 0.2− | 0.1+ | 2005 04 10 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.3+ |
| 2005 04 06 | G96 | 0.6− | 0.5− | 2005 04 10 | 691 | 0.2− | 0.3− | 2006 09 30 | G96 | 0.3+ | 0.5+ |
| 2005 04 06 | G96 | 0.4− | 0.3− | 2005 04 10 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.5− | 0.2+ |
| 2005 04 06 | G96 | 0.4− | 0.3− | 2005 04 10 | 691 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.4− |
| 2005 04 06 | G96 | 0.3− | 0.6− | 2005 04 10 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2005 04 09 | 691 | 0.3+ | 0.4+ | 2005 04 10 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 2005 04 09 | 691 | 0.1− | 0.1+ | 2005 04 11 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.5+ |
| 2005 04 09 | 691 | 0.5+ | 0.4− | 2005 04 11 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1+ |
| 2005 04 10 | 691 | 0.1+ | 0.1+ | 2005 04 11 | 691 | 0.2+ | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2005 04 10 | 691 | 1.2+ | 1.1+ | 2005 04 14 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.2+ |
| 2005 04 10 | 691 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.0 |
| 2005 04 10 | G96 | 0.3− | 0.3− | 2005 04 14 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.7+ | 0.0 |

**2005 GX$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.12407 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27168198 | $\omega$ | 59.14437 | | −0.74805277 | | +0.66351169 |
| $a$ | 2.3609973 | $\Omega$ | 162.41287 | | −0.62263611 | | −0.69491458 |
| $e$ | 0.1590744 | $i$ | 2.46798 | | −0.22965480 | | −0.27721104 |
| $P$ | 3.63 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.1+ | 0.1+ | 2005 04 10 | 691 | 0.2+ | 0.0 | 2005 05 03 | 691 | 0.1+ | 0.3− |
| 2005 03 14 | G96 | 0.0 | 0.1+ | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2005 05 14 | 691 | 0.2− | 0.1− |
| 2005 03 14 | G96 | 0.3− | 0.1− | 2005 04 10 | 691 | (2.9+ | 0.9−) | 2005 05 14 | 691 | 0.3− | 0.3− |
| 2005 03 14 | G96 | 0.2− | 0.1+ | 2005 04 10 | 691 | 0.5+ | 0.2+ | 2005 05 14 | 691 | 0.3− | 0.3− |
| 2005 04 05 | G96 | 0.4− | 0.5− | 2005 04 10 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.2+ |
| 2005 04 05 | G96 | 0.4− | 0.1+ | 2005 04 12 | 704 | 0.5+ | 1.1+ | 2006 09 15 | 691 | 0.4− | 0.1+ |
| 2005 04 05 | G96 | 0.1+ | 0.3+ | 2005 04 12 | 704 | 0.4+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | G96 | 0.2− | 0.2− | 2005 04 12 | 704 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.5− | | |
| 2005 04 06 | G96 | 0.3− | 0.3− | 2005 04 12 | 704 | 0.6− | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.4− | | |
| 2005 04 06 | G96 | 0.6− | 0.2+ | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2005 04 06 | G96 | 0.3− | 0.2− | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.4− | | |
| 2005 04 06 | G96 | 0.2− | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | |
| 2005 04 07 | G96 | 0.1− | 0.1− | 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.0 | | |
| 2005 04 07 | G96 | 0.2− | 0.1− | 2005 04 18 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.3+ | | |
| 2005 04 07 | G96 | 0.3− | 0.1+ | 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.0 | 0.0 | | |
| 2005 04 07 | G96 | 0.2− | 0.3− | 2005 05 03 | 691 | 0.0 | 0.0 | 2006 10 19 | 695 | 0.2− | 0.2+ | | |
| 2005 04 10 | 691 | 0.2+ | 0.2+ | 2005 05 03 | 691 | 0.1+ | 0.1+ | | | | | | |

**2005 GZ$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.57483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23751180 | $\omega$ | 318.01564 | | +0.85202097 | −0.52220423 | |
| $a$ | 2.5823350 | $\Omega$ | 73.50010 | | +0.48997263 | +0.77062175 | |
| $e$ | 0.0757113 | $i$ | 2.20669 | | +0.18435588 | +0.36530105 | |
| $P$ | 4.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.2− | 1.2− | 2005 04 05 | G96 | 0.9− | 0.8+ | 2005 04 10 | 691 | 0.2+ | 0.2+ | | |
| 2002 08 08 | 644 | 0.1− | 0.6− | 2005 04 06 | G96 | 0.4− | 0.4− | 2005 04 10 | 691 | 0.0 | 0.0 | | |
| 2002 08 08 | 644 | 0.3+ | 0.5− | 2005 04 06 | G96 | 0.2− | 0.0 | 2005 04 10 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 18 | 644 | 0.1+ | 0.2+ | 2005 04 06 | G96 | 0.8− | 0.3+ | 2005 04 14 | 691 | 0.2+ | 0.0 | | |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2005 04 06 | G96 | 0.6− | 0.6− | 2005 04 14 | 691 | 0.5+ | 0.1− | | |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2005 04 07 | G96 | 0.2+ | 0.4− | 2005 04 14 | 691 | 0.4+ | 0.1− | | |
| 2002 08 30 | 644 | 0.2− | 0.5+ | 2005 04 07 | G96 | 0.5− | 0.4− | 2005 05 10 | G96 | 0.7− | 0.4− | | |
| 2002 08 30 | 644 | 0.0 | 0.4+ | 2005 04 07 | G96 | 0.2− | 0.4− | 2005 05 10 | G96 | 0.1+ | 0.5− | | |
| 2002 08 30 | 644 | 0.1+ | 0.6+ | 2005 04 07 | G96 | 0.2− | 0.1+ | 2005 05 10 | G96 | 0.9− | 0.4+ | | |
| 2005 04 05 | G96 | 0.2− | 0.2− | 2005 04 09 | 691 | 0.7− | 0.2+ | 2005 05 10 | G96 | 0.2+ | 0.4+ | | |
| 2005 04 05 | G96 | 0.2− | 0.1− | 2005 04 09 | 691 | 0.0 | 0.1+ | | | | | | |
| 2005 04 05 | G96 | 0.2− | 0.5+ | 2005 04 09 | 691 | 0.3+ | 0.3− | | | | | | |

**2005 GQ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.75305 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30005444 | $\omega$ | 157.64635 | | +0.95486230 | +0.29697346 | |
| $a$ | 2.2097137 | $\Omega$ | 185.09174 | | −0.28266733 | +0.90148082 | |
| $e$ | 0.1913097 | $i$ | 4.32251 | | −0.09130806 | +0.31486363 | |
| $P$ | 3.28 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | G96 | 0.4− | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.6− | | |
| 2005 04 05 | G96 | 0.4− | 0.1+ | 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2005 04 05 | G96 | 0.3− | 0.8+ | 2005 05 04 | 691 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2005 04 05 | G96 | 0.5− | 0.0 | 2005 05 04 | 691 | 0.3− | 0.1+ | 2006 11 17 | 704 | 1.0− | 0.1+ | | |
| 2005 04 06 | G96 | 0.6− | 0.5− | 2005 05 04 | 691 | 0.5− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.7+ | | |
| 2005 04 06 | G96 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.0 | | |
| 2005 04 06 | G96 | 0.5+ | 1.1− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 17 | 704 | 1.5− | 1.3+ | | |
| 2005 04 06 | G96 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.1− | 0.0 | | |
| 2005 04 10 | G96 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | (2.0− | 1.0+) | | |
| 2005 04 10 | G96 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 19 | 704 | 1.2− | 1.0+ | | |
| 2005 04 10 | G96 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.6− | 2006 11 19 | 704 | (0.7− | 2.1−) | | |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 11 14 | 704 | (0.4− | 2.8+) | 2006 11 20 | 704 | 0.3+ | 0.0 | | |
| 2005 04 10 | 691 | 0.0 | 0.2− | 2006 11 14 | 704 | 1.4− | 0.8+ | 2006 11 20 | 704 | 0.7− | 0.2− | | |
| 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.5− | | |
| 2005 04 10 | 691 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.4− | 0.9− | 2006 11 20 | 704 | 0.0 | 0.2− | | |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.3− | 0.6− | | |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.6+ | | |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2− | | |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 1.2− | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |

**2005 GP$_{50}$ = 2006 RU$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.91692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22933825 | $\omega$ | 92.08014 | | +0.25782988 | +0.96607965 | |
| $a$ | 2.6433321 | $\Omega$ | 192.88964 | | −0.91048206 | +0.23787097 | |
| $e$ | 0.0593366 | $i$ | 3.75885 | | −0.32333600 | +0.10053613 | |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 09 17 | 703 | 0.0 | 0.0 | | |
| 2005 04 05 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.6− | 2006 09 27 | G96 | 0.3− | 0.3+ | | |
| 2005 04 05 | 691 | 0.3+ | 0.6+ | 2006 08 28 | 703 | (1.7+ | 2.0−) | 2006 09 27 | G96 | 0.1− | 0.1+ | | |
| 2005 04 06 | G96 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.9− | 0.5− | 2006 09 27 | G96 | 0.4− | 0.2+ | | |
| 2005 04 06 | G96 | 0.1+ | 0.8− | 2006 09 13 | 644 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.3+ | | |
| 2005 04 06 | G96 | 0.2− | 0.6− | 2006 09 13 | 644 | 0.1− | 0.3+ | 2006 11 21 | G96 | (2.1− | 0.4−) | | |
| 2005 04 06 | G96 | 0.3− | 0.7− | 2006 09 13 | 644 | 0.5+ | 0.7+ | 2006 11 21 | G96 | (2.2− | 0.4−) | | |
| 2005 04 30 | 691 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.3− | 2006 11 21 | G96 | (2.8− | 0.1−) | | |
| 2005 04 30 | 691 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.7− | 2006 11 21 | G96 | (2.2− | 0.8−) | | |
| 2005 04 30 | 691 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.8+ | 0.0 | | | | | | |

**2005 GS$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.63885 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22894565 | $\omega$ | 303.15972 | | +0.92822395 | +0.34299972 | |
| $a$ | 2.6463531 | $\Omega$ | 37.35824 | | −0.20948335 | +0.80189693 | |
| $e$ | 0.2926776 | $i$ | 13.73316 | | −0.30743622 | +0.48919577 | |
| $P$ | 4.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 15 | 704 | 0.1+ | 0.8− | 2006 09 17 | 699 | 1.1− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2002 12 15 | 704 | 0.5+ | 0.8− | 2006 09 17 | 699 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2002 12 15 | 704 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.2− | | |
| 2005 04 02 | G96 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.3− | | |
| 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.1− | 1.4+ | 2006 11 11 | 703 | 0.0 | 0.0 | | |
| 2005 04 02 | G96 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 1.1− | 2006 11 11 | 703 | 0.0 | 0.5− | | |
| 2005 04 07 | 691 | 0.5+ | 0.4+ | 2006 09 29 | 704 | 0.9− | 0.7+ | 2006 11 13 | 644 | 0.1+ | 0.2+ | | |
| 2005 04 07 | 691 | 0.2+ | 1.2+ | 2006 09 29 | 704 | (1.8− | 0.4+) | 2006 11 13 | 644 | 0.2+ | 0.3+ | | |
| 2005 04 07 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.7+ | 0.8+ | 2006 11 13 | 644 | 0.1+ | 0.4+ | | |
| 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.3− | | |
| 2005 04 11 | G96 | 0.1+ | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.5− | | |
| 2005 04 11 | G96 | 0.1+ | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.0 | | |
| 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.4− | 1.4+ | 2006 11 14 | 703 | 0.1− | 0.4− | | |
| 2005 05 08 | 699 | (0.2− | 1.7−) | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.5+ | | |
| 2005 05 08 | 699 | 1.4+ | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.3− | 2006 11 15 | 704 | 0.2+ | 0.2+ | | |
| 2005 05 08 | 699 | (2.1+ | 0.3−) | 2006 10 21 | 704 | 1.3− | 0.8− | 2006 11 15 | 704 | 0.1+ | 0.4− | | |
| 2005 05 08 | 699 | (1.7+ | 0.8+) | 2006 10 21 | 704 | 0.3− | 0.2− | 2006 11 15 | 704 | 0.0 | 0.1− | | |
| 2005 05 16 | G96 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.0 | 0.1− | | |
| 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.1+ | | |
| 2005 05 16 | G96 | 0.1+ | 0.0 | 2006 10 21 | 704 | (1.7− | 0.3+) | 2006 11 19 | 704 | 0.1+ | 0.1+ | | |
| 2005 05 16 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.0 | | |
| 2006 08 28 | 703 | 1.2− | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.2+ | | |
| 2006 08 28 | 703 | 0.8+ | 1.4+ | 2006 10 21 | 704 | (1.5− | 0.6+) | 2006 11 22 | 704 | 0.3− | 0.5− | | |
| 2006 08 28 | 703 | 0.3− | 0.6− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.4+ | | |
| 2006 08 28 | 703 | 0.4− | 0.6− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | (1.7+ | 2.1−) | | |
| 2006 09 16 | 703 | 0.2− | 0.5− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2+ | | |
| 2006 09 16 | 703 | 0.4− | 0.6− | 2006 10 29 | 704 | 0.5+ | 0.3+ | 2006 12 01 | 704 | 1.6+ | 0.6+ | | |
| 2006 09 16 | 703 | 0.5− | 0.7− | 2006 10 29 | 704 | 0.1+ | 0.6+ | 2006 12 01 | 704 | 0.4+ | 1.2+ | | |
| 2006 09 16 | 703 | 0.8− | 0.7− | 2006 10 29 | 704 | 0.1+ | 0.6+ | 2006 12 01 | 704 | 0.5+ | 2.2+ | | |
| 2006 09 17 | 699 | 0.6− | 0.1+ | 2006 10 29 | 704 | 0.2− | 0.6+ | | | | | | |
| 2006 09 17 | 699 | 0.7− | 0.1− | 2006 10 29 | 704 | 0.2− | 0.7+ | | | | | | |

**2005 GR$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.57791 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28889787 | $\omega$ | 208.99164 | | −0.84283100 | | +0.53814953 |
| $a$ | 2.2662431 | $\Omega$ | 3.58090 | | −0.47499218 | | −0.73897360 |
| $e$ | 0.1323629 | $i$ | 5.11346 | | −0.25301845 | | −0.40535552 |
| $P$ | 3.41 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.4− | 0.1+ | 2005 04 11 | 699 | 0.7− | 0.4− | 2006 09 25 | G96 | 0.4− | 0.1− |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2005 04 11 | 699 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 03 11 | G96 | 0.2+ | 0.1− | 2005 04 11 | 699 | 0.6+ | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2005 03 11 | G96 | 0.2− | 0.1− | 2005 04 11 | 699 | 0.4+ | 0.7− | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2005 04 04 | 691 | 0.3− | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.7− | 0.2− |
| 2005 04 04 | 691 | 0.1− | 0.1+ | 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2005 04 04 | 691 | 0.1+ | 0.2− | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2005 04 04 | 704 | 0.3− | 1.0− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2005 04 04 | 704 | 0.2− | 1.4− | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2005 04 04 | 704 | 0.5+ | 0.2− | 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.8− | 0.2− |
| 2005 04 07 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2005 04 07 | 704 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.4+ | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.6+ |
| 2005 04 07 | 704 | 0.4+ | 0.6+ | 2006 09 25 | 691 | 0.3+ | 0.3− | | | | |

**2005 GV$_{54}$ = 2006 QR$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.37588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25756059 | $\omega$ | 353.38490 | | +0.88436971 | | +0.46658458 |
| $a$ | 2.4465257 | $\Omega$ | 338.78546 | | −0.42650885 | | +0.79573869 |
| $e$ | 0.2111696 | $i$ | 2.17756 | | −0.18968505 | | +0.38613311 |
| $P$ | 3.83 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.2− | 0.1− | 2006 08 21 | 704 | 0.1− | 0.7+ | 2006 09 17 | 704 | 0.2+ | 1.0+ |
| 2002 07 05 | 644 | 0.2− | 0.0 | 2006 08 21 | 704 | 0.5− | 1.2+ | 2006 09 17 | 703 | 0.3+ | 0.0 |
| 2002 07 05 | 644 | 0.2− | 0.1− | 2006 08 21 | 704 | 0.7− | 0.3+ | 2006 09 17 | 704 | 0.3+ | 0.6− |
| 2002 07 14 | 644 | 0.0 | 0.5− | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 17 | 703 | 0.1− | 1.1− |
| 2002 07 14 | 644 | 0.3+ | 0.2− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.0 | 0.7− |
| 2002 07 14 | 644 | 0.0 | 0.4− | 2006 08 22 | 644 | 0.3+ | 0.2− | 2006 09 17 | 703 | 0.7+ | 0.6− |
| 2002 07 22 | 644 | 0.1− | 0.5− | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.0 |
| 2002 07 22 | 644 | 0.1+ | 0.5− | 2006 08 27 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.6+ | 0.2+ |
| 2002 07 22 | 644 | 0.3− | 0.7− | 2006 08 27 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.5− | 0.3+ | 2006 08 28 | 703 | 1.3− | 0.0 | 2006 09 20 | 704 | 0.2− | 1.2+ |
| 2002 08 13 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 09 20 | 699 | 1.2− | 0.3+ |
| 2002 08 13 | 704 | 0.6− | 0.3+ | 2006 08 28 | 703 | 1.5− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.5+ |
| 2002 08 29 | 644 | 1.1+ | 0.5− | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 09 20 | 699 | 0.9− | 0.0 |
| 2002 08 29 | 644 | 0.9+ | 0.0 | 2006 09 12 | 703 | 0.6− | 0.4− | 2006 09 20 | 699 | 0.2+ | 0.7− |
| 2002 08 29 | 644 | 0.6+ | 0.1+ | 2006 09 12 | 703 | 0.5− | 0.3− | 2006 09 25 | G96 | 0.4− | 0.4− |
| 2005 04 05 | G96 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 05 | G96 | 0.2+ | 0.4− | 2006 09 12 | 703 | 0.5− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2005 04 05 | G96 | 0.8+ | 0.4+ | 2006 09 16 | 699 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2005 04 05 | G96 | 0.1− | 0.7+ | 2006 09 16 | 699 | 0.9+ | 0.3+ | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2005 04 07 | G96 | 0.0 | 0.5+ | 2006 09 16 | 699 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2005 04 07 | G96 | 0.5− | 0.2− | 2006 09 16 | 699 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2005 04 07 | G96 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.5+ | 0.3− | 2006 11 13 | G96 | 0.1+ | 1.2− |
| 2005 04 07 | G96 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.9+ | 0.2+ | | | | |

**2005 GU$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.75570 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26983315 | $\omega$ | 219.80865 | | +0.16674781 | | +0.98495423 |
| $a$ | 2.3717697 | $\Omega$ | 59.83449 | | −0.89074092 | | +0.17021944 |
| $e$ | 0.1719786 | $i$ | 3.00945 | | −0.42281885 | | +0.02984149 |
| $P$ | 3.65 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 691 | 0.4+ | 0.5+ | 2005 04 18 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.5+ |
| 2005 04 06 | 691 | 0.2+ | 0.4+ | 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2005 04 06 | 691 | 0.2+ | 1.4− | 2005 05 10 | G96 | 1.0− | 0.6− | 2006 09 26 | G96 | 0.2+ | 0.2+ |
| 2005 04 06 | G96 | 0.4− | 0.2+ | 2005 05 10 | G96 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2005 04 06 | G96 | 0.2− | 0.1− | 2005 05 10 | G96 | 0.3+ | 0.3− | 2006 09 30 | G96 | 0.4+ | 0.1+ |
| 2005 04 06 | G96 | 0.2− | 0.2− | 2005 05 10 | G96 | 0.2− | 0.7− | 2006 09 30 | G96 | 0.5+ | 0.2+ |
| 2005 04 06 | G96 | 0.6− | 0.2− | 2005 06 13 | G96 | 0.8− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.4+ |
| 2005 04 07 | G96 | 0.3− | 0.3− | 2005 06 13 | G96 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.6− | 0.1− |
| 2005 04 07 | G96 | 0.2− | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2005 04 07 | G96 | 0.7− | 0.6− | 2005 06 13 | G96 | (1.9+ | 0.5+) | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 04 07 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 1.2+ | 0.6− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2005 04 14 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2005 04 14 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.7− | 0.8− |
| 2005 04 14 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.7+ | 0.0 |
| 2005 04 18 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3+ | | | | |

**2005 GE$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.78075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30404069 | $\omega$ | 240.08415 | | +0.13261914 | | +0.98906356 |
| $a$ | 2.1903570 | $\Omega$ | 37.70795 | | −0.86911713 | | +0.14734559 |
| $e$ | 0.1506649 | $i$ | 6.05715 | | −0.47649510 | | +0.00652303 |
| $P$ | 3.24 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.4− | 0.4− | 2005 04 11 | 699 | 1.4+ | 0.5− | 2006 10 31 | G96 | 1.0− | 0.6− |
| 2005 04 06 | G96 | 0.7− | 0.1− | 2005 04 11 | 699 | 0.7+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 04 06 | G96 | 0.0 | 0.0 | 2005 04 11 | 699 | (2.1− | 1.6+) | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2005 04 06 | G96 | 0.3− | 0.5− | 2005 04 11 | 699 | 0.0 | 1.3+ | 2006 10 31 | G96 | 0.1− | 0.8− |
| 2005 04 07 | G96 | 0.1− | 0.3− | 2005 04 14 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.5+ |
| 2005 04 07 | G96 | 0.1− | 0.5− | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.1− |
| 2005 04 07 | G96 | 0.2− | 0.3− | 2005 04 14 | 691 | (0.4− | 1.9+) | 2006 11 09 | 691 | 0.4+ | 0.1+ |
| 2005 04 07 | G96 | 0.1− | 0.3− | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2005 04 09 | 691 | 0.1− | 0.2− | 2005 04 18 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.3− | 0.5+ |
| 2005 04 09 | 691 | 0.2+ | 0.1− | 2005 04 18 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.4− | 0.1− |
| 2005 04 09 | 691 | 0.2− | 0.1+ | 2005 05 08 | G96 | 0.8− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2005 04 10 | 691 | 0.0 | 0.1+ | 2005 05 08 | G96 | 0.6− | 0.3− | 2006 11 16 | 691 | 0.2+ | 0.5− |
| 2005 04 10 | 691 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2005 04 10 | 691 | 0.1− | 0.1+ | 2005 05 08 | G96 | 0.5− | 0.0 | | | | |

**2005 GS$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.98002 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28245930 | $\omega$ | 137.97909 | | −0.59055306 | | +0.80324346 |
| $a$ | 2.3005524 | $\Omega$ | 95.67989 | | −0.75965799 | | −0.52080415 |
| $e$ | 0.1964189 | $i$ | 4.48203 | | −0.27233588 | | −0.28907264 |
| $P$ | 3.49 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 291 | 0.1+ | 0.1+ | 2005 04 09 | 704 | 0.3+ | 0.6+ | 2005 05 13 | 703 | 1.4− | 0.3+ |
| 2002 07 06 | 291 | 0.1− | 0.2− | 2005 04 09 | 704 | 1.6+ | 0.2+ | 2005 05 13 | 703 | 1.4− | 0.0 |
| 2002 07 06 | 291 | 0.0 | 0.1+ | 2005 04 09 | 704 | 1.1− | 0.3+ | 2005 05 13 | 703 | 0.7− | 0.6− |
| 2005 04 01 | 699 | 0.2+ | 0.6+ | 2005 04 09 | 704 | 0.7+ | 0.2− | 2005 05 13 | 703 | 0.8+ | 0.3− |
| 2005 04 01 | 699 | 0.3− | 0.0 | 2005 04 13 | 704 | 0.2− | 0.8− | 2005 06 03 | 699 | (0.1− | 2.3−) |
| 2005 04 01 | 699 | 0.2+ | 0.4− | 2005 04 13 | 704 | 0.7+ | 0.5− | 2005 06 03 | 699 | 1.1+ | 0.0 |
| 2005 04 01 | 699 | 0.4+ | 0.1+ | 2005 04 13 | 704 | 0.4+ | 0.9+ | 2005 06 03 | 699 | 0.9+ | 0.9+ |
| 2005 04 07 | 699 | 0.7− | 0.6+ | 2005 05 08 | 703 | 1.9− | 0.1+ | 2005 06 03 | 699 | 0.0 | 0.5+ |
| 2005 04 07 | 699 | 0.1+ | 0.4+ | 2005 05 08 | 703 | 0.6− | 0.8+ | 2006 10 22 | G96 | 0.8− | 0.6+ |
| 2005 04 07 | 699 | 0.4+ | 0.6− | 2005 05 08 | 703 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.2+ |
| 2005 04 07 | 699 | 0.4− | 0.6+ | 2005 05 08 | 703 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.0 |
| 2005 04 09 | H06 | 0.4− | 0.1− | 2005 05 13 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2005 04 09 | H06 | 0.9+ | 1.1− | 2005 05 13 | 691 | 0.0 | 0.1− | | | | |
| 2005 04 09 | H06 | 0.2+ | 0.3− | 2005 05 13 | 691 | 0.1+ | 0.1− | | | | |

**2005 GF$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 244.08132 | | | (2000.0) | | |
| $n$ | 0.37793585 | $\omega$ | 114.82990 | | −0.81152883 | −0.54867099 |
| $a$ | 1.8946282 | $\Omega$ | 32.99345 | | +0.30607475 | −0.69211764 |
| $e$ | 0.0816494 | $i$ | 21.65555 | | +0.49773407 | −0.46897049 |
| $P$ | 2.61 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 703 | (3.0− | 0.3−) | 2005 04 08 | 704 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.2+ |
| 2005 03 10 | 703 | 1.0+ | 1.1+ | 2005 04 18 | 703 | 0.8+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.3− |
| 2005 03 10 | 703 | 0.6− | 0.1− | 2005 04 18 | 703 | 0.7− | 1.2+ | 2006 10 16 | 691 | 0.4+ | 0.4− |
| 2005 03 10 | 703 | 1.3− | 0.5− | 2005 04 18 | 703 | 0.9− | 0.3+ | 2006 10 16 | 691 | 0.6+ | 0.4− |
| 2005 04 04 | 703 | (2.3− | 0.2−) | 2005 04 18 | 703 | (3.6+ | 5.3−) | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2005 04 04 | 703 | (0.9− | 1.7−) | 2005 05 13 | G96 | 0.7+ | 0.3− | 2006 10 23 | 691 | 1.0− | 0.7+ |
| 2005 04 04 | 703 | 1.2− | 0.7− | 2005 05 13 | G96 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2005 04 04 | 703 | 1.0− | 0.2− | 2005 05 13 | G96 | 0.4+ | 0.1+ | 2006 11 23 | 703 | (1.8+ | 3.9−) |
| 2005 04 08 | 704 | 0.2+ | 0.3− | 2005 05 13 | G96 | 0.1− | 0.3− | 2006 11 23 | 703 | (0.7+ | 4.0−) |
| 2005 04 08 | 704 | 0.0 | 0.9− | 2006 10 02 | G96 | 0.1− | 0.3+ | 2006 11 23 | 703 | (2.0+ | 3.2−) |
| 2005 04 08 | 704 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.8+ | 1.1+ | 2006 11 23 | 703 | (0.0 | 4.0−) |
| 2005 04 08 | 704 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3+ | | | | |

**2005 GR$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 82.13506 | | | (2000.0) | | |
| $n$ | 0.22896438 | $\omega$ | 264.52047 | | −0.25342292 | +0.96681863 |
| $a$ | 2.6462087 | $\Omega$ | 350.60978 | | −0.79079568 | −0.22624120 |
| $e$ | 0.2421436 | $i$ | 11.39195 | | −0.55715260 | −0.11864512 |
| $P$ | 4.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 704 | (1.7+ | 1.9+) | 2005 04 11 | G92 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2005 03 17 | 704 | 0.4+ | 1.2+ | 2005 04 11 | G92 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2005 03 17 | 704 | 0.3+ | 1.4+ | 2005 04 18 | 703 | 0.8− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2005 03 17 | 704 | (1.7+ | 1.2+) | 2005 04 18 | 703 | 1.0− | 0.8− | 2006 09 29 | 704 | 1.0+ | 0.2+ |
| 2005 03 17 | 704 | (0.5+ | 1.9+) | 2005 04 18 | 703 | 0.9− | 1.0− | 2006 09 29 | 704 | 0.4+ | 0.1+ |
| 2005 04 06 | 699 | 0.4+ | 0.6+ | 2005 04 18 | 703 | 1.0− | 0.0 | 2006 09 29 | 704 | 0.1− | 0.4− |
| 2005 04 06 | 699 | 0.6+ | 0.7+ | 2005 06 08 | 699 | 0.9+ | 0.5− | 2006 09 29 | 704 | 0.7+ | 0.1+ |
| 2005 04 06 | 699 | 0.7+ | 0.1− | 2005 06 08 | 699 | (0.1+ | 2.3−) | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 2005 04 06 | 699 | 0.7+ | 0.2− | 2005 06 08 | 699 | 0.1− | 1.5− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2005 04 06 | 704 | 1.0+ | 0.5+ | 2005 06 08 | 699 | 0.5− | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.5+ |
| 2005 04 06 | 704 | 0.7+ | 0.0 | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2005 04 06 | 704 | 0.6+ | 0.9+ | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2005 04 06 | 704 | 0.4+ | 0.9+ | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.2− |
| 2005 04 09 | G92 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.5− | 1.4− | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2005 04 09 | G92 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.8− | 0.6+ | 2006 10 17 | 703 | 0.9− | 0.4− |
| 2005 04 09 | G92 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.9− | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2005 04 10 | G92 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.6− | 0.2− |
| 2005 04 10 | G92 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2005 04 10 | G92 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.1+ |
| 2005 04 11 | G92 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ | | | | |

**2005 GU$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 68.36832 | | | (2000.0) | | |
| $n$ | 0.22011852 | $\omega$ | 57.22479 | | +0.14169150 | +0.97690944 |
| $a$ | 2.7166373 | $\Omega$ | 221.86817 | | −0.96935291 | +0.10417579 |
| $e$ | 0.2576736 | $i$ | 13.86269 | | −0.20069494 | +0.18653514 |
| $P$ | 4.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2005 04 27 | 735 | 0.6+ | 0.4+ | 2005 06 13 | G96 | 0.2− | 0.5+ |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2005 04 27 | 735 | (1.5− | 2.1+) | 2005 06 13 | G96 | 0.3− | 0.5+ |
| 2002 11 16 | 644 | 0.5− | 0.2− | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.5+ | 1.0− |
| 2002 11 16 | 644 | 0.7− | 0.4+ | 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.0 | 1.0+ |
| 2002 11 16 | 644 | 0.4+ | 0.2+ | 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 09 16 | 703 | (2.1− | 1.7+) |
| 2002 11 23 | 644 | 0.1− | 0.3− | 2005 05 04 | E12 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.1− | 0.6− |
| 2002 11 23 | 644 | 0.1− | 0.1− | 2005 05 04 | E12 | 0.4− | 0.1+ | 2006 09 20 | 735 | 0.2− | 1.1+ |
| 2002 11 23 | 644 | 0.0 | 0.1− | 2005 05 04 | E12 | 0.4+ | 0.2+ | 2006 09 20 | 735 | 1.1+ | 0.3− |
| 2005 04 08 | 735 | 0.7− | 0.2− | 2005 05 04 | E12 | 0.2− | 0.2− | 2006 09 20 | 735 | 0.1− | 0.7+ |
| 2005 04 08 | 735 | 0.6+ | 0.3− | 2005 05 09 | 699 | 0.9+ | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.4+ |
| 2005 04 08 | 735 | 0.6− | 1.3+ | 2005 05 09 | 703 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.0 |
| 2005 04 08 | 735 | 0.5+ | 0.3+ | 2005 05 09 | 703 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.6+ | 1.2− |
| 2005 04 09 | 735 | 0.3− | 0.4− | 2005 05 09 | 703 | 0.8− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2005 04 09 | 735 | 0.2− | 0.0 | 2005 05 09 | 699 | 0.1− | 0.7− | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 2005 04 09 | 735 | 0.1+ | 0.2− | 2005 05 09 | 703 | 0.7− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2005 04 12 | 735 | 0.1− | 0.3− | 2005 05 09 | 699 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.4+ |
| 2005 04 12 | 735 | 0.3+ | 0.1− | 2005 05 09 | 699 | 0.2+ | 0.9− | 2006 10 17 | 703 | 1.0+ | 0.9+ |
| 2005 04 12 | 735 | 0.3+ | 0.6− | 2005 05 12 | 699 | 1.2+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2005 04 18 | 703 | (1.8− | 0.3−) | 2005 05 12 | 699 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 0.7− | 0.6− |
| 2005 04 18 | 703 | (0.4− | 2.6−) | 2005 05 12 | 699 | 0.8− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.7− |
| 2005 04 18 | 703 | 0.8− | 0.1− | 2005 05 12 | 699 | 0.9+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.7+ |
| 2005 04 18 | 703 | (1.6− | 1.0−) | 2005 06 04 | 735 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2005 04 18 | E12 | 0.5− | 0.3+ | 2005 06 04 | 735 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.6+ |
| 2005 04 18 | E12 | 0.2− | 0.4+ | 2005 06 04 | 735 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2005 04 18 | E12 | 0.1− | 0.1− | 2005 06 04 | 735 | 0.6+ | 1.3− | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2005 04 18 | E12 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2005 04 27 | 735 | 0.0 | 1.4+ | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.1+ |

**2005 GM$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 97.89265 | | | (2000.0) | | |
| $n$ | 0.28914978 | $\omega$ | 261.95929 | | −0.43293843 | +0.90119158 |
| $a$ | 2.2649266 | $\Omega$ | 342.34310 | | −0.79821891 | −0.39381118 |
| $e$ | 0.1322543 | $i$ | 3.86524 | | −0.41882083 | −0.18101519 |
| $P$ | 3.41 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.4− | 0.2− | 2005 04 09 | G96 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.2− | 0.2+ | 2005 04 09 | G96 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.2+ |
| 2005 03 08 | G96 | 0.0 | 0.0 | 2005 04 09 | G96 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.0 |
| 2005 03 08 | G96 | 0.1− | 0.0 | 2005 04 09 | G96 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.5+ | 0.2+ |
| 2005 04 02 | G96 | 0.1+ | 0.2− | 2005 05 14 | G96 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2005 04 02 | G96 | 0.3+ | 0.1+ | 2005 05 14 | G96 | 0.6− | 0.3− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2005 04 02 | G96 | 0.2+ | 0.1+ | 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.5− | 0.0 |
| 2005 04 02 | G96 | 0.1+ | 0.3− | 2005 05 14 | G96 | 0.0 | 0.1+ | | | | |

**2005 GA$_{63}$ = 2000 GS$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.32751 | | | (2000.0) | | |
| $n$ | 0.18025433 | $\omega$ | 96.60088 | | +0.17051191 | +0.98534305 |
| $a$ | 3.1036942 | $\Omega$ | 183.22943 | | −0.93536097 | +0.16027012 |
| $e$ | 0.1330205 | $i$ | 5.06821 | | −0.30987988 | +0.05841718 |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.6+ | 0.1+ | 2000 04 06 | 704 | 1.0+ | 0.0 | 2005 04 02 | G96 | 0.0 | 0.2− |
| 1994 03 10 | 691 | 0.9− | 0.3− | 2001 07 25 | 608 | 0.7+ | 1.0− | 2005 04 02 | G96 | 0.2+ | 0.0 |
| 1994 03 10 | 691 | 0.2+ | 0.4− | 2001 07 25 | 608 | 0.1+ | 0.8− | 2005 04 09 | G96 | 0.2− | 0.1− |
| 2000 04 05 | 704 | 0.2+ | 0.6− | 2001 07 25 | 608 | 0.0 | 0.3− | 2005 04 09 | G96 | 0.1− | 0.0 |
| 2000 04 05 | 704 | 0.9+ | 0.9+ | 2001 08 10 | 691 | 0.3+ | 0.1+ | 2005 04 09 | G96 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 0.8− | 0.7+ | 2001 08 10 | 691 | 0.3+ | 0.0 | 2005 04 09 | G96 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.1− | 0.1− | 2001 08 10 | 691 | 0.1− | 0.1+ | 2005 05 13 | G96 | 0.3+ | 1.1− |
| 2000 04 05 | 704 | 0.2+ | 1.2+ | 2001 08 27 | 644 | 0.5− | 0.3− | 2005 05 13 | G96 | 0.3− | 0.7− |
| 2000 04 06 | 704 | 0.8− | 0.9− | 2001 08 27 | 644 | 0.8− | 0.4− | 2005 05 13 | G96 | 0.3+ | 0.2− |
| 2000 04 06 | 704 | 0.6− | 0.3− | 2001 08 27 | 644 | 1.0− | 0.4− | 2005 05 13 | G96 | 0.3− | 0.2− |
| 2000 04 06 | 704 | 0.3− | 0.5+ | 2005 04 02 | G96 | 0.6− | 0.2− | | | | |
| 2000 04 06 | 704 | 0.9+ | 1.3+ | 2005 04 02 | G96 | 0.0 | 0.1+ | | | | |

**2005 GT$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.71461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22078639 | $\omega$ | 161.26966 | | +0.01319219 | +0.98209347 | |
| $a$ | 2.7111561 | $\Omega$ | 109.13882 | | −0.94093764 | +0.07578558 | |
| $e$ | 0.2372200 | $i$ | 11.47423 | | −0.33832280 | −0.17247889 | |
| $P$ | 4.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 703 | 0.6− | 0.4− | 2005 04 09 | 703 | 0.1− | 0.7+ | 2006 09 20 | 703 | 0.9+ | 0.1+ |
| 2005 03 10 | 703 | 0.6+ | 0.2+ | 2005 04 12 | 699 | 0.6+ | 0.1− | 2006 09 20 | 703 | 0.1− | 0.1− |
| 2005 03 10 | 703 | 0.3− | 1.1+ | 2005 04 12 | 699 | 0.8+ | 0.2− | 2006 09 27 | 703 | 0.8− | 0.1− |
| 2005 03 10 | 703 | 0.1+ | 0.3− | 2005 04 12 | 699 | 1.2+ | 0.3− | 2006 09 27 | 703 | 1.0− | 1.5− |
| 2005 04 02 | 703 | 0.9− | 0.2− | 2005 04 12 | 699 | 0.6+ | 0.6− | 2006 09 27 | 703 | 1.2− | 0.0 |
| 2005 04 02 | 703 | 0.1− | 0.0 | 2005 05 02 | 703 | 0.3− | 0.3+ | 2006 09 27 | 703 | 0.2+ | 1.3− |
| 2005 04 02 | 703 | 0.8− | 0.1− | 2005 05 02 | 703 | 0.4− | 0.8− | 2006 09 27 | 703 | 1.4+ | 0.3− |
| 2005 04 02 | 703 | 0.5− | 0.3− | 2005 05 02 | 703 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.5− |
| 2005 04 09 | 703 | 1.4+ | 0.5+ | 2005 05 02 | 703 | 0.5− | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.9+ |
| 2005 04 09 | 703 | 0.1− | 0.0 | 2006 09 20 | 703 | 0.9− | 1.0+ | 2006 09 27 | 703 | 0.4+ | 0.0 |
| 2005 04 09 | 703 | 0.6− | 0.4+ | 2006 09 20 | 703 | 0.8+ | 1.9+ | | | | |

**2005 GM$_{67}$ = 2006 TU$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.79160 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23614191 | $\omega$ | 98.74783 | | +0.36771074 | +0.92984506 | |
| $a$ | 2.5923124 | $\Omega$ | 192.85092 | | −0.87499315 | +0.34110400 | |
| $e$ | 0.2555037 | $i$ | 3.42907 | | −0.31492189 | +0.13797183 | |
| $P$ | 4.17 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.4− | 0.2− | 2005 04 18 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2005 04 02 | G96 | 0.6− | 0.4− | 2005 04 18 | 691 | 0.5+ | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2005 04 02 | G96 | 0.4− | 0.2− | 2005 04 18 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2005 04 02 | G96 | 0.4− | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2005 04 09 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.2− |
| 2005 04 09 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 2005 04 09 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3− |
| 2005 04 11 | 691 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.7+ | 0.3− | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 13 | 691 | 0.4+ | 0.1+ |
| 2005 04 11 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.2+ |

**2005 GC$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.26821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31172722 | $\omega$ | 185.88256 | | −0.84380914 | +0.53530561 | |
| $a$ | 2.1542011 | $\Omega$ | 26.59043 | | −0.48884735 | −0.73762728 | |
| $e$ | 0.0566289 | $i$ | 4.85315 | | −0.22139198 | −0.41152630 | |
| $P$ | 3.16 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.2− | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.4− |
| 2005 04 02 | G96 | 0.2− | 0.2+ | 2005 05 12 | G96 | 0.4− | 0.2− | 2006 09 25 | 691 | 0.4− | 0.3+ |
| 2005 04 02 | G96 | 0.1+ | 0.5− | 2005 05 12 | G96 | 0.9− | 0.7− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.2− | 0.1− | 2005 05 12 | G96 | 0.8− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2005 04 09 | 691 | 0.2+ | 0.3+ | 2005 05 12 | G96 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.8− |
| 2005 04 09 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3+ |
| 2005 04 09 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 29 | 291 | 0.1− | 0.3+ |
| 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 09 18 | 691 | (1.6+ | 3.6+) | 2006 10 29 | 291 | 0.2− | 0.9+ |
| 2005 04 17 | 691 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 29 | 291 | 0.2+ | 0.0 |

**2005 GE$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.76573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27660466 | $\omega$ | 195.29807 | | −0.14683642 | +0.91538718 | |
| $a$ | 2.3329014 | $\Omega$ | 67.47108 | | −0.85961551 | +0.06939572 | |
| $e$ | 0.1471383 | $i$ | 23.94185 | | −0.48938762 | −0.39654828 | |
| $P$ | 3.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 704 | 0.0 | 0.3+ | 2005 04 13 | 704 | 0.6+ | 0.6− | 2005 05 30 | 703 | 0.9− | 0.6− |
| 2003 12 29 | 704 | 0.4− | 0.2+ | 2005 04 13 | 704 | 1.0+ | 0.0 | 2005 06 01 | 704 | 1.4+ | 0.8+ |
| 2003 12 29 | 704 | 0.1− | 0.5+ | 2005 05 01 | A35 | 0.5+ | 0.3+ | 2005 06 01 | 704 | 0.9+ | 0.5+ |
| 2003 12 29 | 704 | 0.5− | 0.7+ | 2005 05 01 | A35 | 0.0 | 0.1− | 2005 06 01 | 704 | 0.6+ | 0.4− |
| 2005 03 13 | 699 | 0.6+ | 0.9− | 2005 05 01 | A35 | 0.3+ | 0.0 | 2005 06 01 | 704 | 0.7+ | 0.8+ |
| 2005 03 13 | 699 | 0.2+ | 0.3+ | 2005 05 02 | 703 | 0.4− | 0.2− | 2005 06 01 | 704 | 0.3+ | 0.4+ |
| 2005 03 13 | 699 | 0.4− | 0.9+ | 2005 05 02 | 703 | 0.5− | 0.1+ | 2005 06 13 | 699 | 0.1+ | 1.1+ |
| 2005 03 13 | 699 | 0.4+ | 0.5+ | 2005 05 02 | 703 | 0.6− | 0.2+ | 2005 06 13 | 699 | (2.1+ | 0.3+) |
| 2005 04 02 | 703 | 0.8− | 1.2− | 2005 05 02 | 703 | 1.2− | 0.1− | 2005 06 13 | 699 | 0.4+ | 0.7− |
| 2005 04 02 | 703 | 1.3− | 0.3− | 2005 05 09 | 703 | 1.4+ | 0.3+ | 2005 06 13 | 699 | 0.2+ | 1.1− |
| 2005 04 02 | 703 | 0.9− | 0.3− | 2005 05 09 | 703 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.4+ | 0.1+ |
| 2005 04 02 | 703 | 0.7− | 0.2− | 2005 05 09 | 703 | 0.8− | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.9+ |
| 2005 04 09 | 703 | 0.8− | 0.9− | 2005 05 09 | 703 | 0.1− | 0.4+ | 2006 09 19 | 703 | 1.0− | 0.9+ |
| 2005 04 09 | 703 | 0.8− | 0.3− | 2005 05 10 | 704 | 1.0+ | 1.2+ | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2005 04 09 | 703 | 0.3− | 0.5+ | 2005 05 10 | 704 | 0.5− | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.0 |
| 2005 04 09 | 703 | 0.5− | 0.2− | 2005 05 10 | 704 | 0.6+ | 1.0+ | 2006 09 25 | 703 | 0.9+ | 0.3− |
| 2005 04 12 | 699 | 0.7− | 0.9− | 2005 05 10 | 704 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.2+ | 0.1− |
| 2005 04 12 | 699 | 0.5− | 0.4+ | 2005 05 10 | 704 | 0.3+ | 0.4− | 2006 09 25 | 703 | (1.8+ | 0.5+) |
| 2005 04 12 | 699 | 0.8+ | 0.2− | 2005 05 11 | 704 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.8+ | 0.2− |
| 2005 04 12 | 699 | 0.2+ | 0.3+ | 2005 05 11 | 704 | 0.7+ | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.2− |
| 2005 04 12 | 704 | 0.2− | 0.8+ | 2005 05 11 | 704 | 1.1+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 2005 04 12 | 704 | 0.2− | 0.1+ | 2005 05 11 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 2005 04 12 | 704 | 1.1− | 0.2− | 2005 05 11 | 704 | 0.6+ | 0.3+ | 2006 11 23 | 703 | 1.6− | 0.1+ |
| 2005 04 13 | 704 | 0.3+ | 0.1+ | 2005 05 30 | 703 | 0.3+ | 0.9− | 2006 11 23 | 703 | 2.4− | 0.4− |
| 2005 04 13 | 704 | 0.6+ | 0.8− | 2005 05 30 | 703 | 1.4− | 0.3+ | 2006 11 23 | 703 | 0.1+ | 0.7− |
| 2005 04 13 | 704 | 0.4+ | 0.3+ | 2005 05 30 | 703 | 0.7+ | 0.1− | 2006 11 23 | 703 | 0.9+ | 0.7+ |

**2005 GV$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.23740 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29208045 | $\omega$ | 265.00883 | | −0.13350053 | +0.99104511 | |
| $a$ | 2.2497507 | $\Omega$ | 357.31481 | | −0.88505758 | −0.12044100 | |
| $e$ | 0.1495685 | $i$ | 3.28435 | | −0.44592677 | −0.05765034 | |
| $P$ | 3.37 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 704 | 0.7+ | 0.7+ | 2005 04 04 | G96 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.4− | 0.3− |
| 2002 05 17 | 704 | 0.2− | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2005 05 08 | G96 | 0.1+ | 0.1− |
| 2002 05 17 | 704 | 0.5+ | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.6− | 0.6+ |
| 2002 05 17 | 704 | 0.6− | 0.5+ | 2005 04 09 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.6+ |
| 2005 03 04 | 691 | 0.0 | 0.3+ | 2005 04 09 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.5+ |
| 2005 03 04 | 691 | 0.2− | 0.2+ | 2005 04 09 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2005 03 04 | 691 | 0.4+ | 0.3+ | 2005 05 04 | G96 | 0.1− | 0.4− | 2006 09 25 | 691 | 0.4+ | 0.7− |
| 2005 03 04 | G96 | 0.3− | 0.2− | 2005 05 04 | G96 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2005 03 04 | G96 | 0.2+ | 0.2− | 2005 05 04 | G96 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2005 03 04 | G96 | 0.2− | 0.1− | 2005 05 04 | G96 | 0.1− | 0.4− | 2006 10 02 | 691 | 0.0 | 0.4− |
| 2005 03 04 | G96 | 0.0 | 0.5− | 2005 05 08 | G96 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.3− | 0.5+ |
| 2005 04 04 | G96 | 0.1+ | 0.1− | 2005 05 08 | G96 | 0.1+ | 0.3− | | | | |

**2005 GZ$_{70}$ = 2006 SR$_{248}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.94876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29324222 | $\omega$ | 348.26565 | | −0.70738564 | | +0.70596789 |
| $a$ | 2.2438047 | $\Omega$ | 236.69976 | | −0.64508149 | | −0.66496201 |
| $e$ | 0.1125490 | $i$ | 2.39009 | | −0.28892115 | | −0.24379266 |
| $P$ | 3.36 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 691 | 0.1+ | 0.4+ | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2005 04 04 | 691 | 0.2+ | 0.2+ | 2005 04 17 | 691 | 0.4− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2005 04 04 | 691 | 0.1− | 0.2− | 2005 05 12 | G96 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2005 04 09 | 691 | 0.3− | 0.1+ | 2005 05 12 | G96 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2005 04 09 | 691 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2005 04 09 | 691 | 0.2+ | 0.1− | 2005 05 12 | G96 | 0.4+ | 0.0 | | | | |
| 2005 04 17 | 691 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.3− | | | | |

**2005 GO$_{72}$ = 2006 RR$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.06955 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30601412 | $\omega$ | 24.20310 | | −0.97570048 | | +0.21808747 |
| $a$ | 2.1809301 | $\Omega$ | 168.33436 | | −0.21418897 | | −0.92902903 |
| $e$ | 0.1192394 | $i$ | 5.99800 | | −0.04616977 | | −0.29890287 |
| $P$ | 3.22 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 02 | 809 | 0.5+ | 1.7+ | 2005 04 04 | 703 | 1.0+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.2− |
| 2003 10 20 | 691 | 0.6+ | 0.1+ | 2005 04 04 | 703 | 0.8− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.2− |
| 2003 10 20 | 691 | 0.1− | 0.1− | 2005 04 04 | 703 | (0.1+ | 1.6−) | 2006 09 15 | 691 | 0.4+ | 0.1− |
| 2003 10 20 | 691 | 0.4− | 0.1− | 2005 04 04 | 703 | 0.9+ | 0.5− | 2006 09 19 | 291 | 0.0 | 0.4+ |
| 2005 03 13 | 703 | 0.8− | 0.4+ | 2005 04 09 | 699 | 0.1− | 0.1− | 2006 09 19 | 291 | 0.0 | 0.2+ |
| 2005 03 13 | 703 | 1.4− | 0.3− | 2005 04 09 | 699 | 1.1+ | 0.2− | 2006 09 19 | 291 | 0.3− | 0.4+ |
| 2005 03 13 | 703 | 0.3− | 0.8− | 2005 04 09 | 699 | 0.7− | 0.8+ | | | | |
| 2005 03 13 | 703 | 0.3+ | 0.4− | 2005 04 09 | 699 | 0.9+ | 0.6+ | | | | |

**2005 GZ$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.77390 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30118213 | $\omega$ | 154.35835 | | −0.46749004 | | +0.88025779 |
| $a$ | 2.2041945 | $\Omega$ | 87.67734 | | −0.82440501 | | −0.40096063 |
| $e$ | 0.0865536 | $i$ | 4.66345 | | −0.31907590 | | −0.25372584 |
| $P$ | 3.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 18 | 703 | 0.1+ | 0.2− | 2005 04 15 | 699 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 2005 03 18 | 703 | 0.6+ | 1.2− | 2005 04 15 | 699 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2005 03 18 | 703 | 0.5− | 1.2− | 2005 04 15 | 699 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2005 03 18 | 703 | 1.0− | 0.4− | 2005 04 15 | 699 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2005 04 04 | 703 | 0.8− | 0.4+ | 2005 05 07 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.4+ | 0.2− |
| 2005 04 04 | 703 | 0.3− | 0.3+ | 2005 05 07 | 691 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2005 04 04 | 703 | 0.2+ | 0.1+ | 2005 05 07 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2005 04 04 | 703 | 0.9− | 0.0 | 2005 05 08 | 703 | 0.2− | 0.8− | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2005 04 09 | 704 | 0.3+ | 0.5+ | 2005 05 08 | 703 | (2.6− | 1.1+) | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 2005 04 09 | 704 | 0.2+ | 1.3+ | 2005 05 08 | 703 | 1.1− | 1.2+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2005 04 09 | 704 | 1.0− | 0.1− | 2005 05 08 | 703 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2005 04 09 | 704 | 0.2+ | 0.9+ | 2005 05 11 | 699 | 0.9− | 1.1− | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 2005 04 09 | 704 | 0.4+ | 1.0+ | 2005 05 11 | 699 | 0.6− | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2005 04 13 | 704 | 0.8+ | 0.5− | 2005 05 11 | 699 | 0.9− | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 2005 04 13 | 704 | 0.7+ | 0.1− | 2005 05 11 | 699 | 1.0+ | 0.8+ | 2006 10 16 | 703 | 1.2− | 0.5+ |
| 2005 04 13 | 704 | 0.9+ | 0.7− | 2005 05 15 | 644 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2005 04 14 | 704 | 0.5+ | 0.4+ | 2005 05 15 | 644 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.5+ |
| 2005 04 14 | 704 | 0.9+ | 0.2− | 2005 05 15 | 644 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2005 04 14 | 704 | 0.6+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.6− | | | | |
| 2005 04 14 | 704 | 0.9+ | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.4− | | | | |

**2005 GA$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.87771 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29761573 | $\omega$ | 353.14176 | | −0.80701565 | | −0.58647165 |
| $a$ | 2.2217685 | $\Omega$ | 150.60698 | | +0.54826993 | | −0.78759203 |
| $e$ | 0.1349028 | $i$ | 8.09528 | | +0.21937598 | | −0.18907617 |
| $P$ | 3.31 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 645 | 0.0 | 0.0 | 2005 04 09 | 704 | 0.8+ | 0.9+ | 2005 05 18 | 644 | 0.3− | 0.2− |
| 2003 09 30 | 645 | 0.0 | 0.0 | 2005 04 09 | 704 | 0.4− | 0.5+ | 2006 08 23 | 807 | 0.0 | 0.2+ |
| 2005 04 04 | 703 | 0.3− | 0.2+ | 2005 05 04 | 703 | 0.4− | 1.2+ | 2006 08 23 | 807 | 0.3− | 0.1− |
| 2005 04 04 | 703 | 0.3+ | 0.4+ | 2005 05 04 | 703 | (3.9+ | 0.4−) | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2005 04 04 | 703 | 0.3+ | 0.2− | 2005 05 04 | 703 | (0.6+ | 1.8+) | 2006 08 28 | 691 | 0.1+ | 0.2− |
| 2005 04 04 | 703 | 0.2+ | 1.1− | 2005 05 04 | 703 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2005 04 09 | 704 | 0.2− | 0.0 | 2005 05 18 | 644 | 0.1+ | 0.3− | | | | |
| 2005 04 09 | 704 | 0.3+ | 1.0− | 2005 05 18 | 644 | 0.3− | 0.2− | | | | |

**2005 GU$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.12001 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27819608 | $\omega$ | 72.25514 | | −0.77166729 | | +0.63133829 |
| $a$ | 2.3239960 | $\Omega$ | 146.77121 | | −0.62374129 | | −0.72747946 |
| $e$ | 0.1265785 | $i$ | 8.08626 | | −0.12440416 | | −0.26867376 |
| $P$ | 3.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 02 | 691 | 0.1+ | 0.2+ | 2005 04 09 | 704 | 0.9+ | 0.3+ | 2005 05 06 | 704 | 0.4+ | 0.9− |
| 1998 06 02 | 691 | 0.0 | 0.3+ | 2005 04 09 | 704 | 0.1− | 0.4+ | 2005 05 06 | 704 | 0.9+ | 0.7− |
| 1998 06 02 | 691 | 0.1+ | 0.3+ | 2005 04 09 | 704 | 0.5+ | 0.2− | 2005 05 06 | 704 | 0.6+ | 0.3− |
| 2005 03 09 | 699 | 0.9+ | 0.7+ | 2005 04 18 | 703 | 0.2− | 0.4+ | 2005 05 11 | 703 | 0.1− | 0.4− |
| 2005 03 09 | 699 | 0.6− | 1.3+ | 2005 04 18 | 703 | 1.2− | 0.3+ | 2005 05 11 | 703 | 0.2− | 0.5− |
| 2005 03 09 | 699 | 0.1− | 1.9+ | 2005 04 18 | 703 | 0.7− | 0.3− | 2005 05 11 | 703 | 0.2+ | 0.2− |
| 2005 03 09 | 699 | 0.1− | 0.1+ | 2005 04 18 | 703 | 0.2− | 0.1+ | 2005 05 11 | 703 | 0.1− | 0.4− |
| 2005 04 04 | 703 | 1.0− | 0.0 | 2005 05 04 | 703 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.3+ |
| 2005 04 04 | 703 | 0.8− | 0.9+ | 2005 05 04 | 703 | (0.9− | 2.7−) | 2006 10 02 | G96 | 0.6− | 0.3− |
| 2005 04 04 | 703 | 0.8− | 0.1− | 2005 05 04 | 703 | 0.2+ | 2.0− | 2006 10 02 | G96 | 0.3− | 0.5+ |
| 2005 04 04 | 703 | 0.4+ | 0.1− | 2005 05 04 | 703 | 0.3− | 0.4− | 2006 10 02 | G96 | 1.1+ | 0.3− |
| 2005 04 09 | 704 | 0.7− | 0.7+ | 2005 05 06 | 704 | 0.7+ | 1.3− | | | | |
| 2005 04 09 | 704 | 0.5+ | 0.5− | 2005 05 06 | 704 | 0.5+ | 0.9− | | | | |

**2005 GT$_{74}$ = 2006 PH$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.86244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24128576 | $\omega$ | 303.67138 | | +0.81890194 | | +0.53208059 |
| $a$ | 2.5553375 | $\Omega$ | 26.25465 | | −0.21230598 | | +0.62911275 |
| $e$ | 0.1525981 | $i$ | 29.10219 | | −0.53322207 | | +0.56666339 |
| $P$ | 4.08 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 645 | 0.1− | 0.1+ | 2005 04 05 | 644 | 0.2+ | 0.9+ | 2006 08 15 | E12 | 0.1+ | 0.8− |
| 2003 10 24 | 645 | 0.1− | 0.1+ | 2005 04 05 | 644 | 0.2− | 1.1+ | 2006 08 15 | E12 | 0.0 | 0.0 |
| 2003 11 20 | 645 | 0.0 | 0.0 | 2005 04 08 | 704 | 0.7+ | 0.3+ | 2006 08 15 | E12 | 0.4+ | 0.4+ |
| 2003 11 20 | 645 | 0.0 | 0.0 | 2005 04 08 | 704 | 1.3+ | 0.4+ | 2006 09 01 | E12 | 0.2− | 0.6+ |
| 2003 11 30 | 645 | 0.1+ | 0.1− | 2005 04 08 | 704 | 0.8+ | 0.5− | 2006 09 01 | E12 | 0.0 | 0.2+ |
| 2003 11 30 | 645 | 0.1+ | 0.0 | 2005 04 08 | 704 | 1.1+ | 1.3+ | 2006 09 01 | E12 | 0.8− | 0.5− |
| 2005 03 18 | 703 | 1.9− | 0.5− | 2006 06 04 | E12 | 1.4− | 0.4+ | 2006 09 01 | E12 | 0.4+ | 0.2− |
| 2005 03 18 | 703 | 0.8− | 0.6+ | 2006 06 04 | E12 | 0.6− | 0.7− | 2006 09 21 | E12 | 0.3− | 0.0 |
| 2005 03 18 | 703 | 0.5− | 0.2− | 2006 06 04 | E12 | 1.2+ | 0.3− | 2006 09 21 | E12 | 0.2− | 1.2+ |
| 2005 03 18 | 703 | 0.3+ | 2.6− | 2006 06 04 | E12 | 0.1+ | 0.8+ | 2006 09 21 | E12 | 0.0 | 0.7+ |
| 2005 04 05 | 644 | 0.3+ | 0.6+ | 2006 08 15 | E12 | 0.5+ | 0.3− | 2006 09 21 | E12 | 0.3− | 0.6+ |

**2005 GD$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 77.14975 | | | (2000.0) | | |
| $n$ | 0.22151446 | $\omega$ | 187.67470 | | −0.09615636 | +0.98702364 |
| $a$ | 2.7052122 | $\Omega$ | 76.87297 | | −0.90607238 | −0.03331165 |
| $e$ | 0.1814031 | $i$ | 7.58818 | | −0.41205193 | −0.15708174 |
| $P$ | 4.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.2+ | 0.0 | 2005 04 13 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.8− |
| 2004 01 16 | 691 | 0.1+ | 0.1+ | 2005 04 13 | 704 | 1.5+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.8− |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2005 04 13 | 704 | (1.6+ | 0.7+) | 2006 09 25 | 703 | 0.4+ | 0.8+ |
| 2004 01 16 | 691 | 0.0 | 0.2− | 2005 04 13 | 704 | (1.8+ | 1.2+) | 2006 09 25 | 703 | 0.3− | 0.1− |
| 2004 01 16 | 691 | 0.1− | 0.1+ | 2005 04 13 | 704 | (2.3+ | 1.0+) | 2006 09 25 | 703 | 0.7+ | 0.0 |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2005 04 18 | 703 | 1.3− | 0.1+ | 2006 09 25 | 703 | 0.7+ | 0.1− |
| 2005 04 05 | 703 | 0.4+ | 0.2+ | 2005 04 18 | 703 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.4+ |
| 2005 04 05 | 703 | 0.4− | 0.4+ | 2005 04 18 | 703 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2005 04 05 | 703 | 0.2+ | 0.6− | 2005 04 18 | 703 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 04 05 | 703 | 1.0− | 0.0 | 2005 05 08 | 704 | 0.1+ | 0.2− | 2006 10 21 | 703 | 1.5+ | 1.8+ |
| 2005 04 09 | 704 | 0.2+ | 0.7− | 2005 05 08 | 704 | 0.1+ | 1.2− | 2006 10 21 | 703 | 1.5− | 1.4+ |
| 2005 04 09 | 704 | 0.6+ | 0.5− | 2005 05 08 | 704 | 0.4− | 0.3− | 2006 10 21 | 703 | 0.7− | 0.8− |
| 2005 04 09 | 704 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 2005 04 09 | 704 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.2− | 1.1− | | | | |

**2005 GE$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 117.35290 | | | (2000.0) | | |
| $n$ | 0.21980881 | $\omega$ | 48.92086 | | −0.87934360 | +0.47362594 |
| $a$ | 2.7191885 | $\Omega$ | 159.20197 | | −0.46785386 | −0.84001007 |
| $e$ | 0.1554152 | $i$ | 7.98560 | | −0.08869947 | −0.26469143 |
| $P$ | 4.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.4− | 1.1+ | 2005 04 13 | 704 | 0.2− | 0.4+ | 2005 05 18 | 644 | 0.4− | 0.2− |
| 2000 02 02 | 704 | 0.1− | 0.6+ | 2005 04 13 | 704 | 0.6+ | 0.6+ | 2005 05 18 | 644 | 0.0 | 0.3− |
| 2000 02 02 | 704 | 0.1− | 0.2+ | 2005 04 13 | 704 | 0.7+ | 0.8− | 2005 05 18 | 644 | 0.4− | 0.2− |
| 2000 02 02 | 704 | 0.7+ | 0.1+ | 2005 05 04 | 703 | (1.7− | 0.1−) | 2006 08 19 | 691 | 0.0 | 0.1− |
| 2000 02 02 | 704 | 0.4+ | 0.2+ | 2005 05 04 | 703 | 1.0− | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.1+ |
| 2005 04 05 | 703 | 0.4− | 0.3− | 2005 05 04 | 703 | 0.7− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.4+ |
| 2005 04 05 | 703 | 0.1− | 0.4+ | 2005 05 04 | 703 | 1.3+ | 0.6+ | 2006 09 25 | G96 | 0.3− | 0.5+ |
| 2005 04 05 | 703 | 0.7− | 0.1+ | 2005 05 06 | 704 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.4+ |
| 2005 04 05 | 703 | 0.0 | 0.9− | 2005 05 06 | 704 | 1.2+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.5+ |
| 2005 04 09 | 704 | 0.0 | 0.3− | 2005 05 06 | 704 | 0.6+ | 0.9+ | 2006 09 25 | G96 | 0.3− | 0.1+ |
| 2005 04 09 | 704 | 0.1+ | 0.8+ | 2005 05 06 | 704 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.5− | 0.2− |
| 2005 04 09 | 704 | 0.3+ | 0.2+ | 2005 05 06 | 704 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.5− |
| 2005 04 09 | 704 | 0.0 | 0.8− | 2005 05 15 | 644 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2005 04 09 | 704 | 0.0 | 0.2− | 2005 05 15 | 644 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2005 04 13 | 704 | 0.2− | 0.7+ | 2005 05 15 | 644 | 0.5− | 0.2− | | | | |

**2005 GR$_{76}$ = 2005 EB$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.06973 | | | (2000.0) | | |
| $n$ | 0.27921277 | $\omega$ | 275.68935 | | +0.65478367 | +0.75477629 |
| $a$ | 2.3183511 | $\Omega$ | 35.31660 | | −0.66347756 | +0.59911590 |
| $e$ | 0.1318882 | $i$ | 3.93157 | | −0.36201639 | +0.26715705 |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.4− | 0.2− | 2005 04 09 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 07 06 | 644 | 0.2− | 0.4− | 2005 04 09 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 07 06 | 644 | 0.1− | 0.8− | 2005 04 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2002 07 14 | 644 | 0.0 | 0.8+ | 2005 04 11 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2002 07 14 | 644 | 0.1+ | 0.5+ | 2005 04 11 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.8+ |
| 2002 07 14 | 644 | 0.0 | 0.6+ | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2002 08 05 | 644 | 0.1+ | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.5+ | 0.3+ |
| 2002 08 05 | 644 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.3+ | 1.1− |
| 2002 08 05 | 644 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.4+ |
| 2005 03 09 | G96 | 0.4+ | 0.5− | 2006 10 02 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 03 09 | G96 | 0.4− | 0.5− | 2006 10 02 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 03 09 | G96 | 0.9− | 0.8− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2005 03 09 | G96 | 0.5− | 0.7− | 2006 10 11 | 691 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4+ |
| 2005 03 17 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.5+ | 0.0 |
| 2005 03 17 | 691 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2005 04 05 | G96 | 0.0 | 0.9− | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.9+ | 0.1− |
| 2005 04 05 | G96 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.2+ |
| 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.2+ | 2006 11 20 | G96 | 0.6+ | 0.2− |
| 2005 04 05 | G96 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.4+ |
| 2005 04 09 | 691 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 0.3+ | 0.7+ | | | | |

**2005 GW$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.87442 | | | (2000.0) | | |
| $n$ | 0.23238916 | $\omega$ | 266.10158 | | +0.46328148 | +0.88309522 |
| $a$ | 2.6201459 | $\Omega$ | 31.83677 | | −0.74694835 | +0.43419403 |
| $e$ | 0.2318085 | $i$ | 8.09174 | | −0.47690505 | +0.17781558 |
| $P$ | 4.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.7− | 0.6− | 2005 05 08 | G96 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.1− |
| 2005 03 14 | G96 | 0.2− | 0.5− | 2005 05 08 | G96 | 0.6− | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2005 03 14 | G96 | 0.3− | 0.7− | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.2− |
| 2005 03 14 | G96 | 0.4− | 0.9− | 2005 05 08 | G96 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2005 04 05 | G96 | 0.2+ | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2005 04 05 | G96 | 0.0 | 0.6− | 2005 05 12 | G96 | 0.7− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2005 04 05 | G96 | 0.1− | 0.2− | 2005 05 12 | G96 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.6+ |
| 2005 04 05 | G96 | 0.2+ | 0.2− | 2005 05 12 | G96 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2005 04 09 | 691 | 0.5+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2005 04 09 | 691 | 0.5+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.9+ | 0.1+ |
| 2005 04 09 | 691 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2005 04 10 | G96 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2005 04 10 | G96 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2005 04 10 | G96 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2005 04 10 | 691 | 0.5+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2005 04 10 | 691 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2005 04 11 | 691 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.3+ | | | | |
| 2005 04 11 | 691 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.5− | | | | |

**2005 GL$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 209.45237 | | | (2000.0) | | |
| $n$ | 0.22131438 | $\omega$ | 39.03470 | | −0.02535065 | −0.98777958 |
| $a$ | 2.7068423 | $\Omega$ | 52.95779 | | +0.86214087 | −0.09947150 |
| $e$ | 0.0580883 | $i$ | 11.10822 | | +0.50603405 | +0.11998717 |
| $P$ | 4.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 704 | 0.3+ | 0.8+ | 2003 12 18 | 704 | 0.3+ | 0.9− | 2005 04 06 | 703 | 0.3− | 1.2− |
| 2003 10 29 | 704 | 0.0 | 0.1+ | 2003 12 23 | 704 | (3.0+ | 1.0−) | 2005 04 08 | 704 | 0.2− | 0.1− |
| 2003 10 29 | 704 | 0.3− | 0.3+ | 2003 12 23 | 704 | 0.6− | 0.2+ | 2005 04 08 | 704 | 0.5− | 1.0− |
| 2003 11 20 | 704 | (4.2+ | 0.8+) | 2003 12 23 | 704 | 1.8− | 0.3− | 2005 04 08 | 704 | 0.9+ | 0.6− |
| 2003 11 20 | 704 | 0.5+ | 0.7+ | 2003 12 28 | 704 | 0.0 | 0.0 | 2005 04 08 | 704 | 0.0 | 0.2− |
| 2003 11 20 | 704 | 0.4+ | 0.7+ | 2003 12 28 | 704 | 0.4− | 1.2− | 2005 04 16 | 703 | 1.3− | 0.5− |
| 2003 11 20 | 704 | 0.2+ | 0.1+ | 2003 12 28 | 704 | 0.4+ | 0.1+ | 2005 04 16 | 703 | 0.5− | 0.1− |
| 2003 11 20 | 704 | 0.1+ | 0.2+ | 2005 03 30 | 703 | 0.2− | 0.8+ | 2005 04 16 | 703 | 1.1+ | 1.0− |
| 2003 12 04 | 704 | 0.0 | 0.1− | 2005 03 30 | 703 | 0.6+ | 0.4− | 2005 04 16 | 703 | 1.8− | 0.1− |
| 2003 12 04 | 704 | 0.1+ | 0.7− | 2005 03 30 | 703 | 0.3− | 0.0 | 2005 05 03 | 703 | 1.7+ | 1.7+ |
| 2003 12 04 | 704 | 0.6− | 0.6+ | 2005 03 30 | 703 | (2.3+ | 1.1+) | 2005 05 03 | 703 | 1.5+ | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 04 | 704 | 1.2+ | 0.7− | 2005 04 06 | 703 | 1.0− | 0.2+ | 2005 05 03 | 703 | 0.1− | 1.3+ |
| 2003 12 18 | 704 | 0.2− | 0.9+ | 2005 04 06 | 703 | 0.4+ | 0.3− | 2005 05 03 | 703 | 0.3+ | 1.2+ |
| 2003 12 18 | 704 | 0.3+ | 0.0 | 2005 04 06 | 703 | 0.4+ | 0.1+ | | | | |

**2005 GC$_{78}$ = 2006 QW$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.09278 | | (2000.0) | | | |
| $n$ | 0.21360918 | $\omega$ | 253.25667 | | +0.67300388 | +0.70572699 |
| $a$ | 2.7715503 | $\Omega$ | 61.18877 | | −0.54502185 | +0.67553591 |
| $e$ | 0.1359555 | $i$ | 14.63565 | | −0.50001697 | +0.21354308 |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2005 04 06 | 703 | 1.1− | 1.9− | 2006 07 26 | E12 | 0.5+ | 0.2− |
| 2002 10 31 | 704 | 0.2+ | 0.1− | 2005 04 08 | 704 | 0.5+ | 0.8+ | 2006 07 26 | E12 | 0.0 | 1.0+ |
| 2002 10 31 | 704 | 0.0 | 0.8− | 2005 04 08 | 704 | 0.7+ | 0.1− | 2006 07 26 | E12 | 0.7+ | 0.3− |
| 2002 10 31 | 704 | 0.0 | 0.6+ | 2005 04 08 | 704 | 0.3+ | 1.0+ | 2006 08 25 | E12 | 1.3− | 0.5+ |
| 2005 03 18 | 703 | 0.5− | 0.7+ | 2005 04 08 | 704 | 0.3− | 0.0 | 2006 08 25 | E12 | 0.9− | 0.2+ |
| 2005 03 18 | 703 | 1.6+ | 0.0 | 2005 04 08 | 704 | 0.3+ | 0.9+ | 2006 08 25 | E12 | 0.4+ | 0.1− |
| 2005 03 18 | 703 | 0.6− | 0.3− | 2006 06 18 | E12 | 0.1+ | 0.5+ | 2006 08 25 | E12 | 0.4+ | 0.1− |
| 2005 03 18 | 703 | 1.4− | 0.1+ | 2006 06 18 | E12 | 0.2− | 0.2− | 2006 08 26 | E12 | 0.2+ | 0.5+ |
| 2005 04 06 | 703 | 0.4+ | 0.5− | 2006 06 18 | E12 | 0.1− | 0.1− | 2006 08 26 | E12 | 0.1− | 0.7+ |
| 2005 04 06 | 703 | 0.2+ | 0.5− | 2006 06 18 | E12 | 1.3− | 1.2− | 2006 08 26 | E12 | 0.7+ | 0.3− |
| 2005 04 06 | 703 | 0.0 | 0.1− | 2006 07 26 | E12 | 1.2+ | 0.4− | 2006 08 26 | E12 | 0.5− | 0.5− |

**2005 GN$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.53864 | | (2000.0) | | | |
| $n$ | 0.21895688 | $\omega$ | 111.53250 | | +0.34348641 | +0.93915019 |
| $a$ | 2.7262373 | $\Omega$ | 178.54123 | | −0.90687993 | +0.33271453 |
| $e$ | 0.1750029 | $i$ | 8.45535 | | −0.24410219 | +0.08542817 |
| $P$ | 4.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 691 | 0.3− | 0.3− | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.4+ |
| 1996 03 24 | 691 | 0.3+ | 0.5− | 2005 04 15 | 691 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.3+ | 0.4+ |
| 1996 03 24 | 691 | 0.3− | 0.8− | 2005 04 17 | 691 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.4+ |
| 2004 01 28 | 645 | 0.0 | 0.1+ | 2005 04 17 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2004 01 28 | 645 | 0.0 | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2005 04 07 | 691 | 0.1+ | 0.2+ | 2005 04 18 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2005 04 07 | 691 | 0.0 | 0.1− | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.6− | 0.6− |
| 2005 04 07 | 691 | 1.0+ | 0.6+ | 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 04 09 | 691 | 0.2− | 0.0 | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2005 04 09 | 691 | 0.0 | 0.3− | 2006 09 06 | 644 | 0.6− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2005 04 09 | 691 | 0.1+ | 0.3+ | 2006 09 06 | 644 | 1.0− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2005 04 10 | 691 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2005 04 10 | 691 | 0.3− | 1.1− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.6− | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 1.0− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | (0.5− | 1.6+) | 2006 11 23 | G96 | 0.7+ | 0.2+ |
| 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | (1.7− | 2.1−) | | | | |

**2005 GZ$_{80}$ = 2006 SB$_{271}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.30545 | | (2000.0) | | | |
| $n$ | 0.22581952 | $\omega$ | 18.13761 | | −0.13947545 | +0.98938382 |
| $a$ | 2.6707202 | $\Omega$ | 243.86162 | | −0.91405179 | −0.14449192 |
| $e$ | 0.0446217 | $i$ | 2.60613 | | −0.38086209 | −0.01554803 |
| $P$ | 4.36 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.1+ | 0.3− | 2005 04 09 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.1− |
| 1998 11 16 | 691 | 0.2− | 0.5− | 2005 04 09 | 691 | 0.0 | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.5+ |
| 1998 11 16 | 691 | 0.1− | 0.1− | 2005 04 09 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.6+ | 0.4− |
| 1998 11 23 | 691 | 0.2+ | 0.1− | 2005 05 14 | G96 | 0.3− | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 1998 11 23 | 691 | 0.1+ | 0.3− | 2005 05 14 | G96 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.0 | 0.1− |
| 1998 11 23 | 691 | 0.3+ | 0.3− | 2005 05 14 | G96 | 0.3− | 0.5− | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2003 12 21 | 691 | 0.3+ | 0.8+ | 2005 05 14 | G96 | 0.4− | 0.6− | 2006 09 28 | G96 | 0.6+ | 0.1+ |
| 2003 12 21 | 691 | 0.1+ | 0.4+ | 2005 06 01 | G96 | 0.2− | 0.5− | 2006 09 28 | G96 | 0.2+ | 0.1+ |
| 2003 12 21 | 691 | 0.0 | 0.5+ | 2005 06 01 | G96 | 0.5− | 0.2− | 2006 09 28 | G96 | 0.6+ | 0.1− |
| 2005 04 07 | 691 | 0.2+ | 0.2− | 2005 06 01 | G96 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2005 04 07 | 691 | 0.1+ | 0.1+ | 2005 06 01 | G96 | 0.3− | 0.1− | | | | |
| 2005 04 07 | 691 | 0.1− | 0.1+ | 2006 08 29 | 691 | 1.0− | 0.9+ | | | | |

**2005 GU$_{83}$ = 2006 ST$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.39148 | | (2000.0) | | | |
| $n$ | 0.29612877 | $\omega$ | 335.93174 | | +0.94147601 | +0.33699740 |
| $a$ | 2.2291997 | $\Omega$ | 4.39445 | | −0.29131272 | +0.82458412 |
| $e$ | 0.1851521 | $i$ | 5.58856 | | −0.16958723 | +0.45441586 |
| $P$ | 3.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 703 | (2.4− | 0.9−) | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.0 |
| 1999 08 13 | 703 | 1.7− | 0.7− | 2006 08 28 | 703 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.1− |
| 1999 08 13 | 703 | 0.6+ | 1.4+ | 2006 08 28 | 703 | 0.9+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.0 |
| 1999 08 13 | 703 | 1.1− | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 10 27 | 703 | 1.1− | 0.2+ |
| 1999 09 11 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 699 | 0.4− | 0.2− | 2006 10 29 | 704 | 0.5− | 0.2+ |
| 1999 09 11 | 704 | 0.4− | 1.0+ | 2006 09 17 | 699 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.1− | 0.2+ |
| 1999 09 11 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 699 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.1+ | 0.7− |
| 1999 09 11 | 704 | 0.6+ | 0.1− | 2006 09 17 | 699 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 1999 09 11 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2003 12 17 | 704 | 0.2− | 0.8+ | 2006 09 18 | 703 | 0.3− | 1.0− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2003 12 17 | 704 | 0.0 | 1.0+ | 2006 09 18 | 703 | 0.3+ | 0.8− | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2003 12 17 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2003 12 17 | 704 | 0.8+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.4+ | 1.0+ |
| 2004 01 17 | 644 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 1.4+ | 0.0 |
| 2004 01 17 | 644 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 14 | 703 | 0.2− | 1.2+ |
| 2004 01 17 | 644 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.9− | 0.6+ |
| 2005 03 14 | G96 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.3− | 0.8+ | 2006 11 14 | 703 | 0.1− | 0.5+ |
| 2005 03 14 | G96 | 0.8− | 0.1− | 2006 10 19 | 703 | 1.2− | 1.0− | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 2005 03 14 | G96 | 1.2− | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.9− | 2006 11 16 | 704 | 0.8+ | 0.3+ |
| 2005 03 14 | G96 | 0.2− | 0.1+ | 2006 10 19 | 703 | (2.4+ | 0.6−) | 2006 11 16 | 704 | 1.5+ | 0.1− |
| 2005 04 04 | 691 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.1+ |
| 2005 04 04 | 691 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.4+ | 0.6+ |
| 2005 04 04 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.3+ |
| 2005 04 11 | 699 | 0.1+ | 0.6+ | 2006 10 21 | 704 | 0.4− | 0.8+ | 2006 11 22 | 703 | 0.5− | 0.8− |
| 2005 04 11 | 699 | 0.4+ | 0.5+ | 2006 10 21 | 704 | (0.9+ | 2.0−) | 2006 11 22 | 703 | 0.9+ | 0.1+ |
| 2005 04 11 | 699 | 0.5− | 0.6+ | 2006 10 21 | 704 | (0.5− | 2.9+) | 2006 11 22 | 703 | 0.2− | 0.0 |
| 2005 04 11 | 699 | 0.1+ | 0.6− | 2006 10 21 | 704 | (1.6− | 1.7−) | 2006 11 22 | 703 | 0.2+ | 0.2+ |
| 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 10 21 | 704 | (0.2+ | 2.1−) | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2006 07 22 | G96 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2006 07 22 | G96 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2006 07 22 | G96 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.2− |

**2005 GP$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 96.14643 | | (2000.0) | | | |
| $n$ | 0.30235111 | $\omega$ | 341.64945 | | +0.28349477 | +0.95874904 |
| $a$ | 2.1985095 | $\Omega$ | 304.81451 | | −0.87664427 | +0.25031976 |
| $e$ | 0.1699855 | $i$ | 1.44895 | | −0.38874868 | +0.13468589 |
| $P$ | 3.26 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.4− | 0.6− | 2005 04 11 | 691 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2005 03 11 | G96 | 0.4− | 0.6− | 2005 04 11 | 691 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.7+ | 0.0 |
| 2005 03 11 | G96 | 0.5− | 0.7− | 2005 04 15 | 691 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2005 03 11 | G96 | 0.6− | 0.5− | 2005 04 15 | 691 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2005 04 04 | 691 | 0.2− | 0.5+ | 2005 04 15 | 691 | 1.5+ | 0.8+ | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2005 04 04 | 691 | 0.1− | 0.2− | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 691 | 0.3+ | 0.1− | 2005 04 17 | 691 | 0.1− | 0.1− | | | | | | | |
| 2005 04 11 | 691 | 0.1− | 0.1+ | 2005 04 17 | 691 | 0.1− | 0.1+ | | | | | | | |

**2005 GN$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.48673 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27889498 | $\omega$ | 214.55935 | | −0.73129736 | | +0.68204501 |
| $a$ | 2.3201118 | $\Omega$ | 8.44843 | | −0.61893426 | | −0.66093347 |
| $e$ | 0.1865180 | $i$ | 1.68989 | | −0.28657380 | | −0.31302006 |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 704 | 0.0 | 0.2− | 2005 04 13 | 699 | 0.5− | 0.0 | 2005 05 14 | G96 | 0.4− | 0.7− |
| 2005 04 04 | 704 | 0.6− | 0.4+ | 2005 04 13 | 699 | 1.0− | 0.3− | 2005 05 14 | G96 | 0.1− | 0.6− |
| 2005 04 04 | 704 | 0.5+ | 0.6+ | 2005 04 13 | 699 | 0.4− | 0.3+ | 2005 05 14 | G96 | 0.7− | 0.5− |
| 2005 04 11 | 691 | 0.2− | 0.1+ | 2005 04 13 | 699 | 0.8+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.3− |
| 2005 04 11 | 691 | 0.0 | 0.3+ | 2005 05 06 | 703 | (2.8− | 0.2−) | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2005 04 11 | 691 | 0.3− | 0.2+ | 2005 05 06 | 703 | 1.3− | 0.4− | 2006 09 19 | 691 | 0.1− | 0.7+ |
| 2005 04 12 | 691 | 0.2+ | 0.1+ | 2005 05 06 | 703 | 1.3+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2005 04 12 | 691 | 0.1+ | 0.2+ | 2005 05 06 | 703 | 0.8− | 0.6− | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2005 04 12 | 691 | 1.4+ | 0.4+ | 2005 05 14 | G96 | 0.3− | 0.6− | 2006 09 30 | 691 | 0.3− | 0.4+ |

**2005 GH$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.59783 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29009263 | $\omega$ | 248.73185 | | +0.40933071 | | +0.90813774 |
| $a$ | 2.2600164 | $\Omega$ | 45.74849 | | −0.78497730 | | +0.39965954 |
| $e$ | 0.1401217 | $i$ | 7.05250 | | −0.46503657 | | +0.12473213 |
| $P$ | 3.40 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 644 | 0.3− | 0.4+ | 2005 06 13 | G96 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2002 06 18 | 644 | 0.1+ | 0.6+ | 2005 06 13 | G96 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2002 06 18 | 644 | 0.0 | 0.4+ | 2005 06 13 | G96 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2005 04 05 | 703 | 0.3− | 0.6+ | 2005 06 13 | G96 | 1.0+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2005 04 05 | 703 | 0.1− | 1.0− | 2005 06 14 | G96 | 0.5+ | 0.9+ | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 2005 04 05 | 703 | 0.4+ | 0.5− | 2005 06 14 | G96 | 0.2+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2005 04 05 | 703 | 0.4− | 0.6− | 2005 06 14 | G96 | 0.4+ | 0.8+ | 2006 11 09 | J95 | 0.0 | 0.4− |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2005 06 14 | G96 | 0.1+ | 0.6+ | 2006 11 09 | J95 | 0.7− | 0.1− |
| 2005 04 10 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.1+ | 2006 11 09 | J95 | 1.0− | 0.8+ |
| 2005 04 10 | 691 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.6+ | 1.5− | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2005 04 11 | G96 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.5− | 0.7− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2005 04 11 | G96 | 0.2− | 0.0 | 2006 08 28 | 703 | (2.6+ | 0.9−) | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2005 04 12 | 704 | 0.5+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.4− | 0.6+ |
| 2005 04 12 | 704 | 0.3+ | 0.9− | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2005 04 12 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | (0.2− | 1.6+) | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2005 04 15 | 699 | (2.1+ | 0.3+) | 2006 09 30 | 703 | 1.2+ | 1.4+ | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 2005 04 15 | 699 | (2.3+ | 1.4+) | 2006 09 30 | 703 | 0.0 | 0.8+ | 2006 11 17 | 703 | 0.9+ | 0.1+ |
| 2005 04 15 | 699 | 1.2+ | 0.6+ | 2006 09 30 | 703 | 0.9+ | 0.9+ | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2005 04 15 | 699 | 0.6+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | (0.7+ | 1.5+) |
| 2005 04 28 | 461 | 0.5− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.8+ | 1.3+ |
| 2005 04 28 | 461 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | (1.3− | 1.8+) |
| 2005 04 28 | 461 | 0.6+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.7+ |
| 2005 05 08 | 703 | 0.9+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.5− |
| 2005 05 08 | 703 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.6− |
| 2005 05 08 | 703 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.5− |
| 2005 05 08 | 703 | 1.3− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.5− |
| 2005 05 10 | 807 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.5− | 0.1+ |
| 2005 05 10 | 807 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.9+ | 0.1− |
| 2005 05 10 | 807 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.6+ | 0.3− | 2006 11 27 | 703 | 0.5+ | 0.7+ |
| 2005 05 11 | 807 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 27 | 703 | 1.5+ | 1.7+ |
| 2005 05 11 | 807 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2005 05 12 | 699 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.7− | 0.6− |
| 2005 05 12 | 699 | (0.2+ | 1.8+) | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 1.0+ | 0.2+ |
| 2005 05 12 | 699 | 0.7− | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.7− | 0.9− |
| 2005 05 12 | 699 | 1.2− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | |

**2005 GC$_{91}$ = 2006 QG$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.32672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23156587 | $\omega$ | 325.45568 | | +0.30557315 | | +0.95165076 |
| $a$ | 2.6263525 | $\Omega$ | 322.30944 | | −0.86160532 | | +0.26232263 |
| $e$ | 0.0876238 | $i$ | 2.94376 | | −0.40529165 | | +0.15983636 |
| $P$ | 4.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 691 | 0.2+ | 0.6+ | 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 08 19 | 691 | 0.6− | 0.3+ |
| 2000 02 12 | 691 | 0.1+ | 0.6+ | 2005 04 10 | 691 | 0.0 | 0.3− | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 2000 02 12 | 691 | 0.2+ | 0.3+ | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2002 10 04 | 644 | 0.0 | 0.6+ | 2005 04 15 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.3+ | 0.1+ |
| 2002 10 04 | 644 | 0.4− | 0.6+ | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2002 10 04 | 644 | 0.3− | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.5− |
| 2005 04 06 | 691 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2005 04 06 | 691 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 2005 04 06 | 691 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.3+ | | | | |
| 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.5+ | | | | |

**2005 GK$_{91}$ = 2006 SB$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.15292 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23630437 | $\omega$ | 291.95873 | | +0.11275571 | | +0.99332418 |
| $a$ | 2.5911241 | $\Omega$ | 344.45615 | | −0.87481327 | | +0.08762003 |
| $e$ | 0.1819046 | $i$ | 5.21482 | | −0.47115591 | | +0.07503207 |
| $P$ | 4.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 644 | 0.2− | 0.1− | 2005 04 06 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 1.2− | 0.0 |
| 2001 05 14 | 644 | 0.1+ | 0.6− | 2005 04 06 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 1.2+ | 0.5− |
| 2001 05 14 | 644 | 0.0 | 0.2− | 2005 04 06 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 1.2− | 0.7+ |
| 2002 10 10 | 644 | 0.6− | 1.1+ | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2002 10 10 | 644 | 0.7− | 1.1+ | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2002 10 10 | 644 | 0.6− | 1.4+ | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.4+ | 0.6+ |
| 2005 03 17 | G96 | 0.8− | 0.2+ | 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 2005 03 17 | G96 | 0.6− | 0.4+ | 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2005 03 17 | G96 | 0.2− | 0.0 | 2005 04 15 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2005 03 17 | G96 | 0.7− | 0.3+ | 2006 09 17 | 703 | 1.0− | 0.2+ | | | | |

**2005 GL$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.13894 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23333159 | $\omega$ | 283.75720 | | +0.14348457 | | +0.98957988 |
| $a$ | 2.6130859 | $\Omega$ | 354.45036 | | −0.85332182 | | +0.11757153 |
| $e$ | 0.1756138 | $i$ | 7.12393 | | −0.50125248 | | +0.08311797 |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 10 | 644 | 0.1+ | 0.2+ | 2005 05 08 | 699 | 0.3+ | 0.4− | 2006 09 20 | 704 | 0.2+ | 0.3− |
| 2001 07 10 | 644 | 0.3− | 0.3+ | 2005 05 14 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.7+ |
| 2001 07 10 | 644 | 0.3+ | 0.4− | 2005 05 14 | 703 | 0.4+ | 1.1− | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2003 12 18 | 691 | 0.0 | 0.5+ | 2005 05 14 | 644 | 0.5+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2003 12 18 | 691 | 0.1− | 0.5+ | 2005 05 14 | 703 | 1.3− | 0.8+ | 2006 09 25 | 691 | 0.0 | 0.2+ |
| 2003 12 18 | 691 | 0.3+ | 0.5+ | 2005 05 14 | 703 | 0.4− | 0.9+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2005 03 17 | G96 | 0.1− | 0.1+ | 2005 05 14 | 644 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2005 03 17 | G96 | 0.5− | 0.1+ | 2005 05 14 | 703 | 0.3− | 0.9− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2005 03 17 | G96 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2005 03 17 | G96 | 0.1− | 0.2− | 2006 08 24 | 644 | 0.7− | 0.1+ | 2006 09 27 | 704 | (1.0+ | 3.0+) |
| 2005 04 06 | 691 | 0.2+ | 0.5+ | 2006 08 24 | 644 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.9+ |
| 2005 04 06 | 691 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 09 27 | 704 | 0.7− | 0.6+ |
| 2005 04 06 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.0 | 0.7+ | 2006 09 27 | 704 | (0.1− | 1.8+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 0.4+ | 1.0+ | 2006 09 27 | 704 | 0.4+ | 0.7+ |
| 2005 04 10 | 691 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 09 29 | 704 | 0.1+ | 0.2+ |
| 2005 04 10 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.7− | 1.2+ |
| 2005 04 11 | 699 | (1.6+ | 2.7+) | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2005 04 11 | 699 | 0.7+ | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 704 | (1.0− | 1.6+) |
| 2005 04 11 | 699 | (0.1+ | 1.6+) | 2006 09 17 | 704 | 0.5− | 0.3+ | 2006 10 02 | 691 | 0.6− | 0.5+ |
| 2005 04 11 | 699 | 1.2+ | 1.0+ | 2006 09 17 | 704 | 0.3− | 0.3− | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2005 04 18 | 703 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.4− | 0.4+ |
| 2005 04 18 | 703 | 1.3− | 0.4− | 2006 09 17 | 704 | 0.5− | 0.6+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2005 04 18 | 703 | 0.3− | 0.9− | 2006 09 17 | 704 | 0.1− | 0.6− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2005 04 18 | 703 | 0.8− | 0.3− | 2006 09 18 | 699 | (0.3− | 1.5+) | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.9− | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2005 05 01 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2005 05 01 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 699 | (0.5+ | 1.8+) | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2005 05 08 | 699 | 1.3+ | 1.5+ | 2006 09 20 | 704 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 05 08 | 699 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.4+ | | | | |
| 2005 05 08 | 699 | (1.1+ | 2.0+) | 2006 09 20 | 704 | 0.4− | 0.2+ | | | | |

**2005 GX$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 139.64465 | | (2000.0) | | | |
| $n$ | 0.31146367 | $\omega$ | 205.61307 | | −0.42818613 | +0.90057634 |
| $a$ | 2.1554161 | $\Omega$ | 39.15674 | | −0.80736896 | −0.34396559 |
| $e$ | 0.1694367 | $i$ | 6.81771 | | −0.40597044 | −0.26580054 |
| $P$ | 3.16 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 691 | 0.1+ | 0.1+ | 2005 04 13 | 699 | 1.2+ | 0.0 | 2005 05 13 | 704 | 1.6+ | 0.1+ |
| 2003 11 21 | 691 | 0.2+ | 0.1− | 2005 04 13 | 699 | 0.6− | 0.8+ | 2005 05 14 | 644 | 0.0 | 0.2+ |
| 2003 11 21 | 691 | 0.3− | 0.4+ | 2005 04 13 | 699 | 0.1+ | 0.1+ | 2005 05 14 | 644 | 0.0 | 0.1+ |
| 2005 04 06 | G96 | 0.3− | 0.5− | 2005 04 16 | 691 | 0.2+ | 0.0 | 2005 05 14 | 644 | 0.0 | 0.2+ |
| 2005 04 06 | G96 | 0.2− | 0.4− | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2005 06 27 | 644 | 0.4+ | 0.4+ |
| 2005 04 06 | G96 | 0.3− | 0.4− | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2005 06 27 | 644 | 0.1+ | 0.3+ |
| 2005 04 06 | G96 | 0.4− | 0.2− | 2005 04 18 | 703 | 0.7− | 0.7+ | 2005 06 27 | 644 | 0.1+ | 0.2+ |
| 2005 04 10 | G96 | 0.3− | 0.4− | 2005 04 18 | 703 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 04 10 | G96 | 0.1− | 0.4− | 2005 04 18 | 703 | 0.6− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2005 04 10 | G96 | 0.4− | 0.4− | 2005 04 18 | 703 | 0.8− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2005 04 10 | G96 | 0.4− | 0.4− | 2005 05 13 | 704 | 0.9+ | 0.2+ | | | | |
| 2005 04 13 | 699 | 0.4+ | 1.1+ | 2005 05 13 | 704 | 0.3+ | 0.6− | | | | |

**2005 GL$_{93}$ = 2006 VW$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.87817 | | (2000.0) | | | |
| $n$ | 0.29434833 | $\omega$ | 47.84325 | | +0.38858395 | +0.91849162 |
| $a$ | 2.2381799 | $\Omega$ | 245.15999 | | −0.86741650 | +0.33781257 |
| $e$ | 0.2123063 | $i$ | 4.63418 | | −0.31079113 | +0.20556219 |
| $P$ | 3.35 | $H$ | 18.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.1+ | 0.0 | 2005 04 10 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2005 04 10 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 1999 10 14 | 645 | 0.1− | 0.0 | 2005 04 15 | 691 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2005 04 06 | 691 | 0.2+ | 0.2− | 2005 04 15 | 691 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2005 04 06 | 691 | 0.1− | 0.1+ | 2005 04 15 | 691 | 0.2− | 0.1− | | | | |
| 2005 04 06 | 691 | 0.6− | 0.5+ | 2006 11 11 | 691 | 0.3+ | 0.0 | | | | |

**2005 GQ$_{93}$ = 2006 UE$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.26284 | | (2000.0) | | | |
| $n$ | 0.27010258 | $\omega$ | 12.56527 | | −0.47387199 | +0.87752356 |
| $a$ | 2.3701922 | $\Omega$ | 229.19937 | | −0.81609551 | −0.46897476 |
| $e$ | 0.0807901 | $i$ | 5.56959 | | −0.33080727 | −0.10007530 |
| $P$ | 3.65 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.1− | 0.0 | 2005 04 06 | 691 | 0.3+ | 0.7+ | 2006 10 11 | 691 | 0.6+ | 0.1+ |
| 2002 08 05 | 644 | 0.4− | 0.5+ | 2005 04 06 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.2+ |
| 2002 08 05 | 644 | 0.3− | 0.4+ | 2005 04 10 | 691 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2002 08 11 | 644 | 0.0 | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.4− |
| 2002 08 11 | 644 | 0.2+ | 0.7+ | 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2002 08 11 | 644 | 0.0 | 0.5+ | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.6− | 0.5+ |
| 2003 11 26 | 691 | 0.9− | 0.8+ | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.0 |
| 2003 11 26 | 691 | 0.4+ | 0.7+ | 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2003 11 26 | 691 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.8+ | 2006 10 21 | 691 | 0.4− | 0.3− |
| 2005 04 06 | 691 | 0.0 | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1+ |

**2005 GV$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.57202 | | (2000.0) | | | |
| $n$ | 0.28180955 | $\omega$ | 327.29375 | | +0.82394917 | +0.56665406 |
| $a$ | 2.3040872 | $\Omega$ | 358.17892 | | −0.49496575 | +0.71684362 |
| $e$ | 0.2294463 | $i$ | 5.97444 | | −0.27589250 | +0.40624918 |
| $P$ | 3.50 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 20 | 644 | 0.4− | 0.0 | 2002 08 13 | 704 | 0.5+ | 0.8− | 2005 04 11 | 691 | 0.0 | 0.0 |
| 2002 06 20 | 644 | 0.3− | 0.1+ | 2002 08 13 | 704 | 0.0 | 1.1− | 2005 04 12 | 691 | 0.1+ | 0.0 |
| 2002 06 20 | 644 | 0.2− | 0.1+ | 2002 08 13 | 704 | (0.2− | 1.9−) | 2005 04 12 | 691 | 0.2+ | 0.1+ |
| 2002 07 05 | 704 | 0.8+ | 0.7+ | 2002 08 13 | 704 | 0.3− | 1.2− | 2005 04 12 | 691 | 0.0 | 0.0 |
| 2002 07 05 | 704 | 1.2+ | 1.1+ | 2002 08 31 | 704 | 0.9− | 0.5+ | 2005 04 16 | 691 | 0.2+ | 0.0 |
| 2002 07 05 | 704 | 1.5+ | 1.1+ | 2002 08 31 | 704 | 0.8− | 0.7+ | 2005 04 16 | 691 | 0.2− | 0.0 |
| 2002 07 05 | 704 | (0.6+ | 1.8+) | 2002 08 31 | 704 | 0.3− | 0.3+ | 2005 04 16 | 691 | 0.1− | 0.2− |
| 2002 07 05 | 704 | (0.7+ | 1.9+) | 2002 08 31 | 704 | 0.7− | 0.8+ | 2006 11 02 | 703 | 0.9− | 0.8+ |
| 2002 07 16 | 644 | 0.5− | 0.1− | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.0 | 0.1+ |
| 2002 07 16 | 644 | 0.6− | 0.1− | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.8+ |
| 2002 07 16 | 644 | 0.4− | 0.1− | 2005 04 06 | 691 | 0.3+ | 0.3+ | 2006 11 02 | 703 | 0.7− | 0.7+ |
| 2002 07 22 | 644 | 0.3− | 0.3+ | 2005 04 06 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2002 07 22 | 644 | 0.2+ | 0.1+ | 2005 04 06 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.3+ |
| 2002 07 22 | 644 | 0.1+ | 0.0 | 2005 04 11 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.2+ |
| 2002 08 13 | 704 | 0.9+ | 1.1− | 2005 04 11 | 691 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.2+ |

**2005 GN$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.33125 | | (2000.0) | | | |
| $n$ | 0.31840443 | $\omega$ | 120.84483 | | −0.36780509 | +0.92955239 |
| $a$ | 2.1239778 | $\Omega$ | 127.55311 | | −0.86378973 | −0.33135955 |
| $e$ | 0.0538993 | $i$ | 1.84539 | | −0.34436421 | −0.16165767 |
| $P$ | 3.10 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.2+ | 0.3− | 2005 04 10 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.3+ |
| 2005 03 14 | G96 | 0.3+ | 0.4− | 2005 04 10 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.3+ |
| 2005 03 14 | G96 | 0.1+ | 0.1− | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2005 03 14 | G96 | 0.7+ | 0.6− | 2005 04 12 | 704 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.7− | 0.3− |
| 2005 04 06 | 691 | 0.0 | 0.2+ | 2005 04 12 | 704 | 0.9+ | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.3− |
| 2005 04 06 | 691 | 0.3+ | 0.0 | 2005 04 12 | 704 | 0.8+ | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2005 04 06 | 691 | 0.0 | 0.2+ | 2005 04 14 | 691 | 0.3− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2005 04 06 | G96 | 0.5− | 0.2− | 2005 04 14 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2005 04 06 | G96 | 0.3− | 0.2− | 2005 04 14 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2005 04 06 | G96 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2005 04 06 | G96 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− |

**2005 GW$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.56945 | | $\omega$ | 146.10504 | +0.86678338 | +0.49863473 |
| $n$ | 0.28178611 | | $\Omega$ | 184.00492 | −0.47704648 | +0.82495927 |
| $a$ | 2.3042150 | | $i$ | 5.80911 | −0.14530391 | +0.26609322 |
| $e$ | 0.1383667 | | | | | |
| $P$ | 3.50 | $H$ | 16.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.5− | 0.2+ | 2006 07 22 | G96 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 04 06 | G96 | 0.5− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 2005 04 06 | G96 | 0.3− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2005 04 06 | G96 | 1.2− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2005 04 10 | 691 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2005 04 10 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 2005 04 10 | 691 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.6+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2005 04 10 | 691 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2005 04 10 | 691 | 0.7− | 0.6+ | 2006 09 20 | 699 | 0.9− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.0 | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 04 14 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2005 04 18 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2005 04 18 | 691 | 0.4+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2005 04 20 | 705 | 1.5− | 0.2− | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.7+ | 0.1+ |
| 2005 04 20 | 705 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.3+ |
| 2005 04 20 | 705 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.0 |
| 2005 05 03 | 691 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.8+ | 0.8+ |
| 2005 05 03 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2005 05 03 | 691 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.3+ |
| 2006 07 22 | G96 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.8+ | 0.6+ | 2006 11 13 | 703 | 0.1− | 0.1− |
| 2006 07 22 | G96 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.0 | 0.3+ | | | | |
| 2006 07 22 | G96 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.5+ | | | | |

**2005 GY$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.01902 | | $\omega$ | 274.64073 | +0.71815054 | +0.69136493 |
| $n$ | 0.30088939 | | $\Omega$ | 41.65140 | −0.58183854 | +0.65899122 |
| $a$ | 2.2056240 | | $i$ | 6.84514 | −0.38173776 | +0.29621801 |
| $e$ | 0.1212220 | | | | | |
| $P$ | 3.28 | $H$ | 17.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1− | 0.4− | 2005 06 13 | G96 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.2+ |
| 2004 01 18 | 691 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.6+ |
| 2004 01 18 | 691 | 0.3+ | 0.5− | 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2005 03 16 | G96 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2005 03 16 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 1.1− | 0.5− |
| 2005 03 16 | G96 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | (0.2+ | 1.9−) |
| 2005 03 16 | G96 | 0.4− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.1− | 1.0+ |
| 2005 04 06 | G96 | 0.3+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2005 04 06 | G96 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2005 04 06 | G96 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2005 04 06 | G96 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2005 04 10 | 691 | 0.6− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 04 18 | 703 | (1.7− | 0.1−) | 2006 10 27 | G96 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2005 04 18 | 703 | (1.7− | 0.3−) | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 15 | G96 | 1.5− | 0.9+ |
| 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | (0.5+ | 1.7−) |
| 2005 04 18 | 703 | 0.1+ | 1.0+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2005 04 18 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.3− |
| 2005 05 10 | G96 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.1+ |
| 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.3− | 0.8+ |
| 2005 05 10 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 27 | 703 | 1.8+ | 2.2+ |
| 2005 05 10 | G96 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.5+ | 2006 11 27 | 703 | 1.2+ | 2.1+ |
| 2005 06 13 | G96 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.3+ | 2006 11 27 | 703 | 0.1+ | 1.1+ |

**2005 GA$_{98}$ = 2006 QW$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.05335 | | $\omega$ | 182.98613 | +0.52999001 | +0.84768105 |
| $n$ | 0.24754916 | | $\Omega$ | 119.01975 | −0.77747286 | +0.49674083 |
| $a$ | 2.5120508 | | $i$ | 1.53322 | −0.33859496 | +0.18624013 |
| $e$ | 0.0603191 | | | | | |
| $P$ | 3.98 | $H$ | 17.9 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | G96 | 0.5− | 0.2+ | 2005 04 10 | 691 | 0.0 | 0.0 | 2006 08 21 | 691 | 0.1− | 0.4+ |
| 2005 04 07 | G96 | 0.3− | 0.0 | 2005 04 10 | 691 | 0.1+ | 0.3+ | 2006 08 21 | 691 | 0.3− | 0.4− |
| 2005 04 07 | G96 | 0.0 | 0.0 | 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.2+ | 0.0 |
| 2005 04 07 | G96 | 0.1+ | 0.2− | 2005 04 11 | 691 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.1− |
| 2005 04 10 | G96 | 1.4− | 0.7− | 2005 04 11 | 691 | 0.4+ | 0.2− | 2006 08 28 | 691 | 0.3+ | 0.1+ |
| 2005 04 10 | G96 | 1.2− | 0.2+ | 2005 04 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2005 04 10 | G96 | 0.9− | 0.3+ | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2005 04 10 | G96 | 0.1− | 0.1− | 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.3− | 0.0 |
| 2005 04 10 | 691 | 0.0 | 0.3− | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.1− |

**2005 GK$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 150.98582 | | $\omega$ | 204.78262 | −0.84508594 | −0.52012840 |
| $n$ | 0.20166803 | | $\Omega$ | 303.31433 | +0.51187743 | −0.72040356 |
| $a$ | 2.8799040 | | $i$ | 8.51095 | +0.15430894 | −0.45878662 |
| $e$ | 0.1934745 | | | | | |
| $P$ | 4.89 | $H$ | 15.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.8− | 0.3+ | 2003 12 29 | 704 | 0.6− | 0.3− | 2005 04 10 | E12 | 0.1− | 0.1+ |
| 2003 12 17 | 704 | 0.4− | 0.1− | 2003 12 29 | 704 | 0.5− | 0.1− | 2005 05 16 | 644 | 0.2+ | 0.1+ |
| 2003 12 17 | 704 | 0.4+ | 0.1− | 2003 12 29 | 704 | 0.7+ | 1.2+ | 2005 05 16 | 644 | 0.4+ | 0.2+ |
| 2003 12 17 | 704 | 0.5− | 0.1+ | 2005 04 07 | 644 | 0.4− | 0.1− | 2005 05 16 | 644 | 0.4+ | 0.2+ |
| 2003 12 23 | 704 | 0.2+ | 0.2+ | 2005 04 07 | 644 | 0.0 | 0.0 | 2006 06 03 | G96 | 0.1− | 0.7+ |
| 2003 12 23 | 704 | 0.3− | 0.1− | 2005 04 07 | 644 | 0.5+ | 0.6− | 2006 06 03 | G96 | 0.1+ | 0.3+ |
| 2003 12 23 | 704 | 1.6+ | 0.4− | 2005 04 10 | E12 | 0.3− | 0.4+ | 2006 06 03 | G96 | 0.3− | 0.1− |
| 2003 12 23 | 704 | 0.8+ | 0.2+ | 2005 04 10 | E12 | 0.2− | 0.1+ | 2006 06 03 | G96 | 0.0 | 0.0 |
| 2003 12 29 | 704 | 0.7− | 0.3+ | 2005 04 10 | E12 | 0.4− | 0.3+ | | | | |

**2005 GX$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 229.23366 | | $\omega$ | 100.87775 | −0.66673294 | −0.74414637 |
| $n$ | 0.30004804 | | $\Omega$ | 31.06333 | +0.64862879 | −0.60671395 |
| $a$ | 2.2097451 | | $i$ | 4.60128 | +0.36708021 | −0.27954314 |
| $e$ | 0.1040327 | | | | | |
| $P$ | 3.28 | $H$ | 17.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 691 | 0.2− | 0.3− | 2003 10 24 | 291 | 0.0 | 0.1+ | 2005 04 11 | G96 | 0.1+ | 0.4+ |
| 2003 09 27 | 691 | 0.1+ | 0.0 | 2003 11 24 | 691 | 0.4− | 0.1− | 2005 04 11 | G96 | 0.4− | 0.2+ |
| 2003 09 27 | 691 | 0.2− | 0.1− | 2003 11 24 | 691 | 0.2+ | 0.3+ | 2005 04 11 | G96 | 0.1+ | 0.4+ |
| 2003 10 16 | 691 | 0.0 | 0.2+ | 2003 11 24 | 691 | 0.1− | 0.3+ | 2005 05 14 | G96 | 0.4+ | 0.4− |
| 2003 10 16 | 691 | 0.0 | 0.2+ | 2005 04 07 | 691 | 0.1+ | 0.3+ | 2005 05 14 | G96 | 0.2− | 0.3− |
| 2003 10 16 | 691 | 0.4− | 0.2+ | 2005 04 07 | 691 | 0.2+ | 0.4+ | 2005 05 14 | G96 | 0.3− | 1.0+ |
| 2003 10 24 | 291 | 0.2+ | 0.2+ | 2005 04 07 | 691 | 0.0 | 0.3+ | 2005 05 14 | G96 | 1.0+ | 0.4− |
| 2003 10 24 | 291 | 0.1+ | 0.2+ | 2005 04 11 | G96 | 0.1− | 0.2+ | | | | |

**2005 GS$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 112.23757 | | | (2000.0) | | |
| $n$ | 0.31204328 | $\omega$ | 246.99068 | | +0.13364431 | +0.98992113 |
| $a$ | 2.1527462 | $\Omega$ | 30.80387 | | −0.87246367 | +0.13994818 |
| $e$ | 0.1189431 | $i$ | 5.24961 | | −0.47004930 | +0.02169479 |
| $P$ | 3.16 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | 691 | 0.0 | 0.2+ | 2005 05 04 | 699 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.2+ |
| 2005 04 07 | 691 | 0.1+ | 0.0 | 2005 05 08 | 699 | 1.3+ | 1.0+ | 2006 09 30 | G96 | 0.0 | 0.3+ |
| 2005 04 07 | 691 | 0.1+ | 0.0 | 2005 05 08 | 699 | 0.0 | 1.2+ | 2006 10 23 | 691 | 0.2+ | 0.1− |
| 2005 04 11 | G96 | 0.4− | 0.3− | 2005 05 08 | 699 | 0.8− | 1.0− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2005 04 11 | G96 | 0.4− | 0.0 | 2005 05 08 | 699 | (2.1− | 1.1−) | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2005 04 11 | G96 | 0.0 | 0.2− | 2005 05 09 | 704 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2005 05 09 | 704 | 0.6+ | 1.1+ | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2005 04 18 | 703 | 0.1+ | 0.3− | 2005 05 09 | 704 | 1.0+ | 0.5− | 2006 10 27 | 691 | 0.5+ | 0.0 |
| 2005 04 18 | 703 | (1.6+ | 0.4+) | 2005 05 14 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2005 04 18 | 703 | 0.5− | 0.9− | 2005 05 14 | G96 | 0.4− | 0.9− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2005 04 18 | 703 | (0.2− | 1.5−) | 2005 05 14 | G96 | 0.3− | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2005 05 04 | 699 | (2.3− | 0.8−) | 2005 05 14 | G96 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2005 05 04 | 699 | (0.4− | 1.8+) | 2006 09 30 | G96 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2005 05 04 | 699 | 0.5− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.5− | 1.5− |

**2005 GT$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.86578 | | | (2000.0) | | |
| $n$ | 0.17762474 | $\omega$ | 72.68348 | | +0.38165791 | +0.91735012 |
| $a$ | 3.1342508 | $\Omega$ | 220.34406 | | −0.90047697 | +0.34140293 |
| $e$ | 0.0207016 | $i$ | 10.06722 | | −0.20851493 | +0.20472612 |
| $P$ | 5.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 691 | 0.1+ | 0.0 | 2005 02 12 | 809 | 0.2+ | 0.4+ | 2005 05 08 | G96 | 0.1+ | 0.2+ |
| 1996 10 11 | 691 | 0.0 | 0.2+ | 2005 04 07 | G96 | 0.3− | 0.0 | 2005 05 08 | G96 | 0.3− | 0.2+ |
| 1996 10 11 | 691 | 0.1− | 0.3+ | 2005 04 07 | G96 | 0.3− | 0.0 | 2005 05 08 | G96 | 0.2+ | 0.0 |
| 2004 03 13 | 644 | 0.0 | 0.5+ | 2005 04 07 | G96 | 0.2− | 0.1+ | 2005 05 08 | G96 | 0.1+ | 0.1+ |
| 2004 03 13 | 644 | 0.1− | 0.1− | 2005 04 07 | G96 | 0.2− | 0.2+ | 2005 05 12 | 691 | 0.1− | 0.1+ |
| 2004 03 13 | 644 | 0.1+ | 0.2− | 2005 04 11 | G96 | 0.3+ | 0.1− | 2005 05 12 | 691 | 0.4+ | 0.1+ |
| 2005 02 12 | 809 | 0.3− | 0.2+ | 2005 04 11 | G96 | 0.2− | 0.1− | 2005 05 12 | 691 | 0.0 | 0.0 |
| 2005 02 12 | 809 | 0.1+ | 0.2+ | 2005 04 11 | G96 | 0.2− | 0.0 | | | | |
| 2005 02 12 | 809 | 0.1+ | 0.4+ | 2005 04 11 | G96 | 0.1− | 0.0 | | | | |

**2005 GU$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 49.92047 | | | (2000.0) | | |
| $n$ | 0.23564810 | $\omega$ | 100.68973 | | +0.67475282 | +0.73666065 |
| $a$ | 2.5959327 | $\Omega$ | 211.89292 | | −0.70615491 | +0.62659546 |
| $e$ | 0.1273575 | $i$ | 4.90378 | | −0.21460166 | +0.25438007 |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 691 | 0.1+ | 0.0 | 2005 05 08 | G96 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1998 12 12 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 1998 12 12 | 691 | 0.6− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.4− | 0.4+ |
| 2002 11 13 | 291 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2002 11 13 | 291 | 0.1+ | 0.7+ | 2006 09 23 | 152 | 0.5+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2002 11 13 | 291 | 0.1+ | 0.3+ | 2006 09 23 | 152 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.8+ | 0.1+ |
| 2005 04 07 | G96 | 0.3− | 0.3− | 2006 09 23 | 152 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2005 04 07 | G96 | 0.4− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2005 04 07 | G96 | 0.5− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2005 04 07 | G96 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.4− |
| 2005 04 11 | G96 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.8− |
| 2005 04 11 | G96 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2005 05 08 | 691 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.6− |
| 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2005 05 08 | G96 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2005 05 08 | G96 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2005 05 08 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2+ | | | | |

**2005 GW$_{99}$ = 2006 QQ$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 111.63198 | | | (2000.0) | | |
| $n$ | 0.22537174 | $\omega$ | 256.82983 | | −0.73746260 | +0.66726166 |
| $a$ | 2.6742566 | $\Omega$ | 324.85895 | | −0.52778547 | −0.66586114 |
| $e$ | 0.1482444 | $i$ | 10.45561 | | −0.42141597 | −0.33375263 |
| $P$ | 4.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | E12 | 0.5− | 0.0 | 2005 06 05 | E12 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.5+ | 0.4− |
| 2005 04 07 | E12 | 0.3+ | 0.5− | 2005 06 05 | E12 | 0.5− | 0.4− | 2006 08 30 | 704 | 1.1+ | 0.7+ |
| 2005 04 07 | E12 | 0.2− | 0.1− | 2005 06 05 | E12 | 0.2− | 0.8− | 2006 09 13 | 644 | 0.2− | 0.1− |
| 2005 04 07 | E12 | 0.1+ | 0.2+ | 2005 06 05 | E12 | 0.6+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.1− |
| 2005 04 10 | E12 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.7− | 0.6+ | 2006 09 13 | 644 | 0.0 | 0.5+ |
| 2005 04 10 | E12 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.5+ | 0.4+ |
| 2005 04 10 | E12 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 1.2− | 0.4− | 2006 09 17 | 703 | 0.4− | 0.1+ |
| 2005 04 10 | E12 | 0.1− | 0.3− | 2006 08 28 | 703 | 1.0− | 0.0 | 2006 09 17 | 703 | 0.3− | 0.0 |
| 2005 05 12 | 644 | 0.2+ | 0.4+ | 2006 08 30 | 704 | 0.6+ | 1.2− | 2006 09 17 | 703 | 0.2− | 1.1− |
| 2005 05 12 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 1.4+ | 0.3+ | | | | |
| 2005 05 12 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.4+ | 1.3+ | | | | |

**2005 GK$_{100}$ = 2006 SK$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.64993 | | | (2000.0) | | |
| $n$ | 0.24050549 | $\omega$ | 288.82768 | | +0.15789774 | +0.98684568 |
| $a$ | 2.5608612 | $\Omega$ | 350.06370 | | −0.81327905 | +0.11003715 |
| $e$ | 0.2653507 | $i$ | 11.60028 | | −0.56004062 | +0.11843746 |
| $P$ | 4.10 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 691 | 0.7+ | 0.8+ | 2005 04 09 | G96 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 2001 03 02 | 691 | 0.3− | 0.1+ | 2005 04 10 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2001 03 02 | 691 | 0.2+ | 0.0 | 2005 04 10 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2005 03 04 | 691 | 0.3+ | 0.3− | 2005 04 10 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2005 03 04 | 691 | 0.1+ | 0.2− | 2005 04 12 | G96 | 0.5− | 0.1− | 2006 09 27 | 691 | 0.6− | 0.3+ |
| 2005 03 04 | 691 | 0.1− | 0.3− | 2005 04 12 | G96 | 0.5+ | 0.6− | 2006 10 01 | 691 | 0.1+ | 0.3− |
| 2005 04 09 | G96 | 0.9− | 0.1− | 2005 04 12 | G96 | 0.4− | 0.2− | 2006 10 01 | 691 | 0.6+ | 0.1+ |
| 2005 04 09 | G96 | 0.3− | 0.0 | 2005 04 12 | G96 | 0.4− | 0.4− | 2006 10 01 | 691 | 0.3− | 0.4− |
| 2005 04 09 | G96 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |

**2005 GE$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.38576 | | | (2000.0) | | |
| $n$ | 0.26478091 | $\omega$ | 158.14282 | | +0.98773508 | +0.14372262 |
| $a$ | 2.4018448 | $\Omega$ | 194.01353 | | −0.15183148 | +0.97526657 |
| $e$ | 0.1388349 | $i$ | 14.59496 | | +0.03642271 | +0.16792537 |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 644 | 0.3− | 0.5− | 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.6− |
| 2002 07 09 | 644 | 0.3− | 0.9− | 2005 04 17 | 691 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.6− | 0.0 |
| 2002 07 09 | 644 | 0.1+ | 0.6− | 2006 08 29 | 699 | 0.5− | 0.4+ | 2006 09 26 | 691 | (2.1+ | 2.4+) |
| 2002 07 18 | 644 | 0.1+ | 0.2− | 2006 08 29 | 699 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2002 07 18 | 644 | 0.1− | 0.1− | 2006 08 29 | 699 | 1.1− | 0.7− | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2002 07 18 | 644 | 0.2+ | 0.3− | 2006 08 29 | 699 | 0.8+ | 0.3− | 2006 09 27 | 699 | 0.2− | 0.6− |
| 2002 08 03 | 644 | 0.2− | 0.1+ | 2006 09 17 | 941 | 0.5− | 0.0 | 2006 09 27 | 699 | 0.4+ | 0.6− |
| 2002 08 03 | 644 | 0.0 | 0.3+ | 2006 09 17 | 941 | 0.5− | 0.0 | 2006 09 27 | 699 | 0.4− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 03 | 644 | 0.1− | 0.3+ | 2006 09 17 | 941 | 0.3− | 0.0 | 2006 09 27 | 699 | 0.3− | 0.4− |
| 2002 08 14 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 941 | 0.4− | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.2− |
| 2002 08 14 | 644 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 1.0− | 0.1− |
| 2002 08 14 | 644 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.8− | 2006 09 29 | 704 | (2.2+ | 0.0 ) |
| 2002 08 31 | 644 | 0.0 | 0.4− | 2006 09 17 | 703 | 0.0 | 0.0 | 2006 09 29 | 704 | 1.4+ | 0.7+ |
| 2002 08 31 | 644 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.0 | 1.1− | 2006 09 29 | 704 | 0.7− | 0.0 |
| 2002 08 31 | 644 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2005 04 09 | 691 | 0.1− | 0.2− | 2006 09 17 | 703 | 1.0− | 0.6− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2005 04 09 | 691 | 0.5+ | 0.2− | 2006 09 17 | 703 | 0.3− | 0.5− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2005 04 09 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 0.9− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2005 04 11 | 691 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.4+ |
| 2005 04 11 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 1.5+ | 1.4+ | 2006 10 19 | 644 | 0.5+ | 0.1+ |
| 2005 04 11 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.6− |
| 2005 04 14 | 691 | 0.3− | 0.1+ | 2006 09 19 | 699 | 1.1+ | 1.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2005 04 14 | 691 | 0.4− | 0.4+ | 2006 09 19 | 699 | 0.2− | 1.4+ | 2006 10 20 | 644 | 0.4− | 0.5+ |
| 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.5+ |
| 2005 04 15 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.8+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2005 04 15 | 691 | 0.3− | 0.1+ | 2006 09 25 | 704 | 0.8− | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2005 04 17 | 691 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.6− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1− |

**2005 GG$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.17413 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22795322 | $\omega$ | 35.94086 | | +0.05135507 | −0.98312189 | |
| $a$ | 2.6540284 | $\Omega$ | 51.78446 | | +0.85615244 | −0.04718417 | |
| $e$ | 0.1620461 | $i$ | 12.91429 | | +0.51416501 | +0.17676257 | |
| $P$ | 4.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 704 | 0.9− | 0.4− | 2003 12 17 | 704 | 0.1− | 0.6+ | 2005 04 11 | 691 | 0.1+ | 0.2− |
| 2003 11 24 | 704 | 0.1− | 0.4− | 2003 12 17 | 704 | 0.3+ | 0.4− | 2005 04 11 | 691 | 0.4+ | 0.2− |
| 2003 11 24 | 704 | 0.0 | 0.7− | 2003 12 29 | 704 | 0.5− | 0.7+ | 2005 04 11 | 691 | 0.1+ | 0.1+ |
| 2003 11 24 | 704 | 0.6− | 0.4− | 2003 12 29 | 704 | 0.8− | 0.3− | 2005 04 14 | 691 | 0.2− | 0.3+ |
| 2003 12 03 | 704 | 0.8+ | 0.2+ | 2003 12 29 | 704 | 1.0+ | 1.2− | 2005 04 14 | 691 | 0.1+ | 0.0 |
| 2003 12 03 | 704 | 0.4+ | 0.8+ | 2005 04 09 | 691 | 0.2+ | 0.2+ | 2005 04 14 | 691 | 0.1− | 0.0 |
| 2003 12 03 | 704 | 0.0 | 0.7+ | 2005 04 09 | 691 | 0.1− | 0.4− | 2005 04 18 | 691 | 0.3− | 0.3+ |
| 2003 12 03 | 704 | 0.0 | 0.6+ | 2005 04 09 | 691 | 0.0 | 0.5+ | 2005 04 18 | 691 | 0.2− | 0.1− |
| 2003 12 17 | 704 | 0.5+ | 0.8+ | 2005 04 10 | 691 | 0.3− | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.6− |
| 2003 12 17 | 704 | 0.1− | 0.6− | 2005 04 10 | 691 | 0.0 | 0.2+ | | | | |
| 2003 12 17 | 704 | 0.1+ | 0.2− | 2005 04 10 | 691 | 0.2+ | 0.1− | | | | |

**2005 GO$_{103}$ = 2005 GV$_{211}$ = 1999 SY$_{26}$ = 2006 RS$_{89}$**

Id. Minor Planet Center (d, *MPO* 87833; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.08310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27645638 | $\omega$ | 132.28774 | | +0.90339062 | +0.42741688 | |
| $a$ | 2.3337355 | $\Omega$ | 202.47558 | | −0.41526257 | +0.85181975 | |
| $e$ | 0.1538493 | $i$ | 5.19938 | | −0.10696905 | +0.30284968 | |
| $P$ | 3.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.1+ | 0.4+ | 2005 04 11 | G96 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.4− |
| 1999 09 30 | 691 | 0.2− | 0.1− | 2005 04 11 | G96 | (2.2− | 1.1−) | 2006 10 17 | 703 | 0.3− | 0.3− |
| 1999 09 30 | 691 | 0.0 | 0.1+ | 2005 04 11 | G96 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2005 03 10 | G96 | 1.1− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.3− |
| 2005 03 10 | G96 | 0.6− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2005 03 10 | G96 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2005 03 10 | G96 | (0.9− | 1.7+) | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.5− | 0.4+ |
| 2005 04 09 | G96 | 0.3− | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 04 09 | G96 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2005 04 09 | G96 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2005 04 09 | G96 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 04 10 | G96 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 28 | 699 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2006 09 28 | 699 | 1.1− | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.3− |
| 2005 04 10 | G96 | 0.0 | 0.1+ | 2006 09 28 | 699 | 1.2+ | 0.7− | 2006 11 02 | G96 | 0.4− | 0.1− |
| 2005 04 11 | 691 | 0.3+ | 0.0 | 2006 09 28 | 699 | 0.2− | 1.3+ | 2006 11 02 | G96 | 0.3+ | 0.2− |
| 2005 04 11 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 02 | G96 | 0.1− | 0.3− |
| 2005 04 11 | 691 | 0.5+ | 0.0 | 2006 09 30 | 691 | 0.4+ | 0.0 | | | | |
| 2005 04 11 | G96 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2− | | | | |

**2005 GN$_{104}$ = 2006 QG$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.14630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28001469 | $\omega$ | 171.18622 | | −0.97237117 | −0.23336597 | |
| $a$ | 2.3139227 | $\Omega$ | 355.30612 | | +0.20955575 | −0.86149861 | |
| $e$ | 0.0781045 | $i$ | 4.12357 | | +0.10286246 | −0.45095507 | |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 21 | 691 | 0.4− | 0.5+ | 2005 03 14 | G96 | 1.1− | 0.3− | 2005 04 17 | 691 | 0.2+ | 0.3+ |
| 1999 08 21 | 691 | 0.0 | 0.3+ | 2005 04 10 | 691 | 0.7+ | 0.1− | 2005 04 17 | 691 | 0.0 | 0.4+ |
| 1999 08 21 | 691 | 0.0 | 0.0 | 2005 04 10 | 691 | 0.1+ | 0.1+ | 2006 08 22 | 807 | 0.3+ | 0.1− |
| 2003 10 24 | 691 | 0.2− | 0.2+ | 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 08 23 | 807 | 0.2− | 0.0 |
| 2003 10 24 | 691 | 0.1− | 0.1+ | 2005 04 11 | 699 | 0.3+ | 0.6+ | 2006 08 23 | 807 | 0.1− | 0.1− |
| 2003 10 24 | 691 | 0.2− | 0.4+ | 2005 04 11 | 699 | 0.3− | 1.3+ | 2006 08 28 | 691 | 0.0 | 0.1− |
| 2003 11 23 | 691 | 0.7− | 0.2+ | 2005 04 11 | 699 | 0.7− | 1.3− | 2006 08 28 | 691 | 0.1+ | 0.0 |
| 2003 11 23 | 691 | 0.7+ | 0.2− | 2005 04 11 | 699 | 0.8− | 1.3− | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2003 11 23 | 691 | 0.1+ | 0.5+ | 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2005 03 14 | G96 | 0.7− | 0.2− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2005 03 14 | G96 | 0.6− | 0.3− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.5− |
| 2005 03 14 | G96 | 0.6− | 0.4− | 2005 04 17 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− |

**2005 GP$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.53522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27050692 | $\omega$ | 67.19051 | | −0.54460298 | +0.83863555 | |
| $a$ | 2.3678297 | $\Omega$ | 169.79452 | | −0.78852213 | −0.50796699 | |
| $e$ | 0.1447878 | $i$ | 3.20309 | | −0.28572792 | −0.19662135 | |
| $P$ | 3.64 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 691 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2005 03 17 | 691 | 0.1− | 0.3− | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2005 03 17 | 691 | 0.4+ | 0.5+ | 2005 04 18 | 691 | 0.5− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2005 04 10 | 691 | 0.1+ | 0.2− | 2005 04 18 | 691 | 0.5− | 0.3− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2005 04 10 | 691 | 0.0 | 0.0 | 2005 04 18 | 691 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2005 04 10 | 691 | 0.0 | 0.1− | 2005 05 04 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2005 04 11 | 691 | 0.2− | 0.1+ | 2005 05 04 | 691 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2005 04 11 | 691 | 0.2− | 0.1− | 2005 05 04 | 691 | 0.6+ | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2005 04 11 | 691 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.0 | | | | |
| 2005 04 14 | 691 | 1.0+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.3+ | | | | |

**2005 GQ$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.06168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25964074 | $\omega$ | 77.43507 | | −0.31625117 | +0.94864525 | |
| $a$ | 2.4334410 | $\Omega$ | 174.11206 | | −0.89654626 | −0.29625341 | |
| $e$ | 0.0876635 | $i$ | 4.23466 | | −0.31014512 | −0.11093287 | |
| $P$ | 3.80 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 691 | 0.3+ | 0.2+ | 2005 04 11 | 691 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2005 03 17 | 691 | 0.0 | 0.0 | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 691 | 0.3+ | 0.1− |
| 2005 03 17 | 691 | 0.7− | 0.1− | 2005 04 11 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2005 04 01 | 691 | 0.2− | 0.2− | 2005 04 14 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2005 04 01 | 691 | 0.4+ | 0.0 | 2005 04 14 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.3+ |
| 2005 04 01 | 691 | 0.2+ | 0.0 | 2005 04 14 | 691 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2005 04 10 | 691 | 0.5+ | 0.1− | 2005 05 04 | 691 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.3− | 0.3− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.4− | 1.1+ | 2005 05 04 | 691 | 0.1− | 0.3− | |
| 2005 04 10 | 691 | 0.2+ | 0.2− | 2005 05 04 | 691 | 0.1− | 0.3− | |

**2005 GY$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.20006 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23361624 | $\omega$ | 89.58721 | | −0.07951721 | | +0.99681808 |
| $a$ | 2.6109629 | $\Omega$ | 175.83978 | | −0.94227828 | | −0.07334986 |
| $e$ | 0.1571864 | $i$ | 4.38202 | | −0.32525169 | | −0.03120109 |
| $P$ | 4.22 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.1+ | 0.3+ | 2005 04 11 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2005 03 14 | G96 | 0.2− | 0.0 | 2005 04 14 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2005 03 14 | G96 | 0.3+ | 0.2− | 2005 04 14 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3+ |
| 2005 03 14 | G96 | 0.3− | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3+ |
| 2005 04 10 | 691 | 0.1− | 0.0 | 2005 04 19 | 705 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2005 04 10 | 691 | 0.2− | 0.0 | 2005 04 19 | 705 | 0.6− | 0.2− | 2006 10 20 | G96 | 0.5+ | 0.6− |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2005 04 19 | 705 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2005 04 11 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1+ |

**2005 GB$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.41161 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22091968 | $\omega$ | 263.52772 | | +0.60396827 | | +0.79112116 |
| $a$ | 2.7100654 | $\Omega$ | 44.11055 | | −0.66528438 | | +0.56723154 |
| $e$ | 0.1973324 | $i$ | 7.98527 | | −0.43888385 | | +0.22885734 |
| $P$ | 4.46 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.2− | 0.0 | 2005 04 14 | 691 | 1.1+ | 0.6− | 2006 08 28 | 699 | 1.0− | 0.1− |
| 2005 04 02 | 691 | 0.2+ | 0.0 | 2005 04 18 | 691 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.3− |
| 2005 04 02 | 691 | 0.0 | 0.1+ | 2005 04 18 | 691 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.1− | 0.1+ |
| 2005 04 10 | 691 | 0.2− | 0.1+ | 2005 04 18 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.2+ |
| 2005 04 10 | 691 | 0.3− | 0.1+ | 2005 04 20 | 705 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2− | 0.5− |
| 2005 04 10 | 691 | 0.5− | 0.2+ | 2005 04 20 | 705 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.7+ |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2005 04 20 | 705 | 0.2− | 0.3− | 2006 09 30 | 703 | 1.0+ | 0.1− |
| 2005 04 11 | 691 | 0.0 | 0.0 | 2005 05 03 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | (1.5− | 0.2+) |
| 2005 04 11 | 691 | 0.2+ | 0.0 | 2005 05 03 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.6− |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2005 05 03 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.4− | 0.3+ | 2006 10 16 | 703 | (0.3− | 1.8−) |

**2005 GK$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.81319 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22434090 | $\omega$ | 233.68508 | | +0.62600481 | | −0.77980913 |
| $a$ | 2.6824424 | $\Omega$ | 177.54805 | | +0.74187077 | | +0.59396811 |
| $e$ | 0.1382191 | $i$ | 5.31395 | | +0.24030344 | | +0.19773619 |
| $P$ | 4.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.5+ | 0.1+ | 2002 09 05 | 704 | 0.3+ | 0.5− | 2005 04 10 | 691 | 0.2− | 0.2+ |
| 2000 03 03 | 704 | 0.5− | 0.4+ | 2002 09 05 | 704 | 0.1− | 0.5+ | 2005 04 11 | G96 | 0.3− | 0.1+ |
| 2000 03 03 | 704 | 0.5+ | 1.1+ | 2002 10 12 | 291 | 0.4+ | 0.5+ | 2005 04 11 | G96 | 0.9− | 0.0 |
| 2000 03 03 | 704 | 0.1+ | 0.2+ | 2002 10 12 | 291 | 0.2+ | 0.3+ | 2005 04 11 | G96 | 0.6− | 0.0 |
| 2002 08 18 | 644 | 0.3− | 0.3+ | 2002 10 12 | 291 | 0.4− | 0.3+ | 2005 04 11 | G96 | 0.6− | 0.2− |
| 2002 08 18 | 644 | 0.5− | 0.3+ | 2004 01 23 | 704 | 0.0 | 1.5+ | 2005 04 14 | 691 | 0.3+ | 0.1+ |
| 2002 08 18 | 644 | 0.4− | 0.4+ | 2004 01 23 | 704 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.3+ | 0.1+ |
| 2002 08 27 | 644 | 0.4− | 0.3+ | 2004 01 23 | 704 | 0.1+ | 0.8+ | 2005 04 14 | 691 | 0.1+ | 0.1− |
| 2002 08 27 | 644 | 0.4− | 0.4+ | 2004 01 23 | 704 | 0.3+ | 1.1+ | 2005 04 18 | 691 | 0.4+ | 0.2+ |
| 2002 08 27 | 644 | 0.9− | 0.4+ | 2005 04 10 | 691 | 0.0 | 0.1− | 2005 04 18 | 691 | 0.1− | 0.2+ |
| 2002 09 05 | 704 | 0.5+ | 0.1+ | 2005 04 10 | 691 | 0.1− | 0.1+ | 2005 04 18 | 691 | 0.1+ | 0.1+ |

**2005 GJ$_{108}$ = 2006 SM$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.32981 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28169993 | $\omega$ | 130.77426 | | +0.61121982 | | +0.79145590 |
| $a$ | 2.3046849 | $\Omega$ | 176.89949 | | −0.74090501 | | +0.57342226 |
| $e$ | 0.1120673 | $i$ | 2.97839 | | −0.27833452 | | +0.21162342 |
| $P$ | 3.50 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.4− | 0.1+ | 2005 05 10 | G96 | 0.7− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.7+ |
| 2005 04 10 | G96 | 0.4− | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2005 04 10 | G96 | 0.3− | 0.5+ | 2006 09 14 | 691 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.3+ |
| 2005 04 11 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 1.1− |
| 2005 04 11 | 691 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | (1.4− | 1.8−) |
| 2005 04 11 | 691 | 1.3+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.5− |
| 2005 05 08 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2005 05 08 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2005 05 10 | G96 | 0.5− | 0.1− | 2006 10 03 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2005 05 10 | G96 | 0.2+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 05 10 | G96 | 0.2− | 0.5− | 2006 10 03 | 691 | 0.2− | 0.2+ | | | | |

**2005 GN$_{108}$ = 2005 GS$_{211}$ = 2006 UV$_{160}$**

Id. Minor Planet Center (d, *MPO* 87833; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.27921 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27632773 | $\omega$ | 117.97034 | | +0.58452319 | | +0.81126995 |
| $a$ | 2.3344598 | $\Omega$ | 187.83879 | | −0.77424406 | | +0.55284073 |
| $e$ | 0.1291651 | $i$ | 5.54562 | | −0.24264951 | | +0.19028454 |
| $P$ | 3.57 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.5− | 0.6− | 2005 04 10 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2005 04 10 | G96 | 0.2− | 0.2− | 2005 04 11 | 691 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2005 04 10 | G96 | 0.7− | 0.1+ | 2005 04 11 | 691 | 0.5+ | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.3− |
| 2005 04 10 | G96 | 0.4− | 0.4− | 2005 04 11 | 691 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2005 04 10 | 691 | 0.4− | 0.2− | 2005 04 14 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2005 04 10 | 691 | 0.2+ | 0.0 | 2005 04 14 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.6+ | 0.1+ |
| 2005 04 10 | 691 | 0.2+ | 0.2+ | 2005 04 14 | 691 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2005 04 10 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 1.1− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.6+ |
| 2005 04 10 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.1− |

**2005 GX$_{108}$ = 2006 SD$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.30596 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28838823 | $\omega$ | 314.09733 | | +0.97976676 | | −0.18619828 |
| $a$ | 2.2689122 | $\Omega$ | 56.76464 | | +0.19935467 | | +0.87540434 |
| $e$ | 0.1988760 | $i$ | 5.03430 | | +0.01774287 | | +0.44609129 |
| $P$ | 3.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 11 | 704 | 0.2+ | 0.6+ | 2006 08 19 | 699 | 1.0+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 1999 09 11 | 704 | 0.4+ | 0.4+ | 2006 08 19 | 699 | (0.6− | 2.2+) | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 1999 09 11 | 704 | 0.1− | 1.1+ | 2006 09 19 | 704 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.1− | 0.1− |
| 1999 09 11 | 704 | 0.1− | 0.3− | 2006 09 19 | 704 | 0.3− | 0.5− | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 1999 09 11 | 704 | 1.1− | 0.0 | 2006 09 19 | 704 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2003 12 23 | 704 | 0.4+ | 0.1− | 2006 09 19 | 704 | 0.9− | 0.8− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 704 | 0.6− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2003 12 23 | 704 | (0.4− | 1.6+) | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 12 23 | 704 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.3+ | 1.2+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2003 12 28 | 704 | 0.5+ | 1.0+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2003 12 28 | 704 | (1.6+ | 2.7+) | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2003 12 28 | 704 | (1.2+ | 1.8+) | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.9+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 0.6− | 0.6− | 2006 09 21 | 699 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.2+ | 2005 04 10 | G96 | 0.2+ | 0.1− | 2005 04 12 | G96 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.5+ |
| 2005 03 14 | G96 | 0.7− | 0.2− | 2006 09 21 | 699 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.9+ | 2005 04 10 | G96 | 0.2+ | 0.3+ | 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2005 03 14 | G96 | 0.6− | 0.4− | 2006 09 21 | 699 | 0.2+ | 0.8+ | 2006 10 22 | 703 | 0.6− | 0.1+ | 2005 04 11 | G96 | 0.2+ | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2005 03 14 | G96 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2005 03 14 | G96 | 0.9− | 0.5+ | 2006 09 22 | 704 | 1.2+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.4− | 2005 04 11 | G96 | 0.1− | 0.2− | 2005 05 11 | 850 | 0.1− | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2005 04 10 | G96 | 0.0 | 0.6+ | 2006 09 22 | 704 | (1.6+ | 0.2−) | 2006 10 22 | 703 | 0.6− | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2005 05 11 | 850 | 0.8− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.6+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.4− | 2005 04 11 | G96 | 0.2+ | 0.5+ | 2005 05 14 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 04 10 | G96 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.3− | 2005 04 11 | G96 | (1.6+ | 0.0 ) | 2005 05 14 | 644 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 04 10 | G96 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.3− | 2005 04 11 | G96 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 04 11 | G96 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.2− | 2005 04 11 | G96 | 0.2− | 0.0 | 2005 06 13 | G96 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 1.0− | 2005 04 12 | G96 | 0.1− | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.5− |
| 2005 04 11 | G96 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.9− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.3− | 2005 04 12 | G96 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.5− | 0.2− | | | | |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.7− | 1.8−) | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.9− | 0.7+ | 2006 11 11 | 703 | 1.3− | 0.9− | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.1− | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3− | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.4+ | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.3− | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.6+ | 2006 11 17 | 704 | (1.8+ | 0.7+) | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.2+ | 0.5+ | 2006 09 29 | 699 | 0.5+ | 0.5+ | 2006 11 17 | 704 | 0.3+ | 0.5− | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.4− | 2006 11 17 | 704 | 0.5+ | 0.5+ | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 11 17 | 704 | 0.3− | 1.3+ | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.6− | 2006 11 20 | 704 | 0.2− | 0.4− | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.4− | 2006 11 20 | 704 | 1.0+ | 0.2+ | | | | | | | | | | | | |
| 2005 04 12 | G96 | 0.3− | 0.4+ | 2006 10 01 | 704 | 0.6+ | 0.8+ | 2006 11 20 | 704 | 0.4+ | 0.8+ | | | | | | | | | | | | |
| 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.2+ | 1.0+ | 2006 11 20 | 704 | 0.1− | 0.1− | | | | | | | | | | | | |
| 2005 04 16 | 691 | 0.6+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.7+ | 2006 11 21 | 704 | (1.8+ | 0.3+) | | | | | | | | | | | | |
| 2005 04 16 | 691 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | (0.7+ | 2.2+) | | | | | | | | | | | | |
| 2006 08 19 | 699 | 0.4+ | 1.1− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.7− | 0.3+ | | | | | | | | | | | | |
| 2006 08 19 | 699 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.3+ | 1.2+ | | | | | | | | | | | | |

**2005 GZ$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.73564 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21961824 | $\omega$ | 121.29356 | | +0.71993982 | | +0.69326525 |
| $a$ | 2.7207614 | $\Omega$ | 194.90348 | | −0.67214075 | | +0.68470715 |
| $e$ | 0.2634388 | $i$ | 7.30677 | | −0.17295510 | | +0.22485421 |
| $P$ | 4.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 1.0+ | 0.2+ | 2005 04 12 | G96 | 0.0 | 0.1+ | 2005 04 30 | 621 | 0.3− | 0.1+ | 2005 04 10 | G96 | 0.2+ | 0.1− | 2005 04 12 | G96 | 0.4+ | 0.2+ | 2005 04 16 | 691 | 0.3+ | 0.1+ |
| 2005 04 10 | G96 | 0.0 | 0.1− | 2005 04 12 | G96 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1− | 2005 04 10 | G96 | 0.2+ | 0.3+ | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.5+ |
| 2005 04 10 | G96 | 0.1+ | 0.2+ | 2005 04 12 | G96 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.6− | 2005 04 11 | G96 | 0.2+ | 0.0 | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2005 04 10 | G96 | 0.2− | 0.1+ | 2005 04 12 | G96 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.4+ | 0.3+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2005 04 11 | G96 | 0.5− | 0.3− | 2005 04 12 | G96 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.8− | 0.0 | 2005 04 11 | G96 | 0.1− | 0.2− | 2005 05 11 | 850 | 0.1− | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2005 04 11 | G96 | 0.2+ | 0.4− | 2005 04 12 | G96 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 | 2005 04 11 | G96 | 0.1+ | 0.1+ | 2005 05 11 | 850 | 0.8− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2005 04 11 | G96 | 0.5+ | 0.2+ | 2005 04 12 | G96 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.2+ | 0.5+ | 2005 05 14 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 04 11 | G96 | 0.2− | 0.3+ | 2005 04 12 | G96 | 0.5+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.0 | 2005 04 11 | G96 | (1.6+ | 0.0 ) | 2005 05 14 | 644 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 04 12 | G96 | 0.1+ | 0.2− | 2005 04 12 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 04 12 | G96 | 0.0 | 0.1+ | 2005 04 30 | 621 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.2+ | 2005 04 11 | G96 | 0.2− | 0.0 | 2005 06 13 | G96 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2005 04 12 | G96 | 0.3− | 0.0 | 2005 04 30 | 621 | 0.4− | 0.7+ | | | | | 2005 04 12 | G96 | 0.1− | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.5− |
| | | | | | | | | | | | | 2005 04 12 | G96 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.5− | 0.2− | | | | |

**2005 GE$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.25467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29326479 | $\omega$ | 169.12281 | | −0.46056875 | | +0.88661138 |
| $a$ | 2.2436896 | $\Omega$ | 73.44195 | | −0.81766248 | | −0.40520059 |
| $e$ | 0.1219394 | $i$ | 2.53451 | | −0.34540482 | | −0.22300839 |
| $P$ | 3.36 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 30 | 691 | 0.1− | 0.1− | 2005 04 12 | G96 | 0.1− | 0.1+ | 2005 06 13 | G96 | 0.7− | 0.2− | 2005 04 10 | G96 | 0.2+ | 0.1− | 2005 04 12 | G96 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.5+ |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2005 04 12 | G96 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.5+ | 2005 04 10 | G96 | 0.2+ | 0.3+ | 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2003 11 30 | 691 | 0.1− | 0.0 | 2005 04 12 | G96 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.2− | 0.3+ | 2005 04 11 | G96 | 0.2+ | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2005 04 10 | G96 | 0.0 | 0.1− | 2005 04 12 | G96 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.5+ | 2005 04 11 | G96 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2005 04 12 | G96 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2005 04 11 | G96 | 0.1− | 0.2− | 2005 05 11 | 850 | 0.1− | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| | | | | | | | | | | | | 2005 04 11 | G96 | 0.0 | 0.1+ | 2005 05 11 | 850 | 0.8− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| | | | | | | | | | | | | 2005 04 11 | G96 | 0.2+ | 0.5+ | 2005 05 14 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| | | | | | | | | | | | | 2005 04 11 | G96 | (1.6+ | 0.0 ) | 2005 05 14 | 644 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− |
| | | | | | | | | | | | | 2005 04 11 | G96 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| | | | | | | | | | | | | 2005 04 11 | G96 | 0.2− | 0.0 | 2005 06 13 | G96 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| | | | | | | | | | | | | 2005 04 12 | G96 | 0.1− | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.5− |
| | | | | | | | | | | | | 2005 04 12 | G96 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.5− | 0.2− | | | | |

**2005 GP$_{109}$ = 2006 SF$_{362}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.09413 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26709473 | $\omega$ | 210.93053 | | +0.43793366 | | +0.89781986 |
| $a$ | 2.3879534 | $\Omega$ | 85.07668 | | −0.81505419 | | +0.41819334 |
| $e$ | 0.1795302 | $i$ | 2.65731 | | −0.37934256 | | +0.13796317 |
| $P$ | 3.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 691 | 0.7− | 1.1− | 2005 04 11 | G96 | 0.8+ | 0.6+ | 2006 10 02 | G96 | 0.2+ | 0.2+ | 2003 12 28 | 691 | 0.0 | 0.1− | 2005 04 11 | G96 | 0.5+ | 1.0+ | 2006 10 02 | G96 | 0.3+ | 0.8+ |
| 2003 12 28 | 691 | 0.7+ | 1.1+ | 2005 04 16 | 691 | 0.7− | 0.7− | 2006 10 02 | G96 | 0.3− | 0.3+ | 2005 04 10 | G96 | 1.4+ | 1.1+ | 2005 04 16 | 691 | 0.7− | 0.6− | 2006 10 02 | G96 | 0.2+ | 0.2+ |
| 2005 04 10 | G96 | 1.0+ | 1.2+ | 2005 04 16 | 691 | 0.7− | 0.9− | 2006 10 03 | G96 | 0.1− | 0.7+ | 2005 04 10 | G96 | 0.9+ | 1.5+ | 2006 09 30 | G96 | 0.5− | 0.6− | 2006 10 03 | G96 | 0.4+ | 0.5+ |
| 2005 04 10 | G96 | 1.2+ | 1.6+ | 2006 09 30 | G96 | 0.4− | 1.0− | 2006 10 03 | G96 | 0.4+ | 0.3+ | 2005 04 11 | G96 | 1.6+ | 1.2+ | 2006 09 30 | G96 | 0.4− | 0.8− | 2006 10 03 | G96 | 0.3+ | 0.9+ |
| 2005 04 11 | G96 | 1.4+ | 1.4+ | 2006 09 30 | G96 | 0.4− | 0.6− | | | | | | | | | | | | | | | | |

**2005 GX$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.12203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25952604 | $\omega$ | 261.99289 | | +0.35082962 | | +0.93635409 |
| $a$ | 2.4341579 | $\Omega$ | 28.55529 | | −0.84842025 | | +0.32353520 |
| $e$ | 0.1169738 | $i$ | 1.51445 | | −0.39636051 | | +0.13625709 |
| $P$ | 3.80 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.1+ | 0.6+ | 2005 05 11 | G96 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.2− | 0.2+ | 2001 03 25 | 695 | 0.4+ | 0.4+ | 2005 05 11 | G96 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.5+ | 0.3+ |
| 2002 09 12 | 644 | 0.0 | 0.0 | 2005 05 11 | G96 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2002 09 12 | 644 | 0.1+ | 0.3+ | 2005 05 14 | G96 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 09 12 | 644 | 0.2− | 0.1− | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 10 16 | G96 | 0.2− | 0.5− | 2005 04 10 | G96 | 0.1− | 0.1− | 2005 05 14 | G96 | 0.4− | 0.3− | 2006 10 16 | G96 | 0.3− | 0.5− |
| 2005 04 10 | G96 | 0.9− | 0.2+ | 2005 05 14 | G96 | 0.4− | 0.5− | 2006 10 16 | G96 | 0.3− | 0.7− | 2005 04 10 | G96 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2005 04 10 | G96 | 0.9− | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.3+ | 2005 04 11 | G96 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3− | 0.2+ |
| 2005 04 11 | G96 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.6+ | 0.4− | 2005 04 11 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 11 | G96 | (2.8+ | 0.2−) |
| 2005 04 11 | G96 | 0.7− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.8+ | 0.6− | 2005 04 12 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.7− | 0.3− |
| 2005 04 12 | 691 | 0.8+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.6− | 0.1+ | 2005 04 12 | 691 | 0.7+ | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.4+ | | | | |
| 2005 05 11 | G96 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.2+ | | | | | | | | | | | | | | | | |

**2005 GY$_{109}$ = 2006 UA$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 142.96349 | | | (2000.0) | | |
| $n$ | 0.30820542 | $\omega$ | 25.25640 | | −0.61446125 | +0.78619147 |
| $a$ | 2.1705803 | $\Omega$ | 206.97967 | | −0.74625520 | −0.60627831 |
| $e$ | 0.0890327 | $i$ | 8.34985 | | −0.25600887 | −0.11970620 |
| $P$ | 3.20 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 691 | 0.1+ | 0.1− | 2005 04 12 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2003 11 21 | 691 | 0.0 | 0.0 | 2005 04 12 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2003 11 21 | 691 | 0.2− | 0.0 | 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2005 04 10 | G96 | 0.0 | 0.1− | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2005 04 10 | G96 | 0.0 | 0.1− | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2005 04 11 | G96 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.4+ |
| 2005 04 11 | G96 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2005 04 11 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2+ | | | | |
| 2005 04 11 | G96 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.5− | 0.3+ | | | | |

**2005 GA$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 101.20503 | | | (2000.0) | | |
| $n$ | 0.26607983 | $\omega$ | 237.67289 | | −0.09122997 | +0.97699563 |
| $a$ | 2.3940217 | $\Omega$ | 29.03122 | | −0.72668217 | +0.06703640 |
| $e$ | 0.1842148 | $i$ | 23.40388 | | −0.68088921 | −0.20244915 |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.1− | 0.6− | 2005 04 10 | G96 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.1+ |
| 2005 03 16 | G96 | 0.7− | 0.8− | 2005 04 10 | G96 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.5+ |
| 2005 03 16 | G96 | 0.2− | 0.2+ | 2005 04 10 | G96 | 0.7+ | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 03 16 | G96 | 0.2+ | 0.2− | 2005 04 10 | G96 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2005 04 02 | 699 | 0.7+ | 0.4+ | 2005 04 11 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2005 04 11 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.6− | 0.3+ |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2005 04 11 | G96 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.1+ |
| 2005 04 02 | G96 | 0.2+ | 0.2− | 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2005 04 02 | 699 | 0.6+ | 0.4− | 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2005 04 02 | G96 | 0.1+ | 0.2− | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2005 04 02 | 699 | 0.3+ | 0.1− | 2005 04 14 | 691 | 0.2+ | 0.0 | | | | |
| 2005 04 02 | 699 | 1.0− | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.9+ | | | | |

**2005 GR$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.20292 | | | (2000.0) | | |
| $n$ | 0.29893347 | $\omega$ | 46.35563 | | −0.37519370 | +0.92662354 |
| $a$ | 2.2152344 | $\Omega$ | 201.64441 | | −0.86840770 | −0.36060728 |
| $e$ | 0.1073572 | $i$ | 3.80301 | | −0.32418784 | −0.10644811 |
| $P$ | 3.30 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2005 04 05 | G96 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2005 04 05 | G96 | 0.6+ | 0.2+ | 2006 09 25 | G96 | 0.5− | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2005 04 05 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2005 04 12 | 691 | 0.3+ | 0.6+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.5+ |
| 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.8+ |
| 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.9+ | 2006 11 14 | G96 | 0.3+ | 0.4+ |
| 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.8− | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.7− |
| 2005 04 17 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 14 | G96 | 0.5− | 0.7− |
| 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.8− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2005 05 06 | G96 | 0.2− | 0.8+ | 2006 10 27 | G96 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.6+ | 0.4− |
| 2005 05 06 | G96 | (1.8− | 0.3−) | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2005 05 06 | G96 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2005 05 06 | G96 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.6− |

**2005 GG$_{112}$ = 2006 ST$_{227}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 157.43078 | | | (2000.0) | | |
| $n$ | 0.29751078 | $\omega$ | 329.24539 | | −0.90769631 | +0.41323526 |
| $a$ | 2.2222909 | $\Omega$ | 235.33830 | | −0.36470038 | −0.86287282 |
| $e$ | 0.1032350 | $i$ | 5.08939 | | −0.20755975 | −0.29101051 |
| $P$ | 3.31 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 691 | 0.1− | 0.1+ | 2005 04 12 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 |
| 1996 10 12 | 691 | 0.7+ | 0.3− | 2005 04 12 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.4− | 0.1+ |
| 1996 10 12 | 691 | 0.5− | 0.2+ | 2005 04 15 | 691 | 0.3+ | 0.4− | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2005 04 06 | 691 | 0.1− | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 1.3+ | 0.1− |
| 2005 04 06 | 691 | 0.1+ | 0.1+ | 2005 04 15 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2005 04 06 | 691 | 0.3− | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.4− | 0.0 |
| 2005 04 12 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2− |

**2005 GQ$_{112}$ = 2006 SP$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 138.03157 | | | (2000.0) | | |
| $n$ | 0.28162463 | $\omega$ | 287.87670 | | −0.76608864 | +0.64132828 |
| $a$ | 2.3050957 | $\Omega$ | 292.03659 | | −0.57097991 | −0.70943336 |
| $e$ | 0.1328864 | $i$ | 2.62790 | | −0.29511037 | −0.29223681 |
| $P$ | 3.50 | $H$ | 18.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 13 | 691 | 0.4− | 0.0 | 2005 04 12 | 691 | 0.0 | 0.3+ | 2005 05 01 | 644 | 0.0 | 0.3− |
| 1994 01 13 | 691 | 0.1+ | 0.0 | 2005 04 12 | 691 | 0.1+ | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.4− |
| 1994 01 13 | 691 | 0.3+ | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2005 04 06 | 691 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2005 04 06 | 691 | 0.4+ | 0.3− | 2005 04 16 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2005 04 06 | 691 | 0.6− | 0.1+ | 2005 05 01 | 644 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2005 04 12 | 691 | 0.1− | 0.2+ | 2005 05 01 | 644 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ |

**2005 GV$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.23670 | | | (2000.0) | | |
| $n$ | 0.28163767 | $\omega$ | 28.08530 | | +0.53827620 | +0.84039300 |
| $a$ | 2.3050245 | $\Omega$ | 274.54535 | | −0.78461817 | +0.47233599 |
| $e$ | 0.1893072 | $i$ | 3.63683 | | −0.30762489 | +0.26577872 |
| $P$ | 3.50 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 644 | 0.5+ | 0.5+ | 2002 08 26 | 644 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2002 07 04 | 644 | 0.6+ | 0.5+ | 2002 08 26 | 644 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2002 07 04 | 644 | 0.8+ | 0.1+ | 2002 08 26 | 644 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2002 07 14 | 704 | 0.8+ | 0.8− | 2005 04 06 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.2− |
| 2002 07 14 | 704 | (1.7+ | 0.1+) | 2005 04 06 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2002 07 14 | 704 | 0.5+ | 0.6+ | 2005 04 06 | 691 | 0.4− | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.1+ |
| 2002 07 14 | 704 | 0.9− | 0.1− | 2005 04 12 | 691 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.0 | 0.1− |
| 2002 08 06 | 644 | 0.0 | 1.2+ | 2005 04 12 | 691 | 0.2+ | 0.0 | 2006 11 09 | 691 | 0.2− | 0.1+ |
| 2002 08 06 | 644 | 0.1+ | 1.0+ | 2005 04 12 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.4+ |
| 2002 08 06 | 644 | 0.3+ | 0.8+ | 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2002 08 12 | 608 | 1.2− | 1.2− | 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2002 08 12 | 608 | 0.6− | 1.2− | 2005 04 16 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2002 08 12 | 608 | 0.5− | 0.6− | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2002 08 24 | 644 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.6+ | 0.1− |
| 2002 08 24 | 644 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | | | | |
| 2002 08 24 | 644 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3+ | | | | |

**2005 GT$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.95972 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28523873 | $\omega$ | 199.37395 | | −0.56083132 | | +0.82282047 |
| $a$ | 2.2855833 | $\Omega$ | 36.67565 | | −0.73787804 | | −0.44643520 |
| $e$ | 0.1568696 | $i$ | 8.84510 | | −0.37550530 | | −0.35165620 |
| $P$ | 3.46 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 09 | 704 | 0.6+ | 0.3+ | 2005 04 18 | 705 | 0.1+ | 0.1+ | 2006 09 30 | 291 | 0.2− | 0.2+ |
| 2005 04 09 | 704 | 0.3+ | 0.8+ | 2005 04 18 | 705 | 0.0 | 0.2+ | 2006 09 30 | 291 | 0.6− | 0.1+ |
| 2005 04 09 | 704 | 0.3− | 0.2− | 2005 04 19 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2005 04 09 | 704 | 0.0 | 0.2− | 2005 04 19 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2005 04 12 | 691 | 0.2+ | 0.1− | 2005 04 19 | 691 | 0.1+ | 0.0 | 2006 10 01 | 291 | 0.2+ | 0.2+ |
| 2005 04 12 | 691 | 0.0 | 0.1− | 2005 05 08 | 703 | (1.8− | 0.3+) | 2006 10 01 | 291 | 0.1− | 0.1+ |
| 2005 04 12 | 691 | 0.1+ | 0.3− | 2005 05 08 | 703 | 1.1− | 0.8+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2005 04 13 | 704 | 0.1+ | 0.7+ | 2005 05 08 | 703 | 0.3− | 0.6− | 2006 10 01 | 291 | 0.0 | 0.2+ |
| 2005 04 13 | 704 | 1.2+ | 0.8+ | 2005 05 08 | 703 | 0.1− | 0.2+ | 2006 10 02 | 291 | 0.2+ | 0.2+ |
| 2005 04 13 | 704 | 1.5+ | 0.7− | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 02 | 291 | 0.2− | 0.1+ |
| 2005 04 13 | 704 | (2.2+ | 0.9+) | 2006 09 17 | 691 | 0.0 | 0.3− | 2006 10 02 | 291 | 0.2− | 0.2+ |
| 2005 04 15 | 699 | (1.7+ | 1.2+) | 2006 09 17 | 691 | 0.6− | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.4− |
| 2005 04 15 | 699 | 1.0− | 0.3+ | 2006 09 27 | 691 | 0.4+ | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2005 04 15 | 699 | 0.5+ | 1.4+ | 2006 09 27 | 691 | 0.5+ | 0.5− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2005 04 15 | 699 | 0.9− | 0.1− | 2006 09 27 | 691 | 0.7+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.7− |
| 2005 04 18 | 705 | 0.3− | 0.3− | 2006 09 30 | 291 | 0.2− | 0.3+ | | | | |

**2005 GA$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.34658 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28585120 | $\omega$ | 230.48437 | | −0.20976790 | | +0.97592495 |
| $a$ | 2.2823174 | $\Omega$ | 27.58173 | | −0.85282210 | | −0.15274402 |
| $e$ | 0.0916303 | $i$ | 7.41223 | | −0.47821742 | | −0.15569123 |
| $P$ | 3.45 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.9− | 0.0 | 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.4+ |
| 2005 03 14 | G96 | 0.6− | 0.1− | 2005 04 17 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2005 03 14 | G96 | 0.2− | 0.4+ | 2005 04 17 | 691 | 0.5+ | 0.4+ | 2006 10 28 | 691 | 0.9− | 0.2+ |
| 2005 03 14 | G96 | 0.1− | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2005 04 02 | G96 | 0.4− | 0.0 | 2005 05 01 | 644 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2005 04 02 | G96 | 0.5− | 0.0 | 2005 05 01 | 644 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.6+ |
| 2005 04 02 | G96 | 0.5− | 0.0 | 2005 05 01 | 644 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.5− | 0.2+ |
| 2005 04 02 | G96 | 0.9− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.5− | 0.6+ |
| 2005 04 10 | G96 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2005 04 10 | G96 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.5− | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2005 04 10 | G96 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2005 04 10 | G96 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.1− | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.2− |

**2005 GA$_{116}$ = 2006 UO$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.13097 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26290826 | $\omega$ | 222.80265 | | +0.37655724 | | +0.92501126 |
| $a$ | 2.4132366 | $\Omega$ | 69.37545 | | −0.83467284 | | +0.36245802 |
| $e$ | 0.1708738 | $i$ | 3.09828 | | −0.40190283 | | +0.11392262 |
| $P$ | 3.75 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.3− | 0.2+ | 2005 04 12 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.6+ | 0.0 |
| 2005 04 01 | 691 | 0.4+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.1+ |
| 2005 04 01 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.7+ | 0.2− |
| 2005 04 11 | 691 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2005 04 11 | 691 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2005 04 11 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | | | | |
| 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.2− | | | | |

**2005 GE$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.77958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22183218 | $\omega$ | 36.16725 | | −0.20889581 | | +0.97668087 |
| $a$ | 2.7026285 | $\Omega$ | 221.83886 | | −0.91378211 | | −0.21299696 |
| $e$ | 0.2225919 | $i$ | 4.26164 | | −0.34837450 | | −0.02695870 |
| $P$ | 4.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | G96 | 0.5− | 0.2− | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.2+ | 0.4− |
| 2005 03 17 | G96 | 0.4− | 0.1+ | 2005 05 08 | 703 | (1.3− | 1.9−) | 2006 09 18 | 691 | 0.5+ | 0.3+ |
| 2005 03 17 | G96 | 1.1− | 0.1+ | 2005 05 08 | 703 | 1.4+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2005 03 17 | G96 | 0.9− | 0.0 | 2005 05 08 | 703 | (1.9− | 0.2+) | 2006 09 18 | 691 | 0.1+ | 0.5− |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2005 05 08 | 703 | 0.9− | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2005 04 11 | 691 | 0.1− | 0.0 | 2005 05 12 | G96 | 0.5− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2005 04 11 | 691 | 0.1− | 0.0 | 2005 05 12 | G96 | 0.7− | 0.6− | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2005 04 12 | 691 | 0.1+ | 0.0 | 2005 05 12 | G96 | 0.4− | 0.5− | 2006 10 11 | 291 | 0.5− | 0.2+ |
| 2005 04 12 | 691 | 0.3+ | 0.2+ | 2005 05 12 | G96 | 0.4− | 0.2− | 2006 10 11 | 291 | 0.3− | 0.0 |
| 2005 04 12 | 691 | 0.2+ | 0.1+ | 2005 06 13 | G96 | 0.2− | 0.6− | 2006 10 11 | 291 | 0.2− | 0.2+ |
| 2005 04 15 | 691 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.3+ | 0.6− | | | | |
| 2005 04 15 | 691 | 0.4+ | 0.2+ | 2005 06 13 | G96 | 0.2− | 0.6− | | | | |

**2005 GJ$_{116}$ = 2006 QF$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.52981 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22682403 | $\omega$ | 263.59148 | | −0.42082641 | | +0.90708892 |
| $a$ | 2.6628294 | $\Omega$ | 341.51236 | | −0.81967541 | | −0.38482777 |
| $e$ | 0.0987162 | $i$ | 1.75981 | | −0.38863524 | | −0.17057925 |
| $P$ | 4.35 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 691 | 0.1+ | 0.2− | 2005 05 14 | G96 | 0.3− | 0.7− | 2006 08 21 | 691 | 0.2− | 0.1− |
| 2005 04 11 | 691 | 0.1− | 0.0 | 2005 05 14 | G96 | 0.2− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.4+ |
| 2005 04 11 | 691 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.5− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.3− |
| 2005 04 12 | 691 | 0.1+ | 0.3+ | 2005 05 14 | G96 | 0.3+ | 0.3− | 2006 08 28 | 691 | 0.0 | 0.2− |
| 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.3+ | 0.5+ | | | | |
| 2005 04 12 | 691 | 0.2+ | 0.1+ | 2006 08 21 | 691 | 0.4− | 0.3− | | | | |

**2005 GO$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.90790 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22379825 | $\omega$ | 191.23260 | | +0.29543199 | | −0.95481947 |
| $a$ | 2.6867768 | $\Omega$ | 241.59086 | | +0.87934516 | | +0.28496305 |
| $e$ | 0.0645050 | $i$ | 2.10090 | | +0.37345955 | | +0.08435544 |
| $P$ | 4.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 13 | 691 | 0.3− | 0.1+ | 2002 08 28 | 644 | 0.3+ | 0.6− | 2005 03 17 | G96 | 0.6− | 0.1+ |
| 1993 08 13 | 691 | 0.1− | 0.0 | 2002 09 05 | 699 | 0.9+ | 3.0+ | 2005 03 17 | G96 | 1.0− | 0.0 |
| 1993 08 13 | 691 | 0.1+ | 0.5+ | 2002 09 05 | 699 | 0.0 | 0.2+ | 2005 03 17 | G96 | 0.8− | 0.1+ |
| 1998 09 21 | 691 | 0.4− | 0.1− | 2002 09 05 | 699 | 0.3− | 0.6+ | 2005 04 11 | 691 | 0.2− | 0.1+ |
| 1998 09 21 | 691 | 0.6− | 0.0 | 2002 09 05 | 699 | 0.1+ | 0.8+ | 2005 04 11 | 691 | 0.3+ | 0.2+ |
| 1998 09 21 | 691 | 0.0 | 0.1+ | 2002 09 14 | 644 | 0.2− | 0.4+ | 2005 04 11 | 691 | 0.0 | 0.2+ |
| 1998 10 18 | 327 | 0.1+ | 0.0 | 2002 09 14 | 644 | 0.1− | 0.5+ | 2005 04 12 | 691 | 0.1− | 0.3+ |
| 1998 10 18 | 327 | 0.5+ | 0.4+ | 2002 09 14 | 644 | 0.1+ | 0.4+ | 2005 04 12 | 691 | 0.1+ | 0.1+ |
| 1998 10 18 | 327 | 0.5+ | 0.4+ | 2003 12 23 | 704 | 0.2+ | 0.4− | 2005 04 12 | 691 | 0.3+ | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.6+ | 2003 12 23 | 704 | 0.0 | 0.5− | 2006 07 23 | G96 | 0.3+ | 0.2− |
| 2000 03 03 | 704 | 1.0+ | 0.4+ | 2003 12 23 | 704 | 0.4− | 0.0 | 2006 07 23 | G96 | 0.3+ | 0.6− |
| 2000 03 03 | 704 | 1.2+ | 0.7+ | 2004 01 16 | 644 | 0.2− | 0.7+ | 2006 07 23 | G96 | 0.2+ | 0.4− |
| 2000 03 03 | 704 | 1.1+ | 1.0+ | 2004 01 16 | 644 | 0.0 | 0.6+ | 2006 07 23 | G96 | 0.0 | 0.3− |
| 2002 08 28 | 644 | 0.0 | 0.1− | 2004 01 16 | 644 | 0.2+ | 0.7+ | | | | |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2005 03 17 | G96 | 0.6− | 0.0 | | | | |

**2005 GP$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.36538 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27646110 | $\omega$ | 50.66147 | | −0.13961486 | | +0.98850821 |
| $a$ | 2.3337090 | $\Omega$ | 211.45742 | | −0.93923899 | | −0.15073819 |
| $e$ | 0.0596536 | $i$ | 6.37646 | | −0.31358861 | | +0.01138036 |
| $P$ | 3.57 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 04 15 | 691 | 0.4+ | 0.1+ | 2005 05 08 | G96 | 0.5− | 0.5− |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2005 04 15 | 691 | 0.4+ | 0.2+ | 2005 05 08 | G96 | 0.0 | 0.1+ |
| 2005 03 17 | G96 | 1.2− | 0.3− | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.5− |
| 2005 03 17 | G96 | 0.4− | 0.2− | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.4+ |
| 2005 03 17 | G96 | 1.1− | 0.5− | 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2005 03 17 | G96 | 0.5− | 0.4− | 2005 04 17 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2005 04 11 | 691 | 0.3+ | 0.1+ | 2005 05 04 | 568 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2005 04 11 | 691 | 0.1+ | 0.4− | 2005 05 04 | 568 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.5+ |
| 2005 04 11 | 691 | 0.1− | 0.1− | 2005 05 04 | 568 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2005 04 12 | 691 | 0.3− | 0.3+ | 2005 05 05 | 568 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2005 04 12 | 691 | 0.0 | 0.1+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.5− | 0.1+ |
| 2005 04 12 | 691 | 0.1− | 0.2− | 2005 05 08 | G96 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.6− |

**2005 GY$_{117}$ = 2006 QA$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.67093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24249652 | $\omega$ | 122.44855 | | −0.30744711 | | +0.95108016 |
| $a$ | 2.5468246 | $\Omega$ | 129.61556 | | −0.88574691 | | −0.27436910 |
| $e$ | 0.0896090 | $i$ | 2.25999 | | −0.34774801 | | −0.14201451 |
| $P$ | 4.06 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 691 | 0.3+ | 0.4+ | 2005 04 11 | G96 | 0.1− | 0.3− | 2005 05 11 | G96 | 0.7− | 0.4− |
| 2001 03 19 | 691 | 0.1+ | 0.5+ | 2005 04 11 | G96 | 0.5− | 0.3− | 2006 08 21 | 691 | 0.1− | 0.4+ |
| 2001 03 19 | 691 | 0.0 | 0.3+ | 2005 04 12 | 691 | 0.0 | 0.3− | 2006 08 21 | 691 | 0.0 | 0.2− |
| 2005 04 01 | 691 | 0.0 | 0.3+ | 2005 04 12 | 691 | 0.1− | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.1+ |
| 2005 04 01 | 691 | 0.2+ | 0.1− | 2005 04 12 | 691 | 0.1+ | 0.6− | 2006 08 28 | 691 | 0.0 | 0.2− |
| 2005 04 01 | 691 | 0.5− | 0.0 | 2005 05 11 | G96 | 0.1+ | 0.7− | 2006 08 28 | 691 | 0.0 | 0.2− |
| 2005 04 11 | G96 | 0.1+ | 0.1− | 2005 05 11 | G96 | 0.1+ | 0.6− | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2005 05 11 | G96 | 0.5+ | 0.0 | | | | |

**2005 GC$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.06963 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18795901 | $\omega$ | 158.94541 | | +0.96149893 | | +0.27445534 |
| $a$ | 3.0182875 | $\Omega$ | 185.18509 | | −0.26898828 | | +0.92954614 |
| $e$ | 0.1365437 | $i$ | 8.86765 | | −0.05625939 | | +0.24620772 |
| $P$ | 5.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.3− | 0.5− | 2002 11 28 | 699 | 0.1− | 0.6+ | 2005 04 11 | G96 | 0.2− | 0.2− |
| 2002 11 16 | 644 | 0.3− | 0.4− | 2002 11 28 | 699 | (0.6− | 2.9−) | 2005 04 12 | 691 | 0.0 | 0.2+ |
| 2002 11 16 | 644 | 0.2− | 0.7− | 2005 04 02 | 691 | 0.2+ | 0.1+ | 2005 04 12 | 691 | 0.3+ | 0.0 |
| 2002 11 24 | 644 | 0.8+ | 0.3+ | 2005 04 02 | 691 | 0.3− | 0.2− | 2005 04 12 | 691 | 0.4+ | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.5+ | 2005 04 02 | 691 | 0.1− | 0.1− | 2005 05 11 | G96 | 0.3− | 0.0 |
| 2002 11 24 | 644 | 0.2− | 0.4+ | 2005 04 11 | G96 | 0.0 | 0.3− | 2005 05 11 | G96 | 0.1− | 0.1+ |
| 2002 11 28 | 699 | 0.2− | 0.6+ | 2005 04 11 | G96 | 0.4− | 0.1− | 2005 05 11 | G96 | 0.4− | 0.5− |
| 2002 11 28 | 699 | 0.3+ | 0.9− | 2005 04 11 | G96 | 0.5− | 0.0 | 2005 05 11 | G96 | 0.1+ | 0.1− |

**2005 GW$_{118}$ = 2006 TZ$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.37860 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28292829 | $\omega$ | 181.48979 | | +0.81233500 | | +0.58224608 |
| $a$ | 2.2980094 | $\Omega$ | 142.83724 | | −0.53449761 | | +0.76606613 |
| $e$ | 0.1899674 | $i$ | 3.14926 | | −0.23328984 | | +0.27227225 |
| $P$ | 3.48 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.1+ | 0.1+ | 2005 04 12 | 691 | 0.9+ | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.3− |
| 2005 03 09 | G96 | 0.6− | 0.2− | 2005 04 12 | 691 | 0.5− | 0.4− | 2006 10 16 | 703 | 1.0− | 0.1+ |
| 2005 03 09 | G96 | 0.2− | 0.4− | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 10 16 | 703 | (3.4− | 0.9−) |
| 2005 03 09 | G96 | 0.7+ | 0.4− | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.8− |
| 2005 04 11 | G96 | 0.5− | 0.1− | 2006 10 03 | G96 | 0.3− | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.1+ |
| 2005 04 11 | G96 | 0.5− | 0.2+ | 2006 10 14 | D35 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2005 04 11 | G96 | 0.3− | 0.0 | 2006 10 14 | D35 | 0.4+ | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2005 04 12 | 691 | 0.0 | 0.2− | 2006 10 14 | D35 | 0.3+ | 0.6+ | | | | |

**2005 GM$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.01969 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24743030 | $\omega$ | 232.39048 | | −0.97868017 | | +0.13565992 |
| $a$ | 2.5128552 | $\Omega$ | 314.80806 | | −0.03422717 | | −0.84805036 |
| $e$ | 0.1540867 | $i$ | 12.55417 | | −0.20251819 | | −0.51225674 |
| $P$ | 3.98 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.1+ | 0.1− | 2005 04 09 | E12 | 0.4− | 0.5+ | 2005 04 19 | E12 | 0.1+ | 0.4+ |
| 2002 08 28 | 644 | 0.3+ | 0.0 | 2005 04 09 | E12 | 0.0 | 0.2− | 2005 05 01 | E12 | 0.3+ | 0.2+ |
| 2002 08 28 | 644 | 0.2− | 0.2− | 2005 04 09 | E12 | 0.1− | 0.4+ | 2005 05 01 | E12 | 0.6+ | 0.0 |
| 2005 03 05 | E12 | 1.8+ | 1.0+ | 2005 04 09 | E12 | 0.2− | 0.2+ | 2005 05 01 | E12 | 0.1− | 0.3− |
| 2005 03 05 | E12 | 0.0 | 0.4− | 2005 04 12 | E12 | 0.1− | 0.5− | 2005 05 01 | E12 | 0.4− | 0.3+ |
| 2005 03 05 | E12 | 0.1− | 0.1− | 2005 04 12 | E12 | 0.5+ | 0.3− | 2005 05 12 | 644 | 0.4+ | 0.1− |
| 2005 03 05 | E12 | 0.5− | 0.3− | 2005 04 12 | E12 | 0.5+ | 0.2− | 2005 05 12 | 644 | 0.3+ | 0.2+ |
| 2005 03 18 | E12 | 0.6− | 0.6− | 2005 04 12 | E12 | 0.5− | 0.4− | 2005 05 12 | 644 | 0.1− | 0.1− |
| 2005 03 18 | E12 | 0.4− | 0.1− | 2005 04 19 | E12 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2005 03 18 | E12 | 0.1+ | 0.1+ | 2005 04 19 | E12 | 0.2− | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.1− |
| 2005 03 18 | E12 | 0.6− | 0.3− | 2005 04 19 | E12 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.0 |

**2005 GR$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.92308 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28144402 | $\omega$ | 182.02412 | | −0.40803916 | | +0.83653194 |
| $a$ | 2.3060818 | $\Omega$ | 64.06628 | | −0.83181196 | | −0.17555948 |
| $e$ | 0.2065751 | $i$ | 23.99280 | | −0.37628833 | | −0.51903101 |
| $P$ | 3.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 28 | 704 | 0.3− | 0.3− | 2005 04 30 | 699 | 1.3+ | 0.1− | 2005 06 03 | 699 | 0.7− | 0.6− |
| 1998 04 28 | 704 | 0.8+ | 0.7− | 2005 04 30 | 699 | 0.4+ | 0.3+ | 2005 06 03 | 699 | 0.1+ | 0.7− |
| 1998 04 28 | 704 | 3.0+ | 1.0− | 2005 05 02 | 703 | 0.1+ | 0.4+ | 2005 06 28 | 644 | 1.2− | 0.4+ |
| 1998 04 28 | 704 | 0.3+ | 1.2+ | 2005 05 02 | 703 | 0.6− | 0.2− | 2005 06 28 | 644 | 0.5− | 0.4+ |
| 1998 04 28 | 704 | (3.5− | 1.2+) | 2005 05 02 | 703 | 0.1− | 0.2− | 2005 06 28 | 644 | 0.6− | 0.4+ |
| 2005 04 01 | 699 | 0.4+ | 0.9+ | 2005 05 02 | 703 | (0.7+ | 2.1−) | 2005 06 28 | 644 | 0.7− | 0.3+ |
| 2005 04 01 | 699 | 0.8− | 0.2+ | 2005 05 08 | 703 | 0.0 | 0.3− | 2005 06 28 | 644 | 0.5− | 0.1− |
| 2005 04 01 | 699 | 0.1+ | 0.0 | 2005 05 08 | 703 | (1.7− | 0.2−) | 2005 06 28 | 644 | 0.4− | 0.3+ |
| 2005 04 01 | 699 | 0.3− | 0.4− | 2005 05 08 | 703 | (1.6− | 0.7+) | 2005 07 04 | 644 | 0.7− | 0.2+ |
| 2005 04 12 | 699 | 0.1+ | 0.5− | 2005 05 08 | 703 | 1.1− | 0.6+ | 2005 07 04 | 644 | 1.0− | 0.0 |
| 2005 04 12 | 699 | 0.0 | 0.1+ | 2005 05 10 | 704 | 1.4+ | 0.6+ | 2005 07 04 | 644 | 1.2− | 0.3+ |
| 2005 04 12 | 699 | 1.0+ | 0.5+ | 2005 05 10 | 704 | 0.4+ | 1.1+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2005 04 12 | 699 | 0.5+ | 0.5+ | 2005 05 10 | 704 | 0.9+ | 0.4− | 2006 09 27 | G96 | 0.4+ | 0.2− |
| 2005 04 12 | 704 | 1.5+ | 0.3− | 2005 05 10 | 704 | 0.8+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2005 04 12 | 704 | 1.3+ | 0.3− | 2005 05 10 | 704 | 0.3+ | 0.7+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 704 | 0.5+ | 0.0 | 2005 05 30 | 703 | 1.1− | 1.3+ | 2006 09 28 | 291 | 0.6− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 704 | 0.8+ | 0.1− | 2005 05 30 | 703 | 0.0 | 0.6+ | 2006 09 28 | 291 | 0.6− | 0.3+ |
| 2005 04 16 | 704 | 0.6− | 0.6− | 2005 05 30 | 703 | 0.2+ | 0.5− | 2006 09 28 | 291 | 0.4− | 0.2− |
| 2005 04 16 | 704 | 0.4− | 0.3+ | 2005 05 30 | 703 | 0.8− | 0.2− | 2006 09 30 | 291 | 0.4+ | 0.0 |
| 2005 04 16 | 704 | 0.3+ | 0.4− | 2005 06 01 | 704 | 0.6+ | 0.0 | 2006 09 30 | 291 | 0.1+ | 0.2+ |
| 2005 04 16 | 704 | (0.4+ | 1.7−) | 2005 06 01 | 704 | 0.2+ | 1.2+ | 2006 09 30 | 291 | 0.2− | 0.1+ |
| 2005 04 28 | A35 | 0.4+ | 0.4− | 2005 06 01 | 704 | 0.1− | 0.5+ | 2006 10 01 | 291 | 0.3− | 0.5+ |
| 2005 04 28 | A35 | 1.2+ | 0.3− | 2005 06 01 | 704 | 0.4+ | 0.6+ | 2006 10 01 | 291 | 0.2− | 0.4+ |
| 2005 04 28 | A35 | 0.4− | 0.8− | 2005 06 03 | 699 | 0.6− | 1.2+ | 2006 10 01 | 291 | 0.1− | 0.6+ |
| 2005 04 30 | 699 | 0.4− | 0.1− | 2005 06 03 | 699 | 0.8+ | 0.0 | | | | |

**2005 GW$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.61018 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.46901634 | $\omega$ | 242.70600 | | +0.58931236 | −0.80786848 | |
| $a$ | 1.6406303 | $\Omega$ | 171.17355 | | +0.75787033 | +0.54948319 | |
| $e$ | 0.2334603 | $i$ | 2.88069 | | +0.27989910 | +0.21311204 | |
| $P$ | 2.10 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 608 | 0.0 | 0.3+ | 2005 04 11 | 474 | 0.4+ | 0.2+ | 2005 04 12 | G96 | 0.1+ | 0.3+ |
| 2001 05 24 | 608 | 0.0 | 0.1+ | 2005 04 11 | 474 | 0.1+ | 0.3+ | 2005 04 12 | G96 | 0.2− | 0.2− |
| 2001 05 24 | 608 | 0.1+ | 0.2− | 2005 04 11 | 474 | 0.1+ | 0.2+ | 2005 04 27 | 413 | 0.1− | 0.0 |
| 2001 05 25 | 608 | 0.0 | 0.1+ | 2005 04 12 | G96 | 0.1− | 0.1− | 2005 04 27 | 413 | 0.1+ | 0.0 |
| 2005 04 10 | G96 | 0.3− | 0.1− | 2005 04 12 | G96 | 0.7− | 0.1− | 2005 04 27 | 413 | 0.1− | 0.1− |
| 2005 04 10 | G96 | 0.3− | 0.0 | 2005 04 12 | G96 | 0.2− | 0.2− | 2005 04 28 | 413 | 0.3− | 0.2− |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2005 04 12 | G96 | 0.1+ | 0.4+ | 2005 04 28 | 413 | 0.4+ | 0.1+ |
| 2005 04 10 | G96 | 0.0 | 0.2+ | 2005 04 12 | G96 | 0.2+ | 0.1− | 2005 06 02 | J50 | 0.4− | 0.1− |
| 2005 04 11 | G96 | 0.2+ | 0.2+ | 2005 04 12 | G96 | 0.1− | 0.1+ | 2005 06 02 | J50 | 0.3+ | 0.4− |
| 2005 04 11 | G96 | 0.1− | 0.6− | 2005 04 12 | G96 | 0.1− | 0.1+ | 2005 06 02 | J50 | 0.2+ | 0.2− |
| 2005 04 11 | G96 | 0.3+ | 0.3− | 2005 04 12 | G96 | 0.0 | 0.0 | 2005 06 02 | J50 | 0.2− | 0.1− |
| 2005 04 11 | G96 | 0.2+ | 0.3− | 2005 04 12 | G96 | 0.1+ | 0.0 | 2005 06 03 | J50 | 0.0 | 0.1− |
| 2005 04 11 | 474 | 0.6+ | 0.4+ | 2005 04 12 | G96 | 0.0 | 0.3+ | 2005 06 03 | J50 | 0.0 | 0.0 |

**2005 GZ$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.07742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24091369 | $\omega$ | 325.61232 | | +0.53248829 | +0.84236669 | |
| $a$ | 2.5579678 | $\Omega$ | 336.23242 | | −0.72302108 | +0.40172801 | |
| $e$ | 0.2610448 | $i$ | 11.87198 | | −0.44010992 | +0.35921159 | |
| $P$ | 4.09 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 699 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.7− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 04 06 | 699 | 0.3+ | 0.8− | 2006 10 11 | 644 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.3+ |
| 2005 04 06 | 699 | 1.1+ | 1.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.5− |
| 2005 04 06 | 699 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 10 27 | 703 | (0.7− | 2.0−) |
| 2005 04 12 | G92 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 10 27 | 703 | (0.5+ | 2.5−) |
| 2005 04 12 | G92 | 0.7+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.6+ |
| 2005 04 12 | G92 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.4+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.8− |
| 2005 04 14 | 703 | 0.4+ | 0.7− | 2006 10 19 | 703 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.8+ |
| 2005 04 14 | 703 | 0.6− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 11 15 | 703 | 0.4+ | 0.3+ |
| 2005 04 14 | 703 | 0.5− | 1.0+ | 2006 10 19 | 703 | 0.4+ | 0.1− | 2006 11 22 | 703 | 0.0 | 0.0 |
| 2005 04 14 | 703 | 0.8− | 0.9− | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 22 | 703 | 0.5+ | 0.4− |
| 2005 04 18 | E12 | 0.0 | 0.7− | 2006 10 22 | 644 | 0.2+ | 0.1− | 2006 11 22 | 703 | 0.8− | 0.7− |
| 2005 04 18 | E12 | 0.3− | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.2+ | 0.2− |
| 2005 04 18 | E12 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | | | | |
| 2005 04 18 | E12 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1− | | | | |

**2005 GV$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.62410 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26918259 | $\omega$ | 306.36900 | | −0.11400403 | +0.99334561 | |
| $a$ | 2.3755895 | $\Omega$ | 317.07569 | | −0.90363442 | −0.11052222 | |
| $e$ | 0.1558800 | $i$ | 1.37632 | | −0.41285339 | −0.03239338 | |
| $P$ | 3.66 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 18 | 644 | 0.0 | 0.1+ | 2005 04 12 | G96 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.1− | 0.3+ |
| 2002 07 18 | 644 | 0.1− | 0.0 | 2005 04 12 | G96 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.4− | 0.3+ |
| 2002 07 18 | 644 | 0.0 | 0.1+ | 2005 04 12 | G96 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2005 04 12 | G96 | 0.3+ | 0.4− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2005 05 12 | G96 | 0.4− | 0.9− | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2005 03 11 | G96 | 0.4− | 0.3+ | 2005 05 12 | G96 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2005 03 11 | G96 | 0.3+ | 0.4+ | 2005 05 12 | G96 | 0.1− | 0.5− | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 2005 04 05 | G96 | 0.1− | 0.4+ | 2005 05 12 | G96 | 0.5− | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 2005 04 05 | G96 | 0.5+ | 0.1− | 2005 05 14 | G96 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.5+ | 0.5− |
| 2005 04 05 | G96 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 2005 04 05 | G96 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.4− |

**2005 GR$_{121}$ = 2006 QX$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.40609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26975923 | $\omega$ | 293.78878 | | +0.22439979 | +0.97423114 | |
| $a$ | 2.3722029 | $\Omega$ | 349.10476 | | −0.84449975 | +0.18275277 | |
| $e$ | 0.1080215 | $i$ | 6.91876 | | −0.48627657 | +0.13219347 | |
| $P$ | 3.65 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.2− | 0.0 | 2005 04 06 | G96 | 0.2+ | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.0 |
| 2005 03 16 | G96 | 0.3+ | 0.1+ | 2005 04 12 | G96 | 0.3− | 0.1+ | 2006 08 23 | 807 | 0.2− | 0.2− |
| 2005 03 16 | G96 | 0.3− | 0.4+ | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 08 23 | 807 | 0.1+ | 0.3− |
| 2005 03 16 | G96 | 0.0 | 0.7− | 2005 04 12 | G96 | 0.7− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2005 04 06 | G96 | 0.5+ | 0.2+ | 2005 04 12 | G96 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2005 04 06 | G96 | 0.2+ | 0.6− | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2005 04 06 | G96 | 0.1+ | 0.0 | 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− |

**2005 GA$_{123}$ = 2006 ST$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.34674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23997088 | $\omega$ | 285.98982 | | +0.89381807 | +0.43026440 | |
| $a$ | 2.5646632 | $\Omega$ | 48.71273 | | −0.31947771 | +0.80869936 | |
| $e$ | 0.1393539 | $i$ | 9.67952 | | −0.31467959 | +0.40109586 | |
| $P$ | 4.11 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 291 | 0.2− | 0.0 | 2005 04 12 | G96 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.9− | 0.4− |
| 2001 05 26 | 291 | 0.0 | 0.3+ | 2005 04 12 | G96 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1− | 1.0− |
| 2001 05 26 | 291 | 0.1+ | 0.4− | 2005 04 12 | G96 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.2+ | 0.3− |
| 2005 04 06 | G96 | 0.7+ | 0.3− | 2005 04 12 | G96 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.6− |
| 2005 04 06 | G96 | 0.2− | 0.1− | 2005 04 12 | G96 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.6+ | 1.3+ |
| 2005 04 06 | G96 | 0.1+ | 0.2− | 2005 04 12 | G96 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.0 | 1.1+ |
| 2005 04 06 | G96 | 0.1+ | 0.3+ | 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 703 | (1.6+ | 0.3−) |
| 2005 04 12 | G96 | 0.2+ | 0.0 | 2005 04 30 | 691 | 0.0 | 0.3+ | 2006 09 25 | 703 | (0.2− | 2.2+) |
| 2005 04 12 | G96 | 0.2− | 0.1− | 2005 04 30 | 691 | 0.0 | 0.1+ | | | | |

**2005 GE$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.58153 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26987900 | $\omega$ | 189.30421 | | +0.21111841 | +0.97665891 | |
| $a$ | 2.3715010 | $\Omega$ | 92.89112 | | −0.89423467 | +0.20933364 | |
| $e$ | 0.1737626 | $i$ | 2.27112 | | −0.39468135 | +0.04813320 | |
| $P$ | 3.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 12 | 691 | 1.0− | 0.3+ | 2005 04 12 | G96 | 0.4− | 0.4− | 2006 09 30 | G96 | 0.5− | 0.2+ |
| 1994 04 12 | 691 | 0.8+ | 0.1− | 2005 04 12 | G96 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 1994 04 12 | 691 | 0.5+ | 0.6+ | 2005 04 12 | G96 | 0.2− | 0.5− | 2006 09 30 | G96 | 0.5− | 0.3+ |
| 2002 09 28 | 608 | 0.1− | 0.4+ | 2005 04 12 | G96 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.2+ |
| 2002 09 28 | 608 | 0.1+ | 0.2+ | 2005 04 30 | 691 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.3+ |
| 2002 09 28 | 608 | 0.5− | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.4+ |
| 2005 04 06 | G96 | 0.3− | 0.2− | 2005 04 30 | 691 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.5+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.2− | 0.2− | 2005 05 09 | 704 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.4+ | | | |
| 2005 04 06 | G96 | 0.5− | 0.0 | 2005 05 09 | 704 | 1.0+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.2+ | | | |
| 2005 04 06 | G96 | 0.4− | 0.2+ | 2005 05 09 | 704 | 1.5+ | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.2+ | | | |
| 2005 04 12 | G96 | 0.4− | 0.1− | 2005 05 19 | G96 | 0.2− | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.3+ | | | |
| 2005 04 12 | G96 | 0.1− | 0.4− | 2005 05 19 | G96 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.7+ | | | |
| 2005 04 12 | G96 | 0.3− | 0.0 | 2005 05 19 | G96 | 0.2− | 0.4− | | | | | | | |
| 2005 04 12 | G96 | 0.3− | 0.1− | 2005 05 19 | G96 | 0.3− | 0.4− | | | | | | | |

**2005 GF$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.00457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19759580 | $\omega$ | 336.84556 | | +0.87028995 | −0.47204959 | |
| $a$ | 2.9193371 | $\Omega$ | 52.07920 | | +0.47517395 | +0.72955248 | |
| $e$ | 0.1147567 | $i$ | 10.26579 | | +0.12963458 | +0.49489631 | |
| $P$ | 4.99 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 291 | 0.2− | 0.2+ | 2005 04 06 | G96 | 0.5− | 0.2+ | 2005 04 12 | G96 | 0.1− | 0.2− |
| 2002 11 25 | 291 | 0.2+ | 0.0 | 2005 04 06 | G96 | 0.1− | 0.1− | 2005 04 12 | G96 | 0.2− | 0.1+ |
| 2002 11 25 | 291 | 0.2− | 0.5− | 2005 04 06 | G96 | 0.1− | 0.0 | 2005 04 30 | 691 | 0.6+ | 0.0 |
| 2002 12 05 | 704 | 0.6+ | 0.5− | 2005 04 06 | G96 | 0.2− | 0.9− | 2005 04 30 | 691 | 0.4+ | 0.4+ |
| 2002 12 05 | 704 | 0.9− | 0.0 | 2005 04 12 | G96 | 0.3− | 0.0 | 2005 04 30 | 691 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.5+ | 0.5+ | 2005 04 12 | G96 | 0.4− | 0.1− | 2005 06 12 | G96 | 0.6− | 0.7− |
| 2002 12 05 | 704 | 0.8+ | 0.0 | 2005 04 12 | G96 | 0.1− | 0.2− | 2005 06 12 | G96 | 0.4+ | 0.0 |
| 2002 12 10 | 644 | 0.3− | 0.1+ | 2005 04 12 | G96 | 0.2− | 0.2− | 2005 06 12 | G96 | 0.9− | 0.7− |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2005 04 12 | G96 | 0.3− | 0.1− | 2005 06 12 | G96 | 0.0 | 0.3− |
| 2002 12 10 | 644 | 0.3+ | 0.5+ | 2005 04 12 | G96 | 0.2− | 0.1− | | | | |

**2005 GP$_{126}$ = 2006 TS$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.51853 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27723936 | $\omega$ | 288.31086 | | +0.73462561 | +0.67570016 | |
| $a$ | 2.3293395 | $\Omega$ | 29.27464 | | −0.56552348 | +0.65972165 | |
| $e$ | 0.1290445 | $i$ | 7.19840 | | −0.37484451 | +0.32893257 | |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.3+ | 0.6− | 2005 04 12 | G96 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2005 04 02 | G96 | 0.2− | 0.7− | 2005 04 12 | G96 | 0.5− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.1+ | 1.0− | 2005 04 12 | G96 | 0.7+ | 0.7− | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2005 04 02 | G96 | 0.6− | 0.2− | 2005 04 12 | G96 | (0.2− | 1.6+) | 2006 10 20 | 691 | 0.0 | 0.4+ |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2005 04 14 | 691 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2005 04 11 | G96 | 0.8− | 0.2+ | 2005 04 14 | 691 | 0.4+ | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2005 04 11 | G96 | 0.5− | 0.1− | 2005 04 14 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.6+ |
| 2005 04 11 | G96 | 0.2+ | 0.1− | 2006 10 12 | 691 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2005 04 12 | G96 | 0.5+ | 0.6+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2005 04 12 | G96 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.7+ | 0.6− |
| 2005 04 12 | G96 | 0.3− | 0.9− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2005 04 12 | G96 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.4+ | 0.1− | | | | |

**2005 GR$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.27066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22877742 | $\omega$ | 256.99190 | | +0.30456931 | +0.94581043 | |
| $a$ | 2.6476502 | $\Omega$ | 31.46226 | | −0.76872799 | +0.31389060 | |
| $e$ | 0.1535082 | $i$ | 12.45934 | | −0.56240094 | +0.08315837 | |
| $P$ | 4.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | G96 | 0.6− | 0.1+ | 2005 04 12 | G96 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.7+ | 0.7− |
| 2005 03 12 | G96 | 0.2− | 0.2+ | 2005 04 12 | G96 | 0.0 | 0.2− | 2006 09 18 | 703 | (2.2+ | 1.0−) |
| 2005 03 12 | G96 | 0.1+ | 0.3+ | 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.9− |
| 2005 03 12 | G96 | 0.8− | 0.2− | 2005 04 12 | G96 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.8+ | 0.3+ |
| 2005 04 02 | G96 | 0.4+ | 0.9− | 2005 04 12 | G96 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2005 04 12 | G96 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 04 02 | G96 | 0.3+ | 0.0 | 2005 04 12 | G96 | 0.4+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2005 04 02 | G96 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.9− | 1.4+ |
| 2005 04 11 | G96 | 0.2+ | 0.1+ | 2005 05 01 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.5+ | 0.8− |
| 2005 04 11 | G96 | 0.2− | 0.3+ | 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | (3.5− | 0.7−) |
| 2005 04 11 | G96 | 0.1+ | 0.0 | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2005 04 11 | G96 | 0.1+ | 0.0 | 2005 05 19 | 644 | 0.3− | 0.1+ | | | | |
| 2005 04 12 | G96 | 0.1+ | 0.1+ | 2005 05 19 | 644 | 0.0 | 0.1+ | | | | |

**2005 GN$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.82826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27699912 | $\omega$ | 272.99808 | | +0.43736655 | +0.89738577 | |
| $a$ | 2.3306861 | $\Omega$ | 23.21489 | | −0.75499641 | +0.40169189 | |
| $e$ | 0.0806773 | $i$ | 8.51843 | | −0.48856006 | +0.18259900 | |
| $P$ | 3.56 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.1− | 0.0 | 2005 04 17 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2005 03 10 | G96 | 0.0 | 0.0 | 2005 04 17 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2005 03 10 | G96 | 0.4− | 0.2− | 2005 05 01 | 644 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2005 04 12 | G96 | 0.4− | 0.1− | 2005 05 01 | 644 | 0.1− | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2005 04 12 | G96 | 0.2− | 0.0 | 2005 05 01 | 644 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2005 04 12 | G96 | 0.6− | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.4− | 0.2+ |
| 2005 04 12 | G96 | 0.7− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.6+ |
| 2005 04 13 | 691 | 0.3+ | 0.2− | 2006 09 17 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2005 04 13 | 691 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ | | | | |
| 2005 04 13 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | | | | |

**2005 GX$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.27239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26696592 | $\omega$ | 105.66276 | | −0.06551032 | +0.99741616 | |
| $a$ | 2.3887214 | $\Omega$ | 160.50891 | | −0.94602317 | −0.05268119 | |
| $e$ | 0.2142302 | $i$ | 5.06988 | | −0.31740914 | −0.04884368 | |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1− | 0.1− | 2005 04 13 | 704 | 0.4+ | 0.6+ | 2005 05 13 | 703 | 0.6− | 0.0 |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2005 04 13 | 704 | 0.7− | 1.6− | 2005 05 13 | 703 | (0.2− | 2.2+) |
| 2002 09 13 | 644 | 0.1+ | 0.0 | 2005 04 13 | 704 | 0.3− | 0.5+ | 2005 05 15 | 644 | 0.7+ | 0.2+ |
| 2005 03 09 | G96 | 0.1− | 0.3+ | 2005 04 13 | 704 | 0.3− | 0.4− | 2005 05 15 | 644 | 0.5+ | 0.5+ |
| 2005 03 09 | G96 | 0.4− | 0.2− | 2005 05 08 | 703 | 1.2− | 0.4+ | 2005 05 15 | 644 | 0.6+ | 0.3+ |
| 2005 03 09 | G96 | 0.4− | 0.0 | 2005 05 08 | 703 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.2+ |
| 2005 03 09 | G96 | 0.2− | 0.0 | 2005 05 08 | 703 | 0.4− | 1.6− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2005 04 09 | 704 | 0.8+ | 0.3+ | 2005 05 08 | 703 | 1.1− | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.8− |
| 2005 04 09 | 704 | 0.7+ | 0.7+ | 2005 05 13 | 703 | 1.0+ | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2005 04 09 | 704 | 0.8+ | 0.6+ | 2005 05 13 | 703 | 0.1+ | 1.2− | | | | |

**2005 GG$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.42991 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26881541 | $\omega$ | 208.80854 | | −0.44479284 | +0.88839093 | |
| $a$ | 2.3777523 | $\Omega$ | 35.13039 | | −0.77920918 | −0.32127045 | |
| $e$ | 0.1814459 | $i$ | 11.39292 | | −0.44157943 | −0.32794337 | |
| $P$ | 3.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 703 | 0.4+ | 0.4+ | 2005 04 08 | 704 | 0.1+ | 0.3+ | 2005 05 08 | 703 | 1.5− | 0.1− |
| 2005 03 10 | 703 | 0.1+ | 0.2+ | 2005 04 08 | 704 | 0.3+ | 0.0 | 2005 05 08 | 703 | 0.7− | 0.4− |
| 2005 03 10 | 703 | 0.3+ | 0.1+ | 2005 04 08 | 704 | 0.6+ | 0.2+ | 2005 05 08 | 703 | (1.6− | 1.1+) |
| 2005 03 10 | 703 | 0.4− | 0.8− | 2005 04 08 | 704 | 1.0+ | 0.7− | 2005 05 22 | 644 | 0.7+ | 0.1− |
| 2005 03 18 | 703 | 0.1− | 0.7+ | 2005 04 11 | 699 | 1.1+ | 0.7− | 2005 05 22 | 644 | 0.4+ | 0.5+ |
| 2005 03 18 | 703 | 0.3− | 0.0 | 2005 04 11 | 699 | 0.3− | 0.5− | 2005 05 22 | 644 | 0.4+ | 0.5+ |
| 2005 03 18 | 703 | 0.1− | 0.4+ | 2005 04 11 | 699 | 0.1− | 0.3− | 2006 09 17 | F84 | (2.2− | 0.3−) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 18 | 703 | 0.7− | 0.2− | 2005 04 11 | 699 | 0.3+ | 0.5+ | 2006 09 17 | F84 | (0.9+ | 3.5−) |
| 2005 03 30 | 703 | 0.3− | 0.2+ | 2005 04 13 | 699 | 0.4+ | 0.4+ | 2006 09 26 | 703 | (2.3+ | 0.0 ) |
| 2005 03 30 | 703 | (2.0− | 1.0+) | 2005 04 13 | 699 | 0.7− | 1.1− | 2006 09 26 | 703 | 0.2+ | 0.3− |
| 2005 03 30 | 703 | 0.5− | 0.5+ | 2005 04 13 | 704 | 0.2− | 0.5+ | 2006 09 26 | 703 | 0.7+ | 0.2+ |
| 2005 03 30 | 703 | 0.8− | 0.2− | 2005 04 13 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 1.0− | 0.3+ |
| 2005 04 08 | 704 | 0.5+ | 0.1− | 2005 04 13 | 699 | 0.6− | 0.7− | 2006 11 17 | G96 | 0.4− | 0.2+ |
| 2005 04 08 | 704 | 0.1− | 0.6+ | 2005 04 13 | 704 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2005 04 08 | 704 | 0.6+ | 0.3+ | 2005 04 13 | 704 | 0.7− | 0.1+ | 2006 11 17 | G96 | 0.6− | 0.0 |
| 2005 04 08 | 704 | (1.7+ | 0.4−) | 2005 04 13 | 699 | 0.3+ | 0.7+ | 2006 11 17 | G96 | 0.3+ | 0.4+ |
| 2005 04 08 | 704 | 0.3+ | 0.5− | 2005 04 13 | 704 | 0.1+ | 0.3− | | | | |
| 2005 04 08 | 704 | 0.4+ | 0.1+ | 2005 05 08 | 703 | 0.0 | 0.4+ | | | | |

**2005 GD$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.98151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18421029 | $\omega$ | 6.64006 | | −0.04522973 | +0.98815552 | |
| $a$ | 3.0590985 | $\Omega$ | 260.84021 | | −0.92323951 | −0.09741309 | |
| $e$ | 0.0449225 | $i$ | 8.54191 | | −0.38155350 | +0.11857213 | |
| $P$ | 5.35 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 28 | 608 | 0.3− | 0.3− | 2001 09 08 | 704 | 1.1+ | 0.3+ | 2005 03 11 | 699 | 0.2+ | 0.1+ |
| 2001 07 28 | 608 | 0.1− | 0.0 | 2002 10 05 | 704 | 0.1+ | 0.2+ | 2005 03 11 | 699 | 0.1+ | 0.3+ |
| 2001 07 28 | 608 | 0.5− | 0.7− | 2002 10 05 | 704 | 0.5+ | 0.5+ | 2005 03 11 | 699 | 2.0+ | 0.6+ |
| 2001 08 24 | 843 | 1.2+ | 0.8− | 2002 10 05 | 704 | 0.3− | 0.4+ | 2005 04 07 | 704 | 0.0 | 0.8− |
| 2001 08 24 | 843 | 1.5− | 1.2+ | 2002 10 05 | 704 | 0.7− | 0.7− | 2005 04 07 | 704 | 0.6+ | 0.0 |
| 2001 08 24 | 843 | 0.1+ | 1.8+ | 2003 12 17 | 691 | 0.1+ | 0.2+ | 2005 04 07 | 704 | 0.2+ | 0.1+ |
| 2001 08 25 | 843 | 1.4− | 0.5+ | 2003 12 17 | 691 | 0.4+ | 0.2+ | 2005 04 07 | 704 | 0.4− | 0.1− |
| 2001 08 25 | 843 | 0.9− | 0.6− | 2003 12 17 | 691 | 0.2+ | 0.2+ | 2005 04 14 | 703 | 1.0− | 0.3+ |
| 2001 08 25 | 843 | 0.8+ | 0.6− | 2003 12 28 | 691 | 0.1− | 0.0 | 2005 04 14 | 703 | 0.3− | 1.1+ |
| 2001 09 08 | 704 | 0.5+ | 1.0+ | 2003 12 28 | 691 | 0.1− | 0.0 | 2005 04 14 | 703 | 0.2+ | 0.4+ |
| 2001 09 08 | 704 | 1.1− | 0.9+ | 2003 12 28 | 691 | 0.2− | 0.2+ | 2005 04 14 | 703 | 1.1− | 0.6+ |
| 2001 09 08 | 704 | 1.1+ | 1.4+ | 2005 03 11 | 699 | 0.4+ | 0.2− | | | | |

**2005 GE$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.41049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17575856 | $\omega$ | 7.96223 | | −0.99733090 | −0.06470731 | |
| $a$ | 3.1563978 | $\Omega$ | 168.16798 | | +0.05453497 | −0.96819094 | |
| $e$ | 0.1702301 | $i$ | 9.49482 | | +0.04854902 | −0.24170077 | |
| $P$ | 5.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 04 | 691 | 0.3+ | 0.0 | 2005 04 05 | 703 | (1.2− | 1.7−) | 2005 05 15 | 644 | 0.2− | 0.0 |
| 1995 07 04 | 691 | 0.1− | 0.7− | 2005 04 07 | 699 | 1.1− | 0.6− | 2005 05 15 | 644 | 0.0 | 0.1− |
| 1995 07 04 | 691 | 0.0 | 0.7− | 2005 04 07 | 699 | 1.2− | 0.1+ | 2005 05 15 | 644 | 0.1+ | 0.0 |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 04 07 | 699 | 1.1+ | 0.8− | 2005 05 18 | 644 | 0.1− | 0.4+ |
| 2001 09 19 | 645 | 0.0 | 0.2+ | 2005 04 07 | 699 | 0.1− | 1.0− | 2005 05 18 | 644 | 0.3+ | 0.4+ |
| 2005 02 09 | 691 | 0.1− | 0.6+ | 2005 04 14 | 691 | 0.2− | 0.1− | 2005 05 18 | 644 | 0.2− | 0.1+ |
| 2005 02 09 | 691 | 0.0 | 0.3+ | 2005 04 14 | 691 | 0.2− | 0.0 | 2006 06 04 | 691 | 0.2+ | 0.4+ |
| 2005 02 09 | 691 | 0.8+ | 0.0 | 2005 04 14 | 691 | 0.1− | 0.0 | 2006 06 04 | 691 | 0.1+ | 0.3+ |
| 2005 04 05 | 703 | 1.0+ | 0.1+ | 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 06 04 | 691 | 0.2− | 0.1− |
| 2005 04 05 | 703 | 0.1− | 0.6+ | 2005 05 15 | 644 | 0.2− | 0.2+ | | | | |
| 2005 04 05 | 703 | 0.7+ | 0.2+ | 2005 05 15 | 644 | 0.1+ | 0.1− | | | | |

**2005 GS$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.11525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18489141 | $\omega$ | 61.41293 | | −0.63037360 | +0.77223319 | |
| $a$ | 3.0515810 | $\Omega$ | 168.44154 | | −0.77512105 | −0.63173884 | |
| $e$ | 0.1211881 | $i$ | 23.30738 | | +0.04262025 | −0.06754214 | |
| $P$ | 5.33 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.1− | 0.4+ | 2005 05 03 | 703 | 0.8+ | 1.1− | 2005 05 26 | A35 | 0.5+ | 0.1− |
| 2001 08 24 | 704 | 0.3+ | 0.2+ | 2005 05 03 | 703 | 0.1+ | 0.3− | 2005 05 26 | A35 | 0.6+ | 0.3− |
| 2001 08 24 | 704 | 0.2− | 0.0 | 2005 05 03 | 703 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.1− | 0.7+ |
| 2005 04 06 | 703 | (3.3+ | 1.7+) | 2005 05 03 | 703 | 1.1− | 0.2+ | 2006 08 29 | 703 | 0.9− | 1.4− |
| 2005 04 06 | 703 | 0.1+ | 0.3+ | 2005 05 09 | 703 | 0.8− | 0.4+ | 2006 08 29 | 703 | 0.5+ | 0.2− |
| 2005 04 06 | 703 | 1.0− | 0.5+ | 2005 05 09 | 703 | 1.4− | 0.3− | 2006 08 29 | 703 | 0.8− | 0.3+ |
| 2005 04 06 | 703 | 0.3− | 0.4− | 2005 05 09 | 703 | 0.3− | 0.8+ | 2006 09 17 | 291 | 0.3+ | 0.1− |
| 2005 04 08 | 704 | 0.3− | 0.1+ | 2005 05 09 | 703 | 1.0− | 0.6+ | 2006 09 17 | 291 | 0.0 | 0.1+ |
| 2005 04 08 | 704 | 0.4+ | 0.5+ | 2005 05 11 | 704 | 0.6+ | 0.5− | 2006 09 17 | 291 | 0.2− | 0.1+ |
| 2005 04 08 | 704 | 0.5+ | 0.3+ | 2005 05 11 | 704 | 1.3+ | 0.5− | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2005 04 14 | 703 | 0.0 | 0.1+ | 2005 05 11 | 704 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2005 04 14 | 703 | 0.2− | 0.5− | 2005 05 12 | A35 | 0.4+ | 0.1+ | 2006 09 30 | 691 | 0.4+ | 0.4− |
| 2005 04 14 | 703 | 0.5− | 1.0+ | 2005 05 12 | A35 | 0.7+ | 0.1+ | | | | |
| 2005 04 14 | 703 | 0.0 | 1.3− | 2005 05 12 | A35 | 0.7+ | 0.2− | | | | |

**2005 GA$_{131}$ = 2005 GE$_{213}$ = 2006 RF$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.50817 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21691147 | $\omega$ | 272.86613 | | +0.50753412 | +0.86044781 | |
| $a$ | 2.7433489 | $\Omega$ | 27.77929 | | −0.74704349 | +0.46554449 | |
| $e$ | 0.0645914 | $i$ | 5.55945 | | −0.42934269 | +0.20711810 | |
| $P$ | 4.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.1+ | 1.0+ | 2004 01 17 | 644 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.7+ | 1.0+ | 2004 01 17 | 644 | 0.1+ | 0.3+ | 2005 05 01 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 0.3+ | 1.5+ | 2004 01 17 | 644 | 0.3+ | 0.4+ | 2005 05 01 | 644 | 0.1+ | 0.1+ |
| 2002 10 28 | 049 | 0.1+ | 0.5+ | 2005 04 09 | 691 | 0.3+ | 0.1+ | 2006 08 23 | 704 | 0.1+ | 0.4+ |
| 2002 10 28 | 049 | 0.4− | 0.2+ | 2005 04 09 | 691 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.3+ | 0.5+ |
| 2002 10 29 | 049 | 0.7− | 0.0 | 2005 04 09 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 704 | (1.0+ | 1.6+) |
| 2002 11 06 | 704 | 1.3− | 1.1+ | 2005 04 11 | G96 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.4+ |
| 2002 11 06 | 704 | 1.0− | 0.5+ | 2005 04 11 | G96 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.1− |
| 2002 11 06 | 704 | 0.2− | 0.9+ | 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 09 14 | 703 | 1.5− | 0.7− |
| 2002 11 06 | 704 | 0.5+ | 0.3− | 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 09 14 | 703 | 1.1− | 0.2− |
| 2002 11 22 | 644 | 0.1− | 0.2− | 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 644 | 0.7+ | 0.1+ |
| 2002 11 22 | 644 | 0.6− | 0.2+ | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.7+ |
| 2002 11 22 | 644 | 0.2− | 0.0 | 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.3+ | 0.3+ |

**2005 GM$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.63517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21735337 | $\omega$ | 201.09964 | | −0.32477793 | +0.94254606 | |
| $a$ | 2.7396293 | $\Omega$ | 50.03560 | | −0.85246650 | −0.25588205 | |
| $e$ | 0.1158325 | $i$ | 5.86133 | | −0.40965860 | −0.21478199 | |
| $P$ | 4.53 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.0 | 0.0 | 2005 04 18 | 691 | 0.2+ | 0.1− | 2005 05 10 | G96 | 0.5− | 0.0 |
| 2005 04 01 | 691 | 0.3− | 0.0 | 2005 04 18 | 691 | 0.0 | 0.3− | 2005 05 10 | G96 | 0.4− | 0.4− |
| 2005 04 01 | 691 | 0.3+ | 0.1+ | 2005 04 19 | 705 | 0.4+ | 0.5− | 2006 10 23 | 568 | 0.1− | 0.1+ |
| 2005 04 10 | 691 | 0.3− | 0.3+ | 2005 04 19 | 705 | 0.1+ | 0.1− | 2006 10 23 | 568 | 0.1− | 0.0 |
| 2005 04 10 | 691 | 0.1− | 0.0 | 2005 04 19 | 705 | 0.8− | 0.1− | 2006 10 23 | 568 | 0.1− | 0.1+ |
| 2005 04 10 | 691 | 0.0 | 0.1− | 2005 05 04 | 691 | 0.2− | 0.2+ | 2006 10 27 | 568 | 0.0 | 0.0 |
| 2005 04 14 | 691 | 0.2+ | 0.1+ | 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 568 | 0.1+ | 0.0 |
| 2005 04 14 | 691 | 0.0 | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.1− | 2006 10 27 | 568 | 0.1+ | 0.0 |
| 2005 04 14 | 691 | 0.1− | 0.1+ | 2005 05 10 | G96 | 0.5− | 0.0 | | | | |
| 2005 04 18 | 691 | 0.3+ | 0.2− | 2005 05 10 | G96 | 0.3− | 0.3− | | | | |

**2005 GN$_{131}$ = 2006 UU$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 59.25003 | | (2000.0) | | | |
| $n$ | 0.25688710 | $\omega$ | 208.27312 | | +0.52888468 | +0.84730456 |
| $a$ | 2.4507999 | $\Omega$ | 93.69478 | | −0.76920976 | +0.50273338 |
| $e$ | 0.1890358 | $i$ | 2.78794 | | −0.35860471 | +0.17127208 |
| $P$ | 3.84 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2005 04 10 | 691 | 0.3+ | 0.1+ | 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2005 04 10 | 691 | 0.1− | 0.1− | 2005 04 18 | 691 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.5+ | 0.1− |
| 2005 04 14 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.5− | 0.3+ | | | | |
| 2005 04 14 | 691 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.8− | | | | |

**2005 GE$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.35147 | | (2000.0) | | | |
| $n$ | 0.23706153 | $\omega$ | 236.53271 | | +0.38066338 | +0.92146657 |
| $a$ | 2.5856039 | $\Omega$ | 56.02941 | | −0.81441453 | +0.37373819 |
| $e$ | 0.0892155 | $i$ | 5.35694 | | −0.43797759 | +0.10592040 |
| $P$ | 4.16 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.2+ | 0.1+ | 2005 04 18 | 691 | 0.1− | 0.0 | 2006 09 19 | 291 | 0.2− | 0.1− |
| 2005 04 10 | 691 | 0.1+ | 0.1− | 2005 04 18 | 691 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.6+ | 1.2+ |
| 2005 04 10 | 691 | 0.1− | 0.0 | 2005 05 03 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2005 04 14 | 691 | 0.2+ | 0.0 | 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.8− | 0.8+ |
| 2005 04 14 | 691 | 0.1− | 0.2+ | 2005 05 03 | 691 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.9+ | 0.0 |
| 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 19 | 291 | 0.3− | 0.3− | | | | |
| 2005 04 18 | 691 | 0.4− | 0.1− | 2006 09 19 | 291 | 0.4+ | 0.2− | | | | |

**2005 GY$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 68.51058 | | (2000.0) | | | |
| $n$ | 0.28856048 | $\omega$ | 256.03780 | | +0.56331241 | +0.82132438 |
| $a$ | 2.2680092 | $\Omega$ | 48.61301 | | −0.70417458 | +0.53423058 |
| $e$ | 0.1397837 | $i$ | 6.89200 | | −0.43222366 | +0.20005988 |
| $P$ | 3.42 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.3− |
| 2005 04 02 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.8+ | 0.0 | 2006 10 23 | 691 | 0.7− | 0.2+ |
| 2005 04 02 | 691 | 0.0 | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2005 04 10 | 691 | 0.5− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 2005 04 10 | 691 | 0.1− | 0.0 | 2006 10 01 | 291 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 291 | 0.3− | 0.2+ | 2006 10 27 | 691 | 0.5− | 0.2+ |
| 2005 04 14 | 691 | 0.2− | 0.1+ | 2006 10 01 | 291 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.6+ | 0.2+ |
| 2005 04 14 | 691 | 0.2− | 0.1− | 2006 10 01 | 701 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2005 04 14 | 691 | 0.1+ | 0.1− | 2006 10 01 | 701 | 0.5+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 10 01 | 701 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 291 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2005 04 18 | 691 | 0.3+ | 0.1− | 2006 10 02 | 291 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 02 | 291 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2006 09 30 | G96 | 0.0 | 0.7− | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2006 09 30 | G96 | 0.5+ | 0.6− | 2006 10 02 | G96 | 0.1− | 0.2− | | | | |
| 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.3− | | | | |

**2005 GB$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 81.71509 | | (2000.0) | | | |
| $n$ | 0.29779338 | $\omega$ | 231.43606 | | +0.36986961 | +0.92710808 |
| $a$ | 2.2208848 | $\Omega$ | 60.37339 | | −0.82928397 | +0.35882518 |
| $e$ | 0.0983244 | $i$ | 3.99468 | | −0.41890878 | +0.10823630 |
| $P$ | 3.31 | $H$ | 18.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.2+ | 0.1+ | 2005 04 18 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2005 03 16 | G96 | 0.6− | 0.4− | 2005 04 18 | 691 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2005 03 16 | G96 | 0.1+ | 0.8− | 2005 04 18 | 691 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2005 03 16 | G96 | 0.2+ | 0.9− | 2005 04 20 | 705 | 1.1− | 0.4+ | 2006 11 09 | 691 | 0.3+ | 0.2− |
| 2005 04 02 | 691 | 0.4+ | 0.1− | 2005 04 20 | 705 | 0.3− | 0.2− | 2006 11 09 | 691 | 0.2− | 0.0 |
| 2005 04 02 | 691 | 0.1− | 0.2− | 2005 04 20 | 705 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.5− |
| 2005 04 02 | 691 | 0.4+ | 0.1− | 2006 10 18 | 691 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2005 04 10 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.4+ |
| 2005 04 10 | 691 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.4+ |
| 2005 04 14 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.3+ | 0.2+ |
| 2005 04 14 | 691 | 0.6+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2005 04 14 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1+ | | | | |

**2005 GS$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 114.04872 | | (2000.0) | | | |
| $n$ | 0.28789502 | $\omega$ | 187.61467 | | −0.32906637 | +0.94081559 |
| $a$ | 2.2715028 | $\Omega$ | 63.20291 | | −0.86152353 | −0.26393308 |
| $e$ | 0.0882660 | $i$ | 5.21457 | | −0.38664263 | −0.21261549 |
| $P$ | 3.42 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.1+ | 0.1+ | 2005 04 18 | 703 | 0.8− | 0.6− | 2006 10 11 | 644 | 0.5− | 0.5+ |
| 2005 04 01 | 691 | 0.2+ | 0.1− | 2005 04 18 | 703 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2005 04 01 | 691 | 0.0 | 0.2+ | 2005 05 09 | 699 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.8− |
| 2005 04 10 | 691 | 0.1+ | 0.0 | 2005 05 09 | 699 | (0.0 | 1.8+) | 2006 10 16 | 703 | 0.6− | 0.1+ |
| 2005 04 10 | 691 | 0.2− | 0.1− | 2005 05 09 | 699 | 0.8+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2005 04 10 | 691 | 0.1+ | 0.0 | 2005 05 09 | 699 | 0.4− | 0.7− | 2006 10 16 | 703 | 0.6+ | 0.9− |
| 2005 04 14 | 691 | 0.1+ | 0.1− | 2005 05 13 | 703 | 0.7− | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2005 04 14 | 691 | 0.1− | 0.2+ | 2005 05 13 | 703 | (2.0− | 0.7−) | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2005 04 14 | 691 | 0.0 | 0.2+ | 2005 05 13 | 703 | (2.4− | 0.9−) | 2006 11 23 | G96 | 0.4+ | 0.2+ |
| 2005 04 18 | 703 | 0.3− | 0.1− | 2005 05 13 | 703 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.6− |
| 2005 04 18 | 703 | 0.2− | 0.5− | 2006 10 11 | 644 | 0.3+ | 0.4+ | | | | |

**2005 GP$_{135}$ = 1998 XE$_{14}$ = 2004 BB$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.68355 | | (2000.0) | | | |
| $n$ | 0.22662676 | $\omega$ | 285.09494 | | +0.96932313 | −0.17002690 |
| $a$ | 2.6643745 | $\Omega$ | 84.93590 | | +0.22949019 | +0.88466177 |
| $e$ | 0.1147103 | $i$ | 10.26422 | | −0.08801658 | +0.43412487 |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 910 | 0.4+ | 0.3− | 2002 10 25 | 644 | 0.3− | 1.0+ | 2005 04 10 | 691 | 0.4+ | 0.2+ |
| 1998 12 15 | 910 | 0.1+ | 0.5− | 2002 10 25 | 644 | 0.6− | 0.6+ | 2005 04 14 | 691 | 0.1+ | 0.2+ |
| 1998 12 16 | 910 | 0.0 | 0.2− | 2002 10 25 | 644 | 0.2− | 1.1+ | 2005 04 14 | 691 | 0.0 | 0.3+ |
| 1998 12 16 | 910 | 0.3+ | 0.1+ | 2004 01 28 | 703 | 0.6+ | 0.7+ | 2005 04 14 | 691 | 0.2− | 0.3+ |
| 1998 12 16 | 910 | 0.0 | 0.2+ | 2004 01 28 | 703 | 0.6− | 0.7+ | 2005 05 15 | 644 | 0.1− | 0.3− |
| 1998 12 16 | 910 | 0.5+ | 0.3− | 2004 01 28 | 703 | 0.4+ | 0.0 | 2005 05 15 | 644 | 0.1+ | 0.2+ |
| 2002 10 02 | 608 | 1.0− | 0.2+ | 2004 01 28 | 703 | 0.2− | 0.1− | 2005 05 15 | 644 | 0.1− | 0.4+ |
| 2002 10 02 | 608 | 0.7− | 0.3− | 2004 01 31 | 704 | 0.2+ | 0.8+ | 2006 08 20 | 644 | 0.0 | 0.5+ |
| 2002 10 02 | 608 | 1.0− | 0.1− | 2004 01 31 | 704 | 0.0 | 0.9+ | 2006 08 20 | 644 | 0.4+ | 0.6+ |
| 2002 10 16 | 644 | 0.1− | 0.8+ | 2004 01 31 | 704 | 1.3+ | 1.2+ | 2006 08 20 | 644 | 0.4+ | 0.8+ |
| 2002 10 16 | 644 | 0.3− | 0.7+ | 2005 04 10 | 691 | 0.2− | 0.3+ | | | | |
| 2002 10 16 | 644 | 0.2− | 0.8+ | 2005 04 10 | 691 | 0.2+ | 0.1+ | | | | |

**2005 GT$_{135}$ = 2006 SQ$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.63400 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18876982 | $\omega$ | 174.47659 | +0.22943909 | | +0.96469030 | |
| $a$ | 3.0096386 | $\Omega$ | 108.73718 | −0.89815436 | | +0.26105127 | |
| $e$ | 0.2575518 | $i$ | 7.85025 | −0.37506859 | | −0.03499806 | |
| $P$ | 5.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.0 | 0.0 | 2005 05 07 | 703 | 0.3− | 0.7− | 2006 09 26 | 703 | 0.4+ | 0.5− |
| 2005 04 10 | 691 | 0.1− | 0.0 | 2005 05 07 | 703 | 0.7+ | 0.8+ | 2006 09 26 | 703 | 0.5+ | 1.1− |
| 2005 04 10 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.9+ | 2006 10 02 | 703 | 0.9− | 1.1− |
| 2005 04 14 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.1− | 2006 10 02 | 703 | (0.6+ | 1.7+) |
| 2005 04 14 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | (2.0− | 0.1−) | 2006 10 02 | 703 | 0.8+ | 0.3+ |
| 2005 04 14 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.1+ | 2006 10 02 | 703 | 1.1− | 0.3− |
| 2005 05 07 | 703 | 0.5− | 0.4− | 2006 09 26 | 703 | 0.1− | 0.1+ | | | | |
| 2005 05 07 | 703 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.5+ | 1.5+ | | | | |

**2005 GN$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.60733 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.31785808 | $\omega$ | 201.53627 | −0.22224711 | | +0.97427751 | |
| $a$ | 2.1264110 | $\Omega$ | 55.64084 | −0.88781327 | | −0.18642499 | |
| $e$ | 0.1157552 | $i$ | 2.58810 | −0.40298117 | | −0.12660589 | |
| $P$ | 3.10 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 691 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.5− | 0.7− |
| 2005 03 17 | 691 | 0.1− | 0.2+ | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.8+ | 0.9− |
| 2005 03 17 | 691 | 0.4− | 0.1− | 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.8+ | 0.9− |
| 2005 04 11 | 691 | 0.4+ | 0.1+ | 2005 05 04 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2005 04 11 | 691 | 0.2+ | 0.1− | 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2005 04 11 | 691 | 0.2− | 0.4− | 2005 05 06 | G96 | 0.8− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.5+ |
| 2005 04 11 | 691 | 0.2− | 0.0 | 2005 05 06 | G96 | (0.2+ | 2.2+) | 2006 11 21 | G96 | 0.3− | 0.6+ |
| 2005 04 11 | 691 | 0.3+ | 0.2− | 2005 05 06 | G96 | 1.1− | 0.4− | 2006 11 21 | G96 | 0.3− | 0.3+ |
| 2005 04 11 | 691 | 0.1+ | 0.1− | 2005 05 06 | G96 | 0.4− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2005 04 14 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.6− | 0.1+ |

**2005 GW$_{138}$ = 2006 SQ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.22554 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19511420 | $\omega$ | 40.10056 | +0.19754612 | | +0.97448865 | |
| $a$ | 2.9440384 | $\Omega$ | 241.53691 | −0.92759298 | | +0.15066956 | |
| $e$ | 0.2334448 | $i$ | 6.95967 | −0.31709116 | | +0.16634466 | |
| $P$ | 5.05 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 645 | 0.0 | 0.0 | 2005 05 06 | 703 | 0.7− | 0.4+ | 2006 09 19 | 699 | (1.8+ | 1.2−) |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2005 05 06 | 703 | (0.0 | 2.3+) | 2006 09 19 | 699 | 1.1+ | 0.8+ |
| 2005 04 12 | 691 | 0.0 | 0.0 | 2005 05 06 | 703 | 0.5− | 0.9+ | 2006 09 19 | 699 | (1.6+ | 0.3−) |
| 2005 04 12 | 691 | 0.1− | 0.2+ | 2005 05 06 | 703 | (0.1+ | 1.9+) | 2006 09 19 | 699 | 0.7+ | 1.0− |
| 2005 04 12 | 691 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.5− | 0.3− | 2006 09 27 | 703 | 0.3− | 0.1− |
| 2005 04 14 | 703 | 0.9− | 0.3− | 2006 08 29 | 703 | 1.1− | 0.4− | 2006 09 27 | 703 | 0.3− | 0.2+ |
| 2005 04 14 | 703 | 1.0− | 0.8− | 2006 08 29 | 703 | (1.6− | 0.0 ) | 2006 09 27 | 703 | 0.8− | 0.7+ |
| 2005 04 14 | 703 | 0.7+ | 0.0 | 2006 08 29 | 703 | 0.7− | 0.5+ | 2006 09 27 | 703 | 0.8− | 0.8− |
| 2005 04 14 | 703 | 0.1− | 1.2+ | 2006 09 17 | 703 | 0.9+ | 0.3+ | 2006 10 12 | 644 | 0.6+ | 0.1+ |
| 2005 04 16 | 691 | 0.0 | 0.2− | 2006 09 17 | 703 | 1.0+ | 1.0− | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2005 04 16 | 691 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.6+ | 0.3+ |
| 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 09 17 | 703 | 1.1− | 0.1− | | | | |

**2005 GA$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.81114 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17168933 | $\omega$ | 143.15332 | −0.98194208 | | −0.12507625 | |
| $a$ | 3.2060762 | $\Omega$ | 30.59375 | +0.01461682 | | −0.79817672 | |
| $e$ | 0.1171630 | $i$ | 16.19339 | +0.18861628 | | −0.58929607 | |
| $P$ | 5.74 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.1+ | 0.7+ | 2005 04 12 | 704 | 0.7+ | 0.3− | 2005 05 01 | 644 | 0.1+ | 0.2− |
| 1996 11 08 | 691 | 0.5− | 0.1+ | 2005 04 12 | 704 | 0.0 | 0.0 | 2005 05 01 | 644 | 0.3+ | 0.4− |
| 1996 11 08 | 691 | 0.1− | 0.2− | 2005 04 12 | 704 | 0.2+ | 0.1− | 2005 05 01 | 644 | 0.1+ | 0.2− |
| 2002 10 15 | 644 | 0.4− | 0.9+ | 2005 04 12 | 704 | 0.4− | 0.2+ | 2005 05 05 | 608 | 0.5+ | 0.2+ |
| 2002 10 15 | 644 | 0.3− | 1.1+ | 2005 04 13 | 699 | 0.4− | 0.0 | 2005 05 05 | 608 | 0.6+ | 0.5+ |
| 2002 10 15 | 644 | 1.3− | 1.0+ | 2005 04 13 | 699 | 0.5+ | 1.2+ | 2005 05 05 | 608 | 0.6+ | 0.0 |
| 2005 03 12 | G96 | 0.1− | 0.0 | 2005 04 13 | 699 | 0.1+ | 0.7+ | 2005 05 06 | 703 | 0.8− | 0.3+ |
| 2005 03 12 | G96 | 0.2+ | 0.1+ | 2005 04 13 | 699 | 0.3− | 1.7+ | 2005 05 06 | 703 | 0.4− | 0.9− |
| 2005 03 12 | G96 | 0.1− | 0.2− | 2005 04 14 | 691 | 0.3+ | 0.2+ | 2005 05 06 | 703 | 0.1+ | 1.1− |
| 2005 03 12 | G96 | 0.0 | 0.0 | 2005 04 14 | 691 | 0.2+ | 0.3+ | 2005 05 06 | 703 | 0.7− | 1.0− |
| 2005 04 02 | G96 | 0.2− | 0.2− | 2005 04 14 | 691 | 0.1+ | 0.0 | 2005 05 09 | 699 | 0.3+ | 0.6+ |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2005 04 17 | 691 | 0.1+ | 0.2+ | 2005 05 09 | 699 | 0.3+ | 0.0 |
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2005 05 09 | 699 | 0.2− | 1.6+ |
| 2005 04 02 | G96 | 0.0 | 0.2− | 2005 04 17 | 691 | 0.1+ | 0.0 | 2005 05 09 | 699 | 0.0 | 0.4+ |
| 2005 04 04 | 704 | 0.4− | 0.4+ | 2005 04 18 | 703 | 0.4+ | 0.5− | 2005 05 19 | 644 | 0.0 | 0.0 |
| 2005 04 04 | 704 | 1.0+ | 0.9+ | 2005 04 18 | 703 | 0.4− | 0.2+ | 2005 05 19 | 644 | 0.2+ | 0.0 |
| 2005 04 04 | 704 | 0.0 | 0.0 | 2005 04 18 | 703 | 0.2− | 0.0 | 2005 05 19 | 644 | 0.1− | 0.1− |
| 2005 04 04 | 704 | 1.3− | 2.0− | 2005 04 18 | 703 | 0.8− | 0.8+ | | | | |

**2005 GL$_{139}$ = 2006 PP$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.15228 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21678397 | $\omega$ | 46.87722 | −0.40828014 | | −0.90553885 | |
| $a$ | 2.7444244 | $\Omega$ | 67.55114 | +0.79711114 | | −0.41523958 | |
| $e$ | 0.0106951 | $i$ | 7.16996 | +0.44488330 | | −0.08703728 | |
| $P$ | 4.55 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.6− | 0.4− | 2005 04 12 | 691 | 0.1+ | 0.0 | 2006 07 18 | E12 | 0.9+ | 0.1+ |
| 1996 04 14 | 691 | 0.1+ | 0.1− | 2005 04 12 | 691 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.3− | 0.1+ |
| 1996 04 14 | 691 | 0.0 | 0.1− | 2005 04 12 | 691 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.2+ | 0.7+ |
| 2000 03 05 | 704 | 0.9+ | 0.7+ | 2005 04 14 | 691 | 0.4− | 0.5+ | 2006 08 14 | 644 | 0.2− | 0.5+ |
| 2000 03 05 | 704 | 0.4+ | 0.4+ | 2005 04 14 | 691 | 0.4+ | 0.0 | 2006 08 14 | 644 | 0.2− | 0.5+ |
| 2000 03 05 | 704 | 1.3+ | 0.4+ | 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 08 14 | 644 | 0.4− | 0.9+ |
| 2000 03 05 | 704 | 1.2+ | 1.0+ | 2005 05 07 | 703 | 0.1+ | 0.5− | 2006 08 14 | 644 | 0.7− | 0.9+ |
| 2003 12 23 | 704 | 0.2+ | 1.6+ | 2005 05 07 | 703 | 0.1+ | 0.4+ | 2006 08 14 | 644 | 0.1− | 1.0+ |
| 2003 12 23 | 704 | 1.0− | 2.1+ | 2005 05 07 | 703 | 1.6− | 1.2− | 2006 08 14 | 644 | 0.5− | 0.5+ |
| 2003 12 23 | 704 | 0.4+ | 0.7+ | 2005 05 07 | 703 | 1.7− | 0.6− | 2006 08 19 | 644 | 0.1+ | 1.1+ |
| 2005 02 09 | 691 | 0.2+ | 0.2+ | 2005 05 14 | 644 | 0.4+ | 0.1− | 2006 08 19 | 644 | 0.1+ | 1.2+ |
| 2005 02 09 | 691 | 0.1− | 0.6+ | 2005 05 14 | 644 | 0.2+ | 0.1− | 2006 08 19 | 644 | 0.3− | 0.7+ |
| 2005 02 09 | 691 | 0.3+ | 0.0 | 2005 05 14 | 644 | 0.2+ | 0.0 | | | | |

**2005 GX$_{139}$ = 2006 QW$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.81082 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17716539 | $\omega$ | 118.40087 | +0.76400940 | | +0.62793010 | |
| $a$ | 3.1396661 | $\Omega$ | 203.68827 | −0.64069806 | | +0.76548013 | |
| $e$ | 0.2671598 | $i$ | 21.66198 | +0.07612907 | | +0.14051319 | |
| $P$ | 5.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 645 | 0.0 | 0.0 | 2005 04 18 | 691 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.6+ | 0.6− |
| 2001 12 18 | 645 | 0.0 | 0.1+ | 2006 08 29 | 699 | 0.0 | 0.2+ | 2006 09 25 | 683 | 0.3− | 0.5+ |
| 2005 04 12 | G96 | 0.4− | 0.1+ | 2006 08 29 | 699 | 0.1+ | 0.3− | 2006 09 25 | 683 | (0.3+ | 2.1+) |
| 2005 04 12 | G96 | 0.2− | 0.1− | 2006 08 29 | 699 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.5+ | 0.3+ |
| 2005 04 12 | G96 | 0.4− | 0.2− | 2006 08 29 | 699 | 0.0 | 0.9+ | 2006 09 27 | 703 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | G96 | 0.3− | 0.1− | 2006 09 01 | 704 | 0.6− | 1.1+ | 2006 09 27 | 703 | 0.2− | 0.2− |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 0.6+ | 1.2+ | 2006 09 27 | 703 | 0.2− | 0.7− |
| 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 01 | 704 | 0.9+ | 1.2+ | 2006 11 19 | 703 | 0.5− | 1.8− |
| 2005 04 14 | 691 | 0.4+ | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.1+ | 2006 11 19 | 703 | 0.5− | 1.1− |
| 2005 04 18 | 691 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.1+ | 1.2+ |
| 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.4− | 1.2− | 2006 11 19 | 703 | 0.5− | 0.3− |

**2005 GF$_{141}$ = 1988 DW$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.13165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17797880 | $\omega$ | 52.26349 | | −0.81354216 | +0.55869726 | |
| $a$ | 3.1300927 | $\Omega$ | 160.00957 | | −0.55765431 | −0.82818319 | |
| $e$ | 0.3493583 | $i$ | 28.14633 | | +0.16483573 | −0.04438450 | |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 02 16 | 809 | (0.4+ | 3.1−) | 2005 04 20 | 703 | 0.1+ | 0.5− | 2005 05 16 | 703 | 0.7− | 0.5− |
| 1988 02 16 | 809 | 0.1+ | 2.9− | 2005 04 20 | 703 | 0.3− | 0.6+ | 2005 05 16 | 703 | 0.5+ | 0.4− |
| 1988 02 16 | 809 | (0.5+ | 3.1−) | 2005 04 20 | 703 | 0.0 | 0.1− | 2005 06 06 | 703 | (0.0 | 1.6−) |
| 1999 02 16 | 704 | 0.9+ | 0.4− | 2005 04 20 | 703 | 0.4− | 0.2− | 2005 06 06 | 703 | 0.9+ | 1.1− |
| 1999 02 16 | 704 | 0.9− | 1.6+ | 2005 05 07 | 703 | 0.2+ | 0.2+ | 2005 06 06 | 703 | 0.2− | 0.5− |
| 1999 02 16 | 704 | 1.4+ | 1.0− | 2005 05 07 | 703 | 0.4+ | 0.1+ | 2005 06 06 | 703 | 0.8− | 0.7− |
| 1999 02 16 | 704 | 1.0− | 1.0+ | 2005 05 07 | 703 | 0.5+ | 0.1+ | 2005 06 14 | 699 | 0.2+ | 0.3− |
| 2005 03 11 | 703 | 0.8− | 0.3− | 2005 05 07 | 703 | 0.1+ | 0.6+ | 2005 06 14 | 699 | 0.0 | 0.3+ |
| 2005 03 11 | 703 | 0.8− | 0.7− | 2005 05 08 | 704 | 0.5+ | 0.7+ | 2005 06 14 | 699 | 0.5+ | 0.9− |
| 2005 03 11 | 703 | 0.9− | 0.1+ | 2005 05 08 | 704 | 1.5+ | 0.0 | 2005 06 14 | 699 | 0.9− | 0.4− |
| 2005 03 11 | 703 | 1.6− | 0.4− | 2005 05 08 | 704 | 0.7− | 0.3+ | 2005 07 30 | 704 | (0.3+ | 1.9−) |
| 2005 04 12 | 704 | (1.6+ | 0.7−) | 2005 05 08 | 704 | 0.1+ | 0.1+ | 2005 07 30 | 704 | 0.2+ | 0.1− |
| 2005 04 12 | 704 | (1.3+ | 3.2+) | 2005 05 09 | 704 | 1.2+ | 0.7+ | 2005 07 30 | 704 | 0.0 | 1.0+ |
| 2005 04 12 | 704 | 0.9+ | 1.0+ | 2005 05 09 | 704 | 0.7+ | 0.0 | 2005 07 30 | 704 | 0.7+ | 0.8+ |
| 2005 04 12 | 704 | 0.8+ | 0.8+ | 2005 05 09 | 704 | 0.5− | 0.2+ | 2006 08 23 | 807 | 0.2+ | 0.6− |
| 2005 04 15 | 704 | 0.2+ | 0.1− | 2005 05 09 | 704 | (1.9+ | 1.5+) | 2006 08 23 | 807 | 0.1− | 0.4− |
| 2005 04 15 | 704 | 0.0 | 0.1+ | 2005 05 09 | 704 | 0.6− | 1.2+ | 2006 08 28 | 691 | 0.0 | 0.1− |
| 2005 04 15 | 704 | 0.3+ | 0.1+ | 2005 05 16 | 703 | 0.8− | 1.3− | 2006 08 28 | 691 | 0.2− | 0.2− |
| 2005 04 15 | 704 | 0.3− | 0.2+ | 2005 05 16 | 703 | 0.5− | 1.0− | 2006 08 28 | 691 | 0.0 | 0.1− |

**2005 GH$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.52058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26914332 | $\omega$ | 358.78281 | | −0.96896941 | −0.24582900 | |
| $a$ | 2.3758206 | $\Omega$ | 166.89919 | | +0.22773528 | −0.92846225 | |
| $e$ | 0.0870242 | $i$ | 6.53948 | | +0.09609850 | −0.27843484 | |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3+ | 0.0 | 2001 03 20 | 608 | 0.6− | 0.2+ | 2005 04 15 | 691 | 0.1− | 0.2+ |
| 1995 09 26 | 691 | 0.6+ | 0.2+ | 2001 03 20 | 608 | 0.4− | 0.1− | 2006 08 18 | 691 | 0.4− | 0.7+ |
| 1995 09 26 | 691 | 0.7− | 1.0− | 2003 12 21 | 691 | 0.1+ | 0.5+ | 2006 08 18 | 691 | 0.1− | 0.4+ |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2003 12 21 | 691 | 0.1− | 0.4+ | 2006 08 18 | 691 | 0.1− | 0.8+ |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2003 12 21 | 691 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2001 02 20 | 645 | 0.1− | 0.0 | 2005 04 02 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 1.0+ | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 04 02 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4− | 0.8+ |
| 2001 02 22 | 704 | 1.0+ | 0.6+ | 2005 04 02 | 691 | 0.5+ | 0.0 | 2006 09 14 | 703 | (0.1− | 2.2+) |
| 2001 02 22 | 704 | 1.5+ | 0.2− | 2005 04 10 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2001 02 22 | 704 | 1.3+ | 0.1+ | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 02 22 | 704 | 0.3− | 0.1− | 2005 04 10 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2001 02 22 | 704 | 0.5+ | 0.1− | 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 03 20 | 608 | 0.1− | 0.7+ | 2005 04 15 | 691 | 0.1− | 0.1+ | | | | |

**2005 GZ$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.92588 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28230614 | $\omega$ | 260.17575 | | −0.19565680 | +0.98067146 | |
| $a$ | 2.3013844 | $\Omega$ | 358.53900 | | −0.87717374 | −0.17563732 | |
| $e$ | 0.0763966 | $i$ | 3.10658 | | −0.43850273 | −0.08622659 | |
| $P$ | 3.49 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 15 | G96 | 0.2− | 0.3− | 2005 05 01 | 644 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.2− |
| 2005 03 15 | G96 | 0.8− | 0.2− | 2005 05 01 | 644 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2005 03 15 | G96 | 0.5− | 0.3+ | 2005 05 01 | 644 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2005 03 15 | G96 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.3− | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2005 04 11 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.5− | 0.2+ |
| 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.4+ |
| 2005 04 15 | 691 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.5+ |
| 2005 04 15 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.3+ |
| 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2+ | | | | |

**2005 GA$_{146}$ = 2006 QA$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.97901 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21469104 | $\omega$ | 86.77354 | | +0.49872367 | +0.86291217 | |
| $a$ | 2.7622317 | $\Omega$ | 213.54264 | | −0.84229349 | +0.46028458 | |
| $e$ | 0.1371957 | $i$ | 8.49151 | | −0.20449051 | +0.20861612 | |
| $P$ | 4.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 645 | 0.0 | 0.0 | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.4+ | 0.3+ |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.5− | 0.3− | 2006 08 18 | 644 | 0.2+ | 0.0 |
| 2005 04 11 | 691 | 0.1− | 0.3− | 2005 05 12 | G96 | 0.2− | 0.0 | 2006 08 30 | 699 | 0.5+ | 1.1− |
| 2005 04 11 | 691 | 0.1− | 0.1− | 2005 05 12 | G96 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.1− | 0.3− |
| 2005 04 11 | 691 | 0.2+ | 0.4− | 2005 05 12 | G96 | 0.2− | 0.2− | 2006 08 30 | 699 | 0.6− | 0.7+ |
| 2005 04 15 | 691 | 0.2+ | 0.2+ | 2005 06 13 | G96 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.7+ | 0.7− |
| 2005 04 15 | 691 | 0.2− | 0.2+ | 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 1.0− | 0.4− |
| 2005 04 15 | 691 | 0.1− | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.9+ | 0.5+ |
| 2005 04 17 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.9− | 0.0 |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.1+ |

**2005 GH$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.59955 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23980460 | $\omega$ | 263.40019 | | −0.06210255 | +0.99805966 | |
| $a$ | 2.5658487 | $\Omega$ | 3.05015 | | −0.87910300 | −0.05256793 | |
| $e$ | 0.2051285 | $i$ | 4.84416 | | −0.47256872 | −0.03336960 | |
| $P$ | 4.11 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 699 | 0.2+ | 0.4− | 2005 04 18 | 703 | 0.1− | 0.3+ | 2006 09 23 | 152 | 0.1− | 0.4− |
| 2001 05 24 | 699 | 0.5− | 0.1+ | 2005 04 18 | 703 | 0.8− | 0.6+ | 2006 09 23 | 152 | 0.8+ | 0.3− |
| 2001 05 24 | 699 | 0.2− | 0.3− | 2005 04 18 | E12 | 0.1− | 0.0 | 2006 09 23 | 152 | 0.6− | 0.3+ |
| 2001 05 24 | 699 | 0.1+ | 0.5− | 2005 04 18 | E12 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2005 03 15 | G96 | 0.3− | 0.2+ | 2005 04 18 | E12 | 0.5− | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2005 03 15 | G96 | 0.4− | 0.1− | 2005 05 06 | 703 | 0.5− | 1.0− | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2005 03 15 | G96 | 0.3− | 0.0 | 2005 05 06 | 703 | 0.6− | 0.7− | 2006 10 11 | 691 | 0.2− | 0.1+ |
| 2005 03 15 | G96 | 0.4− | 0.3+ | 2005 05 06 | 703 | 0.7− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1− |
| 2005 04 05 | 699 | 1.1+ | 0.5+ | 2005 05 06 | 703 | (0.7− | 1.6−) | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 2005 04 05 | 699 | 0.9− | 0.0 | 2005 05 09 | 699 | (1.9+ | 0.9−) | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2005 04 05 | 699 | 0.6− | 0.5+ | 2005 05 09 | 699 | 0.7+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.1+ |
| 2005 04 05 | 699 | (2.4+ | 0.6+) | 2005 05 09 | 699 | (2.1+ | 0.5−) | 2006 10 15 | 691 | 0.1+ | 0.4+ |
| 2005 04 11 | 691 | 0.3+ | 0.0 | 2005 05 09 | 699 | 0.2+ | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2005 04 11 | 691 | 0.2+ | 0.1+ | 2005 05 12 | 699 | (2.0+ | 0.5−) | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2005 04 11 | 699 | 0.9+ | 0.3+ | 2005 05 12 | 699 | (2.6+ | 0.2+) | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2005 04 11 | 691 | 0.4+ | 0.1− | 2005 05 12 | 699 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 699 | 0.9− | 0.2+ | 2005 05 12 | 699 | 0.2+ | 1.0− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2005 04 11 | 699 | 0.4− | 0.3− | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2005 04 11 | 699 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.4+ |
| 2005 04 15 | 691 | 0.3+ | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2005 04 15 | 691 | 0.4+ | 0.3+ | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2005 04 15 | 691 | 0.5+ | 0.0 | 2006 09 23 | 152 | (1.0− | 1.5+) | 2006 11 18 | G96 | 0.8− | 0.2− |
| 2005 04 18 | 703 | 1.0− | 0.2+ | 2006 09 23 | 152 | 0.4+ | 0.4+ | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2005 04 18 | 703 | 0.4− | 1.1+ | 2006 09 23 | 152 | 0.2− | 0.1+ | | | | |

**2005 GR$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.67219 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22288735 | $\omega$ | 62.85732 | | −0.54806103 | | +0.83635628 |
| $a$ | 2.6940921 | $\Omega$ | 173.86928 | | −0.80100532 | | −0.52075890 |
| $e$ | 0.2250270 | $i$ | 6.29843 | | −0.24087255 | | −0.17122598 |
| $P$ | 4.42 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.0 | 0.0 | 2005 04 15 | 691 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.3− |
| 2005 04 02 | 691 | 0.2+ | 0.1+ | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2005 04 02 | 691 | 0.1− | 0.2+ | 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.6− |
| 2005 04 11 | 691 | 0.2+ | 0.6− | 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2005 04 11 | 691 | 0.0 | 0.2− | 2005 05 15 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2005 04 11 | 691 | 0.1− | 0.5− | 2005 05 15 | 644 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.9+ | 0.5− |
| 2005 04 15 | 691 | 0.0 | 0.2+ | 2005 05 15 | 644 | 0.0 | 0.0 | | | | |
| 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.4− | 0.4+ | | | | |

**2005 GA$_{149}$ = 2006 QZ$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.78734 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21412240 | $\omega$ | 151.65831 | | +0.63113864 | | +0.77475451 |
| $a$ | 2.7671199 | $\Omega$ | 157.41095 | | −0.72890167 | | +0.60899543 |
| $e$ | 0.0464676 | $i$ | 5.62882 | | −0.26526662 | | +0.16994120 |
| $P$ | 4.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.3+ | 0.0 | 2005 04 11 | 691 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.2− | 0.3− |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.4+ |
| 2004 02 12 | 691 | 0.2− | 0.4+ | 2005 04 15 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.2− |
| 2005 04 02 | 691 | 0.1+ | 0.8+ | 2005 04 15 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2005 04 02 | 691 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2+ |
| 2005 04 02 | 691 | 0.2+ | 0.3− | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2005 04 11 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.3+ |
| 2005 04 11 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.5− | 0.3+ | | | | |

**2005 GV$_{149}$ = 2006 TM$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.42586 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23109825 | $\omega$ | 142.97955 | | +0.90654570 | | +0.41995757 |
| $a$ | 2.6298942 | $\Omega$ | 192.40293 | | −0.41893887 | | +0.88282859 |
| $e$ | 0.2045078 | $i$ | 11.42622 | | −0.05162466 | | +0.21035523 |
| $P$ | 4.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 691 | 0.8+ | 0.2+ | 2005 04 30 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2005 04 11 | 691 | 0.2− | 0.1+ | 2005 04 30 | 691 | 0.0 | 0.2− | 2006 10 15 | 703 | 1.1+ | 0.2− |
| 2005 04 11 | 691 | 0.1+ | 0.1− | 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.2− | 0.1− |
| 2005 04 11 | 691 | 0.3− | 0.1+ | 2006 09 18 | 699 | 1.0+ | 0.3+ | 2006 10 15 | 703 | 0.6− | 0.1− |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | (2.0+ | 0.9+) | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2005 04 11 | 691 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.8+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2005 04 15 | 691 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2005 04 15 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.5− | 0.2− |
| 2005 04 15 | 691 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.3+ | | | | |

**2005 GB$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.70696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29614358 | $\omega$ | 48.47528 | | −0.96945888 | | +0.24252565 |
| $a$ | 2.2291254 | $\Omega$ | 145.51432 | | −0.23980831 | | −0.90621778 |
| $e$ | 0.1189288 | $i$ | 3.69409 | | −0.05139499 | | −0.34633893 |
| $P$ | 3.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 04 | 704 | 1.0− | 1.2+ | 2005 04 13 | 699 | 0.9− | 0.2− | 2005 05 11 | 699 | 0.3+ | 0.2− |
| 1998 03 04 | 704 | (5.3+ | 0.4−) | 2005 04 13 | 699 | 1.2− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 1998 03 04 | 704 | 1.7− | 0.4− | 2005 04 13 | 699 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 1998 03 04 | 704 | 2.9− | 0.2− | 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2003 10 29 | 691 | 0.1+ | 0.5+ | 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2003 10 29 | 691 | 0.2− | 0.4+ | 2005 04 15 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2003 10 29 | 691 | 0.1+ | 0.4+ | 2005 05 03 | 704 | 0.7+ | 0.7+ | 2006 09 26 | G96 | 0.4− | 0.4− |
| 2005 03 16 | G96 | 0.7− | 0.3+ | 2005 05 03 | 704 | 0.7+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2005 03 16 | G96 | 0.6− | 0.3− | 2005 05 03 | 704 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2005 03 16 | G96 | 0.8− | 0.1− | 2005 05 07 | 703 | (1.9− | 0.1−) | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2005 03 16 | G96 | 0.4− | 0.0 | 2005 05 07 | 703 | 1.3− | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2005 04 02 | 699 | 0.2+ | 0.2− | 2005 05 07 | 703 | (1.8− | 0.3−) | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2005 04 02 | 699 | 0.2+ | 0.8+ | 2005 05 07 | 703 | (1.9− | 0.8−) | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2005 04 02 | 699 | 0.4+ | 0.2− | 2005 05 11 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4− | 0.4− |
| 2005 04 02 | 699 | 0.6+ | 1.0+ | 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2005 04 11 | 691 | 0.1+ | 0.2+ | 2005 05 11 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2005 04 11 | 691 | 0.0 | 0.2+ | 2005 05 11 | 699 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2005 05 11 | 699 | 0.5+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2005 04 13 | 699 | 0.3+ | 0.2− | 2005 05 11 | 699 | (2.3− | 1.3−) | 2006 09 30 | 691 | 0.1− | 0.2+ |

**2005 GH$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.77949 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28118137 | $\omega$ | 233.69256 | | +0.46612743 | | +0.87933115 |
| $a$ | 2.3075176 | $\Omega$ | 64.36683 | | −0.77310939 | | +0.45841408 |
| $e$ | 0.1687816 | $i$ | 6.20688 | | −0.43014776 | | +0.12896997 |
| $P$ | 3.51 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.3+ | 0.5− | 2005 04 30 | 599 | 1.4− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 1999 11 28 | 691 | 0.1+ | 0.2− | 2005 04 30 | 599 | 0.8+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 1999 11 28 | 691 | 0.0 | 0.5− | 2005 05 08 | 947 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2005 04 11 | 695 | 0.0 | 0.0 | 2005 05 08 | 947 | 0.1− | 0.7− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2005 04 11 | 691 | 0.0 | 0.3− | 2005 05 10 | 947 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2005 04 11 | 691 | 0.4+ | 0.3− | 2005 05 10 | 947 | 0.6− | 0.2− | 2006 11 18 | G96 | 0.4− | 0.3− |
| 2005 04 11 | 695 | 0.3− | 0.0 | 2005 05 10 | 947 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2005 04 11 | 691 | 0.6+ | 0.3+ | 2005 05 19 | G96 | 0.7− | 0.1− | 2006 11 18 | G96 | 0.4− | 0.3− |
| 2005 04 15 | 691 | 0.0 | 0.2+ | 2005 05 19 | G96 | 0.2− | 0.0 | 2006 11 18 | G96 | 1.2+ | 0.1− |
| 2005 04 15 | 691 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2005 04 15 | 691 | 0.1− | 0.2− | 2005 05 19 | G96 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2005 04 30 | 691 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.6+ | 0.1− |
| 2005 04 30 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2005 04 30 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 21 | 691 | 0.3− | 0.2+ |
| 2005 04 30 | 599 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 21 | 691 | 0.4− | 0.4+ |
| 2005 04 30 | 599 | 0.2− | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.6+ | 2006 11 21 | 691 | 0.5− | 0.2− |

**2005 GM$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.02737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22405067 | $\omega$ | 267.50630 | | +0.90269861 | | +0.42317527 |
| $a$ | 2.6847584 | $\Omega$ | 67.44944 | | −0.35364489 | | +0.83273441 |
| $e$ | 0.3035951 | $i$ | 4.83441 | | −0.24509287 | | +0.35703794 |
| $P$ | 4.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | G96 | 0.2− | 0.2− | 2005 06 13 | G96 | 0.3− | 0.4+ | 2006 11 02 | 703 | 0.5− | 0.4+ |
| 2005 04 12 | G96 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.6− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.3− |
| 2005 04 12 | G96 | 0.1+ | 0.1− | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.3− |
| 2005 04 12 | G96 | 0.2− | 0.2− | 2005 06 13 | G96 | 0.5− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2005 04 12 | 695 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.6− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.8− |
| 2005 04 12 | G96 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.8− |
| 2005 04 12 | G96 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.0− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2005 04 12 | G96 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2005 04 12 | G96 | 0.0 | 0.5− | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2005 04 12 | 695 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.3− |
| 2005 04 13 | 699 | 0.4+ | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2005 04 13 | 699 | (1.5+ | 2.0−) | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2005 04 13 | 699 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2005 04 13 | 699 | (1.8− | 0.2−) | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.1− |
| 2005 05 09 | 704 | 0.1− | 0.9+ | 2006 10 23 | 704 | 1.3+ | 0.5− | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2005 05 09 | 704 | 0.2+ | 0.0 | 2006 10 23 | 704 | 0.2− | 0.5+ | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2005 05 09 | 704 | 1.2+ | 0.1+ | 2006 10 23 | 704 | 0.3+ | 0.6+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2005 05 09 | 704 | 1.2+ | 0.1− | 2006 10 23 | 704 | 0.7− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2005 05 13 | 704 | 0.1− | 0.8+ | 2006 10 28 | 704 | 0.3+ | 1.4+ | 2006 11 21 | 704 | 1.1+ | 1.2+ |
| 2005 05 13 | 704 | 0.9+ | 0.5+ | 2006 10 28 | 704 | 1.4+ | 0.4+ | 2006 11 21 | 704 | 1.2− | 0.3+ |
| 2005 05 13 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.1+ | 1.4+ | 2006 11 21 | 704 | 1.2+ | 1.2+ |
| 2005 05 13 | 704 | 0.5− | 0.5− | 2006 10 28 | 704 | 0.9+ | 0.1− | 2006 11 21 | 704 | 1.0− | 0.4− |
| 2005 05 14 | 644 | 0.0 | 0.1− | 2006 10 28 | 704 | 1.4+ | 1.0+ | 2006 11 21 | 704 | 0.5+ | 1.2+ |
| 2005 05 14 | 644 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.1+ | 0.2− |
| 2005 05 14 | 644 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.8− | 0.1− |
| 2005 05 19 | G96 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 11 02 | 703 | 0.2+ | 0.8− | 2006 11 29 | 704 | 0.7+ | 0.1+ |
| 2005 05 19 | G96 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.3− | 0.2− |
| 2005 05 19 | G96 | 0.5− | 0.0 | 2006 11 02 | 703 | 0.3− | 0.0 | | | | |

### 2005 GT$_{152}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.44983 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22266258 | $\omega$ | 31.03648 | | −0.56279378 | | +0.82040089 |
| $a$ | 2.6959049 | $\Omega$ | 205.14854 | | −0.79875823 | | −0.57121337 |
| $e$ | 0.1590580 | $i$ | 13.75194 | | −0.21271681 | | −0.02564507 |
| $P$ | 4.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 644 | 0.2− | 0.7+ | 2005 04 13 | 699 | 0.5− | 0.7− | 2005 05 12 | 291 | 0.0 | 0.1− |
| 2002 10 06 | 644 | 0.1− | 0.6+ | 2005 04 14 | 703 | 1.2− | 0.5+ | 2005 05 12 | 291 | 0.1+ | 0.3+ |
| 2002 10 06 | 644 | 0.1+ | 0.4+ | 2005 04 14 | 703 | 0.2− | 1.1− | 2005 06 27 | G96 | 0.3− | 0.0 |
| 2005 04 05 | 703 | 1.3+ | 0.5+ | 2005 04 14 | 703 | 0.4− | 1.6+ | 2005 06 27 | G96 | 0.5+ | 0.1+ |
| 2005 04 05 | 703 | 1.5+ | 0.8+ | 2005 04 14 | 703 | 0.7− | 0.3+ | 2005 06 27 | G96 | 0.1+ | 0.5− |
| 2005 04 05 | 703 | 0.2− | 0.8− | 2005 05 08 | G96 | 0.5− | 0.1− | 2005 06 27 | G96 | 0.1− | 0.4− |
| 2005 04 05 | 703 | (0.4+ | 2.2+) | 2005 05 08 | G96 | 0.4− | 0.2− | 2006 08 18 | 644 | 0.0 | 0.1− |
| 2005 04 13 | 699 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.3− | 0.5− | 2006 08 18 | 644 | 0.3− | 0.2+ |
| 2005 04 13 | 699 | 0.6+ | 0.0 | 2005 05 08 | G96 | 0.5− | 0.1− | 2006 08 18 | 644 | 0.3+ | 0.1− |
| 2005 04 13 | 699 | 0.4+ | 0.2− | 2005 05 12 | 291 | 0.2+ | 0.4+ | | | | |

### 2005 GX$_{152}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.07463 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27821485 | $\omega$ | 75.06211 | | −0.14248134 | | +0.98970323 |
| $a$ | 2.3238915 | $\Omega$ | 186.79071 | | −0.94672763 | | −0.14029509 |
| $e$ | 0.0893404 | $i$ | 6.63368 | | −0.28880072 | | −0.02836905 |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 691 | 0.1− | 0.1− | 2005 03 13 | G96 | 0.5− | 0.1+ | 2006 09 29 | 691 | 0.3− | 0.3+ |
| 1998 04 22 | 691 | 0.1+ | 0.1− | 2005 03 13 | G96 | 0.1− | 0.1+ | 2006 09 29 | 691 | 0.4− | 0.2− |
| 1998 04 22 | 691 | 0.1− | 0.0 | 2005 03 13 | G96 | 0.1− | 0.2+ | 2006 09 29 | 691 | 0.3+ | 0.0 |
| 2002 07 12 | 644 | 0.0 | 0.0 | 2005 04 13 | 699 | 0.0 | 0.6+ | 2006 10 03 | 691 | 0.1+ | 0.0 |
| 2002 07 12 | 644 | 0.1+ | 0.1− | 2005 04 13 | 699 | (1.7− | 1.1+) | 2006 10 03 | 691 | 0.5− | 0.0 |
| 2002 07 12 | 644 | 0.1− | 0.3− | 2005 04 13 | 699 | (1.8+ | 1.6−) | 2006 10 03 | 691 | 0.2+ | 0.0 |
| 2002 08 05 | 644 | 0.1+ | 0.1− | 2005 04 13 | 699 | 0.6+ | 0.4+ | 2006 10 20 | A44 | 0.8+ | 0.4+ |
| 2002 08 05 | 644 | 0.2+ | 0.2− | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 20 | A44 | 0.9+ | 0.3+ |
| 2002 08 05 | 644 | 0.2+ | 0.1− | 2005 04 14 | 691 | 0.0 | 0.2+ | 2006 10 20 | A44 | 0.9+ | 0.1− |
| 2002 08 11 | 644 | 0.1+ | 0.0 | 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2002 08 11 | 644 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2002 08 11 | 644 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2005 03 13 | G96 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.0 | 0.2+ |

### 2005 GZ$_{152}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.31429 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27828988 | $\omega$ | 51.42106 | | −0.28376718 | | +0.94668845 |
| $a$ | 2.3234737 | $\Omega$ | 203.50454 | | −0.95483226 | | −0.29359042 |
| $e$ | 0.1729939 | $i$ | 22.48143 | | −0.08815640 | | +0.13261087 |
| $P$ | 3.54 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 15 | G96 | 0.1+ | 0.0 | 2005 04 13 | 699 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2005 03 15 | G96 | 0.0 | 0.1− | 2005 04 13 | 699 | 1.4− | 0.2− | 2006 09 26 | G96 | 0.6− | 0.4− |
| 2005 03 15 | G96 | 0.1+ | 0.3+ | 2005 04 13 | 699 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2005 03 15 | G96 | 0.3− | 0.2− | 2005 04 14 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3+ |
| 2005 04 04 | 704 | 0.5+ | 0.2− | 2005 04 14 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2005 04 04 | 704 | 0.1+ | 0.4− | 2005 04 14 | 691 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2005 04 04 | 704 | 0.9+ | 0.2+ | 2005 04 18 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2005 04 04 | 704 | (1.1− | 2.5+) | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2005 04 13 | 699 | 0.7− | 0.8+ | 2005 04 18 | 691 | 0.0 | 0.1− | | | | |

### 2005 GD$_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.80791 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23151057 | $\omega$ | 209.88176 | | +0.05348698 | | +0.98954926 |
| $a$ | 2.6267707 | $\Omega$ | 63.47240 | | −0.88395072 | | +0.10930025 |
| $e$ | 0.1689405 | $i$ | 8.60752 | | −0.46451078 | | −0.09405172 |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1+ | 0.2+ | 2005 05 03 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 644 | 0.6+ | 0.8+ |
| 2004 01 18 | 691 | 0.1+ | 0.3+ | 2005 05 03 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.6+ |
| 2004 01 18 | 691 | 0.1− | 0.2+ | 2005 05 03 | 704 | 0.3+ | 1.1+ | 2006 09 20 | 644 | 0.2+ | 0.4+ |
| 2005 04 02 | 691 | 0.3+ | 0.2− | 2005 05 07 | 703 | 0.8− | 0.7+ | 2006 09 20 | 644 | 0.0 | 0.4+ |
| 2005 04 02 | 691 | 0.3+ | 0.2− | 2005 05 07 | 703 | 1.2− | 0.1+ | 2006 09 20 | 644 | 0.2− | 1.0+ |
| 2005 04 02 | 691 | 0.3+ | 0.2− | 2005 05 07 | 703 | 0.6− | 0.5− | 2006 09 20 | 644 | 0.1+ | 0.6+ |
| 2005 04 13 | 699 | (2.1+ | 0.0 ) | 2005 05 07 | 703 | 1.0− | 0.7− | 2006 09 26 | 703 | 0.5− | 0.7+ |
| 2005 04 13 | 699 | 1.0− | 0.5+ | 2005 06 04 | 703 | 0.7+ | 1.0+ | 2006 09 26 | 703 | 0.2+ | 0.6+ |
| 2005 04 13 | 699 | 0.3+ | 0.3− | 2005 06 04 | 703 | (1.6− | 1.7+) | 2006 09 26 | 703 | 1.2− | 0.7+ |
| 2005 04 13 | 699 | 0.7+ | 0.4+ | 2005 06 04 | 703 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.7+ |
| 2005 04 15 | 691 | 0.1+ | 0.4+ | 2005 06 04 | 703 | 0.9− | 0.8+ | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2005 06 15 | G96 | 0.5− | 0.5− | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2005 04 15 | 691 | 0.1+ | 0.0 | 2005 06 15 | G96 | 0.6− | 0.2+ | 2006 10 22 | 703 | 1.3+ | 1.3− |
| 2005 05 03 | 704 | 0.7+ | 0.5+ | 2005 06 15 | G96 | 0.0 | 0.2+ | 2006 10 22 | 703 | 1.1− | 0.0 |
| 2005 05 03 | 704 | 0.6+ | 0.2+ | 2005 06 15 | G96 | 0.5− | 0.0 | | | | |

### 2005 GE$_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.42747 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21295239 | $\omega$ | 200.58432 | | −0.09722908 | | +0.98244472 |
| $a$ | 2.7772461 | $\Omega$ | 64.12337 | | −0.88660148 | | −0.01281509 |
| $e$ | 0.1128744 | $i$ | 10.19248 | | −0.45219942 | | −0.18611328 |
| $P$ | 4.63 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.9− | 0.8+ | 2005 04 30 | 599 | 0.2− | 0.2+ | 2005 05 16 | 704 | (0.1+ | 2.0+) |
| 2002 10 30 | 644 | 0.4+ | 0.3+ | 2005 04 30 | 599 | 0.0 | 0.0 | 2005 06 01 | 699 | 0.4− | 0.7− |
| 2002 10 30 | 644 | 0.6− | 1.3+ | 2005 05 03 | 704 | 0.2− | 0.4+ | 2005 06 01 | 699 | 0.2+ | 0.4− |
| 2005 04 02 | 691 | 0.1+ | 0.4+ | 2005 05 03 | 704 | 0.3+ | 0.9+ | 2005 06 01 | 699 | 0.6+ | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.2− | 0.1− | 2005 05 03 | 704 | 0.2− | 0.2+ | 2005 06 01 | 699 | 0.4− | 1.4+ |
| 2005 04 02 | 691 | 0.0 | 0.4− | 2005 05 03 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 703 | 0.0 | 0.8− |
| 2005 04 13 | 699 | 0.0 | 0.4− | 2005 05 12 | 704 | 0.7− | 0.1+ | 2006 09 20 | 703 | 0.6+ | 0.2+ |
| 2005 04 13 | 699 | 1.2+ | 0.1− | 2005 05 12 | 704 | 0.5− | 0.3+ | 2006 09 20 | 703 | 1.3+ | 0.8+ |
| 2005 04 13 | 699 | 0.8+ | 0.9− | 2005 05 12 | 704 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.5+ | 0.6+ |
| 2005 04 13 | 699 | 0.3+ | 0.9+ | 2005 05 16 | 704 | 0.2+ | 0.3− | 2006 09 26 | 703 | 1.2− | 0.6− |
| 2005 04 15 | 691 | 0.0 | 0.2− | 2005 05 16 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | (1.5− | 1.8−) |
| 2005 04 15 | 691 | 0.0 | 0.2− | 2005 05 16 | 704 | 0.1− | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2005 04 15 | 691 | 0.1− | 0.1− | 2005 05 16 | 704 | 0.0 | 1.0+ | 2006 09 26 | 703 | 0.9− | 0.5− |
| 2005 04 30 | 599 | 0.0 | 0.0 | 2005 05 16 | 704 | (2.0+ | 0.2−) | | | | |
| 2005 04 30 | 599 | 0.3+ | 0.0 | 2005 05 16 | 704 | 0.6+ | 0.1− | | | | |

**2005 GD$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.40513 | | (2000.0) | | | |
| $n$ | 0.23195762 | $\omega$ | 144.81700 | | +0.89607081 | +0.44282039 |
| $a$ | 2.6233946 | $\Omega$ | 189.06089 | | −0.43893481 | +0.87338786 |
| $e$ | 0.1234915 | $i$ | 11.38959 | | −0.06628220 | +0.20274059 |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.2+ | 0.4+ | 2006 10 01 | 703 | (1.6− | 0.7−) |
| 2002 10 31 | 704 | 0.1− | 0.7+ | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 10 01 | 703 | 0.6− | 1.2− |
| 2002 10 31 | 704 | 0.4− | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.8− | 2006 10 01 | 703 | 0.1− | 0.5+ |
| 2002 10 31 | 704 | 0.2+ | 1.3+ | 2006 09 12 | 703 | 1.1− | 0.5− | 2006 10 01 | 703 | 1.0+ | 1.2+ |
| 2002 10 31 | 608 | 0.1+ | 0.4− | 2006 09 12 | 703 | (0.2− | 1.9−) | 2006 10 16 | 703 | 1.4+ | 0.4− |
| 2002 10 31 | 608 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.4+ | 0.6− | 2006 10 16 | 703 | 1.3− | 0.4+ |
| 2002 10 31 | 608 | 0.8− | 0.2+ | 2006 09 12 | 703 | 0.8+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.8− |
| 2002 11 07 | 704 | 1.2+ | 1.0+ | 2006 09 18 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 1.5− | 0.9− |
| 2002 11 07 | 704 | 0.4− | 0.1− | 2006 09 18 | 704 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2002 11 07 | 704 | 0.5− | 1.0− | 2006 09 18 | 704 | 0.3+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2005 04 02 | 691 | 0.1+ | 0.1− | 2006 09 18 | 704 | 0.6− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2005 04 02 | 691 | 0.2− | 0.2− | 2006 09 18 | 704 | 0.3− | 0.8+ | 2006 10 19 | G96 | 0.4− | 0.3− |
| 2005 04 02 | 691 | 0.1− | 0.1+ | 2006 09 20 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 04 14 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2005 04 14 | 691 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2005 04 15 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.2− | 2006 11 11 | G96 | 0.8+ | 0.2− |
| 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.1− |
| 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2005 04 18 | 691 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 09 29 | 704 | 1.0+ | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.2+ |
| 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 704 | (0.5− | 1.7+) | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | 0.2− | 1.2− | 2006 09 29 | 704 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.1− |

**2005 GE$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 240.89223 | | (2000.0) | | | |
| $n$ | 0.23820822 | $\omega$ | 20.98382 | | +0.09715124 | −0.99418059 |
| $a$ | 2.5772995 | $\Omega$ | 63.46601 | | +0.90557104 | +0.06889557 |
| $e$ | 0.1307668 | $i$ | 2.98226 | | +0.41291976 | +0.08281523 |
| $P$ | 4.14 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.5− | 0.9+ | 2004 01 13 | 691 | 0.1− | 0.2+ | 2005 04 16 | 691 | 0.1+ | 0.0 |
| 2002 08 13 | 644 | 0.4− | 0.8+ | 2004 01 13 | 691 | 0.1− | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.1+ |
| 2002 08 13 | 644 | 0.1+ | 1.0+ | 2004 01 13 | 691 | 0.1− | 0.1+ | 2005 05 01 | 644 | 0.2+ | 0.2+ |
| 2003 12 18 | 704 | 0.4+ | 0.2+ | 2005 04 10 | G96 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.1+ | 0.0 |
| 2003 12 18 | 704 | 0.4+ | 0.4+ | 2005 04 10 | G96 | 0.3− | 0.6+ | 2005 05 14 | G96 | 0.5− | 0.2− |
| 2003 12 18 | 704 | 0.2− | 0.2− | 2005 04 10 | G96 | 0.1+ | 0.5+ | 2005 05 14 | G96 | 0.5− | 0.1− |
| 2003 12 24 | 704 | 0.6− | 0.9− | 2005 04 10 | G96 | 0.5− | 0.5+ | 2005 05 14 | G96 | 0.5− | 0.3− |
| 2003 12 24 | 704 | 0.1+ | 0.7+ | 2005 04 16 | 691 | 0.3+ | 0.1− | 2005 05 14 | G96 | 0.2− | 0.1− |
| 2003 12 24 | 704 | 0.8+ | 1.0+ | 2005 04 16 | 691 | 0.3+ | 0.3+ | | | | |

**2005 GU$_{157}$ = 2006 SY$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.84486 | | (2000.0) | | | |
| $n$ | 0.17812067 | $\omega$ | 91.65745 | | +0.50193011 | +0.86282488 |
| $a$ | 3.1284304 | $\Omega$ | 208.71962 | | −0.83487623 | +0.46521452 |
| $e$ | 0.1932144 | $i$ | 7.17227 | | −0.22593771 | +0.19775914 |
| $P$ | 5.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 0.5− | 0.1− | 2005 04 17 | 691 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2005 04 11 | G96 | 0.6− | 0.3− | 2006 05 25 | G96 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2005 04 11 | G96 | 0.5− | 0.2− | 2006 05 25 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2005 04 11 | G96 | 0.4− | 0.2− | 2006 05 25 | G96 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2005 04 16 | 691 | 0.0 | 0.2− | 2006 05 25 | G96 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 08 17 | 568 | 0.1+ | 0.1− | 2006 09 22 | 691 | 0.0 | 0.0 |
| 2005 04 16 | 691 | 0.3+ | 0.2− | 2006 08 17 | 568 | 0.0 | 0.0 | 2006 09 22 | 691 | 0.0 | 0.1+ |
| 2005 04 17 | 691 | 0.2+ | 0.2− | 2006 08 17 | 568 | 0.1+ | 0.0 | 2006 09 22 | 691 | 0.1− | 0.0 |
| 2005 04 17 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.1+ | | | | |

**2005 GB$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.58500 | | (2000.0) | | | |
| $n$ | 0.24218906 | $\omega$ | 253.79770 | | +0.35490436 | +0.92704814 |
| $a$ | 2.5489796 | $\Omega$ | 37.70227 | | −0.76434255 | +0.36220558 |
| $e$ | 0.2703907 | $i$ | 11.40510 | | −0.53835245 | +0.09689617 |
| $P$ | 4.07 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 691 | 0.1− | 0.3− | 2005 05 10 | G96 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2005 04 12 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2005 04 12 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2005 04 15 | 699 | (0.3+ | 1.6+) | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.0 |
| 2005 04 15 | 699 | (1.8+ | 1.8+) | 2006 09 26 | G96 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 1.7− | 1.0− |
| 2005 04 15 | 699 | 0.7+ | 0.3+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.4+ | 0.3+ |
| 2005 04 15 | 699 | 0.8+ | 1.0+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2005 04 19 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.4+ |
| 2005 04 19 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2005 04 19 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2005 05 10 | G96 | 0.6− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2005 05 10 | G96 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.8− |
| 2005 05 10 | G96 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1− | | | | |

**2005 GR$_{159}$ = 2006 UG$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.77779 | | (2000.0) | | | |
| $n$ | 0.21904533 | $\omega$ | 276.19187 | | +0.61278240 | +0.78091057 |
| $a$ | 2.7255034 | $\Omega$ | 32.60040 | | −0.60650858 | +0.56301943 |
| $e$ | 0.2140229 | $i$ | 12.99431 | | −0.50660150 | +0.27053243 |
| $P$ | 4.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | G96 | 0.4− | 0.3+ | 2005 04 12 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.3+ |
| 2005 03 13 | G96 | 0.3− | 0.1− | 2005 04 16 | 691 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.9+ | 0.3+ |
| 2005 03 13 | G96 | 0.6− | 0.0 | 2005 04 16 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.0− | 0.9− |
| 2005 03 13 | G96 | 0.1+ | 0.1− | 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2005 04 04 | G96 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.6− |
| 2005 04 04 | G96 | 0.7− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 1.0− | 0.2− |
| 2005 04 04 | G96 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2005 04 12 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.7+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.6+ | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.8+ |

**2005 GY$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 123.21853 | | | (2000.0) | | |
| $n$ | 0.27578858 | $\omega$ | 205.37163 | | −0.38617526 | +0.91933504 |
| $a$ | 2.3375013 | $\Omega$ | 42.02510 | | −0.82594049 | −0.30820598 |
| $e$ | 0.1990250 | $i$ | 6.47064 | | −0.41072007 | −0.24460613 |
| $P$ | 3.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 1.0− | 0.0 | 2005 04 16 | 691 | 0.1− | 0.2+ | 2005 05 19 | 644 | 0.1− | 0.3+ |
| 2005 03 14 | G96 | 0.2− | 0.5− | 2005 05 07 | G96 | 0.6− | 0.1− | 2005 05 19 | 644 | 0.3+ | 0.1+ |
| 2005 03 14 | G96 | 0.1+ | 0.2+ | 2005 05 07 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 1.6− |
| 2005 03 14 | G96 | 0.3+ | 0.2− | 2005 05 07 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.0 | 1.2− |
| 2005 04 13 | 699 | 1.2+ | 0.6− | 2005 05 07 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 1.1− |
| 2005 04 13 | 699 | 0.2+ | 1.0− | 2005 05 14 | G96 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2005 04 13 | 699 | 0.0 | 0.7− | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.1− |
| 2005 04 13 | 699 | 1.1+ | 0.6+ | 2005 05 14 | G96 | 0.5− | 0.3− | 2006 10 29 | 691 | 0.5− | 0.4+ |
| 2005 04 16 | 691 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.4+ |
| 2005 04 16 | 691 | 0.1− | 0.2+ | 2005 05 19 | 644 | 0.5+ | 0.1− | | | | |

**2005 GW$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.21154 | | | (2000.0) | | |
| $n$ | 0.17362505 | $\omega$ | 5.36602 | | +0.01503106 | +0.97797109 |
| $a$ | 3.1822024 | $\Omega$ | 265.61301 | | −0.92497104 | −0.06547911 |
| $e$ | 0.1438820 | $i$ | 12.05264 | | −0.37974024 | +0.19820450 |
| $P$ | 5.68 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 1.2+ | 0.3− | 2001 09 10 | 704 | 0.7− | 1.0+ | 2005 04 14 | 703 | 1.0+ | 0.7− |
| 1995 09 26 | 691 | 0.6− | 0.0 | 2001 09 18 | 645 | 0.0 | 0.2− | 2005 04 14 | 703 | 0.5− | 0.1+ |
| 1995 09 26 | 691 | 0.5− | 0.1+ | 2001 09 18 | 645 | 0.1+ | 0.2− | 2005 04 14 | 703 | 0.7− | 0.1+ |
| 2001 08 22 | 704 | 0.6− | 0.5+ | 2001 09 29 | 644 | 0.7− | 0.2+ | 2005 04 14 | 703 | 2.0− | 1.2+ |
| 2001 08 22 | 704 | 0.1+ | 1.3+ | 2001 09 29 | 644 | 0.9− | 0.2+ | 2005 04 15 | 699 | 0.2− | 1.4− |
| 2001 08 22 | 704 | 0.3+ | 1.5+ | 2001 09 29 | 644 | 0.4− | 0.4+ | 2005 04 15 | 699 | 0.5+ | 0.0 |
| 2001 09 10 | 704 | 0.2+ | 0.2+ | 2005 04 13 | E12 | 1.0+ | 0.5− | 2005 04 15 | 699 | 0.5− | 1.0+ |
| 2001 09 10 | 704 | 1.2+ | 1.0+ | 2005 04 13 | E12 | 0.2+ | 0.1+ | 2005 04 15 | 699 | 1.1+ | 0.7+ |
| 2001 09 10 | 704 | 0.1− | 1.1+ | 2005 04 13 | E12 | 0.2− | 0.5− | | | | |
| 2001 09 10 | 704 | 0.1+ | 0.9+ | 2005 04 13 | E12 | 0.3+ | 0.3+ | | | | |

**2005 GC$_{162}$ = 2005 GK$_{211}$ = 2006 RT$_6$**

Id. Minor Planet Center (d, *MPO* 102379; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.19823 | | | (2000.0) | | |
| $n$ | 0.22892325 | $\omega$ | 108.43270 | | +0.71424470 | +0.69967631 |
| $a$ | 2.6465257 | $\Omega$ | 207.17480 | | −0.65576281 | +0.66023932 |
| $e$ | 0.1735267 | $i$ | 2.20073 | | −0.24460100 | +0.27301485 |
| $P$ | 4.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 08 | 910 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.6− |
| 1997 07 08 | 910 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 1997 07 08 | 910 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.4− |
| 2003 12 21 | 645 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.5− | 0.0 |
| 2005 04 02 | G96 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2005 04 02 | G96 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2005 04 02 | G96 | 0.7− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2005 04 02 | G96 | 1.1− | 0.3− | 2006 09 29 | 704 | 0.9+ | 1.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2005 04 07 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2005 04 07 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.3− | 1.4+ | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2005 04 07 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 1.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2005 04 16 | 691 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2005 04 16 | 691 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 1.1− | 0.6+ |
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2006 09 14 | 703 | 0.1− | 0.9− | 2006 10 16 | G96 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.6+ |
| 2006 09 14 | 703 | 0.4− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2006 09 14 | 703 | (0.9− | 1.6−) | 2006 10 16 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.9− | 0.4+ |

**2005 GV$_{163}$ = 2006 QD$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.86347 | | | (2000.0) | | |
| $n$ | 0.22853828 | $\omega$ | 110.98639 | | +0.78787657 | +0.61499876 |
| $a$ | 2.6494968 | $\Omega$ | 211.08768 | | −0.58555953 | +0.73201488 |
| $e$ | 0.1013604 | $i$ | 3.55839 | | −0.19071066 | +0.29313947 |
| $P$ | 4.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 13 | 691 | 0.2+ | 0.2− | 2005 04 10 | G96 | 0.9− | 0.1+ | 2006 08 28 | 699 | 1.6+ | 0.9+ |
| 1998 12 13 | 691 | 0.1− | 0.3+ | 2005 04 10 | G96 | 0.6− | 0.1+ | 2006 08 28 | 699 | 1.8+ | 1.1+ |
| 1998 12 13 | 691 | 0.2− | 0.4+ | 2005 04 10 | G96 | 0.5− | 0.3+ | 2006 08 29 | 703 | 0.8− | 0.2+ |
| 2002 10 03 | 704 | 0.1+ | 0.9+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 0.9− | 0.3− |
| 2002 10 03 | 704 | 1.1− | 2.0+ | 2005 04 17 | 691 | 0.4+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.5+ |
| 2002 10 03 | 704 | 0.6− | 0.6+ | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.1+ |
| 2002 10 03 | 704 | 0.4+ | 0.5− | 2005 05 08 | G96 | (1.5+ | 2.9−) | 2006 09 17 | 703 | 0.5− | 0.8− |
| 2005 04 02 | G96 | 0.5− | 0.3+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.6− | 0.6− |
| 2005 04 02 | G96 | 0.2+ | 0.3+ | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.3− | 1.4− |
| 2005 04 02 | G96 | 0.1+ | 0.3+ | 2005 05 08 | G96 | 1.1+ | 0.8+ | 2006 09 17 | 703 | 0.0 | 0.6+ |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.9+ | 0.0 | | | | |
| 2005 04 10 | G96 | 0.6− | 0.4+ | 2006 08 28 | 699 | 0.6− | 0.2+ | | | | |

**2005 GG$_{164}$ = 2006 SP$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.20358 | | | (2000.0) | | |
| $n$ | 0.25805299 | $\omega$ | 256.16627 | | +0.19364149 | +0.97964251 |
| $a$ | 2.4434124 | $\Omega$ | 25.18668 | | −0.84521092 | +0.19398434 |
| $e$ | 0.0887092 | $i$ | 7.14712 | | −0.49811793 | +0.05167802 |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 18 | 691 | 0.1+ | 0.3+ | 2005 04 17 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2001 04 18 | 691 | 0.2− | 0.0 | 2005 04 17 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2001 04 18 | 691 | 0.3+ | 0.0 | 2005 05 01 | 644 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2005 04 10 | G96 | 0.1− | 0.1− | 2005 05 01 | 644 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2005 04 10 | G96 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2005 04 10 | G96 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2005 04 10 | G96 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.3− | 0.1+ | | | | |
| 2005 04 17 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.3− | | | | |

**2005 GA$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.92343 | | | (2000.0) | | |
| $n$ | 0.31170990 | $\omega$ | 225.33654 | | +0.12064730 | +0.99169786 |
| $a$ | 2.1542809 | $\Omega$ | 51.64478 | | −0.89397528 | +0.12802537 |
| $e$ | 0.1158624 | $i$ | 3.25257 | | −0.43156972 | +0.01203549 |
| $P$ | 3.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 03 | 809 | 0.1+ | 0.2+ | 2005 05 09 | 704 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.4+ |
| 2003 12 25 | 691 | 0.1− | 0.3+ | 2005 05 09 | 704 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2003 12 25 | 691 | 0.0 | 0.0 | 2005 05 09 | 704 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.3+ |
| 2003 12 25 | 691 | 0.0 | 0.1− | 2005 05 09 | 704 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.5− |
| 2005 03 13 | G96 | 0.2− | 0.7− | 2005 05 13 | 704 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2005 03 13 | G96 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.5+ | 0.3− | 2006 10 28 | G96 | 0.2− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | G96 | 0.0 | 0.4− | 2005 05 13 | 704 | 0.1+ | 1.1− | 2006 10 28 | G96 | 0.6− | 0.1− |
| 2005 03 13 | G96 | 0.4− | 0.0 | 2005 05 13 | 704 | 0.7+ | 0.2− | 2006 10 30 | G96 | 0.4+ | 0.5+ |
| 2005 04 11 | G96 | 0.0 | 0.6− | 2005 05 13 | 704 | 0.6+ | 0.1− | 2006 10 30 | G96 | 0.3− | 0.0 |
| 2005 04 11 | G96 | 0.7+ | 0.9− | 2005 05 19 | 644 | 0.3+ | 0.1+ | 2006 10 30 | G96 | 0.1− | 0.4+ |
| 2005 04 11 | G96 | 0.5− | 0.2− | 2005 05 19 | 644 | 0.5− | 0.4− | 2006 10 30 | G96 | 0.4− | 0.4+ |
| 2005 04 11 | G96 | 0.6− | 0.2− | 2005 05 19 | 644 | 0.0 | 0.2− | 2006 10 30 | G96 | 0.1− | 0.3+ |
| 2005 04 17 | 691 | 0.1− | 0.1+ | 2005 05 30 | 699 | 0.5− | 1.4+ | 2006 10 30 | G96 | 0.2+ | 0.1+ |
| 2005 04 17 | 691 | 0.0 | 0.0 | 2005 05 30 | 699 | 0.1− | 0.2− | 2006 10 30 | G96 | 0.1− | 0.3+ |
| 2005 04 17 | 691 | 0.1− | 0.1+ | 2005 05 30 | 699 | (1.8− | 1.5+) | 2006 10 30 | G96 | 0.1+ | 0.1+ |
| 2005 05 03 | 691 | 0.1+ | 0.2+ | 2005 05 30 | 699 | 0.9− | 1.1+ | 2006 11 18 | 691 | 0.4+ | 0.3− |
| 2005 05 03 | 691 | 0.1+ | 0.1+ | 2005 06 04 | 703 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2005 05 03 | 691 | 0.3− | 0.3+ | 2005 06 04 | 703 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2005 05 04 | 699 | 0.8+ | 0.1− | 2005 06 04 | 703 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.9+ | 0.6− |
| 2005 05 04 | 699 | 0.4+ | 0.3+ | 2005 06 04 | 703 | 0.3− | 0.4+ | 2006 11 21 | 704 | 1.5+ | 0.5+ |
| 2005 05 04 | 699 | 0.3+ | 0.6− | 2005 06 14 | G96 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.3+ |
| 2005 05 04 | 704 | 1.2+ | 0.0 | 2005 06 14 | G96 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2005 05 04 | 699 | 0.2− | 0.5+ | 2005 06 14 | G96 | 0.8− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2005 05 04 | 704 | 0.3+ | 0.1− | 2005 06 14 | G96 | 0.5− | 0.1+ | 2006 11 22 | 691 | 0.4− | 0.4− |
| 2005 05 04 | 704 | 1.0+ | 0.4+ | 2006 09 27 | G96 | 0.4+ | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2005 05 08 | 699 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.6+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2005 05 08 | 699 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.4+ |
| 2005 05 08 | 699 | 0.9− | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.4− | 0.0 |
| 2005 05 08 | 699 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.2− |

### 2005 GR$_{167}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.49561 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29352702 | $\omega$ | 159.66570 | | −0.93550928 | | +0.35265763 |
| $a$ | 2.2423531 | $\Omega$ | 41.00417 | | −0.32847641 | | −0.84595433 |
| $e$ | 0.1300129 | $i$ | 1.86304 | | −0.13009858 | | −0.39999233 |
| $P$ | 3.36 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 16 | 291 | 0.4+ | 0.4+ | 2005 05 09 | G96 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.5+ | 0.2+ |
| 2003 11 16 | 291 | 0.1− | 0.2+ | 2005 05 09 | G96 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2003 11 16 | 291 | 0.6− | 0.5+ | 2005 05 09 | G96 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2005 04 11 | G96 | 0.1− | 0.2− | 2005 05 19 | 644 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2005 04 11 | G96 | 0.2− | 0.2+ | 2005 05 19 | 644 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2005 04 11 | G96 | 0.3− | 0.1+ | 2005 05 19 | 644 | 0.4+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2005 04 11 | G96 | 0.2+ | 0.7+ | 2006 09 18 | 691 | 0.3+ | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.6− |
| 2005 04 17 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.3+ | | | | |
| 2005 05 09 | G96 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.2− | 0.5+ | | | | |

### 2005 GE$_{168}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.61071 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25926771 | $\omega$ | 38.75526 | | −0.23733506 | | +0.97123752 |
| $a$ | 2.4357746 | $\Omega$ | 217.52665 | | −0.89894380 | | −0.22708577 |
| $e$ | 0.1797636 | $i$ | 1.80901 | | −0.36820118 | | −0.07162216 |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 644 | 0.0 | 0.4+ | 2005 05 04 | G96 | 0.1− | 0.0 | 2005 06 27 | 644 | 0.4− | 0.2+ |
| 2002 10 06 | 644 | 0.0 | 0.2+ | 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2002 10 06 | 644 | 0.3− | 0.1+ | 2005 05 04 | 699 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2005 03 11 | G96 | 0.1− | 0.3+ | 2005 05 04 | G96 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2005 05 08 | 699 | (1.6− | 0.0 ) | 2006 09 26 | G96 | 0.0 | 0.7− |
| 2005 03 11 | G96 | 0.1+ | 0.3+ | 2005 05 08 | 699 | 1.1+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.3+ |
| 2005 03 11 | G96 | 0.2− | 0.5+ | 2005 05 08 | 699 | 0.8+ | 0.8− | 2006 10 16 | 691 | 0.6− | 0.0 |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2005 05 08 | 699 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2005 04 11 | G96 | 0.2− | 0.1+ | 2005 05 09 | 699 | 0.5+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2005 05 09 | 699 | 1.0+ | 0.8− | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2005 05 09 | 699 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2005 04 17 | 691 | 0.0 | 0.2+ | 2005 05 09 | 699 | 1.4+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2005 04 17 | 691 | 0.1− | 0.1+ | 2005 05 13 | G96 | 0.5− | 0.2− | 2006 10 29 | 691 | 0.4+ | 0.0 |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.5+ | 0.0 |
| 2005 05 04 | 699 | 0.4− | 0.5+ | 2005 05 13 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.8+ | 0.2− |
| 2005 05 04 | 699 | 0.1− | 1.0− | 2005 05 13 | G96 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.1+ |
| 2005 05 04 | G96 | 0.2− | 0.1+ | 2005 06 27 | 644 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2005 05 04 | 699 | 0.2+ | 0.5+ | 2005 06 27 | 644 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− |

### 2005 GS$_{168}$ = 1999 XP$_{264}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.52834 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24065842 | $\omega$ | 287.03584 | | −0.62759141 | | −0.77826195 |
| $a$ | 2.5597762 | $\Omega$ | 201.87815 | | +0.73394537 | | −0.58246633 |
| $e$ | 0.1635478 | $i$ | 3.21731 | | +0.25971757 | | −0.23460887 |
| $P$ | 4.10 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 28 | 691 | 0.3− | 0.1− | 2003 10 22 | 695 | 0.1+ | 0.4+ | 2005 03 11 | G96 | 0.5− | 0.2+ |
| 1999 11 28 | 691 | 0.3− | 0.0 | 2003 10 28 | 704 | 0.6+ | 0.7+ | 2005 03 11 | G96 | 0.4− | 0.5+ |
| 1999 11 28 | 691 | 0.1− | 0.0 | 2003 10 28 | 704 | 0.7+ | 1.0+ | 2005 03 11 | G96 | 0.1+ | 0.1+ |
| 1999 12 06 | 704 | (2.5− | 0.2−) | 2003 10 28 | 704 | 0.0 | 0.9+ | 2005 04 12 | 691 | 0.1− | 0.5+ |
| 1999 12 06 | 704 | 1.0− | 0.1− | 2003 10 28 | 704 | 0.3+ | 0.8+ | 2005 04 12 | 691 | 0.1+ | 0.7+ |
| 1999 12 06 | 704 | 0.6− | 0.3− | 2003 11 21 | 704 | 0.7+ | 1.0+ | 2005 04 12 | 691 | 0.1− | 0.4+ |
| 1999 12 06 | 704 | 1.4− | 0.1− | 2003 11 21 | 699 | 0.8+ | 0.7+ | 2005 04 17 | 691 | 0.1+ | 0.4+ |
| 1999 12 09 | 691 | 0.1− | 0.4+ | 2003 11 21 | 704 | 1.2− | 0.9+ | 2005 04 17 | 691 | 0.1+ | 0.4+ |
| 1999 12 09 | 691 | 0.0 | 0.2+ | 2003 11 21 | 699 | 0.3− | 0.8+ | 2005 04 17 | 691 | 0.1+ | 0.5+ |
| 1999 12 09 | 691 | 0.1− | 0.5+ | 2003 11 21 | 704 | 0.3+ | 0.3+ | 2006 06 22 | 691 | 0.4− | 0.4+ |
| 2001 04 28 | 691 | 0.8+ | 0.3− | 2003 11 21 | 699 | 1.9+ | 1.2+ | 2006 06 22 | 691 | 0.5− | 0.2+ |
| 2001 04 28 | 691 | 0.3+ | 0.2− | 2003 11 21 | 699 | 0.6+ | 1.3+ | 2006 06 22 | 691 | 0.4− | 1.0+ |
| 2001 04 28 | 691 | 0.4+ | 0.1+ | 2003 11 21 | 704 | 0.2+ | 0.4+ | | | | |
| 2003 10 22 | 695 | 0.1+ | 0.3+ | 2005 03 11 | G96 | 0.1− | 0.3+ | | | | |

### 2005 GD$_{169}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.22589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25915059 | $\omega$ | 151.33153 | | −0.98580483 | | +0.16685446 |
| $a$ | 2.4365084 | $\Omega$ | 38.28779 | | −0.15921803 | | −0.89378101 |
| $e$ | 0.0679187 | $i$ | 1.72633 | | −0.05327716 | | −0.41631129 |
| $P$ | 3.80 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.2− | 0.3+ | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2005 05 08 | G96 | 0.1− | 0.4− |
| 1999 11 10 | 691 | 0.1− | 0.4+ | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.2+ |
| 1999 11 10 | 691 | 0.0 | 0.2+ | 2005 04 17 | 691 | 0.3+ | 0.0 | 2005 05 08 | G96 | 1.4− | 1.1− |
| 2005 04 02 | G96 | 0.8− | 0.0 | 2005 04 17 | 691 | 0.2− | 0.0 | 2006 08 21 | 691 | 0.4+ | 0.4+ |
| 2005 04 02 | G96 | 0.0 | 0.4− | 2005 05 04 | 568 | 0.2− | 0.6+ | 2006 08 21 | 691 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.6− | 0.6− | 2005 05 04 | 568 | 0.1− | 0.5+ | 2006 08 21 | 691 | 0.5− | 0.1+ |
| 2005 04 02 | G96 | 0.8− | 0.4− | 2005 05 04 | 568 | 0.1− | 0.5+ | 2006 08 23 | 807 | 0.0 | 0.2+ |
| 2005 04 12 | 691 | 0.5+ | 0.0 | 2005 05 05 | 568 | 0.1+ | 0.6+ | 2006 08 23 | 807 | 0.1+ | 0.2+ |
| 2005 04 12 | 691 | 0.6+ | 0.7+ | 2005 05 08 | G96 | 0.0 | 0.1+ | | | | |

### 2005 GF$_{169}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.44341 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29077811 | $\omega$ | 182.68754 | | −0.80473834 | | +0.59034557 |
| $a$ | 2.2564632 | $\Omega$ | 33.74335 | | −0.54252940 | | −0.68876035 |
| $e$ | 0.0857912 | $i$ | 6.44550 | | −0.24095240 | | −0.42083403 |
| $P$ | 3.39 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 19 | 691 | 0.1+ | 0.1− | 2005 04 12 | 691 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.5− | 0.4− |
| 1996 11 19 | 691 | 0.8− | 0.6+ | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.0 |
| 1996 11 19 | 691 | 0.3+ | 0.2+ | 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 2003 12 18 | 691 | 0.2+ | 0.3+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2003 12 18 | 691 | 0.3− | 0.1+ | 2005 04 17 | 691 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2005 04 17 | 691 | (2.2+ | 1.4−) | 2006 09 26 | G96 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.1− | 0.1− | 2005 05 01 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.5− | 0.3− | | |
| 2005 03 14 | G96 | 0.7− | 0.1− | 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2005 03 14 | G96 | 0.4− | 0.0 | 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2005 03 14 | G96 | 0.5− | 0.1− | 2005 05 14 | G96 | 0.5− | 0.2− | 2006 09 26 | G96 | 0.9− | 0.0 | | |
| 2005 04 04 | G96 | 0.3− | 0.1− | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2+ | | |
| 2005 04 04 | G96 | 0.3− | 0.1− | 2005 05 14 | G96 | 0.5− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.4+ | | |
| 2005 04 04 | G96 | 0.0 | 0.1− | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.3+ | | |
| 2005 04 04 | G96 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.6− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.5+ | | |

**2005 GJ$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.71749 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24197606 | $\omega$ | 52.19709 | | −0.17066761 | | +0.98436878 |
| $a$ | 2.5504753 | $\Omega$ | 208.06877 | | −0.93057981 | | −0.17553274 |
| $e$ | 0.1163327 | $i$ | 5.30229 | | −0.32387309 | | −0.01436565 |
| $P$ | 4.07 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 15 | G96 | 0.3− | 0.0 | 2005 04 12 | 691 | 0.3+ | 0.1+ | 2005 05 14 | G96 | 0.8− | 0.1− |
| 2005 03 15 | G96 | 1.0− | 0.4− | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2005 05 14 | G96 | 0.8− | 0.1+ |
| 2005 03 15 | G96 | 0.1− | 0.2− | 2005 04 17 | 691 | 1.6+ | 1.2− | 2005 05 14 | G96 | 0.7− | 0.0 |
| 2005 03 15 | G96 | 0.3+ | 0.5− | 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.0 |
| 2005 04 10 | G96 | 0.9− | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.0 |
| 2005 04 10 | G96 | 0.6− | 0.2+ | 2005 05 01 | 644 | 0.1− | 0.1+ | 2006 08 21 | 691 | 0.2+ | 0.2− |
| 2005 04 10 | G96 | 0.7− | 0.1− | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.1+ |
| 2005 04 10 | G96 | 0.7− | 0.1+ | 2005 05 01 | 644 | 0.2− | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.1+ |
| 2005 04 12 | 691 | 0.8− | 0.7+ | 2005 05 14 | G96 | 0.6− | 0.3− | 2006 10 11 | 691 | 0.0 | 0.0 |

**2005 GX$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.53393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23310474 | $\omega$ | 260.76186 | | +0.27141232 | | +0.96204064 |
| $a$ | 2.6147809 | $\Omega$ | 25.04298 | | −0.85448358 | | +0.25449181 |
| $e$ | 0.1763035 | $i$ | 3.86274 | | −0.44293697 | | +0.09854812 |
| $P$ | 4.23 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 291 | 0.6− | 0.5+ | 2005 05 01 | 644 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 2002 11 05 | 291 | 0.1− | 0.6+ | 2005 05 01 | 644 | 0.1+ | 0.7+ | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2002 11 05 | 291 | 0.1+ | 0.4+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2005 04 02 | G96 | 0.5− | 0.3+ | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2005 04 02 | G96 | 0.5− | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.8− | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2005 04 12 | 691 | 0.3+ | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.0 |
| 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2005 04 12 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2005 04 17 | 691 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2005 05 01 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.3+ | | | | |

**2005 GD$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.82464 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17497085 | $\omega$ | 69.48572 | | −0.99051962 | | −0.12993325 |
| $a$ | 3.1658639 | $\Omega$ | 103.02787 | | +0.10269186 | | −0.91596518 |
| $e$ | 0.1305129 | $i$ | 2.62320 | | +0.09124285 | | −0.37963816 |
| $P$ | 5.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.3− | 0.0 | 2005 04 01 | 691 | 0.0 | 0.2+ | 2005 04 18 | 691 | 0.1− | 0.1+ |
| 1993 01 29 | 691 | 0.3+ | 0.3− | 2005 04 01 | 691 | 0.1+ | 0.3+ | 2005 05 03 | 691 | 0.2− | 0.2− |
| 1993 01 29 | 691 | 0.1− | 0.2− | 2005 04 01 | 691 | 0.2− | 0.4+ | 2005 05 03 | 691 | 0.4+ | 0.5− |
| 2003 11 24 | 695 | 0.0 | 0.6+ | 2005 04 14 | 691 | 0.1− | 0.1− | 2005 05 03 | 691 | 0.2+ | 0.4− |
| 2003 11 24 | 695 | 0.1+ | 0.7+ | 2005 04 14 | 691 | 0.0 | 0.0 | 2005 05 14 | 691 | 0.1+ | 0.1+ |
| 2005 03 11 | 691 | 0.2+ | 0.1+ | 2005 04 14 | 691 | 0.1− | 0.1− | 2005 05 14 | 691 | 0.3− | 0.2− |
| 2005 03 11 | 691 | 0.3+ | 0.1− | 2005 04 18 | 691 | 0.0 | 0.0 | 2005 05 14 | 691 | 0.0 | 0.0 |
| 2005 03 11 | 691 | 0.0 | 0.3+ | 2005 04 18 | 691 | 0.1− | 0.0 | | | | |

**2005 GQ$_{173}$ = 2006 QM$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.56786 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24127115 | $\omega$ | 108.88959 | | −0.52182215 | | +0.85175221 |
| $a$ | 2.5554406 | $\Omega$ | 129.56423 | | −0.80386312 | | −0.47249666 |
| $e$ | 0.0531849 | $i$ | 3.50387 | | −0.28549208 | | −0.22641794 |
| $P$ | 4.09 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 17 | 691 | 0.5+ | 0.0 | 2005 04 14 | 691 | 0.3− | 0.3− | 2006 08 21 | 691 | 0.2+ | 0.1− |
| 2001 04 17 | 691 | 0.2+ | 0.0 | 2005 04 18 | 691 | 0.1− | 0.3+ | 2006 08 21 | 691 | 0.1+ | 0.2− |
| 2001 04 17 | 691 | 0.5− | 0.7− | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 691 | 0.4+ | 0.2− |
| 2001 05 23 | 691 | 0.3− | 0.2+ | 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 08 23 | 807 | 0.4− | 0.0 |
| 2001 05 23 | 691 | 0.1− | 0.1+ | 2005 04 27 | 599 | 0.3− | 0.3− | 2006 08 23 | 807 | 0.1− | 0.1+ |
| 2001 05 23 | 691 | 0.1+ | 0.1+ | 2005 04 27 | 599 | 0.0 | 0.6− | 2006 08 28 | 691 | 0.1− | 0.0 |
| 2005 04 14 | 691 | 0.4+ | 0.2+ | 2005 04 27 | 599 | 0.4+ | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.4+ |
| 2005 04 14 | 691 | 0.0 | 0.0 | 2005 04 27 | 599 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.3− | 0.1+ |

**2005 GZ$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.68195 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27070830 | $\omega$ | 62.13319 | | +0.44369694 | | +0.89611817 |
| $a$ | 2.3666553 | $\Omega$ | 234.21048 | | −0.82660985 | | +0.40480507 |
| $e$ | 0.1894884 | $i$ | 0.72469 | | −0.34619240 | | +0.18194804 |
| $P$ | 3.64 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 291 | 0.4+ | 0.3+ | 2005 04 15 | 691 | 0.1− | 0.2+ | 2005 05 12 | G96 | 0.2+ | 0.1− |
| 2002 08 16 | 291 | 0.5+ | 0.2− | 2005 04 15 | 691 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.4− | 0.8+ |
| 2002 08 16 | 291 | 0.5− | 0.3− | 2005 04 15 | 691 | 0.6+ | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.4+ |
| 2002 08 29 | 291 | 0.2− | 0.4+ | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.3− |
| 2002 08 29 | 291 | 0.2+ | 0.0 | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.5+ |
| 2002 08 29 | 291 | 0.1+ | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2002 09 12 | 644 | 1.1− | 0.2+ | 2005 05 12 | G96 | 1.0− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 09 12 | 644 | 0.6− | 0.4+ | 2005 05 12 | G96 | 0.1− | 0.9+ | | | | |
| 2002 09 12 | 644 | 0.9− | 0.1+ | 2005 05 12 | G96 | 0.4− | 0.6− | | | | |

**2005 GT$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.43662 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23953240 | $\omega$ | 78.11119 | | −0.85972078 | | +0.03967335 |
| $a$ | 2.5677922 | $\Omega$ | 102.47045 | | −0.18386170 | | −0.95418222 |
| $e$ | 0.1306788 | $i$ | 31.43462 | | +0.47652393 | | −0.29658440 |
| $P$ | 4.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 699 | 1.4+ | 0.1+ | 2005 03 10 | 704 | 0.2+ | 0.4+ | 2005 04 19 | 703 | 0.0 | 0.1+ |
| 2001 05 15 | 699 | 0.7− | 0.5+ | 2005 03 10 | 704 | 0.8− | 0.3− | 2005 04 19 | 703 | 0.7− | 0.3+ |
| 2001 05 15 | 699 | 0.6+ | 0.3− | 2005 04 01 | 703 | 1.0+ | 0.2+ | 2005 04 19 | 703 | 0.1− | 0.0 |
| 2001 05 15 | 699 | 0.4− | 0.9+ | 2005 04 01 | 703 | 0.1− | 0.6+ | 2005 05 06 | 703 | 0.1− | 0.6+ |
| 2004 01 23 | 699 | 0.0 | 0.9− | 2005 04 01 | 703 | 0.6− | 0.3+ | 2005 05 06 | 703 | 0.9− | 0.4+ |
| 2004 01 23 | 699 | 0.6+ | 0.4− | 2005 04 01 | 703 | 1.5+ | 0.0 | 2005 05 06 | 703 | 1.1− | 0.2− |
| 2004 01 23 | 699 | 0.3+ | 1.7+ | 2005 04 10 | 703 | 0.4+ | 0.1− | 2005 05 06 | 703 | 0.8− | 0.4− |
| 2004 01 23 | 699 | 1.5− | 0.4+ | 2005 04 10 | 703 | 0.7+ | 0.4− | 2005 05 16 | 703 | 0.8+ | 0.5+ |
| 2005 03 10 | 704 | 0.1+ | 1.0− | 2005 04 10 | 703 | 0.0 | 0.2+ | 2005 05 16 | 703 | 0.2+ | 0.2+ |
| 2005 03 10 | 704 | 0.3+ | 0.8+ | 2005 04 10 | 703 | 1.2− | 1.2− | 2005 05 16 | 703 | 0.8+ | 0.1− |
| 2005 03 10 | 704 | 0.3− | 1.0− | 2005 04 19 | 703 | 0.4+ | 0.6− | 2005 05 16 | 703 | 0.3− | 0.0 |

**2005 GW$_{180}$ = 2006 UH$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.42604 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25567790 | $\omega$ | 142.74198 | +0.31577409 | | +0.94843179 | |
| $a$ | 2.4585210 | $\Omega$ | 145.64081 | −0.88190651 | | +0.30412179 | |
| $e$ | 0.2040072 | $i$ | 2.80696 | −0.35003948 | | +0.08937048 | |
| $P$ | 3.85 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2005 04 12 | 691 | 0.1+ | 0.3+ | 2005 05 11 | G96 | 0.2− | 0.4− |
| 2001 04 16 | 645 | 0.1− | 0.0 | 2005 04 12 | 691 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 10 05 | 645 | 0.1− | 0.1+ | 2005 04 19 | 691 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2005 04 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2005 04 01 | 691 | 0.2− | 0.4− | 2005 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2005 04 01 | 691 | 0.1− | 0.0 | 2005 05 11 | G96 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2005 04 01 | 691 | 0.1− | 0.1− | 2005 05 11 | G96 | 0.5− | 0.0 | 2006 10 22 | 691 | 0.3+ | 0.3+ |
| 2005 04 12 | 691 | 0.3+ | 0.1+ | 2005 05 11 | G96 | 0.6− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1+ |

**2005 GX$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.13782 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26076198 | $\omega$ | 193.92659 | +0.03804589 | | +0.99831327 | |
| $a$ | 2.4264604 | $\Omega$ | 78.26737 | −0.91247648 | | +0.05259758 | |
| $e$ | 0.1690619 | $i$ | 2.56710 | −0.40735633 | | −0.02457880 | |
| $P$ | 3.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | (6.3+ | 2.4−) | 2005 04 12 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.5+ |
| 1995 12 18 | 691 | 0.1− | 0.1− | 2005 04 12 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 703 | 1.4+ | 1.1− |
| 1995 12 18 | 691 | 0.0 | 0.2+ | 2005 04 12 | 704 | 0.7− | 1.1− | 2006 10 21 | G96 | 0.5− | 0.3− |
| 1999 12 18 | 691 | 0.1+ | 0.2− | 2005 04 12 | 704 | 0.4− | 1.0− | 2006 10 21 | 703 | (3.5+ | 2.0+) |
| 1999 12 18 | 691 | 0.1+ | 0.2+ | 2005 04 12 | 704 | 0.2− | 0.6− | 2006 10 21 | G96 | 0.4− | 0.1− |
| 1999 12 18 | 691 | 0.1− | 0.0 | 2005 04 12 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | (1.6− | 0.7−) |
| 2005 03 09 | G96 | 0.3− | 0.0 | 2005 04 19 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | (2.1− | 1.3−) |
| 2005 03 09 | G96 | 0.4− | 0.0 | 2005 04 19 | 691 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2005 03 09 | G96 | 0.2− | 0.5+ | 2005 04 19 | 691 | 0.5+ | 0.7+ | 2006 10 21 | 703 | 0.6+ | 1.4+ |
| 2005 03 09 | G96 | 0.3− | 0.1− | 2005 05 10 | G96 | 0.7− | 1.2− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2005 04 01 | 691 | 0.1− | 0.1+ | 2005 05 10 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2005 04 01 | 691 | 0.0 | 0.0 | 2005 05 10 | G96 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 04 01 | 691 | 0.1− | 0.3+ | 2005 05 10 | G96 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2005 04 12 | 691 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.4+ | | | | |
| 2005 04 12 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.1+ | | | | |

**2005 GB$_{182}$ = 2006 UU$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.39763 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24088702 | $\omega$ | 353.93592 | −0.53392577 | | +0.84181230 | |
| $a$ | 2.5581565 | $\Omega$ | 243.76790 | −0.77200162 | | −0.52356337 | |
| $e$ | 0.1624468 | $i$ | 5.06651 | −0.34487210 | | −0.13127623 | |
| $P$ | 4.09 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 13 | 691 | 0.1+ | 0.1+ | 2005 05 11 | 291 | 0.3− | 0.8− | 2006 10 19 | 691 | 0.6− | 0.2− |
| 2005 04 13 | 691 | 0.1+ | 0.0 | 2005 05 11 | 291 | 0.5− | 0.5+ | 2006 10 19 | 691 | 0.4+ | 0.2+ |
| 2005 04 13 | 691 | 0.0 | 0.2− | 2005 05 11 | 291 | 0.7+ | 0.5+ | 2006 10 21 | 691 | 0.1+ | 0.3+ |
| 2005 04 18 | E12 | 0.4− | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2+ | 0.2+ |
| 2005 04 18 | E12 | 0.1− | 1.0− | 2006 10 11 | 691 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.2+ | 0.1+ |
| 2005 04 18 | E12 | 0.5+ | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.5− | | | | |
| 2005 04 18 | E12 | 0.3− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ | | | | |

**2005 GC$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.49946 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22666349 | $\omega$ | 318.56473 | −0.38309199 | | +0.92289437 | |
| $a$ | 2.6640866 | $\Omega$ | 288.87724 | −0.83632345 | | −0.36438367 | |
| $e$ | 0.2113205 | $i$ | 2.35093 | −0.39217804 | | −0.12446091 | |
| $P$ | 4.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 291 | 0.1+ | 0.3+ | 2005 05 12 | 699 | 0.4− | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2002 10 13 | 291 | 0.2− | 0.2+ | 2005 05 12 | 699 | 0.6+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2002 10 13 | 291 | 0.1− | 0.2+ | 2005 05 12 | 699 | 0.3+ | 0.6− | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2005 04 13 | 691 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.3+ | 0.2− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2005 04 13 | 691 | 0.1− | 0.1+ | 2005 05 14 | 644 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2005 04 13 | 691 | 0.2+ | 0.2+ | 2005 05 14 | 644 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2005 04 18 | E12 | 1.1− | 0.0 | 2005 05 14 | 644 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.4+ | 0.1− |
| 2005 04 18 | E12 | 0.6− | 0.0 | 2005 05 14 | 704 | 1.0+ | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.3+ |
| 2005 04 18 | E12 | (2.0− | 0.4+) | 2005 05 14 | 704 | 0.9+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.4− |
| 2005 04 18 | E12 | 0.1− | 0.8+ | 2005 05 14 | 644 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.4− | 0.2− |
| 2005 05 01 | 644 | 0.1+ | 0.1− | 2005 05 14 | 644 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2005 05 01 | 644 | 0.1+ | 0.1+ | 2005 05 14 | 704 | 0.5+ | 0.6− | 2006 10 02 | G96 | 0.2− | 0.2+ |
| 2005 05 01 | 644 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2005 05 06 | 703 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.8+ | 0.3− |
| 2005 05 06 | 703 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.6+ | 0.4− |
| 2005 05 06 | 703 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2005 05 06 | 703 | 1.1− | 0.8− | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.5− |
| 2005 05 12 | 699 | (1.8+ | 1.2−) | 2006 09 25 | 691 | 0.0 | 0.2+ | | | | |

**2005 GL$_{190}$ = 2006 QF$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.73806 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26120111 | $\omega$ | 260.62009 | +0.15353426 | | +0.98806029 | |
| $a$ | 2.4237400 | $\Omega$ | 18.22672 | −0.88977257 | | +0.14387670 | |
| $e$ | 0.1812102 | $i$ | 2.34717 | −0.42980461 | | +0.05510311 | |
| $P$ | 3.77 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.2− | 0.2− | 2006 08 21 | 691 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.6+ | 0.1+ |
| 2005 03 10 | G96 | 0.7+ | 0.0 | 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2005 03 10 | G96 | 0.4− | 0.0 | 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2005 03 10 | G96 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.3+ |
| 2005 04 12 | 695 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 695 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3+ |
| 2005 04 13 | 695 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.0 | 0.1+ |

**2005 GB$_{201}$ = 2006 QG$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.40265 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22761655 | $\omega$ | 286.87126 | +0.38627447 | | +0.92231607 | |
| $a$ | 2.6566448 | $\Omega$ | 5.88798 | −0.79933707 | | +0.34077127 | |
| $e$ | 0.2511147 | $i$ | 6.25928 | −0.46027413 | | +0.18223062 | |
| $P$ | 4.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.5− | 0.3+ |
| 2005 03 11 | 691 | 0.4− | 0.1+ | 2006 08 28 | 703 | (1.6− | 2.2−) | 2006 09 30 | 703 | 0.2− | 1.2+ |
| 2005 03 11 | 691 | 0.4+ | 0.3+ | 2006 09 14 | 703 | (0.5+ | 2.2+) | 2006 09 30 | 703 | (0.9+ | 1.9+) |
| 2005 03 11 | 695 | 0.3− | 0.3+ | 2006 09 14 | 703 | 1.1+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2+ |
| 2005 04 04 | G96 | 0.0 | 0.2+ | 2006 09 14 | 703 | (0.1− | 2.0+) | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2005 04 04 | G96 | 0.4+ | 0.3− | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2005 04 04 | G96 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 19 | 699 | (0.7+ | 2.5+) | 2006 11 11 | G96 | 0.8− | 0.3− |
| 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.6+ | 2006 11 11 | G96 | 0.0 | 0.8− |
| 2005 04 11 | 695 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 1.0− | 0.3− | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2005 04 11 | 695 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.6− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 27 | 699 | 0.8− | 0.1+ | 2006 09 26 | 691 | 0.9+ | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.1+ | | |
| 2006 08 27 | 699 | 0.8+ | 1.0− | 2006 09 26 | 691 | 0.4− | 0.9+ | 2006 11 21 | G96 | 0.5+ | 0.1+ | | |
| 2006 08 27 | 699 | 1.3− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.1− | | |
| 2006 08 27 | 699 | 0.7− | 0.6− | 2006 09 30 | 703 | 0.9− | 0.7− | 2006 11 21 | G96 | 0.5+ | 0.1+ | | |
| 2006 08 28 | 703 | 1.2+ | 0.6− | 2006 09 30 | G96 | 0.2− | 0.1− | | | | | | |
| 2006 08 28 | 703 | 0.3− | 0.5− | 2006 09 30 | 703 | (3.1− | 1.5+) | | | | | | |

**2005 GK$_{203}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.80155 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24436989 | $\omega$ | 176.55661 | | +0.98589379 | | −0.16674653 |
| $a$ | 2.5337918 | $\Omega$ | 193.06893 | | +0.15199295 | | +0.92812715 |
| $e$ | 0.2278371 | $i$ | 3.66588 | | +0.07008266 | | +0.33282967 |
| $P$ | 4.03 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 26 | 704 | 0.7+ | 0.0 | 2003 12 01 | 704 | 0.9− | 0.8− | 2005 04 09 | G96 | 0.2+ | 0.1− | | |
| 2003 10 26 | 704 | 0.4− | 0.8+ | 2003 12 21 | 691 | 0.1+ | 0.0 | 2005 04 09 | G96 | 0.3− | 0.2− | | |
| 2003 10 26 | 704 | 0.4+ | 0.2+ | 2003 12 21 | 704 | 0.8+ | 0.6+ | 2005 04 09 | G96 | 0.3− | 0.1+ | | |
| 2003 10 26 | 704 | 0.0 | 0.8+ | 2003 12 21 | 691 | 0.0 | 0.2+ | 2005 04 12 | 695 | 0.1+ | 0.1+ | | |
| 2003 10 26 | 704 | 0.1− | 0.6+ | 2003 12 21 | 704 | 0.6+ | 0.5− | 2005 04 12 | 695 | 0.2− | 0.2+ | | |
| 2003 11 18 | 644 | 0.1+ | 0.2− | 2003 12 21 | 704 | 1.0− | 0.1+ | 2006 05 21 | G96 | 0.1− | 0.5+ | | |
| 2003 11 18 | 644 | 0.0 | 0.7+ | 2003 12 21 | 691 | 0.1− | 0.0 | 2006 05 21 | G96 | 0.3+ | 0.4− | | |
| 2003 11 18 | 644 | 0.2− | 0.2+ | 2005 03 09 | G96 | 0.4+ | 0.4− | 2006 05 21 | G96 | 0.8− | 0.1+ | | |
| 2003 12 01 | 704 | 0.3− | 0.4+ | 2005 03 09 | G96 | 0.0 | 0.3− | 2006 05 21 | G96 | 0.3+ | 0.5− | | |
| 2003 12 01 | 704 | 0.1+ | 0.0 | 2005 03 09 | G96 | 0.1+ | 1.2+ | 2006 05 21 | 691 | 0.3− | 0.1+ | | |
| 2003 12 01 | 704 | 0.3+ | 0.6+ | 2005 03 09 | G96 | 0.3+ | 0.1− | 2006 05 21 | 691 | 0.2+ | 0.8+ | | |
| 2003 12 01 | 704 | 0.5− | 0.2+ | 2005 04 09 | G96 | 0.0 | 0.1+ | 2006 05 21 | 691 | 0.4+ | 0.5+ | | |

**2005 GN$_{203}$ = 2005 GT$_{25}$ = 2005 GO$_{212}$**

Id. Minor Planet Center (d, *MPO* 87833)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.78594 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25223160 | $\omega$ | 52.87021 | | −0.31387655 | | +0.94944645 |
| $a$ | 2.4808646 | $\Omega$ | 198.83924 | | −0.87665686 | | −0.29212448 |
| $e$ | 0.1502753 | $i$ | 1.01864 | | −0.36462893 | | −0.11495535 |
| $P$ | 3.91 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.0 | 0.1+ | 2005 04 09 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.3− | 0.2− | | |
| 2005 03 10 | G96 | 0.4− | 0.4+ | 2005 04 09 | 701 | 0.2− | 1.3+ | 2006 09 17 | 691 | 0.4+ | 0.7+ | | |
| 2005 03 10 | G96 | 0.3− | 0.4− | 2005 04 09 | 691 | 0.2− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.0 | | |
| 2005 03 10 | G96 | 0.7+ | 0.0 | 2005 04 09 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.6− | 0.1− | | |
| 2005 04 02 | G96 | 0.3− | 0.1− | 2005 04 09 | 701 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2+ | | |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2005 04 09 | 701 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3+ | | |
| 2005 04 02 | G96 | 0.1− | 0.2− | 2005 04 12 | 695 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1+ | | |
| 2005 04 02 | G96 | 0.3− | 0.2− | 2005 04 12 | 695 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3− | 0.5− | | |
| 2005 04 05 | G96 | 0.3− | 0.6− | 2005 05 08 | G96 | 0.2− | 0.6− | 2006 09 27 | G96 | 0.2− | 0.3− | | |
| 2005 04 05 | G96 | 0.7+ | 0.1+ | 2005 05 08 | G96 | 0.3− | 0.5− | 2006 09 27 | G96 | 0.4+ | 0.3− | | |
| 2005 04 05 | G96 | 0.3− | 0.3− | 2005 05 08 | G96 | 0.1− | 0.5− | 2006 09 27 | G96 | 0.1− | 0.5− | | |
| 2005 04 05 | G96 | 0.2− | 0.3− | 2005 05 08 | G96 | 0.3+ | 0.4− | | | | | | |

**2005 GU$_{203}$ = 2006 OX$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.57826 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28472335 | $\omega$ | 336.29425 | | +0.96574600 | | +0.25825008 |
| $a$ | 2.2883405 | $\Omega$ | 8.85342 | | −0.20388844 | | +0.81557104 |
| $e$ | 0.1950342 | $i$ | 9.47243 | | −0.16051219 | | +0.51783277 |
| $P$ | 3.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 15 | 644 | 0.4+ | 0.6+ | 2003 12 30 | 704 | 0.1+ | 0.2− | 2006 07 20 | E12 | 0.4+ | 0.3+ | | |
| 2002 05 15 | 644 | 0.0 | 0.7+ | 2003 12 30 | 704 | 0.1+ | 0.2+ | 2006 07 31 | E12 | 0.4− | 0.3+ | | |
| 2002 05 15 | 644 | 0.8+ | 0.8+ | 2003 12 30 | 704 | 0.9− | 1.0+ | 2006 07 31 | E12 | 0.2− | 0.4− | | |
| 2003 09 27 | 704 | 0.3− | 0.2− | 2005 03 01 | 691 | 0.5+ | 0.4− | 2006 07 31 | E12 | 0.4− | 0.2+ | | |
| 2003 09 27 | 704 | 0.1+ | 1.0+ | 2005 03 01 | 691 | 0.2− | 0.4+ | 2006 07 31 | E12 | 1.2− | 0.4+ | | |
| 2003 09 27 | 704 | 0.3− | 0.2− | 2005 03 01 | 691 | 0.1+ | 0.1− | 2006 08 13 | E12 | 0.2− | 0.0 | | |
| 2003 11 20 | 704 | 0.1+ | 0.1+ | 2005 04 10 | 695 | 0.2− | 1.1+ | 2006 08 13 | E12 | 0.2+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.4− | 0.4− | 2005 04 10 | 695 | 0.2− | 0.1+ | 2006 08 13 | E12 | 0.5+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.1− | 0.4+ | 2005 04 16 | 691 | 0.1− | 0.7+ | 2006 08 13 | E12 | 0.4+ | 0.5+ | | |
| 2003 11 20 | 704 | 1.4− | 0.4+ | 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 08 26 | E12 | 0.2+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.5+ | 0.2− | 2005 04 16 | 691 | 0.6+ | 0.4+ | 2006 08 26 | E12 | 0.2+ | 0.0 | | |
| 2003 11 26 | 704 | 0.1+ | 0.0 | 2005 05 13 | G96 | 0.5− | 0.3− | 2006 08 26 | E12 | 0.1+ | 0.1− | | |
| 2003 11 26 | 704 | 0.5+ | 0.4+ | 2005 05 13 | G96 | 0.7− | 0.2− | 2006 08 26 | E12 | 0.3− | 0.4+ | | |
| 2003 11 26 | 704 | 0.7+ | 0.7− | 2005 05 13 | G96 | 0.3− | 0.1+ | 2006 09 12 | E12 | 0.2− | 0.3+ | | |
| 2003 12 03 | 704 | (1.8+ | 0.4+) | 2005 05 13 | G96 | 0.6− | 0.0 | 2006 09 12 | E12 | (0.4− | 1.7+) | | |
| 2003 12 03 | 704 | (2.6+ | 0.2−) | 2006 07 18 | E12 | 0.4+ | 0.2+ | 2006 09 12 | E12 | 0.4+ | 0.0 | | |
| 2003 12 03 | 704 | (0.8+ | 2.4+) | 2006 07 18 | E12 | 0.6− | 0.1− | 2006 10 13 | E12 | 0.2+ | 0.2+ | | |
| 2003 12 03 | 704 | (2.0+ | 0.4−) | 2006 07 18 | E12 | 0.2− | 0.2+ | 2006 10 13 | E12 | 0.1− | 1.2+ | | |
| 2003 12 03 | 704 | (2.3+ | 1.5+) | 2006 07 18 | E12 | 0.4+ | 0.5+ | 2006 10 13 | E12 | 0.1+ | 0.2− | | |
| 2003 12 17 | 704 | 0.1+ | 0.2− | 2006 07 18 | E12 | 0.0 | 0.2+ | 2006 10 13 | E12 | 0.3+ | 0.0 | | |
| 2003 12 17 | 704 | 0.2+ | 0.6+ | 2006 07 18 | E12 | 0.5− | 0.2− | 2006 11 23 | G96 | 0.8− | 0.4+ | | |
| 2003 12 17 | 704 | 0.5− | 0.1+ | 2006 07 18 | E12 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.8− | 0.3+ | | |
| 2003 12 17 | 704 | 0.4+ | 0.8+ | 2006 07 18 | E12 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.8− | 0.2+ | | |
| 2003 12 17 | 704 | 0.7− | 0.5+ | 2006 07 20 | E12 | 0.2− | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.5+ | | |
| 2003 12 30 | 704 | 0.2+ | 1.0+ | 2006 07 20 | E12 | 0.4− | 0.2− | | | | | | |
| 2003 12 30 | 704 | 0.3− | 0.8+ | 2006 07 20 | E12 | 0.0 | 1.0− | | | | | | |

**2005 GF$_{204}$ = 2006 UX$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.59625 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31042081 | $\omega$ | 128.77005 | | +0.37674673 | | +0.92616305 |
| $a$ | 2.1602408 | $\Omega$ | 163.33837 | | −0.86706366 | | +0.35899056 |
| $e$ | 0.1591953 | $i$ | 3.36900 | | −0.32597930 | | +0.11553258 |
| $P$ | 3.18 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | 691 | 0.0 | 0.4− | 2005 04 11 | 695 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.0 | | |
| 2005 03 11 | 691 | 0.2+ | 0.4+ | 2005 04 11 | 695 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.5+ | 0.3− | | |
| 2005 03 11 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.4+ | | |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.6+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ | | |
| 2005 04 10 | G96 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.2+ | | |
| 2005 04 10 | G96 | 0.4− | 0.3− | 2006 09 30 | G96 | 0.3+ | 0.3− | | | | | | |
| 2005 04 10 | G96 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.3− | | | | | | |

**2005 GO$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.12075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27063247 | $\omega$ | 263.48267 | | +0.42061042 | | +0.90711948 |
| $a$ | 2.3670973 | $\Omega$ | 31.40378 | | −0.82069275 | | +0.38742062 |
| $e$ | 0.2211823 | $i$ | 1.63532 | | −0.38671732 | | +0.16443692 |
| $P$ | 3.64 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.2− | 0.3− | 2006 11 13 | 691 | 0.0 | 0.3− | | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.4+ | 0.3+ | 2006 11 18 | 691 | 0.3+ | 0.4+ | | |
| 2002 10 04 | 644 | 0.2− | 0.5+ | 2005 04 10 | 695 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.5− | 0.2+ | | |
| 2002 10 04 | 644 | 0.2− | 0.5+ | 2005 04 10 | 695 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.2+ | | |
| 2002 10 04 | 644 | 0.2− | 0.4+ | 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.2+ | | |
| 2002 10 10 | 645 | 0.1+ | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 11 20 | 691 | 0.1+ | 0.6+ | | |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.2− | | |
| 2002 10 30 | 645 | 0.1− | 0.2− | 2005 05 08 | G96 | 0.7− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2002 11 07 | 695 | 0.0 | 0.6+ | 2005 05 08 | G96 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.5− | 0.4− | | |
| 2002 11 07 | 695 | 0.3+ | 0.9+ | 2005 05 08 | G96 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.3− | 0.4− | | |
| 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.4− | 0.1− | | | | | | |
| 2005 04 02 | G96 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.5+ | 0.4+ | | | | | | |

**2005 GU$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.93040 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17540764 | $\omega$ | 72.93340 | | +0.24422491 | | +0.94155307 |
| $a$ | 3.1606062 | $\Omega$ | 214.06372 | | −0.96965382 | | +0.23988134 |
| $e$ | 0.3409882 | $i$ | 24.47095 | | +0.01120970 | | +0.23650532 |
| $P$ | 5.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.5− | 0.1+ | 2005 04 18 | 703 | 0.4− | 1.4− | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2005 04 10 | G96 | 0.5− | 0.3+ | 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.2− |
| 2005 04 10 | G96 | 0.1− | 0.3+ | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2005 04 10 | G96 | 0.2− | 0.4+ | 2005 04 30 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 2005 04 12 | 695 | 0.2− | 0.3+ | 2005 05 14 | 644 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.4+ |
| 2005 04 12 | 695 | 0.0 | 0.2+ | 2005 05 14 | 644 | 0.2+ | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2005 04 18 | 703 | 0.3− | 0.9+ | 2005 05 14 | 644 | 0.3+ | 0.4− | 2006 11 16 | 691 | 0.2− | 0.2− |
| 2005 04 18 | 703 | (3.7+ | 0.7−) | 2006 10 17 | 691 | 0.2+ | 0.1− | | | | |
| 2005 04 18 | 703 | 1.3− | 1.4− | 2006 10 17 | 691 | 0.1+ | 0.2+ | | | | |

**2005 GN$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.11426 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29863104 | $\omega$ | 256.18470 | | +0.99157475 | | −0.12250137 |
| $a$ | 2.2167297 | $\Omega$ | 110.83870 | | +0.12926582 | | +0.91479786 |
| $e$ | 0.1436127 | $i$ | 2.58224 | | +0.00835871 | | +0.38488738 |
| $P$ | 3.30 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 691 | 0.3− | 0.3+ | 2005 04 30 | 691 | 0.2− | 0.5+ | 2006 11 11 | 703 | 1.4− | 0.4− |
| 1998 03 03 | 691 | 0.3− | 0.1+ | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 1998 03 03 | 691 | 0.6− | 0.0 | 2006 09 17 | 699 | 0.6+ | 0.4+ | 2006 11 13 | 683 | (2.5+ | 1.2−) |
| 1999 08 07 | 699 | (0.3+ | 2.2+) | 2006 09 17 | 699 | (1.6+ | 1.2−) | 2006 11 13 | 683 | (1.6+ | 0.3−) |
| 1999 08 07 | 699 | 0.0 | 0.1+ | 2006 09 17 | 699 | (1.6+ | 0.1+) | 2006 11 13 | 683 | (3.4+ | 0.1−) |
| 1999 08 07 | 699 | 0.0 | 0.8+ | 2006 09 17 | 699 | 0.7+ | 1.4+ | 2006 11 13 | 104 | 0.2+ | 0.3+ |
| 1999 08 07 | 691 | 0.1+ | 0.2+ | 2006 10 15 | D35 | 0.8− | 0.3− | 2006 11 13 | 104 | 0.2+ | 0.1− |
| 1999 08 07 | 691 | 0.1+ | 0.0 | 2006 10 15 | D35 | 0.9− | 0.4− | 2006 11 13 | 104 | 0.1+ | 0.5+ |
| 1999 08 07 | 691 | 0.1− | 0.0 | 2006 10 15 | D35 | 0.7− | 0.3− | 2006 11 14 | 683 | 0.3+ | 0.0 |
| 2003 12 21 | 704 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 14 | 683 | 0.7+ | 0.0 |
| 2003 12 21 | 704 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 14 | 683 | 0.8+ | 0.8− |
| 2003 12 21 | 704 | 1.2+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 15 | 683 | 0.2+ | 0.1− |
| 2003 12 21 | 704 | 0.0 | 0.5− | 2006 10 27 | 704 | 0.4− | 0.7+ | 2006 11 15 | 683 | 0.3+ | 0.7− |
| 2003 12 30 | 704 | 0.2− | 0.6+ | 2006 10 27 | 704 | 1.3− | 0.8+ | 2006 11 15 | 683 | 0.4+ | 0.4− |
| 2003 12 30 | 704 | 0.0 | 0.1+ | 2006 10 27 | 704 | 1.0+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2003 12 30 | 704 | 0.8+ | 0.7+ | 2006 10 27 | 704 | 1.0− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.6− |
| 2003 12 30 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 704 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2004 01 16 | 644 | 0.2+ | 0.5+ | 2006 11 02 | 703 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.8+ | 0.5− |
| 2004 01 16 | 644 | 0.2+ | 0.7+ | 2006 11 02 | 703 | 0.2− | 0.7+ | 2006 11 20 | 704 | (2.3+ | 0.6+) |
| 2004 01 16 | 644 | 0.1+ | 0.4+ | 2006 11 02 | 703 | 1.4− | 0.2− | 2006 11 20 | 704 | 0.3− | 0.6+ |
| 2004 01 21 | 704 | 0.5− | 0.9− | 2006 11 02 | 703 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.3− |
| 2004 01 21 | 704 | 1.3+ | 0.4− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 25 | 683 | 0.3+ | 0.3− |
| 2004 01 21 | 704 | 0.6− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 25 | 683 | 0.7− | 1.9+ |
| 2004 01 31 | 291 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 25 | 683 | 1.1+ | 1.7+ |
| 2004 01 31 | 291 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 28 | 683 | 0.6− | 0.1− |
| 2004 01 31 | 291 | 0.4+ | 0.0 | 2006 11 10 | 644 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.3− | 0.6+ |
| 2005 04 11 | 695 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 28 | 683 | 1.1− | 1.1+ |
| 2005 04 11 | 695 | 0.0 | 0.3+ | 2006 11 11 | 683 | 1.4+ | 0.1+ | 2006 11 28 | 704 | 0.5− | 0.3+ |
| 2005 04 16 | 691 | 0.5+ | 0.2+ | 2006 11 11 | 683 | (0.8+ | 1.7−) | 2006 11 28 | 704 | 0.5− | 0.2− |
| 2005 04 16 | 691 | 0.4+ | 0.0 | 2006 11 11 | 683 | 1.2+ | 0.8− | 2006 11 28 | 704 | 0.5− | 0.8+ |
| 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.7− | 2006 11 28 | 704 | 0.1− | 1.1+ |
| 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.9− | | | | |

**2005 GO$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.77756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28234132 | $\omega$ | 337.96488 | | −0.95864837 | | −0.28450023 |
| $a$ | 2.3011932 | $\Omega$ | 185.52139 | | +0.27109192 | | −0.90509154 |
| $e$ | 0.0937682 | $i$ | 4.33594 | | +0.08661681 | | −0.31602044 |
| $P$ | 3.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | 691 | 0.1− | 0.2+ | 2005 05 11 | 807 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.7+ | 0.1− |
| 2005 04 05 | 691 | 0.6− | 0.5− | 2005 05 11 | 807 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2005 04 05 | 691 | 0.4+ | 0.4− | 2006 09 14 | 644 | 0.5+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.7− |
| 2005 04 11 | 695 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.2− | 0.7− |
| 2005 04 11 | 695 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.2− |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.8− | 1.1+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2005 04 16 | 691 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.8− | 0.1− |
| 2005 04 30 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.5− | 0.3− |
| 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2005 04 30 | 599 | 0.6+ | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2005 04 30 | 599 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.5− |
| 2005 04 30 | 599 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.1− | | | | |
| 2005 04 30 | 599 | 0.1+ | 0.6− | 2006 10 16 | G96 | 0.5+ | 0.4− | | | | |

**2005 GT$_{206}$ = 2006 QS$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.29903 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22531287 | $\omega$ | 153.97171 | | +0.94142416 | | +0.33720196 |
| $a$ | 2.6747224 | $\Omega$ | 186.32562 | | −0.31528094 | | +0.87597610 |
| $e$ | 0.1400091 | $i$ | 2.04068 | | −0.11965987 | | +0.34490681 |
| $P$ | 4.37 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 695 | 0.0 | 0.1+ | 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.7+ | 0.3+ |
| 2005 04 12 | 695 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.8+ | 0.1+ | 2006 09 20 | 704 | (2.1+ | 0.5+) |
| 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.8− | 0.8+ |
| 2005 04 16 | 691 | 0.2− | 0.3− | 2006 08 24 | 644 | 0.4− | 0.3− | 2006 09 20 | 704 | 0.6+ | 0.8+ |
| 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 1.1+ | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2005 05 14 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.4+ | 1.1+ | 2006 10 16 | G96 | 0.5+ | 0.2− |
| 2005 05 14 | G96 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2005 05 14 | G96 | 0.1− | 0.8− | 2006 08 28 | 703 | (2.3− | 1.5+) | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2005 05 14 | G96 | 0.3− | 0.7− | 2006 09 12 | 703 | 1.1− | 0.8− | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2005 06 13 | G96 | 0.5+ | 0.0 | 2006 09 12 | 703 | 0.0 | 0.7+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2005 06 13 | G96 | 0.2− | 0.4− | 2006 09 12 | 703 | 0.4− | 1.1− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2005 06 13 | G96 | 0.1− | 0.3− | 2006 09 12 | 703 | (0.4− | 1.8−) | 2006 11 11 | G96 | 0.4+ | 0.7− |

**2005 GP$_{214}$ = 2002 TV$_{337}$ = 2006 QB$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.45963 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22866581 | $\omega$ | 124.45212 | | −0.26227789 | | +0.96308068 |
| $a$ | 2.6485117 | $\Omega$ | 130.22421 | | −0.90939864 | | −0.22563231 |
| $e$ | 0.0440714 | $i$ | 4.56071 | | −0.32280710 | | −0.14685256 |
| $P$ | 4.31 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.1− | 0.8+ | 2005 04 02 | 691 | 0.1− | 0.0 | 2005 05 11 | 691 | 0.2− | 0.0 |
| 2000 02 06 | 695 | 0.6+ | 0.6+ | 2005 04 15 | 691 | 0.3+ | 0.1+ | 2005 05 11 | 691 | 0.0 | 0.2− |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.4+ | 0.1− |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2005 04 15 | 691 | 0.3+ | 0.2+ | 2006 08 21 | 691 | 0.1− | 0.4− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 04 30 | 691 | 0.1− | 0.0 | 2006 08 21 | 691 | 0.2+ | 0.1− |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2005 04 02 | 691 | 0.1+ | 0.2+ | 2005 04 30 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.4− | 0.9+ |
| 2005 04 02 | 691 | 0.1− | 0.1− | 2005 05 11 | 691 | 0.2− | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.1− |

**2005 GQ$_{214}$ = 2000 KQ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 165.02089 | | | (2000.0) | | |
| $n$ | 0.19078426 | $\omega$ | 320.11563 | | −0.74878030 | −0.66280503 |
| $a$ | 2.9884158 | $\Omega$ | 178.35220 | | +0.63921234 | −0.72377011 |
| $e$ | 0.1311548 | $i$ | 8.37657 | | +0.17531585 | −0.19195393 |
| $P$ | 5.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 29 | 691 | 0.4+ | 0.1+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2005 04 30 | 691 | 0.1− | 0.2− |
| 2000 05 29 | 691 | 0.0 | 0.1+ | 2002 11 08 | 645 | 0.0 | 0.0 | 2005 04 30 | 691 | 0.3− | 0.0 |
| 2000 05 29 | 691 | 0.0 | 0.0 | 2005 04 02 | 691 | 0.5+ | 0.1+ | 2005 04 30 | 691 | 0.0 | 0.1+ |
| 2000 06 07 | 691 | 0.0 | 0.1− | 2005 04 02 | 691 | 0.1− | 0.1+ | 2005 05 15 | 644 | 0.1− | 0.3− |
| 2000 06 07 | 691 | 0.1+ | 0.1− | 2005 04 02 | 691 | 0.2+ | 0.2+ | 2005 05 15 | 644 | 0.4− | 0.1− |
| 2000 06 07 | 691 | 0.6− | 0.2− | 2005 04 15 | 691 | 0.0 | 0.0 | 2005 05 15 | 644 | 0.4+ | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2005 04 15 | 691 | 0.4− | 0.1− | | | | |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2005 04 15 | 691 | 0.4+ | 0.2+ | | | | |

**2005 GR$_{214}$ = 2001 QD$_{232}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.85334 | | | (2000.0) | | |
| $n$ | 0.18275510 | $\omega$ | 49.78204 | | −0.69650343 | +0.71699483 |
| $a$ | 3.0753157 | $\Omega$ | 175.72898 | | −0.71753411 | −0.69623216 |
| $e$ | 0.0510003 | $i$ | 22.34083 | | +0.00526994 | −0.03433944 |
| $P$ | 5.39 | $H$ | 15.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.9+ | 0.3− | 2005 04 04 | 703 | 0.6− | 0.3+ | 2005 04 16 | 703 | 0.0 | 0.0 |
| 2001 08 24 | 699 | 0.4+ | 0.6+ | 2005 04 04 | 703 | 0.1− | 1.1+ | 2005 05 08 | 703 | 0.0 | 0.2+ |
| 2001 08 24 | 699 | 0.0 | 0.1+ | 2005 04 08 | 704 | 1.5+ | 0.0 | 2005 05 08 | 703 | (0.0 | 2.3−) |
| 2001 08 24 | 699 | 0.9+ | 0.9− | 2005 04 08 | 704 | (2.9+ | 1.5+) | 2005 05 08 | 703 | 0.4− | 0.0 |
| 2001 08 25 | 704 | 0.0 | 0.2− | 2005 04 08 | 704 | 0.9− | 0.4− | 2005 05 08 | 703 | 0.9− | 0.2− |
| 2001 08 25 | 704 | 1.5− | 0.2− | 2005 04 08 | 704 | 1.2+ | 1.1− | 2005 05 12 | 704 | 0.7− | 0.3+ |
| 2001 08 25 | 704 | 0.6− | 0.9+ | 2005 04 16 | 703 | 0.8− | 0.1+ | 2005 05 12 | 704 | 1.3+ | 0.1+ |
| 2005 04 04 | 703 | 0.3− | 0.1+ | 2005 04 16 | 703 | 0.3− | 1.3− | 2005 05 12 | 704 | 1.0+ | 0.7+ |
| 2005 04 04 | 703 | 0.6+ | 1.4+ | 2005 04 16 | 703 | 0.7− | 1.1− | | | | |

**2005 GT$_{214}$ = 1996 KP$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.89022 | | | (2000.0) | | |
| $n$ | 0.21695986 | $\omega$ | 236.42387 | | +0.19288306 | +0.95808356 |
| $a$ | 2.7429410 | $\Omega$ | 46.24659 | | −0.77470688 | +0.28118628 |
| $e$ | 0.1284238 | $i$ | 17.05338 | | −0.60218384 | −0.05486507 |
| $P$ | 4.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 19 | 809 | 0.6+ | 0.7+ | 2005 04 07 | 691 | 0.2− | 0.1− | 2005 05 14 | 644 | 0.0 | 0.0 |
| 1996 05 19 | 809 | 0.3− | 1.6− | 2005 04 07 | 691 | 0.1− | 0.2− | 2005 05 14 | 644 | 0.1− | 0.0 |
| 1996 05 19 | 809 | 0.5− | 0.7− | 2005 04 07 | 691 | 0.2− | 0.0 | 2005 05 14 | 644 | 0.4+ | 0.1+ |
| 1996 05 22 | 809 | 0.5− | 0.6+ | 2005 04 17 | 691 | 0.1− | 0.1+ | 2005 06 13 | G96 | 0.2+ | 0.1− |
| 1996 05 22 | 809 | (3.0− | 0.8−) | 2005 04 17 | 691 | 0.3+ | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.2+ |
| 1996 05 22 | 809 | (3.7− | 0.0 ) | 2005 04 17 | 691 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.1− | 0.0 |
| 2002 11 04 | 291 | 0.2+ | 0.0 | 2005 04 30 | 599 | 0.1− | 0.3− | 2005 06 13 | G96 | 0.1− | 0.1− |
| 2002 11 04 | 291 | 0.1− | 0.0 | 2005 04 30 | 599 | 0.1+ | 0.2+ | | | | |
| 2002 11 04 | 291 | 0.0 | 0.2− | 2005 04 30 | 599 | 0.1+ | 0.1+ | | | | |

**2005 GU$_{214}$ = 2002 VN$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.46179 | | | (2000.0) | | |
| $n$ | 0.21246474 | $\omega$ | 295.31750 | | +0.93545382 | +0.34809170 |
| $a$ | 2.7814941 | $\Omega$ | 44.38220 | | −0.28451461 | +0.84450614 |
| $e$ | 0.0742860 | $i$ | 5.02835 | | −0.20970834 | +0.40699085 |
| $P$ | 4.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1+ | 0.0 | 2004 03 18 | 291 | 0.1+ | 0.1− | 2005 05 04 | G96 | 0.1+ | 0.3+ |
| 2000 05 04 | 645 | 0.2− | 0.1− | 2004 04 14 | 291 | 0.1− | 0.0 | 2005 05 04 | G96 | 0.3− | 0.2+ |
| 2002 11 05 | 291 | 0.4− | 0.0 | 2004 04 14 | 291 | 0.2− | 0.1+ | 2005 06 01 | G96 | 0.5+ | 0.3− |
| 2002 11 05 | 291 | 0.4− | 0.2+ | 2004 04 14 | 291 | 0.1− | 0.7+ | 2005 06 01 | G96 | 0.3+ | 0.5− |
| 2002 11 05 | 291 | 0.1+ | 0.1+ | 2005 04 07 | 691 | 0.3+ | 0.6+ | 2005 06 01 | G96 | 0.3+ | 0.1− |
| 2002 11 05 | 644 | 0.6+ | 1.8+ | 2005 04 07 | 691 | 0.1+ | 0.6+ | 2005 06 01 | G96 | 0.2+ | 0.2− |
| 2002 11 05 | 644 | 0.3+ | 1.7+ | 2005 04 07 | 691 | 0.1+ | 0.6+ | 2006 08 16 | E12 | 0.8+ | 0.6+ |
| 2002 11 05 | 644 | 0.2+ | 1.8+ | 2005 04 16 | 691 | 0.1+ | 0.5+ | 2006 08 16 | E12 | 0.7+ | 0.5− |
| 2002 11 09 | 695 | 0.1+ | 0.7+ | 2005 04 16 | 691 | 0.3+ | 0.1− | 2006 08 16 | E12 | 2.4− | 0.8− |
| 2002 11 09 | 695 | 0.1+ | 0.6+ | 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 08 16 | E12 | 1.6− | 1.8+ |
| 2004 03 18 | 291 | 0.1− | 0.1+ | 2005 05 04 | G96 | 0.4+ | 0.1− | | | | |
| 2004 03 18 | 291 | 0.1+ | 0.0 | 2005 05 04 | G96 | 0.3+ | 0.3+ | | | | |

**2005 GX$_{214}$ = 2006 SC$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 59.70219 | | | (2000.0) | | |
| $n$ | 0.24320731 | $\omega$ | 182.38554 | | +0.55177530 | +0.82916948 |
| $a$ | 2.5418601 | $\Omega$ | 121.11679 | | −0.76343086 | +0.54540253 |
| $e$ | 0.1408909 | $i$ | 6.00519 | | −0.33573403 | +0.12253185 |
| $P$ | 4.05 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.2− | 0.1+ | 2005 04 30 | 691 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 2000 01 05 | 691 | 0.0 | 0.0 | 2005 04 30 | 691 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2− |
| 2000 01 05 | 691 | 0.2− | 0.1+ | 2005 04 30 | 691 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2001 05 15 | 699 | 0.4− | 0.3+ | 2005 05 14 | 644 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2001 05 15 | 699 | 0.4+ | 0.2+ | 2005 05 14 | 644 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2001 05 15 | 699 | 0.2+ | 0.4+ | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2001 05 15 | 699 | 1.0+ | 0.7+ | 2005 06 22 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2001 05 18 | 704 | (2.6+ | 2.4+) | 2005 06 22 | 644 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.4+ | 1.4− |
| 2001 05 18 | 704 | 0.6+ | 0.9+ | 2005 06 22 | 644 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2001 05 18 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 1.1− | 0.3− | 2006 10 22 | 703 | 0.1− | 0.5− |
| 2001 05 18 | 704 | 0.4− | 0.9+ | 2006 09 18 | 703 | 0.7− | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2002 10 31 | 704 | 0.5− | 0.7+ | 2006 09 18 | 703 | 0.8+ | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.4+ |
| 2002 10 31 | 704 | 0.3− | 1.1+ | 2006 09 18 | 703 | 0.6+ | 1.3+ | 2006 10 22 | 703 | (2.0− | 0.2−) |
| 2002 10 31 | 704 | (1.7− | 0.6+) | 2006 09 25 | 699 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.7+ |
| 2002 10 31 | 704 | 0.9− | 1.4+ | 2006 09 25 | 699 | 1.3+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 608 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 1.2− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 608 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2002 10 31 | 608 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 1.3− | 1.4+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2004 02 14 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | (1.9− | 0.4−) | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2004 02 14 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.6− | 2006 11 16 | 703 | 0.0 | 0.4+ |
| 2005 04 03 | 644 | 0.1+ | 0.9+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 16 | 703 | 0.6− | 0.6+ |
| 2005 04 03 | 644 | 0.4+ | 0.8+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 16 | 703 | 0.3+ | 0.3+ |
| 2005 04 03 | 644 | 0.7+ | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.2− | | | | |

**2005 GY$_{214}$ = 2006 RG$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.45662 | | | (2000.0) | | |
| $n$ | 0.27158922 | $\omega$ | 232.64895 | | +0.96352815 | +0.26699248 |
| $a$ | 2.3615349 | $\Omega$ | 111.85929 | | −0.23893587 | +0.88882235 |
| $e$ | 0.0780888 | $i$ | 1.11901 | | −0.12051204 | +0.37243771 |
| $P$ | 3.63 | $H$ | 17.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.1+ | 0.1− | 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.6+ |
| 1999 11 17 | 691 | 0.0 | 0.2+ | 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 1999 11 17 | 691 | 0.3− | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.3− | 0.1+ |
| 2001 02 20 | 691 | 0.4+ | 0.3+ | 2005 04 16 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2001 02 20 | 691 | 0.4+ | 0.2+ | 2005 05 14 | G96 | 0.7− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2001 02 20 | 691 | 0.1− | 0.2+ | 2005 05 14 | G96 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2002 07 18 | 644 | 0.2− | 0.4+ | 2005 05 14 | G96 | 0.8− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2002 07 18 | 644 | 0.4− | 0.9+ | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2002 07 18 | 644 | 0.0 | 1.1+ | 2005 06 13 | G96 | 0.7− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 691 | 0.1+ | 0.4+ | 2005 06 13 | G96 | 0.4− | 0.3+ | 2006 11 14 | G96 | 0.5− | 0.1+ |
| 2003 12 29 | 691 | 0.0 | 0.3+ | 2005 06 13 | G96 | 0.8− | 0.2+ | 2006 11 14 | G96 | 0.6+ | 0.3− |
| 2003 12 29 | 691 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.6− | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2005 04 07 | 691 | 0.2+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.1+ | | | | |
| 2005 04 07 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.3+ | | | | |

**2005 GZ$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.45543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29891422 | $\omega$ | 214.84495 | | +0.75724467 | | +0.63471836 |
| $a$ | 2.2153295 | $\Omega$ | 105.00008 | | −0.55714760 | | +0.75078646 |
| $e$ | 0.1441081 | $i$ | 9.17340 | | −0.34083289 | | +0.18289965 |
| $P$ | 3.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 704 | 0.6+ | 0.2+ | 2005 06 23 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 1999 09 13 | 704 | 1.2+ | 1.2− | 2005 06 23 | 644 | 0.3− | 0.6+ | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 1999 09 13 | 704 | 1.6+ | 0.6− | 2005 06 26 | 699 | 0.3− | 0.8− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 1999 09 30 | 704 | 0.4− | 0.4+ | 2005 06 26 | 699 | 0.5+ | 0.6− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 1999 09 30 | 704 | 0.5− | 0.0 | 2005 06 26 | 699 | 1.4+ | 0.5+ | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 1999 09 30 | 704 | 0.6− | 0.3− | 2005 06 26 | 699 | 0.1− | 1.3+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 1999 09 30 | 704 | 1.5− | 0.4+ | 2006 11 15 | 703 | 0.7− | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 1999 09 30 | 704 | 0.6− | 0.8+ | 2006 11 15 | 703 | 0.1− | 0.6− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2004 01 31 | 691 | 0.4+ | 0.1− | 2006 11 15 | 703 | 1.4− | 0.4− | 2006 11 24 | 291 | 0.1− | 0.0 |
| 2004 01 31 | 691 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.3+ | 0.7− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2004 01 31 | 691 | 0.0 | 0.7− | 2006 11 21 | G96 | 0.0 | 0.1− | 2006 11 24 | 291 | 0.2− | 0.1+ |
| 2005 04 09 | 704 | 0.6+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.2− | 2006 11 24 | 291 | 0.1− | 0.2+ |
| 2005 04 09 | 704 | 1.4+ | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2005 04 09 | 704 | 0.3+ | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2005 05 06 | 704 | 0.4+ | 1.0+ | 2006 11 22 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2005 05 06 | 704 | (3.2+ | 2.6+) | 2006 11 22 | G96 | 0.3+ | 0.2− | 2006 11 26 | 291 | 0.7− | 0.6+ |
| 2005 05 06 | 704 | 0.3+ | 1.2+ | 2006 11 22 | G96 | 0.4+ | 0.0 | 2006 11 26 | 291 | 0.5+ | 0.3+ |
| 2005 05 06 | 704 | 0.2− | 1.2+ | 2006 11 22 | G96 | 0.0 | 0.2− | 2006 11 26 | 291 | 0.1+ | 0.5+ |
| 2005 05 20 | 644 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.0 | 2006 11 27 | 291 | 0.2− | 0.3+ |
| 2005 05 20 | 644 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.4+ | 0.2− | 2006 11 27 | 291 | 0.2− | 0.3+ |
| 2005 05 20 | 644 | 0.2+ | 0.5+ | 2006 11 22 | G96 | 0.2− | 0.0 | 2006 11 27 | 291 | 0.4− | 0.4+ |
| 2005 05 31 | 703 | 0.7− | 1.3+ | 2006 11 22 | G96 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2+ | 1.0+ |
| 2005 05 31 | 703 | 0.7− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.4− | 0.5+ |
| 2005 05 31 | 703 | 0.1− | 0.9+ | 2006 11 22 | G96 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2005 05 31 | 703 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.7− | 0.7+ |
| 2005 06 23 | 644 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.2− | | | | |

**2005 GB$_{215}$ = 2006 SQ$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.30083 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27049967 | $\omega$ | 296.12631 | | −0.36031534 | | +0.93276584 |
| $a$ | 2.3678720 | $\Omega$ | 312.74959 | | −0.85042261 | | −0.33330230 |
| $e$ | 0.1505276 | $i$ | 0.85737 | | −0.38334612 | | −0.13732246 |
| $P$ | 3.64 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 13 | 691 | 0.2− | 0.2+ | 2005 04 18 | 704 | 0.5+ | 1.0+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2001 02 13 | 691 | 0.0 | 0.4+ | 2005 04 18 | 704 | 0.5− | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 02 13 | 691 | 0.6+ | 0.7− | 2005 05 01 | 644 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.3+ | 0.3+ |
| 2002 08 16 | 291 | 0.4− | 0.2+ | 2005 05 01 | 644 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.3+ | 0.3− |
| 2002 08 16 | 291 | 0.2− | 0.2− | 2005 05 01 | 644 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1+ |
| 2002 08 16 | 291 | 0.2− | 0.4+ | 2005 05 14 | G96 | 0.3− | 0.3+ | 2006 10 27 | 691 | 0.6− | 0.0 |
| 2002 09 04 | 644 | 0.4+ | 1.0+ | 2005 05 14 | G96 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2002 09 04 | 644 | 0.2+ | 0.5+ | 2005 05 14 | G96 | 0.5− | 0.3+ | 2006 10 27 | 691 | 0.8− | 0.2+ |
| 2002 09 04 | 644 | 0.4+ | 0.8+ | 2005 05 14 | G96 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.4− | 0.3+ |
| 2003 12 25 | 691 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.1− | 0.7+ |
| 2003 12 25 | 691 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.5+ |
| 2003 12 25 | 691 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2005 04 12 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.9− |
| 2005 04 12 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2005 04 12 | 691 | 0.5+ | 0.5+ | 2006 09 26 | 691 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2005 04 18 | 704 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.3− | 0.3+ | | | | |

**2005 GC$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.25986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23594458 | $\omega$ | 315.42148 | | −0.39706237 | | +0.91623808 |
| $a$ | 2.5937575 | $\Omega$ | 291.11687 | | −0.82527495 | | −0.38188019 |
| $e$ | 0.1346049 | $i$ | 3.28031 | | −0.40157531 | | −0.12114167 |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 22 | 691 | 0.2− | 0.4+ | 2005 04 14 | 703 | 0.2− | 0.7+ | 2006 08 21 | 691 | 0.3− | 0.1+ |
| 1993 06 22 | 691 | 0.2− | 0.6+ | 2005 04 14 | 703 | 0.4− | 0.7+ | 2006 08 21 | 691 | 0.2− | 0.1− |
| 1993 06 22 | 691 | 0.5− | 0.9+ | 2005 04 14 | 703 | 0.4− | 1.2+ | 2006 08 29 | 703 | 0.1− | 0.2+ |
| 2000 01 07 | 691 | 0.5+ | 1.0+ | 2005 04 14 | 703 | 0.9− | 0.6+ | 2006 08 29 | 703 | 0.8+ | 0.1+ |
| 2000 01 07 | 691 | 0.2+ | 1.1+ | 2005 05 08 | 699 | 0.5− | 0.7+ | 2006 08 29 | 703 | 0.0 | 0.6+ |
| 2000 01 07 | 691 | 0.4+ | 1.1+ | 2005 05 08 | 699 | 0.3− | 0.7+ | 2006 08 29 | 703 | 0.2− | 0.9− |
| 2000 01 26 | 691 | 0.1− | 0.1+ | 2005 05 08 | 699 | 0.4+ | 1.3+ | 2006 09 06 | 644 | 0.1− | 0.2+ |
| 2000 01 26 | 691 | 0.1− | 0.1+ | 2005 05 08 | 699 | 0.5+ | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.1− |
| 2000 01 26 | 691 | 0.1+ | 0.1+ | 2005 05 08 | E12 | 0.1− | 0.6+ | 2006 09 06 | 644 | 0.2− | 0.2− |
| 2001 05 24 | 704 | 0.4+ | 1.3+ | 2005 05 08 | E12 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.0 | 0.5+ |
| 2001 05 24 | 704 | 0.6+ | 0.2+ | 2005 05 08 | E12 | 0.5+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.2+ |
| 2001 05 24 | 704 | 0.1− | 0.1− | 2005 05 08 | E12 | 0.3+ | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.5+ |
| 2001 05 24 | 704 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 05 24 | 704 | 0.9+ | 0.7− | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 06 16 | 704 | 1.2+ | 0.9− | 2005 05 19 | 644 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2001 06 16 | 704 | 1.2− | 0.4+ | 2005 06 02 | 699 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2001 06 16 | 704 | 0.4− | 0.5− | 2005 06 02 | 699 | 0.5+ | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 2001 06 16 | 704 | 0.5+ | 0.1− | 2005 06 02 | 699 | 0.8+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2001 06 16 | 704 | 0.2− | 0.2− | 2005 06 02 | 699 | 0.7+ | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.3+ |
| 2002 10 09 | 704 | (0.4− | 1.7+) | 2005 06 27 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2002 10 09 | 704 | (0.6− | 1.7+) | 2005 06 27 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.6+ |
| 2002 10 09 | 704 | (0.9− | 1.5+) | 2005 06 27 | 644 | 0.1+ | 0.0 | | | | |
| 2002 10 09 | 704 | (0.3− | 2.2+) | 2006 08 21 | 691 | 0.2− | 0.1− | | | | |

**2005 GJ$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.18870 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29145820 | $\omega$ | 156.55524 | | −0.14418599 | | +0.97375372 |
| $a$ | 2.2529516 | $\Omega$ | 104.78187 | | −0.93428239 | | −0.07531558 |
| $e$ | 0.1463028 | $i$ | 10.49421 | | −0.32607793 | | −0.21478186 |
| $P$ | 3.38 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 608 | 0.5− | 0.3+ | 2005 04 08 | 704 | 0.0 | 0.1+ | 2005 05 09 | 703 | 0.3+ | 0.6− |
| 2002 06 09 | 608 | 0.0 | 0.2+ | 2005 04 08 | 704 | 0.4+ | 0.0 | 2005 05 31 | 703 | 1.2+ | 0.9− |
| 2002 06 09 | 608 | 0.7+ | 0.4+ | 2005 04 08 | 704 | 0.7+ | 0.2+ | 2005 05 31 | 703 | (0.9+ | 2.3−) |
| 2002 08 11 | 644 | 0.3− | 0.2− | 2005 04 13 | 703 | 0.2+ | 0.2+ | 2005 05 31 | 703 | 1.0− | 0.8− |
| 2002 08 11 | 644 | 0.1+ | 0.1− | 2005 04 13 | 703 | 0.5− | 1.3+ | 2005 05 31 | 703 | 0.8+ | 0.1+ |
| 2002 08 11 | 644 | 0.1− | 0.5− | 2005 04 13 | 703 | 0.7− | 0.1+ | 2005 06 03 | 699 | (2.1+ | 2.0+) |
| 2002 08 11 | 644 | 0.3+ | 0.0 | 2005 04 13 | 703 | 0.5− | 0.1− | 2005 06 03 | 699 | 0.4− | 1.6+ |
| 2002 08 11 | 644 | 0.3− | 0.0 | 2005 05 09 | 703 | 1.3+ | 0.5− | 2005 06 03 | 699 | 1.1− | 1.2+ |
| 2002 08 11 | 644 | 0.0 | 0.3+ | 2005 05 09 | 703 | 0.6− | 1.1− | 2005 06 03 | 699 | 0.3− | 1.0− |
| 2005 04 08 | 704 | 0.1− | 0.2+ | 2005 05 09 | 703 | 0.2+ | 0.2− | | | | |

**2005 GL$_{215}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.73602 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22215299 | $\omega$ | 347.46796 | | −0.50105892 | | +0.84737862 |
| $a$ | 2.7000259 | $\Omega$ | 252.22666 | | −0.77722050 | | −0.52993847 |
| $e$ | 0.1845209 | $i$ | 10.63564 | | −0.38061562 | | −0.03338688 |
| $P$ | 4.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.2− | 0.5− | 2005 04 30 | E12 | 0.1− | 0.2− | 2005 06 11 | 703 | 0.5− | 0.5+ |
| 2000 03 04 | 645 | 0.2− | 0.5− | 2005 04 30 | E12 | 0.1− | 0.4− | 2005 06 11 | 703 | 0.2+ | 0.5+ |
| 2001 07 17 | 608 | 0.2+ | 0.1− | 2005 04 30 | E12 | 0.4+ | 0.2− | 2005 06 11 | 703 | 0.8− | 0.8+ |
| 2001 07 17 | 608 | 0.0 | 0.1− | 2005 05 11 | 644 | 0.1+ | 0.1+ | 2005 06 11 | 703 | 0.6− | 0.1+ |
| 2001 07 17 | 608 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.5+ | 0.5− |
| 2005 04 11 | E12 | 0.2+ | 0.3+ | 2005 05 11 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.6− | 0.7− |
| 2005 04 11 | E12 | 0.3+ | 0.2+ | 2005 06 03 | 703 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.0 | 0.8+ |
| 2005 04 11 | E12 | 0.9+ | 0.3− | 2005 06 03 | 703 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.5+ | 0.4− |
| 2005 04 11 | E12 | 0.4− | 0.0 | 2005 06 03 | 703 | 0.0 | 1.0− | | | | |
| 2005 04 30 | E12 | 0.1− | 0.0 | 2005 06 03 | 703 | 0.4+ | 0.7− | | | | |

### 2005 HM

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 99.68096 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28843827 | $\omega$ | 52.79375 | | | +0.16224594 | | +0.98360122 | |
| $a$ | 2.2686498 | $\Omega$ | 226.74118 | | | −0.93613652 | | +0.12819400 | |
| $e$ | 0.1845328 | $i$ | 6.20942 | | | −0.31196903 | | +0.12686584 | |
| $P$ | 3.42 | $H$ | 17.7 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.5+ | 0.6+ | 2005 04 16 | 691 | 0.4+ | 0.2+ | 2005 06 27 | 291 | 0.1+ | 0.1+ |
| 1999 10 13 | 704 | 0.4− | 0.1+ | 2005 04 16 | 691 | 0.2+ | 0.0 | 2005 06 27 | 291 | 0.2+ | 0.4+ |
| 1999 10 13 | 704 | 0.7+ | 0.1− | 2005 04 16 | 691 | 0.1+ | 0.3+ | 2005 06 27 | 291 | 0.0 | 0.6+ |
| 1999 11 02 | 691 | 0.2− | 0.4+ | 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1999 11 02 | 691 | 0.1− | 0.2+ | 2005 04 17 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.2+ |
| 1999 11 02 | 691 | 0.2− | 0.3+ | 2005 04 17 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.5+ |
| 2002 07 12 | 644 | 0.0 | 0.3+ | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 07 12 | 644 | 0.1+ | 0.3+ | 2005 05 01 | 644 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.0 |
| 2002 07 12 | 644 | 0.0 | 0.4+ | 2005 05 01 | 644 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.2+ |
| 2002 08 13 | 699 | 0.4+ | 0.6− | 2005 05 01 | 644 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.1+ |
| 2002 08 13 | 699 | 0.0 | 0.3− | 2005 05 06 | 703 | (3.1− | 0.2+) | 2006 11 11 | G96 | 0.0 | 0.5+ |
| 2002 08 13 | 699 | 0.4− | 0.3+ | 2005 05 06 | 703 | 0.9+ | 1.0+ | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2002 08 13 | 699 | 0.3− | 0.6+ | 2005 05 06 | 703 | (1.6− | 0.1−) | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2002 09 04 | 644 | 0.2+ | 0.1+ | 2005 05 06 | 703 | 0.3− | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.4+ |
| 2002 09 04 | 644 | 0.1− | 0.2− | 2005 05 14 | G96 | 1.0− | 0.6− | 2006 11 21 | G96 | 0.4− | 0.4+ |
| 2002 09 04 | 644 | 0.0 | 0.1+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2005 04 16 | 691 | 0.3+ | 0.2+ | 2005 05 14 | G96 | 0.5− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2005 04 16 | 691 | 0.3+ | 0.1+ | 2005 05 14 | G96 | 0.8− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.1− |

### 2005 HU

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 94.35721 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27291886 | $\omega$ | 256.84318 | | | −0.03229731 | | +0.99924608 | |
| $a$ | 2.3538585 | $\Omega$ | 11.37190 | | | −0.86947112 | | −0.01745887 | |
| $e$ | 0.1053112 | $i$ | 6.27288 | | | −0.49292682 | | −0.03467649 | |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.5− | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.4+ | 1.2− |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.4+ |
| 2004 01 18 | 691 | 0.3+ | 0.5+ | 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.7+ | 1.1− |
| 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2005 04 17 | 691 | 0.4+ | 0.2+ | 2006 09 21 | 152 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.9+ |
| 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 09 21 | 152 | 1.5+ | 1.3+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2005 04 18 | 703 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2005 04 18 | 703 | 0.3− | 1.2− | 2006 09 25 | 691 | 0.6− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2005 04 18 | 703 | 0.4+ | 1.5+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 04 18 | 703 | 0.1+ | 1.4+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2005 05 09 | 699 | (0.5− | 2.5+) | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.6− |
| 2005 05 09 | 699 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2005 05 09 | 699 | 0.8+ | 0.8+ | 2006 09 29 | 691 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2005 05 09 | 699 | 0.8− | 0.2+ | 2006 09 29 | 691 | 0.7− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2005 05 10 | 807 | 0.1− | 0.4− | 2006 09 29 | 691 | 0.3− | 0.0 | | | | |
| 2005 05 11 | 807 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.6− | 0.3+ | | | | |

### 2005 $HS_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 166.44455 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.30087470 | $\omega$ | 164.80319 | | | −0.91215766 | | +0.40718313 | |
| $a$ | 2.2056957 | $\Omega$ | 39.32866 | | | −0.38326925 | | −0.80723086 | |
| $e$ | 0.1147195 | $i$ | 4.21545 | | | −0.14516570 | | −0.42729409 | |
| $P$ | 3.28 | $H$ | 17.4 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | G96 | 0.5− | 0.2+ | 2005 04 18 | 703 | 1.2− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2005 03 12 | G96 | 0.0 | 0.2− | 2005 05 13 | 704 | 0.4+ | 0.0 | 2006 10 01 | 691 | 0.4− | 0.1+ |
| 2005 03 12 | G96 | 0.2− | 0.1+ | 2005 05 13 | 704 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2005 03 12 | G96 | 0.7− | 0.2+ | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2005 04 07 | 691 | 0.1+ | 0.2+ | 2005 05 13 | 704 | 0.9− | 0.2− | 2006 10 22 | G96 | 0.5− | 0.1− |
| 2005 04 07 | 691 | 0.5− | 0.8− | 2005 05 13 | 704 | 0.7− | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2005 04 07 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2005 04 16 | 691 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2005 04 16 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.1− |
| 2005 04 16 | 691 | 0.4+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2005 04 18 | 703 | 0.5− | 0.7− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 1.0+ |
| 2005 04 18 | 703 | 0.6− | 1.0+ | 2006 09 27 | G96 | 0.1− | 0.1+ | | | | |
| 2005 04 18 | 703 | 0.0 | 0.9− | 2006 09 27 | G96 | 0.1+ | 0.1+ | | | | |

### 2005 $HB_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 26.61428 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22238190 | $\omega$ | 219.88363 | | | +0.81290939 | | +0.57876531 | |
| $a$ | 2.6981728 | $\Omega$ | 104.63513 | | | −0.51577145 | | +0.76717729 | |
| $e$ | 0.1115943 | $i$ | 3.84472 | | | −0.27047763 | | +0.27653160 | |
| $P$ | 4.43 | $H$ | 16.4 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.1+ | 0.5+ | 2005 05 17 | G96 | 0.3− | 0.1− | 2006 09 25 | 699 | (1.3+ | 1.8+) |
| 2004 02 12 | 691 | 0.2+ | 0.5+ | 2005 05 17 | G96 | 0.5− | 0.2− | 2006 09 25 | 699 | (2.1+ | 2.5+) |
| 2004 02 12 | 691 | 0.1+ | 0.4+ | 2005 05 17 | G96 | 0.9− | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.8− |
| 2005 04 16 | 691 | 0.2− | 0.2+ | 2005 05 19 | G96 | 0.9− | 0.2− | 2006 09 30 | 703 | 0.3− | 0.9− |
| 2005 04 16 | 691 | 0.3+ | 0.3+ | 2005 05 19 | G96 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2005 04 16 | 691 | 0.0 | 0.3+ | 2005 05 19 | G96 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.9− |
| 2005 04 18 | 691 | 0.0 | 0.0 | 2005 05 19 | G96 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2005 04 18 | 691 | 0.3+ | 0.1− | 2006 08 29 | 691 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.2− | 0.4− |
| 2005 04 18 | 691 | 0.5+ | 0.5+ | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2005 05 04 | 691 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.2− | 0.5+ | 2006 10 19 | 703 | 1.2− | 1.4+ |
| 2005 05 04 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.4+ | 2006 10 19 | 703 | 0.8− | 0.6− |
| 2005 05 10 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.6− | 2006 10 19 | 703 | 0.0 | 0.1+ |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.6− | 0.4+ |
| 2005 05 10 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.2+ | 1.1+ | 2006 11 23 | G96 | 0.2− | 0.7+ |
| 2005 05 17 | G96 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.7− | 1.1+ | 2006 11 23 | G96 | 0.7+ | 0.1+ |
| 2005 05 17 | G96 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.9+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3+ |
| 2005 05 17 | G96 | 0.9− | 0.1+ | 2006 09 18 | 699 | 0.2− | 1.0+ | 2006 11 23 | G96 | 0.6+ | 0.4− |
| 2005 05 17 | G96 | 0.3− | 0.6+ | 2006 09 25 | 699 | (1.7+ | 2.3+) | | | | |
| 2005 05 17 | G96 | 0.5− | 0.4+ | 2006 09 25 | 699 | 0.1− | 1.3+ | | | | |

### 2005 $HE_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 82.36182 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22515607 | $\omega$ | 72.28615 | | | +0.12979561 | | +0.98716401 | |
| $a$ | 2.6759640 | $\Omega$ | 205.72753 | | | −0.97144964 | | +0.10780651 | |
| $e$ | 0.2439156 | $i$ | 12.37917 | | | −0.19859178 | | +0.11783448 | |
| $P$ | 4.38 | $H$ | 17.1 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.0 | 0.2+ | 2005 04 18 | 691 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.7− |
| 2001 08 26 | 644 | 0.2+ | 0.1+ | 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.6− |
| 2001 08 26 | 644 | 0.3− | 0.0 | 2005 05 10 | 691 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2005 03 12 | G96 | 0.2− | 0.4− | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.5− |
| 2005 03 12 | G96 | 0.6− | 0.1+ | 2005 05 14 | 644 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2005 03 12 | G96 | 0.2+ | 0.2− | 2005 05 14 | 644 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.8− | 0.1− |
| 2005 03 12 | G96 | 0.7+ | 0.2+ | 2005 05 14 | 644 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.7− | 0.1− |
| 2005 04 16 | 691 | 0.1− | 0.1− | 2005 06 23 | 644 | 0.0 | 0.6− | 2006 11 01 | G96 | 0.4− | 0.1+ |
| 2005 04 16 | 691 | 0.1− | 0.0 | 2005 06 23 | 644 | 0.5− | 0.6− | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2005 04 16 | 691 | 0.1+ | 0.3+ | 2005 06 23 | 644 | 0.2+ | 0.6− | 2006 11 10 | 691 | 0.4+ | 0.5+ |
| 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.5+ |
| 2005 04 18 | 691 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.9+ |

**2005 HE$_5$ = 2006 SU$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.50939 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23088526 | $\omega$ | 123.60270 | | +0.78568106 | | +0.61508254 |
| $a$ | 2.6315113 | $\Omega$ | 198.71624 | | −0.61359039 | | +0.76117957 |
| $e$ | 0.1446875 | $i$ | 11.90089 | | −0.07881687 | | +0.20561890 |
| $P$ | 4.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 691 | 0.1− | 0.2+ | 2005 06 29 | 644 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.6+ | 0.2− |
| 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.1+ | 1.3+ |
| 2005 04 30 | 691 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.6+ | 1.3+ |
| 2005 05 03 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.7+ | 1.5+ |
| 2005 05 03 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2005 05 03 | 691 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2005 05 09 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2005 05 09 | 691 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2005 05 09 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.5− | 0.0 |
| 2005 05 09 | 703 | (3.1− | 0.5−) | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2005 05 09 | 703 | 1.3− | 0.4− | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2005 05 09 | 703 | 0.8− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2005 05 09 | 703 | 0.6− | 1.2+ | 2006 10 20 | 644 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2005 06 29 | 644 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 06 29 | 644 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− |

**2005 HE$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.06964 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21937407 | $\omega$ | 78.30379 | | +0.16555580 | | +0.98329613 |
| $a$ | 2.7227798 | $\Omega$ | 201.67136 | | −0.96568946 | | +0.14607591 |
| $e$ | 0.1642668 | $i$ | 11.81807 | | −0.20008785 | | +0.10858434 |
| $P$ | 4.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 691 | 0.1− | 0.1+ | 2005 06 02 | 703 | 0.7− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2005 06 02 | 703 | 0.9− | 0.7− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2005 04 30 | 691 | 0.2+ | 0.4+ | 2005 06 02 | 703 | 0.6− | 0.3+ | 2006 10 13 | A50 | 0.2+ | 0.0 |
| 2005 05 04 | 691 | 0.1+ | 0.1− | 2005 06 03 | E12 | 0.4− | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 2005 05 04 | 691 | 0.2+ | 0.1+ | 2005 06 03 | E12 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.6− | 0.2− |
| 2005 05 04 | 691 | 0.1+ | 0.1+ | 2005 06 03 | E12 | 1.2+ | 0.5+ | 2006 10 16 | 691 | 0.4− | 0.2− |
| 2005 05 09 | 691 | 0.3− | 0.2+ | 2005 06 03 | E12 | 0.4− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.2+ |
| 2005 05 09 | 691 | 0.2− | 0.2+ | 2005 06 05 | 691 | 0.3+ | 0.4− | 2006 10 16 | G96 | 0.5+ | 0.1− |
| 2005 05 09 | 691 | 0.2− | 0.2+ | 2005 06 05 | 691 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2005 05 09 | 691 | 0.1+ | 0.1+ | 2005 06 05 | 691 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 2005 05 09 | 691 | 0.1− | 0.1− | 2005 06 23 | 644 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2005 05 09 | 691 | 0.2− | 0.2+ | 2005 06 23 | 644 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2005 05 13 | 691 | 0.0 | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.4− | 0.3− |
| 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.5+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2005 05 16 | 704 | 0.5− | 0.8− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2005 05 16 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2005 05 16 | 704 | (1.6+ | 0.0 ) | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2005 05 16 | 704 | 0.1− | 0.9− | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2005 06 02 | 703 | 0.9− | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.2− |

**2005 HR$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.37581 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37000082 | $\omega$ | 261.34618 | | +0.85657670 | | +0.33375993 |
| $a$ | 1.9216204 | $\Omega$ | 78.40010 | | −0.14425643 | | +0.88713726 |
| $e$ | 0.0513979 | $i$ | 23.68790 | | −0.49544570 | | +0.31873468 |
| $P$ | 2.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 703 | (2.1+ | 1.3+) | 2005 05 10 | 704 | 0.1− | 0.9+ | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2005 04 01 | 703 | (1.5− | 3.5+) | 2005 05 10 | 704 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 1.0− | 0.4− |
| 2005 04 01 | 703 | (3.4+ | 2.4+) | 2005 05 10 | 704 | 0.5− | 0.3+ | 2006 11 25 | 704 | 0.2− | 0.2+ |
| 2005 04 01 | 703 | 0.9+ | 1.1+ | 2005 05 10 | 704 | 0.8+ | 0.8+ | 2006 11 25 | 704 | 0.1+ | 0.8+ |
| 2005 04 19 | 703 | 0.2+ | 0.7− | 2005 05 10 | 703 | 0.5− | 1.1− | 2006 11 25 | 704 | 0.9+ | 0.2+ |
| 2005 04 19 | 703 | 0.6− | 0.8+ | 2005 05 10 | 703 | 0.0 | 0.0 | 2006 11 25 | 704 | 0.3+ | 0.7+ |
| 2005 04 19 | 703 | 0.7− | 1.0− | 2005 05 10 | 703 | 0.5− | 0.5− | 2006 11 29 | 704 | 0.2− | 0.6− |
| 2005 04 19 | 703 | 1.0− | 1.0− | 2005 05 10 | 703 | 0.7+ | 1.0− | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2005 05 02 | 695 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.5− | 0.3− | 2006 11 29 | 704 | (1.0− | 2.2−) |
| 2005 05 02 | 695 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.3− | 0.7+ |
| 2005 05 07 | 695 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.8+ | 2006 11 29 | 704 | 0.2+ | 0.5− |
| 2005 05 07 | 695 | 0.6+ | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.2− | 0.1− |
| 2005 05 07 | 695 | (0.8+ | 3.3+) | 2006 11 20 | 704 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.2+ | 1.3− |

**2005 HV$_6$ = 2006 QQ$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.13070 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21640716 | $\omega$ | 124.79886 | | +0.76850235 | | +0.63693902 |
| $a$ | 2.7476092 | $\Omega$ | 195.92715 | | −0.63523645 | | +0.74808574 |
| $e$ | 0.2178985 | $i$ | 12.82928 | | −0.07667334 | | +0.18621603 |
| $P$ | 4.55 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.0 | 0.7+ | 2005 04 30 | 691 | 0.3+ | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.1+ |
| 2002 09 09 | 599 | 0.4− | 0.6+ | 2005 04 30 | 691 | 0.3+ | 0.3+ | 2006 08 23 | 644 | 0.1− | 0.1+ |
| 2002 09 09 | 599 | 0.6+ | 0.6+ | 2005 05 04 | G96 | 0.4− | 0.4− | 2006 08 23 | 644 | 0.5+ | 0.0 |
| 2002 11 06 | 699 | 0.7+ | 0.9− | 2005 05 04 | G96 | 0.3− | 0.0 | 2006 08 23 | 644 | 0.2− | 0.2+ |
| 2002 11 06 | 699 | 0.2− | 1.3+ | 2005 05 04 | G96 | 0.6− | 0.3− | 2006 09 23 | 703 | 0.1− | 0.2− |
| 2002 11 06 | 699 | 0.7− | 0.3− | 2005 05 04 | G96 | 0.1− | 0.1− | 2006 09 23 | 703 | 1.1+ | 0.6+ |
| 2002 11 06 | 699 | (3.4− | 0.3−) | 2006 06 01 | G96 | 0.7− | 0.5− | 2006 09 23 | 703 | 1.0+ | 0.7+ |
| 2005 04 05 | G96 | 0.1− | 0.3− | 2006 06 01 | G96 | 0.2− | 0.4− | 2006 09 23 | 703 | 0.5+ | 0.7+ |
| 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 06 01 | G96 | 0.4− | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2005 04 05 | G96 | 0.1− | 0.1− | 2006 06 01 | G96 | 0.1− | 0.7− | 2006 10 21 | 703 | 0.6− | 0.0 |
| 2005 04 05 | G96 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.6+ |
| 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 1.9− | 0.2− |

**2005 HY$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.24725 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21193345 | $\omega$ | 209.65490 | | −0.30725326 | | +0.93970485 |
| $a$ | 2.7861407 | $\Omega$ | 42.94973 | | −0.82397444 | | −0.18375850 |
| $e$ | 0.3131700 | $i$ | 12.73221 | | −0.47608986 | | −0.28842260 |
| $P$ | 4.65 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | G96 | 0.1− | 0.0 | 2005 05 04 | 704 | 0.1− | 0.0 | 2005 06 05 | E12 | 0.3+ | 0.3− |
| 2005 04 07 | G96 | 0.1− | 0.0 | 2005 05 04 | 704 | 1.8− | 0.1− | 2005 06 27 | 644 | 0.2+ | 0.2+ |
| 2005 04 07 | G96 | 0.0 | 0.0 | 2005 05 04 | 644 | 0.2− | 0.2− | 2005 06 27 | 644 | 0.3+ | 0.0 |
| 2005 04 07 | G96 | 0.1− | 0.1+ | 2005 05 04 | 644 | 0.2− | 0.0 | 2005 06 27 | 644 | 0.4+ | 0.1+ |
| 2005 04 11 | 699 | 0.9+ | 1.1− | 2005 05 04 | 644 | 0.0 | 0.1− | 2005 07 05 | E12 | 0.8+ | 1.4+ |
| 2005 04 11 | 699 | 0.2− | 0.6+ | 2005 05 08 | E12 | 0.1− | 0.2− | 2005 07 05 | E12 | 0.8− | 1.1− |
| 2005 04 11 | 699 | (2.6+ | 0.6−) | 2005 05 08 | E12 | 0.3− | 0.2+ | 2005 07 05 | E12 | 0.2+ | 0.9− |
| 2005 04 11 | 699 | 1.2+ | 1.0+ | 2005 05 08 | E12 | 0.2+ | 0.3− | 2005 07 05 | E12 | 0.1+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 703 | 0.1+ | 0.5− | 2005 05 08 | E12 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2005 04 17 | 703 | 0.2− | 0.2+ | 2005 05 11 | 644 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2005 04 17 | 703 | 0.4− | 0.4− | 2005 05 11 | 644 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2005 04 17 | 703 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2005 04 30 | E12 | 0.1− | 0.1+ | 2005 05 12 | 644 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 04 30 | E12 | 0.1− | 0.1− | 2005 05 12 | 644 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2005 04 30 | E12 | 0.1+ | 0.1+ | 2005 05 12 | 644 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2005 04 30 | E12 | 0.2− | 0.1+ | 2005 06 05 | E12 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2005 05 04 | 704 | 0.2+ | 0.2− | 2005 06 05 | E12 | 0.2− | 0.4+ | | | | |
| 2005 05 04 | 704 | 0.1− | 0.0 | 2005 06 05 | E12 | 0.0 | 0.6+ | | | | |

### 2005 $HG_8$ = 2005 $GR_{209}$

Id. Minor Planet Center (d, *MPO* 77916)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.53743 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21540528 | $\omega$ | 234.06005 | | +0.52000367 | +0.79324161 | |
| $a$ | 2.7561223 | $\Omega$ | 70.30429 | | −0.63438351 | +0.60701891 | |
| $e$ | 0.3409927 | $i$ | 19.66309 | | −0.57197355 | +0.04791438 | |
| $P$ | 4.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 703 | 0.3+ | 0.7+ | 2005 05 08 | 703 | (2.0− | 0.5+) | 2006 10 17 | 703 | 0.5+ | 0.0 |
| 2005 04 06 | 703 | 0.3− | 0.7+ | 2005 05 08 | 703 | 0.0 | 1.2− | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2005 04 06 | 703 | 0.3− | 0.6− | 2005 05 08 | 703 | 0.0 | 1.1− | 2006 10 17 | 703 | 0.2+ | 1.0+ |
| 2005 04 06 | 703 | 0.3− | 0.6+ | 2005 05 08 | 703 | 0.0 | 0.6− | 2006 11 13 | 703 | 0.0 | 0.4+ |
| 2005 04 12 | 699 | 0.1+ | 0.7− | 2005 05 12 | 704 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.3+ | 0.1+ |
| 2005 04 12 | 699 | 0.3+ | 0.0 | 2005 05 12 | 704 | 0.4+ | 0.2+ | 2006 11 13 | 703 | 0.5− | 0.1− |
| 2005 04 12 | 699 | (1.7+ | 0.2+) | 2005 05 12 | 704 | 1.0− | 0.8− | 2006 11 13 | 703 | 0.3+ | 0.1− |
| 2005 04 12 | 699 | 0.3+ | 0.7+ | 2005 06 07 | 703 | 1.2− | 0.7+ | 2006 11 24 | G96 | 0.1− | 0.6− |
| 2005 04 30 | 699 | 1.4+ | 0.3+ | 2005 06 07 | 703 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2005 04 30 | 699 | 0.6− | 0.0 | 2005 06 07 | 703 | 0.7− | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2005 04 30 | 699 | 0.5+ | 0.5+ | 2005 06 07 | 703 | (1.6+ | 1.9+) | 2006 11 24 | G96 | 0.4− | 0.5− |
| 2005 04 30 | 699 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.0 | 0.0 | | | | |

### 2005 $HC_9$ = 2002 $RC_{242}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.97277 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26721199 | $\omega$ | 18.37215 | | −0.39120834 | +0.91918718 | |
| $a$ | 2.3872547 | $\Omega$ | 228.62498 | | −0.85174686 | −0.38026480 | |
| $e$ | 0.1491625 | $i$ | 3.45999 | | −0.34854459 | −0.10243836 | |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.5− | 0.3+ | 2005 05 01 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.4+ |
| 1999 11 17 | 691 | 0.3+ | 0.5+ | 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.3+ | 0.1− |
| 1999 11 17 | 691 | 0.0 | 0.0 | 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.4+ |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 09 13 | 644 | 0.1+ | 0.5− | 2005 05 09 | 699 | 0.0 | 0.9+ | 2006 10 19 | G96 | 0.3− | 0.8− |
| 2002 09 13 | 644 | 0.1+ | 0.1+ | 2005 05 09 | 699 | 1.2+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2002 09 14 | 644 | 0.4− | 0.1+ | 2005 05 09 | 699 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 09 14 | 644 | 0.2+ | 0.4+ | 2005 05 09 | 699 | 0.4+ | 0.6− | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2002 09 14 | 644 | 0.3+ | 0.0 | 2005 06 14 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 1.0− | 0.9− |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2005 06 14 | G96 | 0.9− | 0.4− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2005 04 17 | 691 | 0.0 | 0.4+ | 2005 06 14 | G96 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.4+ |
| 2005 04 17 | 691 | 0.3+ | 0.2+ | 2005 06 14 | G96 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.9− | 0.1− |
| 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.3+ | | | | |
| 2005 05 01 | 644 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.3+ | | | | |

### 2005 $HD_9$ = 2004 $BY_6$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.64366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21171298 | $\omega$ | 112.51986 | | −0.99620770 | −0.03521452 | |
| $a$ | 2.7880746 | $\Omega$ | 65.53858 | | −0.00237639 | −0.90308181 | |
| $e$ | 0.0435808 | $i$ | 5.01451 | | +0.08697454 | −0.42802242 | |
| $P$ | 4.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.2+ | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.1− | 0.2− |
| 2004 01 16 | 691 | 0.1+ | 0.0 | 2005 04 30 | 691 | 0.2+ | 0.1+ | 2005 05 19 | G96 | 0.1− | 0.0 |
| 2004 01 16 | 691 | 0.1− | 0.1+ | 2005 05 13 | G96 | (0.9− | 2.7−) | 2005 05 19 | G96 | 0.2− | 0.1− |
| 2004 01 18 | 691 | 0.1+ | 0.0 | 2005 05 13 | G96 | 0.3− | 0.2− | 2005 06 13 | G96 | 0.0 | 0.2+ |
| 2004 01 18 | 691 | 0.3− | 0.0 | 2005 05 13 | G96 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.1+ |
| 2004 01 18 | 691 | 0.0 | 0.1− | 2005 05 13 | G96 | 0.1− | 0.1− | 2005 06 13 | G96 | 0.0 | 0.1+ |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2005 05 19 | G96 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.2+ | 0.1+ |

### 2005 JK

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.54728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17534841 | $\omega$ | 247.66605 | | −0.13676897 | +0.98620653 | |
| $a$ | 3.1613178 | $\Omega$ | 15.37769 | | −0.72914642 | −0.03651989 | |
| $e$ | 0.2991300 | $i$ | 20.58236 | | −0.67055182 | −0.16144032 | |
| $P$ | 5.62 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 704 | (3.2+ | 0.7+) | 2005 05 02 | E12 | 0.2− | 0.5− | 2006 09 18 | 703 | 1.5− | 1.0+ |
| 1999 04 12 | 704 | 0.6+ | 0.9+ | 2005 05 13 | E12 | 0.3+ | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 1999 04 12 | 704 | 1.8+ | 0.4+ | 2005 05 13 | E12 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.8+ | 0.6− |
| 1999 04 12 | 704 | 0.1− | 1.3+ | 2005 05 13 | E12 | 0.3− | 0.2+ | 2006 09 18 | 703 | 1.3− | 1.0− |
| 1999 04 12 | 704 | 0.1+ | 0.1+ | 2005 05 13 | E12 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2005 01 17 | 809 | 0.1+ | 0.2− | 2005 05 14 | E12 | 0.4− | 0.3+ | 2006 09 18 | 699 | (1.6− | 1.4+) |
| 2005 01 17 | 809 | 0.3+ | 0.0 | 2005 05 14 | E12 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.3+ | 0.8+ |
| 2005 01 17 | 809 | 0.2+ | 0.0 | 2005 05 14 | E12 | 0.6− | 0.1+ | 2006 09 18 | 699 | (2.1− | 1.6+) |
| 2005 04 20 | E12 | 0.4+ | 0.5+ | 2005 05 14 | E12 | 0.2− | 0.5+ | 2006 09 18 | 699 | (0.2− | 1.6+) |
| 2005 04 20 | E12 | 0.3− | 0.2− | 2005 05 29 | E12 | 0.4+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2005 04 20 | E12 | 0.0 | 0.6+ | 2005 05 29 | E12 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2005 04 20 | E12 | 0.2+ | 0.1− | 2005 05 29 | E12 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2005 05 01 | E12 | 0.5+ | 0.4− | 2005 05 29 | E12 | 0.1− | 0.3− | 2006 10 01 | 704 | (0.8− | 2.3+) |
| 2005 05 01 | E12 | 0.1+ | 0.0 | 2006 09 12 | 703 | (1.6− | 0.4−) | 2006 10 01 | 704 | (1.0− | 2.2+) |
| 2005 05 01 | E12 | 0.1− | 0.3+ | 2006 09 12 | 703 | 1.5− | 0.3− | 2006 10 01 | 704 | (0.0 | 2.0+) |
| 2005 05 01 | E12 | 0.0 | 0.1+ | 2006 09 12 | 703 | (1.9− | 1.9−) | 2006 11 13 | G96 | 0.6+ | 0.8− |
| 2005 05 02 | E12 | 0.3− | 0.2− | 2006 09 12 | 703 | (0.4+ | 3.2−) | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2005 05 02 | E12 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.1− | 2006 11 13 | G96 | 0.3− | 0.1+ |
| 2005 05 02 | E12 | 0.0 | 0.4− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.7+ | 0.2+ |

### 2005 JQ

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.46559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27905108 | $\omega$ | 162.46385 | | −0.65341521 | +0.75312041 | |
| $a$ | 2.3192465 | $\Omega$ | 66.66364 | | −0.70414200 | −0.56755707 | |
| $e$ | 0.1904297 | $i$ | 4.78161 | | −0.27790756 | −0.33269900 | |
| $P$ | 3.53 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | 691 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.1+ | 0.0 | 2005 06 12 | G96 | 0.2− | 0.2+ |
| 2005 04 05 | 691 | 0.0 | 0.1− | 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2005 04 05 | 691 | 0.1− | 0.5+ | 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 2005 05 03 | 704 | 0.6− | 0.3+ | 2005 05 13 | 704 | 0.1− | 0.8+ | 2006 10 02 | G96 | 0.3− | 0.2+ |
| 2005 05 03 | 704 | 0.3− | 0.2− | 2005 05 13 | 704 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.2+ |
| 2005 05 03 | 704 | 0.7− | 0.7− | 2005 05 13 | 704 | 0.4− | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2005 05 03 | 704 | 0.0 | 0.3− | 2005 05 13 | 704 | 0.2+ | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2005 05 04 | 691 | 0.1+ | 0.1+ | 2005 06 12 | G96 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2005 05 04 | 691 | 0.2+ | 0.0 | 2005 06 12 | G96 | 0.5− | 0.3− | 2006 10 21 | G96 | 0.2− | 0.6+ |
| 2005 05 04 | 691 | 0.1+ | 0.1− | 2005 06 12 | G96 | 0.6− | 0.1+ | | | | |

### 2005 $JL_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.68824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30610848 | $\omega$ | 191.24850 | | +0.46529007 | | +0.88449765 |
| $a$ | 2.1804818 | $\Omega$ | 106.48820 | | −0.80932497 | | +0.44075347 |
| $e$ | 0.0607526 | $i$ | 2.04349 | | −0.35846652 | | +0.15297155 |
| $P$ | 3.22 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 21 | 691 | 0.2+ | 0.2− | 2005 05 13 | 704 | 0.6− | 1.2+ | 2006 10 22 | 691 | 0.7− | 0.1− |
| 2000 12 21 | 691 | 0.1− | 0.3+ | 2005 05 13 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2000 12 21 | 691 | 0.1− | 0.2+ | 2005 05 13 | 704 | 0.5+ | 0.9+ | 2006 11 11 | 703 | 0.9+ | 0.3− |
| 2005 03 13 | G96 | 0.4+ | 0.2− | 2005 05 13 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2005 03 13 | G96 | 0.6+ | 0.4− | 2005 05 13 | 704 | 0.0 | 1.4+ | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2005 03 13 | G96 | 0.2+ | 0.5− | 2005 05 13 | 704 | 0.4− | 0.9− | 2006 11 12 | G96 | 0.4+ | 0.0 |
| 2005 03 13 | G96 | 0.3+ | 0.3− | 2005 05 13 | 704 | 0.7+ | 0.9+ | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 2005 05 03 | 691 | 0.2− | 0.2+ | 2005 06 04 | 703 | 0.7− | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.0 |
| 2005 05 03 | 691 | 0.5− | 0.2+ | 2005 06 04 | 703 | (1.9− | 0.1+) | 2006 11 12 | G96 | 0.8+ | 0.1− |
| 2005 05 03 | 691 | 0.3− | 0.1+ | 2005 06 04 | 703 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.2+ |
| 2005 05 04 | 699 | 0.4− | 0.7+ | 2005 06 04 | 703 | 0.8+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2005 05 04 | 699 | 0.5+ | 0.1+ | 2006 10 16 | 621 | 0.8+ | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.3+ |
| 2005 05 04 | 699 | 0.2− | 0.4− | 2006 10 16 | 621 | 0.2− | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.3+ |
| 2005 05 04 | 699 | 0.6+ | 0.7+ | 2006 10 16 | 621 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.8− | 1.0− |
| 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 10 17 | 621 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2005 05 08 | 691 | 0.1+ | 0.1− | 2006 10 17 | 621 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 1.2− |
| 2005 05 08 | 699 | 0.4+ | 0.8− | 2006 10 17 | 621 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.5− | 1.2− |
| 2005 05 08 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2005 05 08 | 699 | 1.0− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 18 | 704 | (1.1+ | 1.7+) |
| 2005 05 08 | 699 | 0.5+ | 1.1+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | (0.7+ | 2.8+) |
| 2005 05 08 | 699 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.6− |
| 2005 05 11 | G96 | 0.5− | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2005 05 11 | G96 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.7+ | 1.4+ |
| 2005 05 11 | G96 | 0.3− | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2005 05 11 | G96 | 0.3− | 0.4− | 2006 10 22 | 691 | 1.3− | 0.0 | 2006 11 21 | 704 | (0.6+ | 1.6+) |
| 2005 05 13 | 691 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.4+ |

### 2005 $JQ_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.51700 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28628036 | $\omega$ | 246.00627 | | +0.43113589 | | +0.89534093 |
| $a$ | 2.2800359 | $\Omega$ | 50.00963 | | −0.76575315 | | +0.42858161 |
| $e$ | 0.1317417 | $i$ | 8.38647 | | −0.47722527 | | +0.12117107 |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 910 | 0.2− | 0.4+ | 2005 05 09 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1998 04 24 | 910 | 0.5+ | 0.1− | 2005 05 13 | 704 | 0.4+ | 0.6+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 1998 04 24 | 910 | 0.2+ | 0.0 | 2005 05 13 | 704 | (0.5+ | 1.6+) | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 1999 11 12 | 691 | 0.2− | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.4− |
| 1999 11 12 | 691 | 0.0 | 0.1+ | 2005 05 13 | G96 | 0.3− | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.1− |
| 1999 11 12 | 691 | 0.0 | 0.1− | 2005 05 13 | 704 | 0.1− | 0.7+ | 2006 11 16 | 703 | 0.4− | 0.5+ |
| 2005 05 03 | 691 | 0.2+ | 0.2− | 2005 05 13 | G96 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.3− | 0.4+ |
| 2005 05 03 | 691 | 0.2+ | 0.1− | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.1− |
| 2005 05 03 | 701 | 0.1+ | 0.1− | 2005 05 16 | 701 | 0.5− | 0.9+ | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2005 05 03 | 691 | 0.3+ | 0.1− | 2005 05 16 | 701 | (2.0+ | 0.6+) | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2005 05 03 | 701 | 0.4+ | 0.1+ | 2005 06 04 | 703 | 1.3− | 0.4− | 2006 11 21 | 704 | (0.1+ | 1.7+) |
| 2005 05 03 | 701 | 0.7+ | 0.0 | 2005 06 04 | 703 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2005 05 04 | 701 | 0.3− | 0.4+ | 2005 06 04 | 703 | 1.2− | 0.3− | 2006 11 21 | 704 | 1.0+ | 0.0 |
| 2005 05 04 | 701 | 0.2+ | 0.8+ | 2005 06 04 | 703 | (1.7− | 0.3−) | 2006 11 27 | 703 | 0.2+ | 0.8− |
| 2005 05 04 | G96 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.4− | 0.4+ | 2006 11 27 | 703 | 0.5+ | 0.5+ |
| 2005 05 04 | G96 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.8− | 0.2− |
| 2005 05 04 | G96 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.9− | 0.3− |
| 2005 05 04 | 701 | 0.0 | 0.8+ | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.9+ | 0.3− |
| 2005 05 09 | 704 | 0.7− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2005 05 09 | 704 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.2− | 0.9− |

### 2005 $JC_2$ = 2006 $UV_{177}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.79652 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28432914 | $\omega$ | 111.19887 | | +0.64841740 | | +0.75136903 |
| $a$ | 2.2904552 | $\Omega$ | 200.77244 | | −0.76099581 | | +0.64416245 |
| $e$ | 0.1621049 | $i$ | 20.20167 | | +0.02098240 | | +0.14317579 |
| $P$ | 3.47 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.1+ | 0.1− | 2005 05 04 | G96 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 1999 11 05 | 691 | 0.3− | 0.1− | 2005 05 06 | G96 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.3+ | 1.1+ |
| 1999 11 05 | 691 | 0.2+ | 0.3+ | 2005 05 06 | G96 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.9− |
| 2005 05 02 | 691 | 0.2+ | 0.0 | 2005 05 06 | G96 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2005 05 02 | 691 | 0.2+ | 0.1− | 2005 05 06 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.8+ |
| 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.4+ | 0.5+ |
| 2005 05 04 | G96 | 0.6− | 0.0 | 2006 09 25 | G96 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.4+ | 1.2− |
| 2005 05 04 | G96 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 21 | 703 | 1.0+ | 1.0− |
| 2005 05 04 | G96 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.4− | 0.2− | | | | |

### 2005 $JE_2$ = 2006 $RM_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.43644 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22697189 | $\omega$ | 274.51409 | | +0.42430504 | | +0.90207976 |
| $a$ | 2.6616728 | $\Omega$ | 21.14411 | | −0.71969968 | | +0.38879892 |
| $e$ | 0.2651243 | $i$ | 12.62646 | | −0.54954309 | | +0.18731657 |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 809 | 1.2+ | 1.3− | 2006 09 16 | 644 | 0.5− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.3− |
| 1993 10 12 | 809 | 1.0+ | 0.8− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 13 | A50 | 0.0 | 0.5− |
| 1993 10 12 | 809 | 0.0 | 1.1− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 13 | A50 | 0.2− | 0.5+ |
| 2005 03 15 | 691 | 0.6− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.5+ |
| 2005 03 15 | 691 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.3+ |
| 2005 03 15 | 691 | 0.8+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.5− | 0.6+ |
| 2005 05 02 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.0 | 0.4+ |
| 2005 05 02 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2005 05 02 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2005 05 04 | G96 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 1.4+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2005 05 04 | G96 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2005 05 04 | G96 | 0.5− | 0.1+ | 2006 09 20 | 704 | 1.1+ | 1.2+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2005 05 04 | G96 | 0.2− | 0.3+ | 2006 09 20 | 704 | (0.1+ | 1.6+) | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2005 05 08 | G96 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.5− | 1.4+ | 2006 11 11 | 703 | 1.2− | 1.1+ |
| 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2005 05 08 | G96 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2005 05 10 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2005 05 10 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.8+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2005 05 10 | 691 | 0.5+ | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.0 | 1.2+ | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 29 | 691 | 0.1− | 0.1+ | 2006 11 18 | 291 | 0.1− | 0.1+ |
| 2006 09 06 | 644 | 0.3+ | 0.3+ | 2006 09 29 | 691 | 0.2− | 0.0 | 2006 11 18 | 291 | 0.0 | 0.1+ |
| 2006 09 14 | 703 | 1.2− | 0.6+ | 2006 09 29 | 691 | 0.4− | 0.0 | 2006 11 18 | 291 | 0.1− | 0.0 |
| 2006 09 14 | 703 | 0.2− | 0.5− | 2006 10 03 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2006 09 14 | 703 | 1.3− | 0.9+ | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.5− |
| 2006 09 14 | 703 | 0.8− | 0.4− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.5− | 0.2− |
| 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | | | |

### 2005 $JL_2$ = 2006 $RJ_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.91411 | | | (2000.0) | | |
| $n$ | 0.25653609 | $\omega$ | 234.45403 | | −0.26118141 | +0.96485394 |
| $a$ | 2.4530349 | $\Omega$ | 20.46399 | | −0.85661983 | −0.21782394 |
| $e$ | 0.1557569 | $i$ | 4.75844 | | −0.44495700 | −0.14700207 |
| $P$ | 3.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.2− | 0.0 | 2005 05 04 | G96 | 0.3− | 0.6− | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2005 03 09 | G96 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.5− | 0.5− | 2006 09 23 | 691 | 0.4+ | 0.0 |
| 2005 03 09 | G96 | 0.0 | 0.1− | 2005 05 08 | G96 | 0.5− | 0.9− | 2006 09 23 | 691 | 0.3− | 0.0 |
| 2005 03 09 | G96 | 0.4+ | 0.2+ | 2005 05 08 | G96 | 0.8− | 0.8− | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2005 04 02 | 644 | 0.6+ | 0.2− | 2005 05 08 | G96 | 0.5− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2005 04 02 | 644 | 0.3+ | 0.3+ | 2005 05 12 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2005 04 02 | 644 | 0.7+ | 0.6+ | 2005 05 12 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2005 05 03 | 691 | 0.0 | 0.1− | 2005 05 12 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.1− |
| 2005 05 03 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2005 05 03 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.3+ |
| 2005 05 04 | G96 | 0.5− | 0.3− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2005 05 04 | G96 | 0.3− | 0.5− | 2006 09 19 | 691 | 0.1− | 0.0 | | | | |
| 2005 05 04 | G96 | 1.1− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− | | | | |

### 2005 $JX_2$ = 2006 $UM_{250}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 103.92037 | | | (2000.0) | | |
| $n$ | 0.27015404 | $\omega$ | 60.44798 | | −0.02763057 | +0.99956658 |
| $a$ | 2.3698912 | $\Omega$ | 207.97419 | | −0.92446272 | −0.02941781 |
| $e$ | 0.1491196 | $i$ | 1.24093 | | −0.38026995 | −0.00111216 |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2005 05 04 | G96 | 0.5− | 0.2− | 2006 10 29 | G96 | 0.6− | 0.3− |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.2+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2005 04 17 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2005 05 03 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 22 | G96 | (7.4− | 2.5−) |
| 2005 05 03 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.1+ | 2006 11 22 | G96 | (7.1− | 2.7−) |
| 2005 05 03 | 691 | 0.2+ | 0.1− | 2006 10 29 | G96 | 0.4− | 0.1− | 2006 11 22 | G96 | (7.3− | 1.8−) |
| 2005 05 04 | G96 | 0.4− | 0.2− | 2006 10 29 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | (6.9− | 2.2−) |
| 2005 05 04 | G96 | 0.1+ | 0.2− | 2006 10 29 | G96 | 0.1− | 0.2− | | | | |
| 2005 05 04 | G96 | 0.4− | 0.1− | 2006 10 29 | G96 | 0.3− | 0.1− | | | | |

### 2005 $JK_3$ = 2006 $RH_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 135.00732 | | | (2000.0) | | |
| $n$ | 0.26600035 | $\omega$ | 50.62082 | | −0.73625834 | +0.67669457 |
| $a$ | 2.3944985 | $\Omega$ | 171.96362 | | −0.62695931 | −0.68054861 |
| $e$ | 0.1366385 | $i$ | 1.16792 | | −0.25464814 | −0.28095915 |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.0 | 0.1+ | 2005 05 04 | 699 | (1.6+ | 1.1−) | 2006 09 15 | 691 | 0.3− | 0.1+ |
| 2000 12 23 | 645 | 0.0 | 0.2+ | 2005 05 08 | 699 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.4+ |
| 2001 02 01 | 691 | (2.3− | 1.3−) | 2005 05 08 | 699 | 0.6+ | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.2− |
| 2001 02 01 | 691 | 0.0 | 0.6+ | 2005 05 08 | 699 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.5+ |
| 2001 02 01 | 691 | 0.5− | 1.2+ | 2005 05 08 | 699 | 0.4− | 0.6− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 03 27 | 691 | 0.8+ | 0.5+ | 2005 05 10 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2001 03 27 | 691 | 0.2+ | 0.1− | 2005 05 10 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2001 03 27 | 691 | 0.7+ | 0.1− | 2005 05 10 | 691 | 1.0+ | 1.1+ | 2006 09 26 | G96 | 1.2− | 0.2+ |
| 2002 08 15 | 291 | 0.0 | 0.4+ | 2005 05 11 | G96 | 0.7− | 0.4− | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2002 08 15 | 291 | 0.4− | 0.7+ | 2005 05 11 | G96 | 0.4− | 0.4− | 2006 09 28 | 691 | 0.2+ | 0.3+ |
| 2002 08 15 | 291 | 0.3− | 0.5+ | 2005 05 11 | G96 | 0.8− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.3+ |
| 2005 04 29 | 185 | 1.2− | 0.7− | 2005 05 11 | G96 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2005 04 29 | 185 | 0.1− | 0.1+ | 2005 05 11 | A13 | (2.1− | 2.0−) | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2005 04 29 | 185 | 1.0− | 0.5− | 2005 05 11 | A13 | 1.4− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2005 05 04 | 699 | 0.6+ | 0.7+ | 2005 05 11 | A13 | 0.3− | 1.0+ | 2006 10 27 | G96 | 0.8+ | 0.6− |
| 2005 05 04 | 699 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.0 | | | | |
| 2005 05 04 | 699 | 0.7+ | 0.0 | 2006 09 15 | 691 | 0.5− | 0.2+ | | | | |

### 2005 $JH_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 153.26496 | | | (2000.0) | | |
| $n$ | 0.26438024 | $\omega$ | 99.75597 | | −0.86828482 | +0.49329472 |
| $a$ | 2.4042708 | $\Omega$ | 109.81767 | | −0.47416004 | −0.79428448 |
| $e$ | 0.1285234 | $i$ | 3.19064 | | −0.14578658 | −0.35464416 |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 703 | 0.3− | 0.5− | 2005 06 03 | 691 | 0.4+ | 0.8− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2005 05 03 | 703 | 0.2+ | 0.5− | 2005 06 03 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.7+ | 0.3− |
| 2005 05 03 | 703 | 1.2− | 0.3+ | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2005 05 03 | 703 | 0.2+ | 1.5− | 2005 06 08 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.1− | 0.0 |
| 2005 05 04 | 644 | 0.4+ | 0.7+ | 2005 06 08 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.4+ |
| 2005 05 04 | 644 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3− |
| 2005 05 04 | 644 | 0.5+ | 0.7+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2− |
| 2005 06 03 | 691 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.6− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.6+ |

### 2005 $JV_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.95407 | | | (2000.0) | | |
| $n$ | 0.23952423 | $\omega$ | 233.81396 | | +0.95750564 | +0.19331208 |
| $a$ | 2.5678506 | $\Omega$ | 114.16068 | | −0.12429556 | +0.94625519 |
| $e$ | 0.1931879 | $i$ | 13.56748 | | −0.26025672 | +0.25929048 |
| $P$ | 4.11 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 02 | 691 | 0.2− | 0.0 | 2005 06 25 | 644 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 05 02 | 691 | 0.1+ | 0.1− | 2005 06 29 | 644 | 0.5− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.5− |
| 2005 05 02 | 691 | 0.1− | 0.1+ | 2005 06 29 | 644 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2005 05 06 | 691 | 0.1+ | 0.3− | 2005 06 29 | 644 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2005 05 06 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2005 05 06 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2005 06 25 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.2+ | | | | |
| 2005 06 25 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 1.6+ | 0.2− | | | | |

### 2005 $JB_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.90149 | | | (2000.0) | | |
| $n$ | 0.17181095 | $\omega$ | 217.23959 | | +0.56246941 | +0.66260084 |
| $a$ | 3.2045631 | $\Omega$ | 92.68335 | | −0.58785581 | +0.74110140 |
| $e$ | 0.2636734 | $i$ | 29.67645 | | −0.58142386 | −0.10829975 |
| $P$ | 5.74 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 645 | 0.0 | 0.1− | 2005 05 13 | 703 | 0.4− | 0.1+ | 2005 06 07 | 703 | (1.8+ | 0.7−) |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2005 05 13 | 703 | 0.0 | 0.2− | 2005 06 09 | 704 | 0.5+ | 0.8− |
| 2005 05 04 | 703 | 0.3− | 0.6+ | 2005 05 13 | 703 | 0.1− | 0.3− | 2005 06 09 | 704 | 0.0 | 1.0− |
| 2005 05 04 | 703 | 1.0− | 1.4− | 2005 05 13 | 703 | 0.0 | 0.3− | 2005 06 09 | 704 | 0.7− | 1.4− |
| 2005 05 04 | 703 | 0.0 | 0.3− | 2005 05 15 | 644 | 0.3+ | 0.2− | 2005 06 09 | 704 | (0.8− | 1.7−) |
| 2005 05 04 | 703 | 0.3+ | 0.7− | 2005 05 15 | 644 | 0.1+ | 0.1− | 2005 06 09 | 704 | 0.2+ | 0.3− |
| 2005 05 06 | 704 | 0.7+ | 0.7− | 2005 05 15 | 644 | 0.2+ | 0.0 | 2005 06 14 | 608 | 0.2+ | 0.1− |
| 2005 05 06 | 704 | 0.5+ | 0.7+ | 2005 05 16 | 691 | 0.0 | 0.1+ | 2005 06 14 | 608 | 0.2− | 0.1− |
| 2005 05 06 | 704 | 1.0+ | 0.1− | 2005 05 16 | 691 | 0.0 | 0.2+ | 2005 06 14 | 608 | 0.1− | 0.4− |
| 2005 05 06 | 704 | 0.5+ | 0.6+ | 2005 05 16 | 691 | 0.0 | 0.0 | 2005 07 02 | 703 | 0.4− | 0.1− |
| 2005 05 06 | 704 | 0.9+ | 0.3+ | 2005 05 19 | 703 | 0.2+ | 0.1+ | 2005 07 02 | 703 | 0.7+ | 0.6+ |
| 2005 05 06 | 691 | 0.3+ | 0.2+ | 2005 05 19 | 703 | 0.7− | 0.7− | 2005 07 02 | 703 | 0.4− | 0.4− |
| 2005 05 06 | 691 | 0.0 | 0.3+ | 2005 05 19 | 703 | 1.1− | 0.1− | 2005 07 02 | 703 | 0.3+ | 0.8− |
| 2005 05 06 | 691 | 0.2+ | 0.1+ | 2005 05 19 | 703 | 0.9− | 0.8− | 2006 09 26 | E12 | 0.5+ | 0.2+ |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2005 05 20 | 644 | 0.1− | 0.2− | 2006 09 26 | E12 | 0.1− | 0.3− |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2005 05 20 | 644 | 0.2+ | 0.3− | 2006 09 26 | E12 | 0.4− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2005 05 20 | 644 | 0.1+ | 0.1− | 2006 09 26 | E12 | 0.1+ | 0.5− |
| 2005 05 09 | 691 | 0.3+ | 0.1+ | 2005 05 31 | 703 | 0.8− | 0.6+ | 2006 10 30 | E12 | 0.1− | 0.4+ |
| 2005 05 09 | 691 | 0.2+ | 0.2+ | 2005 05 31 | 703 | 1.1− | 0.5+ | 2006 10 30 | E12 | 0.8+ | 0.3+ |
| 2005 05 09 | 691 | 0.3+ | 0.1+ | 2005 05 31 | 703 | 0.9− | 0.3+ | 2006 10 30 | E12 | 0.2+ | 0.0 |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2005 05 31 | 703 | 0.7− | 0.2+ | 2006 10 30 | E12 | 0.2+ | 1.0− |
| 2005 05 10 | 691 | 0.1+ | 0.1+ | 2005 06 05 | 691 | 0.2+ | 0.3+ | 2006 11 19 | E12 | 0.5+ | 0.1+ |
| 2005 05 10 | 691 | 0.1+ | 0.1− | 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 11 19 | E12 | 0.2+ | 0.1+ |
| 2005 05 12 | 703 | 0.6− | 0.5− | 2005 06 05 | 691 | 0.5− | 1.0− | 2006 11 19 | E12 | 1.1− | 0.7+ |
| 2005 05 12 | 703 | 1.1− | 0.2+ | 2005 06 07 | 703 | 0.2+ | 0.6+ | 2006 11 19 | E12 | 0.3− | 0.8− |
| 2005 05 12 | 703 | 0.5− | 0.4+ | 2005 06 07 | 703 | 0.8− | 0.4+ | | | | |
| 2005 05 12 | 703 | 0.1+ | 0.3− | 2005 06 07 | 703 | 1.1− | 0.2− | | | | |

**2005 JY$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.87004 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28307497 | $\omega$ | 189.18782 | | +0.84614519 | | −0.53188197 |
| $a$ | 2.2972155 | $\Omega$ | 203.04238 | | +0.49428955 | | +0.80687404 |
| $e$ | 0.1544891 | $i$ | 4.94835 | | +0.19928916 | | +0.25701332 |
| $P$ | 3.48 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2005 05 04 | 568 | 0.1+ | 0.3− | 2006 08 29 | 703 | (0.6− | 4.5−) |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2005 05 04 | 568 | 0.1+ | 0.3− | 2006 08 29 | 703 | (1.8+ | 3.1−) |
| 2003 12 22 | 704 | 0.9− | 1.3+ | 2005 05 04 | 568 | 0.1+ | 0.3− | 2006 09 14 | 703 | 1.2− | 0.4+ |
| 2003 12 22 | 704 | 0.8+ | 0.8+ | 2005 05 05 | 568 | 0.0 | 0.3− | 2006 09 14 | 703 | 1.1− | 0.6+ |
| 2003 12 22 | 704 | 0.4+ | 0.7+ | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 09 14 | 703 | 1.0− | 0.3+ |
| 2003 12 22 | 704 | 0.6− | 0.8+ | 2005 05 08 | G96 | 0.8− | 0.2+ | 2006 09 14 | 703 | 1.1− | 1.0+ |
| 2005 04 02 | G96 | 0.1− | 0.4− | 2005 05 08 | G96 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 2005 04 02 | G96 | 0.2− | 0.2− | 2005 05 08 | G96 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2005 05 10 | 807 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.2+ |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2005 05 11 | 807 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.2+ |
| 2005 04 10 | 691 | 0.3+ | 0.4+ | 2006 08 27 | 699 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.3+ | 0.3+ |
| 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2005 04 10 | 691 | 0.8+ | 0.1− | 2006 08 27 | 699 | 0.4+ | 0.5− | 2006 11 16 | G96 | (0.6+ | 1.8−) |
| 2005 04 17 | 691 | 0.5− | 0.5+ | 2006 08 27 | 699 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.3− | 0.4+ |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 1.1− | 0.3+ | 2006 11 16 | G96 | 0.8− | 1.0+ |
| 2005 04 17 | 691 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.8− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.1− |

**2005 JO$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.13499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23584026 | $\omega$ | 263.08303 | | +0.46737270 | | +0.88065235 |
| $a$ | 2.5945224 | $\Omega$ | 35.11924 | | −0.74853007 | | +0.44087167 |
| $e$ | 0.1867601 | $i$ | 7.74741 | | −0.47038866 | | +0.17344629 |
| $P$ | 4.18 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 291 | 0.2− | 0.1+ | 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2002 10 30 | 291 | 0.1− | 0.3+ | 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 2002 10 30 | 291 | 0.0 | 0.2+ | 2005 05 04 | 568 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2005 03 14 | G96 | 0.9− | 0.4− | 2005 05 04 | 568 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2005 03 14 | G96 | 0.5− | 0.2− | 2005 05 04 | 568 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2005 03 14 | G96 | 0.5− | 0.1+ | 2005 05 05 | 568 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2005 03 14 | G96 | 0.5− | 0.0 | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2005 04 06 | G96 | 0.3+ | 0.2− | 2005 05 08 | G96 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.4− | 0.4− |
| 2005 04 06 | G96 | 0.4− | 0.1+ | 2005 05 08 | G96 | 0.8+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2005 04 06 | G96 | 0.2− | 0.1− | 2005 05 08 | G96 | 0.8+ | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.4+ |
| 2005 04 06 | G96 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.0 | 0.4+ |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.7+ | 0.3− |

**2005 JE$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.07775 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26161856 | $\omega$ | 236.08520 | | +0.08417432 | | +0.99570243 |
| $a$ | 2.4211611 | $\Omega$ | 38.80018 | | −0.89267658 | | +0.09257221 |
| $e$ | 0.1703612 | $i$ | 3.53340 | | −0.44276767 | | +0.00265497 |
| $P$ | 3.77 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 17 | 691 | 0.1+ | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.4+ | 0.8+ |
| 2001 03 17 | 691 | 0.5+ | 0.4+ | 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.4+ | 0.0 |
| 2001 03 17 | 691 | 0.4− | 0.1− | 2005 05 04 | 568 | 0.1+ | 1.0+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2005 03 14 | G96 | 0.1+ | 0.6− | 2005 05 04 | 568 | 0.1+ | 0.9+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2005 03 14 | G96 | 0.1− | 0.1+ | 2005 05 04 | 568 | 0.3+ | 1.0+ | 2006 10 23 | 691 | 1.1− | 0.5− |
| 2005 03 14 | G96 | 0.2+ | 0.5− | 2005 05 05 | 568 | 0.3+ | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 2005 03 14 | G96 | 0.0 | 0.7− | 2005 05 08 | G96 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.7− | 0.3+ |
| 2005 04 04 | G96 | 0.2− | 0.2− | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2005 04 04 | G96 | 0.2− | 0.1− | 2005 05 08 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.4+ |
| 2005 04 04 | G96 | 0.3− | 0.5− | 2005 05 08 | G96 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.5+ | 1.2− |
| 2005 04 04 | G96 | 0.1+ | 0.5− | 2006 09 24 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | (2.3+ | 1.4−) |
| 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 09 24 | 691 | 0.4+ | 0.1+ | | | | |

**2005 JR$_{12}$ = 2006 UK$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.39529 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28982431 | $\omega$ | 253.86396 | | +0.36370074 | | +0.92894807 |
| $a$ | 2.2614110 | $\Omega$ | 37.69542 | | −0.80563097 | | +0.35093211 |
| $e$ | 0.1004301 | $i$ | 6.49038 | | −0.46763288 | | +0.11790731 |
| $P$ | 3.40 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.7+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2005 03 14 | G96 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2005 03 14 | G96 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.3− |
| 2005 03 14 | G96 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2005 05 04 | 568 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2005 05 04 | 568 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 03 | G96 | 0.5− | 0.1− |
| 2005 05 04 | 568 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 03 | G96 | 0.1+ | 0.0 |
| 2005 05 05 | 568 | 0.0 | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 03 | G96 | 0.3− | 0.1+ |
| 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 03 | G96 | 0.7− | 0.0 |
| 2005 05 08 | G96 | 0.5+ | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.9+ | 2006 11 03 | G96 | 0.1− | 0.1+ |
| 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 03 | G96 | 0.6+ | 0.4− |
| 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 03 | G96 | 0.1− | 0.4− |
| 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 03 | G96 | 0.0 | 0.1+ |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.1− | | | | |
| 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.3− | | | | |

**2005 JH$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.20069 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25405990 | $\omega$ | 287.70635 | | +0.83274322 | | +0.54658710 |
| $a$ | 2.4689481 | $\Omega$ | 39.28885 | | −0.44037837 | | +0.75046468 |
| $e$ | 0.1165323 | $i$ | 8.00757 | | −0.33556760 | | +0.37154449 |
| $P$ | 3.88 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.6+ | 0.9+ | 2005 05 08 | G96 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.3− | 0.7+ |
| 2002 08 20 | 644 | 0.6+ | 0.9+ | 2005 05 08 | G96 | 0.2− | 0.2− | 2006 09 30 | 704 | 0.5+ | 0.1+ |
| 2002 08 20 | 644 | 0.5+ | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.6− | 0.4− |
| 2002 09 09 | 644 | 0.2− | 0.6− | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2002 09 09 | 644 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.9+ | 0.3− | 2006 09 30 | 704 | 1.2+ | 0.5+ |
| 2002 09 09 | 644 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.7− | 0.5− | 2006 10 16 | 703 | 0.7+ | 0.4+ |
| 2002 09 14 | 608 | 0.5− | 0.6− | 2006 09 18 | 699 | 0.6− | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2002 09 14 | 608 | 0.4− | 0.8− | 2006 09 18 | 699 | 0.1+ | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2002 09 14 | 608 | 0.0 | 0.5− | 2006 09 18 | 699 | 1.2+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 1.0− | 0.6− | 2006 09 18 | 699 | 0.3+ | 1.4− | 2006 10 21 | 644 | 0.7+ | 0.2+ |
| 2005 03 14 | G96 | 0.7− | 0.8− | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2005 03 14 | G96 | 0.6− | 0.4− | 2006 09 20 | 644 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2005 03 14 | G96 | 0.4− | 0.7− | 2006 09 20 | 644 | 0.1− | 0.5− | 2006 10 23 | 682 | 0.6− | 0.6+ |
| 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 682 | 0.3+ | 0.2− |
| 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.1+ | 2006 10 23 | 682 | 0.7− | 0.1+ |
| 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 1.2+ | 2006 10 24 | 682 | 0.2+ | 0.2+ |
| 2005 05 04 | 568 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.7+ | 2006 10 24 | 682 | 0.3− | 0.2+ |
| 2005 05 04 | 568 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.7− | 0.2+ | 2006 10 24 | 682 | 0.1+ | 1.2− |
| 2005 05 04 | 568 | 0.2− | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.3− | 2006 10 24 | 682 | 0.5− | 0.4+ |
| 2005 05 05 | 568 | 0.1+ | 0.8+ | 2006 09 30 | 703 | 0.8− | 0.0 | 2006 10 24 | 682 | 0.3+ | 1.2− |
| 2005 05 08 | G96 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.7+ | 0.8+ | 2006 10 24 | 682 | 0.1+ | 0.0 |
| 2005 05 08 | G96 | 0.3− | 0.2− | 2006 09 30 | 703 | 1.4− | 0.8− | | | | |

### 2005 JQ$_{13}$ = 2006 UN$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.13945 | | (2000.0) | | | |
| $n$ | 0.28007323 | $\omega$ | 75.92258 | | +0.27797164 | +0.95895680 |
| $a$ | 2.3136002 | $\Omega$ | 210.39639 | | −0.91849287 | +0.24827571 |
| $e$ | 0.1128298 | $i$ | 6.35189 | | −0.28125186 | +0.13697091 |
| $P$ | 3.52 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.6− | 0.0 | 2005 05 14 | G96 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.5− | 0.3− |
| 2005 04 10 | G96 | 0.3− | 0.0 | 2005 05 14 | G96 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2005 04 10 | G96 | 0.4− | 0.6+ | 2005 05 14 | G96 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.5− | 0.2− |
| 2005 04 10 | G96 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.3+ |
| 2005 05 04 | 568 | 0.4+ | 0.7+ | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2005 05 04 | 568 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2005 05 04 | 568 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2005 05 05 | 568 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | | | | |
| 2005 05 14 | G96 | 0.4− | 0.4− | 2006 10 20 | 691 | 0.2+ | 0.1+ | | | | |

### 2005 JL$_{14}$ = 2006 RU$_{21}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.77348 | | (2000.0) | | | |
| $n$ | 0.17531567 | $\omega$ | 73.43642 | | +0.34152629 | +0.90056841 |
| $a$ | 3.1617114 | $\Omega$ | 220.01855 | | −0.93940358 | +0.33611665 |
| $e$ | 0.2341931 | $i$ | 24.72460 | | +0.02967664 | +0.27568486 |
| $P$ | 5.62 | $H$ | 15.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 01 | 644 | 0.3+ | 0.2+ | 2005 05 11 | G96 | 0.7− | 0.2− | 2006 09 15 | 703 | 1.2− | 0.8− |
| 2005 05 01 | 644 | 0.3+ | 0.4+ | 2005 05 11 | G96 | 0.6− | 0.2− | 2006 09 15 | 703 | 0.0 | 0.5+ |
| 2005 05 01 | 644 | 0.4+ | 0.0 | 2005 05 13 | 704 | 0.9+ | 0.1+ | 2006 09 15 | 703 | 0.7+ | 0.1− |
| 2005 05 07 | G96 | 0.6− | 0.2− | 2005 05 13 | 704 | 0.1− | 1.3+ | 2006 09 15 | 703 | 0.1− | 0.3+ |
| 2005 05 07 | G96 | 0.2− | 0.3− | 2005 05 13 | 704 | 1.0+ | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.0 |
| 2005 05 07 | G96 | 0.2− | 0.3− | 2005 05 13 | 704 | 1.4+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.8+ |
| 2005 05 07 | G96 | 0.3− | 0.1− | 2005 05 14 | 644 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.7+ | 0.3− |
| 2005 05 11 | G96 | 0.4− | 0.2− | 2005 05 14 | 644 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.4− |
| 2005 05 11 | G96 | 0.5− | 0.3− | 2005 05 14 | 644 | 0.2− | 0.2− | | | | |

### 2005 JO$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.09213 | | (2000.0) | | | |
| $n$ | 0.22632341 | $\omega$ | 258.64642 | | +0.42287983 | +0.89378597 |
| $a$ | 2.6667547 | $\Omega$ | 37.52891 | | −0.70596110 | +0.42829864 |
| $e$ | 0.1892301 | $i$ | 14.19656 | | −0.56814750 | +0.13306735 |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 327 | 0.6+ | 0.5+ | 2006 09 18 | 703 | (1.7+ | 0.9−) | 2006 10 15 | 703 | 0.6− | 0.2+ |
| 1996 04 20 | 327 | 0.1− | 0.8+ | 2006 09 18 | 703 | 0.8+ | 0.4− | 2006 10 21 | 703 | 0.8− | 0.0 |
| 1996 04 20 | 327 | 0.4+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2005 04 07 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.7− |
| 2005 04 07 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 1.1+ | 0.6− | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 2005 04 07 | 691 | 1.0− | 0.0 | 2006 09 18 | 703 | 0.6− | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 05 01 | 644 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2005 05 01 | 644 | 0.2+ | 0.5− | 2006 09 18 | 703 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2005 05 01 | 644 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.3− | 0.7+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2005 05 04 | 699 | 0.0 | 1.5+ | 2006 09 25 | 699 | 0.8− | 0.7− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2005 05 04 | 699 | 0.2+ | 1.0+ | 2006 09 25 | 699 | (0.3− | 1.6+) | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2005 05 04 | 699 | (2.6+ | 2.1+) | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2005 05 04 | 699 | 1.4+ | 0.2+ | 2006 09 26 | 704 | (1.5+ | 0.9+) | 2006 11 06 | 644 | 0.2+ | 0.2+ |
| 2005 05 09 | 704 | 0.2+ | 1.1+ | 2006 09 26 | 704 | 1.1− | 0.2+ | 2006 11 06 | 644 | 0.1+ | 0.5+ |
| 2005 05 09 | 704 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.5− | 0.0 | 2006 11 06 | 644 | 0.0 | 0.4+ |
| 2005 05 09 | 704 | 0.7− | 0.8+ | 2006 09 29 | 699 | 0.8− | 0.9− | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2005 05 09 | 704 | 0.4− | 0.3− | 2006 09 29 | 699 | (1.7+ | 0.7−) | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2005 05 13 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.1− | 1.3+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2005 05 13 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2005 05 13 | 704 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.7− | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2005 05 13 | 704 | 0.9+ | 0.5− | 2006 09 30 | 703 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2005 05 13 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.7− | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2005 05 16 | G96 | 0.2− | 0.6− | 2006 10 03 | G96 | 0.6+ | 0.2− | 2006 11 11 | 703 | 1.3− | 0.3+ |
| 2005 05 16 | G96 | 0.1− | 0.4− | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 2005 05 16 | G96 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2005 05 16 | G96 | 0.2− | 0.4− | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | (1.8− | 0.0 ) |
| 2005 05 18 | 644 | 0.1+ | 0.4− | 2006 10 15 | 703 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.1− |
| 2005 05 18 | 644 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2005 05 18 | 644 | 0.2+ | 0.5− | 2006 10 15 | 703 | 1.2+ | 0.0 | 2006 11 17 | 703 | 0.8+ | 1.0+ |

### 2005 JK$_{15}$ = 2006 QW$_{165}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.34871 | | (2000.0) | | | |
| $n$ | 0.22014135 | $\omega$ | 123.40745 | | +0.89274427 | +0.44906939 |
| $a$ | 2.7164495 | $\Omega$ | 209.95614 | | −0.43392301 | +0.83500936 |
| $e$ | 0.1193572 | $i$ | 4.21091 | | −0.12131975 | +0.31795605 |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.4− | 0.4− | 2006 09 24 | 106 | 0.1+ | 0.6− |
| 2002 10 30 | 608 | 0.1− | 0.2− | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 1.0+ | 1.0+ |
| 2002 10 30 | 608 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.5+ |
| 2004 02 18 | 691 | 0.0 | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.6+ |
| 2004 02 18 | 691 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.7+ |
| 2004 02 18 | 691 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.6+ | 0.1+ | 2006 09 25 | 704 | 0.4− | 0.3+ |
| 2005 05 03 | 691 | 0.1+ | 0.5+ | 2006 09 06 | 644 | 0.5− | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2005 05 03 | 691 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 1.0+ |
| 2005 05 03 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.2− | 0.9− | 2006 09 29 | 704 | 0.1+ | 0.3− |
| 2005 05 07 | G96 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2005 05 07 | G96 | 0.3− | 0.1− | 2006 09 12 | 703 | (0.6− | 2.4−) | 2006 09 29 | 704 | 0.7− | 0.2+ |
| 2005 05 07 | G96 | 0.4− | 0.1− | 2006 09 18 | 704 | (0.8− | 1.9+) | 2006 10 03 | G96 | 0.5+ | 0.6− |
| 2005 05 07 | G96 | 0.3− | 0.1− | 2006 09 18 | 704 | 1.0− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2005 05 08 | 691 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.9− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.7− |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.2− | 1.0+ | 2006 10 03 | G96 | 1.3− | 0.4− |
| 2005 05 08 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.7− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.5+ |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.4+ | 0.3+ |
| 2005 05 08 | 691 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.1− | 0.6− | 2006 10 10 | 644 | 0.2+ | 0.1+ |
| 2005 05 08 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2005 05 08 | G96 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2005 05 08 | G96 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.5− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2005 05 08 | G96 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2005 05 08 | G96 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2005 05 12 | 691 | 0.2+ | 0.0 | 2006 09 20 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2005 05 12 | 691 | 0.2+ | 0.1− | 2006 09 20 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2005 05 12 | 691 | 0.3+ | 0.2− | 2006 09 20 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2006 08 29 | 703 | 0.8− | 0.3− | 2006 09 24 | 106 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2006 08 29 | 703 | 0.4− | 0.7− | 2006 09 24 | 106 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2006 08 29 | 703 | (0.3− | 1.6−) | 2006 09 24 | 106 | 0.1+ | 1.1− | | | | |

**2005 JL$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.25587 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23970008 | $\omega$ | 352.12587 | | −0.96858386 | | +0.24832724 |
| $a$ | 2.5665945 | $\Omega$ | 202.26651 | | −0.22619936 | | −0.90207198 |
| $e$ | 0.1654119 | $i$ | 2.02281 | | −0.10333998 | | −0.35298687 |
| $P$ | 4.11 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.1− | 2005 05 08 | 699 | 1.2− | 1.0+ | 2005 06 13 | G96 | 0.1+ | 0.3− |
| 2002 09 05 | 645 | 0.1− | 0.2+ | 2005 05 08 | 691 | 0.3+ | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.2− |
| 2005 05 03 | 691 | 0.2+ | 0.1− | 2005 05 08 | 699 | 0.7+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.2+ |
| 2005 05 03 | 691 | 0.0 | 0.2+ | 2005 05 08 | 699 | 1.3− | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.1+ |
| 2005 05 03 | 691 | 0.1+ | 0.1+ | 2005 05 12 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 2005 05 07 | G96 | 0.3− | 0.2− | 2005 05 12 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2005 05 07 | G96 | 0.2− | 0.3− | 2005 05 12 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2005 05 07 | G96 | 0.2− | 0.3− | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.4− |
| 2005 05 07 | G96 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2005 05 19 | 644 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2005 05 08 | 699 | 0.8− | 0.5+ | 2005 06 13 | G96 | 0.3+ | 0.3− | | | | |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.2− | | | | |

**2005 JP$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.87091 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23839350 | $\omega$ | 40.51237 | | −0.21460975 | | +0.97548445 |
| $a$ | 2.5759639 | $\Omega$ | 217.16994 | | −0.91564840 | | −0.21830068 |
| $e$ | 0.1101778 | $i$ | 4.62438 | | −0.33989802 | | −0.02783719 |
| $P$ | 4.13 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 691 | 0.1− | 0.0 | 2005 05 07 | G96 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.1+ |
| 2005 04 17 | 691 | 0.1− | 0.1+ | 2005 05 07 | G96 | 0.5− | 0.3− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2005 04 17 | 691 | 0.2− | 0.0 | 2005 05 12 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.3− | 0.2− |
| 2005 05 03 | 691 | 0.1+ | 0.0 | 2005 05 12 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.9− |
| 2005 05 03 | 691 | 0.0 | 0.1+ | 2005 05 12 | 691 | 0.7+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2005 05 03 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.7− |
| 2005 05 07 | G96 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.9+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2005 05 07 | G96 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.8− | 0.3+ | | | | |

**2005 JX$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.05360 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21322642 | $\omega$ | 113.53737 | | +0.59482458 | | +0.80383911 |
| $a$ | 2.7748661 | $\Omega$ | 192.96660 | | −0.74562243 | | +0.54933433 |
| $e$ | 0.1395285 | $i$ | 1.31215 | | −0.30038461 | | +0.22819833 |
| $P$ | 4.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2005 05 13 | G96 | 0.7− | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2005 04 17 | 691 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.8+ | 0.7− | 2006 10 27 | G96 | 0.3− | 0.3+ |
| 2005 04 17 | 691 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.3− | 0.6− | 2006 10 27 | G96 | 0.5− | 0.4+ |
| 2005 05 03 | 691 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.7− | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.4− |
| 2005 05 03 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.4+ | 0.4+ |
| 2005 05 03 | 691 | 0.0 | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.9− | 0.0 |
| 2005 05 07 | G96 | 0.1+ | 0.3− | 2005 06 13 | G96 | 0.7− | 0.3− | 2006 10 28 | G96 | 0.3− | 0.8− |
| 2005 05 07 | G96 | 0.0 | 0.5− | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.2+ |
| 2005 05 07 | G96 | 0.3+ | 0.1− | 2006 07 22 | G96 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.9+ | 0.5+ |
| 2005 05 07 | G96 | 0.4− | 0.4− | 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 07 22 | G96 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.3+ |
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2005 05 08 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2005 05 13 | G96 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.6− | 0.4− | | | | |

**2005 JZ$_{15}$ = 2005 GB$_{167}$ = 2006 RA$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.00839 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24418245 | $\omega$ | 132.61346 | | +0.84359941 | | +0.53689671 |
| $a$ | 2.5350883 | $\Omega$ | 194.92122 | | −0.50238332 | | +0.78319260 |
| $e$ | 0.1039007 | $i$ | 2.01489 | | −0.18960761 | | +0.31361005 |
| $P$ | 4.04 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 12 | 691 | 0.4+ | 0.6+ | 2005 05 03 | 691 | 0.6+ | 0.3− | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 1994 10 12 | 691 | 0.2+ | 0.2+ | 2005 05 03 | 691 | 0.8+ | 0.7+ | 2006 09 25 | 691 | 0.2− | 0.5− |
| 1994 10 12 | 691 | 0.3− | 0.0 | 2005 05 07 | G96 | 0.4+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2001 04 24 | 291 | 0.5− | 0.5+ | 2005 05 07 | G96 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2001 04 24 | 291 | 0.6− | 0.1+ | 2005 05 07 | G96 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2001 04 24 | 291 | 0.8− | 0.3− | 2005 05 07 | G96 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 10 02 | 049 | 0.3+ | 0.2+ | 2005 05 09 | G96 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2002 10 02 | 049 | 0.7+ | 0.3+ | 2005 05 09 | G96 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.6− | 0.4− |
| 2002 10 02 | 049 | 0.1− | 0.5+ | 2005 05 09 | G96 | 0.3+ | 0.1− | 2006 10 16 | G96 | 0.6+ | 0.0 |
| 2004 01 30 | 691 | 0.4− | 0.2+ | 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.4− | 0.5− |
| 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 09 05 | 163 | 0.9− | 1.0+ | 2006 10 16 | 106 | 0.0 | 0.6+ |
| 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 09 05 | 163 | 0.2+ | 0.7+ | 2006 10 16 | 106 | 0.4− | 0.8+ |
| 2004 02 12 | 291 | 0.1+ | 0.2+ | 2006 09 05 | 163 | 0.4− | 0.1+ | 2006 10 16 | 106 | 0.2− | 0.3+ |
| 2004 02 12 | 291 | 0.5+ | 0.3+ | 2006 09 05 | 163 | 0.1− | 0.1+ | 2006 10 16 | 106 | 0.6− | 0.3− |
| 2004 02 12 | 291 | 0.3+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2005 04 11 | G96 | 0.2+ | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2005 04 11 | G96 | 0.3+ | 0.4+ | 2006 09 14 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.5− |
| 2005 04 11 | G96 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.6+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.3+ | | | | |
| 2005 05 03 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | | | | |

**2005 JV$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.96416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23189972 | $\omega$ | 25.16788 | | +0.27815092 | | +0.94108950 |
| $a$ | 2.6238313 | $\Omega$ | 261.46148 | | −0.91089959 | | +0.19490838 |
| $e$ | 0.1723572 | $i$ | 11.21341 | | −0.30478519 | | +0.27633542 |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2005 05 12 | 644 | 0.4− | 0.2+ | 2006 09 22 | 699 | 0.2− | 0.3+ |
| 2004 01 18 | 691 | 0.1+ | 0.1− | 2005 05 12 | 644 | 0.2− | 0.2+ | 2006 09 22 | 699 | 0.6− | 0.5− |
| 2004 01 18 | 691 | 0.1− | 0.0 | 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.8+ | 0.5+ |
| 2005 05 04 | 644 | 0.0 | 0.5+ | 2005 05 16 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.2+ | 0.8− |
| 2005 05 04 | 644 | 0.2+ | 0.6+ | 2005 05 16 | 644 | 0.0 | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.7+ |
| 2005 05 04 | 644 | 0.1+ | 0.2+ | 2005 05 16 | 644 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.9− | 0.1− |
| 2005 05 05 | 644 | 0.1+ | 0.0 | 2005 05 16 | 644 | 0.2+ | 0.2− | 2006 10 19 | 703 | (1.8+ | 0.5−) |
| 2005 05 05 | 644 | 0.0 | 0.0 | 2005 05 16 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.1+ |
| 2005 05 05 | 644 | 0.5+ | 0.1− | 2006 09 17 | 703 | 0.3− | 0.8− | 2006 10 19 | 703 | 0.4+ | 1.0+ |
| 2005 05 10 | 699 | (1.7− | 0.0 ) | 2006 09 17 | 703 | 0.3+ | 0.8+ | 2006 10 19 | 703 | 1.3− | 0.6+ |
| 2005 05 10 | 699 | (1.2+ | 1.9+) | 2006 09 17 | 703 | 0.1− | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2005 05 10 | 699 | 0.1− | 1.2− | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2005 05 10 | 699 | (2.1+ | 0.4+) | 2006 09 22 | 699 | 0.6+ | 0.4− | 2006 10 22 | 644 | 0.4+ | 0.1+ |
| 2005 05 12 | 644 | 0.3− | 0.1+ | 2006 09 22 | 699 | 0.2− | 0.4− | | | | |

**2005 JD$_{17}$ = 2006 UK$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.78700 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22776801 | $\omega$ | 23.12492 | | −0.35551434 | | +0.92179474 |
| $a$ | 2.6554670 | $\Omega$ | 226.45121 | | −0.88741669 | | −0.38482113 |
| $e$ | 0.1299447 | $i$ | 12.31678 | | −0.29343001 | | +0.04698036 |
| $P$ | 4.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 699 | 0.6− | 1.1− | 2005 05 08 | 699 | 0.7− | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2005 05 04 | 699 | 0.8− | 0.3+ | 2005 05 08 | 699 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.3− | 0.1− | 2005 05 08 | 699 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | | |
| 2005 05 04 | 699 | 0.4− | 0.3− | 2005 05 09 | 699 | 1.4− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.0 | | |
| 2005 05 04 | G96 | 0.4− | 0.0 | 2005 05 09 | 699 | 0.3− | 0.6− | 2006 10 23 | 691 | 0.1− | 0.4− | | |
| 2005 05 04 | G96 | 0.4− | 0.2− | 2005 05 09 | 699 | 0.7− | 1.3+ | 2006 10 23 | 691 | 0.1− | 0.2− | | |
| 2005 05 04 | 699 | 0.1− | 0.5− | 2005 05 09 | 699 | 1.1+ | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.2+ | | |
| 2005 05 04 | G96 | 0.2− | 0.0 | 2005 05 19 | 644 | 0.2+ | 0.6− | 2006 10 23 | 691 | 0.3− | 0.1+ | | |
| 2005 05 07 | 691 | 0.1+ | 0.1− | 2005 05 19 | 644 | 0.4+ | 0.6− | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2005 05 07 | 691 | 0.7+ | 0.6+ | 2005 05 19 | 644 | 0.4+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.5− | | |
| 2005 05 07 | 691 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.0 | | | | | | |
| 2005 05 08 | 699 | 0.3+ | 0.7+ | 2006 10 17 | 691 | 0.3+ | 0.3+ | | | | | | |

**2005 JR$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.97351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20968062 | $\omega$ | 112.88500 | | +0.93978709 | +0.33084969 | |
| $a$ | 2.8060615 | $\Omega$ | 227.91173 | | −0.34029445 | +0.88268906 | |
| $e$ | 0.2380639 | $i$ | 6.62875 | | −0.03162136 | +0.33376416 | |
| $P$ | 4.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.6+ | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.3− | 2006 10 03 | 704 | 0.4+ | 0.4− | | |
| 2001 08 25 | 704 | 0.4− | 0.3+ | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.7− | 0.4− | | |
| 2001 08 25 | 704 | 0.4− | 0.1+ | 2006 09 16 | 703 | 0.6− | 0.6− | 2006 10 04 | G96 | 0.3+ | 0.2− | | |
| 2001 08 25 | 704 | 0.1+ | 0.2− | 2006 09 16 | 703 | 1.1− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.3− | | |
| 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.3+ | 0.3− | | |
| 2005 04 17 | 691 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.6+ | 0.1− | 2006 10 17 | 703 | (1.0− | 2.7+) | | |
| 2005 04 17 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.3− | | |
| 2005 05 04 | G96 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.1+ | | |
| 2005 05 04 | G96 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.5− | 0.1− | | |
| 2005 05 04 | G96 | 0.0 | 0.3+ | 2006 09 29 | 704 | 1.1+ | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.1+ | | |
| 2005 05 04 | G96 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2005 05 07 | 691 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1+ | | |
| 2005 05 07 | 691 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2005 05 07 | 691 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2005 05 13 | G96 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2005 05 13 | G96 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2005 05 13 | G96 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2− | | |
| 2005 05 13 | G96 | 0.5− | 0.3− | 2006 10 03 | 704 | 1.2− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | |

**2005 JA$_{19}$ = 2006 UX$_{302}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.65259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24526945 | $\omega$ | 167.61128 | | −0.80281315 | +0.59576536 | |
| $a$ | 2.5275926 | $\Omega$ | 48.98156 | | −0.54966040 | −0.72422481 | |
| $e$ | 0.0383737 | $i$ | 1.78880 | | −0.23100758 | −0.34722048 | |
| $P$ | 4.02 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 291 | 0.1+ | 0.3+ | 2005 05 04 | G96 | 0.5− | 0.0 | 2005 05 13 | G96 | 0.8− | 0.1+ | | |
| 2002 10 09 | 291 | 0.3− | 0.3+ | 2005 05 04 | G96 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.3− | | |
| 2002 10 09 | 291 | 0.0 | 0.1− | 2005 05 07 | 691 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.5− | | |
| 2005 04 17 | 691 | 0.3+ | 0.1− | 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.4− | | |
| 2005 04 17 | 691 | 0.2+ | 0.0 | 2005 05 07 | 691 | 0.2+ | 0.3− | 2006 09 30 | G96 | 0.7+ | 0.2− | | |
| 2005 04 17 | 691 | 0.1− | 0.2+ | 2005 05 13 | G96 | (1.7− | 0.6−) | 2006 10 19 | 695 | 0.3− | 0.1− | | |
| 2005 05 04 | G96 | 0.6− | 0.0 | 2005 05 13 | G96 | 0.6− | 0.4− | 2006 10 20 | 695 | 0.2− | 0.1− | | |
| 2005 05 04 | G96 | 0.4− | 0.2− | 2005 05 13 | G96 | 0.8− | 0.3+ | 2006 10 20 | 695 | 0.3− | 0.2− | | |

**2005 JF$_{19}$ = 2006 UA$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.53463 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31010146 | $\omega$ | 163.78780 | | +0.88458155 | −0.46444548 | |
| $a$ | 2.1617237 | $\Omega$ | 223.96744 | | +0.42081506 | +0.83411228 | |
| $e$ | 0.1491598 | $i$ | 3.50933 | | +0.20107255 | +0.29756864 | |
| $P$ | 3.18 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 1.4− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.7− | 0.3− | | |
| 2005 05 04 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 16 | 703 | 0.6− | 0.7− | | |
| 2005 05 04 | G96 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 16 | 703 | 1.2− | 0.7− | | |
| 2005 05 04 | G96 | 0.6− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2005 05 07 | 691 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.2+ | | |
| 2005 05 07 | 691 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.4+ | | |
| 2005 05 07 | 691 | 0.8+ | 0.8+ | 2006 11 11 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 1.1+ | | |
| 2005 05 13 | G96 | 0.7− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 1.2− | 2006 11 18 | 704 | 0.4− | 1.2+ | | |
| 2005 05 13 | G96 | 0.7− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.4+ | | |
| 2005 05 13 | G96 | 0.7− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.1− | | |
| 2005 05 13 | G96 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.8+ | 0.1− | 2006 11 18 | 704 | 0.6− | 0.4+ | | |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.2+ | | |
| 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.3+ | 0.2− | | |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 12 | 703 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 12 | 703 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2006 10 17 | G96 | 0.0 | 0.0 | 2006 11 12 | 703 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3− | | |
| 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 12 | 703 | 0.7− | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.0 | | |
| 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.2+ | | |
| 2006 10 17 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.2+ | | |
| 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.0 | | |
| 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 13 | 104 | 0.8+ | 0.3+ | 2006 11 26 | 104 | 0.4− | 0.3+ | | |
| 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 14 | 104 | 0.3+ | 0.4+ | 2006 11 26 | 104 | 0.9− | 0.5+ | | |
| 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 14 | 104 | 0.2+ | 0.1+ | 2006 11 26 | 104 | 0.4− | 0.0 | | |
| 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.2− | 0.3− | | |
| 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.1+ | | |
| 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.1− | | |
| 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.2− | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.0 | | |

**2005 JJ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.00652 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22930842 | $\omega$ | 130.66077 | | −0.43508161 | +0.89528616 | |
| $a$ | 2.6435613 | $\Omega$ | 113.30694 | | −0.85435706 | −0.37693145 | |
| $e$ | 0.1915527 | $i$ | 5.98394 | | −0.28421471 | −0.23745605 | |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 691 | 0.2− | 0.0 | 2005 05 08 | 699 | 0.9+ | 0.1− | 2005 05 16 | 704 | 0.1+ | 0.8+ | | |
| 2003 12 29 | 691 | 0.2+ | 0.2+ | 2005 05 10 | 691 | 0.1− | 0.0 | 2005 05 16 | 704 | 0.6− | 0.6+ | | |
| 2003 12 29 | 691 | 0.0 | 0.0 | 2005 05 10 | 691 | 0.2− | 0.1+ | 2005 06 01 | 691 | 0.1− | 0.1− | | |
| 2005 04 17 | 691 | 0.5+ | 0.0 | 2005 05 10 | 691 | 1.8+ | 0.2+ | 2005 06 01 | 691 | 0.2− | 0.0 | | |
| 2005 04 17 | 691 | 0.1− | 0.1− | 2005 05 11 | 699 | 1.2+ | 0.3+ | 2005 06 01 | 691 | 0.0 | 0.0 | | |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2005 05 11 | 699 | 0.3− | 0.5+ | 2005 06 05 | 691 | 0.0 | 0.1− | | |
| 2005 05 04 | 691 | 0.0 | 0.0 | 2005 05 11 | 699 | 0.8+ | 0.9+ | 2005 06 05 | 691 | 0.1− | 0.2− | | |
| 2005 05 04 | 691 | 0.1− | 0.1− | 2005 05 11 | 699 | 0.8+ | 0.7+ | 2005 06 05 | 691 | 0.1− | 0.2− | | |
| 2005 05 04 | 691 | 0.1− | 0.0 | 2005 05 12 | 704 | 0.0 | 0.3− | 2005 06 23 | 644 | 0.2− | 0.4+ | | |
| 2005 05 07 | 703 | 0.3− | 0.6− | 2005 05 12 | 704 | 0.3+ | 0.1+ | 2005 06 23 | 644 | 0.2+ | 0.2+ | | |
| 2005 05 07 | 703 | 1.5− | 0.5− | 2005 05 12 | 704 | 0.7− | 0.4+ | 2005 06 23 | 644 | 0.5+ | 0.6+ | | |
| 2005 05 07 | 703 | 0.4− | 1.3− | 2005 05 14 | 644 | 0.5− | 0.0 | 2006 10 02 | G96 | 0.3− | 0.3+ | | |
| 2005 05 07 | 703 | 0.0 | 0.1− | 2005 05 14 | 644 | 0.6− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.4+ | | |
| 2005 05 08 | 699 | 0.3− | 0.8+ | 2005 05 14 | 644 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.5+ | | |
| 2005 05 08 | 699 | 0.9− | 0.3+ | 2005 05 16 | 704 | 0.5− | 0.6+ | 2006 10 02 | G96 | 0.3− | 0.2+ | | |
| 2005 05 08 | 699 | 0.5− | 0.4− | 2005 05 16 | 704 | 0.8− | 0.8− | | | | | | |

**2005 JW$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.30251 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22774222 | $\omega$ | 283.59871 | | +0.94378741 | +0.32743168 | |
| $a$ | 2.6556674 | $\Omega$ | 57.30573 | | −0.27863014 | +0.86179146 | |
| $e$ | 0.2585284 | $i$ | 3.08693 | | −0.17784984 | +0.38743255 | |
| $P$ | 4.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | G96 | 0.5+ | 0.2+ | 2006 10 28 | 704 | 0.2− | 0.8+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2005 03 12 | G96 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2005 03 12 | G96 | 0.7+ | 0.4+ | 2006 10 28 | 704 | 0.5− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2005 03 12 | G96 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2005 04 11 | G96 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2005 04 11 | G96 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2005 04 11 | G96 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2005 04 11 | G96 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2005 05 04 | G96 | 0.5− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2005 05 04 | G96 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | (0.6− | 2.0+) |
| 2005 05 04 | G96 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 2005 05 04 | G96 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.3− | 0.0 |
| 2005 05 07 | G96 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 1.1+ |
| 2005 05 07 | G96 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.9+ |
| 2005 05 07 | G96 | 0.4− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2005 05 07 | G96 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2005 05 11 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 18 | 704 | (1.7− | 0.4+) |
| 2005 05 11 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 10 29 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2005 05 11 | 691 | 0.1+ | 0.4+ | 2006 10 29 | G96 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2005 05 19 | 644 | 0.1− | 0.5+ | 2006 10 29 | G96 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 10 29 | G96 | 0.4+ | 0.3+ | 2006 11 21 | 704 | (0.1+ | 2.1+) |
| 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.4+ | 2006 11 21 | 704 | (0.5+ | 2.1+) |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 30 | G96 | 0.3+ | 0.1+ | 2006 11 21 | 704 | (0.6− | 2.9+) |
| 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 10 30 | G96 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.4+ | 0.3+ |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 30 | G96 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.1+ |
| 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 10 30 | G96 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.3+ |
| 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.2+ |
| 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.4− |
| 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.3− |
| 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.8− | 0.6+ | 2006 11 29 | 704 | 0.1+ | 0.5− |
| 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 29 | 704 | 0.3− | 0.6− |
| 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.2+ |
| 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.4− | 0.3+ |
| 2006 10 28 | 704 | (1.7− | 1.6+) | 2006 11 11 | G96 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2006 10 28 | 704 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.1+ |

**2005 JB$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.79122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24035654 | $\omega$ | 104.76782 | | +0.92650163 | +0.34062292 | |
| $a$ | 2.5619191 | $\Omega$ | 235.56028 | | −0.37391234 | +0.88108373 | |
| $e$ | 0.2270945 | $i$ | 11.18012 | | +0.04224089 | +0.32812725 | |
| $P$ | 4.10 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.1+ | 0.0 | 2005 06 08 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2005 05 04 | G96 | 0.6− | 0.3− | 2005 06 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2005 05 04 | G96 | 0.2− | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.4+ |
| 2005 05 04 | G96 | 0.3− | 0.1+ | 2005 06 13 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.7− | 0.5+ |
| 2005 05 07 | G96 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.5− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.3− |
| 2005 05 07 | G96 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 22 | H07 | 0.2+ | 0.6+ |
| 2005 05 07 | G96 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1+ | 2006 11 22 | H07 | 0.3+ | 0.3+ |
| 2005 05 07 | G96 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.2+ | 2006 11 23 | H07 | 0.4− | 0.3− |
| 2005 05 19 | G96 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 11 23 | H07 | 0.1− | 0.1+ |
| 2005 05 19 | G96 | 0.6− | 0.2− | 2006 10 29 | G96 | 0.5− | 0.1+ | 2006 11 23 | H07 | 0.6+ | 0.8− |
| 2005 05 19 | G96 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2005 05 19 | G96 | 0.4− | 0.1− | 2006 10 29 | G96 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2005 06 08 | 691 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.2− |

**2005 JG$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.43573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22680633 | $\omega$ | 260.10370 | | +0.51025897 | +0.84707451 | |
| $a$ | 2.6629679 | $\Omega$ | 41.68826 | | −0.67516044 | +0.50162369 | |
| $e$ | 0.2383275 | $i$ | 12.91626 | | −0.53272335 | +0.17560878 | |
| $P$ | 4.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | 691 | 0.0 | 0.1+ | 2005 05 07 | G96 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2005 04 07 | 691 | 0.2− | 0.2+ | 2005 05 13 | 704 | 0.7+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2005 04 07 | 691 | 0.1+ | 0.1+ | 2005 05 13 | 704 | 1.2+ | 0.5+ | 2006 10 27 | 691 | 0.5+ | 0.3+ |
| 2005 04 16 | 691 | 0.2+ | 0.2− | 2005 05 13 | 704 | 0.7− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2005 04 16 | 691 | 0.3+ | 0.0 | 2005 05 13 | 704 | 1.4+ | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2005 04 16 | 691 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2005 05 04 | E12 | 0.6+ | 0.0 | 2005 05 14 | G96 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2005 05 04 | E12 | 0.7− | 0.1+ | 2005 05 14 | G96 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.4− | 0.1+ |
| 2005 05 04 | E12 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 05 04 | E12 | 0.4− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.6− | 0.5+ |
| 2005 05 07 | G96 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.6+ |
| 2005 05 07 | G96 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.5+ |
| 2005 05 07 | G96 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.1+ |

**2005 JH$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.65241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22592875 | $\omega$ | 81.05547 | | +0.60303238 | +0.78369711 | |
| $a$ | 2.6698594 | $\Omega$ | 227.12444 | | −0.78818380 | +0.55658427 | |
| $e$ | 0.2715124 | $i$ | 11.72310 | | −0.12295632 | +0.27574044 | |
| $P$ | 4.36 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | E12 | 0.3+ | 0.3+ | 2005 05 09 | 699 | (2.1+ | 1.8+) | 2006 10 13 | 691 | 0.2− | 0.1+ |
| 2005 05 04 | E12 | 0.2+ | 0.4+ | 2005 05 09 | 699 | 0.2− | 0.7+ | 2006 10 13 | 691 | 0.0 | 0.3+ |
| 2005 05 04 | E12 | 0.1− | 0.3− | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.0 | 0.0 |
| 2005 05 04 | E12 | 0.2+ | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2005 05 07 | G96 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 05 07 | G96 | 0.3+ | 0.1− | 2005 06 13 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2005 05 07 | G96 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 05 07 | G96 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.9− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 05 09 | 699 | (1.7− | 0.4+) | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 05 09 | 699 | 0.9− | 1.1− | 2006 09 27 | G96 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.0 |

**2005 JT$_{21}$ = 2006 SL$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.16933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25753773 | $\omega$ | 94.77208 | | +0.05123480 | +0.99868582 | |
| $a$ | 2.4466705 | $\Omega$ | 178.16328 | | −0.93135131 | +0.04824205 | |
| $e$ | 0.1815913 | $i$ | 2.28423 | | −0.36049929 | +0.01730149 | |
| $P$ | 3.83 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.1+ | 0.8+ | 2005 05 06 | G96 | 0.3− | 0.3− | 2006 09 23 | 691 | 0.5− | 0.5+ |
| 2001 03 25 | 695 | 0.4+ | 0.4+ | 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.4+ |
| 2005 03 08 | G96 | 0.3+ | 0.1− | 2005 05 07 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.4− | 0.3+ |
| 2005 03 08 | G96 | 0.0 | 0.1+ | 2005 05 07 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 03 08 | G96 | 0.3− | 0.1− | 2005 05 10 | G96 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2005 03 08 | G96 | 0.2+ | 0.0 | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2005 04 11 | 691 | 0.3+ | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.2− | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2005 04 11 | 691 | 0.2+ | 0.3+ | 2005 05 10 | G96 | 0.6− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2005 04 11 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 29 | G96 | 0.1− | 0.2− |
| 2005 05 06 | G96 | (1.6+ | 0.6+) | 2006 09 19 | 691 | 0.4+ | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.0 |
| 2005 05 06 | G96 | 0.5− | 1.0− | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 29 | G96 | 0.0 | 0.4− |
| 2005 05 06 | G96 | 0.6− | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.2− | 0.6− |

**2005 JU$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 105.52219 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23510788 | $\omega$ | 53.90254 | | −0.39709200 | | +0.91632790 | | | | |
| $a$ | 2.5999077 | $\Omega$ | 193.00294 | | −0.89840305 | | −0.39958281 | | | | |
| $e$ | 0.2204934 | $i$ | 13.25411 | | −0.18758969 | | −0.02601459 | | | | |
| $P$ | 4.19 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 06 | 703 | 1.3− | 0.3+ | 2005 05 12 | 012 | 0.2− | 0.2+ | 2005 05 20 | 644 | 0.3+ | 0.5− | | | | | |
| 2005 05 06 | 703 | 0.4+ | 1.0+ | 2005 05 12 | 012 | (0.6− | 2.2−) | 2005 05 20 | 644 | 0.2+ | 0.2− | | | | | |
| 2005 05 06 | 703 | 0.4− | 1.5+ | 2005 05 12 | 012 | 0.2− | 0.3− | 2005 05 20 | 644 | 0.2+ | 0.4− | | | | | |
| 2005 05 06 | 703 | 0.9+ | 0.9+ | 2005 05 12 | 599 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1+ | | | | | |
| 2005 05 07 | 703 | 1.0− | 0.1+ | 2005 05 12 | 599 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.2+ | | | | | |
| 2005 05 07 | 703 | 0.8+ | 0.2− | 2005 05 12 | 599 | 0.4+ | 0.4− | 2006 09 19 | 691 | 0.3+ | 0.2− | | | | | |
| 2005 05 07 | 703 | (2.1− | 0.0 ) | 2005 05 12 | 599 | 0.3+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1− | | | | | |
| 2005 05 07 | 703 | 0.9− | 0.3− | 2005 05 15 | 644 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.4− | 0.0 | | | | | |
| 2005 05 11 | 012 | 0.1− | 0.0 | 2005 05 15 | 644 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.1+ | | | | | |
| 2005 05 11 | 012 | 0.2− | 0.5− | 2005 05 15 | 644 | 0.3+ | 0.1− | | | | | | | | | |

**2005 JX$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 103.27688 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26433258 | $\omega$ | 121.80708 | | −0.12183017 | | +0.98906173 | | | | |
| $a$ | 2.4045598 | $\Omega$ | 140.92486 | | −0.94941381 | | −0.09169612 | | | | |
| $e$ | 0.0943462 | $i$ | 7.58037 | | −0.28943192 | | −0.11553665 | | | | |
| $P$ | 3.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 15 | 703 | 0.0 | 0.1− | 2005 05 07 | 703 | 0.7− | 1.8− | 2005 05 31 | 699 | 0.4+ | 0.2+ | | | | | |
| 2005 04 15 | 703 | 0.4− | 1.2+ | 2005 05 11 | 703 | 1.2− | 1.8+ | 2005 06 29 | 644 | 0.3− | 0.2− | | | | | |
| 2005 04 15 | 703 | 0.6− | 0.1− | 2005 05 11 | 703 | (2.2+ | 0.1+) | 2005 06 29 | 644 | 0.1− | 0.3− | | | | | |
| 2005 04 15 | 703 | 0.1− | 1.9+ | 2005 05 11 | 703 | 0.2− | 0.2+ | 2005 06 29 | 644 | 0.2− | 0.1+ | | | | | |
| 2005 05 06 | 703 | 0.0 | 0.5− | 2005 05 11 | 703 | 1.2− | 0.3− | 2006 09 14 | 291 | 0.3− | 0.1− | | | | | |
| 2005 05 06 | 703 | 1.4− | 0.8− | 2005 05 14 | 704 | 0.3+ | 0.0 | 2006 09 14 | 291 | 0.1+ | 0.4+ | | | | | |
| 2005 05 06 | 703 | 0.2+ | 0.8− | 2005 05 14 | 704 | 0.3+ | 0.7− | 2006 09 14 | 291 | 0.5+ | 0.2+ | | | | | |
| 2005 05 06 | 703 | 0.3+ | 0.4+ | 2005 05 14 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 644 | 0.5− | 1.1− | | | | | |
| 2005 05 07 | 703 | 0.6+ | 0.2− | 2005 05 31 | 699 | 1.7+ | 0.3− | 2006 10 22 | 644 | 0.7− | 0.4− | | | | | |
| 2005 05 07 | 703 | 0.9+ | 0.9− | 2005 05 31 | 699 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.6− | | | | | |
| 2005 05 07 | 703 | 0.7+ | 0.5− | 2005 05 31 | 699 | 0.3− | 0.8+ | | | | | | | | | |

**2005 JF$_{22}$ = 2006 SV$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 41.01961 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26752668 | $\omega$ | 272.95402 | | +0.78761052 | | +0.60374038 | | | | |
| $a$ | 2.3853822 | $\Omega$ | 49.94465 | | −0.48185040 | | +0.72806141 | | | | |
| $e$ | 0.2062681 | $i$ | 9.25904 | | −0.38404409 | | +0.32469083 | | | | |
| $P$ | 3.68 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 850 | (1.8− | 1.3−) | 2006 09 26 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 691 | 0.5− | 0.4+ | | | | | |
| 2005 05 04 | 850 | (3.0− | 0.6−) | 2006 09 26 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 | | | | | |
| 2005 05 04 | 850 | 0.4− | 1.2− | 2006 09 26 | 704 | 0.5− | 0.8+ | 2006 11 11 | 691 | 0.3− | 0.3+ | | | | | |
| 2005 05 04 | 850 | (0.9− | 1.6−) | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.6− | | | | | |
| 2005 05 07 | 850 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.2− | | | | | |
| 2005 05 07 | 850 | 0.9+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.9− | 2006 11 11 | 703 | 0.3− | 0.7− | | | | | |
| 2005 05 07 | 850 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.9+ | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.4− | | | | | |
| 2005 05 07 | 850 | (3.0+ | 2.1+) | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 11 17 | G92 | 0.4− | 0.5+ | | | | | |
| 2005 05 07 | 850 | 0.9− | 1.0− | 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 17 | G92 | 0.3+ | 1.1+ | | | | | |
| 2005 05 08 | 850 | 1.5− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.5− | 2006 11 17 | G92 | 0.0 | 0.5+ | | | | | |
| 2005 05 08 | 850 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.7− | 0.2− | | | | | |
| 2005 05 08 | 850 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.2− | 0.5− | | | | | |
| 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.2− | | | | | |
| 2005 05 08 | 850 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4− | | | | | |
| 2005 05 08 | 850 | 0.9− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 18 | G92 | 0.5+ | 0.3− | | | | | |
| 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G92 | 0.2+ | 0.1− | | | | | |
| 2005 05 08 | 691 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.9+ | 0.6+ | | | | | |
| 2005 05 09 | 850 | 1.3− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 18 | G92 | 0.0 | 0.4+ | | | | | |
| 2005 05 09 | 850 | (0.5+ | 3.2−) | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.9− | 0.1+ | | | | | |
| 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.3− | 1.0− | | | | | |
| 2005 05 15 | 644 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.4− | 0.9+ | | | | | |
| 2005 05 15 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1+ | | | | | |
| 2006 09 16 | 644 | 0.3− | 0.4+ | 2006 11 10 | 691 | (2.6+ | 0.9−) | 2006 11 27 | 691 | 0.4+ | 0.0 | | | | | |
| 2006 09 16 | 644 | 0.2− | 0.6+ | 2006 11 10 | 691 | (2.3+ | 1.1−) | 2006 11 27 | 691 | 0.1+ | 0.1+ | | | | | |
| 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 11 10 | 691 | (1.6+ | 0.6−) | 2006 11 27 | 691 | 0.2+ | 0.0 | | | | | |

**2005 JU$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 168.20198 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23951650 | $\omega$ | 123.11165 | | −0.91954006 | | −0.39172569 | | | | |
| $a$ | 2.5679058 | $\Omega$ | 33.85689 | | +0.33904260 | | −0.83136491 | | | | |
| $e$ | 0.1138389 | $i$ | 3.24914 | | +0.19873649 | | −0.39418698 | | | | |
| $P$ | 4.11 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 691 | 0.0 | 0.4− | 2003 12 14 | 691 | 0.0 | 0.2− | 2005 05 01 | 644 | 0.8+ | 0.1− | | | | | |
| 2001 04 24 | 691 | 0.3− | 0.3− | 2003 12 14 | 691 | 0.8− | 0.1+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | | | | | |
| 2001 04 24 | 691 | 0.0 | 0.3− | 2005 04 02 | G96 | 0.1− | 0.0 | 2005 05 08 | G96 | 0.1− | 0.2+ | | | | | |
| 2003 11 19 | 691 | 0.2+ | 0.1+ | 2005 04 02 | G96 | 0.6− | 0.0 | 2005 05 08 | G96 | 0.3− | 0.1+ | | | | | |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2005 04 02 | G96 | 0.4− | 0.1+ | 2005 05 08 | G96 | 0.3− | 0.1+ | | | | | |
| 2003 11 19 | 691 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.1+ | 0.3− | 2005 05 08 | G96 | 0.4− | 0.0 | | | | | |
| 2003 12 01 | 691 | 0.4+ | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 08 21 | 807 | 0.2− | 0.5+ | | | | | |
| 2003 12 01 | 691 | 0.4+ | 0.2+ | 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 08 21 | 807 | 0.2− | 0.6+ | | | | | |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2005 04 17 | 691 | 0.2+ | 0.3+ | | | | | | | | | |
| 2003 12 14 | 691 | 0.1− | 0.2− | 2005 05 01 | 644 | 0.4+ | 0.1+ | | | | | | | | | |

**2005 JX$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 225.26960 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22010338 | $\omega$ | 237.26640 | | +0.21559641 | | −0.97367636 | | | | |
| $a$ | 2.7167619 | $\Omega$ | 200.66970 | | +0.95130939 | | +0.22652573 | | | | |
| $e$ | 0.0712638 | $i$ | 12.09758 | | +0.22029215 | | −0.02530696 | | | | |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 0.1− | 0.4+ | 2002 08 15 | 644 | 0.3+ | 0.4+ | 2005 04 02 | 735 | 1.1+ | 1.3+ | | | | | |
| 1998 10 20 | 691 | 0.5− | 0.0 | 2002 08 15 | 644 | 0.4+ | 0.6+ | 2005 04 02 | 735 | 0.3+ | 0.9+ | | | | | |
| 1998 10 20 | 691 | 0.5− | 0.4+ | 2002 08 15 | 644 | 0.6+ | 0.7+ | 2005 05 02 | 691 | 0.0 | 0.3+ | | | | | |
| 2000 02 08 | 645 | 0.1+ | 0.1+ | 2002 09 04 | 644 | 0.3+ | 0.5+ | 2005 05 02 | 691 | 0.3+ | 0.3+ | | | | | |
| 2000 02 08 | 645 | 0.1+ | 0.1+ | 2002 09 04 | 644 | 0.1+ | 0.4+ | 2005 05 02 | 691 | 0.2+ | 0.3+ | | | | | |
| 2002 07 20 | 644 | 0.5+ | 1.0+ | 2002 09 04 | 644 | 0.4+ | 0.5+ | 2005 05 08 | G96 | 0.5− | 0.3+ | | | | | |
| 2002 07 20 | 644 | 0.2+ | 0.3+ | 2005 03 14 | G96 | 0.9− | 0.0 | 2005 05 08 | G96 | 0.4− | 0.8+ | | | | | |
| 2002 07 20 | 644 | 0.3+ | 0.7+ | 2005 03 14 | G96 | 0.4− | 0.1− | 2005 05 08 | G96 | 0.2− | 0.1+ | | | | | |
| 2002 08 04 | 644 | 0.2− | 0.4+ | 2005 03 14 | G96 | 0.8− | 0.1+ | 2005 05 08 | G96 | 0.6− | 0.2− | | | | | |
| 2002 08 04 | 644 | 0.3− | 0.4+ | 2005 03 14 | G96 | 0.9− | 0.3− | | | | | | | | | |
| 2002 08 04 | 644 | 0.3− | 0.4+ | 2005 04 02 | 735 | 0.1− | 0.2− | | | | | | | | | |

**2005 JW$_{23}$ = 2006 SB$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 71.90520 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23118113 | $\omega$ | 78.29089 | | +0.26914123 | | +0.96252937 | | | | |
| $a$ | 2.6292656 | $\Omega$ | 207.39203 | | −0.90933172 | | +0.24261807 | | | | |
| $e$ | 0.1679247 | $i$ | 4.13434 | | −0.31729926 | | +0.12113496 | | | | |
| $P$ | 4.26 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.1+ | 0.1− | 2005 05 11 | G96 | 0.7− | 0.5− | 2006 09 26 | 691 | 0.1− | 0.2− | | | | | |
| 2005 05 03 | 691 | 0.1+ | 0.1− | 2005 05 12 | 691 | 0.5+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.4− | | | | | |
| 2005 05 03 | 691 | 0.3− | 0.5+ | 2005 05 12 | 691 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ | | | | | |
| 2005 05 08 | 691 | 0.1+ | 0.1− | 2005 05 12 | 691 | 0.4+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.0 | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 2005 05 08 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.2− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.2+ |
| 2005 05 11 | G96 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.3− |
| 2005 05 11 | G96 | 0.6− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.2+ | | | | |
| 2005 05 11 | G96 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.2− | | | | |

**2005 JZ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.13756 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19120373 | $\omega$ | 157.20865 | | +0.61771194 | +0.78623093 | |
| $a$ | 2.9840434 | $\Omega$ | 150.93266 | | −0.72665005 | +0.57868133 | |
| $e$ | 0.1163735 | $i$ | 1.94852 | | −0.30068532 | +0.21672298 | |
| $P$ | 5.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.2− | 0.3− | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.4+ | 0.2− |
| 2005 05 03 | 691 | 0.1+ | 0.2+ | 2005 05 11 | G96 | 0.8− | 0.5− | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2005 05 03 | 691 | 0.3− | 0.0 | 2005 05 11 | G96 | 0.5+ | 0.5+ | 2006 08 27 | 691 | 0.4− | 0.0 |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2005 05 11 | G96 | 0.4− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2005 05 11 | G96 | 0.4− | 0.6− | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.0 |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.1− | 0.0 | | | | |

**2005 JV$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.81897 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25820716 | $\omega$ | 157.69116 | | −0.70791276 | +0.70547694 | |
| $a$ | 2.4424397 | $\Omega$ | 67.22408 | | −0.65347155 | −0.63588782 | |
| $e$ | 0.1392252 | $i$ | 2.11859 | | −0.26801950 | −0.31296801 | |
| $P$ | 3.82 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 18 | 691 | 0.3+ | 0.7+ | 2005 05 09 | G96 | 0.4− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2001 04 18 | 691 | 0.3+ | 1.0+ | 2005 05 19 | 644 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2001 04 18 | 691 | 0.4+ | 0.4+ | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2005 05 03 | 691 | 0.2+ | 0.0 | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2005 05 03 | 691 | 0.0 | 0.1− | 2005 06 12 | G96 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2005 05 03 | 691 | 0.0 | 0.1− | 2005 06 12 | G96 | 1.3− | 0.2+ | 2006 10 01 | 291 | 0.4− | 0.3+ |
| 2005 05 08 | 691 | 0.2+ | 0.0 | 2005 06 12 | G96 | 1.1− | 0.6− | 2006 10 01 | 291 | 0.5− | 0.5+ |
| 2005 05 08 | 691 | 0.3+ | 0.1− | 2005 06 12 | G96 | 1.0− | 0.1− | 2006 10 01 | 291 | 0.1− | 0.1+ |
| 2005 05 08 | 699 | 1.5+ | 0.0 | 2006 09 18 | 691 | 0.5+ | 0.0 | 2006 10 02 | 291 | 0.4− | 0.0 |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.6+ | 0.4+ | 2006 10 02 | 291 | 0.2− | 0.1+ |
| 2005 05 08 | 699 | 0.0 | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 02 | 291 | 0.4− | 0.0 |
| 2005 05 08 | 699 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.2− | 2006 10 03 | 291 | 0.3+ | 0.5+ |
| 2005 05 08 | 699 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 03 | 291 | 0.1− | 0.1− |
| 2005 05 09 | G96 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.4− | 0.2+ | 2006 10 03 | 291 | 0.1+ | 0.1+ |
| 2005 05 09 | G96 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.0 | | | | |
| 2005 05 09 | G96 | 0.4− | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.0 | | | | |

**2005 JZ$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.19909 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23173038 | $\omega$ | 204.67686 | | +0.79585987 | +0.59820134 | |
| $a$ | 2.6251094 | $\Omega$ | 118.25719 | | −0.53637573 | +0.76827444 | |
| $e$ | 0.2276818 | $i$ | 6.10040 | | −0.28090593 | +0.22783668 | |
| $P$ | 4.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.4+ | 0.1+ | 2005 06 05 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 1.1− | 0.8+ |
| 2005 05 03 | 691 | 0.2+ | 0.0 | 2005 06 05 | 691 | 0.1+ | 0.1− | 2006 11 01 | 703 | 0.6− | 0.7+ |
| 2005 05 03 | 691 | 0.3+ | 0.1− | 2005 06 09 | 691 | 0.1− | 0.4+ | 2006 11 01 | 703 | 1.2+ | 1.1+ |
| 2005 05 08 | 691 | 0.9− | 0.0 | 2005 06 09 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 703 | 1.4− | 0.4− |
| 2005 05 08 | 691 | 0.0 | 0.0 | 2005 06 09 | 691 | 0.4− | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.8+ |
| 2005 05 08 | 691 | 0.0 | 0.1− | 2006 10 17 | 012 | 0.6+ | 0.8− | 2006 11 19 | 703 | 0.4− | 0.3+ |
| 2005 05 14 | 644 | 0.0 | 0.0 | 2006 10 17 | 012 | 0.9+ | 0.1− | 2006 11 19 | 703 | 0.7− | 1.1− |
| 2005 05 14 | 644 | 0.0 | 0.1− | 2006 10 17 | 012 | 0.4+ | 0.3− | 2006 11 19 | 703 | 0.6− | 0.7− |
| 2005 05 14 | 644 | 0.2+ | 0.0 | 2006 10 17 | 012 | 0.0 | 0.8− | 2006 11 19 | 703 | 0.4− | 1.2+ |
| 2005 06 01 | 691 | 0.0 | 0.1− | 2006 10 17 | 012 | 0.9+ | 1.1− | 2006 11 20 | 704 | 0.7+ | 0.5− |
| 2005 06 01 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | (2.1− | 0.4−) | 2006 11 20 | 704 | 1.3+ | 0.5+ |
| 2005 06 01 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.9+ | 2006 11 20 | 704 | 0.2+ | 0.3− |
| 2005 06 05 | 691 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.1− | | | | |

**2005 JD$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.71934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21138725 | $\omega$ | 189.95012 | | +0.81477173 | +0.57636432 | |
| $a$ | 2.7909380 | $\Omega$ | 134.66223 | | −0.52568066 | +0.78011934 | |
| $e$ | 0.2019263 | $i$ | 5.07019 | | −0.24455445 | +0.24334746 | |
| $P$ | 4.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.7− | 0.3− | 2006 10 16 | 703 | (1.3+ | 1.8+) |
| 2005 05 03 | 691 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.7− | 1.0− | 2006 10 16 | 703 | (1.9− | 1.9+) |
| 2005 05 03 | 691 | 0.1+ | 0.3− | 2006 09 30 | 703 | (3.2− | 0.1−) | 2006 10 22 | 703 | 0.4+ | 0.6+ |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.9− | 2006 10 22 | 703 | 0.6− | 1.0− |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.7+ | 0.3+ |
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.6+ | 2006 10 22 | 703 | 1.2− | 0.6+ |
| 2005 05 11 | 291 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2005 05 11 | 291 | 0.3− | 0.4+ | 2006 10 16 | 703 | (1.0+ | 1.7+) | 2006 10 22 | 644 | 0.6+ | 0.1− |
| 2005 05 11 | 291 | 0.3+ | 0.0 | 2006 10 16 | 703 | (1.0+ | 1.9+) | 2006 10 22 | 644 | 0.4− | 0.1+ |

**2005 JE$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.64917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27146075 | $\omega$ | 225.45268 | | +0.55951835 | −0.82848381 | |
| $a$ | 2.3622799 | $\Omega$ | 190.59926 | | +0.79207863 | +0.54286061 | |
| $e$ | 0.0920093 | $i$ | 7.35044 | | +0.24403004 | +0.13753884 | |
| $P$ | 3.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 691 | 0.3− | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.1+ | 0.4− |
| 2001 03 04 | 691 | 0.2+ | 0.0 | 2006 09 16 | 691 | 0.7+ | 0.9+ | 2006 10 16 | 703 | (0.7− | 1.5−) |
| 2001 03 04 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 1.1− | 1.2+ | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2005 05 03 | 691 | 0.5+ | 0.1+ | 2006 09 27 | 704 | 0.7+ | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.1+ |
| 2005 05 03 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 1.3+ | 0.3+ | 2006 10 22 | 703 | 1.6− | 0.2+ |
| 2005 05 03 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.9+ | 0.6− | 2006 10 22 | 703 | 0.7− | 0.3+ |
| 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 22 | 703 | 1.0− | 0.9− |
| 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.4− |
| 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.7− | 0.2+ |
| 2005 06 01 | 691 | 0.2− | 0.4− | 2006 09 29 | 704 | 1.0+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2005 06 01 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.3− | 0.4+ |
| 2005 06 01 | 691 | 0.6− | 0.0 | 2006 09 29 | 704 | 0.0 | 0.7− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2005 06 05 | 691 | 0.4− | 0.3+ | 2006 09 29 | 704 | 0.7− | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.6+ |
| 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2005 06 05 | 691 | 0.1− | 0.2− | 2006 10 01 | 703 | 0.2+ | 0.4− | 2006 10 24 | 644 | 0.2+ | 0.2− |
| 2006 08 21 | 691 | 0.1− | 0.0 | 2006 10 01 | 703 | 1.1− | 0.5− | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 01 | 703 | (1.9+ | 1.0−) | 2006 10 24 | 644 | 0.0 | 0.2− |
| 2006 08 21 | 691 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2006 09 12 | 703 | 0.5− | 1.0− | 2006 10 09 | 644 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2006 09 12 | 703 | 1.3− | 0.4− | 2006 10 09 | 644 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.5− | 0.7− |
| 2006 09 12 | 703 | 1.1− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.2+ |
| 2006 09 12 | 703 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.2+ | | | | |
| 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | | | | |

**2005 JS$_{27}$ = 2006 SS$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.43999 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17747341 | $\omega$ | 115.20826 | | +0.51147298 | +0.85792069 | |
| $a$ | 3.1360323 | $\Omega$ | 186.24887 | | −0.85648485 | +0.51355898 | |
| $e$ | 0.2228852 | $i$ | 26.55259 | | +0.06949164 | +0.01514180 | |
| $P$ | 5.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 05 12 | 704 | (2.1+ | 1.7+) | 2006 09 18 | 704 | 0.0 | 1.1+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 05 12 | 704 | (2.9+ | 1.6+) | 2006 09 18 | 704 | 0.1− | 1.1− |
| 2005 05 03 | 703 | 0.7− | 0.8− | 2005 05 12 | 704 | (3.2+ | 0.1+) | 2006 09 18 | 704 | (0.8+ | 1.6−) |
| 2005 05 03 | 703 | 0.0 | 0.2+ | 2005 05 12 | 704 | 1.2+ | 1.4+ | 2006 09 19 | 699 | 1.1− | 0.1+ |
| 2005 05 03 | 703 | 0.8− | 1.1− | 2006 08 29 | 703 | 0.6− | 0.6+ | 2006 09 19 | 699 | 0.6+ | 1.4− |
| 2005 05 03 | 703 | 0.8− | 0.5− | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.8+ | 0.0 |
| 2005 05 09 | 703 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.6+ | 0.4+ | 2006 09 19 | 699 | 0.4+ | 0.7+ |
| 2005 05 09 | 703 | 0.1+ | 0.8− | 2006 08 29 | 703 | 0.8− | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2005 05 09 | 703 | 0.7+ | 1.3+ | 2006 09 06 | 644 | 0.4− | 0.4− | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2005 05 09 | 703 | 0.3+ | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.6+ | 0.5+ |
| 2005 05 12 | 704 | (2.8+ | 0.4−) | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.1− |

**2005 JX$_{28}$ = 2006 ST$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.13101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19265494 | $\omega$ | 28.98518 | | −0.83704370 | +0.54699329 | |
| $a$ | 2.9690393 | $\Omega$ | 184.23953 | | −0.52891562 | −0.81480356 | |
| $e$ | 0.0898267 | $i$ | 9.73309 | | −0.14002186 | −0.19207682 | |
| $P$ | 5.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.4+ | 1.0− | 2005 06 03 | 691 | 0.3+ | 0.8− | 2006 09 18 | 291 | 0.1+ | 0.1+ |
| 2005 05 03 | 691 | 0.8− | 0.2− | 2005 06 03 | 691 | 0.2− | 0.0 | 2006 09 18 | 291 | 0.2+ | 0.0 |
| 2005 05 03 | 691 | 0.2− | 0.5+ | 2005 06 03 | 691 | 0.0 | 0.3+ | 2006 09 18 | 291 | 0.2+ | 0.1− |
| 2005 05 09 | 691 | 0.0 | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 2005 05 09 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 691 | 0.3+ | 0.4− | 2006 09 19 | 691 | 0.5− | 0.1− |
| 2005 05 09 | 691 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.3− | 0.2− |

**2005 JO$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.07642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36369824 | $\omega$ | 103.81647 | | −0.91860057 | −0.08790773 | |
| $a$ | 1.9437568 | $\Omega$ | 72.25762 | | −0.11664517 | −0.87119436 | |
| $e$ | 0.0617921 | $i$ | 23.86147 | | +0.37758031 | −0.48300375 | |
| $P$ | 2.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 703 | 0.5+ | 0.1+ | 2005 06 26 | 644 | 0.7+ | 0.2+ | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2005 05 03 | 703 | 0.4− | 0.1+ | 2005 06 26 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2005 05 03 | 703 | 0.2− | 0.3− | 2005 06 26 | 644 | 0.5+ | 0.2+ | 2006 11 24 | G96 | 0.8− | 0.9+ |
| 2005 05 03 | 703 | 0.1+ | 0.3− | 2005 07 03 | 644 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2005 05 09 | 703 | 0.3− | 0.2+ | 2005 07 03 | 644 | 0.4+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2005 05 09 | 703 | 0.7− | 0.4− | 2005 07 03 | 644 | 0.2+ | 0.6+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2005 05 09 | 703 | 1.0− | 0.7+ | 2006 11 16 | G96 | 0.0 | 0.3− | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2005 05 09 | 703 | 0.3+ | 1.4+ | 2006 11 16 | G96 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2005 06 17 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− | 2006 12 01 | 691 | 0.1+ | 0.5+ |
| 2005 06 17 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.2− | | | | |
| 2005 06 17 | 691 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.0 | | | | |

**2005 JK$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.53416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23673308 | $\omega$ | 193.03332 | | +0.55387483 | +0.82872564 | |
| $a$ | 2.5879949 | $\Omega$ | 110.65342 | | −0.75599831 | +0.54094827 | |
| $e$ | 0.1387765 | $i$ | 4.91846 | | −0.34883983 | +0.14348789 | |
| $P$ | 4.16 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 691 | 0.1− | 0.1+ | 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 1.4+ | 0.1− |
| 2005 05 04 | 691 | 0.1− | 0.1− | 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.5+ |
| 2005 05 04 | 691 | 0.2− | 0.2− | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.3+ |
| 2005 05 08 | 699 | 0.0 | 0.3− | 2005 05 14 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2005 05 08 | 699 | 1.2+ | 1.5+ | 2005 05 14 | 691 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.4− | 0.3− |
| 2005 05 08 | 699 | 0.6− | 0.1+ | 2005 05 14 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.3− | 0.3− |
| 2005 05 08 | 699 | 0.5− | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.4− |

**2005 JY$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.94499 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21055516 | $\omega$ | 193.93050 | | +0.82217832 | −0.56709079 | |
| $a$ | 2.7982861 | $\Omega$ | 200.84912 | | +0.53462713 | +0.79903525 | |
| $e$ | 0.2231321 | $i$ | 7.96274 | | +0.19543961 | +0.19987672 | |
| $P$ | 4.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 699 | 0.0 | 0.7+ | 2002 08 05 | 644 | 0.3− | 0.7+ | 2005 03 13 | G96 | 0.3− | 0.2+ |
| 1998 12 16 | 699 | 0.3− | 0.4+ | 2002 08 05 | 644 | 0.4− | 0.8+ | 2005 05 04 | G96 | 0.0 | 0.2− |
| 1998 12 16 | 699 | 0.2+ | 0.7+ | 2002 08 19 | 608 | 0.4− | 0.3− | 2005 05 04 | G96 | 0.2+ | 0.4+ |
| 2002 07 09 | 704 | 0.4+ | 0.2+ | 2002 08 19 | 608 | 0.2− | 0.2− | 2005 05 04 | G96 | 0.4+ | 0.3+ |
| 2002 07 09 | 704 | 0.5− | 0.0 | 2002 08 19 | 608 | 0.1− | 0.2− | 2005 05 04 | G96 | 0.3+ | 0.1− |
| 2002 07 09 | 704 | 1.6− | 0.2− | 2004 04 14 | 645 | 0.1+ | 0.1+ | 2005 05 08 | G96 | 0.0 | 0.1− |
| 2002 07 18 | 704 | 1.0+ | 1.2+ | 2004 04 14 | 645 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.4− | 0.3+ |
| 2002 07 18 | 704 | 0.9+ | 0.8− | 2005 03 13 | G96 | 0.2− | 0.3+ | 2005 05 08 | G96 | 0.4+ | 0.3+ |
| 2002 07 18 | 704 | 1.0+ | 0.2+ | 2005 03 13 | G96 | 0.3− | 0.1+ | 2005 05 08 | G96 | 0.2+ | 0.2+ |
| 2002 08 05 | 644 | 0.3− | 0.5+ | 2005 03 13 | G96 | 0.5+ | 0.3+ | | | | |

**2005 JR$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.11502 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23321685 | $\omega$ | 289.89367 | | −0.31136077 | +0.94941244 | |
| $a$ | 2.6139430 | $\Omega$ | 321.88825 | | −0.84523239 | −0.29633923 | |
| $e$ | 0.2315491 | $i$ | 3.79698 | | −0.43432324 | −0.10391861 | |
| $P$ | 4.23 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 703 | 0.3+ | 0.1+ | 2005 05 08 | 699 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 2005 04 14 | 703 | 0.2+ | 0.2+ | 2005 05 08 | 699 | 0.4− | 1.0− | 2006 09 17 | 691 | 0.1− | 0.2− |
| 2005 04 14 | 703 | 0.5+ | 0.1+ | 2005 05 08 | E12 | 0.4− | 0.5− | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2005 04 14 | 703 | 0.6− | 0.5+ | 2005 05 08 | E12 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2005 05 04 | 644 | 0.0 | 0.1+ | 2005 05 08 | E12 | 0.8+ | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.0 |
| 2005 05 04 | 644 | 0.2− | 0.2+ | 2005 05 08 | E12 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.3− | 0.0 |
| 2005 05 04 | 644 | 0.2+ | 0.2+ | 2005 05 16 | 644 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2005 05 08 | 699 | 0.6− | 0.7+ | 2005 05 16 | 644 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.4+ | 0.3− |
| 2005 05 08 | 699 | 1.1+ | 0.7− | 2005 05 16 | 644 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.4− |

**2005 JK$_{32}$ = 2006 UD$_{157}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.91572 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30054169 | $\omega$ | 166.26392 | | −0.81938582 | +0.56741514 | |
| $a$ | 2.2073247 | $\Omega$ | 48.60712 | | −0.53567123 | −0.70725659 | |
| $e$ | 0.1111487 | $i$ | 6.23905 | | −0.20411567 | −0.42169677 | |
| $P$ | 3.28 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.4− | 0.2− | 2005 05 13 | G96 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.8− | 0.2+ |
| 2005 05 04 | G96 | 0.1− | 0.1+ | 2005 05 13 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2005 05 04 | G96 | 0.0 | 0.1− | 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2005 05 04 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2005 05 08 | 691 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.4− |
| 2005 05 08 | 691 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.7+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | | | |
| 2005 05 13 | G96 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.4+ | | | | |

## 2005 JX$_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.35923 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23300185 | $\omega$ | 229.51802 | | +0.59122992 | | +0.80622444 |
| $a$ | 2.6155506 | $\Omega$ | 76.73879 | | −0.73320699 | | +0.54826031 |
| $e$ | 0.0914538 | $i$ | 1.24789 | | −0.33593853 | | +0.22228985 |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 291 | 0.2+ | 0.1+ | 2005 05 18 | 644 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2002 11 13 | 291 | 0.0 | 0.2+ | 2005 05 18 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 11 13 | 291 | 0.2− | 0.4− | 2005 05 18 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2005 05 04 | G96 | 0.1− | 0.0 | 2005 05 18 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2005 05 04 | G96 | 0.3− | 0.4− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2005 05 04 | G96 | 0.3− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.3− | 0.5− |
| 2005 05 04 | G96 | 0.3− | 0.3− | 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2005 05 08 | G96 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.8− | 0.7+ | 2006 10 22 | G96 | 0.9− | 0.3− |
| 2005 05 08 | G96 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 11 14 | G96 | 0.5+ | 0.1+ |
| 2005 05 08 | G96 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.4− | 0.2+ |
| 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2005 05 13 | G96 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.1+ |
| 2005 05 13 | G96 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2005 05 13 | G96 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.3+ |
| 2005 05 13 | G96 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2005 05 18 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.7− | 0.6− | 2006 11 14 | G96 | 0.3+ | 0.1+ |
| 2005 05 18 | 644 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.2− | 0.9− | | | | |

## 2005 JE$_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.05219 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24336882 | $\omega$ | 313.67203 | | −0.87085272 | | +0.48498231 |
| $a$ | 2.5407353 | $\Omega$ | 255.48937 | | −0.42384240 | | −0.82335996 |
| $e$ | 0.1558060 | $i$ | 4.74295 | | −0.24894407 | | −0.29473808 |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 644 | 0.2+ | 0.1− | 2005 05 08 | E12 | 0.1− | 0.2+ | 2005 05 18 | 644 | 0.2− | 0.1+ |
| 2005 05 04 | 644 | 0.1+ | 0.1+ | 2005 05 08 | E12 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.1− |
| 2005 05 04 | 644 | 0.2+ | 0.1− | 2005 05 11 | 644 | 0.0 | 0.0 | 2005 05 19 | 644 | 0.2− | 0.2− |
| 2005 05 04 | E12 | 0.7− | 0.4+ | 2005 05 11 | 644 | 0.2+ | 0.0 | 2005 05 19 | 644 | 0.1+ | 0.2− |
| 2005 05 04 | E12 | 0.6− | 0.1+ | 2005 05 11 | 644 | 0.5+ | 0.2− | 2005 06 27 | 644 | 0.1+ | 0.3+ |
| 2005 05 04 | E12 | 0.2− | 0.4− | 2005 05 12 | 644 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.0 | 0.1− |
| 2005 05 04 | E12 | 0.7− | 0.0 | 2005 05 12 | 644 | 0.3− | 0.2+ | 2005 06 27 | 644 | 0.3− | 0.1+ |
| 2005 05 08 | 699 | 0.1+ | 0.6− | 2005 05 12 | 644 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 2005 05 08 | 699 | 1.4+ | 0.5+ | 2005 05 12 | 644 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2005 05 08 | 699 | 0.8+ | 0.5− | 2005 05 12 | 644 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2005 05 08 | 699 | 0.5+ | 0.2+ | 2005 05 12 | 644 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2005 05 08 | E12 | 0.7− | 0.1− | 2005 05 18 | 644 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2− |
| 2005 05 08 | E12 | 0.6− | 0.4+ | 2005 05 18 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.3− |

## 2005 JF$_{34}$ = 2006 RM$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.56006 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22155086 | $\omega$ | 147.12939 | | +0.92348252 | | +0.38256284 |
| $a$ | 2.7049158 | $\Omega$ | 190.49682 | | −0.37716067 | | +0.89162589 |
| $e$ | 0.1122345 | $i$ | 9.07513 | | −0.07021302 | | +0.24217546 |
| $P$ | 4.45 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.0 | 0.1− | 2005 05 17 | G96 | 0.3− | 0.5− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 1997 09 28 | 691 | 0.4+ | 0.1− | 2005 05 17 | G96 | 0.7− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.7+ |
| 1997 09 28 | 691 | 0.2− | 0.5− | 2005 05 19 | G96 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.3− | 0.1+ |
| 2005 05 04 | 691 | 0.1− | 0.0 | 2005 05 19 | G96 | 0.4− | 0.5− | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2005 05 04 | 691 | 0.1+ | 0.3+ | 2005 05 19 | G96 | 1.5− | 0.8− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2005 05 04 | 691 | 0.2− | 0.1− | 2005 05 19 | G96 | 0.2− | 1.0− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2005 05 08 | 691 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2005 05 10 | 691 | 0.7+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2005 05 10 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2005 05 17 | G96 | 0.9− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.0 | | | | |
| 2005 05 17 | G96 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.7− | | | | |

## 2005 JJ$_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.76482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23918966 | $\omega$ | 61.38263 | | −0.25128578 | | +0.96724610 |
| $a$ | 2.5702446 | $\Omega$ | 194.20112 | | −0.93130739 | | −0.25172595 |
| $e$ | 0.1268783 | $i$ | 8.41998 | | −0.26367026 | | −0.03269596 |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.2+ | 0.1+ | 2005 05 28 | 599 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2005 05 28 | 599 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2004 01 18 | 691 | 0.1− | 0.4+ | 2005 05 29 | 599 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2005 05 04 | 691 | 0.2+ | 0.1− | 2005 06 03 | 691 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2005 05 04 | 691 | 0.2+ | 0.1− | 2005 06 03 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.1+ |
| 2005 05 04 | 691 | 0.2+ | 0.0 | 2005 06 03 | 691 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.2− | 0.2− |
| 2005 05 08 | 691 | 0.2− | 0.2+ | 2005 06 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2005 06 15 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2005 05 08 | 691 | 0.2− | 0.2+ | 2005 06 15 | 691 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.1− |
| 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 05 08 | 691 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2005 05 28 | 599 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.5− | 0.3− |

## 2005 JK$_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.73103 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23895302 | $\omega$ | 72.31870 | | +0.65633292 | | +0.75207228 |
| $a$ | 2.5719412 | $\Omega$ | 238.85525 | | −0.71610689 | | +0.59589125 |
| $e$ | 0.2653861 | $i$ | 4.02803 | | −0.23752478 | | +0.28160415 |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 644 | 0.2− | 0.1+ | 2005 05 19 | 644 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2005 05 04 | 644 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2005 05 04 | 644 | 0.1+ | 0.5− | 2006 10 19 | G96 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.4− | 0.6+ |
| 2005 05 09 | G96 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.3− | 0.5− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2005 05 09 | G96 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4− | 0.3− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2005 05 09 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.5− | 0.6− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2005 05 09 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.4− | 0.3+ |
| 2005 05 11 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.8− | 0.0 | 2006 11 23 | 691 | 0.4− | 0.3− |
| 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.5− | 1.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.4− |
| 2005 05 16 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.5+ | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.4+ |
| 2005 05 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.5+ | 0.2+ |
| 2005 05 16 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.5+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2005 05 19 | 644 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.8− | | | | |
| 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 1.0+ | 0.6− | | | | |

**2005 JD$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.72935 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22955002 | $\omega$ | 304.05883 | | +0.10332495 | | +0.99290804 |
| $a$ | 2.6417060 | $\Omega$ | 331.69718 | | −0.86682000 | | +0.06089597 |
| $e$ | 0.1763197 | $i$ | 7.12409 | | −0.48779816 | | +0.10210437 |
| $P$ | 4.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 09 25 | 704 | (0.3+ | 1.7+) |
| 2000 02 06 | 695 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 0.6+ | 0.4− |
| 2005 03 12 | 699 | 0.2+ | 0.8− | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.2+ | 0.5+ |
| 2005 03 12 | 699 | 0.8− | 0.0 | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2005 03 12 | 699 | 1.1− | 0.7+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2005 03 12 | 699 | (2.2− | 0.4−) | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2005 04 06 | 699 | 0.5+ | 1.0+ | 2006 09 15 | 704 | 0.1− | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.4+ |
| 2005 04 06 | 699 | 0.4− | 0.4+ | 2006 09 15 | 704 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.4+ |
| 2005 04 06 | 699 | 0.5− | 0.5+ | 2006 09 15 | 704 | (1.7+ | 0.3−) | 2006 09 29 | 704 | 0.5+ | 0.4+ |
| 2005 04 06 | 699 | 0.5+ | 0.6− | 2006 09 15 | 704 | 1.2− | 0.4+ | 2006 09 29 | 704 | 0.7+ | 0.1+ |
| 2005 04 18 | E12 | 0.6+ | 0.9− | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.4− |
| 2005 04 18 | E12 | 0.5+ | 0.7+ | 2006 09 17 | 703 | 0.3− | 0.5− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2005 04 18 | E12 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.6− | 2006 10 01 | 703 | 1.0− | 0.6− |
| 2005 04 18 | E12 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.5− | 0.4− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2005 05 01 | 644 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 1.0− | 0.4− | 2006 10 01 | 703 | 0.0 | 0.4+ |
| 2005 05 01 | 644 | 0.6+ | 0.5+ | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 01 | 703 | 0.0 | 0.5− |
| 2005 05 01 | 644 | 0.5+ | 0.7+ | 2006 09 17 | 703 | 0.2− | 0.5− | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2005 05 04 | E12 | 0.4− | 0.1− | 2006 09 18 | 704 | 0.5+ | 1.0− | 2006 10 01 | 703 | 0.0 | 0.7− |
| 2005 05 04 | E12 | 0.3+ | 0.9− | 2006 09 18 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2005 05 04 | E12 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4− |
| 2005 05 04 | E12 | 1.1− | 0.6+ | 2006 09 18 | 704 | 0.0 | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2005 05 09 | 703 | 0.6+ | 0.4+ | 2006 09 18 | 704 | 0.7+ | 0.2− | 2006 10 17 | 703 | 1.5− | 1.3+ |
| 2005 05 09 | 703 | 1.1+ | 1.0− | 2006 09 19 | 699 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 2005 05 09 | 703 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.2+ |
| 2005 05 09 | 703 | 1.0− | 0.4− | 2006 09 19 | 699 | 0.5+ | 0.0 | 2006 10 17 | 703 | (0.5+ | 1.9+) |
| 2005 05 14 | 703 | 0.4+ | 0.1− | 2006 09 19 | 699 | 0.1− | 0.5− | 2006 10 23 | G96 | 0.8+ | 0.3− |
| 2005 05 14 | 703 | 1.1− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.4− |
| 2005 05 14 | 703 | 0.9− | 0.5− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.5+ | 0.3− |
| 2005 05 14 | 703 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.7+ | 0.3− |
| 2006 08 28 | 703 | 0.5− | 0.3− | 2006 09 25 | 704 | 0.3+ | 0.8+ | | | | |

**2005 JF$_{37}$ = 2006 UZ$_{142}$**

Id. Minor Planet Center, S. Foglia

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.78035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36617405 | $\omega$ | 234.16533 | | −0.15899721 | | −0.95703681 |
| $a$ | 1.9349853 | $\Omega$ | 226.93761 | | +0.97855190 | | −0.12017929 |
| $e$ | 0.1085090 | $i$ | 19.38400 | | +0.13098120 | | −0.26388915 |
| $P$ | 2.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 27 | 644 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2003 08 27 | 644 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.5− | 0.6+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2003 08 27 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2005 05 04 | E12 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.7− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.7+ |
| 2005 05 04 | E12 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.3+ |
| 2005 05 04 | E12 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.5+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2005 05 04 | E12 | 0.8− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2005 05 08 | 699 | 0.0 | 0.3+ | 2006 10 19 | 703 | 1.0+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2005 05 08 | 699 | 0.5− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2005 05 08 | 699 | 0.2− | 1.0− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2005 05 08 | 699 | 1.0+ | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2005 05 09 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 704 | 0.9− | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2005 05 09 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 704 | 0.4− | 0.6− | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2005 05 09 | 704 | 0.0 | 0.1− | 2006 10 21 | 704 | (0.3+ | 2.0−) | 2006 11 17 | 703 | 0.1+ | 0.2− |
| 2005 05 09 | 699 | 0.4+ | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2005 05 09 | 699 | 0.9+ | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.4+ |
| 2005 05 09 | 699 | 0.2− | 1.1+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2005 05 09 | 699 | 0.9− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.7− | 2006 11 18 | 704 | 0.3+ | 0.5− |
| 2005 05 10 | 704 | 0.4− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.5− | 2006 11 18 | 704 | 0.5− | 0.2+ |
| 2005 05 10 | 704 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.5− | 2006 11 18 | 704 | (0.3+ | 1.8−) |
| 2005 05 10 | 704 | 0.0 | 0.4− | 2006 10 27 | 703 | 0.2+ | 0.8+ | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2005 05 13 | 704 | (1.8+ | 0.1−) | 2006 10 27 | 703 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.9− |
| 2005 05 13 | 704 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.4− | 0.7+ | 2006 11 18 | 704 | 0.5− | 0.9− |
| 2005 05 13 | 704 | 0.2+ | 0.6− | 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2005 05 13 | 704 | 0.7+ | 1.3+ | 2006 10 29 | 704 | 1.0+ | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.6+ |
| 2005 05 13 | 704 | 0.4+ | 0.6+ | 2006 10 29 | 704 | 0.2+ | 0.2+ | 2006 11 18 | 704 | (1.0− | 1.8−) |
| 2005 05 13 | G96 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.3+ |
| 2005 05 13 | 704 | 0.1+ | 0.7− | 2006 10 29 | 704 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.2+ | 1.2+ |
| 2005 05 13 | 704 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 1.2+ |
| 2005 05 13 | G96 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2005 05 13 | 704 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.1+ | 0.3− |
| 2005 05 13 | G96 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 2005 05 13 | G96 | 0.5− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.2+ |
| 2006 09 28 | 703 | 1.0− | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.8+ |
| 2006 09 28 | 703 | 0.5− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.7+ | 0.8+ |
| 2006 09 28 | 703 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2006 09 28 | 703 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.8+ | 0.9+ |

**2005 JG$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.95504 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23358432 | $\omega$ | 16.29128 | | +0.29481985 | | +0.95464401 |
| $a$ | 2.6112007 | $\Omega$ | 270.87006 | | −0.88128684 | | +0.25479364 |
| $e$ | 0.2312543 | $i$ | 2.38826 | | −0.36934369 | | +0.15406173 |
| $P$ | 4.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | E12 | 0.1+ | 0.1− | 2005 05 12 | 644 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2005 05 04 | E12 | 0.2+ | 0.4− | 2005 05 12 | 644 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2005 05 04 | E12 | 0.1− | 0.4− | 2005 05 26 | 699 | 0.9+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2005 05 04 | E12 | 0.7+ | 0.0 | 2005 05 26 | 699 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2005 05 08 | 699 | (1.6+ | 0.3+) | 2005 05 26 | 699 | (1.6+ | 0.7+) | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2005 05 08 | 699 | 0.4+ | 0.2+ | 2005 05 26 | 699 | 0.7− | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 05 08 | 699 | (1.9− | 0.1+) | 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2005 05 08 | 699 | 1.0+ | 1.1+ | 2006 10 12 | 691 | 0.2− | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 05 11 | 691 | 0.4− | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2005 05 11 | 691 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 05 11 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.4+ | 0.2+ | | | | |
| 2005 05 12 | 644 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1− | | | | |

**2005 JX$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.89072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29380691 | $\omega$ | 40.98299 | | +0.14007288 | | +0.98575766 |
| $a$ | 2.2409287 | $\Omega$ | 237.26510 | | −0.93485703 | | +0.10069827 |
| $e$ | 0.0865835 | $i$ | 6.35210 | | −0.32622374 | | +0.13469108 |
| $P$ | 3.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 703 | 0.8+ | 0.9+ | 2005 05 06 | 703 | 0.1+ | 0.4+ | 2005 05 11 | 291 | 0.1+ | 0.2+ |
| 2005 04 14 | 703 | 0.2+ | 0.1+ | 2005 05 06 | 703 | (3.6− | 0.2+) | 2005 05 11 | 291 | 0.3+ | 0.2+ |
| 2005 04 14 | 703 | 0.7− | 0.2− | 2005 05 06 | 703 | 1.2− | 0.7− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2005 04 14 | 703 | 0.1+ | 1.0− | 2005 05 09 | 699 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.3− | 0.9− |
| 2005 05 01 | 644 | 0.2− | 0.0 | 2005 05 09 | 699 | 1.7− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.4+ |
| 2005 05 01 | 644 | 0.3− | 0.1− | 2005 05 09 | 699 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 01 | 644 | 0.3− | 0.1− | 2005 05 09 | 699 | 0.7+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.4+ | | |
| 2005 05 06 | 703 | 0.2+ | 0.9+ | 2005 05 11 | 291 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.1− | 0.2+ | | |

**2005 JC$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 124.47691 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.23309890 | $\omega$ | 57.75252 | | −0.69016969 | | +0.72159107 | | |
| $a$ | 2.6148246 | $\Omega$ | 168.11014 | | −0.72040624 | | −0.67800327 | | |
| $e$ | 0.1155247 | $i$ | 15.34358 | | −0.06841524 | | −0.14006391 | | |
| $P$ | 4.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.0 | 0.1+ | 2005 05 19 | 703 | (1.9− | 1.2−) | 2005 06 07 | 699 | 0.1− | 0.2− | | |
| 2000 01 08 | 704 | 0.1− | 0.1+ | 2005 05 19 | 703 | 0.3− | 0.1+ | 2005 06 25 | 644 | 0.1− | 0.1+ | | |
| 2000 01 08 | 704 | 0.3+ | 0.3+ | 2005 05 19 | 703 | 0.3− | 1.1+ | 2005 06 25 | 644 | 0.2− | 0.2− | | |
| 2002 10 15 | 644 | 0.0 | 0.6+ | 2005 05 19 | 703 | 0.2+ | 0.4− | 2005 06 25 | 644 | 0.0 | 0.2− | | |
| 2002 10 15 | 644 | 0.2− | 0.4+ | 2005 05 21 | 644 | 0.3− | 0.0 | 2005 06 27 | 699 | 0.8+ | 0.5− | | |
| 2002 10 15 | 644 | 0.3− | 0.4+ | 2005 05 21 | 644 | 0.2− | 0.1+ | 2005 06 27 | 699 | 0.4+ | 0.7− | | |
| 2005 04 18 | 704 | 0.7+ | 0.3− | 2005 05 21 | 644 | 0.2− | 0.0 | 2005 06 27 | 699 | 0.9+ | 0.1+ | | |
| 2005 04 18 | 704 | 0.4− | 0.1+ | 2005 05 31 | 703 | 0.1− | 0.9+ | 2005 06 27 | 699 | 0.3− | 0.5− | | |
| 2005 04 18 | 704 | 0.1+ | 0.4− | 2005 05 31 | 703 | 0.0 | 0.7+ | 2005 07 01 | 644 | 0.2− | 0.0 | | |
| 2005 04 18 | 704 | 0.3− | 0.6− | 2005 05 31 | 703 | 0.0 | 1.3+ | 2005 07 01 | 644 | 0.1− | 0.1+ | | |
| 2005 05 06 | 704 | 0.0 | 0.0 | 2005 06 01 | 704 | 0.3− | 0.3+ | 2005 07 01 | 644 | 0.2− | 0.0 | | |
| 2005 05 06 | 704 | 1.5+ | 0.5+ | 2005 06 01 | 704 | 0.1− | 0.1+ | 2005 07 03 | 703 | 0.6− | 0.2− | | |
| 2005 05 06 | 704 | 0.9+ | 0.2+ | 2005 06 01 | 704 | 0.8+ | 0.1− | 2005 07 03 | 703 | (1.7− | 0.6−) | | |
| 2005 05 06 | 704 | 0.0 | 0.7+ | 2005 06 01 | 704 | 0.4+ | 0.2+ | 2005 07 03 | 703 | (1.6− | 0.4−) | | |
| 2005 05 06 | 704 | 0.3+ | 0.1+ | 2005 06 01 | 704 | 0.0 | 0.6+ | 2005 07 03 | 703 | (1.7− | 0.7−) | | |
| 2005 05 08 | 699 | 0.3+ | 0.1+ | 2005 06 07 | 699 | 0.6− | 0.2+ | 2005 07 10 | 699 | 0.5+ | 0.2+ | | |
| 2005 05 08 | 699 | 0.8+ | 1.1+ | 2005 06 07 | 703 | 0.4− | 0.3− | 2005 07 10 | 699 | 0.1+ | 0.5− | | |
| 2005 05 08 | 699 | 0.4− | 0.2− | 2005 06 07 | 703 | 0.2− | 1.0+ | 2005 07 10 | 699 | 0.3− | 0.2− | | |
| 2005 05 13 | 704 | 0.1− | 0.3− | 2005 06 07 | 703 | 0.5− | 0.5− | 2005 07 10 | 699 | 1.3− | 1.1− | | |
| 2005 05 13 | 704 | 0.4− | 0.4− | 2005 06 07 | 699 | 0.2− | 1.0− | 2006 08 17 | 644 | 0.6+ | 0.3+ | | |
| 2005 05 13 | 704 | 0.5+ | 0.3+ | 2005 06 07 | 703 | 0.1− | 0.7− | 2006 08 17 | 644 | 0.4− | 0.1− | | |
| 2005 05 13 | 704 | 0.2− | 0.1+ | 2005 06 07 | 699 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.0 | 0.2+ | | |

**2005 JR$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 64.91753 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.26496782 | $\omega$ | 276.08650 | | +0.74267385 | | +0.66926716 | | |
| $a$ | 2.4007151 | $\Omega$ | 41.90614 | | −0.60014399 | | +0.68026535 | | |
| $e$ | 0.1960619 | $i$ | 1.95093 | | −0.29709047 | | +0.29886540 | | |
| $P$ | 3.72 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 644 | 0.6− | 2.0+ | 2005 05 09 | G96 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2+ | | |
| 2002 10 07 | 644 | 0.4− | 0.3− | 2005 05 09 | G96 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2002 10 07 | 644 | 0.2+ | 0.0 | 2005 05 09 | G96 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.0 | | |
| 2005 04 17 | 691 | 0.2− | 0.1+ | 2005 05 11 | 691 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1− | | |
| 2005 04 17 | 691 | 0.3+ | 0.3+ | 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2005 04 17 | 691 | 0.1− | 0.1+ | 2005 05 11 | 691 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2005 05 07 | 691 | 0.2+ | 0.2+ | 2005 05 13 | G96 | 0.4− | 0.3+ | 2006 11 18 | 691 | 0.3+ | 0.4+ | | |
| 2005 05 07 | 691 | 0.0 | 0.4+ | 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 11 22 | 691 | 0.3+ | 0.1+ | | |
| 2005 05 07 | 691 | 0.5+ | 0.0 | 2005 05 13 | G96 | 0.4− | 0.5+ | 2006 11 22 | 691 | 1.0− | 0.2+ | | |
| 2005 05 09 | G96 | 0.7− | 0.1+ | 2005 05 13 | G96 | 0.4− | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.1− | | |

**2005 JW$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 47.05842 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.22840916 | $\omega$ | 284.49542 | | +0.85234177 | | +0.52058541 | | |
| $a$ | 2.6504953 | $\Omega$ | 44.16327 | | −0.44790629 | | +0.77602971 | | |
| $e$ | 0.2854872 | $i$ | 4.11902 | | −0.26998789 | | +0.35604596 | | |
| $P$ | 4.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 644 | 0.5+ | 0.0 | 2005 05 13 | 704 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.1− | | |
| 2004 03 19 | 644 | 0.6− | 0.4− | 2005 05 19 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.4− | | |
| 2004 03 19 | 644 | 0.2− | 0.3− | 2005 05 19 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4− | 1.5− | | |
| 2005 04 11 | G96 | 0.1− | 0.5+ | 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.1+ | | |
| 2005 04 11 | G96 | 0.3+ | 0.3+ | 2005 05 19 | 644 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1− | 0.3+ | | |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.0 | | |
| 2005 04 11 | G96 | 0.2− | 0.2+ | 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1− | | |
| 2005 04 17 | 703 | 1.4− | 0.6+ | 2005 06 04 | 703 | 0.9− | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2005 04 17 | 703 | 0.2+ | 1.4+ | 2005 06 04 | 703 | (0.3− | 2.6+) | 2006 11 18 | 691 | 0.2+ | 0.0 | | |
| 2005 04 17 | 703 | 1.0+ | 0.2− | 2005 06 04 | 703 | 0.2− | 0.7− | 2006 11 18 | 691 | 0.2+ | 0.1+ | | |
| 2005 04 17 | 703 | 0.6− | 0.3− | 2005 06 04 | 703 | (1.2− | 2.4+) | 2006 11 19 | 704 | 0.0 | 0.3+ | | |
| 2005 05 07 | 691 | 0.6+ | 0.6− | 2006 09 16 | 703 | 0.9+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 1.2+ | | |
| 2005 05 07 | 691 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.0 | 1.5+ | 2006 11 19 | 704 | 0.1+ | 0.3+ | | |
| 2005 05 07 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.9− | 2006 11 19 | 704 | 0.2+ | 0.3+ | | |
| 2005 05 08 | E12 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.2+ | 1.0− | 2006 11 19 | 704 | 0.4+ | 0.6+ | | |
| 2005 05 08 | E12 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 21 | 691 | 1.5− | 0.5+ | | |
| 2005 05 08 | E12 | 0.3+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.3− | | |
| 2005 05 08 | E12 | 0.7− | 0.5− | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.1− | 0.2− | | |
| 2005 05 09 | 704 | 0.6− | 1.2+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.3− | | |
| 2005 05 09 | 704 | 1.1− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.5− | | |
| 2005 05 09 | 704 | 0.1− | 0.6− | 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.2− | | |
| 2005 05 09 | 699 | 0.1− | 0.9+ | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1− | | |
| 2005 05 09 | 699 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.9+ | 0.1+ | | |
| 2005 05 09 | G96 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.1− | | |
| 2005 05 09 | G96 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.2− | | |
| 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.4− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1− | | |
| 2005 05 09 | 699 | 0.4− | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.0 | | |
| 2005 05 09 | G96 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.1+ | 0.0 | | |
| 2005 05 09 | 699 | 0.1− | 0.8+ | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.1+ | | |
| 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.5+ | 0.2− | 2006 12 01 | 704 | 1.8+ | 1.3+ | | |
| 2005 05 11 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.6− | 0.1− | | |
| 2005 05 11 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.2+ | 0.1− | | |
| 2005 05 13 | 704 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 12 01 | 704 | 0.5+ | 1.2+ | | |
| 2005 05 13 | 704 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.4− | | | | | | |

**2005 JX$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 46.18652 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.22338504 | $\omega$ | 88.73230 | | +0.72604519 | | +0.68054935 | | |
| $a$ | 2.6900891 | $\Omega$ | 228.36982 | | −0.67163559 | | +0.67107560 | | |
| $e$ | 0.2036248 | $i$ | 7.57598 | | −0.14752633 | | +0.29412602 | | |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.6− | 0.1+ | 2005 05 11 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3− | | |
| 1993 12 14 | 691 | 0.8+ | 1.6+ | 2005 05 19 | 644 | 0.3− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 1993 12 14 | 691 | 0.4− | 0.2+ | 2005 05 19 | 644 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1+ | | |
| 1997 10 07 | 691 | 1.6+ | 0.8+ | 2005 05 19 | 644 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 1997 10 07 | 691 | 0.8− | 0.2+ | 2005 06 13 | G96 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 1997 10 07 | 691 | 1.0− | 0.5− | 2005 06 13 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2005 03 14 | G96 | 0.5− | 0.1+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2005 03 14 | G96 | 1.1− | 0.1+ | 2005 06 13 | G96 | 0.7− | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.2− | | |
| 2005 03 14 | G96 | 0.6− | 0.3+ | 2005 06 27 | 644 | 0.3− | 0.4+ | 2006 11 07 | 644 | 0.1+ | 0.0 | | |
| 2005 03 14 | G96 | 0.3+ | 0.5+ | 2005 06 27 | 644 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.1− | | |
| 2005 05 07 | 691 | 0.0 | 0.1+ | 2005 06 27 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.2+ | | |
| 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 699 | 0.5− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.5+ | | |
| 2005 05 07 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.7− | 0.8+ | 2006 11 11 | 703 | 0.0 | 0.3− | | |
| 2005 05 08 | 699 | 0.6+ | 0.9+ | 2006 09 20 | 699 | 1.0− | 0.9+ | 2006 11 11 | 703 | (1.3+ | 2.6−) | | |
| 2005 05 08 | 699 | 0.1− | 0.6+ | 2006 09 20 | 699 | 0.2+ | 1.2− | 2006 11 17 | 691 | 0.2− | 0.2− | | |
| 2005 05 08 | 699 | 0.4+ | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2005 05 08 | 699 | (1.3+ | 3.5+) | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.1+ | | |
| 2005 05 08 | E12 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.4− | 0.2+ | | |
| 2005 05 08 | E12 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.4− | 2006 11 17 | 691 | 0.3+ | 0.0 | | |
| 2005 05 08 | E12 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.3+ | | |
| 2005 05 08 | E12 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2005 05 09 | 704 | 0.7+ | 0.0 | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 704 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2005 05 09 | 704 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.4+ | | |
| 2005 05 09 | 699 | 0.2+ | 1.3+ | 2006 10 17 | 691 | 0.5+ | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.2+ | | |
| 2005 05 09 | 704 | (0.3+ | 1.7+) | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.0 | 0.2+ | | |
| 2005 05 09 | 699 | 0.2+ | 1.1+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.1− | | |
| 2005 05 09 | 704 | (4.0− | 0.3−) | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1+ | | |
| 2005 05 09 | 699 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.2− | | |
| 2005 05 09 | 699 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2005 05 11 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.7− | 0.0 | | |
| 2005 05 11 | 691 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ | | |

**2005 JP$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.55696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21157388 | $\omega$ | 216.95186 | | +0.25126794 | +0.96676916 | |
| $a$ | 2.7892965 | $\Omega$ | 67.64347 | | −0.87541471 | +0.24776060 | |
| $e$ | 0.2810683 | $i$ | 2.92146 | | −0.41293282 | +0.06302435 | |
| $P$ | 4.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 0.5− | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.5− | | |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2005 05 14 | 704 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.4− | 0.1+ | | |
| 2005 04 11 | G96 | 0.5+ | 0.3+ | 2005 05 14 | 704 | 0.9+ | 0.4+ | 2006 10 23 | 691 | 0.5+ | 0.4− | | |
| 2005 04 11 | G96 | 0.4+ | 0.0 | 2005 05 14 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.3+ | | |
| 2005 05 07 | G96 | 0.4− | 0.2− | 2005 05 14 | 704 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.2+ | 0.1+ | | |
| 2005 05 07 | G96 | 0.6− | 0.4− | 2005 05 14 | 704 | 0.5+ | 1.0− | 2006 11 13 | G96 | 0.2+ | 0.2+ | | |
| 2005 05 07 | G96 | 0.1− | 0.3− | 2005 05 19 | 644 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.9− | | |
| 2005 05 07 | G96 | 0.4− | 0.3− | 2005 05 19 | 644 | 0.3− | 0.0 | 2006 11 13 | G96 | (0.7+ | 2.1−) | | |
| 2005 05 08 | 691 | 0.1− | 0.0 | 2005 05 19 | 644 | 0.3− | 0.1− | 2006 11 13 | G96 | (1.1− | 1.9−) | | |
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.5+ | | | | | | |

**2005 JK$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.62983 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23641693 | $\omega$ | 13.29151 | | −0.79659064 | +0.60327083 | |
| $a$ | 2.5903016 | $\Omega$ | 203.94329 | | −0.56301788 | −0.76375966 | |
| $e$ | 0.2125718 | $i$ | 5.49026 | | −0.22012320 | −0.22964207 | |
| $P$ | 4.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.4− | 0.1− | 2005 05 08 | 699 | 0.5− | 0.2+ | 2005 05 16 | 691 | 0.3− | 0.0 | | |
| 2005 03 10 | G96 | 0.4− | 0.3− | 2005 05 08 | 699 | 0.2− | 0.0 | 2005 05 16 | 691 | 0.1− | 0.0 | | |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2005 05 08 | 699 | 0.3− | 0.0 | 2005 05 16 | 691 | 0.6− | 0.4− | | |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2005 05 08 | 699 | 0.3− | 0.1− | 2005 05 16 | 704 | 1.0+ | 1.1− | | |
| 2005 04 04 | 704 | 0.7+ | 0.5+ | 2005 05 09 | 699 | 0.7+ | 1.1+ | 2005 05 16 | 704 | 0.3− | 0.8− | | |
| 2005 04 04 | 704 | 0.7− | 0.7+ | 2005 05 09 | 699 | 0.1− | 0.2+ | 2005 05 16 | 704 | 0.1+ | 0.2− | | |
| 2005 04 04 | 704 | 0.7+ | 0.6+ | 2005 05 09 | 699 | 0.9− | 0.6+ | 2005 05 16 | 704 | 0.5+ | 0.1− | | |
| 2005 04 04 | 704 | 0.2− | 0.9+ | 2005 05 09 | 699 | 0.3− | 0.2− | 2006 09 20 | 691 | 0.3+ | 0.2− | | |
| 2005 04 12 | 704 | 1.0+ | 1.8+ | 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 691 | 0.0 | 0.0 | | |
| 2005 04 12 | 704 | 0.9+ | 0.1− | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 691 | 0.0 | 0.2− | | |
| 2005 04 12 | 704 | 0.3− | 0.8− | 2005 05 10 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 291 | 0.1− | 0.5+ | | |
| 2005 04 12 | 704 | 1.4− | 0.3− | 2005 05 13 | 704 | 0.1+ | 0.2− | 2006 09 27 | 291 | 0.3− | 0.2+ | | |
| 2005 04 16 | 691 | 0.2+ | 0.2− | 2005 05 13 | 704 | 0.2+ | 0.5− | 2006 09 27 | 291 | 0.0 | 0.0 | | |
| 2005 04 16 | 691 | 0.1+ | 0.0 | 2005 05 13 | 704 | 0.1− | 1.1− | | | | | | |
| 2005 04 16 | 691 | 0.2+ | 0.1− | 2005 05 13 | 704 | 0.3− | 0.4− | | | | | | |

**2005 JP$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.14544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29382497 | $\omega$ | 143.07507 | | −0.40553635 | +0.91270882 | |
| $a$ | 2.2408369 | $\Omega$ | 102.95179 | | −0.85044112 | −0.35667326 | |
| $e$ | 0.0315933 | $i$ | 2.94256 | | −0.33509726 | −0.19936599 | |
| $P$ | 3.35 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 699 | 0.3+ | 0.1− | 2005 05 20 | G96 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.4− | | |
| 2005 05 08 | 699 | 1.1+ | 1.4+ | 2005 05 20 | G96 | 0.8− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2005 05 08 | 699 | 0.8+ | 0.7+ | 2005 05 20 | G96 | 0.6− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1+ | | |
| 2005 05 08 | 699 | 0.7− | 0.5− | 2005 05 20 | G96 | 0.5− | 0.2− | 2006 10 22 | 691 | 0.4− | 0.2− | | |
| 2005 05 09 | 699 | 0.8+ | 0.5+ | 2006 10 21 | 703 | 1.3− | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.3− | | |
| 2005 05 09 | 699 | 0.7− | 1.1− | 2006 10 21 | 703 | 1.4+ | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2005 05 09 | 699 | 0.7− | 0.6− | 2006 10 21 | 703 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.4− | | |
| 2005 05 09 | 699 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.4+ | 1.0+ | 2006 11 18 | G96 | 0.7+ | 0.2− | | |
| 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 11 21 | 691 | 0.2− | 0.1− | | |
| 2005 05 13 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.3− | 2006 11 21 | 691 | 0.0 | 0.4+ | | |
| 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.3+ | | |

**2005 JQ$_{42}$ = 2006 UH$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.36822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23986791 | $\omega$ | 94.70777 | | +0.36413940 | +0.93054180 | |
| $a$ | 2.5653972 | $\Omega$ | 196.80611 | | −0.89870531 | +0.34018292 | |
| $e$ | 0.1991827 | $i$ | 7.68363 | | −0.24439981 | +0.13552688 | |
| $P$ | 4.11 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 691 | 0.4+ | 0.4− | 2005 05 10 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.1+ | | |
| 2001 05 23 | 691 | 0.0 | 0.1− | 2005 05 14 | 644 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2001 05 23 | 691 | 0.5− | 0.2+ | 2005 05 14 | 644 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 2005 05 08 | 691 | 0.0 | 0.3+ | 2005 05 14 | 644 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.5− | | |
| 2005 05 08 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.3− | | |
| 2005 05 08 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2005 05 08 | 704 | 0.2+ | 1.4− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2005 05 08 | 704 | 0.7+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2005 05 08 | 704 | 0.7− | 0.7+ | 2006 10 17 | G96 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2005 05 09 | 699 | 1.1+ | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.0 | | |
| 2005 05 09 | 699 | 0.5+ | 0.4− | 2006 10 17 | G96 | 0.8+ | 0.3− | 2006 11 16 | G96 | 0.6+ | 0.1+ | | |
| 2005 05 09 | 699 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.1− | | |
| 2005 05 09 | 699 | 0.6+ | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.2− | | |
| 2005 05 10 | 691 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.6− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.4− | | |

**2005 JU$_{42}$ = 2006 SN$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.26743 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22114554 | $\omega$ | 247.47561 | | +0.56373644 | +0.81410410 | |
| $a$ | 2.7082199 | $\Omega$ | 57.58505 | | −0.68408287 | +0.55479270 | |
| $e$ | 0.2273548 | $i$ | 9.50557 | | −0.46285186 | +0.17157965 | |
| $P$ | 4.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.5− | 0.6+ | 2006 09 30 | 704 | 0.1+ | 0.7− | | |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.1− | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.2+ | | |
| 2005 04 07 | 691 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.4+ | | |
| 2005 04 07 | 691 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.5− | 0.8− | 2006 10 16 | 703 | 0.5+ | 0.3− | | |
| 2005 04 07 | 691 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2+ | | |
| 2005 05 08 | 703 | 0.7− | 0.2+ | 2006 09 21 | 699 | 0.6+ | 0.6− | 2006 10 19 | 644 | 0.0 | 0.2+ | | |
| 2005 05 08 | 703 | 0.2+ | 0.2− | 2006 09 21 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2005 05 08 | 703 | 0.5− | 1.2− | 2006 09 25 | 699 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.3− | 0.2+ | | |
| 2005 05 08 | 703 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2005 05 09 | 699 | (2.6+ | 1.2−) | 2006 09 25 | 699 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2005 05 09 | 699 | 0.6+ | 0.8+ | 2006 09 25 | 699 | 1.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2005 05 09 | 699 | 1.1+ | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.2+ | | |
| 2005 05 09 | 699 | 1.4+ | 1.4+ | 2006 09 26 | 703 | 0.5− | 0.5+ | 2006 10 22 | 703 | 0.7− | 0.1− | | |
| 2005 05 18 | 644 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | 1.0− | 0.6+ | | |
| 2005 05 18 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.6− | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.6+ | | |
| 2005 05 18 | 644 | 0.4− | 0.1+ | 2006 09 30 | 704 | (2.0+ | 0.8+) | | | | | | |
| 2006 09 18 | 703 | 1.3+ | 1.1− | 2006 09 30 | 704 | 0.9+ | 0.4+ | | | | | | |

**2005 JF$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.17494 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28555876 | $\omega$ | 231.31052 | | +0.55067028 | | +0.83244916 |
| $a$ | 2.2838753 | $\Omega$ | 72.20931 | | −0.74436614 | | +0.52310157 |
| $e$ | 0.2485614 | $i$ | 3.70735 | | −0.37773178 | | +0.18273790 |
| $P$ | 3.45 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.6− | 1.1− | 2002 10 03 | 704 | 0.9+ | 0.4− | 2005 05 09 | 699 | 0.7− | 0.8− |
| 2002 09 14 | 608 | 0.4− | 0.7− | 2002 10 03 | 704 | 0.4+ | 0.2+ | 2005 05 12 | 691 | 0.4+ | 0.2+ |
| 2002 09 14 | 608 | 0.8− | 0.5− | 2005 05 08 | G96 | 0.6− | 0.3+ | 2005 05 12 | 691 | 0.1− | 0.2+ |
| 2002 09 30 | 608 | 0.1− | 0.7+ | 2005 05 08 | G96 | 0.5− | 0.2− | 2005 05 12 | 691 | 0.1+ | 0.0 |
| 2002 09 30 | 608 | 0.1− | 0.0 | 2005 05 08 | G96 | 0.5− | 0.2− | 2005 06 12 | G96 | 0.1− | 0.4− |
| 2002 09 30 | 608 | 0.3− | 0.1+ | 2005 05 08 | G96 | 0.5− | 0.1− | 2005 06 12 | G96 | 0.5+ | 0.3− |
| 2002 10 03 | 704 | 0.3− | 1.7+ | 2005 05 09 | 699 | 1.1+ | 0.4− | 2005 06 12 | G96 | 0.3− | 0.0 |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2005 05 09 | 699 | 0.3− | 0.0 | 2005 06 12 | G96 | 0.5+ | 0.3− |
| 2002 10 03 | 704 | 0.7+ | 0.0 | 2005 05 09 | 699 | 0.1+ | 1.0+ | | | | |

**2005 JQ$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.72841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23999777 | $\omega$ | 62.97999 | | +0.03035940 | | +0.99289661 |
| $a$ | 2.5644717 | $\Omega$ | 209.45671 | | −0.97980220 | | +0.00680303 |
| $e$ | 0.1626627 | $i$ | 13.52893 | | −0.19765110 | | +0.11878566 |
| $P$ | 4.11 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.1+ | 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.5− | 0.1+ |
| 2000 03 04 | 645 | 0.1+ | 0.2+ | 2005 05 13 | 691 | 0.5+ | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2001 06 21 | 704 | 0.1+ | 0.9+ | 2005 05 13 | 691 | 0.2+ | 0.2+ | 2006 10 04 | G96 | 0.6− | 0.7+ |
| 2001 06 21 | 704 | 0.2+ | 0.5− | 2005 06 03 | E12 | 0.6− | 0.4− | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2001 06 21 | 704 | 0.4− | 1.1− | 2005 06 03 | E12 | 0.2+ | 0.4− | 2006 10 04 | G96 | 0.2− | 0.1+ |
| 2001 06 21 | 704 | (2.1− | 0.9−) | 2005 06 03 | E12 | 0.6− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.6+ |
| 2005 01 17 | 809 | 0.2− | 0.3− | 2005 06 03 | E12 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.7+ |
| 2005 01 17 | 809 | 0.0 | 0.2− | 2005 06 25 | 644 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.5+ |
| 2005 01 17 | 809 | 0.4− | 0.2− | 2005 06 25 | 644 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2005 05 08 | 691 | 0.0 | 0.2+ | 2005 06 25 | 644 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.4+ |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2005 06 29 | 644 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.5+ |
| 2005 05 08 | 691 | 0.6− | 0.0 | 2005 06 29 | 644 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2005 05 09 | 691 | 0.1+ | 0.2+ | 2005 06 29 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2005 05 09 | 703 | 0.3+ | 0.8+ | 2005 06 30 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2005 05 09 | 703 | 0.0 | 0.2− | 2005 06 30 | 644 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2005 05 09 | 691 | 0.0 | 0.4+ | 2005 06 30 | 644 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2005 05 09 | 703 | (1.6− | 0.3−) | 2006 09 26 | G96 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.3− |
| 2005 05 09 | 703 | 0.3− | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2005 05 09 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.2− |

**2005 JM$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.25174 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25925283 | $\omega$ | 206.22560 | | +0.26478045 | | +0.96303120 |
| $a$ | 2.4358678 | $\Omega$ | 79.16124 | | −0.87561802 | | +0.26166528 |
| $e$ | 0.2140208 | $i$ | 2.89593 | | −0.40396088 | | +0.06404829 |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2005 06 04 | 691 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2005 06 04 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2005 06 04 | 703 | 1.0− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2005 06 04 | 703 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2005 04 11 | G96 | 0.5− | 0.1+ | 2005 06 04 | 703 | 0.7+ | 0.8− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2005 04 11 | G96 | 0.2− | 0.2− | 2005 06 04 | 703 | (2.2− | 0.0 ) | 2006 11 10 | 691 | 0.1− | 0.6+ |
| 2005 04 11 | G96 | 0.3− | 0.3− | 2005 06 13 | G96 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2005 05 08 | G96 | 0.1− | 0.1− | 2005 06 13 | G96 | 0.3− | 0.4+ | 2006 11 12 | G96 | 0.3+ | 0.0 |
| 2005 05 08 | G96 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.3− | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2005 05 08 | G96 | 0.2− | 0.2− | 2005 06 13 | G96 | 0.4− | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2005 05 08 | G96 | 0.0 | 0.1− | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2005 05 09 | 704 | 0.2− | 0.6+ | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.5+ |
| 2005 05 09 | 704 | 1.2+ | 0.0 | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2005 05 09 | 704 | 0.9+ | 0.2− | 2005 06 27 | 644 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.5+ |
| 2005 05 30 | 699 | 0.0 | 1.3+ | 2005 06 27 | 644 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.4+ |
| 2005 05 30 | 699 | 1.3+ | 0.6+ | 2005 06 27 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.3+ |
| 2005 05 30 | 699 | 0.8+ | 0.8+ | 2005 06 27 | 644 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2005 05 30 | 699 | 1.2+ | 1.1+ | 2005 06 27 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.7+ |
| 2005 06 04 | 691 | 0.3− | 0.4+ | 2005 06 27 | 644 | 0.1− | 0.3+ | | | | |

**2005 JQ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.37163 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22789606 | $\omega$ | 68.45180 | | +0.40845396 | | +0.89189130 |
| $a$ | 2.6544721 | $\Omega$ | 227.19248 | | −0.90434494 | | +0.36657102 |
| $e$ | 0.1867018 | $i$ | 15.34573 | | −0.12379657 | | +0.26486902 |
| $P$ | 4.32 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.3− |
| 2002 11 24 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2002 11 24 | 644 | 0.2− | 0.3+ | 2006 09 17 | 703 | 0.3+ | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2005 05 08 | G96 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2005 05 08 | G96 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.3− | 0.6− | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2005 05 08 | G96 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.3+ | 0.1+ |
| 2005 05 08 | G96 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.3+ | 0.3− | 2006 11 14 | 703 | 0.5+ | 0.4+ |
| 2005 05 09 | 704 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.2+ | 0.9− | 2006 11 14 | 703 | 0.0 | 1.3− |
| 2005 05 09 | 704 | 0.3+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 14 | 703 | 0.4− | 0.6− |
| 2005 05 09 | 704 | 0.1− | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2005 05 09 | 704 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2005 05 19 | 644 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2005 05 19 | 644 | 0.2+ | 0.1− | 2006 10 13 | 691 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2005 05 19 | 644 | 0.2+ | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.5− |
| 2005 05 31 | 699 | 0.2− | 0.0 | 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.6− | 0.3+ |
| 2005 05 31 | 699 | 0.5+ | 0.4− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.9− | 0.4− |
| 2005 05 31 | 699 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.5+ |
| 2005 05 31 | 699 | 0.5− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2005 06 03 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 0.4+ | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2005 06 03 | 691 | 0.1− | 0.4+ | 2006 10 19 | 703 | 1.0− | 0.5− | 2006 11 19 | 704 | (0.0 | 1.8+) |
| 2005 06 03 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.9− | 1.3− | 2006 11 19 | 704 | (1.3+ | 2.0+) |
| 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 19 | 704 | (0.2+ | 2.4+) |
| 2005 06 08 | 691 | 0.1− | 0.7− | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | (0.9+ | 2.3+) |
| 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.6− | 2006 11 19 | 704 | 0.7+ | 1.4+ |
| 2005 06 12 | 691 | (0.1− | 1.7+) | 2006 10 20 | G96 | 0.4+ | 0.8− | 2006 11 22 | 704 | 1.0− | 0.8+ |
| 2005 06 12 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.4− | 0.2− |
| 2005 06 12 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.6− |
| 2005 06 16 | 691 | 0.3− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.6− |
| 2005 06 16 | 691 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.5− | 0.6+ | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2005 06 16 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.2− |
| 2005 06 28 | 699 | 0.4− | 0.7− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.6+ | 0.0 |
| 2005 06 28 | 699 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2005 06 28 | 699 | 0.8+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.0 | | | | |
| 2005 06 28 | 699 | 0.5− | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | | | |

**2005 JA$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.03524 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23791870 | $\omega$ | 109.18539 | | +0.75126143 | | +0.64883016 |
| $a$ | 2.5793899 | $\Omega$ | 210.71954 | | −0.65867552 | | +0.72543096 |
| $e$ | 0.2079514 | $i$ | 13.69437 | | −0.04186677 | | +0.22971579 |
| $P$ | 4.14 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2005 05 08 | 699 | 0.1− | 0.5− | 2006 10 16 | 291 | 0.1− | 0.5+ | | |
| 2005 03 11 | G96 | 0.7− | 0.1+ | 2005 05 09 | 947 | 0.5− | 0.4− | 2006 10 16 | 291 | 0.0 | 0.5+ | | |
| 2005 03 11 | G96 | 0.6− | 0.1+ | 2005 05 09 | 947 | 0.7− | 1.1− | 2006 10 20 | 691 | 0.2+ | 0.2+ | | |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2005 05 10 | 947 | 0.3− | 0.8− | 2006 10 20 | 691 | 0.3+ | 0.3+ | | |
| 2005 04 07 | 691 | 0.2+ | 0.2+ | 2005 05 10 | 947 | 1.0− | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.3+ | | |
| 2005 04 07 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2005 04 07 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.3+ | | |
| 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.1+ | | |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.1− | 0.0 | | |
| 2005 04 16 | 691 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.6+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2005 04 30 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.0 | | |
| 2005 04 30 | 691 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2005 04 30 | 691 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.7+ | 1.7+ | | |
| 2005 05 08 | 699 | 0.1+ | 1.2+ | 2006 10 12 | 691 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.4+ | 1.1− | | |
| 2005 05 08 | 699 | (0.4− | 2.3+) | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.0 | | |
| 2005 05 08 | 699 | 0.4− | 1.3+ | 2006 10 16 | 291 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.5− | | |

**2005 JW$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.58498 | | (2000.0) | | | |
| $n$ | 0.27419726 | $\omega$ | 274.42368 | | +0.83237099 | +0.54324983 |
| $a$ | 2.3465365 | $\Omega$ | 52.71118 | | −0.43789551 | +0.76599843 |
| $e$ | 0.2727983 | $i$ | 7.92682 | | −0.33971466 | +0.34369467 |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 17 | 608 | 0.3− | 1.2− | 2002 10 31 | 704 | 0.5+ | 0.1− | 2005 04 16 | 691 | 0.2− | 0.7+ | | |
| 2002 09 17 | 608 | 0.5− | 0.2− | 2002 10 31 | 704 | 0.6+ | 0.1+ | 2005 05 03 | 691 | 0.2+ | 0.3+ | | |
| 2002 09 17 | 608 | 0.3− | 0.5− | 2002 10 31 | 699 | 0.2− | 0.3− | 2005 05 03 | 691 | 0.4+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.2− | 0.9+ | 2002 10 31 | 704 | 0.0 | 0.5− | 2005 05 03 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2002 10 31 | 699 | 0.6− | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.0 | | |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2002 10 31 | 704 | 0.7+ | 0.1+ | 2005 05 10 | G96 | 0.1− | 0.1+ | | |
| 2002 10 04 | 704 | 0.3− | 0.3− | 2002 10 31 | 704 | 0.3+ | 0.3− | 2005 05 10 | G96 | 0.2+ | 0.1− | | |
| 2002 10 10 | 644 | 0.0 | 0.2+ | 2002 11 04 | 608 | 0.3+ | 0.8+ | 2005 05 10 | G96 | 0.2− | 0.1+ | | |
| 2002 10 10 | 644 | 0.2+ | 0.1+ | 2002 11 04 | 608 | 0.4− | 0.3+ | 2005 06 01 | G96 | 0.1− | 0.6− | | |
| 2002 10 10 | 644 | 0.6+ | 0.3+ | 2002 11 04 | 608 | 0.6− | 1.0+ | 2005 06 01 | G96 | 0.1− | 0.4− | | |
| 2002 10 31 | 699 | 0.8− | 0.4− | 2005 04 16 | 691 | 0.2+ | 0.6+ | 2005 06 01 | G96 | 0.5+ | 0.6− | | |
| 2002 10 31 | 699 | 0.2+ | 0.5+ | 2005 04 16 | 691 | 0.7− | 0.8− | 2005 06 01 | G96 | 0.2+ | 0.4− | | |

**2005 JY$_{47}$ = 2006 UC$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.26562 | | (2000.0) | | | |
| $n$ | 0.21325105 | $\omega$ | 260.04725 | | +0.71550894 | +0.68206111 |
| $a$ | 2.7746525 | $\Omega$ | 56.76112 | | −0.54901611 | +0.68276060 |
| $e$ | 0.2883056 | $i$ | 10.40995 | | −0.43200494 | +0.26197443 |
| $P$ | 4.62 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.2− | 0.1− | 2005 05 12 | 691 | 0.0 | 0.1− | 2006 10 31 | 621 | 0.6− | 0.1+ | | |
| 2001 10 15 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 621 | 0.3+ | 0.3+ | 2006 10 31 | 621 | 0.8+ | 0.3+ | | |
| 2001 10 15 | 644 | 0.1− | 0.2+ | 2006 10 16 | 621 | 0.9+ | 0.8− | 2006 10 31 | 621 | 0.4+ | 0.7− | | |
| 2005 05 03 | 691 | 0.0 | 0.3− | 2006 10 16 | 621 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.1+ | | |
| 2005 05 03 | 691 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.8− | 2006 11 01 | 691 | 0.2+ | 0.4+ | | |
| 2005 05 03 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.6+ | | |
| 2005 05 10 | 691 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.4− | 0.9− | 2006 11 02 | 621 | 0.2− | 0.3− | | |
| 2005 05 10 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.4− | 2006 11 02 | 621 | 0.5− | 0.2+ | | |
| 2005 05 10 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 02 | 621 | 0.1+ | 0.4− | | |
| 2005 05 12 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2+ | | | | | | |
| 2005 05 12 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.6− | 0.1+ | | | | | | |

**2005 JE$_{48}$ = 2006 QD$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 315.23535 | | (2000.0) | | | |
| $n$ | 0.22847537 | $\omega$ | 307.14888 | | +0.77850592 | −0.59778272 |
| $a$ | 2.6499832 | $\Omega$ | 90.36347 | | +0.61924342 | +0.68188550 |
| $e$ | 0.0935055 | $i$ | 11.02716 | | +0.10230404 | +0.42153053 |
| $P$ | 4.31 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.5− | 0.9+ | 2005 05 03 | 691 | 0.3+ | 0.1+ | 2005 05 20 | G96 | 0.3− | 0.0 | | |
| 2002 10 16 | 644 | 0.5− | 0.9+ | 2005 05 10 | 691 | 0.2+ | 0.0 | 2005 05 20 | G96 | 0.5− | 0.1+ | | |
| 2002 10 16 | 644 | 0.5− | 1.1+ | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.3+ | | |
| 2004 04 15 | 645 | 0.1+ | 0.0 | 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.1+ | | |
| 2004 04 15 | 645 | 0.1− | 0.1− | 2005 05 14 | 691 | 0.2+ | 0.2− | 2006 08 16 | 644 | 0.3− | 0.1− | | |
| 2004 04 16 | 645 | 0.1+ | 0.1+ | 2005 05 14 | 691 | 0.2− | 0.4− | 2006 08 28 | E12 | 0.3− | 0.3− | | |
| 2004 04 16 | 645 | 0.0 | 0.1+ | 2005 05 14 | 691 | 0.3+ | 0.0 | 2006 08 28 | E12 | 0.3+ | 0.0 | | |
| 2005 05 03 | 691 | 0.3− | 0.3+ | 2005 05 20 | G96 | 0.6− | 0.1+ | 2006 08 28 | E12 | 0.1+ | 0.6+ | | |
| 2005 05 03 | 691 | 0.3+ | 0.5+ | 2005 05 20 | G96 | 0.6− | 0.2− | 2006 08 28 | E12 | 0.2+ | 0.2+ | | |

**2005 JL$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.42821 | | (2000.0) | | | |
| $n$ | 0.26048327 | $\omega$ | 180.88129 | | +0.99098046 | +0.13308740 |
| $a$ | 2.4281909 | $\Omega$ | 171.42297 | | −0.12229685 | +0.94598191 |
| $e$ | 0.1170988 | $i$ | 6.03024 | | −0.05478331 | +0.29564502 |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.2+ | 0.2+ | 2005 05 20 | G96 | 0.7− | 0.6− | 2006 10 22 | 703 | 0.5− | 0.7+ | | |
| 2005 05 03 | 691 | 0.2+ | 0.2+ | 2005 05 20 | G96 | 1.3− | 0.3− | 2006 11 19 | 703 | 0.2+ | 0.5+ | | |
| 2005 05 03 | 691 | 0.2− | 0.0 | 2005 05 20 | G96 | 0.9− | 0.8− | 2006 11 19 | 703 | 0.1− | 0.1− | | |
| 2005 05 10 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.2+ | | |
| 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 1.4− | 2006 11 19 | 703 | 0.4+ | 0.3+ | | |
| 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2005 05 14 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2005 05 14 | 691 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2005 05 14 | 691 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.6− | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2005 05 20 | G96 | 1.2− | 0.5− | 2006 10 22 | 703 | 0.6− | 0.9+ | | | | | | |

**2005 JT$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 320.06253 | | (2000.0) | | | |
| $n$ | 0.28005521 | $\omega$ | 319.13311 | | +0.58844149 | −0.79964683 |
| $a$ | 2.3136995 | $\Omega$ | 94.48591 | | +0.76953805 | +0.50851350 |
| $e$ | 0.0656158 | $i$ | 6.88960 | | +0.24808830 | +0.31934146 |
| $P$ | 3.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.1− | 0.3+ | 2005 06 12 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.7− | 1.4− | | |
| 2005 05 03 | 691 | 0.0 | 0.0 | 2005 06 12 | 691 | 0.0 | 0.3− | 2006 10 02 | 703 | 0.3+ | 1.4+ | | |
| 2005 05 03 | 691 | 1.4+ | 0.4− | 2005 06 12 | 691 | 0.4+ | 0.0 | 2006 10 02 | 703 | 0.7− | 0.6+ | | |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 21 | 699 | (0.2− | 1.8+) | 2006 10 02 | 703 | 0.2− | 0.4− | | |
| 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.5+ | 1.3+ | 2006 10 02 | 703 | 1.0− | 0.2− | | |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.7− | 0.7+ | 2006 10 17 | D35 | 0.4+ | 0.8+ | | |
| 2005 05 16 | G96 | 0.5− | 0.0 | 2006 09 21 | 699 | 0.5− | 0.9− | 2006 10 17 | D35 | 0.4+ | 0.0 | | |
| 2005 05 16 | G96 | 0.9− | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.3− | 2006 10 17 | D35 | 0.2+ | 0.3+ | | |
| 2005 05 16 | G96 | 0.4− | 0.2− | 2006 09 25 | 699 | (2.0+ | 0.6+) | 2006 10 28 | 703 | 0.1+ | 0.2+ | | |
| 2005 05 16 | G96 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.9+ | 0.5− | | |
| 2005 05 17 | G96 | 1.2− | 0.3+ | 2006 09 25 | 699 | 0.1+ | 1.2− | 2006 10 28 | 703 | 0.5+ | 0.0 | | |
| 2005 05 17 | G96 | 1.0− | 0.5− | 2006 09 26 | 703 | 0.2+ | 0.8− | 2006 10 28 | 703 | (1.3+ | 2.8+) | | |
| 2005 05 17 | G96 | 1.0− | 0.2− | 2006 09 26 | 703 | 0.3− | 0.1− | | | | | | |
| 2005 05 17 | G96 | 1.0− | 0.2− | 2006 09 26 | 703 | 0.2− | 0.1+ | | | | | | |

**2005 JM$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.38260 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21328343 | $\omega$ | 107.50777 | | +0.39875341 | +0.91702347 | |
| $a$ | 2.7743716 | $\Omega$ | 186.01064 | | −0.86764460 | +0.37443575 | |
| $e$ | 0.1369707 | $i$ | 4.37008 | | −0.29696558 | +0.13735290 | |
| $P$ | 4.62 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 691 | 0.3+ | 0.0 | 2005 05 10 | 691 | 0.0 | 0.0 | 2006 09 16 | 691 | 0.3− | 0.4+ |
| 2001 08 10 | 691 | 0.1− | 0.0 | 2005 05 10 | 691 | 0.2− | 0.0 | 2006 09 16 | 691 | 0.4+ | 0.1− |
| 2001 08 10 | 691 | 0.2− | 0.2− | 2005 05 17 | G96 | 0.7− | 0.4− | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2005 05 04 | 691 | 0.6+ | 0.1+ | 2005 05 17 | G96 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2005 05 04 | 691 | 0.4+ | 0.2+ | 2005 05 17 | G96 | 0.7− | 0.3− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2005 05 04 | 691 | 0.1+ | 0.3+ | 2005 05 17 | G96 | 0.9− | 0.4− | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2005 05 10 | 691 | 0.3− | 0.1− | 2006 09 16 | 691 | 0.0 | 0.0 | | | | |

**2005 JP$_{49}$ = 2006 SR$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.20867 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20981851 | $\omega$ | 283.50198 | | +0.97026658 | +0.18153392 | |
| $a$ | 2.8048320 | $\Omega$ | 66.23080 | | −0.09032896 | +0.88521353 | |
| $e$ | 0.1812272 | $i$ | 10.07435 | | −0.22455164 | +0.42830182 | |
| $P$ | 4.70 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 07 | 910 | 0.0 | 0.4+ | 2005 05 14 | G96 | 0.9− | 0.4− | 2006 09 20 | 703 | 0.8− | 0.3− |
| 1997 12 07 | 910 | 0.0 | 0.2+ | 2005 05 14 | G96 | 0.7− | 0.2− | 2006 09 21 | 699 | 1.0+ | 0.7+ |
| 1997 12 07 | 910 | 0.3− | 0.2+ | 2005 05 14 | G96 | 0.7− | 0.4− | 2006 09 21 | 699 | 0.5+ | 0.1− |
| 2001 07 20 | 644 | 0.1+ | 0.3− | 2005 05 14 | G96 | 0.4− | 0.5− | 2006 09 21 | 699 | 0.9+ | 0.7− |
| 2001 07 20 | 644 | 0.0 | 0.4− | 2005 05 19 | G96 | 0.4− | 0.7− | 2006 09 21 | 699 | 0.7+ | 0.0 |
| 2001 07 20 | 644 | 0.1+ | 0.6− | 2005 05 19 | G96 | 0.8− | 0.6− | 2006 09 26 | 703 | 0.6− | 0.5+ |
| 2005 04 16 | 691 | 0.4+ | 0.3+ | 2005 05 19 | G96 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.2+ | 0.5+ |
| 2005 04 16 | 691 | 0.2+ | 0.0 | 2005 05 19 | G96 | 0.1− | 0.6− | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 07 28 | E12 | 0.2− | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.4− |
| 2005 05 04 | 691 | 0.4− | 0.5+ | 2006 07 28 | E12 | 0.3− | 0.5+ | 2006 10 12 | E12 | 0.1− | 0.4− |
| 2005 05 04 | 691 | 0.2− | 0.5+ | 2006 07 28 | E12 | 0.2+ | 0.4+ | 2006 10 12 | E12 | 0.5− | 0.6− |
| 2005 05 04 | 691 | 0.1− | 0.4+ | 2006 07 28 | E12 | 0.9− | 0.2− | 2006 10 12 | E12 | 0.9+ | 0.1+ |
| 2005 05 10 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.1− | 2006 10 12 | E12 | 0.0 | 0.4− |
| 2005 05 10 | 691 | 0.4+ | 0.4− | 2006 09 20 | 703 | 0.5− | 0.3+ | | | | |
| 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 09 20 | 703 | 0.3− | 0.3+ | | | | |

**2005 JT$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.84157 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29770577 | $\omega$ | 22.43190 | | −0.84973838 | +0.52711129 | |
| $a$ | 2.2213204 | $\Omega$ | 189.39738 | | −0.49245350 | −0.80030428 | |
| $e$ | 0.0374234 | $i$ | 3.48268 | | −0.18823986 | −0.28577394 | |
| $P$ | 3.31 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 691 | 0.4+ | 0.0 | 2005 05 19 | G96 | 0.4− | 0.4− | 2006 10 16 | 291 | 0.0 | 0.3+ |
| 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 10 16 | 291 | 0.2+ | 0.3+ |
| 2005 05 04 | 691 | 0.4+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2005 05 10 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2005 05 10 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 29 | 291 | 0.3− | 0.1+ |
| 2005 05 16 | 691 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2005 05 16 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 10 29 | 291 | 0.1+ | 0.2+ |
| 2005 05 16 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2005 05 17 | G96 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2005 05 17 | G96 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2005 05 17 | G96 | 0.2− | 0.4− | 2006 10 15 | 703 | (1.3− | 1.6+) | 2006 10 31 | G96 | 0.5− | 0.1− |
| 2005 05 17 | G96 | 0.5− | 0.1+ | 2006 10 15 | 703 | 1.4− | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2005 05 19 | G96 | 0.7− | 0.1− | 2006 10 15 | 703 | (2.3− | 0.8−) | 2006 11 01 | 691 | 0.2− | 0.3− |
| 2005 05 19 | G96 | 0.7− | 0.5− | 2006 10 15 | 703 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.8+ | 0.1+ |
| 2005 05 19 | G96 | 0.7− | 0.2− | 2006 10 16 | 291 | 0.1− | 0.2+ | | | | |

**2005 JE$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.28250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22097169 | $\omega$ | 87.74313 | | +0.16325941 | +0.98644332 | |
| $a$ | 2.7096401 | $\Omega$ | 191.69259 | | −0.93462750 | +0.14924787 | |
| $e$ | 0.1276697 | $i$ | 4.70171 | | −0.31593954 | +0.06822507 | |
| $P$ | 4.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 16 | 691 | 0.2− | 0.1+ | 2005 05 17 | G96 | 0.4− | 0.5− | 2006 09 23 | 291 | 0.3− | 0.4+ |
| 2005 04 16 | 691 | 0.2+ | 0.1+ | 2005 05 19 | G96 | 0.4− | 0.6− | 2006 09 23 | 291 | 0.5+ | 0.5+ |
| 2005 04 16 | 691 | 0.0 | 0.2+ | 2005 05 19 | G96 | 0.9− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2005 05 04 | 691 | 0.4+ | 0.1+ | 2005 05 19 | G96 | 0.7− | 0.6− | 2006 09 23 | 691 | 0.3+ | 0.2− |
| 2005 05 04 | 691 | 0.1+ | 0.0 | 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2005 05 04 | 691 | 0.0 | 0.0 | 2006 08 21 | 691 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2005 05 10 | 691 | 0.2+ | 0.2− | 2006 08 21 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.7− |
| 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1− | 0.6− |
| 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.3− |
| 2005 05 16 | 691 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.4− | 0.1+ |
| 2005 05 16 | 691 | 0.6− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.2− |
| 2005 05 16 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.6+ |
| 2005 05 17 | G96 | 0.8− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2005 05 17 | G96 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.5+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2005 05 17 | G96 | 0.1− | 0.2− | 2006 09 23 | 291 | 0.0 | 0.7+ | | | | |

**2005 JY$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.32342 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29577145 | $\omega$ | 131.30945 | | +0.94324948 | +0.32631300 | |
| $a$ | 2.2309948 | $\Omega$ | 209.79892 | | −0.32950685 | +0.89657305 | |
| $e$ | 0.0316236 | $i$ | 7.12573 | | −0.04129962 | +0.29946049 | |
| $P$ | 3.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.2+ | 0.2+ | 2006 10 01 | 291 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 10 01 | 291 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2005 05 04 | 691 | 0.4+ | 0.1+ | 2006 10 15 | 691 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2005 05 04 | 691 | 0.5+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2005 05 10 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2005 05 10 | 691 | 0.2− | 0.2+ | 2006 10 16 | 683 | 0.8+ | 1.3+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 10 16 | 683 | (0.2+ | 1.9+) | 2006 10 28 | G96 | 0.3+ | 0.6− |
| 2005 05 16 | 691 | 0.3− | 0.2+ | 2006 10 16 | 683 | 0.8− | 1.1+ | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2005 05 17 | G96 | 0.5− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2005 05 17 | G96 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 13 | 291 | 0.1− | 0.1+ |
| 2005 05 17 | G96 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 13 | 291 | 0.0 | 0.0 |
| 2005 05 17 | G96 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 291 | 0.1− | 0.1− |
| 2005 05 19 | G96 | 0.3− | 0.4− | 2006 10 21 | 703 | 1.1+ | 1.0+ | 2006 11 13 | 291 | 0.1− | 0.1+ |
| 2005 05 19 | G96 | 0.3− | 0.5− | 2006 10 21 | 703 | (1.8− | 1.1+) | 2006 11 13 | 291 | 0.0 | 0.3+ |
| 2005 05 19 | G96 | 0.6− | 0.6− | 2006 10 21 | 703 | 0.9+ | 0.4+ | 2006 11 13 | 291 | 0.0 | 0.3+ |
| 2005 05 19 | G96 | 0.7− | 0.5− | 2006 10 21 | 703 | 0.8+ | 0.4+ | 2006 11 21 | 704 | 1.4+ | 1.2+ |
| 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 1.2− | 0.6+ |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | (1.8− | 1.6+) |
| 2006 10 01 | 291 | 0.5− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.3− | | | | |

**2005 JX$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.56271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26991694 | $\omega$ | 168.55682 | | −0.05728640 | +0.99183560 | |
| $a$ | 2.3712788 | $\Omega$ | 98.08423 | | −0.92481727 | −0.00973218 | |
| $e$ | 0.1989293 | $i$ | 6.60796 | | −0.37607352 | −0.12715121 | |
| $P$ | 3.65 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 691 | 0.0 | 0.1− | 2005 05 16 | 691 | 0.1− | 0.0 | 2005 06 09 | 691 | 0.1− | 0.0 |
| 2005 04 17 | 691 | 0.0 | 0.0 | 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2005 04 17 | 691 | 0.1− | 0.3− | 2005 05 16 | 691 | 0.4+ | 0.8+ | 2006 11 17 | G96 | 0.1− | 0.7− |
| 2005 05 04 | 691 | 0.2− | 0.0 | 2005 05 31 | 699 | 0.8− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.5+ |
| 2005 05 04 | 691 | 0.1+ | 0.0 | 2005 05 31 | 699 | 0.8+ | 0.7− | 2006 11 17 | G96 | 0.5+ | 1.6− |
| 2005 05 04 | 691 | 0.1− | 0.1− | 2005 05 31 | 699 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.4− | 1.3+ |
| 2005 05 10 | 691 | 0.2+ | 0.1− | 2005 05 31 | 699 | 0.6+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.5+ |
| 2005 05 10 | 691 | 0.0 | 0.1− | 2005 06 09 | 691 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2005 06 09 | 691 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.1− | 0.0 |

**2005 JA$_{53}$ = 2006 SH$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.88487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21629704 | $\omega$ | 84.66028 | | +0.53170782 | +0.84453756 | |
| $a$ | 2.7485417 | $\Omega$ | 217.68426 | | −0.81240503 | +0.48737762 | |
| $e$ | 0.0400196 | $i$ | 5.97042 | | −0.23934256 | +0.22185438 | |
| $P$ | 4.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 29 | 291 | 0.1− | 0.1+ | 2005 05 04 | G96 | 0.6− | 0.6+ | 2006 09 25 | 691 | 0.8+ | 0.0 |
| 2002 10 29 | 291 | 0.1+ | 0.5+ | 2005 05 04 | G96 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.8+ |
| 2002 10 29 | 291 | 0.2− | 0.4+ | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 04 07 | 691 | 0.1− | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2005 04 07 | 691 | 0.2+ | 0.0 | 2005 05 10 | G96 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2005 04 07 | 691 | 0.2+ | 0.0 | 2005 05 10 | G96 | 0.4+ | 0.5+ | 2006 09 30 | 691 | 0.4− | 0.2− |
| 2005 05 04 | G96 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.8− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2005 05 04 | G96 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.7− | | | | |

**2005 JS$_{54}$ = 2002 TJ$_{373}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.56408 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26577535 | $\omega$ | 27.12334 | | +0.15812587 | +0.98735247 | |
| $a$ | 2.3958498 | $\Omega$ | 251.97662 | | −0.90811044 | +0.14085876 | |
| $e$ | 0.1617071 | $i$ | 0.69043 | | −0.38772624 | +0.07275922 | |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 644 | 0.1+ | 0.0 | 2005 05 16 | 644 | 0.5+ | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.5− |
| 2002 10 06 | 644 | 0.1− | 0.1− | 2005 05 16 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.4− |
| 2002 10 06 | 644 | 0.1− | 0.3+ | 2005 05 16 | 644 | 0.5+ | 0.1+ | 2006 10 16 | 691 | 0.5+ | 0.5− |
| 2005 03 10 | G96 | 0.4+ | 0.2− | 2005 06 09 | 701 | (0.4− | 2.6+) | 2006 10 16 | 691 | 0.3+ | 0.0 |
| 2005 03 10 | G96 | 0.5− | 0.6+ | 2005 06 09 | 701 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3+ | 0.6+ |
| 2005 03 10 | G96 | 0.1− | 0.2+ | 2005 06 09 | 701 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.3+ | 0.1− |
| 2005 03 10 | G96 | 0.0 | 0.5+ | 2005 06 10 | 701 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2005 05 04 | G96 | 0.1− | 0.3− | 2005 06 10 | 701 | 0.8− | 1.2+ | 2006 11 01 | 691 | 0.3− | 0.5+ |
| 2005 05 04 | G96 | 0.0 | 0.3+ | 2005 06 14 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.4− | 0.2− |
| 2005 05 04 | G96 | 0.1− | 0.2+ | 2005 06 14 | G96 | 0.4− | 0.3− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2005 05 04 | G96 | 0.4+ | 0.4+ | 2005 06 14 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2005 05 10 | G96 | 0.1− | 0.1− | 2005 06 14 | G96 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.6+ |
| 2005 05 10 | G96 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.6− | 0.5+ | 2006 11 01 | 691 | 0.3− | 0.3− |
| 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.3− | | | | |
| 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2− | | | | |

**2005 JW$_{54}$ = 2006 QL$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.39720 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17050524 | $\omega$ | 321.21832 | | +0.23271525 | +0.97253806 | |
| $a$ | 3.2209024 | $\Omega$ | 322.23826 | | −0.89080045 | +0.21164698 | |
| $e$ | 0.1436774 | $i$ | 0.34161 | | −0.39027961 | +0.09682601 | |
| $P$ | 5.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.4+ | 0.2− | 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 09 13 | 734 | 0.3− | 0.4− |
| 2000 08 30 | 691 | 0.4− | 0.1+ | 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 09 13 | 734 | (4.0+ | 1.3+) |
| 2000 08 30 | 691 | 0.0 | 0.1+ | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 09 13 | 734 | 1.1+ | 0.1+ |
| 2005 01 17 | 809 | 0.2+ | 0.1+ | 2005 06 11 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2005 01 17 | 809 | 0.0 | 0.1− | 2005 06 11 | 691 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2005 01 17 | 809 | 0.2− | 0.3− | 2006 08 31 | 734 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2005 05 04 | G96 | 0.1− | 1.0− | 2006 08 31 | 734 | 0.4+ | 0.4− | 2006 09 25 | G96 | 0.1− | 0.8− |
| 2005 05 04 | G96 | 0.5− | 0.3+ | 2006 08 31 | 734 | 0.2+ | 0.4+ | 2006 10 19 | 695 | 0.3− | 0.6+ |
| 2005 05 04 | G96 | 0.4− | 0.4+ | 2006 08 31 | 734 | 1.5− | 1.0+ | 2006 10 19 | 695 | 0.2− | 0.6+ |
| 2005 05 04 | G96 | 0.3− | 0.0 | 2006 08 31 | 734 | 0.1+ | 0.0 | 2006 10 20 | 695 | 0.2− | 0.4+ |
| 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 01 | 734 | (1.7− | 0.4−) | | | | |
| 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 09 01 | 734 | 1.2+ | 1.1− | | | | |

**2005 JB$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.59066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26413170 | $\omega$ | 13.88200 | | −0.97258379 | +0.23255094 | |
| $a$ | 2.4057788 | $\Omega$ | 179.56220 | | −0.22309597 | −0.93192427 | |
| $e$ | 0.0601655 | $i$ | 6.82615 | | −0.06564262 | −0.27827543 | |
| $P$ | 3.73 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 691 | 0.4+ | 0.4+ | 2005 06 05 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.1− | 0.4+ |
| 2001 04 15 | 691 | 0.1− | 0.2+ | 2005 06 05 | 691 | 0.3+ | 0.5− | 2006 09 19 | 291 | 0.3− | 0.7+ |
| 2001 04 15 | 691 | 0.0 | 0.5+ | 2005 06 13 | G96 | 1.0− | 0.2+ | 2006 09 19 | 291 | 0.5− | 0.3+ |
| 2005 05 04 | 691 | 0.0 | 0.1− | 2005 06 13 | 291 | 0.1+ | 0.2− | 2006 09 19 | 291 | 0.7− | 0.3+ |
| 2005 05 04 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.4− | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.7+ |
| 2005 05 04 | 691 | 0.1+ | 0.1+ | 2005 06 13 | 291 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.4− |
| 2005 05 10 | 691 | 0.2+ | 0.1+ | 2005 06 13 | G96 | 0.8− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2005 05 10 | 691 | 0.1+ | 0.1+ | 2005 06 13 | 291 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2005 05 10 | 691 | 0.0 | 0.3+ | 2005 06 13 | G96 | 1.0− | 0.7+ | 2006 09 26 | G96 | 0.4− | 0.6− |
| 2005 05 20 | G96 | 0.9− | 0.1− | 2005 06 14 | 291 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.2− |
| 2005 05 20 | G96 | 0.5− | 0.1+ | 2005 06 14 | 291 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2005 05 20 | G96 | 0.7− | 0.3− | 2005 06 14 | 291 | 0.2+ | 0.2− | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2005 05 20 | G96 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2005 06 05 | 691 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.4+ | 0.3− | | | | |

**2005 JJ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.91478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29487574 | $\omega$ | 179.80010 | | +0.98703089 | +0.15981320 | |
| $a$ | 2.2355104 | $\Omega$ | 170.96130 | | −0.14741739 | +0.93973295 | |
| $e$ | 0.1089423 | $i$ | 5.53684 | | −0.06354635 | +0.30226103 | |
| $P$ | 3.34 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 16 | 691 | 0.1− | 0.4− | 2005 05 14 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.2+ |
| 1998 05 16 | 691 | 0.0 | 0.1− | 2005 05 14 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.5+ |
| 1998 05 16 | 691 | 0.1− | 0.4− | 2005 05 14 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.5+ |
| 1999 09 30 | 703 | 0.7+ | 0.1+ | 2005 05 14 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.5+ |
| 1999 09 30 | 703 | 0.2− | 0.3− | 2005 05 14 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.3+ |
| 1999 09 30 | 703 | 0.2− | 0.5− | 2005 05 14 | 691 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.1− | 0.4+ |
| 1999 09 30 | 703 | 0.2− | 0.2− | 2005 05 17 | G96 | 0.5− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.6+ |
| 2005 05 04 | 691 | 0.3+ | 0.0 | 2005 05 17 | G96 | 0.5− | 1.4+ | 2006 11 22 | G96 | 0.2− | 0.4+ |
| 2005 05 04 | 691 | 0.0 | 0.0 | 2005 05 17 | G96 | 1.0− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2005 05 04 | 691 | 0.2+ | 0.1− | 2005 05 17 | G96 | 0.7− | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.3+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.4+ | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.1− | | | |
| 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.3+ | | | |
| 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.1+ | | | |

**2005 JK$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.27099 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25610164 | $\omega$ | 76.36240 | | −0.19341312 | | +0.98110691 |
| $a$ | 2.4558084 | $\Omega$ | 182.49900 | | −0.93559581 | | −0.18582984 |
| $e$ | 0.1122478 | $i$ | 5.97436 | | −0.29538422 | | −0.05381914 |
| $P$ | 3.85 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 691 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 1.0− | 0.3+ | | | |
| 1998 09 15 | 691 | 0.1+ | 0.3− | 2005 06 15 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.5+ | | | |
| 1998 09 15 | 691 | 0.2− | 0.5− | 2005 06 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.5+ | | | |
| 2002 11 08 | 645 | 0.1+ | 0.1− | 2005 06 15 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.5+ | | | |
| 2002 11 08 | 645 | 0.1+ | 0.1− | 2005 06 23 | 644 | 0.9− | 0.5− | 2006 10 01 | 691 | 0.0 | 0.2+ | | | |
| 2005 05 04 | 691 | 0.1− | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.3+ | | | |
| 2005 05 04 | 691 | 0.0 | 0.1− | 2005 06 23 | 644 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.3+ | | | |
| 2005 05 04 | 691 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− | | | |
| 2005 05 10 | 691 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.1+ | | | |
| 2005 05 10 | 691 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.1− | | | |
| 2005 05 10 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.1− | | | |
| 2005 06 05 | 704 | 0.3− | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.2+ | | | |
| 2005 06 05 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.0 | | | |
| 2005 06 05 | 704 | 1.0− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1+ | | | |
| 2005 06 11 | 691 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.7− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− | | | |
| 2005 06 11 | 691 | 0.4+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.0 | | | | | | | |

**2005 JR$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.51365 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23926422 | $\omega$ | 256.83208 | | +0.51378554 | | +0.85601685 |
| $a$ | 2.5697106 | $\Omega$ | 44.23653 | | −0.75202443 | | +0.48139782 |
| $e$ | 0.2177748 | $i$ | 4.69428 | | −0.41289669 | | +0.18839133 |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 644 | 0.3− | 0.2+ | 2005 05 11 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1+ | | | |
| 2005 05 04 | 644 | 0.2− | 0.5+ | 2005 05 11 | 644 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1− | | | |
| 2005 05 04 | 644 | 0.0 | 0.2+ | 2005 05 14 | 704 | 1.3+ | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.1− | | | |
| 2005 05 10 | 699 | 0.0 | 0.3− | 2005 05 14 | 704 | 0.5+ | 1.0+ | 2006 10 27 | G96 | 0.4− | 0.3+ | | | |
| 2005 05 10 | 699 | 0.3− | 0.1+ | 2005 05 14 | 704 | 1.5+ | 0.5+ | 2006 11 12 | G96 | 0.4+ | 0.1− | | | |
| 2005 05 10 | 699 | 0.3− | 0.1− | 2005 05 14 | 704 | 0.3+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.0 | | | |
| 2005 05 10 | 699 | 0.5+ | 0.7− | 2005 05 19 | 644 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.1− | | | |
| 2005 05 10 | G96 | 0.5− | 0.1+ | 2005 05 19 | 644 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.0 | | | |
| 2005 05 10 | G96 | 0.5− | 0.1+ | 2005 05 19 | 644 | 0.3− | 0.4− | 2006 11 14 | 691 | 0.1− | 0.3+ | | | |
| 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.1− | 0.1+ | | | |
| 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1− | 0.1+ | | | |
| 2005 05 11 | 644 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.2+ | | | | | | | |

**2005 JG$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.35383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22633854 | $\omega$ | 210.49502 | | +0.93143812 | | +0.31106906 |
| $a$ | 2.6666359 | $\Omega$ | 130.14612 | | −0.26356798 | | +0.93448350 |
| $e$ | 0.1604384 | $i$ | 14.30227 | | −0.25090824 | | +0.17313759 |
| $P$ | 4.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 06 | 691 | 0.3+ | 0.1+ | 2005 06 25 | 644 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.6− | | | |
| 2005 05 06 | 691 | 0.1− | 0.1− | 2005 06 25 | 644 | 0.6− | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.9− | | | |
| 2005 05 06 | 691 | 0.2+ | 0.1+ | 2005 06 30 | 644 | (2.1− | 0.2+) | 2006 10 21 | 703 | 0.4+ | 0.9− | | | |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2005 06 30 | 644 | 0.5− | 0.1− | 2006 10 31 | 703 | 1.1+ | 0.5+ | | | |
| 2005 05 10 | 691 | 0.0 | 0.1− | 2005 06 30 | 644 | 0.4− | 0.1+ | 2006 10 31 | 703 | 1.1− | 0.8+ | | | |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.3+ | 2006 10 31 | 703 | 0.3− | 0.2+ | | | |
| 2005 05 15 | 644 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.2+ | 2006 10 31 | 703 | 1.1− | 0.1+ | | | |
| 2005 05 15 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.0 | 2006 11 18 | 703 | 0.3+ | 0.6+ | | | |
| 2005 05 15 | 644 | 0.0 | 0.2+ | 2006 09 26 | 703 | 1.0− | 0.1− | 2006 11 18 | 703 | 0.2+ | 0.2+ | | | |
| 2005 05 20 | 644 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.0 | 2006 11 18 | 703 | 1.2+ | 0.1+ | | | |
| 2005 05 20 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 18 | 703 | 0.5+ | 1.4+ | | | |
| 2005 05 20 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.1− | | | | | | | |
| 2005 06 25 | 644 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2− | 0.7− | | | | | | | |

**2005 JD$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.83588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23797545 | $\omega$ | 348.04151 | | +0.84212653 | | +0.53924611 |
| $a$ | 2.5789798 | $\Omega$ | 339.32271 | | −0.49335819 | | +0.76584202 |
| $e$ | 0.0370226 | $i$ | 0.98080 | | −0.21776270 | | +0.35028507 |
| $P$ | 4.14 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 691 | 0.1+ | 0.3− | 2005 05 16 | G96 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.1− | | | |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | | | |
| 2004 01 27 | 691 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2+ | | | |
| 2004 02 16 | 691 | 0.3+ | 0.6+ | 2006 08 28 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 701 | 0.3− | 0.2+ | | | |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.8+ | 2006 09 26 | 701 | 0.5− | 0.5+ | | | |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | (1.2− | 1.8+) | 2006 09 26 | 701 | 0.1− | 0.1− | | | |
| 2005 05 07 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 1.0− | 0.0 | 2006 09 26 | 701 | 0.1+ | 0.4+ | | | |
| 2005 05 07 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.6− | 0.5− | | | |
| 2005 05 07 | 691 | 0.3+ | 0.1+ | 2006 09 13 | 644 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.1− | | | |
| 2005 05 10 | G96 | 0.0 | 0.3+ | 2006 09 13 | 644 | 0.4+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.6− | | | |
| 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.1− | 0.1− | | | |
| 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.6− | 0.4− | | | |
| 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− | | | |
| 2005 05 16 | G96 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.4− | | | |
| 2005 05 16 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.5− | | | |
| 2005 05 16 | G96 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2− | 0.0 | | | | | | | |

**2005 JQ$_{57}$ = 2006 RJ$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.86130 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22843550 | $\omega$ | 113.23784 | | +0.99483583 | | +0.08295436 |
| $a$ | 2.6502915 | $\Omega$ | 242.04772 | | −0.09873956 | | +0.92439630 |
| $e$ | 0.1216083 | $i$ | 3.79614 | | +0.02349833 | | +0.37230371 |
| $P$ | 4.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.5− | 0.7+ | 2006 08 30 | 704 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.5+ | 0.6− | | | |
| 2002 10 31 | 644 | 0.2− | 0.9+ | 2006 09 12 | 703 | 0.6− | 1.2− | 2006 09 19 | 699 | 0.2− | 0.3− | | | |
| 2002 10 31 | 644 | 0.1+ | 0.5+ | 2006 09 12 | 703 | (2.1− | 1.8+) | 2006 09 19 | 703 | 0.2− | 1.5− | | | |
| 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.2+ | 1.1− | 2006 09 19 | 703 | 0.5+ | 1.0− | | | |
| 2005 05 07 | 691 | 0.4+ | 0.6+ | 2006 09 12 | 703 | (0.7− | 1.7−) | 2006 09 19 | 699 | 0.7+ | 0.2− | | | |
| 2005 05 07 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.2− | 0.6− | | | |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.2+ | | | |
| 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ | | | |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 16 | 699 | (2.0− | 1.3+) | 2006 10 18 | 691 | 0.0 | 0.2+ | | | |
| 2005 05 10 | G96 | 0.3− | 0.0 | 2006 09 16 | 699 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | | | |
| 2005 05 11 | 691 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.5− | 0.6− | 2006 10 20 | 691 | 0.1− | 0.4+ | | | |
| 2005 05 11 | 691 | 0.1− | 0.1− | 2006 09 16 | 699 | 0.8− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.4+ | | | |
| 2005 05 11 | 691 | 0.3− | 0.3+ | 2006 09 18 | 704 | 0.6− | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.3+ | | | |
| 2005 05 16 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.5− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2+ | | | |
| 2005 05 16 | 691 | 0.1+ | 0.3− | 2006 09 18 | 704 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.2+ | | | |
| 2005 05 16 | 691 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.2− | | | |
| 2006 08 30 | 704 | 0.2− | 1.2− | 2006 09 18 | 704 | 0.1− | 0.2+ | | | | | | | |
| 2006 08 30 | 704 | 1.1+ | 0.2+ | 2006 09 19 | 699 | 1.2+ | 0.3+ | | | | | | | |

**2005 JA$_{58}$ = 2006 TQ$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 44.72164 | | (2000.0) | | | |
| $n$ | 0.23337566 | $\omega$ | 304.80555 | | +0.78100140 | +0.62444349 |
| $a$ | 2.6127569 | $\Omega$ | 16.56097 | | −0.56048040 | +0.70812030 |
| $e$ | 0.1948449 | $i$ | 2.08109 | | −0.27549689 | +0.32959971 |
| $P$ | 4.22 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2005 05 07 | 691 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.9+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2005 05 10 | G96 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2005 05 10 | G96 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.4− | 2006 11 17 | 691 | 0.1+ | 0.3− |
| 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.2+ |
| 2005 05 16 | G96 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.6− |
| 2005 05 16 | G96 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.6− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2005 05 16 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.6+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2005 05 16 | G96 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | | | | |

**2005 JB$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.30534 | | (2000.0) | | | |
| $n$ | 0.29412341 | $\omega$ | 109.10618 | | +0.69308546 | +0.71970885 |
| $a$ | 2.2393208 | $\Omega$ | 204.91642 | | −0.69232164 | +0.64888674 |
| $e$ | 0.1314003 | $i$ | 5.53578 | | −0.20080658 | +0.24691125 |
| $P$ | 3.35 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.9− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 03 11 | G96 | 1.0− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2005 03 11 | G96 | 0.7− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 03 11 | G96 | 0.8− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 04 30 | 691 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 1.2− | 0.1− |
| 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.5− | 0.2− |
| 2005 05 08 | G96 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2005 05 08 | G96 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2005 05 08 | G96 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2005 05 08 | G96 | 0.4− | 0.4− | 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 05 10 | 691 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2005 05 12 | 291 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2005 05 12 | 291 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2005 05 12 | 291 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2005 05 13 | G96 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2005 05 13 | G96 | 0.3− | 0.1− | 2006 10 20 | 703 | 0.8− | 0.4+ | 2006 11 11 | 691 | 0.3+ | 0.4+ |
| 2005 05 13 | G96 | 0.7− | 0.2+ | 2006 10 20 | 703 | 1.1− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 2005 05 13 | G96 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 703 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 20 | 703 | 0.5− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2006 09 27 | J75 | 0.1− | 1.0− | 2006 10 21 | 703 | 0.1+ | 0.9+ | 2006 11 20 | G96 | 0.8+ | 0.1+ |
| 2006 09 28 | J75 | (1.7+ | 0.1−) | 2006 10 21 | 703 | 0.5− | 0.1− | 2006 11 20 | G96 | 0.7+ | 0.0 |
| 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.2− | 2006 11 20 | G96 | 0.8+ | 0.3− |
| 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.3− | 0.1+ |
| 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ | | | | |
| 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | | | |

**2005 JF$_{59}$ = 2006 SA$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 126.16095 | | (2000.0) | | | |
| $n$ | 0.29562836 | $\omega$ | 25.52724 | | −0.61203778 | +0.78990507 |
| $a$ | 2.2317146 | $\Omega$ | 206.78641 | | −0.73932881 | −0.58866220 |
| $e$ | 0.1003306 | $i$ | 4.86326 | | −0.28071812 | −0.17183366 |
| $P$ | 3.33 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.0 | 0.2+ | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.6− | 0.3− |
| 2005 03 14 | G96 | 0.5− | 0.5− | 2005 05 08 | G96 | 0.4− | 0.5− | 2006 09 25 | 691 | 0.4+ | 0.1+ |
| 2005 03 14 | G96 | 0.1− | 0.6+ | 2005 05 08 | G96 | 0.8− | 0.6− | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 2005 03 14 | G96 | 0.8+ | 0.1+ | 2005 05 10 | 691 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2005 04 30 | 691 | 0.3− | 0.2− | 2005 05 10 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.3− | 0.1− |
| 2005 04 30 | 691 | 0.2− | 0.2+ | 2005 05 10 | 691 | 0.4+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2005 04 30 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2005 05 08 | G96 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.6+ | | | | |

**2005 JG$_{59}$ = 2006 WL$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 98.16496 | | (2000.0) | | | |
| $n$ | 0.28232335 | $\omega$ | 198.58889 | | +0.28165331 | +0.95762928 |
| $a$ | 2.3012909 | $\Omega$ | 87.80451 | | −0.87253065 | +0.28169549 |
| $e$ | 0.1935285 | $i$ | 3.45075 | | −0.39920129 | +0.05994846 |
| $P$ | 3.49 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.7− | 0.0 | 2005 05 10 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.2+ |
| 1999 11 05 | 691 | 0.4− | 0.2− | 2005 05 10 | 691 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 1999 11 05 | 691 | 0.2+ | 0.6− | 2005 05 16 | 691 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 1999 11 28 | 691 | 0.7+ | 0.5− | 2005 05 16 | 691 | 0.4+ | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 1999 11 28 | 691 | 0.2+ | 0.1− | 2005 05 16 | 691 | 0.3+ | 0.1− | 2006 11 25 | 291 | 0.4+ | 0.5+ |
| 1999 11 28 | 691 | 0.5+ | 0.4− | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 25 | 291 | 0.5− | 0.3+ |
| 2005 05 08 | 699 | (2.6− | 1.9+) | 2006 11 15 | 691 | 0.1+ | 0.7+ | 2006 11 25 | 291 | 0.1+ | 0.7+ |
| 2005 05 08 | 699 | 0.5− | 0.6+ | 2006 11 15 | 691 | 0.6− | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2005 05 08 | 699 | 0.6+ | 1.2− | 2006 11 23 | 691 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2005 05 08 | 699 | 0.8− | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.0 |
| 2005 05 10 | 691 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.3− | 0.5− | 2006 11 25 | G96 | 0.7+ | 0.3− |

**2005 JP$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 233.27826 | | (2000.0) | | | |
| $n$ | 0.27446507 | $\omega$ | 307.90129 | | −0.62618043 | −0.77967645 |
| $a$ | 2.3450098 | $\Omega$ | 180.87275 | | +0.74492696 | −0.59764723 |
| $e$ | 0.0416609 | $i$ | 6.19355 | | +0.23017796 | −0.18687541 |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.9− | 0.6− | 2005 05 14 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2005 04 04 | G96 | 0.4− | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2005 04 04 | G96 | 1.1− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2005 04 04 | G96 | 0.2− | 0.2− | 2006 08 28 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2005 05 08 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2005 05 10 | 691 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2005 05 10 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2005 05 10 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2+ |
| 2005 05 14 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.3− | 0.2− | | | | |
| 2005 05 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2− | | | | |

**2005 JH$_{60}$ = 2006 QZ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.74126 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19379471 | $\omega$ | 166.54069 | | +0.69417220 | | +0.71788049 |
| $a$ | 2.9573866 | $\Omega$ | 147.37287 | | −0.66912421 | | +0.67052782 |
| $e$ | 0.1141520 | $i$ | 5.60441 | | −0.26532574 | | +0.18718986 |
| $P$ | 5.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.2− | 0.4− | 2005 06 09 | 691 | 0.1− | 0.1+ | 2006 08 21 | 691 | 0.1− | 0.1+ | |
| 2005 05 08 | 691 | 0.0 | 0.2− | 2005 06 09 | 691 | 0.1+ | 0.2+ | 2006 08 21 | 691 | 0.3+ | 0.0 | |
| 2005 05 08 | 691 | 0.0 | 0.3+ | 2005 06 09 | 691 | 0.2+ | 0.4+ | 2006 08 21 | 691 | 0.0 | 0.4− | |
| 2005 05 10 | 691 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.5+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ | |
| 2005 05 10 | 691 | 0.3− | 0.0 | 2006 08 21 | 691 | 0.2− | 0.4− | 2006 08 28 | 691 | 0.2− | 0.1+ | |
| 2005 05 10 | 691 | 0.1+ | 0.3− | 2006 08 21 | 691 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.0 | |

**2005 JL$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.64624 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23211159 | $\omega$ | 224.52217 | | +0.98470811 | | +0.15457342 |
| $a$ | 2.6222343 | $\Omega$ | 126.41943 | | −0.11850637 | | +0.93241897 |
| $e$ | 0.2952506 | $i$ | 5.73103 | | −0.12769564 | | +0.32665260 |
| $P$ | 4.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2005 06 05 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.0 | |
| 2005 05 08 | 691 | 0.3+ | 0.1− | 2005 06 05 | 691 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.0 | |
| 2005 05 08 | 691 | 0.0 | 0.4− | 2005 06 09 | 691 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.0 | |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2005 06 09 | 691 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.4+ | 0.0 | |
| 2005 05 10 | 691 | 0.3− | 0.2+ | 2005 06 09 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.8+ | 1.2− | |
| 2005 05 10 | 691 | 0.2− | 0.1− | 2006 11 15 | 703 | 1.0− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.7+ | |
| 2005 05 16 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.1+ | 2.1− | |
| 2005 05 16 | 691 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.2− | 2006 11 28 | 704 | 0.9+ | 0.4+ | |
| 2005 05 16 | 691 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.9− | 0.3+ | |
| 2005 06 01 | 691 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.3+ | 2006 11 30 | 683 | 1.1+ | 0.3+ | |
| 2005 06 01 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.5+ | 2006 11 30 | 683 | 1.3+ | 1.4+ | |
| 2005 06 01 | 691 | 0.1− | 0.5+ | 2006 11 17 | 704 | 0.2− | 0.0 | 2006 11 30 | 683 | 2.3− | 0.5− | |
| 2005 06 05 | 691 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.6− | 0.2+ | | | | | |

**2005 JB$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.88889 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23265461 | $\omega$ | 352.33067 | | −0.98014631 | | +0.19009163 |
| $a$ | 2.6181525 | $\Omega$ | 198.91335 | | −0.17143026 | | −0.95532714 |
| $e$ | 0.0753317 | $i$ | 10.01638 | | −0.09962371 | | −0.22630783 |
| $P$ | 4.24 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 644 | 0.1+ | 1.3+ | 2005 05 10 | 691 | 0.3+ | 0.2+ | 2006 08 21 | 691 | 0.4− | 0.2+ | |
| 2002 10 06 | 644 | 0.5− | 0.6+ | 2005 05 14 | 691 | 0.0 | 0.0 | 2006 08 21 | 691 | 0.2− | 0.6− | |
| 2002 10 06 | 644 | 0.2− | 0.3+ | 2005 05 14 | 691 | 0.0 | 0.2+ | 2006 11 10 | 291 | 0.1− | 0.4+ | |
| 2005 05 08 | 691 | 0.0 | 0.0 | 2005 05 14 | 691 | 0.3− | 0.1− | 2006 11 10 | 291 | 0.1+ | 0.4+ | |
| 2005 05 08 | 691 | 0.0 | 0.0 | 2005 06 11 | 691 | 0.1− | 0.1+ | 2006 11 10 | 291 | 0.1+ | 0.3+ | |
| 2005 05 08 | 691 | 0.0 | 0.2+ | 2005 06 11 | 691 | 0.1− | 0.1− | 2006 11 11 | 291 | 0.1+ | 0.9− | |
| 2005 05 10 | 691 | 0.1− | 0.0 | 2005 06 11 | 691 | 0.4+ | 0.4− | 2006 11 11 | 291 | 0.1− | 0.5+ | |
| 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 08 21 | 691 | 0.2+ | 0.3− | 2006 11 11 | 291 | 0.5+ | 0.4− | |

**2005 JL$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.90550 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21666055 | $\omega$ | 84.44683 | | +0.56098850 | | +0.81719498 |
| $a$ | 2.7454666 | $\Omega$ | 220.61744 | | −0.81693239 | | +0.52067520 |
| $e$ | 0.2002196 | $i$ | 11.71910 | | −0.13384086 | | +0.24716330 |
| $P$ | 4.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | G96 | 0.4− | 0.4− | 2005 06 12 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.4− | |
| 2005 05 08 | G96 | 0.3− | 0.6− | 2005 06 12 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.3− | 0.7+ | |
| 2005 05 08 | G96 | 0.4− | 0.5− | 2005 06 12 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.3− | 0.2− | |
| 2005 05 08 | G96 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.2− | |
| 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.5− | |
| 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.1− | 0.3− | |
| 2005 05 10 | G96 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.3+ | |
| 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.5+ | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.1+ | |
| 2005 06 08 | 691 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.2+ | |
| 2005 06 08 | 691 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.0 | |
| 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | | | | | |

**2005 JQ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.29539 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26872274 | $\omega$ | 12.17128 | | −0.03978807 | | +0.99889659 |
| $a$ | 2.3782989 | $\Omega$ | 255.55231 | | −0.91890277 | | −0.04638666 |
| $e$ | 0.1790569 | $i$ | 1.47638 | | −0.39247242 | | +0.00733979 |
| $P$ | 3.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | E12 | 0.2− | 0.7+ | 2005 05 19 | 644 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.2− | |
| 2005 05 08 | E12 | 0.4+ | 0.3− | 2005 05 19 | 644 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.2+ | |
| 2005 05 08 | E12 | 0.2+ | 0.1− | 2005 05 19 | 644 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.1+ | |
| 2005 05 08 | E12 | 0.1+ | 0.5− | 2005 05 27 | 104 | 0.4+ | 0.8− | 2006 10 20 | 691 | 0.4− | 0.2− | |
| 2005 05 10 | G96 | 0.0 | 0.1+ | 2005 05 27 | 104 | (2.6− | 0.9+) | 2006 11 01 | 691 | 0.0 | 0.2+ | |
| 2005 05 10 | G96 | 0.1− | 0.1+ | 2005 05 27 | 104 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.4+ | |
| 2005 05 10 | G96 | 0.8− | 0.6+ | 2005 05 27 | 104 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ | |
| 2005 05 10 | G96 | 0.3+ | 0.2+ | 2005 06 06 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.4− | 0.5− | |
| 2005 05 14 | 704 | 0.1− | 0.2− | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.9− | |
| 2005 05 14 | 704 | 0.1− | 0.6− | 2005 06 06 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.1+ | |
| 2005 05 14 | 704 | 0.1+ | 0.3+ | 2005 06 11 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.3+ | |
| 2005 05 14 | 704 | 0.1+ | 0.5− | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.4− | |
| 2005 05 14 | 704 | 0.8− | 0.4− | 2005 06 11 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.8+ | 0.0 | |
| 2005 05 19 | 644 | 0.1+ | 0.2− | 2005 06 11 | 703 | 1.0+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.4− | |
| 2005 05 19 | 644 | 0.2+ | 0.4− | 2005 06 11 | 703 | 1.2− | 1.1+ | 2006 11 12 | G96 | 0.0 | 0.4− | |
| 2005 05 19 | 644 | 0.1− | 0.4− | 2005 06 11 | 703 | 0.4− | 0.8+ | 2006 11 15 | G96 | 0.3− | 0.1+ | |
| 2005 05 19 | 644 | 0.0 | 0.2− | 2005 06 11 | 703 | (1.5− | 1.6+) | 2006 11 15 | G96 | 0.1− | 0.0 | |
| 2005 05 19 | 644 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.2− | |
| 2005 05 19 | 644 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.6− | 2006 11 15 | G96 | 0.4+ | 0.0 | |

**2005 JP$_{62}$ = 2006 UV$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.47154 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23555268 | $\omega$ | 41.12708 | | +0.03326746 | | +0.99560936 |
| $a$ | 2.5966337 | $\Omega$ | 230.96577 | | −0.94392119 | | +0.00252568 |
| $e$ | 0.1817477 | $i$ | 6.46746 | | −0.32849057 | | +0.09357148 |
| $P$ | 4.18 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.4− | 0.4+ | 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.0 | |
| 1993 09 15 | 691 | 0.3+ | 0.5− | 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.0 | |
| 1993 09 15 | 691 | 0.3+ | 0.2− | 2005 05 14 | 704 | 0.8+ | 1.5+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | |
| 2002 11 14 | 291 | 0.1+ | 0.0 | 2005 05 14 | 704 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.6+ | 0.3− | |
| 2002 11 14 | 291 | 0.2+ | 0.4+ | 2005 05 14 | 704 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.2− | |
| 2002 11 14 | 291 | 0.4− | 0.6+ | 2005 05 14 | 704 | 1.1+ | 0.6− | 2006 10 20 | 691 | 0.3− | 0.2− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | G96 | 0.4− | 0.1− | 2005 05 16 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2005 05 09 | G96 | 0.8+ | 0.0 | 2005 05 16 | 691 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2005 05 09 | G96 | 0.3− | 0.0 | 2005 05 16 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.6+ |
| 2005 05 09 | G96 | 0.3− | 0.2− | 2005 06 10 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2005 05 10 | 703 | 0.0 | 0.1+ | 2005 06 10 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2005 05 10 | 703 | 1.6− | 0.9+ | 2005 06 10 | 691 | 0.4+ | 0.0 | 2006 11 10 | 691 | 0.3− | 0.9+ |
| 2005 05 10 | 703 | 0.4− | 0.1+ | 2005 06 27 | 644 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.5− |
| 2005 05 10 | 703 | 0.2− | 0.6+ | 2005 06 27 | 644 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2005 05 13 | G96 | 0.2− | 0.0 | 2005 06 27 | 644 | 0.4+ | 0.0 | | | | |
| 2005 05 13 | G96 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.2+ | 0.0 | | | | |

**2005 JL$_{64}$ = 2006 SS$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.94733 | | (2000.0) | | | |
| $n$ | 0.22455778 | $\omega$ | 21.11198 | | +0.23476983 | +0.94557707 |
| $a$ | 2.6807150 | $\Omega$ | 263.01685 | | −0.92120237 | +0.14244206 |
| $e$ | 0.2325219 | $i$ | 13.12049 | | −0.31027297 | +0.29256497 |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.1− | 2005 04 14 | 703 | 1.0− | 0.3− | 2006 09 17 | 703 | 0.3+ | 1.1− |
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2005 04 14 | 703 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.4+ | 0.4− |
| 2002 11 14 | 644 | 0.0 | 0.2+ | 2005 05 04 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 699 | 0.2+ | 0.2+ |
| 2002 11 14 | 644 | 0.0 | 0.0 | 2005 05 04 | 644 | 0.4+ | 0.4+ | 2006 09 22 | 699 | 0.8− | 0.8+ |
| 2002 11 14 | 644 | 0.1− | 0.2+ | 2005 05 04 | 644 | 0.3+ | 0.1+ | 2006 09 22 | 699 | (0.0 | 1.6+) |
| 2002 11 25 | 644 | 0.9− | 0.1+ | 2005 05 11 | 644 | 0.0 | 0.1+ | 2006 09 22 | 699 | 0.3+ | 0.4+ |
| 2002 11 25 | 644 | 0.8− | 0.3+ | 2005 05 11 | 644 | 0.5+ | 0.0 | 2006 09 28 | 703 | 0.4− | 0.4− |
| 2002 11 25 | 644 | 0.9− | 0.2− | 2005 05 11 | 644 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.7+ | 0.2+ |
| 2005 04 14 | 703 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 0.8+ | 0.4− |
| 2005 04 14 | 703 | 1.3− | 0.3− | 2006 09 17 | 703 | 0.7+ | 0.8− | 2006 09 28 | 703 | 0.3− | 0.2+ |

**2005 JS$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 89.88455 | | (2000.0) | | | |
| $n$ | 0.22923234 | $\omega$ | 244.74507 | | −0.15106497 | +0.98689965 |
| $a$ | 2.6441461 | $\Omega$ | 16.85895 | | −0.82209122 | −0.09360413 |
| $e$ | 0.1639011 | $i$ | 11.26284 | | −0.54894936 | −0.13140526 |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 21 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 1996 03 21 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1996 03 21 | 691 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2002 10 15 | 644 | 0.6− | 1.0+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2002 10 15 | 644 | 0.5− | 1.0+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 10 15 | 644 | 0.5− | 1.2+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2005 05 04 | 644 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 16 | 106 | (0.2+ | 1.9−) |
| 2005 05 04 | 644 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 16 | 106 | 0.5− | 0.7− |
| 2005 05 04 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 16 | 106 | (0.4− | 1.7−) |
| 2005 05 04 | 644 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 16 | 106 | 0.1+ | 0.1− |
| 2005 05 04 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 291 | 0.7− | 0.3− | 2006 10 17 | 703 | 0.9− | 0.9− |
| 2005 05 04 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 291 | 0.8− | 0.0 | 2006 10 17 | 703 | 1.3+ | 0.2− |
| 2005 05 10 | 699 | 0.5+ | 0.5− | 2006 10 01 | 291 | 1.2− | 0.1− | 2006 10 17 | 703 | (1.5− | 1.0+) |
| 2005 05 10 | 699 | 0.0 | 0.7− | 2006 10 02 | 291 | 0.1− | 0.1+ | 2006 10 17 | 703 | (2.1− | 0.1+) |
| 2005 05 10 | 699 | 0.0 | 0.3+ | 2006 10 02 | 291 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2005 05 10 | 699 | 1.0− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2005 05 12 | 703 | 1.0+ | 0.3− | 2006 10 02 | 291 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2005 05 12 | 703 | 0.9− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 05 12 | 703 | 0.9− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 05 12 | 703 | 0.7− | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2005 06 02 | 699 | 1.1+ | 0.1+ | 2006 10 02 | 291 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2005 06 02 | 699 | 0.2− | 0.3+ | 2006 10 02 | 291 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2005 06 02 | 699 | 0.8+ | 0.2− | 2006 10 02 | 291 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 06 02 | 699 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2006 09 14 | 691 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.6+ | | | | |

**2005 JG$_{66}$ = 2005 HN$_{8}$**

Id. Minor Planet Center (d, *MPO* 87833)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.12662 | | (2000.0) | | | |
| $n$ | 0.23873048 | $\omega$ | 249.50250 | | +0.49085774 | +0.86320458 |
| $a$ | 2.5735393 | $\Omega$ | 50.45598 | | −0.73140514 | +0.48189977 |
| $e$ | 0.1514859 | $i$ | 8.80604 | | −0.47339751 | +0.15050074 |
| $P$ | 4.13 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 703 | 0.9+ | 0.9− | 2005 05 14 | 704 | 0.4− | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.3+ |
| 2005 04 17 | 703 | 0.7− | 1.2+ | 2005 05 14 | 704 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.8+ | 0.1− |
| 2005 04 17 | 703 | 1.0+ | 0.1+ | 2005 05 14 | 704 | 0.8+ | 0.5− | 2006 10 21 | G96 | 0.8+ | 0.1− |
| 2005 04 17 | 703 | 0.8− | 0.6+ | 2005 05 16 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2005 05 04 | G96 | 0.3− | 0.2+ | 2005 05 16 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2005 05 04 | G96 | 0.3− | 0.3− | 2005 05 16 | 691 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2005 05 04 | G96 | 0.2− | 0.1+ | 2005 05 19 | 644 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2005 05 04 | G96 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2005 05 11 | 691 | 0.2− | 0.1− | 2005 05 19 | 644 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2005 05 11 | 691 | 0.1− | 0.2− | 2005 05 30 | 699 | 0.6+ | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.3+ |
| 2005 05 11 | 691 | 0.1− | 0.1− | 2005 05 30 | 699 | 0.7+ | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2005 05 12 | 701 | 0.1− | 0.2+ | 2005 05 30 | 699 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.6+ | 0.1+ |
| 2005 05 12 | 701 | 0.1+ | 0.2+ | 2005 05 30 | 699 | 1.4+ | 0.2+ | 2006 11 17 | 703 | 0.9+ | 0.1− |
| 2005 05 12 | 701 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | 1.1− | 0.5+ |
| 2005 05 13 | 701 | 0.7+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2005 05 13 | 701 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.0 |
| 2005 05 13 | 701 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.2+ | | | | |
| 2005 05 14 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.8− | | | | |

**2005 JZ$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.45978 | | (2000.0) | | | |
| $n$ | 0.24061546 | $\omega$ | 45.90730 | | +0.65043995 | +0.75798939 |
| $a$ | 2.5600809 | $\Omega$ | 264.73229 | | −0.71012881 | +0.58406529 |
| $e$ | 0.2060287 | $i$ | 2.80814 | | −0.26952727 | +0.29037877 |
| $P$ | 4.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 644 | 0.1+ | 0.1+ | 2005 05 18 | 644 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.7+ | 0.2+ |
| 2005 05 04 | 644 | 0.1− | 0.3+ | 2005 05 18 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.8+ | 0.3− |
| 2005 05 04 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.9− | 0.8− |
| 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2005 05 11 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2005 05 11 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3− | 0.9− |
| 2005 05 12 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.9+ | 1.3+ |
| 2005 05 12 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5− | 1.2+ |
| 2005 05 12 | 644 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.8− | 1.1− |
| 2005 05 12 | 644 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 1.6− | 0.8− |
| 2005 05 12 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.5+ | 0.3− | 2006 11 22 | 704 | 1.1+ | 0.0 |
| 2005 05 12 | 644 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2005 05 16 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2005 05 16 | 691 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.5+ |
| 2005 05 16 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.0 | | | | |
| 2005 05 18 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.4+ | | | | |

**2005 JR$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.33168 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23721231 | $\omega$ | 267.02381 | | +0.62139405 | | +0.76561865 |
| $a$ | 2.5845081 | $\Omega$ | 42.91854 | | −0.58599181 | | +0.59514410 |
| $e$ | 0.1896747 | $i$ | 14.14634 | | −0.52007984 | | +0.24419579 |
| $P$ | 4.15 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | G96 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 11 11 | 703 | (2.7+ | 0.9+) |
| 2005 03 12 | G96 | 0.6+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.6− |
| 2005 03 12 | G96 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2005 03 12 | G96 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.0 |
| 2005 04 11 | G96 | 0.5− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2005 04 11 | G96 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.5+ | 2006 11 12 | G96 | 0.3+ | 0.5− |
| 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.5+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2005 04 11 | G96 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2005 05 04 | 644 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2005 05 04 | 644 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2005 05 04 | 644 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.7− | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2005 05 11 | 644 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.6− | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2005 05 11 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | (1.8− | 4.7−) | 2006 11 18 | 704 | 1.2+ | 0.2− |
| 2005 05 11 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.8+ |
| 2005 05 19 | 644 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.6− | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2005 05 19 | 644 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.8− | 1.2+ |
| 2005 05 19 | 644 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 11 11 | 703 | 0.7− | 1.0+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | (0.3− | 1.7−) | | | | |

**2005 JS$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.66653 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22513025 | $\omega$ | 22.16957 | | +0.11463205 | | +0.99145534 |
| $a$ | 2.6761687 | $\Omega$ | 254.45665 | | −0.92085882 | | +0.08254206 |
| $e$ | 0.0773226 | $i$ | 3.70499 | | −0.37266408 | | +0.10101049 |
| $P$ | 4.38 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 1.3+ | 0.8+ | 2005 05 12 | 644 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.1− |
| 2000 03 11 | 699 | 0.1− | 1.2+ | 2005 05 19 | 644 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 2000 03 11 | 699 | 0.3− | 1.5+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.9+ |
| 2000 03 11 | 699 | 0.3− | 0.3− | 2005 05 19 | 644 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2006 08 21 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.7+ |
| 2002 10 15 | 644 | 0.0 | 0.3+ | 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2002 10 15 | 644 | 0.1+ | 0.4+ | 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.3− |
| 2002 10 31 | 644 | 0.4+ | 1.0+ | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.3+ | 0.4− |
| 2002 10 31 | 644 | 1.0+ | 0.8+ | 2006 08 29 | 703 | 0.5− | 0.9− | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2002 10 31 | 644 | 0.3+ | 0.8+ | 2006 08 29 | 703 | 0.3+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 11 12 | 704 | 1.3− | 0.9+ | 2006 08 29 | 703 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2002 11 12 | 704 | 0.7− | 0.0 | 2006 09 19 | 703 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 05 04 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.1− | 0.6+ | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2005 05 04 | 644 | 0.0 | 0.7+ | 2006 09 19 | 703 | 0.1+ | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2005 05 04 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2005 05 11 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 05 11 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 1.1− | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2005 05 11 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 1.0− | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.3+ |
| 2005 05 12 | G96 | 0.3− | 0.3+ | 2006 10 01 | 703 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2005 05 12 | G96 | 0.0 | 0.5+ | 2006 10 01 | 703 | 0.6− | 1.4+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2005 05 12 | G96 | 0.0 | 0.3+ | 2006 10 01 | 703 | 1.3+ | 0.9− | 2006 10 27 | 691 | 0.0 | 0.4+ |
| 2005 05 12 | G96 | 0.0 | 0.5+ | 2006 10 01 | 703 | 1.2− | 1.5− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2005 05 12 | 644 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2005 05 12 | 644 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | | | | |

**2005 JT$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.92720 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30580844 | $\omega$ | 299.65315 | | +0.27784924 | | +0.96056585 |
| $a$ | 2.1819078 | $\Omega$ | 346.46621 | | −0.86490536 | | +0.24533188 |
| $e$ | 0.1152847 | $i$ | 2.60408 | | −0.41801737 | | +0.13086450 |
| $P$ | 3.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.3− | 0.6− | 2005 05 16 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.5+ |
| 2005 03 14 | G96 | 0.6− | 0.2+ | 2005 05 16 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2005 03 14 | G96 | 0.6+ | 0.9− | 2005 05 16 | 644 | 0.2+ | 0.7+ | 2006 11 14 | 691 | 0.3− | 0.5+ |
| 2005 03 14 | G96 | 1.2− | 0.3+ | 2005 05 19 | 644 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2005 05 04 | 644 | 0.3+ | 0.1+ | 2005 05 19 | 644 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2005 05 04 | 644 | 0.8+ | 0.3+ | 2005 05 19 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2005 05 04 | 644 | 0.5+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2005 05 11 | 644 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.7+ | 0.4− | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2005 05 11 | 644 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.1− |
| 2005 05 11 | 644 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.5− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.1+ |

**2005 JD$_{68}$ = 2006 UK$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.24564 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24301976 | $\omega$ | 247.42506 | | +0.15457140 | | +0.98641693 |
| $a$ | 2.5431676 | $\Omega$ | 31.62510 | | −0.86306288 | | +0.16219522 |
| $e$ | 0.2319749 | $i$ | 6.08474 | | −0.48086396 | | +0.02596821 |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.2+ | 0.0 | 2005 05 11 | 644 | 0.4+ | 0.4+ | 2006 09 27 | G96 | 0.4+ | 0.1+ |
| 2005 03 10 | G96 | 0.4+ | 0.2+ | 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.9+ |
| 2005 03 10 | G96 | 0.0 | 0.2+ | 2005 05 11 | 644 | 0.5+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2− |
| 2005 03 10 | G96 | 0.0 | 0.4+ | 2005 06 03 | 703 | 0.4− | 0.2− | 2006 10 12 | 691 | 0.2− | 0.2+ |
| 2005 05 04 | E12 | 0.2− | 0.3− | 2005 06 03 | 703 | 0.9− | 1.2− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2005 05 04 | E12 | 0.5+ | 0.6− | 2005 06 03 | 703 | 0.6+ | 0.2− | 2006 10 28 | 691 | 0.6− | 0.4+ |
| 2005 05 04 | E12 | 0.1− | 0.6+ | 2005 06 03 | 703 | (1.7+ | 0.1−) | 2006 10 28 | 691 | 0.2+ | 0.5− |
| 2005 05 11 | 691 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.3− |
| 2005 05 11 | 691 | 0.4+ | 0.1+ | 2006 09 27 | G96 | (1.6+ | 0.3−) | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2005 05 11 | 691 | 0.7− | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 11 01 | 691 | 0.2− | 0.0 |

**2005 JQ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.67543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22516404 | $\omega$ | 116.03914 | | +0.59692060 | | +0.80129361 |
| $a$ | 2.6759009 | $\Omega$ | 190.88839 | | −0.79092765 | | +0.57931860 |
| $e$ | 0.1693540 | $i$ | 12.28082 | | −0.13460775 | | +0.14939380 |
| $P$ | 4.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.6− | 0.1+ | 2005 06 25 | 644 | 0.4+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2002 11 25 | 644 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.2+ | 1.3+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 11 25 | 644 | 0.5+ | 0.6+ | 2006 08 30 | 699 | 0.2− | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2005 05 06 | 703 | 0.7− | 0.5+ | 2006 08 30 | 699 | 1.1+ | 1.5− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2005 05 06 | 703 | 0.5+ | 0.1− | 2006 08 30 | 699 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2005 05 06 | 703 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2005 05 06 | 703 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2005 05 11 | 703 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 1.0+ | 0.0 |
| 2005 05 11 | 703 | 0.6− | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.7+ | 2006 10 21 | 703 | 0.3− | 1.2+ |
| 2005 05 11 | 703 | 1.3+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.1− |
| 2005 05 11 | 703 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 2005 05 14 | 704 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2005 05 14 | 704 | 1.2+ | 1.3+ | 2006 09 20 | 704 | 0.1+ | 0.6− | 2006 10 21 | G96 | 0.1− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | 704 | 0.3− | 0.4− | 2006 09 20 | 704 | 0.9+ | 0.8− | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2005 05 14 | 704 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 1.3− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2005 05 15 | 644 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2005 05 15 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.8+ | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 05 15 | 644 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.2+ | 0.4+ | 2006 10 27 | 704 | (1.6+ | 0.9−) |
| 2005 05 15 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.4− | 0.4+ | 2006 10 27 | 704 | 0.6− | 0.0 |
| 2005 05 15 | 644 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 10 27 | 704 | 0.2− | 0.0 |
| 2005 05 31 | 699 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 27 | 704 | 0.8− | 0.2+ |
| 2005 05 31 | 699 | 1.3− | 1.3− | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2005 05 31 | 699 | 0.2+ | 0.9− | 2006 09 22 | 704 | 0.8− | 0.8+ | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 2005 05 31 | 699 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 1.3+ | 2006 11 13 | 703 | 0.1− | 0.4− |
| 2005 06 07 | 703 | (1.7− | 0.6−) | 2006 09 22 | 704 | 1.1− | 0.0 | 2006 11 13 | 703 | (2.0− | 0.6+) |
| 2005 06 07 | 703 | (0.7+ | 2.5−) | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2005 06 07 | 703 | 1.3− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2005 06 07 | 703 | 0.5− | 0.5− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 1.2− | 0.1+ |
| 2005 06 25 | 644 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.5− | 0.5+ |
| 2005 06 25 | 644 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 | | | | |

**2005 JL$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.47890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18142500 | $\omega$ | 60.55644 | | −0.69648109 | | +0.71339221 |
| $a$ | 3.0903284 | $\Omega$ | 164.49714 | | −0.71667269 | | −0.68614465 |
| $e$ | 0.0827388 | $i$ | 16.82524 | | −0.03597704 | | −0.14239759 |
| $P$ | 5.43 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 06 | 691 | 0.2+ | 0.1− | 2005 05 16 | 291 | 0.1− | 0.2− | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2005 05 06 | 691 | 0.2+ | 0.0 | 2005 05 16 | 691 | 0.4+ | 0.1− | 2006 08 29 | 691 | 0.2+ | 0.1+ |
| 2005 05 06 | 691 | 1.0+ | 0.0 | 2005 05 16 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.6− | 0.7− |
| 2005 05 11 | 691 | 0.2+ | 0.3− | 2005 05 16 | 691 | (3.6− | 1.0+) | 2006 09 27 | G96 | 0.7+ | 0.4− |
| 2005 05 11 | 691 | 0.2+ | 0.0 | 2005 07 05 | 691 | 0.7+ | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.6− |
| 2005 05 11 | 691 | 0.0 | 0.3− | 2005 07 05 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.4− | 0.2− |
| 2005 05 16 | 291 | 0.1+ | 0.0 | 2005 07 05 | 691 | 0.1− | 0.4− | | | | |
| 2005 05 16 | 291 | 0.3+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.2+ | | | | |

**2005 JU$_{69}$ = 2006 SA$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.34013 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23900687 | $\omega$ | 296.77802 | | +0.96685801 | | +0.25212394 |
| $a$ | 2.5715548 | $\Omega$ | 48.64753 | | −0.21105931 | | +0.87795975 |
| $e$ | 0.1527789 | $i$ | 3.07275 | | −0.14366476 | | +0.40696462 |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 691 | 0.1+ | 0.2+ | 2005 05 13 | G96 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 1998 11 25 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.7+ |
| 1998 11 25 | 691 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.5− | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.5− |
| 2002 10 15 | 644 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | (2.0+ | 3.1−) |
| 2002 10 15 | 644 | 0.4− | 0.0 | 2006 09 18 | 699 | (1.6+ | 0.6−) | 2006 10 21 | 703 | 0.4+ | 0.5+ |
| 2002 10 15 | 644 | 0.3− | 0.2+ | 2006 09 18 | 699 | 1.1+ | 0.4+ | 2006 10 21 | 703 | 1.3− | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.8+ | 2006 09 18 | 699 | 1.2+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.7+ | 2006 09 18 | 699 | 0.7− | 0.8+ | 2006 10 21 | 644 | 0.4+ | 0.5+ |
| 2002 10 31 | 644 | 0.2+ | 0.8+ | 2006 10 01 | 704 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.7+ |
| 2005 04 11 | G96 | 0.4− | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.4− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2005 04 11 | G96 | 0.1− | 0.8− | 2006 10 01 | 704 | 0.8+ | 0.5− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2005 04 11 | G96 | 0.3− | 0.5− | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2005 05 07 | 691 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2005 05 07 | 691 | 0.4+ | 0.1+ | 2006 10 02 | H55 | 0.5− | 1.2− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2005 05 07 | 691 | 0.2+ | 0.0 | 2006 10 02 | H55 | 0.0 | 0.9− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 05 11 | 691 | 0.2− | 0.3− | 2006 10 02 | H55 | 0.3− | 1.4− | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.1− |
| 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.6− | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2005 05 13 | G96 | 0.5− | 0.1− | 2006 10 15 | 703 | 0.2+ | 0.9− | 2006 11 14 | G96 | 0.1− | 0.3+ |
| 2005 05 13 | G96 | 0.6− | 0.2− | 2006 10 15 | 703 | 1.4− | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2005 05 13 | G96 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | | | |

**2005 JU$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.41360 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22587265 | $\omega$ | 353.23854 | | −0.04405276 | | +0.97179138 |
| $a$ | 2.6703014 | $\Omega$ | 274.05238 | | −0.90536999 | | −0.13687533 |
| $e$ | 0.2681646 | $i$ | 13.43087 | | −0.42233226 | | +0.19205902 |
| $P$ | 4.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | E12 | 0.6− | 0.4+ | 2005 05 11 | 644 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.9+ | 0.0 |
| 2005 04 10 | E12 | 0.2− | 0.6+ | 2005 05 11 | 644 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.6+ | 0.9+ |
| 2005 04 10 | E12 | 0.3− | 0.2− | 2005 05 12 | 644 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.6− | 0.4− |
| 2005 04 10 | E12 | 0.2+ | 0.8− | 2005 05 12 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.1+ | 1.0+ |
| 2005 04 19 | E12 | 0.2− | 0.0 | 2005 05 12 | 644 | 0.3+ | 0.1+ | 2006 09 28 | 703 | (1.3+ | 1.9−) |
| 2005 04 19 | E12 | 0.1+ | 0.4+ | 2005 06 09 | E12 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.2− | 0.9− |
| 2005 04 19 | E12 | 0.6− | 0.4− | 2005 06 09 | E12 | 0.0 | 1.0− | 2006 10 19 | 703 | 0.7− | 0.4− |
| 2005 05 08 | 699 | 0.2+ | 0.4− | 2005 06 09 | E12 | 0.5− | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.1+ |
| 2005 05 08 | 699 | 0.1− | 0.1− | 2005 06 09 | E12 | 0.3− | 0.7+ | 2006 10 19 | 703 | (1.9− | 0.3+) |
| 2005 05 08 | 699 | 0.6+ | 0.8− | 2006 09 17 | 703 | 0.3− | 1.5− | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2005 05 08 | 699 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2005 05 11 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 703 | (1.6− | 1.6+) | 2006 10 23 | 644 | 0.2+ | 0.6+ |

**2005 JY$_{72}$ = 2006 QG$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.08091 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21926258 | $\omega$ | 317.89758 | | +0.93740806 | | −0.28220377 |
| $a$ | 2.7237027 | $\Omega$ | 59.58219 | | +0.34752306 | | +0.79550492 |
| $e$ | 0.3408915 | $i$ | 13.68553 | | −0.02222259 | | +0.53622100 |
| $P$ | 4.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 20 | 691 | 0.2− | 0.1− | 2005 05 11 | G96 | 0.3− | 0.1− | 2006 09 13 | 428 | 0.3+ | 0.1− |
| 1996 05 20 | 691 | 0.3+ | 0.9+ | 2005 05 12 | 691 | 0.3+ | 0.3+ | 2006 09 13 | 428 | 0.3− | 0.2− |
| 1996 05 20 | 691 | 0.0 | 0.3− | 2005 05 12 | 691 | 0.1+ | 0.2+ | 2006 09 25 | E12 | 0.0 | 0.3+ |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2005 05 12 | 691 | 0.3+ | 0.1+ | 2006 09 25 | E12 | 0.0 | 0.1+ |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 09 25 | E12 | 0.0 | 0.2+ |
| 2002 10 04 | 704 | 0.9+ | 0.8− | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 09 25 | E12 | 0.4+ | 0.1+ |
| 2002 10 04 | 704 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.1+ | 0.3+ | 2006 10 09 | E12 | 0.2+ | 0.3+ |
| 2002 10 04 | 704 | 0.0 | 0.1− | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 10 09 | E12 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.5+ | 0.3+ | 2006 05 29 | E12 | 0.9+ | 0.8+ | 2006 10 09 | E12 | 0.1+ | 0.3+ |
| 2002 12 05 | 704 | 0.8+ | 0.0 | 2006 05 29 | E12 | 0.2+ | 0.0 | 2006 10 09 | E12 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.6+ | 0.9− | 2006 05 29 | E12 | 0.3− | 0.0 | 2006 10 28 | E12 | 0.4− | 0.4− |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2006 05 29 | E12 | 0.1+ | 0.2− | 2006 10 28 | E12 | 0.5+ | 0.3− |
| 2002 12 05 | 704 | 0.8+ | 0.3− | 2006 06 22 | E12 | 0.6+ | 0.7+ | 2006 10 28 | E12 | 0.2+ | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.5− | 2006 06 22 | E12 | 0.1+ | 0.6+ | 2006 10 28 | E12 | 0.5+ | 0.3+ |
| 2002 12 15 | 704 | 0.5− | 0.5+ | 2006 06 22 | E12 | 0.7− | 0.2+ | 2006 11 17 | 644 | 0.4− | 0.1− |
| 2002 12 15 | 704 | 0.4− | 0.9+ | 2006 06 22 | E12 | 0.5− | 0.3− | 2006 11 17 | 644 | 0.3− | 0.2− |
| 2002 12 15 | 704 | 0.1− | 0.8+ | 2006 07 30 | E12 | 0.0 | 0.2− | 2006 11 17 | 644 | 0.4− | 0.1− |
| 2002 12 15 | 704 | 0.7+ | 0.9+ | 2006 07 30 | E12 | 0.0 | 0.4− | 2006 11 17 | 644 | 0.3− | 0.1− |
| 2002 12 15 | 704 | 0.5− | 1.3+ | 2006 07 30 | E12 | 0.3− | 0.3+ | 2006 11 17 | 644 | 0.4− | 0.1− |
| 2003 01 07 | 704 | 0.6+ | 0.2− | 2006 07 30 | E12 | 0.5− | 0.5+ | 2006 11 17 | 644 | 0.4− | 0.2− |
| 2003 01 07 | 704 | 1.1− | 1.0+ | 2006 08 15 | E12 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.8− | 1.0+ |
| 2003 01 07 | 704 | 0.3− | 1.0+ | 2006 08 15 | E12 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.7+ |
| 2003 01 07 | 704 | (3.5− | 2.0+) | 2006 08 15 | E12 | 0.1+ | 0.2− | 2006 11 17 | 703 | 1.0− | 0.6+ |
| 2003 01 13 | 704 | 0.4− | 0.3+ | 2006 08 15 | E12 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.5+ |
| 2003 01 13 | 704 | 0.3− | 0.3+ | 2006 08 25 | E12 | 0.0 | 0.3− | 2006 11 19 | 703 | 0.7− | 0.2− |
| 2003 01 13 | 704 | 0.8− | 0.1+ | 2006 08 25 | E12 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.3− |
| 2003 01 13 | 704 | 0.4+ | 0.4+ | 2006 08 25 | E12 | 0.1+ | 0.5+ | 2006 11 19 | 703 | 0.6− | 0.6− |
| 2003 01 13 | 704 | 0.8− | 0.7+ | 2006 08 25 | E12 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.2− |
| 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 08 26 | 428 | 0.0 | 0.1− | 2006 12 01 | 703 | 0.7− | 0.2− |
| 2005 05 08 | 691 | 0.1+ | 0.4+ | 2006 08 26 | 428 | 0.0 | 0.2+ | 2006 12 01 | 703 | 2.2+ | 1.3+ |
| 2005 05 08 | 691 | 0.1+ | 0.5+ | 2006 09 02 | 428 | 0.2+ | 0.1− | 2006 12 01 | 703 | 0.1− | 0.6+ |
| 2005 05 11 | G96 | 0.3− | 0.2+ | 2006 09 02 | 428 | 0.3− | 0.1+ | 2006 12 01 | 703 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | G96 | 0.1− | 0.1+ | 2006 09 12 | E12 | 0.1+ | 0.2+ | | | | | | |
| 2005 05 11 | G96 | 0.1− | 0.2− | 2006 09 12 | E12 | 0.0 | 0.3+ | | | | | | |

**2005 JZ$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.23225 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24203917 | $\omega$ | 304.85887 | | −0.64575204 | | +0.76142545 |
| $a$ | 2.5500319 | $\Omega$ | 284.81584 | | −0.67993402 | | −0.60733623 |
| $e$ | 0.1230442 | $i$ | 3.37314 | | −0.34741046 | | −0.22665832 |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 21 | 704 | 0.2+ | 0.9− | 2005 05 10 | 699 | 0.6+ | 1.3− | 2006 09 14 | 644 | 0.0 | 0.3− | | |
| 2001 04 21 | 704 | 0.3− | 0.4− | 2005 05 10 | 699 | 0.4+ | 0.5+ | 2006 09 19 | 699 | 0.9− | 1.4− | | |
| 2001 04 21 | 704 | 0.4− | 0.5− | 2005 05 10 | 699 | 0.5+ | 0.3− | 2006 09 19 | 703 | (1.9+ | 0.0 ) | | |
| 2005 04 14 | 703 | 0.3− | 0.6+ | 2005 05 19 | 644 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.7− | 0.5− | | |
| 2005 04 14 | 703 | 0.9− | 0.5+ | 2005 05 19 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3+ | 1.0+ | | |
| 2005 04 14 | 703 | 1.0− | 0.5+ | 2005 05 19 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.3+ | | |
| 2005 04 14 | 703 | 1.2− | 0.7+ | 2005 06 02 | 699 | (1.7+ | 1.2−) | 2006 09 19 | 699 | 1.1+ | 0.2+ | | |
| 2005 05 01 | 644 | 0.4+ | 0.1+ | 2005 06 02 | 699 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.9+ | 1.1+ | | |
| 2005 05 01 | 644 | 0.3+ | 0.1+ | 2005 06 02 | 699 | 0.4+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 1.2− | | |
| 2005 05 01 | 644 | 0.2+ | 0.2+ | 2005 06 02 | 699 | 1.0+ | 0.4− | 2006 10 18 | 691 | 0.1− | 0.2+ | | |
| 2005 05 08 | E12 | 0.1+ | 0.2+ | 2005 06 27 | 644 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.3− | 0.2+ | | |
| 2005 05 08 | E12 | 0.2− | 0.0 | 2005 06 27 | 644 | 0.1− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | | |
| 2005 05 08 | E12 | 0.4+ | 0.3− | 2005 06 27 | 644 | 0.5− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | | |
| 2005 05 08 | E12 | 0.0 | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.0 | 0.0 | | |
| 2005 05 10 | 699 | 0.7+ | 0.3− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2− | | |

**2005 JS$_{76}$ = 2006 SL$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.30582 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22562798 | $\omega$ | 236.73002 | | −0.03820662 | | +0.99920968 |
| $a$ | 2.6722315 | $\Omega$ | 31.08595 | | −0.90960339 | | −0.03023242 |
| $e$ | 0.1301514 | $i$ | 1.21705 | | −0.41371721 | | −0.02580728 |
| $P$ | 4.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 16 | 691 | 0.3+ | 0.3+ | 2005 05 09 | G96 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2− | 0.2+ | | |
| 1996 03 16 | 691 | 0.1− | 0.0 | 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | |
| 1996 03 16 | 691 | 0.1− | 0.2+ | 2005 05 09 | G96 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.4− | 0.1+ | | |
| 2004 01 16 | 691 | 0.2+ | 0.1+ | 2005 05 09 | G96 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.0 | 0.1+ | | |
| 2004 01 16 | 691 | 0.1+ | 0.3+ | 2005 05 11 | 691 | 0.0 | 0.3+ | 2006 09 24 | 691 | 0.0 | 0.1− | | |
| 2004 01 16 | 691 | 0.1− | 0.1+ | 2005 05 11 | 691 | 0.1− | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.3+ | | |
| 2005 04 11 | G96 | 0.9− | 0.0 | 2005 05 11 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.1+ | | |
| 2005 04 11 | G96 | 0.5− | 0.3+ | 2005 05 19 | 644 | 0.5+ | 0.4− | 2006 09 25 | G96 | 0.1− | 0.1+ | | |
| 2005 04 11 | G96 | 0.1− | 0.3+ | 2005 05 19 | 644 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.4+ | | |
| 2005 04 11 | G96 | 0.2− | 0.2− | 2005 05 19 | 644 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.4+ | | |

**2005 JW$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.25945 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30131524 | $\omega$ | 343.75900 | | +0.85859097 | | −0.50550835 |
| $a$ | 2.2035453 | $\Omega$ | 46.92555 | | +0.48239837 | | +0.74028836 |
| $e$ | 0.0910868 | $i$ | 6.70913 | | +0.17353204 | | +0.44320927 |
| $P$ | 3.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.6− | 2006 10 27 | 691 | 0.2+ | 0.1+ | | |
| 2003 12 17 | 704 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.3+ | | |
| 2003 12 17 | 704 | 1.2− | 0.9− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.1+ | | |
| 2003 12 17 | 704 | 0.1+ | 1.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.4+ | 0.1+ | | |
| 2003 12 17 | 704 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.2+ | | |
| 2003 12 23 | 704 | 0.4− | 1.3+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2003 12 23 | 704 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | | |
| 2003 12 23 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1+ | | |
| 2003 12 23 | 704 | 0.8+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.2+ | | |
| 2003 12 28 | 704 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.2− | | |
| 2003 12 28 | 704 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.6− | | |
| 2003 12 28 | 704 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.6− | | |
| 2003 12 28 | 704 | 0.8+ | 0.5− | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2003 12 28 | 704 | (2.2− | 0.1+) | 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.3− | | |
| 2005 04 07 | G96 | 0.6− | 0.4− | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | (0.4− | 2.2−) | | |
| 2005 04 07 | G96 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.1− | | |
| 2005 04 07 | G96 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2+ | | |
| 2005 04 07 | G96 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6− | 0.0 | 2006 11 13 | 644 | 0.0 | 0.3− | | |
| 2005 05 09 | G96 | 0.2− | 0.3+ | 2006 10 16 | 703 | 1.1− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.0 | | |
| 2005 05 09 | G96 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.7− | 0.8− | 2006 11 17 | 703 | (0.2+ | 3.4+) | | |
| 2005 05 09 | G96 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.3+ | | |
| 2005 05 09 | G96 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.4− | | |
| 2005 05 11 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.9− | 0.7+ | | |
| 2005 05 11 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.5+ | | |
| 2005 05 11 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.4− | 1.3+ | | |
| 2005 05 16 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 21 | 704 | 1.2− | 0.2+ | | |
| 2005 05 16 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 21 | 704 | 1.1− | 0.4− | | |
| 2005 05 16 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.1− | | | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.0 | | | | | | |

**2005 JA$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.45615 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23004020 | $\omega$ | 25.45506 | | −0.77274196 | | +0.63245226 |
| $a$ | 2.6379520 | $\Omega$ | 194.17410 | | −0.61333942 | | −0.76578102 |
| $e$ | 0.1114372 | $i$ | 12.64633 | | −0.16335429 | | −0.11654861 |
| $P$ | 4.28 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 08 | 691 | 0.3− | 0.4− | 2005 05 21 | 644 | 0.0 | 0.1+ | 2005 09 21 | 413 | 0.2− | 0.1− | | |
| 1992 04 08 | 691 | 0.0 | 0.6− | 2005 06 02 | 703 | 0.5− | 0.1+ | 2005 09 21 | 413 | 0.5− | 0.0 | | |
| 1992 04 08 | 691 | 0.2+ | 0.7− | 2005 06 02 | 703 | 0.6+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2+ | | |
| 2005 05 09 | 703 | 1.2− | 0.5+ | 2005 06 02 | 703 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.2− | | |
| 2005 05 09 | 703 | 0.0 | 0.5+ | 2005 06 02 | 703 | 0.6− | 0.1− | 2006 09 25 | 691 | 0.2− | 0.2− | | |
| 2005 05 09 | 703 | 0.4− | 0.6+ | 2005 06 25 | 644 | 0.3− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.4− | | |
| 2005 05 11 | 691 | 0.3+ | 0.1+ | 2005 06 25 | 644 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.5− | | |
| 2005 05 11 | 691 | 0.2+ | 0.0 | 2005 06 25 | 644 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.0 | | |
| 2005 05 11 | 691 | 0.0 | 0.1+ | 2005 06 30 | 644 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.4− | | |
| 2005 05 15 | 691 | 0.2+ | 0.1+ | 2005 06 30 | 644 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.6− | | |
| 2005 05 15 | 691 | 0.2+ | 0.1+ | 2005 06 30 | 644 | 0.3− | 0.3− | 2006 11 21 | G96 | 0.5+ | 0.3− | | |
| 2005 05 15 | 691 | 0.1+ | 0.1+ | 2005 07 01 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 2005 05 21 | 644 | 0.1+ | 0.1+ | 2005 07 01 | 644 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.5− | 0.6− | | |
| 2005 05 21 | 644 | 0.0 | 0.3+ | 2005 07 01 | 644 | 0.2+ | 0.1+ | | | | | | |

**2005 JV$_{77}$ = 2006 QA$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.00973 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23636776 | $\omega$ | 295.60794 | | −0.97181567 | | +0.23025203 |
| $a$ | 2.5906608 | $\Omega$ | 257.73731 | | −0.19344030 | | −0.90149319 |
| $e$ | 0.0295971 | $i$ | 2.96700 | | −0.13474108 | | −0.36646151 |
| $P$ | 4.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 568 | 0.0 | 0.1− | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 0.4− | 1.3+ | | |
| 2001 09 20 | 568 | 0.1− | 0.1− | 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.1+ | 0.1− | | |
| 2001 09 20 | 568 | 0.0 | 0.0 | 2005 05 12 | 644 | 0.2− | 0.5+ | 2006 08 29 | 691 | 0.2+ | 0.3+ | | |
| 2003 12 28 | 691 | 0.1− | 0.5+ | 2005 05 12 | 644 | 0.0 | 0.4+ | 2006 08 29 | 691 | 0.2+ | 0.2− | | |
| 2003 12 28 | 691 | 0.3+ | 0.4+ | 2005 05 12 | 644 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.0 | 0.1− | | |
| 2003 12 28 | 691 | 0.1+ | 0.8+ | 2005 05 16 | 691 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.1− | | |
| 2005 05 10 | 699 | 0.4+ | 0.2+ | 2005 05 16 | 691 | 0.1− | 0.3+ | 2006 08 29 | 691 | 1.5− | 0.6+ | | |
| 2005 05 10 | 699 | 0.5+ | 1.1+ | 2005 05 16 | 691 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.5+ | 0.3+ | | |
| 2005 05 10 | 699 | 0.0 | 0.2+ | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 09 13 | 644 | 0.5+ | 0.3+ | | |
| 2005 05 10 | 699 | 0.1+ | 0.1+ | 2005 05 19 | 644 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.7+ | | |
| 2005 05 11 | 691 | 0.1+ | 0.1+ | 2005 05 19 | 644 | 0.2− | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 691 | 0.1+ | 0.0 | 2006 08 27 | 699 | 1.4− | 0.7+ | 2006 09 17 | 703 | 0.0 | 0.2+ | | |
| 2005 05 11 | 691 | 0.0 | 0.4+ | 2006 08 27 | 699 | 0.2− | 1.4+ | 2006 09 17 | 703 | 1.1+ | 1.0+ | | |
| 2005 05 11 | 644 | 0.2+ | 0.0 | 2006 08 27 | 699 | (1.8− | 0.1−) | 2006 09 17 | 703 | 0.3+ | 0.3− | | |

**2005 JU$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.08112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23539768 | $\omega$ | 283.96416 | | +0.83423065 | +0.53874444 | |
| $a$ | 2.5977734 | $\Omega$ | 43.60305 | | −0.41683727 | +0.75567042 | |
| $e$ | 0.2262865 | $i$ | 9.81224 | | −0.36097910 | +0.37244684 | |
| $P$ | 4.19 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 0.1+ | 0.3+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ | | |
| 2005 04 11 | G96 | 0.3+ | 0.1+ | 2005 05 11 | 644 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.4− | 0.1− | | |
| 2005 04 11 | G96 | 0.2− | 0.7+ | 2005 05 11 | 644 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1− | | |
| 2005 04 11 | G96 | 0.0 | 0.1− | 2005 05 11 | 644 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.3+ | | |
| 2005 05 10 | G96 | 0.1+ | 0.4+ | 2005 05 16 | 691 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.1+ | | |
| 2005 05 10 | G96 | 0.3− | 0.4+ | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.2+ | | |
| 2005 05 10 | G96 | 0.0 | 0.3+ | 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.4− | 0.1+ | | |
| 2005 05 10 | G96 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.4+ | | |
| 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1− | | |
| 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1+ | | | | | | |

**2005 JX$_{78}$ = 2006 VD$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.71181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31016493 | $\omega$ | 336.64878 | | +0.97983359 | −0.19699914 | |
| $a$ | 2.1614287 | $\Omega$ | 34.76538 | | +0.19132607 | +0.87673695 | |
| $e$ | 0.0681951 | $i$ | 3.36085 | | +0.05762344 | +0.43877518 | |
| $P$ | 3.18 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | G96 | 0.2− | 0.5+ | 2006 10 13 | 691 | 0.4+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1+ | | |
| 2005 05 10 | G96 | 0.5− | 0.0 | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.0 | | |
| 2005 05 10 | G96 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 2005 05 10 | G96 | 0.4− | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 2005 05 11 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.6− | 2006 11 16 | 691 | 0.1− | 0.1+ | | |
| 2005 05 11 | 691 | 0.5+ | 0.6− | 2006 10 31 | G96 | 0.1− | 0.5− | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2005 05 11 | 691 | 0.0 | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.6− | 1.0+ | | |
| 2005 05 16 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.3+ | | |
| 2005 05 16 | 691 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 1.1+ | | |
| 2005 05 16 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3− | 0.3+ | | |
| 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.1+ | 0.4− | | |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.3− | 0.7+ | | |
| 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.5− | 1.3− | | |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.5− | 0.4+ | | |
| 2006 10 13 | 691 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.4− | | | | | | |

**2005 JH$_{79}$ = 2006 UK$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.24605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22562502 | $\omega$ | 274.23251 | | +0.75976813 | +0.62928209 | |
| $a$ | 2.6722548 | $\Omega$ | 46.87127 | | −0.47127388 | +0.70630451 | |
| $e$ | 0.1933493 | $i$ | 12.95168 | | −0.44794343 | +0.32424989 | |
| $P$ | 4.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | G96 | 0.0 | 0.0 | 2005 05 16 | 691 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2005 05 10 | G96 | 0.1+ | 0.0 | 2005 05 16 | 691 | 0.0 | 0.4− | 2006 10 22 | 703 | 0.8− | 0.2− | | |
| 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.9+ | 1.0− | | |
| 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 09 30 | 703 | (1.0− | 1.7−) | 2006 10 22 | 703 | 0.2− | 0.3+ | | |
| 2005 05 11 | 691 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.5+ | | |
| 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 1.3+ | 1.0+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2005 05 11 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | (1.6+ | 0.2+) | 2006 11 01 | G96 | 0.2+ | 0.5− | | |
| 2005 05 12 | G96 | 0.5− | 0.1− | 2006 10 16 | 703 | (1.3+ | 1.9+) | 2006 11 01 | G96 | 0.4+ | 0.4− | | |
| 2005 05 12 | G96 | 0.2− | 0.1− | 2006 10 16 | 703 | (3.2+ | 2.7+) | 2006 11 01 | 691 | 0.5+ | 0.1+ | | |
| 2005 05 12 | 291 | 0.0 | 0.2+ | 2006 10 16 | 703 | 1.3+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− | | |
| 2005 05 12 | G96 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.4− | | |
| 2005 05 12 | 291 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2005 05 12 | G96 | 0.2− | 0.0 | 2006 10 16 | 703 | 1.2− | 0.7+ | 2006 11 22 | 691 | 0.8− | 0.1+ | | |
| 2005 05 12 | 291 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.6− | 2006 11 22 | 691 | 0.1− | 0.0 | | |
| 2005 05 12 | G96 | 0.9− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.6− | 2006 11 22 | 691 | 0.2+ | 0.2+ | | |
| 2005 05 12 | G96 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2005 05 12 | G96 | 0.4+ | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2005 05 12 | G96 | 0.6+ | 0.2− | 2006 10 22 | 691 | 0.7− | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.1+ | | |
| 2005 05 16 | 691 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− | | | | | | |

**2005 JJ$_{79}$ = 2006 QW$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.28502 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21548146 | $\omega$ | 95.68978 | | +0.99833506 | −0.04985317 | |
| $a$ | 2.7554727 | $\Omega$ | 267.17018 | | +0.03429879 | +0.91748299 | |
| $e$ | 0.0887077 | $i$ | 1.66460 | | +0.04637562 | +0.39463859 | |
| $P$ | 4.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.1+ | 0.5− | 2006 08 18 | 644 | 0.6+ | 0.0 | | |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2005 05 12 | G96 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.3− | 0.1− | | |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2005 05 12 | 291 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.4+ | | |
| 2004 03 20 | 691 | 0.4− | 0.1+ | 2005 05 12 | G96 | 0.0 | 0.3− | 2006 08 28 | 699 | 0.0 | 1.2+ | | |
| 2004 03 20 | 691 | 0.2+ | 0.2− | 2005 05 12 | 291 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.1− | 0.0 | | |
| 2004 03 20 | 691 | 0.3+ | 0.1− | 2005 05 12 | G96 | 0.3− | 0.2− | 2006 08 28 | 703 | 1.1− | 0.3+ | | |
| 2005 05 10 | G96 | (1.9+ | 1.3−) | 2005 05 12 | 291 | 0.4− | 0.2+ | 2006 08 28 | 699 | 1.1− | 1.6− | | |
| 2005 05 10 | G96 | 0.3− | 0.3+ | 2005 05 12 | G96 | 0.7− | 0.9+ | 2006 08 28 | 699 | 0.0 | 1.3+ | | |
| 2005 05 10 | G96 | 0.4+ | 0.4− | 2005 05 12 | G96 | 0.6− | 1.1+ | 2006 08 28 | 699 | 0.5+ | 1.1− | | |
| 2005 05 10 | G96 | 0.1− | 0.5− | 2005 05 12 | G96 | 0.3+ | 0.7+ | 2006 09 27 | G96 | 0.3+ | 0.1+ | | |
| 2005 05 11 | 691 | 0.3+ | 0.0 | 2005 05 12 | G96 | 0.7+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1+ | | |
| 2005 05 11 | 691 | 0.3+ | 0.3− | 2006 08 18 | 644 | 0.9+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.1+ | | |
| 2005 05 11 | 691 | 0.3− | 0.3− | 2006 08 18 | 644 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3+ | | |

**2005 JN$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.63394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27262252 | $\omega$ | 21.88617 | | +0.11047744 | +0.99357776 | |
| $a$ | 2.3555639 | $\Omega$ | 254.46334 | | −0.91558788 | +0.09217245 | |
| $e$ | 0.1909499 | $i$ | 1.45436 | | −0.38664399 | +0.06563130 | |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.2+ | 0.1− | 2005 05 12 | G96 | 0.2− | 0.2+ | 2005 06 14 | G96 | 0.1− | 0.5− | | |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2005 05 12 | G96 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.1− | | |
| 2005 03 11 | G96 | 0.2− | 0.1− | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.3− | | |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2005 05 12 | G96 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.5− | | |
| 2005 05 10 | G96 | 0.1− | 0.2+ | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.1− | | |
| 2005 05 10 | G96 | 0.1− | 0.2+ | 2005 05 16 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.0 | 0.2+ | | |
| 2005 05 10 | G96 | 0.2− | 0.2+ | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.2+ | | |
| 2005 05 10 | G96 | 0.2− | 0.3+ | 2005 05 16 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2005 05 11 | 691 | 0.2+ | 0.1− | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.0 | | |
| 2005 05 11 | 691 | 0.2+ | 0.0 | 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2005 05 11 | 691 | 0.0 | 0.2− | 2005 05 19 | 644 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.2− | | |
| 2005 05 12 | G96 | 0.1− | 0.0 | 2005 06 14 | G96 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.2− | 0.0 | | |
| 2005 05 12 | G96 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.1+ | 0.2+ | | | | | | |
| 2005 05 12 | G96 | 0.1− | 0.0 | 2005 06 14 | G96 | 0.5− | 0.0 | | | | | | |

**2005 JP$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.25211 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18133988 | $\omega$ | 27.79430 | | −0.92638669 | | +0.37537918 |
| $a$ | 3.0912954 | $\Omega$ | 174.01313 | | −0.37618691 | | −0.91889424 |
| $e$ | 0.1603460 | $i$ | 16.69859 | | −0.01706163 | | −0.12134186 |
| $P$ | 5.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 691 | 0.1+ | 0.1− | 2005 05 11 | 691 | 0.8− | 1.0− | 2006 09 17 | 691 | 0.2− | 0.0 |
| 1999 03 13 | 691 | (6.0+ | 4.6−) | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 1999 03 13 | 691 | 0.1− | 0.2+ | 2005 05 16 | 691 | 0.5− | 0.8+ | 2006 09 18 | 291 | 0.0 | 0.0 |
| 2005 05 10 | 691 | 0.2+ | 0.1+ | 2005 05 16 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 291 | 0.3+ | 0.3+ |
| 2005 05 10 | 691 | 0.3+ | 0.1− | 2005 05 20 | 644 | 0.2+ | 0.0 | 2006 09 18 | 291 | 0.2− | 0.2− |
| 2005 05 10 | 691 | 0.3+ | 0.1− | 2005 05 20 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2− |
| 2005 05 11 | 691 | 0.1+ | 0.1+ | 2005 05 20 | 644 | 0.5+ | 0.2− | 2006 09 19 | 691 | 0.3+ | 0.1− |
| 2005 05 11 | 691 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2− |

**2005 JU$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.23020 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18143916 | $\omega$ | 85.15716 | | −0.01832878 | | +0.99933957 |
| $a$ | 3.0901676 | $\Omega$ | 184.19622 | | −0.99930543 | | −0.01729175 |
| $e$ | 0.2453825 | $i$ | 25.39142 | | +0.03244543 | | +0.03195952 |
| $P$ | 5.43 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 05 14 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.8− | 0.6− |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 05 14 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.1− |
| 2005 04 15 | 703 | 0.6− | 0.2+ | 2005 05 14 | 704 | 0.2+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2005 04 15 | 703 | 0.2− | 0.8+ | 2005 05 14 | 704 | 1.2− | 0.7− | 2006 09 23 | 291 | 0.1− | 0.1+ |
| 2005 04 15 | 703 | 0.0 | 0.0 | 2005 05 19 | 703 | (0.9− | 2.2+) | 2006 09 23 | 291 | 0.1+ | 0.3+ |
| 2005 04 15 | 703 | 0.7− | 0.5+ | 2005 05 19 | 703 | 0.3+ | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.1+ |
| 2005 05 09 | 703 | 0.8− | 0.0 | 2005 05 19 | 703 | (0.4+ | 1.7−) | 2006 09 23 | 291 | 0.1− | 0.2+ |
| 2005 05 09 | 703 | 0.5− | 0.4− | 2005 05 19 | 703 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2005 05 09 | 703 | 1.5− | 0.2− | 2005 06 03 | 699 | 0.0 | 0.7− | 2006 09 24 | 291 | 0.6+ | 0.1+ |
| 2005 05 09 | 703 | (0.1− | 1.5+) | 2005 06 03 | 699 | 0.1− | 0.2+ | 2006 09 24 | 291 | 0.3+ | 0.2+ |
| 2005 05 12 | 704 | 0.4+ | 0.2− | 2005 06 03 | 699 | 1.1+ | 0.6− | 2006 09 24 | 291 | 0.2+ | 0.2+ |
| 2005 05 12 | 704 | 0.5+ | 0.2− | 2005 06 03 | 699 | 1.4+ | 0.3+ | 2006 09 25 | 291 | 0.2+ | 0.1+ |
| 2005 05 12 | 704 | 0.4+ | 0.5− | 2006 09 15 | 691 | 0.4− | 0.2− | 2006 09 25 | 291 | 0.4+ | 0.1+ |
| 2005 05 12 | 704 | 0.8+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.4− | 2006 09 25 | 291 | 0.2+ | 0.1+ |
| 2005 05 13 | 704 | 0.3− | 0.4− | 2006 09 15 | 691 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2005 05 13 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.6− |
| 2005 05 13 | 704 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2005 05 13 | 704 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.6− |
| 2005 05 13 | 704 | 0.1− | 0.2− | 2006 09 19 | 703 | 1.1− | 0.8+ | | | | |
| 2005 05 14 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.7− | 0.1+ | | | | |

**2005 JW$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.14176 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26491389 | $\omega$ | 95.46854 | | +0.09396453 | | +0.99557553 |
| $a$ | 2.4010409 | $\Omega$ | 179.92271 | | −0.95154623 | | +0.08985293 |
| $e$ | 0.0991497 | $i$ | 6.33659 | | −0.29279762 | | +0.02749194 |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.0 | 0.3+ | 2005 06 05 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2005 05 03 | 691 | 0.1+ | 0.1+ | 2005 06 05 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2005 05 03 | 691 | 0.1+ | 0.2+ | 2005 06 09 | 691 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2005 05 12 | 599 | 0.4+ | 0.3+ | 2005 06 09 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2005 05 13 | 599 | 0.1+ | 0.2− | 2005 06 09 | 691 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2005 05 13 | 599 | 0.9+ | 0.1+ | 2005 06 13 | 691 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2005 05 20 | G96 | 0.3− | 0.3− | 2005 06 13 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2005 05 20 | G96 | 0.6− | 0.0 | 2005 06 13 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2005 05 20 | G96 | 0.4− | 0.3− | 2005 06 28 | 644 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2005 05 20 | G96 | 0.6− | 0.4+ | 2005 06 28 | 644 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2005 06 05 | 691 | 0.0 | 0.2+ | 2005 06 28 | 644 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.1− |

**2005 JA$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.82687 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20256533 | $\omega$ | 331.52170 | | −0.96772672 | | −0.24659733 |
| $a$ | 2.8713930 | $\Omega$ | 194.48490 | | +0.25199811 | | −0.94581848 |
| $e$ | 0.0311488 | $i$ | 11.97824 | | +0.00139356 | | −0.21122773 |
| $P$ | 4.87 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 691 | 0.2+ | 0.1+ | 2005 05 20 | G96 | 0.4+ | 0.4− | 2006 09 16 | 691 | 0.1− | 0.1+ |
| 2005 05 09 | 691 | 0.2− | 0.1+ | 2005 05 20 | G96 | 0.3+ | 0.4− | 2006 09 16 | 691 | 0.0 | 0.2+ |
| 2005 05 09 | 691 | 0.1+ | 0.1+ | 2005 05 20 | G96 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.2− | 0.4+ |
| 2005 05 12 | 599 | 0.4− | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2005 05 12 | 599 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.5− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2005 05 13 | 599 | 0.1+ | 0.0 | 2006 09 14 | 691 | 1.2+ | 0.9− | | | | |
| 2005 05 20 | G96 | 0.3− | 0.5− | 2006 09 16 | 691 | 0.4− | 0.0 | | | | |

**2005 JH$_{82}$ = 2006 UX$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.92958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28713438 | $\omega$ | 125.55141 | | +0.63925609 | | +0.76899010 |
| $a$ | 2.2755126 | $\Omega$ | 184.18741 | | −0.71585089 | | +0.59392392 |
| $e$ | 0.2281032 | $i$ | 1.90327 | | −0.28090775 | | +0.23645002 |
| $P$ | 3.43 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.2+ | 0.2− | 2005 05 12 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 1999 11 04 | 691 | 0.1− | 0.4− | 2005 05 12 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 1999 11 04 | 691 | 0.0 | 0.1− | 2005 05 12 | 691 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2005 03 08 | G96 | 0.9− | 0.1− | 2006 09 28 | G96 | 0.8− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2005 03 08 | G96 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.4− | 0.3+ |
| 2005 03 08 | G96 | 0.6− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.5− | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2005 03 08 | G96 | 1.5− | 0.3− | 2006 09 28 | G96 | 0.4− | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2005 05 02 | 691 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.5− | 0.8− | 2006 11 17 | 703 | 0.0 | 0.8− |
| 2005 05 02 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2005 05 02 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | 1.2+ | 1.4− |
| 2005 05 06 | G96 | 0.7− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.9− | 0.7+ |
| 2005 05 06 | G96 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 2005 05 06 | G96 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2005 05 06 | G96 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.0 | 0.2+ |

**2005 JP$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.19483 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27201413 | $\omega$ | 54.88241 | | −0.41285400 | | +0.91079391 |
| $a$ | 2.3590750 | $\Omega$ | 190.73418 | | −0.83987391 | | −0.38174760 |
| $e$ | 0.1431762 | $i$ | 0.75589 | | −0.35236827 | | −0.15723623 |
| $P$ | 3.62 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 15 | 691 | 0.9− | 0.4+ | 2005 05 07 | G96 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 1994 04 15 | 691 | 0.1+ | 0.6− | 2005 05 12 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 1994 04 15 | 691 | 0.2+ | 1.4− | 2005 05 12 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.4− | 0.6+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2005 05 12 | 691 | 0.4+ | 0.5+ | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.4+ |
| 2005 04 11 | G96 | 0.7− | 0.1− | 2005 05 19 | 644 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.5− |
| 2005 04 11 | G96 | 0.0 | 0.2+ | 2005 05 19 | 644 | 0.6+ | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.2+ |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2005 05 07 | G96 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.6+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | G96 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.3− | | |
| 2005 05 07 | G96 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.3− | 0.6− | 2006 10 27 | G96 | 0.5+ | 0.3− | | |

**2005 JQ$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 128.64822 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.26412157 | $\omega$ | 29.81960 | | −0.58618743 | | +0.80922614 | | |
| $a$ | 2.4058403 | $\Omega$ | 204.35914 | | −0.76085880 | | −0.56648739 | | |
| $e$ | 0.0932786 | $i$ | 5.45494 | | −0.27834904 | | −0.15570837 | | |
| $P$ | 3.73 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.3− | 0.5− | 2005 05 12 | 691 | 0.6− | 0.8+ | 2006 09 26 | 691 | 0.1− | 0.3+ | | |
| 1995 10 02 | 691 | 0.5+ | 0.3− | 2005 05 12 | 691 | 0.0 | 0.3− | 2006 09 26 | 691 | 0.3− | 0.2+ | | |
| 1995 10 02 | 691 | 0.1+ | 0.5− | 2005 05 14 | 644 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 2005 04 11 | G96 | 0.4− | 0.3− | 2005 05 14 | 644 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.0 | | |
| 2005 04 11 | G96 | 0.1+ | 0.4− | 2005 05 14 | 644 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1− | | |
| 2005 04 11 | G96 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 2005 04 11 | G96 | 0.3− | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.1+ | | |
| 2005 05 08 | 691 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.4+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.4− | | |
| 2005 05 08 | 691 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.5− | | |
| 2005 05 08 | 691 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.6− | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.1+ | | |
| 2005 05 12 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− | | | | | | |

**2005 JD$_{84}$ = 2006 SB$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 22.07123 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.22964708 | $\omega$ | 300.90822 | | +0.97339147 | | +0.16177271 | | |
| $a$ | 2.6409617 | $\Omega$ | 50.29789 | | −0.05695889 | | +0.85682289 | | |
| $e$ | 0.2851054 | $i$ | 12.17742 | | −0.22195659 | | +0.48957545 | | |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.2− | 0.3− | | |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2002 12 05 | 704 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 02 | 703 | 0.3− | 0.1− | | |
| 2002 12 15 | 704 | 0.9+ | 0.9− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 02 | 703 | 0.3− | 0.3− | | |
| 2002 12 15 | 704 | 0.7− | 0.1+ | 2006 10 03 | 704 | 0.9+ | 0.7+ | 2006 11 02 | 703 | 0.5− | 0.5− | | |
| 2002 12 15 | 704 | 0.8− | 0.2+ | 2006 10 03 | 704 | 0.5+ | 1.5+ | 2006 11 02 | 703 | 0.5− | 0.4+ | | |
| 2002 12 15 | 704 | 0.4+ | 0.2− | 2006 10 03 | 704 | (1.2+ | 1.7+) | 2006 11 11 | 703 | 0.0 | 0.4− | | |
| 2005 04 11 | G96 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.6− | 0.1− | | |
| 2005 04 11 | G96 | 0.6− | 0.1+ | 2006 10 03 | 704 | 0.9+ | 1.1+ | 2006 11 11 | 703 | 0.7− | 0.5− | | |
| 2005 04 11 | G96 | 0.2− | 0.3+ | 2006 10 16 | 621 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2005 04 11 | G96 | 0.3− | 0.3− | 2006 10 16 | 621 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.3− | | |
| 2005 05 08 | 691 | 0.5+ | 0.3+ | 2006 10 16 | 621 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.8− | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2005 05 08 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.0 | 0.2− | | |
| 2005 05 12 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.3− | | |
| 2005 05 12 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.4− | | |
| 2005 05 12 | 691 | 0.7+ | 0.2+ | 2006 10 17 | 621 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.3− | 0.1+ | | |
| 2005 05 13 | G96 | 0.2− | 0.0 | 2006 10 17 | 621 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.5− | 0.1+ | | |
| 2005 05 13 | G96 | 0.3− | 0.0 | 2006 10 17 | 621 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.4+ | | |
| 2005 05 13 | G96 | 0.9− | 0.8− | 2006 10 17 | 621 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.3− | | |
| 2005 05 13 | G96 | 0.1− | 0.1− | 2006 10 17 | 621 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2005 06 14 | G96 | 0.5− | 0.6+ | 2006 10 17 | 621 | 0.9+ | 0.4− | 2006 11 18 | 704 | 0.1− | 0.1+ | | |
| 2005 06 14 | G96 | 0.3− | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 18 | 704 | (1.5+ | 0.2−) | | |
| 2005 06 14 | G96 | 1.0− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.3+ | | |
| 2005 06 14 | G96 | 0.2− | 0.1+ | 2006 10 17 | G96 | (1.4− | 1.9−) | 2006 11 18 | 704 | 0.5− | 0.2− | | |
| 2006 09 17 | 699 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.9+ | | |
| 2006 09 17 | 699 | 0.7− | 0.4+ | 2006 10 18 | 621 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.8− | 0.4+ | | |
| 2006 09 17 | 699 | 0.6− | 0.2+ | 2006 10 18 | 621 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.7+ | | |
| 2006 09 17 | 699 | 0.6+ | 0.7+ | 2006 10 18 | 621 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 1.2+ | | |
| 2006 09 18 | 703 | 0.1+ | 1.4− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 1.3+ | | |
| 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.0 | 1.2+ | | |
| 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.3+ | | |
| 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.8+ | | |
| 2006 09 22 | 704 | 1.0+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.3+ | | |
| 2006 09 22 | 704 | 1.0− | 0.1− | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.2+ | | |
| 2006 09 22 | 704 | 0.5− | 1.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.1+ | | |
| 2006 09 30 | 703 | 0.7− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.0 | 0.0 | | |
| 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.0 | | |
| 2006 09 30 | 703 | 1.2− | 0.5− | 2006 10 28 | G96 | 0.1− | 0.2− | | | | | | |
| 2006 09 30 | 703 | 0.2+ | 1.3− | 2006 11 01 | 691 | 0.2+ | 0.0 | | | | | | |

**2005 JC$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 110.73992 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.28502330 | $\omega$ | 149.79298 | | +0.09353323 | | +0.99470458 | | |
| $a$ | 2.2867348 | $\Omega$ | 125.54162 | | −0.92361674 | | +0.10266338 | | |
| $e$ | 0.1775541 | $i$ | 3.00067 | | −0.37173063 | | −0.00479833 | | |
| $P$ | 3.46 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 699 | 0.1− | 1.0− | 2005 05 13 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.2− | | |
| 2005 05 08 | 699 | 0.8+ | 0.1− | 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.4− | 0.6− | | |
| 2005 05 08 | 691 | 0.1− | 0.0 | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.5− | 0.5− | | |
| 2005 05 08 | 699 | 0.9+ | 0.0 | 2005 05 14 | G96 | 0.3− | 0.5− | 2006 11 16 | 691 | 0.1− | 0.2+ | | |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.2+ | | |
| 2005 05 08 | 699 | 0.2− | 0.4+ | 2005 05 14 | G96 | 0.3− | 0.3− | 2006 11 16 | 691 | 0.1− | 0.5+ | | |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.4− | | |
| 2005 05 12 | 704 | 0.3+ | 0.6+ | 2005 05 14 | 644 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.6+ | 1.1− | | |
| 2005 05 12 | 704 | 0.5− | 0.3− | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.6+ | 0.4− | | |
| 2005 05 12 | 704 | 0.4− | 0.9− | 2005 05 14 | 644 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.5− | 0.2− | | |
| 2005 05 12 | 704 | 0.1+ | 1.0+ | 2006 11 12 | G96 | 0.1+ | 0.0 | | | | | | |

**2005 JG$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 139.00598 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.23486365 | $\omega$ | 1.75535 | | −0.92899518 | | +0.36884673 | | |
| $a$ | 2.6017098 | $\Omega$ | 199.97232 | | −0.34062547 | | −0.88420068 | | |
| $e$ | 0.1596991 | $i$ | 5.09477 | | −0.14471434 | | −0.28660295 | | |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | G96 | 0.4+ | 0.4+ | 2005 05 12 | G96 | 0.1− | 0.3− | 2005 06 04 | 703 | 1.5− | 0.2+ | | |
| 2005 03 12 | G96 | 0.1+ | 0.5+ | 2005 05 12 | G96 | 0.1− | 0.2− | 2005 06 04 | 703 | 0.9− | 0.6+ | | |
| 2005 03 12 | G96 | 0.0 | 0.1− | 2005 05 14 | 644 | 0.2+ | 0.3− | 2005 06 12 | 691 | 0.4+ | 0.2− | | |
| 2005 03 12 | G96 | 0.3− | 0.2+ | 2005 05 14 | 644 | 0.4+ | 0.4− | 2005 06 12 | 691 | 0.2+ | 0.0 | | |
| 2005 05 08 | 704 | 0.1− | 0.8+ | 2005 05 14 | 644 | 0.1− | 0.2− | 2005 06 12 | 691 | 0.2+ | 0.3− | | |
| 2005 05 08 | 704 | 0.1+ | 1.4− | 2005 06 03 | 691 | 0.0 | 0.2+ | 2006 10 19 | 695 | 0.1− | 0.0 | | |
| 2005 05 08 | 704 | 0.2+ | 0.3+ | 2005 06 03 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 695 | 0.1− | 0.0 | | |
| 2005 05 08 | 704 | 0.2+ | 0.4− | 2005 06 03 | 691 | 0.2− | 0.3+ | 2006 10 20 | 695 | 0.1+ | 0.1+ | | |
| 2005 05 12 | G96 | 0.3− | 0.2− | 2005 06 04 | 703 | 0.4− | 0.2+ | | | | | | |
| 2005 05 12 | G96 | 0.1− | 0.2− | 2005 06 04 | 703 | 0.4− | 0.5− | | | | | | |

**2005 JB$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 201.10221 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.23154804 | $\omega$ | 285.79502 | | −0.50524624 | | −0.86285296 | | |
| $a$ | 2.6264873 | $\Omega$ | 194.57948 | | +0.81221104 | | −0.46976997 | | |
| $e$ | 0.2099340 | $i$ | 3.30815 | | +0.29161529 | | −0.18655009 | | |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.5+ | 0.1+ | 2003 12 01 | 691 | 0.1+ | 0.0 | 2005 05 08 | G96 | 0.4− | 0.1− | | |
| 2000 02 02 | 704 | 0.9− | 0.0 | 2003 12 01 | 691 | 0.0 | 0.1− | 2005 05 08 | G96 | 0.5− | 0.0 | | |
| 2000 02 02 | 704 | 1.4+ | 0.0 | 2003 12 21 | 704 | 1.5− | 0.1+ | 2005 05 12 | 691 | 0.3+ | 0.1+ | | |
| 2000 02 02 | 704 | 0.5− | 0.4− | 2003 12 21 | 704 | 0.0 | 0.4− | 2005 05 12 | 691 | 0.6− | 0.4+ | | |
| 2000 02 02 | 704 | 0.6− | 0.1+ | 2003 12 21 | 704 | 0.9+ | 0.4− | 2005 05 12 | 691 | 0.3+ | 0.0 | | |
| 2003 11 19 | 699 | 0.0 | 0.4− | 2003 12 23 | 704 | 0.0 | 0.2− | 2005 05 20 | G96 | 0.1− | 0.4+ | | |
| 2003 11 19 | 699 | 0.5+ | 0.5− | 2003 12 23 | 704 | 1.2+ | 0.7+ | 2005 05 20 | G96 | 0.5− | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 699 | 0.8− | 0.0 | 2003 12 23 | 704 | 0.7+ | 0.4− | 2005 05 20 | G96 | 0.1+ | 0.4+ |
| 2003 11 19 | 699 | 0.8+ | 0.8− | 2003 12 23 | 704 | 0.1+ | 0.6+ | 2005 05 20 | G96 | 0.2− | 0.3+ |
| 2003 12 01 | 704 | 0.6− | 1.1+ | 2005 05 08 | 691 | 0.3+ | 0.3− | 2005 05 20 | G96 | 0.0 | 0.5+ |
| 2003 12 01 | 704 | 0.0 | 0.7+ | 2005 05 08 | 691 | 0.1+ | 0.2− | 2005 05 20 | G96 | 0.1+ | 0.2+ |
| 2003 12 01 | 704 | 0.6− | 0.9+ | 2005 05 08 | 691 | 0.2+ | 0.3− | 2005 05 20 | G96 | 0.2+ | 0.1+ |
| 2003 12 01 | 704 | 0.5− | 0.5+ | 2005 05 08 | G96 | 0.3− | 0.2− | 2005 05 20 | G96 | 0.3− | 0.0 |
| 2003 12 01 | 691 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.5− | 0.1− | | | | |

**2005 JA$_{88}$ = 2006 UO$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.59445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30503687 | $\omega$ | 302.29614 | | +0.69126077 | | +0.72240614 |
| $a$ | 2.1855856 | $\Omega$ | 11.48243 | | −0.63101331 | | +0.61491735 |
| $e$ | 0.1718263 | $i$ | 4.88968 | | −0.35210901 | | +0.31623729 |
| $P$ | 3.23 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 21 | 691 | 0.5− | 0.4+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 1996 09 21 | 691 | 0.1− | 0.3+ | 2005 05 12 | G96 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1996 09 21 | 691 | 0.0 | 0.3+ | 2006 10 19 | A50 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 05 10 | 644 | 0.3− | 0.8− | 2006 10 19 | A50 | 0.5+ | 0.3− | 2006 10 31 | 691 | 0.3− | 0.4+ |
| 2002 05 10 | 644 | 0.1− | 0.6− | 2006 10 19 | 703 | 0.8− | 0.8− | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2002 05 10 | 644 | 0.0 | 0.7− | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 03 08 | G96 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2005 03 08 | G96 | 0.3− | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.3− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2005 03 08 | G96 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.7+ | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2005 03 08 | G96 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 703 | (0.3− | 1.5−) | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2005 04 30 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2005 04 30 | 691 | 0.3+ | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.0 |
| 2005 05 10 | 691 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.6+ | 1.2− |
| 2005 05 10 | 691 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2005 05 10 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2005 05 12 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ | | | | |
| 2005 05 12 | G96 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 | | | | |

**2005 JO$_{88}$ = 2006 SO$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.37665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26524250 | $\omega$ | 326.65510 | | +0.97762527 | | −0.19246489 |
| $a$ | 2.3990574 | $\Omega$ | 44.69248 | | +0.20953620 | | +0.85545530 |
| $e$ | 0.1468437 | $i$ | 6.93253 | | +0.01853157 | | +0.48078424 |
| $P$ | 3.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2005 05 10 | G96 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2005 05 10 | G96 | 0.5− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.8+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2005 05 10 | G96 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.2+ | 0.3+ |
| 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2005 05 12 | G96 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 05 12 | G96 | 0.0 | 0.9+ | 2006 10 21 | G96 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2005 05 16 | 691 | 0.1+ | 0.6− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 17 | 703 | (0.7− | 1.7−) |
| 2005 05 16 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.5− | 2006 11 17 | 703 | 0.7− | 0.2− |
| 2005 05 16 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.8+ | 0.3+ |
| 2006 09 20 | 699 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.2− |
| 2006 09 20 | 699 | (2.1+ | 0.1+) | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.6+ | 0.3− |
| 2006 09 20 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2006 09 20 | 699 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2006 09 26 | 704 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.1+ |
| 2006 09 26 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 26 | 704 | 0.6+ | 0.0 |
| 2006 09 26 | 704 | 0.3− | 0.4− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 26 | 704 | 1.1− | 0.1− |
| 2006 09 26 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 26 | 704 | 0.7− | 0.3+ |
| 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.9− | 0.2+ |
| 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 10 31 | G96 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.8+ | 0.3+ |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.3− | 0.2+ |
| 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 27 | 703 | 0.7− | 0.1− |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 07 | 644 | 0.2+ | 0.4+ | | | | |
| 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.5+ | | | | |

**2005 JD$_{89}$ = 2006 VE$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.97664 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17922055 | $\omega$ | 286.81929 | | +0.86574219 | | +0.43442622 |
| $a$ | 3.1156178 | $\Omega$ | 48.21414 | | −0.22688809 | | +0.78326938 |
| $e$ | 0.3336883 | $i$ | 19.46938 | | −0.44610789 | | +0.44470546 |
| $P$ | 5.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | G96 | 0.1+ | 0.3+ | 2005 05 12 | 291 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2005 04 07 | G96 | 0.1− | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2005 04 07 | G96 | 0.0 | 0.1+ | 2005 05 12 | 291 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 2005 04 07 | G96 | 0.2+ | 0.3− | 2006 09 20 | 644 | 0.7− | 0.5− | 2006 11 13 | 644 | 0.4− | 0.1− |
| 2005 05 11 | 691 | 0.2+ | 0.4− | 2006 09 20 | 644 | 0.5− | 0.0 | 2006 11 13 | 644 | 0.4− | 0.1+ |
| 2005 05 11 | 691 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.6− | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.2− |
| 2005 05 12 | G96 | 0.6− | 0.1+ | 2006 09 29 | 699 | 0.8+ | 0.1+ | 2006 11 17 | 704 | 0.7+ | 0.7+ |
| 2005 05 12 | G96 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.4+ | 1.4− | 2006 11 17 | 704 | 0.7+ | 0.3− |
| 2005 05 12 | 291 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.3+ | 1.2+ | 2006 11 17 | 704 | 0.1+ | 0.5− |
| 2005 05 12 | G96 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.8+ | | | | |

**2005 JF$_{89}$ = 2006 RM$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.29741 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22887592 | $\omega$ | 91.96101 | | +0.83463577 | | +0.52580123 |
| $a$ | 2.6468905 | $\Omega$ | 236.35442 | | −0.55028339 | | +0.78307510 |
| $e$ | 0.1370552 | $i$ | 11.36600 | | −0.02390242 | | +0.33215427 |
| $P$ | 4.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.4− | 2006 09 28 | 703 | 0.3+ | 0.6− |
| 2005 05 11 | 691 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.9+ | 0.8+ |
| 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.5− |
| 2005 05 12 | G96 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.4− | 2006 09 28 | 703 | 0.2+ | 1.0− |
| 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.9− | 0.1− | 2006 09 28 | 703 | 0.5− | 0.7− |
| 2005 05 12 | G96 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.0 | 1.2− | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 05 12 | G96 | 0.6− | 0.1+ | 2006 09 28 | 703 | 0.5+ | 1.3+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2005 05 12 | G96 | 0.2− | 0.2+ | 2006 09 28 | 703 | 1.0+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2005 05 12 | G96 | 0.1− | 0.3+ | 2006 09 28 | 703 | 1.4+ | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2005 05 12 | G96 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.7+ | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2005 05 16 | 691 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 05 16 | 691 | 0.2+ | 0.0 | 2006 09 28 | 703 | 1.4− | 0.5− | 2006 10 23 | 644 | 0.4− | 0.1+ |
| 2005 05 16 | 691 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.6+ | 0.9+ | 2006 10 23 | 644 | 0.3− | 0.4+ |

**2005 JF$_{90}$ = 2006 UJ$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.31998 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22987235 | $\omega$ | 259.71862 | | +0.82704053 | | +0.54341228 |
| $a$ | 2.6392360 | $\Omega$ | 67.22741 | | −0.43505720 | | +0.78085087 |
| $e$ | 0.1881102 | $i$ | 8.97856 | | −0.35599043 | | +0.30818017 |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.1− | 0.4+ | 2005 05 14 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2002 11 07 | 695 | 0.1− | 0.4+ | 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.9− |
| 2005 04 04 | G96 | 0.3− | 0.3+ | 2005 05 14 | 644 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.8− | 0.7− |
| 2005 04 04 | G96 | 0.4− | 0.2− | 2005 06 13 | G96 | 0.5− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2005 04 04 | G96 | 0.4− | 0.4− | 2005 06 13 | G96 | 0.8− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2005 04 04 | G96 | 0.1+ | 0.1− | 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | G96 | 0.4− | 0.2− | 2005 06 13 | G96 | 0.9− | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2005 05 11 | G96 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.1− | 1.0+ | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2005 05 11 | G96 | 0.3− | 0.3− | 2006 09 29 | 699 | 0.3+ | 0.5− | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2005 05 11 | G96 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.1+ | 1.3+ |
| 2005 05 12 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.6+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2005 05 12 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2005 05 12 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.4− | 0.1− |
| 2005 05 13 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.6+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2005 05 13 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.7− | | | | |
| 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.5− | | | | |

### 2005 JS$_{90}$ = 2006 SX$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.37764 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21443734 | $\omega$ | 229.15705 | | +0.24836200 | | +0.96077230 |
| $a$ | 2.7644099 | $\Omega$ | 55.63914 | | −0.83766447 | | +0.27700843 |
| $e$ | 0.1928628 | $i$ | 8.59862 | | −0.48645097 | | +0.01352491 |
| $P$ | 4.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.1− | 0.0 | 2005 05 12 | 691 | 0.1− | 0.1+ | 2006 09 24 | 461 | 0.1− | 0.1+ |
| 2005 05 03 | 691 | 0.4+ | 0.1+ | 2005 05 12 | 691 | 0.0 | 0.0 | 2006 09 24 | 461 | 0.5− | 0.2− |
| 2005 05 03 | 691 | 0.0 | 0.1− | 2005 05 12 | 691 | 0.3+ | 0.2− | 2006 10 04 | G96 | 1.3+ | 0.4+ |
| 2005 05 11 | G96 | 0.4− | 0.1− | 2006 09 23 | 461 | 0.3− | 0.4− | 2006 10 04 | G96 | 0.3− | 0.2− |
| 2005 05 11 | G96 | 0.3− | 0.1+ | 2006 09 23 | 461 | 0.0 | 0.9− | 2006 10 04 | G96 | 0.0 | 0.2+ |
| 2005 05 11 | G96 | 0.6− | 0.1+ | 2006 09 24 | 461 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2005 05 11 | G96 | 0.7− | 0.0 | 2006 09 24 | 461 | 0.2− | 0.8+ | | | | |

### 2005 JW$_{90}$ = 2006 SO$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.85061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22136950 | $\omega$ | 346.64492 | | −0.40820611 | | +0.90266245 |
| $a$ | 2.7063930 | $\Omega$ | 259.12509 | | −0.82429452 | | −0.42860775 |
| $e$ | 0.2034854 | $i$ | 7.97595 | | −0.39230895 | | −0.03867693 |
| $P$ | 4.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2005 05 12 | 703 | 0.7− | 1.1− | 2006 09 16 | 703 | (1.7+ | 1.3+) |
| 2000 03 04 | 645 | 0.1+ | 0.1+ | 2005 05 12 | 703 | 0.4− | 0.4− | 2006 09 16 | 703 | 1.0− | 1.0+ |
| 2001 07 25 | 608 | 0.1+ | 0.5− | 2005 05 12 | 703 | 0.6− | 1.0− | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 2001 07 25 | 608 | 0.1− | 0.5− | 2005 05 12 | 703 | 0.6− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.2+ |
| 2001 07 25 | 608 | 0.1+ | 0.8− | 2005 05 12 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.6+ |
| 2001 08 16 | 644 | 0.5− | 0.1+ | 2005 05 12 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.5+ | 0.7+ |
| 2001 08 16 | 644 | 0.4− | 0.2+ | 2005 05 12 | 644 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.9+ |
| 2001 08 16 | 644 | 0.2− | 0.1+ | 2005 05 30 | E12 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2003 12 21 | 645 | 0.1+ | 0.0 | 2005 05 30 | E12 | 0.6+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2003 12 21 | 645 | 0.3− | 0.1− | 2005 05 30 | E12 | 0.6− | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.3+ |
| 2005 05 11 | 644 | 0.3+ | 0.3+ | 2005 05 30 | E12 | (1.2+ | 2.1−) | 2006 11 11 | G96 | 0.7+ | 0.3− |
| 2005 05 11 | 644 | 0.5+ | 0.4+ | 2006 09 16 | 703 | (0.6− | 1.5+) | 2006 11 11 | G96 | 0.0 | 0.3+ |
| 2005 05 11 | 644 | 0.5+ | 0.4+ | 2006 09 16 | 703 | (0.4+ | 3.5+) | | | | |

### 2005 JX$_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.55455 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23548977 | $\omega$ | 34.14621 | | +0.28110939 | | +0.94333341 |
| $a$ | 2.5970961 | $\Omega$ | 252.73144 | | −0.91656712 | | +0.20945285 |
| $e$ | 0.1656794 | $i$ | 10.64220 | | −0.28439799 | | +0.25739382 |
| $P$ | 4.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 644 | 0.4+ | 0.2+ | 2005 05 30 | E12 | 0.4− | 0.2− | 2006 09 28 | 703 | 0.5− | 0.4+ |
| 2005 05 11 | 644 | 0.5+ | 0.1+ | 2005 05 30 | E12 | 0.2+ | 0.5+ | 2006 09 28 | 703 | 0.7+ | 0.9− |
| 2005 05 11 | 644 | 0.2+ | 0.3+ | 2005 05 30 | E12 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.8− | 1.3− |
| 2005 05 12 | 703 | 0.4+ | 0.2+ | 2005 05 30 | E12 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2005 05 12 | 703 | 1.3− | 1.0− | 2005 06 03 | 703 | 0.9− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2005 05 12 | 703 | 0.3− | 0.7− | 2005 06 03 | 703 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2005 05 12 | 703 | 0.3+ | 0.8− | 2005 06 03 | 703 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2005 05 12 | 644 | 0.2+ | 0.2+ | 2005 06 03 | 703 | (1.7− | 0.5+) | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2005 05 12 | 644 | 0.1+ | 0.1+ | 2005 06 11 | 703 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2005 05 12 | 644 | 0.1+ | 0.2+ | 2005 06 11 | 703 | 1.3− | 0.3+ | 2006 10 27 | 703 | 0.5+ | 0.1+ |
| 2005 05 19 | 644 | 0.5+ | 0.0 | 2005 06 11 | 703 | 0.8− | 1.1+ | 2006 10 27 | 703 | 0.1+ | 0.8+ |
| 2005 05 19 | 644 | 0.3+ | 0.2+ | 2005 06 11 | 703 | 0.6+ | 0.6− | 2006 10 27 | 703 | 0.0 | 0.5+ |
| 2005 05 19 | 644 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.8− | 1.2− | 2006 10 27 | 703 | 0.5− | 0.8+ |

### 2005 JD$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.92086 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23313901 | $\omega$ | 2.25812 | | −0.21158204 | | +0.97039088 |
| $a$ | 2.6145247 | $\Omega$ | 255.54304 | | −0.89858572 | | −0.24002903 |
| $e$ | 0.1944574 | $i$ | 6.91057 | | −0.38441742 | | +0.02697428 |
| $P$ | 4.23 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 644 | 0.5+ | 0.2+ | 2005 05 12 | 703 | 0.6+ | 0.3− | 2005 06 03 | 703 | 0.5− | 0.2+ |
| 2005 05 11 | 644 | 0.4+ | 0.0 | 2005 05 16 | 644 | 0.5− | 0.3− | 2005 06 03 | 703 | 0.5+ | 0.1− |
| 2005 05 11 | 644 | 0.5+ | 0.1+ | 2005 05 16 | 644 | 0.8− | 0.2− | 2006 09 25 | 152 | 0.1+ | 0.1+ |
| 2005 05 12 | 703 | 0.1− | 0.0 | 2005 05 16 | 644 | 0.8− | 0.0 | 2006 09 26 | 152 | 0.1− | 0.1− |
| 2005 05 12 | 703 | 0.1+ | 0.1+ | 2005 06 03 | 703 | 0.1− | 0.1+ | 2006 09 26 | 152 | (4.7+ | 3.0−) |
| 2005 05 12 | 703 | 0.3− | 0.5+ | 2005 06 03 | 703 | 0.5+ | 0.3− | | | | |

### 2005 JE$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.51537 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24303588 | $\omega$ | 82.92595 | | +0.75959086 | | +0.61966730 |
| $a$ | 2.5430552 | $\Omega$ | 238.57345 | | −0.64965145 | | +0.70828161 |
| $e$ | 0.1314112 | $i$ | 13.38744 | | −0.03122061 | | +0.33815616 |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 644 | 0.1− | 0.2− | 2005 06 12 | G96 | 0.3− | 0.9− | 2006 10 27 | 703 | 0.6− | 0.6− |
| 2005 05 11 | 644 | 0.2− | 0.1− | 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.3+ |
| 2005 05 11 | 644 | 0.4− | 0.5− | 2005 06 14 | 691 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.2− | 0.4+ |
| 2005 05 12 | G96 | 0.1+ | 0.4+ | 2005 06 14 | 691 | 0.1− | 0.3− | 2006 11 14 | 703 | (4.2− | 0.1+) |
| 2005 05 12 | G96 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 14 | 703 | (0.1− | 3.5+) |
| 2005 05 12 | G96 | 0.5− | 0.3− | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.9− |
| 2005 05 12 | G96 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.4− | 0.5+ | 2006 11 14 | 703 | 0.5+ | 1.3+ |
| 2005 06 06 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 703 | (2.0− | 0.8−) | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2005 06 06 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.5− | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2005 06 06 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2005 06 12 | G96 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2005 06 12 | G96 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.3− | | | | |
| 2005 06 12 | G96 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.1− | | | | |

### 2005 JY$_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.50135 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23726940 | $\omega$ | 342.91465 | | −0.14493425 | | +0.97779093 |
| $a$ | 2.5840935 | $\Omega$ | 278.55351 | | −0.88896496 | | −0.19586375 |
| $e$ | 0.1686813 | $i$ | 8.80621 | | −0.43443684 | | +0.07458073 |
| $P$ | 4.15 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 02 | E12 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.2− | 0.0 | 2006 10 14 | 621 | 0.4− | 0.6− |
| 2005 05 02 | E12 | 0.3− | 0.4+ | 2005 05 12 | 644 | 0.3+ | 0.0 | 2006 10 15 | 621 | 0.5− | 0.9− |
| 2005 05 02 | E12 | 0.3+ | 0.1− | 2005 05 12 | 644 | 0.1+ | 0.0 | 2006 10 15 | 621 | 0.2+ | 0.6+ |
| 2005 05 02 | E12 | 0.0 | 0.1− | 2005 05 12 | 644 | 0.2− | 0.3− | 2006 10 15 | 621 | 0.2+ | 0.2+ |
| 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 10 14 | 621 | 0.2+ | 0.4+ | | | | |
| 2005 05 11 | 644 | 0.0 | 0.1+ | 2006 10 14 | 621 | 0.2+ | 0.2+ | | | | |

**2005 JU$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 159.00638 | | | (2000.0) | | |
| $n$ | 0.26423803 | $\omega$ | 312.84175 | | −0.90056837 | +0.43347253 |
| $a$ | 2.4051334 | $\Omega$ | 252.87079 | | −0.38815082 | −0.83582000 |
| $e$ | 0.1206695 | $i$ | 1.96905 | | −0.19574359 | −0.33690725 |
| $P$ | 3.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 644 | 0.5+ | 0.1− | 2005 05 27 | 599 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3+ |
| 2005 05 11 | 644 | 0.0 | 0.1+ | 2005 05 28 | 599 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.5− | 0.4+ |
| 2005 05 11 | 644 | 0.2− | 0.0 | 2005 05 28 | 599 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2005 05 12 | 644 | 0.3− | 0.0 | 2005 05 28 | 599 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 05 12 | 644 | 0.0 | 0.3+ | 2005 06 13 | G96 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2005 05 12 | 644 | 0.1− | 0.2+ | 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2005 05 27 | 599 | 0.2+ | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2005 05 27 | 599 | 0.2− | 0.7− | 2005 06 13 | G96 | 0.0 | 0.0 | | | | |
| 2005 05 27 | 599 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.4− | | | | |

**2005 JC$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 274.51231 | | | (2000.0) | | |
| $n$ | 0.36883287 | $\omega$ | 63.75025 | | −0.57296765 | −0.74071404 |
| $a$ | 1.9256749 | $\Omega$ | 65.73781 | | +0.54477220 | −0.66397315 |
| $e$ | 0.0848884 | $i$ | 22.62952 | | +0.61231635 | −0.10238346 |
| $P$ | 2.67 | $H$ | 18.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 12 | 461 | 0.7− | 0.1− | 2005 05 26 | 461 | 0.5− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2005 05 12 | 461 | 0.6− | 0.1− | 2005 05 26 | 461 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.5+ | 1.3+ |
| 2005 05 13 | 461 | 0.3+ | 0.0 | 2005 05 26 | 461 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.3− | 0.4− |
| 2005 05 13 | 461 | 1.0− | 0.2− | 2005 05 26 | 461 | 0.3+ | 0.3− | 2006 11 28 | 704 | 1.6− | 2.0− |
| 2005 05 13 | 461 | 0.3+ | 0.3− | 2005 06 01 | 461 | 0.4+ | 0.5− | 2006 11 28 | 704 | 0.1− | 0.5+ |
| 2005 05 13 | 461 | 0.0 | 0.1− | 2005 06 01 | 461 | 0.8− | 1.0+ | 2006 11 28 | 704 | 0.4− | 0.4− |
| 2005 05 13 | 461 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.2− | 0.5− |
| 2005 05 13 | 461 | 0.6− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.1− | 0.2+ |
| 2005 05 16 | 691 | 0.3+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2005 05 16 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.1+ | | | | |
| 2005 05 16 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.1− | | | | |

**2005 JU$_{95}$ = 2006 TK$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 86.50254 | | | (2000.0) | | |
| $n$ | 0.30562074 | $\omega$ | 103.38037 | | +0.49173750 | +0.87047910 |
| $a$ | 2.1828011 | $\Omega$ | 196.12762 | | −0.82580242 | +0.45840205 |
| $e$ | 0.0295074 | $i$ | 4.43011 | | −0.27612424 | +0.17925876 |
| $P$ | 3.22 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.1+ | 0.1− | 2005 05 14 | G96 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 2005 05 08 | 691 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.7− | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.6− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2005 05 13 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.4+ | 0.5− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.7− | 2006 10 27 | 691 | 0.4+ | 0.3− |
| 2005 05 13 | 691 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2005 05 14 | G96 | 0.4− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2005 05 14 | G96 | 0.4− | 0.3− | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2005 05 14 | G96 | 0.7− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.2+ | | | | |

**2005 JF$_{97}$ = 2006 SY$_{367}$ = 2006 SU$_{369}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.90577 | | | (2000.0) | | |
| $n$ | 0.30190209 | $\omega$ | 324.27028 | | +0.75530927 | −0.64369655 |
| $a$ | 2.2006888 | $\Omega$ | 76.27565 | | +0.62688507 | +0.65482517 |
| $e$ | 0.1270784 | $i$ | 7.28216 | | +0.19110994 | +0.39605397 |
| $P$ | 3.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 599 | 1.5+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 2005 05 01 | 599 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.3+ |
| 2005 05 01 | 599 | (3.0+ | 1.4+) | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 17 | 704 | 0.5− | 1.4+ |
| 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | (1.8− | 0.6+) |
| 2005 05 08 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.6+ | 0.4− | 2006 11 17 | 704 | (2.6− | 0.0 ) |
| 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.6+ | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.1+ |
| 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.4− | 2006 11 19 | 703 | 0.2+ | 0.9+ |
| 2005 05 13 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.3− | 2006 11 19 | 703 | 0.4− | 1.0+ |
| 2005 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.1− | 2006 11 19 | 703 | 1.0+ | 1.2+ |
| 2005 05 14 | G96 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.4− | 2006 11 19 | 703 | 0.3+ | 1.0+ |
| 2005 05 14 | G96 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.6− | 0.9+ |
| 2005 05 14 | G96 | 0.2− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.0 | 1.3+ |
| 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.2− | 0.8+ |
| 2005 05 14 | 644 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.4− | 0.1+ | 2006 11 20 | 704 | (2.5+ | 0.3+) |
| 2005 05 14 | 644 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.8+ | 0.6+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2005 05 14 | 644 | 0.4− | 0.6+ | 2006 10 28 | 703 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2006 09 29 | 699 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.5− | 0.7+ |
| 2006 09 29 | 699 | 0.1− | 0.5− | 2006 11 13 | 703 | 1.1− | 1.1− | 2006 11 21 | 704 | 1.0+ | 0.8+ |
| 2006 09 29 | 699 | 0.1− | 0.7+ | 2006 11 13 | 703 | 0.9− | 1.1− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2006 09 29 | 699 | 0.2− | 1.1− | 2006 11 13 | 703 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2006 09 30 | 703 | 0.9− | 0.9− | 2006 11 13 | 703 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2006 09 30 | 703 | 0.6+ | 0.3− | 2006 11 14 | 704 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2006 09 30 | 703 | 0.6+ | 0.5− | 2006 11 14 | 704 | 0.1− | 0.3+ | | | | |
| 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 14 | 704 | 0.2− | 1.3+ | | | | |

**2005 JT$_{97}$ = 2006 WD$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 87.51577 | | | (2000.0) | | |
| $n$ | 0.29492121 | $\omega$ | 233.08491 | | +0.58253056 | +0.80159928 |
| $a$ | 2.2352806 | $\Omega$ | 73.08132 | | −0.69385134 | +0.57662106 |
| $e$ | 0.1474072 | $i$ | 8.08314 | | −0.42335383 | +0.15794539 |
| $P$ | 3.34 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.1+ | 0.7+ | 2005 05 14 | G96 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.3− | 0.5− |
| 2002 07 16 | 644 | 0.1− | 0.3+ | 2005 06 13 | G96 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2002 07 16 | 644 | 0.3− | 0.0 | 2005 06 13 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 05 08 | 691 | 0.0 | 0.0 | 2005 06 13 | G96 | 0.9− | 0.3+ | 2006 11 24 | G96 | 0.5+ | 0.2− |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2005 05 08 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2005 05 13 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2005 05 13 | 691 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.7+ | 0.4− | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2005 05 13 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.4− | 2006 12 01 | 691 | 0.5− | 0.6+ |
| 2005 05 14 | G96 | 0.4− | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.0 | 2006 12 01 | 691 | 0.3− | 0.3− |
| 2005 05 14 | G96 | 0.3− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 05 14 | G96 | 0.1− | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.2+ | | | | |

**2005 JG$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 96.57768 | | | (2000.0) | | |
| $n$ | 0.27673242 | $\omega$ | 200.52605 | | +0.25805056 | +0.96562733 |
| $a$ | 2.3321834 | $\Omega$ | 84.43855 | | −0.88197795 | +0.24863480 |
| $e$ | 0.2109979 | $i$ | 1.79668 | | −0.39436634 | +0.07579314 |
| $P$ | 3.56 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | G96 | 1.3− | 0.1− | 2005 04 30 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2005 03 12 | G96 | 0.9− | 0.2− | 2005 05 09 | 704 | 1.2− | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2005 03 12 | G96 | 0.9+ | 0.6− | 2005 05 09 | 704 | 1.1− | 0.3− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2005 03 12 | G96 | 1.3+ | 0.8− | 2005 05 09 | 704 | 0.2− | 0.4− | 2006 11 14 | 691 | 0.3− | 0.2+ |
| 2005 04 16 | 691 | 0.0 | 0.0 | 2005 05 13 | 704 | 0.9+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2005 04 16 | 691 | 0.0 | 0.2− | 2005 05 13 | 704 | 0.5+ | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2005 04 16 | 691 | 0.0 | 0.2− | 2005 05 13 | 704 | 0.2+ | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2005 04 30 | 691 | 0.1+ | 0.4+ | 2005 05 13 | 704 | 0.7+ | 0.5+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2005 04 30 | 691 | 0.0 | 0.2+ | 2005 05 13 | 704 | 1.0+ | 0.8+ | 2006 11 21 | 691 | 0.2− | 0.2+ |

**2005 JN$_{99}$ = 2006 SG$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.58739 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21975270 | $\omega$ | 158.51947 | | +0.86416229 | | +0.50266967 |
| $a$ | 2.7196514 | $\Omega$ | 171.19292 | | −0.48107410 | | +0.83888159 |
| $e$ | 0.1237437 | $i$ | 8.78445 | | −0.14761858 | | +0.20880824 |
| $P$ | 4.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 691 | 0.1+ | 0.0 | 2005 05 13 | 691 | 0.2+ | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.1− |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2005 04 30 | 691 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2005 05 09 | 691 | 0.1− | 0.2+ | 2006 07 21 | G96 | 0.4+ | 0.4− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2005 05 09 | 691 | 0.2− | 0.4+ | 2006 07 21 | G96 | 0.6− | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2005 05 09 | 691 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2005 05 13 | 691 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.3− | 0.2+ | | | | |
| 2005 05 13 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.2− | 0.0 | | | | |

**2005 JY$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.50216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24522210 | $\omega$ | 281.03062 | | +0.93881754 | | −0.21281477 |
| $a$ | 2.5279180 | $\Omega$ | 91.67647 | | +0.30660287 | | +0.87458379 |
| $e$ | 0.1662424 | $i$ | 15.71865 | | −0.15689585 | | +0.43567541 |
| $P$ | 4.02 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 644 | 0.3− | 0.5+ | 2005 05 14 | G96 | 0.8− | 0.2− | 2006 09 25 | 703 | 0.1− | 0.3− |
| 2002 11 05 | 644 | 0.4− | 0.3+ | 2005 05 14 | G96 | 1.0− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.7+ |
| 2002 11 05 | 644 | 0.1− | 0.5+ | 2005 05 14 | G96 | 0.5− | 0.2− | 2006 10 21 | 703 | 0.1+ | 1.3+ |
| 2004 04 13 | 645 | 0.0 | 0.1− | 2005 05 14 | G96 | 0.8− | 0.4− | 2006 10 21 | 703 | 1.1− | 0.5− |
| 2004 04 13 | 645 | 0.1+ | 0.2+ | 2005 06 15 | 691 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.3− |
| 2005 05 03 | 691 | 0.1− | 0.3− | 2005 06 15 | 691 | 0.1− | 0.3+ | 2006 10 31 | 703 | 0.3+ | 0.4− |
| 2005 05 03 | 691 | 0.1+ | 0.7+ | 2005 06 15 | 691 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.2+ | 1.2+ |
| 2005 05 03 | 691 | 0.1+ | 0.1− | 2006 09 25 | 703 | (0.1− | 2.0+) | 2006 10 31 | 703 | (0.2+ | 1.7+) |
| 2005 05 09 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.6+ | 0.5− | 2006 10 31 | 703 | 0.7+ | 0.7+ |
| 2005 05 09 | 691 | 0.2− | 0.2+ | 2006 09 25 | 703 | 0.4+ | 0.0 | 2006 11 19 | 703 | 1.0+ | 1.0+ |
| 2005 05 09 | 691 | 1.0+ | 0.9− | 2006 09 25 | 703 | 1.1− | 0.2− | 2006 11 19 | 703 | 0.8− | 0.3− |
| 2005 05 13 | 691 | 0.0 | 0.3+ | 2006 09 25 | 703 | 0.3+ | 0.3− | 2006 11 19 | 703 | 1.0− | 0.1+ |
| 2005 05 13 | 691 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.4+ | 1.0− | 2006 11 19 | 703 | 0.7− | 0.1+ |
| 2005 05 13 | 691 | 0.2− | 0.4+ | 2006 09 25 | 703 | 0.8− | 0.6+ | | | | |

**2005 JQ$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.17827 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18476812 | $\omega$ | 154.99121 | | −0.61421126 | | +0.78538535 |
| $a$ | 3.0529382 | $\Omega$ | 77.02080 | | −0.73664756 | | −0.53567447 |
| $e$ | 0.0340849 | $i$ | 4.52657 | | −0.28301044 | | −0.31019788 |
| $P$ | 5.33 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.7− | 0.2− | 2002 12 05 | 704 | 0.3− | 1.3+ | 2005 05 13 | 704 | 0.5+ | 0.3− |
| 2000 05 28 | 704 | 0.3+ | 0.0 | 2003 01 03 | 291 | 0.2− | 0.1+ | 2005 05 13 | 704 | 1.6+ | 0.3+ |
| 2000 05 28 | 704 | 0.0 | 0.0 | 2003 01 03 | 291 | 0.1− | 0.6+ | 2005 05 13 | 704 | 0.3+ | 0.5− |
| 2000 05 28 | 704 | 0.0 | 0.1+ | 2003 01 03 | 291 | 0.0 | 0.6+ | 2005 05 16 | 691 | 0.3− | 0.6+ |
| 2001 08 01 | 644 | 0.7− | 1.1+ | 2004 01 16 | 644 | 0.1+ | 0.3+ | 2005 05 16 | 691 | 0.5− | 0.5+ |
| 2001 08 01 | 644 | 0.9− | 1.0+ | 2004 01 16 | 644 | 0.1− | 0.2+ | 2005 05 16 | 691 | 0.2− | 0.5+ |
| 2001 08 01 | 644 | 0.6− | 1.0+ | 2004 01 16 | 644 | 0.2+ | 0.4+ | 2005 05 17 | G96 | 0.0 | 0.1+ |
| 2001 08 25 | 644 | 0.1+ | 0.2− | 2004 01 30 | 704 | (1.6+ | 1.0+) | 2005 05 17 | G96 | 0.1+ | 0.2+ |
| 2001 08 25 | 644 | 0.5+ | 0.1+ | 2004 01 30 | 704 | 0.1+ | 1.3+ | 2005 05 17 | G96 | 0.3− | 0.1+ |
| 2001 08 25 | 644 | 0.2+ | 0.2+ | 2004 01 30 | 704 | (0.6+ | 2.2+) | 2005 05 17 | G96 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | (0.7− | 1.6+) | 2004 01 30 | 704 | 0.6− | 0.4+ | 2005 05 19 | G96 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | 0.0 | 0.5+ | 2005 05 04 | 691 | 0.3+ | 0.3+ | 2005 05 19 | G96 | 0.2− | 0.0 |
| 2002 11 06 | 704 | 0.1− | 0.3+ | 2005 05 04 | 691 | 0.5+ | 0.3+ | 2005 05 19 | G96 | 0.1− | 0.0 |
| 2002 11 23 | 644 | 0.2− | 0.3+ | 2005 05 04 | 691 | 0.3+ | 0.3+ | 2005 05 19 | G96 | 0.4− | 0.0 |
| 2002 11 23 | 644 | 0.2− | 0.3+ | 2005 05 09 | 699 | 1.4+ | 0.3+ | 2006 08 14 | 644 | 0.6− | 0.7+ |
| 2002 11 23 | 644 | 0.3− | 0.7+ | 2005 05 09 | 699 | 0.8− | 0.8+ | 2006 08 14 | 644 | 0.2− | 0.6+ |
| 2002 12 05 | 704 | (1.8− | 1.1−) | 2005 05 09 | 699 | (1.9+ | 0.7+) | 2006 08 14 | 644 | 0.3− | 0.7+ |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2005 05 09 | 699 | 0.9+ | 1.1− | | | | |
| 2002 12 05 | 704 | 0.2− | 1.3+ | 2005 05 13 | 704 | 0.6+ | 0.5− | | | | |

**2005 JZ$_{101}$ = 2006 SM$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.06820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21491105 | $\omega$ | 72.88419 | | −0.39904219 | | +0.91680310 |
| $a$ | 2.7603462 | $\Omega$ | 173.53424 | | −0.88468585 | | −0.38053717 |
| $e$ | 0.1690931 | $i$ | 7.86418 | | −0.24103169 | | −0.12109310 |
| $P$ | 4.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.3+ | 0.6+ | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.4− | 0.2− |
| 2000 02 06 | 695 | 0.1+ | 0.7+ | 2005 05 13 | 691 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.3− | 0.2+ |
| 2000 02 06 | 695 | 0.2+ | 0.8+ | 2005 05 13 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2− | 0.3+ |
| 2000 02 06 | 695 | 0.2+ | 0.8+ | 2005 06 13 | 691 | 0.1− | 0.0 | 2006 09 28 | 291 | 0.2+ | 0.1+ |
| 2005 05 09 | 691 | 0.1+ | 0.2+ | 2005 06 13 | 691 | 0.2− | 0.2+ | 2006 09 28 | 291 | 0.0 | 0.4+ |
| 2005 05 09 | 691 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.1+ | 0.3− | 2006 09 28 | 291 | 0.2+ | 0.4+ |
| 2005 05 09 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 1.5− | 0.5− | | | | |

**2005 JA$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.38361 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17426155 | $\omega$ | 52.34516 | | −0.47057441 | | +0.88176429 |
| $a$ | 3.1744488 | $\Omega$ | 189.74431 | | −0.85783359 | | −0.46578941 |
| $e$ | 0.0547342 | $i$ | 11.04537 | | −0.20659445 | | −0.07437715 |
| $P$ | 5.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 691 | 0.1− | 1.0− | 2005 06 03 | 691 | 0.2+ | 0.8+ | 2005 06 17 | 691 | 0.1+ | 0.2− |
| 1993 04 18 | 691 | 0.4− | 1.1− | 2005 06 03 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.4+ | 0.6− |
| 2001 10 25 | 691 | 0.2+ | 0.4+ | 2005 06 03 | 691 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 2001 10 25 | 691 | 0.4− | 1.1+ | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.3− |
| 2001 10 25 | 691 | 0.1+ | 0.4− | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2005 05 09 | 691 | 0.0 | 0.0 | 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.5− |
| 2005 05 09 | 691 | 0.0 | 0.1− | 2005 06 13 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.3− |
| 2005 05 09 | 691 | 0.1+ | 0.1+ | 2005 06 13 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.5− |
| 2005 05 13 | 691 | 0.0 | 0.3+ | 2005 06 13 | 691 | 0.6− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.3− |
| 2005 05 13 | 691 | 0.2− | 0.2+ | 2005 06 17 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2005 05 13 | 691 | 0.1− | 0.2+ | 2005 06 17 | 691 | 0.0 | 0.2+ | | | | |

**2005 JH$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.28853 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22932428 | $\omega$ | 171.94778 | | +0.97240689 | | −0.21707261 |
| $a$ | 2.6434394 | $\Omega$ | 201.18583 | | +0.19869498 | | +0.96259865 |
| $e$ | 0.1096920 | $i$ | 13.67935 | | +0.12225033 | | +0.16212133 |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.1− | 0.9− | 2005 05 09 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.3+ |
| 2002 11 07 | 704 | (0.5− | 1.9+) | 2005 05 13 | 691 | 0.0 | 0.4+ | 2006 09 27 | 699 | 0.4+ | 0.4− |
| 2002 11 07 | 704 | 1.0+ | 0.9+ | 2005 05 13 | 691 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.1+ | 0.4+ |
| 2002 11 07 | 704 | 0.8− | 0.7+ | 2005 05 13 | 691 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.8+ | 2006 08 29 | 699 | (1.6+ | 1.6+) | 2006 09 29 | 704 | 0.6− | 1.0+ |
| 2002 11 14 | 644 | 0.0 | 0.2+ | 2006 08 29 | 699 | 1.3+ | 1.1− | 2006 09 29 | 704 | 0.4− | 0.7+ |
| 2002 11 14 | 644 | 0.1− | 0.4+ | 2006 08 29 | 699 | 1.3+ | 0.6− | 2006 09 29 | 704 | 1.2+ | 0.1+ |
| 2002 11 14 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 699 | 0.4− | 0.4+ | 2006 09 29 | 704 | 1.1+ | 1.2− |
| 2002 12 08 | 644 | 0.3+ | 0.7+ | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2002 12 08 | 644 | 0.2− | 0.8+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.2− |
| 2002 12 08 | 644 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2002 12 13 | 644 | 0.3− | 0.3+ | 2006 09 25 | 704 | 1.0+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2002 12 13 | 644 | 0.6− | 0.5+ | 2006 09 25 | 704 | 0.7− | 0.7− | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2004 02 14 | 644 | 0.5+ | 1.0+ | 2006 09 25 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 1.5− |
| 2004 02 14 | 644 | 0.1+ | 0.8+ | 2006 09 25 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2004 02 14 | 644 | 0.3+ | 0.7+ | 2006 09 25 | 704 | 0.3− | 1.2+ | 2006 10 17 | 703 | 0.8+ | 0.2+ |
| 2005 05 09 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.3+ | | | | |
| 2005 05 09 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.4+ | | | | |

**2005 JB$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.28608 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24535618 | $\omega$ | 15.03289 | | −0.99214420 | +0.12144064 | |
| $a$ | 2.5269970 | $\Omega$ | 171.76488 | | −0.12499607 | −0.97209004 | |
| $e$ | 0.1841836 | $i$ | 12.10381 | | +0.00508544 | −0.20073148 | |
| $P$ | 4.02 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 691 | 0.8− | 0.2+ | 2005 05 20 | 644 | 0.2− | 0.4− | 2005 06 09 | 704 | (0.0 | 1.8+) |
| 1998 09 19 | 691 | 0.2− | 0.6+ | 2005 05 26 | 599 | 0.0 | 0.5+ | 2005 07 06 | 691 | 0.1+ | 0.1+ |
| 1998 09 19 | 691 | 0.2− | 0.2+ | 2005 05 26 | 599 | 0.1+ | 0.1− | 2005 07 06 | 691 | 0.3+ | 0.1− |
| 2002 09 05 | 645 | 0.3+ | 0.1− | 2005 05 26 | 599 | 0.5+ | 0.1+ | 2005 07 06 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 645 | 0.2+ | 0.1− | 2005 05 31 | 703 | 0.6− | 0.1− | 2005 07 09 | 691 | 0.1+ | 0.2+ |
| 2005 05 09 | 703 | 0.9− | 0.6− | 2005 05 31 | 703 | 0.4− | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.0 |
| 2005 05 09 | 703 | 0.5− | 0.5− | 2005 05 31 | 703 | 0.2− | 0.6+ | 2005 07 09 | 691 | 0.5− | 0.3+ |
| 2005 05 09 | 703 | 0.6− | 1.1− | 2005 05 31 | 703 | (1.7− | 1.4−) | 2006 09 26 | 691 | 0.8− | 0.3+ |
| 2005 05 09 | 703 | 0.6− | 0.0 | 2005 06 05 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.5− | 0.0 |
| 2005 05 13 | 691 | 0.1+ | 0.1− | 2005 06 05 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2005 05 13 | 691 | 0.1− | 0.1+ | 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2005 05 13 | 691 | 0.1− | 0.1− | 2005 06 09 | 704 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2005 05 20 | 644 | 0.1+ | 0.2− | 2005 06 09 | 704 | 0.7+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2005 05 20 | 644 | 0.1− | 0.1− | 2005 06 09 | 704 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− |

**2005 JG$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.20340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23189809 | $\omega$ | 237.32820 | | +0.97155268 | −0.13097395 | |
| $a$ | 2.6238435 | $\Omega$ | 129.39924 | | +0.17672748 | +0.95557305 | |
| $e$ | 0.2296364 | $i$ | 14.79358 | | −0.15764766 | +0.26405675 | |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 08 | 910 | 0.4− | 0.1+ | 2005 07 01 | 644 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.7− |
| 1997 07 08 | 910 | 0.1+ | 0.1− | 2005 07 27 | 644 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.7− | 0.7− |
| 1997 07 08 | 910 | 0.1− | 0.1− | 2005 07 27 | 644 | 0.1− | 0.3− | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2003 01 05 | 704 | 0.1− | 0.5+ | 2005 07 27 | 644 | 0.5− | 0.0 | 2006 10 28 | 703 | 1.1− | 0.3− |
| 2003 01 05 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.2− | 2006 11 10 | 704 | 0.2+ | 1.2+ |
| 2003 01 05 | 704 | 0.4+ | 0.4− | 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 11 10 | 704 | 0.5+ | 1.1+ |
| 2003 01 05 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.0 | 2006 11 10 | 704 | 0.2− | 0.7+ |
| 2005 05 09 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 11 10 | 704 | 0.3+ | 0.3+ |
| 2005 05 09 | 691 | 0.5+ | 0.0 | 2006 09 30 | 704 | 1.0− | 1.3+ | 2006 11 10 | 704 | (1.3− | 1.6+) |
| 2005 05 09 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.4+ | 1.0+ |
| 2005 05 13 | 691 | 0.2+ | 0.0 | 2006 09 30 | 704 | 1.0+ | 1.4− | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.0 | 0.9+ |
| 2005 05 13 | 691 | 0.8− | 1.4+ | 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.2− | 0.5+ |
| 2005 05 26 | 599 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 22 | 704 | 0.7+ | 1.0+ |
| 2005 05 26 | 599 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.4− | 2006 11 22 | 704 | 0.6+ | 1.1+ |
| 2005 05 26 | 599 | 0.2− | 0.4+ | 2006 10 11 | 644 | 1.2− | 0.1+ | 2006 11 22 | 704 | (1.0+ | 1.6+) |
| 2005 05 26 | 599 | 0.5+ | 1.0+ | 2006 10 11 | 644 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2005 06 30 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 1.4+ |
| 2005 06 30 | 644 | 0.1− | 0.1− | 2006 10 20 | 703 | 0.5− | 0.1− | 2006 11 23 | 703 | 0.4− | 0.5+ |
| 2005 06 30 | 644 | 0.1− | 0.0 | 2006 10 20 | 703 | 0.1+ | 0.2− | 2006 11 23 | 703 | 0.2+ | 0.5+ |
| 2005 07 01 | 644 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.0 | 0.2− | 2006 11 23 | 703 | 0.6− | 0.5+ |
| 2005 07 01 | 644 | 0.1+ | 0.0 | 2006 10 20 | 703 | 0.2− | 0.5− | 2006 11 23 | 703 | 0.0 | 0.6+ |

**2005 JP$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.66937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23703828 | $\omega$ | 342.71563 | | +0.99887721 | −0.00814065 | |
| $a$ | 2.5857730 | $\Omega$ | 17.94530 | | +0.03147722 | +0.85027385 | |
| $e$ | 0.1243207 | $i$ | 8.71218 | | −0.03540480 | +0.52627760 | |
| $P$ | 4.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 05 | 691 | 0.3− | 0.6+ | 2002 08 30 | 644 | 0.1− | 0.3+ | 2005 04 06 | G96 | 0.0 | 0.1+ |
| 1994 09 05 | 691 | 0.7− | 0.6+ | 2002 08 30 | 644 | 0.4+ | 0.0 | 2005 04 06 | G96 | 0.1− | 0.1− |
| 1994 09 05 | 691 | 0.4+ | 0.3− | 2003 12 17 | 704 | 0.0 | 1.4+ | 2005 04 06 | G96 | 0.2− | 0.1− |
| 2002 07 16 | 644 | 0.0 | 0.4− | 2003 12 17 | 704 | 0.8+ | 0.2+ | 2005 05 10 | 691 | 0.4+ | 0.7+ |
| 2002 07 16 | 644 | 0.4− | 0.2+ | 2003 12 17 | 704 | 1.0+ | 0.7− | 2005 05 10 | 691 | 0.5+ | 0.3+ |
| 2002 07 16 | 644 | 0.1+ | 0.3− | 2003 12 17 | 704 | 0.8+ | 0.4− | 2005 05 10 | 691 | 0.3+ | 0.1+ |
| 2002 08 13 | 644 | 0.1+ | 0.1+ | 2003 12 30 | 704 | 0.6− | 0.5+ | 2005 05 13 | G96 | 0.7− | 0.2+ |
| 2002 08 13 | 644 | 0.0 | 0.1+ | 2003 12 30 | 704 | 1.1− | 0.5+ | 2005 05 13 | G96 | 0.1− | 0.0 |
| 2002 08 13 | 644 | 0.0 | 0.1+ | 2003 12 30 | 704 | 0.5− | 0.4+ | 2005 05 13 | G96 | 0.2+ | 0.3+ |
| 2002 08 30 | 644 | 0.1− | 0.2+ | 2005 04 06 | G96 | 0.5− | 0.1− | 2005 05 13 | G96 | 0.4− | 0.1− |

**2005 JL$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.70583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29877246 | $\omega$ | 43.43234 | | +0.01571543 | +0.99893803 | |
| $a$ | 2.2160302 | $\Omega$ | 227.51827 | | −0.93268073 | −0.00096585 | |
| $e$ | 0.1359360 | $i$ | 3.36676 | | −0.36036049 | +0.04606380 | |
| $P$ | 3.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 691 | 0.2− | 0.0 | 2005 06 14 | G96 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2003 12 25 | 691 | 0.0 | 0.1− | 2005 06 14 | G96 | 0.5+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2003 12 25 | 691 | 0.2+ | 0.0 | 2005 06 14 | G96 | 0.0 | 0.9+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2005 04 12 | 704 | (0.8+ | 1.8+) | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2005 04 12 | 704 | 0.4+ | 1.5+ | 2006 09 27 | G96 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2005 04 12 | G96 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2005 04 12 | 704 | (0.4+ | 1.7+) | 2006 09 27 | G96 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2005 04 12 | G96 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.3+ |
| 2005 04 12 | G96 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2005 04 12 | G96 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2005 04 18 | 703 | 0.4+ | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2005 04 18 | 703 | (2.4− | 0.1−) | 2006 10 20 | 691 | 0.3− | 0.4+ | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 2005 04 18 | 703 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2005 04 18 | 703 | 0.9− | 0.8+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2005 05 01 | 644 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.6+ | 0.2− |
| 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 1.0+ | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2005 05 11 | G96 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2005 05 11 | G96 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2005 05 11 | G96 | 0.5− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.5− |
| 2005 05 11 | G96 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.9+ | 0.6− |
| 2005 05 13 | 704 | 0.9+ | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 1.0− | 0.2+ |
| 2005 05 13 | 704 | 0.9+ | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.3+ | 2006 11 27 | 703 | 0.8− | 0.2+ |
| 2005 05 13 | 704 | (1.0+ | 1.6+) | 2006 11 08 | 644 | 0.1+ | 0.2+ | | | | |
| 2005 05 13 | 704 | 1.1+ | 0.4+ | 2006 11 12 | G96 | 0.4− | 0.2− | | | | |

**2005 JD$_{106}$ = 2006 WH$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.56208 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26426634 | $\omega$ | 243.05216 | | +0.79258785 | | +0.60692332 |
| $a$ | 2.4049616 | $\Omega$ | 79.52311 | | −0.53612955 | | +0.73952094 |
| $e$ | 0.2018677 | $i$ | 3.42376 | | −0.29046447 | | +0.29112344 |
| $P$ | 3.73 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2005 05 03 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2005 05 03 | 691 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.7+ | 0.4+ |
| 2005 05 11 | G96 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.7− | 0.1− |
| 2005 05 11 | G96 | 0.7− | 0.4− | 2006 10 21 | G96 | 0.6− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2005 05 11 | G96 | 0.6− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2005 05 11 | G96 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2005 05 13 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2005 05 13 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2005 05 13 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.3− | 0.2+ | | | | |
| 2006 10 21 | G96 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1− | | | | |

**2005 JM$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.22694 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18857637 | $\omega$ | 37.85507 | | +0.11317356 | | +0.99113690 |
| $a$ | 3.0116965 | $\Omega$ | 238.74357 | | −0.93029970 | | +0.08111939 |
| $e$ | 0.2491138 | $i$ | 4.66774 | | −0.34890429 | | +0.10520120 |
| $P$ | 5.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 12 | 809 | 0.2− | 0.9− | 2005 06 01 | 691 | 0.0 | 0.0 | 2005 06 15 | 691 | 0.4− | 0.1− |
| 2005 02 12 | 809 | 0.1− | 0.7− | 2005 06 06 | 691 | 0.4+ | 0.1+ | 2005 06 15 | 691 | 0.1− | 0.2+ |
| 2005 02 12 | 809 | 0.1− | 0.5− | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.4+ | 0.1+ |
| 2005 05 11 | 644 | 0.1+ | 0.5+ | 2005 06 06 | 691 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.3+ | 0.2+ |
| 2005 05 11 | 644 | 0.0 | 0.1+ | 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.3+ | 0.0 |
| 2005 05 11 | 644 | 0.3− | 0.3+ | 2005 06 11 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.4− |
| 2005 05 13 | G96 | 0.2− | 0.1+ | 2005 06 11 | 691 | 0.5− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.4− |
| 2005 05 13 | G96 | 0.2− | 0.1− | 2005 06 13 | G96 | 0.9− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2005 05 13 | G96 | 0.3− | 0.1− | 2005 06 13 | G96 | 0.0 | 0.3− | 2006 10 01 | 691 | 0.4− | 0.1− |
| 2005 05 13 | G96 | 0.0 | 0.2− | 2005 06 13 | G96 | 0.3+ | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2005 05 21 | 644 | 0.3+ | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2005 05 21 | 644 | 0.2+ | 0.1+ | 2005 06 14 | 291 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2005 05 21 | 644 | 0.1+ | 0.0 | 2005 06 14 | 291 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.6+ | 0.3+ |
| 2005 06 01 | 691 | 0.2+ | 0.2− | 2005 06 14 | 291 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.6+ | 0.3− |
| 2005 06 01 | 691 | 0.2+ | 0.0 | 2005 06 15 | 691 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.2− |

**2005 JK$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.98459 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22080490 | $\omega$ | 230.83478 | | +0.38906706 | | +0.89636326 |
| $a$ | 2.7110045 | $\Omega$ | 63.30399 | | −0.75472387 | | +0.44243008 |
| $e$ | 0.1513279 | $i$ | 13.76050 | | −0.52822221 | | +0.02808074 |
| $P$ | 4.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 599 | 0.1− | 0.1− | 2005 05 14 | G96 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.2− | 1.1− |
| 2005 05 01 | 599 | 0.3+ | 0.3− | 2005 05 14 | G96 | 0.3− | 0.4− | 2006 09 26 | 703 | 0.1− | 0.5+ |
| 2005 05 01 | 599 | 0.2− | 0.2− | 2005 05 14 | G96 | 0.5− | 0.4− | 2006 09 26 | 703 | 0.6− | 1.0− |
| 2005 05 03 | 704 | 1.2− | 0.1− | 2005 05 14 | 644 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.2− |
| 2005 05 03 | 704 | 0.2− | 0.2+ | 2005 05 14 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2005 05 03 | 704 | 0.7+ | 0.3+ | 2005 05 14 | 644 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2005 05 03 | 704 | 0.4− | 0.2+ | 2005 05 16 | 704 | 0.1+ | 1.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2005 05 03 | 704 | 1.0+ | 0.3− | 2005 05 16 | 704 | 0.9+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 05 12 | 704 | 0.6+ | 0.1+ | 2005 05 16 | 704 | 0.4− | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2005 05 12 | 704 | 0.0 | 1.0− | 2005 05 16 | 704 | 0.5+ | 1.1+ | 2006 10 21 | 703 | 0.6+ | 1.4+ |
| 2005 05 12 | 704 | 0.1+ | 0.3+ | 2005 05 16 | 704 | (1.7+ | 0.9+) | 2006 10 21 | 703 | 0.1− | 1.2+ |
| 2005 05 13 | 691 | 0.0 | 0.1+ | 2005 06 27 | 644 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.7− | 0.8+ |
| 2005 05 13 | 691 | 0.2+ | 0.1− | 2005 06 27 | 644 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2005 05 13 | 691 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.3− | 0.2− | | | | |
| 2005 05 14 | G96 | 0.4− | 0.4− | 2006 09 26 | 703 | 0.9+ | 0.7− | | | | |

**2005 JO$_{107}$ = 2006 SA$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.00179 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23942409 | $\omega$ | 115.68933 | | +0.82660962 | | +0.55806863 |
| $a$ | 2.5685665 | $\Omega$ | 210.54436 | | −0.55386551 | | +0.78384181 |
| $e$ | 0.1176840 | $i$ | 8.21718 | | −0.09974734 | | +0.27230757 |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.3+ | 1.3+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 1.2− |
| 2002 10 30 | 644 | 0.4− | 1.6+ | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | (1.7− | 2.1−) |
| 2002 10 30 | 644 | 0.6− | 0.8+ | 2006 09 17 | 691 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.5− |
| 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.8+ | 1.3− | 2006 10 17 | 703 | 0.6− | 0.8− |
| 2005 05 12 | G96 | 0.3− | 0.3− | 2006 09 18 | 703 | 1.2+ | 1.2− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2005 05 12 | G96 | 0.4− | 0.6− | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2005 05 12 | G96 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2005 05 13 | 691 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2005 05 13 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.5− | 0.1− |
| 2005 05 13 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.8+ | 0.6− |
| 2005 05 14 | 644 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2005 05 14 | 644 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.0 | 0.1+ | | | | |

**2005 JU$_{107}$ = 2006 SB$_{122}$ = 2006 SN$_{303}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.82646 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23863373 | $\omega$ | 153.86579 | | +0.96736432 | | −0.20978604 |
| $a$ | 2.5742348 | $\Omega$ | 219.09876 | | +0.17441983 | | +0.95812508 |
| $e$ | 0.0897950 | $i$ | 13.02290 | | +0.18380423 | | +0.19490038 |
| $P$ | 4.13 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 09 22 | 703 | 1.3− | 1.4− |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2005 05 13 | 691 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.3− | 0.2+ |
| 2005 04 07 | G96 | 0.4− | 0.3− | 2005 06 12 | 691 | 0.7+ | 0.0 | 2006 09 27 | 703 | 0.1− | 0.7+ |
| 2005 04 07 | G96 | 0.3+ | 0.1− | 2005 06 12 | 691 | 0.4− | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.7+ |
| 2005 04 07 | G96 | 0.6− | 0.1− | 2005 06 12 | 691 | 0.2+ | 0.1− | 2006 09 27 | 703 | 0.0 | 0.5+ |
| 2005 04 07 | G96 | 0.1+ | 0.1− | 2006 09 19 | 683 | 0.9− | 1.3− | 2006 10 03 | G96 | 0.2+ | 0.2+ |
| 2005 05 12 | G96 | 0.5− | 0.3− | 2006 09 19 | 683 | 0.0 | 1.2+ | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2005 05 12 | G96 | 0.4− | 0.2− | 2006 09 19 | 683 | 0.3+ | 1.1+ | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2005 05 12 | G96 | 0.4− | 0.1− | 2006 09 22 | 703 | (0.6+ | 1.7+) | 2006 10 03 | G96 | 0.3+ | 0.1+ |
| 2005 05 12 | G96 | 0.4− | 0.1− | 2006 09 22 | 703 | 1.0+ | 0.6− | | | | |
| 2005 05 13 | 691 | 0.1− | 0.2+ | 2006 09 22 | 703 | 0.1− | 0.2− | | | | |

**2005 JS$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.28902 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21587637 | $\omega$ | 261.65881 | | +0.60563539 | | +0.67515300 |
| $a$ | 2.7521112 | $\Omega$ | 54.53869 | | −0.35568674 | | +0.70313536 |
| $e$ | 0.1861386 | $i$ | 31.13598 | | −0.71182351 | | +0.22308988 |
| $P$ | 4.57 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 12 | 644 | 0.3+ | 0.3+ | 2005 05 21 | 644 | 0.4+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.3+ |
| 2005 05 12 | 644 | 0.3+ | 0.1+ | 2005 05 30 | E12 | 0.3− | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.3+ |
| 2005 05 12 | 644 | 0.0 | 0.1− | 2005 05 30 | E12 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2005 05 13 | E12 | 0.2+ | 0.0 | 2005 05 30 | E12 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.4+ |
| 2005 05 13 | E12 | 0.1− | 0.1+ | 2005 05 30 | E12 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | E12 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.1− | 0.3− | | |
| 2005 05 13 | E12 | 0.7− | 1.2+ | 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.2− | 1.2− | | |
| 2005 05 18 | E12 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.9+ | 0.5− | | |
| 2005 05 18 | E12 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.3+ | | |
| 2005 05 18 | E12 | 0.4− | 0.3− | 2006 10 22 | 703 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.3+ | | |
| 2005 05 18 | E12 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.3+ | | |
| 2005 05 18 | E12 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.6− | 0.2− | 2006 11 19 | 703 | 0.3+ | 0.4+ | | |
| 2005 05 18 | E12 | 1.1− | 0.3− | 2006 10 22 | 703 | 1.1+ | 1.4− | 2006 11 19 | 703 | 0.3− | 0.1+ | | |
| 2005 05 21 | 644 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.2+ | 0.3− | | |
| 2005 05 21 | 644 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.2− | | |
| 2005 05 21 | 644 | 0.4+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | (1.3− | 2.2+) | | |
| 2005 05 21 | 644 | 0.4+ | 0.0 | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.8− | 0.4+ | | |
| 2005 05 21 | 644 | 0.4+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 20 | 704 | 0.8+ | 0.7− | | |

### 2005 JL$_{111}$ = 2001 KQ$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 113.37457 | | (2000.0) | | | |
| $n$ | 0.24011935 | $\omega$ | 331.29848 | | −0.62260800 | +0.78148888 |
| $a$ | 2.5636060 | $\Omega$ | 260.16550 | | −0.70989498 | −0.58579731 |
| $e$ | 0.1188154 | $i$ | 2.35155 | | −0.32925430 | −0.21474786 |
| $P$ | 4.10 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.1+ | 0.7− | 2005 05 01 | 644 | 0.3+ | 0.2+ | 2005 05 14 | G96 | 0.1− | 0.0 | | |
| 2001 05 17 | 704 | 0.4− | 0.3− | 2005 05 01 | 644 | 0.1+ | 0.2− | 2005 05 14 | G96 | 0.2− | 0.1− | | |
| 2001 05 17 | 704 | 0.7− | 0.9− | 2005 05 01 | 644 | 0.4+ | 0.2+ | 2005 05 14 | G96 | 0.3− | 0.4− | | |
| 2001 05 17 | 704 | 0.8+ | 0.9+ | 2005 05 01 | 644 | 0.7+ | 0.0 | 2006 09 20 | 691 | 0.1+ | 0.1− | | |
| 2005 04 14 | 703 | 0.2+ | 0.1+ | 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 691 | 0.1− | 0.2+ | | |
| 2005 04 14 | 703 | 0.0 | 0.7+ | 2005 05 09 | 704 | 0.5+ | 0.4+ | 2006 09 20 | 691 | 0.1+ | 0.2− | | |
| 2005 04 14 | 703 | 0.9− | 0.3− | 2005 05 09 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 2005 04 14 | 703 | 1.2− | 0.2+ | 2005 05 09 | 704 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.5+ | | |
| 2005 05 01 | 644 | 0.4+ | 0.1− | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1− | | |

### 2005 JB$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 132.35420 | | (2000.0) | | | |
| $n$ | 0.29211527 | $\omega$ | 287.04571 | | −0.38090707 | +0.92460373 |
| $a$ | 2.2495719 | $\Omega$ | 320.56358 | | −0.84577449 | −0.35026539 |
| $e$ | 0.0761917 | $i$ | 0.37992 | | −0.37359780 | −0.14974010 |
| $P$ | 3.37 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | G96 | 0.1− | 0.3− | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.7− | 0.2+ | | |
| 2005 05 09 | G96 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 10 | 691 | 0.4− | 0.0 | | |
| 2005 05 09 | G96 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2005 05 09 | G96 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.7− | | |
| 2005 05 16 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.4− | | |
| 2005 05 16 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.2− | | |
| 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1− | 2006 11 24 | 291 | 0.1− | 0.2+ | | |
| 2005 06 11 | 691 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.2− | 0.1− | 2006 11 24 | 291 | 0.3+ | 0.3+ | | |
| 2005 06 11 | 691 | 0.2+ | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.2+ | 2006 11 24 | 291 | 0.4+ | 0.5+ | | |
| 2005 06 11 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.2− | 0.0 | | | | | | |

### 2005 JJ$_{112}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 81.58415 | | (2000.0) | | | |
| $n$ | 0.26122617 | $\omega$ | 217.64376 | | +0.61319459 | +0.76000066 |
| $a$ | 2.4235850 | $\Omega$ | 91.22459 | | −0.66228508 | +0.64324130 |
| $e$ | 0.2545781 | $i$ | 12.44110 | | −0.43054717 | +0.09294957 |
| $P$ | 3.77 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 703 | 0.7− | 0.4− | 2005 06 04 | 703 | 0.9− | 0.3+ | 2005 06 17 | 691 | 0.2− | 0.1− | | |
| 2005 05 09 | 703 | 0.2− | 0.3+ | 2005 06 04 | 703 | 0.3− | 0.5− | 2005 06 17 | 691 | 0.0 | 0.2− | | |
| 2005 05 09 | 703 | 0.4+ | 0.4+ | 2005 06 04 | 703 | 0.5− | 0.7+ | 2005 06 23 | 644 | 0.0 | 0.1− | | |
| 2005 05 09 | 703 | 1.2− | 0.3− | 2005 06 05 | 691 | 0.0 | 0.1+ | 2005 06 23 | 644 | 0.1+ | 0.2− | | |
| 2005 05 14 | 704 | 0.8+ | 0.4+ | 2005 06 05 | 691 | 0.1+ | 0.0 | 2005 06 23 | 644 | 0.0 | 0.3− | | |
| 2005 05 14 | 704 | 1.1+ | 0.6− | 2005 06 05 | 691 | 0.2+ | 0.1− | 2005 06 28 | 644 | 0.2− | 0.1− | | |
| 2005 05 14 | 704 | 0.3+ | 1.0− | 2005 06 07 | 699 | 0.3− | 0.4− | 2005 06 28 | 644 | 0.2+ | 0.2− | | |
| 2005 05 14 | 704 | 0.7+ | 0.5+ | 2005 06 07 | 699 | 0.0 | 0.1− | 2005 06 28 | 644 | 0.2+ | 0.1− | | |
| 2005 05 14 | 704 | 1.1+ | 0.5− | 2005 06 07 | 699 | 1.5− | 1.0+ | 2006 11 17 | G96 | 0.5− | 0.1− | | |
| 2005 05 20 | G96 | 0.4− | 0.2+ | 2005 06 07 | 699 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.5− | | |
| 2005 05 20 | G96 | 0.2− | 0.3− | 2005 06 09 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2005 05 20 | G96 | 0.3− | 0.3− | 2005 06 09 | 691 | 0.3− | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.0 | | |
| 2005 05 20 | G96 | 0.5− | 0.3− | 2005 06 09 | 691 | 0.6+ | 0.6+ | 2006 11 22 | 691 | 0.1− | 0.1+ | | |
| 2005 06 04 | 703 | (2.5− | 0.1+) | 2005 06 17 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1+ | | |

### 2005 JY$_{114}$ = 2006 UJ$_{147}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 59.95767 | | (2000.0) | | | |
| $n$ | 0.18191086 | $\omega$ | 75.65028 | | +0.06246590 | +0.99634878 |
| $a$ | 3.0848234 | $\Omega$ | 198.23479 | | −0.97231811 | +0.04759681 |
| $e$ | 0.2005853 | $i$ | 10.71895 | | −0.22515662 | +0.07087770 |
| $P$ | 5.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.2+ | 0.4+ | 2005 05 14 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 | | |
| 2005 04 04 | G96 | 0.5− | 0.3+ | 2005 05 14 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.3+ | 0.0 | | |
| 2005 04 04 | G96 | 0.1− | 0.2+ | 2005 05 14 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2005 04 04 | G96 | 0.0 | 0.5− | 2006 09 20 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3− | | |
| 2005 05 10 | 691 | 0.3− | 0.1+ | 2006 09 20 | 691 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ | | |
| 2005 05 10 | 691 | 0.2− | 0.0 | 2006 09 20 | 691 | 0.1− | 0.0 | | | | | | |
| 2005 05 10 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1+ | | | | | | |

### 2005 JE$_{117}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.03659 | | (2000.0) | | | |
| $n$ | 0.22113576 | $\omega$ | 240.91474 | | +0.98619822 | +0.11885485 |
| $a$ | 2.7082997 | $\Omega$ | 112.05735 | | −0.07136113 | +0.93333702 |
| $e$ | 0.0575959 | $i$ | 7.14439 | | −0.14940098 | +0.33875585 |
| $P$ | 4.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.1− | 0.1− | 2005 06 04 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.0 | | |
| 2005 05 10 | 691 | 0.1+ | 0.2+ | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 1.2− | 1.3− | | |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2005 06 04 | 691 | 0.1+ | 0.3− | 2006 09 20 | 703 | 1.1+ | 0.6+ | | |
| 2005 05 14 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | 1.3− | 0.0 | 2006 09 20 | 703 | 0.3− | 0.4+ | | |
| 2005 05 14 | 691 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.5+ | 1.0− | 2006 09 20 | 703 | 0.5+ | 0.3+ | | |
| 2005 05 14 | 691 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.0 | 0.5+ | 2006 09 21 | 699 | 0.0 | 0.9+ | | |
| 2005 05 20 | G96 | 0.5− | 0.1+ | 2006 08 30 | 699 | 0.9+ | 1.4+ | 2006 09 21 | 699 | (1.8+ | 1.5+) | | |
| 2005 05 20 | G96 | 0.4− | 0.1+ | 2006 09 14 | 703 | (0.9+ | 2.9+) | 2006 09 21 | 699 | 0.5− | 0.2+ | | |
| 2005 05 20 | G96 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.8− | 2006 09 21 | 699 | (1.7− | 0.4−) | | |
| 2005 05 20 | G96 | 0.7− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 1.2− | | | | | | |

### 2005 JV$_{117}$ = 2006 SV$_{281}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.27440 | | (2000.0) | | | |
| $n$ | 0.26937031 | $\omega$ | 288.87535 | | +0.82311609 | −0.55137855 |
| $a$ | 2.3744857 | $\Omega$ | 104.79974 | | +0.55942286 | +0.74619183 |
| $e$ | 0.1606768 | $i$ | 8.07885 | | +0.09760106 | +0.37306760 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.4− | | |
| 2004 02 11 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.6+ | | |
| 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 1.0+ | 2006 10 17 | 703 | 0.7− | 0.8− | | |
| 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 1.1− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2005 05 10 | 691 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2005 05 10 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2005 05 17 | G96 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.5+ | 0.7− | 2006 10 23 | 644 | 0.3− | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 17 | G96 | 0.7− | 0.6− | 2006 09 29 | 699 | 0.6− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2005 05 17 | G96 | 1.1− | 0.0 | 2006 09 29 | 699 | 0.7+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2005 05 17 | G96 | 0.2− | 0.4− | 2006 09 29 | 699 | (0.8− | 1.9+) | 2006 10 28 | 703 | 0.5− | 0.4− |
| 2005 05 20 | G96 | 0.5+ | 0.7+ | 2006 09 29 | 699 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.0 |
| 2005 05 20 | G96 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.8+ | 0.4− | 2006 10 28 | 703 | 0.8+ | 0.1+ |
| 2005 05 20 | G96 | 0.5+ | 0.5− | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 10 28 | 703 | 1.0− | 0.3+ |
| 2005 05 20 | G96 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.1+ | | | | |
| 2006 09 19 | 703 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.1+ | | | | |

**2005 JA$_{118}$ = 2006 WA$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.11193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23366594 | $\omega$ | 209.35413 | | +0.91390478 | +0.39747433 | |
| $a$ | 2.6105926 | $\Omega$ | 126.99326 | | −0.34940909 | +0.87361513 | |
| $e$ | 0.2518549 | $i$ | 5.92263 | | −0.20661882 | +0.28073253 | |
| $P$ | 4.22 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.1− | 0.1− | 2005 05 17 | G96 | 0.5− | 0.6− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2005 05 10 | 691 | 0.4− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2005 05 14 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2005 05 14 | 691 | 0.7+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2005 05 14 | 691 | 0.1− | 0.4− | 2006 11 20 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2005 05 17 | G96 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2005 05 17 | G96 | 0.8− | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.7− |
| 2005 05 17 | G96 | 0.0 | 0.6− | 2006 11 21 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.3− |

**2005 JG$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.99566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22291561 | $\omega$ | 256.33985 | | +0.91842145 | +0.32045533 | |
| $a$ | 2.6938644 | $\Omega$ | 84.57779 | | −0.20756506 | +0.88951893 | |
| $e$ | 0.2835856 | $i$ | 13.47455 | | −0.33677705 | +0.32567539 | |
| $P$ | 4.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 644 | 0.2+ | 0.1+ | 2005 05 17 | G96 | 0.3− | 0.2− | 2006 11 21 | 291 | 0.1+ | 0.1+ |
| 2001 07 22 | 644 | 0.1+ | 0.2− | 2005 06 09 | 691 | 0.1+ | 0.3− | 2006 11 21 | 291 | 0.1+ | 0.1+ |
| 2001 07 22 | 644 | 0.3− | 0.3+ | 2005 06 09 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2005 05 04 | 691 | 0.1+ | 0.1+ | 2005 06 09 | 691 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2005 05 04 | 691 | 0.2+ | 0.2− | 2006 11 16 | 691 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2005 05 10 | 691 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.4− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2005 05 14 | 691 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2005 05 14 | 691 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.5+ | 0.1− |
| 2005 05 14 | 691 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.5− | 0.0 |
| 2005 05 17 | G96 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.2+ |
| 2005 05 17 | G96 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.3+ |
| 2005 05 17 | G96 | 0.6− | 0.3− | 2006 11 21 | 291 | 0.1+ | 0.1− | | | | |

**2005 JH$_{118}$ = 2006 UY$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.89944 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21976986 | $\omega$ | 253.32642 | | +0.97237352 | +0.16406783 | |
| $a$ | 2.7195098 | $\Omega$ | 96.99731 | | −0.09197309 | +0.92307032 | |
| $e$ | 0.2322567 | $i$ | 9.63045 | | −0.21454764 | +0.34788349 | |
| $P$ | 4.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.2+ | 0.1+ | 2005 06 09 | 691 | 0.3− | 0.5− | 2006 10 16 | 703 | (0.0 | 2.1+) |
| 2005 05 10 | 691 | 0.4+ | 0.2− | 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | (0.3+ | 2.4+) |
| 2005 05 10 | 691 | 0.1− | 0.0 | 2005 06 14 | 691 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2005 05 17 | G96 | 0.7− | 0.5− | 2005 06 14 | 691 | 0.1− | 0.3+ | 2006 10 22 | 703 | (1.9− | 0.9+) |
| 2005 05 17 | G96 | 0.1− | 0.6− | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2005 05 17 | G96 | 1.0− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2005 05 17 | G96 | (1.7− | 0.5−) | 2006 09 30 | 703 | 0.3+ | 0.7− | 2006 10 22 | 703 | 0.2+ | 0.8+ |
| 2005 06 09 | 691 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.7+ | | | | |
| 2005 06 09 | 691 | 0.3− | 0.8+ | 2006 10 16 | 703 | 0.7− | 0.1− | | | | |

**2005 JP$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.60837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23325241 | $\omega$ | 205.98271 | | +0.98462473 | +0.16709743 | |
| $a$ | 2.6136772 | $\Omega$ | 144.28195 | | −0.14118821 | +0.93290467 | |
| $e$ | 0.2344933 | $i$ | 5.00356 | | −0.10285925 | +0.31900992 | |
| $P$ | 4.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.2+ | 0.2+ | 2005 06 14 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2005 05 10 | 691 | 0.3− | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2005 05 10 | 691 | 0.1+ | 0.2+ | 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2005 05 16 | G96 | 0.3− | 0.0 | 2006 11 16 | 704 | (0.4− | 1.7+) | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2005 05 16 | G96 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.2− | 0.4+ | 2006 11 28 | 704 | 1.0− | 0.3− |
| 2005 05 16 | G96 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.8− |
| 2005 05 16 | G96 | 0.2− | 0.4− | 2006 11 17 | 704 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.5− | 0.3+ |
| 2005 06 09 | 691 | 0.0 | 0.2− | 2006 11 17 | 704 | 1.4+ | 0.4+ | 2006 11 28 | 704 | 0.3− | 0.4+ |
| 2005 06 09 | 691 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2+ | 1.0+ |
| 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.4− | | | | |

**2005 JE$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.90831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28108374 | $\omega$ | 17.40720 | | −0.65184043 | −0.75368845 | |
| $a$ | 2.3080519 | $\Omega$ | 113.36043 | | +0.68443479 | −0.63238689 | |
| $e$ | 0.0766109 | $i$ | 5.25059 | | +0.32657782 | −0.17899872 | |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 16 | 691 | 0.0 | 0.3− | 2003 11 23 | 691 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.1− | 0.5+ |
| 1998 06 16 | 691 | 0.1− | 0.4− | 2003 11 23 | 691 | 0.0 | 0.1+ | 2005 05 14 | 644 | 0.0 | 0.1+ |
| 1998 06 16 | 691 | 0.1+ | 0.6+ | 2003 12 14 | 644 | 0.4− | 0.2− | 2005 05 14 | 644 | 0.2+ | 0.2− |
| 2001 03 18 | 699 | 0.5+ | 0.8+ | 2003 12 14 | 644 | 0.2− | 0.2− | 2005 05 16 | G96 | 0.4− | 0.5− |
| 2001 03 18 | 699 | 0.8+ | 1.2− | 2003 12 14 | 644 | 1.0− | 0.8+ | 2005 05 16 | G96 | 0.0 | 0.3+ |
| 2001 03 18 | 699 | 0.8− | 0.1+ | 2003 12 28 | 691 | 0.3+ | 0.0 | 2005 05 16 | G96 | 0.3− | 0.2− |
| 2001 03 18 | 699 | 0.5− | 0.2− | 2003 12 28 | 691 | 0.1+ | 0.0 | 2005 05 16 | G96 | 0.4− | 0.1− |
| 2003 11 23 | 691 | 0.1+ | 0.0 | 2003 12 28 | 691 | 0.2+ | 0.1− | 2006 09 30 | 703 | (3.0− | 1.6+) |
| 2003 11 23 | 691 | 0.0 | 0.2+ | 2005 05 10 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | (3.3− | 1.0−) |
| 2003 11 23 | 691 | 0.2− | 0.0 | 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | (2.3− | 1.4−) |
| 2003 11 23 | 691 | 0.3− | 0.1+ | 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | (2.0− | 0.9+) |

**2005 JM$_{119}$ = 2006 UY$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.66533 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28897067 | $\omega$ | 38.62670 | | −0.53506619 | +0.84409870 | |
| $a$ | 2.2658624 | $\Omega$ | 199.10280 | | −0.79902135 | −0.51896423 | |
| $e$ | 0.1122622 | $i$ | 6.08012 | | −0.27435208 | −0.13480916 | |
| $P$ | 3.41 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.1− | 0.1− | 2005 05 16 | G96 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2005 05 10 | 691 | 0.2+ | 0.2+ | 2005 05 16 | G96 | 0.9− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2005 05 10 | 691 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.7− |
| 2005 05 14 | 691 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.7− |
| 2005 05 14 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.5+ |
| 2005 05 16 | G96 | 0.2− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2005 05 16 | G96 | 0.4− | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.5− | | | | |

**2005 JY$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.70022 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23399306 | $\omega$ | 150.58784 | | +0.98854041 | −0.07619763 | |
| $a$ | 2.6081590 | $\Omega$ | 214.54235 | | +0.04708016 | +0.97582057 | |
| $e$ | 0.2843161 | $i$ | 13.28676 | | +0.14342707 | +0.20486125 | |
| $P$ | 4.21 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 27 | 704 | 1.2− | 0.5+ |
| 2005 05 10 | 691 | 0.7− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 27 | 704 | 0.7+ | 0.0 |
| 2005 05 10 | 691 | 0.2+ | 0.8+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 05 | 644 | 0.0 | 0.1+ |
| 2005 05 16 | G96 | 0.2− | 0.3+ | 2006 10 01 | 703 | 0.4+ | 0.0 | 2006 11 05 | 644 | 0.1− | 0.1+ |
| 2005 05 16 | G96 | 0.6− | 0.0 | 2006 10 01 | 703 | 0.5+ | 0.0 | 2006 11 05 | 644 | 0.2− | 0.1+ |
| 2005 05 16 | G96 | 0.5− | 0.0 | 2006 10 01 | 703 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.6− | 0.3− |
| 2005 05 16 | G96 | 0.6− | 0.0 | 2006 10 01 | 703 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.0 | 0.5+ |
| 2005 05 17 | G96 | 0.8− | 0.2− | 2006 10 13 | 291 | 0.3− | 0.3− | 2006 11 15 | 703 | 0.6+ | 0.3+ |
| 2005 05 17 | G96 | 0.3− | 0.4− | 2006 10 13 | 291 | 0.4− | 0.2− | 2006 11 15 | 703 | 0.4− | 0.8+ |
| 2005 05 17 | G96 | 1.0− | 0.2− | 2006 10 13 | 291 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2005 05 17 | G96 | 0.4− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2005 06 04 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2005 06 04 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2005 06 04 | 691 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 25 | 704 | 0.2+ | 0.9+ |
| 2005 06 11 | 691 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 25 | 704 | 0.4+ | 0.6+ |
| 2005 06 11 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 25 | 704 | 0.8− | 0.1− |
| 2005 06 11 | 691 | 0.3+ | 0.0 | 2006 10 22 | 704 | 0.3+ | 0.3− | 2006 11 25 | 704 | 2.2+ | 0.1+ |
| 2006 08 29 | 703 | 0.9− | 0.9+ | 2006 10 22 | 704 | (0.1+ | 1.5−) | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2006 08 29 | 703 | 0.2+ | 1.0+ | 2006 10 22 | 704 | (1.9+ | 1.2−) | 2006 11 25 | G96 | 0.5+ | 0.3+ |
| 2006 08 29 | 703 | 0.2− | 0.1− | 2006 10 22 | 704 | (3.1+ | 1.7−) | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | 0.6− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.5+ | 0.2+ |
| 2006 09 16 | 703 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.0 | 2006 11 25 | 703 | 0.0 | 1.1+ |
| 2006 09 16 | 703 | 0.2− | 0.7− | 2006 10 22 | 703 | 0.2− | 0.5+ | 2006 11 25 | 703 | 0.3− | 0.3+ |
| 2006 09 16 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.2− | 2006 11 25 | 703 | 0.2− | 0.2− |
| 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.1− | 2006 11 25 | 703 | 0.1− | 0.5− |
| 2006 09 20 | 704 | 1.0+ | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.5+ | 0.1− |
| 2006 09 20 | 704 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2006 09 20 | 704 | 0.7− | 0.4+ | 2006 10 23 | G96 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.0 |
| 2006 09 20 | 704 | 0.1+ | 0.5− | 2006 10 27 | 704 | 0.9− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2006 09 20 | 704 | 0.7− | 1.4+ | 2006 10 27 | 704 | 0.7− | 1.4+ | | | | |

**2005 JF$_{120}$ = 2006 WX$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.16252 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25707143 | $\omega$ | 133.85709 | | +0.22755251 | +0.97313135 | |
| $a$ | 2.4496282 | $\Omega$ | 149.24464 | | −0.91196789 | +0.22562547 | |
| $e$ | 0.1526583 | $i$ | 3.94094 | | −0.34137139 | +0.04591860 | |
| $P$ | 3.83 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.0 | 0.0 | 2005 05 16 | G96 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.6− |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2005 05 16 | G96 | 0.6− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2005 05 10 | 691 | 0.8+ | 0.6+ | 2005 05 16 | G96 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2005 05 16 | G96 | 0.5− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2005 05 20 | G96 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2005 05 14 | 691 | 0.1+ | 0.1− | 2005 05 20 | G96 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.5+ |
| 2005 05 14 | 691 | 0.1+ | 0.0 | 2005 05 20 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.3− | 0.2+ |
| 2005 05 14 | 691 | 0.1+ | 0.2− | 2005 05 20 | G96 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2005 05 14 | 644 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2005 05 14 | 644 | 0.9− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− | | | | |
| 2005 05 14 | 644 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.0 | | | | |

**2005 JN$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.09110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22061285 | $\omega$ | 100.15409 | | +0.72458992 | +0.67550832 | |
| $a$ | 2.7125776 | $\Omega$ | 217.56424 | | −0.68678749 | +0.69124826 | |
| $e$ | 0.2433784 | $i$ | 12.94721 | | −0.05737934 | +0.25664052 | |
| $P$ | 4.47 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2005 06 04 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.6+ | 0.0 |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2005 06 04 | 691 | 0.6+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1− |
| 2005 05 10 | 691 | 0.1+ | 0.1+ | 2005 06 04 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2005 05 14 | 691 | 0.1− | 0.0 | 2005 06 13 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.3− |
| 2005 05 14 | 691 | 0.3+ | 0.0 | 2005 06 13 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2005 05 14 | 691 | 0.3− | 0.1− | 2005 06 13 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2005 05 19 | G96 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.5+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2005 05 19 | G96 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2005 05 19 | G96 | 0.4− | 0.2− | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2005 05 19 | G96 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.3− | 0.4+ | | | | |

**2005 JC$_{122}$ = 2006 SQ$_{367}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.07854 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23463393 | $\omega$ | 220.65250 | | +0.98308514 | −0.08544739 | |
| $a$ | 2.6034076 | $\Omega$ | 143.27437 | | +0.11511955 | +0.97621996 | |
| $e$ | 0.1528405 | $i$ | 15.71794 | | −0.14244679 | +0.19923185 | |
| $P$ | 4.20 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.3− | 0.0 | 2005 07 06 | 691 | 0.1− | 0.1− | 2006 10 04 | 703 | (0.4− | 1.7+) |
| 2005 05 10 | 691 | 0.4+ | 0.0 | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 10 04 | 703 | 0.1+ | 0.6+ |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2005 07 06 | 691 | 0.0 | 0.3− | 2006 10 04 | 703 | 0.7+ | 1.3+ |
| 2005 05 15 | 644 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.7− | 0.1− | 2006 11 18 | 703 | 0.5+ | 0.1+ |
| 2005 05 15 | 644 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.9− | 2006 11 18 | 703 | 0.6− | 0.5− |
| 2005 05 15 | 644 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.1− | 0.4− | 2006 11 18 | 703 | 0.6− | 0.7− |
| 2005 05 15 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.3− | 2006 11 18 | 703 | 1.0− | 0.5+ |
| 2005 05 15 | 644 | 0.2+ | 0.2− | 2006 10 02 | 703 | 1.1+ | 0.1− | 2006 11 24 | 703 | 0.7+ | 1.3+ |
| 2005 05 15 | 644 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.6+ | 0.1− | 2006 11 24 | 703 | 0.5+ | 0.9− |
| 2005 05 16 | 691 | 0.3− | 0.2+ | 2006 10 02 | 703 | 1.0− | 0.4− | 2006 11 24 | 703 | 0.6+ | 0.1− |
| 2005 05 16 | 691 | 0.0 | 0.1+ | 2006 10 02 | 703 | (1.8− | 1.0−) | 2006 11 24 | 703 | 0.1− | 0.2− |
| 2005 05 16 | 691 | 0.1+ | 0.1+ | 2006 10 04 | 703 | 0.5− | 0.9+ | | | | |

**2005 JJ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.29942 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22274595 | $\omega$ | 111.25148 | | +0.63448216 | +0.77062428 | |
| $a$ | 2.6952321 | $\Omega$ | 198.52296 | | −0.76040806 | +0.60846565 | |
| $e$ | 0.1938497 | $i$ | 10.84157 | | −0.13860729 | +0.18949344 | |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.3+ | 0.8+ | 2006 09 15 | 683 | (1.6− | 1.6−) | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2004 02 11 | 644 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.1+ |
| 2004 02 11 | 644 | 0.1+ | 1.0+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2005 04 05 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2005 04 05 | 691 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2005 04 05 | 691 | 0.1− | 0.4− | 2006 09 20 | 704 | (1.9+ | 0.1−) | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 1.0+ | 0.6− | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 1.3+ | 1.3+ | 2006 10 29 | 291 | 0.1+ | 0.0 |
| 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 29 | 291 | 0.1+ | 0.1+ |
| 2005 05 03 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 05 03 | 704 | 0.5− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2005 05 03 | 704 | 0.3+ | 1.3+ | 2006 09 27 | 704 | 0.5+ | 1.4+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2005 05 03 | 704 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2005 05 11 | 691 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2005 05 11 | 691 | 0.2− | 0.3+ | 2006 09 29 | 704 | (1.6+ | 0.0 ) | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2005 05 14 | 704 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.4+ | 0.6− | 2006 11 06 | 644 | 0.5− | 0.0 |
| 2005 05 14 | 704 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.6− | 0.1− | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2005 05 14 | 704 | 0.0 | 0.3− | 2006 10 15 | 703 | 0.3− | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2005 05 14 | 704 | 0.1− | 0.7− | 2006 10 15 | 703 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2005 05 14 | 704 | 0.1+ | 1.0− | 2006 10 15 | 703 | 0.1− | 0.9+ | 2006 11 11 | 703 | (1.7+ | 0.0 ) |
| 2005 06 03 | 703 | 0.4+ | 0.2− | 2006 10 15 | 703 | (1.8− | 0.1−) | 2006 11 11 | 703 | (1.0− | 1.6−) |
| 2005 06 03 | 703 | 0.5+ | 1.0− | 2006 10 19 | 644 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2005 06 03 | 703 | 0.3− | 0.5− | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2005 06 03 | 703 | 0.6− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 09 14 | 703 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2006 09 14 | 703 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2006 09 14 | 703 | 1.2− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.7+ | 1.2− |
| 2006 09 15 | 683 | 1.1− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.9+ |
| 2006 09 15 | 683 | (2.8− | 0.6−) | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 1.1+ | 0.5− |

**2005 JX$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 131.93191 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.29420261 | $\omega$ | 8.45308 | | −0.39746430 | +0.91640208 |
| $a$ | 2.2389189 | $\Omega$ | 238.13922 | | −0.84511496 | −0.38562137 |
| $e$ | 0.0699109 | $i$ | 3.18682 | | −0.35749522 | −0.10725379 |
| $P$ | 3.35 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.4+ | 0.2+ | 2005 06 14 | G96 | 0.7− | 0.0 | 2006 11 17 | 691 | 0.3− | 0.1+ |
| 2005 03 14 | G96 | 0.3− | 0.2− | 2005 06 14 | G96 | 0.2− | 0.5+ | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2005 03 14 | G96 | 0.5− | 0.1− | 2005 06 27 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2005 03 14 | G96 | 0.3− | 0.3+ | 2005 06 27 | 644 | 0.5− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2005 05 11 | 691 | 0.0 | 0.1+ | 2005 06 27 | 644 | 0.2− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2005 05 11 | 691 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2005 05 11 | 691 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.5+ | 0.4− | 2006 11 21 | 691 | 0.2+ | 0.5+ |
| 2005 05 16 | 691 | 0.3+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2005 05 16 | 691 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 21 | 691 | 0.6− | 0.1− |
| 2005 05 16 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2005 06 14 | G96 | 0.4− | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2005 06 14 | G96 | 0.4− | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2− |

**2005 JW$_{125}$ = 2006 UC$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 108.59603 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.25872627 | $\omega$ | 267.95924 | | −0.13382407 | +0.99100139 |
| $a$ | 2.4391717 | $\Omega$ | 354.34798 | | −0.89793075 | −0.12241299 |
| $e$ | 0.1615117 | $i$ | 1.57814 | | −0.41929880 | −0.05414145 |
| $P$ | 3.81 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 644 | 0.2+ | 0.2+ | 2005 05 18 | E12 | 0.4− | 0.2+ | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2005 05 11 | 644 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2005 05 11 | 644 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2005 05 14 | 704 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.6− |
| 2005 05 14 | 704 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.4+ | 0.2− |
| 2005 05 14 | 704 | 0.2+ | 0.5− | 2006 10 20 | 691 | 0.6− | 0.2− | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2005 05 16 | 644 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.4+ |
| 2005 05 16 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 1.1+ | 0.7− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2005 05 16 | 644 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2005 05 18 | E12 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2005 05 18 | E12 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2005 05 18 | E12 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 | | | | |

**2005 JE$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 49.53208 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.17770389 | $\omega$ | 70.75168 | | +0.29590568 | +0.94779351 |
| $a$ | 3.1333201 | $\Omega$ | 217.13061 | | −0.93358382 | +0.26062474 |
| $e$ | 0.1987031 | $i$ | 11.35600 | | −0.20214125 | +0.18374495 |
| $P$ | 5.55 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 691 | 0.3− | 0.1− | 2005 05 14 | 704 | (0.6+ | 2.1+) | 2005 06 28 | 644 | 0.1− | 0.0 |
| 2001 11 18 | 691 | 0.2+ | 0.4+ | 2005 05 14 | 704 | 0.4+ | 0.0 | 2005 06 28 | 644 | 0.6− | 0.1+ |
| 2001 11 18 | 691 | 0.1+ | 0.3− | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.6− | 0.3+ |
| 2005 04 07 | G96 | 0.3− | 0.1+ | 2005 06 08 | 691 | 0.2+ | 0.0 | 2006 09 27 | 703 | 0.7+ | 0.3− |
| 2005 04 07 | G96 | 0.3− | 0.1− | 2005 06 08 | 691 | 0.2+ | 0.1− | 2006 09 27 | 703 | 1.7− | 1.7− |
| 2005 04 07 | G96 | 0.4− | 0.0 | 2005 06 12 | 691 | 0.2+ | 0.3− | 2006 09 27 | 703 | 1.6− | 0.6+ |
| 2005 04 07 | G96 | 0.5− | 0.1− | 2005 06 12 | 691 | 0.3+ | 0.0 | 2006 10 01 | 703 | 0.2+ | 0.2+ |
| 2005 05 12 | G96 | 0.3+ | 0.1+ | 2005 06 12 | 691 | 0.1+ | 0.1− | 2006 10 01 | 703 | 1.7+ | 1.6+ |
| 2005 05 12 | G96 | 0.4− | 0.0 | 2005 06 23 | 644 | 0.3− | 0.3− | 2006 10 01 | 703 | 1.6+ | 0.7− |
| 2005 05 12 | G96 | 0.6− | 0.0 | 2005 06 23 | 644 | 0.8− | 0.0 | 2006 10 01 | 703 | 0.2− | 0.2+ |
| 2005 05 12 | G96 | 0.3− | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.1+ | | | | |
| 2005 05 14 | 704 | 0.2− | 1.4+ | 2005 06 28 | 644 | 0.4− | 0.2+ | | | | |

**2005 JO$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 119.68090 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.25342480 | $\omega$ | 106.51538 | | −0.44517618 | +0.89463116 |
| $a$ | 2.4730713 | $\Omega$ | 136.98460 | | −0.84139211 | −0.40335796 |
| $e$ | 0.1804737 | $i$ | 3.20340 | | −0.30639434 | −0.19219115 |
| $P$ | 3.89 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | G96 | 0.2+ | 0.3− | 2005 05 14 | G96 | 0.1− | 0.1− | 2005 06 16 | 691 | 0.2+ | 0.1− |
| 2005 03 13 | G96 | 0.0 | 0.3− | 2005 05 19 | G96 | 0.7− | 0.4− | 2005 06 16 | 691 | 0.1+ | 0.1− |
| 2005 03 13 | G96 | 0.4+ | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.4− | 2005 06 16 | 691 | 0.1− | 0.0 |
| 2005 03 13 | G96 | 0.6− | 0.2+ | 2005 05 19 | G96 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.9+ | 0.2− |
| 2005 05 12 | 704 | 0.8− | 1.2− | 2005 05 19 | G96 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2005 05 12 | 704 | 1.2− | 0.4+ | 2005 06 03 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2005 05 12 | 704 | 0.5+ | 0.0 | 2005 06 03 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2005 05 12 | 704 | 0.7+ | 0.8− | 2005 06 03 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2005 05 14 | G96 | 0.1+ | 0.3− | 2005 06 08 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2005 05 14 | G96 | 0.0 | 0.4− | 2005 06 08 | 691 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2005 05 14 | G96 | 0.3+ | 0.1− | 2005 06 08 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 1.1− | 0.1− |

**2005 JC$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 71.16200 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23482216 | $\omega$ | 85.57128 | | +0.57167795 | +0.79872383 |
| $a$ | 2.6020162 | $\Omega$ | 221.21916 | | −0.81920686 | +0.54292940 |
| $e$ | 0.2629068 | $i$ | 16.54832 | | −0.04565578 | +0.25936058 |
| $P$ | 4.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | G96 | 0.2− | 0.3+ | 2005 05 17 | G96 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.1+ |
| 2005 04 07 | G96 | 0.3− | 0.1− | 2005 06 01 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.4+ |
| 2005 04 07 | G96 | 0.3− | 0.3+ | 2005 06 01 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.2+ |
| 2005 04 07 | G96 | 0.1− | 0.2− | 2005 06 01 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.0 |
| 2005 05 12 | 704 | 0.4+ | 1.0+ | 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 10 23 | G96 | 0.0 | 0.2+ |
| 2005 05 12 | 704 | 0.6− | 0.4− | 2005 06 05 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.3− | 0.3+ |
| 2005 05 12 | 704 | 0.1+ | 0.1− | 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.2+ |
| 2005 05 14 | 644 | 0.2+ | 0.4− | 2005 06 09 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2005 05 14 | 644 | 0.1− | 0.0 | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2005 05 14 | 644 | 0.1+ | 0.0 | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2005 05 17 | G96 | 0.4− | 0.8+ | 2005 06 13 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2005 05 17 | G96 | 0.4− | 0.1− | 2005 06 13 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2005 05 17 | G96 | 0.2− | 0.1− | 2005 06 13 | 691 | 0.0 | 0.0 | | | | |

**2005 JF$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.74588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23968712 | $\omega$ | 215.17855 | | +0.89340714 | | +0.43823090 |
| $a$ | 2.5666871 | $\Omega$ | 118.53918 | | −0.38206553 | | +0.85695459 |
| $e$ | 0.2800692 | $i$ | 6.46275 | | −0.23632522 | | +0.27126095 |
| $P$ | 4.11 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 08 | 691 | 0.2− | 0.5− | 2005 05 16 | 704 | 0.5+ | 1.1− | 2005 06 05 | 704 | 0.5+ | 0.2− |
| 1994 12 08 | 691 | 0.4+ | 0.3− | 2005 05 16 | 704 | 1.2+ | 0.4− | 2005 06 05 | 704 | 0.7− | 0.6− |
| 1994 12 08 | 691 | 0.3− | 0.3+ | 2005 05 16 | 704 | 1.2+ | 1.1+ | 2005 06 05 | 704 | 0.4− | 1.3+ |
| 2005 05 03 | 703 | (0.8+ | 4.2+) | 2005 05 16 | G96 | 0.5− | 0.6− | 2005 06 10 | 704 | 0.1+ | 0.6+ |
| 2005 05 03 | 703 | (2.3− | 1.5+) | 2005 05 16 | G96 | 0.5− | 0.4− | 2005 06 10 | 704 | 0.1+ | 0.5+ |
| 2005 05 03 | 703 | 1.1− | 0.6+ | 2005 05 16 | G96 | 0.6− | 0.6− | 2005 06 10 | 704 | 1.2+ | 0.1+ |
| 2005 05 03 | 703 | 0.7+ | 1.3+ | 2005 05 16 | G96 | 0.5− | 0.6− | 2005 06 14 | 691 | 0.0 | 0.0 |
| 2005 05 04 | 691 | 0.0 | 0.1+ | 2005 06 02 | 703 | 0.5− | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.1− |
| 2005 05 04 | 691 | 0.2− | 0.2− | 2005 06 02 | 703 | 1.5− | 0.7+ | 2005 06 14 | 691 | 0.1− | 0.1− |
| 2005 05 04 | 691 | 0.6+ | 1.6+ | 2005 06 02 | 703 | (3.4− | 2.5+) | 2005 07 05 | 644 | 0.5− | 0.1+ |
| 2005 05 12 | 704 | 1.4+ | 1.6− | 2005 06 02 | 703 | (0.1− | 2.3+) | 2005 07 05 | 644 | 0.7− | 0.1− |
| 2005 05 12 | 704 | (0.7+ | 2.2−) | 2005 06 04 | 691 | 0.0 | 0.2− | 2005 07 05 | 644 | 0.4− | 0.1− |
| 2005 05 12 | 704 | (1.7+ | 2.7−) | 2005 06 04 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2005 05 12 | 704 | 1.0+ | 0.9− | 2005 06 04 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2005 05 12 | 704 | 0.1+ | 1.4− | 2005 06 05 | 704 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2+ |

**2005 JZ$_{129}$ = 2006 VO$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.72159 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26269214 | $\omega$ | 221.86645 | | +0.84298463 | | +0.53513893 |
| $a$ | 2.4145600 | $\Omega$ | 105.70134 | | −0.47720328 | | +0.79094226 |
| $e$ | 0.1817872 | $i$ | 3.26338 | | −0.24830212 | | +0.29670974 |
| $P$ | 3.75 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.1− | 0.0 | 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.0 |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.4− | 0.2− | 2006 11 12 | G96 | 0.3− | 0.1− |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2005 04 16 | 691 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.5− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2005 04 16 | 691 | 0.4+ | 0.4+ | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.4+ |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2005 05 13 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.2+ |

**2005 JK$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.63579 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27596439 | $\omega$ | 212.18438 | | +0.31275427 | | +0.94759395 |
| $a$ | 2.3365084 | $\Omega$ | 76.11135 | | −0.85660821 | | +0.31104769 |
| $e$ | 0.1815731 | $i$ | 3.85083 | | −0.41037440 | | +0.07290429 |
| $P$ | 3.57 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 699 | 0.1− | 0.1− | 2005 05 17 | G96 | 0.9− | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.3+ |
| 2005 05 09 | 699 | 0.3+ | 0.6− | 2005 05 17 | G96 | 0.7− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2005 05 09 | 699 | 0.5− | 0.9− | 2005 05 17 | G96 | 0.7− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.3− |
| 2005 05 09 | 699 | 0.8+ | 1.1+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2005 05 13 | 704 | 0.6− | 1.2− | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2005 05 13 | 704 | (1.0− | 4.0+) | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 05 13 | 704 | 1.3+ | 1.1+ | 2005 06 13 | G96 | 0.5− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2005 05 13 | 704 | 1.2+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.9− | 0.5+ |
| 2005 05 16 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.8− |
| 2005 05 16 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | (1.8+ | 1.7−) |
| 2005 05 16 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.5+ | 2006 11 13 | G96 | 0.6− | 0.6− |
| 2005 05 17 | G96 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | | | | |

**2005 JU$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.62238 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23926755 | $\omega$ | 79.24269 | | +0.12381263 | | +0.99132905 |
| $a$ | 2.5696867 | $\Omega$ | 198.04779 | | −0.95688934 | | +0.10753206 |
| $e$ | 0.1424061 | $i$ | 8.16733 | | −0.26274173 | | +0.07552196 |
| $P$ | 4.12 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | 691 | 0.2+ | 1.0+ | 2005 06 05 | 691 | 0.1− | 0.2− | 2006 10 17 | G96 | 1.0+ | 0.7− |
| 2005 05 14 | 691 | 0.1+ | 0.4+ | 2005 06 11 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.2− | 0.1− |
| 2005 05 14 | 691 | 0.4+ | 0.4+ | 2005 06 11 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2005 05 17 | G96 | 0.4− | 0.0 | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 1.2+ | 0.2+ |
| 2005 05 17 | G96 | 0.5− | 0.1− | 2005 06 13 | 291 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.4− |
| 2005 05 17 | G96 | 0.6− | 0.3+ | 2005 06 13 | 291 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.4+ | 0.1− |
| 2005 05 17 | G96 | 0.2+ | 0.2+ | 2005 06 13 | 291 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.4+ |
| 2005 05 20 | G96 | 0.2− | 0.0 | 2005 06 14 | 291 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 0.6− | 0.5+ |
| 2005 05 20 | G96 | 0.2− | 0.6+ | 2005 06 14 | 291 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.5+ |
| 2005 05 20 | G96 | 1.3− | 0.5− | 2005 06 14 | 291 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2005 05 20 | G96 | 0.4− | 0.1+ | 2005 06 15 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2005 06 05 | 691 | 0.1+ | 0.2− | 2005 06 15 | 691 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2005 06 05 | 691 | 0.0 | 0.2− | 2005 06 15 | 691 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.0 | 0.1+ |

**2005 JV$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.20054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24695197 | $\omega$ | 23.51648 | | −0.60393656 | | +0.79080795 |
| $a$ | 2.5160990 | $\Omega$ | 209.62036 | | −0.75947115 | | −0.60882064 |
| $e$ | 0.1077676 | $i$ | 11.60384 | | −0.24179373 | | −0.06293018 |
| $P$ | 3.99 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | 691 | 0.1+ | 0.1+ | 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 10 01 | 461 | 0.4+ | 0.0 |
| 2005 05 14 | 691 | 0.2+ | 0.0 | 2005 05 20 | G96 | 0.3− | 0.2− | 2006 10 01 | 461 | 0.0 | 0.0 |
| 2005 05 14 | 691 | 0.4+ | 0.3+ | 2005 05 20 | G96 | 1.4− | 0.4+ | 2006 10 02 | 461 | 0.0 | 0.1+ |
| 2005 05 17 | G96 | 0.0 | 0.7− | 2005 06 11 | 691 | 0.1+ | 0.1− | 2006 10 02 | 461 | 0.1− | 0.2− |
| 2005 05 17 | G96 | 0.4− | 0.4− | 2005 06 11 | 691 | 0.3+ | 0.0 | 2006 10 02 | 461 | 0.4− | 0.4− |
| 2005 05 17 | G96 | 0.5− | 0.3− | 2005 06 11 | 691 | 0.2− | 0.0 | 2006 10 02 | 461 | 0.0 | 0.2− |
| 2005 05 17 | G96 | 0.4− | 0.3− | 2006 10 01 | 461 | 0.3− | 0.1− | 2006 10 02 | 461 | 0.3+ | 0.3+ |
| 2005 05 20 | G96 | 0.2− | 0.2− | 2006 10 01 | 461 | 0.2− | 0.3+ | 2006 10 02 | 461 | 0.3+ | 0.2+ |

**2005 JT$_{133}$ = 2006 UM$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.93303 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25297069 | $\omega$ | 7.25288 | | −0.94573362 | | +0.32435629 |
| $a$ | 2.4760300 | $\Omega$ | 191.73014 | | −0.30274296 | | −0.90135044 |
| $e$ | 0.0412751 | $i$ | 5.50895 | | −0.11804503 | | −0.28698498 |
| $P$ | 3.90 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 691 | 0.0 | 0.6+ | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2001 04 16 | 691 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.6− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2001 04 16 | 691 | 0.1+ | 0.6+ | 2006 08 21 | 691 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2+ |
| 2005 05 14 | 691 | 0.3+ | 0.2− | 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.8+ | 0.3− |
| 2005 05 14 | 691 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.6+ | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2005 05 14 | 691 | 0.0 | 0.4− | 2006 09 17 | 703 | 1.1− | 0.6− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2005 05 16 | G96 | 0.2− | 0.2− | 2006 09 17 | 703 | 0.5− | 0.9+ | 2006 10 16 | G96 | 0.6− | 0.7− |
| 2005 05 16 | G96 | 0.3− | 0.5− | 2006 09 17 | 703 | 1.3− | 1.1− | 2006 10 16 | G96 | 0.4− | 0.3+ |
| 2005 05 16 | G96 | 0.1− | 0.0 | 2006 09 17 | 703 | 1.0+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2005 05 16 | G96 | 0.5− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.6+ | 2006 10 23 | G96 | 0.6− | 0.0 |
| 2005 05 19 | G96 | 0.7− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2005 05 19 | G96 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.4− |

**2005 JU$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.29581 | | | (2000.0) | | |
| $n$ | 0.23344629 | $\omega$ | 214.18593 | | +0.23776862 | +0.93984994 |
| $a$ | 2.6122299 | $\Omega$ | 70.64644 | | −0.82294048 | +0.32904687 |
| $e$ | 0.1579006 | $i$ | 15.06651 | | −0.51597970 | −0.09170742 |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.3− | 0.3+ | 2005 05 16 | G96 | 0.4− | 0.3− | 2005 06 14 | 691 | 0.0 | 0.2+ |
| 2002 11 14 | 644 | 0.2− | 0.5+ | 2005 05 19 | G96 | 0.5− | 0.4− | 2005 06 14 | 691 | 0.0 | 0.0 |
| 2002 11 14 | 644 | 0.1− | 0.3+ | 2005 05 19 | G96 | 0.6− | 0.1− | 2005 06 14 | 699 | 0.5+ | 1.2− |
| 2005 05 03 | 691 | 0.2+ | 0.1− | 2005 05 19 | G96 | 0.4− | 0.3− | 2005 06 14 | 691 | 0.1− | 0.2+ |
| 2005 05 03 | 691 | 0.3+ | 0.0 | 2005 05 19 | G96 | 0.7− | 0.1+ | 2005 06 14 | 699 | 0.9+ | 0.0 |
| 2005 05 03 | 691 | 0.3+ | 0.0 | 2005 06 04 | 703 | 0.7− | 0.1− | 2005 06 14 | 699 | 0.3+ | 0.5− |
| 2005 05 14 | 691 | 0.3+ | 0.3− | 2005 06 04 | 703 | 0.0 | 0.7+ | 2005 06 23 | 644 | 0.5− | 0.3+ |
| 2005 05 14 | 691 | 0.6− | 0.8+ | 2005 06 04 | 703 | 0.6+ | 0.3+ | 2005 06 23 | 644 | 0.2− | 0.5+ |
| 2005 05 14 | 691 | 0.2+ | 0.2− | 2005 06 04 | 703 | 0.0 | 0.0 | 2005 06 23 | 644 | 0.5− | 0.3− |
| 2005 05 16 | 704 | 1.3+ | 0.1+ | 2005 06 05 | 704 | 0.4− | 0.2+ | 2005 07 04 | 644 | 0.4− | 0.1+ |
| 2005 05 16 | 704 | 0.1+ | 0.2+ | 2005 06 05 | 704 | 0.0 | 0.0 | 2005 07 04 | 644 | 0.3− | 0.2− |
| 2005 05 16 | 704 | 0.8+ | 1.0+ | 2005 06 05 | 704 | 0.1+ | 0.3− | 2005 07 04 | 644 | 0.8− | 0.4− |
| 2005 05 16 | 704 | 0.4+ | 0.4− | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 05 16 | G96 | 0.5− | 0.3− | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2005 05 16 | G96 | 0.4− | 0.1− | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2005 05 16 | G96 | 0.4− | 0.2− | 2005 06 14 | 699 | 0.1+ | 0.3+ | | | | |

**2005 JH$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.56470 | | | (2000.0) | | |
| $n$ | 0.23621736 | $\omega$ | 121.42696 | | +0.70982732 | +0.70422432 |
| $a$ | 2.5917604 | $\Omega$ | 193.82492 | | −0.66522288 | +0.66341108 |
| $e$ | 0.2219701 | $i$ | 3.50390 | | −0.23156791 | +0.25289098 |
| $P$ | 4.17 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.2+ | 0.6+ | 2005 05 19 | G96 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2001 05 24 | 807 | 0.3− | 0.5+ | 2005 05 19 | G96 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.2+ | 0.7+ | 2005 05 19 | G96 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2002 11 24 | 644 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2005 03 10 | G96 | 0.9− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2005 03 10 | G96 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2005 03 10 | G96 | 0.8− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.7+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2005 03 10 | G96 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2005 05 03 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.9− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.9− | 2006 11 17 | 703 | 1.3+ | 0.7+ |
| 2005 05 03 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.1− | 0.8+ |
| 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.6+ |
| 2005 05 14 | G96 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2005 05 14 | G96 | 0.4− | 0.3+ | 2006 10 24 | 644 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 1.0+ | 0.6+ |
| 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 10 24 | 644 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2005 05 16 | 691 | 0.1− | 0.5+ | 2006 10 24 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | (1.5+ | 2.3−) |
| 2005 05 16 | 691 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | (1.6+ | 0.5−) |
| 2005 05 16 | 691 | 0.5+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.4+ | | | | |
| 2005 05 19 | G96 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.7+ | | | | |

**2005 JU$_{135}$ = 2006 QU$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 113.25794 | | | (2000.0) | | |
| $n$ | 0.24332909 | $\omega$ | 67.26584 | | −0.74977074 | +0.66048099 |
| $a$ | 2.5410119 | $\Omega$ | 154.01649 | | −0.63571944 | −0.70219272 |
| $e$ | 0.1390700 | $i$ | 5.25269 | | −0.18358818 | −0.26587637 |
| $P$ | 4.05 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 20 | 691 | 0.0 | 0.3− | 2005 04 15 | 699 | (1.8+ | 0.5+) | 2005 05 15 | 644 | 0.2+ | 1.0+ |
| 1993 05 20 | 691 | 0.0 | 0.4− | 2005 04 15 | 699 | 1.1+ | 0.3− | 2006 08 18 | 691 | 0.2+ | 0.1− |
| 1993 05 20 | 691 | 0.1− | 0.1− | 2005 04 15 | 699 | 0.3+ | 0.3− | 2006 08 18 | 691 | 0.1+ | 0.1+ |
| 2001 03 29 | 608 | 0.2+ | 0.1− | 2005 05 08 | 691 | 0.2− | 0.4+ | 2006 08 18 | 691 | 0.2+ | 0.1+ |
| 2001 03 29 | 608 | 0.6+ | 0.0 | 2005 05 08 | 691 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.3− | 0.3+ |
| 2001 03 29 | 608 | 0.2+ | 0.2+ | 2005 05 08 | 691 | 0.1− | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2001 04 27 | 608 | 0.3− | 0.1+ | 2005 05 08 | 703 | 0.2− | 0.6+ | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 2001 04 27 | 608 | 0.7− | 0.0 | 2005 05 08 | 703 | 0.5− | 1.0− | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2001 04 27 | 608 | 0.1− | 0.4+ | 2005 05 08 | 703 | 1.0+ | 1.1+ | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2001 05 24 | 645 | 0.0 | 0.1− | 2005 05 08 | 703 | 0.3− | 0.8− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2001 05 24 | 645 | 0.1− | 0.0 | 2005 05 15 | 644 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.6− | 0.2− |
| 2005 04 15 | 699 | 1.1+ | 0.1− | 2005 05 15 | 644 | 0.4+ | 0.0 | | | | |

**2005 JC$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.16256 | | | (2000.0) | | |
| $n$ | 0.24323853 | $\omega$ | 167.68225 | | +0.04986281 | +0.99709032 |
| $a$ | 2.5416425 | $\Omega$ | 105.15477 | | −0.92133539 | +0.06820731 |
| $e$ | 0.2034951 | $i$ | 3.42471 | | −0.38555777 | −0.03403920 |
| $P$ | 4.05 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | 691 | 0.3+ | 0.3+ | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.5− |
| 2005 03 11 | 691 | 0.2+ | 0.1+ | 2005 05 04 | 691 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2005 03 11 | 691 | 0.4+ | 0.1+ | 2005 05 13 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.4− | 0.0 |
| 2005 04 01 | 699 | 0.0 | 0.8− | 2005 05 13 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2005 04 01 | 699 | 1.0− | 0.2+ | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2005 04 01 | 699 | 1.1− | 0.7+ | 2005 05 15 | 644 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.5− |
| 2005 04 01 | 699 | 0.7− | 0.3− | 2005 05 15 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2005 04 04 | 703 | 1.2+ | 0.3− | 2005 05 15 | 644 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.8+ | 0.3− |
| 2005 04 04 | 703 | 0.8− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3+ |
| 2005 04 04 | 703 | (2.1− | 0.2+) | 2006 09 28 | 691 | 0.2− | 0.7+ | 2006 11 23 | G96 | 0.4+ | 0.6+ |
| 2005 04 04 | 703 | (2.2− | 2.2+) | 2006 09 28 | 691 | 0.1− | 0.2+ | | | | |
| 2005 05 04 | 691 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.0 | 0.3+ | | | | |

**2005 JS$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.68060 | | | (2000.0) | | |
| $n$ | 0.23777519 | $\omega$ | 345.85424 | | −0.79903109 | +0.59818902 |
| $a$ | 2.5804276 | $\Omega$ | 231.05227 | | −0.54376928 | −0.76215769 |
| $e$ | 0.1827764 | $i$ | 4.49750 | | −0.25664037 | −0.24755920 |
| $P$ | 4.15 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2005 05 13 | G96 | 0.2− | 0.2− | 2005 06 16 | G96 | 0.4− | 0.3− |
| 2002 10 06 | 644 | 0.1− | 0.4+ | 2005 05 13 | G96 | 0.0 | 0.2− | 2005 06 16 | G96 | 0.4− | 0.2− |
| 2002 10 06 | 644 | 0.0 | 0.2+ | 2005 05 18 | 644 | 0.1− | 0.1− | 2005 06 16 | G96 | 0.9− | 0.4− |
| 2005 01 18 | 809 | 0.0 | 0.1+ | 2005 05 18 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.2− |
| 2005 01 18 | 809 | 0.1+ | 0.2+ | 2005 05 18 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 2005 01 18 | 809 | 0.1− | 0.2− | 2005 05 21 | 644 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.4+ |
| 2005 05 04 | G96 | 0.1+ | 0.4− | 2005 05 21 | 644 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.2+ |
| 2005 05 04 | G96 | 0.2− | 0.1− | 2005 05 21 | 644 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2005 05 04 | G96 | 0.2− | 0.2− | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2005 05 04 | G96 | 0.2− | 0.2+ | 2005 06 06 | 691 | 0.5+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2005 05 13 | G96 | 0.3+ | 0.1− | 2005 06 06 | 691 | 0.2+ | 0.2+ | | | | |
| 2005 05 13 | G96 | 0.2− | 0.2− | 2005 06 16 | G96 | 1.0− | 0.2− | | | | |

**2005 JU$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.11081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25833268 | $\omega$ | 36.02109 | | −0.11862689 | | +0.99271060 |
| $a$ | 2.4416486 | $\Omega$ | 227.17654 | | −0.91765956 | | −0.11779791 |
| $e$ | 0.1818735 | $i$ | 1.66346 | | −0.37924739 | | −0.02548150 |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 291 | 0.4− | 0.2+ | 2005 05 21 | 644 | 0.2+ | 0.1− | 2005 06 15 | 691 | 0.0 | 0.1− |
| 2002 11 05 | 291 | 0.1+ | 0.1− | 2005 05 21 | 644 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.7+ | 0.7− |
| 2002 11 05 | 291 | 0.0 | 0.6+ | 2005 05 21 | 644 | 0.6+ | 0.0 | 2006 09 27 | G96 | 0.6+ | 0.5− |
| 2005 03 10 | G96 | 0.1+ | 0.2+ | 2005 06 06 | 691 | 0.4− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2005 03 10 | G96 | 0.1+ | 0.1− | 2005 06 06 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | (0.6+ | 1.6−) |
| 2005 03 10 | G96 | 0.2− | 0.4+ | 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 2005 03 10 | G96 | 0.1+ | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2005 05 13 | G96 | 0.1− | 0.3− | 2005 06 11 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.3− |
| 2005 05 13 | G96 | 0.0 | 0.3− | 2005 06 11 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2005 05 13 | G96 | 0.1− | 0.0 | 2005 06 14 | 291 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2005 05 13 | G96 | 0.0 | 0.1+ | 2005 06 14 | 291 | 1.0− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2005 05 18 | 644 | 0.2+ | 0.2+ | 2005 06 14 | 291 | 0.8− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2005 05 18 | 644 | 0.3+ | 0.0 | 2005 06 15 | 691 | 1.1+ | 0.2− | | | | |
| 2005 05 18 | 644 | 0.2+ | 0.1+ | 2005 06 15 | 691 | 0.6+ | 0.1+ | | | | |

**2005 JW$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.68335 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17883234 | $\omega$ | 86.68026 | | +0.75167387 | | +0.62615070 |
| $a$ | 3.1201252 | $\Omega$ | 234.43881 | | −0.65947620 | | +0.70936841 |
| $e$ | 0.2311164 | $i$ | 14.75423 | | −0.00880512 | | +0.32362286 |
| $P$ | 5.51 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.6− | 0.7+ | 2005 05 18 | 644 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.6− |
| 2001 12 14 | 704 | 1.1+ | 0.2+ | 2005 05 18 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 703 | 0.6+ | 1.0− |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2005 06 01 | 691 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.9− | 0.6+ |
| 2001 12 14 | 704 | 0.4− | 0.9+ | 2005 06 01 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2005 05 04 | G96 | 0.2− | 0.6+ | 2005 06 01 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.4+ |
| 2005 05 04 | G96 | (0.7− | 1.6+) | 2005 06 10 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 2005 05 04 | G96 | 0.5+ | 0.1+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2005 05 04 | G96 | 0.4− | 0.3+ | 2005 06 10 | 691 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2005 05 13 | G96 | 0.3− | 0.6+ | 2005 06 27 | 644 | 0.6− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2005 05 13 | G96 | 0.4− | 0.1− | 2005 06 27 | 644 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.3− | 0.8+ |
| 2005 05 13 | G96 | 0.2− | 0.0 | 2005 06 27 | 644 | 0.7+ | 1.0− | 2006 10 19 | 703 | 0.1+ | 1.1− |
| 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 09 22 | 699 | 1.2− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.6+ |
| 2005 05 18 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 699 | 0.8+ | 0.1+ | 2006 10 19 | 703 | (1.2− | 2.0+) |
| 2005 05 18 | 644 | 0.4+ | 0.3+ | 2006 09 22 | 699 | 1.4+ | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2005 05 18 | 644 | 0.1+ | 0.3+ | 2006 09 22 | 699 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2005 05 18 | 644 | 0.0 | 0.4+ | 2006 09 28 | 703 | 0.8− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.1+ |

**2005 JB$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.85074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18624712 | $\omega$ | 13.28321 | | −0.38166574 | | +0.91497018 |
| $a$ | 3.0367544 | $\Omega$ | 234.43103 | | −0.86206825 | | −0.40350060 |
| $e$ | 0.0611167 | $i$ | 9.26776 | | −0.33342104 | | −0.00410204 |
| $P$ | 5.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | G96 | 0.2− | 0.1− | 2005 05 21 | 644 | 0.0 | 0.1+ | 2006 10 14 | 461 | 0.0 | 0.4− |
| 2005 05 13 | G96 | 0.1− | 0.0 | 2005 05 21 | 644 | 0.3− | 0.2+ | 2006 10 16 | 461 | 0.3− | 0.9+ |
| 2005 05 13 | G96 | 0.2− | 0.1+ | 2005 05 21 | 644 | 0.0 | 0.2+ | 2006 10 16 | 461 | 0.1− | 0.6+ |
| 2005 05 13 | G96 | 0.0 | 0.2+ | 2005 06 01 | 691 | 0.1− | 0.2− | 2006 10 16 | 461 | 0.1+ | 0.1− |
| 2005 05 18 | 644 | 0.0 | 0.3+ | 2005 06 01 | 691 | 0.0 | 0.1− | 2006 10 17 | 461 | 0.2− | 0.1− |
| 2005 05 18 | 644 | 0.2+ | 0.1+ | 2005 06 01 | 691 | 0.1− | 0.3− | 2006 10 17 | 461 | 0.3− | 0.6− |
| 2005 05 18 | 644 | 0.2+ | 0.3+ | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 10 17 | 461 | 0.0 | 0.1− |
| 2005 05 18 | E12 | 0.4+ | 0.1− | 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 10 18 | 461 | 0.5+ | 0.0 |
| 2005 05 18 | E12 | 0.1− | 0.1+ | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 461 | 0.0 | 0.0 |
| 2005 05 18 | E12 | 0.2+ | 0.3− | 2006 10 14 | 461 | 0.2+ | 0.5− | 2006 10 18 | 461 | 0.0 | 0.0 |
| 2005 05 18 | E12 | 0.4+ | 0.1− | 2006 10 14 | 461 | 0.1+ | 0.3+ | | | | |

**2005 JC$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.09556 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23587685 | $\omega$ | 46.70721 | | +0.34426023 | | +0.93139408 |
| $a$ | 2.5942541 | $\Omega$ | 243.77769 | | −0.89506201 | | +0.28754565 |
| $e$ | 0.1696833 | $i$ | 7.57640 | | −0.28345879 | | +0.22320970 |
| $P$ | 4.18 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | 704 | 0.5− | 0.4+ | 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.5− | 0.1+ |
| 2005 05 14 | 704 | 0.2− | 0.1− | 2005 06 14 | 701 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.5− |
| 2005 05 14 | 704 | 0.4− | 1.0− | 2005 06 14 | G96 | 0.1− | 0.7− | 2006 10 12 | 644 | 1.0− | 0.2+ |
| 2005 05 14 | 704 | 0.7+ | 1.3− | 2005 06 14 | 701 | 0.7+ | 0.1− | 2006 10 19 | 703 | 0.5+ | 0.6− |
| 2005 05 18 | E12 | 0.1− | 0.3+ | 2005 06 14 | G96 | 0.5− | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.8− |
| 2005 05 18 | E12 | 0.2− | 0.0 | 2005 06 14 | G96 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 2005 05 18 | E12 | 0.2− | 0.8+ | 2005 06 14 | G96 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.7+ | 0.4+ |
| 2005 05 18 | E12 | 0.0 | 0.1+ | 2005 06 15 | 691 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 05 19 | 644 | 0.0 | 0.3− | 2005 06 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2005 05 19 | 644 | 0.2− | 0.1− | 2005 06 15 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 05 19 | 644 | 0.0 | 0.0 | 2005 06 23 | 644 | 0.5− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2005 06 06 | 691 | 0.1+ | 0.2− | 2005 06 23 | 644 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2005 06 06 | 691 | 0.6+ | 0.4− | 2005 06 23 | 644 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2005 06 06 | 691 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2005 06 11 | 691 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.3− | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.1− |
| 2005 06 11 | 691 | 0.1+ | 0.0 | 2005 06 27 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.3− |

**2005 JO$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.82132 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22938306 | $\omega$ | 24.05573 | | −0.91095707 | | +0.41250009 |
| $a$ | 2.6429878 | $\Omega$ | 180.31099 | | −0.40100699 | | −0.88610700 |
| $e$ | 0.1662629 | $i$ | 10.00127 | | −0.09669854 | | −0.21132453 |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 05 31 | 699 | 1.0− | 0.5− | 2005 06 07 | 699 | 0.9+ | 0.2+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 05 31 | 699 | 0.5− | 0.6− | 2005 06 23 | 644 | 0.1+ | 0.0 |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2005 05 31 | 699 | 0.8+ | 0.5+ | 2005 06 23 | 644 | 0.3+ | 0.1+ |
| 2005 04 30 | 691 | 0.0 | 0.0 | 2005 06 02 | 703 | 0.6− | 0.3+ | 2005 06 23 | 644 | 0.2+ | 0.3− |
| 2005 04 30 | 691 | 0.1+ | 0.1+ | 2005 06 02 | 703 | 0.7− | 0.2− | 2005 06 25 | 644 | 0.2+ | 0.1+ |
| 2005 05 14 | 704 | 0.2+ | 0.9+ | 2005 06 02 | 703 | 0.5− | 0.5− | 2005 06 25 | 644 | 0.0 | 0.0 |
| 2005 05 14 | 704 | 0.8− | 0.1+ | 2005 06 02 | 703 | 0.4+ | 1.4+ | 2005 06 25 | 644 | 0.0 | 0.0 |
| 2005 05 14 | 704 | 0.7+ | 0.6+ | 2005 06 04 | 703 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.2− |
| 2005 05 14 | 704 | 0.1− | 0.3+ | 2005 06 04 | 703 | 1.2− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2005 05 20 | G96 | 0.2− | 0.7− | 2005 06 04 | 703 | 0.5+ | 1.0+ | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2005 05 20 | G96 | 0.1− | 0.6− | 2005 06 04 | 703 | 0.0 | 0.8− | 2006 09 28 | G96 | 0.1− | 0.6− |
| 2005 05 20 | G96 | 0.5− | 0.5− | 2005 06 07 | 699 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2005 05 20 | G96 | 0.2− | 0.0 | 2005 06 07 | 699 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 2005 05 31 | 699 | 1.2+ | 0.8− | 2005 06 07 | 699 | 0.7+ | 1.3− | 2006 09 28 | G96 | 0.5+ | 0.4− |

**2005 JP$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.89924 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23147386 | $\omega$ | 221.51401 | | +0.82416627 | | +0.53007332 |
| $a$ | 2.6270484 | $\Omega$ | 105.41427 | | −0.44961463 | | +0.82650624 |
| $e$ | 0.1606618 | $i$ | 11.93905 | | −0.34437864 | | +0.18949857 |
| $P$ | 4.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 699 | 1.0− | 0.5+ | 2005 06 07 | 699 | (0.5+ | 2.2+) | 2006 10 20 | 703 | 1.5− | 0.2− |
| 2002 11 28 | 699 | 0.6+ | 0.3+ | 2005 06 07 | 699 | 0.3+ | 0.0 | 2006 10 20 | 703 | 0.0 | 0.2+ |
| 2002 11 28 | 699 | 0.1− | 0.0 | 2005 06 07 | 699 | 1.4+ | 1.3+ | 2006 10 20 | 703 | 0.9− | 0.1+ |
| 2002 11 28 | 699 | 0.2− | 0.3+ | 2005 06 23 | 644 | 0.0 | 0.3+ | 2006 10 20 | 703 | 0.1− | 0.9+ |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2005 06 23 | 644 | 0.0 | 0.8+ | 2006 10 20 | 703 | 0.3+ | 0.4+ |
| 2004 03 16 | 691 | 0.2+ | 0.4+ | 2005 06 23 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.6− | 0.5+ |
| 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.5+ |
| 2005 05 14 | 704 | 0.9+ | 0.7+ | 2006 09 19 | 703 | 0.6+ | 0.3+ | 2006 10 28 | 703 | 0.8− | 0.4+ |
| 2005 05 14 | 704 | 0.4+ | 0.4− | 2006 09 19 | 703 | 1.2+ | 0.3+ | 2006 10 28 | 703 | 0.9− | 0.5+ |
| 2005 05 14 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.7+ | 1.1+ | 2006 10 28 | 703 | 0.5− | 0.2+ |
| 2005 05 20 | G96 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2005 05 20 | G96 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2005 05 20 | G96 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2005 05 20 | G96 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.5+ | 2006 11 17 | 703 | (0.5− | 1.5+) |
| 2005 06 04 | 703 | 1.1− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | (0.0 | 1.6+) |
| 2005 06 04 | 703 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.5+ | 1.4+ |
| 2005 06 04 | 703 | 0.5+ | 0.4− | 2006 10 10 | 644 | 0.6+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 1.1+ |
| 2005 06 04 | 703 | 0.7− | 0.9+ | 2006 10 20 | 703 | 0.7− | 0.3+ | | | | |
| 2005 06 07 | 699 | 0.8+ | 1.5+ | 2006 10 20 | 703 | 0.3− | 0.8− | | | | |

**2005 JQ$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.71998 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22991414 | $\omega$ | 104.08284 | | +0.45698775 | | +0.88930499 |
| $a$ | 2.6389161 | $\Omega$ | 193.15116 | | −0.84258350 | | +0.42658871 |
| $e$ | 0.0568912 | $i$ | 4.35738 | | −0.28498286 | | +0.16479898 |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 16 | 691 | 0.1+ | 0.4+ | 2005 05 19 | G96 | 0.0 | 0.3+ | 2006 10 20 | 291 | 0.2+ | 0.9+ |
| 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.5− | 2006 10 20 | 291 | 0.0 | 0.6+ |
| 2005 04 16 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.0 | 2006 10 20 | 291 | 0.0 | 0.3+ |
| 2005 05 03 | 691 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.4− | 0.7+ | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2005 05 03 | 691 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2005 05 03 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.6− | 2006 10 20 | G96 | 0.1− | 0.6− |
| 2005 05 14 | G96 | 0.6− | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2005 05 14 | G96 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.6− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2005 05 14 | G96 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2005 05 14 | G96 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.8− | 0.5− | 2006 11 21 | G96 | 1.0+ | 1.1− |
| 2005 05 19 | G96 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 21 | G96 | 0.5− | 0.2− |
| 2005 05 19 | G96 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | | | |
| 2005 05 19 | G96 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.3− | 0.4− | | | | |

**2005 JQ$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.61149 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22266955 | $\omega$ | 243.93573 | | +0.72006196 | | +0.66213518 |
| $a$ | 2.6958486 | $\Omega$ | 73.83425 | | −0.53399927 | | +0.71977705 |
| $e$ | 0.1979324 | $i$ | 12.48132 | | −0.44312025 | | +0.20856174 |
| $P$ | 4.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 09 | 691 | 0.1+ | 1.2− | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 1996 04 09 | 691 | 0.1− | 0.0 | 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.4+ | 0.3+ |
| 1996 04 09 | 691 | 0.5− | 0.1+ | 2005 06 10 | 691 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.3+ | 0.3+ |
| 2001 07 19 | 644 | 0.1+ | 1.1− | 2005 06 14 | 291 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2001 07 19 | 644 | 0.2+ | 0.5− | 2005 06 14 | 291 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.2+ | 0.2− |
| 2001 07 19 | 644 | 0.5+ | 0.4− | 2005 06 14 | 291 | 0.1+ | 0.7+ | 2006 11 14 | 704 | 0.1− | 0.9+ |
| 2005 05 15 | G96 | 0.2− | 0.2− | 2005 06 17 | 691 | 0.2+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.5− |
| 2005 05 15 | G96 | 0.1− | 0.3− | 2005 06 17 | 691 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.7− | 0.3+ |
| 2005 05 15 | G96 | 0.3− | 0.2− | 2005 06 17 | 691 | 0.2+ | 0.4− | 2006 11 19 | 703 | 0.8+ | 0.4+ |
| 2005 05 15 | G96 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.3− | 2006 11 19 | 703 | 0.1+ | 1.5− |
| 2005 05 19 | G96 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.9− | 2006 11 23 | G96 | 0.4− | 0.0 |
| 2005 05 19 | G96 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.8− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 05 19 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2005 05 19 | G96 | 0.6− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.1− |

**2005 JZ$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.28689 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23297000 | $\omega$ | 233.96110 | | +0.77547470 | | +0.62642103 |
| $a$ | 2.6157891 | $\Omega$ | 87.11700 | | −0.55086928 | | +0.73239240 |
| $e$ | 0.2091280 | $i$ | 4.53491 | | −0.30851586 | | +0.26682967 |
| $P$ | 4.23 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 644 | 0.3+ | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.3− | 2006 11 14 | 704 | 0.3+ | 0.2+ |
| 2005 05 04 | 644 | 0.3+ | 0.1+ | 2005 06 17 | 691 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.1− | 0.6+ |
| 2005 05 04 | 644 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2005 05 15 | G96 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 05 15 | G96 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 05 15 | G96 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2005 05 15 | G96 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2005 05 19 | G96 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.8+ |
| 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.4+ | 1.0+ |
| 2005 05 19 | G96 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.8+ | 0.1− |
| 2005 05 19 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.4+ | 1.0+ |
| 2005 05 21 | 644 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2005 05 21 | 644 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.7− | 0.2+ |
| 2005 05 21 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.4− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2005 06 06 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2005 06 06 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2005 06 06 | 691 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.5+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.0 |
| 2005 06 10 | 691 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.2− | 0.7+ | 2006 11 20 | 704 | 0.4+ | 0.1− |
| 2005 06 10 | 691 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.0 | 0.6− | 2006 11 20 | 704 | 0.7+ | 0.5+ |
| 2005 06 10 | 691 | 0.6+ | 0.8+ | 2006 11 13 | 703 | 0.2− | 0.8− | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2005 06 14 | 291 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.6− | 0.2+ | 2006 11 29 | 704 | 0.7− | 0.1− |
| 2005 06 14 | 291 | 0.2− | 0.4+ | 2006 11 14 | 704 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 1.1− | 0.6+ |
| 2005 06 14 | 291 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.3+ | 0.4+ | 2006 11 29 | 704 | 0.6− | 0.8+ |
| 2005 06 17 | 691 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.2+ | 1.2+ | | | | |

**2005 JF$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.88587 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23822286 | $\omega$ | 322.92369 | | −0.97198255 | | −0.23391425 |
| $a$ | 2.5771939 | $\Omega$ | 203.58009 | | +0.22713015 | | −0.90935926 |
| $e$ | 0.1631688 | $i$ | 3.31176 | | +0.06051292 | | −0.34402014 |
| $P$ | 4.14 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 15 | G96 | 0.2− | 0.0 | 2005 06 03 | 703 | 0.3− | 0.7+ | 2006 09 27 | G96 | 0.9− | 0.3− |
| 2005 05 15 | G96 | 0.5− | 0.0 | 2005 06 03 | 703 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.5− | 0.9+ |
| 2005 05 15 | G96 | 0.0 | 0.2− | 2005 06 03 | 703 | 1.5+ | 0.8− | 2006 09 27 | G96 | 0.5+ | 0.5− |
| 2005 05 15 | G96 | 0.1+ | 0.1− | 2005 06 03 | 703 | 0.1− | 1.2+ | 2006 09 28 | G96 | 0.4+ | 0.1− |
| 2005 05 19 | G96 | 0.0 | 0.1+ | 2005 06 13 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2005 05 19 | G96 | 0.4+ | 0.2− | 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.6+ | 0.4− |
| 2005 05 19 | G96 | 0.0 | 0.3− | 2005 06 13 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.2+ |
| 2005 05 19 | G96 | 0.2− | 0.4− | 2006 09 27 | G96 | 0.3− | 0.6+ | | | | |

**2005 JY$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.77591 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26902116 | $\omega$ | 228.82411 | | −0.88700164 | | −0.45901763 |
| $a$ | 2.3765398 | $\Omega$ | 283.79678 | | +0.43765912 | | −0.80094876 |
| $e$ | 0.0902936 | $i$ | 2.96941 | | +0.14725008 | | −0.38442672 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 15 | 566 | 0.0 | 0.1− | 2003 11 24 | 704 | 0.1− | 0.3+ | 2003 12 27 | 704 | 0.7− | 1.6+ |
| 1997 01 15 | 566 | 0.0 | 0.4− | 2003 11 24 | 704 | 0.4− | 1.0+ | 2003 12 27 | 704 | 0.1− | 0.8+ |
| 1997 01 15 | 566 | 1.2+ | 0.5− | 2003 11 24 | 704 | 1.1− | 0.7− | 2003 12 27 | 704 | 0.8+ | 0.8+ |
| 1999 10 11 | 691 | 0.2− | 0.2− | 2003 11 24 | 704 | 1.4− | 0.3+ | 2003 12 27 | 704 | 0.2+ | 0.0 |
| 1999 10 11 | 691 | 0.2+ | 0.1− | 2003 12 14 | 691 | 0.2+ | 0.2+ | 2005 05 12 | 644 | 0.2− | 0.4− |
| 1999 10 11 | 691 | 0.1− | 0.3− | 2003 12 14 | 691 | 0.3+ | 0.0 | 2005 05 12 | 644 | 0.1− | 0.0 |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2003 12 14 | 691 | 0.3+ | 0.1+ | 2005 05 12 | 644 | 0.1+ | 0.2+ |
| 1999 10 13 | 645 | 0.1+ | 0.1− | 2003 12 22 | 704 | 0.2− | 0.7− | 2005 05 19 | 644 | 0.2− | 0.4+ |
| 2002 08 09 | 807 | 0.3− | 0.3+ | 2003 12 22 | 704 | 0.3+ | 1.9− | 2005 05 19 | 644 | 0.3− | 0.4+ |
| 2002 08 09 | 807 | 0.1− | 0.4+ | 2003 12 22 | 704 | 0.7+ | 0.1− | 2005 05 19 | 644 | 0.0 | 0.4+ |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2003 12 22 | 704 | 0.3+ | 0.8− | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 2003 11 19 | 691 | 0.1− | 0.2+ | 2003 12 27 | 691 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.2+ | 0.2+ |
| 2003 11 19 | 691 | 0.2− | 0.4+ | 2003 12 27 | 691 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.4+ |
| 2003 11 24 | 704 | 0.6− | 0.5+ | 2003 12 27 | 691 | 0.4− | 0.0 | | | | |

**2005 JB$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.54543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26771340 | $\omega$ | 227.66748 | | +0.19308748 | | +0.98031328 |
| $a$ | 2.3842730 | $\Omega$ | 53.51130 | | −0.88444888 | | +0.19210779 |
| $e$ | 0.1951695 | $i$ | 2.94233 | | −0.42481456 | | +0.04561215 |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.2+ | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2005 05 19 | 644 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.3+ |
| 2004 01 16 | 691 | 0.2− | 0.1+ | 2005 05 19 | 644 | 0.4+ | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.3+ |
| 2005 05 04 | G96 | 0.1− | 0.2+ | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.5+ |
| 2005 05 04 | G96 | 0.1− | 0.1− | 2005 06 06 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2005 05 04 | G96 | 0.2− | 0.0 | 2005 06 06 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.5− | 0.1+ |
| 2005 05 04 | G96 | (1.9− | 2.8−) | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.7− |
| 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.1− | 0.9− |
| 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.4− | | | | |
| 2005 05 13 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2+ | | | | |

**2005 JU$_{146}$ = 2006 SB$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.39745 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22960421 | $\omega$ | 212.46630 | | +0.97606492 | | −0.19908123 |
| $a$ | 2.6412904 | $\Omega$ | 158.49423 | | +0.21217722 | | +0.96005313 |
| $e$ | 0.2115242 | $i$ | 13.81589 | | −0.04772946 | | +0.19663329 |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 15 | 608 | 0.3+ | 0.6− | 2006 08 19 | 699 | 0.2+ | 0.4− | 2006 09 30 | 704 | 0.1+ | 1.0+ |
| 2002 12 15 | 608 | 0.5− | 0.5− | 2006 08 19 | 699 | 0.7− | 0.4− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 12 15 | 608 | 0.0 | 0.3− | 2006 09 21 | 699 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2004 01 18 | 691 | 0.1− | 0.6+ | 2006 09 21 | 699 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2004 01 18 | 691 | 0.3+ | 0.5+ | 2006 09 21 | 699 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2004 01 18 | 691 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.7+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2005 05 06 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2005 05 06 | 691 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2005 05 06 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2005 05 06 | 691 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2005 05 06 | 691 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.8− | 0.9+ |
| 2005 05 06 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.1+ | 2006 10 21 | 703 | 1.2− | 1.0+ |
| 2005 05 14 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2005 05 14 | 691 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.4− | 0.9+ | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 2005 05 14 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.1− | 0.4+ | 2006 10 31 | 703 | 0.2+ | 0.5+ |
| 2005 05 15 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 704 | 0.3− | 1.1+ | 2006 10 31 | 703 | 0.2+ | 0.2+ |
| 2005 05 15 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.7+ | 0.5+ | 2006 10 31 | 703 | 0.1+ | 0.7− |
| 2005 05 15 | 644 | 0.4− | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.1− | 2006 10 31 | 703 | 0.5− | 0.5− |
| 2006 08 19 | 699 | 0.8− | 0.0 | 2006 09 30 | 704 | 0.4+ | 0.4+ | | | | |

**2005 JK$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.91530 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17447831 | $\omega$ | 147.39401 | | +0.95651745 | | +0.26401448 |
| $a$ | 3.1718192 | $\Omega$ | 198.55240 | | −0.26926681 | | +0.96267551 |
| $e$ | 0.1618099 | $i$ | 22.93333 | | +0.11211493 | | +0.05960057 |
| $P$ | 5.65 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 291 | 0.2− | 0.1+ | 2006 08 29 | 699 | 0.3− | 0.2− | 2006 09 21 | 699 | 0.6− | 0.1− |
| 2001 10 21 | 291 | 0.1+ | 0.0 | 2006 08 29 | 699 | 0.4− | 0.1− | 2006 09 22 | 703 | 0.4− | 0.3+ |
| 2001 10 21 | 291 | 0.1+ | 0.2+ | 2006 08 29 | 699 | 0.2+ | 0.1+ | 2006 09 22 | 703 | 0.1− | 0.1− |
| 2005 05 15 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 09 22 | 703 | 0.3− | 0.6+ |
| 2005 05 15 | 644 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 09 22 | 703 | (1.6− | 1.3−) |
| 2005 05 15 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.4− | 2006 09 27 | 703 | 0.1− | 0.3+ |
| 2005 05 16 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.2+ | 2006 09 27 | 703 | 0.4+ | 0.5− |
| 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 09 16 | 683 | 0.1+ | 0.5− | 2006 09 27 | 703 | 0.3+ | 0.3− |
| 2005 05 16 | 691 | 0.1− | 0.2+ | 2006 09 16 | 683 | 0.0 | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.0 |
| 2005 05 20 | 644 | 0.1− | 0.0 | 2006 09 16 | 683 | 0.2− | 0.1− | 2006 09 29 | 699 | 1.2+ | 0.4− |
| 2005 05 20 | 644 | 0.0 | 0.1− | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.1− |
| 2005 05 20 | 644 | 0.4− | 0.1+ | 2006 09 16 | 644 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.4+ | 0.4+ |
| 2005 06 24 | 644 | 0.1+ | 0.2− | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.8− | 0.9+ |
| 2005 06 24 | 644 | 0.0 | 0.3− | 2006 09 17 | 683 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2005 06 24 | 644 | 0.1+ | 0.1− | 2006 09 17 | 683 | 1.2+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2005 07 01 | 644 | 0.0 | 0.2− | 2006 09 17 | 683 | 0.1− | 0.2− | 2006 10 17 | 703 | 1.2− | 1.1− |
| 2005 07 01 | 644 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.3− | 1.0+ | 2006 10 17 | 703 | 0.1+ | 0.7− |
| 2005 07 01 | 644 | 0.1− | 0.3− | 2006 09 21 | 699 | 0.4− | 0.0 | | | | |
| 2006 08 29 | 699 | (3.2− | 0.1−) | 2006 09 21 | 699 | 0.9+ | 1.0− | | | | |

**2005 JZ$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.58106 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22467412 | $\omega$ | 197.55838 | | +0.78475884 | | +0.59218616 |
| $a$ | 2.6797895 | $\Omega$ | 124.71869 | | −0.53860090 | | +0.79762155 |
| $e$ | 0.1690153 | $i$ | 12.86020 | | −0.30669632 | | +0.11452254 |
| $P$ | 4.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 703 | (1.8− | 0.2−) | 2005 05 20 | 644 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 2005 05 04 | 703 | 0.7+ | 0.2− | 2005 05 20 | 644 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.2+ |
| 2005 05 04 | 703 | 1.0+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.9− | 2006 10 21 | 703 | 0.7− | 0.6+ |
| 2005 05 04 | 703 | 0.5− | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2005 05 15 | 644 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.3− | 2006 10 31 | 703 | 1.2− | 1.0− |
| 2005 05 15 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 10 31 | 703 | 0.4+ | 1.1+ |
| 2005 05 15 | 644 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 31 | 703 | 0.3+ | 0.2+ |
| 2005 05 20 | 644 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 31 | 703 | 1.9+ | 0.5− |

**2005 JE$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.71202 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22128768 | $\omega$ | 25.20113 | | −0.98332057 | | +0.16929769 |
| $a$ | 2.7070601 | $\Omega$ | 164.11506 | | −0.17840969 | | −0.96888680 |
| $e$ | 0.0359072 | $i$ | 14.05603 | | +0.03536449 | | −0.18054543 |
| $P$ | 4.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.1+ | 0.8+ | 2005 05 20 | 644 | 0.0 | 0.0 | 2006 09 14 | 734 | 0.0 | 0.1+ |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2005 05 20 | 644 | 0.1+ | 0.1− | 2006 09 15 | 734 | 0.9− | 0.0 |
| 2002 10 15 | 644 | 0.3− | 0.6+ | 2005 05 20 | 644 | 0.3− | 0.3− | 2006 09 15 | 734 | 0.6− | 0.2− |
| 2005 05 04 | 703 | 1.2− | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 15 | 734 | 0.1+ | 0.1− |
| 2005 05 04 | 703 | 0.4− | 1.1− | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3+ |
| 2005 05 04 | 703 | 0.4+ | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 703 | (2.1+ | 3.3−) | 2006 09 13 | 734 | 0.0 | 0.7− | 2006 09 26 | G96 | 0.1− | 0.2+ | | |
| 2005 05 06 | 691 | 0.2+ | 0.2+ | 2006 09 13 | 734 | 1.0+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2005 05 06 | 691 | 0.3+ | 0.2+ | 2006 09 13 | 734 | 1.8− | 1.5− | 2006 11 11 | G96 | 0.8− | 0.7− | | |
| 2005 05 06 | 691 | 0.1− | 0.0 | 2006 09 14 | 734 | 0.5+ | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.7− | | |
| 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 14 | 734 | 1.0+ | 0.5+ | 2006 11 11 | G96 | 0.6+ | 0.7− | | |
| 2005 05 15 | 644 | 0.0 | 0.1+ | 2006 09 14 | 734 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.8− | | |
| 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 14 | 734 | 0.0 | 0.3+ | | | | | | |

**2005 JR$_{148}$ = 1999 XG$_{68}$ = 2006 QM$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.25518 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26906963 | $\omega$ | 214.77474 | | +0.88958192 | | +0.45387465 |
| $a$ | 2.3762544 | $\Omega$ | 118.15349 | | −0.40474604 | | +0.83540258 |
| $e$ | 0.2221201 | $i$ | 3.34199 | | −0.21171834 | | +0.31000052 |
| $P$ | 3.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | (6.3+ | 3.0+) | 2005 05 03 | 691 | 0.1+ | 0.7+ | 2006 09 30 | 703 | 1.5− | 0.5+ | | |
| 1998 04 27 | 691 | 0.2+ | 0.2+ | 2005 05 03 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.6+ | | |
| 1998 04 27 | 691 | 0.3+ | 0.2+ | 2005 05 12 | 691 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.0 | | |
| 1999 12 07 | 704 | 0.3− | 0.4− | 2005 05 12 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 608 | 1.3+ | 1.0− | | |
| 1999 12 07 | 704 | 0.1+ | 1.0− | 2005 05 12 | 691 | 0.5+ | 0.4+ | 2006 09 30 | 608 | 0.6+ | 0.8− | | |
| 1999 12 07 | 704 | 0.3− | 0.5− | 2006 08 19 | 699 | 0.6− | 0.0 | 2006 09 30 | 608 | 1.0+ | 0.4− | | |
| 1999 12 07 | 704 | 0.2+ | 0.3− | 2006 08 19 | 699 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.4+ | | |
| 1999 12 07 | 704 | 0.8+ | 0.1− | 2006 08 19 | 699 | 0.3+ | 0.4− | 2006 10 01 | 704 | 0.2− | 0.7+ | | |
| 1999 12 08 | 704 | 0.1+ | 0.1+ | 2006 08 23 | 704 | 1.4+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.6+ | | |
| 1999 12 08 | 704 | 0.4− | 0.7− | 2006 08 23 | 704 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.1+ | | |
| 1999 12 08 | 704 | 0.3− | 0.3− | 2006 08 23 | 704 | 0.2− | 0.8+ | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 2001 05 23 | 807 | 0.1+ | 0.3+ | 2006 08 23 | 704 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 05 23 | 807 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.4− | 2006 10 10 | 644 | 0.3− | 0.2+ | | |
| 2001 05 24 | 807 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.2+ | | |
| 2001 05 24 | 807 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 06 11 | 644 | 0.5− | 0.0 | 2006 09 16 | 704 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ | | |
| 2002 06 11 | 644 | 0.2− | 0.0 | 2006 09 16 | 704 | 0.5+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.3+ | | |
| 2002 06 11 | 644 | 0.2− | 0.1+ | 2006 09 16 | 644 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.2− | | |
| 2002 06 18 | 704 | (1.6− | 0.4+) | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2002 06 18 | 704 | 0.2− | 0.5− | 2006 09 16 | 644 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 2002 06 18 | 704 | 0.7− | 0.6− | 2006 09 19 | 704 | 0.6+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 06 23 | 644 | 0.2− | 0.7+ | 2006 09 19 | 704 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 2002 06 23 | 644 | 0.1+ | 1.1+ | 2006 09 19 | 704 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 06 23 | 644 | (2.3+ | 0.3+) | 2006 09 19 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2002 07 05 | 704 | 0.6+ | 0.5+ | 2006 09 19 | 704 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.1+ | | |
| 2002 07 05 | 704 | (2.0+ | 1.3−) | 2006 09 21 | 699 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 07 05 | 704 | (2.0+ | 1.7−) | 2006 09 21 | 699 | 0.4+ | 0.3+ | 2006 10 22 | 704 | (0.6+ | 2.0−) | | |
| 2002 07 05 | 704 | (2.5+ | 1.5−) | 2006 09 21 | 699 | 0.3− | 0.0 | 2006 10 22 | 704 | 0.1+ | 0.0 | | |
| 2002 07 14 | 704 | (1.9+ | 0.5+) | 2006 09 21 | 699 | 0.2− | 0.2− | 2006 10 22 | 704 | 0.6− | 0.4+ | | |
| 2002 07 14 | 704 | 0.0 | 1.2+ | 2006 09 22 | 704 | 0.1− | 0.2+ | 2006 10 22 | 704 | 0.3+ | 0.6+ | | |
| 2002 07 14 | 704 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.2+ | | |
| 2003 12 19 | 691 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.6− | 0.9+ | 2006 10 22 | 703 | 0.4− | 0.2− | | |
| 2003 12 19 | 691 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.7+ | 2006 10 22 | 703 | 0.3− | 0.0 | | |
| 2003 12 19 | 691 | 0.3+ | 0.1− | 2006 09 22 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.1− | 0.4− | | |
| 2003 12 21 | 645 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.1− | 2006 10 27 | 704 | 0.0 | 0.6+ | | |
| 2003 12 21 | 645 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.7− | 1.2+ | 2006 10 27 | 704 | 0.2+ | 0.2+ | | |
| 2005 03 10 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.8− | 0.6+ | 2006 10 27 | 704 | 0.6− | 0.5+ | | |
| 2005 03 10 | 691 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.2+ | 2006 10 27 | 704 | 0.2+ | 0.6+ | | |
| 2005 03 10 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 10 27 | 704 | 0.2− | 0.2+ | | |
| 2005 04 04 | 703 | 1.4− | 0.4+ | 2006 09 29 | 699 | 0.2+ | 0.3+ | 2006 11 10 | 704 | 0.0 | 1.4+ | | |
| 2005 04 04 | 703 | 0.2+ | 0.0 | 2006 09 29 | 699 | 0.2− | 0.0 | 2006 11 10 | 704 | (0.2+ | 2.1+) | | |
| 2005 04 04 | 703 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.4+ | 2006 11 10 | 704 | 1.3− | 1.4+ | | |
| 2005 04 04 | 703 | 0.9− | 0.5+ | 2006 09 29 | 699 | 0.4+ | 0.4+ | | | | | | |
| 2005 05 03 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.0 | | | | | | |

**2005 JA$_{150}$ = 2006 QR$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.95167 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18166344 | $\omega$ | 222.77052 | | +0.85863282 | | +0.49653591 |
| $a$ | 3.0876237 | $\Omega$ | 107.04515 | | −0.42695900 | | +0.83020054 |
| $e$ | 0.1661912 | $i$ | 7.65075 | | −0.28364713 | | +0.25341500 |
| $P$ | 5.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2005 06 04 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.1+ | | |
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2005 06 04 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.0 | 0.7+ | | |
| 2004 03 17 | 691 | 0.1+ | 0.2− | 2005 06 04 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 0.9+ | 1.2+ | | |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2005 06 12 | 691 | 0.3− | 0.5− | 2006 09 20 | 703 | 0.5− | 0.3+ | | |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2005 06 12 | 691 | 0.5+ | 0.1− | 2006 09 20 | 703 | 0.6+ | 0.8− | | |
| 2005 05 03 | 691 | 0.2+ | 0.3+ | 2005 06 12 | 691 | 0.0 | 0.3+ | 2006 09 20 | 703 | 0.8− | 0.3+ | | |
| 2005 05 03 | 691 | 0.7− | 0.0 | 2006 08 30 | 699 | 0.7− | 0.9+ | 2006 09 26 | 703 | 0.7+ | 1.1+ | | |
| 2005 05 03 | 691 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.3− | 0.0 | | |
| 2005 05 20 | G96 | 0.2− | 0.1− | 2006 08 30 | 699 | 1.4+ | 0.7− | 2006 09 26 | 703 | 0.5− | 0.1+ | | |
| 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 08 30 | 699 | (1.2− | 2.3+) | 2006 09 26 | 703 | 0.4− | 0.7− | | |
| 2005 05 20 | G96 | 0.3+ | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.6− | | | | | | |
| 2005 05 20 | G96 | 0.0 | 0.1− | 2006 09 14 | 703 | 1.0− | 0.7− | | | | | | |

**2005 JB$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.04850 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26153714 | $\omega$ | 25.65886 | | −0.89544090 | | +0.44517748 |
| $a$ | 2.4216635 | $\Omega$ | 180.78136 | | −0.42611295 | | −0.85813228 |
| $e$ | 0.0526233 | $i$ | 6.79611 | | −0.12889280 | | −0.25578505 |
| $P$ | 3.77 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.1+ | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.5− | | |
| 2001 03 15 | 691 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 2001 03 15 | 691 | 0.1+ | 0.1+ | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.6− | | |
| 2005 05 03 | 691 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.1− | | |
| 2005 05 03 | 691 | 0.1− | 0.4− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.9− | 0.5− | | |
| 2005 05 03 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.1+ | | |
| 2005 05 20 | G96 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.5− | | |
| 2005 05 20 | G96 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2005 05 20 | G96 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2005 05 20 | G96 | 0.5− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.6− | 2006 09 26 | G96 | 0.3− | 0.1− | | |
| 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.0 | | |
| 2005 06 09 | 691 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 695 | 0.1− | 0.3+ | | |
| 2005 06 09 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 19 | 695 | 0.1− | 0.2+ | | |

**2005 JP$_{151}$ = 2005 EP$_{318}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.32580 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29984925 | $\omega$ | 117.51601 | | +0.28529400 | | +0.95839542 |
| $a$ | 2.2107217 | $\Omega$ | 169.04847 | | −0.89563549 | | +0.27002302 |
| $e$ | 0.1322725 | $i$ | 2.79083 | | −0.34123950 | | +0.09255158 |
| $P$ | 3.29 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.4− | 0.3− | 2005 04 11 | G96 | 0.2− | 0.4− | 2005 05 11 | G96 | 0.4− | 0.1− | | |
| 2005 03 09 | G96 | 0.2− | 0.2− | 2005 04 11 | G96 | 0.0 | 0.2− | 2005 05 11 | G96 | 0.4− | 0.2− | | |
| 2005 03 09 | G96 | 0.4− | 0.0 | 2005 04 11 | G96 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | | |
| 2005 03 09 | G96 | 0.5+ | 0.3+ | 2005 05 04 | 691 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.5+ | | |
| 2005 04 02 | 691 | 0.2+ | 0.0 | 2005 05 04 | 691 | 0.5+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.4+ | | |
| 2005 04 02 | 691 | 0.0 | 0.1+ | 2005 05 04 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.2+ | 0.1+ | | |
| 2005 04 02 | 691 | 0.0 | 0.1+ | 2005 05 11 | G96 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2005 05 11 | G96 | 0.5− | 0.1− | 2006 10 22 | 691 | 0.4− | 1.0− | | |

**2005 JP$_{153}$ = 1997 EX$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.86482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25815969 | $\omega$ | 54.50933 | | −0.87751500 | −0.46390444 | |
| $a$ | 2.4427392 | $\Omega$ | 97.57036 | | +0.39065278 | −0.83846139 | |
| $e$ | 0.0588093 | $i$ | 7.03983 | | +0.27813275 | −0.28596358 | |
| $P$ | 3.82 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 07 | 691 | 0.2− | 0.3− | 2003 12 14 | 691 | 0.1+ | 0.2+ | 2005 05 04 | 703 | 0.8− | 0.4+ |
| 1997 03 07 | 691 | 0.2− | 0.2− | 2003 12 14 | 691 | 0.1− | 0.2+ | 2005 05 04 | 703 | 0.3+ | 1.1+ |
| 1997 03 07 | 691 | 0.2− | 0.4− | 2003 12 14 | 691 | 0.0 | 0.2+ | 2005 05 04 | 703 | 0.8− | 0.9+ |
| 2001 03 19 | 699 | 1.4+ | 0.5− | 2003 12 21 | 704 | 0.6− | 0.7+ | 2005 05 04 | 703 | 1.2− | 1.0+ |
| 2001 03 19 | 699 | 0.9− | 0.7+ | 2003 12 21 | 704 | 0.5− | 1.4+ | 2005 05 11 | 699 | 0.3− | 1.1+ |
| 2001 03 19 | 699 | 0.1+ | 0.3− | 2003 12 21 | 704 | 0.4+ | 0.0 | 2005 05 11 | 699 | 0.4+ | 0.2+ |
| 2001 03 19 | 699 | 1.4+ | 0.0 | 2005 04 07 | 699 | 0.9− | 0.9+ | 2005 05 11 | 699 | 1.0+ | 1.7− |
| 2003 11 24 | 691 | 0.1− | 0.0 | 2005 04 07 | 699 | 1.2+ | 0.5+ | 2005 05 11 | 699 | 0.0 | 0.0 |
| 2003 11 24 | 691 | 0.0 | 0.1− | 2005 04 07 | 699 | 1.4+ | 0.8+ | | | | |
| 2003 11 24 | 691 | 0.0 | 0.1+ | 2005 04 07 | 699 | 0.7+ | 0.2− | | | | |

**2005 JB$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.93367 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25793429 | $\omega$ | 276.96360 | | +0.76833353 | +0.63983653 | |
| $a$ | 2.4441620 | $\Omega$ | 43.25857 | | −0.57730733 | +0.70392767 | |
| $e$ | 0.1930487 | $i$ | 1.38106 | | −0.27636901 | +0.30837487 | |
| $P$ | 3.82 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 291 | 0.1+ | 0.2+ | 2005 05 13 | G96 | 0.4+ | 0.1− | 2005 06 01 | G96 | 0.6− | 0.1+ |
| 2002 10 09 | 291 | 0.2+ | 0.5− | 2005 05 13 | G96 | 0.0 | 0.2+ | 2005 06 01 | G96 | 0.1− | 0.0 |
| 2002 10 09 | 291 | 0.3+ | 0.3− | 2005 05 13 | G96 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2002 11 04 | 291 | 0.4− | 0.1− | 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.8− |
| 2002 11 04 | 291 | 0.2− | 0.2− | 2005 06 01 | G96 | 0.7− | 0.3+ | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2002 11 04 | 291 | 0.1− | 1.2+ | 2005 06 01 | G96 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.7− |
| 2005 05 04 | G96 | 0.5+ | 0.1+ | 2005 06 01 | G96 | 0.3+ | 0.3− | 2006 11 16 | 703 | 0.2+ | 0.8+ |
| 2005 05 04 | G96 | 0.2+ | 0.1− | 2005 06 01 | G96 | 0.1− | 0.1− | 2006 11 16 | 703 | 1.3− | 0.1+ |
| 2005 05 04 | G96 | 0.0 | 0.1− | 2005 06 01 | G96 | 0.1+ | 0.1+ | 2006 11 16 | 703 | (1.8− | 0.2−) |
| 2005 05 04 | G96 | 0.1+ | 0.2− | 2005 06 01 | G96 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.6+ |

**2005 JN$_{156}$ = 2006 SW$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.29586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29001152 | $\omega$ | 23.60310 | | +0.02850891 | −0.99878629 | |
| $a$ | 2.2604377 | $\Omega$ | 64.78371 | | +0.90989333 | +0.00929357 | |
| $e$ | 0.0357742 | $i$ | 2.54449 | | +0.41386154 | +0.04836921 | |
| $P$ | 3.40 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.3+ | 0.4+ | 2005 05 13 | G96 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2005 05 04 | G96 | 0.1+ | 0.1+ | 2005 05 13 | G96 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2005 05 04 | G96 | 0.6− | 0.2− | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3− |
| 2005 05 04 | G96 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2005 05 10 | 807 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2005 05 10 | 807 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.3+ | | | | |
| 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | | | | |

**2005 JQ$_{156}$ = 2006 SE$_{347}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.38994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27001658 | $\omega$ | 245.77026 | | −0.44315361 | +0.89644304 | |
| $a$ | 2.3706954 | $\Omega$ | 357.92065 | | −0.79913636 | −0.39615017 | |
| $e$ | 0.1428743 | $i$ | 3.44521 | | −0.40619694 | −0.19863264 | |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.4+ | 0.1+ | 2005 05 04 | 644 | 0.2+ | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 08 20 | 644 | 0.3+ | 0.2+ | 2005 05 04 | 644 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2002 08 20 | 644 | 0.3+ | 0.4− | 2005 05 04 | 644 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2002 10 10 | 291 | 0.1− | 0.3− | 2005 05 19 | 644 | 0.0 | 0.5+ | 2006 10 02 | 691 | 0.3− | 0.5+ |
| 2002 10 10 | 291 | 0.0 | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2002 10 10 | 291 | 0.1+ | 0.1− | 2005 05 19 | 644 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.5− | 0.1+ |
| 2005 03 14 | G96 | 0.4− | 0.2− | 2006 09 18 | 691 | 0.5− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2+ |
| 2005 03 14 | G96 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2+ |
| 2005 03 14 | G96 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2005 03 14 | G96 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.0 | | | | |

**2005 JJ$_{158}$ = 2006 RY$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.88267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21034888 | $\omega$ | 71.74727 | | +0.56031515 | +0.82534355 | |
| $a$ | 2.8001152 | $\Omega$ | 232.53187 | | −0.78923553 | +0.50648665 | |
| $e$ | 0.0759508 | $i$ | 5.03643 | | −0.25130503 | +0.24955821 | |
| $P$ | 4.69 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 02 | 608 | 0.0 | 0.5+ | 2005 04 14 | 691 | 0.2+ | 0.6+ | 2005 06 01 | G96 | 0.0 | 0.1+ |
| 2002 11 02 | 608 | 0.4− | 0.7+ | 2005 04 14 | 691 | 0.3+ | 0.7+ | 2006 08 29 | 703 | 0.3− | 0.5− |
| 2002 11 02 | 608 | 0.6− | 0.6+ | 2005 05 06 | 703 | (1.9+ | 0.6+) | 2006 08 29 | 703 | 0.5− | 0.2+ |
| 2002 11 14 | 291 | 0.0 | 0.4+ | 2005 05 06 | 703 | 0.0 | 1.2+ | 2006 08 29 | 703 | 0.8− | 0.4− |
| 2002 11 14 | 291 | 0.1+ | 0.4+ | 2005 05 06 | 703 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.5+ |
| 2002 11 14 | 291 | 0.1+ | 0.4+ | 2005 05 06 | 703 | 0.3+ | 1.5+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2002 12 09 | 291 | 0.5− | 0.2+ | 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2002 12 09 | 291 | 0.0 | 0.1+ | 2005 05 14 | G96 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ |
| 2002 12 09 | 291 | 0.0 | 0.4+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2004 02 11 | 644 | 0.1− | 0.3+ | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2004 02 11 | 644 | 0.0 | 0.1+ | 2005 06 01 | G96 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2005 06 01 | G96 | 0.2− | 0.0 | | | | |
| 2005 04 14 | 691 | 0.4+ | 0.5+ | 2005 06 01 | G96 | 0.2− | 0.2+ | | | | |

**2005 JO$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.04293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23265219 | $\omega$ | 23.88162 | | −0.85460374 | +0.51843279 | |
| $a$ | 2.6181707 | $\Omega$ | 187.55352 | | −0.50533926 | −0.84344926 | |
| $e$ | 0.1351392 | $i$ | 13.04144 | | −0.11951852 | −0.14078632 | |
| $P$ | 4.24 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | 699 | 0.2− | 0.6− | 2005 05 06 | 703 | 0.4− | 0.7+ | 2005 06 07 | 699 | 0.0 | 0.2+ |
| 2005 03 12 | 699 | 0.2+ | 1.2− | 2005 05 06 | 703 | 1.8+ | 0.4+ | 2005 06 07 | 699 | 0.1+ | 1.3+ |
| 2005 03 12 | 699 | 1.4+ | 2.0+ | 2005 05 11 | 703 | 0.2− | 0.6− | 2005 06 07 | 699 | 1.1+ | 0.1− |
| 2005 03 12 | 699 | 0.7− | 0.4+ | 2005 05 11 | 703 | (2.8− | 0.1+) | 2006 08 21 | 691 | 0.2+ | 0.0 |
| 2005 04 20 | 703 | 0.2− | 0.5− | 2005 05 11 | 703 | 0.6− | 1.9− | 2006 08 21 | 691 | 0.1+ | 0.1+ |
| 2005 04 20 | 703 | 0.8− | 0.2− | 2005 05 11 | 703 | 0.4− | 0.4− | 2006 08 21 | 691 | 0.4+ | 0.2+ |
| 2005 04 20 | 703 | 1.1− | 0.6− | 2005 05 15 | 644 | 0.1− | 0.2+ | 2006 09 19 | 703 | 1.7− | 0.1+ |
| 2005 04 20 | 703 | 0.1− | 0.3+ | 2005 05 15 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.0 |
| 2005 05 06 | 703 | 0.5+ | 0.9+ | 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.5− | 1.1− |
| 2005 05 06 | 703 | 1.1− | 0.3+ | 2005 06 07 | 699 | 0.9+ | 1.1− | 2006 09 19 | 703 | 1.0+ | 0.2− |

**2005 JA$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 189.93569 | | (2000.0) | | | |
| $n$ | 0.27803600 | $\omega$ | 61.79920 | | −0.88690882 | −0.45558258 |
| $a$ | 2.3248880 | $\Omega$ | 91.00942 | | +0.39251034 | −0.83042823 |
| $e$ | 0.0770877 | $i$ | 4.38246 | | +0.24357419 | −0.32067658 |
| $P$ | 3.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.2− | 0.5+ | 2003 10 25 | 704 | 0.6+ | 0.5+ | 2005 04 04 | 703 | 0.6− | 0.1− |
| 2001 02 17 | 704 | 1.1+ | 0.9− | 2003 10 25 | 704 | 0.0 | 0.7+ | 2005 04 04 | 703 | 0.3+ | 1.6− |
| 2001 02 17 | 704 | 0.5− | 0.3+ | 2003 10 25 | 704 | 0.5+ | 0.1− | 2005 05 07 | 691 | 0.3+ | 0.4+ |
| 2001 02 17 | 704 | 0.4− | 0.5+ | 2003 11 18 | 644 | 0.0 | 0.5+ | 2005 05 07 | 691 | 0.1+ | 0.3+ |
| 2003 10 24 | 691 | 0.1+ | 0.4− | 2003 11 18 | 644 | 0.0 | 0.6+ | 2005 05 07 | 691 | 0.0 | 0.1+ |
| 2003 10 24 | 691 | 0.0 | 0.2− | 2003 11 18 | 644 | 0.3− | 0.5+ | 2005 05 15 | 644 | 0.4+ | 0.2+ |
| 2003 10 24 | 691 | 0.3− | 0.1− | 2005 04 04 | 703 | 1.3− | 0.4− | 2005 05 15 | 644 | 0.3+ | 0.4+ |
| 2003 10 25 | 704 | 0.1+ | 0.3+ | 2005 04 04 | 703 | 1.0− | 1.0− | 2005 05 15 | 644 | 0.2+ | 0.0 |

**2005 JB$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 166.66034 | | (2000.0) | | | |
| $n$ | 0.23344441 | $\omega$ | 323.80082 | | −0.98227722 | −0.15421101 |
| $a$ | 2.6122439 | $\Omega$ | 207.90275 | | +0.17329590 | −0.96377619 |
| $e$ | 0.1095433 | $i$ | 13.15932 | | −0.07141424 | −0.21761070 |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | G96 | 0.1+ | 0.9+ | 2005 05 16 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.0 |
| 2005 03 12 | G96 | 1.4− | 0.4+ | 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.6− | 0.2− |
| 2005 03 12 | G96 | 0.5− | 0.3− | 2005 05 16 | 691 | 0.3+ | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.1+ |
| 2005 03 12 | G96 | 0.6+ | 0.4− | 2005 06 01 | 691 | 0.0 | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.4+ |
| 2005 05 08 | 691 | 0.0 | 0.1− | 2005 06 01 | 691 | 0.5+ | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.3− |
| 2005 05 08 | 691 | 0.3+ | 0.1− | 2005 06 01 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2005 05 08 | 691 | 0.2+ | 0.1+ | 2005 06 05 | 691 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.2− |
| 2005 05 14 | 644 | 0.0 | 0.2− | 2005 06 05 | 691 | 0.7− | 0.6− | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2005 05 14 | 644 | 0.4− | 0.4− | 2005 06 05 | 691 | 0.1− | 0.3+ | | | | |
| 2005 05 14 | 644 | 0.3− | 0.3− | 2006 09 14 | 691 | 0.1− | 0.1− | | | | |

**2005 JW$_{161}$ = 2006 UP$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.89274 | | (2000.0) | | | |
| $n$ | 0.22912402 | $\omega$ | 83.73153 | | +0.45576134 | +0.88769527 |
| $a$ | 2.6449795 | $\Omega$ | 213.63070 | | −0.85621725 | +0.41714223 |
| $e$ | 0.2070962 | $i$ | 6.78284 | | −0.24325630 | +0.19490886 |
| $P$ | 4.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.3+ | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2005 05 08 | 691 | 0.4+ | 0.1+ | 2005 05 19 | G96 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2005 05 19 | G96 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2005 05 08 | G96 | 0.2− | 0.2− | 2005 05 19 | G96 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2005 05 08 | G96 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2005 05 08 | G96 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2005 05 08 | G96 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2005 05 19 | G96 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.4+ | 0.2+ | 2006 11 27 | 291 | 0.0 | 0.1+ |
| 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | 291 | 0.0 | 0.0 |
| 2005 05 19 | G96 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 27 | 291 | 0.2+ | 0.1− |
| 2005 05 19 | G96 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.1+ | | | | |

**2005 JH$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.49838 | | (2000.0) | | | |
| $n$ | 0.22323325 | $\omega$ | 208.38478 | | +0.56805716 | +0.81043754 |
| $a$ | 2.6913083 | $\Omega$ | 96.57410 | | −0.72520070 | +0.57518165 |
| $e$ | 0.1336713 | $i$ | 8.28708 | | −0.38909511 | +0.11116231 |
| $P$ | 4.42 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2005 06 04 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2005 05 08 | 691 | 0.0 | 0.3− | 2005 06 04 | 691 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2005 05 08 | 691 | 0.3+ | 0.1+ | 2005 06 09 | 691 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2005 05 16 | G96 | 0.5− | 0.1+ | 2005 06 09 | 691 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 05 16 | G96 | 0.3− | 0.3− | 2005 06 09 | 691 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2005 05 16 | G96 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2005 05 16 | G96 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2005 06 04 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.5+ | 0.1+ |

**2005 JA$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.68300 | | (2000.0) | | | |
| $n$ | 0.23317025 | $\omega$ | 69.40121 | | +0.67689626 | +0.73498283 |
| $a$ | 2.6142912 | $\Omega$ | 243.26618 | | −0.69097176 | +0.61567152 |
| $e$ | 0.2480637 | $i$ | 2.57637 | | −0.25371142 | +0.28416337 |
| $P$ | 4.23 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2005 06 11 | 703 | 1.0+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2005 06 11 | 703 | (2.4+ | 0.9−) | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2005 06 11 | 703 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.7− | 0.6− |
| 2005 05 10 | G96 | 0.0 | 0.0 | 2005 06 11 | 703 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2005 05 10 | G96 | 0.1− | 0.1− | 2005 06 14 | G96 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2005 05 10 | G96 | 0.0 | 0.1− | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2005 05 10 | G96 | 0.0 | 0.0 | 2005 06 14 | G96 | (2.7− | 1.4+) | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2005 05 18 | E12 | 0.2− | 0.2+ | 2005 06 15 | 701 | 0.5+ | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2005 05 18 | E12 | 0.5+ | 0.0 | 2005 06 15 | 701 | 0.3+ | 0.5− | 2006 11 14 | 691 | 0.1+ | 0.2+ |
| 2005 05 18 | E12 | 0.5− | 0.2− | 2005 06 15 | 701 | 0.4+ | 0.2+ | 2006 11 18 | 704 | (0.4+ | 2.2+) |
| 2005 05 18 | E12 | 0.4+ | 0.3+ | 2005 07 04 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.7+ |
| 2005 06 04 | 703 | 0.2+ | 0.1+ | 2005 07 04 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2005 06 04 | 704 | (1.6+ | 0.6−) | 2005 07 04 | 644 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.4− | 1.2− |
| 2005 06 04 | 703 | 1.1− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2005 06 04 | 703 | 1.0− | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.5− |
| 2005 06 04 | 704 | 0.3− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.3− |
| 2005 06 04 | 703 | 0.2+ | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2005 06 04 | 704 | 0.4− | 0.6− | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2005 06 04 | 704 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.5+ | 0.6− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 06 06 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.4− | 0.4+ | | | | |

**2005 JD$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 130.58348 | | (2000.0) | | | |
| $n$ | 0.26795700 | $\omega$ | 253.74838 | | −0.51533713 | +0.85697735 |
| $a$ | 2.3828277 | $\Omega$ | 345.22943 | | −0.77987868 | −0.47098473 |
| $e$ | 0.1437828 | $i$ | 0.93918 | | −0.35527016 | −0.20919657 |
| $P$ | 3.68 | $H$ | 17.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 07 03 | 691 | 0.0 | 0.5+ | 2005 05 10 | G96 | 0.6− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 1998 07 03 | 691 | 0.1− | 0.6+ | 2005 05 21 | 644 | 0.5+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 1998 07 03 | 691 | 0.3− | 0.3+ | 2005 05 21 | 644 | 0.3+ | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 2001 02 20 | 691 | 0.1+ | 0.2+ | 2005 05 21 | 644 | 0.8+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.4+ |
| 2001 02 20 | 691 | 0.4+ | 0.4+ | 2005 05 21 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1+ |
| 2001 02 20 | 691 | 0.1− | 0.4+ | 2005 05 21 | 644 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.1+ | 0.2+ | 2005 05 21 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.5+ | 0.4+ |
| 2001 03 15 | 691 | 0.0 | 0.5+ | 2005 05 29 | E12 | 0.9+ | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.0 |
| 2001 03 15 | 691 | 0.1− | 0.4+ | 2005 05 29 | E12 | (1.9+ | 1.6+) | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 05 29 | E12 | 1.1− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.2− |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2005 05 29 | E12 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.2− |
| 2001 04 23 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.6− | 0.3− |
| 2001 04 23 | 691 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2001 04 23 | 691 | 0.9+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2002 09 12 | 644 | 0.6− | 0.7+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 2002 09 12 | 644 | 0.4− | 0.7+ | 2006 09 24 | 691 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2002 09 12 | 644 | 0.3− | 0.9+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.3+ | 0.5+ |
| 2005 05 10 | G96 | 0.4− | 0.4− | 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2005 05 10 | G96 | 0.3− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.7+ |
| 2005 05 10 | G96 | 0.5− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.1+ | | | | |

**2005 JQ$_{166}$ = 2006 SR$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.27233 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17072652 | $\omega$ | 336.32709 | | +0.60879952 | | +0.79238307 |
| $a$ | 3.2181187 | $\Omega$ | 331.13079 | | −0.71448516 | | +0.52648579 |
| $e$ | 0.1129292 | $i$ | 4.58907 | | −0.34478123 | | +0.30812625 |
| $P$ | 5.77 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 13 | 644 | 0.1− | 0.8+ | 2006 08 28 | 699 | 0.1+ | 0.2+ | 2006 09 24 | 699 | 0.0 | 0.1+ |
| 2003 01 13 | 644 | 0.2− | 0.7+ | 2006 08 28 | 703 | 0.1+ | 1.3− | 2006 09 24 | 699 | 0.2+ | 1.3+ |
| 2003 01 13 | 644 | 0.7+ | 0.9+ | 2006 08 28 | 703 | 0.2− | 1.3+ | 2006 09 24 | 699 | 0.2− | 0.2+ |
| 2005 02 14 | 809 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.7− | 1.0+ | 2006 09 24 | 699 | 0.4− | 0.8+ |
| 2005 02 14 | 809 | 0.1+ | 0.0 | 2006 08 28 | 703 | 1.3+ | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2005 02 14 | 809 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2005 05 11 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 2005 05 11 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2005 05 19 | 644 | 0.2− | 0.3+ | 2006 08 28 | 703 | (2.5− | 0.7+) | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.7+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2005 05 19 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.7− |
| 2006 08 28 | 699 | 0.7− | 0.4− | 2006 09 14 | 703 | 0.7− | 0.1− | | | | |
| 2006 08 28 | 699 | (0.2− | 1.6−) | 2006 09 14 | 703 | 0.3+ | 0.6− | | | | |

**2005 JY$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.67811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22276012 | $\omega$ | 232.26781 | | +0.42610820 | | +0.88976880 |
| $a$ | 2.6951178 | $\Omega$ | 63.70876 | | −0.76201727 | | +0.45043445 |
| $e$ | 0.1954470 | $i$ | 10.50973 | | −0.48760792 | | +0.07362258 |
| $P$ | 4.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 644 | 0.2+ | 0.1− | 2005 05 29 | E12 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2005 05 11 | 644 | 0.4+ | 0.1− | 2005 05 29 | E12 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.3+ | 0.1− |
| 2005 05 11 | 644 | 0.5+ | 0.2− | 2005 05 29 | E12 | 0.7− | 0.2+ | 2006 11 16 | G96 | (1.8+ | 1.3+) |
| 2005 05 22 | 644 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2005 05 22 | 644 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 05 22 | 644 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2005 05 29 | E12 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.4− | 0.3− | | | | |

**2005 JG$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.87443 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23452057 | $\omega$ | 46.81232 | | +0.91544205 | | +0.39389127 |
| $a$ | 2.6042465 | $\Omega$ | 289.83590 | | −0.38999682 | | +0.81761536 |
| $e$ | 0.2912483 | $i$ | 5.03495 | | −0.09933949 | | +0.41994618 |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 12 | 644 | 0.2− | 0.0 | 2005 06 26 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2005 05 12 | 703 | (1.7+ | 0.4+) | 2005 06 26 | 644 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.4− | 1.3+ |
| 2005 05 12 | 644 | 0.3− | 0.1− | 2005 06 26 | 644 | 0.5+ | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2005 05 12 | 703 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.1− | 0.3− |
| 2005 05 12 | 703 | 0.4+ | 0.5− | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.5− |
| 2005 05 12 | 703 | 0.6+ | 1.1+ | 2006 11 15 | 704 | 1.4+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.3− |
| 2005 05 12 | 644 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 1.2− |
| 2005 05 21 | 644 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.7+ | 0.8+ |
| 2005 05 21 | 644 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.8− | 0.1+ |
| 2005 05 21 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.1− | 1.4+ |
| 2005 05 30 | E12 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.5− | 0.9− |
| 2005 05 30 | E12 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.3+ | 2006 11 22 | 704 | (1.6− | 0.4+) |
| 2005 05 30 | E12 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.8− | 0.4− | 2006 11 22 | 704 | 0.9+ | 1.1+ |
| 2005 05 30 | E12 | 0.1+ | 0.8− | 2006 11 16 | 704 | 0.4− | 1.1− | | | | |

**2005 JX$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.06059 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23776091 | $\omega$ | 36.60267 | | +0.48566144 | | +0.87194637 |
| $a$ | 2.5805310 | $\Omega$ | 262.52898 | | −0.81611273 | | +0.42686993 |
| $e$ | 0.1288617 | $i$ | 3.58439 | | −0.31319797 | | +0.23977405 |
| $P$ | 4.15 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.1+ | 0.1− | 2005 06 26 | 644 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.5− |
| 2001 08 13 | 608 | 0.1+ | 0.0 | 2005 06 26 | 644 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.4− | 0.7− |
| 2001 08 13 | 608 | 0.1+ | 0.7− | 2005 07 04 | G96 | 0.2− | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.7− |
| 2005 05 13 | G96 | 0.4+ | 0.3+ | 2005 07 04 | G96 | 0.4− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2005 05 13 | G96 | 0.0 | 0.7+ | 2005 07 04 | G96 | 0.9− | 1.3− | 2006 11 01 | G96 | 0.4− | 0.3− |
| 2005 05 13 | G96 | 0.0 | 0.5+ | 2005 07 04 | G96 | 0.6− | 0.1− | 2006 11 14 | 691 | 0.9+ | 0.5+ |
| 2005 05 13 | G96 | 0.3+ | 0.0 | 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2005 05 20 | G96 | 0.3− | 0.1− | 2005 07 15 | 691 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2005 05 20 | G96 | 0.6− | 0.2− | 2005 07 15 | 691 | 0.0 | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2005 05 20 | G96 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2005 05 20 | G96 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.6+ | 0.7− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2005 06 14 | G96 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.5− | 0.3+ |
| 2005 06 14 | G96 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 06 14 | G96 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2005 06 14 | G96 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.4+ | | | | |
| 2005 06 26 | 644 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1− | | | | |

**2005 JH$_{170}$ = 2006 SX$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.72753 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26698070 | $\omega$ | 188.22434 | | −0.42185705 | | +0.90275626 |
| $a$ | 2.3886333 | $\Omega$ | 56.86201 | | −0.82602917 | | −0.34445698 |
| $e$ | 0.1778887 | $i$ | 5.76217 | | −0.37378127 | | −0.25764419 |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.1+ | 0.1− | 2005 05 11 | 807 | 0.4− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | 0.7− | 0.2− | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2005 04 02 | 691 | 0.2− | 0.1+ | 2005 06 13 | G96 | 1.2− | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2005 04 18 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.5− | 0.2− | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 2005 04 18 | 691 | 0.2+ | 0.1+ | 2005 06 13 | G96 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.3+ |
| 2005 04 18 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.4+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2005 05 09 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.5+ | 0.2− | 2006 11 18 | G96 | 0.6− | 0.3− |
| 2005 05 09 | 704 | 1.2+ | 0.0 | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2005 05 09 | 704 | 0.4+ | 1.1+ | 2006 09 27 | 691 | 0.6− | 0.0 | | | | |
| 2005 05 11 | 807 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.5− | 0.0 | | | | |

**2005 JK$_{175}$ = 2006 UX$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.46326 | | | (2000.0) | | |
| $n$ | 0.17526444 | $\omega$ | 166.10928 | | +0.93257343 | +0.35896108 |
| $a$ | 3.1623275 | $\Omega$ | 172.51401 | | −0.35280632 | +0.92870786 |
| $e$ | 0.2335935 | $i$ | 17.01686 | | −0.07638387 | +0.09299817 |
| $P$ | 5.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2005 07 06 | 691 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 05 10 | 691 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 05 16 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 1.3+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2005 05 16 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2005 05 16 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.8− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2005 07 06 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.2− | 1.0− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2005 07 06 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.5− | | | | |

**2005 JV$_{175}$ = 2006 SA$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.15065 | | | (2000.0) | | |
| $n$ | 0.23326120 | $\omega$ | 207.50887 | | +0.72202379 | +0.65499787 |
| $a$ | 2.6136116 | $\Omega$ | 109.74636 | | −0.58329633 | +0.74949959 |
| $e$ | 0.1647150 | $i$ | 13.69577 | | −0.37208472 | +0.09606329 |
| $P$ | 4.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 13 | 703 | 0.2+ | 0.7+ | 2005 05 03 | 703 | 0.6− | 0.9− | 2006 09 22 | 703 | 0.4− | 0.2− |
| 2005 04 13 | 703 | 0.5− | 0.6+ | 2005 05 09 | 703 | 0.4− | 0.3− | 2006 09 22 | 703 | 0.2+ | 0.0 |
| 2005 04 13 | 703 | 0.3+ | 1.0− | 2005 05 09 | 703 | 0.5− | 0.7+ | 2006 09 24 | 699 | 1.1+ | 0.3+ |
| 2005 04 13 | 703 | (0.7+ | 3.0−) | 2005 05 09 | 703 | 0.1+ | 0.2− | 2006 09 24 | 699 | 0.1− | 0.3+ |
| 2005 05 03 | 703 | 0.0 | 0.4− | 2005 05 09 | 703 | 0.5+ | 0.4+ | 2006 09 24 | 699 | 0.8− | 0.9− |
| 2005 05 03 | 703 | (2.3− | 0.8+) | 2006 09 22 | 703 | 0.1+ | 0.6+ | 2006 09 24 | 699 | 0.4+ | 0.0 |
| 2005 05 03 | 703 | 0.9+ | 0.4+ | 2006 09 22 | 703 | 0.4− | 0.1− | | | | |

**2005 JZ$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.18209 | | | (2000.0) | | |
| $n$ | 0.18915145 | $\omega$ | 89.77075 | | −0.27777518 | +0.95996192 |
| $a$ | 3.0055891 | $\Omega$ | 163.95930 | | −0.92530176 | −0.25722307 |
| $e$ | 0.1138292 | $i$ | 7.53826 | | −0.25818133 | −0.11094773 |
| $P$ | 5.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.5− | 0.5− | 2005 05 28 | 599 | 0.8+ | 0.2− | 2006 08 18 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 1.1+ | 2005 05 28 | 599 | 0.6+ | 0.3− | 2006 08 18 | 691 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.6+ | 0.9+ | 2005 05 29 | 599 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2004 01 30 | 691 | 0.1− | 0.2+ | 2005 06 28 | 644 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 01 30 | 691 | 0.0 | 0.5+ | 2005 06 28 | 644 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2005 06 28 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2005 05 08 | 691 | 0.2− | 0.2+ | 2005 07 05 | 644 | 0.2− | 0.2+ | 2006 09 30 | G96 | 1.1− | 0.2+ |
| 2005 05 08 | 691 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.6− | 0.2+ |
| 2005 05 08 | 691 | 0.1+ | 0.3+ | 2005 07 05 | 644 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.8− | 0.2+ |
| 2005 05 28 | 599 | 0.0 | 0.3+ | 2006 08 18 | 691 | 0.2+ | 0.5+ | 2006 09 30 | G96 | 0.5− | 0.1− |

**2005 JW$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.30865 | | | (2000.0) | | |
| $n$ | 0.26636410 | $\omega$ | 152.40002 | | +0.45052992 | +0.89223749 |
| $a$ | 2.3923181 | $\Omega$ | 144.35380 | | −0.82845849 | +0.43059814 |
| $e$ | 0.1945113 | $i$ | 3.00771 | | −0.33268503 | +0.13600553 |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.0 | 0.1− | 2005 05 19 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2005 05 08 | 691 | 0.0 | 0.1− | 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2005 05 08 | 691 | 0.1− | 0.0 | 2005 05 19 | G96 | 0.4+ | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.6− |
| 2005 05 14 | 644 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 1.6+ | 0.3+ | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 2005 05 14 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.4− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2005 05 14 | 644 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.6− | 0.1− | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.3+ |

**2005 JB$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 168.79848 | | | (2000.0) | | |
| $n$ | 0.28011315 | $\omega$ | 130.48958 | | −0.99717633 | +0.06437733 |
| $a$ | 2.3133804 | $\Omega$ | 53.23632 | | −0.07470848 | −0.90266181 |
| $e$ | 0.1513998 | $i$ | 2.76636 | | +0.00761664 | −0.42550819 |
| $P$ | 3.52 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.1− | 0.3+ | 2005 05 10 | G96 | 0.2− | 0.1− | 2005 06 01 | G96 | 0.8− | 0.4− |
| 2005 04 06 | G96 | 1.1− | 0.6− | 2005 05 10 | G96 | 0.1− | 0.0 | 2005 06 01 | G96 | 0.1+ | 0.1− |
| 2005 04 06 | G96 | 0.0 | 0.6− | 2005 05 10 | G96 | 0.4− | 0.1+ | 2005 06 01 | G96 | 0.2+ | 0.4− |
| 2005 04 06 | G96 | 0.5+ | 0.1− | 2005 05 10 | G96 | 0.3− | 0.1− | 2005 06 01 | G96 | 0.1+ | 0.2− |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2005 05 14 | 644 | 0.4− | 0.0 | 2006 10 19 | 695 | 0.2− | 0.0 |
| 2005 04 30 | 691 | 0.1− | 0.3+ | 2005 05 14 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 695 | 0.2+ | 0.1+ |
| 2005 04 30 | 691 | 0.5+ | 0.2+ | 2005 05 14 | 644 | 0.0 | 0.1− | 2006 10 20 | 695 | 0.0 | 0.0 |

**2005 JE$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.42265 | | | (2000.0) | | |
| $n$ | 0.21307105 | $\omega$ | 233.43480 | | +0.68430362 | +0.72220528 |
| $a$ | 2.7762150 | $\Omega$ | 80.07288 | | −0.63209370 | +0.65637095 |
| $e$ | 0.1746659 | $i$ | 5.86984 | | −0.36357407 | +0.21816668 |
| $P$ | 4.63 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2005 05 10 | G96 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.7+ |
| 2001 08 11 | 608 | 0.5+ | 0.6− | 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.5− | 0.6+ |
| 2001 08 11 | 608 | 0.2+ | 0.7− | 2005 05 14 | 644 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.6− | 0.6+ |
| 2001 08 11 | 608 | 0.9+ | 0.6− | 2005 05 14 | 644 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2001 08 19 | 704 | 0.2− | 0.7+ | 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 08 19 | 704 | 0.4− | 0.7+ | 2005 06 27 | 644 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2001 08 19 | 704 | 0.5− | 0.6+ | 2005 06 27 | 644 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2001 08 23 | 608 | 0.4+ | 0.9− | 2005 06 27 | 644 | 0.2− | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2001 08 23 | 608 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.8− |
| 2001 08 23 | 608 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.2+ |
| 2001 08 23 | 608 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2001 08 23 | 608 | 0.3+ | 0.4− | 2006 10 04 | G96 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2001 08 23 | 608 | 0.6− | 1.0− | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.0 |

**2005 JL$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.07821 | | | (2000.0) | | |
| $n$ | 0.24002900 | $\omega$ | 272.55267 | | +0.70661736 | +0.70326043 |
| $a$ | 2.5642493 | $\Omega$ | 42.77437 | | −0.59480379 | +0.65021042 |
| $e$ | 0.3003078 | $i$ | 6.61306 | | −0.38327582 | +0.28749116 |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.3− | 0.3+ | 2005 05 14 | 644 | 0.5+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2005 04 06 | G96 | 0.5− | 0.0 | 2005 06 01 | G96 | 0.4− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2005 04 06 | G96 | 0.0 | 0.0 | 2005 06 01 | G96 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.4+ | 0.1+ |
| 2005 04 06 | G96 | 0.1− | 0.1− | 2005 06 01 | G96 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2005 05 11 | G96 | 0.0 | 0.1− | 2005 06 01 | G96 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | G96 | 0.1− | 0.1− | 2005 06 14 | G96 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.4− |
| 2005 05 11 | G96 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2005 05 11 | G96 | 0.1− | 0.0 | 2005 06 14 | G96 | 0.6+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2005 05 14 | 644 | 0.3+ | 0.0 | 2005 06 14 | G96 | 0.7− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2005 05 14 | 644 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.4− | | | | |

**2005 JN$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 52.19326 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22717543 | $\omega$ | 92.31049 | | +0.63433250 | | +0.75567189 | | |
| $a$ | 2.6600827 | $\Omega$ | 218.68166 | | −0.77141882 | | +0.60501111 | | |
| $e$ | 0.2582239 | $i$ | 15.12158 | | −0.05035159 | | +0.25084169 | | |
| $P$ | 4.34 | $H$ | 16.0 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2005 04 14 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.7− |
| 2005 05 01 | 644 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2005 05 01 | 644 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2005 05 11 | G96 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2005 05 11 | G96 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 05 11 | G96 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2005 05 11 | G96 | 0.5− | 0.5− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.2− | 0.9+ |
| 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.2+ |
| 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.8− |
| 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.3− | 2006 11 17 | 703 | 1.4− | 0.0 |
| 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | | | | |

**2005 JX$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 205.69824 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18892770 | $\omega$ | 66.84757 | | −0.35622129 | | −0.92750738 | | |
| $a$ | 3.0079616 | $\Omega$ | 44.54096 | | +0.78732134 | | −0.36323554 | | |
| $e$ | 0.0099095 | $i$ | 9.29554 | | +0.50322112 | | −0.08826096 | | |
| $P$ | 5.22 | $H$ | 15.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 29 | 691 | 0.2+ | 0.2+ | 2005 05 04 | 699 | 0.7− | 0.7− | 2005 05 04 | E12 | 0.5− | 0.4+ |
| 1991 09 29 | 691 | 0.1− | 0.2+ | 2005 05 04 | G96 | 0.3+ | 0.3+ | 2005 05 13 | G96 | 0.4+ | 0.4+ |
| 1991 09 29 | 691 | 0.5− | 0.3+ | 2005 05 04 | 699 | 0.6+ | 0.8− | 2005 05 13 | G96 | 0.2+ | 0.1− |
| 2002 11 05 | 644 | 0.3− | 0.2+ | 2005 05 04 | G96 | 0.0 | 0.1− | 2005 05 13 | G96 | 0.0 | 0.2+ |
| 2002 11 05 | 644 | 0.1− | 0.2+ | 2005 05 04 | G96 | 0.1− | 0.2+ | 2005 05 13 | G96 | 0.0 | 0.1+ |
| 2002 11 05 | 644 | 0.1− | 0.8+ | 2005 05 04 | 699 | 1.8+ | 0.4+ | 2005 06 01 | G96 | 0.3− | 0.1+ |
| 2004 01 31 | 704 | 0.8− | 0.6− | 2005 05 04 | G96 | 0.2− | 0.0 | 2005 06 01 | G96 | 0.1− | 0.1− |
| 2004 01 31 | 704 | 0.9+ | 0.5+ | 2005 05 04 | E12 | 0.3− | 0.5+ | 2005 06 01 | G96 | 0.1− | 0.2+ |
| 2004 01 31 | 704 | 0.6+ | 1.7+ | 2005 05 04 | E12 | 0.2− | 1.1+ | 2005 06 01 | G96 | 0.0 | 0.2+ |
| 2005 05 04 | 699 | 0.1+ | 0.1− | 2005 05 04 | E12 | 0.5+ | 1.0+ | | | | |

**2005 JY$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 201.30799 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23564537 | $\omega$ | 325.72959 | | −0.81977416 | | −0.57268451 | | |
| $a$ | 2.5959527 | $\Omega$ | 179.32591 | | +0.55204102 | | −0.79099162 | | |
| $e$ | 0.0785664 | $i$ | 8.14501 | | +0.15238450 | | −0.21532467 | | |
| $P$ | 4.18 | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 691 | 0.3− | 0.2+ | 2005 05 13 | 691 | 0.1− | 0.2+ | 2005 06 11 | 691 | 0.1+ | 0.2− |
| 1998 09 18 | 691 | 0.1− | 0.1− | 2005 05 13 | 691 | 0.4− | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.1− |
| 1998 09 18 | 691 | 0.5− | 0.3− | 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.3− | 0.2+ |
| 1998 10 01 | 691 | 0.2+ | 0.1+ | 2005 05 28 | 599 | 0.1+ | 0.3+ | 2006 08 29 | 691 | 0.2+ | 0.2− |
| 1998 10 01 | 691 | 0.2+ | 0.1+ | 2005 05 28 | 599 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.1+ |
| 1998 10 01 | 691 | 0.5+ | 0.0 | 2005 05 28 | 599 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.6+ | 0.3+ |
| 2005 05 04 | 691 | 0.2+ | 0.3− | 2005 05 28 | 599 | 0.5+ | 0.1− | 2006 09 27 | G96 | 0.8− | 0.1− |
| 2005 05 04 | 691 | 0.2− | 0.2− | 2005 06 11 | 691 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2005 05 04 | 691 | 0.1− | 0.2+ | 2005 06 11 | 691 | 0.0 | 0.1− | | | | |

**2005 JA$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 113.15202 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26257443 | $\omega$ | 8.46876 | | −0.21651262 | | +0.97234816 | | |
| $a$ | 2.4152816 | $\Omega$ | 249.06248 | | −0.90111972 | | −0.23353589 | | |
| $e$ | 0.1189410 | $i$ | 5.37749 | | −0.37564015 | | −0.00021791 | | |
| $P$ | 3.75 | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 704 | 0.3− | 0.0 | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2005 05 10 | 704 | 0.1− | 0.2+ | 2005 06 14 | G96 | 0.4+ | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 2005 05 10 | 704 | 0.4− | 0.4+ | 2005 06 14 | G96 | 0.4− | 0.2+ | 2006 10 21 | 691 | 0.6− | 0.2+ |
| 2005 05 10 | 704 | 0.9+ | 0.0 | 2005 06 14 | G96 | 0.7− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2005 05 10 | 704 | 0.8+ | 0.6+ | 2005 06 15 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1− |
| 2005 05 21 | 644 | 0.2− | 0.1− | 2005 06 15 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2005 05 21 | 644 | 0.1− | 0.2+ | 2005 06 15 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.4− |
| 2005 05 21 | 644 | 0.1− | 0.0 | 2006 09 24 | 152 | 0.6− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2005 05 29 | E12 | 0.5− | 0.1+ | 2006 09 24 | 152 | (1.5− | 0.2−) | 2006 10 29 | 691 | 0.2+ | 0.2− |
| 2005 05 29 | E12 | 0.5− | 0.3− | 2006 09 26 | 691 | 1.5+ | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 2005 05 29 | E12 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2005 05 29 | E12 | 1.5− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2005 06 06 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.5+ | | | | |

**2005 JB$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 64.51849 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22492676 | $\omega$ | 240.51579 | | +0.59519832 | | +0.78566115 | | |
| $a$ | 2.6777825 | $\Omega$ | 66.98548 | | −0.65909885 | | +0.59743054 | | |
| $e$ | 0.2255063 | $i$ | 10.56435 | | −0.45970390 | | +0.16066520 | | |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.0 | 0.3+ | 2005 06 04 | 704 | 0.4+ | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2001 07 19 | 644 | 0.1+ | 0.0 | 2005 06 04 | 704 | 0.1+ | 0.4− | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2001 07 19 | 644 | 0.1+ | 0.4+ | 2005 06 13 | G96 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 07 30 | 644 | 0.1− | 0.3− | 2005 06 13 | G96 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 07 30 | 644 | 0.0 | 0.3− | 2005 06 13 | G96 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2001 07 30 | 644 | 0.2− | 0.2− | 2005 07 04 | 644 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2005 05 14 | 704 | (2.6+ | 0.4+) | 2005 07 04 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.1− |
| 2005 05 14 | 704 | 1.2+ | 0.0 | 2005 07 04 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2005 05 14 | 704 | 0.6+ | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.1− | 0.7+ |
| 2005 05 20 | G96 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2005 05 20 | G96 | 0.2− | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.7− | 2006 11 11 | 703 | 0.5− | 0.2− |
| 2005 05 20 | G96 | 0.2− | 0.4− | 2006 10 03 | G96 | 0.3+ | 0.8− | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2005 06 01 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2005 06 01 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | (0.9+ | 1.9−) | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2005 06 01 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2005 06 04 | 704 | 0.2− | 0.9+ | 2006 10 16 | 703 | 0.0 | 1.2+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2005 06 04 | 704 | 0.5+ | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.2+ | | | | |

**2005 KM = 2006 QC$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 18.49807 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23164222 | $\omega$ | 180.63727 | | +0.99173432 | | +0.12771008 | | |
| $a$ | 2.6257754 | $\Omega$ | 171.99362 | | −0.11732401 | | +0.94165359 | | |
| $e$ | 0.2014575 | $i$ | 5.09786 | | −0.05194336 | | +0.31141397 | | |
| $P$ | 4.25 | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.2+ | 0.2+ | 2006 09 15 | 644 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 10 03 | G92 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 12 03 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 10 03 | G92 | 0.2+ | 0.3− | 2006 11 10 | 704 | (0.3+ | 2.3+) |
| 2002 12 03 | 644 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 10 03 | G92 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.0 | 0.6+ |
| 2005 05 16 | G96 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 10 | 704 | 1.0+ | 0.8+ |
| 2005 05 16 | G96 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.8+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.7− | 0.6+ |
| 2005 05 16 | G96 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.2+ |
| 2005 05 16 | G96 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.5− | 2006 11 16 | 703 | 0.5− | 0.7− |
| 2005 05 17 | G96 | (0.2− | 1.5−) | 2006 09 30 | 703 | 1.0− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 16 | 703 | 0.5+ | 0.6+ |
| 2005 05 17 | G96 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.0+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.7+ |
| 2005 05 17 | G96 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.0 | | | | |
| 2005 05 17 | G96 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2− | | | | | | | | |
| 2005 05 19 | G96 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 27 | 704 | 0.4− | 0.7+ | | | | | | | | |
| 2005 05 19 | G96 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 27 | 704 | 0.5+ | 0.6+ | | | | | | | | |
| 2005 05 19 | G96 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 27 | 704 | 1.4− | 1.3+ | | | | | | | | |
| 2005 05 19 | G96 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 27 | 704 | 0.5+ | 1.4− | | | | | | | | |
| 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 27 | 704 | 0.6+ | 1.1− | | | | | | | | |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.9+ | 0.3+ | | | | | | | | |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 13 | 703 | (1.7− | 0.9+) | | | | | | | | |
| 2006 07 21 | G96 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.8+ | | | | | | | | |
| 2006 08 30 | 699 | 1.1+ | 0.4− | 2006 10 16 | 703 | 0.6+ | 0.2+ | 2006 11 13 | 703 | 1.3− | 0.0 | | | | | | | | |
| 2006 08 30 | 699 | 1.0− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.8+ | 2006 11 23 | G96 | 0.7+ | 0.2− | | | | | | | | |
| 2006 08 30 | 699 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.0 | | | | | | | | |
| 2006 08 30 | 699 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.1+ | | | | | | | | |
| 2006 09 15 | 644 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.1+ | | | | | | | | |
| 2006 09 15 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | | | | | | | | | | | |

**2005 KZ**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.11863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23630369 | $\omega$ | 79.31219 | | +0.14052778 | +0.98875506 | |
| $a$ | 2.5911291 | $\Omega$ | 198.99614 | | −0.95867743 | +0.12298413 | |
| $e$ | 0.1860241 | $i$ | 9.03933 | | −0.24736516 | +0.08507845 | |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 16 | 691 | 0.1+ | 0.1+ | 2005 06 09 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | 2005 05 16 | G96 | 0.3− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.4+ |
| 2005 05 16 | 691 | 0.3+ | 0.1+ | 2005 06 09 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.7− | 2005 05 16 | G96 | 0.4− | 0.1− | 2006 09 14 | 691 | 0.1− | 0.6+ |
| 2005 05 16 | 691 | 0.4+ | 0.1− | 2005 06 13 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.0 | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.4+ |
| 2005 05 20 | G96 | 0.5− | 0.0 | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2005 05 19 | G96 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2005 05 20 | G96 | 0.3− | 0.0 | 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.1− |
| 2005 05 20 | G96 | 0.6− | 0.0 | 2005 06 23 | 644 | 0.3− | 0.3− | 2006 11 01 | 691 | 0.3− | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2005 05 20 | G96 | 0.3− | 0.2+ | 2005 06 23 | 644 | 0.7− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2005 06 12 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2005 06 05 | 691 | 0.1+ | 0.0 | 2005 06 23 | 644 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.3+ | 2005 06 12 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.7− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2005 06 12 | 691 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2005 06 05 | 691 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.9+ | 0.1+ | 2006 11 11 | 691 | 0.7− | 0.1− | 2005 06 16 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2005 06 16 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.6− | 0.3+ |
| | | | | | | | | | | | | 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| | | | | | | | | | | | | 2005 06 28 | 644 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.2+ |
| | | | | | | | | | | | | 2005 06 28 | 644 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.5− |
| | | | | | | | | | | | | 2005 06 28 | 644 | 0.0 | 0.2+ | 2006 11 14 | G96 | 1.1− | 0.5− |

**2005 KG$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.29419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22774088 | $\omega$ | 222.99003 | | +0.98979150 | +0.11246386 | |
| $a$ | 2.6556778 | $\Omega$ | 130.33979 | | −0.07809555 | +0.94181658 | |
| $e$ | 0.2051889 | $i$ | 6.59552 | | −0.11922195 | +0.31675450 | |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 16 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 1.1− | 0.7− | 2006 10 22 | 703 | 0.7− | 0.1− | 2005 06 05 | 691 | 0.0 | 0.3− | 2006 10 03 | G92 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2005 05 16 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | (1.7− | 1.0−) | 2006 10 22 | 703 | 0.3− | 0.4− | 2006 09 28 | G92 | 0.4+ | 0.6+ | 2006 10 03 | G92 | 0.2+ | 0.3− | 2006 11 10 | 704 | (0.3+ | 2.3+) |
| 2005 05 16 | 691 | 0.4+ | 0.1− | 2006 10 01 | 704 | 0.4+ | 1.1+ | 2006 10 22 | 703 | 0.4− | 0.8− | 2006 09 28 | G92 | 0.0 | 0.0 | 2006 10 03 | G92 | 0.1− | 0.5+ | 2006 11 10 | 704 | 0.0 | 0.6+ |
| 2005 05 20 | G96 | 0.8− | 0.5− | 2006 10 01 | 704 | 1.3+ | 0.2− | 2006 10 22 | 703 | 0.0 | 0.6− | 2006 09 28 | G92 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 10 | 704 | 1.0+ | 0.8+ |
| 2005 05 20 | G96 | 1.0− | 0.7− | 2006 10 01 | G92 | 0.9+ | 0.8− | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.7− | 0.6+ |
| 2005 05 20 | G96 | 0.8− | 0.4− | 2006 10 01 | 704 | 0.7+ | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.2+ |
| 2005 05 20 | G96 | 1.2− | 0.5− | 2006 10 01 | 704 | 1.2− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 1.2+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.5− | 2006 11 16 | 703 | 0.5− | 0.7− |
| 2005 06 05 | 691 | 0.1+ | 0.0 | 2006 10 01 | G92 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.8+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 16 | 703 | 0.5+ | 0.6+ |
| 2005 06 05 | 691 | 0.0 | 1.0+ | 2006 10 01 | G92 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.1− | 0.6− | 2006 10 16 | 703 | 1.0+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.7+ |
| | | | | | | | | | | | | 2006 09 30 | 703 | (1.7− | 1.4−) | 2006 10 16 | 703 | 0.4− | 0.0 | | | | |

**2005 KO$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.59264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22391233 | $\omega$ | 68.17087 | | −0.24621577 | +0.96915266 | |
| $a$ | 2.6858642 | $\Omega$ | 187.60056 | | −0.91711335 | −0.23663492 | |
| $e$ | 0.1811201 | $i$ | 4.76904 | | −0.31349786 | −0.06889881 | |
| $P$ | 4.40 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | (0.5+ | 2.2+) | 2005 05 16 | G96 | 0.3− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.4+ | 2005 06 08 | 691 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2000 03 03 | 704 | 0.6+ | 1.5+ | 2005 05 16 | G96 | 0.4− | 0.1− | 2006 09 14 | 691 | 0.1− | 0.6+ | 2005 06 08 | 691 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2000 03 03 | 704 | 0.4− | 0.4− | 2005 05 19 | G96 | 0.5− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.4+ | 2005 06 08 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2004 01 18 | 691 | 0.1− | 0.5+ | 2005 05 19 | G96 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 09 24 | 699 | 1.1− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2004 01 18 | 691 | 0.2+ | 0.3+ | 2005 05 19 | G96 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.1− | 2006 09 24 | 699 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2004 01 18 | 691 | 0.1+ | 0.2+ | 2005 05 19 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 09 24 | 699 | 0.5− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2005 03 13 | G96 | 0.3− | 0.1− | 2005 06 12 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 09 24 | 699 | 0.5− | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2005 03 13 | G96 | 0.5− | 0.0 | 2005 06 12 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 09 25 | 703 | 0.5− | 0.2+ | 2006 10 24 | 644 | 0.3+ | 0.1− |
| 2005 03 13 | G96 | 0.3− | 0.1+ | 2005 06 12 | 691 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.1− | 2006 09 25 | 703 | 1.1+ | 0.9− | 2006 10 24 | 644 | 0.3+ | 0.1+ |
| 2005 03 13 | G96 | 0.3− | 0.2− | 2005 06 16 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 09 25 | 703 | 0.8− | 0.5− | 2006 10 28 | 703 | (2.5+ | 2.1+) |
| 2005 05 08 | 704 | 0.9+ | 0.4− | 2005 06 16 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.6− | 0.3+ | 2006 09 25 | 703 | 0.4+ | 0.4− | 2006 10 28 | 703 | 0.9+ | 0.2− |
| 2005 05 08 | 704 | 0.6+ | 0.1+ | 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.6+ |
| 2005 05 08 | 704 | 0.5+ | 0.6+ | 2005 06 28 | 644 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 1.0− | 0.1− |
| 2005 05 16 | G96 | 0.2− | 0.1− | 2005 06 28 | 644 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.4− | 0.5− | 2006 10 09 | 644 | 0.3+ | 0.1+ | | | | |
| 2005 05 16 | G96 | 0.1− | 0.3+ | 2005 06 28 | 644 | 0.0 | 0.2+ | 2006 11 14 | G96 | 1.1− | 0.5− | | | | | | | | |

**2005 KQ$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.57552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21190731 | $\omega$ | 266.87469 | | +0.92518715 | +0.30878254 | |
| $a$ | 2.7863698 | $\Omega$ | 75.05556 | | −0.18763378 | +0.87752487 | |
| $e$ | 0.1757453 | $i$ | 13.20079 | | −0.32988224 | +0.36688343 | |
| $P$ | 4.65 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.2+ | 0.1− | 2005 06 08 | 691 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.4+ | 0.1+ | 2005 05 19 | G96 | 0.5− | 0.4− | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 2005 05 03 | 691 | 0.2+ | 0.3+ | 2005 06 08 | 691 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.2+ | | | | | | | | |
| 2005 05 03 | 691 | 0.2+ | 0.0 | 2005 06 08 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.2+ | | | | | | | | |
| 2005 05 14 | 644 | 0.2+ | 0.1+ | 2006 09 24 | 699 | 1.1− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.3+ | | | | | | | | |
| 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 09 24 | 699 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2− | | | | | | | | |
| 2005 05 14 | 644 | 0.0 | 0.2− | 2006 09 24 | 699 | 0.5− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.0 | | | | | | | | |
| 2005 05 16 | G96 | 0.5− | 0.0 | 2006 09 24 | 699 | 0.5− | 0.5+ | 2006 10 24 | 644 | 0.1− | 0.1− | | | | | | | | |
| 2005 05 16 | G96 | 0.6− | 0.1− | 2006 09 25 | 703 | 0.5− | 0.2+ | 2006 10 24 | 644 | 0.3+ | 0.1− | | | | | | | | |
| 2005 05 16 | G96 | 0.1− | 0.1− | 2006 09 25 | 703 | 1.1+ | 0.9− | 2006 10 24 | 644 | 0.3+ | 0.1+ | | | | | | | | |
| 2005 05 16 | G96 | 0.2− | 0.1− | 2006 09 25 | 703 | 0.8− | 0.5− | 2006 10 28 | 703 | (2.5+ | 2.1+) | | | | | | | | |
| 2005 05 19 | G96 | 0.6− | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.4− | 2006 10 28 | 703 | 0.9+ | 0.2− | | | | | | | | |
| 2005 05 19 | G96 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.6+ | | | | | | | | |
| 2005 05 19 | G96 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 1.0− | 0.1− | | | | | | | | |
| 2005 05 19 | G96 | 0.5− | 0.4− | 2006 10 09 | 644 | 0.3+ | 0.1+ | | | | | | | | | | | | |

**2005 KF$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.24115 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16982202 | $\omega$ | 144.60214 | | −0.37941421 | +0.91931228 | |
| $a$ | 3.2295353 | $\Omega$ | 102.89900 | | −0.87165643 | −0.31730519 | |
| $e$ | 0.0996325 | $i$ | 6.15128 | | −0.31025783 | −0.23277103 | |
| $P$ | 5.80 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 16 | G96 | 0.2− | 0.0 | 2005 05 19 | G96 | 0.1− | 0.0 | 2006 08 23 | 568 | 0.2+ | 0.1+ |
| 2005 05 16 | G96 | 0.1+ | 0.0 | 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 08 23 | 568 | 0.0 | 0.1+ |
| 2005 05 16 | G96 | 0.4− | 0.0 | 2005 06 08 | 691 | 0.1− | 0.0 | 2006 09 26 | 291 | 0.0 | 0.1+ |
| 2005 05 16 | G96 | 0.0 | 0.0 | 2005 06 08 | 691 | 0.3+ | 0.2− | 2006 09 26 | 291 | 0.0 | 0.2− |
| 2005 05 19 | G96 | 0.0 | 0.1− | 2006 08 23 | 568 | 0.1+ | 0.1+ | 2006 09 26 | 291 | 0.1− | 0.0 |
| 2005 05 19 | G96 | 0.0 | 0.1− | 2006 08 23 | 568 | 0.0 | 0.1+ | | | | |
| 2005 05 19 | G96 | 0.2− | 0.1+ | 2006 08 23 | 568 | 0.0 | 0.1+ | | | | |

**2005 KA$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.52682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25820656 | $\omega$ | 204.83003 | | −0.11388641 | +0.99022362 | |
| $a$ | 2.4424436 | $\Omega$ | 58.72268 | | −0.89504793 | −0.06707877 | |
| $e$ | 0.1699549 | $i$ | 5.40749 | | −0.43118335 | −0.12230132 | |
| $P$ | 3.82 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 691 | 0.4+ | 0.2− | 2005 05 19 | G96 | 0.7− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2005 04 30 | 691 | 0.3+ | 0.3+ | 2005 05 19 | G96 | 0.7− | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2005 04 30 | 691 | 0.3+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.3+ |
| 2005 05 17 | G96 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3+ |
| 2005 05 17 | G96 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.4+ |
| 2005 05 17 | G96 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2005 05 17 | G96 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.3+ | 2006 11 18 | G96 | 0.6+ | 0.1+ |
| 2005 05 19 | G96 | 0.4− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.2+ |
| 2005 05 19 | G96 | 0.5− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.2− | | | | |

**2005 KQ$_4$ = 2006 VN$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.35421 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24526063 | $\omega$ | 147.41567 | | +0.75212264 | +0.65890808 | |
| $a$ | 2.5276532 | $\Omega$ | 171.33531 | | −0.62080336 | +0.71465136 | |
| $e$ | 0.1927782 | $i$ | 4.68908 | | −0.22116671 | +0.23476280 | |
| $P$ | 4.02 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | 644 | 0.4+ | 0.1+ | 2005 06 03 | 691 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.1+ |
| 2005 05 14 | 644 | 0.5+ | 0.1− | 2005 06 03 | 691 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2005 05 14 | 644 | 0.1+ | 0.2− | 2005 06 08 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2005 05 14 | 644 | 0.3+ | 0.1− | 2005 06 08 | 691 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2005 05 14 | 644 | 0.2+ | 0.3− | 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 11 02 | 703 | 0.7− | 0.0 |
| 2005 05 14 | 644 | 0.1− | 0.0 | 2005 06 12 | 691 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.3− | 1.1+ |
| 2005 05 17 | G96 | 0.1− | 0.0 | 2005 06 12 | 691 | 0.4+ | 0.2− | 2006 11 02 | 703 | 1.1+ | 1.1+ |
| 2005 05 17 | G96 | 0.2+ | 0.2+ | 2005 06 12 | 691 | 0.5− | 0.2+ | 2006 11 02 | 703 | 0.6− | 1.9+ |
| 2005 05 17 | G96 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2005 05 17 | G96 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2005 05 19 | G96 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2005 05 19 | G96 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2005 05 19 | G96 | 0.7− | 0.6− | 2006 10 16 | 703 | 1.4+ | 0.9− | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2005 05 19 | G96 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.7− | 0.8− | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2005 06 03 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.6− |

**2005 KY$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.72362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23479432 | $\omega$ | 76.60735 | | +0.23892705 | +0.97067943 | |
| $a$ | 2.6022219 | $\Omega$ | 207.25948 | | −0.91170413 | +0.21489836 | |
| $e$ | 0.2138716 | $i$ | 3.30040 | | −0.33422962 | +0.10770394 | |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 18 | 644 | 0.2− | 0.1+ | 2005 06 04 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2005 05 18 | 644 | 0.2− | 0.2+ | 2005 06 04 | 691 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.4+ | 0.1− |
| 2005 05 18 | 644 | 0.1− | 0.2+ | 2005 06 04 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2005 05 20 | G96 | 0.5− | 0.1− | 2005 06 04 | 704 | 0.7+ | 0.8+ | 2006 10 23 | 691 | 0.3+ | 0.1+ |
| 2005 05 20 | G96 | 0.4− | 0.3− | 2005 06 04 | 704 | 0.2+ | 0.5− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2005 05 20 | G96 | 0.3− | 0.1− | 2005 06 04 | 704 | 0.9+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2005 05 20 | G96 | 0.3− | 0.1− | 2005 06 04 | 704 | 0.1+ | 1.5− | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2005 05 21 | 644 | 0.1− | 0.1− | 2005 06 10 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.4− |
| 2005 05 21 | 644 | 0.0 | 0.1+ | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2005 05 21 | 644 | 0.3− | 0.0 | 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2005 06 03 | 691 | 0.0 | 0.6+ | 2005 06 16 | G96 | 0.7− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2005 06 03 | 691 | 0.3+ | 0.7+ | 2005 06 16 | G96 | 1.2− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.3+ |
| 2005 06 03 | 691 | 0.3+ | 0.8− | 2005 06 16 | G96 | 0.7− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2005 06 03 | 703 | 0.5− | 0.5+ | 2005 06 16 | G96 | 0.6− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2005 06 03 | 703 | 0.5− | 0.1+ | 2005 06 27 | 644 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2005 06 03 | 703 | 0.5+ | 0.1+ | 2005 06 27 | 644 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.4− | 0.3+ |
| 2005 06 03 | 703 | 0.1− | 0.3+ | 2005 06 27 | 644 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.4+ |

**2005 KZ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.27266 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25882602 | $\omega$ | 267.67050 | | +0.81785900 | +0.52955230 | |
| $a$ | 2.4385449 | $\Omega$ | 60.27274 | | −0.36838576 | +0.78241060 | |
| $e$ | 0.1904155 | $i$ | 15.02508 | | −0.44203912 | +0.32773162 | |
| $P$ | 3.81 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.0 | 0.0 | 2005 05 20 | G96 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2005 05 20 | G96 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2005 05 08 | G96 | 0.3− | 0.2− | 2005 06 11 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2005 05 08 | G96 | 0.3− | 0.1− | 2005 06 11 | 691 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2005 05 08 | G96 | 0.2− | 0.2− | 2005 06 11 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2005 05 08 | G96 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2005 05 18 | 644 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2005 05 18 | 644 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2005 05 18 | 644 | 0.6+ | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.4− | 0.4+ |
| 2005 05 20 | G96 | 0.5− | 0.7+ | 2006 11 11 | 691 | 0.4+ | 0.0 | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2005 05 20 | G96 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.7− | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.1+ |

**2005 KE$_5$ = 2006 UB$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.84052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25522643 | $\omega$ | 170.70656 | | −0.26495774 | +0.96317655 | |
| $a$ | 2.4614194 | $\Omega$ | 83.91892 | | −0.88761723 | −0.22510762 | |
| $e$ | 0.1479987 | $i$ | 2.63407 | | −0.37674004 | −0.14702892 | |
| $P$ | 3.86 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | G96 | 0.2+ | 0.3− | 2005 05 20 | G96 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.3+ | 0.3+ |
| 2005 05 08 | G96 | 0.2+ | 0.2− | 2005 05 20 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2005 05 08 | G96 | 0.2− | 0.0 | 2005 05 20 | G96 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2005 05 08 | G96 | 0.8− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 05 18 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2005 05 18 | 644 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2005 05 18 | 644 | 0.0 | 0.3+ | 2006 10 21 | G96 | 1.2+ | 0.5− | | | | |
| 2005 05 20 | G96 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.6− | 0.2+ | | | | |

**2005 KL$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 92.67198 | | (2000.0) | | | |
| $n$ | 0.26244343 | $\omega$ | 339.63007 | | +0.15366896 | +0.98808241 |
| $a$ | 2.4160852 | $\Omega$ | 299.20863 | | −0.90516875 | +0.13715488 |
| $e$ | 0.1272118 | $i$ | 0.58348 | | −0.39630213 | +0.06986913 |
| $P$ | 3.76 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 645 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2005 03 11 | G96 | 0.0 | 0.1− | 2005 05 12 | G96 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2005 03 11 | G96 | 0.0 | 0.0 | 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2005 03 11 | G96 | 0.2+ | 0.0 | 2005 05 16 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.9+ | 0.2+ |
| 2005 03 11 | G96 | 0.1− | 0.2+ | 2005 05 16 | 691 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2005 04 11 | G96 | 0.2− | 0.2+ | 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 04 11 | G96 | 0.1+ | 0.3− | 2005 05 19 | 644 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2005 04 11 | G96 | 0.4− | 0.4− | 2005 05 19 | 644 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.4− | 0.4+ |
| 2005 04 11 | G96 | 0.0 | 0.4− | 2005 05 19 | 644 | 0.6− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.4+ |

**2005 KM$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 89.22515 | | (2000.0) | | | |
| $n$ | 0.23969064 | $\omega$ | 221.43527 | | +0.13279624 | +0.98863077 |
| $a$ | 2.5666619 | $\Omega$ | 56.31051 | | −0.88558528 | +0.15030774 |
| $e$ | 0.2173662 | $i$ | 4.86251 | | −0.44508861 | −0.00409778 |
| $P$ | 4.11 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.2− | 0.2− | 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2005 05 04 | G96 | 0.4+ | 0.0 | 2005 05 19 | 644 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.4− |
| 2005 05 04 | G96 | 0.2+ | 0.1+ | 2005 05 19 | 644 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.7+ | 0.1− |
| 2005 05 04 | G96 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2005 05 16 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2005 05 16 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.3+ | | | | |
| 2005 05 16 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ | | | | |

**2005 KL$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 137.66232 | | (2000.0) | | | |
| $n$ | 0.23473464 | $\omega$ | 344.27368 | | −0.90309948 | +0.42808140 |
| $a$ | 2.6026629 | $\Omega$ | 221.12593 | | −0.38820820 | −0.84771294 |
| $e$ | 0.1724419 | $i$ | 2.96528 | | −0.18359118 | −0.31325563 |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 18 | 644 | 0.2+ | 0.0 | 2005 05 21 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2005 05 18 | 644 | 0.1+ | 0.0 | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2005 05 18 | 644 | 0.1− | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.7− |
| 2005 05 21 | 644 | 0.3− | 0.1− | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2005 05 21 | 644 | 0.2− | 0.0 | 2005 06 16 | G96 | 0.5− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2005 05 21 | 644 | 0.1− | 0.0 | 2005 06 16 | G96 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2005 05 21 | 644 | 0.0 | 0.2+ | 2005 06 16 | G96 | 0.8− | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.4+ |
| 2005 05 21 | 644 | 0.1+ | 0.5− | 2005 06 16 | G96 | 0.5− | 0.2+ | | | | |

**2005 KP$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 100.26121 | | (2000.0) | | | |
| $n$ | 0.26558702 | $\omega$ | 32.88904 | | +0.19833429 | +0.97932742 |
| $a$ | 2.3969822 | $\Omega$ | 248.57750 | | −0.90823073 | +0.16837986 |
| $e$ | 0.1790867 | $i$ | 2.44825 | | −0.36848400 | +0.11209834 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 18 | E12 | 0.1+ | 0.7− | 2005 07 04 | 644 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.5+ |
| 2005 05 18 | E12 | 0.1+ | 0.2+ | 2005 07 04 | 644 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2005 05 18 | E12 | 0.0 | 0.4− | 2005 07 04 | 644 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.3− | 0.1− |
| 2005 05 18 | E12 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.2+ | 1.0− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2005 05 21 | 644 | 0.1− | 0.8+ | 2006 10 17 | G96 | 0.3− | 0.5− | 2006 11 16 | 691 | 0.4+ | 0.2+ |
| 2005 05 21 | 644 | 0.3+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2005 05 21 | 644 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 16 | 703 | 1.4− | 0.2+ |
| 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.6− | 2006 11 16 | 703 | 0.4+ | 0.4+ |
| 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.7+ | 0.2− | 2006 11 16 | 703 | 0.1+ | 0.1− |
| 2005 06 13 | G96 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.2− | 2006 11 16 | 703 | 1.8− | 0.1− |
| 2005 06 13 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | | | |

**2005 KT$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 113.68669 | | (2000.0) | | | |
| $n$ | 0.24121113 | $\omega$ | 227.96635 | | −0.38912091 | +0.92089101 |
| $a$ | 2.5558645 | $\Omega$ | 19.17219 | | −0.82278769 | −0.33605140 |
| $e$ | 0.2072415 | $i$ | 4.07513 | | −0.41425273 | −0.19755812 |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 691 | 0.2+ | 0.3− | 2005 05 21 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.1− |
| 1998 10 29 | 691 | 0.3− | 0.2− | 2005 05 21 | 644 | 0.4+ | 0.0 | 2006 09 24 | 691 | 0.4+ | 0.1− |
| 1998 10 29 | 691 | 0.5+ | 0.5− | 2005 05 21 | 644 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.2+ |
| 2002 10 30 | 291 | 0.1− | 0.0 | 2005 05 30 | E12 | 0.1− | 0.8+ | 2006 09 24 | 691 | 0.1+ | 0.0 |
| 2002 10 30 | 291 | 0.1+ | 0.1+ | 2005 05 30 | E12 | (2.5+ | 0.3+) | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2002 10 30 | 291 | 0.2− | 0.2+ | 2005 05 30 | E12 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2005 05 09 | 704 | (1.8− | 0.8+) | 2005 05 30 | E12 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 2005 05 09 | 704 | 0.8− | 0.6+ | 2005 06 11 | 704 | (1.7+ | 0.1−) | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2005 05 09 | 704 | 0.5− | 0.4− | 2005 06 11 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2005 05 09 | 704 | 0.8− | 1.0− | 2005 06 11 | 704 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2005 05 09 | 704 | 0.4− | 0.2+ | 2005 06 26 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2005 05 19 | 644 | 0.6+ | 0.0 | 2005 06 26 | 644 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.6− |
| 2005 05 19 | 644 | 0.6+ | 0.2− | 2005 06 26 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2005 05 19 | 644 | 0.5+ | 0.1+ | 2005 07 03 | 644 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2005 05 19 | E12 | 0.2− | 0.4− | 2005 07 03 | 644 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2005 05 19 | E12 | 0.4+ | 0.3− | 2005 07 03 | 644 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.4− | 0.3+ |
| 2005 05 19 | E12 | 0.5− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2005 05 19 | E12 | 0.5+ | 0.6− | 2006 09 18 | 691 | 0.1− | 0.1+ | | | | |

**2005 KV$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 96.25929 | | (2000.0) | | | |
| $n$ | 0.24090919 | $\omega$ | 39.14770 | | −0.00814674 | +0.99377017 |
| $a$ | 2.5579996 | $\Omega$ | 230.67588 | | −0.94975181 | −0.04247084 |
| $e$ | 0.1358977 | $i$ | 8.26113 | | −0.31289795 | +0.10303925 |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | G96 | (0.1+ | 5.9+) | 2005 06 03 | 703 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.1− |
| 2005 04 07 | G96 | (0.0 | 5.8+) | 2005 06 03 | 703 | 0.3− | 0.3− | 2006 10 02 | 691 | 0.0 | 0.3− |
| 2005 04 07 | G96 | (0.4+ | 5.5+) | 2005 06 03 | 703 | (0.8− | 2.1−) | 2006 10 17 | 691 | 0.3+ | 0.0 |
| 2005 04 07 | G96 | (0.9+ | 6.6+) | 2005 06 03 | 703 | 1.4− | 0.8− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2005 05 19 | G96 | 0.1+ | 0.0 | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.6− |
| 2005 05 19 | G96 | 0.5+ | 0.0 | 2005 06 08 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.3+ |
| 2005 05 19 | G96 | 0.9− | 0.4+ | 2005 06 08 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2005 05 19 | G96 | 0.4+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.7− |
| 2005 05 21 | 644 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.4+ | 0.3+ |
| 2005 05 21 | 644 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.5− | 0.1+ |
| 2005 05 21 | 644 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ |

**2005 KW$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.65721 | | (2000.0) | | | |
| $n$ | 0.24194261 | $\omega$ | 112.13280 | | +0.80559801 | +0.59188114 |
| $a$ | 2.5507103 | $\Omega$ | 211.59420 | | −0.56035970 | +0.74681724 |
| $e$ | 0.2231417 | $i$ | 2.87096 | | −0.19237683 | +0.30321730 |
| $P$ | 4.07 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 10 | 809 | 0.3+ | 0.1+ | 2005 06 27 | 644 | 0.0 | 0.3+ | 2006 10 31 | G96 | 1.5+ | 0.1+ |
| 2005 02 10 | 809 | 0.0 | 0.1+ | 2005 06 27 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2005 02 10 | 809 | 0.1+ | 0.3− | 2005 06 27 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2005 05 19 | G96 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2005 05 19 | G96 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2005 05 19 | G96 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2005 05 19 | G96 | 0.3+ | 0.3− | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2005 05 21 | 644 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2005 05 21 | 644 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 05 21 | 644 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2005 06 03 | 703 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2005 06 03 | 703 | 0.7− | 0.4− | 2006 10 31 | G96 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.7− | 0.9+ |
| 2005 06 03 | 703 | 0.2+ | 1.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.5+ | 0.5+ |
| 2005 06 03 | 703 | 1.1− | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.6− | 0.8+ |

**2005 KD$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 161.67900 | | (2000.0) | | | |
| $n$ | 0.27724794 | $\omega$ | 51.93101 | | −0.85031248 | +0.52605220 |
| $a$ | 2.3292914 | $\Omega$ | 159.79379 | | −0.49575294 | −0.79081545 |
| $e$ | 0.1227546 | $i$ | 2.55867 | | −0.17662872 | −0.31285780 |
| $P$ | 3.55 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.4− | 0.1+ | 2005 06 30 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1− | 0.2+ |
| 2005 05 20 | G96 | 0.0 | 0.6+ | 2005 06 30 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2005 05 20 | G96 | 0.5− | 0.1− | 2005 06 30 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− |
| 2005 05 22 | 644 | 0.1− | 0.2− | 2005 07 04 | 691 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.2+ |
| 2005 05 22 | 644 | 0.1− | 0.2− | 2005 07 04 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2005 05 22 | 644 | 0.5− | 0.2− | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2005 06 06 | 691 | 0.3+ | 0.0 | 2005 07 05 | G96 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2005 06 06 | 691 | 0.8− | 0.1− | 2005 07 05 | G96 | 0.2− | 0.7− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 06 06 | 691 | 0.2+ | 0.1− | 2005 07 05 | G96 | 0.5− | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2005 06 10 | 691 | 0.7+ | 0.9+ | 2005 07 05 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2005 06 10 | 691 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2005 06 27 | 691 | 0.4+ | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2005 06 27 | 691 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 | | | | |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1− | | | | |

**2005 KC$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.88456 | | (2000.0) | | | |
| $n$ | 0.37795796 | $\omega$ | 287.11864 | | −0.92400104 | −0.23547588 |
| $a$ | 1.8945543 | $\Omega$ | 240.19666 | | +0.30634637 | −0.92739207 |
| $e$ | 0.0507006 | $i$ | 20.31670 | | −0.22885360 | −0.29068033 |
| $P$ | 2.61 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 691 | 0.1− | 0.1− | 2005 06 02 | 461 | 0.1− | 0.4+ | 2005 06 15 | 691 | 0.1+ | 0.0 |
| 1998 12 11 | 691 | 0.0 | 0.0 | 2005 06 02 | 461 | 0.0 | 0.1− | 2005 06 15 | 691 | 0.2+ | 0.0 |
| 1998 12 11 | 691 | 0.0 | 0.1− | 2005 06 03 | 703 | 0.3− | 1.0− | 2005 06 15 | 691 | 0.0 | 0.2− |
| 2003 10 19 | 699 | 0.1− | 0.5+ | 2005 06 03 | 703 | 1.0− | 0.2− | 2005 07 01 | 691 | 0.0 | 0.1− |
| 2003 10 19 | 699 | 0.1+ | 0.3− | 2005 06 03 | 703 | (1.9− | 0.6−) | 2005 07 01 | 691 | 0.0 | 0.0 |
| 2003 10 19 | 699 | 0.2− | 0.1+ | 2005 06 03 | 703 | 0.6− | 0.3− | 2005 07 01 | 691 | 0.1− | 0.2+ |
| 2003 10 19 | 699 | 0.5+ | 0.1+ | 2005 06 08 | 691 | 0.1+ | 0.0 | 2005 07 03 | 691 | 0.0 | 0.2− |
| 2005 05 27 | 461 | 0.2− | 0.5+ | 2005 06 08 | 691 | 0.3+ | 0.1− | 2005 07 03 | 691 | 0.1+ | 0.1− |
| 2005 05 27 | 461 | 0.2+ | 0.1− | 2005 06 08 | 691 | 0.1− | 0.0 | 2005 07 03 | 691 | 0.1+ | 0.1− |
| 2005 05 28 | 461 | 0.2− | 0.1+ | 2005 06 08 | E12 | 0.0 | 0.1− | 2005 07 28 | 644 | 0.9− | 0.1− |
| 2005 05 28 | 461 | 0.0 | 0.1+ | 2005 06 08 | E12 | 0.4+ | 0.1+ | 2005 07 28 | 644 | 0.4− | 0.1+ |
| 2005 05 28 | 461 | 0.5− | 0.2+ | 2005 06 08 | E12 | 0.5+ | 0.0 | 2005 07 28 | 644 | 0.1+ | 0.3− |
| 2005 05 29 | 461 | 0.3− | 0.0 | 2005 06 08 | E12 | 0.7+ | 0.5+ | 2006 11 18 | 461 | 0.3− | 0.9− |
| 2005 05 29 | 461 | 0.2− | 0.1− | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 11 18 | 461 | 0.7− | 1.0− |
| 2005 05 29 | 461 | 0.4− | 0.0 | 2005 06 10 | 691 | 0.2− | 0.0 | | | | |
| 2005 05 29 | 461 | 0.1− | 0.2− | 2005 06 10 | 691 | 0.3+ | 0.0 | | | | |

**2005 KF$_9$ = 1976 KG$_3$ = 2006 VG$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.91579 | | (2000.0) | | | |
| $n$ | 0.23793743 | $\omega$ | 278.76383 | | +0.88606155 | +0.45580640 |
| $a$ | 2.5792545 | $\Omega$ | 54.16261 | | −0.37372359 | +0.81018650 |
| $e$ | 0.2358273 | $i$ | 5.98098 | | −0.27427287 | +0.36856256 |
| $P$ | 4.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 05 27 | 260 | 1.2+ | 0.1− | 2005 06 04 | 704 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 1976 05 27 | 260 | 0.7+ | 0.3− | 2005 06 04 | 704 | (0.6+ | 1.8−) | 2006 11 21 | 704 | 1.2− | 1.5+ |
| 1976 05 29 | 260 | 2.1− | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 1976 05 29 | 260 | 1.0− | 0.6− | 2006 09 27 | G96 | 0.2− | 0.5+ | 2006 11 22 | 704 | 1.0+ | 0.7− |
| 1976 05 30 | 260 | 0.7+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.9− |
| 1976 05 30 | 260 | 0.4+ | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 1.3+ | 1.4− |
| 2005 05 27 | 599 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.7+ | 2006 11 22 | 704 | 1.5+ | 0.6− |
| 2005 05 27 | 599 | 0.3+ | 0.9+ | 2006 11 15 | 703 | 0.1− | 0.8− | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2005 05 27 | 599 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.6− | 2006 11 23 | 703 | 0.4+ | 0.9− |
| 2005 05 28 | 599 | 0.4+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 0.4+ | 0.0 |
| 2005 05 28 | 599 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.8+ | 1.3− |
| 2005 05 28 | 599 | 0.4+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.7− | 0.1− |
| 2005 05 28 | 599 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2005 05 29 | E12 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.8+ | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2005 05 29 | E12 | 0.0 | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.2− | 0.2+ |
| 2005 05 29 | E12 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.1− | 0.1− | 2006 11 30 | 691 | 0.2− | 0.3+ |
| 2005 05 29 | E12 | 0.8− | 0.9+ | 2006 11 21 | 704 | 0.3+ | 0.7− | 2006 11 30 | 691 | 0.3− | 0.1+ |
| 2005 06 04 | 704 | 0.7− | 0.7− | 2006 11 21 | 704 | 0.3+ | 0.1− | 2006 11 30 | 691 | 0.3− | 0.1+ |

**2005 KS$_9$ = 2006 VN$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 108.07258 | | (2000.0) | | | |
| $n$ | 0.26844938 | $\omega$ | 214.29246 | | +0.15800898 | +0.98220018 |
| $a$ | 2.3799132 | $\Omega$ | 64.98561 | | −0.87898299 | +0.18677483 |
| $e$ | 0.1827084 | $i$ | 6.43526 | | −0.44991340 | −0.01994928 |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 27 | 691 | 0.0 | 0.2− | 2005 05 29 | 428 | 0.4− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 1995 11 27 | 691 | 0.0 | 1.3+ | 2005 06 04 | 704 | 0.5− | 1.1+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 1995 11 27 | 691 | 0.1− | 0.9− | 2005 06 04 | 704 | 0.5− | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2004 01 18 | 691 | 0.1− | 0.0 | 2005 06 04 | 704 | 0.4+ | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2004 01 18 | 691 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.4− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2005 05 22 | 644 | 0.7+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2005 05 22 | 644 | 0.6+ | 0.2+ | 2006 10 19 | 695 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2005 05 22 | 644 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2005 05 28 | 428 | 0.3− | 0.7− | 2006 10 19 | 695 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2005 05 28 | 428 | 0.5+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.8+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2005 05 29 | 428 | 0.5− | 0.0 | 2006 11 11 | 691 | 0.3− | 0.4+ | | | | |

**2005 KW$_9$ = 2006 UJ$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 100.80924 | | (2000.0) | | | |
| $n$ | 0.23511956 | $\omega$ | 354.65631 | | −0.23187579 | +0.94103228 |
| $a$ | 2.5998216 | $\Omega$ | 261.76521 | | −0.88300163 | −0.30987111 |
| $e$ | 0.1561660 | $i$ | 14.41383 | | −0.40809527 | +0.13578715 |
| $P$ | 4.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.0 | 0.2− | 2005 05 18 | E12 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2002 11 14 | 644 | 0.1− | 0.3+ | 2005 05 30 | 428 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2002 11 14 | 644 | 0.2+ | 0.2− | 2005 05 30 | 428 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2005 03 15 | E12 | 0.3− | 0.0 | 2005 05 31 | 428 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2005 03 15 | E12 | 0.1− | 0.3+ | 2005 05 31 | 428 | 0.3+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2005 03 15 | E12 | 0.1+ | 0.4+ | 2005 05 31 | 428 | 0.6+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2005 03 15 | E12 | 0.4− | 0.1+ | 2006 10 19 | 703 | 1.1+ | 0.6+ | 2006 10 27 | 703 | 0.1− | 1.0− |
| 2005 05 18 | E12 | 0.5− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.4+ | 2006 10 27 | 703 | 0.6− | 0.7+ |
| 2005 05 18 | E12 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.6+ | 2006 10 27 | 703 | 0.5− | 0.1+ |
| 2005 05 18 | E12 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.9− | 1.2− | 2006 10 27 | 703 | 0.3− | 0.1− |

**2005 KA$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.01601 | | (2000.0) | | | |
| $n$ | 0.29853497 | $\omega$ | 201.31894 | | −0.80698366 | +0.58984947 |
| $a$ | 2.2172053 | $\Omega$ | 14.93744 | | −0.52411326 | −0.69247244 |
| $e$ | 0.0925109 | $i$ | 6.51350 | | −0.27218132 | −0.41540285 |
| $P$ | 3.30 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 19 | 644 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.2− |
| 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2005 05 19 | 644 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2005 05 30 | 428 | 0.9− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2005 05 30 | 428 | 0.3+ | 0.5− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2005 05 31 | 428 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2005 05 31 | 428 | 0.8− | 1.2+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2005 05 31 | 428 | 0.2+ | 0.6+ | 2006 10 29 | 691 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2005 05 31 | 428 | 0.4+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.5+ | 2006 11 25 | G96 | 0.4+ | 0.2+ |
| 2005 06 07 | 428 | 0.1− | 0.8− | 2006 11 16 | 691 | 0.3− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2005 06 07 | 428 | 0.1+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.2− | 0.2− |

**2005 KU$_{10}$ = 2006 SO$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 142.13999 | | (2000.0) | | | |
| $n$ | 0.30099135 | $\omega$ | 40.63037 | | −0.53971781 | +0.84140080 |
| $a$ | 2.2051258 | $\Omega$ | 196.76288 | | −0.79487946 | −0.52004694 |
| $e$ | 0.1214841 | $i$ | 5.44646 | | −0.27725677 | −0.14695536 |
| $P$ | 3.27 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 31 | 699 | 0.9− | 0.7+ | 2005 06 05 | G92 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 2005 05 31 | 699 | (1.6− | 2.9+) | 2005 06 05 | G92 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 2005 05 31 | 699 | 0.1− | 0.2− | 2005 06 05 | G92 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2005 05 31 | 699 | (1.8− | 0.2+) | 2006 09 26 | G96 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2005 06 01 | 699 | 1.2+ | 0.2− | 2006 09 26 | G96 | 0.8− | 0.2+ | 2006 10 22 | 691 | 0.4+ | 0.3− |
| 2005 06 01 | 699 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2005 06 01 | 699 | 0.8+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.3− |
| 2005 06 01 | 699 | 0.7+ | 0.3− | 2006 09 30 | G96 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2005 06 03 | G92 | 0.7− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2005 06 03 | G92 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2005 06 03 | G92 | (1.8+ | 2.2−) | 2006 09 30 | G96 | 0.4− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 06 04 | G92 | 0.5− | 0.2− | 2006 10 17 | G96 | 0.2+ | 1.5− | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 2005 06 04 | G92 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 2005 06 04 | G92 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.3− | 0.3+ |

**2005 KJ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 87.11244 | | (2000.0) | | | |
| $n$ | 0.29113338 | $\omega$ | 186.77538 | | +0.74447601 | +0.65983040 |
| $a$ | 2.2546271 | $\Omega$ | 131.40916 | | −0.60600501 | +0.73186605 |
| $e$ | 0.1398043 | $i$ | 7.80706 | | −0.28020244 | +0.17028193 |
| $P$ | 3.39 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 608 | 0.5+ | 1.4+ | 2004 01 19 | 691 | 0.3+ | 0.2+ | 2005 06 11 | 691 | 0.1− | 0.0 |
| 2002 08 12 | 608 | 0.3+ | 0.9+ | 2004 01 19 | 691 | 0.4− | 0.6+ | 2005 06 11 | 691 | 0.0 | 0.1+ |
| 2002 08 12 | 608 | 0.4+ | 1.3+ | 2005 05 31 | 947 | 0.5+ | 0.3− | 2005 06 11 | 691 | 0.0 | 0.1+ |
| 2002 08 18 | 644 | 0.1+ | 0.5+ | 2005 05 31 | 947 | 0.2+ | 0.2− | 2005 06 14 | 691 | 0.0 | 0.0 |
| 2002 08 19 | 644 | 0.1− | 0.4+ | 2005 05 31 | 947 | 0.4+ | 0.4− | 2005 06 14 | 691 | 0.1− | 0.3+ |
| 2002 08 19 | 644 | 0.4− | 0.1+ | 2005 06 02 | 947 | 0.8− | 0.6− | 2005 06 14 | 691 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.2+ | 0.3− | 2005 06 02 | 947 | 0.3− | 1.0− | 2005 06 27 | 691 | 0.8+ | 0.4− |
| 2002 08 20 | 644 | 0.1− | 1.1− | 2005 06 02 | 947 | 0.6− | 0.4− | 2005 06 27 | 691 | 0.1− | 0.0 |
| 2002 08 20 | 644 | 0.3+ | 0.9− | 2005 06 07 | 947 | 0.1+ | 0.1− | 2005 06 27 | 691 | 0.1+ | 0.0 |
| 2002 09 16 | 644 | 0.6− | 0.2− | 2005 06 07 | 947 | 0.9+ | 0.6+ | 2005 06 30 | 691 | 0.1− | 0.0 |
| 2002 09 16 | 644 | 0.8− | 0.2− | 2005 06 09 | 621 | 0.3− | 0.7+ | 2005 06 30 | 691 | 0.1− | 0.4+ |
| 2002 09 16 | 644 | 0.7− | 0.2+ | 2005 06 09 | 621 | 0.3− | 0.0 | 2005 06 30 | 691 | 0.1− | 0.2+ |
| 2004 01 19 | 691 | 0.2+ | 0.1+ | 2005 06 09 | 621 | 0.5− | 0.5+ | | | | |

**2005 KR$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.51930 | | (2000.0) | | | |
| $n$ | 0.18045715 | $\omega$ | 32.36292 | | +0.23100532 | +0.93568519 |
| $a$ | 3.1013682 | $\Omega$ | 252.19794 | | −0.94164521 | +0.14603164 |
| $e$ | 0.1643014 | $i$ | 16.26701 | | −0.24482819 | +0.32119774 |
| $P$ | 5.46 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.7+ | 0.1+ | 2005 06 13 | G96 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 1.0− | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.2+ | 2005 08 05 | 644 | 0.5− | 0.0 |
| 2001 11 12 | 704 | 1.0+ | 0.6− | 2005 06 13 | G96 | 0.0 | 0.1+ | 2005 08 05 | 644 | 0.4− | 0.1− |
| 2001 11 12 | 704 | 0.8− | 1.0+ | 2005 06 13 | G96 | 0.2− | 0.2− | 2005 08 05 | 644 | 0.2+ | 0.2+ |
| 2005 05 30 | E12 | 0.2+ | 0.2− | 2005 06 23 | 644 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.0 |
| 2005 05 30 | E12 | 0.1− | 0.6− | 2005 06 23 | 644 | 0.5+ | 0.4+ | 2006 09 17 | 703 | 0.0 | 0.4− |
| 2005 05 30 | E12 | 0.4− | 0.2+ | 2005 06 23 | 644 | 0.1− | 0.4+ | 2006 09 17 | 703 | 1.3+ | 0.0 |
| 2005 05 30 | E12 | 0.4− | 0.3− | 2005 06 28 | G96 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.7− |
| 2005 06 04 | 704 | 0.6+ | 0.0 | 2005 06 28 | G96 | 0.0 | 0.1+ | 2006 09 28 | 703 | (2.6+ | 0.5+) |
| 2005 06 04 | 704 | 0.3+ | 0.7+ | 2005 06 28 | G96 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.3+ |
| 2005 06 04 | 704 | 0.1+ | 0.4+ | 2005 06 28 | G96 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.7− | 0.6+ |
| 2005 06 04 | 704 | 0.3− | 0.4+ | 2005 07 05 | G96 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.4+ | 0.6− |
| 2005 06 04 | 704 | 0.4+ | 0.1− | 2005 07 05 | G96 | 0.3+ | 0.2− | 2006 10 20 | 703 | 0.6− | 0.8− |
| 2005 06 11 | 703 | 1.2+ | 1.2− | 2005 07 05 | G96 | 0.0 | 0.3− | 2006 10 20 | 703 | 0.7+ | 0.4− |
| 2005 06 11 | 703 | 0.3− | 0.3+ | 2005 07 05 | G96 | 0.1+ | 0.3− | 2006 10 20 | 703 | 0.0 | 0.4+ |
| 2005 06 11 | 703 | 1.3− | 0.3− | 2005 07 27 | 644 | 0.2− | 0.2+ | 2006 10 20 | 703 | 0.3− | 1.2+ |
| 2005 06 11 | 703 | 0.4− | 0.3− | 2005 07 27 | 644 | 0.0 | 0.1+ | | | | |

**2005 KW$_{12}$ = 2000 JJ$_{90}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 51.65512 | | (2000.0) | | | |
| $n$ | 0.21410675 | $\omega$ | 132.33185 | | +0.42240510 | +0.90566268 |
| $a$ | 2.7672548 | $\Omega$ | 162.54922 | | −0.86346847 | +0.41438852 |
| $e$ | 0.0716486 | $i$ | 7.03509 | | −0.27567395 | +0.08976224 |
| $P$ | 4.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2005 05 16 | 691 | 0.0 | 0.0 | 2005 06 09 | 691 | 0.0 | 0.0 |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2005 06 01 | 691 | 0.2+ | 0.1− | 2005 06 13 | 691 | 0.1− | 0.1+ |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2005 06 01 | 691 | 0.0 | 0.1+ | 2005 06 13 | 691 | 0.2+ | 0.1− |
| 2000 05 05 | 645 | 0.1+ | 0.1− | 2005 06 01 | 691 | 0.2− | 0.1+ | 2005 06 13 | 691 | 0.0 | 0.0 |
| 2005 05 16 | 691 | 0.1+ | 0.1+ | 2005 06 09 | 691 | 0.2− | 0.1− | | | | |
| 2005 05 16 | 691 | 0.1+ | 0.1+ | 2005 06 09 | 691 | 0.0 | 0.0 | | | | |

**2005 KX$_{12}$ = 1999 FB$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.45954 | | (2000.0) | | | |
| $n$ | 0.18679868 | $\omega$ | 140.44078 | | +0.66401715 | +0.74757688 |
| $a$ | 3.0307738 | $\Omega$ | 171.13288 | | −0.70763216 | +0.63456204 |
| $e$ | 0.2038309 | $i$ | 5.39484 | | −0.24153250 | +0.19611177 |
| $P$ | 5.28 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2005 06 28 | 644 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 1999 03 21 | 645 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.5+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.2+ | 1.0+ |
| 2004 02 17 | 291 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2004 02 17 | 291 | 0.3+ | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2004 02 17 | 291 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.7− | 0.3+ |
| 2004 03 20 | 291 | 0.0 | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.8− | 1.0− |
| 2004 03 20 | 291 | 0.0 | 0.6+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.0 | 0.9− |
| 2004 03 20 | 291 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.1+ | 1.0− | 2006 10 21 | 703 | (1.7− | 0.7−) |
| 2005 05 16 | G96 | 0.4− | 0.0 | 2006 09 14 | 703 | 1.0− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2005 05 16 | G96 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.8+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 05 16 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 05 16 | G96 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2005 06 04 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.2+ |
| 2005 06 04 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.5− | 1.1− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3+ |
| 2005 06 15 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2005 06 15 | 691 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 06 15 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2005 06 28 | 644 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2005 06 28 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.3+ | | | | |

**2005 KY$_{12}$ = 2000 VH$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.07228 | | (2000.0) | | | |
| $n$ | 0.17347308 | $\omega$ | 163.21844 | | +0.97911198 | +0.20330351 |
| $a$ | 3.1840606 | $\Omega$ | 185.05371 | | −0.18991536 | +0.90968632 |
| $e$ | 0.1895986 | $i$ | 1.77193 | | −0.07260779 | +0.36213048 |
| $P$ | 5.68 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 691 | 0.1+ | 0.2− | 2005 05 19 | G96 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 1994 09 12 | 691 | 0.0 | 0.3− | 2005 05 19 | G96 | 0.6− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 1994 09 12 | 691 | 0.2+ | 0.3− | 2005 08 06 | 644 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2000 11 01 | 704 | 0.0 | 0.6+ | 2005 08 06 | 644 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2000 11 01 | 704 | 0.0 | 1.2+ | 2005 08 06 | 644 | 0.5− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2000 11 01 | 704 | 0.5+ | 1.3+ | 2005 08 27 | 699 | 0.7− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2000 11 01 | 704 | 0.4+ | 0.2+ | 2005 08 27 | 699 | (0.6− | 2.4+) | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2000 11 02 | 704 | 0.1− | 0.1+ | 2005 08 27 | 699 | (2.4+ | 0.5+) | 2006 11 21 | 704 | 1.0− | 1.0+ |
| 2000 11 02 | 704 | 0.0 | 0.3+ | 2005 08 27 | 699 | 1.2+ | 0.7+ | 2006 11 21 | 704 | 0.8− | 0.7− |
| 2000 11 02 | 704 | 0.2− | 1.3+ | 2005 09 01 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | (1.8− | 1.1−) |
| 2000 11 02 | 704 | 0.1− | 0.0 | 2005 09 01 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | (1.6− | 0.2−) |
| 2000 11 02 | 704 | 0.6− | 0.8+ | 2005 09 01 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.1− |
| 2002 01 13 | 704 | 0.9− | 0.5− | 2005 10 26 | G96 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 01 13 | 704 | 1.2− | 0.1− | 2005 10 26 | G96 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2002 01 13 | 704 | 0.2− | 1.2+ | 2005 10 26 | G96 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2005 10 26 | G96 | 0.5− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2004 04 25 | 691 | 0.2+ | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2004 05 28 | 691 | 0.5+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2004 05 28 | 691 | 0.2+ | 0.6− | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2004 05 28 | 691 | 0.1− | 0.8+ | 2006 10 19 | G96 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.4+ | 0.3+ |
| 2005 05 19 | G96 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.3+ |
| 2005 05 19 | G96 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.1− | 0.2+ |

**2005 KZ$_{12}$ = 2004 CO$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.72028 | | (2000.0) | | | |
| $n$ | 0.26651282 | $\omega$ | 277.49786 | | +0.18747882 | +0.98222697 |
| $a$ | 2.3914280 | $\Omega$ | 3.34860 | | −0.82904032 | +0.16316684 |
| $e$ | 0.2199157 | $i$ | 8.91117 | | −0.52682429 | +0.09277261 |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 704 | 0.4− | 0.2+ | 2005 05 20 | E12 | 0.9− | 0.2+ | 2005 07 25 | E12 | 0.1− | 0.3− |
| 2001 05 18 | 704 | 0.4− | 0.7− | 2005 05 20 | E12 | 0.1− | 0.3+ | 2005 07 25 | E12 | 0.1− | 0.2+ |
| 2001 05 18 | 704 | 0.6+ | 0.1+ | 2005 05 20 | E12 | 0.4+ | 0.6− | 2005 07 25 | E12 | 0.8+ | 0.9+ |
| 2004 02 11 | 691 | 0.3+ | 0.1− | 2005 05 20 | E12 | 0.5− | 0.4− | 2005 08 06 | E12 | 0.2− | 0.7+ |
| 2004 02 11 | 691 | 0.1+ | 0.1− | 2005 07 05 | E12 | 0.1− | 0.2+ | 2005 08 06 | E12 | 0.6+ | 0.0 |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2005 07 05 | E12 | 0.1− | 0.1+ | 2005 08 06 | E12 | 0.6− | 0.1+ |
| 2004 02 18 | 691 | 0.2− | 0.2+ | 2005 07 05 | E12 | 0.4+ | 0.1− | 2005 08 06 | E12 | 0.4− | 0.2− |
| 2004 02 18 | 691 | 0.0 | 0.2+ | 2005 07 05 | E12 | 0.4+ | 0.3− | | | | |
| 2004 02 18 | 691 | 0.1+ | 0.3+ | 2005 07 25 | E12 | 0.3− | 0.5+ | | | | |

**2005 KA$_{13}$ = 1993 RU$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.18338 | | (2000.0) | | | |
| $n$ | 0.23562659 | $\omega$ | 131.16213 | | +0.70231065 | +0.71173385 |
| $a$ | 2.5960907 | $\Omega$ | 183.54721 | | −0.70181573 | +0.68897512 |
| $e$ | 0.1948483 | $i$ | 13.03325 | | −0.11922430 | +0.13692410 |
| $P$ | 4.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | (2.9+ | 1.3−) | 2005 05 31 | 703 | 0.6− | 0.6+ | 2005 06 30 | 644 | 0.2+ | 0.0 |
| 1993 09 15 | 809 | 0.4+ | 1.5− | 2005 05 31 | 703 | 0.1+ | 0.0 | 2005 06 30 | 644 | 0.2+ | 0.0 |
| 1993 09 15 | 809 | (1.0+ | 3.7−) | 2005 05 31 | 703 | 0.3− | 0.7− | 2005 07 12 | 703 | 0.3+ | 1.4+ |
| 1993 09 22 | 809 | 0.5+ | 1.6+ | 2005 05 31 | 703 | 1.2− | 1.2− | 2005 07 12 | 703 | 0.1+ | 0.2+ |
| 1993 09 22 | 809 | 0.3+ | 1.1+ | 2005 06 09 | 704 | 0.3− | 0.4− | 2005 07 12 | 703 | 0.8+ | 0.0 |
| 1993 09 22 | 809 | 1.4− | 0.2− | 2005 06 09 | 704 | 0.1− | 0.4− | 2005 07 12 | 703 | 0.0 | 0.3+ |
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2005 06 09 | 704 | (2.0+ | 0.1−) | 2006 11 19 | 703 | 0.4+ | 0.7+ |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2005 06 09 | 704 | 1.1+ | 0.6− | 2006 11 19 | 703 | 0.7+ | 0.8+ |
| 2005 05 28 | 599 | 0.1+ | 0.0 | 2005 06 16 | 691 | 0.4− | 0.6+ | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2005 05 28 | 599 | 0.4+ | 0.2− | 2005 06 16 | 691 | 0.1+ | 0.3− | 2006 11 19 | 703 | 1.0− | 0.1− |
| 2005 05 28 | 599 | 0.4+ | 0.1+ | 2005 06 16 | 691 | 0.1+ | 0.4+ | | | | |
| 2005 05 28 | 599 | 0.1+ | 0.4+ | 2005 06 30 | 644 | 0.1− | 0.1− | | | | |

**2005 KC$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 121.88718 | | (2000.0) | | | |
| $n$ | 0.27593976 | $\omega$ | 32.44286 | | −0.16705307 | +0.98267683 |
| $a$ | 2.3366475 | $\Omega$ | 228.07590 | | −0.92604562 | −0.18432029 |
| $e$ | 0.0995492 | $i$ | 6.19162 | | −0.33842693 | +0.01929464 |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.4− | 0.0 | 2005 06 03 | 703 | 0.9− | 0.4− | 2006 10 16 | 691 | 0.2− | 0.2− |
| 1999 11 17 | 691 | 0.1− | 0.0 | 2005 06 03 | 703 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− |
| 1999 11 17 | 691 | 0.2− | 0.2− | 2005 06 03 | 703 | 1.0− | 0.6− | 2006 10 16 | 691 | 0.0 | 0.0 |
| 1999 11 29 | 691 | 0.3+ | 0.1− | 2005 06 05 | 704 | 0.4+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 1999 11 29 | 691 | 0.3+ | 0.1− | 2005 06 05 | 704 | 0.1− | 1.0+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 1999 11 29 | 691 | 0.1+ | 0.1− | 2005 06 05 | 704 | 0.5+ | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2002 08 28 | 644 | 0.3+ | 0.5+ | 2005 06 27 | 691 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.1+ |
| 2002 08 28 | 644 | 0.0 | 0.5+ | 2005 06 27 | 691 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.4− | 0.3− |
| 2002 08 28 | 644 | 0.1− | 0.4+ | 2005 06 27 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.5− |
| 2002 09 13 | 644 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.5− |
| 2002 09 13 | 644 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2005 05 22 | 644 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2005 05 22 | 644 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 05 22 | 644 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | |
| 2005 06 03 | 703 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.2− | |

**2005 KD$_{13}$ = 2006 SC$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.33918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24193142 | $\omega$ | 42.20989 | | −0.79328391 | +0.60879561 | |
| $a$ | 2.5507890 | $\Omega$ | 175.27029 | | −0.58200424 | −0.75424024 | |
| $e$ | 0.0287192 | $i$ | 5.76245 | | −0.17880632 | −0.24594627 | |
| $P$ | 4.07 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.5+ | 0.4− | 2005 05 16 | G96 | 0.3− | 0.2− | 2006 09 16 | 691 | 0.3− | 0.7+ |
| 1994 10 09 | 691 | 0.7− | 0.0 | 2005 05 16 | G96 | 0.2− | 0.2− | 2006 09 16 | 691 | 0.3− | 0.8+ |
| 1994 10 09 | 691 | 0.0 | 0.1+ | 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 691 | 0.2− | 0.3+ |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 06 04 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.6− | 0.3− |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 06 04 | 691 | (0.1+ | 1.7+) | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2004 01 18 | 644 | 0.0 | 0.7+ | 2005 06 09 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2004 01 18 | 644 | 0.3+ | 0.5+ | 2005 06 09 | 691 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2004 01 18 | 644 | 0.2+ | 0.5+ | 2005 06 09 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.7+ |
| 2004 04 13 | 645 | 0.1− | 0.2+ | 2005 06 14 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2004 04 13 | 645 | 0.0 | 0.2+ | 2005 06 14 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2004 04 15 | 645 | 0.1+ | 0.1+ | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2+ |
| 2004 04 15 | 645 | 0.0 | 0.2+ | 2005 06 28 | 644 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2005 05 16 | G96 | 0.1− | 0.3− | 2005 06 28 | 644 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.5− |
| 2005 05 16 | G96 | 0.4− | 0.1− | 2005 06 28 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1− |

**2005 KG$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.27213 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30214978 | $\omega$ | 80.69995 | | −0.64660267 | +0.76243456 | |
| $a$ | 2.1994860 | $\Omega$ | 148.97104 | | −0.71719045 | −0.59668007 | |
| $e$ | 0.1015166 | $i$ | 2.72036 | | −0.25989006 | −0.25033265 | |
| $P$ | 3.26 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 691 | 0.4+ | 0.2+ | 2005 05 20 | G96 | 0.3+ | 0.3+ | 2005 06 06 | 691 | 0.4+ | 0.2− |
| 1999 08 12 | 691 | 0.2− | 0.0 | 2005 05 20 | G96 | 0.3+ | 0.2− | 2005 06 16 | 691 | 0.2+ | 0.0 |
| 1999 08 12 | 691 | 0.1− | 0.3− | 2005 06 03 | 703 | 0.7− | 0.6− | 2005 06 16 | 691 | 0.3+ | 0.2+ |
| 2003 11 29 | 691 | 0.0 | 0.1+ | 2005 06 03 | 703 | 0.6+ | 0.4− | 2005 06 16 | 691 | 0.2+ | 0.0 |
| 2003 11 29 | 691 | 0.2+ | 0.2+ | 2005 06 03 | 703 | 1.2− | 0.1+ | 2005 07 04 | 691 | 0.0 | 0.3+ |
| 2003 11 29 | 691 | 0.2− | 0.2+ | 2005 06 03 | 703 | 0.5− | 1.6+ | 2005 07 04 | 691 | 0.1− | 0.2+ |
| 2005 05 20 | G96 | 0.3− | 0.8− | 2005 06 06 | 691 | 0.3+ | 0.2− | 2005 07 04 | 691 | 0.3− | 0.2+ |
| 2005 05 20 | G96 | 0.8− | 0.2+ | 2005 06 06 | 691 | 0.4− | 0.0 | | | | |

**2005 KJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.83094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25754428 | $\omega$ | 123.47746 | | −0.21668632 | +0.97534810 | |
| $a$ | 2.4466290 | $\Omega$ | 133.94874 | | −0.91382416 | −0.18760003 | |
| $e$ | 0.1512560 | $i$ | 3.32446 | | −0.34347116 | −0.11619943 | |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 01 | 621 | 0.2+ | 1.2+ | 2005 05 22 | 644 | 0.4− | 0.4+ | 2005 07 05 | 644 | 0.1− | 0.2+ |
| 1997 05 02 | 621 | 0.4− | 1.0+ | 2005 05 22 | 644 | 0.7− | 0.4+ | 2005 07 05 | 644 | 0.2− | 0.2+ |
| 1997 05 02 | 621 | 0.2− | 0.7+ | 2005 06 05 | 704 | 0.9+ | 0.6+ | 2005 07 05 | 644 | 0.5− | 0.0 |
| 1997 05 02 | 621 | 1.0− | 0.4+ | 2005 06 05 | 704 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2001 04 24 | 608 | (2.2+ | 0.3+) | 2005 06 05 | 704 | 0.2− | 0.9+ | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2001 04 24 | 608 | 1.3+ | 0.5− | 2005 06 05 | 704 | 0.7+ | 0.2− | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2001 04 24 | 608 | 1.2+ | 0.0 | 2005 06 11 | 703 | (1.5− | 0.0 ) | 2006 10 03 | G96 | 0.2+ | 0.4− |
| 2001 05 15 | 699 | 0.2− | 0.1+ | 2005 06 11 | 703 | 0.1− | 0.7+ | 2006 10 18 | 691 | 0.3+ | 0.8+ |
| 2001 05 15 | 699 | 0.6+ | 0.6+ | 2005 06 11 | 703 | 0.7− | 0.0 | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 2001 05 15 | 699 | 0.1+ | 0.2− | 2005 06 11 | 703 | (0.0 | 1.6+) | 2006 10 18 | 691 | 0.3+ | 0.2+ |
| 2001 05 15 | 699 | 0.9+ | 0.2− | 2005 06 24 | 644 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2005 06 24 | 644 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2005 06 24 | 644 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2003 12 19 | 691 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.2+ |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.6− | 1.0− | 2006 11 22 | G96 | 0.5+ | 0.1+ |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.4+ | 0.7− | 2006 11 22 | G96 | 0.7+ | 0.3− |
| 2005 05 22 | 644 | 0.6− | 0.3+ | 2005 07 05 | G96 | 1.1+ | 0.7− | 2006 11 22 | G96 | 0.2+ | 0.0 |

**2005 LV$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.96153 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24286740 | $\omega$ | 208.50351 | | +0.62274714 | +0.75411212 | |
| $a$ | 2.5442312 | $\Omega$ | 100.80056 | | −0.67150870 | +0.65194332 | |
| $e$ | 0.2307228 | $i$ | 12.25893 | | −0.40157448 | +0.07927685 | |
| $P$ | 4.06 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 01 | G96 | 0.7− | 0.3− | 2005 06 15 | 691 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.1− | 0.3+ |
| 2005 06 01 | G96 | 0.3− | 0.5− | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2005 06 01 | G96 | 0.5− | 0.5− | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.5+ |
| 2005 06 01 | G96 | 0.5− | 0.5− | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2005 06 03 | 691 | 0.4+ | 0.2+ | 2005 07 11 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2005 06 03 | 691 | 0.1+ | 0.4+ | 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2005 06 03 | 691 | 0.0 | 0.0 | 2005 07 11 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2005 06 11 | 691 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.3− | 2006 11 22 | 291 | 0.5− | 0.0 |
| 2005 06 11 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.3− | 2006 11 22 | 291 | 0.2+ | 0.3+ |
| 2005 06 11 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.3− | 0.2− | 2006 11 22 | 291 | 0.2− | 0.2− |
| 2005 06 15 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− | | | | |
| 2005 06 15 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.3+ | | | | |

**2005 LA$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.51545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19096869 | $\omega$ | 220.91941 | | +0.81496402 | +0.55117635 | |
| $a$ | 2.9864914 | $\Omega$ | 104.76136 | | −0.47169836 | +0.81034091 | |
| $e$ | 0.2250426 | $i$ | 10.66706 | | −0.33665159 | +0.19887746 | |
| $P$ | 5.16 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 699 | (3.1− | 1.7+) | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.4− |
| 2001 12 09 | 699 | 0.1− | 0.1+ | 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 703 | (0.1− | 2.1−) |
| 2001 12 09 | 699 | 0.2− | 0.2+ | 2005 06 29 | 691 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.6− | 0.3+ |
| 2001 12 09 | 699 | 0.0 | 0.7+ | 2005 06 29 | 691 | 0.2− | 0.0 | 2006 09 26 | 703 | 1.0+ | 1.0− |
| 2005 06 01 | 691 | 0.4+ | 0.3− | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 09 29 | 699 | 1.1+ | 1.4− |
| 2005 06 01 | 691 | 0.1+ | 0.1+ | 2005 07 03 | 691 | 0.0 | 0.3+ | 2006 09 29 | 699 | 1.5− | 1.1− |
| 2005 06 01 | 691 | 0.0 | 0.3+ | 2005 07 03 | 691 | 0.2− | 0.0 | 2006 09 29 | 699 | 1.1+ | 0.7+ |
| 2005 06 03 | E12 | 0.3+ | 0.9− | 2005 07 03 | 691 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.4+ | 1.3+ |
| 2005 06 03 | E12 | 0.4− | 0.1− | 2005 07 11 | G96 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.8− | 0.6+ |
| 2005 06 03 | E12 | 0.4− | 0.0 | 2005 07 11 | G96 | 0.5− | 0.3+ | 2006 10 28 | 703 | 0.3+ | 0.1+ |
| 2005 06 03 | E12 | 0.6− | 0.3− | 2005 07 11 | G96 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.1− | 0.7+ |
| 2005 06 10 | 691 | 0.3+ | 0.0 | 2005 07 11 | G96 | 0.1− | 0.4− | 2006 10 28 | 703 | 1.3− | 0.1+ |

**2005 LF$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.69726 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27611390 | $\omega$ | 74.04572 | | −0.54776075 | +0.83648490 | |
| $a$ | 2.3356649 | $\Omega$ | 162.71291 | | −0.78655233 | −0.50842243 | |
| $e$ | 0.0860015 | $i$ | 3.05727 | | −0.28512031 | −0.20444962 | |
| $P$ | 3.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 21 | 691 | 0.1+ | 0.2+ | 2005 06 02 | 703 | 0.5− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 1992 11 21 | 691 | 0.0 | 0.5− | 2005 06 03 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2− |
| 1992 11 21 | 691 | 0.2+ | 0.8− | 2005 06 03 | 691 | 0.6− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 02 01 | 691 | 0.0 | 0.2+ | 2005 06 03 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 02 01 | 691 | 0.1+ | 0.3+ | 2005 06 08 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 691 | 0.0 | 0.8+ | 2005 06 08 | 691 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2001 02 22 | 691 | 0.2+ | 0.5+ | 2005 06 08 | 691 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2001 02 22 | 691 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.6− | 0.1+ |
| 2001 02 22 | 691 | 0.2− | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 03 21 | 691 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.7− | 0.3− |
| 2001 03 21 | 691 | 0.3+ | 0.6− | 2006 09 23 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 03 21 | 691 | 0.1+ | 0.5− | 2006 09 23 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 05 15 | G96 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.7+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2005 05 15 | G96 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2005 05 15 | G96 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.7+ | 0.5+ |
| 2005 05 15 | G96 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.4− | 0.2+ |
| 2005 06 02 | 703 | 0.4+ | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.6− | 0.1+ |
| 2005 06 02 | 703 | 1.3+ | 0.7− | 2006 10 01 | 691 | 0.1+ | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2005 06 02 | 703 | 0.9− | 1.3+ | 2006 10 01 | 691 | 0.2− | 0.5+ | | | | |

**2005 LD$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.58522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17742356 | $\omega$ | 79.14334 | | +0.29525760 | | +0.92818591 |
| $a$ | 3.1366196 | $\Omega$ | 211.13402 | | −0.95381268 | | +0.30009466 |
| $e$ | 0.1748208 | $i$ | 25.97847 | | +0.05535624 | | +0.22003209 |
| $P$ | 5.56 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.0 | 0.4− | 2005 06 05 | 704 | 0.1− | 0.2+ | 2005 06 29 | 703 | 0.9− | 0.6− |
| 1995 11 14 | 691 | 0.3− | 0.3− | 2005 06 05 | 704 | 0.3− | 0.3+ | 2005 07 03 | 703 | 0.7+ | 0.1− |
| 1995 11 14 | 691 | 0.2+ | 0.3− | 2005 06 23 | 644 | 0.0 | 0.3− | 2005 07 03 | 703 | 0.8+ | 0.6+ |
| 2005 06 01 | 704 | 1.1+ | 0.1+ | 2005 06 23 | 644 | 0.0 | 0.4− | 2005 07 03 | 703 | 0.6+ | 0.3− |
| 2005 06 01 | 704 | 0.1− | 0.5+ | 2005 06 23 | 644 | 0.2− | 0.2− | 2005 07 03 | 703 | 0.1+ | 0.6+ |
| 2005 06 01 | 704 | 0.1− | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.2− | 2005 08 25 | 644 | 0.3+ | 0.3− |
| 2005 06 04 | 704 | 0.2− | 0.8+ | 2005 06 23 | 644 | 0.2− | 0.3− | 2005 08 25 | 644 | 0.2+ | 0.1− |
| 2005 06 04 | 704 | 0.4− | 0.2+ | 2005 06 23 | 644 | 0.2− | 0.2− | 2005 08 25 | 644 | 0.0 | 0.4− |
| 2005 06 04 | 704 | 0.3+ | 0.6− | 2005 06 29 | 703 | 0.6− | 0.4+ | 2006 11 18 | 291 | 0.2− | 0.2+ |
| 2005 06 04 | 704 | 0.1+ | 0.5+ | 2005 06 29 | 703 | 0.7− | 0.8− | 2006 11 18 | 291 | 0.3+ | 0.7+ |
| 2005 06 05 | 704 | 0.3+ | 0.3− | 2005 06 29 | 703 | 0.2− | 0.2+ | 2006 11 18 | 291 | 0.0 | 0.2+ |

**2005 LR$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.18912 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.46337422 | $\omega$ | 26.20244 | | −0.13524588 | | −0.90373988 |
| $a$ | 1.6539212 | $\Omega$ | 73.87743 | | +0.81851556 | | −0.33290633 |
| $e$ | 0.3350113 | $i$ | 25.01050 | | +0.55833756 | | +0.26912379 |
| $P$ | 2.13 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 704 | 1.3− | 0.0 | 2005 06 05 | 474 | 0.2+ | 0.2+ | 2005 06 21 | 474 | 0.5+ | 0.4+ |
| 2005 06 04 | 704 | 0.7+ | 0.5− | 2005 06 06 | 649 | 0.2+ | 0.7− | 2005 06 30 | 474 | 0.2+ | 0.2− |
| 2005 06 04 | 704 | 0.4+ | 0.8− | 2005 06 06 | 649 | 0.3+ | 0.3+ | 2005 06 30 | 474 | 0.5+ | 0.3− |
| 2005 06 05 | 704 | 0.1+ | 0.5− | 2005 06 06 | 649 | 0.5− | 0.6+ | 2005 06 30 | 474 | 0.1+ | 0.1− |
| 2005 06 05 | 704 | 1.0− | 0.9+ | 2005 06 06 | 649 | 0.4− | 0.2− | 2006 09 25 | 703 | 0.1+ | 0.7+ |
| 2005 06 05 | 704 | 0.3− | 0.3− | 2005 06 06 | 734 | 0.7+ | 0.6− | 2006 09 25 | 703 | 0.4+ | 0.8− |
| 2005 06 05 | 704 | 0.1+ | 0.0 | 2005 06 06 | 734 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.5− | 0.4− |
| 2005 06 05 | 704 | 0.8− | 0.0 | 2005 06 06 | 734 | 0.2+ | 0.6+ | 2006 09 25 | 703 | 0.0 | 0.4+ |
| 2005 06 05 | 704 | 0.6+ | 0.3+ | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 10 29 | 448 | 0.3− | 0.0 |
| 2005 06 05 | 704 | 0.1+ | 0.9+ | 2005 06 13 | G96 | 0.0 | 0.5− | 2006 10 29 | 448 | 0.7+ | 0.0 |
| 2005 06 05 | 704 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.2− | 0.0 | 2006 10 29 | 448 | 0.4− | 0.1+ |
| 2005 06 05 | 474 | 0.2− | 0.0 | 2005 06 21 | 474 | 0.2+ | 0.1− | | | | |
| 2005 06 05 | 474 | 0.2+ | 0.2+ | 2005 06 21 | 474 | 0.5− | 0.1+ | | | | |

**2005 LX$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.35106 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22651609 | $\omega$ | 142.41758 | | +0.76861708 | | +0.63970755 |
| $a$ | 2.6652422 | $\Omega$ | 177.81084 | | −0.59558290 | | +0.71640844 |
| $e$ | 0.1701234 | $i$ | 2.13333 | | −0.23347116 | | +0.27844781 |
| $P$ | 4.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2005 05 19 | G96 | 0.4+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2000 04 07 | 691 | 0.0 | 0.5− | 2005 05 19 | G96 | (1.7− | 2.1−) | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 2000 04 07 | 691 | 0.0 | 0.1− | 2005 06 03 | 428 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2000 04 07 | 691 | 0.1− | 0.6+ | 2005 06 03 | 428 | 0.3− | 0.2− | 2006 09 30 | 703 | (2.5− | 1.4+) |
| 2000 04 25 | 691 | 0.1− | 0.2− | 2005 06 05 | 428 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.7+ | 0.0 |
| 2000 04 25 | 691 | 0.1+ | 0.1+ | 2005 06 05 | 428 | 1.0− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.1+ |
| 2000 04 25 | 691 | 0.3− | 0.2− | 2005 06 06 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2001 07 21 | 608 | 0.3− | 0.4− | 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 07 21 | 608 | 0.7− | 0.0 | 2005 06 06 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.4+ |
| 2001 07 21 | 608 | 0.2− | 0.5− | 2006 07 21 | G96 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.6+ |
| 2001 08 19 | 704 | 1.2+ | 0.0 | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2001 08 19 | 704 | 0.4− | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2001 08 19 | 704 | 0.3+ | 0.8+ | 2006 07 21 | G96 | 0.5− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2001 08 19 | 704 | 0.1− | 1.3+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | (2.1+ | 0.2+) |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.8+ |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 1.4− | 0.6+ |
| 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.6− | 0.5− | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2005 05 19 | G96 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.0 | | | | |

**2005 LC$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.09910 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22958734 | $\omega$ | 248.28564 | | +0.87299408 | | +0.42474405 |
| $a$ | 2.6414197 | $\Omega$ | 85.89330 | | −0.30900787 | | +0.86196487 |
| $e$ | 0.2892105 | $i$ | 13.90744 | | −0.37735324 | | +0.27678341 |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 691 | 0.3+ | 0.1− | 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.7− |
| 2005 04 30 | 691 | 0.5+ | 0.3− | 2005 06 01 | 691 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.4+ |
| 2005 04 30 | 691 | 0.1− | 0.1− | 2005 06 05 | 691 | 0.5− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2005 05 11 | 850 | (0.2− | 1.8−) | 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2005 05 11 | 850 | 0.2+ | 0.8+ | 2005 06 05 | 691 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2005 05 11 | 850 | (0.7+ | 3.4+) | 2005 06 09 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2005 05 14 | 644 | 0.1− | 0.3+ | 2005 06 09 | 691 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2005 05 14 | 644 | 0.3− | 0.1+ | 2005 06 09 | 691 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.8+ |
| 2005 05 14 | 644 | 0.2+ | 0.2− | 2005 06 28 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.5− | 0.2− |
| 2005 05 18 | 850 | 1.5− | 0.8− | 2005 06 28 | 644 | 0.5+ | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.2+ |
| 2005 05 18 | 850 | (2.4− | 0.9−) | 2005 06 28 | 644 | 0.4+ | 0.3+ | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2005 05 18 | 850 | (2.1− | 1.2−) | 2006 11 20 | 704 | 0.9− | 0.5− | | | | |
| 2005 06 01 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2− | 1.0+ | | | | |

**2005 LS$_4$ = 2002 XS$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.30704 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22604815 | $\omega$ | 142.43342 | | +0.98430311 | | +0.12670037 |
| $a$ | 2.6689191 | $\Omega$ | 210.96850 | | −0.14945454 | | +0.96865124 |
| $e$ | 0.1966937 | $i$ | 13.81352 | | +0.09386550 | | +0.21368619 |
| $P$ | 4.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.6+ | 0.0 | 2006 10 19 | 704 | 0.2− | 0.2− |
| 2001 06 21 | 704 | 0.7− | 0.8+ | 2006 09 20 | 699 | 0.7+ | 0.1− | 2006 10 19 | 704 | 0.1− | 1.3+ |
| 2001 06 21 | 704 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 12 12 | 644 | 0.1− | 0.9+ | 2006 09 25 | 704 | 0.5− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.1− | 1.0+ | 2006 09 25 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2002 12 12 | 644 | 0.3− | 0.8+ | 2006 09 25 | 704 | 0.7− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2002 12 14 | 704 | 0.1− | 1.2+ | 2006 09 25 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.2+ | | |
| 2002 12 14 | 704 | 1.2+ | 0.2− | 2006 09 25 | 704 | 0.8+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.6− | | |
| 2002 12 14 | 704 | (0.4− | 1.6+) | 2006 09 29 | 704 | 0.3+ | 0.8− | 2006 10 21 | 703 | 0.4− | 0.5+ | | |
| 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.2− | | |
| 2005 05 03 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.7− | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.5− | | |
| 2005 05 03 | 691 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2+ | | |
| 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | (1.0− | 2.0−) | 2006 10 27 | 691 | 0.2− | 0.2+ | | |
| 2005 05 14 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1+ | | |
| 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.1− | 2006 10 29 | 704 | 0.7− | 0.4+ | | |
| 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.9− | 2006 10 29 | 704 | 0.1+ | 0.4+ | | |
| 2005 05 14 | 644 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.4+ | 0.7+ | 2006 10 29 | 704 | 0.0 | 0.3+ | | |
| 2005 05 14 | 644 | 0.3− | 0.1+ | 2006 10 03 | 704 | 1.1+ | 0.3+ | 2006 10 29 | 704 | 0.4+ | 0.2+ | | |
| 2005 05 14 | 644 | 0.3+ | 0.3− | 2006 10 03 | 704 | 0.2+ | 0.4+ | 2006 10 29 | 704 | 0.3− | 0.5+ | | |
| 2005 05 14 | 644 | 0.4− | 0.2− | 2006 10 03 | 704 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.3− | | |
| 2005 05 14 | 644 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.5− | | |
| 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.3− | 0.2− | | |
| 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.7+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.4− | | |
| 2005 06 01 | 691 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.4− | 0.2+ | | |
| 2005 06 05 | 691 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.0 | | |
| 2005 06 05 | 691 | 0.1+ | 0.0 | 2006 10 16 | 683 | 0.7− | 0.8− | 2006 11 13 | 691 | 0.0 | 0.1+ | | |
| 2005 06 05 | 691 | 0.1+ | 0.0 | 2006 10 16 | 683 | 0.9− | 0.5+ | 2006 11 17 | 703 | 0.3− | 0.3− | | |
| 2005 06 09 | 691 | 0.2− | 0.1− | 2006 10 16 | 683 | (1.7− | 0.6+) | 2006 11 17 | 703 | 0.4− | 0.1− | | |
| 2005 06 09 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.4− | 2006 11 17 | 703 | 0.3− | 0.2− | | |
| 2005 06 09 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.7− | | |
| 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.5+ | | |
| 2006 09 16 | 703 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.8− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.6+ | | |
| 2006 09 16 | 703 | 0.4+ | 0.5− | 2006 10 19 | 704 | 0.9+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.2+ | | |
| 2006 09 16 | 703 | 0.4+ | 0.3− | 2006 10 19 | 704 | 0.8+ | 0.9+ | 2006 11 18 | 704 | 0.8+ | 0.4+ | | |
| 2006 09 20 | 699 | 0.5+ | 0.2+ | 2006 10 19 | 704 | 0.7+ | 0.4+ | 2006 11 18 | 704 | 0.9+ | 1.2+ | | |

**2005 LQ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.66664 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23015376 | $\omega$ | 87.44646 | | +0.66173411 | | +0.73591569 |
| $a$ | 2.6370842 | $\Omega$ | 225.11365 | | −0.74279432 | | +0.61756298 |
| $e$ | 0.1159869 | $i$ | 11.66926 | | −0.10180650 | | +0.27756813 |
| $P$ | 4.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 02 | E12 | 0.5+ | 0.4+ | 2005 07 27 | 644 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.0 | | |
| 2005 06 02 | E12 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.1− | | |
| 2005 06 02 | E12 | 0.6− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1− | | |
| 2005 06 02 | E12 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2005 06 05 | 704 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2− | | |
| 2005 06 05 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2005 06 05 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.1− | | |
| 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.0 | | |
| 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.0 | | |
| 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.6− | | |
| 2005 06 11 | 703 | 0.6− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | (0.4+ | 1.7−) | | |
| 2005 06 11 | 703 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 21 | 704 | 1.0− | 0.8+ | | |
| 2005 06 11 | 703 | 1.3− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.9− | 0.2+ | | |
| 2005 06 11 | 703 | 0.5− | 1.0− | 2006 10 21 | 691 | 0.8− | 0.5+ | 2006 11 21 | 704 | (0.3− | 2.0+) | | |
| 2005 06 14 | 691 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2005 06 14 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2005 06 14 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.3+ | | |
| 2005 06 27 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.2− | | |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2− | | |
| 2005 07 27 | 644 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.3− | | | | | | |
| 2005 07 27 | 644 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.4+ | 0.3− | | | | | | |

**2005 LZ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.26652 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23680854 | $\omega$ | 244.22403 | | +0.90812913 | | +0.32068689 |
| $a$ | 2.5874451 | $\Omega$ | 96.09194 | | −0.21534219 | | +0.90911440 |
| $e$ | 0.1343653 | $i$ | 15.70684 | | −0.35906715 | | +0.26584004 |
| $P$ | 4.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 03 | 703 | 0.7+ | 1.4− | 2005 06 11 | 703 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | |
| 2005 06 03 | 703 | 0.0 | 1.0− | 2005 06 27 | 644 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.1− | 1.0+ | | |
| 2005 06 03 | 703 | 0.3− | 0.6+ | 2005 06 27 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.3− | | |
| 2005 06 03 | 703 | 0.0 | 0.4− | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.1+ | 1.3− | | |
| 2005 06 05 | 704 | 0.4− | 0.2− | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 10 17 | 703 | (2.4− | 0.1+) | | |
| 2005 06 05 | 704 | 0.0 | 0.8+ | 2005 07 05 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.2− | 0.7− | | |
| 2005 06 05 | 704 | 0.1+ | 0.1+ | 2005 07 05 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.5− | 0.3− | | |
| 2005 06 10 | 691 | 0.1+ | 0.2+ | 2005 07 11 | G96 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.3+ | | |
| 2005 06 10 | 691 | 0.2+ | 0.2+ | 2005 07 11 | G96 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.2+ | 0.2+ | | |
| 2005 06 10 | 691 | 0.1+ | 0.2+ | 2005 07 11 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 1.1− | 0.3+ | | |
| 2005 06 11 | 703 | 1.0− | 0.6+ | 2005 07 11 | G96 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.9+ | 0.5+ | | |
| 2005 06 11 | 703 | 0.7− | 0.9− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.3+ | 0.5+ | | |
| 2005 06 11 | 703 | 0.8− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.4− | 0.8− | | |

**2005 LV$_6$ = 2006 WM$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.38776 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26953082 | $\omega$ | 217.17238 | | +0.38878419 | | +0.92050140 |
| $a$ | 2.3735430 | $\Omega$ | 75.73605 | | −0.83532652 | | +0.37005203 |
| $e$ | 0.1760691 | $i$ | 2.30854 | | −0.38868557 | | +0.12545389 |
| $P$ | 3.66 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | G96 | 0.0 | 0.2+ | 2005 06 06 | 691 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2005 05 07 | G96 | 0.1− | 0.0 | 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.1+ | | |
| 2005 05 07 | G96 | 0.1+ | 0.1+ | 2005 06 06 | 691 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2005 05 07 | G96 | 0.2− | 0.1− | 2005 06 10 | 691 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.6− | 0.1+ | | |
| 2005 06 01 | 691 | 0.2+ | 0.3+ | 2005 06 10 | 691 | 0.5− | 0.2+ | 2006 11 24 | G96 | 0.4+ | 0.1− | | |
| 2005 06 01 | 691 | 0.1+ | 0.2+ | 2005 06 10 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.3− | 0.2+ | | |
| 2005 06 01 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.3+ | | | | | | |

**2005 LC$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.80034 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29610255 | $\omega$ | 264.16592 | | −0.01441116 | | −0.99985181 |
| $a$ | 2.2293313 | $\Omega$ | 186.68157 | | +0.94643559 | | −0.01060174 |
| $e$ | 0.0691642 | $i$ | 4.64241 | | +0.32257091 | | −0.01356341 |
| $P$ | 3.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 14 | 699 | 0.0 | 1.1− | 2006 10 17 | H06 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1− | | |
| 2001 03 14 | 699 | 1.0+ | 0.8+ | 2006 10 17 | H06 | 0.9+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2001 03 14 | 699 | 0.0 | 1.1+ | 2006 10 17 | H06 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.4− | | |
| 2001 03 14 | 699 | 0.6− | 0.5+ | 2006 10 19 | 644 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2005 05 22 | 644 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2005 05 22 | 644 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.2+ | 0.8+ | | |
| 2005 05 22 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 1.1+ | 2006 11 13 | 703 | 0.5+ | 0.8+ | | |
| 2005 06 01 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.5− | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.0 | | |
| 2005 06 01 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.7+ | 2006 11 13 | 703 | 0.1− | 0.9− | | |
| 2005 06 01 | 691 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.5− | 0.5− | 2006 11 14 | 704 | 0.1− | 1.3+ | | |
| 2005 06 06 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.6+ | 0.1− | | |
| 2005 06 06 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.6− | 2006 11 14 | 704 | (0.9+ | 1.7+) | | |
| 2005 06 06 | 691 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 14 | 704 | (1.8+ | 0.3−) | | |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.7+ | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.5− | 0.7− | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 13 | D35 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.5− | 0.7− | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2006 10 13 | D35 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2006 10 13 | D35 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.9− |
| 2006 10 15 | 703 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2006 10 15 | 703 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2006 10 15 | 703 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 1.2− | 0.3+ |
| 2006 10 15 | 703 | 0.7− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.2− | | | | |

**2005 LL$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.44853 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18680264 | $\omega$ | 164.32385 | | +0.11541841 | | +0.98879734 |
| $a$ | 3.0307309 | $\Omega$ | 112.22831 | | −0.92198742 | | +0.14209912 |
| $e$ | 0.1808410 | $i$ | 5.86861 | | −0.36961843 | | −0.04569087 |
| $P$ | 5.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 910 | 0.5− | 0.8− | 2005 06 10 | 691 | 0.0 | 0.1− | 2005 07 12 | G96 | 0.8− | 0.3− |
| 1999 03 21 | 910 | 0.3− | 0.7− | 2005 06 10 | 691 | 0.2+ | 0.1+ | 2005 07 12 | G96 | 0.3+ | 0.7− |
| 1999 03 21 | 910 | 0.3− | 1.4− | 2005 06 10 | 691 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.3− | 0.3− |
| 2004 02 16 | 691 | 0.1− | 0.3+ | 2005 06 16 | 691 | 0.1+ | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.0 |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2005 06 16 | 691 | 0.2+ | 0.2+ | 2005 07 12 | G96 | 0.7− | 0.5− |
| 2004 02 16 | 691 | 0.2+ | 0.3+ | 2005 06 16 | 691 | 0.2+ | 0.1− | 2005 07 12 | G96 | 0.2− | 0.3− |
| 2005 05 12 | 704 | 0.8− | 1.0+ | 2005 06 27 | 691 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.8− | 0.4− |
| 2005 05 12 | 704 | 0.2− | 0.8+ | 2005 06 27 | 691 | 0.4+ | 0.0 | 2005 07 12 | G96 | 0.1− | 0.3− |
| 2005 05 12 | 704 | (0.1+ | 1.5+) | 2005 06 27 | 691 | 0.3+ | 0.0 | 2006 09 18 | 703 | (1.3+ | 1.6+) |
| 2005 05 12 | 704 | 0.1− | 0.6+ | 2005 06 30 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | (2.8+ | 0.6+) |
| 2005 06 02 | E12 | 0.4− | 0.6− | 2005 06 30 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 703 | (2.4+ | 0.0 ) |
| 2005 06 02 | E12 | 0.0 | 0.4− | 2005 06 30 | 691 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.5+ | 0.2+ |
| 2005 06 02 | E12 | 0.1+ | 0.6+ | 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.4− | 1.1+ |
| 2005 06 02 | E12 | 0.1− | 0.4− | 2005 07 04 | 691 | 0.4− | 0.3− | 2006 09 26 | 703 | 0.5− | 0.1− |
| 2005 06 03 | 703 | 0.5− | 0.3− | 2005 07 04 | 691 | 0.5+ | 0.4+ | 2006 09 26 | 703 | 0.5+ | 0.4− |
| 2005 06 03 | 703 | 0.5− | 0.3− | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 09 26 | 703 | 1.0+ | 0.1− |
| 2005 06 03 | 703 | 0.5− | 0.2− | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 10 28 | 703 | (2.2− | 5.3−) |
| 2005 06 03 | 703 | 0.4− | 0.5− | 2005 07 05 | 644 | 0.3+ | 0.5− | 2006 10 28 | 703 | 0.0 | 1.2− |
| 2005 06 06 | 691 | 0.8− | 0.9− | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.7− | 0.2− |
| 2005 06 06 | 691 | 0.0 | 0.2+ | 2005 07 11 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 703 | 0.6− | 0.7+ |
| 2005 06 06 | 691 | 0.1+ | 0.4+ | 2005 07 11 | 691 | 0.1+ | 0.1+ | | | | |

**2005 LC$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.65722 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26200404 | $\omega$ | 203.55296 | | +0.96412708 | | +0.26255895 |
| $a$ | 2.4187857 | $\Omega$ | 141.15898 | | −0.23258062 | | +0.90642680 |
| $e$ | 0.1361715 | $i$ | 3.56613 | | −0.12792662 | | +0.33083719 |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 19 | G96 | 0.2− | 0.1− | 2005 06 08 | 691 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.5+ | 1.0− |
| 2005 05 19 | G96 | 0.2− | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2005 05 19 | G96 | 0.0 | 0.1− | 2005 06 13 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2005 05 19 | G96 | 0.1− | 0.4− | 2005 06 13 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 2005 06 01 | 691 | 0.1+ | 0.4+ | 2005 06 13 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2005 06 08 | 691 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.4− |

**2005 LF$_9$ = 2006 RA$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.67519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19233163 | $\omega$ | 317.80830 | | −0.99485561 | | +0.00628352 |
| $a$ | 2.9723657 | $\Omega$ | 222.87243 | | +0.02378617 | | −0.95568241 |
| $e$ | 0.0238916 | $i$ | 8.54625 | | −0.09847099 | | −0.29433255 |
| $P$ | 5.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.0 | 1.0+ | 2005 05 21 | 644 | 0.4− | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.2+ |
| 2002 11 24 | 644 | 0.0 | 1.0+ | 2005 05 21 | 644 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2002 11 24 | 644 | 0.2− | 0.9+ | 2005 06 01 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.0 |
| 2004 02 19 | 704 | 0.2− | 0.2+ | 2005 06 01 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 691 | 0.4− | 0.2+ |
| 2004 02 19 | 704 | 0.6− | 0.5+ | 2005 06 01 | 691 | 0.0 | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.1+ |
| 2004 02 19 | 704 | 0.7+ | 0.1− | 2005 06 08 | 691 | 0.2− | 0.0 | 2006 09 16 | 691 | 0.7+ | 0.0 |
| 2004 02 19 | 704 | 0.5+ | 0.6+ | 2005 06 08 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2005 02 16 | 809 | 0.0 | 0.3− | 2005 06 08 | 691 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2005 02 16 | 809 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.4− | 0.5− | 2006 09 18 | 691 | 0.1+ | 0.2− |
| 2005 02 16 | 809 | 0.1+ | 0.3− | 2006 08 22 | 644 | 1.2− | 0.1+ | | | | |
| 2005 05 21 | 644 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.4− | 0.1+ | | | | |

**2005 LL$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.55588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26434424 | $\omega$ | 24.83513 | | −0.95458048 | | +0.29789848 |
| $a$ | 2.4044891 | $\Omega$ | 172.48950 | | −0.28014676 | | −0.89084131 |
| $e$ | 0.1319784 | $i$ | 2.50393 | | −0.10145890 | | −0.34301349 |
| $P$ | 3.73 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 03 | 691 | 0.1+ | 0.5+ | 2005 05 21 | 644 | 0.4− | 0.6− | 2006 09 23 | 691 | 0.5+ | 0.6+ |
| 2001 03 03 | 691 | 0.3+ | 0.5+ | 2005 06 01 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.5+ |
| 2001 03 03 | 691 | 0.4+ | 0.3+ | 2005 06 01 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 04 23 | 691 | 0.2+ | 0.5+ | 2005 06 01 | 691 | 0.7+ | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2001 04 23 | 691 | 0.3+ | 0.6+ | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2001 04 23 | 691 | 0.2+ | 0.4+ | 2005 06 08 | 691 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.6− |
| 2002 08 29 | 291 | 0.0 | 0.3+ | 2005 06 08 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2002 08 29 | 291 | 1.0− | 0.7+ | 2006 09 15 | 691 | 0.4+ | 0.4− | 2006 09 27 | 691 | 0.2− | 0.6+ |
| 2002 08 29 | 291 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.4− | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2003 12 25 | 691 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2003 12 25 | 691 | 0.1− | 0.6+ | 2006 09 19 | 291 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.6− |
| 2003 12 25 | 691 | 0.3− | 0.4+ | 2006 09 19 | 291 | 0.6− | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.6+ |
| 2005 05 21 | 644 | 0.3− | 0.2+ | 2006 09 19 | 291 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.8− | 0.1− |
| 2005 05 21 | 644 | 0.2− | 0.3− | 2006 09 23 | 691 | 0.6+ | 0.2+ | | | | |

**2005 LS$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.57169 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23075624 | $\omega$ | 243.68985 | | +0.94725724 | | +0.23648003 |
| $a$ | 2.6324921 | $\Omega$ | 101.99757 | | −0.15219960 | | +0.92589713 |
| $e$ | 0.0949877 | $i$ | 12.77476 | | −0.28202659 | | +0.29460431 |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 01 | 691 | 0.1− | 0.0 | 2005 06 27 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.5+ |
| 2005 06 01 | 691 | 0.0 | 0.2− | 2005 06 27 | 644 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.3− | 0.9− |
| 2005 06 01 | 691 | 0.0 | 0.1− | 2005 06 27 | 644 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.7+ | 0.5− |
| 2005 06 08 | 691 | 0.2+ | 0.1+ | 2005 07 11 | G96 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 2005 06 08 | 691 | 0.1+ | 0.0 | 2005 07 11 | G96 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.3− | 0.4− |
| 2005 06 08 | 691 | 0.2+ | 0.2+ | 2005 07 11 | G96 | 0.3+ | 0.0 | 2006 10 21 | 703 | (4.2+ | 3.7+) |
| 2005 06 11 | 703 | 1.1− | 0.8+ | 2005 07 11 | G96 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2005 06 11 | 703 | (0.8− | 1.9−) | 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2005 06 11 | 703 | (1.7− | 0.4−) | 2006 09 19 | 703 | 1.0− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2005 06 11 | 703 | (1.9− | 0.0 ) | 2006 09 19 | 703 | 0.4+ | 0.7+ | | | | |

**2005 LE$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.31075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23624151 | $\omega$ | 140.34899 | | +0.84023698 | | +0.54215984 |
| $a$ | 2.5915837 | $\Omega$ | 186.83447 | | −0.51303819 | | +0.79013526 |
| $e$ | 0.2205053 | $i$ | 3.87056 | | −0.17548116 | | +0.28591779 |
| $P$ | 4.17 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 291 | 0.3+ | 0.0 | 2005 06 08 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.2+ |
| 2005 05 10 | G96 | 1.2− | 0.0 | 2005 06 08 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 2005 05 10 | 291 | 0.4+ | 0.3− | 2005 06 08 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2005 05 10 | G96 | 0.1+ | 0.3− | 2005 06 12 | 691 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2005 05 10 | G96 | 0.5− | 0.1+ | 2005 06 12 | 691 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2005 05 10 | 291 | 0.1+ | 0.2+ | 2005 06 12 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 2.0+ | 0.2+ |
| 2005 05 10 | G96 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2005 06 03 | 691 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2005 06 03 | 691 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2005 06 03 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.1+ | | | | |

**2005 LQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 258.90983 | | (2000.0) | | | |
| $n$ | 0.19458675 | $\omega$ | 239.07990 | | +0.19512848 | −0.97834586 |
| $a$ | 2.9493561 | $\Omega$ | 200.01999 | | +0.95454388 | +0.20560658 |
| $e$ | 0.0388452 | $i$ | 11.63160 | | +0.22532391 | −0.02377626 |
| $P$ | 5.07 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.3+ | 0.9+ | 2005 06 03 | 691 | 0.2− | 0.2+ | 2005 06 29 | 644 | 0.4− | 0.1− |
| 2001 08 25 | 704 | 0.4− | 0.0 | 2005 06 03 | 691 | 0.2− | 0.2+ | 2005 06 29 | 644 | 0.3− | 0.2− |
| 2001 08 25 | 704 | 0.1+ | 0.5− | 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 09 14 | 691 | 1.4+ | 0.3+ |
| 2004 03 16 | 704 | (0.0 | 1.7+) | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 704 | (1.3− | 2.1+) | 2005 06 08 | 691 | 0.5− | 0.2− | 2006 09 14 | 691 | 0.1− | 0.3+ |
| 2004 03 16 | 704 | (1.7− | 2.7+) | 2005 06 13 | 691 | 0.2+ | 0.0 | 2006 09 16 | 691 | 0.0 | 0.2− |
| 2004 03 16 | 704 | 0.1− | 1.4+ | 2005 06 13 | 691 | 0.0 | 0.1− | 2006 09 16 | 691 | 0.2− | 0.3+ |
| 2004 03 16 | 704 | 0.4+ | 0.4+ | 2005 06 13 | 691 | 0.1+ | 0.0 | 2006 09 16 | 691 | 0.2− | 0.1− |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2005 06 17 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.4− | 0.3− |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2005 06 17 | 691 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.4− | 0.1+ |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2005 06 17 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.0 |
| 2005 06 03 | 691 | 0.0 | 0.4− | 2005 06 29 | 644 | 0.0 | 0.1− | | | | |

**2005 LX$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 95.31211 | | (2000.0) | | | |
| $n$ | 0.21593447 | $\omega$ | 64.50681 | | −0.16473429 | +0.98512220 |
| $a$ | 2.7516175 | $\Omega$ | 196.23779 | | −0.95611947 | −0.17168271 |
| $e$ | 0.1848288 | $i$ | 10.08357 | | −0.24227706 | +0.00770102 |
| $P$ | 4.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.2− | 1.2− | 2005 06 13 | 691 | 0.1− | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.1+ | 0.5+ | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.2+ |
| 2001 08 25 | 704 | 0.3− | 0.5+ | 2005 06 14 | 691 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | 0.5+ | 0.1+ | 2005 06 14 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.2+ |
| 2005 06 03 | 691 | 0.2+ | 0.0 | 2005 06 24 | 644 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.3− |
| 2005 06 03 | 691 | 0.1+ | 0.2+ | 2005 06 24 | 644 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.7− | 0.1− |
| 2005 06 03 | 691 | 0.2+ | 0.1+ | 2005 06 24 | 644 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2005 06 08 | 691 | 0.1+ | 0.0 | 2005 07 01 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2005 06 08 | 691 | 0.0 | 0.0 | 2005 07 01 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2005 06 08 | 691 | 0.1− | 0.2+ | 2005 07 01 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2+ |
| 2005 06 13 | 691 | 0.1− | 0.4− | 2006 09 14 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.9− | 0.8− |
| 2005 06 13 | 691 | 0.2− | 0.4− | 2006 09 14 | 691 | 0.4+ | 0.0 | | | | |

**2005 LZ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.96236 | | (2000.0) | | | |
| $n$ | 0.17401696 | $\omega$ | 83.97164 | | −0.03809283 | +0.99922341 |
| $a$ | 3.1774228 | $\Omega$ | 183.88819 | | −0.96551291 | −0.03940262 |
| $e$ | 0.2130924 | $i$ | 8.54464 | | −0.25755340 | −0.00007572 |
| $P$ | 5.66 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 21 | 691 | 0.5+ | 0.4+ | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.6+ |
| 2004 03 21 | 691 | 0.2− | 0.7+ | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2004 03 21 | 691 | 0.1+ | 0.5+ | 2005 06 28 | 691 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2005 05 03 | 703 | 0.2+ | 0.0 | 2005 06 28 | 691 | 0.4− | 0.1+ | 2006 09 24 | 291 | 0.3− | 0.2+ |
| 2005 05 03 | 703 | 0.7− | 0.4+ | 2005 06 28 | 691 | 0.4− | 0.0 | 2006 09 24 | 291 | 0.2+ | 0.6+ |
| 2005 05 03 | 703 | 0.5+ | 0.5+ | 2005 07 01 | 691 | 0.4+ | 0.5− | 2006 09 24 | 291 | 0.1+ | 0.3+ |
| 2005 05 03 | 703 | 0.5− | 0.2+ | 2005 07 01 | 691 | 0.7− | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 06 03 | 691 | 0.4+ | 0.7+ | 2005 07 01 | 691 | 0.9+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2005 06 03 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.5− |
| 2005 06 03 | 691 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2005 06 08 | 691 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.3+ | | | | |

**2005 LK$_{11}$ = 2006 SC$_{343}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.55961 | | (2000.0) | | | |
| $n$ | 0.16971338 | $\omega$ | 56.84341 | | +0.76534040 | +0.63995642 |
| $a$ | 3.2309134 | $\Omega$ | 263.27114 | | −0.61113719 | +0.68911612 |
| $e$ | 0.1086016 | $i$ | 3.96255 | | −0.20190445 | +0.33996287 |
| $P$ | 5.81 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.1+ | 0.8+ | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2000 10 03 | 704 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2000 10 03 | 704 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.9− | 1.0− |
| 2001 12 14 | 704 | 0.3+ | 0.2− | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.7− |
| 2001 12 14 | 704 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.1− |
| 2001 12 14 | 704 | 0.0 | 0.9+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.5− | 1.0− |
| 2005 06 03 | 691 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.5+ |
| 2005 06 03 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 06 03 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2005 06 08 | 691 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2005 06 08 | 691 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.6− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2005 06 08 | 691 | 0.0 | 0.3− | 2006 10 17 | 703 | 1.1− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 06 12 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.3− | 1.2+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2005 06 12 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2005 06 12 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 06 14 | G96 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2005 06 14 | G96 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2− | | | | |
| 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | | | |

**2005 LL$_{11}$ = 1998 SD$_{92}$ = 2006 SJ$_5$**

Id. Minor Planet Center (*MPO* 89672, unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 12.66998 | | (2000.0) | | | |
| $n$ | 0.12351119 | $\omega$ | 95.25487 | | +0.98903680 | +0.14045770 |
| $a$ | 3.9932991 | $\Omega$ | 256.67646 | | −0.14710173 | +0.91008482 |
| $e$ | 0.1977613 | $i$ | 2.68495 | | −0.01293374 | +0.38989391 |
| $P$ | 7.98 | $H$ | 14.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 1.6− | 0.9− | 2006 09 06 | 644 | 0.0 | 0.5+ | 2006 09 27 | 699 | 1.2− | 0.5− |
| 1998 09 26 | 704 | 1.0− | 1.3− | 2006 09 16 | 644 | 0.2+ | 0.2− | 2006 09 27 | 699 | 0.4+ | 0.8+ |
| 1998 09 26 | 704 | 0.5− | 1.6− | 2006 09 16 | 644 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.5+ |
| 1998 09 26 | 704 | 0.5+ | 1.7− | 2006 09 16 | 644 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 1998 09 27 | 704 | 0.4− | 1.6+ | 2006 09 17 | 703 | 0.8− | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 1998 09 27 | 704 | (2.9+ | 1.5+) | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.0 |
| 1998 09 27 | 704 | 0.9+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 1998 09 27 | 704 | 1.1+ | 1.8+ | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 1998 09 27 | 704 | 1.2+ | 1.4+ | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 1999 12 31 | 691 | 0.1+ | 0.7− | 2006 09 17 | 691 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1999 12 31 | 691 | 0.0 | 0.2− | 2006 09 17 | 703 | 1.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 1999 12 31 | 691 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.3+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 03 | 691 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2005 06 03 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.4− |
| 2005 06 03 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | (1.1− | 1.7+) | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2005 06 08 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 06 08 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.9+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 06 08 | 691 | 0.2+ | 0.1− | 2006 09 19 | 699 | 1.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2005 06 12 | 691 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.6− | 0.2− | 2006 10 25 | 246 | 0.8+ | 0.5− |
| 2005 06 12 | 691 | 0.3+ | 0.2− | 2006 09 21 | A50 | 0.5− | 0.3− | 2006 10 25 | 246 | 0.4+ | 1.0+ |
| 2005 06 12 | 691 | 0.3− | 1.1− | 2006 09 22 | A50 | 0.7− | 0.0 | 2006 10 25 | 246 | 0.3+ | 0.7+ |
| 2005 06 14 | G96 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.6+ | 0.3+ | 2006 10 25 | 246 | 0.8− | 0.1+ |
| 2005 06 14 | G96 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.0 | 2006 10 25 | 246 | 0.2+ | 1.0+ |
| 2005 06 14 | G96 | 0.5− | 0.4+ | 2006 09 25 | 704 | 0.9+ | 0.7+ | 2006 10 25 | 246 | 0.3+ | 0.3− |
| 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 25 | 246 | 0.5− | 0.7+ |
| 2006 08 24 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.5− |
| 2006 08 24 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2006 08 24 | 644 | 0.5+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 27 | 699 | 0.3+ | 1.2+ | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 27 | 699 | 0.5− | 1.0− | | | | |

**2005 LG$_{12}$ = 2006 UC$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.02070 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23839018 | $\omega$ | 74.50300 | | +0.12305726 | | +0.99072257 |
| $a$ | 2.5759879 | $\Omega$ | 202.80566 | | −0.95798717 | | +0.10341937 |
| $e$ | 0.1417942 | $i$ | 8.55635 | | −0.25907045 | | +0.08816588 |
| $P$ | 4.13 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 691 | 0.0 | 0.1+ | 2005 06 30 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2005 06 04 | 691 | 0.1− | 0.1+ | 2005 06 30 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2005 06 04 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.9+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2005 06 08 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.5− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2005 06 08 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2005 06 30 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.2− | | | | |

**2005 LJ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.73396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18112143 | $\omega$ | 220.38401 | | +0.78865682 | | +0.46179486 |
| $a$ | 3.0937805 | $\Omega$ | 107.54981 | | −0.39442486 | | +0.88644939 |
| $e$ | 0.2264605 | $i$ | 25.19683 | | −0.47164546 | | +0.03087062 |
| $P$ | 5.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 14 | 691 | 0.1− | 0.6+ | 2005 06 08 | 691 | 0.1− | 0.1− | 2005 07 29 | E12 | 0.2+ | 0.3+ |
| 1996 12 14 | 691 | 0.3+ | 0.3− | 2005 06 08 | 691 | 0.1+ | 0.1− | 2005 07 29 | E12 | 0.3+ | 0.4− |
| 1996 12 14 | 691 | 0.2− | 0.1+ | 2005 06 13 | G96 | 0.2− | 0.0 | 2005 07 29 | E12 | 0.5− | 0.7+ |
| 2005 05 15 | G96 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.4− | 0.0 | 2006 11 01 | 703 | 0.1+ | 0.5− |
| 2005 05 15 | G96 | 0.2− | 0.4+ | 2005 06 13 | G96 | 0.4− | 0.1+ | 2006 11 01 | 703 | 0.2− | 0.4− |
| 2005 05 15 | G96 | 0.1+ | 0.2+ | 2005 06 13 | G96 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.0 | 1.8+ |
| 2005 05 15 | G96 | 0.2− | 0.5+ | 2005 07 17 | E12 | 0.0 | 0.4+ | 2006 11 01 | 703 | 0.9+ | 0.7+ |
| 2005 06 05 | 691 | 0.0 | 0.1− | 2005 07 17 | E12 | 0.1− | 0.3+ | 2006 11 22 | 703 | 0.3− | 0.9+ |
| 2005 06 05 | 691 | 0.2+ | 0.3− | 2005 07 17 | E12 | 0.3+ | 0.2− | 2006 11 22 | 703 | 0.8− | 0.9− |
| 2005 06 05 | 691 | 0.2+ | 0.1+ | 2005 07 17 | E12 | 0.3− | 0.3+ | 2006 11 22 | 703 | 0.2− | 0.7− |
| 2005 06 08 | 691 | 0.2+ | 0.0 | 2005 07 29 | E12 | 0.5− | 0.2+ | 2006 11 22 | 703 | 0.5+ | 0.8− |

**2005 LJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.53365 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21721616 | $\omega$ | 275.72920 | | +0.97342599 | | +0.03067413 |
| $a$ | 2.7407829 | $\Omega$ | 82.66358 | | +0.06792080 | | +0.90772500 |
| $e$ | 0.1592258 | $i$ | 13.22710 | | −0.21869750 | | +0.41844284 |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.3− | 0.7+ | 2005 05 14 | 691 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.2− | 0.3− |
| 2001 07 19 | 644 | 0.1+ | 0.4+ | 2005 05 14 | 691 | 0.1+ | 0.7+ | 2006 09 27 | 703 | 0.2+ | 0.3+ |
| 2001 07 19 | 644 | 0.1+ | 1.4+ | 2005 06 04 | 691 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2005 06 04 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 703 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2005 06 04 | 691 | 0.4+ | 0.4− | 2006 09 27 | 703 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.9− | 0.4+ | 2005 06 09 | 691 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.4− | 0.8+ |
| 2002 12 05 | 704 | 0.3+ | 1.3+ | 2005 06 09 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.8+ |
| 2002 12 13 | 704 | 0.7+ | 0.7+ | 2005 06 09 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.0 |
| 2002 12 13 | 704 | 0.8− | 1.0+ | 2006 09 22 | 703 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 0.1+ | 1.2+ |
| 2002 12 13 | 704 | 0.1+ | 1.7+ | 2006 09 22 | 703 | 0.1− | 0.9− | 2006 09 28 | 703 | 0.3+ | 0.1+ |
| 2002 12 13 | 704 | 0.7− | 1.0+ | 2006 09 22 | 703 | 0.7− | 0.5− | 2006 09 28 | 703 | 0.5− | 0.3+ |
| 2003 01 10 | 291 | 0.6− | 0.8+ | 2006 09 22 | 703 | 0.9+ | 0.6+ | 2006 09 28 | 703 | 1.2− | 0.3− |
| 2003 01 10 | 291 | 0.2− | 0.5+ | 2006 09 27 | 703 | 0.4+ | 0.5+ | 2006 09 28 | 703 | 0.9− | 0.8− |
| 2003 01 10 | 291 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.2+ | 0.4+ | | | | |
| 2005 05 14 | 691 | 0.2+ | 0.9+ | 2006 09 27 | 703 | 0.4+ | 0.9+ | | | | |

**2005 LP$_{13}$ = 2006 VB$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.82318 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21481250 | $\omega$ | 277.61000 | | +0.95233707 | | −0.17801832 |
| $a$ | 2.7611904 | $\Omega$ | 92.88509 | | +0.26348231 | | +0.88925855 |
| $e$ | 0.3392081 | $i$ | 14.36103 | | −0.15372434 | | +0.42134156 |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 28 | 644 | 0.1− | 0.1− | 2005 05 08 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.8− |
| 2001 06 28 | 644 | 0.4+ | 0.2− | 2005 05 08 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.4− | 0.4− |
| 2001 06 28 | 644 | 0.9+ | 0.4+ | 2005 06 04 | 691 | 0.0 | 0.4− | 2006 11 13 | 703 | 0.1+ | 0.1− |
| 2001 07 25 | 644 | 0.4− | 0.7+ | 2005 06 04 | 691 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.3+ |
| 2001 07 25 | 644 | 0.4− | 0.6+ | 2005 06 04 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2001 07 25 | 644 | 0.2+ | 0.1+ | 2005 06 09 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.3+ |
| 2001 08 09 | 644 | 0.1+ | 0.3− | 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.0 |
| 2001 08 09 | 644 | 0.0 | 0.4− | 2005 06 09 | 691 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.3+ |
| 2001 08 09 | 644 | 0.5− | 0.5− | 2006 09 19 | 703 | 0.7+ | 0.3− | 2006 11 19 | 703 | 0.2− | 0.2+ |
| 2005 05 08 | 691 | 0.1− | 0.4− | 2006 09 19 | 703 | 0.1− | 0.2+ | | | | |

**2005 LK$_{14}$ = 2006 WZ$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.22275 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23461354 | $\omega$ | 129.19626 | | +0.83186078 | | −0.50080690 |
| $a$ | 2.6035585 | $\Omega$ | 262.09100 | | +0.40493424 | | +0.84239619 |
| $e$ | 0.0920363 | $i$ | 13.97286 | | +0.37952062 | | +0.19889975 |
| $P$ | 4.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.1− | 0.2+ | 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.9− | 0.5+ |
| 2001 08 26 | 644 | 0.0 | 0.2+ | 2005 06 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 1.5+ | 1.1+ |
| 2001 08 26 | 644 | 0.0 | 0.1− | 2005 06 13 | 691 | 0.5+ | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2005 06 04 | 691 | 0.1− | 0.2+ | 2005 06 13 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.6− | 0.6+ |
| 2005 06 04 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2005 06 04 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2005 06 09 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.2− |
| 2005 06 09 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.9+ | 0.3− | | | | |

**2005 LO$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.02310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18261622 | $\omega$ | 344.52925 | | +0.13162146 | | −0.96989825 |
| $a$ | 3.0768748 | $\Omega$ | 97.57735 | | +0.93002213 | | +0.04928267 |
| $e$ | 0.0666298 | $i$ | 11.92776 | | +0.34312480 | | +0.23847139 |
| $P$ | 5.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.4+ | 0.6− | 2002 12 03 | 608 | 0.2− | 0.3+ | 2005 06 05 | 691 | 0.1− | 0.1− |
| 2002 11 16 | 644 | 0.5− | 0.1+ | 2002 12 03 | 608 | 0.1+ | 0.0 | 2005 06 05 | 691 | 0.1+ | 0.0 |
| 2002 11 16 | 644 | 0.5+ | 0.0 | 2002 12 03 | 608 | 0.1+ | 0.9− | 2005 06 05 | 691 | 0.2− | 0.4+ |
| 2002 11 23 | 644 | 0.2− | 0.1+ | 2005 05 16 | 691 | 0.2+ | 0.1− | 2005 06 09 | 691 | 0.5+ | 0.0 |
| 2002 11 23 | 644 | 0.2− | 0.4+ | 2005 05 16 | 691 | 0.1+ | 0.0 | 2005 06 09 | 691 | 0.1− | 0.6− |
| 2002 11 23 | 644 | 0.1+ | 0.5+ | 2005 05 16 | 691 | 0.3− | 0.2+ | 2005 06 09 | 691 | 0.1− | 0.1+ |

**2005 LZ$_{14}$ = 2005 JG$_{121}$ = 2006 QD$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.29753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17047416 | $\omega$ | 135.20548 | | +0.94848867 | +0.30216064 | |
| $a$ | 3.2212938 | $\Omega$ | 207.62814 | | −0.31613849 | +0.92228219 | |
| $e$ | 0.2233060 | $i$ | 11.84996 | | +0.02063226 | +0.24102803 | |
| $P$ | 5.78 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.4+ | 0.2+ | 2005 06 13 | 691 | 0.2+ | 0.2− | 2006 09 16 | 644 | 0.1− | 0.6− |
| 2005 05 10 | 691 | 0.1− | 0.7+ | 2005 06 13 | 691 | 0.2+ | 0.2− | 2006 09 16 | 644 | 0.0 | 0.2− |
| 2005 05 10 | 691 | 0.0 | 0.4+ | 2006 08 30 | 699 | 0.7+ | 0.2+ | 2006 09 20 | 699 | 1.0+ | 0.4− |
| 2005 06 08 | 691 | 0.3+ | 0.4+ | 2006 08 30 | 699 | 0.4+ | 0.0 | 2006 09 20 | 699 | 0.2− | 0.7+ |
| 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 08 30 | 699 | 1.0− | 0.7+ | 2006 09 20 | 699 | 0.8− | 0.7− |
| 2005 06 08 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.6+ |
| 2005 06 09 | 691 | 0.1− | 0.0 | 2006 09 15 | 704 | 0.8+ | 0.6− | 2006 10 16 | 703 | 0.9− | 1.1+ |
| 2005 06 09 | 691 | 1.4− | 0.9− | 2006 09 15 | 704 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.6− | 0.5+ |
| 2005 06 09 | 691 | 0.5+ | 0.1+ | 2006 09 15 | 704 | 0.6+ | 0.4− | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2005 06 13 | 691 | 0.1+ | 0.5− | 2006 09 16 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.3− |

**2005 LU$_{16}$ = 2005 JW$_{144}$ = 2005 KQ$_{12}$**

Id. Minor Planet Center (d, *MPO* 98188)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.33973 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29188357 | $\omega$ | 153.52380 | | −0.54235873 | +0.83664179 | |
| $a$ | 2.2507622 | $\Omega$ | 83.54174 | | −0.78385606 | −0.47106904 | |
| $e$ | 0.0674113 | $i$ | 4.42504 | | −0.30235192 | −0.27950757 | |
| $P$ | 3.38 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 15 | G96 | 0.3− | 0.3+ | 2005 06 06 | 691 | 0.6+ | 0.8− | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2005 05 15 | G96 | 0.1− | 0.1+ | 2005 06 10 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2005 05 15 | G96 | 0.1− | 0.2+ | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.5− |
| 2005 05 15 | G96 | 0.1− | 0.1+ | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.3− |
| 2005 05 21 | 644 | 0.0 | 0.1+ | 2005 06 14 | 291 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2005 05 21 | 644 | 0.2+ | 0.1+ | 2005 06 14 | 291 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.6− |
| 2005 05 21 | 644 | 0.1+ | 0.4+ | 2005 06 14 | 291 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2005 06 06 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2005 06 06 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.4− | 0.2− |

**2005 LS$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.98369 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19214106 | $\omega$ | 55.01938 | | +0.43770470 | +0.87051473 | |
| $a$ | 2.9743307 | $\Omega$ | 242.46328 | | −0.88526639 | +0.37349574 | |
| $e$ | 0.1931448 | $i$ | 14.69834 | | −0.15721965 | +0.32047627 | |
| $P$ | 5.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 06 | 691 | 0.1− | 0.1− | 2005 06 23 | 644 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.5+ | 0.2− |
| 2005 06 06 | 691 | 0.2− | 0.0 | 2005 06 23 | 644 | 0.2− | 0.1− | 2006 10 19 | 703 | (1.7− | 0.0 ) |
| 2005 06 06 | 691 | 0.0 | 0.2− | 2005 07 05 | 644 | 0.1− | 0.5− | 2006 10 19 | 703 | 1.4− | 0.3+ |
| 2005 06 10 | 691 | 0.1− | 0.0 | 2005 07 05 | 644 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.5− | 0.1+ |
| 2005 06 10 | 691 | 0.1+ | 0.7− | 2005 07 05 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2005 06 10 | 691 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2005 06 14 | 291 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 1.4− | 0.8− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2005 06 14 | 291 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.7+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2005 06 14 | 291 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.3+ | 0.4− |
| 2005 06 17 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2005 06 17 | 691 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.5− |
| 2005 06 17 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2005 06 23 | 644 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.8+ | 1.1− | | | | |

**2005 LC$_{18}$ = 2005 JF$_{180}$**

Id. Minor Planet Center (d, *MPO* 87833)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.31249 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26529908 | $\omega$ | 66.07476 | | +0.19907328 | +0.97798398 | |
| $a$ | 2.3987163 | $\Omega$ | 215.58846 | | −0.93368660 | +0.16988288 | |
| $e$ | 0.1033224 | $i$ | 6.17387 | | −0.29765612 | +0.12119055 | |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 15 | G96 | 0.4− | 0.6− | 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 291 | 0.1− | 0.2− |
| 2005 05 15 | G96 | 0.3− | 0.3− | 2005 06 27 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.6− | 0.2+ |
| 2005 05 15 | G96 | 0.4− | 0.5− | 2005 06 27 | 644 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2005 05 15 | G96 | 0.4− | 0.2− | 2005 06 27 | 644 | 0.5− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1− |
| 2005 06 01 | 691 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.6+ | 0.6+ |
| 2005 06 01 | 691 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2005 06 01 | 691 | 1.0+ | 1.0+ | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.6+ | 0.3+ |
| 2005 06 06 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.4− | 0.5− |
| 2005 06 06 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.5− |
| 2005 06 06 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 18 | 291 | 0.3+ | 0.1+ | | | | |
| 2005 06 10 | 691 | 0.0 | 0.3− | 2006 10 18 | 291 | 0.0 | 0.2+ | | | | |

**2005 LH$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.32051 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26169564 | $\omega$ | 357.47587 | | −0.98992515 | −0.14139051 | |
| $a$ | 2.4206856 | $\Omega$ | 174.37898 | | +0.13122002 | −0.93612850 | |
| $e$ | 0.1354765 | $i$ | 4.41804 | | +0.05319318 | −0.32198162 | |
| $P$ | 3.77 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 06 | 691 | 0.2+ | 0.1− | 2005 06 28 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2005 06 06 | 691 | 0.2+ | 0.1+ | 2005 06 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.1+ |
| 2005 06 06 | 691 | 0.2+ | 0.0 | 2005 06 28 | 691 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2005 06 10 | 691 | 0.3− | 0.1− | 2006 09 24 | 291 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2005 06 10 | 691 | 0.3− | 0.2+ | 2006 09 24 | 291 | 0.5− | 0.1+ | | | | |
| 2005 06 10 | 691 | 0.3− | 0.3− | 2006 09 24 | 291 | 0.9+ | 0.1− | | | | |

**2005 LO$_{18}$ = 2006 WO$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.63241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23333658 | $\omega$ | 164.64786 | | +0.90083253 | +0.43408651 | |
| $a$ | 2.6130487 | $\Omega$ | 169.61310 | | −0.40305609 | +0.84327308 | |
| $e$ | 0.2271221 | $i$ | 2.65302 | | −0.16138939 | +0.31695333 | |
| $P$ | 4.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.4+ | 0.7+ | 2005 06 27 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 1.7+ |
| 2000 03 25 | 691 | 0.3− | 0.5− | 2005 06 27 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.4− | 0.4+ |
| 2000 03 25 | 691 | 0.1− | 0.1− | 2005 06 27 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 1.5+ | 0.1− |
| 2005 06 06 | 691 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2005 06 06 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.5− | 0.1+ | 2006 11 27 | 703 | 0.5+ | 0.2− |
| 2005 06 06 | 691 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.6− | 0.0 |
| 2005 06 10 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.7− |
| 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2005 06 10 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.3+ |
| 2005 06 13 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2005 06 13 | 691 | 0.7− | 0.7− | 2006 11 20 | 704 | 0.4+ | 0.2+ | | | | |

**2005 LV$_{18}$ = 2006 UR$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.92840 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21981272 | $\omega$ | 69.86545 | | +0.39996834 | | +0.90304477 |
| $a$ | 2.7191563 | $\Omega$ | 224.75065 | | −0.90185965 | | +0.35732187 |
| $e$ | 0.2053405 | $i$ | 12.85533 | | −0.16332332 | | +0.23839302 |
| $P$ | 4.48 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.1− | 0.0 | 2005 06 29 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.5+ |
| 2005 06 08 | 691 | 0.7− | 0.5+ | 2005 07 02 | 691 | (2.8− | 3.0−) | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2005 06 08 | 691 | 0.2+ | 0.1− | 2005 07 02 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.5+ | 0.5+ |
| 2005 06 10 | 691 | 0.4+ | 0.0 | 2005 07 02 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.7− | 0.3− |
| 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 11 01 | 691 | 0.6+ | 0.1− |
| 2005 06 10 | 691 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.8− | 2006 11 01 | 691 | 0.2− | 0.4− |
| 2005 06 29 | 691 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.6− | 0.5− | | | | |
| 2005 06 29 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3+ | | | | |

**2005 LA$_{19}$ = 2006 WQ$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.30900 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27270052 | $\omega$ | 176.26186 | | +0.64346155 | | +0.76082805 |
| $a$ | 2.3551148 | $\Omega$ | 133.76451 | | −0.70530344 | | +0.63205077 |
| $e$ | 0.1144632 | $i$ | 6.69927 | | −0.29749670 | | +0.14714790 |
| $P$ | 3.61 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.1+ | 0.2+ | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2+ |
| 2005 06 08 | 691 | 0.1+ | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2005 06 08 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.7+ | 0.1− | 2006 11 25 | G96 | 0.5− | 0.1+ |
| 2005 06 10 | 691 | 0.6− | 0.1+ | 2006 11 23 | G96 | 0.5− | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2005 06 10 | 691 | 0.1− | 0.8− | 2006 11 23 | G96 | 0.7− | 0.5+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2005 06 14 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− |

**2005 LN$_{19}$ = 2006 TY$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.65073 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22250474 | $\omega$ | 207.19886 | | +0.99397943 | | +0.08908777 |
| $a$ | 2.6971796 | $\Omega$ | 147.49562 | | −0.06575578 | | +0.95068006 |
| $e$ | 0.0938579 | $i$ | 6.81685 | | −0.08764172 | | +0.29710402 |
| $P$ | 4.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.8+ |
| 2005 06 08 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2005 06 08 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2005 06 10 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.5− |
| 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2005 06 14 | 691 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− | | | | |
| 2005 06 14 | 691 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.3− | | | | |

**2005 LC$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.53200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28405558 | $\omega$ | 177.92751 | | −0.37820723 | | +0.92005423 |
| $a$ | 2.2919255 | $\Omega$ | 69.83731 | | −0.85089192 | | −0.30199371 |
| $e$ | 0.1257106 | $i$ | 6.25469 | | −0.36461244 | | −0.24959969 |
| $P$ | 3.47 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 19 | 644 | 0.3+ | 0.3− | 2005 06 13 | G96 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.6+ | 0.1− |
| 2005 05 19 | 644 | 0.1+ | 0.2− | 2005 06 13 | G96 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.5+ | 0.3− |
| 2005 05 19 | 644 | 0.2+ | 0.3− | 2005 06 13 | G96 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2005 06 04 | 691 | 0.1+ | 0.4+ | 2005 06 13 | G96 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2005 06 04 | 691 | 0.2− | 0.1+ | 2005 06 15 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2005 06 04 | 691 | 0.2+ | 0.1+ | 2005 06 15 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2005 06 11 | 691 | 0.1+ | 0.1− | 2005 06 15 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2005 06 11 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.4− | 2006 11 01 | G96 | 0.4+ | 0.6− |
| 2005 06 11 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.3− |

**2005 LM$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.37637 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22681612 | $\omega$ | 232.50851 | | +0.79626834 | | +0.54949064 |
| $a$ | 2.6628913 | $\Omega$ | 92.78876 | | −0.44354519 | | +0.81472010 |
| $e$ | 0.1579454 | $i$ | 14.67379 | | −0.41136894 | | +0.18517883 |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.1+ | 0.1− | 2005 06 15 | 691 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.6+ | 1.1+ |
| 2002 12 12 | 644 | 0.2− | 0.2− | 2005 06 27 | 691 | 0.3− | 0.2− | 2006 10 28 | 703 | (1.7+ | 0.5−) |
| 2002 12 12 | 644 | 0.1+ | 0.2+ | 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.8+ |
| 2005 06 02 | 703 | (2.1+ | 0.3+) | 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2005 06 02 | 703 | 0.8− | 1.0− | 2005 06 30 | 691 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.3− |
| 2005 06 02 | 703 | 1.4+ | 1.3+ | 2005 06 30 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2005 06 02 | 703 | 1.0− | 1.3− | 2005 06 30 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.3+ |
| 2005 06 04 | 691 | 0.1− | 0.2+ | 2005 07 05 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.5+ | 0.5− |
| 2005 06 04 | 691 | 0.3− | 0.1+ | 2005 07 05 | 644 | 0.3− | 0.3− | 2006 11 09 | 644 | 0.4+ | 0.8− |
| 2005 06 04 | 691 | 0.1+ | 0.1+ | 2005 07 05 | 644 | 0.2− | 0.4+ | 2006 11 16 | 703 | 0.1− | 0.5+ |
| 2005 06 11 | 691 | 0.2+ | 0.1− | 2005 07 12 | G96 | 0.7− | 0.4− | 2006 11 16 | 703 | 1.3− | 0.4− |
| 2005 06 11 | 691 | 0.2+ | 0.2+ | 2005 07 12 | G96 | 0.7− | 0.4− | 2006 11 16 | 703 | 1.1− | 0.1+ |
| 2005 06 11 | 691 | 0.5+ | 0.1− | 2005 07 12 | G96 | 0.9− | 0.4− | 2006 11 16 | 703 | 0.6− | 0.6− |
| 2005 06 15 | 691 | 0.2+ | 0.1− | 2005 07 12 | G96 | 0.5− | 0.3− | | | | |
| 2005 06 15 | 691 | 0.1+ | 0.0 | 2006 10 28 | 703 | 1.2+ | 0.0 | | | | |

**2005 LZ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.54190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21027541 | $\omega$ | 196.11970 | | +0.94865671 | | +0.30824867 |
| $a$ | 2.8007675 | $\Omega$ | 145.66718 | | −0.27453978 | | +0.91380428 |
| $e$ | 0.1839429 | $i$ | 7.22634 | | −0.15709346 | | +0.26447022 |
| $P$ | 4.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.3− | 0.1+ | 2005 06 15 | 691 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.4+ |
| 2005 05 08 | 691 | 0.3− | 0.2+ | 2006 09 14 | 291 | 0.0 | 0.2+ | 2006 10 22 | 703 | (0.8+ | 1.8+) |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 09 14 | 291 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.7− |
| 2005 06 05 | 691 | 0.4− | 0.2+ | 2006 09 14 | 291 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.5− |
| 2005 06 05 | 691 | 0.0 | 0.4+ | 2006 09 26 | 703 | (1.5+ | 0.1+) | 2006 10 22 | 703 | 0.4+ | 1.0− |
| 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.5+ | 0.6− | 2006 10 28 | 703 | (0.9− | 1.8−) |
| 2005 06 11 | 691 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2005 06 11 | 691 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.2− | 0.6+ | 2006 10 28 | 703 | 0.5+ | 0.9− |
| 2005 06 11 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.5− | 2006 10 28 | 703 | (1.3− | 1.6−) |
| 2005 06 15 | 691 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.8− | 0.1+ | | | | |
| 2005 06 15 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.2+ | | | | |

**2005 LO$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.28255 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30549729 | $\omega$ | 105.27828 | | +0.99490813 | | −0.08488305 |
| $a$ | 2.1833891 | $\Omega$ | 259.61378 | | +0.05728746 | | +0.91986371 |
| $e$ | 0.0755147 | $i$ | 3.16684 | | +0.08292135 | | +0.38294336 |
| $P$ | 3.23 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 291 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.9+ |
| 2003 12 27 | 291 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2003 12 27 | 291 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | (0.6− | 2.2+) |
| 2005 05 18 | E12 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2005 05 18 | E12 | 0.0 | 0.6− | 2006 10 31 | 691 | 0.5+ | 0.1− | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2005 05 18 | E12 | 0.9− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2005 05 18 | E12 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.3+ | 0.0 | 2006 11 22 | 691 | (0.5+ | 3.6−) |
| 2005 06 06 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 27 | 704 | 1.4− | 0.5− |
| 2005 06 06 | 691 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.5− | 0.3+ | 2006 11 27 | 704 | 0.0 | 1.1+ |
| 2005 06 06 | 691 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.8+ | 2006 11 27 | 704 | 1.0− | 0.0 |
| 2005 06 11 | 691 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.3− | 0.1− | 2006 11 27 | 704 | 0.0 | 0.7+ |
| 2005 06 11 | 691 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.3− | 2006 12 01 | G96 | 0.3− | 0.2− |
| 2005 06 11 | 691 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.4+ | 0.3− | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.3− | 2006 12 01 | G96 | 0.1− | 0.7− |
| 2006 10 23 | 691 | 0.6− | 0.2+ | 2006 11 17 | 704 | 0.2+ | 1.3+ | 2006 12 01 | G96 | 0.3− | 0.2− |
| 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 17 | 704 | 0.7− | 0.1− | | | | |
| 2006 10 27 | 691 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.5− | | | | |

**2005 LU$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.41833 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17044870 | $\omega$ | 176.02226 | | +0.34478748 | | +0.93140979 |
| $a$ | 3.2216147 | $\Omega$ | 114.11490 | | −0.86470965 | | +0.36349253 |
| $e$ | 0.1195904 | $i$ | 7.34002 | | −0.36523803 | | +0.01868080 |
| $P$ | 5.78 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.3− | 0.2− | 2005 06 16 | 691 | 0.1− | 0.1+ | 2005 07 15 | G96 | 0.1+ | 0.0 |
| 2005 05 20 | G96 | 0.0 | 0.1− | 2005 06 16 | 691 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.5− |
| 2005 05 20 | G96 | 0.2− | 0.1− | 2005 06 26 | 644 | 0.0 | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.3+ |
| 2005 05 20 | G96 | 0.2− | 0.0 | 2005 06 26 | 644 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.3− |
| 2005 06 08 | 691 | 0.1+ | 0.2− | 2005 06 26 | 644 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.1− |
| 2005 06 08 | 691 | 0.1− | 0.0 | 2005 07 03 | 701 | 0.2− | 0.3+ | 2006 11 16 | 703 | 0.6− | 0.5+ |
| 2005 06 08 | 691 | 0.1+ | 0.2− | 2005 07 03 | 701 | 0.6+ | 0.1− | 2006 11 16 | 703 | 0.3+ | 1.3+ |
| 2005 06 12 | 691 | 0.1+ | 0.3+ | 2005 07 03 | 701 | 0.0 | 0.4+ | 2006 11 16 | 703 | 0.5− | 0.4− |
| 2005 06 12 | 691 | 0.1− | 0.1− | 2005 07 15 | G96 | 0.3− | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.9− |
| 2005 06 12 | 691 | 0.1+ | 0.1+ | 2005 07 15 | G96 | 0.1+ | 0.1+ | | | | |
| 2005 06 16 | 691 | 0.0 | 0.1− | 2005 07 15 | G96 | 0.1− | 0.0 | | | | |

**2005 LX$_{22}$ = 2004 HE$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.23139 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18362735 | $\omega$ | 194.54410 | | −0.11034408 | | +0.99388360 |
| $a$ | 3.0655693 | $\Omega$ | 69.12090 | | −0.91140576 | | −0.09940958 |
| $e$ | 0.0452423 | $i$ | 0.27130 | | −0.39643881 | | −0.04809494 |
| $P$ | 5.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 691 | 0.6+ | 0.0 | 2005 06 08 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.1− |
| 2000 08 02 | 691 | 0.1+ | 0.2− | 2005 06 08 | 691 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2000 08 02 | 691 | 0.3+ | 0.0 | 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.8− |
| 2000 08 26 | 807 | 0.0 | 0.4+ | 2005 06 12 | 691 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2000 08 26 | 807 | 0.0 | 0.5+ | 2005 06 12 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.7+ |
| 2000 09 02 | 691 | 0.5− | 0.0 | 2005 06 12 | 691 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.1+ |
| 2000 09 02 | 691 | 0.7− | 0.0 | 2005 07 15 | G96 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 2000 09 02 | 691 | 0.2+ | 0.1+ | 2005 07 15 | G96 | 1.1+ | 0.4− | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2004 04 19 | 691 | 0.1+ | 0.2+ | 2005 07 15 | G96 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 04 19 | 691 | 0.3− | 0.3+ | 2005 07 15 | G96 | 1.0− | 0.8+ | 2006 11 11 | G96 | 0.3− | 0.1+ |
| 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 1.5− | 0.7− |
| 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2004 04 25 | 691 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.3+ | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2004 04 25 | 691 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2004 07 16 | 807 | 0.1− | 0.2+ | 2006 09 25 | G96 | 1.0− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.4+ |
| 2004 07 17 | 807 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.7+ | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.1+ |

**2005 LB$_{23}$ = 2006 VY$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.67082 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18736450 | $\omega$ | 231.75297 | | +0.95877161 | | +0.28354268 |
| $a$ | 3.0246689 | $\Omega$ | 111.76810 | | −0.25392429 | | +0.88478629 |
| $e$ | 0.1527580 | $i$ | 1.17154 | | −0.12759093 | | +0.36980638 |
| $P$ | 5.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 695 | 0.4+ | 0.5+ | 2005 06 16 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 1.0− | 0.6− |
| 2004 03 26 | 695 | 0.1− | 0.5+ | 2005 06 28 | G96 | 0.3− | 0.5+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2005 06 08 | 691 | 0.1− | 0.0 | 2005 06 28 | G96 | 0.4− | 0.4+ | 2006 11 14 | 691 | 0.2+ | 0.5+ |
| 2005 06 08 | 691 | 0.2− | 0.0 | 2005 06 28 | G96 | 0.2− | 0.9+ | 2006 11 14 | 691 | 0.5+ | 0.1+ |
| 2005 06 08 | 691 | 0.2− | 0.1− | 2005 06 28 | G96 | 0.4− | 0.2+ | 2006 11 14 | 691 | 0.6+ | 0.6+ |
| 2005 06 12 | 691 | 0.4+ | 0.1− | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.4− |
| 2005 06 12 | 691 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.5+ | 0.0 |
| 2005 06 12 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.4− | 0.2− |
| 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.2− | 2006 11 16 | 703 | 0.9− | 0.0 |
| 2005 06 13 | G96 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.4+ | 0.6− |
| 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.4− | 2006 12 01 | G96 | 0.5− | 0.5− |
| 2005 06 13 | G96 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.7− |
| 2005 06 16 | 691 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.6− | 0.3− |
| 2005 06 16 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.2− | | | | |

**2005 LS$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.54773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27097673 | $\omega$ | 39.65561 | | −0.07884736 | | +0.99670325 |
| $a$ | 2.3650920 | $\Omega$ | 225.83143 | | −0.92126049 | | −0.08018180 |
| $e$ | 0.1938759 | $i$ | 1.52778 | | −0.38087034 | | −0.01239029 |
| $P$ | 3.64 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.4− | 0.2+ | 2005 06 12 | G96 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.3+ |
| 2005 05 04 | G96 | 1.8+ | 1.4+ | 2005 06 12 | G96 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.5+ |
| 2005 05 04 | G96 | 0.6− | 0.4− | 2005 06 12 | G96 | 0.5− | 0.2− | 2006 11 21 | G96 | 0.5− | 0.2+ |
| 2005 05 04 | G96 | 0.1− | 0.1− | 2005 06 12 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2005 05 19 | 644 | 0.4− | 0.1− | 2005 06 14 | 691 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2005 05 19 | 644 | 0.0 | 0.0 | 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.4+ | 0.5+ |
| 2005 05 19 | 644 | 0.4− | 0.3− | 2005 06 14 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.4+ |
| 2005 06 10 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.6− | 2006 11 22 | G96 | 1.9+ | 0.5+ |
| 2005 06 10 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.8− | 0.9− | 2006 11 22 | G96 | 0.1− | 0.5+ |
| 2005 06 10 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.1− | | | | |

**2005 LU$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.14609 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18368626 | $\omega$ | 50.34773 | | +0.89104412 | | +0.41644545 |
| $a$ | 3.0649139 | $\Omega$ | 284.35710 | | −0.45218504 | | +0.77964990 |
| $e$ | 0.1490954 | $i$ | 10.74359 | | −0.03961143 | | +0.46767427 |
| $P$ | 5.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 21 | 691 | 0.5− | 0.6+ | 2005 08 29 | 644 | 0.5+ | 0.2− | 2005 09 26 | 703 | 1.0− | 1.3− |
| 2001 12 21 | 691 | 0.3+ | 0.4+ | 2005 08 31 | 699 | 0.0 | 1.2+ | 2005 09 26 | 703 | 0.4− | 0.1− |
| 2001 12 21 | 691 | 0.7+ | 0.7+ | 2005 08 31 | 699 | 0.7− | 0.5− | 2005 09 26 | 703 | 0.4− | 0.0 |
| 2005 06 11 | 291 | 0.3− | 0.0 | 2005 08 31 | 699 | 0.6− | 0.5+ | 2005 11 04 | G96 | 0.5+ | 0.7− |
| 2005 06 11 | 291 | 0.4− | 0.2+ | 2005 08 31 | 699 | 0.6− | 0.5+ | 2005 11 04 | G96 | 0.7+ | 0.5− |
| 2005 06 11 | 291 | 0.2− | 0.1+ | 2005 09 11 | 704 | 0.1− | 0.6+ | 2005 11 04 | G96 | 0.5+ | 0.5− |
| 2005 06 12 | 291 | 0.3− | 0.3+ | 2005 09 11 | 704 | 0.9+ | 0.2− | 2005 11 04 | G96 | 0.2+ | 0.2− |
| 2005 06 12 | 291 | 0.3− | 0.5+ | 2005 09 11 | 704 | 1.0+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2005 06 12 | 291 | 0.3− | 0.6+ | 2005 09 11 | 704 | 0.9+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2005 08 29 | 644 | 0.3+ | 0.3− | 2005 09 11 | 704 | 1.0+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.4− |
| 2005 08 29 | 644 | 0.2+ | 0.1− | 2005 09 26 | 703 | 0.6+ | 1.0− | | | | |

**2005 LC$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.59774 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28072351 | $\omega$ | 41.29586 | | +0.39188112 | | +0.83257308 |
| $a$ | 2.3100259 | $\Omega$ | 255.22466 | | −0.91399878 | | +0.30373006 |
| $e$ | 0.2039149 | $i$ | 23.88239 | | −0.10504959 | | +0.46321714 |
| $P$ | 3.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 704 | 0.7− | 0.2− | 2005 06 23 | 644 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.3+ | 0.3+ |
| 2005 06 04 | 704 | 0.5+ | 0.5− | 2005 07 03 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2005 06 04 | 704 | 0.1+ | 0.1− | 2005 07 03 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2005 06 13 | G96 | 0.2− | 0.2− | 2005 07 03 | 691 | 0.3+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2005 06 13 | G96 | 0.3− | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.3− | 2006 12 01 | 291 | 0.2− | 0.1− |
| 2005 06 13 | G96 | 0.0 | 0.1+ | 2005 07 05 | 644 | 0.2− | 0.1− | 2006 12 01 | 291 | 0.3− | 0.3− |
| 2005 06 13 | G96 | 0.2− | 0.0 | 2005 07 05 | 644 | 0.2+ | 0.8+ | 2006 12 01 | 291 | 0.1− | 0.2− |
| 2005 06 23 | 644 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.4− | | | | |
| 2005 06 23 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.5− | | | | |

**2005 LL$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.86728 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27532485 | $\omega$ | 273.20460 | | +0.96191075 | | +0.26408973 |
| $a$ | 2.3401253 | $\Omega$ | 71.49127 | | −0.21178705 | | +0.88324597 |
| $e$ | 0.2015629 | $i$ | 4.26966 | | −0.17284086 | | +0.38747023 |
| $P$ | 3.58 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (1.7− | 0.8+) | 2002 11 06 | 644 | 0.0 | 0.0 | 2005 06 17 | 691 | 0.0 | 0.3− |
| 2002 09 28 | 608 | 0.7− | 0.4+ | 2002 11 06 | 644 | 0.3+ | 0.3+ | 2005 06 17 | 691 | 0.0 | 0.3− |
| 2002 09 28 | 608 | 1.4− | 0.9+ | 2002 11 06 | 644 | 0.2+ | 0.7+ | 2005 06 17 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | (1.8+ | 1.7−) | 2005 06 06 | 691 | 0.1− | 0.5+ | 2006 11 17 | 691 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 1.4+ | 0.8− | 2005 06 06 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 691 | 0.3− | 0.1+ |
| 2002 10 04 | 704 | 0.0 | 0.6− | 2005 06 06 | 691 | 0.0 | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2002 10 11 | 704 | (1.6+ | 0.7−) | 2005 06 13 | G96 | 0.4− | 0.3+ | 2006 11 25 | 691 | 0.8+ | 0.5+ |
| 2002 10 11 | 704 | 1.2− | 0.3+ | 2005 06 13 | G96 | 0.0 | 0.5+ | 2006 11 25 | 691 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 0.3− | 0.1+ | 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 11 25 | 691 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 1.3+ | 0.1− | 2005 06 13 | G96 | 0.1− | 0.4+ | | | | |

**2005 LA$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.37652 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22818064 | $\omega$ | 153.32736 | | +0.99442584 | | −0.08499304 |
| $a$ | 2.6522646 | $\Omega$ | 211.73912 | | +0.06231730 | | +0.95113636 |
| $e$ | 0.2442060 | $i$ | 6.81214 | | +0.08505177 | | +0.29684308 |
| $P$ | 4.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | G96 | 0.6− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2005 05 14 | G96 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2005 05 14 | G96 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2005 05 14 | G96 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 13 | 683 | 0.5− | 0.3+ |
| 2005 06 03 | 691 | 0.0 | 0.6− | 2006 10 23 | 704 | 0.2+ | 0.1+ | 2006 11 13 | 683 | (0.9− | 1.7+) |
| 2005 06 03 | 691 | 1.3+ | 0.2− | 2006 10 23 | 704 | 0.3+ | 0.6− | 2006 11 13 | 683 | (1.2− | 1.9+) |
| 2005 06 03 | 691 | 0.1+ | 0.8+ | 2006 10 23 | 704 | 0.6+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2005 06 08 | 691 | 0.2− | 0.0 | 2006 10 23 | 704 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2005 06 08 | 691 | 0.2− | 0.1+ | 2006 10 23 | 704 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2005 06 08 | 691 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2005 06 13 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2005 06 13 | 691 | 0.4− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2005 06 13 | 691 | 0.1− | 0.1− | 2006 10 28 | 704 | (0.9+ | 2.3+) | 2006 11 17 | 703 | 0.6− | 0.6− |
| 2006 09 27 | J75 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.9− | 0.2− | 2006 11 17 | 703 | 0.6− | 0.1− |
| 2006 09 27 | J75 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.2− | 0.8+ | 2006 11 18 | 704 | 0.6+ | 0.8+ |
| 2006 09 27 | J75 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2006 09 27 | G96 | 0.6+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2006 09 27 | G96 | 0.4+ | 0.5+ | 2006 10 31 | 691 | 0.4− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2006 09 27 | G96 | 0.5− | 0.3− | 2006 11 02 | 704 | 0.6− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 02 | 704 | 0.9+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.5− |
| 2006 09 28 | J75 | 0.4− | 0.2+ | 2006 11 02 | 704 | 1.2+ | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.4− |
| 2006 09 28 | J75 | (0.2+ | 1.6+) | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2006 09 29 | 704 | (1.7− | 1.9+) | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.4− |
| 2006 09 29 | 704 | 0.5+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2006 09 29 | 704 | 1.3+ | 0.6− | 2006 11 10 | 683 | 0.3+ | 0.8− | 2006 11 28 | 704 | 0.3+ | 0.1− |
| 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 683 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.0 | 1.0+ |
| 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 683 | 0.1− | 0.5− | 2006 11 28 | 704 | 0.9− | 0.5+ |
| 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 683 | 0.1+ | 1.1+ | 2006 11 28 | 704 | 0.4− | 0.1+ |
| 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 11 | 683 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.3− | | | | |

**2005 LJ$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.39765 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23918106 | $\omega$ | 51.47753 | | −0.32483088 | | +0.94446011 |
| $a$ | 2.5703062 | $\Omega$ | 199.74200 | | −0.90713273 | | −0.32602458 |
| $e$ | 0.1234796 | $i$ | 8.47800 | | −0.26757264 | | −0.04126819 |
| $P$ | 4.12 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 691 | 0.2+ | 0.1+ | 2005 06 30 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.5+ | 0.3− |
| 2005 05 04 | 691 | 0.1− | 0.1+ | 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2005 05 04 | 691 | 0.1− | 0.2− | 2005 07 05 | 644 | 0.1+ | 0.5− | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2005 06 02 | 703 | 1.2− | 0.5+ | 2005 07 05 | 644 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2005 06 02 | 703 | 1.0− | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.6− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2005 06 02 | 703 | 0.6− | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 1.1− | 0.5− |
| 2005 06 02 | 703 | 0.2+ | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3− | 0.7− |
| 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.7− | 0.4− |
| 2005 06 08 | 691 | 0.1− | 0.3+ | 2006 09 19 | A55 | 0.1+ | 0.9+ | 2006 10 29 | 291 | 0.2+ | 0.0 |
| 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 09 19 | A55 | 0.0 | 0.4+ | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2005 06 13 | 691 | 0.0 | 0.1− | 2006 09 19 | A55 | 0.3+ | 0.9+ | 2006 10 29 | 291 | 0.1+ | 0.3+ |
| 2005 06 13 | 691 | 0.4+ | 0.7− | 2006 09 19 | A55 | 0.4+ | 1.1+ | 2006 10 31 | G96 | 0.5− | 0.3− |
| 2005 06 13 | 691 | 0.2− | 0.1− | 2006 09 19 | A55 | 0.0 | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2005 06 27 | 691 | 0.0 | 0.2+ | 2006 09 19 | A55 | 1.3+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2005 06 27 | 691 | 0.2+ | 0.2+ | 2006 09 19 | A55 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 09 20 | A55 | 1.0− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2005 06 28 | 644 | 0.0 | 0.1− | 2006 09 20 | A55 | 0.2− | 0.8+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2005 06 28 | 644 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.7+ | 0.2+ |
| 2005 06 28 | 644 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2005 06 30 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1+ | | | | |

**2005 LV$_{29}$ = 2006 SQ$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.34937 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22420337 | $\omega$ | 109.00930 | | +0.95938189 | | +0.19603942 |
| $a$ | 2.6835393 | $\Omega$ | 240.14280 | | −0.24866324 | | +0.92726647 |
| $e$ | 0.1462821 | $i$ | 13.52765 | | +0.13324034 | | +0.31897561 |
| $P$ | 4.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 11 | 691 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2005 06 11 | 691 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 16 | 104 | 0.5+ | 0.4− |
| 2005 06 11 | 691 | 0.1− | 0.4+ | 2006 09 22 | 699 | 0.9+ | 0.3+ | 2006 10 16 | 104 | 0.1+ | 0.2− |
| 2005 06 13 | G96 | 0.3− | 0.7− | 2006 09 22 | 699 | 0.1+ | 0.4− | 2006 10 16 | 104 | 0.1+ | 0.6− |
| 2005 06 13 | G96 | 0.1+ | 1.1− | 2006 09 22 | 699 | 0.2+ | 0.6+ | 2006 10 19 | 703 | 0.6− | 0.0 |
| 2005 06 13 | G96 | 0.1+ | 1.3− | 2006 09 22 | 699 | 1.1+ | 1.3+ | 2006 10 19 | 703 | 0.3+ | 0.2+ |
| 2005 06 13 | G96 | 0.1+ | 1.0− | 2006 09 28 | 703 | 0.8− | 0.6− | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2005 06 14 | 291 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 10 19 | 703 | 0.4− | 0.1+ |
| 2005 06 14 | 291 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2005 06 14 | 291 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2006 09 17 | 703 | 0.2− | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.1+ | | | | |

**2005 LE$_{30}$ = 2006 VP$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.93521 | | (2000.0) | | | |
| $n$ | 0.17565559 | $\omega$ | 215.27808 | | +0.87854844 | +0.47609875 |
| $a$ | 3.1576312 | $\Omega$ | 116.24701 | | −0.42778470 | +0.82012621 |
| $e$ | 0.2127015 | $i$ | 2.46053 | | −0.21249210 | +0.31736884 |
| $P$ | 5.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 12 | 809 | 0.4+ | 0.8− | 2005 06 12 | 691 | 0.2+ | 0.2+ | 2005 08 01 | E12 | 0.2− | 0.1+ |
| 1994 08 12 | 809 | 0.8− | 0.3+ | 2005 06 12 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.5− |
| 1994 08 12 | 809 | 0.9− | 0.8+ | 2005 06 12 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.5− |
| 1994 09 05 | 809 | 0.2+ | 2.0+ | 2005 06 13 | G96 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.6+ | 0.2− |
| 1994 09 05 | 809 | 0.9+ | 1.0+ | 2005 06 13 | G96 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 1994 09 05 | 809 | 0.1− | 0.7+ | 2005 06 13 | G96 | 0.5+ | 0.8+ | 2006 11 14 | 691 | 0.3+ | 0.4+ |
| 2000 10 07 | 699 | 0.4− | 0.8− | 2005 06 13 | G96 | 0.0 | 0.7+ | 2006 11 14 | 691 | 0.4+ | 0.5+ |
| 2000 10 07 | 699 | 0.7− | 0.4+ | 2005 06 16 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2000 10 07 | 699 | 1.1− | 0.5+ | 2005 06 16 | 691 | 1.4− | 0.8− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2000 10 07 | 699 | 0.6− | 0.1+ | 2005 06 16 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 1.0− | 0.3+ |
| 2003 02 08 | I03 | 0.0 | 0.7+ | 2005 06 16 | 691 | 0.7+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2003 02 08 | I03 | 0.2+ | 0.6+ | 2005 06 16 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 1.0− | 0.3+ |
| 2003 02 08 | I03 | 0.7+ | 0.6+ | 2005 06 16 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.4− | 0.7− |
| 2004 04 12 | 691 | 0.2+ | 0.1+ | 2005 08 01 | E12 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.9− | 0.0 |
| 2004 04 12 | 691 | 0.0 | 0.3+ | 2005 08 01 | E12 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.5− |
| 2004 04 12 | 691 | 0.0 | 0.9+ | 2005 08 01 | E12 | 0.4− | 0.1+ | | | | |

**2005 LS$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 180.61766 | | (2000.0) | | | |
| $n$ | 0.18969502 | $\omega$ | 305.05365 | | −0.71910284 | +0.67137450 |
| $a$ | 2.9998446 | $\Omega$ | 277.85029 | | −0.56396506 | −0.71459050 |
| $e$ | 0.0773930 | $i$ | 10.42761 | | −0.40599817 | −0.19651132 |
| $P$ | 5.20 | $H$ | 14.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 24 | 704 | 0.2− | 0.2+ | 2005 06 13 | 291 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2001 11 24 | 704 | 1.1− | 0.7+ | 2005 08 05 | 644 | 0.3+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.5+ |
| 2001 11 24 | 704 | 1.2− | 0.8+ | 2005 08 05 | 644 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.4+ | 0.3+ |
| 2001 12 14 | 644 | 0.5− | 0.3− | 2005 08 05 | 644 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.4− | 0.4− |
| 2001 12 14 | 644 | 0.6− | 0.2− | 2005 08 27 | 699 | 1.0− | 0.9+ | 2006 11 15 | 703 | 0.1− | 0.5+ |
| 2001 12 14 | 644 | (0.7− | 1.6−) | 2005 08 27 | 699 | 1.2+ | 0.7− | 2006 11 15 | 703 | 0.2+ | 1.4− |
| 2001 12 18 | 704 | 1.1+ | 0.2+ | 2005 08 27 | 699 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.5− |
| 2001 12 18 | 704 | 0.3+ | 0.1+ | 2005 08 27 | 699 | 0.9+ | 0.9− | 2006 11 21 | 703 | 0.9+ | 0.2− |
| 2001 12 18 | 704 | 1.2+ | 0.9+ | 2006 10 27 | 703 | (1.1+ | 1.8+) | 2006 11 21 | 703 | 1.3− | 0.1− |
| 2001 12 18 | 704 | 0.9+ | 0.9+ | 2006 10 27 | 703 | 1.0+ | 0.7+ | 2006 11 21 | 703 | 0.1+ | 1.2− |
| 2001 12 18 | 704 | (1.7+ | 0.0 ) | 2006 10 27 | 703 | 0.4+ | 0.3+ | 2006 11 21 | 703 | 0.4+ | 0.1− |
| 2005 06 12 | 291 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.3− | 1.3− | 2006 11 22 | 703 | (2.0− | 1.3−) |
| 2005 06 12 | 291 | 0.2− | 0.4+ | 2006 11 02 | G96 | 0.0 | 0.1− | 2006 11 22 | 703 | (2.3+ | 0.0 ) |
| 2005 06 12 | 291 | 0.3− | 0.1+ | 2006 11 02 | G96 | 0.4− | 0.2− | 2006 11 22 | 703 | 0.8+ | 0.7+ |
| 2005 06 13 | 291 | 0.2− | 0.2+ | 2006 11 02 | G96 | 0.2− | 0.4− | 2006 11 22 | 703 | (0.6+ | 1.9+) |
| 2005 06 13 | 291 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.1− | 0.2− | | | | |

**2005 LY$_{32}$ = 2006 UD$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.64250 | | (2000.0) | | | |
| $n$ | 0.25759543 | $\omega$ | 260.61333 | | +0.93652261 | +0.32806278 |
| $a$ | 2.4463050 | $\Omega$ | 80.15831 | | −0.25166518 | +0.87464589 |
| $e$ | 0.1489696 | $i$ | 7.21203 | | −0.24411071 | +0.35688848 |
| $P$ | 3.83 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | 0.2+ | 0.2+ | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.8− | 0.2− |
| 2002 10 08 | 699 | 0.5− | 0.4− | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.9+ | 0.6− |
| 2002 10 08 | 699 | 0.5+ | 0.4− | 2005 06 10 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2002 10 08 | 699 | 0.9+ | 0.0 | 2005 06 10 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.8− |
| 2002 10 15 | 644 | 0.2− | 0.1+ | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2002 10 15 | 644 | 0.1+ | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.5− | 0.3+ |
| 2002 10 15 | 644 | 0.2− | 0.2− | 2005 06 14 | 691 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2002 11 06 | 644 | 0.2− | 0.2+ | 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 1.3+ |
| 2002 11 06 | 644 | 0.5− | 0.2+ | 2006 10 16 | 703 | 1.1+ | 0.8+ | 2006 11 20 | 704 | 0.7+ | 0.2+ |
| 2002 11 06 | 644 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.1− | 0.5+ |
| 2005 05 14 | G96 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 1.0− |
| 2005 05 14 | G96 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.2+ | | | | |

**2005 LG$_{34}$ = 2006 SJ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.40232 | | (2000.0) | | | |
| $n$ | 0.21962090 | $\omega$ | 282.16027 | | +0.98350766 | +0.08288063 |
| $a$ | 2.7207393 | $\Omega$ | 73.25014 | | −0.00446508 | +0.89968266 |
| $e$ | 0.1378462 | $i$ | 9.66470 | | −0.18081135 | +0.42860461 |
| $P$ | 4.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 01 | 691 | 0.1− | 0.1− | 2005 06 14 | 291 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.3− |
| 2005 06 01 | 691 | 0.1− | 0.0 | 2005 06 14 | 291 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.8− | 0.2− |
| 2005 06 01 | 691 | 0.0 | 0.3+ | 2006 09 17 | 699 | 0.1+ | 1.1− | 2006 09 19 | 703 | 0.7− | 0.1+ |
| 2005 06 10 | 691 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.0 | 0.9+ | 2006 09 25 | 703 | 0.1+ | 0.5+ |
| 2005 06 10 | 691 | 0.4+ | 0.0 | 2006 09 17 | 699 | 0.3− | 1.2+ | 2006 09 25 | 703 | 0.8+ | 0.6− |
| 2005 06 10 | 691 | 0.1− | 0.5− | 2006 09 17 | 699 | 0.7+ | 0.4+ | 2006 09 25 | 703 | 0.5+ | 0.5− |
| 2005 06 14 | 291 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.8+ | 2006 09 25 | 703 | 0.8− | 1.1− |

**2005 LF$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.68956 | | (2000.0) | | | |
| $n$ | 0.18733221 | $\omega$ | 55.30220 | | −0.52076369 | −0.84376423 |
| $a$ | 3.0250164 | $\Omega$ | 66.59234 | | +0.72966374 | −0.51889177 |
| $e$ | 0.0208471 | $i$ | 8.13583 | | +0.44316589 | −0.13716142 |
| $P$ | 5.26 | $H$ | 14.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2002 12 10 | 704 | 0.7− | 0.0 | 2005 06 13 | G96 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2002 12 10 | 704 | 1.4− | 1.1− | 2005 06 13 | G96 | 0.6− | 0.1− |
| 2002 11 23 | 644 | 0.2− | 0.1+ | 2005 05 08 | G96 | 0.1− | 0.0 | 2005 06 13 | G96 | 0.5− | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2005 05 08 | G96 | 0.4+ | 0.3+ | 2005 06 14 | 691 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2005 05 08 | G96 | 0.1− | 0.2− | 2005 06 14 | 691 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 1.1+ | 0.4+ | 2005 05 08 | G96 | 0.0 | 0.1− | 2005 06 14 | 691 | 0.2+ | 0.0 |
| 2002 12 10 | 704 | 1.2+ | 0.9+ | 2005 06 13 | G96 | 0.2− | 0.0 | | | | |

**2005 LZ$_{36}$ = 2006 TN$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.22764 | | (2000.0) | | | |
| $n$ | 0.23435497 | $\omega$ | 18.85250 | | +0.03620707 | +0.99756621 |
| $a$ | 2.6054731 | $\Omega$ | 253.25685 | | −0.92469306 | +0.01083008 |
| $e$ | 0.1752382 | $i$ | 3.56758 | | −0.37898786 | +0.06887937 |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.3− | 0.3+ | 2005 06 26 | G96 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2005 06 13 | G96 | 0.3− | 0.2+ | 2005 06 26 | G96 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2005 06 13 | G96 | 0.2− | 0.7+ | 2005 06 26 | G96 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2005 06 13 | G96 | 0.7+ | 0.2+ | 2005 06 26 | G96 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.6− | 0.3+ |
| 2005 06 13 | 599 | 0.1+ | 0.0 | 2005 06 28 | G96 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2005 06 13 | 599 | 0.0 | 0.1− | 2005 06 28 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.3− | 0.1− |
| 2005 06 13 | 599 | 0.1+ | 0.0 | 2005 06 28 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.3− | 0.2− |
| 2005 06 13 | 599 | 0.3− | 0.2− | 2005 06 28 | G96 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2005 06 16 | G96 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2005 06 16 | G96 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.4− |
| 2005 06 16 | G96 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.5+ | 0.1− |
| 2005 06 16 | G96 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | | | | |

**2005 LZ$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.48675 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22694260 | $\omega$ | 87.38057 | | +0.62001862 | | +0.77238544 |
| $a$ | 2.6619018 | $\Omega$ | 221.99164 | | −0.77650276 | | +0.57893320 |
| $e$ | 0.1268740 | $i$ | 11.88921 | | −0.11234044 | | +0.26126056 |
| $P$ | 4.34 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 691 | 0.3− | 0.0 | 2005 06 15 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2005 06 04 | 691 | 0.1− | 0.4− | 2005 06 28 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2005 06 04 | 691 | 0.0 | 0.1− | 2005 06 28 | 644 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2005 06 11 | 691 | 0.1+ | 0.2− | 2005 06 28 | 644 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.5+ | 0.1+ |
| 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2005 06 11 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.5− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2005 06 15 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.7+ |
| 2005 06 15 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2005 06 15 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.4− | 2006 11 18 | 691 | 0.2− | 0.4− |
| 2005 06 15 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2005 06 15 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.2− |

**2005 LC$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.11086 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18089910 | $\omega$ | 103.04120 | | +0.79567538 | | +0.58275825 |
| $a$ | 3.0963148 | $\Omega$ | 221.64527 | | −0.60572173 | | +0.76612427 |
| $e$ | 0.1830388 | $i$ | 14.39545 | | +0.00137164 | | +0.27101000 |
| $P$ | 5.45 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 11 | 691 | 0.2+ | 0.1− | 2005 07 01 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2005 06 11 | 691 | 0.2+ | 0.0 | 2005 07 01 | 691 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.5+ | 0.1+ |
| 2005 06 11 | 691 | 0.1− | 0.2+ | 2005 07 04 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 1.2− | 0.7− |
| 2005 06 15 | 691 | 0.1− | 0.0 | 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 2005 06 15 | 691 | 0.2− | 0.0 | 2005 07 04 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.9+ | 0.2− |
| 2005 06 15 | 691 | 0.1+ | 0.0 | 2006 09 22 | 699 | 0.7− | 0.6+ | 2006 10 17 | 703 | 0.1− | 1.4+ |
| 2005 06 28 | 644 | 0.3+ | 0.1− | 2006 09 22 | 699 | 0.3− | 0.8− | 2006 10 19 | 695 | 0.2+ | 0.1− |
| 2005 06 28 | 644 | 0.0 | 0.2+ | 2006 09 22 | 699 | 1.1+ | 0.4− | 2006 10 19 | 695 | 0.0 | 0.2− |
| 2005 06 28 | 644 | 0.2− | 0.2+ | 2006 09 22 | 699 | 0.5− | 0.3+ | | | | |
| 2005 07 01 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.2− | | | | |

**2005 LN$_{38}$ = 1996 SM$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.88317 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31238059 | $\omega$ | 154.52280 | | +0.92616286 | | +0.37709452 |
| $a$ | 2.1511962 | $\Omega$ | 183.33399 | | −0.35835788 | | +0.87612616 |
| $e$ | 0.1769738 | $i$ | 4.63492 | | −0.11748188 | | +0.30033762 |
| $P$ | 3.16 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 21 | 327 | 0.0 | 0.7+ | 2005 06 11 | 691 | 0.1+ | 0.1− | 2005 06 28 | 691 | 0.2− | 0.0 |
| 1996 09 21 | 327 | 0.6− | 0.7− | 2005 06 11 | 691 | 0.2− | 0.0 | 2005 06 28 | 691 | 0.3− | 0.2+ |
| 1996 09 21 | 327 | 0.3+ | 0.3+ | 2005 06 11 | 691 | 0.1− | 0.0 | 2005 06 30 | 691 | 0.3− | 0.5+ |
| 1996 09 22 | 327 | 0.0 | 0.1− | 2005 06 15 | 691 | 0.1− | 0.0 | 2005 06 30 | 691 | 0.3− | 0.3+ |
| 1996 09 22 | 327 | 0.1− | 0.0 | 2005 06 15 | 691 | 0.3− | 0.0 | 2005 06 30 | 691 | 0.1− | 0.1+ |
| 1996 09 22 | 327 | 0.1+ | 0.0 | 2005 06 15 | 691 | 0.4+ | 0.2− | | | | |
| 1996 09 22 | 327 | 0.4+ | 0.3− | 2005 06 28 | 691 | 1.4+ | 0.8− | | | | |

**2005 LP$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.66374 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28388045 | $\omega$ | 23.18350 | | −0.77877174 | | +0.62682754 |
| $a$ | 2.2928680 | $\Omega$ | 195.70827 | | −0.58880134 | | −0.74389951 |
| $e$ | 0.1336023 | $i$ | 5.19877 | | −0.21639678 | | −0.23173425 |
| $P$ | 3.47 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 03 | 691 | 0.5+ | 0.4+ | 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 1994 02 03 | 691 | 0.6+ | 0.5+ | 2005 06 30 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 1994 02 03 | 691 | 0.6− | 0.9+ | 2005 06 30 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.3+ |
| 2002 08 17 | 644 | 0.0 | 0.7− | 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2002 08 17 | 644 | 0.1+ | 0.6− | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2002 08 17 | 644 | 0.1− | 0.5− | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.4− |
| 2005 06 02 | 703 | 1.0− | 0.3− | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.5+ |
| 2005 06 02 | 703 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2005 06 02 | 703 | (1.6− | 0.6−) | 2006 09 25 | G96 | 0.7+ | 0.1− | 2006 10 23 | 691 | 0.9− | 0.0 |
| 2005 06 02 | 703 | 0.9− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2005 06 11 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.4+ | 0.2+ |
| 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2005 06 11 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2005 06 15 | 691 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2005 06 15 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.7+ | 0.7− | 2006 11 16 | G96 | 0.5− | 0.4− |
| 2005 06 15 | 691 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.6+ | 1.0− |
| 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.1− | | | | |
| 2005 06 27 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.2− | | | | |

**2005 LW$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.69116 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24274628 | $\omega$ | 353.11703 | | −0.93413900 | | +0.35316615 |
| $a$ | 2.5450774 | $\Omega$ | 207.73831 | | −0.32195100 | | −0.89615337 |
| $e$ | 0.0750009 | $i$ | 6.35965 | | −0.15405152 | | −0.26866857 |
| $P$ | 4.06 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 06 | 691 | 0.0 | 0.2+ | 2005 06 30 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2005 06 06 | 691 | 0.0 | 0.3+ | 2005 06 30 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.2+ | 1.3− |
| 2005 06 06 | 691 | 0.2− | 0.3+ | 2005 07 04 | 691 | 0.4+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2005 06 10 | 691 | 0.1− | 0.3− | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.5+ |
| 2005 06 10 | 691 | 0.1− | 0.1− | 2005 07 04 | 691 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.2+ |
| 2005 06 10 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.4− | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2005 06 16 | 691 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.2+ |
| 2005 06 16 | 691 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2005 06 16 | 691 | 0.3+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.1+ | | | | |
| 2005 06 30 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.3+ | | | | |

**2005 LN$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.53245 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23673001 | $\omega$ | 31.64826 | | +0.16847775 | | +0.97913683 |
| $a$ | 2.5880173 | $\Omega$ | 248.26382 | | −0.92797471 | | +0.11868962 |
| $e$ | 0.1376154 | $i$ | 7.02496 | | −0.33238258 | | +0.16493585 |
| $P$ | 4.16 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 645 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2004 01 28 | 645 | 0.0 | 0.1+ | 2005 06 14 | G96 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2005 05 19 | E12 | 0.3+ | 0.4− | 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2005 05 19 | E12 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.3− |
| 2005 05 19 | E12 | 0.5− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.4− | 0.1− |
| 2005 05 19 | E12 | 0.6− | 0.9+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2005 05 29 | E12 | 0.4− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2005 05 29 | E12 | 0.9− | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 29 | E12 | 1.3+ | 1.2− | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.1− | | |
| 2005 05 29 | E12 | 0.5+ | 0.5− | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.3+ | | |
| 2005 06 04 | 704 | 0.4− | 1.0− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.3+ | | |
| 2005 06 04 | 704 | 0.6− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.3+ | | |
| 2005 06 04 | 704 | 0.9− | 1.4+ | 2006 10 17 | 703 | 0.7− | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3− | | |
| 2005 06 10 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.7− | 2006 11 25 | G96 | 0.3+ | 0.3− | | |
| 2005 06 10 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.4− | | |
| 2005 06 10 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.3− | 1.0+ | 2006 11 25 | G96 | 0.2+ | 0.4− | | |
| 2005 06 14 | G96 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.0 | 0.2− | | | | | | |

### 2005 LQ$_{43}$ = 2001 YP$_{25}$ = 2006 UY$_{189}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.12499 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17938767 | $\omega$ | 76.51244 | | +0.91634781 | +0.36405579 | |
| $a$ | 3.1136825 | $\Omega$ | 261.93527 | | −0.40035428 | +0.83814767 | |
| $e$ | 0.0694393 | $i$ | 9.68946 | | +0.00481153 | +0.40616729 | |
| $P$ | 5.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.6− | 0.3+ | 2005 06 05 | 691 | 0.7+ | 1.6+ | 2006 10 19 | 703 | 0.2+ | 0.2− | | |
| 2001 12 18 | 704 | 0.4− | 0.5− | 2005 06 10 | 691 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.6+ | | |
| 2001 12 18 | 704 | 0.3− | 0.3+ | 2005 06 10 | 691 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.8− | 0.4− | | |
| 2001 12 19 | 704 | (3.4+ | 0.3−) | 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2001 12 19 | 704 | 1.3+ | 0.4+ | 2005 06 17 | 691 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.4− | | |
| 2001 12 19 | 704 | (2.1+ | 0.5+) | 2005 06 17 | 691 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.8+ | 0.2− | | |
| 2005 06 05 | 691 | 0.1+ | 1.1− | 2005 06 17 | 691 | 0.5− | 0.2+ | | | | | | |
| 2005 06 05 | 691 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.6− | 0.5+ | | | | | | |

### 2005 LR$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.99648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17456943 | $\omega$ | 299.73644 | | −0.65725396 | +0.66023372 | |
| $a$ | 3.1707153 | $\Omega$ | 284.31699 | | −0.49400170 | −0.74161577 | |
| $e$ | 0.0317616 | $i$ | 22.03159 | | −0.56919202 | −0.11873282 | |
| $P$ | 5.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 03 | 691 | 0.3− | 0.1+ | 2005 07 05 | G96 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 1.7+ | 0.5− | | |
| 2005 06 03 | 691 | 0.8+ | 0.1− | 2005 07 05 | G96 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.0 | | |
| 2005 06 03 | 691 | 0.1− | 0.1− | 2005 07 05 | G96 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.0 | 0.8+ | | |
| 2005 06 10 | 691 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.5− | 0.8− | | |
| 2005 06 10 | 691 | 0.7− | 0.2− | 2005 07 07 | G92 | 0.6+ | 0.3+ | 2006 09 25 | 703 | (2.4− | 0.3−) | | |
| 2005 06 10 | 691 | 0.1− | 0.1+ | 2005 07 07 | G92 | 0.7+ | 0.0 | 2006 10 02 | 703 | 1.0− | 0.0 | | |
| 2005 06 14 | G96 | 0.2+ | 0.1− | 2005 07 07 | G92 | 0.1− | 0.2− | 2006 10 02 | 703 | 0.7− | 1.6− | | |
| 2005 06 14 | G96 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 1.3− | 0.8+ | 2006 10 02 | 703 | 1.0+ | 0.2− | | |
| 2005 06 14 | G96 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.6+ | 2006 10 02 | 703 | 0.8− | 0.6− | | |
| 2005 06 14 | G96 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 1.7+ | 1.6+ | | | | | | |

### 2005 LY$_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.99453 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25758566 | $\omega$ | 43.65492 | | +0.36519632 | +0.92883028 | |
| $a$ | 2.4463669 | $\Omega$ | 247.85445 | | −0.87157040 | +0.31754916 | |
| $e$ | 0.1378651 | $i$ | 3.86900 | | −0.32710349 | +0.19088438 | |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 291 | 0.6− | 0.8+ | 2005 06 13 | G96 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.0 | | |
| 2001 05 26 | 291 | 0.3− | 0.8+ | 2005 06 13 | G96 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− | | |
| 2001 05 26 | 291 | 1.3+ | 0.5− | 2005 06 17 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.3− | | |
| 2005 05 28 | 599 | 0.2− | 0.6− | 2005 06 17 | 691 | 0.2+ | 0.1+ | 2006 11 02 | 691 | 0.0 | 0.3− | | |
| 2005 05 28 | 599 | 0.0 | 0.3− | 2005 06 17 | 691 | 0.5+ | 0.0 | 2006 11 02 | 691 | 0.2+ | 0.4− | | |
| 2005 05 28 | 599 | 0.7− | 0.4− | 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 02 | 691 | 0.0 | 0.3− | | |
| 2005 05 29 | E12 | 0.5− | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.4+ | | |
| 2005 05 29 | E12 | 1.2− | 0.7− | 2006 10 13 | 691 | 0.1+ | 0.6+ | 2006 11 12 | G96 | 0.2− | 0.3+ | | |
| 2005 05 29 | E12 | 0.1− | 0.4− | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.4− | 0.2+ | | |
| 2005 05 29 | E12 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.1+ | | |
| 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.3+ | | | | | | |
| 2005 06 13 | G96 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.3− | 0.4− | | | | | | |

### 2005 LD$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.69265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22959561 | $\omega$ | 143.52584 | | +0.97929374 | +0.17629526 | |
| $a$ | 2.6413563 | $\Omega$ | 206.83946 | | −0.19370711 | +0.95885412 | |
| $e$ | 0.1729769 | $i$ | 12.73367 | | +0.05883308 | +0.22252809 | |
| $P$ | 4.29 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.1− | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 2005 06 08 | 691 | 0.0 | 1.0+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.3+ | | |
| 2005 06 13 | 691 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.9− | | |
| 2005 06 13 | 691 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | (3.2− | 0.3−) | | |
| 2005 06 13 | 691 | 0.0 | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.7+ | | |
| 2005 06 17 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | (1.7+ | 0.3+) | | |
| 2005 06 17 | 691 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.7− | 0.3− | | |
| 2005 06 17 | 691 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 19 | 703 | (0.5− | 1.6+) | | |
| 2005 06 28 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 19 | 703 | 0.6+ | 0.4+ | | |
| 2005 06 28 | 691 | 0.2− | 0.1− | 2006 11 01 | 703 | 0.6+ | 0.5+ | 2006 11 19 | 703 | 0.7− | 0.5+ | | |
| 2005 06 28 | 691 | 0.1− | 0.2− | 2006 11 01 | 703 | 0.7− | 0.7− | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 01 | 703 | 0.2+ | 1.0+ | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 01 | 703 | 0.5+ | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.3− | | |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.5− | | |
| 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 11 08 | 644 | 0.4+ | 0.0 | | | | | | |
| 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.1− | | | | | | |

### 2005 LN$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.09952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23198560 | $\omega$ | 53.88463 | | −0.02802098 | +0.99342910 | |
| $a$ | 2.6231836 | $\Omega$ | 215.01123 | | −0.96799905 | −0.05466217 | |
| $e$ | 0.1615113 | $i$ | 11.15180 | | −0.24938457 | +0.10055182 | |
| $P$ | 4.25 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 691 | 0.0 | 0.1− | 2005 06 27 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 291 | 0.3+ | 0.0 | | |
| 2005 06 04 | 691 | 0.2− | 0.1− | 2005 06 28 | 644 | 0.0 | 0.5− | 2006 09 30 | 291 | 0.4+ | 0.0 | | |
| 2005 06 04 | 691 | 0.6+ | 0.6+ | 2005 06 28 | 644 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | | |
| 2005 06 13 | 691 | 0.1− | 0.0 | 2005 06 28 | 644 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ | | |
| 2005 06 13 | 691 | 0.0 | 0.2− | 2005 06 29 | 644 | 0.4− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.4+ | | |
| 2005 06 13 | 691 | 0.1− | 0.3− | 2005 06 29 | 644 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.6+ | 0.1− | | |
| 2005 06 17 | 691 | 0.1− | 0.0 | 2005 06 29 | 644 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4− | | |
| 2005 06 17 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.0 | | |
| 2005 06 17 | 691 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2005 06 27 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.1+ | | | | | | |
| 2005 06 27 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 291 | 0.3− | 0.2− | | | | | | |

### 2005 LV$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.71539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21533147 | $\omega$ | 70.24177 | | +0.26535430 | +0.94904354 | |
| $a$ | 2.7567521 | $\Omega$ | 216.53750 | | −0.95643407 | +0.23684083 | |
| $e$ | 0.1320554 | $i$ | 16.59256 | | −0.12174139 | +0.20790088 | |
| $P$ | 4.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 21 | G96 | 0.5− | 0.0 | 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.2− | | |
| 2005 05 21 | G96 | 0.3− | 0.5+ | 2005 06 27 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1+ | | |
| 2005 05 21 | G96 | 0.6− | 0.1− | 2005 07 04 | 691 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | 691 | 0.1+ | 0.0 | 2005 07 04 | 691 | 0.4+ | 0.4− | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2005 06 13 | 691 | 0.1+ | 0.0 | 2005 07 04 | 691 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2005 06 13 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2005 06 17 | 691 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.5− | 0.7+ | 2006 11 16 | 691 | 0.3− | 0.3− |
| 2005 06 17 | 691 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2005 06 17 | 691 | 0.5− | 0.5− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.4− | 0.2+ |
| 2005 06 27 | 691 | 0.1− | 0.7+ | 2006 10 17 | 691 | 0.9+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |

**2005 LB$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.61788 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22339487 | $\omega$ | 40.25649 | | −0.58095797 | | +0.81251695 |
| $a$ | 2.6900102 | $\Omega$ | 194.43745 | | −0.78748197 | | −0.57601178 |
| $e$ | 0.0881447 | $i$ | 11.10006 | | −0.20581540 | | −0.08959147 |
| $P$ | 4.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 03 | 691 | 0.1+ | 0.2+ | 2005 06 17 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ |
| 2005 06 03 | 691 | 0.0 | 0.0 | 2005 06 24 | 644 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.4+ |
| 2005 06 03 | 691 | 0.3− | 0.3+ | 2005 06 24 | 644 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2005 06 13 | 691 | 0.3+ | 0.1− | 2005 06 24 | 644 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3− |
| 2005 06 13 | 691 | 0.0 | 0.2+ | 2005 07 01 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.5− |
| 2005 06 13 | 691 | 0.0 | 0.1− | 2005 07 01 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.2− | 0.2− |
| 2005 06 17 | 691 | 0.0 | 0.2− | 2005 07 01 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2005 06 17 | 691 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.3+ |

**2005 LU$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.31081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18967824 | $\omega$ | 135.34448 | | +0.14036822 | | +0.98788445 |
| $a$ | 3.0000215 | $\Omega$ | 142.57765 | | −0.93613054 | | +0.15419007 |
| $e$ | 0.2441851 | $i$ | 6.25312 | | −0.32242266 | | −0.01759944 |
| $P$ | 5.20 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 30 | 809 | 0.5− | 0.8− | 2005 06 17 | 691 | 0.0 | 0.0 | 2005 07 07 | 704 | 0.5− | 0.6+ |
| 1995 08 30 | 809 | 0.7+ | 0.2+ | 2005 06 17 | 691 | 0.4+ | 0.2+ | 2005 07 08 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 691 | 0.2− | 0.0 | 2005 06 17 | 691 | 0.1− | 0.0 | 2005 07 08 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 691 | 0.3+ | 0.0 | 2005 06 28 | 691 | 0.1− | 0.1+ | 2005 07 08 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2005 06 28 | 691 | 0.0 | 0.0 | 2005 08 01 | E12 | 0.5− | 0.8− |
| 2005 05 15 | G96 | 0.5− | 1.2− | 2005 06 28 | 691 | (4.1+ | 0.0 ) | 2005 08 01 | E12 | 1.0+ | 0.7+ |
| 2005 05 15 | G96 | 0.2− | 0.4− | 2005 07 04 | 599 | 0.4− | 0.6− | 2005 08 01 | E12 | 0.2− | 0.0 |
| 2005 05 15 | G96 | 0.1+ | 0.5− | 2005 07 04 | 599 | 0.4− | 0.7− | 2005 08 01 | E12 | 1.3− | 0.8+ |
| 2005 05 15 | G96 | 0.1+ | 0.4− | 2005 07 04 | 599 | (1.3− | 2.2−) | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2005 06 13 | 691 | 0.2+ | 0.2+ | 2005 07 07 | 704 | 1.0− | 0.8− | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2005 06 13 | 691 | 0.1+ | 0.1+ | 2005 07 07 | 704 | 0.2− | 0.6+ | 2006 11 23 | G96 | 0.2− | 0.2+ |
| 2005 06 13 | 691 | 0.2+ | 0.1+ | 2005 07 07 | 704 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.4+ |

**2005 LA$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.13725 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22021632 | $\omega$ | 280.13413 | | +0.92893484 | | −0.33615324 |
| $a$ | 2.7158329 | $\Omega$ | 99.64016 | | +0.37014783 | | +0.85270093 |
| $e$ | 0.1927877 | $i$ | 9.05621 | | −0.00840492 | | +0.39987765 |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 06 | 691 | 0.3− | 0.1+ | 2006 09 20 | 703 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2005 06 06 | 691 | 0.2+ | 0.0 | 2006 09 20 | 703 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.2− |
| 2005 06 06 | 691 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.3− | 0.3− | 2006 10 21 | 703 | 0.7+ | 1.1+ |
| 2005 06 06 | 691 | 0.3− | 0.2− | 2006 09 20 | 703 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.7+ |
| 2005 06 06 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 699 | (0.8+ | 1.8−) | 2006 10 21 | 703 | 0.5+ | 0.2− |
| 2005 06 06 | 691 | 0.2+ | 0.1+ | 2006 09 24 | 699 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2005 06 10 | 691 | 0.4+ | 0.2− | 2006 09 24 | 699 | 0.2+ | 0.8+ | 2006 10 28 | 703 | 0.4− | 0.6+ |
| 2005 06 10 | 691 | 0.3− | 0.2− | 2006 09 24 | 699 | (2.2+ | 0.1+) | 2006 10 28 | 703 | 0.1− | 0.3− |
| 2005 06 10 | 691 | 0.4+ | 0.0 | 2006 09 25 | 703 | (1.6+ | 0.6+) | 2006 10 28 | 703 | 0.2− | 0.4− |
| 2005 06 16 | 691 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.6+ | 1.0− | 2006 10 28 | 703 | 0.3+ | 0.5− |
| 2005 06 16 | 691 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.1+ | 0.4− | 2006 11 23 | 703 | 0.1− | 0.0 |
| 2005 06 16 | 691 | 0.0 | 0.1− | 2006 09 25 | 703 | 0.4− | 0.3− | 2006 11 23 | 703 | 1.3− | 0.1+ |
| 2005 07 12 | G96 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.8+ | 0.3+ |
| 2005 07 12 | G96 | 0.4+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.2− | 0.1+ |
| 2005 07 12 | G96 | 0.0 | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.0 | | | | |
| 2005 07 12 | G96 | 0.2− | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.0 | | | | |

**2005 LV$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.47069 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29079600 | $\omega$ | 68.89778 | | −0.36108006 | | +0.93253482 |
| $a$ | 2.2563706 | $\Omega$ | 179.93567 | | −0.86188481 | | −0.33371621 |
| $e$ | 0.1605483 | $i$ | 0.99270 | | −0.35605585 | | −0.13788509 |
| $P$ | 3.39 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.0 | 0.2+ | 2005 06 17 | G96 | 0.2− | 0.2− | 2005 07 06 | 691 | 0.3− | 0.3+ |
| 2005 05 20 | G96 | 0.1+ | 0.3− | 2005 06 17 | G96 | 0.2− | 0.3− | 2005 07 15 | G96 | 0.0 | 0.7+ |
| 2005 05 20 | G96 | 0.2+ | 0.2+ | 2005 07 03 | G96 | 0.1+ | 0.3+ | 2005 07 15 | G96 | 1.1− | 0.9− |
| 2005 05 20 | G96 | 0.3− | 0.1+ | 2005 07 03 | G96 | 0.3− | 0.2+ | 2005 07 15 | G96 | 0.4+ | 0.0 |
| 2005 06 14 | 691 | 0.1+ | 0.1+ | 2005 07 03 | G96 | 1.8− | 0.6− | 2005 07 15 | G96 | 0.2+ | 0.3+ |
| 2005 06 14 | G96 | 0.0 | 0.2+ | 2005 07 03 | G96 | 1.9+ | 0.0 | 2006 11 19 | 691 | 0.3− | 0.2− |
| 2005 06 14 | G96 | 0.3− | 0.2+ | 2005 07 03 | G96 | 0.8− | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2005 06 14 | 691 | 0.1+ | 0.1− | 2005 07 03 | G96 | 0.1− | 0.7− | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 2005 06 14 | G96 | 0.6− | 0.0 | 2005 07 03 | G96 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.6+ | 0.3− |
| 2005 06 14 | G96 | 0.4− | 0.1+ | 2005 07 03 | G96 | 0.6+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2005 06 14 | 691 | 0.2+ | 0.0 | 2005 07 06 | 691 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2005 06 17 | G96 | 0.1− | 0.4− | 2005 07 06 | 691 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.2− | 0.3− |

**2005 LV$_{52}$ = 2000 QH$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.54724 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18773232 | $\omega$ | 234.39319 | | +0.97496981 | | +0.17572188 |
| $a$ | 3.0207168 | $\Omega$ | 115.13668 | | −0.12167247 | | +0.93447010 |
| $e$ | 0.2534953 | $i$ | 8.65412 | | −0.18609054 | | +0.30965700 |
| $P$ | 5.25 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.0 | 0.0 | 2004 04 23 | 691 | 0.4− | 0.2+ | 2005 06 26 | 644 | 0.3+ | 0.2− |
| 2000 08 26 | 704 | 0.8+ | 0.4+ | 2004 04 23 | 691 | 0.0 | 0.0 | 2005 06 26 | 644 | 0.1− | 0.0 |
| 2000 08 26 | 704 | 0.8− | 0.4− | 2005 06 05 | 691 | 0.2− | 0.1+ | 2005 06 26 | 644 | 0.2+ | 0.0 |
| 2000 08 26 | 704 | 0.1+ | 0.2+ | 2005 06 05 | 691 | 0.0 | 0.0 | 2005 06 26 | 644 | 0.2+ | 0.3+ |
| 2000 08 26 | 704 | 0.0 | 0.1+ | 2005 06 05 | 691 | 0.1− | 0.2− | 2005 06 26 | 644 | 0.5+ | 0.1− |
| 2000 09 04 | 704 | 0.2+ | 0.7− | 2005 06 15 | G96 | 0.4− | 0.2− | 2005 07 10 | E12 | 0.1+ | 0.8+ |
| 2000 09 04 | 704 | 0.3+ | 0.3+ | 2005 06 15 | G96 | 0.2− | 0.1− | 2005 07 10 | E12 | 0.5+ | 0.1+ |
| 2000 09 04 | 704 | 0.3− | 0.2− | 2005 06 15 | G96 | 0.2+ | 0.2− | 2005 07 10 | E12 | 0.8+ | 0.4+ |
| 2000 09 04 | 704 | 0.4− | 0.5+ | 2005 06 15 | G96 | 0.2− | 0.2− | 2005 07 10 | E12 | 0.7− | 0.4− |
| 2004 04 23 | 691 | 0.4+ | 0.1− | 2005 06 26 | 644 | 0.1+ | 0.1− | | | | |

**2005 LW$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.38662 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26570698 | $\omega$ | 123.19647 | | +0.02269718 | | +0.99841531 |
| $a$ | 2.3962607 | $\Omega$ | 147.98388 | | −0.94654026 | | +0.03803964 |
| $e$ | 0.1219367 | $i$ | 5.57398 | | −0.32178622 | | −0.04147115 |
| $P$ | 3.71 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.4− | 0.0 | 2005 06 01 | 691 | 0.3− | 0.1+ | 2006 09 30 | 699 | 0.1− | 1.3+ |
| 2001 03 26 | 704 | 0.4+ | 0.8+ | 2005 06 01 | 691 | 0.2+ | 0.0 | 2006 09 30 | 699 | (0.2+ | 2.0+) |
| 2001 03 26 | 704 | 0.0 | 0.7+ | 2005 06 15 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | (1.9− | 0.7+) |
| 2001 03 26 | 704 | 0.4+ | 0.6+ | 2005 06 15 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | (1.6− | 1.0−) |
| 2002 10 03 | 704 | 0.2+ | 0.8− | 2005 06 15 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | (1.5− | 0.4+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.3− | 1.0+ | 2005 06 24 | 644 | 0.4− | 0.1+ | 2006 10 22 | 703 | (2.7− | 0.1−) | | |
| 2002 10 03 | 704 | 0.4+ | 0.9− | 2005 06 24 | 644 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.2+ | 0.3+ | | |
| 2002 10 03 | 704 | 0.6− | 0.1− | 2005 06 24 | 644 | 0.0 | 0.5+ | 2006 11 01 | 703 | 0.9− | 0.8+ | | |
| 2002 10 03 | 704 | 0.8− | 0.0 | 2005 07 03 | 691 | 0.1+ | 0.3− | 2006 11 01 | 703 | 0.8− | 0.6+ | | |
| 2002 10 11 | 704 | 0.9+ | 0.3+ | 2005 07 03 | 691 | 0.2+ | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.8+ | | |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2005 07 03 | 691 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2002 10 11 | 704 | 0.5+ | 0.5− | 2005 07 05 | 644 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.1− | | |
| 2003 12 22 | 691 | 0.1+ | 0.1+ | 2005 07 05 | 644 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.1+ | | |
| 2003 12 22 | 691 | 0.2− | 0.3+ | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.5− | 0.2+ | | |
| 2003 12 22 | 691 | 0.3+ | 0.0 | 2006 09 30 | 699 | 1.0+ | 1.4+ | | | | | | |
| 2005 06 01 | 691 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.6− | 0.8+ | | | | | | |

**2005 LX$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.90137 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23328380 | $\omega$ | 239.23242 | | +0.65505380 | | +0.70693127 |
| $a$ | 2.6134428 | $\Omega$ | 74.19685 | | −0.56313040 | | +0.69215153 |
| $e$ | 0.2648215 | $i$ | 16.09453 | | −0.50377443 | | +0.14551441 |
| $P$ | 4.22 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.8− | 0.3− | 2005 07 05 | E12 | 0.6− | 0.8− | 2005 08 25 | E12 | 0.1− | 0.5− |
| 2001 08 19 | 704 | 0.2− | 0.0 | 2005 07 27 | E12 | 0.2+ | 0.1+ | 2005 08 25 | E12 | 0.1− | 0.5+ |
| 2001 08 19 | 704 | 0.6+ | 0.7− | 2005 07 27 | E12 | 0.6+ | 0.0 | 2005 08 27 | I10 | (1.1+ | 2.3−) |
| 2001 08 19 | 704 | 0.8− | 0.9+ | 2005 07 27 | E12 | 0.2+ | 0.3+ | 2005 08 27 | I10 | 0.4+ | 0.7− |
| 2001 08 19 | 704 | 0.5+ | 0.5+ | 2005 07 27 | E12 | 0.3+ | 0.0 | 2005 08 27 | I10 | 0.0 | 1.6+ |
| 2001 10 15 | 704 | 0.1− | 0.6+ | 2005 08 05 | E12 | 0.1+ | 0.7+ | 2005 09 02 | E12 | 0.3+ | 0.3+ |
| 2001 10 15 | 704 | 0.1− | 0.5− | 2005 08 05 | E12 | 0.0 | 0.1+ | 2005 09 02 | E12 | 0.5− | 0.7− |
| 2001 10 15 | 704 | 0.2+ | 0.4+ | 2005 08 05 | E12 | 0.2+ | 0.3− | 2005 09 02 | E12 | 0.0 | 0.3− |
| 2005 06 03 | E12 | 0.1− | 0.3− | 2005 08 05 | E12 | 0.2+ | 0.1+ | 2005 09 02 | E12 | 0.1+ | 0.9+ |
| 2005 06 03 | E12 | 0.8− | 0.0 | 2005 08 15 | E12 | 0.2+ | 0.6− | 2005 10 25 | E12 | 0.8− | 0.5− |
| 2005 06 03 | E12 | 0.7− | 0.3+ | 2005 08 15 | E12 | 0.0 | 0.1+ | 2005 10 25 | E12 | 0.4− | 0.1+ |
| 2005 06 03 | E12 | 0.1+ | 0.5− | 2005 08 15 | E12 | 0.2− | 0.2+ | 2005 10 25 | E12 | 0.5+ | 1.1− |
| 2005 07 05 | E12 | 0.2− | 0.0 | 2005 08 15 | E12 | 0.4− | 0.2− | 2005 10 25 | E12 | 0.0 | 0.8− |
| 2005 07 05 | E12 | 0.3+ | 0.4+ | 2005 08 25 | E12 | 0.4+ | 0.1+ | | | | |
| 2005 07 05 | E12 | 0.2− | 0.1+ | 2005 08 25 | E12 | 0.2+ | 0.5− | | | | |

**2005 LY$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.75546 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27551876 | $\omega$ | 92.15194 | | +0.10211978 | | +0.99474737 |
| $a$ | 2.3390272 | $\Omega$ | 183.73114 | | −0.95017049 | | +0.09545067 |
| $e$ | 0.2235850 | $i$ | 6.18889 | | −0.29452945 | | +0.03697075 |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.5− | 1.2+ | 2005 06 04 | 703 | 0.5+ | 0.7+ | 2005 08 06 | 644 | 0.5+ | 0.5− |
| 1991 10 07 | 691 | 0.3+ | 1.7+ | 2005 06 04 | 703 | 0.0 | 0.7+ | 2005 08 06 | 644 | 0.4+ | 0.3− |
| 1991 10 07 | 691 | 0.5− | 0.3− | 2005 06 21 | 644 | 0.5+ | 0.5− | 2005 08 06 | 644 | 0.5+ | 0.5− |
| 1994 05 09 | 691 | 0.1− | 0.5+ | 2005 06 21 | 644 | 0.5+ | 0.4− | 2005 08 11 | A50 | 0.4+ | 0.9− |
| 1994 05 09 | 691 | 0.3+ | 0.3− | 2005 06 21 | 644 | 0.4+ | 0.2− | 2005 08 11 | A50 | 0.1+ | 0.2+ |
| 1994 05 09 | 691 | 0.3− | 0.1+ | 2005 07 27 | 608 | 0.6− | 0.9+ | 2005 08 11 | A50 | 1.0− | 1.6+ |
| 2001 03 19 | 691 | 0.0 | 0.8+ | 2005 07 27 | 608 | 0.4− | 1.0+ | 2005 08 11 | A50 | 0.3− | 0.3+ |
| 2001 03 19 | 691 | 0.1+ | 0.7+ | 2005 07 27 | 608 | 0.6− | 0.7+ | 2005 10 03 | 703 | 1.3− | 0.9− |
| 2001 03 19 | 691 | 0.1+ | 0.5+ | 2005 07 29 | 699 | 0.4+ | 0.7− | 2005 10 03 | 703 | 1.3− | 0.9+ |
| 2001 04 16 | 699 | 0.5+ | 0.3+ | 2005 07 29 | 699 | 0.8+ | 0.8+ | 2005 10 03 | 703 | 1.2− | 0.9− |
| 2001 04 16 | 699 | 0.4− | 0.7+ | 2005 07 29 | 699 | 0.3+ | 0.1− | 2005 10 03 | 703 | 0.1− | 0.5+ |
| 2001 04 16 | 699 | 0.9+ | 0.9+ | 2005 07 29 | 699 | 0.4+ | 0.3− | 2005 11 25 | G96 | 0.8+ | 0.5− |
| 2001 04 16 | 699 | 0.5+ | 0.9− | 2005 08 06 | 644 | 0.4+ | 0.4− | 2005 11 25 | G96 | 0.6− | 0.4− |
| 2005 06 04 | 703 | 0.0 | 0.6− | 2005 08 06 | 644 | 0.1+ | 0.5− | 2005 11 25 | G96 | 0.0 | 0.4− |
| 2005 06 04 | 703 | 1.1− | 0.9− | 2005 08 06 | 644 | 0.4+ | 0.4− | 2005 11 25 | G96 | 0.3+ | 0.1− |

**2005 LZ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.94781 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17426213 | $\omega$ | 223.78728 | | +0.77274550 | | +0.42165643 |
| $a$ | 3.1744418 | $\Omega$ | 105.43093 | | −0.35594584 | | +0.90673669 |
| $e$ | 0.2605962 | $i$ | 29.48246 | | −0.52551589 | | +0.00586843 |
| $P$ | 5.66 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.3+ | 0.0 | 2005 06 08 | E12 | 0.1+ | 0.7+ | 2005 09 20 | E12 | 1.2− | 1.6+ |
| 1999 07 14 | 704 | 0.1+ | 0.6+ | 2005 06 08 | E12 | 0.6− | 0.4+ | 2005 09 20 | E12 | 0.3+ | 0.5+ |
| 1999 07 14 | 704 | 0.4− | 0.0 | 2005 06 08 | E12 | 0.9+ | 0.0 | 2005 09 20 | E12 | 0.7+ | 0.5− |
| 1999 07 14 | 704 | 0.0 | 0.3+ | 2005 08 26 | E12 | 0.2− | 0.1− | 2005 09 20 | E12 | 0.2+ | 0.1− |
| 2002 01 14 | 644 | 0.0 | 0.9+ | 2005 08 26 | E12 | 0.3− | 0.1+ | 2005 11 02 | E12 | 0.6− | 0.2+ |
| 2002 01 14 | 644 | 0.6+ | 0.9+ | 2005 08 26 | E12 | 0.5− | 0.4+ | 2005 11 02 | E12 | 0.3+ | 1.2− |
| 2002 01 14 | 644 | 0.4+ | 0.9+ | 2005 09 07 | E12 | 0.6− | 0.1− | 2005 11 02 | E12 | 0.2+ | 0.8+ |
| 2003 04 26 | 645 | 0.1− | 0.1+ | 2005 09 07 | E12 | 0.6− | 0.4+ | 2005 11 02 | E12 | 0.1− | 0.4+ |
| 2003 04 26 | 645 | 0.0 | 0.1+ | 2005 09 07 | E12 | 0.2+ | 0.0 | | | | |
| 2005 06 08 | E12 | 0.6+ | 0.4+ | 2005 09 07 | E12 | 0.2+ | 0.6+ | | | | |

**2005 LA$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.90675 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26122586 | $\omega$ | 56.71792 | | +0.83371661 | | +0.55213721 |
| $a$ | 2.4235869 | $\Omega$ | 269.76717 | | −0.50919086 | | +0.76323709 |
| $e$ | 0.1825413 | $i$ | 0.44791 | | −0.21363821 | | +0.33557956 |
| $P$ | 3.77 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.4− | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.3− | 2005 08 06 | 644 | 0.0 | 0.3+ |
| 2004 03 15 | 691 | 0.3+ | 0.2+ | 2005 06 13 | G96 | 0.4+ | 0.1− | 2005 08 06 | 644 | 0.1+ | 0.3+ |
| 2004 03 15 | 691 | 0.2+ | 0.0 | 2005 07 18 | 644 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.5+ | 0.3+ |
| 2004 03 23 | 691 | 0.3+ | 0.1+ | 2005 07 18 | 644 | 0.1− | 0.1− | 2005 09 29 | G96 | 0.2+ | 0.3+ |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2005 07 18 | 644 | 0.0 | 0.5− | 2005 09 29 | G96 | 0.1− | 0.3+ |
| 2004 03 23 | 691 | 0.4− | 0.1− | 2005 07 28 | 644 | 0.2− | 0.2+ | 2005 09 29 | G96 | 0.2− | 0.2+ |
| 2005 06 13 | G96 | 0.1+ | 0.5− | 2005 07 28 | 644 | 0.5− | 0.3+ | 2005 09 29 | G96 | 0.5− | 0.7+ |
| 2005 06 13 | G96 | 0.1+ | 0.5− | 2005 07 28 | 644 | 0.2− | 0.2+ | | | | |

**2005 LB$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.16894 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17383315 | $\omega$ | 70.04398 | | −0.83857004 | | −0.36529423 |
| $a$ | 3.1796622 | $\Omega$ | 86.72335 | | +0.20632857 | | −0.89957773 |
| $e$ | 0.0966825 | $i$ | 23.88113 | | +0.50421107 | | −0.23941602 |
| $P$ | 5.67 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.1+ | 0.0 | 2004 02 26 | 703 | 0.1− | 0.4+ | 2005 06 03 | 691 | 0.3+ | 0.2+ |
| 2002 12 01 | 704 | 0.2− | 0.7+ | 2004 02 26 | 703 | 0.4− | 0.2− | 2005 06 03 | 691 | (2.9− | 0.0 ) |
| 2002 12 01 | 704 | 0.6− | 0.3+ | 2005 06 01 | G96 | 0.3− | 0.0 | 2005 06 15 | 691 | 0.2+ | 0.2+ |
| 2004 01 27 | 703 | 0.0 | 0.5+ | 2005 06 01 | G96 | 0.2− | 0.1− | 2005 06 15 | 691 | 0.4+ | 0.2+ |
| 2004 01 27 | 703 | 0.1+ | 0.3− | 2005 06 01 | G96 | 0.1+ | 0.2− | 2005 06 15 | 691 | 0.4− | 0.3+ |
| 2004 01 27 | 703 | 0.1− | 0.1+ | 2005 06 01 | G96 | 0.0 | 0.1− | 2005 06 27 | 691 | 0.2+ | 0.0 |
| 2004 01 27 | 703 | 1.0+ | 0.1− | 2005 06 02 | 703 | 0.1− | 0.2+ | 2005 06 27 | 691 | 0.0 | 0.1− |
| 2004 02 21 | 097 | 0.5− | 1.4− | 2005 06 02 | 703 | 0.1− | 0.4− | 2005 06 27 | 691 | 0.3+ | 0.0 |
| 2004 02 21 | 097 | 0.0 | 0.5− | 2005 06 02 | 703 | 1.0− | 0.5− | 2005 07 04 | 691 | 0.0 | 0.1+ |
| 2004 02 26 | 703 | 0.0 | 0.7+ | 2005 06 02 | 703 | 0.5− | 0.3+ | 2005 07 04 | 691 | 0.1− | 0.0 |
| 2004 02 26 | 703 | 0.1+ | 0.8+ | 2005 06 03 | 691 | 0.1− | 0.1+ | 2005 07 04 | 691 | 0.0 | 0.5− |

**2005 LC$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.57542 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25777600 | $\omega$ | 98.05609 | | +0.14624272 | | +0.98924853 |
| $a$ | 2.4451625 | $\Omega$ | 180.35511 | | −0.94387600 | | +0.13933863 |
| $e$ | 0.1319833 | $i$ | 6.01357 | | −0.29616070 | | +0.04440831 |
| $P$ | 3.82 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 1.7+ | 0.7+ | 2005 06 01 | 691 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.3− | 1.5− |
| 1997 04 03 | 704 | (1.8+ | 2.6+) | 2005 06 14 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 1998 09 25 | 691 | 0.0 | 0.1− | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 1998 09 25 | 691 | 0.1− | 0.1+ | 2005 06 14 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 1.4− | 0.4− |
| 1998 09 25 | 691 | 0.0 | 0.0 | 2005 06 24 | 644 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.4+ |
| 2001 05 02 | 608 | 0.3− | 0.3+ | 2005 06 24 | 644 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.0 |
| 2001 05 02 | 608 | 0.5− | 0.5+ | 2005 06 24 | 644 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2001 05 02 | 608 | 0.0 | 0.5+ | 2005 07 03 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2001 05 18 | 704 | 0.4+ | 0.9+ | 2005 07 03 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 05 18 | 704 | 0.7− | 0.5+ | 2005 07 03 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.5− | 0.4+ |
| 2001 05 18 | 704 | 0.1+ | 1.0+ | 2005 07 27 | 644 | 0.7− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 05 18 | 704 | 0.0 | 1.3+ | 2005 07 27 | 644 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2002 10 10 | 644 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2002 10 10 | 644 | 0.1+ | 0.2+ | 2005 08 05 | 644 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 10 10 | 644 | 0.3− | 0.1+ | 2005 08 05 | 644 | 0.3− | 0.3− | 2006 11 23 | G96 | 1.2+ | 0.5+ |
| 2002 10 31 | 704 | 0.0 | 1.0+ | 2005 08 05 | 644 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2002 10 31 | 704 | 0.3− | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2002 10 31 | 704 | 0.3+ | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 06 01 | 691 | 0.2− | 0.4− | 2006 10 03 | G96 | 0.3+ | 0.2− | | | | |
| 2005 06 01 | 691 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.0 | 0.4− | | | | |

**2005 LH$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.88799 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12540611 | $\omega$ | 153.35460 | | +0.57817831 | | +0.81540840 |
| $a$ | 3.9529706 | $\Omega$ | 151.94048 | | −0.75901748 | | +0.55039926 |
| $e$ | 0.2262142 | $i$ | 3.48793 | | −0.29933643 | | +0.17935937 |
| $P$ | 7.86 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 30 | 691 | 0.1− | 0.5+ | 2005 09 30 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2003 04 30 | 691 | 0.2+ | 0.5+ | 2005 09 30 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 2003 04 30 | 691 | 0.4+ | 0.6+ | 2005 10 07 | 704 | (2.2− | 1.0−) | 2006 11 12 | G96 | 0.1+ | 0.4+ |
| 2005 06 13 | G96 | 0.4− | 0.5− | 2005 10 07 | 704 | 0.8− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2005 06 13 | G96 | 0.2− | 0.0 | 2005 10 07 | 704 | 0.4− | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.3+ |
| 2005 06 13 | G96 | 0.5+ | 0.2− | 2005 10 29 | G96 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.1+ |
| 2005 06 13 | G96 | 0.9− | 0.6− | 2005 10 29 | G96 | 0.5+ | 0.1+ | 2006 12 01 | G96 | 0.5+ | 0.6+ |
| 2005 09 09 | 704 | 0.4+ | 0.8+ | 2005 10 29 | G96 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.6− | 0.3+ |
| 2005 09 09 | 704 | 0.1+ | 1.2+ | 2005 10 29 | G96 | 0.2− | 0.4− | 2006 12 01 | G96 | 0.3− | 0.7+ |
| 2005 09 09 | 704 | 1.2+ | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2005 09 30 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.5+ | | | | |

**2005 MU$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.06819 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24210193 | $\omega$ | 65.50101 | | −0.64010169 | | +0.75835189 |
| $a$ | 2.5495912 | $\Omega$ | 162.84532 | | −0.76378834 | | −0.64544985 |
| $e$ | 0.2354855 | $i$ | 24.68392 | | +0.08304931 | | −0.09108737 |
| $P$ | 4.07 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.0 | 0.9+ | 2005 06 20 | H06 | 0.1− | 0.3+ | 2005 06 21 | 474 | 0.4− | 0.3− |
| 2002 11 04 | 644 | 0.1− | 0.6+ | 2005 06 20 | H06 | 0.9− | 0.5− | 2005 06 21 | 474 | 0.3− | 0.5− |
| 2002 11 04 | 644 | 0.1− | 0.6+ | 2005 06 20 | H06 | (0.2− | 2.1−) | 2005 06 24 | 644 | 0.4− | 0.4+ |
| 2005 02 13 | 704 | 0.1+ | 0.5+ | 2005 06 20 | 147 | 0.3− | 0.1− | 2005 06 24 | 644 | 0.1− | 0.0 |
| 2005 02 13 | 704 | 0.0 | 0.4− | 2005 06 20 | 147 | 0.1− | 0.0 | 2005 06 24 | 644 | 0.1− | 0.1+ |
| 2005 02 13 | 704 | 0.3+ | 1.5+ | 2005 06 20 | 147 | 0.3+ | 0.1− | 2005 07 01 | 704 | 0.0 | 0.3+ |
| 2005 02 13 | 704 | 0.1− | 0.5− | 2005 06 20 | 203 | 0.0 | 0.1+ | 2005 07 01 | 704 | 0.2− | 0.1− |
| 2005 06 19 | 704 | 0.4+ | 0.1+ | 2005 06 20 | 198 | 0.7− | 0.1+ | 2005 07 01 | 704 | 0.1− | 0.1+ |
| 2005 06 19 | 704 | 0.2− | 0.7+ | 2005 06 20 | 198 | 0.5− | 0.2+ | 2006 09 25 | 703 | 0.4+ | 0.6− |
| 2005 06 19 | 704 | 0.5+ | 0.6+ | 2005 06 20 | 198 | 0.3− | 0.2+ | 2006 09 25 | 703 | 0.2− | 0.7− |
| 2005 06 19 | 704 | 0.1+ | 0.5+ | 2005 06 20 | 203 | 0.2− | 0.2− | 2006 09 25 | 703 | 0.9+ | 1.4− |
| 2005 06 20 | 734 | 0.4+ | 0.1− | 2005 06 20 | 198 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.4+ | 0.0 |
| 2005 06 20 | 734 | 0.4+ | 0.3− | 2005 06 21 | 673 | 0.0 | 0.1+ | 2006 10 15 | 291 | 0.1− | 0.2+ |
| 2005 06 20 | 734 | 0.5+ | 0.3− | 2005 06 21 | 673 | 0.0 | 0.3+ | 2006 10 15 | 291 | 0.1− | 0.1+ |
| 2005 06 20 | 854 | 0.5+ | 0.2+ | 2005 06 21 | 673 | 0.1+ | 0.2+ | 2006 10 15 | 291 | 0.1− | 0.0 |
| 2005 06 20 | 854 | 0.8+ | 1.0− | 2005 06 21 | 673 | 0.1+ | 0.1+ | | | | |
| 2005 06 20 | 854 | 0.1− | 0.7− | 2005 06 21 | 474 | 0.8+ | 0.5− | | | | |

**2005 ME$_2$ = 2006 UQ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.60584 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26515188 | $\omega$ | 53.64149 | | −0.15387168 | | +0.98798317 |
| $a$ | 2.3996040 | $\Omega$ | 207.51791 | | −0.91636862 | | −0.14820865 |
| $e$ | 0.1662187 | $i$ | 1.80914 | | −0.36958363 | | −0.04385711 |
| $P$ | 3.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 691 | 0.3− | 0.1+ | 2005 06 23 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2005 06 04 | 691 | 0.1+ | 0.1+ | 2005 06 23 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3+ |
| 2005 06 04 | 691 | 0.0 | 0.1− | 2005 06 23 | 644 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 1.0− |
| 2005 06 04 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2005 06 04 | 704 | 0.3+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2005 06 04 | 704 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.4− | 0.1+ |
| 2005 06 04 | 704 | 0.8+ | 0.6− | 2006 10 20 | 691 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2005 06 16 | G96 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.2+ |
| 2005 06 16 | G96 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.5+ | 0.1+ |
| 2005 06 16 | G96 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2005 06 16 | G96 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.4+ | | | | |

**2005 MF$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.59269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21886257 | $\omega$ | 280.50424 | | +0.92466746 | | −0.33943746 |
| $a$ | 2.7270204 | $\Omega$ | 99.50737 | | +0.38009865 | | +0.84982662 |
| $e$ | 0.1861009 | $i$ | 10.07572 | | −0.02269591 | | +0.40320829 |
| $P$ | 4.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 1.1+ | 0.4+ | 2003 01 08 | 704 | 0.6− | 0.3+ | 2006 09 25 | 703 | 0.3− | 0.2+ |
| 2001 06 30 | 644 | 0.7+ | 0.7+ | 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 09 25 | 703 | 0.1− | 0.2+ |
| 2001 06 30 | 644 | 0.8+ | 0.6+ | 2003 01 08 | 704 | 0.4− | 0.3− | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 2001 07 19 | 644 | 0.7− | 0.3− | 2003 01 08 | 704 | 0.9+ | 0.6+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2001 07 19 | 644 | 0.7− | 0.1− | 2005 06 10 | 691 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2001 07 19 | 644 | 0.7− | 0.1− | 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2001 07 30 | 644 | 0.1− | 0.2+ | 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2001 07 30 | 644 | 0.1− | 0.0 | 2005 06 16 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 07 30 | 644 | 0.3− | 0.3+ | 2005 06 16 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2002 12 11 | 704 | (0.7− | 1.8+) | 2005 06 16 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2002 12 11 | 704 | 0.6− | 1.2+ | 2005 06 23 | 644 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 0.3− | 1.1+ | 2005 06 23 | 644 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.5− |
| 2002 12 11 | 704 | (1.6− | 1.6+) | 2005 06 23 | 644 | 0.1+ | 0.0 | 2006 10 21 | 703 | (2.1− | 0.6+) |
| 2002 12 31 | 704 | 0.0 | 0.3+ | 2005 07 04 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.1+ | 0.6+ | 2005 07 04 | 691 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.6− | 0.8+ | 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 12 31 | 704 | 0.0 | 1.0+ | 2006 08 10 | 644 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.1− | 0.5− |
| 2002 12 31 | 704 | (0.3+ | 2.1+) | 2006 08 10 | 644 | 0.1+ | 0.1− | 2006 10 28 | 703 | 1.1+ | 0.8+ |
| 2003 01 08 | 704 | 1.1+ | 0.5+ | 2006 08 10 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.3− |
| 2003 01 08 | 704 | 1.1+ | 0.3+ | 2006 09 24 | 699 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.1− | 0.6− |
| 2003 01 08 | 704 | 0.1+ | 0.2− | 2006 09 24 | 699 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2003 01 08 | 704 | 0.2+ | 0.0 | 2006 09 24 | 699 | 0.6− | 0.7+ | 2006 10 28 | 703 | 0.5+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 1.2− | 0.6+ | 2006 09 24 | 699 | 0.1− | 1.3+ | 2006 10 28 | 703 | 0.7− | 0.1− |
| 2003 01 08 | 704 | 0.9− | 0.7+ | 2006 09 25 | 703 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.3− | 0.7− |

**2005 MN$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.88027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23790444 | $\omega$ | 114.87993 | | +0.23225196 | +0.97187186 | |
| $a$ | 2.5794930 | $\Omega$ | 168.34632 | | −0.94751919 | +0.23513349 | |
| $e$ | 0.1662351 | $i$ | 11.14376 | | −0.21969617 | +0.01331683 | |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 18 | 691 | 0.3+ | 0.3+ | 2005 05 14 | 691 | 0.5+ | 0.4+ | 2005 06 27 | 691 | 0.4+ | 0.0 |
| 1993 09 18 | 691 | 0.3− | 0.2− | 2005 06 16 | 691 | 0.5+ | 0.1− | 2005 06 30 | 691 | 0.4− | 0.0 |
| 2005 05 03 | 703 | 0.5− | 0.4− | 2005 06 16 | 691 | 0.3+ | 0.0 | 2005 06 30 | 691 | 0.1+ | 0.0 |
| 2005 05 03 | 703 | 1.0+ | 0.1− | 2005 06 16 | 691 | 0.6− | 0.4+ | 2005 06 30 | 691 | 0.3+ | 0.3− |
| 2005 05 03 | 703 | 0.0 | 1.0− | 2005 06 24 | 644 | 0.2+ | 0.0 | 2005 07 28 | 644 | 0.4− | 0.1+ |
| 2005 05 03 | 703 | 0.5+ | 0.5− | 2005 06 24 | 644 | 0.1+ | 0.2− | 2005 07 28 | 644 | 0.3+ | 0.2− |
| 2005 05 09 | 703 | (4.6− | 3.0−) | 2005 06 24 | 644 | 0.1+ | 0.1+ | 2005 07 28 | 644 | 0.7− | 0.7− |
| 2005 05 09 | 703 | (2.8− | 3.4−) | 2005 06 24 | 644 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.8+ | 0.5− |
| 2005 05 09 | 703 | 0.5− | 0.3− | 2005 06 24 | 644 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.8− | 0.1− |
| 2005 05 09 | 703 | 0.6+ | 0.1+ | 2005 06 24 | 644 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.4− | 0.7− |
| 2005 05 14 | 691 | 0.3− | 1.1+ | 2005 06 27 | 691 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.7+ | 0.5− |
| 2005 05 14 | 691 | 0.4+ | 0.3+ | 2005 06 27 | 691 | 0.2− | 0.0 | | | | |

**2005 MQ$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.93992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23551487 | $\omega$ | 151.91089 | | +0.97057330 | +0.07672091 | |
| $a$ | 2.5969115 | $\Omega$ | 206.82624 | | −0.06200483 | +0.99554948 | |
| $e$ | 0.2285545 | $i$ | 30.38399 | | +0.23268622 | −0.05472776 | |
| $P$ | 4.18 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 02 | 703 | 1.6+ | 0.5+ | 2005 06 26 | 699 | 1.3− | 0.4+ | 2005 06 30 | 699 | 1.1− | 1.8+ |
| 2005 06 02 | 703 | 0.7− | 0.1− | 2005 06 26 | 699 | 0.6+ | 0.5+ | 2005 06 30 | 699 | 0.3− | 1.3+ |
| 2005 06 02 | 703 | 0.3− | 0.0 | 2005 06 27 | H06 | 1.1− | 0.9− | 2005 06 30 | 699 | 0.8+ | 1.1− |
| 2005 06 02 | 703 | 0.5− | 0.3− | 2005 06 27 | H06 | 0.7− | 0.6− | 2006 11 19 | 703 | 0.7− | 1.7− |
| 2005 06 25 | 644 | 0.1− | 0.1+ | 2005 06 27 | H06 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.7− | 0.3+ |
| 2005 06 25 | 644 | 0.0 | 0.2− | 2005 06 28 | H06 | 0.3− | 1.0− | 2006 11 19 | 703 | 0.9+ | 1.2+ |
| 2005 06 25 | 644 | 0.1− | 0.0 | 2005 06 28 | H06 | 0.1+ | 0.7− | 2006 11 19 | 703 | 0.5+ | 0.3+ |
| 2005 06 26 | 699 | 1.2+ | 0.1+ | 2005 06 28 | H06 | 0.0 | 0.1− | | | | |
| 2005 06 26 | 699 | 1.7+ | 0.3+ | 2005 06 30 | 699 | 0.9+ | 0.0 | | | | |

**2005 MR$_3$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.56818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21104894 | $\omega$ | 100.28204 | | +0.24415253 | +0.96972078 | |
| $a$ | 2.7939198 | $\Omega$ | 183.86318 | | −0.91899192 | +0.22953503 | |
| $e$ | 0.1341757 | $i$ | 4.75211 | | −0.30958585 | +0.08339835 | |
| $P$ | 4.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 01 | 691 | 0.1+ | 0.1+ | 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.2− | 0.0 |
| 2005 06 01 | 691 | 0.2− | 0.1− | 2005 06 27 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2005 06 01 | 691 | 0.3− | 0.1− | 2005 06 30 | 691 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3+ |
| 2005 06 16 | 691 | 0.3+ | 0.2− | 2005 06 30 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.7− | 0.3− |
| 2005 06 16 | 691 | 0.1+ | 0.1− | 2005 06 30 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3+ |
| 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.5+ | 0.2− | | | | |
| 2005 06 27 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.0 | | | | |

**2005 MD$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.54558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24281748 | $\omega$ | 113.29200 | | +0.65490573 | +0.75538797 | |
| $a$ | 2.5445799 | $\Omega$ | 197.67650 | | −0.71720492 | +0.61206383 | |
| $e$ | 0.1116079 | $i$ | 4.16996 | | −0.23815035 | +0.23402326 | |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.6− | 0.2+ | 2005 06 16 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2005 05 20 | G96 | 0.6− | 0.0 | 2005 06 27 | 691 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2− |
| 2005 05 20 | G96 | (1.1− | 1.7+) | 2005 06 27 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.5− | 0.1+ |
| 2005 05 20 | G96 | 0.5− | 0.2+ | 2005 06 27 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2005 06 06 | 691 | 0.2− | 0.2+ | 2005 06 30 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2005 06 06 | 691 | 0.0 | 0.5+ | 2005 06 30 | 691 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2005 06 06 | 691 | 0.4+ | 0.1− | 2005 06 30 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2005 06 10 | 691 | 0.4+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 06 10 | 691 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.7− |
| 2005 06 10 | 691 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2005 06 16 | 691 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2005 06 16 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3− | | | | |

**2005 ML$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.48383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23823144 | $\omega$ | 218.77506 | | +0.31189775 | +0.95006068 | |
| $a$ | 2.5771320 | $\Omega$ | 69.40068 | | −0.86897114 | +0.28959414 | |
| $e$ | 0.1302400 | $i$ | 0.62569 | | −0.38419910 | +0.11627524 | |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.4+ | 0.3+ | 2005 06 26 | G96 | 0.8+ | 0.6− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2005 06 28 | G96 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2004 02 12 | 691 | 0.2− | 0.3+ | 2005 06 28 | G96 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2005 06 13 | G96 | 1.4− | 1.0+ | 2005 06 28 | G96 | 0.2+ | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.6+ |
| 2005 06 13 | G96 | 1.1+ | 0.6+ | 2005 06 28 | G96 | 0.3+ | 0.5+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.5+ | 0.0 |
| 2005 06 17 | G96 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.8− | 0.0 |
| 2005 06 17 | G96 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2+ |
| 2005 06 17 | G96 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2005 06 17 | G96 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.5+ | 0.5+ | 2006 11 11 | G96 | 0.4− | 0.0 |
| 2005 06 17 | G96 | 0.9− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 1.0− | 0.5− |
| 2005 06 17 | G96 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.7+ | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2005 06 17 | G96 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2005 06 26 | G96 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.5− | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2005 06 26 | G96 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.1+ | | | | |
| 2005 06 26 | G96 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.3+ | | | | |

**2005 MK$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.10530 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29924220 | $\omega$ | 73.66477 | | −0.02522266 | +0.99925845 | |
| $a$ | 2.2137105 | $\Omega$ | 194.98026 | | −0.95478357 | −0.03270314 | |
| $e$ | 0.2070185 | $i$ | 6.46226 | | −0.29622989 | +0.02032363 | |
| $P$ | 3.29 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.1− | 0.1− | 2002 09 06 | 704 | 0.0 | 0.3+ | 2005 06 24 | 644 | 0.0 | 0.3− |
| 2002 08 12 | 704 | 1.0+ | 0.2+ | 2002 09 06 | 704 | 0.1− | 0.3− | 2005 06 28 | 691 | 0.0 | 0.1+ |
| 2002 08 12 | 704 | 0.2+ | 0.4+ | 2002 09 06 | 704 | 0.0 | 0.8+ | 2005 06 28 | 691 | 0.1+ | 0.0 |
| 2002 08 16 | 644 | 0.2− | 0.4− | 2002 09 13 | 644 | 0.5+ | 0.4+ | 2005 06 28 | 691 | 0.0 | 0.0 |
| 2002 08 16 | 644 | 0.5− | 0.4− | 2002 09 13 | 644 | 0.3+ | 0.3− | 2005 07 01 | 691 | 0.0 | 0.1− |
| 2002 08 16 | 644 | 0.5− | 0.4− | 2002 09 13 | 644 | 0.1+ | 0.0 | 2005 07 01 | 691 | 0.0 | 0.1− |
| 2002 09 06 | 704 | 0.3+ | 0.7+ | 2005 06 24 | 644 | 0.0 | 0.1+ | 2005 07 01 | 691 | 0.0 | 0.0 |
| 2002 09 06 | 704 | 0.8− | 0.8− | 2005 06 24 | 644 | 0.0 | 0.2− | | | | |

**2005 MA$_6$ = 2006 WM$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.83696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30651262 | $\omega$ | 77.75724 | | −0.13693612 | | +0.99053594 |
| $a$ | 2.1785648 | $\Omega$ | 184.40433 | | −0.94951625 | | −0.13393754 |
| $e$ | 0.0954791 | $i$ | 6.97844 | | −0.28225411 | | −0.02998814 |
| $P$ | 3.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.0 | 0.0 | 2005 06 28 | 644 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 06 08 | 691 | 0.0 | 0.0 | 2005 06 28 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2005 06 08 | 691 | 0.7+ | 0.6+ | 2005 07 01 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2005 06 24 | 644 | 0.3− | 0.4− | 2005 07 01 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2005 06 24 | 644 | 0.1− | 0.4− | 2005 07 01 | 691 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2005 06 24 | 644 | 0.2− | 0.3− | 2005 07 27 | 644 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.5− | 0.4+ |
| 2005 06 28 | 691 | 0.1− | 0.2+ | 2005 07 27 | 644 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2005 06 28 | 691 | 0.2− | 0.1+ | 2005 07 27 | 644 | 0.4− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.5+ |
| 2005 06 28 | 691 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.5+ |
| 2005 06 28 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.4+ |

**2005 MX$_6$ = 2006 RE$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.12315 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17187687 | $\omega$ | 103.03861 | | +0.61154853 | | +0.78363444 |
| $a$ | 3.2037436 | $\Omega$ | 205.65717 | | −0.78776412 | | +0.59019816 |
| $e$ | 0.2408844 | $i$ | 14.60840 | | −0.07372986 | | +0.19386385 |
| $P$ | 5.73 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2005 06 27 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 06 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2005 06 29 | 291 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 1.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2005 06 29 | 291 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2005 06 29 | 291 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2005 07 01 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2005 07 01 | 691 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.6+ | 0.5− |
| 2005 07 01 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2006 09 15 | 291 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.2− | 0.9− |
| 2006 09 15 | 291 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2006 09 15 | 291 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.4− | 0.6− |
| 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 20 | G96 | 1.0+ | 0.6− |
| 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.1− |
| 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.4− | | | | |
| 2006 10 20 | 644 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.4− | 0.4− | | | | |

**2005 ME$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.22214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26172612 | $\omega$ | 148.72960 | | −0.55168666 | | +0.83301486 |
| $a$ | 2.4204977 | $\Omega$ | 87.75675 | | −0.77356055 | | −0.49240378 |
| $e$ | 0.1458339 | $i$ | 2.38430 | | −0.31184275 | | −0.25223947 |
| $P$ | 3.77 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.1+ | 0.3− | 2005 06 28 | G96 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.7+ | 0.2− |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2005 06 28 | G96 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 2005 06 04 | 704 | (0.4+ | 1.9+) | 2005 06 28 | G96 | 0.9+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2005 06 04 | 704 | 0.4+ | 0.4+ | 2005 06 28 | G96 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 06 04 | 704 | (2.2+ | 0.1+) | 2006 09 19 | 691 | 0.6− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2005 06 11 | 703 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2005 06 11 | 703 | 0.5− | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.8+ | 2006 10 31 | G96 | 0.8+ | 0.3− |
| 2005 06 11 | 703 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2005 06 11 | 703 | 0.1+ | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2005 06 27 | G96 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2005 06 27 | G96 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2005 06 27 | G96 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 06 27 | G96 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2005 06 28 | G96 | 0.6+ | 0.1+ | 2006 10 01 | 691 | 0.6− | 0.0 | 2006 11 16 | G96 | 0.7+ | 0.3− |
| 2005 06 28 | G96 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.4− | 0.6+ | 2006 11 20 | 691 | 0.5+ | 0.4+ |
| 2005 06 28 | G96 | 0.4+ | 0.1+ | 2006 10 01 | 691 | 0.5− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.9+ |
| 2005 06 28 | G96 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 20 | 691 | 0.2− | 0.2+ |

**2005 MD$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.61458 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12329991 | $\omega$ | 53.61606 | | +0.75163519 | | +0.65525159 |
| $a$ | 3.9978597 | $\Omega$ | 265.31647 | | −0.62680104 | | +0.67399235 |
| $e$ | 0.1496344 | $i$ | 4.34053 | | −0.20534117 | | +0.34114464 |
| $P$ | 7.99 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 691 | 0.5− | 0.4− | 2005 07 11 | G96 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 2000 12 22 | 691 | 0.5+ | 0.1+ | 2005 07 11 | G96 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 2000 12 22 | 691 | 0.1+ | 0.4+ | 2005 07 30 | E12 | 0.8− | 0.0 | 2006 10 12 | 644 | 0.5+ | 0.0 |
| 2002 03 05 | 645 | 0.1+ | 0.1+ | 2005 07 30 | E12 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2002 03 05 | 645 | 0.1+ | 0.2+ | 2005 07 30 | E12 | 0.7+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2005 05 19 | G96 | 0.1+ | 0.0 | 2005 07 30 | E12 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.1+ |
| 2005 05 19 | G96 | 0.4− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 1.0− | 0.7+ |
| 2005 05 19 | G96 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.6+ | 0.1− |
| 2005 05 19 | G96 | 0.4− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.9− | 1.3− |
| 2005 06 27 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.0 | 2006 10 23 | 682 | 0.2+ | 0.1− |
| 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 1.0+ | 1.3+ | 2006 10 23 | 682 | 0.4− | 0.0 |
| 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 1.2− | 0.9− | 2006 10 23 | 682 | 0.4− | 0.3− |
| 2005 06 28 | 644 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.2− | 0.9− | 2006 10 24 | 682 | 0.3+ | 0.2+ |
| 2005 06 28 | 644 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 24 | 682 | 0.4+ | 0.8− |
| 2005 06 28 | 644 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.4+ | 0.5− | 2006 10 24 | 682 | (1.9− | 0.5−) |
| 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.5+ | 0.1− |
| 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2005 07 07 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2005 07 11 | G96 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2005 07 11 | G96 | 0.7− | 0.3− | 2006 10 11 | 644 | 0.4+ | 0.3+ | | | | |

**2005 MK$_{10}$ = 2006 QB$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.68501 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17666336 | $\omega$ | 199.38982 | | +0.91858546 | | +0.38830396 |
| $a$ | 3.1456113 | $\Omega$ | 137.52486 | | −0.34668670 | | +0.88111691 |
| $e$ | 0.1462788 | $i$ | 6.25952 | | −0.18976062 | | +0.26991299 |
| $P$ | 5.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 06 | 691 | 0.2+ | 0.0 | 2005 06 15 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 699 | 0.7− | 0.6+ |
| 2000 07 06 | 691 | 0.1− | 0.0 | 2005 06 27 | 691 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.7− | 0.2+ |
| 2000 07 06 | 691 | 0.1− | 0.2− | 2005 06 27 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | (1.7+ | 0.0 ) |
| 2004 03 18 | 691 | 0.1− | 0.3+ | 2005 06 27 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.4+ |
| 2004 03 18 | 691 | 0.2+ | 0.1+ | 2005 06 30 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.4− |
| 2004 03 18 | 691 | (4.5+ | 0.6−) | 2005 06 30 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.7− |
| 2005 05 16 | G96 | 0.5− | 0.1− | 2005 06 30 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.9+ |
| 2005 05 16 | G96 | 0.1− | 0.4− | 2006 08 24 | 644 | 0.5− | 0.2+ | 2006 09 30 | 703 | (0.2− | 2.0−) |
| 2005 05 16 | G96 | 0.2− | 0.8− | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 09 30 | 703 | (1.6− | 0.6−) |
| 2005 05 16 | G96 | 0.8− | 0.0 | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.6− | 1.0− |
| 2005 06 15 | 691 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.7+ | 0.7+ | | | | |
| 2005 06 15 | 691 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.9+ | 0.5+ | | | | |

**2005 ML$_{10}$ = 2006 UN$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 32.49188 | | (2000.0) | | | |
| $n$ | 0.23375830 | $\omega$ | 114.34805 | | +0.94817346 | +0.25353942 |
| $a$ | 2.6099049 | $\Omega$ | 231.54494 | | −0.29646977 | +0.92277872 |
| $e$ | 0.1596214 | $i$ | 14.15726 | | +0.11433621 | +0.29016753 |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.6+ |
| 2005 05 20 | G96 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2005 05 20 | G96 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2005 05 20 | G96 | 0.1− | 0.2+ | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2005 06 27 | 691 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2005 06 27 | 691 | 0.2− | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.2− | 0.1− |
| 2005 06 27 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2005 06 30 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2005 06 30 | 691 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.4+ | | | | |
| 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.3+ | | | | |

**2005 MR$_{10}$ = 2006 SY$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 271.13745 | | (2000.0) | | | |
| $n$ | 0.27390387 | $\omega$ | 301.11802 | | −0.18402462 | −0.98263671 |
| $a$ | 2.3482118 | $\Omega$ | 159.44641 | | +0.92321167 | −0.18105907 |
| $e$ | 0.1136297 | $i$ | 3.86498 | | +0.33736501 | −0.04053029 |
| $P$ | 3.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.1+ | 0.6+ | 2006 08 19 | 691 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.6− |
| 1997 01 31 | 691 | 0.1+ | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.3− |
| 1997 01 31 | 691 | 0.2+ | 0.5+ | 2006 08 19 | 691 | 0.1− | 1.4+ | 2006 09 30 | 703 | (0.2− | 2.0−) |
| 2005 05 20 | G96 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 1.0− |
| 2005 05 20 | G96 | 0.5− | 0.6+ | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.4+ |
| 2005 05 20 | G96 | 0.3− | 0.3− | 2006 08 28 | 691 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2005 05 20 | G96 | 0.8− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2005 06 27 | 691 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2005 06 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2005 06 27 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2005 06 30 | 691 | 0.7+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2005 06 30 | 691 | 0.6+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2005 06 30 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2− | | | | |

**2005 MG$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.83674 | | (2000.0) | | | |
| $n$ | 0.22488619 | $\omega$ | 194.50890 | | +0.95516298 | +0.26804194 |
| $a$ | 2.6781046 | $\Omega$ | 149.04248 | | −0.24140722 | +0.95096833 |
| $e$ | 0.1036902 | $i$ | 14.15172 | | −0.17142414 | +0.15431382 |
| $P$ | 4.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 05 | 691 | 0.2+ | 0.1− | 2005 07 04 | 691 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.1− | 0.8+ |
| 2005 06 05 | 691 | 0.1+ | 0.0 | 2005 07 04 | 691 | 0.0 | 0.5− | 2006 10 02 | 703 | 0.6+ | 0.5− |
| 2005 06 05 | 691 | 0.1+ | 0.2− | 2005 07 07 | 691 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.1− | 0.6+ |
| 2005 06 27 | 691 | 0.1+ | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2005 06 27 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.6− | 2006 10 21 | 703 | 0.8− | 0.1+ |
| 2005 06 30 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 1.0+ | 0.8− | 2006 10 21 | 703 | 0.5+ | 1.1+ |
| 2005 06 30 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 21 | 703 | 1.0− | 1.1− |
| 2005 07 04 | 691 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.2− | 0.7+ | 2006 10 21 | 703 | (1.4+ | 2.8−) |

**2005 MK$_{11}$ = 2006 VX$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.33470 | | (2000.0) | | | |
| $n$ | 0.22568754 | $\omega$ | 155.25597 | | +0.99269268 | −0.04059738 |
| $a$ | 2.6717613 | $\Omega$ | 207.80286 | | +0.01863030 | +0.98197872 |
| $e$ | 0.1999714 | $i$ | 14.10080 | | +0.11922316 | +0.18457963 |
| $P$ | 4.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.8+ | 0.1− |
| 2005 06 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.3− | 0.2− |
| 2005 06 27 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.4− |
| 2005 06 30 | 691 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 13 | 703 | 1.3− | 0.4+ |
| 2005 06 30 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.3− | 2006 11 13 | 703 | 0.2− | 0.5+ |
| 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.3+ | 0.6+ | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 11 01 | 703 | 1.4− | 1.1+ | 2006 11 19 | 703 | 0.6+ | 0.1+ |
| 2005 07 04 | 691 | 0.3+ | 0.0 | 2006 11 01 | 703 | 0.5− | 0.5− | 2006 11 19 | 703 | 1.4+ | 1.4− |
| 2005 07 04 | 691 | 0.0 | 0.2− | 2006 11 01 | 703 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.2− | 0.4+ |
| 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.2+ | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.6+ | | | | |

**2005 MX$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.92577 | | (2000.0) | | | |
| $n$ | 0.17723033 | $\omega$ | 77.19822 | | +0.60592413 | +0.76689951 |
| $a$ | 3.1388990 | $\Omega$ | 232.15145 | | −0.79330926 | +0.56268270 |
| $e$ | 0.2167252 | $i$ | 15.53409 | | −0.05929895 | +0.30863136 |
| $P$ | 5.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.2+ | 0.1− | 2005 06 28 | 644 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.4+ |
| 2005 05 20 | G96 | 0.0 | 0.0 | 2005 06 28 | 644 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.3+ |
| 2005 05 20 | G96 | 0.0 | 0.1+ | 2005 06 30 | 691 | 0.4+ | 0.1+ | 2006 09 28 | 703 | (2.3− | 0.1−) |
| 2005 05 20 | G96 | 0.3+ | 0.1− | 2005 06 30 | 691 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.5+ | 0.3− |
| 2005 06 03 | 703 | 0.5− | 0.4+ | 2005 06 30 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.6+ | 0.2− |
| 2005 06 03 | 703 | (1.9+ | 0.8−) | 2005 07 04 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.2− |
| 2005 06 03 | 703 | 1.4− | 0.4− | 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2005 06 03 | 703 | 0.1− | 0.2+ | 2005 07 04 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2005 06 28 | 691 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.1+ | 0.3− | 2006 10 17 | 703 | 1.3− | 0.6+ |
| 2005 06 28 | 691 | 0.3+ | 0.0 | 2005 07 11 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.0 | 1.3− |
| 2005 06 28 | 691 | 0.1+ | 0.2− | 2005 07 11 | 691 | 0.1+ | 0.1− | | | | |
| 2005 06 28 | 644 | 0.1− | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.7+ | | | | |

**2005 MS$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.99397 | | (2000.0) | | | |
| $n$ | 0.23149838 | $\omega$ | 219.09627 | | +0.96294560 | +0.20588336 |
| $a$ | 2.6268630 | $\Omega$ | 128.13342 | | −0.15611916 | +0.95223952 |
| $e$ | 0.1301371 | $i$ | 12.79565 | | −0.21991492 | +0.22550374 |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 17 | 691 | 0.4− | 0.0 | 2006 10 20 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2005 06 17 | 691 | 0.2− | 0.1− | 2006 10 20 | 703 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.3+ |
| 2005 06 17 | 691 | 0.2− | 0.0 | 2006 10 20 | 703 | 0.7+ | 0.5− | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2005 06 29 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 703 | 1.2− | 0.6− | 2006 11 17 | 703 | 0.7+ | 0.1+ |
| 2005 06 29 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.7+ | 2006 11 19 | 703 | 0.7+ | 0.3− |
| 2005 06 29 | 644 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.6− |
| 2005 06 30 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.2− |
| 2005 06 30 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.7− | 1.0− |
| 2005 06 30 | 691 | 0.2+ | 0.1− | 2006 10 28 | 703 | (0.7+ | 2.0+) | 2006 11 23 | 703 | 2.7− | 1.9− |
| 2005 07 04 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.5+ | 0.7+ |
| 2005 07 04 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.7+ | 2006 11 23 | 703 | 0.0 | 0.4+ |
| 2005 07 04 | 644 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.4+ | 0.6+ | 2006 11 23 | 703 | 0.6+ | 1.0+ |

**2005 MR$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.20067 | | (2000.0) | | | |
| $n$ | 0.17823927 | $\omega$ | 97.40283 | | +0.60103072 | +0.79440116 |
| $a$ | 3.1270425 | $\Omega$ | 210.09225 | | −0.78478905 | +0.56585210 |
| $e$ | 0.0741053 | $i$ | 10.07197 | | −0.15122241 | +0.22076731 |
| $P$ | 5.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 16 | 691 | 0.1− | 0.5+ | 2001 10 23 | 704 | 0.7− | 0.9+ | 2005 06 01 | G96 | 0.4− | 0.4− |
| 1999 05 16 | 691 | 0.5+ | 0.3+ | 2001 10 23 | 704 | 0.4+ | 1.1− | 2005 06 01 | G96 | 0.5− | 0.5− |
| 1999 05 16 | 691 | 0.1− | 0.4+ | 2001 10 23 | 704 | 0.1+ | 0.3+ | 2005 06 29 | 691 | 0.0 | 0.1+ |
| 2001 10 16 | 691 | 0.2+ | 0.8+ | 2001 11 14 | 691 | 0.2− | 0.2+ | 2005 06 29 | 691 | 0.1− | 0.1+ |
| 2001 10 16 | 691 | 0.0 | 0.6+ | 2001 11 14 | 691 | 0.1+ | 0.2− | 2005 06 29 | 691 | 0.0 | 0.3+ |
| 2001 10 16 | 691 | 0.1− | 0.4+ | 2001 11 14 | 691 | 0.0 | 0.6− | 2005 07 01 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.0 | 0.3− | 2005 06 01 | G96 | 0.4− | 0.5− | 2005 07 01 | 691 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.2− | 0.6− | 2005 06 01 | G96 | 0.4− | 0.3− | 2005 07 01 | 691 | 0.3+ | 0.1− |

**2005 MA$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 134.73524 | | (2000.0) | | | |
| $n$ | 0.22221090 | $\omega$ | 340.76106 | | −0.06383366 | +0.99603571 |
| $a$ | 2.6995568 | $\Omega$ | 285.54133 | | −0.90697616 | −0.08379943 |
| $e$ | 0.0600160 | $i$ | 3.68687 | | −0.41631659 | +0.02984144 |
| $P$ | 4.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 644 | 0.1+ | 0.0 | 2005 07 18 | 644 | 0.2− | 0.0 | 2005 09 01 | 691 | 0.1− | 0.0 |
| 2005 06 29 | 644 | 0.1+ | 0.0 | 2005 07 18 | 644 | 0.1− | 0.3− | 2005 10 30 | G96 | 0.2− | 0.2− |
| 2005 06 29 | 644 | 0.2− | 0.2− | 2005 07 28 | 644 | 0.1− | 0.1+ | 2005 10 30 | G96 | 0.2+ | 0.2− |
| 2005 07 01 | 691 | 0.2+ | 0.0 | 2005 07 28 | 644 | 0.0 | 0.2+ | 2005 10 30 | G96 | 0.6+ | 0.2− |
| 2005 07 01 | 691 | 0.1− | 0.3+ | 2005 07 28 | 644 | 0.1+ | 0.1− | 2005 10 30 | G96 | 0.1− | 0.2− |
| 2005 07 01 | 691 | 0.1+ | 0.0 | 2005 08 06 | 644 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2005 07 05 | 644 | 0.2+ | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2005 07 05 | 644 | 0.1− | 0.1+ | 2005 08 06 | 644 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2005 07 05 | 644 | 0.2− | 0.1+ | 2005 08 25 | 644 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2005 07 18 | 644 | 0.1− | 0.1− | 2005 08 25 | 644 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2005 07 18 | 644 | 0.2− | 0.2− | 2005 08 25 | 644 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2005 07 18 | 644 | 0.2− | 0.0 | 2005 09 01 | 691 | 0.1+ | 0.1− | | | | |
| 2005 07 18 | 644 | 0.1− | 0.2− | 2005 09 01 | 691 | 0.1+ | 0.1+ | | | | |

**2005 MU$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.14211 | | (2000.0) | | | |
| $n$ | 0.18402939 | $\omega$ | 38.10959 | | +0.39143985 | +0.90932479 |
| $a$ | 3.0611028 | $\Omega$ | 255.33254 | | −0.87602334 | +0.32130649 |
| $e$ | 0.1879260 | $i$ | 8.38542 | | −0.28170545 | +0.26436823 |
| $P$ | 5.36 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 29 | E12 | 0.4+ | 0.8− | 2005 06 30 | 701 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.3+ | 0.4+ |
| 2005 05 29 | E12 | 0.3+ | 0.4+ | 2005 06 30 | 701 | 0.6− | 0.3+ | 2006 09 27 | 703 | 0.2− | 0.2+ |
| 2005 05 29 | E12 | 0.2+ | 0.0 | 2005 07 01 | 701 | 0.4− | 0.1− | 2006 09 27 | 703 | 0.7− | 0.6+ |
| 2005 05 29 | E12 | 0.4− | 0.1− | 2005 07 01 | 701 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2005 06 04 | 704 | (0.6+ | 1.8−) | 2005 07 01 | 701 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2005 06 04 | 704 | 0.8− | 0.9− | 2006 09 16 | 703 | 0.9+ | 0.7− | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2005 06 04 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2005 06 04 | 704 | 0.7+ | 0.3− | 2006 09 16 | 703 | 0.5+ | 0.6− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2005 06 14 | G96 | (1.9− | 1.5+) | 2006 09 16 | 703 | 0.7− | 0.8− | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2005 06 14 | G96 | 1.4+ | 0.1− | 2006 09 20 | 644 | 0.3− | 0.3− | 2006 10 19 | 703 | 0.9+ | 0.7− |
| 2005 06 14 | G96 | 0.8− | 0.2+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2005 06 14 | G96 | 0.4− | 0.7+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 1.1+ | 0.0 |
| 2005 06 30 | 701 | 0.3+ | 0.1− | 2006 09 27 | 703 | 1.3− | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.8− |

**2005 MF$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.27943 | | (2000.0) | | | |
| $n$ | 0.18390463 | $\omega$ | 77.11543 | | +0.81047823 | +0.48212934 |
| $a$ | 3.0624871 | $\Omega$ | 253.18614 | | −0.57318792 | +0.76982880 |
| $e$ | 0.1952242 | $i$ | 20.33680 | | +0.12075040 | +0.41822830 |
| $P$ | 5.36 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | E12 | 0.1− | 0.3+ | 2005 07 01 | 644 | 0.5+ | 0.0 | 2005 09 18 | 644 | 0.0 | 0.1+ |
| 2004 04 21 | E12 | 0.0 | 0.8+ | 2005 07 04 | 703 | (2.3+ | 1.3−) | 2005 09 18 | 644 | 0.1+ | 0.0 |
| 2004 04 21 | E12 | 0.2+ | 0.1+ | 2005 07 04 | 703 | 0.7− | 0.6− | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2004 04 21 | E12 | 0.1− | 0.7+ | 2005 07 04 | 703 | 0.7− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.5+ |
| 2005 06 08 | 703 | 0.7− | 0.2− | 2005 07 04 | 703 | 0.6− | 0.7+ | 2006 11 10 | 691 | 0.3+ | 0.2− |
| 2005 06 08 | 703 | 0.6+ | 0.6+ | 2005 07 29 | 704 | 0.5− | 1.1− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2005 06 08 | 703 | 0.8+ | 0.9+ | 2005 07 29 | 704 | 0.7− | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2005 06 08 | 703 | 0.0 | 0.1− | 2005 07 29 | 704 | 0.1− | 0.6− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2005 06 24 | 644 | 0.1− | 0.2+ | 2005 08 12 | E12 | 0.1+ | 0.4+ | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2005 06 24 | 644 | 0.0 | 0.2+ | 2005 08 12 | E12 | 1.3+ | 0.9+ | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2005 06 24 | 644 | 0.1+ | 0.3+ | 2005 08 12 | E12 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2005 07 01 | 644 | 0.2+ | 0.1+ | 2005 08 12 | E12 | 0.1− | 0.3+ | | | | |
| 2005 07 01 | 644 | 0.2+ | 0.1+ | 2005 09 18 | 644 | 0.2− | 0.2+ | | | | |

**2005 MO$_{16}$ = 2006 UE$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 71.89966 | | (2000.0) | | | |
| $n$ | 0.22796531 | $\omega$ | 120.66740 | | +0.39139127 | +0.91959721 |
| $a$ | 2.6539345 | $\Omega$ | 172.14423 | | −0.90622475 | +0.39158851 |
| $e$ | 0.1413722 | $i$ | 14.39015 | | −0.15990492 | +0.03161334 |
| $P$ | 4.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 691 | 0.1+ | 0.0 | 2005 06 25 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | (4.9+ | 1.0+) |
| 2000 03 10 | 691 | 0.5− | 0.2− | 2005 06 25 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.6+ |
| 2000 03 10 | 691 | 0.3+ | 0.2+ | 2005 07 01 | 644 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2005 05 15 | 644 | 0.2− | 0.1+ | 2005 07 01 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.6+ |
| 2005 05 15 | 644 | 0.1+ | 0.1+ | 2005 07 01 | 644 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.5− |
| 2005 05 15 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.3− | 2006 10 22 | 703 | 0.2− | 0.6− |
| 2005 06 25 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.9− | 0.3+ | | | | |

**2005 MX$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.36429 | | (2000.0) | | | |
| $n$ | 0.24333253 | $\omega$ | 157.17796 | | +0.86684404 | −0.49770197 |
| $a$ | 2.5409880 | $\Omega$ | 232.70359 | | +0.45151218 | +0.80878193 |
| $e$ | 0.1955954 | $i$ | 2.12996 | | +0.21146670 | +0.31331222 |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 644 | 0.1+ | 0.1+ | 2005 07 07 | 691 | 0.1+ | 0.1− | 2005 07 30 | E12 | 0.5− | 0.4− |
| 2003 01 31 | 644 | 0.0 | 0.1− | 2005 07 07 | 691 | 0.1+ | 0.1− | 2005 07 30 | E12 | (0.9− | 2.4−) |
| 2003 01 31 | 644 | 0.1− | 0.1− | 2005 07 07 | 691 | 0.1+ | 0.1− | 2005 07 30 | E12 | 0.1+ | 0.2− |
| 2005 05 19 | G96 | 0.1− | 0.3− | 2005 07 07 | 691 | 0.1− | 0.1+ | 2005 07 30 | E12 | 0.3− | 1.3+ |
| 2005 05 19 | G96 | 0.3− | 0.4− | 2005 07 07 | 691 | 0.2+ | 0.0 | 2005 10 01 | G96 | 0.4− | 0.4− |
| 2005 05 19 | G96 | 0.5− | 0.4− | 2005 07 07 | 691 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.1− | 0.2− |
| 2005 05 19 | G96 | 0.1− | 0.5− | 2005 07 11 | G96 | 0.2− | 0.0 | 2005 10 01 | G96 | 0.3− | 0.1− |
| 2005 06 27 | 691 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.1− | 0.7− | 2005 10 01 | G96 | 0.2− | 0.0 |
| 2005 06 27 | 691 | 0.0 | 0.3+ | 2005 07 11 | G96 | 0.7+ | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2005 06 27 | 691 | 0.4− | 0.3+ | 2005 07 11 | G96 | 0.4+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2005 07 02 | 691 | 0.3+ | 0.0 | 2005 07 18 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2005 07 02 | 691 | 0.1+ | 0.0 | 2005 07 18 | 644 | 0.4− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2005 07 02 | 691 | 0.0 | 0.1+ | 2005 07 18 | 644 | 0.3− | 0.1+ | | | | |

**2005 MB$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.38055 | | (2000.0) | | | |
| $n$ | 0.22661652 | $\omega$ | 173.19720 | | +0.38544159 | −0.92165951 |
| $a$ | 2.6644547 | $\Omega$ | 254.12407 | | +0.84439641 | +0.37174652 |
| $e$ | 0.0632183 | $i$ | 2.65057 | | +0.37206112 | +0.11112281 |
| $P$ | 4.35 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 31 | 910 | 0.5+ | 0.5+ | 2005 07 07 | 691 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 1997 10 31 | 910 | 0.3+ | 0.2+ | 2005 07 15 | 691 | 0.2− | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 1997 10 31 | 910 | 0.5+ | 0.1+ | 2005 07 15 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2002 11 07 | 645 | 0.1− | 0.1+ | 2005 07 15 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2002 11 07 | 645 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 05 21 | 691 | 0.5+ | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.8− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2004 05 21 | 691 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.8− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 05 21 | 691 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2005 06 27 | 691 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.5+ | 0.4− | 2006 11 19 | 691 | 0.8− | 0.1+ |
| 2005 06 27 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.5− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2005 06 27 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.6+ |
| 2005 07 02 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.1− | 2006 11 21 | 704 | 0.4− | 1.0+ |
| 2005 07 02 | 691 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2005 07 02 | 691 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.6− | 0.7+ |
| 2005 07 05 | G96 | 0.2− | 0.6− | 2006 10 29 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.3+ |
| 2005 07 05 | G96 | 0.2− | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.5+ |
| 2005 07 05 | G96 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.4+ |
| 2005 07 05 | G96 | 0.5− | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2005 07 07 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2005 07 07 | 691 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1+ |

**2005 MP$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.47139 | | (2000.0) | | | |
| $n$ | 0.17556091 | $\omega$ | 25.92703 | | +0.73511420 | +0.67331632 |
| $a$ | 3.1587663 | $\Omega$ | 291.51438 | | −0.63584754 | +0.64430398 |
| $e$ | 0.1199864 | $i$ | 4.87562 | | −0.23517022 | +0.36265343 |
| $P$ | 5.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | 691 | 0.1+ | 0.1− | 2005 07 18 | 644 | 0.5− | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2005 07 18 | 644 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2005 06 27 | 691 | 0.0 | 0.1− | 2005 07 18 | 644 | 0.2+ | 0.1− | 2006 11 02 | 691 | 0.1+ | 0.3+ |
| 2005 07 02 | 691 | 0.0 | 0.1+ | 2005 07 18 | 644 | 0.1+ | 0.1− | 2006 11 02 | 691 | 0.3− | 0.0 |
| 2005 07 02 | 691 | 0.0 | 0.2+ | 2005 07 18 | 644 | 0.6− | 0.1− | 2006 11 02 | 691 | 0.1+ | 0.0 |
| 2005 07 02 | 691 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2005 07 05 | G96 | 0.3− | 0.1+ | 2005 10 01 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2005 07 05 | G96 | 0.1+ | 0.1+ | 2005 10 01 | G96 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2005 07 05 | G96 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.4+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2005 07 05 | G96 | 0.5− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.2− | | | | |
| 2005 07 18 | 644 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.3− | | | | |

**2005 MA$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.21892 | | (2000.0) | | | |
| $n$ | 0.19089655 | $\omega$ | 41.66693 | | +0.89960751 | +0.41279414 |
| $a$ | 2.9872437 | $\Omega$ | 293.42831 | | −0.43037437 | +0.78270858 |
| $e$ | 0.1020416 | $i$ | 8.93464 | | −0.07405561 | +0.46579854 |
| $P$ | 5.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.4− | 0.1+ | 2005 07 02 | 691 | 0.1+ | 0.0 | 2006 11 02 | G96 | 0.2− | 0.5− |
| 2005 06 13 | G96 | 0.4− | 0.2− | 2005 07 02 | 691 | 0.2− | 0.1− | 2006 11 02 | G96 | 0.0 | 0.3− |
| 2005 06 13 | G96 | 0.5− | 0.0 | 2005 07 18 | 644 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.3− | 0.4− |
| 2005 06 13 | G96 | 0.1− | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.0 | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2005 06 27 | 691 | 0.3+ | 0.1− | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 1.0− | 0.5+ |
| 2005 06 27 | 691 | 0.0 | 0.2+ | 2005 07 27 | 644 | 0.1− | 0.0 | 2006 11 15 | 703 | 1.4+ | 0.6+ |
| 2005 06 27 | 691 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.2+ | 0.2+ |
| 2005 07 02 | 691 | 0.3+ | 0.1+ | 2005 07 27 | 644 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.1− | 0.1+ |

**2005 MR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.77413 | | (2000.0) | | | |
| $n$ | 0.21242542 | $\omega$ | 183.62627 | | +0.98329444 | +0.17454583 |
| $a$ | 2.7818373 | $\Omega$ | 165.99770 | | −0.16117378 | +0.96672631 |
| $e$ | 0.0791816 | $i$ | 12.32094 | | −0.08458760 | +0.18701337 |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 16 | G96 | 0.2+ | 1.0+ | 2005 06 29 | 691 | 0.1− | 0.2− | 2006 09 20 | 691 | 0.1+ | 0.2+ |
| 2005 05 16 | G96 | (1.1− | 3.6+) | 2005 06 29 | 691 | 0.3− | 0.2+ | 2006 09 20 | 691 | 0.8− | 0.1− |
| 2005 05 16 | G96 | (0.6− | 2.5+) | 2005 07 03 | 691 | 0.0 | 0.1− | 2006 09 20 | 691 | 0.4+ | 0.1+ |
| 2005 05 16 | G96 | (0.9− | 3.5+) | 2005 07 03 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2005 06 17 | 691 | 0.1− | 0.5− | 2005 07 03 | 691 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2005 06 17 | 691 | 0.0 | 0.5+ | 2005 07 04 | 644 | 0.0 | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2005 06 17 | 691 | 0.0 | 0.1+ | 2005 07 04 | 644 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.6+ | 0.1+ |
| 2005 06 29 | 691 | 0.1− | 0.1− | 2005 07 04 | 644 | 0.2− | 0.1− | | | | |

**2005 MU$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 62.52082 | | (2000.0) | | | |
| $n$ | 0.17482983 | $\omega$ | 140.53658 | | +0.85193117 | +0.52365271 |
| $a$ | 3.1675662 | $\Omega$ | 187.88604 | | −0.48236431 | +0.78397244 |
| $e$ | 0.1684772 | $i$ | 0.44017 | | −0.20380860 | +0.33342923 |
| $P$ | 5.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.0 | 0.3+ | 2005 07 03 | G96 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 1994 09 11 | 691 | 0.3− | 0.3+ | 2005 07 03 | G96 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 1994 09 11 | 691 | 0.1+ | 0.2− | 2005 07 03 | G96 | 0.8− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.3+ |
| 2000 10 07 | 691 | 0.1+ | 0.2− | 2005 07 12 | 291 | 0.4− | 0.0 | 2006 11 18 | 691 | 0.4− | 0.6+ |
| 2000 10 07 | 691 | 0.1− | 0.4− | 2005 07 12 | 291 | 0.5− | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2000 10 07 | 691 | 0.3+ | 0.2− | 2005 07 12 | 291 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2005 06 13 | G96 | 0.4+ | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 06 13 | G96 | 0.2+ | 0.3+ | 2005 07 12 | G96 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2005 06 13 | G96 | 0.1− | 0.6+ | 2005 07 12 | G96 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2005 06 13 | G96 | 0.4− | 0.3+ | 2005 07 12 | G96 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2005 06 30 | 691 | 0.5+ | 0.2− | 2005 07 18 | 644 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2005 06 30 | 691 | 0.7+ | 0.0 | 2005 07 18 | 644 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2005 06 30 | 691 | 0.6+ | 0.0 | 2005 07 18 | 644 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2005 07 03 | G96 | 0.8− | 0.4+ | 2006 10 27 | G96 | 0.8+ | 0.4− | | | | |

**2005 ME$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.23641 | | (2000.0) | | | |
| $n$ | 0.17940613 | $\omega$ | 219.50080 | | +0.95640346 | +0.24061054 |
| $a$ | 3.1134689 | $\Omega$ | 125.79778 | | −0.18838802 | +0.94136855 |
| $e$ | 0.0976009 | $i$ | 11.77564 | | −0.22316448 | +0.23649910 |
| $P$ | 5.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 14 | 691 | 0.2− | 0.3+ | 2005 07 03 | G96 | 0.0 | 0.2− | 2005 07 18 | 644 | 0.2− | 0.1− |
| 1997 02 14 | 691 | 0.3+ | 0.1+ | 2005 07 03 | G96 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.3+ | 0.1− |
| 1997 02 14 | 691 | 0.1− | 0.0 | 2005 07 03 | G96 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.3− | 0.5− |
| 2005 06 13 | G96 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.6+ |
| 2005 06 13 | G96 | 0.2− | 0.2+ | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.9+ |
| 2005 06 13 | G96 | 0.4− | 0.1− | 2005 07 11 | 691 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.2+ | 1.2− |
| 2005 06 13 | G96 | 0.1− | 0.1− | 2005 07 12 | G96 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.9+ | 0.7− |
| 2005 06 30 | 691 | 0.4+ | 0.0 | 2005 07 12 | G96 | 0.7− | 0.3+ | 2006 11 19 | 703 | 0.9− | 1.1+ |
| 2005 06 30 | 691 | 0.2+ | 0.1+ | 2005 07 12 | G96 | 0.3− | 0.3+ | 2006 11 19 | 703 | 0.6+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.0 | 0.0 | 2005 07 18 | 644 | 0.2− | 0.3− | |
| 2005 07 03 | G96 | 0.3− | 0.1− | 2005 07 18 | 644 | 0.0 | 0.3− | |

**2005 MN$_{22}$ = 2006 WF$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.85162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19846000 | $\omega$ | 210.02036 | | +0.91838499 | +0.39348674 | |
| $a$ | 2.9108560 | $\Omega$ | 126.74946 | | −0.35189849 | +0.86037187 | |
| $e$ | 0.0873207 | $i$ | 2.98174 | | −0.18093222 | +0.32392657 | |
| $P$ | 4.97 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.7+ | 0.3− | 2006 11 23 | 691 | 0.4− | 0.1+ | | |
| 2005 06 30 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.7− | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2005 06 30 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.7− | 2006 11 23 | 691 | 0.4− | 0.2+ | | |
| 2005 07 03 | G96 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.6− | 0.8− | 2006 11 24 | 691 | 0.1+ | 0.4− | | |
| 2005 07 03 | G96 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.1− | 0.4− | | |
| 2005 07 03 | G96 | 0.9+ | 0.0 | 2006 11 16 | 691 | 0.5+ | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.4− | | |
| 2005 07 03 | G96 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2005 07 11 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2005 07 11 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ | | | | | | |

**2005 MC$_{24}$ = 2003 YF$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.45490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27352220 | $\omega$ | 110.97154 | | −0.56094939 | +0.80922767 | |
| $a$ | 2.3503958 | $\Omega$ | 123.70086 | | −0.81590226 | −0.50471357 | |
| $e$ | 0.1777947 | $i$ | 12.11494 | | −0.14014021 | −0.30069052 | |
| $P$ | 3.60 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 291 | 0.1+ | 0.2− | 2005 06 27 | 691 | 0.3+ | 0.3+ | 2005 07 07 | 691 | 0.0 | 0.1+ |
| 2003 12 25 | 291 | 0.6− | 0.0 | 2005 06 27 | 691 | 0.1− | 0.0 | 2005 07 07 | 691 | 0.0 | 0.2+ |
| 2003 12 25 | 291 | 0.5− | 0.1− | 2005 06 27 | 691 | 0.2+ | 0.2+ | 2005 07 07 | 691 | 0.0 | 0.3+ |
| 2004 01 27 | 691 | 0.1+ | 0.5+ | 2005 07 02 | 691 | 0.1+ | 0.0 | 2005 12 02 | 695 | 0.0 | 0.2+ |
| 2004 01 27 | 691 | 0.3+ | 0.3+ | 2005 07 02 | 691 | 0.4− | 0.2+ | 2005 12 02 | 695 | 0.4− | 0.2+ |
| 2004 01 27 | 691 | 0.4+ | 0.8+ | 2005 07 02 | 691 | 0.2− | 0.2− | | | | |

**2005 MH$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.95945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23776900 | $\omega$ | 126.12829 | | +0.83833793 | +0.53965714 | |
| $a$ | 2.5804724 | $\Omega$ | 201.54016 | | −0.54283080 | +0.81330666 | |
| $e$ | 0.1510620 | $i$ | 12.13781 | | −0.05024177 | +0.21749127 | |
| $P$ | 4.15 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 09 | 703 | 1.0+ | 0.4− | 2005 07 02 | 703 | 0.1− | 0.6+ | 2006 11 15 | 703 | 0.7+ | 0.1− |
| 2005 06 09 | 703 | 0.3− | 0.3+ | 2005 07 02 | 703 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.1− | 1.0− |
| 2005 06 09 | 703 | 0.3− | 0.1− | 2005 07 05 | 291 | 0.0 | 0.1− | 2006 11 15 | 703 | 1.2+ | 0.4+ |
| 2005 06 09 | 703 | 0.4− | 0.4− | 2005 07 05 | 291 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.5− | 0.9+ |
| 2005 06 29 | 644 | 0.1− | 0.1− | 2005 07 05 | 291 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2005 06 29 | 644 | 0.1+ | 0.1+ | 2005 07 06 | 291 | 0.9− | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.5− |
| 2005 06 29 | 644 | 0.1− | 0.1+ | 2005 07 06 | 291 | 0.8+ | 0.1+ | 2006 11 19 | 703 | 0.6− | 0.6+ |
| 2005 07 02 | 703 | 0.2+ | 1.2− | 2005 07 06 | 291 | (2.5+ | 0.2+) | | | | |
| 2005 07 02 | 703 | 1.1− | 0.7+ | 2006 11 15 | 703 | 0.6− | 0.1− | | | | |

**2005 MZ$_{24}$ = 2006 QB$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.25647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21664994 | $\omega$ | 91.45970 | | +0.77305181 | +0.63076031 | |
| $a$ | 2.7455562 | $\Omega$ | 229.43968 | | −0.61153266 | +0.71284056 | |
| $e$ | 0.0371060 | $i$ | 5.08392 | | −0.16857846 | +0.30659383 | |
| $P$ | 4.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.0 | 0.4+ | 2006 08 29 | 703 | (1.9− | 0.7−) | 2006 10 23 | G96 | 0.2− | 0.9− | | |
| 2002 11 23 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.1− | 0.9+ | 2006 10 23 | G96 | 0.0 | 0.6− | | |
| 2002 11 23 | 644 | 0.2− | 0.4+ | 2006 08 29 | 703 | 0.8− | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.6− | | |
| 2005 06 27 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.7− | 0.3+ | 2006 10 23 | G96 | 0.4− | 0.5− | | |
| 2005 06 27 | 691 | 0.6− | 0.9+ | 2006 09 17 | 703 | 0.5− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.0 | | |
| 2005 06 27 | 691 | 0.1+ | 0.2− | 2006 09 17 | 703 | 1.4− | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.2+ | | |
| 2005 07 04 | 691 | 0.3+ | 0.0 | 2006 09 17 | 703 | 1.0− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.2+ | | |
| 2005 07 04 | 691 | 0.2− | 0.6− | 2006 09 20 | 703 | 1.0+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | | |
| 2005 07 04 | 691 | 0.3+ | 0.1− | 2006 09 20 | 703 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.2+ | | |
| 2005 07 05 | G96 | 0.2+ | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.0 | | |
| 2005 07 05 | G96 | 0.0 | 0.3− | 2006 09 20 | 703 | 0.4+ | 0.4− | 2006 10 31 | 691 | 0.6+ | 0.6+ | | |
| 2005 07 05 | G96 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.5+ | 0.2+ | | |
| 2005 07 05 | G96 | 0.5− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.3− | | |
| 2006 08 29 | 703 | 1.2− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.2− | | | | | | |

**2005 MY$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.55882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18031052 | $\omega$ | 81.25700 | | +0.91681567 | +0.36883854 | |
| $a$ | 3.1030492 | $\Omega$ | 256.98570 | | −0.39929113 | +0.84301800 | |
| $e$ | 0.0817393 | $i$ | 9.03440 | | −0.00395225 | +0.39150835 | |
| $P$ | 5.47 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 691 | 0.1+ | 0.1− | 2005 07 30 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2005 06 29 | 691 | 0.0 | 0.3− | 2005 07 30 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 2005 06 29 | 691 | 0.1+ | 0.1+ | 2005 07 30 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | (1.8+ | 1.1−) |
| 2005 07 04 | 691 | 0.1+ | 0.3+ | 2005 07 30 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.7− |
| 2005 07 04 | 691 | 0.2− | 0.1− | 2005 07 30 | 644 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.4− | 1.2+ |
| 2005 07 04 | 691 | 0.1+ | 0.0 | 2005 07 30 | 644 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2005 07 05 | 644 | 0.1+ | 0.2− | 2005 08 06 | 644 | 0.2− | 0.6− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2005 07 05 | 644 | 0.1− | 0.2− | 2005 08 06 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 1.0− | 0.5+ |
| 2005 07 05 | 644 | 0.3+ | 0.2− | 2005 08 06 | 644 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2005 07 15 | 691 | 0.7− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.3+ | 0.3− |
| 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.0 |

**2005 MB$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.10822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17951452 | $\omega$ | 97.29623 | | +0.98788364 | −0.00015853 | |
| $a$ | 3.1122155 | $\Omega$ | 262.80173 | | −0.05874768 | +0.92520338 | |
| $e$ | 0.1088673 | $i$ | 8.99969 | | +0.14364756 | +0.37947157 | |
| $P$ | 5.49 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.1+ | 0.2− | 2005 07 15 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2000 09 27 | 645 | 0.1+ | 0.2− | 2005 07 15 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2005 06 29 | 691 | 0.0 | 0.1− | 2005 07 30 | 644 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.4+ |
| 2005 06 29 | 691 | 0.2− | 0.1+ | 2005 07 30 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.3+ | 0.4+ |
| 2005 06 29 | 691 | 0.0 | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.2+ |
| 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2005 07 04 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2005 07 08 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.8− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2005 07 08 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 1.1− | 0.9− | 2006 11 22 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 08 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 1.7− | 0.6− | 2006 11 22 | 691 | 0.1− | 0.1+ | | |
| 2005 07 15 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.8− | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.0 | | |

**2005 MY$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.77786 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18529269 | $\omega$ | 150.46229 | | +0.70287886 | | −0.70322346 |
| $a$ | 3.0471736 | $\Omega$ | 254.64254 | | +0.62893321 | | +0.68464870 |
| $e$ | 0.0537981 | $i$ | 6.36773 | | +0.33227146 | | +0.19165834 |
| $P$ | 5.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 691 | 0.2+ | 0.3+ | 2005 09 03 | 644 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.4+ | | |
| 2005 06 29 | 691 | 0.1+ | 0.0 | 2005 09 03 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.0 | | |
| 2005 06 29 | 691 | 0.1+ | 0.1− | 2005 09 03 | 644 | 0.2− | 0.7− | 2006 10 31 | 691 | 0.5− | 0.4− | | |
| 2005 07 04 | 691 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.2− | | |
| 2005 07 04 | 691 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 2005 07 04 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.5+ | 0.1− | | |
| 2005 07 08 | 691 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.3+ | | |
| 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.3+ | 0.7+ | | |
| 2005 07 08 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.2+ | | |
| 2005 08 06 | 644 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.1− | 0.1+ | | |
| 2005 08 06 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.6+ | 1.0+ | | |
| 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.0+ | | |

**2005 MH$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.78286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17193735 | $\omega$ | 77.77573 | | +0.97412000 | | +0.18156056 |
| $a$ | 3.2029923 | $\Omega$ | 271.65122 | | −0.22094474 | | +0.89050966 |
| $e$ | 0.2067309 | $i$ | 7.74062 | | +0.04768270 | | +0.41716699 |
| $P$ | 5.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 691 | 0.3− | 0.1− | 2005 07 08 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 691 | 0.3− | 0.2− | | |
| 2005 06 29 | 691 | 0.0 | 0.2− | 2005 07 08 | 691 | 0.2+ | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.3+ | | |
| 2005 06 29 | 691 | 0.0 | 0.1+ | 2005 07 08 | 691 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.2− | 0.1− | | |
| 2005 07 04 | 691 | 0.1+ | 0.1+ | 2005 07 29 | 644 | 0.1− | 0.1− | 2006 11 25 | 691 | 0.1− | 0.2− | | |
| 2005 07 04 | 691 | 0.1− | 0.0 | 2005 07 29 | 644 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.4+ | 0.3+ | | |
| 2005 07 04 | 691 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.1− | 0.1− | | |

**2005 MB$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.54802 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23609465 | $\omega$ | 168.30621 | | +0.44107839 | | +0.89673488 |
| $a$ | 2.5926583 | $\Omega$ | 127.85570 | | −0.82707177 | | +0.42184350 |
| $e$ | 0.0994296 | $i$ | 2.63382 | | −0.34842809 | | +0.13384548 |
| $P$ | 4.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 645 | 0.1+ | 0.1− | 2005 07 05 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.2− | | |
| 2003 12 25 | 645 | 0.0 | 0.1+ | 2005 07 05 | G96 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.6− | | |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 2005 06 30 | 691 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.5+ | 0.6+ | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2005 06 30 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.6− | | |
| 2005 07 04 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.6− | | |
| 2005 07 04 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.2− | 0.4+ | | |
| 2005 07 05 | G96 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2005 07 05 | G96 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.5− | 0.1− | | |

**2005 MM$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.74822 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20339584 | $\omega$ | 43.81567 | | +0.97572815 | | +0.20430337 |
| $a$ | 2.8635714 | $\Omega$ | 304.23646 | | −0.21782811 | | +0.86853915 |
| $e$ | 0.1086875 | $i$ | 5.47184 | | −0.02248311 | | +0.45155274 |
| $P$ | 4.85 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.3− | 0.2+ | 2005 07 12 | G96 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.0 | | |
| 2005 06 30 | 691 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2005 06 30 | 691 | 0.2+ | 0.0 | 2005 07 30 | E12 | 0.3+ | 0.1+ | 2006 11 17 | 691 | 0.3− | 0.0 | | |
| 2005 07 05 | 691 | 0.2− | 0.1− | 2005 07 30 | E12 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.1− | 0.1− | | |
| 2005 07 05 | 691 | 0.1− | 0.1+ | 2005 07 30 | E12 | 0.1+ | 0.4+ | 2006 11 25 | 691 | 0.0 | 0.1+ | | |
| 2005 07 05 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2+ | 2006 11 25 | 691 | 0.2− | 0.1− | | |
| 2005 07 09 | 691 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.2+ | 0.3+ | | |
| 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.3+ | 0.0 | 2006 11 25 | 691 | 0.6− | 0.3− | | |
| 2005 07 09 | 691 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.1− | 0.2− | 2006 11 25 | 691 | 0.5+ | 0.0 | | |
| 2005 07 12 | G96 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.1+ | | | | | | |
| 2005 07 12 | G96 | 0.3+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.0 | | | | | | |

**2005 MD$_{36}$ = 2006 VS$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.88973 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18959917 | $\omega$ | 339.62878 | | +0.95031386 | | −0.31044281 |
| $a$ | 3.0008556 | $\Omega$ | 38.48116 | | +0.29047931 | | +0.85779080 |
| $e$ | 0.1445961 | $i$ | 2.11792 | | +0.11191666 | | +0.40965863 |
| $P$ | 5.20 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.5+ | 0.5− | 2006 11 14 | 691 | 0.0 | 0.3+ | | |
| 2005 06 30 | 691 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.2+ | 1.0− | 2006 11 18 | 691 | 0.0 | 0.3+ | | |
| 2005 06 30 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.6− | 2006 11 18 | 691 | 0.2+ | 0.5+ | | |
| 2005 07 05 | 691 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |
| 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.6− | 2006 11 22 | 691 | 0.2− | 0.3+ | | |
| 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.6− | 2006 11 22 | 691 | 0.2− | 0.0 | | |
| 2005 07 09 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | H07 | 0.6+ | 0.6− | | |
| 2005 07 09 | 691 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 22 | H07 | 0.0 | 0.2− | | |
| 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3− | 2006 11 22 | H07 | 1.1+ | 0.8− | | |
| 2006 09 27 | G96 | 0.1+ | 0.7− | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1− | 0.1− | | |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.2− | 0.1+ | | | | | | |

**2005 MK$_{36}$ = 2006 UP$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.26877 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23141261 | $\omega$ | 34.43676 | | −0.50046188 | | −0.86457468 |
| $a$ | 2.6275120 | $\Omega$ | 85.63227 | | +0.78375811 | | −0.47464920 |
| $e$ | 0.0380596 | $i$ | 2.60169 | | +0.36777865 | | −0.16498107 |
| $P$ | 4.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 12 | 703 | 0.6+ | 0.1+ | | |
| 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 12 | 703 | 0.9+ | 1.4− | | |
| 2005 06 30 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.4− | | |
| 2005 07 05 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.6− | 0.5− | | |
| 2005 07 05 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.6− | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.4− | | |
| 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.7− | | |
| 2005 07 16 | 691 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.6+ | | |
| 2005 07 16 | 691 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.2− | | |
| 2005 07 16 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.0 | | |
| 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.6+ | | |
| 2006 10 16 | 691 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.1− | | |
| 2006 10 16 | 691 | 0.0 | 0.5+ | 2006 11 12 | 703 | 0.7+ | 0.5+ | 2006 11 18 | 704 | 0.8+ | 1.4− | | |
| 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 12 | 703 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.0 | 1.1− | | |

**2005 MP$_{36}$ = 2006 US$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.14471 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17255310 | $\omega$ | 298.75668 | | −0.01117331 | +0.99936809 | |
| $a$ | 3.1953679 | $\Omega$ | 330.54490 | | −0.89183439 | −0.02522085 | |
| $e$ | 0.1457579 | $i$ | 3.93466 | | −0.45222403 | +0.02504637 | |
| $P$ | 5.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.1− | 0.1+ | 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.5+ | |
| 2005 06 30 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.4− | 2006 10 21 | 691 | 0.4− | 1.0+ | |
| 2005 06 30 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.6+ | 0.3− | |
| 2005 07 05 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.4− | |
| 2005 07 05 | 691 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.7− | |
| 2005 07 05 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1− | |
| 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.3+ | 0.5+ | |
| 2005 07 09 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.6− | |

**2005 MT$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.62899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25740845 | $\omega$ | 342.33904 | | +0.49121595 | +0.87075474 | |
| $a$ | 2.4474896 | $\Omega$ | 317.07427 | | −0.79517538 | +0.43788270 | |
| $e$ | 0.1930789 | $i$ | 1.86842 | | −0.35553200 | +0.22370722 | |
| $P$ | 3.83 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.1− | 0.5− | 2005 07 04 | 644 | 0.1− | 0.2+ | 2005 08 06 | 704 | 0.5+ | 1.0+ | |
| 1994 10 28 | 691 | 0.4− | 1.5+ | 2005 07 04 | 644 | 0.1− | 0.1+ | 2005 08 28 | 691 | 0.2− | 0.0 | |
| 1994 10 28 | 691 | 0.1+ | 0.0 | 2005 07 05 | 691 | 0.0 | 0.1+ | 2005 08 28 | 691 | 0.1+ | 0.1− | |
| 2004 02 29 | 691 | 0.7+ | 0.2+ | 2005 07 05 | 691 | 0.2− | 0.2+ | 2005 08 28 | 691 | 0.1+ | 0.1+ | |
| 2004 02 29 | 691 | 0.3− | 0.5+ | 2005 07 05 | 691 | 0.1− | 0.1+ | 2005 09 29 | G96 | 0.1+ | 0.3+ | |
| 2004 02 29 | 691 | 0.4+ | 1.0+ | 2005 07 30 | E12 | 0.9− | 0.1− | 2005 09 29 | G96 | 0.3− | 0.4+ | |
| 2005 06 30 | 691 | 0.1+ | 0.1+ | 2005 07 30 | E12 | 0.0 | 0.2− | 2005 09 29 | G96 | 0.2+ | 0.1+ | |
| 2005 06 30 | 691 | 0.0 | 0.3+ | 2005 07 30 | E12 | 0.3+ | 0.1+ | 2005 09 29 | G96 | 0.3− | 0.1− | |
| 2005 06 30 | 691 | 0.0 | 0.1+ | 2005 08 06 | 704 | 0.2− | 0.6− | | | | | |
| 2005 07 04 | 644 | 0.1+ | 0.1+ | 2005 08 06 | 704 | 0.6+ | 0.8+ | | | | | |

**2005 MM$_{37}$ = 2006 WL$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.07633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27830863 | $\omega$ | 317.19801 | | −0.43312720 | +0.89947295 | |
| $a$ | 2.3233694 | $\Omega$ | 287.06005 | | −0.80973357 | −0.41650930 | |
| $e$ | 0.1269970 | $i$ | 3.47060 | | −0.39589440 | −0.13216816 | |
| $P$ | 3.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 291 | 0.1+ | 0.4+ | 2005 07 05 | G96 | 0.2− | 0.2+ | 2005 07 11 | 691 | 0.0 | 0.5+ | |
| 2003 12 19 | 291 | 0.3+ | 0.4+ | 2005 07 05 | G96 | 0.6− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.3+ | |
| 2003 12 19 | 291 | 1.1− | 0.1+ | 2005 07 05 | G96 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ | |
| 2004 01 28 | 691 | 0.4+ | 0.2+ | 2005 07 05 | G96 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1+ | |
| 2004 01 28 | 691 | 0.4+ | 0.5+ | 2005 07 05 | 644 | 0.2− | 0.4+ | 2006 11 24 | 691 | 0.1− | 0.3− | |
| 2004 01 28 | 691 | 0.4+ | 0.3+ | 2005 07 05 | 644 | 0.2+ | 0.2+ | 2006 11 24 | 691 | 0.5− | 0.0 | |
| 2005 06 30 | 691 | 0.4− | 0.1+ | 2005 07 05 | 644 | 0.4− | 0.2+ | 2006 11 24 | 691 | 0.6+ | 0.0 | |
| 2005 06 30 | 691 | 0.2− | 0.0 | 2005 07 11 | 691 | 0.3+ | 0.3+ | | | | | |
| 2005 06 30 | 691 | 0.4− | 0.1− | 2005 07 11 | 691 | 0.3+ | 0.6+ | | | | | |

**2005 MV$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.47561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19765520 | $\omega$ | 130.92486 | | +0.97959082 | +0.20059775 | |
| $a$ | 2.9187521 | $\Omega$ | 217.50834 | | −0.19013415 | +0.90419829 | |
| $e$ | 0.0126823 | $i$ | 1.19918 | | −0.06519843 | +0.37707558 | |
| $P$ | 4.99 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.1− | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.2+ | |
| 2005 06 30 | 691 | 0.2+ | 0.1+ | 2005 07 27 | 644 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1+ | |
| 2005 06 30 | 691 | 0.2− | 0.1+ | 2005 07 27 | 644 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.0 | 0.1+ | |
| 2005 07 05 | G96 | 0.3+ | 0.4− | 2005 07 27 | 644 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ | |
| 2005 07 05 | G96 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 2005 07 05 | G96 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.3− | |
| 2005 07 05 | G96 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 2005 07 11 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.5+ | 0.5− | |
| 2005 07 11 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.0 | 0.3+ | | | | | |

**2005 MV$_{38}$ = 2006 VB$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.30827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19890810 | $\omega$ | 45.05407 | | +0.79202360 | +0.61024019 | |
| $a$ | 2.9064826 | $\Omega$ | 277.33118 | | −0.56495871 | +0.72180241 | |
| $e$ | 0.0523326 | $i$ | 1.00979 | | −0.23134449 | +0.32650910 | |
| $P$ | 4.96 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.2− | 0.5+ | 2005 07 12 | G96 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.2− | 0.1+ | |
| 2001 10 16 | 291 | 0.1+ | 0.9+ | 2005 07 12 | G96 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | |
| 2001 10 16 | 291 | 0.3− | 0.4+ | 2005 07 12 | G96 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.2+ | |
| 2004 04 24 | 691 | 0.3+ | 0.5+ | 2005 07 12 | G96 | 0.2+ | 0.3+ | 2006 11 13 | 691 | 0.3+ | 0.1− | |
| 2004 04 24 | 691 | 0.0 | 0.4+ | 2005 07 12 | G96 | 0.2− | 0.9+ | 2006 11 18 | 691 | 0.1+ | 0.0 | |
| 2004 04 24 | 691 | 0.2+ | 0.4+ | 2005 07 15 | G96 | 0.7− | 0.5− | 2006 11 18 | 691 | 0.2+ | 0.1+ | |
| 2005 06 30 | 691 | 0.2+ | 0.0 | 2005 07 15 | G96 | 0.4− | 0.5− | 2006 11 18 | 691 | 0.3+ | 0.0 | |
| 2005 06 30 | 691 | 0.3+ | 0.4+ | 2005 07 15 | G96 | 0.2− | 0.4− | 2006 11 20 | 691 | 0.5− | 0.9− | |
| 2005 06 30 | 691 | 0.2− | 0.1− | 2005 07 15 | G96 | 0.0 | 0.5− | 2006 11 20 | 691 | 0.2+ | 0.2+ | |
| 2005 07 05 | G96 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.4+ | 0.4+ | |
| 2005 07 05 | G96 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− | |
| 2005 07 05 | G96 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.2− | |
| 2005 07 05 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 11 24 | G96 | 0.2− | 0.5− | |
| 2005 07 06 | 413 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.2− | 0.3− | |
| 2005 07 06 | 413 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.0 | |
| 2005 07 12 | G96 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.3− | 0.3− | |
| 2005 07 12 | G96 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.3+ | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.6− | |
| 2005 07 12 | G96 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.2− | |

**2005 MK$_{42}$ = 2006 WZ$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.25504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19108557 | $\omega$ | 112.35593 | | +0.99045800 | +0.07460883 | |
| $a$ | 2.9852734 | $\Omega$ | 243.52989 | | −0.11026146 | +0.93339354 | |
| $e$ | 0.1266441 | $i$ | 7.43738 | | +0.08267625 | +0.35101285 | |
| $P$ | 5.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 04 | 691 | 0.2+ | 0.2− | 2005 07 08 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.1− | |
| 2000 10 04 | 691 | 0.1+ | 0.1− | 2005 07 08 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.0 | 0.1+ | |
| 2000 10 04 | 691 | 0.0 | 0.4− | 2006 10 29 | G96 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.0 | |
| 2005 06 29 | 691 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.2− | |
| 2005 06 29 | 691 | 0.2+ | 0.2+ | 2006 10 29 | G96 | 0.7+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.1+ | |
| 2005 06 29 | 691 | 0.4− | 0.4+ | 2006 10 29 | G96 | 0.4− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.0 | |
| 2005 07 05 | 644 | 0.4+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.2+ | |
| 2005 07 05 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 644 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.4+ | 0.2− |
| 2005 07 08 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− | | | | |

**2005 MT$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.51347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12315359 | $\omega$ | 146.31779 | | +0.96839891 | | +0.24861858 |
| $a$ | 4.0010257 | $\Omega$ | 199.31565 | | −0.23999855 | | +0.90731918 |
| $e$ | 0.2315986 | $i$ | 3.43313 | | −0.06785457 | | +0.33905857 |
| $P$ | 8.00 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 27 | 691 | 0.2+ | 0.4− | 2005 08 06 | 644 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1998 10 27 | 691 | 0.0 | 0.3− | 2005 08 06 | 644 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 1998 10 27 | 691 | 0.1+ | 0.3− | 2005 08 06 | 644 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2005 06 29 | 644 | 0.0 | 0.1− | 2005 08 25 | 644 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2005 06 29 | 644 | 0.1− | 0.1+ | 2005 08 25 | 644 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2005 06 29 | 644 | 0.0 | 0.2+ | 2005 08 25 | 644 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2005 06 29 | 644 | 0.1− | 0.3+ | 2005 10 27 | G96 | 0.0 | 0.9− | 2006 11 09 | 644 | 0.5+ | 0.1+ |
| 2005 06 29 | 644 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2005 06 29 | 644 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.2− | 0.6− | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2005 07 05 | 644 | 0.3+ | 0.1− | 2005 10 27 | G96 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 07 05 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2005 07 05 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.2− |
| 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2005 07 09 | 691 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.8− | 1.4+ |
| 2005 07 30 | 185 | (0.9− | 1.8−) | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2005 07 30 | 185 | 0.5− | 1.5− | 2006 10 11 | 691 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.3− |
| 2005 07 31 | 185 | 0.7− | 1.2+ | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2005 07 31 | 185 | (1.7+ | 0.2+) | 2006 10 19 | 691 | 0.4− | 0.4+ | 2006 11 27 | G96 | 0.4+ | 0.3− |

**2005 MO$_{46}$ = 2006 VZ$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.89766 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24171981 | $\omega$ | 342.16967 | | −0.54895265 | | +0.83155668 |
| $a$ | 2.5522775 | $\Omega$ | 254.45691 | | −0.75578246 | | −0.53706439 |
| $e$ | 0.0578151 | $i$ | 5.04029 | | −0.35699280 | | −0.14168746 |
| $P$ | 4.08 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 10 | 691 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2005 06 10 | 691 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2005 06 10 | 691 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.4− | 0.4− |
| 2005 06 28 | 691 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.4− | 0.6− |
| 2005 06 28 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.2− | 0.3+ |
| 2005 06 28 | 691 | 0.2− | 0.1− | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2005 07 05 | G96 | 0.1− | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2005 07 05 | G96 | 0.4+ | 0.3+ | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.3− |

**2005 MU$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.84301 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24552438 | $\omega$ | 32.72822 | | +0.45691154 | | +0.88131460 |
| $a$ | 2.5258427 | $\Omega$ | 264.71485 | | −0.83992333 | | +0.38287008 |
| $e$ | 0.0635132 | $i$ | 6.94974 | | −0.29284919 | | +0.27693877 |
| $P$ | 4.01 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.2+ | 0.7− | 2005 07 11 | G96 | 1.2+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2005 05 20 | G96 | 0.2+ | 0.3+ | 2005 07 11 | G96 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.5+ |
| 2005 05 20 | G96 | 0.5− | 0.1+ | 2005 07 11 | G96 | 0.0 | 0.5− | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2005 05 20 | G96 | 0.0 | 0.4− | 2005 07 11 | G96 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2005 06 28 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2005 06 28 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2005 06 28 | 691 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.2+ |
| 2005 07 08 | 691 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.9+ | 1.2− |
| 2005 07 08 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 07 08 | 691 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.8− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1+ |

**2005 MM$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.67204 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18532644 | $\omega$ | 232.16650 | | +0.78811662 | | −0.61398563 |
| $a$ | 3.0468036 | $\Omega$ | 165.54178 | | +0.60518790 | | +0.76003730 |
| $e$ | 0.1237260 | $i$ | 10.03796 | | +0.11233786 | | +0.21299049 |
| $P$ | 5.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 691 | 0.1− | 0.2+ | 2005 08 31 | 691 | 0.2− | 0.3+ | 2006 10 30 | 703 | 0.7+ | 0.1− |
| 2005 06 29 | 691 | 0.0 | 0.0 | 2005 08 31 | 691 | 0.1+ | 0.1− | 2006 10 30 | 703 | 0.1− | 0.2− |
| 2005 06 29 | 691 | 0.1+ | 0.1+ | 2005 08 31 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 1.0+ | 0.7+ |
| 2005 06 29 | 691 | 0.3− | 0.1− | 2005 09 12 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.8+ |
| 2005 06 29 | 691 | 0.1− | 0.2+ | 2005 09 12 | 691 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.4− | 0.7− |
| 2005 06 29 | 691 | 0.0 | 0.3− | 2005 09 12 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 1.1+ | 1.5− |
| 2005 07 08 | 691 | 0.1+ | 0.1+ | 2005 10 30 | G96 | 0.7− | 0.3− | 2006 11 19 | 703 | 0.6− | 0.7+ |
| 2005 07 08 | 691 | 0.2+ | 0.2+ | 2005 10 30 | G96 | 0.2− | 1.0− | 2006 11 19 | 703 | 0.6+ | 1.7+ |
| 2005 07 08 | 691 | 0.1+ | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.2+ | 1.2+ |
| 2005 08 25 | 644 | 0.2+ | 0.0 | 2005 10 30 | G96 | 0.6− | 0.7− | 2006 11 19 | 703 | 0.8− | 1.0− |
| 2005 08 25 | 644 | 0.2− | 0.3+ | 2006 10 30 | 703 | 1.1− | 1.6− | | | | |
| 2005 08 25 | 644 | 0.4+ | 0.0 | 2006 10 30 | 703 | 0.6− | 0.6+ | | | | |

**2005 MX$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.80778 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17050611 | $\omega$ | 219.43862 | | +0.34027736 | | +0.93978371 |
| $a$ | 3.2208915 | $\Omega$ | 70.47606 | | −0.85395209 | | +0.32304807 |
| $e$ | 0.1554843 | $i$ | 1.93988 | | −0.39367136 | | +0.11156400 |
| $P$ | 5.78 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 06 | 691 | 0.4+ | 0.1− | 2005 07 07 | 599 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.3− | 0.5+ |
| 1994 10 06 | 691 | 0.3+ | 0.2− | 2005 07 18 | 644 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.3− |
| 1994 10 06 | 691 | 0.4− | 0.6− | 2005 07 18 | 644 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.8+ |
| 2004 04 16 | 691 | 0.3+ | 0.4+ | 2005 07 18 | 644 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2004 04 16 | 691 | 0.0 | 0.7+ | 2005 08 06 | 704 | 1.3− | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.4+ |
| 2004 04 16 | 691 | 0.4+ | 0.3+ | 2005 08 06 | 704 | 0.1− | 0.8+ | 2006 10 27 | 691 | 0.4− | 0.1+ |
| 2005 06 29 | 644 | 0.2− | 0.2+ | 2005 08 06 | 704 | 0.4+ | 0.1+ | 2006 10 27 | 691 | 0.5− | 0.1− |
| 2005 06 29 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.9+ | 0.5− | 2006 10 27 | 691 | 0.2+ | 0.7+ |
| 2005 06 29 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.7+ | 0.4− | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2005 07 07 | 599 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2005 07 07 | 599 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.6+ | 0.5− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2005 07 07 | 599 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.7+ | 2006 11 13 | G96 | 0.3− | 0.1+ |

**2005 MO$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.26186 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23756235 | $\omega$ | 352.02936 | | −0.93369308 | | −0.35427819 |
| $a$ | 2.5819687 | $\Omega$ | 166.85537 | | +0.33984912 | | −0.92251707 |
| $e$ | 0.0879982 | $i$ | 13.21878 | | +0.11278210 | | −0.15313137 |
| $P$ | 4.15 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | 691 | 0.1+ | 0.1+ | 2005 06 30 | 644 | 0.1+ | 0.2− | 2006 08 28 | 691 | 0.2+ | 0.1− |
| 2005 05 13 | 691 | 0.1− | 0.0 | 2005 07 09 | 691 | 0.0 | 0.2− | 2006 08 28 | 691 | 0.3− | 0.2− |
| 2005 05 13 | 691 | 0.0 | 0.2+ | 2005 07 09 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.7+ | 0.5+ |
| 2005 06 24 | 644 | 0.0 | 0.1+ | 2005 07 09 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2005 06 24 | 644 | 0.1− | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2005 06 24 | 644 | 0.5+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 644 | 0.2+ | 0.0 | 2006 08 19 | 691 | 0.1− | 0.3+ | |
| 2005 06 30 | 644 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.0 | 0.2− | |

**2005 MP$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.45937 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21554044 | $\omega$ | 14.58072 | | −0.76451403 | | +0.63454275 |
| $a$ | 2.7549700 | $\Omega$ | 205.88998 | | −0.61438318 | | −0.77055716 |
| $e$ | 0.1539602 | $i$ | 15.06126 | | −0.19506824 | | −0.05997637 |
| $P$ | 4.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | 691 | 0.4− | 0.2− | 2005 06 09 | 703 | 0.2− | 0.4− | 2005 07 07 | 691 | 0.2− | 0.3+ |
| 2005 05 14 | 691 | 0.3+ | 0.0 | 2005 06 09 | 703 | 0.2− | 0.4− | 2006 09 17 | 703 | 0.4− | 0.3+ |
| 2005 05 14 | 691 | 0.2+ | 0.9− | 2005 06 09 | 703 | 0.4− | 0.9− | 2006 09 17 | 703 | 1.5+ | 1.5+ |
| 2005 06 04 | 691 | 0.2+ | 0.1+ | 2005 06 24 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 1.9− | 0.3+ |
| 2005 06 04 | 691 | 0.1− | 0.1+ | 2005 06 24 | 644 | 0.2− | 0.4+ | 2006 09 17 | 703 | 1.5− | 0.0 |
| 2005 06 04 | 691 | 0.0 | 0.2− | 2005 06 24 | 644 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2005 06 09 | 704 | 1.3− | 0.0 | 2005 06 30 | 644 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2005 06 09 | 704 | 0.5+ | 1.1− | 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.3+ | 0.7− |
| 2005 06 09 | 704 | 0.1− | 1.0+ | 2005 06 30 | 644 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.1− |
| 2005 06 09 | 704 | 0.6+ | 1.4+ | 2005 07 07 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.4+ | 0.2− |
| 2005 06 09 | 703 | (1.6+ | 3.9−) | 2005 07 07 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.7+ | 0.0 |

**2005 MU$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.17137 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22879032 | $\omega$ | 53.19258 | | +0.93524369 | | +0.35258273 |
| $a$ | 2.6475507 | $\Omega$ | 286.14286 | | −0.33439613 | | +0.85050645 |
| $e$ | 0.0770046 | $i$ | 1.89095 | | −0.11618289 | | +0.39028733 |
| $P$ | 4.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.3− | 0.0 | 2004 03 29 | 691 | 0.4+ | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2001 08 19 | 807 | 0.2− | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.6+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2001 08 21 | 691 | 0.2+ | 0.1+ | 2004 03 29 | 691 | 0.2+ | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2001 08 21 | 691 | 0.1+ | 0.3+ | 2005 06 30 | 691 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 08 21 | 691 | 0.2− | 0.6+ | 2005 06 30 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2005 06 30 | 691 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.7+ | 2005 07 12 | G96 | 0.3− | 0.1+ | 2006 11 27 | H07 | 0.7+ | 0.2+ |
| 2001 09 12 | 704 | 0.7− | 0.6− | 2005 07 12 | G96 | 0.1− | 0.2+ | 2006 11 27 | H07 | 0.6− | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.4+ | 2005 07 12 | G96 | 0.6− | 0.1− | 2006 11 27 | H07 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2005 07 15 | G96 | 0.2− | 0.4− | 2006 11 30 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.3+ | 2005 07 15 | G96 | 0.3+ | 0.1− | 2006 11 30 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.3+ | 2005 07 15 | G96 | 0.3+ | 0.2− | 2006 11 30 | 691 | 0.4− | 0.5+ |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2005 07 15 | G96 | 0.2− | 0.2− | | | | |

**2005 MR$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.72857 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17650349 | $\omega$ | 218.21363 | | +0.97956437 | | +0.19098296 |
| $a$ | 3.1475105 | $\Omega$ | 130.65571 | | −0.15793767 | | +0.92458473 |
| $e$ | 0.1649204 | $i$ | 4.76963 | | −0.12453646 | | +0.32964918 |
| $P$ | 5.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.1+ | 0.1+ | 2005 07 15 | G96 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2005 06 13 | G96 | 0.2+ | 0.4− | 2005 07 15 | G96 | 0.5− | 0.3− | 2006 11 17 | G96 | 0.1− | 0.4+ |
| 2005 06 13 | G96 | 0.2− | 0.1− | 2005 07 15 | G96 | 0.2− | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.2+ |
| 2005 06 13 | G96 | 0.1− | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.4+ | 0.3− |
| 2005 06 30 | 691 | 0.0 | 0.3+ | 2005 07 18 | 644 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2005 06 30 | 691 | 0.2+ | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2005 06 30 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.6+ |
| 2005 07 11 | 691 | 0.2+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 12 01 | G96 | 0.6− | 0.7− |
| 2005 07 11 | 691 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.5− | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2005 07 11 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.8+ | 0.2+ | | | | |
| 2005 07 15 | G96 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.3− | 0.0 | | | | |

**2005 MU$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.57889 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30588251 | $\omega$ | 246.54141 | | −0.94036127 | | +0.33745852 |
| $a$ | 2.1815556 | $\Omega$ | 313.15008 | | −0.28668475 | | −0.85407915 |
| $e$ | 0.0697156 | $i$ | 3.37291 | | −0.18311893 | | −0.39581631 |
| $P$ | 3.22 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2004 01 24 | 704 | 0.0 | 0.1− | 2005 07 11 | 691 | 0.1+ | 0.1+ |
| 2004 01 19 | 691 | 0.2+ | 0.3+ | 2004 02 12 | 691 | 0.1− | 0.2+ | 2005 07 11 | 691 | 0.0 | 0.2+ |
| 2004 01 19 | 691 | 0.1− | 0.3+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2005 07 11 | 691 | 0.0 | 0.3+ |
| 2004 01 24 | 704 | 0.3+ | 0.2− | 2004 02 12 | 691 | 0.2+ | 0.0 | 2005 07 15 | G96 | 0.1− | 0.3+ |
| 2004 01 24 | 704 | 0.1− | 0.4− | 2005 06 30 | 691 | 0.2+ | 0.5− | 2005 07 15 | G96 | 0.7+ | 0.0 |
| 2004 01 24 | 704 | 0.3+ | 0.1− | 2005 06 30 | 691 | 0.4− | 0.2+ | 2005 07 15 | G96 | 0.2− | 0.4+ |
| 2004 01 24 | 704 | 0.2− | 0.7− | 2005 06 30 | 691 | 0.1− | 0.1− | 2005 07 15 | G96 | 0.0 | 0.1+ |

**2005 MM$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.00566 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12521022 | $\omega$ | 57.74017 | | +0.76253408 | | +0.63021960 |
| $a$ | 3.9570924 | $\Omega$ | 262.76573 | | −0.63201285 | | +0.67740185 |
| $e$ | 0.2721406 | $i$ | 8.47285 | | −0.13820828 | | +0.37940742 |
| $P$ | 7.87 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.9+ | 0.1+ | 2005 07 31 | E12 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.7+ | 0.8+ |
| 2005 06 30 | 691 | 0.1− | 0.0 | 2005 08 12 | J87 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2005 06 30 | 691 | 0.0 | 0.1+ | 2005 08 12 | J87 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2005 07 04 | 704 | 0.3+ | 1.5− | 2005 08 23 | J87 | 0.7+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 2005 07 04 | 704 | 0.1+ | 0.4+ | 2005 08 23 | J87 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 1.1− | 0.0 |
| 2005 07 04 | 704 | 0.4+ | 0.5− | 2005 08 23 | J87 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.3+ |
| 2005 07 04 | 704 | 0.6− | 0.2+ | 2006 10 16 | 400 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.2− | 1.0− |
| 2005 07 04 | 704 | 0.3− | 0.1− | 2006 10 16 | 400 | 0.2− | 1.1− | 2006 11 14 | 703 | 0.4− | 0.1+ |
| 2005 07 06 | 691 | 0.2− | 0.1+ | 2006 10 17 | 400 | 0.4− | 1.2− | 2006 11 19 | 704 | 0.1− | 0.9+ |
| 2005 07 06 | 691 | 0.3− | 0.2+ | 2006 10 17 | 400 | 0.6− | 0.8− | 2006 11 19 | 704 | 0.1− | 0.8− |
| 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 10 19 | A50 | 0.0 | 0.0 | 2006 11 19 | 704 | (1.0+ | 1.6−) |
| 2005 07 17 | 608 | 0.4− | 0.6− | 2006 10 19 | A50 | 0.4+ | 0.0 | 2006 11 19 | 704 | 1.1+ | 0.5+ |
| 2005 07 17 | 608 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 1.3− | 1.4− |
| 2005 07 17 | 608 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2005 07 30 | E12 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2005 07 30 | E12 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2005 07 30 | E12 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2005 07 30 | E12 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 1.3+ | 1.2− |
| 2005 07 31 | E12 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.5+ | 0.8+ |
| 2005 07 31 | E12 | 0.8− | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.9+ | 2006 11 23 | 703 | 0.5− | 0.5+ |
| 2005 07 31 | E12 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.1− | 0.6+ | 2006 11 23 | 703 | 0.1+ | 0.8+ |

**2005 MU$_{52}$ = 2006 VE$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.51816 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17992395 | $\omega$ | 93.94762 | | +0.81086686 | | +0.56265457 |
| $a$ | 3.1074923 | $\Omega$ | 231.89218 | | −0.58441359 | | +0.76396769 |
| $e$ | 0.1197913 | $i$ | 11.80541 | | −0.03091420 | | +0.31586896 |
| $P$ | 5.48 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.2+ | 2006 11 17 | 703 | (0.3− | 2.6+) |
| 1995 11 14 | 691 | 0.3+ | 0.3− | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | (1.6+ | 1.1+) |
| 1995 11 14 | 691 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2004 05 23 | 691 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2004 05 23 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 23 | 691 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2005 06 30 | 644 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2005 06 30 | 644 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2005 06 30 | 644 | 0.5+ | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2005 07 16 | 703 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2+ |
| 2005 07 16 | 703 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.9+ | 0.4+ |
| 2005 07 16 | 703 | 0.4− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.4+ | 1.1− |
| 2005 07 16 | 703 | 0.6− | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | (0.2− | 1.9+) |
| 2005 07 16 | 703 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2005 07 16 | 703 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2005 07 16 | 703 | 0.6− | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.4− | 0.0 |
| 2005 07 16 | 703 | (1.8− | 1.1−) | 2006 11 17 | 703 | 0.5− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.9− | 0.6− | 2006 11 27 | G96 | 0.2+ | 0.2+ |
| 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.2− | | | | |
| 2006 10 17 | G96 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.9+ | | | | |

### 2005 ME$_{53}$ = 1995 TN$_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.18247 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19271851 | $\omega$ | 343.77160 | | +0.97178840 | | +0.23582875 |
| $a$ | 2.9683864 | $\Omega$ | 2.59550 | | −0.20695027 | | +0.85967967 |
| $e$ | 0.1334307 | $i$ | 4.40745 | | −0.11313221 | | +0.45313978 |
| $P$ | 5.11 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.4− | 0.1+ | 2001 12 11 | 704 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 1995 10 01 | 691 | 0.4− | 0.4+ | 2001 12 11 | 704 | 0.6− | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 1995 10 01 | 691 | 0.4− | 0.2+ | 2004 05 14 | 691 | 0.1+ | 0.5+ | 2006 11 17 | 691 | 0.1− | 0.2− |
| 1995 10 03 | 691 | 0.4+ | 0.0 | 2004 05 14 | 691 | 0.4+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1995 10 03 | 691 | 0.3+ | 0.1+ | 2004 05 14 | 691 | 0.1− | 0.6+ | 2006 11 17 | 691 | 0.2− | 0.1+ |
| 1995 10 03 | 691 | 0.4+ | 0.1+ | 2005 06 29 | 644 | 0.4− | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.2− |
| 1995 10 03 | 691 | (2.1− | 2.0−) | 2005 06 29 | 644 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.3+ | 0.2− |
| 1995 10 03 | 691 | 0.2+ | 1.8− | 2005 06 29 | 644 | 0.4− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 1995 10 03 | 691 | 0.2+ | 0.2− | 2005 07 11 | 699 | 1.1− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.0 |
| 1998 03 20 | 691 | 0.1+ | 0.4− | 2005 07 11 | 699 | 0.3+ | 0.8− | 2006 11 21 | 704 | 0.4− | 0.1+ |
| 1998 03 20 | 691 | 0.5− | 0.0 | 2005 07 11 | 699 | 0.3− | 0.7− | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 1998 03 20 | 691 | 0.0 | 0.1+ | 2005 07 11 | 699 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 1998 04 03 | 691 | 0.3+ | 0.3− | 2005 07 31 | E12 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.2− | 1.0+ |
| 1998 04 03 | 691 | 0.1− | 0.0 | 2005 07 31 | E12 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 1.0+ | 0.4+ |
| 1998 04 03 | 691 | 0.1+ | 0.0 | 2005 07 31 | E12 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.2− | 0.9+ |
| 2000 08 21 | 699 | 0.3+ | 0.4+ | 2005 09 08 | E12 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2000 08 21 | 699 | 1.0− | 1.5+ | 2005 09 08 | E12 | 0.3− | 0.1+ | 2006 11 22 | 704 | 1.2− | 0.6− |
| 2000 08 21 | 699 | 1.3+ | 0.8+ | 2005 09 08 | E12 | 0.4+ | 0.7− | 2006 11 22 | 704 | 0.4− | 0.7− |
| 2000 08 21 | 699 | 0.5− | 0.6+ | 2005 09 08 | E12 | 1.0+ | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.8+ |
| 2000 09 04 | 704 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 0.7− | 0.2− |
| 2000 09 04 | 704 | 0.5+ | 1.4+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.9− | 0.2+ |
| 2000 09 04 | 704 | 1.5− | 0.7+ | 2006 11 13 | 691 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.3− | 0.4+ |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.3+ | 2006 11 25 | 691 | 0.3+ | 0.2+ |
| 2001 12 11 | 704 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.3+ |

### 2005 MF$_{53}$ = 2000 SL$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.63671 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18111656 | $\omega$ | 15.33471 | | +0.47852906 | | +0.86282427 |
| $a$ | 3.0938359 | $\Omega$ | 283.49214 | | −0.82221390 | | +0.37518490 |
| $e$ | 0.0438486 | $i$ | 9.64528 | | −0.30817890 | | +0.33877805 |
| $P$ | 5.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.2− | 1.4+ | 2005 06 29 | 644 | 0.1− | 0.0 | 2005 09 03 | 644 | 0.1− | 0.2+ |
| 2000 09 23 | 704 | 0.4− | 0.2+ | 2005 07 08 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 703 | 0.7− | 0.7+ |
| 2000 09 23 | 704 | 0.6+ | 0.4− | 2005 07 08 | 691 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.0 | 0.8− |
| 2000 09 23 | 704 | 1.5− | 0.8+ | 2005 07 08 | 691 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.4− | 0.8− |
| 2000 09 27 | 704 | 0.8− | 1.1+ | 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.6+ |
| 2000 09 27 | 704 | 0.6− | 0.1+ | 2005 07 29 | 644 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 2000 09 27 | 704 | 1.0+ | 0.4+ | 2005 07 29 | 644 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.5+ |
| 2003 03 12 | 291 | 0.1+ | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.1− | 2006 11 08 | 644 | 1.1+ | 0.4+ |
| 2003 03 12 | 291 | 0.2+ | 0.5+ | 2005 08 06 | 644 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.4+ | 0.1+ |
| 2003 03 12 | 291 | 0.6+ | 0.8+ | 2005 08 06 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.3− | 1.0− |
| 2005 06 29 | 644 | 0.3+ | 0.6+ | 2005 09 03 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.4+ | 1.0− |
| 2005 06 29 | 644 | 0.3− | 0.6+ | 2005 09 03 | 644 | 0.1− | 0.2+ | 2006 11 15 | 703 | 1.2− | 0.2+ |

### 2005 MG$_{53}$ = 2004 EU$_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.79888 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21755439 | $\omega$ | 155.32456 | | +0.49890986 | | +0.85985796 |
| $a$ | 2.7379414 | $\Omega$ | 144.32367 | | −0.82279380 | | +0.50920421 |
| $e$ | 0.1249587 | $i$ | 10.70383 | | −0.27221189 | | +0.03681523 |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.4+ | 0.5+ | 2004 03 21 | 691 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.1+ |
| 2001 10 15 | 644 | 0.0 | 0.7+ | 2005 06 29 | 644 | 0.1− | 0.1− | 2005 08 06 | 644 | 0.1− | 0.1+ |
| 2001 10 15 | 644 | 0.3+ | 0.8+ | 2005 06 29 | 644 | 0.0 | 0.4+ | 2005 08 25 | 644 | 0.1− | 0.1+ |
| 2001 10 23 | 644 | 0.5− | 0.3+ | 2005 06 29 | 644 | 0.3− | 0.3+ | 2005 08 25 | 644 | 0.3− | 0.2− |
| 2001 10 23 | 644 | 0.7− | 0.6+ | 2005 07 18 | 644 | 0.0 | 0.1+ | 2005 08 25 | 644 | 0.0 | 0.0 |
| 2001 10 23 | 644 | 0.5− | 0.5+ | 2005 07 18 | 644 | 0.1− | 0.1+ | 2005 11 06 | G96 | 0.2+ | 0.1− |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2005 07 18 | 644 | 0.1+ | 0.1+ | 2005 11 06 | G96 | 1.2+ | 0.0 |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.1+ | 2005 11 06 | G96 | 0.1+ | 0.2− |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2005 08 06 | 644 | 0.1− | 0.1− | 2005 11 06 | G96 | 0.2+ | 0.3− |
| 2004 03 21 | 691 | 0.0 | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.1+ | | | | |
| 2004 03 21 | 691 | 0.1+ | 0.3+ | 2005 08 06 | 644 | 0.1− | 0.1+ | | | | |

### 2005 MH$_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.74482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18040433 | $\omega$ | 59.32846 | | +0.92458284 | | +0.37961381 |
| $a$ | 3.1019735 | $\Omega$ | 278.34517 | | −0.35974680 | | +0.84205337 |
| $e$ | 0.2284242 | $i$ | 1.86777 | | −0.12541455 | | +0.38319640 |
| $P$ | 5.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 691 | 0.1− | 0.6+ | 2005 06 17 | G96 | 0.2− | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.2− |
| 2002 01 13 | 691 | 0.3− | 0.6+ | 2005 06 17 | G96 | 0.1− | 0.2− | 2005 08 27 | 644 | 0.1− | 0.0 |
| 2002 01 13 | 691 | 0.5− | 0.1+ | 2005 06 17 | G96 | 0.0 | 0.3+ | 2005 08 27 | 644 | 0.0 | 0.1− |
| 2002 01 14 | 645 | 0.1+ | 0.0 | 2005 07 28 | 644 | 0.0 | 0.1+ | 2005 08 27 | 644 | 0.1+ | 0.1− |
| 2002 01 14 | 645 | 0.1+ | 0.1− | 2005 07 28 | 644 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2005 07 28 | 644 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2005 06 17 | G96 | 0.3+ | 0.3− | 2005 08 06 | 644 | 0.0 | 0.0 | | | | |

### 2005 MJ$_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.96520 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26664736 | $\omega$ | 109.86024 | | +0.11845763 | | −0.99293537 |
| $a$ | 2.3906235 | $\Omega$ | 333.33381 | | +0.90520257 | | +0.11082823 |
| $e$ | 0.0850502 | $i$ | 0.87665 | | +0.40813736 | | +0.04238469 |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.0 | 0.1+ | 2005 06 17 | G96 | 0.3− | 0.0 | 2005 11 25 | G96 | 0.4+ | 0.1− |
| 1994 09 11 | 691 | 0.5− | 0.8+ | 2005 06 17 | G96 | 0.4+ | 0.0 | 2005 11 25 | G96 | 0.4+ | 0.4− |
| 1994 09 11 | 691 | 0.0 | 0.1+ | 2005 06 17 | G96 | 0.4+ | 0.0 | 2005 11 25 | G96 | 0.2+ | 0.4− |
| 1998 10 15 | 691 | 0.2− | 0.5− | 2005 06 17 | G96 | 0.5− | 0.0 | 2006 10 04 | G96 | 0.2− | 0.1− |
| 1998 10 15 | 691 | 0.1− | 0.2+ | 2005 07 30 | 644 | 0.5+ | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.1+ |
| 1998 10 15 | 691 | 0.1− | 0.5+ | 2005 07 30 | 644 | 0.5+ | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.4+ |
| 2000 03 11 | 704 | 0.3+ | 1.3− | 2005 07 30 | 644 | 0.6+ | 0.1+ | 2006 10 04 | G96 | 0.8− | 0.4− |
| 2000 03 11 | 704 | 0.7+ | 0.0 | 2005 08 06 | 644 | 0.3+ | 0.6− | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2000 03 11 | 704 | 0.6− | 0.3+ | 2005 08 06 | 644 | 0.5+ | 0.4− | 2006 10 23 | G96 | 0.5− | 0.3− |
| 2003 01 04 | 704 | 0.2+ | 0.1− | 2005 08 06 | 644 | 0.1+ | 0.5− | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2003 01 04 | 704 | 0.1− | 0.3− | 2005 08 28 | 691 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.9+ | 0.5+ | 2005 08 28 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2003 01 04 | 704 | 0.4+ | 0.3+ | 2005 08 28 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.2+ | 0.1+ | 2005 09 11 | 691 | 0.2− | 1.1− | 2006 11 16 | G96 | 0.4− | 0.3+ |
| 2004 04 25 | 691 | 0.2− | 0.1+ | 2005 09 11 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2004 04 25 | 691 | 0.2+ | 0.2+ | 2005 09 11 | 691 | 0.1+ | 0.0 | | | | |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2005 11 25 | G96 | 0.3− | 0.3− | | | | |

**2005 MK$_{53}$ = 3359 T-2**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.33220 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27551919 | $\omega$ | 308.67472 | | +0.96721890 | | +0.25117624 |
| $a$ | 2.3390247 | $\Omega$ | 36.82133 | | −0.20928854 | | +0.87184012 |
| $e$ | 0.1901492 | $i$ | 3.57695 | | −0.14382595 | | +0.42048224 |
| $P$ | 3.58 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.0 | 0.3− | 2002 12 11 | 704 | 0.3+ | 0.7+ | 2005 07 29 | E12 | 0.1+ | 0.5+ |
| 1973 09 19 | 675 | 0.1− | 0.4− | 2002 12 11 | 704 | 0.3+ | 0.1− | 2005 07 29 | E12 | 0.2− | 0.2+ |
| 1973 09 20 | 675 | 1.1+ | 0.1− | 2004 03 23 | 691 | 0.1− | 0.0 | 2005 07 29 | E12 | 0.5+ | 0.1+ |
| 1973 09 24 | 675 | 0.5− | 0.3− | 2004 03 23 | 691 | 0.0 | 0.1− | 2005 07 29 | E12 | 0.7− | 0.3+ |
| 1973 09 24 | 675 | 0.5+ | 0.7− | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2005 08 12 | E12 | 0.0 | 0.3− |
| 1973 09 25 | 675 | 1.1+ | 2.1− | 2005 06 28 | 644 | 0.2− | 0.5+ | 2005 08 12 | E12 | 0.1+ | 0.2+ |
| 1973 09 25 | 675 | (2.4+ | 3.2−) | 2005 06 28 | 644 | 0.0 | 0.5+ | 2005 08 12 | E12 | 0.1− | 0.3+ |
| 1998 08 30 | 699 | 1.2− | 0.9+ | 2005 06 28 | 644 | 0.1− | 0.2+ | 2005 08 12 | E12 | 0.0 | 0.1+ |
| 1998 08 30 | 699 | 0.0 | 0.5+ | 2005 07 11 | 699 | (2.2− | 0.8+) | 2005 11 06 | G96 | 0.0 | 0.2− |
| 1998 08 30 | 699 | 0.4− | 0.1− | 2005 07 11 | 699 | 0.5− | 1.4− | 2005 11 06 | G96 | 0.2+ | 0.7+ |
| 2002 12 11 | 704 | 0.1+ | 2.3+ | 2005 07 11 | 699 | 0.2− | 1.2+ | 2005 11 06 | G96 | 0.3+ | 0.5+ |
| 2002 12 11 | 704 | 0.9− | 0.2+ | 2005 07 11 | 699 | 0.8+ | 0.2− | 2005 11 06 | G96 | 0.1− | 0.5+ |

**2005 MQ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.57610 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28997481 | $\omega$ | 251.88633 | | +0.92613970 | | −0.37668924 |
| $a$ | 2.2606285 | $\Omega$ | 130.23776 | | +0.35488976 | | +0.85298782 |
| $e$ | 0.2253311 | $i$ | 1.44480 | | +0.12774390 | | +0.36127137 |
| $P$ | 3.40 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 24 | 691 | 0.0 | 0.1+ | 2005 06 17 | G96 | 0.1− | 0.1− | 2005 09 13 | 703 | 0.1+ | 0.4− |
| 1992 12 24 | 691 | 0.2− | 0.4+ | 2005 06 17 | G96 | 0.3+ | 0.3+ | 2005 09 13 | 703 | 1.2+ | 0.2− |
| 1992 12 24 | 691 | 0.4+ | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.4+ | 2005 09 13 | 703 | 0.2− | 0.8− |
| 2004 04 12 | 691 | 0.5+ | 0.2+ | 2005 08 06 | 644 | 0.1− | 0.7+ | 2005 09 13 | 703 | 0.2+ | 0.5+ |
| 2004 04 12 | 691 | 0.8− | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.5+ | 2005 09 28 | 644 | 0.1− | 0.8+ |
| 2004 04 12 | 691 | 0.6+ | 0.3+ | 2005 08 27 | 644 | 0.3− | 0.2+ | 2005 09 28 | 644 | 0.2− | 0.2+ |
| 2005 06 17 | G96 | 0.2− | 0.4+ | 2005 08 27 | 644 | 0.3− | 0.3+ | 2005 09 28 | 644 | 0.5− | 0.4+ |
| 2005 06 17 | G96 | 0.4− | 0.0 | 2005 08 27 | 644 | 0.2− | 0.2+ | | | | |

**2005 MR$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.01290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25466744 | $\omega$ | 48.48179 | | +0.97707421 | | +0.21191380 |
| $a$ | 2.4650200 | $\Omega$ | 299.27436 | | −0.20165068 | | +0.89034710 |
| $e$ | 0.2027063 | $i$ | 1.34391 | | −0.06828616 | | +0.40295730 |
| $P$ | 3.87 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | 0.1− | 0.1+ | 2005 06 17 | G96 | 0.2− | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.2+ |
| 2001 08 24 | 704 | (0.0 | 2.6−) | 2005 06 17 | G96 | 0.2+ | 0.1− | 2005 08 24 | 644 | 0.0 | 0.2− |
| 2001 08 24 | 704 | 0.5+ | 1.9− | 2005 07 11 | G96 | 0.5+ | 0.4+ | 2005 08 24 | 644 | 0.0 | 0.0 |
| 2002 12 31 | 291 | 0.2− | 0.0 | 2005 07 11 | G96 | 0.5− | 0.2+ | 2005 08 24 | 644 | 0.1+ | 0.1− |
| 2002 12 31 | 291 | 0.0 | 0.1− | 2005 07 11 | G96 | 0.5− | 0.1+ | 2005 08 29 | 699 | 0.7+ | 0.2− |
| 2002 12 31 | 291 | 0.1+ | 0.1+ | 2005 07 11 | G96 | 0.2− | 0.5+ | 2005 08 29 | 699 | 0.3− | 1.3+ |
| 2005 06 17 | G96 | 0.7− | 0.0 | 2005 08 06 | 644 | 0.2+ | 0.2+ | 2005 08 29 | 699 | 1.5− | 0.8− |
| 2005 06 17 | G96 | 0.4+ | 0.0 | 2005 08 06 | 644 | 0.2+ | 0.2+ | 2005 08 29 | 699 | 0.8+ | 0.3− |

**2005 MS$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.31375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26433172 | $\omega$ | 322.15781 | | +0.09673800 | | +0.99497821 |
| $a$ | 2.4045650 | $\Omega$ | 313.37751 | | −0.90433597 | | +0.07708476 |
| $e$ | 0.1807947 | $i$ | 2.02575 | | −0.41571409 | | +0.06384599 |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.1+ | 0.1+ | 2005 06 17 | G96 | 0.0 | 0.8− | 2005 08 06 | 644 | 0.2− | 0.3+ |
| 1994 09 11 | 691 | 0.1+ | 0.2+ | 2005 06 17 | G96 | 0.2− | 0.9− | 2005 08 24 | 644 | 0.4− | 0.0 |
| 1994 09 11 | 691 | 0.1− | 0.2− | 2005 06 17 | G96 | 0.2+ | 0.8− | 2005 08 24 | 644 | 0.3− | 0.1+ |
| 2000 01 28 | 691 | 0.2− | 0.3− | 2005 06 17 | G96 | 0.5− | 0.2− | 2005 08 24 | 644 | 0.2− | 0.4+ |
| 2000 01 28 | 691 | 0.2− | 0.0 | 2005 07 29 | 644 | 0.1− | 0.1+ | 2005 08 29 | 704 | 0.4− | 1.2+ |
| 2000 01 28 | 691 | 0.0 | 0.2− | 2005 07 29 | 644 | 0.1− | 0.1+ | 2005 08 29 | 704 | 0.4− | 0.6+ |
| 2004 02 14 | 691 | 0.1+ | 0.5+ | 2005 07 29 | 644 | 0.3+ | 0.3+ | 2005 08 29 | 704 | 1.1+ | 0.7+ |
| 2004 02 14 | 691 | 0.4+ | 0.4+ | 2005 08 06 | 644 | 0.0 | 0.1+ | | | | |
| 2004 02 14 | 691 | 0.2+ | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.7+ | | | | |

**2005 MY$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.75697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22422618 | $\omega$ | 62.28598 | | +0.93057333 | | −0.33798244 |
| $a$ | 2.6833573 | $\Omega$ | 317.05266 | | +0.21827702 | | +0.82077534 |
| $e$ | 0.1862695 | $i$ | 11.91928 | | +0.29391907 | | +0.46053851 |
| $P$ | 4.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.7+ | 0.4+ | 2005 06 18 | G96 | 0.2+ | 0.4+ | 2005 08 30 | 691 | 0.1− | 0.0 |
| 2001 11 11 | 704 | 0.4− | 0.6+ | 2005 06 18 | G96 | 0.4− | 0.1+ | 2005 08 30 | 691 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.3− | 0.3− | 2005 06 18 | G96 | 0.1+ | 0.4+ | 2005 08 31 | 704 | 0.6+ | 1.2− |
| 2001 11 11 | 704 | 0.6+ | 0.4− | 2005 07 31 | 644 | 0.3− | 0.2− | 2005 08 31 | 704 | 0.2− | 0.2− |
| 2001 11 11 | 704 | 0.1− | 0.1− | 2005 07 31 | 644 | 0.1+ | 0.2− | 2005 08 31 | 704 | 0.5+ | 0.3+ |
| 2001 12 09 | 704 | 0.0 | 0.2− | 2005 07 31 | 644 | 0.1+ | 0.3− | 2005 10 02 | 699 | 0.8− | 0.3+ |
| 2001 12 09 | 704 | 0.4+ | 0.0 | 2005 08 26 | 644 | 0.3− | 0.1− | 2005 10 02 | 699 | 0.4− | 0.4+ |
| 2001 12 09 | 704 | 0.7− | 0.5+ | 2005 08 26 | 644 | 0.2− | 0.3− | 2005 10 02 | 699 | 1.8+ | 0.4+ |
| 2001 12 09 | 704 | 0.2− | 0.5− | 2005 08 26 | 644 | 0.4− | 0.2− | 2005 10 02 | 699 | 0.3− | 0.8+ |
| 2005 06 18 | G96 | 0.3− | 0.3+ | 2005 08 30 | 691 | 0.1+ | 0.1+ | | | | |

**2005 MC$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.44358 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12377389 | $\omega$ | 79.94851 | | +0.98001168 | | +0.09141667 |
| $a$ | 3.9876469 | $\Omega$ | 274.64783 | | −0.15699415 | | +0.90089184 |
| $e$ | 0.2313911 | $i$ | 10.21108 | | +0.12218812 | | +0.42430754 |
| $P$ | 7.96 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 23 | 644 | 0.2+ | 0.0 | 2005 08 26 | 699 | 0.8+ | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.4− |
| 2005 06 23 | 644 | 0.1+ | 0.2− | 2005 08 30 | 699 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 2005 06 23 | 644 | 0.2+ | 0.1+ | 2005 08 30 | 699 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 2005 07 08 | 691 | 0.1+ | 0.0 | 2005 08 30 | 699 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.2− |
| 2005 07 08 | 691 | 0.0 | 0.0 | 2005 08 30 | 699 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2005 07 08 | 691 | 0.1− | 0.1+ | 2005 09 11 | 699 | 0.4− | 0.7− | 2006 11 14 | 703 | (1.9+ | 0.4−) |
| 2005 07 29 | 699 | 0.3+ | 0.1− | 2005 09 11 | 699 | 1.2+ | 0.5− | 2006 11 14 | 703 | 0.7− | 1.3+ |
| 2005 07 29 | 699 | 0.6− | 0.1+ | 2005 09 11 | 699 | 0.6+ | 0.2+ | 2006 11 14 | 703 | 0.6+ | 1.1+ |
| 2005 07 29 | 699 | 0.0 | 0.1+ | 2005 09 11 | 699 | (3.5− | 0.3−) | 2006 11 14 | 703 | 1.0− | 0.4+ |
| 2005 07 29 | 699 | 0.0 | 0.1− | 2005 09 23 | 644 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.7+ | 0.6+ |
| 2005 08 06 | 644 | 0.4− | 0.2− | 2005 09 23 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.3− | 0.1+ |
| 2005 08 06 | 644 | 0.0 | 0.2+ | 2005 09 23 | 644 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.3+ |
| 2005 08 06 | 644 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.2+ | 0.6− |
| 2005 08 24 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2005 08 24 | 644 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.9+ | 0.0 | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2005 08 24 | 644 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.2− | 0.4+ | 2006 11 25 | G96 | 0.3− | 0.4− |
| 2005 08 26 | 699 | 0.9− | 0.1− | 2006 10 27 | 703 | 0.8− | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 26 | 699 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.6− | | | | | | |
| 2005 08 26 | 699 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.3− | 0.2+ | | | | | | |

**2005 MH$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.30783 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17865283 | $\omega$ | 252.90363 | | +0.91378905 | −0.33665053 | |
| $a$ | 3.1222149 | $\Omega$ | 126.18611 | | +0.38617283 | +0.89351285 | |
| $e$ | 0.2854594 | $i$ | 16.35566 | | −0.12593696 | +0.29715519 | |
| $P$ | 5.52 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | (1.1− | 3.4+) | 2000 12 04 | 608 | 0.7+ | 1.5− | 2005 07 18 | 644 | 0.1− | 0.0 | | |
| 2000 09 26 | 699 | 1.1− | 1.7− | 2000 12 04 | 608 | 1.6+ | 1.5− | 2005 07 27 | 644 | 0.0 | 0.3− | | |
| 2000 09 26 | 699 | 0.3+ | 0.5+ | 2000 12 04 | 608 | 1.2+ | 1.3− | 2005 07 27 | 644 | 0.2+ | 0.5− | | |
| 2000 09 26 | 699 | 0.8+ | 1.1+ | 2005 06 30 | 691 | 0.1− | 0.4+ | 2005 07 27 | 644 | 0.1− | 0.1+ | | |
| 2000 10 05 | 704 | 0.9− | 0.1− | 2005 06 30 | 691 | 0.0 | 0.2+ | 2005 08 01 | E12 | 0.1− | 0.4− | | |
| 2000 10 05 | 704 | 0.3− | 0.8+ | 2005 06 30 | 691 | 0.1+ | 0.3+ | 2005 08 01 | E12 | 0.2+ | 0.2− | | |
| 2000 10 05 | 704 | 0.7− | 0.9+ | 2005 07 12 | G96 | 0.3+ | 0.5+ | 2005 08 01 | E12 | 0.5+ | 0.0 | | |
| 2000 10 05 | 704 | 1.2− | 1.4+ | 2005 07 12 | G96 | 0.2− | 0.0 | 2005 08 01 | E12 | 0.4− | 0.5− | | |
| 2000 10 05 | 704 | 1.0− | 1.6+ | 2005 07 12 | G96 | 0.2− | 0.4− | 2005 08 06 | 704 | 0.2+ | 1.0− | | |
| 2000 10 05 | 608 | (2.9− | 0.1−) | 2005 07 12 | G96 | 0.3− | 0.1− | 2005 08 06 | 704 | 0.2− | 1.1− | | |
| 2000 10 05 | 608 | (2.9− | 0.4−) | 2005 07 18 | 644 | 0.1− | 0.2− | 2005 08 06 | 704 | 0.1+ | 0.2− | | |
| 2000 10 05 | 608 | (3.3− | 0.5−) | 2005 07 18 | 644 | 0.1− | 0.2− | | | | | | |

**2005 ND**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.54593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17961355 | $\omega$ | 242.22375 | | +0.53258447 | +0.84596626 | |
| $a$ | 3.1110715 | $\Omega$ | 59.98053 | | −0.76542752 | +0.49470520 | |
| $e$ | 0.1926509 | $i$ | 1.74461 | | −0.36121252 | +0.19901722 | |
| $P$ | 5.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 02 | 673 | 0.3+ | 0.2+ | 2005 07 14 | 673 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.3+ | | |
| 2005 07 02 | 673 | 0.6+ | 0.0 | 2005 07 14 | 673 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2005 07 02 | 673 | 0.3+ | 0.1− | 2005 07 14 | 673 | 0.6+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | | |
| 2005 07 03 | 673 | 0.9− | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.3− | | |
| 2005 07 03 | 673 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.8+ | 0.4− | | |
| 2005 07 03 | 673 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2005 07 07 | 691 | 0.7+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.5− | | |
| 2005 07 07 | 691 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.2− | | |
| 2005 07 07 | 691 | 0.5− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.2+ | | |
| 2005 07 07 | 673 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.4− | | |
| 2005 07 07 | 673 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2005 07 07 | 673 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.4− | 0.0 | | |
| 2005 07 14 | 673 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.1+ | | | | | | |

**2005 NP$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.73654 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.39902800 | $\omega$ | 307.47854 | | −0.59612533 | +0.56854765 | |
| $a$ | 1.8272605 | $\Omega$ | 275.07547 | | −0.42936870 | −0.82238475 | |
| $e$ | 0.2968618 | $i$ | 34.69046 | | −0.67843725 | +0.02090189 | |
| $P$ | 2.47 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 03 | E12 | 0.1+ | 0.2+ | 2005 07 05 | 734 | 0.4− | 0.3− | 2005 07 15 | 448 | 0.4− | 0.1− | | |
| 2005 07 03 | E12 | 0.2− | 0.3+ | 2005 07 05 | 734 | 0.4− | 0.4+ | 2005 07 15 | 448 | 0.9− | 0.0 | | |
| 2005 07 03 | E12 | 0.1− | 0.8+ | 2005 07 05 | 854 | 0.9+ | 0.5+ | 2005 07 15 | 448 | 0.2+ | 0.4− | | |
| 2005 07 03 | 413 | 0.2− | 0.2− | 2005 07 05 | 711 | 0.4+ | 0.4− | 2005 07 25 | 734 | 0.5+ | 0.9+ | | |
| 2005 07 03 | 413 | 0.1− | 0.0 | 2005 07 05 | 711 | 0.6+ | 0.4− | 2005 07 25 | 734 | 0.0 | 1.3− | | |
| 2005 07 03 | 413 | 0.0 | 0.5− | 2005 07 05 | 854 | 0.3+ | 0.4+ | 2005 07 25 | 734 | 1.0+ | 1.1+ | | |
| 2005 07 04 | I77 | 0.9− | 0.3− | 2005 07 05 | 711 | 0.5+ | 0.5− | 2005 08 10 | 734 | 0.4− | 1.2− | | |
| 2005 07 04 | I77 | 0.7+ | 0.3+ | 2005 07 05 | 854 | 0.0 | 0.9+ | 2005 08 10 | 734 | 0.1+ | 1.1+ | | |
| 2005 07 04 | 711 | 0.3+ | 0.2− | 2005 07 05 | 474 | 0.1− | 0.2+ | 2005 08 10 | 734 | 0.4− | 0.5+ | | |
| 2005 07 04 | 711 | 0.3+ | 1.5− | 2005 07 05 | 413 | 0.1− | 0.1− | 2005 08 28 | F65 | 0.6− | 0.2− | | |
| 2005 07 04 | 711 | 0.1+ | 0.4+ | 2005 07 05 | 474 | 0.0 | 0.0 | 2005 08 28 | F65 | 0.4− | 0.3− | | |
| 2005 07 04 | H06 | 0.4− | 1.3+ | 2005 07 05 | 413 | 0.0 | 0.1− | 2005 08 28 | F65 | 0.2− | 0.2− | | |
| 2005 07 04 | H06 | 0.7+ | 0.8+ | 2005 07 05 | 474 | 0.2+ | 0.0 | 2005 10 24 | 291 | 0.2− | 0.3+ | | |
| 2005 07 04 | 413 | 0.1− | 0.0 | 2005 07 06 | 413 | 0.2− | 0.0 | 2005 10 24 | 291 | 0.6− | 0.2− | | |
| 2005 07 04 | 413 | 0.1− | 0.2− | 2005 07 06 | 413 | 0.1− | 0.2− | 2005 10 24 | 291 | 1.1+ | 0.0 | | |
| 2005 07 04 | 413 | 0.1− | 0.0 | 2005 07 07 | 649 | 0.0 | 0.6− | 2006 11 21 | 696 | 0.3+ | 0.0 | | |
| 2005 07 04 | 413 | 0.1+ | 0.0 | 2005 07 07 | 649 | 0.3+ | 0.1+ | 2006 11 21 | 696 | 0.1− | 0.4+ | | |
| 2005 07 04 | 413 | 0.1− | 0.1+ | 2005 07 07 | 649 | 0.1− | 0.0 | | | | | | |
| 2005 07 05 | 734 | 0.2+ | 0.4+ | 2005 07 07 | 649 | 0.1− | 0.1− | | | | | | |

**2005 NC$_2$ = 2006 ST$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.00687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16819683 | $\omega$ | 138.35231 | | +0.62142656 | +0.78346326 | |
| $a$ | 3.2503055 | $\Omega$ | 170.06605 | | −0.72450290 | +0.57648767 | |
| $e$ | 0.1222815 | $i$ | 1.25849 | | −0.29820227 | +0.23205019 | |
| $P$ | 5.86 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.3− | 0.5+ | 2005 07 07 | 691 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.6+ | | |
| 1994 11 01 | 691 | 0.5− | 0.2+ | 2005 07 07 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.5− | 0.0 | | |
| 1994 11 01 | 691 | 0.6+ | 0.3− | 2005 07 07 | 691 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.0 | | |
| 2004 04 24 | 691 | 0.1+ | 0.4+ | 2005 07 07 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.2− | 0.1+ | | |
| 2004 04 24 | 691 | 0.1− | 0.3+ | 2005 07 07 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.2− | | |
| 2004 04 24 | 691 | 0.2+ | 0.0 | 2005 07 07 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.8+ | | |
| 2005 07 02 | 691 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.1− | | |
| 2005 07 02 | 691 | 0.2+ | 0.4− | 2005 09 29 | G96 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.3+ | | |
| 2005 07 02 | 691 | 0.5+ | 0.2+ | 2005 09 29 | G96 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.2− | | |
| 2005 07 04 | G96 | 0.3+ | 0.1+ | 2005 09 29 | G96 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.0 | | |
| 2005 07 04 | G96 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1+ | | |
| 2005 07 04 | G96 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.1+ | | |
| 2005 07 04 | G96 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.2− | | |

**2005 NC$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.29596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21926972 | $\omega$ | 51.92937 | | −0.52896801 | +0.84843602 | |
| $a$ | 2.7236436 | $\Omega$ | 186.22111 | | −0.82258580 | −0.51801700 | |
| $e$ | 0.1479082 | $i$ | 9.92944 | | −0.20867545 | −0.10869551 | |
| $P$ | 4.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 691 | 0.0 | 0.2+ | 2005 07 05 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.5+ | | |
| 2005 06 04 | 691 | 0.0 | 0.1− | 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.5− | | |
| 2005 06 04 | 691 | 0.0 | 0.1− | 2005 07 05 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.7+ | 0.5− | | |
| 2005 06 14 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.7− | 0.2− | | |
| 2005 06 14 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.5− | | |
| 2005 06 14 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.4− | 0.4− | | |
| 2005 07 01 | 644 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.6+ | 0.1+ | | |
| 2005 07 01 | 644 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2005 07 01 | 644 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | | |

**2005 NJ$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.90192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25394203 | $\omega$ | 43.59520 | | −0.99580124 | +0.05376622 | |
| $a$ | 2.4697121 | $\Omega$ | 139.31137 | | −0.07458631 | −0.94577587 | |
| $e$ | 0.0416361 | $i$ | 6.52528 | | +0.05307332 | −0.32033918 | |
| $P$ | 3.88 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.3+ | 0.3− | 2004 04 21 | 691 | 0.2− | 0.2+ | 2005 07 18 | 644 | 0.0 | 0.3+ | | |
| 2004 03 12 | 644 | 0.8− | 0.1+ | 2004 04 21 | 691 | 0.2− | 0.1+ | 2005 07 28 | 644 | 0.3− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.1+ | 0.1− | 2005 07 01 | 691 | 0.1+ | 0.1− | 2005 07 28 | 644 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 1.0+ | 0.2− | 2005 07 01 | 691 | 0.1+ | 0.1− | 2005 07 28 | 644 | 0.2− | 0.3+ |
| 2004 03 20 | 704 | 0.3+ | 0.0 | 2005 07 01 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2004 03 20 | 704 | (1.7+ | 0.5−) | 2005 07 05 | G96 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.1+ |
| 2004 03 20 | 704 | (1.0+ | 2.4+) | 2005 07 05 | G96 | 0.2− | 0.4+ | 2006 11 25 | G96 | 0.4+ | 0.1+ |
| 2004 03 22 | 704 | 0.1+ | 0.5+ | 2005 07 05 | G96 | 0.8− | 0.3+ | 2006 11 25 | 703 | 0.2− | 0.8+ |
| 2004 03 22 | 704 | 0.2+ | 0.1− | 2005 07 05 | G96 | 0.8− | 0.4+ | 2006 11 25 | 703 | 0.0 | 0.5+ |
| 2004 03 22 | 704 | 1.0+ | 0.6+ | 2005 07 18 | 644 | 0.3+ | 0.4+ | 2006 11 25 | 703 | 0.1− | 0.5+ |
| 2004 04 21 | 691 | 0.1− | 0.0 | 2005 07 18 | 644 | 0.1+ | 0.0 | 2006 11 25 | 703 | 0.4− | 0.6− |

### 2005 $NE_4$ = 2006 $UK_{212}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 163.32317 | | | (2000.0) | | |
| $n$ | 0.24428110 | $\omega$ | 318.56976 | | −0.51336124 | +0.85533256 |
| $a$ | 2.5344057 | $\Omega$ | 280.43276 | | −0.76750913 | −0.49397224 |
| $e$ | 0.0862708 | $i$ | 4.06755 | | −0.38391402 | −0.15619742 |
| $P$ | 4.03 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 291 | 0.2− | 0.4− | 2005 07 02 | 691 | 0.1+ | 0.1+ | 2005 07 07 | 691 | 0.2− | 0.1− |
| 2002 11 07 | 291 | 0.1− | 0.1+ | 2005 07 02 | 691 | 0.1+ | 0.3+ | 2005 07 07 | 691 | 0.4− | 0.4+ |
| 2002 11 07 | 291 | 0.3+ | 0.4+ | 2005 07 05 | G96 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2004 03 13 | 644 | 0.8+ | 0.3+ | 2005 07 05 | G96 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2004 03 13 | 644 | 0.2+ | 0.6+ | 2005 07 05 | G96 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2004 03 13 | 644 | 0.5+ | 0.5+ | 2005 07 05 | G96 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.4− | 0.2+ |
| 2004 03 27 | 691 | 0.3+ | 0.3+ | 2005 07 05 | 644 | 0.4− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2004 03 27 | 691 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.5+ | 0.4+ |
| 2004 03 27 | 691 | 0.0 | 0.4+ | 2005 07 05 | 644 | 0.3− | 0.3+ | | | | |
| 2005 07 02 | 691 | 0.3+ | 0.4+ | 2005 07 07 | 691 | 0.1+ | 0.2− | | | | |

### 2005 $NK_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 82.65243 | | | (2000.0) | | |
| $n$ | 0.22209783 | $\omega$ | 195.45480 | | +0.76229007 | +0.64263813 |
| $a$ | 2.7004730 | $\Omega$ | 124.29663 | | −0.58350894 | +0.73383507 |
| $e$ | 0.0704967 | $i$ | 5.34854 | | −0.28005564 | +0.22023244 |
| $P$ | 4.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.3+ |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2005 07 09 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.5+ |
| 2004 03 26 | 691 | 0.0 | 0.4+ | 2005 07 30 | E12 | 1.0− | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 2005 07 03 | G96 | 0.8− | 0.3− | 2005 07 30 | E12 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2005 07 03 | G96 | 0.1− | 0.3− | 2005 07 30 | E12 | 0.5− | 1.0+ | 2006 11 16 | 691 | 0.1− | 0.3− |
| 2005 07 03 | G96 | 0.3+ | 0.2− | 2005 07 30 | E12 | 0.3+ | 0.6− | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2005 07 03 | G96 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2005 07 05 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.0 | | | | |
| 2005 07 09 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.6+ | | | | |

### 2005 $NO_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.90155 | | | (2000.0) | | |
| $n$ | 0.17947270 | $\omega$ | 220.91820 | | +0.99671395 | +0.07706798 |
| $a$ | 3.1126990 | $\Omega$ | 134.64276 | | −0.06213974 | +0.92496516 |
| $e$ | 0.0902756 | $i$ | 2.00850 | | −0.05196111 | +0.37215586 |
| $P$ | 5.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 03 | G96 | 0.1+ | 0.0 | 2005 07 11 | 691 | 0.3+ | 0.4+ | 2006 10 12 | 691 | 0.4− | 0.3+ |
| 2005 07 03 | G96 | 0.3− | 0.0 | 2005 07 11 | 691 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ |
| 2005 07 03 | G96 | 0.3+ | 0.2+ | 2005 08 31 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2005 07 03 | G96 | 0.3+ | 0.3+ | 2005 08 31 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1− |
| 2005 07 05 | G96 | 0.1− | 0.5+ | 2005 08 31 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.3− | 0.1− |
| 2005 07 05 | G96 | 0.3− | 0.2− | 2005 08 31 | 291 | 0.0 | 0.6− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2005 07 05 | G96 | 0.1+ | 0.2+ | 2005 08 31 | 291 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.3+ | 0.1− |
| 2005 07 05 | G96 | 0.6− | 0.3− | 2005 08 31 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.3− |
| 2005 07 11 | 691 | 0.1− | 0.3− | 2006 10 12 | 691 | 0.0 | 0.0 | | | | |

### 2005 $NQ_5$ = 2006 $UD_{277}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 101.24760 | | | (2000.0) | | |
| $n$ | 0.17383603 | $\omega$ | 332.29529 | | −0.01217853 | +0.99853796 |
| $a$ | 3.1796271 | $\Omega$ | 296.96543 | | −0.90614016 | −0.03329126 |
| $e$ | 0.1988527 | $i$ | 3.38755 | | −0.42280220 | +0.04258687 |
| $P$ | 5.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 691 | 0.1− | 0.6− | 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.3− |
| 2000 09 07 | 691 | 0.4+ | 0.6− | 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2000 09 07 | 691 | 0.2+ | 0.0 | 2005 07 11 | 691 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2005 02 18 | 809 | 0.0 | 0.2+ | 2005 07 18 | 644 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.4+ | 0.5+ |
| 2005 02 18 | 809 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2005 07 03 | G96 | 0.0 | 0.1− | 2005 07 18 | 644 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2005 07 03 | G96 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2005 07 03 | G96 | 0.1+ | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 2005 07 03 | G96 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.6+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2005 07 05 | G96 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2005 07 05 | G96 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2005 07 05 | G96 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2005 07 05 | G96 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.3− |

### 2005 $NW_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.60126 | | | (2000.0) | | |
| $n$ | 0.18899569 | $\omega$ | 158.13396 | | +0.72500591 | −0.68658052 |
| $a$ | 3.0072402 | $\Omega$ | 245.34594 | | +0.62268745 | +0.68724924 |
| $e$ | 0.1630217 | $i$ | 3.43983 | | +0.29432427 | +0.23726707 |
| $P$ | 5.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 327 | 0.3+ | 1.9− | 2005 07 09 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 1995 10 17 | 327 | 0.1− | 1.6− | 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1995 10 17 | 327 | 0.9+ | 1.3− | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2000 10 03 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.7− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2000 10 03 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2000 10 03 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.4− | 1.1+ |
| 2003 03 26 | 644 | 0.7+ | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.6+ | 1.4+ |
| 2003 03 26 | 644 | 0.3+ | 0.8+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 2003 03 26 | 644 | 0.3+ | 1.1+ | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2005 07 01 | 691 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2005 07 01 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2005 07 06 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2005 07 06 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2005 07 06 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.3− | | | | |
| 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.4− | | | | |

### 2005 $NX_7$ = 2006 $VT_{123}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.74950 | | | (2000.0) | | |
| $n$ | 0.18361336 | $\omega$ | 83.42369 | | +0.98883134 | +0.10135607 |
| $a$ | 3.0657251 | $\Omega$ | 270.71955 | | −0.13687193 | +0.90770679 |
| $e$ | 0.1469872 | $i$ | 6.27363 | | +0.05898016 | +0.40717974 |
| $P$ | 5.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 01 | 691 | 0.3+ | 0.1+ | 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.3+ | 0.1+ |
| 2005 07 01 | 691 | 0.0 | 0.1− | 2005 07 09 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 01 | 691 | 0.1+ | 0.0 | 2005 07 09 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.3− |
| 2005 07 06 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.4− | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2005 07 06 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2005 07 06 | 691 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.1− | 0.3− | 2006 11 22 | 691 | 0.4− | 0.6+ |

**2005 NJ$_9$ = 2006 WC$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.91242 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18684378 | $\omega$ | 246.22184 | | +0.71648375 | −0.69717712 | |
| $a$ | 3.0302859 | $\Omega$ | 157.95356 | | +0.66136601 | +0.66772571 | |
| $e$ | 0.1388957 | $i$ | 3.72631 | | +0.22191448 | +0.26093378 | |
| $P$ | 5.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 30 | 691 | 0.1− | 0.1− | 2005 08 31 | 691 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.3− | 0.6+ |
| 1995 09 30 | 691 | 0.0 | 0.0 | 2005 08 31 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.5+ |
| 1995 09 30 | 691 | 0.2+ | 0.0 | 2005 08 31 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.6+ | 0.3− |
| 2005 07 01 | 691 | 0.3− | 0.7− | 2006 10 22 | G96 | 0.3− | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.6− |
| 2005 07 01 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.6− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2005 07 01 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2005 07 06 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.6− | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2005 07 06 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2005 07 06 | 691 | 0.3+ | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.5− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2005 07 09 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 24 | 691 | 0.3+ | 0.2− |
| 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.3− | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2005 07 09 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.5− | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.2+ |

**2005 NP$_9$ = 2006 WB$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.80888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18969602 | $\omega$ | 234.91322 | | +0.89839814 | −0.43682193 | |
| $a$ | 2.9998341 | $\Omega$ | 150.91007 | | +0.42721790 | +0.84522766 | |
| $e$ | 0.1127809 | $i$ | 5.36623 | | +0.10181182 | +0.30785840 | |
| $P$ | 5.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.2+ | 0.4+ | 2005 07 01 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | 1.0− | 0.2+ |
| 2000 08 21 | 699 | 1.5− | 0.2+ | 2005 07 05 | 644 | 0.3− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 1.4+ |
| 2000 08 21 | 699 | 0.2− | 0.0 | 2005 07 05 | 644 | 0.0 | 0.6+ | 2006 11 20 | 704 | 1.0− | 0.7+ |
| 2000 08 21 | 699 | 1.4+ | 1.1− | 2005 07 05 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.4− | 0.5− |
| 2003 03 31 | 691 | 0.3+ | 0.3+ | 2005 07 06 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.9− | 0.1+ |
| 2003 03 31 | 691 | 0.5+ | 0.3+ | 2005 07 06 | 691 | 0.2+ | 0.6+ | 2006 11 20 | 704 | 1.3+ | 0.5+ |
| 2003 03 31 | 691 | 0.1+ | 0.4+ | 2005 07 06 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2003 04 09 | 691 | 0.1− | 0.6+ | 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 04 09 | 691 | 0.3− | 0.3+ | 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2003 04 09 | 691 | 0.2+ | 0.2+ | 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2004 03 15 | 291 | 0.3− | 0.6+ | 2005 07 18 | 644 | 0.0 | 0.2+ | 2006 11 28 | 683 | 0.5+ | 0.3+ |
| 2004 03 15 | 291 | 0.1− | 0.2+ | 2005 07 18 | 644 | 0.3− | 0.2+ | 2006 11 28 | 704 | 0.1− | 2.8+ |
| 2004 03 15 | 291 | 0.3+ | 0.6+ | 2005 07 18 | 644 | 0.3− | 0.2+ | 2006 11 28 | 683 | 0.5+ | 0.4+ |
| 2004 06 16 | 691 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.4+ | 0.9+ | 2006 11 28 | 704 | 0.5+ | 0.7+ |
| 2004 06 16 | 691 | 0.1+ | 0.0 | 2006 10 30 | 703 | 0.6− | 0.1+ | 2006 11 28 | 683 | 2.2+ | 1.3+ |
| 2004 06 16 | 691 | 0.1+ | 0.3+ | 2006 10 30 | 703 | 1.0− | 0.7+ | 2006 11 28 | 704 | 0.6− | 0.1− |
| 2005 07 01 | 691 | 0.1− | 0.4+ | 2006 10 30 | 703 | 0.2− | 1.5+ | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2005 07 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.8− | 0.7+ | 2006 11 28 | 704 | 0.4− | 0.9+ |

**2005 NQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.51931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20471015 | $\omega$ | 168.52120 | | +0.34666608 | +0.93636215 | |
| $a$ | 2.8513014 | $\Omega$ | 121.74053 | | −0.86564544 | +0.34204305 | |
| $e$ | 0.1974844 | $i$ | 3.72248 | | −0.36122099 | +0.07894610 | |
| $P$ | 4.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.1− | 0.5+ | 2005 07 06 | 691 | 0.1− | 0.2+ | 2005 07 15 | 691 | 0.2− | 0.3+ |
| 2005 05 20 | G96 | 0.2− | 0.3+ | 2005 07 06 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2005 05 20 | G96 | 0.1+ | 0.3+ | 2005 07 06 | 691 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2005 05 20 | G96 | 0.0 | 0.1+ | 2005 07 11 | 701 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2005 06 14 | G96 | 0.4+ | 0.1+ | 2005 07 11 | 701 | 0.9− | 0.9− | 2006 11 15 | G96 | 0.3+ | 0.3+ |
| 2005 06 14 | G96 | 0.2+ | 0.3+ | 2005 07 11 | 701 | 0.7− | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2005 06 14 | G96 | 0.0 | 0.2+ | 2005 07 15 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.2+ |
| 2005 06 14 | G96 | 0.3+ | 0.2+ | 2005 07 15 | 691 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2005 07 03 | G96 | 0.5+ | 0.2+ | 2005 07 15 | G96 | (0.8− | 3.4−) | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2005 07 03 | G96 | 0.4− | 0.4+ | 2005 07 15 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2005 07 03 | G96 | 0.8− | 1.3− | 2005 07 15 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2005 07 03 | G96 | 0.7+ | 0.4− | 2005 07 15 | G96 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2− |

**2005 NQ$_{11}$ = 2006 UM$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.85322 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23190413 | $\omega$ | 2.37586 | | −0.23637105 | +0.95503309 | |
| $a$ | 2.6237980 | $\Omega$ | 253.99278 | | −0.89452582 | −0.28581502 | |
| $e$ | 0.0831285 | $i$ | 10.73221 | | −0.37941045 | +0.07887695 | |
| $P$ | 4.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 699 | 0.4+ | 0.0 | 2005 07 05 | G96 | 0.3− | 0.1+ | 2006 09 28 | 703 | 0.7+ | 0.7+ |
| 2004 01 27 | 699 | 1.0− | 0.4+ | 2005 07 05 | G96 | 0.5+ | 0.4+ | 2006 10 10 | 644 | 0.3− | 0.1− |
| 2004 01 27 | 699 | 0.5+ | 0.1− | 2005 07 05 | G96 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2004 01 27 | 699 | 0.4+ | 0.4+ | 2005 07 05 | G96 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.2− |
| 2005 06 16 | G96 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.9− | 0.3+ |
| 2005 06 16 | G96 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 10 17 | 703 | (0.8− | 2.8+) |
| 2005 06 16 | G96 | 0.0 | 0.1+ | 2006 09 16 | 703 | 1.3+ | 0.5− | 2006 10 17 | 703 | 1.3− | 0.1− |
| 2005 06 16 | G96 | 0.0 | 0.1− | 2006 09 16 | 703 | (2.1− | 0.2+) | 2006 10 17 | 703 | 0.4+ | 1.3+ |
| 2005 07 04 | 644 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.4− | 0.2− |
| 2005 07 04 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.3+ | 1.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2005 07 04 | 644 | 0.4− | 0.2− | 2006 09 28 | 703 | 0.1+ | 1.2− | 2006 10 22 | 644 | 0.0 | 0.1− |

**2005 NF$_{12}$ = 2006 VD$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.15638 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26522446 | $\omega$ | 287.57864 | | −0.92679633 | +0.36292349 | |
| $a$ | 2.3991662 | $\Omega$ | 273.78830 | | −0.29728536 | −0.86613864 | |
| $e$ | 0.0717132 | $i$ | 5.55665 | | −0.22949941 | −0.34364283 | |
| $P$ | 3.72 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 08 | 691 | 0.3+ | 0.0 | 2005 06 15 | G96 | 0.5− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 1994 09 08 | 691 | 0.2+ | 0.0 | 2005 07 04 | G96 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.3+ |
| 1994 09 08 | 691 | 0.1− | 1.0− | 2005 07 04 | G96 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.1+ |
| 2004 02 17 | 691 | 0.1+ | 0.0 | 2005 07 04 | G96 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.4− | 0.1+ |
| 2004 02 17 | 691 | 0.2+ | 0.0 | 2005 07 04 | G96 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.4+ |
| 2004 02 17 | 691 | 0.4− | 0.0 | 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.5+ |
| 2005 06 15 | G96 | 0.7− | 0.1− | 2005 07 06 | 691 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.2+ |
| 2005 06 15 | G96 | 0.2− | 0.4− | 2005 07 06 | 691 | 0.1+ | 0.4+ | | | | |
| 2005 06 15 | G96 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.4+ | | | | |

**2005 NU$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.93917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22996837 | $\omega$ | 141.93816 | | +0.95324820 | −0.30109177 | |
| $a$ | 2.6385013 | $\Omega$ | 235.60400 | | +0.26904677 | +0.88437939 | |
| $e$ | 0.0756622 | $i$ | 1.78632 | | +0.13759252 | +0.35667469 | |
| $P$ | 4.29 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | G96 | (3.7+ | 0.4−) | 2005 07 16 | E12 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2005 07 04 | G96 | 0.1− | 0.1− | 2005 07 16 | E12 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.5− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | G96 | 0.2− | 0.2+ | 2005 07 16 | E12 | 0.6− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.5+ |
| 2005 07 04 | G96 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2005 07 06 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 07 06 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.3− | 0.2− |
| 2005 07 06 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.2− |
| 2005 07 15 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1− | | | | |
| 2005 07 15 | 691 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.0 | | | | |

**2005 NZ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.34329 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17115073 | $\omega$ | 163.80950 | | +0.13485575 | +0.98997728 | |
| $a$ | 3.2127989 | $\Omega$ | 113.92525 | | −0.91411420 | +0.14063208 | |
| $e$ | 0.0948383 | $i$ | 2.62976 | | −0.38237307 | +0.01294638 | |
| $P$ | 5.76 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | 644 | 0.1+ | 0.2+ | 2005 07 12 | G96 | 0.2+ | 0.9− | 2006 10 21 | G96 | 0.6+ | 0.2− |
| 2005 07 04 | 644 | 0.4+ | 0.4+ | 2005 07 12 | G96 | 0.2+ | 1.1− | 2006 10 21 | G96 | 0.5+ | 0.2+ |
| 2005 07 04 | 644 | 0.0 | 0.4+ | 2005 07 16 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2005 07 05 | 691 | 0.1− | 0.3− | 2005 07 16 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 07 05 | 691 | 0.0 | 0.1+ | 2005 07 16 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 07 05 | 691 | 0.1− | 0.2+ | 2005 07 30 | E12 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2005 07 09 | 691 | 0.2− | 0.3+ | 2005 07 30 | E12 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 07 09 | 691 | 0.0 | 0.0 | 2005 07 30 | E12 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 2005 07 09 | 691 | 0.1− | 0.2+ | 2005 07 30 | E12 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2005 07 12 | G96 | 0.1− | 1.1− | 2006 10 21 | G96 | 0.5+ | 0.1− | | | | |
| 2005 07 12 | G96 | 0.8+ | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.3− | | | | |

**2005 NA$_{13}$ = 2006 SN$_{359}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.57224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12540794 | $\omega$ | 238.42369 | | +0.98583694 | +0.15494905 | |
| $a$ | 3.9529321 | $\Omega$ | 112.59468 | | −0.12041143 | +0.92026061 | |
| $e$ | 0.2495380 | $i$ | 3.98483 | | −0.11673312 | +0.35932046 | |
| $P$ | 7.86 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | 644 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.1− | 1.5− | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2005 07 04 | 644 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.3− | 0.7− | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 2005 07 04 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | (0.2− | 1.6−) | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2005 07 04 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 1.3− | 0.3− | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2005 07 04 | 644 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2005 07 04 | 644 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2005 07 05 | 691 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2005 07 05 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2005 07 05 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.2− |
| 2005 07 30 | E12 | 0.1− | 0.4− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2005 07 30 | E12 | 0.3+ | 0.3− | 2006 10 18 | 691 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 1.0+ | 1.4+ |
| 2005 07 30 | E12 | 0.0 | 0.7− | 2006 10 22 | 691 | 0.1− | 0.1− | | | | |
| 2005 07 30 | E12 | 0.3+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.1+ | | | | |

**2005 NH$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.10919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12391579 | $\omega$ | 142.95191 | | +0.85105601 | +0.52505342 | |
| $a$ | 3.9846021 | $\Omega$ | 185.38272 | | −0.49307188 | +0.79604080 | |
| $e$ | 0.2539581 | $i$ | 2.90350 | | −0.18050980 | +0.30106139 | |
| $P$ | 7.95 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 291 | 0.5− | 0.3− | 2005 09 01 | 691 | 0.2+ | 0.4+ | 2005 11 25 | G96 | 0.1+ | 0.1− |
| 2005 07 05 | 291 | 0.1− | 0.5− | 2005 09 01 | 691 | 0.1+ | 0.1+ | 2005 11 25 | G96 | 0.8− | 0.2+ |
| 2005 07 05 | 291 | 0.0 | 0.0 | 2005 09 11 | 691 | 0.4+ | 0.1+ | 2005 12 02 | G96 | 0.2+ | 0.6− |
| 2005 07 06 | 291 | 0.1+ | 0.1− | 2005 09 11 | 691 | 0.1+ | 0.2+ | 2005 12 02 | G96 | 0.4− | 0.2− |
| 2005 07 06 | 291 | 0.1− | 0.3− | 2005 09 11 | 691 | 0.1+ | 0.0 | 2005 12 02 | G96 | 0.0 | 0.0 |
| 2005 07 06 | 291 | 0.2+ | 0.1− | 2005 09 29 | 691 | 0.1− | 0.1− | 2005 12 02 | G96 | 0.4+ | 0.5− |
| 2005 07 30 | 644 | 0.2− | 0.3+ | 2005 09 29 | 691 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2005 07 30 | 644 | 0.3− | 0.1+ | 2005 09 29 | 691 | 0.5− | 0.2− | 2006 11 11 | 691 | 0.7− | 0.5− |
| 2005 07 30 | 644 | 0.2− | 0.1+ | 2005 09 30 | G96 | 0.1− | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2005 08 28 | 691 | 0.2+ | 0.2+ | 2005 09 30 | G96 | 0.3− | 0.2− | 2006 11 19 | 691 | 0.4+ | 0.2− |
| 2005 08 28 | 691 | 0.4+ | 0.2+ | 2005 09 30 | G96 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2005 08 28 | 691 | 0.2+ | 0.1+ | 2005 11 25 | G96 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.6+ |
| 2005 09 01 | 691 | 0.1− | 0.2+ | 2005 11 25 | G96 | 0.0 | 0.3− | | | | |

**2005 NM$_{16}$ = 2006 WF$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.90474 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22477890 | $\omega$ | 143.97809 | | −0.97196286 | +0.23208138 | |
| $a$ | 2.6789567 | $\Omega$ | 49.48628 | | −0.22568119 | −0.87568725 | |
| $e$ | 0.0134070 | $i$ | 2.84754 | | −0.06600148 | −0.42345019 | |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.1+ | 0.1+ | 2005 07 11 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.1− | 0.2− |
| 1995 02 03 | 691 | (1.9+ | 3.3+) | 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.2− |
| 1995 02 03 | 691 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.5− |
| 1995 03 29 | 691 | 0.3− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.0 | 0.1− |
| 1995 03 29 | 691 | 0.3− | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 1995 03 29 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2005 07 02 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2005 07 02 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2005 07 02 | 691 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2005 07 07 | 691 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.5+ | 0.3+ |
| 2005 07 07 | 691 | 0.5− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.4+ |
| 2005 07 07 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.7+ | 2006 11 22 | G96 | 0.3− | 0.1+ |
| 2005 07 07 | 691 | 0.2+ | 0.5+ | 2006 11 12 | G96 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.3+ |
| 2005 07 07 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2005 07 07 | 691 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 22 | G96 | 0.5+ | 0.0 |
| 2005 07 11 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.1− | | | | |

**2005 NU$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.95583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21758933 | $\omega$ | 85.54377 | | +0.99529192 | −0.04417115 | |
| $a$ | 2.7376483 | $\Omega$ | 276.97113 | | +0.00537012 | +0.91387943 | |
| $e$ | 0.0241977 | $i$ | 4.98614 | | +0.09677378 | +0.40357565 | |
| $P$ | 4.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 02 | 691 | 0.2+ | 0.1+ | 2005 07 11 | G96 | 0.3− | 0.8− | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2005 07 02 | 691 | 0.1+ | 0.1− | 2005 07 27 | 644 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2005 07 02 | 691 | 0.1+ | 0.2− | 2005 07 27 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2005 07 07 | 691 | 0.1+ | 0.2+ | 2005 07 27 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.1+ |
| 2005 07 07 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.1+ |
| 2005 07 07 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.6+ | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2005 07 11 | G96 | 0.7− | 0.1+ | 2006 10 19 | 691 | 0.5− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2005 07 11 | G96 | 0.9− | 0.6− | 2006 10 23 | 691 | 0.8− | 0.3− | | | | |
| 2005 07 11 | G96 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1+ | | | | |

**2005 NG$_{18}$ = 2006 SA$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.26954 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17542328 | $\omega$ | 51.66672 | | −0.65992250 | +0.75133248 | |
| $a$ | 3.1604182 | $\Omega$ | 177.03827 | | −0.69719352 | −0.61170192 | |
| $e$ | 0.1222349 | $i$ | 1.48981 | | −0.28004194 | −0.24762930 | |
| $P$ | 5.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 807 | 0.1− | 0.4+ | 2005 07 04 | G96 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4+ |
| 2000 08 25 | 807 | 0.0 | 0.0 | 2005 07 04 | G96 | 0.1+ | 0.6+ | 2006 09 25 | G96 | 0.3− | 2.5− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2005 07 07 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.1+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2005 07 07 | 691 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 2004 04 15 | 699 | 0.3− | 0.1− | 2005 07 07 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2004 04 15 | 699 | 0.3+ | 0.4+ | 2005 08 28 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2004 04 15 | 699 | 0.0 | 1.1+ | 2005 08 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.1+ |
| 2004 04 15 | 699 | 0.6+ | 0.1+ | 2005 08 28 | 691 | 0.0 | 0.5− | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2005 07 04 | G96 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.3− | 0.0 | | | | |
| 2005 07 04 | G96 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.8+ | 0.5+ | | | | |

**2005 NM$_{18}$ = 2006 VQ$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.40058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17432725 | $\omega$ | 131.79328 | | +0.63225256 | −0.77181727 | |
| $a$ | 3.1736512 | $\Omega$ | 278.86286 | | +0.68903655 | +0.59998629 | |
| $e$ | 0.1867045 | $i$ | 3.91663 | | +0.35423910 | +0.21051023 | |
| $P$ | 5.65 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 02 | 691 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2005 07 02 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2005 07 02 | 691 | 0.7+ | 0.0 | 2006 10 19 | 703 | 1.4− | 1.0− | 2006 11 09 | 644 | 0.3− | 0.5+ |
| 2005 07 04 | G96 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2005 07 04 | G96 | 0.0 | 0.7− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.8+ |
| 2005 07 04 | G96 | 0.2− | 0.5− | 2006 10 19 | 703 | 1.1+ | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.2+ |
| 2005 07 04 | G96 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.8+ |
| 2005 07 07 | 691 | 0.6− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2005 07 07 | 691 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2005 07 07 | 691 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.9+ |
| 2005 07 15 | G96 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.2+ | 1.3− | 2006 11 19 | 704 | (0.2+ | 1.8+) |
| 2005 07 15 | G96 | 0.1− | 0.3− | 2006 10 19 | 703 | 0.3− | 0.0 | 2006 11 19 | 704 | (0.7+ | 2.0+) |
| 2005 07 15 | G96 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.2− | 2006 11 22 | 704 | 0.2− | 0.4− |
| 2005 07 15 | G96 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2006 10 04 | G96 | 0.0 | 0.5− | 2006 10 27 | 703 | 0.4− | 0.6+ | 2006 11 22 | 704 | 0.5− | 0.4+ |
| 2006 10 04 | G96 | 0.5+ | 0.5− | 2006 10 27 | 703 | 1.3− | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2006 10 04 | G96 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2006 10 04 | G96 | 0.0 | 0.7− | 2006 10 27 | 691 | 0.3+ | 0.0 | | | | |

**2005 NX$_{19}$ = 2004 EY$_{53}$ = 2006 UW$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.29313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25710602 | $\omega$ | 297.01289 | | −0.97654807 | −0.21396882 | |
| $a$ | 2.4494085 | $\Omega$ | 230.64192 | | +0.20686502 | −0.90172557 | |
| $e$ | 0.1234293 | $i$ | 1.77133 | | +0.05967183 | −0.37564390 | |
| $P$ | 3.83 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 599 | 0.0 | 0.1+ | 2005 07 05 | G96 | 0.3+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2004 03 15 | 599 | 0.5+ | 0.7+ | 2005 07 05 | G96 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 03 15 | 599 | 0.1+ | 0.1+ | 2005 07 05 | G96 | 0.7+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 03 15 | 599 | 0.0 | 0.4+ | 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2004 03 16 | 683 | (1.6+ | 2.9−) | 2005 07 07 | 691 | 0.1− | 0.5+ | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2004 03 16 | 683 | (4.5+ | 1.8−) | 2005 07 07 | 691 | 0.6− | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.9− |
| 2004 03 16 | 683 | (2.9+ | 1.1+) | 2005 12 01 | 695 | 0.9− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2004 03 18 | 691 | 0.1+ | 0.5+ | 2005 12 01 | 695 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.2+ |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.4+ |
| 2005 06 29 | 688 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2005 06 29 | 688 | 1.1+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.3+ |
| 2005 07 05 | G96 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2+ | | | | |

**2005 NM$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.40953 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17328754 | $\omega$ | 83.27171 | | +0.98881734 | +0.07169209 | |
| $a$ | 3.1863330 | $\Omega$ | 272.55926 | | −0.11876048 | +0.90891259 | |
| $e$ | 0.1223248 | $i$ | 7.52157 | | +0.09020093 | +0.41077750 | |
| $P$ | 5.69 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 01 | 691 | 0.0 | 0.2+ | 2005 07 12 | 703 | (0.2− | 1.9−) | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2005 07 01 | 691 | 0.1− | 0.0 | 2005 07 15 | 691 | 0.8+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2005 07 01 | 691 | 0.3− | 0.0 | 2005 07 15 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1− | 0.3− |
| 2005 07 05 | 644 | 0.1+ | 0.2− | 2005 07 15 | 691 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.3− | 0.2− |
| 2005 07 05 | 644 | 0.0 | 0.2− | 2005 07 27 | 644 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.4− |
| 2005 07 05 | 644 | 0.0 | 0.1− | 2005 07 27 | 644 | 0.4− | 0.1+ | 2006 11 16 | 704 | 1.0+ | 1.4+ |
| 2005 07 10 | 691 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.2+ |
| 2005 07 10 | 691 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.4− | 0.2− | 2006 11 16 | 704 | 1.0+ | 0.1− |
| 2005 07 10 | 691 | 0.1+ | 0.0 | 2005 07 27 | 644 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2005 07 10 | 691 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.5− | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.6+ |
| 2005 07 10 | 691 | 0.1− | 0.1+ | 2005 08 01 | 599 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2005 07 10 | 691 | 0.1+ | 0.1+ | 2005 08 01 | 599 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.0 | 0.4− |
| 2005 07 12 | 703 | 0.3− | 1.0− | 2005 08 01 | 599 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2005 07 12 | 703 | 0.7− | 0.2− | 2005 08 01 | 599 | 0.1− | 0.1− | | | | |
| 2005 07 12 | 703 | 0.6+ | 0.9− | 2006 11 09 | 644 | 0.4− | 0.3+ | | | | |

**2005 NN$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.28037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21123726 | $\omega$ | 104.67782 | | +0.86283108 | +0.50359050 | |
| $a$ | 2.7922590 | $\Omega$ | 225.10713 | | −0.48431637 | +0.79875405 | |
| $e$ | 0.0686175 | $i$ | 3.54534 | | −0.14477632 | +0.32922420 | |
| $P$ | 4.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 01 | 691 | 0.2− | 0.2− | 2005 07 10 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2005 07 01 | 691 | 0.2+ | 0.2+ | 2005 07 15 | 691 | 0.2+ | 1.3+ | 2006 11 15 | 691 | 0.3− | 0.1− |
| 2005 07 01 | 691 | 0.0 | 0.1− | 2005 07 15 | 691 | 0.0 | 0.4− | 2006 11 19 | 691 | 1.0+ | 0.5+ |
| 2005 07 05 | 644 | 0.3− | 0.3− | 2005 07 15 | 691 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2005 07 05 | 644 | 0.2− | 0.2− | 2005 07 18 | 644 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2005 07 05 | 644 | 0.2+ | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2005 07 10 | 691 | 0.1+ | 0.1+ | 2005 07 18 | 644 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2005 07 10 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.2− |

**2005 NP$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.87536 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12388043 | $\omega$ | 168.37010 | | +0.98580817 | +0.16784620 | |
| $a$ | 3.9853602 | $\Omega$ | 181.97548 | | −0.16041697 | +0.93631535 | |
| $e$ | 0.2829952 | $i$ | 5.23970 | | −0.04948387 | +0.30844969 | |
| $P$ | 7.96 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 01 | 691 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2005 07 01 | 691 | 0.1− | 0.0 | 2005 07 27 | 644 | 0.2− | 1.2− | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2005 07 01 | 691 | 0.2− | 0.2+ | 2005 08 12 | J87 | 0.7+ | 1.4− | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2005 07 05 | 644 | 0.2+ | 0.1− | 2005 08 12 | J87 | 0.5+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.0 |
| 2005 07 05 | 644 | 0.0 | 0.4+ | 2005 08 12 | J87 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2005 07 05 | 644 | 0.2+ | 0.1− | 2005 08 30 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2005 07 18 | 644 | 0.4+ | 0.1− | 2005 08 30 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2005 07 18 | 644 | 0.1+ | 0.2+ | 2005 08 30 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2005 07 18 | 644 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2005 07 27 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1− | | | | |

**2005 NX$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 194.00180 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.30011986 | $\omega$ | 313.27152 | | −0.71388160 | | +0.69243127 | | | | |
| $a$ | 2.2093926 | $\Omega$ | 270.84995 | | −0.60842217 | | −0.68716502 | | | | |
| $e$ | 0.1333191 | $i$ | 5.99675 | | −0.34669226 | | −0.21987082 | | | | |
| $P$ | 3.28 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 18 | 608 | 0.1− | 0.1− | 2005 07 05 | 644 | 0.3+ | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.3+ |
| 2001 02 18 | 608 | 0.1− | 0.3− | 2005 07 10 | 691 | 0.0 | 0.1− | 2005 07 18 | 644 | 0.1− | 0.2+ |
| 2001 02 18 | 608 | 0.1− | 0.0 | 2005 07 10 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.3− |
| 2005 07 01 | 691 | 0.1+ | 0.1− | 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.7− | 0.2− |
| 2005 07 01 | 691 | 0.0 | 0.2− | 2005 07 15 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2005 07 01 | 691 | 0.0 | 0.0 | 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.4+ | 0.4+ |
| 2005 07 05 | 644 | 0.2+ | 0.0 | 2005 07 15 | 691 | 0.3− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2005 07 05 | 644 | 0.3+ | 0.1− | 2005 07 18 | 644 | 0.4− | 0.1+ | 2006 11 20 | 691 | 0.4+ | 0.2+ |

**2005 NM$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 68.98056 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.20441015 | $\omega$ | 185.05133 | | +0.89756759 | | +0.43659253 | | | | |
| $a$ | 2.8540905 | $\Omega$ | 148.83056 | | −0.40023435 | | +0.86522956 | | | | |
| $e$ | 0.0871290 | $i$ | 6.80350 | | −0.18489155 | | +0.24650509 | | | | |
| $P$ | 4.82 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 691 | 0.0 | 0.1+ | 2005 07 09 | 691 | 0.2+ | 0.1− | 2005 09 29 | G96 | 0.0 | 0.2− |
| 2004 04 20 | 691 | 0.0 | 0.5+ | 2005 07 09 | 691 | 0.0 | 0.1+ | 2005 09 29 | G96 | 0.2+ | 0.2+ |
| 2004 04 20 | 691 | 0.2+ | 0.1+ | 2005 07 28 | 644 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.6+ |
| 2005 07 01 | 691 | 0.1+ | 0.0 | 2005 07 28 | 644 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.6+ |
| 2005 07 01 | 691 | 0.0 | 0.0 | 2005 07 28 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.5+ |
| 2005 07 01 | 691 | 0.1+ | 0.1+ | 2005 07 28 | 644 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2005 07 05 | 644 | 0.2− | 0.2+ | 2005 07 28 | 644 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2005 07 05 | 644 | 0.4− | 0.2+ | 2005 07 28 | 644 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.4+ |
| 2005 07 05 | 644 | 0.1+ | 0.3+ | 2005 09 29 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.4+ |
| 2005 07 09 | 691 | 0.1− | 0.0 | 2005 09 29 | G96 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2+ |

**2005 NN$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 79.72544 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.17698344 | $\omega$ | 172.93526 | | +0.57980285 | | +0.77904405 | | | | |
| $a$ | 3.1418176 | $\Omega$ | 132.16099 | | −0.76238794 | | +0.62204197 | | | | |
| $e$ | 0.2092893 | $i$ | 18.77500 | | −0.28739048 | | −0.07844842 | | | | |
| $P$ | 5.57 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 10 | 699 | 0.8− | 0.2− | 2005 07 09 | 691 | 0.0 | 0.0 | 2005 08 06 | 704 | 0.5− | 0.1+ |
| 2000 09 10 | 699 | 0.8+ | 0.8+ | 2005 07 09 | 691 | 0.1+ | 0.1+ | 2005 08 28 | 699 | 0.2− | 0.4− |
| 2000 09 10 | 699 | 0.2− | 1.6+ | 2005 07 09 | 691 | 0.2+ | 0.0 | 2005 08 28 | 699 | 0.5− | 0.6− |
| 2000 09 10 | 699 | 0.3− | 0.6− | 2005 07 15 | G96 | 0.2− | 0.2− | 2005 08 28 | 699 | 1.4+ | 0.5− |
| 2005 06 21 | 644 | 0.2− | 0.1− | 2005 07 15 | G96 | 0.1+ | 0.3− | 2005 08 28 | 699 | 2.6+ | 0.2+ |
| 2005 06 21 | 644 | 0.0 | 0.2+ | 2005 07 15 | G96 | 0.0 | 0.2− | 2005 09 08 | E12 | 0.8+ | 0.2− |
| 2005 06 21 | 644 | 0.3− | 0.3+ | 2005 07 15 | G96 | 0.2− | 0.1− | 2005 09 08 | E12 | 1.4− | 0.4+ |
| 2005 07 01 | 691 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.4− | 0.1− | 2005 09 08 | E12 | 0.1− | 1.0+ |
| 2005 07 01 | 691 | 0.1+ | 0.1+ | 2005 07 27 | 644 | 0.4− | 0.4− | 2005 09 08 | E12 | 0.3− | 0.0 |
| 2005 07 01 | 691 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.4− | 0.1− | 2006 11 22 | 703 | 0.8− | 0.0 |
| 2005 07 05 | 644 | 0.4− | 0.1− | 2005 08 06 | 704 | 0.4− | 0.5− | 2006 11 22 | 703 | 0.7+ | 1.1− |
| 2005 07 05 | 644 | 0.3− | 0.0 | 2005 08 06 | 704 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.1+ | 0.8− |
| 2005 07 05 | 644 | 0.4− | 0.0 | 2005 08 06 | 704 | 0.3− | 0.3− | 2006 11 22 | 703 | 0.5+ | 0.4+ |

**2005 NO$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 87.61574 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.19293919 | $\omega$ | 108.67947 | | +0.58637709 | | +0.81000682 | | | | |
| $a$ | 2.9661225 | $\Omega$ | 197.22662 | | −0.75197584 | | +0.54105185 | | | | |
| $e$ | 0.1055631 | $i$ | 1.38000 | | −0.30115487 | | +0.22616775 | | | | |
| $P$ | 5.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 691 | 0.5+ | 0.3+ | 2005 07 18 | 644 | 0.2− | 0.6+ | 2006 11 18 | G96 | 0.4− | 0.0 |
| 2004 05 13 | 691 | 0.3− | 0.8+ | 2005 07 18 | 644 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2004 05 13 | 691 | 0.5+ | 0.6+ | 2005 07 18 | 644 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2005 07 01 | 691 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2005 07 01 | 691 | 0.1− | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2005 07 01 | 691 | 0.1+ | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2005 07 05 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.6− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2005 07 05 | 644 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2005 07 05 | 644 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2005 07 09 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.7+ | | | | |

**2005 NA$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 69.14439 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22580772 | $\omega$ | 50.69787 | | +0.41885414 | | +0.88447939 | | | | |
| $a$ | 2.6708133 | $\Omega$ | 245.22105 | | −0.88715965 | | +0.35030955 | | | | |
| $e$ | 0.1019898 | $i$ | 13.08589 | | −0.19367232 | | +0.30818734 | | | | |
| $P$ | 4.36 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 22 | 644 | 0.1+ | 0.3+ | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 673 | 0.3+ | 0.0 |
| 2005 05 22 | 644 | 0.2− | 0.1+ | 2005 07 05 | 644 | 0.2− | 0.1+ | 2006 10 16 | 673 | 0.2+ | 0.1+ |
| 2005 05 22 | 644 | 0.1+ | 0.1− | 2005 07 05 | 644 | 0.6+ | 0.2− | 2006 10 18 | 673 | 0.0 | 0.1− |
| 2005 06 11 | 703 | 0.3+ | 0.2− | 2005 07 05 | 644 | 0.3+ | 0.1+ | 2006 10 18 | 673 | 0.4+ | 0.4− |
| 2005 06 11 | 703 | 0.5− | 0.0 | 2005 07 12 | G96 | 0.3− | 0.5− | 2006 10 18 | 673 | 0.4+ | 0.2+ |
| 2005 06 11 | 703 | (1.7− | 1.2+) | 2005 07 12 | G96 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.9− | 1.3+ |
| 2005 06 11 | 703 | 0.0 | 0.9− | 2005 07 12 | G96 | 0.4− | 0.4− | 2006 10 19 | 703 | 0.5− | 1.2− |
| 2005 07 04 | 691 | 0.1+ | 0.2+ | 2005 07 12 | G96 | 0.2− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.1− |
| 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 10 16 | 673 | 0.2+ | 0.3+ | | | | |

**2005 NO$_{23}$ = 2006 VN$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 291.97630 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.21512380 | $\omega$ | 220.71683 | | −0.35124998 | | −0.92613367 | | | | |
| $a$ | 2.7585259 | $\Omega$ | 250.25047 | | +0.89246344 | | −0.28678885 | | | | |
| $e$ | 0.0826063 | $i$ | 8.39917 | | +0.28307677 | | −0.24500731 | | | | |
| $P$ | 4.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | 691 | 0.1+ | 0.1− | 2005 07 15 | 691 | 0.2− | 0.3+ | 2006 11 10 | H55 | 0.1− | 0.1+ |
| 2005 07 04 | 691 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 10 | H55 | 0.2+ | 0.4+ |
| 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 10 | H55 | 0.0 | 0.2− |
| 2005 07 08 | 691 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2005 07 08 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 11 03 | H55 | 0.0 | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2005 07 15 | 691 | 0.2+ | 0.2− | 2006 11 03 | H55 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2005 07 15 | 691 | 0.3− | 0.1− | 2006 11 03 | H55 | 0.2− | 0.0 | | | | |

**2005 NQ$_{26}$ = 2006 VO$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.07800 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25956661 | $\omega$ | 90.40296 | | −0.32174770 | +0.94667580 | |
| $a$ | 2.4339043 | $\Omega$ | 160.80230 | | −0.88778673 | −0.29545806 | |
| $e$ | 0.1456858 | $i$ | 2.93428 | | −0.32910961 | −0.12848914 | |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.1− | 0.1− | 2005 07 05 | G96 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 1993 03 23 | 691 | 0.1+ | 0.1− | 2005 07 05 | G96 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.4+ |
| 1993 03 23 | 691 | 0.1− | 0.0 | 2005 07 05 | G96 | 0.3+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2005 05 15 | G96 | 0.1− | 0.3− | 2005 07 05 | G96 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.4+ |
| 2005 05 15 | G96 | 0.1+ | 0.2− | 2005 07 08 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2005 05 15 | G96 | 0.4− | 0.1− | 2005 07 08 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 1.4− | 0.3− |
| 2005 05 15 | G96 | 0.0 | 0.5− | 2005 07 08 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.3− | 0.1− |
| 2005 06 28 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 1.5+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2005 06 28 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.5− | 2006 11 27 | 691 | 0.6+ | 0.2+ |
| 2005 06 28 | 691 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.5+ | 0.6− |

**2005 NM$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.86152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17133970 | $\omega$ | 81.96332 | | +0.97152428 | +0.22521202 | |
| $a$ | 3.2104363 | $\Omega$ | 264.99894 | | −0.23586898 | +0.88975160 | |
| $e$ | 0.1740511 | $i$ | 4.23818 | | −0.02250325 | +0.39701592 | |
| $P$ | 5.75 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 18 | G96 | 0.5− | 0.2+ | 2005 07 08 | 691 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2005 06 18 | G96 | 0.6− | 0.3+ | 2005 07 08 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2005 06 18 | G96 | 0.5+ | 0.1− | 2005 07 08 | 691 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2005 06 18 | G96 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2005 07 05 | G96 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2005 07 05 | G96 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.2− |
| 2005 07 05 | G96 | 0.3− | 0.2− | 2006 11 09 | 691 | 0.3− | 0.6− | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2005 07 05 | G96 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.4+ | 0.2+ | | | | |

**2005 NM$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.75938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20468029 | $\omega$ | 101.27218 | | +0.59107477 | +0.80642491 | |
| $a$ | 2.8515787 | $\Omega$ | 204.98666 | | −0.75535403 | +0.54572750 | |
| $e$ | 0.1542059 | $i$ | 2.38694 | | −0.28296803 | +0.22772872 | |
| $P$ | 4.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.3+ | 0.1+ | 2005 07 06 | 691 | 0.2+ | 0.1− | 2005 08 06 | 644 | 0.0 | 0.1+ |
| 1991 10 08 | 691 | 0.3− | 0.0 | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.2+ | 0.1+ |
| 1991 10 08 | 691 | 0.2− | 0.3+ | 2005 07 06 | 691 | 0.2+ | 0.1+ | 2005 08 25 | 644 | 0.1+ | 0.2− |
| 2004 04 20 | 691 | 0.2+ | 0.2+ | 2005 07 09 | 691 | 0.0 | 0.0 | 2005 08 25 | 644 | 0.3+ | 0.4− |
| 2004 04 20 | 691 | 0.1− | 0.1+ | 2005 07 09 | 691 | 0.0 | 0.1+ | 2005 08 25 | 644 | 0.1+ | 0.3− |
| 2004 04 20 | 691 | 0.2+ | 0.4+ | 2005 07 09 | 691 | 0.2− | 0.1− | 2005 10 26 | G96 | 0.3− | 0.3− |
| 2005 05 19 | G96 | 0.1− | 0.2− | 2005 07 18 | 644 | 0.2− | 0.1+ | 2005 10 26 | G96 | 0.2− | 0.1+ |
| 2005 05 19 | G96 | 0.3− | 0.8− | 2005 07 18 | 644 | 0.1− | 0.0 | 2005 10 26 | G96 | 0.2− | 0.0 |
| 2005 05 19 | G96 | 0.2− | 0.5− | 2005 07 18 | 644 | 0.1− | 0.0 | 2005 10 26 | G96 | 0.7− | 0.5+ |
| 2005 05 19 | G96 | 0.2− | 0.6− | 2005 07 28 | 644 | 0.4+ | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.2+ |
| 2005 07 05 | 644 | 0.5− | 0.3+ | 2005 07 28 | 644 | 0.3− | 0.3+ | 2006 10 20 | 695 | 0.2+ | 0.4+ |
| 2005 07 05 | 644 | 0.0 | 0.1+ | 2005 07 28 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 2005 07 05 | 644 | 0.1− | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.2+ | | | | |

**2005 NO$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.46347 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26963325 | $\omega$ | 198.87417 | | +0.96574363 | +0.25822144 | |
| $a$ | 2.3729418 | $\Omega$ | 146.12798 | | −0.23175535 | +0.90282304 | |
| $e$ | 0.1332941 | $i$ | 2.64383 | | −0.11674201 | +0.34384916 | |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2005 08 29 | 704 | 0.0 | 0.3+ | 2005 09 24 | 644 | 0.2− | 0.2− |
| 2004 03 16 | 691 | 0.1+ | 0.1+ | 2005 08 29 | 704 | 1.1− | 0.2− | 2005 09 24 | 644 | 0.1− | 0.2− |
| 2004 03 16 | 691 | 0.0 | 0.4+ | 2005 08 29 | 704 | 0.9− | 0.2+ | 2005 09 28 | 704 | 0.5− | 0.2+ |
| 2005 07 08 | 673 | 0.8+ | 0.5+ | 2005 08 29 | 704 | 0.1+ | 1.1− | 2005 09 28 | 704 | 0.3+ | 0.4+ |
| 2005 07 08 | 673 | 0.4+ | 0.2+ | 2005 08 29 | 691 | 0.0 | 0.0 | 2005 09 28 | 704 | 0.1− | 1.2+ |
| 2005 07 08 | 673 | 0.1+ | 0.3− | 2005 08 29 | 691 | 0.0 | 0.1+ | 2005 09 28 | 704 | 0.2− | 1.0− |
| 2005 07 09 | 673 | 0.3− | 0.1+ | 2005 08 29 | 699 | 0.3− | 0.3− | 2005 09 29 | 699 | 0.1− | 0.1− |
| 2005 07 09 | 673 | 0.2− | 0.0 | 2005 08 29 | 691 | 0.1− | 0.1+ | 2005 09 29 | 699 | 0.5+ | 0.5+ |
| 2005 07 09 | 673 | 0.2− | 0.2− | 2005 08 29 | 699 | 0.1+ | 0.0 | 2005 09 29 | 699 | 0.4+ | 0.9+ |
| 2005 07 16 | 673 | 0.1+ | 0.1− | 2005 08 29 | 699 | 0.2− | 0.7+ | 2005 09 29 | 699 | 0.5− | 0.1+ |
| 2005 07 16 | 673 | 0.0 | 0.5− | 2005 08 29 | 699 | 0.7− | 0.2+ | 2005 10 01 | 704 | 0.1+ | 0.3+ |
| 2005 07 16 | 673 | 0.4− | 0.7− | 2005 09 05 | A50 | 0.2+ | 0.0 | 2005 10 01 | 704 | 0.9+ | 0.4+ |
| 2005 07 16 | 673 | 0.4− | 0.7− | 2005 09 05 | A50 | 0.1+ | 0.1+ | 2005 10 01 | 704 | 0.3− | 0.0 |
| 2005 08 25 | 644 | 0.0 | 0.2− | 2005 09 08 | 704 | 1.0+ | 0.8+ | 2005 10 01 | 704 | 0.4− | 0.0 |
| 2005 08 25 | 644 | 0.1+ | 0.0 | 2005 09 08 | 704 | 1.4− | 1.4+ | 2005 10 01 | 704 | 0.7− | 0.3+ |
| 2005 08 25 | 644 | 0.2− | 0.1+ | 2005 09 08 | 704 | 1.0+ | 0.6− | 2005 10 06 | G96 | 0.1+ | 0.6− |
| 2005 08 26 | 699 | 0.3+ | 0.5+ | 2005 09 08 | 704 | 0.2− | 0.1− | 2005 10 06 | G96 | 0.1+ | 0.4− |
| 2005 08 26 | 699 | 0.3+ | 0.1+ | 2005 09 12 | 691 | 0.3+ | 0.2+ | 2005 10 06 | G96 | 0.2− | 0.6− |
| 2005 08 26 | 699 | 0.0 | 0.0 | 2005 09 12 | 691 | 0.3+ | 0.4+ | 2005 10 06 | G96 | 0.6− | 0.5− |
| 2005 08 26 | 699 | 0.0 | 1.7− | 2005 09 12 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.4+ |
| 2005 08 26 | 699 | 0.1+ | 0.4+ | 2005 09 23 | 703 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.7+ |
| 2005 08 26 | 699 | 0.5− | 1.1− | 2005 09 23 | 703 | 0.6+ | 0.7+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2005 08 26 | 699 | 0.0 | 0.2− | 2005 09 23 | 703 | 0.6+ | 0.8− | 2006 11 21 | G96 | 0.4+ | 0.4+ |
| 2005 08 26 | 699 | 0.6+ | 0.7+ | 2005 09 23 | 703 | 0.6− | 0.3− | | | | |
| 2005 08 29 | 704 | 0.4− | 0.1+ | 2005 09 24 | 644 | 0.1+ | 0.2+ | | | | |

**2005 NN$_{30}$ = 2006 UW$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.51751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18190803 | $\omega$ | 244.24279 | | +0.99394264 | +0.09802614 | |
| $a$ | 3.0848553 | $\Omega$ | 110.09878 | | −0.07190403 | +0.92196554 | |
| $e$ | 0.0955665 | $i$ | 3.03295 | | −0.08311346 | +0.37466041 | |
| $P$ | 5.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.2+ | 0.0 | 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2005 06 13 | G96 | 0.2+ | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2005 06 13 | G96 | 0.1+ | 0.4+ | 2005 07 09 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2005 06 13 | G96 | 0.4− | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2005 07 04 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | | | | |
| 2005 07 04 | 691 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.4− | 0.1− | | | | |

**2005 NV$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.76535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22583886 | $\omega$ | 311.02353 | | −0.13650922 | −0.97390039 | |
| $a$ | 2.6705678 | $\Omega$ | 145.52263 | | +0.97756466 | −0.16207289 | |
| $e$ | 0.1375225 | $i$ | 18.68340 | | +0.16041373 | +0.15890375 | |
| $P$ | 4.36 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 691 | 0.0 | 0.1− | 2006 09 21 | 703 | 0.4− | 0.7+ | 2006 10 03 | 703 | 0.2− | 1.0− |
| 2005 07 05 | 691 | 0.3− | 0.1− | 2006 09 21 | 703 | 0.0 | 0.0 | 2006 10 03 | 703 | 0.3+ | 0.1− |
| 2005 07 05 | 691 | 0.2+ | 0.2− | 2006 09 21 | 703 | 0.7− | 0.4+ | 2006 10 03 | 703 | 0.4+ | 0.6− |
| 2005 07 09 | 691 | 0.0 | 0.0 | 2006 09 21 | 703 | 0.3+ | 1.5+ | 2006 11 24 | 703 | 0.3− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 09 | 691 | 0.0 | 0.2− | 2006 09 28 | 703 | 1.1+ | 0.8− | 2006 11 24 | 703 | 0.0 | 0.1+ | | |
| 2005 07 09 | 691 | 0.3− | 0.1− | 2006 09 28 | 703 | (2.0+ | 0.9−) | 2006 11 24 | 703 | 0.8− | 0.1+ | | |
| 2005 07 15 | 691 | 0.7+ | 0.5+ | 2006 09 28 | 703 | 0.7+ | 0.3− | 2006 11 24 | 703 | 0.4+ | 0.0 | | |
| 2005 07 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.6− | 0.0 | | | | | | |
| 2005 07 15 | 691 | 0.2− | 0.0 | 2006 10 03 | 703 | 0.1+ | 0.2− | | | | | | |

**2005 NY$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.26358 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23200240 | $\omega$ | 306.44818 | | −0.77525587 | | +0.58141297 |
| $a$ | 2.6230570 | $\Omega$ | 270.40734 | | −0.47115458 | | −0.79258132 |
| $e$ | 0.0237816 | $i$ | 14.29184 | | −0.42070380 | | −0.18377656 |
| $P$ | 4.25 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.2+ | 0.2− | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 10 29 | 703 | (0.4− | 3.2+) | | |
| 2001 08 14 | 644 | 0.0 | 0.1+ | 2005 07 09 | 691 | 0.4+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.1− | | |
| 2001 08 14 | 644 | 0.2− | 0.0 | 2005 07 09 | 691 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.4− | | |
| 2005 06 27 | 644 | 0.2− | 0.6+ | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.0 | 0.1− | | |
| 2005 06 27 | 644 | 0.6− | 0.3+ | 2005 10 28 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.3− | | |
| 2005 06 27 | 644 | 0.8− | 0.3− | 2005 10 28 | G96 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.7+ | 0.6+ | | |
| 2005 07 05 | 691 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.5+ | | |
| 2005 07 05 | 691 | 0.1− | 0.1− | 2005 10 28 | G96 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.9− | | |
| 2005 07 05 | 691 | 0.0 | 0.1+ | 2006 10 29 | 703 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 1.0− | 0.1− | | |
| 2005 07 05 | 644 | 0.3− | 0.1− | 2006 10 29 | 703 | (2.6+ | 0.9+) | | | | | | |
| 2005 07 05 | 644 | 0.2− | 0.1+ | 2006 10 29 | 703 | (1.4− | 3.2+) | | | | | | |

**2005 NW$_{32}$ = 2006 SR$_{312}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.50031 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18109125 | $\omega$ | 122.35571 | | +0.35586106 | | +0.93403294 |
| $a$ | 3.0941242 | $\Omega$ | 168.36843 | | −0.90048050 | | +0.35150756 |
| $e$ | 0.0460854 | $i$ | 8.77190 | | −0.24999556 | | +0.06344213 |
| $P$ | 5.44 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 691 | 0.2− | 0.1− | 2005 07 09 | 691 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.1+ | | |
| 2000 09 19 | 691 | 0.1+ | 0.1− | 2005 07 15 | 691 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.2+ | | |
| 2000 09 19 | 691 | 0.2+ | 0.2− | 2005 07 15 | 691 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.3+ | | |
| 2005 07 05 | 644 | 0.1− | 0.1− | 2005 07 15 | 691 | 0.2− | 0.2− | 2006 10 03 | G96 | 0.4+ | 0.2+ | | |
| 2005 07 05 | 644 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.4+ | 0.1− | | |
| 2005 07 05 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.1− | | |
| 2005 07 09 | 691 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.6− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2005 07 09 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.5− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.4− | | |

**2005 NK$_{33}$ = 1995 BZ$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.77572 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23049071 | $\omega$ | 104.52706 | | −0.63697037 | | +0.76716478 |
| $a$ | 2.6345135 | $\Omega$ | 125.65210 | | −0.73828429 | | −0.57883603 |
| $e$ | 0.0102964 | $i$ | 5.34383 | | −0.22182211 | | −0.27641827 |
| $P$ | 4.28 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 28 | 691 | 0.7− | 0.2− | 2005 07 05 | 691 | 0.6− | 0.2+ | 2006 11 19 | 703 | 0.2+ | 0.5+ | | |
| 1995 01 28 | 691 | 0.3+ | 0.4− | 2005 07 05 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.5+ | | |
| 1995 01 28 | 691 | 0.4− | 0.4− | 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.9− | 0.1+ | | |
| 1995 02 06 | 691 | 0.4+ | 0.0 | 2005 07 09 | 691 | 0.1+ | 0.1− | 2006 11 19 | 703 | 1.0− | 0.8− | | |
| 1995 02 06 | 691 | 0.3+ | 0.3− | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.7+ | | |
| 1995 02 06 | 691 | 0.2− | 0.1− | 2005 07 09 | 691 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.5+ | 1.8+ | | |
| 2004 03 18 | 691 | 0.2+ | 0.7+ | 2005 07 16 | 691 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.3− | 1.0+ | | |
| 2004 03 18 | 691 | 0.3+ | 0.4+ | 2005 07 16 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.3+ | 1.1+ | | |
| 2004 03 18 | 691 | 0.1+ | 0.5+ | 2005 07 16 | 691 | 0.0 | 0.2− | | | | | | |

**2005 NP$_{33}$ = 2006 WB$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.53461 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22058463 | $\omega$ | 285.16399 | | +0.75586405 | | −0.65244612 |
| $a$ | 2.7128090 | $\Omega$ | 115.59505 | | +0.62155546 | | +0.68884622 |
| $e$ | 0.0806148 | $i$ | 3.47228 | | +0.20576286 | | +0.31591921 |
| $P$ | 4.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 291 | 0.1− | 0.5+ | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2003 01 04 | 291 | 0.4− | 0.4+ | 2005 07 09 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.5− | | |
| 2003 01 04 | 291 | 0.8− | 0.3+ | 2005 07 12 | G96 | 0.7+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5− | | |
| 2003 01 11 | 291 | 0.4+ | 0.2− | 2005 07 12 | G96 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.7+ | 1.1+ | | |
| 2003 01 11 | 291 | 0.4+ | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.1+ | | |
| 2003 01 11 | 291 | 0.4+ | 0.2+ | 2005 07 12 | G96 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.3+ | 0.8+ | | |
| 2003 02 10 | 291 | 0.4+ | 0.3+ | 2005 07 16 | 691 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.0 | 0.3− | | |
| 2003 02 10 | 291 | 0.1+ | 0.4+ | 2005 07 16 | 691 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.2− | | |
| 2003 02 10 | 291 | 0.0 | 0.3+ | 2005 07 16 | 691 | 0.3− | 0.5+ | 2006 11 24 | 691 | 0.3+ | 0.2− | | |
| 2005 07 05 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.3+ | 0.4+ | | |
| 2005 07 05 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 29 | 704 | (1.3+ | 1.7+) | | |
| 2005 07 05 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 11 29 | 704 | 1.1+ | 0.4+ | | |
| 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5− | 2006 11 29 | 704 | (1.8− | 0.6+) | | |

**2005 NG$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 179.26372 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29185845 | $\omega$ | 128.18302 | | −0.51775355 | | +0.85341683 |
| $a$ | 2.2508914 | $\Omega$ | 110.53364 | | −0.80363133 | | −0.46105272 |
| $e$ | 0.1211095 | $i$ | 3.67910 | | −0.29344156 | | −0.24312572 |
| $P$ | 3.38 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 608 | 0.4+ | 1.0+ | 2005 07 09 | 691 | 0.1+ | 0.3+ | 2005 07 18 | 644 | 0.2+ | 0.2+ | | |
| 2001 03 20 | 608 | 0.2+ | 1.0+ | 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.3+ | | |
| 2001 03 20 | 608 | 0.5+ | 0.6+ | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.3+ | | |
| 2004 02 16 | 691 | 0.2− | 0.4+ | 2005 07 12 | G96 | 0.3− | 0.2+ | 2006 11 18 | 691 | 0.3+ | 0.1+ | | |
| 2004 02 16 | 691 | 0.3+ | 0.1+ | 2005 07 12 | G96 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.3− | 0.0 | | |
| 2004 02 16 | 691 | 0.1+ | 0.4+ | 2005 07 12 | G96 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2005 07 05 | 691 | 0.2− | 0.2+ | 2005 07 12 | G96 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.3+ | | |
| 2005 07 05 | 691 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.2+ | 0.2+ | | | | | | |
| 2005 07 05 | 691 | 0.2− | 0.3+ | 2005 07 18 | 644 | 0.1+ | 0.3+ | | | | | | |

**2005 NN$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.28941 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21028211 | $\omega$ | 256.77984 | | −0.72940711 | | +0.68298230 |
| $a$ | 2.8007080 | $\Omega$ | 326.27303 | | −0.59751505 | | −0.66365467 |
| $e$ | 0.1033005 | $i$ | 4.00044 | | −0.33307812 | | −0.30511908 |
| $P$ | 4.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.7+ | 1.3+ | 2005 07 05 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | | |
| 2004 03 20 | 704 | (1.6+ | 1.4+) | 2005 07 05 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.3+ | | |
| 2004 03 20 | 704 | 0.8+ | 0.6+ | 2005 07 05 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.0 | | |
| 2004 03 20 | 704 | (1.7+ | 1.4+) | 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2004 03 27 | 704 | (2.3+ | 1.0+) | 2005 07 09 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.4+ | | |
| 2004 03 27 | 704 | 0.1− | 0.6+ | 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.3+ | | |
| 2004 03 27 | 704 | 0.7+ | 0.3+ | 2005 07 16 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.7− | 0.8− | | |
| 2004 03 27 | 704 | 0.3+ | 1.0+ | 2005 07 16 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.3− | 0.9+ | | |
| 2004 04 12 | 691 | 0.6+ | 0.7+ | 2005 07 16 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2004 04 12 | 691 | 0.6− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.4+ | | | | | | |

**2005 NE$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.42006 | | | (2000.0) | | |
| $n$ | 0.18066989 | $\omega$ | 259.94575 | | +0.99670287 | +0.06270533 |
| $a$ | 3.0989331 | $\Omega$ | 96.44576 | | −0.03758503 | +0.91923748 |
| $e$ | 0.1841452 | $i$ | 2.97037 | | −0.07190790 | +0.38867788 |
| $P$ | 5.46 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.3− | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2005 07 05 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.6− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2005 07 09 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2005 07 09 | 691 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.6+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2005 07 09 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.6− | 0.2− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2005 07 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.4+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2005 07 16 | 691 | 0.4+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2005 07 16 | 691 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | | | |

**2005 NP$_{35}$ = 2006 TF$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.42013 | | | (2000.0) | | |
| $n$ | 0.18085689 | $\omega$ | 332.61531 | | +0.51795454 | +0.85515206 |
| $a$ | 3.0967966 | $\Omega$ | 328.56690 | | −0.77729593 | +0.46030144 |
| $e$ | 0.0760816 | $i$ | 2.30010 | | −0.35711921 | +0.23840625 |
| $P$ | 5.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2005 07 05 | 691 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.3− |
| 2005 07 05 | 691 | 0.5+ | 0.9− | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.3− | 2006 11 09 | 691 | 0.2+ | 0.1− |
| 2005 07 09 | 691 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 09 | 691 | 0.6+ | 0.2+ |
| 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.3+ | 2006 11 09 | 691 | 0.4+ | 0.2+ |
| 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2005 07 12 | G96 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.4− |
| 2005 07 12 | G96 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.2− | 0.6+ | 2006 11 11 | 691 | 0.5− | 0.2− |
| 2005 07 12 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 | | | | |
| 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ | | | | |

**2005 NR$_{35}$ = 2006 VH$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.90629 | | | (2000.0) | | |
| $n$ | 0.17337754 | $\omega$ | 337.53644 | | +0.99822949 | −0.05926114 |
| $a$ | 3.1852302 | $\Omega$ | 25.86255 | | +0.05619483 | +0.91151826 |
| $e$ | 0.1895319 | $i$ | 0.66988 | | +0.01949443 | +0.40696754 |
| $P$ | 5.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 19 | 691 | 0.1− | 0.1+ | 2005 07 16 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2000 10 19 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2000 10 19 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2005 07 05 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2005 07 05 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2005 07 05 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2005 07 09 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2005 07 09 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2005 07 12 | G96 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 19 | 691 | (2.5− | 4.1+) |
| 2005 07 12 | G96 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.1− | 0.6− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2005 07 12 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.6+ |
| 2005 07 16 | 691 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2005 07 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− | | | | |

**2005 NM$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.15986 | | | (2000.0) | | |
| $n$ | 0.18040994 | $\omega$ | 157.38646 | | +0.69295332 | +0.72040299 |
| $a$ | 3.1019091 | $\Omega$ | 156.44592 | | −0.67205772 | +0.65992587 |
| $e$ | 0.2921910 | $i$ | 4.14728 | | −0.26106343 | +0.21334804 |
| $P$ | 5.46 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.0 | 0.0 | 2005 09 05 | 703 | (1.6+ | 0.6+) | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2000 09 27 | 691 | 0.2− | 0.1+ | 2005 09 05 | 703 | 0.3− | 0.7− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2000 09 27 | 691 | 0.1+ | 0.1+ | 2005 09 05 | 703 | 0.4− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2005 07 06 | 691 | 0.1+ | 0.1+ | 2005 09 05 | 703 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2005 07 06 | 691 | 0.1+ | 0.2+ | 2005 09 17 | 644 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2005 07 06 | 691 | 0.1+ | 0.4+ | 2005 09 17 | 644 | 0.2− | 0.5− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2005 07 09 | 691 | 0.1+ | 0.1+ | 2005 09 17 | 644 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2005 07 09 | 691 | 0.0 | 0.2− | 2005 10 25 | G96 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2005 07 09 | 691 | 0.1− | 0.0 | 2005 10 25 | G96 | 0.5+ | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2005 07 28 | 644 | 0.1− | 0.4− | 2005 10 25 | G96 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.3+ | 0.2+ |
| 2005 07 28 | 644 | 0.1− | 0.2− | 2005 10 25 | G96 | 0.2+ | 0.2− | | | | |
| 2005 07 28 | 644 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.6+ | 0.2+ | | | | |

**2005 NZ$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.85450 | | | (2000.0) | | |
| $n$ | 0.17990482 | $\omega$ | 295.38778 | | +0.27357738 | −0.95363976 |
| $a$ | 3.1077126 | $\Omega$ | 138.09467 | | +0.93612273 | +0.23403374 |
| $e$ | 0.0760889 | $i$ | 10.82214 | | +0.22097432 | +0.18920735 |
| $P$ | 5.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 03 | 691 | 0.8+ | 0.3− | 2003 03 31 | 645 | 0.0 | 0.1+ | 2005 07 15 | G96 | 0.4− | 0.0 |
| 1997 01 03 | 691 | 0.2+ | 0.5+ | 2003 03 31 | 645 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.7+ |
| 1997 01 03 | 691 | (2.4+ | 2.2+) | 2004 06 13 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 1.0+ |
| 2000 09 05 | 645 | 0.1− | 0.1− | 2004 06 13 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.7+ |
| 2000 09 05 | 645 | 0.1− | 0.1− | 2004 06 13 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2001 12 11 | 704 | 0.4− | 0.2− | 2005 07 06 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.5+ | 0.8− | 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 1.2+ | 0.1− |
| 2001 12 11 | 704 | 0.2− | 1.1+ | 2005 07 06 | 691 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 1.1+ | 0.7− |
| 2001 12 11 | 704 | (2.6+ | 1.0−) | 2005 07 09 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 703 | 1.1− | 0.3+ |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 11 16 | 703 | 1.0− | 0.9+ |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2005 07 09 | 691 | 0.4+ | 0.1+ | 2006 11 16 | 703 | 0.2+ | 0.1− |
| 2003 03 25 | 644 | 0.3+ | 0.1− | 2005 07 15 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.1− | 1.1− |
| 2003 03 25 | 644 | 0.4+ | 0.2− | 2005 07 15 | G96 | 0.8− | 0.0 | | | | |
| 2003 03 25 | 644 | 0.2+ | 0.6− | 2005 07 15 | G96 | 0.3− | 0.1+ | | | | |

**2004 NN$_{39}$ = 2004 GX$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.13847 | | | (2000.0) | | |
| $n$ | 0.24577065 | $\omega$ | 331.24549 | | +0.99041032 | +0.13215269 |
| $a$ | 2.5241551 | $\Omega$ | 21.27419 | | −0.09565280 | +0.86631806 |
| $e$ | 0.2176087 | $i$ | 6.37502 | | −0.09968918 | +0.48169355 |
| $P$ | 4.01 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 691 | 0.6− | 0.3− | 2001 07 30 | 644 | 0.5+ | 0.4+ | 2005 06 07 | E12 | 0.7+ | 0.6+ |
| 2000 03 12 | 691 | 0.0 | 0.7− | 2001 09 10 | 644 | 0.4− | 0.5+ | 2005 07 05 | E12 | 0.2− | 0.2+ |
| 2000 03 12 | 691 | 0.5− | 0.5− | 2001 09 10 | 644 | 0.2− | 0.3+ | 2005 07 05 | E12 | 0.3+ | 1.4− |
| 2000 04 05 | 704 | 0.6+ | 0.3− | 2001 09 10 | 644 | 0.1+ | 0.2− | 2005 07 05 | E12 | 0.1− | 0.4+ |
| 2000 04 05 | 704 | 0.0 | 0.1+ | 2004 04 14 | 691 | 0.0 | 0.3+ | 2005 07 05 | E12 | 0.1− | 0.1+ |
| 2000 04 05 | 704 | 1.0+ | 0.9− | 2004 04 14 | 691 | 0.1+ | 0.5+ | 2005 07 07 | 428 | 0.9+ | 0.2− |
| 2000 04 05 | 704 | 1.2+ | 0.8+ | 2004 04 14 | 691 | 0.2+ | 0.0 | 2005 07 07 | 428 | 0.7− | 0.0 |
| 2000 04 05 | 704 | 0.2+ | 0.5− | 2004 04 19 | 691 | 0.1+ | 0.2+ | 2005 07 09 | 428 | 0.3+ | 0.0 |
| 2001 06 30 | 644 | 0.6− | 0.4− | 2004 04 19 | 691 | 0.3+ | 0.4+ | 2005 07 09 | 428 | 0.4− | 0.4− |
| 2001 06 30 | 644 | 0.6− | 0.7− | 2004 04 19 | 691 | 0.3− | 0.2+ | 2005 09 01 | 644 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 0.3− | 0.7− | 2005 06 07 | E12 | 0.2+ | 0.0 | 2005 09 01 | 644 | 0.0 | 0.2+ |
| 2001 07 30 | 644 | 0.4+ | 0.4− | 2005 06 07 | E12 | 0.3− | 0.7+ | 2005 09 01 | 644 | 0.1− | 0.5+ |
| 2001 07 30 | 644 | 0.5+ | 0.1− | 2005 06 07 | E12 | 0.2+ | 0.3+ | | | | |

**2005 NR$_{39}$ = 2006 US$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.30700 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22083134 | $\omega$ | 172.88838 | | +0.01627273 | +0.95949489 | |
| $a$ | 2.7107881 | $\Omega$ | 97.75490 | | −0.93077235 | +0.11728873 | |
| $e$ | 0.1137690 | $i$ | 16.49022 | | −0.36523695 | −0.25615016 | |
| $P$ | 4.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 07 | 428 | 0.6+ | 0.5+ | 2005 07 16 | E12 | 0.5+ | 0.3+ | 2006 10 29 | G96 | 0.2+ | 0.3− |
| 2005 07 07 | 428 | 0.2− | 0.3+ | 2005 07 16 | 428 | 0.7+ | 0.2− | 2006 10 29 | G96 | 0.3+ | 0.0 |
| 2005 07 09 | 428 | 0.1− | 0.0 | 2005 07 17 | E12 | 1.0− | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.1+ |
| 2005 07 09 | 428 | 0.2− | 0.8− | 2005 07 17 | E12 | 0.5+ | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.1+ |
| 2005 07 14 | 428 | 0.3− | 0.6− | 2005 07 17 | E12 | 0.4− | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.1+ |
| 2005 07 14 | 428 | 0.8− | 0.3− | 2005 07 17 | E12 | 0.3+ | 0.3− | 2006 10 30 | G96 | 0.2− | 0.1− |
| 2005 07 16 | E12 | 0.5+ | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.0 | 2006 10 30 | G96 | 0.1− | 0.0 |
| 2005 07 16 | E12 | 0.0 | 0.5+ | 2006 10 29 | G96 | 0.5− | 0.1− | 2006 10 30 | G96 | 0.1+ | 0.1+ |
| 2005 07 16 | E12 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.1+ | 2006 10 30 | G96 | 0.3− | 0.0 |

**2005 NV$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.10682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24085081 | $\omega$ | 128.94520 | | +0.38603376 | −0.83677184 | |
| $a$ | 2.5584129 | $\Omega$ | 294.08838 | | +0.65847227 | +0.54475848 | |
| $e$ | 0.2705939 | $i$ | 25.17342 | | +0.64605898 | −0.05523671 | |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.1− | 0.1− | 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2001 08 16 | 644 | 0.3+ | 0.1− | 2005 07 29 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2001 08 16 | 644 | 0.1+ | 0.1− | 2005 07 29 | 644 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2005 07 05 | 644 | 0.1+ | 0.3− | 2005 07 29 | 644 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2005 07 05 | 644 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2005 07 05 | 644 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2005 07 10 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2005 07 10 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.5− | 0.1− | | | | |

**2005 NA$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.67691 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22926482 | $\omega$ | 114.36521 | | +0.79427088 | +0.59570642 | |
| $a$ | 2.6438964 | $\Omega$ | 209.50334 | | −0.60715007 | +0.77098526 | |
| $e$ | 0.1492918 | $i$ | 14.03679 | | −0.02241779 | +0.22520123 | |
| $P$ | 4.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 09 | 703 | 0.0 | 0.3+ | 2006 10 15 | D35 | 0.1− | 0.5+ | 2006 11 02 | 703 | (2.0− | 0.6−) |
| 2005 06 09 | 703 | 0.6− | 0.5+ | 2006 10 15 | D35 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2005 06 09 | 703 | 1.1− | 0.1+ | 2006 10 15 | D35 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2005 06 09 | 703 | 1.1− | 0.4− | 2006 10 16 | 703 | 0.8− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2005 07 03 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2005 07 03 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.0 | 1.1+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2005 07 03 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2005 07 04 | 644 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2005 07 04 | 644 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2005 07 04 | 644 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2005 07 11 | 691 | 0.2+ | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.9− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2005 07 11 | 691 | 0.3+ | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.4− | 2006 11 23 | G96 | 0.5− | 0.3− |
| 2005 07 11 | 691 | 0.4+ | 0.0 | 2006 11 02 | 703 | 0.5− | 0.7− | | | | |

**2005 NZ$_{42}$ = 2006 UG$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.72382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17958851 | $\omega$ | 94.85532 | | +0.54279536 | +0.83951731 | |
| $a$ | 3.1113606 | $\Omega$ | 208.06104 | | −0.78948824 | +0.50021170 | |
| $e$ | 0.1658843 | $i$ | 2.94442 | | −0.28649871 | +0.21212956 | |
| $P$ | 5.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 691 | 0.0 | 0.1− | 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2000 09 25 | 691 | 0.2+ | 0.3− | 2005 07 10 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.8+ |
| 2000 09 25 | 691 | 0.0 | 0.2− | 2005 07 11 | G96 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2004 04 20 | 691 | 0.2− | 0.2+ | 2005 07 11 | G96 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2004 04 20 | 691 | 0.4+ | 0.3+ | 2005 07 11 | G96 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2004 04 20 | 691 | 0.1+ | 0.3+ | 2005 07 11 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2005 07 05 | 644 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2005 07 05 | 644 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.5+ |
| 2005 07 10 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2+ | | | | |

**2005 NZ$_{45}$ = 1995 UE$_{29}$ = 2006 TB$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.49675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18512022 | $\omega$ | 152.98559 | | +0.64073084 | +0.76760887 | |
| $a$ | 3.0490659 | $\Omega$ | 156.85037 | | −0.71134827 | +0.60112907 | |
| $e$ | 0.0326872 | $i$ | 2.26135 | | −0.28887303 | +0.22230717 | |
| $P$ | 5.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1− | 0.1− | 2005 07 05 | G96 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.5+ |
| 1995 10 20 | 691 | 0.1− | 0.4− | 2005 07 05 | G96 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.4− | 0.4+ |
| 1995 10 20 | 691 | 0.1+ | 0.4− | 2005 07 05 | G96 | 0.4− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.3+ |
| 1995 10 26 | 691 | 0.3+ | 0.1− | 2005 07 11 | 691 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.5+ | 0.0 |
| 1995 10 26 | 691 | 0.3+ | 0.1− | 2005 07 11 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.3+ |
| 1995 10 26 | 691 | 0.1+ | 0.3− | 2005 07 11 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2003 01 04 | 291 | 0.7+ | 0.4+ | 2005 07 15 | G96 | 0.6− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2003 01 04 | 291 | 0.0 | 0.5+ | 2005 07 15 | G96 | 0.4− | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.0 |
| 2003 01 04 | 291 | 0.5− | 0.3+ | 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2003 01 26 | 291 | 0.3− | 0.3− | 2005 07 15 | G96 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.4− |
| 2003 01 26 | 291 | 0.5− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2003 01 26 | 291 | 1.4+ | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.5− |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.2− | 0.5− | 2006 10 31 | 691 | 0.5+ | 0.0 |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2005 07 05 | G96 | 0.2− | 0.4+ | 2006 10 11 | 691 | 0.3− | 0.9+ | | | | |

**2005 NN$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.71017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21422946 | $\omega$ | 195.91493 | | +0.55377825 | +0.82750316 | |
| $a$ | 2.7661980 | $\Omega$ | 107.79681 | | −0.75295901 | +0.54512718 | |
| $e$ | 0.1913382 | $i$ | 5.57891 | | −0.35550301 | +0.13444284 | |
| $P$ | 4.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.3− | 0.0 | 2005 07 07 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2005 06 13 | G96 | 0.3+ | 0.1− | 2005 07 11 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.5− |
| 2005 06 13 | G96 | 0.2− | 0.1− | 2005 07 11 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2005 06 13 | G96 | 0.2+ | 0.1− | 2005 07 11 | 691 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.9+ |
| 2005 07 07 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.7− |

**2005 NT$_{47}$ = 2006 UL$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.70432 | | (2000.0) | | | |
| $n$ | 0.12445065 | $\omega$ | 312.29835 | | +0.86808762 | +0.49615262 |
| $a$ | 3.9731773 | $\Omega$ | 17.97434 | | −0.43881608 | +0.78205313 |
| $e$ | 0.2416654 | $i$ | 2.97473 | | −0.23208691 | +0.37712793 |
| $P$ | 7.92 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 02 | 691 | 0.6+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.4+ | 0.2− |
| 2005 07 02 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2005 07 02 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.5− |
| 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 17 | 691 | 0.0 | 0.2+ |
| 2005 07 07 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2005 07 07 | 691 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2005 07 11 | 691 | 0.3+ | 0.3+ | 2006 10 29 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.4− | 0.1− |
| 2005 07 11 | 691 | 0.5+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2005 07 11 | 691 | 1.4− | 0.7− | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2− |

**2005 NL$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 32.80703 | | (2000.0) | | | |
| $n$ | 0.19074024 | $\omega$ | 223.29696 | | +0.75279144 | +0.61655207 |
| $a$ | 2.9888756 | $\Omega$ | 97.18477 | | −0.52257275 | +0.77276233 |
| $e$ | 0.1260000 | $i$ | 13.43888 | | −0.40027836 | +0.15067162 |
| $P$ | 5.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 11 | 691 | 0.0 | 0.0 | 2005 07 05 | 644 | 0.2− | 0.0 | 2006 09 22 | 703 | 0.1+ | 0.2+ |
| 2005 06 11 | 691 | 0.2+ | 0.0 | 2005 07 05 | 644 | 0.1− | 0.0 | 2006 09 22 | 703 | 0.5− | 0.2+ |
| 2005 06 11 | 691 | 0.0 | 0.1+ | 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 09 22 | 703 | 1.2− | 0.3− |
| 2005 07 03 | 705 | 0.2+ | 0.2+ | 2005 07 12 | G96 | 0.8− | 0.3+ | 2006 09 27 | 703 | 0.3+ | 0.5− |
| 2005 07 03 | 705 | 0.3+ | 0.4− | 2005 07 12 | G96 | 0.0 | 0.0 | 2006 09 27 | 703 | 1.6+ | 2.0+ |
| 2005 07 03 | 705 | 0.2− | 0.2− | 2005 07 12 | G96 | 0.3− | 0.3− | 2006 09 27 | 703 | 1.0+ | 1.0− |
| 2005 07 05 | 644 | 0.2+ | 0.0 | 2006 09 22 | 703 | 0.7− | 1.9− | 2006 09 27 | 703 | 0.6− | 1.4+ |

**2005 NT$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.14839 | | (2000.0) | | | |
| $n$ | 0.18631856 | $\omega$ | 144.08588 | | +0.97189465 | −0.22960394 |
| $a$ | 3.0359781 | $\Omega$ | 229.27301 | | +0.19680474 | +0.91361539 |
| $e$ | 0.1898465 | $i$ | 3.93372 | | +0.12918472 | +0.33554276 |
| $P$ | 5.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 691 | 0.4+ | 0.1− | 2006 10 29 | G96 | 0.4+ | 0.5− | 2006 11 23 | H07 | 1.0− | 0.3− |
| 1998 03 24 | 691 | 0.1− | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.4− | 2006 11 23 | H07 | 1.4− | 0.4− |
| 1998 03 24 | 691 | 0.1+ | 0.7+ | 2006 10 29 | G96 | 0.3− | 0.2− | 2006 11 23 | H07 | 0.3+ | 0.8+ |
| 2000 10 03 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 23 | H07 | 0.3− | 0.1− |
| 2000 10 03 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 24 | H07 | 0.1+ | 0.6+ |
| 2000 10 03 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 24 | H07 | 0.3− | 0.1+ |
| 2005 06 28 | 691 | 0.3− | 0.3+ | 2006 11 15 | 703 | 0.7− | 0.9− | 2006 11 24 | H07 | 0.2− | 0.0 |
| 2005 06 28 | 691 | 0.0 | 0.5+ | 2006 11 15 | 703 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2005 06 28 | 691 | 0.1− | 0.0 | 2006 11 15 | 703 | 1.5− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2005 07 08 | 691 | 0.1− | 0.0 | 2006 11 15 | 703 | 1.3− | 0.8− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2005 07 08 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2005 07 08 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 11 25 | H07 | 0.2− | 0.6+ |
| 2005 07 11 | G96 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.1+ | 2006 11 25 | H07 | 0.1+ | 0.5+ |
| 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1− | 2006 11 25 | H07 | 0.1+ | 0.5+ |
| 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2005 07 11 | G96 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 07 12 | G96 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2005 07 12 | G96 | 0.5+ | 0.3+ | 2006 11 21 | 704 | 0.2− | 0.7+ | 2006 12 01 | 691 | 0.4+ | 0.2+ |
| 2005 07 12 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2005 07 12 | G96 | 0.0 | 0.3+ | 2006 11 22 | H07 | 0.3+ | 0.2− | 2006 12 01 | 704 | 0.0 | 1.0+ |
| 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 22 | H07 | 0.2+ | 1.3− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2006 09 27 | G96 | 0.0 | 0.6− | 2006 11 22 | H07 | 0.1+ | 0.3+ | 2006 12 01 | 704 | 0.6− | 0.7+ |
| 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 0.7+ | 0.8+ |
| 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.2− | 0.2+ | | | | |
| 2006 10 29 | G96 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ | | | | |

**2005 NX$_{53}$ = 2004 DA$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.48230 | | (2000.0) | | | |
| $n$ | 0.28398149 | $\omega$ | 340.83733 | | +0.36692238 | +0.85016843 |
| $a$ | 2.2923241 | $\Omega$ | 308.73067 | | −0.77774567 | +0.05766117 |
| $e$ | 0.1644323 | $i$ | 28.94979 | | −0.51037206 | +0.52334389 |
| $P$ | 3.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 699 | 0.8− | 0.4+ | 2005 07 10 | 703 | 0.7− | 0.1− | 2005 07 18 | 644 | 0.1+ | 0.0 |
| 2004 02 13 | 699 | 0.3+ | 0.3+ | 2005 07 10 | 703 | 0.7− | 0.2+ | 2005 07 18 | 644 | 0.0 | 0.1− |
| 2004 02 13 | 699 | 1.3− | 1.7− | 2005 07 10 | 703 | 0.5− | 0.1+ | 2005 07 18 | 644 | 0.2+ | 0.0 |
| 2004 02 13 | 699 | 0.3− | 0.5+ | 2005 07 10 | 703 | 1.0− | 0.0 | 2005 07 30 | 599 | 0.5+ | 0.5+ |
| 2004 02 19 | 704 | 1.4+ | 0.0 | 2005 07 11 | 699 | 1.4− | 0.2− | 2005 07 30 | 599 | 0.3+ | 0.3+ |
| 2004 02 19 | 704 | 0.4− | 0.8+ | 2005 07 11 | 699 | 0.3− | 0.0 | 2005 07 30 | 599 | 1.5+ | 1.0− |
| 2004 02 19 | 704 | 0.7+ | 0.5− | 2005 07 11 | 699 | 0.2− | 0.0 | 2005 08 06 | 644 | 0.3− | 0.0 |
| 2004 02 19 | 704 | 0.1+ | 0.2− | 2005 07 11 | 699 | 0.0 | 0.6+ | 2005 08 06 | 644 | 0.4− | 0.0 |
| 2005 06 20 | 644 | 0.5+ | 0.3− | 2005 07 12 | G96 | 0.2+ | 0.3− | 2005 08 06 | 644 | 0.2− | 0.1+ |
| 2005 06 20 | 644 | 0.8+ | 0.2− | 2005 07 12 | G96 | 0.4+ | 0.3− | 2005 08 13 | 608 | 1.2+ | 0.7+ |
| 2005 06 20 | 644 | 0.5+ | 0.0 | 2005 07 12 | G96 | 0.5+ | 0.1− | 2005 08 13 | 608 | 0.7+ | 0.0 |
| 2005 06 29 | 703 | 0.3+ | 0.5+ | 2005 07 12 | G96 | 0.2+ | 0.3− | 2005 08 13 | 608 | 0.3+ | 0.3− |
| 2005 06 29 | 703 | 0.2+ | 0.7+ | 2005 07 18 | 644 | 0.1+ | 0.1− | 2005 09 02 | 644 | 0.4− | 0.0 |
| 2005 06 29 | 703 | 1.4− | 0.3− | 2005 07 18 | 644 | 0.1+ | 0.0 | 2005 09 02 | 644 | 0.5− | 0.0 |
| 2005 06 29 | 703 | 0.0 | 0.3− | 2005 07 18 | 644 | 0.0 | 0.1− | 2005 09 02 | 644 | 0.4− | 0.0 |

**2005 NA$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 81.08400 | | (2000.0) | | | |
| $n$ | 0.25815519 | $\omega$ | 182.14940 | | +0.98556742 | +0.16898612 |
| $a$ | 2.4427675 | $\Omega$ | 168.10755 | | −0.15457950 | +0.92252769 |
| $e$ | 0.2102997 | $i$ | 2.78902 | | −0.06900749 | +0.34696736 |
| $P$ | 3.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.2− | 0.1+ | 2005 07 10 | 691 | 0.1+ | 0.1+ | 2005 07 27 | 644 | 0.1− | 0.1− |
| 1995 02 03 | 691 | 0.2+ | 0.8+ | 2005 07 11 | G96 | 0.0 | 0.1− | 2005 07 27 | 644 | 0.3− | 0.1− |
| 1995 02 03 | 691 | 0.2− | 0.0 | 2005 07 11 | G96 | 0.4+ | 0.4− | 2005 07 27 | 644 | 0.0 | 0.1− |
| 2004 04 14 | 691 | 0.4− | 0.1+ | 2005 07 11 | G96 | 0.2− | 0.1− | 2005 08 05 | 644 | 0.2+ | 0.2+ |
| 2004 04 14 | 691 | 0.2+ | 0.2+ | 2005 07 11 | G96 | 0.4+ | 0.2− | 2005 08 05 | 644 | 0.0 | 0.2+ |
| 2004 04 14 | 691 | 0.5+ | 0.4+ | 2005 07 15 | 691 | 0.1− | 0.0 | 2005 08 05 | 644 | 0.1+ | 0.1+ |
| 2005 07 01 | 691 | 0.1+ | 0.2+ | 2005 07 15 | 691 | 0.2− | 0.1+ | 2005 09 29 | G96 | 0.3− | 0.4+ |
| 2005 07 01 | 691 | 0.1− | 0.2− | 2005 07 15 | 691 | 0.2− | 0.2+ | 2005 09 29 | G96 | 0.2− | 0.4+ |
| 2005 07 01 | 691 | 0.0 | 0.0 | 2005 07 18 | 644 | 0.3+ | 0.0 | 2005 09 29 | G96 | 0.0 | 0.1+ |
| 2005 07 10 | 691 | 0.0 | 0.1− | 2005 07 18 | 644 | 0.1+ | 0.1+ | 2005 09 29 | G96 | 0.1+ | 0.2+ |
| 2005 07 10 | 691 | 0.1+ | 0.1+ | 2005 07 18 | 644 | 0.2+ | 0.3+ | | | | |

**2005 NB$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 93.89188 | | (2000.0) | | | |
| $n$ | 0.17232008 | $\omega$ | 128.16318 | | +0.17501902 | +0.98345595 |
| $a$ | 3.1982479 | $\Omega$ | 151.81064 | | −0.93143069 | +0.18076506 |
| $e$ | 0.1572652 | $i$ | 5.67590 | | −0.31906928 | +0.01176352 |
| $P$ | 5.72 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.1+ | 0.0 | 2005 07 11 | G96 | 0.0 | 0.2− | 2005 08 05 | 644 | 0.0 | 0.1− |
| 1998 03 02 | 691 | 0.0 | 0.0 | 2005 07 15 | 691 | 0.2− | 0.4+ | 2005 08 05 | 644 | 0.1− | 0.2− |
| 1998 03 02 | 691 | 0.0 | 0.3+ | 2005 07 15 | 691 | 0.0 | 0.2+ | 2005 08 05 | 644 | 0.0 | 0.1− |
| 2004 04 14 | 691 | 0.0 | 0.0 | 2005 07 15 | 691 | 0.2− | 0.2+ | 2005 08 05 | 644 | 0.2− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 691 | 0.0 | 0.0 | 2005 07 18 | 644 | 0.2− | 0.0 | 2005 09 29 | G96 | 0.1+ | 0.1+ |
| 2004 04 14 | 691 | 0.0 | 0.1− | 2005 07 18 | 644 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.0 | 0.4− |
| 2005 07 10 | 691 | 0.2+ | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.0 | 2005 09 29 | G96 | 0.1− | 0.2− |
| 2005 07 10 | 691 | 0.2+ | 0.1+ | 2005 07 18 | 644 | 0.0 | 0.0 | 2005 09 29 | G96 | 0.3− | 0.2− |
| 2005 07 10 | 691 | 0.2+ | 0.1+ | 2005 07 18 | 644 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.6+ |
| 2005 07 11 | G96 | 0.1+ | 0.5− | 2005 07 18 | 644 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.3+ |
| 2005 07 11 | G96 | 0.2− | 0.4− | 2005 08 05 | 644 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.3− | 0.5+ |
| 2005 07 11 | G96 | 0.1− | 0.1− | 2005 08 05 | 644 | 0.3+ | 0.5− | | | | |

**2005 NG$_{55}$ = 2006 UP$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.34116 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18163757 | $\omega$ | 253.02268 | | +0.78468104 | | −0.61035941 |
| $a$ | 3.0879168 | $\Omega$ | 144.37844 | | +0.61558815 | | +0.74665444 |
| $e$ | 0.1018221 | $i$ | 10.72004 | | +0.07298556 | | +0.26451567 |
| $P$ | 5.43 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 691 | 0.1− | 0.4+ | 2005 07 11 | G96 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2003 04 04 | 691 | 0.4+ | 0.5+ | 2005 07 11 | G96 | 0.4− | 0.4− | 2006 10 16 | 703 | 1.4− | 1.3+ |
| 2003 04 04 | 691 | 0.1+ | 0.7+ | 2005 07 11 | G96 | 0.5− | 0.4− | 2006 10 16 | 703 | 1.0− | 0.8+ |
| 2005 06 28 | 644 | 0.4+ | 0.0 | 2005 07 18 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 2005 06 28 | 644 | 1.1+ | 0.1− | 2005 07 18 | 644 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.7+ | 1.0− |
| 2005 06 28 | 644 | 0.3+ | 0.0 | 2005 07 18 | 644 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.7− | 0.3− |
| 2005 07 10 | 691 | 0.2− | 0.4+ | 2006 09 30 | 703 | 1.2+ | 1.2+ | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2005 07 10 | 691 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.1+ | 1.2+ | 2006 10 22 | 703 | 0.5+ | 0.5+ |
| 2005 07 10 | 691 | 0.3+ | 1.4+ | 2006 09 30 | 703 | 0.7+ | 0.2+ | | | | |
| 2005 07 11 | G96 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.2+ | 1.0− | | | | |

**2005 NK$_{55}$ = 2006 QF$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.92035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18083702 | $\omega$ | 306.32401 | | +0.10677732 | | +0.99108984 |
| $a$ | 3.0970235 | $\Omega$ | 329.51376 | | −0.85453340 | | +0.05053632 |
| $e$ | 0.0495996 | $i$ | 9.02940 | | −0.50830235 | | +0.12323560 |
| $P$ | 5.45 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 09 | 691 | 0.2+ | 0.1+ | 2003 01 30 | 644 | 0.1− | 0.3+ | 2006 09 16 | 703 | 0.7− | 0.4− |
| 2000 08 09 | 691 | 0.3+ | 0.2− | 2003 01 30 | 644 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.1+ |
| 2000 08 09 | 691 | 0.6+ | 0.2− | 2003 01 30 | 644 | (0.3+ | 2.0+) | 2006 09 20 | 699 | (1.5+ | 1.1−) |
| 2000 08 20 | 691 | 0.4− | 0.9− | 2003 02 01 | 645 | 0.1− | 0.2− | 2006 09 20 | 699 | (1.7− | 0.5+) |
| 2000 08 20 | 691 | 0.4+ | 0.6− | 2003 02 01 | 645 | 0.1− | 0.1− | 2006 09 20 | 699 | 1.3− | 0.4+ |
| 2000 08 20 | 691 | 0.2+ | 0.6− | 2003 02 01 | 704 | 1.1− | 0.0 | 2006 09 22 | 699 | 0.2− | 0.5− |
| 2000 08 29 | 704 | 0.4− | 0.2+ | 2003 02 01 | 704 | 0.3+ | 0.0 | 2006 09 22 | 699 | (0.5+ | 1.6+) |
| 2000 08 29 | 704 | 0.7− | 0.7+ | 2003 02 01 | 704 | 1.2− | 0.7− | 2006 09 22 | 699 | 0.3+ | 0.4− |
| 2000 08 29 | 704 | 1.1− | 0.2+ | 2003 02 01 | 704 | 0.1− | 0.3+ | 2006 09 22 | 699 | 0.1+ | 0.3− |
| 2000 08 29 | 704 | 0.1− | 0.4+ | 2003 02 01 | 704 | (1.5+ | 1.9+) | 2006 09 27 | 703 | 1.0− | 0.3+ |
| 2000 08 29 | 704 | 0.4− | 0.9+ | 2004 04 09 | E12 | 0.1− | 0.0 | 2006 09 27 | 703 | (0.8− | 1.8+) |
| 2001 11 11 | 704 | 0.8+ | 1.2+ | 2004 04 09 | E12 | 0.1+ | 0.4+ | 2006 09 27 | 703 | (0.1− | 1.8+) |
| 2001 11 11 | 699 | 0.3+ | 0.9+ | 2004 04 09 | E12 | 0.6+ | 0.1− | 2006 09 27 | 703 | 0.5+ | 0.3+ |
| 2001 11 11 | 704 | 0.0 | 0.5+ | 2004 04 09 | E12 | 0.9+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.6+ | 2005 07 06 | 428 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.4+ | 0.2− |
| 2001 11 11 | 699 | 0.2+ | 0.1+ | 2005 07 06 | 428 | 0.0 | 0.9+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2001 11 11 | 704 | 0.1− | 0.9+ | 2005 07 10 | 428 | 0.7+ | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2001 11 11 | 699 | 0.1− | 0.3+ | 2005 07 10 | 428 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2001 11 11 | 704 | 0.2+ | 0.7+ | 2005 07 10 | E12 | 0.0 | 0.8+ | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2001 11 11 | 699 | 0.7+ | 0.1− | 2005 07 10 | E12 | 0.5− | 0.6+ | 2006 10 17 | 703 | 0.7+ | 0.5+ |
| 2003 01 05 | 704 | 0.1− | 0.6− | 2005 07 10 | E12 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.5+ | 0.7+ | 2005 07 10 | E12 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | 0.6− | 0.4+ | 2006 08 22 | H55 | (2.3+ | 2.5+) | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 01 05 | 704 | 0.1− | 0.8+ | 2006 08 22 | H55 | (2.5+ | 2.7+) | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2003 01 16 | 644 | 0.1+ | 0.6+ | 2006 08 22 | H55 | (2.8+ | 3.2+) | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2003 01 16 | 644 | 0.1+ | 0.8+ | 2006 08 23 | H55 | 0.8− | 0.7− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2003 01 16 | 644 | 0.4+ | 0.2+ | 2006 08 23 | H55 | 0.6− | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2003 01 25 | 699 | 0.0 | 1.0− | 2006 08 23 | H55 | 1.0− | 0.6− | 2006 10 23 | 644 | 0.4+ | 0.0 |
| 2003 01 25 | 699 | 0.6+ | 1.2+ | 2006 09 16 | 703 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2003 01 25 | 699 | (0.2− | 2.6+) | 2006 09 16 | 703 | 0.8+ | 0.2− | | | | |
| 2003 01 25 | 699 | 0.0 | 0.4+ | 2006 09 16 | 703 | 0.0 | 1.3+ | | | | |

**2005 NF$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.80386 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23393304 | $\omega$ | 36.59908 | | +0.66298541 | | +0.72649553 |
| $a$ | 2.6086051 | $\Omega$ | 275.68834 | | −0.72270350 | | +0.55812069 |
| $e$ | 0.1609078 | $i$ | 10.46297 | | −0.19532023 | | +0.40088096 |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.8− | 0.2− | 2001 08 24 | 699 | 0.4+ | 0.3+ | 2001 10 06 | 644 | 0.6− | 0.3+ |
| 2001 07 16 | 608 | 0.2− | 0.1− | 2001 09 16 | 704 | 1.6+ | 1.2− | 2005 06 18 | G96 | 0.3− | 0.2− |
| 2001 07 16 | 608 | 1.1− | 0.1− | 2001 09 16 | 704 | 0.8+ | 0.5− | 2005 06 18 | G96 | 0.5− | 0.0 |
| 2001 07 20 | 699 | (3.7− | 0.3−) | 2001 09 16 | 704 | 1.7+ | 0.3− | 2005 06 18 | G96 | 0.8− | 0.0 |
| 2001 07 20 | 699 | 0.0 | 0.7+ | 2001 09 16 | 704 | (2.1+ | 0.2−) | 2005 06 18 | G96 | 0.0 | 0.4− |
| 2001 07 20 | 699 | 0.3+ | 0.8+ | 2001 09 16 | 704 | 0.9+ | 1.1+ | 2005 07 11 | G96 | 0.0 | 0.3− |
| 2001 07 20 | 699 | 0.4− | 0.5+ | 2001 09 25 | 704 | 0.8− | 0.6− | 2005 07 11 | G96 | 0.2+ | 0.2− |
| 2001 08 17 | 644 | 0.1− | 0.4+ | 2001 09 25 | 704 | 0.3− | 0.2+ | 2005 07 11 | G96 | 0.5+ | 0.1− |
| 2001 08 17 | 644 | 0.1− | 0.3+ | 2001 09 25 | 704 | 1.0− | 0.1− | 2005 07 11 | G96 | 0.3+ | 0.3− |
| 2001 08 17 | 644 | 0.1+ | 0.4+ | 2001 09 25 | 704 | 0.1− | 0.9− | 2005 07 12 | G92 | 0.1+ | 0.1+ |
| 2001 08 24 | 699 | 0.2+ | 0.2− | 2001 09 25 | 704 | 0.2− | 0.0 | 2005 07 12 | G92 | 0.6+ | 0.4+ |
| 2001 08 24 | 699 | 0.0 | 0.1+ | 2001 10 06 | 644 | 0.2− | 0.1+ | 2005 07 12 | G92 | 0.2+ | 0.2+ |
| 2001 08 24 | 699 | 0.5− | 0.6− | 2001 10 06 | 644 | 0.4− | 0.5+ | | | | |

**2005 NN$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.53218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20250622 | $\omega$ | 200.45316 | | +0.76771485 | | +0.63897452 |
| $a$ | 2.8719518 | $\Omega$ | 119.73785 | | −0.57992547 | | +0.72483487 |
| $e$ | 0.0543078 | $i$ | 3.18368 | | −0.27258091 | | +0.25753829 |
| $P$ | 4.87 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.7+ | 0.2+ | 2005 07 16 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.2− |
| 2005 06 30 | 691 | 0.0 | 0.1+ | 2005 07 16 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.2− |
| 2005 06 30 | 691 | 0.1+ | 0.2+ | 2005 07 16 | 691 | 0.4− | 0.7− | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2005 07 05 | 691 | 0.5− | 0.2− | 2006 10 15 | D35 | 0.8+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2005 07 05 | 691 | 0.1+ | 0.1+ | 2006 10 15 | D35 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2005 07 05 | 691 | 0.0 | 0.3+ | 2006 10 15 | D35 | 0.5− | 0.8+ | 2006 11 17 | G96 | 0.6+ | 0.0 |
| 2005 07 12 | G96 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2005 07 12 | G96 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2005 07 12 | G96 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2005 07 12 | G96 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.2− | 0.1+ | | | | |

**2005 NA$_{59}$ = 2006 UH$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.60736 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18974342 | $\omega$ | 280.31217 | | +0.78761476 | | −0.60840663 |
| $a$ | 2.9993344 | $\Omega$ | 117.23152 | | +0.59950120 | | +0.72010714 |
| $e$ | 0.1025747 | $i$ | 6.29471 | | +0.14234220 | | +0.33359717 |
| $P$ | 5.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 695 | 0.3+ | 0.2− | 2005 07 12 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2000 09 20 | 695 | 0.2+ | 0.2− | 2005 07 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2005 07 16 | 691 | 0.1− | 0.1− | 2006 11 11 | 644 | 0.1− | 0.5+ |
| 2002 12 11 | 645 | 0.0 | 0.1− | 2005 07 16 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2003 04 04 | 448 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.9+ | 2006 11 11 | 644 | 0.3− | 0.2− |
| 2003 04 04 | 448 | 0.3− | 0.4+ | 2006 10 16 | 703 | 1.0+ | 0.1− | 2006 11 11 | 644 | 0.2− | 0.0 |
| 2003 04 04 | 448 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.3+ | 2006 11 19 | 703 | 0.0 | 1.7+ |
| 2004 05 13 | 291 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.9− | 1.1+ | 2006 11 19 | 703 | 0.9− | 1.8+ |
| 2004 05 13 | 291 | 0.2+ | 0.8+ | 2006 10 22 | 703 | 0.6− | 0.7+ | 2006 11 19 | 703 | 0.5+ | 1.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 291 | 0.3+ | 0.6+ | 2006 10 22 | 703 | 0.6− | 1.1− | 2006 11 19 | 703 | 0.8+ | 1.2+ |
| 2005 07 09 | 691 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.1− | 0.5+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 07 09 | 691 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2005 07 12 | G96 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 07 12 | G96 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.5− | 0.0 | | | | |
| 2005 07 12 | G96 | 0.5+ | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.4− | | | | |

### 2005 $NO_{59}$ = 2006 $WE_{82}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.93417 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22530938 | $\omega$ | 243.28572 | | +0.99854994 | −0.00220372 | |
| $a$ | 2.6747500 | $\Omega$ | 116.79876 | | +0.02209297 | +0.92791874 | |
| $e$ | 0.0871103 | $i$ | 3.45476 | | −0.04909102 | +0.37277601 | |
| $P$ | 4.37 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.6+ | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2005 07 09 | 691 | 0.1− | 0.3− | 2005 07 15 | G96 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2005 07 09 | 691 | 0.2− | 0.2− | 2005 07 15 | G96 | 0.4+ | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2005 07 09 | 691 | 0.2− | 0.0 | 2005 07 15 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2005 07 12 | G96 | 0.6+ | 0.3+ | 2005 07 15 | G96 | 0.2+ | 0.4+ | | | | |
| 2005 07 12 | G96 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1− | | | | |

### 2005 $NR_{59}$ = 2005 $MH_{45}$

Id. Minor Planet Center (d, *MPO* 102379)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.98491 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25590057 | $\omega$ | 145.51202 | | −0.14320359 | +0.98823601 | |
| $a$ | 2.4570946 | $\Omega$ | 116.20201 | | −0.92097065 | −0.11320209 | |
| $e$ | 0.1825025 | $i$ | 3.43038 | | −0.36236141 | −0.10283419 | |
| $P$ | 3.85 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 22 | 691 | 0.1+ | 0.0 | 2005 05 19 | G96 | 0.3+ | 0.3+ | 2005 07 15 | G96 | 0.1− | 0.1− |
| 1993 04 22 | 691 | 0.0 | 0.2− | 2005 06 27 | 691 | 0.5− | 0.2+ | 2005 07 15 | G96 | 0.1− | 0.0 |
| 1993 04 22 | 691 | 0.0 | 0.2− | 2005 06 27 | 691 | 0.1+ | 0.1+ | 2005 07 30 | E12 | 0.5+ | 0.3+ |
| 2000 02 05 | 691 | 0.5− | 0.1+ | 2005 06 27 | 691 | 0.1− | 0.2+ | 2005 07 30 | E12 | 0.5+ | 0.0 |
| 2000 02 05 | 691 | 0.3− | 0.2− | 2005 07 09 | 691 | 0.2− | 0.0 | 2005 07 30 | E12 | 0.4+ | 0.2+ |
| 2000 02 05 | 691 | 0.0 | 0.1− | 2005 07 09 | 691 | 0.1− | 0.1− | 2005 07 30 | E12 | 0.4+ | 0.3+ |
| 2004 02 11 | 691 | 0.2+ | 0.6+ | 2005 07 09 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2004 02 11 | 691 | 0.3+ | 0.3+ | 2005 07 12 | G96 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2005 07 12 | G96 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.7+ | 0.6+ |
| 2005 05 19 | G96 | 0.4+ | 0.1+ | 2005 07 12 | G96 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2005 05 19 | G96 | 0.5− | 0.5+ | 2005 07 15 | G96 | 0.3− | 0.0 | | | | |
| 2005 05 19 | G96 | 0.0 | 0.3− | 2005 07 15 | G96 | 0.3− | 0.2− | | | | |

### 2005 $NJ_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.70497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21956058 | $\omega$ | 283.00937 | | +0.54428415 | −0.83536314 | |
| $a$ | 2.7212376 | $\Omega$ | 133.74088 | | +0.80504890 | +0.49431964 | |
| $e$ | 0.0862204 | $i$ | 6.11509 | | +0.23590472 | +0.24045064 | |
| $P$ | 4.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 08 | 644 | 0.0 | 0.2+ | 2005 07 05 | G96 | 0.3− | 0.4− | 2005 07 12 | G96 | 0.1+ | 0.4− |
| 2001 10 08 | 644 | 0.3− | 0.4+ | 2005 07 11 | 691 | 0.1+ | 0.0 | 2005 07 12 | G96 | 0.2− | 0.2− |
| 2001 10 08 | 644 | 0.2− | 0.2− | 2005 07 11 | 691 | 0.1− | 0.0 | 2005 07 12 | G96 | 0.6+ | 0.0 |
| 2001 10 16 | 644 | 0.2− | 0.6+ | 2005 07 11 | 691 | 0.0 | 0.1− | 2005 09 01 | 691 | 0.1+ | 0.4− |
| 2001 10 16 | 644 | 0.2− | 0.7+ | 2005 07 12 | 291 | 0.1− | 0.2+ | 2005 09 01 | 691 | 0.1− | 0.4− |
| 2001 10 16 | 644 | 0.2− | 0.4+ | 2005 07 12 | 291 | 0.0 | 0.3+ | 2005 09 01 | 691 | 0.1+ | 0.3− |
| 2001 10 24 | 644 | 0.2− | 0.1+ | 2005 07 12 | 291 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2001 10 24 | 644 | 0.3+ | 0.8+ | 2005 07 12 | G96 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2001 10 24 | 644 | 0.1+ | 0.2+ | 2005 07 12 | G96 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.7+ | 1.2− |
| 2005 07 05 | G96 | 0.5− | 0.4− | 2005 07 12 | G96 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.4− | 0.3− |
| 2005 07 05 | G96 | 0.3− | 0.4− | 2005 07 12 | G96 | 0.2+ | 0.1− | | | | |
| 2005 07 05 | G96 | 0.1− | 1.1+ | 2005 07 12 | G96 | 0.2− | 0.3− | | | | |

### 2005 $NZ_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.13976 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17950013 | $\omega$ | 155.78243 | | +0.99941473 | −0.00865677 | |
| $a$ | 3.1123818 | $\Omega$ | 204.78195 | | −0.00277884 | +0.94370816 | |
| $e$ | 0.1360141 | $i$ | 4.52844 | | +0.03409519 | +0.33066595 | |
| $P$ | 5.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 01 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.5− | 2006 11 17 | 703 | 1.2− | 0.8− |
| 2005 07 01 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (0.8− | 1.8−) |
| 2005 07 01 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.0 | 0.6− |
| 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2005 07 10 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.3− | 0.1− |
| 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.9− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2005 07 15 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.3− |
| 2005 07 15 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.2− | 0.3− |
| 2006 10 12 | 691 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.5+ | 0.2− |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.3− | 0.1− | 2006 12 01 | 691 | 0.4− | 0.7+ |
| 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.5− |
| 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.4− | 1.4− | 2006 12 01 | 691 | 0.8+ | 0.6+ |
| 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.4− | 0.7+ | | | | |
| 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.7+ | | | | |

### 2005 $NN_{64}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.82795 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17876947 | $\omega$ | 87.28035 | | +0.85695343 | +0.51243990 | |
| $a$ | 3.1208566 | $\Omega$ | 241.88771 | | −0.49420768 | +0.78667925 | |
| $e$ | 0.1220729 | $i$ | 3.58169 | | −0.14625179 | +0.34429800 | |
| $P$ | 5.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 20 | 691 | 0.1− | 0.1+ | 2005 07 27 | 644 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 1995 11 20 | 691 | 0.1+ | 0.3− | 2005 07 27 | 644 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1995 11 20 | 691 | 0.1+ | 0.1− | 2005 07 27 | 644 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2005 07 01 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.4− | 0.2+ |
| 2005 07 01 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2005 07 01 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.3− | 0.2+ |
| 2005 07 10 | 691 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 14 | 691 | 0.2− | 0.4+ |
| 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2005 07 10 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.1− | 0.1+ |

### 2005 $NH_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.85978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21949715 | $\omega$ | 168.19749 | | +0.09093561 | −0.99053814 | |
| $a$ | 2.7217619 | $\Omega$ | 276.52234 | | +0.90505722 | +0.12526179 | |
| $e$ | 0.0687595 | $i$ | 5.93818 | | +0.41545415 | −0.05606851 | |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 644 | 0.1+ | 0.2− | 2005 07 01 | 691 | 0.3− | 0.2− | 2005 09 01 | 691 | 0.1+ | 0.1+ |
| 2001 09 29 | 644 | 0.1− | 0.1− | 2005 07 09 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2001 09 29 | 644 | 0.2+ | 0.0 | 2005 07 09 | 691 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.2+ |
| 2003 01 30 | 699 | 0.2− | 0.4− | 2005 07 09 | 691 | 0.3− | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2003 01 30 | 699 | 0.4+ | 0.2+ | 2005 07 18 | 644 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2003 01 30 | 699 | 0.5+ | 0.5+ | 2005 07 18 | 644 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2003 01 30 | 699 | 0.4− | 0.3+ | 2005 07 18 | 644 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 01 | 691 | 0.2− | 0.1+ | 2005 09 01 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2005 07 01 | 691 | 0.1+ | 0.1− | 2005 09 01 | 691 | 0.1+ | 0.1+ | | | | |

**2005 NO$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.97771 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18469093 | $\omega$ | 241.19214 | | +0.43513298 | | +0.90004103 |
| $a$ | 3.0537888 | $\Omega$ | 54.62164 | | −0.81538195 | | +0.40531626 |
| $e$ | 0.1387962 | $i$ | 1.70052 | | −0.38185281 | | +0.16014018 |
| $P$ | 5.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 02 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 10 29 | 291 | 0.0 | 0.0 |
| 2005 07 02 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.5+ | 0.0 |
| 2005 07 02 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.6− |
| 2005 07 11 | 691 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2005 07 11 | 691 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1− | 0.2+ |
| 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2005 07 30 | E12 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2005 07 30 | E12 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2005 07 30 | E12 | 0.1+ | 1.0− | 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2005 07 30 | E12 | 0.6+ | 0.5+ | 2006 10 29 | 291 | 0.1− | 0.4+ | | | | |
| 2006 10 16 | 691 | 0.3− | 0.2− | 2006 10 29 | 291 | 0.0 | 0.4+ | | | | |

**2005 NE$_{67}$ = 2006 UP$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.57526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19906355 | $\omega$ | 57.82001 | | −0.07253819 | | +0.99731254 |
| $a$ | 2.9049693 | $\Omega$ | 208.02569 | | −0.92228058 | | −0.07100129 |
| $e$ | 0.0050894 | $i$ | 1.25496 | | −0.37965344 | | −0.01806946 |
| $P$ | 4.95 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.3− | 0.2− | 2005 07 04 | G96 | 0.6− | 1.3− | 2006 10 19 | 691 | 0.2+ | 0.4− |
| 2001 10 14 | 691 | 0.2− | 0.2+ | 2005 07 07 | 691 | 0.6− | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.1− |
| 2001 10 14 | 691 | 0.6− | 0.2+ | 2005 07 07 | 691 | 0.5+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2001 11 21 | 691 | 0.3+ | 0.1+ | 2005 07 07 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 11 21 | 691 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2001 11 21 | 691 | 0.4+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2005 07 02 | 691 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2005 07 02 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2005 07 02 | 691 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2005 07 04 | G96 | 0.5− | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2005 07 04 | G96 | 0.1+ | 0.6− | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2005 07 04 | G96 | 0.8+ | 0.4− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− |

**2005 NR$_{67}$ = 2006 SC$_{347}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.17086 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12656198 | $\omega$ | 103.49877 | | +0.98585130 | | +0.16494606 |
| $a$ | 3.9288660 | $\Omega$ | 247.01368 | | −0.16358287 | | +0.90789727 |
| $e$ | 0.2235708 | $i$ | 1.85707 | | −0.03657677 | | +0.38537689 |
| $P$ | 7.79 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 17 | G96 | 0.4− | 0.3− | 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 2005 06 17 | G96 | 0.6− | 0.5− | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2005 06 17 | G96 | 0.3− | 0.7− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.4− | 0.1− |
| 2005 07 03 | G96 | 0.1+ | 0.7+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.2− |
| 2005 07 03 | G96 | 0.1− | 0.6+ | 2006 10 02 | 691 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2005 07 03 | G96 | 0.1+ | 0.9+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2005 07 03 | G96 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.5+ |
| 2005 07 10 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2005 07 10 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.8− | 0.0 |
| 2005 07 10 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.4− |
| 2006 09 15 | 691 | 0.5− | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.4+ | 0.1+ |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2006 09 24 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.1− | | | | |

**2005 NU$_{67}$ = 2006 VP$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.54816 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23460231 | $\omega$ | 156.40002 | | +0.22976286 | | −0.97119084 |
| $a$ | 2.6036415 | $\Omega$ | 280.26894 | | +0.88239194 | | +0.23528102 |
| $e$ | 0.1570676 | $i$ | 3.68402 | | +0.41060137 | | +0.03783112 |
| $P$ | 4.20 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 1.1− | 0.9+ |
| 1998 11 15 | 691 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.5− |
| 1998 11 15 | 691 | 0.3− | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.2− |
| 2005 07 03 | G96 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 1.0− | 0.6+ |
| 2005 07 03 | G96 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.9− | 1.1− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2005 07 03 | G96 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.6− | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2005 07 03 | G96 | 0.1− | 0.1+ | 2006 11 15 | 704 | (0.3+ | 1.6−) | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2005 07 06 | 691 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.9+ | 0.5+ | 2006 11 22 | 704 | 0.1+ | 0.9+ |
| 2005 07 06 | 691 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.6− | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2005 07 06 | 691 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.7− | 0.7+ |
| 2005 07 07 | 568 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2005 07 07 | 568 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2005 07 07 | 568 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 0.2+ | 1.3− | 2006 11 27 | 704 | 0.8+ | 0.4− |
| 2005 07 08 | 568 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.0 | 2006 11 27 | 704 | 0.4+ | 0.3− |
| 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 11 27 | 704 | 0.4+ | 0.1− |
| 2006 11 10 | 691 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2− | | | | |

**2005 NY$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.15585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12390762 | $\omega$ | 40.98909 | | +0.79506322 | | +0.58158706 |
| $a$ | 3.9847771 | $\Omega$ | 282.63088 | | −0.59228306 | | +0.68332362 |
| $e$ | 0.3207473 | $i$ | 10.16047 | | −0.13067229 | | +0.44139022 |
| $P$ | 7.95 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 15 | 807 | 0.7+ | 0.1+ | 2005 09 01 | 704 | 0.2+ | 0.5+ | 2005 10 06 | 683 | (3.0− | 1.5−) |
| 2002 02 15 | 807 | 0.3− | 0.3+ | 2005 09 08 | A50 | 0.1+ | 0.3+ | 2005 10 06 | 683 | 1.5− | 0.7− |
| 2002 02 15 | 807 | 0.4+ | 0.0 | 2005 09 08 | A50 | 0.1+ | 0.0 | 2005 10 10 | 683 | 0.7+ | 0.8+ |
| 2002 02 15 | 807 | 0.3− | 0.2+ | 2005 09 12 | 704 | 1.0+ | 0.1+ | 2005 10 10 | 683 | (1.7− | 0.5+) |
| 2005 07 03 | 703 | 0.2+ | 0.4+ | 2005 09 12 | 704 | 0.8+ | 0.0 | 2005 10 10 | 683 | 0.6+ | 0.2+ |
| 2005 07 03 | 703 | 0.7+ | 0.9− | 2005 09 12 | 704 | 0.5+ | 0.2− | 2005 10 22 | 644 | 0.1− | 0.3+ |
| 2005 07 03 | 703 | 1.1+ | 0.9− | 2005 09 12 | 704 | 0.6+ | 0.2− | 2005 10 22 | 644 | 0.5− | 0.4+ |
| 2005 07 03 | 703 | 0.6+ | 1.0− | 2005 09 30 | 644 | 0.4− | 0.0 | 2005 10 22 | 644 | 0.2− | 0.3+ |
| 2005 07 09 | 703 | 0.8− | 0.3+ | 2005 09 30 | 644 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2005 07 09 | 703 | 0.4+ | 0.9+ | 2005 09 30 | 644 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2005 07 09 | 703 | 1.3− | 1.4+ | 2005 10 02 | 699 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.5+ | 0.0 |
| 2005 07 09 | 703 | 0.9− | 0.4− | 2005 10 02 | 699 | 1.1− | 0.5+ | 2006 11 17 | 691 | 0.3− | 0.4+ |
| 2005 08 31 | 699 | 0.2+ | 0.1+ | 2005 10 02 | 699 | 0.4− | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.3− |
| 2005 08 31 | 699 | 0.3+ | 0.5+ | 2005 10 02 | 699 | 1.1− | 1.4+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2005 08 31 | 699 | 0.3+ | 0.6+ | 2005 10 06 | 703 | 0.3+ | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2005 08 31 | 699 | 0.5+ | 0.4+ | 2005 10 06 | 703 | 0.4+ | 0.5− | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2005 09 01 | 704 | 0.8+ | 0.5− | 2005 10 06 | 683 | 0.2− | 1.5− | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2005 09 01 | 704 | 0.0 | 0.1− | 2005 10 06 | 703 | 0.8− | 1.0− | | | | |
| 2005 09 01 | 704 | 0.5− | 0.3− | 2005 10 06 | 703 | 0.3+ | 0.6− | | | | |

### 2005 NW$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.24462 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17032077 | $\omega$ | 299.54927 | | −0.97365826 | | −0.04407367 |
| $a$ | 3.2232276 | $\Omega$ | 238.76684 | | +0.10307961 | | −0.96023853 |
| $e$ | 0.0956873 | $i$ | 15.16692 | | −0.20338187 | | −0.27568001 |
| $P$ | 5.79 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 05 | 691 | 0.0 | 0.4− | 2004 01 16 | 644 | 0.4+ | 0.0 | 2005 06 27 | 691 | 1.2− | 0.9− |
| 1996 12 05 | 691 | 0.2− | 0.4− | 2004 01 16 | 644 | 0.9+ | 0.4+ | 2005 06 27 | 691 | 0.7− | 0.8+ |
| 1996 12 05 | 691 | 0.1+ | 0.4− | 2004 03 14 | 644 | 0.1− | 0.1− | 2005 06 27 | 691 | 1.6+ | 0.7− |
| 2002 11 24 | 644 | 0.1+ | 0.4+ | 2004 03 14 | 644 | 0.1− | 0.3− | 2005 07 05 | 644 | 0.2− | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2004 03 14 | 644 | 0.1− | 0.2− | 2005 07 05 | 644 | 0.2− | 0.4+ |
| 2002 11 24 | 644 | 0.3+ | 0.5+ | 2004 03 26 | 699 | 0.6+ | 1.0− | 2005 07 05 | 644 | 0.2− | 0.2+ |
| 2002 11 28 | 608 | 0.4− | 0.4+ | 2004 03 26 | 699 | 0.1− | 0.1− | 2005 07 05 | 644 | 0.3− | 0.4+ |
| 2002 11 28 | 608 | 0.7− | 0.8+ | 2004 03 26 | 699 | 0.5− | 0.5+ | 2005 07 05 | 644 | 0.2− | 0.3+ |
| 2002 11 28 | 608 | 0.6− | 1.3+ | 2004 03 26 | 699 | 1.7− | 0.0 | 2005 07 05 | 644 | 0.2− | 0.4+ |
| 2002 12 03 | 644 | 0.8+ | 1.1+ | 2005 06 04 | 704 | 1.6+ | 1.7+ | 2005 07 12 | G96 | 0.7− | 0.1− |
| 2002 12 03 | 644 | 0.5+ | 1.2+ | 2005 06 04 | 704 | 1.0− | 0.9+ | 2005 07 12 | G96 | 0.4− | 0.3− |
| 2002 12 03 | 644 | 0.8+ | 1.2+ | 2005 06 04 | 704 | 1.3+ | 1.5+ | 2005 07 12 | G96 | 0.7− | 0.2− |
| 2004 01 16 | 644 | 0.2+ | 0.3− | 2005 06 04 | 704 | 1.6+ | 0.0 | 2005 07 12 | G96 | 0.0 | 0.1− |

### 2005 NZ$_{71}$ = 1993 FJ$_{82}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.37986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18012556 | $\omega$ | 91.57481 | | −0.17312705 | | +0.98462304 |
| $a$ | 3.1051731 | $\Omega$ | 168.37666 | | −0.94341476 | | −0.15898455 |
| $e$ | 0.1427515 | $i$ | 6.65073 | | −0.28283497 | | −0.07239739 |
| $P$ | 5.47 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 1.4+ | 0.4+ | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2005 07 10 | 691 | 0.0 | 0.3+ |
| 1993 03 24 | 691 | 0.0 | 0.7− | 2004 03 28 | 691 | 0.2− | 0.5+ | 2005 07 10 | 691 | 0.1+ | 0.4+ |
| 1993 03 24 | 691 | 0.2+ | 0.5− | 2004 03 28 | 691 | 0.3+ | 0.8+ | 2005 07 15 | 691 | 0.1− | 0.0 |
| 1993 03 24 | 691 | 0.2− | 0.5− | 2004 04 26 | 691 | 0.0 | 0.3+ | 2005 07 15 | 691 | 0.3− | 0.0 |
| 1999 06 05 | 691 | 0.2− | 0.3+ | 2004 04 26 | 691 | 0.5+ | 0.3+ | 2005 07 15 | 691 | 1.2+ | 0.2+ |
| 1999 06 05 | 691 | 0.0 | 0.5− | 2004 04 26 | 691 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.7− | 0.4− |
| 1999 06 05 | 691 | 0.2− | 0.4− | 2005 07 05 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.6− | 0.6− |
| 1999 06 18 | 691 | 0.5− | 0.4− | 2005 07 05 | 644 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.4− | 0.2− |
| 1999 06 18 | 691 | 0.2− | 0.4− | 2005 07 05 | 644 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.1− |
| 1999 06 18 | 691 | 0.6− | 0.1− | 2005 07 10 | 691 | 0.1+ | 0.2+ | | | | |

### 2005 NQ$_{72}$ = 2006 VK$_{151}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.38640 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22418505 | $\omega$ | 342.67915 | | +0.02812293 | | −0.99678295 |
| $a$ | 2.6836855 | $\Omega$ | 105.65932 | | +0.92610284 | | −0.00227714 |
| $e$ | 0.0337683 | $i$ | 4.47047 | | +0.37622152 | | +0.08011590 |
| $P$ | 4.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 17 | G96 | 0.3+ | 0.2+ | 2005 07 11 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2005 06 17 | G96 | 0.3+ | 0.4+ | 2005 07 11 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.4+ | 1.4− |
| 2005 06 17 | G96 | 0.2− | 0.4+ | 2005 08 08 | 807 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2005 06 17 | G96 | 0.2− | 0.2+ | 2005 08 08 | 807 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2005 07 07 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2005 07 07 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.2+ |
| 2005 07 07 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2005 07 11 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | (0.8− | 1.8−) | | | | |

### 2005 NB$_{76}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.45934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23657219 | $\omega$ | 287.61236 | | −0.82858476 | | +0.55609199 |
| $a$ | 2.5891682 | $\Omega$ | 286.21939 | | −0.48463904 | | −0.77043972 |
| $e$ | 0.1547303 | $i$ | 3.87419 | | −0.28030750 | | −0.31174402 |
| $P$ | 4.17 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.4− | 0.7+ | 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.4+ | 0.1+ |
| 2005 06 13 | G96 | 0.6− | 0.3− | 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.5− |
| 2005 06 13 | G96 | 0.3− | 0.8− | 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.8− |
| 2005 06 13 | G96 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.5+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2005 07 10 | 691 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 | | | | |

### 2005 NA$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.72936 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17787032 | $\omega$ | 47.47906 | | +0.41992308 | | +0.89467001 |
| $a$ | 3.1313652 | $\Omega$ | 247.93922 | | −0.87342417 | | +0.35276342 |
| $e$ | 0.1465202 | $i$ | 9.46557 | | −0.24656605 | | +0.27408674 |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | 691 | 0.2+ | 0.0 | 2005 07 29 | 644 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3+ |
| 2005 06 27 | 691 | 0.2− | 0.0 | 2005 07 29 | 644 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2005 07 10 | 691 | 0.1+ | 0.8+ | 2005 08 24 | 644 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2005 07 10 | 691 | 0.1− | 0.3− | 2005 08 24 | 644 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2005 07 10 | 691 | 0.2− | 0.2− | 2005 08 24 | 644 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2005 07 15 | 691 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2005 07 15 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2− | 0.2+ |
| 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.1− |

### 2005 NG$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.39693 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18326624 | $\omega$ | 165.58701 | | +0.84422313 | | −0.52609882 |
| $a$ | 3.0695950 | $\Omega$ | 226.63042 | | +0.47674604 | | +0.82444625 |
| $e$ | 0.0919515 | $i$ | 8.10626 | | +0.24495003 | | +0.20858668 |
| $P$ | 5.38 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 12 | 703 | 0.1+ | 0.3− |
| 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.3+ |
| 2005 07 10 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2005 07 15 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.2− | 0.2− |
| 2005 07 15 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.0 |
| 2005 07 30 | 644 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.2− | 0.2− |
| 2005 07 30 | 644 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.3− | 0.1− |
| 2005 07 30 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.5+ |
| 2005 09 03 | 644 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2005 09 03 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | (0.5+ | 1.5+) | 2006 11 18 | 704 | 1.0+ | 0.3+ |
| 2005 09 03 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.6− | 2006 11 18 | 704 | 0.6− | 0.3− |
| 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 12 | 703 | (1.6+ | 0.3−) | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2006 10 17 | G96 | 0.4− | 0.4− | 2006 11 12 | 703 | 0.5+ | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 12 | 703 | 0.5− | 0.7− | 2006 11 21 | 704 | 1.1− | 0.9− |

**2005 NV$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.72826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21230439 | $\omega$ | 4.53623 | | +0.27790345 | +0.95010306 | |
| $a$ | 2.7828944 | $\Omega$ | 281.64749 | | −0.88583005 | +0.19641412 | |
| $e$ | 0.1339171 | $i$ | 8.31765 | | −0.37158416 | +0.24233378 | |
| $P$ | 4.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 01 | 691 | 0.1+ | 0.0 | 2005 07 11 | G96 | 0.8− | 0.9− | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2005 07 01 | 691 | 0.1− | 0.1+ | 2005 07 15 | 691 | 0.7+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2005 07 01 | 691 | 0.1+ | 0.0 | 2005 07 15 | 691 | 0.5− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2005 07 11 | G96 | 0.2− | 0.1− | 2005 07 15 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2005 07 11 | G96 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.5− | 0.2− |
| 2005 07 11 | G96 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.4+ |

**2005 NZ$_{77}$ = 2005 ML$_{38}$**

Id. Minor Planet Center (d, *MPO* 87833)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.55904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12399590 | $\omega$ | 196.16454 | | +0.99337791 | +0.11418213 | |
| $a$ | 3.9828856 | $\Omega$ | 157.26734 | | −0.10141808 | +0.92363045 | |
| $e$ | 0.1917513 | $i$ | 1.89194 | | −0.05398793 | +0.36588144 | |
| $P$ | 7.95 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.2− | 0.3+ | 2005 07 15 | G96 | 0.5+ | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2005 06 30 | 691 | 0.2+ | 0.4+ | 2005 07 15 | G96 | 0.2+ | 0.5− | 2006 10 18 | 691 | 0.1+ | 0.1+ |
| 2005 06 30 | 691 | 0.1+ | 0.2+ | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2005 07 05 | G96 | 0.1− | 0.1− | 2005 07 18 | 644 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2005 07 05 | G96 | 0.3− | 0.2− | 2005 07 18 | 644 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2005 07 05 | G96 | 0.0 | 0.2− | 2005 07 27 | 644 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2005 07 05 | G96 | 0.2− | 0.1− | 2005 07 27 | 644 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2005 07 11 | 691 | 0.1− | 0.0 | 2005 07 27 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 07 11 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.7− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2005 07 11 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.3+ |
| 2005 07 15 | G96 | 0.0 | 0.7− | 2006 10 17 | G96 | 0.0 | 0.1− | | | | |
| 2005 07 15 | G96 | 0.2− | 0.5− | 2006 10 17 | G96 | (0.5− | 1.6−) | | | | |

**2005 NY$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.25629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28999340 | $\omega$ | 40.44983 | | +0.94473329 | −0.32554569 | |
| $a$ | 2.2605319 | $\Omega$ | 338.45446 | | +0.26696028 | +0.83246242 | |
| $e$ | 0.1079074 | $i$ | 6.05178 | | +0.19029247 | +0.44835959 | |
| $P$ | 3.40 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.3+ | 0.2− | 2002 11 14 | 704 | 0.0 | 0.1+ | 2005 07 16 | 291 | 0.0 | 0.1− |
| 2002 10 10 | 704 | 0.5+ | 1.1− | 2002 11 14 | 704 | 0.3− | 0.7− | 2005 07 16 | 291 | 0.1+ | 0.0 |
| 2002 10 10 | 704 | 0.1− | 0.2− | 2002 11 14 | 704 | 0.0 | 0.2− | 2005 07 27 | 644 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.8+ | 0.1+ | 2005 07 15 | 291 | 0.1− | 0.2+ | 2005 07 27 | 644 | 0.2− | 0.2+ |
| 2002 11 01 | 644 | 0.4− | 0.6+ | 2005 07 15 | 291 | 0.0 | 0.1− | 2005 07 27 | 644 | 0.1+ | 0.3− |
| 2002 11 01 | 644 | 0.4− | 0.8+ | 2005 07 15 | 291 | 0.1− | 0.2+ | | | | |
| 2002 11 01 | 644 | 0.4− | 0.6+ | 2005 07 16 | 291 | 0.1+ | 0.1− | | | | |

**2005 ND$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.59252 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26726488 | $\omega$ | 181.20272 | | +0.99937072 | +0.03457553 | |
| $a$ | 2.3869397 | $\Omega$ | 176.78367 | | −0.03125164 | +0.96387281 | |
| $e$ | 0.1934868 | $i$ | 8.11278 | | −0.01677778 | +0.26410933 | |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 27 | 691 | 0.0 | 0.2+ | 2005 07 03 | 705 | 0.0 | 0.1− | 2005 10 27 | G96 | 0.1− | 0.2− |
| 1996 01 27 | 691 | 0.1− | 0.5− | 2005 07 03 | 705 | 0.1− | 0.1+ | 2005 10 27 | G96 | 0.0 | 0.6− |
| 1996 01 27 | 691 | 0.0 | 0.2− | 2005 07 03 | 705 | 0.1+ | 0.0 | 2005 10 27 | G96 | 0.1− | 0.2− |
| 1998 11 19 | 699 | 0.4+ | 0.2+ | 2005 07 12 | 703 | 0.1− | 0.6− | 2005 10 27 | G96 | 0.2+ | 0.6− |
| 1998 11 19 | 699 | 0.9− | 0.6+ | 2005 07 12 | 703 | 0.7− | 0.5+ | 2005 11 25 | G96 | 0.5− | 0.1− |
| 1998 11 19 | 699 | 0.4+ | 0.1− | 2005 07 12 | 703 | 0.1− | 0.7− | 2005 11 25 | G96 | 0.2− | 0.4− |
| 2005 05 15 | G96 | 0.2− | 0.5− | 2005 07 12 | 703 | 0.8+ | 0.7− | 2005 11 25 | G96 | 0.0 | 0.2− |
| 2005 05 15 | G96 | 0.3− | 0.1+ | 2005 07 29 | 644 | 1.0+ | 0.7+ | 2005 11 25 | G96 | 0.4+ | 0.5− |
| 2005 05 15 | G96 | 0.2− | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.3+ | | | | |
| 2005 05 15 | G96 | 0.5− | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.3+ | | | | |

**2005 NE$_{85}$ = 2001 OL$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.70698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25177073 | $\omega$ | 99.01684 | | +0.66095336 | +0.73966162 | |
| $a$ | 2.4838911 | $\Omega$ | 213.47684 | | −0.74651914 | +0.63087716 | |
| $e$ | 0.2076128 | $i$ | 13.27428 | | −0.07648423 | +0.23429615 | |
| $P$ | 3.91 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.6+ | 0.3+ | 2005 07 26 | 608 | 0.1+ | 0.5+ | 2005 09 01 | A35 | 0.1+ | 0.3− |
| 2001 07 16 | 608 | 0.7+ | 0.1+ | 2005 07 28 | 704 | (1.1+ | 2.1+) | 2005 09 01 | A35 | 0.2+ | 0.3− |
| 2001 07 16 | 608 | 0.5+ | 0.4+ | 2005 07 28 | 704 | (1.2+ | 2.5+) | 2005 09 11 | 704 | 0.3+ | 0.2+ |
| 2001 07 24 | 608 | 0.3− | 1.2− | 2005 07 28 | 704 | (0.3+ | 2.5+) | 2005 09 11 | 704 | 0.1+ | 0.4− |
| 2001 07 24 | 608 | 0.5− | 0.0 | 2005 07 28 | 704 | (1.0+ | 2.3+) | 2005 09 11 | 704 | 0.3+ | 0.1+ |
| 2001 07 24 | 608 | 0.8− | 0.1− | 2005 07 28 | 704 | (0.7+ | 2.5+) | 2005 09 11 | 704 | (2.4+ | 1.1−) |
| 2005 07 03 | 703 | 1.4− | 0.1+ | 2005 08 27 | 699 | 0.4− | 0.3+ | 2005 09 11 | 704 | 0.1+ | 0.5− |
| 2005 07 03 | 703 | 0.2+ | 0.7+ | 2005 08 27 | 699 | 0.7+ | 0.0 | 2005 09 26 | 703 | 0.5− | 0.5+ |
| 2005 07 03 | 703 | 0.3− | 0.1+ | 2005 08 27 | 699 | 0.3− | 0.0 | 2005 09 26 | 703 | 0.1− | 0.6+ |
| 2005 07 03 | 703 | 0.3+ | 0.9+ | 2005 08 27 | 699 | 0.0 | 0.1− | 2005 09 26 | 703 | 0.2+ | 0.3+ |
| 2005 07 08 | 703 | 0.1+ | 0.7− | 2005 08 29 | 644 | 0.3+ | 0.3− | 2005 10 03 | 703 | (2.4− | 1.8+) |
| 2005 07 08 | 703 | 0.6− | 0.0 | 2005 08 29 | 644 | 0.7+ | 0.3− | 2005 10 03 | 703 | 0.0 | 0.1− |
| 2005 07 08 | 703 | 0.3+ | 0.3+ | 2005 08 29 | 644 | 0.4− | 0.2− | 2005 10 10 | 703 | (1.1− | 2.9+) |
| 2005 07 08 | 703 | 0.4− | 0.0 | 2005 09 01 | A35 | 0.1− | 0.4− | 2005 10 10 | 703 | (1.8+ | 0.4+) |
| 2005 07 26 | 608 | 0.1+ | 0.1+ | 2005 09 01 | A35 | 0.1− | 0.4− | 2005 10 10 | 703 | 0.2+ | 1.0+ |
| 2005 07 26 | 608 | 0.3+ | 0.0 | 2005 09 01 | A35 | 0.3− | 0.4− | 2005 10 10 | 703 | 0.2− | 0.1+ |

**2005 NT$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.60072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22227542 | $\omega$ | 157.45635 | | +0.53932744 | −0.84167665 | |
| $a$ | 2.6990344 | $\Omega$ | 259.89642 | | +0.76843286 | +0.50481295 | |
| $e$ | 0.0940856 | $i$ | 1.54692 | | +0.34443700 | +0.19168804 | |
| $P$ | 4.43 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.3+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.7− | 2006 11 20 | 703 | 1.2− | 0.8− |
| 2005 06 13 | G96 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.6− | 2006 11 20 | 703 | 0.4− | 0.2+ |
| 2005 06 13 | G96 | 0.1+ | 0.0 | 2006 10 18 | 291 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 06 13 | G96 | 0.2− | 0.2+ | 2006 10 18 | 291 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2005 07 03 | G96 | 0.1− | 0.1+ | 2006 10 18 | 291 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2005 07 03 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.1+ |
| 2005 07 03 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2005 07 03 | G96 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (3.4− | 0.6+) | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2005 07 15 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.6− | 0.5+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2005 07 15 | G96 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1− | 2006 11 25 | 926 | 0.0 | 0.1+ |
| 2005 07 15 | G96 | 0.3− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.2+ | 2006 11 25 | 926 | 0.0 | 0.0 |
| 2005 07 15 | G96 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2+ | 2006 11 25 | 926 | 0.0 | 0.1+ |
| 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 20 | 703 | 0.7+ | 0.5− | 2006 11 25 | 926 | 0.2+ | 0.1+ |
| 2006 10 17 | G96 | 0.5+ | 0.7− | 2006 11 20 | 703 | 0.1− | 0.9+ | | | | |

**2005 NH$_{87}$ = 6877 P-L = 1994 SR$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.14830 | | (2000.0) | | | |
| $n$ | 0.26109603 | $\omega$ | 184.42475 | | +0.95080046 | +0.30967220 |
| $a$ | 2.4243903 | $\Omega$ | 157.52936 | | −0.28350930 | +0.88148730 |
| $e$ | 0.1884287 | $i$ | 1.35432 | | −0.12490377 | +0.35648740 |
| $P$ | 3.77 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.2− | 1.3+ | 1998 11 16 | 691 | 1.6− | 0.3− | 2005 07 07 | 568 | 0.3+ | 0.4− |
| 1960 09 24 | 675 | 0.5− | 0.5+ | 1998 11 16 | 691 | 1.4− | 0.3+ | 2005 07 07 | 568 | 0.3+ | 0.4− |
| 1994 09 28 | 691 | 0.3− | 0.2+ | 2005 06 14 | G96 | 0.3+ | 0.4− | 2005 07 08 | 568 | 0.5+ | 0.3− |
| 1994 09 28 | 691 | 0.5− | 0.4+ | 2005 06 14 | G96 | 0.0 | 0.3− | 2005 07 15 | G96 | 0.1+ | 0.2− |
| 1994 09 28 | 691 | 0.2− | 0.2+ | 2005 06 14 | G96 | 0.1+ | 0.1− | 2005 07 15 | G96 | 0.3− | 0.3− |
| 1994 10 04 | 691 | 0.2+ | 0.6+ | 2005 06 14 | G96 | 0.1− | 0.3− | 2005 07 15 | 691 | 0.0 | 0.4− |
| 1994 10 04 | 691 | 0.2− | 0.2+ | 2005 07 03 | G96 | 0.1− | 0.1− | 2005 07 15 | G96 | 0.7− | 0.2+ |
| 1994 10 26 | 691 | 0.0 | 0.7+ | 2005 07 03 | G96 | 0.8− | 0.5− | 2005 07 15 | 691 | 0.7+ | 0.6− |
| 1994 10 26 | 691 | 0.0 | 0.4+ | 2005 07 03 | G96 | 0.6− | 0.0 | 2005 07 15 | G96 | 0.0 | 0.2− |
| 1994 10 26 | 691 | 0.1+ | 0.2+ | 2005 07 03 | G96 | 0.2− | 0.2− | 2005 07 15 | 691 | 0.0 | 0.7− |
| 1998 11 16 | 691 | (4.0+ | 4.1−) | 2005 07 07 | 568 | 0.3+ | 0.4− | | | | |

**2005 NS$_{87}$ = 2006 SD$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.71455 | | (2000.0) | | | |
| $n$ | 0.16974658 | $\omega$ | 170.45787 | | +0.55320192 | +0.83179359 |
| $a$ | 3.2304922 | $\Omega$ | 133.11278 | | −0.76837319 | +0.53067181 |
| $e$ | 0.0262018 | $i$ | 3.58794 | | −0.32182337 | +0.16280925 |
| $P$ | 5.81 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 291 | 0.1− | 0.0 | 2005 07 15 | G96 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2003 01 04 | 291 | 0.0 | 0.3+ | 2005 07 15 | G96 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2003 01 04 | 291 | 0.3+ | 0.2+ | 2005 07 15 | G96 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2005 06 15 | G96 | 0.3+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2005 06 15 | G96 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.5− |
| 2005 06 15 | G96 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2005 06 15 | G96 | 0.9− | 0.3+ | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2005 07 04 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2005 07 04 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.7− | 0.7+ | | | | |
| 2005 07 15 | G96 | 0.5− | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.3+ | | | | |

**2005 NT$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 144.14651 | | (2000.0) | | | |
| $n$ | 0.23983971 | $\omega$ | 314.74797 | | −0.44996053 | +0.89117833 |
| $a$ | 2.5655983 | $\Omega$ | 288.43064 | | −0.80119382 | −0.43140686 |
| $e$ | 0.1776363 | $i$ | 3.49074 | | −0.39449205 | −0.14031857 |
| $P$ | 4.11 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.0 | 0.2− | 2005 07 15 | G96 | 0.4− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.3− |
| 2001 08 13 | 608 | 0.0 | 0.0 | 2005 07 15 | G96 | 0.4− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.1+ |
| 2001 08 13 | 608 | 0.3+ | 0.7− | 2005 07 15 | G96 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2+ | 0.4+ |
| 2004 02 29 | 691 | 0.1− | 0.5+ | 2005 07 15 | G96 | 0.7− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2004 02 29 | 691 | 0.2+ | 0.2− | 2005 07 30 | E12 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2004 02 29 | 691 | 0.2+ | 0.7+ | 2005 07 30 | E12 | 0.3+ | 0.4+ | 2006 11 14 | G96 | 0.3− | 0.2+ |
| 2005 06 13 | G96 | 0.2+ | 0.1− | 2005 07 30 | E12 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2005 06 13 | G96 | 0.3− | 0.1+ | 2005 07 30 | E12 | 0.1− | 0.4+ | 2006 11 14 | G96 | 1.1− | 0.6− |
| 2005 06 13 | G96 | 0.7− | 0.2+ | 2005 10 01 | G96 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.4+ |
| 2005 06 13 | G96 | 0.3− | 0.6+ | 2005 10 01 | G96 | 0.5+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2005 07 04 | 691 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.6+ | 1.0+ | 2006 11 18 | G96 | 1.0− | 0.4+ |
| 2005 07 04 | 691 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 10 13 | 691 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.1− |

**2005 NU$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.15964 | | (2000.0) | | | |
| $n$ | 0.12477540 | $\omega$ | 119.79733 | | +0.96272533 | +0.26157797 |
| $a$ | 3.9662802 | $\Omega$ | 225.13773 | | −0.26932980 | +0.90362389 |
| $e$ | 0.3323793 | $i$ | 5.57222 | | −0.02492770 | +0.33917670 |
| $P$ | 7.90 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | 691 | 0.1− | 0.2− | 2005 07 08 | 691 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.1− | 0.0 |
| 2005 07 04 | 691 | 0.0 | 0.0 | 2005 07 08 | 691 | 0.1− | 0.0 | 2005 07 29 | 644 | 0.1+ | 0.2− |
| 2005 07 04 | 691 | 0.1+ | 0.1− | 2005 07 08 | 691 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.1− | 0.1− |
| 2005 07 04 | 691 | 0.3− | 0.1− | 2005 07 15 | 691 | 0.1− | 0.0 | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2005 07 04 | 691 | 0.0 | 0.1+ | 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 10 20 | 695 | 0.1− | 0.0 |
| 2005 07 04 | 691 | 0.4+ | 0.5+ | 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 10 20 | 695 | 0.1+ | 0.0 |

**2005 NA$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.41615 | | (2000.0) | | | |
| $n$ | 0.12538326 | $\omega$ | 72.01990 | | +0.91236248 | +0.40290472 |
| $a$ | 3.9534508 | $\Omega$ | 264.16902 | | −0.39776140 | +0.83051028 |
| $e$ | 0.3003426 | $i$ | 4.18174 | | −0.09685337 | +0.38460430 |
| $P$ | 7.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 06 | 691 | 0.0 | 0.2+ | 2005 07 29 | 644 | 0.1− | 0.1− | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2005 07 06 | 691 | 0.1+ | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.2− | 2006 10 19 | 695 | 0.2− | 0.0 |
| 2005 07 06 | 691 | 0.1− | 0.0 | 2005 08 06 | 644 | 0.3− | 0.5− | 2006 10 19 | 695 | 0.1− | 0.0 |
| 2005 07 09 | 691 | 0.1− | 0.0 | 2005 08 06 | 644 | 0.1+ | 0.2− | 2006 10 20 | 695 | 0.0 | 0.0 |
| 2005 07 09 | 691 | 0.1+ | 0.0 | 2005 10 03 | 291 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2005 07 09 | 691 | 0.3+ | 0.2− | 2005 10 03 | 291 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2005 07 18 | 644 | 0.2− | 0.1− | 2005 10 03 | 291 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2005 07 18 | 644 | 0.1− | 0.1− | 2005 10 05 | 291 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2005 07 18 | 644 | 0.2− | 0.1− | 2005 10 05 | 291 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2005 07 29 | 644 | 0.4− | 0.6− | 2005 10 05 | 291 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.6+ | 0.0 |
| 2005 07 29 | 644 | 0.2− | 0.3− | 2006 10 19 | 695 | 0.0 | 0.1+ | | | | |

**2005 NA$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.67431 | | (2000.0) | | | |
| $n$ | 0.22415253 | $\omega$ | 301.54111 | | +0.57819385 | −0.81443055 |
| $a$ | 2.6839450 | $\Omega$ | 113.05730 | | +0.76544733 | +0.52070000 |
| $e$ | 0.0442493 | $i$ | 3.04872 | | +0.28245754 | +0.25607498 |
| $P$ | 4.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.9+ | 2006 11 11 | 703 | 0.7+ | 0.0 |
| 2005 06 13 | G96 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.4+ |
| 2005 06 13 | G96 | 0.3+ | 0.3− | 2006 10 18 | 691 | 0.0 | 0.3− | 2006 11 17 | 704 | (1.6+ | 1.2+) |
| 2005 06 13 | G96 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.4+ | 1.1+ |
| 2005 07 07 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 17 | 704 | 1.0+ | 1.1+ |
| 2005 07 07 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 1.2− | 0.6+ |
| 2005 07 07 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2005 07 15 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.5− |
| 2005 07 15 | G96 | 0.9− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.6− |
| 2005 07 15 | G96 | 0.5− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | (0.8+ | 1.6−) |
| 2005 07 15 | G96 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2006 10 16 | 703 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 1.2− | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2006 10 16 | 703 | 0.6+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.7− | | | | |

**2005 NE$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.89658 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18609874 | $\omega$ | 71.96110 | −0.29027225 | | +0.95694269 | |
| $a$ | 3.0383684 | $\Omega$ | 181.16843 | −0.90567031 | | −0.27527407 | |
| $e$ | 0.1513429 | $i$ | 4.62799 | −0.30903611 | | −0.09211334 | |
| $P$ | 5.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 10 | 691 | 0.1− | 0.4+ | 2005 07 27 | 644 | 0.3− | 0.5− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 07 10 | 691 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.7− |
| 2005 07 10 | 691 | 0.1+ | 0.1− | 2005 07 27 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2005 07 15 | 691 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.7+ | 0.1− |
| 2005 07 15 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.1+ | | | | |
| 2005 07 15 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 | | | | |

**2005 NZ$_{121}$ = 2000 EM$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.23247 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24264108 | $\omega$ | 304.79023 | +0.99289781 | | +0.11385530 | |
| $a$ | 2.5458130 | $\Omega$ | 48.69826 | −0.08851378 | | +0.90077289 | |
| $e$ | 0.1781547 | $i$ | 2.63290 | −0.07949374 | | +0.41910042 | |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 06 | 807 | 0.1+ | 0.4+ | 2004 04 13 | 691 | 0.1− | 0.3− | 2005 08 28 | 699 | 0.9− | 0.4− |
| 2000 03 06 | 807 | 0.3+ | 0.1+ | 2004 04 13 | 691 | 0.2+ | 0.0 | 2005 08 28 | 699 | 0.0 | 0.2+ |
| 2000 03 06 | 807 | 0.0 | 0.5+ | 2005 07 04 | 644 | 0.1− | 0.2+ | 2005 09 01 | 644 | 0.2− | 0.1+ |
| 2000 03 07 | 807 | 0.1− | 0.8+ | 2005 07 04 | 644 | 0.0 | 0.4+ | 2005 09 01 | 644 | 0.1+ | 0.2+ |
| 2000 03 07 | 807 | 0.0 | 0.2+ | 2005 07 04 | 644 | 0.1+ | 0.1+ | 2005 09 01 | 644 | 0.1+ | 0.5+ |
| 2000 03 07 | 807 | 0.4+ | 0.1+ | 2005 07 18 | 644 | 0.5+ | 0.2+ | 2005 09 01 | 644 | 0.1+ | 0.4+ |
| 2001 08 24 | 608 | 0.4− | 0.6− | 2005 07 18 | 644 | 0.1+ | 0.5+ | 2005 09 01 | 644 | 0.3− | 0.1+ |
| 2001 08 24 | 608 | 0.2− | 0.9− | 2005 07 18 | 644 | 0.1− | 0.3+ | 2005 09 01 | 644 | 0.1+ | 0.1+ |
| 2001 08 24 | 608 | 0.4− | 0.7− | 2005 08 05 | 644 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.5− | 0.1− |
| 2001 08 25 | 704 | 0.6+ | 0.4+ | 2005 08 05 | 644 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2001 08 25 | 704 | 0.5+ | 0.6− | 2005 08 05 | 644 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.5+ | 0.1+ |
| 2001 08 25 | 704 | 0.9+ | 0.3+ | 2005 08 28 | 699 | (0.1− | 2.5−) | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2004 04 13 | 691 | 0.3− | 0.4− | 2005 08 28 | 699 | 0.1+ | 1.1− | | | | |

**2005 NA$_{122}$ = 2004 GG$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.57046 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26549725 | $\omega$ | 358.21435 | +0.98437322 | | −0.17453589 | |
| $a$ | 2.3975226 | $\Omega$ | 11.91454 | +0.16293495 | | +0.85238765 | |
| $e$ | 0.1438244 | $i$ | 6.50224 | +0.06679492 | | +0.49292243 | |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 17 | 691 | 0.3− | 0.1− | 2005 07 04 | 644 | 0.1− | 0.2− | 2005 08 30 | 699 | 0.2+ | 0.8+ |
| 1996 02 17 | 691 | 0.1+ | 0.4− | 2005 07 27 | 644 | 0.2+ | 0.3− | 2005 08 30 | 699 | 0.6− | 0.1− |
| 1996 02 17 | 691 | 0.5+ | 0.2− | 2005 07 27 | 644 | 0.2+ | 0.3− | 2005 08 30 | 699 | 0.2+ | 0.4− |
| 2000 04 06 | 691 | 0.2− | 0.8+ | 2005 07 27 | 644 | 0.1+ | 0.1− | 2005 09 13 | 703 | 0.4− | 1.8+ |
| 2000 04 06 | 691 | 0.0 | 0.5+ | 2005 07 27 | 644 | 0.1− | 0.1+ | 2005 09 13 | 703 | 0.6+ | 0.4− |
| 2000 04 06 | 691 | 0.3− | 0.6+ | 2005 07 27 | 644 | 0.2+ | 0.1− | 2005 09 13 | 703 | 1.5− | 0.2− |
| 2004 04 12 | 691 | 0.1− | 0.5− | 2005 07 27 | 644 | 0.1− | 0.3− | 2005 09 13 | 703 | 0.5+ | 0.7+ |
| 2004 04 12 | 691 | 0.3+ | 0.1+ | 2005 08 04 | 644 | 0.2+ | 0.4− | 2005 09 24 | 644 | 0.3+ | 0.1− |
| 2004 04 12 | 691 | 0.2− | 0.5− | 2005 08 04 | 644 | 0.1− | 0.2− | 2005 09 24 | 644 | 0.7+ | 0.1− |
| 2004 04 19 | 691 | 0.1+ | 0.1+ | 2005 08 04 | 644 | 0.1− | 0.2− | 2005 09 24 | 644 | 0.2− | 0.2+ |
| 2004 04 19 | 691 | 0.3+ | 0.1+ | 2005 08 30 | 644 | 0.1+ | 0.1− | 2005 11 06 | G96 | 0.4+ | 0.2− |
| 2004 04 19 | 691 | 0.0 | 0.3− | 2005 08 30 | 644 | 0.1− | 0.1− | 2005 11 06 | G96 | 0.7+ | 0.4+ |
| 2005 07 04 | 644 | 0.1− | 0.1+ | 2005 08 30 | 644 | 0.1+ | 0.1+ | 2005 11 06 | G96 | 0.1− | 0.2+ |
| 2005 07 04 | 644 | 0.3− | 0.2− | 2005 08 30 | 699 | 0.8− | 0.4+ | 2005 11 06 | G96 | 0.3− | 0.3− |

**2005 NB$_{122}$ = 2004 JZ$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.35153 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20403090 | $\omega$ | 187.35740 | +0.86925518 | | +0.49365555 | |
| $a$ | 2.8576262 | $\Omega$ | 143.02343 | −0.45130033 | | +0.81423946 | |
| $e$ | 0.0986208 | $i$ | 2.52040 | −0.20180050 | | +0.30548044 | |
| $P$ | 4.83 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.0 | 0.1+ | 2004 05 21 | 691 | 0.2+ | 0.5+ | 2005 07 28 | 644 | 0.4+ | 0.3− |
| 1994 04 03 | 691 | 0.7− | 1.0− | 2004 05 21 | 691 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.6− | 0.1− |
| 1994 04 03 | 691 | 0.2− | 1.5− | 2005 07 05 | G96 | 0.7− | 0.3− | 2006 09 28 | G96 | 0.4− | 0.4+ |
| 2001 11 20 | 704 | 0.4− | 0.5+ | 2005 07 05 | G96 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.3+ | 1.1+ | 2005 07 05 | G96 | 0.6− | 0.3− | 2006 09 28 | G96 | 0.5− | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2005 07 05 | G96 | 0.4− | 0.2− | 2006 11 16 | 691 | 0.2− | 0.3− |
| 2001 12 14 | 704 | 0.7+ | 0.8− | 2005 07 05 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 12 14 | 704 | 0.1+ | 0.1+ | 2005 07 05 | 644 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2001 12 14 | 704 | 0.7− | 0.7− | 2005 07 05 | 644 | 0.2+ | 0.6− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.6+ | 0.6− | 2005 07 18 | 644 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2004 05 13 | 691 | 0.1+ | 0.5+ | 2005 07 18 | 644 | 0.3+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2004 05 13 | 691 | 0.5+ | 0.7+ | 2005 07 18 | 644 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2004 05 13 | 691 | 0.1+ | 0.6+ | 2005 07 28 | 644 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2004 05 21 | 691 | 0.3+ | 0.6+ | 2005 07 28 | 644 | 0.2+ | 0.1− | 2006 11 24 | 691 | 0.3+ | 0.3+ |

**2005 NC$_{122}$ = 2002 VN$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.06976 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27548406 | $\omega$ | 218.26066 | +0.39112441 | | +0.91042832 | |
| $a$ | 2.3392236 | $\Omega$ | 75.12791 | −0.80634594 | | +0.40953954 | |
| $e$ | 0.1231857 | $i$ | 8.01084 | −0.44365293 | | +0.05828924 | |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.3− | 0.6− | 2002 11 13 | 644 | 0.7− | 0.8+ | 2005 08 10 | E12 | 0.1− | 0.3− |
| 1993 01 22 | 691 | 1.3+ | 0.4+ | 2002 11 13 | 644 | 0.4− | 0.8+ | 2005 08 10 | E12 | 0.1− | 0.1+ |
| 1993 01 22 | 691 | 0.7− | 0.1− | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2005 08 24 | E12 | 0.3+ | 0.1− |
| 2001 04 15 | 691 | 0.1− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.0 | 2005 08 24 | E12 | 0.1− | 0.6+ |
| 2001 04 15 | 691 | 0.3− | 0.0 | 2004 02 16 | 691 | 0.4+ | 0.3+ | 2005 08 24 | E12 | 0.8+ | 0.4− |
| 2001 04 15 | 691 | 0.1− | 0.0 | 2005 07 10 | E12 | 0.6− | 0.8+ | 2005 08 24 | E12 | 0.7+ | 0.5+ |
| 2001 04 25 | 699 | 0.2+ | 0.8+ | 2005 07 10 | E12 | 0.4− | 0.6+ | 2005 08 27 | I10 | (4.1+ | 0.3+) |
| 2001 04 25 | 699 | 0.6− | 0.6+ | 2005 07 10 | E12 | 0.2+ | 0.3+ | 2005 08 27 | I10 | 0.1+ | 2.1− |
| 2001 04 25 | 699 | 0.1+ | 0.5− | 2005 07 10 | E12 | 0.4+ | 0.3+ | 2005 08 27 | I10 | (3.2− | 1.7−) |
| 2001 04 25 | 699 | 1.0+ | 0.5+ | 2005 07 29 | E12 | 0.6+ | 0.5− | 2005 09 05 | E12 | 0.3+ | 0.2+ |
| 2002 11 11 | 704 | 0.8− | 1.2− | 2005 07 29 | E12 | 0.1+ | 0.4+ | 2005 09 05 | E12 | 0.5− | 0.2+ |
| 2002 11 11 | 704 | 0.5− | 0.7+ | 2005 07 29 | E12 | 1.4− | 0.5+ | 2005 09 05 | E12 | 0.2+ | 0.3− |
| 2002 11 11 | 704 | 0.3− | 0.6+ | 2005 07 29 | E12 | 0.1− | 0.7+ | 2005 09 05 | E12 | 0.1− | 0.2+ |
| 2002 11 11 | 704 | 0.1+ | 0.9− | 2005 08 10 | E12 | 0.3+ | 0.3+ | | | | |
| 2002 11 13 | 644 | 0.4− | 1.0+ | 2005 08 10 | E12 | 0.1− | 0.5+ | | | | |

**2005 ND$_{122}$ = 2003 CZ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.10539 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22404748 | $\omega$ | 57.53965 | +0.99656279 | | +0.03137486 | |
| $a$ | 2.6847840 | $\Omega$ | 300.55719 | −0.06191558 | | +0.89697345 | |
| $e$ | 0.0554887 | $i$ | 5.10806 | +0.05503691 | | +0.44096966 | |
| $P$ | 4.40 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 05 | 691 | 1.1+ | 0.0 | 2003 02 09 | 333 | 0.1+ | 0.3− | 2005 09 12 | 691 | 0.1− | 0.1+ |
| 1994 01 05 | 691 | 0.4− | 0.1− | 2005 07 12 | 291 | 0.1+ | 0.1+ | 2005 09 12 | 691 | 0.0 | 0.1+ |
| 1994 01 05 | 691 | 0.6− | 0.3+ | 2005 07 12 | 291 | 0.2− | 0.3− | 2005 09 12 | 691 | 0.0 | 0.0 |
| 2001 10 20 | 644 | 0.2+ | 0.3− | 2005 07 12 | 291 | 0.2− | 0.1− | 2005 09 25 | 691 | 0.2+ | 0.2− |
| 2001 10 20 | 644 | 0.2− | 0.4− | 2005 07 31 | 644 | 0.1+ | 0.4+ | 2005 09 25 | 691 | 0.3+ | 0.2− |
| 2001 10 20 | 644 | 0.2+ | 0.2− | 2005 07 31 | 644 | 0.1+ | 0.4+ | 2005 09 25 | 691 | 0.2+ | 0.1− |
| 2003 02 07 | 333 | 0.0 | 0.2+ | 2005 07 31 | 644 | 0.3+ | 0.3+ | 2005 10 07 | 691 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 07 | 333 | 0.7− | 0.3+ | 2005 08 30 | 691 | 0.2− | 0.0 | 2005 10 07 | 691 | 0.0 | 0.2+ | | |
| 2003 02 07 | 333 | 0.6+ | 0.1− | 2005 08 30 | 691 | 0.4− | 0.1− | 2005 10 07 | 691 | 0.1+ | 0.4+ | | |
| 2003 02 09 | 333 | 0.0 | 0.1− | 2005 08 30 | 691 | 0.2− | 0.0 | | | | | | |

**2005 NE$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.51086 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23134565 | $\omega$ | 1.33637 | | +0.44062686 | +0.85603024 | |
| $a$ | 2.6280189 | $\Omega$ | 294.86885 | | −0.82635394 | +0.26915830 | |
| $e$ | 0.1519448 | $i$ | 17.33284 | | −0.35069523 | +0.44132306 | |
| $P$ | 4.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.8+ | 0.1− | 2005 07 02 | 703 | 0.1− | 0.5+ | 2005 08 29 | 644 | 0.4+ | 0.1+ | | |
| 2001 08 23 | 704 | 0.5+ | 0.0 | 2005 07 02 | 703 | 0.3− | 0.6− | 2005 08 29 | 644 | 0.3− | 0.0 | | |
| 2001 08 23 | 704 | 0.1+ | 0.1− | 2005 08 05 | 644 | 0.1− | 0.2+ | 2005 08 29 | 644 | 0.1+ | 0.1+ | | |
| 2001 10 15 | 704 | 0.1− | 0.4− | 2005 08 05 | 644 | 0.0 | 0.1+ | 2005 09 11 | 704 | 0.1+ | 0.4− | | |
| 2001 10 15 | 704 | 0.7− | 0.2+ | 2005 08 05 | 644 | 0.3+ | 0.2+ | 2005 09 11 | 704 | 0.4+ | 0.0 | | |
| 2001 10 15 | 704 | 0.6− | 0.6+ | 2005 08 28 | 699 | 0.5+ | 0.1− | 2005 09 11 | 704 | 0.5− | 0.4− | | |
| 2001 10 15 | 704 | 0.0 | 0.2− | 2005 08 28 | 699 | 0.2− | 0.0 | 2005 09 11 | 704 | 0.6+ | 0.5+ | | |
| 2005 07 02 | 703 | 0.4− | 0.3− | 2005 08 28 | 699 | 0.1+ | 0.1+ | | | | | | |
| 2005 07 02 | 703 | 0.1− | 0.4+ | 2005 08 28 | 699 | 0.5− | 0.6− | | | | | | |

**2005 NF$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.03575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26930431 | $\omega$ | 275.16833 | | +0.11746217 | +0.99307179 | |
| $a$ | 2.3748737 | $\Omega$ | 1.58884 | | −0.85698394 | +0.10305682 | |
| $e$ | 0.1319259 | $i$ | 6.89045 | | −0.50177800 | +0.05645987 | |
| $P$ | 3.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 28 | 691 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.1− | 0.2+ | 2005 08 10 | E12 | 0.1− | 0.6+ | | |
| 1991 11 28 | 691 | 0.3− | 1.0− | 2005 07 03 | 644 | 0.1− | 0.1+ | 2005 08 10 | E12 | 0.0 | 0.1+ | | |
| 1991 11 28 | 691 | 0.4+ | 0.7+ | 2005 07 03 | 644 | 0.3− | 0.3+ | 2005 08 10 | E12 | 0.1− | 0.1− | | |
| 1998 10 13 | 691 | 0.5− | 0.1+ | 2005 07 03 | 644 | 0.2− | 0.3+ | 2005 08 24 | E12 | 1.2− | 0.2− | | |
| 1998 10 13 | 691 | 0.2+ | 0.3+ | 2005 07 17 | 644 | 0.0 | 0.2+ | 2005 08 24 | E12 | 1.3+ | 0.0 | | |
| 1998 10 13 | 691 | 0.1+ | 0.2+ | 2005 07 17 | 644 | 0.0 | 0.1+ | 2005 08 24 | E12 | 0.7− | 0.1− | | |
| 2004 02 16 | 691 | 0.2+ | 0.3+ | 2005 07 17 | 644 | 0.1− | 0.3+ | | | | | | |
| 2004 02 16 | 691 | 0.3+ | 0.2+ | 2005 08 10 | E12 | 0.7+ | 0.3− | | | | | | |

**2005 NG$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.83755 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23819330 | $\omega$ | 77.42370 | | +0.83621391 | +0.54092572 | |
| $a$ | 2.5774071 | $\Omega$ | 249.76507 | | −0.53306680 | +0.76309649 | |
| $e$ | 0.2565955 | $i$ | 5.51981 | | −0.12878699 | +0.35367091 | |
| $P$ | 4.14 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.8− | 0.4+ | 2001 09 25 | 704 | 0.4+ | 0.7+ | 2005 08 24 | 644 | 0.2− | 0.3− | | |
| 2001 09 16 | 704 | 0.2+ | 0.1− | 2005 07 04 | 691 | 0.1− | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.2− | | |
| 2001 09 16 | 704 | 0.4− | 0.1− | 2005 07 04 | 691 | 0.0 | 0.1+ | 2005 08 24 | 644 | 0.3+ | 0.1− | | |
| 2001 09 16 | 704 | 0.0 | 0.4− | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2005 09 03 | 644 | 0.2+ | 0.1− | | |
| 2001 09 16 | 704 | 0.2+ | 0.2+ | 2005 08 06 | 644 | 0.4− | 0.1− | 2005 09 03 | 644 | 0.4+ | 0.3− | | |
| 2001 09 25 | 704 | 0.3+ | 0.3+ | 2005 08 06 | 644 | 0.2− | 0.2− | 2005 09 03 | 644 | 0.4+ | 0.1− | | |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2005 08 06 | 644 | 0.1− | 0.3− | | | | | | |

**2005 NH$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.85228 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27122595 | $\omega$ | 98.16045 | | +0.00444443 | +0.99998543 | |
| $a$ | 2.3636430 | $\Omega$ | 172.09226 | | −0.92602149 | +0.00527249 | |
| $e$ | 0.1642149 | $i$ | 1.27649 | | −0.37744462 | −0.00116063 | |
| $P$ | 3.63 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 291 | 1.3− | 0.3+ | 2004 01 31 | 691 | 0.6+ | 0.1+ | 2005 08 06 | 704 | 0.0 | 1.6+ | | |
| 2002 11 04 | 291 | 0.2+ | 0.5− | 2005 07 05 | G96 | 0.0 | 0.1+ | 2005 08 06 | 704 | 0.4− | 0.5+ | | |
| 2002 11 04 | 291 | 0.2+ | 0.0 | 2005 07 05 | G96 | 0.3− | 0.1− | 2005 08 06 | 704 | 0.2+ | 1.3+ | | |
| 2002 11 13 | 291 | 0.4+ | 0.0 | 2005 07 05 | G96 | 0.1− | 0.2− | 2005 08 31 | 691 | 0.0 | 0.0 | | |
| 2002 11 13 | 291 | 0.0 | 0.2+ | 2005 07 05 | G96 | 0.1+ | 0.2+ | 2005 08 31 | 691 | 0.0 | 0.0 | | |
| 2002 11 13 | 291 | 0.5+ | 0.1+ | 2005 07 27 | 644 | 0.1+ | 0.2+ | 2005 08 31 | 691 | 0.2− | 0.1− | | |
| 2004 01 31 | 691 | 0.1+ | 0.2+ | 2005 07 27 | 644 | 0.3+ | 0.1+ | | | | | | |
| 2004 01 31 | 691 | 0.4− | 0.6+ | 2005 07 27 | 644 | 0.0 | 0.0 | | | | | | |

**2005 NJ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.98683 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20508848 | $\omega$ | 185.57142 | | +0.90237438 | +0.43046499 | |
| $a$ | 2.8477938 | $\Omega$ | 148.90578 | | −0.39384265 | +0.84304932 | |
| $e$ | 0.1191790 | $i$ | 2.27525 | | −0.17495269 | +0.32244030 | |
| $P$ | 4.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.3+ | 0.7+ | 2004 05 13 | 691 | 0.0 | 0.1+ | 2005 09 29 | G96 | 0.5− | 0.2+ | | |
| 2001 11 17 | 704 | 0.6− | 0.1− | 2004 05 13 | 691 | 0.4+ | 0.1− | 2005 09 29 | G96 | 0.5− | 0.3− | | |
| 2001 11 17 | 704 | 0.4+ | 1.1+ | 2005 07 05 | 644 | 0.4− | 0.4+ | 2005 09 29 | G96 | 0.2+ | 0.2+ | | |
| 2001 11 17 | 704 | 0.4+ | 0.8+ | 2005 07 05 | 644 | 0.1− | 0.3+ | 2005 09 29 | G96 | 0.4− | 0.0 | | |
| 2003 03 11 | 291 | 0.1− | 0.1+ | 2005 07 05 | 644 | 0.0 | 0.5+ | 2005 10 25 | G96 | 0.1− | 0.2+ | | |
| 2003 03 11 | 291 | 0.6− | 0.3+ | 2005 07 28 | 644 | 0.1− | 0.5+ | 2005 10 25 | G96 | 0.0 | 0.2+ | | |
| 2003 03 11 | 291 | 0.1+ | 0.7+ | 2005 07 28 | 644 | 0.0 | 0.3+ | 2005 10 25 | G96 | 0.1+ | 0.4+ | | |
| 2004 04 22 | 691 | 0.0 | 0.1+ | 2005 07 28 | 644 | 0.1− | 0.3+ | 2005 10 25 | G96 | 0.3− | 0.2+ | | |
| 2004 04 22 | 691 | 0.2− | 0.1+ | 2005 08 06 | 644 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1− | | |
| 2004 04 22 | 691 | 0.3− | 0.2+ | 2005 08 06 | 644 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1+ | | |
| 2004 05 13 | 691 | 0.8+ | 0.0 | 2005 08 06 | 644 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.2+ | | |

**2005 NK$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.17460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19043769 | $\omega$ | 326.18456 | | −0.04524508 | +0.99009205 | |
| $a$ | 2.9920403 | $\Omega$ | 300.89153 | | −0.87883174 | −0.10271886 | |
| $e$ | 0.0384430 | $i$ | 8.91133 | | −0.47498173 | +0.09574221 | |
| $P$ | 5.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.8− | 0.3+ | 2004 05 22 | 704 | 0.2− | 0.3− | 2005 08 24 | 644 | 0.3+ | 0.4+ | | |
| 2000 08 31 | 704 | 0.4− | 0.7+ | 2004 05 22 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.5− | | |
| 2000 08 31 | 704 | 1.0− | 0.3+ | 2005 07 12 | 703 | 0.4+ | 0.5+ | 2006 10 19 | 703 | (2.0+ | 0.8−) | | |
| 2001 12 09 | 704 | 0.4+ | 0.2− | 2005 07 12 | 703 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.9− | 0.3+ | | |
| 2001 12 09 | 704 | 0.9+ | 0.2+ | 2005 07 12 | 703 | 0.4+ | 0.4− | 2006 10 19 | 703 | 0.8− | 0.7+ | | |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2005 07 12 | 703 | 0.5− | 0.2− | 2006 11 08 | 644 | 0.4+ | 0.0 | | |
| 2001 12 09 | 704 | 0.5+ | 1.0+ | 2005 07 29 | 644 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.1+ | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.1− | 0.1+ | 2006 11 22 | 703 | 1.2− | 0.7− | | |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 08 06 | 644 | 0.1− | 0.4+ | 2006 11 22 | 703 | 0.3− | 0.0 | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.5+ | 0.1+ | | |
| 2004 05 22 | 704 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.3− | 0.2+ | 2006 11 22 | 703 | 0.3+ | 0.2+ | | |
| 2004 05 22 | 704 | 0.7+ | 1.1+ | 2005 08 24 | 644 | 0.0 | 0.0 | | | | | | |
| 2004 05 22 | 704 | 0.1+ | 0.7+ | 2005 08 24 | 644 | 0.1+ | 0.1− | | | | | | |

**2005 NL$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.43788 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21222291 | $\omega$ | 154.43342 | | +0.16530989 | | +0.98270076 |
| $a$ | 2.7836067 | $\Omega$ | 124.97489 | | −0.92145177 | | +0.18407529 |
| $e$ | 0.0564221 | $i$ | 5.84862 | | −0.35156688 | | −0.02038401 |
| $P$ | 4.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 644 | 0.4+ | 0.6+ | 2004 04 14 | 699 | 1.3+ | 0.6+ | 2006 11 02 | 703 | 0.6− | 0.1+ |
| 2001 10 24 | 644 | 0.1+ | 0.1− | 2004 04 14 | 699 | 1.1+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2001 10 24 | 644 | 0.4+ | 0.4+ | 2005 07 12 | G96 | 0.8− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2001 11 18 | 704 | 0.4+ | 0.3− | 2005 07 12 | G96 | 0.7− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2001 11 18 | 704 | 1.2+ | 0.4+ | 2005 07 12 | G96 | 0.9− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2001 11 18 | 704 | 0.4+ | 0.4+ | 2005 07 12 | G96 | 0.5− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2002 12 09 | 291 | 0.1+ | 0.2+ | 2005 07 28 | 644 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 12 09 | 291 | 0.4− | 0.4+ | 2005 07 28 | 644 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.8− | 0.1+ |
| 2002 12 09 | 291 | 0.4+ | 0.4− | 2005 07 28 | 644 | 0.4− | 0.2+ | 2006 11 24 | 691 | 1.0+ | 0.6+ |
| 2002 12 28 | 291 | 0.6− | 0.3+ | 2005 08 04 | 644 | 0.5− | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2002 12 28 | 291 | 0.4− | 0.4+ | 2005 08 04 | 644 | 0.3− | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2002 12 28 | 291 | 0.4− | 0.2+ | 2005 08 04 | 644 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2004 04 13 | 703 | 0.7+ | 0.7+ | 2005 08 30 | 644 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2004 04 13 | 703 | 0.9+ | 0.7+ | 2005 08 30 | 644 | 0.3− | 0.4+ | 2006 11 24 | G96 | 0.4− | 0.2− |
| 2004 04 13 | 703 | 1.0+ | 0.9− | 2005 08 30 | 644 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2004 04 13 | 703 | (0.5− | 1.6+) | 2006 11 02 | 703 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.7+ | 1.8− |
| 2004 04 14 | 699 | 0.9− | 0.0 | 2006 11 02 | 703 | 1.1+ | 0.6+ | 2006 11 28 | 704 | 0.1+ | 0.7+ |
| 2004 04 14 | 699 | 0.4+ | 1.0+ | 2006 11 02 | 703 | 0.5+ | 0.9− | 2006 11 28 | 704 | 0.4+ | 0.9+ |

**2005 NN$_{122}$ = 2006 UB$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.23990 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21010572 | $\omega$ | 264.51029 | | +0.82325838 | | −0.56629086 |
| $a$ | 2.8022753 | $\Omega$ | 129.97491 | | +0.53910188 | | +0.75814172 |
| $e$ | 0.0813933 | $i$ | 2.95465 | | +0.17780553 | | +0.32331996 |
| $P$ | 4.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 07 03 | G96 | 0.2− | 0.3+ | 2005 07 15 | 691 | 0.1− | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 07 03 | G96 | 0.0 | 0.2+ | 2005 07 15 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2005 07 06 | 691 | 0.1+ | 0.3− | 2005 07 15 | 691 | 0.0 | 0.1− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2005 07 06 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.4+ |
| 2003 01 30 | 644 | 0.3− | 0.2+ | 2005 07 06 | 691 | (3.8− | 0.8−) | 2006 10 18 | 691 | 0.1+ | 0.3− |
| 2003 01 30 | 644 | 0.1+ | 0.0 | 2005 07 07 | 568 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.1+ |
| 2003 01 30 | 644 | 0.3+ | 0.6+ | 2005 07 07 | 568 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2005 07 03 | G96 | 0.2− | 0.3+ | 2005 07 07 | 568 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2005 07 03 | G96 | 0.0 | 0.4+ | 2005 07 08 | 568 | 0.4− | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.0 |

**2005 NP$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.94190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12429309 | $\omega$ | 71.76765 | | +0.76095587 | | +0.63636092 |
| $a$ | 3.9765342 | $\Omega$ | 248.51045 | | −0.63471106 | | +0.68974833 |
| $e$ | 0.3016298 | $i$ | 7.81082 | | −0.13449178 | | +0.34538677 |
| $P$ | 7.93 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 03 | 703 | 0.2− | 0.0 | 2005 10 01 | 703 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2005 07 03 | 703 | 0.2− | 1.2+ | 2005 10 01 | 703 | 1.2− | 0.1− | 2006 11 11 | 691 | 0.3− | 0.4+ |
| 2005 07 03 | 703 | 0.1− | 0.6− | 2005 10 08 | 704 | 1.0+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2005 07 03 | 703 | 0.5+ | 0.1− | 2005 10 08 | 704 | 0.4+ | 0.9+ | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2005 09 23 | 644 | 0.1+ | 0.1− | 2005 10 08 | 704 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2005 09 23 | 644 | 0.3+ | 0.1− | 2005 10 21 | 644 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2005 09 23 | 644 | 0.4+ | 0.1+ | 2005 10 21 | 644 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.4− | 0.1− |
| 2005 09 29 | 699 | 0.6+ | 0.6+ | 2005 10 21 | 644 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2005 09 29 | 699 | 0.1− | 1.0+ | 2006 10 19 | G96 | 0.2+ | 1.0− | 2006 11 23 | 691 | 0.7− | 0.2+ |
| 2005 09 29 | 699 | 0.6− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.6− | 0.6+ |
| 2005 09 29 | 699 | 0.5− | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.6− | 0.1+ |
| 2005 10 01 | 703 | 0.2+ | 1.2− | 2006 10 19 | G96 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 2.5+ | 0.1− |
| 2005 10 01 | 703 | 0.0 | 0.8− | 2006 11 11 | 691 | 0.2+ | 0.2− | | | | |

**2005 NS$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.98914 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19042791 | $\omega$ | 282.45884 | | +0.96331687 | | +0.21541475 |
| $a$ | 2.9921428 | $\Omega$ | 65.28113 | | −0.12052781 | | +0.88014236 |
| $e$ | 0.3033445 | $i$ | 10.14840 | | −0.23977835 | | +0.42301999 |
| $P$ | 5.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.6− | 0.7+ | 2005 07 03 | 644 | 0.2− | 0.4+ | 2005 09 08 | E12 | 0.6+ | 0.7− |
| 2000 09 23 | 699 | 0.6− | 0.8+ | 2005 07 03 | 644 | 0.1− | 0.1+ | 2005 09 08 | E12 | 0.9+ | 0.3− |
| 2000 09 23 | 699 | 1.1− | 0.0 | 2005 07 27 | 644 | 0.0 | 0.2+ | 2005 09 08 | E12 | 0.9− | 0.3− |
| 2000 09 23 | 699 | 0.8+ | 1.2+ | 2005 07 27 | 644 | 0.1− | 0.4+ | 2005 09 08 | E12 | 0.7+ | 0.1− |
| 2000 10 02 | 699 | 0.9+ | 0.7− | 2005 07 27 | 644 | 0.1+ | 0.3+ | 2005 09 24 | E12 | 0.2− | 0.7+ |
| 2000 10 02 | 699 | 0.6+ | 0.9− | 2005 08 28 | E12 | 0.2+ | 0.1+ | 2005 09 24 | E12 | 0.5+ | 0.1+ |
| 2000 10 02 | 699 | 0.0 | 0.2− | 2005 08 28 | E12 | 0.1− | 0.8− | 2005 09 24 | E12 | 0.1+ | 0.8+ |
| 2000 10 02 | 699 | 0.6− | 0.1− | 2005 08 28 | E12 | 0.4+ | 0.1− | 2005 09 24 | E12 | 2.0− | 1.4− |
| 2005 07 03 | 644 | 0.2− | 0.2+ | 2005 08 28 | E12 | 0.2+ | 0.1− | | | | |

**2005 NU$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.73062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23040100 | $\omega$ | 264.26646 | | +0.92696978 | | −0.30908838 |
| $a$ | 2.6351973 | $\Omega$ | 113.58746 | | +0.36313643 | | +0.88151488 |
| $e$ | 0.2104276 | $i$ | 13.41268 | | −0.09412208 | | +0.35692560 |
| $P$ | 4.28 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 1.4+ | 0.8− | 2001 09 22 | 644 | 0.9+ | 0.1− | 2005 08 24 | E12 | 0.0 | 0.3− |
| 2001 08 19 | 704 | (0.3+ | 1.6+) | 2001 09 22 | 644 | 0.8+ | 0.7− | 2005 08 24 | E12 | 0.7+ | 0.5− |
| 2001 08 19 | 704 | 0.2− | 0.7+ | 2001 09 29 | 608 | 1.2− | 0.5+ | 2005 08 24 | E12 | 1.0+ | 0.4− |
| 2001 08 19 | 704 | 0.2− | 0.9+ | 2001 09 29 | 608 | 1.3− | 0.2− | 2005 08 28 | 699 | 0.4− | 0.0 |
| 2001 08 19 | 704 | 0.6− | 0.8+ | 2001 09 29 | 608 | 0.9− | 0.2+ | 2005 08 28 | 699 | 0.3− | 0.2− |
| 2001 08 19 | 608 | 0.6+ | 0.1+ | 2001 10 15 | 704 | 0.2+ | 0.2− | 2005 08 28 | 699 | 0.8− | 0.0 |
| 2001 08 19 | 608 | 0.4+ | 0.2+ | 2001 10 15 | 704 | 0.3+ | 0.2− | 2005 08 28 | 699 | 1.0+ | 0.5− |
| 2001 08 19 | 608 | 0.2+ | 0.1+ | 2001 10 15 | 704 | 0.3+ | 0.4− | 2005 09 06 | E12 | 0.0 | 0.0 |
| 2001 08 29 | 644 | 0.0 | 0.1+ | 2001 10 15 | 704 | 0.1+ | 0.5− | 2005 09 06 | E12 | 0.1+ | 0.9+ |
| 2001 08 29 | 644 | 0.1− | 1.0+ | 2005 07 04 | 644 | 0.0 | 0.3− | 2005 09 06 | E12 | 0.3− | 0.1− |
| 2001 08 29 | 644 | 0.2− | 0.2+ | 2005 07 04 | 644 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2001 08 29 | 644 | 0.1+ | 0.3+ | 2005 07 04 | 644 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2001 08 29 | 644 | 0.2− | 0.1+ | 2005 07 26 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2001 08 29 | 644 | 0.1+ | 1.0+ | 2005 07 26 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 2001 09 11 | 704 | 0.3+ | 0.4− | 2005 07 26 | 644 | 0.9+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2001 09 11 | 704 | 0.4− | 0.1− | 2005 08 15 | E12 | 0.8− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2001 09 11 | 704 | 0.6− | 0.5− | 2005 08 15 | E12 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2001 09 11 | 704 | 0.4− | 0.2− | 2005 08 15 | E12 | 0.4− | 0.2+ | 2006 11 27 | G96 | 0.3− | 0.1+ |
| 2001 09 11 | 704 | 0.2− | 0.1− | 2005 08 15 | E12 | 0.1+ | 0.4− | | | | |
| 2001 09 22 | 644 | 0.8+ | 0.8− | 2005 08 24 | E12 | 0.3− | 0.2− | | | | |

**2005 NV$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.21007 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17497703 | $\omega$ | 156.01962 | | −0.36231152 | | −0.92623963 |
| $a$ | 3.1657894 | $\Omega$ | 315.03060 | | +0.82959996 | | −0.26962385 |
| $e$ | 0.0579714 | $i$ | 8.46003 | | +0.42484617 | | −0.26340676 |
| $P$ | 5.63 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 699 | 0.9+ | 1.1+ | 2005 07 27 | 644 | 0.1+ | 0.2+ | 2005 10 26 | G96 | 0.5+ | 0.2− |
| 2003 03 07 | 699 | (0.4− | 2.9+) | 2005 07 27 | 644 | 0.7+ | 0.1+ | 2006 09 17 | 703 | 1.4+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 699 | 0.2+ | 0.9+ | 2005 08 06 | 704 | 0.0 | 0.9+ | 2006 09 17 | 703 | 0.4− | 0.4+ | | |
| 2003 03 07 | 699 | (1.3+ | 2.2+) | 2005 08 06 | 704 | 1.0− | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.0 | | |
| 2005 07 04 | 644 | 0.5− | 0.3+ | 2005 08 06 | 704 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.6− | 0.3+ | | |
| 2005 07 04 | 644 | 0.1− | 0.2+ | 2005 09 01 | 691 | 0.2+ | 0.1− | 2006 10 17 | A50 | 1.0− | 0.0 | | |
| 2005 07 04 | 644 | 0.0 | 0.3+ | 2005 09 01 | 691 | 0.1− | 0.1− | 2006 10 17 | A50 | 1.1− | 0.5+ | | |
| 2005 07 18 | 644 | 0.3− | 0.2+ | 2005 09 01 | 691 | 0.0 | 0.3− | 2006 10 18 | A50 | 1.0+ | 0.0 | | |
| 2005 07 18 | 644 | 0.1− | 0.1− | 2005 10 26 | G96 | 0.7+ | 0.5+ | 2006 10 18 | A50 | 0.2− | 0.6− | | |
| 2005 07 18 | 644 | 0.0 | 0.6+ | 2005 10 26 | G96 | 0.1− | 0.4− | | | | | | |
| 2005 07 27 | 644 | 0.0 | 0.3+ | 2005 10 26 | G96 | 0.8− | 0.4− | | | | | | |

**2005 NE$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 60.73107 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25832532 | $\omega$ | 353.07708 | | +0.90632435 | | −0.41660398 | | |
| $a$ | 2.4416949 | $\Omega$ | 31.84249 | | +0.39386480 | | +0.77204401 | | |
| $e$ | 0.2237438 | $i$ | 7.71574 | | +0.15312313 | | +0.47998872 | | |
| $P$ | 3.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.8− | 0.3+ | 2005 07 26 | 644 | 0.1− | 0.3+ | 2005 08 15 | E12 | 0.6+ | 0.2− | | |
| 2003 01 10 | 704 | (0.3+ | 2.0+) | 2005 07 26 | 644 | 0.1+ | 0.2+ | 2005 08 15 | E12 | 0.8+ | 0.1+ | | |
| 2003 01 10 | 704 | (0.7+ | 2.4+) | 2005 07 26 | 644 | 0.1− | 0.2+ | 2005 08 30 | 699 | 0.2+ | 0.7+ | | |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2005 07 26 | 644 | 0.3− | 0.0 | 2005 08 30 | 699 | 1.4− | 1.1− | | |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2005 07 26 | 644 | 0.2− | 0.2+ | 2005 08 30 | 699 | (0.6+ | 1.7+) | | |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2005 07 26 | 644 | 0.1− | 0.1+ | 2005 08 30 | 699 | 0.5− | 0.4− | | |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2005 08 04 | 644 | 0.1− | 0.2+ | 2005 09 22 | E12 | 0.4+ | 0.4− | | |
| 2005 07 06 | E12 | (0.2− | 1.8−) | 2005 08 04 | 644 | 0.0 | 0.2+ | 2005 09 22 | E12 | 0.4− | 0.2+ | | |
| 2005 07 06 | E12 | 0.2− | 1.1− | 2005 08 04 | 644 | 0.1− | 0.0 | 2005 09 22 | E12 | 0.2+ | 0.0 | | |
| 2005 07 06 | E12 | 1.1− | 0.4− | 2005 08 15 | E12 | 0.8+ | 0.3+ | 2005 09 22 | E12 | 0.3+ | 0.0 | | |
| 2005 07 06 | E12 | 0.2+ | 0.3+ | 2005 08 15 | E12 | 0.5+ | 0.6+ | | | | | | |

**2005 OD**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 29.12038 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18182821 | $\omega$ | 281.92791 | | +0.94918349 | | −0.08079159 | | |
| $a$ | 3.0857581 | $\Omega$ | 83.27345 | | +0.20743142 | | +0.88745604 | | |
| $e$ | 0.1648032 | $i$ | 17.83549 | | −0.23669160 | | +0.45375598 | | |
| $P$ | 5.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 10 | 428 | 1.2+ | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.0 | | |
| 2005 07 16 | 428 | 0.4− | 0.6+ | 2006 11 15 | 703 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2005 07 16 | 428 | 0.0 | 0.2− | 2006 11 15 | 703 | 0.5− | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2005 07 18 | 428 | 0.7− | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2005 07 18 | 428 | 0.6+ | 0.3− | 2006 11 15 | 703 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2005 07 18 | 428 | 0.2− | 0.8− | 2006 11 15 | 703 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.3− | | |
| 2005 08 06 | E12 | 0.4− | 0.2+ | 2006 11 15 | 703 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2005 08 06 | E12 | 0.6+ | 0.5+ | 2006 11 15 | 703 | 0.6− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2005 08 06 | E12 | 0.5− | 0.5+ | 2006 11 19 | 703 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.2− | | |
| 2005 08 06 | E12 | 0.3+ | 0.4− | 2006 11 19 | 703 | 0.3+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.2− | | |
| 2005 08 24 | E12 | 0.4− | 0.5− | 2006 11 19 | 703 | 0.3+ | 0.4+ | 2006 11 28 | 704 | (1.6− | 0.8+) | | |
| 2005 08 24 | E12 | 0.4− | 1.1+ | 2006 11 19 | 703 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.4− | 1.5+ | | |
| 2005 08 24 | E12 | 0.4+ | 1.2− | 2006 11 23 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.9+ | 0.9− | | |
| 2005 08 24 | E12 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.3− | 2006 11 28 | 704 | 0.1− | 0.7+ | | |

**2005 OM$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 93.52328 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19630106 | $\omega$ | 316.72860 | | +0.52471901 | | +0.85088824 | | |
| $a$ | 2.9321597 | $\Omega$ | 344.86237 | | −0.75177197 | | +0.44902533 | | |
| $e$ | 0.0756638 | $i$ | 5.64223 | | −0.39938562 | | +0.27270030 | | |
| $P$ | 5.02 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 30 | I03 | 0.0 | 0.2+ | 2005 09 08 | E12 | 0.4+ | 0.7− | 2006 11 15 | 691 | 0.5− | 0.0 | | |
| 2000 06 30 | I03 | 0.2− | 0.3+ | 2005 09 08 | E12 | 0.7− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.0 | | |
| 2000 06 30 | I03 | 0.0 | 0.1− | 2005 10 25 | G96 | 0.3− | 0.6− | 2006 11 15 | 691 | 0.5+ | 0.1− | | |
| 2005 07 04 | 644 | 0.1+ | 0.4+ | 2005 10 25 | G96 | 0.9− | 0.9− | 2006 11 15 | 691 | 0.1− | 0.2+ | | |
| 2005 07 04 | 644 | 0.3− | 0.3+ | 2005 10 25 | G96 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.2− | | |
| 2005 07 04 | 644 | 0.2+ | 0.2+ | 2005 10 25 | G96 | 0.2− | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.7+ | | |
| 2005 07 26 | 644 | 0.0 | 0.1− | 2005 10 28 | G96 | 0.0 | 0.4− | 2006 11 22 | 703 | 0.2+ | 0.1− | | |
| 2005 07 26 | 644 | 0.2+ | 0.1+ | 2005 10 28 | G96 | 0.0 | 0.3− | 2006 11 22 | 703 | 0.3+ | 0.1+ | | |
| 2005 07 26 | 644 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.0 | 0.1− | 2006 11 22 | 703 | (0.3+ | 3.3−) | | |
| 2005 07 27 | 644 | 0.3− | 0.1− | 2005 10 28 | G96 | 0.2− | 0.1− | 2006 11 22 | 703 | 0.8+ | 0.1− | | |
| 2005 07 27 | 644 | 0.6− | 0.2+ | 2005 11 06 | 291 | 0.2+ | 0.3− | 2006 11 22 | 703 | 0.7− | 0.4+ | | |
| 2005 07 27 | 644 | 0.3− | 0.1+ | 2005 11 06 | 291 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 1.3− | 0.2− | | |
| 2005 09 08 | E12 | 0.6+ | 0.5+ | 2005 11 06 | 291 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.6+ | 0.3− | | |
| 2005 09 08 | E12 | 0.5+ | 0.5− | 2006 11 15 | 691 | 0.1− | 0.1+ | | | | | | |

**2005 OQ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 46.39512 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17582293 | $\omega$ | 100.05024 | | +0.90825105 | | −0.10164966 | | |
| $a$ | 3.1556274 | $\Omega$ | 266.65142 | | −0.04762033 | | +0.93862907 | | |
| $e$ | 0.2956389 | $i$ | 23.99049 | | +0.41570703 | | +0.32961011 | | |
| $P$ | 5.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | 703 | 0.9− | 0.8− | 2005 07 30 | 704 | 0.6+ | 0.5+ | 2005 08 12 | J87 | 0.5+ | 0.7− | | |
| 2005 07 04 | 703 | 0.1− | 0.2− | 2005 07 30 | 704 | 0.0 | 0.2+ | 2005 08 12 | J87 | 0.4+ | 0.0 | | |
| 2005 07 04 | 703 | 0.1+ | 0.4− | 2005 07 30 | 704 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.3+ | | |
| 2005 07 04 | 703 | (2.2− | 2.7−) | 2005 07 30 | 704 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1+ | | |
| 2005 07 29 | 704 | 0.2− | 0.5+ | 2005 08 02 | 704 | 1.2+ | 0.2+ | 2006 09 28 | 691 | 0.3+ | 0.2− | | |
| 2005 07 29 | 704 | 1.4− | 0.5+ | 2005 08 02 | 704 | 0.6+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.3+ | | |
| 2005 07 29 | 704 | 0.4+ | 0.1+ | 2005 08 02 | 704 | 1.5− | 0.9+ | 2006 11 01 | G96 | 0.2− | 0.3− | | |
| 2005 07 29 | 704 | 0.3+ | 0.5+ | 2005 08 02 | 704 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1+ | | |
| 2005 07 30 | 704 | 0.2− | 0.1− | 2005 08 12 | J87 | 0.2− | 1.0− | 2006 11 01 | G96 | 0.1− | 1.0− | | |

**2005 OG$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 75.52954 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17731693 | $\omega$ | 255.14497 | | +0.85405770 | | +0.51868745 | | |
| $a$ | 3.1378769 | $\Omega$ | 73.59691 | | −0.46009252 | | +0.78853835 | | |
| $e$ | 0.0973910 | $i$ | 2.35117 | | −0.24269386 | | +0.33040975 | | |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 28 | 644 | 0.0 | 0.0 | 2005 08 27 | 644 | 0.0 | 0.1− | 2006 11 22 | H07 | 1.2+ | 1.0− | | |
| 2005 07 28 | 644 | 0.1− | 0.2+ | 2005 08 31 | 691 | 0.0 | 0.2+ | 2006 11 22 | H07 | (1.6+ | 1.8−) | | |
| 2005 07 28 | 644 | 0.1− | 0.0 | 2005 08 31 | 691 | 0.0 | 0.0 | 2006 11 22 | H07 | 0.7− | 0.1− | | |
| 2005 07 28 | 644 | 0.1+ | 0.3+ | 2005 08 31 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.2− | 0.0 | | |
| 2005 07 28 | 644 | 0.0 | 0.2+ | 2005 09 14 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2005 07 28 | 644 | 0.2− | 0.2+ | 2005 09 14 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2005 07 29 | 644 | 0.0 | 0.1+ | 2005 09 14 | 691 | 0.0 | 0.3− | 2006 12 01 | 691 | 0.4− | 0.5+ | | |
| 2005 07 29 | 644 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.3+ | 0.3+ | | |
| 2005 07 29 | 644 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 12 01 | 691 | 0.0 | 0.0 | | |
| 2005 08 27 | 644 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4− | | | | | | |
| 2005 08 27 | 644 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.2− | | | | | | |

**2005 OH$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 54.05515 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.12377052 | $\omega$ | 255.91286 | | +0.86054270 | | +0.50509315 | | |
| $a$ | 3.9877193 | $\Omega$ | 73.71297 | | −0.43682925 | | +0.79834831 | | |
| $e$ | 0.2137949 | $i$ | 3.93873 | | −0.26200470 | | +0.32790378 | | |
| $P$ | 7.96 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 28 | 644 | 0.1− | 0.2− | 2005 09 22 | 644 | 0.1+ | 0.5− | 2006 10 28 | G96 | 0.6+ | 0.1− |
| 2005 07 28 | 644 | 0.2− | 0.2− | 2005 09 22 | 644 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.5− |
| 2005 07 28 | 644 | 0.0 | 0.1+ | 2005 09 23 | 699 | 0.5− | 0.4− | 2006 10 28 | G96 | 0.5+ | 0.1+ |
| 2005 07 29 | 644 | 0.4− | 0.2− | 2005 09 23 | 699 | 0.1+ | 0.7− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2005 07 29 | 644 | 0.0 | 0.1+ | 2005 09 23 | 699 | 0.4− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2005 07 29 | 644 | 0.3− | 0.1− | 2005 09 23 | 699 | 0.7+ | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2005 08 27 | 644 | 0.1− | 0.1− | 2005 09 24 | 644 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2005 08 27 | 644 | 0.2− | 0.1− | 2005 09 24 | 644 | 0.3+ | 0.3− | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2005 08 27 | 644 | 0.2− | 0.1− | 2005 09 24 | 644 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.4− | 0.2− |
| 2005 08 28 | 699 | 0.0 | 0.9+ | 2005 09 26 | 703 | 0.8− | 0.7+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2005 08 28 | 699 | 0.3+ | 1.1+ | 2005 09 26 | 703 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2005 08 28 | 699 | 0.6+ | 0.8+ | 2005 09 26 | 703 | 0.2+ | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2005 08 28 | 699 | 0.2− | 0.4+ | 2005 09 26 | 703 | 0.9− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 2005 09 14 | 691 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.4+ |
| 2005 09 14 | 691 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.5− | 0.6− |
| 2005 09 14 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2005 09 22 | 644 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.9+ | 0.2+ |

**2005 OM$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 26.57501 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.12450311 | $\omega$ | 98.88891 | +0.99587346 | −0.04905498 | |
| $a$ | 3.9720611 | $\Omega$ | 263.94888 | +0.01553080 | +0.92103205 | |
| $e$ | 0.2544664 | $i$ | 4.40350 | +0.08941385 | +0.38638525 | |
| $P$ | 7.92 | $H$ | 14.0 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 699 | 0.4+ | 0.8+ | 2005 10 30 | G96 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.3− | 0.0 |
| 1998 10 19 | 699 | 0.6+ | 0.4+ | 2005 10 30 | G96 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.2− |
| 1998 10 19 | 699 | 1.1− | 0.6− | 2006 10 19 | 695 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2005 06 23 | 644 | 0.2− | 0.0 | 2006 10 19 | 695 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2005 06 23 | 644 | 0.1− | 0.2− | 2006 10 20 | 695 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.7+ |
| 2005 06 23 | 644 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2005 07 29 | 644 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.9+ |
| 2005 07 29 | 644 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2005 07 29 | 644 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 2005 07 31 | 608 | 1.0+ | 0.8+ | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 20 | 703 | 0.4+ | 0.4− |
| 2005 07 31 | 608 | 1.3+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.5+ | 0.3− |
| 2005 07 31 | 608 | 0.3+ | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 20 | 703 | 0.1− | 0.8+ |
| 2005 08 06 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.2+ | 1.3+ |
| 2005 08 06 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.4− | 0.6− |
| 2005 08 06 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2005 08 23 | 608 | 1.1− | 0.4− | 2006 11 09 | 644 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.7+ |
| 2005 08 23 | 608 | 0.7− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.3+ | 1.2+ |
| 2005 08 23 | 608 | 0.9− | 0.4− | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 1.2+ | 0.2+ |
| 2005 08 24 | 644 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2005 08 24 | 644 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2005 08 24 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.8− | 0.9− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2005 08 26 | 699 | 0.1+ | 0.2+ | 2006 11 14 | 703 | (2.0− | 1.2−) | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2005 08 26 | 699 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 1.1− | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2005 08 26 | 699 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.8+ |
| 2005 08 29 | 699 | 0.5− | 0.2+ | 2006 11 15 | 704 | 1.2− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2005 08 29 | 699 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.1− | 0.0 |
| 2005 08 29 | 699 | 0.4− | 0.4+ | 2006 11 15 | 704 | 0.3− | 0.6− | 2006 12 01 | 704 | 0.2− | 0.1+ |
| 2005 09 17 | 644 | 0.3+ | 0.2− | 2006 11 15 | 704 | 0.4+ | 0.5− | 2006 12 01 | 704 | 0.5− | 0.3− |
| 2005 09 17 | 644 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.0 | 1.2+ | 2006 12 01 | 704 | 0.4− | 0.3− |
| 2005 09 17 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.7− |
| 2005 10 30 | G96 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.2− | 0.1+ | | | | |
| 2005 10 30 | G96 | 0.2− | 0.4− | 2006 11 16 | 704 | 0.4− | 0.1− | | | | |

**2005 OL$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 137.55062 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.18360431 | $\omega$ | 323.53919 | −0.43683008 | +0.88301905 | |
| $a$ | 3.0658258 | $\Omega$ | 279.98718 | −0.77863201 | −0.46671117 | |
| $e$ | 0.0457132 | $i$ | 10.03622 | −0.45045718 | −0.04957858 | |
| $P$ | 5.37 | $H$ | 15.6 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 09 | 691 | 1.0+ | 0.2+ | 2005 07 10 | 691 | 0.2− | 0.2+ | 2005 08 01 | 599 | 0.2− | 0.3+ |
| 1992 01 09 | 691 | 0.8− | 0.3+ | 2005 07 10 | 691 | 0.0 | 0.4+ | 2005 08 01 | 599 | 0.1+ | 0.1+ |
| 2003 01 28 | 645 | 0.1+ | 0.1+ | 2005 07 10 | 691 | 0.2− | 0.5+ | 2005 08 01 | 599 | 0.5− | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 07 27 | 644 | 0.3− | 0.0 | 2006 11 13 | 104 | 0.0 | 0.1+ |
| 2005 06 28 | 644 | 0.0 | 0.3+ | 2005 07 27 | 644 | 0.4− | 0.4+ | 2006 11 13 | 104 | 0.6− | 0.4− |
| 2005 06 28 | 644 | 0.1+ | 0.1+ | 2005 07 27 | 644 | 0.2− | 0.2+ | 2006 11 13 | 104 | 0.5+ | 0.0 |
| 2005 06 28 | 644 | 0.2+ | 0.2+ | 2005 08 01 | 599 | 0.1+ | 0.2+ | | | | |

**2005 OD$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 55.94071 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.18821021 | $\omega$ | 65.58438 | +0.92638443 | +0.34711072 | |
| $a$ | 3.0156013 | $\Omega$ | 273.83334 | −0.37615711 | +0.83457946 | |
| $e$ | 0.1074663 | $i$ | 8.41615 | −0.01782473 | +0.42777480 | |
| $P$ | 5.24 | $H$ | 16.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 08 | 691 | 0.0 | 0.1+ | 2005 07 30 | 644 | 0.5− | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2005 07 08 | 691 | 0.3+ | 0.0 | 2005 07 30 | 644 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2005 07 08 | 691 | 0.0 | 0.0 | 2005 07 30 | 644 | 0.5− | 0.1− | 2006 11 11 | 691 | 0.3− | 0.2− |
| 2005 07 26 | 644 | 0.4+ | 0.1− | 2005 08 27 | 291 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2005 07 26 | 644 | 0.3− | 0.1− | 2005 08 27 | 291 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2005 07 26 | 644 | 0.4− | 0.3− | 2005 08 27 | 291 | 0.5+ | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.1− |

**2005 OK$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | |
|---|---|---|---|---|---|---|
| $M$ | 72.32214 | | (2000.0) | **P** | **Q** | |
| $n$ | 0.29445000 | $\omega$ | 53.80708 | +0.86816357 | −0.49327431 | |
| $a$ | 2.2376647 | $\Omega$ | 335.60844 | +0.40232839 | +0.76387190 | |
| $e$ | 0.0986081 | $i$ | 7.58634 | +0.29055789 | +0.41614922 | |
| $P$ | 3.35 | $H$ | 17.0 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.2+ | 0.1− | 2005 08 28 | 691 | 0.1+ | 0.0 | 2005 09 25 | 691 | 0.2+ | 0.2− |
| 1995 10 20 | 691 | 0.1− | 0.4− | 2005 08 28 | 691 | 0.2+ | 0.0 | 2005 09 25 | 691 | 0.4+ | 0.4− |
| 1995 10 20 | 691 | 0.1+ | 0.0 | 2005 08 28 | 691 | 0.2+ | 0.0 | 2005 09 30 | 699 | 1.6+ | 0.8− |
| 2005 07 29 | 644 | 0.3+ | 0.2− | 2005 08 29 | 704 | 0.4− | 1.7+ | 2005 09 30 | 699 | 1.5− | 0.9+ |
| 2005 07 29 | 644 | 0.1+ | 0.1− | 2005 08 29 | 704 | 1.0− | 1.0+ | 2005 09 30 | 699 | 0.6− | 1.0+ |
| 2005 07 29 | 644 | 0.1− | 0.4− | 2005 08 29 | 704 | 1.8− | 1.2− | 2005 09 30 | 699 | 0.1+ | 1.3+ |
| 2005 07 30 | 644 | 0.0 | 0.2− | 2005 08 29 | 704 | 0.4− | 0.8+ | 2005 10 07 | 691 | 0.3− | 0.2+ |
| 2005 07 30 | 644 | 0.1+ | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.3− | 2005 10 07 | 691 | 0.2− | 0.3+ |
| 2005 07 30 | 644 | 0.1+ | 0.3− | 2005 09 22 | 644 | 0.0 | 0.1− | 2005 10 07 | 691 | 0.3− | 0.1+ |
| 2005 07 30 | 644 | 0.2+ | 0.2+ | 2005 09 22 | 644 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.2− | 0.2+ |
| 2005 07 30 | 644 | 0.2+ | 0.2− | 2005 09 23 | 699 | 0.7+ | 0.7− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2005 07 30 | 644 | 0.1+ | 0.1− | 2005 09 23 | 699 | 2.0− | 0.7− | 2006 11 24 | G96 | 0.5+ | 0.4− |
| 2005 08 25 | 644 | 0.0 | 0.1+ | 2005 09 23 | 699 | 0.1+ | 1.2+ | 2006 11 24 | G96 | 0.1− | 0.3+ |
| 2005 08 25 | 644 | 0.1+ | 0.1− | 2005 09 23 | 699 | 0.6+ | 0.2+ | | | | |
| 2005 08 25 | 644 | 0.0 | 0.0 | 2005 09 25 | 691 | 0.3+ | 0.3− | | | | |

### 2005 $OL_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.50076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27367845 | $\omega$ | 331.95187 | | +0.45379918 | +0.89085447 | |
| $a$ | 2.3495011 | $\Omega$ | 325.02410 | | −0.81053777 | +0.40282278 | |
| $e$ | 0.2233428 | $i$ | 2.10806 | | −0.37026318 | +0.21002885 | |
| $P$ | 3.60 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 691 | 0.1− | 0.2− | 2005 07 11 | 691 | 0.1+ | 0.2+ | 2005 08 27 | E12 | 0.7+ | 0.4− |
| 2000 01 08 | 691 | 0.0 | 0.3− | 2005 07 11 | 691 | 0.2+ | 0.3+ | 2005 08 27 | E12 | 0.9− | 0.5− |
| 2000 01 08 | 691 | 0.1− | 0.5− | 2005 07 31 | E12 | 0.5− | 0.0 | 2005 08 27 | E12 | 0.4+ | 0.1+ |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2005 07 31 | E12 | 0.1− | 0.2− | 2005 08 27 | E12 | 0.5+ | 0.1+ |
| 2004 02 12 | 691 | 0.2+ | 0.3+ | 2005 07 31 | E12 | 0.7− | 0.0 | 2005 08 29 | 699 | 0.2− | 0.4− |
| 2004 02 12 | 691 | 0.2+ | 0.4+ | 2005 07 31 | E12 | 1.5+ | 0.2+ | 2005 08 29 | 704 | 0.6− | 0.3− |
| 2005 06 11 | 703 | (0.6+ | 3.0−) | 2005 08 02 | 704 | 0.3+ | 0.4+ | 2005 08 29 | 704 | 0.8− | 1.3+ |
| 2005 06 11 | 703 | 0.2− | 0.9− | 2005 08 02 | 704 | 0.1− | 0.3− | 2005 08 29 | 699 | 0.5+ | 0.1− |
| 2005 06 11 | 703 | 0.4− | 0.2+ | 2005 08 02 | 704 | 0.7+ | 0.4+ | 2005 08 29 | 699 | 0.5− | 0.7+ |
| 2005 06 11 | 703 | 0.6− | 1.7− | 2005 08 06 | 704 | 0.2+ | 0.5+ | 2005 08 29 | 704 | 0.7− | 0.9− |
| 2005 07 11 | 699 | 1.0+ | 0.7+ | 2005 08 06 | 704 | 0.4+ | 0.1+ | 2005 08 29 | 699 | 0.0 | 0.1− |
| 2005 07 11 | 699 | 0.0 | 0.5− | 2005 08 06 | 704 | 0.3+ | 0.8+ | 2005 09 29 | G96 | 0.2− | 0.1− |
| 2005 07 11 | 699 | 0.6− | 0.0 | 2005 08 25 | 644 | 0.2− | 0.0 | 2005 09 29 | G96 | 0.3− | 0.0 |
| 2005 07 11 | 699 | 0.4− | 0.1+ | 2005 08 25 | 644 | 0.4− | 0.2+ | 2005 09 29 | G96 | 0.4− | 0.0 |
| 2005 07 11 | 691 | 0.2+ | 0.0 | 2005 08 25 | 644 | 0.3− | 0.0 | 2005 09 29 | G96 | 0.6− | 0.1− |

### 2005 $OZ_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.43188 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28807205 | $\omega$ | 290.71058 | | +0.47486253 | +0.87997208 | |
| $a$ | 2.2705721 | $\Omega$ | 7.67517 | | −0.76882237 | +0.42167744 | |
| $e$ | 0.2706972 | $i$ | 5.34376 | | −0.42827298 | +0.21871733 | |
| $P$ | 3.42 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 15 | 691 | 0.5+ | 0.8+ | 2005 07 10 | E12 | 0.4− | 0.4+ | 2005 08 12 | E12 | 0.1+ | 0.2− |
| 1994 02 15 | 691 | 0.3− | 0.3− | 2005 07 10 | E12 | 0.1+ | 0.5+ | 2005 08 24 | E12 | 0.1− | 0.3+ |
| 1994 02 15 | 691 | 0.1+ | 0.1− | 2005 07 10 | E12 | 0.1− | 0.2− | 2005 08 24 | E12 | 0.0 | 0.4+ |
| 2004 02 26 | 695 | 0.0 | 0.3+ | 2005 07 28 | 428 | 0.8+ | 0.8+ | 2005 08 24 | E12 | 0.0 | 0.2+ |
| 2004 02 26 | 695 | 0.3+ | 0.5+ | 2005 07 28 | 428 | 0.3+ | 0.4− | 2005 08 24 | E12 | 0.1− | 0.8+ |
| 2005 06 08 | E12 | 0.1− | 0.2− | 2005 08 02 | 428 | 0.1− | 0.4− | 2005 10 28 | G96 | 0.2− | 0.1+ |
| 2005 06 08 | E12 | 0.3+ | 0.1− | 2005 08 02 | 428 | 0.5− | 0.1− | 2005 10 28 | G96 | 0.0 | 0.4+ |
| 2005 06 08 | E12 | 0.1− | 0.5− | 2005 08 12 | E12 | 0.3− | 0.2− | 2005 10 28 | G96 | 0.1+ | 0.4+ |
| 2005 06 08 | E12 | 0.5+ | 0.1+ | 2005 08 12 | E12 | 0.1− | 0.1− | 2005 10 28 | G96 | 0.2+ | 0.2+ |
| 2005 07 10 | E12 | 0.5− | 0.2+ | 2005 08 12 | E12 | 0.0 | 0.1− | | | | |

### 2005 $ON_{16}$ = 2006 $WH_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.85264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18433108 | $\omega$ | 128.09354 | | +0.34972439 | +0.93665388 | |
| $a$ | 3.0577620 | $\Omega$ | 162.34734 | | −0.87823706 | +0.33494500 | |
| $e$ | 0.1839906 | $i$ | 3.64837 | | −0.32617867 | +0.10242728 | |
| $P$ | 5.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.2+ | 0.5+ | 2005 08 06 | 644 | 0.0 | 0.5+ | 2006 11 12 | G96 | 0.2+ | 0.1+ |
| 2004 04 12 | 691 | 0.1+ | 0.2+ | 2005 10 29 | G96 | 0.9− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2004 04 12 | 691 | 0.1+ | 0.5+ | 2005 10 29 | G96 | 0.7+ | 0.0 | 2006 11 16 | 691 | 0.8− | 0.2+ |
| 2005 07 29 | 644 | 0.0 | 0.4+ | 2005 10 29 | G96 | 0.4− | 0.3− | 2006 11 16 | 691 | 0.4+ | 0.3+ |
| 2005 07 29 | 644 | 0.2− | 0.2+ | 2005 10 29 | G96 | 0.6+ | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2005 07 29 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.5+ |
| 2005 07 31 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.6− | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2005 07 31 | 644 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.1− | 2006 11 20 | 691 | 0.4+ | 0.2+ |
| 2005 07 31 | 644 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.5− | 2006 11 24 | 691 | 0.8− | 0.1+ |
| 2005 08 06 | 644 | 0.2− | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 11 24 | 691 | 0.3+ | 0.2+ |
| 2005 08 06 | 644 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.6+ | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.2+ |

### 2005 $OX_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.50544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17959425 | $\omega$ | 151.56383 | | +0.76847293 | −0.62626677 | |
| $a$ | 3.1112943 | $\Omega$ | 247.81862 | | +0.55694586 | +0.75566674 | |
| $e$ | 0.0683707 | $i$ | 8.15156 | | +0.31505660 | +0.19172301 | |
| $P$ | 5.49 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 30 | 644 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.3+ | 0.1− |
| 2005 07 30 | 644 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2005 07 30 | 644 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2005 07 31 | 644 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2005 07 31 | 644 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2005 07 31 | 644 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 1.0+ |
| 2005 07 31 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 1.3− | 0.6+ |
| 2005 07 31 | 644 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2005 07 31 | 644 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 1.0+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2005 08 06 | 644 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2+ | 1.2+ | 2006 11 21 | 704 | 0.1− | 0.2− |
| 2005 08 06 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | (0.9+ | 2.7+) | 2006 11 21 | 704 | 0.7− | 0.2− |
| 2005 10 01 | G96 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 1.3− | 0.0 |
| 2005 10 01 | G96 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.9− | 0.7− |
| 2005 10 01 | G96 | 0.3− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2005 10 01 | G96 | 0.3− | 0.2+ | 2006 11 15 | 704 | 0.4+ | 0.3− | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.3− | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.1− |
| 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.7+ | 0.8+ | 2006 12 01 | G96 | 0.6+ | 0.2− |
| 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 15 | 704 | 1.0− | 0.2+ | | | | |
| 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.0 | | | | |

### 2005 $OV_{19}$ = 2006 $UE_{106}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.13044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18483807 | $\omega$ | 148.50624 | | −0.05291241 | +0.99708702 | |
| $a$ | 3.0521680 | $\Omega$ | 118.40922 | | −0.92868595 | −0.02891201 | |
| $e$ | 0.0443421 | $i$ | 3.58076 | | −0.36707312 | −0.07058020 | |
| $P$ | 5.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 599 | 0.8+ | 0.0 | 2005 08 04 | 644 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.4+ |
| 2004 05 15 | 599 | 0.5− | 0.7+ | 2005 08 05 | 644 | 0.2− | 0.5− | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2004 06 11 | 691 | 0.0 | 0.3+ | 2005 08 05 | 644 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 06 11 | 691 | 0.2+ | 0.2+ | 2005 08 05 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2004 06 11 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2005 07 28 | 644 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2005 07 28 | 644 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2005 07 28 | 644 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2005 08 04 | 644 | 0.1+ | 0.4− | 2006 10 18 | 691 | 0.3− | 0.1+ | | | | |
| 2005 08 04 | 644 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.0 | 0.2+ | | | | |

### 2005 $OF_{23}$ = 2006 $WY_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.35890 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22293841 | $\omega$ | 137.86275 | | +0.98625931 | +0.15932868 | |
| $a$ | 2.6936807 | $\Omega$ | 213.04469 | | −0.16470429 | +0.92774338 | |
| $e$ | 0.0448201 | $i$ | 4.59331 | | −0.01284762 | +0.33750052 | |
| $P$ | 4.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 30 | 644 | 0.1+ | 0.3− | 2005 08 06 | 644 | 0.4+ | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2005 07 30 | 644 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2005 07 30 | 644 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2005 08 05 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2005 08 05 | 644 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2005 08 05 | 644 | 0.4− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.5− | 2006 12 01 | G96 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 06 | 644 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.5− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.5− | | | | |

**2005 OM$_{24}$ = 2006 UC$_{316}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.40885 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18816079 | $\omega$ | 96.43210 | | +0.44829052 | | +0.89352268 |
| $a$ | 3.0161293 | $\Omega$ | 200.26209 | | −0.84652578 | | +0.41518390 |
| $e$ | 0.1136127 | $i$ | 4.23105 | | −0.28710576 | | +0.17099578 |
| $P$ | 5.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.2− | 0.5+ | 2004 05 23 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 1995 09 22 | 691 | 0.3+ | 0.0 | 2005 07 30 | 644 | 0.1− | 0.4+ | 2006 10 20 | 695 | 0.1− | 0.2+ |
| 1995 09 22 | 691 | 0.2− | 0.3+ | 2005 07 30 | 644 | 0.1− | 0.5+ | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 2000 09 08 | 691 | 0.0 | 0.4− | 2005 07 30 | 644 | 0.1− | 0.3+ | 2006 10 20 | 695 | 0.1− | 0.1+ |
| 2000 09 08 | 691 | 0.1+ | 0.3− | 2005 07 31 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.7+ |
| 2000 09 08 | 691 | 0.0 | 0.2− | 2005 07 31 | 644 | 0.0 | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.5+ |
| 2004 05 14 | 691 | 0.2+ | 0.5+ | 2005 07 31 | 644 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.6+ |
| 2004 05 14 | 691 | 0.0 | 0.4+ | 2005 08 06 | 644 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.4+ | 0.1+ |
| 2004 05 14 | 691 | 0.2− | 0.3+ | 2005 08 06 | 644 | 0.0 | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 05 23 | 691 | 0.3+ | 0.5+ | 2005 08 06 | 644 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2004 05 23 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 695 | 0.0 | 0.1+ | | | | |

**2005 OO$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.40153 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27472460 | $\omega$ | 343.99615 | | −0.67325216 | | +0.73618495 |
| $a$ | 2.3435327 | $\Omega$ | 243.62838 | | −0.66967018 | | −0.64666053 |
| $e$ | 0.1682109 | $i$ | 4.41804 | | −0.31348585 | | −0.19965442 |
| $P$ | 3.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 30 | 644 | 0.2− | 0.0 | 2005 08 06 | 644 | 0.4+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2005 07 30 | 644 | 0.2− | 0.0 | 2005 08 24 | 644 | 0.3+ | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2005 07 30 | 644 | 0.4− | 0.2− | 2005 08 24 | 644 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.6− |
| 2005 07 30 | 599 | 0.2− | 0.0 | 2005 08 24 | 644 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2005 07 30 | 599 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2005 07 30 | 599 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.4+ | 2006 11 27 | 691 | 0.5− | 0.2− |
| 2005 07 31 | 599 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.4− | 0.4+ |
| 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 08 06 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.2+ | | | | |

**2005 OV$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.42631 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18336499 | $\omega$ | 239.48181 | | +0.31775626 | | −0.94749320 |
| $a$ | 3.0684928 | $\Omega$ | 192.15122 | | +0.91784953 | | +0.31686815 |
| $e$ | 0.1380342 | $i$ | 9.81526 | | +0.23787224 | | +0.04302567 |
| $P$ | 5.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.2− | 0.1+ | 2003 03 27 | 691 | 0.4− | 0.3+ | 2006 10 29 | 703 | 0.9− | 0.7+ |
| 1995 11 14 | 691 | 0.1+ | 0.1+ | 2003 03 27 | 691 | 0.6− | 0.0 | 2006 10 29 | 703 | 0.5− | 0.4+ |
| 1995 11 14 | 691 | 0.3− | 0.0 | 2003 04 26 | 691 | 0.9+ | 1.3+ | 2006 10 29 | 703 | 0.8− | 0.2− |
| 2000 09 04 | 691 | 0.3+ | 0.1+ | 2003 04 26 | 691 | 1.0+ | 0.9+ | 2006 11 19 | 704 | (2.7− | 1.4+) |
| 2000 09 04 | 691 | 0.6+ | 0.2+ | 2003 04 26 | 691 | 0.6+ | 1.1+ | 2006 11 19 | 704 | 0.5− | 1.3+ |
| 2000 09 04 | 691 | 0.9+ | 0.2+ | 2005 07 31 | 644 | 0.5− | 0.2+ | 2006 11 19 | 704 | (1.7− | 0.6+) |
| 2000 09 21 | 699 | 0.8− | 0.6+ | 2005 07 31 | 644 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 2000 09 21 | 699 | 0.5− | 0.6+ | 2005 07 31 | 644 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.4+ |
| 2000 09 21 | 699 | 0.6+ | 0.5+ | 2005 08 06 | 644 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.3+ |
| 2000 09 21 | 699 | 0.2− | 1.7+ | 2005 08 06 | 644 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.3+ |
| 2000 09 29 | 691 | 0.0 | 0.2− | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2000 09 29 | 691 | 0.2+ | 1.3+ | 2005 11 01 | G96 | 0.2− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2000 09 29 | 691 | 0.1− | 0.3− | 2005 11 01 | G96 | 0.3− | 0.7− | 2006 12 01 | G96 | 0.2+ | 0.3+ |
| 2000 10 02 | 645 | 0.2− | 0.0 | 2005 11 01 | G96 | 0.4− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.3+ |
| 2000 10 02 | 645 | 0.1− | 0.1+ | 2005 11 01 | G96 | 0.5− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.3+ |
| 2003 03 27 | 691 | 0.6− | 0.1+ | 2006 10 29 | 703 | 1.0+ | 0.2− | | | | |

**2005 OD$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.97482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23900160 | $\omega$ | 57.43491 | | +0.99412809 | | +0.01021292 |
| $a$ | 2.5715927 | $\Omega$ | 301.76857 | | −0.05851380 | | +0.88816826 |
| $e$ | 0.1568840 | $i$ | 7.27953 | | +0.09102460 | | +0.45940488 |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.2− | 0.2+ | 2001 09 16 | 704 | 0.7+ | 1.1+ | 2005 08 06 | 644 | 0.3+ | 0.2− |
| 2001 09 11 | 699 | 0.3− | 1.8− | 2001 09 25 | 704 | 0.7− | 1.9− | 2005 08 06 | 644 | 0.1+ | 0.0 |
| 2001 09 11 | 699 | 0.8+ | 0.0 | 2001 09 25 | 704 | 1.4− | 0.6+ | 2005 08 06 | 644 | 0.1+ | 0.1− |
| 2001 09 11 | 699 | 1.3+ | 1.0+ | 2001 09 25 | 704 | 0.0 | 0.1− | 2005 08 22 | 644 | 0.2+ | 0.2+ |
| 2001 09 16 | 704 | 0.1− | 0.1+ | 2001 09 25 | 704 | 0.4− | 0.6+ | 2005 08 22 | 644 | 0.1+ | 0.1+ |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2005 07 31 | 644 | 0.5− | 0.1− | 2005 08 22 | 644 | 0.3+ | 0.3+ |
| 2001 09 16 | 704 | 0.2+ | 0.4− | 2005 07 31 | 644 | 0.0 | 0.0 | | | | |
| 2001 09 16 | 704 | 0.4− | 0.1+ | 2005 07 31 | 644 | 0.6− | 0.2− | | | | |

**2005 OU$_{26}$ = 1999 BH$_{29}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.36491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38663010 | $\omega$ | 91.82778 | | +0.73887973 | | −0.63542849 |
| $a$ | 1.8661173 | $\Omega$ | 307.70082 | | +0.44826661 | | +0.71199000 |
| $e$ | 0.0723035 | $i$ | 16.46461 | | +0.50310415 | | +0.29883252 |
| $P$ | 2.55 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 691 | 0.3+ | 0.0 | 2005 07 18 | 644 | 0.1+ | 0.2− | 2005 08 06 | 644 | 0.0 | 0.1+ |
| 1999 01 18 | 691 | 0.1+ | 0.2− | 2005 07 18 | 644 | 0.2+ | 0.1− | 2005 09 03 | 644 | 0.1− | 0.0 |
| 1999 01 18 | 691 | 0.2+ | 0.0 | 2005 07 28 | 644 | 0.1− | 0.2+ | 2005 09 03 | 644 | 0.1− | 0.3− |
| 1999 01 23 | 691 | 0.4− | 0.2+ | 2005 07 28 | 644 | 0.1− | 0.2+ | 2005 09 03 | 644 | 0.1− | 0.1+ |
| 1999 01 23 | 691 | 0.2− | 0.1+ | 2005 07 28 | 644 | 0.1− | 0.1− | 2005 09 12 | 691 | 0.1+ | 0.0 |
| 1999 01 23 | 691 | 0.1− | 0.2− | 2005 08 06 | 644 | 0.1+ | 0.2− | 2005 09 12 | 691 | 0.0 | 0.2+ |
| 2005 07 18 | 644 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.2+ | 0.1+ | 2005 09 12 | 691 | 0.1+ | 0.1− |

**2005 OV$_{26}$ = 2004 FS$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.63100 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21675973 | $\omega$ | 182.25204 | | +0.33705297 | | +0.93582209 |
| $a$ | 2.7446290 | $\Omega$ | 107.45875 | | −0.86209786 | | +0.35079354 |
| $e$ | 0.1360967 | $i$ | 6.20537 | | −0.37839473 | | +0.03436426 |
| $P$ | 4.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 05 | 691 | 0.5+ | 0.5+ | 2005 07 27 | 644 | 0.1− | 0.3+ | 2005 09 01 | 644 | 0.1− | 0.0 |
| 1994 01 05 | 691 | 0.1− | 0.2+ | 2005 07 27 | 644 | 0.1+ | 0.1+ | 2005 09 01 | 644 | 0.2− | 0.2+ |
| 1994 01 05 | 691 | 0.3− | 0.4+ | 2005 08 01 | E12 | 1.1+ | 1.1+ | 2006 11 17 | G96 | 0.9− | 0.3− |
| 2004 03 21 | 691 | 0.1+ | 0.1− | 2005 08 01 | E12 | 0.7− | 0.3+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2005 08 01 | E12 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2004 03 21 | 691 | 0.0 | 0.2+ | 2005 08 01 | E12 | (1.9− | 0.4−) | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2004 03 28 | 691 | 0.2− | 0.1− | 2005 08 22 | 644 | 0.4− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2004 03 28 | 691 | 0.1− | 0.1− | 2005 08 22 | 644 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2004 03 28 | 691 | 0.2+ | 0.1+ | 2005 08 22 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2005 07 27 | 644 | 0.3− | 0.1+ | 2005 09 01 | 644 | 0.5− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.0 |

**2005 OW$_{26}$ = 1999 LD$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.24048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17740756 | $\omega$ | 231.32521 | | +0.46575385 | | +0.84256789 |
| $a$ | 3.1368082 | $\Omega$ | 68.48479 | | −0.69444909 | | +0.53745171 |
| $e$ | 0.2898157 | $i$ | 16.90138 | | −0.54846495 | | +0.03500020 |
| $P$ | 5.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 09 | 704 | 0.8+ | 0.0 | 2005 08 10 | E12 | 0.2− | 0.9+ | 2006 10 21 | G96 | 0.4− | 0.6+ |
| 1999 06 09 | 704 | (3.3+ | 0.4+) | 2005 08 10 | E12 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 1999 06 09 | 704 | 0.4− | 0.1+ | 2005 08 10 | E12 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.5− | 0.3+ |
| 1999 06 09 | 704 | 1.9+ | 0.2+ | 2005 08 25 | E12 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 1999 06 15 | 704 | 0.0 | 0.9+ | 2005 08 25 | E12 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 1999 06 15 | 704 | 0.8+ | 1.3+ | 2005 08 25 | E12 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1999 06 15 | 704 | 0.2− | 1.1+ | 2005 08 25 | E12 | 0.7− | 0.7− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 1999 06 15 | 704 | 0.8− | 0.6+ | 2005 09 24 | E12 | 0.8− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2005 07 27 | E12 | 1.2+ | 0.4− | 2005 09 24 | E12 | 0.9+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2005 07 27 | E12 | 0.1+ | 0.2− | 2005 09 24 | E12 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2005 07 27 | E12 | 0.3+ | 0.6− | 2005 09 24 | E12 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2005 07 27 | E12 | 0.6− | 0.3+ | 2006 10 21 | G96 | 0.5− | 0.7+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2005 08 10 | E12 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.1+ | | | | |

**2005 OX$_{26}$ = 1995 YG$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.60787 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18545511 | $\omega$ | 260.11565 | | +0.59316640 | | +0.75304465 |
| $a$ | 3.0453941 | $\Omega$ | 50.20492 | | −0.51310338 | | +0.62615191 |
| $e$ | 0.2262750 | $i$ | 21.75220 | | −0.62038581 | | +0.20213248 |
| $P$ | 5.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.2− | 0.2+ | 2000 09 29 | 699 | 1.4+ | 0.0 | 2005 08 10 | E12 | 0.5− | 0.2+ |
| 1995 12 19 | 691 | 0.3− | 0.1+ | 2000 09 29 | 699 | 0.4− | 1.9+ | 2005 08 10 | E12 | 0.9− | 0.4+ |
| 1995 12 19 | 691 | 0.1− | 0.2+ | 2004 04 25 | 699 | 0.3+ | 1.2+ | 2005 08 28 | E12 | 0.1− | 0.3− |
| 1995 12 26 | 691 | 0.3− | 0.5− | 2004 04 25 | 699 | 1.1+ | 0.5− | 2005 08 28 | E12 | 0.1− | 0.1− |
| 1995 12 26 | 691 | 0.2− | 0.0 | 2004 04 25 | 699 | 0.0 | 0.1+ | 2005 08 28 | E12 | 0.3+ | 0.1+ |
| 1995 12 26 | 691 | 0.1− | 0.2+ | 2004 04 25 | 699 | 1.9+ | 1.6+ | 2005 08 28 | E12 | 0.2+ | 0.3− |
| 1999 05 19 | 703 | 0.5+ | 0.8+ | 2005 07 29 | E12 | 0.1− | 0.2+ | 2005 09 08 | E12 | 0.4− | 0.7− |
| 1999 05 19 | 703 | 1.0− | 0.5+ | 2005 07 29 | E12 | 0.0 | 0.1+ | 2005 09 08 | E12 | 0.5+ | 0.3− |
| 1999 05 19 | 703 | 0.4+ | 0.6− | 2005 07 29 | E12 | 0.6− | 0.6− | 2005 09 08 | E12 | 0.3+ | 0.5+ |
| 1999 05 19 | 703 | 0.4+ | 0.2+ | 2005 07 29 | E12 | 0.5− | 0.1+ | 2005 09 08 | E12 | 0.1+ | 0.4+ |
| 2000 09 29 | 699 | 0.8− | 0.9+ | 2005 08 10 | E12 | 0.2− | 0.4− | | | | |
| 2000 09 29 | 699 | 1.7+ | 0.9+ | 2005 08 10 | E12 | 0.2+ | 0.1− | | | | |

**2005 OY$_{26}$ = 2004 HG$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.92979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17446356 | $\omega$ | 148.05529 | | +0.65999097 | | +0.74763456 |
| $a$ | 3.1719980 | $\Omega$ | 162.86540 | | −0.73121198 | | +0.66182169 |
| $e$ | 0.1373227 | $i$ | 14.51770 | | −0.17245565 | | +0.05508728 |
| $P$ | 5.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 291 | 0.5+ | 0.9+ | 2005 07 30 | 644 | 0.0 | 0.1− | 2005 09 11 | 691 | 0.0 | 0.3+ |
| 2003 03 26 | 291 | 0.2+ | 0.3+ | 2005 07 30 | 644 | 0.1+ | 0.3− | 2005 09 11 | 691 | 0.0 | 0.2+ |
| 2003 03 26 | 291 | 0.3− | 1.0+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2005 09 23 | 703 | 0.6− | 1.6+ |
| 2004 04 20 | 691 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.6+ | 0.0 | 2005 09 23 | 703 | 0.5+ | 0.8+ |
| 2004 04 20 | 691 | 0.2− | 0.2+ | 2005 08 06 | 644 | 0.0 | 0.1+ | 2005 09 23 | 703 | 0.4− | 0.8+ |
| 2004 04 20 | 691 | 0.4− | 0.2− | 2005 08 27 | 699 | 1.0− | 0.7+ | 2005 09 23 | 703 | 2.0− | 0.6+ |
| 2004 04 28 | 691 | 0.2+ | 0.0 | 2005 08 27 | 699 | 0.2+ | 0.5+ | 2005 10 06 | G96 | 0.4− | 0.1+ |
| 2004 04 28 | 691 | 0.2+ | 0.1− | 2005 08 27 | 699 | 0.1+ | 0.0 | 2005 10 06 | G96 | 0.2+ | 0.1+ |
| 2004 04 28 | 691 | 0.1+ | 0.0 | 2005 08 27 | 699 | 1.9+ | 0.6− | 2005 10 06 | G96 | 0.2− | 0.1− |
| 2005 07 30 | 644 | 0.0 | 0.1− | 2005 09 11 | 691 | 0.1+ | 0.2+ | 2005 10 06 | G96 | 0.1− | 0.0 |

**2005 OZ$_{26}$ = 2000 SG$_{236}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.65004 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18538608 | $\omega$ | 278.98886 | | +0.92895770 | | +0.36974435 |
| $a$ | 3.0461501 | $\Omega$ | 59.31312 | | −0.33084647 | | +0.85115174 |
| $e$ | 0.1163744 | $i$ | 1.20435 | | −0.16606688 | | +0.37259876 |
| $P$ | 5.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 691 | 0.1− | 0.0 | 2000 10 01 | 704 | 0.4− | 0.4+ | 2005 08 28 | 699 | 0.3− | 0.1− |
| 1997 02 01 | 691 | 0.0 | 0.5− | 2003 03 08 | 291 | 0.7− | 1.2+ | 2005 08 28 | 699 | 0.6+ | 0.9+ |
| 1997 02 01 | 691 | 0.3+ | 0.2+ | 2003 03 08 | 291 | 0.6− | 0.4+ | 2005 08 28 | 699 | 0.5+ | 0.5+ |
| 2000 09 24 | 704 | 0.2+ | 1.3+ | 2003 03 08 | 291 | 0.0 | 1.0+ | 2005 08 28 | 699 | 0.5+ | 0.9+ |
| 2000 09 24 | 704 | 0.4+ | 0.4+ | 2003 03 27 | 691 | 0.8+ | 0.3+ | 2005 09 14 | 691 | 0.2− | 0.4+ |
| 2000 09 24 | 704 | 0.7− | 0.6+ | 2003 03 27 | 691 | 0.5+ | 0.2+ | 2005 09 14 | 691 | 0.2− | 0.4+ |
| 2000 09 24 | 704 | 1.2− | 0.1+ | 2003 03 27 | 691 | 1.4+ | 0.5+ | 2005 09 14 | 691 | 0.0 | 0.3+ |
| 2000 10 01 | 704 | 0.3− | 0.8− | 2005 07 30 | 644 | 0.3− | 0.1+ | 2005 09 22 | 644 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.1+ | 1.6+ | 2005 07 30 | 644 | 0.3− | 0.2+ | 2005 09 22 | 644 | 1.0− | 0.4+ |
| 2000 10 01 | 704 | 0.8− | 0.4+ | 2005 07 30 | 644 | 0.4− | 0.4+ | 2005 09 22 | 644 | 0.3− | 0.5+ |

**2005 OA$_{27}$ = 1995 BB$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.40779 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24706686 | $\omega$ | 356.12381 | | +0.93478019 | | −0.35489662 |
| $a$ | 2.5153189 | $\Omega$ | 24.68047 | | +0.32689212 | | +0.84255090 |
| $e$ | 0.1611716 | $i$ | 2.10124 | | +0.13902355 | | +0.40516215 |
| $P$ | 3.99 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.2− | 0.6− | 2001 09 21 | 704 | 1.6− | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.3+ |
| 1995 01 29 | 691 | 0.3+ | 0.1− | 2001 09 21 | 704 | (0.3+ | 4.2−) | 2005 09 22 | 644 | 0.1+ | 0.4+ |
| 1995 01 29 | 691 | 0.7− | 1.2− | 2005 07 30 | 644 | 0.0 | 0.4+ | 2005 10 06 | G96 | 0.0 | 0.1− |
| 1995 02 04 | 691 | 0.2− | 0.6+ | 2005 07 30 | 644 | 0.3− | 0.4+ | 2005 10 06 | G96 | 0.2− | 0.4− |
| 1995 02 04 | 691 | 0.3+ | 0.6+ | 2005 07 30 | 644 | 0.2− | 0.4+ | 2005 10 06 | G96 | 0.5− | 0.4− |
| 1995 02 04 | 691 | 0.6+ | 1.1+ | 2005 08 26 | 644 | 0.4− | 0.3+ | 2005 10 06 | G96 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2005 08 26 | 644 | 0.4− | 0.2+ | 2005 10 29 | G96 | 0.5+ | 0.2+ |
| 2001 09 21 | 704 | 0.8− | 0.9+ | 2005 08 26 | 644 | 0.1− | 0.3+ | 2005 10 29 | G96 | 0.4+ | 0.2+ |
| 2001 09 21 | 704 | 0.5+ | 0.3+ | 2005 09 14 | 691 | 0.0 | 0.2+ | 2005 10 29 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 1.1− | 2005 09 14 | 691 | 0.1− | 0.2+ | 2005 10 29 | G96 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 1.1+ | 0.7+ | 2005 09 14 | 691 | 0.1− | 0.2+ | | | | |
| 2001 09 21 | 704 | 1.6+ | 0.6− | 2005 09 22 | 644 | 0.2+ | 0.4+ | | | | |

**2005 OB$_{27}$ = 2004 FA$_{73}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.72226 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28561867 | $\omega$ | 153.43295 | | +0.90306160 | | +0.42950495 |
| $a$ | 2.2835559 | $\Omega$ | 181.13842 | | −0.41173447 | | +0.86415448 |
| $e$ | 0.1334874 | $i$ | 6.62270 | | −0.12228850 | | +0.26222613 |
| $P$ | 3.45 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2005 08 27 | 699 | 0.0 | 0.0 | 2005 10 06 | 691 | 0.0 | 0.4+ |
| 2004 03 17 | 691 | 0.3+ | 0.1+ | 2005 08 27 | 699 | 0.3+ | 0.2+ | 2005 10 25 | G96 | 0.3+ | 0.4− |
| 2004 03 17 | 691 | 0.4+ | 0.3+ | 2005 09 05 | 703 | 0.3− | 0.8− | 2005 10 25 | G96 | 0.2+ | 0.4− |
| 2004 03 23 | 691 | 0.3− | 0.1− | 2005 09 05 | 703 | 0.1+ | 0.3+ | 2005 10 25 | G96 | 0.5+ | 0.4− |
| 2004 03 23 | 691 | 0.3− | 0.1+ | 2005 09 05 | 703 | 0.4+ | 0.0 | 2005 10 25 | G96 | 0.4+ | 0.6− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2005 09 05 | 703 | 1.0− | 0.0 | 2005 12 01 | G96 | 0.0 | 0.3+ |
| 2005 07 31 | 644 | 0.4+ | 0.1+ | 2005 09 22 | 644 | 0.3− | 0.3+ | 2005 12 01 | G96 | 0.6+ | 0.3+ |
| 2005 07 31 | 644 | 0.1+ | 0.0 | 2005 09 22 | 644 | 0.3+ | 0.4+ | 2005 12 01 | G96 | 0.5− | 0.4+ |
| 2005 07 31 | 644 | 0.4+ | 0.0 | 2005 09 22 | 644 | 0.2− | 0.2+ | 2005 12 01 | G96 | 0.5− | 0.4+ |
| 2005 08 27 | 699 | 0.7− | 0.8− | 2005 10 06 | 691 | 0.5− | 0.1+ | | | | |
| 2005 08 27 | 699 | 0.4+ | 0.8+ | 2005 10 06 | 691 | 0.2− | 0.3+ | | | | |

**2005 $OC_{27}$ = 2002 $CV_{279}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.74795 | | | (2000.0) | | |
| $n$ | 0.17949827 | $\omega$ | 49.20546 | | +0.96761118 | −0.18082635 |
| $a$ | 3.1124033 | $\Omega$ | 320.27163 | | +0.04738044 | +0.81547775 |
| $e$ | 0.2359081 | $i$ | 15.99825 | | +0.24795905 | +0.54981621 |
| $P$ | 5.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 691 | 0.2+ | 0.5+ | 2005 07 31 | 644 | 0.3+ | 0.0 | 2005 09 26 | 703 | 1.4+ | 0.4+ |
| 2002 02 07 | 691 | 0.2− | 0.0 | 2005 09 09 | 704 | 0.6− | 1.1+ | 2005 09 26 | 703 | 0.1− | 0.0 |
| 2002 02 07 | 691 | 0.3+ | 0.0 | 2005 09 09 | 704 | 0.4− | 0.4− | 2005 10 05 | 703 | 0.6+ | 0.2+ |
| 2002 02 11 | 704 | 0.8− | 0.9− | 2005 09 09 | 704 | 0.1− | 0.8− | 2005 10 05 | 703 | 1.1+ | 1.2− |
| 2002 02 11 | 704 | 0.3− | 0.3− | 2005 09 09 | 704 | 0.0 | 0.6+ | 2005 10 05 | 703 | 0.8− | 0.0 |
| 2002 02 11 | 704 | 0.7+ | 0.6+ | 2005 09 09 | 704 | 0.0 | 0.1− | 2005 10 05 | 703 | 1.3− | 0.3− |
| 2005 07 31 | 644 | 0.1+ | 0.0 | 2005 09 26 | 703 | 0.5+ | 0.3+ | | | | |
| 2005 07 31 | 644 | 0.2+ | 0.4− | 2005 09 26 | 703 | 0.5− | 0.5+ | | | | |

**2005 $OD_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.24515 | | | (2000.0) | | |
| $n$ | 0.26735643 | $\omega$ | 175.01453 | | +0.71175283 | +0.70158857 |
| $a$ | 2.3863948 | $\Omega$ | 140.35662 | | −0.64631490 | +0.67327289 |
| $e$ | 0.2226816 | $i$ | 3.08819 | | −0.27510899 | +0.23340330 |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 568 | 0.3− | 0.3− | 2005 08 06 | 644 | 0.2+ | 0.4− | 2005 08 29 | 704 | 0.3− | 0.3+ |
| 1999 03 10 | 568 | 0.3+ | 0.1− | 2005 08 06 | 644 | 0.1+ | 0.1− | 2005 08 29 | 699 | 0.7+ | 1.3+ |
| 2000 02 05 | 691 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.3+ | 0.1− | 2005 08 29 | 699 | 0.2− | 0.1− |
| 2000 02 05 | 691 | 0.1− | 0.0 | 2005 08 16 | E12 | 0.5− | 0.6− | 2005 08 29 | 699 | 0.2− | 0.2+ |
| 2000 02 05 | 691 | 0.0 | 0.1− | 2005 08 16 | E12 | 0.5+ | 0.2+ | 2005 08 29 | 699 | 0.1+ | 0.6+ |
| 2001 06 13 | 704 | 0.4− | 0.6− | 2005 08 16 | E12 | 0.2+ | 0.4− | 2005 09 24 | 644 | 0.3+ | 0.0 |
| 2001 06 13 | 704 | 0.1+ | 0.5+ | 2005 08 16 | E12 | 0.7− | 0.2− | 2005 09 24 | 644 | 0.5+ | 0.2+ |
| 2001 06 13 | 704 | 0.1+ | 0.9+ | 2005 08 26 | 608 | 0.6− | 0.9− | 2005 09 24 | 644 | 0.3+ | 0.3− |
| 2001 06 22 | 704 | 0.8− | 0.7− | 2005 08 26 | 608 | 0.4− | 0.8− | 2005 10 06 | G96 | 0.1+ | 0.3+ |
| 2001 06 22 | 704 | 0.0 | 0.4− | 2005 08 26 | 608 | 0.7− | 0.5− | 2005 10 06 | G96 | 0.2+ | 0.1+ |
| 2001 06 22 | 704 | 1.0+ | 0.3+ | 2005 08 29 | 704 | 0.2+ | 0.4+ | 2005 10 06 | G96 | 0.1+ | 0.2+ |
| 2005 07 29 | 644 | 0.2− | 0.1− | 2005 08 29 | 704 | 0.3+ | 0.2− | 2005 10 06 | G96 | 0.0 | 0.2+ |
| 2005 07 29 | 644 | 0.0 | 0.2− | 2005 08 29 | 704 | 0.1− | 0.3+ | | | | |
| 2005 07 29 | 644 | 0.2+ | 0.1+ | 2005 08 29 | 704 | 0.0 | 0.2+ | | | | |

**2005 $OE_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.36577 | | | (2000.0) | | |
| $n$ | 0.21831821 | $\omega$ | 349.05493 | | +0.20876478 | +0.95565861 |
| $a$ | 2.7315516 | $\Omega$ | 292.73168 | | −0.87940174 | +0.09053082 |
| $e$ | 0.0932413 | $i$ | 13.01333 | | −0.42786661 | +0.28021561 |
| $P$ | 4.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 645 | 0.0 | 0.0 | 2005 07 30 | 644 | 0.1− | 0.1− | 2005 08 26 | 699 | 0.7+ | 0.4+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.1+ | 0.0 | 2005 08 26 | 699 | (2.2− | 2.1+) |
| 2003 01 10 | 704 | 0.2− | 0.3− | 2005 08 06 | 644 | 0.0 | 0.0 | 2005 08 26 | 699 | 0.4+ | 1.6+ |
| 2003 01 10 | 704 | 0.1− | 0.4+ | 2005 08 06 | 644 | 0.2− | 0.4− | 2005 09 27 | 644 | 0.2− | 0.2− |
| 2003 01 10 | 704 | 0.4+ | 0.1− | 2005 08 24 | 644 | 0.2− | 0.2− | 2005 09 27 | 644 | 0.1− | 0.1+ |
| 2003 01 10 | 704 | 0.5+ | 0.5− | 2005 08 24 | 644 | 0.2− | 0.2− | 2005 09 27 | 644 | 0.2− | 0.3− |
| 2005 07 30 | 644 | 0.0 | 0.5− | 2005 08 24 | 644 | 0.1− | 0.1− | | | | |
| 2005 07 30 | 644 | 0.0 | 0.2− | 2005 08 26 | 699 | 0.0 | 0.1− | | | | |

**2005 $OF_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.80191 | | | (2000.0) | | |
| $n$ | 0.18491357 | $\omega$ | 154.50364 | | −0.02254979 | −0.99729256 |
| $a$ | 3.0513372 | $\Omega$ | 296.72072 | | +0.90330911 | +0.00967553 |
| $e$ | 0.0479617 | $i$ | 4.49439 | | +0.42839720 | −0.07289668 |
| $P$ | 5.33 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.2− | 0.6− | 2005 08 10 | 807 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 1997 01 09 | 691 | 0.0 | 0.2− | 2005 08 10 | 807 | 0.2+ | 0.2− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 1997 01 09 | 691 | 0.2− | 0.5− | 2005 08 24 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2002 01 14 | 704 | 0.3+ | 0.9+ | 2005 08 24 | 644 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2002 01 14 | 704 | 0.1+ | 0.5+ | 2005 08 24 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 0.1− | 0.1+ | 2005 10 30 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.7+ | 0.6+ |
| 2003 03 11 | 644 | 0.2+ | 0.9+ | 2005 10 30 | G96 | 0.5− | 0.0 | 2006 11 22 | 704 | 1.1− | 0.9+ |
| 2003 03 11 | 644 | 0.5+ | 1.1+ | 2005 10 30 | G96 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2003 03 11 | 644 | 0.8+ | 1.2+ | 2005 10 30 | G96 | 0.0 | 0.6− | 2006 11 22 | 704 | 1.2− | 0.4+ |
| 2005 07 30 | 644 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.2− | 0.5+ |
| 2005 07 30 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.3+ | 0.3+ |
| 2005 07 30 | 644 | 0.4+ | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.0 | 2006 11 23 | 703 | 1.2+ | 0.5+ |
| 2005 08 09 | 807 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.1+ | 1.2+ |

**2005 $OG_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.41240 | | | (2000.0) | | |
| $n$ | 0.17665862 | $\omega$ | 47.75701 | | +0.99096293 | −0.07026146 |
| $a$ | 3.1456676 | $\Omega$ | 315.90734 | | +0.00365922 | +0.86567986 |
| $e$ | 0.0412974 | $i$ | 9.45145 | | +0.13408607 | +0.49564273 |
| $P$ | 5.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 645 | 0.1+ | 0.0 | 2005 08 06 | 644 | 0.0 | 0.1+ | 2005 09 23 | 691 | 0.1− | 0.1+ |
| 2001 12 15 | 645 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.4+ | 0.0 | 2005 09 23 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2005 08 06 | 644 | 0.3− | 0.5+ | 2005 09 23 | 691 | 0.0 | 0.2− |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2005 08 24 | 644 | 0.1+ | 0.2− | 2005 10 05 | 691 | 0.0 | 0.4+ |
| 2005 07 30 | 644 | 0.1+ | 0.4+ | 2005 08 24 | 644 | 0.0 | 0.1+ | 2005 10 05 | 691 | 0.2+ | 0.1− |
| 2005 07 30 | 644 | 0.0 | 0.3+ | 2005 08 24 | 644 | 0.0 | 0.5− | 2005 10 05 | 691 | 0.1− | 0.0 |
| 2005 07 30 | 644 | 0.1− | 0.2+ | 2005 08 30 | 704 | 0.3− | 1.4− | 2006 11 22 | 703 | (6.9− | 1.1−) |
| 2005 07 30 | 644 | 0.0 | 0.0 | 2005 08 30 | 704 | 0.0 | 0.6− | 2006 11 22 | 703 | (6.1− | 0.4−) |
| 2005 07 30 | 644 | 0.2+ | 0.3+ | 2005 08 30 | 704 | (1.8+ | 0.3−) | 2006 11 22 | 703 | (7.5− | 1.1−) |
| 2005 07 30 | 644 | 0.4+ | 0.3+ | 2005 08 30 | 704 | 0.7− | 0.9− | 2006 11 22 | 703 | (6.1− | 1.4−) |

**2005 $OH_{27}$ = 2004 $CD_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 160.17168 | | | (2000.0) | | |
| $n$ | 0.29221755 | $\omega$ | 82.53695 | | +0.15324949 | +0.98806910 |
| $a$ | 2.2490469 | $\Omega$ | 196.30232 | | −0.92678298 | +0.13833737 |
| $e$ | 0.1313891 | $i$ | 3.12418 | | −0.34291091 | +0.06769211 |
| $P$ | 3.37 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 23 | 691 | 0.2+ | 0.2+ | 2004 02 29 | 691 | 0.1+ | 0.4+ | 2005 09 25 | 691 | 0.4− | 0.7+ |
| 2001 03 23 | 691 | 0.2+ | 0.3+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2005 09 25 | 691 | 0.3− | 0.9+ |
| 2001 03 23 | 691 | 0.1+ | 0.2+ | 2005 07 30 | 644 | 0.3+ | 0.0 | 2005 10 06 | 691 | 0.3− | 0.4+ |
| 2001 04 29 | 691 | 0.0 | 0.2+ | 2005 07 30 | 644 | 0.1+ | 0.1+ | 2005 10 06 | 691 | 0.2− | 0.5+ |
| 2001 04 29 | 691 | 0.3− | 0.3+ | 2005 07 30 | 644 | 0.5+ | 0.2+ | 2005 10 06 | 691 | 0.3− | 0.3+ |
| 2001 04 29 | 691 | 0.1+ | 0.1+ | 2005 08 27 | 699 | 0.0 | 0.5− | 2005 10 27 | G96 | 0.0 | 1.2− |
| 2004 02 12 | 691 | 0.0 | 0.6+ | 2005 08 27 | 699 | 0.9+ | 1.0+ | 2005 10 27 | G96 | 0.3− | 0.1− |
| 2004 02 12 | 691 | 0.2+ | 0.5+ | 2005 08 27 | 699 | 0.6+ | 0.7− | 2005 10 27 | G96 | 0.4− | 1.1− |
| 2004 02 12 | 691 | 0.1+ | 0.6+ | 2005 08 27 | 699 | 0.3+ | 1.5+ | 2005 10 27 | G96 | 0.1− | 0.4− |
| 2004 02 29 | 691 | 0.5+ | 0.2+ | 2005 09 25 | 691 | 0.3− | 0.9+ | | | | |

**2005 OJ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.20692 | | | (2000.0) | | |
| $n$ | 0.17811229 | $\omega$ | 309.48402 | | +0.83655811 | +0.54453433 |
| $a$ | 3.1285285 | $\Omega$ | 17.78507 | | −0.42199810 | +0.71077215 |
| $e$ | 0.0727828 | $i$ | 11.41249 | | −0.34941112 | +0.44529240 |
| $P$ | 5.53 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 704 | 0.5− | 0.4− | 2003 03 09 | 704 | 1.1+ | 1.5+ | 2005 08 31 | 644 | 0.1+ | 0.1+ |
| 2000 11 03 | 704 | 0.6− | 0.4+ | 2003 03 09 | 704 | 0.2+ | 0.4+ | 2005 08 31 | 644 | 0.3− | 0.2+ |
| 2000 11 03 | 704 | 1.2+ | 0.3− | 2005 07 30 | 644 | 0.2− | 0.3+ | 2005 09 13 | 703 | 0.4+ | 1.2+ |
| 2002 01 05 | 644 | 0.1+ | 0.0 | 2005 07 30 | 644 | 0.1− | 0.2+ | 2005 09 13 | 703 | 0.2+ | 0.5+ |
| 2002 01 05 | 644 | 0.2+ | 0.4+ | 2005 07 30 | 644 | 0.2− | 0.3+ | 2005 09 13 | 703 | 1.2− | 0.2+ |
| 2002 01 05 | 644 | 0.3+ | 0.0 | 2005 08 28 | 699 | (0.5+ | 3.3+) | 2005 09 13 | 703 | 0.4− | 1.1+ |
| 2002 01 14 | 644 | 0.5− | 0.3+ | 2005 08 28 | 699 | 1.4− | 0.4+ | 2005 09 24 | 644 | 0.2+ | 0.0 |
| 2002 01 14 | 644 | 0.3+ | 0.3+ | 2005 08 28 | 699 | 0.4− | 0.8− | 2005 09 24 | 644 | 0.1+ | 0.5+ |
| 2002 01 14 | 644 | 0.1+ | 0.2+ | 2005 08 28 | 699 | 0.8+ | 0.5− | 2005 09 24 | 644 | 0.1+ | 0.2+ |
| 2003 03 09 | 704 | 0.8+ | 1.7+ | 2005 08 31 | 644 | 0.3− | 0.2+ | | | | |

**2005 OK$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.93864 | | | (2000.0) | | |
| $n$ | 0.17631773 | $\omega$ | 265.57675 | | +0.82109446 | −0.50639735 |
| $a$ | 3.1497208 | $\Omega$ | 124.62583 | | +0.56114003 | +0.80063968 |
| $e$ | 0.1700198 | $i$ | 18.66673 | | −0.10452630 | +0.32021528 |
| $P$ | 5.59 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 699 | 0.5+ | 0.8− | 2003 05 30 | 645 | 0.0 | 0.0 | 2005 09 01 | 644 | 0.2+ | 0.4+ |
| 2000 10 01 | 699 | 0.6+ | 0.3+ | 2005 07 30 | 644 | 0.1+ | 0.3+ | 2005 09 01 | 644 | 0.2+ | 0.6+ |
| 2000 10 01 | 699 | 1.0− | 0.6+ | 2005 07 30 | 644 | 0.0 | 0.3+ | 2005 09 01 | 644 | 0.1+ | 0.3+ |
| 2000 10 01 | 699 | 0.2− | 0.1+ | 2005 07 30 | 644 | 0.3+ | 0.2+ | 2005 09 26 | 704 | 0.1− | 0.8− |
| 2002 03 11 | 644 | 0.1− | 0.1+ | 2005 08 06 | E12 | 0.1+ | 0.4− | 2005 09 26 | 704 | 0.3− | 0.7+ |
| 2002 03 11 | 644 | 0.2− | 0.7+ | 2005 08 06 | E12 | 0.6− | 0.4+ | 2005 09 26 | 704 | 0.1+ | 0.2+ |
| 2002 03 11 | 644 | 0.5+ | 0.7+ | 2005 08 06 | E12 | 0.1− | 0.1+ | 2005 09 26 | 704 | 0.4− | 0.4− |
| 2003 05 30 | 645 | 0.0 | 0.0 | 2005 08 24 | 644 | 0.0 | 0.3+ | 2005 09 26 | 704 | 0.1+ | 1.2− |
| 2003 05 30 | 645 | 0.0 | 0.0 | 2005 08 24 | 644 | 0.1− | 0.3+ | | | | |
| 2003 05 30 | 645 | 0.1+ | 0.0 | 2005 08 24 | 644 | 0.1− | 0.0 | | | | |

**2005 OL$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 57.38222 | | | (2000.0) | | |
| $n$ | 0.18372152 | $\omega$ | 129.61793 | | +0.94965451 | +0.30029775 |
| $a$ | 3.0645216 | $\Omega$ | 213.18737 | | −0.31329690 | +0.91130231 |
| $e$ | 0.0826494 | $i$ | 9.39110 | | +0.00116823 | +0.28169019 |
| $P$ | 5.36 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 704 | 0.0 | 0.6+ | 2005 08 24 | 644 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2000 09 25 | 704 | 0.4+ | 0.6+ | 2005 08 24 | 644 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2000 09 25 | 704 | 0.3− | 0.3− | 2005 08 24 | 644 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2000 09 25 | 704 | 0.1+ | 0.3− | 2005 08 26 | 699 | 1.3− | 1.2− | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2000 09 25 | 704 | 0.2− | 0.8− | 2005 08 26 | 699 | 0.2− | 1.3+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2004 05 21 | 691 | 0.1− | 0.4+ | 2005 08 26 | 699 | 0.8− | 0.9+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2004 05 21 | 691 | 0.2+ | 0.3+ | 2005 08 26 | 699 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2004 05 21 | 691 | 0.1− | 0.0 | 2005 09 02 | 644 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2004 06 09 | 691 | 0.3+ | 0.4− | 2005 09 02 | 644 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.3+ |
| 2004 06 09 | 691 | 0.3− | 0.4+ | 2005 09 02 | 644 | 0.4+ | 0.1− | 2006 11 24 | 691 | 0.1− | 0.4+ |
| 2004 06 09 | 691 | 0.1+ | 0.3+ | 2005 10 01 | G96 | 0.2+ | 0.6+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2005 07 31 | 644 | 0.2+ | 0.0 | 2005 10 01 | G96 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2005 07 31 | 644 | 0.0 | 0.1− | 2005 10 01 | G96 | 0.1+ | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2005 07 31 | 644 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.4− | 0.1− |

**2005 OM$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 81.80658 | | | (2000.0) | | |
| $n$ | 0.27330321 | $\omega$ | 191.61745 | | +0.98506366 | −0.17213324 |
| $a$ | 2.3516511 | $\Omega$ | 178.27564 | | +0.16743555 | +0.95152076 |
| $e$ | 0.2484232 | $i$ | 8.49041 | | +0.04018616 | +0.25490858 |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 24 | 691 | 0.9+ | 0.0 | 2005 07 31 | 644 | 0.1+ | 0.2+ | 2005 08 24 | 644 | 0.4+ | 0.1+ |
| 1996 01 24 | 691 | 0.1− | 0.6+ | 2005 07 31 | 644 | 0.0 | 0.1+ | 2005 09 28 | 644 | 0.6− | 0.1− |
| 1996 01 24 | 691 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.2+ | 0.3+ | 2005 09 28 | 644 | 0.1+ | 0.0 |
| 1996 01 29 | 691 | 0.5− | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.2+ | 2005 09 28 | 644 | 0.3− | 0.0 |
| 1996 01 29 | 691 | 0.2− | 0.1+ | 2005 08 06 | 644 | 0.2+ | 0.3+ | 2005 10 25 | G96 | 0.1− | 0.5− |
| 1996 01 29 | 691 | 0.2− | 0.2− | 2005 08 23 | 608 | 0.1− | 0.7+ | 2005 10 25 | G96 | 0.4− | 0.0 |
| 1998 10 11 | 699 | 0.5− | 0.6− | 2005 08 23 | 608 | 0.0 | 0.6+ | 2005 10 25 | G96 | 0.2− | 0.1− |
| 1998 10 11 | 699 | 0.1− | 0.3+ | 2005 08 23 | 608 | 0.3− | 0.2− | 2005 10 25 | G96 | 0.1− | 0.1− |
| 1998 10 11 | 699 | 0.7+ | 0.1+ | 2005 08 24 | 644 | 0.0 | 0.0 | | | | |
| 2005 07 31 | 644 | 0.1+ | 0.1+ | 2005 08 24 | 644 | 0.2+ | 0.0 | | | | |

**2005 ON$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 76.83619 | | | (2000.0) | | |
| $n$ | 0.22108036 | $\omega$ | 171.57145 | | +0.99264059 | +0.12102392 |
| $a$ | 2.7087522 | $\Omega$ | 181.49701 | | −0.11838741 | +0.96248874 |
| $e$ | 0.1811171 | $i$ | 9.31181 | | −0.02547705 | +0.24283458 |
| $P$ | 4.46 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.2− | 0.1− | 2005 08 30 | 691 | 0.1− | 0.1− | 2005 09 26 | 691 | 0.2+ | 0.0 |
| 1999 03 21 | 645 | 0.1+ | 0.1− | 2005 08 30 | 691 | 0.1+ | 0.3+ | 2005 09 26 | 691 | 0.1+ | 0.2+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2005 08 30 | 691 | 0.2+ | 0.2+ | 2005 10 09 | 691 | 0.3− | 0.1− |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2005 09 12 | 691 | 0.1− | 0.3− | 2005 10 09 | 691 | 0.2+ | 0.2− |
| 2005 07 31 | 644 | 0.0 | 0.1− | 2005 09 12 | 691 | 0.1− | 0.2− | 2005 10 09 | 691 | 0.1− | 0.2+ |
| 2005 07 31 | 644 | 0.1+ | 0.1+ | 2005 09 12 | 691 | 0.2− | 0.1− | | | | |
| 2005 07 31 | 644 | 0.0 | 0.1+ | 2005 09 26 | 691 | 0.1+ | 0.1+ | | | | |

**2005 OO$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.36416 | | | (2000.0) | | |
| $n$ | 0.18449145 | $\omega$ | 66.35101 | | +0.64395660 | +0.76239279 |
| $a$ | 3.0559897 | $\Omega$ | 243.89259 | | −0.72529165 | +0.58179295 |
| $e$ | 0.2316184 | $i$ | 4.07760 | | −0.24345826 | +0.28332702 |
| $P$ | 5.34 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.7− | 0.5− | 2004 05 13 | 691 | 0.1− | 0.2+ | 2005 08 27 | 644 | 0.1− | 0.4− |
| 2000 09 20 | 691 | 0.1+ | 0.3− | 2005 07 31 | 644 | 0.2+ | 0.1+ | 2005 08 27 | 644 | 0.1− | 0.1+ |
| 2000 09 20 | 691 | 0.2− | 0.0 | 2005 07 31 | 644 | 0.2+ | 0.1− | 2005 08 27 | 644 | 0.2− | 0.2− |
| 2000 11 29 | 691 | 0.1+ | 0.8+ | 2005 07 31 | 644 | 0.4+ | 0.0 | 2005 09 14 | 703 | 0.2+ | 0.3+ |
| 2000 11 29 | 691 | 0.1+ | 0.8+ | 2005 08 27 | 699 | 1.2+ | 1.0+ | 2005 09 14 | 703 | 0.0 | 0.9+ |
| 2000 11 29 | 691 | 0.3+ | 0.1+ | 2005 08 27 | 699 | 1.7+ | 0.6− | 2005 09 14 | 703 | 0.4+ | 0.8+ |
| 2004 04 22 | 691 | 0.1+ | 0.3+ | 2005 08 27 | 699 | 0.6− | 0.3+ | 2005 09 14 | 703 | (1.8+ | 2.4+) |
| 2004 04 22 | 691 | 0.1− | 0.1+ | 2005 08 27 | 644 | 0.5− | 0.4− | 2005 09 26 | 691 | 0.2− | 0.0 |
| 2004 04 22 | 691 | 0.2+ | 0.1+ | 2005 08 27 | 644 | 0.4− | 0.2− | 2005 09 26 | 691 | 0.2− | 0.1− |
| 2004 05 13 | 691 | 0.1+ | 0.0 | 2005 08 27 | 699 | 0.4− | 0.1+ | 2005 09 26 | 691 | 0.1− | 0.1− |
| 2004 05 13 | 691 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.2− | 0.1− | | | | |

**2005 OP$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.44996 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19317864 | $\omega$ | 113.74202 | | +0.47524666 | −0.87676953 | |
| $a$ | 2.9636709 | $\Omega$ | 307.67798 | | +0.76960680 | +0.45477957 | |
| $e$ | 0.1751012 | $i$ | 5.33524 | | +0.42643404 | +0.15636731 | |
| $P$ | 5.10 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 04 | 691 | 0.1+ | 0.4− | 2005 07 31 | 644 | 0.0 | 0.4+ | 2005 09 26 | 691 | 0.3− | 0.1+ |
| 2000 09 04 | 691 | 0.4+ | 0.5− | 2005 07 31 | 644 | 0.2+ | 0.4+ | 2005 09 26 | 691 | 0.5− | 0.0 |
| 2000 09 04 | 691 | 0.0 | 0.1− | 2005 08 09 | 807 | (1.9− | 0.3+) | 2005 09 26 | 691 | 0.5− | 0.1− |
| 2002 01 14 | 704 | 0.6− | 0.3+ | 2005 08 10 | 807 | 0.4− | 0.4+ | 2005 10 10 | 691 | 0.2+ | 0.2− |
| 2002 01 14 | 704 | 0.3− | 0.2+ | 2005 08 10 | 807 | 0.4− | 0.3+ | 2005 10 10 | 691 | 0.1− | 0.5+ |
| 2002 01 14 | 704 | 0.5− | 0.5+ | 2005 08 27 | 644 | 0.2− | 0.2+ | 2005 10 10 | 691 | 0.3+ | 0.1+ |
| 2002 01 14 | 704 | 0.3− | 0.7+ | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2002 02 11 | 691 | 0.1− | 0.2+ | 2005 08 27 | 644 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2002 02 11 | 691 | 0.2+ | 0.4− | 2005 09 12 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 02 11 | 691 | 0.5+ | 0.2+ | 2005 09 12 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2005 07 31 | 644 | 0.1+ | 0.3+ | 2005 09 12 | 691 | 0.3+ | 0.1+ | | | | |

**2005 OV$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.86746 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22878874 | $\omega$ | 261.90943 | | +0.81915435 | +0.53778357 | |
| $a$ | 2.6475629 | $\Omega$ | 65.34556 | | −0.40061171 | +0.78527915 | |
| $e$ | 0.2798021 | $i$ | 12.67619 | | −0.41048314 | +0.30679877 | |
| $P$ | 4.31 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2005 07 28 | 644 | 0.1− | 0.2+ | 2005 10 02 | E12 | 0.5− | 0.7+ |
| 2001 11 20 | 704 | 0.7+ | 0.8+ | 2005 07 28 | 644 | 0.2+ | 0.1+ | 2005 10 10 | 703 | 0.2− | 1.0− |
| 2001 11 20 | 704 | 0.3+ | 0.8+ | 2005 08 08 | E12 | 0.2− | 0.3− | 2005 10 10 | 703 | 0.0 | 0.9− |
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2005 08 08 | E12 | 0.1− | 0.3+ | 2005 10 10 | 703 | 0.2+ | 0.1+ |
| 2001 12 10 | 691 | 0.2− | 0.3− | 2005 08 08 | E12 | 0.1− | 0.6+ | 2005 10 10 | 703 | 0.0 | 0.1+ |
| 2001 12 10 | 691 | 0.2− | 0.1+ | 2005 10 02 | E12 | 0.4+ | 0.2+ | 2005 10 24 | 644 | 0.2+ | 0.3+ |
| 2001 12 10 | 691 | 0.1+ | 0.2− | 2005 10 02 | E12 | 0.5− | 0.9− | 2005 10 24 | 644 | 0.1+ | 0.5+ |
| 2005 07 28 | 644 | 0.1− | 0.3+ | 2005 10 02 | E12 | 0.7+ | 0.7− | 2005 10 24 | 644 | 0.2+ | 0.5+ |

**2005 OC$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.64216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25222695 | $\omega$ | 126.02222 | | +0.46212635 | +0.88668366 | |
| $a$ | 2.4808950 | $\Omega$ | 171.46138 | | −0.84303250 | +0.44456890 | |
| $e$ | 0.2221285 | $i$ | 5.87934 | | −0.27520071 | +0.12708491 | |
| $P$ | 3.91 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.0 | 0.3− | 2005 08 06 | 644 | 0.0 | 0.0 | 2005 09 22 | 644 | 0.1− | 0.2− |
| 2001 07 25 | 608 | 0.0 | 0.1− | 2005 08 06 | 644 | 0.4− | 0.2− | 2005 09 29 | G96 | 0.1− | 0.3+ |
| 2001 07 25 | 608 | 0.1+ | 0.1− | 2005 08 06 | 644 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.6− | 0.6+ |
| 2004 03 21 | 291 | 0.2+ | 0.4+ | 2005 08 27 | 699 | 0.2+ | 0.5+ | 2005 09 29 | G96 | 0.1+ | 0.4+ |
| 2004 03 21 | 291 | 0.1+ | 0.3+ | 2005 08 27 | 699 | 0.4+ | 0.2− | 2005 09 29 | G96 | 0.1+ | 0.3+ |
| 2004 03 21 | 291 | 0.1− | 0.0 | 2005 08 27 | 699 | 0.5− | 0.2+ | 2005 10 29 | G96 | 0.3+ | 0.0 |
| 2005 07 30 | 644 | 0.1− | 0.1− | 2005 08 27 | 699 | 0.9− | 0.9+ | 2005 10 29 | G96 | 0.3− | 0.4− |
| 2005 07 30 | 644 | 0.1+ | 0.0 | 2005 09 22 | 644 | 0.3+ | 0.3+ | 2005 10 29 | G96 | 0.1+ | 0.1− |
| 2005 07 30 | 644 | 0.5+ | 0.2− | 2005 09 22 | 644 | 0.1− | 0.3+ | 2005 10 29 | G96 | 0.3+ | 0.2− |

**2005 OP$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.58637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18185923 | $\omega$ | 99.61433 | | +0.82225449 | −0.51759424 | |
| $a$ | 3.0854072 | $\Omega$ | 291.90045 | | +0.36840516 | +0.80099158 | |
| $e$ | 0.2858437 | $i$ | 14.77566 | | +0.43379166 | +0.30084662 | |
| $P$ | 5.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 704 | 0.7+ | 0.2+ | 2005 08 26 | 699 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2000 09 25 | 704 | 0.1− | 0.2+ | 2005 08 26 | 699 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.5− | 0.5− |
| 2000 09 25 | 704 | 0.3+ | 0.2+ | 2005 08 26 | 699 | 1.1+ | 0.3− | 2006 11 16 | G96 | 0.7− | 0.4− |
| 2000 11 06 | 704 | 0.6− | 0.5+ | 2005 08 26 | 699 | 0.8+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2000 11 06 | 704 | 0.5− | 0.7+ | 2005 09 09 | 704 | 0.6− | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.7− |
| 2000 11 06 | 704 | 0.1− | 0.2− | 2005 09 09 | 704 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2005 07 31 | 644 | 0.1+ | 0.0 | 2005 09 09 | 704 | 0.3− | 0.4− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2005 07 31 | 644 | 0.2+ | 0.1− | 2005 09 11 | 699 | 1.1+ | 1.3+ | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2005 07 31 | 644 | 0.2− | 0.2− | 2005 09 11 | 699 | (1.7+ | 0.9+) | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2005 08 14 | 608 | 0.1+ | 0.2− | 2005 09 11 | 699 | 0.4− | 0.6− | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2005 08 14 | 608 | 0.3− | 0.7− | 2005 09 11 | 699 | 0.4− | 0.9− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2005 08 14 | 608 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2+ | | | | |

**2005 PN**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.49137 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18203324 | $\omega$ | 69.95697 | | +0.83186236 | −0.50095225 | |
| $a$ | 3.0834406 | $\Omega$ | 319.08771 | | +0.26427232 | +0.73601076 | |
| $e$ | 0.4586453 | $i$ | 21.39027 | | +0.48802168 | +0.45534053 | |
| $P$ | 5.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 01 | 691 | 0.8− | 1.1+ | 2005 08 10 | 106 | 0.7+ | 0.5+ | 2005 11 12 | 703 | 0.2− | 0.7+ |
| 1994 09 01 | 691 | 0.3− | 0.3+ | 2005 08 10 | 106 | 0.5+ | 1.0+ | 2005 11 12 | 703 | 0.1− | 0.2− |
| 1994 09 01 | 691 | 0.2− | 0.0 | 2005 08 10 | 106 | 0.2+ | 0.1− | 2005 11 20 | 703 | 0.5− | 0.2− |
| 2000 12 19 | 695 | 0.2+ | 0.1+ | 2005 08 18 | A35 | 0.0 | 0.1+ | 2005 11 20 | 703 | 0.6− | 0.0 |
| 2000 12 19 | 695 | 0.8+ | 0.4+ | 2005 08 18 | A35 | 0.1+ | 0.2+ | 2005 11 20 | 703 | 1.0+ | 1.0− |
| 2000 12 19 | 695 | 0.2+ | 0.2+ | 2005 08 18 | A35 | 0.2− | 0.1− | 2005 11 26 | 704 | 0.1+ | 0.3+ |
| 2005 07 03 | 703 | 1.7− | 0.5− | 2005 08 27 | A35 | 0.2+ | 0.0 | 2005 11 26 | 704 | 0.8+ | 0.2+ |
| 2005 07 03 | 703 | 1.0+ | 0.7− | 2005 08 27 | A35 | 0.2+ | 0.4− | 2005 11 26 | 704 | 0.9+ | 0.3+ |
| 2005 07 03 | 703 | 0.9+ | 0.6+ | 2005 08 27 | A35 | 0.1+ | 0.3− | 2005 11 26 | 704 | 0.5+ | 0.5+ |
| 2005 07 03 | 703 | 0.2− | 0.9− | 2005 09 12 | 699 | 0.3+ | 0.3+ | 2005 12 04 | 703 | 0.4+ | 1.5+ |
| 2005 08 03 | 608 | 0.2− | 1.0− | 2005 09 12 | 699 | 0.3+ | 0.2− | 2005 12 04 | 703 | (2.7− | 1.2+) |
| 2005 08 03 | 608 | 0.4− | 0.4− | 2005 09 12 | 699 | 0.7+ | 0.3+ | 2005 12 04 | 703 | 0.5− | 0.1− |
| 2005 08 03 | 608 | 0.5− | 0.5− | 2005 09 15 | 704 | 0.3+ | 0.2− | 2005 12 04 | 703 | 0.1− | 0.2− |
| 2005 08 05 | 106 | 0.1+ | 0.0 | 2005 09 15 | 704 | 0.8+ | 0.2− | 2005 12 10 | 703 | 1.3− | 0.5− |
| 2005 08 05 | 106 | 1.0+ | 0.3+ | 2005 09 15 | 704 | 0.6+ | 0.0 | 2005 12 10 | 703 | 1.0− | 0.3+ |
| 2005 08 05 | 106 | 1.2− | 1.6− | 2005 09 15 | 704 | 0.6+ | 0.1− | 2005 12 10 | 703 | 0.3− | 0.5+ |
| 2005 08 05 | 106 | 0.3− | 1.4− | 2005 09 15 | 704 | 0.3+ | 0.4+ | 2005 12 10 | 703 | 0.3− | 0.2− |
| 2005 08 09 | 704 | 0.9+ | 0.2+ | 2005 09 29 | 703 | 0.2− | 0.7− | 2005 12 30 | 703 | 0.8− | 1.0− |
| 2005 08 09 | 704 | 0.4+ | 0.0 | 2005 09 29 | 703 | 0.2− | 0.0 | 2005 12 30 | 703 | 0.3− | 1.1− |
| 2005 08 09 | 704 | 0.3+ | 0.7+ | 2005 09 29 | 703 | 0.2− | 0.4− | 2005 12 30 | 703 | 0.8− | 0.6+ |
| 2005 08 09 | 704 | 0.6+ | 0.4− | 2005 11 12 | 703 | 0.2+ | 0.3+ | 2005 12 30 | 703 | 1.3− | 0.3+ |
| 2005 08 10 | 106 | 0.0 | 0.2+ | 2005 11 12 | 703 | 0.2− | 0.2− | | | | |

**2005 PC$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.22761 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26351492 | $\omega$ | 227.38116 | | +0.99910999 | +0.00689959 | |
| $a$ | 2.4095313 | $\Omega$ | 132.17816 | | +0.00866486 | +0.93192114 | |
| $e$ | 0.1934319 | $i$ | 3.21902 | | −0.04128132 | +0.36259535 | |
| $P$ | 3.74 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.1− | 0.0 | 2005 08 02 | 704 | 0.9+ | 1.7+ | 2005 08 27 | E12 | 0.1− | 0.1+ |
| 1996 02 15 | 691 | (0.9− | 3.2+) | 2005 08 02 | 704 | 0.3− | 0.5+ | 2005 08 27 | E12 | 1.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.1+ | 0.0 | 2005 08 06 | 704 | 0.5+ | 0.2− | 2005 08 29 | 704 | 0.6− | 0.4+ |
| 2000 04 10 | 695 | 0.0 | 0.6+ | 2005 08 06 | 704 | 0.4+ | 0.3+ | 2005 08 29 | 704 | 0.5− | 0.4+ |
| 2000 04 10 | 695 | 0.4+ | 0.4+ | 2005 08 06 | 704 | 0.0 | 0.1− | 2005 08 29 | 704 | 0.4− | 0.4− |
| 2005 06 17 | G96 | 0.3− | 0.5− | 2005 08 06 | 704 | 0.1+ | 0.1− | 2005 08 29 | 704 | 0.1− | 0.3− |
| 2005 06 17 | G96 | 0.2+ | 0.5− | 2005 08 06 | 644 | 0.2+ | 0.2− | 2005 08 29 | 704 | 0.4− | 0.1− |
| 2005 06 17 | G96 | 0.2− | 0.5− | 2005 08 06 | 644 | 0.3− | 0.3− | 2005 08 30 | 644 | 0.1+ | 0.1− |
| 2005 06 17 | G96 | 0.1− | 0.2− | 2005 08 06 | 644 | 0.2+ | 0.0 | 2005 08 30 | 644 | 0.2+ | 0.1− |
| 2005 07 04 | G96 | 0.3− | 0.2− | 2005 08 15 | E12 | 0.4+ | 0.3− | 2005 08 30 | 644 | 0.0 | 0.1− |
| 2005 07 04 | G96 | 0.1+ | 0.1− | 2005 08 15 | E12 | 0.6− | 0.7− | 2005 08 31 | 704 | 1.2− | 0.2− |
| 2005 07 04 | G96 | 0.2− | 0.0 | 2005 08 15 | E12 | 0.9+ | 0.3− | 2005 08 31 | 704 | 0.4− | 0.5+ |
| 2005 07 04 | G96 | 0.2+ | 0.1− | 2005 08 15 | E12 | 0.5+ | 0.1− | 2005 08 31 | 704 | 0.1− | 0.7+ |
| 2005 07 28 | 644 | 0.1− | 0.1− | 2005 08 22 | 644 | 0.0 | 0.1+ | 2005 08 31 | 704 | 0.8− | 0.5+ |
| 2005 07 28 | 644 | 0.1− | 0.1+ | 2005 08 22 | 644 | 0.1+ | 0.1+ | 2005 09 24 | 644 | 0.0 | 0.0 |
| 2005 07 28 | 644 | 0.1+ | 0.0 | 2005 08 22 | 644 | 0.0 | 0.2+ | 2005 09 24 | 644 | 0.3− | 0.1− |
| 2005 08 02 | 704 | 0.8+ | 0.7+ | 2005 08 27 | E12 | 0.1+ | 0.2− | 2005 09 24 | 644 | 0.1− | 0.2− |
| 2005 08 02 | 704 | (0.3+ | 2.3+) | 2005 08 27 | E12 | 0.0 | 0.0 | | | | |

**2005 PC$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.40967 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27490205 | $\omega$ | 158.04196 | | +0.54743364 | | +0.83446262 |
| $a$ | 2.3425241 | $\Omega$ | 145.05980 | | −0.78326325 | | +0.53748988 |
| $e$ | 0.2808008 | $i$ | 6.33098 | | −0.29464402 | | +0.12155970 |
| $P$ | 3.59 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 15 | 691 | 0.2+ | 0.5− | 2005 08 06 | 704 | 0.3− | 0.7+ | 2005 08 27 | E12 | 0.9+ | 0.7− |
| 1994 06 15 | 691 | 0.3+ | 0.0 | 2005 08 07 | 608 | 0.3+ | 0.2− | 2005 08 29 | 699 | 0.6+ | 0.1+ |
| 1994 06 15 | 691 | 0.6− | 0.2+ | 2005 08 07 | 608 | 0.4+ | 0.5− | 2005 08 29 | 704 | 0.1− | 0.2+ |
| 1998 09 29 | 910 | 0.3+ | 0.0 | 2005 08 07 | 608 | 0.3+ | 0.7− | 2005 08 29 | 699 | 0.2+ | 0.3− |
| 1998 09 29 | 910 | 0.1+ | 0.2− | 2005 08 15 | E12 | 0.0 | 0.3− | 2005 08 29 | 704 | 1.0− | 0.6+ |
| 1998 09 29 | 910 | 0.0 | 0.2− | 2005 08 15 | E12 | 0.1− | 0.1− | 2005 08 29 | 704 | 1.6− | 0.6+ |
| 2005 06 29 | 644 | 0.3+ | 0.6+ | 2005 08 15 | E12 | 0.5+ | 0.5− | 2005 08 29 | 699 | 0.9− | 0.7− |
| 2005 06 29 | 644 | 0.4+ | 0.6+ | 2005 08 15 | E12 | 0.1− | 0.2− | 2005 08 29 | 704 | 0.4− | 0.5+ |
| 2005 06 29 | 644 | 0.5+ | 0.4+ | 2005 08 26 | 699 | 0.2− | 0.1+ | 2005 08 29 | 699 | 0.1+ | 0.3− |
| 2005 07 28 | 644 | 0.2− | 0.1− | 2005 08 26 | 699 | 0.1+ | 0.7− | 2005 08 29 | 704 | 0.0 | 0.5+ |
| 2005 07 28 | 644 | 0.0 | 0.0 | 2005 08 26 | 699 | 0.6+ | 0.6− | 2005 09 05 | 703 | 1.3− | 0.2− |
| 2005 07 28 | 644 | 0.1− | 0.0 | 2005 08 26 | 699 | 1.5− | 0.7+ | 2005 09 05 | 703 | 0.5− | 0.1− |
| 2005 08 06 | 704 | 0.1+ | 0.3+ | 2005 08 27 | E12 | 0.3+ | 0.1− | 2005 09 05 | 703 | 0.5+ | 0.8+ |
| 2005 08 06 | 704 | 0.0 | 0.5+ | 2005 08 27 | E12 | 0.6+ | 0.4− | 2005 09 05 | 703 | 0.8+ | 0.2− |
| 2005 08 06 | 704 | 0.3+ | 0.7+ | 2005 08 27 | E12 | 0.4+ | 0.3− | | | | |

**2005 PJ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.57595 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17361811 | $\omega$ | 293.14157 | | +0.36880897 | | +0.92947460 |
| $a$ | 3.1822871 | $\Omega$ | 358.44020 | | −0.71876516 | | +0.28003635 |
| $e$ | 0.0966605 | $i$ | 16.08876 | | −0.58936966 | | +0.24011790 |
| $P$ | 5.68 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 21 | 644 | 0.6+ | 0.6+ | 2005 08 08 | E12 | 0.2+ | 0.3+ | 2005 09 08 | E12 | 0.8− | 0.2− |
| 2003 02 21 | 644 | 0.7+ | 0.7+ | 2005 08 08 | E12 | 0.1− | 0.3+ | 2005 12 25 | 291 | 0.0 | 0.1+ |
| 2003 02 21 | 644 | 0.3+ | 0.6+ | 2005 08 08 | E12 | 0.3− | 0.1− | 2005 12 25 | 291 | 0.2+ | 0.4+ |
| 2005 07 04 | 644 | 0.3− | 0.1+ | 2005 08 28 | E12 | 0.0 | 0.3+ | 2005 12 25 | 291 | 0.0 | 0.2− |
| 2005 07 04 | 644 | 0.1− | 0.1+ | 2005 08 28 | E12 | 0.1− | 0.7− | 2006 10 29 | 703 | 0.1+ | 1.6+ |
| 2005 07 04 | 644 | 0.3− | 0.1+ | 2005 08 28 | E12 | 0.4+ | 0.2− | 2006 10 29 | 703 | 0.9− | 0.3+ |
| 2005 08 04 | 644 | 0.1+ | 0.2+ | 2005 08 28 | E12 | 0.0 | 0.2+ | 2006 10 29 | 703 | 0.1− | 1.9− |
| 2005 08 04 | 644 | 0.2+ | 0.4+ | 2005 09 08 | E12 | 0.0 | 0.2+ | 2006 10 29 | 703 | 0.7+ | 0.2+ |
| 2005 08 04 | 644 | 0.1+ | 0.2+ | 2005 09 08 | E12 | 0.6− | 0.6+ | | | | |
| 2005 08 08 | E12 | 0.4− | 0.3− | 2005 09 08 | E12 | 0.3+ | 0.2− | | | | |

**2005 PH$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.07493 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28801101 | $\omega$ | 267.25131 | | +0.82599750 | | +0.55538314 |
| $a$ | 2.2708929 | $\Omega$ | 58.99364 | | −0.46215233 | | +0.76510078 |
| $e$ | 0.1046771 | $i$ | 6.45245 | | −0.32271248 | | +0.32583795 |
| $P$ | 3.42 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 691 | 0.2− | 0.0 | 2005 07 03 | 644 | 0.3− | 0.3− | 2005 09 01 | 644 | 0.2− | 0.1− |
| 2001 05 18 | 691 | 0.1− | 0.5− | 2005 07 03 | 644 | 0.2− | 0.0 | 2005 09 01 | 644 | 0.6− | 0.2− |
| 2001 05 18 | 691 | 0.4+ | 0.8+ | 2005 08 07 | 428 | 0.3+ | 0.2− | 2005 09 06 | E12 | 0.5− | 0.0 |
| 2002 11 06 | 608 | 0.0 | 0.0 | 2005 08 07 | 428 | 1.3+ | 0.3+ | 2005 09 06 | E12 | 0.4+ | 0.2− |
| 2002 11 06 | 608 | 0.3− | 0.5+ | 2005 08 09 | 428 | 1.0+ | 0.7+ | 2005 09 06 | E12 | 1.0− | 0.3− |
| 2002 11 06 | 608 | 0.0 | 0.4+ | 2005 08 09 | 428 | 0.0 | 0.5− | 2005 09 06 | E12 | 0.2− | 0.9+ |
| 2005 07 03 | 644 | 0.1+ | 0.2− | 2005 09 01 | 644 | 0.3− | 0.1+ | | | | |

**2005 PC$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.84776 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19185438 | $\omega$ | 18.73565 | | +0.99806598 | | −0.01700083 |
| $a$ | 2.9772929 | $\Omega$ | 341.92290 | | −0.01932593 | | +0.82935195 |
| $e$ | 0.1544354 | $i$ | 11.11027 | | +0.05908298 | | +0.55846782 |
| $P$ | 5.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 699 | 0.9− | 1.1+ | 2005 07 27 | 644 | 0.1+ | 0.2− | 2005 08 29 | 704 | 0.3− | 0.1− |
| 2000 09 02 | 699 | 0.1+ | 0.9+ | 2005 07 27 | 644 | 0.1+ | 0.2− | 2005 08 30 | 644 | 0.1+ | 0.1− |
| 2000 09 02 | 699 | 1.7− | 0.8+ | 2005 07 27 | 644 | 0.0 | 0.2+ | 2005 08 30 | 644 | 0.2+ | 0.0 |
| 2000 09 02 | 699 | 0.9− | 2.2+ | 2005 07 27 | 644 | 0.2− | 0.2− | 2005 08 30 | 644 | 0.4+ | 0.2− |
| 2003 03 31 | 691 | 0.2− | 0.4+ | 2005 07 27 | 644 | 0.1− | 0.1+ | 2005 10 03 | G96 | 0.5− | 0.1− |
| 2003 03 31 | 691 | 0.4+ | 0.7+ | 2005 08 04 | 644 | 0.5+ | 0.1− | 2005 10 03 | G96 | 0.4− | 0.3− |
| 2003 03 31 | 691 | 0.5+ | 0.0 | 2005 08 04 | 644 | 0.2+ | 0.2+ | 2005 10 03 | G96 | 0.4− | 0.4− |
| 2005 07 04 | 644 | 0.1− | 0.2− | 2005 08 04 | 644 | 0.3+ | 0.1+ | 2005 10 03 | G96 | 0.3− | 0.5− |
| 2005 07 04 | 644 | 0.0 | 0.1− | 2005 08 05 | 644 | 0.3+ | 0.3− | 2005 10 25 | G96 | 0.6+ | 0.3− |
| 2005 07 04 | 644 | 0.1− | 0.0 | 2005 08 05 | 644 | 0.1− | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.1+ |
| 2005 07 18 | 644 | 0.3+ | 0.1− | 2005 08 05 | 644 | 0.2+ | 0.0 | 2005 10 25 | G96 | 0.1− | 0.1+ |
| 2005 07 18 | 644 | 0.3+ | 0.2− | 2005 08 29 | 704 | 0.7− | 0.2+ | 2005 10 25 | G96 | 0.1− | 0.5− |
| 2005 07 18 | 644 | 0.0 | 0.2+ | 2005 08 29 | 704 | 0.1+ | 0.3+ | | | | |
| 2005 07 27 | 644 | 0.6+ | 0.2+ | 2005 08 29 | 704 | 0.0 | 0.5+ | | | | |

**2005 PF$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.59242 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12448044 | $\omega$ | 194.09407 | | +0.86987642 | | +0.49145976 |
| $a$ | 3.9725432 | $\Omega$ | 136.38681 | | −0.44643101 | | +0.82078972 |
| $e$ | 0.2958421 | $i$ | 3.50891 | | −0.20979602 | | +0.29115553 |
| $P$ | 7.92 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 695 | 0.0 | 0.5+ | 2005 08 05 | 644 | 0.0 | 0.2+ | 2005 11 06 | G96 | 0.1+ | 0.1+ |
| 2002 02 06 | 695 | 0.3+ | 0.4+ | 2005 08 22 | 644 | 0.1− | 0.1+ | 2005 11 06 | G96 | 0.0 | 0.1+ |
| 2004 05 09 | 691 | 0.5+ | 0.6+ | 2005 08 22 | 644 | 0.2− | 0.2− | 2005 11 06 | G96 | 0.1− | 0.2− |
| 2004 05 09 | 691 | 0.2+ | 0.6+ | 2005 08 22 | 644 | 0.0 | 0.0 | 2005 11 06 | G96 | 0.2− | 0.3− |
| 2004 05 09 | 691 | 0.3− | 0.3+ | 2005 08 26 | 699 | 0.1− | 0.5− | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2005 07 28 | 644 | 0.1+ | 0.1− | 2005 08 26 | 699 | 1.1− | 0.2− | 2006 11 12 | G96 | 0.3− | 0.2− |
| 2005 07 28 | 644 | 0.2+ | 0.1− | 2005 08 26 | 699 | 0.2− | 0.8− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2005 07 28 | 644 | 0.1− | 0.0 | 2005 08 26 | 699 | 0.8− | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2005 07 28 | 644 | 0.0 | 0.2+ | 2005 08 27 | 644 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2005 07 28 | 644 | 0.2+ | 0.0 | 2005 08 27 | 644 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2005 07 28 | 644 | 0.0 | 0.0 | 2005 08 27 | 644 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2005 08 04 | 644 | 0.1+ | 0.0 | 2005 08 29 | 704 | 0.1+ | 1.5+ | 2006 11 27 | 691 | 0.6− | 0.7+ |
| 2005 08 04 | 644 | 0.1+ | 0.1+ | 2005 08 29 | 704 | 0.2− | 0.6+ | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2005 08 04 | 644 | 0.1+ | 0.0 | 2005 08 29 | 704 | 1.2+ | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.3+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 08 05 | 644 | 0.1− | 0.1+ | 2005 08 29 | 704 | 0.0 | 0.3− | |
| 2005 08 05 | 644 | 0.3+ | 0.3+ | 2005 08 29 | 704 | 0.2+ | 0.0 | |

**2005 PY$_9$ = 2006 TU$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.81165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12375263 | $\omega$ | 150.04263 | | +0.71374046 | +0.70041026 | |
| $a$ | 3.9881036 | $\Omega$ | 165.49744 | | −0.64273644 | +0.65505668 | |
| $e$ | 0.1828882 | $i$ | 0.03537 | | −0.27832432 | +0.28341879 | |
| $P$ | 7.96 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 695 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.3+ | |
| 2002 02 08 | 695 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ | |
| 2003 04 09 | 291 | 0.5+ | 0.8+ | 2006 10 12 | 691 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.0 | |
| 2003 04 09 | 291 | 0.5+ | 1.0+ | 2006 10 12 | 691 | 0.6− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.1− | |
| 2003 04 09 | 291 | 0.0 | 0.7+ | 2006 10 12 | 691 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 2005 08 04 | 644 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− | |
| 2005 08 04 | 644 | 0.1− | 0.8+ | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.5+ | 0.5− | |
| 2005 08 04 | 644 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.0 | |
| 2005 08 05 | 644 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.5+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.4− | |
| 2005 08 05 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.7− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.0 | |
| 2005 08 05 | 644 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.1− | |
| 2005 08 27 | 644 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.3+ | |
| 2005 08 27 | 644 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.1− | |
| 2005 08 27 | 644 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.5− | |
| 2006 09 25 | G96 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.6+ | 0.5− | | | | | |
| 2006 09 25 | G96 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | | | | | |

**2005 PE$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.72717 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29745322 | $\omega$ | 290.81745 | | +0.58077620 | +0.81380000 | |
| $a$ | 2.2225776 | $\Omega$ | 14.74321 | | −0.71337775 | +0.52103024 | |
| $e$ | 0.1738872 | $i$ | 4.66599 | | −0.39216220 | +0.25740443 | |
| $P$ | 3.31 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.3+ | 0.3− | 2005 08 04 | 644 | 0.1+ | 0.2+ | 2005 08 30 | 644 | 0.3− | 0.0 | |
| 2002 10 16 | 644 | 0.4− | 0.2+ | 2005 08 04 | 644 | 0.1− | 0.0 | 2005 08 30 | 644 | 0.5− | 0.1− | |
| 2002 10 16 | 644 | 0.1+ | 0.2+ | 2005 08 05 | 644 | 0.2− | 0.0 | 2005 08 30 | 699 | 0.2+ | 0.1+ | |
| 2004 02 16 | 691 | 0.2+ | 0.5+ | 2005 08 05 | 644 | 0.1+ | 0.0 | 2005 08 30 | 699 | 0.2− | 0.4− | |
| 2004 02 16 | 691 | 0.4+ | 0.1− | 2005 08 05 | 644 | 0.0 | 0.3+ | 2005 08 30 | 699 | 0.5+ | 0.3− | |
| 2004 02 16 | 691 | 0.4− | 0.0 | 2005 08 30 | 644 | 0.2− | 0.1− | 2005 10 29 | G96 | 0.6+ | 0.0 | |
| 2005 07 27 | 644 | 0.0 | 0.3+ | 2005 08 30 | 644 | 0.2− | 0.1+ | 2005 10 29 | G96 | 0.3− | 0.4+ | |
| 2005 07 27 | 644 | 0.1+ | 0.2+ | 2005 08 30 | 644 | 0.1− | 0.1+ | 2005 10 29 | G96 | 0.3+ | 0.2+ | |
| 2005 07 27 | 644 | 0.1− | 0.0 | 2005 08 30 | 644 | 0.4− | 0.1+ | 2005 10 29 | G96 | 0.0 | 0.1+ | |
| 2005 08 04 | 644 | 0.1− | 0.1+ | 2005 08 30 | 699 | 0.2+ | 0.4+ | | | | | |

**2005 PJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.03455 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26410697 | $\omega$ | 314.92041 | | +0.42211197 | −0.90013912 | |
| $a$ | 2.4059290 | $\Omega$ | 109.83513 | | +0.86062198 | +0.36061153 | |
| $e$ | 0.0805818 | $i$ | 6.56631 | | +0.28487066 | +0.24435401 | |
| $P$ | 3.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 18 | 691 | 0.0 | 0.3− | 2003 01 07 | 704 | 0.4− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.2+ | |
| 1996 02 18 | 691 | 0.1− | 0.1− | 2003 01 07 | 704 | 0.3+ | 1.1+ | 2006 11 01 | G96 | 0.6+ | 0.6− | |
| 1996 02 18 | 691 | 0.0 | 0.0 | 2005 08 04 | 644 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.2− | |
| 2001 07 21 | 608 | (0.6+ | 1.7−) | 2005 08 04 | 644 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.4− | |
| 2001 07 21 | 608 | 0.1+ | 1.1− | 2005 08 04 | 644 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.1+ | |
| 2001 07 21 | 608 | (0.4+ | 1.7−) | 2005 08 05 | 644 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− | |
| 2002 12 11 | 704 | 0.3+ | 0.8− | 2005 08 05 | 644 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.4− | |
| 2002 12 11 | 704 | 0.4+ | 0.1+ | 2005 08 05 | 644 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.5− | |
| 2002 12 11 | 704 | 0.3− | 0.2+ | 2005 08 30 | 644 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.0 | |
| 2002 12 31 | 704 | 1.2− | 0.1+ | 2005 08 30 | 644 | 0.2− | 0.2− | 2006 11 28 | G96 | 0.2+ | 0.2− | |
| 2002 12 31 | 704 | 0.1+ | 0.4− | 2005 08 30 | 644 | 0.0 | 0.4− | 2006 11 28 | G96 | 0.1+ | 0.0 | |
| 2002 12 31 | 704 | 0.5+ | 0.4− | 2006 10 21 | G96 | 0.2− | 0.1− | 2006 11 28 | G96 | 0.5− | 0.3+ | |
| 2003 01 07 | 704 | (0.9+ | 2.0+) | 2006 10 21 | G96 | 0.1− | 0.7− | 2006 11 28 | G96 | 0.2− | 0.0 | |
| 2003 01 07 | 704 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.1+ | | | | | |

**2005 PY$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.44033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12370615 | $\omega$ | 229.50976 | | +0.98527185 | +0.08272870 | |
| $a$ | 3.9891023 | $\Omega$ | 125.22850 | | −0.03552867 | +0.95511818 | |
| $e$ | 0.1959726 | $i$ | 10.55638 | | −0.16726357 | +0.28443843 | |
| $P$ | 7.97 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 699 | 0.2− | 0.5+ | 2005 08 30 | 699 | 0.3− | 0.1− | 2006 10 30 | 703 | 0.3+ | 0.9+ | |
| 1998 11 19 | 699 | 0.9− | 0.1+ | 2005 08 30 | 699 | 0.8− | 0.1− | 2006 10 30 | 703 | 0.3− | 0.7− | |
| 1998 11 19 | 699 | 0.5+ | 1.3+ | 2005 08 31 | 644 | 0.1+ | 0.0 | 2006 10 30 | 703 | 0.3− | 1.1+ | |
| 2005 07 28 | 644 | 0.3+ | 0.0 | 2005 08 31 | 644 | 0.2+ | 0.1− | 2006 10 30 | 703 | 1.0− | 0.0 | |
| 2005 07 28 | 644 | 0.2+ | 0.1+ | 2005 08 31 | 644 | 0.0 | 0.1+ | 2006 11 10 | D35 | 0.0 | 0.3− | |
| 2005 07 28 | 644 | 0.3+ | 0.0 | 2005 09 05 | 703 | 0.5+ | 1.0+ | 2006 11 10 | D35 | 0.0 | 0.3− | |
| 2005 08 04 | 644 | 0.1+ | 0.0 | 2005 09 05 | 703 | 0.2− | 0.3+ | 2006 11 10 | D35 | 0.2+ | 0.3− | |
| 2005 08 04 | 644 | 0.1+ | 0.1+ | 2005 09 05 | 703 | 0.3− | 0.9+ | 2006 11 13 | 703 | 0.1+ | 0.1− | |
| 2005 08 04 | 644 | 0.0 | 0.0 | 2005 09 05 | 703 | 1.0− | 0.3− | 2006 11 13 | 703 | 0.1− | 0.3− | |
| 2005 08 05 | 644 | 0.1+ | 0.0 | 2005 09 26 | 704 | 0.0 | 0.7− | 2006 11 13 | 703 | 0.2− | 0.9− | |
| 2005 08 05 | 644 | 0.0 | 0.0 | 2005 09 26 | 704 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.3− | |
| 2005 08 05 | 644 | 0.1+ | 0.1+ | 2005 09 26 | 704 | 0.6+ | 0.8− | 2006 11 19 | 703 | 0.5+ | 0.1+ | |
| 2005 08 05 | 644 | 0.1+ | 0.2− | 2005 09 26 | 704 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.2+ | 0.5+ | |
| 2005 08 05 | 644 | 0.0 | 0.1− | 2005 09 26 | 704 | 0.6− | 0.2− | 2006 11 19 | 703 | 0.4+ | 0.1− | |
| 2005 08 05 | 644 | 0.2+ | 0.1− | 2005 10 04 | 644 | 0.2− | 0.0 | 2006 11 19 | 703 | 1.1+ | 0.3+ | |
| 2005 08 30 | 644 | 0.2− | 0.0 | 2005 10 04 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 703 | 1.2+ | 0.3− | |
| 2005 08 30 | 644 | 0.1− | 0.1− | 2005 10 04 | 644 | 0.0 | 0.0 | 2006 11 20 | 703 | 0.4− | 0.6− | |
| 2005 08 30 | 699 | 0.8+ | 0.5− | 2005 11 15 | 644 | 0.2− | 0.0 | 2006 11 20 | 703 | 0.3− | 0.7+ | |
| 2005 08 30 | 644 | 0.3− | 0.1− | 2005 11 15 | 644 | 0.0 | 0.1+ | 2006 11 20 | 703 | 0.8− | 1.3− | |
| 2005 08 30 | 699 | 0.3+ | 0.3+ | 2005 11 15 | 644 | 0.2+ | 0.3+ | | | | | |

**2005 PD$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.93864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12221717 | $\omega$ | 239.34653 | | +0.96071310 | +0.26997745 | |
| $a$ | 4.0214367 | $\Omega$ | 104.92543 | | −0.22636131 | +0.89637197 | |
| $e$ | 0.2718629 | $i$ | 3.81928 | | −0.16059548 | +0.35160982 | |
| $P$ | 8.06 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 28 | 644 | 0.2− | 0.3+ | 2005 08 27 | 644 | 0.1− | 0.1− | 2005 09 26 | 703 | (3.1− | 2.3−) | |
| 2005 07 28 | 644 | 0.0 | 0.0 | 2005 08 27 | 644 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.0 | |
| 2005 07 28 | 644 | 0.1− | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2− | 0.1− | |
| 2005 08 04 | 644 | 0.4+ | 0.2− | 2005 08 27 | 644 | 0.1− | 0.0 | 2006 11 11 | 291 | 0.4+ | 0.3+ | |
| 2005 08 04 | 644 | 0.0 | 0.2+ | 2005 08 30 | 699 | (2.5+ | 0.6+) | 2006 11 11 | 291 | 0.3− | 0.4− | |
| 2005 08 04 | 644 | 0.2− | 0.2+ | 2005 08 30 | 699 | 0.3+ | 0.2+ | 2006 11 11 | 291 | 0.3+ | 0.2+ | |
| 2005 08 05 | 644 | 0.1+ | 0.2− | 2005 08 30 | 699 | (1.9+ | 1.0+) | 2006 11 12 | G96 | 0.2− | 0.2− | |
| 2005 08 05 | 644 | 0.2+ | 0.1− | 2005 08 30 | 699 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.1+ | |
| 2005 08 05 | 644 | 0.1− | 0.0 | 2005 09 26 | 703 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.1+ | |
| 2005 08 27 | 644 | 0.1− | 0.2+ | 2005 09 26 | 703 | 0.1+ | 1.1− | 2006 11 12 | G96 | 0.4− | 0.0 | |
| 2005 08 27 | 644 | 0.1− | 0.0 | 2005 09 26 | 703 | (2.0− | 0.3−) | | | | | |

**2005 PF$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.49195 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12619605 | $\omega$ | 116.38253 | | +0.77543221 | +0.63139641 | |
| $a$ | 3.9364573 | $\Omega$ | 204.46597 | | −0.58485162 | +0.71425517 | |
| $e$ | 0.2247359 | $i$ | 0.91217 | | −0.23801991 | +0.30195716 | |
| $P$ | 7.81 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 18 | 644 | 1.1− | 0.6− | 2005 08 27 | H06 | (1.2− | 1.7−) | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2005 07 18 | 644 | 0.1− | 0.2+ | 2005 08 29 | H06 | 1.2− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2005 07 18 | 644 | 0.1− | 0.0 | 2005 08 29 | H06 | 0.1− | 0.9− | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2005 08 03 | 735 | 0.6− | 0.0 | 2006 10 12 | 691 | 0.7+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2005 08 03 | 735 | 1.0+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 08 03 | 735 | 1.0+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2005 08 06 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 11 11 | G96 | (1.2− | 2.1−) |
| 2005 08 06 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.4− | 2006 11 11 | G96 | 0.6+ | 1.3− |
| 2005 08 06 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2005 08 25 | 644 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.4− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2005 08 25 | 644 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2005 08 25 | 644 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.3− | 1.0+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2005 08 27 | H06 | (2.2− | 1.0+) | 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2005 08 27 | H06 | (2.0− | 1.2−) | 2006 10 27 | 691 | 0.3− | 0.6+ | | | | |

**2005 PR$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.60006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00335799 | $\omega$ | 308.52097 | | +0.30308771 | +0.95292612 | |
| $a$ | 44.1654658 | $\Omega$ | 339.11758 | | −0.86687784 | +0.27206052 | |
| $e$ | 0.1073483 | $i$ | 1.34165 | | −0.39580381 | +0.13384650 | |
| $P$ | 294 | $H$ | 5.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 09 | 807 | 0.1− | 0.1+ | 2005 12 23 | 568 | 0.1− | 0.1− | 2006 10 19 | 695 | 0.1− | 0.2+ |
| 2005 08 10 | 807 | 0.0 | 0.1+ | 2006 08 21 | 807 | 0.0 | 0.3− | 2006 10 19 | 695 | 0.0 | 0.1+ |
| 2005 08 10 | 807 | 0.0 | 0.1+ | 2006 08 21 | 807 | 0.3+ | 0.3− | 2006 10 19 | 695 | 0.0 | 0.1+ |
| 2005 11 02 | 695 | 0.1+ | 0.2− | 2006 08 22 | 807 | 0.1− | 0.2+ | 2006 10 20 | 695 | 0.1+ | 0.0 |
| 2005 11 02 | 695 | 0.0 | 0.1− | 2006 09 24 | 688 | 0.2− | 0.1− | 2006 10 20 | 695 | 0.1− | 0.1+ |
| 2005 11 03 | 695 | 0.0 | 0.0 | 2006 09 24 | 688 | 0.2+ | 0.1− | | | | |
| 2005 12 23 | 568 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.1− | 0.1+ | | | | |

**2005 PT$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.44873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00162880 | $\omega$ | 109.52122 | | +0.28695511 | +0.95791916 | |
| $a$ | 71.5414796 | $\Omega$ | 177.12760 | | −0.92242862 | +0.27825299 | |
| $e$ | 0.4885722 | $i$ | 7.91713 | | −0.25842252 | +0.07047094 | |
| $P$ | 605 | $H$ | 7.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 09 | 807 | 0.1+ | 0.1+ | 2005 10 28 | 568 | 0.2+ | 0.1+ | 2006 08 22 | 807 | 0.0 | 0.0 |
| 2005 08 10 | 807 | 0.1− | 0.1− | 2005 11 02 | 695 | 0.1+ | 0.0 | 2006 08 23 | 807 | 0.2+ | 0.1+ |
| 2005 08 10 | 807 | 0.0 | 0.1− | 2005 11 03 | 695 | 0.1+ | 0.1− | 2006 08 23 | 807 | 0.2− | 0.1− |
| 2005 10 28 | 568 | 0.1− | 0.1− | 2005 11 03 | 695 | 0.2− | 0.1+ | | | | |

**2005 PU$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.57540 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00043724 | $\omega$ | 227.95731 | | +0.49501378 | −0.86857529 | |
| $a$ | 171.9198076 | $\Omega$ | 192.43341 | | +0.82563174 | +0.47852423 | |
| $e$ | 0.8297918 | $i$ | 6.18636 | | +0.27072788 | +0.12880808 | |
| $P$ | 2250 | $H$ | 6.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 807 | 0.2− | 0.0 | 2005 10 28 | 568 | 0.0 | 0.1+ | 2006 08 23 | 807 | 0.1+ | 0.2+ |
| 2000 08 26 | 807 | 0.2+ | 0.1+ | 2005 11 02 | 695 | 0.1− | 0.2+ | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2005 08 09 | 807 | 0.1− | 0.0 | 2005 11 03 | 695 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.1− | 0.2+ |
| 2005 08 10 | 807 | 0.1+ | 0.2− | 2005 11 03 | 695 | 0.2+ | 0.2− | 2006 10 20 | 695 | 0.0 | 0.2− |
| 2005 08 10 | 807 | 0.1+ | 0.2− | 2006 08 22 | 807 | 0.1− | 0.2− | | | | |
| 2005 10 28 | 568 | 0.1− | 0.0 | 2006 08 23 | 807 | 0.1+ | 0.2+ | | | | |

**2005 PK$_{23}$ = 2001 YD$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.84755 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20498850 | $\omega$ | 126.37192 | | −0.63163248 | −0.77526075 | |
| $a$ | 2.8487197 | $\Omega$ | 2.80555 | | +0.68762213 | −0.56221180 | |
| $e$ | 0.1357013 | $i$ | 3.91714 | | +0.35807292 | −0.28790391 | |
| $P$ | 4.81 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.0 | 0.2+ | 2003 04 29 | 691 | 0.1+ | 0.2+ | 2005 08 31 | 691 | 0.6− | 0.1− |
| 2001 12 18 | 704 | 0.7+ | 0.1− | 2003 04 29 | 691 | 0.0 | 0.4+ | 2005 09 14 | 691 | 0.3+ | 0.1+ |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2003 04 29 | 691 | 0.4+ | 0.6+ | 2005 09 14 | 691 | 0.8− | 0.2+ |
| 2001 12 19 | 704 | 0.6− | 0.4+ | 2005 08 09 | 807 | 0.4+ | 0.8+ | 2005 09 14 | 691 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2005 08 10 | 807 | 1.4+ | 0.0 | 2005 09 29 | G96 | 0.6+ | 0.4+ |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2005 08 10 | 807 | 0.2+ | 0.7+ | 2005 09 29 | G96 | 0.8+ | 0.2+ |
| 2001 12 19 | 704 | 0.2+ | 0.4+ | 2005 08 31 | 691 | 0.5− | 0.2+ | 2005 09 29 | G96 | 0.9+ | 0.2+ |
| 2001 12 19 | 704 | 0.3− | 1.0+ | 2005 08 31 | 691 | 0.4− | 0.2+ | 2005 09 29 | G96 | 1.1+ | 0.3+ |

**2005 PL$_{23}$ = 2001 LR$_{5}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.15317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27031612 | $\omega$ | 227.35233 | | +0.89462513 | +0.41447076 | |
| $a$ | 2.3689438 | $\Omega$ | 107.53214 | | −0.34134513 | +0.87501909 | |
| $e$ | 0.3294181 | $i$ | 10.08121 | | −0.28832165 | +0.25011114 | |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.1− | 0.6− | 2005 09 13 | 703 | 0.1+ | 0.3− | 2005 10 25 | 704 | 0.8+ | 1.1+ |
| 2001 06 15 | 704 | 0.3+ | 0.4+ | 2005 09 13 | 703 | 0.7− | 0.1+ | 2005 10 25 | 704 | 0.5+ | 1.4+ |
| 2001 06 15 | 704 | 0.2− | 0.3− | 2005 09 13 | 703 | 0.5− | 0.1− | 2005 10 25 | 704 | 1.9− | 0.8+ |
| 2001 06 15 | 704 | 0.3− | 0.1+ | 2005 09 27 | 704 | 0.2− | 0.5+ | 2005 10 30 | 703 | 0.6− | 0.1− |
| 2001 06 15 | 704 | 0.2− | 1.7+ | 2005 09 27 | 704 | 0.8− | 0.0 | 2005 10 30 | 703 | 0.2− | 0.1− |
| 2001 06 16 | 704 | 0.0 | 0.3− | 2005 09 27 | 704 | 0.3− | 0.2+ | 2005 10 30 | 703 | 0.8+ | 0.8− |
| 2001 06 16 | 704 | 0.5− | 0.6− | 2005 09 27 | 704 | 0.1− | 0.1+ | 2005 10 30 | 703 | 0.3+ | 1.0− |
| 2001 06 16 | 704 | 0.7+ | 0.2+ | 2005 09 27 | 704 | 0.0 | 0.3+ | 2005 11 06 | 703 | 0.1+ | 0.6− |
| 2001 06 16 | 704 | 0.4+ | 0.3− | 2005 10 04 | 644 | 0.1+ | 0.3− | 2005 11 06 | 703 | 0.3− | 0.7− |
| 2005 08 13 | E12 | 0.6+ | 0.3− | 2005 10 04 | 644 | 0.2+ | 0.2− | 2005 11 06 | 703 | 0.3− | 0.5− |
| 2005 08 13 | E12 | 0.5− | 0.2− | 2005 10 04 | 644 | 0.2+ | 0.2− | 2005 11 06 | 703 | 0.8− | 0.2− |
| 2005 08 13 | E12 | 0.6+ | 1.2− | 2005 10 12 | E12 | 0.9+ | 0.0 | 2005 12 06 | 703 | 0.5+ | 0.5+ |
| 2005 08 13 | E12 | 1.3− | 0.3− | 2005 10 12 | E12 | 0.0 | 0.6− | 2005 12 06 | 703 | 0.1+ | 0.5− |
| 2005 08 14 | 608 | 0.7+ | 0.1+ | 2005 10 12 | E12 | (1.2+ | 2.4−) | 2005 12 06 | 703 | 0.1+ | 1.2− |
| 2005 08 14 | 608 | 0.3+ | 0.4+ | 2005 10 12 | E12 | (0.4+ | 2.7−) | 2005 12 06 | 703 | 0.2+ | 0.4+ |
| 2005 08 14 | 608 | 0.6+ | 0.2+ | 2005 10 25 | 704 | 0.9+ | 1.5+ | | | | |
| 2005 09 13 | 703 | 0.6− | 0.3− | 2005 10 25 | 704 | 1.4+ | 1.5+ | | | | |

**2005 PM$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.74801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28652138 | $\omega$ | 177.59965 | | +0.45522301 | +0.88086075 | |
| $a$ | 2.2787570 | $\Omega$ | 119.45340 | | −0.81936924 | +0.47150396 | |
| $e$ | 0.2375776 | $i$ | 8.57493 | | −0.34843373 | +0.04205173 | |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 0.4+ | 0.6− | 2005 08 01 | E12 | 0.1+ | 0.3+ | 2005 09 13 | 703 | 0.4− | 1.5− |
| 1998 08 17 | 704 | 0.4− | 1.0+ | 2005 08 01 | E12 | 0.2− | 0.7+ | 2005 09 13 | 703 | 0.7− | 0.8− |
| 1998 08 17 | 704 | 1.1− | 0.9− | 2005 08 27 | 644 | 0.3− | 0.3+ | 2005 09 13 | 703 | 0.6+ | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.0− | 0.8+ | 2005 08 27 | 644 | 0.4− | 0.2+ | 2005 09 13 | 703 | 0.4+ | 0.1− |
| 1998 08 17 | 704 | 1.8+ | 0.9+ | 2005 08 27 | 644 | 0.5− | 0.1+ | 2005 09 27 | 704 | 1.0+ | 0.6+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2005 08 29 | 644 | 0.4− | 0.1+ | 2005 09 27 | 704 | 0.8+ | 0.3− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2005 08 29 | 644 | 0.3− | 0.0 | 2005 09 27 | 704 | 1.7+ | 1.4− |
| 2004 02 16 | 691 | 0.0 | 0.3+ | 2005 08 29 | 644 | 0.2− | 0.2+ | 2005 09 27 | 704 | 0.6+ | 0.4+ |
| 2004 02 16 | 691 | 0.2+ | 0.4+ | 2005 09 03 | 703 | 0.0 | 0.9+ | 2005 10 04 | 644 | 0.3+ | 0.5+ |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2005 09 03 | 703 | 0.5− | 0.7− | 2005 10 04 | 644 | 0.0 | 0.3+ |
| 2005 08 01 | E12 | 0.5− | 0.5+ | 2005 09 03 | 703 | 1.0− | 0.6− | 2005 10 04 | 644 | 0.3− | 0.1+ |
| 2005 08 01 | E12 | 0.1+ | 0.1+ | 2005 09 03 | 703 | 0.3− | 0.8+ | | | | |

**2005 PN$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.61613 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26413822 | $\omega$ | 94.89556 | | −0.20636210 | | +0.97819172 |
| $a$ | 2.4057392 | $\Omega$ | 163.13921 | | −0.92686416 | | −0.18769964 |
| $e$ | 0.1701307 | $i$ | 4.66159 | | −0.31358814 | | −0.08893713 |
| $P$ | 3.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.9− | 0.2− | 2005 08 24 | 644 | 0.1− | 0.1+ | 2005 08 29 | 699 | 0.2− | 0.1+ |
| 2004 02 17 | 704 | 0.5+ | 0.0 | 2005 08 24 | 644 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.1+ | 0.2− |
| 2004 02 17 | 704 | 0.2+ | 0.2+ | 2005 08 24 | 644 | 0.2+ | 0.3+ | 2005 10 01 | G96 | 0.1− | 0.5− |
| 2004 02 17 | 704 | 1.1+ | 0.5+ | 2005 08 29 | 704 | 1.0− | 0.5+ | 2005 10 01 | G96 | 0.3− | 0.2− |
| 2004 03 20 | 691 | 0.1+ | 0.3+ | 2005 08 29 | 704 | 0.5− | 0.3+ | 2005 10 01 | G96 | 0.0 | 0.1− |
| 2004 03 20 | 691 | 0.1+ | 0.2+ | 2005 08 29 | 704 | 0.5+ | 0.8+ | 2006 11 17 | G96 | 0.3− | 0.3+ |
| 2004 03 20 | 691 | 0.2− | 0.3+ | 2005 08 29 | 704 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.6+ | 0.3+ |
| 2005 08 06 | 644 | 0.1− | 0.1+ | 2005 08 29 | 699 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2005 08 06 | 644 | 0.2− | 0.2+ | 2005 08 29 | 699 | 0.0 | 0.7+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2005 08 06 | 644 | 0.3− | 0.0 | 2005 08 29 | 699 | 1.1+ | 0.6+ | | | | |

**2005 PO$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.08999 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12426391 | $\omega$ | 265.33274 | | +0.44392354 | | +0.89274106 |
| $a$ | 3.9771568 | $\Omega$ | 31.38808 | | −0.75220761 | | +0.41803389 |
| $e$ | 0.1204993 | $i$ | 8.51355 | | −0.48694518 | | +0.16811030 |
| $P$ | 7.93 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 15 | 691 | 0.1+ | 0.1+ | 2005 09 25 | 703 | 0.4+ | 1.0− | 2006 10 16 | 691 | 0.2− | 0.0 |
| 1998 10 15 | 691 | 0.1− | 0.4+ | 2005 10 03 | 703 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 1998 10 15 | 691 | 0.5− | 0.5+ | 2005 10 03 | 703 | 0.2+ | 0.8− | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 1998 11 23 | 691 | 0.3+ | 0.6− | 2005 10 03 | 703 | 0.8+ | 0.1+ | 2006 10 20 | 691 | 0.5− | 0.4+ |
| 1998 11 23 | 691 | 0.4+ | 0.7− | 2005 10 03 | 703 | 0.3− | 0.8− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 1998 11 23 | 691 | 0.4+ | 0.6− | 2005 10 10 | 703 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2003 04 24 | 699 | 0.4+ | 0.7+ | 2005 10 10 | 703 | 0.8+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2003 04 24 | 699 | 0.7+ | 0.3+ | 2005 10 10 | 703 | (0.2− | 1.6+) | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2003 04 24 | 699 | 0.6+ | 0.8+ | 2005 10 10 | 703 | 0.6− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2003 04 24 | 699 | 0.6+ | 0.4+ | 2006 07 22 | G96 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2003 05 22 | 691 | 0.1+ | 0.5+ | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2003 05 22 | 691 | 0.1+ | 0.3+ | 2006 07 22 | G96 | 0.1− | 0.5+ | 2006 11 11 | 703 | (2.2+ | 1.8−) |
| 2003 05 22 | 691 | 0.1+ | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2005 08 06 | E12 | 0.8− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | (2.4− | 1.9−) |
| 2005 08 06 | E12 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | (1.7+ | 2.3−) |
| 2005 08 06 | E12 | 0.5− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.6+ | 0.1− |
| 2005 08 06 | E12 | 0.4− | 1.2+ | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2005 08 28 | 699 | 1.0+ | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2005 08 28 | 699 | (1.1+ | 1.9+) | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2005 08 28 | 699 | 0.4+ | 0.4+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.3− |
| 2005 08 28 | 699 | 0.8+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.6− |
| 2005 09 25 | 703 | 0.3− | 1.1+ | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.5+ | 0.4− |
| 2005 09 25 | 703 | 0.4− | 0.6− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.5− | 0.1+ |
| 2005 09 25 | 703 | 0.6− | 0.9− | 2006 10 16 | 691 | 0.1+ | 0.1+ | | | | |

**2005 PP$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.10300 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28574788 | $\omega$ | 306.72892 | | −0.89154003 | | +0.45131741 |
| $a$ | 2.2828675 | $\Omega$ | 260.12796 | | −0.40217761 | | −0.82770360 |
| $e$ | 0.1082775 | $i$ | 2.22955 | | −0.20834958 | | −0.33349566 |
| $P$ | 3.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 09 | 695 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.0 | 1.4− | 2005 08 29 | 691 | 0.1+ | 0.2− |
| 2002 11 09 | 695 | 0.0 | 0.2− | 2004 03 20 | 704 | 0.0 | 0.4− | 2005 08 29 | 691 | 0.1− | 0.2− |
| 2004 03 20 | 699 | 0.0 | 0.0 | 2004 03 27 | 704 | 1.0− | 1.8+ | 2005 08 29 | 691 | 0.3− | 0.2+ |
| 2004 03 20 | 699 | 0.4− | 0.2− | 2004 03 27 | 704 | 0.1+ | 0.9+ | 2005 09 13 | 691 | 0.1− | 0.0 |
| 2004 03 20 | 704 | 0.4+ | 1.0− | 2004 03 27 | 704 | 0.4− | 0.1− | 2005 09 13 | 691 | 0.4+ | 0.1+ |
| 2004 03 20 | 699 | 0.6+ | 0.5− | 2004 03 27 | 704 | 1.1+ | 0.3+ | 2005 09 13 | 691 | 0.3− | 0.0 |
| 2004 03 20 | 704 | 0.2− | 0.0 | 2004 03 27 | 704 | 1.0− | 0.1+ | 2005 09 25 | 691 | 0.0 | 0.1− |
| 2004 03 20 | 704 | 0.2+ | 0.0 | 2005 08 08 | 807 | 0.1+ | 0.3− | 2005 09 25 | 691 | 0.5− | 0.0 |
| 2004 03 20 | 699 | 0.4+ | 0.1+ | 2005 08 08 | 807 | 0.2+ | 0.3− | 2005 09 25 | 691 | 0.7+ | 0.1+ |

**2005 PQ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.86470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27629366 | $\omega$ | 12.46766 | | −0.10631781 | | +0.97379208 |
| $a$ | 2.3346517 | $\Omega$ | 251.69706 | | −0.92950335 | | −0.16915095 |
| $e$ | 0.1757024 | $i$ | 12.22638 | | −0.35315725 | | +0.15204258 |
| $P$ | 3.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.5− | 0.7+ | 2005 08 09 | 704 | 0.7− | 0.7+ | 2005 10 02 | 644 | 0.3+ | 0.3+ |
| 2001 06 15 | 704 | 0.2− | 0.7+ | 2005 08 09 | 704 | 0.2+ | 0.0 | 2005 10 06 | 703 | 0.2− | 0.7+ |
| 2001 06 15 | 704 | 0.4+ | 0.8+ | 2005 08 09 | 704 | 0.1+ | 0.7− | 2005 10 06 | 703 | 0.2− | 0.6− |
| 2002 11 07 | 695 | 0.2− | 0.3+ | 2005 09 03 | 703 | 0.5− | 0.2+ | 2005 10 06 | 703 | 0.2− | 0.5+ |
| 2002 11 07 | 695 | 0.5− | 0.1+ | 2005 09 03 | 703 | 0.5− | 1.4− | 2005 10 06 | 703 | 0.1− | 1.6+ |
| 2002 12 09 | 291 | 0.4+ | 0.0 | 2005 09 03 | 703 | 0.5+ | 0.6− | 2005 10 28 | 703 | 0.2+ | 0.8+ |
| 2002 12 09 | 291 | 0.3− | 0.2− | 2005 09 03 | 703 | 0.1− | 0.2+ | 2005 10 28 | 703 | 0.8− | 0.7− |
| 2002 12 09 | 291 | 0.1− | 0.3+ | 2005 09 03 | 446 | 0.1+ | 0.8− | 2005 10 28 | 703 | 0.9+ | 0.6+ |
| 2004 03 17 | 704 | 1.3+ | 1.2+ | 2005 09 03 | 446 | 0.8− | 1.7− | 2005 10 28 | 703 | 1.7− | 0.8− |
| 2004 03 17 | 704 | 0.6+ | 0.3− | 2005 09 12 | 704 | 0.4+ | 0.4− | 2005 11 25 | G96 | 0.2+ | 0.8+ |
| 2004 03 17 | 704 | 0.1− | 1.3+ | 2005 09 12 | 704 | 0.1− | 1.1+ | 2005 11 25 | G96 | 0.3− | 0.7+ |
| 2004 03 17 | 704 | 0.0 | 0.8+ | 2005 09 12 | 704 | 0.3+ | 0.8+ | 2005 11 25 | G96 | 0.2− | 0.9+ |
| 2004 03 17 | 704 | 0.4+ | 1.5+ | 2005 09 12 | 704 | 0.2+ | 0.6+ | 2005 11 25 | G96 | 0.3+ | 0.8+ |
| 2005 08 09 | 704 | 1.3+ | 0.1+ | 2005 10 02 | 644 | 0.2− | 0.4+ | | | | |
| 2005 08 09 | 704 | 0.5− | 0.4+ | 2005 10 02 | 644 | 0.1+ | 0.4+ | | | | |

**2005 PR$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.63048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19674716 | $\omega$ | 206.33700 | | +0.99501278 | | −0.07083957 |
| $a$ | 2.9277258 | $\Omega$ | 157.39230 | | +0.08558981 | | +0.96788798 |
| $e$ | 0.1116440 | $i$ | 10.52555 | | −0.05122459 | | +0.24119412 |
| $P$ | 5.01 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.6− | 0.1− | 2005 08 29 | 704 | 0.5+ | 0.4+ | 2005 09 22 | 644 | 0.3− | 0.1+ |
| 2000 08 24 | 704 | 0.2+ | 0.6+ | 2005 08 29 | 704 | 0.2− | 0.6+ | 2005 09 22 | 644 | 0.4− | 0.1+ |
| 2000 08 24 | 704 | 0.5+ | 0.8+ | 2005 08 29 | 704 | 0.2− | 0.4+ | 2005 11 06 | G96 | 0.2+ | 0.1+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2005 09 05 | 703 | 1.3− | 0.7− | 2005 11 06 | G96 | 0.0 | 0.3− |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2005 09 05 | 703 | 1.2+ | 0.1+ | 2005 11 06 | G96 | 0.3− | 1.1+ |
| 2005 08 10 | 807 | 0.1− | 0.1− | 2005 09 05 | 703 | 0.4+ | 0.0 | 2005 11 06 | G96 | 0.1+ | 0.6− |
| 2005 08 10 | 807 | 0.2+ | 0.0 | 2005 09 05 | 703 | 0.2− | 0.1+ | | | | |
| 2005 08 29 | 704 | 0.1− | 0.1+ | 2005 09 22 | 644 | 0.1+ | 0.3+ | | | | |

**2005 PW$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.86817 | | | (2000.0) | | |
| $n$ | 0.18127794 | $\omega$ | 314.52534 | | +0.89804857 | +0.43979243 |
| $a$ | 3.0919995 | $\Omega$ | 19.39018 | | −0.39499140 | +0.81575019 |
| $e$ | 0.1933175 | $i$ | 1.65003 | | −0.19362481 | +0.37567838 |
| $P$ | 5.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 691 | 0.1+ | 0.6− | 2005 08 28 | 691 | 0.0 | 0.3+ | 2005 10 01 | G96 | 0.2− | 0.4− |
| 2000 11 02 | 691 | 0.0 | 0.2− | 2005 08 28 | 691 | 0.2− | 0.4+ | 2005 10 01 | G96 | 0.1+ | 0.2− |
| 2000 11 02 | 691 | 0.3+ | 0.1− | 2005 08 28 | 691 | 0.2− | 0.4+ | 2005 10 29 | G96 | 0.8+ | 0.8+ |
| 2002 01 14 | 645 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.2− | 0.1− | 2005 10 29 | G96 | 0.1− | 0.4+ |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.1− | 0.1+ | 2005 10 29 | G96 | 0.2+ | 0.2− |
| 2005 08 06 | 644 | 0.3+ | 0.3− | 2005 09 11 | 691 | 0.0 | 0.2+ | 2005 10 29 | G96 | 0.2− | 0.0 |
| 2005 08 06 | 644 | 0.2− | 0.1− | 2005 10 01 | G96 | 0.1+ | 0.2− | | | | |
| 2005 08 06 | 644 | 0.1+ | 0.3− | 2005 10 01 | G96 | 0.1− | 0.0 | | | | |

**2005 PB$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 109.15198 | | | (2000.0) | | |
| $n$ | 0.17454847 | $\omega$ | 221.65860 | | +0.33299158 | +0.94244123 |
| $a$ | 3.1709692 | $\Omega$ | 67.81195 | | −0.85622388 | +0.31569736 |
| $e$ | 0.1357701 | $i$ | 1.87835 | | −0.39496490 | +0.11018037 |
| $P$ | 5.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 691 | 0.2− | 0.4− | 2005 08 30 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2000 11 20 | 691 | 0.6+ | 0.9− | 2005 08 30 | 691 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2000 11 20 | 691 | 0.4+ | 0.6− | 2005 08 30 | 691 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2003 03 30 | 645 | 0.0 | 0.2+ | 2005 09 14 | 691 | 0.2− | 0.6+ | 2006 11 22 | 691 | 0.2+ | 0.6+ |
| 2003 03 30 | 645 | 0.1+ | 0.1+ | 2005 09 14 | 691 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2005 08 09 | 807 | 0.1− | 0.1− | 2005 09 14 | 691 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 2005 08 10 | 807 | 0.1− | 0.0 | 2005 12 01 | 695 | 0.0 | 0.1+ | | | | |
| 2005 08 10 | 807 | 0.1− | 0.0 | 2005 12 01 | 695 | 0.2+ | 0.2− | | | | |

**2005 PD$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 137.42829 | | | (2000.0) | | |
| $n$ | 0.22491094 | $\omega$ | 157.63727 | | +0.52852121 | +0.84881883 |
| $a$ | 2.6779081 | $\Omega$ | 144.26454 | | −0.78222719 | +0.49294234 |
| $e$ | 0.0297690 | $i$ | 1.28641 | | −0.32982715 | +0.19108752 |
| $P$ | 4.38 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.4− | 0.2− | 2005 08 31 | 691 | 0.1− | 0.3− | 2005 09 29 | G96 | 0.6+ | 0.3− |
| 1994 01 08 | 691 | 0.3− | 0.2− | 2005 08 31 | 691 | 0.2− | 0.0 | 2005 10 13 | 691 | 0.2− | 0.0 |
| 1994 01 08 | 691 | 0.7+ | 0.0 | 2005 08 31 | 691 | 0.3− | 0.1− | 2005 10 13 | 691 | 0.3− | 0.1− |
| 2001 11 20 | 691 | 0.1+ | 0.0 | 2005 09 14 | 691 | 0.1+ | 0.2+ | 2005 10 13 | 691 | 0.1− | 0.4+ |
| 2001 11 20 | 691 | 0.2− | 0.4+ | 2005 09 14 | 691 | 0.2− | 0.1− | 2005 10 28 | G96 | 0.3+ | 0.4− |
| 2001 11 20 | 691 | 0.1− | 0.1+ | 2005 09 14 | 691 | 0.4+ | 0.0 | 2005 10 28 | G96 | 0.8+ | 0.2+ |
| 2005 08 09 | 807 | 0.1+ | 0.0 | 2005 09 29 | G96 | 0.1+ | 0.3− | 2005 10 28 | G96 | 0.4+ | 0.2− |
| 2005 08 10 | 807 | 0.2+ | 0.2− | 2005 09 29 | G96 | 0.4+ | 0.4− | 2005 10 28 | G96 | 0.5+ | 0.4− |
| 2005 08 10 | 807 | 0.2+ | 0.4+ | 2005 09 29 | G96 | 0.5+ | 0.2− | | | | |

**2005 PH$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 79.87073 | | | (2000.0) | | |
| $n$ | 0.26316290 | $\omega$ | 343.69260 | | +0.97022104 | −0.24176348 |
| $a$ | 2.4116796 | $\Omega$ | 30.31048 | | +0.22539784 | +0.87862669 |
| $e$ | 0.1882721 | $i$ | 1.69006 | | +0.08869581 | +0.41178339 |
| $P$ | 3.75 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 29 | 691 | 0.2− | 0.1+ | 2005 08 30 | 691 | 0.2+ | 0.4+ | 2005 10 29 | G96 | 0.3+ | 0.0 |
| 1994 11 29 | 691 | 0.6+ | 0.8− | 2005 09 08 | 704 | 0.4− | 0.8+ | 2005 10 29 | G96 | 0.1− | 0.1+ |
| 1994 11 29 | 691 | 0.1− | 0.1− | 2005 09 08 | 704 | 0.1− | 0.6+ | 2005 10 29 | G96 | 0.6+ | 0.0 |
| 2003 02 01 | 645 | 0.0 | 0.2+ | 2005 09 08 | 704 | 0.0 | 0.3+ | 2005 10 29 | G96 | 0.4+ | 0.5− |
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2005 09 08 | 704 | 0.6− | 0.1− | 2005 12 02 | G96 | 0.2+ | 0.2+ |
| 2005 08 10 | 807 | 0.3− | 0.2+ | 2005 09 23 | 703 | 0.5+ | 0.3− | 2005 12 02 | G96 | 0.5− | 0.0 |
| 2005 08 10 | 807 | 0.3− | 0.0 | 2005 09 23 | 703 | 0.5− | 0.3+ | 2005 12 02 | G96 | 0.4+ | 0.1+ |
| 2005 08 30 | 691 | 0.0 | 0.3+ | 2005 09 23 | 703 | 0.2− | 1.1− | 2005 12 02 | G96 | 0.2+ | 0.1+ |
| 2005 08 30 | 691 | 0.2− | 0.2+ | 2005 09 23 | 703 | 1.1− | 0.8+ | | | | |

**2005 QT$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 70.29172 | | | (2000.0) | | |
| $n$ | 0.18144660 | $\omega$ | 153.98134 | | +0.85457994 | +0.51924062 |
| $a$ | 3.0900831 | $\Omega$ | 174.71036 | | −0.49198926 | +0.81507451 |
| $e$ | 0.0927842 | $i$ | 5.64762 | | −0.16625192 | +0.25698778 |
| $P$ | 5.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 06 | 644 | 0.3+ | 0.1+ | 2005 10 01 | G96 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2005 08 06 | 644 | 0.4+ | 0.3+ | 2005 10 01 | G96 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2005 08 06 | 644 | 0.4+ | 0.1+ | 2005 10 01 | G96 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2005 08 22 | 644 | 0.5− | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 24 | 691 | 0.3+ | 0.1− |
| 2005 08 22 | 644 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.7− | 2006 11 24 | 691 | 0.3− | 0.6− |
| 2005 08 22 | 644 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.3− | 0.4− | 2006 11 24 | 691 | 0.4+ | 0.3− |
| 2005 08 24 | 644 | 0.1+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.6− | 2006 11 27 | 291 | 0.3+ | 0.4+ |
| 2005 08 24 | 644 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.3− | 2006 11 27 | 291 | 0.1+ | 0.5+ |
| 2005 08 24 | 644 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.4− | 2006 11 27 | 291 | 0.2− | 0.2+ |
| 2005 10 01 | G96 | 0.3− | 0.2− | 2006 11 16 | 691 | 1.3− | 1.1+ | | | | |

**2005 QA$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.68496 | | | (2000.0) | | |
| $n$ | 0.25980456 | $\omega$ | 210.82627 | | +0.97735187 | −0.20973360 |
| $a$ | 2.4324180 | $\Omega$ | 161.21822 | | +0.20759389 | +0.92433442 |
| $e$ | 0.1187177 | $i$ | 5.02449 | | +0.04108647 | +0.31877531 |
| $P$ | 3.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 691 | 0.1+ | 0.7− | 2005 08 24 | 644 | 0.1− | 0.4− | 2005 08 30 | 704 | 0.7+ | 1.1+ |
| 2000 03 03 | 691 | 0.2− | 0.4− | 2005 08 24 | 644 | 0.1− | 0.3− | 2005 08 30 | 704 | 0.2− | 0.4− |
| 2000 03 03 | 691 | 0.5− | 0.6− | 2005 08 24 | 644 | 0.1− | 0.4− | 2005 09 05 | 703 | 0.3+ | 0.3+ |
| 2004 04 14 | 691 | 0.1+ | 0.5+ | 2005 08 26 | 699 | 0.6− | 1.0+ | 2005 09 05 | 703 | 1.4+ | 0.6+ |
| 2004 04 14 | 691 | 0.3+ | 0.3+ | 2005 08 26 | 699 | 1.1− | 1.0+ | 2005 09 05 | 703 | 0.3+ | 0.3− |
| 2004 04 14 | 691 | 0.0 | 0.3+ | 2005 08 26 | 699 | 0.1+ | 0.8+ | 2005 09 05 | 703 | 0.6+ | 0.8− |
| 2005 07 29 | 644 | 0.2− | 0.2− | 2005 08 26 | 699 | 1.1+ | 1.3+ | 2005 11 06 | G96 | 0.4+ | 0.4− |
| 2005 07 29 | 644 | 0.4− | 0.4− | 2005 08 27 | 644 | 0.4− | 0.5− | 2005 11 06 | G96 | 0.2+ | 0.2− |
| 2005 07 29 | 644 | 0.1− | 0.3− | 2005 08 27 | 644 | 0.2− | 0.5− | 2005 11 06 | G96 | 0.1− | 0.4− |
| 2005 07 29 | 644 | 0.2− | 0.5− | 2005 08 27 | 644 | 0.2− | 0.4− | 2005 11 06 | G96 | 0.3+ | 0.6− |
| 2005 07 29 | 644 | 0.1− | 0.5− | 2005 08 29 | 699 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2005 07 29 | 644 | 0.1− | 0.3− | 2005 08 29 | 699 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.4+ | 0.5+ |
| 2005 08 06 | 644 | 0.1+ | 0.2− | 2005 08 29 | 699 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3+ |
| 2005 08 06 | 644 | 0.0 | 0.2− | 2005 08 29 | 699 | 0.8− | 0.9− | 2006 11 23 | G96 | 0.4− | 0.3+ |
| 2005 08 06 | 644 | 0.2+ | 0.2− | 2005 08 30 | 704 | 0.2− | 0.1− | | | | |

**2005 QU$_{3}$ = 2000 TL$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.74372 | | | (2000.0) | | |
| $n$ | 0.18524658 | $\omega$ | 20.09422 | | +0.99723458 | −0.05023265 |
| $a$ | 3.0476792 | $\Omega$ | 342.51392 | | +0.01180188 | +0.83466893 |
| $e$ | 0.1215475 | $i$ | 10.50273 | | +0.07337515 | +0.54845643 |
| $P$ | 5.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 691 | 0.1+ | 0.2− | 2005 08 28 | 691 | 0.2+ | 0.1+ | 2005 09 11 | 691 | 0.2+ | 0.3+ |
| 2000 09 26 | 691 | 0.0 | 0.2− | 2005 08 28 | 691 | 0.3+ | 0.0 | 2005 09 22 | 644 | 0.2+ | 0.1− |
| 2000 09 26 | 691 | 0.2+ | 0.0 | 2005 08 28 | 691 | 0.1− | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.1+ |
| 2000 10 03 | 704 | 0.1− | 0.6+ | 2005 09 01 | 691 | 0.1− | 0.0 | 2005 09 22 | 644 | 0.1+ | 0.2− |
| 2000 10 03 | 704 | 0.2+ | 0.4+ | 2005 09 01 | 691 | 0.3− | 0.0 | 2005 09 23 | 703 | 0.2− | 0.6+ |
| 2000 10 03 | 704 | 0.6− | 0.2+ | 2005 09 01 | 691 | 0.1− | 0.0 | 2005 09 23 | 703 | 0.4+ | 0.5− |
| 2000 10 03 | 704 | 0.4− | 0.2− | 2005 09 06 | 699 | 0.2+ | 0.1+ | 2005 09 23 | 703 | (1.6− | 0.1−) |
| 2005 07 30 | 644 | 0.5+ | 0.2− | 2005 09 06 | 699 | 0.2− | 0.2− | 2005 09 23 | 703 | (2.1− | 1.9−) |
| 2005 07 30 | 644 | 0.5+ | 0.0 | 2005 09 06 | 699 | 0.5+ | 0.0 | 2005 09 28 | 644 | 0.1+ | 0.2− |
| 2005 07 30 | 644 | 0.6+ | 0.0 | 2005 09 06 | 699 | 0.2+ | 0.3+ | 2005 09 28 | 644 | 0.1+ | 0.1+ |
| 2005 08 24 | 644 | 0.3− | 0.2+ | 2005 09 08 | 704 | 0.1+ | 0.7+ | 2005 09 28 | 644 | 0.1− | 0.2− |
| 2005 08 24 | 644 | 0.5− | 0.3− | 2005 09 08 | 704 | 0.9+ | 0.3− | 2005 10 01 | 699 | 0.8− | 0.3− |
| 2005 08 24 | 644 | 0.1+ | 0.2− | 2005 09 08 | 704 | 0.3+ | 0.4+ | 2005 10 01 | 699 | 1.1− | 0.7+ |
| 2005 08 26 | 699 | 0.1− | 0.0 | 2005 09 08 | 704 | 0.2− | 0.1+ | 2005 10 01 | 699 | 0.1− | 0.9− |
| 2005 08 26 | 699 | 0.0 | 0.6+ | 2005 09 08 | 704 | 0.4− | 0.2− | 2005 10 01 | 699 | (1.5+ | 1.8+) |
| 2005 08 26 | 699 | 0.3− | 1.4− | 2005 09 11 | 691 | 0.3− | 0.2− | | | | |
| 2005 08 26 | 699 | (1.7− | 0.9+) | 2005 09 11 | 691 | 0.2+ | 0.0 | | | | |

**2005 QC$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.29267 | | (2000.0) | | **P** | | **Q** |
| $n$ | 1.16685888 | $\omega$ | 108.65567 | | −0.91003637 | | −0.39599323 |
| $a$ | 0.8935602 | $\Omega$ | 48.21868 | | +0.29051544 | | −0.82018433 |
| $e$ | 0.3645759 | $i$ | 9.46060 | | +0.29569341 | | −0.41290075 |
| $P$ | 0.84 | $H$ | 19.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 26 | E12 | 0.4+ | 0.5− | 2005 08 29 | I77 | 0.4+ | 0.2− | 2005 09 19 | 413 | 0.2+ | 0.1− |
| 2005 08 26 | E12 | 0.4+ | 0.7− | 2005 08 29 | 423 | 0.6+ | 0.4− | 2005 09 19 | 413 | 0.2+ | 0.3− |
| 2005 08 26 | E12 | 0.5+ | 0.1+ | 2005 08 29 | 423 | 0.3− | 0.0 | 2005 09 21 | E12 | 1.5+ | 0.5+ |
| 2005 08 26 | E12 | 1.3+ | 0.9+ | 2005 08 31 | 423 | 0.4− | 0.2− | 2005 09 21 | E12 | 0.3− | 0.2− |
| 2005 08 26 | E12 | 0.8− | 0.5+ | 2005 08 31 | 423 | 0.1− | 0.2+ | 2005 09 21 | E12 | 0.4− | 0.1+ |
| 2005 08 26 | E12 | 0.4− | 0.6+ | 2005 08 31 | 423 | 0.2+ | 0.1+ | 2005 09 21 | E12 | 0.1− | 0.2+ |
| 2005 08 26 | E12 | 0.2+ | 0.5+ | 2005 09 01 | E12 | 0.4− | 0.7+ | 2005 09 21 | 428 | 0.4− | 0.2+ |
| 2005 08 26 | E12 | 0.8+ | 0.6+ | 2005 09 01 | E12 | 0.1− | 0.4+ | 2005 09 21 | 428 | 0.4− | 0.2− |
| 2005 08 26 | E12 | 0.2− | 0.7− | 2005 09 01 | E12 | 0.2+ | 0.4− | 2005 09 21 | 428 | 0.4− | 0.1+ |
| 2005 08 27 | 651 | 1.0+ | 0.4+ | 2005 09 01 | E12 | 0.9+ | 0.1− | 2005 09 22 | 413 | 0.0 | 0.0 |
| 2005 08 27 | 651 | 0.9− | 0.7− | 2005 09 02 | 423 | 0.3− | 0.3+ | 2005 09 22 | 413 | 0.0 | 0.0 |
| 2005 08 27 | 651 | 0.1− | 0.0 | 2005 09 02 | 423 | 0.2− | 0.1− | 2005 10 01 | E12 | 0.2− | 0.5+ |
| 2005 08 27 | 474 | 0.7− | 0.1+ | 2005 09 06 | 423 | 0.3− | 0.1+ | 2005 10 01 | E12 | 0.5− | 0.6− |
| 2005 08 27 | 474 | 0.6− | 0.2− | 2005 09 06 | 423 | 0.2+ | 0.2+ | 2005 10 01 | E12 | 0.1− | 0.1− |
| 2005 08 27 | 474 | 0.4− | 0.0 | 2005 09 06 | 423 | 0.1− | 0.2− | 2005 10 01 | E12 | 0.3+ | 0.1+ |
| 2005 08 27 | 474 | 0.6− | 0.2− | 2005 09 06 | 423 | 0.1− | 0.1+ | 2005 10 21 | 413 | 0.0 | 0.1− |
| 2005 08 27 | E14 | 0.5+ | 0.2− | 2005 09 07 | 423 | 0.1− | 0.1+ | 2005 10 21 | 413 | 0.0 | 0.0 |
| 2005 08 27 | E14 | 0.1− | 0.3− | 2005 09 07 | 423 | 0.6− | 0.3− | 2006 09 19 | 291 | 0.7+ | 0.3+ |
| 2005 08 27 | E14 | 0.0 | 0.1− | 2005 09 07 | 423 | 0.1− | 0.1+ | 2006 09 19 | 291 | 0.2− | 0.2− |
| 2005 08 28 | 423 | 0.5− | 0.1+ | 2005 09 07 | E12 | 0.5+ | 0.4+ | 2006 09 19 | 291 | 0.2− | 1.0− |
| 2005 08 28 | 423 | 0.3+ | 0.2− | 2005 09 07 | E12 | 0.5+ | 0.4+ | 2006 09 28 | 291 | 0.2− | 0.6+ |
| 2005 08 29 | I77 | 0.3− | 0.2− | 2005 09 07 | E12 | 0.4− | 0.7− | 2006 09 28 | 291 | 0.1+ | 0.3+ |
| 2005 08 29 | I77 | 0.0 | 0.1− | 2005 09 07 | E12 | 0.5+ | 0.3− | 2006 09 28 | 291 | 0.1− | 0.1− |

**2005 QJ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.68597 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30402287 | $\omega$ | 325.64995 | | +0.65174078 | | +0.75841089 |
| $a$ | 2.1904426 | $\Omega$ | 345.01916 | | −0.68977756 | | +0.58895949 |
| $e$ | 0.1623165 | $i$ | 1.51757 | | −0.31534246 | | +0.27917671 |
| $P$ | 3.24 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 19 | 691 | 0.6+ | 0.3− | 2005 07 12 | G96 | 0.0 | 0.3− | 2005 08 25 | 644 | 0.1− | 0.1+ |
| 1994 01 19 | 691 | 0.1− | 0.4+ | 2005 08 06 | 644 | 0.0 | 0.0 | 2005 08 25 | 644 | 0.1+ | 0.2− |
| 1994 01 19 | 691 | 0.6− | 0.4− | 2005 08 06 | 644 | 0.1+ | 0.1+ | 2005 08 25 | 644 | 0.0 | 0.1+ |
| 1999 12 05 | 691 | 0.1+ | 0.0 | 2005 08 06 | 644 | 0.1− | 0.1+ | 2005 10 03 | G96 | 0.0 | 0.1+ |
| 1999 12 05 | 691 | 0.3− | 0.4− | 2005 08 08 | 807 | 0.2+ | 0.1− | 2005 10 03 | G96 | 0.2− | 0.0 |
| 1999 12 05 | 691 | 0.1+ | 0.4+ | 2005 08 08 | 807 | 0.2− | 0.3+ | 2005 10 03 | G96 | 0.1+ | 0.2+ |
| 2005 07 12 | G96 | 0.2− | 0.4− | 2005 08 22 | 644 | 0.0 | 0.1+ | 2005 10 03 | G96 | 0.3+ | 0.2− |
| 2005 07 12 | G96 | 0.1+ | 0.5− | 2005 08 22 | 644 | 0.1+ | 0.0 | | | | |
| 2005 07 12 | G96 | 0.0 | 0.4− | 2005 08 22 | 644 | 0.1− | 0.1+ | | | | |

**2005 QW$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.86167 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12394035 | $\omega$ | 252.70956 | | +0.88456416 | | +0.46545287 |
| $a$ | 3.9840755 | $\Omega$ | 79.54210 | | −0.41550977 | | +0.81560211 |
| $e$ | 0.1377115 | $i$ | 1.74805 | | −0.21189120 | | +0.34372492 |
| $P$ | 7.95 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 691 | 0.1− | 0.6+ | 2005 09 06 | 699 | 0.8− | 0.2− | 2006 10 28 | G96 | 0.4− | 0.1+ |
| 2002 03 13 | 691 | 0.4+ | 0.3+ | 2005 09 07 | A50 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.0 |
| 2002 03 13 | 691 | 0.3+ | 0.4+ | 2005 09 07 | A50 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2003 05 01 | 291 | 0.2+ | 0.6+ | 2005 09 12 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 2003 05 01 | 291 | 0.4+ | 0.6+ | 2005 09 12 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.5− | 0.4+ |
| 2003 05 01 | 291 | 0.1+ | 0.6+ | 2005 09 12 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2003 05 01 | 691 | 0.0 | 0.4+ | 2005 10 06 | G96 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2003 05 01 | 691 | 0.1− | 0.3+ | 2005 10 06 | G96 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.1+ |
| 2003 05 01 | 691 | 0.2+ | 0.2+ | 2005 10 06 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2005 07 30 | 644 | 0.3− | 0.3+ | 2005 10 06 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2005 07 30 | 644 | 0.3− | 0.1+ | 2005 12 01 | G96 | 0.3+ | 0.2+ | 2006 11 12 | 703 | 0.1+ | 0.1− |
| 2005 07 30 | 644 | 0.4− | 0.3+ | 2005 12 01 | G96 | 0.1+ | 0.6− | 2006 11 12 | 703 | 0.0 | 0.5− |
| 2005 08 24 | 644 | 0.1+ | 0.1+ | 2005 12 01 | G96 | 0.0 | 0.4+ | 2006 11 12 | 703 | 0.7− | 0.2− |
| 2005 08 24 | 644 | 0.3+ | 0.3+ | 2005 12 01 | G96 | 0.2− | 0.1− | 2006 11 12 | 703 | 1.1− | 0.2− |
| 2005 08 24 | 644 | 0.3− | 0.6− | 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2005 08 25 | 644 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2005 08 25 | 644 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2005 08 25 | 644 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.7+ |
| 2005 08 29 | 699 | 0.5+ | 0.2+ | 2006 10 12 | 691 | 0.9+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.6+ |
| 2005 08 29 | 699 | 1.0− | 0.9+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.7+ |
| 2005 08 29 | 699 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.7+ |
| 2005 08 29 | 699 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2005 09 06 | 699 | 0.2− | 1.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.3+ |
| 2005 09 06 | 699 | (3.1− | 0.5+) | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2005 09 06 | 699 | (1.2− | 2.0+) | 2006 10 28 | G96 | 0.5+ | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.0 |

**2005 QE$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.14249 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28669669 | $\omega$ | 135.72110 | | +0.53994376 | | −0.83982940 |
| $a$ | 2.2778280 | $\Omega$ | 281.52267 | | +0.75547415 | | +0.51293907 |
| $e$ | 0.1711962 | $i$ | 3.28226 | | +0.37110584 | | +0.17770790 |
| $P$ | 3.44 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.6− | 0.5+ | 2002 12 05 | 704 | 0.4− | 0.6+ | 2005 08 25 | 599 | 0.5− | 0.2− |
| 2002 11 14 | 704 | 0.3+ | 0.6− | 2002 12 05 | 704 | 1.6+ | 1.3− | 2005 08 25 | 599 | 0.1− | 0.3− |
| 2002 11 14 | 704 | 0.8+ | 0.8+ | 2002 12 05 | 704 | 0.4+ | 0.4− | 2005 08 25 | 599 | 0.7+ | 0.0 |
| 2002 12 03 | 644 | 1.0− | 0.1+ | 2002 12 05 | 704 | 0.8− | 0.6− | 2005 08 25 | 599 | 0.2− | 0.0 |
| 2002 12 03 | 644 | 0.9− | 0.2+ | 2005 07 30 | 644 | 0.3− | 0.2+ | 2005 08 26 | 599 | 0.4+ | 0.1− |
| 2002 12 03 | 644 | 0.6− | 0.2+ | 2005 07 30 | 644 | 0.0 | 0.1− | 2005 08 26 | 599 | 0.2− | 0.7+ |
| 2002 12 05 | 704 | 1.2+ | 0.6+ | 2005 07 30 | 644 | 1.0+ | 0.3− | 2005 08 26 | 599 | 0.6− | 0.1− |

**2005 QA$_{11}$ = 2005 TM$_{192}$ = 2006 UD$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.96384 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18391504 | $\omega$ | 93.39967 | | −0.24610916 | | +0.96921797 |
| $a$ | 3.0623716 | $\Omega$ | 162.34838 | | −0.89798128 | | −0.22535242 |
| $e$ | 0.1339585 | $i$ | 1.29286 | | −0.36477377 | | −0.09916055 |
| $P$ | 5.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.2− | 0.1+ | 2005 08 28 | 701 | 0.3− | 0.5− | 2006 10 12 | 691 | 0.6− | 0.1+ |
| 1993 03 24 | 809 | 0.4+ | 0.4− | 2005 08 28 | 701 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.1− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2005 08 28 | 701 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.3+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2005 08 29 | 701 | 0.3− | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.6+ |
| 2004 04 22 | 691 | 0.1− | 0.4+ | 2005 08 29 | 701 | 0.1− | 0.8− | 2006 10 16 | 691 | 0.2+ | 0.4+ |
| 2004 04 22 | 691 | 0.1+ | 0.4+ | 2005 08 29 | 701 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2004 04 22 | 691 | 0.3+ | 0.3+ | 2005 08 30 | 701 | 0.0 | 0.7− | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2005 06 17 | G96 | 0.3+ | 0.5+ | 2005 08 30 | 701 | 0.7− | 0.6− | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2005 06 17 | G96 | 0.4+ | 0.8+ | 2005 10 01 | G96 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2005 06 17 | G96 | 0.1+ | 0.9+ | 2005 10 01 | G96 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2005 06 17 | G96 | 0.1+ | 0.5+ | 2005 10 01 | G96 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 08 27 | 701 | (2.1+ | 1.9+) | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.6+ | 1.1− |
| 2005 08 27 | 644 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2005 08 27 | 701 | (1.5+ | 2.1+) | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 11 12 | G96 | 0.4− | 0.5− |
| 2005 08 27 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 12 | G96 | 0.3− | 0.5− |
| 2005 08 27 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | | | | |

**2005 QZ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.50428 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25548110 | $\omega$ | 111.29866 | | +0.75936794 | | +0.65051682 |
| $a$ | 2.4597834 | $\Omega$ | 208.12623 | | −0.60723670 | | +0.70095726 |
| $e$ | 0.1746067 | $i$ | 1.66759 | | −0.23371762 | | +0.29238123 |
| $P$ | 3.86 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 07 | 608 | 0.2+ | 0.1− | 2005 09 08 | 704 | 1.9+ | 0.1+ | 2005 09 30 | G96 | 0.1− | 0.0 |
| 2001 08 07 | 608 | 0.2+ | 0.5− | 2005 09 08 | 704 | 0.6+ | 0.6+ | 2005 09 30 | G96 | 0.2+ | 0.0 |
| 2001 08 07 | 608 | 0.1− | 0.7− | 2005 09 22 | 644 | 0.6− | 0.4+ | 2005 10 27 | G96 | 0.1+ | 0.0 |
| 2004 03 17 | 691 | 0.4+ | 0.4+ | 2005 09 22 | 644 | 0.5− | 0.3+ | 2005 10 27 | G96 | 0.2+ | 0.2+ |
| 2004 03 17 | 691 | 0.1− | 0.2+ | 2005 09 22 | 644 | 0.7− | 0.4+ | 2005 10 27 | G96 | 0.4− | 0.2− |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2005 09 23 | 703 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.1+ | 0.1− |
| 2005 08 24 | 644 | 0.1+ | 0.1− | 2005 09 23 | 703 | 1.1+ | 0.3+ | 2005 11 25 | G96 | 0.1+ | 0.4− |
| 2005 08 24 | 644 | 0.2+ | 0.1− | 2005 09 23 | 703 | (0.4− | 2.1−) | 2005 11 25 | G96 | 0.5+ | 0.4− |
| 2005 08 24 | 644 | 0.3− | 0.0 | 2005 09 23 | 703 | 0.4− | 0.3− | 2005 11 25 | G96 | 0.6− | 0.2+ |
| 2005 08 27 | 699 | 0.1− | 0.6+ | 2005 09 25 | 691 | 0.3− | 0.3+ | 2005 11 25 | G96 | 0.0 | 0.2+ |
| 2005 08 27 | 699 | 0.1− | 0.4+ | 2005 09 25 | 691 | 0.2− | 0.3+ | 2005 12 02 | G96 | 0.3+ | 0.0 |
| 2005 08 27 | 699 | 0.0 | 0.4+ | 2005 09 25 | 691 | 0.1− | 0.0 | 2005 12 02 | G96 | 0.6− | 0.0 |
| 2005 08 27 | 699 | 1.2− | 0.1+ | 2005 09 30 | G96 | 0.3− | 0.0 | 2005 12 02 | G96 | 0.1+ | 0.6+ |
| 2005 09 08 | 704 | 1.1+ | 1.3− | 2005 09 30 | G96 | 0.5− | 0.0 | 2005 12 02 | G96 | 0.2+ | 0.1+ |

**2005 QD$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.64810 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29409769 | $\omega$ | 161.68602 | | +0.57215955 | | +0.81891308 |
| $a$ | 2.2394514 | $\Omega$ | 143.17799 | | −0.76151720 | | +0.55078503 |
| $e$ | 0.1956527 | $i$ | 4.29517 | | −0.30450779 | | +0.16129855 |
| $P$ | 3.35 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 809 | 0.3+ | 0.5− | 2005 08 28 | 699 | 0.2− | 0.1− | 2005 09 07 | 699 | 0.2− | 0.2+ |
| 1995 09 24 | 809 | 0.6− | 1.5+ | 2005 08 28 | 699 | 0.1+ | 0.4+ | 2005 09 07 | 699 | 0.2− | 0.2+ |
| 2004 02 22 | 691 | 0.0 | 0.1− | 2005 08 28 | 699 | 0.8− | 0.7− | 2005 09 14 | 691 | 0.2− | 0.0 |
| 2004 02 22 | 691 | 0.3+ | 0.5+ | 2005 08 28 | 608 | 0.8+ | 0.5+ | 2005 09 14 | 691 | 0.2− | 0.0 |
| 2004 02 22 | 691 | 0.0 | 0.2+ | 2005 08 28 | 699 | 0.0 | 0.4+ | 2005 09 14 | 691 | 0.1− | 0.1+ |
| 2005 07 29 | 644 | 0.1+ | 0.3+ | 2005 08 28 | 608 | 0.7+ | 0.8+ | 2005 09 14 | 691 | 0.0 | 0.0 |
| 2005 07 29 | 644 | 0.1+ | 0.4+ | 2005 08 28 | 608 | 0.5+ | 0.4+ | 2005 09 14 | 691 | 0.2+ | 0.0 |
| 2005 07 29 | 644 | 0.3+ | 0.3+ | 2005 08 29 | 704 | 1.6− | 1.6− | 2005 09 14 | 691 | 0.0 | 0.2− |
| 2005 08 06 | 644 | 0.0 | 0.6+ | 2005 08 29 | 704 | 0.5− | 0.7+ | 2005 10 01 | 699 | 1.5+ | 0.5+ |
| 2005 08 06 | 644 | 0.0 | 0.5+ | 2005 08 29 | 704 | 0.5− | 0.7− | 2005 10 01 | 699 | 0.4− | 0.6− |
| 2005 08 06 | 644 | 0.1− | 0.6+ | 2005 08 29 | 704 | 0.1− | 1.0− | 2005 10 01 | 699 | 0.2− | 0.2+ |
| 2005 08 25 | 644 | 0.1− | 0.1+ | 2005 08 29 | 704 | 0.0 | 0.2− | 2005 10 01 | 699 | 0.6+ | 0.1− |
| 2005 08 25 | 644 | 0.1− | 0.2+ | 2005 09 07 | 699 | 0.4+ | 0.5− | | | | |
| 2005 08 25 | 644 | 0.1+ | 0.2+ | 2005 09 07 | 699 | 0.8+ | 0.2− | | | | |

**2005 QX$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.74642 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25835726 | $\omega$ | 256.57845 | | +0.61150826 | | −0.79118257 |
| $a$ | 2.4414937 | $\Omega$ | 155.71539 | | +0.73447670 | | +0.56319621 |
| $e$ | 0.1861908 | $i$ | 1.30544 | | +0.29428154 | | +0.23841176 |
| $P$ | 3.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.4− | 0.7+ | 2005 09 11 | 691 | 0.2+ | 0.4+ | 2005 10 01 | G96 | 0.0 | 0.4− |
| 2001 08 21 | 807 | 0.1− | 0.9+ | 2005 09 22 | 644 | 0.1− | 0.3− | 2005 10 01 | G96 | 0.3+ | 0.3− |
| 2003 03 09 | 291 | 1.2+ | 0.4+ | 2005 09 22 | 644 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.0 | 0.2− |
| 2003 03 09 | 291 | 0.5− | 1.0+ | 2005 09 22 | 644 | 0.3− | 0.0 | 2005 10 01 | G96 | 0.2+ | 0.4− |
| 2003 03 09 | 291 | 0.2− | 0.5+ | 2005 10 01 | 704 | 0.4+ | 0.6+ | 2005 10 21 | 644 | 0.2+ | 0.6− |
| 2005 08 25 | 644 | 0.3− | 0.2− | 2005 10 01 | G96 | 0.5− | 0.7− | 2005 10 21 | 644 | 0.3− | 0.1− |
| 2005 08 25 | 644 | 0.1− | 0.1+ | 2005 10 01 | G96 | 0.6+ | 0.3− | 2005 10 21 | 644 | 0.2− | 0.3− |
| 2005 08 25 | 644 | 0.4− | 0.0 | 2005 10 01 | G96 | 0.2+ | 0.2− | 2005 10 25 | G96 | 0.1+ | 0.2− |
| 2005 08 28 | 691 | 0.1− | 0.3+ | 2005 10 01 | 704 | 0.3− | 0.8+ | 2005 10 25 | G96 | 0.2+ | 0.3− |
| 2005 08 28 | 691 | 0.1− | 0.1+ | 2005 10 01 | G96 | 0.3+ | 0.1− | 2005 10 25 | G96 | 0.1+ | 0.5− |
| 2005 08 28 | 691 | 0.3− | 0.1+ | 2005 10 01 | 703 | 0.5− | 0.3− | 2005 10 25 | G96 | 0.3+ | 0.3− |
| 2005 09 01 | 691 | 0.2− | 0.1+ | 2005 10 01 | 704 | 0.5+ | 0.5− | 2005 12 01 | G96 | 0.5+ | 0.4− |
| 2005 09 01 | 691 | 0.1− | 0.1+ | 2005 10 01 | 703 | 1.6− | 0.5+ | 2005 12 01 | G96 | 0.2+ | 0.4− |
| 2005 09 01 | 691 | 0.2− | 0.1+ | 2005 10 01 | 704 | 0.8− | 1.7+ | 2005 12 01 | G96 | 0.1− | 0.7− |
| 2005 09 11 | 691 | 0.3+ | 0.8+ | 2005 10 01 | 703 | 0.5− | 0.1+ | 2005 12 01 | G96 | 0.3+ | 0.5− |
| 2005 09 11 | 691 | 0.3+ | 0.4+ | 2005 10 01 | 703 | 0.2+ | 0.6− | | | | |

**2005 QY$_{17}$ = 1998 UB$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.93818 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27424916 | $\omega$ | 27.85592 | | +0.80012871 | | −0.59978298 |
| $a$ | 2.3462404 | $\Omega$ | 9.00945 | | +0.54120519 | | +0.71657191 |
| $e$ | 0.1628276 | $i$ | 2.70019 | | +0.25863292 | | +0.35606891 |
| $P$ | 3.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 24 | 691 | 0.1+ | 0.4− | 2005 09 06 | 704 | 1.4− | 0.2− | 2005 10 01 | G96 | 0.3− | 0.3− |
| 1998 10 24 | 691 | 0.0 | 0.3− | 2005 09 06 | 704 | 0.9− | 0.5+ | 2005 10 01 | G96 | 0.2+ | 0.5+ |
| 1998 10 24 | 691 | 0.1+ | 0.2− | 2005 09 06 | 704 | 0.4+ | 0.2+ | 2005 10 01 | G96 | 0.7+ | 0.7+ |
| 1998 10 30 | 327 | 0.2− | 1.5+ | 2005 09 06 | 704 | 0.1+ | 0.1+ | 2005 10 01 | G96 | 0.0 | 0.4− |
| 1998 10 30 | 327 | 0.2+ | 0.1+ | 2005 09 06 | 704 | 0.1+ | 0.5+ | 2005 10 01 | G96 | 0.1− | 0.3− |
| 1998 10 30 | 327 | 0.3+ | 1.4− | 2005 09 08 | 704 | 0.6+ | 0.3+ | 2005 10 05 | 704 | 0.2− | 0.9+ |
| 2003 01 26 | 644 | 0.2+ | 0.8+ | 2005 09 08 | 704 | 0.7+ | 0.2+ | 2005 10 05 | 704 | 0.8− | 0.7+ |
| 2003 01 26 | 644 | 0.2+ | 0.9+ | 2005 09 08 | 704 | 0.3− | 0.0 | 2005 10 05 | 704 | 0.0 | 0.1+ |
| 2003 01 26 | 644 | 0.1+ | 0.8+ | 2005 09 08 | 704 | 0.6+ | 0.4− | 2005 10 05 | 704 | 0.0 | 0.4+ |
| 2005 08 25 | 644 | 0.3− | 0.1+ | 2005 09 08 | 704 | 0.2+ | 0.0 | 2005 10 05 | 704 | 0.6− | 1.0+ |
| 2005 08 25 | 644 | 0.1− | 0.3− | 2005 09 11 | 691 | 0.2+ | 0.1+ | 2005 10 12 | 691 | 0.3− | 0.1− |
| 2005 08 25 | 644 | 0.1− | 0.4− | 2005 09 11 | 691 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.1− | 0.2+ |
| 2005 08 28 | 691 | 0.0 | 0.1− | 2005 09 11 | 691 | 0.1+ | 0.0 | 2005 10 12 | 691 | 0.1− | 0.0 |
| 2005 08 28 | 691 | 0.0 | 0.2− | 2005 09 28 | 644 | 0.2− | 0.1− | 2005 11 29 | G96 | 0.2+ | 0.1− |
| 2005 08 28 | 691 | 0.0 | 0.0 | 2005 09 28 | 644 | 0.2− | 0.2− | 2005 11 29 | G96 | 0.3+ | 0.0 |
| 2005 08 29 | 699 | 1.0+ | 0.7+ | 2005 09 28 | 644 | 0.3− | 0.0 | 2005 11 29 | G96 | 0.1− | 0.3+ |
| 2005 08 29 | 699 | 0.4+ | 0.5+ | 2005 09 29 | 699 | 1.2+ | 0.4+ | 2005 11 29 | G96 | 0.1− | 0.2− |
| 2005 08 29 | 699 | 0.2+ | 0.4+ | 2005 09 29 | 699 | 0.5− | 0.5− | 2005 12 04 | G96 | 0.2− | 0.4+ |
| 2005 08 29 | 699 | 0.1+ | 0.0 | 2005 09 29 | 699 | 0.8− | 0.2+ | 2005 12 04 | G96 | 0.4+ | 0.0 |
| 2005 09 01 | 691 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.2− | 0.3− | 2005 12 04 | G96 | 0.5+ | 0.4− |
| 2005 09 01 | 691 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.2− | 0.4− | 2005 12 04 | G96 | 0.1+ | 0.1− |
| 2005 09 01 | 691 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.3− | 0.3− | | | | |

**2005 QT$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.38237 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17727907 | $\omega$ | 332.11059 | | +0.99842889 | | −0.04240228 |
| $a$ | 3.1383237 | $\Omega$ | 30.38692 | | +0.05442642 | | +0.88931434 |
| $e$ | 0.1124778 | $i$ | 4.15275 | | −0.01332348 | | +0.45532631 |
| $P$ | 5.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.6+ | 0.6+ | 2005 08 28 | 691 | 0.2− | 0.0 | 2005 10 06 | G96 | 0.1+ | 0.0 |
| 1997 02 02 | 691 | 0.1− | 0.1+ | 2005 08 28 | 691 | 0.1− | 0.0 | 2005 10 06 | G96 | 0.1+ | 0.1− |
| 1997 02 02 | 691 | 0.1− | 0.1− | 2005 09 24 | 644 | 0.0 | 0.3+ | 2005 10 06 | G96 | 0.1+ | 0.0 |
| 2000 11 30 | 691 | 0.1− | 0.1− | 2005 09 24 | 644 | 0.0 | 0.2+ | 2005 10 29 | G96 | 0.3+ | 0.5+ |
| 2000 11 30 | 691 | 0.0 | 0.1+ | 2005 09 24 | 644 | 0.1− | 0.0 | 2005 10 29 | G96 | 0.4+ | 0.2− |
| 2000 11 30 | 691 | 0.1+ | 0.2− | 2005 09 28 | 644 | 0.2− | 0.1− | 2005 10 29 | G96 | 0.0 | 0.1− |
| 2005 08 25 | 644 | 0.0 | 0.0 | 2005 09 28 | 644 | 0.3− | 0.1+ | 2005 10 29 | G96 | 0.1− | 0.1− |
| 2005 08 25 | 644 | 0.1+ | 0.3+ | 2005 09 28 | 644 | 0.3+ | 0.2− | 2005 12 01 | G96 | 0.0 | 0.2+ |
| 2005 08 25 | 644 | 0.0 | 0.2+ | 2005 09 30 | 699 | 0.1+ | 1.2+ | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2005 08 27 | 691 | 0.1− | 0.1− | 2005 09 30 | 699 | 0.2+ | 0.4+ | 2005 12 01 | G96 | 0.2+ | 0.2+ |
| 2005 08 27 | 691 | 0.1− | 0.0 | 2005 09 30 | 699 | 0.0 | 0.7+ | 2005 12 01 | G96 | 0.3+ | 0.2+ |
| 2005 08 27 | 691 | 0.1− | 0.1− | 2005 09 30 | 699 | 0.7− | 0.3+ | | | | |
| 2005 08 28 | 691 | 0.1− | 0.2− | 2005 10 06 | G96 | 0.2+ | 0.0 | | | | |

**2005 QX$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.85710 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24303608 | $\omega$ | 244.80742 | | +0.63860951 | | −0.76646846 |
| $a$ | 2.5430538 | $\Omega$ | 164.88305 | | +0.76608365 | | +0.62479185 |
| $e$ | 0.1340981 | $i$ | 15.24765 | | +0.07275804 | | +0.14886653 |
| $P$ | 4.06 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.2− | 0.9− | 2001 09 25 | 704 | 0.9+ | 0.4+ | 2005 08 27 | 691 | 0.1− | 0.0 |
| 1995 03 02 | 691 | 0.4+ | 1.2− | 2001 09 25 | 704 | 1.4+ | 0.9− | 2005 09 23 | 703 | 0.8− | 0.4+ |
| 1995 03 02 | 691 | 0.2− | 0.9− | 2001 10 15 | 644 | 0.3− | 0.1− | 2005 09 23 | 703 | 0.5+ | 0.9− |
| 1995 04 04 | 691 | 0.6− | 0.7+ | 2001 10 15 | 644 | 0.1+ | 0.2− | 2005 09 23 | 703 | 0.1− | 0.4− |
| 1995 04 04 | 691 | 0.2− | 0.1− | 2001 10 15 | 644 | 0.1− | 0.1− | 2005 09 23 | 703 | 0.7+ | 0.3− |
| 1995 04 04 | 691 | 0.2+ | 0.2+ | 2003 03 31 | 645 | 0.1+ | 0.2+ | 2005 09 24 | 644 | 0.2+ | 0.2− |
| 2001 09 18 | 699 | 1.5− | 0.1− | 2003 03 31 | 645 | 0.0 | 0.2+ | 2005 09 24 | 644 | 0.2− | 0.0 |
| 2001 09 18 | 699 | 1.6+ | 1.3+ | 2005 08 25 | 644 | 0.3− | 0.0 | 2005 09 24 | 644 | 0.2+ | 0.2− |
| 2001 09 18 | 699 | 0.4− | 0.6+ | 2005 08 25 | 644 | 0.1+ | 0.1+ | 2005 10 05 | 703 | 0.0 | 0.4+ |
| 2001 09 18 | 699 | 0.2− | 0.3− | 2005 08 25 | 644 | 0.1− | 0.1+ | 2005 10 05 | 703 | 0.2+ | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2005 08 27 | 691 | 0.1+ | 0.1− | 2005 10 05 | 703 | 1.1− | 0.2+ |
| 2001 09 25 | 704 | 0.4− | 0.5− | 2005 08 27 | 691 | 0.1− | 0.2− | 2005 10 05 | 703 | 0.3− | 0.8+ |

**2005 QZ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.31716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17990018 | $\omega$ | 229.49860 | | +0.49023707 | | +0.87054185 |
| $a$ | 3.1077661 | $\Omega$ | 69.90615 | | −0.78528063 | | +0.46242375 |
| $e$ | 0.1420807 | $i$ | 2.60687 | | −0.37815598 | | +0.16828893 |
| $P$ | 5.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 691 | 0.2− | 0.4− | 2005 09 22 | 644 | 0.0 | 0.2− | 2005 10 06 | G96 | 0.2− | 0.2− |
| 2000 11 03 | 691 | 0.4+ | 0.1− | 2005 09 22 | 644 | 0.1− | 0.0 | 2005 10 06 | G96 | 0.3− | 0.3− |
| 2000 11 03 | 691 | 0.0 | 0.0 | 2005 09 25 | 644 | 0.1− | 0.1+ | 2005 10 06 | G96 | 0.2+ | 0.3− |
| 2005 08 25 | 644 | 0.2− | 0.3+ | 2005 09 25 | 644 | 0.1− | 0.2− | 2005 10 06 | G96 | 0.0 | 0.3− |
| 2005 08 25 | 644 | 0.5+ | 0.1+ | 2005 09 25 | 644 | 0.1+ | 0.2+ | 2005 10 29 | G96 | 0.0 | 0.3− |
| 2005 08 25 | 644 | 0.1+ | 0.4− | 2005 09 30 | 699 | 0.7+ | 0.6+ | 2005 10 29 | G96 | 0.4− | 0.2− |
| 2005 08 27 | 691 | 0.3+ | 0.1− | 2005 09 30 | 699 | 0.3− | 0.6− | 2005 10 29 | G96 | 0.2+ | 0.2− |
| 2005 08 27 | 691 | 0.2+ | 0.0 | 2005 09 30 | 699 | 0.0 | 0.6+ | 2005 10 29 | G96 | 0.2− | 0.1− |
| 2005 08 27 | 691 | 0.4+ | 0.1− | 2005 09 30 | 699 | 0.4+ | 1.1+ | 2006 11 16 | 691 | 0.4− | 0.1− |
| 2005 09 11 | 691 | 0.1− | 0.1− | 2005 10 05 | 704 | 0.9− | 0.6+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2005 09 11 | 691 | 0.1− | 0.2− | 2005 10 05 | 704 | 0.5+ | 1.4− | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2005 09 11 | 691 | 0.6− | 0.4+ | 2005 10 05 | 704 | 0.4− | 1.0+ | | | | |
| 2005 09 22 | 644 | 0.2− | 0.1+ | 2005 10 05 | 704 | 0.4+ | 0.8+ | | | | |

**2005 QS$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.71576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21162660 | $\omega$ | 243.44960 | | +0.97092476 | | −0.22590892 |
| $a$ | 2.7888333 | $\Omega$ | 129.49965 | | +0.23935596 | | +0.91101832 |
| $e$ | 0.1852365 | $i$ | 5.89010 | | +0.00371877 | | +0.34497939 |
| $P$ | 4.66 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 22 | 691 | 0.5+ | 0.0 | 2005 08 28 | 691 | 0.0 | 0.1+ | 2005 10 03 | 703 | 0.5− | 0.8− |
| 1998 01 22 | 691 | 0.1− | 0.4+ | 2005 09 22 | 644 | 0.0 | 0.2− | 2005 10 10 | 703 | 0.0 | 0.0 |
| 1998 01 22 | 691 | 0.2− | 0.1+ | 2005 09 22 | 644 | 0.1+ | 0.0 | 2005 10 10 | 703 | 0.2− | 1.2+ |
| 2004 05 20 | 691 | 0.3+ | 0.1− | 2005 09 22 | 644 | 0.1+ | 0.2− | 2005 10 10 | 703 | 0.6+ | 1.1+ |
| 2004 05 20 | 691 | 0.0 | 0.4+ | 2005 09 23 | 703 | 0.6− | 0.3− | 2005 10 10 | 703 | 0.6− | 0.7− |
| 2004 05 20 | 691 | 0.2− | 0.1+ | 2005 09 23 | 703 | 0.3+ | 0.6− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2005 08 26 | 699 | 0.6− | 0.9− | 2005 09 23 | 703 | 0.6+ | 0.5+ | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2005 08 26 | 699 | 0.2+ | 0.0 | 2005 09 23 | 703 | 0.6− | 0.6− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2005 08 26 | 644 | 0.0 | 0.1+ | 2005 09 24 | 644 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.6+ | 0.2+ |
| 2005 08 26 | 699 | 0.4+ | 0.1+ | 2005 09 24 | 644 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.3+ |
| 2005 08 26 | 699 | (1.9− | 0.6−) | 2005 09 24 | 644 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2005 08 26 | 644 | 0.1− | 0.0 | 2005 09 27 | 704 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2005 08 26 | 644 | 0.1− | 0.0 | 2005 09 27 | 704 | 0.8+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2005 08 26 | 644 | 0.1− | 0.1+ | 2005 09 27 | 704 | 0.2+ | 0.9+ | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2005 08 26 | 644 | 0.1− | 0.1+ | 2005 09 27 | 704 | 1.0+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2005 08 26 | 644 | 0.1− | 0.0 | 2005 10 03 | 703 | 1.4− | 0.7+ | 2006 11 22 | G96 | 0.2− | 0.2+ |
| 2005 08 28 | 691 | 0.1+ | 0.1+ | 2005 10 03 | 703 | 0.1+ | 0.1− | | | | |
| 2005 08 28 | 691 | 0.1− | 0.1+ | 2005 10 03 | 703 | 0.5− | 0.4+ | | | | |

**2005 QU$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.94547 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21433672 | $\omega$ | 325.59096 | | +0.58224861 | | +0.81255077 |
| $a$ | 2.7652750 | $\Omega$ | 339.97435 | | −0.72682268 | | +0.50515767 |
| $e$ | 0.1490378 | $i$ | 4.58028 | | −0.36430118 | | +0.29082121 |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 691 | 0.1− | 0.1+ | 2005 08 29 | 704 | 0.3+ | 0.7+ | 2005 09 25 | 691 | 0.2+ | 0.2+ |
| 1996 09 17 | 691 | 0.0 | 0.0 | 2005 09 01 | 691 | 0.1− | 0.2− | 2005 09 25 | 691 | 0.3+ | 0.2+ |
| 1996 09 17 | 691 | 0.0 | 0.0 | 2005 09 01 | 691 | 0.2− | 0.1− | 2005 09 30 | G96 | 0.6+ | 0.3− |
| 1999 03 10 | 691 | 0.3− | 0.3− | 2005 09 01 | 691 | 0.2− | 0.5− | 2005 09 30 | G96 | 0.3+ | 0.1− |
| 1999 03 10 | 691 | 0.2− | 0.1+ | 2005 09 07 | 699 | 1.7− | 1.3− | 2005 09 30 | G96 | 0.4+ | 0.2− |
| 1999 03 10 | 691 | 0.3+ | 0.1− | 2005 09 07 | 699 | 0.2+ | 0.8− | 2005 09 30 | G96 | 0.1− | 0.1− |
| 2005 08 26 | 599 | 0.2+ | 0.1− | 2005 09 07 | 699 | 0.3− | 0.4+ | 2005 10 27 | G96 | 0.1+ | 0.7− |
| 2005 08 26 | 599 | 0.3+ | 0.1+ | 2005 09 07 | 699 | 0.1+ | 0.1+ | 2005 10 27 | G96 | 0.3− | 0.3− |
| 2005 08 26 | 599 | 0.3+ | 0.2− | 2005 09 08 | 704 | (1.1+ | 2.3+) | 2005 10 27 | G96 | 0.2− | 0.0 |
| 2005 08 26 | 599 | 0.1+ | 0.0 | 2005 09 08 | 704 | 0.2− | 0.8+ | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2005 08 28 | 691 | 0.0 | 0.2− | 2005 09 08 | 704 | 0.3+ | 0.8+ | 2005 11 30 | G96 | 0.1− | 0.4− |
| 2005 08 28 | 691 | 0.3− | 0.3− | 2005 09 11 | 691 | 0.1+ | 0.2+ | 2005 11 30 | G96 | 0.1+ | 0.2− |
| 2005 08 28 | 691 | 0.1− | 0.2− | 2005 09 11 | 691 | 0.1− | 0.4+ | 2005 11 30 | G96 | 0.2+ | 0.2− |
| 2005 08 29 | 704 | 0.3+ | 0.2− | 2005 09 11 | 691 | 0.0 | 0.3+ | 2005 11 30 | G96 | 0.6+ | 0.2− |
| 2005 08 29 | 704 | 0.4+ | 1.2+ | 2005 09 25 | 691 | 0.3+ | 0.0 | | | | |

**2005 QS$_{22}$ = 2006 VO$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.82316 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22366917 | $\omega$ | 252.26622 | | −0.91934384 | | −0.39205303 |
| $a$ | 2.6878104 | $\Omega$ | 264.64098 | | +0.37243949 | | −0.83994094 |
| $e$ | 0.2266112 | $i$ | 1.91013 | | +0.12686892 | | −0.37522479 |
| $P$ | 4.41 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 27 | 291 | 0.4− | 0.4− | 2005 08 28 | 291 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.2+ | 0.1− |
| 2005 08 27 | 291 | 0.1+ | 0.7− | 2005 08 29 | 691 | 0.3+ | 0.7+ | 2006 11 09 | 691 | 0.3− | 0.7− |
| 2005 08 27 | 291 | 0.1− | 0.5− | 2005 08 29 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.4− | 0.2+ |
| 2005 08 28 | 291 | 0.1+ | 0.2− | 2005 08 29 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.5+ |
| 2005 08 28 | 291 | 0.1− | 0.5+ | 2006 11 09 | 691 | 0.7+ | 0.5− | 2006 11 16 | 691 | 0.2− | 0.5+ |

**2005 QB$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.78377 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18242278 | $\omega$ | 110.25696 | −0.57270676 | | −0.81840074 | |
| $a$ | 3.0790495 | $\Omega$ | 14.96785 | +0.66729966 | | −0.49885913 | |
| $e$ | 0.1367320 | $i$ | 10.52843 | +0.47614927 | | −0.28523640 | |
| $P$ | 5.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 691 | 0.1− | 0.3− | 2002 02 03 | 644 | 0.1+ | 0.5− | 2005 08 27 | 691 | 0.3− | 0.1− |
| 2000 09 25 | 691 | 0.1− | 0.2− | 2002 02 03 | 644 | 0.2+ | 0.4− | 2005 08 27 | 691 | 0.2− | 0.1+ |
| 2000 09 25 | 691 | 0.3− | 0.1− | 2002 02 03 | 644 | 0.2− | 0.3− | 2005 08 28 | 691 | 0.4+ | 0.1− |
| 2000 10 25 | 704 | 0.4+ | 0.8+ | 2002 02 08 | 704 | 1.0− | 0.1− | 2005 08 28 | 691 | 0.1+ | 0.1− |
| 2000 10 25 | 704 | 1.0+ | 1.0+ | 2002 02 08 | 704 | 0.7+ | 0.3+ | 2005 08 28 | 691 | 0.1− | 0.0 |
| 2000 10 25 | 704 | 0.5+ | 0.0 | 2002 02 08 | 704 | 0.3+ | 0.2+ | 2005 10 06 | G96 | 0.0 | 0.1+ |
| 2002 01 23 | 704 | 0.1+ | 0.3+ | 2002 02 08 | 704 | 0.6+ | 0.3+ | 2005 10 06 | G96 | 0.1− | 0.1+ |
| 2002 01 23 | 704 | 0.2− | 0.7+ | 2002 02 22 | 644 | 0.4− | 1.2− | 2005 10 06 | G96 | 0.2− | 0.0 |
| 2002 01 23 | 704 | 0.1− | 0.5+ | 2002 02 22 | 644 | 0.1− | 0.7+ | 2005 10 06 | G96 | 0.4− | 0.0 |
| 2002 01 23 | 704 | 0.4+ | 0.7− | 2002 02 22 | 644 | 0.1− | 0.3+ | | | | |
| 2002 01 23 | 704 | 0.1− | 0.2+ | 2005 08 27 | 691 | 0.1+ | 0.3+ | | | | |

**2005 QN$_{29}$ = 2006 VS$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.42412 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17545684 | $\omega$ | 121.57892 | +0.96070944 | | −0.24417136 | |
| $a$ | 3.1600153 | $\Omega$ | 252.83750 | +0.18382642 | | +0.91600576 | |
| $e$ | 0.0951769 | $i$ | 7.93946 | +0.20795486 | | +0.31829829 | |
| $P$ | 5.62 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 26 | 644 | 0.1− | 0.0 | 2005 08 30 | 644 | 0.7− | 0.1− | 2006 11 21 | 704 | (1.7+ | 1.2+) |
| 2005 08 26 | 644 | 0.0 | 0.2− | 2005 08 30 | 644 | 0.5− | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.3− |
| 2005 08 26 | 644 | 0.0 | 0.2− | 2005 08 30 | 644 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2005 08 29 | 599 | 0.0 | 0.2+ | 2005 08 30 | 644 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2005 08 29 | 599 | 0.4+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2005 08 29 | 599 | 0.3+ | 0.7+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2005 08 29 | 599 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.6+ | 0.2− |
| 2005 08 29 | 599 | 0.4− | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2005 08 29 | 599 | 0.4+ | 0.3− | 2006 11 16 | 691 | 0.5− | 0.4+ | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2005 08 29 | 599 | 0.5+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2005 08 30 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.1+ |
| 2005 08 30 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.5+ | | | | |

**2005 QC$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.83931 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.12637507 | $\omega$ | 266.00841 | +0.91707718 | | +0.37546424 | |
| $a$ | 3.9327390 | $\Omega$ | 71.89764 | −0.28623858 | | +0.85421637 | |
| $e$ | 0.2265702 | $i$ | 8.11354 | −0.27755527 | | +0.35964009 | |
| $P$ | 7.80 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 04 | 644 | 0.1− | 0.1+ | 2005 09 08 | E12 | 0.0 | 0.4− | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2005 08 04 | 644 | 0.1− | 0.1+ | 2005 09 08 | E12 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2005 08 04 | 644 | 0.1− | 0.1+ | 2005 09 08 | E12 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2005 08 22 | 644 | 0.1+ | 0.0 | 2005 09 08 | E12 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.2+ | 0.0 |
| 2005 08 22 | 644 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.2− |
| 2005 08 22 | 644 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.6− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2005 08 28 | E12 | 0.7+ | 0.4− | 2006 09 30 | G96 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2005 08 28 | E12 | 0.5− | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 2005 08 28 | E12 | 0.1− | 0.5− | 2006 10 15 | D35 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.3− |
| 2005 08 28 | E12 | 0.2− | 0.0 | 2006 10 15 | D35 | 0.4− | 0.3− | 2006 11 11 | 703 | (1.7+ | 0.1−) |
| 2005 09 01 | 644 | 0.2+ | 0.1+ | 2006 10 15 | D35 | 0.3− | 0.2− | 2006 11 11 | 703 | (3.2+ | 1.2+) |
| 2005 09 01 | 644 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.0 | | | | |
| 2005 09 01 | 644 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.0 | | | | |

**2005 QL$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.29380 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17594161 | $\omega$ | 94.27091 | +0.96930538 | | −0.06100741 | |
| $a$ | 3.1542081 | $\Omega$ | 269.34976 | −0.03624339 | | +0.92268434 | |
| $e$ | 0.2657261 | $i$ | 13.77949 | +0.24317379 | | +0.38069898 | |
| $P$ | 5.60 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 1.0− | 0.7+ | 2000 11 19 | 704 | 0.3+ | 0.9+ | 2005 07 06 | 699 | 1.0− | 0.1+ |
| 2000 10 25 | 704 | 0.0 | 0.3− | 2000 11 19 | 704 | 0.4+ | 0.4+ | 2005 08 22 | 608 | 0.1− | 0.6− |
| 2000 10 25 | 704 | 0.7− | 0.7− | 2000 11 19 | 704 | 0.2+ | 0.4− | 2005 08 22 | 608 | 0.5+ | 0.5− |
| 2000 10 25 | 704 | 0.5− | 0.7− | 2000 11 19 | 704 | 0.6+ | 0.2− | 2005 08 22 | 608 | 0.4− | 0.7− |
| 2000 10 25 | 704 | 0.8+ | 0.4+ | 2000 11 30 | 704 | 0.5− | 1.1− | 2005 08 26 | 644 | 0.4+ | 0.0 |
| 2000 11 05 | 704 | 0.3− | 0.6+ | 2000 11 30 | 704 | 0.4+ | 0.1− | 2005 08 26 | 644 | 0.3+ | 0.1+ |
| 2000 11 05 | 704 | 0.2+ | 0.8− | 2000 11 30 | 704 | 0.9+ | 0.5+ | 2005 08 26 | 644 | 0.2+ | 0.0 |
| 2000 11 05 | 704 | 0.3+ | 0.2+ | 2005 07 06 | 699 | 0.5− | 0.1+ | 2005 09 28 | 644 | 0.5+ | 0.2+ |
| 2000 11 05 | 704 | 0.8− | 1.4+ | 2005 07 06 | 699 | 0.3− | 0.6+ | 2005 09 28 | 644 | 0.4+ | 0.4+ |
| 2000 11 19 | 704 | 0.4− | 0.3− | 2005 07 06 | 699 | 0.4− | 0.3+ | 2005 09 28 | 644 | 0.5+ | 0.2+ |

**2005 QA$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.75850 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28989088 | $\omega$ | 163.87265 | +0.89939199 | | +0.43698596 | |
| $a$ | 2.2610648 | $\Omega$ | 170.19093 | −0.40828746 | | +0.84929944 | |
| $e$ | 0.2247454 | $i$ | 3.94401 | −0.15619023 | | +0.29619881 | |
| $P$ | 3.40 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.1+ | 0.0 | 2005 08 29 | 691 | 0.2− | 0.1− | 2005 09 11 | 691 | 0.1− | 0.2− |
| 1995 11 15 | 691 | 0.2+ | 0.1+ | 2005 08 29 | 691 | 0.3− | 0.0 | 2005 09 11 | 691 | 0.0 | 0.1− |
| 1995 11 15 | 691 | 0.0 | 0.2+ | 2005 08 29 | 691 | 0.3− | 0.2− | 2005 09 11 | 691 | 0.2− | 0.1− |
| 1995 11 19 | 691 | 0.4− | 0.1− | 2005 08 29 | 704 | 0.3− | 0.3+ | 2005 09 23 | 699 | 0.9+ | 0.6+ |
| 2004 03 17 | 291 | 0.5+ | 0.4+ | 2005 08 29 | 704 | 0.8+ | 0.9+ | 2005 09 23 | 699 | 0.6− | 0.8− |
| 2004 03 17 | 291 | 0.3+ | 0.3+ | 2005 08 29 | 704 | 0.4+ | 0.2+ | 2005 09 23 | 699 | (1.1− | 1.6+) |
| 2004 03 17 | 291 | 0.5− | 0.3+ | 2005 08 29 | 704 | 0.5+ | 0.1− | 2005 09 23 | 699 | 1.3+ | 0.2− |
| 2005 07 30 | 644 | 0.0 | 0.1+ | 2005 08 29 | 704 | 0.9+ | 0.0 | 2005 10 01 | G96 | 0.1− | 0.2− |
| 2005 07 30 | 644 | 0.2+ | 0.1− | 2005 09 01 | 691 | 0.3− | 0.7+ | 2005 10 01 | G96 | 0.0 | 0.1− |
| 2005 07 30 | 644 | 1.1+ | 0.0 | 2005 09 01 | 691 | 0.2− | 0.0 | 2005 10 01 | G96 | 0.2− | 0.1− |
| 2005 08 06 | 644 | 0.1+ | 0.1+ | 2005 09 01 | 691 | 0.2− | 0.0 | 2005 10 01 | G96 | 0.3+ | 0.2− |
| 2005 08 06 | 644 | 0.1+ | 0.2+ | 2005 09 07 | 699 | (1.6− | 0.1−) | 2005 10 29 | G96 | 0.2− | 0.2+ |
| 2005 08 06 | 644 | 0.0 | 0.1+ | 2005 09 07 | 699 | (1.9+ | 0.2−) | 2005 10 29 | G96 | 0.1+ | 0.1+ |
| 2005 08 24 | 644 | 0.1+ | 0.1− | 2005 09 07 | 699 | 0.1− | 1.2+ | 2005 10 29 | G96 | 0.4+ | 0.1+ |
| 2005 08 24 | 644 | 0.0 | 0.2− | 2005 09 07 | 699 | 0.5+ | 0.8+ | 2005 10 29 | G96 | 0.0 | 0.1− |
| 2005 08 24 | 644 | 0.0 | 0.1− | 2005 09 08 | 704 | 1.1+ | 0.6+ | 2005 11 03 | G96 | 0.5− | 0.5+ |
| 2005 08 27 | 699 | 0.3− | 0.2+ | 2005 09 08 | 704 | 0.3− | 0.3+ | 2005 11 03 | G96 | 0.0 | 0.1+ |
| 2005 08 27 | 699 | 0.4− | 0.1− | 2005 09 08 | 704 | 0.4+ | 0.6− | 2005 11 03 | G96 | 0.1+ | 0.1− |
| 2005 08 27 | 699 | 0.5− | 0.0 | 2005 09 08 | 704 | 0.5+ | 1.2− | 2005 11 03 | G96 | 0.1+ | 0.0 |

**2005 QL$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.23038 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21284645 | $\omega$ | 75.19133 | +0.66504620 | | −0.74484397 | |
| $a$ | 2.7781676 | $\Omega$ | 332.88385 | +0.63145676 | | +0.59949223 | |
| $e$ | 0.1987903 | $i$ | 6.80992 | +0.39871785 | | +0.29294457 | |
| $P$ | 4.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.3− | 0.4+ | 2001 12 22 | 704 | 0.7− | 0.5− | 2005 10 05 | 691 | 0.2− | 0.1+ |
| 2001 11 11 | 704 | 0.1− | 0.9+ | 2001 12 22 | 704 | 0.6− | 0.9+ | 2005 10 05 | 691 | 0.2− | 0.1− |
| 2001 11 11 | 704 | (1.1− | 1.8+) | 2001 12 22 | 704 | (0.5+ | 1.9+) | 2005 10 27 | G96 | 0.1− | 0.1+ |
| 2001 11 11 | 704 | (0.3+ | 1.9+) | 2005 08 25 | 644 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.2+ | 1.2− |
| 2001 11 11 | 704 | 0.0 | 0.2+ | 2005 08 25 | 644 | 0.4− | 0.2− | 2005 10 27 | G96 | 0.5+ | 0.1− |
| 2001 12 09 | 704 | 0.6+ | 0.4− | 2005 08 25 | 644 | 0.3− | 0.3− | 2005 10 27 | G96 | 0.2+ | 0.1− |
| 2001 12 09 | 704 | 0.8+ | 0.8− | 2005 08 29 | 704 | 0.5+ | 0.0 | 2005 10 30 | G96 | 0.2+ | 0.1− |
| 2001 12 09 | 704 | 0.5+ | 0.5− | 2005 08 29 | 704 | 1.3+ | 1.2+ | 2005 10 30 | G96 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | 0.7+ | 0.2+ | 2005 08 29 | 704 | (1.9+ | 1.3+) | 2005 10 30 | G96 | 0.0 | 0.5+ |
| 2001 12 09 | 704 | 0.1+ | 0.1− | 2005 08 29 | 704 | 0.7− | 0.3+ | 2005 10 30 | G96 | 0.4+ | 0.0 |
| 2001 12 22 | 704 | 1.0− | 0.0 | 2005 08 29 | 704 | 0.2− | 0.1+ | | | | |
| 2001 12 22 | 704 | 0.0 | 0.1− | 2005 10 05 | 691 | 0.1+ | 0.2− | | | | |

**2005 QN$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.05206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17110207 | $\omega$ | 282.30783 | | −0.18398351 | | +0.98215063 |
| $a$ | 3.2134080 | $\Omega$ | 336.97857 | | −0.85847781 | | −0.17994385 |
| $e$ | 0.0103508 | $i$ | 5.74070 | | −0.47871278 | | −0.05477547 |
| $P$ | 5.76 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 691 | 0.2+ | 0.4+ | 2005 09 13 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2003 04 26 | 691 | 0.2+ | 0.4+ | 2005 09 13 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2003 04 26 | 691 | 0.1+ | 0.1+ | 2005 09 30 | G96 | 0.4− | 0.6− | 2006 11 17 | 691 | 0.1+ | 0.5− |
| 2005 08 25 | 644 | 0.1+ | 0.1+ | 2005 09 30 | G96 | 0.7− | 1.0− | 2006 11 17 | 691 | 0.1− | 0.3− |
| 2005 08 25 | 644 | 0.1+ | 0.1− | 2005 09 30 | G96 | 0.4− | 0.4− | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2005 08 25 | 644 | 0.3+ | 0.2+ | 2005 09 30 | G96 | 0.7− | 0.5− | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2005 08 29 | 691 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2005 08 29 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.5+ | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2005 08 29 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2005 09 13 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | | | | |

**2005 QZ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.78167 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17963061 | $\omega$ | 167.35083 | | +0.40870466 | | +0.91245308 |
| $a$ | 3.1108744 | $\Omega$ | 126.76931 | | −0.83948775 | | +0.38433437 |
| $e$ | 0.1952920 | $i$ | 1.41243 | | −0.35807934 | | +0.14041534 |
| $P$ | 5.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 08 29 | 691 | 0.1+ | 0.4+ | 2005 09 23 | 703 | 0.2+ | 0.9− |
| 2003 01 28 | 645 | 0.1+ | 0.2+ | 2005 09 12 | 691 | 0.1− | 0.1+ | 2005 09 27 | 461 | 0.5+ | 0.3+ |
| 2004 05 09 | 691 | 0.1+ | 0.4+ | 2005 09 12 | 691 | 0.1− | 0.4+ | 2005 09 27 | 461 | 0.3+ | 0.4− |
| 2004 05 09 | 691 | 0.1+ | 0.2+ | 2005 09 12 | 691 | 0.0 | 0.1+ | 2005 09 27 | 461 | 0.8− | 0.4− |
| 2004 05 09 | 691 | 0.1+ | 0.4+ | 2005 09 12 | 691 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2005 08 25 | 644 | 0.3+ | 0.1− | 2005 09 12 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2005 08 25 | 644 | 0.3− | 0.0 | 2005 09 12 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2005 08 25 | 644 | 0.4− | 0.0 | 2005 09 23 | 703 | 0.7+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2005 08 29 | 691 | 0.1− | 0.3+ | 2005 09 23 | 703 | (1.6− | 1.6−) | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2005 08 29 | 691 | 0.1− | 0.2+ | 2005 09 23 | 703 | 0.6− | 0.7+ | 2006 11 23 | 691 | 0.1+ | 0.2+ |

**2005 QD$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.06899 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18005440 | $\omega$ | 151.95798 | | +0.99393185 | | +0.09857067 |
| $a$ | 3.1059912 | $\Omega$ | 202.54373 | | −0.10847889 | | +0.95187764 |
| $e$ | 0.0732891 | $i$ | 7.31567 | | +0.01821572 | | +0.29019440 |
| $P$ | 5.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.1− | 0.2− | 2005 08 29 | 699 | 0.8− | 0.1− | 2005 09 24 | A50 | 0.2+ | 0.5+ |
| 1994 09 29 | 691 | 0.2+ | 0.3− | 2005 08 29 | 699 | 0.5− | 0.4− | 2005 10 07 | 703 | 0.4+ | 0.4− |
| 1994 09 29 | 691 | 0.2+ | 0.4− | 2005 08 29 | 644 | 0.2+ | 0.3+ | 2005 10 07 | 703 | 0.5+ | 0.4+ |
| 2003 03 24 | 291 | 0.2− | 0.2+ | 2005 08 29 | 699 | 1.1− | 0.0 | 2005 10 07 | 703 | 0.2+ | 0.4+ |
| 2003 03 24 | 291 | 0.2− | 0.3− | 2005 09 05 | A50 | 0.5+ | 0.2+ | 2005 10 07 | 703 | 1.4− | 0.6− |
| 2003 03 24 | 291 | 0.4+ | 0.1+ | 2005 09 05 | A50 | 0.4− | 0.1+ | 2005 10 27 | 703 | (1.8+ | 0.7+) |
| 2005 08 25 | 644 | 0.1+ | 0.2+ | 2005 09 09 | 704 | 0.6− | 0.1+ | 2005 10 27 | 703 | 1.0+ | 0.1+ |
| 2005 08 25 | 644 | 0.6+ | 0.2− | 2005 09 09 | 704 | 0.5− | 1.0+ | 2005 10 27 | 703 | 0.6+ | 0.2− |
| 2005 08 25 | 644 | 0.2+ | 0.1+ | 2005 09 09 | 704 | 0.3+ | 0.2− | 2005 10 27 | 703 | 1.3− | 0.6− |
| 2005 08 29 | 691 | 0.0 | 0.1+ | 2005 09 09 | 704 | 0.2+ | 0.4− | 2005 11 29 | G96 | 0.1− | 0.2+ |
| 2005 08 29 | 644 | 0.0 | 0.0 | 2005 09 23 | 703 | (0.9− | 1.7+) | 2005 11 29 | G96 | 0.5− | 0.1+ |
| 2005 08 29 | 691 | 0.1+ | 0.2+ | 2005 09 23 | 703 | (1.0+ | 1.9+) | 2005 11 29 | G96 | 0.3− | 0.1+ |
| 2005 08 29 | 699 | 1.0+ | 0.7− | 2005 09 23 | 703 | (0.5− | 1.8+) | 2005 11 29 | G96 | 0.1− | 0.4+ |
| 2005 08 29 | 691 | 0.0 | 0.4+ | 2005 09 23 | 703 | (0.4− | 1.8+) | | | | |
| 2005 08 29 | 644 | 0.0 | 0.2+ | 2005 09 24 | A50 | 0.0 | 0.3+ | | | | |

**2005 QL$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.43582 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25325286 | $\omega$ | 101.31254 | | +0.76353031 | | +0.64280495 |
| $a$ | 2.4741906 | $\Omega$ | 218.73108 | | −0.62432245 | | +0.71030488 |
| $e$ | 0.1281797 | $i$ | 5.67162 | | −0.16505438 | | +0.28682534 |
| $P$ | 3.89 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.2+ | 0.4− | 2005 08 26 | 644 | 0.3− | 0.3− | 2005 09 11 | 699 | 0.7+ | 0.3+ |
| 2001 08 17 | 644 | 0.0 | 0.1+ | 2005 08 26 | 644 | 0.4− | 0.4− | 2005 09 11 | 699 | 1.8− | 0.7+ |
| 2001 08 17 | 644 | 0.2+ | 0.0 | 2005 08 26 | 644 | 0.2− | 0.4− | 2005 09 30 | 703 | 1.2− | 1.0+ |
| 2001 08 25 | 704 | 0.2− | 0.2+ | 2005 08 27 | 699 | 0.9+ | 0.3− | 2005 09 30 | 703 | 1.3− | 0.9− |
| 2001 08 25 | 704 | 0.4− | 1.0+ | 2005 08 27 | 699 | 1.0+ | 0.3− | 2005 09 30 | 703 | 0.2+ | 0.4− |
| 2001 08 25 | 704 | 0.2− | 0.6+ | 2005 08 27 | 699 | 0.4+ | 0.4+ | 2005 09 30 | 703 | 0.0 | 0.8− |
| 2001 08 25 | 704 | 0.3− | 0.6+ | 2005 08 27 | 699 | 0.4− | 0.0 | 2005 10 05 | 691 | 0.2− | 0.1− |
| 2005 07 31 | 644 | 0.1+ | 0.2− | 2005 08 29 | 599 | 0.0 | 0.0 | 2005 10 05 | 691 | 0.0 | 0.1− |
| 2005 07 31 | 644 | 0.6+ | 0.3− | 2005 08 29 | 599 | 0.0 | 0.0 | 2005 10 05 | 691 | 0.2+ | 0.0 |
| 2005 07 31 | 644 | 0.3+ | 0.3− | 2005 08 29 | 599 | 0.0 | 0.2− | 2005 11 30 | G96 | 0.2− | 0.1+ |
| 2005 08 26 | 644 | 0.4− | 0.5− | 2005 08 29 | 599 | 0.2+ | 0.0 | 2005 11 30 | G96 | 0.3+ | 0.7+ |
| 2005 08 26 | 644 | 0.1− | 0.4− | 2005 09 11 | 699 | 1.9+ | 0.8+ | 2005 11 30 | G96 | 0.1− | 0.0 |
| 2005 08 26 | 644 | 0.6− | 0.5− | 2005 09 11 | 699 | 0.9+ | 0.7+ | 2005 11 30 | G96 | 0.4+ | 0.5+ |

**2005 QQ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.01255 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12388341 | $\omega$ | 186.09301 | | +0.73084954 | | +0.68070028 |
| $a$ | 3.9852962 | $\Omega$ | 130.87943 | | −0.62338826 | | +0.69558086 |
| $e$ | 0.2028340 | $i$ | 3.79634 | | −0.27793169 | | +0.22981383 |
| $P$ | 7.96 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 645 | 0.0 | 0.2+ | 2005 08 28 | 699 | 0.9+ | 0.4+ | 2005 10 01 | 704 | 0.5− | 0.1− |
| 2002 03 12 | 645 | 0.1+ | 0.2+ | 2005 08 28 | 699 | (0.3+ | 1.8+) | 2005 10 01 | 704 | 0.3+ | 1.3− |
| 2003 04 10 | 691 | 0.1+ | 0.3+ | 2005 08 29 | 704 | 0.2− | 0.3+ | 2005 10 01 | 699 | 0.1+ | 0.5+ |
| 2003 04 10 | 691 | 0.0 | 0.1+ | 2005 08 29 | 704 | 0.1− | 0.6+ | 2005 10 01 | 699 | 0.7− | 0.5+ |
| 2003 04 10 | 691 | 0.1+ | 0.4+ | 2005 08 29 | 704 | 0.6+ | 0.6+ | 2005 10 01 | 699 | 0.1+ | 0.2+ |
| 2005 07 30 | 644 | 0.7− | 0.3+ | 2005 08 30 | 691 | 0.0 | 0.4+ | 2005 10 01 | 699 | 0.1− | 0.8+ |
| 2005 07 30 | 644 | 0.3− | 0.1+ | 2005 08 30 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.4+ |
| 2005 07 30 | 644 | 0.2− | 0.1+ | 2005 08 30 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.3+ |
| 2005 08 26 | 644 | 0.1+ | 0.0 | 2005 09 07 | A50 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.4+ |
| 2005 08 26 | 644 | 0.3− | 0.1− | 2005 09 07 | A50 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.7+ |
| 2005 08 26 | 644 | 0.3− | 0.0 | 2005 09 14 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.5+ |
| 2005 08 26 | 644 | 0.3− | 0.0 | 2005 09 14 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2+ |
| 2005 08 26 | 644 | 0.1+ | 0.1+ | 2005 09 14 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2005 08 26 | 644 | 0.1− | 0.2+ | 2005 10 01 | 704 | 0.8− | 0.9+ | 2006 11 16 | G96 | 0.6− | 0.2+ |
| 2005 08 28 | 699 | 0.1+ | 0.1− | 2005 10 01 | 704 | 0.0 | 0.0 | | | | |
| 2005 08 28 | 699 | 1.4− | 0.6+ | 2005 10 01 | 704 | 0.2− | 0.4− | | | | |

**2005 QV$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.82763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27058223 | $\omega$ | 281.84776 | | +0.84152299 | +0.53969999 | |
| $a$ | 2.3673903 | $\Omega$ | 45.49454 | | −0.48179039 | +0.76964661 | |
| $e$ | 0.2037455 | $i$ | 1.90654 | | −0.24437076 | +0.34112757 | |
| $P$ | 3.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 691 | 0.0 | 0.0 | 2005 08 29 | 704 | 0.3− | 0.5+ | 2005 10 01 | 704 | 0.6+ | 0.3+ | |
| 1998 10 19 | 691 | 0.1− | 0.2− | 2005 08 29 | 704 | 0.0 | 0.1− | 2005 10 01 | 704 | 0.4− | 0.0 | |
| 1998 10 19 | 691 | 0.1+ | 0.3+ | 2005 08 29 | 704 | 0.3− | 0.2+ | 2005 10 01 | 699 | (1.7+ | 0.5+) | |
| 2004 02 26 | 695 | 0.3+ | 0.4+ | 2005 08 29 | 704 | 0.4− | 0.1+ | 2005 10 01 | 699 | 0.3+ | 1.4+ | |
| 2004 02 26 | 695 | 0.3+ | 0.3+ | 2005 08 29 | 704 | 0.1− | 0.4+ | 2005 10 01 | 699 | 0.3+ | 0.7+ | |
| 2005 07 09 | 703 | 0.9+ | 0.6+ | 2005 08 30 | 691 | 0.2− | 0.1− | 2005 10 01 | 699 | 1.5+ | 0.5− | |
| 2005 07 09 | 703 | 0.2− | 0.4− | 2005 08 30 | 691 | 0.3− | 0.2− | 2005 10 29 | G96 | 0.0 | 0.1− | |
| 2005 07 09 | 703 | 0.8− | 0.0 | 2005 08 30 | 691 | 0.3− | 0.1− | 2005 10 29 | G96 | 0.4+ | 0.0 | |
| 2005 07 09 | 703 | 0.8+ | 0.1+ | 2005 09 14 | 691 | 0.2− | 0.0 | 2005 10 29 | G96 | 0.2+ | 0.1− | |
| 2005 08 26 | 644 | 0.0 | 0.2− | 2005 09 14 | 691 | 0.2+ | 0.1− | 2005 10 29 | G96 | 0.2+ | 0.2− | |
| 2005 08 26 | 644 | 0.0 | 0.3− | 2005 09 14 | 691 | 0.0 | 0.1− | 2005 12 01 | G96 | 0.3+ | 0.2− | |
| 2005 08 26 | 644 | 0.3+ | 0.2− | 2005 09 24 | 644 | 0.2+ | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.2− | |
| 2005 08 26 | 699 | 0.8− | 0.5+ | 2005 09 24 | 644 | 0.3− | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.1− | |
| 2005 08 26 | 699 | 0.1− | 0.4+ | 2005 09 24 | 644 | 0.2+ | 0.0 | 2005 12 01 | G96 | 0.5− | 0.5+ | |
| 2005 08 26 | 699 | 0.2− | 0.2+ | 2005 09 24 | 644 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.3− | 0.3+ | |
| 2005 08 26 | 699 | 0.6− | 0.6− | 2005 09 24 | 644 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1+ | |
| 2005 08 28 | 699 | 0.1+ | 0.4− | 2005 09 24 | 644 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.3− | 0.1− | |
| 2005 08 28 | 699 | 0.6+ | 0.3+ | 2005 10 01 | 704 | 0.7+ | 0.1+ | 2006 11 22 | G96 | 0.4+ | 0.3+ | |
| 2005 08 28 | 699 | 0.2− | 0.4+ | 2005 10 01 | 704 | 0.3+ | 0.2+ | | | | | |
| 2005 08 28 | 699 | 0.2+ | 0.2+ | 2005 10 01 | 704 | 0.7+ | 0.1+ | | | | | |

**2005 QW$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.07312 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26062845 | $\omega$ | 349.53494 | | +0.95802407 | −0.28579635 | |
| $a$ | 2.4272891 | $\Omega$ | 27.10447 | | +0.26648340 | +0.85868096 | |
| $e$ | 0.2344598 | $i$ | 2.84200 | | +0.10571884 | +0.42542621 | |
| $P$ | 3.78 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 21 | 608 | 0.4− | 0.8− | 2005 08 29 | 704 | 0.6− | 0.1− | 2005 10 01 | 704 | 0.4+ | 0.5+ | |
| 2001 07 21 | 608 | 0.5+ | 0.9− | 2005 08 29 | 704 | 0.2− | 0.6+ | 2005 10 01 | 704 | 0.8+ | 0.9+ | |
| 2001 07 21 | 608 | 0.4+ | 0.7− | 2005 08 30 | 691 | 0.6− | 0.1− | 2005 10 01 | 704 | 0.4− | 0.8− | |
| 2004 04 24 | 691 | 0.1+ | 0.3+ | 2005 08 30 | 691 | 0.2− | 0.1− | 2005 10 01 | 699 | 1.2+ | 1.0− | |
| 2004 04 24 | 691 | 0.1+ | 0.0 | 2005 08 30 | 691 | 0.2− | 0.4+ | 2005 10 01 | 699 | 0.6+ | 0.8+ | |
| 2004 04 24 | 691 | 0.1− | 0.1− | 2005 09 05 | 608 | 1.3+ | 0.0 | 2005 10 01 | 699 | 0.7+ | 0.3− | |
| 2005 08 26 | 644 | 0.0 | 0.2+ | 2005 09 05 | 608 | 0.7+ | 0.6− | 2005 10 01 | 699 | 1.4+ | 0.6+ | |
| 2005 08 26 | 644 | 0.1− | 0.0 | 2005 09 05 | 608 | 0.8+ | 1.0− | 2005 10 05 | 704 | 0.4− | 0.8− | |
| 2005 08 26 | 644 | 0.1− | 0.2+ | 2005 09 14 | 691 | 0.0 | 0.2+ | 2005 10 05 | 704 | 0.5− | 0.8− | |
| 2005 08 26 | 699 | 0.7− | 0.4+ | 2005 09 14 | 691 | 0.1+ | 0.4+ | 2005 10 05 | 704 | 0.9− | 1.5− | |
| 2005 08 26 | 699 | 0.3+ | 0.7− | 2005 09 14 | 691 | 0.1+ | 0.3+ | 2005 10 05 | 704 | 0.2+ | 0.8− | |
| 2005 08 26 | 699 | 0.6− | 1.3+ | 2005 09 23 | 703 | 0.7− | 0.4− | 2005 10 05 | 704 | 0.7− | 0.7− | |
| 2005 08 26 | 699 | 0.4− | 1.0+ | 2005 09 23 | 703 | 1.0− | 0.3− | 2005 10 29 | G96 | 0.0 | 0.0 | |
| 2005 08 28 | 699 | 0.3+ | 0.2− | 2005 09 23 | 703 | 0.4− | 0.3− | 2005 10 29 | G96 | 0.1+ | 0.1+ | |
| 2005 08 28 | 699 | 0.6− | 0.8− | 2005 09 23 | 703 | 0.2− | 1.0− | 2005 10 29 | G96 | 0.1− | 0.2− | |
| 2005 08 28 | 699 | 0.1+ | 0.3− | 2005 09 24 | 644 | 0.1− | 0.2+ | 2005 10 29 | G96 | 0.5+ | 0.1+ | |
| 2005 08 28 | 699 | 0.5− | 0.2+ | 2005 09 24 | 644 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.0 | 0.1+ | |
| 2005 08 29 | 704 | 0.0 | 0.9+ | 2005 09 24 | 644 | 0.1+ | 0.1+ | 2005 12 01 | G96 | 0.4+ | 0.3+ | |
| 2005 08 29 | 704 | 0.1+ | 0.3+ | 2005 10 01 | 704 | 0.8+ | 0.4+ | 2005 12 01 | G96 | 0.7− | 0.3− | |
| 2005 08 29 | 704 | 0.4+ | 0.0 | 2005 10 01 | 704 | 0.4+ | 0.6+ | 2005 12 01 | G96 | 0.1+ | 0.2+ | |

**2005 QY$_{45}$ = 2002 XQ$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.04902 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27419801 | $\omega$ | 297.07447 | | +0.04151629 | −0.99713391 | |
| $a$ | 2.3465322 | $\Omega$ | 150.33889 | | +0.95599341 | +0.02124254 | |
| $e$ | 0.0618040 | $i$ | 7.34297 | | +0.29043588 | +0.07261350 | |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.2− | 2002 12 11 | 644 | 0.1+ | 1.4+ | 2005 08 26 | 644 | 0.3− | 0.1+ | |
| 1998 09 19 | 645 | 0.0 | 0.2− | 2002 12 11 | 644 | 0.2+ | 0.6+ | 2005 08 28 | 691 | 0.1+ | 0.3+ | |
| 2000 03 11 | 699 | 0.5+ | 0.2+ | 2002 12 11 | 644 | 0.1− | 0.6+ | 2005 08 28 | 691 | 0.1− | 0.2+ | |
| 2000 03 11 | 699 | 0.7− | 0.8+ | 2002 12 13 | 644 | 0.2− | 0.2+ | 2005 08 28 | 691 | 0.1− | 0.0 | |
| 2000 03 11 | 699 | 0.2+ | 0.4− | 2002 12 13 | 644 | 0.0 | 0.3+ | 2005 09 01 | 691 | 0.1− | 0.4+ | |
| 2000 03 11 | 699 | 0.4− | 0.3+ | 2002 12 13 | 644 | 0.2+ | 0.7+ | 2005 09 01 | 691 | 0.2− | 0.4+ | |
| 2002 12 05 | 644 | 0.3+ | 0.6+ | 2004 05 19 | 599 | 0.4+ | 0.1+ | 2005 09 01 | 691 | 0.3− | 0.3+ | |
| 2002 12 05 | 644 | 0.0 | 0.3+ | 2004 05 19 | 599 | 0.4+ | 0.6+ | 2005 09 11 | 691 | 0.1+ | 0.0 | |
| 2002 12 06 | 644 | 0.1− | 0.3+ | 2004 05 19 | 599 | 0.4+ | 0.5+ | 2005 09 11 | 691 | 0.1+ | 0.0 | |
| 2002 12 06 | 644 | 0.3− | 0.1+ | 2005 08 26 | 644 | 0.4− | 0.0 | 2005 09 11 | 691 | 0.1− | 0.2+ | |
| 2002 12 06 | 644 | 0.3− | 1.0− | 2005 08 26 | 644 | 0.2− | 0.2+ | | | | | |

**2005 QP$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.47002 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26742792 | $\omega$ | 291.99067 | | +0.49174546 | +0.87067209 | |
| $a$ | 2.3859695 | $\Omega$ | 7.49201 | | −0.76524271 | +0.43804831 | |
| $e$ | 0.1922467 | $i$ | 4.74868 | | −0.41543953 | +0.22370468 | |
| $P$ | 3.69 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.2+ | 0.1+ | 2005 09 06 | 699 | 0.1+ | 0.4− | 2005 10 01 | 704 | 0.5− | 0.3− | |
| 1994 09 28 | 691 | 0.2− | 0.0 | 2005 09 06 | 699 | 0.1+ | 1.3− | 2005 10 01 | 703 | 0.8+ | 0.4− | |
| 1994 09 28 | 691 | 0.1− | 0.1+ | 2005 09 09 | 704 | 0.6− | 0.6+ | 2005 10 01 | 703 | 0.2− | 0.9+ | |
| 2004 03 21 | 691 | 0.3+ | 0.7+ | 2005 09 09 | 704 | 0.6− | 0.4− | 2005 10 05 | 704 | 0.2− | 0.5+ | |
| 2004 03 21 | 691 | 0.4+ | 0.6+ | 2005 09 09 | 704 | 0.2− | 0.4+ | 2005 10 05 | 704 | 0.1− | 0.1− | |
| 2004 03 21 | 691 | 0.3+ | 0.7+ | 2005 09 09 | 704 | 0.2+ | 0.6+ | 2005 10 05 | 704 | 0.0 | 0.7+ | |
| 2005 08 27 | 699 | 0.2+ | 1.0+ | 2005 09 09 | 704 | 0.4− | 0.8+ | 2005 10 05 | 704 | 0.0 | 0.4+ | |
| 2005 08 27 | 699 | 1.3+ | 0.7+ | 2005 09 23 | 703 | 0.0 | 0.5+ | 2005 10 11 | 691 | 0.1− | 0.1+ | |
| 2005 08 27 | 699 | 1.0− | 0.6+ | 2005 09 23 | 703 | 0.2+ | 1.0− | 2005 10 11 | 691 | 0.0 | 0.2+ | |
| 2005 08 27 | 699 | 0.8+ | 0.5+ | 2005 09 23 | 703 | 0.3+ | 0.8− | 2005 10 11 | 691 | 0.3− | 0.2+ | |
| 2005 08 29 | 704 | 0.6− | 0.2− | 2005 09 23 | 703 | 0.5− | 0.3− | 2005 11 29 | G96 | 1.8− | 0.9− | |
| 2005 08 29 | 704 | 0.4− | 0.4− | 2005 09 28 | 644 | 0.2− | 0.3+ | 2005 11 29 | G96 | 0.4+ | 0.1− | |
| 2005 08 29 | 704 | 0.2+ | 0.6− | 2005 09 28 | 644 | 0.4− | 0.4+ | 2005 11 29 | G96 | 1.8− | 0.8− | |
| 2005 08 30 | 691 | 0.1− | 0.1+ | 2005 09 28 | 644 | 0.2− | 0.3+ | 2005 11 29 | G96 | 0.8+ | 0.5− | |
| 2005 08 30 | 691 | 0.2− | 0.2+ | 2005 10 01 | 704 | 0.1− | 1.0+ | 2005 12 22 | 291 | 0.0 | 0.2− | |
| 2005 08 30 | 691 | 0.1− | 0.1− | 2005 10 01 | 703 | 0.3+ | 0.3+ | 2005 12 22 | 291 | 0.5+ | 0.0 | |
| 2005 09 06 | 699 | 0.3+ | 0.8+ | 2005 10 01 | 704 | 0.2+ | 0.3+ | 2005 12 22 | 291 | 0.3+ | 0.3+ | |
| 2005 09 06 | 699 | 0.5+ | 0.2− | 2005 10 01 | 703 | 0.5+ | 0.4− | | | | | |

**2005 QZ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.03992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17493438 | $\omega$ | 8.65967 | | +0.88627340 | +0.46077800 | |
| $a$ | 3.1663040 | $\Omega$ | 323.78377 | | −0.42955942 | +0.77984506 | |
| $e$ | 0.1056588 | $i$ | 4.55650 | | −0.17319981 | +0.42370428 | |
| $P$ | 5.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 17 | G96 | 0.0 | 0.3− | 2005 09 22 | 644 | 0.0 | 0.2− | 2005 10 30 | G96 | 0.2− | 0.2− | |
| 2005 06 17 | G96 | 0.8− | 0.4− | 2005 09 22 | 644 | 0.1− | 0.1+ | 2005 10 31 | G96 | 0.4+ | 0.6− | |
| 2005 06 17 | G96 | 0.7− | 0.6− | 2005 09 22 | 644 | 0.2− | 0.3+ | 2005 10 31 | G96 | 0.2− | 0.4− | |
| 2005 06 17 | G96 | 1.0− | 0.6− | 2005 09 23 | 703 | (2.0− | 2.1−) | 2005 10 31 | G96 | 0.1− | 0.4− | |
| 2005 08 28 | 691 | 0.0 | 0.2− | 2005 09 23 | 703 | 0.7− | 0.6− | 2005 10 31 | G96 | 0.3+ | 0.2− | |
| 2005 08 28 | 691 | 0.5− | 0.4+ | 2005 09 23 | 703 | 1.1− | 0.5− | 2005 11 29 | 291 | 0.2− | 0.2− | |
| 2005 08 28 | 691 | 0.2− | 0.1+ | 2005 09 23 | 703 | 0.7+ | 1.4− | 2005 11 29 | 291 | 0.2− | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 29 | 291 | 0.6+ | 0.2− | 2005 09 25 | 691 | 0.1− | 0.4+ | 2005 11 29 | 291 | 0.1− | 0.2+ |
| 2005 08 29 | 291 | 0.3+ | 0.0 | 2005 09 25 | 691 | 0.2− | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2005 08 29 | 291 | 0.5+ | 0.0 | 2005 09 25 | 691 | 0.2− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2005 09 01 | 691 | 1.0+ | 0.1− | 2005 10 06 | 691 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.4− | 0.0 |
| 2005 09 01 | 691 | 0.0 | 0.0 | 2005 10 06 | 691 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.2+ |
| 2005 09 01 | 691 | 0.1− | 0.1− | 2005 10 06 | 691 | 0.2− | 0.4+ | 2006 11 25 | 691 | 0.2− | 0.3+ |
| 2005 09 11 | 691 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.2− | 0.2− | 2006 11 25 | 691 | 0.5+ | 0.7− |
| 2005 09 11 | 691 | 0.3+ | 0.1+ | 2005 10 30 | G96 | 0.1− | 0.3− | | | | |
| 2005 09 11 | 691 | 0.1+ | 0.0 | 2005 10 30 | G96 | 0.1− | 0.3− | | | | |

**2005 QA$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 87.11933 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.16952178 | $\omega$ | 135.67817 | | +0.60623323 | +0.79518049 |
| $a$ | 3.2333475 | $\Omega$ | 171.61022 | | −0.75220037 | +0.57862379 |
| $e$ | 0.1195481 | $i$ | 5.11561 | | −0.25821673 | +0.18133531 |
| $P$ | 5.81 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 30 | 644 | 0.1− | 0.3+ | 2005 09 04 | 185 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2005 07 30 | 644 | 0.2+ | 0.3+ | 2005 09 06 | 185 | 0.3+ | 0.6+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2005 07 30 | 644 | 0.1− | 0.4+ | 2005 09 06 | 185 | 0.6− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2005 08 29 | 185 | 0.2+ | 1.3− | 2005 09 06 | 185 | 0.2− | 0.6− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2005 08 29 | 185 | 0.8+ | 0.4− | 2005 09 07 | 185 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2005 08 29 | 185 | 0.6− | 0.4− | 2005 09 07 | 185 | 0.6+ | 0.8− | 2006 11 16 | G96 | 0.5− | 0.7− |
| 2005 08 29 | 185 | 0.4− | 0.5− | 2005 09 23 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2005 08 30 | 185 | 0.2− | 0.4− | 2005 09 23 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2005 08 30 | 185 | (1.9− | 1.5−) | 2005 09 23 | 691 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2005 08 31 | 185 | 0.2− | 0.7− | 2006 10 20 | G96 | 0.5+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.4− |
| 2005 08 31 | 185 | 0.6+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.5− | 0.1− |
| 2005 09 04 | 185 | 0.2− | 0.5− | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2005 09 04 | 185 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.4+ |

**2005 QF$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 138.24764 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27706776 | $\omega$ | 330.17145 | | +0.47902797 | +0.87766771 |
| $a$ | 2.3303012 | $\Omega$ | 328.44330 | | −0.79950263 | +0.42907726 |
| $e$ | 0.2085216 | $i$ | 1.66633 | | −0.36239170 | +0.21352304 |
| $P$ | 3.56 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 691 | 0.1+ | 0.1− | 2005 08 30 | 691 | 0.3− | 0.3+ | 2005 09 08 | 704 | 0.7− | 0.6+ |
| 2000 02 07 | 691 | 0.1+ | 0.2+ | 2005 08 30 | 185 | 0.2− | 0.2− | 2005 09 13 | 691 | 0.2− | 0.2+ |
| 2000 02 07 | 691 | 0.2− | 0.1− | 2005 08 30 | 185 | 0.2+ | 0.0 | 2005 09 13 | 691 | 0.2− | 0.1+ |
| 2004 03 23 | 291 | 0.3+ | 0.4+ | 2005 08 30 | 185 | 0.3+ | 0.3− | 2005 09 13 | 691 | 1.2+ | 0.6− |
| 2004 03 23 | 291 | 0.1+ | 0.2+ | 2005 08 31 | 185 | 0.7+ | 0.1− | 2005 09 22 | 644 | 0.1+ | 0.1+ |
| 2004 03 23 | 291 | 0.2+ | 0.7+ | 2005 08 31 | 185 | 1.0+ | 1.0− | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2005 08 27 | 644 | 0.4− | 0.0 | 2005 08 31 | 185 | 0.7+ | 0.8− | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2005 08 27 | 644 | 0.4− | 0.0 | 2005 09 06 | 704 | 0.1− | 0.2+ | 2005 09 30 | G96 | 0.6+ | 0.9− |
| 2005 08 27 | 644 | 0.3− | 0.1+ | 2005 09 06 | 704 | 0.0 | 0.8+ | 2005 09 30 | G96 | 0.1− | 0.1− |
| 2005 08 29 | 699 | 0.3+ | 1.1+ | 2005 09 06 | 704 | 0.0 | 0.3− | 2005 09 30 | G96 | 0.2− | 0.1+ |
| 2005 08 29 | 699 | 1.4+ | 0.0 | 2005 09 06 | 185 | 0.6+ | 1.6− | 2005 09 30 | G96 | 0.2+ | 0.1− |
| 2005 08 29 | 699 | (2.0+ | 1.6+) | 2005 09 06 | 185 | 0.4+ | 0.5− | 2005 10 01 | 691 | 0.2− | 0.2+ |
| 2005 08 29 | 699 | 1.7− | 0.9+ | 2005 09 06 | 185 | 0.1+ | 0.6− | 2005 10 01 | 691 | 0.1+ | 0.2+ |
| 2005 08 30 | 185 | 0.2− | 0.1− | 2005 09 07 | 682 | 0.8− | 0.0 | 2005 10 01 | 691 | 0.0 | 0.3+ |
| 2005 08 30 | 185 | 0.2− | 0.5− | 2005 09 07 | 682 | 0.9− | 0.3+ | 2005 11 29 | G96 | 0.3− | 0.5− |
| 2005 08 30 | 185 | 0.0 | 0.4− | 2005 09 07 | 682 | 1.0− | 0.1+ | 2005 11 29 | G96 | 1.0− | 0.1− |
| 2005 08 30 | 185 | 0.2+ | 0.3− | 2005 09 08 | 704 | 0.6− | 0.8+ | 2005 11 29 | G96 | 1.0+ | 0.2− |
| 2005 08 30 | 691 | 0.1− | 0.3+ | 2005 09 08 | 704 | 0.6− | 1.1+ | 2005 11 29 | G96 | 0.2− | 0.6+ |
| 2005 08 30 | 691 | 0.2− | 0.2+ | 2005 09 08 | 704 | 0.7+ | 1.2+ | | | | |

**2005 QH$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 111.31529 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.26927083 | $\omega$ | 342.53542 | | +0.85053286 | +0.52590036 |
| $a$ | 2.3750705 | $\Omega$ | 345.73275 | | −0.48018861 | +0.77284828 |
| $e$ | 0.1790614 | $i$ | 1.10682 | | −0.21450581 | +0.35515398 |
| $P$ | 3.66 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 08 | 691 | 0.4− | 0.4+ | 2005 08 30 | 113 | 0.5+ | 0.5− | 2005 09 05 | 113 | 0.5− | 1.1+ |
| 1994 09 08 | 691 | 0.0 | 0.4+ | 2005 08 30 | 113 | 0.1− | 0.5− | 2005 09 07 | 113 | 0.2+ | 0.1− |
| 1994 09 08 | 691 | 0.1− | 0.4+ | 2005 08 30 | 113 | 0.3− | 0.0 | 2005 09 07 | 113 | 0.5+ | 0.3− |
| 1998 11 17 | 691 | 0.2+ | 0.4+ | 2005 08 30 | 113 | 0.3− | 0.8− | 2005 09 07 | 113 | 0.5+ | 0.1− |
| 1998 11 17 | 691 | 0.5− | 0.3− | 2005 08 30 | 113 | 0.9+ | 0.0 | 2005 09 07 | 113 | 0.3+ | 0.4− |
| 1998 11 17 | 691 | 0.2+ | 0.0 | 2005 08 31 | 113 | 0.5+ | 0.1+ | 2005 09 22 | 644 | 0.0 | 0.2+ |
| 2005 08 06 | 644 | 0.0 | 0.1− | 2005 09 01 | 113 | 0.4− | 0.1+ | 2005 09 22 | 644 | 0.0 | 0.1− |
| 2005 08 06 | 644 | 0.2− | 0.1+ | 2005 09 01 | 113 | 0.1− | 0.1− | 2005 09 22 | 644 | 0.1+ | 0.0 |
| 2005 08 06 | 644 | 0.3− | 0.3+ | 2005 09 01 | 113 | 0.3− | 0.0 | 2005 09 27 | 460 | 0.4+ | 0.6− |
| 2005 08 28 | 691 | 0.7+ | 0.3− | 2005 09 01 | 113 | 0.1+ | 0.9− | 2005 09 27 | 460 | 0.4+ | 0.7− |
| 2005 08 28 | 691 | 0.3− | 0.3+ | 2005 09 01 | 691 | 0.3− | 0.2+ | 2005 09 27 | 460 | 0.3− | 0.2+ |
| 2005 08 28 | 691 | 0.4− | 0.2+ | 2005 09 01 | 691 | 0.2− | 0.2+ | 2005 09 29 | G96 | 1.0− | 0.3+ |
| 2005 08 29 | 699 | 1.9+ | 0.0 | 2005 09 01 | 691 | 0.4− | 0.1+ | 2005 09 29 | G96 | 0.1+ | 0.8+ |
| 2005 08 29 | 704 | 0.2+ | 0.6+ | 2005 09 01 | 113 | 0.1+ | 0.1+ | 2005 09 29 | G96 | 0.8+ | 0.8+ |
| 2005 08 29 | 704 | 0.1− | 0.1− | 2005 09 01 | 113 | 1.2+ | 0.6− | 2005 09 29 | G96 | 0.3− | 0.4+ |
| 2005 08 29 | 699 | 0.9+ | 0.3+ | 2005 09 02 | 113 | 0.2− | 0.7− | 2005 10 25 | G96 | 0.1+ | 0.1+ |
| 2005 08 29 | 704 | 0.1+ | 0.2− | 2005 09 02 | 113 | 0.0 | 0.6− | 2005 10 25 | G96 | 0.1+ | 0.2− |
| 2005 08 29 | 704 | 0.2+ | 1.8− | 2005 09 04 | 113 | 0.7− | 0.2− | 2005 10 25 | G96 | 0.4− | 0.1+ |
| 2005 08 29 | 699 | 0.7+ | 0.1− | 2005 09 04 | 113 | 0.7− | 0.2− | 2005 10 25 | G96 | 0.1+ | 0.2− |
| 2005 08 29 | 699 | 0.5− | 0.6+ | 2005 09 04 | 113 | 0.7+ | 0.3− | 2005 10 27 | G96 | 0.6+ | 0.5− |
| 2005 08 29 | 113 | 0.0 | 0.2− | 2005 09 04 | 113 | 0.6+ | 1.1− | 2005 10 27 | G96 | 0.3+ | 0.9− |
| 2005 08 29 | 113 | 0.2+ | 0.2− | 2005 09 05 | 113 | 0.5− | 0.3− | 2005 10 27 | G96 | 0.1− | 0.1− |
| 2005 08 29 | 113 | 0.1− | 0.4− | 2005 09 05 | 113 | 0.1+ | 0.3+ | 2005 10 27 | G96 | 0.1− | 0.4− |

**2005 QV$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 129.41885 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.16704843 | $\omega$ | 150.70535 | | +0.12501894 | +0.98890479 |
| $a$ | 3.2651850 | $\Omega$ | 126.36329 | | −0.92857671 | +0.14510762 |
| $e$ | 0.1006433 | $i$ | 5.71823 | | −0.34945036 | −0.03179773 |
| $P$ | 5.90 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 09 | 291 | 0.3+ | 0.2+ | 2005 09 03 | 703 | (0.3− | 1.7+) | 2005 10 01 | 703 | 0.5− | 0.8− |
| 2002 02 09 | 291 | 0.1− | 0.1+ | 2005 09 13 | 691 | 0.4+ | 0.6+ | 2005 10 01 | 703 | 1.5− | 0.9+ |
| 2002 02 09 | 291 | 0.1− | 0.2+ | 2005 09 13 | 691 | 0.0 | 0.2+ | 2005 10 13 | G96 | 0.2+ | 0.3+ |
| 2003 04 01 | 645 | 0.1+ | 0.2+ | 2005 09 13 | 691 | 0.2+ | 0.3+ | 2005 10 13 | G96 | 0.3+ | 0.1− |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2005 09 22 | 644 | 0.2− | 0.2+ | 2005 10 13 | G96 | 0.2− | 0.8− |
| 2005 08 25 | 644 | 0.2− | 0.0 | 2005 09 22 | 644 | 0.1− | 0.1+ | 2005 10 13 | G96 | 0.2− | 0.4− |
| 2005 08 25 | 644 | 0.1− | 0.2+ | 2005 09 22 | 644 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2005 08 25 | 644 | 0.3− | 0.0 | 2005 09 23 | 703 | 0.6+ | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2005 08 25 | 644 | 0.3− | 0.2+ | 2005 09 23 | 703 | 0.9− | 0.5− | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 08 25 | 644 | 0.1− | 0.1+ | 2005 09 23 | 703 | 0.2− | 1.1− | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2005 08 25 | 644 | 1.1+ | 0.4− | 2005 09 23 | 703 | (2.0+ | 1.1−) | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2005 08 30 | 691 | 0.0 | 0.5+ | 2005 10 01 | 703 | (3.2+ | 0.4−) | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2005 08 30 | 691 | 0.1− | 0.5+ | 2005 10 01 | 703 | 0.6+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2005 08 30 | 691 | 0.2− | 0.4+ | 2005 10 01 | 703 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2005 09 03 | 703 | 0.7− | 0.8+ | 2005 10 01 | 703 | 2.1− | 0.8+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2005 09 03 | 703 | (2.5− | 0.9+) | 2005 10 01 | 703 | 1.4− | 1.0− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2005 09 03 | 703 | (2.2− | 0.7+) | 2005 10 01 | 703 | 0.6− | 1.2− | 2006 11 18 | G96 | 0.1+ | 0.1− |

**2005 QO$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 116.95650 | | (2000.0) | | | |
| $n$ | 0.28666718 | $\omega$ | 93.62930 | | +0.87999000 | +0.47391652 |
| $a$ | 2.2779843 | $\Omega$ | 238.08435 | | −0.44937385 | +0.80885175 |
| $e$ | 0.2199111 | $i$ | 2.15706 | | −0.15388551 | +0.34808329 |
| $P$ | 3.44 | $H$ | 18.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.2− | 0.1+ | 2005 09 13 | 691 | 0.1+ | 0.1+ |
| 1995 11 21 | 691 | 0.1− | 0.1+ | 2005 08 27 | 644 | 0.1− | 0.0 | 2005 09 13 | 691 | 0.1− | 0.0 |
| 2001 05 22 | 807 | 0.3+ | 0.2+ | 2005 08 27 | 644 | 0.5− | 0.1− | 2005 09 26 | 691 | 0.2− | 0.3+ |
| 2001 05 23 | 807 | 0.1− | 0.3+ | 2005 08 27 | 644 | 0.1− | 0.1+ | 2005 09 26 | 691 | 0.0 | 0.1− |
| 2005 08 26 | 699 | 0.5+ | 0.8− | 2005 08 27 | 644 | 0.3− | 0.2+ | 2005 09 26 | 691 | 0.7+ | 0.7− |
| 2005 08 26 | 699 | 1.1+ | 0.8− | 2005 08 30 | 691 | 0.2− | 0.1− | 2005 11 01 | G96 | 0.2− | 0.0 |
| 2005 08 26 | 699 | 0.3− | 0.7+ | 2005 08 30 | 691 | 0.2− | 0.0 | 2005 11 01 | G96 | 0.1− | 0.3− |
| 2005 08 26 | 699 | 0.1+ | 0.6+ | 2005 08 30 | 691 | 0.0 | 0.3+ | 2005 11 01 | G96 | 0.0 | 0.4− |
| 2005 08 27 | 644 | 0.1+ | 0.1+ | 2005 09 13 | 691 | 0.0 | 0.2+ | 2005 11 01 | G96 | 0.1+ | 0.2+ |

**2005 QR$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 68.87223 | | (2000.0) | | | |
| $n$ | 0.26023457 | $\omega$ | 252.79443 | | +0.88780488 | −0.45936865 |
| $a$ | 2.4297377 | $\Omega$ | 134.54147 | | +0.43575666 | +0.81949909 |
| $e$ | 0.1827662 | $i$ | 2.24991 | | +0.14804941 | +0.34263930 |
| $P$ | 3.79 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.2+ | 0.2+ | 2005 07 30 | 644 | 0.1+ | 0.2+ | 2005 09 14 | 691 | 0.1+ | 0.3+ |
| 1996 03 26 | 691 | 0.1+ | 0.8+ | 2005 07 30 | 644 | 0.0 | 0.4− | 2005 09 14 | 691 | 0.0 | 0.2+ |
| 1996 03 26 | 691 | 0.2+ | 0.4+ | 2005 07 30 | 644 | 0.2− | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.2− |
| 2003 01 30 | 291 | 0.3+ | 0.2+ | 2005 08 26 | 644 | 0.2− | 0.2− | 2005 09 22 | 644 | 0.1+ | 0.0 |
| 2003 01 30 | 291 | 0.2+ | 0.6+ | 2005 08 26 | 644 | 0.1− | 0.4− | 2005 09 22 | 644 | 0.0 | 0.1+ |
| 2003 01 30 | 291 | 0.2− | 0.5+ | 2005 08 26 | 644 | 0.3− | 0.0 | 2005 09 24 | 644 | 0.0 | 0.3+ |
| 2005 06 17 | G96 | 0.1− | 0.5+ | 2005 08 29 | 704 | (3.2− | 1.2+) | 2005 09 24 | 644 | 0.4+ | 0.4+ |
| 2005 06 17 | G96 | 0.2− | 0.0 | 2005 08 29 | 704 | 0.0 | 0.5+ | 2005 09 24 | 644 | 0.0 | 0.3− |
| 2005 06 17 | G96 | 0.2− | 0.1− | 2005 08 29 | 704 | 0.1− | 0.0 | 2005 11 03 | G96 | 0.1+ | 0.3− |
| 2005 06 17 | G96 | 0.3− | 0.1− | 2005 08 30 | 691 | 0.0 | 0.4+ | 2005 11 03 | G96 | 0.0 | 0.3− |
| 2005 07 11 | 291 | 0.1+ | 0.1+ | 2005 08 30 | 691 | 0.0 | 0.0 | 2005 11 03 | G96 | 0.4+ | 0.5− |
| 2005 07 11 | 291 | 0.1− | 0.0 | 2005 08 30 | 691 | 0.2+ | 0.3+ | 2005 11 03 | G96 | 0.6− | 0.0 |
| 2005 07 11 | 291 | 0.0 | 0.0 | 2005 09 14 | 691 | 0.0 | 0.2+ | | | | |

**2005 QE$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 168.06827 | | (2000.0) | | | |
| $n$ | 0.17679058 | $\omega$ | 174.48308 | | −0.57316789 | +0.81842642 |
| $a$ | 3.1441020 | $\Omega$ | 60.53909 | | −0.75359608 | −0.50695488 |
| $e$ | 0.0921178 | $i$ | 2.67946 | | −0.32182529 | −0.27050869 |
| $P$ | 5.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.9+ | 0.2+ | 2005 08 26 | 644 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.9+ | 0.0 | 2005 08 26 | 644 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.3+ |
| 2000 10 01 | 704 | 0.6− | 0.2+ | 2005 08 30 | 691 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.8− | 0.9− |
| 2000 10 01 | 704 | 0.7− | 0.0 | 2005 08 30 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2000 11 17 | 691 | 0.1− | 0.8+ | 2005 08 30 | 691 | 0.4− | 0.8+ | 2006 11 11 | G96 | 1.4+ | 0.4− |
| 2000 11 17 | 691 | 0.5− | 0.3+ | 2005 12 01 | 695 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2000 11 17 | 691 | 0.1− | 0.2+ | 2005 12 01 | 695 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2003 03 06 | 699 | 0.0 | 0.7− | 2006 09 28 | G96 | 0.4− | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2003 03 06 | 699 | 0.2+ | 1.4− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.3+ | 0.4+ |
| 2003 03 06 | 699 | 0.1+ | 0.3− | 2006 09 28 | G96 | 0.3− | 0.6− | 2006 11 16 | 703 | 0.6− | 0.2− |
| 2003 03 06 | 699 | (2.4− | 0.6+) | 2006 09 28 | G96 | 0.5− | 0.6− | 2006 11 16 | 703 | (1.5+ | 1.5−) |
| 2003 03 10 | 599 | (0.3+ | 1.9−) | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 703 | (1.6− | 0.7+) |
| 2003 03 10 | 599 | 0.8− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.1− | 0.8− |
| 2003 03 10 | 599 | 0.4+ | 0.5− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2003 03 31 | 645 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2003 03 31 | 645 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2003 04 10 | 691 | 1.0+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.6+ | 0.0 |
| 2003 04 10 | 691 | 0.7+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.8+ | 0.8− |
| 2003 04 10 | 691 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.6+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.6− |
| 2005 08 10 | 807 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.6+ | 0.3− |
| 2005 08 10 | 807 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2005 08 26 | 644 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.1+ | | | | |

**2005 QY$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.44016 | | (2000.0) | | | |
| $n$ | 0.28305488 | $\omega$ | 51.73968 | | −0.92380230 | +0.37916677 |
| $a$ | 2.2973242 | $\Omega$ | 150.43249 | | −0.37623202 | −0.87328302 |
| $e$ | 0.0362242 | $i$ | 6.18004 | | −0.07098431 | −0.30595642 |
| $P$ | 3.48 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.1+ | 0.2+ | 2004 04 23 | 704 | 1.5+ | 0.7+ | 2005 07 30 | 644 | 0.5− | 0.0 |
| 2002 11 14 | 644 | 0.0 | 0.2+ | 2004 04 23 | 704 | 0.1+ | 0.0 | 2005 07 30 | 644 | 0.4− | 0.0 |
| 2002 11 14 | 644 | 0.1− | 0.2− | 2004 04 23 | 704 | 1.4+ | 0.5+ | 2005 08 28 | 691 | 0.1+ | 0.2− |
| 2004 03 13 | 644 | 0.1− | 0.4+ | 2004 04 23 | 704 | 0.0 | 0.3+ | 2005 08 28 | 691 | 0.4− | 0.2− |
| 2004 03 13 | 644 | 0.1− | 0.4+ | 2004 04 23 | 704 | 0.5− | 0.1− | 2005 08 28 | 691 | 0.1− | 0.2− |
| 2004 03 13 | 644 | 0.2− | 0.4+ | 2004 04 26 | 691 | 0.1− | 0.1− | 2005 08 30 | 691 | 0.8+ | 0.7+ |
| 2004 04 13 | 683 | 0.6− | 2.6− | 2004 04 26 | 691 | 0.2− | 0.0 | 2005 08 30 | 691 | 0.1− | 0.1− |
| 2004 04 13 | 683 | 1.1+ | 1.1− | 2004 04 26 | 691 | 0.1− | 0.1− | 2005 08 30 | 691 | 0.1− | 0.0 |
| 2004 04 13 | 683 | 0.7− | 2.6+ | 2005 07 30 | 644 | 0.4− | 0.1+ | | | | |

**2005 QE$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 79.46150 | | (2000.0) | | | |
| $n$ | 0.21904351 | $\omega$ | 345.32416 | | +0.98057285 | +0.19604244 |
| $a$ | 2.7255185 | $\Omega$ | 3.39142 | | −0.16672797 | +0.85085369 |
| $e$ | 0.1241859 | $i$ | 6.45672 | | −0.10333768 | +0.48745806 |
| $P$ | 4.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 11 | 691 | 0.1+ | 0.0 | 2005 08 28 | 699 | 0.2+ | 0.2+ | 2005 10 06 | G96 | 0.3+ | 0.5+ |
| 1996 09 11 | 691 | 0.1− | 0.1− | 2005 08 28 | 699 | 0.4− | 1.5+ | 2005 10 06 | G96 | 0.0 | 0.2− |
| 2001 11 11 | 699 | 0.6− | 0.9+ | 2005 08 30 | 691 | 0.5− | 0.2− | 2005 10 06 | G96 | 0.3+ | 0.4− |
| 2001 11 11 | 699 | 0.4− | 0.3+ | 2005 08 30 | 691 | 0.1+ | 0.1− | 2005 10 06 | G96 | 0.1+ | 0.1− |
| 2001 11 11 | 699 | 0.3+ | 0.1− | 2005 08 30 | 691 | 0.1− | 0.2− | 2005 10 29 | G96 | 0.1+ | 0.6− |
| 2001 11 11 | 699 | 0.5+ | 0.7− | 2005 09 14 | 691 | 0.2+ | 0.0 | 2005 10 29 | G96 | 0.4+ | 0.1− |
| 2005 08 28 | 699 | 0.7− | 0.0 | 2005 09 14 | 691 | 0.2+ | 0.1− | 2005 10 29 | G96 | 0.3+ | 0.4− |
| 2005 08 28 | 699 | 0.2+ | 1.7− | 2005 09 14 | 691 | 0.1+ | 1.1+ | 2005 10 29 | G96 | 0.1+ | 0.3− |

**2005 QB$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.05354 | | (2000.0) | | | |
| $n$ | 0.12493538 | $\omega$ | 240.29865 | | +0.96689482 | +0.25147848 |
| $a$ | 3.9628938 | $\Omega$ | 105.10786 | | −0.21588838 | +0.89659801 |
| $e$ | 0.2444736 | $i$ | 2.56928 | | −0.13603900 | +0.36451418 |
| $P$ | 7.89 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 12 | G96 | 0.1− | 0.3− | 2005 09 21 | 413 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2005 07 12 | G96 | 0.2+ | 0.2+ | 2005 09 21 | 413 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2005 07 12 | G96 | 1.0− | 0.4− | 2005 09 22 | 644 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2005 07 12 | G96 | 1.1− | 0.2− | 2005 09 22 | 644 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.1− | 0.4+ |
| 2005 08 04 | 644 | 0.2+ | 0.1+ | 2005 09 22 | 644 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.5+ |
| 2005 08 04 | 644 | 0.3+ | 0.3+ | 2005 10 24 | 413 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.4+ |
| 2005 08 04 | 644 | 0.3+ | 0.1+ | 2005 11 06 | G96 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.4− | 0.3+ |
| 2005 08 28 | E12 | 0.5− | 1.4+ | 2005 11 06 | G96 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2005 08 28 | E12 | 0.3+ | 0.5+ | 2005 11 06 | G96 | 0.1− | 0.6− | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2005 08 28 | E12 | 0.5+ | 0.6− | 2005 11 06 | G96 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.4+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 28 | E12 | 0.4+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.5− | 0.9− | | |
| 2005 08 30 | 699 | 0.3− | 1.3+ | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 12 01 | 691 | 0.3+ | 0.4− | | |
| 2005 08 30 | 699 | 0.7− | 0.5− | 2006 10 19 | G96 | 0.4+ | 0.4− | | | | | | |
| 2005 08 30 | 699 | 0.8+ | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.2− | | | | | | |

**2005 QV$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.97418 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18996620 | $\omega$ | 199.75846 | | +0.78382851 | +0.61942150 | |
| $a$ | 2.9969891 | $\Omega$ | 121.88949 | | −0.56255208 | +0.73825947 | |
| $e$ | 0.2081880 | $i$ | 2.96578 | | −0.26296012 | +0.26700181 | |
| $P$ | 5.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 645 | 0.1+ | 0.2+ | 2005 09 23 | 703 | 0.2− | 0.0 | 2005 10 01 | 703 | 0.6+ | 0.1+ | | |
| 2003 03 30 | 645 | 0.0 | 0.1+ | 2005 09 23 | 703 | 0.3− | 0.7+ | 2005 10 01 | 703 | 0.0 | 0.4+ | | |
| 2004 05 09 | 691 | 0.0 | 0.8+ | 2005 09 23 | 703 | 0.3− | 0.3+ | 2005 10 05 | 704 | 0.0 | 1.4− | | |
| 2004 05 09 | 691 | 0.3+ | 0.7+ | 2005 09 23 | 703 | 0.2+ | 0.2− | 2005 10 05 | 704 | 0.5+ | 0.2+ | | |
| 2004 05 09 | 691 | 0.3+ | 0.6+ | 2005 09 24 | 644 | 0.2− | 0.0 | 2005 10 05 | 704 | (0.2+ | 1.8+) | | |
| 2005 08 29 | 704 | 1.1− | 0.3− | 2005 09 24 | 644 | 0.3− | 0.0 | 2005 10 07 | 699 | (0.6− | 2.4+) | | |
| 2005 08 29 | 704 | 1.0− | 0.1− | 2005 09 24 | 644 | 0.1+ | 0.1− | 2005 10 07 | 699 | 1.1+ | 0.7+ | | |
| 2005 08 29 | 704 | 1.4− | 0.3− | 2005 09 24 | 644 | 0.1+ | 0.2− | 2005 10 07 | 699 | 0.0 | 0.9+ | | |
| 2005 08 29 | 704 | 0.1+ | 0.9− | 2005 09 24 | 644 | 0.1+ | 0.1− | 2005 10 07 | 699 | 1.0+ | 1.1+ | | |
| 2005 08 30 | 691 | 0.1+ | 0.1+ | 2005 09 24 | 644 | 0.2+ | 0.1− | 2005 10 12 | 691 | 0.3− | 0.4+ | | |
| 2005 08 30 | 691 | 0.3+ | 0.2+ | 2005 09 26 | A50 | 0.0 | 0.2+ | 2005 10 12 | 691 | 0.2+ | 0.0 | | |
| 2005 08 30 | 691 | 0.1+ | 0.1+ | 2005 09 26 | A50 | 0.0 | 0.2+ | 2005 10 12 | 691 | 0.0 | 0.2− | | |
| 2005 09 06 | 699 | 0.2+ | 1.1+ | 2005 09 29 | 699 | 0.2+ | 0.6+ | 2006 11 18 | 691 | 0.1− | 0.1+ | | |
| 2005 09 06 | 699 | 0.7− | 0.1+ | 2005 09 29 | 699 | 0.9− | 0.8+ | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2005 09 06 | 699 | 0.2+ | 1.0− | 2005 09 29 | 699 | 1.3− | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.0 | | |
| 2005 09 06 | 699 | 1.1− | 0.1+ | 2005 09 29 | 699 | 0.6− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.3+ | | |
| 2005 09 06 | 704 | 0.4− | 0.5+ | 2005 10 01 | 704 | 1.1+ | 0.9+ | 2006 11 22 | 691 | 0.2+ | 0.1− | | |
| 2005 09 06 | 704 | 0.1+ | 0.8+ | 2005 10 01 | 704 | 0.4+ | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.6+ | | |
| 2005 09 06 | 704 | 0.2− | 0.7+ | 2005 10 01 | 704 | 0.3+ | 0.3+ | 2006 11 26 | 691 | 0.1+ | 0.1+ | | |
| 2005 09 06 | 704 | 0.3+ | 0.3+ | 2005 10 01 | 704 | 0.4+ | 0.2− | 2006 11 26 | 691 | 0.3− | 0.4+ | | |
| 2005 09 13 | 691 | 0.3− | 0.1+ | 2005 10 01 | 704 | 0.1+ | 0.3− | 2006 11 26 | 691 | 0.2− | 0.2+ | | |
| 2005 09 13 | 691 | 0.3− | 0.2+ | 2005 10 01 | 703 | 0.2− | 0.4− | | | | | | |
| 2005 09 13 | 691 | 0.0 | 0.2+ | 2005 10 01 | 703 | 0.1− | 0.4− | | | | | | |

**2005 QE$_{72}$ = 2004 FC$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.64908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27207068 | $\omega$ | 344.19146 | | +0.55469995 | +0.83200106 | |
| $a$ | 2.3587481 | $\Omega$ | 319.49740 | | −0.76187078 | +0.50350360 | |
| $e$ | 0.2003636 | $i$ | 0.79980 | | −0.33445610 | +0.23293422 | |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.2+ | 0.2− | 2005 08 30 | 599 | 0.1− | 0.3+ | 2005 09 29 | 699 | 2.6+ | 1.9+ | | |
| 2000 02 04 | 691 | 0.2− | 0.2+ | 2005 08 30 | 599 | 0.1+ | 0.3+ | 2005 09 30 | G96 | 0.0 | 0.3− | | |
| 2000 02 04 | 691 | 0.0 | 0.0 | 2005 08 30 | 691 | 0.1− | 0.1− | 2005 09 30 | G96 | 0.2− | 0.0 | | |
| 2004 03 18 | 691 | 0.3+ | 0.4+ | 2005 08 30 | 691 | 0.2+ | 0.1+ | 2005 09 30 | G96 | 0.3+ | 0.2− | | |
| 2004 03 18 | 691 | 0.3+ | 0.5+ | 2005 08 30 | 691 | 0.1+ | 0.2+ | 2005 09 30 | G96 | 0.3+ | 0.3− | | |
| 2004 03 18 | 691 | 0.3+ | 0.4+ | 2005 09 13 | 691 | 0.3− | 0.2− | 2005 10 01 | 691 | 0.3+ | 0.3+ | | |
| 2004 03 20 | 291 | 0.8+ | 0.4+ | 2005 09 13 | 691 | 0.2− | 0.1+ | 2005 10 01 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 20 | 291 | 0.6+ | 0.5+ | 2005 09 13 | 691 | 0.3− | 0.0 | 2005 10 01 | 691 | 0.2+ | 0.3+ | | |
| 2004 03 20 | 291 | 0.9− | 1.2+ | 2005 09 23 | 703 | 1.2− | 0.2− | 2005 10 01 | 703 | 0.1− | 1.4− | | |
| 2005 08 27 | 644 | 0.1+ | 0.1+ | 2005 09 23 | 703 | 0.7− | 0.1− | 2005 10 01 | 703 | 0.7+ | 0.1− | | |
| 2005 08 27 | 644 | 0.1− | 0.2+ | 2005 09 23 | 703 | 1.2− | 0.1+ | 2005 10 01 | 703 | 0.6− | 0.9+ | | |
| 2005 08 27 | 644 | 0.1− | 0.0 | 2005 09 23 | 703 | 0.5− | 0.2+ | 2005 10 01 | 703 | 1.4− | 0.2− | | |
| 2005 08 29 | 699 | 0.5− | 1.7+ | 2005 09 28 | 644 | 0.0 | 0.0 | 2005 11 29 | G96 | 1.3− | 0.1+ | | |
| 2005 08 29 | 699 | 1.3− | 1.6+ | 2005 09 28 | 644 | 0.2+ | 0.1− | 2005 11 29 | G96 | 0.4+ | 0.6− | | |
| 2005 08 29 | 699 | 0.1− | 0.1+ | 2005 09 28 | 644 | 0.1− | 0.0 | 2005 11 29 | G96 | 0.2+ | 0.6− | | |
| 2005 08 29 | 699 | 0.4+ | 1.3+ | 2005 09 29 | 699 | 0.4+ | 0.6+ | 2005 11 29 | G96 | 0.6+ | 0.1− | | |
| 2005 08 30 | 599 | 0.5+ | 0.1+ | 2005 09 29 | 699 | 0.3− | 1.3+ | | | | | | |
| 2005 08 30 | 599 | 0.2+ | 0.1+ | 2005 09 29 | 699 | 1.4− | 0.5+ | | | | | | |

**2005 QE$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.11690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12445707 | $\omega$ | 126.09936 | | +0.76689871 | +0.64052654 | |
| $a$ | 3.9730407 | $\Omega$ | 194.21287 | | −0.62858636 | +0.73715690 | |
| $e$ | 0.2540819 | $i$ | 9.35286 | | −0.12940459 | +0.21523347 | |
| $P$ | 7.92 | $H$ | 13.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | (5.9− | 3.3+) | 2005 09 24 | 644 | 0.2+ | 0.1− | 2005 12 04 | 704 | 0.3+ | 0.9− | | |
| 2003 04 25 | 691 | (6.0− | 3.3+) | 2005 09 24 | 644 | 0.2+ | 0.0 | 2005 12 04 | 704 | 0.1− | 0.0 | | |
| 2003 04 25 | 691 | (5.6− | 3.4+) | 2005 09 24 | 644 | 0.1+ | 0.2− | 2005 12 04 | 704 | 0.2− | 0.6+ | | |
| 2005 07 07 | 704 | 0.5+ | 0.5+ | 2005 09 26 | 644 | 0.2− | 0.1+ | 2005 12 04 | 704 | 0.2+ | 0.0 | | |
| 2005 07 07 | 704 | 0.8− | 0.1+ | 2005 09 26 | 644 | 0.2− | 0.2− | 2005 12 04 | 704 | 0.1+ | 0.2+ | | |
| 2005 07 07 | 704 | 0.0 | 0.7− | 2005 09 26 | 644 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1+ | | |
| 2005 07 07 | 704 | 0.2+ | 0.5+ | 2005 09 29 | 699 | 0.4− | 0.5+ | 2006 11 21 | G96 | 0.4− | 0.2+ | | |
| 2005 08 25 | 644 | 0.0 | 0.3− | 2005 09 29 | 699 | 0.4+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.0 | | |
| 2005 08 25 | 644 | 0.2+ | 0.2− | 2005 09 29 | 699 | 0.5+ | 0.2− | 2006 11 22 | G96 | 0.3− | 0.1− | | |
| 2005 08 25 | 644 | 0.2+ | 0.2− | 2005 09 29 | 699 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.0 | | |
| 2005 08 29 | 699 | 0.3− | 0.2− | 2005 10 01 | 703 | 0.8− | 0.5− | 2006 11 22 | G96 | 0.0 | 0.1− | | |
| 2005 08 29 | 699 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.7− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.0 | | |
| 2005 08 29 | 699 | 0.5+ | 0.2− | 2005 10 01 | 703 | 0.5− | 0.5− | 2006 11 22 | G96 | 0.8+ | 0.0 | | |
| 2005 08 29 | 699 | 0.7+ | 0.1+ | 2005 10 01 | 703 | 1.0− | 0.3− | 2006 11 22 | G96 | 0.0 | 0.1+ | | |
| 2005 08 30 | 704 | 0.2+ | 0.6− | 2005 10 02 | 704 | 0.9− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.1− | | |
| 2005 08 30 | 704 | 0.3+ | 0.3+ | 2005 10 02 | 704 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.1+ | | |
| 2005 08 30 | 704 | 0.5+ | 0.0 | 2005 10 02 | 704 | 0.7+ | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.2+ | | |
| 2005 08 30 | 704 | 0.1− | 0.2− | 2005 10 06 | 699 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.1+ | | |
| 2005 08 30 | 704 | 0.2− | 0.1− | 2005 10 06 | 699 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− | | |
| 2005 09 08 | 704 | 0.1− | 0.7+ | 2005 10 06 | 699 | 0.0 | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.1− | | |
| 2005 09 08 | 704 | 0.1− | 0.2+ | 2005 10 06 | 699 | 0.6+ | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.1+ | | |
| 2005 09 08 | 704 | 0.8− | 0.6+ | 2005 10 10 | 704 | 0.2− | 0.7− | 2006 11 23 | G96 | 0.1+ | 0.3− | | |
| 2005 09 08 | 704 | 0.2+ | 0.2+ | 2005 10 10 | 704 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.3− | | |
| 2005 09 08 | 704 | 0.1− | 0.3+ | 2005 10 10 | 704 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.1+ | | |
| 2005 09 09 | 704 | 0.1− | 0.3+ | 2005 10 10 | 704 | 0.7+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.0 | | |
| 2005 09 09 | 704 | 1.1− | 0.2+ | 2005 10 20 | 644 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2005 09 09 | 704 | 0.6− | 0.7+ | 2005 10 20 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.6− | 0.3+ | | |
| 2005 09 09 | 704 | 0.3+ | 0.2− | 2005 10 20 | 644 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.8+ | | |
| 2005 09 09 | 704 | 0.3+ | 0.0 | 2005 10 21 | 699 | 0.3− | 1.2− | 2006 11 23 | G96 | 0.4+ | 0.1+ | | |
| 2005 09 14 | 691 | 0.1+ | 0.0 | 2005 10 21 | 699 | 0.8+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.2− | | |
| 2005 09 14 | 691 | 0.1− | 0.1+ | 2005 10 21 | 699 | 0.8+ | 1.1+ | 2006 11 23 | G96 | 0.2− | 0.1− | | |
| 2005 09 14 | 691 | 0.0 | 0.0 | 2005 10 21 | 699 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.0 | | |
| 2005 09 15 | 703 | 0.2− | 0.0 | 2005 10 22 | 699 | 0.9− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.1+ | | |
| 2005 09 15 | 703 | 0.7+ | 0.0 | 2005 10 22 | 699 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2− | | |
| 2005 09 15 | 703 | 0.1+ | 0.5+ | 2005 10 22 | 699 | 0.6− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.1+ | | |
| 2005 09 15 | 703 | 0.4+ | 0.5+ | 2005 10 22 | 699 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.4+ | | |
| 2005 09 22 | 644 | 0.1− | 0.2− | 2005 10 25 | 699 | 0.3+ | 0.8+ | 2006 11 24 | G96 | 0.1− | 0.1+ | | |
| 2005 09 22 | 644 | 0.1− | 0.3− | 2005 10 25 | 699 | 0.5+ | 0.0 | 2006 11 28 | 704 | 0.5− | 0.8− | | |
| 2005 09 22 | 644 | 0.1− | 0.2− | 2005 10 25 | 699 | 0.5+ | 0.8− | 2006 11 28 | 704 | 0.7+ | 0.3+ | | |
| 2005 09 22 | 224 | 0.0 | 0.3+ | 2005 10 25 | 699 | 0.4+ | 0.6+ | 2006 11 28 | 704 | 0.7+ | 0.4− | | |
| 2005 09 22 | 224 | 0.2+ | 0.3+ | 2005 10 31 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.3− | | |
| 2005 09 23 | 224 | 0.7+ | 0.1− | 2005 10 31 | 644 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.2+ | | |
| 2005 09 23 | 703 | 0.4− | 0.5− | 2005 10 31 | 644 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.3− | | |
| 2005 09 23 | 703 | 0.6− | 0.8− | 2005 11 17 | 644 | 0.6− | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.2+ | | |
| 2005 09 23 | 703 | 0.4+ | 0.3− | 2005 11 17 | 644 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.1− | | |
| 2005 09 23 | 703 | 0.3− | 0.6− | 2005 11 17 | 644 | 0.3− | 0.2+ | | | | | | |

**2005 QL$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.30710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26360669 | $\omega$ | 252.41670 | | +0.84939535 | −0.52118149 | |
| $a$ | 2.4089721 | $\Omega$ | 138.88809 | | +0.51933215 | +0.79741596 | |
| $e$ | 0.1132019 | $i$ | 7.25621 | | +0.09392363 | +0.30413423 | |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.1− | 0.0 | 2005 08 29 | 704 | 0.7+ | 0.6+ | 2005 09 26 | 703 | 0.2+ | 0.2− |
| 2001 07 13 | 644 | 0.1+ | 0.3+ | 2005 08 31 | 691 | 0.1− | 0.0 | 2005 09 26 | 703 | 0.6− | 0.7+ |
| 2001 07 13 | 644 | 0.0 | 0.1− | 2005 08 31 | 691 | 0.1− | 0.1+ | 2005 09 26 | 703 | 0.3+ | 0.8− |
| 2005 06 17 | G96 | 0.0 | 0.0 | 2005 08 31 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2005 06 17 | G96 | 0.0 | 0.5− | 2005 09 13 | 703 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2005 06 17 | G96 | 0.4+ | 0.1− | 2005 09 13 | 703 | 0.5− | 1.1− | 2006 11 21 | G96 | 0.4+ | 0.4+ |
| 2005 06 17 | G96 | 0.1− | 0.1− | 2005 09 13 | 703 | 0.1+ | 0.9− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2005 08 10 | 807 | 0.2− | 0.0 | 2005 09 13 | 703 | 0.2+ | 0.7− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 08 10 | 807 | 0.2− | 0.1− | 2005 09 24 | 644 | 0.1− | 0.2− | 2006 11 23 | G96 | 1.1− | 0.3+ |
| 2005 08 29 | 704 | 0.1− | 1.0+ | 2005 09 24 | 644 | 0.5− | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.4+ |
| 2005 08 29 | 704 | 0.8+ | 0.7+ | 2005 09 24 | 644 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2005 08 29 | 704 | 1.0+ | 1.5+ | 2005 09 26 | 703 | 0.9+ | 0.2+ | | | | |

**2005 QA$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.50521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26447320 | $\omega$ | 126.57480 | | +0.98534386 | −0.17041901 | |
| $a$ | 2.4037074 | $\Omega$ | 243.23844 | | +0.15373506 | +0.90601538 | |
| $e$ | 0.1879907 | $i$ | 0.47522 | | +0.07391221 | +0.38741901 | |
| $P$ | 3.73 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 30 | 291 | 0.0 | 0.4+ | 2005 09 09 | 704 | 0.2+ | 0.3− | 2005 09 29 | 644 | 0.3− | 0.1− |
| 2003 01 30 | 644 | 0.5− | 0.6+ | 2005 09 09 | 704 | 0.6+ | 0.6− | 2005 09 29 | 699 | 1.1− | 1.2+ |
| 2003 01 30 | 291 | 0.2+ | 0.3+ | 2005 09 09 | 704 | 0.4− | 0.1− | 2005 09 29 | 644 | 0.3− | 0.0 |
| 2003 01 30 | 291 | 0.3+ | 0.1+ | 2005 09 09 | 704 | 0.2+ | 0.0 | 2005 09 29 | 699 | 0.5− | 0.8+ |
| 2003 01 30 | 644 | 0.1+ | 0.5+ | 2005 09 14 | 691 | 0.2− | 0.1+ | 2005 09 29 | 699 | 0.0 | 0.2+ |
| 2003 01 30 | 644 | 0.2− | 0.4+ | 2005 09 14 | 691 | 0.0 | 0.2+ | 2005 09 29 | 699 | 0.8− | 0.3+ |
| 2004 04 25 | 291 | 0.3+ | 0.9+ | 2005 09 14 | 691 | 0.0 | 0.0 | 2005 10 04 | 644 | 0.0 | 0.2+ |
| 2004 04 25 | 291 | 0.2+ | 0.5+ | 2005 09 22 | 644 | 0.2− | 0.1+ | 2005 10 04 | 644 | 0.1− | 0.0 |
| 2004 04 25 | 291 | 0.1+ | 0.5+ | 2005 09 22 | 644 | 0.4− | 0.2+ | 2005 10 04 | 644 | 0.2− | 0.0 |
| 2005 08 29 | 699 | 0.6− | 0.1− | 2005 09 22 | 644 | 0.4− | 0.1+ | 2005 10 06 | 699 | 0.8+ | 0.3− |
| 2005 08 29 | 699 | 0.0 | 0.3− | 2005 09 24 | A50 | 0.3− | 0.1− | 2005 10 06 | 699 | 0.7+ | 0.9+ |
| 2005 08 29 | 699 | 0.3+ | 0.1− | 2005 09 24 | A50 | 0.1+ | 0.1+ | 2005 10 06 | 699 | 0.0 | 0.6+ |
| 2005 08 29 | 699 | 0.5+ | 1.2+ | 2005 09 25 | 644 | 0.0 | 0.2+ | 2005 10 06 | 699 | 0.3+ | 0.1+ |
| 2005 08 31 | 691 | 0.1+ | 0.1+ | 2005 09 25 | 644 | 0.0 | 0.1+ | 2005 10 07 | 704 | 0.1− | 0.1− |
| 2005 08 31 | 691 | 0.1+ | 0.0 | 2005 09 25 | 644 | 0.0 | 0.1+ | 2005 10 07 | 704 | 0.1− | 0.9+ |
| 2005 08 31 | 691 | 0.1− | 0.2+ | 2005 09 25 | A50 | 0.1+ | 0.1+ | 2005 10 07 | 704 | 0.4+ | 0.3+ |
| 2005 09 08 | 704 | 0.4− | 0.3− | 2005 09 25 | A50 | 0.2− | 0.1− | 2005 10 07 | 704 | 0.2− | 0.4+ |
| 2005 09 08 | 704 | 0.3+ | 0.8− | 2005 09 26 | 644 | 0.3− | 0.1+ | 2005 12 02 | G96 | 0.3+ | 0.5− |
| 2005 09 08 | 704 | 0.3− | 0.0 | 2005 09 26 | 644 | 0.1+ | 0.0 | 2005 12 02 | G96 | 0.3− | 0.3− |
| 2005 09 08 | 704 | 0.7+ | 0.2− | 2005 09 26 | 644 | 0.1− | 0.1+ | 2005 12 02 | G96 | 0.2− | 0.3− |
| 2005 09 09 | 704 | 0.1− | 0.6− | 2005 09 29 | 644 | 0.3− | 0.7+ | 2005 12 02 | G96 | 0.6+ | 0.2− |

**2005 QS$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.09275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22974485 | $\omega$ | 335.82657 | | +0.24977581 | −0.96649112 | |
| $a$ | 2.6402123 | $\Omega$ | 99.66604 | | +0.89789971 | +0.20828749 | |
| $e$ | 0.1916509 | $i$ | 3.44397 | | +0.36247504 | +0.15003744 | |
| $P$ | 4.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 01 | 691 | 0.2− | 0.1− | 2001 10 24 | 644 | 0.4− | 0.9+ | 2005 09 01 | 615 | 0.3− | 0.3+ |
| 1997 11 01 | 691 | 0.4− | 0.0 | 2003 02 09 | 291 | 0.3− | 0.4+ | 2005 09 01 | 615 | 0.3− | 0.1− |
| 1997 11 01 | 691 | 0.2− | 0.1− | 2003 02 09 | 291 | 0.1− | 0.3+ | 2005 09 02 | 615 | 0.4− | 0.5+ |
| 1997 12 07 | 910 | 1.2+ | 0.7+ | 2003 02 09 | 291 | 0.1+ | 0.4+ | 2005 09 02 | 615 | 0.9− | 0.4+ |
| 1997 12 07 | 910 | 1.2+ | 0.6+ | 2003 03 23 | 645 | 0.0 | 0.1+ | 2005 09 02 | 615 | 1.3− | 0.8+ |
| 1997 12 07 | 910 | 1.5+ | 0.7+ | 2003 03 23 | 645 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.2− |
| 2001 09 27 | 644 | 0.2− | 0.5+ | 2003 03 31 | 645 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.6− | 0.1− |
| 2001 09 27 | 644 | 0.0 | 0.5+ | 2003 03 31 | 645 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2001 09 27 | 644 | 0.3− | 0.3+ | 2005 08 05 | 644 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2001 10 08 | 644 | (0.0 | 1.8+) | 2005 08 05 | 644 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 10 08 | 644 | (0.3+ | 1.6+) | 2005 08 05 | 644 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 10 08 | 644 | (0.7+ | 1.5+) | 2005 08 28 | 615 | 0.8+ | 0.8− | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2001 10 16 | 644 | 0.3− | 0.9+ | 2005 08 28 | 615 | 1.1+ | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2001 10 16 | 644 | 0.5− | 0.7+ | 2005 08 29 | 615 | 0.3+ | 0.5+ | 2006 11 28 | G96 | 0.0 | 0.2+ |
| 2001 10 16 | 644 | 1.0− | 0.5+ | 2005 08 29 | 615 | 0.0 | 0.2+ | 2006 11 28 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 644 | 0.5− | 0.7+ | 2005 08 29 | 615 | 0.1+ | 0.4+ | 2006 11 28 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 644 | 0.3− | 0.6+ | 2005 09 01 | 615 | 0.3− | 0.3+ | 2006 11 28 | G96 | 0.4− | 0.2− |

**2005 QQ$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.86401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17052811 | $\omega$ | 183.71467 | | +0.95595748 | +0.29344307 | |
| $a$ | 3.2206144 | $\Omega$ | 159.21806 | | −0.26884527 | +0.88370811 | |
| $e$ | 0.1693201 | $i$ | 0.97511 | | −0.11776042 | +0.36462467 | |
| $P$ | 5.78 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 691 | 0.2− | 0.0 | 2005 08 22 | 644 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 1999 08 13 | 691 | 0.0 | 0.4+ | 2005 08 22 | 644 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 1999 08 13 | 691 | 0.2+ | 0.0 | 2005 08 22 | 644 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.5+ | 0.2− |
| 2000 12 16 | 691 | 0.8+ | 0.1− | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.5+ |
| 2000 12 16 | 691 | 0.2− | 0.1− | 2005 08 27 | 644 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2000 12 16 | 691 | 0.4− | 0.1− | 2005 08 27 | 644 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2005 06 17 | G96 | 0.4− | 0.1− | 2005 10 25 | G96 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2005 06 17 | G96 | 0.3+ | 0.0 | 2005 10 25 | G96 | 0.5− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2005 06 17 | G96 | 0.3+ | 0.2− | 2005 10 25 | G96 | 0.1+ | 0.6− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2005 06 17 | G96 | 0.0 | 0.0 | 2005 10 25 | G96 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2005 08 04 | 644 | 0.5− | 0.5+ | 2006 10 31 | G96 | 0.6− | 0.5− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2005 08 04 | 644 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.5− | | | | |
| 2005 08 04 | 644 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− | | | | |

**2005 QU$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.93534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25219941 | $\omega$ | 155.51098 | | +0.81068947 | +0.58520306 | |
| $a$ | 2.4810757 | $\Omega$ | 168.61943 | | −0.55100355 | +0.77292875 | |
| $e$ | 0.1111131 | $i$ | 5.20101 | | −0.19793353 | +0.24519080 | |
| $P$ | 3.91 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.1− | 0.1+ | 2005 07 29 | 644 | 0.2+ | 0.1+ | 2005 08 27 | 644 | 0.1+ | 0.2+ |
| 1996 03 11 | 691 | 0.1− | 0.2+ | 2005 07 29 | 644 | 0.1+ | 0.2− | 2005 10 25 | G96 | 0.0 | 0.7− |
| 1996 03 11 | 691 | 0.2+ | 0.1− | 2005 08 24 | 644 | 0.3+ | 0.0 | 2005 10 25 | G96 | 0.1+ | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.2− | 2005 08 24 | 644 | 0.2− | 0.0 | 2005 10 25 | G96 | 0.3− | 0.2+ |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2005 08 24 | 644 | 0.2− | 0.2+ | 2005 10 25 | G96 | 0.2+ | 0.0 |
| 2004 04 19 | 691 | 0.3− | 0.0 | 2005 08 27 | 644 | 0.1− | 0.1+ | | | | |
| 2005 07 29 | 644 | 0.1− | 0.1− | 2005 08 27 | 644 | 0.2− | 0.2+ | | | | |

**2005 QJ$_{90}$ = 2006 VL$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.20187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21513804 | $\omega$ | 234.52210 | | −0.84975878 | +0.52619495 | |
| $a$ | 2.7584043 | $\Omega$ | 337.17469 | | −0.45292412 | −0.75986049 | |
| $e$ | 0.0644824 | $i$ | 4.74307 | | −0.26975870 | −0.38174719 | |
| $P$ | 4.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 25 | 644 | 0.5+ | 0.0 | 2005 09 01 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2005 08 25 | 644 | 0.5+ | 0.2− | 2005 09 01 | 691 | 0.3+ | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2005 08 25 | 644 | 1.1+ | 0.3+ | 2005 09 25 | 691 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.5− | 0.0 |
| 2005 08 28 | 691 | 1.4− | 0.5+ | 2005 09 25 | 691 | 0.1+ | 0.3− | 2006 11 17 | 691 | 0.2− | 0.0 |
| 2005 08 28 | 691 | 0.2+ | 0.0 | 2005 09 25 | 691 | 0.1− | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.3− |
| 2005 08 28 | 691 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.3+ | 2006 11 25 | 691 | 0.4+ | 0.0 |
| 2005 09 01 | 691 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.3− | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.2+ |

**2005 QR$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.75223 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17372536 | $\omega$ | 158.91136 | | +0.99642417 | | +0.08448831 |
| $a$ | 3.1809773 | $\Omega$ | 196.24210 | | −0.07790832 | | +0.91522000 |
| $e$ | 0.1950786 | $i$ | 0.15769 | | −0.03269803 | | +0.39399756 |
| $P$ | 5.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 27 | 691 | 0.2+ | 0.5− | 2005 09 23 | 703 | 0.3− | 0.1− | 2005 10 01 | 704 | (2.2− | 0.7+) |
| 1994 10 27 | 691 | 0.1− | 0.3− | 2005 09 23 | 703 | 1.8+ | 1.1+ | 2005 10 01 | 703 | 0.7− | 0.5+ |
| 1994 10 27 | 691 | 0.3+ | 0.2− | 2005 09 23 | 703 | 1.7+ | 0.0 | 2005 10 01 | 703 | 0.7− | 0.6− |
| 2000 12 01 | 691 | 0.2− | 0.4+ | 2005 09 30 | G96 | 0.2− | 0.2− | 2005 11 25 | G96 | 0.1− | 0.5− |
| 2000 12 01 | 691 | 0.0 | 0.2+ | 2005 09 30 | G96 | 0.1+ | 0.2− | 2005 11 25 | G96 | 0.2+ | 0.0 |
| 2000 12 01 | 691 | 0.1+ | 0.1+ | 2005 09 30 | G96 | 0.0 | 0.2− | 2005 11 25 | G96 | 0.2+ | 0.3− |
| 2005 08 25 | 644 | 0.3− | 0.1+ | 2005 09 30 | G96 | 0.1− | 0.3− | 2005 11 25 | G96 | 0.4− | 0.2+ |
| 2005 08 25 | 644 | 0.1+ | 0.2+ | 2005 10 01 | 704 | 0.3+ | 0.0 | 2005 12 02 | G96 | 1.0− | 0.5+ |
| 2005 08 25 | 644 | 0.2+ | 0.3− | 2005 10 01 | 704 | 0.1− | 0.8+ | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2005 08 27 | 644 | 0.2− | 0.1− | 2005 10 01 | 704 | 1.0+ | 0.1+ | 2005 12 02 | G96 | 0.3+ | 0.0 |
| 2005 08 27 | 644 | 0.1− | 0.1− | 2005 10 01 | 703 | 1.3− | 0.3+ | 2005 12 02 | G96 | 0.4+ | 0.4+ |
| 2005 08 27 | 644 | 0.7− | 0.0 | 2005 10 01 | 704 | 0.7− | 0.7+ | | | | |
| 2005 09 23 | 703 | 0.1− | 0.6+ | 2005 10 01 | 703 | 0.6− | 0.5− | | | | |

**2005 QN$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.06720 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26362572 | $\omega$ | 314.50621 | | +0.90678489 | | +0.42127476 |
| $a$ | 2.4088561 | $\Omega$ | 20.59562 | | −0.37238075 | | +0.81856074 |
| $e$ | 0.1965591 | $i$ | 2.67102 | | −0.19767077 | | +0.39049441 |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 12 | 691 | 0.0 | 0.1− | 2005 08 25 | 599 | 0.1− | 0.2+ | 2005 09 13 | 703 | 0.9+ | 1.3+ |
| 1994 10 12 | 691 | 0.1− | 0.5+ | 2005 08 25 | 599 | 0.1+ | 0.2+ | 2005 09 22 | 644 | 0.3− | 0.0 |
| 1994 10 12 | 691 | 0.3− | 0.6+ | 2005 08 27 | 644 | 0.1+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.0 |
| 2004 03 26 | 291 | 0.3+ | 0.7+ | 2005 08 27 | 644 | 0.1+ | 0.0 | 2005 09 22 | 644 | 0.3− | 0.1+ |
| 2004 03 26 | 291 | 0.0 | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.0 | 2005 09 24 | 644 | 0.1− | 0.1+ |
| 2004 03 26 | 291 | 0.2− | 0.9+ | 2005 08 29 | 704 | 0.3− | 0.6+ | 2005 09 24 | 644 | 0.0 | 0.2+ |
| 2004 03 26 | 691 | 0.2+ | 0.2− | 2005 08 29 | 704 | 0.0 | 0.3+ | 2005 09 24 | 644 | 0.1− | 0.3+ |
| 2004 03 26 | 691 | 0.1+ | 0.1− | 2005 08 29 | 704 | 0.1− | 0.2− | 2005 10 29 | G96 | 0.1+ | 0.0 |
| 2004 03 26 | 691 | 0.4+ | 0.1− | 2005 08 29 | 704 | 0.9− | 1.1+ | 2005 10 29 | G96 | 0.1+ | 0.1+ |
| 2005 07 28 | 644 | 0.0 | 0.2+ | 2005 08 29 | 704 | 0.4− | 0.4+ | 2005 10 29 | G96 | 0.2+ | 0.2+ |
| 2005 07 28 | 644 | 0.2+ | 0.2+ | 2005 09 05 | 703 | 0.6− | 0.2− | 2005 10 29 | G96 | 0.2+ | 0.0 |
| 2005 07 28 | 644 | 0.2+ | 0.1+ | 2005 09 05 | 703 | 0.8− | 0.2− | 2005 11 29 | G96 | 0.2+ | 0.3− |
| 2005 08 04 | 644 | 0.5+ | 0.0 | 2005 09 05 | 703 | 0.4− | 0.8− | 2005 11 29 | G96 | 0.5− | 0.1+ |
| 2005 08 04 | 644 | 0.0 | 0.0 | 2005 09 05 | 703 | 0.5− | 0.8− | 2005 11 29 | G96 | 0.1− | 0.2+ |
| 2005 08 04 | 644 | 0.0 | 0.1− | 2005 09 13 | 703 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.8+ | 0.2− |
| 2005 08 25 | 599 | 0.2+ | 0.2+ | 2005 09 13 | 703 | 0.5+ | 2.0− | | | | |
| 2005 08 25 | 599 | 0.1− | 0.4+ | 2005 09 13 | 703 | 0.7+ | 0.2+ | | | | |

**2005 QG$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.21816 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25545612 | $\omega$ | 265.10525 | | +0.96945336 | | −0.24229501 |
| $a$ | 2.4599437 | $\Omega$ | 108.91291 | | +0.23797163 | | +0.89150565 |
| $e$ | 0.1454852 | $i$ | 2.30953 | | +0.05941120 | | +0.38276731 |
| $P$ | 3.86 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 645 | 0.0 | 0.0 | 2005 08 29 | 704 | 0.3− | 0.3+ | 2005 09 30 | 699 | 0.3− | 0.9− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2005 09 05 | 703 | 0.4− | 0.1− | 2005 09 30 | 699 | 1.0+ | 1.1− |
| 2005 07 29 | 644 | 0.0 | 0.1+ | 2005 09 05 | 703 | 0.6− | 0.3− | 2005 09 30 | 699 | 0.9+ | 0.1− |
| 2005 07 29 | 644 | 0.1− | 0.1+ | 2005 09 05 | 703 | 0.8− | 0.1+ | 2005 09 30 | 699 | 0.0 | 0.0 |
| 2005 07 29 | 644 | 0.3+ | 0.4+ | 2005 09 05 | 703 | 0.0 | 0.4− | 2006 10 20 | 695 | 0.3− | 0.0 |
| 2005 08 27 | 644 | 0.0 | 0.0 | 2005 09 07 | 699 | 0.2+ | 0.3− | 2006 10 20 | 695 | 0.4+ | 0.1+ |
| 2005 08 27 | 644 | 0.1+ | 0.0 | 2005 09 07 | 699 | 0.5− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2005 08 27 | 644 | 0.0 | 0.1+ | 2005 09 07 | 699 | 0.9− | 1.1+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2005 08 29 | 704 | 0.1+ | 0.4+ | 2005 09 07 | 699 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.9− | 0.2− |
| 2005 08 29 | 704 | 0.7+ | 0.0 | 2005 09 14 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2005 08 29 | 704 | 0.1+ | 0.1+ | 2005 09 14 | 691 | 0.2− | 0.0 | | | | |
| 2005 08 29 | 704 | 0.3+ | 0.1+ | 2005 09 14 | 691 | 0.1+ | 0.0 | | | | |

**2005 QB$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.10032 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28203424 | $\omega$ | 104.35717 | | −0.18857158 | | −0.98203625 |
| $a$ | 2.3028633 | $\Omega$ | 356.49116 | | +0.85316970 | | −0.16041461 |
| $e$ | 0.1335841 | $i$ | 6.33239 | | +0.48635606 | | −0.09935775 |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.5+ | 0.7+ | 2002 12 05 | 704 | 0.1+ | 0.1− | 2005 08 27 | 644 | 0.3+ | 0.5+ |
| 2000 03 05 | 704 | 1.2+ | 0.1− | 2002 12 05 | 704 | 0.5− | 0.5− | 2005 08 31 | 691 | 0.2− | 0.2+ |
| 2000 03 05 | 704 | 1.0− | 0.3+ | 2002 12 05 | 704 | 1.0− | 0.3+ | 2005 08 31 | 691 | 0.2+ | 0.3− |
| 2000 03 05 | 704 | 0.3− | 0.1+ | 2002 12 05 | 704 | 0.6− | 0.4+ | 2005 08 31 | 691 | 0.1− | 0.2+ |
| 2002 11 14 | 644 | 0.4+ | 0.2− | 2002 12 05 | 704 | 0.7− | 1.0+ | 2005 10 06 | G96 | 0.1− | 0.1− |
| 2002 11 14 | 644 | 0.3+ | 0.2− | 2002 12 12 | 644 | 0.5+ | 0.1− | 2005 10 06 | G96 | 0.1+ | 0.1− |
| 2002 11 14 | 644 | 0.1+ | 0.0 | 2002 12 12 | 644 | 0.1− | 0.4− | 2005 10 06 | G96 | 0.1− | 0.2− |
| 2002 11 25 | 644 | 0.4+ | 0.2− | 2002 12 12 | 644 | 0.0 | 0.1− | 2005 10 06 | G96 | 0.3− | 0.0 |
| 2002 11 25 | 644 | 0.4+ | 0.1− | 2005 08 27 | 644 | 0.2− | 0.3+ | | | | |
| 2002 11 25 | 644 | 0.6+ | 0.0 | 2005 08 27 | 644 | 0.3− | 0.3+ | | | | |

**2005 QS$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.32522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30144679 | $\omega$ | 89.89789 | | +0.97675688 | | −0.20460259 |
| $a$ | 2.2029042 | $\Omega$ | 281.90813 | | +0.16133288 | | +0.89802654 |
| $e$ | 0.0242328 | $i$ | 3.74464 | | +0.14113005 | | +0.38946902 |
| $P$ | 3.27 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 18 | 644 | 0.0 | 0.3+ | 2005 08 27 | 644 | 0.1− | 0.1− | 2005 10 01 | 699 | (1.8− | 0.1−) |
| 2002 10 18 | 644 | 0.1+ | 0.0 | 2005 08 30 | 691 | 0.3+ | 0.4− | 2005 10 01 | 699 | 0.5+ | 0.3− |
| 2002 10 18 | 644 | 0.3− | 0.3+ | 2005 08 30 | 691 | 0.1+ | 0.1− | 2005 10 01 | 699 | (0.1+ | 1.7+) |
| 2004 03 14 | 644 | 0.1+ | 0.7+ | 2005 08 30 | 691 | 0.3+ | 0.1− | 2005 10 09 | 691 | 0.4− | 0.2− |
| 2004 03 14 | 644 | 0.3+ | 0.5+ | 2005 09 12 | 691 | 0.0 | 0.1+ | 2005 10 09 | 691 | 0.2− | 0.0 |
| 2004 03 14 | 644 | 0.3+ | 0.3+ | 2005 09 12 | 691 | 0.1+ | 0.0 | 2005 10 09 | 691 | 0.1+ | 0.0 |
| 2005 07 31 | 644 | 0.1− | 0.7+ | 2005 09 12 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | (6.9− | 3.1+) |
| 2005 07 31 | 644 | 0.1+ | 0.5+ | 2005 09 26 | 691 | 0.3− | 0.1+ | 2006 11 21 | G96 | (7.5− | 3.1+) |
| 2005 07 31 | 644 | 0.0 | 0.6+ | 2005 09 26 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | (7.6− | 3.0+) |
| 2005 08 27 | 644 | 0.1− | 0.0 | 2005 09 26 | 691 | 0.3− | 0.2+ | 2006 11 21 | G96 | (7.1− | 2.8+) |
| 2005 08 27 | 644 | 0.2+ | 0.1+ | 2005 10 01 | 699 | 0.3− | 0.5− | | | | |

**2005 QU$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.47012 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29835209 | $\omega$ | 312.96904 | | −0.03423589 | | +0.99572338 |
| $a$ | 2.2181113 | $\Omega$ | 314.85035 | | −0.87810854 | | −0.07096757 |
| $e$ | 0.1059631 | $i$ | 6.95177 | | −0.47723505 | | +0.05914852 |
| $P$ | 3.30 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 06 | 691 | 0.1+ | 0.1− | 2005 07 06 | 291 | 0.0 | 0.2+ | 2005 08 30 | 691 | 0.3+ | 0.1− |
| 1994 03 06 | 691 | 0.4− | 0.1− | 2005 07 31 | 644 | 0.1− | 0.2+ | 2005 08 30 | 691 | 0.1+ | 0.1− |
| 1994 03 06 | 691 | 0.0 | 0.5− | 2005 07 31 | 644 | 0.1− | 0.4+ | 2005 09 12 | 691 | 0.1− | 0.0 |
| 2004 02 22 | 691 | 0.4+ | 0.5+ | 2005 07 31 | 644 | 0.1+ | 0.3+ | 2005 09 12 | 691 | 0.2− | 0.1+ |
| 2004 02 22 | 691 | 0.3+ | 0.7+ | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2005 09 12 | 691 | 0.2− | 0.1+ |
| 2004 02 22 | 691 | 0.2+ | 0.5+ | 2005 08 27 | 644 | 0.0 | 0.3+ | 2005 09 26 | 691 | 0.1− | 0.2+ |
| 2005 07 06 | 291 | 0.2− | 0.4+ | 2005 08 27 | 644 | 0.1+ | 0.0 | 2005 09 26 | 691 | 0.1− | 0.1+ |
| 2005 07 06 | 291 | 0.1− | 0.2+ | 2005 08 30 | 691 | 0.3+ | 0.1− | 2005 09 26 | 691 | 0.3− | 0.1+ |

**2005 QS$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.03336 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23547559 | $\omega$ | 277.43336 | | −0.37809722 | +0.91840639 | |
| $a$ | 2.5972004 | $\Omega$ | 329.51619 | | −0.73269533 | −0.37378424 | |
| $e$ | 0.0573227 | $i$ | 13.27640 | | −0.56586221 | −0.12967280 | |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 1.1+ | 1.2+ | 2001 09 29 | 644 | 0.6− | 0.8+ | 2005 08 27 | 644 | 0.0 | 0.1+ |
| 2001 09 10 | 704 | 1.2− | 1.1+ | 2001 09 29 | 644 | 0.2− | 0.8+ | 2005 08 27 | 644 | 0.2+ | 0.0 |
| 2001 09 10 | 704 | 0.3− | 0.2+ | 2001 09 29 | 644 | 0.4− | 0.6+ | 2005 08 29 | 691 | 0.3+ | 0.1+ |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2001 10 13 | 644 | 0.2+ | 0.7− | 2005 08 29 | 691 | 0.6− | 0.5− |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2001 10 13 | 644 | 0.7+ | 0.1+ | 2005 08 29 | 691 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | (2.2− | 0.6−) | 2001 10 13 | 644 | 0.1+ | 0.2− | 2005 09 12 | 691 | 0.1+ | 0.0 |
| 2001 09 25 | 704 | 0.2− | 0.8− | 2005 08 27 | 644 | 0.1+ | 0.3+ | 2005 09 12 | 691 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.7− | 0.3+ | 2005 08 27 | 644 | 0.1+ | 0.1+ | 2005 09 12 | 691 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2005 08 27 | 644 | 0.1+ | 0.0 | | | | |
| 2001 09 25 | 704 | 0.3+ | 1.8+ | 2005 08 27 | 644 | 0.1− | 0.1+ | | | | |

**2005 QG$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.43537 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23251551 | $\omega$ | 281.97622 | | −0.33337171 | −0.94273494 | |
| $a$ | 2.6191966 | $\Omega$ | 187.52329 | | +0.89364274 | −0.31236003 | |
| $e$ | 0.1918233 | $i$ | 4.68029 | | +0.30044294 | −0.11697025 | |
| $P$ | 4.24 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2003 03 07 | 699 | 1.1− | 0.2+ | 2005 08 27 | 644 | 0.2− | 0.6+ |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2003 03 25 | 699 | 0.7− | 0.2+ | 2005 08 27 | 644 | 0.4− | 0.2+ |
| 2001 09 19 | 704 | 0.5+ | 1.3+ | 2003 03 25 | 699 | 0.2+ | 0.6− | 2005 08 31 | 691 | 0.1+ | 0.0 |
| 2001 10 18 | 691 | 0.1− | 0.0 | 2003 03 25 | 699 | 0.2− | 0.0 | 2005 08 31 | 691 | 0.3+ | 0.1+ |
| 2001 10 18 | 691 | 0.3− | 0.0 | 2003 03 25 | 699 | 1.4− | 0.5+ | 2005 08 31 | 691 | 0.0 | 0.1− |
| 2001 10 18 | 691 | 0.1+ | 0.3+ | 2003 04 07 | 691 | 0.0 | 0.3+ | 2005 09 13 | 691 | 0.2− | 0.3+ |
| 2003 03 07 | 699 | 0.9+ | 0.8− | 2003 04 07 | 691 | 0.4+ | 0.6+ | 2005 09 13 | 691 | 0.0 | 0.1+ |
| 2003 03 07 | 699 | 0.8+ | 0.4− | 2003 04 07 | 691 | 0.2+ | 0.4+ | 2005 09 13 | 691 | 0.2− | 0.2+ |
| 2003 03 07 | 699 | 0.8+ | 0.8+ | 2005 08 27 | 644 | 0.4− | 0.3− | | | | |

**2005 QY$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.40489 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15139528 | $\omega$ | 312.50160 | | +0.86025572 | +0.50732719 | |
| $a$ | 3.4865387 | $\Omega$ | 17.20950 | | −0.40281203 | +0.73732121 | |
| $e$ | 0.0983947 | $i$ | 9.88387 | | −0.31257409 | +0.44606789 | |
| $P$ | 6.51 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 08 | 691 | 0.3+ | 0.1+ | 2005 08 28 | 699 | (0.3+ | 1.6+) | 2005 09 25 | 703 | 1.2+ | 1.3− |
| 2003 05 08 | 691 | 0.0 | 0.2+ | 2005 08 28 | 699 | (1.9+ | 0.4+) | 2005 09 25 | 703 | 0.0 | 0.5+ |
| 2003 05 08 | 691 | 0.1− | 0.1+ | 2005 08 28 | 699 | 0.8− | 1.1+ | 2005 09 27 | 704 | 0.1+ | 0.6− |
| 2005 07 30 | 644 | 0.3− | 0.2− | 2005 08 28 | 699 | 0.8− | 1.1+ | 2005 09 27 | 704 | 1.4− | 0.1− |
| 2005 07 30 | 644 | 0.0 | 0.2+ | 2005 09 13 | 703 | 0.9+ | 0.5+ | 2005 09 27 | 704 | 0.3− | 1.0− |
| 2005 07 30 | 644 | 0.1− | 0.1− | 2005 09 13 | 703 | 1.3+ | 1.3+ | 2005 09 27 | 704 | 0.6− | 0.1− |
| 2005 08 06 | E12 | 0.6+ | 0.4+ | 2005 09 13 | 703 | 0.7+ | 0.6− | 2006 11 16 | 621 | 0.3+ | 0.3+ |
| 2005 08 06 | E12 | 0.4+ | 0.3− | 2005 09 13 | 703 | 0.6+ | 0.5+ | 2006 11 16 | 621 | 0.1+ | 0.1+ |
| 2005 08 06 | E12 | 0.9− | 0.3− | 2005 09 22 | 644 | 0.3− | 0.3+ | 2006 11 16 | 621 | 0.0 | 0.5+ |
| 2005 08 06 | E12 | 0.6− | 0.3− | 2005 09 22 | 644 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.6− | 0.0 |
| 2005 08 27 | 644 | 0.1− | 0.1− | 2005 09 22 | 644 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2005 08 27 | 644 | 0.0 | 0.2− | 2005 09 25 | 703 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.2+ |
| 2005 08 27 | 644 | 0.0 | 0.2− | 2005 09 25 | 703 | 0.7+ | 0.4− | | | | |

**2005 QU$_{108}$ = 2006 WA$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.27687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17656302 | $\omega$ | 85.40901 | | +0.94212858 | −0.33052110 | |
| $a$ | 3.1468030 | $\Omega$ | 293.88302 | | +0.27808680 | +0.86395240 | |
| $e$ | 0.0312227 | $i$ | 3.51881 | | +0.18724709 | +0.37992374 | |
| $P$ | 5.58 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 21 | 291 | 0.0 | 0.1− | 2005 08 27 | 644 | 0.3− | 0.5+ | 2006 11 20 | 691 | 0.4+ | 0.3+ |
| 2002 01 21 | 291 | 0.2+ | 0.2− | 2005 08 31 | 691 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2002 01 21 | 291 | 0.2− | 0.3+ | 2005 08 31 | 691 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2005 08 09 | A50 | 0.6− | 0.3+ | 2005 08 31 | 691 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2005 08 09 | A50 | 0.4− | 0.1+ | 2005 09 14 | 691 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2005 08 27 | 644 | 0.1− | 0.3− | 2005 09 14 | 691 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.5− | 0.2− |
| 2005 08 27 | 644 | 0.3+ | 0.4− | 2005 09 14 | 691 | 0.1+ | 0.0 | | | | |

**2005 QW$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.54781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27178519 | $\omega$ | 45.49594 | | +0.93246222 | +0.36120834 | |
| $a$ | 2.3603996 | $\Omega$ | 293.32863 | | −0.33344364 | +0.85354088 | |
| $e$ | 0.2071674 | $i$ | 0.40795 | | −0.13903075 | +0.37549502 | |
| $P$ | 3.63 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 26 | 691 | 0.0 | 0.0 | 2005 08 30 | 691 | 0.2− | 0.1+ | 2005 09 30 | G96 | 0.1+ | 0.2− |
| 1998 11 26 | 691 | 0.1− | 0.1− | 2005 08 30 | 691 | 0.2− | 0.0 | 2005 09 30 | G96 | 0.0 | 0.3− |
| 1998 11 26 | 691 | 0.1+ | 0.1+ | 2005 08 30 | 691 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.1+ | 0.1− |
| 2000 02 05 | 695 | 0.2− | 1.1+ | 2005 09 13 | 691 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.2− | 0.2− |
| 2000 02 05 | 695 | 0.8+ | 0.3+ | 2005 09 13 | 691 | 0.1+ | 0.0 | 2005 10 27 | G96 | 0.1+ | 0.2+ |
| 2005 08 27 | 644 | 0.1+ | 0.2− | 2005 09 13 | 691 | 0.1− | 0.1+ | 2005 10 27 | G96 | 0.2− | 0.0 |
| 2005 08 27 | 644 | 0.4+ | 0.4+ | 2005 09 30 | G96 | 0.3+ | 0.0 | | | | |
| 2005 08 27 | 644 | 0.4+ | 0.3− | 2005 09 30 | G96 | 0.2+ | 0.4− | | | | |

**2005 QA$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.92403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18553586 | $\omega$ | 151.33699 | | −0.02010298 | +0.99016407 | |
| $a$ | 3.0445105 | $\Omega$ | 117.21300 | | −0.94443978 | +0.02663569 | |
| $e$ | 0.0222054 | $i$ | 8.95696 | | −0.32806914 | −0.13735231 | |
| $P$ | 5.31 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 23 | 691 | 1.6+ | 0.4+ | 2003 03 23 | 645 | 0.0 | 0.2+ | 2005 08 28 | 699 | 0.4− | 0.7+ |
| 1992 02 23 | 691 | 0.0 | 1.7− | 2003 03 23 | 645 | 0.0 | 0.2+ | 2005 08 28 | 699 | 1.3+ | 1.0+ |
| 1992 02 23 | 691 | 0.6− | 0.8− | 2003 03 26 | 699 | 0.3− | 0.2− | 2005 08 28 | 699 | 0.6− | 0.3+ |
| 1997 01 09 | 691 | 0.6− | 0.0 | 2003 03 26 | 699 | 0.4+ | 0.6+ | 2005 08 28 | 699 | 1.1− | 1.2+ |
| 1997 01 09 | 691 | 0.8− | 0.1+ | 2003 03 26 | 699 | 0.1+ | 0.0 | 2005 09 25 | 703 | 0.5− | 0.7− |
| 1997 01 09 | 691 | 0.7− | 0.1+ | 2003 03 26 | 699 | 0.1− | 0.2+ | 2005 09 25 | 703 | 1.0+ | 1.3+ |
| 1998 04 21 | 704 | (0.4+ | 3.7+) | 2003 03 31 | 645 | 0.1+ | 0.1+ | 2005 09 25 | 703 | 0.6− | 0.7− |
| 1998 04 21 | 704 | 0.9− | 1.2− | 2003 03 31 | 645 | 0.1+ | 0.1+ | 2005 09 25 | 703 | 0.6− | 1.0+ |
| 1998 04 21 | 704 | 0.0 | 1.1− | 2003 03 31 | 704 | 0.5+ | 0.1+ | 2006 11 25 | 703 | 0.4+ | 0.8+ |
| 1998 04 21 | 704 | 0.6− | 0.9− | 2003 03 31 | 704 | 1.0− | 1.0+ | 2006 11 25 | 703 | 0.1− | 0.4− |
| 2002 01 15 | 704 | 0.1+ | 0.6+ | 2003 03 31 | 704 | 1.3− | 0.2− | 2006 11 25 | 703 | 0.4+ | 0.4− |
| 2002 01 15 | 704 | 0.2− | 0.7+ | 2003 03 31 | 704 | 0.0 | 0.8+ | 2006 11 25 | 703 | 0.1− | 0.1− |
| 2002 01 15 | 704 | 0.4+ | 0.1+ | 2005 08 27 | 644 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.9+ | 0.7+ |
| 2002 01 15 | 704 | 0.4+ | 0.2+ | 2005 08 27 | 644 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.5+ | 1.0+ |
| 2002 01 15 | 704 | 0.3+ | 0.1+ | 2005 08 27 | 644 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.9+ |

**2005 QG$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.03143 | | | (2000.0) | | |
| $n$ | 0.12592521 | $\omega$ | 306.83346 | | +0.87383211 | +0.48620204 |
| $a$ | 3.9420996 | $\Omega$ | 24.07649 | | −0.44211097 | +0.79878637 |
| $e$ | 0.1913667 | $i$ | 0.70249 | | −0.20237424 | +0.35432741 |
| $P$ | 7.83 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 23 | 691 | 0.2+ | 0.1− | 2005 09 01 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.6+ | 1.2− |
| 1998 11 23 | 691 | 0.0 | 0.5− | 2005 09 01 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.7− |
| 1998 11 23 | 691 | 0.0 | 0.0 | 2005 09 11 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2005 08 08 | 807 | 0.2− | 0.1− | 2005 09 11 | 691 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.6+ |
| 2005 08 08 | 807 | 0.1− | 0.1− | 2005 09 11 | 691 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.3− | 0.4+ |
| 2005 08 09 | 807 | 0.1− | 0.2− | 2005 09 29 | G96 | 0.4+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2005 08 28 | 691 | 0.1+ | 0.7+ | 2005 09 29 | G96 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2005 08 28 | 691 | 0.3− | 0.3− | 2005 09 29 | G96 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.3+ |
| 2005 08 28 | 691 | 0.4+ | 0.2− | 2005 09 29 | G96 | 0.4+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2005 09 01 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.3− | 0.2+ |

**2005 QN$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.29997 | | | (2000.0) | | |
| $n$ | 0.20356513 | $\omega$ | 316.71231 | | −0.33338541 | −0.94212860 |
| $a$ | 2.8619835 | $\Omega$ | 152.70530 | | +0.88464518 | −0.32555947 |
| $e$ | 0.0823032 | $i$ | 4.41809 | | +0.32597096 | −0.08002955 |
| $P$ | 4.84 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 23 | I03 | 0.1− | 0.3+ | 2003 02 22 | 291 | 0.2− | 0.3+ | 2005 09 01 | 691 | 0.3− | 0.1+ |
| 2000 10 23 | I03 | 0.0 | 0.2+ | 2003 02 22 | 291 | 0.3− | 0.1− | 2005 09 01 | 691 | 0.4− | 0.2− |
| 2000 10 23 | I03 | 0.6− | 0.1+ | 2003 03 11 | 704 | 1.0+ | 0.5− | 2005 09 01 | 691 | 0.3− | 0.1− |
| 2001 11 17 | 704 | 0.7− | 0.4+ | 2003 03 11 | 704 | (1.7+ | 0.3−) | 2005 10 01 | G96 | 0.7+ | 0.3+ |
| 2001 11 17 | 704 | 0.6+ | 0.1+ | 2003 03 11 | 704 | 0.4+ | 0.7− | 2005 10 01 | G96 | 0.3+ | 0.2+ |
| 2001 11 17 | 704 | 0.3+ | 0.5+ | 2003 03 26 | 644 | 0.7+ | 0.3− | 2005 10 01 | G96 | 0.6− | 0.2+ |
| 2001 12 11 | 704 | 0.9− | 0.2+ | 2003 03 26 | 644 | 0.5+ | 0.8− | 2005 10 01 | G96 | 0.0 | 0.3+ |
| 2001 12 11 | 704 | 0.3− | 0.2+ | 2003 03 26 | 644 | 0.5+ | 0.7− | 2005 11 06 | G96 | 0.7+ | 0.3− |
| 2001 12 11 | 704 | 0.1+ | 0.3+ | 2003 03 26 | 699 | 1.2− | 0.3+ | 2005 11 06 | G96 | 0.1− | 0.3+ |
| 2001 12 11 | 704 | 1.0+ | 0.3+ | 2003 03 26 | 699 | 1.1− | 0.5+ | 2005 11 06 | G96 | 0.4− | 0.1+ |
| 2001 12 11 | 704 | 0.1− | 0.8− | 2003 03 26 | 699 | 0.4+ | 0.8− | 2005 11 06 | G96 | 0.2− | 0.1+ |
| 2003 02 01 | 291 | 0.0 | 0.2+ | 2003 03 26 | 699 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2003 02 01 | 291 | 0.3+ | 0.2+ | 2005 08 28 | 691 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2003 02 01 | 291 | 0.1+ | 0.4+ | 2005 08 28 | 691 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2003 02 22 | 291 | 0.1+ | 0.7+ | 2005 08 28 | 691 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.3− | 0.3− |

**2005 QT$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 232.25782 | | | (2000.0) | | |
| $n$ | 0.17125023 | $\omega$ | 10.71615 | | −0.99969725 | −0.01548941 |
| $a$ | 3.2115544 | $\Omega$ | 168.34529 | | +0.00877884 | −0.95038366 |
| $e$ | 0.0519279 | $i$ | 5.43030 | | +0.02298547 | −0.31069434 |
| $P$ | 5.76 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 0.5+ | 1.6+ | 2003 04 08 | 691 | 0.1− | 0.9− | 2005 08 28 | 691 | 0.0 | 0.3+ |
| 2002 01 14 | 704 | 0.2+ | 1.8+ | 2003 04 08 | 704 | 0.3− | 1.1+ | 2005 08 28 | 691 | 0.3+ | 0.3+ |
| 2002 01 14 | 704 | 0.0 | 2.2+ | 2003 04 08 | 704 | 0.9+ | 0.3+ | 2005 08 28 | 691 | 0.1+ | 0.2+ |
| 2003 03 27 | 699 | 0.6+ | 0.8− | 2003 04 08 | 691 | 0.3+ | 0.8− | 2005 08 29 | 291 | 0.8− | 0.5+ |
| 2003 03 27 | 699 | 0.1+ | 0.3+ | 2003 04 08 | 704 | 0.6+ | 0.0 | 2005 08 29 | 291 | 0.6− | 0.1+ |
| 2003 03 27 | 699 | 1.0+ | 0.8− | 2003 04 26 | 691 | 0.2− | 1.4+ | 2005 08 29 | 291 | 0.4− | 0.1+ |
| 2003 03 27 | 699 | 1.6+ | 0.6+ | 2003 04 26 | 691 | 0.0 | 1.3+ | 2005 09 01 | 691 | 0.0 | 0.3+ |
| 2003 04 03 | 699 | 2.2+ | 0.0 | 2003 04 26 | 691 | 0.2− | 1.8+ | 2005 09 01 | 691 | 0.1− | 0.1+ |
| 2003 04 03 | 699 | 0.3− | 0.7+ | 2003 05 02 | 691 | 0.4− | 0.2− | 2005 09 01 | 691 | 0.1+ | 0.1+ |
| 2003 04 03 | 699 | 0.1+ | 0.0 | 2003 05 02 | 691 | 0.4− | 0.1+ | 2005 09 11 | 691 | 0.1+ | 0.0 |
| 2003 04 03 | 699 | 0.8− | 1.2− | 2003 05 02 | 691 | 0.3− | 0.1+ | 2005 09 11 | 691 | 0.1+ | 0.0 |
| 2003 04 08 | 691 | 0.0 | 0.8− | 2005 07 30 | 644 | 0.3+ | 0.1+ | 2005 09 11 | 691 | 0.2+ | 0.1+ |
| 2003 04 08 | 704 | 1.9+ | 0.3+ | 2005 07 30 | 644 | 0.5+ | 0.3+ | | | | |
| 2003 04 08 | 704 | 0.3− | 0.3− | 2005 07 30 | 644 | 0.2+ | 0.1− | | | | |

**2005 QQ$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.01600 | | | (2000.0) | | |
| $n$ | 0.22820099 | $\omega$ | 324.81570 | | −0.61659663 | −0.78642761 |
| $a$ | 2.6521069 | $\Omega$ | 163.15503 | | +0.74817590 | −0.59980988 |
| $e$ | 0.1592733 | $i$ | 7.25767 | | +0.24503352 | −0.14751173 |
| $P$ | 4.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 704 | 0.7− | 0.1+ | 2003 03 06 | 644 | 0.4+ | 0.2+ | 2005 08 28 | 691 | 0.0 | 0.1− |
| 2003 01 31 | 704 | 0.1− | 0.6+ | 2003 03 06 | 644 | 0.5+ | 0.3+ | 2005 08 28 | 691 | 0.4− | 0.1+ |
| 2003 01 31 | 704 | 0.7− | 0.0 | 2003 03 06 | 644 | 0.3+ | 0.3+ | 2005 09 01 | 691 | 0.2− | 0.1− |
| 2003 02 22 | 644 | 0.1− | 0.1− | 2003 03 12 | 644 | 0.4+ | 0.5+ | 2005 09 01 | 691 | 0.0 | 0.1+ |
| 2003 02 22 | 644 | 0.3− | 0.2− | 2003 03 12 | 644 | 0.4+ | 0.3+ | 2005 09 01 | 691 | 0.1− | 0.1+ |
| 2003 02 22 | 644 | 0.1− | 0.2− | 2003 03 12 | 644 | 0.3+ | 0.4+ | 2005 10 01 | G96 | 0.0 | 0.2+ |
| 2003 03 06 | 699 | 1.4+ | 0.5+ | 2005 07 12 | 291 | 0.6− | 0.4+ | 2005 10 01 | G96 | 0.9+ | 0.0 |
| 2003 03 06 | 699 | 0.1+ | 0.5+ | 2005 07 12 | 291 | 0.1+ | 0.6+ | 2005 10 01 | G96 | 0.8+ | 0.1+ |
| 2003 03 06 | 699 | 1.1− | 0.3+ | 2005 07 12 | 291 | 0.4+ | 0.4+ | 2005 10 01 | G96 | 0.5+ | 0.1+ |
| 2003 03 06 | 699 | 0.3+ | 0.8+ | 2005 08 28 | 691 | 0.0 | 0.0 | | | | |

**2005 QG$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 187.09970 | | | (2000.0) | | |
| $n$ | 0.26201534 | $\omega$ | 105.86177 | | −0.53877204 | +0.84242179 |
| $a$ | 2.4187162 | $\Omega$ | 131.53595 | | −0.77651137 | −0.49332151 |
| $e$ | 0.1735091 | $i$ | 0.54242 | | −0.32673350 | −0.21670121 |
| $P$ | 3.76 | $H$ | 17.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 691 | 0.4− | 0.4− | 2004 02 26 | 333 | 0.0 | 0.2+ | 2005 08 28 | 691 | 0.1− | 0.4+ |
| 2000 01 11 | 691 | 0.0 | 0.5− | 2004 02 26 | 333 | 0.5− | 0.3+ | 2005 08 28 | 691 | 0.4− | 0.5+ |
| 2000 01 11 | 691 | 0.5− | 0.5− | 2004 02 29 | 291 | 0.1+ | 0.6+ | 2005 09 01 | 691 | 0.2− | 0.0 |
| 2000 02 03 | 691 | 0.3+ | 0.3+ | 2004 02 29 | 291 | 0.4+ | 0.6+ | 2005 09 01 | 691 | 0.4− | 0.3+ |
| 2000 02 03 | 691 | 0.1+ | 0.5+ | 2004 02 29 | 291 | 0.6+ | 0.7+ | 2005 09 01 | 691 | 0.5− | 0.4+ |
| 2000 02 03 | 691 | 0.5+ | 0.5+ | 2004 03 14 | 691 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.3+ | 0.3+ |
| 2001 08 21 | 807 | 0.0 | 0.1− | 2004 03 14 | 691 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.2+ | 0.2+ |
| 2001 08 21 | 807 | 0.0 | 0.0 | 2004 03 14 | 691 | 0.1+ | 0.4+ | 2005 09 11 | 691 | 0.0 | 0.5+ |
| 2004 02 26 | 333 | 0.6+ | 2.6+ | 2005 08 28 | 691 | 0.2− | 0.7+ | | | | |

**2005 QX$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.56027 | | | (2000.0) | | |
| $n$ | 0.25631455 | $\omega$ | 29.23554 | | −0.30288574 | −0.95211494 |
| $a$ | 2.4544482 | $\Omega$ | 78.42152 | | +0.86591128 | −0.29320384 |
| $e$ | 0.1350017 | $i$ | 2.43853 | | +0.39806769 | −0.08665241 |
| $P$ | 3.85 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 645 | 0.1− | 0.0 | 2003 02 01 | 704 | 0.9+ | 0.5+ | 2005 09 11 | 691 | 0.1− | 0.0 |
| 2003 01 25 | 645 | 0.1− | 0.1− | 2005 08 28 | 691 | 0.1− | 0.2+ | 2005 09 11 | 691 | 0.3− | 0.3+ |
| 2003 01 29 | 644 | 0.2+ | 0.4+ | 2005 08 28 | 691 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2003 01 29 | 644 | 0.4+ | 0.5+ | 2005 08 28 | 691 | 0.6+ | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2003 01 29 | 644 | 0.1+ | 0.1− | 2005 09 01 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2003 02 01 | 704 | 0.8+ | 0.8− | 2005 09 01 | 691 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.6+ |
| 2003 02 01 | 704 | 0.8+ | 0.6+ | 2005 09 01 | 691 | 0.1+ | 0.2− | | | | |
| 2003 02 01 | 704 | (0.2− | 1.9+) | 2005 09 11 | 691 | 0.1− | 0.0 | | | | |

**2005 QB$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.07502 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22551765 | $\omega$ | 287.72990 | | +0.81444970 | +0.58013383 | |
| $a$ | 2.6731030 | $\Omega$ | 36.81223 | | −0.52529910 | +0.74511031 | |
| $e$ | 0.0687792 | $i$ | 1.03180 | | −0.24643971 | +0.32902184 | |
| $P$ | 4.37 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.1− | 0.7+ | 2005 09 01 | 691 | 0.1+ | 0.3− | 2005 10 01 | G96 | 0.3− | 0.6− |
| 1992 09 30 | 691 | 0.1+ | 0.5+ | 2005 09 11 | 691 | 0.4+ | 0.3+ | 2005 10 25 | G96 | 0.2− | 0.6− |
| 1992 09 30 | 691 | 0.9− | 0.7+ | 2005 09 11 | 691 | 0.5+ | 0.1+ | 2005 10 25 | G96 | 0.1− | 0.2− |
| 2001 11 12 | 691 | 0.0 | 0.3− | 2005 09 11 | 691 | 0.0 | 0.4+ | 2005 10 25 | G96 | 0.1− | 0.1− |
| 2001 11 12 | 691 | 0.1− | 0.2− | 2005 10 01 | G96 | 0.2+ | 0.2− | 2005 10 25 | G96 | 0.7− | 0.4− |
| 2001 11 12 | 691 | 0.3+ | 0.1− | 2005 10 01 | G96 | 0.0 | 0.3− | 2005 12 02 | G96 | 0.0 | 0.4− |
| 2005 08 28 | 691 | 0.0 | 0.2− | 2005 10 01 | G96 | 0.2− | 0.2− | 2005 12 02 | G96 | 0.4+ | 0.6+ |
| 2005 08 28 | 691 | 0.1+ | 0.3− | 2005 10 01 | G96 | 0.3− | 0.2− | 2005 12 02 | G96 | 0.3+ | 0.1− |
| 2005 08 28 | 691 | 0.0 | 0.2− | 2005 10 01 | G96 | 0.0 | 0.4− | 2005 12 02 | G96 | 0.3− | 0.4− |
| 2005 09 01 | 691 | 0.2− | 0.2− | 2005 10 01 | G96 | 0.2+ | 0.7− | | | | |
| 2005 09 01 | 691 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.2+ | 0.2− | | | | |

**2005 QG$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.19896 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18359128 | $\omega$ | 213.72771 | | +0.36785545 | +0.92965084 | |
| $a$ | 3.0659708 | $\Omega$ | 77.86326 | | −0.84838849 | +0.34468013 | |
| $e$ | 0.2055762 | $i$ | 1.21773 | | −0.38068272 | +0.13017263 | |
| $P$ | 5.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.1+ | 0.0 | 2005 08 28 | 691 | 0.0 | 0.2− | 2005 09 29 | G96 | 0.2− | 0.3− |
| 2000 10 02 | 691 | 0.1+ | 0.2+ | 2005 09 01 | 691 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.2+ | 0.1− |
| 2000 10 02 | 691 | 0.4− | 0.2+ | 2005 09 01 | 691 | 0.3+ | 0.2− | 2005 09 29 | G96 | 0.0 | 0.1+ |
| 2004 05 19 | 691 | 0.3+ | 0.1+ | 2005 09 01 | 691 | 0.0 | 0.1− | 2005 12 01 | G96 | 0.1+ | 0.5+ |
| 2004 05 19 | 691 | 0.1− | 0.1+ | 2005 09 11 | 691 | 0.1− | 0.1+ | 2005 12 01 | G96 | 0.4+ | 0.3+ |
| 2004 05 19 | 691 | 0.1− | 0.1+ | 2005 09 11 | 691 | 0.2− | 0.4+ | 2005 12 01 | G96 | 0.5− | 0.3+ |
| 2005 08 28 | 691 | 0.2+ | 0.0 | 2005 09 11 | 691 | 0.1+ | 0.1− | 2005 12 01 | G96 | 0.2− | 0.1− |
| 2005 08 28 | 691 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.6− | 0.1− | | | | |

**2005 QV$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.28024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24026250 | $\omega$ | 308.69535 | | −0.30103012 | −0.95264927 | |
| $a$ | 2.5625876 | $\Omega$ | 158.70495 | | +0.90749755 | −0.30000219 | |
| $e$ | 0.1646206 | $i$ | 6.78364 | | +0.29296598 | −0.04957870 | |
| $P$ | 4.10 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 26 | 599 | 0.7− | 0.3+ | 2003 03 25 | 291 | 0.0 | 0.0 | 2005 08 28 | 691 | 0.3− | 0.1+ |
| 2003 02 26 | 599 | 0.1− | 0.1+ | 2003 03 25 | 291 | 0.4+ | 0.1− | 2005 08 28 | 691 | 0.3− | 0.1− |
| 2003 02 26 | 599 | 0.3− | 0.0 | 2003 04 01 | 645 | 0.2− | 0.3− | 2005 09 01 | 691 | 0.1+ | 0.3+ |
| 2003 02 26 | 599 | 0.3− | 0.2− | 2003 04 01 | 645 | 0.1− | 0.3− | 2005 09 01 | 691 | 0.1+ | 0.1+ |
| 2003 03 08 | 291 | 0.1− | 0.5+ | 2003 04 07 | 691 | 0.3+ | 1.0+ | 2005 09 01 | 691 | 0.1+ | 0.2+ |
| 2003 03 08 | 291 | 0.1+ | 0.2+ | 2003 04 07 | 691 | 0.2+ | 1.0+ | 2005 09 11 | 691 | 0.5− | 0.1− |
| 2003 03 08 | 291 | 0.5+ | 0.3+ | 2003 04 07 | 691 | 0.3+ | 0.9+ | 2005 09 11 | 691 | 0.4+ | 0.3− |
| 2003 03 25 | 291 | 0.2+ | 0.4− | 2005 08 28 | 691 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.3+ | 0.1+ |

**2005 QG$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.00061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18197693 | $\omega$ | 222.23980 | | −0.93015573 | +0.36617047 | |
| $a$ | 3.0840767 | $\Omega$ | 339.19297 | | −0.31325560 | −0.82980582 | |
| $e$ | 0.1091674 | $i$ | 4.36070 | | −0.19152347 | −0.42111933 | |
| $P$ | 5.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 691 | 0.2+ | 0.1+ | 2005 09 01 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2003 04 09 | 691 | 0.1− | 0.4+ | 2005 09 01 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2+ | 0.1− |
| 2003 04 09 | 691 | 0.3+ | 0.1+ | 2005 09 11 | 691 | 0.1+ | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2005 08 28 | 291 | 0.4+ | 0.3+ | 2005 09 11 | 691 | 0.3+ | 0.4− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2005 08 28 | 291 | 0.3+ | 0.2+ | 2005 09 11 | 691 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.4+ | 0.2+ |
| 2005 08 28 | 291 | 0.0 | 0.2+ | 2005 09 30 | G96 | 0.6− | 0.5− | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2005 08 28 | 291 | 0.4− | 0.2+ | 2005 09 30 | G96 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2005 08 28 | 291 | 0.0 | 0.2+ | 2005 09 30 | G96 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.6− | 0.4− |
| 2005 08 28 | 291 | 0.0 | 0.2+ | 2005 09 30 | G96 | 0.7− | 0.1− | 2006 11 14 | G96 | 0.6− | 0.4− |
| 2005 09 01 | 691 | 0.5− | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.1− | | | | |

**2005 QW$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.08522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19986366 | $\omega$ | 8.13630 | | +0.53112039 | −0.84653126 | |
| $a$ | 2.8972113 | $\Omega$ | 49.79064 | | +0.77470136 | +0.46796943 | |
| $e$ | 0.0635120 | $i$ | 2.70185 | | +0.34314564 | +0.25375075 | |
| $P$ | 4.93 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 691 | 0.4+ | 0.9+ | 2005 09 11 | 691 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.1− | 0.3+ |
| 2003 04 26 | 691 | 0.1+ | 0.9+ | 2005 10 29 | G96 | 0.6+ | 0.1− | 2006 12 01 | G96 | 0.2− | 0.7+ |
| 2003 04 26 | 691 | 0.6+ | 0.7+ | 2005 10 29 | G96 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.6+ |
| 2005 08 28 | 691 | 0.3− | 0.2+ | 2005 10 29 | G96 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.2+ |
| 2005 08 28 | 691 | 0.3− | 0.1+ | 2005 10 29 | G96 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.5+ |
| 2005 08 28 | 691 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.6+ | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2005 09 01 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.1+ |
| 2005 09 01 | 691 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2005 09 01 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.6+ | 0.0 | 2006 12 01 | G96 | 0.4− | 0.2+ |
| 2005 09 11 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.3+ |
| 2005 09 11 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.3− | 0.2+ | | | | |

**2005 QR$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.73989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29763535 | $\omega$ | 295.70030 | | +0.56434520 | +0.82531229 | |
| $a$ | 2.2216708 | $\Omega$ | 8.73392 | | −0.70440473 | +0.49362261 | |
| $e$ | 0.1740065 | $i$ | 7.31816 | | −0.43049794 | +0.27421951 | |
| $P$ | 3.31 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 0.2+ | 0.1+ | 2005 08 22 | 644 | 0.2+ | 0.3+ | 2005 09 08 | E12 | 0.3+ | 0.1− |
| 2001 03 16 | 691 | 0.2+ | 0.4+ | 2005 08 22 | 644 | 0.0 | 0.1− | 2005 09 08 | E12 | 0.1+ | 0.6+ |
| 2001 03 16 | 691 | 0.1+ | 0.4+ | 2005 08 28 | E12 | 0.1+ | 0.1+ | 2005 09 08 | E12 | 0.9− | 0.1− |
| 2002 10 31 | 644 | 0.4− | 0.9+ | 2005 08 28 | E12 | 0.2+ | 0.8− | 2005 10 04 | 644 | 0.3− | 0.0 |
| 2002 10 31 | 644 | 0.4− | 0.8+ | 2005 08 28 | E12 | 0.1− | 0.2− | 2005 10 04 | 644 | 0.3− | 0.0 |
| 2002 10 31 | 644 | 0.4− | 0.8+ | 2005 08 28 | E12 | 0.1+ | 0.5− | 2005 10 04 | 644 | 0.4− | 0.3− |
| 2005 07 26 | 644 | 0.3− | 0.6+ | 2005 09 01 | 644 | 0.1+ | 0.3+ | 2005 11 06 | G96 | 0.3+ | 0.2− |
| 2005 07 26 | 644 | 0.2− | 0.5+ | 2005 09 01 | 644 | 0.2+ | 0.4+ | 2005 11 06 | G96 | 0.3+ | 0.4− |
| 2005 07 26 | 644 | 0.3− | 0.3+ | 2005 09 01 | 644 | 0.3+ | 0.3+ | 2005 11 06 | G96 | 0.3+ | 0.1+ |
| 2005 08 22 | 644 | 0.1− | 0.3+ | 2005 09 08 | E12 | 0.6− | 0.4+ | 2005 11 06 | G96 | 0.2+ | 0.1− |

**2005 QH$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.16475 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.39231481 | $\omega$ | 206.15511 | | −0.81397522 | | +0.57688742 |
| $a$ | 1.8480466 | $\Omega$ | 9.96258 | | −0.43951648 | | −0.53489436 |
| $e$ | 0.0510838 | $i$ | 23.20077 | | −0.37982838 | | −0.61732401 |
| $P$ | 2.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 0.2+ | 0.8− | 2005 08 27 | E12 | 1.0− | 0.7− | 2005 11 29 | G96 | 0.2+ | 0.3+ |
| 2000 10 02 | 699 | 1.0− | 0.7+ | 2005 08 27 | E12 | 0.3− | 0.6+ | 2005 11 30 | G96 | 0.2+ | 0.3+ |
| 2000 10 02 | 699 | 0.4− | 0.8+ | 2005 08 27 | E12 | 1.0− | 0.0 | 2005 11 30 | G96 | 0.5+ | 0.5− |
| 2000 10 02 | 699 | 0.4− | 1.0+ | 2005 08 27 | E12 | 0.2− | 0.3+ | 2005 11 30 | G96 | 0.1− | 0.1− |
| 2005 07 28 | 644 | 0.4+ | 0.4+ | 2005 08 27 | E12 | 0.1+ | 0.3+ | 2005 11 30 | G96 | 0.2− | 0.2+ |
| 2005 07 28 | 644 | 0.3+ | 0.2+ | 2005 08 27 | E12 | 0.3+ | 0.4+ | 2006 11 21 | G96 | 0.6− | 0.4− |
| 2005 07 28 | 644 | 0.4+ | 0.1− | 2005 08 27 | E12 | 0.3− | 0.3− | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2005 07 28 | 644 | 0.2+ | 0.3+ | 2005 09 02 | 644 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2005 07 28 | 644 | 0.3− | 0.4+ | 2005 09 02 | 644 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.4+ |
| 2005 07 28 | 644 | 0.4+ | 0.2+ | 2005 09 02 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | (2.4− | 1.1+) |
| 2005 08 08 | E12 | 1.6+ | 0.8− | 2005 09 25 | 703 | 1.2− | 0.6− | 2006 11 23 | G96 | 0.4+ | 0.6− |
| 2005 08 08 | E12 | 0.5+ | 0.4− | 2005 09 25 | 703 | 0.4+ | 0.9− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2005 08 08 | E12 | 0.7+ | 0.1+ | 2005 09 25 | 703 | 1.0+ | 1.5− | 2006 11 23 | G96 | 0.7− | 0.0 |
| 2005 08 08 | E12 | 0.4+ | 0.4+ | 2005 11 29 | G96 | 1.6+ | 1.6− | | | | |
| 2005 08 27 | E12 | 1.1− | 0.3− | 2005 11 29 | G96 | 0.3− | 0.9+ | | | | |

**2005 QN$_{149}$ = 2006 VA$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.76106 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19086422 | $\omega$ | 192.41173 | | +0.17097484 | | +0.96654240 |
| $a$ | 2.9875811 | $\Omega$ | 87.66368 | | −0.88682256 | | +0.23552857 |
| $e$ | 0.0876346 | $i$ | 11.03302 | | −0.42931730 | | −0.10159761 |
| $P$ | 5.16 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 28 | E12 | 0.5+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2005 08 28 | E12 | 0.2+ | 0.9+ | 2006 11 15 | G96 | 0.3− | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2005 08 28 | E12 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2005 08 28 | E12 | 0.7+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2005 09 02 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 1.1− | 0.5− | 2006 11 28 | 704 | 0.2− | 0.2+ |
| 2005 09 02 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.0 |
| 2005 09 02 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | (0.6− | 1.8+) | 2006 11 28 | 704 | 0.6+ | 0.3+ |
| 2005 09 06 | I10 | 1.4− | 1.3− | 2006 11 22 | G96 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2005 09 06 | I10 | (1.8− | 2.1−) | 2006 11 22 | G96 | 0.2+ | 0.0 | | | | |
| 2005 09 06 | I10 | (1.8− | 1.3−) | 2006 11 22 | G96 | 0.1+ | 0.4− | | | | |

**2005 QC$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.41061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18470110 | $\omega$ | 236.21274 | | +0.73141673 | | −0.68043505 |
| $a$ | 3.0536768 | $\Omega$ | 166.47400 | | +0.67191015 | | +0.70778191 |
| $e$ | 0.2252130 | $i$ | 11.12815 | | +0.11647454 | | +0.18987602 |
| $P$ | 5.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.4− | 0.2+ | 2005 09 05 | 461 | 0.2− | 0.0 | 2005 10 05 | 701 | 0.1− | 0.7− |
| 2002 02 06 | 644 | 0.1+ | 0.3+ | 2005 09 05 | 461 | 0.2− | 0.2+ | 2005 10 05 | 701 | 0.1+ | 0.3− |
| 2002 02 16 | 644 | 0.3+ | 0.1− | 2005 09 06 | 461 | 0.3+ | 0.3− | 2005 10 05 | 701 | 0.1+ | 0.5− |
| 2002 02 16 | 644 | 0.5− | 0.7+ | 2005 09 06 | 461 | 0.3+ | 0.3+ | 2005 10 29 | G96 | 0.4+ | 0.1− |
| 2002 02 16 | 644 | 0.6+ | 0.6− | 2005 09 29 | G96 | 0.1+ | 0.4+ | 2005 10 29 | G96 | 0.4− | 0.3− |
| 2005 08 31 | 461 | 0.6− | 0.3+ | 2005 09 29 | G96 | 0.0 | 0.3+ | 2005 10 29 | G96 | 0.2− | 0.2+ |
| 2005 08 31 | 461 | 0.0 | 0.3+ | 2005 09 29 | G96 | 0.0 | 0.3+ | 2005 10 29 | G96 | 0.5− | 0.1− |
| 2005 09 05 | 461 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.6+ | 0.3+ | | | | |

**2005 QL$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.19452 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23894998 | $\omega$ | 104.57430 | | +0.56037328 | | −0.80695320 |
| $a$ | 2.5719630 | $\Omega$ | 309.79014 | | +0.63519371 | | +0.56327525 |
| $e$ | 0.1177355 | $i$ | 14.05216 | | +0.53151739 | | +0.17761623 |
| $P$ | 4.12 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2001 09 26 | 704 | 0.8− | 0.1+ | 2005 08 29 | 644 | 0.1− | 0.3+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2003 02 07 | 644 | 0.0 | 0.3+ | 2005 08 29 | 644 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.3+ | 0.9+ | 2003 02 07 | 644 | 0.1− | 0.3+ | 2005 08 30 | 644 | 0.3− | 0.3+ |
| 2001 09 12 | 704 | 1.8− | 1.1− | 2003 02 07 | 644 | 0.1+ | 0.4+ | 2005 08 30 | 644 | 0.3+ | 0.3+ |
| 2001 09 12 | 704 | 1.2− | 0.4+ | 2005 08 26 | 644 | 1.0− | 0.4− | 2005 08 30 | 644 | 0.1− | 0.3+ |
| 2001 09 12 | 704 | 1.4+ | 0.4− | 2005 08 26 | 644 | 0.0 | 0.2+ | 2005 08 30 | 644 | 0.1− | 0.0 |
| 2001 09 21 | 699 | 0.4− | 0.3− | 2005 08 26 | 644 | 0.1− | 0.1+ | 2005 08 30 | 644 | 0.2− | 0.1+ |
| 2001 09 21 | 699 | 0.4− | 1.2+ | 2005 08 27 | 699 | 0.4+ | 0.6+ | 2005 08 30 | 644 | 0.1− | 0.1+ |
| 2001 09 21 | 699 | 0.1− | 0.4− | 2005 08 27 | 699 | 1.8+ | 0.8+ | 2005 11 04 | G96 | 0.2− | 0.4− |
| 2001 09 21 | 699 | 1.0+ | 0.4+ | 2005 08 27 | 699 | 0.4− | 1.4+ | 2005 11 04 | G96 | 0.1+ | 0.3− |
| 2001 09 26 | 704 | 1.2+ | 0.5− | 2005 08 27 | 699 | 1.6− | 0.5− | 2005 11 04 | G96 | 0.2− | 0.3− |
| 2001 09 26 | 704 | 0.0 | 0.2+ | 2005 08 29 | 644 | 0.0 | 0.3+ | 2005 11 04 | G96 | 0.1+ | 0.2− |

**2005 QC$_{156}$ = 2002 AZ$_{207}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.62839 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18818316 | $\omega$ | 42.63492 | | +0.98109067 | | −0.08305852 |
| $a$ | 3.0158903 | $\Omega$ | 321.08062 | | −0.03461664 | | +0.81337592 |
| $e$ | 0.0693073 | $i$ | 16.15740 | | +0.19042788 | | +0.57577851 |
| $P$ | 5.24 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 644 | 0.1+ | 0.2+ | 2005 09 01 | 644 | 0.3+ | 0.0 | 2005 09 26 | 703 | 0.3+ | 0.3− |
| 2002 01 13 | 644 | 0.4+ | 0.4+ | 2005 09 01 | 644 | 0.3+ | 0.0 | 2005 09 26 | 703 | 0.2− | 0.5+ |
| 2002 01 13 | 644 | 0.2− | 0.1+ | 2005 09 01 | 644 | 0.4+ | 0.1+ | 2005 09 26 | 644 | 0.4+ | 0.3+ |
| 2002 01 14 | 645 | 0.1− | 0.4− | 2005 09 12 | 704 | 1.2− | 0.5+ | 2005 10 22 | 644 | 0.5− | 0.1+ |
| 2002 01 14 | 645 | 0.2− | 0.3− | 2005 09 12 | 704 | 0.8− | 0.2+ | 2005 10 22 | 644 | 0.3− | 0.2+ |
| 2005 08 30 | 644 | 0.4+ | 0.1− | 2005 09 12 | 704 | 0.4− | 0.8+ | 2005 10 22 | 644 | 0.4− | 0.3+ |
| 2005 08 30 | 644 | 0.4+ | 0.2− | 2005 09 12 | 704 | 1.5− | 0.6− | 2005 10 28 | 703 | 0.7− | 1.0− |
| 2005 08 30 | 644 | 0.6+ | 0.1− | 2005 09 26 | 644 | 0.2+ | 0.4+ | 2005 10 28 | 703 | 1.0+ | 0.1− |
| 2005 09 01 | 644 | 0.3+ | 0.1+ | 2005 09 26 | 703 | 0.4− | 0.0 | 2005 10 28 | 703 | 0.3− | 0.7− |
| 2005 09 01 | 644 | 0.3+ | 0.0 | 2005 09 26 | 644 | 0.2+ | 0.3+ | 2005 10 28 | 703 | 1.4+ | 0.1− |
| 2005 09 01 | 644 | 0.5+ | 0.5− | 2005 09 26 | 703 | 0.1+ | 0.5− | | | | |

**2005 QF$_{156}$ = 2006 WD$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.42994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17506414 | $\omega$ | 77.18617 | | +0.57868245 | | +0.79279814 |
| $a$ | 3.1647392 | $\Omega$ | 229.85593 | | −0.81104249 | | +0.53478927 |
| $e$ | 0.2079098 | $i$ | 14.49291 | | −0.08565455 | | +0.29235516 |
| $P$ | 5.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 23 | 691 | 0.1+ | 0.2+ | 2005 09 30 | 703 | 1.3+ | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.2+ |
| 2000 11 23 | 691 | 0.1− | 0.2+ | 2005 09 30 | 703 | 1.5+ | 0.5− | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2000 11 23 | 691 | 0.0 | 0.1− | 2005 09 30 | 703 | 0.2− | 0.7− | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2004 05 19 | 691 | 0.1+ | 0.1+ | 2005 10 06 | 699 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.3+ |
| 2004 05 19 | 691 | 0.0 | 0.2+ | 2005 10 06 | 699 | 0.3− | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2004 05 19 | 691 | 0.0 | 0.3+ | 2005 10 06 | 699 | 1.4+ | 0.5− | 2006 11 20 | G96 | 0.2− | 0.4− |
| 2005 08 30 | 644 | 0.0 | 0.1+ | 2005 10 06 | 699 | 0.3− | 0.2+ | 2006 11 20 | G96 | 0.5+ | 0.1+ |
| 2005 08 30 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2005 08 30 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.2− | 0.1+ |
| 2005 09 01 | 699 | 1.2− | 0.8− | 2006 11 17 | G96 | 0.4+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2005 09 01 | 699 | 0.9− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2005 09 01 | 699 | 0.3+ | 0.9+ | 2006 11 17 | G96 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.6− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 01 | 699 | 0.7− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.2+ |
| 2005 09 30 | 703 | 0.6− | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.2+ | | | | |

**2005 QJ$_{156}$ = 2006 WW$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.83831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18999823 | $\omega$ | 112.99875 | | +0.58788662 | −0.79804909 | |
| $a$ | 2.9966523 | $\Omega$ | 300.32611 | | +0.67468455 | +0.57395383 | |
| $e$ | 0.1558644 | $i$ | 8.81759 | | +0.44630716 | +0.18356103 | |
| $P$ | 5.19 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 30 | 644 | 0.4− | 0.0 | 2005 10 01 | 703 | 0.5− | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2005 08 30 | 644 | 0.5− | 0.1− | 2005 10 01 | 703 | (0.6+ | 3.2+) | 2006 11 22 | G96 | 0.4− | 0.8− |
| 2005 08 30 | 644 | 0.3− | 0.2+ | 2005 10 02 | 699 | 0.4+ | 0.8− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2005 09 01 | 599 | 0.3+ | 0.3+ | 2005 10 02 | 699 | 0.6− | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.6+ |
| 2005 09 01 | 599 | 0.4+ | 0.1+ | 2005 10 02 | 699 | 0.4− | 0.4− | 2006 11 22 | G96 | 0.5− | 0.3− |
| 2005 09 01 | 599 | 0.1− | 0.1+ | 2005 10 02 | 699 | 1.1+ | 0.2+ | 2006 11 28 | G96 | 0.0 | 0.2+ |
| 2005 09 01 | 599 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.3+ | 2006 11 28 | G96 | 0.0 | 0.5+ |
| 2005 10 01 | 703 | (1.9+ | 1.2+) | 2006 11 21 | G96 | 0.3+ | 0.1− | 2006 11 28 | G96 | 0.0 | 0.1− |
| 2005 10 01 | 703 | 0.0 | 1.1+ | 2006 11 21 | G96 | 0.3+ | 0.3+ | 2006 11 28 | G96 | 0.4− | 0.4− |

**2005 QT$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.73641 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22868721 | $\omega$ | 110.01110 | | +0.72190633 | −0.66744839 | |
| $a$ | 2.6483464 | $\Omega$ | 292.34075 | | +0.53782666 | +0.70727053 | |
| $e$ | 0.0948603 | $i$ | 11.38968 | | +0.43542363 | +0.23298294 | |
| $P$ | 4.31 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 699 | (2.0+ | 2.4+) | 2005 09 30 | 644 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.2+ |
| 2003 03 10 | 699 | (2.2+ | 2.6+) | 2005 09 30 | 644 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.5+ | 0.2+ |
| 2003 03 10 | 699 | 0.1+ | 0.5− | 2005 10 03 | 703 | 1.3− | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2003 03 10 | 699 | 0.2− | 0.3+ | 2005 10 03 | 703 | 0.3− | 0.8− | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2005 08 30 | 644 | 0.2+ | 0.1− | 2005 10 03 | 703 | 0.8+ | 1.1− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2005 08 30 | 644 | 0.2+ | 0.1− | 2005 10 03 | 703 | (0.7− | 1.8−) | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2005 08 30 | 644 | 0.3+ | 0.0 | 2005 10 06 | 699 | (2.2+ | 2.1+) | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2005 09 01 | 704 | 0.1+ | 0.5− | 2005 10 06 | 699 | (0.2− | 1.8+) | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2005 09 01 | 704 | 0.3+ | 0.2− | 2005 10 06 | 699 | 0.3+ | 1.4+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2005 09 01 | 704 | 0.4− | 0.4+ | 2005 10 06 | 699 | 1.0+ | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2005 09 26 | 703 | 0.3− | 0.5− | 2005 10 08 | 703 | 1.2− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2005 09 26 | 703 | 0.3− | 0.9+ | 2005 10 08 | 703 | 0.0 | 0.8− | 2006 11 28 | G96 | 0.1+ | 0.2+ |
| 2005 09 26 | 703 | (1.7+ | 1.0+) | 2005 10 08 | 703 | 0.2+ | 0.2+ | 2006 11 28 | G96 | 0.1− | 0.1− |
| 2005 09 26 | 703 | 0.2+ | 0.4− | 2005 10 08 | 703 | 0.7− | 0.4− | 2006 11 28 | G96 | 0.0 | 0.1− |
| 2005 09 30 | 644 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.1− | 2006 11 28 | G96 | 0.2+ | 0.2+ |

**2005 QX$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.56220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12327661 | $\omega$ | 67.77216 | | +0.74385820 | +0.64669417 | |
| $a$ | 3.9983634 | $\Omega$ | 251.50380 | | −0.65978672 | +0.67031103 | |
| $e$ | 0.2608106 | $i$ | 10.24717 | | −0.10656672 | +0.36396398 | |
| $P$ | 8.00 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 09 | 703 | 0.0 | 0.3+ | 2005 09 03 | 683 | (0.8+ | 2.1−) | 2005 10 01 | 703 | 0.4− | 0.2− |
| 2005 07 09 | 703 | 0.2− | 0.4+ | 2005 09 03 | 683 | (2.0+ | 0.7−) | 2005 10 07 | 703 | 1.1+ | 0.1− |
| 2005 07 09 | 703 | (0.4− | 2.0+) | 2005 09 03 | 683 | 0.4− | 0.5+ | 2005 10 07 | 703 | 0.2− | 0.1+ |
| 2005 07 09 | 703 | 0.0 | 0.0 | 2005 09 11 | 704 | (2.0+ | 0.6+) | 2005 10 07 | 703 | 0.1+ | 1.1− |
| 2005 08 30 | 644 | 0.0 | 0.5− | 2005 09 11 | 704 | 0.2+ | 0.9+ | 2005 10 07 | 703 | 1.0+ | 0.6+ |
| 2005 08 30 | 644 | 0.0 | 0.4− | 2005 09 11 | 704 | 0.4− | 0.2− | 2006 11 13 | 691 | 0.9+ | 1.4+ |
| 2005 08 30 | 644 | 0.1− | 0.4− | 2005 09 11 | 704 | 0.4+ | 0.9+ | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2005 08 31 | 699 | 0.9+ | 0.7− | 2005 09 11 | 704 | 0.4+ | 0.8+ | 2006 11 13 | 691 | 0.2− | 0.3− |
| 2005 08 31 | 699 | (1.8+ | 0.7−) | 2005 09 30 | 644 | 0.1− | 0.5− | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2005 08 31 | 699 | 0.2− | 0.1− | 2005 09 30 | 644 | 0.1+ | 0.3− | 2006 11 17 | 691 | 0.4− | 0.5− |
| 2005 09 01 | 704 | 0.2− | 0.5+ | 2005 09 30 | 644 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.3− | 0.1− |
| 2005 09 01 | 704 | 0.8− | 0.2+ | 2005 10 01 | 703 | 0.4− | 0.7− | 2006 11 21 | 704 | 0.8+ | 0.9+ |
| 2005 09 01 | 704 | (0.7− | 1.7−) | 2005 10 01 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.3− |
| 2005 09 01 | 704 | (2.0+ | 1.0+) | 2005 10 01 | 703 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.1− | 1.0− |

**2005 QV$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.30009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17417901 | $\omega$ | 321.49327 | | +0.92644435 | +0.37267145 | |
| $a$ | 3.1754517 | $\Omega$ | 16.86265 | | −0.28386296 | +0.78424255 | |
| $e$ | 0.0845309 | $i$ | 10.54248 | | −0.24723002 | +0.49606413 | |
| $P$ | 5.66 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.5− | 0.8+ | 2005 09 23 | 703 | 0.1+ | 1.2+ | 2005 10 06 | G96 | 0.3+ | 0.2− |
| 1994 11 01 | 691 | 0.1− | 0.5+ | 2005 09 25 | 644 | 0.0 | 0.2+ | 2005 10 06 | G96 | 0.1+ | 0.1− |
| 1994 11 01 | 691 | 0.5− | 0.6+ | 2005 09 25 | 644 | 0.3+ | 0.4+ | 2005 10 07 | 703 | 0.0 | 0.2+ |
| 2003 04 08 | 691 | 0.7+ | 1.6+ | 2005 09 25 | 644 | 0.3+ | 0.3+ | 2005 10 07 | 703 | 0.5− | 0.5+ |
| 2003 04 08 | 691 | 0.6+ | 1.1+ | 2005 09 28 | 644 | 0.1+ | 0.3+ | 2005 10 07 | 703 | 0.3− | 0.5+ |
| 2003 04 08 | 691 | 1.0+ | 0.9+ | 2005 09 28 | 644 | 0.2+ | 0.1+ | 2005 10 07 | 703 | 0.7− | 0.4− |
| 2005 08 28 | 691 | 0.6− | 0.1+ | 2005 09 28 | 644 | 0.3+ | 0.1+ | 2005 10 28 | G96 | 0.1+ | 0.2− |
| 2005 08 28 | 691 | 0.3− | 0.0 | 2005 09 30 | 699 | 0.4− | 0.6+ | 2005 10 28 | G96 | 0.1− | 0.1− |
| 2005 08 28 | 691 | 0.5− | 0.0 | 2005 09 30 | 699 | 0.8− | 0.4+ | 2005 10 28 | G96 | 0.3+ | 0.3− |
| 2005 08 31 | 644 | 0.0 | 0.4− | 2005 09 30 | 699 | 0.6+ | 0.2+ | 2005 10 28 | G96 | 0.1+ | 0.3− |
| 2005 08 31 | 644 | 0.1+ | 0.1− | 2005 09 30 | 699 | 0.0 | 0.4− | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2005 08 31 | 644 | 0.2+ | 0.0 | 2005 10 01 | 704 | 0.7+ | 0.6+ | 2005 11 25 | G96 | 0.1+ | 0.2− |
| 2005 09 11 | 691 | 0.2− | 0.1− | 2005 10 01 | 704 | 0.1+ | 0.5+ | 2005 11 25 | G96 | 0.3+ | 0.2− |
| 2005 09 11 | 691 | 0.0 | 0.3− | 2005 10 01 | 704 | 0.9+ | 0.7+ | 2005 11 25 | G96 | 0.0 | 0.1+ |
| 2005 09 11 | 691 | 0.1− | 0.1− | 2005 10 01 | 704 | 0.4− | 0.9+ | 2005 12 02 | G96 | 0.6− | 1.0− |
| 2005 09 23 | 703 | 1.0− | 1.4+ | 2005 10 01 | 704 | 0.7− | 1.4+ | 2005 12 02 | G96 | 0.4+ | 0.3+ |
| 2005 09 23 | 703 | 0.3+ | 0.6+ | 2005 10 06 | G96 | 0.2+ | 0.1− | 2005 12 02 | G96 | 0.4+ | 0.2+ |
| 2005 09 23 | 703 | 0.9+ | 1.2+ | 2005 10 06 | G96 | 0.1− | 0.2− | 2005 12 02 | G96 | 0.4+ | 0.4+ |

**2005 QE$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.71776 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18752143 | $\omega$ | 146.39957 | | −0.61661114 | +0.78547350 | |
| $a$ | 3.0229812 | $\Omega$ | 85.47427 | | −0.73352774 | −0.54870759 | |
| $e$ | 0.0656182 | $i$ | 3.05470 | | −0.28588066 | −0.28627147 | |
| $P$ | 5.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 1.5+ | 1.6− | 2003 03 06 | 699 | 0.3− | 0.8− | 2005 11 03 | G96 | 0.3+ | 0.0 |
| 1998 03 29 | 704 | 0.6+ | 1.3− | 2003 03 23 | 691 | 0.0 | 0.0 | 2005 11 03 | G96 | 0.2− | 0.2+ |
| 1998 03 29 | 704 | (0.5+ | 2.5−) | 2003 03 23 | 691 | 0.0 | 0.0 | 2005 11 03 | G96 | 0.7− | 0.0 |
| 1998 03 29 | 704 | 0.3+ | 1.5+ | 2003 03 23 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.3− |
| 1998 04 22 | 704 | 0.6− | 0.0 | 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 1998 04 22 | 704 | 1.1− | 0.6+ | 2003 04 01 | 645 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 1998 04 22 | 704 | 1.3− | 1.1+ | 2005 08 28 | 691 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.0 |
| 1998 04 22 | 704 | (5.4− | 0.1+) | 2005 08 28 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.1+ | 0.2+ | 2005 08 28 | 691 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.2− | 0.7+ |
| 2001 12 19 | 704 | 0.5+ | 0.3− | 2005 08 31 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.5− | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.4− | 2005 08 31 | 644 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.3− | 0.1+ |
| 2002 01 15 | 704 | 0.0 | 0.3− | 2005 08 31 | 644 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2002 01 15 | 704 | 0.6− | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.2− | 2006 12 01 | 691 | 0.5+ | 0.3− |
| 2002 01 15 | 704 | 0.8+ | 1.0+ | 2005 09 30 | G96 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 0.2+ | 0.2− |
| 2003 03 06 | 699 | 1.0+ | 1.1+ | 2005 09 30 | G96 | 0.6+ | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2003 03 06 | 699 | (1.3+ | 2.4+) | 2005 09 30 | G96 | 0.2+ | 0.1+ | | | | |
| 2003 03 06 | 699 | (1.7+ | 1.0+) | 2005 11 03 | G96 | 0.2+ | 0.0 | | | | |

**2005 QM$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.42962 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26563107 | $\omega$ | 211.53400 | | −0.02362382 | | +0.99707167 |
| $a$ | 2.3967172 | $\Omega$ | 57.20682 | | −0.89828611 | | +0.01076042 |
| $e$ | 0.2180192 | $i$ | 4.96351 | | −0.43877555 | | −0.07571200 |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 097 | 0.1+ | 0.4+ | 2005 08 30 | 644 | 0.1+ | 0.1− | 2005 08 31 | 644 | 0.3+ | 0.1+ |
| 2004 02 11 | 644 | 0.1− | 0.1− | 2005 08 30 | 699 | 0.3− | 0.1− | 2005 08 31 | 644 | 0.0 | 0.1+ |
| 2004 02 11 | 644 | 0.1+ | 0.1− | 2005 08 30 | 644 | 0.4+ | 0.3− | 2005 08 31 | 644 | 0.3+ | 0.2+ |
| 2004 02 11 | 644 | 0.2+ | 0.1+ | 2005 08 30 | 699 | 0.1− | 0.3− | 2005 08 31 | 644 | 0.0 | 0.2+ |
| 2004 02 15 | 704 | 0.1+ | 0.7− | 2005 08 30 | 699 | 0.3+ | 0.4+ | 2005 09 05 | 703 | 0.3− | 0.4+ |
| 2004 02 15 | 704 | 0.5+ | 0.3+ | 2005 08 30 | 699 | 1.4− | 0.6+ | 2005 09 05 | 703 | 0.5− | 0.8− |
| 2004 02 15 | 704 | 0.9− | 0.2+ | 2005 08 31 | 644 | 0.1+ | 0.1+ | 2005 09 05 | 703 | 0.2− | 0.6+ |
| 2005 08 30 | 644 | 0.3+ | 0.4− | 2005 08 31 | 644 | 0.0 | 0.0 | 2005 09 05 | 703 | 1.1+ | 0.7− |

**2005 QE$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.56766 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27574571 | $\omega$ | 35.17944 | | +0.80799753 | | +0.58382159 |
| $a$ | 2.3377436 | $\Omega$ | 288.90838 | | −0.55796345 | | +0.71496719 |
| $e$ | 0.2461038 | $i$ | 4.80984 | | −0.18925323 | | +0.38467424 |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 12 | 644 | 0.1− | 0.0 | 2005 09 11 | 704 | 0.6+ | 0.0 | 2005 10 01 | 703 | 1.8− | 0.9− |
| 2001 07 12 | 644 | 0.0 | 0.2+ | 2005 09 11 | 704 | 0.4+ | 0.2− | 2005 10 07 | 703 | 0.1+ | 0.4− |
| 2001 07 12 | 644 | 0.2+ | 0.1+ | 2005 09 11 | 704 | 0.5+ | 0.3− | 2005 10 07 | 703 | 0.7− | 0.7+ |
| 2005 08 29 | 644 | 0.1− | 0.0 | 2005 09 11 | 704 | 0.1+ | 0.4− | 2005 10 07 | 703 | 0.7− | 0.1− |
| 2005 08 29 | 644 | 0.0 | 0.0 | 2005 09 11 | 704 | 0.3+ | 1.0− | 2005 10 07 | 703 | 0.3+ | 0.5− |
| 2005 08 29 | 644 | 0.7− | 0.2− | 2005 09 11 | 608 | 1.1− | 0.3+ | 2005 10 08 | 704 | 0.3+ | 0.6+ |
| 2005 08 31 | 699 | 0.3+ | 0.2+ | 2005 09 11 | 608 | 1.1− | 0.4+ | 2005 10 08 | 704 | 0.1+ | 1.0+ |
| 2005 08 31 | 699 | 1.4+ | 0.5− | 2005 09 11 | 608 | 0.7− | 0.1− | 2005 10 08 | 704 | 0.6− | 0.4+ |
| 2005 08 31 | 704 | 0.4− | 0.5− | 2005 09 21 | A13 | 0.5+ | 0.0 | 2005 10 08 | 704 | 0.0 | 1.0+ |
| 2005 08 31 | 704 | 0.3+ | 0.6+ | 2005 09 21 | A13 | 0.2+ | 0.5− | 2005 10 08 | 704 | 0.4+ | 0.8+ |
| 2005 08 31 | 699 | 0.2+ | 0.6+ | 2005 09 21 | A13 | 0.3+ | 0.2− | 2005 10 30 | 699 | 0.6− | 1.1− |
| 2005 08 31 | 704 | 0.0 | 0.1+ | 2005 09 23 | 699 | 0.2+ | 0.2+ | 2005 10 30 | 699 | 0.2− | 0.0 |
| 2005 08 31 | 704 | 0.2− | 1.2+ | 2005 09 23 | 699 | 0.7+ | 0.2− | 2005 10 30 | 699 | 2.1+ | 0.3− |
| 2005 08 31 | 699 | 1.2+ | 0.2+ | 2005 09 23 | 699 | 0.2+ | 0.2+ | 2005 10 30 | 699 | 0.3+ | 0.1− |
| 2005 08 31 | 704 | 0.1+ | 0.3+ | 2005 10 01 | 703 | 0.2− | 0.0 | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 2005 09 06 | A50 | 0.2− | 0.2− | 2005 10 01 | 703 | 0.9− | 0.3− | 2006 10 20 | 695 | 0.4+ | 0.4+ |
| 2005 09 06 | A50 | 0.2− | 0.6− | 2005 10 01 | 703 | 0.5− | 0.2+ | | | | |

**2005 QK$_{171}$ = 2002 XF$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.67719 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27630551 | $\omega$ | 65.08637 | | +0.94819850 | | +0.30557334 |
| $a$ | 2.3345850 | $\Omega$ | 277.02442 | | −0.31379277 | | +0.85827792 |
| $e$ | 0.1329715 | $i$ | 5.02073 | | −0.04953484 | | +0.41229110 |
| $P$ | 3.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 735 | 0.9− | 0.2+ | 2005 09 11 | 704 | 0.0 | 0.0 | 2005 10 21 | 644 | 0.0 | 0.1+ |
| 2002 12 11 | 735 | 0.0 | 0.7+ | 2005 09 11 | 704 | 0.1+ | 0.4+ | 2005 10 30 | 704 | 0.7+ | 0.7+ |
| 2002 12 15 | 735 | 1.4+ | 1.0− | 2005 09 11 | 704 | 0.5− | 0.4− | 2005 10 30 | 699 | 0.8+ | 0.7+ |
| 2002 12 15 | 735 | 0.5− | 0.1− | 2005 10 01 | 703 | 0.3+ | 0.1− | 2005 10 30 | 704 | 1.2+ | 0.1+ |
| 2002 12 15 | 735 | 0.1− | 0.4+ | 2005 10 01 | 703 | 0.3− | 0.3− | 2005 10 30 | 699 | 0.6− | 0.6+ |
| 2005 08 29 | 644 | 0.0 | 0.4+ | 2005 10 01 | 703 | 0.6− | 0.1− | 2005 10 30 | 704 | 0.3+ | 0.0 |
| 2005 08 29 | 644 | 0.1− | 0.4+ | 2005 10 01 | 703 | 0.7− | 0.1− | 2005 10 30 | 704 | 0.9+ | 0.6− |
| 2005 08 29 | 644 | 0.1− | 0.4+ | 2005 10 07 | 703 | 0.7+ | 0.4+ | 2005 10 30 | 699 | 0.2+ | 0.4− |
| 2005 08 31 | 704 | 0.6− | 0.1− | 2005 10 07 | 703 | 0.0 | 0.8− | 2005 10 30 | 699 | 0.7+ | 1.2+ |
| 2005 08 31 | 704 | 0.5− | 0.1− | 2005 10 07 | 703 | 0.7− | 0.1+ | 2005 12 02 | 703 | 0.5+ | 0.3− |
| 2005 08 31 | 704 | 0.1− | 0.4− | 2005 10 07 | 703 | 0.4− | 0.6− | 2005 12 02 | 703 | 1.0− | 0.7+ |
| 2005 08 31 | 704 | 1.4+ | 0.9− | 2005 10 08 | 704 | 0.1− | 1.0− | 2005 12 02 | 703 | 1.0− | 0.9− |
| 2005 09 10 | 699 | 0.6− | 0.0 | 2005 10 08 | 704 | 0.3+ | 0.0 | 2005 12 02 | 703 | (1.9− | 1.6−) |
| 2005 09 10 | 699 | 0.1+ | 0.3− | 2005 10 08 | 704 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3+ |
| 2005 09 10 | 699 | 0.1+ | 0.5+ | 2005 10 08 | 704 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2005 09 10 | 699 | 0.1+ | 0.5− | 2005 10 08 | 704 | 0.2+ | 0.7+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2005 09 11 | 704 | 0.2− | 0.2− | 2005 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2005 09 11 | 704 | 0.0 | 0.3+ | 2005 10 21 | 644 | 0.0 | 0.0 | | | | |

**2005 QE$_{177}$ = 2001 UP$_{124}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.13740 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22902260 | $\omega$ | 191.40380 | | +0.94190982 | | +0.31286516 |
| $a$ | 2.6457603 | $\Omega$ | 149.48026 | | −0.28612785 | | +0.93793403 |
| $e$ | 0.0611830 | $i$ | 13.91818 | | −0.17588843 | | +0.14965007 |
| $P$ | 4.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 22 | 644 | 0.1+ | 0.1− | 2005 08 26 | 644 | 0.1− | 0.2− | 2005 09 26 | 703 | 0.0 | 0.3+ |
| 2001 10 22 | 644 | 0.1+ | 0.1+ | 2005 08 26 | 644 | 0.2+ | 0.3− | 2005 09 26 | 703 | 0.5− | 0.3− |
| 2001 10 22 | 644 | 0.0 | 0.0 | 2005 09 03 | 703 | 0.2− | 1.5+ | 2005 09 26 | 703 | 0.1− | 0.1+ |
| 2001 10 28 | 644 | 0.2− | 0.0 | 2005 09 03 | 703 | 0.6+ | 0.2− | 2005 10 03 | 703 | 0.2− | 0.8− |
| 2001 10 28 | 644 | 0.1− | 0.0 | 2005 09 03 | 703 | 0.1− | 0.1+ | 2005 10 03 | 703 | 1.1+ | 0.7− |
| 2001 10 28 | 644 | 0.2+ | 0.0 | 2005 09 03 | 703 | 0.4+ | 0.4− | 2005 10 03 | 703 | (2.4+ | 0.7−) |
| 2005 08 26 | 644 | 0.1− | 0.3− | 2005 09 26 | 703 | 1.0− | 1.1+ | 2005 10 03 | 703 | 0.0 | 0.2+ |

**2005 QF$_{177}$ = 1999 PL$_{8}$ = 2002 AU$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.76990 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17473874 | $\omega$ | 40.84172 | | +0.63711983 | | +0.76840394 |
| $a$ | 3.1686669 | $\Omega$ | 268.82415 | | −0.72192121 | | +0.56751957 |
| $e$ | 0.0398627 | $i$ | 3.45663 | | −0.27001498 | | +0.29576498 |
| $P$ | 5.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 621 | 0.2− | 0.3− | 2005 08 27 | 644 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1− | 0.6− |
| 1999 08 13 | 621 | 0.4− | 0.1+ | 2005 08 27 | 644 | 0.2− | 0.1+ | 2006 11 01 | G96 | (0.2+ | 1.8−) |
| 1999 08 13 | 621 | 0.5− | 0.1+ | 2005 08 27 | 644 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.1+ | 1.1− |
| 2002 01 13 | 704 | 0.1+ | 0.8+ | 2005 08 31 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2002 01 13 | 704 | 0.1+ | 1.1+ | 2005 08 31 | 691 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 01 13 | 704 | 0.3− | 1.4+ | 2005 08 31 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2002 01 13 | 704 | 0.6− | 0.0 | 2005 09 14 | 691 | 0.1− | 0.0 | 2006 11 26 | H07 | 0.4+ | 0.3+ |
| 2002 01 14 | 704 | 0.9+ | 0.1+ | 2005 09 14 | 691 | 0.4+ | 0.0 | 2006 11 26 | H07 | 0.1+ | 0.0 |
| 2002 01 14 | 704 | 1.2+ | 0.6+ | 2005 09 14 | 691 | 0.0 | 0.2+ | 2006 11 26 | H07 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 1.4+ | 0.2+ | 2005 10 01 | 691 | 0.2+ | 0.4+ | 2006 11 30 | 691 | 0.2− | 0.3− |
| 2003 04 01 | 644 | 0.4− | 0.9+ | 2005 10 01 | 691 | 0.0 | 0.2+ | 2006 11 30 | 691 | 0.4− | 0.0 |
| 2003 04 01 | 644 | 0.4+ | 0.7+ | 2005 10 01 | 691 | 0.1− | 0.1+ | 2006 11 30 | 691 | 0.4− | 0.0 |
| 2003 04 01 | 644 | 0.4+ | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.9− | | | | |

**2005 QG$_{177}$ = 2003 BY$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.81455 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19571795 | $\omega$ | 343.85854 | | +0.87043256 | | +0.49040692 |
| $a$ | 2.9379807 | $\Omega$ | 346.52127 | | −0.42881141 | | +0.71240702 |
| $e$ | 0.0504064 | $i$ | 10.62869 | | −0.24180144 | | +0.50197340 |
| $P$ | 5.04 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 699 | 0.4+ | 0.5+ | 2005 08 27 | 644 | 0.1− | 0.1+ | 2005 10 01 | 703 | 0.4− | 2.2− |
| 2000 09 21 | 699 | 0.2+ | 0.1+ | 2005 08 27 | 644 | 0.2+ | 0.0 | 2005 10 01 | 703 | 0.0 | 0.6− |
| 2000 09 21 | 699 | 1.8− | 1.0+ | 2005 08 27 | 644 | 0.0 | 0.0 | 2005 10 01 | 703 | 0.8− | 0.4− |
| 2000 09 21 | 699 | 0.5− | 0.9+ | 2005 09 14 | 691 | 0.4+ | 0.0 | 2005 10 01 | 703 | 0.3− | 0.3+ |
| 2003 01 30 | 291 | 0.2+ | 0.2+ | 2005 09 14 | 691 | 0.4+ | 0.1+ | 2005 11 01 | G96 | 0.9+ | 0.0 |
| 2003 01 30 | 291 | 0.2+ | 0.3+ | 2005 09 14 | 691 | 0.3+ | 0.2+ | 2005 11 01 | G96 | 0.6+ | 0.1+ |
| 2003 01 30 | 291 | 0.2+ | 0.2− | 2005 09 23 | 703 | 2.3− | 0.1− | 2005 11 01 | G96 | 0.5+ | 0.0 |
| 2003 01 31 | 291 | 0.4+ | 0.2− | 2005 09 23 | 703 | 0.2− | 0.6+ | 2005 11 01 | G96 | 0.2+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 291 | 0.0 | 0.4− | 2005 09 23 | 703 | 0.6− | 0.4+ | |
| 2003 01 31 | 291 | 1.0− | 0.4+ | 2005 09 23 | 703 | 0.2− | 1.4− | |

**2005 QH$_{177}$ = 1995 WG$_{29}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.08037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28444672 | $\omega$ | 151.45379 | | −0.94756282 | −0.31901071 | |
| $a$ | 2.2898240 | $\Omega$ | 9.99784 | | +0.26860831 | −0.82708956 | |
| $e$ | 0.0865322 | $i$ | 6.24689 | | +0.17313084 | −0.46276887 | |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.2+ | 0.1+ | 2005 08 27 | 691 | 0.2+ | 0.0 | 2005 10 12 | 291 | 0.1− | 0.4+ |
| 1995 11 19 | 691 | 0.1+ | 0.1+ | 2005 09 11 | 691 | 0.1+ | 0.4+ | 2005 10 12 | 291 | 1.1− | 0.4+ |
| 1995 11 19 | 691 | 0.1+ | 0.0 | 2005 09 11 | 691 | 0.2+ | 0.7+ | 2005 10 12 | 291 | 0.1− | 0.2+ |
| 1995 11 24 | 691 | 0.3+ | 0.1− | 2005 09 11 | 691 | 0.5+ | 0.0 | 2005 12 02 | G96 | 0.8+ | 0.0 |
| 1995 11 24 | 691 | 0.1− | 0.0 | 2005 09 29 | G96 | 0.1− | 0.2− | 2005 12 02 | G96 | 0.6− | 0.3− |
| 1995 11 24 | 691 | 0.7− | 0.1+ | 2005 09 29 | G96 | 0.1+ | 0.5− | 2005 12 02 | G96 | 0.3+ | 0.1− |
| 2005 08 27 | 691 | 0.3− | 0.1− | 2005 09 29 | G96 | 0.1− | 0.5− | 2005 12 02 | G96 | 0.6+ | 0.8− |
| 2005 08 27 | 691 | 0.1− | 0.1+ | 2005 09 29 | G96 | 0.1+ | 0.4− | | | | |

**2005 QJ$_{177}$ = 2001 YG$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.26734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20304358 | $\omega$ | 217.99364 | | +0.19994747 | +0.97866069 | |
| $a$ | 2.8668824 | $\Omega$ | 63.58538 | | −0.88550623 | +0.20118855 | |
| $e$ | 0.0219990 | $i$ | 3.03214 | | −0.41940401 | +0.04179029 | |
| $P$ | 4.85 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.0 | 2001 12 19 | 704 | 1.2− | 0.5+ | 2005 09 11 | 691 | 0.1+ | 0.1+ |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2001 12 19 | 704 | 1.5+ | 0.9− | 2005 09 11 | 691 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.4+ | 0.1+ | 2001 12 19 | 704 | 1.1+ | 0.8− | 2005 09 23 | 691 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.4+ | 0.5− | 2001 12 19 | 704 | 0.3+ | 0.6− | 2005 09 23 | 691 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.5− | 0.9− | 2003 03 09 | 704 | 0.6− | 1.7+ | 2005 09 23 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.6+ | 0.0 | 2003 03 09 | 704 | 0.5− | 0.0 | 2005 10 09 | 691 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.2− | 0.1+ | 2003 03 09 | 704 | 0.7− | 1.3+ | 2005 10 09 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.2+ | 2003 04 07 | 691 | 0.8+ | 0.5+ | 2005 10 09 | 691 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 0.7− | 2003 04 07 | 691 | 0.3+ | 0.6+ | 2005 11 06 | G96 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 0.2+ | 0.4+ | 2003 04 07 | 691 | 0.3+ | 0.3+ | 2005 11 06 | G96 | 0.3− | 0.1− |
| 2001 12 18 | 704 | 0.7− | 0.1− | 2005 08 27 | 691 | 0.0 | 0.2+ | 2005 11 06 | G96 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2005 08 27 | 691 | 0.1− | 0.3+ | 2005 11 06 | G96 | 0.7− | 0.1− |
| 2001 12 18 | 704 | 0.1+ | 0.3+ | 2005 08 27 | 691 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.3+ | 0.4+ |
| 2001 12 18 | 704 | 0.5− | 1.1+ | 2005 09 03 | 644 | 0.3− | 0.2+ | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.7− | 0.2− | 2005 09 03 | 644 | 0.2− | 0.1+ | 2005 12 01 | G96 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.2− | 1.1+ | 2005 09 03 | 644 | 0.1+ | 0.1− | 2005 12 01 | G96 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 1.0− | 0.1− | 2005 09 11 | 691 | 0.2− | 0.2+ | | | | |

**2005 QK$_{177}$ = 1994 LB$_{2}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.83935 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19155876 | $\omega$ | 225.95532 | | +0.74908630 | +0.63999530 | |
| $a$ | 2.9803553 | $\Omega$ | 93.48297 | | −0.54818892 | +0.74384745 | |
| $e$ | 0.3235479 | $i$ | 9.87028 | | −0.37196588 | +0.19260579 | |
| $P$ | 5.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 08 | 691 | 0.1+ | 0.3− | 2005 08 27 | E12 | 0.3− | 0.3− | 2005 10 02 | E12 | 0.4− | 0.8− |
| 1994 06 08 | 691 | 0.5− | 0.7− | 2005 09 01 | 644 | 0.3+ | 0.1+ | 2005 10 02 | E12 | 0.6− | 0.5+ |
| 1994 06 08 | 691 | 0.2+ | 0.1+ | 2005 09 01 | 644 | 0.3+ | 0.1+ | 2005 10 02 | E12 | 0.0 | 0.5+ |
| 1994 06 09 | 691 | 0.4+ | 0.7+ | 2005 09 01 | 644 | 0.2+ | 0.2+ | 2005 10 02 | E12 | 0.4+ | 0.7+ |
| 1994 06 09 | 691 | 0.1− | 0.6− | 2005 09 26 | 704 | 0.6− | 1.3− | 2005 10 24 | 644 | 0.2+ | 0.1+ |
| 1994 06 09 | 691 | 0.1+ | 0.7+ | 2005 09 26 | 704 | 0.0 | 0.7− | 2005 10 24 | 644 | 0.1+ | 0.0 |
| 2005 08 27 | E12 | 0.5− | 1.0+ | 2005 09 26 | 704 | 0.4+ | 0.3− | 2005 10 24 | 644 | 0.1+ | 0.5+ |
| 2005 08 27 | E12 | 1.0+ | 0.2− | 2005 09 26 | 704 | 0.1− | 0.6− | | | | |
| 2005 08 27 | E12 | 0.2− | 0.4+ | 2005 09 26 | 704 | 0.3− | 0.1+ | | | | |

**2005 QL$_{177}$ = 1995 SM$_{7}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.36637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29535535 | $\omega$ | 47.09589 | | +0.81331126 | −0.58169890 | |
| $a$ | 2.2330896 | $\Omega$ | 348.45610 | | +0.51431515 | +0.72865756 | |
| $e$ | 0.2273080 | $i$ | 3.52269 | | +0.27203810 | +0.36150318 | |
| $P$ | 3.34 | $H$ | 19.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1+ | 0.4− | 2005 08 28 | 691 | 0.1− | 0.3+ | 2005 09 30 | G96 | 0.0 | 0.1+ |
| 1995 09 17 | 691 | 0.1+ | 0.1+ | 2005 08 28 | 691 | 0.4+ | 0.2− | 2005 09 30 | G96 | 0.4− | 0.2− |
| 1995 09 17 | 691 | 0.1− | 0.0 | 2005 09 11 | 691 | 0.0 | 0.1+ | 2005 11 01 | G96 | 0.1+ | 0.0 |
| 1995 09 22 | 691 | 0.0 | 0.2+ | 2005 09 11 | 691 | 0.4− | 0.1+ | 2005 11 01 | G96 | 0.1+ | 0.1+ |
| 1995 09 22 | 691 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.1+ | 0.1− | 2005 11 01 | G96 | 0.0 | 0.1− |
| 1995 09 22 | 691 | 0.0 | 0.2+ | 2005 09 30 | G96 | 0.0 | 0.3− | 2005 11 01 | G96 | 0.0 | 0.0 |
| 2005 08 28 | 691 | 0.1+ | 0.0 | 2005 09 30 | G96 | 0.3+ | 0.0 | | | | |

**2005 QM$_{177}$ = 1999 FZ$_{71}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.38962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21877291 | $\omega$ | 301.73068 | | +0.56060851 | +0.82803895 | |
| $a$ | 2.7277654 | $\Omega$ | 2.41628 | | −0.67695134 | +0.46407285 | |
| $e$ | 0.0967589 | $i$ | 11.41227 | | −0.47692240 | +0.31462340 | |
| $P$ | 4.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.2− | 2005 08 28 | 691 | 0.1+ | 0.4− | 2005 09 29 | G96 | 0.1+ | 0.2+ |
| 1999 03 20 | 645 | 0.1− | 0.2− | 2005 09 11 | 691 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.1− | 0.2+ |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2005 09 11 | 691 | 0.1+ | 0.1− | 2005 10 27 | G96 | 0.3+ | 0.1+ |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2005 09 11 | 691 | 0.4− | 0.2+ | 2005 10 27 | G96 | 0.3− | 0.5− |
| 2005 08 28 | 691 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.4+ | 0.1− | 2005 10 27 | G96 | 0.6+ | 0.1− |
| 2005 08 28 | 691 | 0.0 | 0.0 | 2005 09 29 | G96 | 0.3+ | 0.0 | 2005 10 27 | G96 | 0.6− | 0.0 |

**2005 QN$_{177}$ = 1996 XP$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.43182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20529704 | $\omega$ | 46.05464 | | +0.97525736 | −0.21514341 | |
| $a$ | 2.8458648 | $\Omega$ | 326.27428 | | +0.16736086 | +0.86881167 | |
| $e$ | 0.0874948 | $i$ | 5.25552 | | +0.14444176 | +0.44595919 | |
| $P$ | 4.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 31 | 691 | 0.2+ | 0.1− | 2001 12 20 | 644 | 0.5+ | 0.1− | 2005 10 07 | 691 | 0.2− | 0.2+ |
| 1993 01 31 | 691 | 0.5− | 0.3− | 2005 08 29 | 691 | 0.0 | 1.0+ | 2005 10 07 | 691 | 0.3− | 0.5+ |
| 1993 01 31 | 691 | 0.0 | 0.4− | 2005 08 29 | 691 | 0.1− | 0.2− | 2005 11 01 | G96 | 0.3− | 0.6− |
| 1996 12 02 | 691 | 0.1− | 0.2+ | 2005 08 29 | 691 | 0.1− | 0.2− | 2005 11 01 | G96 | 0.4− | 0.4− |
| 1996 12 02 | 691 | 0.1− | 0.1+ | 2005 09 13 | 691 | 0.1+ | 0.2− | 2005 11 01 | G96 | 0.6+ | 0.5− |
| 1996 12 02 | 691 | 0.0 | 0.3− | 2005 09 13 | 691 | 0.2+ | 0.5− | 2005 11 01 | G96 | 0.5+ | 0.8− |
| 1996 12 09 | 691 | 0.0 | 0.1+ | 2005 09 13 | 691 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 1996 12 09 | 691 | 0.0 | 0.0 | 2005 09 25 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 1996 12 09 | 691 | 0.0 | 0.2+ | 2005 09 25 | 691 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 12 20 | 644 | 0.3+ | 0.3− | 2005 09 25 | 691 | 0.1+ | 0.1− | | | | |
| 2001 12 20 | 644 | 0.1+ | 0.2+ | 2005 10 07 | 691 | 0.2− | 0.1+ | | | | |

**2005 QO$_{177}$ = 2004 GX$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.13895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31498178 | $\omega$ | 78.79790 | | +0.24511391 | −0.96949220 | |
| $a$ | 2.1393365 | $\Omega$ | 357.01129 | | +0.87376410 | +0.22180916 | |
| $e$ | 0.0697536 | $i$ | 2.21071 | | +0.42006603 | +0.10433393 | |
| $P$ | 3.13 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 291 | 0.1+ | 0.1+ | 2004 04 20 | 691 | 0.3− | 0.6+ | 2005 09 23 | 291 | 0.3+ | 0.3+ |
| 2002 10 09 | 291 | 0.1− | 0.1+ | 2005 08 29 | 691 | 0.2+ | 0.0 | 2005 09 23 | 291 | 0.4+ | 0.4+ |
| 2002 10 09 | 291 | 0.1− | 0.0 | 2005 08 29 | 691 | 0.1+ | 0.2+ | 2005 10 01 | G96 | 0.3+ | 0.1− |
| 2004 04 13 | 691 | 0.3+ | 0.2− | 2005 08 29 | 691 | 0.2− | 0.2+ | 2005 10 01 | G96 | 0.0 | 0.2− |
| 2004 04 13 | 691 | 0.1+ | 0.2− | 2005 09 12 | 691 | 0.2+ | 0.2− | 2005 10 01 | G96 | 0.2+ | 0.3− |
| 2004 04 13 | 691 | 0.1− | 0.1− | 2005 09 12 | 691 | 0.1+ | 0.3− | 2005 10 01 | G96 | 0.0 | 0.4− |
| 2004 04 20 | 691 | 0.0 | 0.2− | 2005 09 12 | 691 | 0.0 | 0.0 | | | | |
| 2004 04 20 | 691 | 0.1+ | 0.3+ | 2005 09 23 | 291 | 1.2− | 0.4− | | | | |

**2005 QP$_{177}$ = 2000 WY$_{134}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.32269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17663319 | $\omega$ | 147.51036 | | +0.85274772 | −0.49932238 | |
| $a$ | 3.1459696 | $\Omega$ | 243.18743 | | +0.43498832 | +0.84135796 | |
| $e$ | 0.1443939 | $i$ | 9.89007 | | +0.28914784 | +0.20686696 | |
| $P$ | 5.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 691 | 0.5+ | 0.7− | 2005 08 29 | 644 | 0.1+ | 0.3− | 2005 09 30 | 644 | 0.0 | 0.4− |
| 2000 11 19 | 691 | 0.8+ | 0.7− | 2005 08 29 | 644 | 0.4+ | 0.4− | 2005 09 30 | 644 | 0.1− | 0.2+ |
| 2000 11 19 | 691 | (2.6+ | 1.6−) | 2005 08 29 | 644 | 0.2+ | 0.7− | 2005 09 30 | 644 | 0.5+ | 0.1− |
| 2000 11 24 | 699 | 0.1− | 0.4+ | 2005 09 11 | 704 | 0.3− | 0.6+ | 2005 10 07 | 703 | 1.2− | 0.7− |
| 2000 11 24 | 699 | 1.4− | 0.4+ | 2005 09 11 | 704 | 0.1− | 0.3+ | 2005 10 07 | 703 | 0.6+ | 0.3+ |
| 2000 11 24 | 699 | 0.8+ | 0.0 | 2005 09 11 | 704 | 0.1+ | 0.3− | 2005 10 07 | 703 | 0.3− | 0.6+ |
| 2000 11 24 | 699 | 0.6− | 0.6+ | 2005 09 11 | 704 | 0.2− | 1.4+ | 2005 10 07 | 703 | 0.3+ | 0.4− |

**2005 QQ$_{177}$ = 2001 YE$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.79831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21389509 | $\omega$ | 72.58647 | | +0.99611436 | +0.01408391 | |
| $a$ | 2.7690800 | $\Omega$ | 286.53881 | | −0.04945347 | +0.90625750 | |
| $e$ | 0.0721584 | $i$ | 5.20317 | | +0.07287341 | +0.42249141 | |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3− | 0.3+ | 2005 08 29 | 644 | 0.2+ | 0.3+ | 2005 10 01 | 703 | 0.8− | 0.0 |
| 2001 12 18 | 704 | 0.5− | 0.9+ | 2005 08 31 | 699 | 1.3+ | 0.7− | 2005 10 01 | 703 | 0.4+ | 0.4− |
| 2001 12 18 | 704 | 0.5+ | 0.6+ | 2005 08 31 | 699 | 0.0 | 0.0 | 2005 10 08 | 704 | 0.5− | 0.2+ |
| 2001 12 18 | 704 | 0.7− | 1.3+ | 2005 08 31 | 699 | 1.2+ | 0.1− | 2005 10 08 | 704 | 0.4+ | 0.8+ |
| 2001 12 18 | 704 | 0.6− | 0.5+ | 2005 08 31 | 699 | 1.0− | 1.1+ | 2005 10 08 | 704 | 0.1− | 0.5− |
| 2001 12 19 | 704 | 0.4− | 0.7− | 2005 09 11 | 704 | 1.1− | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.8− |
| 2001 12 19 | 704 | 1.3+ | 0.1+ | 2005 09 11 | 704 | 0.2− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2001 12 19 | 704 | 0.2− | 0.4− | 2005 09 11 | 704 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.7− |
| 2001 12 19 | 704 | 0.8+ | 0.5− | 2005 09 11 | 704 | 0.5− | 0.4− | 2006 10 23 | G96 | 0.4− | 0.6− |
| 2005 08 29 | 644 | 0.5+ | 0.2+ | 2005 10 01 | 703 | 1.0+ | 0.2+ | | | | |
| 2005 08 29 | 644 | 0.2+ | 0.2− | 2005 10 01 | 703 | 0.4− | 1.0− | | | | |

**2005 QR$_{177}$ = 1998 RA$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.76448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28446858 | $\omega$ | 312.27414 | | +0.44461314 | +0.89508391 | |
| $a$ | 2.2897067 | $\Omega$ | 344.02575 | | −0.78139081 | +0.36912567 | |
| $e$ | 0.1256132 | $i$ | 7.05940 | | −0.43788989 | +0.25014201 | |
| $P$ | 3.46 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.1+ | 0.1− | 2005 08 30 | 691 | 0.2+ | 0.2+ | 2005 09 14 | 691 | 0.1− | 0.2+ |
| 1998 09 14 | 691 | 0.1+ | 0.1− | 2005 08 30 | 691 | 0.1+ | 0.4+ | 2005 09 23 | 703 | 1.0+ | 0.8+ |
| 1998 09 14 | 691 | 1.3− | 0.4+ | 2005 08 30 | 691 | 0.1+ | 0.2+ | 2005 09 23 | 703 | 0.5− | 1.2+ |
| 1998 09 23 | 691 | 0.4+ | 0.4− | 2005 09 06 | 699 | 1.1− | 1.1+ | 2005 09 23 | 703 | 0.2− | 0.3+ |
| 1998 09 23 | 691 | 0.7+ | 0.0 | 2005 09 06 | 699 | 0.7+ | 0.0 | 2005 09 23 | 703 | 0.7− | 0.0 |
| 1998 09 23 | 691 | 0.3+ | 0.1− | 2005 09 06 | 699 | 0.8+ | 1.0− | 2005 10 01 | 703 | 0.2+ | 0.2− |
| 2004 03 15 | 691 | 0.2+ | 0.5+ | 2005 09 06 | 699 | 0.5− | 1.6+ | 2005 10 01 | 703 | 0.8− | 0.0 |
| 2004 03 15 | 691 | 0.2+ | 0.2+ | 2005 09 14 | 691 | 0.8− | 0.8− | 2005 10 01 | 703 | 0.2− | 0.8+ |
| 2004 03 15 | 691 | 0.2+ | 0.2+ | 2005 09 14 | 691 | 0.2+ | 0.2+ | 2005 10 01 | 703 | 0.2− | 0.7− |

**2005 QS$_{177}$ = 2004 FT$_{72}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.13676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28500727 | $\omega$ | 303.57767 | | +0.73040602 | +0.68279165 | |
| $a$ | 2.2868206 | $\Omega$ | 13.38853 | | −0.59911894 | +0.65271226 | |
| $e$ | 0.1364082 | $i$ | 4.30842 | | −0.32796880 | +0.32827164 | |
| $P$ | 3.46 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1− | 0.5+ | 2005 08 30 | 691 | 0.0 | 0.2− | 2005 10 25 | G96 | 0.2− | 0.0 |
| 2004 03 17 | 691 | 0.3+ | 0.7+ | 2005 09 22 | 644 | 0.0 | 0.0 | 2005 10 25 | G96 | 0.3− | 0.1− |
| 2004 03 17 | 691 | 0.0 | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.4+ | 2005 10 25 | G96 | 0.1+ | 0.0 |
| 2004 03 23 | 691 | 0.3+ | 0.1+ | 2005 09 22 | 644 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.1− | 0.1+ |
| 2004 03 23 | 691 | 0.4+ | 0.4+ | 2005 10 11 | 691 | 0.2− | 0.8+ | 2005 11 25 | G96 | 0.1+ | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2005 10 11 | 691 | 0.4+ | 0.4+ | 2005 11 25 | G96 | 0.1− | 0.2− |
| 2005 08 30 | 691 | 0.2− | 0.1+ | 2005 10 11 | 691 | 0.2− | 0.3+ | 2005 11 25 | G96 | 0.3+ | 0.1+ |
| 2005 08 30 | 691 | 0.2− | 0.2+ | 2005 10 25 | G96 | 0.1− | 0.1+ | | | | |

**2005 QU$_{177}$ = 2001 QK$_{271}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.18550 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26150754 | $\omega$ | 237.85871 | | +0.90466845 | +0.42131961 | |
| $a$ | 2.4218463 | $\Omega$ | 97.15442 | | −0.36611171 | +0.84508230 | |
| $e$ | 0.1898808 | $i$ | 3.68413 | | −0.21803031 | +0.32912870 | |
| $P$ | 3.77 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.3+ | 0.3− | 2005 08 31 | 699 | 1.1− | 0.2+ | 2005 10 09 | 703 | 0.6− | 0.5+ |
| 2001 08 19 | 704 | 0.7− | 0.8+ | 2005 09 24 | 644 | 0.4+ | 0.3− | 2005 10 09 | 703 | (0.6+ | 3.0+) |
| 2001 08 19 | 704 | 0.4− | 0.3+ | 2005 09 24 | 644 | 0.4+ | 0.2− | 2005 10 09 | 703 | 0.6+ | 1.2+ |
| 2001 08 19 | 704 | 0.2+ | 0.7− | 2005 09 24 | 644 | 0.4+ | 0.3− | 2005 10 09 | 703 | 0.3− | 0.3+ |
| 2001 08 23 | 699 | 0.0 | 0.1− | 2005 10 03 | 703 | 0.6+ | 1.1− | 2005 10 27 | 704 | 1.5+ | 1.0+ |
| 2001 08 23 | 699 | 1.0+ | 0.4+ | 2005 10 03 | 703 | 0.1+ | 0.1+ | 2005 10 27 | 704 | 0.1+ | 0.7+ |
| 2001 08 23 | 699 | 0.2− | 0.5+ | 2005 10 03 | 703 | 0.3− | 0.4− | 2005 10 27 | 704 | 0.3− | 0.7+ |
| 2001 08 23 | 699 | 0.2− | 1.4− | 2005 10 03 | 703 | 1.5− | 0.3+ | 2005 12 01 | G96 | 0.1+ | 0.7− |
| 2005 08 31 | 699 | 0.4+ | 0.4+ | 2005 10 09 | 691 | 0.1− | 0.2− | 2005 12 01 | G96 | 0.2+ | 0.8− |
| 2005 08 31 | 699 | 0.1+ | 0.8− | 2005 10 09 | 691 | 0.2− | 0.0 | 2005 12 01 | G96 | 0.1− | 0.6− |
| 2005 08 31 | 699 | 0.5− | 0.3+ | 2005 10 09 | 691 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.7− |

**2005 QV$_{177}$ = 2002 CG$_{279}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.71969 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18911616 | $\omega$ | 247.09514 | | +0.81373024 | −0.57510365 | |
| $a$ | 3.0059630 | $\Omega$ | 147.82909 | | +0.57421996 | +0.77294244 | |
| $e$ | 0.1763738 | $i$ | 9.10481 | | +0.09008075 | +0.26798464 | |
| $P$ | 5.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 691 | 0.1− | 0.3− | 2005 08 31 | 644 | 0.1+ | 0.1− | 2005 09 23 | 703 | 1.3− | 0.7− |
| 2002 02 07 | 691 | 0.1− | 0.0 | 2005 08 31 | 644 | 0.2− | 0.0 | 2005 09 23 | 703 | 0.0 | 0.2− |
| 2002 02 07 | 691 | 0.9− | 0.6− | 2005 08 31 | 644 | 0.2− | 0.2− | 2005 09 28 | 644 | 0.1− | 0.1+ |
| 2002 02 11 | 704 | 0.3− | 1.0− | 2005 08 31 | 644 | 0.2− | 0.2+ | 2005 09 28 | 644 | 0.2− | 0.1+ |
| 2002 02 11 | 704 | 0.1+ | 0.0 | 2005 09 13 | 703 | 0.7− | 0.2+ | 2005 09 28 | 644 | 0.3+ | 0.0 |
| 2002 02 11 | 704 | 0.2+ | 0.2+ | 2005 09 13 | 703 | 0.8+ | 0.1+ | 2005 09 28 | 644 | 0.0 | 0.3+ |
| 2002 02 11 | 704 | 0.5+ | 0.6+ | 2005 09 13 | 703 | 0.1+ | 0.4+ | 2005 09 28 | 644 | 0.1+ | 0.1+ |
| 2002 02 11 | 704 | 0.6+ | 1.1+ | 2005 09 13 | 703 | 0.1+ | 0.6+ | 2005 09 28 | 644 | 0.2+ | 0.2− |
| 2005 08 31 | 644 | 0.0 | 0.1− | 2005 09 23 | 703 | 1.8+ | 0.2− | | | | |
| 2005 08 31 | 644 | 0.1+ | 0.3− | 2005 09 23 | 703 | 0.8− | 0.1+ | | | | |

**2005 QW$_{177}$ = 2004 EA$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 162.75002 | | (2000.0) | | | |
| $n$ | 0.26642323 | $\omega$ | 94.53035 | | +0.07015090 | +0.99753638 |
| $a$ | 2.3919641 | $\Omega$ | 179.49223 | | −0.92194581 | +0.06489375 |
| $e$ | 0.1695250 | $i$ | 0.99139 | | −0.38091308 | +0.02664532 |
| $P$ | 3.70 | $H$ | 17.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.2+ | 0.0 | 2004 03 16 | 291 | 0.2+ | 0.3+ | 2005 09 30 | G96 | 0.3+ | 0.2+ |
| 2000 02 06 | 695 | 0.2− | 0.0 | 2004 03 16 | 291 | 0.3+ | 0.2+ | 2005 09 30 | G96 | 0.2− | 0.2+ |
| 2001 07 19 | 644 | 0.1− | 0.0 | 2005 08 31 | 691 | 0.1+ | 0.2+ | 2005 09 30 | G96 | 0.0 | 0.1− |
| 2001 07 19 | 644 | 0.1+ | 0.2+ | 2005 08 31 | 691 | 0.0 | 0.3+ | 2005 10 25 | G96 | 0.5− | 0.4− |
| 2001 07 19 | 644 | 0.0 | 0.0 | 2005 08 31 | 691 | 0.1− | 0.3+ | 2005 10 25 | G96 | 0.5− | 0.3− |
| 2004 03 14 | 691 | 0.3+ | 0.3+ | 2005 09 14 | 691 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.0 |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2005 09 14 | 691 | 0.1+ | 0.2+ | 2005 10 25 | G96 | 0.5− | 0.1+ |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2005 09 14 | 691 | 0.0 | 0.3+ | | | | |
| 2004 03 16 | 291 | 0.1− | 0.3+ | 2005 09 30 | G96 | 0.2− | 0.0 | | | | |

**2005 QX$_{177}$ = 1999 CE$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 102.43930 | | (2000.0) | | | |
| $n$ | 0.21481177 | $\omega$ | 143.74161 | | +0.84281034 | +0.53818537 |
| $a$ | 2.7611966 | $\Omega$ | 183.70975 | | −0.51083352 | +0.79684770 |
| $e$ | 0.1224768 | $i$ | 4.62731 | | −0.16946932 | +0.27457286 |
| $P$ | 4.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 08 | 568 | 0.2+ | 0.5+ | 2005 08 31 | 691 | 0.1+ | 0.2+ | 2005 09 30 | G96 | 0.1+ | 0.2− |
| 1999 02 08 | 568 | 0.3+ | 0.5+ | 2005 08 31 | 691 | 0.0 | 0.1+ | 2005 09 30 | G96 | 0.2− | 0.1− |
| 1999 02 09 | 568 | 0.0 | 0.4+ | 2005 08 31 | 691 | 0.2+ | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.1− |
| 1999 02 09 | 568 | 0.2+ | 0.8+ | 2005 09 14 | 691 | 0.1+ | 0.4+ | 2005 10 25 | G96 | 0.1+ | 0.3− |
| 2000 07 05 | 691 | 0.3+ | 0.4− | 2005 09 14 | 691 | 0.1− | 0.0 | 2005 10 25 | G96 | 0.3− | 0.4− |
| 2000 07 05 | 691 | 0.0 | 0.1− | 2005 09 14 | 691 | 0.2− | 0.2+ | 2005 10 25 | G96 | 0.6− | 0.1− |
| 2000 07 05 | 691 | 0.2− | 0.4+ | 2005 09 30 | G96 | 0.3− | 0.2− | 2005 10 25 | G96 | 0.1+ | 0.5− |

**2005 QY$_{177}$ = 1998 MD$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 112.00187 | | (2000.0) | | | |
| $n$ | 0.17415911 | $\omega$ | 180.94811 | | +0.64203151 | +0.76221991 |
| $a$ | 3.1756936 | $\Omega$ | 129.00080 | | −0.70271244 | +0.62810504 |
| $e$ | 0.1365609 | $i$ | 6.09847 | | −0.30657914 | +0.15654027 |
| $P$ | 5.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 24 | 691 | 1.3+ | 0.4+ | 2003 03 26 | 691 | 0.3+ | 0.1− | 2005 10 03 | 703 | 0.8− | 0.5+ |
| 1998 06 24 | 691 | 1.0+ | 0.0 | 2003 03 26 | 644 | 0.2+ | 0.7+ | 2005 10 27 | 699 | 0.3+ | 1.0+ |
| 1998 06 24 | 691 | 0.4+ | 0.4+ | 2003 03 26 | 644 | 0.1+ | 0.8+ | 2005 10 27 | 704 | (0.2− | 2.1+) |
| 1998 06 30 | 691 | 1.2− | 0.2− | 2003 03 26 | 644 | 0.2− | 0.5+ | 2005 10 27 | 699 | 0.7− | 0.8+ |
| 1998 06 30 | 691 | 0.4− | 0.3+ | 2005 08 31 | 644 | 0.2+ | 0.3+ | 2005 10 27 | 704 | 0.2− | 1.1+ |
| 1998 06 30 | 691 | 0.5− | 0.4+ | 2005 08 31 | 644 | 0.1+ | 0.5+ | 2005 10 27 | 704 | 1.3− | 0.9− |
| 1998 07 24 | 691 | 0.2− | 0.2+ | 2005 08 31 | 644 | 0.2+ | 0.6+ | 2005 10 27 | 704 | 0.3+ | 0.3+ |
| 1998 07 24 | 691 | 0.4− | 0.0 | 2005 09 30 | 699 | 0.7− | 1.4+ | 2005 10 27 | 699 | 0.6− | 1.3+ |
| 2000 11 27 | 704 | 0.4− | 1.1+ | 2005 09 30 | 699 | 0.3+ | 0.7+ | 2005 10 27 | 704 | 1.0− | 0.2+ |
| 2000 11 27 | 704 | 0.2+ | 0.0 | 2005 09 30 | 699 | 0.3+ | 0.8+ | 2005 10 27 | 699 | 0.4+ | 0.1+ |
| 2000 11 27 | 704 | 0.6+ | 0.2+ | 2005 09 30 | 699 | 0.6+ | 0.9+ | 2006 11 28 | 691 | 0.1+ | 0.2+ |
| 2000 11 27 | 704 | 0.1+ | 0.7− | 2005 10 03 | 703 | 1.0− | 0.1+ | 2006 11 28 | 691 | 0.1− | 0.1+ |
| 2003 03 26 | 691 | 0.3+ | 1.2+ | 2005 10 03 | 703 | 0.3− | 0.3− | 2006 11 28 | 691 | 0.2− | 0.4+ |
| 2003 03 26 | 691 | 0.3+ | 0.6+ | 2005 10 03 | 703 | 0.2+ | 0.9+ | | | | |

**2005 QZ$_{177}$ = 1999 BM$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 60.90944 | | (2000.0) | | | |
| $n$ | 0.26238171 | $\omega$ | 103.60374 | | +0.58419659 | −0.81125390 |
| $a$ | 2.4164641 | $\Omega$ | 310.62372 | | +0.73181770 | +0.53937484 |
| $e$ | 0.2158168 | $i$ | 1.82059 | | +0.35093760 | +0.22570310 |
| $P$ | 3.76 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 16 | 691 | 0.0 | 0.4− | 2005 08 31 | 691 | 0.0 | 0.1− | 2005 10 07 | 704 | 0.1+ | 0.1− |
| 1999 01 16 | 691 | 0.5+ | 0.3− | 2005 08 31 | 691 | 0.5+ | 0.2− | 2005 10 07 | 704 | 0.5+ | 0.2− |
| 1999 01 16 | 691 | 0.3+ | 0.4− | 2005 09 14 | 691 | 0.0 | 0.1+ | 2005 11 21 | 291 | 0.2− | 1.6+ |
| 1999 01 22 | 691 | 0.7− | 0.5− | 2005 09 14 | 691 | 0.2+ | 0.1+ | 2005 11 21 | 291 | 0.0 | 0.7+ |
| 1999 01 22 | 691 | 0.4− | 0.7− | 2005 09 14 | 691 | 0.0 | 0.2+ | 2005 11 21 | 291 | 0.0 | 0.5+ |
| 1999 01 22 | 691 | 0.4− | 0.3− | 2005 09 23 | 703 | 0.5− | 1.1− | 2005 11 21 | 291 | 0.1− | 0.0 |
| 2003 02 01 | 291 | 0.4+ | 1.0+ | 2005 09 23 | 703 | 1.3− | 0.9− | 2005 11 21 | 291 | 0.6− | 0.1− |
| 2003 02 01 | 291 | 0.4+ | 0.9+ | 2005 09 23 | 703 | 0.6− | 1.5− | 2005 11 21 | 291 | 0.5− | 0.3+ |
| 2003 02 01 | 291 | 0.3+ | 0.7+ | 2005 09 23 | 703 | 1.2+ | 1.5− | | | | |
| 2005 08 31 | 691 | 0.2+ | 0.1− | 2005 10 07 | 704 | 0.1+ | 0.5− | | | | |

**2005 QA$_{178}$ = 2003 AL$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 63.55411 | | (2000.0) | | | |
| $n$ | 0.27589902 | $\omega$ | 293.55385 | | +0.58432773 | −0.80398481 |
| $a$ | 2.3368775 | $\Omega$ | 120.23163 | | +0.78332539 | +0.52327294 |
| $e$ | 0.0956316 | $i$ | 7.33558 | | +0.21204350 | +0.28247807 |
| $P$ | 3.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.3+ | 0.1− | 2005 08 31 | 644 | 0.7− | 0.4+ | 2005 10 10 | 703 | 0.3+ | 0.6− |
| 2003 01 04 | 704 | 0.8+ | 0.4+ | 2005 09 30 | 699 | 0.2− | 0.3+ | 2005 10 10 | 703 | 0.1+ | 0.5+ |
| 2003 01 04 | 704 | 0.9+ | 0.5− | 2005 09 30 | 699 | 0.1+ | 0.8− | 2005 10 22 | 644 | 0.3− | 0.0 |
| 2003 01 08 | 704 | 0.6− | 0.7+ | 2005 09 30 | 699 | 1.2+ | 0.4+ | 2005 10 22 | 644 | 0.5− | 0.3− |
| 2003 01 08 | 704 | 0.7− | 0.3+ | 2005 09 30 | 699 | 0.8+ | 0.1+ | 2005 10 22 | 644 | 0.2− | 0.2− |
| 2003 01 08 | 704 | 0.7− | 0.3+ | 2005 10 04 | 703 | 1.1+ | 0.5+ | 2005 10 31 | 699 | 0.0 | 2.2− |
| 2004 05 20 | 691 | 0.2+ | 0.1− | 2005 10 04 | 703 | 0.2− | 0.2+ | 2005 10 31 | 699 | 0.2− | 0.6+ |
| 2004 05 20 | 691 | 0.1+ | 0.1+ | 2005 10 04 | 703 | 0.7+ | 0.3+ | 2005 10 31 | 699 | 1.0− | 0.1− |
| 2004 05 20 | 691 | 0.2− | 0.3+ | 2005 10 04 | 703 | 0.6− | 0.2+ | 2005 10 31 | 699 | 0.9+ | 0.8+ |
| 2005 08 31 | 644 | 0.7− | 0.4+ | 2005 10 10 | 703 | 0.3− | 0.1− | | | | |
| 2005 08 31 | 644 | 0.4− | 0.4+ | 2005 10 10 | 703 | 0.5− | 0.0 | | | | |

**2005 QB$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.43075 | | (2000.0) | | | |
| $n$ | 0.25548922 | $\omega$ | 316.08622 | | +0.99604978 | −0.07741132 |
| $a$ | 2.4597313 | $\Omega$ | 48.40599 | | +0.08862308 | +0.89725293 |
| $e$ | 0.1921068 | $i$ | 3.33458 | | −0.00554845 | +0.43467765 |
| $P$ | 3.86 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2004 04 13 | 691 | 0.1− | 0.2+ | 2005 08 28 | 699 | 0.2+ | 0.4+ |
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2005 06 28 | 644 | 0.0 | 0.4− | 2005 08 28 | 699 | 0.5− | 0.9− |
| 2000 05 04 | 645 | 0.2− | 0.0 | 2005 06 28 | 644 | 0.2− | 0.1+ | 2005 08 28 | 699 | 0.2+ | 0.5− |
| 2000 05 04 | 645 | 0.1− | 0.2− | 2005 06 28 | 644 | 0.2− | 0.2− | 2005 08 28 | 699 | 0.6− | 1.0− |
| 2003 01 09 | 704 | 0.6+ | 0.5+ | 2005 07 26 | 644 | 0.1+ | 0.1+ | 2005 09 08 | E12 | 0.0 | 0.4+ |
| 2003 01 09 | 704 | 0.7− | 0.2+ | 2005 07 26 | 644 | 0.0 | 0.0 | 2005 09 08 | E12 | 0.0 | 0.0 |
| 2003 01 09 | 704 | 0.0 | 0.8+ | 2005 07 26 | 644 | 1.4+ | 0.1+ | 2005 09 08 | E12 | 0.1− | 0.2+ |
| 2003 01 09 | 704 | 0.4+ | 0.3+ | 2005 08 22 | E12 | 0.4+ | 1.1+ | 2005 09 08 | E12 | 0.5− | 0.1+ |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2005 08 22 | E12 | 0.9− | 0.9+ | 2005 11 06 | G96 | 0.0 | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2005 08 27 | E12 | 0.1+ | 0.7+ | 2005 11 06 | G96 | 0.2+ | 1.3+ |
| 2004 03 23 | 691 | 0.2+ | 0.0 | 2005 08 27 | E12 | 0.2+ | 0.3− | 2005 11 06 | G96 | 0.0 | 0.1− |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2005 08 27 | E12 | 0.4+ | 1.2+ | 2005 11 06 | G96 | 0.3− | 0.0 |
| 2004 04 13 | 691 | 0.0 | 0.2+ | 2005 08 27 | E12 | 0.9− | 0.4− | | | | |

**2005 QC$_{178}$ = 2000 SF$_{337}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.23347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19173356 | $\omega$ | 322.09400 | | +0.72789077 | | +0.68547656 |
| $a$ | 2.9785436 | $\Omega$ | 354.53522 | | −0.57657098 | | +0.59825824 |
| $e$ | 0.0625874 | $i$ | 10.42442 | | −0.37113466 | | +0.41498068 |
| $P$ | 5.14 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 691 | 0.1+ | 0.1− | 2003 03 30 | 695 | 0.5+ | 0.4+ | 2005 09 12 | 691 | 0.2− | 0.3+ |
| 2000 09 25 | 691 | 0.2+ | 0.3− | 2003 03 30 | 695 | 0.4+ | 0.2+ | 2005 09 12 | 691 | 0.1− | 0.4+ |
| 2000 09 25 | 691 | 0.3+ | 0.1− | 2005 08 24 | 644 | 0.2− | 0.3+ | 2005 10 01 | 691 | 0.2− | 0.5+ |
| 2000 10 02 | 704 | 0.8+ | 0.7+ | 2005 08 24 | 644 | 0.2− | 0.3+ | 2005 10 01 | 691 | 0.2− | 0.5+ |
| 2000 10 02 | 704 | 0.6− | 0.7− | 2005 08 24 | 644 | 0.5− | 0.1− | 2005 10 01 | 691 | 0.1− | 0.3+ |
| 2000 10 02 | 704 | 0.2− | 0.3− | 2005 09 08 | 704 | 0.3+ | 0.7+ | 2005 10 27 | G96 | 0.0 | 0.1+ |
| 2000 10 02 | 704 | 0.5− | 1.1− | 2005 09 08 | 704 | 0.0 | 1.3− | 2005 10 27 | G96 | 0.4− | 0.0 |
| 2003 03 11 | 291 | 0.6+ | 0.6+ | 2005 09 08 | 704 | 1.2− | 0.7+ | 2005 10 27 | G96 | 0.2− | 0.3+ |
| 2003 03 11 | 291 | 0.4+ | 0.9+ | 2005 09 08 | 704 | 1.3− | 0.6+ | 2005 10 27 | G96 | 0.0 | 0.7+ |
| 2003 03 11 | 291 | 0.3+ | 0.7+ | 2005 09 12 | 691 | 0.2− | 0.4+ | | | | |

**2005 QE$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.70707 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21120793 | $\omega$ | 241.05454 | | +0.74059894 | | −0.66726600 |
| $a$ | 2.7925175 | $\Omega$ | 160.44908 | | +0.66886219 | | +0.72078400 |
| $e$ | 0.2025237 | $i$ | 13.68630 | | +0.06431619 | | +0.18768725 |
| $P$ | 4.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 691 | 0.1− | 0.1− | 2005 08 25 | 644 | 0.4− | 0.4+ | 2005 09 23 | 703 | 1.1− | 0.1+ |
| 2000 08 02 | 691 | 0.0 | 0.0 | 2005 08 25 | 644 | 0.2− | 0.5+ | 2005 10 01 | 703 | 0.3− | 0.4+ |
| 2000 08 02 | 691 | 0.2+ | 0.3− | 2005 08 25 | 644 | 0.6− | 0.4+ | 2005 10 01 | 703 | 1.0+ | 1.8− |
| 2003 03 11 | 291 | 0.4− | 0.3+ | 2005 09 12 | 691 | 0.1+ | 0.3+ | 2005 10 01 | 703 | 1.3+ | 1.6− |
| 2003 03 11 | 291 | 0.2− | 0.5+ | 2005 09 12 | 691 | 0.0 | 0.6+ | 2005 10 01 | 703 | 0.0 | 0.2+ |
| 2003 03 11 | 291 | 0.5− | 0.4+ | 2005 09 12 | 691 | 0.1+ | 0.2+ | 2005 10 10 | 703 | 0.6− | 0.6+ |
| 2003 04 09 | 691 | 1.1+ | 0.3− | 2005 09 23 | 703 | 0.5+ | 0.7+ | 2005 10 10 | 703 | 0.6− | 0.1+ |
| 2003 04 09 | 691 | 0.2+ | 0.2− | 2005 09 23 | 703 | 0.1− | 0.2+ | 2005 10 10 | 703 | 0.2+ | 0.2+ |
| 2003 04 09 | 691 | 0.1− | 0.2+ | 2005 09 23 | 703 | 0.0 | 0.6− | 2005 10 10 | 703 | 0.9− | 0.5− |

**2005 QF$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.38985 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20213553 | $\omega$ | 45.64835 | | +0.99390638 | | −0.10955931 |
| $a$ | 2.8754619 | $\Omega$ | 320.63690 | | +0.09491696 | | +0.90656346 |
| $e$ | 0.0897302 | $i$ | 1.09485 | | +0.05604352 | | +0.40760207 |
| $P$ | 4.88 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.1+ | 0.6− | 2005 08 25 | 644 | 0.4− | 0.1+ | 2005 10 13 | 691 | 0.4+ | 0.3+ |
| 1995 07 22 | 691 | 0.4+ | 0.3− | 2005 08 31 | 691 | 0.2− | 0.3+ | 2005 10 13 | 691 | 0.7+ | 0.0 |
| 1995 07 22 | 691 | 0.3+ | 0.1− | 2005 08 31 | 691 | 0.2− | 0.3+ | 2005 11 29 | G96 | 0.4+ | 0.3+ |
| 1995 08 01 | 691 | 0.4+ | 0.4+ | 2005 08 31 | 691 | 0.1− | 0.4+ | 2005 11 29 | G96 | 0.2− | 0.3− |
| 1995 08 01 | 691 | 0.1+ | 0.2− | 2005 09 09 | 704 | (1.0+ | 1.9+) | 2005 11 29 | G96 | 0.3+ | 0.5− |
| 1995 08 01 | 691 | 0.2− | 0.3+ | 2005 09 09 | 704 | 0.2+ | 0.1− | 2005 11 29 | G96 | 0.3− | 0.9− |
| 2000 09 19 | 691 | 0.3− | 0.2− | 2005 09 09 | 704 | 0.7− | 0.8− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2000 09 19 | 691 | 0.6− | 0.2− | 2005 09 09 | 704 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2000 09 19 | 691 | 0.3− | 0.4− | 2005 09 14 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2003 03 24 | 691 | 0.2+ | 0.2+ | 2005 09 14 | 691 | 0.3− | 0.2+ | 2006 10 22 | G96 | (0.3− | 1.5−) |
| 2003 03 24 | 691 | 0.1+ | 0.6+ | 2005 09 14 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2003 03 24 | 691 | 0.1+ | 0.4+ | 2005 09 29 | 699 | 1.4+ | 1.2+ | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2003 04 01 | 695 | 0.5+ | 0.2+ | 2005 09 29 | 699 | 0.4+ | 0.8+ | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2003 04 01 | 695 | 0.2+ | 0.5+ | 2005 09 29 | 699 | 0.8− | 0.9+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2005 08 25 | 644 | 0.4− | 0.1+ | 2005 09 29 | 699 | 1.0− | 0.0 | | | | |
| 2005 08 25 | 644 | 0.3− | 0.1+ | 2005 10 13 | 691 | 0.2+ | 0.3+ | | | | |

**2005 QG$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.50831 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27151330 | $\omega$ | 202.44866 | | +0.84632436 | | −0.53264731 |
| $a$ | 2.3619751 | $\Omega$ | 189.73989 | | +0.49282050 | | +0.78631845 |
| $e$ | 0.1452185 | $i$ | 1.58579 | | +0.20214606 | | +0.31303376 |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.6+ | 0.0 | 2002 12 07 | 291 | 0.5− | 0.2+ | 2005 09 29 | G96 | 0.1+ | 0.3− |
| 1998 11 15 | 691 | 0.8+ | 0.0 | 2005 08 25 | 644 | 0.1+ | 0.1− | 2005 09 29 | G96 | 0.4+ | 0.2− |
| 1998 11 15 | 691 | 0.6+ | 0.0 | 2005 08 25 | 644 | 0.6+ | 0.2+ | 2005 09 29 | G96 | 0.1+ | 0.3− |
| 1998 11 21 | 691 | 0.6− | 0.5− | 2005 08 25 | 644 | 0.2− | 0.5+ | 2005 10 13 | 691 | 0.4− | 0.3− |
| 1998 11 21 | 691 | (3.4+ | 5.3−) | 2005 09 14 | 691 | 0.1− | 0.1− | 2005 10 13 | 691 | 0.0 | 0.1− |
| 1998 11 21 | 691 | 1.3− | 0.0 | 2005 09 14 | 691 | 0.3− | 0.9+ | 2005 10 13 | 691 | 0.1+ | 0.1+ |
| 2002 12 07 | 291 | 0.6+ | 0.2+ | 2005 09 14 | 691 | 0.1+ | 0.0 | | | | |
| 2002 12 07 | 291 | 0.1+ | 0.4+ | 2005 09 29 | G96 | 0.2+ | 0.1− | | | | |

**2005 QH$_{178}$ = 1993 FC$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.58272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26306001 | $\omega$ | 50.60335 | | −0.31817542 | | +0.94730381 |
| $a$ | 2.4123084 | $\Omega$ | 200.93443 | | −0.89863123 | | −0.31384761 |
| $e$ | 0.1735997 | $i$ | 5.96757 | | −0.30203695 | | −0.06414953 |
| $P$ | 3.75 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | (0.9− | 3.0+) | 2005 08 26 | 644 | 0.7+ | 0.9− | 2005 09 12 | 691 | 0.1+ | 0.0 |
| 1993 03 22 | 809 | 0.1− | 0.2− | 2005 08 26 | 644 | 0.3+ | 0.3− | 2005 09 25 | 691 | 0.2+ | 0.0 |
| 2004 02 19 | 704 | 0.2+ | 0.6+ | 2005 08 26 | 644 | 0.5+ | 0.1− | 2005 09 25 | 691 | 0.1+ | 0.0 |
| 2004 02 19 | 704 | 0.1− | 0.1+ | 2005 08 30 | 691 | 0.3− | 0.1− | 2005 09 25 | 691 | 0.1+ | 0.1− |
| 2004 02 19 | 704 | 0.9+ | 0.5− | 2005 08 30 | 691 | 0.4+ | 0.5− | 2005 10 07 | 691 | 0.1− | 0.2− |
| 2004 03 21 | 691 | 0.1− | 0.0 | 2005 08 30 | 691 | 0.8− | 1.2+ | 2005 10 07 | 691 | 0.5− | 0.0 |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2005 09 12 | 691 | 0.1− | 0.1− | 2005 10 07 | 691 | 0.1+ | 0.2− |
| 2004 03 21 | 691 | 0.0 | 0.1+ | 2005 09 12 | 691 | 0.4+ | 0.1+ | | | | |

**2005 QJ$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.84218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19055903 | $\omega$ | 286.79828 | | +0.61572187 | | +0.78533219 |
| $a$ | 2.9907701 | $\Omega$ | 21.60161 | | −0.63990329 | | +0.54600468 |
| $e$ | 0.1205171 | $i$ | 10.06536 | | −0.45979382 | | +0.29177429 |
| $P$ | 5.17 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.5− | 0.2+ | 2000 10 03 | 049 | 0.1+ | 0.5− | 2005 10 01 | 703 | 0.0 | 0.2+ |
| 1993 03 19 | 691 | 0.6− | 0.4+ | 2000 10 03 | 049 | 0.9+ | 0.2− | 2005 10 01 | 703 | 0.6− | 0.2− |
| 1993 03 19 | 691 | 1.0+ | 0.8− | 2005 08 26 | 644 | 0.2+ | 0.2+ | 2005 10 01 | 703 | 0.3− | 0.7− |
| 2000 09 26 | 699 | 0.8− | 0.6+ | 2005 08 26 | 644 | 0.3+ | 0.1+ | 2005 10 01 | 703 | 0.1+ | 0.8+ |
| 2000 09 26 | 699 | 1.4− | 1.2+ | 2005 08 26 | 644 | 0.0 | 0.1− | 2005 10 10 | 703 | 0.2+ | 0.1+ |
| 2000 09 26 | 699 | 0.0 | 0.3+ | 2005 09 22 | 644 | 0.3+ | 0.2+ | 2005 10 10 | 703 | 0.3+ | 1.3− |
| 2000 09 26 | 699 | 1.3+ | 1.2− | 2005 09 22 | 644 | 0.1+ | 0.1+ | 2005 10 10 | 703 | 0.6− | 0.1+ |
| 2000 10 03 | 049 | 0.1+ | 0.2− | 2005 09 22 | 644 | 0.3+ | 0.2− | 2005 10 10 | 703 | 0.0 | 0.2+ |

**2005 QK$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.66514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26764795 | $\omega$ | 337.92090 | | +0.94895909 | | −0.30556922 |
| $a$ | 2.3846617 | $\Omega$ | 40.13670 | | +0.30446036 | | +0.82282407 |
| $e$ | 0.1523929 | $i$ | 6.96150 | | +0.08234394 | | +0.47915343 |
| $P$ | 3.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2005 08 26 | 644 | 0.2+ | 0.1+ | 2005 09 23 | 703 | 0.7− | 0.8+ |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2005 08 26 | 644 | 0.1+ | 0.3+ | 2005 09 23 | 703 | 1.5+ | 1.8+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2005 08 26 | 644 | 0.1+ | 0.1+ | 2005 09 23 | 703 | 1.7+ | 0.1+ |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2005 08 26 | 644 | 0.0 | 0.0 | 2005 09 23 | 703 | 0.4+ | 0.3+ |
| 2001 07 20 | 644 | 0.1+ | 0.2+ | 2005 08 26 | 644 | 0.1+ | 0.1+ | 2005 09 30 | 699 | 0.7− | 0.1− |
| 2001 07 20 | 644 | 0.3− | 0.0 | 2005 09 03 | 703 | 0.2+ | 0.7− | 2005 09 30 | 699 | 0.2− | 0.8+ |
| 2001 07 20 | 644 | 0.0 | 0.0 | 2005 09 03 | 703 | 0.5− | 1.3− | 2005 09 30 | 699 | 0.3+ | 1.3+ |
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2005 09 03 | 703 | 0.3− | 1.1− | 2005 09 30 | 699 | 0.0 | 0.8+ |
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2005 09 03 | 703 | 0.6− | 0.2+ | 2005 10 22 | 703 | 0.1+ | 0.7− |
| 2004 05 23 | 691 | 0.4− | 0.5+ | 2005 09 13 | 703 | 1.2− | 1.0+ | 2005 10 22 | 703 | 0.5+ | 0.0 |
| 2004 05 23 | 691 | 0.5+ | 0.4+ | 2005 09 13 | 703 | 1.6− | 0.6+ | 2005 10 22 | 703 | 0.6− | 0.2− |
| 2004 05 23 | 691 | 0.4+ | 0.2+ | 2005 09 13 | 703 | 0.3− | 0.1− | 2005 10 22 | 703 | 0.7− | 1.4+ |
| 2005 08 26 | 644 | 0.0 | 0.2− | 2005 09 13 | 703 | 0.7− | 0.2− | | | | |

**2005 QL$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.33157 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21516558 | $\omega$ | 263.05395 | | +0.70460931 | −0.70524810 | |
| $a$ | 2.7581689 | $\Omega$ | 141.74691 | | +0.69075540 | +0.65640032 | |
| $e$ | 0.0866512 | $i$ | 7.27733 | | +0.16242751 | +0.26788754 | |
| $P$ | 4.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.6− | 0.2+ | 2001 12 11 | 704 | 0.2+ | 0.5− | 2005 08 31 | 644 | 0.2+ | 0.0 |
| 2001 11 17 | 704 | 0.1+ | 0.5+ | 2001 12 11 | 704 | 0.3− | 1.5+ | 2005 08 31 | 644 | 0.4− | 0.3+ |
| 2001 11 17 | 704 | 0.1− | 0.2+ | 2001 12 11 | 704 | 0.0 | 0.1+ | 2005 09 13 | 691 | 0.0 | 0.0 |
| 2001 11 17 | 704 | 0.1− | 0.9− | 2001 12 11 | 704 | 0.3− | 0.3+ | 2005 09 13 | 691 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 0.5+ | 0.5− | 2001 12 11 | 704 | 0.7− | 0.4+ | 2005 09 13 | 691 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 0.8+ | 0.3− | 2005 08 26 | 644 | 0.1− | 0.0 | 2005 09 22 | 644 | 0.1− | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.0 | 2005 08 26 | 644 | 0.1+ | 0.2+ | 2005 09 22 | 644 | 0.1+ | 0.0 |
| 2001 12 11 | 704 | 0.6− | 0.6− | 2005 08 26 | 644 | 0.4+ | 0.1+ | 2005 09 22 | 644 | 0.1− | 0.2− |
| 2001 12 11 | 704 | 0.9+ | 0.1− | 2005 08 31 | 644 | 0.1− | 0.0 | | | | |

**2005 QM$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.13870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30314044 | $\omega$ | 77.63475 | | −0.22071917 | +0.97533724 | |
| $a$ | 2.1946914 | $\Omega$ | 179.61267 | | −0.92366396 | −0.20884309 | |
| $e$ | 0.1102341 | $i$ | 4.69823 | | −0.31325380 | −0.07142706 | |
| $P$ | 3.25 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 704 | 0.1+ | 1.3+ | 2004 02 29 | 691 | 0.1+ | 0.3+ | 2005 09 30 | 691 | 0.2+ | 0.0 |
| 2001 03 24 | 704 | 0.4+ | 0.9+ | 2004 02 29 | 691 | 0.1+ | 0.1+ | 2005 09 30 | 691 | 0.2− | 0.1+ |
| 2001 03 24 | 704 | 0.1+ | 0.3− | 2004 02 29 | 691 | 0.3+ | 0.8+ | 2005 09 30 | 691 | 0.1+ | 0.2+ |
| 2002 10 10 | 644 | 0.4− | 0.3− | 2005 08 27 | 644 | 0.1− | 0.2+ | 2005 09 30 | G96 | 0.1+ | 0.3− |
| 2002 10 10 | 644 | 0.1+ | 0.1+ | 2005 08 27 | 644 | 0.3+ | 0.3+ | 2005 09 30 | G96 | 0.0 | 0.6− |
| 2002 10 10 | 644 | 0.3+ | 0.3− | 2005 08 27 | 644 | 0.3+ | 0.5+ | 2005 09 30 | G96 | 0.6− | 0.6− |
| 2004 02 25 | 333 | 0.6− | 0.6− | 2005 09 13 | 691 | 0.1− | 0.2+ | 2005 09 30 | G96 | 0.1− | 0.3− |
| 2004 02 25 | 333 | 0.0 | 0.1+ | 2005 09 13 | 691 | 0.2− | 0.7+ | | | | |
| 2004 02 25 | 333 | 0.1− | 0.2− | 2005 09 13 | 691 | 0.1− | 0.4+ | | | | |

**2005 QN$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.61618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22296703 | $\omega$ | 281.32750 | | +0.99138763 | +0.03884116 | |
| $a$ | 2.6934502 | $\Omega$ | 76.53745 | | +0.01771652 | +0.90644912 | |
| $e$ | 0.0381116 | $i$ | 7.38878 | | −0.12975628 | +0.42052510 | |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.3+ | 0.6+ | 2004 04 30 | 691 | 0.3+ | 0.1+ | 2005 10 03 | 703 | 0.9+ | 0.5− |
| 2001 10 10 | 644 | 0.1+ | 0.5+ | 2004 04 30 | 691 | 0.0 | 0.3+ | 2005 10 03 | 703 | 0.1+ | 0.4+ |
| 2001 10 10 | 644 | 0.1+ | 0.4+ | 2004 04 30 | 691 | 0.4− | 0.0 | 2005 10 03 | 703 | 0.1− | 0.8+ |
| 2001 10 17 | 704 | 0.4+ | 1.1+ | 2005 08 27 | 644 | 0.0 | 0.5+ | 2005 10 10 | 703 | (1.9− | 0.7+) |
| 2001 10 17 | 704 | (1.9− | 0.6−) | 2005 08 27 | 644 | 0.3− | 0.2+ | 2005 10 10 | 703 | 0.1+ | 1.2− |
| 2001 10 17 | 704 | 1.2− | 0.3+ | 2005 08 27 | 644 | 0.0 | 0.2+ | 2005 10 10 | 703 | 0.9− | 0.5+ |
| 2001 10 17 | 704 | 1.0− | 1.1− | 2005 09 27 | 704 | 0.0 | 0.1+ | 2005 10 10 | 703 | 0.2+ | 0.9+ |
| 2003 02 04 | 699 | 0.6+ | 0.4− | 2005 09 27 | 704 | 0.6− | 1.0− | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2003 02 04 | 699 | 0.8+ | 0.4+ | 2005 09 27 | 704 | 0.9+ | 0.5+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2003 02 04 | 699 | (1.0+ | 1.8+) | 2005 09 27 | 704 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 02 04 | 699 | 0.0 | 0.7+ | 2005 10 03 | 703 | 0.2+ | 0.9− | 2006 11 22 | G96 | 0.2− | 0.3− |

**2005 QO$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.60541 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23067333 | $\omega$ | 140.10330 | | +0.12879323 | +0.98934504 | |
| $a$ | 2.6331229 | $\Omega$ | 137.17065 | | −0.93341919 | +0.14406052 | |
| $e$ | 0.0858479 | $i$ | 5.73118 | | −0.33487448 | −0.02104644 | |
| $P$ | 4.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.2− | 0.3− | 2004 06 09 | 691 | 0.1+ | 0.3+ | 2005 09 24 | 644 | 0.1+ | 0.0 |
| 1995 02 24 | 691 | 0.2− | 0.3− | 2004 06 09 | 691 | 0.1+ | 0.4+ | 2005 09 24 | 699 | 0.5+ | 0.6+ |
| 1995 02 24 | 691 | 0.1− | 0.1− | 2004 06 09 | 691 | 0.3+ | 0.4+ | 2005 09 24 | 699 | 0.9+ | 0.1+ |
| 2001 10 24 | 644 | 0.3+ | 0.5+ | 2005 08 27 | 644 | 0.0 | 0.0 | 2005 09 24 | 644 | 0.2+ | 0.1+ |
| 2001 10 24 | 644 | 0.1+ | 0.3+ | 2005 08 27 | 644 | 0.2+ | 0.0 | 2005 09 24 | 699 | 0.1+ | 0.8− |
| 2001 10 24 | 644 | 0.6+ | 0.7+ | 2005 08 27 | 644 | 0.1+ | 0.0 | 2005 09 30 | 699 | 0.3− | 0.1− |
| 2003 01 27 | 704 | 0.5+ | 0.9+ | 2005 09 11 | 691 | 0.3− | 0.1+ | 2005 09 30 | 699 | 0.7− | 0.2− |
| 2003 01 27 | 704 | 0.1− | 0.8+ | 2005 09 11 | 691 | 0.1− | 0.2− | 2005 09 30 | 699 | 0.5− | 1.6+ |
| 2003 01 27 | 704 | 0.8− | 0.8+ | 2005 09 11 | 691 | 0.2− | 0.3− | 2005 09 30 | 699 | 1.0+ | 0.9+ |
| 2003 01 27 | 704 | 0.3− | 0.7+ | 2005 09 24 | 644 | 0.3+ | 0.2− | | | | |
| 2003 01 27 | 704 | 1.5+ | 1.3+ | 2005 09 24 | 699 | 1.0− | 0.1− | | | | |

**2005 QP$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.02550 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21796455 | $\omega$ | 91.77147 | | −0.01988581 | −0.99979801 | |
| $a$ | 2.7345055 | $\Omega$ | 359.34628 | | +0.78524481 | −0.01381300 | |
| $e$ | 0.1248595 | $i$ | 14.80725 | | +0.61886602 | −0.01459962 | |
| $P$ | 4.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 15 | 691 | 0.7+ | 0.4+ | 2003 03 23 | 691 | 0.1− | 0.0 | 2005 09 11 | 691 | 0.1− | 0.4+ |
| 1994 04 15 | 691 | 0.0 | 0.2+ | 2005 08 28 | 691 | 0.0 | 0.0 | 2005 09 11 | 691 | 0.1+ | 0.2+ |
| 1994 04 15 | 691 | 0.2+ | 0.5+ | 2005 08 28 | 691 | 0.3− | 0.4+ | 2005 10 01 | G96 | 0.1− | 0.0 |
| 2001 12 09 | 704 | 1.5− | 1.5+ | 2005 08 28 | 691 | 0.4− | 0.2+ | 2005 10 01 | G96 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.6+ | 0.1+ | 2005 09 01 | 691 | 0.1− | 0.1− | 2005 10 01 | G96 | 0.1− | 0.2+ |
| 2001 12 09 | 704 | 0.3− | 0.4+ | 2005 09 01 | 691 | 0.2+ | 0.1− | 2005 10 01 | G96 | 0.2+ | 0.1− |
| 2003 03 23 | 691 | 0.1+ | 0.0 | 2005 09 01 | 691 | 0.3− | 0.2− | | | | |
| 2003 03 23 | 691 | 0.0 | 0.1+ | 2005 09 11 | 691 | 0.0 | 0.1+ | | | | |

**2005 QQ$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.61324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25751106 | $\omega$ | 240.70057 | | +0.88287908 | −0.46710365 | |
| $a$ | 2.4468394 | $\Omega$ | 147.07754 | | +0.45579324 | +0.82757642 | |
| $e$ | 0.1897164 | $i$ | 5.10485 | | +0.11303563 | +0.31133816 | |
| $P$ | 3.83 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.2− | 1.5− | 2005 08 28 | 691 | 0.0 | 0.2− | 2005 10 05 | 703 | 1.0+ | 0.4− |
| 2001 08 16 | 704 | 0.4+ | 0.3− | 2005 08 28 | 691 | 0.1− | 0.0 | 2005 10 05 | 703 | 0.7− | 0.2− |
| 2001 08 16 | 704 | 0.7+ | 1.2+ | 2005 08 28 | 691 | 0.2− | 0.3− | 2005 10 05 | 703 | 0.7+ | 0.1+ |
| 2001 08 16 | 704 | 0.8− | 0.9+ | 2005 09 11 | 691 | 0.1− | 0.0 | 2005 10 05 | 703 | 1.0− | 0.4+ |
| 2001 08 20 | 807 | 0.1− | 0.2− | 2005 09 11 | 691 | 0.1+ | 0.0 | 2005 10 25 | G96 | 0.0 | 0.3+ |
| 2001 08 20 | 807 | 0.1− | 0.1− | 2005 09 11 | 691 | 0.1− | 0.0 | 2005 10 25 | G96 | 0.2− | 0.6+ |
| 2004 05 09 | 291 | 0.2+ | 0.1+ | 2005 09 25 | 644 | 0.3+ | 0.2+ | 2005 10 25 | G96 | 0.1+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 09 | 291 | 0.0 | 0.1− | 2005 09 25 | 644 | 0.3+ | 0.5+ | 2005 10 25 | G96 | 0.4+ | 0.5+ | | |
| 2004 05 09 | 291 | 0.2− | 0.2+ | 2005 09 25 | 644 | 0.2+ | 0.2− | | | | | | |

**2005 QR$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.09987 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16931516 | $\omega$ | 302.58760 | | −0.35649521 | | −0.93100627 |
| $a$ | 3.2359774 | $\Omega$ | 167.53849 | | +0.93163561 | | −0.36055276 |
| $e$ | 0.0135825 | $i$ | 21.28998 | | +0.07047169 | | +0.05682453 |
| $P$ | 5.82 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.1+ | 0.0 | 2005 08 29 | 691 | 0.0 | 0.0 | 2005 09 25 | 691 | 0.1+ | 0.2+ | | |
| 2003 04 01 | 645 | 0.1+ | 0.0 | 2005 09 13 | 691 | 0.1+ | 0.1− | 2005 09 30 | G96 | 0.3− | 0.2− | | |
| 2003 04 27 | 645 | 0.1− | 0.0 | 2005 09 13 | 691 | 0.0 | 0.4− | 2005 09 30 | G96 | 0.2− | 0.7− | | |
| 2003 04 27 | 645 | 0.1− | 0.0 | 2005 09 13 | 691 | 0.3− | 0.3+ | 2005 09 30 | G96 | 0.2+ | 0.2+ | | |
| 2005 08 29 | 691 | 0.0 | 0.1− | 2005 09 25 | 691 | 0.1+ | 0.2+ | 2005 09 30 | G96 | 0.0 | 0.1− | | |
| 2005 08 29 | 691 | 0.2− | 0.1− | 2005 09 25 | 691 | 0.4+ | 0.2+ | | | | | | |

**2005 QS$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.78325 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25866489 | $\omega$ | 261.41088 | | +0.80802056 | | −0.58867421 |
| $a$ | 2.4395575 | $\Omega$ | 134.64790 | | +0.55283361 | | +0.74363682 |
| $e$ | 0.1858154 | $i$ | 1.91542 | | +0.20366094 | | +0.31696523 |
| $P$ | 3.81 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 291 | 0.6+ | 0.0 | 2005 08 29 | 704 | 0.5+ | 0.4− | 2005 09 12 | 691 | 0.1+ | 0.3+ | | |
| 2003 01 28 | 291 | 0.4− | 0.7+ | 2005 08 29 | 704 | 0.4+ | 0.5− | 2005 09 12 | 691 | 0.1+ | 0.2+ | | |
| 2003 01 28 | 291 | 0.1+ | 0.2− | 2005 08 29 | 704 | 0.7− | 0.7− | 2005 09 12 | 691 | 0.1− | 0.2+ | | |
| 2003 02 06 | 291 | 0.0 | 0.3+ | 2005 08 29 | 691 | 0.3− | 0.3+ | 2005 09 22 | 644 | 0.0 | 0.0 | | |
| 2003 02 06 | 291 | 0.3+ | 0.5+ | 2005 08 29 | 691 | 0.1− | 0.3+ | 2005 09 22 | 644 | 0.4− | 0.3− | | |
| 2003 02 06 | 291 | 0.1− | 0.3+ | 2005 08 29 | 699 | 0.3− | 1.0+ | 2005 09 22 | 644 | 0.0 | 0.0 | | |
| 2004 05 13 | 691 | 0.5+ | 0.6+ | 2005 08 29 | 691 | 0.2− | 0.3+ | 2005 11 03 | G96 | 0.3+ | 0.3− | | |
| 2004 05 13 | 691 | 0.1− | 0.2+ | 2005 08 29 | 699 | 0.3+ | 0.5+ | 2005 11 03 | G96 | 0.4+ | 0.2− | | |
| 2004 05 13 | 691 | 0.2− | 0.1− | 2005 08 29 | 699 | 0.5− | 0.3+ | 2005 11 03 | G96 | 0.5+ | 0.2− | | |
| 2005 08 29 | 704 | 0.3+ | 0.4+ | 2005 08 29 | 699 | 0.8− | 0.5− | 2005 11 03 | G96 | 0.5+ | 0.4− | | |

**2005 QT$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.32272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22309689 | $\omega$ | 56.98835 | | +0.87750257 | | +0.47703769 |
| $a$ | 2.6924049 | $\Omega$ | 274.47632 | | −0.45482864 | | +0.79527834 |
| $e$ | 0.0838755 | $i$ | 2.83085 | | −0.15205310 | | +0.37412218 |
| $P$ | 4.42 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.2+ | 2004 04 25 | 691 | 0.1+ | 0.4− | 2005 09 12 | 691 | 0.0 | 0.0 | | |
| 1999 03 20 | 645 | 0.1+ | 0.2+ | 2004 04 25 | 691 | 0.5+ | 0.3− | 2005 09 12 | 691 | 0.4− | 0.1+ | | |
| 2001 11 19 | 704 | 0.4− | 0.2+ | 2004 05 19 | 691 | 0.4− | 0.4+ | 2005 09 30 | 691 | 0.2+ | 0.2+ | | |
| 2001 11 19 | 704 | 1.4− | 1.1+ | 2004 05 19 | 691 | 0.2− | 0.6+ | 2005 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.5+ | 0.8+ | 2004 05 19 | 691 | 0.0 | 0.1− | 2005 09 30 | 691 | 0.3− | 0.1+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.6+ | 2005 08 29 | 691 | 0.2+ | 0.2+ | 2005 09 30 | 291 | 0.3− | 0.1+ | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 08 29 | 691 | 0.0 | 0.1+ | 2005 09 30 | 291 | 0.1+ | 0.1+ | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 08 29 | 691 | 0.2+ | 0.1− | 2005 09 30 | 291 | 0.1− | 0.2+ | | |
| 2004 04 25 | 691 | 0.1+ | 0.2+ | 2005 09 12 | 691 | 0.4− | 0.1+ | | | | | | |

**2005 QU$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.72244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15289325 | $\omega$ | 54.06333 | | +0.81279439 | | +0.57826873 |
| $a$ | 3.4637285 | $\Omega$ | 270.50517 | | −0.55461472 | | +0.73110154 |
| $e$ | 0.0825058 | $i$ | 4.04299 | | −0.17823522 | | +0.36207157 |
| $P$ | 6.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.1+ | 0.4+ | 2005 09 06 | 699 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.7− | | |
| 2002 02 11 | 704 | (2.1− | 1.4+) | 2005 09 06 | 699 | (1.9+ | 0.8−) | 2006 11 01 | G96 | 0.7+ | 0.6− | | |
| 2002 02 11 | 704 | 0.8+ | 0.2+ | 2005 09 06 | 699 | 0.9+ | 0.2− | 2006 11 01 | G96 | 0.4− | 0.4− | | |
| 2002 02 11 | 704 | 0.5− | 0.8− | 2005 09 22 | 644 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2+ | | |
| 2002 02 11 | 704 | (1.8+ | 1.7+) | 2005 09 22 | 644 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.1− | | |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2005 09 22 | 644 | 0.0 | 0.0 | 2006 11 10 | 691 | (1.6+ | 0.4+) | | |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2005 10 01 | 703 | 0.4− | 0.5+ | 2006 11 14 | 691 | 0.4+ | 0.3+ | | |
| 2005 08 29 | 699 | 0.6+ | 0.7+ | 2005 10 01 | 703 | 0.1+ | 1.2− | 2006 11 14 | 691 | 0.1+ | 0.2+ | | |
| 2005 08 29 | 699 | 0.1− | 0.5− | 2005 10 01 | 703 | 0.6− | 0.1+ | 2006 11 14 | 691 | 0.9− | 0.4+ | | |
| 2005 08 29 | 699 | 0.3+ | 0.8− | 2005 10 01 | 703 | 0.3+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.1− | | |
| 2005 08 29 | 699 | 1.3+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.7− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2005 08 31 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.6− | 2006 11 18 | 691 | 0.2− | 0.0 | | |
| 2005 08 31 | 691 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.6− | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2005 08 31 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.4− | 2006 11 22 | 691 | 0.3+ | 0.0 | | |
| 2005 09 06 | 699 | (0.4− | 1.9−) | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.0 | | |

**2005 QV$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.51846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23446237 | $\omega$ | 117.06290 | | +0.52748586 | | −0.84009280 |
| $a$ | 2.6046774 | $\Omega$ | 300.53866 | | +0.71814002 | | +0.52047161 |
| $e$ | 0.1148054 | $i$ | 8.44591 | | +0.45390921 | | +0.15281818 |
| $P$ | 4.20 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.5− | 0.7− | 2003 04 01 | 691 | 0.4− | 0.1− | 2005 09 30 | 644 | 0.2+ | 0.7+ | | |
| 2001 09 25 | 704 | 0.2+ | 0.8+ | 2003 04 01 | 691 | 0.7+ | 0.5+ | 2005 09 30 | 644 | 0.1+ | 0.2+ | | |
| 2001 09 25 | 704 | (0.2− | 1.6+) | 2005 08 29 | 644 | 0.3− | 0.4+ | 2005 09 30 | 644 | 0.5− | 0.3+ | | |
| 2001 10 13 | 644 | 0.0 | 0.5+ | 2005 08 29 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 13 | 644 | 0.1− | 0.3+ | 2005 08 29 | 644 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.6+ | 0.3− | | |
| 2001 10 13 | 644 | 0.3− | 0.2− | 2005 09 11 | 704 | 0.9+ | 0.4+ | 2006 10 22 | 691 | 0.2+ | 0.4− | | |
| 2003 03 07 | 704 | 0.5+ | 0.5+ | 2005 09 11 | 704 | 0.4− | 0.1− | 2006 11 01 | 691 | 1.0− | 0.3+ | | |
| 2003 03 07 | 704 | 0.0 | 0.9+ | 2005 09 11 | 704 | 0.7− | 0.7+ | 2006 11 01 | 691 | 0.3− | 0.2+ | | |
| 2003 03 07 | 704 | (0.9+ | 1.5+) | 2005 09 23 | 644 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.3− | | |
| 2003 03 07 | 704 | 1.0+ | 1.0+ | 2005 09 23 | 644 | 0.4− | 0.2+ | | | | | | |
| 2003 04 01 | 691 | 0.2+ | 0.3+ | 2005 09 23 | 644 | 0.0 | 0.5+ | | | | | | |

**2005 QW$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.30561 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18307410 | $\omega$ | 60.05855 | | +0.96529282 | | −0.21982803 |
| $a$ | 3.0717423 | $\Omega$ | 312.24335 | | +0.12003668 | | +0.85296018 |
| $e$ | 0.1363469 | $i$ | 10.98111 | | +0.23195036 | | +0.47342852 |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 704 | 1.4− | 0.2+ | 2002 02 11 | 704 | 0.4+ | 0.2+ | 2005 09 30 | 644 | 0.6+ | 0.9− | | |
| 2000 11 19 | 704 | 0.2+ | 0.6+ | 2002 02 11 | 704 | 0.3− | 0.4+ | 2005 10 07 | 703 | 0.2− | 0.2+ | | |
| 2000 11 19 | 704 | 0.1+ | 1.2− | 2005 08 30 | 644 | 0.2− | 0.1+ | 2005 10 07 | 703 | 0.7+ | 0.8− | | |
| 2000 11 19 | 704 | 0.5+ | 0.9− | 2005 08 30 | 644 | 0.1+ | 0.1+ | 2005 10 07 | 703 | 1.0+ | 0.9+ | | |
| 2000 11 19 | 704 | 1.0+ | 0.1− | 2005 08 30 | 644 | 0.2− | 0.0 | 2005 10 07 | 703 | 0.3+ | 0.9+ | | |
| 2002 01 13 | 291 | 0.0 | 0.1+ | 2005 09 12 | 704 | 0.8− | 0.7− | 2005 10 28 | 703 | 0.5− | 0.5− | | |
| 2002 01 13 | 291 | 0.0 | 0.0 | 2005 09 12 | 704 | 0.6− | 1.7+ | 2005 10 28 | 703 | 0.6− | 0.4− | | |
| 2002 01 13 | 291 | 0.0 | 0.2− | 2005 09 12 | 704 | 0.4− | 1.2+ | 2005 10 28 | 703 | 0.8− | 0.1+ | | |
| 2002 02 11 | 704 | 0.5+ | 0.8+ | 2005 09 12 | 704 | 0.7+ | 0.8+ | 2005 10 28 | 703 | 0.4− | 0.6− | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.1+ | 0.3+ | 2005 09 30 | 644 | 0.2+ | 0.1− | |
| 2002 02 11 | 704 | 0.5+ | 0.4+ | 2005 09 30 | 644 | 0.2− | 0.2− | |

**2005 QY$_{178}$ = 1996 SJ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.45359 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21746388 | $\omega$ | 291.30978 | | −0.25357593 | +0.96721205 | |
| $a$ | 2.7387010 | $\Omega$ | 323.99161 | | −0.87833950 | −0.23635320 | |
| $e$ | 0.0894476 | $i$ | 1.37876 | | −0.40523939 | −0.09294097 | |
| $P$ | 4.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 691 | 0.3− | 0.1− | 2001 10 16 | 291 | 0.1− | 0.1− | 2005 09 14 | 691 | 0.1− | 0.0 |
| 1996 09 17 | 691 | 0.3− | 0.0 | 2001 10 16 | 291 | 0.5− | 0.3+ | 2005 09 14 | 691 | 0.1− | 0.1+ |
| 1996 09 17 | 691 | 0.4− | 0.0 | 2001 10 16 | 291 | 1.0− | 1.0+ | 2005 09 25 | 703 | 1.6− | 0.8+ |
| 1996 09 20 | 691 | 0.6+ | 0.3− | 2001 10 16 | 291 | 0.1+ | 0.0 | 2005 09 25 | 703 | 0.3+ | 1.1+ |
| 1996 09 20 | 691 | 0.4+ | 0.3− | 2001 11 19 | 704 | 0.3+ | 1.4− | 2005 09 25 | 703 | 0.1− | 0.8+ |
| 1996 09 20 | 691 | 0.3+ | 0.0 | 2001 11 19 | 704 | 1.0+ | 0.1+ | 2005 09 25 | 703 | 1.4− | 1.4+ |
| 2001 10 16 | 291 | 0.2+ | 0.3− | 2001 11 19 | 704 | 1.3+ | 0.1− | 2005 10 30 | G96 | 0.2− | 0.5− |
| 2001 10 16 | 291 | 0.2+ | 0.2+ | 2005 08 31 | 691 | 0.4+ | 0.0 | 2005 10 30 | G96 | 0.4− | 0.3− |
| 2001 10 16 | 291 | 0.4+ | 0.2− | 2005 08 31 | 691 | 0.4+ | 0.1− | 2005 10 30 | G96 | 0.0 | 0.5− |
| 2001 10 16 | 291 | 0.1+ | 0.1− | 2005 08 31 | 691 | 0.2+ | 0.1− | 2005 10 30 | G96 | 0.2− | 0.0 |
| 2001 10 16 | 291 | 0.0 | 0.2− | 2005 09 14 | 691 | 0.1− | 0.1− | | | | |

**2005 QZ$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.45023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23540460 | $\omega$ | 269.42840 | | +0.96383416 | +0.25469279 | |
| $a$ | 2.5977225 | $\Omega$ | 75.81434 | | −0.20077995 | +0.88754617 | |
| $e$ | 0.2106317 | $i$ | 4.64164 | | −0.17524591 | +0.38391844 | |
| $P$ | 4.19 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.7− | 0.2+ | 2005 08 31 | 644 | 0.0 | 0.4+ | 2005 10 27 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.5+ | 1.1+ | 2005 10 01 | 699 | 0.2− | 0.2− | 2005 10 27 | 691 | 0.0 | 0.0 |
| 2001 11 20 | 704 | 0.9− | 0.5+ | 2005 10 01 | 699 | 0.4− | 1.1+ | 2005 10 27 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 704 | 0.9− | 0.3− | 2005 10 01 | 699 | 0.2− | 1.4− | 2005 12 01 | G96 | 0.3+ | 0.1− |
| 2001 12 09 | 691 | 0.7+ | 0.1+ | 2005 10 01 | 699 | 0.4− | 0.5+ | 2005 12 01 | G96 | 0.1+ | 0.1+ |
| 2001 12 09 | 691 | 0.2+ | 0.2+ | 2005 10 03 | 703 | 1.4+ | 1.8− | 2005 12 01 | G96 | 0.1+ | 0.2− |
| 2001 12 09 | 691 | 0.4− | 0.5− | 2005 10 03 | 703 | 0.2+ | 0.4− | 2005 12 01 | G96 | 0.1+ | 0.6− |
| 2005 08 31 | 644 | 0.1− | 0.1+ | 2005 10 03 | 703 | 0.7+ | 0.6+ | | | | |
| 2005 08 31 | 644 | 0.2− | 0.2+ | 2005 10 03 | 703 | 0.5+ | 0.6+ | | | | |

**2005 QG$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.62131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23387489 | $\omega$ | 46.13782 | | +0.88735800 | −0.45924425 | |
| $a$ | 2.6090375 | $\Omega$ | 341.08359 | | +0.37825695 | +0.77605320 | |
| $e$ | 0.2748741 | $i$ | 7.28623 | | +0.26366164 | +0.43224547 | |
| $P$ | 4.21 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2+ | 0.2+ | 2005 08 25 | 644 | 0.9+ | 0.4− | 2005 09 22 | 644 | 0.8+ | 0.3− |
| 2001 11 11 | 704 | 0.8− | 0.5− | 2005 08 25 | 644 | 0.4+ | 0.3− | 2005 10 01 | 703 | 0.4+ | 0.9− |
| 2001 11 11 | 704 | 0.5− | 0.3+ | 2005 08 25 | 644 | 0.5+ | 0.4− | 2005 10 01 | 703 | 0.0 | 0.3− |
| 2001 11 11 | 704 | 0.2+ | 0.1− | 2005 08 31 | 691 | 0.1+ | 0.2+ | 2005 10 01 | 703 | 1.5− | 0.2+ |
| 2001 11 11 | 704 | 0.9+ | 0.0 | 2005 08 31 | 691 | 0.9− | 0.2+ | 2005 10 01 | 703 | 0.2− | 0.1− |
| 2001 12 09 | 704 | 0.1− | 0.5− | 2005 08 31 | 691 | 0.0 | 0.1+ | 2005 10 08 | 704 | 0.2+ | 0.8+ |
| 2001 12 09 | 704 | 0.2− | 0.2− | 2005 09 22 | 644 | 0.4+ | 0.2− | 2005 10 08 | 704 | 0.2+ | 0.4+ |
| 2001 12 09 | 704 | 0.1+ | 1.0+ | 2005 09 22 | 644 | 0.5+ | 0.3− | 2005 10 08 | 704 | 0.5+ | 0.0 |

**2005 QJ$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.80000 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18234529 | $\omega$ | 40.58329 | | +0.78872532 | −0.61469730 | |
| $a$ | 3.0799217 | $\Omega$ | 357.31137 | | +0.51281183 | +0.66481647 | |
| $e$ | 0.0921453 | $i$ | 9.47234 | | +0.33902271 | +0.42446000 | |
| $P$ | 5.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 704 | 0.0 | 0.6+ | 2005 09 11 | 691 | 0.2− | 0.1+ | 2005 09 30 | G96 | 0.1− | 0.3− |
| 2000 11 03 | 704 | 0.1− | 0.5− | 2005 09 11 | 691 | 0.1+ | 0.1+ | 2005 10 12 | 691 | 0.5+ | 0.3+ |
| 2000 11 03 | 704 | 0.3− | 0.2− | 2005 09 23 | 703 | 0.2+ | 0.5− | 2005 10 12 | 691 | 0.7− | 0.4+ |
| 2000 11 03 | 704 | 0.2+ | 0.4+ | 2005 09 23 | 703 | (4.2+ | 0.7−) | 2005 10 12 | 691 | 0.4− | 0.0 |
| 2002 02 11 | 704 | 0.8− | 0.1− | 2005 09 23 | 703 | 0.4− | 0.2+ | 2005 10 30 | G96 | 0.0 | 0.3− |
| 2002 02 11 | 704 | 0.4+ | 0.1+ | 2005 09 23 | 703 | 1.2− | 1.2− | 2005 10 30 | G96 | 0.1+ | 0.3− |
| 2002 02 11 | 704 | 0.9+ | 0.0 | 2005 09 23 | 699 | 1.1+ | 0.5− | 2005 10 30 | G96 | 0.3− | 0.4− |
| 2002 02 11 | 704 | 0.5− | 0.9− | 2005 09 23 | 699 | 0.5+ | 0.7− | 2005 11 30 | G96 | 0.1− | 0.3+ |
| 2002 02 11 | 704 | 0.2− | 0.4+ | 2005 09 23 | 699 | 0.7− | 0.1+ | 2005 11 30 | G96 | 0.3− | 0.1+ |
| 2005 08 25 | 644 | 0.3− | 0.1− | 2005 09 23 | 699 | 0.1− | 0.7+ | 2005 11 30 | G96 | 0.2− | 0.3− |
| 2005 08 25 | 644 | 0.2− | 0.2− | 2005 09 30 | G96 | 0.0 | 0.0 | 2005 11 30 | G96 | 0.2− | 0.0 |
| 2005 08 25 | 644 | 0.3− | 0.1− | 2005 09 30 | G96 | 0.3− | 0.4− | | | | |
| 2005 09 11 | 691 | 0.3+ | 0.1+ | 2005 09 30 | G96 | 0.2+ | 0.2− | | | | |

**2005 QL$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.22724 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24085689 | $\omega$ | 267.58931 | | +0.95333702 | +0.16401276 | |
| $a$ | 2.5583699 | $\Omega$ | 82.89036 | | −0.04646846 | +0.90927782 | |
| $e$ | 0.1760760 | $i$ | 14.79946 | | −0.29831060 | +0.38250968 | |
| $P$ | 4.09 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 644 | 0.3− | 0.2+ | 2003 03 07 | 645 | 0.1+ | 0.2+ | 2005 10 30 | 703 | 0.2+ | 0.1+ |
| 2001 09 21 | 644 | 0.3− | 0.4+ | 2004 04 23 | 691 | 0.1+ | 0.5+ | 2005 11 06 | 699 | 0.2− | 0.3+ |
| 2001 09 21 | 644 | 0.7− | 0.5+ | 2004 04 23 | 691 | 0.1− | 0.4+ | 2005 11 06 | 703 | 0.4+ | 0.1+ |
| 2001 10 11 | 704 | 0.3− | 1.0+ | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2005 11 06 | 703 | (1.7− | 0.7−) |
| 2001 10 11 | 704 | 0.9− | 0.8+ | 2005 08 25 | 644 | 0.4− | 0.0 | 2005 11 06 | 699 | 0.7+ | 0.2− |
| 2001 10 11 | 704 | 1.1− | 1.3+ | 2005 08 25 | 644 | 0.3− | 0.0 | 2005 11 06 | 703 | 0.3− | 0.0 |
| 2001 10 11 | 704 | 1.2− | 1.8+ | 2005 08 25 | 644 | 0.0 | 0.1− | 2005 11 06 | 703 | 0.2+ | 1.0− |
| 2001 10 23 | 699 | 1.2+ | 0.3+ | 2005 09 15 | 703 | 0.5+ | 2.2+ | 2005 11 06 | 699 | 0.6+ | 1.4− |
| 2001 10 23 | 699 | 0.2+ | 0.6+ | 2005 09 15 | 703 | 0.5− | 0.5+ | 2005 11 06 | 699 | 0.3+ | 0.9+ |
| 2001 10 23 | 699 | 0.1− | 0.1− | 2005 09 15 | 703 | 0.4− | 0.6+ | 2005 11 17 | 644 | 0.3− | 0.2− |
| 2001 10 23 | 699 | 0.4+ | 0.3− | 2005 09 15 | 703 | 0.7+ | 0.9+ | 2005 11 17 | 644 | 0.5− | 0.3− |
| 2002 01 08 | 645 | 0.2+ | 0.1− | 2005 10 30 | 703 | 0.6− | 0.3+ | 2005 11 17 | 644 | 1.2− | 0.5− |
| 2002 01 08 | 645 | 0.1− | 0.2− | 2005 10 30 | 703 | (1.7+ | 0.7+) | | | | |
| 2003 03 07 | 645 | 0.1+ | 0.2+ | 2005 10 30 | 703 | 0.6− | 0.7+ | | | | |

**2005 QY$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.26605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22304956 | $\omega$ | 282.16126 | | +0.17273180 | −0.98028235 | |
| $a$ | 2.6927857 | $\Omega$ | 157.20472 | | +0.97227695 | +0.15410366 | |
| $e$ | 0.0479637 | $i$ | 14.34163 | | +0.15761107 | +0.12368741 | |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 699 | 1.0+ | 0.6− | 2005 08 26 | 644 | 0.1− | 0.0 | 2005 09 13 | 703 | 0.5+ | 0.2+ |
| 2003 03 06 | 699 | 0.9− | 0.3+ | 2005 08 26 | 644 | 0.4+ | 0.3− | 2005 10 05 | 703 | 0.6+ | 1.1− |
| 2003 03 06 | 699 | 0.1+ | 1.0+ | 2005 08 26 | 644 | 0.1− | 0.2+ | 2005 10 05 | 703 | 0.2− | 1.8− |
| 2003 03 06 | 699 | 0.0 | 0.2− | 2005 08 31 | 644 | 0.1+ | 0.1− | 2005 10 05 | 703 | (2.1− | 0.8+) |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2005 08 31 | 644 | 0.1+ | 0.3− | 2005 10 05 | 703 | 0.9− | 1.2+ |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2005 08 31 | 644 | 0.3+ | 0.1− | 2005 10 10 | 703 | (3.1+ | 0.6−) |
| 2005 08 26 | 644 | 0.1+ | 0.1+ | 2005 09 13 | 703 | 0.7− | 0.5− | 2005 10 10 | 703 | 1.0− | 0.4− |
| 2005 08 26 | 644 | 0.2+ | 0.1+ | 2005 09 13 | 703 | 0.7+ | 0.9+ | 2005 10 10 | 703 | 0.3− | 1.6+ |
| 2005 08 26 | 644 | 0.4+ | 0.2+ | 2005 09 13 | 703 | 0.1+ | 0.6− | 2005 10 10 | 703 | 0.1− | 0.3+ |

**2005 QA$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.68603 | | | (2000.0) | | |
| $n$ | 0.18293131 | $\omega$ | 240.44017 | | +0.92582933 | −0.35880627 |
| $a$ | 3.0733406 | $\Omega$ | 140.25036 | | +0.37774247 | +0.88869339 |
| $e$ | 0.1047278 | $i$ | 10.70126 | | −0.01227485 | +0.28545073 |
| $P$ | 5.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 645 | 0.0 | 0.1− | 2005 08 26 | 644 | 0.3− | 0.5+ | 2005 10 05 | 703 | 1.2− | 1.2− |
| 2000 11 27 | 645 | 0.1+ | 0.0 | 2005 08 26 | 644 | 0.3− | 0.6+ | 2005 10 05 | 703 | (2.8− | 0.4−) |
| 2002 01 12 | 644 | 0.3+ | 0.2+ | 2005 09 13 | 703 | 0.1+ | 0.7− | 2005 10 05 | 703 | (0.5− | 1.7−) |
| 2002 01 12 | 644 | 0.4+ | 0.6+ | 2005 09 13 | 703 | 0.6+ | 0.5− | 2005 10 05 | 703 | 1.3− | 0.4+ |
| 2002 01 12 | 644 | 0.4+ | 0.4+ | 2005 09 13 | 703 | 0.1− | 0.2− | 2005 10 05 | 703 | 0.4− | 0.7+ |
| 2002 02 11 | 704 | 1.2− | 1.1− | 2005 09 13 | 703 | (2.9− | 1.9−) | 2005 10 05 | 703 | 0.5+ | 0.3− |
| 2002 02 11 | 704 | 0.2− | 0.8+ | 2005 09 23 | 703 | 0.2− | 1.1+ | 2005 10 05 | 703 | 0.3− | 0.2+ |
| 2002 02 11 | 704 | 0.6+ | 0.0 | 2005 09 23 | 703 | 0.5+ | 0.5− | 2005 10 10 | 703 | 1.3+ | 0.3+ |
| 2002 02 11 | 704 | 0.5+ | 1.4+ | 2005 09 23 | 703 | 0.4− | 0.1− | 2005 10 10 | 703 | 0.3− | 0.5− |
| 2002 02 11 | 704 | 0.5− | 0.0 | 2005 09 23 | 703 | (1.8− | 1.2+) | 2005 10 10 | 703 | 1.4+ | 1.0+ |
| 2005 08 26 | 644 | 0.9− | 0.7+ | 2005 10 05 | 703 | 0.4− | 0.3+ | 2005 10 10 | 703 | 0.8+ | 1.4+ |

**2005 QB$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 132.11499 | | | (2000.0) | | |
| $n$ | 0.30049504 | $\omega$ | 241.38534 | | +0.79643429 | +0.59589913 |
| $a$ | 2.2075532 | $\Omega$ | 81.85430 | | −0.51215397 | +0.75518445 |
| $e$ | 0.2363121 | $i$ | 5.96893 | | −0.32154428 | +0.27313124 |
| $P$ | 3.28 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 691 | 0.7− | 0.3+ | 2005 09 03 | 703 | 0.3− | 0.7− | 2005 09 27 | 704 | 0.0 | 0.1+ |
| 1998 04 20 | 691 | 0.3− | 0.0 | 2005 09 03 | 703 | 0.5− | 0.2− | 2005 10 05 | 703 | 0.1− | 0.5− |
| 1998 04 20 | 691 | 0.5− | 0.1− | 2005 09 03 | 703 | 0.0 | 1.0− | 2005 10 05 | 703 | 0.7− | 1.0− |
| 1998 04 28 | 691 | 0.3+ | 0.2− | 2005 09 13 | 703 | 0.1− | 0.2+ | 2005 10 05 | 703 | 0.2+ | 0.4+ |
| 1998 04 28 | 691 | 0.9+ | 0.2− | 2005 09 13 | 703 | 1.0+ | 0.5+ | 2005 10 05 | 703 | 0.4− | 0.3+ |
| 1998 04 28 | 691 | 0.3+ | 0.1+ | 2005 09 13 | 703 | 0.4+ | 0.4+ | 2005 10 10 | 703 | (1.8+ | 3.1−) |
| 2005 08 26 | 644 | 0.0 | 0.7+ | 2005 09 27 | 704 | 0.1− | 0.8+ | 2005 10 10 | 703 | (4.3+ | 4.1−) |
| 2005 08 26 | 644 | 0.3− | 0.2+ | 2005 09 27 | 704 | 0.3+ | 0.1− | 2005 10 10 | 703 | 0.5+ | 1.1− |
| 2005 08 26 | 644 | 0.0 | 0.3+ | 2005 09 27 | 704 | 0.5+ | 0.0 | | | | |
| 2005 09 03 | 703 | 0.4− | 0.4+ | 2005 09 27 | 704 | 0.1− | 0.1+ | | | | |

**2005 QE$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 99.40147 | | | (2000.0) | | |
| $n$ | 0.26543580 | $\omega$ | 122.75290 | | +0.95913961 | +0.28070778 |
| $a$ | 2.3978925 | $\Omega$ | 220.97555 | | −0.27428740 | +0.89180825 |
| $e$ | 0.1686347 | $i$ | 3.09609 | | −0.06940916 | +0.35479740 |
| $P$ | 3.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 23 | 691 | 0.8− | 0.8+ | 2005 09 13 | 691 | 0.0 | 0.2+ | 2005 09 25 | 691 | 0.3+ | 0.2+ |
| 1998 12 23 | 691 | 0.5+ | 0.2+ | 2005 09 13 | 691 | 0.0 | 0.1+ | 2005 09 25 | 691 | 0.1+ | 0.3+ |
| 1998 12 23 | 691 | 0.2+ | 0.2− | 2005 09 13 | 691 | 0.0 | 0.1+ | 2005 09 25 | 691 | 0.2+ | 0.1+ |
| 2004 03 29 | 691 | 0.4+ | 0.6+ | 2005 09 22 | 644 | 0.2− | 0.2+ | 2005 10 07 | 691 | 0.2− | 0.1+ |
| 2004 03 29 | 691 | 0.2+ | 0.7+ | 2005 09 22 | 644 | 0.4− | 0.1+ | 2005 10 07 | 691 | 0.2− | 0.4+ |
| 2004 03 29 | 691 | 0.1+ | 0.4+ | 2005 09 22 | 644 | 0.4− | 0.1− | 2005 10 07 | 691 | 0.0 | 0.1− |
| 2005 08 27 | 699 | 0.3− | 0.2+ | 2005 09 23 | 703 | 0.6+ | 0.6+ | 2005 11 01 | G96 | 0.4− | 0.4− |
| 2005 08 27 | 699 | 0.3− | 0.5+ | 2005 09 23 | 703 | 0.0 | 0.5− | 2005 11 01 | G96 | 0.2− | 0.2− |
| 2005 08 27 | 699 | 0.5− | 0.2− | 2005 09 23 | 703 | 0.3− | 0.7+ | 2005 11 01 | G96 | 0.5− | 0.5− |
| 2005 08 27 | 699 | 0.3+ | 0.5− | 2005 09 23 | 703 | (0.5− | 2.1−) | 2005 11 01 | G96 | 0.2− | 0.0 |

**2005 QG$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.31447 | | | (2000.0) | | |
| $n$ | 0.17753462 | $\omega$ | 57.88991 | | +0.57245108 | −0.81982509 |
| $a$ | 3.1353113 | $\Omega$ | 357.07833 | | +0.63258027 | +0.45218231 |
| $e$ | 0.2765219 | $i$ | 15.54497 | | +0.52167228 | +0.35130896 |
| $P$ | 5.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 05 | 704 | 0.0 | 0.2+ | 2005 08 27 | 644 | 0.2− | 0.1− | 2005 10 01 | 704 | 0.5− | 1.0+ |
| 2000 12 05 | 704 | 2.1+ | 1.0− | 2005 08 27 | 644 | 0.2− | 0.0 | 2005 10 01 | 704 | 0.7− | 0.3+ |
| 2000 12 05 | 704 | 0.4− | 0.8+ | 2005 09 22 | 644 | 0.1− | 0.0 | 2005 10 29 | G96 | 0.4− | 0.1+ |
| 2000 12 05 | 704 | 0.8− | 0.2+ | 2005 09 22 | 644 | 0.1+ | 0.1+ | 2005 10 29 | G96 | 0.3+ | 0.1+ |
| 2000 12 17 | 704 | 0.3− | 0.3+ | 2005 09 22 | 644 | 0.0 | 0.1− | 2005 10 29 | G96 | 0.1− | 0.3+ |
| 2000 12 17 | 704 | 0.3− | 0.4− | 2005 09 26 | 703 | 0.8− | 0.1− | 2005 10 29 | G96 | 0.1+ | 0.2+ |
| 2000 12 17 | 704 | 0.5− | 0.3+ | 2005 09 26 | 703 | 0.2+ | 0.4+ | 2005 11 29 | G96 | 0.3− | 0.8− |
| 2002 03 06 | 644 | 0.8+ | 1.1+ | 2005 09 26 | 703 | 0.5− | 0.6− | 2005 11 29 | G96 | 0.4+ | 0.1− |
| 2002 03 06 | 644 | 1.1+ | 1.1+ | 2005 09 26 | 703 | 0.6− | 0.5− | 2005 11 29 | G96 | 0.3+ | 0.2− |
| 2002 03 06 | 644 | 0.5+ | 0.8+ | 2005 10 01 | 704 | 0.9+ | 1.7+ | 2005 11 29 | G96 | 0.1− | 0.0 |
| 2005 08 27 | 644 | 0.2+ | 0.1+ | 2005 10 01 | 704 | 0.1− | 0.9+ | | | | |

**2005 QH$_{180}$ = 2004 GE$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.17177 | | | (2000.0) | | |
| $n$ | 0.27161212 | $\omega$ | 320.24969 | | +0.99535366 | −0.04746348 |
| $a$ | 2.3614022 | $\Omega$ | 42.69989 | | +0.08193502 | +0.87451597 |
| $e$ | 0.1623933 | $i$ | 7.09608 | | −0.05057410 | +0.48266866 |
| $P$ | 3.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 0.2− | 0.2− | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2005 10 03 | 703 | 0.3+ | 0.2− |
| 1998 11 17 | 691 | 0.3− | 0.0 | 2005 09 13 | 703 | 0.7+ | 1.4− | 2005 10 03 | 703 | 0.2− | 0.3+ |
| 1998 11 24 | 691 | 0.1+ | 0.2− | 2005 09 13 | 703 | 0.9− | 0.2+ | 2005 10 03 | 703 | 0.4− | 0.7− |
| 1998 11 24 | 691 | 0.0 | 0.4+ | 2005 09 13 | 703 | 0.1+ | 0.2+ | 2005 10 03 | 703 | 0.4+ | 0.7− |
| 1998 11 24 | 691 | 0.4+ | 0.1+ | 2005 09 13 | 703 | 0.0 | 0.2− | 2005 10 03 | 703 | 0.3+ | 0.8− |
| 2004 04 12 | 691 | 0.5− | 0.0 | 2005 09 27 | 704 | 0.1+ | 1.2+ | 2005 10 03 | 703 | 0.5− | 0.1+ |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2005 09 27 | 704 | 0.5+ | 0.1− | 2005 10 10 | 703 | 0.4− | 0.4− |
| 2004 04 12 | 691 | 0.4+ | 0.2− | 2005 09 27 | 704 | 1.0+ | 1.0+ | 2005 10 10 | 703 | 0.2+ | 0.9+ |
| 2005 08 27 | 644 | 0.1− | 0.2+ | 2005 10 03 | 703 | 0.5+ | 1.1− | 2005 10 10 | 703 | 0.8− | 1.3+ |
| 2005 08 27 | 644 | 0.2− | 0.3+ | 2005 10 03 | 703 | 0.6− | 0.1− | 2005 10 10 | 703 | 0.3− | 0.1+ |

**2005 QO$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 138.07683 | | | (2000.0) | | |
| $n$ | 0.29880985 | $\omega$ | 167.90305 | | +0.79765049 | +0.60285867 |
| $a$ | 2.2158453 | $\Omega$ | 154.99585 | | −0.55679372 | +0.74737547 |
| $e$ | 0.0973094 | $i$ | 2.40695 | | −0.23180690 | +0.27926927 |
| $P$ | 3.30 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 691 | 0.3− | 0.1+ | 2005 08 28 | 691 | 0.0 | 0.2− | 2005 09 22 | 644 | 0.4− | 0.0 |
| 2001 04 16 | 691 | 0.3+ | 0.1− | 2005 09 01 | 691 | 0.2+ | 0.1− | 2005 09 22 | 644 | 0.3− | 0.3+ |
| 2001 04 16 | 691 | 0.2+ | 0.0 | 2005 09 01 | 691 | 0.1+ | 0.1− | 2005 09 22 | 644 | 0.0 | 0.4+ |
| 2001 05 24 | 807 | 0.3− | 0.1+ | 2005 09 01 | 691 | 0.7− | 0.4+ | 2005 10 06 | G96 | 0.2+ | 0.2− |
| 2001 05 24 | 807 | 0.2− | 0.1+ | 2005 09 11 | 691 | 0.2− | 0.2+ | 2005 10 06 | G96 | 0.2+ | 0.1+ |
| 2005 08 28 | 691 | 0.3+ | 0.3− | 2005 09 11 | 691 | 0.0 | 0.0 | 2005 10 06 | G96 | 0.2+ | 0.2− |
| 2005 08 28 | 691 | 0.4+ | 0.1− | 2005 09 11 | 691 | 0.0 | 0.1+ | 2005 10 06 | G96 | 0.2+ | 0.2− |

**2005 QS$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.41087 | | (2000.0) | | +0.63871096 | +0.76683550 |
| $n$ | 0.12362524 | $\omega$ | 242.81049 | | −0.67937758 | +0.60067696 |
| $a$ | 3.9908428 | $\Omega$ | 67.02990 | | −0.36124010 | +0.22616477 |
| $e$ | 0.2257813 | $i$ | 3.94460 | | | |
| $P$ | 7.97 | $H$ | 15.6 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 28 | 691 | 0.2+ | 0.1− | 2005 09 30 | G96 | 0.1+ | 0.0 | 2005 10 09 | 691 | 0.0 | 0.1+ |
| 2005 08 28 | 691 | 0.1− | 0.0 | 2005 09 30 | G96 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.1− |
| 2005 08 28 | 691 | 0.4+ | 0.0 | 2005 09 30 | G96 | 0.5+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2005 09 11 | 691 | 0.2− | 0.3+ | 2005 09 30 | G96 | 0.5+ | 0.0 | 2006 11 22 | 691 | 0.5+ | 0.7+ |
| 2005 09 11 | 691 | 0.1+ | 0.0 | 2005 10 09 | 691 | 0.0 | 0.5− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 09 11 | 691 | 0.7− | 0.1+ | 2005 10 09 | 691 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2005 09 23 | 691 | 0.5− | 0.2− | 2005 10 09 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2005 09 23 | 691 | 0.6+ | 0.2− | 2005 10 09 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.6− | 0.5− |
| 2005 09 23 | 691 | 0.0 | 0.1− | 2005 10 09 | 691 | 0.1− | 0.0 | | | | |

**2005 QZ$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.57357 | | (2000.0) | | +0.74835559 | −0.61338205 |
| $n$ | 0.24105176 | $\omega$ | 106.22847 | | +0.45484720 | +0.75156459 |
| $a$ | 2.5569908 | $\Omega$ | 292.32131 | | +0.48278145 | +0.24272027 |
| $e$ | 0.2069613 | $i$ | 15.83624 | | | |
| $P$ | 4.09 | $H$ | 16.6 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.2+ | 0.1+ | 2005 08 30 | 599 | 0.1+ | 0.6+ | 2005 09 26 | 644 | 0.5+ | 0.1− |
| 2001 10 15 | 704 | 0.1+ | 0.4− | 2005 08 30 | 599 | 1.0+ | 0.1+ | 2005 09 30 | 703 | 0.3+ | 0.4+ |
| 2001 10 15 | 704 | 1.1− | 0.5− | 2005 08 30 | 599 | 0.9+ | 0.3+ | 2005 09 30 | 703 | 0.1+ | 0.1− |
| 2001 10 15 | 704 | 0.2+ | 0.2− | 2005 09 03 | 703 | 1.6− | 0.0 | 2005 09 30 | 703 | 0.1− | 0.6+ |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2005 09 03 | 703 | 0.5+ | 1.0− | 2005 09 30 | 703 | 1.3− | 0.7− |
| 2001 12 10 | 704 | 0.7+ | 0.4+ | 2005 09 03 | 703 | 0.6− | 0.2+ | 2005 10 08 | 703 | 0.0 | 0.3+ |
| 2001 12 10 | 704 | 0.5+ | 0.2+ | 2005 09 03 | 703 | 1.6− | 1.1+ | 2005 10 08 | 703 | 0.1+ | 1.5− |
| 2001 12 10 | 704 | 0.6− | 0.6+ | 2005 09 26 | 644 | 0.2+ | 0.1+ | 2005 10 08 | 703 | 0.1+ | 0.7− |
| 2005 08 30 | 599 | 1.2+ | 0.2+ | 2005 09 26 | 644 | 0.6+ | 0.1− | 2005 10 08 | 703 | 0.1− | 0.2+ |

**2005 QC$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.83647 | | (2000.0) | | +0.76376645 | −0.63594548 |
| $n$ | 0.18979595 | $\omega$ | 182.04412 | | +0.59473730 | +0.75990628 |
| $a$ | 2.9987810 | $\Omega$ | 218.19008 | | +0.25089511 | +0.13459491 |
| $e$ | 0.1033980 | $i$ | 10.30562 | | | |
| $P$ | 5.19 | $H$ | 16.5 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 691 | 0.5− | 0.3− | 2005 09 23 | 703 | 0.4+ | 1.0− | 2005 10 06 | 699 | 0.1+ | 0.3− |
| 2000 09 24 | 691 | 0.4− | 0.4− | 2005 09 23 | 703 | 1.3− | 1.2+ | 2005 10 06 | 699 | 1.8+ | 0.2+ |
| 2000 09 24 | 691 | 0.0 | 0.2− | 2005 09 23 | 703 | 0.7+ | 0.6+ | 2005 10 06 | 699 | 0.7− | 0.3+ |
| 2000 11 23 | 691 | 0.1+ | 0.2+ | 2005 09 23 | 703 | 1.5+ | 0.3+ | 2005 10 08 | 704 | 0.4+ | 0.2− |
| 2000 11 23 | 691 | 0.1+ | 0.3+ | 2005 09 29 | 699 | 0.5− | 0.2− | 2005 10 08 | 704 | 0.3− | 0.3− |
| 2000 11 23 | 691 | 0.7+ | 0.1+ | 2005 09 29 | 699 | 0.9− | 0.3− | 2005 10 08 | 704 | 1.4− | 0.9− |
| 2005 08 30 | 644 | 0.4− | 0.7− | 2005 09 29 | 699 | 0.6− | 1.0+ | 2005 10 08 | 704 | 0.0 | 1.5+ |
| 2005 08 30 | 644 | 0.2− | 0.4− | 2005 09 29 | 699 | 1.5+ | 1.5+ | | | | |
| 2005 08 30 | 644 | 0.2− | 0.3− | 2005 10 06 | 699 | 0.3− | 0.5− | | | | |

**2005 QD$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.47852 | | (2000.0) | | +0.53861373 | −0.84077653 |
| $n$ | 0.21936694 | $\omega$ | 78.92738 | | +0.70404897 | +0.48477498 |
| $a$ | 2.7228388 | $\Omega$ | 338.21260 | | +0.46282858 | +0.24101463 |
| $e$ | 0.1051339 | $i$ | 8.47193 | | | |
| $P$ | 4.49 | $H$ | 16.3 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 19 | 691 | 0.1+ | 0.0 | 2005 08 30 | 644 | 0.0 | 1.6+ | 2005 10 29 | 460 | (3.5+ | 1.0+) |
| 1994 04 19 | 691 | 0.3− | 0.2− | 2005 10 03 | 703 | 0.6− | 0.4− | 2005 10 29 | 460 | 0.6+ | 0.3+ |
| 1994 04 19 | 691 | 0.1− | 0.4− | 2005 10 03 | 703 | 0.0 | 0.8− | 2005 10 29 | 460 | 0.4+ | 1.0+ |
| 2003 03 30 | 691 | 0.0 | 0.2+ | 2005 10 03 | 703 | 0.2+ | 1.2− | 2005 11 03 | G96 | 0.2− | 0.0 |
| 2003 03 30 | 691 | 0.2+ | 0.6+ | 2005 10 03 | 703 | 0.1− | 1.7+ | 2005 11 03 | G96 | 0.2+ | 0.1− |
| 2003 03 30 | 691 | 0.4+ | 0.3+ | 2005 10 27 | 460 | 0.4− | 0.7− | 2005 11 03 | G96 | 0.5− | 0.1+ |
| 2005 08 30 | 644 | 0.2− | 0.4+ | 2005 10 27 | 460 | 0.4+ | 0.0 | 2005 11 03 | G96 | 0.3− | 0.2− |
| 2005 08 30 | 644 | 0.4− | 0.6+ | 2005 10 27 | 460 | 0.6− | 0.2− | | | | |

**2005 QB$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.51557 | | (2000.0) | | +0.90259988 | −0.43034189 |
| $n$ | 0.18681028 | $\omega$ | 208.95743 | | +0.42122100 | +0.87766637 |
| $a$ | 3.0306483 | $\Omega$ | 176.47748 | | +0.08880499 | +0.21096826 |
| $e$ | 0.0315758 | $i$ | 10.24062 | | | |
| $P$ | 5.28 | $H$ | 15.8 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 691 | 0.2− | 0.1+ | 2005 08 31 | 691 | 0.3+ | 0.0 | 2005 10 13 | 691 | 0.3− | 0.2− |
| 2003 03 27 | 691 | 0.8− | 0.1− | 2005 09 14 | 691 | 0.1− | 0.1− | 2005 10 13 | 691 | 0.7− | 0.1− |
| 2003 03 27 | 691 | 0.3− | 0.2+ | 2005 09 14 | 691 | 0.1− | 0.0 | 2005 10 13 | 691 | 0.1+ | 0.2+ |
| 2003 04 09 | 691 | 0.5+ | 0.1+ | 2005 09 14 | 691 | 0.0 | 0.1− | 2005 10 29 | G96 | 0.0 | 0.1− |
| 2003 04 09 | 691 | 0.3+ | 0.2− | 2005 09 29 | G96 | 0.3+ | 0.7+ | 2005 10 29 | G96 | 0.5+ | 0.4− |
| 2003 04 09 | 691 | 0.5+ | 0.1− | 2005 09 29 | G96 | 0.1+ | 0.6+ | 2005 10 29 | G96 | 0.4+ | 0.4− |
| 2005 08 31 | 691 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.1+ | 0.5+ | 2005 10 29 | G96 | 0.4+ | 0.2− |
| 2005 08 31 | 691 | 0.1+ | 0.0 | 2005 09 29 | G96 | 0.6+ | 0.6+ | | | | |

**2005 QD$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.82268 | | (2000.0) | | +0.77739582 | −0.62406948 |
| $n$ | 0.23725996 | $\omega$ | 238.38814 | | +0.62622085 | +0.75609312 |
| $a$ | 2.5841621 | $\Omega$ | 159.87606 | | +0.05918781 | +0.19713059 |
| $e$ | 0.1823790 | $i$ | 13.22244 | | | |
| $P$ | 4.15 | $H$ | 16.8 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 645 | 0.1+ | 0.0 | 2005 10 04 | 703 | 0.1+ | 0.2− | 2005 10 22 | 644 | 0.0 | 0.4− |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2005 10 04 | 703 | 0.3− | 0.0 | 2005 11 06 | 699 | 0.1− | 0.1+ |
| 2003 03 11 | 644 | 0.2+ | 1.1+ | 2005 10 07 | A50 | 1.5− | 1.3+ | 2005 11 06 | 699 | 0.8− | 1.3+ |
| 2003 03 11 | 644 | 0.4+ | 1.6+ | 2005 10 07 | A50 | 1.0− | 1.6+ | 2005 11 06 | 699 | 0.3− | 1.4+ |
| 2003 03 11 | 644 | 0.1+ | 1.1+ | 2005 10 07 | A50 | 0.7− | 1.4+ | 2005 11 06 | 699 | 0.2− | 0.6+ |
| 2005 08 31 | 644 | 0.1− | 0.1+ | 2005 10 07 | A50 | 0.5− | 0.5+ | 2005 11 25 | 644 | 0.3+ | 0.2− |
| 2005 08 31 | 644 | 0.0 | 0.1+ | 2005 10 07 | A50 | 0.2− | 0.3+ | 2005 11 25 | 644 | 0.0 | 0.1− |
| 2005 08 31 | 644 | 0.2− | 0.0 | 2005 10 07 | A50 | 0.2− | 0.3+ | 2005 11 25 | 644 | 0.2− | 0.5− |
| 2005 09 30 | 699 | 0.6− | 0.6− | 2005 10 10 | 703 | 0.4+ | 0.3− | 2005 12 04 | 699 | (1.4− | 5.1−) |
| 2005 09 30 | 699 | 0.1+ | 0.0 | 2005 10 10 | 703 | 0.0 | 0.5− | 2005 12 04 | 699 | 0.4+ | 0.3− |
| 2005 09 30 | 699 | 0.6+ | 0.3+ | 2005 10 10 | 703 | 1.4+ | 0.7− | 2005 12 04 | 699 | 1.0+ | 0.5− |
| 2005 09 30 | 699 | 0.1+ | 0.5+ | 2005 10 10 | 703 | 0.1+ | 0.6− | 2005 12 04 | 699 | 1.9+ | 1.6+ |
| 2005 10 04 | 703 | 0.3− | 0.8− | 2005 10 22 | 644 | 0.2+ | 0.3− | | | | |
| 2005 10 04 | 703 | 0.4+ | 0.5− | 2005 10 22 | 644 | 0.1+ | 0.5− | | | | |

**2005 QE$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.13738 | | | (2000.0) | | |
| $n$ | 0.29150696 | $\omega$ | 196.71963 | | +0.96431488 | +0.25608473 |
| $a$ | 2.2527003 | $\Omega$ | 148.19806 | | −0.22597153 | +0.92836672 |
| $e$ | 0.1449786 | $i$ | 7.32747 | | −0.13796257 | +0.26936194 |
| $P$ | 3.38 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 07 | 691 | 0.3+ | 0.7+ | 2005 08 31 | 644 | 0.0 | 0.0 | 2005 10 04 | 703 | 0.1− | 0.5+ |
| 1994 04 07 | 691 | 0.3+ | 0.8+ | 2005 08 31 | 644 | 0.2+ | 0.1− | 2005 10 04 | 703 | 0.5− | 0.1+ |
| 1994 04 07 | 691 | 0.2− | 0.3− | 2005 08 31 | 644 | 0.2+ | 0.0 | 2005 10 04 | 703 | 0.4− | 0.0 |
| 2001 06 15 | 691 | 0.3− | 0.3+ | 2005 09 06 | 704 | 1.2− | 0.2+ | 2005 10 10 | 703 | 0.3+ | 0.9− |
| 2001 06 15 | 691 | 0.4− | 0.3− | 2005 09 06 | 704 | 0.5− | 0.1− | 2005 10 10 | 703 | 0.4− | 0.2+ |
| 2001 06 15 | 691 | 0.4− | 0.2+ | 2005 09 06 | 704 | 0.2− | 0.7+ | 2005 10 10 | 703 | 0.1+ | 0.3− |
| 2001 06 26 | 691 | 0.2+ | 0.0 | 2005 09 06 | 704 | 0.0 | 0.1+ | 2005 10 10 | 703 | 0.5+ | 0.0 |
| 2001 06 26 | 691 | 0.4+ | 0.2− | 2005 09 30 | 699 | 0.1− | 1.0+ | 2005 10 31 | 699 | 0.4+ | 0.8+ |
| 2001 06 26 | 691 | 0.5+ | 0.6− | 2005 09 30 | 699 | 0.8− | 0.7+ | 2005 10 31 | 699 | 0.1− | 0.8− |
| 2004 04 26 | 691 | 0.4+ | 0.0 | 2005 09 30 | 699 | 0.4+ | 0.4+ | 2005 10 31 | 699 | 0.9+ | 1.0+ |
| 2004 04 26 | 691 | 0.3− | 0.3+ | 2005 09 30 | 699 | 0.5− | 0.1+ | 2005 10 31 | 699 | 0.8+ | 0.4− |
| 2004 04 26 | 691 | 0.1− | 0.2− | 2005 10 04 | 703 | 0.1+ | 0.4+ | | | | |

**2005 QJ$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 229.29910 | | | (2000.0) | | |
| $n$ | 0.21557047 | $\omega$ | 226.52305 | | −0.85905503 | +0.51136046 |
| $a$ | 2.7547141 | $\Omega$ | 344.18635 | | −0.44173347 | −0.76340111 |
| $e$ | 0.0483919 | $i$ | 4.86874 | | −0.25864261 | −0.39462542 |
| $P$ | 4.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 23 | I03 | 0.6+ | 0.3+ | 2003 02 22 | 699 | 0.9+ | 0.1+ | 2005 09 25 | 703 | (1.7− | 3.9−) |
| 2000 10 23 | I03 | 0.2+ | 0.1− | 2003 03 09 | 704 | 1.3+ | 0.7+ | 2005 09 25 | 703 | 1.4− | 0.4+ |
| 2000 10 23 | I03 | 0.7− | 0.2− | 2003 03 09 | 704 | 0.5+ | 0.7− | 2005 09 25 | 703 | 0.4− | 1.4− |
| 2001 11 12 | 704 | 0.4− | 0.7− | 2003 03 09 | 704 | 0.3− | 0.1+ | 2005 09 25 | 703 | (1.7− | 0.7−) |
| 2001 11 12 | 704 | 0.1+ | 0.6− | 2003 03 30 | 645 | 0.1− | 0.0 | 2005 10 01 | 703 | 0.9− | 0.5+ |
| 2001 11 12 | 704 | 0.3+ | 0.7+ | 2003 03 30 | 645 | 0.1− | 0.2+ | 2005 10 01 | 703 | 1.2− | 0.0 |
| 2001 11 12 | 704 | 0.3+ | 0.8− | 2005 08 31 | 691 | 0.2+ | 0.3+ | 2005 10 01 | 703 | 0.4− | 0.1− |
| 2002 12 14 | 645 | 0.1+ | 0.0 | 2005 08 31 | 691 | 0.1− | 0.5+ | 2005 10 01 | 703 | (2.3− | 0.4+) |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2005 08 31 | 691 | 0.2+ | 0.0 | 2005 11 01 | G96 | 0.0 | 0.3− |
| 2003 02 22 | 699 | 0.5− | 0.5+ | 2005 09 14 | 691 | 0.2− | 0.3+ | 2005 11 01 | G96 | 0.4+ | 0.4+ |
| 2003 02 22 | 699 | 1.1+ | 0.1− | 2005 09 14 | 691 | 0.4+ | 0.3− | 2005 11 01 | G96 | 0.0 | 0.1+ |
| 2003 02 22 | 699 | 1.5+ | 1.1+ | 2005 09 14 | 691 | 0.1− | 0.4+ | 2005 11 01 | G96 | 0.1+ | 0.1− |

**2005 RN**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.45424 | | | (2000.0) | | |
| $n$ | 0.21816819 | $\omega$ | 255.07869 | | +0.90832858 | −0.40899262 |
| $a$ | 2.7328037 | $\Omega$ | 128.98295 | | +0.41381499 | +0.84834945 |
| $e$ | 0.0500555 | $i$ | 6.46654 | | +0.06079764 | +0.33619674 |
| $P$ | 4.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 644 | 0.2− | 0.4+ | 2001 12 18 | 645 | 0.1+ | 0.1− | 2005 07 12 | G96 | 0.7− | 0.0 |
| 2001 10 24 | 644 | 0.2− | 0.6+ | 2003 02 02 | 644 | 0.0 | 0.3+ | 2005 08 30 | 644 | 0.1− | 0.2+ |
| 2001 10 24 | 644 | 0.5− | 0.2+ | 2003 02 02 | 644 | 0.5+ | 0.3+ | 2005 08 30 | 644 | 0.1− | 0.3+ |
| 2001 11 11 | 645 | 0.1− | 0.0 | 2003 02 02 | 644 | 0.8+ | 0.3+ | 2005 08 30 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 645 | 0.1− | 0.1+ | 2003 02 10 | 291 | 0.2+ | 0.1+ | 2005 09 01 | 615 | 0.2+ | 0.5+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 02 10 | 291 | 0.2− | 0.5+ | 2005 09 01 | 615 | 0.1− | 0.5+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2003 02 10 | 291 | 0.1− | 0.2+ | 2005 09 01 | 615 | 0.1− | 0.2− |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.1− | 0.2+ | 2005 09 02 | 615 | 0.0 | 0.6+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.1− | 0.2+ | 2005 09 02 | 615 | 0.0 | 0.4+ |
| 2001 12 18 | 645 | 0.1+ | 0.1− | 2005 07 12 | G96 | 0.1− | 0.1+ | 2005 09 02 | 615 | 0.0 | 0.5+ |

**2005 RU$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 113.75348 | | | (2000.0) | | |
| $n$ | 0.26806651 | $\omega$ | 310.79449 | | +0.86061676 | +0.50919409 |
| $a$ | 2.3821787 | $\Omega$ | 18.59945 | | −0.45960152 | +0.78317754 |
| $e$ | 0.1997273 | $i$ | 1.39356 | | −0.21932905 | +0.35686737 |
| $P$ | 3.68 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 12 | 691 | 0.3− | 0.9+ | 2005 08 29 | 691 | 0.0 | 0.1− | 2005 09 23 | 644 | 0.1− | 0.2− |
| 1994 10 12 | 691 | 0.3+ | 0.5+ | 2005 08 29 | 699 | 0.3+ | 0.5− | 2005 09 23 | 703 | (3.1− | 0.9+) |
| 1994 10 12 | 691 | 0.3− | 0.6− | 2005 08 29 | 691 | 0.1− | 0.0 | 2005 09 23 | 703 | 0.7− | 0.4+ |
| 2004 03 26 | 691 | 0.2+ | 0.5+ | 2005 08 29 | 699 | 0.2− | 0.5+ | 2005 09 23 | 703 | 0.2− | 1.4+ |
| 2004 03 26 | 691 | 0.0 | 0.0 | 2005 08 29 | 699 | 0.1+ | 0.5+ | 2005 09 23 | 644 | 0.0 | 0.1− |
| 2004 03 26 | 691 | 0.2+ | 0.4+ | 2005 08 29 | 699 | 1.1+ | 0.9+ | 2005 09 23 | 703 | 1.2+ | 0.3− |
| 2005 08 24 | 644 | 0.1+ | 0.2− | 2005 09 05 | 461 | 0.3− | 0.2− | 2005 09 23 | 644 | 0.1+ | 0.2− |
| 2005 08 24 | 644 | 0.2+ | 0.4− | 2005 09 05 | 461 | 0.4+ | 0.4− | 2005 09 23 | 461 | 0.0 | 0.4− |
| 2005 08 24 | 644 | 0.4+ | 0.1− | 2005 09 05 | 461 | 0.1− | 0.2− | 2005 09 23 | 461 | 0.1− | 0.1− |
| 2005 08 29 | 704 | 0.2+ | 0.6− | 2005 09 06 | 461 | 0.1− | 0.5− | 2005 12 02 | G96 | 0.1− | 1.2− |
| 2005 08 29 | 704 | 0.0 | 0.1+ | 2005 09 06 | 461 | 0.0 | 0.2− | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2005 08 29 | 704 | 0.2− | 0.4+ | 2005 09 06 | 461 | 0.3− | 0.2− | 2005 12 02 | G96 | 0.4+ | 0.2+ |
| 2005 08 29 | 704 | 0.4− | 0.5− | 2005 09 12 | 691 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2005 08 29 | 704 | (1.6+ | 1.1+) | 2005 09 12 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 08 29 | 691 | 0.1+ | 0.1+ | 2005 09 12 | 691 | 0.2+ | 0.1+ | | | | |

**2005 RZ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 120.98494 | | | (2000.0) | | |
| $n$ | 0.28993094 | $\omega$ | 325.27750 | | +0.89402490 | +0.44791451 |
| $a$ | 2.2608566 | $\Omega$ | 8.12971 | | −0.39414232 | +0.79651863 |
| $e$ | 0.1446079 | $i$ | 3.89054 | | −0.21300540 | +0.40611656 |
| $P$ | 3.40 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 13 | 691 | 0.4+ | 0.9+ | 2005 09 06 | 699 | 0.5+ | 0.7+ | 2005 09 23 | 703 | 1.2− | 0.1− |
| 1994 04 13 | 691 | (2.2− | 4.8−) | 2005 09 06 | 699 | 0.2− | 0.7+ | 2005 09 23 | 644 | 0.1+ | 0.5− |
| 1994 04 13 | 691 | 0.4+ | 1.0+ | 2005 09 08 | 704 | 0.2+ | 0.1− | 2005 10 01 | 704 | 0.3+ | 0.2− |
| 2004 04 25 | 691 | 0.4+ | 0.8+ | 2005 09 08 | 704 | 0.2+ | 0.1+ | 2005 10 01 | 704 | 0.3+ | 0.1+ |
| 2004 04 25 | 691 | 0.8+ | 0.6+ | 2005 09 08 | 704 | 0.1+ | 0.7+ | 2005 10 01 | 704 | 0.2+ | 0.1+ |
| 2004 04 25 | 691 | 0.1+ | 1.0+ | 2005 09 08 | 704 | 1.7+ | 0.8− | 2005 10 01 | 704 | 0.2+ | 0.2+ |
| 2005 07 31 | 644 | 0.6− | 0.3+ | 2005 09 08 | 704 | 0.4− | 0.5+ | 2005 10 01 | 704 | 0.6+ | 0.6− |
| 2005 07 31 | 644 | 0.6− | 0.3+ | 2005 09 12 | 691 | 0.1− | 0.1− | 2005 10 05 | 704 | 0.1− | 0.3− |
| 2005 07 31 | 644 | 0.5− | 0.2+ | 2005 09 12 | 691 | 0.0 | 0.2− | 2005 10 05 | 704 | 0.0 | 1.1+ |
| 2005 08 29 | 704 | 0.0 | 0.4+ | 2005 09 12 | 691 | 0.0 | 0.2− | 2005 10 05 | 704 | 0.3− | 0.3+ |
| 2005 08 29 | 704 | 0.7+ | 1.6+ | 2005 09 22 | 644 | 0.2− | 0.3− | 2005 10 05 | 704 | 0.9− | 0.6+ |
| 2005 08 29 | 704 | 0.0 | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.4− | 2005 10 05 | 704 | 0.7+ | 0.4+ |
| 2005 08 29 | 691 | 0.3− | 0.2+ | 2005 09 22 | 644 | 0.0 | 0.3− | 2005 11 29 | G96 | 0.4− | 3.0− |
| 2005 08 29 | 691 | 0.3− | 0.3+ | 2005 09 22 | 644 | 0.1− | 0.3− | 2005 11 29 | G96 | 0.4+ | 0.3− |
| 2005 08 29 | 699 | 1.0+ | 0.4− | 2005 09 22 | 644 | 0.1+ | 0.2− | 2005 11 29 | G96 | 0.9+ | 0.2− |
| 2005 08 29 | 691 | 0.3− | 0.3+ | 2005 09 22 | 644 | 0.1+ | 0.3− | 2005 11 29 | G96 | 0.0 | 0.5− |
| 2005 08 29 | 699 | 0.1− | 0.1− | 2005 09 23 | 644 | 0.1+ | 0.5− | 2005 12 04 | G96 | 0.7+ | 0.9− |
| 2005 08 29 | 699 | 0.6+ | 0.4− | 2005 09 23 | 703 | 0.2+ | 1.1− | 2005 12 04 | G96 | 1.3+ | 0.6− |
| 2005 08 29 | 699 | 0.0 | 0.1− | 2005 09 23 | 703 | 0.3+ | 0.1+ | 2005 12 04 | G96 | 0.3+ | 0.1+ |
| 2005 09 06 | 699 | 0.3− | 0.6+ | 2005 09 23 | 703 | 0.2− | 0.3− | 2005 12 04 | G96 | 0.9+ | 0.4− |
| 2005 09 06 | 699 | 0.3− | 0.5+ | 2005 09 23 | 644 | 0.2+ | 0.7− | | | | |

**2005 RT$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 102.68045 | | | (2000.0) | | |
| $n$ | 0.22557123 | $\omega$ | 131.89387 | | +0.83225486 | +0.55215203 |
| $a$ | 2.6726796 | $\Omega$ | 194.81574 | | −0.54861308 | +0.80731090 |
| $e$ | 0.1935096 | $i$ | 11.23004 | | −0.07984698 | +0.20827204 |
| $P$ | 4.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.1+ | 0.3+ | 2005 09 09 | 704 | 0.5+ | 0.5+ | 2005 10 01 | 703 | 0.8+ | 0.3+ |
| 1992 10 03 | 691 | 0.1− | 0.1− | 2005 09 10 | 941 | 0.1− | 0.6− | 2005 10 11 | 691 | 0.1+ | 0.2+ |
| 2004 03 29 | 291 | 0.0 | 0.0 | 2005 09 10 | 941 | 0.2− | 0.6− | 2005 10 11 | 691 | 0.0 | 0.1+ |
| 2004 03 29 | 291 | 0.2+ | 0.1+ | 2005 09 10 | 941 | 0.0 | 0.5− | 2005 10 11 | 691 | 0.1− | 0.3+ |
| 2004 03 29 | 291 | 0.5+ | 0.1+ | 2005 09 11 | 941 | 0.2+ | 0.4− | 2005 10 30 | G96 | 0.2− | 0.2− |
| 2004 04 14 | 691 | 0.2− | 0.0 | 2005 09 11 | 941 | 0.3+ | 0.0 | 2005 10 30 | G96 | 0.0 | 0.1− |
| 2004 04 14 | 691 | 0.2− | 0.1+ | 2005 09 11 | 941 | 0.0 | 0.3− | 2005 10 30 | G96 | 0.2− | 0.3− |
| 2004 04 14 | 691 | 0.2− | 0.0 | 2005 09 29 | 699 | 0.8+ | 0.1− | 2005 10 30 | G96 | 0.1+ | 0.2− |
| 2005 08 29 | 644 | 0.1− | 0.2+ | 2005 09 29 | 699 | 0.3+ | 0.8− | 2005 12 01 | G96 | 0.2+ | 0.0 |
| 2005 08 29 | 644 | 0.1− | 0.0 | 2005 09 29 | 699 | 0.1+ | 0.0 | 2005 12 01 | G96 | 0.3+ | 0.1+ |
| 2005 08 29 | 644 | 0.3− | 0.1− | 2005 09 29 | 699 | 1.0− | 0.5+ | 2005 12 01 | G96 | 0.1− | 0.7+ |
| 2005 09 09 | 704 | (0.3+ | 2.6+) | 2005 10 01 | 703 | 0.6− | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.0 |
| 2005 09 09 | 704 | (0.0 | 2.4+) | 2005 10 01 | 703 | 0.4− | 0.3+ | | | | |
| 2005 09 09 | 704 | (0.8− | 2.0+) | 2005 10 01 | 703 | 0.3− | 0.2− | | | | |

**2005 RZ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.24454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17545838 | $\omega$ | 255.87082 | | +0.44789037 | −0.89256083 | |
| $a$ | 3.1599968 | $\Omega$ | 167.13386 | | +0.88380817 | +0.43314858 | |
| $e$ | 0.2945647 | $i$ | 13.56914 | | +0.13519369 | +0.12536932 | |
| $P$ | 5.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 25 | 644 | 0.0 | 0.0 | 2005 09 24 | 644 | 0.1− | 0.2+ | 2005 10 07 | 699 | (2.1+ | 0.9+) |
| 2005 08 25 | 644 | 0.2− | 0.0 | 2005 09 29 | 699 | 0.3− | 0.4+ | 2005 10 07 | 699 | 1.2− | 1.5− |
| 2005 08 25 | 644 | 0.1+ | 0.1− | 2005 09 29 | 699 | 0.9− | 1.1+ | 2005 10 13 | 691 | 0.3+ | 0.2− |
| 2005 09 01 | 691 | 0.1+ | 0.2+ | 2005 09 29 | 699 | 0.5+ | 0.1+ | 2005 10 13 | 691 | 0.3+ | 0.2− |
| 2005 09 01 | 691 | 0.2+ | 0.4+ | 2005 09 29 | 699 | 0.4+ | 0.7+ | 2005 10 13 | 691 | 0.5+ | 0.2+ |
| 2005 09 01 | 691 | 0.1+ | 0.3+ | 2005 10 01 | 704 | 0.0 | 0.2− | 2005 10 22 | 703 | 1.2− | 0.9− |
| 2005 09 06 | 704 | 0.0 | 1.3− | 2005 10 01 | 704 | 0.2+ | 0.9+ | 2005 10 22 | 703 | 0.7+ | 0.2+ |
| 2005 09 06 | 704 | 1.1− | 0.2− | 2005 10 01 | 704 | 0.1+ | 0.8+ | 2005 10 22 | 703 | 0.3+ | 0.3+ |
| 2005 09 06 | 704 | 0.7+ | 1.1− | 2005 10 01 | 704 | 0.2− | 0.1+ | 2005 10 22 | 703 | 0.0 | 0.4+ |
| 2005 09 06 | 704 | 0.4+ | 0.7− | 2005 10 01 | 704 | 0.1+ | 0.5+ | 2006 11 21 | 568 | 0.2− | 0.1+ |
| 2005 09 06 | 704 | 0.5+ | 0.2− | 2005 10 01 | 703 | 1.0− | 0.1+ | 2006 11 21 | 568 | 0.0 | 0.0 |
| 2005 09 11 | 691 | 0.1+ | 0.2− | 2005 10 01 | 703 | 0.4− | 0.2− | 2006 11 22 | 568 | 0.1+ | 0.0 |
| 2005 09 11 | 691 | 0.3− | 0.3− | 2005 10 01 | 703 | 0.5− | 0.9− | 2006 11 22 | 568 | 0.1+ | 0.0 |
| 2005 09 11 | 691 | 0.1− | 0.0 | 2005 10 01 | 703 | 0.5− | 0.5− | 2006 11 22 | 568 | 0.1+ | 0.0 |
| 2005 09 24 | 644 | 0.2− | 0.1− | 2005 10 07 | 699 | 1.1− | 1.2+ | | | | |
| 2005 09 24 | 644 | 0.0 | 0.2+ | 2005 10 07 | 699 | 0.9+ | 0.1+ | | | | |

**2005 RS$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.21791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23156915 | $\omega$ | 245.48608 | | +0.34735589 | −0.93593884 | |
| $a$ | 2.6263277 | $\Omega$ | 185.31734 | | +0.91010864 | +0.32157937 | |
| $e$ | 0.1855273 | $i$ | 38.73448 | | −0.22593394 | −0.14354509 | |
| $P$ | 4.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.4+ | 0.2+ | 2003 04 01 | 704 | 0.7− | 0.4+ | 2005 09 12 | 683 | 0.5− | 0.7+ |
| 2001 08 26 | 644 | 0.6+ | 0.4+ | 2003 04 01 | 704 | 0.0 | 1.6+ | 2005 09 12 | 704 | 0.1+ | 0.3+ |
| 2001 08 26 | 644 | 0.4+ | 0.4+ | 2003 04 07 | 691 | 0.5− | 0.2+ | 2005 09 12 | 683 | (0.6+ | 2.7−) |
| 2001 09 17 | 699 | 0.5− | 0.4+ | 2003 04 07 | 691 | 0.6− | 0.0 | 2005 09 12 | 683 | 0.6− | 1.2− |
| 2001 09 17 | 699 | 0.1− | 0.7+ | 2003 04 07 | 691 | 0.6− | 0.1− | 2005 09 29 | 699 | 1.3+ | 0.1− |
| 2001 09 17 | 699 | 1.0− | 0.2+ | 2005 09 11 | 704 | 0.8− | 0.6+ | 2005 09 29 | 699 | 0.1− | 0.1+ |
| 2001 09 17 | 699 | 1.3+ | 0.8+ | 2005 09 11 | 704 | 0.5− | 0.3− | 2005 09 29 | 699 | 0.6+ | 0.3+ |
| 2003 03 24 | 691 | 0.4+ | 0.7+ | 2005 09 11 | 704 | 0.5+ | 0.4− | 2005 09 29 | 699 | 0.9+ | 0.6+ |
| 2003 03 24 | 691 | 0.5+ | 0.2+ | 2005 09 12 | 704 | 0.1+ | 1.0+ | 2005 10 27 | G96 | 0.2− | 0.6+ |
| 2003 03 24 | 691 | 0.4+ | 0.7+ | 2005 09 12 | 704 | 0.3+ | 0.9+ | 2005 10 27 | G96 | 0.1+ | 0.5+ |
| 2003 04 01 | 704 | 0.1+ | 0.1− | 2005 09 12 | 704 | 0.0 | 0.1− | 2005 10 27 | G96 | 0.2− | 0.7+ |
| 2003 04 01 | 704 | 0.7− | 0.2− | 2005 09 12 | 704 | 0.6+ | 0.5+ | 2005 10 27 | G96 | 0.0 | 0.8+ |

**2005 RG$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.36122 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27761162 | $\omega$ | 65.22283 | | +0.76600437 | +0.63520569 | |
| $a$ | 2.3272567 | $\Omega$ | 255.18455 | | −0.62050992 | +0.69049389 | |
| $e$ | 0.2188840 | $i$ | 5.86259 | | −0.16794269 | +0.34602299 | |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 04 | 695 | 0.1− | 0.1+ | 2005 09 12 | 704 | 0.3− | 0.3+ | 2005 10 07 | 683 | 0.6+ | 0.4+ |
| 2002 12 04 | 695 | 0.1+ | 0.1+ | 2005 09 12 | 704 | 0.3+ | 0.5+ | 2005 10 07 | 683 | 1.9− | 0.5+ |
| 2004 02 18 | I03 | 0.3+ | 0.6+ | 2005 09 12 | 704 | 0.2+ | 0.2− | 2005 10 08 | 704 | 0.6+ | 0.6+ |
| 2004 02 18 | I03 | 0.6− | 0.8+ | 2005 09 12 | 704 | 0.1− | 0.3− | 2005 10 08 | 704 | 0.0 | 0.1+ |
| 2004 02 18 | I03 | 1.1+ | 0.5+ | 2005 09 26 | 644 | 0.1+ | 0.0 | 2005 10 08 | 704 | 0.4− | 0.4+ |
| 2005 08 04 | 704 | 0.7− | 0.0 | 2005 09 26 | 644 | 0.0 | 0.0 | 2005 10 08 | 704 | 0.1+ | 0.1+ |
| 2005 08 04 | 704 | 0.1+ | 0.4− | 2005 09 26 | 644 | 0.2+ | 0.2− | 2005 10 08 | 683 | 0.6− | 0.1+ |
| 2005 08 04 | 704 | 0.1− | 0.0 | 2005 09 26 | 644 | 0.1+ | 0.1− | 2005 10 08 | 704 | 0.1+ | 1.1+ |
| 2005 08 04 | 704 | 0.2− | 0.2+ | 2005 09 26 | 644 | 0.2+ | 0.0 | 2005 10 08 | 704 | 0.1+ | 0.0 |
| 2005 08 31 | 704 | 1.0+ | 0.4+ | 2005 09 26 | 644 | 0.2+ | 0.0 | 2005 10 08 | 683 | 0.4+ | 0.7+ |
| 2005 08 31 | 704 | 1.5+ | 1.0+ | 2005 09 30 | 699 | 0.4+ | 0.7− | 2005 10 08 | 704 | 0.8− | 0.2− |
| 2005 08 31 | 704 | 0.2+ | 0.5+ | 2005 09 30 | 699 | 0.3+ | 1.2− | 2005 10 08 | 704 | 0.5− | 0.0 |
| 2005 08 31 | 704 | 0.0 | 0.5+ | 2005 09 30 | 699 | 0.8+ | 0.0 | 2005 10 08 | 704 | 0.7+ | 0.5+ |
| 2005 08 31 | 704 | 0.7+ | 1.2+ | 2005 10 05 | 683 | 0.3+ | 0.8− | 2005 10 08 | 704 | 0.2+ | 0.2+ |
| 2005 09 10 | 699 | 0.4− | 0.1− | 2005 10 05 | 683 | 1.0− | 1.3− | 2005 10 30 | 704 | 0.6− | 0.2− |
| 2005 09 10 | 699 | 0.2− | 0.7+ | 2005 10 06 | 703 | 0.2− | 0.2− | 2005 10 30 | 704 | 0.0 | 0.0 |
| 2005 09 10 | 699 | 0.1− | 0.5+ | 2005 10 06 | 703 | 0.6− | 0.6− | 2005 10 30 | 704 | 0.5− | 0.2+ |
| 2005 09 10 | 699 | 0.7− | 0.3− | 2005 10 06 | 703 | 0.2+ | 0.4− | 2005 10 30 | 704 | 0.1− | 1.0− |
| 2005 09 12 | 704 | 0.4+ | 0.7− | 2005 10 07 | 683 | 0.6− | 0.5− | | | | |

**2005 RT$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.94337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17947109 | $\omega$ | 348.75269 | | +0.93606542 | +0.35084876 | |
| $a$ | 3.1127176 | $\Omega$ | 350.58130 | | −0.30909633 | +0.78451874 | |
| $e$ | 0.1281567 | $i$ | 9.21428 | | −0.16805056 | +0.51130763 | |
| $P$ | 5.49 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.3+ | 0.5− | 2005 09 30 | 703 | 0.1− | 0.1+ | 2005 10 30 | 704 | 0.1− | 0.1+ |
| 1999 09 04 | 699 | 0.6− | 0.4+ | 2005 09 30 | 703 | 0.5− | 0.8− | 2005 10 30 | 704 | 0.0 | 0.3+ |
| 1999 09 04 | 699 | 0.5− | 1.4+ | 2005 09 30 | 703 | 0.5+ | 0.2− | 2005 10 30 | 704 | 0.3+ | 0.4+ |
| 2002 02 07 | 644 | 0.2+ | 0.4+ | 2005 10 03 | 704 | 0.3+ | 0.2− | 2005 10 30 | 704 | 0.0 | 1.0+ |
| 2002 02 07 | 644 | 0.2+ | 0.3+ | 2005 10 03 | 704 | 0.2+ | 0.0 | 2005 10 30 | 704 | 0.2+ | 0.6+ |
| 2002 02 07 | 644 | 0.1+ | 0.4+ | 2005 10 03 | 704 | 0.5− | 0.3+ | 2005 11 02 | 704 | 1.0− | 0.7− |
| 2005 09 10 | 699 | 0.2+ | 0.9− | 2005 10 03 | 704 | 0.7+ | 0.1+ | 2005 11 02 | 704 | 0.5− | 1.0+ |
| 2005 09 10 | 699 | 0.2− | 0.2+ | 2005 10 08 | 704 | 0.2+ | 0.3− | 2005 11 02 | 704 | 0.8− | 0.8− |
| 2005 09 10 | 699 | 0.9+ | 0.2− | 2005 10 08 | 704 | 0.5+ | 0.5− | 2005 11 02 | 704 | 0.2− | 0.4+ |
| 2005 09 10 | 699 | 0.5+ | 0.1− | 2005 10 08 | 704 | 0.2+ | 0.5− | 2005 11 02 | 704 | 1.4− | 0.3+ |
| 2005 09 13 | 704 | 0.2− | 0.5− | 2005 10 08 | 704 | 0.9+ | 0.0 | 2005 11 07 | 704 | 0.2+ | 0.1− |
| 2005 09 13 | 704 | 0.2+ | 0.8+ | 2005 10 08 | 704 | 0.2− | 0.0 | 2005 11 07 | 704 | 0.3− | 0.9− |
| 2005 09 13 | 704 | 0.2− | 0.2+ | 2005 10 13 | 704 | 0.2+ | 0.7+ | 2005 11 07 | 704 | 0.1− | 0.3− |
| 2005 09 13 | 704 | 0.4− | 0.7+ | 2005 10 13 | 704 | 0.3+ | 0.5+ | 2005 11 07 | 704 | 0.2+ | 0.0 |
| 2005 09 13 | 704 | 0.5− | 0.6+ | 2005 10 13 | 704 | 0.7− | 0.2+ | 2005 11 07 | 704 | 0.2+ | 0.3− |
| 2005 09 18 | 644 | 0.2− | 0.0 | 2005 10 23 | 703 | 0.1− | 0.1− | 2005 11 19 | 699 | 1.8+ | 0.2− |
| 2005 09 18 | 644 | 0.1− | 0.0 | 2005 10 23 | 703 | 0.6+ | 0.2− | 2005 11 19 | 699 | 0.6+ | 0.5+ |
| 2005 09 18 | 644 | 0.4− | 0.1− | 2005 10 23 | 703 | 0.3− | 1.4− | 2005 11 19 | 699 | 0.0 | 0.5+ |
| 2005 09 24 | 703 | 0.1+ | 0.8− | 2005 10 23 | 703 | 1.4− | 0.4− | 2005 11 19 | 699 | (2.5+ | 1.4−) |
| 2005 09 24 | 703 | 0.3− | 0.3+ | 2005 10 26 | 699 | 0.1− | 0.4+ | 2005 12 01 | 644 | 0.1+ | 0.3+ |
| 2005 09 24 | 703 | 0.3− | 0.9− | 2005 10 26 | 699 | 0.5+ | 0.4+ | 2005 12 01 | 644 | 0.0 | 0.7+ |
| 2005 09 24 | 703 | 0.3+ | 0.4− | 2005 10 26 | 699 | 0.1− | 0.3− | 2005 12 01 | 644 | 0.2+ | 0.2+ |
| 2005 09 30 | 703 | 0.3+ | 0.3+ | 2005 10 26 | 699 | 0.5+ | 0.5− | | | | |

**2005 RE$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.74496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27321064 | $\omega$ | 163.14189 | | +0.98389787 | +0.17871180 | |
| $a$ | 2.3521823 | $\Omega$ | 186.56510 | | −0.16654946 | +0.91133578 | |
| $e$ | 0.2034029 | $i$ | 1.33285 | | −0.06485569 | +0.37084927 | |
| $P$ | 3.61 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 699 | 0.0 | 0.8− | 2005 08 06 | 704 | (2.2+ | 2.7+) | 2005 09 05 | 703 | (2.5− | 1.5−) |
| 1998 10 17 | 699 | 0.4+ | 0.1+ | 2005 08 06 | 704 | 0.7+ | 1.2+ | 2005 09 05 | 703 | (2.3− | 0.4+) |
| 1998 10 17 | 699 | 0.2− | 0.5+ | 2005 08 06 | 704 | 0.2+ | 1.3+ | 2005 09 05 | 703 | 0.2+ | 1.2+ |
| 2002 12 04 | 695 | 0.1− | 0.4+ | 2005 08 06 | 704 | 0.6+ | 0.4+ | 2005 09 07 | 699 | 0.1− | 0.1+ |
| 2002 12 04 | 695 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.2+ | 0.1− | 2005 09 07 | 699 | 0.3+ | 1.0− |
| 2005 07 31 | 644 | 0.4− | 0.1− | 2005 08 06 | 644 | 0.2+ | 0.2− | 2005 09 07 | 699 | 0.8− | 0.2− |
| 2005 07 31 | 644 | 0.1− | 0.1+ | 2005 08 06 | 644 | 0.3+ | 0.2− | 2005 09 07 | 699 | 0.5− | 0.3+ |
| 2005 07 31 | 644 | 0.1− | 0.0 | 2005 08 22 | 644 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.3+ | 0.0 |
| 2005 07 31 | 644 | 0.6− | 1.1− | 2005 08 22 | 644 | 0.3− | 0.3− | 2005 11 25 | G96 | 0.2− | 0.3+ |
| 2005 07 31 | 644 | 0.1+ | 0.2− | 2005 08 22 | 644 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.4− | 0.0 |
| 2005 07 31 | 644 | 0.1− | 0.1+ | 2005 09 05 | 703 | 0.1− | 1.0− | 2005 11 25 | G96 | 0.5+ | 0.5− |

**2005 RS$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.37090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18121212 | $\omega$ | 51.21982 | | +0.13330956 | −0.99049154 | |
| $a$ | 3.0927481 | $\Omega$ | 31.16964 | | +0.88771747 | +0.10408922 | |
| $e$ | 0.0996111 | $i$ | 3.76501 | | +0.44066570 | +0.08995521 | |
| $P$ | 5.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 01 | 691 | 0.1+ | 0.2+ | 2005 09 23 | 691 | 0.2− | 0.1+ | 2005 10 28 | G96 | 0.3+ | 0.2+ |
| 2003 05 01 | 691 | 0.3− | 0.2+ | 2005 09 23 | 691 | 0.3− | 0.0 | 2005 10 28 | G96 | 0.2+ | 0.1− |
| 2003 05 01 | 691 | 0.4+ | 0.2+ | 2005 09 23 | 691 | 0.3− | 0.4− | 2005 12 01 | G96 | 0.2− | 0.2+ |
| 2005 08 30 | 691 | 0.1+ | 0.0 | 2005 09 25 | A50 | 0.1− | 0.2− | 2005 12 01 | G96 | 0.3+ | 0.1− |
| 2005 08 30 | 691 | 0.2+ | 0.1+ | 2005 10 09 | 691 | 0.1− | 0.3+ | 2005 12 01 | G96 | 0.3− | 0.5− |
| 2005 08 30 | 691 | 0.1− | 0.1+ | 2005 10 09 | 691 | 0.4+ | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.2− |
| 2005 09 13 | 691 | 0.1+ | 0.0 | 2005 10 09 | 691 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.3− |
| 2005 09 13 | 691 | 0.3− | 0.2+ | 2005 10 28 | G96 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.9+ |
| 2005 09 13 | 691 | 0.3+ | 0.0 | 2005 10 28 | G96 | 0.6− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 |

**2005 RP$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.83201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00109009 | $\omega$ | 346.31670 | | +0.87587137 | +0.47076340 | |
| $a$ | 93.5037281 | $\Omega$ | 344.23284 | | −0.39786034 | +0.58025467 | |
| $e$ | 0.5904958 | $i$ | 22.95519 | | −0.27305035 | +0.66459487 | |
| $P$ | 904 | $H$ | 6.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 03 | 705 | 0.1− | 0.0 | 2005 10 26 | 705 | 0.1− | 0.1+ | 2006 09 11 | 705 | 0.1− | 0.0 |
| 2005 09 03 | 705 | 0.3− | 0.3− | 2005 10 26 | 705 | 0.0 | 0.1− | 2006 09 11 | 705 | 0.2− | 0.0 |
| 2005 09 10 | 705 | 0.1+ | 0.2+ | 2005 10 28 | 705 | 0.0 | 0.0 | 2006 09 19 | 705 | 0.0 | 0.1+ |
| 2005 09 10 | 705 | 0.2+ | 0.2− | 2005 10 28 | 705 | 0.1+ | 0.0 | 2006 09 19 | 705 | 0.1− | 0.0 |
| 2005 09 13 | 705 | 0.1− | 0.2+ | 2005 10 31 | 705 | 0.1− | 0.1− | 2006 09 22 | 705 | 0.1+ | 0.1+ |
| 2005 09 13 | 705 | 0.3+ | 0.2+ | 2005 10 31 | 705 | 0.2+ | 0.0 | 2006 09 22 | 705 | 0.0 | 0.0 |
| 2005 09 15 | 705 | 0.1− | 0.1+ | 2005 11 05 | 705 | 0.0 | 0.2+ | 2006 09 29 | 705 | 0.0 | 0.1− |
| 2005 09 15 | 705 | 0.0 | 0.2+ | 2005 11 05 | 705 | 0.1− | 0.2− | 2006 09 29 | 705 | 0.2+ | 0.2+ |
| 2005 09 22 | 705 | 0.3− | 0.1+ | 2005 11 07 | 705 | 0.0 | 0.0 | 2006 10 01 | 705 | 0.0 | 0.1+ |
| 2005 09 22 | 705 | 0.0 | 0.2+ | 2005 11 07 | 705 | 0.1+ | 0.1− | 2006 10 01 | 705 | 0.1− | 0.1− |
| 2005 09 24 | 705 | 0.2+ | 0.1− | 2005 11 13 | 705 | 0.1+ | 0.1− | 2006 10 03 | 705 | 0.1+ | 0.0 |
| 2005 09 24 | 705 | 0.4+ | 0.0 | 2005 11 13 | 705 | 0.4+ | 0.0 | 2006 10 03 | 705 | 0.0 | 0.0 |
| 2005 09 26 | 705 | 0.2− | 0.0 | 2005 11 26 | 705 | 0.0 | 0.1+ | 2006 10 14 | 705 | 0.0 | 0.0 |
| 2005 09 26 | 705 | 0.1− | 0.1+ | 2005 11 26 | 705 | 0.1+ | 0.1+ | 2006 10 14 | 705 | 0.1+ | 0.1− |
| 2005 10 01 | 705 | 0.0 | 0.3− | 2005 12 01 | 705 | 0.3− | 0.1+ | 2006 10 20 | 705 | 0.1+ | 0.0 |
| 2005 10 01 | 705 | 0.4− | 0.2− | 2005 12 01 | 705 | 0.4− | 0.0 | 2006 10 20 | 705 | 0.1− | 0.1− |
| 2005 10 23 | 705 | 0.0 | 0.1− | 2006 08 28 | 705 | 0.1− | 0.0 | 2006 10 22 | 705 | 0.0 | 0.0 |
| 2005 10 23 | 705 | 0.2+ | 0.0 | 2006 08 28 | 705 | 0.1+ | 0.1+ | 2006 10 22 | 705 | 0.1+ | 0.2− |

**2005 RQ$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.08142 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00372207 | $\omega$ | 266.88278 | | +0.83546977 | +0.44925368 | |
| $a$ | 41.2363252 | $\Omega$ | 66.22431 | | −0.25484843 | +0.82698136 | |
| $e$ | 0.0938496 | $i$ | 20.23268 | | −0.48687016 | +0.33804284 | |
| $P$ | 265 | $H$ | 6.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 09 | 705 | 0.1+ | 0.1− | 2005 10 31 | 705 | 0.0 | 0.0 | 2006 09 30 | 705 | 0.0 | 0.0 |
| 2005 09 09 | 705 | 0.2+ | 0.0 | 2005 10 31 | 705 | 0.2− | 0.1− | 2006 09 30 | 705 | 0.0 | 0.4+ |
| 2005 09 22 | 705 | 0.2− | 0.0 | 2005 11 02 | 705 | 0.1− | 0.2+ | 2006 10 02 | 705 | 0.1− | 0.0 |
| 2005 09 22 | 705 | 0.1+ | 0.1+ | 2005 11 02 | 705 | 0.1− | 0.1+ | 2006 10 02 | 705 | 0.3+ | 0.2− |
| 2005 09 24 | 705 | 0.1+ | 0.1+ | 2005 11 07 | 705 | 0.0 | 0.1− | 2006 10 03 | 705 | 0.1+ | 0.1− |
| 2005 09 24 | 705 | 0.3+ | 0.2+ | 2005 11 07 | 705 | 0.1+ | 0.2− | 2006 10 03 | 705 | 0.1− | 0.1− |
| 2005 09 26 | 705 | 0.0 | 0.1− | 2005 11 10 | 705 | 0.2− | 0.0 | 2006 10 11 | 705 | 0.0 | 0.2− |
| 2005 09 26 | 705 | 0.1− | 0.2− | 2005 11 10 | 705 | 0.0 | 0.1+ | 2006 10 11 | 705 | 0.0 | 0.1− |
| 2005 09 28 | 705 | 0.0 | 0.1− | 2005 11 13 | 705 | 0.1− | 0.1+ | 2006 10 13 | 705 | 0.0 | 0.1− |
| 2005 09 28 | 705 | 0.5− | 0.0 | 2005 11 13 | 705 | 0.2+ | 0.1+ | 2006 10 13 | 705 | 0.0 | 0.0 |
| 2005 10 01 | 705 | 0.0 | 0.0 | 2005 11 23 | 705 | 0.1− | 0.0 | 2006 10 23 | 705 | 0.0 | 0.1+ |
| 2005 10 01 | 705 | 0.0 | 0.3+ | 2005 11 23 | 705 | 0.2+ | 0.0 | 2006 10 23 | 705 | 0.0 | 0.3− |
| 2005 10 20 | 705 | 0.1− | 0.0 | 2005 12 01 | 705 | 0.0 | 0.1− | 2006 10 28 | 705 | 0.2− | 0.0 |
| 2005 10 20 | 705 | 0.1+ | 0.1+ | 2005 12 01 | 705 | 0.2+ | 0.2− | 2006 10 28 | 705 | 0.0 | 0.1+ |
| 2005 10 22 | 705 | 0.1− | 0.0 | 2006 09 16 | 705 | 0.1+ | 0.0 | 2006 10 31 | 705 | 0.1+ | 0.1− |
| 2005 10 22 | 705 | 0.2+ | 0.1+ | 2006 09 16 | 705 | 0.3+ | 0.5+ | 2006 10 31 | 705 | 0.3− | 0.0 |
| 2005 10 26 | 705 | 0.1− | 0.1− | 2006 09 18 | 705 | 0.0 | 0.1− | 2006 11 02 | 705 | 0.2+ | 0.1− |
| 2005 10 26 | 705 | 0.2+ | 0.0 | 2006 09 18 | 705 | 0.5− | 0.0 | 2006 11 02 | 705 | 0.1+ | 0.1+ |
| 2005 10 28 | 705 | 0.2− | 0.1− | 2006 09 27 | 705 | 0.1− | 0.0 | | | | |
| 2005 10 28 | 705 | 0.1+ | 0.1− | 2006 09 27 | 705 | 0.0 | 0.0 | | | | |

**2005 RS$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.98913 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00299408 | $\omega$ | 266.03340 | | +0.66330647 | +0.73766302 | |
| $a$ | 47.6753704 | $\Omega$ | 46.36896 | | −0.59876611 | +0.62414730 | |
| $e$ | 0.1988742 | $i$ | 10.02580 | | −0.44889160 | +0.25747508 | |
| $P$ | 329 | $H$ | 5.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 13 | 705 | 0.1+ | 0.1− | 2005 10 30 | 705 | 0.1+ | 0.1+ | 2006 09 30 | 705 | 0.1+ | 0.0 |
| 2005 09 13 | 705 | 0.0 | 0.4− | 2005 11 01 | 705 | 0.0 | 0.1+ | 2006 09 30 | 705 | 0.0 | 0.1− |
| 2005 09 15 | 705 | 0.0 | 0.2− | 2005 11 01 | 705 | 0.1− | 0.0 | 2006 10 02 | 705 | 0.1− | 0.0 |
| 2005 09 15 | 705 | 0.2+ | 0.1− | 2005 11 03 | 705 | 0.0 | 0.0 | 2006 10 02 | 705 | 0.0 | 0.0 |
| 2005 09 21 | 705 | 0.1− | 0.1+ | 2005 11 03 | 705 | 0.0 | 0.1+ | 2006 10 04 | 705 | 0.0 | 0.0 |
| 2005 09 21 | 705 | 0.1+ | 0.3+ | 2005 11 06 | 705 | 0.1− | 0.1− | 2006 10 04 | 705 | 0.2+ | 0.0 |
| 2005 09 25 | 705 | 0.1− | 0.1− | 2005 11 06 | 705 | 0.0 | 0.1+ | 2006 10 13 | 705 | 0.1− | 0.0 |
| 2005 09 25 | 705 | 0.0 | 0.0 | 2005 11 19 | 705 | 0.1− | 0.0 | 2006 10 13 | 705 | 0.1− | 0.0 |
| 2005 09 27 | 705 | 0.1− | 0.0 | 2005 11 19 | 705 | 0.0 | 0.1+ | 2006 10 17 | 705 | 0.0 | 0.2+ |
| 2005 09 27 | 705 | 0.1− | 0.0 | 2005 11 24 | 705 | 0.0 | 0.1− | 2006 10 17 | 705 | 0.1+ | 0.1+ |
| 2005 10 12 | 705 | 0.0 | 0.1− | 2005 11 24 | 705 | 0.0 | 0.2− | 2006 10 21 | 705 | 0.1+ | 0.1− |
| 2005 10 12 | 705 | 0.1− | 0.2+ | 2005 11 30 | 705 | 0.2− | 0.0 | 2006 10 21 | 705 | 0.0 | 0.1− |
| 2005 10 20 | 705 | 0.0 | 0.0 | 2005 11 30 | 705 | 0.1− | 0.1− | 2006 10 23 | 705 | 0.1+ | 0.0 |
| 2005 10 20 | 705 | 0.1+ | 0.1− | 2006 09 12 | 705 | 0.1+ | 0.2+ | 2006 10 23 | 705 | 0.0 | 0.1+ |
| 2005 10 22 | 705 | 0.1+ | 0.1+ | 2006 09 12 | 705 | 0.0 | 0.1− | 2006 10 28 | 705 | 0.1− | 0.0 |
| 2005 10 22 | 705 | 0.0 | 0.1− | 2006 09 16 | 705 | 0.0 | 0.0 | 2006 10 28 | 705 | 0.0 | 0.2− |
| 2005 10 23 | 705 | 0.0 | 0.1+ | 2006 09 16 | 705 | 0.1− | 0.0 | 2006 10 31 | 705 | 0.1+ | 0.0 |
| 2005 10 23 | 705 | 0.3+ | 0.1− | 2006 09 18 | 705 | 0.0 | 0.1+ | 2006 10 31 | 705 | 0.0 | 0.0 |
| 2005 10 25 | 705 | 0.0 | 0.0 | 2006 09 18 | 705 | 0.2− | 0.0 | 2006 11 02 | 705 | 0.1+ | 0.0 |
| 2005 10 25 | 705 | 0.1+ | 0.5+ | 2006 09 25 | 688 | 0.1− | 0.0 | 2006 11 02 | 705 | 0.0 | 0.1− |
| 2005 10 30 | 705 | 0.1− | 0.0 | 2006 09 25 | 688 | 0.0 | 0.2− | | | | |

**2005 RT$_{43}$ = 2003 AN$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.40188 | | (2000.0) | | | |
| $n$ | 0.27957124 | $\omega$ | 294.72113 | | +0.06693728 | −0.99760379 |
| $a$ | 2.3163689 | $\Omega$ | 151.42408 | | +0.92813247 | +0.05582146 |
| $e$ | 0.1841498 | $i$ | 2.09613 | | +0.36618236 | +0.04087355 |
| $P$ | 3.53 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.1− | 0.2− | 2003 01 09 | 704 | 0.0 | 1.0+ | 2005 09 23 | 703 | 0.8− | 0.3+ |
| 1996 01 13 | 691 | 0.0 | 0.3− | 2003 01 09 | 704 | 0.1+ | 0.4+ | 2005 09 23 | 703 | (0.3− | 3.5+) |
| 1996 01 13 | 691 | 0.1− | 0.1− | 2005 09 01 | 691 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.8+ | 0.1− |
| 2003 01 08 | 704 | 0.5+ | 0.4− | 2005 09 01 | 691 | 0.1+ | 0.0 | 2005 09 29 | G96 | 0.5+ | 0.1+ |
| 2003 01 08 | 704 | 0.4+ | 0.4− | 2005 09 01 | 691 | 0.2− | 0.1+ | 2005 09 29 | G96 | 0.6+ | 0.3− |
| 2003 01 08 | 704 | 0.8− | 0.0 | 2005 09 11 | 691 | 0.0 | 0.3− | 2005 09 29 | G96 | 0.3+ | 0.1+ |
| 2003 01 08 | 704 | 0.7− | 1.0+ | 2005 09 11 | 691 | 0.8− | 0.6− | 2005 10 29 | G96 | 0.1− | 0.2− |
| 2003 01 09 | 704 | 0.5+ | 0.1+ | 2005 09 11 | 691 | 0.1+ | 0.0 | 2005 10 29 | G96 | 0.1− | 0.4− |
| 2003 01 09 | 704 | 0.4− | 0.3+ | 2005 09 23 | 703 | 0.3+ | 0.5+ | 2005 10 29 | G96 | 0.6− | 0.7− |
| 2003 01 09 | 704 | 0.7+ | 0.4+ | 2005 09 23 | 703 | 1.3+ | 0.8− | 2005 10 29 | G96 | 0.6+ | 0.1− |

**2005 RU$_{43}$ = 2001 UG$_{200}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 101.77846 | | (2000.0) | | | |
| $n$ | 0.24283537 | $\omega$ | 119.94000 | | +0.96609820 | +0.25579651 |
| $a$ | 2.5444549 | $\Omega$ | 225.26468 | | −0.25058157 | +0.89644288 |
| $e$ | 0.2265188 | $i$ | 2.82115 | | −0.06215424 | +0.36188162 |
| $P$ | 4.06 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.8+ | 0.1− | 2005 10 01 | 703 | 0.5+ | 0.2+ | 2005 10 07 | 703 | 0.1− | 0.1+ |
| 2001 10 19 | 644 | 0.7+ | 0.3− | 2005 10 01 | 703 | 0.1− | 0.5+ | 2005 10 07 | 703 | 0.1− | 0.1− |
| 2001 10 19 | 644 | 0.6+ | 0.2+ | 2005 10 01 | 703 | 0.4+ | 1.4+ | 2005 10 25 | 691 | 0.5+ | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.5+ | 2005 10 01 | 703 | 0.2− | 0.4− | 2005 10 25 | 691 | 0.6+ | 0.3+ |
| 2001 10 21 | 704 | 0.5− | 0.6+ | 2005 10 07 | 703 | 0.5− | 0.1+ | 2005 10 25 | 691 | 0.3+ | 0.0 |
| 2001 10 21 | 704 | 0.9− | 0.6− | 2005 10 07 | 703 | 0.3− | 0.2+ | 2005 11 03 | G96 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.5− | 0.8− | 2005 10 07 | 703 | (1.8− | 4.1−) | 2005 11 03 | G96 | 0.2− | 0.4− |
| 2005 09 01 | 691 | 0.3+ | 0.3− | 2005 10 07 | 703 | (1.7+ | 2.3−) | 2005 11 03 | G96 | 0.1− | 0.4− |
| 2005 09 01 | 691 | 0.3+ | 0.4− | 2005 10 07 | 703 | 0.2− | 0.0 | 2005 11 03 | G96 | 0.1− | 0.1− |
| 2005 09 01 | 691 | 0.0 | 0.6− | 2005 10 07 | 703 | 1.2− | 0.0 | | | | |

**2005 RV$_{43}$ = 2001 UK$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 109.48919 | | (2000.0) | | | |
| $n$ | 0.23352242 | $\omega$ | 240.87151 | | +0.74897910 | +0.65807152 |
| $a$ | 2.6116621 | $\Omega$ | 77.86211 | | −0.57714124 | +0.70522603 |
| $e$ | 0.2221194 | $i$ | 4.53379 | | −0.32548165 | +0.26381454 |
| $P$ | 4.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | (1.6+ | 0.7−) | 2005 09 03 | 703 | (0.4− | 1.8+) | 2005 10 01 | 703 | 0.5− | 0.1− |
| 2001 10 23 | 704 | 0.6+ | 0.9+ | 2005 09 03 | 703 | 0.6+ | 0.2− | 2005 10 01 | 703 | 0.2+ | 0.2− |
| 2001 10 23 | 704 | 0.7+ | 0.1+ | 2005 09 03 | 703 | 0.8+ | 1.1+ | 2005 10 01 | 703 | 1.1− | 0.8− |
| 2001 10 23 | 704 | 0.5+ | 0.6+ | 2005 09 03 | 703 | (0.1+ | 1.9+) | 2005 10 04 | 644 | 0.0 | 0.3− |
| 2001 10 23 | 704 | 0.2+ | 0.5− | 2005 09 13 | 703 | 0.6− | 0.8+ | 2005 10 04 | 644 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 1.1− | 0.8+ | 2005 09 13 | 703 | 0.5− | 0.5+ | 2005 10 04 | 644 | 0.0 | 0.3− |
| 2001 10 24 | 704 | 0.4− | 0.8− | 2005 09 13 | 703 | 0.2+ | 0.8+ | 2005 10 10 | 703 | (1.7+ | 1.1−) |
| 2001 10 24 | 704 | 0.6− | 1.0− | 2005 09 13 | 703 | 0.3− | 0.1− | 2005 10 10 | 703 | 0.3− | 0.7− |
| 2001 10 24 | 704 | (1.6− | 0.7−) | 2005 09 24 | 644 | 0.2− | 0.4− | 2005 10 10 | 703 | 0.9+ | 0.7− |
| 2004 04 26 | 691 | 0.3− | 0.2− | 2005 09 24 | 644 | 0.4+ | 0.2− | 2005 10 10 | 703 | (1.6+ | 0.8+) |
| 2004 04 26 | 691 | 0.0 | 0.5+ | 2005 09 24 | 644 | 0.3+ | 0.1+ | | | | |
| 2004 04 26 | 691 | 0.2+ | 0.5− | 2005 10 01 | 703 | 0.8+ | 0.2− | | | | |

**2005 RW$_{43}$ = 1994 PT$_{7}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 122.02884 | | (2000.0) | | | |
| $n$ | 0.27424082 | $\omega$ | 191.28954 | | +0.95686687 | +0.28401677 |
| $a$ | 2.3462880 | $\Omega$ | 151.97598 | | −0.25538948 | +0.92264437 |
| $e$ | 0.1291098 | $i$ | 7.47923 | | −0.13849913 | +0.26088665 |
| $P$ | 3.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | 0.3+ | 0.0 | 2005 09 03 | 644 | 0.0 | 0.0 | 2005 10 20 | 644 | 0.2− | 0.0 |
| 1994 08 10 | 809 | 0.5+ | 0.5+ | 2005 09 24 | 644 | 0.5− | 0.4− | 2005 10 20 | 644 | 0.0 | 0.0 |
| 1994 08 10 | 809 | 0.7− | 0.1+ | 2005 09 24 | 644 | 0.3− | 0.1+ | 2005 10 20 | 644 | 0.4− | 0.3+ |
| 1994 08 11 | 809 | 0.1+ | 0.3− | 2005 09 24 | 644 | 0.1+ | 0.1+ | 2005 10 31 | 699 | 0.0 | 1.0+ |
| 1994 08 11 | 809 | 0.5− | 0.5+ | 2005 10 03 | 703 | 0.7− | 0.1+ | 2005 10 31 | 699 | 0.6+ | 1.6− |
| 1994 08 11 | 809 | 0.2+ | 0.7− | 2005 10 03 | 703 | 0.5+ | 1.1+ | 2005 10 31 | 699 | 0.1− | 0.8+ |
| 2005 09 03 | 644 | 0.0 | 0.2− | 2005 10 03 | 703 | 1.0+ | 0.8− | 2005 10 31 | 699 | 0.1− | 0.3− |
| 2005 09 03 | 644 | 0.1+ | 0.2− | 2005 10 03 | 703 | 0.0 | 0.2− | | | | |

**2005 RX$_{43}$ = 2002 AA$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.50127 | | (2000.0) | | | |
| $n$ | 0.21822794 | $\omega$ | 295.38043 | | +0.39287596 | −0.91756424 |
| $a$ | 2.7323048 | $\Omega$ | 131.34606 | | +0.87022806 | +0.34951611 |
| $e$ | 0.0669444 | $i$ | 4.66275 | | +0.29723998 | +0.18951085 |
| $P$ | 4.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 16 | 691 | 0.2− | 0.1+ | 2003 03 26 | 691 | 0.2+ | 1.0+ | 2005 10 03 | 703 | 1.8− | 0.8+ |
| 1996 10 16 | 691 | 0.4− | 1.4+ | 2003 03 26 | 691 | 0.6+ | 1.2+ | 2005 10 03 | 703 | 0.7+ | 1.4+ |
| 1996 10 16 | 691 | 0.1− | 0.4+ | 2005 09 03 | 644 | 0.1− | 0.4+ | 2005 10 08 | 703 | 0.1+ | 0.7+ |
| 2002 01 09 | 291 | 0.2− | 0.3− | 2005 09 03 | 644 | 0.1− | 0.2+ | 2005 10 08 | 703 | 0.6+ | 0.3− |
| 2002 01 09 | 291 | 0.1+ | 0.3− | 2005 09 03 | 644 | 0.3− | 0.1+ | 2005 10 08 | 703 | 0.5− | 0.4− |
| 2002 01 09 | 291 | 0.2+ | 0.4− | 2005 09 03 | 644 | 0.1− | 0.6+ | 2005 10 08 | 703 | 0.3− | 0.4+ |
| 2002 01 13 | 704 | 0.0 | 0.0 | 2005 09 03 | 644 | 0.4− | 0.4+ | 2005 10 20 | 644 | 0.4+ | 0.5+ |
| 2002 01 13 | 704 | 0.1− | 0.3+ | 2005 09 03 | 644 | 0.1− | 0.3+ | 2005 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 01 13 | 704 | 0.1+ | 1.1+ | 2005 10 03 | 703 | 0.4− | 0.1− | 2005 10 20 | 644 | 0.4+ | 0.1+ |
| 2003 03 26 | 691 | 0.3+ | 0.8+ | 2005 10 03 | 703 | 0.5− | 0.7− | | | | |

**2005 RY$_{43}$ = 1987 KB$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 130.29852 | | (2000.0) | | | |
| $n$ | 0.22802315 | $\omega$ | 50.47300 | | +0.53572053 | +0.81911829 |
| $a$ | 2.6534858 | $\Omega$ | 253.09108 | | −0.82548337 | +0.45693545 |
| $e$ | 0.2612161 | $i$ | 12.37584 | | −0.17770968 | +0.34677834 |
| $P$ | 4.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1987 05 30 | 413 | 0.2+ | 1.4+ | 2001 12 15 | 704 | 0.5− | 1.6− | 2005 10 10 | 699 | 0.1− | 0.3+ |
| 1987 05 30 | 413 | 0.2− | 0.1+ | 2002 01 06 | 691 | 0.1+ | 0.5+ | 2005 10 10 | 699 | 0.2− | 0.1− |
| 2000 05 10 | 704 | 0.2+ | 0.5− | 2002 01 06 | 691 | 0.2+ | 0.7+ | 2005 10 30 | 644 | 0.3− | 0.0 |
| 2000 05 10 | 704 | 0.8+ | 0.2− | 2002 01 06 | 691 | 0.0 | 1.0+ | 2005 10 30 | 644 | 0.3− | 0.2+ |
| 2000 05 10 | 704 | 0.2+ | 0.4+ | 2005 09 11 | 699 | 0.6− | 0.1− | 2005 10 30 | 644 | 0.2+ | 0.0 |
| 2000 05 10 | 704 | 0.1+ | 0.1+ | 2005 09 11 | 699 | 0.3− | 0.6+ | 2005 11 07 | 704 | 0.2+ | 0.2+ |
| 2000 05 10 | 704 | 0.3− | 0.1− | 2005 09 11 | 699 | 0.9+ | 1.5− | 2005 11 07 | 704 | 0.4− | 0.3+ |
| 2000 06 07 | 704 | 0.4− | 0.4+ | 2005 09 11 | 699 | 1.1− | 1.8+ | 2005 11 07 | 704 | 0.3+ | 0.7− |
| 2000 06 07 | 704 | 0.7− | 0.3+ | 2005 09 29 | 703 | 0.3+ | 0.1− | 2005 11 07 | 704 | 0.0 | 0.0 |
| 2000 06 07 | 704 | 0.3+ | 0.9+ | 2005 09 29 | 703 | 1.3− | 0.2− | 2005 12 22 | 644 | 0.2+ | 0.3+ |
| 2000 06 07 | 704 | 0.1− | 0.0 | 2005 09 29 | 703 | 0.3− | 0.4− | 2005 12 22 | 644 | 0.1+ | 0.1+ |
| 2001 12 15 | 704 | 0.2− | 2.1− | 2005 09 29 | 703 | 2.7+ | 1.1+ | 2005 12 22 | 644 | 0.1− | 0.1+ |
| 2001 12 15 | 704 | 0.4− | 0.9− | 2005 10 10 | 699 | 0.1− | 0.4− | | | | |
| 2001 12 15 | 704 | 0.1+ | 0.4− | 2005 10 10 | 699 | 0.1− | 0.5− | | | | |

**2005 RZ$_{43}$ = 2000 WC$_{186}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.91996 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17465233 | $\omega$ | 126.82661 | | +0.97538441 | | +0.09935950 |
| $a$ | 3.1697120 | $\Omega$ | 228.38105 | | −0.14327958 | | +0.96416757 |
| $e$ | 0.1292309 | $i$ | 15.26758 | | +0.16761928 | | +0.24598493 |
| $P$ | 5.64 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.2− | 0.7− | 2005 09 12 | 704 | 0.0 | 0.1+ | 2005 10 28 | 703 | 0.6− | 0.9− |
| 2000 11 27 | 704 | 1.1− | 0.4− | 2005 09 26 | 703 | 0.9+ | 0.0 | 2005 10 28 | 703 | 1.7+ | 1.0+ |
| 2000 11 27 | 704 | 0.6− | 0.6+ | 2005 09 26 | 703 | 0.8+ | 0.1− | 2005 10 30 | 699 | 0.2+ | 0.1− |
| 2000 11 27 | 704 | 1.6+ | 0.4+ | 2005 09 26 | 703 | 0.0 | 0.3− | 2005 10 30 | 699 | 0.2− | 0.7− |
| 2000 11 27 | 704 | 0.6+ | 0.8+ | 2005 09 26 | 703 | 0.3− | 0.1− | 2005 10 30 | 699 | 0.6+ | 0.6+ |
| 2000 12 03 | 691 | 0.0 | 0.2− | 2005 10 06 | 703 | 0.8− | 1.4− | 2005 10 30 | 699 | 0.1− | 1.2+ |
| 2000 12 03 | 691 | 0.2− | 0.2− | 2005 10 06 | 703 | 0.6− | 0.1− | 2005 11 03 | 703 | 0.3− | 0.7+ |
| 2000 12 03 | 691 | 0.1− | 0.3− | 2005 10 06 | 703 | 0.5− | 0.5+ | 2005 11 03 | 703 | 0.5+ | 0.8− |
| 2005 09 12 | 704 | 0.4− | 0.4− | 2005 10 06 | 703 | 0.1+ | 0.9+ | 2005 11 03 | 703 | 0.3+ | 1.1− |
| 2005 09 12 | 704 | 0.3− | 0.3− | 2005 10 28 | 703 | 1.3− | 0.1− | 2005 11 03 | 703 | 0.5+ | 0.6+ |
| 2005 09 12 | 704 | 0.1+ | 0.2+ | 2005 10 28 | 703 | 0.2− | 0.8+ | | | | |

**2005 RA$_{44}$ = 1999 ND$_{63}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.59011 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17690097 | $\omega$ | 70.55885 | | +0.81964424 | | +0.52772304 |
| $a$ | 3.1427939 | $\Omega$ | 257.00740 | | −0.57272138 | | +0.74589825 |
| $e$ | 0.2101581 | $i$ | 13.22485 | | −0.01317310 | | +0.40637937 |
| $P$ | 5.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.3− | 0.2+ | 2005 09 13 | 704 | 0.5− | 1.3+ | 2005 10 02 | 644 | 0.1+ | 0.3− |
| 1999 07 13 | 704 | 0.4− | 0.5+ | 2005 09 13 | 704 | 0.5− | 0.4+ | 2005 10 02 | 644 | 0.5+ | 0.3− |
| 1999 07 13 | 704 | 0.1+ | 0.1+ | 2005 09 13 | 704 | 0.3− | 1.0+ | 2005 10 23 | 703 | 0.5+ | 0.3+ |
| 1999 07 13 | 704 | 0.6+ | 0.1− | 2005 09 25 | 644 | 0.6+ | 0.4− | 2005 10 23 | 703 | 1.1− | 1.1− |
| 1999 07 22 | 704 | 0.9+ | 0.2+ | 2005 09 25 | 644 | 0.4+ | 0.5− | 2005 10 23 | 703 | 0.5− | 0.2− |
| 1999 07 22 | 704 | 0.3− | 0.1− | 2005 09 25 | 644 | 0.4+ | 0.2− | 2005 10 23 | 703 | 0.0 | 0.5+ |
| 1999 07 22 | 704 | 0.4− | 0.8− | 2005 10 02 | 644 | 0.3+ | 0.4− | | | | |

**2005 RB$_{44}$ = 2001 TC$_{156}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.17295 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24304016 | $\omega$ | 53.67794 | | −0.55398937 | | +0.83252165 |
| $a$ | 2.5430254 | $\Omega$ | 182.68298 | | −0.77603226 | | −0.51720828 |
| $e$ | 0.1197887 | $i$ | 2.28451 | | −0.30144602 | | −0.19850265 |
| $P$ | 4.06 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.2− | 0.3+ | 2005 09 14 | 691 | 0.0 | 0.1− | 2005 09 30 | G96 | 0.4+ | 0.2− |
| 2001 10 14 | 691 | 0.4− | 0.1− | 2005 09 14 | 691 | 0.0 | 0.0 | 2005 09 30 | G96 | 0.2− | 0.1− |
| 2001 10 14 | 691 | 0.5− | 0.1− | 2005 09 30 | 691 | 0.2+ | 0.3+ | 2005 10 12 | 691 | 0.3+ | 0.3− |
| 2001 10 17 | 691 | 0.4+ | 0.0 | 2005 09 30 | 691 | 0.3− | 0.0 | 2005 10 12 | 691 | 0.1− | 0.8− |
| 2001 10 17 | 691 | 0.2+ | 0.1− | 2005 09 30 | 691 | 0.4+ | 0.3+ | 2005 10 12 | 691 | 0.2+ | 1.0+ |
| 2001 10 17 | 691 | 0.5+ | 0.1+ | 2005 09 30 | G96 | 0.7− | 0.0 | | | | |
| 2005 09 14 | 691 | 0.2+ | 0.1− | 2005 09 30 | G96 | 0.1− | 0.3− | | | | |

**2005 RC$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.43985 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22546508 | $\omega$ | 221.98333 | | −0.89209773 | | −0.39324736 |
| $a$ | 2.6735185 | $\Omega$ | 293.58335 | | +0.45145514 | | −0.75535629 |
| $e$ | 0.0591114 | $i$ | 14.05222 | | +0.01870557 | | −0.52420739 |
| $P$ | 4.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8+ | 0.9+ | 2005 09 02 | 644 | 0.4+ | 0.2+ | 2005 11 21 | 703 | 0.3− | 0.2+ |
| 2001 12 09 | 704 | 0.2+ | 0.2+ | 2005 09 02 | 644 | 0.1+ | 0.4+ | 2005 11 21 | 703 | 0.2+ | 0.9− |
| 2001 12 09 | 704 | 0.1− | 0.1− | 2005 11 02 | 703 | 0.2− | 1.5− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 12 09 | 704 | 0.7− | 0.2+ | 2005 11 02 | 703 | 1.4+ | 0.6− | 2006 11 15 | G96 | 0.5+ | 0.6− |
| 2003 03 23 | 644 | 0.5+ | 0.9+ | 2005 11 02 | 703 | 0.8− | 1.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2003 03 23 | 644 | 0.3+ | 0.9+ | 2005 11 02 | 703 | 0.6− | 1.3+ | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2003 03 23 | 644 | 0.0 | 0.9+ | 2005 11 04 | 699 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2004 07 15 | E12 | 0.3+ | 0.4+ | 2005 11 04 | 699 | 0.5+ | 1.0+ | 2006 11 21 | G96 | 0.6− | 0.2− |
| 2004 07 15 | E12 | 0.5− | 0.3− | 2005 11 04 | 699 | (2.3+ | 0.9+) | 2006 11 21 | G96 | 0.8− | 0.0 |
| 2004 07 15 | E12 | 0.8+ | 0.5+ | 2005 11 04 | 699 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2004 07 15 | E12 | (2.0− | 0.5+) | 2005 11 21 | 703 | 0.6− | 1.2− | | | | |
| 2005 09 02 | 644 | 0.5− | 0.7+ | 2005 11 21 | 703 | 0.9− | 0.0 | | | | |

**2005 RD$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.80884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18516518 | $\omega$ | 116.07945 | | +0.98128596 | | +0.12514428 |
| $a$ | 3.0485724 | $\Omega$ | 237.05780 | | −0.16506796 | | +0.93804199 |
| $e$ | 0.2261931 | $i$ | 10.04269 | | +0.09914856 | | +0.32313484 |
| $P$ | 5.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 17 | 691 | 0.4− | 0.7+ | 2005 09 02 | 644 | 0.3− | 0.7− | 2005 10 08 | 703 | 0.0 | 0.4− |
| 2000 11 17 | 691 | 1.5+ | 1.1− | 2005 09 02 | 644 | 0.0 | 1.1− | 2005 10 08 | 703 | 1.5+ | 0.2− |
| 2000 11 17 | 691 | 0.8+ | 1.1− | 2005 09 02 | 644 | 0.6− | 0.8− | 2005 10 22 | 703 | 1.4− | 0.1+ |
| 2000 12 05 | 691 | 0.6− | 0.2+ | 2005 10 01 | 703 | 0.1− | 0.3+ | 2005 10 22 | 703 | 0.0 | 0.1+ |
| 2000 12 05 | 691 | 0.6− | 0.4+ | 2005 10 01 | 703 | 1.0+ | 0.9+ | 2005 10 22 | 703 | 0.4+ | 1.0+ |
| 2000 12 05 | 691 | 0.8− | 0.5+ | 2005 10 01 | 703 | 0.7− | 0.1+ | 2005 10 22 | 644 | 0.7+ | 1.1+ |
| 2005 09 02 | 644 | 0.2− | 0.3− | 2005 10 01 | 703 | 0.6− | 0.4− | 2005 10 22 | 703 | 1.2− | 1.0+ |
| 2005 09 02 | 644 | 0.6− | 0.5− | 2005 10 08 | 703 | 0.8+ | 0.5− | 2005 10 22 | 644 | 0.5+ | 0.4+ |
| 2005 09 02 | 644 | 0.6− | 0.4− | 2005 10 08 | 703 | 0.4− | 0.4+ | 2005 10 22 | 644 | 0.9+ | 0.7+ |

**2005 RE$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.16459 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36985507 | $\omega$ | 108.38264 | | −0.16839531 | | −0.98432324 |
| $a$ | 1.9221252 | $\Omega$ | 350.82295 | | +0.73372304 | | −0.08963661 |
| $e$ | 0.0677790 | $i$ | 19.19933 | | +0.65825035 | | −0.15189810 |
| $P$ | 2.66 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 25 | 704 | 0.0 | 0.4+ | 2005 09 11 | 699 | 1.4− | 0.6− | 2005 09 30 | 699 | 0.7− | 0.4+ |
| 2004 02 25 | 704 | 0.7+ | 0.6− | 2005 09 11 | 699 | 0.5+ | 0.6+ | 2005 10 03 | 703 | 1.3+ | 0.9+ |
| 2004 02 25 | 704 | 0.3− | 1.0+ | 2005 09 11 | 699 | 1.8− | 0.8+ | 2005 10 03 | 703 | 0.2+ | 0.8− |
| 2004 02 25 | 704 | 0.1+ | 0.7+ | 2005 09 11 | 699 | 1.0− | 0.9+ | 2005 10 03 | 703 | 0.4+ | 0.6− |
| 2004 03 27 | 703 | 0.2+ | 1.2− | 2005 09 23 | 703 | 1.1− | 0.9+ | 2005 10 10 | 703 | 0.2− | 0.3+ |
| 2004 03 27 | 703 | 0.2− | 0.0 | 2005 09 23 | 703 | 0.9− | 1.6− | 2005 10 10 | 703 | 0.1+ | 0.2− |
| 2004 03 27 | 703 | 0.8+ | 0.0 | 2005 09 23 | 703 | 0.4− | 0.3− | 2005 10 10 | 703 | 0.6+ | 0.6+ |
| 2004 03 27 | 703 | 0.6− | 0.5+ | 2005 09 23 | 703 | 0.6− | 0.2+ | 2005 11 04 | 703 | 0.9+ | 0.2− |
| 2005 09 02 | 644 | 0.0 | 0.4− | 2005 09 30 | 699 | 1.7+ | 1.3+ | 2005 11 04 | 703 | 0.0 | 1.1+ |
| 2005 09 02 | 644 | 0.2− | 0.4− | 2005 09 30 | 699 | 0.1+ | 0.8− | 2005 11 04 | 703 | 0.9+ | 0.7+ |
| 2005 09 02 | 644 | 0.1+ | 0.3− | 2005 09 30 | 699 | 0.5+ | 1.4− | | | | |

**2005 RF$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.75348 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17403693 | $\omega$ | 313.32514 | | +0.77673316 | | +0.62599717 |
| $a$ | 3.1771797 | $\Omega$ | 8.75768 | | −0.35949713 | | +0.53109489 |
| $e$ | 0.1909040 | $i$ | 27.10734 | | −0.51715318 | | +0.57102168 |
| $P$ | 5.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 645 | 0.1+ | 0.0 | 2005 10 01 | 703 | 0.4− | 0.0 | 2005 10 12 | 691 | 0.2− | 0.0 |
| 2003 03 23 | 645 | 0.1+ | 0.1+ | 2005 10 01 | 703 | 0.1+ | 0.4+ | 2005 10 29 | G96 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 645 | 0.0 | 0.1− | 2005 10 01 | 703 | 0.4+ | 0.5+ | 2005 10 29 | G96 | 0.2− | 0.1− |
| 2003 03 31 | 645 | 0.1− | 0.0 | 2005 10 10 | 703 | 1.5− | 1.3+ | 2005 10 29 | G96 | 0.5− | 0.1+ |
| 2005 09 03 | 703 | 0.6− | 0.8− | 2005 10 10 | 703 | 1.2+ | 0.4− | 2005 10 29 | G96 | 0.3− | 0.2− |
| 2005 09 03 | 703 | 0.4− | 0.4− | 2005 10 10 | 703 | 0.2+ | 0.5+ | 2005 11 29 | G96 | 0.0 | 0.4+ |
| 2005 09 03 | 703 | 0.7− | 0.4+ | 2005 10 10 | 703 | 0.2+ | 1.3− | 2005 11 29 | G96 | 0.4− | 0.3+ |
| 2005 09 03 | 703 | 0.9− | 0.2− | 2005 10 12 | 691 | 0.7+ | 0.4+ | 2005 11 29 | G96 | 0.2+ | 0.1+ |
| 2005 10 01 | 703 | (1.2− | 2.6−) | 2005 10 12 | 691 | 0.1+ | 0.2− | 2005 11 29 | G96 | 0.4+ | 0.1− |

**2005 RG$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.79951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20663686 | $\omega$ | 45.26714 | | +0.47005622 | −0.87829512 | |
| $a$ | 2.8335498 | $\Omega$ | 17.29940 | | +0.70371257 | +0.31313179 | |
| $e$ | 0.0812391 | $i$ | 17.09950 | | +0.53276240 | +0.36131174 | |
| $P$ | 4.77 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.2− | 1.1+ | 2005 09 03 | 703 | 1.4− | 1.0+ | 2005 10 07 | 699 | 1.0+ | 0.5+ |
| 2001 12 23 | 704 | 0.4+ | 0.2+ | 2005 09 13 | 703 | (2.9− | 0.1+) | 2005 10 11 | 291 | 0.5− | 0.6+ |
| 2001 12 23 | 704 | 0.3− | 0.9− | 2005 09 13 | 703 | 0.3+ | 0.8− | 2005 10 11 | 291 | 0.2− | 0.7+ |
| 2003 03 26 | 691 | 0.4+ | 0.2− | 2005 09 13 | 703 | 0.7+ | 0.6− | 2005 10 11 | 291 | 0.0 | 0.8+ |
| 2003 03 26 | 691 | 0.4+ | 0.1+ | 2005 09 13 | 703 | 1.4− | 0.5− | 2005 11 03 | G96 | 0.2− | 0.0 |
| 2003 03 26 | 691 | 0.6+ | 0.0 | 2005 09 26 | 703 | 0.5− | 0.1+ | 2005 11 03 | G96 | 0.3− | 0.3+ |
| 2003 03 30 | 291 | 0.0 | 0.5+ | 2005 09 26 | 703 | 0.6− | 0.4− | 2005 11 03 | G96 | 0.4− | 0.0 |
| 2003 03 30 | 291 | 0.4− | 0.7+ | 2005 09 26 | 703 | 0.2− | 0.6− | 2005 11 03 | G96 | 0.1+ | 0.2+ |
| 2003 03 30 | 291 | 0.5+ | 0.6+ | 2005 09 26 | 703 | 1.0− | 0.2− | 2005 12 01 | G96 | 0.3− | 0.0 |
| 2005 09 03 | 703 | 0.4+ | 0.1+ | 2005 10 07 | 699 | 1.1+ | 0.1+ | 2005 12 01 | G96 | 0.3− | 0.2− |
| 2005 09 03 | 703 | 0.7+ | 1.3− | 2005 10 07 | 699 | 0.5+ | 1.0− | 2005 12 01 | G96 | 0.1− | 0.0 |
| 2005 09 03 | 703 | 0.1− | 0.5+ | 2005 10 07 | 699 | 0.7− | 1.2+ | 2005 12 01 | G96 | 0.1− | 0.0 |

**2005 RH$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.35688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19023189 | $\omega$ | 43.28060 | | +0.05409486 | −0.98964092 | |
| $a$ | 2.9941978 | $\Omega$ | 44.12263 | | +0.85613556 | −0.02257506 | |
| $e$ | 0.0786882 | $i$ | 11.01198 | | +0.51391211 | +0.14177873 | |
| $P$ | 5.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 691 | 0.1+ | 0.2− | 2003 05 01 | 691 | 0.2+ | 0.4− | 2005 10 03 | 703 | 1.4+ | 0.3− |
| 2000 11 20 | 691 | 0.0 | 0.1+ | 2005 09 03 | 644 | 0.0 | 0.0 | 2005 10 28 | 703 | 0.6+ | 1.1− |
| 2000 11 20 | 691 | 0.0 | 0.1− | 2005 09 03 | 644 | 0.6− | 0.1− | 2005 10 28 | 703 | 0.4− | 0.5+ |
| 2002 01 23 | 704 | 1.1+ | 0.8− | 2005 09 03 | 644 | 0.7− | 0.6+ | 2005 10 28 | 703 | 0.5− | 0.3− |
| 2002 01 23 | 704 | 0.2− | 0.2− | 2005 10 01 | 699 | 1.7− | 0.3− | 2005 10 28 | 703 | 0.2− | 0.9+ |
| 2002 01 23 | 704 | 0.3+ | 0.7+ | 2005 10 01 | 699 | 0.5− | 0.5+ | 2005 11 30 | G96 | 0.2− | 0.5− |
| 2002 02 12 | 644 | 0.3− | 0.9+ | 2005 10 01 | 699 | 0.4− | 1.4+ | 2005 11 30 | G96 | 0.2− | 0.3− |
| 2002 02 12 | 644 | 0.1+ | 0.2+ | 2005 10 01 | 699 | 0.6+ | 0.3+ | 2005 11 30 | G96 | 0.1− | 0.4− |
| 2002 02 12 | 644 | 0.3− | 0.4+ | 2005 10 03 | 703 | 0.6+ | 1.0+ | 2005 11 30 | G96 | 0.4+ | 0.6− |
| 2003 05 01 | 691 | 0.1+ | 0.2+ | 2005 10 03 | 703 | 0.7+ | 1.3+ | | | | |
| 2003 05 01 | 691 | 0.3− | 0.4+ | 2005 10 03 | 703 | 0.2− | 0.4− | | | | |

**2005 RJ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.53250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26642565 | $\omega$ | 319.24620 | | +0.99023805 | −0.08116798 | |
| $a$ | 2.3919496 | $\Omega$ | 45.80204 | | +0.12702446 | +0.86020689 | |
| $e$ | 0.1500876 | $i$ | 9.09403 | | −0.05738810 | +0.50344401 | |
| $P$ | 3.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 291 | 0.2− | 0.2− | 2005 09 14 | 703 | 1.9− | 0.6− | 2005 10 09 | 703 | 0.6− | 0.3− |
| 2004 04 20 | 291 | 0.1+ | 0.0 | 2005 09 14 | 703 | 0.4− | 1.8− | 2005 10 09 | 703 | 0.5− | 0.3+ |
| 2004 04 20 | 291 | 0.0 | 0.2+ | 2005 09 14 | 703 | 0.6+ | 0.1− | 2005 10 09 | 703 | 0.6+ | 0.2− |
| 2004 05 14 | 691 | 0.3− | 0.1+ | 2005 09 14 | 703 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.3− | 0.1+ |
| 2004 05 14 | 691 | 0.0 | 0.0 | 2005 09 30 | 699 | (0.0 | 3.1+) | 2005 12 01 | G96 | 0.3− | 0.1+ |
| 2004 05 14 | 691 | 0.4+ | 0.1+ | 2005 09 30 | 699 | 0.4+ | 0.5+ | 2005 12 01 | G96 | 0.3− | 0.0 |
| 2005 09 03 | 644 | 0.1− | 0.2− | 2005 09 30 | 699 | 0.5+ | 1.0+ | 2005 12 01 | G96 | 0.5− | 0.3+ |
| 2005 09 03 | 644 | 0.1+ | 0.2+ | 2005 09 30 | 699 | 1.6+ | 1.0+ | | | | |
| 2005 09 03 | 644 | 0.2− | 0.3+ | 2005 10 09 | 703 | 0.4+ | 0.3− | | | | |

**2005 RK$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.80464 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22120768 | $\omega$ | 75.42697 | | +0.92887861 | −0.36268242 | |
| $a$ | 2.7077127 | $\Omega$ | 305.78412 | | +0.29405871 | +0.84547538 | |
| $e$ | 0.0382492 | $i$ | 5.31464 | | +0.22519768 | +0.39196026 | |
| $P$ | 4.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 691 | 0.3− | 0.2+ | 2005 09 10 | 699 | (0.6+ | 2.3−) | 2006 10 03 | G96 | 0.2+ | 0.3+ |
| 2000 08 01 | 691 | 0.1− | 0.3+ | 2005 09 30 | 644 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.4− | 0.3+ |
| 2000 08 01 | 691 | 0.0 | 0.3+ | 2005 09 30 | 644 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.4− | 0.1+ |
| 2001 11 24 | 704 | 0.1− | 0.5− | 2005 09 30 | 644 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4+ |
| 2001 11 24 | 704 | 0.4− | 0.3+ | 2005 10 06 | 703 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2001 11 24 | 704 | 0.4+ | 1.1+ | 2005 10 06 | 703 | 0.3− | 0.6− | 2006 10 31 | G96 | 0.2+ | 0.2+ |
| 2003 02 21 | 644 | 0.6+ | 0.8+ | 2005 10 06 | 703 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2003 02 21 | 644 | 0.3+ | 0.4+ | 2005 10 06 | 703 | (1.7− | 1.1−) | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2003 02 21 | 644 | 0.8+ | 0.8+ | 2005 10 21 | 644 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2005 09 10 | 699 | 0.2+ | 0.5+ | 2005 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2005 09 10 | 699 | 0.4+ | 0.7− | 2005 10 21 | 644 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2005 09 10 | 699 | 0.3− | 1.0− | 2006 10 03 | G96 | 0.2+ | 0.0 | | | | |

**2005 RL$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.65605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23180602 | $\omega$ | 102.02505 | | +0.80726181 | −0.55751036 | |
| $a$ | 2.6245382 | $\Omega$ | 292.15368 | | +0.42658299 | +0.77794635 | |
| $e$ | 0.2670230 | $i$ | 12.07045 | | +0.40786680 | +0.28979592 | |
| $P$ | 4.25 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 06 | 691 | 0.0 | 0.2− | 2005 09 13 | 704 | 0.8+ | 0.4+ | 2005 10 06 | 703 | 0.2+ | 0.0 |
| 1998 01 06 | 691 | 0.1+ | 0.5− | 2005 09 13 | 704 | 0.2− | 0.1− | 2005 10 06 | 703 | 0.6+ | 0.4− |
| 1998 01 06 | 691 | 0.3− | 0.1+ | 2005 09 13 | 704 | 0.4+ | 0.9− | 2005 10 06 | 703 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.5+ | 1.0+ | 2005 09 25 | 644 | 0.3− | 0.1+ | 2005 10 06 | 703 | 1.0− | 0.8+ |
| 2001 12 09 | 704 | 0.4− | 1.0+ | 2005 09 25 | 644 | 0.2+ | 0.1+ | 2005 10 13 | 704 | 0.5+ | 0.2+ |
| 2001 12 09 | 704 | 1.1+ | 0.5+ | 2005 09 25 | 644 | 0.2− | 0.2+ | 2005 10 13 | 704 | 0.5− | 0.2− |
| 2001 12 09 | 704 | 0.5+ | 0.2+ | 2005 09 29 | 703 | 0.3− | 1.1− | 2005 10 13 | 704 | 0.2− | 0.5− |
| 2001 12 09 | 704 | 0.2+ | 0.7+ | 2005 09 29 | 703 | 0.2+ | 1.8− | 2005 10 23 | 703 | 0.6− | 0.2+ |
| 2001 12 22 | 704 | 0.4− | 0.6− | 2005 09 29 | 703 | (0.7+ | 2.2−) | 2005 10 23 | 703 | 0.6− | 0.2− |
| 2001 12 22 | 704 | 0.3− | 0.6− | 2005 09 29 | 703 | 0.6− | 0.0 | 2005 10 23 | 703 | 0.5+ | 0.5+ |
| 2001 12 22 | 704 | 0.1− | 0.3+ | 2005 10 02 | 644 | 0.2+ | 0.2+ | 2005 10 23 | 703 | 0.1+ | 0.5+ |
| 2001 12 22 | 704 | 0.6− | 0.6− | 2005 10 02 | 644 | 0.5+ | 0.2+ | | | | |
| 2005 09 13 | 704 | 0.5+ | 0.4+ | 2005 10 02 | 644 | 0.4+ | 0.1+ | | | | |

**2005 RM$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.95415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26906506 | $\omega$ | 187.87910 | | +0.66981882 | +0.72527041 | |
| $a$ | 2.3762812 | $\Omega$ | 124.33794 | | −0.67031243 | +0.68282188 | |
| $e$ | 0.3204064 | $i$ | 11.11202 | | −0.31941195 | +0.08796093 | |
| $P$ | 3.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.2+ | 0.3+ | 2005 09 13 | 704 | 0.1+ | 0.1− | 2005 10 08 | 703 | 1.3+ | 0.1+ |
| 2000 02 05 | 695 | 0.6+ | 0.4+ | 2005 09 13 | 703 | 1.0− | 0.3+ | 2005 10 08 | 703 | 1.1− | 0.6− |
| 2001 05 29 | 704 | 0.7− | 0.0 | 2005 09 13 | 704 | 0.6+ | 0.3− | 2005 10 08 | 703 | 0.3+ | 0.4− |
| 2001 05 29 | 704 | 0.4− | 0.2+ | 2005 09 13 | 703 | 0.5− | 0.2+ | 2005 10 08 | 703 | 0.6+ | 0.9+ |
| 2001 05 29 | 704 | 0.8− | 0.2+ | 2005 09 13 | 704 | 0.4− | 1.5+ | 2005 10 08 | 703 | 0.6− | 0.2+ |
| 2001 06 21 | 704 | 0.2+ | 0.6+ | 2005 09 13 | 703 | 0.5+ | 0.1− | 2005 10 25 | 704 | 0.2− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 704 | 0.2+ | 0.1+ | 2005 09 13 | 704 | 0.1− | 0.6+ | 2005 10 25 | 704 | 0.4− | 0.2+ | | |
| 2001 06 21 | 704 | 0.5+ | 0.5+ | 2005 09 13 | 703 | 0.4+ | 0.2+ | 2005 10 25 | 704 | 0.1+ | 0.8+ | | |
| 2001 06 21 | 704 | 0.6+ | 0.4+ | 2005 09 28 | 644 | 0.1− | 0.2+ | 2005 10 25 | 704 | 1.0− | 0.7+ | | |
| 2001 06 21 | 704 | 0.3+ | 0.3− | 2005 09 28 | 644 | 0.3+ | 0.1− | 2005 10 25 | 704 | 0.6+ | 0.7+ | | |
| 2004 02 29 | 691 | 0.2+ | 0.4+ | 2005 09 28 | 644 | 0.4− | 0.1− | 2005 11 05 | 703 | 0.2− | 0.4− | | |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2005 10 08 | 703 | 0.3+ | 0.2+ | 2005 11 05 | 703 | 0.1− | 0.2− | | |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2005 10 08 | 703 | 0.9− | 0.8− | 2005 11 05 | 703 | 0.9− | 0.6− | | |
| 2005 09 13 | 704 | 0.6+ | 0.1+ | 2005 10 08 | 703 | 0.4+ | 0.8+ | 2005 11 05 | 703 | 0.3+ | 0.9− | | |

### 2005 $RN_{44}$ = 2004 MR

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 127.54834 | | (2000.0) | | | |
| $n$ | 0.21978069 | $\omega$ | 216.23797 | | +0.74906969 | +0.64627675 |
| $a$ | 2.7194204 | $\Omega$ | 102.83452 | | −0.56726625 | +0.73928335 |
| $e$ | 0.0998332 | $i$ | 8.59256 | | −0.34220402 | +0.18917321 |
| $P$ | 4.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | (2.5− | 1.3+) | 2004 06 18 | 704 | 0.9+ | 0.1+ | 2005 10 05 | 703 | 0.2− | 0.5+ | | |
| 2001 11 17 | 704 | (2.5− | 0.0 ) | 2004 06 18 | 704 | 0.0 | 0.1− | 2005 10 05 | 703 | 0.0 | 0.1+ | | |
| 2001 11 17 | 704 | (2.3− | 1.1+) | 2004 06 18 | 704 | (0.1+ | 1.5+) | 2005 10 05 | 703 | 0.5+ | 0.7+ | | |
| 2001 11 17 | 704 | 0.7− | 1.1+ | 2004 06 18 | 704 | 0.9− | 0.2− | 2005 11 01 | 703 | 1.0+ | 0.7+ | | |
| 2001 12 11 | 704 | 0.5− | 0.7+ | 2005 09 14 | 703 | 0.6+ | 0.8− | 2005 11 01 | 703 | 0.3− | 1.1− | | |
| 2001 12 11 | 704 | 0.2+ | 0.1− | 2005 09 14 | 703 | (1.9− | 0.4+) | 2005 11 01 | 703 | 0.6+ | 1.1− | | |
| 2001 12 11 | 704 | 0.4+ | 0.7+ | 2005 09 14 | 703 | (0.2− | 1.9+) | 2005 11 01 | 703 | 0.3+ | 0.5− | | |
| 2001 12 11 | 704 | 0.0 | 0.5− | 2005 09 14 | 703 | 0.7− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2+ | | |
| 2004 06 16 | 704 | 0.7+ | 1.1+ | 2005 09 30 | 704 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3− | 0.1+ | | |
| 2004 06 16 | 704 | 0.2+ | 0.4+ | 2005 09 30 | 704 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.1− | | |
| 2004 06 16 | 704 | 0.0 | 0.1− | 2005 09 30 | 704 | 1.3− | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.1+ | | |
| 2004 06 18 | 704 | 0.5− | 0.5+ | 2005 10 05 | 703 | 0.2− | 0.5+ | | | | | | |

### 2005 $RT_{44}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.19546 | | (2000.0) | | | |
| $n$ | 0.22012403 | $\omega$ | 198.48685 | | −0.14774392 | −0.95075775 |
| $a$ | 2.7165920 | $\Omega$ | 260.71455 | | +0.93867289 | −0.04801844 |
| $e$ | 0.2067075 | $i$ | 16.02590 | | +0.31155247 | −0.30619263 |
| $P$ | 4.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.5− | 0.2− | 2002 01 09 | 704 | 1.3+ | 0.6+ | 2005 10 14 | 704 | 0.5− | 0.7+ | | |
| 2001 11 20 | 704 | 0.4− | 0.0 | 2002 01 09 | 704 | 0.6+ | 0.3+ | 2005 10 14 | 704 | 0.7− | 0.2+ | | |
| 2001 11 20 | 704 | 0.9− | 0.1+ | 2005 09 02 | 644 | 0.2− | 0.1+ | 2005 10 29 | 703 | 0.2+ | 0.3+ | | |
| 2001 12 18 | 704 | 0.1+ | 0.6− | 2005 09 02 | 644 | 0.0 | 0.0 | 2005 10 29 | 703 | 0.9− | 0.0 | | |
| 2001 12 18 | 704 | 1.5− | 0.1− | 2005 09 02 | 644 | 0.1− | 0.1− | 2005 10 29 | 703 | 1.1+ | 0.0 | | |
| 2001 12 18 | 704 | 0.3− | 0.6− | 2005 09 29 | 703 | 0.0 | 0.7− | 2005 10 29 | 703 | 0.6+ | 0.4− | | |
| 2001 12 18 | 704 | 0.5− | 0.1+ | 2005 09 29 | 703 | 0.0 | 0.8− | 2005 11 29 | 704 | 0.6− | 0.3+ | | |
| 2002 01 09 | 704 | 0.8+ | 0.1+ | 2005 09 29 | 703 | 0.6− | 0.1+ | 2005 11 29 | 704 | 0.3− | 0.4− | | |
| 2002 01 09 | 704 | 0.4+ | 0.2+ | 2005 09 29 | 703 | 0.3+ | 0.1+ | 2005 11 29 | 704 | 0.3+ | 0.0 | | |
| 2002 01 09 | 704 | 0.4+ | 0.1+ | 2005 10 14 | 704 | 1.1+ | 1.1+ | | | | | | |

### 2005 $RE_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.23495 | | (2000.0) | | | |
| $n$ | 0.24103286 | $\omega$ | 3.82404 | | +0.87313665 | +0.47051959 |
| $a$ | 2.5571245 | $\Omega$ | 327.12033 | | −0.45324743 | +0.68735059 |
| $e$ | 0.1916445 | $i$ | 13.57803 | | −0.17944123 | +0.55331770 |
| $P$ | 4.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 691 | 0.0 | 0.9− | 2005 09 10 | 699 | 0.8− | 0.5+ | 2005 10 11 | 699 | 0.6+ | 0.3− | | |
| 1999 01 23 | 691 | 0.1+ | 0.5+ | 2005 09 10 | 699 | 1.3+ | 0.4− | 2005 11 04 | 703 | 0.1+ | 0.2+ | | |
| 1999 01 23 | 691 | 0.1− | 0.3+ | 2005 09 29 | 703 | 1.0+ | 0.3− | 2005 11 04 | 703 | 0.3+ | 0.4+ | | |
| 2001 10 25 | 704 | 0.9− | 0.5+ | 2005 09 29 | 703 | 0.6− | 0.5+ | 2005 11 04 | 703 | 0.4− | 0.0 | | |
| 2001 10 25 | 704 | 0.6+ | 0.3− | 2005 09 29 | 703 | 0.7− | 0.8− | 2005 11 04 | 703 | 0.3+ | 0.6− | | |
| 2001 10 25 | 704 | 0.4+ | 0.7+ | 2005 09 29 | 703 | 1.8− | 1.3+ | 2005 11 08 | 704 | 0.2− | 0.9− | | |
| 2001 10 25 | 704 | 0.6− | 0.2+ | 2005 10 11 | 699 | 1.1+ | 0.3+ | 2005 11 08 | 704 | 0.3+ | 0.7− | | |
| 2005 09 10 | 699 | 1.0+ | 0.1− | 2005 10 11 | 699 | 0.1+ | 0.6+ | 2005 11 08 | 704 | 0.4− | 0.9− | | |
| 2005 09 10 | 699 | 0.2− | 1.2− | 2005 10 11 | 699 | 0.3+ | 0.2+ | 2005 11 08 | 704 | 0.5− | 0.7+ | | |

### 2005 $RK_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.08332 | | (2000.0) | | | |
| $n$ | 0.21404305 | $\omega$ | 334.12829 | | +0.78048197 | −0.58345346 |
| $a$ | 2.7678038 | $\Omega$ | 63.40619 | | +0.60829969 | +0.62582387 |
| $e$ | 0.1295218 | $i$ | 14.54472 | | +0.14428921 | +0.51761621 |
| $P$ | 4.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 12 | 691 | 0.3− | 0.1− | 2001 12 17 | 704 | 0.1− | 0.1− | 2005 09 27 | 704 | 0.3− | 0.3+ | | |
| 1999 06 12 | 691 | 0.1+ | 0.0 | 2001 12 17 | 704 | 1.7+ | 0.6+ | 2005 10 08 | 699 | 0.0 | 0.6+ | | |
| 1999 06 12 | 691 | 0.4− | 0.4− | 2001 12 17 | 704 | 1.0− | 0.8− | 2005 10 08 | 699 | 0.2− | 0.4− | | |
| 2001 12 09 | 704 | 0.6− | 0.3− | 2001 12 17 | 704 | 1.5+ | 0.4+ | 2005 10 08 | 699 | 0.6− | 0.2− | | |
| 2001 12 09 | 704 | 1.8− | 0.4− | 2003 03 31 | 645 | 0.1+ | 0.2+ | 2005 10 08 | 699 | 0.5+ | 0.3+ | | |
| 2001 12 09 | 704 | 0.8− | 0.8− | 2003 03 31 | 645 | 0.1+ | 0.2+ | 2005 10 30 | 703 | 0.3+ | 0.2+ | | |
| 2001 12 09 | 704 | 0.6− | 0.2− | 2005 09 14 | 703 | 0.9− | 1.0− | 2005 10 30 | 703 | 0.2− | 0.4+ | | |
| 2001 12 17 | 704 | 0.2− | 0.6− | 2005 09 14 | 703 | 0.8− | 0.9+ | 2005 10 30 | 703 | 0.4− | 0.1− | | |
| 2001 12 17 | 704 | 1.9+ | 0.2+ | 2005 09 14 | 703 | 0.3− | 0.0 | 2005 10 30 | 703 | 0.5+ | 0.4+ | | |
| 2001 12 17 | 704 | 1.0− | 0.3− | 2005 09 14 | 703 | 0.6− | 0.3+ | 2005 11 06 | 703 | 0.2− | 1.5+ | | |
| 2001 12 17 | 704 | 1.5+ | 0.6+ | 2005 09 27 | 704 | 0.9− | 1.0+ | 2005 11 06 | 703 | 0.1− | 0.4+ | | |
| 2001 12 17 | 704 | 0.6− | 0.3− | 2005 09 27 | 704 | 0.1+ | 1.1+ | 2005 11 06 | 703 | 0.6+ | 0.6− | | |
| 2001 12 17 | 704 | 0.8+ | 0.2+ | 2005 09 27 | 704 | 0.1+ | 1.0+ | 2005 11 06 | 703 | 0.7− | 0.2+ | | |

### 2005 $RM_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.82952 | | (2000.0) | | | |
| $n$ | 0.17762961 | $\omega$ | 10.84824 | | +0.30662608 | −0.93523227 |
| $a$ | 3.1341935 | $\Omega$ | 61.49960 | | +0.85751789 | +0.19073239 |
| $e$ | 0.2145823 | $i$ | 11.61780 | | +0.41309020 | +0.29826457 |
| $P$ | 5.55 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 704 | 0.6+ | 0.0 | 2005 09 30 | 699 | 0.3− | 0.9− | 2005 10 03 | 703 | 0.8− | 1.7+ | | |
| 2000 11 30 | 704 | 0.4+ | 0.1+ | 2005 09 30 | 699 | 1.3+ | 0.2+ | 2005 10 31 | 699 | 0.2+ | 0.6+ | | |
| 2000 11 30 | 704 | 0.1+ | 0.0 | 2005 09 30 | 699 | 0.2− | 0.4+ | 2005 10 31 | 699 | 0.7− | 0.0 | | |
| 2000 12 20 | 704 | 0.3+ | 0.3− | 2005 09 30 | 699 | 0.4+ | 1.1+ | 2005 10 31 | 699 | 2.0− | 0.5− | | |
| 2000 12 20 | 704 | 0.3+ | 0.4+ | 2005 10 03 | 703 | 0.2− | 0.4− | 2005 10 31 | 699 | 0.6+ | 0.9+ | | |
| 2000 12 20 | 704 | 1.0− | 0.2− | 2005 10 03 | 703 | 1.1− | 0.4− | 2005 11 05 | 703 | 0.2+ | 0.2− | | |
| 2000 12 20 | 704 | 0.6− | 0.2− | 2005 10 03 | 703 | 0.0 | 0.6− | 2005 11 05 | 703 | 0.3+ | 0.0 | | |
| 2005 09 14 | 703 | 1.0+ | 0.0 | 2005 10 03 | 703 | 0.1+ | 0.2− | 2005 11 05 | 703 | 0.6+ | 0.5− | | |
| 2005 09 14 | 703 | (1.7+ | 2.7+) | 2005 10 03 | 703 | 0.5+ | 0.3− | 2005 11 05 | 703 | 0.2− | 0.7− | | |
| 2005 09 14 | 703 | 0.7− | 1.6− | 2005 10 03 | 703 | 0.4− | 0.4+ | | | | | | |
| 2005 09 14 | 703 | 1.2+ | 0.3+ | 2005 10 03 | 703 | 0.2+ | 0.7+ | | | | | | |

### 2005 $RN_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.74039 | | (2000.0) | | | |
| $n$ | 0.29221745 | $\omega$ | 103.73420 | | +0.35482757 | −0.93470072 |
| $a$ | 2.2490474 | $\Omega$ | 325.46023 | | +0.84299624 | +0.32947004 |
| $e$ | 0.1401630 | $i$ | 2.10077 | | +0.40429535 | +0.13335691 |
| $P$ | 3.37 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2− | 0.7− | 2005 09 14 | 691 | 0.1+ | 0.1+ | 2005 10 25 | 699 | 0.5− | 0.1− | | |
| 2002 12 11 | 704 | 0.3− | 0.4− | 2005 09 14 | 691 | 0.2+ | 0.4+ | 2005 10 25 | 699 | (2.4+ | 0.3+) | | |
| 2002 12 11 | 704 | 0.2− | 0.2− | 2005 09 14 | 691 | 0.2+ | 0.1+ | 2005 10 25 | 699 | 0.1+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.3+ | 0.2− | 2005 09 23 | 703 | 0.2+ | 0.1− | 2005 11 01 | G96 | 0.0 | 0.6− | | |
| 2003 01 04 | 704 | 1.0+ | 0.9+ | 2005 09 23 | 703 | 1.1− | 0.4+ | 2005 11 01 | G96 | 0.4− | 0.3− | | |
| 2003 01 04 | 704 | 0.3+ | 0.0 | 2005 09 23 | 703 | (2.4+ | 1.5−) | 2005 11 01 | G96 | 0.5+ | 0.3− | | |
| 2003 01 04 | 704 | 0.3+ | 0.7+ | 2005 09 23 | 703 | 1.1− | 0.5− | 2005 11 01 | G96 | 0.2+ | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.1− | 0.8− | 2005 10 07 | 703 | 0.8+ | 1.3− | 2005 11 26 | 291 | 0.1+ | 0.3+ |
| 2003 01 08 | 704 | 0.7− | 0.8+ | 2005 10 07 | 703 | 0.8− | 0.2+ | 2005 11 26 | 291 | 0.0 | 0.2+ |
| 2003 01 08 | 704 | 0.4− | 0.1− | 2005 10 07 | 703 | 0.1− | 0.0 | 2005 11 26 | 291 | 0.1− | 0.1− |
| 2003 01 08 | 704 | 0.0 | 0.2+ | 2005 10 07 | 703 | 0.5+ | 0.9− | | | | |
| 2003 01 08 | 704 | (0.3+ | 1.7−) | 2005 10 25 | 699 | (0.9+ | 2.0−) | | | | |

**2005 SN$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.14269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12618557 | $\omega$ | 199.48060 | | +0.67592792 | +0.73354372 | |
| $a$ | 3.9366753 | $\Omega$ | 113.11676 | | −0.66550782 | +0.64891119 | |
| $e$ | 0.2298337 | $i$ | 4.42494 | | −0.31657668 | +0.20205912 | |
| $P$ | 7.81 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 691 | 0.4+ | 0.3+ | 2005 09 23 | 703 | 1.0− | 0.7+ | 2005 10 03 | G96 | 0.4+ | 0.2+ |
| 2003 04 04 | 691 | 0.1− | 0.3+ | 2005 09 24 | 699 | 0.2− | 0.2+ | 2005 10 03 | G96 | 0.1+ | 0.2+ |
| 2003 04 04 | 691 | 0.1− | 0.1+ | 2005 09 24 | 699 | 1.2− | 0.8+ | 2005 10 03 | G96 | 0.3+ | 0.1+ |
| 2005 08 29 | 699 | (0.4− | 1.5−) | 2005 09 24 | 699 | 0.5− | 0.4− | 2005 10 03 | G96 | 0.0 | 0.1+ |
| 2005 08 29 | 699 | 0.9− | 0.7− | 2005 09 24 | 699 | 0.4− | 0.0 | 2005 10 05 | 703 | 0.5+ | 0.2+ |
| 2005 08 29 | 699 | 0.7− | 0.4− | 2005 09 28 | 644 | 0.2+ | 0.1+ | 2005 10 05 | 703 | 0.0 | 1.0+ |
| 2005 08 29 | 699 | 0.4− | 0.1+ | 2005 09 28 | 644 | 0.1− | 0.1− | 2005 10 05 | 703 | 0.6− | 0.6+ |
| 2005 09 22 | 644 | 0.2+ | 0.1+ | 2005 09 28 | 644 | 0.3+ | 0.3− | 2005 10 05 | 703 | 0.1− | 0.7+ |
| 2005 09 22 | 644 | 0.3+ | 0.1− | 2005 09 30 | 699 | (0.0 | 1.7+) | 2006 10 23 | G96 | 0.4− | 0.2+ |
| 2005 09 22 | 644 | 0.1+ | 0.2− | 2005 09 30 | 699 | (1.6+ | 0.8+) | 2006 10 23 | G96 | 0.5− | 0.3+ |
| 2005 09 23 | 691 | 0.0 | 0.1− | 2005 09 30 | 699 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2005 09 23 | 691 | 0.3+ | 0.2− | 2005 09 30 | 699 | (1.7− | 0.2−) | 2006 10 23 | G96 | 0.3− | 0.2+ |
| 2005 09 23 | 691 | 0.2+ | 0.0 | 2005 10 03 | G96 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 2005 09 23 | 703 | 0.8− | 0.1+ | 2005 10 03 | G96 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.1+ |
| 2005 09 23 | 703 | 0.2− | 1.1− | 2005 10 03 | G96 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2005 09 23 | 703 | (0.9+ | 2.1−) | 2005 10 03 | G96 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |

**2005 SH$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.96645 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27391635 | $\omega$ | 184.08654 | | −0.49088118 | −0.87077857 | |
| $a$ | 2.3481405 | $\Omega$ | 295.31400 | | +0.80020813 | −0.43795523 | |
| $e$ | 0.1374786 | $i$ | 1.77083 | | +0.34453246 | −0.22347236 | |
| $P$ | 3.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 21 | 910 | 0.2− | 0.0 | 2003 01 08 | 704 | 0.1− | 0.8+ | 2005 09 23 | 703 | (0.0 | 2.6+) |
| 1998 10 21 | 910 | 0.1− | 0.2− | 2003 01 08 | 704 | 0.2+ | 0.7+ | 2005 09 26 | 691 | 0.2+ | 0.0 |
| 1998 10 21 | 910 | 0.5+ | 0.4− | 2003 01 08 | 704 | 0.2+ | 0.7+ | 2005 09 26 | 691 | 0.1− | 0.2+ |
| 2002 12 31 | 704 | 0.2+ | 0.3− | 2003 01 31 | 704 | 0.3− | 0.6− | 2005 09 26 | 691 | 0.1+ | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.6− | 2003 01 31 | 704 | 0.2− | 0.1− | 2005 11 01 | G96 | 0.2− | 0.0 |
| 2002 12 31 | 704 | 0.3− | 0.6− | 2003 01 31 | 704 | 0.1− | 0.0 | 2005 11 01 | G96 | 0.5− | 0.6+ |
| 2002 12 31 | 704 | 0.3+ | 0.9− | 2005 09 23 | 703 | (1.1− | 3.4+) | 2005 11 01 | G96 | 0.0 | 0.1+ |
| 2003 01 08 | 704 | 0.4+ | 0.4+ | 2005 09 23 | 703 | (2.2+ | 1.0+) | 2005 11 01 | G96 | 0.0 | 0.3− |
| 2003 01 08 | 704 | 0.4− | 0.5+ | 2005 09 23 | 703 | 0.6− | 1.2− | | | | |

**2005 SQ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.23268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21629995 | $\omega$ | 119.81424 | | +0.94591783 | +0.31864652 | |
| $a$ | 2.7485170 | $\Omega$ | 221.68851 | | −0.32016705 | +0.88675204 | |
| $e$ | 0.0405532 | $i$ | 5.25029 | | −0.05227357 | +0.33486596 | |
| $P$ | 4.56 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.1+ | 0.5− | 2005 10 22 | 691 | 0.3+ | 0.1+ | 2005 10 26 | 683 | (2.3+ | 0.4−) |
| 1996 10 04 | 691 | 0.1− | 0.0 | 2005 10 22 | 691 | 0.1− | 0.0 | 2005 10 26 | 683 | 0.1− | 1.2+ |
| 1996 10 04 | 691 | 0.2+ | 0.4− | 2005 10 22 | 691 | 0.1+ | 0.1− | 2005 10 27 | 683 | 0.2− | 0.1− |
| 2000 09 22 | 699 | 1.5+ | 0.0 | 2005 10 22 | 644 | 0.0 | 0.4+ | 2005 10 27 | 683 | 0.5− | 0.9+ |
| 2000 09 22 | 699 | 0.7− | 0.7+ | 2005 10 22 | 644 | 0.2− | 0.3+ | 2005 10 27 | 683 | (0.6+ | 2.4+) |
| 2000 09 22 | 699 | 0.4− | 0.3− | 2005 10 22 | 644 | 0.1− | 0.2+ | 2005 10 29 | 703 | 1.0− | 0.4− |
| 2000 09 22 | 699 | 0.3− | 0.7− | 2005 10 23 | 683 | 1.1− | 1.2− | 2005 10 29 | 703 | 0.2+ | 0.2− |
| 2005 09 23 | 291 | 0.4+ | 0.3+ | 2005 10 23 | 683 | 0.4+ | 1.3− | 2005 10 29 | 703 | 0.2− | 0.1+ |
| 2005 09 23 | 291 | 0.5+ | 0.2+ | 2005 10 23 | 683 | 0.7+ | 1.1− | 2005 10 29 | 703 | 0.4− | 0.9− |
| 2005 09 23 | 291 | 0.2− | 0.3+ | 2005 10 23 | 703 | 0.6− | 0.5+ | 2005 10 29 | 703 | 0.1− | 0.2+ |
| 2005 09 26 | 691 | 0.0 | 0.0 | 2005 10 23 | 703 | 0.1− | 0.4+ | 2005 10 29 | 703 | 0.0 | 0.3− |
| 2005 09 26 | 691 | 0.0 | 0.1− | 2005 10 23 | 703 | 0.2− | 0.1+ | 2005 10 29 | 703 | 0.2+ | 0.4− |
| 2005 09 26 | 691 | 0.2+ | 0.0 | 2005 10 23 | 703 | 0.7− | 0.0 | 2005 10 29 | 703 | 0.3− | 0.3+ |
| 2005 10 03 | 703 | 1.3− | 0.3− | 2005 10 23 | 703 | 0.2− | 0.1+ | 2005 10 30 | 691 | 0.0 | 0.1− |
| 2005 10 03 | 703 | (2.1− | 0.5−) | 2005 10 23 | 703 | 0.1+ | 0.3− | 2005 10 30 | 691 | 0.0 | 0.1+ |
| 2005 10 03 | 703 | 1.2− | 0.5− | 2005 10 23 | 703 | 0.4+ | 0.2+ | 2005 10 30 | 691 | 0.0 | 0.0 |
| 2005 10 03 | 703 | 0.9− | 0.2+ | 2005 10 23 | 703 | 0.4− | 1.0+ | 2005 11 26 | G96 | 0.4+ | 0.2− |
| 2005 10 03 | G96 | 0.1− | 0.2− | 2005 10 24 | 683 | (1.2− | 1.5−) | 2005 11 26 | G96 | 0.4+ | 0.3− |
| 2005 10 03 | G96 | 0.1− | 0.2− | 2005 10 24 | 683 | (1.4− | 2.5−) | 2005 11 26 | G96 | 0.1− | 0.5− |
| 2005 10 03 | G96 | 0.0 | 0.3− | 2005 10 24 | 683 | 1.4− | 0.5− | 2005 11 26 | G96 | 0.1− | 0.0 |
| 2005 10 03 | G96 | 0.0 | 0.2− | 2005 10 25 | 683 | 1.3+ | 1.0+ | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 2005 10 13 | 691 | 0.3+ | 0.3+ | 2005 10 25 | 683 | 0.7+ | 0.4− | 2006 11 24 | G96 | 0.1− | 0.3+ |
| 2005 10 13 | 691 | 0.0 | 0.2+ | 2005 10 25 | 683 | (0.8− | 1.6+) | 2006 11 24 | G96 | 0.4− | 0.4+ |
| 2005 10 13 | 691 | 0.2+ | 0.3+ | 2005 10 26 | 683 | 1.2− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.2+ |

**2005 SF$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.27419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21367380 | $\omega$ | 328.79640 | | +0.89503839 | −0.44581062 | |
| $a$ | 2.7709916 | $\Omega$ | 57.68397 | | +0.41220192 | +0.81610057 | |
| $e$ | 0.0840521 | $i$ | 0.85537 | | +0.17028168 | +0.36774006 | |
| $P$ | 4.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 691 | 0.0 | 0.3+ | 2005 09 29 | G96 | 0.3− | 0.4+ | 2005 10 28 | 703 | 0.2− | 0.2+ |
| 2000 08 02 | 691 | 0.0 | 0.0 | 2005 10 01 | 691 | 0.0 | 0.2+ | 2005 10 28 | 703 | 0.5− | 0.7− |
| 2000 08 02 | 691 | 0.1− | 0.0 | 2005 10 01 | 704 | 0.0 | 0.5+ | 2005 10 28 | 703 | 0.5+ | 0.5− |
| 2003 03 31 | 291 | 0.2+ | 0.8+ | 2005 10 01 | 704 | 0.2+ | 0.8+ | 2005 11 04 | 691 | 0.1− | 0.3− |
| 2003 03 31 | 291 | 0.4+ | 0.7+ | 2005 10 01 | 691 | 0.2− | 0.1+ | 2005 11 04 | 691 | 0.0 | 0.2− |
| 2003 03 31 | 291 | 0.4+ | 0.7+ | 2005 10 01 | 704 | 0.0 | 0.5+ | 2005 11 04 | 691 | 0.4− | 0.0 |
| 2005 09 23 | 691 | 0.3+ | 0.3+ | 2005 10 01 | 691 | 0.2− | 0.1+ | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2005 09 23 | 691 | 0.0 | 0.1+ | 2005 10 06 | 699 | 0.7− | 1.3+ | 2005 12 02 | G96 | 0.3− | 0.1+ |
| 2005 09 23 | 691 | 0.0 | 0.1+ | 2005 10 06 | 699 | 0.7− | 0.4+ | 2005 12 02 | G96 | 0.4− | 0.0 |
| 2005 09 27 | 691 | 0.0 | 0.1+ | 2005 10 06 | 699 | 0.7+ | 0.8+ | 2005 12 02 | G96 | 0.4− | 0.3+ |
| 2005 09 27 | 691 | 0.0 | 0.2+ | 2005 10 06 | 699 | (1.7+ | 0.6+) | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2005 09 27 | 691 | 0.2− | 0.1+ | 2005 10 12 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2005 09 29 | G96 | 0.0 | 0.3+ | 2005 10 12 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2005 09 29 | G96 | 0.3+ | 0.1+ | 2005 10 12 | 691 | 0.3+ | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2005 09 29 | G96 | 0.0 | 0.3+ | 2005 10 28 | 703 | 0.6− | 0.5+ | | | | |

**2005 SY$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.51455 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26581990 | $\omega$ | 30.47568 | | +0.59881609 | −0.79936045 | |
| $a$ | 2.3955821 | $\Omega$ | 22.85362 | | +0.70673963 | +0.49838984 | |
| $e$ | 0.1888999 | $i$ | 7.31027 | | +0.37674710 | +0.33560457 | |
| $P$ | 3.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 644 | 0.2− | 0.2+ | 2005 10 01 | 704 | 0.2− | 0.3+ | 2005 10 25 | G96 | 0.0 | 0.0 |
| 2001 07 27 | 644 | 0.1+ | 0.3− | 2005 10 01 | 704 | 0.0 | 0.2− | 2005 10 25 | G96 | 0.2+ | 0.2− |
| 2001 07 27 | 644 | 0.2+ | 0.2− | 2005 10 01 | 704 | 0.1+ | 0.1+ | 2005 10 25 | G96 | 0.2+ | 0.2− |
| 2003 02 21 | 644 | 0.1+ | 0.3− | 2005 10 05 | 704 | 0.6− | 0.0 | 2005 10 25 | G96 | 0.3+ | 0.1− |
| 2003 02 21 | 644 | 0.1− | 0.3+ | 2005 10 05 | 704 | 0.3+ | 0.6+ | 2005 10 27 | 699 | 0.3− | 0.6− |
| 2003 02 21 | 644 | 0.1+ | 0.2+ | 2005 10 05 | 691 | 0.1− | 0.1+ | 2005 10 27 | 699 | 0.8+ | 0.1+ |
| 2005 09 24 | 691 | 0.0 | 0.0 | 2005 10 05 | 704 | 1.6+ | 0.1+ | 2005 10 27 | 699 | 0.2− | 0.2− |
| 2005 09 24 | 691 | 0.0 | 0.0 | 2005 10 05 | 691 | 0.0 | 0.1− | 2005 10 27 | 699 | 0.4+ | 0.9+ |
| 2005 09 24 | 691 | 0.0 | 0.1− | 2005 10 05 | 691 | 0.1− | 0.1− | 2005 10 27 | 699 | 0.3+ | 1.2− |
| 2005 09 24 | 644 | 0.0 | 0.1− | 2005 10 06 | 699 | 0.2− | 0.3− | 2005 10 27 | 699 | 0.5+ | 0.0 |
| 2005 09 24 | 644 | 0.2+ | 0.1+ | 2005 10 06 | 699 | 1.5− | 1.7− | 2005 10 27 | 699 | 0.6− | 0.5+ |
| 2005 09 24 | 644 | 0.0 | 0.0 | 2005 10 06 | 699 | 0.3+ | 0.4− | 2005 10 27 | 699 | 0.4− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 26 | 644 | 0.1− | 0.0 | 2005 10 07 | 703 | 0.6− | 0.2− | 2005 11 01 | 704 | 0.2− | 0.6+ | | |
| 2005 09 26 | 644 | 0.0 | 0.1+ | 2005 10 07 | 703 | 0.2− | 0.6− | 2005 11 01 | 704 | 0.7− | 1.1+ | | |
| 2005 09 26 | 644 | 0.2− | 0.3+ | 2005 10 07 | 703 | (3.6− | 1.3−) | 2005 11 01 | 704 | 0.4− | 0.1− | | |
| 2005 09 29 | 644 | 0.7− | 0.1+ | 2005 10 10 | 691 | 0.0 | 0.2− | 2005 11 01 | 704 | 0.1+ | 0.1+ | | |
| 2005 09 29 | 644 | 0.1− | 0.3+ | 2005 10 10 | 691 | 0.1+ | 0.3− | 2005 11 04 | 691 | 0.1− | 0.1+ | | |
| 2005 09 29 | 644 | 0.3− | 0.4+ | 2005 10 10 | 691 | 0.1+ | 0.3− | 2005 11 04 | 691 | 0.1− | 0.0 | | |
| 2005 09 29 | 644 | 0.4− | 0.4+ | 2005 10 10 | 704 | 0.1+ | 0.1+ | 2005 11 04 | 691 | 0.1+ | 0.2− | | |
| 2005 09 29 | 644 | 0.4+ | 0.8+ | 2005 10 10 | 704 | 0.1− | 1.0− | 2005 11 04 | 704 | 0.1+ | 0.4− | | |
| 2005 09 29 | 644 | 0.2− | 0.1− | 2005 10 10 | 704 | 0.1− | 0.0 | 2005 11 04 | 704 | 1.8+ | 0.4− | | |
| 2005 09 29 | 699 | 0.4− | 0.7+ | 2005 10 10 | 704 | 0.7− | 0.4− | 2005 11 04 | 704 | 0.0 | 1.4+ | | |
| 2005 09 29 | 699 | 0.5+ | 0.2− | 2005 10 22 | 699 | (0.4+ | 2.1−) | 2005 11 04 | 704 | 0.2+ | 0.3+ | | |
| 2005 09 29 | 699 | 0.2− | 0.4− | 2005 10 22 | 699 | 0.1+ | 0.8− | 2005 11 04 | 704 | 1.3− | 0.8+ | | |
| 2005 09 29 | 699 | 0.7− | 0.9+ | 2005 10 22 | 699 | 0.6+ | 0.9+ | 2005 11 28 | G96 | 0.1+ | 0.2− | | |
| 2005 09 30 | 691 | 0.2+ | 0.2+ | 2005 10 22 | 699 | 0.8− | 0.6+ | 2005 11 28 | G96 | 0.4+ | 0.2− | | |
| 2005 09 30 | 691 | 0.3+ | 0.2+ | 2005 10 22 | 703 | 0.6− | 0.5+ | 2005 11 28 | G96 | 0.0 | 0.1− | | |
| 2005 09 30 | 691 | 0.2+ | 0.4+ | 2005 10 22 | 703 | 0.7− | 0.5− | 2005 11 28 | G96 | 0.3+ | 0.1− | | |
| 2005 10 01 | 704 | 0.3+ | 0.1− | 2005 10 22 | 703 | 0.3+ | 0.3− | | | | | | |
| 2005 10 01 | 704 | 0.2+ | 0.0 | 2005 10 22 | 703 | 0.3− | 0.4− | | | | | | |

**2005 SR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 137.85891 | | (2000.0) | | | |
| $n$ | 0.27192407 | $\omega$ | 283.90678 | | +0.81459717 | +0.57499599 |
| $a$ | 2.3595958 | $\Omega$ | 41.06853 | | −0.47723140 | +0.73911419 |
| $e$ | 0.1267524 | $i$ | 6.66332 | | −0.32966899 | +0.35084161 |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 644 | 0.2− | 0.2+ | 2005 09 28 | J95 | 0.5− | 0.1+ | 2005 10 12 | 691 | 0.4− | 0.3+ | | |
| 2001 07 22 | 644 | 0.2+ | 0.0 | 2005 09 28 | J95 | 0.2− | 0.0 | 2005 10 12 | 691 | 0.4− | 0.2+ | | |
| 2001 07 22 | 644 | 0.0 | 0.0 | 2005 09 29 | 691 | 0.0 | 0.0 | 2005 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2004 04 16 | 691 | 0.0 | 0.4+ | 2005 09 29 | 691 | 0.1− | 0.0 | 2005 10 21 | 644 | 0.1− | 0.2+ | | |
| 2004 04 16 | 691 | 0.3+ | 0.7+ | 2005 09 29 | 691 | 0.0 | 0.0 | 2005 10 21 | 644 | 0.1+ | 0.0 | | |
| 2004 04 16 | 691 | 0.4+ | 0.4+ | 2005 10 01 | 704 | 1.0− | 0.8+ | 2005 10 22 | 703 | 0.2− | 1.9− | | |
| 2005 09 23 | 691 | 0.3+ | 0.3+ | 2005 10 01 | 704 | 1.0− | 0.1+ | 2005 10 22 | 703 | 0.3− | 0.2− | | |
| 2005 09 23 | 691 | 0.3+ | 0.1+ | 2005 10 01 | 704 | 0.9− | 0.7+ | 2005 10 22 | 703 | 0.7+ | 0.7+ | | |
| 2005 09 23 | 691 | 0.0 | 0.2+ | 2005 10 01 | 704 | 0.3− | 0.2− | 2005 10 22 | 703 | 1.5− | 0.1− | | |
| 2005 09 23 | 291 | 0.4+ | 0.0 | 2005 10 01 | 704 | 0.0 | 0.1− | 2005 10 26 | J95 | 0.5− | 0.4− | | |
| 2005 09 23 | 291 | 0.5+ | 0.1+ | 2005 10 06 | 703 | 1.4− | 0.8− | 2005 10 26 | J95 | 1.2+ | 0.4− | | |
| 2005 09 23 | 291 | 0.5+ | 0.2+ | 2005 10 06 | 703 | 1.1− | 0.6+ | 2005 10 27 | 691 | 0.4+ | 0.3+ | | |
| 2005 09 24 | J95 | 0.3+ | 0.6− | 2005 10 06 | 703 | 0.1− | 0.4− | 2005 10 27 | 691 | 0.1+ | 0.1+ | | |
| 2005 09 24 | J95 | 0.4+ | 0.3− | 2005 10 06 | 703 | 0.2− | 0.3+ | 2005 10 27 | 691 | 0.2+ | 0.2+ | | |
| 2005 09 24 | J95 | 0.4− | 0.2− | 2005 10 07 | 701 | 0.3− | 0.1− | 2005 10 28 | 704 | 0.4+ | 0.3+ | | |
| 2005 09 24 | 461 | 0.1+ | 0.2− | 2005 10 07 | 701 | 0.6+ | 0.3− | 2005 10 28 | 703 | 1.4− | 0.9+ | | |
| 2005 09 24 | 461 | 0.1− | 0.3+ | 2005 10 07 | 701 | 0.4− | 0.3− | 2005 10 28 | 704 | 0.2+ | 0.9+ | | |
| 2005 09 24 | 461 | 0.3+ | 0.2+ | 2005 10 07 | 701 | 0.3+ | 0.1− | 2005 10 28 | 703 | 0.1+ | 0.4− | | |
| 2005 09 24 | J95 | 1.4+ | 0.3+ | 2005 10 08 | 701 | 0.3− | 0.5− | 2005 10 28 | 703 | 1.0+ | 1.4+ | | |
| 2005 09 24 | 291 | 0.3− | 0.0 | 2005 10 08 | 691 | 0.3− | 0.0 | 2005 10 28 | 703 | 0.9− | 0.1+ | | |
| 2005 09 24 | 291 | 0.2− | 0.2+ | 2005 10 08 | 691 | 0.3− | 0.1+ | 2005 10 28 | 704 | 0.1− | 0.0 | | |
| 2005 09 24 | 291 | 0.1− | 0.0 | 2005 10 08 | 691 | 0.3− | 0.1+ | 2005 11 18 | J95 | 0.5− | 1.1+ | | |
| 2005 09 24 | 644 | 0.2− | 0.5− | 2005 10 08 | 701 | 0.6− | 0.3− | 2005 11 18 | J95 | 0.7+ | 0.1− | | |
| 2005 09 24 | 644 | 0.3+ | 0.1+ | 2005 10 08 | 701 | 0.2− | 0.5− | 2005 11 29 | G96 | 0.0 | 0.4− | | |
| 2005 09 24 | 644 | 0.3+ | 0.2+ | 2005 10 09 | 701 | 0.6− | 0.3+ | 2005 11 29 | G96 | 0.0 | 0.2− | | |
| 2005 09 25 | 291 | 0.5− | 0.2+ | 2005 10 09 | 701 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.1+ | 0.2− | | |
| 2005 09 25 | 291 | 0.4− | 0.2+ | 2005 10 09 | 701 | 0.6− | 0.1+ | 2005 11 29 | G96 | 0.3− | 0.0 | | |
| 2005 09 25 | 291 | 0.5− | 0.1+ | 2005 10 10 | 701 | 0.4− | 0.0 | 2005 12 04 | G96 | 0.5+ | 0.0 | | |
| 2005 09 25 | J95 | 0.5+ | 0.2− | 2005 10 10 | 701 | 0.4− | 0.0 | 2005 12 04 | G96 | 0.0 | 0.2− | | |
| 2005 09 25 | J95 | 0.5+ | 0.9− | 2005 10 10 | 701 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.1− | 0.0 | | |
| 2005 09 27 | J95 | 0.1+ | 0.0 | 2005 10 12 | 691 | 0.5− | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.1− | | |

**2005 SH$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.78355 | | (2000.0) | | | |
| $n$ | 0.17566877 | $\omega$ | 111.71793 | | +0.80070421 | −0.58243152 |
| $a$ | 3.1574733 | $\Omega$ | 284.16991 | | +0.48221413 | +0.76546462 |
| $e$ | 0.1641323 | $i$ | 8.31202 | | +0.35544663 | +0.27356431 |
| $P$ | 5.61 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 10 | 699 | 1.2− | 0.8+ | 2005 09 27 | 644 | 0.1+ | 0.2− | 2005 10 29 | 644 | 0.1− | 0.4+ | | |
| 2005 09 10 | 699 | 0.5+ | 1.4+ | 2005 09 27 | 644 | 0.0 | 0.3+ | 2005 10 29 | 644 | 0.2+ | 0.5+ | | |
| 2005 09 10 | 699 | 0.2+ | 0.5− | 2005 10 02 | 644 | 0.0 | 0.3− | 2005 11 01 | 699 | 0.4+ | 0.7+ | | |
| 2005 09 10 | 699 | 0.7− | 1.9+ | 2005 10 02 | 644 | 0.2− | 0.1+ | 2005 11 01 | 699 | 1.3+ | 0.1− | | |
| 2005 09 13 | 704 | 0.3+ | 0.4− | 2005 10 02 | 644 | 0.0 | 0.0 | 2005 11 01 | 699 | 0.3− | 0.0 | | |
| 2005 09 13 | 704 | 0.3− | 0.2− | 2005 10 03 | 703 | 0.2+ | 0.6+ | 2005 11 01 | 699 | 0.7+ | 0.9− | | |
| 2005 09 13 | 704 | 0.4+ | 1.4+ | 2005 10 03 | 703 | 0.1− | 0.2− | 2005 11 03 | 703 | 0.6+ | 0.2+ | | |
| 2005 09 13 | 704 | 0.1+ | 0.9− | 2005 10 03 | 703 | 1.2− | 0.2− | 2005 11 03 | 703 | 0.6+ | 0.7− | | |
| 2005 09 13 | 704 | 0.3+ | 0.1+ | 2005 10 03 | 703 | 0.6+ | 0.5− | 2005 11 03 | 703 | 1.5+ | 1.3− | | |
| 2005 09 23 | 703 | 0.7− | 1.1− | 2005 10 08 | 703 | 1.4− | 0.1+ | 2005 11 03 | 703 | 0.3+ | 1.1− | | |
| 2005 09 23 | 703 | 0.3+ | 0.1− | 2005 10 08 | 703 | 0.8− | 0.2+ | 2005 11 06 | 704 | 0.4− | 0.7− | | |
| 2005 09 23 | 703 | 0.4+ | 0.1− | 2005 10 08 | 703 | 0.6− | 0.4+ | 2005 11 06 | 704 | 0.2− | 0.2− | | |
| 2005 09 23 | 703 | 0.6− | 0.2+ | 2005 10 08 | 703 | 0.6+ | 0.7+ | 2005 11 06 | 704 | 0.1− | 1.1+ | | |
| 2005 09 25 | 644 | 0.1− | 0.1+ | 2005 10 12 | 704 | 0.1− | 0.0 | 2005 11 06 | 704 | 0.2+ | 0.8+ | | |
| 2005 09 25 | 644 | 0.4+ | 0.2+ | 2005 10 12 | 704 | 1.0+ | 0.1− | 2005 11 06 | 704 | 0.4− | 0.7+ | | |
| 2005 09 25 | 644 | 0.0 | 0.1+ | 2005 10 12 | 704 | 0.2− | 0.8− | 2006 11 15 | G96 | 0.4− | 0.2+ | | |
| 2005 09 25 | 644 | 0.1+ | 0.0 | 2005 10 12 | 704 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.4− | 0.2+ | | |
| 2005 09 25 | 644 | 0.1− | 0.0 | 2005 10 12 | 704 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.4− | 0.1+ | | |
| 2005 09 25 | 644 | 0.0 | 0.2+ | 2005 10 23 | 703 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4+ | | |
| 2005 09 26 | 644 | 0.1+ | 0.0 | 2005 10 23 | 703 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.4+ | 0.0 | | |
| 2005 09 26 | 644 | 0.2− | 0.0 | 2005 10 23 | 703 | 0.5− | 0.6− | 2006 11 27 | G96 | 0.4+ | 0.1+ | | |
| 2005 09 26 | 644 | 0.1+ | 0.1+ | 2005 10 23 | 703 | 0.8− | 0.9− | 2006 11 27 | G96 | 0.5+ | 0.1+ | | |
| 2005 09 27 | 644 | 0.1+ | 0.0 | 2005 10 29 | 644 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.1+ | 0.2− | | |

**2005 SB$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.76160 | | (2000.0) | | | |
| $n$ | 0.27224153 | $\omega$ | 261.61392 | | +0.71915849 | +0.69357672 |
| $a$ | 2.3577611 | $\Omega$ | 54.45960 | | −0.61548375 | +0.66389523 |
| $e$ | 0.2192849 | $i$ | 2.95733 | | −0.32247606 | +0.27963272 |
| $P$ | 3.62 | $H$ | 17.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.1− | 0.4+ | 2005 09 23 | 691 | 0.3− | 0.2− | 2005 09 30 | 699 | 0.4− | 0.5− | | |
| 2000 02 05 | 695 | 0.4+ | 0.5+ | 2005 09 28 | 644 | 0.3+ | 0.3+ | 2005 11 06 | G96 | 0.4+ | 0.1− | | |
| 2004 03 18 | 691 | 0.0 | 0.3− | 2005 09 28 | 644 | 0.3+ | 0.0 | 2005 11 06 | G96 | 0.2− | 0.2− | | |
| 2004 03 18 | 691 | 0.3− | 0.2− | 2005 09 28 | 644 | 0.3+ | 0.0 | 2005 11 06 | G96 | 0.3+ | 0.3− | | |
| 2004 03 18 | 691 | 0.2+ | 0.4+ | 2005 09 28 | 644 | 0.1+ | 0.2+ | 2005 11 06 | G96 | 0.3+ | 0.0 | | |
| 2005 09 22 | 644 | 0.1+ | 0.2+ | 2005 09 28 | 644 | 0.0 | 0.2+ | 2005 11 30 | G96 | 0.3− | 0.6− | | |
| 2005 09 22 | 644 | 0.3+ | 0.1+ | 2005 09 28 | 644 | 0.1− | 0.4+ | 2005 11 30 | G96 | 0.2+ | 0.1+ | | |
| 2005 09 22 | 644 | 0.1+ | 0.4+ | 2005 09 30 | 699 | 0.4− | 0.2− | 2005 11 30 | G96 | 0.0 | 0.3− | | |
| 2005 09 23 | 691 | 0.1+ | 0.1− | 2005 09 30 | 699 | 0.1+ | 1.5+ | 2005 11 30 | G96 | 0.4+ | 0.0 | | |
| 2005 09 23 | 691 | 0.5− | 0.2− | 2005 09 30 | 699 | 1.2+ | 0.3+ | | | | | | |

**2005 SC$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.74559 | | (2000.0) | | | |
| $n$ | 0.21133665 | $\omega$ | 47.24155 | | −0.10671603 | −0.98578821 |
| $a$ | 2.7913835 | $\Omega$ | 49.35750 | | +0.85500383 | −0.15758829 |
| $e$ | 0.1899284 | $i$ | 9.84523 | | +0.50752353 | +0.05820259 |
| $P$ | 4.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8+ | 1.1− | 2002 01 14 | 644 | 0.4− | 0.1− | 2005 09 28 | 644 | 0.4− | 1.0+ | | |
| 2001 12 09 | 704 | 1.7+ | 0.6+ | 2002 01 14 | 644 | 0.2− | 0.0 | 2005 09 28 | 644 | 0.5− | 0.0 | | |
| 2001 12 09 | 704 | 0.1+ | 0.5− | 2002 01 14 | 644 | 0.1− | 0.3+ | 2005 10 03 | 703 | 0.9− | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.2+ | 0.6− | 2005 09 25 | 703 | 0.0 | 1.6+ | 2005 10 03 | 703 | 0.3− | 0.3− |
| 2001 12 22 | 704 | 0.1− | 0.2− | 2005 09 25 | 703 | 0.5− | 0.7− | 2005 10 03 | 703 | 1.4+ | 1.4− |
| 2001 12 22 | 704 | 0.6− | 0.0 | 2005 09 25 | 703 | 0.5+ | 0.1+ | 2005 10 03 | 703 | 1.0+ | 0.2− |
| 2001 12 22 | 704 | 0.3− | 0.1+ | 2005 09 25 | 703 | 0.1− | 0.7− | | | | |
| 2001 12 22 | 704 | 0.9− | 1.5+ | 2005 09 28 | 644 | 0.3− | 0.5+ | | | | |

**2005 SL$_{27}$ = 2006 WP$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.27282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20875835 | $\omega$ | 86.19309 | | +0.71194822 | −0.69975758 | |
| $a$ | 2.8143200 | $\Omega$ | 318.20059 | | +0.60411364 | +0.65307530 | |
| $e$ | 0.0423860 | $i$ | 5.06966 | | +0.35801738 | +0.28953753 | |
| $P$ | 4.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 30 | 644 | 0.6− | 0.1+ | 2005 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.3+ |
| 2005 08 30 | 644 | 0.3− | 0.6+ | 2005 10 03 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2005 08 30 | 644 | 0.3− | 0.3− | 2005 10 03 | 691 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.7+ |
| 2005 09 23 | 691 | 0.3+ | 0.0 | 2005 10 09 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2005 09 23 | 691 | 0.1+ | 0.0 | 2005 10 09 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2005 09 23 | 691 | 0.3− | 0.0 | 2005 10 09 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2005 09 29 | 691 | 0.1+ | 0.1+ | 2005 10 13 | 691 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.2− | 0.1+ |
| 2005 09 29 | 691 | 0.1− | 0.0 | 2005 10 13 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.2− | 0.6− |
| 2005 09 29 | 691 | 0.1+ | 0.0 | 2005 10 13 | 691 | 0.5− | 0.4− | | | | |

**2005 SE$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.74571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20998149 | $\omega$ | 25.40349 | | +0.24858463 | −0.96542174 | |
| $a$ | 2.8033805 | $\Omega$ | 50.30466 | | +0.87035908 | +0.18705638 | |
| $e$ | 0.1980733 | $i$ | 5.85759 | | +0.42506559 | +0.18157854 | |
| $P$ | 4.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 03 | 691 | 0.0 | 0.7− | 2005 10 06 | 699 | 1.2+ | 0.8− | 2005 10 28 | 704 | 1.1− | 0.8+ |
| 1991 11 03 | 691 | 0.4+ | 0.1+ | 2005 10 06 | 699 | 0.2− | 1.6+ | 2005 10 28 | 704 | 1.8− | 0.9+ |
| 1991 11 03 | 691 | 0.1+ | 0.7− | 2005 10 08 | 691 | 0.1+ | 0.0 | 2005 11 29 | G96 | 0.5+ | 0.0 |
| 2002 02 03 | 644 | 0.3+ | 0.8+ | 2005 10 08 | 691 | 0.0 | 0.1+ | 2005 11 29 | G96 | 0.4+ | 0.2− |
| 2002 02 03 | 644 | 0.5+ | 1.1+ | 2005 10 08 | 691 | 0.0 | 0.1+ | 2005 11 29 | G96 | 0.3+ | 0.2− |
| 2002 02 03 | 644 | 0.0 | 0.8+ | 2005 10 12 | 691 | 0.2+ | 0.1+ | 2005 11 29 | G96 | 0.6+ | 0.2− |
| 2005 09 23 | 691 | 0.4− | 0.0 | 2005 10 12 | 691 | 0.3+ | 0.1+ | 2005 12 28 | G96 | 0.2+ | 0.9− |
| 2005 09 23 | 691 | 0.4− | 0.2− | 2005 10 12 | 691 | 0.0 | 0.0 | 2005 12 28 | G96 | 0.3+ | 0.8− |
| 2005 09 23 | 691 | 0.2− | 0.1+ | 2005 10 25 | 691 | 0.2− | 0.4+ | 2005 12 28 | G96 | 0.5+ | 0.4− |
| 2005 09 29 | 691 | 0.4+ | 0.1+ | 2005 10 25 | 691 | 0.4− | 0.2+ | 2005 12 28 | G96 | 0.1+ | 0.3− |
| 2005 09 29 | 691 | 0.1+ | 0.1+ | 2005 10 25 | 691 | 0.4− | 0.1+ | 2006 01 05 | G96 | 1.0+ | 0.1+ |
| 2005 09 29 | 691 | 0.2+ | 0.3+ | 2005 10 28 | 704 | 0.8+ | 0.7− | 2006 01 05 | G96 | 0.5+ | 0.4− |
| 2005 10 06 | 699 | 0.5− | 0.0 | 2005 10 28 | 704 | 0.2+ | 0.4− | 2006 01 05 | G96 | 0.4+ | 0.2− |
| 2005 10 06 | 699 | 1.0− | 0.2− | 2005 10 28 | 704 | 0.6− | 1.5+ | 2006 01 05 | G96 | 0.3+ | 0.1+ |

**2005 SM$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.81596 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18075237 | $\omega$ | 329.82220 | | +0.92262105 | +0.38570169 | |
| $a$ | 3.0979903 | $\Omega$ | 7.49144 | | −0.35050561 | +0.84072724 | |
| $e$ | 0.1674892 | $i$ | 0.94355 | | −0.16098515 | +0.38001567 | |
| $P$ | 5.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 22 | 691 | 0.4− | 0.7+ | 2005 09 29 | 291 | 0.0 | 0.1+ | 2005 10 07 | 704 | 0.3+ | 0.2+ |
| 1999 06 22 | 691 | 0.3+ | 0.3+ | 2005 09 29 | 291 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.0 | 0.2− |
| 1999 06 22 | 691 | 0.3− | 0.6+ | 2005 09 29 | G96 | 0.4+ | 0.2− | 2005 10 07 | 703 | 0.7− | 0.5− |
| 2002 01 22 | 291 | 0.2− | 0.5+ | 2005 09 29 | G96 | 0.0 | 0.0 | 2005 10 07 | 703 | 0.2− | 0.9− |
| 2002 01 22 | 291 | 0.3+ | 0.7+ | 2005 09 29 | G96 | 0.2+ | 0.1− | 2005 10 25 | 691 | 0.2− | 0.4− |
| 2002 01 22 | 291 | 0.4+ | 0.5+ | 2005 09 29 | G96 | 0.1− | 0.0 | 2005 10 25 | 691 | 0.1+ | 0.1− |
| 2005 08 31 | 691 | 0.1+ | 0.1+ | 2005 10 02 | 644 | 0.2− | 0.0 | 2005 10 25 | 691 | 0.1+ | 0.1− |
| 2005 08 31 | 691 | 0.2− | 0.1− | 2005 10 02 | 644 | 0.0 | 0.1− | 2005 10 25 | G96 | 0.3− | 0.5− |
| 2005 08 31 | 691 | 0.3− | 0.2− | 2005 10 02 | 644 | 0.5− | 0.3+ | 2005 10 25 | G96 | 0.7− | 0.7− |
| 2005 09 22 | 644 | 0.2− | 0.0 | 2005 10 02 | 644 | 0.1− | 0.4+ | 2005 10 25 | G96 | 0.0 | 0.3− |
| 2005 09 22 | 644 | 0.4− | 0.2− | 2005 10 02 | 644 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.4+ | 0.2− |
| 2005 09 22 | 644 | 0.2− | 0.2− | 2005 10 02 | 644 | 0.1− | 0.0 | 2005 11 03 | 691 | 0.1− | 0.3− |
| 2005 09 23 | 703 | 1.0+ | 0.0 | 2005 10 06 | 699 | 0.6+ | 0.1− | 2005 11 03 | 691 | 0.3− | 0.3+ |
| 2005 09 23 | 703 | 1.1+ | 1.8− | 2005 10 06 | 699 | 0.5+ | 0.0 | 2005 11 03 | 691 | 0.2− | 0.2+ |
| 2005 09 23 | 703 | 0.8+ | 0.1+ | 2005 10 06 | 699 | 0.9+ | 0.8+ | 2005 11 03 | 691 | 0.4+ | 0.2+ |
| 2005 09 23 | 703 | 0.6− | 0.2+ | 2005 10 06 | 699 | 0.7+ | 0.1+ | 2005 11 03 | 691 | 0.1+ | 0.0 |
| 2005 09 24 | 691 | 0.0 | 0.1+ | 2005 10 07 | 704 | 0.0 | 0.9+ | 2005 11 03 | 691 | 0.1− | 0.0 |
| 2005 09 24 | 691 | 0.3− | 0.0 | 2005 10 07 | 704 | 0.2− | 0.4+ | 2005 11 05 | 691 | 0.9+ | 0.4+ |
| 2005 09 24 | 691 | 0.3− | 0.0 | 2005 10 07 | 704 | 0.5+ | 0.6+ | 2005 11 05 | 691 | 0.3− | 0.3+ |
| 2005 09 29 | 291 | 0.1− | 0.2+ | 2005 10 07 | 703 | 0.1+ | 0.4− | 2005 11 05 | 691 | 0.1− | 0.2+ |

**2005 SO$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.31004 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17452405 | $\omega$ | 243.05173 | | +0.70866830 | −0.70548592 | |
| $a$ | 3.1712650 | $\Omega$ | 161.81245 | | +0.65699165 | +0.65526253 | |
| $e$ | 0.1937071 | $i$ | 1.63030 | | +0.25719878 | +0.27003821 | |
| $P$ | 5.65 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 06 | 644 | 0.2+ | 0.5+ | 2005 10 05 | 704 | 0.1− | 0.1+ | 2005 10 28 | G96 | 0.1− | 0.1− |
| 2002 03 06 | 644 | 0.1− | 0.6+ | 2005 10 05 | 704 | 0.4+ | 0.3− | 2005 10 28 | 704 | 0.9− | 0.1+ |
| 2002 03 06 | 644 | 0.5+ | 0.5+ | 2005 10 05 | 704 | 0.4+ | 0.4+ | 2005 10 28 | G96 | 0.1+ | 0.3− |
| 2005 09 22 | 644 | 0.2+ | 0.2+ | 2005 10 05 | 704 | 0.5− | 0.4+ | 2005 10 28 | G96 | 0.1− | 0.2− |
| 2005 09 22 | 644 | 0.1− | 0.1+ | 2005 10 07 | 703 | 1.3+ | 0.1+ | 2005 11 04 | 691 | 0.0 | 0.1+ |
| 2005 09 22 | 644 | 0.2− | 0.1+ | 2005 10 07 | 703 | 0.2+ | 0.2− | 2005 11 04 | 691 | 0.0 | 0.4+ |
| 2005 09 23 | 703 | 0.2+ | 0.4− | 2005 10 07 | 703 | 0.7+ | 0.0 | 2005 11 04 | 691 | 0.2+ | 0.0 |
| 2005 09 23 | 703 | 0.0 | 0.2+ | 2005 10 10 | 691 | 0.8− | 0.5− | 2005 11 28 | 644 | 0.7+ | 0.7+ |
| 2005 09 23 | 703 | 0.1+ | 0.6− | 2005 10 10 | 691 | 0.3− | 0.2− | 2005 11 28 | 644 | 0.0 | 0.3+ |
| 2005 09 23 | 703 | 1.8− | 0.2+ | 2005 10 10 | 691 | 1.2− | 0.0 | 2005 11 28 | 644 | 0.2+ | 0.6+ |
| 2005 09 24 | 691 | 0.2+ | 0.0 | 2005 10 12 | 291 | 0.3− | 0.0 | 2005 11 29 | G96 | 0.5+ | 0.3− |
| 2005 09 24 | 691 | 0.1+ | 0.0 | 2005 10 12 | 291 | 0.3− | 0.1+ | 2005 11 29 | G96 | 0.2+ | 0.3− |
| 2005 09 24 | 691 | 0.3+ | 0.0 | 2005 10 12 | 291 | 0.3+ | 1.0+ | 2005 11 29 | G96 | 0.1− | 0.2− |
| 2005 09 29 | 644 | 0.3− | 0.1− | 2005 10 21 | 699 | (3.3+ | 1.4+) | 2005 11 29 | G96 | 0.3+ | 0.4− |
| 2005 09 29 | 644 | 0.2− | 0.6+ | 2005 10 21 | 699 | 0.3− | 0.2− | 2006 01 05 | G96 | 0.4− | 0.6− |
| 2005 09 29 | 644 | 0.0 | 0.5+ | 2005 10 21 | 699 | 0.3− | 0.1− | 2006 01 05 | G96 | 0.5− | 0.4− |
| 2005 09 30 | 691 | 0.7− | 1.0− | 2005 10 21 | 699 | 1.0+ | 0.4+ | 2006 01 05 | G96 | 0.3+ | 0.2− |
| 2005 09 30 | 691 | 0.1+ | 0.1− | 2005 10 21 | 644 | 0.0 | 0.4− | 2006 01 05 | G96 | 0.6+ | 0.2− |
| 2005 09 30 | 691 | 0.1+ | 0.1+ | 2005 10 21 | 644 | 0.0 | 0.0 | 2006 01 05 | G96 | 0.1+ | 0.0 |
| 2005 10 01 | G96 | 0.1+ | 0.1− | 2005 10 21 | 644 | 0.1− | 0.0 | 2006 01 05 | G96 | 0.4− | 0.7− |
| 2005 10 01 | G96 | 0.2+ | 0.3− | 2005 10 22 | 699 | 0.4+ | 0.7− | 2006 01 05 | G96 | 0.3+ | 0.4− |
| 2005 10 01 | G96 | 0.6+ | 0.2− | 2005 10 22 | 699 | 0.6+ | 0.4− | 2006 01 05 | G96 | 0.1− | 0.1− |
| 2005 10 01 | G96 | 0.1+ | 0.1− | 2005 10 22 | 699 | 0.7+ | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.5+ |
| 2005 10 01 | 704 | 0.5+ | 0.6+ | 2005 10 22 | 699 | 1.5+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2005 10 01 | 704 | 1.0+ | 0.7+ | 2005 10 28 | 704 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2005 10 01 | 704 | 0.1+ | 0.4+ | 2005 10 28 | 704 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 10 01 | 704 | 0.2− | 0.0 | 2005 10 28 | 704 | 0.5− | 0.1− | | | | |

**2005 SH$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.16946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22075591 | $\omega$ | 136.09111 | | +0.96175330 | +0.26503213 | |
| $a$ | 2.7114056 | $\Omega$ | 208.75410 | | −0.27373653 | +0.92077190 | |
| $e$ | 0.1764761 | $i$ | 8.27070 | | −0.00994466 | +0.28624652 | |
| $P$ | 4.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.1+ | 0.6+ | 2005 10 05 | 683 | 0.8− | 0.6+ | 2005 10 11 | 691 | 0.0 | 0.2− |
| 1995 05 29 | 691 | 0.0 | 0.4− | 2005 10 05 | 683 | 0.9+ | 0.9+ | 2005 10 22 | 703 | 1.0− | 0.6− |
| 1995 05 29 | 691 | 0.1− | 0.0 | 2005 10 06 | 699 | 0.4+ | 1.1+ | 2005 10 22 | 703 | 1.2− | 0.3− |
| 2004 05 09 | 691 | 0.5+ | 0.1− | 2005 10 06 | 699 | 1.1+ | 0.1− | 2005 10 22 | 703 | 0.3+ | 0.6− |
| 2004 05 09 | 691 | 0.2− | 0.3+ | 2005 10 06 | 699 | 0.7− | 0.4− | 2005 10 22 | 703 | 1.3− | 0.4− |
| 2004 05 09 | 691 | 0.3− | 0.6− | 2005 10 06 | 699 | 0.1+ | 0.3− | 2005 10 26 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 24 | 691 | 0.3+ | 0.1+ | 2005 10 07 | 152 | 0.3+ | 0.5+ | 2005 10 26 | 691 | 0.2+ | 0.2+ | | |
| 2005 09 24 | 691 | 0.2+ | 0.0 | 2005 10 07 | 152 | 0.0 | 0.2+ | 2005 10 26 | 691 | 0.1+ | 0.2+ | | |
| 2005 09 24 | 691 | 0.3+ | 0.1+ | 2005 10 07 | 152 | 0.3+ | 0.1+ | 2005 10 27 | 691 | 0.2− | 0.0 | | |
| 2005 09 29 | 691 | 0.3+ | 0.1− | 2005 10 07 | 704 | 1.5− | 1.5− | 2005 10 27 | 691 | 0.2− | 0.0 | | |
| 2005 09 29 | 691 | 0.3+ | 0.1− | 2005 10 07 | 704 | 1.5− | 0.5+ | 2005 10 27 | 691 | 0.3− | 0.1+ | | |
| 2005 09 29 | 691 | 0.4+ | 0.1− | 2005 10 07 | 704 | 1.2− | 1.1+ | 2005 10 27 | G96 | 0.3+ | 0.0 | | |
| 2005 09 29 | 699 | 0.3+ | 0.2+ | 2005 10 08 | 152 | 0.1+ | 0.2+ | 2005 10 27 | G96 | 0.2+ | 0.1− | | |
| 2005 09 29 | 699 | 0.1− | 0.4− | 2005 10 08 | 152 | 0.1− | 0.3+ | 2005 10 27 | G96 | 0.3− | 0.2+ | | |
| 2005 09 29 | 699 | 0.4+ | 0.9+ | 2005 10 08 | 152 | 0.9+ | 0.6+ | 2005 10 27 | G96 | 0.3− | 0.0 | | |
| 2005 09 29 | 699 | 0.1+ | 1.1− | 2005 10 09 | 152 | 0.3+ | 0.5+ | 2005 10 28 | 703 | 0.7+ | 1.1− | | |
| 2005 10 01 | 683 | (3.3− | 1.6−) | 2005 10 09 | 152 | 0.7− | 0.6− | 2005 10 28 | 703 | 1.0+ | 0.1− | | |
| 2005 10 01 | 683 | (1.8− | 3.4−) | 2005 10 09 | 152 | 0.1+ | 1.1+ | 2005 10 28 | 703 | 0.7+ | 1.5− | | |
| 2005 10 01 | 683 | (1.3+ | 2.5−) | 2005 10 09 | 152 | 0.5+ | 1.6− | 2005 10 28 | 703 | 0.5+ | 1.9− | | |
| 2005 10 03 | 703 | 0.7− | 1.2+ | 2005 10 09 | 152 | 0.1− | 0.5+ | 2005 11 28 | G96 | 0.1+ | 0.3+ | | |
| 2005 10 03 | 703 | 0.3+ | 0.5− | 2005 10 09 | 152 | 0.2− | 0.2+ | 2005 11 28 | G96 | 0.3+ | 0.1− | | |
| 2005 10 03 | 691 | 0.4+ | 0.2− | 2005 10 11 | 704 | 0.8− | 1.5+ | 2005 11 28 | G96 | 0.4+ | 0.2− | | |
| 2005 10 03 | 703 | 0.2+ | 1.6− | 2005 10 11 | 704 | 1.6− | 1.7+ | 2005 11 28 | G96 | 0.0 | 0.2− | | |
| 2005 10 03 | 703 | 1.0− | 0.4− | 2005 10 11 | 704 | 1.3− | 1.0+ | 2005 11 29 | G96 | 0.0 | 0.0 | | |
| 2005 10 03 | 691 | 0.1+ | 0.1+ | 2005 10 11 | 704 | 0.8− | 0.2− | 2005 11 29 | G96 | 0.1+ | 0.2+ | | |
| 2005 10 03 | 691 | 0.1+ | 0.2− | 2005 10 11 | 691 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.0 | 0.1− | | |
| 2005 10 05 | 683 | 1.0+ | 0.2− | 2005 10 11 | 691 | 0.1− | 0.1− | 2005 11 29 | G96 | 0.7+ | 0.1− | | |

**2005 SB$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.52151 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17487384 | $\omega$ | 280.07186 | | −0.59955798 | | −0.79615325 |
| $a$ | 3.1670347 | $\Omega$ | 207.28510 | | +0.78621115 | | −0.56682096 |
| $e$ | 0.0736441 | $i$ | 10.26256 | | +0.14967386 | | −0.21178763 |
| $P$ | 5.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.0 | 0.4+ | 2005 09 29 | 691 | 0.1+ | 0.2+ | 2005 10 27 | G96 | 0.1− | 0.4− | | |
| 1994 10 31 | 691 | 0.2− | 0.3+ | 2005 09 29 | 691 | 0.0 | 0.2+ | 2005 10 27 | G96 | 0.3+ | 0.2− | | |
| 1994 10 31 | 691 | 0.1+ | 0.4+ | 2005 09 29 | 691 | 0.1+ | 0.2+ | 2005 10 27 | G96 | 0.0 | 0.1+ | | |
| 2003 06 04 | 691 | 0.0 | 0.1+ | 2005 10 13 | 691 | 0.3− | 0.3− | 2005 10 27 | G96 | 0.2− | 0.1− | | |
| 2003 06 04 | 691 | 0.3+ | 0.3+ | 2005 10 13 | 691 | 0.0 | 0.1− | 2005 11 25 | G96 | 0.3− | 0.2− | | |
| 2003 06 04 | 691 | 0.3− | 0.1− | 2005 10 13 | 691 | 0.3− | 0.5− | 2005 11 25 | G96 | 0.2− | 0.2− | | |
| 2005 09 24 | 691 | 0.2− | 0.3+ | 2005 10 27 | 691 | 0.1+ | 0.1− | 2005 11 25 | G96 | 0.4+ | 1.2− | | |
| 2005 09 24 | 691 | 0.3+ | 0.0 | 2005 10 27 | 691 | 0.3+ | 0.2− | 2005 11 25 | G96 | 0.5+ | 0.4− | | |
| 2005 09 24 | 691 | 0.1− | 0.0 | 2005 10 27 | 691 | 0.1+ | 0.1+ | | | | | | |

**2005 SV$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.35488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26762224 | $\omega$ | 317.81776 | | +0.55533435 | | −0.82953431 |
| $a$ | 2.3848144 | $\Omega$ | 98.36710 | | +0.77803765 | | +0.49320190 |
| $e$ | 0.1763672 | $i$ | 3.41668 | | +0.29370254 | | +0.26196319 |
| $P$ | 3.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 27 | 691 | 0.2− | 0.4− | 2005 09 27 | A50 | 0.1− | 0.0 | 2005 10 21 | 699 | 0.2+ | 1.1+ | | |
| 1992 02 27 | 691 | 0.1− | 0.2− | 2005 09 27 | A50 | 0.0 | 0.0 | 2005 10 21 | 699 | 1.5− | 0.8− | | |
| 1992 02 27 | 691 | 0.1+ | 0.1− | 2005 09 29 | 699 | 0.7+ | 0.2+ | 2005 10 27 | 699 | 0.0 | 0.5− | | |
| 2003 02 21 | 644 | 0.0 | 0.4+ | 2005 09 29 | 699 | 0.1+ | 0.4+ | 2005 10 27 | 704 | 0.8+ | 1.0− | | |
| 2003 02 21 | 644 | 0.1+ | 0.8+ | 2005 09 29 | 644 | 0.2− | 0.3− | 2005 10 27 | 704 | 0.3+ | 0.4+ | | |
| 2003 02 21 | 644 | 0.6+ | 1.0+ | 2005 09 29 | 699 | 0.2+ | 0.0 | 2005 10 27 | 699 | 0.6− | 0.4+ | | |
| 2005 08 31 | 644 | 0.4− | 0.0 | 2005 09 29 | 644 | 0.3+ | 0.4− | 2005 10 27 | 704 | 0.7+ | 0.1− | | |
| 2005 08 31 | 644 | 0.6− | 0.3+ | 2005 09 29 | 699 | 0.3− | 0.2− | 2005 10 27 | 704 | 0.2+ | 0.2− | | |
| 2005 08 31 | 644 | 0.2− | 0.0 | 2005 09 29 | 644 | 0.3− | 0.5− | 2005 10 27 | 699 | 1.3− | 1.3+ | | |
| 2005 09 24 | 644 | 0.1− | 0.1+ | 2005 10 06 | 703 | 0.5− | 1.4− | 2005 10 27 | 704 | 0.1+ | 0.3− | | |
| 2005 09 24 | 644 | 0.1− | 0.3+ | 2005 10 06 | 703 | 0.6− | 0.6+ | 2005 10 27 | 699 | 0.5+ | 0.6− | | |
| 2005 09 24 | 644 | 0.1− | 0.0 | 2005 10 06 | 703 | 0.8+ | 0.3− | 2005 12 01 | G96 | 0.2− | 0.2+ | | |
| 2005 09 25 | 691 | 0.2+ | 0.0 | 2005 10 06 | 703 | 0.1+ | 0.6− | 2005 12 01 | G96 | 0.3− | 0.0 | | |
| 2005 09 25 | 691 | 0.1+ | 0.1− | 2005 10 21 | 699 | 0.3+ | 0.6+ | 2005 12 01 | G96 | 0.3− | 0.1− | | |
| 2005 09 25 | 691 | 0.1+ | 0.0 | 2005 10 21 | 699 | 0.8+ | 1.6+ | 2005 12 01 | G96 | 0.2− | 0.2− | | |

**2005 SL$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.33480 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27741529 | $\omega$ | 104.68668 | | +0.44575686 | | −0.89507019 |
| $a$ | 2.3283546 | $\Omega$ | 318.83448 | | +0.81395811 | | +0.41098305 |
| $e$ | 0.2185212 | $i$ | 1.06674 | | +0.37252250 | | +0.17303840 |
| $P$ | 3.55 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 19 | 691 | 0.0 | 0.2− | 2005 09 25 | 703 | 1.0− | 1.1+ | 2005 10 01 | 703 | 1.2+ | 0.1− | | |
| 1998 10 19 | 691 | 0.0 | 0.2− | 2005 09 25 | 703 | 0.7+ | 1.4− | 2005 10 01 | 703 | 0.7+ | 0.4− | | |
| 1998 10 19 | 691 | 0.2+ | 0.2− | 2005 09 26 | 644 | 0.2+ | 0.1+ | 2005 10 01 | 703 | 0.7+ | 0.2− | | |
| 2003 02 21 | 644 | 0.2+ | 0.4+ | 2005 09 26 | 644 | 0.1+ | 0.3+ | 2005 10 01 | 703 | 0.3− | 0.4+ | | |
| 2003 02 21 | 644 | 0.1+ | 0.8+ | 2005 09 26 | 644 | 0.1+ | 0.4+ | 2005 10 02 | 644 | 0.1− | 0.3+ | | |
| 2003 02 21 | 644 | 0.4+ | 0.7+ | 2005 09 29 | 699 | 0.3− | 0.2+ | 2005 10 02 | 644 | 0.2− | 0.1+ | | |
| 2005 08 31 | 691 | 0.1− | 0.2− | 2005 09 29 | 699 | 0.1− | 0.5+ | 2005 10 02 | 644 | 0.0 | 0.2+ | | |
| 2005 08 31 | 691 | 0.0 | 0.2+ | 2005 09 29 | 699 | 0.2+ | 0.7+ | 2005 10 27 | G96 | 0.0 | 0.2− | | |
| 2005 08 31 | 691 | 0.1− | 0.1− | 2005 09 29 | 699 | (0.1+ | 2.1+) | 2005 10 27 | G96 | 0.3+ | 0.3− | | |
| 2005 09 14 | 691 | 0.0 | 0.2+ | 2005 10 01 | G96 | 0.3− | 0.1− | 2005 10 27 | G96 | 0.1+ | 0.2− | | |
| 2005 09 14 | 691 | 0.3− | 0.2+ | 2005 10 01 | G96 | 0.2− | 0.2− | 2005 10 27 | G96 | 0.2− | 0.2− | | |
| 2005 09 14 | 691 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.1+ | 0.2− | 2005 11 28 | G96 | 0.1− | 0.2+ | | |
| 2005 09 22 | 644 | 0.2− | 0.1+ | 2005 10 01 | G96 | 0.3− | 0.1− | 2005 11 28 | G96 | 0.8− | 0.0 | | |
| 2005 09 22 | 644 | 0.0 | 0.3+ | 2005 10 01 | 703 | 0.2+ | 0.8+ | 2005 11 28 | G96 | 0.2+ | 0.0 | | |
| 2005 09 22 | 644 | 0.1+ | 0.3+ | 2005 10 01 | 703 | 0.5− | 0.2+ | 2005 11 28 | G96 | 0.2+ | 0.2+ | | |
| 2005 09 25 | 703 | 0.6+ | 0.8− | 2005 10 01 | 703 | 0.7− | 0.3+ | | | | | | |
| 2005 09 25 | 703 | 0.3− | 0.7− | 2005 10 01 | 703 | 0.3− | 0.3+ | | | | | | |

**2005 ST$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.33725 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26540672 | $\omega$ | 226.16343 | | +0.98508111 | | +0.17199820 |
| $a$ | 2.3980677 | $\Omega$ | 123.93178 | | −0.15587490 | | +0.90567216 |
| $e$ | 0.2429950 | $i$ | 0.38962 | | −0.07292617 | | +0.38752363 |
| $P$ | 3.71 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 691 | 0.3− | 0.2+ | 2005 10 06 | 703 | 1.0− | 0.7− | 2005 10 24 | 691 | 0.4+ | 0.1+ | | |
| 2001 08 26 | 691 | 0.0 | 0.1− | 2005 10 06 | 703 | 0.8− | 1.7+ | 2005 10 24 | 699 | 1.7− | 1.2+ | | |
| 2001 08 26 | 691 | 0.3+ | 0.4− | 2005 10 06 | 703 | 0.1+ | 1.0+ | 2005 10 24 | 699 | 0.1− | 1.7− | | |
| 2004 07 16 | 807 | 0.2+ | 0.4+ | 2005 10 06 | 703 | 0.7− | 0.3− | 2005 10 28 | G96 | 0.9+ | 0.1− | | |
| 2004 07 17 | 807 | 0.0 | 0.1− | 2005 10 07 | 704 | 0.2+ | 0.7+ | 2005 10 28 | G96 | 0.3+ | 0.2− | | |
| 2005 08 30 | 644 | 0.2− | 0.1+ | 2005 10 07 | 704 | 0.5+ | 0.9+ | 2005 10 28 | G96 | 0.1+ | 0.2− | | |
| 2005 08 30 | 644 | 0.2+ | 0.1+ | 2005 10 07 | 704 | (0.5− | 2.4+) | 2005 10 28 | G96 | 0.1− | 0.1− | | |
| 2005 08 30 | 644 | 0.7− | 0.1+ | 2005 10 07 | 704 | 1.0+ | 0.1+ | 2005 10 31 | 691 | 0.1− | 0.3+ | | |
| 2005 09 25 | 691 | 0.0 | 0.4+ | 2005 10 10 | 291 | 0.0 | 0.7− | 2005 10 31 | 691 | 0.1− | 0.0 | | |
| 2005 09 25 | 691 | 0.1+ | 0.1+ | 2005 10 10 | 291 | 0.1+ | 0.5− | 2005 10 31 | 691 | 0.5− | 0.4− | | |
| 2005 09 25 | 691 | 0.1− | 0.0 | 2005 10 10 | 291 | 0.1+ | 0.5− | 2005 11 01 | 691 | 0.0 | 0.2+ | | |
| 2005 09 29 | G96 | 0.5+ | 0.3+ | 2005 10 22 | 703 | 0.0 | 0.8− | 2005 11 01 | 691 | 0.3+ | 0.1+ | | |
| 2005 09 29 | G96 | 0.3+ | 0.3+ | 2005 10 22 | 703 | 0.1+ | 0.5− | 2005 11 01 | 691 | 0.1+ | 0.0 | | |
| 2005 09 29 | G96 | 0.3+ | 0.2+ | 2005 10 22 | 703 | 0.7− | 0.4− | 2005 12 02 | G96 | 0.0 | 0.1− | | |
| 2005 09 29 | G96 | 0.7+ | 0.0 | 2005 10 22 | 703 | 0.7− | 1.0− | 2005 12 02 | G96 | 0.5+ | 0.2− | | |
| 2005 10 01 | 704 | 0.9− | 1.6+ | 2005 10 24 | 691 | 0.1+ | 0.0 | 2005 12 02 | G96 | 0.2+ | 0.5+ | | |
| 2005 10 01 | 704 | 0.6+ | 1.3+ | 2005 10 24 | 699 | 0.3+ | 1.0− | 2005 12 02 | G96 | 0.0 | 0.2− | | |
| 2005 10 01 | 704 | 0.7+ | 0.6+ | 2005 10 24 | 691 | 0.2+ | 0.1+ | | | | | | |
| 2005 10 01 | 704 | 0.9− | 0.2− | 2005 10 24 | 699 | 1.4− | 0.2+ | | | | | | |

**2005 SU$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.37471 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26309641 | $\omega$ | 113.37471 | | +0.49869201 | | +0.86677616 |
| $a$ | 2.4120859 | $\Omega$ | 186.54022 | | −0.80249390 | | +0.46069475 |
| $e$ | 0.1735279 | $i$ | 1.16502 | | −0.32758178 | | +0.19094355 |
| $P$ | 3.75 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.1+ | 0.4+ | 2005 08 29 | 691 | 0.1− | 0.1+ | 2005 09 29 | G96 | 0.2− | 0.0 |
| 1998 11 16 | 691 | 0.3− | 0.0 | 2005 08 29 | 691 | 0.1+ | 0.2+ | 2005 09 29 | G96 | 0.7− | 0.0 |
| 1998 11 16 | 691 | 0.1+ | 0.1− | 2005 08 29 | 691 | 0.0 | 0.3+ | 2005 09 29 | G96 | 0.2− | 0.0 |
| 2004 03 17 | 291 | 0.3+ | 0.4+ | 2005 09 13 | 691 | 0.1+ | 0.1+ | 2005 09 29 | G96 | 0.7− | 0.1+ |
| 2004 03 17 | 291 | 0.1− | 0.6+ | 2005 09 13 | 691 | 0.4− | 0.1+ | 2005 10 29 | G96 | 0.3+ | 0.0 |
| 2004 03 17 | 291 | 0.4+ | 0.4+ | 2005 09 13 | 691 | 0.0 | 0.2+ | 2005 10 29 | G96 | 0.3+ | 0.2+ |
| 2005 07 30 | 644 | 0.0 | 0.4+ | 2005 09 26 | 691 | 0.0 | 0.1− | 2005 10 29 | G96 | 0.3− | 0.0 |
| 2005 07 30 | 644 | 0.1− | 0.0 | 2005 09 26 | 691 | 0.0 | 0.1+ | 2005 10 29 | G96 | 0.2− | 0.1− |
| 2005 07 30 | 644 | 0.1− | 0.1+ | 2005 09 26 | 691 | 0.4+ | 0.1− | | | | |

### 2005 SF$_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.57358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22581139 | $\omega$ | 184.82783 | | +0.92228604 | −0.38596485 | |
| $a$ | 2.6707843 | $\Omega$ | 197.91808 | | +0.35680588 | +0.87058827 | |
| $e$ | 0.1391495 | $i$ | 3.81762 | | +0.14858675 | +0.30513473 | |
| $P$ | 4.36 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 12 | 691 | 0.4− | 0.0 | 2005 09 30 | G98 | 0.7+ | 0.5− | 2005 10 28 | 703 | 0.9− | 0.5+ |
| 1996 09 12 | 691 | 0.3+ | 0.1− | 2005 10 01 | G98 | 0.5− | 0.3+ | 2005 10 28 | G96 | 0.3− | 0.2− |
| 1996 09 12 | 691 | 0.1+ | 0.1+ | 2005 10 01 | G98 | 0.4+ | 0.2+ | 2005 10 28 | 703 | 0.6− | 0.6− |
| 2000 07 03 | 691 | 0.1+ | 0.2− | 2005 10 01 | G98 | 0.0 | 0.3+ | 2005 10 28 | G96 | 0.3+ | 0.8− |
| 2000 07 03 | 691 | 0.0 | 0.2− | 2005 10 01 | G98 | 0.2− | 0.2− | 2005 10 28 | 704 | 1.7+ | 1.0+ |
| 2000 07 03 | 691 | 0.1− | 0.3+ | 2005 10 01 | G98 | 0.1− | 0.3+ | 2005 10 28 | 703 | 0.8+ | 1.4− |
| 2005 09 26 | G98 | 0.5− | 0.0 | 2005 10 01 | G98 | 0.4+ | 0.4+ | 2005 10 28 | G96 | 0.9+ | 0.5− |
| 2005 09 26 | G98 | 0.2+ | 0.2+ | 2005 10 01 | G98 | 0.4− | 0.0 | 2005 10 28 | G96 | 0.1− | 0.3− |
| 2005 09 26 | G98 | 0.0 | 0.2+ | 2005 10 01 | G98 | 0.3− | 0.3+ | 2005 10 31 | 704 | 1.8− | 0.6+ |
| 2005 09 26 | G98 | 0.1+ | 0.5+ | 2005 10 01 | G98 | 0.0 | 0.0 | 2005 10 31 | 704 | 0.4− | 0.1+ |
| 2005 09 26 | G98 | 0.3− | 0.2+ | 2005 10 01 | G98 | 0.0 | 0.0 | 2005 10 31 | 704 | (3.4− | 0.4+) |
| 2005 09 29 | G96 | 0.1+ | 0.1+ | 2005 10 01 | G98 | 0.2− | 0.0 | 2005 10 31 | 704 | 0.0 | 0.2+ |
| 2005 09 29 | G96 | 1.0+ | 0.2+ | 2005 10 01 | G98 | 0.4− | 0.2+ | 2005 10 31 | 704 | 0.7− | 0.2− |
| 2005 09 29 | G96 | 0.3+ | 0.0 | 2005 10 07 | 691 | 0.1+ | 0.1− | 2005 11 05 | 699 | 0.2− | 0.2− |
| 2005 09 29 | G96 | 0.2+ | 0.0 | 2005 10 07 | 691 | 0.1+ | 0.1− | 2005 11 05 | 704 | 0.8+ | 0.2− |
| 2005 09 30 | G98 | 0.8− | 0.3− | 2005 10 07 | 691 | 0.0 | 0.1− | 2005 11 05 | 699 | 0.5+ | 1.2+ |
| 2005 09 30 | G98 | 0.4− | 0.2− | 2005 10 11 | 691 | 0.1+ | 0.1+ | 2005 11 05 | 704 | 0.5− | 0.4+ |
| 2005 09 30 | G98 | 1.0+ | 0.5− | 2005 10 11 | 691 | 0.1− | 0.3+ | 2005 11 05 | 704 | 0.0 | 0.1+ |
| 2005 09 30 | G98 | 0.0 | 0.2+ | 2005 10 11 | 691 | 0.0 | 0.0 | 2005 11 05 | 704 | 0.1− | 0.1+ |
| 2005 09 30 | G98 | 0.1− | 0.4+ | 2005 10 22 | 703 | 0.9− | 0.5+ | 2005 11 05 | 699 | 0.0 | 0.1+ |
| 2005 09 30 | G98 | 0.1+ | 0.7− | 2005 10 22 | 703 | 0.0 | 0.3+ | 2005 11 05 | 699 | 0.1− | 0.7− |
| 2005 09 30 | G98 | 0.1+ | 0.0 | 2005 10 22 | 703 | 0.1− | 0.5− | 2005 11 28 | G96 | 0.6+ | 0.4− |
| 2005 09 30 | G98 | 0.3− | 0.0 | 2005 10 22 | 703 | 0.2+ | 1.1+ | 2005 11 28 | G96 | 0.1− | 0.5− |
| 2005 09 30 | G98 | 0.4+ | 0.6+ | 2005 10 28 | 704 | 0.3+ | 0.4− | 2005 11 28 | G96 | 0.3+ | 0.6− |
| 2005 09 30 | G98 | 0.5+ | 0.1− | 2005 10 28 | 704 | 0.5− | 0.1+ | 2005 11 28 | G96 | 0.1+ | 0.2− |
| 2005 09 30 | G98 | 0.1+ | 0.4− | 2005 10 28 | 703 | 0.8− | 0.4+ | | | | |
| 2005 09 30 | G98 | 0.1+ | 0.3+ | 2005 10 28 | 704 | 0.5− | 1.0− | | | | |

### 2005 SG$_{60}$ = 2001 SS$_{352}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.42494 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26167166 | $\omega$ | 313.23136 | | +0.99971999 | −0.00100454 | |
| $a$ | 2.4208335 | $\Omega$ | 46.84124 | | +0.01079569 | +0.90842520 | |
| $e$ | 0.1922409 | $i$ | 1.85728 | | −0.02105705 | +0.41804622 | |
| $P$ | 3.77 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.1+ | 0.1+ | 2005 10 01 | 704 | 0.7+ | 0.3− | 2005 10 11 | 691 | 0.1+ | 0.0 |
| 2001 08 24 | 644 | 0.1− | 0.2− | 2005 10 01 | 704 | 0.1+ | 0.7− | 2005 10 11 | 691 | 0.0 | 0.2+ |
| 2001 08 24 | 644 | 0.0 | 0.1+ | 2005 10 01 | G96 | 0.2− | 0.5− | 2005 10 22 | 703 | 0.6− | 0.3+ |
| 2001 09 19 | 704 | 0.6+ | 0.1− | 2005 10 01 | G96 | 0.3− | 0.3− | 2005 10 22 | 703 | 0.0 | 0.5+ |
| 2001 09 19 | 704 | 0.0 | 0.8+ | 2005 10 01 | G96 | 0.1+ | 0.5− | 2005 10 22 | 703 | (1.5− | 0.0 ) |
| 2001 09 19 | 704 | 0.8− | 0.2+ | 2005 10 01 | G96 | 0.0 | 0.3− | 2005 10 22 | 703 | (1.5− | 0.2−) |
| 2005 09 25 | 644 | 0.0 | 0.0 | 2005 10 06 | 699 | 0.9+ | 0.6− | 2005 10 26 | 691 | 0.1+ | 0.2− |
| 2005 09 25 | 644 | 0.3− | 0.5− | 2005 10 06 | 699 | 0.7+ | 0.3− | 2005 10 26 | 691 | 0.2+ | 0.2− |
| 2005 09 25 | 644 | 0.2− | 0.2+ | 2005 10 06 | 699 | 0.2+ | 0.1− | 2005 10 26 | 691 | 0.2+ | 0.1+ |
| 2005 09 26 | 691 | 0.1+ | 0.0 | 2005 10 06 | 699 | 0.4+ | 0.6− | 2005 10 28 | 704 | 0.9− | 1.3+ |
| 2005 09 26 | 691 | 0.1− | 0.1+ | 2005 10 07 | 691 | 0.2+ | 0.2− | 2005 10 28 | 704 | 0.3− | 0.9+ |
| 2005 09 26 | 691 | 0.1+ | 0.0 | 2005 10 07 | 691 | 1.3− | 0.4− | 2005 10 28 | 704 | 0.6+ | 0.2+ |
| 2005 09 29 | 699 | 0.1+ | 1.0+ | 2005 10 07 | 691 | 0.1+ | 0.1− | 2005 10 28 | 704 | (1.8− | 2.1+) |
| 2005 09 29 | 699 | 0.6− | 0.7+ | 2005 10 07 | 703 | 0.7− | 0.1+ | 2005 12 02 | G96 | 0.4− | 0.2+ |
| 2005 09 29 | 699 | 1.1+ | 0.4− | 2005 10 07 | 703 | 0.4− | 0.8+ | 2005 12 02 | G96 | 0.0 | 0.1+ |
| 2005 09 29 | 699 | 1.2+ | 1.2+ | 2005 10 07 | 703 | 0.6− | 0.2− | 2005 12 02 | G96 | 0.2− | 0.0 |
| 2005 10 01 | 704 | (2.0+ | 0.9+) | 2005 10 07 | 703 | 0.4+ | 0.4+ | 2005 12 02 | G96 | 0.0 | 0.2+ |
| 2005 10 01 | 704 | (1.8+ | 0.4−) | 2005 10 11 | 691 | 0.1+ | 0.2− | | | | |

### 2005 SQ$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.89813 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28765092 | $\omega$ | 120.58212 | | +0.58166427 | +0.81341918 | |
| $a$ | 2.2727877 | $\Omega$ | 184.99112 | | −0.76113420 | +0.54253227 | |
| $e$ | 0.1739896 | $i$ | 2.62901 | | −0.28695194 | +0.20978080 | |
| $P$ | 3.43 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 16 | 691 | 0.4− | 0.1+ | 2005 09 26 | 691 | 0.1− | 0.4+ | 2005 10 07 | 691 | 0.1− | 0.0 |
| 2001 06 16 | 691 | 0.1− | 0.1+ | 2005 09 26 | 691 | 0.2+ | 0.1+ | 2005 10 11 | 691 | 0.1− | 0.2+ |
| 2001 06 16 | 691 | 0.6+ | 0.2+ | 2005 09 26 | 691 | 0.1− | 0.3+ | 2005 10 11 | 691 | 0.2− | 0.1+ |
| 2004 03 17 | 691 | 0.2+ | 0.4+ | 2005 09 29 | G96 | 0.1− | 0.1− | 2005 10 11 | 691 | 0.1− | 0.1+ |
| 2004 03 17 | 691 | 0.2+ | 0.6+ | 2005 09 29 | G96 | 0.0 | 0.2− | 2005 12 04 | G96 | 0.1+ | 0.1− |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2005 09 29 | G96 | 0.4+ | 0.1− | 2005 12 04 | G96 | 0.1+ | 0.0 |
| 2005 09 26 | 691 | 0.0 | 0.1+ | 2005 09 29 | G96 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.0 | 0.2− |
| 2005 09 26 | 691 | 0.0 | 0.2+ | 2005 10 07 | 691 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.0 | 0.3− |
| 2005 09 26 | 691 | 0.1− | 0.0 | 2005 10 07 | 691 | 0.1+ | 0.1+ | | | | |

### 2005 SJ$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.74652 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23533222 | $\omega$ | 34.67704 | | +0.51844114 | −0.85459738 | |
| $a$ | 2.5982551 | $\Omega$ | 24.13638 | | +0.76719650 | +0.44951825 | |
| $e$ | 0.1164675 | $i$ | 4.16523 | | +0.37766166 | +0.25999359 | |
| $P$ | 4.19 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 691 | 0.8− | 0.8+ | 2001 11 19 | 704 | 0.4+ | 0.4+ | 2005 10 03 | 703 | 1.7− | 0.3+ |
| 2001 09 22 | 691 | 0.2+ | 0.1− | 2001 11 19 | 704 | 0.6+ | 0.8+ | 2005 10 05 | 621 | 0.3+ | 0.4− |
| 2001 09 22 | 691 | 0.8+ | 0.6− | 2005 09 26 | 691 | 0.2+ | 0.1− | 2005 10 06 | 621 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | (3.3+ | 1.0+) | 2005 09 26 | 691 | 0.2+ | 0.1+ | 2005 10 06 | 621 | 0.1+ | 0.2− |
| 2001 10 21 | 704 | 0.1+ | 0.9− | 2005 09 26 | 691 | 0.1− | 0.0 | 2005 10 07 | 621 | 0.2+ | 0.4+ |
| 2001 10 21 | 704 | 0.3+ | 0.2+ | 2005 09 29 | G96 | 0.6− | 0.1− | 2005 10 07 | 621 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.4− | 0.1− | 2005 09 29 | G96 | 0.1− | 0.0 | 2005 10 07 | 621 | 0.2− | 0.1− |
| 2001 10 26 | 644 | 0.5− | 0.5− | 2005 09 29 | G96 | 0.2− | 0.1+ | 2005 10 11 | 691 | 0.1− | 0.2+ |
| 2001 10 26 | 644 | 0.5− | 0.5− | 2005 09 29 | G96 | 0.4− | 0.1− | 2005 10 11 | 691 | 0.2− | 0.0 |
| 2001 10 26 | 644 | 0.2− | 0.6− | 2005 10 03 | 703 | 0.2− | 0.1+ | 2005 10 11 | 691 | 0.2+ | 0.0 |
| 2001 11 19 | 704 | 0.5− | 0.7+ | 2005 10 03 | 703 | 1.8+ | 0.5− | | | | |
| 2001 11 19 | 704 | 0.3+ | 0.2− | 2005 10 03 | 703 | (2.1− | 0.3−) | | | | |

### 2005 SY$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.93017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27538261 | $\omega$ | 138.94997 | | +0.87287829 | +0.48784846 | |
| $a$ | 2.3397980 | $\Omega$ | 191.86129 | | −0.45871518 | +0.81392026 | |
| $e$ | 0.1856070 | $i$ | 2.60663 | | −0.16632464 | +0.31549596 | |
| $P$ | 3.58 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 30 | 691 | 0.1− | 0.3− | 2005 10 07 | 704 | 0.3− | 0.5+ | 2005 10 28 | 704 | 0.3− | 1.3+ |
| 1995 12 30 | 691 | 0.3+ | 0.2+ | 2005 10 07 | 704 | 0.2− | 0.0 | 2005 10 28 | 703 | 0.1+ | 0.6+ |
| 1995 12 30 | 691 | 0.2− | 0.1+ | 2005 10 07 | 704 | 0.1− | 0.1− | 2005 10 28 | 703 | 0.1+ | 0.3+ |
| 2004 04 20 | 691 | 0.1+ | 0.4+ | 2005 10 07 | 691 | 0.2+ | 0.2+ | 2005 10 28 | 703 | 0.6− | 1.1+ |
| 2004 04 20 | 691 | 0.4+ | 0.8+ | 2005 10 07 | 704 | 0.1− | 0.4− | 2005 10 28 | 704 | (0.1− | 2.2+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 691 | 0.3+ | 0.7+ | 2005 10 07 | 704 | 0.3+ | 0.6− | 2005 10 28 | 703 | (0.9− | 1.7+) |
| 2005 09 15 | 703 | 2.6− | 2.4+ | 2005 10 07 | 691 | 0.2+ | 0.2+ | 2005 10 28 | G96 | 0.2− | 0.2− |
| 2005 09 15 | 703 | 0.8+ | 1.2+ | 2005 10 07 | 691 | 0.5+ | 0.4+ | 2005 10 28 | 704 | (0.5− | 1.5+) |
| 2005 09 15 | 703 | 1.1− | 1.3− | 2005 10 10 | A50 | 0.3+ | 0.1+ | 2005 10 28 | G96 | 0.4− | 0.4− |
| 2005 09 15 | 703 | 0.6+ | 0.6− | 2005 10 10 | A50 | 0.5− | 0.1− | 2005 10 28 | G96 | 0.0 | 0.0 |
| 2005 09 26 | 691 | 0.4− | 0.2− | 2005 10 10 | A50 | 0.4− | 0.3+ | 2005 10 28 | G96 | 0.3− | 0.3− |
| 2005 09 26 | 691 | 0.3− | 0.3− | 2005 10 10 | A50 | 0.2+ | 0.2+ | 2005 10 31 | 704 | 0.6− | 0.7+ |
| 2005 09 26 | 691 | 0.3− | 0.3− | 2005 10 11 | 691 | 0.0 | 0.2+ | 2005 10 31 | 704 | 0.6+ | 0.1− |
| 2005 09 29 | G96 | 0.3+ | 0.2+ | 2005 10 11 | 691 | 0.0 | 0.1+ | 2005 10 31 | 704 | 0.9+ | 0.5+ |
| 2005 09 29 | G96 | 0.3+ | 0.2+ | 2005 10 11 | 691 | 0.2+ | 0.1+ | 2005 10 31 | 704 | 0.4− | 0.2− |
| 2005 09 29 | 699 | 0.5− | 0.2+ | 2005 10 22 | 703 | 0.3+ | 0.3− | 2005 11 09 | 599 | 0.1+ | 0.0 |
| 2005 09 29 | G96 | 0.5+ | 0.2+ | 2005 10 22 | 703 | 0.8− | 0.5− | 2005 11 09 | 599 | 0.3+ | 0.0 |
| 2005 09 29 | G96 | 0.4+ | 0.2+ | 2005 10 22 | 703 | 0.1+ | 0.5− | 2005 11 09 | 599 | 0.3+ | 0.1− |
| 2005 09 29 | 699 | 0.1+ | 0.3− | 2005 10 22 | 703 | (1.6− | 0.8−) | 2005 11 09 | 599 | 0.2+ | 0.2+ |
| 2005 09 29 | 699 | 0.1+ | 0.1− | 2005 10 24 | 699 | 0.7+ | 0.8− | 2005 11 29 | G96 | 0.1− | 0.4− |
| 2005 09 29 | 699 | 0.1+ | 0.5+ | 2005 10 24 | 699 | (0.6+ | 2.6−) | 2005 11 29 | G96 | 0.3− | 0.1− |
| 2005 10 06 | 699 | 0.0 | 0.2+ | 2005 10 24 | 699 | 0.1+ | 0.3− | 2005 11 29 | G96 | 0.0 | 0.1+ |
| 2005 10 06 | 699 | 0.2− | 0.5+ | 2005 10 24 | 699 | 0.4− | 0.0 | 2005 11 29 | G96 | 0.3− | 0.4− |
| 2005 10 06 | 699 | 0.7+ | 0.5+ | 2005 10 28 | 704 | 0.2− | 1.0+ | | | | |
| 2005 10 06 | 699 | 0.0 | 0.0 | 2005 10 28 | 704 | (0.3+ | 2.0+) | | | | |

**2005 SQ$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.90364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29398215 | $\omega$ | 343.83253 | | +0.99964972 | +0.01495822 | |
| $a$ | 2.2400381 | $\Omega$ | 15.36000 | | −0.00296189 | +0.88300893 | |
| $e$ | 0.1811112 | $i$ | 4.72803 | | −0.02629958 | +0.46911777 | |
| $P$ | 3.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 21 | 691 | 0.7+ | 0.5− | 2005 10 06 | 703 | 0.5− | 0.3− | 2005 10 22 | 703 | 0.4− | 0.3+ |
| 1993 01 21 | 691 | 0.8− | 0.6+ | 2005 10 06 | 703 | 0.0 | 0.5− | 2005 10 22 | 703 | 1.2− | 0.1− |
| 1993 01 21 | 691 | 0.0 | 0.2− | 2005 10 07 | 704 | 0.3+ | 0.1+ | 2005 10 24 | 699 | 0.2− | 0.8+ |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2005 10 07 | 704 | 0.2− | 0.4− | 2005 10 24 | 699 | 0.3− | 0.9− |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2005 10 07 | 704 | 0.2− | 0.3− | 2005 10 24 | 699 | 0.4+ | 0.5− |
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2005 10 07 | 704 | 0.2− | 0.2+ | 2005 10 24 | 699 | 0.6− | 0.2+ |
| 2004 05 11 | 699 | 0.8− | 0.2+ | 2005 10 07 | 691 | 0.1+ | 0.0 | 2005 10 27 | G96 | 0.1− | 0.3− |
| 2005 09 15 | 703 | 0.2+ | 0.1− | 2005 10 07 | 691 | 0.1+ | 0.1+ | 2005 10 27 | G96 | 0.3− | 0.2− |
| 2005 09 15 | 703 | 0.4+ | 0.0 | 2005 10 07 | 691 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2005 09 15 | 703 | 0.7− | 0.2− | 2005 10 10 | A50 | 0.2+ | 0.3+ | 2005 10 27 | G96 | 0.0 | 0.2− |
| 2005 09 15 | 703 | 1.1+ | 0.2+ | 2005 10 10 | A50 | 0.2− | 0.1+ | 2005 11 01 | 704 | 0.4− | 0.9+ |
| 2005 09 26 | 691 | 0.0 | 0.1− | 2005 10 11 | 704 | 0.9+ | 0.5+ | 2005 11 01 | 704 | (1.7+ | 0.2+) |
| 2005 09 26 | 691 | 0.0 | 0.0 | 2005 10 11 | 704 | 0.0 | 0.3+ | 2005 11 01 | 704 | 0.6+ | 0.1− |
| 2005 09 26 | 691 | 0.2+ | 0.0 | 2005 10 11 | 704 | 0.1− | 0.1− | 2005 11 01 | 704 | (2.1+ | 0.9+) |
| 2005 09 29 | G96 | 0.3− | 0.1− | 2005 10 11 | 691 | 0.3+ | 0.1+ | 2005 11 04 | 704 | 1.1− | 0.4− |
| 2005 09 29 | G96 | 0.3− | 0.1− | 2005 10 11 | 704 | 0.5− | 0.6+ | 2005 11 04 | 704 | 0.6+ | 0.2+ |
| 2005 09 29 | G96 | 0.4− | 0.2− | 2005 10 11 | 691 | 0.2+ | 0.1+ | 2005 11 04 | 704 | 1.0+ | 0.0 |
| 2005 09 29 | G96 | 0.4− | 0.3− | 2005 10 11 | 704 | 0.3+ | 0.7− | 2005 11 04 | 704 | 0.6− | 0.5+ |
| 2005 09 29 | 699 | 0.3− | 0.2+ | 2005 10 11 | 691 | 0.2+ | 0.0 | 2005 11 05 | 704 | 0.1+ | 0.1+ |
| 2005 09 29 | 699 | 0.6+ | 0.2− | 2005 10 21 | 644 | 0.0 | 0.2+ | 2005 11 05 | 704 | (0.1+ | 1.8−) |
| 2005 09 29 | 699 | 0.5+ | 0.1+ | 2005 10 21 | 644 | 0.0 | 0.1+ | 2005 11 05 | 704 | 0.0 | 0.2+ |
| 2005 09 29 | 699 | 0.2− | 0.1− | 2005 10 21 | 644 | 0.0 | 0.0 | 2005 11 05 | 704 | (1.1+ | 2.3+) |
| 2005 09 30 | 644 | 0.0 | 0.0 | 2005 10 21 | 644 | 0.2− | 0.1+ | 2005 11 05 | 704 | 0.5− | 0.1− |
| 2005 09 30 | 644 | 0.3+ | 0.1− | 2005 10 21 | 644 | 0.0 | 0.1+ | 2005 12 06 | G96 | 0.2+ | 0.0 |
| 2005 09 30 | 644 | 0.1− | 0.1− | 2005 10 21 | 644 | 0.1− | 0.0 | 2005 12 06 | G96 | 0.0 | 0.0 |
| 2005 10 06 | 703 | 0.4− | 0.0 | 2005 10 22 | 703 | 0.0 | 0.1− | 2005 12 06 | G96 | 0.2+ | 0.1− |
| 2005 10 06 | 703 | 0.5− | 0.6+ | 2005 10 22 | 703 | 0.7− | 0.1+ | 2005 12 06 | G96 | 0.0 | 0.2− |

**2005 SN$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.29720 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20309709 | $\omega$ | 41.75812 | | +0.98702738 | +0.14132260 | |
| $a$ | 2.8663788 | $\Omega$ | 309.95359 | | −0.16053183 | +0.87623092 | |
| $e$ | 0.1280258 | $i$ | 5.70411 | | +0.00254758 | +0.46070304 | |
| $P$ | 4.85 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 049 | 1.1+ | 0.6− | 2005 09 26 | 644 | 0.4+ | 0.2− | 2005 10 01 | 703 | 0.8− | 0.3+ |
| 2000 09 05 | 049 | 0.1+ | 0.4− | 2005 09 26 | 644 | 0.2+ | 0.2− | 2005 10 01 | 703 | 0.0 | 0.3+ |
| 2000 09 05 | 049 | 0.4− | 0.5+ | 2005 09 29 | 699 | 0.3+ | 0.0 | 2005 10 01 | 703 | 0.3+ | 0.1− |
| 2000 09 23 | 704 | 0.3+ | 0.8− | 2005 09 29 | 699 | 0.9− | 0.7+ | 2005 10 01 | 703 | 0.1− | 0.6− |
| 2000 09 23 | 704 | 1.3− | 0.9+ | 2005 09 29 | 699 | 0.6− | 0.1− | 2005 10 01 | 703 | 0.8− | 0.7+ |
| 2000 09 23 | 704 | 0.1+ | 0.9+ | 2005 09 29 | 699 | 0.6+ | 1.1+ | 2005 10 01 | 703 | 0.2+ | 0.5− |
| 2000 09 23 | 704 | 0.3+ | 0.2− | 2005 09 30 | 644 | 0.0 | 0.0 | 2005 10 01 | 703 | 0.2− | 0.1− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2005 09 30 | 644 | 0.0 | 0.3− | 2005 10 08 | 704 | 0.0 | 0.4+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2005 09 30 | 644 | 0.3+ | 0.6− | 2005 10 08 | 704 | 0.2− | 0.6− |
| 2005 09 26 | 644 | 0.0 | 0.4− | 2005 10 01 | 703 | 1.1+ | 0.7+ | 2005 10 08 | 704 | 0.2+ | 0.6− |

**2005 SH$_{66}$ = 2000 JU$_{93}$ = 2001 PN$_{64}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.73033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26274060 | $\omega$ | 195.99830 | | +0.50038903 | −0.86279186 | |
| $a$ | 2.4142630 | $\Omega$ | 224.04435 | | +0.80529594 | +0.49439466 | |
| $e$ | 0.0899042 | $i$ | 5.95429 | | +0.31797684 | +0.10566043 | |
| $P$ | 3.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 13 | 691 | 0.0 | 0.2+ | 2005 09 29 | 699 | 0.3− | 0.2− | 2005 10 07 | 703 | 0.6− | 0.1+ |
| 2000 05 13 | 691 | 0.1+ | 0.0 | 2005 09 30 | 644 | 0.5− | 0.2− | 2005 10 07 | 703 | 0.6+ | 0.1− |
| 2000 05 13 | 691 | 0.0 | 0.4+ | 2005 09 30 | 644 | 0.2− | 0.1− | 2005 10 07 | 703 | 0.2− | 0.5+ |
| 2001 08 15 | 621 | 1.9+ | 0.1− | 2005 09 30 | 644 | 0.2− | 0.3+ | 2005 10 07 | 703 | 0.6− | 0.7+ |
| 2001 08 15 | 621 | 1.6− | 0.7− | 2005 10 01 | 703 | 0.4− | 0.7− | 2005 10 11 | 691 | 0.0 | 0.1− |
| 2005 08 30 | 644 | 0.2+ | 0.3+ | 2005 10 01 | 703 | 0.1− | 0.1+ | 2005 10 11 | 691 | 0.3+ | 0.3− |
| 2005 08 30 | 644 | 0.1+ | 0.0 | 2005 10 01 | 703 | 0.8− | 0.4+ | 2005 10 11 | 691 | 0.4+ | 0.2+ |
| 2005 08 30 | 644 | 0.0 | 0.0 | 2005 10 01 | 703 | 0.5− | 0.6+ | 2005 11 03 | 691 | 0.0 | 0.1− |
| 2005 09 26 | 644 | 0.1+ | 0.3+ | 2005 10 03 | 691 | 0.3+ | 0.3+ | 2005 11 03 | 691 | 0.2+ | 0.0 |
| 2005 09 26 | 644 | 0.1+ | 0.3+ | 2005 10 03 | 691 | 0.0 | 0.3+ | 2005 11 03 | 691 | 0.1+ | 0.2+ |
| 2005 09 26 | 644 | 0.2+ | 0.3+ | 2005 10 03 | 691 | 0.1+ | 0.1+ | 2005 11 03 | G96 | 0.1+ | 0.3− |
| 2005 09 29 | 699 | 0.7+ | 0.0 | 2005 10 07 | 691 | 0.0 | 0.1− | 2005 11 03 | G96 | 0.3− | 0.4− |
| 2005 09 29 | 699 | 1.2+ | 0.5− | 2005 10 07 | 691 | 0.2+ | 0.0 | 2005 11 03 | G96 | 0.2− | 0.4− |
| 2005 09 29 | 699 | 0.1− | 0.0 | 2005 10 07 | 691 | 0.3+ | 0.2− | 2005 11 03 | G96 | 0.2− | 0.4− |

**2005 SQ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.49432 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28280358 | $\omega$ | 164.40399 | | +0.98235953 | −0.18441696 | |
| $a$ | 2.2986849 | $\Omega$ | 206.28410 | | +0.16321732 | +0.92643204 | |
| $e$ | 0.1828550 | $i$ | 4.01249 | | +0.09126804 | +0.32819822 | |
| $P$ | 3.49 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 14 | 691 | 0.2− | 0.0 | 2005 09 30 | 644 | 0.3+ | 0.3+ | 2005 10 11 | 704 | 0.5− | 0.3− |
| 1997 04 14 | 691 | 0.0 | 0.3− | 2005 10 03 | 703 | 0.2+ | 1.2− | 2005 10 11 | 704 | 1.3− | 0.8+ |
| 1997 04 14 | 691 | 0.0 | 0.4− | 2005 10 03 | 703 | 0.5− | 0.2− | 2005 10 11 | 704 | 0.5− | 0.7+ |
| 2004 04 20 | 291 | 0.5+ | 0.3+ | 2005 10 03 | 703 | 0.4− | 0.3− | 2005 10 24 | 699 | 0.0 | 0.3− |
| 2004 04 20 | 291 | 0.2− | 0.3+ | 2005 10 03 | 703 | 0.0 | 0.7− | 2005 10 24 | 699 | 0.0 | 0.0 |
| 2004 04 20 | 291 | 0.1+ | 0.8+ | 2005 10 03 | 703 | 0.6+ | 0.3− | 2005 10 24 | 699 | 0.5+ | 0.3+ |
| 2005 08 30 | 644 | 0.1+ | 0.2− | 2005 10 03 | 703 | 0.4+ | 0.4+ | 2005 10 24 | 699 | 0.4+ | 1.3+ |
| 2005 08 30 | 644 | 0.4− | 0.0 | 2005 10 03 | 703 | 0.5+ | 0.4− | 2005 10 25 | G96 | 0.1+ | 0.1+ |
| 2005 08 30 | 644 | 0.2− | 0.2+ | 2005 10 03 | 703 | 0.9+ | 0.1− | 2005 10 25 | G96 | 0.0 | 0.3− |
| 2005 09 25 | 644 | 0.1+ | 0.1+ | 2005 10 06 | 699 | 0.2− | 0.0 | 2005 10 25 | G96 | 0.2− | 0.0 |
| 2005 09 25 | 644 | 0.0 | 0.3+ | 2005 10 06 | 699 | 1.2− | 0.3+ | 2005 10 25 | G96 | 0.2+ | 0.0 |
| 2005 09 25 | 644 | 0.3+ | 0.3+ | 2005 10 06 | 699 | 0.1+ | 0.4+ | 2005 11 29 | G96 | 0.0 | 0.6+ |
| 2005 09 27 | 691 | 0.2+ | 0.1− | 2005 10 06 | 699 | 0.5− | 0.1− | 2005 11 29 | G96 | 0.5+ | 0.6+ |
| 2005 09 27 | 691 | 0.3+ | 0.2− | 2005 10 07 | 704 | 0.8− | 0.9− | 2005 11 29 | G96 | 0.2+ | 0.7+ |
| 2005 09 27 | 691 | 0.2+ | 0.1− | 2005 10 07 | 691 | 0.2− | 0.1+ | 2005 11 29 | G96 | 0.1+ | 0.7+ |
| 2005 09 29 | 699 | 0.8+ | 0.2− | 2005 10 07 | 704 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.4+ | 1.0− |
| 2005 09 29 | 699 | 0.6− | 0.0 | 2005 10 07 | 691 | 0.0 | 0.1+ | 2005 12 04 | G96 | 0.2− | 0.9− |
| 2005 09 29 | 699 | 0.6− | 0.2+ | 2005 10 07 | 704 | 0.4+ | 0.5− | 2005 12 04 | G96 | 0.5− | 0.4+ |
| 2005 09 29 | 699 | 1.0+ | 0.1+ | 2005 10 07 | 704 | 0.1− | 0.7− | 2005 12 04 | G96 | 0.0 | 0.6+ |
| 2005 09 30 | 644 | 0.0 | 0.2+ | 2005 10 07 | 691 | 0.2− | 0.2+ | | | | |
| 2005 09 30 | 644 | 0.1+ | 0.4+ | 2005 10 11 | 704 | 1.1− | 0.9+ | | | | |

**2005 SQ$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.36162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28105808 | $\omega$ | 323.27984 | | +0.93385673 | −0.35409980 | |
| $a$ | 2.3081924 | $\Omega$ | 57.53202 | | +0.34066940 | +0.83792773 | |
| $e$ | 0.2315236 | $i$ | 3.41446 | | +0.10888514 | +0.41531969 | |
| $P$ | 3.51 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 04 | 691 | 0.2− | 0.1− | 2005 10 09 | 557 | 0.3− | 0.4− | 2005 10 28 | 704 | 0.4− | 0.2+ |
| 1991 11 04 | 691 | 0.1− | 0.4− | 2005 10 09 | 557 | 0.6− | 0.3− | 2005 10 28 | 703 | 0.3+ | 1.2+ |
| 1991 11 04 | 691 | 0.1+ | 0.3− | 2005 10 09 | 557 | 0.3− | 0.4+ | 2005 10 28 | 703 | 0.1+ | 0.8+ |
| 1998 10 20 | 699 | 1.2+ | 0.8+ | 2005 10 09 | 557 | 1.7+ | 0.5− | 2005 10 28 | 704 | 0.5− | 0.1+ |
| 1998 10 20 | 699 | 1.0+ | 0.7+ | 2005 10 09 | 557 | 0.4+ | 0.5− | 2005 10 28 | 703 | 1.0+ | 0.9+ |
| 1998 10 20 | 699 | 0.3+ | 0.5+ | 2005 10 09 | 557 | 0.5+ | 0.7− | 2005 10 28 | 703 | 0.7+ | 0.8+ |
| 2005 08 30 | 644 | 0.2+ | 0.5+ | 2005 10 09 | 557 | 0.1− | 0.1− | 2005 10 28 | 704 | 0.3− | 0.6+ |
| 2005 08 30 | 644 | 0.1− | 0.0 | 2005 10 09 | 557 | 0.5− | 0.1+ | 2005 10 28 | 704 | 0.5+ | 0.6+ |
| 2005 08 30 | 644 | 0.4− | 0.1+ | 2005 10 09 | 557 | 0.2− | 0.4− | 2005 10 31 | 704 | 0.2− | 0.2+ |
| 2005 09 23 | 691 | 0.0 | 0.1− | 2005 10 09 | 557 | 0.8− | 0.5+ | 2005 10 31 | 704 | 0.2+ | 0.4+ |
| 2005 09 23 | 691 | 0.1+ | 0.3− | 2005 10 09 | 557 | 0.4− | 0.2− | 2005 10 31 | 704 | 0.0 | 0.3+ |
| 2005 09 23 | 691 | 0.1+ | 0.0 | 2005 10 09 | 557 | 0.2− | 0.6− | 2005 10 31 | 704 | 0.3− | 0.4− |
| 2005 09 30 | 644 | 0.1− | 0.1− | 2005 10 09 | 557 | 0.2− | 0.3+ | 2005 10 31 | 704 | 0.2+ | 0.1+ |
| 2005 09 30 | 644 | 0.3+ | 0.4− | 2005 10 09 | 557 | 0.4− | 0.2− | 2005 11 01 | G96 | 0.2+ | 0.1− |
| 2005 09 30 | 644 | 0.2+ | 0.1− | 2005 10 10 | 557 | 0.7+ | 0.1− | 2005 11 01 | G96 | 0.2− | 0.3− |
| 2005 10 01 | 704 | 0.3+ | 1.2− | 2005 10 10 | 557 | 0.3− | 1.0+ | 2005 11 01 | G96 | 0.3+ | 0.2− |
| 2005 10 01 | 704 | 0.9+ | 0.9+ | 2005 10 10 | 557 | 0.1+ | 0.1− | 2005 11 09 | 703 | 0.9− | 0.4+ |
| 2005 10 01 | 704 | 0.1+ | 0.8− | 2005 10 10 | 557 | 0.6+ | 0.8− | 2005 11 09 | 703 | 0.7− | 0.2+ |
| 2005 10 01 | 704 | 0.1− | 1.3− | 2005 10 10 | 557 | 0.3+ | 0.9− | 2005 11 09 | 703 | 1.2− | 0.3− |
| 2005 10 01 | 703 | 0.4+ | 0.6− | 2005 10 10 | 557 | 0.2− | 0.0 | 2005 11 09 | 703 | 0.6− | 0.8+ |
| 2005 10 01 | 703 | 1.4− | 1.1+ | 2005 10 10 | 557 | 0.0 | 0.5+ | 2005 11 28 | G96 | 0.3− | 1.0− |
| 2005 10 01 | 703 | 0.5− | 0.2+ | 2005 10 12 | 691 | 0.1− | 0.1+ | 2005 11 28 | G96 | 0.0 | 1.7− |
| 2005 10 01 | 703 | (2.1+ | 1.3−) | 2005 10 12 | 691 | 0.2− | 0.1+ | 2005 11 28 | G96 | 0.1− | 0.8− |
| 2005 10 05 | 704 | 1.1+ | 0.2− | 2005 10 12 | 691 | 0.2− | 0.0 | 2005 11 28 | G96 | 0.3+ | 0.3− |
| 2005 10 05 | 704 | 0.3+ | 0.6+ | 2005 10 21 | 644 | 0.0 | 0.0 | 2005 11 29 | G96 | 0.1+ | 0.4− |
| 2005 10 05 | 704 | 0.2+ | 0.7+ | 2005 10 21 | 644 | 0.3+ | 0.0 | 2005 11 29 | G96 | 0.4− | 0.6− |
| 2005 10 05 | 704 | 0.9+ | 0.1+ | 2005 10 21 | 644 | 0.1+ | 0.2+ | 2005 11 29 | G96 | 0.3+ | 0.7− |
| 2005 10 05 | 704 | 0.0 | 0.5+ | 2005 10 22 | 703 | 0.5− | 0.1+ | 2005 11 29 | G96 | 1.2− | 0.2− |
| 2005 10 07 | 703 | 0.2+ | 0.8− | 2005 10 22 | 703 | 0.6− | 0.6+ | 2005 12 04 | 704 | 0.2− | 1.3+ |
| 2005 10 07 | 699 | 0.4+ | 0.4− | 2005 10 22 | 703 | 0.4− | 0.4+ | 2005 12 04 | 704 | 1.0+ | 0.1− |
| 2005 10 07 | 703 | 0.3+ | 0.1− | 2005 10 22 | 703 | 0.8− | 0.7− | 2005 12 04 | 704 | 0.9+ | 0.2+ |
| 2005 10 07 | 703 | 0.2− | 0.1− | 2005 10 22 | 703 | 0.3− | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.1− |
| 2005 10 07 | 703 | 0.1− | 0.7+ | 2005 10 22 | 703 | 1.0− | 0.5− | 2005 12 04 | 704 | 0.1− | 0.9+ |
| 2005 10 07 | 699 | 0.1+ | 0.2− | 2005 10 22 | 703 | 0.6− | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.1+ |
| 2005 10 07 | 699 | 0.2+ | 0.1+ | 2005 10 24 | 699 | 0.1+ | 0.3+ | 2005 12 04 | G96 | 0.2− | 0.0 |
| 2005 10 07 | 699 | 0.7+ | 0.3+ | 2005 10 24 | 699 | 0.1− | 1.0− | 2005 12 04 | G96 | 0.4− | 0.1− |
| 2005 10 08 | 557 | 1.1+ | 0.2− | 2005 10 24 | 699 | 0.8− | 0.2− | 2006 01 23 | G96 | 0.2+ | 0.2+ |
| 2005 10 08 | 557 | 0.9− | 0.5− | 2005 10 24 | A50 | 1.5+ | 0.1− | 2006 01 23 | G96 | 0.5+ | 0.7+ |
| 2005 10 08 | 557 | 0.1− | 0.6+ | 2005 10 24 | A50 | 0.5− | 0.4+ | 2006 01 23 | G96 | 0.1− | 0.2− |
| 2005 10 08 | 557 | 0.2+ | 0.8+ | 2005 10 28 | 704 | 0.1− | 0.7+ | 2006 01 23 | G96 | 0.7+ | 0.2− |

**2005 SL$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.13624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19544749 | $\omega$ | 18.85882 | | −0.98970090 | −0.14176657 | |
| $a$ | 2.9406904 | $\Omega$ | 152.96732 | | +0.12507941 | −0.92387043 | |
| $e$ | 0.0663475 | $i$ | 2.50428 | | +0.06962239 | −0.35547948 | |
| $P$ | 5.04 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 691 | 0.3+ | 0.0 | 2003 04 06 | 691 | 0.2+ | 0.2+ | 2005 09 30 | 691 | 0.1− | 0.0 |
| 2000 08 25 | 691 | 0.1− | 0.1+ | 2003 04 26 | 691 | 0.0 | 0.1− | 2005 10 01 | G96 | 0.0 | 0.4− |
| 2000 08 25 | 691 | 0.3− | 0.1+ | 2003 04 26 | 691 | 0.2+ | 0.3− | 2005 10 01 | G96 | 0.5+ | 0.1+ |
| 2003 03 26 | 699 | 0.6− | 0.4+ | 2003 04 26 | 691 | 0.3+ | 0.2− | 2005 10 01 | G96 | 0.3+ | 0.2− |
| 2003 03 26 | 699 | 0.2+ | 0.5− | 2005 09 24 | 691 | 0.1− | 0.1+ | 2005 10 01 | G96 | 0.3+ | 0.2− |
| 2003 03 26 | 699 | 0.7− | 0.3− | 2005 09 24 | 691 | 0.1− | 0.0 | 2005 10 03 | G96 | 0.2− | 0.2− |
| 2003 03 26 | 699 | 1.4− | 1.4− | 2005 09 24 | 691 | 0.0 | 0.0 | 2005 10 03 | G96 | 0.1− | 0.2− |
| 2003 04 06 | 691 | 0.1+ | 0.3+ | 2005 09 30 | 691 | 0.3+ | 0.2+ | 2005 10 03 | G96 | 0.1− | 0.2− |
| 2003 04 06 | 691 | 0.1− | 0.5+ | 2005 09 30 | 691 | 0.1− | 0.1− | 2005 10 03 | G96 | 0.0 | 0.2− |

**2005 SQ$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.36986 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26708019 | $\omega$ | 109.46612 | | +0.25960365 | +0.96567907 | |
| $a$ | 2.3880400 | $\Omega$ | 175.55514 | | −0.92155145 | +0.25030991 | |
| $e$ | 0.1376569 | $i$ | 6.19188 | | −0.28870205 | +0.06934608 | |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.5+ | 0.4− | 2005 09 30 | 691 | 0.1+ | 0.0 | 2005 10 06 | 691 | 0.1+ | 0.1+ |
| 2001 08 13 | 608 | 0.3− | 0.1+ | 2005 09 30 | 691 | 0.2− | 0.2− | 2005 10 06 | 691 | 0.3+ | 0.1+ |
| 2001 08 13 | 608 | 0.1− | 0.3− | 2005 10 01 | 691 | 0.1+ | 0.1+ | 2005 10 27 | 691 | 0.1− | 0.6+ |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2005 10 01 | 691 | 0.2+ | 0.1− | 2005 10 27 | 691 | 0.0 | 0.1+ |
| 2004 04 20 | 691 | 0.0 | 0.3+ | 2005 10 01 | 691 | 0.1+ | 0.0 | 2005 10 27 | 691 | 0.3+ | 0.1− |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2005 10 03 | G96 | 0.0 | 0.2− | 2005 12 01 | G96 | 0.5+ | 0.0 |
| 2005 09 24 | 691 | 0.3− | 0.2+ | 2005 10 03 | G96 | 0.1+ | 0.1− | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2005 09 24 | 691 | 0.7− | 0.2+ | 2005 10 03 | G96 | 0.2− | 0.1− | 2005 12 01 | G96 | 0.2+ | 0.5− |
| 2005 09 24 | 691 | 0.5− | 0.3+ | 2005 10 03 | G96 | 0.1− | 0.1− | 2005 12 01 | G96 | 0.3+ | 0.1+ |
| 2005 09 30 | 691 | 0.2− | 0.1+ | 2005 10 06 | 691 | 0.3+ | 0.2− | | | | |

**2005 SY$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.38144 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17371572 | $\omega$ | 183.05684 | | +0.90325825 | −0.42896565 | |
| $a$ | 3.1810950 | $\Omega$ | 202.35451 | | +0.39427962 | +0.83948693 | |
| $e$ | 0.0898477 | $i$ | 1.60162 | | +0.16931661 | +0.33354185 | |
| $P$ | 5.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 10 | 291 | 0.2+ | 0.2− | 2005 09 30 | G96 | 0.1+ | 0.4− | 2005 11 25 | G96 | 0.1+ | 0.5− |
| 2003 05 10 | 291 | 0.4− | 0.7− | 2005 09 30 | G96 | 0.5+ | 0.5− | 2005 11 25 | G96 | 0.2+ | 0.6− |
| 2003 05 10 | 291 | 0.0 | 0.4+ | 2005 09 30 | G96 | 0.3+ | 0.4− | 2005 11 25 | G96 | 0.3+ | 0.3− |
| 2004 08 12 | 807 | 0.0 | 0.1+ | 2005 10 07 | 691 | 0.3+ | 0.0 | 2005 11 25 | G96 | 0.2− | 0.2− |
| 2004 08 12 | 807 | 0.1+ | 0.0 | 2005 10 07 | 691 | 0.1+ | 0.2+ | 2005 12 02 | G96 | 0.2+ | 0.4− |
| 2005 09 24 | 691 | 0.8− | 0.2+ | 2005 10 07 | 691 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.2+ | 0.3− |
| 2005 09 24 | 691 | 0.3− | 0.1− | 2005 10 11 | 691 | 0.4+ | 0.0 | 2005 12 02 | G96 | 0.4+ | 0.5− |
| 2005 09 24 | 691 | 0.2− | 0.3+ | 2005 10 11 | 691 | 0.0 | 0.0 | 2005 12 02 | G96 | 0.0 | 0.4− |
| 2005 09 30 | G96 | 0.3+ | 0.4− | 2005 10 11 | 691 | 0.1− | 0.1+ | | | | |

**2005 SX$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.17252 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26511583 | $\omega$ | 215.07016 | | +0.38589386 | −0.89704602 | |
| $a$ | 2.3998215 | $\Omega$ | 213.77178 | | +0.90995930 | +0.40854191 | |
| $e$ | 0.2275696 | $i$ | 22.79765 | | +0.15185520 | −0.16852875 | |
| $P$ | 3.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 12 | 644 | 0.2+ | 1.3+ | 2005 09 25 | 644 | 0.1+ | 0.2− | 2005 10 23 | 683 | 1.1− | 0.7− |
| 2003 03 12 | 644 | 0.7+ | 1.0+ | 2005 09 25 | 644 | 0.1+ | 0.2− | 2005 10 23 | 683 | (1.6− | 2.4−) |
| 2003 03 12 | 644 | 0.4− | 1.2+ | 2005 09 25 | 644 | 0.2− | 0.2+ | 2005 10 28 | 703 | 0.0 | 0.3− |
| 2004 06 17 | 691 | 0.1+ | 0.2+ | 2005 09 26 | 703 | 1.3− | 0.6+ | 2005 10 28 | 703 | 0.2+ | 0.3+ |
| 2004 06 17 | 691 | 0.1+ | 0.2+ | 2005 09 26 | 703 | 0.8− | 0.2+ | 2005 10 28 | 703 | 0.1− | 0.0 |
| 2004 06 17 | 691 | 0.1− | 0.0 | 2005 09 26 | 703 | 0.3− | 0.2+ | 2005 10 28 | 703 | 0.5+ | 0.7+ |
| 2005 09 01 | 599 | 0.3− | 0.4− | 2005 09 26 | 703 | 0.5− | 0.7− | 2005 10 30 | 699 | 0.3− | 0.1− |
| 2005 09 01 | 599 | 0.3+ | 0.2+ | 2005 10 02 | 644 | 0.1− | 0.0 | 2005 10 30 | 699 | 0.4− | 0.3+ |
| 2005 09 01 | 599 | 1.4+ | 0.4− | 2005 10 02 | 644 | 0.1+ | 0.0 | 2005 10 30 | 699 | 0.2− | 0.4− |
| 2005 09 01 | 599 | 0.0 | 0.6− | 2005 10 02 | 644 | 0.2+ | 0.1− | 2005 10 30 | 699 | 0.7− | 0.6+ |
| 2005 09 12 | 699 | 1.1+ | 1.0− | 2005 10 12 | 704 | 0.9+ | 1.0+ | 2005 11 03 | 703 | 0.4− | 0.7− |
| 2005 09 12 | 699 | 0.6+ | 0.0 | 2005 10 12 | 704 | 0.5+ | 0.1− | 2005 11 03 | 703 | 1.9− | 0.4− |
| 2005 09 12 | 699 | 0.9+ | 0.3+ | 2005 10 12 | 704 | 0.2− | 1.0+ | 2005 11 03 | 703 | 0.2− | 0.0 |
| 2005 09 12 | 699 | 0.3+ | 0.5+ | 2005 10 12 | 704 | 0.4− | 0.0 | 2005 11 03 | 703 | 0.5+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 13 | 704 | 0.7− | 1.4+ | 2005 10 12 | 704 | 0.7+ | 1.0+ | 2005 11 05 | 704 | 0.9+ | 0.4− |
| 2005 09 13 | 704 | 1.0− | 0.2− | 2005 10 22 | 644 | 0.0 | 0.1+ | 2005 11 05 | 704 | 1.0+ | 1.3+ |
| 2005 09 13 | 704 | 0.1+ | 0.9+ | 2005 10 22 | 644 | 0.2+ | 0.0 | 2005 11 05 | 704 | 0.1− | 0.5− |
| 2005 09 13 | 704 | 0.4+ | 0.1+ | 2005 10 22 | 644 | 0.0 | 0.2− | | | | |
| 2005 09 13 | 704 | 0.5− | 0.3+ | 2005 10 23 | 683 | (2.4− | 1.2−) | | | | |

**2005 SN$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.81216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19120519 | $\omega$ | 312.58930 | | +0.97509555 | −0.22001311 | |
| $a$ | 2.9840282 | $\Omega$ | 60.13845 | | +0.21176212 | +0.88609151 | |
| $e$ | 0.1178945 | $i$ | 1.84891 | | +0.06592020 | +0.40796577 | |
| $P$ | 5.15 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 08 | 691 | 0.3+ | 0.4+ | 2005 10 03 | G96 | 0.1− | 0.0 | 2005 10 28 | G96 | 0.3− | 0.2+ |
| 2003 04 08 | 691 | 0.2+ | 0.5+ | 2005 10 06 | 699 | 0.8+ | 1.1+ | 2005 10 28 | G96 | 0.1− | 0.0 |
| 2003 04 08 | 691 | 0.4+ | 1.1+ | 2005 10 06 | 699 | 0.6+ | 0.4+ | 2005 11 29 | G96 | 0.8+ | 0.1− |
| 2005 09 25 | 644 | 0.0 | 0.8+ | 2005 10 06 | 699 | 2.5+ | 0.3+ | 2005 11 29 | G96 | 0.2+ | 0.0 |
| 2005 09 25 | 644 | 0.4− | 0.4+ | 2005 10 06 | 699 | 0.4− | 0.1+ | 2005 11 29 | G96 | 0.2+ | 0.1− |
| 2005 09 25 | 644 | 0.0 | 0.4+ | 2005 10 12 | 691 | 0.3− | 0.2+ | 2005 11 29 | G96 | 0.7+ | 0.1+ |
| 2005 09 30 | 691 | 0.1− | 0.1− | 2005 10 12 | 691 | 0.2+ | 0.1− | 2005 12 04 | G96 | 0.2− | 0.7+ |
| 2005 09 30 | 691 | 0.0 | 0.2− | 2005 10 12 | 691 | 0.0 | 0.3+ | 2005 12 04 | G96 | 0.1+ | 0.2+ |
| 2005 09 30 | 691 | 0.5− | 0.2− | 2005 10 27 | 691 | 0.6− | 0.4− | 2005 12 04 | G96 | 0.2− | 0.2+ |
| 2005 10 01 | G96 | 0.3− | 0.1− | 2005 10 27 | 691 | 0.2− | 0.7+ | 2005 12 04 | G96 | 0.1− | 0.2+ |
| 2005 10 01 | G96 | 0.2− | 0.1− | 2005 10 27 | 691 | 0.2− | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.7− |
| 2005 10 01 | G96 | 0.2− | 0.1− | 2005 10 27 | 240 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 2005 10 01 | G96 | 0.0 | 0.0 | 2005 10 27 | 240 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2005 10 03 | G96 | 0.2+ | 0.0 | 2005 10 27 | 240 | 0.7+ | 0.6− | 2006 10 22 | G96 | 0.1+ | 0.8+ |
| 2005 10 03 | G96 | 0.3+ | 0.2− | 2005 10 28 | G96 | 0.2− | 0.2+ | | | | |
| 2005 10 03 | G96 | 0.2+ | 0.1− | 2005 10 28 | G96 | 0.0 | 0.3+ | | | | |

**2005 SZ$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.04187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27960348 | $\omega$ | 308.46727 | | +0.30965385 | +0.95030559 | |
| $a$ | 2.3161908 | $\Omega$ | 339.50133 | | −0.84129498 | +0.25806203 | |
| $e$ | 0.1425394 | $i$ | 5.26805 | | −0.44309959 | +0.17413578 | |
| $P$ | 3.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 0.2+ | 0.1− | 2001 07 24 | 644 | 0.2+ | 0.2− | 2005 09 30 | 691 | 0.1+ | 0.1− |
| 2001 06 30 | 644 | 0.3− | 0.2− | 2004 03 20 | 704 | 0.0 | 0.1+ | 2005 09 30 | 691 | 0.2+ | 0.1− |
| 2001 06 30 | 644 | 0.2+ | 0.2− | 2004 03 20 | 704 | 0.6+ | 1.0+ | 2005 09 30 | 691 | 0.2+ | 0.1− |
| 2001 06 30 | 644 | 0.4− | 0.2− | 2004 03 20 | 704 | 0.9− | 0.3− | 2005 10 28 | 703 | 0.2− | 0.8+ |
| 2001 06 30 | 644 | 0.4+ | 0.2− | 2004 04 21 | 704 | 0.4+ | 0.3− | 2005 10 28 | 703 | 1.5− | 0.4+ |
| 2001 06 30 | 644 | 0.5− | 0.3− | 2004 04 21 | 704 | 0.6− | 0.0 | 2005 10 28 | 703 | 0.4+ | 0.3+ |
| 2001 07 11 | 644 | 0.1+ | 0.9+ | 2004 04 21 | 704 | 0.1+ | 0.3− | 2005 10 28 | 703 | 0.7+ | 1.4+ |
| 2001 07 11 | 644 | 0.2+ | 0.4+ | 2004 04 21 | 704 | 0.3+ | 0.4− | 2005 11 02 | 704 | (1.4− | 4.1−) |
| 2001 07 11 | 644 | 0.3− | 0.6+ | 2005 09 25 | 691 | 0.1− | 0.1− | 2005 11 02 | 704 | 0.8− | 1.3− |
| 2001 07 24 | 644 | 0.1+ | 0.1− | 2005 09 25 | 691 | 0.1− | 0.2− | 2005 11 02 | 704 | 0.0 | 0.8+ |
| 2001 07 24 | 644 | 0.1− | 0.0 | 2005 09 25 | 691 | 0.0 | 0.0 | | | | |

**2005 SE$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.00735 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22426317 | $\omega$ | 132.13271 | | +0.85423795 | +0.51599903 | |
| $a$ | 2.6830623 | $\Omega$ | 197.11288 | | −0.51745983 | +0.83214364 | |
| $e$ | 0.2780807 | $i$ | 12.44713 | | −0.05012830 | +0.20317963 | |
| $P$ | 4.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 07 | 691 | 0.1+ | 0.1− | 2005 09 30 | 644 | 0.0 | 0.0 | 2005 10 28 | 703 | 0.8− | 0.5− |
| 1996 09 07 | 691 | 0.1+ | 0.2− | 2005 09 30 | 644 | 0.1− | 0.3+ | 2005 10 28 | 703 | 0.7− | 0.1+ |
| 1996 09 07 | 691 | 0.2− | 0.0 | 2005 10 03 | 703 | 1.2+ | 0.5− | 2005 10 28 | 703 | 0.6+ | 0.5− |
| 2004 04 12 | 691 | 0.2− | 0.1+ | 2005 10 03 | 703 | 0.1− | 0.1+ | 2005 10 28 | 703 | 0.4− | 0.4− |
| 2004 04 12 | 691 | 0.2+ | 0.5+ | 2005 10 03 | 703 | 1.2− | 0.2− | 2005 10 29 | G96 | 0.2+ | 0.1+ |
| 2004 04 12 | 691 | 0.2+ | 0.1+ | 2005 10 03 | 703 | 1.5− | 0.9− | 2005 10 29 | G96 | 0.2− | 0.0 |
| 2005 08 30 | 699 | 1.3+ | 1.6+ | 2005 10 03 | 703 | 0.1+ | 0.7− | 2005 10 29 | G96 | 0.1− | 0.3− |
| 2005 08 30 | 644 | 0.2− | 0.5+ | 2005 10 03 | 703 | 0.6− | 1.2− | 2005 10 29 | G96 | 0.1+ | 0.0 |
| 2005 08 30 | 644 | 0.1− | 0.2+ | 2005 10 03 | 703 | (0.0 | 2.6−) | 2005 10 30 | G96 | 0.3− | 0.3− |
| 2005 08 30 | 699 | 0.2+ | 0.9− | 2005 10 03 | 703 | 1.3− | 0.8− | 2005 10 30 | G96 | 0.1+ | 0.2− |
| 2005 08 30 | 644 | 0.2+ | 0.3+ | 2005 10 06 | 699 | 0.2+ | 0.6+ | 2005 10 30 | G96 | 0.0 | 0.4− |
| 2005 08 30 | 699 | 0.1+ | 0.4− | 2005 10 06 | 699 | 1.0+ | 0.3+ | 2005 10 30 | G96 | 0.0 | 0.4− |
| 2005 08 30 | 644 | 0.0 | 0.2+ | 2005 10 06 | 699 | 0.8+ | 0.6+ | 2005 10 31 | 704 | 0.5− | 0.7− |
| 2005 08 30 | 699 | 0.2− | 0.2+ | 2005 10 06 | 699 | 1.1+ | 0.0 | 2005 10 31 | 704 | 1.1− | 0.8+ |
| 2005 08 30 | 644 | 0.2− | 0.1+ | 2005 10 07 | 691 | 0.1+ | 0.3+ | 2005 10 31 | 704 | 1.5− | 0.2+ |
| 2005 08 30 | 644 | 0.1+ | 0.0 | 2005 10 07 | 691 | 0.0 | 0.4+ | 2005 11 01 | G96 | (3.4+ | 0.8−) |
| 2005 09 25 | 644 | 0.1− | 0.3+ | 2005 10 07 | 691 | 0.1− | 0.2+ | 2005 11 01 | G96 | 0.2− | 0.3− |
| 2005 09 25 | 644 | 0.2− | 0.1+ | 2005 10 11 | 691 | 0.1+ | 0.5+ | 2005 11 01 | G96 | 0.1+ | 0.2− |
| 2005 09 25 | 644 | 0.1− | 0.5+ | 2005 10 11 | 691 | 0.1− | 0.2+ | 2005 11 01 | G96 | 0.1− | 0.2+ |
| 2005 09 30 | G96 | 0.2− | 0.0 | 2005 10 11 | 691 | 0.1+ | 0.3+ | 2005 11 01 | G96 | 0.1− | 0.0 |
| 2005 09 30 | G96 | 0.1+ | 0.1− | 2005 10 22 | 703 | 0.8+ | 1.3− | 2005 11 01 | G96 | 0.3− | 0.0 |
| 2005 09 30 | G96 | 0.2+ | 0.1+ | 2005 10 22 | 703 | 0.4− | 0.4+ | 2005 11 01 | G96 | 1.2+ | 0.2+ |
| 2005 09 30 | G96 | 0.0 | 0.0 | 2005 10 22 | 703 | 1.1+ | 0.6− | 2005 11 01 | G96 | 0.2− | 0.2− |
| 2005 09 30 | 644 | 0.1− | 0.1+ | 2005 10 22 | 703 | 1.3+ | 0.0 | | | | |

**2005 SW$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.16762 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29356031 | $\omega$ | 117.67108 | | +0.74660488 | +0.66431923 | |
| $a$ | 2.2421835 | $\Omega$ | 200.76225 | | −0.64021008 | +0.70294685 | |
| $e$ | 0.1847969 | $i$ | 5.74942 | | −0.18086517 | +0.25405844 | |
| $P$ | 3.36 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.1+ | 0.2− | 2005 09 30 | G96 | 0.1+ | 0.2− | 2005 10 07 | G96 | 0.2+ | 0.1+ |
| 1995 09 29 | 691 | 0.1+ | 0.9− | 2005 09 30 | G96 | 0.1− | 0.2− | 2005 10 07 | G96 | 0.1− | 0.0 |
| 1995 09 29 | 691 | 0.0 | 0.1− | 2005 10 01 | 291 | 0.2− | 0.1+ | 2005 10 11 | 701 | 0.2+ | 0.5− |
| 2004 03 16 | 691 | 0.1− | 0.1+ | 2005 10 01 | 291 | 0.1− | 0.2+ | 2005 10 11 | 691 | 0.1+ | 0.2+ |
| 2004 03 16 | 691 | 0.2+ | 0.4+ | 2005 10 01 | 291 | 0.2− | 0.1+ | 2005 10 11 | 701 | 0.1− | 0.3− |
| 2004 03 16 | 691 | 0.2+ | 0.2+ | 2005 10 03 | 703 | 1.5+ | 1.2− | 2005 10 11 | 691 | 0.0 | 0.2+ |
| 2005 08 30 | 644 | 0.1+ | 0.2+ | 2005 10 03 | 703 | 0.2− | 0.2− | 2005 10 11 | 691 | 0.0 | 0.2+ |
| 2005 08 30 | 644 | 0.1− | 0.5+ | 2005 10 03 | 703 | 0.1− | 0.1+ | 2005 10 11 | 701 | 0.5− | 0.0 |
| 2005 08 30 | 644 | 0.0 | 0.4+ | 2005 10 03 | 703 | 0.8− | 0.7− | 2005 10 28 | 703 | 0.0 | 0.5+ |
| 2005 08 30 | 644 | 0.0 | 0.4+ | 2005 10 06 | 699 | 0.1− | 0.4+ | 2005 10 28 | 703 | 0.8+ | 1.5+ |
| 2005 08 30 | 644 | 0.2− | 0.4+ | 2005 10 06 | 699 | 0.7+ | 0.6+ | 2005 10 28 | 703 | 0.8− | 0.2− |
| 2005 08 30 | 644 | 0.1+ | 0.3+ | 2005 10 06 | 699 | 1.2− | 1.3+ | 2005 10 28 | 703 | 0.7− | 0.5+ |
| 2005 09 26 | 691 | 0.1+ | 0.1− | 2005 10 06 | 699 | 1.1− | 0.1+ | 2005 11 30 | G96 | 0.4+ | 0.4− |
| 2005 09 26 | 691 | 0.1+ | 0.2− | 2005 10 07 | 691 | 0.1+ | 0.1+ | 2005 11 30 | G96 | 0.0 | 0.7− |
| 2005 09 26 | 691 | 0.0 | 0.1− | 2005 10 07 | 691 | 0.0 | 0.1+ | 2005 11 30 | G96 | 0.0 | 0.1+ |
| 2005 09 30 | G96 | 0.0 | 0.3− | 2005 10 07 | 691 | 0.1+ | 0.3+ | 2005 11 30 | G96 | 0.5− | 0.2− |
| 2005 09 30 | G96 | 0.2− | 0.2− | 2005 10 07 | G96 | 0.1− | 0.0 | | | | |

**2005 SB$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.13704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29532718 | $\omega$ | 202.30315 | | +0.65508961 | −0.75526496 | |
| $a$ | 2.2332316 | $\Omega$ | 206.78422 | | +0.69998464 | +0.61704129 | |
| $e$ | 0.1431434 | $i$ | 2.64493 | | +0.28439252 | +0.22098616 | |
| $P$ | 3.34 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.4+ | 0.2− | 2005 10 03 | 703 | 1.2− | 0.2+ | 2005 10 07 | 691 | 0.0 | 0.1+ |
| 1995 10 02 | 691 | 0.3+ | 0.2− | 2005 10 03 | 703 | 0.3− | 0.2− | 2005 10 11 | 691 | 0.1+ | 0.1− |
| 1995 10 02 | 691 | 0.4+ | 0.1− | 2005 10 03 | 703 | 0.5− | 0.2+ | 2005 10 11 | 691 | 0.1− | 0.2+ |
| 1995 10 15 | 691 | 0.4− | 0.2− | 2005 10 03 | 703 | 0.2− | 0.7+ | 2005 10 11 | 691 | 0.3+ | 0.0 |
| 1995 10 15 | 691 | 0.2− | 0.2− | 2005 10 06 | 699 | 1.4+ | 0.4+ | 2005 10 21 | 644 | 0.1+ | 0.2+ |
| 1995 10 15 | 691 | 0.1− | 0.1− | 2005 10 06 | 699 | 0.1+ | 0.8+ | 2005 10 21 | 644 | 0.3+ | 0.3+ |
| 2005 09 26 | 691 | 0.3− | 0.1− | 2005 10 06 | 699 | 0.2+ | 0.6− | 2005 10 21 | 644 | 0.2− | 0.6+ |
| 2005 09 26 | 691 | 0.1− | 0.2− | 2005 10 06 | 699 | 0.0 | 0.5+ | 2005 12 02 | G96 | 0.2− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 26 | 691 | 0.2− | 0.3− | 2005 10 07 | 704 | 0.4− | 0.7+ | 2005 12 02 | G96 | 0.0 | 0.1− |
| 2005 09 30 | G96 | 0.2− | 0.1− | 2005 10 07 | 704 | 0.1− | 0.7+ | 2005 12 02 | G96 | 0.2+ | 0.5− |
| 2005 09 30 | G96 | 0.2− | 0.1− | 2005 10 07 | 691 | 0.1+ | 0.3+ | 2005 12 02 | G96 | 0.1− | 0.5+ |
| 2005 09 30 | G96 | 0.1− | 0.2− | 2005 10 07 | 704 | 0.2+ | 0.4+ | | | | |
| 2005 09 30 | G96 | 0.0 | 0.3− | 2005 10 07 | 691 | 0.0 | 0.1+ | | | | |

**2005 SV$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.46507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22449476 | $\omega$ | 56.15503 | | −0.08881140 | +0.98851301 | |
| $a$ | 2.6812166 | $\Omega$ | 209.48665 | | −0.97611077 | −0.11081711 | |
| $e$ | 0.1142542 | $i$ | 14.38540 | | −0.19829349 | +0.10276962 | |
| $P$ | 4.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 09 | 691 | 0.1− | 0.7− | 2004 07 10 | 644 | 0.5+ | 0.3+ | 2005 10 07 | 691 | 0.0 | 0.2+ |
| 1996 10 09 | 691 | 0.0 | 0.2− | 2005 09 26 | 691 | 0.1− | 0.2+ | 2005 10 07 | 691 | 0.3+ | 0.3+ |
| 1996 10 09 | 691 | 0.2+ | 0.1+ | 2005 09 26 | 691 | 0.0 | 0.2+ | 2005 12 04 | G96 | 0.3− | 0.5− |
| 2004 06 12 | 704 | 0.8− | 0.7− | 2005 09 26 | 691 | 0.6− | 0.1+ | 2005 12 04 | G96 | 0.4− | 0.5− |
| 2004 06 12 | 704 | 0.3− | 0.1+ | 2005 09 30 | 691 | 0.3+ | 0.0 | 2005 12 04 | G96 | 0.2− | 0.0 |
| 2004 06 12 | 704 | 0.1− | 0.5+ | 2005 09 30 | 691 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.1+ | 0.3− |
| 2004 07 10 | 644 | 0.3+ | 0.2+ | 2005 09 30 | 691 | 0.0 | 0.2+ | | | | |
| 2004 07 10 | 644 | 0.5+ | 0.3+ | 2005 10 07 | 691 | 0.1+ | 0.1+ | | | | |

**2005 ST$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.52931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26776537 | $\omega$ | 63.32271 | | +0.76058795 | +0.64869960 | |
| $a$ | 2.3839645 | $\Omega$ | 256.22156 | | −0.60489220 | +0.69330834 | |
| $e$ | 0.2267099 | $i$ | 1.55521 | | −0.23582070 | +0.31386682 | |
| $P$ | 3.68 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 691 | 0.3− | 0.1+ | 2005 09 30 | 644 | 0.1+ | 0.1+ | 2005 10 21 | 644 | 0.0 | 0.6+ |
| 2001 06 27 | 691 | 0.4+ | 0.1− | 2005 10 03 | 703 | 0.9− | 0.2− | 2005 10 21 | 644 | 0.2+ | 0.2+ |
| 2001 06 27 | 691 | 0.0 | 0.0 | 2005 10 03 | 703 | 0.5+ | 0.7+ | 2005 10 21 | 644 | 0.1+ | 0.0 |
| 2004 03 26 | 691 | 0.3+ | 0.3+ | 2005 10 03 | 703 | 0.2+ | 0.3+ | 2005 10 22 | 703 | 0.4− | 0.3+ |
| 2004 03 26 | 691 | 0.3+ | 0.5+ | 2005 10 03 | 703 | 0.0 | 0.2− | 2005 10 22 | 703 | 0.2− | 0.8+ |
| 2004 03 26 | 691 | 0.1− | 0.4+ | 2005 10 06 | 699 | 0.0 | 0.0 | 2005 10 22 | 703 | 0.4+ | 0.0 |
| 2005 09 08 | A50 | 0.4− | 0.5+ | 2005 10 06 | 699 | 0.4+ | 0.0 | 2005 10 22 | 703 | 0.0 | 0.3− |
| 2005 09 08 | A50 | 0.6− | 0.5+ | 2005 10 06 | 699 | 0.3+ | 0.2− | 2005 10 30 | G96 | 0.3+ | 0.5− |
| 2005 09 22 | 644 | 0.1− | 0.4+ | 2005 10 06 | 699 | 0.6− | 0.5− | 2005 10 30 | G96 | 0.1− | 0.3− |
| 2005 09 22 | 644 | 0.1+ | 0.2+ | 2005 10 07 | 691 | 0.1+ | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.5− |
| 2005 09 22 | 644 | 0.1− | 0.4+ | 2005 10 07 | 704 | 0.2− | 0.0 | 2005 10 30 | G96 | 0.0 | 0.2− |
| 2005 09 27 | 691 | 0.2+ | 0.1+ | 2005 10 07 | 704 | 0.3− | 0.2+ | 2005 11 04 | 691 | 0.0 | 0.1− |
| 2005 09 27 | 691 | 0.1+ | 0.0 | 2005 10 07 | 691 | 0.1+ | 0.1− | 2005 11 04 | 691 | 0.1− | 0.2+ |
| 2005 09 27 | 691 | 0.2+ | 0.1− | 2005 10 07 | 704 | 2.0− | 1.0+ | 2005 11 04 | 691 | 0.3− | 0.0 |
| 2005 09 29 | 699 | 0.6+ | 0.4+ | 2005 10 07 | 704 | 1.0+ | 0.8+ | 2005 11 28 | G96 | 0.3− | 0.4− |
| 2005 09 29 | 699 | 0.7− | 0.1− | 2005 10 07 | 691 | 0.1− | 0.0 | 2005 11 28 | G96 | 0.1− | 0.6− |
| 2005 09 29 | 699 | 1.1− | 0.4− | 2005 10 11 | 691 | 0.0 | 0.0 | 2005 11 28 | G96 | 0.3+ | 0.7− |
| 2005 09 30 | 644 | 0.0 | 0.2+ | 2005 10 11 | 691 | 0.2+ | 0.1+ | 2005 11 28 | G96 | 0.0 | 0.6− |
| 2005 09 30 | 644 | 0.1− | 0.5+ | 2005 10 11 | 691 | 0.1+ | 0.1+ | | | | |

**2005 SL$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.03295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16629801 | $\omega$ | 289.82831 | | +0.90049466 | +0.42423505 | |
| $a$ | 3.2750003 | $\Omega$ | 45.20810 | | −0.33128377 | +0.81159929 | |
| $e$ | 0.1788281 | $i$ | 7.73958 | | −0.28170983 | +0.40166056 | |
| $P$ | 5.93 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 31 | 644 | 0.1+ | 0.1+ | 2005 09 30 | 699 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2005 08 31 | 644 | 0.0 | 0.0 | 2005 10 03 | 703 | 0.1− | 0.7− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2005 08 31 | 644 | 0.1+ | 0.3− | 2005 10 03 | 703 | 0.6− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.8− |
| 2005 09 28 | 644 | 0.1+ | 0.3− | 2005 10 03 | 703 | (2.3− | 0.3+) | 2006 11 16 | G96 | 0.1+ | 0.8− |
| 2005 09 28 | 644 | 0.3− | 0.5− | 2005 10 03 | 703 | 0.5+ | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2005 09 28 | 644 | 1.4− | 0.6+ | 2005 10 10 | 703 | 0.0 | 0.7+ | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2005 09 30 | 699 | 0.2+ | 0.7+ | 2005 10 10 | 703 | 0.6+ | 1.5− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2005 09 30 | 699 | 0.7+ | 0.8+ | 2005 10 10 | 703 | 0.4+ | 0.7+ | | | | |
| 2005 09 30 | 699 | 1.0+ | 0.3− | 2005 10 10 | 703 | 1.0− | 0.7+ | | | | |

**2005 SX$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.96563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27011769 | $\omega$ | 288.56142 | | +0.82050668 | +0.56630276 | |
| $a$ | 2.3701038 | $\Omega$ | 37.05761 | | −0.46351828 | +0.73887264 | |
| $e$ | 0.1361593 | $i$ | 7.42834 | | −0.33454387 | +0.36519641 | |
| $P$ | 3.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.5− | 0.3+ | 2005 09 28 | 644 | 0.5+ | 0.1− | 2005 10 27 | 691 | 0.1− | 0.4+ |
| 2001 07 20 | 644 | 0.3+ | 0.1− | 2005 09 28 | 644 | 0.8+ | 0.2− | 2005 10 27 | 691 | 0.1− | 0.3+ |
| 2001 07 20 | 644 | 0.1+ | 0.2+ | 2005 09 30 | 644 | 0.7− | 0.5− | 2005 10 27 | 691 | 0.2− | 0.2+ |
| 2004 04 13 | 691 | 0.1+ | 0.5+ | 2005 09 30 | 644 | 0.4+ | 0.3− | 2005 11 29 | G96 | 0.2+ | 0.1+ |
| 2004 04 13 | 691 | 0.3+ | 0.6− | 2005 09 30 | 644 | 0.2+ | 0.1+ | 2005 11 29 | G96 | 1.0− | 0.3+ |
| 2004 04 13 | 691 | 0.1− | 0.7+ | 2005 10 06 | 703 | 0.4− | 0.2+ | 2005 11 29 | G96 | 0.4+ | 0.1− |
| 2005 09 27 | A50 | 0.3+ | 0.2− | 2005 10 06 | 703 | 0.4− | 0.4− | 2005 11 29 | G96 | 0.9− | 0.5+ |
| 2005 09 27 | A50 | 0.3+ | 0.2− | 2005 10 06 | 703 | 0.5− | 0.2− | | | | |
| 2005 09 28 | 644 | 0.3+ | 0.0 | 2005 10 06 | 703 | 0.7+ | 0.4− | | | | |

**2005 SA$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.08780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29093715 | $\omega$ | 228.43261 | | +0.96350872 | +0.26507537 | |
| $a$ | 2.2556407 | $\Omega$ | 116.16551 | | −0.23158797 | +0.89524874 | |
| $e$ | 0.1974237 | $i$ | 2.37730 | | −0.13423102 | +0.35814069 | |
| $P$ | 3.39 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 31 | 691 | 0.2− | 0.1+ | 2005 10 01 | 691 | 0.2− | 0.1− | 2005 10 20 | 644 | 0.1− | 0.4+ |
| 2001 05 31 | 691 | 0.2− | 0.1+ | 2005 10 01 | 704 | 0.5+ | 0.9+ | 2005 10 21 | 699 | 0.3+ | 0.3− |
| 2001 05 31 | 691 | 0.4+ | 0.1+ | 2005 10 01 | 704 | 0.4+ | 0.8+ | 2005 10 21 | 699 | 0.8+ | 0.1+ |
| 2004 03 29 | 691 | 0.1− | 0.4+ | 2005 10 01 | 704 | 0.5+ | 0.3+ | 2005 10 21 | 699 | 1.6+ | 1.9− |
| 2004 03 29 | 691 | 0.4+ | 0.5+ | 2005 10 01 | 704 | 0.1+ | 0.3− | 2005 10 21 | 699 | 0.2+ | 0.9+ |
| 2004 03 29 | 691 | 0.2+ | 0.4+ | 2005 10 05 | 704 | 0.3− | 0.0 | 2005 10 27 | 704 | 0.8− | 1.1+ |
| 2005 09 14 | 703 | 0.4+ | 0.1− | 2005 10 05 | 704 | 0.1− | 0.2+ | 2005 10 27 | 704 | 0.7+ | 1.2+ |
| 2005 09 14 | 703 | 0.6+ | 0.2− | 2005 10 05 | 704 | 0.1− | 0.3+ | 2005 10 27 | 704 | 1.1− | 0.0 |
| 2005 09 14 | 703 | 0.5− | 0.8+ | 2005 10 05 | 704 | 0.4− | 0.0 | 2005 10 27 | 704 | 0.0 | 0.2+ |
| 2005 09 14 | 703 | 0.4− | 0.3− | 2005 10 05 | 704 | 0.2− | 0.2+ | 2005 10 27 | 704 | 1.0− | 0.2+ |
| 2005 09 23 | 703 | 0.2+ | 1.3− | 2005 10 06 | 699 | 0.3+ | 0.7+ | 2005 10 28 | 704 | 0.8− | 1.5− |
| 2005 09 23 | 703 | 0.5− | 0.3+ | 2005 10 06 | 691 | 0.1+ | 0.0 | 2005 10 28 | 704 | 0.3+ | 0.8+ |
| 2005 09 23 | 703 | 0.7− | 0.1+ | 2005 10 06 | 699 | 1.3+ | 1.4+ | 2005 10 28 | 704 | 0.4− | 1.2+ |
| 2005 09 29 | 644 | 0.1− | 0.3− | 2005 10 06 | 691 | 0.1+ | 0.1− | 2005 10 28 | 704 | 1.4− | 0.5+ |
| 2005 09 29 | 644 | 0.0 | 0.5− | 2005 10 06 | 699 | 0.2+ | 0.1− | 2005 11 01 | G96 | 0.7+ | 0.8− |
| 2005 09 29 | 644 | 0.2+ | 0.2+ | 2005 10 06 | 691 | 0.1+ | 0.0 | 2005 11 01 | G96 | 0.4+ | 0.1− |
| 2005 09 30 | 699 | 1.3− | 1.0+ | 2005 10 06 | 699 | 0.2+ | 0.7+ | 2005 11 01 | G96 | 0.4+ | 0.3− |
| 2005 09 30 | 699 | 0.8+ | 0.9− | 2005 10 07 | 703 | 0.1− | 0.7− | 2005 11 01 | G96 | 0.1+ | 0.2− |
| 2005 09 30 | 699 | 0.0 | 1.1+ | 2005 10 07 | 703 | 0.7− | 0.4− | 2005 11 04 | 691 | 0.1− | 0.3+ |
| 2005 09 30 | 644 | 0.2− | 0.3− | 2005 10 07 | 703 | 1.3− | 0.3− | 2005 11 04 | 691 | 0.2− | 0.0 |
| 2005 09 30 | 699 | 0.7− | 0.2− | 2005 10 07 | 703 | 0.9− | 0.2− | 2005 11 04 | 691 | 0.1− | 0.1+ |
| 2005 09 30 | 644 | 0.2− | 0.2− | 2005 10 12 | 691 | 0.1+ | 0.1+ | 2005 12 01 | G96 | 0.2+ | 0.1+ |
| 2005 09 30 | 644 | 1.2− | 0.3+ | 2005 10 12 | 691 | 0.3+ | 0.1− | 2005 12 01 | G96 | 0.5+ | 0.1+ |
| 2005 10 01 | 691 | 0.2− | 0.0 | 2005 10 12 | 691 | 0.3+ | 0.0 | 2005 12 01 | G96 | 0.4+ | 0.1+ |
| 2005 10 01 | 691 | 0.2− | 0.1− | 2005 10 20 | 644 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.3+ | 0.2+ |
| 2005 10 01 | 704 | 0.7+ | 0.1+ | 2005 10 20 | 644 | 0.4+ | 0.3− | | | | |

**2005 SC$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.71461 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21391743 | $\omega$ | 141.24912 | | +0.98906286 | | +0.14346996 |
| $a$ | 2.7688872 | $\Omega$ | 210.55425 | | −0.14644480 | | +0.92759450 |
| $e$ | 0.0803828 | $i$ | 3.85984 | | −0.01756650 | | +0.34494176 |
| $P$ | 4.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 11 | 691 | 0.2− | 0.4+ | 2005 09 30 | G96 | 0.2+ | 0.4− | 2005 11 25 | G96 | 0.4− | 0.5− |
| 1994 04 11 | 691 | 0.0 | 0.2− | 2005 09 30 | G96 | 0.6+ | 0.3+ | 2005 11 25 | G96 | 0.2+ | 0.6− |
| 1994 04 11 | 691 | 0.1− | 0.8− | 2005 09 30 | G96 | 0.1− | 0.4− | 2005 11 25 | G96 | 0.3+ | 0.8− |
| 2003 04 05 | 691 | 0.0 | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.1− | 2005 11 25 | G96 | 0.2− | 0.1+ |
| 2003 04 05 | 691 | 0.3+ | 0.2+ | 2005 10 07 | 691 | 0.2+ | 0.1+ | 2005 12 02 | G96 | 0.0 | 0.0 |
| 2003 04 05 | 691 | 0.1− | 0.3+ | 2005 10 07 | 691 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.3− | 0.3− |
| 2005 09 29 | G96 | 0.3− | 0.4+ | 2005 10 07 | 691 | 0.0 | 0.0 | 2005 12 02 | G96 | 0.1+ | 0.3− |
| 2005 09 29 | G96 | 0.7+ | 0.1+ | 2005 10 11 | 691 | 0.1+ | 0.2+ | 2005 12 02 | G96 | 0.1− | 0.6− |
| 2005 09 29 | G96 | 0.5+ | 0.2− | 2005 10 11 | 691 | 0.2− | 0.2+ | | | | |
| 2005 09 29 | G96 | 0.3+ | 0.4− | 2005 10 11 | 691 | 0.3− | 0.0 | | | | |

**2005 SR$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.94486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21214400 | $\omega$ | 138.09625 | | +0.98846278 | | +0.14020558 |
| $a$ | 2.7842969 | $\Omega$ | 213.97087 | | −0.15119008 | | +0.93607752 |
| $e$ | 0.0577209 | $i$ | 5.88622 | | +0.00910481 | | +0.32264728 |
| $P$ | 4.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 04 | 691 | 0.2+ | 0.1− | 2005 09 30 | G96 | 0.2+ | 0.4− | 2005 10 09 | 691 | 0.2− | 0.2+ |
| 1995 07 04 | 691 | 0.3− | 0.0 | 2005 09 30 | G96 | 0.4+ | 0.2− | 2005 10 09 | 691 | 0.1− | 0.2+ |
| 1995 07 04 | 691 | 0.1+ | 0.1+ | 2005 09 30 | G96 | 0.1+ | 0.2+ | 2005 10 30 | 291 | 0.3− | 0.2+ |
| 1996 12 08 | 691 | 0.0 | 0.5+ | 2005 09 30 | G96 | 0.3+ | 0.3− | 2005 10 30 | 291 | 0.1+ | 0.5+ |
| 1996 12 08 | 691 | 0.1− | 0.0 | 2005 10 07 | G96 | 0.3+ | 0.1+ | 2005 10 30 | 291 | 0.2− | 0.1− |
| 1996 12 08 | 691 | 0.1+ | 0.8− | 2005 10 07 | G96 | 0.1+ | 0.2− | 2005 12 02 | G96 | 0.2+ | 0.1+ |
| 2005 09 29 | 691 | 0.1+ | 0.3− | 2005 10 07 | G96 | 0.2− | 0.5− | 2005 12 02 | G96 | 0.2+ | 0.3+ |
| 2005 09 29 | 691 | 0.0 | 0.2− | 2005 10 07 | G96 | 0.1+ | 0.0 | 2005 12 02 | G96 | 0.3− | 0.0 |
| 2005 09 29 | 691 | 0.1− | 0.2− | 2005 10 09 | 691 | 0.3+ | 0.1− | 2005 12 02 | G96 | 0.3− | 0.4+ |

**2005 SM$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.30807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28128073 | $\omega$ | 142.56280 | | +0.15495159 | | −0.98592135 |
| $a$ | 2.3069742 | $\Omega$ | 298.44393 | | +0.88824223 | | +0.16687974 |
| $e$ | 0.1760972 | $i$ | 4.09838 | | +0.43245318 | | +0.01049928 |
| $P$ | 3.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2+ | 0.4+ | 2003 01 31 | 704 | 1.3− | 0.5− | 2005 10 01 | 703 | 0.5+ | 0.5− |
| 2002 12 11 | 704 | 0.0 | 0.1− | 2003 01 31 | 704 | 0.1− | 0.3− | 2005 10 01 | 703 | 0.4− | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2005 09 24 | 941 | 1.8− | 0.9+ | 2005 10 01 | 703 | 1.0+ | 1.5− |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2005 09 24 | 941 | 2.5− | 0.3+ | 2005 10 01 | 941 | 0.6+ | 0.3− |
| 2002 12 11 | 704 | 0.5− | 0.1− | 2005 09 24 | 941 | 0.8− | 0.0 | 2005 10 01 | 941 | 0.6+ | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.2+ | 2005 09 25 | 941 | 0.0 | 1.6− | 2005 10 01 | 941 | 0.5+ | 0.3+ |
| 2002 12 31 | 704 | 0.5− | 0.6− | 2005 09 25 | 941 | 0.0 | 2.5− | 2005 10 01 | 941 | 0.0 | 0.5+ |
| 2002 12 31 | 704 | 0.6+ | 0.4+ | 2005 09 29 | 699 | 1.4+ | 0.1+ | 2005 10 01 | 941 | 0.1+ | 0.5+ |
| 2002 12 31 | 704 | 0.4− | 0.3− | 2005 09 29 | 699 | 0.5+ | 0.5+ | 2005 10 08 | 704 | (2.7− | 0.0 ) |
| 2002 12 31 | 704 | 0.5+ | 0.4+ | 2005 09 29 | 699 | 0.4− | 1.6+ | 2005 10 08 | 704 | (3.7− | 0.8+) |
| 2003 01 08 | 704 | 0.3+ | 0.4+ | 2005 09 29 | 699 | 0.4+ | 0.3+ | 2005 10 08 | 704 | (2.2− | 0.8+) |
| 2003 01 08 | 704 | 1.2+ | 0.1+ | 2005 09 30 | 941 | 0.1+ | 0.4+ | 2006 02 02 | G96 | 0.3− | 0.4+ |
| 2003 01 08 | 704 | 0.3+ | 0.1+ | 2005 09 30 | 941 | 0.1+ | 0.2+ | 2006 02 02 | G96 | 0.1+ | 0.4+ |
| 2003 01 08 | 704 | 0.8− | 0.1− | 2005 09 30 | 941 | 0.0 | 0.1+ | 2006 02 02 | G96 | 0.4− | 0.1+ |
| 2003 01 08 | 704 | 0.5+ | 0.4+ | 2005 09 30 | 941 | 0.2+ | 0.1+ | 2006 02 02 | G96 | 0.1+ | 0.7+ |
| 2003 01 31 | 704 | 0.1− | 0.7− | 2005 09 30 | 941 | 0.2+ | 0.1− | | | | |
| 2003 01 31 | 704 | 0.1− | 0.9− | 2005 10 01 | 703 | 0.4+ | 0.1− | | | | |

**2005 SK$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.10361 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17653804 | $\omega$ | 228.38377 | | +0.30617988 | | +0.95148161 |
| $a$ | 3.1470998 | $\Omega$ | 59.46987 | | −0.86251268 | | +0.29086934 |
| $e$ | 0.1159690 | $i$ | 2.03615 | | −0.40289671 | | +0.10038810 |
| $P$ | 5.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 691 | 0.1− | 0.4+ | 2005 10 06 | 691 | 0.1+ | 0.0 | 2005 12 04 | G96 | 0.0 | 0.2+ |
| 2000 11 27 | 691 | 0.0 | 0.2+ | 2005 10 06 | 691 | 0.3− | 0.4− | 2005 12 04 | G96 | 0.0 | 0.4− |
| 2000 11 27 | 691 | 0.0 | 0.0 | 2005 10 06 | 691 | 0.4+ | 0.3− | 2005 12 04 | G96 | 0.1+ | 0.5+ |
| 2003 04 07 | 691 | 0.1+ | 0.9+ | 2005 10 12 | 691 | 0.3+ | 0.2+ | 2005 12 04 | G96 | 0.1+ | 0.3+ |
| 2003 04 07 | 691 | 0.6+ | 0.8+ | 2005 10 12 | 691 | 0.6− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2003 04 07 | 691 | (0.1+ | 1.7+) | 2005 10 12 | 691 | 0.1+ | 0.7+ | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2005 09 25 | 691 | 0.1− | 0.4+ | 2005 10 28 | G96 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2005 09 25 | 691 | 0.1− | 0.3− | 2005 10 28 | G96 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.5− | 0.3− |
| 2005 09 25 | 691 | 0.2− | 0.3− | 2005 10 28 | G96 | 0.2+ | 0.4+ | 2006 11 24 | 691 | 0.0 | 0.6− |
| 2005 10 01 | 691 | 0.1− | 0.4+ | 2005 10 28 | G96 | 0.0 | 0.0 | 2006 11 24 | 691 | 1.1+ | 0.2− |
| 2005 10 01 | 691 | 0.2− | 0.2+ | 2005 12 02 | 695 | 0.0 | 0.4+ | | | | |
| 2005 10 01 | 691 | 0.0 | 0.6+ | 2005 12 02 | 695 | 0.0 | 0.5+ | | | | |

**2005 SF$_{139}$ = 2006 WH$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.08395 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18076550 | $\omega$ | 345.56278 | | +0.35644686 | | −0.93349368 |
| $a$ | 3.0978403 | $\Omega$ | 83.54325 | | +0.86108090 | | +0.31194303 |
| $e$ | 0.1702955 | $i$ | 2.25984 | | +0.36260904 | | +0.17686462 |
| $P$ | 5.45 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 691 | 0.1− | 0.1+ | 2005 10 06 | 691 | 0.1+ | 0.2+ | 2005 11 01 | G96 | 0.3+ | 0.3− |
| 2002 03 10 | 691 | 0.1− | 0.0 | 2005 10 06 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2002 03 10 | 691 | 0.3+ | 0.3+ | 2005 10 06 | 691 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2005 09 25 | 691 | 0.3− | 0.1− | 2005 10 12 | 691 | 0.4+ | 0.1− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2005 09 25 | 691 | 0.2− | 0.4− | 2005 10 12 | 691 | 0.3+ | 0.4+ | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2005 09 25 | 691 | 0.2− | 0.1− | 2005 10 12 | 691 | 0.1− | 0.6+ | 2006 11 27 | G96 | 0.3− | 0.1+ |
| 2005 10 01 | 691 | 0.4− | 0.1+ | 2005 11 01 | G96 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.5− | 0.1− |
| 2005 10 01 | 691 | 0.2+ | 0.0 | 2005 11 01 | G96 | 0.8+ | 0.4− | 2006 11 27 | G96 | 0.4+ | 0.2+ |
| 2005 10 01 | 691 | 0.2− | 0.4− | 2005 11 01 | G96 | 0.0 | 0.4− | 2006 11 27 | G96 | 0.1− | 0.2+ |

**2005 SH$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.80849 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21880252 | $\omega$ | 298.88254 | | +0.10508518 | | −0.99381896 |
| $a$ | 2.7275193 | $\Omega$ | 145.02896 | | +0.93277131 | | +0.08602347 |
| $e$ | 0.0404515 | $i$ | 3.58013 | | +0.34481123 | | +0.07017004 |
| $P$ | 4.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 691 | 0.1− | 0.0 | 2005 10 01 | 691 | 0.3+ | 0.1− | 2006 11 20 | G96 | 0.2− | 0.4+ |
| 2003 04 05 | 691 | 0.1+ | 0.1+ | 2005 10 01 | 691 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.4+ |
| 2003 04 05 | 691 | 0.1+ | 0.1− | 2005 10 06 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2005 09 25 | 691 | 0.1+ | 0.1− | 2005 10 06 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2005 09 25 | 691 | 0.4− | 0.8+ | 2005 10 06 | 691 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2005 09 25 | 691 | 0.3+ | 0.1− | 2005 10 07 | 703 | 0.7− | 0.9− | 2006 11 21 | G96 | 0.4+ | 0.8− |
| 2005 09 30 | 699 | 0.7+ | 0.4+ | 2005 10 07 | 703 | 0.9− | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.2+ |
| 2005 09 30 | 699 | (1.4− | 1.6+) | 2005 10 07 | 703 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.1− | 0.3+ |
| 2005 09 30 | 699 | 1.0+ | 0.5+ | 2005 10 07 | 703 | 1.4− | 1.3+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2005 09 30 | 699 | 0.5+ | 1.2+ | 2006 11 20 | G96 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2005 10 01 | 691 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.0 | 0.4+ | | | | |

**2005 SJ$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.87767 | | | (2000.0) | | |
| $n$ | 0.20580198 | $\omega$ | 2.93940 | | +0.23530367 | −0.97056742 |
| $a$ | 2.8412079 | $\Omega$ | 73.45522 | | +0.89062588 | +0.19419166 |
| $e$ | 0.0410495 | $i$ | 3.06733 | | +0.38912431 | +0.14243766 |
| $P$ | 4.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 691 | 0.1− | 0.4− | 2005 10 06 | 691 | 0.2+ | 0.1− | 2005 11 01 | G96 | 0.2− | 0.6+ |
| 2003 04 04 | 691 | 0.5− | 0.0 | 2005 10 06 | 691 | 0.2+ | 0.2− | 2005 11 01 | G96 | 0.4− | 0.3+ |
| 2003 04 04 | 691 | 0.1− | 0.2− | 2005 10 06 | 691 | 0.0 | 0.2+ | 2005 11 01 | G96 | 0.0 | 0.5+ |
| 2003 04 30 | 691 | 0.9+ | 0.9+ | 2005 11 01 | G96 | 0.2− | 0.1+ | 2005 12 01 | G96 | 0.3+ | 0.7+ |
| 2003 04 30 | 691 | 0.5+ | 0.6+ | 2005 11 01 | G96 | 0.5− | 0.3+ | 2005 12 01 | G96 | 0.0 | 0.3+ |
| 2003 04 30 | 691 | 0.1+ | 0.9+ | 2005 11 01 | G96 | 0.9− | 0.3+ | 2005 12 01 | G96 | 0.2+ | 1.0+ |
| 2005 09 25 | 691 | 0.2− | 0.1+ | 2005 11 01 | G96 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.4+ | 0.7+ |
| 2005 09 25 | 691 | 0.3− | 0.3+ | 2005 11 01 | G96 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2005 09 25 | 691 | 0.0 | 0.0 | 2005 11 01 | G96 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.8+ |
| 2005 10 01 | 691 | 0.3− | 0.1+ | 2005 11 01 | G96 | 0.4− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2005 10 01 | 691 | 0.1− | 0.0 | 2005 11 01 | G96 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2005 10 01 | 691 | 0.1+ | 0.1+ | 2005 11 01 | G96 | 0.5+ | 0.3+ | | | | |

**2005 SC$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.64441 | | | (2000.0) | | |
| $n$ | 0.20411139 | $\omega$ | 339.99924 | | +0.51500204 | −0.85488994 |
| $a$ | 2.8568749 | $\Omega$ | 78.95727 | | +0.79489637 | +0.44890420 |
| $e$ | 0.0195228 | $i$ | 3.66495 | | +0.32080005 | +0.26009267 |
| $P$ | 4.83 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 691 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.3+ | 0.5− | 2005 12 01 | G96 | 0.3+ | 0.4+ |
| 2003 03 26 | 691 | 0.2+ | 0.3+ | 2005 10 07 | 703 | 0.9− | 0.9− | 2005 12 01 | G96 | 0.1+ | 0.3+ |
| 2003 03 26 | 691 | 0.2+ | 0.4+ | 2005 10 07 | 703 | 0.9− | 0.4+ | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2005 09 25 | 691 | 0.2− | 0.1+ | 2005 10 07 | 703 | (2.0− | 0.1−) | 2006 11 15 | G96 | 0.6+ | 0.1− |
| 2005 09 25 | 691 | 0.1− | 0.4+ | 2005 10 12 | 691 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2005 09 25 | 691 | 0.6− | 0.1− | 2005 10 12 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2005 10 01 | 691 | 0.1+ | 0.1+ | 2005 10 12 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3− | 1.0− |
| 2005 10 01 | 691 | 0.1+ | 0.1− | 2005 11 02 | G96 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.5− | 0.5+ |
| 2005 10 01 | 691 | 0.1− | 0.0 | 2005 11 02 | G96 | 0.6+ | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.4+ |
| 2005 10 06 | 691 | 0.0 | 0.2+ | 2005 11 02 | G96 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.3+ |
| 2005 10 06 | 691 | 0.1+ | 0.1+ | 2005 11 02 | G96 | 0.2− | 0.7− | 2006 12 01 | G96 | 0.4− | 0.1+ |
| 2005 10 06 | 691 | 0.1− | 0.1− | 2005 12 01 | G96 | 0.9+ | 0.4+ | | | | |

**2005 SN$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 81.04752 | | | (2000.0) | | |
| $n$ | 0.20945411 | $\omega$ | 293.18695 | | +0.99698088 | −0.05292059 |
| $a$ | 2.8080842 | $\Omega$ | 69.88546 | | +0.07183238 | +0.90645852 |
| $e$ | 0.0871068 | $i$ | 3.46914 | | −0.02948273 | +0.41896582 |
| $P$ | 4.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 14 | 691 | 0.1+ | 0.0 | 2005 09 25 | 691 | 0.0 | 0.1+ | 2005 10 12 | 691 | 0.2+ | 0.0 |
| 1996 12 14 | 691 | 0.2− | 0.2+ | 2005 10 01 | 691 | 0.1+ | 0.1+ | 2005 10 12 | 691 | 0.1+ | 0.5− |
| 1996 12 14 | 691 | 0.2+ | 0.2− | 2005 10 01 | 691 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.2− | 0.2− |
| 2000 08 27 | 807 | 0.2− | 0.3− | 2005 10 01 | 691 | 0.1− | 0.2+ | 2005 12 01 | G96 | 0.6− | 0.5− |
| 2000 08 27 | 807 | 0.4+ | 0.2− | 2005 10 06 | 691 | 0.0 | 0.0 | 2005 12 01 | G96 | 0.0 | 0.2+ |
| 2005 09 25 | 691 | 0.1− | 0.1+ | 2005 10 06 | 691 | 0.1+ | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2005 09 25 | 691 | 0.0 | 0.2+ | 2005 10 06 | 691 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.1+ |

**2005 SA$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 172.90534 | | | (2000.0) | | |
| $n$ | 0.28322174 | $\omega$ | 243.97648 | | +0.46166446 | +0.88269635 |
| $a$ | 2.2964218 | $\Omega$ | 53.79666 | | −0.76999089 | +0.44792783 |
| $e$ | 0.1542697 | $i$ | 6.24833 | | −0.44043156 | +0.14215418 |
| $P$ | 3.48 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 644 | 0.0 | 0.0 | 2005 10 24 | 699 | 0.5− | 0.4− | 2005 11 03 | 691 | 0.0 | 0.2+ |
| 2001 07 18 | 644 | 0.0 | 0.2+ | 2005 10 24 | 699 | 0.3− | 0.5− | 2005 11 03 | 691 | 0.2+ | 0.1+ |
| 2001 07 18 | 644 | 0.1− | 0.4+ | 2005 10 24 | 699 | 0.9− | 0.4+ | 2005 11 05 | 699 | 0.0 | 0.1+ |
| 2004 03 25 | 699 | 0.1− | 0.9+ | 2005 10 24 | 699 | 0.2+ | 0.6+ | 2005 11 05 | 699 | 0.2− | 0.8− |
| 2004 03 25 | 699 | 1.0+ | 0.0 | 2005 10 26 | 691 | 0.5+ | 0.4+ | 2005 11 05 | 699 | 0.7− | 1.3− |
| 2004 03 25 | 699 | 0.6− | 1.1+ | 2005 10 26 | 691 | 0.7+ | 0.8− | 2005 11 05 | 699 | 0.4+ | 1.0+ |
| 2004 03 25 | 699 | 1.2+ | 1.2+ | 2005 10 26 | 691 | 0.1+ | 0.2+ | 2005 11 28 | G96 | 0.2− | 0.5− |
| 2005 09 25 | 691 | 0.2− | 0.1− | 2005 10 28 | 704 | 0.3− | 0.5− | 2005 11 28 | G96 | 0.1+ | 0.2− |
| 2005 09 25 | 691 | 0.0 | 0.2− | 2005 10 28 | 704 | 0.1+ | 0.1+ | 2005 11 28 | G96 | 0.1− | 0.2− |
| 2005 09 25 | 691 | 0.1− | 0.3− | 2005 10 28 | 704 | 0.7+ | 1.5+ | 2005 11 28 | G96 | 0.2+ | 0.0 |
| 2005 10 01 | 704 | 1.3− | 0.7+ | 2005 10 29 | G96 | 0.2− | 0.1− | 2005 11 29 | G96 | 0.1+ | 0.4− |
| 2005 10 01 | 704 | 1.5− | 0.8+ | 2005 10 29 | G96 | 0.5+ | 0.2− | 2005 11 29 | G96 | 0.4− | 0.2− |
| 2005 10 01 | 704 | 1.3− | 0.3− | 2005 10 29 | G96 | 0.1+ | 0.2− | 2005 11 29 | G96 | 0.4− | 0.1− |
| 2005 10 01 | 704 | 1.1− | 0.2− | 2005 10 29 | G96 | 0.1+ | 0.2− | 2005 11 29 | G96 | 0.1+ | 0.1− |
| 2005 10 01 | 704 | 0.5− | 0.5+ | 2005 10 30 | 691 | 0.0 | 0.4+ | 2005 12 04 | G96 | 0.2+ | 0.1+ |
| 2005 10 01 | 703 | 0.1− | 0.1− | 2005 10 30 | 691 | 0.0 | 0.1+ | 2005 12 04 | G96 | 0.3+ | 0.3+ |
| 2005 10 01 | 703 | 0.1− | 0.5+ | 2005 10 30 | 691 | 0.1+ | 0.4+ | 2005 12 04 | G96 | 0.0 | 0.1+ |
| 2005 10 01 | 703 | 1.0− | 0.2− | 2005 10 31 | G96 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.4+ | 0.3+ |
| 2005 10 01 | 703 | (2.1− | 6.4+) | 2005 10 31 | G96 | 0.5− | 0.2+ | 2005 12 28 | G96 | 0.0 | 0.2+ |
| 2005 10 22 | 644 | 0.1+ | 0.3+ | 2005 10 31 | G96 | 0.2+ | 0.2+ | 2005 12 28 | G96 | 1.2+ | 0.2+ |
| 2005 10 22 | 644 | 0.3+ | 0.3+ | 2005 10 31 | G96 | 0.3+ | 0.2− | 2005 12 28 | G96 | 0.7+ | 0.1− |
| 2005 10 22 | 644 | 0.2− | 0.5+ | 2005 11 03 | 691 | 0.1− | 0.2+ | 2005 12 28 | G96 | 0.3+ | 0.2− |

**2005 SO$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 89.60894 | | | (2000.0) | | |
| $n$ | 0.22460277 | $\omega$ | 173.36365 | | +0.88683927 | −0.44027845 |
| $a$ | 2.6803570 | $\Omega$ | 213.89969 | | +0.41154906 | +0.89061010 |
| $e$ | 0.1215122 | $i$ | 14.56433 | | +0.21010350 | +0.11387946 |
| $P$ | 4.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 13 | 566 | 0.3+ | 0.3− | 2005 10 26 | 699 | 0.0 | 0.0 | 2005 11 06 | 691 | 0.0 | 0.2− |
| 1996 10 13 | 566 | 0.2− | 0.0 | 2005 10 26 | 699 | 0.0 | 0.9+ | 2005 11 06 | 691 | 0.1+ | 0.2− |
| 1996 10 13 | 566 | 0.0 | 0.3− | 2005 10 26 | 699 | 0.3+ | 0.5+ | 2005 11 06 | 691 | 0.2− | 0.0 |
| 2000 09 30 | 691 | 0.2− | 0.1+ | 2005 10 28 | 704 | 1.1+ | 1.0+ | 2005 11 06 | 683 | 0.6+ | 0.2− |
| 2000 09 30 | 691 | 0.1+ | 0.1+ | 2005 10 28 | 704 | 0.1− | 0.4+ | 2005 11 06 | 683 | 0.2+ | 1.5+ |
| 2000 09 30 | 691 | 0.0 | 0.0 | 2005 10 28 | 704 | 1.2+ | 0.2+ | 2005 11 06 | 683 | 0.0 | 0.6+ |
| 2005 09 25 | 644 | 0.1+ | 0.1+ | 2005 10 29 | 691 | 0.2+ | 0.2− | 2005 11 10 | 703 | 0.5− | 0.0 |
| 2005 09 25 | 644 | 0.4+ | 0.1+ | 2005 10 29 | 691 | 0.2+ | 0.0 | 2005 11 10 | 703 | 0.5− | 0.1− |
| 2005 09 25 | 644 | 0.0 | 0.4− | 2005 10 29 | 691 | 0.2+ | 0.2− | 2005 11 10 | 703 | 0.4− | 0.7− |
| 2005 10 01 | 704 | 0.4− | 0.7+ | 2005 10 30 | 644 | 0.3+ | 0.1− | 2005 11 10 | 703 | 0.1+ | 1.0− |
| 2005 10 01 | 704 | 0.2− | 0.4+ | 2005 10 30 | 644 | 0.3+ | 0.3− | 2005 11 20 | 644 | 0.0 | 0.2− |
| 2005 10 01 | 704 | 0.6− | 0.0 | 2005 10 30 | 644 | 0.2+ | 0.1− | 2005 11 20 | 644 | 0.0 | 0.3− |
| 2005 10 01 | 704 | 0.4− | 0.2− | 2005 11 03 | 704 | 0.1+ | 0.2+ | 2005 11 20 | 644 | 0.1+ | 0.0 |
| 2005 10 01 | 704 | 0.5− | 0.0 | 2005 11 03 | 704 | 0.2− | 0.3+ | 2005 11 20 | 699 | 0.0 | 0.0 |
| 2005 10 05 | 704 | 0.3+ | 0.5− | 2005 11 03 | 704 | 0.4− | 0.3+ | 2005 11 20 | 699 | (1.3− | 2.1−) |
| 2005 10 05 | 704 | 0.7+ | 0.0 | 2005 11 03 | 704 | 0.3− | 0.2+ | 2005 11 20 | 699 | (2.0+ | 0.6+) |
| 2005 10 05 | 704 | 0.2+ | 0.5− | 2005 11 03 | 704 | 0.1− | 0.9+ | 2005 11 20 | 699 | 0.2+ | 1.3+ |
| 2005 10 05 | 704 | 0.4− | 0.9− | 2005 11 04 | 683 | 0.4+ | 0.1− | 2005 11 21 | 699 | 0.8+ | 0.2− |
| 2005 10 05 | 704 | 0.3− | 0.8− | 2005 11 04 | 683 | 1.0+ | 0.8− | 2005 11 21 | 699 | 0.6+ | 0.4− |
| 2005 10 06 | 699 | 1.0+ | 0.3− | 2005 11 04 | 683 | 1.2− | 0.1+ | 2005 11 21 | 699 | 0.0 | 0.9− |
| 2005 10 06 | 699 | 0.5+ | 0.8+ | 2005 11 05 | 683 | 0.4+ | 0.7+ | 2005 11 26 | 703 | 0.0 | 0.0 |
| 2005 10 06 | 699 | 0.1+ | 0.2− | 2005 11 05 | 683 | 0.8− | 0.6− | 2005 11 26 | 703 | 0.3− | 0.5− |
| 2005 10 06 | 699 | 0.7+ | 0.0 | 2005 11 05 | 683 | 0.8− | 1.0+ | 2005 11 26 | 703 | 0.1− | 0.2+ |
| 2005 10 12 | 704 | 0.2− | 0.4+ | 2005 11 05 | 703 | 0.3+ | 0.4− | 2005 11 26 | 703 | 0.4− | 0.0 |
| 2005 10 12 | 704 | 0.7− | 1.1+ | 2005 11 05 | 704 | 0.6− | 0.0 | 2005 11 30 | 699 | 0.1+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 12 | 704 | 0.6− | 0.3− | 2005 11 05 | 703 | 0.2+ | 0.9− | 2005 11 30 | 699 | 0.2+ | 0.1+ | |
| 2005 10 12 | 704 | 0.9− | 0.2+ | 2005 11 05 | 703 | 0.2+ | 0.1− | 2005 11 30 | 699 | 0.1+ | 0.3+ | |
| 2005 10 25 | 703 | 0.3+ | 0.3− | 2005 11 05 | 703 | 0.4− | 0.2− | 2005 11 30 | 699 | 0.4+ | 0.2+ | |
| 2005 10 25 | 703 | 0.0 | 0.8− | 2005 11 05 | 704 | 0.1+ | 0.2+ | 2005 12 07 | 704 | 0.6+ | 0.4+ | |
| 2005 10 25 | 703 | 0.3+ | 0.2− | 2005 11 05 | 704 | 0.4+ | 0.1+ | 2005 12 07 | 704 | 0.4+ | 1.4+ | |
| 2005 10 25 | 703 | (5.7− | 0.8−) | 2005 11 05 | 704 | 0.1− | 0.7+ | 2005 12 07 | 704 | 0.8− | 0.3+ | |
| 2005 10 26 | 699 | 0.3+ | 0.4− | 2005 11 05 | 704 | 0.4− | 0.4+ | 2005 12 07 | 704 | 1.4+ | 0.7− | |

**2005 SJ$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 120.68263 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.26135701 | $\omega$ | 259.19720 | +0.70805965 | +0.69819543 |
| $a$ | 2.4227761 | $\Omega$ | 56.41930 | −0.58813252 | +0.66592955 |
| $e$ | 0.1567451 | $i$ | 7.28972 | −0.39083458 | +0.26279453 |
| $P$ | 3.77 | $H$ | 16.1 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.2+ | 0.1− | 2005 08 28 | 699 | 0.2− | 0.5+ | 2005 10 07 | 699 | 0.4− | 0.1+ | |
| 1994 10 31 | 691 | 0.1− | 0.1− | 2005 08 28 | 699 | 0.9− | 0.0 | 2005 10 07 | 699 | 0.6+ | 0.3+ | |
| 1994 10 31 | 691 | 0.1− | 0.4+ | 2005 09 13 | 703 | 0.2− | 0.1− | 2005 10 10 | 703 | 0.6− | 0.5+ | |
| 2001 08 11 | 644 | 0.2− | 0.4− | 2005 09 13 | 703 | 0.4− | 1.0− | 2005 10 10 | 703 | 0.1− | 0.6− | |
| 2001 08 11 | 644 | 0.1+ | 0.5+ | 2005 09 13 | 703 | 0.2+ | 0.2+ | 2005 10 10 | 703 | 0.7− | 0.5− | |
| 2001 08 11 | 644 | 0.0 | 0.2+ | 2005 09 13 | 703 | 1.0+ | 0.2− | 2005 10 10 | 703 | 0.2+ | 0.5+ | |
| 2005 06 18 | G96 | 0.4+ | 0.2+ | 2005 09 26 | 704 | 0.7+ | 0.9+ | 2005 10 22 | 703 | 0.2+ | 0.2− | |
| 2005 06 18 | G96 | 0.0 | 0.2+ | 2005 09 26 | 704 | 0.4+ | 0.0 | 2005 10 22 | 703 | 0.1+ | 0.8− | |
| 2005 06 18 | G96 | 0.1+ | 0.2+ | 2005 09 26 | 704 | 0.2+ | 0.1− | 2005 10 22 | 703 | 0.2+ | 0.9− | |
| 2005 06 18 | G96 | 0.4+ | 0.3+ | 2005 09 26 | 704 | 0.8+ | 0.4− | 2005 10 22 | 703 | 0.1+ | 2.0− | |
| 2005 08 06 | E12 | 0.2+ | 0.6− | 2005 10 03 | 703 | 0.2− | 0.3− | 2005 11 05 | 699 | 0.9− | 0.1+ | |
| 2005 08 06 | E12 | 0.8+ | 0.3− | 2005 10 03 | 703 | 0.6− | 0.9− | 2005 11 05 | 699 | 0.8+ | 0.1+ | |
| 2005 08 06 | E12 | 0.4+ | 0.7+ | 2005 10 03 | 703 | 0.8+ | 0.3+ | 2005 11 05 | 699 | 0.5− | 1.6+ | |
| 2005 08 06 | E12 | 0.9− | 0.3+ | 2005 10 03 | 703 | 0.7− | 0.3− | 2005 11 05 | 699 | 1.0+ | 1.7+ | |
| 2005 08 28 | 699 | 0.1− | 0.1− | 2005 10 07 | 699 | 0.1− | 0.1+ | | | | | |
| 2005 08 28 | 699 | 1.1− | 0.5+ | 2005 10 07 | 699 | 0.2− | 0.1+ | | | | | |

**2005 SO$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 84.42609 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.17311532 | $\omega$ | 302.83195 | +0.97928826 | +0.02016944 |
| $a$ | 3.1884459 | $\Omega$ | 56.77728 | +0.08666811 | +0.85750089 |
| $e$ | 0.1217658 | $i$ | 13.93541 | −0.18298399 | +0.51408697 |
| $P$ | 5.69 | $H$ | 14.9 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 29 | 691 | 0.2+ | 0.9+ | 2005 10 23 | 703 | 0.1− | 0.1+ | 2005 11 30 | 704 | 0.7− | 0.1+ | |
| 2003 05 29 | 691 | 0.6+ | 0.8+ | 2005 10 30 | 699 | 0.7+ | 0.0 | 2005 11 30 | 704 | 0.3− | 0.7+ | |
| 2003 05 29 | 691 | 0.8+ | 0.8+ | 2005 10 30 | 699 | 0.6− | 0.5+ | 2005 11 30 | 704 | 0.4− | 0.7+ | |
| 2004 07 15 | E12 | 0.1− | 0.9− | 2005 10 30 | 699 | 0.6− | 0.8+ | 2005 12 01 | G96 | 0.1− | 0.3− | |
| 2004 07 15 | E12 | 0.3+ | 0.1− | 2005 10 30 | 699 | 0.4− | 0.4− | 2005 12 01 | G96 | 0.3+ | 0.6− | |
| 2004 07 15 | E12 | 0.1− | 0.1− | 2005 11 05 | 699 | 0.5− | 0.3+ | 2005 12 01 | G96 | 0.2+ | 0.2− | |
| 2004 07 15 | E12 | 0.0 | 0.2+ | 2005 11 05 | 699 | 1.6+ | 0.1+ | 2005 12 01 | G96 | 0.0 | 0.1− | |
| 2005 09 27 | 644 | 0.2− | 0.3+ | 2005 11 05 | 699 | 0.3− | 0.2+ | 2005 12 02 | G96 | 0.1− | 0.6+ | |
| 2005 09 27 | 644 | 0.0 | 0.5+ | 2005 11 05 | 699 | 0.8+ | 0.0 | 2005 12 02 | G96 | 0.2+ | 0.5+ | |
| 2005 09 27 | 644 | 0.0 | 0.2+ | 2005 11 06 | 699 | 0.1+ | 0.2+ | 2005 12 02 | G96 | 0.1− | 0.5+ | |
| 2005 10 01 | 703 | 0.8+ | 0.3+ | 2005 11 06 | 699 | 0.0 | 0.2− | 2005 12 02 | G96 | 0.1+ | 0.6+ | |
| 2005 10 01 | 703 | 0.3− | 1.3− | 2005 11 06 | 699 | 0.7+ | 0.8+ | 2005 12 05 | 699 | 0.6− | 0.2+ | |
| 2005 10 01 | 703 | 0.7− | 0.3− | 2005 11 06 | 699 | 0.3+ | 0.2− | 2005 12 05 | 699 | 0.4− | 0.9+ | |
| 2005 10 01 | 703 | 0.1− | 0.3− | 2005 11 09 | 703 | 0.1+ | 0.3+ | 2005 12 05 | 699 | 0.2− | 1.0+ | |
| 2005 10 07 | 699 | 0.4+ | 0.4+ | 2005 11 09 | 703 | 1.3− | 0.4+ | 2005 12 05 | 699 | 1.4+ | 1.4+ | |
| 2005 10 07 | 699 | 0.3− | 0.6+ | 2005 11 09 | 703 | 0.2− | 0.4− | 2005 12 31 | G96 | 0.3− | 0.1− | |
| 2005 10 07 | 699 | 0.5+ | 0.1+ | 2005 11 29 | 703 | 1.6− | 0.6+ | 2005 12 31 | G96 | 0.1− | 0.2+ | |
| 2005 10 07 | 699 | 0.5+ | 0.7+ | 2005 11 29 | 703 | 0.6− | 0.3+ | 2005 12 31 | G96 | 0.4− | 0.1− | |
| 2005 10 23 | 703 | 0.7− | 0.4− | 2005 11 29 | 703 | 0.2− | 0.4− | 2005 12 31 | G96 | 0.2+ | 0.2+ | |
| 2005 10 23 | 703 | 0.3− | 0.5+ | 2005 11 29 | 703 | 1.1− | 0.9− | | | | | |
| 2005 10 23 | 703 | (2.1− | 0.7−) | 2005 11 30 | 704 | 1.2− | 0.1+ | | | | | |

**2005 SS$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 83.53319 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.22428126 | $\omega$ | 217.43204 | +0.94287681 | −0.32970989 |
| $a$ | 2.6829180 | $\Omega$ | 161.64416 | +0.33036797 | +0.90695954 |
| $e$ | 0.3329803 | $i$ | 8.71091 | +0.04289904 | +0.26213695 |
| $P$ | 4.39 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 566 | 0.2− | 0.3− | 2005 10 10 | 704 | 0.1− | 0.4+ | 2005 11 03 | 703 | 0.5− | 0.4− | |
| 1996 09 08 | 566 | 0.2− | 0.9− | 2005 10 10 | 704 | 0.4− | 0.1+ | 2005 11 03 | 703 | 0.2+ | 0.4− | |
| 1996 09 08 | 566 | 0.9+ | 1.0− | 2005 10 22 | 703 | 0.0 | 0.2− | 2005 11 03 | 703 | 0.3+ | 0.7− | |
| 2002 02 06 | 644 | 0.1− | 0.2− | 2005 10 22 | 703 | 0.3+ | 0.5− | 2005 11 03 | 703 | 0.1− | 0.4− | |
| 2002 02 06 | 644 | 0.2+ | 0.3− | 2005 10 22 | 703 | 0.0 | 0.5+ | 2005 11 26 | 699 | 0.0 | 0.5− | |
| 2002 02 06 | 644 | 0.4− | 0.5− | 2005 10 22 | 703 | 0.8+ | 0.1− | 2005 11 26 | 699 | 0.2− | 0.1+ | |
| 2005 09 27 | 644 | 0.8− | 0.4+ | 2005 10 24 | 644 | 0.1+ | 0.3− | 2005 11 26 | 699 | 0.6+ | 0.1− | |
| 2005 09 27 | 644 | 0.0 | 0.3+ | 2005 10 24 | 644 | 0.1+ | 0.1− | 2005 11 26 | 699 | 0.1− | 0.5+ | |
| 2005 09 27 | 644 | 0.1+ | 0.0 | 2005 10 24 | 644 | 0.0 | 0.1− | 2005 12 24 | 644 | 0.3− | 0.4− | |
| 2005 10 01 | 703 | 0.4− | 0.1+ | 2005 10 27 | 704 | 0.1− | 0.4+ | 2005 12 24 | 644 | 0.2+ | 0.1− | |
| 2005 10 01 | 703 | 0.4− | 0.1− | 2005 10 27 | 704 | 0.3− | 0.3+ | 2005 12 24 | 644 | 0.0 | 0.0 | |
| 2005 10 01 | 703 | 0.2− | 0.4+ | 2005 10 27 | 644 | 0.2− | 0.1− | 2005 12 29 | 703 | 0.1− | 0.1− | |
| 2005 10 01 | 703 | 0.2− | 0.4+ | 2005 10 27 | 704 | 0.6− | 0.4+ | 2005 12 29 | 703 | 0.2− | 0.3− | |
| 2005 10 07 | 699 | 0.5+ | 0.5+ | 2005 10 27 | 704 | 0.6− | 0.0 | 2005 12 29 | 703 | 0.7− | 0.4+ | |
| 2005 10 07 | 699 | 0.3+ | 0.1+ | 2005 10 27 | 644 | 0.1− | 0.1− | 2005 12 29 | 703 | 0.2+ | 0.1+ | |
| 2005 10 07 | 699 | 0.0 | 0.0 | 2005 10 27 | 644 | 0.1− | 0.0 | 2006 01 06 | 703 | 1.0+ | 1.3− | |
| 2005 10 07 | 699 | 0.3− | 0.3+ | 2005 10 30 | 699 | 0.1+ | 0.3+ | 2006 01 06 | 703 | 0.2+ | 0.8+ | |
| 2005 10 10 | 704 | 0.0 | 0.5+ | 2005 10 30 | 699 | 0.3+ | 0.4− | 2006 01 06 | 703 | 0.4+ | 0.1+ | |
| 2005 10 10 | 704 | 0.2+ | 0.4+ | 2005 10 30 | 699 | 0.2+ | 0.2+ | 2006 01 06 | 703 | 0.2+ | 0.2− | |
| 2005 10 10 | 704 | 0.3+ | 0.2+ | 2005 10 30 | 699 | 0.3+ | 0.1− | | | | | |

**2005 SO$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 59.37969 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.21374759 | $\omega$ | 247.37539 | +0.60986691 | −0.78811199 |
| $a$ | 2.7703538 | $\Omega$ | 164.16967 | +0.79168768 | +0.60109243 |
| $e$ | 0.3138829 | $i$ | 17.78396 | +0.03595803 | +0.13254199 |
| $P$ | 4.61 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1+ | 0.0 | 2005 10 01 | 699 | 0.3+ | 0.1+ | 2005 10 25 | 704 | 0.0 | 0.7+ | |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2005 10 01 | 699 | 0.6− | 0.3− | 2005 10 25 | 704 | 0.2+ | 0.4+ | |
| 2002 02 07 | 644 | 0.3+ | 0.6− | 2005 10 01 | 699 | 0.1+ | 0.1+ | 2005 10 31 | 703 | 0.1+ | 0.7− | |
| 2002 02 07 | 644 | 0.1+ | 0.6− | 2005 10 01 | 699 | 0.4− | 0.5+ | 2005 10 31 | 703 | 0.8− | 1.1− | |
| 2002 02 07 | 644 | 0.1+ | 0.6− | 2005 10 08 | 703 | 0.3+ | 0.2+ | 2005 10 31 | 703 | 0.4+ | 0.8+ | |
| 2002 02 16 | 644 | 0.2− | 0.9+ | 2005 10 08 | 703 | 0.4− | 0.3+ | 2005 10 31 | 703 | 0.5+ | 0.6+ | |
| 2002 02 16 | 644 | 0.3− | 0.7+ | 2005 10 08 | 703 | 0.2− | 0.3− | 2005 12 07 | 703 | 0.4+ | 1.5− | |
| 2002 02 16 | 644 | 0.1− | 0.3+ | 2005 10 08 | 703 | 0.5− | 0.1+ | 2005 12 07 | 703 | (1.8− | 0.6+) | |
| 2005 09 28 | 644 | 0.1+ | 0.2+ | 2005 10 25 | 704 | 0.1− | 0.5+ | 2005 12 07 | 703 | 0.2+ | 1.5− | |
| 2005 09 28 | 644 | 0.2− | 0.2+ | 2005 10 25 | 704 | 0.0 | 0.1− | 2005 12 07 | 703 | 1.0+ | 0.1− | |
| 2005 09 28 | 644 | 0.0 | 0.3− | 2005 10 25 | 704 | 0.3− | 1.1+ | | | | | |

**2005 SC$_{175}$ = 2006 WW$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 11.09680 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.18313861 | $\omega$ | 160.32848 | +0.14121185 | −0.98735432 |
| $a$ | 3.0710209 | $\Omega$ | 281.50187 | +0.89815956 | +0.15838350 |
| $e$ | 0.1325548 | $i$ | 4.21635 | +0.41637556 | −0.00679080 |
| $P$ | 5.38 | $H$ | 16.3 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 29 | 691 | 0.5− | 0.3+ | 2005 10 09 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.0 | |
| 2005 09 29 | 691 | 0.1+ | 0.0 | 2005 10 09 | 691 | 0.4− | 0.4− | 2006 11 27 | G96 | 0.5− | 0.2− | |
| 2005 09 29 | 691 | 0.1+ | 0.0 | 2005 10 13 | 691 | 0.1+ | 0.2− | 2006 11 28 | G96 | 0.1− | 0.1− | |
| 2005 10 03 | 691 | 0.2− | 0.1+ | 2005 10 13 | 691 | 0.6+ | 0.1− | 2006 11 28 | G96 | 0.4+ | 0.4+ | |
| 2005 10 03 | 691 | 0.2+ | 0.0 | 2005 10 13 | 691 | 0.1− | 0.1+ | 2006 11 28 | G96 | 0.2+ | 0.0 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 03 | 691 | 0.4+ | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.2+ | 2006 11 28 | G96 | 0.1+ | 0.1+ | | |
| 2005 10 09 | 691 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.5− | 0.4− | | | | | | |

**2005 SK$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.82238 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29311898 | $\omega$ | 111.70461 | | +0.97098084 | | +0.23079928 |
| $a$ | 2.2444336 | $\Omega$ | 235.00354 | | −0.23778150 | | +0.90358837 |
| $e$ | 0.1336789 | $i$ | 4.38777 | | −0.02561566 | | +0.36091514 |
| $P$ | 3.36 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.4+ | 0.3− | 2005 10 08 | 704 | 0.0 | 0.3− | 2005 10 22 | 703 | 0.3+ | 1.8+ | | |
| 1995 10 19 | 691 | 0.1− | 0.2+ | 2005 10 10 | 683 | (2.7+ | 1.3−) | 2005 10 24 | 699 | 0.5+ | 0.9− | | |
| 1995 10 19 | 691 | 0.3− | 0.1− | 2005 10 10 | 683 | (2.5+ | 2.1−) | 2005 10 24 | 699 | 0.7+ | 0.8+ | | |
| 1995 11 16 | 691 | 0.1+ | 0.0 | 2005 10 10 | 683 | 0.2+ | 1.8− | 2005 10 24 | 699 | 0.5+ | 0.5+ | | |
| 1995 11 16 | 691 | 0.1− | 0.0 | 2005 10 11 | 683 | 1.4+ | 0.2− | 2005 10 24 | 699 | 0.0 | 0.0 | | |
| 1995 11 16 | 691 | 0.0 | 0.2− | 2005 10 11 | 704 | 0.9+ | 0.0 | 2005 10 28 | 703 | 0.4+ | 0.1+ | | |
| 2004 04 20 | 691 | 0.2+ | 0.2+ | 2005 10 11 | 683 | (1.2+ | 2.3−) | 2005 10 28 | 703 | 0.4− | 0.2+ | | |
| 2004 04 20 | 691 | 0.1+ | 0.1+ | 2005 10 11 | 704 | 0.6− | 0.3+ | 2005 10 28 | 703 | 1.3− | 0.5− | | |
| 2004 04 20 | 691 | 0.0 | 0.3+ | 2005 10 11 | 704 | 0.3+ | 1.6− | 2005 10 28 | 703 | 0.0 | 0.6+ | | |
| 2005 09 29 | 699 | 0.7− | 0.2+ | 2005 10 11 | 683 | 0.1− | 0.9− | 2005 11 04 | 691 | 0.0 | 0.1+ | | |
| 2005 09 29 | 699 | 0.6+ | 0.3+ | 2005 10 11 | 704 | 0.0 | 0.0 | 2005 11 04 | 691 | 0.3− | 0.0 | | |
| 2005 09 29 | 699 | 0.1− | 0.9− | 2005 10 11 | 704 | 0.5− | 0.5− | 2005 11 04 | 691 | 0.6+ | 0.5+ | | |
| 2005 09 29 | 699 | 0.4+ | 0.4+ | 2005 10 12 | 683 | 1.6− | 0.5− | 2005 11 04 | 704 | 0.2− | 0.5− | | |
| 2005 10 03 | 704 | 0.1− | 1.0+ | 2005 10 12 | 683 | 0.7− | 1.8− | 2005 11 04 | 704 | 1.1+ | 0.2− | | |
| 2005 10 03 | 704 | 0.4+ | 0.5+ | 2005 10 12 | 683 | 0.8− | 0.1+ | 2005 11 04 | 704 | 0.3+ | 0.1+ | | |
| 2005 10 03 | 704 | 0.4− | 0.1+ | 2005 10 21 | 644 | 0.0 | 0.4+ | 2005 11 04 | 704 | 1.0− | 1.1+ | | |
| 2005 10 03 | 704 | 0.5+ | 0.8+ | 2005 10 21 | 644 | 0.1− | 0.4+ | 2005 11 05 | 704 | 0.0 | 1.0− | | |
| 2005 10 03 | 703 | 0.1+ | 0.1+ | 2005 10 21 | 644 | 0.1+ | 0.1− | 2005 11 05 | 704 | 0.1− | 1.0+ | | |
| 2005 10 03 | 703 | 0.4− | 0.4+ | 2005 10 21 | 644 | 0.2− | 0.4+ | 2005 11 05 | 704 | 0.6+ | 1.0+ | | |
| 2005 10 03 | 703 | 0.2+ | 0.1− | 2005 10 21 | 644 | 0.0 | 0.2− | 2005 11 05 | 704 | 0.7+ | 0.5+ | | |
| 2005 10 03 | 703 | 0.3− | 0.9− | 2005 10 21 | 644 | 0.3− | 0.1+ | 2005 11 28 | G96 | 0.4− | 0.0 | | |
| 2005 10 08 | 704 | 0.1− | 0.5− | 2005 10 22 | 703 | 0.1+ | 1.0+ | 2005 11 28 | G96 | 0.3− | 0.2− | | |
| 2005 10 08 | 704 | (3.2+ | 0.2−) | 2005 10 22 | 703 | (0.3+ | 2.0+) | 2005 11 28 | G96 | 0.3− | 0.1− | | |
| 2005 10 08 | 704 | 0.3− | 0.3+ | 2005 10 22 | 703 | 1.5− | 1.1+ | 2005 11 28 | G96 | 0.7− | 0.5− | | |

**2005 SV$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.52498 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17977872 | $\omega$ | 331.23328 | | +0.57118790 | | −0.81969567 |
| $a$ | 3.1091656 | $\Omega$ | 83.90246 | | +0.76111132 | | +0.50932854 |
| $e$ | 0.1429357 | $i$ | 2.47474 | | +0.30733359 | | +0.26207525 |
| $P$ | 5.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 26 | 691 | 0.5− | 0.2− | 2005 10 01 | 691 | 0.1+ | 0.1− | 2005 10 30 | G96 | 0.4+ | 0.2− | | |
| 1996 01 26 | 691 | 0.5+ | 0.0 | 2005 10 01 | 691 | 0.1+ | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 1996 01 26 | 691 | 0.0 | 0.3− | 2005 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.6− | 0.1− | | |
| 2001 01 15 | 691 | 0.1+ | 0.3+ | 2005 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.4− | | |
| 2001 01 15 | 691 | 0.1− | 0.3+ | 2005 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.4− | | |
| 2001 01 15 | 691 | 0.2− | 0.5+ | 2005 10 12 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2+ | | |
| 2005 09 23 | 691 | 0.1− | 0.2− | 2005 10 28 | 703 | 1.0− | 1.2− | 2006 11 16 | G96 | 0.3+ | 0.1+ | | |
| 2005 09 23 | 691 | 0.1+ | 0.1+ | 2005 10 28 | 703 | 1.2− | 0.1+ | 2006 11 16 | G96 | 0.2− | 1.1− | | |
| 2005 09 23 | 691 | 0.1+ | 0.0 | 2005 10 28 | 703 | 0.8+ | 1.4− | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2005 09 29 | 699 | (0.1+ | 1.7+) | 2005 10 28 | 703 | 0.1+ | 1.4− | 2006 11 28 | G96 | 0.2+ | 0.4+ | | |
| 2005 09 29 | 699 | 0.5− | 0.2+ | 2005 10 30 | G96 | 0.3+ | 0.3− | 2006 11 28 | G96 | 0.1− | 0.0 | | |
| 2005 09 29 | 699 | 1.3− | 1.4− | 2005 10 30 | G96 | 0.4+ | 0.2− | 2006 11 28 | G96 | 0.1+ | 0.2− | | |
| 2005 09 29 | 699 | 0.7− | 1.1+ | 2005 10 30 | G96 | 0.1+ | 0.3− | 2006 11 28 | G96 | 0.2− | 0.2+ | | |

**2005 SM$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.53661 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17386320 | $\omega$ | 306.30452 | | +0.49656123 | | −0.86172329 |
| $a$ | 3.1792957 | $\Omega$ | 113.60597 | | +0.82838081 | | +0.43460858 |
| $e$ | 0.1936901 | $i$ | 6.53023 | | +0.25925310 | | +0.26181741 |
| $P$ | 5.67 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 691 | 0.7+ | 0.2+ | 2005 10 10 | 704 | 0.3+ | 0.0 | 2005 10 28 | 703 | 0.4− | 0.7− | | |
| 2000 12 23 | 691 | 0.2+ | 0.2− | 2005 10 10 | 704 | 0.5− | 0.6+ | 2005 10 28 | 703 | 0.2+ | 0.3− | | |
| 2000 12 23 | 691 | 0.9− | 0.1+ | 2005 10 22 | 703 | 0.3+ | 1.7− | 2005 10 31 | 699 | 0.7+ | 0.2− | | |
| 2005 09 26 | A50 | 0.2− | 0.3+ | 2005 10 22 | 644 | 0.2+ | 0.1+ | 2005 10 31 | 699 | 0.8− | 0.1+ | | |
| 2005 09 26 | A50 | 0.0 | 0.1+ | 2005 10 22 | 703 | 0.2− | 0.3− | 2005 10 31 | 699 | 0.3+ | 0.5− | | |
| 2005 09 29 | 644 | 0.1− | 0.0 | 2005 10 22 | 703 | 0.5+ | 0.3− | 2005 10 31 | 699 | 0.5− | 0.0 | | |
| 2005 09 29 | 644 | 0.1− | 0.0 | 2005 10 22 | 644 | 0.2− | 0.1+ | 2005 11 03 | 703 | 0.4+ | 0.1+ | | |
| 2005 09 29 | 644 | 0.3− | 0.1+ | 2005 10 22 | 703 | 0.1+ | 1.3− | 2005 11 03 | 703 | 0.3− | 0.2− | | |
| 2005 10 01 | 699 | 0.2+ | 0.2+ | 2005 10 22 | 644 | 0.0 | 0.1+ | 2005 11 03 | 703 | 0.0 | 0.3+ | | |
| 2005 10 01 | 699 | 0.4− | 1.0− | 2005 10 27 | 644 | 0.1+ | 0.1+ | 2005 12 04 | 699 | 0.3+ | 1.7− | | |
| 2005 10 01 | 699 | 0.3+ | 1.5+ | 2005 10 27 | 644 | 0.1− | 0.1+ | 2005 12 04 | 699 | 0.3+ | 0.3+ | | |
| 2005 10 01 | 699 | 0.4− | 0.3− | 2005 10 27 | 704 | 0.1− | 0.8+ | 2005 12 04 | 699 | 0.2− | 0.4+ | | |
| 2005 10 05 | 703 | 0.2+ | 0.0 | 2005 10 27 | 704 | 0.3+ | 0.5+ | 2005 12 04 | 699 | 0.0 | 0.4+ | | |
| 2005 10 05 | 703 | 0.6+ | 0.2+ | 2005 10 27 | 644 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2005 10 05 | 703 | 0.5− | 0.1− | 2005 10 27 | 704 | 0.5+ | 0.9+ | 2006 11 24 | G96 | 0.5+ | 0.1+ | | |
| 2005 10 05 | 703 | 0.2− | 0.5− | 2005 10 27 | 704 | 0.3− | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.2− | | |
| 2005 10 10 | 704 | 0.0 | 0.5+ | 2005 10 27 | 704 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.4− | 0.1− | | |
| 2005 10 10 | 704 | 0.1+ | 0.2+ | 2005 10 28 | 703 | 0.1+ | 0.2+ | | | | | | |
| 2005 10 10 | 704 | 0.4− | 0.8+ | 2005 10 28 | 703 | 0.6+ | 0.4− | | | | | | |

**2005 SS$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.16463 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29296310 | $\omega$ | 157.77787 | | +0.98195567 | | +0.18867612 |
| $a$ | 2.2452297 | $\Omega$ | 191.36914 | | −0.18181648 | | +0.92325770 |
| $e$ | 0.1267248 | $i$ | 3.72904 | | −0.05201753 | | +0.33465883 |
| $P$ | 3.36 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.2− | 0.1− | 2005 10 01 | G96 | 0.4+ | 0.1− | 2005 11 03 | 691 | 0.1+ | 0.4+ | | |
| 1995 11 17 | 691 | 0.0 | 0.3− | 2005 10 01 | G96 | 0.5− | 0.6− | 2005 11 03 | 691 | 0.4− | 0.0 | | |
| 1995 11 17 | 691 | 0.2+ | 0.2+ | 2005 10 22 | 691 | 0.1+ | 0.3− | 2005 11 03 | 691 | 0.2− | 0.4+ | | |
| 1998 08 28 | 691 | 0.1− | 0.3+ | 2005 10 22 | 691 | 0.2+ | 0.2− | 2005 11 04 | G96 | 0.3+ | 0.3− | | |
| 1998 08 28 | 691 | 0.2− | 0.0 | 2005 10 22 | 691 | 0.0 | 0.2− | 2005 11 04 | G96 | 0.0 | 0.1+ | | |
| 1998 08 28 | 691 | 0.2+ | 0.2− | 2005 10 30 | 691 | 0.1+ | 0.2+ | 2005 11 04 | G96 | 0.1− | 0.0 | | |
| 2005 09 29 | G96 | 0.3− | 0.7− | 2005 10 30 | 691 | 0.2+ | 0.6+ | 2005 11 04 | G96 | 0.3+ | 0.0 | | |
| 2005 09 29 | G96 | 0.1− | 0.5− | 2005 10 30 | 691 | 0.2+ | 0.3+ | 2005 12 01 | G96 | 0.4− | 0.1− | | |
| 2005 09 29 | G96 | 0.3− | 0.2− | 2005 10 31 | G96 | 0.3− | 0.6− | 2005 12 01 | G96 | 0.6− | 0.2− | | |
| 2005 09 29 | G96 | 0.1− | 0.4+ | 2005 10 31 | G96 | 0.8+ | 0.5− | 2005 12 01 | G96 | 0.6− | 0.4− | | |
| 2005 10 01 | G96 | 0.1− | 0.0 | 2005 10 31 | G96 | 0.2+ | 0.5− | 2005 12 01 | G96 | 0.2− | 0.2− | | |
| 2005 10 01 | G96 | 0.2+ | 0.4− | 2005 10 31 | G96 | 0.3− | 0.5− | | | | | | |

**2005 SV$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.16625 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23113114 | $\omega$ | 206.74403 | | +0.52670820 | | −0.83999306 |
| $a$ | 2.6296447 | $\Omega$ | 211.96567 | | +0.81732097 | | +0.54257922 |
| $e$ | 0.0761187 | $i$ | 14.25334 | | +0.23359134 | | −0.00441000 |
| $P$ | 4.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 16 | 691 | 0.2+ | 1.0+ | 2005 10 02 | G96 | 0.2+ | 0.4+ | 2005 10 13 | 691 | 0.4− | 0.8+ | | |
| 1999 05 16 | 691 | 0.4− | 0.6+ | 2005 10 08 | 152 | 0.0 | 0.7+ | 2005 10 13 | 691 | 0.6− | 0.7+ | | |
| 1999 05 16 | 691 | 0.5+ | 1.0+ | 2005 10 08 | 152 | 0.5− | 0.1− | 2005 10 13 | 691 | 0.3− | 0.9+ | | |
| 2003 03 31 | 691 | 0.0 | 0.3+ | 2005 10 08 | 152 | 0.5+ | 0.3+ | 2005 10 22 | 644 | 0.1− | 0.8+ | | |
| 2003 03 31 | 691 | 0.2+ | 0.4+ | 2005 10 09 | 152 | 0.3+ | 0.2− | 2005 10 22 | 644 | 0.3− | 0.8+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 691 | 0.0 | 0.0 | 2005 10 09 | 152 | 0.1+ | 0.6+ | 2005 10 22 | 644 | 0.3− | 0.6+ |
| 2005 09 29 | 691 | 0.0 | 0.5+ | 2005 10 09 | 152 | (2.2+ | 0.3+) | 2005 12 01 | G96 | 0.1+ | 0.3+ |
| 2005 09 29 | 691 | 0.1+ | 0.5+ | 2005 10 13 | 152 | 0.2+ | 0.5− | 2005 12 01 | G96 | 0.4− | 0.1+ |
| 2005 09 29 | 691 | 0.1+ | 0.6+ | 2005 10 13 | 152 | 0.6+ | 0.8− | 2005 12 01 | G96 | 0.6− | 0.1+ |
| 2005 10 02 | G96 | 0.1− | 0.1+ | 2005 10 13 | 152 | 0.1+ | 1.3− | 2005 12 01 | G96 | 0.0 | 0.8+ |
| 2005 10 02 | G96 | 0.3+ | 0.2+ | 2005 10 13 | 152 | 0.8+ | 0.1− | | | | |
| 2005 10 02 | G96 | 0.3+ | 0.5+ | 2005 10 13 | 152 | (2.0+ | 7.0−) | | | | |

**2005 SH**$_{199}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 55.31105 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17801120 | $\omega$ | 7.16762 | | +0.99530840 | | −0.09675061 | | |
| $a$ | 3.1297129 | $\Omega$ | 358.38396 | | +0.08746913 | | +0.90292353 | | |
| $e$ | 0.0963929 | $i$ | 1.44682 | | +0.04135624 | | +0.41877012 | | |
| $P$ | 5.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 19 | 291 | 0.8+ | 0.3+ | 2005 09 13 | 691 | 0.1− | 0.4+ | 2005 11 25 | G96 | 0.2− | 0.0 |
| 2002 01 19 | 291 | 0.3− | 0.2+ | 2005 09 13 | 691 | 0.1− | 0.4+ | 2005 11 25 | G96 | 0.1− | 0.1− |
| 2002 01 19 | 291 | 0.2− | 0.3+ | 2005 09 30 | G96 | 0.1− | 0.3− | 2005 11 25 | G96 | 0.7+ | 0.0 |
| 2003 04 04 | 691 | 0.2+ | 0.4+ | 2005 09 30 | G96 | 0.5− | 0.4− | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2003 04 04 | 691 | 0.4+ | 0.7+ | 2005 09 30 | G96 | 0.5− | 0.1+ | 2005 12 02 | G96 | 0.2− | 0.7+ |
| 2003 04 04 | 691 | 0.1+ | 0.5+ | 2005 09 30 | G96 | 0.5− | 0.0 | 2005 12 02 | G96 | 0.3+ | 0.1+ |
| 2005 08 30 | 691 | 0.0 | 0.4+ | 2005 10 01 | G96 | 0.3+ | 0.3+ | 2005 12 02 | G96 | 0.3− | 0.1− |
| 2005 08 30 | 691 | 0.1− | 0.2+ | 2005 10 01 | G96 | 0.0 | 0.2+ | 2005 12 02 | G96 | 0.3− | 0.1− |
| 2005 08 30 | 691 | 0.1− | 0.3+ | 2005 10 01 | G96 | 0.3+ | 0.2+ | | | | |
| 2005 09 13 | 691 | 0.2− | 0.2+ | 2005 10 01 | G96 | 0.1− | 0.1+ | | | | |

**2005 SL**$_{204}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 19.58791 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.12950459 | $\omega$ | 195.26398 | | +0.79211740 | | −0.61023957 | | |
| $a$ | 3.8691236 | $\Omega$ | 202.35731 | | +0.56340276 | | +0.73892574 | | |
| $e$ | 0.0423978 | $i$ | 1.89184 | | +0.23479213 | | +0.28565086 | | |
| $P$ | 7.61 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 30 | G96 | 0.1+ | 0.1+ | 2005 10 27 | G96 | 0.3− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2005 09 30 | G96 | 0.5+ | 0.2+ | 2005 10 27 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2005 09 30 | G96 | 0.2+ | 0.3− | 2005 11 03 | 691 | 1.3+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 1.0− |
| 2005 09 30 | G96 | 0.4+ | 0.2− | 2005 11 03 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2005 10 01 | 691 | 0.1− | 0.0 | 2005 11 03 | 691 | 0.4− | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.3− |
| 2005 10 01 | 691 | 0.5+ | 0.0 | 2005 11 05 | 691 | 0.3− | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 10 01 | 691 | 0.4+ | 0.0 | 2005 11 05 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2005 10 05 | 691 | 0.6− | 0.0 | 2005 11 05 | 691 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2005 10 05 | 691 | 0.3+ | 0.4− | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2005 10 05 | 691 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.5+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2005 10 07 | 703 | 1.3− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2005 10 07 | 703 | 0.8− | 0.9− | 2006 11 19 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2005 10 07 | 703 | 0.4− | 0.5+ | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2005 10 07 | 703 | 1.5− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.2− | 0.0 |
| 2005 10 27 | G96 | 0.5− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2005 10 27 | G96 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1− | | | | |

**2005 SP**$_{213}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 17.61607 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17377279 | $\omega$ | 134.47382 | | +0.14879211 | | −0.98879417 | | |
| $a$ | 3.1803985 | $\Omega$ | 306.96545 | | +0.90290765 | | +0.14084749 | | |
| $e$ | 0.1319463 | $i$ | 0.86945 | | +0.40326007 | | +0.04947797 | | |
| $P$ | 5.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 15 | 691 | 0.1− | 0.1+ | 2000 12 04 | 691 | 0.3+ | 0.1− | 2005 10 11 | 291 | 0.4− | 0.1+ |
| 1996 02 15 | 691 | 0.0 | 0.1+ | 2000 12 04 | 691 | 0.1− | 0.2− | 2005 10 11 | 291 | 0.3− | 0.2+ |
| 1996 02 15 | 691 | 0.2+ | 0.2− | 2004 08 13 | 807 | 0.1+ | 0.4− | 2005 10 29 | 703 | 1.1− | 0.7+ |
| 1999 09 07 | 691 | 0.4− | 0.1− | 2004 08 13 | 807 | 0.0 | 0.3− | 2005 10 29 | 703 | 1.1+ | 0.2− |
| 1999 09 07 | 691 | 0.6− | 0.3− | 2005 09 30 | 691 | 0.1+ | 0.2+ | 2005 10 29 | 703 | (1.6+ | 0.4+) |
| 1999 09 07 | 691 | 0.1− | 0.3+ | 2005 09 30 | 691 | 0.1+ | 0.2+ | 2005 10 29 | 703 | (1.1− | 2.4+) |
| 1999 10 16 | 645 | 0.1+ | 0.1− | 2005 09 30 | 691 | 0.2+ | 0.1+ | 2005 12 05 | G96 | 0.4+ | 0.0 |
| 1999 10 16 | 645 | 0.1+ | 0.1+ | 2005 10 01 | G96 | 0.0 | 0.1+ | 2005 12 05 | G96 | 0.1+ | 0.2− |
| 1999 10 19 | 691 | 0.1+ | 0.4− | 2005 10 01 | G96 | 0.3+ | 0.1− | 2005 12 05 | G96 | 0.0 | 0.1− |
| 1999 10 19 | 691 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.6− | 0.2+ | 2005 12 05 | G96 | 0.7− | 0.5− |
| 1999 10 19 | 691 | 0.0 | 0.1− | 2005 10 01 | G96 | 0.4− | 0.9+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 1999 11 05 | 691 | 0.1+ | 0.2+ | 2005 10 07 | G96 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.5− | 0.2− |
| 1999 11 05 | 691 | 0.0 | 0.4− | 2005 10 07 | G96 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.5− | 0.2+ |
| 1999 11 05 | 691 | 0.0 | 0.0 | 2005 10 07 | G96 | 0.4+ | 0.1− | 2006 11 27 | G96 | 0.5+ | 0.1+ |
| 2000 12 04 | 691 | 0.3− | 0.2− | 2005 10 11 | 291 | 0.2+ | 0.3+ | | | | |

**2005 SX**$_{217}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 149.03318 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.31131539 | $\omega$ | 312.29414 | | +0.95359149 | | +0.30021710 | | |
| $a$ | 2.1561005 | $\Omega$ | 30.25660 | | −0.26102035 | | +0.86243778 | | |
| $e$ | 0.1083223 | $i$ | 2.62607 | | −0.15010548 | | +0.40751782 | | |
| $P$ | 3.17 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 691 | 0.2+ | 0.8+ | 2005 10 23 | 644 | 0.1+ | 0.7+ | 2005 11 02 | 704 | 0.5− | 0.4+ |
| 2001 04 27 | 691 | 0.2+ | 0.8+ | 2005 10 23 | 644 | 0.0 | 0.2+ | 2005 11 02 | 704 | 0.6− | 0.6+ |
| 2001 04 27 | 691 | 0.4+ | 0.8+ | 2005 10 24 | 691 | 0.2+ | 0.3+ | 2005 11 04 | 704 | 0.1+ | 0.3− |
| 2002 12 03 | 644 | 0.4− | 0.1+ | 2005 10 24 | 691 | 0.2+ | 0.1− | 2005 11 04 | 704 | 0.3+ | 1.2+ |
| 2002 12 03 | 644 | 0.0 | 0.3+ | 2005 10 24 | 691 | 0.1+ | 0.1+ | 2005 11 04 | 704 | 0.4+ | 0.8+ |
| 2002 12 03 | 644 | 0.2+ | 0.2+ | 2005 10 27 | G96 | 0.2+ | 0.4− | 2005 11 04 | 704 | 0.2− | 0.3+ |
| 2005 09 30 | G96 | 0.7+ | 0.1− | 2005 10 27 | G96 | 0.0 | 0.4− | 2005 11 05 | 691 | 0.2− | 0.1− |
| 2005 09 30 | G96 | 0.3+ | 0.0 | 2005 10 27 | G96 | 0.1+ | 0.4− | 2005 11 05 | 691 | 0.4− | 0.3− |
| 2005 09 30 | G96 | 0.2+ | 0.0 | 2005 10 27 | G96 | 0.5+ | 0.3− | 2005 11 05 | 691 | 0.5− | 0.3− |
| 2005 09 30 | G96 | 0.3+ | 0.1+ | 2005 10 30 | 691 | 0.3− | 0.3+ | 2005 11 05 | 699 | 0.3− | 0.2+ |
| 2005 10 01 | 699 | 0.1+ | 0.0 | 2005 10 30 | 691 | 0.2− | 0.3+ | 2005 11 05 | 699 | 1.0+ | 1.2+ |
| 2005 10 01 | 699 | 0.8+ | 0.6+ | 2005 10 30 | 703 | 1.4+ | 0.9+ | 2005 11 05 | 699 | 0.6+ | 0.1− |
| 2005 10 01 | 699 | 0.1+ | 0.3− | 2005 10 30 | 703 | 0.3+ | 0.0 | 2005 11 05 | 699 | 1.3− | 0.2+ |
| 2005 10 01 | 699 | 0.0 | 1.9− | 2005 10 30 | 703 | 0.2− | 0.4+ | 2005 11 12 | 691 | 0.1− | 0.0 |
| 2005 10 07 | 704 | 0.0 | 1.4− | 2005 10 30 | 691 | 0.3− | 0.3+ | 2005 11 12 | 691 | 0.1+ | 0.5+ |
| 2005 10 07 | 704 | 0.2+ | 0.2+ | 2005 10 30 | 703 | 0.8+ | 0.1+ | 2005 11 12 | 691 | 0.0 | 0.0 |
| 2005 10 07 | 704 | 0.5+ | 1.0− | 2005 11 01 | 704 | 0.9− | 0.3+ | 2005 12 05 | G96 | 0.5+ | 0.3− |
| 2005 10 07 | 704 | 0.4− | 0.3+ | 2005 11 01 | 704 | 1.8− | 0.5+ | 2005 12 05 | G96 | 0.2− | 0.5− |
| 2005 10 12 | 691 | 0.0 | 0.0 | 2005 11 01 | 704 | 0.4− | 1.6+ | 2005 12 05 | G96 | 0.0 | 0.4− |
| 2005 10 12 | 691 | 0.3+ | 0.0 | 2005 11 02 | 704 | 0.2− | 0.1+ | 2005 12 05 | G96 | 0.3+ | 0.4− |
| 2005 10 12 | 691 | 0.1− | 0.0 | 2005 11 02 | 704 | 0.7− | 0.7+ | | | | |
| 2005 10 23 | 644 | 0.1− | 0.0 | 2005 11 02 | 704 | 0.5− | 0.6+ | | | | |

**2005 SB**$_{220}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 86.31045 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23441266 | $\omega$ | 171.28765 | | +0.89141633 | | +0.44853522 | | |
| $a$ | 2.6050457 | $\Omega$ | 161.63559 | | −0.42719085 | | +0.87935991 | | |
| $e$ | 0.2936106 | $i$ | 11.86048 | | −0.15127756 | | +0.15981958 | | |
| $P$ | 4.20 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.9+ | 0.3− | 2001 09 16 | 704 | 1.9+ | 0.7− | 2001 10 23 | 644 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.3− | 1.0− | 2001 09 16 | 704 | 0.8+ | 0.5− | 2001 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 08 16 | 704 | 0.0 | 0.4− | 2001 09 16 | 704 | 0.4+ | 0.1+ | 2005 08 31 | 691 | 0.5− | 0.4+ |
| 2001 08 27 | 704 | 0.7− | 0.2+ | 2001 09 25 | 704 | 1.1− | 1.6+ | 2005 08 31 | 691 | 0.3+ | 0.0 |
| 2001 08 27 | 704 | 0.6− | 0.3+ | 2001 09 25 | 704 | 0.6+ | 0.4+ | 2005 08 31 | 691 | 0.3+ | 0.2− |
| 2001 08 27 | 699 | 0.7− | 0.0 | 2001 09 25 | 704 | 0.2+ | 0.0 | 2005 09 29 | G96 | 0.1+ | 0.2− |
| 2001 08 27 | 704 | 0.5− | 0.1+ | 2001 09 25 | 704 | 0.1+ | 0.3+ | 2005 09 29 | G96 | 0.0 | 0.5− |
| 2001 08 27 | 699 | 0.1+ | 0.4− | 2001 10 11 | 704 | 0.8− | 0.0 | 2005 09 29 | G96 | 0.2+ | 0.0 |
| 2001 08 27 | 704 | 0.7− | 0.1− | 2001 10 11 | 704 | 0.5+ | 0.7− | 2005 09 29 | G96 | 0.0 | 0.1− |
| 2001 08 27 | 704 | 0.1− | 0.3+ | 2001 10 11 | 704 | 0.6− | 0.2+ | 2005 10 03 | 644 | 0.3− | 0.2− |
| 2001 08 27 | 699 | 0.5+ | 1.0+ | 2001 10 11 | 704 | 0.3− | 1.2− | 2005 10 03 | 644 | 0.3− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.2+ | 0.9+ | 2001 10 11 | 704 | 1.1− | 0.0 | 2005 10 03 | 644 | 0.1− | 0.2− | | |
| 2001 09 16 | 704 | 1.1+ | 0.5− | 2001 10 23 | 644 | 0.1− | 0.2+ | | | | | | |

**2005 SR$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 108.20301 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.17477038 | $\omega$ | 320.04509 | | +0.94510659 | | +0.32658174 | |
| $a$ | 3.1682844 | $\Omega$ | 20.90116 | | −0.29148673 | | +0.85763073 | |
| $e$ | 0.0791190 | $i$ | 1.74416 | | −0.14767880 | | +0.39725797 | |
| $P$ | 5.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 691 | 0.3+ | 0.2− | 2005 10 05 | 691 | 0.2− | 0.3+ | 2005 11 05 | 691 | 0.2− | 0.2+ | | |
| 1999 09 18 | 691 | 0.2+ | 0.4− | 2005 10 24 | 691 | 0.5− | 0.0 | 2005 11 10 | 291 | 0.2− | 0.1+ | | |
| 1999 09 18 | 691 | 0.1− | 0.2− | 2005 10 24 | 691 | 0.1− | 0.0 | 2005 11 10 | 291 | 0.5+ | 0.2+ | | |
| 2000 12 31 | 691 | 0.3+ | 0.2− | 2005 10 24 | 691 | 0.2− | 0.2+ | 2005 11 10 | 291 | 0.2+ | 0.3− | | |
| 2000 12 31 | 691 | 0.5− | 0.2+ | 2005 10 28 | 691 | 0.3− | 0.2+ | 2005 11 26 | G96 | 0.2− | 0.4− | | |
| 2000 12 31 | 691 | 0.2+ | 0.5− | 2005 10 28 | 691 | 0.3− | 0.1− | 2005 11 26 | G96 | 0.1+ | 0.4− | | |
| 2005 09 30 | G96 | 0.1− | 0.3− | 2005 10 28 | 691 | 0.2− | 0.1+ | 2005 11 26 | G96 | 0.0 | 0.2− | | |
| 2005 09 30 | G96 | 0.2+ | 0.3− | 2005 11 01 | 691 | 0.1− | 0.1− | 2005 11 26 | G96 | 0.7− | 0.3− | | |
| 2005 09 30 | G96 | 0.4− | 0.2− | 2005 11 01 | 691 | 1.8+ | 0.2− | 2005 12 05 | G96 | 0.2+ | 0.1+ | | |
| 2005 09 30 | G96 | 0.2− | 0.1− | 2005 11 01 | 691 | 0.1+ | 0.1− | 2005 12 05 | G96 | 0.1+ | 0.2+ | | |
| 2005 10 05 | 691 | 0.1− | 0.3+ | 2005 11 05 | 691 | 0.0 | 0.1+ | 2005 12 05 | G96 | 0.4+ | 0.1− | | |
| 2005 10 05 | 691 | 0.2− | 0.2+ | 2005 11 05 | 691 | 0.1− | 0.3+ | 2005 12 05 | G96 | 0.3+ | 0.2− | | |

**2005 SF$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 112.32644 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.22905868 | $\omega$ | 297.65436 | | +0.84973592 | | +0.52709506 | |
| $a$ | 2.6454824 | $\Omega$ | 30.53993 | | −0.47580313 | | +0.77565377 | |
| $e$ | 0.2822750 | $i$ | 1.23351 | | −0.22706879 | | +0.34717722 | |
| $P$ | 4.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.2+ | 0.1− | 2005 10 06 | G96 | 0.1− | 0.3+ | 2005 10 22 | 703 | 0.6− | 1.0+ | | |
| 2001 11 17 | 291 | 0.1− | 0.1+ | 2005 10 06 | G96 | 0.5− | 0.3+ | 2005 10 22 | 703 | 1.0− | 0.8+ | | |
| 2001 11 17 | 291 | 0.1− | 0.0 | 2005 10 06 | G96 | 0.3− | 0.3+ | 2005 10 22 | 703 | 0.2− | 0.9+ | | |
| 2004 04 19 | 691 | 0.1+ | 0.3+ | 2005 10 06 | 699 | 2.6+ | 1.4+ | 2005 10 22 | 703 | 0.4+ | 0.6+ | | |
| 2004 04 19 | 691 | 0.6+ | 0.5+ | 2005 10 06 | G96 | 0.1− | 0.4+ | 2005 10 23 | 703 | 0.6+ | 0.0 | | |
| 2004 04 19 | 691 | 0.2− | 0.5+ | 2005 10 06 | G96 | 0.4− | 0.2+ | 2005 10 23 | 703 | 0.6− | 0.0 | | |
| 2005 09 18 | 644 | 0.1+ | 0.4+ | 2005 10 06 | G96 | 0.2− | 0.5+ | 2005 10 23 | 703 | 0.1− | 0.2− | | |
| 2005 09 18 | 644 | 0.3− | 0.1+ | 2005 10 06 | G96 | 0.2+ | 0.1+ | 2005 10 23 | 703 | 0.4+ | 0.1− | | |
| 2005 09 18 | 644 | 0.2− | 0.3+ | 2005 10 06 | G96 | 0.0 | 0.5+ | 2005 10 24 | 699 | 0.2+ | 0.4+ | | |
| 2005 09 29 | 683 | 2.2+ | 1.7− | 2005 10 06 | G96 | 0.4− | 0.1+ | 2005 10 24 | 699 | 0.8− | 1.0+ | | |
| 2005 09 29 | 683 | 1.1− | 1.6− | 2005 10 06 | G96 | 0.0 | 0.5+ | 2005 10 24 | 699 | 0.3− | 0.4− | | |
| 2005 09 29 | G96 | 0.3− | 0.1− | 2005 10 06 | G96 | 0.3− | 0.0 | 2005 10 24 | 699 | 0.6− | 0.5+ | | |
| 2005 09 29 | G96 | 0.3− | 0.3− | 2005 10 07 | 704 | 0.8+ | 0.2+ | 2005 10 25 | 701 | 0.9− | 0.1− | | |
| 2005 09 29 | G96 | 0.1− | 0.3− | 2005 10 07 | 704 | 0.6+ | 0.7− | 2005 10 25 | 701 | 0.7− | 0.2− | | |
| 2005 09 29 | G96 | 0.1+ | 0.2− | 2005 10 07 | 704 | (1.1+ | 1.9−) | 2005 10 28 | 703 | 0.6− | 0.1+ | | |
| 2005 10 01 | 704 | 0.9− | 0.9− | 2005 10 07 | 683 | 1.4+ | 0.8− | 2005 10 28 | 703 | 0.5− | 0.5+ | | |
| 2005 10 01 | 704 | 0.3− | 0.8− | 2005 10 07 | 683 | (2.1+ | 0.8+) | 2005 10 28 | 703 | 0.4− | 0.9+ | | |
| 2005 10 01 | 683 | (0.2− | 2.0−) | 2005 10 07 | G96 | 0.2− | 0.1+ | 2005 10 28 | 703 | 0.3− | 0.1− | | |
| 2005 10 01 | 704 | 0.1− | 0.3− | 2005 10 07 | 683 | 0.2+ | 0.6− | 2005 10 29 | 703 | (0.7+ | 2.2−) | | |
| 2005 10 01 | 683 | (0.2+ | 2.5−) | 2005 10 07 | G96 | 0.0 | 0.2+ | 2005 10 29 | 703 | (3.0+ | 1.6−) | | |
| 2005 10 01 | 704 | 0.1+ | 0.2− | 2005 10 07 | G96 | 0.4− | 0.1+ | 2005 10 29 | 703 | 0.1+ | 0.3− | | |
| 2005 10 01 | 683 | 0.3+ | 1.1− | 2005 10 07 | G96 | 0.1− | 0.0 | 2005 10 29 | 703 | 0.2+ | 0.4− | | |
| 2005 10 01 | 704 | 0.1+ | 0.5+ | 2005 10 08 | 291 | 0.1− | 0.4+ | 2005 11 04 | 704 | 0.4+ | 0.2− | | |
| 2005 10 06 | 699 | 0.1− | 0.1+ | 2005 10 08 | 291 | 0.2+ | 0.3+ | 2005 11 04 | 704 | 0.8+ | 1.0− | | |
| 2005 10 06 | 699 | 0.1+ | 0.3− | 2005 10 08 | 291 | 0.7+ | 0.4+ | 2005 11 04 | 704 | 0.1+ | 0.3− | | |
| 2005 10 06 | 703 | 0.3− | 0.1− | 2005 10 11 | 683 | 0.0 | 0.5+ | 2005 11 04 | 704 | 0.3+ | 0.1− | | |
| 2005 10 06 | 703 | 0.9− | 0.2+ | 2005 10 11 | 683 | (1.3− | 1.7+) | 2005 11 25 | G96 | 0.1+ | 0.2− | | |
| 2005 10 06 | 703 | (1.3+ | 3.3−) | 2005 10 11 | 683 | (3.7− | 0.7+) | 2005 11 25 | G96 | 0.4+ | 0.1− | | |
| 2005 10 06 | 699 | 1.1− | 0.7− | 2005 10 21 | 644 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.1+ | 0.1− | | |
| 2005 10 06 | 703 | 0.3− | 0.9− | 2005 10 21 | 644 | 0.2− | 0.3+ | 2005 11 25 | G96 | 0.2− | 0.3− | | |
| 2005 10 06 | G96 | 0.3− | 0.3+ | 2005 10 21 | 644 | 0.2− | 0.2+ | | | | | | |

**2005 SN$_{237}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 183.23827 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.19641510 | $\omega$ | 250.82762 | | +0.00533842 | | +0.99775749 | |
| $a$ | 2.9310246 | $\Omega$ | 19.83672 | | −0.82763779 | | +0.04185501 | |
| $e$ | 0.0547618 | $i$ | 11.33908 | | −0.56123720 | | −0.05223165 | |
| $P$ | 5.02 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 291 | 0.2− | 0.1− | 2005 09 29 | 691 | 0.0 | 0.1− | 2005 10 06 | G96 | 0.5+ | 0.3− | | |
| 2003 03 24 | 291 | 0.3− | 0.1− | 2005 09 29 | 691 | 0.1+ | 0.1+ | 2005 10 09 | 691 | 0.3− | 0.2− | | |
| 2003 03 24 | 291 | 0.2+ | 0.1+ | 2005 09 29 | 691 | 0.1+ | 0.1+ | 2005 10 09 | 691 | 0.1− | 0.3+ | | |
| 2003 04 09 | 644 | 0.2+ | 0.2+ | 2005 09 29 | 691 | 0.2+ | 0.0 | 2005 10 09 | 691 | 0.3+ | 0.0 | | |
| 2003 04 09 | 644 | 0.6+ | 0.1+ | 2005 09 29 | 691 | 0.1− | 0.2+ | 2005 10 13 | 691 | 0.5− | 0.0 | | |
| 2003 04 09 | 644 | 0.4+ | 0.6+ | 2005 09 29 | 691 | 0.2+ | 0.1+ | 2005 10 13 | 691 | 0.3− | 0.1− | | |
| 2003 04 24 | 691 | 0.1− | 0.2− | 2005 10 06 | G96 | 0.4+ | 0.7− | 2005 10 13 | 691 | 0.1+ | 0.1− | | |
| 2003 04 24 | 691 | 0.0 | 0.0 | 2005 10 06 | G96 | 0.3+ | 0.3− | | | | | | |
| 2003 04 24 | 691 | 0.0 | 0.0 | 2005 10 06 | G96 | 0.2+ | 0.1− | | | | | | |

**2005 SO$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 8.07902 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.18402382 | $\omega$ | 231.33245 | | +0.09379540 | | −0.99155057 | |
| $a$ | 3.0611647 | $\Omega$ | 213.61352 | | +0.95632080 | | +0.11475976 | |
| $e$ | 0.0468563 | $i$ | 9.31549 | | +0.27686270 | | −0.06047858 | |
| $P$ | 5.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 31 | 807 | 0.0 | 0.1+ | 2005 10 11 | 691 | 0.2− | 0.3− | 2005 11 06 | G96 | 0.3+ | 0.2− | | |
| 2003 05 31 | 807 | 0.0 | 0.2+ | 2005 10 11 | 691 | 0.1− | 0.0 | 2005 11 06 | G96 | 0.3− | 0.5− | | |
| 2004 06 22 | 691 | 0.1+ | 0.7+ | 2005 10 11 | 691 | 0.3− | 0.2+ | 2005 11 25 | G96 | 0.7+ | 0.0 | | |
| 2004 06 22 | 691 | 0.1− | 0.3− | 2005 10 25 | 691 | 0.3− | 0.3+ | 2005 11 25 | G96 | 0.2+ | 0.0 | | |
| 2004 06 22 | 691 | 0.0 | 0.4− | 2005 10 25 | 691 | 0.1+ | 0.4+ | 2005 11 25 | G96 | 0.2+ | 0.1− | | |
| 2005 09 30 | 691 | 0.0 | 0.1+ | 2005 10 25 | 691 | 0.0 | 0.1+ | 2005 11 25 | G96 | 0.3− | 0.2+ | | |
| 2005 09 30 | 691 | 0.2+ | 0.1− | 2005 10 31 | 691 | 0.3− | 0.1− | 2005 12 02 | G96 | 0.1+ | 0.1+ | | |
| 2005 09 30 | 691 | 0.3+ | 0.3− | 2005 10 31 | 691 | 0.4− | 0.4+ | 2005 12 02 | G96 | 0.1− | 0.2+ | | |
| 2005 10 07 | 691 | 0.5+ | 0.2− | 2005 10 31 | 691 | 0.3− | 0.3− | 2005 12 02 | G96 | 0.2+ | 0.0 | | |
| 2005 10 07 | 691 | 0.3+ | 0.1− | 2005 11 06 | G96 | 0.4+ | 0.1+ | 2005 12 02 | G96 | 0.0 | 0.3+ | | |
| 2005 10 07 | 691 | 0.2+ | 0.1− | 2005 11 06 | G96 | 0.2− | 0.1− | | | | | | |

**2005 SZ$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 33.64609 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.17372302 | $\omega$ | 201.57583 | | +0.59243183 | | −0.80136045 | |
| $a$ | 3.1810058 | $\Omega$ | 212.26294 | | +0.75996296 | | +0.58998521 | |
| $e$ | 0.0177082 | $i$ | 8.91685 | | +0.26735898 | | +0.09868577 | |
| $P$ | 5.67 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 15 | 691 | 0.3− | 0.3− | 2005 10 07 | 691 | 0.3+ | 0.4+ | 2005 10 30 | 691 | 0.1+ | 0.0 | | |
| 1997 04 15 | 691 | 0.2+ | 0.2+ | 2005 10 07 | 691 | 0.2− | 0.1+ | 2005 10 30 | 691 | 0.1+ | 0.0 | | |
| 1997 04 15 | 691 | 0.1+ | 0.1− | 2005 10 07 | 691 | 0.2+ | 0.3+ | 2005 11 25 | G96 | 0.0 | 0.0 | | |
| 2003 06 02 | 807 | 0.1− | 0.0 | 2005 10 11 | 691 | 0.2+ | 0.0 | 2005 11 25 | G96 | 0.3+ | 0.1− | | |
| 2003 06 02 | 807 | 0.1+ | 0.1+ | 2005 10 11 | 691 | 0.1+ | 0.1+ | 2005 11 25 | G96 | 0.0 | 0.0 | | |
| 2005 09 24 | 691 | 0.3− | 0.2+ | 2005 10 11 | 691 | 0.2+ | 0.0 | 2005 11 25 | G96 | 0.4+ | 0.0 | | |
| 2005 09 24 | 691 | 0.0 | 0.2− | 2005 10 27 | G96 | 0.1− | 0.2− | 2005 12 02 | G96 | 0.4+ | 0.2+ | | |
| 2005 09 24 | 691 | 0.1+ | 0.0 | 2005 10 27 | G96 | 0.6− | 0.3− | 2005 12 02 | G96 | 0.1+ | 0.2+ | | |
| 2005 09 30 | 691 | 0.5− | 0.5− | 2005 10 27 | G96 | 0.2− | 0.2− | 2005 12 02 | G96 | 0.2− | 0.0 | | |
| 2005 09 30 | 691 | 0.0 | 0.2− | 2005 10 27 | G96 | 0.2− | 0.0 | 2005 12 02 | G96 | 0.1+ | 0.4+ | | |
| 2005 09 30 | 691 | 0.2+ | 0.1+ | 2005 10 30 | 691 | 0.5− | 0.3− | | | | | | |

**2005 SG$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.69158 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17414031 | $\omega$ | 233.79997 | | +0.25095043 | | −0.96617682 |
| $a$ | 3.1759221 | $\Omega$ | 201.89345 | | +0.93137966 | | +0.25771568 |
| $e$ | 0.0784910 | $i$ | 9.16348 | | +0.26373434 | | +0.00921891 |
| $P$ | 5.66 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 29 | 691 | 0.1− | 0.1+ | 2005 10 07 | 691 | 0.1− | 0.1+ | 2005 10 28 | G96 | 0.0 | 0.2− |
| 1994 11 29 | 691 | 0.1+ | 0.3− | 2005 10 11 | 691 | 0.1+ | 0.2+ | 2005 10 29 | G96 | 0.0 | 0.4− |
| 1994 11 29 | 691 | 0.1− | 0.2+ | 2005 10 11 | 691 | 0.2+ | 0.4+ | 2005 10 29 | G96 | 0.3+ | 0.2− |
| 1999 11 14 | 691 | 0.1− | 0.0 | 2005 10 11 | 691 | 0.1− | 0.4+ | 2005 10 29 | G96 | 0.1− | 0.2− |
| 1999 11 14 | 691 | 0.1− | 0.2− | 2005 10 22 | 703 | 0.7+ | 1.6− | 2005 10 29 | G96 | 0.0 | 0.3− |
| 1999 11 14 | 691 | 0.3+ | 0.1− | 2005 10 22 | 703 | 1.0+ | 0.4− | 2005 12 01 | G96 | 0.3+ | 0.3+ |
| 2005 09 30 | 691 | 0.3− | 0.0 | 2005 10 22 | 703 | 0.3+ | 1.4− | 2005 12 01 | G96 | 0.2+ | 0.0 |
| 2005 09 30 | 691 | 0.1+ | 0.3+ | 2005 10 22 | 703 | 0.8− | 1.1− | 2005 12 01 | G96 | 0.1+ | 0.2− |
| 2005 09 30 | 691 | 0.4− | 0.1+ | 2005 10 28 | G96 | 0.1− | 0.1− | 2005 12 01 | G96 | 0.0 | 0.1− |
| 2005 10 07 | 691 | 0.1− | 0.2+ | 2005 10 28 | G96 | 0.2− | 0.4− | | | | |
| 2005 10 07 | 691 | 0.1+ | 0.1+ | 2005 10 28 | G96 | 0.2+ | 0.3− | | | | |

**2005 SC$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.43423 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17857231 | $\omega$ | 121.42848 | | −0.61645930 | | −0.78710383 |
| $a$ | 3.1231533 | $\Omega$ | 6.74832 | | +0.64762822 | | −0.52210390 |
| $e$ | 0.0170838 | $i$ | 10.34763 | | +0.44783437 | | −0.32844343 |
| $P$ | 5.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 644 | 0.4+ | 1.3+ | 2005 09 24 | 644 | 0.1+ | 0.0 | 2005 10 25 | G96 | 0.3− | 0.2− |
| 2002 01 13 | 644 | 0.2+ | 1.2+ | 2005 09 24 | 644 | 0.1− | 0.3+ | 2005 10 25 | G96 | 0.3+ | 0.0 |
| 2002 01 13 | 644 | 0.6+ | 1.0+ | 2005 09 28 | 644 | 0.4+ | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.5− |
| 2003 04 24 | 691 | 0.3+ | 0.5+ | 2005 09 28 | 644 | 0.0 | 0.2+ | 2005 11 25 | G96 | 0.9− | 0.2− |
| 2003 04 24 | 691 | 0.2+ | 0.6+ | 2005 09 28 | 644 | 0.3− | 0.3+ | 2005 11 25 | G96 | 0.5− | 0.0 |
| 2003 04 24 | 691 | 0.6+ | 0.5+ | 2005 10 12 | 691 | 0.3− | 0.5+ | 2005 11 25 | G96 | 0.2− | 0.6− |
| 2005 08 30 | 691 | 0.3− | 0.0 | 2005 10 12 | 691 | 0.4+ | 0.6+ | 2005 11 29 | G96 | 0.3− | 0.8− |
| 2005 08 30 | 691 | 0.3− | 0.1+ | 2005 10 12 | 691 | 0.0 | 0.9+ | 2005 11 29 | G96 | 0.6− | 0.4+ |
| 2005 08 30 | 691 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.1− | 2005 11 29 | G96 | 0.4− | 0.1+ |
| 2005 09 24 | 644 | 0.2− | 0.2+ | 2005 10 25 | G96 | 0.1+ | 0.1+ | 2005 11 29 | G96 | 0.3+ | 0.8− |

**2005 SY$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.07214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16975974 | $\omega$ | 352.61008 | | +0.76659652 | | −0.63491379 |
| $a$ | 3.2303252 | $\Omega$ | 47.26834 | | +0.59562606 | | +0.64723690 |
| $e$ | 0.0993232 | $i$ | 7.50899 | | +0.23991534 | | +0.42186357 |
| $P$ | 5.81 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 644 | 0.9+ | 0.8+ | 2005 09 24 | 644 | 0.1+ | 0.2+ | 2005 10 27 | 644 | 0.3− | 0.3+ |
| 2002 03 11 | 644 | 0.5+ | 0.8+ | 2005 09 24 | 644 | 0.3+ | 0.3+ | 2005 10 27 | 644 | 0.1− | 0.2− |
| 2002 03 11 | 644 | 0.1+ | 0.9+ | 2005 09 24 | 644 | 0.2− | 0.1+ | 2005 10 27 | 699 | (0.0 | 2.1+) |
| 2003 05 10 | 291 | 0.1+ | 0.3+ | 2005 09 29 | 644 | 0.1+ | 0.1− | 2005 10 27 | 644 | 0.2− | 0.1+ |
| 2003 05 10 | 291 | 0.2+ | 0.2+ | 2005 09 29 | 644 | 0.1+ | 0.5+ | 2005 10 27 | 699 | 0.9− | 0.1− |
| 2003 05 10 | 291 | 0.0 | 0.1+ | 2005 09 29 | 644 | 0.1+ | 0.3+ | 2005 10 28 | 704 | 0.1+ | 0.8+ |
| 2005 08 31 | 644 | 0.2+ | 0.1+ | 2005 10 07 | 703 | 0.8+ | 0.1+ | 2005 10 28 | 704 | 1.2− | 0.2+ |
| 2005 08 31 | 644 | 0.2− | 0.1+ | 2005 10 07 | 703 | 0.3+ | 0.5+ | 2005 10 28 | 704 | 0.4+ | 0.3− |
| 2005 08 31 | 644 | 0.0 | 0.0 | 2005 10 07 | 703 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.4− | 0.2+ |
| 2005 08 31 | 644 | 0.4− | 0.1+ | 2005 10 07 | 703 | 0.5− | 0.3+ | 2005 12 01 | G96 | 0.2+ | 0.2+ |
| 2005 08 31 | 644 | 0.2− | 0.0 | 2005 10 27 | 699 | 0.8− | 0.1− | 2005 12 01 | G96 | 0.5− | 0.2+ |
| 2005 08 31 | 644 | 0.4− | 0.0 | 2005 10 27 | 699 | 1.0+ | 0.1− | 2005 12 01 | G96 | 0.0 | 0.2+ |

**2005 SP$_{259}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.57755 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18215257 | $\omega$ | 256.50559 | | +0.39397906 | | +0.91261773 |
| $a$ | 3.0820937 | $\Omega$ | 37.29866 | | −0.75816926 | | +0.38980888 |
| $e$ | 0.0413487 | $i$ | 10.37510 | | −0.51957663 | | +0.12319869 |
| $P$ | 5.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.7− | 0.3− | 2005 08 27 | 644 | 0.6− | 0.1+ | 2005 09 25 | 703 | (0.2+ | 1.5−) |
| 2001 12 09 | 704 | 0.3+ | 0.3+ | 2005 08 27 | 644 | 0.5− | 0.2+ | 2005 09 25 | 703 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | 0.3+ | 1.0+ | 2005 08 27 | 644 | 0.3− | 0.4+ | 2005 09 27 | 704 | 1.1− | 0.5+ |
| 2001 12 09 | 704 | 0.5+ | 0.6+ | 2005 08 27 | 644 | 0.4− | 0.2+ | 2005 09 27 | 704 | (1.9− | 0.3−) |
| 2002 12 11 | 645 | 0.2− | 0.0 | 2005 08 27 | 644 | 0.4− | 0.4+ | 2005 09 27 | 704 | 1.1− | 0.1− |
| 2002 12 11 | 645 | 0.3+ | 0.4+ | 2005 08 27 | 644 | 0.3− | 0.5+ | 2005 09 27 | 704 | 1.1− | 0.9+ |
| 2003 03 12 | 644 | 0.4+ | 0.2+ | 2005 08 28 | 699 | 1.3+ | 1.1+ | 2006 11 17 | 691 | 0.4+ | 0.1− |
| 2003 03 12 | 644 | 0.7− | 0.5− | 2005 08 28 | 699 | (0.3− | 1.6+) | 2006 11 17 | 691 | 0.1+ | 0.3− |
| 2003 03 12 | 644 | 0.3+ | 0.0 | 2005 08 28 | 699 | 0.5+ | 0.2+ | 2006 11 17 | 691 | 0.5+ | 0.1− |
| 2003 03 25 | 644 | 0.0 | 0.4+ | 2005 08 28 | 699 | (2.3− | 1.2+) | 2006 11 21 | 691 | 1.2− | 0.6+ |
| 2003 03 25 | 644 | 0.3− | 0.5+ | 2005 09 13 | 703 | 0.9+ | 1.3+ | 2006 11 21 | 691 | 0.5− | 0.0 |
| 2003 03 25 | 644 | 0.1+ | 0.5+ | 2005 09 13 | 703 | 0.9− | 0.1+ | 2006 11 21 | 691 | 0.5+ | 0.1− |
| 2003 04 01 | 704 | 0.7− | 0.1− | 2005 09 13 | 703 | (2.6− | 1.4−) | 2006 11 25 | 691 | 0.4+ | 0.1− |
| 2003 04 01 | 704 | 1.0+ | 0.6− | 2005 09 13 | 703 | 0.2− | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2003 04 01 | 704 | 0.3+ | 0.3+ | 2005 09 25 | 703 | 0.6+ | 0.8− | 2006 11 25 | 691 | 0.1− | 0.3− |
| 2003 04 01 | 704 | 1.0+ | 0.6− | 2005 09 25 | 703 | (1.5+ | 0.9−) | | | | |

**2005 SS$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.75682 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22659465 | $\omega$ | 47.98923 | | +0.17886718 | | −0.98333826 |
| $a$ | 2.6646261 | $\Omega$ | 31.75029 | | +0.88348645 | | +0.14601968 |
| $e$ | 0.0959571 | $i$ | 3.53447 | | +0.43296445 | | +0.10827802 |
| $P$ | 4.35 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 18 | 691 | 0.6− | 0.5− | 2001 12 18 | 704 | 0.2+ | 0.4+ | 2005 10 01 | G96 | 0.3+ | 0.0 |
| 1992 10 18 | 691 | 0.9+ | 0.2− | 2003 03 23 | 291 | 0.5− | 0.2+ | 2005 10 01 | G96 | 0.5− | 0.2+ |
| 2001 11 19 | 704 | 0.3+ | 0.7− | 2003 03 23 | 291 | 0.5− | 0.2+ | 2005 10 01 | G96 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.4− | 0.4+ | 2003 03 23 | 291 | 0.5− | 0.5+ | 2005 10 01 | G96 | 0.4− | 0.1+ |
| 2001 11 19 | 704 | 0.8− | 0.6− | 2003 04 26 | 691 | 1.1+ | 0.0 | 2005 10 01 | G96 | 0.1+ | 0.1+ |
| 2001 11 19 | 704 | 0.4+ | 0.7− | 2003 04 26 | 691 | 0.7+ | 0.6+ | 2005 10 11 | 291 | 0.2− | 0.3+ |
| 2001 12 10 | 704 | 0.2− | 0.9− | 2003 04 26 | 691 | 0.8+ | 0.6+ | 2005 10 11 | 291 | 0.1− | 0.9+ |
| 2001 12 10 | 704 | 0.1− | 0.1− | 2005 09 23 | 691 | 0.2− | 0.0 | 2005 10 11 | 291 | 0.1+ | 0.4+ |
| 2001 12 10 | 704 | 0.2+ | 0.1− | 2005 09 23 | 691 | 0.2− | 0.5+ | 2005 10 28 | G96 | 0.3− | 0.2− |
| 2001 12 18 | 704 | 0.4+ | 0.6+ | 2005 09 23 | 691 | 0.2− | 0.1+ | 2005 10 28 | G96 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2005 10 01 | G96 | 0.2− | 0.2+ | 2005 10 28 | G96 | 0.3+ | 1.8+ |
| 2001 12 18 | 704 | 0.1− | 0.3+ | 2005 10 01 | G96 | 0.3− | 0.1+ | 2005 10 28 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.2+ | 1.4+ | 2005 10 01 | G96 | 0.7− | 0.2+ | | | | |

**2005 SL$_{266}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.31407 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28084099 | $\omega$ | 29.99871 | | +0.91377326 | | +0.40082488 |
| $a$ | 2.3093817 | $\Omega$ | 306.22492 | | −0.38708336 | | +0.80984665 |
| $e$ | 0.0465187 | $i$ | 4.69387 | | −0.12322706 | | +0.42835479 |
| $P$ | 3.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.3− | 0.1+ | 2003 01 05 | 704 | 1.0+ | 0.6− | 2005 09 23 | 699 | 0.5− | 0.4+ |
| 1991 10 08 | 691 | 0.1+ | 0.3− | 2003 01 05 | 704 | 0.1+ | 0.2+ | 2005 09 23 | 699 | 0.3+ | 1.3+ |
| 1991 10 08 | 691 | 0.4+ | 0.0 | 2003 01 05 | 704 | 0.2+ | 0.3+ | 2005 09 23 | 699 | 1.2+ | 0.9+ |
| 2002 12 06 | 704 | 0.6− | 0.1+ | 2004 04 19 | 704 | 0.3+ | 0.7+ | 2005 09 29 | 699 | 1.4− | 0.6+ |
| 2002 12 06 | 704 | 0.8− | 0.4+ | 2004 04 19 | 704 | 0.2+ | 0.5+ | 2005 09 29 | 699 | 0.6+ | 0.6+ |
| 2002 12 06 | 704 | 0.0 | 0.3− | 2004 04 19 | 704 | 0.0 | 0.2+ | 2005 09 29 | 699 | 0.4− | 1.0+ |
| 2002 12 06 | 704 | 0.8− | 1.1− | 2004 04 19 | 704 | 0.0 | 0.3− | 2005 09 29 | 699 | (0.1+ | 2.4+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1+ | 1.2+ | 2005 09 09 | 704 | 0.4+ | 1.2− | 2005 10 01 | 703 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.9+ | 1.5+ | 2005 09 09 | 704 | 1.5+ | 0.5+ | 2005 10 01 | 703 | 0.1+ | 1.5− |
| 2002 12 11 | 704 | 0.4− | 0.5− | 2005 09 09 | 704 | 0.3− | 0.4+ | 2005 10 01 | 703 | 0.7− | 0.3+ |
| 2002 12 11 | 704 | 0.0 | 0.6+ | 2005 09 09 | 704 | 0.2+ | 0.5− | 2005 10 01 | 703 | 1.1− | 0.3− |
| 2002 12 11 | 704 | 0.7+ | 1.6− | 2005 09 09 | 704 | 0.4− | 0.2− | | | | |
| 2003 01 05 | 704 | 0.3− | 0.5+ | 2005 09 23 | 699 | 0.5− | 0.1− | | | | |

**2005 SK$_{269}$ = 2000 YU$_5$**

Id. Minor Planet Center; 2000 YU$_5$ = 1996 AF$_9$ (*MPO* 9462) is invalid.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.27438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17871139 | $\omega$ | 82.20289 | | +0.92091944 | −0.34758658 | |
| $a$ | 3.1215327 | $\Omega$ | 297.98952 | | +0.22940464 | +0.84914021 | |
| $e$ | 0.1902453 | $i$ | 11.51839 | | +0.31508871 | +0.39767383 | |
| $P$ | 5.52 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 19 | 704 | 0.4+ | 0.2− | 2005 09 01 | 644 | 0.2− | 0.4− | 2005 10 06 | 703 | 0.2− | 0.2+ |
| 2000 12 19 | 704 | 0.2− | 0.1− | 2005 09 01 | 644 | 0.4− | 0.4− | 2005 10 06 | 703 | 0.2− | 1.0− |
| 2000 12 19 | 704 | 0.8− | 0.2− | 2005 09 12 | 704 | 0.9+ | 0.2+ | 2005 10 06 | 703 | 0.9+ | 1.0− |
| 2000 12 22 | 704 | 0.3+ | 0.3− | 2005 09 12 | 704 | 1.2+ | 1.0+ | 2005 10 06 | 703 | 1.4+ | 0.4+ |
| 2000 12 22 | 704 | 0.4+ | 0.3− | 2005 09 12 | 704 | 0.5− | 0.1+ | 2005 10 12 | 704 | (1.1+ | 1.6+) |
| 2000 12 22 | 704 | 0.4+ | 0.4+ | 2005 09 12 | 704 | 0.5+ | 0.4+ | 2005 10 12 | 704 | 0.2− | 0.4− |
| 2000 12 22 | 704 | 1.4+ | 0.5+ | 2005 09 12 | 704 | 0.2− | 0.6+ | 2005 10 12 | 704 | (0.1+ | 1.7+) |
| 2000 12 23 | 704 | 0.8− | 0.5+ | 2005 09 26 | 703 | 0.6− | 0.0 | 2005 10 12 | 704 | 0.1− | 0.8− |
| 2000 12 23 | 704 | 0.5− | 0.2+ | 2005 09 26 | 703 | 0.8− | 0.4+ | 2005 10 22 | 644 | 0.0 | 0.4+ |
| 2000 12 23 | 704 | 0.7− | 0.0 | 2005 09 26 | 703 | 0.6− | 1.3− | 2005 10 22 | 644 | 0.2− | 0.8+ |
| 2005 09 01 | 704 | 0.9− | 0.0 | 2005 09 26 | 703 | 1.3+ | 0.6− | 2005 10 22 | 644 | 0.0 | 0.6+ |
| 2005 09 01 | 704 | (1.0− | 1.8+) | 2005 10 02 | 699 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2005 09 01 | 704 | 0.0 | 0.1− | 2005 10 02 | 699 | 0.5− | 0.4+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2005 09 01 | 704 | 0.1− | 0.3+ | 2005 10 02 | 699 | 0.8+ | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2005 09 01 | 644 | 0.4− | 0.5− | 2005 10 02 | 699 | 0.4− | 0.1+ | | | | |

**2005 SB$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.19038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12402978 | $\omega$ | 207.35551 | | +0.84354967 | +0.51663483 | |
| $a$ | 3.9821602 | $\Omega$ | 120.78504 | | −0.45624324 | +0.83345310 | |
| $e$ | 0.2272491 | $i$ | 9.83013 | | −0.28331266 | +0.19607241 | |
| $P$ | 7.95 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 27 | 699 | 0.5− | 0.0 | 2005 10 05 | 703 | 0.6+ | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2005 08 27 | 699 | 0.1+ | 0.6+ | 2005 10 05 | 703 | 1.0+ | 0.7+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2005 08 27 | 699 | 0.1− | 0.1+ | 2005 10 05 | 703 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2005 08 27 | 699 | 0.5+ | 0.1+ | 2005 10 10 | 703 | 0.9+ | 0.5− | 2006 11 22 | G96 | 0.1− | 0.2+ |
| 2005 09 03 | 703 | 0.5+ | 0.7− | 2005 10 10 | 703 | 0.7+ | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2005 09 03 | 703 | 0.5+ | 0.8− | 2005 10 10 | 703 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2005 09 03 | 703 | 0.7− | 0.4− | 2005 10 10 | 703 | 0.5− | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2005 09 03 | 703 | 0.7− | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2005 09 13 | 703 | 0.5+ | 0.3+ | 2006 11 22 | G96 | 0.6− | 0.0 | 2006 11 23 | G96 | 0.7+ | 0.1− |
| 2005 09 13 | 703 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2005 09 13 | 703 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.7− | 0.3− |
| 2005 09 13 | 703 | 0.6+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 09 27 | 704 | 0.7+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2005 09 27 | 704 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2005 09 27 | 704 | 0.4+ | 0.4− | 2006 11 22 | G96 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2005 09 27 | 704 | 0.6− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2005 09 27 | 704 | 0.3+ | 0.8− | 2006 11 22 | G96 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2005 10 05 | 703 | 0.8− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 1.5− |
| 2005 10 05 | 703 | 0.5− | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2005 10 05 | 703 | 1.3− | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.6+ | 0.2+ |
| 2005 10 05 | 703 | 1.1− | 0.3+ | 2006 11 22 | G96 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.6− | 0.0 |
| 2005 10 05 | 703 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.5+ | | | | |

**2005 ST$_{272}$ = 2004 HJ$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.28332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24632060 | $\omega$ | 148.46895 | | +0.97444916 | +0.22450372 | |
| $a$ | 2.5203967 | $\Omega$ | 198.56105 | | −0.21029142 | +0.90119901 | |
| $e$ | 0.1038112 | $i$ | 1.23299 | | −0.07890725 | +0.37072688 | |
| $P$ | 4.00 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 691 | 0.0 | 0.0 | 2001 10 14 | 645 | 0.1− | 0.1− | 2005 08 31 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 691 | 0.2+ | 0.0 | 2001 11 18 | 645 | 0.1+ | 0.0 | 2005 09 30 | G96 | 0.1+ | 0.2− |
| 2001 09 12 | 691 | 0.3+ | 0.2+ | 2001 11 18 | 645 | 0.1− | 0.1+ | 2005 09 30 | G96 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.4+ | 0.3+ | 2004 04 25 | 691 | 0.2− | 0.1− | 2005 09 30 | G96 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.7+ | 2004 04 25 | 691 | 0.4− | 0.0 | 2005 10 05 | G96 | 0.2+ | 0.3+ |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2004 04 25 | 691 | 0.5+ | 0.0 | 2005 10 05 | G96 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2005 08 31 | 691 | 0.0 | 0.0 | 2005 10 05 | G96 | 0.3+ | 0.2− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2005 08 31 | 691 | 0.2− | 0.1+ | 2005 10 05 | G96 | 0.1+ | 0.1+ |

**2005 SD$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.62608 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12431118 | $\omega$ | 255.62632 | | +0.42017999 | +0.90738913 | |
| $a$ | 3.9761484 | $\Omega$ | 39.22416 | | −0.82654950 | +0.38710612 | |
| $e$ | 0.1674803 | $i$ | 0.87732 | | −0.37451929 | +0.16368818 | |
| $P$ | 7.93 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 291 | 0.0 | 0.9+ | 2004 09 07 | 691 | 0.3− | 0.4+ | 2005 10 05 | 691 | 0.2− | 0.2+ |
| 2002 03 16 | 291 | 0.2+ | 1.1+ | 2004 09 07 | 691 | 0.4− | 0.4+ | 2005 10 05 | 691 | 0.0 | 0.0 |
| 2002 03 16 | 291 | 0.6+ | 0.2+ | 2004 10 08 | 691 | 0.2+ | 0.2− | 2005 10 05 | 691 | 0.0 | 0.1+ |
| 2002 04 04 | 291 | 0.1+ | 0.4+ | 2004 10 08 | 691 | 0.3+ | 0.3− | 2005 10 24 | 691 | 0.2+ | 0.4+ |
| 2002 04 04 | 291 | 0.1+ | 0.3+ | 2004 10 08 | 691 | 0.2+ | 0.0 | 2005 10 24 | 691 | 0.4− | 0.5+ |
| 2002 04 04 | 291 | 0.2+ | 0.3+ | 2004 10 15 | G96 | 0.0 | 0.4− | 2005 10 24 | 691 | 0.1+ | 0.4+ |
| 2004 08 12 | 807 | 0.3− | 0.1− | 2004 10 15 | G96 | 0.2+ | 0.4− | 2005 11 05 | 691 | 0.3− | 0.7+ |
| 2004 08 12 | 807 | 0.3− | 0.0 | 2004 10 15 | G96 | 0.3+ | 0.0 | 2005 11 05 | 691 | 0.1− | 0.2+ |
| 2004 08 21 | 703 | 0.5+ | 1.1+ | 2004 10 15 | G96 | 0.0 | 0.1− | 2005 11 05 | 691 | 0.1− | 0.1+ |
| 2004 08 21 | 703 | 0.4+ | 1.5+ | 2005 09 30 | G96 | 0.1+ | 0.0 | 2005 11 05 | G96 | 0.3+ | 0.1− |
| 2004 08 21 | 703 | 2.3− | 0.3+ | 2005 09 30 | G96 | 0.2+ | 0.2− | 2005 11 05 | G96 | 0.1− | 0.2− |
| 2004 08 21 | 703 | 0.7+ | 1.0+ | 2005 09 30 | G96 | 0.3− | 0.1− | 2005 11 05 | G96 | 0.1− | 0.1+ |
| 2004 09 07 | 691 | 0.3− | 0.1+ | 2005 09 30 | G96 | 0.4+ | 0.3− | 2005 11 05 | G96 | 0.5− | 0.1+ |

**2005 SC$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.29769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00481574 | $\omega$ | 51.19300 | | +0.19649639 | −0.98042814 | |
| $a$ | 34.7291348 | $\Omega$ | 27.48224 | | +0.89117365 | +0.17337423 | |
| $e$ | 0.0614200 | $i$ | 1.51991 | | +0.40889937 | +0.09328468 | |
| $P$ | 205 | $H$ | 7.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 22 | 705 | 0.3− | 0.1+ | 2005 11 02 | 705 | 0.3+ | 0.1− | 2006 10 02 | 705 | 0.1− | 0.0 |
| 2005 09 22 | 705 | 0.0 | 0.2+ | 2005 11 03 | 705 | 0.2− | 0.0 | 2006 10 02 | 705 | 0.0 | 0.0 |
| 2005 09 26 | 705 | 0.1− | 0.1+ | 2005 11 03 | 705 | 0.0 | 0.1+ | 2006 10 04 | 705 | 0.1− | 0.0 |
| 2005 09 26 | 705 | 0.2+ | 0.2+ | 2005 11 06 | 705 | 0.0 | 0.0 | 2006 10 04 | 705 | 0.2− | 0.0 |
| 2005 10 23 | 705 | 0.1− | 0.0 | 2005 11 06 | 705 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.2+ | 0.1+ |
| 2005 10 23 | 705 | 0.1+ | 0.1+ | 2006 08 28 | 705 | 0.2− | 0.2− | 2006 10 19 | 695 | 0.3+ | 0.0 |
| 2005 10 26 | 705 | 0.1− | 0.1− | 2006 08 28 | 705 | 0.5+ | 0.3− | 2006 10 20 | 705 | 0.0 | 0.1+ |
| 2005 10 26 | 705 | 0.0 | 0.0 | 2006 09 29 | 705 | 0.2− | 0.2+ | 2006 10 20 | 705 | 0.1− | 0.1− |
| 2005 10 31 | 705 | 0.2− | 0.1− | 2006 09 29 | 705 | 0.1+ | 0.1+ | 2006 10 20 | 695 | 0.1+ | 0.5− |
| 2005 10 31 | 705 | 0.2+ | 0.1− | 2006 10 01 | 705 | 0.1+ | 0.0 | 2006 10 22 | 705 | 0.1− | 0.1+ |
| 2005 11 02 | 705 | 0.1+ | 0.2− | 2006 10 01 | 705 | 0.2− | 0.3+ | 2006 10 22 | 705 | 0.1− | 0.0 |

**2005 SD$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.14466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00239392 | $\omega$ | 216.63858 | | +0.97371042 | −0.17894694 | |
| $a$ | 55.3430948 | $\Omega$ | 152.63670 | | +0.19724375 | +0.97186399 | |
| $e$ | 0.2823900 | $i$ | 17.85759 | | −0.11394264 | +0.15316126 | |
| $P$ | 412 | $H$ | 6.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 25 | 705 | 0.2− | 0.0 | 2005 11 03 | 705 | 0.1− | 0.1+ | 2006 10 03 | 705 | 0.0 | 0.1+ | |
| 2005 09 25 | 705 | 0.1+ | 0.1+ | 2005 11 03 | 705 | 0.3+ | 0.1+ | 2006 10 03 | 705 | 0.3− | 0.0 | |
| 2005 10 03 | 705 | 0.2− | 0.1+ | 2005 11 06 | 705 | 0.0 | 0.0 | 2006 10 11 | 705 | 0.1+ | 0.1+ | |
| 2005 10 03 | 705 | 0.0 | 0.2+ | 2005 11 06 | 705 | 0.2+ | 0.1+ | 2006 10 11 | 705 | 0.0 | 0.0 | |
| 2005 10 22 | 705 | 0.0 | 0.1+ | 2005 11 22 | 705 | 0.1− | 0.0 | 2006 10 13 | 705 | 0.1+ | 0.1+ | |
| 2005 10 22 | 705 | 0.2− | 0.2+ | 2005 11 22 | 705 | 0.1− | 0.1− | 2006 10 13 | 705 | 0.1+ | 0.0 | |
| 2005 10 23 | 705 | 0.1+ | 0.1+ | 2005 11 26 | 705 | 0.1− | 0.1+ | 2006 10 21 | 705 | 0.1+ | 0.0 | |
| 2005 10 23 | 705 | 0.3+ | 0.2+ | 2005 11 26 | 705 | 0.1+ | 0.1+ | 2006 10 21 | 705 | 0.2+ | 0.0 | |
| 2005 10 25 | 705 | 0.1+ | 0.2+ | 2006 09 16 | 705 | 0.1+ | 0.1+ | 2006 10 23 | 705 | 0.0 | 0.0 | |
| 2005 10 25 | 705 | 0.1− | 0.3− | 2006 09 16 | 705 | 0.0 | 0.1+ | 2006 10 23 | 705 | 0.1− | 0.1− | |
| 2005 10 26 | 705 | 0.1− | 0.2− | 2006 09 24 | 688 | 0.6+ | 1.1− | 2006 10 27 | 705 | 0.0 | 0.0 | |
| 2005 10 26 | 705 | 0.1+ | 0.2− | 2006 09 24 | 688 | 0.2− | 0.6+ | 2006 10 27 | 705 | 0.0 | 0.0 | |
| 2005 10 27 | 705 | 0.1− | 0.3− | 2006 09 27 | 705 | 0.0 | 0.0 | 2006 10 29 | 705 | 0.1− | 0.1− | |
| 2005 10 27 | 705 | 0.2+ | 0.2− | 2006 09 27 | 705 | 0.1− | 0.1− | 2006 10 29 | 705 | 0.1− | 0.1− | |
| 2005 10 30 | 705 | 0.1− | 0.1− | 2006 09 29 | 705 | 0.0 | 0.0 | 2006 11 01 | 705 | 0.1+ | 0.1+ | |
| 2005 10 30 | 705 | 0.0 | 0.1+ | 2006 09 29 | 705 | 0.1− | 0.1+ | 2006 11 01 | 705 | 0.1− | 0.0 | |
| 2005 11 01 | 705 | 0.0 | 0.3− | 2006 10 01 | 705 | 0.0 | 0.1+ | | | | | |
| 2005 11 01 | 705 | 0.1− | 0.1− | 2006 10 01 | 705 | 0.1− | 0.1− | | | | | |

**2005 SE$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.46749 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00359653 | $\omega$ | 265.80479 | | +0.99268592 | −0.01684095 | |
| $a$ | 42.1903830 | $\Omega$ | 95.12999 | | +0.06199217 | +0.92080925 | |
| $e$ | 0.1091991 | $i$ | 6.89360 | | −0.10359359 | +0.38964947 | |
| $P$ | 274 | $H$ | 7.4 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 26 | 705 | 0.1− | 0.0 | 2005 10 26 | 705 | 0.1− | 0.2+ | 2006 09 17 | 705 | 0.0 | 0.2+ | |
| 2005 09 26 | 705 | 0.2+ | 0.0 | 2005 10 26 | 705 | 0.2+ | 0.2+ | 2006 09 17 | 705 | 0.2− | 0.1+ | |
| 2005 09 28 | 705 | 0.1+ | 0.0 | 2005 11 02 | 705 | 0.2− | 0.0 | 2006 10 01 | 705 | 0.3− | 0.2− | |
| 2005 09 28 | 705 | 0.0 | 0.1+ | 2005 11 02 | 705 | 0.0 | 0.1+ | 2006 10 01 | 705 | 0.2− | 0.0 | |
| 2005 10 01 | 705 | 0.2+ | 0.4− | 2005 11 07 | 705 | 0.2− | 0.0 | 2006 10 02 | 705 | 0.0 | 0.1− | |
| 2005 10 01 | 705 | 0.4− | 0.0 | 2005 11 07 | 705 | 0.1+ | 0.0 | 2006 10 02 | 705 | 0.2+ | 0.0 | |
| 2005 10 11 | 705 | 0.2− | 0.0 | 2005 12 01 | 705 | 0.1− | 0.2− | 2006 10 04 | 705 | 0.1+ | 0.1− | |
| 2005 10 11 | 705 | 0.1+ | 0.1+ | 2005 12 01 | 705 | 0.1+ | 0.1− | 2006 10 04 | 705 | 0.2+ | 0.0 | |

**2005 SF$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.70912 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00343190 | $\omega$ | 321.43625 | | +0.43759121 | −0.87027244 | |
| $a$ | 43.5290557 | $\Omega$ | 101.55776 | | +0.87158091 | +0.34870309 | |
| $e$ | 0.1839771 | $i$ | 13.34544 | | +0.22104446 | +0.34789660 | |
| $P$ | 287 | $H$ | 7.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 10 | 705 | 0.0 | 0.1+ | 2005 10 30 | 705 | 0.1− | 0.1− | 2006 09 27 | 705 | 0.0 | 0.0 | |
| 2004 10 10 | 705 | 0.1− | 0.0 | 2005 10 30 | 705 | 0.0 | 0.0 | 2006 09 27 | 705 | 0.2+ | 0.0 | |
| 2005 09 26 | 705 | 0.1− | 0.1+ | 2005 11 03 | 705 | 0.1− | 0.1+ | 2006 09 30 | 705 | 0.0 | 0.4− | |
| 2005 09 26 | 705 | 0.0 | 0.2+ | 2005 11 03 | 705 | 0.3+ | 0.2+ | 2006 09 30 | 705 | 0.2− | 0.0 | |
| 2005 09 28 | 705 | 0.1+ | 0.1− | 2005 11 06 | 705 | 0.1− | 0.1+ | 2006 10 02 | 705 | 0.1+ | 0.0 | |
| 2005 09 28 | 705 | 0.0 | 0.0 | 2005 11 06 | 705 | 0.2+ | 0.0 | 2006 10 02 | 705 | 0.1− | 0.2+ | |
| 2005 10 01 | 705 | 0.1− | 0.2− | 2005 11 09 | 705 | 0.2− | 0.1− | 2006 10 16 | 705 | 0.1− | 0.1+ | |
| 2005 10 01 | 705 | 0.3− | 0.1− | 2005 11 09 | 705 | 0.0 | 0.1− | 2006 10 16 | 705 | 0.1− | 0.2− | |
| 2005 10 03 | 705 | 0.0 | 0.4− | 2005 11 24 | 705 | 0.1− | 0.2+ | 2006 10 21 | 705 | 0.2− | 0.1− | |
| 2005 10 03 | 705 | 0.1− | 0.1+ | 2005 11 24 | 705 | 0.2+ | 0.1+ | 2006 10 21 | 705 | 0.2− | 0.1− | |
| 2005 10 12 | 705 | 0.1+ | 0.0 | 2005 11 30 | 705 | 0.1+ | 0.0 | 2006 10 23 | 705 | 0.1− | 0.2− | |
| 2005 10 12 | 705 | 0.1− | 0.1+ | 2005 11 30 | 705 | 0.2− | 0.2+ | 2006 10 23 | 705 | 0.3− | 0.0 | |
| 2005 10 22 | 705 | 0.1− | 0.1− | 2006 08 28 | 705 | 0.0 | 0.2+ | 2006 10 28 | 705 | 0.1− | 0.3+ | |
| 2005 10 22 | 705 | 0.1+ | 0.1− | 2006 08 28 | 705 | 0.1+ | 0.0 | 2006 10 28 | 705 | 0.0 | 0.1− | |
| 2005 10 27 | 705 | 0.1+ | 0.2− | 2006 09 17 | 705 | 0.0 | 0.1+ | 2006 10 31 | 705 | 0.3+ | 0.1+ | |
| 2005 10 27 | 705 | 0.4+ | 0.2− | 2006 09 17 | 705 | 0.0 | 0.0 | 2006 10 31 | 705 | 0.4+ | 0.2− | |
| 2005 10 28 | 705 | 0.0 | 0.0 | 2006 09 22 | 705 | 0.2+ | 0.2+ | 2006 11 02 | 705 | 0.0 | 0.0 | |
| 2005 10 28 | 705 | 0.2+ | 0.1+ | 2006 09 22 | 705 | 0.1+ | 0.2+ | 2006 11 02 | 705 | 0.1− | 0.1− | |

**2005 SG$_{278}$ = 2002 FT$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.06033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18010766 | $\omega$ | 239.39960 | | +0.45016145 | −0.89292500 | |
| $a$ | 3.1053788 | $\Omega$ | 183.86263 | | +0.84792342 | +0.42966296 | |
| $e$ | 0.1377198 | $i$ | 5.36114 | | +0.27996525 | +0.13444212 | |
| $P$ | 5.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 695 | 0.3− | 0.1+ | 2005 10 01 | 691 | 0.2− | 0.2+ | 2005 10 29 | G96 | 0.4+ | 0.6− | |
| 2002 03 20 | 695 | 0.2− | 0.4+ | 2005 10 01 | G96 | 0.0 | 0.1+ | 2005 10 29 | G96 | 0.4+ | 0.5− | |
| 2002 03 21 | 291 | 0.1+ | 0.2+ | 2005 10 01 | G96 | 0.3+ | 0.2− | 2005 10 29 | G96 | 0.0 | 0.6− | |
| 2002 03 21 | 291 | 0.1+ | 0.2+ | 2005 10 01 | 691 | 0.1− | 0.2+ | 2005 10 29 | G96 | 0.1− | 0.7− | |
| 2002 03 21 | 291 | 0.2+ | 0.4+ | 2005 10 01 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.6− | |
| 2005 09 23 | 691 | 0.2+ | 0.0 | 2005 10 01 | G96 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.5− | 0.4+ | |
| 2005 09 23 | 691 | 0.0 | 0.2+ | 2005 10 12 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.7− | |
| 2005 09 23 | 691 | 0.1+ | 0.3+ | 2005 10 12 | 691 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.8− | |
| 2005 10 01 | 691 | 0.2− | 0.1+ | 2005 10 12 | 691 | 0.1− | 0.1+ | | | | | |

**2005 SH$_{278}$ = 1999 RE$_{247}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.93544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17686347 | $\omega$ | 127.96448 | | +0.33953828 | +0.94003264 | |
| $a$ | 3.1432382 | $\Omega$ | 161.80315 | | −0.89227686 | +0.33281738 | |
| $e$ | 0.2136950 | $i$ | 5.96278 | | −0.29758321 | +0.07464071 | |
| $P$ | 5.57 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 691 | 0.3− | 0.1+ | 2005 10 01 | 691 | 0.0 | 0.2+ | 2005 10 28 | 703 | (2.7− | 0.0 | ) |
| 1999 09 04 | 691 | 0.2− | 0.3+ | 2005 10 01 | 691 | 0.3− | 0.2+ | 2005 11 03 | 703 | 0.6− | 0.5+ | |
| 1999 09 04 | 691 | 0.1− | 0.2+ | 2005 10 01 | 691 | 0.3− | 0.0 | 2005 11 03 | 703 | 0.9− | 1.3+ | |
| 1999 09 14 | 704 | 0.6+ | 0.1− | 2005 10 07 | 703 | 0.0 | 0.1− | 2005 11 03 | 703 | 0.3+ | 0.4+ | |
| 1999 09 14 | 704 | 0.2+ | 1.2− | 2005 10 07 | 703 | 0.4+ | 0.4− | 2005 11 03 | 703 | 1.1− | 0.3+ | |
| 1999 09 14 | 704 | 0.3+ | 0.1+ | 2005 10 07 | 703 | 0.7+ | 0.6− | 2005 11 09 | 703 | 0.2− | 0.7− | |
| 1999 09 14 | 704 | 0.8− | 0.8+ | 2005 10 07 | 703 | 1.1+ | 0.2− | 2005 11 09 | 703 | 0.5+ | 0.8− | |
| 2005 09 23 | 691 | 0.5− | 0.2− | 2005 10 28 | 703 | (0.6+ | 2.5+) | 2005 11 09 | 703 | 0.9− | 0.4− | |
| 2005 09 23 | 691 | 0.1− | 0.2− | 2005 10 28 | 703 | 1.2+ | 0.2− | 2005 11 09 | 703 | 0.4+ | 0.6+ | |
| 2005 09 23 | 691 | 0.5− | 0.2+ | 2005 10 28 | 703 | 0.6+ | 0.3+ | | | | | |

**2005 SJ$_{278}$ = 2004 FT$_{6}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.07990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29887990 | $\omega$ | 133.03110 | | +0.60294741 | +0.79771348 | |
| $a$ | 2.2154991 | $\Omega$ | 174.02299 | | −0.75786282 | +0.57679162 | |
| $e$ | 0.1921830 | $i$ | 5.71789 | | −0.24919543 | +0.17596770 | |
| $P$ | 3.30 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 291 | 0.0 | 0.3+ | 2005 09 24 | 291 | 0.1− | 0.1+ | 2005 10 08 | 691 | 0.5− | 1.7+ | |
| 2004 03 16 | 291 | 0.1+ | 0.2− | 2005 09 24 | 291 | 0.4− | 0.0 | 2005 10 08 | 691 | 0.1− | 0.4− | |
| 2004 03 16 | 291 | 0.6+ | 0.0 | 2005 09 24 | 291 | 0.3+ | 0.1− | 2005 10 08 | 691 | 0.4− | 0.3+ | |
| 2004 03 17 | 291 | 0.3− | 0.1+ | 2005 09 29 | 691 | 0.1+ | 0.2− | 2005 10 13 | 291 | 0.3+ | 0.4− | |
| 2004 03 17 | 291 | 0.1− | 0.0 | 2005 09 29 | 691 | 0.3+ | 0.3− | 2005 10 13 | 291 | 0.1+ | 0.4− | |
| 2004 03 17 | 291 | 0.2− | 0.2− | 2005 09 29 | 691 | 0.2+ | 0.2− | 2005 10 13 | 291 | 0.2+ | 0.1− | |

**2005 SK$_{278}$ = 2002 CL$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.41962 | | (2000.0) | | | |
| $n$ | 0.18308093 | $\omega$ | 30.88415 | | −0.67806215 | −0.73313680 |
| $a$ | 3.0716659 | $\Omega$ | 101.86437 | | +0.66295709 | −0.64080471 |
| $e$ | 0.0786627 | $i$ | 3.06728 | | +0.31736353 | −0.22777126 |
| $P$ | 5.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 06 | 691 | 0.1+ | 0.2+ | 2002 02 12 | 704 | 0.8+ | 0.1+ | 2005 10 12 | 691 | 0.1− | 0.0 |
| 2000 12 06 | 691 | 0.0 | 0.3− | 2005 09 24 | 291 | 0.2+ | 0.2+ | 2005 10 12 | 691 | 0.1+ | 0.4− |
| 2000 12 06 | 691 | 0.1− | 0.0 | 2005 09 24 | 291 | 0.3+ | 0.3− | 2005 12 01 | G96 | 0.0 | 0.4+ |
| 2002 02 10 | 704 | 0.5+ | 0.6+ | 2005 09 24 | 291 | 0.1+ | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2002 02 10 | 704 | 0.0 | 0.8− | 2005 10 01 | 691 | 0.1− | 0.1+ | 2005 12 01 | G96 | 0.2− | 0.3+ |
| 2002 02 10 | 704 | 1.2− | 0.5+ | 2005 10 01 | 691 | 0.2− | 0.4+ | 2005 12 01 | G96 | 0.0 | 0.2+ |
| 2002 02 12 | 704 | 0.4− | 0.3− | 2005 10 01 | 691 | 0.3− | 0.2− | | | | |
| 2002 02 12 | 704 | 0.4+ | 0.0 | 2005 10 12 | 691 | 0.1− | 0.1+ | | | | |

**2005 SL$_{278}$ = 1996 TZ$_{42}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.26047 | | (2000.0) | | | |
| $n$ | 0.22484304 | $\omega$ | 189.68410 | | +0.83047532 | −0.54958063 |
| $a$ | 2.6784471 | $\Omega$ | 204.34366 | | +0.52471625 | +0.82658616 |
| $e$ | 0.0593001 | $i$ | 12.74664 | | +0.18703902 | +0.12131137 |
| $P$ | 4.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.4+ | 0.2+ | 2005 09 24 | 691 | 0.1+ | 0.0 | 2005 10 25 | 691 | 0.3− | 0.0 |
| 1996 10 04 | 691 | 0.3+ | 0.0 | 2005 09 24 | 691 | 0.4+ | 0.0 | 2005 10 25 | 691 | 0.5− | 0.1+ |
| 1996 10 12 | 691 | 0.3− | 0.3− | 2005 10 11 | 691 | 0.1+ | 0.1+ | 2005 11 30 | G96 | 0.4+ | 0.1− |
| 1996 10 12 | 691 | 0.3− | 0.2− | 2005 10 11 | 691 | 0.2− | 0.1− | 2005 11 30 | G96 | 0.0 | 0.1− |
| 1996 10 12 | 691 | 0.0 | 0.2+ | 2005 10 11 | 691 | 0.1+ | 0.1− | 2005 11 30 | G96 | 0.2− | 0.2− |
| 2005 09 24 | 691 | 0.3+ | 0.4+ | 2005 10 25 | 691 | 0.2− | 0.2− | 2005 11 30 | G96 | 0.0 | 0.3+ |

**2005 SM$_{278}$ = 2000 GO$_{183}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.68224 | | (2000.0) | | | |
| $n$ | 0.27584926 | $\omega$ | 229.32494 | | −0.48546707 | +0.87419287 |
| $a$ | 2.3371585 | $\Omega$ | 11.64535 | | −0.78573700 | −0.43105738 |
| $e$ | 0.0359992 | $i$ | 2.95872 | | −0.38332635 | −0.22355393 |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 1.4+ | 1.0− | 2005 09 24 | 691 | 0.2+ | 0.2+ | 2005 10 25 | 691 | 0.2+ | 0.1− |
| 2000 04 05 | 704 | 1.0+ | 1.0+ | 2005 09 24 | 691 | 0.1+ | 0.0 | 2005 10 29 | 703 | 1.3− | 0.9+ |
| 2000 04 05 | 704 | 0.1− | 1.5+ | 2005 10 11 | 691 | 0.0 | 0.7− | 2005 10 29 | 703 | 0.5+ | 1.7+ |
| 2000 04 06 | 691 | 0.3− | 0.6− | 2005 10 11 | 691 | 0.2− | 0.5− | 2005 10 29 | 703 | 0.2− | 1.5− |
| 2000 04 06 | 691 | 1.2− | 0.7− | 2005 10 11 | 691 | 0.0 | 0.4− | 2005 10 29 | 703 | 0.1+ | 0.1+ |
| 2000 04 06 | 691 | 0.8− | 0.4− | 2005 10 25 | 691 | 0.4+ | 0.2+ | | | | |
| 2005 09 24 | 691 | 0.3+ | 0.2+ | 2005 10 25 | 691 | 0.2+ | 0.3− | | | | |

**2005 SN$_{278}$ = 2000 TA$_{7}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 107.84653 | | (2000.0) | | | |
| $n$ | 0.20701455 | $\omega$ | 163.94298 | | +0.98428028 | +0.17516706 |
| $a$ | 2.8301023 | $\Omega$ | 186.10396 | | −0.17617570 | +0.96481169 |
| $e$ | 0.0994499 | $i$ | 12.24772 | | −0.01242793 | +0.19609922 |
| $P$ | 4.76 | $H$ | 16.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.1− | 0.1+ | 2000 10 02 | 704 | 0.2− | 0.3− | 2005 10 28 | 703 | 1.1+ | 1.0+ |
| 2000 10 01 | 704 | 0.4+ | 0.3− | 2000 10 02 | 704 | 0.2− | 0.7− | 2005 10 28 | 703 | 1.1− | 0.8+ |
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2005 09 25 | 691 | 0.1− | 0.4+ | 2005 11 03 | 703 | 0.5+ | 0.4− |
| 2000 10 01 | 704 | 0.1− | 0.4− | 2005 09 25 | 691 | 0.3− | 0.4+ | 2005 11 03 | 703 | 0.6+ | 0.5− |
| 2000 10 01 | 699 | 0.1− | 1.1+ | 2005 09 25 | 691 | 0.2+ | 0.7+ | 2005 11 03 | 703 | 1.1− | 0.7+ |
| 2000 10 01 | 704 | 0.6− | 0.4− | 2005 10 10 | 703 | 0.4− | 0.4+ | 2005 11 03 | 703 | 0.1+ | 0.7− |
| 2000 10 01 | 699 | 0.8+ | 0.1− | 2005 10 10 | 703 | 0.6− | 1.2− | 2005 11 09 | 703 | 1.2− | 0.6+ |
| 2000 10 01 | 699 | 0.4+ | 0.4+ | 2005 10 10 | 703 | 0.4− | 0.5− | 2005 11 09 | 703 | 0.2− | 0.3+ |
| 2000 10 01 | 699 | (2.0− | 0.4−) | 2005 10 10 | 703 | 0.9+ | 1.2− | 2005 11 09 | 703 | 0.2− | 0.5+ |
| 2000 10 02 | 704 | 0.1− | 0.2− | 2005 10 28 | 703 | 1.1+ | 1.0+ | 2005 11 09 | 703 | 0.7+ | 0.6− |
| 2000 10 02 | 704 | 0.4− | 1.1+ | 2005 10 28 | 703 | 0.1+ | 1.4− | | | | |

**2005 SO$_{278}$ = 2000 SR$_{315}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 82.60208 | | (2000.0) | | | |
| $n$ | 0.20277237 | $\omega$ | 126.13309 | | +0.95517618 | −0.19838101 |
| $a$ | 2.8694381 | $\Omega$ | 246.23354 | | +0.12809476 | +0.94613193 |
| $e$ | 0.1592231 | $i$ | 13.89221 | | +0.26688987 | +0.25588934 |
| $P$ | 4.86 | $H$ | 16.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.7+ | 0.2− | 2005 09 29 | 703 | 0.5− | 0.2+ | 2005 11 07 | 704 | 0.7+ | 0.0 |
| 2000 09 28 | 704 | 0.1− | 0.3+ | 2005 09 29 | 703 | 0.1− | 0.6− | 2005 11 07 | 704 | 1.8+ | 0.6− |
| 2000 09 28 | 704 | 0.1+ | 0.8+ | 2005 09 29 | 703 | 1.3+ | 0.1+ | 2005 11 25 | 703 | 1.3− | 0.4+ |
| 2000 09 28 | 704 | 0.7+ | 1.5+ | 2005 10 10 | 703 | 0.8− | 0.4− | 2005 11 25 | 703 | 0.1+ | 0.1+ |
| 2000 10 04 | 704 | 0.6+ | 1.8− | 2005 10 10 | 703 | 0.0 | 0.6+ | 2005 11 25 | 703 | 0.3+ | 0.4+ |
| 2000 10 04 | 704 | 0.7− | 0.3− | 2005 10 10 | 703 | 0.2− | 0.2− | 2005 11 25 | 703 | 1.1+ | 0.5− |
| 2000 10 04 | 704 | 1.1− | 0.6− | 2005 10 10 | 703 | 0.1− | 0.5+ | 2005 12 02 | 703 | 0.7+ | 1.0+ |
| 2005 09 29 | 703 | 0.7+ | 0.3+ | 2005 10 29 | 703 | 0.2+ | 0.4− | 2005 12 02 | 703 | 0.8− | 0.4− |
| 2005 09 29 | 703 | 0.5− | 0.2+ | 2005 10 29 | 703 | 0.2− | 0.2− | 2005 12 02 | 703 | 0.3+ | 0.4− |
| 2005 09 29 | 703 | 0.0 | 0.9+ | 2005 10 29 | 703 | 0.9− | 0.3+ | 2005 12 02 | 703 | 1.2− | 0.4− |
| 2005 09 29 | 703 | 0.7− | 0.0 | 2005 10 29 | 703 | 0.2− | 0.3− | | | | |
| 2005 09 29 | 703 | 0.0 | 0.6− | 2005 11 07 | 704 | 0.0 | 0.6+ | | | | |

**2005 SP$_{278}$ = 2000 HK$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.86171 | | (2000.0) | | | |
| $n$ | 0.27382274 | $\omega$ | 87.57908 | | −0.89070714 | −0.45025297 |
| $a$ | 2.3486757 | $\Omega$ | 65.65518 | | +0.38500378 | −0.82037001 |
| $e$ | 0.1193595 | $i$ | 3.93700 | | +0.24168757 | −0.35251287 |
| $P$ | 3.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.2+ | 0.0 | 2003 01 05 | 704 | 0.5+ | 0.8+ | 2005 10 12 | 691 | 0.0 | 0.2+ |
| 1998 12 14 | 691 | 0.1+ | 0.2− | 2003 01 05 | 704 | 0.7+ | 0.2+ | 2005 10 12 | 691 | 0.5− | 0.3+ |
| 1998 12 14 | 691 | 0.2− | 0.1− | 2003 01 05 | 704 | 0.1− | 0.4+ | 2005 10 26 | 691 | 0.6+ | 0.2+ |
| 2000 04 25 | 699 | 0.0 | 1.6+ | 2003 01 05 | 704 | 0.3− | 0.5+ | 2005 10 26 | 691 | 0.4− | 0.1+ |
| 2000 04 25 | 699 | 0.1+ | 0.3+ | 2003 01 13 | 644 | 0.5− | 0.4+ | 2005 10 26 | 691 | 0.0 | 0.2− |
| 2000 04 25 | 699 | 0.1+ | 1.2+ | 2003 01 13 | 644 | 0.2+ | 0.3+ | 2005 11 30 | G96 | 0.0 | 0.2− |
| 2000 04 25 | 699 | 0.0 | 0.9+ | 2003 01 13 | 644 | 0.2− | 0.5+ | 2005 11 30 | G96 | 0.6+ | 0.0 |
| 2000 04 29 | 704 | 0.0 | 0.4+ | 2005 09 29 | 691 | 0.3− | 0.4+ | 2005 11 30 | G96 | 0.0 | 0.6+ |
| 2000 04 29 | 704 | 0.0 | 0.8+ | 2005 09 29 | 691 | 0.0 | 0.5+ | 2005 11 30 | G96 | 0.0 | 0.1− |
| 2000 04 29 | 704 | 1.6+ | 1.8+ | 2005 09 29 | 691 | 0.1− | 0.4+ | | | | |
| 2000 04 29 | 704 | 0.9+ | 0.4+ | 2005 10 12 | 691 | 0.4− | 0.2+ | | | | |

**2005 SQ$_{278}$ = 1995 WC$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 137.49492 | | (2000.0) | | | |
| $n$ | 0.29019432 | $\omega$ | 139.13978 | | +0.87219378 | +0.48880403 |
| $a$ | 2.2594884 | $\Omega$ | 191.64121 | | −0.46942587 | +0.82566355 |
| $e$ | 0.1537062 | $i$ | 5.30930 | | −0.13754038 | +0.28169187 |
| $P$ | 3.40 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.0 | 0.1− | 2005 09 29 | G96 | 0.1− | 0.3+ | 2005 10 11 | 691 | 0.6+ | 0.4+ |
| 1995 11 16 | 691 | 0.3+ | 0.2− | 2005 09 29 | G96 | 0.2+ | 0.1+ | 2005 10 28 | G96 | 0.4+ | 0.0 |
| 1995 11 16 | 691 | 0.5− | 0.2+ | 2005 09 29 | G96 | 0.3+ | 0.3+ | 2005 10 28 | G96 | 0.5+ | 0.0 |
| 1995 11 21 | 691 | 0.1+ | 0.1− | 2005 09 29 | G96 | 0.5+ | 0.6+ | 2005 10 28 | G96 | 0.6+ | 0.2+ |
| 1995 11 21 | 691 | 0.1+ | 0.1− | 2005 10 07 | 691 | 0.1+ | 0.2+ | 2005 10 28 | G96 | 0.6+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.0 | 0.3+ | 2005 10 07 | 691 | 0.7− | 0.4− | 2005 12 01 | G96 | 0.5+ | 0.3+ |
| 1998 08 27 | 327 | 0.3+ | 0.2+ | 2005 10 07 | 691 | 0.1+ | 0.1+ | 2005 12 01 | G96 | 0.1− | 0.4+ |
| 1998 08 27 | 327 | 0.0 | 0.2+ | 2005 10 11 | 691 | 1.3− | 1.3− | 2005 12 01 | G96 | 0.1+ | 0.3+ |
| 1998 08 27 | 327 | 0.2− | 0.1− | 2005 10 11 | 691 | 0.4+ | 0.3+ | 2005 12 01 | G96 | 0.4+ | 0.2+ |

**2005 SR$_{278}$ = 2003 GT$_{51}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.95059 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22469513 | $\omega$ | 236.34916 | | +0.25294003 | | −0.96718472 |
| $a$ | 2.6796224 | $\Omega$ | 199.04278 | | +0.91020740 | | +0.24629460 |
| $e$ | 0.1020248 | $i$ | 4.21492 | | +0.32793876 | | +0.06239141 |
| $P$ | 4.39 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 695 | 0.3− | 0.9− | 2005 10 07 | 691 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.0 | 0.2− |
| 2003 04 01 | 695 | 0.5− | 0.8− | 2005 10 07 | 691 | 0.2+ | 0.1− | 2005 10 28 | 704 | 0.8− | 0.8+ |
| 2003 04 05 | 691 | 0.5+ | 0.6+ | 2005 10 07 | 691 | 0.3+ | 0.2− | 2005 10 28 | 703 | 0.1+ | 0.2+ |
| 2003 04 05 | 691 | 0.1− | 0.4+ | 2005 10 28 | 704 | 1.6− | 1.0− | 2005 10 28 | G96 | 0.7+ | 0.1− |
| 2003 04 05 | 691 | 0.3+ | 0.5+ | 2005 10 28 | 703 | 0.2− | 0.1− | 2005 10 28 | G96 | 0.3+ | 0.2− |
| 2005 09 29 | G96 | 0.1+ | 0.4− | 2005 10 28 | 704 | 0.7− | 0.7+ | 2005 12 04 | G96 | 0.8+ | 0.7+ |
| 2005 09 29 | G96 | 0.0 | 0.7− | 2005 10 28 | 703 | 0.7− | 0.8− | 2005 12 04 | G96 | 0.2− | 0.2− |
| 2005 09 29 | G96 | 0.3+ | 0.2− | 2005 10 28 | G96 | 0.5+ | 0.2− | 2005 12 04 | G96 | 0.0 | 0.1− |
| 2005 09 29 | G96 | 0.2+ | 1.7+ | 2005 10 28 | 703 | 0.8+ | 0.3+ | 2005 12 04 | G96 | 0.0 | 0.1+ |

**2005 SS$_{278}$ = 1999 BW$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.91050 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25480715 | $\omega$ | 200.69345 | | −0.89730620 | | −0.44129799 |
| $a$ | 2.4641188 | $\Omega$ | 313.11583 | | +0.40686360 | | −0.81819269 |
| $e$ | 0.1237689 | $i$ | 0.77568 | | +0.17118291 | | −0.36853331 |
| $P$ | 3.87 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 16 | 691 | 0.1+ | 0.4− | 2003 01 30 | 291 | 0.3+ | 1.0+ | 2005 10 11 | 691 | 0.2− | 0.0 |
| 1999 01 16 | 691 | 0.3+ | 0.6− | 2003 01 30 | 291 | 0.4+ | 0.9+ | 2005 10 11 | 691 | 0.3− | 0.1− |
| 1999 01 16 | 691 | 0.4+ | 0.4− | 2003 03 06 | 644 | 0.7+ | 0.6+ | 2005 10 27 | 691 | 0.2− | 0.3+ |
| 1999 01 22 | 691 | 0.7− | 0.6− | 2003 03 06 | 644 | 0.3+ | 0.3+ | 2005 10 27 | 691 | 0.1+ | 0.1+ |
| 1999 01 22 | 691 | 0.2− | 0.3− | 2003 03 06 | 644 | 0.6+ | 0.4+ | 2005 10 27 | 691 | 0.0 | 0.7+ |
| 1999 01 22 | 691 | 0.5− | 0.4− | 2005 09 30 | G96 | 0.4− | 0.2− | 2005 10 27 | G96 | 0.1+ | 0.2− |
| 2001 09 23 | 691 | 0.1+ | 0.4+ | 2005 09 30 | G96 | 0.2+ | 0.1− | 2005 10 27 | G96 | 0.1− | 0.3− |
| 2001 09 23 | 691 | 0.3− | 0.2− | 2005 09 30 | G96 | 0.3+ | 0.3− | 2005 10 27 | G96 | 0.2+ | 0.3+ |
| 2001 09 23 | 691 | 0.0 | 0.4+ | 2005 09 30 | G96 | 0.3+ | 0.6− | 2005 10 27 | G96 | 0.1+ | 0.2− |
| 2003 01 30 | 291 | 0.0 | 0.8+ | 2005 10 11 | 691 | 0.1+ | 0.0 | | | | |

**2005 ST$_{278}$ = 1996 TZ$_{43}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.82275 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21700902 | $\omega$ | 93.34760 | | +0.56992642 | | +0.80719920 |
| $a$ | 2.7425267 | $\Omega$ | 212.95461 | | −0.82027705 | | +0.54792051 |
| $e$ | 0.3613900 | $i$ | 16.40875 | | −0.04826414 | | +0.21957359 |
| $P$ | 4.54 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.2− | 0.1− | 2005 09 30 | 703 | 0.8− | 0.6+ | 2005 10 25 | 691 | 0.4+ | 0.5− |
| 1996 10 05 | 691 | 0.1− | 0.1− | 2005 09 30 | 703 | 0.1+ | 0.3− | 2005 10 29 | 703 | 0.3− | 1.5+ |
| 1996 10 07 | 691 | 0.3− | 0.0 | 2005 10 09 | 691 | 0.5+ | 0.4− | 2005 10 29 | 703 | 0.1+ | 0.2− |
| 1996 10 07 | 691 | 0.1+ | 0.1− | 2005 10 09 | 691 | 0.4+ | 0.4− | 2005 10 29 | 703 | 0.5− | 0.7+ |
| 1996 10 07 | 691 | 0.4+ | 0.3+ | 2005 10 09 | 691 | 0.9+ | 0.5− | 2005 10 29 | 703 | 1.0− | 0.8− |
| 2005 09 30 | 703 | 0.5− | 0.2+ | 2005 10 25 | 691 | 0.4+ | 0.2− | | | | |
| 2005 09 30 | 703 | 0.1− | 0.5+ | 2005 10 25 | 691 | 0.5+ | 0.3− | | | | |

**2005 SU$_{278}$ = 1996 VW$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.55002 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21981340 | $\omega$ | 87.66018 | | +0.59395937 | | +0.80296369 |
| $a$ | 2.7191507 | $\Omega$ | 218.91807 | | −0.76593965 | | +0.54555437 |
| $e$ | 0.1665053 | $i$ | 4.52980 | | −0.24606650 | | +0.24004112 |
| $P$ | 4.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | 0.5+ | 0.1+ | 2000 09 05 | 699 | 0.7+ | 0.6+ | 2005 10 30 | 291 | 0.2− | 0.2− |
| 1996 11 11 | 691 | 0.0 | 0.1+ | 2000 09 05 | 699 | 0.2+ | 0.7− | 2005 11 10 | 691 | 0.2+ | 0.1+ |
| 1996 11 11 | 691 | 0.0 | 0.0 | 2005 09 30 | G96 | 0.4+ | 0.0 | 2005 11 10 | 691 | 0.5+ | 0.6+ |
| 1996 11 18 | 691 | 0.1− | 0.3− | 2005 09 30 | G96 | 0.2+ | 0.0 | 2005 11 10 | 691 | 0.1+ | 0.1− |
| 1996 11 18 | 691 | 0.3− | 0.3− | 2005 09 30 | G96 | 0.1+ | 0.1− | 2005 11 29 | G96 | 0.2+ | 0.4− |
| 1996 11 18 | 691 | 0.0 | 0.1− | 2005 09 30 | G96 | 0.0 | 0.0 | 2005 11 29 | G96 | 0.3+ | 0.1+ |
| 2000 09 05 | 699 | 0.7− | 0.5− | 2005 10 30 | 291 | 0.3− | 0.1+ | 2005 11 29 | G96 | 0.6+ | 0.0 |
| 2000 09 05 | 699 | 0.2− | 0.7+ | 2005 10 30 | 291 | 0.5− | 0.1+ | 2005 11 29 | G96 | 1.5− | 0.0 |

**2005 SV$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.94207 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30441925 | $\omega$ | 96.56211 | | +0.87999538 | | −0.46785849 |
| $a$ | 2.1885408 | $\Omega$ | 291.36004 | | +0.39356793 | | +0.81482153 |
| $e$ | 0.1927310 | $i$ | 5.04851 | | +0.26591805 | | +0.34230731 |
| $P$ | 3.24 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.6− | 1.2− | 2005 09 23 | 703 | 0.2− | 1.2− | 2005 10 12 | 704 | 0.5+ | 0.3+ |
| 2002 12 14 | 704 | 0.4+ | 0.2− | 2005 10 03 | 703 | 0.3− | 0.2− | 2005 11 01 | 699 | 0.0 | 1.3+ |
| 2002 12 14 | 704 | 0.7− | 0.3+ | 2005 10 03 | 703 | 0.3+ | 0.1+ | 2005 11 01 | 699 | 1.4− | 0.6+ |
| 2002 12 14 | 704 | 1.1+ | 0.9+ | 2005 10 03 | 703 | 0.7− | 0.3+ | 2005 11 01 | 699 | (1.1− | 2.8+) |
| 2003 01 04 | 704 | 0.1+ | 0.3+ | 2005 10 03 | 703 | 0.6− | 0.1− | 2005 11 01 | 699 | 1.1+ | 0.5+ |
| 2003 01 04 | 704 | 0.2+ | 0.3− | 2005 10 08 | 703 | 0.8+ | 0.4− | 2005 11 06 | 704 | 0.4+ | 0.6+ |
| 2003 01 04 | 704 | 0.5− | 0.4+ | 2005 10 08 | 703 | 0.9− | 0.6+ | 2005 11 06 | 704 | 0.2− | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.2− | 2005 10 08 | 703 | 0.1+ | 0.8+ | 2005 11 06 | 704 | 0.4+ | 1.3− |
| 2005 09 23 | 703 | 1.4+ | 0.8− | 2005 10 08 | 703 | 0.0 | 0.6+ | 2005 11 06 | 704 | 0.2+ | 1.2− |
| 2005 09 23 | 703 | 0.8− | 0.3+ | 2005 10 12 | 704 | 1.4+ | 0.7− | 2005 11 06 | 704 | 1.0− | 0.5− |
| 2005 09 23 | 703 | 0.6− | 0.8+ | 2005 10 12 | 704 | 0.1+ | 0.3− | | | | |

**2005 SW$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.09116 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23513525 | $\omega$ | 274.74535 | | −0.12071989 | | +0.99157506 |
| $a$ | 2.5997059 | $\Omega$ | 348.01150 | | −0.79737205 | | −0.12503919 |
| $e$ | 0.1412053 | $i$ | 13.06740 | | −0.59129055 | | −0.03382444 |
| $P$ | 4.19 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.4− | 0.8− | 2005 09 23 | 703 | 0.9+ | 1.4+ | 2005 10 08 | 703 | (0.8− | 2.6−) |
| 2001 10 15 | 704 | 0.8− | 0.2− | 2005 09 23 | 703 | 0.1− | 0.6− | 2005 10 13 | G96 | 0.1− | 0.0 |
| 2001 10 15 | 704 | 0.9+ | 0.8− | 2005 09 23 | 703 | (2.1− | 2.2−) | 2005 10 13 | G96 | 0.3+ | 0.2+ |
| 2001 10 18 | 704 | 0.5− | 0.5− | 2005 09 23 | 703 | 0.1− | 0.4− | 2005 10 13 | G96 | 0.0 | 0.1− |
| 2001 10 18 | 704 | 0.3+ | 0.4− | 2005 10 03 | 704 | 0.6− | 0.0 | 2005 10 13 | G96 | 0.4+ | 0.2− |
| 2001 10 18 | 704 | 0.4+ | 0.3+ | 2005 10 03 | 704 | 0.1− | 1.2+ | 2005 10 27 | 703 | 0.1− | 0.2− |
| 2001 10 18 | 704 | 0.5+ | 1.5+ | 2005 10 03 | 704 | 0.0 | 0.6+ | 2005 10 27 | 703 | 0.1− | 0.8+ |
| 2003 01 10 | 704 | 0.2+ | 0.0 | 2005 10 08 | 703 | 1.0+ | 0.2− | 2005 10 27 | 703 | 0.1− | 0.3+ |
| 2003 01 10 | 704 | 0.0 | 0.6− | 2005 10 08 | 703 | 0.1− | 0.4− | 2005 10 27 | 703 | 0.7− | 0.6− |
| 2003 01 10 | 704 | 0.0 | 0.8+ | 2005 10 08 | 703 | 0.8− | 1.0− | | | | |

**2005 SX$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.35412 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16402318 | $\omega$ | 124.78332 | | +0.77586322 | | +0.62906518 |
| $a$ | 3.3052114 | $\Omega$ | 196.40871 | | −0.62006714 | | +0.74625358 |
| $e$ | 0.1725332 | $i$ | 9.80297 | | −0.11641741 | | +0.21767542 |
| $P$ | 6.01 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 695 | 0.7− | 0.4+ | 2005 09 24 | 691 | 0.0 | 0.1+ | 2005 10 26 | 691 | 0.1− | 0.4− |
| 2003 03 07 | 695 | 0.8− | 0.2+ | 2005 09 24 | 691 | 0.4+ | 0.1+ | 2005 10 26 | 691 | 0.1− | 0.5− |
| 2003 04 25 | 691 | 0.4+ | 0.0 | 2005 10 07 | 691 | 0.5− | 0.3+ | 2005 11 03 | 691 | 0.0 | 0.1− |
| 2003 04 25 | 691 | 0.1+ | 0.1+ | 2005 10 07 | 691 | 0.3− | 0.2+ | 2005 11 03 | 691 | 0.3+ | 0.3+ |
| 2003 04 25 | 691 | 0.1+ | 0.5+ | 2005 10 07 | 691 | 0.3− | 0.1+ | 2005 11 03 | 691 | 0.3+ | 0.0 |
| 2005 09 24 | 691 | 0.5+ | 0.4+ | 2005 10 26 | 691 | 0.3− | 0.3+ | | | | |

**2005 SY$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.89068 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26718120 | $\omega$ | 108.02253 | | +0.91170587 | | +0.40250562 |
| $a$ | 2.3874381 | $\Omega$ | 228.33070 | | −0.40616411 | | +0.85286337 |
| $e$ | 0.1223143 | $i$ | 6.32930 | | −0.06183139 | | +0.33258578 |
| $P$ | 3.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.6+ | 1.3− | 2003 01 25 | 809 | 0.1− | 0.1+ | 2005 10 09 | 691 | 0.1+ | 0.1− |
| 2001 08 25 | 704 | 0.6+ | 0.9+ | 2003 01 25 | 809 | 0.0 | 0.2+ | 2005 10 24 | 691 | 0.1− | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.3− | 2005 09 26 | 691 | 0.1− | 0.1− | 2005 10 24 | 691 | 0.2+ | 0.2+ |
| 2001 09 10 | 704 | 0.8− | 0.0 | 2005 09 26 | 691 | 0.0 | 0.0 | 2005 10 24 | 691 | 0.1+ | 0.1− |
| 2001 09 10 | 704 | 0.4− | 1.0+ | 2005 09 26 | 691 | 0.2− | 0.0 | 2005 11 01 | 691 | 0.1+ | 0.3− |
| 2001 09 10 | 704 | 0.2− | 0.2+ | 2005 10 09 | 691 | 0.1+ | 0.1− | 2005 11 01 | 691 | 0.2− | 0.0 |
| 2003 01 25 | 809 | 0.1+ | 0.1+ | 2005 10 09 | 691 | 0.0 | 0.2− | 2005 11 01 | 691 | 0.1− | 0.1+ |

**2005 SZ$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.22789 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18357650 | $\omega$ | 234.18496 | | −0.79057509 | | −0.60950632 |
| $a$ | 3.0661354 | $\Omega$ | 268.18723 | | +0.57918256 | | −0.71290542 |
| $e$ | 0.0596649 | $i$ | 3.38998 | | +0.19884311 | | −0.34679664 |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 691 | 0.1+ | 0.8− | 2002 02 16 | 644 | 0.7+ | 0.7+ | 2005 10 09 | 691 | 0.2− | 0.5+ |
| 2000 11 26 | 691 | 0.1+ | 0.6− | 2002 02 16 | 644 | 0.3+ | 0.5+ | 2005 10 09 | 691 | 0.2+ | 0.2+ |
| 2000 11 26 | 691 | 0.1+ | 0.4− | 2004 08 22 | 691 | 0.3− | 0.2− | 2005 10 25 | 691 | 0.1− | 0.0 |
| 2002 02 11 | 704 | 0.4+ | 0.4+ | 2004 08 22 | 691 | 0.6+ | 0.8+ | 2005 10 25 | 691 | 0.0 | 0.3+ |
| 2002 02 11 | 704 | 0.4− | 0.9+ | 2004 08 22 | 691 | 0.4− | 0.2− | 2005 10 25 | 691 | 0.3− | 0.0 |
| 2002 02 11 | 704 | 0.0 | 0.7+ | 2005 09 26 | 691 | 0.0 | 0.2− | 2005 11 12 | 691 | 0.1+ | 0.5+ |
| 2002 02 11 | 704 | 0.4+ | 1.0+ | 2005 09 26 | 691 | 0.4− | 0.3+ | 2005 11 12 | 691 | 0.3− | 0.1+ |
| 2002 02 11 | 704 | 0.3+ | 0.5+ | 2005 09 26 | 691 | 0.2− | 0.1+ | 2005 11 12 | 691 | 0.1− | 0.3+ |
| 2002 02 16 | 644 | 0.4+ | 0.7+ | 2005 10 09 | 691 | 0.4+ | 0.1+ | | | | |

**2005 SA$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.44457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26822377 | $\omega$ | 320.37689 | | −0.28985425 | | −0.95490391 |
| $a$ | 2.3812475 | $\Omega$ | 146.32926 | | +0.90491488 | | −0.29533639 |
| $e$ | 0.1099881 | $i$ | 6.66690 | | +0.31163051 | | −0.03057680 |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 699 | 0.2− | 0.5+ | 2005 09 26 | 291 | 0.0 | 0.2+ | 2005 11 09 | 703 | 0.7− | 0.4+ |
| 2003 03 07 | 699 | 0.9+ | 0.1+ | 2005 09 26 | 291 | 0.3+ | 0.1+ | 2005 11 09 | 703 | 0.2− | 0.5− |
| 2003 03 07 | 699 | 0.1+ | 0.5+ | 2005 11 03 | 703 | 0.5+ | 0.0 | 2005 11 26 | 703 | 1.7+ | 0.3− |
| 2003 03 07 | 699 | 0.0 | 0.5− | 2005 11 03 | 703 | 0.3− | 0.0 | 2005 11 26 | 703 | 0.6− | 1.0+ |
| 2003 04 04 | 691 | 0.1− | 0.1− | 2005 11 03 | 703 | 0.1− | 0.7− | 2005 11 26 | 703 | 0.3− | 0.9− |
| 2003 04 04 | 691 | 0.0 | 0.1− | 2005 11 03 | 703 | 0.1+ | 0.6+ | 2005 11 26 | 703 | 0.8+ | 0.1− |
| 2003 04 04 | 691 | 0.2− | 0.1+ | 2005 11 09 | 703 | 0.9− | 0.4− | | | | |
| 2005 09 26 | 291 | 0.2− | 0.3+ | 2005 11 09 | 703 | 0.5− | 0.7− | | | | |

**2005 SB$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.34921 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26593932 | $\omega$ | 85.39647 | | +0.57168734 | | −0.81775048 |
| $a$ | 2.3948649 | $\Omega$ | 329.42862 | | +0.69108499 | | +0.52379837 |
| $e$ | 0.2061462 | $i$ | 7.54309 | | +0.44223877 | | +0.23857791 |
| $P$ | 3.71 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.3− | 0.1− | 2005 09 29 | 703 | 0.0 | 1.6+ | 2005 11 08 | 704 | 0.5− | 0.5− |
| 2001 08 23 | 691 | 0.2− | 0.2+ | 2005 09 29 | 703 | 0.7− | 0.2− | 2005 11 08 | 704 | 0.5− | 0.1+ |
| 2001 08 23 | 691 | 0.5+ | 0.0 | 2005 11 03 | 704 | 0.1+ | 0.1+ | 2005 11 21 | 699 | 0.4− | 0.3+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 11 03 | 704 | 0.1− | 0.1+ | 2005 11 21 | 699 | 0.2− | 0.3+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2005 11 03 | 704 | 0.7+ | 0.3+ | 2005 11 21 | 699 | 0.2+ | 0.6− |
| 2005 09 29 | 703 | 1.2+ | 0.0 | 2005 11 03 | 704 | 0.6− | 0.2− | 2005 11 21 | 699 | 1.8+ | 0.3− |
| 2005 09 29 | 703 | 1.0− | 0.4− | 2005 11 08 | 704 | (1.7− | 2.4−) | | | | |

**2005 SC$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.37310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22477998 | $\omega$ | 152.11308 | | −0.99284002 | | +0.03887162 |
| $a$ | 2.6789481 | $\Omega$ | 30.75491 | | −0.09610936 | | −0.82146326 |
| $e$ | 0.0423222 | $i$ | 12.76064 | | +0.07093430 | | −0.56893506 |
| $P$ | 4.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 16 | 691 | 0.1+ | 0.1+ | 2003 04 08 | 691 | 0.1+ | 0.4+ | 2005 10 12 | 691 | 0.3− | 0.2+ |
| 1999 04 16 | 691 | 0.1+ | 0.4+ | 2005 09 29 | 691 | 0.3− | 0.2+ | 2005 10 12 | 691 | 0.2− | 0.3+ |
| 1999 04 16 | 691 | 0.2+ | 0.2+ | 2005 09 29 | 691 | 0.4− | 0.1+ | 2005 10 27 | 691 | 0.1− | 0.3+ |
| 2001 11 11 | 704 | 0.2− | 0.0 | 2005 09 29 | 691 | 0.0 | 0.1+ | 2005 10 27 | 691 | 0.1+ | 0.4+ |
| 2001 11 11 | 704 | 0.5+ | 0.7− | 2005 10 07 | 703 | (0.7+ | 2.2+) | 2005 10 27 | 691 | 0.2− | 0.3+ |
| 2001 11 11 | 704 | 0.1− | 0.4− | 2005 10 07 | 703 | 0.5+ | 0.4+ | 2005 11 25 | G96 | 0.4− | 0.6− |
| 2001 11 11 | 704 | 0.4+ | 0.1− | 2005 10 07 | 703 | 1.9+ | 0.4− | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2003 04 08 | 691 | 0.1+ | 0.1+ | 2005 10 07 | 703 | 0.6− | 0.8− | 2005 11 25 | G96 | 0.3− | 0.1+ |
| 2003 04 08 | 691 | 0.2+ | 0.2+ | 2005 10 12 | 691 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.1− | 0.3− |

**2005 SD$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.93796 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22927291 | $\omega$ | 39.93894 | | −0.16536146 | | −0.98278160 |
| $a$ | 2.6438343 | $\Omega$ | 59.72640 | | +0.87872730 | | −0.18477071 |
| $e$ | 0.1319971 | $i$ | 5.47749 | | +0.44776547 | | −0.00033752 |
| $P$ | 4.30 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.0 | 0.1− | 2005 09 29 | 291 | 0.1− | 0.3+ | 2005 10 23 | 291 | 0.2− | 0.2− |
| 2001 11 17 | 291 | 0.1− | 0.1− | 2005 09 29 | 291 | 0.0 | 0.1+ | 2005 10 23 | 291 | 0.3− | 0.1+ |
| 2001 11 17 | 291 | 0.1− | 0.2− | 2005 09 29 | 291 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.4+ | 0.5− |
| 2001 12 18 | 704 | 1.1+ | 0.2+ | 2005 10 12 | 691 | 0.1− | 0.3− | 2005 12 01 | G96 | 0.6+ | 0.3− |
| 2001 12 18 | 704 | 0.6− | 1.6+ | 2005 10 12 | 691 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.8+ | 0.5− |
| 2001 12 18 | 704 | 0.0 | 0.6+ | 2005 10 12 | 691 | 0.2+ | 0.2− | 2005 12 01 | G96 | 0.8+ | 0.5− |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2005 10 23 | 291 | 0.0 | 0.2+ | | | | |

**2005 SE$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.91383 | | (2000.0) | | | |
| $n$ | 0.25993080 | $\omega$ | 283.90693 | | +0.55745016 | −0.83020297 |
| $a$ | 2.4316303 | $\Omega$ | 132.21287 | | +0.76352340 | +0.51100601 |
| $e$ | 0.2068024 | $i$ | 0.27185 | | +0.32600819 | +0.22279112 |
| $P$ | 3.79 | $H$ | 18.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.1+ | 0.5+ | 2005 09 29 | G96 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.1+ | 0.5− |
| 1995 02 02 | 691 | 0.2− | 0.1+ | 2005 09 29 | G96 | 0.4− | 0.2+ | 2005 11 25 | G96 | 0.3+ | 0.1− |
| 1995 02 02 | 691 | 0.2+ | 0.0 | 2005 10 07 | 691 | 0.2− | 0.2+ | 2005 11 25 | G96 | 0.2+ | 0.2− |
| 2001 08 27 | 691 | 0.3− | 0.1+ | 2005 10 07 | 691 | 0.0 | 0.2− | 2005 11 25 | G96 | 0.0 | 0.2− |
| 2001 08 27 | 691 | 0.3− | 0.0 | 2005 10 07 | 691 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.1− | 0.1− |
| 2001 08 27 | 691 | 0.2− | 0.2− | 2005 10 11 | 691 | 0.4+ | 0.0 | 2005 12 25 | G96 | 1.6− | 0.1− |
| 2001 09 19 | 704 | 1.0+ | 1.4+ | 2005 10 11 | 691 | 0.2+ | 0.0 | 2005 12 25 | G96 | 0.2− | 0.5− |
| 2001 09 19 | 704 | (2.3+ | 0.6+) | 2005 10 11 | 691 | 0.2+ | 0.3+ | 2005 12 25 | G96 | 0.5− | 0.4− |
| 2001 09 19 | 704 | 1.1+ | 1.1+ | 2005 10 25 | G96 | 0.0 | 0.4− | 2005 12 25 | G96 | 0.7+ | 0.2− |
| 2005 09 29 | G96 | 0.5− | 0.2+ | 2005 10 25 | G96 | 0.3+ | 0.4− | | | | |
| 2005 09 29 | G96 | 0.3− | 0.2+ | 2005 10 25 | G96 | 0.0 | 0.2− | | | | |

**2005 SF$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.70649 | | (2000.0) | | | |
| $n$ | 0.21414377 | $\omega$ | 272.35358 | | −0.39954995 | −0.91636369 |
| $a$ | 2.7669358 | $\Omega$ | 201.25146 | | +0.86632258 | −0.36843947 |
| $e$ | 0.0140205 | $i$ | 3.99415 | | +0.29974161 | −0.15662035 |
| $P$ | 4.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.4+ | 0.4+ | 2004 06 25 | 691 | 0.1+ | 0.3+ | 2005 10 25 | G96 | 0.2+ | 0.2− |
| 1991 10 08 | 691 | 0.6− | 0.6+ | 2004 06 25 | 691 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.1− | 0.0 |
| 2000 09 28 | 691 | 0.3+ | 0.4− | 2005 09 29 | G96 | 0.5− | 0.1+ | 2005 10 25 | G96 | 0.3− | 0.0 |
| 2000 09 28 | 691 | 0.3− | 0.3− | 2005 09 29 | G96 | 0.4− | 0.0 | 2005 10 25 | G96 | 0.0 | 0.3− |
| 2000 09 28 | 691 | 0.0 | 0.3− | 2005 09 29 | G96 | 0.4− | 0.2− | 2005 10 28 | 703 | (3.2+ | 0.1−) |
| 2003 04 08 | 691 | 0.1− | 0.5+ | 2005 09 29 | G96 | 0.2− | 0.1− | 2005 10 28 | 703 | 0.3− | 0.3− |
| 2003 04 08 | 691 | 0.1− | 0.5+ | 2005 10 07 | 691 | 0.2+ | 0.2+ | 2005 10 28 | 703 | 1.2+ | 0.5+ |
| 2003 04 08 | 691 | 0.4+ | 0.1+ | 2005 10 07 | 691 | 0.0 | 0.3+ | 2005 10 28 | 703 | 0.5− | 0.9+ |
| 2004 06 25 | 691 | 0.1+ | 0.1+ | 2005 10 07 | 691 | 0.0 | 0.3+ | | | | |

**2005 SG$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 131.49873 | | (2000.0) | | | |
| $n$ | 0.18407311 | $\omega$ | 95.80505 | | +0.62016122 | +0.77809682 |
| $a$ | 3.0606181 | $\Omega$ | 213.19290 | | −0.77239289 | +0.58339897 |
| $e$ | 0.0712231 | $i$ | 10.50641 | | −0.13714691 | +0.23283250 |
| $P$ | 5.35 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 644 | 0.3+ | 0.1− | 2005 09 30 | 691 | 0.4− | 0.5− | 2005 11 06 | G96 | 0.3+ | 0.3− |
| 2003 04 09 | 644 | 0.7+ | 0.0 | 2005 10 11 | 691 | 0.2− | 0.0 | 2005 11 06 | G96 | 0.1+ | 0.4− |
| 2003 04 09 | 644 | 0.5+ | 0.6+ | 2005 10 11 | 691 | 0.1+ | 0.0 | 2005 11 06 | G96 | 0.5+ | 0.2− |
| 2003 04 24 | 691 | 0.5+ | 0.3− | 2005 10 11 | 691 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.2− |
| 2003 04 24 | 691 | 0.7− | 0.0 | 2005 10 25 | 691 | 0.6− | 0.2+ | 2005 11 25 | G96 | 0.6+ | 0.2+ |
| 2003 04 24 | 691 | 0.2− | 0.0 | 2005 10 25 | 691 | 0.3+ | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.1− |
| 2005 09 30 | 691 | 0.2+ | 0.1− | 2005 10 25 | 691 | 0.1− | 0.3+ | 2005 11 25 | G96 | 0.4− | 0.4− |
| 2005 09 30 | 691 | 0.4+ | 0.2+ | 2005 11 06 | G96 | 0.4+ | 0.4− | | | | |

**2005 SH$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.11186 | | (2000.0) | | | |
| $n$ | 0.19978836 | $\omega$ | 226.19988 | | +0.17907856 | −0.98374093 |
| $a$ | 2.8979391 | $\Omega$ | 213.49107 | | +0.90957363 | +0.17081003 |
| $e$ | 0.0537579 | $i$ | 1.41113 | | +0.37497557 | +0.05547723 |
| $P$ | 4.93 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.3+ | 0.3− | 2002 02 11 | 704 | 0.4− | 1.1+ | 2005 11 04 | 691 | 0.1− | 0.1+ |
| 1995 10 28 | 691 | 0.1+ | 0.2− | 2002 02 11 | 704 | 0.3− | 1.3− | 2005 11 04 | 691 | 0.0 | 0.5+ |
| 1995 10 28 | 691 | 0.2+ | 0.2− | 2002 02 11 | 704 | 0.0 | 1.4− | 2005 11 04 | 691 | 0.2+ | 0.7+ |
| 1998 04 21 | 688 | 0.3+ | 0.6− | 2005 09 30 | G96 | 0.6+ | 0.2+ | 2005 11 25 | G96 | 0.4− | 0.3+ |
| 1998 04 21 | 688 | 0.7− | 0.2− | 2005 09 30 | G96 | 0.4+ | 0.1− | 2005 11 25 | G96 | 0.1− | 0.1− |
| 1998 04 21 | 688 | 0.1+ | 0.1− | 2005 09 30 | G96 | 0.4− | 0.1+ | 2005 11 25 | G96 | 0.0 | 0.1− |
| 2000 10 21 | 691 | 0.2+ | 0.3− | 2005 09 30 | G96 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.0 | 0.0 |
| 2000 10 21 | 691 | 0.2− | 0.3− | 2005 10 12 | 691 | 0.4− | 0.3− | 2005 12 02 | G96 | 0.5+ | 0.2− |
| 2000 10 21 | 691 | 0.3− | 0.3− | 2005 10 12 | 691 | 0.1− | 0.0 | 2005 12 02 | G96 | 0.1+ | 0.3− |
| 2002 02 09 | 333 | 1.5− | 0.1− | 2005 10 12 | 691 | 0.3− | 0.3+ | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2002 02 09 | 333 | 0.1− | 0.3− | 2005 10 24 | 691 | 0.3− | 0.4+ | 2005 12 02 | G96 | 0.5+ | 0.0 |
| 2002 02 09 | 333 | 1.5+ | 0.3+ | 2005 10 24 | 691 | 0.5+ | 0.1− | | | | |
| 2002 02 11 | 704 | 0.5+ | 0.8+ | 2005 10 24 | 691 | 0.2+ | 0.2− | | | | |

**2005 SJ$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.35110 | | (2000.0) | | | |
| $n$ | 0.23921886 | $\omega$ | 233.51524 | | −0.19234710 | −0.98120225 |
| $a$ | 2.5700354 | $\Omega$ | 227.58234 | | +0.90699132 | −0.17166789 |
| $e$ | 0.0924650 | $i$ | 1.21422 | | +0.37465896 | −0.08816051 |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.2− | 2005 09 30 | G96 | 0.4− | 0.5− | 2005 11 12 | 691 | 0.5− | 0.0 |
| 2001 11 20 | 704 | 0.1+ | 0.9− | 2005 09 30 | G96 | 0.2+ | 0.1+ | 2005 11 22 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.9− | 2005 09 30 | G96 | 0.9+ | 0.4− | 2005 11 22 | 691 | 0.2+ | 0.0 |
| 2001 12 17 | 704 | 0.2− | 0.7+ | 2005 10 28 | 691 | 0.2+ | 0.1+ | 2005 11 22 | 691 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 0.4+ | 2005 10 28 | 691 | 0.0 | 0.3+ | 2005 12 02 | G96 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 0.2+ | 0.4− | 2005 10 28 | 691 | 0.3− | 0.1+ | 2005 12 02 | G96 | 0.1+ | 0.3− |
| 2001 12 17 | 704 | 0.3− | 0.4+ | 2005 11 12 | 691 | 0.1− | 0.0 | 2005 12 02 | G96 | 0.2− | 0.2− |
| 2005 09 30 | G96 | 0.6− | 0.0 | 2005 11 12 | 691 | 0.5+ | 0.2− | 2005 12 02 | G96 | 0.6− | 0.3+ |

**2005 SK$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 235.61776 | | (2000.0) | | | |
| $n$ | 0.26900591 | $\omega$ | 219.62817 | | −0.01758391 | +0.99573987 |
| $a$ | 2.3766296 | $\Omega$ | 49.56170 | | −0.88452492 | +0.02671558 |
| $e$ | 0.0956635 | $i$ | 6.83009 | | −0.46616143 | −0.08825182 |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.7+ | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.2− | 2005 11 21 | 691 | 0.3− | 0.4+ |
| 2000 05 28 | 704 | 0.1+ | 0.2+ | 2005 09 30 | G96 | 0.2+ | 0.3− | 2005 11 25 | 691 | 0.7− | 0.0 |
| 2000 05 28 | 704 | 0.2− | 0.2− | 2005 09 30 | G96 | 0.2+ | 0.2− | 2005 11 25 | 691 | 0.3+ | 0.1− |
| 2000 05 28 | 704 | 0.1+ | 0.7+ | 2005 10 28 | G96 | 0.3+ | 0.5− | 2005 11 25 | 691 | 0.1− | 0.3− |
| 2000 05 28 | 704 | 0.1− | 0.7+ | 2005 10 28 | G96 | 0.5− | 0.5− | 2005 12 10 | 691 | 0.4+ | 0.1− |
| 2001 10 20 | 704 | 0.9− | 0.1+ | 2005 10 28 | G96 | 0.1+ | 0.3− | 2005 12 10 | 691 | 0.1− | 0.1+ |
| 2001 10 20 | 704 | 0.0 | 0.1− | 2005 10 28 | G96 | 0.7+ | 0.4− | 2005 12 10 | 691 | 0.1+ | 0.2− |
| 2001 10 20 | 704 | 0.4+ | 0.5+ | 2005 11 12 | 691 | 0.2− | 0.4+ | 2005 12 21 | 691 | 0.2+ | 0.1+ |
| 2001 10 26 | 691 | 0.0 | 0.2− | 2005 11 12 | 691 | 0.1+ | 0.4+ | 2005 12 21 | 691 | 0.6+ | 1.0− |
| 2001 10 26 | 691 | 0.1+ | 0.0 | 2005 11 12 | 691 | 0.1− | 0.4+ | 2005 12 21 | 691 | 0.4+ | 0.3− |
| 2001 10 26 | 691 | 0.0 | 0.1− | 2005 11 21 | 691 | 0.5− | 0.6+ | | | | |
| 2005 09 30 | G96 | 0.3+ | 0.4− | 2005 11 21 | 691 | 0.4− | 0.9+ | | | | |

**2005 SL$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 158.52120 | | | (2000.0) | | |
| $n$ | 0.22355168 | $\omega$ | 81.38141 | | −0.07534505 | +0.99701308 |
| $a$ | 2.6887521 | $\Omega$ | 184.40538 | | −0.97954596 | −0.07718831 |
| $e$ | 0.1288645 | $i$ | 12.76486 | | −0.18658196 | +0.00262351 |
| $P$ | 4.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 22 | 691 | 0.3− | 0.7− | 2005 08 25 | 644 | 0.2+ | 0.1− | 2005 09 23 | 703 | 1.0− | 0.2− |
| 1995 04 22 | 691 | 0.3+ | 0.2− | 2005 08 25 | 644 | 0.4+ | 0.3− | 2005 09 23 | 703 | 0.5− | 0.9− |
| 1995 04 22 | 691 | 0.1− | 0.5− | 2005 08 29 | 691 | 0.2− | 0.9+ | 2005 10 12 | 691 | 0.3− | 0.4− |
| 2004 04 11 | 644 | 0.1− | 0.3− | 2005 08 29 | 691 | 0.4+ | 0.3− | 2005 10 12 | 691 | 0.3− | 0.0 |
| 2004 04 11 | 644 | 0.5− | 0.1+ | 2005 08 29 | 691 | 0.4+ | 0.3− | 2005 10 12 | 691 | 0.0 | 0.2+ |
| 2004 04 11 | 644 | 0.3+ | 0.4+ | 2005 09 14 | 691 | 0.2+ | 0.1+ | 2005 10 20 | G96 | 0.4− | 0.0 |
| 2004 05 23 | 704 | 0.8+ | 1.5+ | 2005 09 14 | 691 | 0.3+ | 0.1+ | 2005 10 20 | G96 | 0.2− | 0.3− |
| 2004 05 23 | 704 | 0.1+ | 0.7+ | 2005 09 14 | 691 | 0.5− | 0.2+ | 2005 10 20 | G96 | 0.2+ | 0.1+ |
| 2004 05 23 | 704 | 0.2− | 0.1+ | 2005 09 23 | 703 | 0.2+ | 2.4− | 2005 10 20 | G96 | 0.3+ | 0.3+ |
| 2005 08 25 | 644 | 0.8+ | 0.1− | 2005 09 23 | 703 | 0.2+ | 0.7− | | | | |

**2005 SM$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.37711 | | | (2000.0) | | |
| $n$ | 0.18315992 | $\omega$ | 49.37641 | | −0.08731061 | −0.99519561 |
| $a$ | 3.0707827 | $\Omega$ | 45.69242 | | +0.89427045 | −0.09789522 |
| $e$ | 0.1156040 | $i$ | 3.54928 | | +0.43892735 | +0.00148923 |
| $P$ | 5.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 691 | 0.3+ | 0.4− | 2005 10 09 | 691 | 0.2− | 0.3+ | 2005 12 01 | G96 | 0.5+ | 0.3+ |
| 2000 11 03 | 691 | 0.1− | 0.2− | 2005 10 09 | 691 | 0.2− | 0.1− | 2005 12 01 | G96 | 0.3+ | 0.0 |
| 2000 11 03 | 691 | 0.1+ | 0.3− | 2005 10 09 | 691 | 0.1− | 0.2+ | 2005 12 01 | G96 | 0.0 | 0.2− |
| 2002 02 12 | 704 | 0.9+ | 1.0+ | 2005 10 24 | 691 | 0.1− | 0.5+ | 2005 12 01 | G96 | 0.4+ | 0.1+ |
| 2002 02 12 | 704 | (1.0+ | 2.1+) | 2005 10 24 | 691 | 0.6− | 0.3+ | 2006 10 23 | G96 | (5.3+ | 0.4−) |
| 2002 02 12 | 704 | 0.1+ | 1.3+ | 2005 10 24 | 691 | 0.1+ | 0.5+ | 2006 10 23 | G96 | (4.9+ | 0.4−) |
| 2002 02 12 | 704 | (0.6+ | 2.2+) | 2005 10 29 | G96 | 0.5+ | 0.1+ | 2006 10 23 | G96 | (5.6+ | 0.2+) |
| 2005 09 23 | 691 | 0.2− | 0.1− | 2005 10 29 | G96 | 0.1+ | 0.0 | 2006 10 23 | G96 | (5.2+ | 0.8−) |
| 2005 09 23 | 691 | 0.3− | 0.2− | 2005 10 29 | G96 | 0.3+ | 0.1− | | | | |
| 2005 09 23 | 691 | 0.6+ | 0.3− | 2005 10 29 | G96 | 0.2− | 0.2− | | | | |

**2005 SP$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.61194 | | | (2000.0) | | |
| $n$ | 0.26523673 | $\omega$ | 64.35705 | | −0.30850701 | −0.94871862 |
| $a$ | 2.3990922 | $\Omega$ | 43.79938 | | +0.83309685 | −0.30447787 |
| $e$ | 0.1275752 | $i$ | 5.71864 | | +0.45910027 | −0.08500710 |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 699 | 1.3− | 0.1+ | 2003 03 07 | 644 | 0.1− | 0.4− | 2005 10 30 | G96 | 1.2+ | 0.3− |
| 2003 01 26 | 699 | 0.9+ | 0.8− | 2005 09 23 | 691 | 0.5− | 0.3− | 2005 10 30 | G96 | 0.2+ | 0.3− |
| 2003 01 26 | 699 | 0.2− | 0.3− | 2005 09 23 | 691 | 0.3+ | 0.1− | 2005 11 29 | G96 | 0.1− | 0.4− |
| 2003 01 26 | 699 | 0.3− | 0.6− | 2005 09 23 | 691 | 0.0 | 0.1+ | 2005 11 29 | G96 | 0.2− | 0.2− |
| 2003 01 26 | 608 | 0.5+ | 0.4− | 2005 10 01 | 691 | 0.3− | 0.3+ | 2005 11 29 | G96 | 0.2+ | 0.2− |
| 2003 01 26 | 608 | 0.3+ | 0.3− | 2005 10 01 | 691 | 0.2− | 0.2+ | 2005 11 29 | G96 | 0.1− | 0.1− |
| 2003 01 26 | 608 | 0.8+ | 0.6− | 2005 10 01 | 691 | 0.2− | 0.2+ | 2006 01 05 | G96 | 0.1+ | 0.4− |
| 2003 02 19 | 644 | 0.0 | 1.7+ | 2005 10 12 | 691 | 0.1+ | 0.1− | 2006 01 05 | G96 | 0.5+ | 0.1+ |
| 2003 02 19 | 644 | 0.2− | 1.6+ | 2005 10 12 | 691 | 0.2+ | 0.1+ | 2006 01 05 | G96 | 0.3+ | 0.2+ |
| 2003 02 19 | 644 | 0.0 | 1.2+ | 2005 10 12 | 691 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.2+ | 0.1− |
| 2003 03 07 | 644 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.3+ | 0.4− | | | | |
| 2003 03 07 | 644 | 0.1− | 0.4− | 2005 10 30 | G96 | 0.1− | 0.8− | | | | |

**2005 SK$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.20691 | | | (2000.0) | | |
| $n$ | 0.17584023 | $\omega$ | 260.91756 | | −0.12547331 | −0.98830790 |
| $a$ | 3.1554203 | $\Omega$ | 197.03811 | | +0.98605600 | −0.11461198 |
| $e$ | 0.1388297 | $i$ | 17.19602 | | +0.10931610 | −0.10055640 |
| $P$ | 5.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 291 | 0.1− | 0.4+ | 2005 09 25 | 691 | 0.2+ | 0.1+ | 2005 11 06 | 699 | 0.3− | 0.0 |
| 2002 03 16 | 291 | 0.3− | 0.1− | 2005 09 25 | 691 | 0.2+ | 0.0 | 2005 11 06 | 699 | (0.3+ | 2.7+) |
| 2002 03 16 | 291 | 0.3− | 0.0 | 2005 10 27 | 699 | 0.8− | 0.3+ | 2005 11 06 | 699 | 0.4+ | 1.7+ |
| 2002 03 21 | 691 | 0.3+ | 0.0 | 2005 10 27 | 699 | (0.5− | 1.7+) | 2005 11 06 | 699 | 1.0+ | 0.3+ |
| 2002 03 21 | 691 | 0.2+ | 0.1− | 2005 10 27 | 699 | (2.0− | 0.7+) | 2005 11 09 | 703 | 0.1+ | 0.4− |
| 2002 03 21 | 691 | 0.2+ | 0.0 | 2005 10 27 | 699 | (2.1− | 0.8+) | 2005 11 09 | 703 | 0.2− | 0.2− |
| 2002 04 13 | 691 | 0.0 | 0.0 | 2005 11 03 | 703 | 0.0 | 1.2− | 2005 11 09 | 703 | 0.0 | 0.7− |
| 2002 04 13 | 691 | 0.2− | 0.4+ | 2005 11 03 | 703 | 0.4− | 0.1− | 2005 11 09 | 703 | 0.1− | 0.5+ |
| 2002 04 13 | 691 | 0.1+ | 0.5− | 2005 11 03 | 703 | 0.8− | 0.9− | | | | |
| 2005 09 25 | 691 | 0.2+ | 0.2+ | 2005 11 03 | 703 | 1.0− | 0.0 | | | | |

**2005 SP$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 83.30825 | | | (2000.0) | | |
| $n$ | 0.23541840 | $\omega$ | 235.12546 | | +0.96197219 | −0.21270315 |
| $a$ | 2.5976210 | $\Omega$ | 136.43065 | | +0.24781029 | +0.94349780 |
| $e$ | 0.2354552 | $i$ | 14.39679 | | −0.11488939 | +0.25410483 |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 699 | (0.9− | 2.1−) | 2001 12 14 | 699 | 0.8+ | 0.8+ | 2005 10 30 | 703 | 0.1− | 1.0− |
| 2001 11 17 | 699 | 0.0 | 1.1+ | 2005 09 27 | 704 | 0.4− | 0.8+ | 2005 10 30 | 703 | 0.1− | 1.4− |
| 2001 11 17 | 699 | 0.7− | 0.1+ | 2005 09 27 | 704 | 0.3+ | 0.9+ | 2005 11 06 | 699 | 0.5− | 0.8− |
| 2001 11 17 | 699 | 0.6− | 0.5+ | 2005 09 27 | 704 | 0.0 | 0.4+ | 2005 11 06 | 699 | 0.2− | 0.5+ |
| 2001 12 14 | 644 | 0.1+ | 0.1− | 2005 09 27 | 704 | 0.2+ | 0.3− | 2005 11 06 | 699 | 0.9− | 0.5+ |
| 2001 12 14 | 644 | 0.0 | 0.3− | 2005 10 04 | 644 | 0.2+ | 0.1+ | 2005 11 06 | 699 | (1.3− | 2.0−) |
| 2001 12 14 | 699 | 0.8− | 0.0 | 2005 10 04 | 644 | 0.1+ | 0.1+ | 2005 11 17 | 644 | 0.3+ | 0.1− |
| 2001 12 14 | 644 | 0.0 | 0.5− | 2005 10 04 | 644 | 0.2+ | 0.1+ | 2005 11 17 | 644 | 0.2+ | 0.4− |
| 2001 12 14 | 699 | 0.2+ | 0.6− | 2005 10 30 | 703 | (2.0+ | 0.1−) | 2005 11 17 | 644 | 0.5+ | 0.4− |
| 2001 12 14 | 699 | 0.8+ | 0.2+ | 2005 10 30 | 703 | 0.4+ | 0.1− | | | | |

**2005 SV$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 79.65075 | | | (2000.0) | | |
| $n$ | 0.24033331 | $\omega$ | 97.59303 | | +0.85499054 | −0.49339603 |
| $a$ | 2.5620842 | $\Omega$ | 292.09200 | | +0.38121754 | +0.80682364 |
| $e$ | 0.3088265 | $i$ | 9.93404 | | +0.35165944 | +0.32495535 |
| $P$ | 4.10 | $H$ | 18.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 05 | 461 | 0.3− | 0.1− | 2005 10 24 | 644 | 0.0 | 0.2+ | 2005 11 02 | 703 | (4.0− | 0.1+) |
| 1998 01 05 | 461 | 0.3+ | 0.3+ | 2005 10 24 | 644 | 0.2+ | 0.1+ | 2005 11 21 | 703 | 1.1− | 0.4− |
| 2001 12 09 | 704 | 0.1− | 0.2+ | 2005 10 24 | 644 | 0.1+ | 0.3+ | 2005 11 21 | 703 | 0.4+ | 0.1+ |
| 2001 12 09 | 704 | 0.7− | 0.5+ | 2005 10 25 | 703 | 1.0+ | 2.0− | 2005 11 21 | 703 | (0.5− | 2.3−) |
| 2001 12 09 | 704 | 0.3+ | 1.3− | 2005 10 25 | 703 | 0.6+ | 0.3− | 2005 11 21 | 703 | 0.0 | 0.6+ |
| 2001 12 09 | 704 | 0.6+ | 0.0 | 2005 10 25 | 703 | 0.3+ | 0.9+ | 2005 11 21 | 703 | 0.6+ | 0.5− |
| 2005 09 29 | 703 | 0.4− | 0.4− | 2005 10 25 | 703 | 0.9+ | 1.1+ | 2005 11 21 | 703 | 0.5+ | 0.3+ |
| 2005 09 29 | 703 | 0.7− | 0.0 | 2005 11 02 | 703 | 1.0− | 0.2− | 2005 11 21 | 703 | 1.2− | 0.6+ |
| 2005 09 29 | 703 | 0.8+ | 0.6+ | 2005 11 02 | 703 | 0.5− | 0.6+ | 2005 11 21 | 703 | 0.3+ | 0.2− |
| 2005 09 29 | 703 | 0.6− | 0.5− | 2005 11 02 | 703 | 0.4− | 0.6− | | | | |

**2005 SB$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.78569 | | | (2000.0) | | |
| $n$ | 0.21374158 | $\omega$ | 95.34759 | | −0.07762797 | −0.99698207 |
| $a$ | 2.7704057 | $\Omega$ | 359.10345 | | +0.89301705 | −0.06917212 |
| $e$ | 0.0544846 | $i$ | 2.96362 | | +0.44327695 | −0.03524165 |
| $P$ | 4.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2+ | 0.2+ | 2005 09 29 | 691 | 0.2− | 0.1− | 2005 10 28 | 703 | 0.1− | 0.4− |
| 2001 12 18 | 704 | 0.3− | 0.3− | 2005 09 29 | 691 | 0.1− | 0.1− | 2005 11 03 | G96 | 0.3− | 0.0 |
| 2001 12 18 | 704 | 0.2− | 0.8+ | 2005 10 10 | 691 | 0.2− | 0.0 | 2005 11 03 | G96 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 0.2− | 0.2− | 2005 10 10 | 691 | 0.1− | 0.0 | 2005 11 03 | G96 | 0.2+ | 0.1− |
| 2001 12 19 | 645 | 0.1+ | 0.0 | 2005 10 10 | 691 | 0.4− | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.0 |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2005 10 23 | 691 | 0.2− | 0.0 | 2005 11 10 | G96 | 0.0 | 0.2+ |
| 2002 01 14 | 704 | 0.4+ | 0.5− | 2005 10 23 | 691 | 0.3+ | 0.2+ | 2005 11 10 | G96 | 0.4− | 0.1+ |
| 2002 01 14 | 704 | 0.0 | 0.4+ | 2005 10 23 | 691 | 0.0 | 0.3− | 2005 11 10 | G96 | 0.2− | 0.3− |
| 2002 01 14 | 704 | 1.1+ | 0.4+ | 2005 10 28 | 703 | 1.5+ | 0.4+ | 2005 11 10 | G96 | 0.1− | 0.6+ |
| 2002 01 14 | 704 | 0.7− | 0.6+ | 2005 10 28 | 703 | 1.5+ | 0.3+ | | | | |
| 2005 09 29 | 691 | 0.1+ | 0.0 | 2005 10 28 | 703 | 0.9+ | 0.6+ | | | | |

**2005 SD$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 89.96882 | | | (2000.0) | | |
| $n$ | 0.23705226 | $\omega$ | 94.55547 | | +0.95874854 | −0.20505730 |
| $a$ | 2.5856713 | $\Omega$ | 277.36916 | | +0.10853220 | +0.90414017 |
| $e$ | 0.2802167 | $i$ | 11.44906 | | +0.26272039 | +0.37480937 |
| $P$ | 4.16 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.4+ | 0.3+ | 2005 09 30 | 703 | 0.9− | 0.1− | 2005 10 24 | 644 | 0.1− | 0.0 |
| 2001 12 09 | 704 | 0.1+ | 1.3+ | 2005 10 11 | 699 | 0.3− | 0.3+ | 2005 11 02 | 703 | 0.3+ | 1.0− |
| 2001 12 09 | 704 | 0.2− | 1.0+ | 2005 10 11 | 699 | 0.9+ | 0.1+ | 2005 11 02 | 703 | 0.1+ | 0.6+ |
| 2001 12 09 | 704 | 0.6− | 1.1− | 2005 10 11 | 699 | 0.4+ | 0.6− | 2005 11 02 | 703 | 0.3− | 1.0− |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2005 10 11 | 699 | 1.5+ | 1.0+ | 2005 11 02 | 703 | 0.2+ | 0.8− |
| 2001 12 17 | 704 | 0.6− | 0.7− | 2005 10 24 | 644 | 0.1− | 0.2+ | 2005 11 20 | 644 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.7+ | 0.1+ | 2005 10 24 | 644 | 0.1− | 0.2+ | 2005 11 20 | 644 | 0.1− | 0.1− |
| 2005 09 30 | 703 | (4.8+ | 2.3−) | 2005 10 24 | 644 | 0.4− | 0.0 | 2005 11 20 | 644 | 0.2− | 0.0 |
| 2005 09 30 | 703 | 0.5+ | 0.0 | 2005 10 24 | 644 | 0.2− | 0.4+ | | | | |
| 2005 09 30 | 703 | 0.9− | 0.1− | 2005 10 24 | 644 | 0.2− | 0.5+ | | | | |

**2005 SE$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.76423 | | | (2000.0) | | |
| $n$ | 0.28378689 | $\omega$ | 24.54663 | | −0.52189221 | +0.85063197 |
| $a$ | 2.2933719 | $\Omega$ | 214.09528 | | −0.80019346 | −0.51406806 |
| $e$ | 0.0803206 | $i$ | 6.52170 | | −0.29549781 | −0.11026916 |
| $P$ | 3.47 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 30 | 910 | 0.2− | 0.9+ | 2005 09 30 | G96 | 0.5− | 0.1− | 2005 11 06 | 704 | 0.4+ | 0.8+ |
| 1997 05 30 | 910 | 0.3− | 0.4+ | 2005 09 30 | G96 | 0.2− | 0.4− | 2005 11 06 | 704 | 0.0 | 0.3+ |
| 1997 05 30 | 910 | 0.2− | 0.3+ | 2005 09 30 | G96 | 0.4− | 0.1− | 2005 11 06 | 704 | (1.6− | 0.3−) |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2005 10 25 | 691 | 0.0 | 0.1− | 2005 11 06 | G96 | 0.4+ | 0.4− |
| 2000 05 05 | 645 | 0.1+ | 0.1+ | 2005 10 25 | 703 | 0.2− | 0.2− | 2005 11 06 | G96 | 0.0 | 0.3− |
| 2001 08 25 | 704 | 0.9− | 0.2− | 2005 10 25 | 691 | 0.1− | 0.1− | 2005 11 06 | G96 | 0.1+ | 0.3− |
| 2001 08 25 | 704 | 0.6+ | 0.5− | 2005 10 25 | 703 | (1.6− | 2.7+) | 2005 11 06 | G96 | 0.3+ | 0.2− |
| 2001 08 25 | 704 | 0.4− | 0.7+ | 2005 10 25 | 703 | 0.6− | 0.6− | 2005 11 12 | 703 | 0.3− | 0.0 |
| 2001 08 25 | 704 | 0.1+ | 0.3+ | 2005 10 25 | 691 | 0.0 | 0.1+ | 2005 11 12 | 703 | 0.0 | 1.2+ |
| 2001 08 25 | 704 | 0.0 | 1.2+ | 2005 10 25 | 703 | (1.6− | 0.5+) | 2005 11 12 | 703 | 0.4+ | 1.1+ |
| 2001 09 08 | 704 | 0.7+ | 0.1+ | 2005 11 06 | 691 | 0.4− | 0.2+ | 2005 11 12 | 703 | 0.8+ | 1.4+ |
| 2001 09 08 | 704 | 0.6+ | 0.1+ | 2005 11 06 | 691 | 0.2− | 0.1− | 2005 12 06 | 691 | 0.0 | 0.4+ |
| 2001 09 08 | 704 | 0.5− | 0.5+ | 2005 11 06 | 691 | 0.0 | 0.1+ | 2005 12 06 | 691 | 0.0 | 0.1+ |
| 2001 09 08 | 704 | (0.1− | 1.8+) | 2005 11 06 | 704 | 0.4+ | 0.5+ | 2005 12 06 | 691 | 0.2+ | 0.3− |
| 2005 09 30 | G96 | 0.2− | 0.1− | 2005 11 06 | 704 | 0.3− | 0.1+ | | | | |

**2005 SN$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 82.27813 | | | (2000.0) | | |
| $n$ | 0.16690898 | $\omega$ | 333.62607 | | −0.02355616 | −0.98218878 |
| $a$ | 3.2670034 | $\Omega$ | 117.22073 | | +0.95028198 | −0.07991198 |
| $e$ | 0.0752366 | $i$ | 12.10071 | | +0.31049841 | +0.17005666 |
| $P$ | 5.91 | $H$ | 14.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.5− | 0.8+ | 2005 10 07 | 568 | 0.0 | 0.2− | 2006 02 04 | 704 | 1.4+ | 0.8+ |
| 1993 11 20 | 691 | 0.0 | 0.2+ | 2005 11 12 | 691 | 0.1+ | 0.1− | 2006 02 04 | 704 | 0.4− | 1.0+ |
| 1993 11 20 | 691 | 0.3+ | 0.0 | 2005 11 12 | 691 | 0.3− | 0.3− | 2006 02 04 | 704 | 0.1+ | 0.4+ |
| 2000 02 03 | 704 | 0.8+ | 0.2− | 2005 11 12 | 691 | 0.3− | 0.6− | 2006 02 22 | 703 | 0.1+ | 0.8+ |
| 2000 02 03 | 704 | 0.0 | 0.4− | 2006 01 06 | 699 | 0.4− | 0.2+ | 2006 02 22 | 699 | 0.2− | 0.3+ |
| 2000 02 03 | 704 | 0.2+ | 0.1+ | 2006 01 06 | 699 | 0.4+ | 0.9− | 2006 02 22 | 703 | 1.8+ | 0.2+ |
| 2000 02 03 | 704 | 0.2− | 0.2− | 2006 01 06 | 699 | (0.5− | 2.7−) | 2006 02 22 | 703 | 0.4+ | 0.0 |
| 2000 02 03 | 704 | 0.9+ | 0.2− | 2006 01 06 | 699 | 1.6− | 0.6+ | 2006 02 22 | 699 | 0.7− | 0.7− |
| 2005 09 30 | 568 | 0.1+ | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.5− | 2006 02 22 | 703 | 0.9− | 1.0+ |
| 2005 09 30 | 568 | 0.2+ | 0.1− | 2006 01 23 | 691 | 0.4− | 0.2+ | 2006 02 22 | 699 | 0.4+ | 0.7− |
| 2005 09 30 | 568 | 0.1+ | 0.2− | 2006 01 23 | 691 | 0.1+ | 0.4− | 2006 02 22 | 699 | 0.4− | 1.1− |
| 2005 10 07 | 568 | 0.0 | 0.1− | 2006 02 04 | 704 | 0.1− | 1.6+ | | | | |
| 2005 10 07 | 568 | 0.0 | 0.1− | 2006 02 04 | 704 | 0.7+ | 1.0+ | | | | |

**2005 TQ$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 38.62415 | | | (2000.0) | | |
| $n$ | 0.23206122 | $\omega$ | 124.21571 | | +0.19256815 | −0.97758910 |
| $a$ | 2.6226138 | $\Omega$ | 314.43593 | | +0.85657153 | +0.20975789 |
| $e$ | 0.1804789 | $i$ | 6.84255 | | +0.47875122 | +0.01792139 |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 1.3+ | 0.2− | 2003 05 06 | 291 | 0.5+ | 0.7+ | 2005 10 08 | 704 | 0.6− | 1.7+ |
| 2001 10 14 | 704 | 0.3− | 0.1− | 2003 05 06 | 291 | 0.2+ | 0.5+ | 2005 10 08 | 704 | 0.2− | 0.4− |
| 2001 10 14 | 704 | 0.5+ | 0.1− | 2003 05 06 | 291 | 0.0 | 0.3+ | 2005 10 08 | 704 | 0.7− | 0.6+ |
| 2001 10 14 | 704 | 1.2+ | 0.9+ | 2005 10 01 | 703 | 0.2+ | 0.4+ | 2005 10 08 | 704 | 0.5+ | 0.3+ |
| 2001 11 11 | 704 | 0.5− | 0.4+ | 2005 10 01 | 703 | 0.2+ | 0.1+ | 2005 10 08 | 704 | 0.8− | 0.9+ |
| 2001 11 11 | 704 | 0.2− | 0.1− | 2005 10 01 | 703 | 0.0 | 0.0 | 2005 10 10 | 699 | 0.7+ | 0.8− |
| 2001 11 11 | 704 | 0.3+ | 0.5+ | 2005 10 01 | 703 | 0.0 | 0.8+ | 2005 10 10 | 699 | 0.4− | 0.0 |
| 2001 11 11 | 704 | 0.0 | 0.2+ | 2005 10 03 | 704 | 1.4+ | 0.1+ | 2005 10 10 | 699 | 0.1− | 1.1− |
| 2001 11 11 | 704 | 0.4+ | 0.8+ | 2005 10 03 | 704 | 1.7+ | 0.3+ | 2005 10 10 | 699 | 0.2+ | 0.2+ |
| 2001 12 09 | 704 | 1.7− | 0.3+ | 2005 10 03 | 704 | 0.7+ | 0.3− | 2005 10 12 | 704 | 0.4− | 0.3+ |
| 2001 12 09 | 704 | 0.2+ | 0.4+ | 2005 10 03 | 704 | 1.3+ | 0.2− | 2005 10 12 | 704 | 0.3− | 0.6− |
| 2001 12 09 | 704 | 0.4− | 0.7+ | 2005 10 05 | 704 | 0.7+ | 0.7+ | 2005 10 12 | 704 | 0.1− | 0.1+ |
| 2001 12 09 | 704 | 0.1− | 0.6+ | 2005 10 05 | 704 | 0.2− | 0.3+ | 2005 10 29 | 703 | 1.2− | 0.6− |
| 2001 12 22 | 704 | 0.3+ | 0.9− | 2005 10 05 | 704 | 0.5+ | 0.4+ | 2005 10 29 | 703 | 1.2− | 0.9− |
| 2001 12 22 | 704 | 0.3− | 0.1+ | 2005 10 05 | 704 | 0.4− | 0.7+ | 2005 10 29 | 703 | 1.1− | 0.6− |
| 2001 12 22 | 704 | 0.6+ | 0.1− | 2005 10 05 | 704 | 0.2+ | 0.6+ | 2005 10 29 | 703 | 0.0 | 0.4+ |
| 2001 12 22 | 704 | 0.3+ | 0.5− | 2005 10 08 | 704 | 0.1+ | 0.3− | 2005 12 24 | 703 | (0.1+ | 2.9+) |
| 2001 12 22 | 704 | 0.0 | 0.7− | 2005 10 08 | 704 | 0.7+ | 0.6− | 2005 12 24 | 703 | 0.7− | 0.5+ |
| 2002 01 08 | 704 | 0.1− | 0.9− | 2005 10 08 | 704 | 0.0 | 0.2+ | 2005 12 24 | 703 | 1.9− | 1.2+ |
| 2002 01 08 | 704 | 0.6− | 0.6− | 2005 10 08 | 704 | 1.0− | 0.1+ | 2005 12 24 | 703 | 0.1+ | 1.2− |
| 2002 01 08 | 704 | 0.4− | 0.3− | 2005 10 08 | 704 | 0.0 | 0.1+ | | | | |

**2005 TQ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 171.32032 | | | (2000.0) | | |
| $n$ | 0.28447918 | $\omega$ | 259.01379 | | +0.57772790 | +0.81417617 |
| $a$ | 2.2896498 | $\Omega$ | 46.43669 | | −0.71423516 | +0.53857645 |
| $e$ | 0.0739757 | $i$ | 4.57982 | | −0.39509318 | +0.21691605 |
| $P$ | 3.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 03 | 691 | 0.6− | 0.7+ | 2005 10 22 | 703 | (1.0− | 2.1−) | 2005 10 29 | G96 | 0.4+ | 0.5− |
| 1991 10 03 | 691 | 0.1+ | 0.5− | 2005 10 22 | 703 | 0.8− | 1.0− | 2005 10 29 | G96 | 0.5+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 03 | 691 | 0.2+ | 0.3+ | 2005 10 22 | 703 | 0.5− | 0.7− | 2005 10 29 | G96 | 0.2− | 0.4− |
| 2001 06 26 | 644 | 0.1+ | 0.5− | 2005 10 22 | 703 | 0.1− | 0.2− | 2005 10 29 | G96 | 0.5+ | 0.1− |
| 2001 06 26 | 644 | 0.1+ | 0.3− | 2005 10 22 | 703 | 0.9− | 0.1− | 2005 11 28 | G96 | 0.0 | 0.5− |
| 2001 06 26 | 644 | 0.1+ | 0.2− | 2005 10 22 | 703 | 0.8+ | 0.0 | 2005 11 28 | G96 | 0.1− | 0.1− |
| 2005 10 01 | 691 | 0.1− | 0.2+ | 2005 10 22 | 703 | 0.7− | 0.3− | 2005 11 28 | G96 | 0.1− | 0.1− |
| 2005 10 01 | 691 | 0.1+ | 0.0 | 2005 10 24 | 699 | 0.3+ | 1.1+ | 2005 11 28 | G96 | 0.3− | 0.2+ |
| 2005 10 01 | 691 | 0.3+ | 0.0 | 2005 10 24 | 699 | 1.1− | 1.3− | 2005 12 04 | G96 | 0.5− | 0.1+ |
| 2005 10 04 | G96 | 0.1− | 0.5− | 2005 10 24 | 699 | 1.2− | 0.7+ | 2005 12 04 | G96 | 0.5− | 0.1+ |
| 2005 10 04 | G96 | 0.2+ | 0.6− | 2005 10 24 | 699 | 0.1− | 1.1+ | 2005 12 04 | G96 | 0.2+ | 0.1+ |
| 2005 10 04 | G96 | 0.1+ | 0.7− | 2005 10 24 | A50 | 0.3+ | 0.4+ | 2005 12 04 | G96 | 0.4− | 0.3+ |
| 2005 10 04 | G96 | 0.5+ | 0.5− | 2005 10 24 | A50 | 0.4+ | 0.1− | 2005 12 26 | G96 | 0.4+ | 0.0 |
| 2005 10 07 | 703 | 0.7− | 0.3+ | 2005 10 28 | 704 | 0.2− | 0.2+ | 2005 12 26 | G96 | 0.1− | 0.5− |
| 2005 10 07 | 703 | 0.3+ | 0.1− | 2005 10 28 | 704 | 0.0 | 0.4+ | 2005 12 26 | G96 | 0.6− | 1.2− |
| 2005 10 07 | 703 | 0.3− | 0.9+ | 2005 10 28 | 703 | 0.6− | 0.8− | 2005 12 26 | G96 | 0.5+ | 0.1− |
| 2005 10 07 | 703 | 0.7+ | 0.3− | 2005 10 28 | 703 | 0.3+ | 0.4− | 2006 01 04 | G96 | 0.8+ | 0.3+ |
| 2005 10 21 | 644 | 0.8+ | 0.1+ | 2005 10 28 | 704 | 0.1+ | 0.3+ | 2006 01 04 | G96 | 0.7+ | 0.4− |
| 2005 10 21 | 644 | 0.4+ | 0.4+ | 2005 10 28 | 703 | 0.7+ | 0.4+ | 2006 01 04 | G96 | 0.1− | 0.4+ |
| 2005 10 21 | 644 | 0.6+ | 0.0 | 2005 10 28 | 703 | 0.1− | 0.3− | 2006 01 04 | G96 | 0.2+ | 0.4+ |
| 2005 10 22 | 703 | 0.7− | 0.3+ | 2005 10 28 | 704 | 0.1+ | 0.7+ | | | | |

## 2005 TW$_{12}$ = 2005 UN$_{486}$

Id. Minor Planet Center (d, *MPO* 98188)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.62848 | | (2000.0) | | | |
| $n$ | 0.18598620 | $\omega$ | 115.44795 | | +0.32565287 | −0.93152799 |
| $a$ | 3.0395940 | $\Omega$ | 314.52476 | | +0.76527167 | +0.36023802 |
| $e$ | 0.1877279 | $i$ | 13.12406 | | +0.55525623 | +0.04984151 |
| $P$ | 5.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 644 | 0.6+ | 0.5+ | 2005 10 04 | 703 | 1.0− | 0.4− | 2005 10 29 | 703 | 0.5+ | 0.9− |
| 2002 03 09 | 644 | 0.1+ | 0.2+ | 2005 10 04 | 703 | 0.5+ | 0.2− | 2005 10 29 | 703 | 0.5+ | 0.4− |
| 2002 03 09 | 644 | 0.3− | 0.0 | 2005 10 04 | 703 | 1.1− | 0.5− | 2005 11 01 | 699 | 0.3+ | 1.0+ |
| 2005 09 02 | 644 | 0.4+ | 0.3+ | 2005 10 08 | 703 | 0.2− | 1.1+ | 2005 11 01 | 699 | 0.6− | 0.0 |
| 2005 09 02 | 644 | 0.4+ | 0.4+ | 2005 10 08 | 703 | 0.1+ | 0.1+ | 2005 11 01 | 699 | 0.6+ | 0.5− |
| 2005 09 02 | 644 | 0.3+ | 0.5+ | 2005 10 08 | 703 | 0.0 | 1.4+ | 2005 11 01 | 699 | 1.8+ | 0.3+ |
| 2005 09 18 | 644 | 0.3− | 0.4+ | 2005 10 08 | 703 | 1.1− | 0.3− | 2005 11 04 | 703 | 0.5+ | 0.2− |
| 2005 09 18 | 644 | 0.5+ | 0.2+ | 2005 10 11 | 699 | 1.4+ | 0.5+ | 2005 11 04 | 703 | 0.3+ | 1.3− |
| 2005 09 18 | 644 | 0.2+ | 0.2− | 2005 10 11 | 699 | 0.3− | 1.9+ | 2005 11 04 | 703 | 0.2+ | 0.2− |
| 2005 09 23 | 703 | 0.2− | 0.1+ | 2005 10 11 | 699 | 0.8− | 0.3+ | 2005 11 04 | 703 | 0.8− | 0.6− |
| 2005 09 23 | 703 | 1.0− | 0.0 | 2005 10 11 | 699 | 1.0+ | 0.2− | 2005 11 07 | 704 | 0.0 | 0.0 |
| 2005 09 23 | 703 | 0.2− | 0.3+ | 2005 10 23 | 703 | 0.4+ | 0.2+ | 2005 11 07 | 704 | 0.2+ | 0.3+ |
| 2005 09 23 | 703 | 1.9− | 0.4− | 2005 10 23 | 703 | 0.6− | 1.4− | 2005 11 07 | 704 | 0.1+ | 0.6+ |
| 2005 10 02 | 644 | 0.1+ | 0.1+ | 2005 10 23 | 703 | 0.7+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 2005 10 02 | 644 | 0.1+ | 0.3+ | 2005 10 23 | 703 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.3+ | 0.3− |
| 2005 10 02 | 644 | 0.1− | 0.1+ | 2005 10 29 | 703 | 0.2+ | 0.6− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 10 04 | 703 | 0.0 | 0.1+ | 2005 10 29 | 703 | 0.7− | 1.4− | | | | |

## 2005 TQ$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 106.89745 | | (2000.0) | | | |
| $n$ | 0.23406800 | $\omega$ | 311.95266 | | +0.77889734 | +0.61866696 |
| $a$ | 2.6076023 | $\Omega$ | 11.24372 | | −0.29306333 | +0.50398307 |
| $e$ | 0.1985272 | $i$ | 31.82206 | | −0.55446624 | +0.60270412 |
| $P$ | 4.21 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.4− | 0.8+ | 2005 09 27 | 704 | 0.4− | 1.3− | 2005 10 04 | 644 | 0.0 | 0.3+ |
| 2001 10 13 | 644 | 0.4− | 0.3+ | 2005 09 27 | 704 | 0.5+ | 0.1− | 2005 10 04 | 644 | 0.3− | 0.2+ |
| 2001 10 13 | 644 | 0.9− | 0.3+ | 2005 09 27 | 704 | 0.1− | 0.9− | 2005 10 07 | 699 | 0.4− | 0.5+ |
| 2004 03 16 | 691 | 0.4+ | 0.4+ | 2005 09 27 | 704 | 0.1+ | 0.5− | 2005 10 07 | 699 | 0.6+ | 1.4+ |
| 2004 03 16 | 691 | 0.5+ | 0.2− | 2005 10 03 | 703 | 0.4− | 0.2− | 2005 10 07 | 699 | 0.5+ | 1.1+ |
| 2004 03 16 | 691 | 0.0 | 0.5+ | 2005 10 03 | 703 | 0.5− | 0.3+ | 2005 10 07 | 699 | 0.4+ | 0.1+ |
| 2005 08 25 | 644 | 0.2− | 0.2+ | 2005 10 03 | 703 | (0.8+ | 3.3−) | 2005 10 29 | G96 | 0.6− | 0.2+ |
| 2005 08 25 | 644 | 0.1− | 0.2+ | 2005 10 03 | 703 | 0.5− | 0.6− | 2005 10 29 | G96 | 0.4− | 0.3− |
| 2005 08 25 | 644 | 0.1+ | 0.2+ | 2005 10 04 | 644 | 0.2+ | 0.5+ | 2005 10 29 | G96 | 0.3− | 0.2− |

## 2005 TK$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.00869 | | (2000.0) | | | |
| $n$ | 0.12334179 | $\omega$ | 137.95956 | | +0.96609849 | +0.25504246 |
| $a$ | 3.9969546 | $\Omega$ | 207.34147 | | −0.25396933 | +0.91092973 |
| $e$ | 0.1601703 | $i$ | 5.00726 | | −0.04640348 | +0.32428439 |
| $P$ | 7.99 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 01 | 691 | 0.0 | 0.2− | 2005 10 05 | G96 | 0.0 | 0.2− | 2005 10 27 | G96 | 0.2+ | 0.5− |
| 2005 10 01 | 691 | 0.8+ | 0.2− | 2005 10 05 | G96 | 0.3+ | 0.1− | 2005 10 27 | G96 | 0.1− | 0.3− |
| 2005 10 01 | 691 | 0.2− | 0.0 | 2005 10 05 | G96 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2005 10 01 | G96 | 0.2− | 0.2− | 2005 10 05 | G96 | 0.6− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2005 10 01 | G96 | 0.1− | 0.7− | 2005 10 06 | G96 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2005 10 01 | G96 | 0.2− | 0.4− | 2005 10 06 | G96 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.3+ |
| 2005 10 01 | G96 | 0.2− | 0.5− | 2005 10 06 | G96 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2005 10 05 | 691 | 0.1+ | 0.3+ | 2005 10 06 | G96 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2005 10 05 | 691 | 0.1− | 0.5+ | 2005 10 27 | G96 | 0.3− | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2005 10 05 | 691 | 0.4− | 0.4+ | 2005 10 27 | G96 | 0.5+ | 0.3− | | | | |

## 2005 TG$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 88.76995 | | (2000.0) | | | |
| $n$ | 0.20387752 | $\omega$ | 232.28612 | | +0.99184188 | +0.11860115 |
| $a$ | 2.8590593 | $\Omega$ | 120.85758 | | −0.09295222 | +0.92373904 |
| $e$ | 0.0819056 | $i$ | 3.12030 | | −0.08723282 | +0.36419770 |
| $P$ | 4.83 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.4+ | 0.1+ | 2005 10 01 | 704 | 0.2+ | 1.1+ | 2005 10 12 | 691 | 0.7+ | 1.2− |
| 1995 07 22 | 691 | 0.1+ | 0.0 | 2005 10 01 | 704 | 0.4− | 0.9+ | 2005 11 04 | 691 | 0.4− | 0.1+ |
| 1995 07 22 | 691 | 0.5− | 0.1− | 2005 10 05 | 704 | 0.5+ | 0.3− | 2005 11 04 | 691 | 0.1− | 0.1+ |
| 2003 04 05 | 691 | 0.1+ | 0.6+ | 2005 10 05 | 704 | 0.3− | 0.2+ | 2005 11 04 | 691 | 0.2− | 0.2+ |
| 2003 04 05 | 691 | 0.3+ | 0.5+ | 2005 10 05 | 704 | 0.6− | 0.3+ | 2005 12 01 | G96 | 0.3+ | 0.1+ |
| 2003 04 05 | 691 | 0.1+ | 0.4+ | 2005 10 05 | 704 | 0.4− | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.1+ |
| 2005 09 30 | 699 | 1.1− | 0.5+ | 2005 10 05 | 704 | 0.1− | 0.4− | 2005 12 01 | G96 | 0.0 | 0.3+ |
| 2005 09 30 | 699 | 1.3− | 0.7+ | 2005 10 06 | 691 | 0.0 | 0.3+ | 2005 12 01 | G96 | 0.1− | 0.0 |
| 2005 09 30 | 699 | (0.3− | 2.5−) | 2005 10 06 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.6+ | 0.1+ |
| 2005 09 30 | 699 | 1.2+ | 0.4− | 2005 10 06 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2005 10 01 | 691 | 0.1+ | 0.2+ | 2005 10 07 | 703 | 1.0− | 1.2− | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2005 10 01 | 691 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.0 | 1.3− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2005 10 01 | 704 | 0.5− | 0.4+ | 2005 10 07 | 703 | 0.3+ | 0.5− | 2006 11 01 | G96 | 0.5− | 0.1− |
| 2005 10 01 | 691 | 0.1− | 0.2+ | 2005 10 07 | 703 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2005 10 01 | 704 | 0.4+ | 0.3+ | 2005 10 12 | 691 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 2005 10 01 | 704 | 0.0 | 0.1− | 2005 10 12 | 691 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.4− | 0.4− |

## 2005 TY$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 205.93222 | | (2000.0) | | | |
| $n$ | 0.17538179 | $\omega$ | 279.78817 | | −0.82436187 | +0.56567252 |
| $a$ | 3.1609167 | $\Omega$ | 294.66371 | | −0.50986192 | −0.75813924 |
| $e$ | 0.1597530 | $i$ | 1.32577 | | −0.24590309 | −0.32440637 |
| $P$ | 5.62 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 704 | 0.4+ | 0.4+ | 2003 05 05 | 691 | 0.4+ | 0.1+ | 2005 11 06 | G96 | 0.8− | 0.1− |
| 2003 04 01 | 704 | 0.2+ | 0.6+ | 2005 10 01 | G96 | 0.1− | 0.0 | 2005 11 06 | G96 | 0.0 | 0.1+ |
| 2003 04 01 | 704 | 0.2− | 0.1+ | 2005 10 01 | G96 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.6+ | 0.3+ |
| 2003 04 01 | 704 | 0.9+ | 0.1− | 2005 10 01 | G96 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2003 04 01 | 704 | 1.0+ | 0.7+ | 2005 10 01 | G96 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2003 04 20 | 699 | 1.4− | 0.0 | 2005 10 05 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.6+ |
| 2003 04 20 | 699 | (1.8− | 0.5−) | 2005 10 05 | 691 | 0.0 | 0.6+ | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2003 04 20 | 699 | 0.1+ | 0.3− | 2005 10 05 | 691 | 0.3− | 0.5+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2003 04 20 | 699 | 0.3− | 0.0 | 2005 10 27 | G96 | 0.9− | 0.3+ | 2006 11 18 | 691 | 0.4− | 0.1− |
| 2003 04 25 | 691 | 0.1− | 0.4+ | 2005 10 27 | G96 | 0.4+ | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | 0.2− | 0.2+ | 2005 10 27 | G96 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.5− |
| 2003 04 25 | 691 | 0.6− | 0.2+ | 2005 10 27 | G96 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 2003 05 05 | 691 | 0.5+ | 0.3+ | 2005 11 06 | G96 | 0.2− | 0.0 | | | | |
| 2003 05 05 | 691 | 0.6+ | 0.3+ | 2005 11 06 | G96 | 0.5− | 0.3+ | | | | |

**2005 TJ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.26906 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18128627 | $\omega$ | 176.74543 | | +0.99833800 | | −0.04702454 |
| $a$ | 3.0919048 | $\Omega$ | 186.24905 | | +0.04350216 | | +0.99408177 |
| $e$ | 0.1313899 | $i$ | 17.82245 | | +0.03779952 | | +0.09792924 |
| $P$ | 5.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.2− | 0.4− | 2005 09 24 | 644 | 0.1− | 0.5+ | 2005 10 08 | 703 | 0.0 | 1.5+ |
| 1994 09 28 | 691 | 0.2+ | 0.2− | 2005 09 24 | 644 | 0.1+ | 0.3+ | 2005 10 08 | 703 | 0.2− | 0.9+ |
| 1994 09 28 | 691 | 0.1+ | 0.4− | 2005 10 01 | 704 | 1.1+ | 0.3+ | 2005 10 08 | 703 | 0.1− | 0.1− |
| 2003 04 10 | 691 | 0.2− | 0.7+ | 2005 10 01 | 704 | 0.9+ | 0.5− | 2005 10 08 | 703 | 0.3− | 0.4− |
| 2003 04 10 | 691 | 0.0 | 0.2+ | 2005 10 01 | 704 | 0.2− | 1.3− | 2005 10 27 | 644 | 0.3+ | 0.0 |
| 2003 04 10 | 691 | 0.3+ | 0.4+ | 2005 10 01 | 704 | 0.2− | 0.2− | 2005 10 27 | 644 | 0.2+ | 0.2+ |
| 2005 08 30 | 644 | 0.2+ | 0.6+ | 2005 10 01 | 704 | 1.2− | 0.8+ | 2005 10 27 | 704 | 0.8− | 0.1− |
| 2005 08 30 | 644 | 0.2+ | 0.7+ | 2005 10 01 | 691 | 0.1− | 0.7+ | 2005 10 27 | 644 | 0.3+ | 0.1− |
| 2005 08 30 | 644 | 0.2+ | 0.7+ | 2005 10 01 | 699 | 0.3− | 0.5+ | 2005 10 27 | 704 | 0.4+ | 0.3− |
| 2005 09 23 | 691 | 0.1− | 0.2+ | 2005 10 01 | 699 | 1.2+ | 0.2+ | 2005 10 27 | 704 | 1.2+ | 0.5− |
| 2005 09 23 | 691 | 0.2− | 0.2− | 2005 10 01 | 699 | 1.4+ | 0.6+ | 2005 10 27 | 704 | 0.1+ | 1.0+ |
| 2005 09 23 | 691 | 0.1− | 0.2+ | 2005 10 05 | 704 | 0.8− | 0.0 | 2005 11 01 | 703 | 0.5− | 0.8− |
| 2005 09 24 | 644 | 0.1+ | 0.5+ | 2005 10 05 | 704 | 1.0− | 0.4− | 2005 11 01 | 703 | 0.3+ | 0.9+ |
| 2005 09 24 | 644 | 0.1+ | 0.2+ | 2005 10 05 | 704 | 0.7− | 0.4− | 2005 11 01 | 703 | 1.3− | 0.5+ |
| 2005 09 24 | 644 | 0.2+ | 0.6+ | 2005 10 05 | 704 | 0.5− | 0.4− | 2005 11 01 | 703 | 0.6+ | 0.7− |
| 2005 09 24 | 644 | 0.4+ | 0.6+ | 2005 10 05 | 704 | 0.1− | 0.9+ | | | | |

**2005 TL$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.43717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17719778 | $\omega$ | 64.90214 | | −0.30518543 | | −0.95195646 |
| $a$ | 3.1392835 | $\Omega$ | 42.89283 | | +0.85976817 | | −0.28686561 |
| $e$ | 0.1550601 | $i$ | 2.13137 | | +0.40946374 | | −0.10717756 |
| $P$ | 5.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.5+ | 0.2+ | 2005 10 12 | 691 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.3+ | 0.1− |
| 2002 04 08 | 691 | 0.3+ | 0.3+ | 2005 10 12 | 691 | 0.3+ | 0.4+ | 2005 11 25 | G96 | 0.1+ | 0.1− |
| 2002 04 08 | 691 | 0.0 | 0.3+ | 2005 10 12 | 691 | 0.1+ | 0.3+ | 2005 11 25 | G96 | 0.1− | 0.2− |
| 2002 04 08 | 691 | 0.0 | 0.5+ | 2005 10 28 | 691 | 0.2− | 0.2− | 2005 11 25 | G96 | 0.1+ | 0.3− |
| 2002 04 08 | 644 | 0.5+ | 0.5+ | 2005 10 28 | 691 | 0.2− | 0.1+ | 2005 11 28 | G96 | 0.4+ | 0.5− |
| 2002 04 08 | 644 | 0.6+ | 0.6+ | 2005 10 28 | 691 | 0.3− | 0.3− | 2005 11 28 | G96 | 0.0 | 0.5− |
| 2005 10 01 | G96 | 0.2− | 0.1− | 2005 10 30 | 703 | 0.7+ | 1.3− | 2005 11 28 | G96 | 0.0 | 0.1− |
| 2005 10 01 | G96 | 0.3− | 0.2− | 2005 10 30 | 703 | 0.5− | 1.3+ | 2005 11 28 | G96 | 0.0 | 0.2− |
| 2005 10 01 | G96 | 0.2+ | 0.1− | 2005 10 30 | 703 | 0.7− | 0.6− | 2005 11 29 | G96 | 0.3− | 0.6− |
| 2005 10 01 | G96 | 0.1+ | 0.1− | 2005 10 30 | 703 | 0.1+ | 0.6+ | 2005 11 29 | G96 | 1.6+ | 0.6− |
| 2005 10 05 | 691 | 0.1+ | 0.3+ | 2005 11 01 | 691 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.1− | 0.5− |
| 2005 10 05 | 691 | 0.1− | 0.3+ | 2005 11 01 | 691 | 0.2− | 0.1+ | 2005 11 29 | G96 | 0.2− | 0.3− |
| 2005 10 05 | 691 | 0.0 | 0.2+ | 2005 11 01 | 691 | 0.1− | 0.1+ | 2006 01 23 | G96 | 0.1+ | 0.2− |
| 2005 10 07 | G96 | 0.1− | 0.2− | 2005 11 05 | 691 | 0.4− | 0.0 | 2006 01 23 | G96 | 0.2+ | 0.2+ |
| 2005 10 07 | G96 | 0.2− | 0.1+ | 2005 11 05 | 691 | 0.2− | 0.0 | 2006 01 23 | G96 | 0.8+ | 0.1− |
| 2005 10 07 | G96 | 0.3− | 0.3− | 2005 11 05 | 691 | 0.6− | 0.3+ | 2006 01 23 | G96 | 0.3+ | 0.1− |
| 2005 10 07 | G96 | 0.1+ | 1.2− | 2005 11 05 | 699 | 0.1− | 0.8+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2005 10 08 | 291 | 0.3+ | 0.4+ | 2005 11 05 | 699 | 0.6+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2005 10 08 | 291 | 0.1− | 0.4+ | 2005 11 05 | 699 | 1.5+ | 0.1− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2005 10 08 | 291 | 0.1+ | 0.4+ | 2005 11 05 | 699 | 1.2+ | 0.9− | 2006 11 24 | G96 | 0.0 | 0.2− |

**2005 TK$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.94619 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.32020276 | $\omega$ | 279.51158 | | +0.96336807 | | +0.26128645 |
| $a$ | 2.1160179 | $\Omega$ | 65.36173 | | −0.21250608 | | +0.88118283 |
| $e$ | 0.1757043 | $i$ | 3.81177 | | −0.16359441 | | +0.39401296 |
| $P$ | 3.08 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.2+ | 0.3+ | 2005 10 05 | 704 | 0.6− | 0.6+ | 2005 10 28 | 703 | 0.1+ | 1.5+ |
| 2001 05 22 | 807 | 0.1− | 0.4+ | 2005 10 05 | 704 | 0.1− | 0.5+ | 2005 10 28 | 703 | 1.2− | 1.2+ |
| 2001 05 22 | 807 | 0.2+ | 0.4+ | 2005 10 05 | 704 | 0.4− | 0.9+ | 2005 10 30 | G96 | 0.0 | 0.3− |
| 2001 05 22 | 807 | 0.3+ | 0.4+ | 2005 10 07 | 703 | 0.2+ | 0.4+ | 2005 10 30 | G96 | 0.3− | 0.3− |
| 2002 11 12 | 644 | 0.1− | 0.7+ | 2005 10 07 | 699 | 1.2+ | 0.6+ | 2005 10 30 | G96 | 0.1− | 0.2− |
| 2002 11 12 | 644 | 0.4− | 0.5− | 2005 10 07 | 703 | 0.6+ | 0.5+ | 2005 10 30 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 644 | 0.5+ | 0.2− | 2005 10 07 | 703 | 0.4+ | 0.0 | 2005 10 31 | 704 | 0.6− | 0.1+ |
| 2005 09 23 | 691 | 0.3+ | 0.2− | 2005 10 07 | 703 | 0.3+ | 0.5+ | 2005 10 31 | 704 | 0.4− | 0.6+ |
| 2005 09 23 | 691 | 0.2− | 0.1− | 2005 10 07 | 699 | 0.1+ | 0.3+ | 2005 10 31 | 704 | 0.5− | 0.0 |
| 2005 09 23 | 691 | 0.2− | 0.2− | 2005 10 07 | 699 | 0.9− | 1.1− | 2005 10 31 | 704 | 0.0 | 0.1+ |
| 2005 10 01 | 703 | 0.3− | 0.2− | 2005 10 07 | 699 | 0.4+ | 0.2+ | 2005 10 31 | 704 | 0.3+ | 0.0 |
| 2005 10 01 | 703 | 0.7− | 0.1− | 2005 10 12 | 691 | 0.7+ | 0.1− | 2005 11 05 | 704 | 0.2− | 0.7+ |
| 2005 10 01 | 703 | 1.0− | 0.2+ | 2005 10 12 | 691 | 0.1+ | 0.0 | 2005 11 05 | 704 | 0.9+ | 1.0+ |
| 2005 10 01 | 703 | 1.4+ | 0.8+ | 2005 10 12 | 691 | 0.0 | 0.0 | 2005 11 05 | 704 | 0.2+ | 0.1+ |
| 2005 10 01 | 691 | 0.1− | 0.1− | 2005 10 24 | A50 | 0.7− | 0.3− | 2005 12 01 | G96 | 0.3+ | 0.6− |
| 2005 10 01 | 691 | 0.0 | 0.2− | 2005 10 24 | A50 | 1.3+ | 0.9− | 2005 12 01 | G96 | 0.0 | 0.6− |
| 2005 10 01 | 691 | 0.2− | 0.1− | 2005 10 28 | 703 | 1.0− | 0.8− | 2005 12 01 | G96 | 0.4+ | 0.3− |
| 2005 10 05 | 704 | 0.6− | 0.2+ | 2005 10 28 | 703 | 1.1− | 0.2− | 2005 12 01 | G96 | 0.3+ | 0.2− |

**2005 TT$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.40554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22457626 | $\omega$ | 71.02432 | | +0.98146869 | | +0.12758212 |
| $a$ | 2.6805679 | $\Omega$ | 281.44879 | | −0.17689813 | | +0.89007466 |
| $e$ | 0.1106512 | $i$ | 8.38814 | | +0.07366319 | | +0.43759559 |
| $P$ | 4.39 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 02 | 644 | 0.3+ | 0.1− | 2005 10 23 | 644 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 1.0+ | 0.3+ |
| 2005 10 02 | 644 | 0.1+ | 0.4− | 2005 10 28 | 703 | 0.5+ | 0.7+ | 2006 11 20 | G96 | 0.3− | 0.0 |
| 2005 10 02 | 644 | 0.5+ | 0.0 | 2005 10 28 | 703 | 1.3+ | 1.2+ | 2006 11 20 | G96 | 0.5− | 0.1− |
| 2005 10 05 | 703 | 0.3− | 0.5+ | 2005 10 28 | 703 | 1.2− | 0.5+ | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2005 10 05 | 703 | 0.5− | 0.7+ | 2005 10 28 | 703 | 0.5− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2005 10 05 | 703 | 0.1− | 0.6− | 2005 11 03 | 703 | 0.4+ | 0.8− | 2006 11 21 | G96 | 0.3+ | 0.2+ |
| 2005 10 05 | 703 | 0.4− | 0.4− | 2005 11 03 | 703 | 1.0+ | 0.1− | 2006 11 21 | G96 | 0.5− | 0.3− |
| 2005 10 23 | 644 | 0.3+ | 0.4+ | 2005 11 03 | 703 | 0.4− | 0.3− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2005 10 23 | 644 | 0.2+ | 0.1+ | 2005 11 03 | 703 | 1.4− | 1.0− | | | | |

**2005 TR$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.85003 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30819267 | $\omega$ | 125.66576 | | +0.58278036 | | +0.81262971 |
| $a$ | 2.1706402 | $\Omega$ | 179.98041 | | −0.78083915 | | +0.55999658 |
| $e$ | 0.5083153 | $i$ | 7.36182 | | −0.22507169 | | +0.16135919 |
| $P$ | 3.20 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.6− | 0.4+ | 2005 10 08 | E12 | 0.4+ | 0.9+ | 2005 10 21 | 448 | 0.3− | 0.7+ |
| 2002 10 31 | 644 | 0.4− | 0.4+ | 2005 10 08 | E12 | 0.4+ | 0.1+ | 2005 10 21 | 448 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.4+ | 0.5+ | 2005 10 08 | E12 | 0.4− | 0.7− | 2005 10 21 | 448 | 0.7+ | 0.1+ |
| 2002 12 09 | 644 | 0.1+ | 1.0+ | 2005 10 08 | E12 | 0.1− | 0.0 | 2005 10 22 | 703 | 0.7+ | 0.0 |
| 2005 04 07 | 691 | 0.1+ | 0.2+ | 2005 10 08 | E12 | 0.1+ | 0.2+ | 2005 10 22 | 703 | 0.1+ | 1.4− |
| 2005 04 07 | 691 | 0.1+ | 0.3+ | 2005 10 08 | E12 | 0.0 | 0.9+ | 2005 10 22 | 703 | 0.5+ | 0.1+ |
| 2005 04 07 | 691 | 0.0 | 0.1+ | 2005 10 08 | J95 | 0.2− | 0.4+ | 2005 10 22 | 703 | 2.2− | 0.7− |
| 2005 10 07 | 704 | 0.2− | 0.4+ | 2005 10 08 | J95 | 0.3+ | 0.2+ | 2005 10 22 | 703 | 0.7− | 0.2+ |
| 2005 10 07 | 704 | 1.0− | 0.7+ | 2005 10 08 | J95 | 0.2+ | 0.1− | 2005 10 22 | 703 | 0.4+ | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 07 | 704 | 1.1− | 0.5+ | 2005 10 09 | I77 | 1.3− | 0.1− | 2005 10 22 | 703 | 2.1− | 0.7− |
| 2005 10 07 | 704 | 1.3+ | 1.0+ | 2005 10 09 | I77 | 0.1− | 1.1− | 2005 10 22 | 413 | 0.1+ | 0.0 |
| 2005 10 08 | 704 | 0.2− | 1.2− | 2005 10 11 | I77 | 0.1+ | 0.5+ | 2005 10 22 | 413 | 0.2− | 0.3− |
| 2005 10 08 | 704 | 0.4− | 0.2+ | 2005 10 11 | I77 | 0.5+ | 0.7+ | 2005 10 28 | G96 | 0.1+ | 0.1+ |
| 2005 10 08 | 704 | 0.0 | 0.3+ | 2005 10 15 | I77 | 0.1+ | 0.8− | 2005 10 28 | G96 | 0.1− | 0.2+ |
| 2005 10 08 | 704 | 0.5+ | 0.6− | 2005 10 15 | I77 | 0.1− | 0.8− | 2005 10 28 | 448 | 0.0 | 0.2− |
| 2005 10 08 | 704 | 1.1− | 0.4− | 2005 10 15 | I77 | 0.1− | 0.9− | 2005 10 28 | 448 | 1.1− | 0.2− |
| 2005 10 08 | E12 | 0.6+ | 0.1+ | 2005 10 16 | I77 | 1.6+ | 0.1+ | 2005 10 28 | 448 | 0.5+ | 0.7− |
| 2005 10 08 | E12 | 0.1+ | 0.5+ | 2005 10 16 | I77 | 1.2+ | 0.3− | 2005 12 25 | 291 | 0.3+ | 0.2+ |
| 2005 10 08 | E12 | 0.1− | 0.4+ | 2005 10 16 | I77 | 0.9+ | 0.3− | 2005 12 25 | 291 | 0.0 | 0.1+ |

**2005 TO$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 71.06069 | | (2000.0) | | | |
| $n$ | 0.18742620 | $\omega$ | 165.40213 | | +0.93229825 | −0.35763763 |
| $a$ | 3.0240051 | $\Omega$ | 215.70176 | | +0.32187833 | +0.88846858 |
| $e$ | 0.2276633 | $i$ | 5.30878 | | +0.16496758 | +0.28760896 |
| $P$ | 5.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 25 | 691 | 0.1− | 0.0 | 2005 10 23 | 701 | 1.0− | 0.3− | 2005 11 05 | 699 | 0.1+ | 0.0 |
| 2000 11 25 | 691 | 0.0 | 0.2− | 2005 10 23 | 701 | 0.9− | 0.3+ | 2005 11 05 | 699 | 0.8+ | 0.9+ |
| 2000 11 25 | 691 | 0.1+ | 0.1− | 2005 10 23 | 701 | 0.8− | 0.5− | 2005 11 05 | 699 | 1.6+ | 0.4− |
| 2003 04 01 | 695 | 0.0 | 0.6+ | 2005 10 23 | 701 | 0.4− | 0.5− | 2005 11 05 | 699 | 1.0− | 0.1− |
| 2003 04 01 | 695 | 0.3+ | 0.7+ | 2005 10 23 | 701 | 0.1+ | 1.3+ | 2005 11 28 | 691 | 0.5+ | 0.2+ |
| 2005 09 29 | 691 | 0.2− | 0.1− | 2005 10 24 | 701 | (2.0+ | 2.2+) | 2005 11 28 | 691 | 0.0 | 0.4+ |
| 2005 09 29 | 691 | 0.3− | 0.0 | 2005 10 24 | 701 | 0.5− | 0.1− | 2005 11 28 | 691 | 0.0 | 0.1+ |
| 2005 09 29 | 691 | 0.1+ | 0.0 | 2005 10 24 | 701 | 0.2− | 0.2+ | 2005 11 30 | 691 | 0.1− | 0.1+ |
| 2005 10 05 | 691 | 0.3− | 0.0 | 2005 10 25 | 701 | 0.5− | 0.3− | 2005 11 30 | 691 | 0.1− | 0.2+ |
| 2005 10 05 | 691 | 0.1− | 0.1+ | 2005 10 25 | 701 | 0.7− | 0.3− | 2005 11 30 | 691 | 0.1− | 0.8− |
| 2005 10 05 | 691 | 0.1− | 0.1− | 2005 10 25 | 701 | 0.6− | 0.6− | 2005 12 02 | 691 | 0.1+ | 0.0 |
| 2005 10 06 | 621 | 0.2+ | 0.1− | 2005 10 27 | 691 | 0.3− | 0.2+ | 2005 12 02 | 691 | 0.2+ | 0.3+ |
| 2005 10 06 | 621 | 0.1− | 0.0 | 2005 10 27 | 691 | 0.1+ | 0.1+ | 2005 12 02 | 691 | 0.1− | 0.0 |
| 2005 10 06 | 621 | 0.8− | 0.4+ | 2005 10 27 | 691 | 0.2− | 0.1− | 2005 12 04 | G96 | 0.1− | 0.2− |
| 2005 10 07 | 621 | 0.5+ | 0.4+ | 2005 10 28 | 701 | 0.4+ | 0.3− | 2005 12 04 | G96 | 0.1− | 0.2− |
| 2005 10 07 | 621 | 0.7− | 0.3− | 2005 10 28 | 701 | 0.7+ | 0.4− | 2005 12 04 | G96 | 0.6+ | 0.2− |
| 2005 10 07 | 621 | 0.7+ | 0.5− | 2005 10 28 | 701 | 0.6+ | 0.3− | 2005 12 04 | G96 | 0.1+ | 0.2− |
| 2005 10 12 | 691 | 0.3+ | 0.1− | 2005 10 31 | 691 | 0.1+ | 0.4+ | 2005 12 07 | 691 | 0.1+ | 0.4+ |
| 2005 10 12 | 691 | 0.2+ | 0.1− | 2005 10 31 | 691 | 0.1+ | 0.3+ | 2005 12 07 | 691 | 0.0 | 0.2+ |
| 2005 10 12 | 691 | 0.3+ | 0.3− | 2005 10 31 | 691 | 0.3+ | 0.1− | 2005 12 07 | 691 | 0.1+ | 0.4+ |
| 2005 10 22 | 691 | 0.1− | 0.4+ | 2005 10 31 | 701 | 0.3+ | 0.6− | 2005 12 31 | G96 | 0.3+ | 0.2+ |
| 2005 10 22 | 701 | 0.7+ | 0.8− | 2005 10 31 | 701 | 0.7+ | 0.5− | 2005 12 31 | G96 | 0.2+ | 0.1− |
| 2005 10 22 | 691 | 0.1− | 0.1+ | 2005 10 31 | 701 | 0.4+ | 0.6− | 2005 12 31 | G96 | 0.8− | 0.1− |
| 2005 10 22 | 691 | 0.0 | 0.0 | 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 31 | G96 | 1.2− | 0.0 |
| 2005 10 22 | 701 | 0.3+ | 0.1+ | 2005 11 04 | 691 | 0.1− | 0.1− | | | | |
| 2005 10 22 | 701 | 0.8− | 0.2+ | 2005 11 04 | 691 | 0.1− | 0.2− | | | | |

**2005 TS$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 103.23972 | | (2000.0) | | | |
| $n$ | 0.18180413 | $\omega$ | 310.94242 | | +0.93706384 | +0.34585624 |
| $a$ | 3.0860305 | $\Omega$ | 28.91866 | | −0.28313714 | +0.83297666 |
| $e$ | 0.1603052 | $i$ | 5.68529 | | −0.20431525 | +0.43189507 |
| $P$ | 5.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.1+ | 0.0 | 2005 10 26 | 701 | 0.4+ | 0.1+ | 2005 11 04 | 704 | 0.2+ | 0.3− |
| 1994 10 08 | 691 | 0.2− | 0.2+ | 2005 10 26 | 701 | 0.8+ | 0.8− | 2005 11 04 | 704 | 1.5− | 1.0− |
| 1994 10 08 | 691 | 0.3− | 0.4+ | 2005 10 26 | 701 | 1.5+ | 0.6− | 2005 11 05 | 691 | 0.2− | 0.0 |
| 2003 04 05 | 691 | 0.1+ | 0.4+ | 2005 10 26 | 224 | 0.5− | 0.6− | 2005 11 05 | 691 | 0.0 | 0.3+ |
| 2003 04 05 | 691 | 0.0 | 0.2+ | 2005 10 26 | 224 | 0.1+ | 0.0 | 2005 11 05 | 691 | 0.1− | 0.1+ |
| 2003 04 05 | 691 | 0.3+ | 0.1+ | 2005 10 27 | 224 | 0.1+ | 0.3+ | 2005 11 05 | 699 | 0.7+ | 0.4− |
| 2005 09 30 | G96 | 0.2+ | 0.3− | 2005 10 27 | 701 | 0.6− | 0.5− | 2005 11 05 | 699 | 1.0− | 0.6+ |
| 2005 09 30 | G96 | 0.2− | 0.2− | 2005 10 27 | 701 | 0.6+ | 0.4− | 2005 11 05 | 699 | 0.6+ | 0.3+ |
| 2005 09 30 | G96 | 0.0 | 0.5− | 2005 10 27 | 701 | 0.4+ | 0.6− | 2005 11 05 | 699 | 0.4− | 0.1+ |
| 2005 09 30 | G96 | 0.1+ | 0.5− | 2005 10 27 | 701 | 0.6− | 0.5− | 2005 11 06 | 704 | 1.0+ | 1.0− |
| 2005 10 11 | 701 | 0.1+ | 0.6− | 2005 10 27 | 701 | 0.6+ | 0.4− | 2005 11 06 | 704 | 0.8+ | 0.2− |
| 2005 10 11 | 701 | 0.3+ | 1.0− | 2005 10 27 | 701 | 0.7+ | 0.7− | 2005 11 06 | 704 | 1.2+ | 0.3+ |
| 2005 10 12 | 691 | 0.3− | 0.1+ | 2005 10 27 | 701 | 0.2+ | 0.8− | 2005 11 06 | 704 | 1.1+ | 0.4− |
| 2005 10 12 | 691 | 0.4− | 0.1+ | 2005 10 27 | 701 | 0.4+ | 0.4− | 2005 11 06 | 704 | 0.7+ | 0.4− |
| 2005 10 12 | 691 | 0.4− | 0.1+ | 2005 10 27 | 701 | 0.1+ | 0.3− | 2005 11 21 | 691 | 0.0 | 0.2+ |
| 2005 10 14 | 701 | 0.1− | 0.3− | 2005 10 30 | 703 | 0.0 | 0.4+ | 2005 11 21 | 691 | 0.2− | 0.3− |
| 2005 10 14 | 701 | 0.2− | 0.5− | 2005 10 30 | 703 | 0.5− | 0.2+ | 2005 11 21 | 691 | 0.1− | 0.2+ |
| 2005 10 14 | 701 | 1.3− | 0.1− | 2005 10 30 | 703 | 0.1+ | 0.1+ | 2005 12 02 | 691 | 1.4+ | 1.0− |
| 2005 10 23 | 703 | 0.6+ | 1.4− | 2005 10 30 | 703 | 0.1+ | 0.2− | 2005 12 02 | 691 | 0.1+ | 0.1+ |
| 2005 10 23 | 703 | 0.4− | 0.0 | 2005 10 31 | A50 | 1.2+ | 0.3− | 2005 12 02 | 691 | 0.0 | 0.1+ |
| 2005 10 23 | 703 | 0.2− | 0.7+ | 2005 11 01 | 691 | 0.1− | 0.6+ | 2005 12 02 | 703 | 0.6− | 1.9− |
| 2005 10 23 | 703 | 0.6+ | 0.6+ | 2005 11 01 | 691 | 0.2− | 0.5+ | 2005 12 02 | 703 | 0.4− | 0.2− |
| 2005 10 24 | 699 | 1.0− | 0.8− | 2005 11 01 | 691 | 0.1− | 0.5+ | 2005 12 02 | 703 | (0.6+ | 2.4−) |
| 2005 10 24 | 699 | 0.5− | 0.1− | 2005 11 01 | 691 | 0.1− | 0.3+ | 2005 12 02 | 703 | 0.1− | 0.5+ |
| 2005 10 24 | 699 | (2.4− | 0.8+) | 2005 11 01 | 691 | 0.2− | 0.6+ | 2005 12 05 | 691 | 0.4− | 0.2+ |
| 2005 10 24 | 699 | (3.0− | 0.9+) | 2005 11 01 | 691 | 0.1− | 0.4+ | 2005 12 05 | 691 | 0.3+ | 0.2+ |
| 2005 10 25 | 701 | 0.4− | 0.6− | 2005 11 01 | 704 | 0.1+ | 0.3− | 2005 12 05 | 691 | 0.4− | 0.6+ |
| 2005 10 25 | 701 | 0.4+ | 0.1− | 2005 11 01 | 704 | 0.4+ | 0.8+ | 2005 12 05 | G96 | 0.1− | 0.5− |
| 2005 10 25 | 701 | 0.2+ | 0.2− | 2005 11 01 | 704 | 1.0− | 0.5+ | 2005 12 05 | G96 | 0.0 | 0.1− |
| 2005 10 26 | 701 | 0.3− | 0.6− | 2005 11 01 | 704 | 0.3− | 0.5+ | 2005 12 05 | G96 | 0.2+ | 0.1− |
| 2005 10 26 | 701 | 0.3− | 0.6− | 2005 11 01 | 704 | 0.4+ | 0.4+ | 2005 12 05 | G96 | 0.4+ | 0.2− |
| 2005 10 26 | 701 | 1.2+ | 0.5− | 2005 11 04 | 704 | 0.8+ | 0.6+ | | | | |

**2005 TN$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.48645 | | (2000.0) | | | |
| $n$ | 0.00598356 | $\omega$ | 89.32829 | | −0.13459948 | −0.98854411 |
| $a$ | 30.0489833 | $\Omega$ | 9.28491 | | +0.65368552 | −0.14037652 |
| $e$ | 0.0626359 | $i$ | 25.04038 | | +0.74470009 | −0.05545243 |
| $P$ | 164.72 | $H$ | 9.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 07 | 304 | 0.2+ | 0.1− | 2005 11 03 | 304 | 0.0 | 0.2− | 2005 12 25 | 568 | 0.1− | 0.0 |
| 2005 10 07 | 304 | 0.1− | 0.2− | 2005 11 03 | 304 | 0.2+ | 0.2+ | 2005 12 26 | 568 | 0.1− | 0.6− |
| 2005 10 07 | 304 | 0.0 | 0.3− | 2005 11 28 | 304 | 0.2− | 0.2+ | 2006 07 28 | 304 | 0.1− | 0.5+ |
| 2005 10 08 | 304 | 0.2− | 0.3+ | 2005 11 28 | 304 | 0.0 | 0.4+ | 2006 07 28 | 304 | 0.1− | 0.0 |
| 2005 10 08 | 304 | 0.1− | 0.1− | 2005 11 30 | 304 | 0.3+ | 0.2+ | 2006 11 12 | 304 | 0.1+ | 0.2+ |
| 2005 10 25 | 304 | 0.4+ | 0.1− | 2005 11 30 | 304 | 0.1− | 0.2+ | 2006 11 13 | 304 | 0.0 | 0.3− |
| 2005 10 25 | 304 | 0.2− | 0.2− | 2005 12 24 | 568 | 0.0 | 0.1+ | 2006 11 13 | 304 | 0.0 | 0.3− |

**2005 TV$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.12196 | | (2000.0) | | | |
| $n$ | 0.19108913 | $\omega$ | 311.90749 | | +0.91127728 | +0.40222571 |
| $a$ | 2.9852364 | $\Omega$ | 24.76748 | | −0.28700045 | +0.77404509 |
| $e$ | 0.1538471 | $i$ | 12.16069 | | −0.29530400 | +0.48894650 |
| $P$ | 5.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 21 | 691 | 0.3+ | 0.1− | 2005 10 06 | 699 | 0.5+ | 1.3− | 2005 10 27 | 691 | 0.1+ | 0.0 |
| 1998 03 21 | 691 | (4.9+ | 3.5−) | 2005 10 06 | 699 | 1.2+ | 0.6+ | 2005 10 27 | 691 | 0.2+ | 0.1− |
| 1998 03 21 | 691 | 0.3− | 0.1+ | 2005 10 06 | 699 | 0.8+ | 0.5− | 2005 11 25 | G96 | 0.0 | 0.0 |
| 2000 10 07 | 691 | 0.1+ | 0.3− | 2005 10 07 | 703 | 0.5− | 0.4− | 2005 11 25 | G96 | 0.8+ | 0.1− |
| 2000 10 07 | 691 | 0.2− | 0.2+ | 2005 10 07 | 703 | 1.4− | 0.9− | 2005 11 25 | G96 | 0.5− | 0.4− |
| 2000 10 07 | 691 | 0.0 | 0.2+ | 2005 10 07 | 703 | 0.7− | 0.7+ | 2005 11 25 | G96 | 0.2− | 0.5− |
| 2005 10 01 | 704 | 0.1+ | 0.3+ | 2005 10 07 | 703 | 0.4− | 0.2− | 2005 12 02 | G96 | 0.3− | 0.3+ |
| 2005 10 01 | 704 | 0.1+ | 0.6+ | 2005 10 12 | 691 | 0.1+ | 0.1− | 2005 12 02 | G96 | 0.4+ | 0.4+ |
| 2005 10 01 | 704 | 0.6− | 0.8+ | 2005 10 12 | 691 | 0.2− | 0.2+ | 2005 12 02 | G96 | 0.3+ | 0.1+ |
| 2005 10 01 | 704 | 0.4− | 0.9+ | 2005 10 12 | 691 | 0.2+ | 0.3− | 2005 12 02 | G96 | 0.1− | 0.4+ |
| 2005 10 06 | 699 | 0.0 | 0.2− | 2005 10 27 | 691 | 0.1− | 0.0 | | | | |

**2005 TL$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.45678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21393164 | $\omega$ | 201.25647 | | +0.78005881 | −0.62509924 | |
| $a$ | 2.7687646 | $\Omega$ | 197.51950 | | +0.58646607 | +0.74577856 | |
| $e$ | 0.0710392 | $i$ | 5.25166 | | +0.21809586 | +0.23035903 | |
| $P$ | 4.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 691 | 0.2− | 0.2+ | 2005 10 07 | 691 | 0.3+ | 0.2+ | 2005 10 28 | G96 | 0.1− | 0.1+ |
| 2000 09 07 | 691 | 0.1− | 0.2+ | 2005 10 07 | 691 | 0.1+ | 0.5+ | 2005 10 28 | 703 | 0.6+ | 0.0 |
| 2000 09 07 | 691 | 0.1+ | 0.2+ | 2005 10 07 | 691 | 0.2+ | 0.3+ | 2005 10 28 | 703 | 0.2+ | 0.8− |
| 2003 03 27 | 691 | 0.1− | 0.8+ | 2005 10 22 | 703 | 0.8+ | 0.3− | 2005 10 29 | G96 | 0.2+ | 0.1+ |
| 2003 03 27 | 691 | 0.8+ | 0.6+ | 2005 10 22 | 703 | 0.4+ | 0.6− | 2005 10 29 | G96 | 0.3− | 0.1+ |
| 2003 03 27 | 691 | 0.1− | 0.6+ | 2005 10 22 | 703 | 1.2+ | 0.1+ | 2005 10 29 | G96 | 0.2− | 0.2+ |
| 2005 10 01 | G96 | 0.2+ | 0.6+ | 2005 10 22 | 703 | 1.4− | 0.6+ | 2005 11 28 | G96 | 0.9− | 0.9− |
| 2005 10 01 | G96 | 0.2− | 0.3+ | 2005 10 24 | A50 | 0.1+ | 0.7− | 2005 11 28 | G96 | 0.1+ | 0.1− |
| 2005 10 01 | G96 | 0.4− | 0.3+ | 2005 10 24 | A50 | 1.0− | 0.2+ | 2005 11 28 | G96 | 0.6− | 0.1+ |
| 2005 10 01 | G96 | 0.1− | 0.5+ | 2005 10 28 | G96 | 0.1− | 0.2+ | 2005 11 28 | G96 | 0.1− | 0.2+ |
| 2005 10 06 | G96 | 0.6− | 0.1− | 2005 10 28 | G96 | 0.3+ | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.2+ |
| 2005 10 06 | G96 | 0.3+ | 0.2− | 2005 10 28 | 703 | 0.9− | 0.9− | 2005 12 01 | G96 | 0.2− | 0.2+ |
| 2005 10 06 | G96 | 0.0 | 0.1+ | 2005 10 28 | G96 | 0.1+ | 0.1+ | 2005 12 01 | G96 | 1.0− | 0.3+ |
| 2005 10 06 | G96 | 0.3+ | 0.1+ | 2005 10 28 | 703 | 0.7− | 1.1+ | 2005 12 01 | G96 | 0.1− | 0.1+ |

**2005 TW$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.42690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25304879 | $\omega$ | 16.17391 | | −0.08230369 | −0.99604702 | |
| $a$ | 2.4755206 | $\Omega$ | 78.55620 | | +0.91055045 | −0.08878324 | |
| $e$ | 0.1301451 | $i$ | 1.95364 | | +0.40512217 | −0.00280587 | |
| $P$ | 3.89 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 691 | 0.1− | 0.0 | 2005 10 07 | 691 | 0.2− | 0.3+ | 2005 12 01 | G96 | 0.1+ | 0.3− |
| 2001 10 25 | 691 | 0.1+ | 0.3+ | 2005 10 07 | 691 | 0.2− | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.4− |
| 2001 10 25 | 691 | 0.0 | 0.5− | 2005 10 07 | 691 | 0.1− | 0.4+ | 2005 12 01 | G96 | 0.2− | 0.2− |
| 2003 04 05 | 691 | 0.1− | 0.3+ | 2005 10 11 | 691 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.6+ | 0.2− |
| 2003 04 05 | 691 | 0.1+ | 0.2+ | 2005 10 11 | 691 | 0.0 | 0.3+ | 2005 12 04 | G96 | 1.7+ | 0.3+ |
| 2003 04 05 | 691 | 0.2+ | 0.0 | 2005 10 11 | 691 | 0.2− | 0.3+ | 2005 12 04 | G96 | 0.0 | 0.5− |
| 2005 10 04 | G96 | 0.2− | 0.3− | 2005 10 28 | G96 | 0.1− | 0.5− | 2005 12 04 | G96 | 0.1+ | 0.5− |
| 2005 10 04 | G96 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.4− | 0.1− | 2005 12 04 | G96 | 0.5+ | 0.5− |
| 2005 10 04 | G96 | 0.6− | 0.0 | 2005 10 28 | G96 | 0.5+ | 0.2− | | | | |
| 2005 10 04 | G96 | 0.1− | 0.3+ | 2005 10 28 | G96 | 0.1+ | 0.6− | | | | |

**2005 TN$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.00210 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00360721 | $\omega$ | 220.68670 | | +0.76698245 | −0.64166787 | |
| $a$ | 42.1070959 | $\Omega$ | 179.22905 | | +0.59813169 | +0.71465499 | |
| $e$ | 0.2306769 | $i$ | 2.17716 | | +0.23232822 | +0.27844315 | |
| $P$ | 273 | $H$ | 7.2 | $G$ | 0.15 | $U$ | 7 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 08 | 304 | 0.0 | 0.4+ | 2005 11 03 | 304 | 0.2− | 0.1− | 2005 11 28 | 304 | 0.1− | 0.2− |
| 2005 10 08 | 304 | 0.1− | 0.4+ | 2005 11 03 | 304 | 0.5+ | 0.6+ | 2005 11 30 | 304 | 0.0 | 0.3+ |
| 2005 10 08 | 304 | 0.3− | 0.2+ | 2005 11 04 | 304 | 0.5+ | 0.3+ | 2006 08 21 | 807 | 0.1+ | 0.1+ |
| 2005 10 25 | 304 | 0.6+ | 1.1− | 2005 11 04 | 304 | 0.7− | 0.4− | 2006 08 21 | 807 | 0.1− | 0.0 |
| 2005 10 25 | 304 | 0.1− | 0.4− | 2005 11 28 | 304 | 0.2+ | 0.0 | 2006 08 22 | 807 | 0.1+ | 0.1+ |

**2005 TD$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.74366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12434010 | $\omega$ | 224.68968 | | +0.81016567 | +0.55955592 | |
| $a$ | 3.9755319 | $\Omega$ | 100.51255 | | −0.47575132 | +0.80176988 | |
| $e$ | 0.2803985 | $i$ | 10.23627 | | −0.34247959 | +0.20991006 | |
| $P$ | 7.93 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 27 | 699 | (1.8− | 0.7+) | 2005 09 24 | 699 | 1.4+ | 0.2+ | 2005 12 01 | 703 | 1.3− | 0.5+ |
| 2005 08 27 | 699 | 0.6− | 1.0+ | 2005 09 27 | 704 | 0.3+ | 0.2+ | 2005 12 01 | 703 | 0.1+ | 1.0− |
| 2005 08 27 | 699 | 0.1− | 0.3− | 2005 09 27 | 704 | 0.4− | 0.1+ | 2005 12 01 | 703 | 0.8− | 1.3+ |
| 2005 08 27 | 699 | 0.1− | 0.6+ | 2005 09 27 | 704 | 0.6+ | 0.3− | 2006 11 12 | D35 | 0.2− | 0.0 |
| 2005 09 03 | 703 | 0.2− | 0.4− | 2005 09 27 | 704 | 0.2+ | 0.8− | 2006 11 12 | D35 | 0.3− | 0.3− |
| 2005 09 03 | 703 | 0.6+ | 0.0 | 2005 09 27 | 704 | 1.2− | 0.6− | 2006 11 12 | D35 | 0.0 | 0.4+ |
| 2005 09 03 | 703 | 0.1− | 0.5− | 2005 10 05 | 703 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2005 09 03 | 703 | 0.3− | 0.7− | 2005 10 05 | 703 | 0.4− | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2005 09 13 | 703 | 0.2− | 0.1− | 2005 10 05 | 703 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2005 09 13 | 703 | 0.3− | 0.7+ | 2005 10 05 | 703 | 0.2+ | 0.6− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2005 09 13 | 703 | 0.2− | 0.1+ | 2005 10 08 | 699 | 1.3+ | 0.1+ | 2006 12 01 | G96 | 0.3+ | 0.1− |
| 2005 09 13 | 703 | 0.1− | 0.0 | 2005 10 08 | 699 | 0.2+ | 0.9+ | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 2005 09 24 | 699 | 0.1+ | 0.2− | 2005 10 08 | 699 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2005 09 24 | 699 | (1.6+ | 0.9−) | 2005 10 08 | 699 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.3+ | 0.6+ |
| 2005 09 24 | 699 | 0.4+ | 0.5− | 2005 12 01 | 703 | 0.2+ | 1.2+ | | | | |

**2005 TS$_{76}$ = 2000 VF$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.69880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17978376 | $\omega$ | 260.50066 | | +0.55361143 | +0.80042148 | |
| $a$ | 3.1091076 | $\Omega$ | 45.72685 | | −0.58072338 | +0.56889609 | |
| $e$ | 0.0548980 | $i$ | 18.72567 | | −0.59688754 | +0.18889861 | |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 02 | 704 | 1.4+ | 0.0 | 2001 12 23 | 704 | 0.3+ | 0.8− | 2005 09 27 | 704 | 0.4− | 0.2+ |
| 2000 11 02 | 704 | 0.5+ | 0.0 | 2002 01 19 | 699 | 0.4+ | 1.0+ | 2005 10 05 | 703 | 0.7− | 0.2+ |
| 2000 11 02 | 704 | 1.3− | 0.5− | 2002 01 19 | 699 | 0.2− | 0.8+ | 2005 10 05 | 703 | 0.1+ | 1.2− |
| 2000 11 02 | 704 | 0.3− | 0.2+ | 2002 01 19 | 699 | 0.1− | 0.8+ | 2005 10 05 | 703 | 0.4+ | 0.8− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2002 01 19 | 699 | 1.8− | 0.8+ | 2005 10 05 | 703 | 0.2− | 0.9− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2003 04 27 | 645 | 0.0 | 0.0 | 2005 10 08 | 699 | 0.3+ | 1.1+ |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2003 04 27 | 645 | 0.0 | 0.0 | 2005 10 08 | 699 | 0.2− | 0.2− |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2005 09 27 | 704 | 0.4− | 0.6+ | 2005 10 08 | 699 | 0.5− | 0.9− |
| 2001 12 23 | 704 | 0.6+ | 0.1+ | 2005 09 27 | 704 | 0.3+ | 1.0+ | 2005 10 08 | 699 | 0.4− | 1.7+ |
| 2001 12 23 | 704 | 1.2+ | 0.4− | 2005 09 27 | 704 | 1.2+ | 0.4− | | | | |

**2005 TO$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.71609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21851926 | $\omega$ | 65.09577 | | −0.22012656 | −0.96187569 | |
| $a$ | 2.7298758 | $\Omega$ | 38.76342 | | +0.77507258 | −0.27348672 | |
| $e$ | 0.0402213 | $i$ | 15.02332 | | +0.59228945 | +0.00040128 | |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.1− | 0.4− | 2003 04 09 | 691 | 0.1+ | 0.1+ | 2005 10 08 | 691 | 0.2+ | 0.0 |
| 2001 12 09 | 704 | 0.5− | 0.6+ | 2003 04 09 | 691 | 0.2+ | 0.1+ | 2005 10 08 | 691 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.7+ | 0.3− | 2005 09 29 | 691 | 0.0 | 0.1− | 2005 10 08 | 691 | 0.0 | 0.1+ |
| 2003 03 26 | 644 | 0.6+ | 1.0+ | 2005 09 29 | 691 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.1− | 0.1− |
| 2003 03 26 | 644 | 0.6+ | 1.1+ | 2005 09 29 | 691 | 0.0 | 0.1− | 2005 10 12 | 691 | 0.0 | 0.0 |
| 2003 03 26 | 644 | 0.8+ | 1.1+ | 2005 10 06 | 703 | 0.8+ | 1.0+ | 2005 10 12 | 691 | 0.0 | 0.0 |
| 2003 04 01 | 645 | 0.1− | 0.2− | 2005 10 06 | 703 | 1.0− | 0.3+ | 2005 10 21 | 644 | 0.1+ | 0.4+ |
| 2003 04 01 | 645 | 0.1− | 0.1− | 2005 10 06 | 703 | 0.0 | 1.8− | 2005 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 04 09 | 691 | 0.0 | 0.4+ | 2005 10 06 | 703 | 1.2− | 0.9+ | 2005 10 21 | 644 | 0.2− | 0.1+ |

**2005 TV$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.22503 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17706454 | $\omega$ | 167.96646 | | +0.67288584 | −0.72221692 | |
| $a$ | 3.1408581 | $\Omega$ | 239.50064 | | +0.66236508 | +0.68458112 | |
| $e$ | 0.0798637 | $i$ | 10.70736 | | +0.32938907 | +0.09874920 | |
| $P$ | 5.57 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 01 | 691 | 0.0 | 0.3+ | 2005 10 08 | 704 | 0.2− | 0.1+ | 2005 10 22 | 703 | 0.1+ | 0.6− |
| 2000 12 01 | 691 | 0.1− | 0.2+ | 2005 10 08 | 704 | 0.3+ | 0.2+ | 2005 10 22 | 703 | 0.2− | 0.2+ |
| 2000 12 01 | 691 | 0.2+ | 0.3+ | 2005 10 08 | 704 | 0.4− | 0.4− | 2005 10 22 | 703 | 0.9− | 0.3− |
| 2003 06 04 | 691 | 0.4− | 0.3+ | 2005 10 08 | 704 | 0.6− | 0.2− | 2005 10 22 | 703 | 0.1+ | 0.1+ |
| 2003 06 04 | 691 | 0.2+ | 0.8+ | 2005 10 08 | 704 | 0.3− | 0.3− | 2005 10 22 | 703 | 0.1− | 0.5+ |
| 2003 06 04 | 691 | 0.3+ | 0.5+ | 2005 10 08 | 704 | 0.1− | 0.8− | 2005 10 23 | 644 | 0.6+ | 0.3+ |
| 2005 09 02 | 644 | 0.4− | 0.0 | 2005 10 08 | 704 | 0.1− | 0.8− | 2005 10 23 | 644 | 0.2+ | 0.3+ |
| 2005 09 02 | 644 | 0.2− | 0.0 | 2005 10 10 | 699 | 0.1− | 1.1+ | 2005 10 23 | 644 | 0.2+ | 0.1+ |
| 2005 09 02 | 644 | 0.4− | 0.0 | 2005 10 10 | 699 | 0.1− | 1.1+ | 2005 10 26 | 699 | 0.7− | 1.2+ |
| 2005 10 01 | 703 | 0.2− | 0.0 | 2005 10 10 | 699 | 0.4− | 1.5+ | 2005 10 26 | 699 | 0.1− | 0.6− |
| 2005 10 01 | 703 | 0.7− | 0.3− | 2005 10 10 | 699 | 0.0 | 0.0 | 2005 10 26 | 699 | 0.8+ | 0.1+ |
| 2005 10 01 | 703 | 0.7− | 0.5+ | 2005 10 22 | 703 | 0.2+ | 0.2+ | 2005 10 26 | 699 | 0.1− | 0.3+ |
| 2005 10 01 | 703 | 0.8− | 0.3+ | 2005 10 22 | 703 | 1.2+ | 0.1+ | 2005 11 02 | 704 | 0.4+ | 0.5− |
| 2005 10 05 | 704 | 0.2− | 1.3− | 2005 10 22 | 703 | 0.8− | 1.3+ | 2005 11 02 | 704 | 0.9+ | 0.3+ |
| 2005 10 05 | 704 | 1.6+ | 0.2− | 2005 10 22 | 703 | 0.3− | 0.9+ | 2005 11 02 | 704 | 0.5+ | 0.0 |
| 2005 10 05 | 704 | 1.3+ | 0.8− | 2005 10 22 | 703 | 0.2− | 0.3− | 2005 11 02 | 704 | 0.6+ | 0.0 |
| 2005 10 05 | 704 | (2.5+ | 2.1−) | 2005 10 22 | 703 | 0.4− | 0.1− | 2005 11 02 | 704 | 0.7+ | 0.5+ |
| 2005 10 05 | 704 | 0.9+ | 1.0− | 2005 10 22 | 703 | 1.7− | 0.1− | | | | |

**2005 TH$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.07337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21842806 | $\omega$ | 124.02314 | | +0.94994088 | −0.29989984 | |
| $a$ | 2.7306357 | $\Omega$ | 253.56318 | | +0.24800133 | +0.89432036 | |
| $e$ | 0.0401438 | $i$ | 5.23981 | | +0.19002017 | +0.33204093 | |
| $P$ | 4.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.1− | 0.0 | 2001 12 18 | 691 | 0.5+ | 0.3+ | 2005 10 03 | 691 | 0.1− | 0.1+ |
| 2001 11 17 | 291 | 0.0 | 0.1+ | 2001 12 18 | 691 | 0.2+ | 0.1− | 2005 10 09 | 691 | 0.0 | 0.3+ |
| 2001 11 17 | 291 | 0.4− | 0.0 | 2005 09 23 | 691 | 0.3+ | 0.7+ | 2005 10 09 | 691 | 0.1− | 0.3− |
| 2001 12 09 | 644 | 0.2− | 0.1+ | 2005 09 23 | 691 | 0.1+ | 0.1+ | 2005 10 09 | 691 | 0.1+ | 0.2− |
| 2001 12 09 | 644 | 0.2+ | 0.2− | 2005 09 23 | 691 | 0.3+ | 0.2− | 2005 10 13 | 691 | 0.4− | 0.2− |
| 2001 12 09 | 644 | 0.1+ | 0.0 | 2005 10 03 | 691 | 0.1− | 0.0 | 2005 10 13 | 691 | 0.0 | 0.2− |
| 2001 12 18 | 691 | 0.3− | 0.2− | 2005 10 03 | 691 | 0.0 | 0.0 | 2005 10 13 | 691 | 0.3− | 0.0 |

**2005 TN$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.19705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23386411 | $\omega$ | 169.02728 | | +0.11950974 | −0.99168790 | |
| $a$ | 2.6091176 | $\Omega$ | 274.09639 | | +0.90724967 | +0.12858405 | |
| $e$ | 0.1154377 | $i$ | 2.73938 | | +0.40325606 | +0.00460880 | |
| $P$ | 4.21 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 691 | 0.2− | 0.3− | 2001 11 19 | 704 | 0.3− | 0.9− | 2005 10 03 | 691 | 0.1+ | 0.3− |
| 2001 10 19 | 691 | 0.1+ | 0.6− | 2001 11 19 | 704 | 0.7− | 0.1+ | 2005 10 09 | 691 | 0.2− | 0.3+ |
| 2001 10 19 | 691 | 0.1− | 0.1− | 2001 11 19 | 704 | 1.2− | 0.8− | 2005 10 09 | 691 | 0.3− | 0.1− |
| 2001 11 11 | 704 | 0.9+ | 1.5+ | 2001 11 19 | 704 | 0.4− | 0.8− | 2005 10 09 | 691 | 0.8− | 0.1+ |
| 2001 11 11 | 704 | 1.1+ | 1.0+ | 2001 11 19 | 704 | 0.7− | 0.5− | 2005 10 13 | 691 | 0.7+ | 0.1+ |
| 2001 11 11 | 704 | 1.1+ | 1.7+ | 2005 10 03 | 691 | 0.3− | 0.0 | 2005 10 13 | 691 | 0.6+ | 0.2+ |
| 2001 11 11 | 704 | 1.0+ | 1.5+ | 2005 10 03 | 691 | 0.5− | 0.1− | 2005 10 13 | 691 | 0.5+ | 0.1− |

**2005 TM$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.95515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17293138 | $\omega$ | 98.60982 | | +0.66292201 | +0.74774743 | |
| $a$ | 3.1907064 | $\Omega$ | 213.01126 | | −0.71115047 | +0.61322100 | |
| $e$ | 0.1058435 | $i$ | 3.94964 | | −0.23409276 | +0.25462479 | |
| $P$ | 5.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 03 | 691 | 0.1+ | 0.3− | 2005 08 29 | 644 | 0.2− | 0.2+ | 2005 10 10 | 691 | 0.1+ | 0.3− |
| 1994 12 03 | 691 | 0.3− | 0.2+ | 2005 09 26 | 691 | 0.3+ | 0.1− | 2005 10 10 | 691 | 0.2− | 0.1+ |
| 1994 12 03 | 691 | 0.1+ | 0.1+ | 2005 09 26 | 691 | 0.1+ | 0.2− | 2005 10 25 | 691 | 0.0 | 0.2+ |
| 2003 04 25 | 691 | 0.0 | 0.2− | 2005 09 26 | 691 | 0.1+ | 0.1− | 2005 10 25 | 691 | 0.0 | 0.2+ |
| 2003 04 25 | 691 | 0.2+ | 0.1− | 2005 10 05 | 691 | 0.0 | 0.0 | 2005 10 25 | 691 | 0.4+ | 0.0 |
| 2003 04 25 | 691 | 0.3− | 0.3+ | 2005 10 05 | 691 | 0.0 | 0.0 | 2005 11 03 | 691 | 0.2− | 0.3− |
| 2005 08 29 | 644 | 0.2− | 0.4− | 2005 10 05 | 691 | 0.1− | 0.0 | 2005 11 03 | 691 | 0.0 | 0.2− |
| 2005 08 29 | 644 | 0.1− | 0.1+ | 2005 10 10 | 691 | 0.2− | 0.7+ | 2005 11 03 | 691 | 0.2− | 0.1− |

**2005 TE$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.26633 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26612564 | $\omega$ | 29.25777 | | +0.25041381 | −0.96719653 | |
| $a$ | 2.3937470 | $\Omega$ | 46.27676 | | +0.87636646 | +0.20770977 | |
| $e$ | 0.1406859 | $i$ | 3.38777 | | +0.41143013 | +0.14624474 | |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 691 | 0.2+ | 0.7+ | 2005 10 10 | 691 | 0.5− | 0.2− | 2005 10 30 | 691 | 0.2+ | 0.3+ |
| 1996 04 20 | 691 | 0.4+ | 0.7+ | 2005 10 22 | 691 | 0.4+ | 0.0 | 2005 10 30 | 691 | 0.5+ | 0.1+ |
| 2003 01 31 | 291 | 0.8− | 0.1− | 2005 10 22 | 691 | 0.2+ | 0.1+ | 2005 10 30 | 691 | 0.3+ | 0.5+ |
| 2003 01 31 | 291 | 0.1+ | 0.1− | 2005 10 22 | 691 | 0.2+ | 0.2+ | 2005 10 31 | 704 | 0.2− | 0.2− |
| 2003 01 31 | 291 | 0.7+ | 0.2+ | 2005 10 22 | 703 | 0.0 | 1.3+ | 2005 10 31 | 704 | 1.0+ | 0.4− |
| 2005 08 30 | 644 | 0.2− | 0.4− | 2005 10 22 | 703 | 0.3− | 0.1+ | 2005 10 31 | 704 | 0.3− | 0.2+ |
| 2005 08 30 | 644 | 0.2+ | 0.1− | 2005 10 22 | 703 | 0.0 | 1.2+ | 2005 10 31 | 704 | 0.5+ | 0.5+ |
| 2005 08 30 | 644 | 0.3− | 0.1+ | 2005 10 22 | 703 | 1.0− | 1.3+ | 2005 11 01 | 691 | 0.7− | 0.0 |
| 2005 10 01 | 691 | 0.0 | 0.1+ | 2005 10 22 | 703 | 0.1+ | 0.7+ | 2005 11 01 | 691 | 0.7− | 0.1− |
| 2005 10 01 | 691 | 0.1− | 0.1+ | 2005 10 22 | 703 | 0.1− | 0.9− | 2005 11 01 | 691 | 0.4− | 0.1+ |
| 2005 10 01 | 691 | 0.1+ | 0.0 | 2005 10 22 | 703 | 0.5− | 0.8− | 2005 12 25 | G96 | 0.1+ | 0.0 |
| 2005 10 05 | 704 | 0.7+ | 0.3− | 2005 10 22 | 703 | 0.9+ | 0.4− | 2005 12 25 | G96 | 0.5+ | 0.3− |
| 2005 10 05 | 704 | 0.9− | 0.1− | 2005 10 28 | G96 | 0.2+ | 0.1− | 2005 12 25 | G96 | 0.2+ | 0.0 |
| 2005 10 05 | 704 | 0.4− | 0.9+ | 2005 10 28 | G96 | 0.1− | 0.2− | 2005 12 25 | G96 | 0.0 | 0.3− |
| 2005 10 10 | 691 | 0.2− | 0.2− | 2005 10 28 | G96 | 0.2+ | 0.3− | | | | |
| 2005 10 10 | 691 | 0.1− | 0.0 | 2005 10 28 | G96 | 0.4+ | 0.3− | | | | |

**2005 TD$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.83013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21893046 | $\omega$ | 96.97979 | | −0.45219783 | −0.88765589 | |
| $a$ | 2.7264566 | $\Omega$ | 20.60509 | | +0.68897214 | −0.40964391 | |
| $e$ | 0.1193635 | $i$ | 14.32720 | | +0.56642256 | −0.21037797 | |
| $P$ | 4.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 691 | 0.3− | 0.1− | 2003 04 30 | 691 | 0.0 | 0.3− | 2005 10 05 | G96 | 0.2+ | 0.1− |
| 2003 03 27 | 691 | 0.6− | 0.4− | 2005 10 05 | G96 | 0.1+ | 0.1− | 2005 10 09 | 691 | 0.2− | 0.2+ |
| 2003 03 27 | 691 | 0.7− | 0.3− | 2005 10 05 | G96 | 0.0 | 0.3+ | 2005 10 09 | 691 | 0.3− | 0.1+ |
| 2003 04 08 | 691 | 0.8+ | 0.3+ | 2005 10 05 | G96 | 0.5+ | 0.1+ | 2005 10 09 | 691 | 0.0 | 0.3− |
| 2003 04 08 | 691 | 0.6+ | 1.0+ | 2005 10 05 | G96 | 0.4+ | 0.2+ | 2005 10 29 | G96 | 0.4− | 0.6+ |
| 2003 04 08 | 691 | 0.4+ | 1.0+ | 2005 10 05 | G96 | 0.4+ | 0.0 | 2005 10 29 | G96 | 0.4− | 0.3+ |
| 2003 04 30 | 691 | 0.0 | 0.5− | 2005 10 05 | G96 | 0.3+ | 0.0 | 2005 10 29 | G96 | 0.3− | 0.4+ |
| 2003 04 30 | 691 | 0.0 | 0.4− | 2005 10 05 | G96 | 0.2+ | 0.3− | 2005 10 29 | G96 | 0.4− | 0.6+ |

**2005 TB$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.65715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16923036 | $\omega$ | 159.95319 | | −0.93832137 | −0.34576424 | |
| $a$ | 3.2370584 | $\Omega$ | 359.81754 | | +0.30300898 | −0.82187550 | |
| $e$ | 0.1026744 | $i$ | 5.40277 | | +0.16654898 | −0.45273364 | |
| $P$ | 5.82 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.2− | 0.2− | 2002 04 02 | 691 | 0.1− | 0.3− | 2005 10 06 | G96 | 0.4+ | 0.1− |
| 1996 03 11 | 691 | 0.2− | 0.2− | 2002 04 02 | 691 | 0.0 | 0.4− | 2005 10 06 | G96 | 0.2− | 0.2+ |
| 1996 03 11 | 691 | 0.2+ | 0.2+ | 2002 04 02 | 691 | 0.1− | 0.0 | 2005 10 06 | G96 | 0.3− | 0.3+ |
| 2002 03 18 | 691 | 0.0 | 0.1+ | 2002 04 08 | 807 | 0.1+ | 0.4+ | 2005 10 09 | 691 | 0.4− | 0.2− |
| 2002 03 18 | 691 | 0.1+ | 0.3+ | 2002 04 08 | 807 | 0.2− | 0.6+ | 2005 10 09 | 691 | 0.1+ | 0.1+ |
| 2002 03 18 | 691 | 0.3+ | 0.5+ | 2005 10 06 | G96 | 0.1− | 0.2+ | 2005 10 09 | 691 | 0.3+ | 0.0 |

**2005 TJ$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.04295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18070085 | $\omega$ | 178.37025 | | +0.37749204 | −0.91701494 | |
| $a$ | 3.0985791 | $\Omega$ | 249.43567 | | +0.84803657 | +0.39820117 | |
| $e$ | 0.1197123 | $i$ | 7.90556 | | +0.37193242 | +0.02279094 | |
| $P$ | 5.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.1+ | 0.5+ | 2002 03 06 | 644 | 0.6+ | 0.3+ | 2005 10 01 | 703 | 0.6+ | 0.3+ |
| 2002 02 07 | 644 | 0.1+ | 0.4+ | 2005 08 29 | 644 | 0.3− | 0.1+ | 2005 10 07 | 703 | 0.1+ | 0.9− |
| 2002 02 07 | 644 | 0.5+ | 0.3+ | 2005 08 29 | 644 | 0.3− | 0.3+ | 2005 10 07 | 703 | 1.2− | 0.7− |
| 2002 02 17 | 644 | 0.4+ | 0.1+ | 2005 08 29 | 644 | 0.4− | 0.5+ | 2005 10 07 | 703 | 0.9− | 0.4− |
| 2002 02 17 | 644 | 0.2+ | 0.3+ | 2005 09 11 | 704 | 0.0 | 0.5− | 2005 10 07 | 703 | 0.0 | 1.0− |
| 2002 02 17 | 644 | 0.4+ | 0.2+ | 2005 09 11 | 704 | 0.6+ | 0.1− | 2005 10 08 | 704 | 0.1− | 0.2+ |
| 2002 03 05 | 645 | 0.1− | 0.1− | 2005 09 11 | 704 | 0.2− | 0.6+ | 2005 10 08 | 704 | 0.3+ | 0.2− |
| 2002 03 05 | 645 | 0.1− | 0.1− | 2005 10 01 | 703 | 0.4+ | 0.0 | 2005 10 08 | 704 | 1.1+ | 0.3+ |
| 2002 03 06 | 644 | 0.3+ | 0.6+ | 2005 10 01 | 703 | 0.4+ | 0.9− | 2005 10 08 | 704 | 0.2− | 1.5+ |
| 2002 03 06 | 644 | 0.1+ | 0.2+ | 2005 10 01 | 703 | 0.2+ | 0.7+ | | | | |

**2005 TC$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.15497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26238548 | $\omega$ | 261.12431 | | +0.98473013 | +0.16839983 | |
| $a$ | 2.4164410 | $\Omega$ | 89.17215 | | −0.13728083 | +0.90706682 | |
| $e$ | 0.2008318 | $i$ | 2.52994 | | −0.10705389 | +0.38583842 | |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 28 | 691 | 0.0 | 0.2− | 2005 09 23 | 691 | 0.0 | 0.1− | 2005 10 07 | 703 | 0.1+ | 0.1− |
| 1994 12 28 | 691 | 0.0 | 0.1− | 2005 09 23 | 691 | 0.1+ | 0.1+ | 2005 10 09 | 691 | 0.1− | 0.3− |
| 1994 12 28 | 691 | 0.2+ | 0.4− | 2005 09 23 | 691 | 0.0 | 0.1− | 2005 10 09 | 691 | 0.2+ | 0.2− |
| 2001 08 07 | 608 | 0.1− | 0.7− | 2005 09 29 | 699 | 0.3+ | 1.0+ | 2005 10 09 | 691 | 0.2+ | 0.3− |
| 2001 08 07 | 608 | 0.4+ | 0.9− | 2005 09 29 | 699 | 0.3− | 0.4+ | 2005 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 08 07 | 608 | (0.5− | 2.5−) | 2005 09 29 | 699 | 0.3+ | 1.0+ | 2005 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 08 24 | 644 | 0.7+ | 0.8− | 2005 09 29 | 699 | 1.1− | 1.0+ | 2005 10 20 | 644 | 0.0 | 0.2+ |
| 2001 08 24 | 644 | 0.1− | 1.4− | 2005 10 01 | 704 | 0.0 | 1.7+ | 2005 10 25 | 691 | 0.1+ | 0.1− |
| 2001 08 24 | 644 | 0.4+ | 0.9− | 2005 10 01 | 704 | 0.3− | 1.5+ | 2005 10 25 | 691 | 0.0 | 0.1− |
| 2005 08 31 | 699 | 0.8+ | 0.0 | 2005 10 01 | 704 | 0.2− | 1.6+ | 2005 10 25 | 691 | 0.2+ | 0.3− |
| 2005 08 31 | 699 | 0.3− | 0.7+ | 2005 10 01 | 704 | 0.2− | 0.3+ | 2005 11 30 | G96 | 0.3+ | 0.1− |
| 2005 08 31 | 699 | 0.3+ | 0.9+ | 2005 10 01 | 704 | 0.1− | 0.0 | 2005 11 30 | G96 | 0.2+ | 0.1+ |
| 2005 08 31 | 644 | 0.5− | 0.1− | 2005 10 05 | 704 | 0.0 | 1.2+ | 2005 11 30 | G96 | 0.8+ | 0.2− |
| 2005 08 31 | 699 | 1.1− | 0.3− | 2005 10 05 | 704 | 0.3− | 0.2+ | 2005 11 30 | G96 | 0.7+ | 0.1− |
| 2005 08 31 | 644 | 0.2− | 0.1+ | 2005 10 05 | 704 | 0.7− | 0.8+ | 2005 12 01 | G96 | 0.5+ | 0.6− |
| 2005 08 31 | 644 | 0.1− | 0.0 | 2005 10 05 | 704 | 0.3− | 0.0 | 2005 12 01 | G96 | 0.5+ | 0.5− |
| 2005 09 14 | 703 | 0.2− | 0.6− | 2005 10 05 | 704 | 0.4− | 0.8− | 2005 12 01 | G96 | 0.4+ | 0.1+ |
| 2005 09 14 | 703 | 0.8− | 1.0− | 2005 10 07 | 703 | 0.8− | 0.1− | 2005 12 01 | G96 | 0.4+ | 0.1+ |
| 2005 09 14 | 703 | 0.4− | 0.5+ | 2005 10 07 | 703 | 0.2− | 0.7− | | | | |
| 2005 09 14 | 703 | 0.4− | 0.3− | 2005 10 07 | 703 | 0.1− | 0.4+ | | | | |

**2005 TT$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 104.26816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21490220 | $\omega$ | 271.69490 | | +0.94033138 | +0.29852837 | |
| $a$ | 2.7604220 | $\Omega$ | 70.96109 | | −0.20033873 | +0.87360095 | |
| $e$ | 0.2146608 | $i$ | 9.94601 | | −0.27502960 | +0.38432043 | |
| $P$ | 4.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 691 | 0.3− | 0.4− | 2005 10 22 | 644 | 0.1+ | 0.1− | 2005 11 04 | 704 | 0.4− | 1.2+ |
| 1997 02 10 | 691 | 0.2+ | 0.3− | 2005 10 22 | 703 | 0.5+ | 0.3+ | 2005 11 04 | 704 | 0.4+ | 0.7+ |
| 1997 02 10 | 691 | 0.5+ | 0.1− | 2005 10 22 | 703 | 1.1+ | 0.4+ | 2005 11 04 | 704 | 0.1− | 0.0 |
| 2000 07 10 | 699 | 0.0 | 0.0 | 2005 10 22 | 703 | 0.1+ | 0.6+ | 2005 11 04 | 704 | 0.2+ | 1.9+ |
| 2000 07 10 | 699 | 0.2+ | 0.2− | 2005 10 22 | 644 | 0.0 | 0.1+ | 2005 11 06 | 699 | 0.3− | 0.3− |
| 2000 07 10 | 699 | 0.4+ | 0.1− | 2005 10 22 | 644 | 0.1+ | 0.2− | 2005 11 06 | 699 | 0.3+ | 0.4+ |
| 2000 07 10 | 699 | 0.3− | 0.4− | 2005 10 27 | 644 | 0.1+ | 0.1− | 2005 11 06 | 699 | 0.5+ | 0.7− |
| 2005 10 01 | 703 | 1.2− | 1.2− | 2005 10 27 | 644 | 0.0 | 0.0 | 2005 11 06 | 699 | 0.5+ | 0.5− |
| 2005 10 01 | 703 | 0.9− | 0.9− | 2005 10 27 | 644 | 0.1− | 0.1− | 2005 11 09 | 703 | 0.2− | 1.0− |
| 2005 10 01 | 703 | 0.6− | 0.7− | 2005 10 28 | 703 | 0.3− | 0.1+ | 2005 11 09 | 703 | 0.4− | 1.1− |
| 2005 10 01 | 703 | 0.8− | 1.0− | 2005 10 28 | 703 | 0.6− | 0.2− | 2005 11 09 | 703 | 0.1− | 0.7− |
| 2005 10 07 | 703 | 1.4+ | 1.3− | 2005 10 28 | 703 | 0.4− | 0.1− | 2005 11 09 | 703 | 0.1+ | 0.9− |
| 2005 10 07 | 703 | 0.6− | 0.1− | 2005 10 28 | 703 | 0.2− | 0.1− | 2005 11 29 | 703 | 1.0− | 0.1+ |
| 2005 10 07 | 703 | 0.4+ | 0.1− | 2005 10 28 | 703 | 0.1− | 0.4− | 2005 11 29 | 703 | 0.2− | 0.1+ |
| 2005 10 07 | 703 | 0.2+ | 0.2− | 2005 10 28 | 703 | 0.2− | 0.0 | 2005 11 29 | 703 | 0.0 | 0.7− |
| 2005 10 10 | 704 | 0.2− | 0.2+ | 2005 10 28 | 703 | 0.4− | 0.2− | 2005 11 29 | 703 | 0.3− | 0.4+ |
| 2005 10 10 | 704 | 0.4− | 0.4+ | 2005 10 30 | 699 | 0.6+ | 0.7+ | 2005 11 30 | 704 | 0.5+ | 0.2+ |
| 2005 10 10 | 704 | 0.4+ | 0.2+ | 2005 10 30 | 699 | 0.5+ | 0.3+ | 2005 11 30 | 704 | 0.3+ | 0.4+ |
| 2005 10 21 | 644 | 0.2− | 0.1+ | 2005 10 30 | 699 | 0.5+ | 0.7+ | 2005 11 30 | 704 | 0.7+ | 1.3+ |
| 2005 10 21 | 644 | 0.0 | 0.1+ | 2005 10 30 | 699 | 0.7+ | 0.6− | 2005 12 06 | 703 | 1.7+ | 0.6+ |
| 2005 10 21 | 644 | 0.0 | 0.3− | 2005 11 03 | 703 | 0.1+ | 0.2+ | 2005 12 06 | 703 | 1.1+ | 0.4+ |
| 2005 10 22 | 644 | 0.1− | 0.1− | 2005 11 03 | 703 | 0.6+ | 0.4+ | 2005 12 06 | 703 | 1.2− | 0.3+ |
| 2005 10 22 | 644 | 0.3− | 0.2+ | 2005 11 03 | 703 | 0.4+ | 0.5+ | 2005 12 06 | 703 | 1.4− | 0.4+ |
| 2005 10 22 | 703 | 0.1− | 0.2+ | 2005 11 03 | 703 | 0.3− | 0.5+ | | | | |
| 2005 10 22 | 644 | 0.3− | 0.1− | 2005 11 04 | 704 | 0.8− | 1.2+ | | | | |

**2005 TG$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.46272 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28009230 | $\omega$ | 114.95370 | | +0.97135046 | −0.23244676 | |
| $a$ | 2.3134952 | $\Omega$ | 258.51851 | | +0.19575680 | +0.90060805 | |
| $e$ | 0.1100707 | $i$ | 2.89323 | | +0.13474996 | +0.36725147 | |
| $P$ | 3.52 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.2+ | 0.2+ | 2005 10 09 | 691 | 0.1− | 0.0 | 2005 10 30 | 691 | 0.1+ | 0.1− |
| 1995 12 18 | 691 | 0.1+ | 0.2+ | 2005 10 09 | 691 | 0.1+ | 0.3+ | 2005 10 30 | 691 | 0.0 | 0.0 |
| 1995 12 18 | 691 | 0.1− | 0.0 | 2005 10 09 | 691 | 0.1+ | 0.1+ | 2005 10 30 | 691 | 0.2+ | 0.1+ |
| 2004 04 28 | 691 | 0.1− | 0.3+ | 2005 10 13 | 691 | 0.4− | 0.2− | 2005 11 04 | 704 | 0.6+ | 1.0+ |
| 2004 04 28 | 691 | 0.2+ | 0.7+ | 2005 10 13 | 691 | 0.4− | 0.1+ | 2005 11 04 | 704 | 1.7− | 1.7+ |
| 2004 04 28 | 691 | 0.1+ | 0.1+ | 2005 10 13 | 691 | 0.3− | 0.1+ | 2005 11 04 | 704 | 0.5+ | 0.2+ |
| 2005 09 23 | 291 | 0.0 | 0.1− | 2005 10 22 | 691 | 0.1+ | 0.3− | 2005 11 04 | 704 | 0.4− | 0.4− |
| 2005 09 23 | 291 | 0.1+ | 0.0 | 2005 10 22 | 691 | 0.1+ | 0.5+ | 2005 11 04 | 703 | 0.5+ | 0.0 |
| 2005 09 23 | 291 | 0.2+ | 0.0 | 2005 10 22 | 691 | 0.0 | 0.1+ | 2005 11 04 | 703 | 0.6− | 0.7+ |
| 2005 09 30 | 703 | (0.1+ | 2.2−) | 2005 10 24 | 699 | (2.2+ | 2.3+) | 2005 11 04 | 703 | 0.6+ | 1.0+ |
| 2005 09 30 | 703 | 0.0 | 0.2− | 2005 10 24 | 699 | 1.0− | 0.6+ | 2005 11 04 | 703 | 0.5− | 0.4− |
| 2005 09 30 | 703 | (0.3− | 2.9−) | 2005 10 24 | 699 | 0.1− | 0.9+ | 2005 12 28 | G96 | 0.1− | 0.1− |
| 2005 09 30 | 703 | 0.1− | 0.3+ | 2005 10 24 | 699 | 1.2+ | 0.6+ | 2005 12 28 | G96 | 0.5− | 1.0− |
| 2005 10 07 | G96 | 0.1+ | 0.4− | 2005 10 29 | 703 | 0.3+ | 1.3− | 2005 12 28 | G96 | 0.1+ | 0.3− |
| 2005 10 07 | G96 | 0.2+ | 0.4− | 2005 10 29 | 703 | 0.0 | 1.3− | 2005 12 28 | G96 | 0.1− | 0.3− |
| 2005 10 07 | G96 | 0.3+ | 0.4− | 2005 10 29 | 703 | 0.2+ | 1.0− | | | | |
| 2005 10 07 | G96 | 0.2− | 0.4− | 2005 10 29 | 703 | 0.5+ | 0.3+ | | | | |

**2005 TP$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.12761 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19763976 | $\omega$ | 355.72135 | | −0.78991369 | +0.59816970 | |
| $a$ | 2.9189042 | $\Omega$ | 222.00517 | | −0.55645944 | −0.79172361 | |
| $e$ | 0.0712034 | $i$ | 11.63980 | | −0.25766114 | −0.12396264 | |
| $P$ | 4.99 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.4− | 0.1+ | 2003 05 05 | 691 | 0.4+ | 1.1+ | 2005 10 07 | G96 | 0.2+ | 0.5− |
| 2000 11 24 | 691 | 0.2+ | 0.4+ | 2003 05 05 | 691 | 0.7+ | 1.1+ | 2005 10 09 | 691 | 0.0 | 0.6+ |
| 2000 11 24 | 691 | 0.1+ | 0.2+ | 2003 05 05 | 691 | 0.2+ | 0.6+ | 2005 10 09 | 691 | 0.4− | 0.5+ |
| 2003 04 09 | 644 | 0.2− | 0.7− | 2005 09 26 | 691 | 0.2+ | 0.2+ | 2005 10 09 | 691 | 0.1+ | 0.7+ |
| 2003 04 09 | 644 | 0.2− | 0.8− | 2005 09 26 | 691 | 0.1− | 0.4+ | 2005 12 05 | G96 | 0.1− | 1.1+ |
| 2003 04 09 | 644 | 0.3− | 0.6− | 2005 09 26 | 691 | 0.2− | 0.2− | 2005 12 05 | G96 | 0.2− | 0.2+ |
| 2003 04 29 | 691 | 0.1− | 0.4+ | 2005 10 07 | G96 | 0.7+ | 0.4+ | 2005 12 05 | G96 | 0.2− | 0.3− |
| 2003 04 29 | 691 | 0.2− | 0.2+ | 2005 10 07 | G96 | 0.1+ | 0.0 | 2005 12 05 | G96 | 1.4− | 1.2+ |
| 2003 04 29 | 691 | 0.1− | 0.2+ | 2005 10 07 | G96 | 0.1− | 0.3+ | | | | |

**2005 TD$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.77286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24109788 | $\omega$ | 77.99183 | | +0.25744789 | −0.96628486 | |
| $a$ | 2.5566648 | $\Omega$ | 357.08141 | | +0.85531688 | +0.22969118 | |
| $e$ | 0.2917648 | $i$ | 4.23833 | | +0.44961498 | +0.11634233 | |
| $P$ | 4.09 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 1.3− | 0.5+ | 2005 09 27 | 691 | 0.1− | 0.2− | 2005 11 03 | 691 | 0.1− | 0.3− |
| 2001 10 18 | 704 | 0.5− | 0.3+ | 2005 09 27 | 691 | 0.2+ | 0.0 | 2005 11 05 | 691 | 0.1+ | 0.2+ |
| 2001 10 18 | 704 | 1.3− | 0.4+ | 2005 10 07 | 691 | 0.2− | 0.0 | 2005 11 05 | 691 | 0.0 | 0.2− |
| 2001 10 26 | 644 | 0.1+ | 0.3+ | 2005 10 07 | 691 | 0.0 | 0.0 | 2005 11 05 | 691 | 0.4+ | 0.1− |
| 2001 10 26 | 644 | 0.3+ | 0.4+ | 2005 10 07 | 691 | 0.0 | 0.1− | 2005 11 06 | G96 | 0.1+ | 0.5− |
| 2001 10 26 | 644 | 0.5+ | 0.5+ | 2005 10 11 | 691 | 0.1+ | 0.2+ | 2005 11 06 | G96 | 0.0 | 0.3− |
| 2001 11 10 | 704 | 1.0+ | 0.4− | 2005 10 11 | 691 | 0.2+ | 0.0 | 2005 11 06 | G96 | 0.0 | 0.4− |
| 2001 11 10 | 704 | 0.3− | 0.6− | 2005 10 11 | 691 | 0.0 | 0.2+ | 2005 11 06 | G96 | 0.1+ | 0.5− |
| 2001 11 10 | 704 | 0.8+ | 0.4+ | 2005 11 03 | 691 | 0.4− | 0.5+ | | | | |
| 2005 09 27 | 691 | 0.1− | 0.0 | 2005 11 03 | 691 | 0.0 | 0.3− | | | | |

**2005 TT$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.63325 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23758017 | $\omega$ | 178.61741 | | −0.99316758 | +0.11462095 | |
| $a$ | 2.5818396 | $\Omega$ | 8.06367 | | −0.10851078 | −0.83797928 | |
| $e$ | 0.0980666 | $i$ | 8.98752 | | −0.04293683 | −0.53352860 | |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 30 | 608 | 1.0+ | 0.6+ | 2003 03 07 | 644 | 0.1+ | 0.1+ | 2005 10 07 | 691 | 0.0 | 0.0 |
| 2003 01 30 | 608 | 0.7+ | 0.7+ | 2003 03 07 | 644 | 0.1− | 0.2+ | 2005 10 07 | 691 | 0.2+ | 0.0 |
| 2003 01 30 | 608 | 0.7+ | 0.9+ | 2005 09 26 | 691 | 0.1+ | 0.0 | 2005 10 07 | 691 | 0.2+ | 0.2+ |
| 2003 02 04 | 699 | 0.4+ | 0.4+ | 2005 09 26 | 691 | 0.0 | 0.0 | 2005 10 07 | 691 | 0.1+ | 0.2+ |
| 2003 02 04 | 699 | 0.5+ | 0.1− | 2005 09 26 | 691 | 0.1− | 0.0 | 2005 10 11 | 691 | 0.1+ | 0.1− |
| 2003 02 04 | 699 | 1.4− | 0.0 | 2005 10 03 | 703 | 0.9− | 0.7+ | 2005 10 11 | 691 | 0.2− | 0.2+ |
| 2003 02 04 | 699 | 0.4− | 1.4− | 2005 10 03 | 703 | 0.0 | 0.4− | 2005 10 11 | 691 | 0.0 | 0.0 |
| 2003 02 19 | 644 | 0.2− | 0.7− | 2005 10 03 | 703 | 0.2− | 0.4− | 2005 11 06 | G96 | 0.4+ | 0.0 |
| 2003 02 19 | 644 | 0.5− | 0.5− | 2005 10 03 | 703 | 0.3− | 2.1− | 2005 11 06 | G96 | 0.2+ | 0.3+ |
| 2003 02 19 | 644 | 0.4− | 0.4− | 2005 10 07 | 691 | 0.1− | 0.1− | 2005 11 06 | G96 | 0.0 | 0.3+ |
| 2003 03 07 | 644 | 0.3− | 0.1− | 2005 10 07 | 691 | 0.1− | 0.0 | 2005 11 06 | G96 | 0.4+ | 0.1+ |

**2005 TY$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.33679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22012754 | $\omega$ | 223.75752 | | +0.76642054 | −0.64233609 | |
| $a$ | 2.7165631 | $\Omega$ | 176.20712 | | +0.59724190 | +0.71147698 | |
| $e$ | 0.0793062 | $i$ | 1.71049 | | +0.23643534 | +0.28496464 | |
| $P$ | 4.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 11 | 291 | 0.3− | 0.2− | 2003 05 06 | 291 | 0.2+ | 0.3+ | 2005 10 07 | 691 | 0.0 | 0.2− |
| 2003 03 11 | 291 | 0.2− | 0.3− | 2003 05 06 | 291 | 0.6− | 0.3+ | 2005 10 11 | 691 | 0.3− | 0.1+ |
| 2003 03 11 | 291 | 0.2− | 0.1− | 2003 05 06 | 291 | 0.2+ | 0.2+ | 2005 10 11 | 691 | 0.0 | 0.3+ |
| 2003 03 24 | 691 | 0.6+ | 0.0 | 2005 09 29 | G96 | 0.3− | 0.5+ | 2005 10 11 | 691 | 0.2+ | 0.1− |
| 2003 03 24 | 691 | 0.1− | 0.5− | 2005 09 29 | G96 | 0.5− | 0.3+ | 2005 10 26 | 691 | 0.3− | 0.1+ |
| 2003 03 24 | 691 | 0.0 | 0.2+ | 2005 09 29 | G96 | 0.7− | 0.3+ | 2005 10 26 | 691 | 0.5+ | 0.0 |
| 2003 03 30 | 291 | 0.4+ | 0.0 | 2005 09 29 | G96 | 1.0− | 0.4+ | 2005 10 26 | 691 | 0.1− | 0.2− |
| 2003 03 30 | 291 | 0.2− | 0.2+ | 2005 10 07 | 691 | 0.3+ | 0.0 | | | | |
| 2003 03 30 | 291 | 0.4+ | 0.4+ | 2005 10 07 | 691 | 0.3+ | 0.1− | | | | |

**2005 TY$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.88310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21244796 | $\omega$ | 220.00146 | | +0.03604671 | −0.99854333 | |
| $a$ | 2.7816406 | $\Omega$ | 227.97278 | | +0.93015117 | +0.04821286 | |
| $e$ | 0.0721863 | $i$ | 3.09820 | | +0.36540311 | −0.02422270 | |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | 0.2+ | 0.5+ | 2005 10 07 | 691 | 0.1+ | 0.1+ | 2005 10 31 | 691 | 0.1− | 0.2− |
| 2003 04 25 | 691 | 0.2+ | 0.6+ | 2005 10 07 | 691 | 0.4+ | 0.1+ | 2005 10 31 | 691 | 0.1+ | 0.0 |
| 2003 04 25 | 691 | 0.1+ | 0.4+ | 2005 10 11 | 691 | 0.1+ | 0.1− | 2005 11 01 | 691 | 0.1− | 0.3+ |
| 2004 06 11 | 691 | 0.3+ | 0.2+ | 2005 10 11 | 691 | 0.3+ | 0.0 | 2005 11 01 | 691 | 0.1− | 0.4+ |
| 2004 06 11 | 691 | 0.2− | 0.1− | 2005 10 11 | 691 | 0.1− | 0.2+ | 2005 11 01 | 691 | 0.1− | 0.2+ |
| 2004 06 11 | 691 | 0.0 | 0.2− | 2005 10 23 | 703 | 0.9− | 0.1− | 2005 11 06 | G96 | 0.2+ | 0.2− |
| 2005 09 24 | 691 | 0.3− | 0.0 | 2005 10 23 | 703 | 0.0 | 0.1+ | 2005 11 06 | G96 | 0.2− | 0.1− |
| 2005 09 24 | 691 | 0.3− | 0.0 | 2005 10 23 | 703 | 0.3− | 0.8+ | 2005 11 06 | G96 | 0.1+ | 0.2− |
| 2005 09 24 | 691 | 0.3− | 0.1− | 2005 10 23 | 703 | 1.0− | 0.7+ | 2005 11 06 | G96 | 0.2+ | 0.2− |
| 2005 09 30 | 691 | 0.1− | 0.0 | 2005 10 24 | 691 | 0.2+ | 0.2+ | 2005 11 26 | G96 | 0.1+ | 0.1+ |
| 2005 09 30 | 691 | 0.1+ | 0.1+ | 2005 10 24 | 691 | 0.2+ | 0.1− | 2005 11 26 | G96 | 0.1+ | 0.2− |
| 2005 09 30 | 691 | 0.0 | 0.1+ | 2005 10 24 | 691 | 0.3+ | 0.0 | 2005 11 26 | G96 | 0.0 | 0.1+ |
| 2005 10 07 | 691 | 0.1− | 0.1− | 2005 10 31 | 691 | 0.2− | 0.1+ | 2005 11 26 | G96 | 0.1+ | 0.3+ |

**2005 TT$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.74385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12529914 | $\omega$ | 192.36389 | | −0.99942225 | +0.03326564 | |
| $a$ | 3.9552200 | $\Omega$ | 349.53495 | | −0.02699042 | −0.90142047 | |
| $e$ | 0.1365418 | $i$ | 2.19899 | | −0.02065652 | −0.43166485 | |
| $P$ | 7.87 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.2+ | 0.1+ | 2005 10 11 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1− | 0.7− |
| 1999 12 07 | 691 | 0.3− | 0.6− | 2005 11 06 | G96 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 1999 12 07 | 691 | 0.0 | 0.1− | 2005 11 06 | G96 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2005 10 07 | 691 | 0.1+ | 0.2− | 2005 11 06 | G96 | 0.7− | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.5+ |
| 2005 10 07 | 691 | 0.3+ | 0.0 | 2005 11 06 | G96 | (2.8+ | 1.9+) | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2005 10 07 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.7+ | 0.3− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2005 10 11 | 691 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2005 10 11 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.6+ | 0.2− | | | | |

**2005 TU$_{129}$ = 2005 SC$_{258}$**

Id. Minor Planet Center (d, *MPO* 98189)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.33287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17762597 | $\omega$ | 80.44363 | | −0.33838094 | | −0.93652844 |
| $a$ | 3.1342363 | $\Omega$ | 29.84732 | | +0.77481422 | | −0.33260471 |
| $e$ | 0.0457958 | $i$ | 10.61998 | | +0.53400492 | | −0.11085388 |
| $P$ | 5.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 14 | 691 | 0.2− | 0.1+ | 2005 09 29 | G96 | 0.3− | 0.2+ | 2005 10 25 | G96 | 0.0 | 0.5− |
| 1997 04 14 | 691 | 0.4− | 0.2+ | 2005 09 29 | G96 | 0.3− | 0.0 | 2005 12 01 | 701 | 0.7+ | 0.4− |
| 1997 04 14 | 691 | 0.3− | 0.1+ | 2005 10 07 | 691 | 0.0 | 0.1+ | 2005 12 01 | 701 | 0.3− | 0.9+ |
| 1997 04 29 | 691 | 0.5+ | 1.1− | 2005 10 07 | 691 | 0.2+ | 0.1+ | 2005 12 01 | 701 | 1.1− | 0.6− |
| 1997 04 29 | 691 | 0.0 | 0.2+ | 2005 10 07 | 691 | 0.1− | 0.0 | 2005 12 03 | 701 | 0.0 | 0.3− |
| 1997 04 29 | 691 | 0.3+ | 0.4+ | 2005 10 11 | 691 | 0.0 | 0.1+ | 2005 12 03 | 701 | 0.7+ | 0.0 |
| 2005 09 24 | 691 | 0.1+ | 0.4+ | 2005 10 11 | 691 | 0.2+ | 0.1− | 2005 12 03 | 701 | 0.2− | 0.2+ |
| 2005 09 24 | 691 | 0.1+ | 0.0 | 2005 10 11 | 691 | 0.1+ | 0.3− | 2005 12 05 | 701 | 0.2− | 0.1+ |
| 2005 09 24 | 691 | 0.1+ | 0.2− | 2005 10 25 | G96 | 0.5− | 0.1− | 2005 12 05 | 701 | 0.2− | 0.5− |
| 2005 09 29 | G96 | 0.0 | 0.2+ | 2005 10 25 | G96 | 0.5− | 0.3− | 2005 12 05 | 701 | 0.4− | 0.4+ |
| 2005 09 29 | G96 | 0.1+ | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.5− | | | | |

**2005 TV**$_{132}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.66695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27124003 | $\omega$ | 116.37459 | | −0.93841092 | | −0.34469152 |
| $a$ | 2.3635612 | $\Omega$ | 43.47374 | | +0.30332221 | | −0.85499211 |
| $e$ | 0.1273357 | $i$ | 1.99328 | | +0.16547077 | | −0.38752579 |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.1+ | 0.1− | 2005 09 29 | G96 | 0.4+ | 0.0 | 2005 10 28 | 703 | 1.2+ | 1.7+ |
| 2000 05 28 | 704 | 0.0 | 0.6+ | 2005 09 29 | G96 | 0.4+ | 0.1+ | 2005 10 31 | G96 | 0.1+ | 0.2− |
| 2000 05 28 | 704 | 0.1+ | 0.2+ | 2005 10 07 | 691 | 0.1− | 0.0 | 2005 10 31 | G96 | 0.3− | 0.6− |
| 2003 01 09 | 704 | 0.6+ | 0.6+ | 2005 10 07 | 691 | 0.2+ | 0.2+ | 2005 10 31 | G96 | 0.3+ | 0.5− |
| 2003 01 09 | 704 | 0.4+ | 0.8+ | 2005 10 07 | 691 | 0.2+ | 0.1+ | 2005 10 31 | G96 | 0.2− | 0.2− |
| 2003 01 09 | 704 | 0.4+ | 0.8+ | 2005 10 11 | 691 | 0.1− | 0.2− | 2005 11 26 | G96 | 0.2+ | 0.1− |
| 2003 01 09 | 704 | 0.7+ | 0.1− | 2005 10 11 | 691 | 0.2+ | 0.1− | 2005 11 26 | G96 | 0.3+ | 0.3− |
| 2003 01 16 | 644 | 0.2+ | 0.4+ | 2005 10 11 | 691 | 0.2+ | 0.1+ | 2005 11 26 | G96 | 0.2− | 0.1+ |
| 2003 01 16 | 644 | 0.4− | 0.1+ | 2005 10 22 | 703 | 0.5+ | 0.3− | 2005 11 26 | G96 | 0.5+ | 0.2− |
| 2003 01 16 | 644 | 0.3+ | 0.1− | 2005 10 22 | 703 | 1.9− | 0.2− | 2005 12 02 | G96 | 0.1+ | 0.1− |
| 2003 02 06 | 608 | 0.6− | 0.9− | 2005 10 22 | 703 | (2.1− | 0.2−) | 2005 12 02 | G96 | 0.3+ | 0.1− |
| 2003 02 06 | 608 | 0.9− | 0.7− | 2005 10 22 | 703 | 1.3− | 0.2+ | 2005 12 02 | G96 | 0.1− | 0.3− |
| 2003 02 06 | 608 | 0.5− | 0.5− | 2005 10 28 | 703 | 1.2− | 1.2+ | 2005 12 02 | G96 | 0.0 | 0.4− |
| 2005 09 29 | G96 | 0.1− | 0.5− | 2005 10 28 | 703 | 1.6− | 0.3+ | | | | |
| 2005 09 29 | G96 | 0.7+ | 0.2+ | 2005 10 28 | 703 | 0.4− | 0.0 | | | | |

**2005 TV**$_{135}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.14450 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16745035 | $\omega$ | 236.84770 | | −0.06525188 | | +0.99712602 |
| $a$ | 3.2599581 | $\Omega$ | 29.48346 | | −0.88750562 | | −0.04035707 |
| $e$ | 0.0895016 | $i$ | 4.48597 | | −0.45615344 | | −0.06411707 |
| $P$ | 5.89 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 691 | 0.3+ | 0.2+ | 2005 10 12 | 691 | 0.3− | 0.1− | 2005 10 28 | G96 | 0.1+ | 0.2− |
| 2003 03 27 | 691 | 0.1− | 0.2+ | 2005 10 12 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2003 03 27 | 691 | 0.2+ | 0.4+ | 2005 10 12 | 691 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.2− | 0.2− |
| 2005 08 27 | 644 | 0.8− | 0.2+ | 2005 10 24 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.7+ |
| 2005 08 27 | 644 | 0.6− | 0.3− | 2005 10 24 | 691 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2005 08 27 | 644 | 0.6− | 0.2+ | 2005 10 24 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2005 10 06 | 691 | 0.1− | 0.4+ | 2005 10 28 | G96 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2005 10 06 | 691 | 0.1− | 0.0 | 2005 10 28 | G96 | 0.1+ | 0.0 | | | | |
| 2005 10 06 | 691 | 0.0 | 0.1− | 2005 10 28 | G96 | 0.4− | 0.2− | | | | |

**2005 TS**$_{137}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.70287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19742192 | $\omega$ | 237.21012 | | +0.93384911 | | +0.35286021 |
| $a$ | 2.9210509 | $\Omega$ | 102.06955 | | −0.30491501 | | +0.87082651 |
| $e$ | 0.0633237 | $i$ | 3.42623 | | −0.18695633 | | +0.34227309 |
| $P$ | 4.99 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 691 | 0.5− | 0.2+ | 2005 10 06 | 691 | 0.1− | 0.5+ | 2005 11 01 | G96 | 0.1+ | 0.6− |
| 2002 02 07 | 691 | 0.3− | 0.2− | 2005 10 06 | 691 | 0.3− | 0.6+ | 2005 11 09 | 703 | 0.6+ | 0.3− |
| 2002 02 07 | 691 | 0.8+ | 0.0 | 2005 10 06 | 691 | 0.4− | 0.3+ | 2005 11 09 | 703 | (3.0− | 0.7+) |
| 2003 05 02 | 691 | 0.3− | 0.2+ | 2005 10 12 | 691 | 0.2− | 0.2− | 2005 11 09 | 703 | 1.0+ | 0.7+ |
| 2003 05 02 | 691 | 0.2− | 0.1+ | 2005 10 12 | 691 | 0.2+ | 0.1− | 2005 11 09 | 703 | 1.0− | 0.3+ |
| 2003 05 02 | 691 | 0.5+ | 0.4− | 2005 10 12 | 691 | 0.3+ | 0.3− | 2005 12 01 | G96 | 0.2− | 0.0 |
| 2005 10 01 | 691 | 0.0 | 0.1− | 2005 11 01 | G96 | 0.1+ | 0.4− | 2005 12 01 | G96 | 0.5+ | 0.1− |
| 2005 10 01 | 691 | 0.1+ | 0.2− | 2005 11 01 | G96 | 0.0 | 0.4− | 2005 12 01 | G96 | 0.1− | 0.0 |
| 2005 10 01 | 691 | 0.1+ | 0.3− | 2005 11 01 | G96 | 0.3+ | 0.4− | 2005 12 01 | G96 | 0.0 | 0.1+ |

**2005 TF**$_{143}$ **= 2005 WN**$_{203}$

Id. Minor Planet Center (d, *MPO* 102379)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.47093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31230489 | $\omega$ | 252.20885 | | +0.55328923 | | +0.82924825 |
| $a$ | 2.1515438 | $\Omega$ | 51.64484 | | −0.72109954 | | +0.52420928 |
| $e$ | 0.0584941 | $i$ | 5.77138 | | −0.41699697 | | +0.19378332 |
| $P$ | 3.16 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 291 | 0.0 | 0.1+ | 2005 09 29 | 691 | 0.0 | 0.0 | 2005 10 24 | 691 | 0.2− | 0.3− |
| 2002 11 05 | 291 | 0.1− | 0.2+ | 2005 09 29 | 691 | 0.2− | 0.0 | 2005 10 24 | 691 | 0.0 | 0.1− |
| 2002 11 05 | 291 | 0.0 | 0.2− | 2005 09 29 | 691 | 0.2− | 0.1+ | 2005 10 24 | 691 | 0.3− | 0.0 |
| 2004 04 26 | 691 | 0.1− | 0.1+ | 2005 10 08 | 691 | 0.4+ | 0.2+ | 2005 11 30 | G96 | 0.4+ | 0.3+ |
| 2004 04 26 | 691 | 0.1+ | 0.3+ | 2005 10 08 | 691 | 0.1− | 0.0 | 2005 11 30 | G96 | 0.1+ | 0.3− |
| 2004 04 26 | 691 | 0.1+ | 0.1− | 2005 10 08 | 691 | 0.0 | 0.1+ | 2005 11 30 | G96 | 0.4+ | 0.4+ |
| 2005 09 23 | 691 | 0.2− | 0.3+ | 2005 10 12 | 691 | 0.0 | 0.4− | 2005 11 30 | G96 | 0.7+ | 0.1+ |
| 2005 09 23 | 691 | 0.1− | 0.0 | 2005 10 12 | 691 | 0.3+ | 0.1+ | | | | |
| 2005 09 23 | 691 | 0.0 | 0.1− | 2005 10 12 | 691 | 0.2+ | 0.0 | | | | |

**2005 TQ**$_{148}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.60638 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29193456 | $\omega$ | 33.15720 | | −0.98117750 | | +0.18949851 |
| $a$ | 2.2505001 | $\Omega$ | 157.67730 | | −0.19152076 | | −0.93030000 |
| $e$ | 0.0945860 | $i$ | 5.61486 | | −0.02470855 | | −0.31405769 |
| $P$ | 3.38 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 1.0+ | 1.6+ | 2004 05 23 | 704 | 1.3− | 1.3+ | 2005 10 08 | 691 | 0.1− | 0.0 |
| 2000 01 07 | 704 | 0.5− | 0.1− | 2004 05 23 | 704 | 0.3+ | 0.3+ | 2005 10 08 | 691 | 0.1− | 0.2− |
| 2000 01 07 | 704 | 0.2− | 0.2+ | 2004 05 23 | 704 | 0.2+ | 0.4+ | 2005 10 12 | 691 | 0.1+ | 0.0 |
| 2004 04 14 | 644 | 0.7+ | 0.1− | 2004 05 23 | 704 | 0.4+ | 1.0− | 2005 10 12 | 691 | 0.1+ | 0.0 |
| 2004 04 14 | 644 | 0.8+ | 0.1+ | 2004 06 15 | 691 | 0.1− | 0.2+ | 2005 10 12 | 691 | 0.2− | 0.1+ |
| 2004 04 14 | 644 | 0.6+ | 0.0 | 2004 06 15 | 691 | 0.4− | 0.0 | 2005 10 31 | 699 | 0.5− | 1.7+ |
| 2004 05 15 | 704 | 0.1− | 0.4− | 2004 06 15 | 691 | 0.3− | 0.3+ | 2005 10 31 | 699 | 0.8− | 0.8+ |
| 2004 05 15 | 704 | 0.1+ | 0.3+ | 2005 09 23 | 691 | 0.1− | 0.0 | 2005 10 31 | 699 | 2.6+ | 0.8− |
| 2004 05 15 | 704 | 0.6+ | 0.1+ | 2005 09 23 | 691 | 0.2− | 0.2+ | 2005 10 31 | 699 | 0.3+ | 0.2+ |
| 2004 05 15 | 704 | 0.8+ | 0.2− | 2005 09 23 | 691 | 0.1− | 0.0 | | | | |
| 2004 05 23 | 704 | 0.9+ | 0.1− | 2005 10 08 | 691 | 0.0 | 0.0 | | | | |

**2005 TG$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.38697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18196722 | $\omega$ | 315.51649 | | −0.90122879 | +0.42741440 | |
| $a$ | 3.0841863 | $\Omega$ | 249.91019 | | −0.37336409 | −0.84954678 | |
| $e$ | 0.0802760 | $i$ | 4.36258 | | −0.21996801 | −0.30917180 | |
| $P$ | 5.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.0 | 0.0 | 2002 02 16 | 644 | 0.3+ | 0.2+ | 2005 10 13 | 691 | 0.2− | 0.4− |
| 2002 02 06 | 644 | 0.0 | 0.5+ | 2002 02 16 | 644 | 0.3− | 0.0 | 2005 10 13 | 691 | 0.2+ | 0.3+ |
| 2002 02 06 | 644 | 0.3− | 0.4+ | 2002 02 16 | 644 | 0.3+ | 0.2+ | 2005 10 13 | 691 | 0.3− | 0.1− |
| 2002 02 11 | 704 | 0.1− | 0.6− | 2002 02 16 | 644 | 0.0 | 0.4− | 2005 11 04 | 703 | 0.5− | 0.0 |
| 2002 02 11 | 704 | 0.2+ | 0.3− | 2002 02 16 | 644 | 0.2+ | 0.7+ | 2005 11 04 | 703 | 0.5+ | 0.3+ |
| 2002 02 11 | 704 | 0.3− | 0.0 | 2005 10 09 | 691 | 0.3+ | 0.6+ | 2005 11 04 | 703 | 0.1− | 0.6+ |
| 2002 02 11 | 704 | 0.2− | 0.6− | 2005 10 09 | 691 | 0.2− | 0.2− | 2005 11 04 | 703 | 0.2− | 0.4− |
| 2002 02 16 | 644 | 0.1+ | 0.1− | 2005 10 09 | 691 | 0.2+ | 0.3− | | | | |

**2005 TZ$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.31054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29924852 | $\omega$ | 189.54314 | | +0.60148987 | −0.79795340 | |
| $a$ | 2.2136793 | $\Omega$ | 223.49298 | | +0.73659568 | +0.57259454 | |
| $e$ | 0.0847499 | $i$ | 3.20457 | | +0.30925191 | +0.18816447 | |
| $P$ | 3.29 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 03 | 691 | 0.3− | 0.3− | 2005 10 09 | 691 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.4− | 0.3− |
| 1994 05 03 | 691 | 0.2+ | 0.2− | 2005 10 09 | 691 | 0.1− | 0.2+ | 2005 11 26 | G96 | 0.1− | 0.0 |
| 1994 05 03 | 691 | 0.1+ | 0.8+ | 2005 10 09 | 691 | 0.1+ | 0.1+ | 2005 11 26 | G96 | 0.2+ | 0.3− |
| 1995 10 28 | 691 | 0.1− | 0.0 | 2005 10 13 | 691 | 0.1+ | 0.4+ | 2005 11 26 | G96 | 0.0 | 0.2− |
| 1995 10 28 | 691 | 0.1+ | 0.1− | 2005 10 13 | 691 | 0.1− | 0.2+ | 2005 11 26 | G96 | 0.2− | 0.2+ |
| 1995 10 28 | 691 | 0.2+ | 0.4− | 2005 10 13 | 691 | 0.1− | 0.3+ | 2005 12 02 | G96 | 0.0 | 0.1+ |
| 2005 09 29 | 691 | 0.3+ | 0.2− | 2005 10 27 | G96 | 0.4− | 0.2− | 2005 12 02 | G96 | 0.4− | 0.1+ |
| 2005 09 29 | 691 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.1+ | 0.8− | 2005 12 02 | G96 | 0.1+ | 0.3+ |
| 2005 09 29 | 691 | 0.0 | 0.1− | 2005 10 27 | G96 | 0.1+ | 0.2− | 2005 12 02 | G96 | 0.3+ | 0.2− |

**2005 TE$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.52276 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23203755 | $\omega$ | 343.30793 | | −0.17081752 | +0.96716818 | |
| $a$ | 2.6227921 | $\Omega$ | 276.55622 | | −0.88097832 | −0.23544409 | |
| $e$ | 0.0217870 | $i$ | 10.91814 | | −0.44124661 | +0.09566502 | |
| $P$ | 4.25 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 29 | 703 | 0.5− | 0.2− | 2005 10 26 | 699 | 0.6+ | 0.6+ | 2005 11 22 | 703 | 0.1+ | 1.3− |
| 2005 09 29 | 703 | 0.1+ | 0.2− | 2005 10 26 | 699 | 0.7+ | 0.1+ | 2005 11 22 | 703 | 0.1+ | 0.5− |
| 2005 09 29 | 703 | 0.3− | 0.7+ | 2005 10 29 | 703 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.6+ |
| 2005 09 29 | 703 | 0.3+ | 0.6+ | 2005 10 29 | 703 | 1.1− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.4+ |
| 2005 10 10 | 699 | 0.0 | 0.7+ | 2005 10 29 | 703 | 0.5− | 1.5− | 2006 10 21 | G96 | 0.2+ | 0.2+ |
| 2005 10 10 | 699 | 0.4− | 0.6+ | 2005 10 29 | 703 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.5− | 0.7− |
| 2005 10 10 | 699 | 0.5+ | 0.2+ | 2005 10 30 | 644 | 0.1+ | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2005 10 10 | 699 | 0.6− | 0.1+ | 2005 10 30 | 644 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2005 10 13 | 704 | 0.5− | 1.2− | 2005 10 30 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2005 10 13 | 704 | 0.3− | 0.0 | 2005 11 03 | 704 | 1.3+ | 0.9+ | 2006 11 22 | G96 | 0.5+ | 0.1+ |
| 2005 10 13 | 704 | 1.4− | 0.2+ | 2005 11 03 | 704 | 1.5+ | 0.4− | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2005 10 13 | 704 | 0.7− | 0.3− | 2005 11 03 | 704 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2005 10 13 | 704 | 0.1− | 0.5− | 2005 11 03 | 704 | 0.2+ | 1.3+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2005 10 23 | 703 | 0.2+ | 0.4+ | 2005 11 19 | 699 | 0.7− | 0.6− | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2005 10 23 | 703 | 0.4+ | 0.1− | 2005 11 19 | 699 | 0.8− | 1.0− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2005 10 23 | 703 | 0.0 | 0.5+ | 2005 11 19 | 699 | (0.9− | 2.4+) | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2005 10 23 | 703 | 0.3− | 0.3+ | 2005 11 19 | 699 | 0.2− | 1.0+ | 2006 11 23 | G96 | 0.3+ | 0.2+ |
| 2005 10 26 | 699 | 1.2+ | 0.4+ | 2005 11 22 | 703 | 0.8+ | 0.1− | 2006 11 23 | G96 | 0.4− | 0.0 |
| 2005 10 26 | 699 | 0.8+ | 0.6− | 2005 11 22 | 703 | 0.4− | 0.1− | | | | |

**2005 TQ$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.62038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29172105 | $\omega$ | 175.80014 | | +0.68370618 | +0.72560907 | |
| $a$ | 2.2515981 | $\Omega$ | 137.30812 | | −0.67283331 | +0.66801766 | |
| $e$ | 0.1508365 | $i$ | 6.58014 | | −0.28256184 | +0.16505722 | |
| $P$ | 3.38 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.1+ | 0.5+ | 2005 08 31 | 644 | 0.2− | 0.1− | 2005 10 03 | 703 | 0.5− | 0.1− |
| 2002 12 03 | 644 | 0.3− | 0.0 | 2005 08 31 | 644 | 0.1+ | 0.1− | 2005 10 04 | 703 | 1.0+ | 0.7+ |
| 2002 12 03 | 644 | 0.2+ | 0.3+ | 2005 08 31 | 644 | 0.2− | 0.1+ | 2005 10 04 | 703 | 0.8+ | 0.1− |
| 2004 03 30 | 691 | 0.3+ | 0.1+ | 2005 08 31 | 644 | 0.0 | 0.0 | 2005 10 04 | 703 | 0.2+ | 0.1− |
| 2004 03 30 | 691 | 0.1− | 0.3+ | 2005 09 30 | 699 | 0.8+ | 1.0+ | 2005 10 04 | 703 | 0.2+ | 0.9− |
| 2004 03 30 | 691 | 0.1+ | 0.4+ | 2005 09 30 | 699 | 0.9− | 1.9+ | 2005 10 10 | 703 | 1.2+ | 0.2+ |
| 2005 07 02 | 291 | 0.1− | 0.1− | 2005 09 30 | 699 | 0.1− | 0.1+ | 2005 10 10 | 703 | 0.7− | 0.3− |
| 2005 07 02 | 291 | 0.2+ | 0.2+ | 2005 09 30 | 699 | 0.9− | 0.2− | 2005 10 10 | 703 | 0.6+ | 0.3+ |
| 2005 07 02 | 291 | 0.5− | 0.4+ | 2005 10 03 | 703 | 0.0 | 0.2− | 2005 10 10 | 703 | 0.3− | 0.2− |
| 2005 08 31 | 644 | 0.2+ | 0.3+ | 2005 10 03 | 703 | 0.4− | 0.8− | | | | |
| 2005 08 31 | 644 | 0.0 | 0.2+ | 2005 10 03 | 703 | 1.3− | 0.1− | | | | |

**2005 TC$_{190}$ = 1999 TD$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.70586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16752966 | $\omega$ | 199.98724 | | −0.60560419 | +0.79422647 | |
| $a$ | 3.2589290 | $\Omega$ | 32.79613 | | −0.71711948 | −0.51774524 | |
| $e$ | 0.0394165 | $i$ | 5.24087 | | −0.34493943 | −0.31803173 | |
| $P$ | 5.88 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.2− | 0.3+ | 2003 06 04 | 691 | 0.2+ | 0.5+ | 2005 10 28 | G96 | 0.2+ | 0.1− |
| 1999 10 06 | 691 | 0.2− | 0.1− | 2003 06 04 | 691 | 0.4+ | 0.1+ | 2005 10 28 | G96 | 0.2− | 0.1+ |
| 1999 10 06 | 691 | 0.0 | 0.1− | 2005 10 01 | 691 | 0.1+ | 0.2+ | 2005 10 28 | G96 | 0.4− | 0.3− |
| 1999 10 13 | 691 | 0.2+ | 0.1− | 2005 10 01 | 691 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.3+ | 0.0 |
| 1999 10 13 | 691 | 0.2+ | 0.0 | 2005 10 01 | G96 | 0.3− | 0.1+ | 2005 11 25 | G96 | 0.4+ | 0.1− |
| 1999 10 13 | 691 | 0.0 | 0.0 | 2005 10 01 | 691 | 0.4− | 0.4+ | 2005 11 25 | G96 | 0.1+ | 0.3+ |
| 2002 02 12 | 704 | 0.1+ | 0.2− | 2005 10 01 | G96 | 0.2− | 0.1− | 2005 11 25 | G96 | 0.4+ | 0.3+ |
| 2002 02 12 | 704 | 0.6− | 0.2+ | 2005 10 01 | G96 | 0.3− | 0.6− | 2005 11 25 | G96 | 0.1+ | 0.5− |
| 2002 02 12 | 704 | 0.1+ | 0.3− | 2005 10 01 | G96 | 0.6+ | 0.3− | 2006 11 22 | 691 | 0.3+ | 0.3+ |
| 2002 02 12 | 704 | 0.3− | 0.3+ | 2005 10 12 | 691 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.3− | 0.6+ |
| 2002 02 12 | 704 | 0.2+ | 0.3+ | 2005 10 12 | 691 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2003 06 04 | 691 | 0.2+ | 0.9+ | 2005 10 12 | 691 | 0.0 | 0.4+ | | | | |

**2005 TD$_{190}$ = 1994 TL$_{6}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.88154 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18065291 | $\omega$ | 224.13891 | | +0.70836386 | −0.70584646 | |
| $a$ | 3.0991272 | $\Omega$ | 180.76217 | | +0.66988710 | +0.67280641 | |
| $e$ | 0.1419991 | $i$ | 5.14054 | | +0.22242284 | +0.22161298 | |
| $P$ | 5.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 04 | 691 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.1+ | 0.1+ | 2005 10 12 | 691 | 0.4+ | 0.5− |
| 1994 10 04 | 691 | 0.2− | 0.1− | 2005 10 01 | G96 | 0.2− | 0.2− | 2005 10 28 | 703 | 0.0 | 0.1+ |
| 1994 10 11 | 691 | 0.0 | 0.0 | 2005 10 01 | 691 | 0.3+ | 0.2+ | 2005 10 28 | 703 | 0.2− | 0.2+ |
| 1994 10 11 | 691 | 0.1− | 0.2+ | 2005 10 01 | G96 | 0.2− | 0.1+ | 2005 10 28 | 703 | 0.0 | 0.8− |
| 1994 10 11 | 691 | 0.2+ | 0.1− | 2005 10 01 | G96 | 0.0 | 0.0 | 2005 10 28 | 703 | 0.4− | 1.2+ |
| 2005 10 01 | 691 | 0.4+ | 0.2+ | 2005 10 12 | 691 | 0.2+ | 0.4− | | | | |
| 2005 10 01 | 691 | 1.0− | 0.6+ | 2005 10 12 | 691 | 0.5+ | 0.7− | | | | |

**2005 TE$_{190}$ = 1995 DV$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.21773 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23372530 | $\omega$ | 290.11351 | +0.13184127 | | +0.99015414 | |
| $a$ | 2.6101506 | $\Omega$ | 347.18867 | −0.81168515 | | +0.08059470 | |
| $e$ | 0.1588651 | $i$ | 12.24746 | −0.56902118 | | +0.11445207 | |
| $P$ | 4.22 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.1+ | 0.3+ | 2001 10 26 | 691 | 0.3− | 0.0 | 2005 10 23 | 703 | 0.7+ | 0.3+ |
| 1995 02 25 | 691 | 0.0 | 0.1− | 2001 10 26 | 691 | 0.2− | 0.2+ | 2005 10 23 | 703 | 0.9− | 0.5+ |
| 1995 02 25 | 691 | 0.2− | 0.8+ | 2005 10 01 | 703 | 1.2+ | 0.7+ | 2005 10 23 | 703 | 0.7+ | 0.3+ |
| 1995 03 05 | 691 | 0.1+ | 0.3− | 2005 10 01 | 703 | 0.6+ | 0.5− | 2005 10 23 | 703 | 0.3+ | 1.2− |
| 1995 03 05 | 691 | 0.1+ | 0.3− | 2005 10 01 | 703 | 1.5− | 0.3− | 2005 10 29 | 703 | 1.6− | 0.3− |
| 1995 03 05 | 691 | 0.1− | 0.2− | 2005 10 01 | 703 | 0.5− | 0.8+ | 2005 10 29 | 703 | 1.5− | 1.1+ |
| 2001 10 15 | 704 | 0.2− | 0.7− | 2005 10 10 | 699 | 0.3+ | 1.5+ | 2005 10 29 | 703 | 0.1− | 1.2− |
| 2001 10 15 | 704 | 1.2+ | 0.5− | 2005 10 10 | 699 | 0.1+ | 0.5+ | 2005 10 29 | 703 | 0.1+ | 0.2+ |
| 2001 10 15 | 704 | 0.1+ | 0.2− | 2005 10 10 | 699 | 0.8+ | 0.7− | | | | |
| 2001 10 26 | 691 | 0.4+ | 0.2− | 2005 10 10 | 699 | 0.4+ | 0.0 | | | | |

**2005 TF$_{190}$ = 2004 NQ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.76043 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18229991 | $\omega$ | 18.48974 | +0.34930812 | | +0.92587164 | |
| $a$ | 3.0804329 | $\Omega$ | 272.15774 | −0.87684693 | | +0.26880375 | |
| $e$ | 0.0797515 | $i$ | 8.28721 | −0.33033817 | | +0.26553012 | |
| $P$ | 5.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 03 | 691 | 0.0 | 0.3+ | 2004 07 16 | 704 | 1.0+ | 0.2− | 2005 10 23 | 703 | 0.4+ | 0.7+ |
| 2003 05 03 | 691 | 0.4+ | 0.4+ | 2005 10 01 | 703 | 0.6+ | 0.5+ | 2005 10 23 | 703 | 0.1− | 0.4− |
| 2003 05 03 | 691 | 0.0 | 0.4+ | 2005 10 01 | 703 | 0.3+ | 1.2+ | 2005 10 23 | 703 | 0.1− | 0.6+ |
| 2004 07 11 | 704 | 0.5+ | 0.7− | 2005 10 01 | 703 | (2.5− | 0.8+) | 2005 10 29 | 291 | 0.1+ | 0.1+ |
| 2004 07 11 | 704 | 0.3− | 0.7+ | 2005 10 01 | 703 | 1.2− | 0.9+ | 2005 10 29 | 291 | 0.0 | 0.2+ |
| 2004 07 11 | 704 | 0.0 | 0.2− | 2005 10 08 | 703 | (2.3− | 0.3−) | 2005 10 29 | 291 | 0.0 | 0.1+ |
| 2004 07 11 | 704 | 0.3− | 0.0 | 2005 10 08 | 703 | 1.6− | 0.1+ | 2005 11 22 | 291 | 0.1− | 0.1+ |
| 2004 07 11 | 704 | 1.3− | 0.2+ | 2005 10 08 | 703 | 0.9− | 0.2− | 2005 11 22 | 291 | 0.3+ | 0.0 |
| 2004 07 16 | 704 | 0.1+ | 0.4+ | 2005 10 08 | 703 | 0.1− | 0.0 | 2005 11 22 | 291 | 0.0 | 0.3− |
| 2004 07 16 | 704 | 0.5+ | 0.1− | 2005 10 23 | 703 | (3.1− | 0.3+) | | | | |

**2005 TG$_{190}$ = 2002 GP$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.51813 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.15908854 | $\omega$ | 355.46536 | +0.09639312 | | −0.98718012 | |
| $a$ | 3.3732105 | $\Omega$ | 88.96615 | +0.91716447 | | +0.03844107 | |
| $e$ | 0.0372790 | $i$ | 7.30991 | +0.38667519 | | +0.15491189 | |
| $P$ | 6.20 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.3− | 0.8+ | 2004 08 11 | 704 | 0.9+ | 0.5+ | 2005 12 05 | 699 | (1.3+ | 1.5+) |
| 1999 10 10 | 704 | 0.6− | 0.5+ | 2004 08 11 | 704 | 0.3− | 0.1+ | 2005 12 05 | 699 | 0.6+ | 0.9+ |
| 1999 10 10 | 704 | 1.7− | 1.4+ | 2004 08 11 | 704 | 0.0 | 0.3+ | 2005 12 23 | 291 | 0.3+ | 0.0 |
| 1999 10 10 | 704 | 0.2+ | 1.3+ | 2005 10 01 | 703 | 0.6− | 0.5− | 2005 12 23 | 291 | 0.3+ | 0.0 |
| 2001 01 04 | 704 | 0.6− | 0.6− | 2005 10 01 | 703 | 0.4− | 0.5− | 2005 12 23 | 291 | 0.2+ | 0.0 |
| 2001 01 04 | 704 | 0.2+ | 0.0 | 2005 10 01 | 703 | 0.4+ | 1.0+ | 2006 09 24 | 691 | 0.2+ | 0.3+ |
| 2001 01 04 | 704 | 0.5+ | 0.2− | 2005 10 01 | 703 | 0.4− | 0.1− | 2006 09 24 | 691 | 0.2− | 0.1+ |
| 2001 01 04 | 704 | 0.8+ | 0.7+ | 2005 10 07 | 703 | 0.9− | 0.5+ | 2006 09 24 | 691 | 0.0 | 0.2+ |
| 2002 04 11 | 699 | (0.7+ | 1.6+) | 2005 10 07 | 703 | 0.0 | 1.5+ | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2002 04 11 | 699 | 0.4− | 1.0+ | 2005 10 07 | 703 | 1.0+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2002 04 11 | 699 | 0.1− | 1.3+ | 2005 10 07 | 703 | 0.3+ | 0.9+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2002 04 11 | 704 | 0.8+ | 0.1− | 2005 10 07 | 703 | 0.2− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 04 11 | 704 | 1.5+ | 0.4− | 2005 10 07 | 703 | 1.0− | 0.3+ | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2002 04 11 | 699 | 1.1− | 0.8+ | 2005 10 07 | 703 | 0.4− | 1.2− | 2006 10 21 | G96 | 1.0+ | 0.3+ |
| 2002 04 11 | 704 | (0.6+ | 1.6+) | 2005 10 07 | 703 | 1.0− | 0.5− | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2002 04 11 | 704 | 0.7+ | 0.3+ | 2005 10 22 | 703 | 0.0 | 0.5− | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2002 04 16 | 704 | 0.6+ | 1.1+ | 2005 10 22 | 703 | 0.8− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.6− |
| 2002 04 16 | 704 | 0.1− | 0.5+ | 2005 10 22 | 703 | (0.5− | 1.9−) | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2002 04 16 | 704 | 0.6+ | 1.0+ | 2005 10 22 | 703 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2002 04 16 | 704 | 0.8+ | 1.3+ | 2005 11 03 | 703 | 0.1− | 0.5− | 2006 12 01 | G96 | 0.4− | 0.6− |
| 2002 04 16 | 704 | 0.3+ | 0.9+ | 2005 11 03 | 703 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.4− | 0.5− |
| 2004 08 08 | 704 | 1.3− | 0.1− | 2005 11 03 | 703 | 0.4+ | 0.1− | 2006 12 01 | G96 | 0.3− | 0.6− |
| 2004 08 08 | 704 | 0.9− | 0.5+ | 2005 11 03 | 703 | 0.2+ | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2004 08 08 | 704 | 0.6+ | 0.3+ | 2005 12 05 | 699 | 0.4+ | 1.1+ | | | | |
| 2004 08 08 | 704 | (1.9+ | 0.5−) | 2005 12 05 | 699 | 0.5− | 0.7+ | | | | |

**2005 TH$_{190}$ = 2003 GZ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.48246 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23071143 | $\omega$ | 153.58335 | −0.90980467 | | +0.40419162 | |
| $a$ | 2.6328330 | $\Omega$ | 50.58135 | −0.39911028 | | −0.78972108 | |
| $e$ | 0.0988558 | $i$ | 7.00828 | −0.11387034 | | −0.46148645 | |
| $P$ | 4.27 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 15 | 691 | 0.2+ | 0.9− | 2003 04 09 | 691 | 0.0 | 0.1− | 2005 10 25 | G96 | 0.3− | 0.2− |
| 1999 05 15 | 691 | (5.6+ | 0.9+) | 2005 10 01 | G96 | 0.2− | 0.2− | 2005 11 10 | 691 | 0.4+ | 0.1+ |
| 1999 05 15 | 691 | 0.2− | 0.8+ | 2005 10 01 | G96 | 0.5− | 0.3+ | 2005 11 10 | 691 | 0.1− | 0.1− |
| 2003 04 08 | 644 | 0.3+ | 0.4+ | 2005 10 01 | G96 | 0.2+ | 0.1− | 2005 11 10 | 691 | 0.2− | 0.1− |
| 2003 04 08 | 644 | 0.3− | 0.3+ | 2005 10 01 | G96 | 0.3+ | 0.2+ | 2005 11 25 | G96 | 0.1− | 0.1− |
| 2003 04 08 | 644 | 0.2− | 0.7+ | 2005 10 25 | G96 | 0.0 | 0.5+ | 2005 11 25 | G96 | 0.3+ | 0.1+ |
| 2003 04 09 | 691 | 0.1+ | 0.3− | 2005 10 25 | G96 | 0.1− | 0.2− | 2005 11 25 | G96 | 0.6− | 0.1+ |
| 2003 04 09 | 691 | 0.1− | 0.1+ | 2005 10 25 | G96 | 0.3+ | 0.4− | 2005 11 25 | G96 | 0.6+ | 0.1+ |

**2005 TJ$_{190}$ = 1996 VV$_{27}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.21226 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21565815 | $\omega$ | 316.26605 | +0.93952199 | | −0.33140218 | |
| $a$ | 2.7539674 | $\Omega$ | 63.27191 | +0.33478575 | | +0.83543917 | |
| $e$ | 0.1303467 | $i$ | 5.55352 | +0.07222836 | | +0.43842216 | |
| $P$ | 4.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | 0.4− | 0.2− | 2005 10 01 | 691 | 0.2− | 0.0 | 2005 10 31 | G96 | 0.0 | 0.0 |
| 1996 11 11 | 691 | 0.7− | 0.1+ | 2005 10 01 | 691 | 0.1+ | 0.2+ | 2005 10 31 | G96 | 0.3− | 0.0 |
| 1996 11 11 | 691 | 0.8− | 0.0 | 2005 10 12 | 691 | 0.2− | 0.1− | 2005 12 01 | G96 | 0.6+ | 0.1+ |
| 1996 11 18 | 691 | 0.9+ | 0.5+ | 2005 10 12 | 691 | 0.1− | 0.1+ | 2005 12 01 | G96 | 0.3+ | 0.2+ |
| 1996 11 18 | 691 | 0.2+ | 0.1− | 2005 10 12 | 691 | 0.0 | 0.2+ | 2005 12 01 | G96 | 0.1− | 0.2− |
| 1996 11 18 | 691 | 0.6+ | 0.0 | 2005 10 31 | G96 | 0.3+ | 0.1− | 2005 12 01 | G96 | 0.4− | 0.3− |
| 2005 10 01 | 691 | 0.1− | 0.0 | 2005 10 31 | G96 | 0.1+ | 0.2− | | | | |

**2005 TK$_{190}$ = 2004 GF$_{67}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.45598 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27067690 | $\omega$ | 293.43796 | +0.57015703 | | +0.82131938 | |
| $a$ | 2.3668383 | $\Omega$ | 11.38100 | −0.71457385 | | +0.50711617 | |
| $e$ | 0.1584373 | $i$ | 5.48235 | −0.40534575 | | +0.26128082 | |
| $P$ | 3.64 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.3+ | 0.2+ | 2005 10 02 | G96 | 0.4+ | 0.1+ | 2005 11 10 | G96 | 0.1− | 0.3− |
| 2004 04 13 | 691 | 0.2+ | 0.5+ | 2005 10 02 | G96 | 0.9+ | 0.1+ | 2005 11 10 | G96 | 0.2+ | 0.3− |
| 2004 04 13 | 691 | 0.2+ | 0.1− | 2005 10 09 | 691 | 0.2− | 0.6+ | 2005 11 10 | G96 | 0.0 | 0.3− |
| 2004 04 20 | 691 | 0.4+ | 0.0 | 2005 10 09 | 691 | 0.4− | 0.0 | 2005 11 10 | G96 | 0.2− | 0.0 |
| 2004 04 20 | 691 | 0.7− | 0.1+ | 2005 10 09 | 691 | 0.2− | 0.6+ | 2005 11 10 | G96 | 0.0 | 0.2+ |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2005 10 22 | 691 | 0.0 | 0.3+ | 2005 11 10 | G96 | 0.2− | 0.0 |
| 2005 10 02 | G96 | 0.0 | 0.1− | 2005 10 22 | 691 | 0.3− | 0.3− | 2005 11 10 | G96 | 0.0 | 0.0 |
| 2005 10 02 | G96 | 0.7− | 0.0 | 2005 10 22 | 691 | 0.1+ | 0.1+ | 2005 11 10 | G96 | 0.2+ | 0.2+ |

**2005 TN$_{190}$ = 1996 CV$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.39380 | | (2000.0) | | | |
| $n$ | 0.18641616 | $\omega$ | 129.03909 | | +0.16710743 | −0.97850621 |
| $a$ | 3.0349183 | $\Omega$ | 310.90215 | | +0.84798521 | +0.20516574 |
| $e$ | 0.2729825 | $i$ | 9.19927 | | +0.50298726 | −0.02079944 |
| $P$ | 5.29 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.0 | 0.0 | 2005 10 10 | 703 | 0.4− | 0.1+ | 2005 11 09 | 704 | 0.1+ | 0.3− |
| 1996 02 10 | 691 | 0.2+ | 0.2+ | 2005 10 10 | 703 | 0.1− | 0.4+ | 2005 11 09 | 704 | 1.0+ | 0.0 |
| 1996 02 10 | 691 | 0.2+ | 0.0 | 2005 10 24 | 644 | 0.0 | 0.3+ | 2005 11 09 | 704 | 0.3+ | 2.0+ |
| 1996 02 17 | 691 | 0.4− | 0.1+ | 2005 10 24 | 644 | 0.2+ | 0.1+ | 2005 11 10 | 703 | 0.9− | 0.4− |
| 1996 02 17 | 691 | 0.1+ | 0.2+ | 2005 10 24 | 644 | 0.3− | 0.6+ | 2005 11 10 | 703 | 0.0 | 0.4− |
| 1996 02 17 | 691 | 0.0 | 0.3− | 2005 10 25 | 703 | (0.6− | 3.7−) | 2005 11 10 | 703 | 0.1+ | 0.2− |
| 2000 12 19 | 704 | 0.1− | 0.2− | 2005 10 25 | 703 | 0.7− | 0.1− | 2005 11 10 | 703 | 0.2+ | 0.5+ |
| 2000 12 19 | 704 | 0.0 | 0.1− | 2005 10 25 | 703 | 0.8− | 0.5− | 2005 11 21 | 703 | 0.4− | 0.8+ |
| 2000 12 19 | 704 | 0.0 | 0.4− | 2005 10 25 | 703 | 1.1+ | 0.3+ | 2005 11 21 | 703 | 0.3− | 0.3− |
| 2000 12 19 | 704 | 0.1+ | 0.0 | 2005 11 02 | 703 | 0.3− | 0.5+ | 2005 11 21 | 703 | 0.3− | 0.6+ |
| 2000 12 19 | 704 | 0.1− | 0.3− | 2005 11 02 | 703 | 0.9− | 0.2+ | 2005 11 21 | 703 | 0.8− | 0.6+ |
| 2001 01 04 | 704 | 0.5+ | 0.6+ | 2005 11 02 | 703 | 0.5− | 0.4− | 2005 11 28 | 703 | 0.8− | 0.4+ |
| 2001 01 04 | 704 | 0.1− | 0.5+ | 2005 11 02 | 703 | 0.2+ | 0.9+ | 2005 11 28 | 703 | 0.3− | 0.8− |
| 2001 01 04 | 704 | 0.2− | 1.1− | 2005 11 03 | 704 | 2.8+ | 2.5+ | 2005 11 28 | 703 | 0.8− | 1.5− |
| 2001 01 04 | 704 | 0.3− | 0.4− | 2005 11 03 | 704 | 0.8+ | 0.5+ | 2005 11 28 | 703 | 0.8− | 0.8− |
| 2005 10 10 | 703 | 0.2− | 0.1+ | 2005 11 03 | 704 | 2.5+ | 0.2+ | | | | |
| 2005 10 10 | 703 | 0.6+ | 1.4− | 2005 11 03 | 704 | 0.2− | 0.3− | | | | |

**2005 TP$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 193.49099 | | (2000.0) | | | |
| $n$ | 0.22501503 | $\omega$ | 83.38295 | | −0.22968905 | +0.97325084 |
| $a$ | 2.6770822 | $\Omega$ | 173.33180 | | −0.90932893 | −0.21273920 |
| $e$ | 0.0634531 | $i$ | 2.50432 | | −0.34693491 | −0.08674581 |
| $P$ | 4.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 20 | 691 | 0.7− | 0.4+ | 2001 12 09 | 691 | 0.5+ | 0.2− | 2005 10 12 | 691 | 0.3− | 0.1+ |
| 1992 10 20 | 691 | 0.4+ | 0.2+ | 2001 12 09 | 691 | 0.2+ | 0.2− | 2005 10 12 | 691 | 0.2− | 0.1+ |
| 1992 10 20 | 691 | 0.2+ | 0.4− | 2005 10 01 | 691 | 0.1+ | 0.1+ | 2005 10 28 | G96 | 0.0 | 0.1+ |
| 1996 09 12 | 691 | 0.1− | 0.2− | 2005 10 01 | 691 | 0.2− | 0.1− | 2005 10 28 | G96 | 0.1− | 0.5− |
| 1996 09 12 | 691 | 0.1+ | 0.1+ | 2005 10 01 | G96 | 0.4− | 0.0 | 2005 10 28 | G96 | 0.4+ | 1.4+ |
| 1996 09 12 | 691 | 0.1+ | 0.0 | 2005 10 01 | G96 | 0.2+ | 0.1− | 2005 10 28 | G96 | 0.3− | 0.3− |
| 2001 11 20 | 704 | 0.9− | 0.8+ | 2005 10 01 | 691 | 0.1− | 0.0 | 2005 10 29 | G96 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.3− | 0.2− | 2005 10 01 | G96 | 0.1− | 0.1− | 2005 10 29 | G96 | 0.6− | 0.2− |
| 2001 11 20 | 704 | 0.7− | 0.1− | 2005 10 01 | G96 | 0.2− | 0.1+ | 2005 10 29 | G96 | 0.1+ | 0.4− |
| 2001 12 09 | 691 | 0.1− | 0.1+ | 2005 10 12 | 691 | 1.0+ | 0.6− | 2005 10 29 | G96 | 0.3+ | 1.5+ |

**2005 TQ$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 308.48405 | | (2000.0) | | | |
| $n$ | 0.26012100 | $\omega$ | 73.76447 | | −0.97570104 | −0.21613744 |
| $a$ | 2.4304449 | $\Omega$ | 93.74264 | | +0.18474818 | −0.89975401 |
| $e$ | 0.0728698 | $i$ | 2.06438 | | +0.11779472 | −0.37911388 |
| $P$ | 3.79 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 645 | 0.0 | 0.0 | 2005 10 01 | 691 | 0.1+ | 0.2− | 2005 10 26 | 691 | 0.4+ | 0.7+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.5− | 0.1− | 2005 10 29 | G96 | 0.1+ | 0.1+ |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.2+ | 0.1− | 2005 10 29 | G96 | 0.1+ | 0.5− |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.3+ | 0.1+ | 2005 10 29 | G96 | 0.2+ | 0.1− |
| 2005 10 01 | 691 | 0.1− | 0.3+ | 2005 10 26 | 691 | 0.3− | 0.3− | 2005 10 29 | G96 | 0.2+ | 0.8+ |
| 2005 10 01 | 691 | 0.0 | 0.1+ | 2005 10 26 | 691 | 0.2− | 0.6− | | | | |

**2005 TR$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 232.05437 | | (2000.0) | | | |
| $n$ | 0.18338320 | $\omega$ | 23.39318 | | −0.77445304 | +0.63220816 |
| $a$ | 3.0682897 | $\Omega$ | 195.88657 | | −0.59295995 | −0.73814994 |
| $e$ | 0.1173462 | $i$ | 4.84870 | | −0.22050168 | −0.23547294 |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.1+ | 0.2− | 2003 05 05 | 704 | 0.3− | 1.4+ | 2005 10 11 | 691 | 0.4− | 0.2+ |
| 1994 10 09 | 691 | 0.0 | 0.4+ | 2003 05 05 | 704 | 0.2− | 0.5+ | 2005 10 28 | G96 | 0.4+ | 0.4− |
| 1994 10 09 | 691 | 0.5− | 0.0 | 2004 08 23 | 691 | 0.2+ | 0.1− | 2005 10 28 | G96 | 0.0 | 0.1+ |
| 1997 04 07 | 691 | 0.4− | 0.7− | 2004 08 23 | 691 | 0.0 | 0.2− | 2005 10 28 | G96 | 0.2+ | 0.1− |
| 1997 04 07 | 691 | 0.2− | 0.3− | 2004 08 23 | 691 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.1+ | 0.3− |
| 1997 04 07 | 691 | 0.4+ | 0.4− | 2005 10 01 | G96 | 0.0 | 0.2− | 2005 12 04 | G96 | 0.7+ | 0.8− |
| 1999 10 09 | 691 | 0.3+ | 0.3− | 2005 10 01 | G96 | 0.2+ | 0.1+ | 2005 12 04 | G96 | 0.5+ | 0.1− |
| 1999 10 09 | 691 | 0.2+ | 0.6− | 2005 10 01 | G96 | 0.2+ | 0.2+ | 2005 12 04 | G96 | 0.5+ | 0.5+ |
| 1999 10 09 | 691 | 0.3+ | 0.5− | 2005 10 01 | G96 | 0.2+ | 0.1− | 2005 12 04 | G96 | 0.1− | 0.1− |
| 2003 05 05 | 704 | 0.1− | 0.6+ | 2005 10 11 | 691 | 0.3− | 0.2+ | | | | |
| 2003 05 05 | 704 | 0.1+ | 0.1+ | 2005 10 11 | 691 | 0.3− | 0.6+ | | | | |

**2005 TS$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 51.24464 | | (2000.0) | | | |
| $n$ | 0.18466474 | $\omega$ | 354.79063 | | +0.40333839 | −0.91481822 |
| $a$ | 3.0540776 | $\Omega$ | 71.42105 | | +0.84032702 | +0.36138221 |
| $e$ | 0.2405866 | $i$ | 1.24734 | | +0.36217211 | +0.18030674 |
| $P$ | 5.34 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 20 | 691 | 0.0 | 0.1− | 2005 10 01 | G96 | 0.0 | 0.3− | 2005 11 22 | 691 | 0.3− | 0.2+ |
| 2000 12 20 | 691 | 0.1− | 0.1+ | 2005 10 01 | G96 | 0.2− | 0.1− | 2005 11 22 | 691 | 0.0 | 0.1+ |
| 2000 12 20 | 691 | 0.0 | 0.8− | 2005 10 30 | 691 | 0.1+ | 0.1− | 2005 11 22 | 691 | 0.1− | 0.3+ |
| 2000 12 29 | 691 | 0.1+ | 0.3+ | 2005 10 30 | 691 | 0.0 | 0.0 | 2005 12 02 | G96 | 0.1+ | 0.3− |
| 2000 12 29 | 691 | 0.0 | 0.3+ | 2005 10 30 | 691 | 0.1+ | 0.1+ | 2005 12 02 | G96 | 0.3+ | 0.5− |
| 2000 12 29 | 691 | 0.0 | 0.1+ | 2005 11 12 | 691 | 0.1+ | 0.0 | 2005 12 02 | G96 | 0.1− | 0.3− |
| 2005 10 01 | G96 | 0.3+ | 0.6− | 2005 11 12 | 691 | 0.1− | 0.2+ | 2005 12 02 | G96 | 0.1+ | 0.1− |
| 2005 10 01 | G96 | 0.2+ | 0.5− | 2005 11 12 | 691 | (3.3+ | 3.4−) | | | | |

**2005 TT$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 94.65629 | | (2000.0) | | | |
| $n$ | 0.20644383 | $\omega$ | 321.78155 | | +0.98924079 | +0.02209614 |
| $a$ | 2.8353158 | $\Omega$ | 37.73267 | | +0.06308974 | +0.82745099 |
| $e$ | 0.1173625 | $i$ | 13.66901 | | −0.13199370 | +0.56110303 |
| $P$ | 4.77 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.0 | 0.0 | 2005 10 11 | 691 | 0.1− | 0.0 | 2005 11 26 | G96 | 0.4+ | 0.5+ |
| 2000 09 05 | 645 | 0.1− | 0.0 | 2005 10 11 | 691 | 0.0 | 0.1+ | 2005 11 26 | G96 | 0.2− | 0.1+ |
| 2000 09 26 | 645 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.0 | 0.1+ | 2005 12 05 | G96 | 0.6+ | 0.1− |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.0 | 0.2+ | 2005 12 05 | G96 | 0.2− | 0.5− |
| 2005 10 01 | 691 | 0.1− | 0.1+ | 2005 10 28 | G96 | 0.0 | 0.2+ | 2005 12 05 | G96 | 0.7+ | 0.1− |
| 2005 10 01 | 691 | 0.2+ | 0.2− | 2005 10 28 | G96 | 0.1− | 0.1+ | 2005 12 05 | G96 | 0.1− | 0.6− |
| 2005 10 01 | 691 | 0.1− | 0.2− | 2005 11 26 | G96 | 1.2− | 0.4+ | | | | |
| 2005 10 11 | 691 | 0.1+ | 0.2+ | 2005 11 26 | G96 | 0.1− | 0.3− | | | | |

**2005 TU$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.25898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22632453 | $\omega$ | 272.11535 | | +0.86447423 | +0.49268329 | |
| $a$ | 2.6667458 | $\Omega$ | 58.38179 | | −0.40196439 | +0.79667136 | |
| $e$ | 0.0377055 | $i$ | 6.72607 | | −0.30184255 | +0.35011130 | |
| $P$ | 4.35 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.3− | 0.1− | 2005 11 26 | G96 | 0.0 | 0.1− |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.4− | 0.1− | 2005 11 26 | G96 | 0.5− | 0.0 |
| 2003 04 07 | 691 | 0.3− | 0.2− | 2005 11 03 | 691 | 0.3+ | 0.2+ | 2005 12 05 | G96 | 0.2− | 0.4+ |
| 2003 04 07 | 691 | 0.1− | 0.0 | 2005 11 03 | 691 | 0.4− | 0.2+ | 2005 12 05 | G96 | 0.4+ | 0.2+ |
| 2003 04 07 | 691 | 0.0 | 0.1− | 2005 11 03 | 691 | 0.2+ | 0.0 | 2005 12 05 | G96 | 0.0 | 0.2+ |
| 2003 05 02 | 691 | 0.3+ | 0.3+ | 2005 11 12 | 691 | 0.4− | 0.1+ | 2005 12 05 | G96 | 0.1+ | 0.5+ |
| 2003 05 02 | 691 | 0.1+ | 0.8+ | 2005 11 12 | 691 | 0.2+ | 0.0 | 2005 12 28 | G96 | 0.1+ | 0.0 |
| 2003 05 02 | 691 | 0.3+ | 0.1− | 2005 11 12 | 691 | 0.0 | 0.0 | 2005 12 28 | G96 | 0.3− | 0.3− |
| 2005 10 01 | G96 | 0.2− | 0.3− | 2005 11 26 | G96 | 0.3+ | 0.0 | 2005 12 28 | G96 | 0.3+ | 0.2+ |
| 2005 10 01 | G96 | 0.7− | 0.6− | 2005 11 26 | G96 | 0.4+ | 0.3− | 2005 12 28 | G96 | 0.0 | 0.1− |

**2005 TV$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.96473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37308753 | $\omega$ | 76.14322 | | −0.48873253 | −0.81200399 | |
| $a$ | 1.9110068 | $\Omega$ | 47.83073 | | +0.53637333 | −0.56807877 | |
| $e$ | 0.0654572 | $i$ | 25.49708 | | +0.68807278 | −0.13392546 | |
| $P$ | 2.64 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 30 | 704 | 0.8+ | 0.4+ | 2004 04 25 | 699 | 1.0+ | 0.2+ | 2005 10 27 | 703 | 0.4+ | 0.6− |
| 2004 03 30 | 704 | 0.4− | 0.2+ | 2004 04 25 | 699 | 1.6− | 1.1− | 2005 11 06 | 699 | 0.4+ | 0.1+ |
| 2004 03 30 | 704 | 0.7− | 0.3+ | 2004 04 25 | 699 | 1.0+ | 1.2+ | 2005 11 06 | 699 | 0.8− | 1.5+ |
| 2004 03 30 | 704 | 0.0 | 0.3+ | 2005 10 07 | 699 | 0.8− | 0.4+ | 2005 11 06 | 699 | 0.2+ | 0.0 |
| 2004 03 30 | 704 | 0.2− | 0.5− | 2005 10 07 | 699 | 0.7+ | 0.0 | 2005 11 06 | 699 | 0.6+ | 0.2+ |
| 2004 03 30 | 704 | 0.9− | 0.2+ | 2005 10 07 | 699 | 0.6+ | 1.0− | 2005 11 22 | 703 | 1.8+ | 0.6− |
| 2004 03 30 | 704 | 0.6+ | 1.2− | 2005 10 07 | 699 | 0.3+ | 0.2− | 2005 11 22 | 703 | 0.7− | 0.0 |
| 2004 03 30 | 704 | 1.0− | 0.6− | 2005 10 08 | 703 | 1.7+ | 1.0+ | 2005 11 22 | 703 | 0.7+ | 0.6− |
| 2004 03 30 | 704 | 1.1+ | 0.2+ | 2005 10 08 | 703 | 1.3− | 0.6+ | 2005 11 22 | 703 | (2.3− | 0.5+) |
| 2004 03 30 | 704 | 0.4− | 0.2+ | 2005 10 08 | 703 | 1.3− | 0.2+ | 2005 12 04 | G96 | 0.4− | 0.3+ |
| 2004 03 30 | 704 | 0.2+ | 0.0 | 2005 10 08 | 703 | 0.5− | 0.6− | 2005 12 04 | G96 | 0.4− | 0.2+ |
| 2004 03 30 | 704 | 0.2+ | 0.2− | 2005 10 27 | 703 | 0.2− | 0.4− | 2005 12 04 | G96 | 0.3− | 0.2+ |
| 2004 03 30 | 704 | 0.7+ | 0.7+ | 2005 10 27 | 703 | 0.4− | 0.6− | 2005 12 04 | G96 | 0.4− | 0.0 |
| 2004 04 25 | 699 | 0.4− | 0.2− | 2005 10 27 | 703 | 0.0 | 0.1− | | | | |

**2005 TW$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.02896 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17076528 | $\omega$ | 152.25679 | | +0.91008646 | +0.41422411 | |
| $a$ | 3.2176317 | $\Omega$ | 183.35040 | | −0.40894426 | +0.89268351 | |
| $e$ | 0.0981505 | $i$ | 12.54009 | | −0.06713585 | +0.17757969 | |
| $P$ | 5.77 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 12 | 691 | 0.1+ | 0.7− | 2004 08 09 | 704 | 0.4+ | 1.1− | 2005 10 22 | 703 | 0.3− | 0.5− |
| 1997 04 12 | 691 | 0.3+ | 0.8− | 2004 08 09 | 704 | 0.2− | 0.4− | 2005 10 22 | 703 | 0.0 | 0.5+ |
| 1997 04 12 | 691 | 0.1− | 0.5− | 2004 08 09 | 704 | 0.3+ | 0.8+ | 2005 11 03 | 703 | 0.1− | 1.1+ |
| 1999 10 09 | 704 | 0.9− | 1.9+ | 2004 08 09 | 704 | 0.6+ | 0.2− | 2005 11 03 | 703 | 0.5− | 1.3+ |
| 1999 10 09 | 704 | 0.7− | 0.6− | 2005 10 10 | 703 | 0.2− | 0.4− | 2005 11 03 | 703 | 0.3− | 0.4+ |
| 1999 10 09 | 704 | 0.0 | 0.0 | 2005 10 10 | 703 | 0.8+ | 1.4+ | 2005 11 03 | 703 | 0.5− | 1.4+ |
| 1999 10 09 | 704 | 0.7− | 0.7− | 2005 10 10 | 703 | 0.9− | 0.6+ | 2005 11 29 | 703 | 0.5+ | 0.8+ |
| 2003 03 31 | 691 | 0.3− | 1.8+ | 2005 10 10 | 703 | 0.9− | 0.3− | 2005 11 29 | 703 | 0.7+ | 0.7− |
| 2003 03 31 | 691 | 0.1+ | 1.7+ | 2005 10 22 | 703 | 1.5+ | 0.4+ | 2005 11 29 | 703 | 0.9+ | 2.4+ |
| 2003 03 31 | 691 | 0.1− | 1.5+ | 2005 10 22 | 703 | 0.9− | 1.3+ | 2005 11 29 | 703 | 0.6+ | 0.5+ |

**2005 TX$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.37147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27802830 | $\omega$ | 291.91209 | | −0.98225207 | +0.17021415 | |
| $a$ | 2.3249309 | $\Omega$ | 257.95716 | | −0.12810276 | −0.91563168 | |
| $e$ | 0.1240749 | $i$ | 4.62099 | | −0.13700570 | −0.36420567 | |
| $P$ | 3.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 691 | 0.3+ | 0.0 | 2005 10 13 | 691 | 0.9+ | 0.1− | 2006 01 23 | 704 | 0.1+ | 0.3+ |
| 2002 01 09 | 691 | 0.4− | 0.4− | 2005 10 13 | 691 | 0.7+ | 0.2+ | 2006 01 23 | 704 | 0.6+ | 0.6− |
| 2002 01 09 | 691 | 0.0 | 0.2+ | 2005 11 30 | G96 | 0.6− | 0.2− | 2006 01 23 | 704 | 0.2− | 0.2− |
| 2003 04 28 | 699 | 1.0+ | 0.5+ | 2005 11 30 | G96 | 0.2− | 0.2− | 2006 02 01 | G96 | 0.2− | 0.3− |
| 2003 04 28 | 699 | 0.1− | 0.7+ | 2005 11 30 | G96 | 0.3− | 0.6− | 2006 02 01 | G96 | 0.2− | 0.2− |
| 2003 04 28 | 699 | 0.3− | 0.1+ | 2005 11 30 | G96 | 0.3− | 0.1− | 2006 02 01 | G96 | 0.6− | 0.3− |
| 2003 04 28 | 699 | 0.0 | 0.3− | 2005 12 27 | 691 | 0.3− | 0.2− | 2006 02 01 | G96 | 0.6− | 0.3− |
| 2004 09 07 | 644 | 0.4− | 0.4+ | 2005 12 27 | 691 | 1.2− | 0.0 | 2006 02 04 | 704 | 1.3+ | 0.8+ |
| 2004 09 07 | 644 | 0.2− | 0.2+ | 2005 12 27 | 691 | 0.2− | 0.4− | 2006 02 04 | 704 | 0.8+ | 0.9+ |
| 2004 09 07 | 644 | 0.1+ | 0.2+ | 2006 01 23 | 704 | 1.0+ | 0.3− | 2006 02 04 | 704 | 0.1+ | 0.1− |
| 2005 10 13 | 691 | 0.2+ | 1.1+ | 2006 01 23 | 704 | 1.0+ | 1.2+ | 2006 02 04 | 704 | 0.5+ | 1.2+ |

**2005 TZ$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.49795 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17652416 | $\omega$ | 194.22730 | | −0.75186501 | +0.65086452 | |
| $a$ | 3.1472648 | $\Omega$ | 27.28134 | | −0.58024718 | −0.57742317 | |
| $e$ | 0.0173800 | $i$ | 13.27293 | | −0.31306903 | −0.49290755 | |
| $P$ | 5.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.1− | 0.6− | 2005 10 01 | 691 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.2− | 0.1+ |
| 1994 10 08 | 691 | 0.2+ | 0.0 | 2005 10 07 | 703 | 0.6− | 0.7+ | 2005 10 28 | G96 | 0.1− | 0.2+ |
| 1994 10 08 | 691 | 0.4+ | 0.1− | 2005 10 07 | 703 | 0.5− | 0.2+ | 2005 10 28 | G96 | 0.1+ | 0.1+ |
| 2002 02 12 | 644 | 0.4+ | 0.1+ | 2005 10 07 | 703 | 0.4− | 0.2+ | 2005 10 28 | G96 | 0.3− | 0.1− |
| 2002 02 12 | 644 | 0.1+ | 0.2+ | 2005 10 07 | 703 | 0.3+ | 1.6− | 2005 11 25 | G96 | 0.2+ | 0.1+ |
| 2002 02 12 | 644 | 0.3− | 0.2+ | 2005 10 12 | 691 | 0.1+ | 0.2+ | 2005 11 25 | G96 | 0.3− | 0.1− |
| 2005 10 01 | 691 | 0.2− | 0.2+ | 2005 10 12 | 691 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.3− | 0.3+ |
| 2005 10 01 | 691 | 0.1+ | 0.1+ | 2005 10 12 | 691 | 0.0 | 0.1+ | 2005 11 25 | G96 | 0.3+ | 0.3+ |

**2005 TH$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.14889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23651610 | $\omega$ | 332.61868 | | +0.52238249 | −0.83196159 | |
| $a$ | 2.5895775 | $\Omega$ | 85.34074 | | +0.81265021 | +0.41930980 | |
| $e$ | 0.1241708 | $i$ | 10.81196 | | +0.25829475 | +0.36334446 | |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.6− | 0.5+ | 2001 12 19 | 704 | 0.3+ | 0.3− | 2005 10 08 | 699 | (0.6+ | 2.7−) |
| 2001 10 15 | 644 | 0.3− | 0.4+ | 2005 10 01 | 699 | 0.5+ | 0.8− | 2005 10 08 | 699 | 0.1+ | 0.7+ |
| 2001 10 15 | 644 | 0.6− | 0.1+ | 2005 10 01 | 699 | 0.3− | 0.4+ | 2005 10 08 | 699 | 1.1+ | 0.4+ |
| 2001 10 23 | 644 | 0.5− | 0.1+ | 2005 10 01 | 699 | 0.5− | 0.2+ | 2005 10 22 | 644 | 0.3+ | 0.2− |
| 2001 10 23 | 644 | 0.3− | 0.0 | 2005 10 01 | 699 | 0.4+ | 1.0+ | 2005 10 22 | 644 | 0.2+ | 0.3− |
| 2001 10 23 | 644 | 0.2− | 0.3+ | 2005 10 03 | 703 | 0.3+ | 0.3+ | 2005 10 22 | 644 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.4+ | 2005 10 03 | 703 | 0.7+ | 0.4− | 2005 11 05 | 703 | 1.0− | 0.3− |
| 2001 12 19 | 704 | 0.8+ | 0.7+ | 2005 10 03 | 703 | 0.7− | 0.9− | 2005 11 05 | 703 | 0.4− | 1.1− |
| 2001 12 19 | 704 | 0.9+ | 0.0 | 2005 10 03 | 703 | (0.3− | 2.0−) | 2005 11 05 | 703 | 0.9− | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 1.0− | 2005 10 08 | 699 | (1.9+ | 1.5−) | 2005 11 05 | 703 | 0.3+ | 0.2− |

**2005 TK**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.56444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26059828 | $\omega$ | 126.42940 | | +0.85610261 | +0.51665557 | |
| $a$ | 2.4274764 | $\Omega$ | 202.47049 | | −0.48398535 | +0.79304393 | |
| $e$ | 0.1087094 | $i$ | 1.86873 | | −0.18123605 | +0.32272023 | |
| $P$ | 3.78 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.6− | 0.3+ | 2005 10 01 | G96 | 0.1− | 0.1− | 2005 10 27 | 691 | 0.4− | 0.0 |
| 2001 09 23 | 704 | 0.1+ | 1.0+ | 2005 10 01 | G96 | 0.4+ | 0.1− | 2005 11 04 | 691 | 0.4+ | 0.1+ |
| 2001 09 23 | 704 | 0.3+ | 0.9+ | 2005 10 01 | G96 | 0.1− | 0.2+ | 2005 11 04 | 691 | 0.3+ | 0.2− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 10 22 | 691 | 0.3+ | 0.2+ | 2005 11 04 | 691 | 0.3+ | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2005 10 22 | 691 | 0.4− | 0.0 | 2005 12 02 | G96 | 0.1− | 0.6− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 10 22 | 691 | 0.2+ | 0.3− | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2005 10 27 | 691 | 1.0− | 0.5+ | 2005 12 02 | G96 | 0.5+ | 0.7− |
| 2005 10 01 | G96 | 0.5+ | 0.2− | 2005 10 27 | 691 | 0.1+ | 0.5+ | 2005 12 02 | G96 | 0.2− | 0.4− |

**2005 TR**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.75454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22097294 | $\omega$ | 302.56268 | | −0.48504705 | −0.87443133 | |
| $a$ | 2.7096299 | $\Omega$ | 176.40887 | | +0.84616004 | −0.47217967 | |
| $e$ | 0.0954647 | $i$ | 9.15012 | | +0.22077712 | −0.11142808 | |
| $P$ | 4.46 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 599 | (3.5− | 0.5−) | 2005 10 10 | 703 | 0.1+ | 0.7+ | 2005 11 09 | 703 | 1.4+ | 0.3+ |
| 2003 04 25 | 599 | 1.6− | 0.3+ | 2005 10 10 | 703 | 1.1− | 0.4− | 2005 11 09 | 703 | 0.1+ | 0.1− |
| 2003 04 25 | 599 | 1.4− | 0.6− | 2005 10 10 | 703 | 0.2− | 1.2+ | 2005 11 09 | 703 | 0.1+ | 0.2− |
| 2003 05 02 | 704 | 0.2+ | 1.2+ | 2005 10 10 | 703 | 0.7+ | 0.3+ | 2005 11 22 | 703 | 0.5− | 0.6− |
| 2003 05 02 | 704 | 0.6− | 0.3− | 2005 10 27 | 699 | 1.0+ | 0.6+ | 2005 11 22 | 703 | 0.4+ | 0.3+ |
| 2003 05 02 | 704 | 0.6− | 1.2− | 2005 10 27 | 699 | 0.7+ | 1.4+ | 2005 11 22 | 703 | 0.2+ | 1.1− |
| 2003 05 11 | 691 | 0.5+ | 0.0 | 2005 10 27 | 699 | 0.6− | 0.8+ | 2005 11 22 | 703 | 0.0 | 1.0− |
| 2003 05 11 | 691 | 0.2+ | 0.0 | 2005 10 27 | 699 | 0.3+ | 0.1− | 2005 12 05 | 699 | 0.4− | 1.0+ |
| 2003 05 11 | 691 | 0.2+ | 0.0 | 2005 11 03 | 703 | 1.0+ | 0.7− | 2005 12 05 | 699 | 0.6− | 0.2+ |
| 2005 10 01 | 703 | 0.1− | 0.0 | 2005 11 03 | 703 | 0.4− | 0.2− | 2005 12 05 | 699 | 1.8− | 0.0 |
| 2005 10 01 | 703 | 0.5+ | 0.6− | 2005 11 03 | 703 | 1.0− | 0.4+ | 2005 12 05 | 699 | 1.3+ | 0.9− |
| 2005 10 01 | 703 | 1.0− | 0.5− | 2005 11 03 | 703 | 0.2− | 0.3+ | | | | |
| 2005 10 01 | 703 | 1.2+ | 1.9− | 2005 11 09 | 703 | 1.1− | 0.0 | | | | |

**2005 TX**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.02289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18620371 | $\omega$ | 163.12712 | | +0.54482171 | +0.83652624 | |
| $a$ | 3.0372264 | $\Omega$ | 139.83311 | | −0.77940695 | +0.53079712 | |
| $e$ | 0.1396534 | $i$ | 5.18138 | | −0.30934465 | +0.13593478 | |
| $P$ | 5.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 03 | 691 | 0.3− | 0.4− | 2005 10 03 | 703 | 1.1− | 0.4− | 2005 10 27 | 644 | 0.3− | 0.2− |
| 1999 08 03 | 691 | 0.5+ | 0.6+ | 2005 10 08 | 703 | 0.6− | 0.3− | 2005 10 27 | 644 | 0.2− | 0.2− |
| 1999 08 03 | 691 | 0.2− | 0.4− | 2005 10 08 | 703 | 0.7+ | 0.2+ | 2005 10 27 | 644 | 0.3− | 0.0 |
| 1999 08 07 | 691 | (2.8+ | 2.8−) | 2005 10 08 | 703 | 0.5+ | 1.1− | 2005 11 01 | 703 | 1.3+ | 0.1− |
| 1999 08 07 | 691 | 0.5+ | 0.3+ | 2005 10 08 | 703 | 0.2+ | 0.2− | 2005 11 01 | 703 | 0.3− | 1.4+ |
| 1999 08 07 | 691 | 0.5− | 0.1− | 2005 10 22 | 703 | 1.3+ | 1.1+ | 2005 11 01 | 703 | 0.2+ | 0.5+ |
| 2005 10 03 | 703 | (2.1− | 0.4−) | 2005 10 22 | 703 | (0.8+ | 2.1+) | 2005 11 01 | 703 | (2.9− | 1.3−) |
| 2005 10 03 | 703 | 0.3+ | 0.4− | 2005 10 22 | 703 | 0.0 | 1.0− | | | | |
| 2005 10 03 | 703 | 0.2− | 0.5− | 2005 10 22 | 703 | 1.5− | 1.0+ | | | | |

**2005 TY**$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.96979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15204488 | $\omega$ | 23.35845 | | +0.32097461 | +0.93521078 | |
| $a$ | 3.4766010 | $\Omega$ | 265.63407 | | −0.89087180 | +0.24455477 | |
| $e$ | 0.0465438 | $i$ | 8.62430 | | −0.32143854 | +0.25607374 | |
| $P$ | 6.48 | $H$ | 13.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.7+ | 0.9− | 2004 09 18 | 704 | 0.8+ | 0.5− | 2005 11 02 | 704 | 0.4− | 0.4− |
| 1999 12 07 | 704 | 0.2+ | 1.3− | 2004 09 18 | 704 | 0.6+ | 0.2− | 2005 11 02 | 704 | 0.6+ | 0.3+ |
| 1999 12 07 | 704 | 1.4+ | 1.2+ | 2004 09 18 | 704 | 0.2+ | 0.2− | 2005 11 02 | 704 | 0.0 | 0.3− |
| 2000 01 13 | 691 | 0.2− | 0.1+ | 2004 09 18 | 704 | 0.0 | 0.0 | 2005 11 02 | 704 | 0.8− | 1.4+ |
| 2000 01 13 | 691 | 0.2− | 0.1+ | 2004 09 18 | 704 | 0.4+ | 0.7− | 2005 11 08 | 704 | 0.9+ | 0.4− |
| 2000 01 13 | 691 | 0.2− | 0.2+ | 2005 10 04 | 703 | 0.4− | 0.0 | 2005 11 08 | 704 | 0.1+ | 0.4+ |
| 2004 08 21 | 703 | 1.3− | 0.2− | 2005 10 04 | 703 | 0.1+ | 0.2− | 2005 11 08 | 704 | 0.2+ | 0.7− |
| 2004 08 21 | 703 | 0.9+ | 0.2+ | 2005 10 04 | 703 | 0.2+ | 0.0 | 2005 11 08 | 704 | 0.3+ | 0.2− |
| 2004 08 21 | 703 | 0.2+ | 0.0 | 2005 10 04 | 703 | 0.1+ | 0.4+ | 2005 11 08 | 704 | 0.3+ | 0.7− |
| 2004 08 21 | 703 | 0.4− | 0.1− | 2005 10 30 | 704 | 0.8− | 1.0+ | 2005 11 28 | 703 | 1.2− | 0.0 |
| 2004 09 10 | 704 | 0.8− | 0.6+ | 2005 10 30 | 704 | 0.4+ | 0.2+ | 2005 11 28 | 703 | (1.8− | 0.2+) |
| 2004 09 10 | 704 | 0.3− | 0.9+ | 2005 10 30 | 704 | 0.2− | 0.5− | 2005 11 28 | 703 | 0.7+ | 1.1− |
| 2004 09 10 | 704 | 0.3− | 0.4+ | 2005 10 30 | 704 | 0.1− | 0.4+ | 2005 11 28 | 703 | (2.3− | 2.1−) |

**2005 TH**$_{192}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.90545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21820305 | $\omega$ | 335.23817 | | +0.87663603 | +0.48106258 | |
| $a$ | 2.7325126 | $\Omega$ | 355.96965 | | −0.41621237 | +0.74838581 | |
| $e$ | 0.1213433 | $i$ | 7.67316 | | −0.24140534 | +0.45661523 | |
| $P$ | 4.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 291 | 0.2+ | 0.0 | 2005 10 23 | 703 | 0.4− | 0.9− | 2005 11 02 | 704 | 0.1− | 0.9− |
| 2003 03 09 | 291 | 0.3− | 0.2− | 2005 10 23 | 703 | 0.7− | 0.4− | 2005 11 02 | 704 | 0.5− | 0.9− |
| 2003 03 09 | 291 | 0.2+ | 0.3+ | 2005 10 23 | 703 | 0.8− | 0.4− | 2005 11 02 | 704 | 1.0− | 0.4+ |
| 2003 03 30 | 695 | 0.3− | 0.1− | 2005 10 23 | 703 | 0.6− | 0.5+ | 2005 11 06 | 704 | 0.1+ | 0.9− |
| 2003 03 30 | 695 | 0.1− | 0.2− | 2005 10 30 | 704 | 1.0+ | 1.4+ | 2005 11 06 | 704 | 0.0 | 0.1− |
| 2005 10 10 | 699 | 0.8+ | 0.2− | 2005 10 30 | 704 | 0.1+ | 0.3+ | 2005 11 06 | 704 | 0.3− | 1.1+ |
| 2005 10 10 | 699 | 0.1− | 0.5+ | 2005 10 30 | 704 | (2.4− | 0.0 ) | 2005 11 06 | 704 | 1.7+ | 1.6+ |
| 2005 10 10 | 699 | 0.1− | 0.9− | 2005 11 02 | 704 | 1.0+ | 0.7− | | | | |
| 2005 10 10 | 699 | 0.3+ | 0.7+ | 2005 11 02 | 704 | 0.3− | 0.1− | | | | |

**2005 UB**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.11461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37758930 | $\omega$ | 3.06660 | | +0.08498776 | +0.88132141 | |
| $a$ | 1.8957872 | $\Omega$ | 272.16161 | | −0.92377560 | −0.10512027 | |
| $e$ | 0.7385667 | $i$ | 27.71944 | | −0.37338414 | +0.46067591 | |
| $P$ | 2.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 21 | 704 | 0.1− | 0.3+ | 2005 10 29 | G77 | 0.0 | 0.1− | 2005 11 03 | J95 | 0.2− | 0.0 |
| 2005 10 21 | 704 | 0.3− | 0.1+ | 2005 10 29 | G77 | 0.1− | 0.2+ | 2005 11 03 | J95 | 0.2− | 0.3+ |
| 2005 10 21 | 704 | 0.3− | 0.4+ | 2005 10 29 | G77 | 1.3− | 0.3− | 2005 11 03 | J95 | 0.1− | 0.0 |
| 2005 10 21 | 704 | 0.3− | 0.6+ | 2005 10 29 | G77 | 0.0 | 0.5+ | 2005 11 04 | G77 | 0.6− | 0.8− |
| 2005 10 21 | 704 | 0.1+ | 0.6+ | 2005 10 30 | G77 | 0.0 | 0.1− | 2005 11 04 | G77 | (1.6+ | 0.5+) |
| 2005 10 22 | 854 | 0.3+ | 0.0 | 2005 10 30 | G88 | 0.3− | 0.2− | 2005 11 04 | G77 | (2.0+ | 0.8−) |
| 2005 10 22 | 854 | 0.4+ | 0.1− | 2005 10 30 | G88 | 0.2− | 0.0 | 2005 11 04 | G77 | 0.6− | 0.2− |
| 2005 10 22 | 854 | 0.6+ | 0.1+ | 2005 10 30 | G77 | 0.0 | 0.1− | 2005 11 05 | A20 | 0.7+ | 0.3− |
| 2005 10 22 | 734 | 0.1− | 0.1− | 2005 10 30 | G88 | 0.2− | 0.1+ | 2005 11 05 | A20 | 0.6− | 0.3− |
| 2005 10 22 | 734 | 0.0 | 0.1− | 2005 10 30 | G88 | 0.3− | 0.2− | 2005 11 05 | A20 | 1.0+ | 0.2− |
| 2005 10 22 | H36 | 0.3+ | 0.0 | 2005 10 30 | G88 | 0.4− | 0.1− | 2005 11 14 | 448 | 0.2+ | 0.0 |
| 2005 10 22 | 734 | 0.0 | 0.1− | 2005 10 30 | G77 | 0.0 | 0.2+ | 2005 11 14 | 448 | 0.1+ | 0.1− |
| 2005 10 22 | H36 | 0.1+ | 0.1+ | 2005 10 30 | G88 | 0.1− | 0.0 | 2005 11 14 | 448 | 0.2+ | 0.1− |
| 2005 10 22 | 734 | 0.1+ | 0.0 | 2005 10 30 | G77 | 0.6− | 0.2+ | 2005 11 20 | A53 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 22 | 854 | 0.3+ | 0.0 | 2005 10 30 | 448 | 0.2− | 0.0 | 2005 11 20 | A53 | 0.5+ | 0.4+ |
| 2005 10 22 | H36 | 0.3+ | 0.1− | 2005 10 30 | 448 | 0.1+ | 0.0 | 2005 11 20 | A53 | 0.3+ | 1.2+ |
| 2005 10 22 | 734 | 0.0 | 0.1− | 2005 10 30 | 448 | 0.2+ | 0.1− | 2005 11 23 | 704 | 0.0 | 0.3− |
| 2005 10 22 | 854 | 0.2+ | 0.1+ | 2005 10 30 | 448 | 0.1+ | 0.1− | 2005 11 23 | 704 | 0.2− | 0.1− |
| 2005 10 22 | H36 | (1.7+ | 0.3+) | 2005 10 30 | 160 | 0.1+ | 0.1+ | 2005 11 23 | 704 | 0.1+ | 0.1+ |
| 2005 10 22 | 854 | 0.3+ | 0.2− | 2005 10 30 | 160 | 0.1+ | 0.0 | 2005 11 23 | 704 | 0.3+ | 0.1+ |
| 2005 10 22 | H36 | 0.3− | 0.2+ | 2005 10 30 | 160 | 0.1+ | 0.1+ | 2005 11 23 | 704 | 0.1− | 0.5+ |
| 2005 10 22 | J95 | 0.1− | 0.3− | 2005 10 30 | 160 | 0.1+ | 0.0 | 2005 12 04 | 703 | 0.2− | 0.4− |
| 2005 10 22 | J95 | 0.1+ | 0.0 | 2005 10 30 | 160 | 0.0 | 0.3+ | 2005 12 04 | 703 | 0.0 | 0.4− |
| 2005 10 22 | J95 | 0.0 | 0.2− | 2005 10 30 | 160 | 0.2+ | 0.1+ | 2005 12 04 | 703 | 0.1+ | 0.2− |
| 2005 10 23 | 448 | 0.1− | 0.2+ | 2005 10 30 | 160 | 0.0 | 0.1+ | 2005 12 10 | J95 | 0.0 | 0.0 |
| 2005 10 23 | 448 | 0.1+ | 0.1+ | 2005 10 30 | 160 | 0.1+ | 0.1− | 2005 12 10 | J95 | 0.1+ | 0.0 |
| 2005 10 23 | 448 | 0.1+ | 0.1− | 2005 10 30 | 160 | 0.3+ | 0.1− | 2005 12 10 | J95 | 0.3+ | 0.3− |
| 2005 10 23 | G77 | 0.6+ | 0.3− | 2005 10 30 | 160 | 0.2+ | 0.1− | 2005 12 29 | 711 | 0.8+ | 0.4+ |
| 2005 10 23 | G77 | 0.4− | 0.2+ | 2005 10 30 | 469 | (1.6+ | 0.1−) | 2005 12 29 | 711 | 0.0 | 0.1− |
| 2005 10 23 | G77 | 0.6− | 0.2+ | 2005 10 30 | 469 | 1.3+ | 0.5− | 2005 12 29 | 711 | 1.0− | 1.4+ |
| 2005 10 23 | G77 | 0.1− | 0.1− | 2005 10 30 | 469 | 0.6+ | 0.1− | 2005 12 31 | 703 | 1.0− | 0.7+ |
| 2005 10 23 | G77 | 0.6− | 0.1+ | 2005 10 30 | 469 | 0.2− | 0.3− | 2005 12 31 | 703 | 0.8− | 1.2− |
| 2005 10 25 | 448 | 0.2− | 0.0 | 2005 10 30 | 469 | 0.2− | 0.2+ | 2005 12 31 | 703 | 0.5− | 0.2+ |
| 2005 10 25 | 448 | 0.0 | 0.1+ | 2005 10 30 | 469 | 0.3+ | 0.4− | 2005 12 31 | 703 | 0.2− | 0.2+ |
| 2005 10 25 | 448 | 0.7+ | 0.1+ | 2005 10 30 | 469 | 0.2+ | 0.2− | 2006 10 25 | 568 | 0.0 | 0.0 |
| 2005 10 29 | 696 | 0.0 | 0.2+ | 2005 11 01 | 734 | 0.1− | 0.1+ | 2006 10 25 | 568 | 0.0 | 0.1− |
| 2005 10 29 | 696 | 0.2+ | 0.2+ | 2005 11 01 | 734 | 0.0 | 0.0 | 2006 11 28 | 568 | 0.1+ | 0.1− |
| 2005 10 29 | G88 | 0.2+ | 0.2+ | 2005 11 01 | 734 | 0.0 | 0.1+ | 2006 11 28 | 568 | 0.1+ | 0.1− |
| 2005 10 29 | G88 | 0.2+ | 0.1− | 2005 11 01 | 734 | 0.2− | 0.1+ | 2006 11 30 | 291 | 1.0− | 1.0+ |
| 2005 10 29 | G88 | 0.1+ | 0.2− | 2005 11 01 | 734 | 0.0 | 0.0 | 2006 11 30 | 291 | 1.0− | 1.2+ |

**2005 UJ$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.76743 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23047479 | $\omega$ | 180.73883 | | +0.86923900 | | −0.48117493 |
| $a$ | 2.6346349 | $\Omega$ | 208.91105 | | +0.45479213 | | +0.86830684 |
| $e$ | 0.1839635 | $i$ | 13.58453 | | +0.19387544 | | +0.12047370 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 23 | 691 | 0.3− | 0.1− | 2005 10 26 | 699 | 0.8− | 0.7− | 2005 11 25 | 703 | 0.0 | 0.2+ |
| 1995 06 23 | 691 | 0.3+ | 0.3+ | 2005 10 27 | 683 | 0.8+ | 0.4+ | 2005 11 25 | 703 | 0.2− | 0.2− |
| 1995 06 23 | 691 | 0.1− | 0.2− | 2005 10 27 | 683 | 0.2− | 0.9+ | 2005 11 25 | 703 | 0.4− | 0.2+ |
| 2003 04 08 | 691 | 0.1+ | 0.1+ | 2005 10 27 | 683 | 1.2+ | 0.1+ | 2005 11 30 | 699 | 0.2+ | 0.5+ |
| 2003 04 08 | 691 | 0.1+ | 0.1− | 2005 10 30 | 644 | 0.1+ | 0.1− | 2005 11 30 | 699 | 0.1+ | 0.5+ |
| 2003 04 08 | 691 | 0.2− | 0.1+ | 2005 10 30 | 644 | 0.2+ | 0.2− | 2005 11 30 | 699 | 0.7+ | 0.3− |
| 2005 10 06 | 699 | 0.3+ | 0.5− | 2005 10 30 | 644 | 0.3+ | 0.0 | 2005 11 30 | 699 | 1.0+ | 0.3+ |
| 2005 10 06 | 699 | 0.1+ | 0.3− | 2005 11 03 | 703 | 0.7− | 0.1− | 2005 12 01 | 703 | 0.3− | 0.5+ |
| 2005 10 06 | 699 | 1.4+ | 0.1+ | 2005 11 03 | 703 | 0.5+ | 0.3+ | 2005 12 01 | 703 | 0.8− | 1.0− |
| 2005 10 06 | 699 | 0.4− | 0.4+ | 2005 11 03 | 703 | 0.1+ | 0.3+ | 2005 12 01 | 703 | 0.9+ | 0.2− |
| 2005 10 12 | 704 | 0.0 | 0.6+ | 2005 11 03 | 703 | 0.3+ | 0.3− | 2005 12 01 | 703 | 0.2− | 0.5− |
| 2005 10 12 | 704 | 0.7− | 0.5− | 2005 11 05 | 704 | 0.3+ | 0.4+ | 2005 12 06 | 704 | 0.1+ | 0.1+ |
| 2005 10 12 | 704 | 0.5+ | 0.5+ | 2005 11 05 | 704 | 0.0 | 0.3+ | 2005 12 06 | 704 | 0.1− | 0.5+ |
| 2005 10 12 | 704 | 0.8− | 0.1+ | 2005 11 05 | 704 | 0.7+ | 0.8+ | 2005 12 06 | 704 | 0.1+ | 0.4+ |
| 2005 10 12 | 704 | 1.2+ | 0.5− | 2005 11 05 | 704 | 0.0 | 0.1+ | 2005 12 06 | 704 | 0.3+ | 0.2− |
| 2005 10 24 | 683 | 0.1+ | 1.1− | 2005 11 10 | 703 | 0.9− | 0.4− | 2005 12 06 | 704 | 0.1+ | 0.8+ |
| 2005 10 24 | 683 | 1.1+ | 1.3− | 2005 11 10 | 703 | 0.9− | 0.2− | 2005 12 07 | 703 | 0.3− | 0.8− |
| 2005 10 24 | 683 | 0.6− | 0.3+ | 2005 11 10 | 703 | 0.2− | 0.9− | 2005 12 07 | 703 | 0.6− | 0.2+ |
| 2005 10 25 | 683 | 0.1+ | 0.7+ | 2005 11 10 | 703 | 1.0+ | 0.6+ | 2005 12 07 | 703 | 0.1+ | 0.4− |
| 2005 10 25 | 683 | 0.9+ | 0.3− | 2005 11 20 | 644 | 0.1− | 0.0 | 2005 12 24 | 644 | 0.1+ | 0.1− |
| 2005 10 25 | 703 | 1.0− | 0.1− | 2005 11 20 | 644 | 0.1− | 0.0 | 2005 12 24 | 644 | 0.2+ | 0.5− |
| 2005 10 25 | 703 | 0.5− | 0.2− | 2005 11 20 | 644 | 0.1− | 0.1+ | 2005 12 24 | 644 | 0.1+ | 0.2− |
| 2005 10 25 | 683 | 0.9− | 0.6+ | 2005 11 21 | 699 | 0.9− | 0.3− | 2005 12 29 | 644 | 0.7+ | 0.1− |
| 2005 10 25 | 703 | 0.6− | 0.2+ | 2005 11 21 | 699 | 0.5− | 0.2+ | 2005 12 29 | 644 | 0.1+ | 0.1+ |
| 2005 10 25 | 703 | 0.2− | 0.7+ | 2005 11 21 | 699 | 1.9− | 0.1− | 2005 12 29 | 644 | 0.2+ | 0.0 |
| 2005 10 26 | 699 | 0.4+ | 0.4− | 2005 11 21 | 699 | 0.0 | 0.5− | | | | |
| 2005 10 26 | 699 | 0.2− | 0.7+ | 2005 11 25 | 703 | 0.0 | 0.0 | | | | |

**2005 UU$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.56107 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.68373211 | $\omega$ | 128.21102 | | −0.95116984 | | −0.27322487 |
| $a$ | 1.2760824 | $\Omega$ | 36.57878 | | +0.14832983 | | −0.81261641 |
| $e$ | 0.4757877 | $i$ | 13.94482 | | +0.27069208 | | −0.51478417 |
| $P$ | 1.44 | $H$ | 22.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 25 | G96 | 0.6− | 0.3− | 2005 10 27 | G96 | 0.8+ | 0.2− | 2005 11 25 | G96 | 0.5− | 0.3+ |
| 2005 10 25 | G96 | 0.8− | 0.2− | 2005 10 27 | G96 | 0.1+ | 0.1+ | 2005 12 06 | 291 | 0.5+ | 0.4+ |
| 2005 10 25 | G96 | 0.4− | 0.2− | 2005 10 28 | G96 | 0.5− | 0.1− | 2005 12 06 | 291 | 0.6− | 1.4− |
| 2005 10 25 | G96 | 0.0 | 0.3+ | 2005 10 28 | G96 | 0.0 | 0.3− | 2005 12 06 | 291 | 0.5+ | 0.0 |
| 2005 10 25 | G96 | 0.1− | 0.1− | 2005 10 28 | G96 | 1.1+ | 0.5− | 2005 12 23 | 291 | 0.2− | 0.3+ |
| 2005 10 25 | G96 | 0.8− | 0.2− | 2005 11 06 | 291 | 0.1− | 0.1+ | 2005 12 23 | 291 | 0.1− | 0.1+ |
| 2005 10 25 | G96 | 0.3− | 0.3− | 2005 11 06 | 291 | 0.1+ | 0.2− | 2006 07 26 | 568 | 0.1+ | 0.2− |
| 2005 10 25 | G96 | 0.4− | 0.4− | 2005 11 06 | 291 | 0.4− | 0.1+ | 2006 07 26 | 568 | 0.0 | 0.1− |
| 2005 10 25 | J95 | 1.4+ | 0.6+ | 2005 11 10 | 291 | 0.4+ | 0.3+ | 2006 07 26 | 568 | 0.0 | 0.3− |
| 2005 10 25 | J95 | 0.2+ | 0.1− | 2005 11 10 | 291 | 0.7− | 0.3− | 2006 09 04 | 568 | 0.0 | 0.2+ |
| 2005 10 27 | G96 | 0.0 | 0.0 | 2005 11 10 | 291 | 0.0 | 0.3− | 2006 09 04 | 568 | 0.1+ | 0.2+ |
| 2005 10 27 | G96 | 0.2− | 0.6− | 2005 11 25 | 696 | 0.0 | 0.1+ | 2006 09 04 | 568 | 0.0 | 0.4+ |
| 2005 10 27 | G96 | 0.1+ | 0.4− | 2005 11 25 | 696 | 0.3− | 0.5+ | | | | |
| 2005 10 27 | G96 | 0.1− | 0.3− | 2005 11 25 | G96 | 0.4− | 0.3+ | | | | |

**2005 UH$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.99456 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.98471427 | $\omega$ | 200.24347 | | −0.77219089 | | +0.63520850 |
| $a$ | 1.0006048 | $\Omega$ | 19.21647 | | −0.57641386 | | −0.69024285 |
| $e$ | 0.6324047 | $i$ | 2.64894 | | −0.26733554 | | −0.34651835 |
| $P$ | 1.00 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 28 | G96 | 0.3+ | 0.2− | 2005 10 30 | 651 | 0.1− | 0.1− | 2005 11 28 | 291 | 0.1+ | 0.7− |
| 2005 10 28 | G96 | 0.1+ | 0.2− | 2005 11 01 | 291 | (1.3+ | 2.2−) | 2005 11 28 | 291 | 0.2+ | 1.2+ |
| 2005 10 28 | G96 | 0.1− | 0.4− | 2005 11 01 | 291 | 0.4− | 0.1− | 2005 12 02 | 291 | 0.0 | 0.2+ |
| 2005 10 28 | G96 | 0.3− | 0.3− | 2005 11 01 | 291 | 0.6+ | 0.8− | 2005 12 02 | 291 | 0.1+ | 0.3+ |
| 2005 10 28 | G96 | 0.4+ | 0.1− | 2005 11 02 | 448 | 0.0 | 0.1− | 2005 12 02 | 291 | 0.1− | 0.1+ |
| 2005 10 28 | G96 | 0.0 | 0.0 | 2005 11 02 | 448 | 0.4− | 0.3+ | 2005 12 10 | 291 | 0.4+ | 0.0 |
| 2005 10 29 | 734 | 0.2+ | 0.7+ | 2005 11 02 | 448 | 0.9− | 0.8− | 2005 12 10 | 291 | 0.2− | 0.1+ |
| 2005 10 29 | 734 | 0.2− | 0.7− | 2005 11 06 | 291 | 0.5+ | 0.3+ | 2005 12 21 | 291 | 0.5+ | 0.2− |
| 2005 10 29 | 734 | 0.1− | 0.6+ | 2005 11 06 | 291 | 0.5+ | 0.4+ | 2005 12 21 | 291 | 0.1− | 0.2− |
| 2005 10 29 | 734 | (2.5+ | 0.5−) | 2005 11 06 | 291 | 0.2− | 0.1− | 2005 12 21 | 291 | 0.5+ | 0.3− |
| 2005 10 29 | G96 | 0.4+ | 0.0 | 2005 11 12 | 291 | 1.2− | 0.2+ | 2005 12 29 | 291 | 0.4− | 0.8− |
| 2005 10 29 | G96 | 0.2− | 0.0 | 2005 11 12 | 291 | 0.1+ | 0.4+ | 2005 12 29 | 291 | 0.4+ | 0.7+ |
| 2005 10 29 | G96 | 0.0 | 0.2− | 2005 11 12 | 291 | 0.2+ | 0.4− | 2005 12 29 | 291 | 0.4− | 1.1+ |
| 2005 10 29 | G96 | 0.2+ | 0.1− | 2005 11 13 | 291 | 0.3− | 0.3− | 2006 01 10 | 291 | 0.7+ | 0.6− |
| 2005 10 30 | G96 | 0.0 | 0.1− | 2005 11 13 | 291 | (1.6+ | 1.5−) | 2006 01 10 | 291 | 0.7− | 0.7− |
| 2005 10 30 | G96 | 0.1+ | 0.2+ | 2005 11 13 | 291 | 0.2− | 0.0 | 2006 10 20 | 474 | 0.5+ | 0.5+ |
| 2005 10 30 | G96 | 0.2− | 0.1+ | 2005 11 22 | 291 | 0.9− | 0.2+ | 2006 10 20 | 474 | 2.0− | 0.8+ |
| 2005 10 30 | G96 | 0.3+ | 0.2− | 2005 11 22 | 291 | 0.7+ | 0.1+ | 2006 10 20 | 474 | 0.8− | 1.1− |
| 2005 10 30 | 651 | 0.1+ | 0.3+ | 2005 11 22 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 474 | 1.6+ | 0.3− |
| 2005 10 30 | 651 | 0.1+ | 0.4+ | 2005 11 28 | 291 | 0.6− | 0.0 | 2006 10 20 | 474 | 0.6+ | 0.2+ |

**2005 UJ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.28099 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.89217147 | $\omega$ | 131.29649 | | −0.96644368 | | −0.13305136 |
| $a$ | 1.0686541 | $\Omega$ | 42.45803 | | −0.02516464 | | −0.80225607 |
| $e$ | 0.4161554 | $i$ | 18.99653 | | +0.25564301 | | −0.58196437 |
| $P$ | 1.10 | $H$ | 21.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 28 | 703 | 0.8+ | 0.6+ | 2005 10 30 | 651 | 0.5+ | 1.4+ | 2005 11 18 | F65 | 0.9− | 0.8− |
| 2005 10 28 | 703 | 0.6− | 1.1− | 2005 10 30 | 651 | 0.1+ | 0.3− | 2005 11 19 | 715 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 28 | 703 | 0.3− | 0.4+ | 2005 10 30 | 651 | (2.4+ | 1.1+) | 2005 11 19 | 715 | 0.6+ | 0.0 |
| 2005 10 28 | 703 | (0.1+ | 1.6+) | 2005 10 30 | G96 | 0.1+ | 0.1− | 2005 11 19 | 715 | 0.2− | 0.0 |
| 2005 10 28 | 703 | 0.1− | 0.7+ | 2005 10 30 | G96 | 0.2+ | 0.1+ | 2005 12 07 | 291 | 1.2+ | 0.3+ |
| 2005 10 28 | 703 | 0.3− | 1.3+ | 2005 10 30 | G96 | 0.1+ | 0.3+ | 2005 12 07 | 291 | 0.5− | 0.2− |
| 2005 10 28 | 703 | 0.4+ | 1.5− | 2005 10 30 | G96 | 0.3+ | 0.2+ | 2005 12 07 | 291 | 0.8− | 0.6− |
| 2005 10 28 | 703 | 0.5− | 0.1− | 2005 11 04 | 448 | 0.4− | 0.5+ | 2006 09 04 | 568 | 0.0 | 0.1− |
| 2005 10 29 | 734 | 0.8+ | 0.1+ | 2005 11 04 | 448 | 0.9+ | 0.5+ | 2006 09 04 | 568 | 0.0 | 0.0 |
| 2005 10 29 | 734 | 0.1− | 0.0 | 2005 11 04 | 448 | 0.3− | 0.8+ | 2006 10 25 | 568 | 0.1+ | 0.0 |
| 2005 10 29 | G96 | 0.7+ | 0.2+ | 2005 11 09 | J95 | 0.4− | 0.2− | 2006 10 25 | 568 | 0.0 | 0.1+ |
| 2005 10 29 | G96 | 0.4+ | 0.1+ | 2005 11 09 | J95 | 0.0 | 0.2− | 2006 10 25 | 568 | 0.1− | 0.0 |
| 2005 10 29 | G96 | 0.0 | 0.0 | 2005 11 09 | J95 | 0.3+ | 0.1− | | | | |
| 2005 10 29 | G96 | 0.2+ | 0.1+ | 2005 11 18 | F65 | 1.0− | 0.2− | | | | |

### 2005 UV$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.74664 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18402896 | $\omega$ | 245.00057 | | +0.96724763 | | −0.25181242 |
| $a$ | 3.0611077 | $\Omega$ | 129.56761 | | +0.24527464 | | +0.89474467 |
| $e$ | 0.1625296 | $i$ | 2.37738 | | +0.06536332 | | +0.36881225 |
| $P$ | 5.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 20 | 691 | 0.4− | 0.5+ | 2005 10 01 | 691 | 0.1− | 0.0 | 2005 10 22 | 703 | 0.1+ | 0.0 |
| 1999 07 20 | 691 | 0.3+ | 0.4− | 2005 10 05 | 704 | 0.9− | 0.7− | 2005 10 28 | 703 | 0.2+ | 0.1− |
| 1999 07 20 | 691 | 0.2+ | 0.5− | 2005 10 05 | 704 | 0.3+ | 0.6+ | 2005 10 28 | 703 | 0.3+ | 0.5+ |
| 2000 12 01 | 691 | 0.2+ | 0.4− | 2005 10 05 | 704 | 0.6− | 0.2+ | 2005 10 28 | 703 | 0.2+ | 0.4− |
| 2000 12 01 | 691 | 0.0 | 0.0 | 2005 10 05 | 704 | 0.6+ | 0.7+ | 2005 10 28 | 703 | 0.7− | 0.1+ |
| 2000 12 01 | 691 | 0.1− | 0.2− | 2005 10 05 | 704 | 0.2+ | 0.2− | 2005 10 31 | 704 | 0.7+ | 0.1+ |
| 2005 08 30 | 644 | 0.4+ | 0.3+ | 2005 10 12 | 691 | 0.1− | 0.2− | 2005 10 31 | 704 | 0.2+ | 0.3+ |
| 2005 08 30 | 644 | 0.0 | 0.3− | 2005 10 12 | 691 | 0.2− | 0.1− | 2005 10 31 | 704 | 0.2+ | 0.0 |
| 2005 08 30 | 644 | 0.6+ | 0.2+ | 2005 10 12 | 691 | 0.1− | 0.3− | 2005 10 31 | 704 | 0.4− | 0.7+ |
| 2005 10 01 | 704 | 0.4+ | 0.2− | 2005 10 21 | 644 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.2− |
| 2005 10 01 | 704 | 0.8+ | 1.2+ | 2005 10 21 | 644 | 0.2− | 0.1+ | 2005 12 01 | G96 | 0.3− | 0.0 |
| 2005 10 01 | 704 | 1.0− | 1.2+ | 2005 10 21 | 644 | 0.2− | 0.1+ | 2005 12 01 | G96 | 0.1− | 0.3− |
| 2005 10 01 | 704 | 0.2+ | 1.0+ | 2005 10 22 | 703 | 0.2− | 1.0− | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 2005 10 01 | 691 | 0.0 | 0.0 | 2005 10 22 | 703 | 1.3+ | 0.6+ | | | | |
| 2005 10 01 | 691 | 0.2− | 0.0 | 2005 10 22 | 703 | 0.2+ | 0.2− | | | | |

### 2005 UP$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.82208 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17512066 | $\omega$ | 260.80476 | | +0.80710652 | | +0.58201192 |
| $a$ | 3.1640582 | $\Omega$ | 63.54097 | | −0.48879749 | | +0.75294496 |
| $e$ | 0.1331960 | $i$ | 6.36200 | | −0.33114360 | | +0.30714168 |
| $P$ | 5.63 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.1+ | 0.5+ | 2005 10 24 | 699 | 0.4+ | 0.5− | 2005 11 03 | 704 | 0.3− | 0.3+ |
| 1997 03 02 | 691 | 0.4+ | 0.1− | 2005 10 24 | 699 | 0.5+ | 1.7+ | 2005 11 03 | 704 | 0.3− | 0.2+ |
| 1997 03 02 | 691 | 0.4− | 0.3− | 2005 10 24 | 699 | 1.2+ | 0.5− | 2005 11 03 | 704 | 0.1+ | 0.2+ |
| 2000 12 28 | 691 | 0.0 | 0.2+ | 2005 10 25 | 699 | 1.0− | 0.8+ | 2005 11 03 | 704 | 1.3− | 0.2+ |
| 2000 12 28 | 691 | 0.1+ | 0.4− | 2005 10 25 | 699 | 0.7− | 1.5− | 2005 11 03 | 704 | 0.7− | 0.2+ |
| 2000 12 28 | 691 | 0.1− | 0.0 | 2005 10 25 | 699 | (2.3+ | 0.2+) | 2005 11 05 | 699 | 0.7− | 0.9− |
| 2005 09 23 | 691 | 0.1− | 0.1− | 2005 10 25 | 699 | 1.2+ | 0.7+ | 2005 11 05 | 699 | (2.2− | 0.6+) |
| 2005 09 23 | 691 | 0.3+ | 0.2− | 2005 10 28 | 704 | 0.2− | 0.1+ | 2005 11 05 | 699 | 0.4− | 0.3+ |
| 2005 09 23 | 691 | 0.2+ | 0.0 | 2005 10 28 | 703 | 0.4+ | 0.4+ | 2005 11 05 | 699 | 1.7− | 0.7+ |
| 2005 10 01 | 703 | 0.5− | 0.1− | 2005 10 28 | 704 | 1.3− | 0.9+ | 2005 11 06 | 704 | 0.2+ | 0.3− |
| 2005 10 01 | 703 | 0.1− | 0.5+ | 2005 10 28 | 703 | 0.7+ | 0.7− | 2005 11 06 | 704 | 0.7+ | 0.7− |
| 2005 10 01 | 703 | 0.2− | 0.3− | 2005 10 28 | 703 | 1.6− | 0.4− | 2005 11 06 | 704 | 0.5+ | 0.1+ |
| 2005 10 01 | 703 | 0.7+ | 0.8− | 2005 10 28 | 704 | 1.3− | 0.4− | 2005 11 07 | 704 | 1.0+ | 0.1− |
| 2005 10 01 | 691 | 0.1+ | 0.1− | 2005 10 28 | 703 | 0.8− | 0.2− | 2005 11 07 | 704 | 1.0+ | 0.5− |
| 2005 10 01 | 691 | 0.2+ | 0.0 | 2005 10 29 | A50 | 0.2− | 0.4+ | 2005 11 07 | 704 | 0.6− | 0.7+ |
| 2005 10 01 | 691 | 0.1+ | 0.0 | 2005 10 29 | A50 | 0.7+ | 0.1− | 2005 11 07 | 704 | 0.4+ | 0.2− |
| 2005 10 12 | 691 | 0.2+ | 0.1+ | 2005 10 29 | A50 | 0.4+ | 0.4− | 2005 11 09 | 703 | 0.5+ | 0.7+ |
| 2005 10 12 | 691 | 0.1+ | 0.0 | 2005 10 29 | A50 | 0.1− | 0.6− | 2005 11 09 | 703 | 0.1− | 0.7− |
| 2005 10 12 | 691 | 0.2+ | 0.3+ | 2005 10 29 | A50 | 0.1− | 0.4− | 2005 11 09 | 703 | 0.8− | 0.8− |
| 2005 10 22 | 703 | 1.0− | 0.4− | 2005 10 30 | A50 | 0.3+ | 0.2− | 2005 11 09 | 703 | 0.5− | 0.2+ |
| 2005 10 22 | 703 | 0.8− | 0.4+ | 2005 10 30 | A50 | 0.1+ | 0.1− | 2005 12 01 | G96 | 0.2+ | 0.1+ |
| 2005 10 22 | 703 | 0.0 | 0.2+ | 2005 10 30 | A50 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.1− | 0.1− |
| 2005 10 22 | 703 | 0.1+ | 0.1+ | 2005 10 30 | A50 | 0.1− | 0.4+ | 2005 12 01 | G96 | 0.4+ | 0.2+ |
| 2005 10 24 | 699 | 0.5+ | 1.0+ | 2005 10 30 | A50 | 0.6− | 0.4+ | | | | |

### 2005 UP$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.42433 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17036317 | $\omega$ | 157.04216 | | −0.77803893 | | +0.62651869 |
| $a$ | 3.2226928 | $\Omega$ | 61.83345 | | −0.58419452 | | −0.69454892 |
| $e$ | 0.0618966 | $i$ | 3.00071 | | −0.23102420 | | −0.35366103 |
| $P$ | 5.79 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 01 | G96 | 0.4+ | 0.6− | 2005 10 25 | G96 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2005 10 01 | G96 | 0.3− | 0.2− | 2005 10 31 | 691 | 0.4+ | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2005 10 01 | G96 | 0.6+ | 0.3− | 2005 10 31 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2005 10 01 | G96 | 0.2− | 0.7− | 2005 10 31 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.4+ |
| 2005 10 22 | 691 | 0.2− | 0.0 | 2005 11 04 | 691 | 0.3− | 0.3+ | 2006 11 22 | G96 | 0.2− | 0.4− |
| 2005 10 22 | 691 | 0.2+ | 0.0 | 2005 11 04 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.3+ |
| 2005 10 22 | 691 | 0.1− | 0.1+ | 2005 11 04 | 691 | 0.2− | 0.9+ | 2006 12 01 | G96 | 0.4+ | 0.2− |
| 2005 10 25 | G96 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.6− | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.2+ |
| 2005 10 25 | G96 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.4+ | 0.1− | 2006 12 01 | G96 | 0.5− | 0.0 |
| 2005 10 25 | G96 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.5− | 0.3− | | | | |

### 2005 UH$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.86452 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26268866 | $\omega$ | 309.87600 | | +0.94937750 | | −0.31210554 |
| $a$ | 2.4145813 | $\Omega$ | 68.33664 | | +0.29866275 | | +0.86157032 |
| $e$ | 0.1995823 | $i$ | 2.19973 | | +0.09738033 | | +0.40035824 |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.1+ | 0.0 | 2005 10 28 | 704 | 0.3− | 0.6+ | 2005 11 04 | 683 | 0.3+ | 0.8+ |
| 2001 08 25 | 704 | 0.9− | 0.5+ | 2005 10 28 | 704 | 0.2− | 0.4+ | 2005 11 04 | 683 | 0.6− | 0.7+ |
| 2001 08 25 | 704 | 0.1+ | 0.2+ | 2005 10 28 | 683 | 1.5− | 1.0− | 2005 11 05 | 699 | 0.2+ | 1.8− |
| 2001 08 25 | 704 | 0.6− | 0.3+ | 2005 10 28 | G96 | 0.1+ | 0.2− | 2005 11 05 | 704 | 0.8+ | 0.3+ |
| 2001 09 12 | 704 | 0.7+ | 0.6− | 2005 10 28 | G96 | 0.1− | 0.1− | 2005 11 05 | 699 | 0.3+ | 0.4− |
| 2001 09 12 | 704 | 1.3+ | 0.4+ | 2005 10 28 | 704 | 0.0 | 0.5+ | 2005 11 05 | 704 | 0.4− | 0.2− |
| 2001 09 12 | 704 | 0.5+ | 0.7− | 2005 10 28 | 683 | 0.1− | 0.1− | 2005 11 05 | 704 | 1.6− | 0.7− |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2005 10 28 | G96 | 0.1− | 0.2− | 2005 11 05 | 699 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2005 10 28 | G96 | 0.1+ | 0.2− | 2005 11 05 | 704 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.5− | 2005 10 28 | 704 | 0.8− | 1.3+ | 2005 11 05 | 704 | 0.3− | 0.2+ |
| 2005 10 22 | 691 | 0.2+ | 0.3+ | 2005 10 29 | 683 | 0.8− | 1.5− | 2005 11 09 | 599 | 0.5+ | 0.2+ |
| 2005 10 22 | 691 | 0.0 | 0.3+ | 2005 10 29 | 683 | 0.7− | 1.0− | 2005 11 09 | 599 | 0.4+ | 0.2+ |
| 2005 10 22 | 691 | 0.2+ | 0.2+ | 2005 10 29 | 683 | 0.5− | 1.5− | 2005 11 09 | 599 | 0.5+ | 0.3+ |
| 2005 10 23 | 703 | 0.4+ | 0.3− | 2005 10 30 | 683 | 1.0+ | 0.1− | 2005 11 09 | 599 | 0.4+ | 0.4+ |
| 2005 10 23 | 703 | 0.2− | 0.0 | 2005 10 30 | 683 | 1.1+ | 0.2+ | 2005 11 10 | 683 | 0.2+ | 1.0+ |
| 2005 10 23 | 703 | 0.1− | 0.9− | 2005 10 31 | 691 | 0.0 | 0.2+ | 2005 11 10 | 683 | 1.2− | 1.0+ |
| 2005 10 23 | 703 | 0.0 | 0.2+ | 2005 10 31 | 691 | 0.1− | 0.2+ | 2005 11 25 | 703 | 1.2− | 0.2+ |
| 2005 10 24 | 699 | 0.3− | 1.5+ | 2005 10 31 | 691 | 0.0 | 0.2+ | 2005 11 25 | 703 | 0.3− | 0.5− |
| 2005 10 24 | 699 | 0.1− | 0.1− | 2005 10 31 | 683 | 0.1+ | 0.0 | 2005 11 25 | 703 | (2.1− | 2.1−) |
| 2005 10 24 | 699 | 0.3− | 0.5+ | 2005 10 31 | 683 | 1.0+ | 0.1− | 2005 11 25 | 703 | (1.3− | 2.2−) |
| 2005 10 24 | 699 | 1.2+ | 0.1+ | 2005 10 31 | 683 | 0.5− | 0.2+ | 2005 11 28 | G96 | 0.2− | 0.3− |
| 2005 10 25 | 699 | 0.0 | 0.3− | 2005 10 31 | 704 | 0.4+ | 0.2+ | 2005 11 28 | G96 | 0.1− | 0.1− |
| 2005 10 25 | 699 | 0.3+ | 0.1− | 2005 10 31 | 704 | 0.3− | 0.7+ | 2005 11 28 | G96 | 0.2+ | 0.3− |
| 2005 10 25 | 699 | 0.8− | 0.9+ | 2005 10 31 | 704 | 0.1− | 0.5+ | 2005 11 28 | G96 | 0.2− | 0.1+ |
| 2005 10 25 | 683 | 0.1− | 0.7− | 2005 10 31 | 704 | 0.1+ | 0.4+ | 2005 11 29 | G96 | 0.4− | 0.0 |
| 2005 10 25 | 699 | 0.1+ | 0.1+ | 2005 10 31 | 704 | 0.2+ | 0.3+ | 2005 11 29 | G96 | 0.3+ | 0.0 |
| 2005 10 25 | 683 | 1.2− | 1.6− | 2005 11 03 | 704 | 0.6+ | 0.1+ | 2005 11 29 | G96 | 0.1+ | 0.0 |
| 2005 10 25 | 683 | (0.8+ | 2.8−) | 2005 11 03 | 704 | 0.2− | 1.0+ | 2005 12 04 | G96 | 0.4− | 0.1− |
| 2005 10 26 | 683 | 1.1+ | 1.9− | 2005 11 03 | 704 | 0.3+ | 0.1+ | 2005 12 04 | G96 | 0.1+ | 0.1− |
| 2005 10 26 | 683 | 0.7+ | 1.7− | 2005 11 03 | 704 | 0.1− | 0.8+ | 2005 12 04 | G96 | 1.1− | 0.2+ |
| 2005 10 26 | 683 | 0.9+ | 0.7− | 2005 11 03 | 704 | 0.3− | 0.3+ | 2005 12 04 | G96 | 0.6− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 27 | 683 | 0.7+ | 0.4− | 2005 11 04 | 691 | 0.2− | 0.1+ | 2006 01 05 | G96 | 0.5+ | 0.4− |
| 2005 10 27 | 683 | 1.2+ | 0.9− | 2005 11 04 | 691 | 0.1− | 0.0 | 2006 01 05 | G96 | 0.1+ | 0.1− |
| 2005 10 27 | 683 | 1.1+ | 0.0 | 2005 11 04 | 691 | 0.0 | 0.2− | 2006 01 05 | G96 | 0.8+ | 0.2− |
| 2005 10 28 | 683 | 0.4− | 0.6− | 2005 11 04 | 683 | 0.0 | 0.5− | 2006 01 05 | G96 | 0.4+ | 0.0 |

**2005 UZ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.90565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23443381 | $\omega$ | 54.54171 | | +0.59946608 | +0.78452181 | |
| $a$ | 2.6048889 | $\Omega$ | 253.06621 | | −0.77754945 | +0.52377849 | |
| $e$ | 0.0395554 | $i$ | 9.54532 | | −0.18988753 | +0.33193618 | |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 09 | 691 | 0.1+ | 0.2+ | 2005 08 30 | 291 | 0.0 | 0.2+ | 2005 11 02 | 704 | 1.5− | 1.4− |
| 1996 09 09 | 691 | 0.1− | 0.0 | 2005 08 30 | 291 | 1.2− | 0.4+ | 2005 11 02 | 704 | 0.0 | 0.1− |
| 1996 09 09 | 691 | 0.1− | 0.0 | 2005 10 22 | 691 | 0.1− | 0.5− | 2005 11 02 | 704 | 0.7+ | 0.4+ |
| 2001 11 19 | 704 | 0.0 | 0.2− | 2005 10 22 | 691 | 0.5+ | 0.3− | 2005 11 02 | 704 | 0.2+ | 0.4− |
| 2001 11 19 | 704 | 0.0 | 0.4+ | 2005 10 22 | 691 | 0.4+ | 0.2− | 2005 11 02 | 704 | 0.1− | 0.3− |
| 2001 11 19 | 704 | 0.0 | 0.2− | 2005 10 23 | 703 | 0.3+ | 0.1+ | 2005 11 02 | 704 | 0.6+ | 0.8+ |
| 2001 11 19 | 704 | 0.3+ | 0.5− | 2005 10 23 | 703 | 0.8− | 0.9+ | 2005 11 02 | 704 | 0.8− | 0.4+ |
| 2001 12 10 | 704 | 0.0 | 0.4+ | 2005 10 23 | 703 | 0.1+ | 0.5+ | 2005 11 03 | 704 | 0.9+ | 0.6+ |
| 2001 12 10 | 704 | 0.5− | 0.8− | 2005 10 23 | 703 | 1.0+ | 0.6− | 2005 11 03 | 704 | 0.1− | 0.2− |
| 2001 12 10 | 704 | 0.2+ | 0.8+ | 2005 10 27 | 691 | 0.2+ | 0.2− | 2005 11 03 | 704 | 0.4+ | 1.9− |
| 2001 12 10 | 704 | 1.1− | 0.7+ | 2005 10 27 | 691 | 0.2+ | 0.2− | 2005 11 03 | 704 | 0.8+ | 0.3+ |
| 2001 12 18 | 704 | 0.6− | 0.4+ | 2005 10 27 | 691 | 0.2+ | 0.1− | 2005 11 07 | 704 | 1.8− | 0.5+ |
| 2001 12 18 | 704 | 0.1− | 0.5+ | 2005 10 29 | 703 | 0.3− | 0.2− | 2005 11 07 | 704 | 2.0− | 0.4+ |
| 2001 12 18 | 704 | 0.6− | 0.5+ | 2005 10 29 | 703 | 0.6− | 0.3− | 2005 11 07 | 704 | 1.5− | 0.1− |
| 2001 12 18 | 704 | 0.0 | 1.2+ | 2005 10 29 | 703 | 0.1− | 0.5− | 2005 11 07 | 704 | 1.9− | 0.1+ |
| 2001 12 18 | 704 | 0.8− | 0.9+ | 2005 10 29 | 703 | 0.1+ | 0.4− | 2006 01 27 | G96 | 0.3+ | 0.4− |
| 2002 01 17 | 691 | 0.4+ | 0.0 | 2005 10 30 | 704 | 0.7+ | 1.2+ | 2006 01 27 | G96 | 0.4+ | 0.3− |
| 2002 01 17 | 691 | 0.0 | 0.1− | 2005 10 30 | 704 | 1.0+ | 0.7+ | 2006 01 27 | G96 | 0.3+ | 0.3− |
| 2002 01 17 | 691 | 0.4+ | 0.1− | 2005 10 30 | 704 | 0.7+ | 0.1− | 2006 01 27 | G96 | 0.3+ | 0.2+ |
| 2005 08 30 | 291 | 0.7+ | 0.2+ | 2005 10 30 | 704 | (2.1+ | 0.8+) | | | | |

**2005 UF$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.37140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18552802 | $\omega$ | 113.47210 | | +0.99116821 | +0.00593959 | |
| $a$ | 3.0445963 | $\Omega$ | 246.40726 | | −0.05113863 | +0.93884731 | |
| $e$ | 0.0502991 | $i$ | 8.31185 | | +0.12235369 | +0.34428252 | |
| $P$ | 5.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 691 | 0.1− | 0.2− | 2005 10 28 | A39 | 0.2+ | 0.5− | 2005 11 07 | 704 | 0.2− | 0.3− |
| 2000 11 30 | 691 | 0.1− | 0.2− | 2005 10 29 | 703 | 0.2+ | 0.3− | 2005 11 07 | 704 | 0.2− | 1.6+ |
| 2000 11 30 | 691 | 0.2+ | 0.4+ | 2005 10 29 | 703 | 0.3− | 0.1+ | 2005 11 25 | 703 | 0.4− | 0.0 |
| 2004 06 16 | 691 | 0.1− | 0.0 | 2005 10 29 | 703 | 0.3+ | 1.5− | 2005 11 25 | 703 | 1.0− | 1.5+ |
| 2004 06 16 | 691 | 0.1+ | 0.1+ | 2005 10 29 | 703 | 0.0 | 0.6− | 2005 11 25 | 703 | 0.0 | 1.2+ |
| 2004 06 16 | 691 | 0.0 | 0.1− | 2005 10 31 | 691 | 0.1+ | 0.2− | 2005 11 25 | 703 | 0.1− | 0.7+ |
| 2005 10 22 | 691 | 0.1− | 0.1+ | 2005 10 31 | 691 | 0.1+ | 0.2− | 2006 01 06 | G96 | 0.4− | 0.3− |
| 2005 10 22 | 691 | 0.2+ | 0.1+ | 2005 10 31 | 691 | 0.2+ | 0.2− | 2006 01 06 | G96 | 0.4+ | 0.3− |
| 2005 10 22 | 691 | 0.1− | 0.0 | 2005 11 05 | 699 | 1.2− | 0.2− | 2006 01 06 | G96 | 1.1+ | 0.8− |
| 2005 10 23 | 703 | 0.2+ | 0.8+ | 2005 11 05 | 699 | 1.6− | 1.6+ | 2006 01 06 | G96 | 0.3+ | 0.3− |
| 2005 10 23 | 703 | 0.8+ | 0.6+ | 2005 11 05 | 699 | 1.0+ | 0.7− | 2006 01 23 | G96 | 0.0 | 0.1− |
| 2005 10 23 | 703 | 0.2− | 1.7+ | 2005 11 05 | 699 | 0.7+ | 0.5+ | 2006 01 23 | G96 | 0.3− | 0.2+ |
| 2005 10 23 | 703 | 1.4+ | 0.5− | 2005 11 07 | 704 | 0.4− | 0.4− | 2006 01 23 | G96 | 0.1+ | 0.0 |
| 2005 10 28 | A39 | 0.4− | 0.7− | 2005 11 07 | 704 | 1.1− | 0.0 | 2006 01 23 | G96 | 0.5− | 0.3− |
| 2005 10 28 | A39 | 0.2− | 1.0− | 2005 11 07 | 704 | 0.5+ | 0.1+ | | | | |

**2005 UP$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.49773 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21869533 | $\omega$ | 197.73157 | | +0.44886083 | −0.88877385 | |
| $a$ | 2.7284104 | $\Omega$ | 225.71561 | | +0.83476155 | +0.45408579 | |
| $e$ | 0.1545732 | $i$ | 7.44524 | | +0.31889984 | +0.06234688 | |
| $P$ | 4.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 04 | 691 | 0.3+ | 0.2− | 2005 11 01 | 691 | 0.2− | 0.1− | 2005 11 29 | 703 | 0.1− | 1.6− |
| 2000 10 04 | 691 | 0.2− | 0.2+ | 2005 11 01 | 704 | 0.6+ | 0.1− | 2005 11 29 | 703 | 0.2− | 0.6− |
| 2000 10 04 | 691 | 0.2− | 0.5+ | 2005 11 01 | 704 | 0.7− | 1.1+ | 2005 11 30 | 691 | 0.2+ | 0.2+ |
| 2003 04 25 | 691 | 0.4+ | 1.2+ | 2005 11 01 | 704 | 0.5− | 0.4− | 2005 11 30 | 691 | 0.0 | 0.0 |
| 2003 04 25 | 691 | 0.3+ | 1.5+ | 2005 11 01 | 704 | 1.0− | 0.4+ | 2005 11 30 | 691 | 0.1− | 0.2+ |
| 2003 04 25 | 691 | 0.4+ | 1.8+ | 2005 11 01 | 704 | 0.6− | 0.4+ | 2005 11 30 | 691 | 0.1− | 0.3+ |
| 2005 10 23 | 691 | 0.2+ | 0.2+ | 2005 11 03 | G96 | 0.2− | 0.2− | 2005 11 30 | 691 | 0.2− | 0.1+ |
| 2005 10 23 | 691 | 0.2+ | 0.3+ | 2005 11 03 | G96 | 0.1+ | 0.3− | 2005 11 30 | 691 | 0.3− | 0.3− |
| 2005 10 23 | 691 | 0.2+ | 0.3+ | 2005 11 03 | G96 | 0.0 | 0.1− | 2005 12 02 | 691 | 0.4+ | 0.1+ |
| 2005 10 23 | 644 | 0.2+ | 0.3− | 2005 11 03 | G96 | 0.3+ | 0.2− | 2005 12 02 | 691 | 0.0 | 0.3+ |
| 2005 10 23 | 644 | 0.1+ | 0.2+ | 2005 11 04 | 704 | 0.0 | 0.2− | 2005 12 02 | 691 | 0.0 | 0.3+ |
| 2005 10 23 | 644 | 0.2+ | 0.4+ | 2005 11 04 | 704 | 0.7+ | 0.2− | 2005 12 02 | G96 | 0.2− | 0.4− |
| 2005 10 23 | 703 | 0.8+ | 0.2+ | 2005 11 04 | 704 | 0.6− | 0.1+ | 2005 12 02 | G96 | 0.1− | 0.2− |
| 2005 10 23 | 703 | 0.1− | 0.6+ | 2005 11 04 | 704 | (0.9− | 3.5+) | 2005 12 02 | G96 | 0.2+ | 0.4− |
| 2005 10 23 | 703 | 0.1− | 0.1+ | 2005 11 05 | 691 | 0.0 | 0.1− | 2005 12 02 | G96 | 0.2− | 0.2− |
| 2005 10 23 | 703 | 1.6+ | 0.5+ | 2005 11 05 | 691 | 0.0 | 0.0 | 2005 12 02 | G96 | 0.0 | 0.3− |
| 2005 10 24 | 691 | 0.1+ | 0.2+ | 2005 11 05 | 691 | 0.0 | 0.2− | 2005 12 02 | G96 | 0.2+ | 0.2− |
| 2005 10 24 | 691 | 0.1− | 0.0 | 2005 11 06 | 704 | 0.1+ | 0.3+ | 2005 12 02 | G96 | 0.1− | 0.1− |
| 2005 10 24 | 691 | 0.3− | 0.1+ | 2005 11 06 | 704 | 0.3+ | 0.1− | 2005 12 02 | G96 | 0.1+ | 0.0 |
| 2005 10 28 | 691 | 0.0 | 0.5+ | 2005 11 06 | 704 | 0.4− | 0.6+ | 2005 12 04 | 691 | 0.2− | 0.1+ |
| 2005 10 28 | 691 | 0.6− | 0.2+ | 2005 11 06 | 704 | 0.0 | 0.2+ | 2005 12 04 | 691 | 1.0− | 0.7− |
| 2005 10 28 | 691 | 0.2+ | 0.2+ | 2005 11 06 | 704 | 0.7+ | 0.2− | 2005 12 04 | 691 | 0.3+ | 1.0+ |
| 2005 10 29 | A50 | 0.2− | 2.0+ | 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 31 | G96 | 0.8+ | 0.1− |
| 2005 10 30 | 703 | 0.2+ | 0.6− | 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 31 | G96 | 1.1− | 0.0 |
| 2005 10 30 | 703 | 1.4+ | 0.0 | 2005 11 26 | G96 | 0.0 | 0.3− | 2005 12 31 | G96 | 0.3− | 0.2− |
| 2005 10 30 | 703 | 0.8− | 0.0 | 2005 11 26 | G96 | 0.0 | 0.2+ | 2005 12 31 | G96 | 0.1− | 0.0 |
| 2005 10 30 | 703 | 0.4+ | 0.2− | 2005 11 28 | 691 | 0.1− | 0.0 | 2006 01 28 | G96 | 0.0 | 0.5− |
| 2005 10 31 | A50 | 0.4+ | 1.0+ | 2005 11 28 | 691 | 0.3− | 0.4+ | 2006 01 28 | G96 | 0.8+ | 0.5− |
| 2005 10 31 | A50 | 0.9+ | 0.3− | 2005 11 28 | 691 | 0.1− | 0.3+ | 2006 01 28 | G96 | 0.4− | 0.2− |
| 2005 11 01 | 691 | 0.0 | 0.1+ | 2005 11 29 | 703 | 0.5+ | 0.2− | 2006 01 28 | G96 | 0.1− | 0.1− |
| 2005 11 01 | 691 | 0.1− | 0.1+ | 2005 11 29 | 703 | 0.1− | 1.4− | | | | |

**2005 UF$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.56771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21759833 | $\omega$ | 349.64863 | | +0.54910718 | −0.83472497 | |
| $a$ | 2.7375728 | $\Omega$ | 67.03410 | | +0.76996679 | +0.48599054 | |
| $e$ | 0.0752921 | $i$ | 2.57830 | | +0.32501145 | +0.25893517 | |
| $P$ | 4.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.2− | 0.1− | 2005 11 25 | G96 | 0.2− | 0.1+ |
| 1998 02 23 | 691 | 0.1+ | 0.2− | 2005 10 25 | G96 | 0.2+ | 0.0 | 2005 11 25 | G96 | 0.1− | 0.1− |
| 2000 10 01 | 691 | 0.4− | 0.1+ | 2005 10 25 | G96 | 0.1+ | 0.0 | 2005 11 25 | G96 | 0.0 | 0.4− |
| 2000 10 01 | 691 | 0.6− | 0.1+ | 2005 11 01 | 691 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.1− | 0.1− |
| 2000 10 01 | 691 | 0.3− | 0.1+ | 2005 11 01 | 691 | 0.3+ | 0.2+ | 2005 12 02 | G96 | 0.2− | 0.1− |
| 2000 10 01 | 691 | 0.4+ | 0.0 | 2005 11 01 | 691 | 0.0 | 0.2+ | 2005 12 02 | G96 | 0.0 | 0.1+ |
| 2000 10 01 | 691 | 0.5+ | 0.2− | 2005 11 21 | 691 | 0.1− | 0.3+ | 2005 12 02 | G96 | 0.2+ | 0.1− |
| 2000 10 01 | 691 | 0.5+ | 0.2− | 2005 11 21 | 691 | 0.1+ | 0.1− | 2005 12 02 | G96 | 0.3+ | 0.1− |
| 2005 10 24 | 691 | 0.1− | 0.0 | 2005 11 21 | 691 | 0.2− | 0.0 | 2005 12 31 | G96 | 0.2− | 0.4− |
| 2005 10 24 | 691 | 0.4− | 0.2+ | 2005 11 25 | G96 | 0.2+ | 0.1− | 2005 12 31 | G96 | 0.0 | 0.2− |
| 2005 10 24 | 691 | 0.2− | 0.1− | 2005 11 25 | G96 | 0.2+ | 0.2− | 2005 12 31 | G96 | 0.0 | 0.3− |
| 2005 10 25 | G96 | 0.3+ | 0.2− | 2005 11 25 | G96 | 0.3+ | 0.2− | 2005 12 31 | G96 | 0.7+ | 0.1+ |

**2005 UU$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 184.57169 | | (2000.0) | | | |
| $n$ | 0.19675630 | $\omega$ | 172.30698 | | +0.20040733 | +0.97854451 |
| $a$ | 2.9276351 | $\Omega$ | 109.24431 | | −0.90154478 | +0.20330609 |
| $e$ | 0.0248649 | $i$ | 2.90379 | | −0.38347608 | +0.03342567 |
| $P$ | 5.01 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 691 | 0.0 | 0.0 | 2002 02 07 | 691 | 0.0 | 0.3− | 2005 10 27 | 691 | 0.0 | 0.3+ |
| 2002 01 14 | 691 | 0.0 | 0.0 | 2005 10 22 | 691 | 0.2− | 0.3+ | 2005 10 27 | 691 | 0.0 | 0.3− |
| 2002 01 14 | 691 | 0.2+ | 0.1+ | 2005 10 22 | 691 | 0.2+ | 0.0 | 2005 11 01 | 691 | 0.2− | 0.2− |
| 2002 01 21 | 291 | 0.0 | 0.1− | 2005 10 22 | 691 | 0.1− | 0.1− | 2005 11 01 | 691 | 0.2− | 0.2− |
| 2002 01 21 | 291 | 0.2− | 0.1− | 2005 10 25 | 691 | 0.2+ | 0.2+ | 2005 11 01 | 691 | 0.2+ | 0.3+ |
| 2002 01 21 | 291 | 0.2− | 0.1− | 2005 10 25 | 691 | 0.4+ | 0.1+ | 2005 11 05 | 691 | 0.3+ | 0.0 |
| 2002 02 07 | 691 | 0.3+ | 0.3+ | 2005 10 25 | 691 | 0.1− | 0.2− | 2005 11 05 | 691 | 0.4− | 0.1− |
| 2002 02 07 | 691 | 0.1− | 0.3+ | 2005 10 27 | 691 | 0.3− | 0.2− | 2005 11 05 | 691 | 0.1+ | 0.1+ |

**2005 UA$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 105.93748 | | (2000.0) | | | |
| $n$ | 0.22938986 | $\omega$ | 146.50650 | | +0.99490096 | −0.09916630 |
| $a$ | 2.6429355 | $\Omega$ | 219.19752 | | +0.08496748 | +0.92233978 |
| $e$ | 0.1719266 | $i$ | 1.66726 | | +0.05433781 | +0.37343725 |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 17 | 566 | 0.2− | 0.6+ | 2005 11 03 | 704 | 0.8+ | 0.0 | 2005 11 29 | G96 | 0.0 | 0.3− |
| 1996 09 17 | 566 | 0.1− | 0.8+ | 2005 11 03 | 704 | 0.7− | 0.2+ | 2005 11 29 | G96 | 0.3+ | 0.3− |
| 1996 09 17 | 566 | 0.4− | 0.4+ | 2005 11 03 | 704 | 0.1− | 0.7− | 2005 12 04 | 704 | 0.0 | 0.0 |
| 2003 03 12 | 291 | 0.2+ | 0.3+ | 2005 11 05 | 691 | 0.2− | 0.1+ | 2005 12 04 | 704 | 0.1+ | 0.6+ |
| 2003 03 12 | 291 | 0.3+ | 0.6+ | 2005 11 05 | 691 | 0.0 | 0.1+ | 2005 12 04 | 704 | 0.5− | 0.1− |
| 2003 03 12 | 291 | 0.1− | 0.1− | 2005 11 05 | 691 | 0.0 | 0.0 | 2005 12 04 | 704 | 0.4− | 0.2− |
| 2005 10 23 | 703 | 0.0 | 0.5− | 2005 11 07 | 704 | 0.4+ | 0.3+ | 2005 12 04 | G96 | 0.1− | 0.2− |
| 2005 10 23 | 703 | 0.4− | 0.7− | 2005 11 07 | 704 | 0.4− | 0.2− | 2005 12 04 | 704 | 0.1+ | 1.1− |
| 2005 10 23 | 703 | 0.2− | 0.7− | 2005 11 07 | 704 | 0.3− | 0.2+ | 2005 12 04 | G96 | 0.1+ | 0.2− |
| 2005 10 23 | 703 | 0.4+ | 0.1+ | 2005 11 11 | 691 | 0.4− | 0.1− | 2005 12 04 | G96 | 0.4+ | 0.2− |
| 2005 10 26 | 699 | 0.8+ | 1.4+ | 2005 11 11 | 691 | 0.3− | 0.1+ | 2005 12 04 | G96 | 0.1+ | 0.2− |
| 2005 10 26 | 699 | 1.4+ | 0.6+ | 2005 11 11 | 691 | 0.3− | 0.1+ | 2005 12 08 | 691 | 0.6− | 0.4+ |
| 2005 10 26 | 699 | 1.2+ | 1.3+ | 2005 11 19 | 151 | 1.7− | 0.7− | 2005 12 08 | 691 | 0.1+ | 0.1+ |
| 2005 10 26 | 691 | 0.1+ | 0.1+ | 2005 11 19 | 151 | 0.1− | 0.2− | 2005 12 08 | 691 | 0.0 | 0.2+ |
| 2005 10 26 | 699 | 0.2+ | 0.1− | 2005 11 25 | G96 | 0.3+ | 0.3− | 2006 01 21 | G96 | 0.4− | 0.0 |
| 2005 10 26 | 691 | 0.1+ | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.8− | 2006 01 21 | G96 | 0.0 | 0.4− |
| 2005 10 26 | 691 | 0.1+ | 0.2− | 2005 11 25 | G96 | 0.1+ | 0.3− | 2006 01 21 | G96 | 0.0 | 0.3− |
| 2005 10 28 | 704 | 0.2+ | 1.0+ | 2005 11 25 | G96 | 0.1+ | 0.4− | 2006 01 21 | G96 | 0.2− | 0.3− |
| 2005 10 28 | 704 | 0.7+ | 0.4+ | 2005 11 29 | 699 | 1.1+ | 0.1− | 2006 02 25 | G96 | 0.8− | 0.1− |
| 2005 10 28 | 704 | 0.1+ | 1.1+ | 2005 11 29 | 699 | 0.8+ | 0.2− | 2006 02 25 | G96 | 0.6+ | 0.3+ |
| 2005 10 31 | 704 | 0.2+ | 0.2+ | 2005 11 29 | 699 | 0.3− | 0.3− | 2006 02 25 | G96 | 1.1+ | 0.5+ |
| 2005 10 31 | 704 | 0.5+ | 0.5+ | 2005 11 29 | 699 | 0.1+ | 0.4− | 2006 02 25 | G96 | 0.5− | 0.5− |
| 2005 10 31 | 704 | 0.4− | 0.6− | 2005 11 29 | G96 | 0.0 | 0.3− | | | | |
| 2005 10 31 | 704 | 0.5+ | 0.4+ | 2005 11 29 | G96 | 0.3+ | 0.2− | | | | |

**2005 UY$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 125.95503 | | (2000.0) | | | |
| $n$ | 0.22374780 | $\omega$ | 336.47610 | | +0.95574052 | +0.29382713 |
| $a$ | 2.6871807 | $\Omega$ | 6.49176 | | −0.24441679 | +0.82137104 |
| $e$ | 0.0182978 | $i$ | 7.63542 | | −0.16376961 | +0.48889185 |
| $P$ | 4.40 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 699 | 0.2+ | 0.2+ | 2005 10 23 | 644 | 0.0 | 0.0 | 2005 11 02 | G96 | 0.0 | 0.3− |
| 2003 03 10 | 699 | (2.0+ | 2.8−) | 2005 10 24 | 699 | 0.1− | 0.2+ | 2005 11 02 | G96 | 0.1+ | 0.1− |
| 2003 03 10 | 699 | 0.2− | 0.9− | 2005 10 24 | 699 | 0.0 | 0.5+ | 2005 11 02 | G96 | 0.3− | 0.3− |
| 2003 03 10 | 699 | 0.3− | 1.0− | 2005 10 24 | 699 | (0.9− | 2.4−) | 2005 11 02 | G96 | 0.1+ | 0.3− |
| 2003 03 24 | 691 | 0.1+ | 0.2+ | 2005 10 24 | 699 | 0.3+ | 0.2− | 2005 11 02 | G96 | 0.2+ | 0.3− |
| 2003 03 24 | 691 | 0.1+ | 0.4+ | 2005 10 25 | 691 | 0.0 | 0.2+ | 2005 11 02 | G96 | 0.2− | 0.4− |
| 2003 03 24 | 691 | 0.3+ | 0.2− | 2005 10 25 | 691 | 0.0 | 0.1+ | 2005 11 02 | G96 | 0.3+ | 0.3− |
| 2003 04 07 | 691 | 0.0 | 0.1+ | 2005 10 25 | 691 | 0.0 | 0.0 | 2005 11 07 | 704 | 0.4− | 0.3− |
| 2003 04 07 | 691 | 0.1− | 0.1+ | 2005 11 02 | 704 | 0.9− | 1.7+ | 2005 11 07 | 704 | 0.2− | 0.4− |
| 2003 04 07 | 691 | 0.3− | 0.1− | 2005 11 02 | 704 | 1.4+ | 1.0+ | 2005 11 07 | 704 | 0.4+ | 0.7− |
| 2005 10 23 | 644 | 0.4− | 0.4+ | 2005 11 02 | 704 | 0.6+ | 0.7+ | 2005 11 07 | 704 | 0.3− | 0.7− |
| 2005 10 23 | 644 | 0.2− | 0.4+ | 2005 11 02 | G96 | 0.2− | 0.2− | 2005 11 07 | 704 | 0.4− | 1.2− |

**2005 UA$_{61}$ = 1997 TG$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 186.56227 | | (2000.0) | | | |
| $n$ | 0.25942638 | $\omega$ | 71.03910 | | +0.35797218 | +0.93349869 |
| $a$ | 2.4347813 | $\Omega$ | 219.95633 | | −0.86845108 | +0.32464569 |
| $e$ | 0.1540124 | $i$ | 1.86351 | | −0.34299948 | +0.15226746 |
| $P$ | 3.80 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 0.1+ | 0.2− | 2001 10 16 | 691 | 0.0 | 0.0 | 2005 11 05 | 691 | 0.2− | 0.0 |
| 1997 10 05 | 691 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.5+ | 0.0 | 2005 11 05 | 691 | 0.4− | 0.2+ |
| 1997 10 05 | 691 | 0.3+ | 0.1+ | 2005 10 25 | G96 | 0.1− | 0.3+ | 2005 11 05 | 691 | 0.3− | 0.1− |
| 1997 10 10 | 691 | 0.1+ | 0.1− | 2005 10 25 | G96 | 0.2+ | 0.1− | 2005 11 25 | 691 | 0.7− | 0.0 |
| 1997 10 10 | 691 | 0.0 | 0.1+ | 2005 10 25 | G96 | 1.1+ | 0.7− | 2005 11 25 | 691 | 0.3+ | 0.7− |
| 1997 10 10 | 691 | 0.4− | 0.0 | 2005 10 26 | 691 | 0.1+ | 0.5+ | 2005 11 25 | 691 | 0.5+ | 0.5+ |
| 2001 10 16 | 691 | 0.1+ | 0.1− | 2005 10 26 | 691 | 0.1+ | 0.2− | | | | |
| 2001 10 16 | 691 | 0.0 | 0.1− | 2005 10 26 | 691 | 0.2+ | 0.1+ | | | | |

**2005 UL$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 112.19199 | | (2000.0) | | | |
| $n$ | 0.28556155 | $\omega$ | 286.51410 | | +0.88308645 | −0.45648037 |
| $a$ | 2.2838605 | $\Omega$ | 100.75630 | | +0.46151572 | +0.80331214 |
| $e$ | 0.1126431 | $i$ | 6.34388 | | +0.08462601 | +0.38251179 |
| $P$ | 3.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.1− | 0.2+ | 2005 11 05 | 704 | 0.4+ | 0.6+ | 2005 11 30 | 644 | 0.3− | 0.2− |
| 1991 10 07 | 691 | 0.1− | 0.4+ | 2005 11 05 | 704 | 1.1− | 0.9+ | 2005 12 05 | 704 | 0.4+ | 0.6+ |
| 1991 10 07 | 691 | 0.1− | 0.1− | 2005 11 21 | 699 | 0.7+ | 0.3+ | 2005 12 05 | 683 | 0.7− | 0.2− |
| 2003 01 31 | 644 | 0.1− | 0.5+ | 2005 11 21 | 699 | 0.2− | 0.8− | 2005 12 05 | 704 | 1.0+ | 0.1+ |
| 2003 01 31 | 644 | 0.1+ | 0.4+ | 2005 11 21 | 699 | 0.3− | 0.5− | 2005 12 05 | 683 | 0.5− | 0.8+ |
| 2003 01 31 | 644 | 0.0 | 0.5+ | 2005 11 21 | 699 | 1.4− | 0.5− | 2005 12 05 | 704 | 1.1+ | 0.5− |
| 2005 10 25 | 703 | 0.3+ | 0.4+ | 2005 11 23 | 224 | 0.4− | 0.2+ | 2005 12 05 | 683 | (0.8− | 3.8+) |
| 2005 10 25 | 703 | 0.3− | 0.6+ | 2005 11 23 | 224 | 0.4− | 0.5− | 2005 12 08 | 683 | 1.5− | 0.8− |
| 2005 10 25 | 703 | 0.8+ | 0.6+ | 2005 11 23 | 224 | 1.1+ | 0.3− | 2005 12 08 | 683 | 0.6− | 1.0+ |
| 2005 10 25 | 703 | 0.2+ | 0.0 | 2005 11 25 | 683 | (1.3− | 3.0−) | 2005 12 08 | 683 | 0.2+ | 0.4+ |
| 2005 10 26 | 683 | 0.0 | 1.4− | 2005 11 25 | 683 | 1.1+ | 0.4+ | 2006 01 04 | 699 | 0.9+ | 0.1+ |
| 2005 10 26 | 683 | 0.4+ | 0.0 | 2005 11 25 | 683 | 0.5− | 0.8+ | 2006 01 04 | 699 | 0.8+ | 0.2+ |
| 2005 10 26 | 683 | 1.2− | 1.3− | 2005 11 25 | 224 | 0.2+ | 0.5+ | 2006 01 04 | 699 | 1.1− | 1.0+ |
| 2005 10 26 | 691 | 0.1− | 0.2− | 2005 11 25 | 224 | 0.7+ | 0.6− | 2006 01 04 | 699 | 0.8− | 1.6− |
| 2005 10 26 | 691 | 0.0 | 0.1− | 2005 11 28 | 683 | (2.4+ | 1.1+) | 2006 01 24 | G96 | 0.1− | 0.1− |
| 2005 10 26 | 691 | 0.3+ | 0.2− | 2005 11 28 | 683 | 1.7+ | 0.5− | 2006 01 24 | G96 | 0.4− | 0.3− |
| 2005 10 30 | 644 | 0.3− | 0.0 | 2005 11 28 | 683 | 1.7− | 1.7+ | 2006 01 24 | G96 | 0.2− | 0.5− |
| 2005 10 30 | 644 | 0.0 | 0.1− | 2005 11 30 | 704 | 0.6+ | 0.5+ | 2006 01 24 | G96 | 0.0 | 0.6− |
| 2005 10 30 | 644 | 0.2− | 0.1+ | 2005 11 30 | 644 | 0.1− | 0.1− | 2006 02 27 | G96 | 0.8+ | 0.3+ |
| 2005 10 30 | 691 | 0.0 | 0.2− | 2005 11 30 | 704 | 0.8+ | 0.3− | 2006 02 27 | G96 | 0.3+ | 0.2− |
| 2005 10 30 | 691 | 0.1+ | 0.1− | 2005 11 30 | 704 | 0.3+ | 1.0− | 2006 02 27 | G96 | 0.2+ | 0.4+ |
| 2005 10 30 | 691 | 0.1+ | 0.1− | 2005 11 30 | 644 | 0.2− | 0.1− | 2006 02 27 | G96 | 0.5+ | 0.4+ |
| 2005 11 05 | 704 | 0.5+ | 0.8+ | 2005 11 30 | 704 | 0.5− | 0.2+ | | | | |
| 2005 11 05 | 704 | 1.0− | 0.0 | 2005 11 30 | 704 | 0.1+ | 0.3+ | | | | |

**2005 UL$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.92297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23224385 | $\omega$ | 68.01079 | | −0.56323392 | −0.82362664 | |
| $a$ | 2.6212387 | $\Omega$ | 56.43940 | | +0.72569494 | −0.53147862 | |
| $e$ | 0.1477647 | $i$ | 4.56918 | | +0.39513847 | −0.19791318 | |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.1− | 1.0− | 2005 10 25 | G96 | 0.6− | 0.4− | 2005 11 26 | G96 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | 0.3+ | 1.5− | 2005 10 26 | 691 | 0.4− | 0.0 | 2005 11 26 | G96 | 0.4− | 0.1+ |
| 2001 12 18 | 704 | 0.0 | 1.7− | 2005 10 26 | 691 | 0.2− | 0.0 | 2005 12 10 | 691 | 0.2− | 0.6+ |
| 2003 04 05 | 691 | 0.1− | 1.0+ | 2005 10 26 | 691 | 0.2− | 0.1− | 2005 12 10 | 691 | 0.1+ | 0.4+ |
| 2003 04 05 | 691 | 0.6+ | 0.7+ | 2005 11 11 | 691 | 0.3− | 0.5+ | 2005 12 10 | 691 | 0.2− | 1.1+ |
| 2003 04 05 | 691 | 0.3+ | 1.0+ | 2005 11 11 | 691 | 0.0 | 0.7+ | 2006 01 06 | G96 | 1.6+ | 0.5+ |
| 2005 10 25 | G96 | 0.2− | 0.2− | 2005 11 11 | 691 | 0.2+ | 0.1+ | 2006 01 06 | G96 | (2.6+ | 0.5+) |
| 2005 10 25 | G96 | 0.2− | 0.6− | 2005 11 26 | G96 | 0.3+ | 0.1+ | 2006 01 06 | G96 | (2.8+ | 0.6+) |
| 2005 10 25 | G96 | 0.0 | 0.2− | 2005 11 26 | G96 | 0.2+ | 0.2+ | 2006 01 06 | G96 | (3.9+ | 1.1+) |

**2005 UY$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.80730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27046480 | $\omega$ | 265.32725 | | +0.95589624 | +0.29057158 | |
| $a$ | 2.3680755 | $\Omega$ | 77.77600 | | −0.24912292 | +0.87930819 | |
| $e$ | 0.2079877 | $i$ | 2.50905 | | −0.15556395 | +0.37733972 | |
| $P$ | 3.64 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 12 | 608 | 0.1+ | 0.2+ | 2005 10 25 | G96 | 0.0 | 0.6− | 2005 10 30 | 691 | 0.0 | 0.2+ |
| 2001 08 12 | 608 | 0.1− | 0.1+ | 2005 10 25 | G96 | 0.4+ | 0.7− | 2005 10 30 | 691 | 0.0 | 0.1− |
| 2001 08 12 | 608 | 0.7− | 0.3− | 2005 10 25 | G96 | 0.0 | 0.4− | 2005 11 04 | 691 | 0.3+ | 0.0 |
| 2001 08 25 | 704 | 0.7+ | 1.7+ | 2005 10 25 | G96 | 0.4+ | 0.7− | 2005 11 04 | 691 | 0.4+ | 0.0 |
| 2001 08 25 | 704 | 0.2+ | 0.3− | 2005 10 26 | 691 | 0.0 | 0.1− | 2005 11 04 | 691 | 0.2+ | 0.1− |
| 2001 08 25 | 704 | 0.2+ | 1.2− | 2005 10 26 | 691 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.2+ | 0.4− |
| 2001 08 25 | 704 | 0.2− | 0.1− | 2005 10 26 | 691 | 0.1+ | 0.0 | 2005 12 04 | G96 | 0.3+ | 0.5− |
| 2001 09 10 | 699 | 0.0 | 0.1+ | 2005 10 28 | 691 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.2− | 0.6− |
| 2001 09 10 | 699 | 0.7+ | 0.2− | 2005 10 28 | 691 | 0.0 | 0.1+ | 2005 12 04 | G96 | 0.4+ | 0.4− |
| 2001 09 10 | 699 | 1.1− | 0.5+ | 2005 10 28 | 691 | 0.1+ | 0.0 | | | | |
| 2001 09 10 | 699 | 0.1+ | 0.8− | 2005 10 30 | 691 | 1.4− | 1.2+ | | | | |

**2005 UT$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.06947 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21741683 | $\omega$ | 246.23084 | | +0.73266511 | −0.67530017 | |
| $a$ | 2.7390961 | $\Omega$ | 155.96850 | | +0.67522050 | +0.70563834 | |
| $e$ | 0.1590662 | $i$ | 12.00217 | | +0.08531768 | +0.21457915 | |
| $P$ | 4.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 691 | 0.0 | 0.2− | 2005 10 22 | 644 | 0.4+ | 0.2+ | 2005 10 30 | 699 | 0.7− | 0.4+ |
| 1998 03 25 | 691 | 0.0 | 0.0 | 2005 10 22 | 644 | 0.2+ | 0.0 | 2005 10 30 | 699 | 0.8− | 0.4− |
| 1998 03 25 | 691 | 0.0 | 0.1+ | 2005 10 26 | 704 | 0.1− | 0.6+ | 2005 10 31 | 644 | 0.2− | 0.1− |
| 2003 04 07 | 691 | 0.1+ | 0.1− | 2005 10 26 | 704 | 0.8+ | 0.3− | 2005 10 31 | 644 | 0.2+ | 0.0 |
| 2003 04 07 | 691 | 0.1+ | 0.1+ | 2005 10 26 | 704 | 0.0 | 0.6+ | 2005 10 31 | 644 | 0.7+ | 0.1+ |
| 2003 04 07 | 691 | 0.2− | 0.0 | 2005 10 26 | 644 | 0.3+ | 0.2− | 2005 11 03 | 703 | 0.3− | 0.1− |
| 2005 09 09 | 704 | 0.7− | 0.8+ | 2005 10 26 | 644 | 0.5+ | 0.1− | 2005 11 03 | 703 | 0.2+ | 0.2− |
| 2005 09 09 | 704 | 0.2− | 0.3− | 2005 10 26 | 644 | 0.3+ | 0.2+ | 2005 11 03 | 703 | 0.3− | 0.2+ |
| 2005 09 09 | 704 | 0.6+ | 0.6− | 2005 10 27 | 703 | 0.4+ | 0.9− | 2005 11 03 | 703 | 0.3+ | 0.1+ |
| 2005 10 05 | 703 | 0.4− | 0.2− | 2005 10 27 | 703 | 0.0 | 0.9+ | 2005 12 04 | 699 | (3.0+ | 0.7+) |
| 2005 10 05 | 703 | 0.4− | 0.2− | 2005 10 27 | 703 | 0.3+ | 0.2− | 2005 12 04 | 699 | 0.6+ | 0.5+ |
| 2005 10 05 | 703 | 0.0 | 0.7− | 2005 10 27 | 703 | 1.7− | 0.4− | 2005 12 04 | 699 | 1.0+ | 0.3− |
| 2005 10 05 | 703 | (0.6− | 2.2−) | 2005 10 30 | 699 | 0.0 | 0.0 | 2005 12 04 | 699 | 1.9− | 0.8+ |
| 2005 10 22 | 644 | 0.0 | 0.1+ | 2005 10 30 | 699 | 0.6+ | 0.2− | | | | |

**2005 UZ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.52562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18149080 | $\omega$ | 278.13957 | | −0.88207729 | −0.27339119 | |
| $a$ | 3.0895814 | $\Omega$ | 246.70122 | | +0.37156794 | −0.90438490 | |
| $e$ | 0.2069701 | $i$ | 24.69111 | | −0.28961512 | −0.32763578 | |
| $P$ | 5.43 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 29 | 703 | 0.1+ | 0.5− | 2005 10 26 | 644 | 0.1+ | 0.0 | 2006 11 16 | 673 | 0.2− | 0.0 |
| 2005 09 29 | 703 | 0.3+ | 0.9− | 2005 10 29 | 703 | 0.8− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2005 09 29 | 703 | 0.5+ | 0.0 | 2005 10 29 | 703 | 0.7− | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2005 09 29 | 703 | 0.2− | 0.0 | 2005 10 29 | 703 | 1.2− | 0.1− | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2005 10 23 | 703 | 0.4− | 0.6+ | 2005 10 29 | 703 | 0.0 | 0.9− | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2005 10 23 | 703 | (3.1− | 0.1+) | 2005 10 29 | 644 | 0.2+ | 0.1− | 2006 11 21 | 673 | 0.2+ | 0.3+ |
| 2005 10 23 | 703 | 0.2− | 1.1+ | 2005 10 29 | 644 | 0.5+ | 0.3− | 2006 11 21 | 673 | 0.8− | 0.1− |
| 2005 10 23 | 703 | 0.4+ | 0.8+ | 2005 10 29 | 644 | 0.1+ | 0.3− | 2006 11 21 | 673 | 0.1− | 0.4+ |
| 2005 10 26 | 644 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.4+ | 0.6− | 2006 11 29 | 704 | 0.3− | 0.0 |
| 2005 10 26 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.7+ | 0.5− | 2006 11 29 | 704 | 0.1− | 0.3+ |
| 2005 10 26 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.7+ | 0.9− | 2006 11 29 | 704 | 0.2+ | 0.1− |
| 2005 10 26 | 644 | 0.5+ | 0.1+ | 2006 11 16 | 673 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.1+ |
| 2005 10 26 | 644 | 0.1− | 0.0 | 2006 11 16 | 673 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.2+ |

**2005 UY$_{71}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.59864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17900530 | $\omega$ | 182.52467 | | +0.17936325 | −0.96847503 | |
| $a$ | 3.1181150 | $\Omega$ | 257.18228 | | +0.90568121 | +0.23117069 | |
| $e$ | 0.0638242 | $i$ | 10.21198 | | +0.38414889 | −0.09282368 | |
| $P$ | 5.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 1.0− | 0.7− | 2004 08 23 | 691 | 0.1+ | 0.2+ | 2005 10 26 | 699 | 1.2− | 0.9+ |
| 2000 11 24 | 691 | 0.1+ | 0.7− | 2004 08 23 | 691 | 0.0 | 0.0 | 2005 10 26 | 699 | 1.8+ | 1.1− |
| 2000 11 24 | 691 | 0.7+ | 0.2+ | 2005 10 10 | 703 | 0.8− | 0.3− | 2005 10 26 | 699 | 0.8+ | 0.6+ |
| 2002 04 08 | 644 | 0.4+ | 0.8+ | 2005 10 10 | 703 | 0.0 | 0.1− | 2005 10 26 | 699 | 0.3+ | 0.9− |
| 2002 04 08 | 644 | 0.5+ | 0.7+ | 2005 10 10 | 703 | 1.3+ | 0.3− | 2005 10 30 | 644 | 0.2− | 0.4+ |
| 2002 04 08 | 644 | 0.2+ | 0.8+ | 2005 10 10 | 703 | 0.2+ | 0.1− | 2005 10 30 | 644 | 0.3− | 0.5+ |
| 2004 06 16 | 691 | 0.2− | 0.5+ | 2005 10 23 | 703 | 1.3− | 0.1+ | 2005 10 30 | 644 | 0.1− | 0.3+ |
| 2004 06 16 | 691 | 0.1+ | 0.1+ | 2005 10 23 | 703 | 0.6− | 0.6− | 2005 11 07 | 704 | 0.0 | 1.5+ |
| 2004 06 16 | 691 | 0.2− | 0.2− | 2005 10 23 | 703 | 0.8− | 0.6− | 2005 11 07 | 704 | 0.0 | 1.4+ |
| 2004 08 23 | 691 | 0.1− | 0.4+ | 2005 10 23 | 703 | 0.3− | 0.6+ | 2005 11 07 | 704 | 0.4+ | 0.4+ |

**2005 UH$_{72}$ = 2001 PB$_{67}$ = 2004 LH$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.32862 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27501363 | $\omega$ | 11.53881 | | −0.11747063 | +0.97040581 | |
| $a$ | 2.3418904 | $\Omega$ | 251.98847 | | −0.92787200 | −0.18296586 | |
| $e$ | 0.0817470 | $i$ | 12.81793 | | −0.35391270 | +0.15759458 | |
| $P$ | 3.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.6− | 0.1+ | 2004 06 14 | 704 | 1.3+ | 0.6+ | 2005 10 23 | 703 | 0.4− | 1.0− |
| 2001 08 11 | 644 | 0.2− | 0.4+ | 2004 06 14 | 704 | 0.8+ | 1.0− | 2005 10 26 | 699 | 0.1− | 1.5+ |
| 2001 08 11 | 644 | 0.1− | 0.1+ | 2004 06 14 | 704 | 0.6− | 0.1− | 2005 10 26 | 699 | 0.1+ | 0.2− |
| 2001 08 17 | 644 | 0.3+ | 0.3− | 2004 06 14 | 704 | 0.5+ | 1.0− | 2005 10 26 | 699 | 0.7+ | 1.4− |
| 2001 08 17 | 644 | 0.4− | 0.2+ | 2004 06 17 | 691 | 0.0 | 0.0 | 2005 10 26 | 699 | 0.5+ | 0.3+ |
| 2001 08 17 | 644 | 0.6+ | 0.1− | 2004 06 17 | 691 | 0.1+ | 0.2− | 2005 10 29 | 703 | 0.2+ | 0.6+ |
| 2001 08 17 | 644 | 0.1− | 0.1+ | 2004 06 17 | 691 | 0.1− | 0.1+ | 2005 10 29 | 703 | 0.2+ | 0.2+ |
| 2001 08 17 | 644 | 0.7+ | 0.3− | 2005 09 29 | 703 | 0.8− | 0.3− | 2005 10 29 | 703 | (0.2+ | 1.6+) |
| 2001 08 17 | 644 | 0.4− | 0.2+ | 2005 09 29 | 703 | 1.1+ | 0.8+ | 2005 10 29 | 703 | 0.2+ | 0.7+ |
| 2004 05 22 | 704 | 0.5+ | 0.4+ | 2005 09 29 | 703 | 0.1+ | 1.0− | 2005 10 30 | 644 | 0.5− | 0.1− |
| 2004 05 22 | 704 | 0.2− | 0.6+ | 2005 09 29 | 703 | (0.5+ | 1.6−) | 2005 10 30 | 644 | 0.4− | 0.3+ |
| 2004 05 22 | 704 | 0.3− | 0.0 | 2005 10 23 | 703 | 0.9− | 0.8− | 2005 10 30 | 644 | 0.2+ | 0.1− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 05 22 | 704 | 0.5− | 0.4+ | 2005 10 23 | 703 | (1.0− | 3.8−) | |
| 2004 05 22 | 704 | 1.2− | 0.1+ | 2005 10 23 | 703 | (2.7+ | 1.8−) | |

**2005 UP$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 107.30112 | (2000.0) | **P** | **Q** | |
| $n$ | 0.28589975 | $\omega$ | 278.69347 | +0.88558253 | −0.45103553 |
| $a$ | 2.2820590 | $\Omega$ | 108.17977 | +0.45870199 | +0.81167674 |
| $e$ | 0.1897841 | $i$ | 6.70644 | +0.07304835 | +0.37114392 |
| $P$ | 3.45 | $H$ | 16.8 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 699 | 0.0 | 0.5− | 2005 10 24 | 644 | 0.4+ | 0.3+ | 2005 11 05 | 704 | 0.1+ | 1.0− |
| 1998 10 17 | 699 | 0.8+ | 0.2+ | 2005 10 24 | 644 | 0.0 | 0.0 | 2005 11 05 | 704 | 0.4− | 0.2− |
| 1998 10 17 | 699 | 0.6− | 0.1+ | 2005 10 26 | 699 | 0.3− | 0.3+ | 2005 11 05 | 704 | 0.9− | 0.5− |
| 1999 03 10 | 568 | 0.3− | 0.1− | 2005 10 26 | 699 | 0.8− | 0.4+ | 2005 11 05 | 704 | 0.4− | 0.2− |
| 2004 06 16 | 691 | 0.0 | 0.1− | 2005 10 26 | 699 | 0.4− | 0.4+ | 2005 11 26 | 703 | 0.2+ | 0.5+ |
| 2004 06 16 | 691 | 0.3+ | 0.5+ | 2005 10 26 | 699 | 0.2+ | 0.4+ | 2005 11 26 | 703 | 0.1+ | 0.6+ |
| 2004 06 16 | 691 | 0.0 | 0.3+ | 2005 10 27 | 703 | 0.2− | 0.9− | 2005 11 26 | 703 | 0.6+ | 0.8+ |
| 2005 09 30 | 644 | 0.1+ | 0.0 | 2005 10 27 | 703 | 0.8+ | 0.5− | 2005 11 26 | 703 | 0.7+ | 1.1+ |
| 2005 09 30 | 644 | 0.3− | 0.2+ | 2005 10 27 | 703 | 0.8− | 0.6− | 2006 02 27 | G96 | 0.1− | 0.2+ |
| 2005 09 30 | 644 | 0.0 | 0.0 | 2005 11 03 | 703 | 1.3+ | 0.7+ | 2006 02 27 | G96 | 0.5− | 0.2+ |
| 2005 10 24 | 644 | 0.1+ | 0.2+ | 2005 11 03 | 703 | 0.5+ | 0.5+ | 2006 02 27 | G96 | 0.0 | 0.0 |
| 2005 10 24 | 644 | 0.3− | 0.3+ | 2005 11 03 | 703 | 1.0+ | 0.7+ | 2006 02 27 | G96 | 1.0+ | 0.3+ |
| 2005 10 24 | 644 | 0.0 | 0.3+ | 2005 11 03 | 703 | 0.8− | 0.3− | | | | |
| 2005 10 24 | 644 | 0.2− | 0.1+ | 2005 11 05 | 704 | 1.1− | 1.4− | | | | |

**2005 UC$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 97.45689 | (2000.0) | **P** | **Q** | |
| $n$ | 0.23276978 | $\omega$ | 169.95428 | +0.95344087 | −0.29190540 |
| $a$ | 2.6172888 | $\Omega$ | 207.38880 | +0.26400659 | +0.92933016 |
| $e$ | 0.2352246 | $i$ | 9.48082 | +0.14577735 | +0.22613424 |
| $P$ | 4.23 | $H$ | 15.7 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 691 | 0.3+ | 0.5+ | 2005 10 12 | 704 | 0.1+ | 0.6+ | 2005 11 10 | 683 | 1.4+ | 0.9− |
| 2003 03 31 | 691 | 0.0 | 0.3+ | 2005 10 25 | 703 | 0.1+ | 1.1− | 2005 11 10 | 703 | 0.4+ | 0.1+ |
| 2003 03 31 | 691 | 0.0 | 0.2+ | 2005 10 25 | 703 | 0.0 | 0.3− | 2005 11 10 | 703 | 0.5+ | 0.2− |
| 2004 07 08 | 691 | 0.1+ | 0.4+ | 2005 10 25 | 703 | 1.1− | 0.4− | 2005 11 10 | 703 | 0.5− | 0.1+ |
| 2004 07 08 | 691 | 0.1+ | 0.1+ | 2005 10 25 | 703 | 0.1+ | 0.1− | 2005 11 10 | 703 | 0.1− | 0.3− |
| 2004 07 08 | 691 | 0.3− | 0.4+ | 2005 10 26 | 699 | 0.2+ | 0.1− | 2005 11 21 | 699 | 0.9+ | 0.4+ |
| 2005 08 31 | 699 | 0.7− | 0.6+ | 2005 10 26 | 699 | 0.5− | 0.2+ | 2005 11 21 | 699 | 0.2− | 0.1+ |
| 2005 08 31 | 699 | 0.9+ | 0.7+ | 2005 10 26 | 699 | 0.1+ | 0.2+ | 2005 11 21 | 699 | 0.3+ | 0.5+ |
| 2005 08 31 | 699 | 1.2− | 0.4− | 2005 10 26 | 699 | 0.3− | 0.8+ | 2005 11 26 | 703 | 0.6+ | 0.3− |
| 2005 08 31 | 699 | 0.3+ | 0.2+ | 2005 10 30 | 644 | 0.2− | 0.1+ | 2005 11 26 | 703 | 0.0 | 0.2− |
| 2005 09 12 | 704 | 1.4+ | 1.4+ | 2005 10 30 | 644 | 0.0 | 0.3− | 2005 11 26 | 703 | 0.3+ | 0.1− |
| 2005 09 12 | 704 | 0.3+ | 0.1+ | 2005 10 30 | 644 | 0.3+ | 0.3− | 2005 11 26 | 703 | 0.2− | 0.1− |
| 2005 09 12 | 704 | 0.3+ | 0.8+ | 2005 11 02 | 703 | 0.5− | 0.6+ | 2005 11 30 | 699 | 0.3+ | 0.2− |
| 2005 09 29 | 703 | 0.4− | 0.7− | 2005 11 02 | 703 | 0.7− | 0.3+ | 2005 11 30 | 699 | 0.4− | 0.1− |
| 2005 09 29 | 703 | 0.2+ | 0.6− | 2005 11 02 | 703 | 0.6+ | 0.7+ | 2005 11 30 | 699 | 0.3− | 0.2− |
| 2005 09 29 | 703 | 0.1− | 0.3− | 2005 11 02 | 703 | 0.2+ | 0.1− | 2005 12 05 | 703 | (3.3+ | 2.9+) |
| 2005 09 29 | 703 | 0.5− | 0.1− | 2005 11 04 | G96 | 0.0 | 0.3− | 2005 12 05 | 703 | 0.1+ | 0.0 |
| 2005 10 01 | 704 | 0.5+ | 0.8+ | 2005 11 04 | G96 | 0.4+ | 0.2− | 2005 12 05 | 703 | 0.7− | 0.2+ |
| 2005 10 01 | 704 | 0.8− | 0.8+ | 2005 11 04 | G96 | 0.3+ | 0.3− | 2005 12 07 | 704 | 0.8− | 0.3+ |
| 2005 10 01 | 704 | 0.9+ | 0.4+ | 2005 11 04 | G96 | 0.1+ | 0.4− | 2005 12 07 | 704 | 2.7− | 0.1+ |
| 2005 10 01 | 704 | 0.4− | 0.5+ | 2005 11 05 | 704 | 0.3− | 0.2+ | 2005 12 07 | 704 | 0.6− | 0.3− |
| 2005 10 06 | 699 | 0.4− | 0.3− | 2005 11 05 | 704 | 0.0 | 0.5+ | 2005 12 07 | 704 | 1.1− | 0.4− |
| 2005 10 06 | 699 | 0.6− | 0.0 | 2005 11 05 | 704 | 0.2+ | 0.0 | 2005 12 07 | 704 | 1.3− | 0.3+ |
| 2005 10 06 | 699 | 0.2+ | 0.6+ | 2005 11 05 | 704 | 0.1+ | 0.0 | 2006 01 23 | 703 | 1.0+ | 0.7− |
| 2005 10 06 | 699 | 1.1− | 0.8− | 2005 11 05 | 704 | 0.0 | 0.0 | 2006 01 23 | 703 | 0.3− | 0.9− |
| 2005 10 12 | 704 | 0.5− | 0.8+ | 2005 11 10 | 683 | 0.2+ | 0.2− | 2006 01 23 | 703 | 0.6− | 0.3− |
| 2005 10 12 | 704 | 0.1+ | 0.3+ | 2005 11 10 | 683 | 1.3+ | 0.3− | 2006 01 23 | 703 | 0.8+ | 1.1+ |

**2005 UQ$_{84}$ = 2005 XL$_{113}$**

Id. Minor Planet Center (d, *MPO* 98189)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 357.14171 | (2000.0) | **P** | **Q** | |
| $n$ | 0.23073741 | $\omega$ | 73.78406 | −0.54388785 | −0.83834429 |
| $a$ | 2.6326353 | $\Omega$ | 49.22377 | +0.75007778 | −0.50542028 |
| $e$ | 0.0538049 | $i$ | 2.79635 | +0.37625700 | −0.20427725 |
| $P$ | 4.27 | $H$ | 17.5 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.2− | 0.1− | 2005 10 31 | 691 | 0.2+ | 0.8+ |
| 2001 11 17 | 291 | 0.4− | 0.3− | 2005 10 12 | 691 | 0.3+ | 0.4− | 2005 11 25 | G96 | 0.2+ | 0.1− |
| 2001 11 17 | 291 | 0.5+ | 0.2− | 2005 10 22 | 691 | 0.3− | 0.1+ | 2005 11 25 | G96 | 0.0 | 0.1− |
| 2004 08 13 | 807 | 0.0 | 0.5− | 2005 10 22 | 691 | 0.1− | 0.3+ | 2005 11 25 | G96 | 0.6+ | 0.1− |
| 2004 08 14 | 807 | 0.0 | 0.4− | 2005 10 22 | 691 | 0.1+ | 0.2+ | 2005 11 25 | G96 | 0.5+ | 0.3− |
| 2005 10 01 | G96 | 0.2+ | 0.6− | 2005 10 27 | 691 | 0.6+ | 0.2− | 2005 12 04 | 691 | 0.4− | 0.1+ |
| 2005 10 01 | G96 | 0.1− | 0.4− | 2005 10 27 | 691 | 0.3+ | 0.6+ | 2005 12 04 | 691 | 0.3− | 0.4− |
| 2005 10 01 | G96 | 0.2− | 0.0 | 2005 10 27 | 691 | 0.1− | 0.6− | 2005 12 04 | 691 | 0.6− | 0.0 |
| 2005 10 01 | G96 | 0.2+ | 0.7+ | 2005 10 31 | 691 | 0.2+ | 0.1+ | | | | |
| 2005 10 12 | 691 | 0.1− | 0.2− | 2005 10 31 | 691 | 0.1− | 0.1+ | | | | |

**2005 US$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 94.37454 | (2000.0) | **P** | **Q** | |
| $n$ | 0.20376144 | $\omega$ | 172.73592 | +0.99880871 | −0.04830682 |
| $a$ | 2.8601450 | $\Omega$ | 190.04071 | +0.04254391 | +0.93131912 |
| $e$ | 0.1355186 | $i$ | 2.26816 | +0.02389929 | +0.36098636 |
| $P$ | 4.84 | $H$ | 17.3 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.0 | 0.1− | 2005 10 12 | 691 | 0.5− | 0.1− | 2005 10 31 | 691 | 0.1− | 0.1− |
| 1995 08 22 | 691 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.2+ | 0.1− | 2005 10 31 | 691 | 0.1+ | 0.2+ |
| 1995 08 22 | 691 | 0.1+ | 0.1− | 2005 10 12 | 691 | 0.2+ | 0.1− | 2005 11 29 | G96 | 0.5− | 0.4− |
| 2000 09 28 | 691 | 0.2+ | 0.1− | 2005 10 22 | 691 | 0.2+ | 0.0 | 2005 11 29 | G96 | 0.1− | 0.0 |
| 2000 09 28 | 691 | 0.1+ | 0.1+ | 2005 10 22 | 691 | 0.0 | 0.2− | 2005 11 29 | G96 | 0.3+ | 0.1− |
| 2000 09 28 | 691 | 0.2− | 0.2+ | 2005 10 22 | 691 | 0.2− | 0.1+ | 2005 11 29 | G96 | 0.4− | 0.1− |
| 2005 10 01 | G96 | 0.4− | 0.3− | 2005 10 27 | 691 | 0.0 | 0.1+ | 2005 12 04 | G96 | 0.2+ | 0.0 |
| 2005 10 01 | G96 | 0.5− | 0.2− | 2005 10 27 | 691 | 0.1+ | 0.6+ | 2005 12 04 | G96 | 0.0 | 0.2− |
| 2005 10 01 | G96 | 0.2− | 0.1− | 2005 10 27 | 691 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.4+ | 0.4− |
| 2005 10 01 | G96 | 0.2+ | 0.0 | 2005 10 31 | 691 | 0.2+ | 0.1− | 2005 12 04 | G96 | 0.1+ | 0.1+ |

**2005 UD$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | |
|---|---|---|---|---|---|
| $M$ | 70.27698 | (2000.0) | **P** | **Q** | |
| $n$ | 0.20492753 | $\omega$ | 212.08662 | +0.83520221 | −0.54994243 |
| $a$ | 2.8492847 | $\Omega$ | 181.27721 | +0.51155562 | +0.77741431 |
| $e$ | 0.0775964 | $i$ | 1.97216 | +0.20186162 | +0.30527088 |
| $P$ | 4.81 | $H$ | 16.6 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.8+ | 0.0 | 2005 10 28 | G96 | 0.1− | 0.2− | 2005 11 28 | G96 | 0.0 | 0.3+ |
| 1995 09 18 | 691 | 0.6− | 0.2+ | 2005 10 28 | G96 | 0.1− | 0.2− | 2005 11 28 | G96 | 0.0 | 0.3+ |
| 1995 09 18 | 691 | 0.3− | 0.1+ | 2005 10 28 | G96 | 0.0 | 0.2− | 2005 11 29 | G96 | 0.0 | 0.6− |
| 2003 04 25 | 291 | 0.2− | 0.7+ | 2005 10 31 | 691 | 0.1− | 0.1− | 2005 11 29 | G96 | 0.3− | 0.2− |
| 2003 04 25 | 291 | 0.3+ | 0.1+ | 2005 10 31 | 691 | 0.1− | 0.1− | 2005 11 29 | G96 | 0.5+ | 0.0 |
| 2003 04 25 | 291 | 0.2+ | 0.4+ | 2005 10 31 | 691 | 0.0 | 0.0 | 2005 11 29 | G96 | 0.1+ | 0.0 |
| 2005 09 29 | G96 | 0.8− | 0.4− | 2005 11 04 | 691 | 0.1+ | 0.1− | 2005 11 30 | 691 | 0.7+ | 0.1− |
| 2005 09 29 | G96 | 0.2+ | 0.3− | 2005 11 04 | 691 | 0.1+ | 0.1− | 2005 11 30 | 691 | 0.0 | 0.2+ |
| 2005 09 29 | G96 | 0.1− | 0.0 | 2005 11 04 | 691 | 0.2− | 0.1− | 2005 11 30 | 691 | 0.4− | 0.5+ |
| 2005 09 29 | G96 | 0.4− | 0.3− | 2005 11 28 | 691 | 0.2+ | 0.3+ | 2005 11 30 | 691 | 0.0 | 0.6+ |
| 2005 10 22 | 691 | 0.1+ | 0.4+ | 2005 11 28 | 691 | 0.2+ | 0.2+ | 2005 11 30 | 691 | 0.6− | 0.3+ |
| 2005 10 22 | 691 | 0.0 | 0.4+ | 2005 11 28 | 691 | 0.0 | 0.2− | 2005 11 30 | 691 | 0.1+ | 0.2+ |
| 2005 10 22 | 691 | 0.1− | 0.2+ | 2005 11 28 | 691 | 0.6− | 0.2− | 2005 12 04 | G96 | 0.0 | 0.0 |
| 2005 10 27 | 691 | 0.0 | 0.0 | 2005 11 28 | 691 | 0.4+ | 0.5− | 2005 12 04 | G96 | 0.6+ | 0.2+ |
| 2005 10 27 | 691 | 0.2− | 0.1− | 2005 11 28 | 691 | 0.1− | 0.1+ | 2005 12 04 | G96 | 0.2+ | 0.0 |
| 2005 10 27 | 691 | 0.0 | 0.0 | 2005 11 28 | G96 | 0.1+ | 0.4− | 2005 12 04 | G96 | 0.4+ | 0.6− |
| 2005 10 28 | G96 | 0.8+ | 0.2− | 2005 11 28 | G96 | 0.1+ | 0.6− | | | | |

**2005 UH$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.92617 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17972700 | $\omega$ | 157.94622 | −0.52144477 | | −0.85151508 | |
| $a$ | 3.1097621 | $\Omega$ | 323.41906 | +0.76846295 | | −0.44065385 | |
| $e$ | 0.0942761 | $i$ | 5.28861 | +0.37089087 | | −0.28415885 | |
| $P$ | 5.48 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 22 | 691 | 0.9− | 0.4+ | 2005 11 02 | 704 | 0.4+ | 0.4− | 2005 11 29 | 704 | 0.7+ | 0.4+ |
| 2005 10 22 | 691 | 0.1− | 0.2+ | 2005 11 02 | 704 | 0.6− | 0.1− | 2005 11 29 | 704 | 1.3+ | 1.2+ |
| 2005 10 22 | 691 | 0.1− | 0.0 | 2005 11 02 | 704 | 0.0 | 0.4− | 2005 11 29 | 704 | 0.9+ | 1.0+ |
| 2005 10 27 | 691 | 0.2+ | 0.1+ | 2005 11 04 | 691 | 0.0 | 0.3− | 2005 12 02 | 703 | 0.2+ | 0.9+ |
| 2005 10 27 | 691 | 0.3+ | 0.0 | 2005 11 04 | 691 | 0.1+ | 0.2− | 2005 12 02 | 703 | 0.2+ | 0.5− |
| 2005 10 27 | 691 | 0.6+ | 0.0 | 2005 11 04 | 691 | 0.1− | 0.2− | 2005 12 02 | 703 | 0.4− | 0.2+ |
| 2005 10 30 | 704 | 1.3+ | 0.7+ | 2005 11 25 | 703 | (1.1− | 2.3+) | 2005 12 02 | 703 | 1.9− | 0.2+ |
| 2005 10 30 | 704 | 0.7+ | 0.0 | 2005 11 25 | 703 | 1.3− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2005 10 30 | 704 | 0.1− | 0.8− | 2005 11 25 | 703 | (0.4− | 2.5+) | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2005 10 31 | 691 | 0.0 | 0.1− | 2005 11 25 | 703 | 0.5+ | 0.9− | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2005 10 31 | 691 | 0.1− | 0.1− | 2005 11 25 | 703 | 0.2− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 10 31 | 691 | 0.0 | 0.3− | 2005 11 25 | 703 | 1.2− | 0.6− | 2006 11 01 | 691 | 0.7− | 0.2− |
| 2005 11 02 | 704 | 0.2+ | 0.4− | 2005 11 25 | 703 | 0.1− | 0.7+ | 2006 11 01 | 691 | 0.5+ | 0.0 |
| 2005 11 02 | 704 | 0.3+ | 0.6+ | 2005 11 25 | 703 | 0.7− | 0.6− | | | | |

**2005 UJ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.12463 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21498291 | $\omega$ | 237.83166 | −0.25436390 | | +0.96586303 | |
| $a$ | 2.7597310 | $\Omega$ | 17.63298 | −0.82379971 | | −0.18981481 | |
| $e$ | 0.1100842 | $i$ | 9.32200 | −0.50660936 | | −0.17629224 | |
| $P$ | 4.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.6− | 0.1+ | 2003 03 26 | 644 | 1.1+ | 0.6− | 2005 10 27 | 691 | 0.5− | 0.1− |
| 2000 10 01 | 704 | 0.5− | 0.4+ | 2003 04 03 | 699 | (0.2+ | 2.2−) | 2005 10 27 | 691 | 0.1− | 0.2+ |
| 2000 10 01 | 704 | 1.2− | 0.7+ | 2003 04 03 | 699 | 1.6+ | 0.5− | 2005 10 27 | 691 | 0.2− | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 0.6+ | 2003 04 03 | 699 | 1.2− | 0.4− | 2005 10 31 | 691 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.2− | 1.8+ | 2003 04 03 | 699 | (2.6− | 1.3−) | 2005 10 31 | 691 | 0.1+ | 0.1+ |
| 2003 03 09 | 704 | 0.6+ | 0.3− | 2003 05 01 | 691 | 0.3− | 0.6+ | 2005 10 31 | 691 | 0.3− | 0.1− |
| 2003 03 09 | 704 | 0.5+ | 0.7+ | 2003 05 01 | 691 | 0.0 | 0.1+ | 2005 11 04 | 691 | 0.4+ | 0.0 |
| 2003 03 09 | 704 | 0.7+ | 0.5+ | 2003 05 01 | 691 | 0.4− | 0.4+ | 2005 11 04 | 691 | 0.3+ | 0.3− |
| 2003 03 09 | 704 | 0.7− | 0.8+ | 2005 10 22 | 691 | 0.0 | 0.2+ | 2005 11 04 | 691 | 0.4+ | 0.3− |
| 2003 03 26 | 644 | 0.8+ | 0.3− | 2005 10 22 | 691 | 0.1+ | 0.1− | | | | |
| 2003 03 26 | 644 | 0.9+ | 0.4− | 2005 10 22 | 691 | 0.3− | 0.2+ | | | | |

**2005 UO$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.56941 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21017768 | $\omega$ | 235.45609 | −0.46983470 | | −0.87230526 | |
| $a$ | 2.8016356 | $\Omega$ | 243.12171 | +0.85148722 | | −0.40736124 | |
| $e$ | 0.2293063 | $i$ | 8.73257 | +0.23286234 | | −0.27044473 | |
| $P$ | 4.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 27 | 691 | 0.6− | 0.2+ | 2005 10 27 | 691 | 0.2+ | 0.1− | 2005 12 02 | 704 | 0.8+ | 0.4− |
| 1991 11 27 | 691 | 0.8+ | 0.6+ | 2005 10 27 | 691 | 0.0 | 0.2− | 2005 12 02 | 704 | 0.4+ | 0.8− |
| 1991 11 27 | 691 | 0.4− | 0.8+ | 2005 10 31 | 691 | 0.5− | 0.3+ | 2005 12 02 | 704 | 0.1+ | 0.1− |
| 2002 02 08 | 644 | 0.0 | 0.4− | 2005 10 31 | 691 | 0.3− | 0.3+ | 2005 12 02 | 704 | 0.2− | 0.1+ |
| 2002 02 08 | 644 | 0.1− | 0.6− | 2005 10 31 | 691 | 0.2− | 0.3+ | 2005 12 31 | G96 | 0.0 | 0.5− |
| 2002 02 08 | 644 | 0.0 | 0.4− | 2005 11 07 | 704 | 0.9+ | 0.1− | 2005 12 31 | G96 | 0.1+ | 0.0 |
| 2002 03 09 | 644 | 0.4− | 0.3+ | 2005 11 07 | 704 | 1.3+ | 0.5− | 2005 12 31 | G96 | 0.1+ | 0.3− |
| 2002 03 09 | 644 | 0.1+ | 0.5+ | 2005 11 07 | 704 | 0.8+ | 0.3− | 2005 12 31 | G96 | 0.6− | 0.7− |
| 2002 03 09 | 644 | 0.2+ | 0.3+ | 2005 11 07 | 704 | 0.5− | 0.3+ | 2006 01 21 | G96 | 0.1+ | 0.9− |
| 2005 10 22 | 691 | 0.0 | 0.3− | 2005 11 07 | 704 | 0.1+ | 0.7+ | 2006 01 21 | G96 | 0.0 | 0.6− |
| 2005 10 22 | 691 | 0.2− | 0.1− | 2005 11 10 | 691 | 0.0 | 0.2− | 2006 01 21 | G96 | 0.2− | 0.3− |
| 2005 10 22 | 691 | 0.0 | 0.3− | 2005 11 10 | 691 | 0.1− | 0.1− | 2006 01 21 | G96 | 0.3+ | 0.5− |
| 2005 10 27 | 691 | 0.2+ | 0.0 | 2005 11 10 | 691 | 0.2+ | 0.3− | | | | |

**2005 UK$_{96}$ = 2003 GR$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.77091 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21518667 | $\omega$ | 169.20027 | −0.23095485 | | +0.97008039 | |
| $a$ | 2.7579887 | $\Omega$ | 87.41545 | −0.89816974 | | −0.18298588 | |
| $e$ | 0.0461355 | $i$ | 4.29751 | −0.37410023 | | −0.15956256 | |
| $P$ | 4.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 691 | 0.0 | 0.2+ | 2005 10 22 | 691 | 0.0 | 0.3+ | 2005 11 05 | 691 | 0.5− | 0.2+ |
| 2000 10 07 | 691 | 0.1− | 0.2+ | 2005 10 22 | 691 | 0.3+ | 0.4+ | 2005 11 05 | 691 | 0.2− | 0.1− |
| 2000 10 07 | 691 | 0.0 | 0.1+ | 2005 10 22 | 691 | 0.4+ | 0.2+ | 2005 11 12 | 703 | 0.1− | 0.2+ |
| 2003 04 08 | 644 | 0.5+ | 0.4− | 2005 10 25 | 703 | 0.2− | 1.2− | 2005 11 12 | 703 | 0.5+ | 1.1− |
| 2003 04 08 | 644 | 0.4+ | 0.5− | 2005 10 25 | 703 | 0.3− | 0.5+ | 2005 11 12 | 703 | 0.2+ | 0.6− |
| 2003 04 08 | 644 | 1.1+ | 0.0 | 2005 10 25 | 703 | 0.3− | 0.1+ | 2005 11 12 | 703 | 0.9+ | 0.9− |
| 2003 04 09 | 691 | 0.1− | 0.0 | 2005 10 25 | 703 | 0.9− | 0.9− | 2005 12 06 | 691 | 0.0 | 0.1+ |
| 2003 04 09 | 691 | 0.1− | 0.0 | 2005 10 27 | 691 | 0.1− | 0.0 | 2005 12 06 | 691 | 0.0 | 0.0 |
| 2003 04 09 | 691 | 0.7− | 0.9+ | 2005 10 27 | 691 | 0.4− | 0.2+ | 2005 12 06 | 691 | 0.1+ | 0.3+ |
| 2003 04 22 | 460 | 1.4+ | 0.1− | 2005 10 27 | 691 | 0.1+ | 0.2− | 2006 01 22 | G96 | 1.1+ | 0.1+ |
| 2003 04 22 | 460 | 1.3+ | 0.4+ | 2005 10 31 | 691 | 0.3− | 0.3+ | 2006 01 22 | G96 | 0.3+ | 0.6− |
| 2003 05 02 | 691(0.11− | | 0.07−) | 2005 10 31 | 691 | 0.1+ | 0.5+ | 2006 01 22 | G96 | 0.6+ | 0.4+ |
| 2003 05 02 | 691(0.11− | | 0.07−) | 2005 10 31 | 691 | 0.0 | 0.2+ | 2006 01 22 | G96 | 0.4+ | 0.1− |
| 2003 05 02 | 691(0.11− | | 0.08−) | 2005 11 05 | 691 | 0.2+ | 1.0− | | | | |

**2005 UW$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.43805 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26113016 | $\omega$ | 130.98721 | −0.95888492 | | +0.23746051 | |
| $a$ | 2.4241791 | $\Omega$ | 63.27716 | −0.28305872 | | −0.83967311 | |
| $e$ | 0.1575882 | $i$ | 10.02010 | +0.02043188 | | −0.48842765 | |
| $P$ | 3.77 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.0 | 0.4+ | 2003 03 08 | 699 | 0.4− | 0.4− | 2005 10 22 | 691 | 0.1+ | 0.1+ |
| 2003 02 01 | 644 | 0.0 | 0.4+ | 2003 03 08 | 699 | 0.4− | 0.7+ | 2005 10 22 | 691 | 0.3− | 0.2+ |
| 2003 02 01 | 644 | 0.1+ | 0.3+ | 2003 03 08 | 644 | 0.3− | 0.7− | 2005 10 27 | 691 | 0.3+ | 0.3− |
| 2003 02 26 | 704 | 0.6+ | 1.0− | 2003 03 08 | 644 | 0.4+ | 0.2+ | 2005 10 27 | 691 | 0.1− | 0.1+ |
| 2003 02 26 | 704 | 0.3+ | 0.1+ | 2003 03 08 | 644 | 0.1− | 0.5− | 2005 10 27 | 691 | 0.3+ | 0.0 |
| 2003 02 26 | 704 | 0.2+ | 0.3− | 2003 03 08 | 644 | 0.2+ | 0.2+ | 2005 10 31 | 691 | 0.1− | 0.3− |
| 2003 02 26 | 704 | 0.3+ | 0.7− | 2003 03 08 | 644 | 0.2− | 0.5− | 2005 10 31 | 691 | 0.5+ | 0.3− |
| 2003 02 26 | 704 | 0.5+ | 0.3− | 2003 03 08 | 644 | 0.3+ | 0.2+ | 2005 10 31 | 691 | 0.3− | 0.1− |
| 2003 03 03 | 644 | 0.1− | 0.8+ | 2004 08 16 | E12 | 2.0+ | 0.2− | 2005 11 04 | 691 | 0.1− | 0.1+ |
| 2003 03 03 | 644 | 0.4− | 0.6+ | 2004 08 16 | E12 | 0.2+ | 0.0 | 2005 11 04 | 691 | 0.3− | 0.2+ |
| 2003 03 03 | 644 | 0.1− | 0.5+ | 2004 08 16 | E12 | 1.0− | 0.2− | 2005 11 04 | 691 | 0.1− | 0.2+ |
| 2003 03 08 | 699 | 0.1− | 0.2+ | 2004 08 16 | E12 | 1.3− | 0.5+ | | | | |
| 2003 03 08 | 699 | 0.9− | 0.2− | 2005 10 22 | 691 | 0.2+ | 0.0 | | | | |

**2005 UA$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.83293 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18570524 | $\omega$ | 270.79280 | +0.90679470 | | +0.38582229 | |
| $a$ | 3.0426590 | $\Omega$ | 66.52604 | −0.27378920 | | +0.84542157 | |
| $e$ | 0.0447711 | $i$ | 10.67423 | −0.32056643 | | +0.36932848 | |
| $P$ | 5.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 691 | 1.3− | 0.2+ | 2005 10 27 | 691 | 0.1− | 0.0 | 2005 12 06 | 691 | 0.2− | 0.5+ |
| 2000 11 27 | 691 | 0.5+ | 0.1+ | 2005 10 27 | 691 | 0.0 | 0.3− | 2005 12 06 | 691 | 0.3− | 0.2+ |
| 2000 11 27 | 691 | 0.6+ | 0.1+ | 2005 10 27 | 691 | 0.3− | 0.0 | 2005 12 06 | 691 | 0.1− | 0.0 |
| 2003 06 04 | 691 | 0.4+ | 0.6+ | 2005 10 31 | 691 | 0.0 | 0.4− | 2006 01 22 | G96 | 0.1+ | 0.0 |
| 2003 06 04 | 691 | 0.1+ | 0.6+ | 2005 10 31 | 691 | 0.1− | 0.1− | 2006 01 22 | G96 | 0.2+ | 0.2− |
| 2003 06 04 | 691 | 0.4+ | 0.5+ | 2005 10 31 | 691 | 0.3− | 0.1+ | 2006 01 22 | G96 | 0.2− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 22 | 691 | 0.1− | 0.9+ | 2005 11 04 | 691 | 0.1+ | 0.1− | 2006 01 22 | G96 | 0.5+ | 0.1+ |
| 2005 10 22 | 691 | 0.0 | 0.2+ | 2005 11 04 | 691 | 0.8+ | 0.1+ | | | | |
| 2005 10 22 | 691 | 0.0 | 0.1+ | 2005 11 04 | 691 | 0.2− | 0.2+ | | | | |

**2005 UY$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.17455 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26648452 | $\omega$ | 114.69326 | | −0.99152170 | | −0.00047516 |
| $a$ | 2.3915973 | $\Omega$ | 65.50272 | | −0.05828677 | | −0.89211907 |
| $e$ | 0.1746151 | $i$ | 8.20959 | | +0.11613515 | | −0.45180011 |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2003 03 22 | 644 | 0.2− | 0.3− | 2005 10 27 | 691 | 0.1+ | 0.4− |
| 2001 10 14 | 645 | 0.1+ | 0.1+ | 2003 03 26 | 704 | 0.4+ | 2.0+ | 2005 10 30 | G96 | 0.2+ | 0.4− |
| 2001 10 25 | 645 | 0.1− | 0.0 | 2003 03 26 | 704 | 0.5+ | 0.3+ | 2005 10 30 | G96 | 0.0 | 0.3− |
| 2001 10 25 | 645 | 0.2− | 0.1+ | 2003 03 26 | 704 | 0.4− | 0.4+ | 2005 10 30 | G96 | 0.0 | 0.6− |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2003 03 26 | 704 | 0.1+ | 0.3+ | 2005 10 30 | G96 | 0.2− | 0.6− |
| 2001 11 18 | 645 | 0.1+ | 0.1− | 2003 03 26 | 704 | 0.4+ | 0.8+ | 2005 10 31 | 691 | 0.2+ | 0.0 |
| 2003 03 08 | 644 | 0.5− | 0.7− | 2005 10 22 | 691 | 0.2− | 0.1− | 2005 10 31 | 691 | 0.0 | 0.2+ |
| 2003 03 08 | 644 | 0.1− | 0.7− | 2005 10 22 | 691 | 0.1− | 0.1− | 2005 10 31 | 691 | 0.1+ | 0.2+ |
| 2003 03 08 | 644 | 0.2− | 0.8− | 2005 10 22 | 691 | 0.3+ | 0.2− | 2005 11 06 | 691 | 0.1+ | 0.8+ |
| 2003 03 22 | 644 | 0.0 | 0.5− | 2005 10 27 | 691 | 0.1− | 0.2− | 2005 11 06 | 691 | 0.2− | 0.2+ |
| 2003 03 22 | 644 | 0.0 | 0.3− | 2005 10 27 | 691 | 0.1− | 0.2− | 2005 11 06 | 691 | 0.1− | 0.3+ |

**2005 UA$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.25406 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17926081 | $\omega$ | 49.03671 | | −0.13206926 | | +0.98656798 |
| $a$ | 3.1151513 | $\Omega$ | 213.73983 | | −0.95349362 | | −0.15294932 |
| $e$ | 0.1338773 | $i$ | 9.96687 | | −0.27093841 | | +0.05735955 |
| $P$ | 5.50 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 04 | 246 | 0.1+ | 0.6+ | 2003 05 05 | 704 | 1.0+ | 0.2− | 2005 10 27 | 691 | 0.1− | 0.1− |
| 2003 05 05 | 246 | 0.3− | 1.2+ | 2003 05 05 | 704 | 0.3− | 0.0 | 2005 10 27 | 691 | 0.0 | 0.2− |
| 2003 05 05 | 246 | 0.2− | 0.5+ | 2003 05 05 | 704 | 0.2− | 0.8+ | 2005 10 29 | G96 | 0.2− | 0.2− |
| 2003 05 05 | 246 | 0.0 | 0.5+ | 2003 05 28 | 691 | 0.1+ | 0.2− | 2005 10 29 | G96 | 0.1− | 0.2− |
| 2003 05 05 | 246 | 0.1− | 0.4+ | 2003 05 28 | 691 | 0.2+ | 0.2+ | 2005 10 29 | G96 | 0.2− | 0.0 |
| 2003 05 05 | 246 | 0.1− | 0.3+ | 2003 05 28 | 691 | 0.3− | 0.3− | 2005 10 29 | G96 | 0.1+ | 0.3− |
| 2003 05 05 | 246 | 0.6− | 0.0 | 2005 10 22 | 691 | 0.1− | 0.5+ | 2005 10 31 | 691 | 0.4+ | 0.1+ |
| 2003 05 05 | 246 | 0.0 | 0.0 | 2005 10 22 | 691 | 0.5− | 0.3+ | 2005 10 31 | 691 | 0.3+ | 0.0 |
| 2003 05 05 | 704 | 0.4+ | 0.1− | 2005 10 22 | 691 | 0.4− | 0.3+ | 2005 10 31 | 691 | 0.2+ | 0.1+ |
| 2003 05 05 | 704 | 0.4+ | 0.1− | 2005 10 27 | 691 | 0.3+ | 0.1+ | | | | |

**2005 UC$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.28481 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21044807 | $\omega$ | 245.17796 | | +0.36543716 | | −0.93082773 |
| $a$ | 2.7992354 | $\Omega$ | 183.39483 | | +0.87617609 | | +0.34539926 |
| $e$ | 0.0866299 | $i$ | 3.80167 | | +0.31427875 | | +0.11941141 |
| $P$ | 4.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 691 | 0.2− | 0.1+ | 2005 10 27 | 691 | 0.0 | 0.0 | 2005 10 31 | 691 | 0.1− | 0.1+ |
| 2000 09 21 | 691 | 0.1− | 0.4+ | 2005 10 27 | 691 | 0.2− | 0.1+ | 2005 11 04 | 691 | 0.1− | 0.1+ |
| 2000 09 21 | 691 | 0.0 | 0.5+ | 2005 10 27 | 691 | 0.0 | 0.0 | 2005 11 04 | 691 | 0.2− | 0.0 |
| 2003 05 01 | 691 | 0.4+ | 1.0+ | 2005 10 30 | G96 | 0.0 | 0.4− | 2005 11 04 | 691 | 0.3− | 0.0 |
| 2003 05 01 | 691 | 0.1+ | 0.8+ | 2005 10 30 | G96 | 0.5− | 0.1+ | 2006 01 21 | 291 | 0.5+ | 0.6+ |
| 2003 05 01 | 691 | 0.1+ | 1.0+ | 2005 10 30 | G96 | 0.2+ | 0.1+ | 2006 01 21 | 291 | 0.3− | 0.4+ |
| 2005 10 22 | 691 | 0.2+ | 0.1+ | 2005 10 30 | G96 | 0.2+ | 0.0 | 2006 01 21 | 291 | 0.1+ | 0.6+ |
| 2005 10 22 | 691 | 0.0 | 0.1+ | 2005 10 31 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 10 22 | 691 | 0.1− | 0.1+ | 2005 10 31 | 691 | 0.1+ | 0.1+ | | | | |

**2005 UO$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.02161 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28798312 | $\omega$ | 280.40707 | | +0.96168175 | | −0.25249034 |
| $a$ | 2.2710395 | $\Omega$ | 94.27927 | | +0.27413917 | | +0.87987837 |
| $e$ | 0.1713788 | $i$ | 6.15095 | | +0.00398994 | | +0.40257009 |
| $P$ | 3.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 699 | 0.5− | 0.7+ | 2005 11 03 | 703 | 0.4− | 0.5− | 2005 11 30 | 704 | 0.6− | 0.4− |
| 1998 09 24 | 699 | 0.3+ | 0.7− | 2005 11 03 | 703 | 0.1− | 0.5− | 2005 11 30 | 704 | 0.1− | 0.3− |
| 1998 09 24 | 699 | 0.2− | 0.9+ | 2005 11 03 | 703 | 0.3+ | 0.2− | 2005 12 03 | 704 | 0.0 | 0.8− |
| 2003 01 26 | 644 | 0.1− | 0.3+ | 2005 11 04 | 704 | 0.3+ | 1.0+ | 2005 12 03 | 704 | 0.7+ | 0.3− |
| 2003 01 26 | 644 | 0.3− | 0.7+ | 2005 11 04 | 704 | 0.7+ | 1.3+ | 2005 12 03 | 704 | 0.2+ | 1.2− |
| 2003 01 26 | 644 | 0.1+ | 0.5− | 2005 11 04 | 704 | 0.5− | 1.1+ | 2005 12 03 | 704 | 1.5+ | 0.9− |
| 2005 10 22 | 703 | 0.8− | 0.3+ | 2005 11 04 | 704 | (0.7− | 3.2+) | 2005 12 07 | 704 | 0.3− | 0.0 |
| 2005 10 22 | 703 | 0.4− | 0.1+ | 2005 11 06 | 699 | 0.2+ | 0.2+ | 2005 12 07 | 704 | 0.1− | 0.3+ |
| 2005 10 22 | 703 | 0.6− | 0.4− | 2005 11 06 | 699 | 0.5− | 0.4+ | 2005 12 07 | 704 | 0.5+ | 1.0+ |
| 2005 10 22 | 703 | 0.1− | 0.1+ | 2005 11 06 | 699 | 0.3+ | 0.6+ | 2005 12 07 | 704 | 0.5+ | 0.8− |
| 2005 10 27 | 699 | 0.0 | 0.7− | 2005 11 06 | 699 | 0.2− | 0.4+ | 2005 12 07 | 704 | 1.6+ | 1.0+ |
| 2005 10 27 | 699 | 0.1+ | 0.1+ | 2005 11 10 | 703 | 0.3+ | 0.2− | 2005 12 07 | 704 | 0.4+ | 0.2+ |
| 2005 10 27 | 699 | 0.9+ | 0.6− | 2005 11 10 | 703 | 0.1+ | 0.1+ | 2005 12 07 | 704 | 0.2+ | 0.5− |
| 2005 10 27 | 699 | 0.4+ | 0.3+ | 2005 11 10 | 703 | 0.2+ | 0.1− | 2005 12 07 | 704 | 0.2+ | 0.3+ |
| 2005 10 28 | 703 | 0.3− | 0.3− | 2005 11 10 | 703 | 1.1− | 1.0− | 2005 12 07 | 704 | 0.5− | 0.2+ |
| 2005 10 28 | 703 | 0.3+ | 0.3+ | 2005 11 20 | 699 | 0.0 | 0.0 | 2005 12 21 | 703 | 0.3− | 0.1+ |
| 2005 10 28 | 703 | 0.3+ | 0.6− | 2005 11 20 | 699 | 0.5+ | 0.4+ | 2005 12 21 | 703 | 1.1− | 0.6− |
| 2005 10 28 | 703 | 0.4+ | 0.2− | 2005 11 20 | 699 | 1.7− | 0.0 | 2005 12 21 | 703 | 1.9− | 1.6− |
| 2005 10 30 | A50 | 0.4− | 1.6+ | 2005 11 20 | 699 | 0.8+ | 0.6+ | 2005 12 21 | 703 | 0.6− | 0.2− |
| 2005 10 30 | A50 | 1.1+ | 0.4− | 2005 11 25 | 703 | 0.3− | 0.1+ | 2006 02 25 | G96 | 0.4+ | 0.7+ |
| 2005 10 31 | G96 | 0.3− | 0.3− | 2005 11 25 | 703 | 0.6− | 0.1+ | 2006 02 25 | G96 | 0.2+ | 0.7+ |
| 2005 10 31 | G96 | 0.1+ | 0.2− | 2005 11 25 | 703 | 0.1+ | 0.3− | 2006 02 25 | G96 | 0.5+ | 0.6+ |
| 2005 10 31 | G96 | 0.3− | 0.4− | 2005 11 25 | 703 | (0.1− | 2.4−) | 2006 02 25 | G96 | 0.5+ | 0.8+ |
| 2005 10 31 | G96 | 0.5− | 0.1− | 2005 11 30 | 704 | 0.0 | 0.2+ | | | | |
| 2005 11 03 | 703 | 0.3+ | 0.6− | 2005 11 30 | 704 | 0.4+ | 0.2+ | | | | |

**2005 UM$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.57365 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22155624 | $\omega$ | 288.05427 | | +0.99116043 | | −0.04734879 |
| $a$ | 2.7048720 | $\Omega$ | 74.80169 | | +0.09617624 | | +0.89989341 |
| $e$ | 0.0549406 | $i$ | 7.37850 | | −0.09138454 | | +0.43353193 |
| $P$ | 4.45 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 18 | 691 | 0.2+ | 0.5− | 2005 10 23 | 291 | 0.1+ | 0.3+ | 2005 10 28 | G96 | (2.4+ | 0.5−) |
| 1999 06 18 | 691 | 0.2− | 0.0 | 2005 10 23 | 291 | 0.1+ | 0.0 | 2005 10 28 | G96 | 0.4+ | 0.3− |
| 1999 06 18 | 691 | 0.2− | 0.2+ | 2005 10 23 | 291 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.5+ | 0.3− |
| 2003 03 27 | 691 | 0.4− | 0.4− | 2005 10 23 | 291 | 0.4+ | 0.2− | 2005 10 28 | G96 | 0.6+ | 0.4− |
| 2003 03 27 | 691 | 0.3+ | 0.8− | 2005 10 23 | 291 | 0.5+ | 0.1− | 2005 10 31 | 691 | 0.4+ | 0.2− |
| 2003 03 27 | 691 | 0.0 | 0.6− | 2005 10 23 | 291 | 0.6− | 0.1− | 2005 10 31 | 691 | 0.4+ | 0.2+ |
| 2003 04 09 | 691 | 0.1+ | 0.2+ | 2005 10 23 | 291 | 0.1+ | 0.0 | 2005 10 31 | 691 | 0.2+ | 0.3− |
| 2003 04 09 | 691 | 0.2− | 0.0 | 2005 10 23 | 291 | 0.1+ | 0.1+ | 2005 11 04 | 691 | 0.0 | 0.1− |
| 2003 04 09 | 691 | 0.3− | 0.3− | 2005 10 23 | 291 | 0.0 | 0.0 | 2005 11 04 | 691 | 0.1+ | 0.1− |
| 2003 04 10 | 291 | 0.1+ | 0.8+ | 2005 10 27 | 691 | 0.4+ | 0.1− | 2005 11 04 | 691 | 0.1+ | 0.1+ |
| 2003 04 10 | 291 | 0.1+ | 0.6+ | 2005 10 27 | 691 | 0.4+ | 0.2− | 2005 12 29 | G96 | 0.5+ | 0.0 |
| 2003 04 10 | 291 | 0.4+ | 0.5+ | 2005 10 27 | 691 | 0.4+ | 0.3+ | 2005 12 29 | G96 | 0.7+ | 0.6− |
| 2005 10 22 | 691 | (2.1− | 0.5−) | 2005 10 27 | 291 | 1.8− | 0.4+ | 2005 12 29 | G96 | 0.3+ | 0.2− |
| 2005 10 22 | 691 | 0.5− | 0.2− | 2005 10 27 | 291 | 1.6− | 0.5+ | 2005 12 29 | G96 | 0.5+ | 0.4− |
| 2005 10 22 | 691 | 0.3+ | 0.1+ | 2005 10 27 | 291 | (3.1− | 1.6−) | | | | |

**2005 UH$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.60324 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17534766 | $\omega$ | 206.71425 | | +0.42268219 | | −0.90627198 |
| $a$ | 3.1613268 | $\Omega$ | 218.28196 | | +0.83244234 | | +0.38968119 |
| $e$ | 0.1710680 | $i$ | 0.30486 | | +0.35830087 | | +0.16376712 |
| $P$ | 5.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 691 | 0.2− | 0.1− | 2005 10 27 | G96 | 0.1+ | 0.5− | 2005 11 10 | 691 | 0.1+ | 0.0 |
| 2000 12 22 | 691 | 0.1− | 0.3− | 2005 10 27 | G96 | 0.2− | 0.8− | 2005 11 25 | G96 | 0.2+ | 0.3− |
| 2000 12 22 | 691 | 0.2+ | 0.1+ | 2005 10 28 | 691 | 0.3− | 0.1− | 2005 11 25 | G96 | 0.0 | 0.3− |
| 2002 04 08 | 291 | 0.1+ | 0.0 | 2005 10 28 | 691 | 0.3+ | 0.2+ | 2005 11 25 | G96 | 0.2− | 0.2− |
| 2002 04 08 | 291 | 0.1+ | 0.6+ | 2005 10 28 | 691 | 0.3+ | 0.1+ | 2005 11 25 | G96 | 0.1− | 0.2− |
| 2002 04 08 | 291 | 0.1+ | 0.2+ | 2005 11 01 | 691 | 0.2+ | 0.1+ | 2005 12 05 | 691 | 0.1− | 0.0 |
| 2005 10 10 | 291 | 0.5− | 0.2+ | 2005 11 01 | 691 | 0.2+ | 0.0 | 2005 12 05 | 691 | 0.3− | 0.4+ |
| 2005 10 10 | 291 | 0.7− | 0.4+ | 2005 11 01 | 691 | 0.2+ | 0.1+ | 2005 12 05 | 691 | 0.2+ | 0.3+ |
| 2005 10 10 | 291 | 1.7− | 0.4− | 2005 11 05 | 691 | 0.1+ | 0.1+ | 2006 01 05 | G96 | 0.2− | 0.2− |
| 2005 10 24 | 691 | 0.1+ | 0.0 | 2005 11 05 | 691 | 0.0 | 0.1+ | 2006 01 05 | G96 | 0.3− | 0.5− |
| 2005 10 24 | 691 | 0.1+ | 0.1+ | 2005 11 05 | 691 | 0.0 | 0.3+ | 2006 01 05 | G96 | 0.3− | 0.2− |
| 2005 10 24 | 691 | 0.5+ | 0.1+ | 2005 11 06 | 704 | 0.3− | 0.4+ | 2006 01 05 | G96 | 0.6+ | 0.6− |
| 2005 10 24 | 691 | 0.3+ | 0.1+ | 2005 11 06 | 704 | 0.1+ | 0.4− | 2006 01 23 | G96 | 0.6− | 0.4+ |
| 2005 10 24 | 691 | 0.1+ | 0.1+ | 2005 11 06 | 704 | 0.6+ | 0.1+ | 2006 01 23 | G96 | 0.3− | 0.3− |
| 2005 10 24 | 691 | 0.3+ | 0.1+ | 2005 11 06 | 704 | 0.0 | 0.1+ | 2006 01 23 | G96 | 0.2+ | 0.3− |
| 2005 10 27 | G96 | 0.4+ | 0.2− | 2005 11 10 | 691 | 0.2+ | 0.2− | 2006 01 23 | G96 | 0.4− | 0.6− |
| 2005 10 27 | G96 | 0.1− | 0.3− | 2005 11 10 | 691 | 0.0 | 0.1− | | | | |

**2005 UZ$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.22503 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28291931 | $\omega$ | 259.50773 | | −0.40767166 | | −0.91305640 |
| $a$ | 2.2980580 | $\Omega$ | 214.55810 | | +0.84549697 | | −0.37269826 |
| $e$ | 0.1688101 | $i$ | 1.15982 | | +0.34487489 | | −0.16560199 |
| $P$ | 3.48 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 691 | 0.7− | 0.2+ | 2003 04 05 | 291 | 0.1− | 0.0 | 2005 11 29 | G96 | 0.1− | 0.4− |
| 1998 10 14 | 691 | 0.3− | 0.3+ | 2003 04 05 | 291 | 0.2− | 0.5− | 2005 11 29 | G96 | 0.0 | 0.3− |
| 1998 10 14 | 691 | 1.3− | 0.4+ | 2003 04 05 | 291 | 0.3− | 0.7− | 2005 11 29 | G96 | 0.6− | 0.3− |
| 1998 11 26 | 691 | 0.4+ | 0.1+ | 2005 10 24 | 691 | 0.1+ | 0.2+ | 2005 11 29 | G96 | 0.2+ | 0.4− |
| 1998 11 26 | 691 | 0.3+ | 0.1− | 2005 10 24 | 691 | 0.3− | 0.2+ | 2005 12 02 | G96 | 0.3− | 0.3− |
| 1998 11 26 | 691 | 0.6+ | 0.5− | 2005 10 24 | 691 | 0.1+ | 0.2+ | 2005 12 02 | G96 | 0.5− | 0.1− |
| 1998 12 13 | 691 | 0.5+ | 0.5− | 2005 10 27 | G96 | 0.3+ | 0.8− | 2005 12 02 | G96 | 0.1− | 0.2− |
| 1998 12 13 | 691 | 0.4+ | 0.3− | 2005 10 27 | G96 | 1.1+ | 0.4− | 2005 12 06 | 691 | 0.3+ | 1.0+ |
| 1998 12 13 | 691 | 0.4+ | 0.4− | 2005 10 27 | G96 | 0.0 | 0.1− | 2005 12 06 | 691 | 0.1− | 0.0 |
| 2003 02 23 | 699 | 0.5− | 1.6+ | 2005 10 27 | G96 | 0.3+ | 0.3− | 2005 12 06 | 691 | 0.1− | 0.1+ |
| 2003 02 23 | 699 | 0.4− | 0.5− | 2005 10 28 | 691 | 0.3+ | 0.4+ | 2006 01 22 | G96 | 0.8− | 0.5− |
| 2003 02 23 | 699 | 0.4+ | 0.5− | 2005 10 28 | 691 | 0.1+ | 0.0 | 2006 01 22 | G96 | 1.0− | 0.5− |
| 2003 02 23 | 699 | 1.0+ | 0.6+ | 2005 10 28 | 691 | 0.0 | 0.2+ | 2006 01 22 | G96 | 0.7− | 0.3− |
| 2003 03 24 | 691 | 0.1+ | 0.5+ | 2005 11 10 | 691 | 0.1− | 0.1− | 2006 01 22 | G96 | 0.8− | 0.3− |
| 2003 03 24 | 691 | 0.1+ | 0.4+ | 2005 11 10 | 691 | 0.0 | 0.2+ | | | | |
| 2003 03 24 | 691 | 0.3+ | 0.4+ | 2005 11 10 | 691 | 0.1− | 0.1− | | | | |

**2005 UJ$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.93599 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19094009 | $\omega$ | 248.77989 | | +0.95629798 | | +0.21012673 |
| $a$ | 2.9867896 | $\Omega$ | 98.64167 | | −0.12629283 | | +0.92400479 |
| $e$ | 0.1608096 | $i$ | 11.86811 | | −0.26371254 | | +0.31947128 |
| $P$ | 5.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 699 | 1.2− | 0.0 | 2005 10 27 | 703 | 0.2+ | 0.6− | 2005 11 29 | 703 | 1.3+ | 0.1− |
| 2000 11 30 | 699 | 0.3− | 1.2+ | 2005 10 27 | 703 | 0.3− | 0.8+ | 2005 11 29 | 703 | 1.5− | 0.2− |
| 2000 11 30 | 699 | 0.3+ | 0.1− | 2005 10 27 | 699 | 0.5+ | 0.4− | 2005 11 29 | 703 | 1.1+ | 0.4+ |
| 2000 11 30 | 699 | 0.5+ | 0.6+ | 2005 10 27 | 699 | 0.2+ | 0.1+ | 2005 11 29 | 703 | 0.7− | 0.3+ |
| 2005 09 30 | 644 | 0.3− | 0.1− | 2005 11 19 | 644 | 0.7+ | 0.1− | 2005 12 06 | 703 | 0.6− | 0.5− |
| 2005 09 30 | 644 | 0.0 | 0.2− | 2005 11 19 | 644 | 0.1+ | 0.3− | 2005 12 06 | 703 | 0.7− | 0.4− |
| 2005 09 30 | 644 | 0.0 | 0.0 | 2005 11 19 | 644 | 1.2− | 0.3+ | 2005 12 06 | 703 | 0.2− | 0.1+ |
| 2005 10 24 | 644 | 0.3+ | 0.1− | 2005 11 22 | 703 | 0.0 | 0.7+ | 2005 12 06 | 703 | 0.9− | 1.9− |
| 2005 10 24 | 644 | 0.4− | 0.1− | 2005 11 22 | 703 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.5+ |
| 2005 10 24 | 644 | 0.4+ | 0.2− | 2005 11 22 | 703 | 1.6+ | 0.2− | 2006 10 23 | G96 | 0.4+ | 0.6− |
| 2005 10 27 | 699 | 0.2− | 0.3+ | 2005 11 22 | 703 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.5− |
| 2005 10 27 | 703 | 0.6− | 0.2+ | 2005 11 28 | 644 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2005 10 27 | 699 | 1.0+ | 0.3− | 2005 11 28 | 644 | 0.2+ | 0.0 | | | | |
| 2005 10 27 | 703 | 0.3+ | 0.3+ | 2005 11 28 | 644 | 0.0 | 0.0 | | | | |

**2005 UT$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.19023 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28072753 | $\omega$ | 235.16541 | | +0.10786359 | | +0.98936828 |
| $a$ | 2.3100039 | $\Omega$ | 41.36930 | | −0.85714088 | | +0.14225823 |
| $e$ | 0.1612719 | $i$ | 8.48777 | | −0.50366156 | | −0.03021579 |
| $P$ | 3.51 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 599 | 0.4+ | 0.1− | 2004 05 21 | 691 | 0.3+ | 0.2− | 2005 10 27 | G96 | 0.3− | 0.3+ |
| 2004 04 21 | 599 | 0.7− | 0.1− | 2004 05 21 | 691 | 0.2− | 0.1+ | 2005 10 27 | G96 | 0.0 | 0.1− |
| 2004 04 21 | 599 | 0.1− | 0.0 | 2004 05 21 | 691 | 0.3+ | 0.3− | 2005 10 27 | G96 | 0.6+ | 0.3+ |
| 2004 04 21 | 599 | 0.2− | 0.0 | 2005 10 25 | G96 | 1.0+ | 0.1− | 2005 10 27 | G96 | 0.6− | 0.1− |
| 2004 05 13 | 691 | 0.1− | 0.1+ | 2005 10 25 | G96 | 0.3+ | 0.6− | 2005 11 01 | 691 | 0.1− | 0.6+ |
| 2004 05 13 | 691 | 0.5− | 0.3+ | 2005 10 25 | G96 | 0.4+ | 0.1− | 2005 11 01 | 691 | 0.4− | 0.2− |
| 2004 05 13 | 691 | 0.5+ | 0.3+ | 2005 10 25 | G96 | 0.3+ | 0.5+ | 2005 11 01 | 691 | 0.0 | 0.2− |

**2005 UQ$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.88717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27186408 | $\omega$ | 249.87407 | | −0.38723394 | | −0.92195698 |
| $a$ | 2.3599429 | $\Omega$ | 222.91037 | | +0.84954695 | | −0.35396847 |
| $e$ | 0.1357663 | $i$ | 0.56581 | | +0.35821761 | | −0.15716760 |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.1− | 0.1+ | 2005 10 28 | G96 | 0.0 | 0.3− | 2005 11 25 | G96 | 0.1+ | 0.2− |
| 2001 08 25 | 691 | 0.1− | 0.2+ | 2005 10 28 | G96 | 0.2− | 0.0 | 2005 11 25 | G96 | 0.0 | 0.2− |
| 2001 08 25 | 691 | 0.2+ | 0.3− | 2005 10 28 | G96 | 0.5+ | 0.1− | 2005 11 25 | G96 | 0.2+ | 0.0 |
| 2003 04 01 | 695 | 0.5+ | 0.7+ | 2005 11 01 | 691 | 0.1+ | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.1− |
| 2003 04 01 | 695 | 0.1− | 0.5+ | 2005 11 01 | 691 | 0.0 | 0.3+ | 2005 12 02 | G96 | 0.1+ | 0.2− |
| 2005 10 25 | G96 | 0.1− | 0.4− | 2005 11 01 | 691 | 0.2+ | 0.4+ | 2005 12 02 | G96 | 0.5+ | 0.6− |
| 2005 10 25 | G96 | 0.2+ | 0.5− | 2005 11 04 | 691 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.2− | 0.3− |
| 2005 10 25 | G96 | 0.5− | 0.5− | 2005 11 04 | 691 | 0.2+ | 0.0 | 2005 12 06 | 691 | 0.2− | 0.3− |
| 2005 10 25 | G96 | 0.5− | 0.4− | 2005 11 04 | 691 | 0.3+ | 0.0 | 2005 12 06 | 691 | 0.3− | 0.4− |
| 2005 10 27 | 291 | 0.5− | 0.2+ | 2005 11 12 | 691 | 0.3+ | 0.0 | 2005 12 06 | 691 | 0.0 | 0.5− |
| 2005 10 27 | 291 | 0.2− | 0.2+ | 2005 11 12 | 691 | 0.1+ | 0.2+ | 2006 01 05 | G96 | 0.1− | 0.5− |
| 2005 10 27 | 291 | 0.2− | 0.1+ | 2005 11 12 | 691 | 0.2+ | 0.0 | 2006 01 05 | G96 | 0.2+ | 0.1+ |
| 2005 10 28 | 691 | 0.1− | 0.2+ | 2005 11 25 | 703 | 0.3+ | 0.4+ | 2006 01 05 | G96 | 0.5+ | 1.3+ |
| 2005 10 28 | 691 | 0.2− | 0.3+ | 2005 11 25 | 703 | 0.6+ | 0.2− | 2006 01 05 | G96 | 0.3− | 0.1+ |
| 2005 10 28 | 691 | 0.3− | 0.2+ | 2005 11 25 | 703 | 0.5− | 1.6− | | | | |
| 2005 10 28 | G96 | 0.3+ | 0.2− | 2005 11 25 | 703 | 1.4+ | 0.4+ | | | | |

**2005 UR$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.39593 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28915434 | $\omega$ | 58.90150 | | −0.31144615 | | −0.94662921 |
| $a$ | 2.2649028 | $\Omega$ | 49.47989 | | +0.83041263 | | −0.31360335 |
| $e$ | 0.1154895 | $i$ | 6.27082 | | +0.46196987 | | −0.07447204 |
| $P$ | 3.41 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.1+ | 0.6− | 2005 10 28 | G96 | 0.1− | 0.4− | 2005 11 25 | G96 | 0.2+ | 0.1− |
| 2003 01 10 | 704 | 0.3− | 0.3− | 2005 10 28 | 704 | 0.0 | 0.8+ | 2005 11 28 | 691 | 0.1− | 0.0 |
| 2003 01 10 | 704 | 0.5− | 0.6− | 2005 10 29 | 683 | 0.1+ | 0.7− | 2005 11 28 | 691 | 0.3− | 0.2+ |
| 2003 01 10 | 704 | 0.5− | 0.0 | 2005 10 29 | 683 | 0.4− | 0.6− | 2005 11 28 | 691 | 0.1+ | 0.1+ |
| 2003 01 10 | 704 | 0.2− | 0.2+ | 2005 10 29 | 683 | 0.1+ | 0.6+ | 2005 11 29 | 703 | (2.2+ | 2.3−) |
| 2003 01 31 | 699 | 0.5+ | 0.1− | 2005 10 31 | 691 | 0.0 | 0.1+ | 2005 11 29 | 703 | 0.1+ | 0.9+ |
| 2003 01 31 | 699 | 1.7− | 0.2+ | 2005 10 31 | 691 | 0.1+ | 0.3+ | 2005 11 29 | 703 | 0.6+ | 0.2− |
| 2003 01 31 | 704 | 0.6+ | 0.6+ | 2005 10 31 | 691 | 1.0− | 0.8+ | 2005 11 29 | 703 | 0.2+ | 0.6− |
| 2003 01 31 | 699 | 1.2+ | 0.2+ | 2005 10 31 | 683 | 0.6− | 0.3− | 2005 11 30 | 691 | 0.1− | 0.1+ |
| 2003 01 31 | 704 | 0.1+ | 0.8+ | 2005 10 31 | 683 | 0.7+ | 0.8− | 2005 11 30 | 691 | 0.0 | 0.0 |
| 2003 01 31 | 699 | 0.6+ | 0.0 | 2005 10 31 | 683 | 0.2− | 0.4+ | 2005 11 30 | 691 | 0.2− | 0.1+ |
| 2003 01 31 | 704 | 0.3+ | 0.5− | 2005 10 31 | 704 | (2.5+ | 0.1−) | 2005 11 30 | 691 | 0.2− | 0.1+ |
| 2003 01 31 | 704 | 0.4+ | 0.0 | 2005 10 31 | 704 | 0.8+ | 0.2− | 2005 11 30 | 691 | 0.1− | 0.0 |
| 2003 03 07 | 644 | 0.3− | 0.5+ | 2005 10 31 | 704 | 0.8+ | 0.4− | 2005 11 30 | 691 | 0.7− | 0.2+ |
| 2003 03 07 | 644 | 0.5− | 0.5+ | 2005 10 31 | 704 | 1.4+ | 0.0 | 2005 12 02 | G96 | 0.3+ | 0.1− |
| 2003 03 07 | 644 | 0.0 | 0.4+ | 2005 10 31 | 704 | 1.0+ | 0.5+ | 2005 12 02 | G96 | 0.0 | 0.3− |
| 2005 10 22 | 691 | 0.1− | 0.3− | 2005 11 03 | 704 | 0.0 | 0.6− | 2005 12 02 | G96 | 0.2+ | 0.1− |
| 2005 10 22 | 691 | 0.1+ | 0.2+ | 2005 11 03 | 704 | 0.1+ | 0.5− | 2005 12 02 | G96 | 0.1− | 0.1− |
| 2005 10 22 | 691 | 0.1+ | 0.1+ | 2005 11 03 | 704 | 1.3+ | 0.5+ | 2005 12 04 | 691 | 0.2− | 0.1+ |
| 2005 10 23 | 703 | 0.5− | 0.1− | 2005 11 03 | 704 | 0.5+ | 0.3− | 2005 12 04 | 691 | 0.1− | 0.4+ |
| 2005 10 23 | 703 | 0.7+ | 1.1− | 2005 11 03 | 704 | 0.0 | 0.1− | 2005 12 04 | 691 | 0.2− | 0.2+ |
| 2005 10 23 | 703 | 0.3+ | 1.2− | 2005 11 04 | 683 | 0.5+ | 0.2+ | 2006 01 06 | G96 | 0.3+ | 0.4− |
| 2005 10 23 | 703 | 0.6+ | 0.9− | 2005 11 04 | 683 | 1.2+ | 0.6− | 2006 01 06 | G96 | 0.1+ | 0.9− |
| 2005 10 26 | 683 | 1.1− | 0.7− | 2005 11 04 | 683 | 0.7+ | 0.3− | 2006 01 06 | G96 | 1.7+ | 1.0− |
| 2005 10 26 | 683 | 0.7+ | 1.9− | 2005 11 05 | 699 | 1.3− | 0.6− | 2006 01 06 | G96 | 0.9+ | 1.4− |
| 2005 10 27 | 691 | 0.0 | 0.0 | 2005 11 05 | 683 | 1.4+ | 1.4− | 2006 01 23 | G96 | 0.4+ | 0.1+ |
| 2005 10 27 | 691 | 0.1+ | 0.0 | 2005 11 05 | 683 | (1.7+ | 2.5−) | 2006 01 23 | G96 | 0.8+ | 0.0 |
| 2005 10 27 | 691 | 0.2− | 0.3+ | 2005 11 05 | 699 | 1.1− | 1.2+ | 2006 01 23 | G96 | 0.6+ | 0.0 |
| 2005 10 28 | 704 | 0.7− | 1.2+ | 2005 11 05 | 683 | (1.5− | 2.1−) | 2006 01 23 | G96 | 0.3+ | 0.2− |
| 2005 10 28 | 704 | 0.2− | 1.0+ | 2005 11 05 | 699 | 0.2− | 0.6+ | 2006 01 27 | G96 | 0.1− | 0.9− |
| 2005 10 28 | G96 | 0.3− | 0.5− | 2005 11 05 | 699 | 0.3+ | 0.0 | 2006 01 27 | G96 | 0.3+ | 0.4− |
| 2005 10 28 | G96 | 0.2+ | 0.5− | 2005 11 25 | G96 | 0.0 | 0.0 | 2006 01 27 | G96 | 0.1+ | 0.8− |
| 2005 10 28 | 704 | 0.3− | 1.5+ | 2005 11 25 | G96 | 0.0 | 0.3− | 2006 01 27 | G96 | 0.1− | 0.8− |
| 2005 10 28 | G96 | 0.0 | 0.5− | 2005 11 25 | G96 | 0.3+ | 0.2− | | | | |

**2005 UG$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.41672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26149047 | $\omega$ | 152.68832 | | −0.97064892 | | +0.23175822 |
| $a$ | 2.4219517 | $\Omega$ | 40.87782 | | −0.23466924 | | −0.85420471 |
| $e$ | 0.0528089 | $i$ | 5.63455 | | −0.05264046 | | −0.46542717 |
| $P$ | 3.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 21 | 644 | 0.2+ | 0.3− | 2005 10 26 | 691 | 0.2− | 0.2+ | 2005 11 01 | G96 | 0.0 | 0.3− |
| 2003 02 21 | 644 | 0.2+ | 0.1− | 2005 10 26 | 691 | 0.0 | 0.0 | 2005 11 05 | 691 | 0.1+ | 0.5− |
| 2003 02 21 | 644 | 0.5+ | 0.2+ | 2005 10 26 | 691 | 0.3− | 0.2+ | 2005 11 05 | 691 | 0.0 | 0.3− |
| 2003 03 03 | 644 | 0.5− | 0.1+ | 2005 10 27 | G96 | 0.0 | 0.3− | 2005 11 05 | 691 | 0.1+ | 0.1+ |
| 2003 03 03 | 644 | 0.1+ | 0.5+ | 2005 10 27 | G96 | 0.1− | 0.2− | 2005 11 11 | 691 | 0.2+ | 1.8+ |
| 2003 03 03 | 644 | 0.2− | 0.6+ | 2005 10 27 | G96 | 0.4+ | 0.2− | 2005 11 11 | 691 | 0.0 | 0.3− |
| 2003 03 07 | 644 | 0.0 | 0.3− | 2005 10 27 | G96 | 0.3− | 0.1− | 2005 11 11 | 691 | 0.0 | 0.7− |
| 2003 03 07 | 644 | 0.1+ | 0.4− | 2005 11 01 | G96 | 0.2+ | 0.2− | | | | |
| 2003 03 07 | 644 | 0.4− | 0.4− | 2005 11 01 | G96 | 0.1− | 0.5− | | | | |

**2005 UM$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.76347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23459751 | $\omega$ | 5.32303 | | +0.65135709 | | −0.73243864 |
| $a$ | 2.6036770 | $\Omega$ | 44.23398 | | +0.68525652 | | +0.45569190 |
| $e$ | 0.1817172 | $i$ | 16.50293 | | +0.32581811 | | +0.50584438 |
| $P$ | 4.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 644 | 0.4− | 1.4− | 2005 10 26 | 691 | 0.0 | 0.1− | 2005 11 12 | 691 | 0.0 | 0.2+ |
| 2001 12 23 | 644 | 0.2+ | 0.6− | 2005 10 27 | G96 | 0.3− | 0.2− | 2005 11 12 | 691 | 0.0 | 0.3+ |
| 2001 12 23 | 644 | 0.1− | 0.6− | 2005 10 27 | G96 | 0.2+ | 0.5− | 2005 11 28 | 704 | 0.7+ | 0.0 |
| 2001 12 23 | 644 | 0.4+ | 0.6− | 2005 10 27 | G96 | 0.2− | 0.6− | 2005 11 28 | 704 | 0.1+ | 0.0 |
| 2001 12 23 | 644 | 0.4− | 1.0− | 2005 11 01 | 704 | 0.4− | 0.2+ | 2005 11 28 | 704 | 0.4+ | 0.2− |
| 2001 12 23 | 644 | 0.2+ | 0.7− | 2005 11 01 | 704 | 0.3− | 0.2− | 2005 11 28 | 703 | 0.5+ | 1.2+ |
| 2001 12 23 | 704 | 0.6+ | 1.3− | 2005 11 01 | 704 | 1.0− | 0.6+ | 2005 11 28 | 703 | 1.3− | 0.5+ |
| 2001 12 23 | 704 | 0.3+ | 1.1− | 2005 11 01 | 704 | 0.5− | 0.4+ | 2005 11 28 | 703 | 0.5− | 0.3+ |
| 2001 12 23 | 704 | 0.8+ | 0.9− | 2005 11 01 | 704 | 0.3− | 0.4+ | 2005 11 28 | 704 | 0.5+ | 0.3+ |
| 2001 12 23 | 704 | (1.9+ | 1.0−) | 2005 11 01 | 691 | 0.0 | 0.1− | 2005 11 28 | 703 | 0.7− | 0.5+ |
| 2003 04 10 | 691 | 0.6+ | 0.5+ | 2005 11 01 | 691 | 0.1− | 0.1− | 2005 11 28 | 704 | 0.3+ | 0.3− |
| 2003 04 10 | 691 | 0.0 | 0.5+ | 2005 11 01 | 691 | 0.3+ | 0.3− | 2005 12 02 | 704 | 0.2− | 1.1+ |
| 2003 04 10 | 691 | 0.7+ | 0.7+ | 2005 11 04 | 704 | 0.3− | 0.9+ | 2005 12 02 | 704 | 0.2+ | 0.3+ |
| 2005 10 01 | 704 | 0.3+ | 0.4+ | 2005 11 04 | 704 | 0.1+ | 0.7+ | 2005 12 02 | 704 | 0.3+ | 0.4+ |
| 2005 10 01 | 704 | 0.1− | 0.6− | 2005 11 04 | 704 | 0.1− | 0.7+ | 2005 12 02 | 704 | 0.4− | 0.5+ |
| 2005 10 01 | 704 | 0.5− | 0.8− | 2005 11 04 | 704 | (0.2− | 1.8+) | 2005 12 02 | 704 | 0.1− | 0.3+ |
| 2005 10 26 | 699 | 0.3− | 0.9+ | 2005 11 07 | 704 | 0.0 | 0.0 | 2005 12 05 | 704 | 1.1− | 0.6+ |
| 2005 10 26 | 699 | (0.1+ | 1.6+) | 2005 11 07 | 704 | 0.1+ | 0.1+ | 2005 12 05 | 704 | 0.3− | 0.5+ |
| 2005 10 26 | 691 | 0.0 | 0.0 | 2005 11 07 | 704 | 0.6− | 0.2− | 2005 12 05 | 704 | 0.1+ | 0.9+ |
| 2005 10 26 | 699 | 1.0− | 0.3− | 2005 11 07 | 704 | 0.1+ | 0.0 | 2005 12 05 | 704 | 0.4− | 1.2+ |
| 2005 10 26 | 691 | 0.1− | 0.1− | 2005 11 07 | 704 | 0.4− | 0.4− | | | | |
| 2005 10 26 | 699 | 0.7+ | 0.1− | 2005 11 12 | 691 | 0.1− | 0.4+ | | | | |

**2005 UO$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.18407 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23525454 | $\omega$ | 252.58883 | | −0.71286326 | | −0.70079975 |
| $a$ | 2.5988270 | $\Omega$ | 242.91044 | | +0.65422758 | | −0.65089047 |
| $e$ | 0.0688239 | $i$ | 1.70984 | | +0.25261085 | | −0.29192689 |
| $P$ | 4.19 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.5− | 0.8+ | 2005 10 27 | G96 | 0.0 | 0.5− | 2005 11 26 | G96 | 0.0 | 0.2− |
| 2000 07 31 | 807 | 0.1− | 0.8+ | 2005 10 27 | G96 | 0.3+ | 0.4− | 2005 11 26 | G96 | 0.0 | 0.2− |
| 2003 04 25 | 691 | 0.0 | 0.3+ | 2005 10 30 | 691 | 0.3− | 0.1+ | 2005 12 08 | 691 | 0.3− | 0.2+ |
| 2003 04 25 | 691 | 0.1+ | 0.3+ | 2005 10 30 | 691 | 0.3+ | 0.2+ | 2005 12 08 | 691 | 0.1− | 0.1− |
| 2003 04 25 | 691 | 0.2+ | 0.2+ | 2005 10 30 | 691 | 0.2+ | 0.2+ | 2005 12 08 | 691 | 0.1− | 0.1+ |
| 2005 10 26 | 691 | 0.1+ | 0.2− | 2005 11 11 | 691 | 0.1− | 0.1+ | 2006 01 21 | G96 | 0.7− | 0.0 |
| 2005 10 26 | 691 | 0.2− | 0.1+ | 2005 11 11 | 691 | 0.1− | 0.4+ | 2006 01 21 | G96 | 0.4+ | 0.1− |
| 2005 10 26 | 691 | 0.1− | 0.1− | 2005 11 11 | 691 | 0.4+ | 0.3+ | 2006 01 21 | G96 | 0.6+ | 0.1+ |
| 2005 10 27 | G96 | 0.1− | 0.4− | 2005 11 26 | G96 | 0.4+ | 0.1− | 2006 01 21 | G96 | 0.4− | 0.1+ |
| 2005 10 27 | G96 | 0.3− | 0.5− | 2005 11 26 | G96 | 0.1− | 0.3− | | | | |

**2005 UA$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.00892 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25993963 | $\omega$ | 17.98614 | | +0.55709225 | | −0.83018374 |
| $a$ | 2.4315753 | $\Omega$ | 38.16655 | | +0.75767795 | | +0.49773320 |
| $e$ | 0.1668827 | $i$ | 1.95231 | | +0.33995934 | | +0.25111077 |
| $P$ | 3.79 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 691 | 0.0 | 0.2− | 2005 10 27 | G96 | 0.4+ | 0.5− | 2005 12 05 | G96 | 0.4+ | 0.1− |
| 2001 09 11 | 691 | 0.1− | 0.3− | 2005 10 27 | G96 | 0.3− | 0.3− | 2005 12 05 | G96 | 0.3+ | 0.1− |
| 2001 09 11 | 691 | 0.2− | 0.3+ | 2005 10 27 | G96 | 0.3− | 0.3− | 2005 12 05 | G96 | 0.2+ | 0.5− |
| 2001 10 17 | 691 | 0.0 | 0.3+ | 2005 10 30 | 691 | 0.3− | 0.1− | 2005 12 10 | 691 | 0.4+ | 0.6+ |
| 2001 10 17 | 691 | 0.0 | 0.3+ | 2005 10 30 | 691 | 0.1− | 0.1− | 2005 12 10 | 691 | 0.3− | 0.6+ |
| 2001 10 17 | 691 | 0.0 | 0.1+ | 2005 10 30 | 691 | 0.5− | 0.3− | 2005 12 10 | 691 | 0.3+ | 0.3+ |
| 2005 10 26 | 691 | 0.1+ | 0.3− | 2005 11 12 | 691 | 0.3+ | 0.1− | 2006 01 23 | G96 | 0.7− | 0.5− |
| 2005 10 26 | 691 | 0.2− | 0.1− | 2005 11 12 | 691 | 0.0 | 0.1− | 2006 01 23 | G96 | 0.2− | 0.3− |
| 2005 10 26 | 691 | 0.0 | 0.3− | 2005 11 12 | 691 | 0.4+ | 0.0 | 2006 01 23 | G96 | 0.3− | 0.3− |
| 2005 10 27 | G96 | 0.0 | 0.7− | 2005 12 05 | G96 | 0.5+ | 1.3+ | 2006 01 23 | G96 | 1.4− | 0.1+ |

**2005 UE$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.57145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17535089 | $\omega$ | 266.34256 | | +0.93798341 | | −0.25220076 |
| $a$ | 3.1612880 | $\Omega$ | 108.15098 | | +0.31990877 | | +0.89405542 |
| $e$ | 0.0766449 | $i$ | 14.49680 | | −0.13358709 | | +0.37021572 |
| $P$ | 5.62 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 27 | E12 | 0.9− | 0.4− | 2005 10 27 | 704 | 0.2− | 0.0 | 2005 12 06 | 699 | 0.2− | 0.7+ |
| 2004 06 27 | E12 | 0.2− | 1.0+ | 2005 10 27 | 703 | 0.2− | 0.2+ | 2005 12 06 | 699 | 0.3− | 0.6− |
| 2004 06 27 | E12 | 0.6+ | 0.3+ | 2005 10 27 | 704 | 0.1+ | 0.3+ | 2005 12 06 | 699 | 0.3− | 0.5− |
| 2004 06 27 | E12 | 0.5+ | 0.8− | 2005 10 27 | 703 | 0.5+ | 0.4− | 2005 12 06 | 699 | 1.4− | 0.2− |
| 2005 10 07 | 703 | 0.5− | 0.5+ | 2005 10 27 | 704 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.3+ |
| 2005 10 07 | 703 | 0.2+ | 1.2− | 2005 10 27 | 704 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.4+ |
| 2005 10 07 | 703 | 0.1− | 0.7− | 2005 11 01 | 703 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.5+ |
| 2005 10 07 | 703 | (2.1− | 2.7−) | 2005 11 01 | 703 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.2+ |
| 2005 10 26 | 644 | 0.1+ | 0.1− | 2005 11 01 | 703 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2005 10 26 | 644 | 0.2− | 0.4− | 2005 11 01 | 703 | 0.7− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2005 10 26 | 644 | 0.1− | 0.1− | 2005 11 30 | 703 | (1.7− | 2.9+) | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2005 10 27 | 704 | 0.6+ | 0.4+ | 2005 11 30 | 703 | (0.5+ | 1.9+) | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2005 10 27 | 703 | 0.0 | 0.1+ | 2005 11 30 | 703 | 1.1+ | 0.7+ | | | | |
| 2005 10 27 | 703 | 0.2+ | 0.6+ | 2005 11 30 | 703 | 0.6+ | 0.4+ | | | | |

**2005 UW$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.36986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17965609 | $\omega$ | 115.52287 | | +0.95031863 | | +0.29230926 |
| $a$ | 3.1105803 | $\Omega$ | 227.68169 | | −0.31119039 | | +0.90034562 |
| $e$ | 0.1137382 | $i$ | 8.32071 | | +0.00741956 | | +0.32238652 |
| $P$ | 5.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | 0.1+ | 0.7+ | 2005 10 28 | 599 | 1.2+ | 0.5+ | 2005 11 05 | 691 | 0.3− | 0.4+ |
| 2003 04 25 | 691 | 0.6+ | 0.6+ | 2005 10 28 | 599 | 0.8+ | 0.2+ | 2005 11 05 | 691 | 0.2− | 0.4+ |
| 2003 04 25 | 691 | 0.3− | 0.5+ | 2005 10 28 | 599 | 0.9+ | 0.3+ | 2005 11 05 | 691 | 0.4− | 0.4+ |
| 2004 06 15 | 691 | 0.3+ | 0.4+ | 2005 10 29 | 703 | 1.0− | 0.0 | 2005 11 12 | 691 | 0.1− | 0.2− |
| 2004 06 15 | 691 | 0.2− | 0.3− | 2005 10 29 | 703 | 0.0 | 0.1− | 2005 11 12 | 691 | 0.1+ | 0.2+ |
| 2004 06 15 | 691 | 0.1− | 0.1+ | 2005 10 29 | 703 | 0.5− | 1.9− | 2005 11 12 | 691 | 0.1+ | 0.4− |
| 2005 10 24 | 691 | 0.3− | 0.0 | 2005 10 29 | 703 | 0.0 | 0.2− | 2005 12 31 | G96 | 0.2+ | 0.1+ |
| 2005 10 24 | 691 | 0.2− | 0.2+ | 2005 10 30 | 691 | 0.3− | 0.3+ | 2005 12 31 | G96 | 0.3+ | 0.4+ |
| 2005 10 24 | 691 | 0.1− | 0.1− | 2005 10 30 | 691 | 0.8+ | 0.6+ | 2005 12 31 | G96 | 0.4+ | 0.5− |
| 2005 10 28 | 599 | 0.9+ | 0.4+ | 2005 10 30 | 691 | 0.3− | 0.2+ | 2005 12 31 | G96 | 0.5+ | 0.3+ |

**2005 UD$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.11279 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17847995 | $\omega$ | 311.74439 | | +0.38848106 | | −0.91576373 |
| $a$ | 3.1242307 | $\Omega$ | 115.12648 | | +0.87540152 | | +0.33213480 |
| $e$ | 0.1311583 | $i$ | 6.48595 | | +0.28767107 | | +0.22597183 |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 05 | 703 | 0.3− | 0.1− | 2005 10 27 | 644 | 0.2+ | 0.2− | 2005 11 03 | 703 | 0.2− | 1.1− |
| 2005 10 05 | 703 | 0.4+ | 0.2+ | 2005 10 28 | 703 | 0.5+ | 0.4+ | 2005 11 03 | 703 | 0.5− | 0.8− |
| 2005 10 05 | 703 | 1.2− | 0.9+ | 2005 10 28 | 703 | 0.4+ | 0.6− | 2005 11 03 | 703 | 0.3− | 0.4+ |
| 2005 10 05 | 703 | 0.6+ | 0.6− | 2005 10 28 | 703 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2005 10 22 | 644 | 0.2− | 0.2− | 2005 10 28 | 703 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3+ | 1.2+ |
| 2005 10 22 | 703 | 0.4− | 0.6+ | 2005 10 31 | 699 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2005 10 22 | 703 | 0.2− | 0.9− | 2005 10 31 | 699 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.3+ |
| 2005 10 22 | 703 | 0.7− | 1.0+ | 2005 10 31 | 699 | 0.4+ | 1.0+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2005 10 22 | 644 | 0.0 | 0.0 | 2005 10 31 | 699 | 1.0− | 1.2− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2005 10 22 | 703 | 1.6+ | 0.9+ | 2005 11 01 | 644 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2005 10 22 | 644 | 0.0 | 0.0 | 2005 11 01 | 644 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.5− | 0.1− |
| 2005 10 27 | 644 | 0.0 | 0.4+ | 2005 11 01 | 644 | 0.3+ | 0.1− | | | | |
| 2005 10 27 | 644 | 0.2+ | 0.0 | 2005 11 03 | 703 | 0.2+ | 1.4− | | | | |

**2005 UL$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.94213 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29485559 | $\omega$ | 176.07162 | | +0.59669159 | | +0.79731851 |
| $a$ | 2.2356122 | $\Omega$ | 130.53508 | | −0.73946948 | | +0.59025723 |
| $e$ | 0.1511604 | $i$ | 6.86069 | | −0.31167937 | | +0.12601425 |
| $P$ | 3.34 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 704 | 0.4− | 0.5+ | 2004 03 23 | 704 | 0.3+ | 0.9+ | 2005 10 28 | 703 | 0.7+ | 0.6+ |
| 2001 05 26 | 704 | 0.0 | 0.3− | 2004 03 28 | 691 | 0.2+ | 0.4− | 2005 10 28 | 703 | 0.9− | 0.8− |
| 2001 05 26 | 704 | 0.4+ | 0.1− | 2004 03 28 | 691 | 0.2+ | 0.4− | 2005 10 28 | 703 | 0.7− | 0.3+ |
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2004 03 28 | 691 | 0.0 | 0.1− | 2005 11 03 | 703 | 0.6+ | 0.3+ |
| 2004 03 14 | 691 | 0.3− | 0.1− | 2005 10 22 | 703 | 0.6+ | 0.8− | 2005 11 03 | 703 | 2.0− | 0.1+ |
| 2004 03 14 | 691 | 0.3− | 0.3+ | 2005 10 22 | 703 | 0.4+ | 0.1− | 2005 11 03 | 703 | 0.3− | 0.2+ |
| 2004 03 23 | 704 | 0.1+ | 0.2+ | 2005 10 22 | 703 | 0.7+ | 0.8+ | 2005 11 03 | 703 | 0.4+ | 1.0− |
| 2004 03 23 | 704 | 0.1+ | 1.3+ | 2005 10 22 | 703 | 0.6+ | 0.1+ | | | | |
| 2004 03 23 | 704 | 0.1− | 0.1− | 2005 10 28 | 703 | 0.0 | 0.2+ | | | | |

**2005 UP$_{161}$ = 2003 DH$_{18}$ = 2006 UY$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.67812 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24015803 | $\omega$ | 154.55390 | | −0.07410272 | | +0.98451185 |
| $a$ | 2.5633307 | $\Omega$ | 110.86046 | | −0.94156135 | | −0.01657391 |
| $e$ | 0.1033114 | $i$ | 9.78974 | | −0.32858943 | | −0.17453287 |
| $P$ | 4.10 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 608 | 0.2+ | 0.1− | 2005 10 24 | 644 | 0.4+ | 0.1+ | 2005 11 09 | 703 | 0.4+ | 0.0 |
| 2003 01 26 | 608 | 0.0 | 0.8− | 2005 10 28 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 695 | 0.1+ | 0.1− |
| 2003 01 26 | 608 | 0.1+ | 0.2− | 2005 10 28 | 703 | 0.7+ | 0.2− | 2006 10 20 | 695 | 0.3+ | 0.1− |
| 2003 02 04 | 699 | 0.7+ | 0.3+ | 2005 10 28 | 703 | 1.0− | 0.4+ | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2003 02 04 | 699 | 0.9− | 1.0− | 2005 10 28 | 703 | 0.9− | 0.4− | 2006 10 21 | G96 | 0.3+ | 0.2+ |
| 2003 02 04 | 699 | 0.5− | 1.0+ | 2005 10 31 | G96 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.5− | 0.3− |
| 2003 02 04 | 699 | 0.7− | 0.4− | 2005 10 31 | G96 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2003 02 19 | 644 | 0.4+ | 0.2+ | 2005 10 31 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2003 02 19 | 644 | 0.0 | 0.4+ | 2005 10 31 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2003 02 19 | 644 | 0.2+ | 0.3+ | 2005 11 03 | 703 | 0.6− | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2003 02 23 | 699 | 0.0 | 0.1+ | 2005 11 03 | 703 | 0.7− | 0.8− | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2003 02 23 | 699 | 0.8− | 0.2+ | 2005 11 03 | 703 | 0.1− | 0.5− | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2003 02 23 | 699 | 0.7+ | 0.1+ | 2005 11 03 | 703 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2003 02 23 | 699 | 0.5+ | 0.6− | 2005 11 09 | 703 | 0.3+ | 0.5+ | 2006 11 22 | G96 | 0.1− | 0.3+ |
| 2005 10 24 | 644 | 0.3+ | 0.2+ | 2005 11 09 | 703 | 0.1− | 0.1+ | | | | |
| 2005 10 24 | 644 | 0.4+ | 0.3+ | 2005 11 09 | 703 | 0.1− | 0.7+ | | | | |

**2005 UP$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.14153 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19948965 | $\omega$ | 343.58454 | | −0.01406267 | | −0.99824255 |
| $a$ | 2.9008312 | $\Omega$ | 107.19311 | | +0.92403228 | | −0.03497252 |
| $e$ | 0.1561169 | $i$ | 3.45477 | | +0.38205573 | | +0.04784063 |
| $P$ | 4.94 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 16 | 691 | 0.2+ | 0.2− | 2005 11 01 | G96 | 0.5+ | 0.1− | 2005 12 05 | 699 | 0.6+ | 1.0− |
| 2000 11 16 | 691 | 0.0 | 0.3− | 2005 11 01 | G96 | 0.0 | 0.2− | 2005 12 05 | 699 | 0.5+ | 0.5+ |
| 2000 11 16 | 691 | 0.0 | 0.2− | 2005 11 01 | G96 | 0.1− | 0.2− | 2005 12 05 | 699 | 0.1+ | 1.1− |
| 2002 03 12 | 691 | 0.5+ | 0.3− | 2005 11 01 | 691 | 0.2− | 0.1+ | 2005 12 05 | 699 | 0.4+ | 0.0 |
| 2002 03 12 | 691 | 0.3+ | 0.3− | 2005 11 01 | 691 | 0.2− | 0.2+ | 2005 12 29 | G96 | 0.4+ | 0.3− |
| 2002 03 12 | 691 | 0.7− | 0.8+ | 2005 11 01 | 691 | 0.0 | 0.1+ | 2005 12 29 | G96 | 0.5+ | 0.0 |
| 2005 10 24 | 691 | 0.5+ | 0.4+ | 2005 11 04 | G96 | 0.0 | 0.0 | 2005 12 29 | G96 | 0.4− | 0.3− |
| 2005 10 24 | 691 | 0.0 | 0.0 | 2005 11 04 | G96 | 0.2− | 0.0 | 2005 12 29 | G96 | 0.4+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 24 | 691 | 0.3− | 0.4+ | 2005 11 04 | G96 | 0.2+ | 0.1+ | 2006 01 22 | G96 | 0.9+ | 0.3− |
| 2005 10 28 | 691 | 0.0 | 0.3+ | 2005 11 04 | G96 | 0.0 | 0.2− | 2006 01 22 | G96 | 0.0 | 0.1− |
| 2005 10 28 | 691 | 0.1− | 0.1+ | 2005 12 04 | 704 | 1.1− | 0.4− | 2006 01 22 | G96 | 0.2+ | 0.1− |
| 2005 10 28 | 691 | 0.0 | 0.3+ | 2005 12 04 | 704 | 0.8− | 0.1− | 2006 01 22 | G96 | 0.2+ | 0.1+ |
| 2005 11 01 | G96 | 0.0 | 0.1− | 2005 12 04 | 704 | 1.4− | 0.2+ | | | | |

### 2005 UW$_{182}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 343.03330 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.19540338 | $\omega$ | 77.32619 | | −0.79891288 | | −0.59955576 | |
| $a$ | 2.9411330 | $\Omega$ | 65.81616 | | +0.52955773 | | −0.73877505 | |
| $e$ | 0.0506054 | $i$ | 2.99455 | | +0.28514349 | | −0.30780565 | |
| $P$ | 5.04 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 28 | 691 | 0.2+ | 0.2− | 2005 10 28 | 691 | 0.2− | 0.3+ | 2005 12 02 | G96 | 0.1+ | 0.1− |
| 2000 11 28 | 691 | 0.1+ | 0.8− | 2005 10 28 | 691 | 0.0 | 0.2− | 2005 12 02 | G96 | 0.0 | 0.1+ |
| 2000 11 28 | 691 | 0.0 | 0.3− | 2005 10 28 | 691 | 0.3− | 0.1+ | 2005 12 02 | G96 | 0.5+ | 0.4+ |
| 2004 08 23 | 691 | 0.1− | 0.1− | 2005 11 12 | 691 | 0.2+ | 0.6+ | 2005 12 02 | G96 | 0.3+ | 0.1+ |
| 2004 08 23 | 691 | 0.1+ | 0.0 | 2005 11 12 | 691 | 0.2+ | 0.2+ | 2005 12 31 | G96 | 0.6− | 0.4+ |
| 2004 08 23 | 691 | 0.0 | 0.1+ | 2005 11 12 | 691 | 0.6− | 0.5+ | 2005 12 31 | G96 | 0.1− | 0.7+ |
| 2005 10 24 | 691 | 0.5+ | 0.6− | 2005 11 25 | G96 | 0.4− | 0.1+ | 2005 12 31 | G96 | 0.0 | 0.0 |
| 2005 10 24 | 691 | 0.2− | 0.1− | 2005 11 25 | G96 | 0.3+ | 0.1+ | 2005 12 31 | G96 | 0.2+ | 0.3+ |
| 2005 10 24 | 691 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.1+ | 0.2+ | | | | |

### 2005 UA$_{184}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 55.36507 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27458057 | $\omega$ | 46.01355 | | −0.08446166 | | −0.99477036 | |
| $a$ | 2.3443522 | $\Omega$ | 48.92216 | | +0.89101493 | | −0.10120135 | |
| $e$ | 0.1907800 | $i$ | 4.36932 | | +0.44604779 | | +0.01379214 | |
| $P$ | 3.59 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.1+ | 0.2− | 2005 10 28 | 691 | 0.1+ | 0.1+ | 2005 11 26 | G96 | 0.1− | 0.1− |
| 1996 04 12 | 691 | 0.2− | 0.6− | 2005 11 01 | 691 | 0.0 | 0.0 | 2005 11 26 | G96 | 0.2− | 0.3− |
| 1996 04 12 | 691 | 0.3− | 0.1− | 2005 11 01 | 691 | 0.1− | 0.1− | 2005 11 26 | G96 | 0.3− | 0.3− |
| 2003 03 26 | 644 | 0.1− | 0.4+ | 2005 11 01 | 691 | 0.0 | 0.0 | 2005 12 05 | 691 | 0.1− | 0.4+ |
| 2003 03 26 | 644 | 0.3+ | 0.1+ | 2005 11 06 | 704 | 0.5+ | 0.1− | 2005 12 05 | 691 | 0.0 | 0.1+ |
| 2003 03 26 | 644 | 0.5+ | 0.7+ | 2005 11 06 | 704 | 0.0 | 0.2− | 2005 12 05 | 691 | 0.2+ | 1.0− |
| 2003 03 26 | 644 | 0.2+ | 0.5+ | 2005 11 06 | 704 | 0.2− | 0.6− | 2005 12 07 | 691 | 0.0 | 0.1− |
| 2003 03 26 | 644 | 0.2+ | 0.4+ | 2005 11 06 | 704 | 0.9+ | 1.4− | 2005 12 07 | 691 | 0.0 | 0.3+ |
| 2003 03 26 | 644 | 0.2+ | 0.4+ | 2005 11 10 | 291 | 0.2− | 0.3+ | 2005 12 07 | 691 | 0.0 | 0.1+ |
| 2005 10 25 | G96 | 0.0 | 0.0 | 2005 11 10 | 691 | 0.0 | 0.1− | 2005 12 30 | G96 | 0.1+ | 0.1+ |
| 2005 10 25 | G96 | 0.1+ | 0.1− | 2005 11 10 | 291 | 0.2− | 0.0 | 2005 12 30 | G96 | 0.7+ | 0.6− |
| 2005 10 25 | G96 | 0.3− | 0.1− | 2005 11 10 | 291 | 0.0 | 0.0 | 2005 12 30 | G96 | 0.3+ | 0.2− |
| 2005 10 25 | G96 | 0.4+ | 0.1− | 2005 11 10 | 691 | 0.1+ | 0.0 | 2005 12 30 | G96 | 0.2+ | 0.0 |
| 2005 10 28 | 691 | 0.0 | 0.2+ | 2005 11 10 | 691 | 0.0 | 0.1+ | | | | |
| 2005 10 28 | 691 | 0.0 | 0.1+ | 2005 11 26 | G96 | 0.2+ | 0.0 | | | | |

### 2005 UY$_{185}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 230.20226 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22387523 | $\omega$ | 191.11221 | | −0.25958673 | | +0.96201070 | |
| $a$ | 2.6861609 | $\Omega$ | 63.88788 | | −0.87865465 | | −0.19894335 | |
| $e$ | 0.1137976 | $i$ | 5.40355 | | −0.40072525 | | −0.18696779 | |
| $P$ | 4.40 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 691 | 0.2+ | 0.2− | 2005 10 28 | 691 | 0.0 | 0.1− | 2005 12 02 | G96 | 0.2+ | 0.2− |
| 2000 10 07 | 691 | 0.2+ | 0.2− | 2005 11 01 | 691 | 0.3− | 0.2− | 2005 12 02 | G96 | 0.1+ | 0.2− |
| 2000 10 07 | 691 | 0.3− | 0.3+ | 2005 11 01 | 691 | 1.1− | 0.8+ | 2005 12 02 | G96 | 1.1− | 1.8− |
| 2003 03 26 | 691 | 0.3− | 0.2− | 2005 11 01 | 691 | 0.3+ | 0.0 | 2005 12 04 | G96 | 0.2+ | 0.3− |
| 2003 03 26 | 691 | 0.2+ | 0.0 | 2005 11 12 | 691 | 0.4− | 0.5+ | 2005 12 04 | G96 | 0.5+ | 0.1− |
| 2003 03 26 | 691 | 0.0 | 0.1+ | 2005 11 12 | 691 | 0.3+ | 0.1− | 2005 12 04 | G96 | 0.3+ | 0.3− |
| 2005 10 25 | G96 | 0.1+ | 0.1− | 2005 11 12 | 691 | 0.7+ | 0.2+ | 2005 12 04 | G96 | 0.5+ | 0.4− |
| 2005 10 25 | G96 | 0.5− | 0.1− | 2005 11 25 | G96 | 0.4+ | 0.1− | 2005 12 31 | G96 | 0.3+ | 0.2− |
| 2005 10 25 | G96 | 0.5+ | 0.6− | 2005 11 25 | G96 | 0.0 | 0.5− | 2005 12 31 | G96 | 0.5− | 0.3+ |
| 2005 10 25 | G96 | 0.2− | 0.0 | 2005 11 25 | G96 | 0.2+ | 0.2− | 2005 12 31 | G96 | 0.3− | 0.2− |
| 2005 10 28 | 691 | 0.0 | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.2+ | 2005 12 31 | G96 | 0.7+ | 0.4+ |
| 2005 10 28 | 691 | 0.3+ | 0.0 | 2005 12 02 | G96 | 0.2+ | 0.1− | | | | |

### 2005 UT$_{190}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 127.29473 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23147768 | $\omega$ | 105.57342 | | +0.94250505 | | +0.33336817 | |
| $a$ | 2.6270196 | $\Omega$ | 234.95872 | | −0.31654305 | | +0.86802900 | |
| $e$ | 0.1591538 | $i$ | 1.64126 | | −0.10716683 | | +0.36795559 | |
| $P$ | 4.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 291 | 0.0 | 0.0 | 2005 10 27 | G96 | 0.2− | 0.4− | 2005 11 25 | G96 | 0.4+ | 0.1− |
| 2002 01 14 | 291 | 0.1− | 0.1− | 2005 10 28 | 691 | 0.0 | 0.1+ | 2005 11 26 | G96 | 0.1+ | 0.2− |
| 2002 01 14 | 291 | 0.2+ | 0.0 | 2005 10 28 | 691 | 0.1− | 0.2+ | 2005 11 26 | G96 | 0.3+ | 0.0 |
| 2004 07 16 | 807 | 0.0 | 0.1+ | 2005 10 28 | 691 | 0.0 | 0.2− | 2005 11 26 | G96 | 0.2− | 0.2− |
| 2004 07 16 | 807 | 0.0 | 0.1− | 2005 11 05 | 691 | 0.2+ | 0.0 | 2005 11 26 | G96 | 0.0 | 0.3− |
| 2005 10 27 | G96 | 0.0 | 0.3− | 2005 11 05 | 691 | 0.2+ | 0.3+ | 2005 12 02 | G96 | 0.1+ | 0.1+ |
| 2005 10 27 | G96 | 0.2− | 0.5− | 2005 11 05 | 691 | 0.1+ | 0.1− | 2005 12 02 | G96 | 0.4− | 0.1− |
| 2005 10 27 | G96 | 0.0 | 0.3− | 2005 11 07 | 704 | 0.4− | 0.2+ | 2005 12 02 | G96 | 0.2− | 0.1+ |
| 2005 10 27 | G96 | 0.1− | 0.4− | 2005 11 07 | 704 | 0.2− | 0.8+ | 2006 01 21 | G96 | 0.0 | 0.4− |
| 2005 10 27 | G96 | 0.0 | 0.0 | 2005 11 07 | 704 | 0.5− | 1.5+ | 2006 01 21 | G96 | 0.0 | 0.3+ |
| 2005 10 27 | G96 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.1+ | 0.2− | 2006 01 21 | G96 | 0.4− | 0.3+ |
| 2005 10 27 | G96 | 0.0 | 0.6− | 2005 11 25 | G96 | 0.2+ | 0.3− | 2006 01 21 | G96 | 0.4+ | 0.1+ |

### 2005 UV$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 324.80147 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24117850 | $\omega$ | 138.18506 | | −0.99724643 | | −0.05198540 | |
| $a$ | 2.5560950 | $\Omega$ | 38.93039 | | +0.02216131 | | −0.88948021 | |
| $e$ | 0.1016047 | $i$ | 4.82802 | | +0.07077026 | | −0.45400713 | |
| $P$ | 4.09 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 18 | 691 | 0.4− | 0.6− | 2003 04 01 | 704 | 0.2− | 0.2+ | 2005 10 27 | G96 | 0.3− | 0.5− |
| 1999 04 18 | 691 | 0.2− | 0.4− | 2003 04 01 | 704 | 0.4+ | 0.6+ | 2005 10 27 | G96 | 0.5− | 0.4− |
| 1999 04 18 | 691 | 0.1+ | 0.2− | 2003 04 01 | 704 | 1.6+ | 0.3− | 2005 10 27 | G96 | 0.4+ | 0.9− |
| 2001 11 19 | 704 | 1.3+ | 0.3− | 2003 04 29 | 691 | 0.0 | 0.2+ | 2005 10 28 | 691 | 0.3− | 0.2− |
| 2001 11 19 | 704 | 0.1− | 0.5− | 2003 04 29 | 691 | 0.2+ | 0.2+ | 2005 10 28 | 691 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.5+ | 1.8− | 2003 04 29 | 691 | 0.6+ | 0.3+ | 2005 10 28 | 691 | 0.2− | 0.3− |
| 2001 12 18 | 704 | 0.4+ | 1.3− | 2003 05 06 | 691 | 0.3− | 0.0 | 2005 12 10 | 691 | 0.3+ | 0.7+ |
| 2001 12 18 | 704 | 0.6− | 1.4− | 2003 05 06 | 691 | 0.4− | 0.0 | 2005 12 10 | 691 | 0.1− | 0.7+ |
| 2001 12 18 | 704 | 0.0 | 1.0− | 2003 05 06 | 691 | 0.2− | 0.2+ | 2005 12 10 | 691 | 0.2+ | 1.0+ |
| 2001 12 18 | 704 | 0.4− | 0.1− | 2005 10 27 | G96 | 0.3− | 0.7− | | | | |

### 2005 UJ$_{196}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 13.93299 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22356568 | $\omega$ | 257.72324 | | −0.27159491 | | −0.96181928 | |
| $a$ | 2.6886398 | $\Omega$ | 208.10643 | | +0.90850978 | | −0.24465039 | |
| $e$ | 0.0569600 | $i$ | 4.10963 | | +0.31756288 | | −0.12267789 | |
| $P$ | 4.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 06 | 291 | 1.4− | 0.0 | 2005 09 30 | G96 | 0.6− | 1.0+ | 2005 10 24 | 691 | 0.1+ | 0.2+ |
| 2003 04 06 | 291 | 0.7+ | 0.0 | 2005 09 30 | G96 | 0.2+ | 0.3− | 2005 10 24 | 691 | 0.1− | 0.1+ |
| 2003 04 06 | 291 | 1.3+ | 0.1+ | 2005 09 30 | G96 | 0.1− | 0.1− | 2005 10 28 | G96 | 0.2+ | 0.1− |
| 2003 04 29 | 691 | 0.2− | 0.1− | 2005 10 05 | 691 | 0.3+ | 0.2− | 2005 10 28 | G96 | 0.3+ | 0.3− |
| 2003 04 29 | 691 | 0.1+ | 0.7+ | 2005 10 05 | 691 | 0.3+ | 0.0 | 2005 10 28 | G96 | 0.2− | 0.2− |
| 2003 04 29 | 691 | 0.3+ | 0.6− | 2005 10 05 | 691 | 0.3+ | 0.4+ | 2005 10 28 | G96 | 0.4+ | 0.9+ |
| 2003 05 05 | 691 | 0.9− | 0.5− | 2005 10 12 | 691 | 0.2− | 0.3− | 2005 11 04 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 05 | 691 | 0.0 | 0.0 | 2005 10 12 | 691 | 0.9− | 0.5− | 2005 11 04 | 691 | 0.0 | 0.1− | | |
| 2003 05 05 | 691 | 0.1− | 0.1+ | 2005 10 12 | 691 | 0.2− | 0.4− | 2005 11 04 | 691 | 0.1+ | 0.2+ | | |
| 2005 09 30 | G96 | 1.1+ | 0.3+ | 2005 10 24 | 691 | 0.1+ | 0.0 | | | | | | |

**2005 UV$_{203}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 171.53853 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.18928243 | $\omega$ | 227.63091 | | +0.44293518 | +0.89598233 |
| $a$ | 3.0042024 | $\Omega$ | 68.68636 | | −0.81214700 | +0.41609864 |
| $e$ | 0.0078087 | $i$ | 1.96855 | | −0.37977056 | +0.15516955 |
| $P$ | 5.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.5+ | 0.3− | 2005 10 25 | 691 | 0.1+ | 0.0 | 2005 11 06 | G96 | 0.6+ | 0.9− | | |
| 2002 02 10 | 704 | 0.8+ | 0.1+ | 2005 10 25 | G96 | 0.1+ | 0.0 | 2005 11 06 | G96 | 0.1− | 0.1+ | | |
| 2002 02 10 | 704 | 0.3− | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.6− | 2005 11 06 | G96 | 0.3− | 0.3− | | |
| 2002 02 10 | 704 | 0.2+ | 1.0− | 2005 10 25 | G96 | 0.1− | 0.2− | 2005 11 06 | G96 | 0.1− | 0.3− | | |
| 2002 02 10 | 704 | 0.1− | 0.9− | 2005 10 25 | G96 | 0.3+ | 0.2− | 2005 11 10 | 691 | 0.0 | 0.3+ | | |
| 2002 02 10 | 691 | 0.3+ | 0.5+ | 2005 10 28 | G96 | 0.1+ | 0.6− | 2005 11 10 | 691 | 0.3+ | 0.1− | | |
| 2002 02 10 | 691 | 0.1− | 0.7+ | 2005 10 28 | G96 | 0.2+ | 0.5− | 2005 11 10 | 691 | 0.1− | 0.6+ | | |
| 2002 02 10 | 691 | 0.3− | 0.2− | 2005 10 28 | G96 | 0.2− | 0.4− | 2005 11 12 | 691 | 0.2+ | 0.2+ | | |
| 2004 08 21 | E12 | 0.3+ | 0.5+ | 2005 10 28 | G96 | 0.1− | 0.5− | 2005 11 12 | 691 | 0.7− | 0.1− | | |
| 2004 08 21 | E12 | 0.8− | 1.4+ | 2005 10 29 | 691 | 0.1+ | 0.3− | 2005 11 12 | 691 | 0.1− | 0.2− | | |
| 2004 08 21 | E12 | 0.2− | 0.9+ | 2005 10 29 | 691 | 0.1− | 0.1− | 2005 12 02 | G96 | 0.2− | 0.0 | | |
| 2004 08 21 | E12 | 0.1− | 0.1− | 2005 10 29 | 691 | 0.2− | 0.3− | 2005 12 02 | G96 | 0.1+ | 0.3− | | |
| 2005 10 01 | G96 | 0.2+ | 0.5− | 2005 11 04 | 691 | 0.2− | 0.1+ | 2005 12 02 | G96 | 0.4+ | 0.3− | | |
| 2005 10 01 | G96 | 0.3+ | 0.3− | 2005 11 04 | 691 | 0.1+ | 0.2+ | 2005 12 02 | G96 | 0.6+ | 0.3− | | |
| 2005 10 01 | G96 | 0.3+ | 0.4− | 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 06 | 691 | 0.2+ | 0.0 | | |
| 2005 10 01 | G96 | 0.3− | 0.3− | 2005 11 06 | 691 | 0.2+ | 0.0 | 2005 12 06 | 691 | 0.0 | 0.6+ | | |
| 2005 10 25 | 691 | 0.1+ | 0.0 | 2005 11 06 | 691 | 0.2− | 0.0 | 2005 12 06 | 691 | 0.1+ | 0.6+ | | |
| 2005 10 25 | 691 | 0.2− | 0.0 | 2005 11 06 | 691 | 0.1− | 0.1+ | | | | | | |

**2005 UE$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 93.88609 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23263587 | $\omega$ | 263.32248 | | +0.92614632 | −0.37673817 |
| $a$ | 2.6182931 | $\Omega$ | 118.80798 | | +0.35362160 | +0.85082525 |
| $e$ | 0.1738399 | $i$ | 1.17224 | | +0.13116693 | +0.36628505 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.6− | 1.4+ | 2005 10 28 | G96 | 0.1− | 0.0 | 2005 11 26 | 703 | 0.7+ | 0.7+ | | |
| 2000 07 30 | 807 | 0.4+ | 1.0+ | 2005 10 28 | G96 | 0.2− | 0.2+ | 2005 11 29 | G96 | 0.5+ | 0.2− | | |
| 2003 03 31 | 291 | 0.3+ | 0.5+ | 2005 10 31 | 704 | 0.3− | 0.2+ | 2005 11 29 | G96 | 0.2+ | 0.1− | | |
| 2003 03 31 | 291 | 0.0 | 0.2+ | 2005 10 31 | 704 | 0.1− | 0.4− | 2005 11 29 | G96 | 0.2+ | 0.3− | | |
| 2003 03 31 | 291 | 0.2+ | 0.4+ | 2005 10 31 | 704 | 0.5+ | 1.7− | 2005 11 29 | G96 | 0.1− | 0.1− | | |
| 2005 10 25 | 699 | 0.4+ | 1.7− | 2005 10 31 | 691 | 0.1+ | 0.3+ | 2005 12 04 | G96 | 0.2− | 0.2− | | |
| 2005 10 25 | 699 | 0.6+ | 1.1− | 2005 10 31 | 704 | 0.2− | 0.4+ | 2005 12 04 | G96 | 0.5+ | 0.3− | | |
| 2005 10 25 | 699 | 0.2+ | 0.3+ | 2005 10 31 | 691 | 0.0 | 0.1+ | 2005 12 04 | G96 | 0.1+ | 0.2− | | |
| 2005 10 25 | 699 | (2.2+ | 0.5+) | 2005 10 31 | 691 | 0.0 | 0.2+ | 2005 12 04 | G96 | 0.2+ | 0.2− | | |
| 2005 10 25 | 703 | 0.1− | 0.5+ | 2005 11 10 | 691 | 0.2+ | 0.2+ | 2005 12 08 | 691 | 0.1+ | 0.0 | | |
| 2005 10 25 | 703 | (2.0− | 1.1+) | 2005 11 10 | 691 | 0.0 | 0.2+ | 2005 12 08 | 691 | 0.4+ | 0.0 | | |
| 2005 10 25 | 703 | 0.9+ | 0.3+ | 2005 11 10 | 691 | 0.5− | 0.5− | 2005 12 08 | 691 | 0.2+ | 0.0 | | |
| 2005 10 25 | 703 | 1.4− | 1.9+ | 2005 11 25 | 691 | 0.2− | 0.3+ | 2006 01 21 | G96 | 0.2− | 0.4− | | |
| 2005 10 27 | 691 | 0.1− | 0.1+ | 2005 11 25 | 691 | 0.1+ | 0.3+ | 2006 01 21 | G96 | 0.7− | 0.4− | | |
| 2005 10 27 | 691 | 0.1− | 0.1+ | 2005 11 25 | 691 | 0.2+ | 0.2+ | 2006 01 21 | G96 | 0.2+ | 0.5− | | |
| 2005 10 27 | 691 | 1.3− | 0.1+ | 2005 11 26 | 703 | 0.6− | 0.5− | 2006 01 21 | G96 | 0.6+ | 0.6− | | |
| 2005 10 28 | G96 | 0.3+ | 0.0 | 2005 11 26 | 703 | 0.2+ | 0.4+ | | | | | | |
| 2005 10 28 | G96 | 0.2− | 0.0 | 2005 11 26 | 703 | 0.5+ | 0.1+ | | | | | | |

**2005 UH$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 91.10285 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.26851272 | $\omega$ | 133.70291 | | +0.99246381 | −0.11198372 |
| $a$ | 2.3795389 | $\Omega$ | 232.78874 | | +0.08654833 | +0.92801945 |
| $e$ | 0.1612965 | $i$ | 3.58160 | | +0.08674664 | +0.35530204 |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 23 | 291 | 0.2+ | 0.1+ | 2005 09 09 | 704 | 0.0 | 0.3− | 2005 10 27 | 644 | 0.0 | 0.3+ | | |
| 2003 01 23 | 291 | 0.0 | 0.2+ | 2005 09 09 | 704 | 0.2− | 0.0 | 2005 10 27 | 644 | 0.0 | 0.2+ | | |
| 2003 01 23 | 291 | 0.1− | 0.5+ | 2005 10 01 | 703 | 0.2+ | 0.4+ | 2005 10 27 | 644 | 0.2− | 0.5+ | | |
| 2004 04 22 | 691 | 0.2− | 0.5+ | 2005 10 01 | 703 | 0.3+ | 0.2− | 2005 10 30 | G96 | 0.0 | 0.1+ | | |
| 2004 04 22 | 691 | 0.5+ | 0.6+ | 2005 10 01 | 703 | 0.8+ | 1.1− | 2005 10 30 | G96 | 0.2− | 0.3− | | |
| 2004 04 22 | 691 | 0.2+ | 0.3+ | 2005 10 01 | 703 | 1.8− | 0.4+ | 2005 10 30 | G96 | 0.0 | 0.1+ | | |
| 2005 08 31 | 699 | 0.3− | 0.5+ | 2005 10 07 | 704 | 0.5+ | 0.9+ | 2005 11 30 | G96 | 0.2− | 0.5− | | |
| 2005 08 31 | 699 | 0.2+ | 0.1+ | 2005 10 07 | 704 | 0.0 | 1.9+ | 2005 11 30 | G96 | 0.1− | 0.0 | | |
| 2005 08 31 | 699 | 0.1+ | 0.0 | 2005 10 07 | 704 | 1.4− | 1.6+ | 2005 11 30 | G96 | 0.3− | 0.3− | | |
| 2005 08 31 | 699 | 0.0 | 0.4+ | 2005 10 20 | 644 | 0.0 | 0.3+ | 2005 11 30 | G96 | 0.0 | 0.3− | | |
| 2005 09 09 | 704 | 0.1− | 0.7− | 2005 10 20 | 644 | 0.1− | 0.3+ | | | | | | |
| 2005 09 09 | 704 | 0.3+ | 0.6+ | 2005 10 20 | 644 | 0.1+ | 0.0 | | | | | | |

**2005 UL$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 114.08578 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.28702071 | $\omega$ | 317.02598 | | +0.94978938 | −0.29198645 |
| $a$ | 2.2761134 | $\Omega$ | 60.27166 | | +0.31052203 | +0.83549851 |
| $e$ | 0.1285441 | $i$ | 7.44001 | | +0.03842128 | +0.46549561 |
| $P$ | 3.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 699 | 0.6+ | 1.0− | 2005 10 31 | 704 | 0.9− | 0.1− | 2005 11 20 | 699 | 0.5− | 0.1− | | |
| 1998 10 20 | 699 | 0.2− | 0.0 | 2005 10 31 | 691 | 0.1+ | 0.1+ | 2005 11 20 | 699 | 0.7− | 0.1+ | | |
| 1998 10 20 | 699 | 0.6+ | 0.8− | 2005 10 31 | 704 | 0.6− | 0.6− | 2005 11 20 | 699 | 0.1− | 0.1− | | |
| 2004 06 13 | 691 | 0.1+ | 0.1+ | 2005 10 31 | 704 | 0.3− | 0.3− | 2005 11 25 | 703 | 0.5+ | 0.5− | | |
| 2004 06 13 | 691 | 0.2+ | 0.2+ | 2005 11 03 | 704 | 0.2− | 0.4+ | 2005 11 25 | 703 | 0.5− | 0.7− | | |
| 2004 06 13 | 691 | 0.1− | 0.2+ | 2005 11 03 | 704 | 0.4− | 0.1+ | 2005 11 25 | 703 | 0.4− | 1.0− | | |
| 2005 09 25 | 644 | 0.4− | 0.1− | 2005 11 03 | 704 | 0.0 | 0.2+ | 2005 11 25 | 703 | 0.2+ | 0.8− | | |
| 2005 09 25 | 644 | 0.5− | 0.4− | 2005 11 03 | 704 | 0.6+ | 0.1− | 2005 11 30 | 644 | 0.2+ | 0.4+ | | |
| 2005 09 25 | 644 | 0.4− | 0.1+ | 2005 11 04 | 691 | 0.0 | 0.0 | 2005 11 30 | 644 | 0.2+ | 0.1− | | |
| 2005 10 22 | 691 | 0.1+ | 0.0 | 2005 11 04 | 691 | 0.0 | 0.1− | 2005 11 30 | 644 | 0.5− | 1.0− | | |
| 2005 10 22 | 691 | 0.2+ | 0.1− | 2005 11 04 | 691 | 0.0 | 0.1+ | 2005 12 01 | 704 | 1.3+ | 0.6+ | | |
| 2005 10 22 | 691 | 0.7+ | 0.5+ | 2005 11 06 | 704 | 0.1− | 0.1+ | 2005 12 01 | 704 | 0.2+ | 1.3+ | | |
| 2005 10 25 | 703 | 0.9+ | 0.6+ | 2005 11 06 | 704 | 0.0 | 0.1− | 2005 12 01 | 704 | 0.4+ | 0.2+ | | |
| 2005 10 25 | 703 | 0.6− | 0.2+ | 2005 11 06 | 704 | 0.4+ | 0.4+ | 2005 12 01 | 704 | (2.1− | 0.1−) | | |
| 2005 10 25 | 703 | 0.4− | 0.9+ | 2005 11 06 | 704 | 0.6− | 0.1+ | 2005 12 01 | G96 | 0.1− | 0.3− | | |
| 2005 10 25 | 703 | 0.4− | 1.0+ | 2005 11 06 | 704 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.3+ | 0.3− | | |
| 2005 10 28 | 704 | 0.1+ | 0.1− | 2005 11 10 | 703 | 0.8− | 0.2+ | 2005 12 01 | G96 | 0.2+ | 0.3− | | |
| 2005 10 28 | 704 | 0.1+ | 0.0 | 2005 11 10 | 703 | 0.9− | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.3− | | |
| 2005 10 28 | 704 | 0.1− | 0.2+ | 2005 11 10 | 703 | 0.5− | 0.1− | 2005 12 04 | 704 | 0.0 | 0.8+ | | |
| 2005 10 28 | 704 | 0.5+ | 0.3− | 2005 11 10 | 703 | 1.0− | 0.3− | 2005 12 04 | 704 | 0.5− | 0.4− | | |
| 2005 10 28 | 704 | 0.2− | 0.4+ | 2005 11 12 | 703 | 0.3+ | 1.1+ | 2005 12 04 | 704 | 0.2− | 0.3− | | |
| 2005 10 31 | 691 | 0.1− | 0.1− | 2005 11 12 | 703 | 0.7+ | 0.1+ | 2005 12 04 | 704 | 0.4+ | 0.5+ | | |
| 2005 10 31 | 704 | 0.6− | 0.7− | 2005 11 12 | 703 | 0.0 | 0.3+ | 2005 12 04 | 704 | 0.3+ | 0.5− | | |
| 2005 10 31 | 691 | 0.0 | 0.0 | 2005 11 12 | 703 | 0.4+ | 0.1+ | | | | | | |
| 2005 10 31 | 704 | 0.5− | 0.1+ | 2005 11 20 | 699 | 0.1+ | 0.7+ | | | | | | |

**2005 UL$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 66.90778 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22577185 | $\omega$ | 192.29853 | | +0.33749616 | −0.92090800 |
| $a$ | 2.6710962 | $\Omega$ | 238.27052 | | +0.88191291 | +0.38176561 |
| $e$ | 0.2300091 | $i$ | 13.25382 | | +0.32912910 | −0.07863512 |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 691 | 0.2+ | 0.1+ | 2005 11 21 | 703 | 1.0− | 0.1− | 2005 12 10 | 699 | 0.1− | 0.1+ |
| 2000 10 03 | 691 | 0.2+ | 0.3− | 2005 11 21 | 703 | (4.0− | 0.9−) | 2005 12 10 | 699 | 0.0 | 0.1+ |
| 2000 10 03 | 691 | 0.1− | 0.1− | 2005 11 28 | 703 | 0.4− | 0.3− | 2005 12 10 | 699 | 0.0 | 0.5+ |
| 2000 10 03 | 691 | 0.2− | 0.1+ | 2005 11 28 | 703 | 0.2+ | 0.5− | 2005 12 27 | 704 | 0.1− | 0.6+ |
| 2000 10 03 | 691 | 0.2− | 0.2+ | 2005 11 28 | 703 | 0.3+ | 0.5− | 2005 12 27 | 704 | 0.2+ | 0.4+ |
| 2000 10 03 | 691 | 0.0 | 0.2+ | 2005 11 28 | 703 | 2.3− | 0.5+ | 2005 12 27 | 704 | 0.2− | 0.2+ |
| 2002 02 09 | 644 | 0.0 | 0.2+ | 2005 11 30 | 704 | 0.2+ | 0.1− | 2005 12 27 | 704 | 0.5− | 0.1+ |
| 2002 02 09 | 644 | 0.2+ | 0.0 | 2005 11 30 | 704 | 0.1− | 0.8+ | 2005 12 27 | 703 | 0.1− | 0.0 |
| 2002 02 09 | 644 | 0.2− | 0.3+ | 2005 11 30 | 704 | 0.0 | 0.7+ | 2005 12 27 | 703 | 0.2− | 0.1− |
| 2005 10 27 | G96 | 0.0 | 0.2− | 2005 11 30 | 704 | 0.0 | 0.7+ | 2005 12 27 | 703 | 0.2− | 0.9+ |
| 2005 10 27 | G96 | 0.0 | 0.2− | 2005 11 30 | 704 | 0.6+ | 0.5+ | 2005 12 27 | 703 | 0.8− | 0.5− |
| 2005 10 27 | G96 | 0.3+ | 0.3− | 2005 12 07 | 704 | 0.7+ | 0.3+ | 2006 01 03 | 704 | 0.4− | 0.1− |
| 2005 10 27 | G96 | 0.1+ | 0.2− | 2005 12 07 | 704 | 0.4+ | 0.1+ | 2006 01 03 | 704 | 1.2+ | 0.3+ |
| 2005 10 28 | 704 | 0.5− | 0.7+ | 2005 12 07 | 704 | 1.1+ | 0.6+ | 2006 01 03 | 704 | 0.1− | 0.6+ |
| 2005 10 28 | 704 | 0.1+ | 0.7+ | 2005 12 07 | 704 | 0.9+ | 0.3− | 2006 01 03 | 704 | 0.7+ | 0.8− |
| 2005 10 28 | 704 | 0.2+ | 0.8+ | 2005 12 07 | 704 | 0.9+ | 0.0 | 2006 01 03 | 704 | 0.6− | 0.3− |
| 2005 10 28 | 704 | 0.1− | 0.5+ | 2005 12 08 | 704 | 0.8+ | 0.3− | 2006 01 21 | 699 | 0.5+ | 0.1− |
| 2005 10 31 | 704 | 0.1+ | 0.3+ | 2005 12 08 | 704 | 0.6+ | 0.3− | 2006 01 21 | 699 | 0.0 | 0.4− |
| 2005 10 31 | 704 | 0.9− | 0.2− | 2005 12 08 | 704 | 0.4+ | 1.0− | 2006 01 21 | 699 | 1.0+ | 0.3− |
| 2005 10 31 | 704 | 0.3+ | 1.5− | 2005 12 08 | 704 | 0.7+ | 0.8− | 2006 01 21 | 699 | 0.0 | 0.3− |
| 2005 11 21 | 703 | 0.1+ | 0.3+ | 2005 12 08 | 704 | 0.5+ | 0.4− | | | | |
| 2005 11 21 | 703 | 0.1+ | 0.3− | 2005 12 10 | 699 | 0.1− | 0.1− | | | | |

**2005 UZ$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.05270 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25643901 | $\omega$ | 225.65445 | | −0.92243215 | | −0.38437664 |
| $a$ | 2.4536540 | $\Omega$ | 291.70842 | | +0.36467344 | | −0.83552028 |
| $e$ | 0.1263533 | $i$ | 2.28615 | | +0.12701262 | | −0.39263273 |
| $P$ | 3.84 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 31 | 691 | 0.0 | 0.2+ | 2003 03 07 | 699 | 0.2− | 0.6+ | 2005 10 25 | 691 | 0.7− | 0.0 |
| 1994 12 31 | 691 | 0.1+ | 1.1− | 2003 03 07 | 699 | 0.4− | 1.1+ | 2005 10 29 | 691 | 0.1+ | 0.4− |
| 1995 01 07 | 691 | 1.9+ | 1.2+ | 2003 03 07 | 699 | 0.3− | 0.1+ | 2005 10 29 | 691 | 0.1+ | 0.0 |
| 1995 01 07 | 691 | 0.4− | 0.5− | 2003 03 07 | 699 | 1.2− | 1.1+ | 2005 10 29 | 691 | 0.3+ | 0.5− |
| 1995 01 07 | 691 | (4.9+ | 0.6−) | 2003 03 27 | 691 | 0.9+ | 0.6+ | 2005 11 06 | 691 | 0.1+ | 0.5+ |
| 1995 01 08 | 691 | 0.7− | 0.5− | 2003 03 27 | 691 | 0.3− | 0.5+ | 2005 11 06 | 691 | 0.3+ | 0.7+ |
| 1995 01 08 | 691 | 0.6− | 0.5− | 2003 03 27 | 691 | 0.3+ | 0.2+ | 2005 11 06 | 691 | 0.3+ | 0.0 |
| 1995 01 08 | 691 | 0.5− | 0.1+ | 2003 04 09 | 691 | 0.2+ | 0.2− | 2005 11 21 | 691 | 0.3− | 0.6+ |
| 2003 02 23 | 599 | 0.1− | 0.1+ | 2003 04 09 | 691 | 0.3+ | 0.3− | 2005 11 21 | 691 | 0.1+ | 0.4− |
| 2003 02 23 | 599 | 0.3− | 0.6+ | 2003 04 09 | 691 | 0.1− | 0.7− | 2005 11 21 | 691 | 0.3− | 0.0 |
| 2003 02 24 | 599 | 0.0 | 0.2+ | 2005 10 25 | 691 | 0.3− | 0.2+ | | | | |
| 2003 02 24 | 599 | 0.5− | 0.2− | 2005 10 25 | 691 | 0.1− | 0.3+ | | | | |

**2005 UJ$_{222}$ = 1994 VM$_5$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.12167 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18030695 | $\omega$ | 78.11605 | | +0.96628640 | | +0.24952232 |
| $a$ | 3.1030902 | $\Omega$ | 267.41010 | | −0.25396505 | | +0.88317521 |
| $e$ | 0.1155841 | $i$ | 3.64308 | | −0.04233600 | | +0.39716515 |
| $P$ | 5.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 06 | 691 | 0.6− | 0.1+ | 2005 10 25 | 691 | 0.1− | 0.4− | 2005 11 04 | 703 | 0.5+ | 0.2+ |
| 1994 11 06 | 691 | 0.2− | 0.0 | 2005 10 25 | 691 | 0.0 | 0.0 | 2005 11 04 | 703 | 0.6+ | 0.1+ |
| 1994 11 06 | 691 | 0.4− | 0.0 | 2005 10 29 | 691 | 0.1− | 0.0 | 2005 11 04 | 703 | 1.8+ | 0.9+ |
| 1994 11 10 | 691 | 0.5+ | 0.1+ | 2005 10 29 | 691 | 0.0 | 0.1− | 2005 11 06 | 691 | 0.8− | 0.4− |
| 1994 11 10 | 691 | 0.6+ | 0.1− | 2005 10 29 | 691 | 0.4− | 0.1+ | 2005 11 06 | 691 | 0.7− | 0.1+ |
| 2005 10 25 | 691 | 0.3+ | 0.1− | 2005 11 04 | 703 | 0.1− | 0.1+ | 2005 11 06 | 691 | 0.8− | 0.7− |

**2005 UN$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.95959 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20704282 | $\omega$ | 311.38848 | | +0.83096168 | | −0.55346661 |
| $a$ | 2.8298447 | $\Omega$ | 82.28970 | | +0.52589398 | | +0.74840526 |
| $e$ | 0.0639163 | $i$ | 3.26089 | | +0.18148885 | | +0.36546446 |
| $P$ | 4.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 291 | 0.1+ | 0.6+ | 2005 10 25 | 703 | 1.2− | 0.2+ | 2005 12 05 | 691 | 0.2+ | 0.1+ |
| 2003 04 26 | 291 | 0.2+ | 0.3+ | 2005 10 25 | 703 | 0.0 | 0.5− | 2005 12 05 | 691 | 0.3+ | 0.1− |
| 2003 04 26 | 291 | 0.3+ | 0.7+ | 2005 10 29 | 691 | 0.1+ | 0.3+ | 2005 12 05 | 691 | 0.1+ | 0.4+ |
| 2004 07 21 | E12 | 0.1− | 0.4+ | 2005 10 29 | 691 | 0.0 | 0.3+ | 2005 12 07 | 691 | 0.5− | 0.2+ |
| 2004 07 21 | E12 | 0.5− | 0.1+ | 2005 10 29 | 691 | 0.4− | 0.3+ | 2005 12 07 | 691 | 0.5− | 0.2+ |
| 2004 07 21 | E12 | 0.5+ | 0.0 | 2005 11 06 | 691 | 0.1− | 0.2− | 2005 12 07 | 691 | 0.0 | 0.1+ |
| 2004 07 21 | E12 | 0.3− | 0.7+ | 2005 11 06 | 691 | 0.1+ | 0.1− | 2006 01 22 | G96 | 0.2+ | 0.5− |
| 2005 10 25 | 691 | 0.1− | 0.2+ | 2005 11 06 | 691 | 0.1+ | 0.1− | 2006 01 22 | G96 | 0.4+ | 0.1− |
| 2005 10 25 | 691 | 0.3+ | 0.5+ | 2005 11 06 | G96 | 0.0 | 0.2− | 2006 01 22 | G96 | 0.3+ | 0.8− |
| 2005 10 25 | 703 | 1.3+ | 1.3− | 2005 11 06 | G96 | 0.2+ | 0.1− | 2006 01 22 | G96 | 0.5+ | 0.4− |
| 2005 10 25 | 703 | 1.0− | 0.3+ | 2005 11 06 | G96 | 0.2− | 0.3− | | | | |
| 2005 10 25 | 691 | 0.2− | 0.1+ | 2005 11 06 | G96 | 0.1+ | 0.4− | | | | |

**2005 UO$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.28080 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18490181 | $\omega$ | 240.24196 | | +0.40980472 | | +0.91188573 |
| $a$ | 3.0514665 | $\Omega$ | 53.96830 | | −0.82681906 | | +0.38194555 |
| $e$ | 0.1635116 | $i$ | 1.62283 | | −0.38526657 | | +0.15027313 |
| $P$ | 5.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.5+ | 1.1+ | 2004 08 21 | E12 | 0.4− | 0.5+ | 2005 11 06 | 691 | 0.5− | 0.1+ |
| 1999 09 07 | 704 | 0.4− | 1.9+ | 2004 08 21 | E12 | 0.7+ | 0.3+ | 2005 11 06 | G96 | 1.4− | 1.9− |
| 1999 09 07 | 704 | 1.4− | 0.0 | 2004 08 21 | E12 | 0.7− | 0.2− | 2005 11 06 | G96 | 0.1− | 0.1+ |
| 2003 04 08 | 691 | 0.3− | 0.4+ | 2005 10 25 | 691 | 0.2+ | 0.4+ | 2005 11 06 | G96 | 0.1+ | 0.2− |
| 2003 04 08 | 691 | 0.2− | 0.3+ | 2005 10 25 | 691 | 0.2− | 0.3+ | 2005 11 12 | 691 | 0.0 | 0.5+ |
| 2003 04 08 | 691 | 0.1− | 0.2+ | 2005 10 25 | 691 | 0.0 | 0.2+ | 2005 11 12 | 691 | 0.1+ | 0.2+ |
| 2003 04 26 | 691 | 1.1+ | 1.4+ | 2005 10 25 | G96 | 0.3+ | 0.2− | 2005 11 12 | 691 | 0.1− | 0.1+ |
| 2003 04 26 | 691 | 0.8+ | 1.2+ | 2005 10 25 | G96 | 0.1− | 0.2− | 2005 12 02 | G96 | 0.3+ | 0.0 |
| 2003 04 26 | 691 | 0.7+ | 1.1+ | 2005 10 25 | G96 | 0.1− | 0.4+ | 2005 12 02 | G96 | 0.4+ | 0.1+ |
| 2004 07 09 | 699 | 2.0+ | 0.0 | 2005 10 25 | G96 | 0.0 | 0.1− | 2005 12 02 | G96 | 0.2− | 0.7+ |
| 2004 07 09 | 699 | 0.2− | 2.1+ | 2005 10 29 | 691 | 0.1+ | 0.2+ | 2005 12 02 | G96 | 0.2− | 0.1+ |
| 2004 07 09 | 699 | 0.5− | 0.1− | 2005 10 29 | 691 | 0.1+ | 0.1− | 2005 12 04 | 691 | 0.2− | 0.7+ |
| 2004 07 09 | 699 | 0.2− | 0.3+ | 2005 10 29 | 691 | 0.1+ | 0.3+ | 2005 12 04 | 691 | 0.1+ | 0.7+ |
| 2004 08 03 | E12 | 0.1− | 0.7+ | 2005 11 02 | 695 | 0.3− | 0.2+ | 2005 12 04 | 691 | 0.0 | 0.1− |
| 2004 08 03 | E12 | 0.2− | 0.6+ | 2005 11 02 | 695 | 0.1− | 0.3+ | 2006 01 21 | G96 | 0.5− | 0.6+ |
| 2004 08 03 | E12 | 1.4− | 1.1+ | 2005 11 02 | 695 | 0.1− | 0.2+ | 2006 01 21 | G96 | 0.3− | 0.3− |
| 2004 08 03 | E12 | 0.8− | 0.6+ | 2005 11 06 | 691 | 0.2− | 0.5+ | 2006 01 21 | G96 | 1.1+ | 0.7+ |
| 2004 08 21 | E12 | 0.1+ | 0.4+ | 2005 11 06 | 691 | 0.4− | 0.3+ | 2006 01 21 | G96 | 0.3+ | 0.0 |

**2005 UO$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 144.13668 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17634753 | $\omega$ | 110.00608 | | +0.68265599 | | +0.73064764 |
| $a$ | 3.1493660 | $\Omega$ | 203.05815 | | −0.68103431 | | +0.63038055 |
| $e$ | 0.0763777 | $i$ | 1.69884 | | −0.26490199 | | +0.26224872 |
| $P$ | 5.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 29 | 291 | 0.1+ | 0.1− | 2005 10 25 | 691 | 0.0 | 0.1+ | 2005 11 10 | 691 | 0.2− | 0.1− |
| 2003 05 29 | 291 | 0.1+ | 0.4+ | 2005 10 25 | 691 | 0.0 | 0.2+ | 2005 11 10 | 691 | 0.0 | 0.0 |
| 2003 05 29 | 291 | 0.0 | 0.4+ | 2005 10 25 | G96 | 0.1− | 0.0 | 2005 11 10 | 691 | 0.2− | 0.1− |
| 2004 08 11 | 599 | 0.5+ | 0.2+ | 2005 10 25 | G96 | 0.1+ | 0.1+ | 2005 11 29 | G96 | 0.5+ | 0.1+ |
| 2004 08 11 | 599 | 0.2− | 0.2− | 2005 10 25 | G96 | 0.3− | 0.0 | 2005 11 29 | G96 | 0.4− | 0.1+ |
| 2004 08 11 | 599 | 0.1+ | 0.4− | 2005 10 25 | G96 | 0.3+ | 0.0 | 2005 11 29 | G96 | 0.5+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 11 | 599 | 0.3− | 0.0 | 2005 10 29 | 691 | 0.1+ | 0.1+ | 2005 11 29 | G96 | 0.4− | 0.8− |
| 2005 10 01 | G96 | 0.3− | 0.2− | 2005 10 29 | 691 | 0.1+ | 0.1+ | 2005 12 04 | G96 | 0.4+ | 0.0 |
| 2005 10 01 | G96 | 0.0 | 0.1+ | 2005 10 29 | 691 | 0.1+ | 0.1+ | 2005 12 04 | G96 | 0.2+ | 0.2+ |
| 2005 10 01 | G96 | 0.2− | 0.0 | 2005 11 06 | 691 | 0.2− | 0.1+ | 2005 12 04 | G96 | 0.5+ | 0.0 |
| 2005 10 01 | G96 | 0.2− | 0.2− | 2005 11 06 | 691 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.1+ | 0.1+ |
| 2005 10 25 | 691 | 0.2+ | 0.2+ | 2005 11 06 | 691 | 0.2− | 0.2+ | | | | |

**2005 UT$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.53323 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28173216 | $\omega$ | 269.51479 | +0.99645168 | | −0.05462005 | |
| $a$ | 2.3045091 | $\Omega$ | 93.61527 | +0.07549994 | | +0.91632846 | |
| $e$ | 0.1774265 | $i$ | 3.67888 | −0.03719958 | | +0.39668477 | |
| $P$ | 3.50 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 09 | 691 | 0.0 | 0.2− | 2005 10 29 | 691 | 0.1− | 0.1+ | 2005 11 06 | 704 | 0.1− | 0.8+ |
| 1991 11 09 | 691 | 0.6+ | 0.3− | 2005 10 31 | 704 | 0.6− | 0.8+ | 2005 11 06 | 704 | 0.9− | 0.4+ |
| 1991 11 09 | 691 | 0.3− | 0.2− | 2005 10 31 | 704 | 0.6− | 0.8− | 2005 11 10 | 703 | 1.1− | 0.2− |
| 2001 07 18 | 644 | 0.1+ | 0.3− | 2005 10 31 | 704 | 0.7+ | 0.6− | 2005 11 10 | 703 | 0.2− | 0.6− |
| 2001 07 18 | 644 | 0.2+ | 0.5− | 2005 10 31 | 704 | 1.0+ | 0.6+ | 2005 11 10 | 703 | 0.2− | 0.2− |
| 2001 07 18 | 644 | 0.1− | 0.4− | 2005 11 05 | 703 | 0.5− | 0.5+ | 2005 11 10 | 703 | 0.4− | 0.2+ |
| 2005 10 25 | 703 | 0.4− | 1.4− | 2005 11 05 | 703 | 0.0 | 0.0 | 2005 11 26 | 703 | 0.7+ | 0.4− |
| 2005 10 25 | 703 | 1.6− | 0.3+ | 2005 11 05 | 703 | 0.7+ | 0.3+ | 2005 11 26 | 703 | 0.3+ | 0.1+ |
| 2005 10 25 | 703 | 0.1− | 1.4− | 2005 11 05 | 703 | 0.6+ | 0.2+ | 2005 11 26 | 703 | 0.5+ | 0.7− |
| 2005 10 25 | 703 | 0.8− | 0.1+ | 2005 11 06 | 691 | 0.2+ | 0.0 | 2005 11 26 | 703 | 0.9− | 0.2− |
| 2005 10 25 | 691 | 0.2+ | 0.4+ | 2005 11 06 | 691 | 0.1− | 0.1+ | 2005 12 29 | G96 | 0.0 | 0.6− |
| 2005 10 25 | 691 | 0.2+ | 0.2+ | 2005 11 06 | 691 | 0.1− | 0.1+ | 2005 12 29 | G96 | 0.7+ | 0.6− |
| 2005 10 25 | 691 | 0.0 | 0.3+ | 2005 11 06 | 704 | 0.1− | 0.7+ | 2005 12 29 | G96 | 0.3+ | 0.5− |
| 2005 10 29 | 691 | 0.0 | 0.0 | 2005 11 06 | 704 | 0.0 | 0.1+ | 2005 12 29 | G96 | 0.9+ | 0.5− |
| 2005 10 29 | 691 | 0.0 | 0.1+ | 2005 11 06 | 704 | 0.3+ | 0.1− | | | | |

**2005 UA$_{239}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.79296 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18132635 | $\omega$ | 87.59269 | −0.94037850 | | −0.27218587 | |
| $a$ | 3.0914491 | $\Omega$ | 76.55883 | +0.16247566 | | −0.88630912 | |
| $e$ | 0.1329809 | $i$ | 12.10551 | +0.29881421 | | −0.37466119 | |
| $P$ | 5.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 11 | 699 | 1.0− | 0.2+ | 2002 04 23 | 644 | 0.1− | 0.7+ | 2005 11 06 | 691 | 0.0 | 0.1− |
| 2002 04 11 | 699 | 0.0 | 0.2− | 2002 04 23 | 644 | 0.1− | 0.4+ | 2005 12 24 | 291 | 0.1+ | 0.0 |
| 2002 04 11 | 699 | 2.2+ | 0.3− | 2005 10 25 | 691 | 0.0 | 0.2− | 2005 12 24 | 291 | 0.2+ | 0.0 |
| 2002 04 11 | 699 | 0.9+ | 0.1− | 2005 10 25 | 691 | 0.1+ | 0.1− | 2005 12 24 | 291 | 0.3− | 0.1− |
| 2002 04 16 | 704 | 0.7− | 0.3− | 2005 10 25 | 691 | 0.0 | 0.1+ | 2006 02 25 | G96 | 0.0 | 0.3+ |
| 2002 04 16 | 704 | 0.9− | 0.1+ | 2005 10 29 | 691 | 0.1− | 0.0 | 2006 02 25 | G96 | 0.7− | 0.1− |
| 2002 04 16 | 704 | 0.7− | 0.0 | 2005 10 29 | 691 | 0.2− | 0.5+ | 2006 02 25 | G96 | 0.3+ | 0.0 |
| 2002 04 16 | 704 | 0.2− | 0.7− | 2005 10 29 | 691 | 0.0 | 0.0 | 2006 02 25 | G96 | 0.2+ | 0.2+ |
| 2002 04 16 | 704 | 0.4+ | 0.2− | 2005 11 06 | 691 | 0.4+ | 0.1+ | | | | |
| 2002 04 23 | 644 | 0.1− | 0.4+ | 2005 11 06 | 691 | 0.2− | 0.2− | | | | |

**2005 UM$_{239}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.26819 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25889672 | $\omega$ | 46.40197 | −0.98756567 | | −0.13873323 | |
| $a$ | 2.4381009 | $\Omega$ | 125.48924 | +0.10484793 | | −0.93170121 | |
| $e$ | 0.0924651 | $i$ | 5.21023 | +0.11713649 | | −0.33568728 | |
| $P$ | 3.81 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 09 | 291 | 0.1− | 0.1− | 2003 03 26 | 691 | 0.1+ | 0.2− | 2005 10 25 | 691 | 0.2+ | 0.1+ |
| 2003 02 09 | 291 | 0.1+ | 0.2+ | 2003 03 26 | 691 | 0.1+ | 0.2− | 2005 10 25 | 691 | 0.0 | 0.1− |
| 2003 02 09 | 291 | 0.1− | 0.2+ | 2003 03 26 | 691 | 0.1− | 0.2− | 2005 10 29 | 691 | 0.2− | 0.0 |
| 2003 03 07 | 699 | 0.3+ | 0.2+ | 2003 03 31 | 645 | 0.1+ | 0.1− | 2005 10 29 | 691 | 0.1− | 0.1+ |
| 2003 03 07 | 699 | 0.8− | 1.7+ | 2003 03 31 | 645 | 0.1+ | 0.1− | 2005 10 29 | 691 | 0.5+ | 0.0 |
| 2003 03 07 | 699 | 0.8− | 0.4+ | 2003 04 08 | 691 | 0.3− | 0.0 | 2005 11 06 | 691 | 0.1+ | 0.1− |
| 2003 03 07 | 699 | 1.4− | 0.2+ | 2003 04 08 | 691 | 0.4− | 0.0 | 2005 11 06 | 691 | 0.8− | 0.1− |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2003 04 08 | 691 | 0.5+ | 0.2+ | 2005 11 06 | 691 | 0.1− | 0.0 |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2005 10 25 | 691 | 0.4+ | 0.0 | | | | |

**2005 UN$_{240}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.22412 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21824016 | $\omega$ | 171.69865 | +0.24382883 | | +0.96610995 | |
| $a$ | 2.7322028 | $\Omega$ | 112.38080 | −0.89497057 | | +0.25780607 | |
| $e$ | 0.1301787 | $i$ | 5.25748 | −0.37359762 | | +0.01294603 | |
| $P$ | 4.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 27 | E12 | 0.8+ | 0.0 | 2004 07 16 | 704 | 0.6− | 0.6− | 2005 10 29 | 691 | 0.2− | 0.1+ |
| 2004 06 27 | E12 | 0.0 | 0.2+ | 2004 07 16 | 704 | 0.6− | 0.2+ | 2005 11 04 | 691 | 0.0 | 0.2+ |
| 2004 06 27 | E12 | 0.4− | 0.1+ | 2004 07 16 | 704 | 0.6− | 0.0 | 2005 11 04 | 691 | 0.1+ | 0.2+ |
| 2004 06 27 | E12 | 0.4+ | 0.3+ | 2004 07 16 | 704 | 0.0 | 1.3− | 2005 11 04 | 691 | 0.1− | 0.0 |
| 2004 07 09 | 704 | (0.2− | 2.3+) | 2005 10 25 | 691 | 0.1− | 0.2− | 2005 11 06 | 691 | 0.4+ | 0.2− |
| 2004 07 09 | 704 | 0.5+ | 0.9+ | 2005 10 25 | 691 | 0.2− | 0.4− | 2005 11 06 | 691 | 0.2+ | 0.2+ |
| 2004 07 09 | 704 | 0.5− | 0.3+ | 2005 10 25 | 691 | 0.2− | 0.1+ | 2005 11 06 | 691 | 0.1+ | 0.1+ |
| 2004 07 09 | 704 | 0.5+ | 0.1+ | 2005 10 29 | 691 | 0.1− | 0.1− | | | | |
| 2004 07 16 | 704 | 0.3+ | 0.0 | 2005 10 29 | 691 | 0.0 | 0.0 | | | | |

**2005 UK$_{242}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.29313 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27831375 | $\omega$ | 120.03726 | +0.52454188 | | −0.84991679 | |
| $a$ | 2.3233409 | $\Omega$ | 298.24266 | +0.76029580 | | +0.49402921 | |
| $e$ | 0.1600740 | $i$ | 3.25190 | +0.38315287 | | +0.18323918 | |
| $P$ | 3.54 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.5− | 0.4+ | 2005 11 06 | 691 | 0.4− | 0.0 | 2005 11 28 | 703 | 0.9− | 0.2+ |
| 2001 08 24 | 644 | 0.2− | 0.4+ | 2005 11 06 | 691 | 0.1− | 0.1− | 2005 12 02 | 704 | 0.4+ | 0.1− |
| 2001 08 24 | 644 | 0.2+ | 0.1+ | 2005 11 08 | 704 | 0.1+ | 0.3− | 2005 12 02 | 704 | 0.5− | 0.3− |
| 2003 03 24 | 691 | 0.3+ | 0.0 | 2005 11 08 | 704 | 0.4+ | 0.3− | 2005 12 02 | 704 | 0.9+ | 0.1− |
| 2003 03 24 | 691 | 0.1+ | 0.1+ | 2005 11 08 | 704 | 1.2+ | 1.2− | 2005 12 02 | 704 | 0.6+ | 0.3− |
| 2003 03 24 | 691 | 0.3− | 0.0 | 2005 11 08 | 704 | 1.0− | 0.3+ | 2005 12 02 | 704 | 0.9+ | 0.3+ |
| 2005 10 25 | 691 | 0.2+ | 0.1+ | 2005 11 28 | 704 | 0.0 | 1.0+ | 2005 12 28 | 644 | 0.1+ | 0.0 |
| 2005 10 25 | 691 | 0.1+ | 0.0 | 2005 11 28 | 704 | 0.6− | 0.2− | 2005 12 28 | 644 | 0.1+ | 0.1+ |
| 2005 10 25 | 691 | 0.3+ | 0.2+ | 2005 11 28 | 704 | 0.6− | 0.5+ | 2005 12 28 | 644 | 0.1− | 0.2+ |
| 2005 10 29 | 691 | 0.2+ | 0.0 | 2005 11 28 | 704 | 0.7− | 0.8+ | 2006 01 25 | G96 | 0.2+ | 0.5+ |
| 2005 10 29 | 691 | 0.4+ | 0.0 | 2005 11 28 | 703 | 0.3− | 1.0− | 2006 01 25 | G96 | 0.2− | 0.0 |
| 2005 10 29 | 691 | 0.1+ | 0.0 | 2005 11 28 | 703 | 1.4− | 0.6− | 2006 01 25 | G96 | 0.6− | 0.1− |
| 2005 11 06 | 691 | 0.0 | 0.0 | 2005 11 28 | 703 | 0.5− | 0.1− | 2006 01 25 | G96 | 0.1− | 0.1+ |

**2005 UA$_{248}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.16885 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27663714 | $\omega$ | 96.39434 | −0.91378680 | | −0.40353103 | |
| $a$ | 2.3327188 | $\Omega$ | 59.81526 | +0.34820692 | | −0.83706703 | |
| $e$ | 0.1385634 | $i$ | 3.07947 | +0.20915454 | | −0.36943402 | |
| $P$ | 3.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 12 | 691 | 0.3− | 0.1+ | 2003 02 24 | 608 | 0.3+ | 0.8− | 2005 11 12 | 691 | 0.1− | 0.5+ |
| 1994 10 12 | 691 | 0.2+ | 0.2+ | 2005 10 01 | G96 | 0.3+ | 0.3+ | 2005 11 12 | 691 | 0.1− | 0.5+ |
| 1994 10 12 | 691 | 0.3+ | 0.8− | 2005 10 01 | G96 | 0.1− | 0.1+ | 2005 11 12 | 691 | 0.7− | 0.4+ |
| 2003 01 27 | 704 | 0.7+ | 0.7− | 2005 10 01 | G96 | 0.2+ | 0.2− | 2005 12 02 | G96 | 0.4+ | 0.4+ |
| 2003 01 27 | 704 | 0.0 | 1.4+ | 2005 10 01 | G96 | 0.1− | 0.0 | 2005 12 02 | G96 | 0.0 | 0.1+ |
| 2003 01 27 | 704 | 0.1+ | 0.7+ | 2005 10 28 | G96 | 0.4+ | 0.2+ | 2005 12 02 | G96 | 0.1+ | 0.0 |
| 2003 01 27 | 704 | 0.5+ | 0.1− | 2005 10 28 | G96 | 0.3+ | 0.0 | 2005 12 02 | G96 | 0.2+ | 0.2+ |
| 2003 02 19 | 644 | 0.5− | 0.4+ | 2005 10 28 | G96 | 0.5+ | 0.2− | 2005 12 04 | 691 | 0.3− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 19 | 644 | 0.6− | 0.1+ | 2005 10 28 | G96 | 0.1+ | 0.1− | 2005 12 04 | 691 | 0.0 | 0.3− |
| 2003 02 19 | 644 | 0.3− | 0.2+ | 2005 10 29 | 691 | 0.5+ | 0.5− | 2005 12 04 | 691 | 0.4− | 0.5− |
| 2003 02 24 | 608 | 0.2− | 1.7− | 2005 10 29 | 691 | 0.6+ | 0.1+ | | | | |
| 2003 02 24 | 608 | 0.0 | 0.3− | 2005 10 29 | 691 | 0.1− | 0.1− | | | | |

**2005 UF$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.72299 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17332244 | $\omega$ | 51.95849 | | +0.91268883 | | +0.35456765 |
| $a$ | 3.1859053 | $\Omega$ | 286.45029 | | −0.40862834 | | +0.79754192 |
| $e$ | 0.1351831 | $i$ | 12.23072 | | +0.00468849 | | +0.48806626 |
| $P$ | 5.69 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 703 | 0.1− | 0.3+ | 2005 10 11 | 699 | 0.7+ | 1.2+ | 2005 11 22 | 703 | 0.9+ | 1.1+ |
| 1999 09 07 | 703 | 0.6+ | 0.3+ | 2005 10 26 | 699 | 0.7+ | 0.5+ | 2005 11 22 | 703 | 0.3+ | 0.1+ |
| 1999 09 07 | 703 | 1.2− | 0.7+ | 2005 10 26 | 699 | 0.7+ | 0.6+ | 2005 11 22 | 703 | 0.6+ | 0.1+ |
| 1999 09 07 | 703 | 0.3+ | 0.6− | 2005 10 26 | 699 | 0.3+ | 0.7− | 2005 11 22 | 703 | 1.0+ | 0.8− |
| 2005 09 11 | 699 | 1.3− | 0.7− | 2005 10 26 | 699 | 0.1− | 0.4+ | 2005 11 29 | 704 | 0.2+ | 0.4+ |
| 2005 09 11 | 699 | 0.4+ | 1.2− | 2005 10 29 | 703 | 0.0 | 0.3− | 2005 11 29 | 704 | 0.9− | 0.5+ |
| 2005 09 11 | 699 | 0.7+ | 0.9− | 2005 10 29 | 703 | 0.0 | 0.5− | 2005 11 29 | 704 | 0.7− | 0.1− |
| 2005 09 11 | 699 | 0.3− | 1.1+ | 2005 10 29 | 703 | 0.4+ | 0.5− | 2005 11 29 | 704 | 0.7− | 0.1− |
| 2005 09 29 | 703 | 0.2− | 0.2+ | 2005 10 29 | 703 | 0.0 | 0.1+ | 2005 11 29 | 704 | 0.6+ | 0.0 |
| 2005 09 29 | 703 | 0.1− | 0.2− | 2005 10 29 | 644 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.2+ |
| 2005 09 29 | 703 | 0.5− | 0.1+ | 2005 10 29 | 644 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.0 |
| 2005 09 29 | 703 | 1.5− | 0.2− | 2005 10 29 | 644 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2005 10 11 | 699 | 0.3− | 0.7− | 2005 11 01 | 644 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.2+ |
| 2005 10 11 | 699 | 0.5− | 0.9+ | 2005 11 01 | 644 | 0.3− | 0.2− | | | | |
| 2005 10 11 | 699 | 0.2− | 1.2− | 2005 11 01 | 644 | 0.1+ | 0.0 | | | | |

**2005 UZ$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.89223 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18180293 | $\omega$ | 216.93251 | | +0.23400737 | | +0.95413342 |
| $a$ | 3.0860441 | $\Omega$ | 67.27792 | | −0.83661071 | | +0.29546306 |
| $e$ | 0.0979724 | $i$ | 11.68009 | | −0.49530100 | | −0.04828036 |
| $P$ | 5.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 691 | 0.2+ | 0.5+ | 2005 10 29 | G96 | 0.3+ | 0.3− | 2005 11 30 | G96 | 0.2− | 0.0 |
| 2003 04 05 | 691 | 0.2+ | 0.9+ | 2005 10 29 | G96 | 0.1+ | 0.2− | 2005 11 30 | G96 | 0.1− | 0.5− |
| 2003 04 05 | 691 | 0.3+ | 0.2+ | 2005 10 29 | G96 | 0.4− | 0.2− | 2005 11 30 | G96 | 0.0 | 0.2− |
| 2004 08 21 | E12 | 0.1+ | 0.1− | 2005 10 29 | G96 | 0.0 | 0.5− | 2005 11 30 | G96 | 0.0 | 0.1− |
| 2004 08 21 | E12 | 0.5− | 0.1− | 2005 11 01 | 691 | 0.4− | 0.1+ | 2005 12 04 | G96 | 0.0 | 0.1− |
| 2004 08 21 | E12 | 0.2− | 0.3+ | 2005 11 01 | 691 | 0.5− | 0.2+ | 2005 12 04 | G96 | 0.3+ | 0.1− |
| 2004 08 21 | E12 | 0.1+ | 0.0 | 2005 11 01 | 691 | 0.3+ | 0.3+ | 2005 12 04 | G96 | 0.1+ | 0.2− |
| 2005 10 24 | 691 | 0.1− | 0.1− | 2005 11 01 | 291 | 0.0 | 0.3+ | 2005 12 04 | G96 | 0.2− | 0.8− |
| 2005 10 24 | 691 | 0.2− | 0.2+ | 2005 11 01 | 291 | 0.0 | 0.2+ | 2006 01 23 | G96 | 0.5+ | 0.4− |
| 2005 10 24 | 691 | 0.4− | 0.3+ | 2005 11 01 | 291 | 0.1+ | 0.1+ | 2006 01 23 | G96 | 0.1+ | 0.2− |
| 2005 10 28 | 691 | 0.3− | 0.1+ | 2005 11 22 | 691 | 0.4+ | 0.3+ | 2006 01 23 | G96 | 0.7+ | 0.7− |
| 2005 10 28 | 691 | 0.1− | 0.2+ | 2005 11 22 | 691 | 0.6+ | 0.3+ | 2006 01 23 | G96 | 0.2+ | 0.3− |
| 2005 10 28 | 691 | 0.1− | 0.3+ | 2005 11 22 | 691 | 0.1− | 0.2+ | | | | |

**2005 UE$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.48411 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22703142 | $\omega$ | 258.00983 | | +0.01055818 | | −0.99984818 |
| $a$ | 2.6612075 | $\Omega$ | 191.41246 | | +0.94253172 | | +0.01458055 |
| $e$ | 0.0538401 | $i$ | 4.01703 | | +0.33394983 | | −0.00954052 |
| $P$ | 4.34 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 291 | 0.0 | 0.3+ | 2005 10 25 | 691 | 0.2− | 0.4+ | 2005 11 01 | G96 | 0.1+ | 0.5− |
| 2003 03 24 | 291 | 0.4+ | 0.1− | 2005 10 25 | 691 | 0.1− | 0.5+ | 2005 11 01 | G96 | 0.1+ | 0.5− |
| 2003 03 24 | 291 | 0.1+ | 0.4+ | 2005 10 29 | G96 | 0.2+ | 0.1− | 2005 11 01 | G96 | 0.1− | 0.6− |
| 2003 04 04 | 291 | 0.4− | 0.1− | 2005 10 29 | G96 | 0.2+ | 0.0 | 2005 11 01 | G96 | 0.5− | 0.2− |
| 2003 04 04 | 291 | 0.6− | 0.4− | 2005 10 29 | G96 | 0.2− | 0.2− | 2005 11 01 | G96 | 1.0+ | 0.2+ |
| 2003 04 04 | 291 | 0.4− | 0.3− | 2005 10 29 | G96 | 0.7+ | 0.4− | 2005 11 01 | G96 | 0.4+ | 0.2− |
| 2003 04 24 | 691 | 0.5+ | 0.1+ | 2005 11 01 | 691 | 0.2+ | 0.1+ | 2005 11 05 | 691 | 0.3− | 0.3− |
| 2003 04 24 | 691 | 0.3+ | 0.2+ | 2005 11 01 | 691 | 0.2+ | 0.2− | 2005 11 05 | 691 | 0.1− | 0.2− |
| 2003 04 24 | 691 | 0.1+ | 0.1+ | 2005 11 01 | 691 | 0.2− | 0.0 | 2005 11 05 | 691 | 0.1− | 0.0 |
| 2005 10 25 | 691 | 0.0 | 0.3+ | 2005 11 01 | G96 | 0.1+ | 0.0 | | | | |

**2005 UB$_{278}$ = 2002 GR$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.41896 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16961163 | $\omega$ | 250.02487 | | −0.53160717 | | −0.84572003 |
| $a$ | 3.2322054 | $\Omega$ | 232.17593 | | +0.79740039 | | −0.48126769 |
| $e$ | 0.0207168 | $i$ | 3.36640 | | +0.28556335 | | −0.23051906 |
| $P$ | 5.81 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.3+ | 0.2+ | 2002 04 12 | 704 | 1.1− | 0.8+ | 2005 10 29 | 703 | 0.2− | 0.1− |
| 2002 04 04 | 644 | 0.1− | 0.4+ | 2002 04 12 | 704 | 0.2− | 0.0 | 2005 10 30 | 691 | 0.0 | 0.1+ |
| 2002 04 04 | 644 | 0.5+ | 0.0 | 2002 04 14 | 704 | 0.5+ | 0.9− | 2005 10 30 | 691 | 0.0 | 0.1+ |
| 2002 04 04 | 644 | 0.5+ | 0.3+ | 2002 04 14 | 704 | 0.2− | 0.1− | 2005 10 30 | 691 | 0.2+ | 0.1+ |
| 2002 04 04 | 644 | 0.2+ | 0.3+ | 2002 04 14 | 704 | 0.7+ | 0.5+ | 2005 10 30 | G96 | 0.4+ | 0.0 |
| 2002 04 04 | 644 | 0.1+ | 0.6+ | 2002 04 14 | 704 | 0.9+ | 0.3+ | 2005 10 30 | G96 | 0.0 | 0.1− |
| 2002 04 10 | 704 | 1.5− | 0.5− | 2005 10 24 | 691 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.0 | 0.2− |
| 2002 04 10 | 704 | 0.4+ | 0.4− | 2005 10 24 | 691 | 0.2− | 0.1+ | 2005 10 30 | G96 | 0.1+ | 0.4− |
| 2002 04 10 | 704 | 0.9− | 1.3− | 2005 10 24 | 691 | 0.0 | 0.1+ | 2006 01 21 | G96 | 0.2+ | 0.1+ |
| 2002 04 10 | 704 | 0.5+ | 0.6− | 2005 10 29 | 703 | 0.9− | 0.5+ | 2006 01 21 | G96 | 0.4− | 0.0 |
| 2002 04 12 | 704 | 0.1− | 0.2+ | 2005 10 29 | 703 | 0.6+ | 1.5− | 2006 01 21 | G96 | 0.1+ | 0.4− |
| 2002 04 12 | 704 | 0.4− | 0.0 | 2005 10 29 | 703 | (1.6− | 0.2−) | 2006 01 21 | G96 | 0.1+ | 0.0 |

**2005 UK$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.15722 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19271147 | $\omega$ | 130.75343 | | +0.61963613 | | +0.78488816 |
| $a$ | 2.9684587 | $\Omega$ | 177.53508 | | −0.72880421 | | +0.57596490 |
| $e$ | 0.0766629 | $i$ | 1.70783 | | −0.29136830 | | +0.22850604 |
| $P$ | 5.11 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.2+ | 0.4− | 2003 03 26 | 291 | 0.2+ | 0.2+ | 2005 10 30 | 691 | 0.0 | 0.8+ |
| 1997 01 31 | 691 | 0.3− | 0.3− | 2003 04 01 | 807 | 0.0 | 0.0 | 2005 10 30 | 691 | 0.0 | 0.8+ |
| 1997 01 31 | 691 | 0.4− | 0.7− | 2003 04 01 | 807 | 0.1+ | 0.1+ | 2005 10 30 | 691 | 0.1− | 0.9+ |
| 2002 02 14 | 691 | 0.5+ | 0.2− | 2003 04 01 | 807 | 0.0 | 0.1+ | 2005 11 25 | 703 | 0.5− | 0.0 |
| 2002 02 14 | 691 | 0.2− | 0.1− | 2003 04 01 | 807 | 0.0 | 0.1+ | 2005 11 25 | 703 | 0.8− | 0.4− |
| 2002 02 14 | 691 | 0.3− | 0.1− | 2003 04 25 | 691 | 0.8+ | 1.4+ | 2005 11 25 | 703 | 0.4− | 0.4+ |
| 2003 03 07 | 291 | 0.4− | 0.6+ | 2003 04 25 | 691 | 0.9+ | 1.2+ | 2005 11 25 | 703 | 0.5− | 1.3+ |
| 2003 03 07 | 291 | 0.1+ | 0.1+ | 2003 04 25 | 691 | 0.7+ | 1.6+ | 2006 01 22 | G96 | 0.3− | 0.8+ |
| 2003 03 07 | 291 | 0.4− | 0.3+ | 2005 10 24 | 691 | 0.2− | 1.1+ | 2006 01 22 | G96 | 0.3+ | 0.2+ |
| 2003 03 26 | 291 | 0.1− | 0.2+ | 2005 10 24 | 691 | 0.4− | 0.7+ | 2006 01 22 | G96 | 0.2− | 0.1− |
| 2003 03 26 | 291 | 0.0 | 0.2+ | 2005 10 24 | 691 | 0.4− | 0.8+ | 2006 01 22 | G96 | 0.2− | 0.7+ |

**2005 UT$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.80923 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22484884 | $\omega$ | 63.48167 | | −0.18530022 | | −0.97755209 |
| $a$ | 2.6784011 | $\Omega$ | 37.62984 | | +0.83299607 | | −0.21039117 |
| $e$ | 0.1745383 | $i$ | 9.45311 | | +0.52132655 | | −0.01128966 |
| $P$ | 4.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 05 | 691 | 0.4− | 0.4+ | 2002 01 23 | 704 | 0.6− | 0.3+ | 2005 11 07 | 704 | 0.4+ | 1.1+ |
| 1994 05 05 | 691 | 0.4+ | 0.2− | 2002 02 10 | 704 | 0.0 | 1.1+ | 2005 11 12 | 691 | 0.1− | 0.1− |
| 1994 05 05 | 691 | 0.0 | 0.0 | 2002 02 10 | 704 | 0.7+ | 0.2− | 2005 11 12 | 691 | 0.2+ | 0.3− |
| 2002 01 14 | 644 | 0.3+ | 0.1+ | 2002 02 10 | 704 | 0.3− | 0.3+ | 2005 11 12 | 691 | 0.1− | 0.2− |
| 2002 01 14 | 644 | 0.4+ | 0.2− | 2005 10 24 | 691 | 0.2− | 0.3− | 2005 11 29 | 704 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 644 | 0.3+ | 0.1− | 2005 10 24 | 691 | 0.1− | 0.3− | 2005 11 29 | 704 | 0.0 | 0.3+ |
| 2002 01 14 | 644 | 0.2+ | 0.2− | 2005 10 24 | 691 | 0.1− | 0.2− | 2005 11 29 | 704 | 0.3+ | 0.3+ |
| 2002 01 14 | 644 | 0.4+ | 0.0 | 2005 10 30 | 691 | 0.0 | 0.0 | 2005 11 29 | 704 | 0.6+ | 0.5+ |
| 2002 01 14 | 644 | 0.2+ | 0.0 | 2005 10 30 | 691 | 0.1+ | 0.1− | 2005 12 02 | 704 | 0.6− | 0.1− |
| 2002 01 23 | 704 | 0.0 | 0.2− | 2005 10 30 | 691 | 0.3− | 0.2− | 2005 12 02 | 704 | 0.5− | 0.9+ |
| 2002 01 23 | 704 | 0.4− | 0.7− | 2005 11 07 | 704 | (0.6+ | 2.6+) | 2005 12 02 | 704 | 0.0 | 0.8+ |
| 2002 01 23 | 704 | 0.7− | 0.5− | 2005 11 07 | 704 | 1.2+ | 1.5+ | 2005 12 02 | 704 | 0.0 | 0.1− |
| 2002 01 23 | 704 | 0.8− | 0.1− | 2005 11 07 | 704 | 0.4+ | 2.1+ | | | | |

**2005 UF$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 208.95304 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.30107005 | $\omega$ | 216.82194 | | +0.27042552 | | +0.95936229 |
| $a$ | 2.2047415 | $\Omega$ | 68.99198 | | −0.86144168 | | +0.27849680 |
| $e$ | 0.0051621 | $i$ | 4.95213 | | −0.42987007 | | +0.04542603 |
| $P$ | 3.27 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 695 | 0.0 | 0.5+ | 2005 10 30 | 691 | 0.0 | 0.1+ | 2005 11 30 | G96 | 0.3+ | 0.0 |
| 2002 12 06 | 695 | 0.2− | 1.0+ | 2005 10 30 | 691 | 0.2− | 0.1+ | 2005 11 30 | G96 | 0.5+ | 0.1− |
| 2004 06 11 | 691 | 0.1+ | 0.0 | 2005 10 30 | 691 | 0.1− | 0.3+ | 2005 12 01 | 691 | 0.2− | 0.4+ |
| 2004 06 11 | 691 | 0.0 | 0.3+ | 2005 11 28 | 691 | 0.2+ | 0.6− | 2005 12 01 | 691 | 0.0 | 0.0 |
| 2004 06 11 | 691 | 0.2+ | 0.4+ | 2005 11 28 | 691 | 0.2+ | 0.3+ | 2005 12 01 | 691 | 0.1+ | 0.0 |
| 2005 09 25 | 691 | 0.3+ | 0.2− | 2005 11 28 | 691 | 0.4+ | 0.4+ | 2005 12 26 | G96 | 0.6− | 0.2− |
| 2005 09 25 | 691 | 0.3+ | 0.2− | 2005 11 30 | 691 | 0.1− | 0.1− | 2005 12 26 | G96 | 0.4− | 0.2+ |
| 2005 09 25 | 691 | 0.0 | 0.2+ | 2005 11 30 | 691 | 0.1+ | 0.0 | 2005 12 26 | G96 | 0.3− | 0.6+ |
| 2005 10 26 | 691 | 0.4− | 0.2− | 2005 11 30 | 691 | 0.1+ | 0.1− | 2005 12 26 | G96 | 0.3+ | 0.5+ |
| 2005 10 26 | 691 | 0.2− | 0.1+ | 2005 11 30 | G96 | 0.1+ | 0.4− | | | | |
| 2005 10 26 | 691 | 0.6− | 0.1− | 2005 11 30 | G96 | 0.3+ | 0.3− | | | | |

**2005 UQ$_{283}$ = 2006 WK$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 172.25897 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.18595052 | $\omega$ | 211.75929 | | +0.13892187 | | +0.98637916 |
| $a$ | 3.0399827 | $\Omega$ | 66.35542 | | −0.88726867 | | +0.16347467 |
| $e$ | 0.0804101 | $i$ | 5.51718 | | −0.43983522 | | −0.01822574 |
| $P$ | 5.30 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 25 | 691 | 0.0 | 0.2+ | 2005 10 30 | 691 | 0.2+ | 0.1+ | 2005 11 30 | G96 | 0.8− | 0.3+ |
| 1998 06 25 | 691 | 0.1− | 0.1+ | 2005 10 30 | 691 | 0.1+ | 0.2− | 2005 11 30 | G96 | 0.3− | 0.3+ |
| 1998 06 25 | 691 | 0.4+ | 0.5+ | 2005 11 01 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2003 04 30 | 691 | 0.0 | 0.1+ | 2005 11 01 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.5+ |
| 2003 04 30 | 691 | 0.2+ | 0.0 | 2005 11 01 | G96 | 0.6+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2003 04 30 | 691 | 0.1− | 0.0 | 2005 11 03 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.5+ |
| 2005 10 26 | 691 | 0.2− | 0.0 | 2005 11 03 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2005 10 26 | 691 | 0.2+ | 0.1+ | 2005 11 03 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.4+ |
| 2005 10 26 | 691 | 0.3− | 0.6− | 2005 11 30 | G96 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.3+ |
| 2005 10 30 | 691 | 0.2− | 0.3+ | 2005 11 30 | G96 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3+ |

**2005 UG$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 351.64666 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.24243419 | $\omega$ | 10.42286 | | −0.76821869 | | −0.63884203 |
| $a$ | 2.5472611 | $\Omega$ | 129.78949 | | +0.58340715 | | −0.72529121 |
| $e$ | 0.1239321 | $i$ | 3.09474 | | +0.26358329 | | −0.25658042 |
| $P$ | 4.07 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 25 | 691 | 0.5+ | 0.2+ | 2003 05 02 | 691 | 0.5− | 0.3+ | 2005 11 03 | 691 | 0.1− | 0.2− |
| 1995 04 25 | 691 | 0.1− | 0.2+ | 2003 05 02 | 691 | 0.8− | 0.3+ | 2005 11 03 | 691 | 0.2− | 0.3− |
| 1995 04 25 | 691 | 0.2− | 0.2+ | 2003 05 02 | 691 | 0.6− | 0.5+ | 2005 11 03 | 691 | 0.0 | 0.3+ |
| 2003 04 09 | 644 | 0.5− | 0.2− | 2005 10 26 | 691 | 0.1− | 0.4+ | 2005 12 01 | G96 | 0.8− | 0.3− |
| 2003 04 09 | 691 | 0.7+ | 0.4− | 2005 10 26 | 691 | 0.4+ | 0.2+ | 2005 12 01 | G96 | 0.6+ | 0.1− |
| 2003 04 09 | 644 | 0.4− | 0.1− | 2005 10 26 | 691 | 0.3− | 0.3+ | 2005 12 01 | G96 | 0.3+ | 0.3− |
| 2003 04 09 | 691 | 0.5+ | 0.4− | 2005 10 30 | 691 | 0.4− | 0.3+ | 2005 12 01 | G96 | 0.0 | 0.3− |
| 2003 04 09 | 691 | 1.0+ | 0.1− | 2005 10 30 | 691 | 0.0 | 0.2− | | | | |
| 2003 04 09 | 644 | 0.4− | 0.1− | 2005 10 30 | 691 | 0.4+ | 0.2+ | | | | |

**2005 UW$_{289}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 215.25520 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.26542938 | $\omega$ | 357.84725 | | +0.00406691 | | +0.99607576 |
| $a$ | 2.3979312 | $\Omega$ | 272.37733 | | −0.91614723 | | −0.03172633 |
| $e$ | 0.1066770 | $i$ | 5.07659 | | −0.40082129 | | +0.08262271 |
| $P$ | 3.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 12 | 809 | 0.5− | 0.5− | 2001 10 18 | 704 | 0.4− | 0.1− | 2005 10 29 | 703 | 0.7+ | 0.5+ |
| 1993 07 12 | 809 | 1.0− | 0.8+ | 2001 10 18 | 704 | 0.9− | 1.0+ | 2005 10 29 | 703 | 1.5+ | 0.9− |
| 1993 07 12 | 809 | 1.5+ | 0.1+ | 2001 10 18 | 704 | (1.6− | 2.6+) | 2005 10 29 | 703 | 1.6− | 0.7+ |
| 2001 09 10 | 704 | 0.9− | 0.5− | 2001 10 20 | 644 | 0.0 | 0.3+ | 2005 10 30 | 691 | 0.3+ | 0.3− |
| 2001 09 10 | 704 | 1.3+ | 0.9− | 2001 10 20 | 644 | 0.0 | 0.2+ | 2005 10 30 | 691 | 0.1+ | 0.8+ |
| 2001 09 10 | 704 | 0.3− | 1.2− | 2001 10 20 | 644 | 0.0 | 0.4+ | 2005 10 30 | 691 | 0.2+ | 0.1− |
| 2001 09 28 | 644 | 0.3+ | 0.7+ | 2005 10 26 | 691 | 0.1− | 0.1− | 2005 12 07 | 691 | 0.0 | 0.2+ |
| 2001 09 28 | 644 | 0.4+ | 0.6+ | 2005 10 26 | 691 | 0.3− | 0.1− | 2005 12 07 | 691 | 0.2+ | 0.0 |
| 2001 09 28 | 644 | 0.4+ | 0.2+ | 2005 10 26 | 691 | 0.2− | 0.2− | 2005 12 07 | 691 | 0.2− | 0.4− |
| 2001 10 18 | 704 | 0.2+ | 1.6− | 2005 10 29 | 703 | 0.7− | 1.2+ | | | | |

**2005 UC$_{292}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 250.52310 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.21282669 | $\omega$ | 302.21489 | | −0.68529999 | | +0.72551421 |
| $a$ | 2.7783396 | $\Omega$ | 284.38840 | | −0.64428966 | | −0.64444475 |
| $e$ | 0.1927747 | $i$ | 3.74046 | | −0.33949191 | | −0.24149554 |
| $P$ | 4.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 19 | 691 | 0.1− | 0.4+ | 2003 04 07 | 704 | 1.0+ | 1.2+ | 2004 10 04 | 291 | 0.0 | 0.2+ |
| 1999 07 19 | 691 | 0.1+ | 0.3+ | 2003 04 07 | 704 | 1.2+ | 0.2+ | 2005 10 26 | 691 | 0.1− | 0.5+ |
| 1999 07 19 | 691 | 0.4− | 0.4+ | 2003 04 07 | 704 | (1.5+ | 3.5+) | 2005 10 26 | 691 | 0.2− | 0.0 |
| 2003 03 22 | 644 | 0.1− | 0.6+ | 2003 04 20 | 608 | 0.1− | 0.5+ | 2005 10 26 | 691 | 0.1− | 0.3+ |
| 2003 03 22 | 644 | 0.1+ | 0.9+ | 2003 04 20 | 608 | 0.3− | 0.5+ | 2005 10 30 | 691 | 0.2− | 0.6+ |
| 2003 03 22 | 644 | 0.3+ | 0.5+ | 2003 04 20 | 608 | 0.1− | 0.2+ | 2005 10 30 | 691 | 0.2+ | 0.5+ |
| 2003 03 27 | 699 | 0.1− | 0.1+ | 2004 09 06 | E12 | 0.4+ | 0.9− | 2005 10 30 | 691 | 0.2+ | 0.3+ |
| 2003 03 27 | 699 | 0.3− | 0.4− | 2004 09 06 | E12 | 0.1− | 0.4− | 2005 11 03 | 691 | 0.2− | 0.3+ |
| 2003 03 27 | 699 | 1.0− | 0.3+ | 2004 09 06 | E12 | 1.1− | 0.2+ | 2005 11 03 | 691 | 0.4− | 0.2+ |
| 2003 03 27 | 699 | 1.5− | 0.5− | 2004 09 06 | E12 | 0.6+ | 0.3− | 2005 11 03 | 691 | 0.0 | 0.2+ |
| 2003 04 07 | 704 | 1.4+ | 0.4+ | 2004 10 04 | 291 | 0.1+ | 0.2+ | | | | |
| 2003 04 07 | 704 | 1.3+ | 0.5+ | 2004 10 04 | 291 | 0.1+ | 0.1+ | | | | |

**2005 UF$_{294}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 152.78053 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.19987418 | $\omega$ | 279.52408 | | +0.66272218 | | +0.74217339 |
| $a$ | 2.8971095 | $\Omega$ | 32.69067 | | −0.59382616 | | +0.60208986 |
| $e$ | 0.0794269 | $i$ | 10.65797 | | −0.45625628 | | +0.29439169 |
| $P$ | 4.93 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 809 | 1.1− | 0.3+ | 2002 02 08 | 645 | 0.1− | 0.1− | 2004 08 09 | E12 | 0.1+ | 0.4+ |
| 1995 11 23 | 691 | 0.2− | 0.5+ | 2003 04 29 | 691 | 0.3+ | 0.6+ | 2004 08 09 | E12 | 0.0 | 0.9− |
| 1995 11 23 | 691 | 0.4− | 0.5+ | 2003 04 29 | 691 | 0.7+ | 0.5+ | 2005 10 26 | 691 | 0.0 | 0.4+ |
| 1995 11 23 | 691 | 0.2− | 0.2+ | 2003 04 29 | 691 | 0.7+ | 0.5+ | 2005 10 26 | 691 | 0.2− | 0.0 |
| 2000 11 03 | 704 | 1.0+ | 0.8+ | 2003 05 05 | 691 | 0.2− | 0.5+ | 2005 10 26 | 691 | 0.1− | 0.0 |
| 2000 11 03 | 704 | 1.3+ | 0.5+ | 2003 05 05 | 691 | 0.3+ | 0.3+ | 2005 10 30 | 691 | 0.3+ | 0.1+ |
| 2000 11 03 | 704 | 0.6+ | 0.7+ | 2003 05 05 | 691 | 0.2− | 0.6+ | 2005 10 30 | 691 | 0.3− | 0.3+ |
| 2000 11 03 | 704 | 0.3− | 0.7− | 2003 05 10 | 691 | 0.4+ | 0.0 | 2005 10 30 | 691 | 0.1− | 0.2+ |
| 2000 11 20 | 704 | 0.0 | 0.4− | 2003 05 10 | 691 | 0.6+ | 0.0 | 2005 11 03 | 691 | 0.5− | 0.2+ |
| 2000 11 20 | 704 | 0.8− | 0.1− | 2003 05 10 | 691 | 0.4− | 0.1− | 2005 11 03 | 691 | 0.4− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.1+ | 0.8+ | 2004 08 09 | E12 | 0.2− | 0.4+ | 2005 11 03 | 691 | 0.0 | 0.2+ |
| 2002 02 08 | 645 | 0.0 | 0.1− | 2004 08 09 | E12 | 0.2+ | 0.2+ | | | | |

**2005 UK$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.94162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21384459 | $\omega$ | 28.03191 | | +0.22133182 | −0.96963535 | |
| $a$ | 2.7695159 | $\Omega$ | 49.37847 | | +0.86715556 | +0.14688946 | |
| $e$ | 0.0554647 | $i$ | 7.87659 | | +0.44615409 | +0.19552694 | |
| $P$ | 4.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 644 | 0.3− | 0.5− | 2005 10 26 | 691 | 0.3− | 0.1− | 2005 11 29 | 704 | 0.0 | 0.6+ |
| 2002 01 14 | 644 | 0.4− | 0.4− | 2005 10 26 | 691 | 0.0 | 0.2+ | 2005 11 29 | 704 | 1.1+ | 0.5− |
| 2002 01 14 | 644 | 0.2+ | 0.6− | 2005 10 30 | 691 | 0.0 | 0.2+ | 2005 12 07 | 691 | 0.1− | 0.3+ |
| 2003 05 01 | 291 | 0.4+ | 0.4+ | 2005 10 30 | 691 | 0.0 | 0.4+ | 2005 12 07 | 691 | 0.1− | 0.4+ |
| 2003 05 01 | 291 | 0.1+ | 0.6+ | 2005 10 30 | 691 | 0.8− | 0.5− | 2005 12 07 | 691 | 0.3− | 0.3+ |
| 2003 05 01 | 291 | 0.2+ | 0.5+ | 2005 11 29 | 699 | 0.9+ | 0.1+ | 2005 12 10 | 691 | 0.3+ | 0.2− |
| 2005 10 01 | G96 | 0.5− | 0.4− | 2005 11 29 | 699 | 0.2+ | 0.8+ | 2005 12 10 | 691 | 0.2+ | 0.1+ |
| 2005 10 01 | G96 | 0.2− | 0.1− | 2005 11 29 | 699 | 0.6− | 0.6− | 2005 12 10 | 691 | 0.4+ | 0.4+ |
| 2005 10 01 | G96 | 0.7− | 0.1+ | 2005 11 29 | 699 | 0.4+ | 0.6− | | | | |
| 2005 10 26 | 691 | 0.1− | 0.3+ | 2005 11 29 | 704 | 0.0 | 0.5+ | | | | |

**2005 UN$_{297}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.97646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17901009 | $\omega$ | 202.89577 | | +0.56301735 | −0.82643518 | |
| $a$ | 3.1180593 | $\Omega$ | 212.83991 | | +0.75939756 | +0.51926496 | |
| $e$ | 0.1709484 | $i$ | 0.42714 | | +0.32607792 | +0.21764372 | |
| $P$ | 5.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.1+ | 0.2+ | 2005 11 03 | 691 | 0.0 | 0.1− | 2005 12 02 | G96 | 0.0 | 0.1− |
| 1999 10 09 | 691 | 0.5− | 0.5− | 2005 11 03 | 691 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.1+ | 0.4− |
| 1999 10 09 | 691 | 0.3+ | 0.4+ | 2005 11 03 | 691 | 0.1+ | 0.2− | 2006 01 21 | G96 | 0.1− | 0.2− |
| 2001 01 15 | 691 | 0.0 | 0.4+ | 2005 11 12 | 691 | 0.1+ | 0.1− | 2006 01 21 | G96 | 0.1+ | 0.0 |
| 2001 01 15 | 691 | 0.2+ | 0.1− | 2005 11 12 | 691 | 0.4+ | 0.3+ | 2006 01 21 | G96 | 0.3+ | 0.1− |
| 2001 01 15 | 691 | 0.1− | 0.2+ | 2005 11 12 | 691 | 0.1− | 0.0 | 2006 01 21 | G96 | 0.5+ | 0.6− |
| 2005 10 26 | 691 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.0 | 0.4− | 2006 01 21 | G96 | 1.0− | 0.1− |
| 2005 10 26 | 691 | 0.4− | 0.1− | 2005 11 25 | G96 | 0.5+ | 0.3− | 2006 01 21 | G96 | 0.5+ | 0.3− |
| 2005 10 26 | 691 | 0.2− | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.3− | 2006 01 21 | G96 | 0.4− | 0.1− |
| 2005 10 30 | 691 | 0.4− | 0.2− | 2005 11 25 | G96 | 0.2− | 0.3− | 2006 01 21 | G96 | 1.2+ | 1.4− |
| 2005 10 30 | 691 | 0.2− | 1.0+ | 2005 12 02 | G96 | 0.3+ | 0.4− | | | | |
| 2005 10 30 | 691 | 0.0 | 0.2+ | 2005 12 02 | G96 | 0.4+ | 0.0 | | | | |

**2005 UH$_{298}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.00964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24456177 | $\omega$ | 289.43615 | | −0.84814862 | −0.52792355 | |
| $a$ | 2.5324663 | $\Omega$ | 218.73344 | | +0.50862133 | −0.78823265 | |
| $e$ | 0.1898869 | $i$ | 4.03729 | | +0.14814944 | −0.31620565 | |
| $P$ | 4.03 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 691 | 0.2− | 0.1+ | 2005 10 30 | 691 | 0.2+ | 0.2− | 2005 12 01 | G96 | 0.0 | 0.3− |
| 2001 12 14 | 691 | 0.1+ | 0.2+ | 2005 10 30 | 691 | 0.3+ | 0.0 | 2005 12 01 | G96 | 0.3+ | 0.2+ |
| 2001 12 14 | 691 | 0.0 | 0.2+ | 2005 11 22 | 691 | 0.0 | 0.2+ | 2005 12 01 | G96 | 0.3+ | 0.1− |
| 2003 06 01 | 807 | 0.2+ | 0.3+ | 2005 11 22 | 691 | 0.3− | 0.2+ | 2005 12 01 | G96 | 0.8− | 1.0− |
| 2003 06 01 | 807 | 0.1− | 0.5+ | 2005 11 22 | 691 | 0.6+ | 0.1− | 2005 12 29 | G96 | 0.1− | 0.3− |
| 2005 10 26 | 691 | 0.5− | 0.2− | 2005 11 29 | G96 | 0.7− | 0.4− | 2005 12 29 | G96 | 0.1− | 0.0 |
| 2005 10 26 | 691 | 0.1+ | 0.1+ | 2005 11 29 | G96 | 0.1− | 0.4− | 2005 12 29 | G96 | 0.1+ | 0.2− |
| 2005 10 26 | 691 | 0.3− | 0.1− | 2005 11 29 | G96 | 0.4+ | 0.2− | 2005 12 29 | G96 | 0.3+ | 0.2− |
| 2005 10 30 | 691 | 0.1+ | 0.5+ | 2005 11 29 | G96 | 0.0 | 0.1+ | | | | |

**2005 UA$_{303}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.45785 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27545096 | $\omega$ | 238.41691 | | +0.95682898 | +0.27223867 | |
| $a$ | 2.3394110 | $\Omega$ | 105.61721 | | −0.21772563 | +0.90338823 | |
| $e$ | 0.2573816 | $i$ | 6.06797 | | −0.19254569 | +0.33132434 | |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 23 | 644 | 0.4+ | 0.2+ | 2005 10 30 | 644 | 0.0 | 0.3+ | 2005 11 26 | 703 | 0.3+ | 0.5+ |
| 2001 06 23 | 644 | 0.5− | 0.1− | 2005 10 30 | 691 | 0.1− | 0.1+ | 2005 11 26 | 703 | 0.2− | 0.2+ |
| 2001 06 23 | 644 | 0.7− | 0.4+ | 2005 10 30 | 644 | 0.2+ | 0.4− | 2005 11 26 | 703 | 0.2+ | 0.7− |
| 2001 08 06 | 644 | 0.1+ | 0.9+ | 2005 10 30 | 691 | 0.3− | 0.3+ | 2005 11 26 | 703 | 0.9+ | 0.6− |
| 2001 08 06 | 644 | 0.3− | 0.6+ | 2005 10 30 | 691 | 0.1+ | 0.1+ | 2005 11 30 | 644 | 0.3+ | 0.0 |
| 2001 08 06 | 644 | 0.2− | 0.5+ | 2005 11 05 | 704 | 0.2+ | 0.2− | 2005 11 30 | 644 | 0.3− | 0.0 |
| 2001 09 11 | 704 | 0.2+ | 0.4− | 2005 11 05 | 704 | 0.8− | 0.5− | 2005 11 30 | 644 | 0.2− | 0.0 |
| 2001 09 11 | 704 | 0.3+ | 1.0− | 2005 11 05 | 704 | 0.3+ | 1.0− | 2005 12 03 | 704 | 1.1− | 0.2+ |
| 2001 09 11 | 704 | 0.8+ | 0.3− | 2005 11 05 | 704 | 0.2+ | 0.9+ | 2005 12 03 | 704 | 0.7− | 0.4+ |
| 2004 04 23 | 691 | 0.2+ | 0.3+ | 2005 11 21 | 699 | 0.0 | 0.8+ | 2005 12 03 | 704 | 0.5− | 0.4− |
| 2004 04 23 | 691 | 0.0 | 0.3+ | 2005 11 21 | 699 | 0.4+ | 0.0 | 2006 01 24 | G96 | 0.4+ | 0.6+ |
| 2004 04 23 | 691 | 0.1+ | 0.0 | 2005 11 21 | 699 | 0.3− | 0.6+ | 2006 01 24 | G96 | 0.1+ | 0.1− |
| 2005 10 26 | 691 | 0.2− | 0.1− | 2005 11 21 | 699 | 0.3+ | 1.0− | 2006 01 24 | G96 | 0.2+ | 0.7+ |
| 2005 10 26 | 691 | 0.1+ | 0.2+ | 2005 11 23 | 224 | 0.9+ | 0.4+ | 2006 01 24 | G96 | 0.9+ | 0.2+ |
| 2005 10 26 | 691 | 0.2− | 0.1+ | 2005 11 23 | 224 | 0.5+ | 0.1+ | | | | |
| 2005 10 30 | 644 | 0.3− | 0.0 | 2005 11 23 | 224 | 0.4+ | 0.0 | | | | |

**2005 UN$_{303}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.82099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26827659 | $\omega$ | 74.89913 | | −0.98735809 | −0.08278902 | |
| $a$ | 2.3809349 | $\Omega$ | 100.21227 | | +0.02692973 | −0.92797552 | |
| $e$ | 0.0984930 | $i$ | 7.89409 | | +0.15620113 | −0.36332825 | |
| $P$ | 3.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 645 | 0.1+ | 0.1+ | 2003 03 23 | 644 | 0.0 | 0.4+ | 2005 10 26 | 691 | 0.1− | 0.1+ |
| 2002 12 14 | 645 | 0.1− | 0.0 | 2003 03 23 | 644 | 0.4+ | 0.3+ | 2005 10 30 | 691 | 0.4− | 0.1− |
| 2003 02 28 | 608 | 0.2+ | 1.1− | 2003 03 23 | 644 | 0.1− | 0.2+ | 2005 10 30 | 691 | 0.6+ | 0.1+ |
| 2003 02 28 | 608 | 0.4− | 1.2− | 2005 10 26 | 691 | 0.3− | 0.1+ | 2005 10 30 | 691 | 0.1+ | 0.2− |
| 2003 02 28 | 608 | 0.0 | 0.9− | 2005 10 26 | 691 | 0.2+ | 0.2− | | | | |

**2005 UC$_{310}$ = 2004 OA$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.58103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17828412 | $\omega$ | 278.98895 | | +0.95850540 | +0.26604339 | |
| $a$ | 3.1265181 | $\Omega$ | 65.63572 | | −0.19672122 | +0.87728289 | |
| $e$ | 0.1865152 | $i$ | 6.45512 | | −0.20632054 | +0.39949424 | |
| $P$ | 5.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 01 | 691 | 0.5+ | 0.5+ | 2005 10 28 | G96 | 0.0 | 0.1+ | 2005 11 29 | G96 | 0.0 | 0.0 |
| 2003 05 01 | 691 | 0.1+ | 0.6+ | 2005 10 30 | 691 | 0.1− | 0.5+ | 2005 11 29 | G96 | 0.0 | 0.0 |
| 2003 05 01 | 691 | 0.3+ | 0.9+ | 2005 10 30 | 691 | 0.0 | 0.6+ | 2005 12 01 | 704 | 0.2− | 0.2− |
| 2004 07 16 | E12 | 0.4− | 0.4+ | 2005 10 30 | 691 | 0.1− | 0.2+ | 2005 12 01 | 704 | 0.5+ | 0.6+ |
| 2004 07 16 | E12 | 0.7− | 0.8+ | 2005 11 22 | 691 | 0.0 | 0.3+ | 2005 12 01 | 704 | 0.2− | 0.5+ |
| 2004 07 16 | E12 | 0.2+ | 2.0+ | 2005 11 22 | 691 | 0.2− | 0.3+ | 2006 01 23 | G96 | 0.2− | 0.4− |
| 2004 07 16 | E12 | 0.3+ | 0.1+ | 2005 11 22 | 691 | 0.3− | 0.2+ | 2006 01 23 | G96 | 0.6− | 0.0 |
| 2005 10 28 | G96 | 0.1+ | 0.0 | 2005 11 29 | G96 | 0.3+ | 0.3+ | 2006 01 23 | G96 | 0.1+ | 0.1− |
| 2005 10 28 | G96 | 0.2+ | 0.1− | 2005 11 29 | G96 | 0.2+ | 0.0 | 2006 01 23 | G96 | 0.3− | 0.1+ |

**2005 UN$_{312}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.84673 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17864344 | $\omega$ | 253.86592 | | +0.87146273 | −0.48988364 | |
| $a$ | 3.1223243 | $\Omega$ | 135.45964 | | +0.46196345 | +0.80355454 | |
| $e$ | 0.1817770 | $i$ | 1.94501 | | +0.16474977 | +0.33810372 | |
| $P$ | 5.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.0 | 0.2+ | 2005 10 23 | 703 | 0.1+ | 0.5+ | 2005 10 31 | 704 | 0.2+ | 0.7+ |
| 1994 10 31 | 691 | 0.0 | 0.1− | 2005 10 23 | 703 | 1.6− | 0.9− | 2005 11 03 | 691 | 0.1− | 0.0 |
| 1994 10 31 | 691 | 0.1+ | 0.3− | 2005 10 23 | 703 | 1.1− | 0.2+ | 2005 11 03 | 691 | 0.4− | 0.1+ |
| 2002 03 10 | 691 | 0.3+ | 0.4+ | 2005 10 29 | G96 | 0.5+ | 0.3− | 2005 11 03 | 691 | 0.1− | 0.0 |
| 2002 03 10 | 691 | 0.2− | 0.2+ | 2005 10 29 | G96 | 0.0 | 0.3− | 2005 11 30 | G96 | 0.3+ | 0.1− |
| 2002 03 10 | 691 | 0.1+ | 0.2− | 2005 10 30 | 691 | 0.1− | 0.3+ | 2005 11 30 | G96 | 0.2+ | 0.1− |
| 2005 09 24 | 691 | 0.0 | 0.4+ | 2005 10 30 | 691 | 0.2+ | 0.1+ | 2005 11 30 | G96 | 0.2+ | 0.3− |
| 2005 09 24 | 691 | 0.1+ | 0.1+ | 2005 10 30 | 691 | 0.3+ | 0.2− | 2005 11 30 | G96 | 0.1+ | 0.3− |
| 2005 09 24 | 691 | 0.3− | 0.1+ | 2005 10 31 | G96 | 0.2+ | 0.0 | 2005 12 01 | 691 | 0.2+ | 0.1− |
| 2005 10 07 | 691 | 0.0 | 0.1+ | 2005 10 31 | G96 | 0.2− | 0.1+ | 2005 12 01 | 691 | 0.0 | 0.0 |
| 2005 10 07 | 691 | 0.1+ | 0.2+ | 2005 10 31 | G96 | 0.0 | 0.1− | 2005 12 01 | 691 | 0.2+ | 0.4− |
| 2005 10 07 | 691 | 0.2+ | 0.1+ | 2005 10 31 | 704 | 1.4− | 0.3− | | | | |
| 2005 10 23 | 703 | 1.3+ | 0.0 | 2005 10 31 | 704 | 0.6− | 0.1− | | | | |

**2005 UT$_{312}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.12112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19712268 | $\omega$ | 18.27434 | | +0.03916796 | +0.98845811 | |
| $a$ | 2.9240064 | $\Omega$ | 254.17169 | | −0.93470579 | −0.01553285 | |
| $e$ | 0.0311943 | $i$ | 8.74929 | | −0.35325763 | +0.15069606 | |
| $P$ | 5.00 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.0 | 0.1− | 2005 10 30 | 691 | 0.0 | 0.0 | 2005 12 02 | 704 | (2.2− | 1.0+) |
| 1995 11 18 | 691 | 0.0 | 0.0 | 2005 10 30 | 691 | 0.2+ | 0.0 | 2005 12 02 | 704 | 0.6− | 1.0+ |
| 1995 11 18 | 691 | 0.1+ | 0.3− | 2005 10 30 | 691 | 0.1+ | 0.2+ | 2005 12 04 | 691 | 0.0 | 0.1+ |
| 2003 05 01 | 704 | 0.8+ | 0.3− | 2005 11 03 | 691 | 0.0 | 0.1+ | 2005 12 04 | 691 | 0.1− | 0.0 |
| 2003 05 01 | 704 | 0.4− | 0.1+ | 2005 11 03 | 691 | 0.2+ | 0.1− | 2005 12 04 | 691 | 0.3− | 0.6+ |
| 2003 05 01 | 704 | 0.3− | 0.7+ | 2005 11 03 | 691 | 0.0 | 0.0 | 2005 12 06 | 691 | 0.1− | 0.1+ |
| 2004 08 10 | 699 | 0.6+ | 0.4− | 2005 11 13 | 703 | (2.0− | 0.9−) | 2005 12 06 | 691 | 0.1+ | 0.2− |
| 2004 08 10 | 699 | 0.2+ | 0.1+ | 2005 11 13 | 703 | 0.1+ | 0.3+ | 2005 12 06 | 691 | 0.0 | 0.0 |
| 2004 08 10 | 699 | 0.9− | 0.2+ | 2005 11 13 | 703 | 0.1+ | 1.3− | 2006 01 27 | G96 | 0.1+ | 0.2− |
| 2004 08 10 | 699 | 0.1+ | 0.2+ | 2005 11 13 | 703 | 0.4+ | 0.4+ | 2006 01 27 | G96 | 0.5+ | 0.2− |
| 2005 10 29 | 703 | 0.9− | 0.2− | 2005 11 29 | 704 | 0.1+ | 0.8+ | 2006 01 27 | G96 | 0.0 | 0.4− |
| 2005 10 29 | 703 | 0.4− | 0.2+ | 2005 11 29 | 704 | 0.1+ | 0.1− | 2006 01 27 | G96 | 0.0 | 0.4− |
| 2005 10 29 | 703 | 0.2+ | 0.6− | 2005 11 29 | 704 | 0.8− | 0.8+ | | | | |
| 2005 10 29 | 703 | 0.3+ | 0.8− | 2005 12 02 | 704 | (2.2− | 0.1−) | | | | |

**2005 UE$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.57508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18044936 | $\omega$ | 174.54330 | | +0.17818464 | −0.97119940 | |
| $a$ | 3.1014574 | $\Omega$ | 265.12269 | | +0.89668821 | +0.22646308 | |
| $e$ | 0.0965746 | $i$ | 9.13482 | | +0.40521660 | −0.07406892 | |
| $P$ | 5.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 17 | 691 | 0.0 | 0.7+ | 2002 02 07 | 644 | 0.1+ | 0.4+ | 2005 10 01 | 703 | 0.2− | 0.1− |
| 1999 08 17 | 691 | 0.4− | 0.6+ | 2002 02 13 | 645 | 0.0 | 0.1+ | 2005 10 01 | 703 | 0.6− | 0.3+ |
| 1999 08 17 | 691 | 0.2− | 0.3+ | 2002 02 13 | 645 | 0.0 | 0.1+ | 2005 10 01 | 703 | 1.1− | 0.0 |
| 2000 10 25 | 704 | 0.4+ | 1.8− | 2002 02 17 | 644 | 0.3+ | 0.5+ | 2005 10 28 | 703 | 0.6+ | 1.1+ |
| 2000 10 25 | 704 | 0.4+ | 0.3− | 2002 02 17 | 644 | 0.4+ | 0.8+ | 2005 10 28 | 703 | 0.1+ | 0.8− |
| 2000 10 25 | 704 | 0.3− | 0.2+ | 2002 02 17 | 644 | 0.6+ | 0.3− | 2005 10 28 | 703 | 0.8− | 0.6+ |
| 2000 11 19 | 704 | 0.2− | 0.4+ | 2005 09 01 | 683 | 0.0 | 2.1− | 2005 10 28 | 703 | 0.1− | 0.8− |
| 2000 11 19 | 704 | 0.9− | 0.5+ | 2005 09 01 | 683 | 0.0 | 0.1+ | 2005 10 30 | 699 | 1.1− | 0.5− |
| 2000 11 19 | 704 | 1.0− | 0.9+ | 2005 09 12 | 683 | 2.2+ | 0.9− | 2005 10 30 | 699 | 0.7+ | 1.1+ |
| 2000 11 19 | 704 | 1.0+ | 0.6+ | 2005 09 12 | 683 | (3.4+ | 0.5+) | 2005 10 30 | 699 | 1.0− | 0.0 |
| 2002 02 07 | 644 | 0.2+ | 0.4+ | 2005 09 12 | 683 | 0.6− | 1.6+ | 2005 10 30 | 699 | 1.3− | 1.3− |
| 2002 02 07 | 644 | 0.1+ | 0.1+ | 2005 10 01 | 703 | 0.3− | 0.2+ | | | | |

**2005 UD$_{316}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.15141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26498617 | $\omega$ | 105.39558 | | −0.82788949 | −0.53909698 | |
| $a$ | 2.4006043 | $\Omega$ | 42.30762 | | +0.38445726 | −0.74641816 | |
| $e$ | 0.1327685 | $i$ | 13.29865 | | +0.40840129 | −0.39017224 | |
| $P$ | 3.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 645 | 0.0 | 0.0 | 2003 03 26 | 704 | 0.4+ | 0.3+ | 2005 10 25 | G96 | 0.4+ | 0.2+ |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2003 03 26 | 704 | 0.6+ | 0.6+ | 2005 10 29 | 703 | 1.1− | 0.1+ |
| 2003 03 08 | 699 | 0.4+ | 0.1− | 2003 03 26 | 704 | 0.4+ | 1.2+ | 2005 10 29 | 703 | 1.0− | 0.1− |
| 2003 03 08 | 699 | (0.4− | 2.3+) | 2003 03 26 | 704 | 0.5+ | 0.6+ | 2005 10 29 | 703 | (0.6+ | 2.2−) |
| 2003 03 08 | 699 | 0.4+ | 0.5+ | 2003 04 06 | 699 | 0.5+ | 0.3− | 2005 10 29 | 703 | 0.6+ | 0.5− |
| 2003 03 08 | 699 | 0.4+ | 0.6− | 2003 04 06 | 699 | 1.0− | 0.7− | 2005 10 30 | G96 | 0.3+ | 0.1− |
| 2003 03 08 | 704 | 1.3− | 0.8− | 2003 04 06 | 699 | 0.1+ | 0.4+ | 2005 10 30 | G96 | 0.2+ | 0.1− |
| 2003 03 08 | 704 | 1.5− | 1.2− | 2003 04 06 | 699 | 0.5+ | 1.0− | 2005 10 30 | G96 | 0.1− | 0.0 |
| 2003 03 08 | 704 | 0.8− | 0.6+ | 2005 10 25 | G96 | 0.1− | 0.3+ | 2005 10 30 | G96 | 0.4+ | 0.1− |
| 2003 03 08 | 704 | 0.7− | 0.4− | 2005 10 25 | G96 | 0.4+ | 0.2+ | | | | |
| 2003 03 26 | 704 | 0.9+ | 1.1+ | 2005 10 25 | G96 | 0.1− | 0.5+ | | | | |

**2005 UL$_{317}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.70986 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23352969 | $\omega$ | 210.15471 | | +0.26988649 | −0.96243243 | |
| $a$ | 2.6116079 | $\Omega$ | 224.20676 | | +0.89174334 | +0.26148121 | |
| $e$ | 0.0844870 | $i$ | 2.44548 | | +0.36325623 | +0.07315327 | |
| $P$ | 4.22 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.5+ | 0.1− | 2005 08 31 | 691 | 0.2− | 0.3− | 2005 10 01 | 703 | 0.2− | 0.3− |
| 2001 10 14 | 691 | 0.5+ | 0.1− | 2005 08 31 | 691 | 0.1+ | 0.1− | 2005 10 01 | 703 | 0.5− | 0.1− |
| 2001 10 14 | 691 | 0.6+ | 0.1+ | 2005 08 31 | 691 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.1− | 0.2− |
| 2001 10 26 | 644 | 0.3− | 0.2+ | 2005 09 14 | 691 | 0.1+ | 0.2+ | 2005 10 27 | G96 | 0.0 | 0.3− |
| 2001 10 26 | 644 | 0.2− | 0.1+ | 2005 09 14 | 691 | 0.3+ | 0.0 | 2005 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 10 26 | 644 | 0.6− | 0.1− | 2005 09 14 | 691 | 0.6− | 0.5+ | 2005 10 27 | G96 | 0.2+ | 0.3+ |
| 2001 11 21 | 691 | 0.5− | 0.1− | 2005 10 01 | 703 | 0.2− | 0.1− | 2005 10 30 | G96 | 0.7+ | 0.0 |
| 2001 11 21 | 691 | 0.6− | 0.1+ | 2005 10 01 | 703 | 0.1+ | 0.1+ | 2005 10 30 | G96 | 0.7+ | 0.3+ |
| 2001 11 21 | 691 | 0.3− | 0.2− | 2005 10 01 | 703 | 0.8− | 0.6+ | 2005 10 30 | G96 | 0.7+ | 0.0 |
| 2003 04 05 | 691 | 0.1+ | 0.2+ | 2005 10 01 | 703 | 0.5+ | 1.0− | 2005 10 30 | G96 | 0.3+ | 0.6− |
| 2003 04 05 | 691 | 0.2+ | 0.1+ | 2005 10 01 | 703 | 0.4− | 0.0 | | | | |
| 2003 04 05 | 691 | 0.2− | 0.0 | 2005 10 01 | 703 | 0.3− | 0.4+ | | | | |

**2005 UX$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.72618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17675329 | $\omega$ | 40.15773 | | −0.64815987 | −0.76037925 | |
| $a$ | 3.1445443 | $\Omega$ | 90.28685 | | +0.68762269 | −0.60775845 | |
| $e$ | 0.1303478 | $i$ | 2.37152 | | +0.32720608 | −0.22902635 | |
| $P$ | 5.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.3− | 0.1+ | 2005 10 29 | G96 | 0.4+ | 0.3− | 2005 11 29 | G96 | 0.9+ | 0.3− |
| 1994 10 31 | 691 | 0.1− | 0.6+ | 2005 10 29 | G96 | 0.0 | 0.3− | 2005 11 29 | G96 | 0.3+ | 0.3− |
| 1994 10 31 | 691 | 0.0 | 0.5+ | 2005 10 29 | G96 | 0.1+ | 0.5− | 2005 11 29 | G96 | 1.0− | 0.0 |
| 2005 09 23 | 691 | 0.5− | 0.4+ | 2005 10 29 | G96 | 0.3+ | 0.2− | 2005 11 29 | G96 | 0.4− | 0.4+ |
| 2005 09 23 | 691 | 0.3− | 0.0 | 2005 10 29 | G96 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.5− | 0.8− |
| 2005 09 23 | 691 | 0.3+ | 0.1− | 2005 10 29 | G96 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2005 10 01 | 691 | 0.1− | 0.1+ | 2005 10 29 | G96 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2005 10 01 | 691 | 0.1− | 0.0 | 2005 10 29 | G96 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.0 |
| 2005 10 01 | 691 | 0.0 | 0.1− | 2005 10 30 | G96 | 0.2+ | 0.1− | 2006 11 28 | G96 | 0.3− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 12 | 691 | 0.4+ | 0.2− | 2005 10 30 | G96 | 0.5+ | 0.2− | 2006 11 28 | G96 | 0.0 | 0.2+ | | |
| 2005 10 12 | 691 | 0.1+ | 0.4− | 2005 10 30 | G96 | 0.1+ | 0.1− | 2006 11 28 | G96 | 0.3+ | 0.0 | | |
| 2005 10 12 | 691 | 0.1+ | 0.2− | 2005 10 30 | G96 | 0.1− | 0.3− | 2006 11 28 | G96 | 0.0 | 0.0 | | |

**2005 UU$_{330}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.82681 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26337235 | $\omega$ | 55.69645 | | −0.93784889 | +0.34642022 | |
| $a$ | 2.4104008 | $\Omega$ | 144.55923 | | −0.32902888 | −0.86851128 | |
| $e$ | 0.1350613 | $i$ | 2.05532 | | −0.11036058 | −0.35451543 | |
| $P$ | 3.74 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 291 | 0.6− | 0.3+ | 2005 10 28 | 691 | 0.5+ | 0.2− | 2005 11 04 | 691 | 0.1+ | 0.5+ | | |
| 2003 01 25 | 291 | 0.0 | 0.2+ | 2005 10 28 | G96 | 0.1− | 0.4− | 2005 12 01 | G96 | 0.3+ | 0.3− | | |
| 2003 01 25 | 291 | 1.0+ | 0.1− | 2005 10 28 | G96 | 0.2− | 0.6− | 2005 12 01 | G96 | 0.6+ | 0.1− | | |
| 2003 02 23 | 291 | 0.2+ | 0.1+ | 2005 10 28 | 691 | 0.2− | 0.0 | 2005 12 01 | G96 | 0.3− | 0.4− | | |
| 2003 02 23 | 291 | 0.4− | 0.2− | 2005 11 01 | 691 | 0.4+ | 0.4− | 2005 12 01 | G96 | 0.3+ | 0.4− | | |
| 2003 02 23 | 291 | 0.1− | 0.2− | 2005 11 01 | 691 | 0.3− | 0.0 | 2005 12 29 | G96 | 0.0 | 0.3− | | |
| 2005 10 28 | 691 | 0.0 | 0.3+ | 2005 11 01 | 691 | 0.4− | 0.3+ | 2005 12 29 | G96 | 0.5− | 0.0 | | |
| 2005 10 28 | G96 | 0.1+ | 0.3− | 2005 11 04 | 691 | 0.1+ | 0.2+ | 2005 12 29 | G96 | 0.1− | 0.3− | | |
| 2005 10 28 | G96 | 0.4− | 0.6− | 2005 11 04 | 691 | 0.1+ | 0.2+ | 2005 12 29 | G96 | 0.5− | 0.4− | | |

**2005 UF$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.78985 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22134892 | $\omega$ | 164.46356 | | −0.61372432 | +0.77933786 | |
| $a$ | 2.7065608 | $\Omega$ | 67.50812 | | −0.73816541 | −0.50960985 | |
| $e$ | 0.2002711 | $i$ | 7.86259 | | −0.28009693 | −0.36459607 | |
| $P$ | 4.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.1− | 2003 04 09 | 704 | 0.8− | 0.6+ | 2005 10 29 | G96 | 0.4+ | 0.3− | | |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2003 04 09 | 704 | 0.3+ | 1.0− | 2005 10 29 | G96 | 0.7− | 0.5+ | | |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2003 04 09 | 608 | 0.4+ | 0.4− | 2005 10 29 | G96 | 0.1+ | 0.3− | | |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2003 04 09 | 608 | 0.7+ | 0.3− | 2005 11 04 | 691 | 0.2+ | 0.0 | | |
| 2003 04 09 | 704 | 0.6− | 0.2+ | 2003 04 09 | 608 | 0.2− | 0.7− | 2005 11 04 | 691 | 0.1+ | 0.1− | | |
| 2003 04 09 | 704 | 0.0 | 0.4+ | 2005 10 29 | G96 | 0.1− | 0.1+ | 2005 11 04 | 691 | 0.2− | 0.0 | | |

**2005 UB$_{334}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.91184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22633707 | $\omega$ | 191.90702 | | +0.99724983 | +0.07336784 | |
| $a$ | 2.6666474 | $\Omega$ | 163.87441 | | −0.06452285 | +0.92907459 | |
| $e$ | 0.1048227 | $i$ | 2.16343 | | −0.03646333 | +0.36254318 | |
| $P$ | 4.35 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 10 | 691 | 0.3+ | 0.3+ | 2005 11 04 | 691 | 0.0 | 0.3+ | 2005 12 06 | G96 | 0.1+ | 0.2− | | |
| 1994 03 10 | 691 | 0.2− | 0.0 | 2005 11 04 | 691 | 0.1+ | 0.1+ | 2005 12 06 | G96 | 0.0 | 0.2− | | |
| 2000 08 29 | 704 | 0.5+ | 0.3+ | 2005 11 21 | 703 | 0.3− | 0.0 | 2005 12 06 | G96 | 0.2+ | 0.2− | | |
| 2000 08 29 | 704 | 1.6+ | 1.2+ | 2005 11 21 | 703 | 1.3− | 0.5− | 2005 12 06 | G96 | 0.1+ | 0.0 | | |
| 2000 08 29 | 704 | 0.6− | 0.7+ | 2005 11 21 | 703 | 0.5− | 0.3+ | 2005 12 06 | G96 | 0.1+ | 0.0 | | |
| 2000 08 29 | 704 | 0.4− | 1.0+ | 2005 11 21 | 703 | 0.1− | 0.3+ | 2005 12 06 | G96 | 0.3+ | 0.3− | | |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2005 11 30 | G96 | 0.1+ | 0.2− | 2005 12 06 | G96 | 0.1+ | 0.1− | | |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2005 11 30 | G96 | 0.3+ | 0.2− | 2006 01 26 | G96 | 0.4+ | 0.3− | | |
| 2005 10 29 | G96 | 0.1+ | 0.6− | 2005 11 30 | G96 | 0.1− | 0.0 | 2006 01 26 | G96 | 0.4+ | 0.2− | | |
| 2005 10 29 | G96 | 0.0 | 0.2− | 2005 11 30 | G96 | 0.6− | 0.2− | 2006 01 26 | G96 | 0.0 | 0.5+ | | |
| 2005 11 04 | 691 | 0.1+ | 0.2+ | 2005 12 06 | G96 | 0.3− | 0.2− | 2006 01 26 | G96 | 0.2+ | 0.2+ | | |

**2005 UV$_{337}$ = 2005 XU$_{113}$**

Id. Minor Planet Center (d, *MPO* 98189)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.91592 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17893220 | $\omega$ | 87.90972 | | −0.15569804 | +0.98780334 | |
| $a$ | 3.1189641 | $\Omega$ | 173.13235 | | −0.91164098 | −0.14305566 | |
| $e$ | 0.1269599 | $i$ | 0.78334 | | −0.38035358 | −0.06147871 | |
| $P$ | 5.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | 0.3+ | 0.8+ | 2005 10 01 | G96 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.1+ | 0.6+ | | |
| 2003 04 25 | 691 | 0.1+ | 0.8+ | 2005 10 01 | G96 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.6− | 0.1+ | | |
| 2003 04 25 | 691 | 0.4+ | 0.6+ | 2005 10 31 | 691 | 0.1+ | 0.4+ | 2005 11 25 | G96 | 0.0 | 0.1− | | |
| 2004 12 13 | 568 | 0.1+ | 0.0 | 2005 10 31 | 691 | 0.5− | 0.6+ | 2005 11 25 | G96 | 0.1− | 0.7+ | | |
| 2004 12 13 | 568 | 0.1− | 0.0 | 2005 10 31 | 691 | 0.6+ | 0.1− | 2005 12 02 | G96 | 0.2− | 0.1+ | | |
| 2004 12 13 | 568 | 0.0 | 0.0 | 2005 11 04 | 691 | 0.2− | 0.0 | 2005 12 02 | G96 | 0.6+ | 0.4+ | | |
| 2005 10 01 | G96 | 0.2+ | 0.3+ | 2005 11 04 | 691 | 0.3− | 0.4+ | 2005 12 02 | G96 | 0.0 | 0.6− | | |
| 2005 10 01 | G96 | 0.5− | 0.1+ | 2005 11 04 | 691 | 0.3− | 0.5+ | 2005 12 02 | G96 | 0.2+ | 0.8+ | | |

**2005 UR$_{341}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.99141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27714581 | $\omega$ | 0.87542 | | +0.12677030 | −0.98931702 | |
| $a$ | 2.3298637 | $\Omega$ | 81.84390 | | +0.90963742 | +0.08700699 | |
| $e$ | 0.0966804 | $i$ | 4.16997 | | +0.39558698 | +0.11696846 | |
| $P$ | 3.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 21 | 691 | 0.2− | 0.1+ | 2005 11 06 | 704 | 0.6− | 0.3− | 2005 12 04 | 704 | (1.6− | 2.9−) | | |
| 1996 03 21 | 691 | 0.2− | 0.2− | 2005 11 06 | 704 | 0.3− | 0.1− | 2005 12 08 | 691 | 0.1− | 0.1− | | |
| 1996 03 21 | 691 | 0.1+ | 0.5− | 2005 11 06 | 704 | 1.3− | 0.2− | 2005 12 08 | 691 | 0.1− | 0.2− | | |
| 2003 02 21 | 644 | 0.2+ | 0.9+ | 2005 11 25 | 291 | 0.0 | 0.2+ | 2005 12 08 | 691 | 0.1+ | 0.2− | | |
| 2003 02 21 | 644 | 0.4+ | 0.9+ | 2005 11 25 | 291 | 0.3+ | 0.0 | 2005 12 29 | G96 | 0.5+ | 0.4− | | |
| 2003 02 21 | 644 | 0.4+ | 1.0+ | 2005 11 25 | 291 | 0.0 | 0.1+ | 2005 12 29 | G96 | 0.1− | 0.4− | | |
| 2005 10 31 | 691 | 0.2− | 0.1− | 2005 11 25 | 291 | 0.3+ | 0.1+ | 2005 12 29 | G96 | 0.2− | 0.2− | | |
| 2005 10 31 | 691 | 0.1− | 0.1− | 2005 11 25 | 291 | 0.5− | 0.1+ | 2005 12 29 | G96 | 0.2+ | 0.5− | | |
| 2005 10 31 | 691 | 0.0 | 0.0 | 2005 11 25 | 291 | 0.7+ | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.4− | | |
| 2005 11 01 | G96 | 0.4+ | 0.4− | 2005 11 26 | 703 | 0.6− | 0.8− | 2006 01 05 | G96 | 0.3− | 0.1− | | |
| 2005 11 01 | G96 | 0.0 | 0.2− | 2005 11 26 | 703 | 0.5− | 0.9+ | 2006 01 05 | G96 | 0.2− | 0.1− | | |
| 2005 11 01 | G96 | 0.2+ | 0.2− | 2005 11 26 | 703 | 0.8+ | 0.1+ | 2006 01 05 | G96 | 0.4+ | 0.7− | | |
| 2005 11 01 | G96 | 0.1− | 0.3− | 2005 11 26 | 703 | 0.1− | 0.3+ | 2006 01 21 | G96 | 0.1+ | 0.2− | | |
| 2005 11 04 | 691 | 0.1− | 0.1+ | 2005 12 01 | 704 | 0.0 | 0.6+ | 2006 01 21 | G96 | 0.0 | 0.0 | | |
| 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.3+ | 0.4− | 2006 01 21 | G96 | 0.6+ | 0.3+ | | |
| 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.5− | 0.9+ | 2006 01 21 | G96 | 0.1− | 0.2− | | |
| 2005 11 06 | 704 | 0.3+ | 0.5− | 2005 12 04 | 704 | 0.5− | 1.1+ | | | | | | |
| 2005 11 06 | 704 | 0.6+ | 1.0+ | 2005 12 04 | 704 | 0.6− | 1.1− | | | | | | |

**2005 UV$_{341}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.21557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27084288 | $\omega$ | 244.57315 | | −0.98670117 | −0.13619859 | |
| $a$ | 2.3658712 | $\Omega$ | 287.49622 | | +0.16108616 | −0.89230673 | |
| $e$ | 0.1561294 | $i$ | 5.33740 | | −0.02172651 | −0.43039360 | |
| $P$ | 3.64 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.0 | 0.0 | 2003 03 30 | 645 | 0.0 | 0.0 | 2005 10 31 | G96 | 0.1− | 0.2− | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2003 03 30 | 645 | 0.0 | 0.0 | 2005 10 31 | G96 | 0.2+ | 0.3− | | |
| 2003 02 07 | 644 | 0.3+ | 0.1− | 2005 10 27 | 691 | 0.4+ | 0.3+ | 2005 10 31 | G96 | 0.1+ | 0.3− | | |
| 2003 02 07 | 644 | 0.1+ | 0.1+ | 2005 10 27 | 691 | 0.0 | 0.1− | 2005 10 31 | G96 | 0.1+ | 0.3− | | |
| 2003 02 07 | 644 | 0.4+ | 0.1+ | 2005 10 27 | 691 | 0.2− | 0.1− | 2005 11 04 | 691 | 0.3− | 0.1+ | | |
| 2003 02 22 | 644 | 0.1+ | 0.3+ | 2005 10 31 | 691 | 0.0 | 0.1− | 2005 11 04 | 691 | 0.0 | 0.2+ | | |
| 2003 02 22 | 644 | 0.2− | 0.4+ | 2005 10 31 | 691 | 0.0 | 0.1− | 2005 11 04 | 691 | 0.2− | 0.1+ | | |
| 2003 02 22 | 644 | 0.1− | 0.4+ | 2005 10 31 | 691 | 0.3+ | 0.1− | | | | | | |

**2005 UP$_{342}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.62114 | | (2000.0) | | | |
| $n$ | 0.25471643 | $\omega$ | 142.94312 | | −0.85113000 | −0.52484834 |
| $a$ | 2.4647038 | $\Omega$ | 5.43070 | | +0.45085788 | −0.74116856 |
| $e$ | 0.0670270 | $i$ | 6.41856 | | +0.26889569 | −0.41857302 |
| $P$ | 3.87 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 645 | 0.2− | 0.3− | 2003 04 11 | 691 | 0.5+ | 0.7+ | 2005 10 31 | 691 | 0.3− | 0.3+ |
| 2002 12 11 | 645 | 0.3− | 0.3− | 2003 04 11 | 691 | 0.3+ | 0.5+ | 2005 10 31 | 691 | 0.4− | 0.4+ |
| 2003 03 09 | 704 | 0.4+ | 0.0 | 2004 07 16 | E12 | 0.3− | 0.7+ | 2005 10 31 | 691 | 0.4− | 0.0 |
| 2003 03 09 | 704 | 0.7+ | 0.2− | 2004 07 16 | E12 | 1.8− | 1.1− | 2005 10 31 | 703 | 0.5− | 0.7+ |
| 2003 03 09 | 704 | 0.2+ | 0.2− | 2004 07 16 | E12 | 1.7+ | 1.9+ | 2005 10 31 | 703 | 1.7+ | 0.8+ |
| 2003 03 09 | 704 | 0.2+ | 0.3+ | 2005 10 22 | 691 | 0.1− | 0.1+ | 2005 10 31 | 703 | 0.4+ | 0.6+ |
| 2003 03 09 | 704 | 0.6+ | 0.2+ | 2005 10 22 | 691 | 0.2− | 0.2− | 2005 10 31 | 703 | 0.7− | 1.1− |
| 2003 03 31 | 691 | 0.3+ | 0.3+ | 2005 10 22 | 691 | 0.1+ | 0.4+ | 2005 11 04 | 691 | 0.1− | 0.0 |
| 2003 03 31 | 691 | 0.1− | 0.4+ | 2005 10 30 | 704 | 0.2+ | 0.3+ | 2005 11 04 | 691 | 0.2+ | 0.0 |
| 2003 03 31 | 691 | 0.1+ | 0.3+ | 2005 10 30 | 704 | 0.6+ | 1.2+ | 2005 11 04 | 691 | 0.0 | 0.3+ |
| 2003 04 11 | 691 | 0.5+ | 0.8+ | 2005 10 30 | 704 | 0.4+ | 0.3+ | | | | |

**2005 UZ$_{342}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 99.58338 | | (2000.0) | | | |
| $n$ | 0.22779026 | $\omega$ | 28.42934 | | +0.98406710 | +0.11853280 |
| $a$ | 2.6552940 | $\Omega$ | 323.99474 | | −0.17274623 | +0.81381522 |
| $e$ | 0.2709252 | $i$ | 13.02818 | | +0.04207945 | +0.56890664 |
| $P$ | 4.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 644 | 0.1+ | 0.3+ | 2005 10 31 | 703 | 0.3− | 0.1− | 2005 11 22 | 703 | 0.1+ | 0.3− |
| 2001 12 20 | 644 | 0.1− | 0.3+ | 2005 10 31 | 703 | 0.5− | 0.1− | 2005 11 28 | 703 | 0.2+ | 0.8+ |
| 2001 12 20 | 644 | 0.1+ | 0.3+ | 2005 10 31 | 703 | 0.6+ | 0.3− | 2005 11 28 | 703 | 0.4− | 0.3+ |
| 2005 08 04 | 704 | 1.0+ | 0.2− | 2005 10 31 | 703 | 0.2− | 0.5− | 2005 11 28 | 703 | 0.7+ | 0.3+ |
| 2005 08 04 | 704 | 0.8− | 0.1− | 2005 11 04 | 699 | 0.1+ | 0.3− | 2005 11 28 | 703 | 1.0+ | 0.0 |
| 2005 08 04 | 704 | 0.5− | 0.3− | 2005 11 04 | 699 | 0.2+ | 0.6+ | 2005 12 25 | 703 | 0.7− | 0.4− |
| 2005 09 15 | 704 | 0.2− | 0.4+ | 2005 11 04 | 699 | 0.0 | 0.2+ | 2005 12 25 | 703 | 0.2+ | 1.2− |
| 2005 09 15 | 704 | 0.0 | 0.0 | 2005 11 04 | 699 | 0.4+ | 0.2− | 2005 12 25 | 703 | 0.3+ | 0.8+ |
| 2005 09 15 | 704 | 0.0 | 0.4+ | 2005 11 10 | 703 | 0.2+ | 0.0 | 2005 12 25 | 703 | 0.5− | 0.4− |
| 2005 09 15 | 704 | 0.1− | 0.8+ | 2005 11 10 | 703 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.8− | 0.2+ |
| 2005 09 15 | 704 | 0.2− | 0.3+ | 2005 11 10 | 703 | 0.4− | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2005 09 30 | 703 | 0.5− | 0.4− | 2005 11 10 | 703 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2005 09 30 | 703 | 0.0 | 0.5− | 2005 11 22 | 703 | 0.4− | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 09 30 | 703 | 0.8+ | 0.4− | 2005 11 22 | 703 | 0.2− | 0.1+ | | | | |
| 2005 09 30 | 703 | 0.1+ | 0.3+ | 2005 11 22 | 703 | 0.3+ | 0.2+ | | | | |

**2005 UZ$_{348}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 87.62722 | | (2000.0) | | | |
| $n$ | 0.23270471 | $\omega$ | 189.48352 | | +0.89084773 | −0.44873843 |
| $a$ | 2.6177767 | $\Omega$ | 197.70999 | | +0.43059425 | +0.88376157 |
| $e$ | 0.2492910 | $i$ | 13.47431 | | +0.14484100 | +0.13266243 |
| $P$ | 4.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 08 | 691 | 0.2+ | 0.8+ | 2005 10 05 | 703 | 0.1− | 0.8+ | 2005 11 26 | 699 | 1.2+ | 0.7+ |
| 2003 04 08 | 691 | 0.3− | 0.5+ | 2005 10 05 | 703 | 0.3− | 0.4+ | 2005 11 28 | 644 | 0.3+ | 0.2+ |
| 2003 04 08 | 691 | 0.4+ | 1.0+ | 2005 10 05 | 703 | 0.1− | 0.4+ | 2005 11 28 | 644 | 0.1+ | 0.1+ |
| 2004 06 20 | 691 | 0.0 | 0.6+ | 2005 10 24 | 644 | 0.1+ | 0.7+ | 2005 11 28 | 644 | 0.3+ | 0.3+ |
| 2004 06 20 | 691 | 0.1+ | 0.4+ | 2005 10 24 | 644 | 0.1− | 0.6+ | 2005 11 29 | 703 | 0.2− | 0.1− |
| 2004 06 20 | 691 | 0.1− | 0.7+ | 2005 10 24 | 644 | 0.0 | 0.7+ | 2005 11 29 | 703 | 0.4− | 0.6+ |
| 2005 08 31 | 699 | 0.2+ | 0.2+ | 2005 10 31 | 703 | 0.3− | 0.2− | 2005 11 29 | 703 | 0.4− | 0.5+ |
| 2005 08 31 | 699 | 0.5− | 0.9+ | 2005 10 31 | 703 | 0.2− | 0.0 | 2005 11 29 | 703 | 0.2− | 0.2+ |
| 2005 08 31 | 699 | 0.6+ | 0.0 | 2005 10 31 | 703 | 0.5+ | 0.2+ | 2005 12 06 | 704 | 0.1+ | 0.8− |
| 2005 08 31 | 699 | 1.3− | 0.7+ | 2005 10 31 | 703 | 0.1+ | 0.4+ | 2005 12 06 | 704 | 0.2+ | 0.2− |
| 2005 09 06 | 703 | 0.3+ | 0.6+ | 2005 11 04 | 704 | 0.5− | 0.8+ | 2005 12 06 | 704 | 0.2+ | 0.4+ |
| 2005 09 06 | 703 | 0.5+ | 0.1+ | 2005 11 04 | 704 | 0.7− | 0.1− | 2005 12 06 | 704 | 0.2+ | 0.1+ |
| 2005 09 06 | 703 | 0.4− | 0.9+ | 2005 11 04 | 704 | 0.1+ | 0.6+ | 2005 12 06 | 703 | 0.1+ | 0.5− |
| 2005 09 06 | 703 | 0.4− | 1.0+ | 2005 11 04 | 704 | 0.3− | 0.4+ | 2005 12 06 | 704 | 0.3+ | 0.4− |
| 2005 10 05 | 683 | 0.2− | 1.3− | 2005 11 04 | 704 | 0.3− | 0.7+ | 2005 12 06 | 703 | 0.1+ | 0.2− |
| 2005 10 05 | 683 | 0.8+ | 0.0 | 2005 11 26 | 699 | 0.4+ | 0.5+ | 2005 12 06 | 703 | 0.5− | 0.4− |
| 2005 10 05 | 683 | 0.5− | 0.1+ | 2005 11 26 | 699 | 0.8+ | 0.1− | 2005 12 06 | 703 | 0.0 | 0.5− |
| 2005 10 05 | 703 | 0.3− | 0.5+ | 2005 11 26 | 699 | 0.1− | 0.8+ | | | | |

**2005 UC$_{349}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.84400 | | (2000.0) | | | |
| $n$ | 0.20935407 | $\omega$ | 147.60649 | | −0.86305287 | −0.50508763 |
| $a$ | 2.8089786 | $\Omega$ | 2.07672 | | +0.42808199 | −0.73677821 |
| $e$ | 0.0631292 | $i$ | 8.12421 | | +0.26811481 | −0.44949343 |
| $P$ | 4.71 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2001 12 19 | 644 | 0.5+ | 1.3+ | 2005 11 02 | 704 | 0.5− | 0.6+ |
| 2000 10 01 | 704 | 0.4− | 0.1− | 2002 01 13 | 644 | 0.3+ | 0.5+ | 2005 11 02 | 704 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.6− | 0.1+ | 2002 01 13 | 644 | 0.4+ | 0.4+ | 2005 11 02 | G96 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 0.4− | 0.8+ | 2002 01 13 | 644 | 0.8+ | 0.5+ | 2005 11 02 | G96 | 0.4+ | 0.0 |
| 2000 10 01 | 704 | 0.1+ | 1.1+ | 2002 02 03 | 644 | 0.1− | 0.6+ | 2005 11 02 | G96 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.4− | 0.9− | 2002 02 03 | 644 | 0.2+ | 1.1+ | 2005 11 02 | G96 | 0.1− | 0.4− |
| 2001 12 09 | 704 | 0.3+ | 0.5+ | 2002 02 03 | 644 | 0.0 | 0.4+ | 2005 11 02 | G96 | 0.2+ | 0.0 |
| 2001 12 09 | 704 | (0.4− | 1.5+) | 2005 10 25 | 691 | 0.1− | 0.3− | 2005 11 02 | G96 | 0.3− | 0.4− |
| 2001 12 09 | 704 | (0.2+ | 2.9+) | 2005 10 25 | 691 | 0.2+ | 0.3− | 2005 11 02 | G96 | 0.4− | 0.1+ |
| 2001 12 15 | 645 | 0.0 | 0.0 | 2005 10 25 | 691 | 0.0 | 0.2− | 2005 11 02 | G96 | 0.1+ | 0.3− |
| 2001 12 15 | 645 | 0.1− | 0.1− | 2005 10 30 | 704 | 0.7+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.1+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2005 10 30 | 704 | 0.5+ | 0.7+ | 2006 12 01 | G96 | 0.4− | 0.3− |
| 2001 12 19 | 645 | 0.0 | 0.1− | 2005 10 30 | 704 | 1.3+ | 0.9− | 2006 12 01 | G96 | 0.1− | 0.1+ |
| 2001 12 19 | 644 | 0.5+ | 1.1+ | 2005 11 02 | 704 | 0.8− | 0.5+ | 2006 12 01 | G96 | 0.3+ | 0.0 |
| 2001 12 19 | 644 | 0.7+ | 0.8+ | 2005 11 02 | 704 | 0.7− | 1.4+ | | | | |

**2005 UB$_{350}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 119.72655 | | (2000.0) | | | |
| $n$ | 0.28902124 | $\omega$ | 97.10546 | | +0.95161890 | −0.28753945 |
| $a$ | 2.2655981 | $\Omega$ | 279.64945 | | +0.22017840 | +0.88405549 |
| $e$ | 0.1547698 | $i$ | 6.31059 | | +0.21434303 | +0.36846568 |
| $P$ | 3.41 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.2+ | 0.6+ | 2005 11 02 | 704 | 0.4+ | 0.9+ | 2005 12 02 | 704 | (1.0+ | 2.2−) |
| 1998 10 12 | 699 | 0.6− | 0.2− | 2005 11 28 | 704 | 0.2− | 0.1− | 2005 12 02 | 704 | 0.7+ | 0.2+ |
| 1998 10 12 | 699 | 0.6+ | 0.8− | 2005 11 28 | 704 | 0.1− | 0.2+ | 2005 12 02 | 704 | 0.0 | 0.1− |
| 2003 01 30 | 644 | 0.1− | 0.1+ | 2005 11 28 | 704 | 0.5+ | 0.0 | 2005 12 05 | 704 | 0.9− | 0.4+ |
| 2003 01 30 | 644 | 0.0 | 0.3+ | 2005 11 28 | 704 | 0.5+ | 0.0 | 2005 12 05 | 704 | 0.1+ | 0.5+ |
| 2003 01 30 | 644 | 0.3+ | 0.1− | 2005 11 29 | 704 | 1.9− | 0.2− | 2005 12 05 | 704 | 0.3− | 0.0 |
| 2005 10 27 | 644 | 0.3+ | 0.1+ | 2005 11 29 | 704 | 0.7− | 0.8+ | 2005 12 24 | 703 | 0.3− | 0.1+ |
| 2005 10 27 | 644 | 0.4+ | 0.2− | 2005 11 29 | 704 | 1.4− | 1.1+ | 2005 12 24 | 703 | 1.0− | 0.6− |
| 2005 10 27 | 644 | 0.0 | 0.1− | 2005 11 29 | 704 | 0.6− | 0.5+ | 2005 12 24 | 703 | 0.9+ | 1.7− |
| 2005 10 30 | 704 | 0.5− | 0.2− | 2005 11 29 | 704 | 0.6+ | 0.3+ | 2005 12 24 | 703 | 0.7+ | 0.3− |
| 2005 10 30 | 704 | 0.6+ | 0.3− | 2005 12 01 | 644 | 0.1+ | 0.2− | 2006 01 07 | G96 | 0.0 | 0.3− |
| 2005 10 30 | 704 | 0.4+ | 0.1+ | 2005 12 01 | 644 | 0.5+ | 0.1− | 2006 01 07 | G96 | 0.1− | 0.0 |
| 2005 11 02 | 704 | 0.8− | 0.6+ | 2005 12 01 | 644 | 0.1− | 0.6− | 2006 01 07 | G96 | 0.1− | 0.4− |
| 2005 11 02 | 704 | 0.7+ | 0.1+ | 2005 12 02 | 704 | 0.8+ | 0.5− | 2006 01 07 | G96 | 0.1− | 0.5− |
| 2005 11 02 | 704 | 0.7+ | 0.5− | 2005 12 02 | 704 | 0.5+ | 0.5+ | | | | |

**2005 UC$_{354}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.04388 | | (2000.0) | | | |
| $n$ | 0.25595657 | $\omega$ | 238.13032 | | −0.72117842 | −0.65258585 |
| $a$ | 2.4567362 | $\Omega$ | 260.01240 | | +0.68813016 | −0.63615188 |
| $e$ | 0.0381718 | $i$ | 13.65221 | | +0.07986596 | −0.41163394 |
| $P$ | 3.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 644 | 0.1+ | 0.3− | 2005 11 28 | 704 | 0.1− | 0.3+ | 2005 12 05 | 704 | 0.2+ | 0.9+ | |
| 2003 03 23 | 644 | 0.3− | 0.2+ | 2005 11 28 | 703 | 1.4− | 1.5+ | 2005 12 10 | 704 | 0.5− | 1.9− | |
| 2003 03 23 | 644 | 0.1+ | 0.1− | 2005 11 28 | 703 | 0.5− | 0.2− | 2005 12 10 | 704 | 0.5− | 1.9− | |
| 2004 06 22 | 691 | 0.0 | 0.2− | 2005 11 28 | 703 | 0.1+ | 0.4+ | 2005 12 10 | 704 | 0.8+ | 1.3− | |
| 2004 06 22 | 691 | 0.2− | 0.2+ | 2005 11 28 | 703 | 0.2+ | 0.1− | 2005 12 10 | 704 | 0.5− | 0.2− | |
| 2004 06 22 | 691 | 0.2+ | 0.0 | 2005 12 01 | 644 | 0.1+ | 0.2+ | 2005 12 28 | G96 | 0.5− | 0.1+ | |
| 2005 10 29 | 691 | 0.3− | 0.1+ | 2005 12 01 | 644 | 0.1+ | 0.3+ | 2005 12 28 | G96 | 0.2− | 0.0 | |
| 2005 10 29 | 691 | 0.2− | 0.0 | 2005 12 01 | 644 | 0.2+ | 0.2+ | 2005 12 28 | G96 | 0.3− | 0.1+ | |
| 2005 10 29 | 691 | 0.0 | 0.2+ | 2005 12 02 | 704 | 0.1+ | 0.0 | 2005 12 28 | G96 | 0.3− | 0.0 | |
| 2005 10 30 | 704 | 0.5− | 0.7− | 2005 12 02 | 704 | 1.0+ | 0.7− | 2006 01 07 | G96 | 0.3+ | 0.3+ | |
| 2005 10 30 | 704 | 0.1− | 0.5− | 2005 12 02 | 704 | 0.3+ | 0.4+ | 2006 01 07 | G96 | 0.5+ | 0.1+ | |
| 2005 10 30 | 704 | 1.1− | 0.5+ | 2005 12 02 | 704 | 0.1+ | 0.9− | 2006 01 07 | G96 | 0.3+ | 0.1+ | |
| 2005 11 06 | 691 | 0.0 | 0.1− | 2005 12 02 | 704 | 0.2+ | 0.6− | 2006 01 07 | G96 | 0.6+ | 0.3+ | |
| 2005 11 06 | 691 | 0.1− | 0.2− | 2005 12 05 | 704 | 0.0 | 1.6+ | 2006 01 21 | G96 | 0.0 | 0.1+ | |
| 2005 11 06 | 691 | 0.0 | 0.1+ | 2005 12 05 | 704 | 0.1+ | 1.2+ | 2006 01 21 | G96 | 0.1+ | 0.2− | |
| 2005 11 28 | 704 | 1.1+ | 0.7− | 2005 12 05 | 704 | 0.8+ | 0.7+ | 2006 01 21 | G96 | 0.2− | 0.1− | |
| 2005 11 28 | 704 | 1.3+ | 0.3− | 2005 12 05 | 704 | 0.7+ | 0.9+ | 2006 01 21 | G96 | 0.5− | 0.0 | |

**2005 UL$_{355}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 159.10925 | | (2000.0) | | | |
| $n$ | 0.29599872 | $\omega$ | 317.28034 | | +0.90457783 | +0.42512854 |
| $a$ | 2.2298526 | $\Omega$ | 17.63815 | | −0.35744370 | +0.79687377 |
| $e$ | 0.1445871 | $i$ | 6.00458 | | −0.23232080 | +0.42925275 |
| $P$ | 3.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 27 | 699 | 0.2+ | 1.3+ | 2005 10 30 | 704 | 0.1− | 0.0 | 2005 12 02 | 704 | 1.4+ | 0.2+ | |
| 1998 09 27 | 699 | 0.2− | 0.0 | 2005 10 30 | 704 | 1.2+ | 0.2− | 2005 12 02 | 704 | 0.1+ | 0.8− | |
| 1998 09 27 | 699 | 0.4− | 0.5− | 2005 11 21 | 703 | 0.4− | 0.1− | 2005 12 02 | 704 | 0.6− | 0.7+ | |
| 2004 05 14 | 691 | 0.1+ | 0.4+ | 2005 11 21 | 703 | 0.2+ | 0.2− | 2005 12 02 | 704 | 1.1+ | 0.2+ | |
| 2004 05 14 | 691 | 0.2+ | 0.3+ | 2005 11 21 | 703 | 0.4+ | 0.2+ | 2005 12 05 | 704 | 0.6+ | 1.0+ | |
| 2004 05 14 | 691 | 0.2+ | 0.3+ | 2005 11 21 | 703 | 0.0 | 0.2+ | 2005 12 05 | 704 | 0.3+ | 0.4+ | |
| 2005 09 29 | 703 | 0.7+ | 0.1− | 2005 11 28 | 704 | 0.7− | 0.5+ | 2005 12 05 | 704 | 0.2− | 0.4− | |
| 2005 09 29 | 703 | 0.2+ | 0.4− | 2005 11 28 | 704 | 0.5− | 0.4+ | 2005 12 05 | 704 | 0.0 | 0.4+ | |
| 2005 09 29 | 703 | 0.8− | 0.2+ | 2005 11 28 | 704 | 0.1+ | 0.8+ | 2005 12 05 | 704 | 0.4− | 0.3+ | |
| 2005 09 29 | 703 | 1.0+ | 1.3+ | 2005 11 28 | 704 | 0.2− | 0.9+ | 2005 12 08 | 703 | 1.2+ | 0.7− | |
| 2005 10 07 | 704 | 0.7+ | 0.3− | 2005 11 28 | 704 | 0.2− | 0.5+ | 2005 12 08 | 703 | 0.6+ | 0.3+ | |
| 2005 10 07 | 704 | 0.2+ | 0.4− | 2005 11 28 | 703 | 0.1− | 1.0− | 2005 12 08 | 703 | 1.3− | 0.1+ | |
| 2005 10 07 | 704 | 0.3+ | 0.2+ | 2005 11 28 | 703 | 0.5− | 0.3− | 2005 12 08 | 703 | 0.4− | 0.1+ | |
| 2005 10 07 | 704 | 0.2+ | 0.3+ | 2005 11 28 | 703 | 1.0− | 0.8+ | 2005 12 24 | 703 | 0.2− | 0.2− | |
| 2005 10 29 | 703 | 0.1− | 0.2+ | 2005 11 28 | 703 | 0.4− | 0.3− | 2005 12 24 | 703 | 0.1+ | 0.4− | |
| 2005 10 29 | 703 | 0.2+ | 0.8+ | 2005 11 29 | 704 | 0.3− | 0.4+ | 2005 12 24 | 703 | 0.3+ | 0.4− | |
| 2005 10 29 | 703 | 0.4− | 0.1− | 2005 11 29 | 704 | 0.2+ | 0.4+ | 2005 12 24 | 703 | 0.9− | 0.1− | |
| 2005 10 29 | 703 | 1.0− | 0.1+ | 2005 11 29 | 704 | 1.2− | 0.1− | 2006 01 23 | G96 | 0.2− | 0.4− | |
| 2005 10 30 | 704 | (2.9+ | 0.3+) | 2005 11 29 | 704 | 0.7− | 0.7− | 2006 01 23 | G96 | 0.2+ | 0.5− | |
| 2005 10 30 | 704 | 0.0 | 0.0 | 2005 11 29 | 704 | 0.1− | 1.1+ | 2006 01 23 | G96 | 0.4− | 0.5− | |
| 2005 10 30 | 704 | 0.5+ | 1.0− | 2005 12 02 | 704 | 0.4+ | 0.0 | 2006 01 23 | G96 | 0.2+ | 0.8− | |

**2005 UX$_{361}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.62468 | | (2000.0) | | | |
| $n$ | 0.21465792 | $\omega$ | 15.56661 | | −0.06461190 | −0.99744917 |
| $a$ | 2.7625158 | $\Omega$ | 78.14520 | | +0.91222396 | −0.07136221 |
| $e$ | 0.0373403 | $i$ | 1.77647 | | +0.40456489 | +0.00160971 |
| $P$ | 4.59 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.5− | 0.2+ | 2005 10 01 | G96 | 0.2− | 0.0 | 2005 11 04 | 691 | 0.3− | 0.1+ | |
| 2000 10 02 | 691 | 0.1+ | 0.3+ | 2005 10 27 | 691 | 0.1− | 0.0 | 2005 11 30 | 691 | 0.1− | 0.5+ | |
| 2000 10 02 | 691 | 0.0 | 0.3+ | 2005 10 27 | 691 | 0.4− | 0.2− | 2005 11 30 | 691 | 0.4+ | 0.4+ | |
| 2003 04 29 | 691 | 0.4+ | 0.9+ | 2005 10 27 | 691 | 0.0 | 0.1− | 2005 11 30 | 691 | 0.2+ | 1.1+ | |
| 2003 04 29 | 691 | 0.7+ | 0.7+ | 2005 10 31 | 691 | 0.1− | 0.2+ | 2005 12 04 | G96 | 0.6+ | 0.1+ | |
| 2003 04 29 | 691 | 0.1− | 0.7+ | 2005 10 31 | 691 | 0.1+ | 0.4− | 2005 12 04 | G96 | 0.1− | 0.3− | |
| 2005 10 01 | G96 | 0.3− | 0.1+ | 2005 10 31 | 691 | 0.1− | 0.3− | 2005 12 04 | G96 | 0.3+ | 0.7+ | |
| 2005 10 01 | G96 | 0.3− | 0.2− | 2005 11 04 | 691 | 0.2− | 0.3+ | 2005 12 04 | G96 | 0.6+ | 0.3+ | |
| 2005 10 01 | G96 | 0.3− | 0.1− | 2005 11 04 | 691 | 0.2− | 0.1− | | | | | |

**2005 UA$_{362}$ = 2005 UY$_{502}$**

Id. Minor Planet Center (d, *MPO* 98189)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 130.62822 | | (2000.0) | | | |
| $n$ | 0.21452877 | $\omega$ | 143.25478 | | +0.86048251 | +0.50945715 |
| $a$ | 2.7636244 | $\Omega$ | 186.12336 | | −0.47753761 | +0.80319894 |
| $e$ | 0.0751651 | $i$ | 2.59102 | | −0.17756034 | +0.30874726 |
| $P$ | 4.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 18 | 691 | 0.3+ | 0.0 | 2005 10 28 | G96 | 0.5+ | 0.2− | 2005 11 28 | G96 | 0.1+ | 0.1+ | |
| 1999 06 18 | 691 | 0.3− | 0.2− | 2005 10 28 | G96 | 0.6+ | 0.0 | 2005 11 28 | G96 | 0.4− | 0.4− | |
| 1999 06 18 | 691 | 0.1− | 0.0 | 2005 10 28 | G96 | 0.2+ | 0.1− | 2005 11 29 | G96 | 0.7+ | 0.0 | |
| 2003 04 05 | 691 | 0.2− | 0.2+ | 2005 10 31 | 691 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.0 | 0.4− | |
| 2003 04 05 | 691 | 0.2+ | 0.2− | 2005 10 31 | 691 | 0.0 | 0.0 | 2005 11 29 | G96 | 0.2− | 0.4+ | |
| 2003 04 05 | 691 | 0.0 | 0.1− | 2005 10 31 | 691 | 1.0− | 0.9− | 2005 11 29 | G96 | 0.2+ | 0.1− | |
| 2005 10 01 | G96 | 0.4+ | 0.1− | 2005 11 04 | 691 | 0.0 | 0.2+ | 2005 11 30 | 691 | 0.2+ | 0.2− | |
| 2005 10 01 | G96 | 0.3+ | 0.3− | 2005 11 04 | 691 | 0.3+ | 0.1+ | 2005 11 30 | 691 | 0.2+ | 0.1− | |
| 2005 10 01 | G96 | 0.1+ | 0.1− | 2005 11 04 | 691 | 0.3+ | 0.1+ | 2005 11 30 | 691 | 0.4− | 0.1− | |
| 2005 10 01 | G96 | 0.4+ | 0.0 | 2005 11 28 | 691 | 0.5+ | 0.2− | 2005 12 04 | 691 | 0.1− | 0.2+ | |
| 2005 10 27 | 691 | 0.3+ | 0.0 | 2005 11 28 | 691 | 0.9− | 0.2+ | 2005 12 04 | 691 | 0.1+ | 0.0 | |
| 2005 10 27 | 691 | 0.3− | 0.1+ | 2005 11 28 | 691 | 0.1− | 0.4+ | 2005 12 04 | 691 | 0.1+ | 0.0 | |
| 2005 10 27 | 691 | 0.1+ | 0.2+ | 2005 11 28 | G96 | 1.0+ | 0.2− | | | | | |
| 2005 10 28 | G96 | 0.1+ | 0.0 | 2005 11 28 | G96 | 0.6− | 0.4− | | | | | |

**2005 UD$_{364}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.37273 | | (2000.0) | | | |
| $n$ | 0.25670472 | $\omega$ | 51.74668 | | −0.99677160 | −0.06610741 |
| $a$ | 2.4519606 | $\Omega$ | 124.41811 | | +0.04473589 | −0.92854046 |
| $e$ | 0.1366852 | $i$ | 3.16634 | | +0.06667139 | −0.36529772 |
| $P$ | 3.84 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 08 | 691 | 0.0 | 0.6− | 2003 03 31 | 691 | 0.0 | 0.1− | 2005 10 22 | 691 | 0.2− | 0.0 | |
| 1995 01 08 | 691 | 0.2− | 0.5− | 2003 03 31 | 691 | 0.0 | 0.0 | 2005 10 22 | 691 | 0.2− | 0.2+ | |
| 1995 01 08 | 691 | 0.0 | 0.6− | 2003 03 31 | 645 | 0.0 | 0.1+ | 2005 10 27 | 691 | 0.3− | 0.0 | |
| 2003 02 09 | 608 | 0.4+ | 0.1− | 2003 03 31 | 645 | 0.1− | 0.2+ | 2005 10 27 | 691 | 0.3− | 0.1+ | |
| 2003 02 09 | 608 | 0.2+ | 0.2− | 2003 03 31 | 691 | 0.1− | 0.0 | 2005 10 27 | 691 | 0.2− | 0.2+ | |
| 2003 02 09 | 608 | 0.5+ | 0.4− | 2003 04 05 | 699 | 0.6+ | 0.6+ | 2005 10 31 | 691 | 0.3− | 0.4+ | |
| 2003 02 22 | 644 | 1.3+ | 0.6+ | 2003 04 05 | 699 | 0.7− | 0.1− | 2005 10 31 | 691 | 0.1− | 0.1+ | |
| 2003 02 22 | 644 | 1.2+ | 0.5+ | 2003 04 05 | 699 | 1.2+ | 0.2+ | 2005 10 31 | 691 | 0.1− | 0.1+ | |
| 2003 02 22 | 644 | 1.2+ | 1.3+ | 2003 04 05 | 699 | 0.3− | 0.6+ | 2005 11 04 | 691 | 0.0 | 0.1+ | |
| 2003 03 06 | 699 | 0.2+ | 0.1+ | 2004 08 22 | 691 | 0.1− | 0.4− | 2005 11 04 | 691 | 0.2+ | 0.7+ | |
| 2003 03 06 | 699 | 0.2− | 0.3+ | 2004 08 22 | 691 | 0.1+ | 0.3+ | 2005 11 04 | 691 | 0.1+ | 0.1+ | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 699 | 0.7− | 1.0− | 2004 08 22 | 691 | 0.0 | 0.4+ | |
| 2003 03 06 | 699 | 0.6+ | 0.8+ | 2005 10 22 | 691 | 0.8+ | 0.1+ | |

**2005 UB$_{370}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.87132 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22249487 | $\omega$ | 343.93361 | | −0.15804186 | | −0.98576102 |
| $a$ | 2.6972594 | $\Omega$ | 115.13037 | | +0.91279130 | | −0.16802999 |
| $e$ | 0.0286373 | $i$ | 3.63684 | | +0.37660964 | | −0.00641299 |
| $P$ | 4.43 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 29 | 691 | 0.1− | 0.1− | 2005 10 27 | 691 | 0.1− | 0.3+ | 2005 11 01 | G96 | 0.4+ | 0.0 |
| 1998 01 29 | 691 | 0.0 | 0.2− | 2005 10 27 | 691 | 0.1+ | 0.2+ | 2005 11 10 | 691 | 0.2+ | 0.2+ |
| 1998 01 29 | 691 | 0.0 | 0.1+ | 2005 10 27 | 691 | 0.2− | 0.0 | 2005 11 10 | 691 | 0.1+ | 0.2− |
| 2003 03 23 | 291 | 0.6− | 1.1+ | 2005 10 31 | 691 | 0.1+ | 0.2+ | 2005 11 10 | 691 | 0.0 | 0.1+ |
| 2003 03 23 | 291 | 0.5+ | 0.5− | 2005 10 31 | 691 | 0.1+ | 0.2+ | 2005 12 29 | G96 | 0.5+ | 0.3+ |
| 2003 03 23 | 291 | 0.3+ | 0.1− | 2005 10 31 | 691 | 0.2+ | 0.1+ | 2005 12 29 | G96 | 0.7+ | 0.2− |
| 2005 10 22 | 691 | 0.2− | 0.3− | 2005 11 01 | G96 | 0.2− | 0.2− | 2005 12 29 | G96 | 0.8+ | 0.1+ |
| 2005 10 22 | 691 | 0.2− | 0.2− | 2005 11 01 | G96 | 0.0 | 0.4− | 2005 12 29 | G96 | 0.8+ | 0.3+ |
| 2005 10 22 | 691 | 0.9− | 0.0 | 2005 11 01 | G96 | 0.1+ | 0.3− | | | | |

**2005 UG$_{370}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.42185 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26537730 | $\omega$ | 319.89820 | | −0.94005290 | | −0.33883206 |
| $a$ | 2.3982449 | $\Omega$ | 200.39615 | | +0.33435974 | | −0.89343320 |
| $e$ | 0.1387501 | $i$ | 6.36631 | | +0.06711264 | | −0.29490669 |
| $P$ | 3.71 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 25 | 644 | 0.7− | 0.1− | 2003 04 07 | 691 | 0.2+ | 0.1− | 2005 10 31 | 691 | 0.2+ | 0.2+ |
| 2003 03 25 | 644 | 0.0 | 0.1+ | 2003 04 07 | 691 | 0.2− | 0.3+ | 2005 11 01 | G96 | 0.2+ | 0.4− |
| 2003 03 25 | 644 | 0.5− | 0.1− | 2005 10 27 | 691 | 0.4− | 0.0 | 2005 11 01 | G96 | 0.0 | 0.6− |
| 2003 03 30 | 644 | 1.3+ | 0.7+ | 2005 10 27 | 691 | 0.1− | 0.2− | 2005 11 01 | G96 | 0.1− | 0.2− |
| 2003 03 30 | 644 | 0.5+ | 0.7− | 2005 10 27 | 691 | 0.0 | 0.1− | 2005 11 01 | G96 | 0.1+ | 0.3− |
| 2003 03 30 | 644 | 0.0 | 0.2+ | 2005 10 31 | 691 | 0.2+ | 0.3+ | | | | |
| 2003 04 07 | 691 | 0.2− | 0.2− | 2005 10 31 | 691 | 0.1+ | 0.2+ | | | | |

**2005 UN$_{372}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.84805 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18613560 | $\omega$ | 95.38057 | | +0.96113720 | | +0.22040524 |
| $a$ | 3.0379673 | $\Omega$ | 251.96725 | | −0.26584024 | | +0.90131446 |
| $e$ | 0.1094233 | $i$ | 10.06882 | | +0.07445977 | | +0.37289914 |
| $P$ | 5.30 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 704 | 0.1− | 0.8+ | 2005 11 28 | 703 | 0.7− | 0.7− | 2005 12 25 | G96 | 0.1+ | 0.3− |
| 2000 12 30 | 704 | 0.1− | 0.2+ | 2005 11 28 | 703 | 0.4− | 0.7− | 2005 12 25 | G96 | 0.1+ | 0.6− |
| 2000 12 30 | 704 | 0.3+ | 0.1− | 2005 11 29 | 704 | 0.6+ | 1.5+ | 2005 12 25 | G96 | 0.1− | 0.6− |
| 2004 08 09 | 704 | 0.5+ | 0.1− | 2005 11 29 | 704 | 0.7+ | 1.5+ | 2005 12 25 | G96 | 0.1− | 0.4− |
| 2004 08 09 | 704 | 0.4− | 0.2+ | 2005 11 29 | 704 | 0.3− | 0.6+ | 2006 01 02 | G96 | 0.5+ | 0.2− |
| 2004 08 09 | 704 | 0.2− | 0.2+ | 2005 11 29 | G96 | 0.3+ | 0.4− | 2006 01 02 | G96 | 0.3+ | 0.4− |
| 2005 10 22 | 691 | 0.1+ | 0.3− | 2005 11 29 | G96 | 0.2+ | 0.2− | 2006 01 02 | G96 | 0.2+ | 0.4− |
| 2005 10 22 | 691 | 0.0 | 0.2− | 2005 11 29 | 704 | (0.4+ | 2.5+) | 2006 01 02 | G96 | 0.7+ | 0.4− |
| 2005 10 22 | 691 | 0.1− | 0.1− | 2005 11 29 | G96 | 0.1− | 0.3− | 2006 01 06 | G96 | 0.0 | 0.3− |
| 2005 10 27 | 691 | 0.3− | 0.0 | 2005 11 29 | G96 | 0.0 | 0.5− | 2006 01 06 | G96 | 0.6+ | 0.3− |
| 2005 10 27 | 691 | 0.3− | 0.1+ | 2005 12 01 | 704 | 1.0+ | 1.0+ | 2006 01 06 | G96 | 0.1− | 0.6− |
| 2005 10 27 | 691 | 0.3− | 0.2+ | 2005 12 01 | 704 | 0.7+ | 0.9+ | 2006 01 06 | G96 | 0.3+ | 0.3− |
| 2005 10 31 | 691 | 0.1− | 0.0 | 2005 12 01 | 704 | 0.0 | 0.9+ | 2006 01 21 | G96 | 0.1+ | 0.2− |
| 2005 10 31 | 691 | 0.1− | 0.0 | 2005 12 01 | 704 | 0.2+ | 0.9+ | 2006 01 21 | G96 | 0.5+ | 0.1− |
| 2005 10 31 | 691 | 0.1− | 0.1− | 2005 12 01 | 704 | 1.2+ | 0.1+ | 2006 01 21 | G96 | 0.2− | 0.1− |
| 2005 11 08 | 704 | 0.5+ | 0.1+ | 2005 12 04 | 704 | (2.0− | 1.2+) | 2006 01 21 | G96 | 0.2+ | 0.1− |
| 2005 11 08 | 704 | 1.2+ | 0.2+ | 2005 12 04 | 704 | 0.2− | 0.7+ | 2006 02 25 | G96 | 0.1− | 0.1− |
| 2005 11 08 | 704 | 1.9+ | 0.7− | 2005 12 04 | 704 | 0.6− | 0.6− | 2006 02 25 | G96 | 0.0 | 0.1− |
| 2005 11 21 | 703 | 1.5− | 0.5− | 2005 12 04 | 704 | 0.4− | 0.1+ | 2006 02 25 | G96 | 0.2+ | 0.1+ |
| 2005 11 21 | 703 | 0.0 | 0.3+ | 2005 12 04 | 704 | 0.5− | 0.3+ | 2006 02 25 | G96 | 0.0 | 0.1+ |
| 2005 11 21 | 703 | 0.8+ | 0.0 | 2005 12 24 | 703 | 1.6+ | 0.8− | 2006 02 27 | G96 | 0.1− | 0.3+ |
| 2005 11 21 | 703 | 0.2− | 0.3+ | 2005 12 24 | 703 | 0.1− | 0.0 | 2006 02 27 | G96 | 0.3− | 0.3+ |
| 2005 11 28 | 703 | 0.8− | 0.2+ | 2005 12 24 | 703 | 1.0− | 0.4− | 2006 02 27 | G96 | 0.3− | 0.2+ |
| 2005 11 28 | 703 | 1.0− | 1.2− | 2005 12 24 | 703 | 1.0− | 2.0+ | 2006 02 27 | G96 | 0.1+ | 0.4+ |

**2005 UR$_{375}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.85960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21587721 | $\omega$ | 315.09691 | | −0.76967347 | | +0.62778472 |
| $a$ | 2.7521041 | $\Omega$ | 264.14555 | | −0.54807085 | | −0.74300873 |
| $e$ | 0.1612493 | $i$ | 6.70466 | | −0.32744633 | | −0.23200081 |
| $P$ | 4.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 691 | 0.3+ | 0.2− | 2003 04 07 | 704 | 0.2− | 0.2+ | 2004 09 17 | 691 | 0.1+ | 0.5+ |
| 2002 01 13 | 691 | 0.0 | 0.4+ | 2003 04 07 | 704 | 0.1+ | 0.7+ | 2005 10 27 | 691 | 0.1+ | 0.3+ |
| 2002 01 13 | 691 | 0.3− | 0.3+ | 2003 04 07 | 704 | 0.2− | 0.9+ | 2005 10 27 | 691 | 0.1− | 0.1+ |
| 2003 03 23 | 644 | 0.3+ | 1.2− | 2003 05 03 | 691 | 0.1+ | 1.1+ | 2005 10 27 | 691 | 0.5− | 0.0 |
| 2003 03 23 | 644 | 0.4+ | 0.8− | 2003 05 03 | 691 | 0.0 | 1.0+ | 2005 10 31 | 691 | 0.4− | 0.6+ |
| 2003 03 23 | 644 | 0.7+ | 0.7− | 2003 05 03 | 691 | 0.2+ | 1.1+ | 2005 10 31 | 691 | 0.2− | 0.3+ |
| 2003 03 29 | 699 | 0.2+ | 0.7− | 2004 08 22 | 691 | 0.1− | 0.1+ | 2005 10 31 | 691 | 0.5− | 0.5+ |
| 2003 03 29 | 699 | 0.1− | 0.6+ | 2004 08 22 | 691 | 0.1− | 0.1+ | 2005 11 04 | 691 | 0.6+ | 0.3+ |
| 2003 03 29 | 699 | 0.7+ | 1.4− | 2004 08 22 | 691 | 0.2− | 0.1+ | 2005 11 04 | 691 | 0.3+ | 0.2+ |
| 2003 03 29 | 699 | 0.8+ | 0.4+ | 2004 09 17 | 691 | 0.0 | 0.3+ | 2005 11 04 | 691 | 0.1+ | 0.2+ |
| 2003 04 07 | 704 | 0.2+ | 0.2− | 2004 09 17 | 691 | 0.1− | 0.1+ | | | | |

**2005 UH$_{377}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.27047 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24175800 | $\omega$ | 293.96726 | | −0.30561434 | | −0.95212315 |
| $a$ | 2.5520087 | $\Omega$ | 173.81219 | | +0.89787806 | | −0.29092166 |
| $e$ | 0.0912651 | $i$ | 4.16840 | | +0.31688304 | | −0.09394732 |
| $P$ | 4.08 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.4− | 0.3− | 2003 03 27 | 644 | 0.4+ | 0.6− | 2005 10 28 | 683 | (4.3− | 1.3−) |
| 2001 11 17 | 704 | 0.6− | 0.2− | 2003 04 08 | 691 | 0.2− | 0.3+ | 2005 10 28 | 683 | 1.0+ | 1.5+ |
| 2001 11 17 | 704 | 0.5− | 0.2+ | 2003 04 08 | 691 | 0.4− | 0.1− | 2005 10 31 | 691 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.9− | 0.1+ | 2003 04 08 | 691 | 0.0 | 0.2− | 2005 10 31 | 691 | 0.1− | 0.2− |
| 2001 12 11 | 704 | 0.4+ | 0.2+ | 2003 04 26 | 691 | 0.2+ | 0.9− | 2005 10 31 | 691 | 0.1− | 0.1− |
| 2001 12 11 | 704 | 0.2+ | 0.9+ | 2003 04 26 | 691 | 0.3+ | 1.1− | 2005 11 05 | 691 | 0.1+ | 0.2− |
| 2001 12 11 | 704 | 1.1+ | 1.1+ | 2003 04 26 | 691 | 0.1+ | 1.0− | 2005 11 05 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.2− | 0.3− | 2003 05 08 | 691 | 0.1+ | 1.6+ | 2005 11 05 | 691 | 0.3+ | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2003 05 08 | 691 | 0.1− | 1.1+ | 2005 11 25 | 703 | 0.9+ | 1.1− |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2003 05 08 | 691 | 0.2− | 0.9+ | 2005 11 25 | 703 | 1.7+ | 0.7+ |
| 2001 12 18 | 704 | 0.3+ | 0.2+ | 2005 10 28 | 704 | 0.6+ | 1.1+ | 2005 11 25 | 703 | 0.1+ | 0.3− |
| 2003 03 27 | 644 | 0.3+ | 0.2− | 2005 10 28 | 704 | 0.6− | 0.4+ | 2005 11 25 | 703 | 0.9+ | 0.2+ |
| 2003 03 27 | 644 | 0.5+ | 0.2− | 2005 10 28 | 704 | 0.4− | 1.1+ | | | | |

**2005 UK$_{379}$ = 2005 UZ$_{115}$ = 2004 LJ$_{29}$**

Id. Minor Planet Center (d, *MPO* 98190; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.67191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17606895 | $\omega$ | 104.14225 | | +0.43310310 | | +0.90116515 |
| $a$ | 3.1526871 | $\Omega$ | 191.57215 | | −0.85767757 | | +0.40590717 |
| $e$ | 0.1395100 | $i$ | 5.14072 | | −0.27714776 | | +0.15212081 |
| $P$ | 5.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 06 | 691 | 0.4+ | 0.6+ | 2004 06 19 | 691 | 0.2+ | 0.1+ | 2005 10 29 | G96 | 0.3− | 0.1+ |
| 2003 05 06 | 691 | 0.1+ | 0.6+ | 2005 10 22 | 691 | 0.3− | 0.6+ | 2005 10 29 | G96 | 0.4− | 0.0 |
| 2003 05 06 | 691 | 0.0 | 0.1+ | 2005 10 22 | 691 | 0.0 | 0.3+ | 2005 10 29 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 14 | 691 | 0.6− | 0.1+ | 2005 10 22 | 691 | 0.2− | 0.3+ | 2005 10 31 | 691 | 0.3− | 0.5+ | | |
| 2004 06 14 | 691 | 0.1+ | 0.0 | 2005 10 23 | 291 | 0.2+ | 0.0 | 2005 10 31 | 691 | 0.3+ | 0.3+ | | |
| 2004 06 14 | 691 | 0.0 | 0.1− | 2005 10 23 | 291 | 0.2+ | 0.3+ | 2005 10 31 | 691 | 0.0 | 0.2− | | |
| 2004 06 19 | 691 | 0.1+ | 0.0 | 2005 10 23 | 291 | 0.2+ | 0.5− | | | | | | |
| 2004 06 19 | 691 | 0.2+ | 0.2+ | 2005 10 29 | G96 | 0.6− | 0.2− | | | | | | |

**2005 UG$_{382}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.12469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17790045 | $\omega$ | 321.87428 | | +0.79978167 | −0.52331528 | |
| $a$ | 3.1310117 | $\Omega$ | 72.17772 | | +0.59808418 | +0.65269189 | |
| $e$ | 0.1504745 | $i$ | 17.99399 | | +0.05142561 | +0.54784524 | |
| $P$ | 5.54 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.2− | 0.1+ | 2003 05 26 | 691 | 0.6+ | 0.6+ | 2005 10 26 | 704 | 0.2− | 0.4− | | |
| 2001 01 04 | 704 | 0.3− | 0.6+ | 2003 05 26 | 691 | 0.4+ | 0.8+ | 2005 10 31 | 644 | 0.0 | 0.7+ | | |
| 2001 01 04 | 704 | 0.4+ | 0.3+ | 2005 09 28 | 644 | 0.4+ | 0.5+ | 2005 10 31 | 644 | 0.2+ | 0.8+ | | |
| 2001 01 04 | 704 | 0.9− | 0.3− | 2005 09 28 | 644 | 0.0 | 0.3+ | 2005 10 31 | 644 | 0.2+ | 0.4+ | | |
| 2001 01 19 | 704 | 0.3+ | 0.8+ | 2005 09 28 | 644 | 0.7+ | 0.3+ | 2005 11 05 | 703 | 0.7− | 0.7− | | |
| 2001 01 19 | 704 | 0.4− | 0.4+ | 2005 10 08 | 703 | 0.1+ | 0.1+ | 2005 11 05 | 703 | 0.4− | 0.6− | | |
| 2001 01 19 | 704 | 0.2+ | 0.2+ | 2005 10 08 | 703 | 0.0 | 0.1− | 2005 11 05 | 703 | 0.7− | 0.3+ | | |
| 2001 01 19 | 704 | 0.1− | 0.1− | 2005 10 08 | 703 | 0.0 | 0.5+ | 2005 11 05 | 703 | 1.4− | 0.4+ | | |
| 2003 05 02 | 691 | 0.6− | 0.3− | 2005 10 08 | 703 | 0.5− | 0.2− | 2005 11 30 | 703 | 0.6+ | 0.2− | | |
| 2003 05 02 | 691 | 0.3− | 0.8− | 2005 10 26 | 704 | 0.4− | 0.4+ | 2005 11 30 | 703 | 0.0 | 0.3+ | | |
| 2003 05 02 | 691 | 0.6− | 0.3− | 2005 10 26 | 704 | 0.4+ | 0.0 | 2005 11 30 | 703 | 0.8+ | 0.1− | | |
| 2003 05 26 | 691 | 1.0+ | 1.0+ | 2005 10 26 | 704 | 0.2+ | 0.6− | 2005 11 30 | 703 | 0.5− | 0.1+ | | |

**2005 UV$_{382}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.68172 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22542862 | $\omega$ | 357.25065 | | −0.98306220 | +0.18230098 | |
| $a$ | 2.6738068 | $\Omega$ | 193.29817 | | −0.16654729 | −0.93152708 | |
| $e$ | 0.2109285 | $i$ | 4.69899 | | −0.07648999 | −0.31468023 | |
| $P$ | 4.37 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 31 | 691 | 1.2+ | 1.0+ | 2003 05 11 | 691 | 0.2− | 0.8+ | 2005 10 27 | 691 | 0.0 | 0.4− | | |
| 1998 01 31 | 691 | 0.3− | 0.0 | 2003 05 11 | 691 | 0.2− | 0.5+ | 2005 10 27 | 691 | 0.1− | 0.1− | | |
| 1998 01 31 | 691 | 0.9− | 0.9− | 2003 05 27 | 699 | (0.0 | 3.2+) | 2005 10 27 | 691 | 1.3+ | 0.1− | | |
| 2003 05 05 | 704 | 1.1+ | 1.5− | 2003 05 27 | 699 | 0.9− | 1.4+ | 2005 10 31 | 691 | 0.1− | 0.1− | | |
| 2003 05 05 | 704 | 0.2+ | 1.1− | 2003 05 27 | 699 | (2.2− | 2.5+) | 2005 10 31 | 691 | 0.1− | 0.5− | | |
| 2003 05 05 | 704 | 1.0+ | 1.2− | 2003 05 27 | 699 | 0.5− | 1.4+ | 2005 10 31 | 691 | 0.2− | 0.7− | | |
| 2003 05 05 | 704 | 0.3+ | 0.8− | 2005 10 22 | 691 | 0.3− | 0.4+ | 2005 11 05 | 691 | 1.0− | 1.4+ | | |
| 2003 05 05 | 704 | 0.4+ | 1.0− | 2005 10 22 | 691 | 0.3+ | 1.2+ | 2005 11 05 | 691 | 0.3+ | 0.5− | | |
| 2003 05 11 | 691 | 0.0 | 0.4− | 2005 10 22 | 691 | 0.4− | 0.5+ | 2005 11 05 | 691 | 0.3+ | 0.8− | | |

**2005 UV$_{384}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.34072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18683758 | $\omega$ | 234.63380 | | +0.91019960 | −0.40178125 | |
| $a$ | 3.0303531 | $\Omega$ | 148.70057 | | +0.41410155 | +0.87841885 | |
| $e$ | 0.2055768 | $i$ | 11.15889 | | +0.00752279 | +0.25875113 | |
| $P$ | 5.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 691 | 0.1− | 0.0 | 2005 10 27 | 699 | 1.0+ | 1.1− | 2005 11 26 | 699 | 0.1− | 0.5+ | | |
| 2002 03 13 | 691 | 0.2+ | 0.1− | 2005 10 27 | 644 | 0.0 | 0.4+ | 2005 11 26 | 699 | 0.3+ | 0.5+ | | |
| 2002 03 13 | 691 | 0.1− | 0.1− | 2005 10 27 | 644 | 0.1− | 0.3+ | 2005 11 26 | 699 | 0.1+ | 0.2− | | |
| 2005 09 30 | 644 | 0.2+ | 0.3+ | 2005 10 27 | 644 | 0.1− | 0.2+ | 2005 11 28 | 644 | 0.2+ | 0.2+ | | |
| 2005 09 30 | 644 | 0.0 | 0.2+ | 2005 10 31 | 699 | 0.4− | 0.0 | 2005 11 28 | 644 | 0.1− | 0.0 | | |
| 2005 09 30 | 644 | 0.2+ | 0.4+ | 2005 10 31 | 699 | 0.2+ | 0.2+ | 2005 11 28 | 644 | 0.0 | 0.1+ | | |
| 2005 10 27 | 699 | 1.0− | 0.4+ | 2005 10 31 | 699 | 0.1− | 0.5+ | 2006 01 06 | G96 | 0.1− | 0.3− | | |
| 2005 10 27 | 699 | 0.0 | 0.1− | 2005 10 31 | 699 | 0.1+ | 0.5+ | 2006 01 06 | G96 | 0.1+ | 0.3− | | |
| 2005 10 27 | 703 | 0.3+ | 1.7− | 2005 11 01 | 703 | 0.2− | 0.1+ | 2006 01 06 | G96 | 0.2− | 0.4− | | |
| 2005 10 27 | 703 | 0.1+ | 0.5− | 2005 11 01 | 703 | 0.0 | 0.0 | 2006 01 06 | G96 | 0.0 | 0.2− | | |
| 2005 10 27 | 699 | 0.2+ | 0.7+ | 2005 11 01 | 703 | 0.1− | 0.4− | 2006 11 24 | 291 | 0.0 | 0.1+ | | |
| 2005 10 27 | 703 | 0.4+ | 0.1− | 2005 11 01 | 703 | 0.7− | 0.8− | 2006 11 24 | 291 | 0.1+ | 0.3+ | | |
| 2005 10 27 | 703 | 0.1+ | 0.3+ | 2005 11 26 | 699 | 0.4− | 0.2− | 2006 11 24 | 291 | 0.1− | 0.1− | | |

**2005 UE$_{386}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.87739 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21719830 | $\omega$ | 317.77945 | | −0.34862142 | −0.93406553 | |
| $a$ | 2.7409331 | $\Omega$ | 152.35699 | | +0.89832538 | −0.35654157 | |
| $e$ | 0.0833685 | $i$ | 9.59832 | | +0.26734739 | −0.01999237 | |
| $P$ | 4.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2003 04 10 | 691 | 0.3− | 0.0 | 2005 10 30 | 704 | 0.0 | 0.9− | | |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2003 04 10 | 691 | 0.2− | 0.3+ | 2005 10 30 | 704 | 0.7− | 0.1− | | |
| 2000 09 21 | 695 | 0.6+ | 0.5+ | 2003 04 10 | 691 | 0.2− | 0.1− | 2005 10 30 | 704 | 0.2− | 0.1+ | | |
| 2000 09 21 | 695 | 0.4+ | 0.4+ | 2005 10 01 | 699 | 0.7− | 0.5+ | 2005 10 31 | 699 | 0.8+ | 0.2+ | | |
| 2003 03 29 | 699 | 0.5− | 0.3− | 2005 10 01 | 699 | 0.5+ | 0.4− | 2005 10 31 | 699 | 0.1− | 1.2+ | | |
| 2003 03 29 | 699 | 0.7+ | 1.3− | 2005 10 01 | 699 | 0.5+ | 0.9− | 2005 10 31 | 699 | 0.2+ | 0.9− | | |
| 2003 03 29 | 699 | 0.5+ | 0.3+ | 2005 10 01 | 699 | 0.2+ | 0.5+ | 2005 10 31 | 699 | 0.7− | 0.2− | | |
| 2003 03 29 | 699 | 0.6+ | 0.5+ | 2005 10 05 | 703 | (2.6− | 0.3+) | 2005 11 01 | 703 | 1.0+ | 0.9+ | | |
| 2003 04 04 | 691 | 0.1+ | 0.1− | 2005 10 05 | 703 | (2.1− | 2.9+) | 2005 11 01 | 703 | 0.2+ | 0.6+ | | |
| 2003 04 04 | 691 | 0.2+ | 0.1+ | 2005 10 05 | 703 | 1.6− | 0.7− | 2005 11 01 | 703 | 0.6− | 0.5− | | |
| 2003 04 04 | 691 | 0.1+ | 0.1+ | 2005 10 05 | 703 | 0.0 | 0.2+ | 2005 11 01 | 703 | 1.3+ | 0.3+ | | |

**2005 UF$_{387}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.38681 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18964489 | $\omega$ | 296.76574 | | +0.84000780 | +0.54218379 | |
| $a$ | 3.0003733 | $\Omega$ | 30.41469 | | −0.48224734 | +0.76345728 | |
| $e$ | 0.0461751 | $i$ | 2.33010 | | −0.24864514 | +0.35095544 | |
| $P$ | 5.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 291 | 0.1− | 0.2− | 2005 10 30 | G96 | 0.0 | 0.1− | 2005 11 21 | 691 | 0.3+ | 0.3− | | |
| 2002 03 20 | 291 | 0.1+ | 0.5+ | 2005 10 30 | G96 | 0.5− | 0.1− | 2005 11 28 | G96 | 0.9+ | 0.3− | | |
| 2002 03 20 | 291 | 0.3+ | 0.5+ | 2005 10 30 | G96 | 0.1+ | 0.0 | 2005 11 28 | G96 | 0.5+ | 0.3− | | |
| 2004 08 22 | 691 | 0.3− | 0.3+ | 2005 10 30 | G96 | 0.5− | 0.5− | 2005 11 28 | G96 | 0.1+ | 0.3− | | |
| 2004 08 22 | 691 | 0.2− | 0.2+ | 2005 10 31 | 691 | 0.4− | 0.3+ | 2005 11 28 | G96 | 0.1+ | 1.3− | | |
| 2004 08 22 | 691 | 0.1+ | 0.2+ | 2005 10 31 | 691 | 0.2+ | 0.2+ | 2006 01 25 | G96 | 0.3− | 0.2+ | | |
| 2005 10 27 | 691 | 0.1− | 0.3+ | 2005 10 31 | 691 | 0.2− | 0.2+ | 2006 01 25 | G96 | 0.1+ | 0.1+ | | |
| 2005 10 27 | 691 | 0.1+ | 0.1+ | 2005 11 21 | 691 | 0.2− | 0.2+ | 2006 01 25 | G96 | 0.5− | 0.3− | | |
| 2005 10 27 | 691 | 0.0 | 0.3+ | 2005 11 21 | 691 | 0.5+ | 0.4− | 2006 01 25 | G96 | 0.9− | 0.1− | | |

**2005 UO$_{398}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.62663 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23876678 | $\omega$ | 187.85145 | | −0.63872841 | +0.74679016 | |
| $a$ | 2.5732784 | $\Omega$ | 42.71339 | | −0.69026729 | −0.44976002 | |
| $e$ | 0.0900108 | $i$ | 15.85168 | | −0.33993690 | −0.48991875 | |
| $P$ | 4.13 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.7− | 0.3− | 2003 02 26 | 704 | 0.3− | 0.6+ | 2004 08 20 | E12 | 0.4+ | 0.5+ | | |
| 2001 10 21 | 704 | 0.8+ | 0.1+ | 2003 02 26 | 704 | 0.6− | 0.8+ | 2004 08 20 | E12 | 0.6+ | 0.0 | | |
| 2001 10 21 | 704 | 0.3− | 0.8+ | 2003 03 22 | 644 | 0.2+ | 0.3+ | 2004 08 20 | E12 | 0.3+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.6+ | 0.2− | 2003 03 22 | 644 | 0.3+ | 0.3+ | 2004 08 20 | E12 | 0.5− | 0.5+ | | |
| 2001 11 12 | 704 | 0.1− | 0.7+ | 2003 03 22 | 644 | 0.4+ | 0.2+ | 2005 10 30 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 12 | 704 | 0.2+ | 0.8+ | 2003 04 07 | 644 | 0.3+ | 0.2+ | 2005 10 30 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 24 | 704 | 0.3+ | 0.1+ | 2003 04 07 | 644 | 0.2+ | 0.4+ | 2005 10 30 | 691 | 0.0 | 0.2+ | | |
| 2001 11 24 | 704 | 0.4+ | 0.1+ | 2003 04 07 | 644 | 0.3+ | 0.4+ | 2005 11 06 | 704 | 0.3− | 0.1+ | | |
| 2001 11 24 | 704 | 2.0− | 0.0 | 2004 07 14 | E12 | 0.8− | 1.5+ | 2005 11 06 | 704 | 0.4− | 0.2+ | | |
| 2003 02 01 | 644 | 0.3+ | 0.4+ | 2004 07 14 | E12 | 0.7− | 0.0 | 2005 11 06 | 704 | 1.1− | 0.6+ | | |
| 2003 02 01 | 644 | 0.1+ | 0.4+ | 2004 07 14 | E12 | 0.5− | 0.2+ | 2005 11 25 | 703 | 0.3− | 0.8+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.3+ | 0.5+ | 2004 07 14 | E12 | 0.4+ | 0.6+ | 2005 11 25 | 703 | 2.3+ | 1.4− |
| 2003 02 21 | 644 | 0.3+ | 0.4+ | 2004 08 09 | E12 | 0.7− | 0.5+ | 2005 11 25 | 703 | 1.0− | 0.6− |
| 2003 02 21 | 644 | 0.2+ | 0.2+ | 2004 08 09 | E12 | 0.1+ | 0.1+ | 2005 11 25 | 703 | 0.5− | 0.2+ |
| 2003 02 21 | 644 | 0.1+ | 0.3+ | 2004 08 09 | E12 | 0.2+ | 0.1+ | | | | |
| 2003 02 26 | 704 | 0.8+ | 0.5− | 2004 08 09 | E12 | 0.2− | 0.8+ | | | | |

**2005 UH$_{402}$ = 2004 RY$_{321}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.03866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17619923 | $\omega$ | 12.90195 | | −0.31006964 | | +0.93703056 |
| $a$ | 3.1511328 | $\Omega$ | 239.23855 | | −0.88803274 | | −0.34582465 |
| $e$ | 0.1946745 | $i$ | 10.77973 | | −0.33949178 | | +0.04877551 |
| $P$ | 5.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 13 | 644 | 0.1+ | 0.1+ | 2005 10 28 | 691 | 0.2+ | 0.7+ | 2005 11 05 | 691 | 0.0 | 0.3+ |
| 2004 09 13 | 644 | 0.3+ | 0.0 | 2005 10 28 | 691 | 0.3+ | 0.2+ | 2005 11 05 | 691 | 0.1− | 0.0 |
| 2004 09 13 | 644 | 0.3+ | 0.3+ | 2005 11 01 | G96 | 0.2− | 0.5− | 2005 11 11 | 691 | 0.5+ | 0.1− |
| 2004 09 18 | 704 | 0.1+ | 0.2− | 2005 11 01 | G96 | 0.5− | 0.4− | 2005 11 11 | 691 | 0.5+ | 0.0 |
| 2004 09 18 | 704 | 0.8− | 0.3− | 2005 11 01 | G96 | 0.2− | 0.6− | 2005 11 11 | 691 | 0.3− | 0.1− |
| 2004 09 18 | 704 | 0.1+ | 0.1+ | 2005 11 01 | G96 | 0.0 | 0.4− | | | | |
| 2005 10 28 | 691 | 0.3− | 0.6+ | 2005 11 05 | 691 | 0.0 | 0.3+ | | | | |

**2005 UQ$_{409}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.86750 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30083499 | $\omega$ | 41.17084 | | −0.40663738 | | −0.91172837 |
| $a$ | 2.2058898 | $\Omega$ | 72.89640 | | +0.82142306 | | −0.39279541 |
| $e$ | 0.0910682 | $i$ | 3.49632 | | +0.39988773 | | −0.12026281 |
| $P$ | 3.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.2+ | 0.4− | 2005 10 31 | 704 | 1.1+ | 1.5+ | 2005 11 10 | 703 | 0.7− | 0.5+ |
| 1992 11 27 | 691 | 0.1+ | 0.0 | 2005 10 31 | 704 | 0.9+ | 1.7+ | 2005 12 31 | G96 | 0.6− | 0.4− |
| 1992 11 27 | 691 | 0.2− | 0.5− | 2005 10 31 | 704 | (0.2− | 2.1+) | 2005 12 31 | G96 | 0.1− | 0.6− |
| 1992 11 27 | 691 | 0.2− | 0.2+ | 2005 11 01 | 691 | 0.1+ | 0.2+ | 2005 12 31 | G96 | 0.1− | 0.3− |
| 1992 11 27 | 691 | 0.1− | 0.2+ | 2005 11 01 | 691 | 0.1− | 0.1+ | 2005 12 31 | G96 | 0.6− | 0.0 |
| 1992 11 27 | 691 | 0.2+ | 0.7+ | 2005 11 01 | 691 | 0.0 | 0.4+ | 2006 01 05 | G96 | 0.2+ | 0.0 |
| 1995 10 19 | 691 | 0.2+ | 0.0 | 2005 11 01 | G96 | 0.4+ | 0.4− | 2006 01 05 | G96 | 0.1+ | 0.3− |
| 1995 10 19 | 691 | 0.2+ | 0.2− | 2005 11 01 | G96 | 0.5+ | 0.2− | 2006 01 05 | G96 | 0.6+ | 0.6− |
| 1995 10 19 | 691 | 0.2− | 0.3− | 2005 11 01 | G96 | 0.1+ | 0.4− | 2006 01 05 | G96 | 0.9− | 0.1− |
| 2005 10 28 | 703 | 0.4− | 0.0 | 2005 11 01 | G96 | 0.2+ | 0.4− | 2006 01 21 | G96 | 0.2+ | 0.2− |
| 2005 10 28 | 703 | 0.7− | 0.6− | 2005 11 10 | 703 | 0.6− | 1.0− | 2006 01 21 | G96 | 0.6+ | 0.8− |
| 2005 10 28 | 703 | 0.4− | 0.2+ | 2005 11 10 | 703 | (0.4+ | 2.1−) | 2006 01 21 | G96 | 0.2+ | 0.3− |
| 2005 10 28 | 703 | 0.6− | 0.0 | 2005 11 10 | 703 | 0.4+ | 0.0 | 2006 01 21 | G96 | 0.0 | 0.4− |

**2005 UO$_{421}$ = 2005 VY$_{26}$**

Id. Minor Planet Center (d, *MPO* 98190)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.36630 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24630221 | $\omega$ | 41.35450 | | +0.55969950 | | +0.82827031 |
| $a$ | 2.5205221 | $\Omega$ | 262.69676 | | −0.76717440 | | +0.50576956 |
| $e$ | 0.1452930 | $i$ | 1.53367 | | −0.31333674 | | +0.24117511 |
| $P$ | 4.00 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.0 | 0.1+ | 2005 10 12 | 691 | 0.2+ | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.0 |
| 1997 11 22 | 691 | 0.5+ | 0.7− | 2005 10 27 | G96 | 0.1+ | 0.3+ | 2005 11 05 | 691 | 0.2+ | 0.4+ |
| 1997 11 22 | 691 | 0.1+ | 0.3− | 2005 10 27 | G96 | 0.4+ | 0.1− | 2005 11 05 | 691 | 0.1+ | 0.3+ |
| 2001 11 12 | 691 | 0.3− | 0.0 | 2005 10 27 | G96 | 0.2+ | 0.0 | 2005 11 05 | 691 | 0.2+ | 0.0 |
| 2001 11 12 | 691 | 0.1+ | 0.3− | 2005 10 27 | G96 | 0.2+ | 0.2+ | 2005 12 01 | 691 | 0.3− | 0.4+ |
| 2001 11 12 | 691 | 0.1− | 0.0 | 2005 11 01 | 691 | 0.4− | 0.0 | 2005 12 01 | 691 | 0.4+ | 0.1− |
| 2005 10 05 | 691 | 0.2+ | 0.1+ | 2005 11 01 | 691 | 0.4− | 0.4+ | 2005 12 01 | 691 | 0.2+ | 0.4+ |
| 2005 10 05 | 691 | 0.2+ | 0.1− | 2005 11 01 | 691 | 0.5− | 0.3+ | 2005 12 05 | G96 | 0.0 | 0.0 |
| 2005 10 05 | 691 | 0.0 | 0.0 | 2005 11 03 | G96 | 0.1− | 0.4− | 2005 12 05 | G96 | 0.7− | 0.5− |
| 2005 10 12 | 691 | 0.1+ | 0.3− | 2005 11 03 | G96 | 0.1− | 0.2− | 2005 12 05 | G96 | 0.9− | 0.1− |
| 2005 10 12 | 691 | 0.1+ | 0.0 | 2005 11 03 | G96 | 0.1− | 0.4− | 2005 12 05 | G96 | 0.0 | 0.6− |

**2005 UQ$_{431}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.65667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22932888 | $\omega$ | 332.62391 | | −0.65581567 | | −0.75477248 |
| $a$ | 2.6434041 | $\Omega$ | 158.34701 | | +0.69983909 | | −0.61528431 |
| $e$ | 0.0948769 | $i$ | 2.32627 | | +0.28307428 | | −0.22747247 |
| $P$ | 4.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 14 | 691 | 0.1− | 0.2− | 2005 10 28 | 691 | 0.1+ | 0.2− | 2005 11 04 | 691 | 0.0 | 0.1+ |
| 1994 03 14 | 691 | 0.4+ | 0.5− | 2005 10 28 | G96 | 0.4+ | 0.3− | 2005 11 29 | 291 | 0.0 | 0.1+ |
| 1994 03 14 | 691 | 0.5− | 0.1− | 2005 10 28 | G96 | 0.3+ | 0.4− | 2005 11 29 | 291 | 0.1+ | 0.2+ |
| 1998 03 04 | 691 | 0.0 | 0.1− | 2005 10 28 | 691 | 0.3− | 0.1+ | 2005 11 29 | 291 | 0.2+ | 0.1+ |
| 1998 03 04 | 691 | 0.1− | 0.4+ | 2005 11 01 | 691 | 0.3+ | 0.3+ | 2005 12 29 | G96 | 0.1+ | 0.3− |
| 1998 03 04 | 691 | 0.3+ | 0.4+ | 2005 11 01 | 691 | 0.2+ | 0.0 | 2005 12 29 | G96 | 0.4+ | 0.7− |
| 2005 10 28 | 691 | 0.2+ | 0.0 | 2005 11 01 | 691 | 0.1+ | 0.2+ | 2005 12 29 | G96 | 0.0 | 0.3− |
| 2005 10 28 | G96 | 0.3+ | 0.2− | 2005 11 04 | 691 | 0.8− | 0.4− | 2005 12 29 | G96 | 0.3− | 0.2− |
| 2005 10 28 | G96 | 0.9− | 0.9− | 2005 11 04 | 691 | 0.0 | 0.0 | | | | |

**2005 UT$_{432}$ = 1999 UQ$_{58}$ = 1999 VG$_{231}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.50198 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17404788 | $\omega$ | 236.76567 | | +0.87979340 | | −0.47515468 |
| $a$ | 3.1770465 | $\Omega$ | 151.59657 | | +0.44524084 | | +0.81350603 |
| $e$ | 0.1851168 | $i$ | 1.66756 | | +0.16650579 | | +0.33531474 |
| $P$ | 5.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.3+ | 0.1− | 2005 10 28 | G96 | 0.2− | 0.2− | 2005 11 25 | G96 | 0.2− | 0.1− |
| 1999 10 31 | 691 | 0.1− | 0.0 | 2005 11 01 | 691 | 0.1− | 0.2+ | 2005 11 25 | G96 | 0.0 | 0.1− |
| 1999 10 31 | 691 | 0.1− | 0.2+ | 2005 11 01 | 691 | 0.1+ | 0.4+ | 2005 12 01 | G96 | 0.3+ | 0.3− |
| 1999 11 05 | 691 | 0.1− | 0.5+ | 2005 11 01 | 691 | 0.3+ | 0.4+ | 2005 12 01 | G96 | 0.1+ | 0.0 |
| 1999 11 05 | 691 | 0.1+ | 0.3− | 2005 11 04 | 691 | 0.1+ | 0.4+ | 2005 12 01 | G96 | 0.1+ | 0.1− |
| 1999 11 05 | 691 | (0.7− | 2.6−) | 2005 11 04 | 691 | 0.0 | 0.7+ | 2005 12 01 | G96 | 0.1− | 0.1+ |
| 1999 11 09 | 691 | 0.1− | 0.2− | 2005 11 04 | 691 | 0.1+ | 0.4+ | 2005 12 29 | G96 | 0.0 | 0.1− |
| 1999 11 09 | 691 | 0.2− | 0.1+ | 2005 11 22 | 691 | 0.1+ | 0.0 | 2005 12 29 | G96 | 0.1− | 0.1− |
| 1999 11 09 | 691 | 0.3+ | 0.5− | 2005 11 22 | 691 | 0.4− | 0.2+ | 2005 12 29 | G96 | 0.3− | 0.4− |
| 2005 10 28 | G96 | 0.1+ | 0.1− | 2005 11 22 | 691 | 0.3− | 0.1− | 2005 12 29 | G96 | 0.8+ | 0.2− |
| 2005 10 28 | G96 | 0.2+ | 0.0 | 2005 11 25 | G96 | 0.1− | 0.1− | | | | |
| 2005 10 28 | G96 | 0.3− | 0.6− | 2005 11 25 | G96 | 0.2+ | 0.1− | | | | |

**2005 UJ$_{435}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.31121 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29667560 | $\omega$ | 59.59762 | | −0.63199954 | | +0.77494995 |
| $a$ | 2.2264596 | $\Omega$ | 171.19850 | | −0.72257802 | | −0.58674148 |
| $e$ | 0.0994963 | $i$ | 2.02228 | | −0.28010280 | | −0.23491917 |
| $P$ | 3.32 | $H$ | 19.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.1+ | 0.5+ | 2005 10 29 | G96 | 0.0 | 0.5− | 2005 11 05 | 691 | 0.3− | 0.3+ |
| 1998 09 14 | 691 | 0.2+ | 0.3+ | 2005 10 29 | G96 | 0.5− | 0.6− | 2005 11 05 | 691 | 0.1+ | 0.3+ |
| 1998 09 14 | 691 | 0.4+ | 0.1+ | 2005 10 29 | G96 | 0.4− | 0.7− | 2005 11 05 | 691 | 0.2+ | 0.1− |
| 1998 09 19 | 645 | 0.1− | 0.3− | 2005 10 29 | G96 | 0.1+ | 0.6− | 2005 12 04 | G96 | 0.3+ | 0.8− |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2005 11 01 | 691 | 0.1− | 0.5+ | 2005 12 04 | G96 | 0.8+ | 0.2− |
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2005 11 01 | 691 | 0.4− | 0.2+ | 2005 12 04 | G96 | 0.3− | 1.1− |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2005 11 01 | 691 | 0.5+ | 0.1+ | 2005 12 04 | G96 | 0.2+ | 0.4− |

**2005 UV$_{442}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.94821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28478723 | $\omega$ | 268.32416 | | −0.55741360 | −0.83002658 | |
| $a$ | 2.2879984 | $\Omega$ | 215.57348 | | +0.77387342 | −0.51132896 | |
| $e$ | 0.1081602 | $i$ | 1.83217 | | +0.30068256 | −0.22270734 | |
| $P$ | 3.46 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.3− | 0.6− | 2005 09 30 | G96 | 0.4+ | 0.4− | 2005 12 02 | G96 | 0.3+ | 0.0 |
| 1991 10 08 | 691 | 0.1+ | 1.2+ | 2005 09 30 | G96 | 0.5+ | 0.4− | 2005 12 02 | G96 | 0.3+ | 0.1− |
| 2000 04 26 | 691 | 0.3+ | 0.2− | 2005 10 30 | 703 | 1.1− | 0.6+ | 2005 12 02 | G96 | 0.2+ | 0.1+ |
| 2000 04 26 | 691 | 0.2+ | 0.1+ | 2005 10 30 | 703 | 0.6− | 0.6+ | 2005 12 02 | G96 | 0.3− | 0.1+ |
| 2000 04 26 | 691 | 0.1+ | 0.2+ | 2005 10 30 | 703 | 1.0− | 0.0 | 2005 12 26 | G96 | 0.0 | 0.2+ |
| 2000 05 02 | 691 | 0.6+ | 0.8+ | 2005 10 30 | 703 | 0.5+ | 0.4− | 2005 12 26 | G96 | 0.4− | 0.3− |
| 2000 05 02 | 691 | 0.0 | 0.4+ | 2005 11 01 | 704 | 0.4+ | 1.1+ | 2005 12 26 | G96 | 0.2− | 0.2+ |
| 2000 05 02 | 691 | 0.3− | 0.3+ | 2005 11 01 | 704 | 0.5− | 1.3+ | 2005 12 26 | G96 | 0.0 | 0.1− |
| 2000 05 11 | 691 | 0.1− | 0.3− | 2005 11 01 | 704 | 0.1− | 0.5+ | 2006 01 04 | G96 | 0.2+ | 0.0 |
| 2000 05 11 | 691 | 0.6− | 0.1− | 2005 11 25 | G96 | 0.0 | 0.2− | 2006 01 04 | G96 | 0.7+ | 0.1− |
| 2000 05 11 | 691 | 0.0 | 0.4− | 2005 11 25 | G96 | 0.2− | 0.3− | 2006 01 04 | G96 | 0.4− | 0.1+ |
| 2005 09 30 | G96 | 0.4+ | 0.4− | 2005 11 25 | G96 | 0.0 | 0.2− | 2006 01 04 | G96 | 0.4− | 0.1− |
| 2005 09 30 | G96 | 0.4+ | 0.5− | 2005 11 25 | G96 | 0.4+ | 0.1− | | | | |

**2005 UF$_{443}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.73282 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18192917 | $\omega$ | 116.27927 | | −0.50482794 | −0.86312641 | |
| $a$ | 3.0846164 | $\Omega$ | 4.10832 | | +0.71514918 | −0.42643388 | |
| $e$ | 0.2893934 | $i$ | 10.21892 | | +0.48343604 | −0.27049388 | |
| $P$ | 5.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 699 | 1.0+ | 0.7+ | 2000 12 19 | 704 | 0.0 | 0.3− | 2005 11 01 | 699 | 0.5− | 1.1+ |
| 2000 11 24 | 699 | 0.5− | 0.9+ | 2000 12 19 | 704 | 0.3+ | 0.2− | 2005 11 01 | 699 | 1.0− | 0.3+ |
| 2000 11 24 | 699 | 0.2+ | 0.7− | 2001 01 05 | 704 | 0.4− | 0.2+ | 2005 11 01 | 699 | 0.2+ | 0.5+ |
| 2000 11 24 | 699 | 0.1− | 0.6+ | 2001 01 05 | 704 | 0.0 | 0.0 | 2005 11 02 | 704 | 0.4+ | 0.2− |
| 2000 11 26 | 645 | 0.0 | 0.1− | 2001 01 05 | 704 | 0.0 | 0.2− | 2005 11 02 | 704 | 0.7+ | 0.2− |
| 2000 11 26 | 645 | 0.0 | 0.1− | 2001 01 05 | 704 | 0.6+ | 0.3+ | 2005 11 02 | 704 | 0.8− | 0.3− |
| 2000 12 04 | 704 | 0.3− | 0.8+ | 2005 10 30 | 704 | 0.8+ | 1.4− | 2005 11 25 | 703 | 0.8+ | 0.1− |
| 2000 12 04 | 704 | 0.6− | 0.4− | 2005 10 30 | 704 | 0.3+ | 0.4+ | 2005 11 25 | 703 | 0.1− | 0.1− |
| 2000 12 04 | 704 | 0.2− | 1.2+ | 2005 10 30 | 704 | 0.9+ | 1.4+ | 2005 11 25 | 703 | 1.1− | 0.2+ |
| 2000 12 04 | 704 | 0.6− | 1.0+ | 2005 10 30 | 704 | 0.2+ | 0.0 | 2005 11 25 | 703 | 0.0 | 0.0 |
| 2000 12 19 | 704 | 0.4− | 0.5+ | 2005 10 30 | 704 | 0.2− | 0.9− | | | | |
| 2000 12 19 | 704 | 0.2+ | 0.2− | 2005 11 01 | 699 | 0.7− | 0.5− | | | | |

**2005 UR$_{444}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.13504 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28267804 | $\omega$ | 165.34645 | | +0.57997345 | −0.81403212 | |
| $a$ | 2.2993654 | $\Omega$ | 249.19553 | | +0.74399868 | +0.54496402 | |
| $e$ | 0.1539473 | $i$ | 1.92155 | | +0.33180830 | +0.20091272 | |
| $P$ | 3.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 699 | 0.6− | 0.8+ | 2005 11 26 | G96 | 0.1+ | 0.1+ | 2005 12 02 | 926 | 0.1− | 0.2− |
| 1998 11 25 | 699 | 0.9+ | 0.6+ | 2005 11 26 | G96 | 0.0 | 0.1− | 2005 12 04 | 704 | 0.2− | 0.2+ |
| 1998 11 25 | 699 | 0.9− | 0.0 | 2005 11 26 | G96 | 0.2− | 0.0 | 2005 12 04 | 704 | 0.3− | 0.3− |
| 1998 12 08 | 691 | 0.3+ | 0.6− | 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 04 | 704 | 0.6+ | 0.8− |
| 1998 12 08 | 691 | 0.1+ | 0.2− | 2005 11 26 | G96 | 0.2+ | 0.0 | 2005 12 04 | 704 | 0.1− | 0.3− |
| 1998 12 08 | 691 | 0.1+ | 0.7− | 2005 11 26 | G96 | 0.0 | 0.1+ | 2005 12 04 | 704 | 0.2− | 0.1− |
| 2005 10 27 | G96 | 0.0 | 0.7− | 2005 11 29 | 704 | 0.7− | 1.2+ | 2005 12 06 | 704 | 0.5− | 0.4− |
| 2005 10 27 | G96 | 0.4+ | 0.7− | 2005 11 29 | 704 | 0.4− | 0.2− | 2005 12 06 | 704 | 1.6− | 0.2+ |
| 2005 10 27 | G96 | 0.3− | 0.5− | 2005 11 29 | 704 | 0.4− | 0.4+ | 2005 12 06 | 704 | 0.1+ | 0.3+ |
| 2005 10 27 | G96 | 0.0 | 0.6− | 2005 11 29 | 704 | 0.4− | 0.3+ | 2005 12 06 | 704 | 0.1− | 0.3+ |
| 2005 10 30 | G96 | 0.1+ | 0.0 | 2005 11 29 | 704 | 0.3− | 0.1+ | 2005 12 06 | 704 | 0.3+ | 0.2− |
| 2005 10 30 | G96 | 0.2+ | 0.2− | 2005 11 30 | 704 | 0.1− | 0.0 | 2005 12 09 | 704 | 1.1− | 0.6+ |
| 2005 10 30 | G96 | 0.3+ | 0.1+ | 2005 11 30 | 704 | 0.5− | 0.2+ | 2005 12 09 | 704 | 1.0− | 0.8− |
| 2005 10 30 | G96 | 0.1− | 0.1+ | 2005 11 30 | 704 | 0.2− | 0.1+ | 2005 12 09 | 704 | 0.6− | 0.8+ |
| 2005 11 01 | 704 | 0.1− | 0.2− | 2005 11 30 | 704 | 0.4+ | 0.3− | 2005 12 09 | 704 | 0.5+ | 0.0 |
| 2005 11 01 | 704 | 0.5+ | 0.1+ | 2005 11 30 | 704 | 0.1+ | 0.2− | 2005 12 25 | G96 | 0.0 | 0.2− |
| 2005 11 01 | 704 | 0.3− | 0.3− | 2005 12 01 | 704 | 1.5+ | 0.7+ | 2005 12 25 | G96 | 0.4− | 0.2− |
| 2005 11 01 | 704 | 0.5+ | 1.6− | 2005 12 01 | 704 | 0.7+ | 0.4+ | 2005 12 25 | G96 | 0.2+ | 0.1− |
| 2005 11 01 | 704 | 0.3+ | 0.3− | 2005 12 01 | 704 | 0.2+ | 0.1+ | 2005 12 25 | G96 | 0.1+ | 0.4− |
| 2005 11 12 | 691 | 0.0 | 0.2+ | 2005 12 01 | 704 | 0.3+ | 0.5+ | 2006 01 21 | G96 | 0.4− | 0.2− |
| 2005 11 12 | 691 | 0.1− | 0.3+ | 2005 12 01 | 704 | 0.1+ | 0.2+ | 2006 01 21 | G96 | 0.2+ | 0.2− |
| 2005 11 12 | 691 | 0.1− | 0.4+ | 2005 12 01 | 704 | 0.2+ | 0.4+ | 2006 01 21 | G96 | 0.0 | 0.2− |
| 2005 11 21 | 703 | 0.6− | 0.0 | 2005 12 01 | 704 | 0.2+ | 0.1+ | 2006 01 21 | G96 | 0.3+ | 0.1+ |
| 2005 11 21 | 703 | 0.3+ | 0.7+ | 2005 12 01 | 704 | 0.4+ | 0.3+ | 2006 01 22 | G96 | 0.4+ | 0.2− |
| 2005 11 21 | 703 | 0.5+ | 0.5+ | 2005 12 01 | 704 | 0.7+ | 0.4+ | 2006 01 22 | G96 | 0.3− | 0.1− |
| 2005 11 21 | 703 | 0.0 | 0.7+ | 2005 12 01 | 704 | 0.2+ | 0.5+ | 2006 01 22 | G96 | 0.3+ | 0.0 |
| 2005 11 26 | G96 | 0.1+ | 0.1− | 2005 12 02 | 926 | 0.1+ | 0.0 | 2006 01 22 | G96 | 0.1+ | 0.0 |
| 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 02 | 926 | 0.1+ | 0.1− | | | | |

**2005 UZ$_{444}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.59801 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18683596 | $\omega$ | 347.59022 | | +0.71571867 | −0.69807502 | |
| $a$ | 3.0303706 | $\Omega$ | 56.70304 | | +0.64288061 | +0.64682877 | |
| $e$ | 0.1146651 | $i$ | 1.43485 | | +0.27285768 | +0.30708925 | |
| $P$ | 5.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 695 | 0.1− | 0.4+ | 2005 10 31 | 691 | 0.0 | 0.1+ | 2005 11 25 | G96 | 0.2− | 0.6− |
| 2002 02 08 | 695 | 0.5+ | 0.5+ | 2005 10 31 | 691 | 0.1+ | 0.0 | 2005 12 01 | 691 | 0.4− | 0.2+ |
| 2005 09 29 | G96 | 0.3− | 0.8− | 2005 10 31 | 691 | 0.2− | 0.1+ | 2005 12 01 | 691 | 0.3+ | 0.5+ |
| 2005 09 29 | G96 | 0.2− | 0.6− | 2005 11 01 | 704 | 1.9− | 0.0 | 2005 12 01 | 691 | 0.0 | 0.3+ |
| 2005 09 29 | G96 | 0.2− | 0.8− | 2005 11 01 | 704 | 0.6− | 0.5+ | 2006 01 22 | G96 | 0.1+ | 0.8− |
| 2005 09 29 | G96 | 0.1− | 0.3− | 2005 11 01 | 704 | 1.1+ | 0.3+ | 2006 01 22 | G96 | 0.5− | 0.4+ |
| 2005 10 22 | 691 | 0.2+ | 0.0 | 2005 11 01 | 704 | 0.7− | 0.8+ | 2006 01 22 | G96 | 0.0 | 0.1− |
| 2005 10 22 | 691 | 0.1+ | 0.3+ | 2005 11 05 | 683 | 0.1− | 1.1− | 2006 01 22 | G96 | 0.1− | 0.5+ |
| 2005 10 22 | 691 | 0.0 | 0.2+ | 2005 11 05 | 683 | 2.0+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2005 10 23 | 703 | 0.8− | 1.1− | 2005 11 05 | 683 | 0.6+ | 0.7− | 2006 11 24 | G96 | 0.6− | 0.6− |
| 2005 10 23 | 703 | 0.6− | 0.9+ | 2005 11 25 | G96 | 0.1− | 0.4− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2005 10 23 | 703 | 0.2− | 0.9− | 2005 11 25 | G96 | 0.4+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.6− |
| 2005 10 23 | 703 | 0.5+ | 0.9− | 2005 11 25 | G96 | 0.3+ | 0.3− | | | | |

**2005 UJ$_{445}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.99470 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23833129 | $\omega$ | 340.31520 | | −0.99205881 | +0.11224121 | |
| $a$ | 2.5764122 | $\Omega$ | 206.32734 | | −0.09125997 | −0.95288679 | |
| $e$ | 0.1311240 | $i$ | 7.35248 | | −0.08655023 | −0.28179544 | |
| $P$ | 4.14 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 691 | 0.1− | 0.1+ | 2003 05 05 | 704 | 0.1+ | 1.2− | 2005 10 31 | 691 | 0.3− | 0.1+ |
| 2000 09 24 | 691 | 0.3− | 1.1+ | 2003 05 05 | 704 | 1.1+ | 0.7+ | 2005 11 02 | G96 | 0.1− | 0.8− |
| 2000 09 24 | 691 | 0.2− | 0.7+ | 2003 05 05 | 704 | 0.6− | 1.6+ | 2005 11 02 | G96 | 0.3+ | 0.6− |
| 2001 11 17 | 704 | (0.6− | 2.2−) | 2003 05 05 | 704 | 0.2+ | 1.2+ | 2005 11 02 | G96 | 0.1+ | 0.5− |
| 2001 11 17 | 704 | 0.5+ | 0.5− | 2003 05 05 | 704 | 0.6− | 0.4+ | 2005 11 02 | G96 | 0.6− | 0.8− |
| 2001 11 17 | 704 | 0.2+ | 1.2− | 2003 05 10 | 691 | 0.3+ | 0.7+ | 2005 11 04 | 691 | 0.0 | 0.1+ |
| 2001 11 17 | 704 | 0.2− | 1.4− | 2003 05 10 | 691 | 0.3+ | 0.8+ | 2005 11 04 | 691 | 0.3+ | 0.5+ |
| 2003 04 25 | 291 | 0.1+ | 0.2+ | 2003 05 10 | 691 | 0.4+ | 0.9+ | 2005 11 04 | 691 | 0.1− | 0.0 |
| 2003 04 25 | 691 | 0.1+ | 0.3+ | 2005 10 22 | 691 | 0.2+ | 0.5+ | 2005 11 10 | 691 | 0.3− | 1.2+ |
| 2003 04 25 | 291 | 0.1+ | 0.5+ | 2005 10 22 | 691 | 0.2+ | 0.4+ | 2005 11 10 | 691 | 0.0 | 1.7+ |
| 2003 04 25 | 691 | 0.0 | 0.2+ | 2005 10 22 | 691 | 0.2− | 0.2− | 2005 11 10 | 691 | 0.1+ | 1.2+ |
| 2003 04 25 | 291 | 0.1+ | 0.4+ | 2005 10 31 | 691 | 0.3− | 0.2+ | | | | |
| 2003 04 25 | 691 | 0.0 | 0.1+ | 2005 10 31 | 691 | 0.2− | 0.1+ | | | | |

**2005 UC$_{448}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.33180 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23248389 | $\omega$ | 121.33961 | | +0.22939428 | | −0.97170182 |
| $a$ | 2.6194341 | $\Omega$ | 315.28536 | | +0.86360517 | | +0.22989023 |
| $e$ | 0.2333172 | $i$ | 4.59272 | | +0.44895921 | | +0.05427764 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.5+ | 0.3− | 2005 09 30 | 703 | 0.5− | 0.3− | 2005 11 07 | 704 | 0.2− | 0.6− |
| 2001 12 09 | 704 | 0.7+ | 0.6+ | 2005 09 30 | 703 | 0.5+ | 0.8− | 2005 11 07 | 704 | 0.5+ | 0.0 |
| 2001 12 09 | 704 | 0.7+ | 0.0 | 2005 09 30 | 703 | 0.6− | 0.4+ | 2005 11 07 | 704 | 0.0 | 0.8− |
| 2001 12 09 | 704 | 0.5+ | 0.1+ | 2005 09 30 | 703 | 0.2− | 0.1− | 2005 11 07 | 704 | 0.9+ | 1.3− |
| 2001 12 17 | 704 | 1.1− | 0.1− | 2005 10 30 | 704 | 0.3− | 0.2+ | 2005 11 07 | 704 | 0.3− | 1.3− |
| 2001 12 17 | 704 | 1.8− | 0.6− | 2005 10 30 | 704 | 0.1− | 0.4+ | 2005 11 25 | 703 | (2.9− | 2.5−) |
| 2001 12 17 | 704 | 1.1+ | 0.4+ | 2005 10 30 | 704 | 0.5+ | 0.4+ | 2005 11 25 | 703 | (2.5− | 2.0−) |
| 2001 12 17 | 704 | 1.6− | 0.8− | 2005 10 30 | 704 | 0.3+ | 0.2+ | 2005 11 25 | 703 | (1.4− | 2.2−) |
| 2001 12 17 | 704 | 1.2+ | 0.8+ | 2005 10 30 | 704 | 0.6− | 0.3+ | 2005 11 25 | 703 | 1.5− | 1.5− |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2005 11 02 | 704 | 0.3+ | 1.1+ | 2005 11 29 | 704 | 0.4+ | 0.1+ |
| 2002 01 08 | 704 | 0.9+ | 0.2− | 2005 11 02 | 704 | 0.5+ | 0.3+ | 2005 11 29 | 704 | 0.1+ | 0.1+ |
| 2002 01 08 | 704 | 0.5− | 0.4+ | 2005 11 02 | 704 | 0.3+ | 1.0+ | 2005 11 29 | 704 | 0.2+ | 0.4− |
| 2002 01 08 | 704 | 0.5− | 0.3− | 2005 11 02 | 704 | 0.5− | 1.2+ | | | | |
| 2002 01 08 | 704 | 0.1− | 0.1− | 2005 11 02 | 704 | 0.5+ | 0.8+ | | | | |

**2005 UO$_{456}$ = 2005 UE$_{503}$ = 2000 GT$_{16}$**

Id. Minor Planet Center (d, *MPO* 102380; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.72125 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29619648 | $\omega$ | 114.72818 | | −0.61570987 | | −0.78787533 |
| $a$ | 2.2288600 | $\Omega$ | 13.29744 | | +0.70207116 | | −0.55566589 |
| $e$ | 0.1656815 | $i$ | 3.09098 | | +0.35776729 | | −0.26549553 |
| $P$ | 3.33 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.5+ | 0.6− | 2000 04 05 | 704 | 1.0+ | 1.0+ | 2005 10 30 | 703 | (2.7+ | 0.8+) |
| 1995 10 23 | 691 | 0.4+ | 0.2− | 2000 04 05 | 704 | 1.1+ | 0.5+ | 2005 10 30 | 703 | 0.7− | 0.2− |
| 1995 10 23 | 691 | 0.4+ | 0.3− | 2000 04 06 | 704 | 0.8− | 0.2+ | 2005 10 30 | 703 | 0.6+ | 0.1+ |
| 1995 11 17 | 691 | 0.1− | 0.8+ | 2000 04 06 | 704 | 0.5+ | 2.0+ | 2005 11 03 | G96 | 0.4+ | 0.2− |
| 1995 11 17 | 691 | 2.5− | 2.8+ | 2000 04 06 | 704 | 1.1+ | 1.1+ | 2005 11 03 | G96 | 0.7+ | 0.3− |
| 1995 11 17 | 691 | 0.1− | 0.9+ | 2002 12 06 | 645 | 0.1− | 0.2− | 2005 11 03 | G96 | 0.1+ | 0.0 |
| 2000 04 01 | 691 | 0.0 | 0.2+ | 2002 12 06 | 645 | 0.0 | 0.2− | 2005 11 03 | G96 | 0.3+ | 0.3− |
| 2000 04 01 | 691 | 0.1+ | 0.2+ | 2005 10 29 | 703 | 0.1+ | 0.0 | 2005 11 12 | 691 | 0.1+ | 0.1− |
| 2000 04 01 | 691 | 0.1− | 0.2+ | 2005 10 29 | 703 | 0.7− | 0.1+ | 2005 11 12 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 704 | 1.0+ | 0.4+ | 2005 10 29 | 703 | 0.4− | 0.5+ | 2005 11 12 | 691 | 0.1− | 0.4− |
| 2000 04 05 | 704 | 0.1− | 0.6+ | 2005 10 29 | 703 | 0.3+ | 0.5+ | | | | |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2005 10 30 | 703 | (1.9+ | 0.7−) | | | | |

**2005 UR$_{456}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.53255 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27177677 | $\omega$ | 223.61424 | | −0.55946730 | | −0.82777916 |
| $a$ | 2.3604483 | $\Omega$ | 260.44774 | | +0.77170812 | | −0.50165858 |
| $e$ | 0.1158228 | $i$ | 2.45067 | | +0.30242837 | | −0.25123759 |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 645 | 0.0 | 0.2− | 2003 02 26 | 608 | 0.1− | 0.4− | 2005 11 03 | G96 | 0.1+ | 0.1+ |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2005 10 27 | 691 | 0.0 | 0.5+ | 2005 11 03 | G96 | 0.3+ | 0.1+ |
| 2003 02 12 | 608 | 0.2+ | 0.9+ | 2005 10 27 | 691 | 0.1− | 0.3+ | 2005 11 03 | G96 | 0.4+ | 0.2− |
| 2003 02 12 | 608 | 0.6− | 0.7+ | 2005 10 27 | 691 | 0.2− | 0.2+ | 2005 11 03 | G96 | 0.2+ | 0.1+ |
| 2003 02 12 | 608 | 0.2+ | 0.6+ | 2005 10 30 | 703 | 0.4+ | 0.4− | 2005 11 03 | G96 | 0.3+ | 0.1− |
| 2003 02 22 | 644 | 0.4+ | 0.5+ | 2005 10 30 | 703 | 0.3+ | 0.4− | 2005 11 03 | G96 | 0.2+ | 0.1− |
| 2003 02 22 | 644 | 0.5+ | 0.9+ | 2005 10 30 | 703 | 1.2+ | 0.7− | 2005 11 12 | 691 | 0.1− | 0.2+ |
| 2003 02 22 | 644 | 0.5+ | 0.3+ | 2005 10 30 | 703 | 0.4− | 0.5− | 2005 11 12 | 691 | 0.3− | 0.0 |
| 2003 02 26 | 608 | 0.3+ | 0.5− | 2005 11 03 | G96 | 0.1+ | 0.0 | 2005 11 12 | 691 | 0.3− | 0.3− |
| 2003 02 26 | 608 | 0.1− | 0.3− | 2005 11 03 | G96 | 0.3+ | 0.0 | | | | |

**2005 UT$_{456}$ = 2005 VU$_{78}$**

Id. Minor Planet Center (d, *MPO* 98190)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.04233 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29679709 | $\omega$ | 304.41984 | | +0.95103345 | | −0.28888520 |
| $a$ | 2.2258520 | $\Omega$ | 72.58638 | | +0.30764700 | | +0.85042997 |
| $e$ | 0.1781171 | $i$ | 6.61468 | | +0.02981124 | | +0.43967511 |
| $P$ | 3.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.2− | 0.1+ | 2005 11 21 | 703 | (1.7− | 2.2−) | 2005 12 02 | 704 | 0.5+ | 0.7+ |
| 1995 12 16 | 691 | 0.1− | 0.1+ | 2005 11 21 | 703 | 0.0 | 0.6− | 2005 12 02 | 704 | 0.4+ | 1.2+ |
| 1995 12 16 | 691 | 0.2+ | 0.0 | 2005 11 28 | 703 | 0.3+ | 0.3− | 2005 12 02 | 695 | 0.4− | 0.1− |
| 2004 05 13 | 691 | 0.4+ | 0.1+ | 2005 11 28 | 703 | 1.0− | 0.5− | 2005 12 04 | 704 | 0.2+ | 0.0 |
| 2004 05 13 | 691 | 0.2+ | 0.1− | 2005 11 28 | 703 | 0.9− | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.2− |
| 2004 05 13 | 691 | 0.4− | 0.6+ | 2005 11 28 | 703 | 1.4− | 0.3+ | 2005 12 04 | G96 | 0.3+ | 0.2− |
| 2005 10 30 | 644 | 0.5− | 0.3− | 2005 11 28 | 703 | 0.2+ | 0.3− | 2005 12 04 | G96 | 0.1+ | 0.4− |
| 2005 10 30 | 644 | 0.3− | 0.0 | 2005 11 28 | 703 | 0.2+ | 1.0− | 2005 12 04 | G96 | 0.1− | 0.2− |
| 2005 10 30 | 644 | 0.1− | 0.1− | 2005 11 28 | 703 | 0.6+ | 0.4+ | 2005 12 04 | 704 | 0.7− | 0.8+ |
| 2005 11 01 | G96 | 0.1− | 0.1− | 2005 11 28 | 703 | 0.5− | 0.0 | 2005 12 04 | 704 | 0.1− | 0.4+ |
| 2005 11 01 | G96 | 0.1− | 0.4− | 2005 11 28 | 703 | 0.2+ | 0.4+ | 2005 12 06 | 704 | 0.8+ | 0.9+ |
| 2005 11 01 | G96 | 0.1− | 0.3− | 2005 11 28 | 703 | 1.8+ | 0.0 | 2005 12 06 | 704 | 1.1+ | 0.0 |
| 2005 11 02 | G96 | 0.1− | 0.3− | 2005 11 28 | 703 | 0.0 | 0.7+ | 2005 12 06 | 704 | 0.7− | 1.9− |
| 2005 11 02 | G96 | 0.2+ | 0.7− | 2005 11 28 | 703 | 1.1− | 0.5− | 2005 12 06 | 704 | 0.4+ | 0.9+ |
| 2005 11 02 | G96 | 0.4+ | 0.6− | 2005 11 29 | G96 | 0.1− | 0.3− | 2005 12 06 | 704 | 0.6+ | 1.1+ |
| 2005 11 02 | G96 | 0.1+ | 0.3− | 2005 11 29 | G96 | 0.2− | 0.3− | 2005 12 25 | G96 | 0.2− | 0.4− |
| 2005 11 06 | 704 | 0.2− | 0.1− | 2005 11 29 | G96 | 0.4− | 0.2− | 2005 12 25 | G96 | 0.4+ | 0.4− |
| 2005 11 06 | 704 | 0.3+ | 0.5+ | 2005 11 29 | G96 | 0.0 | 0.3− | 2005 12 25 | G96 | 0.1− | 0.5− |
| 2005 11 06 | 704 | 0.8+ | 0.3+ | 2005 12 01 | 704 | 1.3+ | 0.7+ | 2005 12 25 | G96 | 1.7− | 0.4− |
| 2005 11 06 | 704 | 0.5+ | 0.5+ | 2005 12 01 | 704 | 0.4+ | 0.9− | 2006 01 07 | G96 | 0.2− | 0.1− |
| 2005 11 06 | 704 | 0.1− | 0.2+ | 2005 12 01 | 704 | 0.1+ | 1.0+ | 2006 01 07 | G96 | 0.5− | 0.2+ |
| 2005 11 08 | 704 | 0.6− | 0.2+ | 2005 12 01 | 704 | 0.5− | 1.7+ | 2006 01 07 | G96 | 0.2+ | 0.0 |
| 2005 11 08 | 704 | 0.5− | 0.5+ | 2005 12 01 | 704 | 0.0 | 0.5+ | 2006 01 07 | G96 | 0.3+ | 0.2− |
| 2005 11 08 | 704 | 1.3− | 0.2+ | 2005 12 02 | 695 | 0.1+ | 0.2− | 2006 01 25 | G96 | 0.8+ | 0.8− |
| 2005 11 08 | 704 | 0.3+ | 0.2+ | 2005 12 02 | 704 | 0.5− | 1.5+ | 2006 01 25 | G96 | 1.0+ | 0.7− |
| 2005 11 08 | 704 | 1.2+ | 0.3− | 2005 12 02 | 695 | 0.3− | 0.2− | 2006 01 25 | G96 | 0.0 | 0.3− |
| 2005 11 21 | 703 | 0.1+ | 0.2+ | 2005 12 02 | 704 | 0.9+ | 0.4− | 2006 01 25 | G96 | 0.2+ | 0.3− |
| 2005 11 21 | 703 | 0.2+ | 0.2+ | 2005 12 02 | 704 | 1.5− | 0.6+ | | | | |

**2005 UT$_{460}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.49471 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22338791 | $\omega$ | 103.49255 | | +0.99816751 | | −0.00636535 |
| $a$ | 2.6900661 | $\Omega$ | 256.89704 | | −0.01727324 | | +0.92310227 |
| $e$ | 0.1398112 | $i$ | 3.54223 | | +0.05799362 | | +0.38450187 |
| $P$ | 4.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 07 | 691 | 0.1+ | 0.0 | 2005 11 03 | 691 | 0.1+ | 0.2+ | 2005 12 04 | G96 | 0.0 | 0.2− |
| 2000 09 07 | 691 | 0.1− | 0.0 | 2005 11 03 | 691 | 0.4− | 0.3+ | 2005 12 28 | G96 | 0.4− | 0.4− |
| 2000 09 07 | 691 | 0.0 | 0.0 | 2005 11 03 | 691 | 0.3+ | 0.3+ | 2005 12 28 | G96 | 0.3+ | 0.1− |
| 2002 01 07 | 691 | 1.1+ | 0.1− | 2005 11 26 | G96 | 0.2+ | 0.3− | 2005 12 28 | G96 | 0.0 | 0.1+ |
| 2002 01 07 | 691 | 0.7− | 0.2+ | 2005 11 26 | G96 | 0.2+ | 0.2− | 2005 12 28 | G96 | 0.2+ | 0.3− |
| 2002 01 07 | 691 | 0.4− | 0.1+ | 2005 11 26 | G96 | 0.6− | 0.5− | 2006 01 21 | G96 | 0.1− | 0.1+ |
| 2005 10 28 | G96 | 0.2− | 0.1− | 2005 11 26 | G96 | 0.3− | 0.3− | 2006 01 21 | G96 | 0.1− | 0.6− |
| 2005 10 28 | G96 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.1+ | 0.1− | 2006 01 21 | G96 | 0.2− | 0.4− |
| 2005 10 28 | G96 | 0.4+ | 0.3− | 2005 12 04 | G96 | 0.2+ | 0.1− | 2006 01 21 | G96 | 0.4+ | 0.7− |
| 2005 10 28 | G96 | 0.3− | 0.2+ | 2005 12 04 | G96 | 0.3+ | 0.0 | | | | |

**2005 UN$_{463}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.18473 | | (2000.0) | | | |
| $n$ | 0.26531469 | $\omega$ | 86.41121 | | −0.86671853 | +0.49691105 |
| $a$ | 2.3986222 | $\Omega$ | 123.37999 | | −0.47576832 | −0.79747902 |
| $e$ | 0.1249101 | $i$ | 2.97511 | | −0.14981152 | −0.34220844 |
| $P$ | 3.71 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 291 | 0.1− | 0.3+ | 2005 10 30 | 691 | 0.2+ | 0.0 | 2005 11 03 | 691 | 0.3− | 0.0 |
| 2003 01 10 | 291 | 0.0 | 0.3+ | 2005 10 30 | 691 | 0.3+ | 0.4+ | 2005 11 03 | 691 | 0.3− | 0.2− |
| 2003 01 10 | 291 | 0.2+ | 0.5+ | 2005 10 30 | 691 | 0.4− | 0.2− | 2005 12 01 | G96 | 0.0 | 0.1+ |
| 2003 01 25 | 645 | 0.1+ | 0.1− | 2005 11 01 | G96 | 1.0+ | 0.3+ | 2005 12 01 | G96 | 1.1− | 0.9− |
| 2003 01 25 | 645 | 0.1+ | 0.1− | 2005 11 01 | G96 | 0.7+ | 0.0 | 2005 12 01 | G96 | 0.0 | 0.1+ |
| 2003 01 31 | 291 | 0.4− | 0.0 | 2005 11 01 | G96 | 0.4+ | 0.2− | 2005 12 01 | G96 | 0.1− | 0.0 |
| 2003 01 31 | 291 | 0.2− | 0.2− | 2005 11 01 | G96 | 0.0 | 0.5− | | | | |
| 2003 01 31 | 291 | 0.4− | 0.3+ | 2005 11 03 | 691 | 0.3+ | 0.1+ | | | | |

**2005 UP$_{475}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 100.67456 | | (2000.0) | | | |
| $n$ | 0.17400640 | $\omega$ | 230.85414 | | +0.77004241 | +0.42932662 |
| $a$ | 3.1775513 | $\Omega$ | 98.81037 | | −0.32929258 | +0.90101586 |
| $e$ | 0.1920133 | $i$ | 28.52617 | | −0.54644404 | +0.06204088 |
| $P$ | 5.66 | $H$ | 14.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 26 | 704 | 0.4+ | 0.4− | 2005 10 22 | 644 | 0.1+ | 0.2+ | 2005 11 06 | 703 | 0.3− | 0.4+ |
| 2005 09 26 | 704 | 0.4+ | 0.1+ | 2005 10 22 | 644 | 0.1+ | 0.4+ | 2005 11 06 | 703 | 0.6+ | 0.7− |
| 2005 09 26 | 704 | 0.1− | 0.7− | 2005 10 31 | 703 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2005 09 26 | 704 | 0.0 | 0.1+ | 2005 10 31 | 703 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2005 10 22 | 644 | 0.3− | 0.1+ | 2005 10 31 | 703 | 0.8− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2005 10 22 | 644 | 0.3− | 0.2+ | 2005 10 31 | 703 | 1.3− | 0.8− | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2005 10 22 | 644 | 0.1− | 0.5+ | 2005 11 06 | 703 | 0.2+ | 0.6− | | | | |
| 2005 10 22 | 644 | 0.0 | 0.2+ | 2005 11 06 | 703 | 1.6+ | 0.6+ | | | | |

**2005 US$_{477}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.40902 | | (2000.0) | | | |
| $n$ | 0.17940934 | $\omega$ | 294.08711 | | +0.35045537 | −0.86913302 |
| $a$ | 3.1134318 | $\Omega$ | 130.57362 | | +0.93514983 | +0.34530134 |
| $e$ | 0.2067586 | $i$ | 27.35143 | | −0.05172843 | +0.35408302 |
| $P$ | 5.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 26 | 644 | 0.3+ | 0.2− | 2005 11 06 | 703 | 0.4− | 0.5+ | 2006 02 27 | G96 | 0.0 | 0.3+ |
| 2005 10 26 | 644 | 0.2+ | 0.0 | 2005 11 06 | 703 | 0.2+ | 1.0+ | 2006 11 23 | 691 | 0.4+ | 0.2+ |
| 2005 10 26 | 644 | 0.4+ | 0.4− | 2005 12 04 | 699 | 0.1+ | 2.7− | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2005 10 30 | 703 | 0.3+ | 0.2− | 2005 12 04 | 699 | 0.7− | 0.4+ | 2006 11 23 | 691 | 1.0− | 0.2+ |
| 2005 10 30 | 703 | 0.6+ | 0.5− | 2005 12 04 | 699 | 1.1+ | 0.5+ | 2006 11 28 | 691 | 0.2+ | 0.1− |
| 2005 10 30 | 703 | 0.7− | 0.9+ | 2005 12 04 | 699 | 0.8+ | 0.3+ | 2006 11 28 | 691 | 0.5+ | 0.3− |
| 2005 10 30 | 703 | 1.0− | 0.4− | 2006 02 27 | G96 | 0.3+ | 0.1+ | 2006 11 28 | 691 | 0.1− | 0.4+ |
| 2005 11 06 | 703 | 0.9− | 0.1+ | 2006 02 27 | G96 | 0.3− | 0.0 | | | | |
| 2005 11 06 | 703 | 0.1+ | 0.3+ | 2006 02 27 | G96 | 0.4− | 0.3+ | | | | |

**2005 UV$_{482}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.72895 | | (2000.0) | | | |
| $n$ | 0.23658776 | $\omega$ | 243.48144 | | +0.55744376 | −0.82968365 |
| $a$ | 2.5890546 | $\Omega$ | 172.42982 | | +0.81910984 | +0.54380606 |
| $e$ | 0.1686361 | $i$ | 13.02445 | | +0.13533486 | +0.12609524 |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.0 | 0.1− | 2001 12 19 | 704 | 0.5+ | 1.2+ | 2005 10 05 | 703 | 0.2− | 0.3− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2001 12 19 | 704 | 1.4+ | 1.3+ | 2005 10 05 | 703 | 0.8+ | 0.1− |
| 2001 11 17 | 699 | 0.2+ | 0.6+ | 2001 12 19 | 704 | 0.9− | 0.5+ | 2005 10 22 | 644 | 0.3− | 0.0 |
| 2001 11 17 | 699 | 0.2+ | 1.1+ | 2001 12 19 | 704 | 1.4+ | 0.7− | 2005 10 22 | 644 | 0.3− | 0.2+ |
| 2001 11 17 | 699 | 0.7+ | 1.0− | 2001 12 19 | 704 | 0.3− | 0.2− | 2005 10 22 | 644 | 0.2− | 0.3+ |
| 2001 11 17 | 699 | 0.8− | 0.1− | 2002 01 09 | 645 | 0.1− | 0.1− | 2005 11 01 | 703 | 0.3+ | 0.2− |
| 2001 12 07 | 704 | 0.6+ | 0.3− | 2002 01 09 | 645 | 0.0 | 0.1− | 2005 11 01 | 703 | 1.0− | 1.4− |
| 2001 12 07 | 704 | 0.2+ | 0.1+ | 2002 01 14 | 645 | 0.0 | 0.1+ | 2005 11 01 | 703 | 0.1− | 0.5+ |
| 2001 12 07 | 704 | 1.1− | 1.1+ | 2002 01 14 | 645 | 0.0 | 0.0 | 2005 11 01 | 703 | 0.6− | 0.1+ |
| 2001 12 07 | 704 | 0.3− | 0.2− | 2005 10 05 | 703 | 1.0+ | 0.0 | | | | |
| 2001 12 07 | 704 | 0.1+ | 0.3+ | 2005 10 05 | 703 | 0.5+ | 1.3+ | | | | |

**2005 UB$_{488}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.96473 | | (2000.0) | | | |
| $n$ | 0.22771553 | $\omega$ | 287.10362 | | −0.96454685 | +0.06442800 |
| $a$ | 2.6558749 | $\Omega$ | 257.16787 | | +0.02462662 | −0.94353919 |
| $e$ | 0.1072143 | $i$ | 15.21739 | | −0.26276016 | −0.32493513 |
| $P$ | 4.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.5− | 0.1− | 2003 03 20 | 644 | 0.6− | 0.1+ | 2005 10 23 | 703 | 0.1+ | 0.3+ |
| 2001 11 11 | 704 | 0.5− | 0.1− | 2003 03 29 | 699 | 0.3− | 0.2+ | 2005 10 23 | 703 | 0.4+ | 0.6− |
| 2001 11 11 | 704 | 0.2+ | 0.0 | 2003 03 29 | 699 | 1.2+ | 1.4+ | 2005 10 26 | 699 | 1.2− | 0.0 |
| 2001 11 11 | 704 | 0.4+ | 0.4+ | 2003 03 29 | 699 | 0.1− | 0.7− | 2005 10 26 | 699 | 0.3+ | 0.4+ |
| 2001 11 11 | 704 | 0.3− | 0.7+ | 2003 03 29 | 699 | 1.0+ | 0.3+ | 2005 10 26 | 699 | 0.3− | 0.3− |
| 2001 11 24 | 704 | 2.3− | 0.2+ | 2003 03 29 | 699 | 0.4− | 0.6+ | 2005 10 26 | 699 | 1.1+ | 0.4+ |
| 2001 11 24 | 704 | 1.6+ | 1.3− | 2003 03 29 | 699 | 0.3− | 0.5− | 2005 10 29 | 703 | 1.2− | 1.1− |
| 2001 11 24 | 704 | 0.6+ | 1.0− | 2003 03 29 | 699 | 0.6− | 0.7− | 2005 10 29 | 703 | 0.7+ | 0.1− |
| 2001 11 24 | 704 | 1.8+ | 1.2− | 2003 03 29 | 699 | 0.6+ | 0.2− | 2005 10 29 | 703 | 0.2+ | 0.6+ |
| 2001 12 20 | 644 | 0.2− | 0.8+ | 2003 04 07 | 704 | 0.1− | 0.8− | 2005 10 29 | 703 | 0.4− | 0.7− |
| 2001 12 20 | 644 | 0.6− | 0.5+ | 2003 04 07 | 704 | 0.3+ | 0.4− | 2005 11 05 | 703 | 1.0+ | 1.2+ |
| 2001 12 20 | 644 | 0.4− | 0.5+ | 2003 04 07 | 704 | 0.4− | 0.2+ | 2005 11 05 | 703 | 0.5− | 0.2+ |
| 2003 03 20 | 644 | 0.3− | 0.4+ | 2005 10 23 | 703 | 0.1+ | 0.6+ | 2005 11 05 | 703 | 1.3− | 0.2+ |
| 2003 03 20 | 644 | 0.1+ | 0.2+ | 2005 10 23 | 703 | 0.9+ | 0.6− | 2005 11 05 | 703 | 0.3− | 0.4+ |

**2005 UQ$_{489}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.58848 | | (2000.0) | | | |
| $n$ | 0.17085159 | $\omega$ | 114.27321 | | −0.37283892 | −0.92785159 |
| $a$ | 3.2165480 | $\Omega$ | 357.56233 | | +0.75489859 | −0.29761786 |
| $e$ | 0.1389614 | $i$ | 12.33556 | | +0.53955468 | −0.22475550 |
| $P$ | 5.77 | $H$ | 14.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 06 | 704 | 0.2+ | 0.4− | 2001 01 05 | 704 | 0.0 | 0.0 | 2005 10 23 | 703 | 0.8− | 0.8+ |
| 2000 11 06 | 704 | 0.1+ | 0.8+ | 2001 01 05 | 704 | 0.1− | 0.5+ | 2005 10 23 | 703 | 0.1− | 0.5− |
| 2000 11 06 | 704 | 0.2+ | 1.0− | 2001 01 05 | 704 | 0.1+ | 0.0 | 2005 10 23 | 703 | 1.2+ | 0.1+ |
| 2000 12 01 | 704 | 0.2+ | 0.4− | 2001 01 18 | 704 | 0.0 | 0.3− | 2005 10 23 | 703 | 1.1− | 0.6− |
| 2000 12 01 | 704 | 0.7− | 0.3− | 2001 01 18 | 704 | 0.0 | 0.4+ | 2005 10 29 | 703 | 0.1− | 0.5+ |
| 2000 12 01 | 704 | 0.7− | 0.0 | 2001 01 18 | 704 | 0.3− | 0.8+ | 2005 10 29 | 703 | 0.3− | 0.3+ |
| 2000 12 01 | 704 | 0.0 | 0.1+ | 2002 04 09 | 704 | 0.2+ | 0.1+ | 2005 10 29 | 703 | 0.4− | 0.3− |
| 2000 12 01 | 704 | 0.1− | 0.4+ | 2002 04 09 | 704 | 0.7− | 0.5− | 2005 10 29 | 703 | 0.6− | 1.1− |
| 2000 12 18 | 699 | 0.2+ | 0.5− | 2002 04 09 | 704 | 0.5− | 1.1+ | 2005 11 03 | 704 | 0.4+ | 0.3− |
| 2000 12 18 | 699 | 0.1− | 0.1+ | 2002 04 09 | 704 | 1.1+ | 0.4− | 2005 11 03 | 704 | 0.4+ | 0.6+ |
| 2000 12 18 | 699 | 1.2+ | 0.8+ | 2005 10 03 | 704 | 0.4− | 0.5+ | 2005 11 03 | 704 | 0.1− | 0.1− |
| 2000 12 18 | 699 | 0.2− | 0.7− | 2005 10 03 | 704 | 0.1+ | 0.3+ | 2005 11 03 | 704 | 0.3− | 0.2+ |
| 2001 01 05 | 704 | 0.1+ | 0.1− | 2005 10 03 | 704 | 0.6+ | 0.4− | | | | |
| 2001 01 05 | 704 | 0.3− | 0.6− | 2005 10 03 | 704 | 1.4+ | 0.5+ | | | | |

**2005 UK$_{493}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.22964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22075890 | $\omega$ | 195.79456 | | +0.65642064 | +0.71940907 | |
| $a$ | 2.7113811 | $\Omega$ | 115.83758 | | −0.66195422 | +0.69364639 | |
| $e$ | 0.1004626 | $i$ | 14.61336 | | −0.36184052 | +0.03612863 | |
| $P$ | 4.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 03 | 493 | 0.9+ | 0.8+ | 2004 05 24 | 704 | 0.6− | 0.1+ | 2005 09 27 | 704 | 1.8− | 0.3+ |
| 2000 07 03 | 493 | 0.0 | 0.5− | 2004 05 24 | 704 | 0.7+ | 0.8− | 2005 09 27 | 704 | 0.4+ | 0.5− |
| 2000 07 03 | 493 | 0.1+ | 0.2− | 2004 06 12 | 704 | 0.5− | 0.4+ | 2005 10 03 | 644 | 0.1+ | 0.1− |
| 2000 08 01 | 807 | 0.0 | 0.6− | 2004 06 12 | 704 | 0.4+ | 1.1+ | 2005 10 03 | 644 | 0.1− | 0.1− |
| 2000 08 01 | 807 | 0.1− | 0.5− | 2004 06 12 | 704 | 0.7− | 1.1+ | 2005 10 03 | 644 | 0.1− | 0.2− |
| 2001 11 17 | 608 | 0.2− | 0.7+ | 2004 06 12 | 704 | 0.4+ | 1.3+ | 2005 10 25 | 704 | 0.1− | 1.6+ |
| 2001 11 17 | 608 | 0.7− | 0.0 | 2004 06 19 | 703 | 0.4− | 1.5+ | 2005 10 25 | 704 | 0.4− | 0.2− |
| 2001 11 17 | 608 | 0.8− | 0.0 | 2004 06 19 | 703 | 0.2− | 0.5+ | 2005 10 25 | 704 | 0.2− | 0.2+ |
| 2001 12 19 | 209 | 0.2+ | 0.4+ | 2004 06 19 | 703 | 0.4+ | 0.6+ | 2005 10 25 | 704 | 1.1+ | 0.2+ |
| 2001 12 19 | 209 | 1.0+ | 0.0 | 2004 06 19 | 703 | 0.3− | 0.1+ | 2005 10 31 | 703 | 0.4− | 0.1− |
| 2001 12 19 | 209 | 0.3+ | 0.1+ | 2004 06 27 | 691 | 0.2+ | 0.1+ | 2005 10 31 | 703 | 0.0 | 0.3+ |
| 2001 12 20 | 209 | 0.6− | 0.1+ | 2004 06 27 | 691 | 0.2+ | 0.3+ | 2005 10 31 | 703 | 0.7+ | 0.5− |
| 2001 12 20 | 209 | 0.5− | 0.5+ | 2004 06 27 | 691 | 0.1+ | 0.2+ | 2005 10 31 | 703 | 0.7+ | 0.4+ |
| 2001 12 20 | 209 | 1.8− | 0.9+ | 2005 09 13 | 703 | 1.4+ | 0.2+ | 2005 12 01 | 703 | 0.9− | 0.2+ |
| 2003 03 08 | 644 | 0.8+ | 0.8+ | 2005 09 13 | 703 | 0.8+ | 0.4− | 2005 12 01 | 703 | 0.9+ | 0.3− |
| 2003 03 08 | 644 | 0.8+ | 0.8+ | 2005 09 13 | 703 | 0.1+ | 0.8+ | 2005 12 01 | 703 | 1.0− | 0.3− |
| 2003 03 08 | 644 | 1.0+ | 1.0+ | 2005 09 13 | 703 | 0.1− | 0.2− | 2005 12 01 | 703 | 0.3− | 2.1+ |
| 2004 05 24 | 704 | 0.5− | 0.7− | 2005 09 27 | 704 | 1.1− | 0.4+ | | | | |
| 2004 05 24 | 704 | 0.2+ | 0.2− | 2005 09 27 | 704 | 0.4− | 1.0+ | | | | |

**2005 US$_{494}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.00787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18339543 | $\omega$ | 213.82923 | | +0.87632692 | −0.48141686 | |
| $a$ | 3.0681532 | $\Omega$ | 174.86041 | | +0.47322891 | +0.85375471 | |
| $e$ | 0.1595076 | $i$ | 10.93825 | | +0.09003074 | +0.19834490 | |
| $P$ | 5.37 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 291 | 0.1− | 0.3+ | 2005 10 31 | 703 | 0.2+ | 0.8− | 2005 11 29 | 703 | 0.9− | 0.3− |
| 2002 03 21 | 291 | 0.1+ | 0.1+ | 2005 10 31 | 703 | 0.2− | 0.4+ | 2005 11 29 | 703 | 0.3− | 0.2+ |
| 2002 03 21 | 291 | 0.1+ | 0.0 | 2005 10 31 | 703 | 0.1− | 0.7− | 2005 11 29 | 703 | 0.3− | 1.2− |
| 2005 09 30 | 644 | 0.1− | 0.6+ | 2005 11 19 | 644 | 0.5+ | 0.1+ | 2005 12 06 | 703 | 0.1− | 0.3− |
| 2005 09 30 | 644 | 0.1+ | 0.4+ | 2005 11 19 | 644 | 0.1+ | 0.3+ | 2005 12 06 | 703 | 0.1− | 0.4+ |
| 2005 09 30 | 644 | 0.3+ | 0.5+ | 2005 11 19 | 644 | 1.0− | 0.8− | 2005 12 06 | 703 | 0.5+ | 0.1+ |
| 2005 10 25 | 703 | 0.4− | 0.7+ | 2005 11 22 | 703 | 0.2− | 0.4+ | 2005 12 06 | 703 | 0.3+ | 0.2− |
| 2005 10 25 | 703 | 0.3+ | 1.1+ | 2005 11 22 | 703 | 0.4− | 0.7+ | 2006 10 30 | G96 | 0.1+ | 0.0 |
| 2005 10 25 | 703 | 0.1− | 0.7− | 2005 11 22 | 703 | 1.5+ | 0.2+ | 2006 10 30 | G96 | 0.2+ | 0.4− |
| 2005 10 25 | 703 | 0.0 | 0.6+ | 2005 11 22 | 703 | 0.1+ | 0.4− | 2006 10 30 | G96 | 0.1− | 0.1− |
| 2005 10 31 | 703 | 0.4− | 0.4+ | 2005 11 29 | 703 | 0.7+ | 0.9− | 2006 10 30 | G96 | 0.4− | 0.4− |

**2005 UY$_{497}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.33395 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23526236 | $\omega$ | 119.70760 | | −0.57935098 | +0.81088897 | |
| $a$ | 2.5987694 | $\Omega$ | 114.65789 | | −0.77568517 | −0.51741873 | |
| $e$ | 0.0507335 | $i$ | 5.21036 | | −0.25032970 | −0.27338057 | |
| $P$ | 4.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | (2.2− | 0.7+) | 2003 03 07 | 699 | (0.7+ | 1.9−) | 2005 10 29 | 703 | 1.1− | 0.3+ |
| 2001 12 11 | 704 | 0.1− | 1.1+ | 2003 03 07 | 699 | 0.3+ | 0.3+ | 2005 11 05 | 699 | 0.1− | 1.2+ |
| 2001 12 11 | 704 | 0.1+ | 0.2− | 2003 04 10 | 691 | 0.4− | 0.1+ | 2005 11 05 | 699 | 1.4+ | 0.8− |
| 2001 12 11 | 704 | (1.4+ | 1.6−) | 2003 04 10 | 691 | 0.2− | 0.3+ | 2005 11 05 | 699 | 0.0 | 1.4− |
| 2003 02 22 | 644 | 1.1+ | 0.2+ | 2003 04 10 | 691 | 0.3− | 0.4+ | 2005 11 05 | 703 | 0.1+ | 0.2− |
| 2003 02 22 | 644 | 1.1+ | 0.2+ | 2004 07 15 | E12 | 1.4+ | 1.2+ | 2005 11 05 | 703 | 0.4+ | 0.3− |
| 2003 02 22 | 644 | 1.2+ | 0.4+ | 2004 07 15 | E12 | 0.7− | 1.3+ | 2005 11 05 | 703 | 0.9− | 0.1+ |
| 2003 02 28 | 704 | 0.2+ | 1.1− | 2004 07 15 | E12 | 0.3− | 0.4+ | 2005 11 05 | 703 | 0.6+ | 0.0 |
| 2003 02 28 | 704 | 0.0 | 0.4− | 2004 07 15 | E12 | 0.7− | 0.6+ | 2005 11 05 | 699 | 0.6− | 0.3− |
| 2003 02 28 | 704 | (0.9− | 1.8−) | 2005 10 27 | 699 | 0.5− | 1.2+ | 2005 11 10 | 703 | 0.1+ | 0.3+ |
| 2003 03 06 | 699 | 1.3− | 0.3+ | 2005 10 27 | 699 | 0.4− | 0.1− | 2005 11 10 | 703 | 0.0 | 0.6− |
| 2003 03 06 | 699 | 0.9+ | 0.6+ | 2005 10 27 | 699 | 1.0− | 0.6+ | 2005 11 10 | 703 | 0.5− | 0.5+ |
| 2003 03 06 | 699 | (1.0− | 2.3+) | 2005 10 27 | 699 | 0.5+ | 1.3+ | 2005 11 10 | 703 | 0.5+ | 1.1− |
| 2003 03 06 | 699 | 0.8+ | 0.7+ | 2005 10 29 | 703 | 0.9+ | 1.3+ | 2006 10 19 | 695 | 0.1− | 0.3− |
| 2003 03 07 | 699 | (1.2+ | 2.3−) | 2005 10 29 | 703 | 0.7− | 0.7+ | 2006 10 19 | 695 | 0.4+ | 0.1− |
| 2003 03 07 | 699 | 0.4+ | 0.3+ | 2005 10 29 | 703 | 0.1− | 0.2+ | | | | |

**2005 UF$_{500}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.37575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23083756 | $\omega$ | 249.39464 | | +0.37347162 | −0.92762349 | |
| $a$ | 2.6318739 | $\Omega$ | 178.63409 | | +0.91562461 | +0.36762357 | |
| $e$ | 0.0519465 | $i$ | 14.07697 | | +0.14883052 | +0.06608764 | |
| $P$ | 4.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 691 | 0.1+ | 0.6− | 2003 04 10 | 291 | 0.1− | 0.1− | 2005 10 28 | 703 | 1.5+ | 0.1+ |
| 2003 03 27 | 691 | 0.1− | 0.5+ | 2003 04 10 | 291 | 0.1− | 0.1− | 2005 10 28 | 703 | 0.2− | 1.5− |
| 2003 03 27 | 691 | 0.2− | 0.1+ | 2005 10 27 | 644 | 0.3+ | 0.5+ | 2005 11 03 | 703 | 1.4− | 0.2− |
| 2003 04 09 | 691 | 0.1+ | 0.1− | 2005 10 27 | 644 | 0.1+ | 0.4+ | 2005 11 03 | 703 | 1.3+ | 0.2− |
| 2003 04 09 | 691 | 0.0 | 0.3− | 2005 10 27 | 644 | 0.4+ | 0.6+ | 2005 11 03 | 703 | 1.8− | 0.0 |
| 2003 04 09 | 691 | 0.1+ | 0.3+ | 2005 10 28 | 703 | (2.6+ | 0.1−) | 2005 11 03 | 703 | 0.6− | 0.1− |
| 2003 04 10 | 291 | 0.2+ | 0.1+ | 2005 10 28 | 703 | 0.5+ | 0.3+ | | | | |

**2005 UY$_{504}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.30804 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21948015 | $\omega$ | 21.46871 | | −0.68456940 | −0.72749837 | |
| $a$ | 2.7219024 | $\Omega$ | 111.76576 | | +0.66138792 | −0.64638741 | |
| $e$ | 0.1224886 | $i$ | 2.83564 | | +0.30648125 | −0.23006398 | |
| $P$ | 4.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 691 | 0.0 | 0.5− | 2004 11 03 | 291 | 0.1− | 0.3+ | 2006 02 20 | 691 | 0.1− | 0.2+ |
| 2000 11 30 | 691 | 0.1+ | 0.6− | 2004 11 03 | 291 | 0.4+ | 0.4+ | 2006 02 20 | 691 | 0.1− | 0.1− |
| 2000 11 30 | 691 | 0.3− | 0.3− | 2005 10 24 | 568 | 0.3+ | 0.1+ | 2006 03 03 | 408 | 0.3+ | 0.9+ |
| 2004 11 03 | 691 | 0.6− | 0.2+ | 2005 10 24 | 568 | 0.2+ | 0.2+ | 2006 03 03 | 408 | 0.2+ | 0.9+ |
| 2004 11 03 | 691 | 0.1− | 0.2+ | 2005 10 31 | 568 | 0.1+ | 0.2− | 2006 03 04 | 408 | 0.5+ | 0.7+ |
| 2004 11 03 | 691 | 0.6− | 0.0 | 2005 10 31 | 568 | 0.2+ | 0.2− | 2006 03 04 | 408 | 0.7+ | 1.0+ |
| 2004 11 03 | 291 | 0.5+ | 0.5+ | 2006 02 20 | 691 | 0.2+ | 0.3+ | | | | |

**2005 UJ$_{506}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.54199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18289214 | $\omega$ | 345.87084 | | +0.84037112 | +0.54018523 | |
| $a$ | 3.0737793 | $\Omega$ | 341.22895 | | −0.48290758 | +0.70896540 | |
| $e$ | 0.1304150 | $i$ | 7.94092 | | −0.24612324 | +0.45339604 | |
| $P$ | 5.39 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 644 | 0.1+ | 0.1− | 2005 10 31 | 568 | 0.2− | 0.1− | 2006 02 21 | G96 | 0.5− | 0.2− |
| 2003 09 22 | 644 | 0.2− | 0.2− | 2005 10 31 | 568 | 0.1+ | 0.2− | 2006 02 21 | G96 | 0.2+ | 0.0 |
| 2003 09 22 | 644 | 0.6+ | 0.0 | 2005 10 31 | 568 | 0.1+ | 0.2− | 2006 02 21 | G96 | 0.1+ | 0.0 |
| 2003 10 20 | 644 | 0.2− | 0.0 | 2006 01 30 | 691 | 0.1− | 0.2+ | 2006 02 21 | G96 | 0.1− | 0.7− |
| 2003 10 20 | 644 | 0.2− | 0.1+ | 2006 01 30 | 691 | 0.1+ | 0.1+ | 2006 03 03 | 691 | 0.1+ | 0.0 |
| 2003 10 20 | 644 | 0.1− | 0.2+ | 2006 01 30 | 691 | 0.0 | 0.1− | 2006 03 03 | 691 | 0.0 | 0.1− |
| 2005 10 24 | 568 | 0.2− | 0.0 | 2006 02 07 | 691 | 0.1+ | 0.3+ | 2006 03 03 | 691 | 0.0 | 0.2− |
| 2005 10 24 | 568 | 0.2− | 0.1− | 2006 02 07 | 691 | 0.0 | 0.1+ | | | | |
| 2005 10 24 | 568 | 0.1+ | 0.1− | 2006 02 07 | 691 | 0.1− | 0.1+ | | | | |

**2005 UE$_{508}$ = 2000 SO$_{374}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 126.36726 | | | (2000.0) | | |
| $n$ | 0.21219159 | $\omega$ | 267.50304 | | +0.85245308 | +0.50118400 |
| $a$ | 2.7838806 | $\Omega$ | 62.38229 | | −0.38756418 | +0.79681628 |
| $e$ | 0.2062399 | $i$ | 9.66706 | | −0.35088140 | +0.33748838 |
| $P$ | 4.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.0 | 2001 12 19 | 645 | 0.0 | 0.1− | 2005 10 29 | G96 | 0.2+ | 0.1− |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2005 10 22 | 691 | 0.1− | 0.2− | 2005 11 10 | 691 | 0.0 | 0.5+ |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2005 10 22 | 691 | 0.1− | 0.1− | 2005 11 10 | 691 | 0.4− | 0.2− |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2005 10 22 | 691 | 0.1+ | 0.2− | 2005 11 10 | 691 | 0.1− | 0.0 |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2005 10 29 | G96 | 0.6+ | 0.0 | 2005 11 25 | 691 | 0.2+ | 0.2+ |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2005 10 29 | G96 | 0.8+ | 0.1− | 2005 11 25 | 691 | 0.2+ | 0.1− |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2005 10 29 | G96 | 0.3+ | 0.2− | 2005 11 25 | 691 | 0.2− | 0.2+ |

**2005 UF$_{508}$ = 2000 WO$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 200.97424 | | | (2000.0) | | |
| $n$ | 0.24446641 | $\omega$ | 234.35011 | | +0.97672795 | −0.20541372 |
| $a$ | 2.5331248 | $\Omega$ | 137.40743 | | +0.21414105 | +0.91773045 |
| $e$ | 0.1138632 | $i$ | 5.23131 | | +0.01208820 | +0.33996474 |
| $P$ | 4.03 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 02 | 691 | 0.2− | 0.1− | 2002 03 09 | 691 | 0.1− | 0.1+ | 2006 01 07 | G96 | 1.2− | 0.2− |
| 1992 12 02 | 691 | 0.2+ | 0.0 | 2002 03 09 | 691 | 0.0 | 0.2+ | 2006 01 07 | G96 | 0.2− | 0.6− |
| 1992 12 02 | 691 | 0.1+ | 0.0 | 2002 03 09 | 691 | 0.2− | 0.0 | 2006 02 25 | 691 | 0.5+ | 0.1− |
| 2000 11 27 | 704 | 0.2− | 1.0− | 2004 11 04 | 703 | 0.4− | 0.0 | 2006 02 25 | 691 | 0.1+ | 0.0 |
| 2000 11 27 | 704 | 0.9− | 0.9+ | 2004 11 04 | 703 | 0.8+ | 0.3− | 2006 02 25 | 691 | 0.3+ | 0.1− |
| 2000 11 27 | 704 | 0.3− | 0.1+ | 2004 11 04 | 703 | 0.6− | 0.4− | 2006 03 04 | 691 | 0.1− | 0.1+ |
| 2000 11 27 | 704 | 0.7+ | 0.3+ | 2004 11 04 | 703 | 0.0 | 0.3+ | 2006 03 04 | 691 | 0.0 | 0.2+ |
| 2000 11 29 | 704 | 0.5− | 0.6+ | 2005 10 24 | 568 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.1+ | 0.0 |
| 2000 11 29 | 704 | 0.2+ | 0.1+ | 2005 10 24 | 568 | 0.1+ | 0.2+ | 2006 03 09 | G96 | 0.1− | 0.1+ |
| 2000 11 29 | 704 | 0.2+ | 0.4+ | 2005 10 24 | 568 | 0.0 | 0.1+ | 2006 03 09 | G96 | 0.3− | 0.1− |
| 2000 11 29 | 704 | 0.7+ | 0.2− | 2006 01 07 | G96 | 1.4− | 0.4− | 2006 03 09 | G96 | 0.4− | 0.3+ |
| 2000 11 29 | 704 | 0.3− | 0.2− | 2006 01 07 | G96 | 0.2− | 0.5− | | | | |

**2005 UG$_{508}$ = 1999 VJ$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 143.31912 | | | (2000.0) | | |
| $n$ | 0.21041782 | $\omega$ | 58.01815 | | +0.44207289 | −0.89696898 |
| $a$ | 2.7995036 | $\Omega$ | 5.75057 | | +0.80792359 | +0.39611083 |
| $e$ | 0.0271162 | $i$ | 2.44113 | | +0.38965501 | +0.19632337 |
| $P$ | 4.68 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 14 | 704 | 0.6+ | 0.2− | 2005 10 24 | 568 | 0.0 | 0.0 | 2006 03 05 | G96 | 0.3− | 0.4− |
| 1999 11 14 | 704 | 0.9− | 0.3− | 2005 11 30 | 691 | 1.2+ | 0.5+ | 2006 03 05 | G96 | 0.2− | 0.3− |
| 1999 11 14 | 704 | 1.3+ | 0.2− | 2005 11 30 | 691 | 1.0+ | 0.3+ | 2006 03 05 | G96 | 0.4− | 0.2− |
| 1999 11 15 | 691 | 0.1− | 0.1+ | 2005 11 30 | 691 | 0.3− | 0.2− | 2006 03 23 | G96 | 0.2+ | 0.2− |
| 1999 11 15 | 691 | 0.1+ | 0.1+ | 2005 12 07 | 291 | 0.2− | 0.3+ | 2006 03 23 | G96 | 0.1− | 0.3− |
| 1999 11 15 | 691 | 0.1− | 0.1− | 2005 12 07 | 291 | 0.4− | 0.0 | 2006 03 23 | G96 | 0.0 | 0.5− |
| 2001 02 20 | 704 | 0.5− | 0.4+ | 2005 12 07 | 291 | 0.1− | 0.3+ | 2006 03 23 | G96 | 0.0 | 0.3− |
| 2001 02 20 | 704 | 0.1− | 0.8− | 2006 01 26 | G96 | 0.6+ | 0.4+ | 2006 04 07 | G96 | 0.4− | 0.3− |
| 2001 02 20 | 704 | 0.2+ | 0.6− | 2006 01 26 | G96 | 0.2+ | 0.5+ | 2006 04 07 | G96 | 0.0 | 0.4+ |
| 2003 08 26 | 807 | 0.3− | 0.7+ | 2006 01 26 | G96 | 0.5+ | 0.7+ | 2006 04 07 | G96 | 0.1− | 0.3+ |
| 2003 08 26 | 807 | 0.2− | 0.7+ | 2006 01 26 | G96 | 0.2+ | 0.7+ | 2006 04 07 | G96 | 0.2− | 0.1− |
| 2004 12 02 | 703 | 0.1+ | 0.1+ | 2006 02 21 | G96 | 0.5− | 0.3− | 2006 04 21 | G96 | 0.0 | 0.1+ |
| 2004 12 02 | 703 | 0.1+ | 0.4− | 2006 02 21 | G96 | 0.0 | 0.4− | 2006 04 21 | G96 | 0.2− | 0.1+ |
| 2004 12 02 | 703 | 0.3− | 0.2+ | 2006 02 21 | G96 | 0.3− | 0.3− | 2006 04 21 | G96 | 0.1− | 0.0 |
| 2004 12 02 | 703 | 0.1− | 0.1+ | 2006 02 21 | G96 | 0.2+ | 0.1− | 2006 04 21 | G96 | 0.3− | 0.4− |
| 2005 10 24 | 568 | 0.0 | 0.1− | 2006 03 05 | G96 | 0.3− | 0.2− | | | | |

**2005 UH$_{508}$ = 2004 LP$_{22}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 219.34485 | | | (2000.0) | | |
| $n$ | 0.27951356 | $\omega$ | 193.06647 | | +0.05971544 | +0.98906460 |
| $a$ | 2.3166875 | $\Omega$ | 80.47723 | | −0.90310872 | +0.11108066 |
| $e$ | 0.0989028 | $i$ | 7.85908 | | −0.42523959 | −0.09701703 |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 14 | 704 | 1.1− | 0.5+ | 2005 10 25 | 691 | 0.2− | 0.3+ | 2005 11 10 | 691 | 1.6− | 0.9− |
| 2004 06 14 | 704 | 0.1+ | 0.0 | 2005 10 25 | 691 | 0.3+ | 0.2− | 2005 11 10 | 691 | 0.1+ | 0.1− |
| 2004 06 14 | 704 | 0.1+ | 0.2+ | 2005 10 25 | 691 | 0.8+ | 0.1+ | 2005 11 10 | 691 | 0.1− | 0.0 |
| 2004 06 17 | 704 | 0.7+ | 0.9− | 2005 10 25 | 691 | 0.3+ | 0.1− | 2005 12 07 | 291 | 0.1+ | 0.3+ |
| 2004 06 17 | 704 | 1.5− | 0.5+ | 2005 10 25 | 691 | 0.1− | 0.3+ | 2005 12 07 | 291 | 0.1+ | 0.2+ |
| 2004 06 17 | 704 | 0.5+ | 0.7− | 2005 11 06 | 691 | 0.1+ | 0.2− | 2005 12 07 | 291 | 0.2+ | 0.3+ |
| 2004 06 17 | 704 | 1.2+ | 0.5+ | 2005 11 06 | 691 | 0.3− | 0.2+ | | | | |
| 2005 10 25 | 691 | 0.2+ | 0.0 | 2005 11 06 | 691 | 0.2+ | 0.1− | | | | |

**2005 UJ$_{508}$ = 2001 YZ$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 289.03644 | | | (2000.0) | | |
| $n$ | 0.23652057 | $\omega$ | 274.54190 | | −0.82691433 | +0.55914219 |
| $a$ | 2.5895449 | $\Omega$ | 299.46584 | | −0.48486820 | −0.76280462 |
| $e$ | 0.1355484 | $i$ | 3.93658 | | −0.28480786 | −0.32479089 |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 04 | 691 | 0.1+ | 0.5− | 2001 12 19 | 704 | 0.1+ | 1.0+ | 2005 11 06 | 691 | 0.3− | 0.0 |
| 1994 01 04 | 691 | 0.7− | 0.3− | 2001 12 19 | 704 | 0.1+ | 1.2+ | 2005 11 06 | 691 | 0.1− | 0.3+ |
| 1994 01 04 | 691 | 0.1+ | 0.8− | 2001 12 19 | 704 | 0.1− | 1.8+ | 2005 11 12 | 691 | 0.3− | 0.3− |
| 2000 09 29 | 691 | 0.2− | 0.2+ | 2003 03 31 | 704 | 1.2+ | 1.3+ | 2005 11 12 | 691 | 0.1+ | 0.1+ |
| 2000 09 29 | 691 | 0.3− | 0.3+ | 2003 03 31 | 704 | 0.2+ | 0.1− | 2005 11 12 | 691 | 0.2− | 0.1+ |
| 2000 09 29 | 691 | 0.1− | 0.2+ | 2003 03 31 | 704 | 0.2+ | 0.9+ | 2005 11 21 | 691 | 0.1+ | 0.1+ |
| 2000 10 19 | 691 | 0.3+ | 0.0 | 2003 03 31 | 704 | 0.0 | 0.4− | 2005 11 21 | 691 | 0.0 | 0.2+ |
| 2000 10 19 | 691 | 0.3+ | 0.5− | 2003 04 07 | 704 | 0.1− | 1.1+ | 2005 11 21 | 691 | 0.4+ | 0.2+ |
| 2000 10 19 | 691 | 0.2+ | 0.3− | 2003 04 07 | 704 | 0.1+ | 0.1+ | 2006 01 27 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.1+ | 0.6+ | 2003 04 07 | 704 | 0.5− | 0.0 | 2006 01 27 | G96 | 0.7+ | 0.4− |
| 2001 12 18 | 704 | 0.9+ | 1.0+ | 2005 10 25 | 691 | 0.1− | 0.3− | 2006 01 27 | G96 | 0.3− | 0.9− |
| 2001 12 18 | 704 | 1.1+ | 1.3+ | 2005 10 25 | 691 | 0.3+ | 0.1+ | 2006 01 27 | G96 | 0.4+ | 0.1− |
| 2001 12 18 | 704 | 0.3− | 0.1− | 2005 10 25 | 691 | 0.3− | 0.1+ | | | | |
| 2001 12 19 | 704 | 0.3− | 0.6+ | 2005 11 06 | 691 | 0.1− | 0.1− | | | | |

**2005 UK$_{508}$ = 2000 SR$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 125.84770 | | | (2000.0) | | |
| $n$ | 0.22284392 | $\omega$ | 38.42245 | | +0.99718124 | −0.05210854 |
| $a$ | 2.6944421 | $\Omega$ | 324.45161 | | +0.02104563 | +0.88486472 |
| $e$ | 0.0362475 | $i$ | 5.32778 | | +0.07201847 | +0.46292454 |
| $P$ | 4.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 09 | 691 | 0.1+ | 0.2+ | 2002 01 14 | 704 | 0.6+ | 0.1− | 2005 11 10 | 599 | 0.2+ | 0.2− |
| 1991 09 09 | 691 | 0.0 | 0.0 | 2002 01 14 | 704 | 0.3+ | 0.5+ | 2005 11 10 | 599 | 0.6+ | 0.1− |
| 1991 09 09 | 691 | 0.2+ | 0.3− | 2002 02 10 | 704 | 1.4+ | 0.4+ | 2005 11 28 | 703 | (3.1+ | 0.4+) |
| 1996 12 02 | 691 | 1.6− | 0.4− | 2002 02 10 | 704 | 0.5+ | 0.5+ | 2005 11 28 | 703 | 0.1+ | 0.5+ |
| 1996 12 02 | 691 | 0.6+ | 0.1+ | 2002 02 10 | 704 | 0.2− | 0.8+ | 2005 11 28 | 703 | 0.0 | 0.5− |
| 1996 12 02 | 691 | 0.0 | 0.2− | 2002 02 10 | 704 | 0.3+ | 0.9+ | 2005 11 28 | 703 | 0.3+ | 0.6− |
| 2000 09 24 | 704 | 0.1+ | 0.6+ | 2004 08 21 | E12 | 0.6− | 0.9− | 2005 12 05 | 704 | 0.3− | 0.6− |
| 2000 09 24 | 704 | 0.9− | 0.8+ | 2004 08 21 | E12 | 0.6− | 0.4+ | 2005 12 05 | 704 | 1.0+ | 0.1+ |
| 2000 09 24 | 704 | 0.4+ | 1.0+ | 2004 08 21 | E12 | 0.0 | 0.3− | 2005 12 05 | 704 | 0.1− | 0.3+ |
| 2000 09 24 | 704 | 0.5− | 1.2+ | 2004 08 21 | E12 | 0.8− | 1.1− | 2006 12 01 | G96 | 0.2+ | 0.1+ |
| 2000 09 26 | 704 | 0.9+ | 0.7− | 2005 10 25 | 691 | 0.2− | 0.4− | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2000 09 26 | 704 | 0.0 | 1.1+ | 2005 10 25 | 691 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2000 09 26 | 704 | 0.2+ | 1.4+ | 2005 10 25 | 691 | 0.1− | 0.3− | 2006 12 01 | G96 | 0.3− | 0.9− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 704 | 1.0+ | 1.1+ | 2005 11 10 | 599 | 0.5+ | 0.2− | |
| 2002 01 14 | 704 | 0.3− | 1.0+ | 2005 11 10 | 599 | 0.4+ | 0.0 | |

**2005 UL$_{508}$ = 2001 SV$_{93}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.48536 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27481460 | $\omega$ | 115.40921 | | +0.92441504 | | +0.38076447 |
| $a$ | 2.3430210 | $\Omega$ | 222.21915 | | −0.36053891 | | +0.85381118 |
| $e$ | 0.1458468 | $i$ | 1.85916 | | −0.12437258 | | +0.35499985 |
| $P$ | 3.59 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.3− | 2005 10 25 | G96 | 0.5− | 0.3+ | 2005 12 04 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.3+ | 0.0 | 2005 12 04 | G96 | 0.1− | 0.3− |
| 2001 09 20 | 704 | 0.1+ | 1.0+ | 2005 10 25 | G96 | 0.1+ | 0.5− | 2005 12 04 | G96 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2005 10 25 | G96 | 0.3+ | 0.6+ | 2005 12 04 | G96 | 0.5+ | 0.0 |
| 2001 09 22 | 704 | 0.9+ | 1.3− | 2005 11 22 | 691 | 0.1− | 0.3+ | 2005 12 25 | 691 | 0.3− | 0.1+ |
| 2001 09 22 | 704 | 0.2− | 0.7− | 2005 11 22 | 691 | 1.0− | 0.2− | 2005 12 25 | 691 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 0.4− | 0.6+ | 2005 11 22 | 691 | 0.2+ | 0.1− | 2005 12 25 | 691 | 0.3+ | 0.0 |

**2005 UM$_{508}$ = 2001 YY$_{146}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.82803 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23276425 | $\omega$ | 328.62046 | | +0.68539790 | | −0.71945287 |
| $a$ | 2.6173303 | $\Omega$ | 77.84677 | | +0.68962180 | | +0.59182098 |
| $e$ | 0.2540455 | $i$ | 6.59797 | | +0.23377659 | | +0.36350447 |
| $P$ | 4.23 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 649 | 0.5+ | 0.1+ | 2005 10 27 | 699 | 0.9+ | 0.3+ | 2005 11 25 | 703 | 0.1+ | 0.3+ |
| 2001 12 18 | 649 | 0.3− | 0.4+ | 2005 10 27 | 699 | 0.1− | 0.6+ | 2005 11 25 | 703 | 1.2+ | 0.3+ |
| 2001 12 18 | 649 | 0.6− | 0.0 | 2005 10 27 | 699 | 0.2− | 0.4− | 2005 11 25 | 703 | 0.9+ | 0.5− |
| 2001 12 19 | 704 | 0.2− | 0.4− | 2005 11 05 | 703 | 0.3+ | 0.8− | 2005 12 29 | G96 | 0.7− | 0.2+ |
| 2001 12 19 | 704 | 0.0 | 0.8− | 2005 11 05 | 703 | 1.5− | 0.2− | 2005 12 29 | G96 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2005 11 05 | 703 | 0.5− | 0.1+ | 2005 12 29 | G96 | 0.2− | 0.3+ |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2005 11 05 | 703 | 0.6+ | 0.4− | 2005 12 29 | G96 | 0.7− | 0.3+ |
| 2005 10 27 | 699 | 0.6− | 0.3− | 2005 11 25 | 703 | 0.1− | 0.9+ | | | | |

**2005 UN$_{508}$ = 2000 CV$_{137}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.84834 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28558844 | $\omega$ | 191.42912 | | +0.85269754 | | +0.51642215 |
| $a$ | 2.2837171 | $\Omega$ | 137.17701 | | −0.46969138 | | +0.82393682 |
| $e$ | 0.2334332 | $i$ | 6.66015 | | −0.22868520 | | +0.23331585 |
| $P$ | 3.45 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.3− | 0.5− | 2005 10 27 | 699 | 1.4− | 0.0 | 2005 11 06 | 699 | 0.2+ | 0.5− |
| 2000 02 04 | 691 | 0.1− | 0.1− | 2005 10 31 | G96 | 0.1− | 0.2− | 2005 11 06 | 699 | 0.2+ | 0.9− |
| 2000 02 04 | 691 | 0.4+ | 0.0 | 2005 10 31 | G96 | 0.2− | 0.3− | 2005 11 06 | 699 | 0.2− | 0.1+ |
| 2000 02 05 | 691 | 0.1− | 0.0 | 2005 10 31 | G96 | 0.2+ | 0.1− | 2005 11 06 | 699 | 0.6− | 1.0+ |
| 2000 02 05 | 691 | 0.4+ | 0.2+ | 2005 10 31 | G96 | 0.0 | 0.1− | 2005 11 09 | 703 | 0.6− | 0.4+ |
| 2000 02 05 | 691 | 0.3− | 0.5+ | 2005 11 03 | 703 | 0.4− | 0.3− | 2005 11 09 | 703 | 1.7+ | 1.5− |
| 2005 10 27 | 699 | 0.7+ | 0.7+ | 2005 11 03 | 703 | 0.4+ | 0.4− | 2005 11 09 | 703 | 0.1− | 1.1+ |
| 2005 10 27 | 699 | 1.2+ | 0.1− | 2005 11 03 | 703 | 1.9− | 0.1− | 2005 11 09 | 703 | 0.4+ | 0.6+ |
| 2005 10 27 | 699 | 0.4+ | 0.7+ | 2005 11 03 | 703 | (2.4− | 0.3−) | | | | |

**2005 UO$_{508}$ = 2001 YG$_{21}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.22021 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25428204 | $\omega$ | 66.30560 | | +0.89546294 | | −0.44486318 |
| $a$ | 2.4675100 | $\Omega$ | 320.10412 | | +0.39904343 | | +0.81776272 |
| $e$ | 0.2174580 | $i$ | 1.39231 | | +0.19725736 | | +0.36518609 |
| $P$ | 3.88 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5− | 0.0 | 2001 12 19 | 704 | 0.4− | 0.5− | 2005 12 02 | G96 | 0.1+ | 0.5− |
| 2001 12 18 | 704 | 0.5− | 0.6+ | 2001 12 19 | 704 | 0.6+ | 0.3+ | 2005 12 02 | G96 | 0.4− | 0.3− |
| 2001 12 18 | 704 | 0.5+ | 0.1− | 2001 12 19 | 704 | 0.3− | 0.2− | 2005 12 02 | G96 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.3− | 2001 12 19 | 704 | 0.9+ | 0.5+ | 2005 12 02 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.0 | 0.2− | 2001 12 19 | 704 | 0.7− | 0.0 | 2005 12 08 | 691 | 0.1+ | 0.4+ |
| 2001 12 18 | 704 | 0.8− | 0.3+ | 2001 12 19 | 704 | 0.7+ | 0.9+ | 2005 12 08 | 691 | 0.3− | 0.1+ |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2001 12 19 | 704 | 0.1+ | 0.7+ | 2005 12 08 | 691 | (1.1+ | 2.9−) |
| 2001 12 18 | 704 | 1.1− | 0.7− | 2001 12 19 | 704 | 1.8+ | 0.7+ | 2005 12 28 | G96 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.6− | 0.6− | 2005 10 27 | G96 | 0.1+ | 0.1− | 2005 12 28 | G96 | 0.0 | 0.0 |
| 2001 12 18 | 704 | 0.6− | 0.6− | 2005 10 27 | G96 | 0.1− | 0.7− | 2005 12 28 | G96 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 0.3− | 0.4+ | 2005 10 27 | G96 | 0.2+ | 0.1− | 2005 12 28 | G96 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.7+ | 0.2+ | 2005 10 27 | G96 | 0.4− | 0.3− | | | | |

**2005 UP$_{508}$ = 2004 LK$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.23286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27540835 | $\omega$ | 253.92619 | | +0.20081444 | | +0.97940273 |
| $a$ | 2.3396522 | $\Omega$ | 27.68526 | | −0.88057068 | | +0.18989045 |
| $e$ | 0.1925688 | $i$ | 2.59898 | | −0.42926546 | | +0.06864343 |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.3+ | 0.5− | 2004 06 16 | 704 | 0.9− | 0.7+ | 2005 11 12 | 691 | 0.0 | 0.3+ |
| 2000 04 05 | 704 | 0.3− | 0.4+ | 2004 06 16 | 704 | 0.4− | 0.2+ | 2005 11 12 | 691 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.5+ | 1.2+ | 2004 06 16 | 704 | 0.7− | 0.6+ | 2005 11 12 | 691 | 0.1− | 0.2− |
| 2001 10 18 | 644 | 0.2+ | 0.1− | 2004 06 16 | 704 | 0.2− | 1.2+ | 2005 11 21 | 691 | 0.3+ | 0.0 |
| 2001 10 18 | 644 | 0.0 | 0.0 | 2005 10 28 | G96 | 0.0 | 0.3− | 2005 11 21 | 691 | 0.1− | 0.1+ |
| 2001 10 18 | 644 | 0.1− | 0.1+ | 2005 10 28 | G96 | 0.7+ | 0.5− | 2005 11 21 | 691 | 0.0 | 0.2+ |
| 2004 06 14 | 704 | 0.0 | 0.3+ | 2005 10 28 | G96 | 1.1− | 0.3+ | 2005 11 25 | 691 | 0.3− | 0.0 |
| 2004 06 14 | 704 | 0.4+ | 0.0 | 2005 10 28 | G96 | 0.3− | 0.3− | 2005 11 25 | 691 | 0.1+ | 0.3+ |
| 2004 06 14 | 704 | 1.7+ | 0.8+ | 2005 11 12 | 691 | 0.2+ | 0.1+ | 2005 11 25 | 691 | 0.1+ | 0.2+ |
| 2004 06 14 | 704 | 1.0+ | 1.1− | 2005 11 12 | 691 | 0.2− | 0.3+ | | | | |
| 2004 06 16 | 704 | 0.3− | 0.8+ | 2005 11 12 | 691 | 0.0 | 0.3+ | | | | |

**2005 UQ$_{508}$ = 2001 DK$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.45622 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16933581 | $\omega$ | 7.57881 | | +0.94656746 | | −0.31902285 |
| $a$ | 3.2357143 | $\Omega$ | 11.37002 | | +0.28188821 | | +0.74720965 |
| $e$ | 0.0757236 | $i$ | 13.87320 | | +0.15668146 | | +0.58301128 |
| $P$ | 5.82 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 645 | 0.0 | 0.0 | 2005 10 29 | 703 | 0.1− | 0.1+ | 2005 11 10 | 703 | 1.9− | 0.2− |
| 2001 02 21 | 645 | 0.0 | 0.0 | 2005 10 29 | 703 | 0.4+ | 0.6+ | 2005 11 21 | 644 | 0.6+ | 0.2− |
| 2001 02 22 | 645 | 0.0 | 0.0 | 2005 10 29 | 703 | 1.2− | 0.1− | 2005 11 21 | 644 | 0.6+ | 0.1− |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2005 10 29 | 703 | 0.1+ | 1.1+ | 2005 11 21 | 644 | 0.5+ | 0.1+ |
| 2002 04 02 | 691 | 0.2+ | 0.1+ | 2005 11 10 | 703 | 0.6+ | 0.5+ | 2005 12 22 | 644 | 0.6+ | 0.5− |
| 2002 04 02 | 691 | 0.1− | 0.0 | 2005 11 10 | 703 | 0.3+ | 1.4+ | 2005 12 22 | 644 | 0.5+ | 0.2− |
| 2002 04 02 | 691 | 0.3+ | 0.4+ | 2005 11 10 | 703 | 2.2− | 0.1− | 2005 12 22 | 644 | 0.6+ | 0.2− |

**2005 UR$_{508}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.54220 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19157624 | $\omega$ | 267.66925 | | +0.71027124 | | −0.70318435 |
| $a$ | 2.9801739 | $\Omega$ | 137.01128 | | +0.66323183 | | +0.65310178 |
| $e$ | 0.1291115 | $i$ | 2.71937 | | +0.23587771 | | +0.28105128 |
| $P$ | 5.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 29 | 691 | 0.1+ | 0.4− | 2005 10 22 | 691 | 0.3− | 0.2+ | 2005 12 08 | G96 | 0.2− | 0.4+ |
| 2000 11 29 | 691 | 0.0 | 0.3− | 2005 10 26 | 699 | 0.5+ | 0.8+ | 2005 12 08 | G96 | 0.3− | 0.0 |
| 2000 11 29 | 691 | 0.1+ | 0.5− | 2005 10 26 | 699 | 0.9+ | 0.0 | 2005 12 08 | G96 | 0.1− | 0.1+ |
| 2002 04 06 | 807 | 0.3+ | 0.8+ | 2005 10 26 | 699 | 0.8+ | 0.1− | 2005 12 08 | G96 | 0.2− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 06 | 807 | 0.2+ | 0.5+ | 2005 10 26 | 699 | 0.3+ | 1.2− | 2005 12 08 | G96 | 0.2− | 0.1− |
| 2004 07 21 | E12 | 0.0 | 0.1− | 2005 11 29 | 699 | 0.5+ | 0.1+ | 2005 12 08 | G96 | 0.2− | 0.0 |
| 2004 07 21 | E12 | 0.1− | 0.2+ | 2005 11 29 | 699 | 0.4− | 0.1− | 2006 01 28 | G96 | 0.7− | 0.0 |
| 2004 07 21 | E12 | 0.1− | 0.3− | 2005 11 29 | 699 | 1.0+ | 1.1+ | 2006 01 28 | G96 | 0.5− | 0.1− |
| 2004 07 21 | E12 | 0.2+ | 0.2− | 2005 11 29 | 699 | 0.4+ | 0.9+ | 2006 01 28 | G96 | 0.5− | 0.4− |
| 2005 10 22 | 691 | 0.2− | 0.3+ | 2005 12 08 | G96 | 0.2− | 0.1+ | 2006 01 28 | G96 | 0.4− | 0.1+ |
| 2005 10 22 | 691 | 0.2− | 0.1+ | 2005 12 08 | G96 | 0.3+ | 0.2+ | | | | |

**2005 US$_{508}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 189.18220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23470976 | $\omega$ | 280.65663 | | +0.29782691 | +0.95461107 | |
| $a$ | 2.6028469 | $\Omega$ | 6.67477 | | −0.86147115 | +0.27061497 | |
| $e$ | 0.0884004 | $i$ | 2.02264 | | −0.41129866 | +0.12443968 | |
| $P$ | 4.20 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 11 | 291 | 0.3− | 0.0 | 2005 10 24 | 691 | 0.0 | 0.1+ | 2005 11 05 | 691 | 0.4− | 0.2+ |
| 2003 03 11 | 291 | 0.6− | 0.1− | 2005 10 24 | 691 | 0.0 | 0.0 | 2005 11 05 | 691 | 0.6+ | 0.2− |
| 2003 03 11 | 291 | 0.4− | 0.2+ | 2005 11 01 | G96 | 0.5− | 0.2− | 2005 12 06 | G96 | 0.3+ | 0.5− |
| 2003 04 07 | 291 | 0.6+ | 0.1− | 2005 11 01 | G96 | 0.4+ | 0.2− | 2005 12 06 | G96 | 0.1− | 0.3− |
| 2003 04 07 | 291 | 0.5+ | 0.4+ | 2005 11 01 | G96 | 0.2+ | 0.3− | 2005 12 06 | G96 | 0.2− | 0.1+ |
| 2003 04 07 | 291 | 0.3+ | 0.3− | 2005 11 01 | G96 | 0.5+ | 0.0 | 2005 12 06 | G96 | 0.3− | 0.3− |
| 2005 10 24 | 691 | 0.4− | 0.4+ | 2005 11 05 | 691 | 0.2+ | 0.0 | | | | |

**2005 UU$_{508}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.64643 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24109408 | $\omega$ | 129.15745 | | −0.99502476 | +0.08662119 | |
| $a$ | 2.5566916 | $\Omega$ | 55.86500 | | −0.09936935 | −0.89844822 | |
| $e$ | 0.0738760 | $i$ | 3.40901 | | +0.00717383 | −0.43045043 | |
| $P$ | 4.09 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 08 | 691 | 0.2+ | 0.4− | 2005 10 24 | 691 | 0.1+ | 0.1− | 2005 11 26 | G96 | 0.1− | 0.0 |
| 2003 04 08 | 691 | 0.2− | 0.5− | 2005 10 24 | 691 | 0.2+ | 0.2− | 2005 12 31 | G96 | 0.2− | 0.3− |
| 2003 04 08 | 691 | 0.0 | 0.0 | 2005 11 01 | 691 | 0.0 | 0.1+ | 2005 12 31 | G96 | 0.1+ | 0.0 |
| 2003 04 26 | 691 | 0.0 | 0.5+ | 2005 11 01 | 691 | 0.1+ | 0.2− | 2005 12 31 | G96 | 0.2+ | 0.3− |
| 2003 04 26 | 691 | 0.1− | 0.2+ | 2005 11 01 | 691 | 0.5− | 0.4+ | 2005 12 31 | G96 | 0.8− | 0.4− |
| 2003 04 26 | 691 | 0.0 | 0.4+ | 2005 11 26 | G96 | 0.4+ | 0.2− | | | | |
| 2005 10 24 | 691 | 0.1+ | 0.1+ | 2005 11 26 | G96 | 0.4− | 0.9+ | | | | |

**2005 UV$_{508}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 190.93710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21362617 | $\omega$ | 210.32997 | | +0.20023233 | +0.97644682 | |
| $a$ | 2.7714034 | $\Omega$ | 71.32144 | | −0.88100144 | +0.21533234 | |
| $e$ | 0.0626011 | $i$ | 4.86646 | | −0.42865309 | +0.01354971 | |
| $P$ | 4.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 691 | 0.3+ | 0.1− | 2005 10 25 | 691 | 0.1+ | 0.2− | 2005 11 10 | 691 | 0.3+ | 1.1− |
| 2003 04 09 | 691 | 0.5+ | 0.1− | 2005 10 28 | G96 | 0.4− | 0.2− | 2005 11 10 | 691 | 0.2+ | 0.2+ |
| 2003 04 09 | 691 | 0.0 | 0.3+ | 2005 10 28 | G96 | 0.3+ | 0.0 | 2005 11 10 | 691 | 0.1+ | 0.2+ |
| 2003 05 02 | 691 | 0.1− | 0.1− | 2005 10 28 | G96 | 0.0 | 0.4− | 2005 12 04 | G96 | 0.1+ | 0.0 |
| 2003 05 02 | 691 | 0.5− | 0.3− | 2005 10 28 | G96 | 0.2+ | 0.2+ | 2005 12 04 | G96 | 0.4+ | 0.1+ |
| 2003 05 02 | 691 | 0.1− | 0.2+ | 2005 11 06 | 691 | 0.0 | 0.4+ | 2005 12 04 | G96 | 0.3− | 0.3+ |
| 2005 10 25 | 691 | 0.1− | 0.1− | 2005 11 06 | 691 | 0.2− | 0.1+ | 2005 12 04 | G96 | 0.6+ | 0.4+ |
| 2005 10 25 | 691 | 0.2− | 0.0 | 2005 11 06 | 691 | 0.5− | 0.2+ | | | | |

**2005 UW$_{508}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.70422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18106032 | $\omega$ | 258.29189 | | +0.71420602 | +0.61234534 | |
| $a$ | 3.0944765 | $\Omega$ | 62.95603 | | −0.39528330 | +0.75260812 | |
| $e$ | 0.1583415 | $i$ | 22.37419 | | −0.57763386 | +0.24210371 | |
| $P$ | 5.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 27 | 645 | 0.1+ | 0.0 | 2004 07 18 | E12 | 1.0− | 0.5− | 2005 11 10 | 703 | 0.9+ | 0.3+ |
| 2003 04 27 | 645 | 0.1+ | 0.0 | 2005 10 25 | 703 | 0.5− | 0.6+ | 2005 11 10 | 703 | 0.9+ | 1.3+ |
| 2003 04 28 | 645 | 0.0 | 0.1+ | 2005 10 25 | 703 | 0.1− | 1.1− | 2005 11 26 | 703 | 0.5− | 1.1+ |
| 2003 04 28 | 645 | 0.0 | 0.1+ | 2005 10 25 | 703 | 1.9− | 0.1+ | 2005 11 26 | 703 | 0.3− | 0.4+ |
| 2004 06 16 | E12 | 0.3+ | 0.2+ | 2005 10 25 | 703 | 1.5− | 1.6+ | 2005 11 26 | 703 | 0.4+ | 1.4+ |
| 2004 06 16 | E12 | 0.6− | 0.2+ | 2005 11 05 | 703 | 0.4− | 0.5− | 2005 11 26 | 703 | 0.6+ | 0.1− |
| 2004 06 16 | E12 | 0.3+ | 0.6+ | 2005 11 05 | 703 | 0.3− | 0.1+ | 2006 01 21 | G96 | 0.0 | 0.2− |
| 2004 06 16 | E12 | 0.2− | 0.5+ | 2005 11 05 | 703 | (3.3− | 1.7+) | 2006 01 21 | G96 | 0.9− | 0.6− |
| 2004 07 18 | E12 | 0.7+ | 0.6+ | 2005 11 05 | 703 | 1.1− | 1.3+ | 2006 01 21 | G96 | 0.6− | 0.1− |
| 2004 07 18 | E12 | 0.3+ | 0.7+ | 2005 11 10 | 703 | 0.4+ | 0.0 | 2006 01 21 | G96 | 0.2+ | 0.2− |
| 2004 07 18 | E12 | 0.3− | 0.6+ | 2005 11 10 | 703 | 0.2− | 0.9+ | | | | |

**2005 UX$_{508}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.21487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18087955 | $\omega$ | 201.40865 | | +0.95837341 | −0.28540573 | |
| $a$ | 3.0965379 | $\Omega$ | 175.15334 | | +0.27377672 | +0.91065213 | |
| $e$ | 0.1711220 | $i$ | 5.43194 | | +0.08103524 | +0.29875788 | |
| $P$ | 5.45 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 0.2− | 2004 08 12 | 704 | 0.7+ | 1.0+ | 2005 11 25 | 703 | (4.7− | 0.2+) |
| 1999 09 07 | 704 | 0.4+ | 0.7− | 2004 08 12 | 704 | 0.6+ | 1.8+ | 2005 11 30 | 704 | 0.2− | 0.0 |
| 1999 09 07 | 704 | 0.3+ | 1.4− | 2005 10 25 | 703 | 0.2− | 1.2− | 2005 11 30 | 704 | 0.3+ | 0.3+ |
| 1999 10 08 | 691 | 0.3− | 0.5+ | 2005 10 25 | 703 | 0.1− | 1.1+ | 2005 11 30 | 704 | 0.5+ | 0.1− |
| 1999 10 08 | 691 | 0.1− | 0.2+ | 2005 10 25 | 703 | 0.5− | 0.5+ | 2005 11 30 | 704 | 0.1− | 0.3+ |
| 1999 10 08 | 691 | 0.1− | 0.2+ | 2005 10 25 | 703 | 0.9− | 0.1− | 2005 11 30 | 644 | 0.3− | 0.2+ |
| 2002 02 20 | 691 | 0.2+ | 0.4+ | 2005 11 06 | G96 | 0.0 | 0.1− | 2005 11 30 | 644 | 0.1+ | 0.1− |
| 2002 02 20 | 691 | 0.1+ | 0.1+ | 2005 11 06 | G96 | 0.3− | 0.0 | 2005 11 30 | 644 | 0.1+ | 0.2+ |
| 2002 02 20 | 691 | 0.8+ | 0.5+ | 2005 11 06 | G96 | 0.1− | 0.0 | 2006 02 02 | G96 | 0.3+ | 0.5− |
| 2003 04 25 | 691 | 0.1− | 0.0 | 2005 11 06 | G96 | 0.1+ | 0.2− | 2006 02 02 | G96 | 0.2+ | 0.1− |
| 2003 04 25 | 691 | 0.3− | 0.1− | 2005 11 25 | 703 | (2.5+ | 0.7+) | 2006 02 02 | G96 | 0.1+ | 0.2− |
| 2003 04 25 | 691 | 0.5− | 0.2+ | 2005 11 25 | 703 | 0.6− | 0.5+ | 2006 02 02 | G96 | 0.0 | 0.0 |
| 2004 08 12 | 704 | 0.1+ | 0.6+ | 2005 11 25 | 703 | 0.5+ | 0.8+ | | | | |

**2005 UZ$_{508}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.01480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15138559 | $\omega$ | 147.46067 | | +0.93201382 | −0.35254685 | |
| $a$ | 3.4866875 | $\Omega$ | 233.41025 | | +0.30608963 | +0.88984437 | |
| $e$ | 0.0678530 | $i$ | 6.00725 | | +0.19406023 | +0.28963377 | |
| $P$ | 6.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 22 | 691 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.0 | 0.2− | 2005 12 05 | G96 | 0.1− | 0.2+ |
| 2004 08 22 | 691 | 0.1− | 0.1+ | 2005 11 04 | 691 | 0.1+ | 0.2+ | 2005 12 05 | G96 | 0.2− | 0.1− |
| 2004 08 22 | 691 | 0.5− | 0.1+ | 2005 11 04 | 691 | 0.1− | 0.3+ | 2005 12 05 | G96 | 0.4− | 0.0 |
| 2004 09 12 | 691 | 0.2+ | 0.2− | 2005 11 04 | 691 | 0.4+ | 0.2− | 2005 12 05 | G96 | 0.4− | 0.2− |
| 2004 09 12 | 691 | 0.2+ | 0.1− | 2005 11 30 | G96 | 0.4+ | 0.6− | 2005 12 05 | G96 | 0.0 | 0.1+ |
| 2004 09 12 | 691 | 0.2+ | 0.1− | 2005 11 30 | G96 | 0.1− | 0.1− | 2005 12 05 | G96 | 0.3+ | 0.2+ |
| 2005 10 25 | G96 | 0.0 | 0.1+ | 2005 11 30 | G96 | 0.1− | 0.0 | 2005 12 05 | G96 | 0.1+ | 0.1+ |
| 2005 10 25 | G96 | 0.2− | 0.4− | 2005 11 30 | G96 | 0.6− | 0.1+ | | | | |
| 2005 10 25 | G96 | 0.1+ | 0.4− | 2005 12 05 | G96 | 0.4− | 0.0 | | | | |

**2005 UA$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.58123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21722290 | $\omega$ | 54.99511 | | +0.86672913 | +0.49197890 | |
| $a$ | 2.7407262 | $\Omega$ | 275.40611 | | −0.48027015 | +0.77877353 | |
| $e$ | 0.0459656 | $i$ | 4.72931 | | −0.13461500 | +0.38918960 | |
| $P$ | 4.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 15 | 704 | 0.1− | 2.3+ | 2004 08 22 | 691 | 0.1− | 0.1+ | 2005 11 06 | 691 | 0.2+ | 0.1− |
| 2002 01 15 | 704 | 1.9+ | 0.8+ | 2005 10 25 | 691 | 0.1− | 0.4− | 2005 11 06 | 691 | 0.2+ | 0.3− |
| 2002 01 15 | 704 | 0.5− | 0.4+ | 2005 10 25 | 691 | 0.4+ | 0.3+ | 2005 11 25 | 691 | 0.4+ | 0.0 |
| 2002 01 15 | 704 | 0.5− | 0.4− | 2005 10 25 | 691 | 1.8− | 1.2+ | 2005 11 25 | 691 | 0.2+ | 0.0 |
| 2004 08 11 | 599 | 0.5+ | 1.0+ | 2005 10 30 | G96 | 0.4− | 0.3− | 2005 11 25 | 691 | 0.5+ | 0.3− |
| 2004 08 11 | 599 | 0.1+ | 0.3+ | 2005 10 30 | G96 | 0.3− | 0.3− | 2006 01 25 | G96 | 0.2− | 0.3+ |
| 2004 08 11 | 599 | 0.4+ | 0.5+ | 2005 10 30 | G96 | 0.0 | 0.1− | 2006 01 25 | G96 | 0.4+ | 0.4− |
| 2004 08 22 | 691 | 0.1+ | 0.2− | 2005 10 30 | G96 | 0.3− | 0.4− | 2006 01 25 | G96 | 0.1− | 0.3− |
| 2004 08 22 | 691 | 0.4− | 0.1+ | 2005 11 06 | 691 | 0.0 | 0.1− | 2006 01 25 | G96 | 0.5+ | 0.3− |

**2005 UC$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.89543 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29523393 | $\omega$ | 264.62563 | | +0.83231504 | +0.54137016 | |
| $a$ | 2.2337018 | $\Omega$ | 62.54621 | | −0.44045514 | +0.77631628 | |
| $e$ | 0.1281477 | $i$ | 7.70918 | | −0.33652777 | +0.32287984 | |
| $P$ | 3.34 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 644 | 0.0 | 0.1+ | 2004 06 08 | 691 | 0.1+ | 0.3+ | 2005 11 26 | G96 | 0.1− | 0.1− |
| 2001 07 18 | 644 | 0.2− | 0.1+ | 2005 10 25 | G96 | 0.3− | 0.1− | 2005 11 26 | G96 | 0.3− | 0.2+ |
| 2001 07 18 | 644 | 0.2+ | 0.1+ | 2005 10 25 | G96 | 0.4− | 0.3+ | 2005 11 26 | G96 | 0.2− | 0.1− |
| 2004 05 28 | 691 | 0.2+ | 0.1− | 2005 10 25 | G96 | 0.4− | 0.0 | 2005 11 26 | G96 | 0.6− | 0.1+ |
| 2004 05 28 | 691 | 0.1− | 0.2+ | 2005 10 25 | G96 | 0.4− | 0.4− | 2005 12 28 | G96 | 0.4− | 0.2− |
| 2004 05 28 | 691 | 0.2+ | 0.4+ | 2005 11 05 | 691 | 0.1+ | 0.2+ | 2005 12 28 | G96 | 0.2+ | 0.1+ |
| 2004 06 08 | 691 | 0.1+ | 0.0 | 2005 11 05 | 691 | 0.2+ | 0.6+ | 2005 12 28 | G96 | 0.0 | 0.1+ |
| 2004 06 08 | 691 | 0.1− | 0.2+ | 2005 11 05 | 691 | 0.1+ | 0.1+ | 2005 12 28 | G96 | 0.3− | 0.2+ |

**2005 UD$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.73072 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21312492 | $\omega$ | 173.61313 | | −0.30766926 | +0.95125241 | |
| $a$ | 2.7757471 | $\Omega$ | 78.46648 | | −0.87394224 | −0.27362260 | |
| $e$ | 0.0673533 | $i$ | 1.25220 | | −0.37625071 | −0.14230080 | |
| $P$ | 4.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.1+ | 0.0 | 2005 10 25 | G96 | 0.6+ | 0.1+ | 2005 12 04 | 691 | 0.0 | 0.2+ |
| 1995 09 25 | 691 | 0.0 | 0.1− | 2005 11 10 | G96 | 0.5+ | 0.4+ | 2005 12 04 | 691 | 0.3− | 0.5+ |
| 1995 09 25 | 691 | 0.1+ | 0.4− | 2005 11 10 | G96 | 0.7+ | 0.6+ | 2005 12 04 | 691 | 0.2+ | 0.2+ |
| 2002 02 12 | 691 | 0.2− | 0.0 | 2005 11 10 | G96 | 0.1− | 0.0 | 2005 12 25 | G96 | 1.3− | 0.6− |
| 2002 02 12 | 691 | 0.0 | 1.1− | 2005 11 10 | G96 | 0.3− | 0.2− | 2005 12 25 | G96 | 1.4− | 0.1+ |
| 2002 02 12 | 691 | 0.0 | 0.2+ | 2005 11 25 | G96 | 0.4+ | 0.2+ | 2005 12 25 | G96 | 0.6+ | 0.1+ |
| 2003 06 04 | 691 | 0.1− | 0.5+ | 2005 11 25 | G96 | 0.2− | 0.2+ | 2005 12 25 | G96 | 0.0 | 0.1− |
| 2003 06 04 | 691 | 0.3+ | 0.1− | 2005 11 25 | G96 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.1+ | 0.1− |
| 2003 06 04 | 691 | 0.0 | 0.4+ | 2005 11 25 | G96 | 0.1+ | 0.2+ | 2006 01 05 | G96 | 0.6+ | 0.2+ |
| 2005 10 25 | G96 | 0.0 | 0.0 | 2005 12 02 | 695 | 0.2− | 0.4+ | 2006 01 05 | G96 | 1.1− | 0.0 |
| 2005 10 25 | G96 | 0.6+ | 0.2+ | 2005 12 02 | 695 | 0.1− | 0.4+ | 2006 01 05 | G96 | 0.1− | 0.1− |
| 2005 10 25 | G96 | 0.1+ | 0.3+ | 2005 12 02 | 695 | 0.1− | 0.4+ | | | | |

**2005 UE$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.58204 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22140485 | $\omega$ | 213.66123 | | +0.94956893 | −0.31212032 | |
| $a$ | 2.7061049 | $\Omega$ | 164.44139 | | +0.30666343 | +0.90447864 | |
| $e$ | 0.0778537 | $i$ | 6.42088 | | +0.06539403 | +0.29068763 | |
| $P$ | 4.45 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 691 | 0.2− | 0.2− | 2004 07 14 | 704 | 0.1+ | 0.1+ | 2005 11 10 | 703 | 0.0 | 0.1+ |
| 2000 09 19 | 691 | 0.2+ | 0.1+ | 2004 07 14 | 704 | 0.1− | 0.5+ | 2005 11 10 | 703 | 1.0− | 1.5+ |
| 2000 09 19 | 691 | 0.1+ | 0.1+ | 2004 07 14 | 704 | 0.1− | 0.3+ | 2005 11 30 | 699 | (1.6− | 2.0+) |
| 2003 04 07 | 691 | 0.5− | 0.5+ | 2005 10 26 | 691 | 0.2− | 0.3+ | 2005 11 30 | 699 | (2.6+ | 0.8−) |
| 2003 04 07 | 691 | 0.6− | 0.2− | 2005 10 26 | 691 | 0.1− | 0.3+ | 2005 11 30 | 699 | 1.5+ | 0.6− |
| 2003 04 07 | 691 | 0.4− | 0.0 | 2005 10 26 | 691 | 0.2+ | 0.1− | 2005 11 30 | 699 | 0.4− | 0.8+ |
| 2003 05 02 | 691 | 0.6+ | 0.0 | 2005 10 30 | 691 | 0.1− | 0.0 | 2005 11 30 | 699 | 0.2+ | 0.0 |
| 2003 05 02 | 691 | 0.9+ | 0.2+ | 2005 10 30 | 691 | 0.1+ | 0.1+ | 2005 11 30 | 699 | 0.0 | 0.4− |
| 2003 05 02 | 691 | 0.3+ | 0.1+ | 2005 10 30 | 691 | 0.1− | 0.3+ | 2005 11 30 | 699 | 0.2+ | 0.2− |
| 2004 07 14 | 704 | 0.2+ | 0.0 | 2005 11 10 | 703 | 0.2+ | 1.3− | 2005 11 30 | 699 | 0.6+ | 1.2− |
| 2004 07 14 | 704 | 0.3− | 0.1+ | 2005 11 10 | 703 | 1.2− | 0.9+ | | | | |

**2005 UF$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.92115 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21634005 | $\omega$ | 288.93912 | | +0.97271265 | −0.02922914 | |
| $a$ | 2.7481774 | $\Omega$ | 73.25815 | | +0.13293553 | +0.88326248 | |
| $e$ | 0.0435082 | $i$ | 13.90735 | | −0.19015321 | +0.46796693 | |
| $P$ | 4.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.0 | 0.0 | 2005 11 06 | 691 | 0.2− | 0.1− | 2005 12 29 | G96 | 0.0 | 0.2− |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2005 11 06 | 691 | 0.1+ | 0.1+ | 2006 01 22 | G96 | 0.7+ | 0.1− |
| 2003 04 27 | 645 | 0.0 | 0.0 | 2005 11 10 | 703 | 1.3− | 0.7− | 2006 01 22 | G96 | 0.1+ | 0.2− |
| 2003 04 27 | 645 | 0.0 | 0.0 | 2005 11 10 | 703 | 0.4− | 0.4+ | 2006 01 22 | G96 | 0.3+ | 0.2− |
| 2005 10 26 | 699 | 0.8+ | 0.1+ | 2005 11 10 | 703 | 1.6− | 0.1− | 2006 01 22 | G96 | 0.2+ | 0.1− |
| 2005 10 26 | 699 | 0.2− | 1.1+ | 2005 11 10 | 703 | 0.6+ | 0.1− | 2006 02 24 | G96 | 0.2+ | 0.1+ |
| 2005 10 26 | 699 | 0.0 | 0.1+ | 2005 12 29 | G96 | 0.4+ | 0.0 | 2006 02 24 | G96 | 0.2− | 0.1+ |
| 2005 10 26 | 699 | 0.3− | 0.7+ | 2005 12 29 | G96 | 0.6+ | 0.1− | 2006 02 24 | G96 | 0.4+ | 0.1+ |
| 2005 11 06 | 691 | 0.2+ | 0.1− | 2005 12 29 | G96 | 0.1+ | 0.5− | 2006 02 24 | G96 | 0.6− | 1.0+ |

**2005 UG$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.82374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22992003 | $\omega$ | 227.74551 | | +0.99783379 | +0.03304702 | |
| $a$ | 2.6388711 | $\Omega$ | 130.27883 | | −0.01090008 | +0.93576950 | |
| $e$ | 0.1956840 | $i$ | 4.27596 | | −0.06487622 | +0.35106030 | |
| $P$ | 4.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2005 10 27 | 703 | 0.3− | 0.9− | 2005 11 05 | 703 | 0.4− | 0.5+ |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2005 11 04 | G96 | 0.3+ | 0.1− | 2005 11 05 | 703 | 0.6− | 0.2− |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2005 11 04 | G96 | 0.6+ | 0.0 | 2005 11 13 | 644 | 0.2− | 0.1− |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2005 11 04 | G96 | 0.4+ | 0.0 | 2005 11 13 | 644 | 0.5− | 0.1− |
| 2005 10 27 | 703 | 0.0 | 0.0 | 2005 11 04 | G96 | 0.1+ | 0.1− | 2005 11 13 | 644 | 0.0 | 0.0 |
| 2005 10 27 | 703 | 0.5+ | 0.5− | 2005 11 05 | 703 | 0.9+ | 0.5+ | | | | |
| 2005 10 27 | 703 | 0.5− | 1.0+ | 2005 11 05 | 703 | 0.3− | 0.1− | | | | |

**2005 UH$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.35574 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27514354 | $\omega$ | 334.46970 | | −0.56117079 | | +0.82707369 |
| $a$ | 2.3411532 | $\Omega$ | 261.37786 | | −0.75370843 | | −0.52669333 |
| $e$ | 0.0953935 | $i$ | 1.86599 | | −0.34206861 | | −0.19632435 |
| $P$ | 3.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 05 | 691 | 0.3− | 0.4+ | 2005 10 27 | G96 | 0.3− | 0.1− | 2005 11 26 | 291 | 0.0 | 0.2− |
| 1994 11 05 | 691 | 0.1+ | 0.5+ | 2005 10 27 | G96 | 0.3+ | 0.3− | 2005 11 26 | 291 | 0.1− | 0.0 |
| 1994 11 05 | 691 | 0.2− | 0.1+ | 2005 10 27 | G96 | 0.0 | 0.1+ | 2005 11 26 | G96 | 0.2− | 0.1− |
| 2000 05 10 | 704 | 1.1+ | 0.7+ | 2005 11 22 | 691 | 0.2− | 0.2+ | 2005 11 26 | G96 | 0.3+ | 0.0 |
| 2000 05 10 | 704 | 0.1+ | 0.9+ | 2005 11 22 | 691 | 0.2+ | 0.5+ | 2005 11 26 | G96 | 0.4+ | 0.2+ |
| 2000 05 10 | 704 | 1.3+ | 0.4+ | 2005 11 22 | 691 | 0.1+ | 0.1− | 2005 11 26 | G96 | 0.1+ | 0.1+ |
| 2000 05 10 | 704 | 0.3− | 0.8+ | 2005 11 26 | G96 | 0.5+ | 0.2− | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2003 01 10 | 291 | 0.1− | 0.3+ | 2005 11 26 | G96 | 0.1− | 0.1− | 2005 12 02 | G96 | 0.2+ | 0.3− |
| 2003 01 10 | 291 | 0.2− | 0.3+ | 2005 11 26 | G96 | 0.1− | 0.3+ | 2005 12 02 | G96 | 0.1− | 0.0 |
| 2003 01 10 | 291 | 0.1+ | 0.2+ | 2005 11 26 | G96 | 0.3+ | 0.5+ | 2005 12 02 | G96 | 0.2+ | 0.2− |
| 2004 07 21 | E12 | 0.2− | 0.0 | 2005 11 26 | G96 | (0.3+ | 2.1+) | 2005 12 25 | G96 | 0.1− | 0.3− |
| 2004 07 21 | E12 | 1.0− | 0.3+ | 2005 11 26 | G96 | 0.3+ | 0.0 | 2005 12 25 | G96 | 0.4− | 1.2− |
| 2004 07 21 | E12 | 0.3+ | 0.1− | 2005 11 26 | G96 | 0.3− | 0.1+ | 2005 12 25 | G96 | 0.5+ | 0.7− |
| 2004 07 21 | E12 | 0.4− | 0.9+ | 2005 11 26 | G96 | 0.1+ | 0.0 | 2005 12 25 | G96 | 0.4− | 0.2− |
| 2005 10 27 | G96 | 0.1+ | 0.1− | 2005 11 26 | 291 | 0.1+ | 0.1+ | | | | |

**2005 UJ$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.19521 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21180254 | $\omega$ | 42.83704 | | +0.71418550 | | +0.69775379 |
| $a$ | 2.7872887 | $\Omega$ | 272.82536 | | −0.65628657 | | +0.63995909 |
| $e$ | 0.0630698 | $i$ | 3.18463 | | −0.24336601 | | +0.32185713 |
| $P$ | 4.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.0 | 0.5+ | 2002 01 14 | 645 | 0.1+ | 0.0 | 2005 11 12 | 691 | 0.2− | 0.1− |
| 1995 07 26 | 691 | 0.3− | 0.3+ | 2005 10 28 | 691 | 0.1− | 0.1− | 2005 11 25 | 691 | 0.1+ | 0.4+ |
| 2000 10 03 | 704 | 0.1− | 0.5+ | 2005 10 28 | 691 | 0.0 | 0.2− | 2005 11 25 | 691 | 0.1+ | 0.1+ |
| 2000 10 03 | 704 | 0.3− | 0.0 | 2005 10 28 | 691 | 0.0 | 0.2− | 2005 11 25 | 691 | 0.3+ | 0.2+ |
| 2000 10 03 | 704 | 0.4− | 0.7+ | 2005 11 01 | 691 | (1.1− | 3.2−) | 2005 12 01 | 695 | 0.1− | 0.0 |
| 2002 01 13 | 691 | 0.3+ | 0.8+ | 2005 11 01 | 691 | 0.2+ | 0.3− | 2005 12 01 | 695 | 0.3− | 0.1− |
| 2002 01 13 | 691 | 0.1− | 0.4+ | 2005 11 01 | 691 | 0.1+ | 0.3− | 2005 12 01 | 695 | 0.2− | 0.0 |
| 2002 01 13 | 691 | 0.1− | 0.3+ | 2005 11 12 | 691 | 0.3+ | 0.0 | | | | |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2005 11 12 | 691 | 0.6− | 0.4− | | | | |

**2005 UL$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.22934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26474006 | $\omega$ | 119.73367 | | −0.71621457 | | −0.69777523 |
| $a$ | 2.4020918 | $\Omega$ | 16.02807 | | +0.62420320 | | −0.64825955 |
| $e$ | 0.1447116 | $i$ | 2.51168 | | +0.31210104 | | −0.30474462 |
| $P$ | 3.72 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 14 | 691 | 0.4− | 0.1− | 2003 04 24 | 691 | 0.2− | 0.1+ | 2005 11 25 | 691 | 0.4− | 0.1+ |
| 1999 04 14 | 691 | 0.1− | 0.1− | 2004 08 13 | 807 | 0.1− | 0.2+ | 2005 11 25 | 691 | 0.3− | 0.1+ |
| 1999 04 14 | 691 | 0.1− | 0.8− | 2004 08 13 | 807 | 0.4− | 0.0 | 2005 12 21 | 691 | 0.1− | 0.0 |
| 2001 10 16 | 691 | 0.2− | 0.1+ | 2005 10 30 | G96 | 0.0 | 0.0 | 2005 12 21 | 691 | 0.3+ | 0.1− |
| 2001 10 16 | 691 | 0.0 | 0.2+ | 2005 10 30 | G96 | 0.2− | 0.1+ | 2005 12 21 | 691 | 1.0+ | 0.5+ |
| 2001 10 16 | 691 | 0.1+ | 0.5+ | 2005 10 30 | G96 | 0.1+ | 0.1− | 2006 01 02 | G96 | 0.5+ | 0.5− |
| 2003 04 05 | 691 | 0.6+ | 0.5+ | 2005 10 30 | G96 | 0.4+ | 0.2+ | 2006 01 02 | G96 | 0.1− | 0.6− |
| 2003 04 05 | 691 | 0.7+ | 0.7+ | 2005 11 12 | 691 | (2.7− | 0.0 ) | 2006 01 02 | G96 | 0.8+ | 0.0 |
| 2003 04 05 | 691 | 0.3+ | 0.6+ | 2005 11 12 | 691 | 1.2− | 0.5+ | 2006 01 02 | G96 | 0.1+ | 0.3− |
| 2003 04 24 | 691 | 0.2− | 0.1+ | 2005 11 12 | 691 | (2.7− | 0.9−) | | | | |
| 2003 04 24 | 691 | 0.3− | 0.0 | 2005 11 25 | 691 | 0.0 | 0.0 | | | | |

**2005 UT$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.26881 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23769408 | $\omega$ | 144.60908 | | −0.64696023 | | −0.76225893 |
| $a$ | 2.5810147 | $\Omega$ | 345.66819 | | +0.67957000 | | −0.56442521 |
| $e$ | 0.1998899 | $i$ | 4.65619 | | +0.34587147 | | −0.31683671 |
| $P$ | 4.15 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | (1.8+ | 0.1+) | 2001 12 17 | 704 | (1.6+ | 1.7+) | 2005 11 02 | 704 | 0.4− | 1.2+ |
| 2001 11 11 | 704 | 0.6+ | 0.7− | 2001 12 17 | 704 | 1.0+ | 1.3+ | 2005 11 07 | 704 | (2.5+ | 2.3−) |
| 2001 11 11 | 704 | (1.8+ | 0.6−) | 2005 10 22 | 691 | 0.5− | 0.2+ | 2005 11 07 | 704 | 0.3− | 1.3− |
| 2001 11 11 | 704 | 0.6+ | 0.7− | 2005 10 22 | 691 | 0.1− | 0.1+ | 2005 11 07 | 704 | 0.7+ | 0.1− |
| 2001 11 11 | 704 | 0.4+ | 0.9+ | 2005 10 22 | 691 | 0.0 | 0.0 | 2005 11 07 | 704 | 1.1+ | 0.6− |
| 2001 11 24 | 704 | (2.1− | 1.0−) | 2005 10 31 | 691 | 0.3+ | 0.4+ | 2005 11 25 | 703 | (0.8− | 2.0−) |
| 2001 11 24 | 704 | (2.5− | 1.0−) | 2005 10 31 | 691 | 0.5+ | 0.2+ | 2005 11 25 | 703 | 0.7+ | 1.0− |
| 2001 11 24 | 704 | 0.4− | 0.1− | 2005 10 31 | 691 | 0.2+ | 0.0 | 2005 11 25 | 703 | 0.5− | 0.1+ |
| 2001 11 24 | 704 | 1.0− | 1.4− | 2005 10 31 | 703 | 0.9− | 0.4+ | 2005 11 25 | 703 | 0.3− | 0.1+ |
| 2001 11 24 | 704 | 0.7− | 0.0 | 2005 10 31 | 703 | 1.0− | 0.1− | 2005 11 25 | 703 | (0.2− | 2.3−) |
| 2001 11 24 | 704 | 0.1+ | 0.6− | 2005 10 31 | 703 | 0.4− | 0.6+ | 2005 11 25 | 703 | 0.8− | 0.2− |
| 2001 11 24 | 704 | 0.1− | 0.7+ | 2005 10 31 | 703 | 0.5− | 0.4− | 2005 11 25 | 703 | 0.2− | 0.9− |
| 2001 11 24 | 704 | 1.0− | 0.7− | 2005 11 02 | 704 | 0.0 | 0.3− | 2005 11 25 | 703 | (1.4− | 2.0−) |
| 2001 11 24 | 704 | 0.0 | 0.6+ | 2005 11 02 | 704 | 0.0 | 0.5− | | | | |
| 2001 12 17 | 704 | 0.7+ | 0.9+ | 2005 11 02 | 704 | 1.1+ | 0.2− | | | | |

**2005 UW$_{509}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.75486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20239358 | $\omega$ | 210.72223 | | −0.41339945 | | −0.91040551 |
| $a$ | 2.8730172 | $\Omega$ | 263.70058 | | +0.83869179 | | −0.37378412 |
| $e$ | 0.0143006 | $i$ | 0.93432 | | +0.35453770 | | −0.17733368 |
| $P$ | 4.87 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.1− | 0.3− | 2005 10 22 | 691 | 0.2− | 0.2+ | 2005 12 04 | G96 | 0.2− | 0.1− |
| 2002 02 11 | 704 | 0.1− | 0.0 | 2005 10 31 | 691 | 0.1− | 0.2+ | 2005 12 04 | G96 | 0.1+ | 0.4+ |
| 2002 02 11 | 704 | 0.5+ | 0.3+ | 2005 10 31 | 691 | 0.5− | 0.1+ | 2005 12 04 | G96 | 0.2− | 0.0 |
| 2002 02 11 | 704 | 0.1+ | 0.2+ | 2005 10 31 | 691 | 0.1+ | 0.0 | 2005 12 04 | G96 | 0.1− | 0.2− |
| 2002 02 11 | 704 | 0.1− | 0.5+ | 2005 11 12 | 691 | 0.2+ | 0.3− | 2005 12 31 | G96 | 0.6+ | 0.2− |
| 2004 08 20 | 691 | 0.3+ | 0.1− | 2005 11 12 | 691 | 0.3+ | 0.4− | 2005 12 31 | G96 | 0.1+ | 0.0 |
| 2004 08 20 | 691 | 0.1− | 0.1+ | 2005 11 12 | 691 | 0.3+ | 0.5− | 2005 12 31 | G96 | 0.3− | 0.1− |
| 2004 08 20 | 691 | 0.2− | 0.1+ | 2005 11 21 | 691 | 0.3+ | 0.0 | 2005 12 31 | G96 | 0.6− | 0.0 |
| 2005 10 22 | 691 | 0.2− | 0.2+ | 2005 11 21 | 691 | 0.1− | 0.3+ | | | | |
| 2005 10 22 | 691 | 0.2+ | 0.4+ | 2005 11 21 | 691 | 0.1− | 0.1− | | | | |

**2005 UG$_{510}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.62409 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18690140 | $\omega$ | 289.49187 | | +0.32376779 | | −0.94519068 |
| $a$ | 3.0296631 | $\Omega$ | 141.53499 | | +0.89156632 | | +0.28982606 |
| $e$ | 0.0814290 | $i$ | 3.89894 | | +0.31667636 | | +0.15038429 |
| $P$ | 5.27 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 11 | 691 | 0.0 | 0.5− | 2005 11 07 | 568 | 0.1+ | 0.7− | 2006 02 07 | 691 | 0.1+ | 0.3+ |
| 1996 04 11 | 691 | 0.3− | 0.1+ | 2005 11 07 | 568 | 0.1+ | 0.0 | 2006 02 07 | 691 | 0.0 | 0.4+ |
| 1996 04 11 | 691 | 0.2+ | 0.0 | 2006 01 07 | G96 | 1.1− | 1.2− | 2006 02 07 | 691 | 0.1− | 0.5+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 01 07 | G96 | 0.1− | 1.1− | 2006 02 25 | G96 | 0.0 | 0.2+ |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 01 07 | G96 | 0.3+ | 0.6− | 2006 02 25 | G96 | 0.2− | 0.0 |
| 2005 10 24 | 568 | 0.2− | 0.0 | 2006 01 07 | G96 | 0.4− | 0.8− | 2006 02 25 | G96 | 0.3− | 0.1− |
| 2005 10 24 | 568 | 0.2− | 0.0 | 2006 01 30 | 691 | 0.1+ | 0.0 | 2006 02 25 | G96 | 0.6− | 0.3− |
| 2005 10 24 | 568 | 0.2− | 0.0 | 2006 01 30 | 691 | 0.2+ | 0.2− | | | | |
| 2005 11 07 | 568 | 0.3+ | 0.8− | 2006 01 30 | 691 | 0.3+ | 0.2+ | | | | |

**2005 UM$_{510}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.28710 | | | (2000.0) | | |
| $n$ | 0.17904084 | $\omega$ | 42.01875 | | −0.38923655 | −0.90360054 |
| $a$ | 3.1177023 | $\Omega$ | 71.59857 | | +0.78696104 | −0.42713931 |
| $e$ | 0.2031996 | $i$ | 10.86689 | | +0.47873502 | −0.03252815 |
| $P$ | 5.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 05 | 704 | 0.7− | 0.1− | 2005 10 29 | 691 | 0.1− | 0.1+ | 2005 12 08 | 691 | 0.0 | 0.2+ |
| 2001 01 05 | 704 | 0.3+ | 0.4− | 2005 10 29 | 691 | (0.5+ | 3.0−) | 2005 12 08 | G96 | 0.3− | 0.3− |
| 2001 01 05 | 704 | 0.1− | 0.5+ | 2005 11 04 | 691 | 0.0 | 0.1− | 2005 12 08 | G96 | 0.1+ | 0.2− |
| 2001 01 18 | 704 | 0.6− | 0.0 | 2005 11 04 | 691 | 0.1+ | 0.2− | 2005 12 08 | G96 | 0.7− | 0.3− |
| 2001 01 18 | 704 | 0.6+ | 0.6+ | 2005 11 04 | 691 | 0.1− | 0.1+ | 2005 12 08 | G96 | 0.4+ | 0.1− |
| 2001 01 18 | 704 | 0.4+ | 0.4− | 2005 11 25 | 691 | 0.2+ | 0.3+ | 2006 01 21 | G96 | 0.3+ | 0.8− |
| 2005 10 25 | 691 | 0.4+ | 0.1+ | 2005 11 25 | 691 | 0.5− | 0.1+ | 2006 01 21 | G96 | 0.2+ | 0.4− |
| 2005 10 25 | 691 | 0.1+ | 0.1− | 2005 11 25 | 691 | 0.2− | 0.3− | 2006 01 21 | G96 | 0.2+ | 0.8− |
| 2005 10 25 | 691 | 0.0 | 0.1+ | 2005 12 08 | 691 | 0.1− | 0.2+ | 2006 01 21 | G96 | 0.6+ | 0.5+ |
| 2005 10 29 | 691 | 0.1− | 0.1− | 2005 12 08 | 691 | 0.0 | 0.1+ | | | | |

**2005 UV$_{510}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 130.78012 | | | (2000.0) | | |
| $n$ | 0.23152571 | $\omega$ | 141.33681 | | +0.98078861 | +0.19355258 |
| $a$ | 2.6266562 | $\Omega$ | 207.53219 | | −0.18948969 | +0.91567962 |
| $e$ | 0.1598758 | $i$ | 3.01493 | | −0.04633950 | +0.35223320 |
| $P$ | 4.26 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 704 | 0.3− | 0.7+ | 2005 10 25 | G96 | 0.2+ | 0.0 | 2005 12 01 | 704 | 0.3− | 0.8+ |
| 2000 08 01 | 704 | 0.3+ | 0.2+ | 2005 11 06 | 691 | 0.0 | 0.1+ | 2005 12 29 | G96 | 0.2− | 0.0 |
| 2000 08 01 | 704 | 0.8− | 0.7+ | 2005 11 06 | 691 | 0.0 | 0.2+ | 2005 12 29 | G96 | 0.3− | 0.1− |
| 2000 08 01 | 704 | 0.0 | 1.3+ | 2005 11 06 | 691 | 0.1+ | 0.2+ | 2005 12 29 | G96 | 0.2− | 0.0 |
| 2003 04 05 | 691 | 0.1+ | 0.3+ | 2005 11 28 | 703 | (2.3− | 0.3−) | 2005 12 29 | G96 | 0.1− | 0.0 |
| 2003 04 05 | 691 | 0.1+ | 0.3+ | 2005 11 28 | 703 | 0.7+ | 0.2+ | 2006 01 25 | G96 | 0.4− | 0.2+ |
| 2003 04 05 | 691 | 0.1+ | 0.3+ | 2005 11 28 | 703 | 0.9− | 1.3− | 2006 01 25 | G96 | 0.1− | 0.4− |
| 2005 10 25 | G96 | 0.3+ | 0.1− | 2005 11 28 | 703 | 0.5− | 0.6+ | 2006 01 25 | G96 | 0.8− | 0.1+ |
| 2005 10 25 | G96 | 0.4+ | 0.1+ | 2005 12 01 | 704 | 0.9+ | 0.2+ | 2006 01 25 | G96 | 0.1+ | 0.3− |
| 2005 10 25 | G96 | 0.1+ | 0.2+ | 2005 12 01 | 704 | 0.1+ | 0.6+ | | | | |

**2005 UC$_{511}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 90.97874 | | | (2000.0) | | |
| $n$ | 0.27671411 | $\omega$ | 227.47683 | | +0.62745067 | −0.77862020 |
| $a$ | 2.3322862 | $\Omega$ | 183.68470 | | +0.74424398 | +0.60252472 |
| $e$ | 0.0796498 | $i$ | 6.70173 | | +0.22892477 | +0.17525567 |
| $P$ | 3.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.3− | 0.1− | 2003 02 09 | 644 | 0.1+ | 0.0 | 2005 11 10 | 703 | 0.6− | 1.1+ |
| 2001 08 23 | 699 | 2.2+ | 0.3− | 2003 02 09 | 644 | 0.2− | 0.1− | 2005 11 10 | 703 | 1.0+ | 0.3− |
| 2001 08 23 | 699 | 0.2+ | 0.8− | 2003 02 22 | 644 | 0.1− | 0.0 | 2005 11 10 | 703 | 0.0 | 1.3+ |
| 2001 08 23 | 699 | 0.5− | 0.5+ | 2003 02 22 | 644 | 0.2+ | 0.3+ | 2005 11 10 | 703 | 0.5− | 0.5− |
| 2001 09 12 | 704 | 0.5− | 0.3+ | 2003 02 22 | 644 | 0.7+ | 0.4+ | 2005 11 21 | 699 | 0.2− | 0.0 |
| 2001 09 12 | 704 | 0.6− | 0.2+ | 2003 03 30 | 645 | 0.0 | 0.0 | 2005 11 21 | 699 | 0.4− | 0.1− |
| 2001 09 12 | 704 | 0.6+ | 0.0 | 2003 03 30 | 645 | 0.0 | 0.0 | 2005 11 21 | 699 | 0.6+ | 0.1− |
| 2001 09 12 | 704 | 0.1− | 0.2− | 2005 10 26 | 691 | 0.1+ | 0.1− | 2005 11 21 | 699 | 0.2− | 0.9+ |
| 2001 09 12 | 704 | 0.2− | 0.0 | 2005 10 26 | 691 | 0.1+ | 0.2− | 2005 12 06 | 703 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.2+ | 2005 10 26 | 691 | 0.1+ | 0.1− | 2005 12 06 | 703 | 0.1− | 0.9− |
| 2001 09 20 | 704 | 0.3− | 0.1− | 2005 10 30 | 683 | 0.6+ | 1.1− | 2005 12 06 | 703 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.1+ | 0.4+ | 2005 10 30 | 683 | 0.3− | 0.1− | 2005 12 06 | 703 | 0.4− | 0.5− |
| 2003 02 09 | 644 | 0.1+ | 0.2+ | 2005 10 30 | 683 | 1.1− | 1.1+ | | | | |

**2005 UF$_{511}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 119.64843 | | | (2000.0) | | |
| $n$ | 0.18868938 | $\omega$ | 153.65989 | | +0.94167048 | +0.33602450 |
| $a$ | 3.0104939 | $\Omega$ | 186.78515 | | −0.32979179 | +0.91041295 |
| $e$ | 0.0559934 | $i$ | 9.03502 | | −0.06703785 | +0.24132094 |
| $P$ | 5.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.2− | 0.0 | 2004 06 16 | 691 | 0.3+ | 0.6+ | 2005 11 05 | 703 | 0.5− | 0.1− |
| 1994 10 08 | 691 | 0.1− | 0.4+ | 2004 06 16 | 691 | 0.1− | 0.0 | 2005 11 05 | 703 | 0.3− | 1.2− |
| 1994 10 08 | 691 | 0.0 | 0.4+ | 2004 06 16 | 691 | 0.3+ | 0.1− | 2005 11 05 | 703 | 1.1− | 0.6− |
| 2002 02 07 | 644 | 0.1− | 0.2− | 2005 10 27 | 699 | 0.3− | 0.4+ | 2005 11 10 | 703 | (0.5+ | 1.6+) |
| 2002 02 07 | 644 | 0.1+ | 0.5+ | 2005 10 27 | 699 | 1.4− | 0.1− | 2005 11 10 | 703 | 0.4+ | 1.5+ |
| 2002 02 07 | 644 | 0.6+ | 0.6+ | 2005 10 27 | 699 | 0.1− | 1.4+ | 2005 11 10 | 703 | 0.3− | 0.9− |
| 2002 02 16 | 644 | 0.9+ | 0.8+ | 2005 10 27 | 699 | (1.5− | 1.6−) | 2005 11 10 | 703 | 0.1+ | 1.3+ |
| 2002 02 16 | 644 | 0.8+ | 0.6+ | 2005 11 04 | G96 | 0.1− | 0.3+ | 2005 11 25 | 703 | 0.5− | 0.5+ |
| 2002 02 16 | 644 | 0.8+ | 0.7+ | 2005 11 04 | G96 | 0.5+ | 0.2+ | 2005 11 25 | 703 | 0.4+ | 0.6− |
| 2003 05 11 | 691 | 0.4− | 0.3+ | 2005 11 04 | G96 | 0.0 | 0.2+ | 2005 11 25 | 703 | 0.7+ | 0.8− |
| 2003 05 11 | 691 | 0.1+ | 0.5+ | 2005 11 04 | G96 | 0.4+ | 0.2+ | 2005 11 25 | 703 | (1.0+ | 1.7+) |
| 2003 05 11 | 691 | 0.2− | 0.1+ | 2005 11 05 | 703 | 0.3+ | 0.0 | | | | |

**2005 UH$_{511}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.00121 | | | (2000.0) | | |
| $n$ | 0.27915847 | $\omega$ | 346.93493 | | +0.46621085 | −0.87466463 |
| $a$ | 2.3186517 | $\Omega$ | 75.14237 | | +0.82351776 | +0.37427118 |
| $e$ | 0.0791142 | $i$ | 7.89106 | | +0.32321191 | +0.30803065 |
| $P$ | 3.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 910 | 0.8+ | 1.0− | 2005 10 27 | 703 | 0.6− | 0.5− | 2005 11 25 | 703 | 0.0 | 0.0 |
| 1998 12 15 | 910 | 0.3+ | 0.7− | 2005 11 05 | 703 | 1.2− | 0.3+ | 2005 11 25 | 703 | 0.6+ | 0.1− |
| 1998 12 15 | 910 | 0.6+ | 0.6− | 2005 11 05 | 703 | 0.4+ | 0.3− | 2005 11 25 | 703 | 0.0 | 0.0 |
| 1999 01 24 | 691 | 0.1+ | 0.8+ | 2005 11 05 | 703 | 0.4− | 0.8− | 2005 11 25 | 703 | 0.6+ | 0.7+ |
| 1999 01 24 | 691 | 0.3− | 1.0− | 2005 11 05 | 703 | 0.1+ | 0.7− | 2005 12 29 | G96 | 0.3− | 0.2− |
| 1999 01 24 | 691 | 0.3− | 0.7+ | 2005 11 10 | 703 | 0.1− | 0.5+ | 2005 12 29 | G96 | 0.0 | 0.3+ |
| 2005 10 27 | 703 | 0.3− | 0.5− | 2005 11 10 | 703 | 0.4− | 0.7+ | 2005 12 29 | G96 | 0.6+ | 0.4+ |
| 2005 10 27 | 703 | 0.1− | 0.8+ | 2005 11 10 | 703 | 0.8+ | 0.8+ | 2005 12 29 | G96 | 0.2+ | 0.1+ |
| 2005 10 27 | 703 | 0.7− | 0.2+ | 2005 11 10 | 703 | 0.4+ | 0.3− | | | | |

**2005 UT$_{511}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 74.54236 | | | (2000.0) | | |
| $n$ | 0.29237264 | $\omega$ | 352.57839 | | +0.49457527 | −0.86532430 |
| $a$ | 2.2482515 | $\Omega$ | 67.74939 | | +0.80186079 | +0.41820933 |
| $e$ | 0.1363161 | $i$ | 5.03921 | | +0.33528283 | +0.27625137 |
| $P$ | 3.37 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.5+ | 0.3− | 2005 10 28 | 291 | 0.1+ | 0.1− | 2005 11 09 | 703 | (1.6− | 0.9+) |
| 2003 01 05 | 704 | 0.0 | 0.5+ | 2005 10 28 | 291 | 0.1+ | 0.0 | 2005 12 01 | G96 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 0.0 | 0.5− | 2005 11 01 | 704 | 1.1− | 0.4− | 2005 12 01 | G96 | 0.0 | 0.3− |
| 2003 01 12 | 704 | 0.2+ | 0.8+ | 2005 11 01 | 704 | 0.3− | 0.1− | 2005 12 01 | G96 | 0.4+ | 0.3− |
| 2003 01 12 | 704 | 0.6− | 0.1− | 2005 11 01 | 704 | 0.3+ | 0.4+ | 2005 12 01 | G96 | 0.3+ | 0.3− |
| 2003 01 12 | 704 | 0.7− | 0.3+ | 2005 11 01 | 704 | 0.2− | 0.2− | 2006 01 22 | G96 | 0.2+ | 0.6− |
| 2003 01 24 | 644 | 0.1+ | 0.0 | 2005 11 01 | 704 | 0.1− | 0.3+ | 2006 01 22 | G96 | 0.4+ | 0.0 |
| 2003 01 24 | 644 | 0.2+ | 0.1− | 2005 11 09 | 703 | 0.4− | 0.7+ | 2006 01 22 | G96 | 0.6+ | 0.5− |
| 2003 01 24 | 644 | 0.2+ | 0.1+ | 2005 11 09 | 703 | 0.1− | 0.9+ | 2006 01 22 | G96 | 0.2− | 0.4− |
| 2005 10 28 | 291 | 0.2+ | 0.0 | 2005 11 09 | 703 | 0.8− | 0.5+ | | | | |

**2005 UF$_{512}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 79.97403 | | (2000.0) | | | |
| $n$ | 0.25503720 | $\omega$ | 119.60667 | | +0.65617146 | −0.74775708 |
| $a$ | 2.4626368 | $\Omega$ | 289.02320 | | +0.64990353 | +0.62833154 |
| $e$ | 0.1128809 | $i$ | 6.16219 | | +0.38348979 | +0.21461319 |
| $P$ | 3.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 644 | 0.2+ | 0.5− | 2005 10 29 | 703 | 0.5+ | 0.1− | 2005 11 21 | 703 | 0.6− | 1.4− |
| 2001 10 20 | 644 | 0.4+ | 0.9− | 2005 10 29 | 703 | 0.8− | 0.0 | 2005 11 21 | 703 | 0.0 | 0.2− |
| 2001 10 20 | 644 | 0.1− | 0.5− | 2005 11 02 | 704 | 0.2− | 0.5+ | 2005 11 21 | 703 | 1.1− | 0.6− |
| 2001 11 17 | 704 | 0.4− | 0.0 | 2005 11 02 | 704 | 0.4+ | 1.2+ | 2005 11 21 | 703 | (0.1− | 3.7−) |
| 2001 11 17 | 704 | 0.2+ | 0.5+ | 2005 11 02 | 704 | 1.5+ | 0.8− | 2005 11 25 | 703 | 0.8+ | 0.6− |
| 2001 11 17 | 704 | 0.5− | 0.5− | 2005 11 02 | 704 | 0.5+ | 0.5− | 2005 11 25 | 703 | 0.3+ | 0.7− |
| 2001 11 17 | 704 | 0.7+ | 0.2+ | 2005 11 08 | 704 | 0.6− | 0.0 | 2005 11 25 | 703 | 0.3− | 0.4− |
| 2001 11 17 | 704 | 0.3− | 1.1+ | 2005 11 08 | 704 | 0.0 | 0.5+ | 2005 11 25 | 703 | 0.2+ | 0.0 |
| 2005 10 29 | 703 | 0.7− | 1.3+ | 2005 11 08 | 704 | 0.5− | 0.2− | | | | |
| 2005 10 29 | 703 | 1.3+ | 1.8+ | 2005 11 08 | 704 | 0.4− | 0.5+ | | | | |

**2005 US$_{512}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 76.23708 | | (2000.0) | | | |
| $n$ | 0.22347758 | $\omega$ | 234.33895 | | +0.72900001 | −0.68419905 |
| $a$ | 2.6893464 | $\Omega$ | 168.78288 | | +0.65745103 | +0.69141662 |
| $e$ | 0.0383753 | $i$ | 6.12387 | | +0.19057054 | +0.23198000 |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 09 | 644 | 0.5+ | 0.1− | 2005 10 31 | 703 | 0.3− | 0.7+ | 2005 11 29 | 644 | 0.1+ | 0.3− |
| 2003 04 09 | 644 | 0.4+ | 0.2− | 2005 11 05 | 703 | 0.4+ | 0.0 | 2005 11 29 | 644 | 0.2+ | 0.4− |
| 2003 04 09 | 644 | 0.4+ | 0.3− | 2005 11 05 | 704 | 0.3− | 0.1+ | 2005 11 29 | 644 | 0.2+ | 0.6− |
| 2003 04 11 | 691 | 0.5− | 0.0 | 2005 11 05 | 703 | (2.2+ | 0.6−) | 2005 11 29 | 644 | 0.2+ | 0.1+ |
| 2003 04 11 | 691 | 0.2− | 0.5+ | 2005 11 05 | 703 | 0.1+ | 0.5+ | 2005 11 29 | 644 | 0.0 | 0.4− |
| 2003 04 11 | 691 | 0.8− | 0.6+ | 2005 11 05 | 703 | 0.2+ | 1.0+ | 2005 11 29 | 644 | 0.2− | 0.2− |
| 2003 04 21 | 691 | 0.6+ | 0.3− | 2005 11 05 | 704 | 0.3− | 0.4+ | 2005 11 30 | 699 | (2.2+ | 1.7−) |
| 2003 04 21 | 691 | 0.4+ | 0.5− | 2005 11 05 | 704 | 0.4+ | 0.3+ | 2005 11 30 | 699 | 0.2+ | 0.2− |
| 2003 04 21 | 691 | 0.3+ | 0.0 | 2005 11 10 | 703 | (1.7− | 0.1+) | 2005 11 30 | 699 | 0.8− | 0.9− |
| 2005 10 31 | 703 | 0.3− | 0.2− | 2005 11 10 | 703 | 0.4− | 0.6− | 2005 11 30 | 699 | (2.3− | 1.1+) |
| 2005 10 31 | 703 | 0.9+ | 0.7+ | 2005 11 10 | 703 | 0.5+ | 0.7− | | | | |
| 2005 10 31 | 703 | 0.1+ | 0.9+ | 2005 11 10 | 703 | 0.9− | 0.0 | | | | |

**2005 UU$_{512}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.54599 | | (2000.0) | | | |
| $n$ | 0.18457262 | $\omega$ | 248.58523 | | +0.06803633 | +0.99763028 |
| $a$ | 3.0550936 | $\Omega$ | 25.32254 | | −0.90626090 | +0.06609113 |
| $e$ | 0.1404775 | $i$ | 1.37200 | | −0.41720766 | +0.01912549 |
| $P$ | 5.34 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 644 | 0.1− | 0.5+ | 2005 10 31 | 568 | 0.1− | 0.1+ | 2006 02 25 | G96 | 0.0 | 0.4− |
| 2002 07 17 | 644 | 0.1− | 0.4+ | 2005 10 31 | 568 | 0.2+ | 0.0 | 2006 03 03 | 691 | 0.0 | 0.3− |
| 2002 07 17 | 644 | 0.1− | 0.3+ | 2005 10 31 | 568 | 0.1+ | 0.0 | 2006 03 03 | 691 | 0.2+ | 0.3+ |
| 2003 10 23 | 291 | 0.0 | 0.1− | 2006 02 21 | G96 | 0.2− | 0.1+ | 2006 03 03 | 691 | 0.0 | 0.4+ |
| 2003 10 23 | 291 | 0.4− | 0.0 | 2006 02 21 | G96 | 0.1+ | 0.0 | 2006 04 07 | G96 | 0.2− | 0.0 |
| 2003 10 23 | 291 | 0.3+ | 0.3+ | 2006 02 21 | G96 | 0.1− | 0.2+ | 2006 04 07 | G96 | 0.4− | 0.1+ |
| 2003 11 22 | 695 | 0.2− | 0.1+ | 2006 02 21 | G96 | 0.1+ | 0.3+ | 2006 04 07 | G96 | 0.4+ | 0.2− |
| 2003 11 22 | 695 | 0.0 | 0.2+ | 2006 02 25 | G96 | 0.3+ | 0.1− | 2006 04 07 | G96 | 0.4− | 0.2− |

**2005 VE**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.88505 | | (2000.0) | | | |
| $n$ | 0.89826930 | $\omega$ | 31.64875 | | −0.28463366 | +0.92208319 |
| $a$ | 1.0638123 | $\Omega$ | 223.43709 | | −0.93975183 | −0.32240814 |
| $e$ | 0.2753309 | $i$ | 22.41688 | | −0.18934141 | +0.21404577 |
| $P$ | 1.10 | $H$ | 20.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 01 | G96 | 0.4+ | 0.0 | 2005 11 03 | G96 | 0.0 | 0.2− | 2005 11 13 | 448 | 0.2+ | 0.8− |
| 2005 11 01 | G96 | 0.2+ | 0.1− | 2005 11 03 | G96 | 0.2+ | 0.1− | 2005 11 13 | 448 | 0.3− | 0.7− |
| 2005 11 01 | G96 | 0.1− | 0.2+ | 2005 11 03 | 448 | 0.1− | 0.2+ | 2005 11 25 | 696 | 0.7− | 0.0 |
| 2005 11 01 | G96 | 0.2+ | 0.0 | 2005 11 03 | G96 | 0.1+ | 0.2− | 2005 11 25 | 696 | 0.1+ | 0.1+ |
| 2005 11 01 | G96 | 0.1+ | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.1− | 2005 11 25 | G96 | 0.3− | 0.6− |
| 2005 11 01 | G96 | 0.1− | 0.1+ | 2005 11 03 | G96 | 0.2+ | 0.1− | 2005 11 25 | G96 | 0.1− | 0.2− |
| 2005 11 01 | G96 | 0.2+ | 0.2− | 2005 11 03 | G96 | 0.2− | 0.1− | 2005 11 25 | G96 | 0.1− | 0.4− |
| 2005 11 01 | G96 | 0.0 | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.1− | 2005 11 25 | G96 | 0.3+ | 0.5− |
| 2005 11 01 | G96 | 0.1+ | 0.3+ | 2005 11 03 | G96 | 0.2+ | 0.0 | 2005 12 23 | 291 | 0.2+ | 0.1+ |
| 2005 11 01 | G96 | 0.3+ | 0.2+ | 2005 11 03 | 448 | 0.4− | 0.3− | 2005 12 23 | 291 | 0.2− | 0.6+ |
| 2005 11 01 | G96 | 0.1+ | 0.1− | 2005 11 03 | 448 | 0.2− | 0.1− | 2005 12 23 | 291 | 0.2− | 0.2− |
| 2005 11 01 | G96 | 0.2+ | 0.3+ | 2005 11 03 | G96 | 0.1+ | 0.2− | 2006 01 22 | 291 | 0.5+ | 0.3− |
| 2005 11 01 | G96 | 0.3+ | 0.1+ | 2005 11 03 | G96 | 0.0 | 0.1+ | 2006 01 22 | 291 | 0.4− | 0.3+ |
| 2005 11 01 | G96 | 0.0 | 0.2+ | 2005 11 03 | G96 | 0.0 | 0.1+ | 2006 01 22 | 291 | 0.7− | 0.3+ |
| 2005 11 01 | G96 | 0.3+ | 0.4+ | 2005 11 03 | G96 | 0.3+ | 0.0 | 2006 09 04 | 568 | 0.1+ | 0.1− |
| 2005 11 01 | G96 | 0.1− | 0.0 | 2005 11 06 | A50 | 0.6− | 1.4+ | 2006 09 04 | 568 | 0.1+ | 0.1− |
| 2005 11 02 | G96 | 0.5+ | 0.6− | 2005 11 06 | A50 | 0.3− | 0.3+ | 2006 09 08 | J95 | 0.2− | 0.4+ |
| 2005 11 02 | G96 | 0.2+ | 1.2− | 2005 11 06 | A50 | 0.2− | 0.1+ | 2006 09 08 | J95 | 0.6+ | 0.7− |
| 2005 11 02 | G96 | 0.1− | 0.1+ | 2005 11 06 | A50 | 0.3+ | 0.6+ | 2006 09 08 | J95 | 0.1+ | 0.6+ |
| 2005 11 02 | G96 | 0.1+ | 0.0 | 2005 11 06 | A50 | 0.6+ | 0.5+ | 2006 09 09 | J95 | 0.9− | 0.3+ |
| 2005 11 03 | 854 | 0.1− | 0.9− | 2005 11 06 | 448 | 0.1− | 0.3− | 2006 09 09 | J95 | 0.7− | 1.1+ |
| 2005 11 03 | 854 | 0.1+ | 0.8+ | 2005 11 06 | 448 | 0.2− | 0.1− | 2006 10 25 | 113 | 0.3+ | 0.3+ |
| 2005 11 03 | 703 | 0.6− | 0.7− | 2005 11 06 | 448 | 0.2− | 0.2− | 2006 10 25 | 113 | 0.1+ | 0.9+ |
| 2005 11 03 | 703 | 0.4+ | 0.5+ | 2005 11 13 | 448 | 0.6+ | 0.9− | 2006 10 25 | 113 | 0.2+ | 0.2+ |

**2005 VH**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 119.22306 | | (2000.0) | | | |
| $n$ | 0.18612097 | $\omega$ | 86.15820 | | +0.78985258 | +0.61199061 |
| $a$ | 3.0381265 | $\Omega$ | 236.10354 | | −0.58008456 | +0.72431392 |
| $e$ | 0.2070852 | $i$ | 2.76249 | | −0.19908490 | +0.31754816 |
| $P$ | 5.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 691 | 0.0 | 0.4− | 2005 10 30 | G96 | 0.2− | 0.3− | 2005 11 13 | 448 | 0.1+ | 0.2+ |
| 2000 11 30 | 691 | 0.1+ | 0.5− | 2005 10 30 | G96 | 0.4+ | 0.4− | 2005 11 13 | 448 | 0.1− | 0.1− |
| 2000 11 30 | 691 | 0.1+ | 0.5− | 2005 10 30 | G96 | 0.1− | 0.4− | 2005 11 13 | 448 | 0.6+ | 0.3− |
| 2003 04 29 | 691 | 0.3+ | 0.1+ | 2005 11 02 | 448 | 0.5+ | 0.0 | 2005 11 19 | 448 | 0.1− | 0.1+ |
| 2003 04 29 | 691 | 0.1− | 0.5+ | 2005 11 02 | 448 | 0.3+ | 0.4+ | 2005 11 19 | 448 | 0.2+ | 0.1− |
| 2003 04 29 | 691 | 0.2+ | 0.3+ | 2005 11 02 | 448 | 0.6+ | 0.7+ | 2005 11 19 | 448 | 0.8+ | 0.1− |
| 2005 10 29 | 703 | 0.8− | 0.3− | 2005 11 03 | 448 | 0.1+ | 0.1− | 2005 12 08 | 448 | 0.1+ | 0.8+ |
| 2005 10 29 | 703 | 0.0 | 0.1+ | 2005 11 03 | 448 | 0.5− | 0.1+ | 2005 12 08 | 448 | 0.5+ | 0.2+ |
| 2005 10 29 | 703 | 0.2− | 0.1+ | 2005 11 03 | 448 | 0.0 | 0.1− | 2005 12 08 | 448 | 0.6+ | 0.3− |
| 2005 10 29 | 703 | 0.0 | 0.1+ | 2005 11 06 | 704 | 1.3− | 0.1+ | 2005 12 08 | 448 | 1.0− | 0.6+ |
| 2005 10 30 | 691 | 0.0 | 0.2+ | 2005 11 06 | 704 | 1.1− | 1.1+ | 2006 01 06 | 448 | 1.2− | 0.0 |
| 2005 10 30 | 691 | 0.1+ | 0.3+ | 2005 11 06 | 704 | 0.3− | 0.7+ | 2006 01 06 | 448 | 0.1+ | 0.6+ |
| 2005 10 30 | 691 | 0.0 | 0.0 | 2005 11 06 | 704 | 0.2− | 0.4+ | 2006 01 06 | 448 | 0.1+ | 0.7+ |
| 2005 10 30 | G96 | 0.2− | 0.5− | 2005 11 06 | 704 | 0.2+ | 1.3+ | | | | |

### 2005 VQ

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.05857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.82542149 | $\omega$ | 184.14771 | | −0.52368521 | +0.80905609 | |
| $a$ | 1.1255174 | $\Omega$ | 54.49099 | | −0.77188156 | −0.31809765 | |
| $e$ | 0.4887865 | $i$ | 19.13251 | | −0.36048947 | −0.49420859 | |
| $P$ | 1.19 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 30 | 703 | 1.0+ | 0.8− | 2005 11 04 | H36 | 1.2+ | 0.7− | 2005 11 10 | 703 | 1.0− | 0.3+ |
| 2005 10 30 | 703 | 0.6− | 0.8− | 2005 11 04 | 703 | 0.6+ | 0.7+ | 2005 11 18 | J95 | 0.1+ | 0.1− |
| 2005 10 30 | 703 | 0.4+ | 0.2+ | 2005 11 04 | 703 | 0.1− | 0.1+ | 2005 11 18 | J95 | 0.1+ | 0.3+ |
| 2005 10 30 | 703 | 0.6− | 0.3+ | 2005 11 04 | 854 | 0.6− | 0.9+ | 2005 11 18 | 448 | 0.3+ | 0.2− |
| 2005 11 03 | 703 | 0.2− | 0.2+ | 2005 11 04 | 854 | 0.9+ | 0.4+ | 2005 11 18 | 448 | 0.1− | 0.8− |
| 2005 11 03 | 703 | 1.0− | 1.1+ | 2005 11 04 | 703 | 0.2− | 0.6− | 2005 11 18 | 448 | 0.5− | 0.1− |
| 2005 11 03 | 703 | 0.7+ | 0.7+ | 2005 11 04 | 854 | 0.1+ | 0.8+ | 2005 11 26 | 711 | 0.2+ | 0.3+ |
| 2005 11 03 | 703 | 1.1− | 0.4+ | 2005 11 04 | G96 | 0.3+ | 0.2− | 2005 11 26 | 711 | 0.7− | 0.5+ |
| 2005 11 03 | 703 | 0.2− | 1.4− | 2005 11 04 | G96 | 0.2+ | 0.2− | 2005 11 26 | 711 | 0.5+ | 0.1+ |
| 2005 11 03 | 703 | 0.0 | 1.4+ | 2005 11 04 | G96 | 0.1− | 0.0 | 2005 11 30 | G96 | 0.2+ | 0.2− |
| 2005 11 03 | 703 | 1.4+ | 0.0 | 2005 11 04 | G96 | 0.0 | 0.2− | 2005 11 30 | G96 | 0.0 | 0.3− |
| 2005 11 03 | 703 | 0.4− | 0.4− | 2005 11 04 | 703 | 0.7− | 0.4− | 2005 11 30 | G96 | 0.4− | 0.3− |
| 2005 11 03 | 461 | 0.3− | 0.6− | 2005 11 04 | 703 | 0.1− | 0.2− | 2005 11 30 | G96 | 0.2+ | 0.2− |
| 2005 11 03 | 461 | 0.2+ | 0.2− | 2005 11 04 | 703 | 0.5− | 0.3+ | 2005 12 22 | 291 | 0.5+ | 0.2+ |
| 2005 11 03 | 461 | 0.2+ | 0.4− | 2005 11 04 | 703 | 0.5+ | 0.1− | 2005 12 22 | 291 | 0.6+ | 0.1+ |
| 2005 11 03 | 461 | 1.0+ | 0.2+ | 2005 11 05 | A50 | 0.2− | 0.7+ | 2005 12 22 | 291 | 0.5+ | 0.1+ |
| 2005 11 04 | 932 | 0.3+ | 0.2− | 2005 11 05 | A50 | 0.5− | 0.5+ | 2006 01 22 | 291 | 0.5− | 0.4+ |
| 2005 11 04 | 932 | 0.4+ | 0.2− | 2005 11 09 | 448 | 0.3− | 0.2+ | 2006 01 22 | 291 | 0.6− | 0.9− |
| 2005 11 04 | 932 | 0.3+ | 0.4− | 2005 11 09 | 448 | 0.8− | 0.2+ | 2006 01 22 | 291 | 1.1+ | 0.3+ |
| 2005 11 04 | 673 | 1.0− | 0.6− | 2005 11 09 | 448 | 0.1− | 0.4− | 2006 09 13 | 474 | 0.2+ | 0.1+ |
| 2005 11 04 | 673 | 1.1− | 0.2− | 2005 11 09 | 461 | 0.0 | 0.3+ | 2006 09 13 | 474 | 0.4+ | 0.9− |
| 2005 11 04 | 673 | 1.0+ | 0.4− | 2005 11 09 | 461 | 0.3− | 0.2− | 2006 09 13 | 474 | 0.5− | 0.5+ |
| 2005 11 04 | 673 | 0.2− | 0.1− | 2005 11 09 | 461 | 0.4− | 0.1+ | 2006 10 19 | F84 | 0.1− | 0.2− |
| 2005 11 04 | H36 | 0.2− | 0.6− | 2005 11 10 | 703 | 1.0− | 0.1− | 2006 10 19 | F84 | 0.1+ | 0.6− |
| 2005 11 04 | H36 | (3.0+ | 1.7−) | 2005 11 10 | 703 | 1.3− | 0.5+ | | | | |
| 2005 11 04 | 703 | 0.3− | 0.1+ | 2005 11 10 | 703 | (1.4− | 1.8−) | | | | |

### 2005 $VH_5$ = 2000 $SE_{236}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.56032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22623113 | $\omega$ | 44.05453 | | +0.98093820 | −0.19338889 | |
| $a$ | 2.6674798 | $\Omega$ | 327.08215 | | +0.16721412 | +0.88987199 | |
| $e$ | 0.0553723 | $i$ | 2.00359 | | +0.09899337 | +0.41319315 | |
| $P$ | 4.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.4− | 0.6+ | 2002 02 15 | 644 | 0.3+ | 0.5− | 2005 12 05 | G96 | 0.1− | 0.1− |
| 2000 09 24 | 704 | 0.1− | 0.2− | 2005 11 09 | 461 | 0.0 | 0.3− | 2005 12 07 | 691 | 0.2− | 0.3− |
| 2000 09 24 | 704 | 0.7+ | 0.7− | 2005 11 09 | 461 | 0.1− | 0.2− | 2005 12 07 | 691 | 0.3− | 0.3− |
| 2002 01 06 | 644 | 0.1− | 0.1+ | 2005 11 10 | 461 | 0.2− | 1.0+ | 2005 12 07 | 691 | 0.3+ | 0.6+ |
| 2002 01 06 | 644 | 0.2+ | 0.6+ | 2005 11 10 | 461 | 0.0 | 0.6+ | 2005 12 21 | 461 | 0.2+ | 0.4− |
| 2002 01 18 | 644 | 0.1+ | 0.1− | 2005 11 10 | 461 | 0.1− | 0.7+ | 2005 12 21 | 461 | 0.1+ | 0.1− |
| 2002 01 18 | 644 | 0.1+ | 0.4− | 2005 11 25 | 691 | 0.0 | 0.1+ | 2005 12 28 | G96 | 0.5+ | 0.2− |
| 2002 01 18 | 644 | 0.6− | 0.8− | 2005 11 25 | 691 | 0.1− | 0.2− | 2005 12 28 | G96 | 0.3− | 0.3+ |
| 2002 02 05 | 644 | 0.3− | 0.3+ | 2005 11 25 | 691 | 0.0 | 0.0 | 2005 12 28 | G96 | 0.2+ | 0.1− |
| 2002 02 05 | 644 | 0.1− | 0.4+ | 2005 12 05 | G96 | 0.0 | 0.0 | 2005 12 28 | G96 | 0.1− | 0.3− |
| 2002 02 05 | 644 | 0.2+ | 0.5− | 2005 12 05 | G96 | 0.0 | 0.3− | 2006 01 19 | 461 | 0.7+ | 0.3+ |
| 2002 02 05 | 644 | 0.0 | 0.6+ | 2005 12 05 | G96 | 0.1− | 0.4− | 2006 01 19 | 461 | 0.9+ | 0.4+ |

### 2005 $VB_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.35865 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26734016 | $\omega$ | 220.15862 | | +0.85520294 | −0.51809994 | |
| $a$ | 2.3864916 | $\Omega$ | 171.01337 | | +0.49573908 | +0.80971340 | |
| $e$ | 0.2391268 | $i$ | 5.19936 | | +0.15123059 | +0.27556608 | |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 691 | 0.1+ | 0.1+ | 2005 10 27 | 703 | 0.9− | 0.3− | 2005 11 10 | 703 | 0.3− | 0.7− |
| 2001 07 18 | 691 | 0.1− | 0.4− | 2005 10 27 | 699 | 0.6+ | 0.5− | 2005 11 10 | 703 | 0.0 | 0.0 |
| 2001 07 18 | 691 | 0.3+ | 0.6+ | 2005 11 05 | 703 | 0.0 | 0.5− | 2005 11 10 | 703 | 0.8+ | 0.4+ |
| 2001 08 15 | 608 | 0.2+ | 0.4− | 2005 11 05 | 704 | 0.5+ | 0.3+ | 2005 11 10 | 703 | 0.5+ | 0.6+ |
| 2001 08 15 | 608 | 0.3− | 0.5− | 2005 11 05 | 703 | 0.6− | 0.8− | 2005 11 29 | 644 | 0.1+ | 0.3− |
| 2001 08 15 | 608 | 0.0 | 0.0 | 2005 11 05 | 703 | 0.5− | 0.8− | 2005 11 29 | 644 | 0.1− | 0.2− |
| 2001 09 07 | 704 | 0.3− | 0.6+ | 2005 11 05 | 704 | 1.0+ | 0.7+ | 2005 11 29 | 644 | 0.1+ | 0.2− |
| 2001 09 07 | 704 | 0.2− | 1.2+ | 2005 11 05 | 703 | 0.1− | 1.0− | 2005 11 29 | 644 | 0.1+ | 0.2+ |
| 2001 09 07 | 704 | 1.3− | 1.1+ | 2005 11 05 | 704 | 0.3+ | 1.0+ | 2005 11 29 | 644 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 0.7+ | 0.2+ | 2005 11 05 | 704 | 0.7+ | 0.6+ | 2005 11 29 | 644 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.3+ | 0.8− | 2005 11 05 | 704 | 0.3− | 0.1+ | 2005 11 30 | 699 | 0.1+ | 0.5+ |
| 2001 09 20 | 704 | 0.6− | 0.1+ | 2005 11 09 | 012 | 0.2− | 0.7− | 2005 11 30 | 699 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.4− | 2005 11 09 | 012 | 0.3+ | 0.2− | 2005 11 30 | 699 | 0.5− | 0.4+ |
| 2005 10 27 | 699 | 0.5− | 0.2− | 2005 11 09 | 012 | 0.1+ | 0.2− | 2005 11 30 | 699 | 0.2+ | 0.5− |
| 2005 10 27 | 699 | 0.3+ | 0.3+ | 2005 11 09 | 012 | 0.1+ | 0.2− | 2006 01 22 | 291 | 0.2− | 0.4+ |
| 2005 10 27 | 703 | 0.6− | 0.7− | 2005 11 09 | 012 | 0.6+ | 0.1+ | 2006 01 22 | 291 | 0.1− | 0.3+ |
| 2005 10 27 | 703 | (0.2− | 1.5−) | 2005 11 09 | 012 | 0.1− | 0.5− | 2006 01 22 | 291 | 0.1− | 0.6+ |
| 2005 10 27 | 703 | 0.4− | 0.6− | 2005 11 09 | 012 | 0.3+ | 0.2− | | | | |
| 2005 10 27 | 699 | 1.0− | 0.8+ | 2005 11 09 | 012 | 0.5+ | 0.2− | | | | |

### 2005 $VH_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.25437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22469121 | $\omega$ | 109.87083 | | +0.97862075 | −0.07490795 | |
| $a$ | 2.6796536 | $\Omega$ | 254.80019 | | +0.00496179 | +0.93964485 | |
| $e$ | 0.2850938 | $i$ | 11.44871 | | +0.20561327 | +0.33385079 | |
| $P$ | 4.39 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 608 | 0.2+ | 0.2− | 2005 11 28 | 704 | 1.3+ | 0.0 | 2005 12 06 | 704 | 0.1+ | 0.1− |
| 2002 01 05 | 608 | 0.3+ | 0.4+ | 2005 11 28 | 704 | 0.3+ | 0.4+ | 2005 12 06 | 704 | 0.9− | 0.0 |
| 2002 01 05 | 608 | 0.1− | 1.2+ | 2005 11 28 | 704 | 0.4+ | 0.1+ | 2005 12 10 | 704 | 0.7− | 0.2+ |
| 2004 07 16 | 807 | 0.1+ | 0.1+ | 2005 11 28 | 704 | 0.4− | 0.6+ | 2005 12 10 | 704 | 0.6− | 1.0+ |
| 2004 07 16 | 807 | 0.1+ | 0.3+ | 2005 11 28 | 704 | 0.1− | 0.5+ | 2005 12 10 | 704 | 0.4+ | 0.6− |
| 2005 10 30 | 704 | 0.5+ | 1.1+ | 2005 11 29 | 704 | 0.1+ | 0.5− | 2005 12 10 | 704 | 0.2− | 0.1− |
| 2005 10 30 | 704 | 0.0 | 0.5+ | 2005 11 29 | 704 | (3.1− | 0.2+) | 2005 12 10 | 704 | 0.0 | 0.3+ |
| 2005 10 30 | 704 | 0.0 | 0.3+ | 2005 11 29 | 704 | 0.2− | 0.1− | 2005 12 21 | 691 | 0.1+ | 0.1+ |
| 2005 10 30 | 704 | 0.8+ | 0.6+ | 2005 11 29 | 704 | 0.3− | 0.3− | 2005 12 21 | 691 | 0.1− | 0.2+ |
| 2005 10 30 | 704 | 0.3+ | 0.5− | 2005 11 29 | 704 | 0.3+ | 1.1+ | 2005 12 21 | 691 | 0.3+ | 0.3+ |
| 2005 11 02 | 704 | 0.4+ | 0.2+ | 2005 12 01 | 704 | 0.6+ | 0.5+ | 2005 12 21 | 699 | 0.5− | 0.3− |
| 2005 11 02 | 704 | 0.1+ | 0.1− | 2005 12 01 | 704 | 0.6+ | 0.2+ | 2005 12 21 | 699 | 0.5+ | 0.5+ |
| 2005 11 02 | 704 | 0.4+ | 0.2+ | 2005 12 01 | 704 | 0.5+ | 0.5+ | 2005 12 21 | 699 | 0.3+ | 0.6+ |
| 2005 11 02 | 704 | 0.4+ | 0.1+ | 2005 12 01 | 704 | 0.2+ | 0.5+ | 2005 12 21 | 699 | 0.4+ | 0.3+ |
| 2005 11 02 | 704 | 0.7+ | 0.0 | 2005 12 01 | 704 | 0.5+ | 0.5+ | 2005 12 23 | 691 | 0.6− | 0.7− |
| 2005 11 08 | 704 | 0.3+ | 0.0 | 2005 12 04 | 704 | 0.0 | 0.0 | 2005 12 23 | 691 | 0.1+ | 1.2− |
| 2005 11 08 | 704 | 0.1+ | 0.3− | 2005 12 04 | 704 | 0.5+ | 0.7− | 2005 12 23 | 691 | 0.1+ | 0.2+ |
| 2005 11 08 | 704 | 0.5+ | 0.1+ | 2005 12 04 | 704 | 1.5− | 0.7− | 2005 12 23 | 703 | 0.7− | 0.6− |
| 2005 11 08 | 704 | 0.3+ | 0.3− | 2005 12 04 | 704 | 0.3− | 0.3− | 2005 12 23 | 703 | 0.4− | 0.7− |
| 2005 11 08 | 703 | 0.2− | 0.1+ | 2005 12 04 | 704 | 0.0 | 0.9− | 2005 12 23 | 703 | 0.5− | 0.7− |
| 2005 11 08 | 704 | 0.3+ | 0.2− | 2005 12 04 | 704 | 1.6− | 0.6− | 2005 12 23 | 703 | 0.6− | 0.3− |
| 2005 11 08 | 703 | 0.2+ | 0.4− | 2005 12 04 | 704 | 0.1+ | 0.6− | 2005 12 25 | G96 | 0.1− | 0.0 |
| 2005 11 08 | 703 | 0.4− | 0.4− | 2005 12 04 | 704 | 0.8+ | 0.8− | 2005 12 25 | G96 | 0.1− | 0.4− |
| 2005 11 08 | 703 | 0.1− | 0.4+ | 2005 12 04 | 704 | 1.6− | 0.6− | 2005 12 25 | G96 | 0.1+ | 0.2− |
| 2005 11 09 | 599 | 0.6+ | 0.4+ | 2005 12 04 | 704 | 0.3− | 0.7− | 2005 12 25 | G96 | 0.1+ | 0.2− |
| 2005 11 09 | 599 | 1.0− | 1.7− | 2005 12 04 | 704 | 0.2+ | 0.3− | 2005 12 27 | 699 | 1.9− | 1.5+ |
| 2005 11 09 | 599 | 0.6+ | 0.4+ | 2005 12 04 | 704 | (2.2− | 0.6−) | 2005 12 27 | 699 | 0.8+ | 0.3+ |
| 2005 11 09 | 599 | 0.7+ | 0.5+ | 2005 12 04 | 704 | 0.1− | 0.2− | 2005 12 27 | 699 | 0.3+ | 1.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 12 | 691 | 0.1+ | 0.0 | 2005 12 04 | 704 | 0.4+ | 0.7− | 2005 12 27 | 699 | 0.0 | 0.1− |
| 2005 11 12 | 691 | 0.1+ | 0.1− | 2005 12 04 | 704 | 1.6− | 1.0− | 2006 01 04 | 699 | 0.5+ | 0.5+ |
| 2005 11 12 | 691 | 0.1− | 0.1− | 2005 12 05 | 704 | 0.1− | 0.1+ | 2006 01 04 | 699 | 0.3− | 0.1− |
| 2005 11 21 | 691 | 0.1− | 0.0 | 2005 12 05 | 704 | 0.2− | 0.6+ | 2006 01 04 | 699 | 0.3− | 0.2− |
| 2005 11 21 | 691 | 0.1− | 0.1+ | 2005 12 05 | 704 | 0.2+ | 0.7+ | 2006 01 04 | 699 | 0.5− | 0.4+ |
| 2005 11 21 | 691 | 0.0 | 0.1+ | 2005 12 05 | 704 | 0.2+ | 0.4+ | 2006 01 06 | G96 | 0.3− | 0.0 |
| 2005 11 21 | 691 | 0.2+ | 0.4+ | 2005 12 05 | 704 | 0.5+ | 0.1− | 2006 01 06 | G96 | 0.2+ | 0.1− |
| 2005 11 21 | 691 | 0.3+ | 0.1+ | 2005 12 05 | 699 | 0.0 | 0.7+ | 2006 01 06 | G96 | 0.2+ | 0.5− |
| 2005 11 21 | 691 | 0.1+ | 0.0 | 2005 12 05 | 699 | 0.2− | 0.4+ | 2006 01 06 | G96 | 0.0 | 0.3− |
| 2005 11 21 | 703 | 0.1+ | 0.3− | 2005 12 05 | 699 | 0.4− | 1.3+ | 2006 01 25 | G96 | 0.1− | 0.1− |
| 2005 11 21 | 703 | 0.3+ | 0.0 | 2005 12 06 | 704 | 0.5− | 0.1+ | 2006 01 25 | G96 | 0.3+ | 0.2− |
| 2005 11 21 | 703 | 0.1− | 0.3− | 2005 12 06 | 704 | 0.7− | 0.4+ | 2006 01 25 | G96 | 0.0 | 0.1− |
| 2005 11 21 | 703 | 0.6+ | 0.2− | 2005 12 06 | 704 | 0.6− | 0.6− | 2006 01 25 | G96 | 0.3+ | 0.0 |

### 2005 $VU_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 17.79361 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18868564 | $\omega$ | 78.22016 | | | −0.30696917 | | −0.94626904 | |
| $a$ | 3.0105337 | $\Omega$ | 30.26863 | | | +0.77559659 | | −0.31066476 | |
| $e$ | 0.1056148 | $i$ | 11.64122 | | | +0.55156129 | | −0.08979038 | |
| $P$ | 5.22 | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 02 | 644 | 0.3+ | 0.0 | 2005 11 09 | 461 | 0.1+ | 0.3− | 2005 12 01 | 644 | 0.2+ | 0.3− |
| 2002 04 02 | 644 | 0.2+ | 0.5− | 2005 11 09 | 461 | 0.1+ | 0.4+ | 2005 12 01 | 644 | 0.1− | 0.1+ |
| 2002 04 03 | 644 | 0.4− | 0.1− | 2005 11 09 | 461 | 0.1+ | 0.0 | 2005 12 10 | 703 | 0.2+ | 0.6− |
| 2002 04 03 | 644 | 0.2− | 0.1− | 2005 11 10 | 461 | 0.0 | 0.0 | 2005 12 10 | 703 | 0.3− | 0.4− |
| 2002 04 14 | 644 | 0.0 | 0.4+ | 2005 11 21 | 703 | 0.3− | 0.2− | 2005 12 10 | 703 | 1.0− | 0.8− |
| 2002 04 14 | 644 | 0.3+ | 0.6+ | 2005 11 21 | 703 | 0.1+ | 0.2− | 2005 12 10 | 703 | (0.3+ | 1.7−) |
| 2002 05 10 | 644 | 0.1− | 0.1− | 2005 11 21 | 703 | 1.1− | 0.7− | 2005 12 21 | 461 | 0.1− | 0.1+ |
| 2002 05 10 | 644 | 0.1− | 0.1− | 2005 11 21 | 703 | 0.2+ | 0.2− | 2005 12 21 | 461 | 0.0 | 0.0 |
| 2005 11 08 | 461 | 0.4+ | 0.1− | 2005 11 28 | 704 | 0.4− | 1.2+ | 2005 12 21 | 461 | 0.1+ | 0.1+ |
| 2005 11 08 | 461 | 0.0 | 0.3− | 2005 11 28 | 704 | (0.6+ | 1.9+) | 2005 12 21 | 461 | 0.5+ | 0.3− |
| 2005 11 08 | 461 | 0.1− | 0.3− | 2005 11 28 | 704 | 0.9+ | 0.8+ | 2006 01 19 | 461 | 0.4+ | 0.1− |
| 2005 11 08 | 461 | 0.2+ | 0.2+ | 2005 11 28 | 704 | 0.4+ | 0.8+ | 2006 01 19 | 461 | 0.2− | 0.1− |
| 2005 11 08 | 461 | 0.1+ | 0.0 | 2005 11 28 | 704 | 0.4+ | 0.4+ | 2006 01 19 | 461 | 0.2− | 0.4+ |
| 2005 11 08 | 461 | 0.6− | 0.4+ | 2005 12 01 | 644 | 0.0 | 0.0 | | | | |

### 2005 $VV_{10}$ = 2003 $GL_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 42.50394 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24168252 | $\omega$ | 354.80747 | | | −0.04028754 | | −0.99683141 | |
| $a$ | 2.5525400 | $\Omega$ | 97.48913 | | | +0.91920952 | | −0.06388436 | |
| $e$ | 0.0788443 | $i$ | 3.96667 | | | +0.39170239 | | +0.04739115 | |
| $P$ | 4.08 | $H$ | 16.9 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 18 | 691 | 0.1− | 0.1− | 2005 10 22 | 691 | 0.0 | 0.4+ | 2005 11 04 | 691 | 0.1− | 0.2+ |
| 2002 01 18 | 691 | 0.2+ | 0.1− | 2005 10 22 | 691 | 0.1+ | 0.3+ | 2005 11 04 | 691 | 0.1− | 0.2+ |
| 2002 01 18 | 691 | 0.1+ | 0.2− | 2005 11 01 | G96 | 0.0 | 0.3− | 2005 12 29 | G96 | 0.2+ | 0.3− |
| 2003 04 08 | 291 | 0.3− | 0.3− | 2005 11 01 | G96 | 0.3− | 0.2− | 2005 12 29 | G96 | 0.4+ | 0.1+ |
| 2003 04 08 | 291 | 0.1− | 0.5+ | 2005 11 01 | G96 | 0.0 | 0.4− | 2005 12 29 | G96 | 0.1− | 0.3− |
| 2003 04 08 | 291 | 0.2+ | 0.2+ | 2005 11 02 | G96 | 0.4+ | 0.4− | 2005 12 29 | G96 | 0.6+ | 0.2− |
| 2003 04 09 | 291 | 0.2+ | 0.1+ | 2005 11 02 | G96 | 0.2− | 0.2− | 2006 01 22 | G96 | 0.2+ | 0.2− |
| 2003 04 09 | 291 | 0.1− | 0.0 | 2005 11 02 | G96 | 0.2− | 0.1− | 2006 01 22 | G96 | 1.5+ | 0.3− |
| 2003 04 09 | 291 | 0.4+ | 0.3+ | 2005 11 02 | G96 | 0.2− | 0.4− | 2006 01 22 | G96 | 0.2+ | 0.1+ |
| 2005 10 22 | 691 | 0.2− | 0.4+ | 2005 11 04 | 691 | 0.5− | 0.2+ | 2006 01 22 | G96 | 0.4+ | 0.1+ |

### 2005 $VT_{11}$ = 2003 $BC_{20}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 80.79823 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28979688 | $\omega$ | 3.36844 | | | +0.51138538 | | −0.85380121 | |
| $a$ | 2.2615538 | $\Omega$ | 55.89797 | | | +0.78566169 | | +0.41854121 | |
| $e$ | 0.1903658 | $i$ | 6.76294 | | | +0.34816763 | | +0.30959127 | |
| $P$ | 3.40 | $H$ | 17.3 | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.1− | 0.2+ | 2005 10 31 | 704 | 0.9+ | 0.4+ | 2005 11 29 | 683 | 0.7+ | 1.4− |
| 2000 05 05 | 645 | 0.1− | 0.2+ | 2005 11 01 | G96 | 0.2− | 0.1− | 2005 11 29 | 683 | 0.1+ | 0.7+ |
| 2003 01 27 | 699 | 0.4+ | 0.5− | 2005 11 01 | G96 | 0.0 | 0.2− | 2005 11 29 | 683 | (2.1+ | 0.5+) |
| 2003 01 27 | 699 | 0.1− | 1.1+ | 2005 11 01 | G96 | 0.2+ | 0.2− | 2005 12 01 | 704 | 0.6− | 0.7+ |
| 2003 01 27 | 699 | 0.0 | 0.2+ | 2005 11 01 | G96 | 0.1− | 0.4− | 2005 12 01 | 704 | 0.4+ | 0.3− |
| 2003 01 27 | 699 | 0.3+ | 1.3− | 2005 11 03 | 704 | 0.2+ | 1.1+ | 2005 12 01 | 704 | 0.9+ | 0.3+ |
| 2003 01 28 | 644 | 0.1− | 0.5+ | 2005 11 03 | 704 | 0.4− | 0.3+ | 2005 12 01 | 704 | 0.0 | 0.5− |
| 2003 01 28 | 644 | 0.1+ | 0.4+ | 2005 11 03 | 704 | 0.0 | 0.0 | 2005 12 01 | 704 | 1.8− | 0.5− |
| 2003 01 28 | 644 | 0.1+ | 0.7+ | 2005 11 03 | 704 | 0.6+ | 0.4− | 2005 12 02 | 683 | 0.1− | 0.2− |
| 2005 10 10 | 703 | 0.9− | 1.5+ | 2005 11 04 | 691 | 0.1+ | 0.0 | 2005 12 02 | 683 | 0.7+ | 0.8+ |
| 2005 10 10 | 703 | 1.0− | 0.3+ | 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 02 | 683 | 1.6− | 0.6+ |
| 2005 10 10 | 703 | 0.1− | 0.4+ | 2005 11 04 | 691 | 0.2+ | 0.1− | 2005 12 02 | G96 | 0.4+ | 0.3− |
| 2005 10 10 | 703 | 0.1− | 0.1+ | 2005 11 05 | 699 | 0.3+ | 0.2− | 2005 12 02 | G96 | 0.1+ | 0.2− |
| 2005 10 22 | 644 | 0.2+ | 0.1− | 2005 11 05 | 704 | 0.7− | 0.4− | 2005 12 02 | G96 | 0.3+ | 0.2− |
| 2005 10 22 | 644 | 0.1+ | 0.0 | 2005 11 05 | 704 | 0.3+ | 0.3− | 2005 12 02 | G96 | 0.1+ | 0.2− |
| 2005 10 22 | 644 | 0.0 | 0.1+ | 2005 11 05 | 699 | 0.1+ | 0.1− | 2005 12 04 | 683 | 0.2− | 0.1− |
| 2005 10 23 | 703 | 0.6+ | 0.1− | 2005 11 05 | 704 | 0.2+ | 1.5− | 2005 12 04 | 683 | 1.4+ | 0.6− |
| 2005 10 23 | 703 | 0.2+ | 0.3+ | 2005 11 05 | 704 | 0.5+ | 0.1− | 2005 12 04 | 683 | 0.3+ | 1.1+ |
| 2005 10 23 | 703 | 1.9− | 0.0 | 2005 11 05 | 699 | 0.1− | 0.2− | 2005 12 04 | 704 | 0.3− | 0.8− |
| 2005 10 28 | 704 | 0.2− | 0.2+ | 2005 11 05 | 704 | 0.6+ | 0.1− | 2005 12 04 | 704 | 0.4− | 0.0 |
| 2005 10 28 | 704 | 0.2+ | 0.1− | 2005 11 05 | 699 | 0.4− | 1.0− | 2005 12 04 | 704 | 0.5+ | 0.1− |
| 2005 10 28 | 704 | 1.7− | 0.1+ | 2005 11 10 | 703 | 0.4− | 0.1− | 2005 12 04 | 704 | 0.4+ | 0.6+ |
| 2005 10 28 | 704 | 1.1− | 0.4− | 2005 11 10 | 703 | 0.6− | 0.1− | 2005 12 04 | 704 | 0.1+ | 0.9+ |
| 2005 10 28 | 704 | 0.1+ | 0.4+ | 2005 11 10 | 703 | 0.6− | 0.1+ | 2005 12 31 | 704 | 0.2− | 0.3− |
| 2005 10 30 | 703 | 0.2− | 0.1+ | 2005 11 10 | 703 | 0.9+ | 0.4− | 2005 12 31 | 704 | 1.2− | 0.3− |
| 2005 10 30 | 703 | 0.3− | 0.4− | 2005 11 25 | 703 | 0.1+ | 0.7− | 2005 12 31 | 704 | 0.4− | 0.4− |
| 2005 10 30 | 703 | 0.0 | 0.3+ | 2005 11 25 | 703 | 0.1+ | 0.8− | 2005 12 31 | 704 | 0.1− | 0.0 |
| 2005 10 30 | 703 | 0.2+ | 0.6− | 2005 11 25 | 703 | 0.2+ | 0.1+ | 2006 01 06 | G96 | 0.5+ | 0.6− |
| 2005 10 31 | 704 | 0.5+ | 0.0 | 2005 11 25 | 703 | 0.2− | 0.7+ | 2006 01 06 | G96 | 0.2+ | 0.4− |
| 2005 10 31 | 704 | 1.4+ | 0.7+ | 2005 11 28 | 683 | 0.3+ | 0.3− | 2006 01 06 | G96 | 0.5+ | 0.9− |
| 2005 10 31 | 704 | 0.7+ | 1.1+ | 2005 11 28 | 683 | 1.9− | 1.4+ | 2006 01 06 | G96 | 0.6+ | 0.5− |
| 2005 10 31 | 704 | 0.9+ | 0.4+ | 2005 11 28 | 683 | 0.5+ | 1.6+ | | | | |

### 2005 $VM_{14}$ = 2000 $SY_{44}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 70.54524 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20624487 | $\omega$ | 182.61629 | | | +0.68496855 | | −0.71411387 | |
| $a$ | 2.8371390 | $\Omega$ | 224.20484 | | | +0.67215726 | | +0.69587468 | |
| $e$ | 0.0731554 | $i$ | 11.95520 | | | +0.28110976 | | +0.07615645 | |
| $P$ | 4.78 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 557 | 0.1− | 1.2− | 2005 10 31 | 691 | 0.1− | 0.0 | 2005 11 29 | 699 | 0.2+ | 0.2+ |
| 2000 09 27 | 557 | 0.2− | 1.1+ | 2005 10 31 | 691 | 0.0 | 0.2− | 2005 11 29 | 699 | (2.8+ | 1.1+) |
| 2000 09 27 | 557 | 0.3− | 0.4− | 2005 11 03 | 704 | 0.2+ | 0.8+ | 2005 11 30 | 704 | 0.1− | 0.4+ |
| 2000 09 27 | 557 | 0.4+ | 0.7− | 2005 11 03 | 704 | 0.5+ | 0.5+ | 2005 11 30 | 704 | 0.0 | 0.3− |
| 2000 09 29 | 557 | 0.3− | 0.0 | 2005 11 03 | 704 | 0.2− | 0.1+ | 2005 11 30 | 704 | 0.2+ | 0.0 |
| 2000 09 29 | 557 | 1.6+ | 0.1− | 2005 11 04 | 691 | 0.1− | 0.1− | 2005 12 08 | G96 | 0.0 | 0.2− |
| 2000 09 29 | 557 | 0.9− | 0.1− | 2005 11 04 | 691 | 0.1− | 0.1− | 2005 12 08 | G96 | 0.2+ | 0.1− |
| 2003 05 24 | 691 | 0.0 | 0.2+ | 2005 11 04 | 691 | 0.0 | 0.2+ | 2005 12 08 | G96 | 0.1− | 0.2− |
| 2003 05 24 | 691 | 0.1+ | 0.2+ | 2005 11 06 | 704 | 0.5− | 0.0 | 2005 12 08 | G96 | 0.1+ | 0.2− |
| 2003 05 24 | 691 | 0.1+ | 0.5+ | 2005 11 06 | 704 | 0.3− | 0.1− | 2005 12 08 | G96 | 0.3− | 0.2+ |
| 2004 06 22 | 691 | 0.1+ | 0.4+ | 2005 11 06 | 704 | 0.6+ | 0.5+ | 2005 12 08 | G96 | 0.2+ | 0.2+ |
| 2004 06 22 | 691 | 0.4− | 0.4+ | 2005 11 06 | 704 | 0.1− | 0.2+ | 2005 12 08 | G96 | 0.0 | 0.0 |
| 2004 06 22 | 691 | 0.1− | 0.4+ | 2005 11 26 | 703 | 1.4− | 0.3− | 2005 12 08 | G96 | 0.1+ | 0.1+ |
| 2005 10 28 | G96 | 0.0 | 0.4− | 2005 11 26 | 703 | 1.7+ | 0.5+ | 2005 12 08 | G96 | 0.3+ | 0.2− |
| 2005 10 28 | G96 | 0.0 | 0.2− | 2005 11 26 | 703 | (2.5− | 0.2+) | 2005 12 08 | G96 | 0.2+ | 0.0 |
| 2005 10 28 | G96 | 0.4− | 0.0 | 2005 11 26 | 703 | 0.4− | 0.4+ | 2005 12 08 | G96 | 0.1+ | 0.1+ |
| 2005 10 28 | G96 | 0.2+ | 0.4− | 2005 11 29 | 699 | 0.5− | 0.2+ | 2005 12 08 | G96 | 0.0 | 0.0 |
| 2005 10 31 | 691 | 0.1+ | 0.1+ | 2005 11 29 | 699 | 0.6− | 1.2+ | | | | |

**2005 VS$_{16}$ = 2002 YD$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.64260 | | (2000.0) | | | |
| $n$ | 0.29701393 | $\omega$ | 282.08962 | | +0.95731277 | −0.26154622 |
| $a$ | 2.2247685 | $\Omega$ | 93.16689 | | +0.28899033 | +0.87495995 |
| $e$ | 0.1554430 | $i$ | 7.08009 | | −0.00607007 | +0.40747841 |
| $P$ | 3.32 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.1+ | 0.1− | 2005 10 28 | 703 | 0.6+ | 0.6+ | 2005 11 09 | 703 | 0.7− | 0.3+ |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2005 10 31 | G96 | 0.2+ | 0.4− | 2005 11 25 | 703 | 0.0 | 0.8− |
| 2002 12 31 | 704 | 0.1+ | 0.0 | 2005 10 31 | G96 | 0.7+ | 0.5− | 2005 11 25 | 703 | 0.4− | 0.6+ |
| 2002 12 31 | 704 | 0.1− | 0.2− | 2005 10 31 | G96 | 0.1+ | 0.5− | 2005 11 25 | 703 | 0.3− | 0.1− |
| 2002 12 31 | 704 | 0.0 | 0.0 | 2005 10 31 | G96 | 0.5+ | 0.5− | 2005 11 25 | 703 | 0.5− | 0.8− |
| 2003 01 02 | 704 | 0.3− | 1.3+ | 2005 11 03 | 703 | 0.8+ | 0.1+ | 2005 11 29 | 644 | 0.4+ | 0.1− |
| 2003 01 02 | 704 | 0.9− | 0.5+ | 2005 11 03 | 703 | 0.3− | 0.6+ | 2005 11 29 | 644 | 0.5+ | 0.0 |
| 2003 01 02 | 704 | 0.0 | 0.2− | 2005 11 03 | 703 | 0.4− | 0.7+ | 2005 11 29 | 644 | 0.1− | 0.2+ |
| 2003 01 02 | 704 | 0.3+ | 0.0 | 2005 11 03 | 703 | 0.9− | 0.3+ | 2005 12 21 | 703 | 1.2− | 0.8− |
| 2003 01 02 | 704 | 0.5− | 0.5+ | 2005 11 04 | 704 | 0.5+ | 0.2+ | 2005 12 21 | 703 | 0.9+ | 0.2+ |
| 2005 10 22 | 644 | 0.3+ | 0.1+ | 2005 11 04 | 704 | 0.4− | 0.1+ | 2005 12 21 | 703 | 1.2− | 0.1− |
| 2005 10 22 | 644 | 0.4+ | 0.2+ | 2005 11 04 | 704 | 0.9− | 0.4− | 2005 12 21 | 703 | 0.6+ | 0.2+ |
| 2005 10 22 | 644 | 0.0 | 0.3+ | 2005 11 04 | 704 | 0.9+ | 0.3− | 2006 01 28 | G96 | 0.4− | 0.1− |
| 2005 10 27 | 699 | 0.1+ | 0.7− | 2005 11 06 | 703 | 0.2− | 0.1− | 2006 01 28 | G96 | 0.7− | 0.2+ |
| 2005 10 27 | 699 | 0.6+ | 0.1+ | 2005 11 06 | 703 | 0.2− | 0.1− | 2006 01 28 | G96 | 0.6− | 0.9+ |
| 2005 10 27 | 699 | 0.8− | 0.1+ | 2005 11 06 | 703 | 0.1− | 0.3− | 2006 01 28 | G96 | 0.1+ | 0.2+ |
| 2005 10 27 | 699 | 0.9+ | 0.4+ | 2005 11 06 | 703 | 0.1− | 0.3− | 2006 02 25 | G96 | 0.1+ | 0.8+ |
| 2005 10 28 | 703 | 0.7− | 0.3+ | 2005 11 09 | 703 | 0.4− | 0.0 | 2006 02 25 | G96 | 0.3+ | 0.3− |
| 2005 10 28 | 703 | 0.2− | 0.1+ | 2005 11 09 | 703 | 0.1− | 0.7+ | 2006 02 25 | G96 | 0.2+ | 0.8+ |
| 2005 10 28 | 703 | 1.1+ | 0.0 | 2005 11 09 | 703 | 0.3− | 0.7+ | 2006 02 25 | G96 | 0.3− | 0.2− |

**2005 VJ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 114.02957 | | (2000.0) | | | |
| $n$ | 0.17741580 | $\omega$ | 264.47372 | | +0.91394435 | +0.36328561 |
| $a$ | 3.1367111 | $\Omega$ | 74.12246 | | −0.25589625 | +0.86184119 |
| $e$ | 0.2351680 | $i$ | 10.84124 | | −0.31499656 | +0.35391147 |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 30 | 691 | 0.1+ | 0.3+ | 2005 11 05 | 691 | 0.3+ | 0.2+ | 2005 12 25 | G96 | 0.1− | 0.2+ |
| 2003 04 30 | 691 | 0.1+ | 0.4+ | 2005 11 28 | 703 | 1.0+ | 2.3+ | 2005 12 25 | G96 | 0.4− | 0.3− |
| 2003 04 30 | 691 | 0.3+ | 0.2+ | 2005 11 28 | 703 | 1.5− | 0.2− | 2005 12 25 | G96 | 0.1− | 0.2− |
| 2004 07 12 | E12 | 0.5+ | 0.4+ | 2005 11 28 | 703 | 0.1+ | 0.1+ | 2005 12 25 | G96 | 0.2− | 0.1− |
| 2004 07 12 | E12 | 0.8+ | 0.2+ | 2005 11 28 | 703 | 0.9− | 0.3+ | 2006 01 05 | G96 | 0.1+ | 0.0 |
| 2004 07 12 | E12 | 1.1− | 0.2+ | 2005 11 30 | G96 | 0.0 | 0.2− | 2006 01 05 | G96 | 0.1− | 0.4− |
| 2004 07 12 | E12 | 0.5− | 1.8+ | 2005 11 30 | G96 | 0.4− | 0.3− | 2006 01 05 | G96 | 0.3− | 0.2− |
| 2005 11 04 | 691 | 0.2+ | 0.2− | 2005 11 30 | G96 | 0.1+ | 0.5− | 2006 01 05 | G96 | 0.0 | 0.0 |
| 2005 11 04 | 691 | 0.1+ | 0.3+ | 2005 11 30 | G96 | 0.1+ | 0.2− | 2006 03 04 | G96 | 0.7+ | 0.3+ |
| 2005 11 04 | 691 | 0.0 | 0.1− | 2005 12 02 | 695 | 0.0 | 0.2+ | 2006 03 04 | G96 | 0.6− | 0.0 |
| 2005 11 05 | 691 | 0.1+ | 0.1− | 2005 12 02 | 695 | 0.1− | 0.1+ | 2006 03 04 | G96 | 0.2− | 0.2+ |
| 2005 11 05 | 691 | 0.2− | 0.7+ | 2005 12 02 | 695 | 0.1− | 0.1+ | 2006 03 04 | G96 | 1.0− | 0.2− |

**2005 VT$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.67045 | | (2000.0) | | | |
| $n$ | 0.27292781 | $\omega$ | 22.08185 | | −0.38924792 | −0.91948843 |
| $a$ | 2.3538070 | $\Omega$ | 90.86129 | | +0.83668162 | −0.37791337 |
| $e$ | 0.1626226 | $i$ | 3.15431 | | +0.38529201 | −0.10827058 |
| $P$ | 3.61 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 25 | 691 | 0.1+ | 0.5− | 2005 11 28 | 703 | 0.4+ | 0.2− | 2005 12 29 | G96 | 0.1+ | 0.2− |
| 1998 12 25 | 691 | 0.3− | 0.5− | 2005 11 28 | 703 | 0.1− | 1.1+ | 2005 12 29 | G96 | 0.3+ | 0.3− |
| 2003 03 27 | 691 | 0.3+ | 0.2+ | 2005 11 28 | 703 | 0.0 | 0.7+ | 2006 01 06 | G96 | 0.2+ | 0.2+ |
| 2003 03 27 | 691 | 0.4+ | 0.0 | 2005 12 02 | 704 | 0.0 | 0.2− | 2006 01 06 | G96 | 0.2− | 0.2+ |
| 2003 03 27 | 691 | 0.2− | 0.9+ | 2005 12 02 | 704 | 0.4+ | 0.9+ | 2006 01 06 | G96 | 0.0 | 0.0 |
| 2005 11 04 | 691 | 0.0 | 0.2+ | 2005 12 02 | 704 | 0.2− | 0.4+ | 2006 01 06 | G96 | 0.1+ | 0.2+ |
| 2005 11 04 | 691 | 0.4− | 0.2+ | 2005 12 05 | 699 | 0.4+ | 0.6+ | 2006 01 21 | G96 | 0.5+ | 0.6− |
| 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 05 | 699 | 1.7− | 0.5+ | 2006 01 21 | G96 | 0.6+ | 0.0 |
| 2005 11 05 | 691 | 0.1− | 0.3+ | 2005 12 05 | 699 | 1.3− | 0.3+ | 2006 01 21 | G96 | 0.7+ | 0.7− |
| 2005 11 05 | 691 | 0.2+ | 0.1+ | 2005 12 05 | 699 | 0.2− | 0.2− | 2006 01 21 | G96 | 0.9+ | 0.2− |
| 2005 11 05 | 691 | 0.2+ | 0.1+ | 2005 12 29 | G96 | 0.8+ | 0.1− | | | | |
| 2005 11 28 | 703 | 1.4− | 0.2+ | 2005 12 29 | G96 | 0.1+ | 0.4− | | | | |

**2005 VN$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 207.34218 | | (2000.0) | | | |
| $n$ | 0.26621711 | $\omega$ | 219.33814 | | +0.25692927 | +0.95938570 |
| $a$ | 2.3931986 | $\Omega$ | 65.83054 | | −0.85137714 | +0.28172362 |
| $e$ | 0.1605024 | $i$ | 7.33477 | | −0.45732299 | +0.01452193 |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.3− | 0.3+ | 2005 11 04 | 691 | 0.2+ | 0.1+ | 2005 12 02 | G96 | 0.1− | 0.2+ |
| 2000 04 27 | 699 | 0.3− | 1.1+ | 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 02 | G96 | 0.7− | 0.2+ |
| 2000 04 27 | 699 | 1.3+ | 0.7− | 2005 11 05 | 691 | 0.3+ | 0.5− | 2005 12 02 | G96 | 0.2− | 0.1+ |
| 2000 04 27 | 699 | 0.2− | 0.2+ | 2005 11 05 | 691 | 0.3+ | 0.3− | 2005 12 02 | G96 | 0.1− | 0.2+ |
| 2001 10 24 | 644 | 0.5− | 0.7+ | 2005 11 05 | 691 | 0.1+ | 0.1+ | 2005 12 28 | G96 | 0.3− | 0.3+ |
| 2001 10 24 | 644 | 0.4− | 0.8+ | 2005 11 22 | 691 | 0.1− | 0.2− | 2005 12 28 | G96 | 0.5− | 0.1+ |
| 2001 10 24 | 644 | 0.1− | 0.7+ | 2005 11 22 | 691 | 0.0 | 0.1− | 2005 12 28 | G96 | 0.5− | 0.8+ |
| 2005 10 25 | G96 | 0.2+ | 0.2− | 2005 11 22 | 691 | 0.2+ | 0.1+ | 2005 12 28 | G96 | 0.0 | 0.5+ |
| 2005 10 25 | G96 | 0.3− | 0.2− | 2005 11 25 | G96 | 0.0 | 0.1+ | 2006 01 07 | G96 | 0.2− | 0.3+ |
| 2005 10 25 | G96 | 0.2− | 0.3− | 2005 11 25 | G96 | 0.4− | 0.0 | 2006 01 07 | G96 | 0.4+ | 0.1+ |
| 2005 10 25 | G96 | 0.1− | 0.3− | 2005 11 25 | G96 | 0.4− | 0.1+ | 2006 01 07 | G96 | 0.6− | 0.1+ |
| 2005 11 04 | 691 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.3− | 0.0 | 2006 01 07 | G96 | 0.0 | 0.3+ |

**2005 VT$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 175.22672 | | (2000.0) | | | |
| $n$ | 0.29514755 | $\omega$ | 250.17661 | | +0.79141349 | +0.60654619 |
| $a$ | 2.2341376 | $\Omega$ | 72.40913 | | −0.52679887 | +0.73976728 |
| $e$ | 0.1426855 | $i$ | 4.56913 | | −0.31007681 | +0.29128353 |
| $P$ | 3.34 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 23 | 644 | 0.1+ | 0.9+ | 2005 11 22 | 691 | 0.3+ | 0.1+ | 2005 12 05 | 703 | 0.6+ | 0.7+ |
| 2001 07 23 | 644 | 0.1− | 0.3+ | 2005 11 22 | 691 | 0.1+ | 0.2− | 2005 12 05 | 703 | 0.1− | 0.9+ |
| 2001 07 23 | 644 | 0.2− | 0.6+ | 2005 11 22 | 691 | 1.6− | 0.1+ | 2005 12 05 | 703 | 1.3+ | 0.6− |
| 2004 05 19 | 691 | 0.3+ | 0.5+ | 2005 11 28 | 703 | 2.6− | 1.8+ | 2005 12 25 | G96 | 0.5+ | 0.6− |
| 2004 05 19 | 691 | 0.2+ | 0.6+ | 2005 11 28 | 703 | 1.5+ | 1.5+ | 2005 12 25 | G96 | 0.6− | 0.4− |
| 2004 05 19 | 691 | 0.0 | 0.3+ | 2005 11 28 | 703 | 2.2− | 3.0+ | 2005 12 25 | G96 | 0.1− | 0.5− |
| 2005 10 25 | G96 | 0.1+ | 0.2− | 2005 11 28 | 703 | (1.9+) | 3.3+) | 2005 12 25 | G96 | 0.0 | 0.5− |
| 2005 10 25 | G96 | 0.5+ | 0.7− | 2005 11 29 | G96 | 0.1+ | 0.1+ | 2006 01 05 | G96 | 0.1− | 0.3− |
| 2005 10 25 | G96 | 0.3+ | 0.3− | 2005 11 29 | G96 | 0.2+ | 0.1+ | 2006 01 05 | G96 | 0.1− | 0.2+ |
| 2005 10 25 | G96 | 0.5+ | 0.5− | 2005 11 29 | G96 | 0.2+ | 0.2+ | 2006 01 05 | G96 | 0.6+ | 0.2+ |
| 2005 11 04 | 691 | 0.1− | 0.0 | 2005 11 29 | G96 | 0.6+ | 0.3+ | 2006 01 05 | G96 | 0.5+ | 0.2+ |
| 2005 11 04 | 691 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.3+ | 0.1− | 2006 01 23 | G96 | 0.2+ | 0.3− |
| 2005 11 04 | 691 | 0.1− | 0.3+ | 2005 12 04 | G96 | 0.2+ | 0.1− | 2006 01 23 | G96 | 0.5+ | 0.4− |
| 2005 11 05 | 691 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.2− | 0.1− | 2006 01 23 | G96 | 0.0 | 0.1− |
| 2005 11 05 | 691 | 0.2+ | 0.0 | 2005 12 04 | G96 | 0.3+ | 0.4− | 2006 01 23 | G96 | 0.3+ | 0.1− |
| 2005 11 05 | 691 | 0.2− | 0.2− | 2005 12 05 | 703 | 0.2− | 0.2+ | | | | |

**2005 VV$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.57508 | | (2000.0) | | | |
| $n$ | 0.27977542 | $\omega$ | 274.74471 | | −0.84546018 | −0.51376583 |
| $a$ | 2.3152418 | $\Omega$ | 234.41300 | | +0.53280124 | −0.79291501 |
| $e$ | 0.1683660 | $i$ | 10.32418 | | +0.03633078 | −0.32761326 |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.0 | 0.0 | 2003 04 07 | 704 | 0.2− | 0.1− | 2005 11 30 | 704 | 0.6+ | 0.6− |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2003 04 07 | 704 | 0.7+ | 0.8+ | 2005 11 30 | 704 | (2.4+ | 0.1+) |
| 2003 03 09 | 699 | 0.8− | 0.5− | 2005 10 25 | G96 | 0.5+ | 0.7− | 2005 11 30 | 704 | 0.4+ | 0.5+ |
| 2003 03 09 | 699 | 0.0 | 0.1− | 2005 10 25 | G96 | 0.1− | 0.0 | 2005 11 30 | 704 | 0.0 | 1.3+ |
| 2003 03 09 | 699 | 0.2+ | 0.1+ | 2005 10 25 | G96 | 0.8+ | 0.7− | 2005 12 05 | 699 | 0.3− | 0.1− |
| 2003 03 09 | 699 | 0.4− | 0.5+ | 2005 10 25 | G96 | 0.2+ | 0.5− | 2005 12 05 | 699 | 1.4+ | 1.2+ |
| 2003 03 28 | 644 | 0.4− | 0.5+ | 2005 11 04 | 691 | 0.2− | 0.7+ | 2005 12 05 | 699 | 0.3− | 0.2+ |
| 2003 03 28 | 644 | 0.1+ | 0.3− | 2005 11 04 | 691 | 0.0 | 0.1+ | 2005 12 05 | 699 | 0.3+ | 0.6+ |
| 2003 03 28 | 644 | 0.0 | 0.7− | 2005 11 04 | 691 | 0.2− | 0.0 | 2005 12 23 | 735 | 0.2+ | 0.8− |
| 2003 03 28 | 699 | 0.4− | 0.5− | 2005 11 05 | 691 | 0.2− | 0.1− | 2005 12 23 | 735 | 0.4− | 0.1+ |
| 2003 03 28 | 699 | 1.2+ | 0.2+ | 2005 11 05 | 691 | 0.5+ | 0.1+ | 2005 12 23 | 735 | 0.2+ | 0.4− |
| 2003 03 28 | 699 | 0.1+ | 0.7− | 2005 11 05 | 691 | 0.1− | 0.1− | 2005 12 24 | 703 | (4.3+ | 3.4+) |
| 2003 03 28 | 699 | 0.1+ | 0.3− | 2005 11 21 | 703 | 1.7− | 0.3− | 2005 12 24 | 703 | 0.3− | 1.2− |
| 2003 04 07 | 704 | 0.4+ | 0.7+ | 2005 11 21 | 703 | 0.5+ | 0.8+ | 2005 12 24 | 703 | 0.7− | 1.2− |
| 2003 04 07 | 704 | 0.1+ | 0.7+ | 2005 11 21 | 703 | 0.9− | 0.6+ | 2005 12 24 | 703 | 0.5+ | 1.4− |
| 2003 04 07 | 704 | 0.3− | 0.6+ | 2005 11 21 | 703 | 0.2− | 0.3+ | | | | |

**2005 VA$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.28591 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20938057 | $\omega$ | 28.55911 | | −0.26204225 | | −0.96104355 |
| $a$ | 2.8087416 | $\Omega$ | 76.74511 | | +0.86735931 | | −0.27447568 |
| $e$ | 0.0595748 | $i$ | 5.18212 | | +0.42310954 | | −0.03253290 |
| $P$ | 4.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 18 | 809 | 0.1+ | 0.2+ | 2005 11 25 | G96 | 0.5+ | 0.7+ | 2005 12 21 | 691 | 0.2+ | 0.2+ |
| 2000 09 27 | 691 | 0.1− | 0.0 | 2005 11 25 | G96 | 0.2− | 0.7+ | 2005 12 21 | 691 | 0.1+ | 0.1+ |
| 2000 09 27 | 691 | 0.1+ | 0.0 | 2005 11 25 | G96 | 0.0 | 0.5+ | 2005 12 23 | 691 | 0.4+ | 0.3+ |
| 2000 09 27 | 691 | 0.1+ | 0.2− | 2005 11 28 | G96 | 0.0 | 0.4− | 2005 12 23 | 691 | 0.2+ | 0.2+ |
| 2005 10 25 | G96 | 0.1+ | 0.4− | 2005 11 28 | G96 | 0.3+ | 1.0− | 2005 12 23 | 691 | 0.4− | 0.4+ |
| 2005 10 25 | G96 | 0.2+ | 0.6− | 2005 11 28 | G96 | 0.1− | 0.2− | 2005 12 25 | G96 | 1.2− | 0.6− |
| 2005 10 25 | G96 | 0.5+ | 0.3− | 2005 11 28 | G96 | 0.2+ | 0.2− | 2005 12 25 | G96 | 0.5− | 0.3− |
| 2005 10 25 | G96 | 0.2+ | 0.2− | 2005 12 01 | 704 | 1.4+ | 0.3+ | 2005 12 25 | G96 | 0.1− | 0.0 |
| 2005 11 04 | 691 | 0.1− | 0.2+ | 2005 12 01 | 704 | 0.4+ | 0.9+ | 2005 12 25 | G96 | 0.3− | 0.3− |
| 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 01 | 704 | 1.5− | 1.5− | 2006 01 05 | G96 | 0.6+ | 0.2− |
| 2005 11 04 | 691 | 0.2− | 0.2+ | 2005 12 04 | G96 | 0.3+ | 0.3− | 2006 01 05 | G96 | 0.1+ | 0.7− |
| 2005 11 05 | 691 | 0.1+ | 0.2+ | 2005 12 04 | G96 | 0.0 | 0.0 | 2006 01 05 | G96 | 0.4+ | 0.2− |
| 2005 11 05 | 691 | 0.4− | 0.2+ | 2005 12 04 | G96 | 0.1+ | 0.2− | 2006 01 05 | G96 | 0.1− | 0.2− |
| 2005 11 05 | 691 | 0.3− | 0.2+ | 2005 12 04 | G96 | 0.1− | 0.3− | 2006 01 23 | G96 | 0.6+ | 0.9− |
| 2005 11 22 | 691 | 0.0 | 0.1+ | 2005 12 05 | 704 | 1.3− | 0.2− | 2006 01 23 | G96 | 0.1+ | 0.6− |
| 2005 11 22 | 691 | 0.5+ | 0.2+ | 2005 12 05 | 704 | 1.4− | 0.5− | 2006 01 23 | G96 | 0.2+ | 0.6− |
| 2005 11 22 | 691 | 0.1− | 0.2+ | 2005 12 05 | 704 | 0.1+ | 1.6− | 2006 01 23 | G96 | 0.3+ | 1.0− |
| 2005 11 25 | G96 | 0.1+ | 0.7+ | 2005 12 21 | 691 | 0.0 | 0.0 | | | | |

**2005 VX$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.43730 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23569679 | $\omega$ | 21.41386 | | +0.51837688 | | −0.85111546 |
| $a$ | 2.5955751 | $\Omega$ | 37.50163 | | +0.76345822 | | +0.41688729 |
| $e$ | 0.1604410 | $i$ | 7.83532 | | +0.38524921 | | +0.31907281 |
| $P$ | 4.18 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.2− | 0.1− | 2001 11 12 | 691 | 0.3− | 0.1− | 2005 11 03 | 691 | 0.1− | 0.3− |
| 2001 10 14 | 691 | 0.1− | 0.3− | 2001 11 12 | 691 | 0.0 | 0.0 | 2005 11 03 | 691 | 0.3− | 0.3+ |
| 2001 10 14 | 691 | 0.6− | 0.0 | 2001 11 12 | 691 | 0.0 | 0.1− | 2005 11 06 | G96 | 0.3+ | 0.4+ |
| 2001 10 23 | 704 | 1.6+ | 0.8+ | 2005 10 09 | 691 | 0.5− | 0.3+ | 2005 11 06 | G96 | 0.6+ | 0.2− |
| 2001 10 23 | 704 | 2.1+ | 0.1+ | 2005 10 09 | 691 | 0.2+ | 0.2− | 2005 11 06 | G96 | 0.4+ | 0.2− |
| 2001 10 23 | 704 | 0.2+ | 0.0 | 2005 10 09 | 691 | 0.1+ | 0.0 | 2005 11 06 | G96 | 0.2+ | 0.3+ |
| 2001 10 23 | 704 | 1.2+ | 1.1+ | 2005 11 03 | 691 | 0.2+ | 0.1− | | | | |

**2005 VH$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.98130 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21739682 | $\omega$ | 269.16169 | | +0.27035358 | | −0.96250182 |
| $a$ | 2.7392642 | $\Omega$ | 165.09514 | | +0.91426291 | | +0.24939296 |
| $e$ | 0.0838133 | $i$ | 4.98320 | | +0.30171555 | | +0.10673989 |
| $P$ | 4.53 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.0 | 0.3+ | 2005 11 10 | 691 | 0.2+ | 0.2− | 2005 12 01 | 703 | 0.4− | 1.2+ |
| 2000 08 31 | 691 | 0.0 | 0.0 | 2005 11 10 | 691 | 0.1+ | 0.0 | 2005 12 18 | A13 | 0.5+ | 0.1− |
| 2000 08 31 | 691 | 0.2− | 0.1+ | 2005 11 10 | 691 | 0.1− | 0.2− | 2005 12 18 | A13 | 0.2− | 0.5− |
| 2002 01 12 | 644 | 0.2+ | 0.5+ | 2005 11 25 | 703 | 0.0 | 0.9+ | 2005 12 18 | A13 | 1.0+ | 0.2+ |
| 2002 01 12 | 644 | 0.0 | 0.8+ | 2005 11 25 | 703 | 0.2− | 1.0+ | 2005 12 18 | A13 | 0.1+ | 0.6− |
| 2002 01 12 | 644 | 0.3+ | 0.7+ | 2005 11 25 | 703 | 0.4− | 0.4− | 2005 12 18 | A13 | 0.4− | 0.3− |
| 2005 11 04 | G96 | 0.1+ | 0.1+ | 2005 11 25 | 703 | 0.5+ | 0.2+ | 2005 12 29 | A13 | 0.6− | 1.2− |
| 2005 11 04 | G96 | 0.2+ | 0.2− | 2005 11 25 | 703 | 1.3+ | 0.5− | 2005 12 29 | A13 | 0.1− | 1.6− |
| 2005 11 04 | G96 | 0.3+ | 0.2− | 2005 11 25 | 703 | (2.7+ | 0.3−) | 2006 02 02 | G96 | 0.6− | 0.2− |
| 2005 11 04 | G96 | 0.2− | 0.1− | 2005 11 25 | 703 | 1.4+ | 0.9+ | 2006 02 02 | G96 | 0.1− | 0.0 |
| 2005 11 06 | G96 | 0.1− | 0.2− | 2005 11 25 | 703 | 0.2+ | 1.2+ | 2006 02 02 | G96 | 0.3− | 0.2− |
| 2005 11 06 | G96 | 0.1− | 0.1− | 2005 12 01 | 703 | 1.7− | 1.6− | 2006 02 02 | G96 | 0.5− | 0.1− |
| 2005 11 06 | G96 | 0.0 | 0.1− | 2005 12 01 | 703 | 0.5− | 1.1+ | | | | |
| 2005 11 06 | G96 | 0.0 | 0.2− | 2005 12 01 | 703 | 0.5− | 1.3+ | | | | |

**2005 VN$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.42587 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28156581 | $\omega$ | 66.73272 | | −0.79187449 | | −0.59902529 |
| $a$ | 2.3054167 | $\Omega$ | 76.26092 | | +0.50605853 | | −0.75252828 |
| $e$ | 0.0751620 | $i$ | 7.02233 | | +0.34181801 | | −0.27362364 |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.2− | 1.3+ | 2003 01 31 | 699 | 0.2− | 1.6− | 2005 11 04 | 691 | 0.1+ | 0.0 |
| 2002 12 31 | 704 | 0.3− | 0.4+ | 2003 01 31 | 704 | 0.6− | 0.5+ | 2005 11 04 | 691 | 0.1− | 0.1− |
| 2002 12 31 | 704 | 0.9− | 0.8+ | 2003 01 31 | 699 | 1.4+ | 0.3− | 2005 11 06 | 691 | 0.2− | 0.1− |
| 2003 01 10 | 704 | 0.8+ | 1.2− | 2003 01 31 | 704 | 0.7− | 1.2+ | 2005 11 06 | 691 | 0.7+ | 0.5+ |
| 2003 01 10 | 704 | 0.3− | 0.6+ | 2003 03 03 | 644 | 0.3− | 0.4− | 2005 11 06 | 691 | 0.2+ | 0.3− |
| 2003 01 10 | 704 | 0.1− | 0.6− | 2003 03 03 | 644 | 0.1− | 0.2− | 2006 01 22 | G96 | 0.3+ | 0.3+ |
| 2003 01 10 | 704 | 0.3− | 0.1− | 2003 03 03 | 644 | 0.1− | 0.0 | 2006 01 22 | G96 | 0.1+ | 0.1+ |
| 2003 01 31 | 699 | 0.2− | 0.4− | 2005 10 25 | 691 | 0.3− | 0.1+ | 2006 01 22 | G96 | 0.3− | 0.3− |
| 2003 01 31 | 704 | 0.5− | 0.7+ | 2005 10 25 | 691 | 0.5− | 0.0 | 2006 01 22 | G96 | 0.1+ | 0.1− |
| 2003 01 31 | 699 | 1.5+ | 0.6− | 2005 10 25 | 691 | 0.0 | 0.2− | | | | |
| 2003 01 31 | 704 | 0.8+ | 0.1+ | 2005 11 04 | 691 | 0.0 | 0.0 | | | | |

**2005 VB$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.76362 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27013688 | $\omega$ | 276.55676 | | +0.98613686 | | +0.11723769 |
| $a$ | 2.3699916 | $\Omega$ | 76.75736 | | −0.05762133 | | +0.90558790 |
| $e$ | 0.2372159 | $i$ | 6.92882 | | −0.15560810 | | +0.40763449 |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.6+ | 0.2− | 2005 10 27 | 699 | 0.4− | 1.0+ | 2005 11 06 | 699 | 1.0+ | 1.3− |
| 2001 07 13 | 644 | 0.5+ | 0.2− | 2005 10 27 | 699 | 0.4+ | 0.1− | 2005 11 10 | 703 | 0.0 | 0.2+ |
| 2001 07 13 | 644 | 0.4+ | 0.1− | 2005 10 27 | 699 | 1.4+ | 1.3− | 2005 11 10 | 703 | 0.7+ | 1.2− |
| 2001 07 26 | 644 | 0.4− | 0.2− | 2005 11 04 | 704 | 0.8− | 0.4− | 2005 11 10 | 703 | 0.2− | 0.5+ |
| 2001 07 26 | 644 | 0.4− | 0.0 | 2005 11 04 | 704 | 0.6− | 0.0 | 2005 11 10 | 703 | 1.0− | 0.3+ |
| 2001 07 26 | 644 | 0.5− | 0.3+ | 2005 11 04 | 704 | 0.9− | 0.5+ | 2005 11 25 | 703 | 1.0+ | 0.2− |
| 2001 08 10 | 644 | 0.0 | 0.2− | 2005 11 04 | 704 | 1.1− | 1.2+ | 2005 11 25 | 703 | 0.8+ | 1.0− |
| 2001 08 10 | 644 | 0.3− | 0.2+ | 2005 11 05 | 703 | 0.8− | 0.4+ | 2005 11 25 | 703 | 0.5+ | 0.6+ |
| 2001 08 10 | 644 | 0.2+ | 0.3− | 2005 11 05 | 703 | 0.3− | 0.1− | 2005 11 25 | 703 | 1.4+ | 0.1+ |
| 2005 10 10 | 703 | 0.4− | 0.5+ | 2005 11 05 | 703 | 0.9− | 0.1− | 2005 12 29 | G96 | 0.0 | 0.5− |
| 2005 10 10 | 703 | 1.1− | 0.5− | 2005 11 05 | 703 | 0.3− | 0.2− | 2005 12 29 | G96 | 0.6+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 10 | 703 | 0.2+ | 1.3+ | 2005 11 06 | 699 | 1.2+ | 0.4− | 2005 12 29 | G96 | 0.5+ | 0.4− | | |
| 2005 10 10 | 703 | 0.5+ | 0.7− | 2005 11 06 | 699 | 0.3− | 1.3+ | 2005 12 29 | G96 | 0.2− | 0.3− | | |
| 2005 10 27 | 699 | 0.1− | 0.0 | 2005 11 06 | 699 | 0.3− | 0.7+ | | | | | | |

**2005 VS$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.48963 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23773496 | $\omega$ | 287.21345 | | −0.68623781 | | −0.72412127 |
| $a$ | 2.5807188 | $\Omega$ | 206.52148 | | +0.71207087 | | −0.64950299 |
| $e$ | 0.1547679 | $i$ | 8.85623 | | +0.14843427 | | −0.23193589 |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 699 | 0.7+ | 0.2+ | 2003 03 27 | 644 | 0.2− | 0.2− | 2005 11 01 | G96 | 0.4+ | 0.1+ | |
| 2003 03 10 | 699 | 0.7+ | 0.2− | 2003 03 31 | 704 | 0.0 | 0.1+ | 2005 11 01 | G96 | 0.1+ | 0.1− | |
| 2003 03 10 | 704 | 0.6− | 0.3− | 2003 03 31 | 704 | 0.3− | 0.8+ | 2005 11 01 | G96 | 0.6− | 0.3− | |
| 2003 03 10 | 699 | 0.3+ | 0.2+ | 2003 03 31 | 704 | 0.8− | 0.5+ | 2005 11 01 | G96 | 0.1− | 0.0 | |
| 2003 03 10 | 704 | 0.1+ | 0.1+ | 2003 03 31 | 704 | 0.1− | 1.3+ | 2005 11 01 | G96 | 0.3+ | 0.1− | |
| 2003 03 10 | 699 | 0.1− | 1.4− | 2005 10 01 | 703 | 0.9− | 1.0− | 2005 11 01 | G96 | 0.2+ | 0.0 | |
| 2003 03 10 | 704 | 0.6+ | 0.3− | 2005 10 01 | 703 | 0.4− | 0.0 | 2005 11 02 | G96 | 0.1− | 0.3+ | |
| 2003 03 10 | 704 | 0.7+ | 0.6+ | 2005 10 01 | 703 | 1.5+ | 1.2+ | 2005 11 02 | G96 | 0.2+ | 0.1+ | |
| 2003 03 10 | 704 | 0.3− | 0.4− | 2005 10 01 | 703 | 0.6− | 0.9− | 2005 11 02 | G96 | 0.2− | 0.3+ | |
| 2003 03 27 | 644 | 0.2− | 0.3− | 2005 11 01 | G96 | 0.0 | 0.2+ | 2005 11 02 | G96 | 0.0 | 0.4+ | |
| 2003 03 27 | 644 | 0.6− | 0.5− | 2005 11 01 | G96 | 0.3+ | 0.1+ | | | | | |

**2005 VX$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.58961 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26105506 | $\omega$ | 28.87314 | | −0.88457613 | | +0.46639413 |
| $a$ | 2.4246439 | $\Omega$ | 178.92493 | | −0.43979902 | | −0.83322758 |
| $e$ | 0.1866100 | $i$ | 3.85983 | | −0.15524785 | | −0.29699884 |
| $P$ | 3.78 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 08 | 608 | 0.1− | 1.2+ | 2003 04 05 | 291 | 0.3+ | 0.9− | 2005 11 01 | G96 | 0.5− | 0.0 | |
| 2003 02 08 | 608 | 0.2+ | 0.1− | 2003 04 05 | 291 | 0.4+ | 0.8− | 2005 11 01 | G96 | 0.2+ | 0.3+ | |
| 2003 02 08 | 608 | 0.1+ | 0.3− | 2003 04 05 | 691 | 0.2− | 0.7+ | 2005 11 04 | G96 | 0.1− | 0.2− | |
| 2003 03 24 | 608 | 0.3− | 0.8− | 2003 04 05 | 291 | 0.2+ | 0.7− | 2005 11 04 | G96 | 0.1+ | 0.3− | |
| 2003 03 24 | 608 | 0.2− | 0.8− | 2003 04 05 | 691 | 0.2− | 0.6+ | 2005 11 04 | G96 | 0.3+ | 0.0 | |
| 2003 03 24 | 608 | 0.4− | 0.5− | 2005 11 01 | G96 | 0.0 | 0.1− | 2005 11 04 | G96 | 0.1− | 0.2− | |
| 2003 04 05 | 691 | 0.3− | 1.3+ | 2005 11 01 | G96 | 0.0 | 0.4+ | | | | | |

**2005 VW$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.23469 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26655725 | $\omega$ | 67.81240 | | −0.99797656 | | −0.03150277 |
| $a$ | 2.3911623 | $\Omega$ | 110.34708 | | +0.00828397 | | −0.92564815 |
| $e$ | 0.1277580 | $i$ | 3.37700 | | +0.06304102 | | −0.37707172 |
| $P$ | 3.70 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 24 | 691 | 0.4+ | 1.0− | 2003 03 25 | 644 | 0.2+ | 0.9+ | 2005 11 01 | G96 | 0.0 | 0.3+ | |
| 1998 12 24 | 691 | 0.8− | 0.6− | 2003 04 04 | 691 | 0.2+ | 0.1+ | 2005 11 01 | G96 | 0.2+ | 0.1+ | |
| 1998 12 24 | 691 | 0.2− | 0.5− | 2003 04 04 | 691 | 0.0 | 0.2− | 2005 11 01 | G96 | 0.1− | 0.3+ | |
| 1999 01 08 | 691 | 0.0 | 0.6+ | 2003 04 04 | 691 | 0.2− | 0.3− | 2005 11 05 | G96 | 0.3− | 0.5+ | |
| 1999 01 08 | 691 | 0.2+ | 0.1− | 2004 10 10 | 695 | 0.0 | 0.1+ | 2005 11 05 | G96 | 0.0 | 0.6+ | |
| 1999 01 08 | 691 | 0.1+ | 0.3+ | 2004 10 10 | 695 | 0.2− | 0.2+ | 2005 11 05 | G96 | 0.2− | 0.6+ | |
| 2003 03 11 | 644 | 0.2− | 0.7+ | 2005 10 31 | G96 | 0.1+ | 0.1− | 2005 11 05 | G96 | 0.0 | 0.6+ | |
| 2003 03 11 | 644 | 0.1+ | 0.9+ | 2005 10 31 | G96 | 0.3+ | 0.2+ | 2005 12 29 | G96 | 0.2+ | 0.6+ | |
| 2003 03 11 | 644 | 0.3+ | 0.6+ | 2005 10 31 | G96 | 0.0 | 0.1− | 2005 12 29 | G96 | 0.6− | 0.1− | |
| 2003 03 25 | 644 | 0.2− | 0.9+ | 2005 10 31 | G96 | 0.2− | 0.2+ | 2005 12 29 | G96 | 0.2− | 1.0+ | |
| 2003 03 25 | 644 | 1.2+ | 0.9+ | 2005 11 01 | G96 | 0.2+ | 0.2+ | 2005 12 29 | G96 | 0.7− | 0.5+ | |

**2005 VF$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.77814 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22501527 | $\omega$ | 76.70716 | | +0.37018186 | | −0.92859684 |
| $a$ | 2.6770803 | $\Omega$ | 351.42930 | | +0.77060193 | | +0.32255712 |
| $e$ | 0.2517368 | $i$ | 10.02705 | | +0.51878518 | | +0.18347973 |
| $P$ | 4.38 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 699 | 1.2+ | 0.5− | 2002 02 10 | 704 | 0.6− | 0.0 | 2005 11 03 | 704 | 0.2− | 0.4+ | |
| 2002 01 05 | 699 | 0.5− | 0.2+ | 2002 02 10 | 704 | 0.2− | 0.5+ | 2005 11 03 | 704 | 0.6+ | 0.1+ | |
| 2002 01 05 | 699 | 0.0 | 1.0+ | 2002 02 10 | 704 | 0.3+ | 0.4+ | 2005 11 03 | 704 | 0.3− | 1.3− | |
| 2002 01 05 | 699 | 1.4+ | 0.0 | 2005 10 10 | 699 | 0.0 | 0.4+ | 2005 11 03 | 704 | 0.4− | 0.2+ | |
| 2002 01 14 | 644 | 0.1+ | 0.3+ | 2005 10 10 | 699 | 0.3+ | 0.2− | 2005 11 03 | 704 | 0.1− | 0.3+ | |
| 2002 01 14 | 644 | 0.2− | 0.2+ | 2005 10 10 | 699 | 1.0+ | 0.4− | 2005 11 07 | 704 | 0.7− | 0.2+ | |
| 2002 01 14 | 644 | 0.2− | 0.0 | 2005 10 10 | 699 | 0.9+ | 0.2+ | 2005 11 07 | 704 | 0.3− | 0.0 | |
| 2002 01 23 | 704 | 1.1− | 0.8− | 2005 10 23 | 703 | 0.7+ | 0.4− | 2005 11 07 | 704 | 0.5− | 0.5+ | |
| 2002 01 23 | 704 | 0.7+ | 0.1− | 2005 10 23 | 703 | 0.7− | 0.9− | 2005 11 07 | 704 | 0.6− | 0.1+ | |
| 2002 01 23 | 704 | 0.7− | 0.6− | 2005 10 23 | 703 | 0.0 | 0.1+ | 2005 11 07 | 704 | 1.1− | 0.3− | |
| 2002 01 23 | 704 | 0.3− | 0.9− | 2005 10 23 | 703 | 1.3+ | 0.5+ | | | | | |

**2005 VA$_{83}$ = 2005 VE$_{39}$**

Id. Minor Planet Center (d, *MPO* 98190)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.98822 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22718368 | $\omega$ | 334.97455 | | −0.99783397 | | +0.01893060 |
| $a$ | 2.6600183 | $\Omega$ | 206.34357 | | −0.00073911 | | −0.96086407 |
| $e$ | 0.0830734 | $i$ | 8.16192 | | −0.06577861 | | −0.27637270 |
| $P$ | 4.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 05 | 704 | 0.3− | 0.3+ | 2005 09 13 | 291 | 0.7− | 0.3+ | 2005 11 05 | G96 | 0.0 | 0.3− | |
| 2003 05 05 | 704 | 0.3+ | 0.0 | 2005 09 13 | 291 | 0.6− | 0.2− | 2005 11 05 | G96 | 0.1− | 0.3− | |
| 2003 05 05 | 704 | 0.3+ | 0.4+ | 2005 09 13 | 291 | 0.0 | 0.4+ | 2005 11 05 | G96 | 0.3+ | 0.2− | |
| 2003 05 05 | 704 | 0.1+ | 0.3+ | 2005 11 03 | G96 | 0.3+ | 0.3− | 2005 11 05 | G96 | 0.3+ | 0.1− | |
| 2003 05 05 | 704 | 0.3− | 0.6+ | 2005 11 03 | G96 | 0.0 | 0.4− | 2005 11 10 | 691 | 0.3− | 0.2− | |
| 2004 08 22 | 691 | 0.2− | 0.1− | 2005 11 03 | G96 | 0.2− | 0.2− | 2005 11 10 | 691 | 0.1− | 0.1+ | |
| 2004 08 22 | 691 | 0.2− | 0.3− | 2005 11 03 | G96 | 0.2+ | 0.3− | 2005 11 10 | 691 | 0.1− | 0.0 | |
| 2004 08 22 | 691 | 0.1− | 0.0 | 2005 11 03 | G96 | 0.1+ | 0.2− | 2005 12 07 | 291 | 0.3+ | 0.3+ | |
| 2004 09 17 | 691 | 0.3+ | 0.0 | 2005 11 03 | G96 | 0.3+ | 0.2− | 2005 12 07 | 291 | 0.3+ | 0.2+ | |
| 2004 09 17 | 691 | 0.2− | 0.2+ | 2005 11 03 | G96 | 0.5+ | 0.5− | 2005 12 07 | 291 | 0.2+ | 0.4+ | |
| 2004 09 17 | 691 | 0.5+ | 0.3+ | 2005 11 03 | G96 | 0.2+ | 0.1+ | | | | | |

**2005 VB$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.65753 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31068009 | $\omega$ | 218.18459 | | +0.71936251 | | +0.68904878 |
| $a$ | 2.1590388 | $\Omega$ | 98.01704 | | −0.61348990 | | +0.68958255 |
| $e$ | 0.1809568 | $i$ | 5.09368 | | −0.32580320 | | +0.22290736 |
| $P$ | 3.17 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.4+ | 0.4+ | 2005 10 29 | 691 | 0.1− | 0.3+ | 2005 11 29 | 699 | 0.4+ | 0.2− | |
| 2001 03 24 | 691 | 0.0 | 0.3+ | 2005 10 29 | 691 | 0.3− | 0.1+ | 2005 11 29 | 699 | 0.1− | 0.1− | |
| 2001 03 24 | 691 | 0.1− | 0.2+ | 2005 11 06 | 691 | 0.0 | 0.1+ | 2005 12 29 | G96 | 0.4+ | 0.3− | |
| 2003 01 06 | 291 | 0.4+ | 0.0 | 2005 11 06 | 691 | 0.1+ | 0.1+ | 2005 12 29 | G96 | 0.1+ | 0.2− | |
| 2003 01 06 | 291 | 0.1− | 0.2− | 2005 11 06 | 691 | 0.2+ | 0.1+ | 2005 12 29 | G96 | 0.3+ | 0.2− | |
| 2003 01 06 | 291 | 0.2− | 0.2− | 2005 11 10 | 691 | 0.1+ | 0.2+ | 2005 12 29 | G96 | 0.1+ | 0.3− | |
| 2005 10 25 | 691 | 0.1− | 0.6− | 2005 11 10 | 691 | 0.1+ | 0.1+ | 2006 02 25 | G96 | 0.3+ | 0.1+ | |
| 2005 10 25 | 691 | 0.1− | 0.2+ | 2005 11 10 | 691 | 0.2− | 0.0 | 2006 02 25 | G96 | 0.9+ | 0.4− | |
| 2005 10 25 | 691 | 0.5− | 0.2+ | 2005 11 29 | 699 | 0.1− | 0.7+ | 2006 02 25 | G96 | 0.4+ | 0.1− | |
| 2005 10 29 | 691 | 0.1− | 0.4+ | 2005 11 29 | 699 | (2.2+ | 1.4−) | 2006 02 25 | G96 | 0.5+ | 0.1+ | |

**2005 VO$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 96.58645 | | | (2000.0) | | |
| $n$ | 0.23283970 | $\omega$ | 58.18148 | | +0.92377455 | −0.35074080 |
| $a$ | 2.6167648 | $\Omega$ | 321.72756 | | +0.20941898 | +0.79873367 |
| $e$ | 0.0816030 | $i$ | 14.36695 | | +0.32059985 | +0.48888180 |
| $P$ | 4.23 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 05 | 703 | 1.3− | 0.4− | 2005 11 20 | 703 | 0.4− | 0.5− | 2005 12 24 | 704 | 0.1− | 0.1+ |
| 2005 11 05 | 703 | 1.0− | 0.7− | 2005 11 26 | 704 | 0.3− | 0.3+ | 2005 12 24 | 704 | 1.0− | 0.1− |
| 2005 11 05 | 703 | 0.8− | 1.2− | 2005 11 26 | 704 | 0.4− | 0.1+ | 2006 01 07 | 704 | (2.1− | 0.5+) |
| 2005 11 10 | 703 | 0.1− | 0.3− | 2005 11 26 | 704 | 0.1+ | 0.4+ | 2006 01 07 | 704 | 0.5+ | 0.0 |
| 2005 11 10 | 703 | 0.6− | 1.1+ | 2005 11 26 | 704 | (0.5− | 2.0+) | 2006 01 07 | 704 | 1.4− | 0.9− |
| 2005 11 10 | 703 | 1.2+ | 1.0+ | 2005 11 26 | 704 | 0.3+ | 0.1+ | 2006 01 07 | 704 | 0.3+ | 0.4+ |
| 2005 11 10 | 703 | 0.3+ | 0.3+ | 2005 12 02 | 703 | 0.1+ | 0.1+ | 2006 01 24 | 703 | (1.3− | 1.8−) |
| 2005 11 10 | 703 | 0.6+ | 1.0+ | 2005 12 02 | 703 | 0.1− | 1.2+ | 2006 01 24 | 703 | 0.3+ | 1.4− |
| 2005 11 10 | 703 | 1.1− | 0.1+ | 2005 12 02 | 703 | 0.3− | 0.5− | 2006 01 24 | 703 | 0.2+ | 0.7+ |
| 2005 11 10 | 703 | 0.6− | 0.3− | 2005 12 02 | 703 | 0.2+ | 0.5+ | 2006 01 24 | 703 | 0.5− | 0.8− |
| 2005 11 11 | 704 | 0.8+ | 0.0 | 2005 12 08 | 703 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.3− | 1.0− |
| 2005 11 11 | 704 | 1.4+ | 0.6− | 2005 12 08 | 703 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2005 11 11 | 704 | 0.1− | 0.4− | 2005 12 08 | 703 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2005 11 11 | 704 | 0.5+ | 0.4− | 2005 12 08 | 703 | 0.3− | 1.1− | 2006 11 01 | G96 | 0.2− | 0.5− |
| 2005 11 12 | 703 | 0.2+ | 0.1− | 2005 12 17 | 699 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.5+ |
| 2005 11 12 | 703 | 0.8+ | 0.3+ | 2005 12 17 | 699 | 0.9+ | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2005 11 12 | 703 | 0.3+ | 0.1+ | 2005 12 17 | 699 | 0.3− | 0.2− | 2006 11 22 | 691 | 0.3+ | 0.2+ |
| 2005 11 12 | 703 | 0.1+ | 1.0+ | 2005 12 17 | 699 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.6− |
| 2005 11 20 | 703 | 0.1− | 0.0 | 2005 12 24 | 704 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2005 11 20 | 703 | 0.4+ | 0.3+ | 2005 12 24 | 704 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.5− | 0.5− |
| 2005 11 20 | 703 | 0.6− | 0.9− | 2005 12 24 | 704 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.4− |

**2005 VB$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 313.86490 | | | (2000.0) | | |
| $n$ | 0.23029947 | $\omega$ | 149.52169 | | −0.98982586 | −0.12781812 |
| $a$ | 2.6359717 | $\Omega$ | 23.38135 | | +0.07624267 | −0.84739596 |
| $e$ | 0.1547431 | $i$ | 9.06250 | | +0.12013254 | −0.51534708 |
| $P$ | 4.28 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 06 | 291 | 0.6+ | 0.4− | 2003 05 05 | 691 | 0.1+ | 0.1+ | 2005 11 03 | G96 | 0.1− | 0.4− |
| 2003 04 06 | 291 | 0.2− | 0.0 | 2005 10 24 | 691 | 0.3+ | 0.1+ | 2005 11 03 | G96 | 0.2+ | 0.2+ |
| 2003 04 06 | 291 | 0.2− | 0.5+ | 2005 10 24 | 691 | 0.2+ | 0.2+ | 2005 11 03 | G96 | 0.4− | 0.3− |
| 2003 04 25 | 691 | 0.1+ | 0.1+ | 2005 10 24 | 691 | 0.5− | 0.1+ | 2005 11 04 | G96 | 0.1− | 0.4− |
| 2003 04 25 | 691 | 0.1− | 0.1− | 2005 11 01 | 691 | 0.2− | 0.0 | 2005 11 04 | G96 | 0.5− | 0.3− |
| 2003 04 25 | 691 | 0.5− | 0.2− | 2005 11 01 | 691 | 0.6+ | 0.1+ | 2005 11 04 | G96 | 0.7+ | 0.5− |
| 2003 05 05 | 691 | 0.0 | 0.0 | 2005 11 01 | 691 | 0.4− | 0.2+ | 2005 11 04 | G96 | 0.5+ | 0.2− |
| 2003 05 05 | 691 | 0.3+ | 0.2+ | 2005 11 03 | G96 | 0.0 | 0.2− | | | | |

**2005 VK$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.80113 | | | (2000.0) | | |
| $n$ | 0.23311566 | $\omega$ | 358.02841 | | +0.61277802 | −0.75971948 |
| $a$ | 2.6146993 | $\Omega$ | 54.10668 | | +0.72867042 | +0.43664593 |
| $e$ | 0.2481414 | $i$ | 15.57787 | | +0.30584721 | +0.48183674 |
| $P$ | 4.23 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8+ | 0.3− | 2005 10 23 | 644 | 0.0 | 0.1+ | 2005 11 28 | 704 | 1.4+ | 0.2− |
| 2001 12 09 | 704 | 0.5− | 0.1− | 2005 10 23 | 644 | 0.6− | 0.0 | 2005 11 28 | 703 | 0.7− | 0.5− |
| 2001 12 09 | 704 | 0.6+ | 0.0 | 2005 10 23 | 644 | 0.2− | 0.1+ | 2005 11 28 | 703 | 0.8− | 0.3− |
| 2001 12 09 | 704 | 0.5− | 0.4− | 2005 10 28 | 704 | 0.5+ | 0.0 | 2005 11 28 | 703 | 0.8− | 0.1+ |
| 2001 12 23 | 704 | 0.1− | 0.4+ | 2005 10 28 | 704 | 0.8+ | 0.1− | 2005 11 28 | 703 | 1.9− | 0.7− |
| 2001 12 23 | 704 | 0.0 | 0.5+ | 2005 10 28 | 704 | 0.7− | 0.8+ | 2005 12 02 | 704 | 0.1− | 0.1− |
| 2001 12 23 | 704 | 0.7− | 0.9+ | 2005 10 28 | 704 | 2.0+ | 0.6+ | 2005 12 02 | 704 | 0.4− | 0.0 |
| 2001 12 23 | 704 | 0.2+ | 0.5+ | 2005 10 28 | 704 | 0.8+ | 0.1+ | 2005 12 02 | 704 | 0.0 | 0.3− |
| 2001 12 23 | 704 | 0.3+ | 1.4+ | 2005 11 01 | 691 | 0.0 | 0.2− | 2005 12 02 | 704 | 0.0 | 0.1+ |
| 2002 01 06 | 704 | 0.1− | 0.3+ | 2005 11 01 | 691 | 0.2− | 0.0 | 2005 12 05 | 704 | 0.1− | 0.1− |
| 2002 01 06 | 704 | 0.1+ | 0.1+ | 2005 11 01 | 691 | 0.2− | 0.0 | 2005 12 05 | 704 | 0.6+ | 0.4+ |
| 2002 01 06 | 704 | 0.3− | 0.5+ | 2005 11 03 | 704 | 0.4− | 0.2− | 2005 12 05 | 704 | 0.0 | 0.6+ |
| 2002 01 25 | 704 | 0.2+ | 0.9− | 2005 11 03 | 704 | 0.4− | 0.3− | 2005 12 05 | 704 | 0.3+ | 0.5+ |
| 2002 01 25 | 704 | 0.1+ | 1.4− | 2005 11 03 | 704 | 0.1− | 0.5− | 2005 12 05 | 704 | 0.6− | 0.5+ |
| 2002 01 25 | 704 | 0.4+ | 1.6− | 2005 11 03 | 704 | 0.6− | 0.1+ | 2005 12 24 | 703 | 1.2− | 0.5− |
| 2005 10 05 | 704 | 0.4− | 0.4− | 2005 11 03 | 704 | 0.5+ | 0.3− | 2005 12 24 | 703 | 0.6− | 0.1− |
| 2005 10 05 | 704 | 0.6− | 0.0 | 2005 11 04 | 704 | 0.6+ | 1.5− | 2005 12 24 | 703 | 0.3+ | 0.6+ |
| 2005 10 05 | 704 | 0.2− | 0.7+ | 2005 11 04 | 704 | (0.8+ | 2.2+) | 2005 12 24 | 703 | 0.4+ | 0.5+ |
| 2005 10 05 | 704 | 0.5− | 0.4+ | 2005 11 04 | 704 | 1.9+ | 1.1− | 2006 01 28 | 703 | 0.9− | 0.1+ |
| 2005 10 05 | 704 | 0.3+ | 0.4− | 2005 11 04 | 704 | 0.6+ | 0.5− | 2006 01 28 | 703 | 0.1− | 0.1− |
| 2005 10 07 | 703 | 0.3− | 0.6+ | 2005 11 28 | 704 | 0.3+ | 0.3+ | 2006 01 28 | 703 | 0.3+ | 0.6− |
| 2005 10 07 | 703 | 0.6− | 0.5+ | 2005 11 28 | 704 | 1.4+ | 0.3+ | 2006 01 28 | 703 | 0.2+ | 1.0+ |
| 2005 10 07 | 703 | 0.3+ | 1.0+ | 2005 11 28 | 704 | 0.4+ | 0.0 | | | | |
| 2005 10 07 | 703 | 0.6+ | 0.1+ | 2005 11 28 | 704 | 0.5+ | 0.2− | | | | |

**2005 VS$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 95.39654 | | | (2000.0) | | |
| $n$ | 0.28626107 | $\omega$ | 126.68410 | | +0.79547570 | −0.59328152 |
| $a$ | 2.2801383 | $\Omega$ | 270.03196 | | +0.50913929 | +0.76479494 |
| $e$ | 0.2632314 | $i$ | 7.09022 | | +0.32862684 | +0.25120855 |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 704 | 0.5+ | 1.7− | 2005 10 14 | 704 | 0.1− | 0.3+ | 2005 11 21 | 699 | 0.3+ | 0.1+ |
| 1998 08 27 | 704 | 2.3− | 0.8+ | 2005 10 14 | 704 | 0.2+ | 0.3− | 2005 11 25 | 703 | 0.2+ | 0.3− |
| 1998 08 27 | 704 | 1.3+ | 0.6− | 2005 10 25 | 703 | 0.0 | 0.1+ | 2005 11 25 | 703 | 0.5− | 0.1+ |
| 1998 08 27 | 704 | 0.9− | 0.6+ | 2005 10 25 | 703 | (1.8− | 0.3+) | 2005 11 25 | 703 | 0.7− | 0.4+ |
| 1998 08 27 | 704 | 0.2− | 1.5+ | 2005 10 25 | 703 | 0.5− | 0.4+ | 2005 11 25 | 703 | 0.4− | 0.2− |
| 1998 09 19 | 699 | 0.8− | 1.5+ | 2005 10 25 | 703 | 0.2− | 0.0 | 2005 11 29 | 704 | 0.3− | 0.3+ |
| 1998 09 19 | 699 | 0.5+ | 0.3− | 2005 11 01 | 699 | 0.1− | 0.8− | 2005 11 29 | 704 | 0.0 | 0.3− |
| 1998 09 19 | 699 | 0.3− | 0.2+ | 2005 11 01 | 699 | 0.2+ | 0.4+ | 2005 11 29 | 704 | 0.8− | 0.2− |
| 1998 10 10 | 699 | 1.0+ | 0.6− | 2005 11 01 | 699 | 0.5+ | 0.6+ | 2005 11 29 | 704 | 0.0 | 0.5− |
| 1998 10 10 | 699 | 0.1+ | 0.7− | 2005 11 01 | 699 | 0.3+ | 0.4+ | 2005 11 29 | 704 | 0.0 | 0.0 |
| 1998 10 10 | 699 | 1.0+ | 0.5− | 2005 11 02 | 703 | 0.3+ | 0.2+ | 2005 12 07 | 699 | 0.3+ | 0.3+ |
| 2005 08 31 | 704 | 1.6+ | 0.8− | 2005 11 02 | 703 | 0.4+ | 0.1+ | 2005 12 07 | 699 | 0.2− | 0.1+ |
| 2005 08 31 | 704 | 0.4+ | 0.3+ | 2005 11 02 | 703 | 0.2+ | 0.1− | 2005 12 07 | 699 | 0.6− | 0.1− |
| 2005 08 31 | 704 | 0.7+ | 0.6+ | 2005 11 02 | 703 | 0.3+ | 0.2− | 2005 12 07 | 699 | (0.8+ | 2.0+) |
| 2005 08 31 | 704 | 0.6+ | 0.7+ | 2005 11 03 | 704 | 0.1− | 0.3+ | 2005 12 10 | 704 | 0.2+ | 1.0+ |
| 2005 09 14 | 704 | 0.0 | 0.1− | 2005 11 03 | 704 | 0.3− | 0.1− | 2005 12 10 | 704 | 0.3+ | 0.8+ |
| 2005 09 14 | 704 | 0.6− | 0.5+ | 2005 11 03 | 704 | 0.2− | 0.3+ | 2005 12 10 | 704 | 0.4+ | 0.9+ |
| 2005 09 14 | 704 | 0.5− | 0.5− | 2005 11 03 | 704 | 0.0 | 0.3+ | 2005 12 10 | 704 | 0.0 | 0.5+ |
| 2005 09 14 | 704 | 0.6− | 0.8+ | 2005 11 03 | 704 | 0.2− | 0.4+ | 2005 12 10 | 704 | 1.4+ | 0.5− |
| 2005 09 14 | 704 | 0.2− | 0.9− | 2005 11 08 | 704 | 0.0 | 0.1+ | 2005 12 29 | 704 | 0.2+ | 0.5− |
| 2005 09 29 | 703 | 2.2− | 2.5− | 2005 11 08 | 704 | 0.4+ | 0.1+ | 2005 12 29 | 704 | 0.1− | 0.4+ |
| 2005 09 29 | 703 | 0.7− | 0.5− | 2005 11 08 | 704 | 0.1− | 0.1+ | 2005 12 29 | 704 | 0.4− | 0.7− |
| 2005 09 29 | 703 | 0.1− | 0.3− | 2005 11 08 | 704 | 0.3+ | 0.3− | 2005 12 29 | 703 | 0.9− | 0.6+ |
| 2005 09 29 | 703 | 0.3− | 0.3+ | 2005 11 08 | 704 | 0.0 | 0.0 | 2005 12 29 | 703 | 0.0 | 0.6− |
| 2005 10 14 | 704 | 0.4+ | 0.6− | 2005 11 21 | 699 | 0.2+ | 0.1− | 2005 12 29 | 703 | 0.8+ | 0.6− |
| 2005 10 14 | 704 | 0.3− | 0.7+ | 2005 11 21 | 699 | 0.2+ | 0.1+ | 2005 12 29 | 703 | 0.4− | 0.8− |
| 2005 10 14 | 704 | 0.5+ | 0.2− | 2005 11 21 | 699 | 0.6+ | 0.2− | | | | |

**2005 VU$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 247.33443 | | | (2000.0) | | |
| $n$ | 0.22070732 | $\omega$ | 12.42457 | | −0.65254881 | +0.75642038 |
| $a$ | 2.7118036 | $\Omega$ | 216.86864 | | −0.70145498 | −0.62538345 |
| $e$ | 0.0500457 | $i$ | 4.28349 | | −0.28660245 | −0.19163439 |
| $P$ | 4.47 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.0 | 0.1+ | 2005 09 30 | G96 | 0.6+ | 0.3− | 2005 11 06 | G96 | 0.3− | 0.1+ |
| 1996 10 07 | 691 | 0.2− | 0.0 | 2005 10 29 | 691 | 0.2+ | 0.1+ | 2005 11 06 | G96 | 0.1− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.2+ | 0.1− | 2005 10 29 | 691 | 0.1+ | 0.0 | 2005 11 12 | 691 | 0.5− | 0.0 |
| 2003 05 05 | 691 | 0.3+ | 0.1− | 2005 10 29 | 691 | 0.0 | 0.2− | 2005 11 12 | 691 | 0.5+ | 0.3+ |
| 2003 05 05 | 691 | 0.1− | 0.0 | 2005 11 06 | 691 | 0.3− | 0.2+ | 2005 11 12 | 691 | 0.3+ | 0.1+ |
| 2003 05 05 | 691 | 0.2− | 0.1+ | 2005 11 06 | 691 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.5+ | 0.5− |
| 2005 09 30 | G96 | 0.0 | 0.2− | 2005 11 06 | 691 | 0.1− | 0.1+ | 2005 12 04 | G96 | 0.4+ | 0.3− |
| 2005 09 30 | G96 | 0.5− | 0.3+ | 2005 11 06 | G96 | 0.4− | 0.4− | 2005 12 04 | G96 | 0.2− | 0.1+ |
| 2005 09 30 | G96 | 0.1+ | 0.4− | 2005 11 06 | G96 | 0.2+ | 0.2− | 2005 12 04 | G96 | 0.2− | 0.4− |

**2005 VF$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.44152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17985255 | $\omega$ | 53.80832 | | −0.31279188 | −0.93405515 | |
| $a$ | 3.1083147 | $\Omega$ | 55.31073 | | +0.79022663 | −0.35658497 | |
| $e$ | 0.0512360 | $i$ | 12.09888 | | +0.52697545 | −0.01970097 | |
| $P$ | 5.48 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.0 | 0.1+ | 2005 11 06 | 691 | 0.2+ | 0.2− | 2005 12 01 | G96 | 0.0 | 0.1+ |
| 1994 10 31 | 691 | 0.3+ | 0.9− | 2005 11 06 | 691 | 0.1+ | 0.0 | 2005 12 01 | G96 | 0.2+ | 0.1− |
| 1994 10 31 | 691 | 0.5+ | 0.7− | 2005 11 06 | 691 | 0.1+ | 0.2− | 2005 12 01 | G96 | 0.2− | 0.3− |
| 2002 03 11 | 644 | 0.2− | 0.5+ | 2005 11 06 | 691 | 0.2+ | 0.2− | 2005 12 04 | 691 | 0.4− | 0.0 |
| 2002 03 11 | 644 | 0.0 | 0.1− | 2005 11 06 | 691 | 0.0 | 0.0 | 2005 12 04 | 691 | 0.1+ | 0.2+ |
| 2002 03 11 | 644 | 0.0 | 0.1+ | 2005 11 06 | 704 | 0.4+ | 0.1− | 2005 12 04 | 691 | 0.2+ | 0.0 |
| 2002 04 01 | 644 | 0.2+ | 0.6− | 2005 11 06 | 704 | 0.1− | 0.0 | 2005 12 04 | 704 | 1.3− | 0.3+ |
| 2002 04 01 | 644 | 0.2+ | 0.5+ | 2005 11 06 | 704 | 0.7+ | 0.3+ | 2005 12 04 | 704 | 0.4− | 1.1+ |
| 2002 04 01 | 644 | 0.1+ | 0.1+ | 2005 11 06 | 704 | 0.4− | 0.2+ | 2005 12 04 | 704 | 0.6− | 0.0 |
| 2005 10 25 | 691 | 1.6− | 1.7+ | 2005 11 06 | G96 | 0.2+ | 0.5− | 2005 12 06 | 691 | 0.1− | 0.4− |
| 2005 10 25 | 691 | 0.5− | 1.3+ | 2005 11 06 | G96 | 0.2− | 0.4− | 2005 12 06 | 691 | 0.4− | 0.3− |
| 2005 10 25 | 691 | 0.3+ | 0.1+ | 2005 11 06 | G96 | 0.0 | 0.3− | 2005 12 06 | 691 | 0.1− | 0.3− |
| 2005 10 25 | 703 | 0.7− | 0.2− | 2005 11 12 | 691 | 0.2+ | 0.4+ | 2006 01 23 | G96 | 0.6+ | 0.3− |
| 2005 10 25 | 691 | 0.0 | 0.2+ | 2005 11 12 | 691 | 0.3+ | 0.3+ | 2006 01 23 | G96 | 0.4+ | 0.1+ |
| 2005 10 25 | 703 | 0.9− | 1.7− | 2005 11 12 | 691 | 0.1+ | 0.2+ | 2006 01 23 | G96 | 0.1+ | 0.1− |
| 2005 10 25 | 691 | 0.2+ | 0.2+ | 2005 11 25 | 703 | 0.0 | 0.6− | 2006 01 23 | G96 | 0.0 | 0.1+ |
| 2005 10 25 | 703 | 0.4− | 0.3− | 2005 11 25 | 703 | 1.3+ | 0.2− | 2006 01 27 | G96 | 1.2+ | 0.2+ |
| 2005 10 25 | 691 | 0.1+ | 0.1+ | 2005 11 25 | 703 | 0.0 | 1.5− | 2006 01 27 | G96 | 0.3+ | 0.2+ |
| 2005 10 25 | 703 | 0.1− | 1.0− | 2005 11 25 | 703 | 0.2− | 0.0 | 2006 01 27 | G96 | 0.6+ | 0.1− |
| 2005 11 06 | 691 | 0.3+ | 0.2− | 2005 12 01 | G96 | 0.0 | 0.2− | 2006 01 27 | G96 | 0.7+ | 0.1+ |

**2005 VS$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.36151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18186534 | $\omega$ | 76.46304 | | +0.97736903 | −0.20408894 | |
| $a$ | 3.0853381 | $\Omega$ | 295.28964 | | +0.16235240 | +0.89234268 | |
| $e$ | 0.1415900 | $i$ | 3.52904 | | +0.13561518 | +0.40258198 | |
| $P$ | 5.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.2− | 0.3− | 2005 11 12 | 691 | 0.5− | 0.4+ | 2005 11 28 | 704 | 0.4− | 1.1− |
| 1996 02 10 | 691 | 0.2+ | 0.4+ | 2005 11 12 | 691 | 0.1− | 0.3+ | 2005 11 28 | 704 | 0.1+ | 0.0 |
| 2004 08 09 | 699 | 0.2− | 0.2− | 2005 11 12 | 691 | 1.4− | 0.1+ | 2005 11 28 | 704 | 0.1− | 1.1− |
| 2004 08 09 | 699 | 0.6+ | 0.5− | 2005 11 21 | 691 | 0.0 | 0.2+ | 2005 12 10 | 691 | 0.4+ | 0.1− |
| 2004 08 09 | 699 | 0.0 | 0.4+ | 2005 11 21 | 691 | 0.1− | 0.2+ | 2005 12 10 | 691 | 0.4+ | 0.4+ |
| 2004 08 09 | 699 | 0.3− | 0.3+ | 2005 11 21 | 691 | 0.3− | 0.0 | 2005 12 10 | 691 | 0.3+ | 0.1− |
| 2005 10 30 | G96 | 0.3+ | 0.3− | 2005 11 21 | 691 | 0.2+ | 0.1+ | 2005 12 23 | 691 | 0.2+ | 0.1− |
| 2005 10 30 | G96 | 0.1− | 0.4− | 2005 11 21 | 691 | 0.3+ | 0.0 | 2005 12 23 | 691 | 0.1+ | 0.1− |
| 2005 10 30 | G96 | 0.0 | 0.6− | 2005 11 21 | 691 | 0.1+ | 0.1+ | 2005 12 23 | 691 | 0.2+ | 0.2− |
| 2005 10 30 | G96 | 0.0 | 0.6− | 2005 11 25 | 691 | 0.0 | 0.0 | 2006 01 27 | G96 | 0.1− | 0.1+ |
| 2005 11 09 | 599 | 0.5+ | 0.2+ | 2005 11 25 | 691 | 0.0 | 0.0 | 2006 01 27 | G96 | 0.3− | 0.1− |
| 2005 11 09 | 599 | 0.2+ | 0.3− | 2005 11 25 | 691 | 0.0 | 0.1− | 2006 01 27 | G96 | 0.2− | 0.2− |
| 2005 11 09 | 599 | 0.1+ | 0.0 | 2005 11 28 | 704 | 0.4+ | 1.0+ | 2006 01 27 | G96 | 0.0 | 0.7− |

**2005 VW$_{112}$ = 2005 VH$_{121}$**

Id. Minor Planet Center (d, *MPO* 98190)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.98715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22975589 | $\omega$ | 55.10174 | | +0.99618892 | −0.08593472 | |
| $a$ | 2.6401278 | $\Omega$ | 309.82327 | | +0.07233511 | +0.90960771 | |
| $e$ | 0.2198831 | $i$ | 1.11373 | | +0.04873661 | +0.40648374 | |
| $P$ | 4.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.0 | 0.1+ | 2005 11 09 | 599 | 0.7+ | 0.5+ | 2005 12 23 | 691 | 0.2+ | 0.1+ |
| 1996 09 06 | 691 | 0.1+ | 0.1− | 2005 11 09 | 599 | 0.3+ | 0.5+ | 2005 12 23 | 691 | 0.2− | 0.2− |
| 1996 09 06 | 691 | 0.0 | 0.2− | 2005 11 09 | 599 | 0.0 | 0.5+ | 2005 12 23 | 691 | 0.1+ | 0.2− |
| 2000 07 29 | 807 | 0.1− | 0.0 | 2005 11 12 | 691 | 0.1+ | 0.1− | 2005 12 28 | G96 | 0.3− | 0.1− |
| 2000 07 29 | 807 | 0.1+ | 0.0 | 2005 11 12 | 691 | 0.1− | 0.3+ | 2005 12 28 | G96 | 0.3+ | 0.3− |
| 2005 10 28 | G96 | 0.0 | 0.2− | 2005 11 12 | 691 | 0.1+ | 0.2− | 2005 12 28 | G96 | 0.3+ | 0.1+ |
| 2005 10 28 | G96 | 0.1− | 0.1− | 2005 11 21 | 691 | 0.5+ | 0.2− | 2005 12 28 | G96 | 0.6− | 0.4+ |
| 2005 10 28 | G96 | 0.1+ | 0.2− | 2005 11 21 | 691 | 0.2− | 0.3− | 2006 01 23 | G96 | 0.1− | 0.3− |
| 2005 10 28 | G96 | 0.2− | 0.4− | 2005 11 21 | 691 | 0.1+ | 0.0 | 2006 01 23 | G96 | 0.2+ | 0.8− |
| 2005 11 03 | 691 | 0.2− | 0.3+ | 2005 12 01 | 704 | 0.1− | 0.2+ | 2006 01 23 | G96 | 0.2+ | 0.6− |
| 2005 11 03 | 691 | 0.1− | 0.1+ | 2005 12 01 | 704 | 0.6− | 0.4+ | 2006 01 23 | G96 | 0.0 | 0.2− |
| 2005 11 03 | 691 | 0.1+ | 0.4+ | 2005 12 01 | 704 | 0.7− | 0.0 | | | | |
| 2005 11 09 | 599 | 0.3+ | 0.1+ | 2005 12 01 | 704 | 1.1− | 0.2+ | | | | |

**2005 VV$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.44565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26247853 | $\omega$ | 186.38305 | | −0.97745576 | −0.21070723 | |
| $a$ | 2.4158698 | $\Omega$ | 341.43642 | | +0.19554672 | −0.87926345 | |
| $e$ | 0.1257153 | $i$ | 2.43345 | | +0.07963496 | −0.42719813 | |
| $P$ | 3.76 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.2− | 0.8− | 2003 04 01 | 644 | 0.9+ | 0.5+ | 2005 11 12 | 691 | 0.1+ | 0.4+ |
| 1999 02 07 | 691 | 0.3− | 0.5− | 2003 04 25 | 691 | 0.2− | 0.1+ | 2005 11 12 | 691 | 0.1+ | 0.6+ |
| 1999 02 07 | 691 | 0.5− | 0.9− | 2003 04 25 | 691 | 0.4− | 0.2+ | 2005 11 12 | 691 | 0.1+ | 0.8+ |
| 2000 07 30 | 807 | 0.1+ | 0.4+ | 2003 04 25 | 691 | 0.4− | 0.1+ | 2005 11 21 | 691 | 0.7− | 0.1+ |
| 2000 07 30 | 807 | 0.1+ | 0.3+ | 2003 05 05 | 691 | 0.3+ | 1.5+ | 2005 11 21 | 691 | 0.2+ | 0.4+ |
| 2003 03 24 | 691 | 0.5+ | 0.5− | 2003 05 05 | 691 | 0.2+ | 1.4+ | 2005 11 21 | 691 | 0.4− | 0.4+ |
| 2003 03 24 | 691 | 0.4+ | 0.2− | 2003 05 05 | 691 | 0.5+ | 1.3+ | 2005 12 10 | 691 | 0.0 | 0.3+ |
| 2003 03 24 | 691 | 0.2+ | 0.6− | 2005 11 10 | 691 | 0.1− | 0.2+ | 2005 12 10 | 691 | 0.1− | 0.1− |
| 2003 04 01 | 644 | 0.7+ | 0.6+ | 2005 11 10 | 691 | 0.1− | 0.4+ | 2005 12 10 | 691 | 0.5+ | 0.0 |
| 2003 04 01 | 644 | 1.0+ | 0.8+ | 2005 11 10 | 691 | 0.3− | 0.3+ | | | | |

**2005 VA$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.13111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26253332 | $\omega$ | 240.40123 | | −0.83540342 | −0.54955520 | |
| $a$ | 2.4155337 | $\Omega$ | 266.26074 | | +0.50751722 | −0.76463500 | |
| $e$ | 0.1280308 | $i$ | 0.54536 | | +0.21101516 | −0.33663394 | |
| $P$ | 3.75 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.4− | 1.2+ | 2005 11 12 | 691 | 0.2− | 0.1+ | 2005 12 02 | G96 | 0.4+ | 0.1− |
| 2001 10 14 | 691 | 0.2+ | 0.2+ | 2005 11 12 | 691 | 0.2− | 0.0 | 2006 01 21 | G96 | 0.3− | 0.1+ |
| 2001 10 14 | 691 | 0.3− | 0.2− | 2005 11 12 | 691 | 0.1− | 0.2+ | 2006 01 21 | G96 | 0.0 | 0.5− |
| 2003 04 08 | 691 | 0.0 | 0.1+ | 2005 11 26 | G96 | 0.3+ | 0.1+ | 2006 01 21 | G96 | 0.5− | 0.2− |
| 2003 04 08 | 691 | 0.2+ | 0.6+ | 2005 11 26 | G96 | 0.2+ | 0.0 | 2006 01 21 | G96 | 0.2− | 0.4− |
| 2003 04 08 | 691 | 0.3+ | 0.3+ | 2005 11 26 | G96 | 0.0 | 0.2− | 2006 01 21 | G96 | 0.1− | 0.2− |
| 2005 11 10 | G96 | 0.5+ | 0.7+ | 2005 11 26 | G96 | 0.1+ | 0.1− | 2006 01 21 | G96 | 0.3+ | 0.6− |
| 2005 11 10 | G96 | 0.3+ | 0.3− | 2005 12 02 | G96 | 0.3+ | 0.1− | 2006 01 21 | G96 | 0.2− | 0.1+ |
| 2005 11 10 | G96 | 0.3+ | 0.1− | 2005 12 02 | G96 | 0.3+ | 0.1− | 2006 01 21 | G96 | 0.6+ | 0.4− |
| 2005 11 10 | G96 | 0.1− | 0.4+ | 2005 12 02 | G96 | 0.2− | 0.8− | | | | |

**2005 VM$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 163.70269 | | | (2000.0) | | |
| $n$ | 0.21098414 | $\omega$ | 258.54107 | | +0.77205847 | +0.62614388 |
| $a$ | 2.7944918 | $\Omega$ | 62.59470 | | −0.52472830 | +0.72471577 |
| $e$ | 0.0515986 | $i$ | 7.04911 | | −0.35858879 | +0.28762978 |
| $P$ | 4.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.2− | 0.1− | 2005 11 10 | G96 | 0.4+ | 0.0 | 2005 12 02 | G96 | 0.0 | 0.0 |
| 2000 09 27 | 691 | 0.0 | 0.2+ | 2005 11 10 | G96 | 0.3− | 0.1− | 2005 12 04 | G96 | 0.2+ | 0.1− |
| 2000 09 27 | 691 | 0.0 | 0.2+ | 2005 11 10 | G96 | 0.0 | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.0 |
| 2003 05 06 | 691 | 0.2− | 0.1+ | 2005 11 10 | G96 | 0.3− | 0.2− | 2005 12 04 | G96 | 0.3+ | 0.1+ |
| 2003 05 06 | 691 | 0.1+ | 0.3+ | 2005 11 12 | 691 | 0.1− | 0.2+ | 2005 12 04 | G96 | 0.0 | 0.2+ |
| 2003 05 06 | 691 | 0.2+ | 0.0 | 2005 11 12 | 691 | 0.2− | 0.3+ | 2005 12 23 | 691 | 0.3+ | 0.2+ |
| 2005 10 01 | G96 | 0.3− | 0.3− | 2005 11 12 | 691 | 0.0 | 0.2− | 2005 12 23 | 691 | 0.4+ | 0.2+ |
| 2005 10 01 | G96 | 0.2− | 0.0 | 2005 11 26 | G96 | 0.0 | 0.2− | 2005 12 23 | 691 | 0.0 | 0.2+ |
| 2005 10 01 | G96 | 0.1+ | 0.2− | 2005 11 26 | G96 | 0.5− | 0.4− | 2005 12 28 | G96 | 0.2+ | 0.0 |
| 2005 10 01 | G96 | 0.5− | 0.4− | 2005 11 26 | G96 | 0.2− | 0.3− | 2005 12 28 | G96 | 0.4− | 0.2− |
| 2005 10 25 | G96 | 0.4+ | 0.1+ | 2005 11 26 | G96 | 0.5− | 0.1− | 2005 12 28 | G96 | 0.1− | 0.2− |
| 2005 10 25 | G96 | 0.1− | 0.2− | 2005 12 02 | G96 | 0.1− | 0.3− | 2005 12 28 | G96 | 0.0 | 0.1− |
| 2005 10 25 | G96 | 0.3+ | 0.0 | 2005 12 02 | G96 | 0.2+ | 0.1+ | | | | |
| 2005 10 25 | G96 | 0.3+ | 0.1− | 2005 12 02 | G96 | 0.4− | 0.1+ | | | | |

**2005 VT$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.76812 | | | (2000.0) | | |
| $n$ | 0.29001052 | $\omega$ | 175.26222 | | +0.06119650 | −0.99559913 |
| $a$ | 2.2604429 | $\Omega$ | 271.21733 | | +0.91341429 | +0.08452871 |
| $e$ | 0.1202950 | $i$ | 4.07087 | | +0.40240442 | −0.04046315 |
| $P$ | 3.40 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 11 11 | 691 | 0.1− | 0.0 | 2005 12 07 | 691 | 0.1− | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 11 12 | 691 | 0.1+ | 0.0 | 2005 12 10 | 691 | 0.2+ | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 11 12 | 691 | 0.1+ | 0.0 | 2005 12 10 | 691 | 0.3+ | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 11 12 | 691 | 0.2− | 0.1+ | 2005 12 10 | 691 | 0.1+ | 0.1+ |
| 2003 02 09 | 608 | 0.1+ | 0.3+ | 2005 11 29 | 691 | 0.1− | 0.1− | 2006 01 23 | G96 | 0.4− | 0.8− |
| 2003 02 09 | 608 | 0.6− | 0.8+ | 2005 11 29 | 691 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.1+ | 0.9− |
| 2003 02 09 | 608 | 0.0 | 0.7+ | 2005 11 29 | 691 | 0.3− | 0.1+ | 2006 01 23 | G96 | 0.1+ | 0.8− |
| 2005 11 11 | 691 | 0.1+ | 0.1+ | 2005 12 07 | 691 | 0.1− | 0.1+ | 2006 01 23 | G96 | 0.2+ | 0.6− |
| 2005 11 11 | 691 | 0.2+ | 0.0 | 2005 12 07 | 691 | 0.3− | 0.0 | | | | |

**2005 VP$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 84.16453 | | | (2000.0) | | |
| $n$ | 0.32477916 | $\omega$ | 123.14817 | | −0.53903588 | +0.78398380 |
| $a$ | 2.0960933 | $\Omega$ | 111.20154 | | −0.83994060 | −0.47308742 |
| $e$ | 0.7032167 | $i$ | 19.28494 | | −0.06277034 | −0.40194241 |
| $P$ | 3.03 | $H$ | 18.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 01 | 568 | 0.0 | 0.0 | 2005 11 03 | 568 | 0.1+ | 0.1+ | 2006 07 27 | 568 | 0.0 | 0.2+ |
| 2005 11 01 | 568 | 0.1− | 0.0 | 2005 11 04 | 568 | 0.2+ | 0.0 | 2006 07 27 | 568 | 0.0 | 0.2+ |
| 2005 11 01 | 568 | 0.2− | 0.0 | 2005 11 04 | 568 | 0.1− | 0.0 | 2006 09 04 | 568 | 0.0 | 0.1− |
| 2005 11 01 | 568 | 0.0 | 0.0 | 2005 11 04 | 568 | 0.0 | 0.0 | 2006 09 04 | 568 | 0.1+ | 0.1− |
| 2005 11 01 | 568 | 0.2− | 0.0 | 2005 11 04 | 568 | 0.1+ | 0.0 | 2006 09 19 | 568 | 0.1− | 0.1− |
| 2005 11 02 | 568 | 0.0 | 0.1− | 2005 11 11 | 568 | 0.1+ | 0.1+ | 2006 09 19 | 568 | 0.1+ | 0.0 |
| 2005 11 02 | 568 | 0.1− | 0.2− | 2005 11 11 | 568 | 0.0 | 0.1+ | 2006 09 19 | 568 | 0.1− | 0.0 |
| 2005 11 02 | 568 | 0.0 | 0.0 | 2005 11 13 | 568 | 0.0 | 0.2+ | | | | |
| 2005 11 02 | 568 | 0.0 | 0.2− | 2005 11 13 | 568 | 0.1+ | 0.1+ | | | | |

**2005 VW$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.06521 | | | (2000.0) | | |
| $n$ | 0.26395942 | $\omega$ | 106.80806 | | +0.66161315 | −0.67611661 |
| $a$ | 2.4068255 | $\Omega$ | 297.12387 | | +0.47031069 | +0.71095482 |
| $e$ | 0.2687486 | $i$ | 21.36513 | | +0.58401704 | +0.19341556 |
| $P$ | 3.73 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 910 | 0.3+ | 0.7+ | 2001 09 10 | 644 | 0.3+ | 0.2+ | 2005 11 29 | 704 | 0.1+ | 0.5+ |
| 1998 12 15 | 910 | 0.1+ | 0.5+ | 2001 09 10 | 644 | 0.2+ | 0.0 | 2005 11 29 | 704 | 0.7+ | 1.0+ |
| 1998 12 15 | 910 | 0.1+ | 0.9+ | 2005 11 10 | 703 | 0.0 | 0.2+ | 2005 11 29 | 704 | 0.2− | 0.5+ |
| 1999 02 12 | 704 | 0.4+ | 0.4+ | 2005 11 10 | 703 | 1.4− | 0.5− | 2005 11 30 | 704 | 0.4+ | 0.0 |
| 1999 02 12 | 704 | 1.5+ | 0.3+ | 2005 11 10 | 703 | 1.9− | 0.5+ | 2005 11 30 | 704 | 0.1+ | 0.5− |
| 1999 02 12 | 704 | 1.7− | 0.1− | 2005 11 10 | 703 | 0.2+ | 0.8− | 2005 11 30 | 704 | 0.5+ | 0.4− |
| 1999 02 12 | 704 | 0.5− | 0.7− | 2005 11 27 | 704 | 0.0 | 0.2− | 2005 11 30 | 704 | 0.2+ | 0.2− |
| 1999 02 12 | 704 | 0.6+ | 0.9− | 2005 11 27 | 704 | 0.2− | 0.6+ | 2005 11 30 | 704 | 0.6+ | 0.6− |
| 2001 07 25 | 608 | 0.0 | 0.2− | 2005 11 27 | 704 | 0.2− | 0.4+ | 2005 12 01 | 704 | 0.1− | 0.2− |
| 2001 07 25 | 608 | 0.0 | 0.6− | 2005 11 27 | 704 | 0.0 | 0.3− | 2005 12 01 | 704 | 0.4+ | 1.2− |
| 2001 07 25 | 608 | 0.3+ | 0.3− | 2005 11 27 | 704 | 0.8+ | 0.3+ | 2005 12 01 | 704 | 0.4+ | 0.3+ |
| 2001 08 16 | 644 | 0.4− | 0.3− | 2005 11 28 | 704 | 0.3− | 0.2− | 2005 12 01 | 704 | 0.1− | 0.7− |
| 2001 08 16 | 644 | 0.8− | 0.2− | 2005 11 28 | 704 | 0.1− | 0.7− | 2005 12 05 | 703 | 1.3− | 0.2+ |
| 2001 08 16 | 644 | 0.6− | 0.4− | 2005 11 28 | 704 | 0.1− | 0.2+ | 2005 12 05 | 703 | 1.0+ | 0.5− |
| 2001 08 26 | 644 | 0.2+ | 0.7+ | 2005 11 28 | 704 | 0.3− | 0.6+ | 2005 12 05 | 703 | 0.5+ | 0.2+ |
| 2001 08 26 | 644 | 0.2− | 0.7+ | 2005 11 28 | 704 | 0.3+ | 0.3+ | 2005 12 05 | 703 | 0.1+ | 0.4+ |
| 2001 08 26 | 644 | 0.3+ | 0.8+ | 2005 11 29 | 704 | 0.2+ | 0.2+ | | | | |
| 2001 09 10 | 644 | 0.4+ | 0.2+ | 2005 11 29 | 704 | 0.2+ | 0.0 | | | | |

**2005 VM$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.14184 | | | (2000.0) | | |
| $n$ | 0.17573814 | $\omega$ | 79.02840 | | +0.76446942 | −0.64341082 |
| $a$ | 3.1566423 | $\Omega$ | 321.00000 | | +0.56378023 | +0.69743819 |
| $e$ | 0.1985158 | $i$ | 3.65450 | | +0.31263135 | +0.31559864 |
| $P$ | 5.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 13 | 691 | 0.1− | 0.1+ | 2004 10 10 | 704 | 0.6+ | 0.5+ | 2005 11 13 | 291 | 0.8− | 0.5+ |
| 1993 12 13 | 691 | 0.0 | 0.3+ | 2004 11 04 | 699 | 0.0 | 0.8− | 2006 01 07 | G96 | 0.0 | 0.2+ |
| 1993 12 13 | 691 | 0.0 | 0.0 | 2004 11 04 | 699 | 0.1+ | 0.2− | 2006 01 07 | G96 | 0.5+ | 0.1− |
| 2004 09 18 | 704 | 0.4+ | 0.8+ | 2004 11 04 | 699 | 0.4+ | 0.4− | 2006 01 07 | G96 | 0.0 | 0.2− |
| 2004 09 18 | 704 | 0.3+ | 0.5+ | 2004 11 04 | 699 | 0.9− | 0.1− | 2006 01 07 | G96 | 0.0 | 0.2− |
| 2004 09 18 | 704 | 0.6− | 0.2− | 2004 11 04 | 703 | 0.5− | 1.4− | 2006 02 05 | G96 | 0.1+ | 0.0 |
| 2004 10 04 | 699 | 1.3+ | 0.7− | 2004 11 04 | 703 | 0.1− | 0.1− | 2006 02 05 | G96 | 0.0 | 0.2− |
| 2004 10 04 | 699 | 1.4+ | 0.8+ | 2004 11 04 | 703 | 0.2+ | 0.5+ | 2006 02 05 | G96 | 0.5+ | 0.1+ |
| 2004 10 04 | 699 | 0.5+ | 0.5− | 2004 11 04 | 703 | 0.4− | 1.2− | 2006 02 05 | G96 | 0.1− | 0.3− |
| 2004 10 04 | 699 | 0.6− | 0.4+ | 2005 11 12 | 691 | 0.8+ | 0.2− | 2006 02 20 | G96 | 0.0 | 0.5+ |
| 2004 10 10 | 704 | 0.2− | 0.4+ | 2005 11 12 | 691 | 0.4+ | 0.1− | 2006 02 20 | G96 | 0.2− | 0.2+ |
| 2004 10 10 | 704 | 0.1− | 0.1+ | 2005 11 12 | 691 | 0.3− | 0.2− | 2006 02 20 | G96 | 0.2− | 0.4+ |
| 2004 10 10 | 704 | 0.7− | 0.1+ | 2005 11 13 | 291 | 0.3− | 0.2− | 2006 02 20 | G96 | 0.5− | 0.4+ |
| 2004 10 10 | 704 | 0.4− | 0.7+ | 2005 11 13 | 291 | 0.1+ | 0.2− | | | | |

**2005 VZ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.34770 | | | (2000.0) | | |
| $n$ | 0.00376266 | $\omega$ | 187.57050 | | +0.65065927 | −0.74625301 |
| $a$ | 40.9391979 | $\Omega$ | 221.98640 | | +0.70725441 | +0.66291339 |
| $e$ | 0.1674474 | $i$ | 12.12679 | | +0.27646647 | +0.06043417 |
| $P$ | 262 | $H$ | 7.5 | $G$ | 0.15 | $U$ 7 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 02 | 695 | 0.2− | 0.0 | 2005 12 01 | 695 | 0.3− | 0.0 | 2006 10 19 | 695 | 0.2− | 0.1− |
| 2005 11 02 | 695 | 0.0 | 0.0 | 2005 12 01 | 695 | 0.0 | 0.2+ | 2006 10 19 | 695 | 0.1+ | 0.2+ |
| 2005 11 02 | 695 | 0.0 | 0.0 | 2005 12 30 | 688 | 0.7+ | 0.1− | 2006 10 20 | 695 | 0.1− | 0.1− |
| 2005 12 01 | 695 | 0.1+ | 0.1− | 2005 12 30 | 688 | 0.8− | 0.1+ | | | | |

**2005 VQ$_{123}$ = 1999 CN$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.43784 | | (2000.0) | | −0.80540217 | −0.59228882 |
| $n$ | 0.26843522 | $\omega$ | 190.21890 | | −0.80540217 | −0.59228882 |
| $a$ | 2.3799969 | $\Omega$ | 313.43637 | | +0.54601281 | −0.72638459 |
| $e$ | 0.1396096 | $i$ | 1.80185 | | +0.23064552 | −0.34865368 |
| $P$ | 3.67 | $H$ | 18.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 691 | 0.8+ | 0.1+ | 2003 04 24 | 691 | 0.5+ | 0.2− | 2005 12 10 | 691 | 0.2− | 0.4− |
| 1999 02 10 | 691 | 0.5+ | 0.1− | 2003 04 24 | 691 | 0.6+ | 0.1− | 2005 12 10 | 691 | 0.1− | 0.3+ |
| 1999 02 14 | 691 | 0.5− | 0.3− | 2005 11 01 | G96 | 0.2+ | 0.3− | 2005 12 10 | 691 | 1.0+ | 0.9+ |
| 1999 02 14 | 691 | 0.4− | 0.3− | 2005 11 01 | G96 | 0.6+ | 0.3− | 2005 12 28 | G96 | 0.3− | 0.5− |
| 1999 02 14 | 691 | 0.8− | 0.3− | 2005 11 01 | G96 | 0.3+ | 0.3− | 2005 12 28 | G96 | 1.0− | 0.0 |
| 2003 04 05 | 691 | 0.5− | 0.2+ | 2005 11 01 | G96 | 0.4− | 0.6+ | 2005 12 28 | G96 | 0.7− | 0.2+ |
| 2003 04 05 | 691 | 0.2− | 0.3+ | 2005 11 29 | 691 | 0.4− | 0.2+ | 2005 12 28 | G96 | 0.3− | 0.1− |
| 2003 04 05 | 691 | 0.3− | 0.6+ | 2005 11 29 | 691 | 0.0 | 0.2+ | | | | |
| 2003 04 24 | 691 | 0.4+ | 0.3+ | 2005 11 29 | 691 | 0.1− | 0.1+ | | | | |

**2005 VR$_{123}$ = 2002 AK$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 189.97521 | | (2000.0) | | +0.10952034 | +0.95543252 |
| $n$ | 0.20679457 | $\omega$ | 7.38701 | | +0.10952034 | +0.95543252 |
| $a$ | 2.8321090 | $\Omega$ | 269.18469 | | −0.92541109 | −0.00265471 |
| $e$ | 0.0439998 | $i$ | 15.91256 | | −0.36279418 | +0.29519765 |
| $P$ | 4.77 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 04 | 704 | 0.5+ | 0.1− | 2004 06 12 | 644 | 0.6− | 0.0 | 2005 11 10 | 703 | 0.6− | 0.2− |
| 2000 10 04 | 704 | 0.3+ | 0.2− | 2004 06 12 | 644 | 0.6− | 0.3+ | 2005 11 10 | 703 | 0.9+ | 0.3− |
| 2000 10 04 | 704 | 0.3− | 2.0− | 2004 08 09 | 704 | 0.4− | 1.7+ | 2005 11 10 | 703 | 0.1− | 0.2+ |
| 2002 01 09 | 704 | 0.1+ | 0.7+ | 2004 08 09 | 704 | 0.6+ | 0.6+ | 2005 11 28 | 703 | 0.5+ | 0.2+ |
| 2002 01 09 | 704 | 0.6+ | 0.3+ | 2004 08 09 | 704 | 0.5− | 0.8+ | 2005 11 28 | 703 | 1.4+ | 1.3+ |
| 2002 01 09 | 704 | 0.1+ | 0.6+ | 2004 08 09 | 704 | 0.0 | 0.3+ | 2005 11 28 | 703 | 0.5− | 0.3− |
| 2002 01 14 | 704 | 0.2+ | 0.1+ | 2005 11 02 | 703 | 1.5− | 0.1− | 2005 11 28 | 703 | 1.1− | 0.7− |
| 2002 01 14 | 704 | 0.4+ | 0.8+ | 2005 11 02 | 703 | 0.2− | 0.4+ | 2006 01 05 | 703 | 0.7+ | 0.8+ |
| 2002 01 14 | 704 | 0.2+ | 0.0 | 2005 11 02 | 703 | 0.9− | 0.5+ | 2006 01 05 | 703 | 1.7+ | 0.4+ |
| 2002 01 14 | 704 | 0.1+ | 0.8+ | 2005 11 02 | 703 | 1.2− | 0.4− | 2006 01 05 | 703 | 0.5+ | 0.4+ |
| 2004 06 12 | 644 | 0.5− | 0.3+ | 2005 11 10 | 703 | 0.3+ | 0.3− | 2006 01 05 | 703 | 0.6+ | 0.2− |

**2005 VS$_{123}$ = 2002 CJ$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.82206 | | (2000.0) | | +0.01292448 | −0.99547360 |
| $n$ | 0.20968020 | $\omega$ | 9.12244 | | +0.01292448 | −0.99547360 |
| $a$ | 2.8060653 | $\Omega$ | 80.17798 | | +0.91127383 | −0.02703432 |
| $e$ | 0.0281439 | $i$ | 5.48333 | | +0.41159806 | +0.09111228 |
| $P$ | 4.70 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 691 | 0.1+ | 0.1− | 2002 02 12 | 704 | 0.5− | 1.1− | 2005 11 28 | 703 | 1.3− | 0.6− |
| 1998 04 22 | 691 | 0.1− | 0.1− | 2002 02 12 | 704 | 1.1+ | 0.0 | 2005 11 28 | 703 | 0.8− | 1.0− |
| 1998 04 22 | 691 | 0.1− | 0.1− | 2002 02 12 | 704 | 0.3− | 0.1+ | 2005 11 30 | G96 | 0.0 | 0.2− |
| 2002 02 08 | 704 | 0.1− | 0.0 | 2002 02 12 | 704 | 1.5+ | 0.2+ | 2005 11 30 | G96 | 0.0 | 0.1+ |
| 2002 02 08 | 704 | 0.6− | 0.2− | 2002 02 12 | 704 | 0.2− | 0.0 | 2005 11 30 | G96 | 0.5+ | 0.1− |
| 2002 02 08 | 704 | 0.5− | 0.7+ | 2002 02 12 | 704 | 1.3+ | 0.6− | 2005 11 30 | G96 | 0.6+ | 0.4− |
| 2002 02 08 | 608 | 0.7− | 0.3+ | 2005 11 02 | G96 | 0.3+ | 0.2+ | 2006 01 21 | G96 | 0.4+ | 0.3− |
| 2002 02 08 | 608 | 0.5− | 0.3+ | 2005 11 02 | G96 | 0.4+ | 0.4− | 2006 01 21 | G96 | 0.7+ | 0.5− |
| 2002 02 08 | 608 | 0.9− | 0.3− | 2005 11 02 | G96 | 0.3+ | 0.3− | 2006 01 21 | G96 | 0.4+ | 0.3− |
| 2002 02 12 | 704 | 0.1+ | 0.2+ | 2005 11 02 | G96 | 0.3− | 0.2− | 2006 01 21 | G96 | 0.7+ | 0.3− |
| 2002 02 12 | 704 | 0.9− | 0.9+ | 2005 11 28 | 703 | 0.7− | 1.1+ | | | | |
| 2002 02 12 | 704 | 1.1+ | 0.5+ | 2005 11 28 | 703 | 0.1− | 1.7+ | | | | |

**2005 VU$_{123}$ = 2004 GE$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 152.06972 | | (2000.0) | | +0.84249926 | +0.52068185 |
| $n$ | 0.28305181 | $\omega$ | 9.49231 | | +0.84249926 | +0.52068185 |
| $a$ | 2.2973408 | $\Omega$ | 318.16727 | | −0.50683854 | +0.67927854 |
| $e$ | 0.2430744 | $i$ | 11.95447 | | −0.18250946 | +0.51717606 |
| $P$ | 3.48 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | E12 | 1.3+ | 0.4+ | 2005 11 05 | 703 | 0.2− | 0.0 | 2005 11 26 | 704 | 0.9+ | 1.1− |
| 2004 04 12 | E12 | 1.0+ | 0.4− | 2005 11 05 | 703 | 0.5− | 0.3− | 2005 11 26 | 704 | 0.6− | 0.5+ |
| 2004 04 12 | E12 | 0.4+ | 0.6− | 2005 11 05 | 703 | 0.2− | 0.2+ | 2005 12 24 | 704 | 1.3+ | 0.8+ |
| 2004 04 12 | E12 | 0.3− | 0.9− | 2005 11 11 | 704 | 0.7− | 0.4− | 2005 12 24 | 704 | 1.3+ | 0.3− |
| 2004 04 16 | 699 | (2.3− | 0.3−) | 2005 11 11 | 704 | 0.3− | 0.4+ | 2005 12 24 | 704 | 0.2− | 1.3+ |
| 2004 04 16 | 699 | 1.5− | 0.6+ | 2005 11 11 | 704 | 0.2− | 0.4+ | 2006 10 30 | G96 | 0.1− | 0.1− |
| 2004 04 16 | 699 | 1.0− | 0.8+ | 2005 11 11 | 704 | 0.2− | 0.3− | 2006 10 30 | G96 | 0.7+ | 0.4− |
| 2004 04 16 | 699 | (1.8− | 0.2+) | 2005 11 11 | 704 | 0.7− | 0.3− | 2006 10 30 | G96 | 0.7− | 0.2+ |
| 2005 11 05 | 703 | 0.3+ | 0.4− | 2005 11 26 | 704 | 0.4+ | 0.2− | 2006 10 30 | G96 | 0.1+ | 0.2+ |

**2005 VV$_{123}$ = 2003 FC$_{13}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 141.98421 | | (2000.0) | | +0.95182893 | +0.30580180 |
| $n$ | 0.23640605 | $\omega$ | 147.04538 | | +0.95182893 | +0.30580180 |
| $a$ | 2.5903811 | $\Omega$ | 195.19712 | | −0.29662705 | +0.89969205 |
| $e$ | 0.1153723 | $i$ | 4.92722 | | −0.07767931 | +0.31151161 |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 691 | 0.1+ | 0.5+ | 2005 11 06 | G96 | 0.2− | 0.0 | 2005 11 30 | 704 | 0.1− | 0.9+ |
| 2003 03 23 | 691 | 0.0 | 0.3+ | 2005 11 06 | 691 | 0.4− | 0.0 | 2005 11 30 | 704 | 0.3+ | 0.4− |
| 2003 03 23 | 691 | 0.3+ | 0.5+ | 2005 11 06 | 691 | 0.3− | 0.1+ | 2005 11 30 | 644 | 0.0 | 0.3− |
| 2003 03 25 | 644 | 0.0 | 0.6− | 2005 11 06 | 691 | 0.3− | 0.1+ | 2005 11 30 | 644 | 0.2− | 0.1+ |
| 2003 03 25 | 644 | 0.1− | 0.2− | 2005 11 07 | 224 | 0.1+ | 0.4− | 2005 11 30 | 644 | 0.1− | 0.3− |
| 2003 03 25 | 644 | 0.2− | 0.2− | 2005 11 07 | 224 | 0.3+ | 1.1− | 2006 02 02 | G96 | 0.2+ | 0.4− |
| 2005 11 06 | G96 | 0.0 | 0.0 | 2005 11 07 | 224 | 0.7+ | 1.2+ | 2006 02 02 | G96 | 0.5− | 0.4− |
| 2005 11 06 | G96 | 0.1+ | 0.0 | 2005 11 30 | 704 | 0.4+ | 0.6+ | 2006 02 02 | G96 | 0.4+ | 0.2− |
| 2005 11 06 | G96 | 0.4− | 0.0 | 2005 11 30 | 704 | 0.1+ | 0.6+ | 2006 02 02 | G96 | 0.2+ | 0.4− |

**2005 VW$_{123}$ = 2001 YT$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 122.93657 | | (2000.0) | | +0.97741348 | +0.18961096 |
| $n$ | 0.23166220 | $\omega$ | 15.50768 | | +0.97741348 | +0.18961096 |
| $a$ | 2.6256244 | $\Omega$ | 333.01616 | | −0.20909259 | +0.80345213 |
| $e$ | 0.1838980 | $i$ | 11.87000 | | −0.03071116 | +0.56436899 |
| $P$ | 4.25 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 19 | 566 | 0.3+ | 0.5− | 2001 12 23 | 704 | 0.0 | 0.2− | 2005 12 04 | 703 | 0.6− | 0.3+ |
| 1996 08 19 | 566 | 0.3+ | 0.4− | 2001 12 23 | 704 | 0.1− | 0.4− | 2005 12 04 | 703 | 0.1− | 0.6+ |
| 1996 08 19 | 566 | 0.0 | 0.1+ | 2001 12 23 | 704 | 0.1+ | 0.1− | 2005 12 04 | 703 | 0.6− | 0.2− |
| 2001 12 20 | 644 | 0.1− | 0.5− | 2005 11 11 | 704 | 0.2+ | 0.1+ | 2005 12 24 | 704 | 0.7+ | 1.2+ |
| 2001 12 20 | 644 | 0.2− | 0.1+ | 2005 11 11 | 704 | 0.2− | 0.1− | 2005 12 24 | 704 | 0.9+ | 0.1− |
| 2001 12 20 | 644 | 0.0 | 0.1− | 2005 11 11 | 704 | 0.0 | 0.5− | 2005 12 24 | 704 | 0.7+ | 0.5+ |
| 2001 12 20 | 644 | 0.0 | 0.0 | 2005 11 11 | 704 | 0.6− | 0.3+ | 2006 11 24 | G96 | 0.6+ | 0.4− |
| 2001 12 20 | 644 | 0.2− | 0.3− | 2005 11 26 | 703 | (0.6− | 2.1−) | 2006 11 24 | G96 | 1.0− | 0.5− |
| 2001 12 20 | 644 | 0.2− | 0.1− | 2005 11 26 | 703 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2001 12 23 | 704 | 0.3+ | 0.2+ | 2005 12 04 | 703 | 0.6− | 0.4− | 2006 11 24 | G96 | 0.3− | 0.2− |

**2005 VX$_{123}$ = 2002 CW$_{302}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 325.98342 | | (2000.0) | | | |
| $n$ | 0.18839458 | $\omega$ | 279.28815 | | −0.77825261 | −0.61891427 |
| $a$ | 3.0136335 | $\Omega$ | 222.57355 | | +0.61993736 | −0.73034284 |
| $e$ | 0.0172445 | $i$ | 9.02720 | | +0.10000268 | −0.28904058 |
| $P$ | 5.23 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 31 | 691 | 0.1− | 0.2+ | 2003 05 23 | 691 | 0.2− | 0.7+ | 2005 11 25 | 703 | 0.9+ | 0.5+ |
| 2000 12 31 | 691 | 0.1+ | 0.4+ | 2003 05 23 | 691 | 0.4+ | 0.7+ | 2005 11 25 | 703 | 0.6+ | 0.6− |
| 2000 12 31 | 691 | 0.2− | 0.1− | 2003 05 23 | 691 | 0.2− | 1.1+ | 2005 11 25 | 703 | 0.2− | 0.3− |
| 2002 02 12 | 704 | 1.0+ | 0.1+ | 2003 07 04 | 691 | 0.1− | 0.6+ | 2005 11 25 | 703 | 1.4− | 0.9+ |
| 2002 02 12 | 704 | 1.2+ | 0.9+ | 2003 07 04 | 691 | 0.2+ | 0.6+ | 2005 12 04 | G96 | 0.8− | 0.1− |
| 2002 02 12 | 704 | 0.0 | 1.0+ | 2003 07 04 | 691 | 0.3− | 0.7+ | 2005 12 04 | G96 | 0.2− | 0.2− |
| 2002 02 12 | 704 | 1.0+ | 1.0+ | 2004 08 08 | 599 | 1.1+ | 0.8+ | 2005 12 04 | G96 | 0.3− | 0.3− |
| 2002 02 12 | 704 | 0.8+ | 1.1+ | 2004 08 08 | 599 | 0.5− | 0.1− | 2005 12 04 | G96 | 0.4− | 0.4− |
| 2002 02 15 | 704 | 0.1+ | 0.3+ | 2004 08 08 | 599 | 0.2− | 1.1+ | 2006 01 28 | G96 | 0.1− | 0.5− |
| 2002 02 15 | 704 | 0.3− | 0.2− | 2004 08 08 | 599 | 0.7+ | 0.5+ | 2006 01 28 | G96 | 0.0 | 0.4− |
| 2002 02 15 | 704 | 0.2− | 0.5+ | 2005 11 12 | 691 | 0.1+ | 1.3+ | 2006 01 28 | G96 | 0.1+ | 0.3− |
| 2002 02 15 | 704 | 0.0 | 0.9+ | 2005 11 12 | 691 | 0.2− | 1.6+ | 2006 01 28 | G96 | 0.3+ | 1.1− |
| 2002 02 15 | 704 | 0.2+ | 0.1+ | 2005 11 12 | 691 | 0.2− | 1.5+ | | | | |

**2005 VY$_{123}$ = 1995 UH$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 100.64286 | | (2000.0) | | | |
| $n$ | 0.20831481 | $\omega$ | 343.45530 | | +0.88328319 | −0.46346447 |
| $a$ | 2.8183134 | $\Omega$ | 44.37845 | | +0.44080379 | +0.76951094 |
| $e$ | 0.0235932 | $i$ | 5.80936 | | +0.15969607 | +0.43937864 |
| $P$ | 4.73 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 691 | 0.0 | 0.1+ | 2000 11 03 | 691 | 0.3+ | 0.6− | 2005 12 10 | 691 | 0.1− | 0.0 |
| 1993 03 20 | 691 | 0.1− | 0.3+ | 2002 02 12 | 704 | 1.3+ | 0.1+ | 2005 12 10 | 691 | 0.3− | 0.2− |
| 1993 03 20 | 691 | 0.1+ | 0.3+ | 2002 02 12 | 704 | 1.3+ | 0.6+ | 2005 12 23 | 691 | 0.5+ | 0.1+ |
| 1995 10 20 | 691 | 0.4− | 0.5+ | 2002 02 12 | 704 | 0.3+ | 1.0+ | 2005 12 23 | 691 | 0.5+ | 0.2+ |
| 1995 10 20 | 691 | 0.7− | 0.4+ | 2005 11 12 | 691 | 0.4− | 0.0 | 2005 12 23 | 691 | 0.1+ | 0.3− |
| 1995 10 20 | 691 | 0.4− | 0.6+ | 2005 11 12 | 691 | 0.2− | 0.1− | 2006 01 02 | G96 | 0.1+ | 0.2− |
| 1995 10 25 | 691 | 0.2+ | 0.0 | 2005 11 12 | 691 | 0.9− | 0.2+ | 2006 01 02 | G96 | 0.9− | 0.3− |
| 1995 10 25 | 691 | 0.1+ | 0.4+ | 2005 11 21 | 691 | 0.1+ | 0.2+ | 2006 01 02 | G96 | 0.2+ | 0.5− |
| 1995 10 25 | 691 | 0.0 | 0.1+ | 2005 11 21 | 691 | 0.3+ | 0.2+ | 2006 01 02 | G96 | 0.7− | 0.3− |
| 2000 11 03 | 691 | 0.3+ | 0.5− | 2005 11 21 | 691 | 0.1+ | 0.0 | | | | |
| 2000 11 03 | 691 | 0.4+ | 0.4− | 2005 12 10 | 691 | 0.0 | 0.0 | | | | |

**2005 VZ$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 106.38120 | | (2000.0) | | | |
| $n$ | 0.22690655 | $\omega$ | 348.02993 | | +0.90306961 | −0.42824647 |
| $a$ | 2.6621837 | $\Omega$ | 37.38112 | | +0.39836533 | +0.80671347 |
| $e$ | 0.1036380 | $i$ | 3.08891 | | +0.16053146 | +0.40720797 |
| $P$ | 4.34 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2003 04 25 | 691 | 1.0+ | 0.4+ | 2005 11 29 | 691 | 0.0 | 0.3+ |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2003 04 25 | 691 | 0.0 | 0.3+ | 2005 11 29 | 691 | 0.2+ | 0.3+ |
| 2002 01 14 | 645 | 0.1− | 0.0 | 2003 04 25 | 691 | 0.3− | 0.4+ | 2005 12 06 | 691 | 0.5− | 1.2− |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2005 11 01 | G96 | 0.9− | 0.6+ | 2005 12 06 | 691 | 0.3− | 0.4+ |
| 2002 01 22 | 691 | 0.1+ | 0.2+ | 2005 11 01 | G96 | 0.6+ | 0.4+ | 2005 12 06 | 691 | 0.2− | 0.2+ |
| 2002 01 22 | 691 | 0.4+ | 0.1+ | 2005 11 01 | G96 | 0.1− | 0.2+ | 2005 12 30 | G96 | 0.4− | 0.2+ |
| 2002 01 22 | 691 | 0.1+ | 0.1+ | 2005 11 01 | G96 | 0.5− | 0.1− | 2005 12 30 | G96 | 0.3− | 0.0 |
| 2003 03 31 | 807 | 1.2− | 0.9+ | 2005 11 21 | 691 | 0.8+ | 0.0 | 2005 12 30 | G96 | 0.3+ | 0.2− |
| 2003 03 31 | 807 | 0.8+ | 0.3+ | 2005 11 21 | 691 | 0.3− | 0.3+ | 2005 12 30 | G96 | 0.5− | 0.4− |
| 2003 03 31 | 807 | 0.5+ | 0.5+ | 2005 11 21 | 691 | 0.3− | 0.2+ | | | | |
| 2003 03 31 | 807 | 0.1+ | 0.4+ | 2005 11 29 | 691 | 0.8+ | 0.6+ | | | | |

**2005 VA$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 102.79671 | | (2000.0) | | | |
| $n$ | 0.18077014 | $\omega$ | 274.62900 | | +0.97508703 | −0.02065700 |
| $a$ | 3.0977873 | $\Omega$ | 86.66905 | | +0.10981486 | +0.91003801 |
| $e$ | 0.2188160 | $i$ | 12.78143 | | −0.19273294 | +0.41400979 |
| $P$ | 5.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 19 | 704 | 0.4+ | 0.2+ | 2005 11 06 | 704 | 0.2+ | 0.3+ | 2005 12 07 | 704 | 1.9+ | 0.6− |
| 2001 01 19 | 704 | 0.3+ | 0.6+ | 2005 11 06 | 704 | 0.8− | 0.1+ | 2005 12 22 | 703 | 0.7− | 0.4+ |
| 2001 01 19 | 704 | 1.1+ | 0.9+ | 2005 11 06 | 704 | 0.5− | 0.0 | 2005 12 22 | 703 | 0.9− | 1.3+ |
| 2001 01 26 | 645 | 0.0 | 0.0 | 2005 11 21 | 703 | 0.2+ | 0.9− | 2005 12 22 | 703 | 0.4+ | 0.1+ |
| 2001 01 26 | 645 | 0.1− | 0.0 | 2005 11 21 | 703 | 0.0 | 0.2− | 2005 12 22 | 703 | 0.3− | 0.3+ |
| 2004 07 13 | E12 | 0.1+ | 0.1− | 2005 11 21 | 703 | 0.7− | 0.7+ | 2006 01 21 | G96 | 0.1− | 0.3− |
| 2004 07 13 | E12 | 0.1+ | 0.5− | 2005 11 21 | 703 | 0.7+ | 0.9+ | 2006 01 21 | G96 | 0.0 | 0.4− |
| 2004 07 13 | E12 | 0.6+ | 0.5− | 2005 12 07 | 691 | 0.1− | 0.0 | 2006 01 21 | G96 | 0.0 | 0.3− |
| 2004 07 13 | E12 | 1.0− | 1.8+ | 2005 12 07 | 691 | 0.0 | 0.0 | 2006 01 21 | G96 | 0.1+ | 0.4− |
| 2005 11 01 | G96 | 0.2− | 0.2− | 2005 12 07 | 691 | 0.0 | 0.0 | 2006 01 21 | G96 | 0.3− | 0.2− |
| 2005 11 01 | G96 | 0.0 | 0.2− | 2005 12 07 | 704 | 1.5+ | 0.8+ | 2006 01 21 | G96 | 0.2− | 0.1− |
| 2005 11 01 | G96 | 0.1+ | 0.4− | 2005 12 07 | 704 | 0.5− | 0.3− | 2006 01 21 | G96 | 0.3+ | 0.5− |
| 2005 11 01 | G96 | 0.1+ | 0.2− | 2005 12 07 | 704 | 0.7+ | 0.2+ | 2006 01 21 | G96 | 0.1− | 0.4− |

**2005 VB$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.20961 | | (2000.0) | | | |
| $n$ | 0.27514857 | $\omega$ | 92.00018 | | −0.98379023 | −0.11548969 |
| $a$ | 2.3411247 | $\Omega$ | 81.38720 | | +0.04916873 | −0.90940578 |
| $e$ | 0.0464026 | $i$ | 7.97533 | | +0.17245062 | −0.39955383 |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 0.3+ | 0.1− | 2005 11 03 | G96 | 0.1− | 0.1+ | 2005 11 10 | G96 | 0.2− | 0.3+ |
| 2000 04 28 | 691 | 0.1+ | 0.3+ | 2005 11 03 | G96 | 0.0 | 0.2+ | 2005 11 10 | G96 | 0.1− | 0.2+ |
| 2000 04 28 | 691 | 0.2+ | 0.0 | 2005 11 03 | G96 | 0.1+ | 0.1+ | 2005 11 26 | 703 | 1.0+ | 1.5− |
| 2000 05 03 | 691 | 0.1− | 0.1+ | 2005 11 03 | G96 | 0.1+ | 0.1+ | 2005 11 26 | 703 | 0.7− | 0.3+ |
| 2000 05 03 | 691 | 0.1− | 0.2+ | 2005 11 03 | G96 | 0.3− | 0.1+ | 2005 11 26 | 703 | 0.7+ | 0.2+ |
| 2000 05 03 | 691 | 0.2− | 0.0 | 2005 11 03 | G96 | 0.3− | 0.1+ | 2005 11 26 | 703 | 0.9+ | 1.7+ |
| 2003 02 04 | 699 | 0.1+ | 0.7+ | 2005 11 03 | G96 | 0.4− | 0.4+ | 2006 01 04 | G96 | 0.1+ | 0.1− |
| 2003 02 04 | 699 | 0.3− | 0.5− | 2005 11 03 | G96 | 0.6+ | 0.2+ | 2006 01 04 | G96 | 0.3− | 0.4+ |
| 2003 02 04 | 699 | 0.6+ | 0.4+ | 2005 11 10 | G96 | 0.0 | 0.2+ | 2006 01 04 | G96 | 0.7− | 0.4− |
| 2003 02 04 | 699 | 0.0 | 0.1+ | 2005 11 10 | G96 | 0.1+ | 0.3+ | 2006 01 04 | G96 | 0.5− | 0.1− |
| 2004 07 16 | E12 | 0.4− | 0.2+ | 2005 11 10 | G96 | 0.0 | 0.2+ | 2006 01 21 | G96 | 0.6− | 0.3− |
| 2004 07 16 | E12 | 0.1+ | 0.6+ | 2005 11 10 | G96 | 0.1+ | 0.1+ | 2006 01 21 | G96 | 0.3− | 0.4− |
| 2004 07 16 | E12 | 0.3+ | 0.4+ | 2005 11 10 | G96 | 0.2− | 0.1+ | 2006 01 21 | G96 | 0.2+ | 0.2+ |
| 2004 07 16 | E12 | 0.2− | 0.1+ | 2005 11 10 | G96 | 0.1− | 0.1− | 2006 01 21 | G96 | 0.5− | 0.2− |

**2005 VC$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.15652 | | (2000.0) | | | |
| $n$ | 0.20068158 | $\omega$ | 136.87503 | | +0.37668179 | −0.88860652 |
| $a$ | 2.8893337 | $\Omega$ | 289.42165 | | +0.75643671 | +0.45813647 |
| $e$ | 0.1226204 | $i$ | 16.11075 | | +0.53470958 | −0.02212294 |
| $P$ | 4.91 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 644 | 0.2− | 0.1+ | 2005 11 05 | 703 | 0.1− | 0.7+ | 2005 11 20 | 703 | 0.1− | 0.5− |
| 2002 02 08 | 644 | 0.4− | 0.1+ | 2005 11 05 | 703 | 0.6− | 0.0 | 2005 11 20 | 703 | 0.8+ | 0.6+ |
| 2002 02 08 | 644 | 0.1− | 0.1− | 2005 11 05 | 703 | 0.1+ | 0.2+ | 2005 11 20 | 703 | 1.9− | 0.2− |
| 2002 02 15 | 704 | 0.5+ | 0.0 | 2005 11 12 | 703 | 0.5+ | 1.0+ | 2005 12 02 | 703 | 0.3− | 0.4+ |
| 2002 02 15 | 704 | 0.2− | 0.2− | 2005 11 12 | 703 | 0.2− | 1.0+ | 2005 12 02 | 703 | 0.5+ | 0.3− |
| 2002 02 15 | 704 | 0.2+ | 1.2+ | 2005 11 12 | 703 | 0.5− | 0.7− | 2005 12 02 | 703 | 1.4− | 0.7+ |
| 2002 02 15 | 704 | 0.2+ | 1.0− | 2005 11 12 | 703 | 1.0+ | 0.3− | 2005 12 02 | 703 | 0.2+ | 0.7− |
| 2005 11 05 | 703 | 0.4+ | 0.5− | 2005 11 20 | 703 | 1.6+ | 1.4− | | | | |

**2005 VD$_{124}$ = 1999 TT$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 181.13006 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.17978153 | $\omega$ | 4.65201 | +0.17297520 | +0.91412187 | | | | | | | | |
| $a$ | 3.1091332 | $\Omega$ | 275.63937 | −0.91512340 | +0.01150222 | | | | | | | | |
| $e$ | 0.0393995 | $i$ | 21.62143 | −0.36418229 | +0.40527633 | | | | | | | | |
| $P$ | 5.48 | $H$ | 14.2 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.5− | 0.5− | 2002 02 15 | 704 | 0.6+ | 1.2+ | 2005 11 05 | 703 | 0.7+ | 0.2+ | | | | | |
| 1999 10 14 | 704 | 0.8− | 0.1− | 2002 02 15 | 704 | 0.9+ | 0.1− | 2005 11 11 | 704 | 0.5+ | 0.1+ | | | | | |
| 1999 10 14 | 704 | 0.3+ | 0.1+ | 2004 06 20 | 704 | 0.2− | 0.5+ | 2005 11 11 | 704 | 0.7+ | 0.8− | | | | | |
| 1999 10 14 | 704 | 0.5+ | 0.9− | 2004 06 20 | 704 | 0.4− | 0.2+ | 2005 11 11 | 704 | 0.2− | 1.0+ | | | | | |
| 1999 10 14 | 704 | 1.6+ | 0.2+ | 2004 06 20 | 704 | 0.1− | 0.8+ | 2005 11 26 | 704 | (2.1− | 0.5−) | | | | | |
| 1999 10 15 | 704 | 0.4− | 0.5+ | 2004 08 20 | 704 | 0.3− | 0.1+ | 2005 11 26 | 704 | 0.5− | 0.0 | | | | | |
| 1999 10 15 | 704 | 1.4− | 0.7+ | 2004 08 20 | 704 | 0.1+ | 0.2+ | 2005 11 26 | 704 | 0.5− | 0.1− | | | | | |
| 1999 10 15 | 704 | 0.2+ | 0.4+ | 2004 08 20 | 704 | 0.4− | 0.6+ | 2005 11 26 | 704 | 0.0 | 0.1+ | | | | | |
| 1999 10 15 | 704 | 0.4+ | 0.7− | 2005 11 05 | 703 | 0.1− | 0.5− | 2005 12 22 | 644 | 0.0 | 0.1+ | | | | | |
| 1999 10 15 | 704 | 0.0 | 0.4+ | 2005 11 05 | 703 | (0.5+ | 2.9−) | 2005 12 22 | 644 | 0.0 | 0.4+ | | | | | |
| 2002 02 15 | 704 | 0.0 | 1.1+ | 2005 11 05 | 703 | 1.0− | 0.1− | 2005 12 22 | 644 | 0.1+ | 0.2+ | | | | | |

**2005 VE$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 103.39373 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.19996907 | $\omega$ | 117.12414 | +0.99276394 | −0.11942574 | | | | | | | | |
| $a$ | 2.8961930 | $\Omega$ | 249.73703 | +0.10489898 | +0.91332277 | | | | | | | | |
| $e$ | 0.1837355 | $i$ | 0.76589 | +0.05844618 | +0.38933149 | | | | | | | | |
| $P$ | 4.93 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 18 | 691 | 0.1+ | 0.7− | 2005 11 05 | 691 | 0.2− | 0.3+ | 2005 11 25 | G96 | 0.0 | 0.4+ | | | | | |
| 2000 11 18 | 691 | 0.0 | 0.3− | 2005 11 05 | 691 | 0.2+ | 0.1+ | 2005 11 25 | G96 | 0.4− | 0.5+ | | | | | |
| 2000 11 18 | 691 | 0.2+ | 0.5− | 2005 11 05 | 691 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.2− | 0.3+ | | | | | |
| 2002 03 18 | 695 | 0.1− | 0.6− | 2005 11 10 | G96 | 0.1− | 0.6+ | 2005 11 25 | G96 | 0.0 | 0.2+ | | | | | |
| 2002 03 18 | 695 | 0.2− | 0.4− | 2005 11 10 | G96 | 0.5− | 0.5+ | 2005 12 23 | 691 | 0.0 | 0.1+ | | | | | |
| 2003 04 01 | 695 | 0.1− | 0.0 | 2005 11 10 | G96 | 0.6− | 0.2+ | 2005 12 23 | 691 | 0.2+ | 0.4− | | | | | |
| 2003 04 01 | 695 | 0.1+ | 0.0 | 2005 11 10 | G96 | 0.5+ | 0.0 | 2005 12 23 | 691 | 0.1− | 0.7+ | | | | | |

**2005 VF$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 22.66280 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.29055120 | $\omega$ | 219.80070 | −0.73499454 | −0.66965600 | | | | | | | | |
| $a$ | 2.2576378 | $\Omega$ | 277.81753 | +0.64628149 | −0.64430643 | | | | | | | | |
| $e$ | 0.0359875 | $i$ | 6.17161 | +0.20519079 | −0.36936441 | | | | | | | | |
| $P$ | 3.39 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.2− | 0.8− | 2005 11 06 | 691 | 0.3− | 0.0 | 2005 12 10 | 691 | 0.1+ | 0.1+ | | | | | |
| 2001 09 08 | 704 | 0.1+ | 0.6+ | 2005 11 06 | 691 | 0.3− | 0.0 | 2006 01 02 | G96 | 0.3+ | 0.3− | | | | | |
| 2001 09 08 | 704 | 0.2+ | 0.0 | 2005 11 28 | 691 | 0.1− | 0.1− | 2006 01 02 | G96 | 0.1+ | 0.2− | | | | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 11 28 | 691 | 0.2+ | 0.0 | 2006 01 02 | G96 | 0.0 | 0.4− | | | | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 11 28 | 691 | 0.1+ | 0.1+ | 2006 01 02 | G96 | 0.1+ | 0.5− | | | | | |
| 2003 02 24 | 599 | 0.2− | 0.1+ | 2005 12 05 | 704 | 0.0 | 0.1− | 2006 01 23 | G96 | 0.8+ | 0.3− | | | | | |
| 2003 02 24 | 599 | 0.1+ | 0.4+ | 2005 12 05 | 704 | 0.3− | 0.1+ | 2006 01 23 | G96 | 0.4+ | 0.6− | | | | | |
| 2003 02 24 | 599 | 0.2+ | 0.0 | 2005 12 05 | 704 | 0.9− | 1.2+ | 2006 01 23 | G96 | 0.6+ | 0.1+ | | | | | |
| 2003 02 24 | 599 | 0.2+ | 0.1+ | 2005 12 10 | 691 | 0.1+ | 0.3+ | 2006 01 23 | G96 | 0.2+ | 0.5− | | | | | |
| 2005 11 06 | 691 | 0.1− | 0.1− | 2005 12 10 | 691 | 0.0 | 0.2+ | | | | | | | | | |

**2005 VG$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 190.84676 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.23486757 | $\omega$ | 216.64179 | +0.34141043 | +0.90615741 | | | | | | | | |
| $a$ | 2.6016808 | $\Omega$ | 74.52236 | −0.78911775 | +0.42062796 | | | | | | | | |
| $e$ | 0.1545227 | $i$ | 15.01244 | −0.51061933 | −0.04416870 | | | | | | | | |
| $P$ | 4.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.7− | 0.6− | 2004 08 09 | E12 | 0.0 | 0.5+ | 2005 12 06 | G96 | 0.2+ | 0.1− | | | | | |
| 2001 12 18 | 704 | 1.6+ | 0.4− | 2004 08 09 | E12 | 0.0 | 0.4+ | 2005 12 06 | G96 | 0.2− | 0.2− | | | | | |
| 2001 12 18 | 704 | 1.1+ | 0.2− | 2004 08 09 | E12 | 0.3+ | 0.1+ | 2005 12 06 | G96 | 0.4− | 0.2− | | | | | |
| 2001 12 19 | 704 | 0.6− | 1.9− | 2004 08 09 | E12 | 0.0 | 1.3− | 2005 12 06 | G96 | 0.3− | 0.1− | | | | | |
| 2001 12 19 | 704 | 0.5− | 0.4+ | 2005 11 06 | G96 | 1.0− | 1.6− | 2005 12 06 | G96 | 0.2− | 0.0 | | | | | |
| 2001 12 19 | 704 | 0.9− | 0.1+ | 2005 11 06 | G96 | 0.2− | 0.2− | 2005 12 06 | G96 | 0.0 | 0.1− | | | | | |
| 2001 12 19 | 704 | 0.2+ | 0.9− | 2005 11 06 | G96 | 0.2+ | 0.1− | 2005 12 06 | G96 | 0.1+ | 0.0 | | | | | |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2005 11 06 | G96 | 0.0 | 0.1− | 2005 12 06 | G96 | 0.2− | 0.1− | | | | | |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2005 11 06 | 691 | 0.4+ | 0.1+ | 2005 12 25 | G96 | 0.3+ | 0.1+ | | | | | |
| 2001 12 19 | 704 | 0.3− | 0.3+ | 2005 11 06 | 691 | 0.1+ | 0.1− | 2005 12 25 | G96 | 0.1+ | 0.1− | | | | | |
| 2001 12 19 | 704 | 0.0 | 0.3+ | 2005 11 06 | 691 | 0.3+ | 0.0 | 2005 12 25 | G96 | 0.1− | 0.1− | | | | | |
| 2001 12 19 | 704 | 0.9+ | 0.9+ | 2005 11 21 | 703 | 0.6− | 0.0 | 2005 12 25 | G96 | 0.1+ | 0.1− | | | | | |
| 2003 03 09 | 644 | 0.1+ | 0.4+ | 2005 11 21 | 703 | 0.7− | 0.4+ | 2006 01 05 | G96 | 0.3+ | 0.3− | | | | | |
| 2003 03 09 | 644 | 0.1+ | 0.1+ | 2005 11 21 | 703 | 0.4− | 0.8+ | 2006 01 05 | G96 | 0.3+ | 0.2− | | | | | |
| 2003 03 09 | 644 | 0.2+ | 0.3+ | 2005 11 21 | 703 | 0.4− | 1.0− | 2006 01 05 | G96 | 0.1+ | 0.1− | | | | | |
| 2003 04 07 | 644 | 0.1+ | 0.7+ | 2005 12 01 | G96 | 0.4+ | 0.2− | 2006 01 05 | G96 | 0.0 | 0.2− | | | | | |
| 2003 04 07 | 644 | 0.1+ | 0.4+ | 2005 12 01 | G96 | 0.2+ | 0.1− | 2006 01 23 | G96 | 0.1− | 0.2− | | | | | |
| 2003 04 07 | 644 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.1+ | 0.2+ | 2006 01 23 | G96 | 0.1+ | 0.1+ | | | | | |
| 2004 07 15 | E12 | 0.4− | 0.9+ | 2005 12 01 | G96 | 0.0 | 0.1− | 2006 01 23 | G96 | 0.3+ | 0.1+ | | | | | |
| 2004 07 15 | E12 | 0.3+ | 0.7+ | 2005 12 06 | 291 | 0.1− | 0.6+ | 2006 01 23 | G96 | 0.1− | 0.0 | | | | | |
| 2004 07 15 | E12 | 0.2− | 0.1+ | 2005 12 06 | 291 | 0.2− | 0.6+ | | | | | | | | | |
| 2004 07 15 | E12 | 0.3− | 0.3+ | 2005 12 06 | 291 | 0.2− | 0.5+ | | | | | | | | | |

**2005 VH$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 355.65253 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.23440548 | $\omega$ | 143.21925 | −0.94936843 | −0.31368138 | | | | | | | | |
| $a$ | 2.6050988 | $\Omega$ | 18.52263 | +0.27359899 | −0.85276898 | | | | | | | | |
| $e$ | 0.1513107 | $i$ | 3.14401 | +0.15441234 | −0.41759917 | | | | | | | | |
| $P$ | 4.20 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 13 | 807 | 0.1+ | 0.2+ | 2005 11 06 | G96 | 0.6+ | 0.1− | 2005 11 21 | 691 | 0.1− | 0.4− | | | | | |
| 2004 08 13 | 807 | 0.1+ | 0.2+ | 2005 11 06 | G96 | 0.3+ | 0.2− | 2005 11 21 | 691 | 0.3− | 0.0 | | | | | |
| 2004 10 10 | 695 | 0.2− | 0.1− | 2005 11 12 | 691 | 1.0− | 0.7− | 2005 12 10 | 691 | 0.3− | 0.4+ | | | | | |
| 2004 10 10 | 695 | 0.1− | 0.1− | 2005 11 12 | 691 | 0.4+ | 0.3+ | 2005 12 10 | 691 | 0.4+ | 0.1+ | | | | | |
| 2005 11 06 | G96 | 0.8+ | 0.3− | 2005 11 12 | 691 | 0.1+ | 0.2+ | 2005 12 10 | 691 | 0.3+ | 0.1− | | | | | |
| 2005 11 06 | G96 | 0.5+ | 0.1− | 2005 11 21 | 691 | 0.1− | 0.3+ | | | | | | | | | |

**2005 VJ$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 359.79973 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.18434673 | $\omega$ | 222.68662 | −0.64742937 | −0.75290422 | | | | | | | | |
| $a$ | 3.0575889 | $\Omega$ | 268.01991 | +0.72725091 | −0.56395060 | | | | | | | | |
| $e$ | 0.0453223 | $i$ | 6.79211 | +0.22790638 | −0.33925648 | | | | | | | | |
| $P$ | 5.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 22 | 691 | 0.1+ | 0.0 | 2005 11 06 | G96 | 0.3+ | 0.0 | 2005 12 28 | G96 | 0.4+ | 0.4− | | | | | |
| 2004 08 22 | 691 | 0.2+ | 0.1+ | 2005 11 06 | G96 | 0.1+ | 0.2− | 2005 12 28 | G96 | 0.2+ | 0.2− | | | | | |
| 2004 08 22 | 691 | 0.2− | 0.2− | 2005 11 21 | 691 | 0.1− | 0.0 | 2005 12 28 | G96 | 0.1− | 0.4− | | | | | |
| 2004 09 12 | 691 | 0.0 | 0.0 | 2005 11 21 | 691 | 0.2+ | 0.1+ | 2005 12 28 | G96 | 1.4− | 0.3+ | | | | | |
| 2004 09 12 | 691 | 0.0 | 0.0 | 2005 11 21 | 691 | 0.3+ | 0.2− | 2006 03 05 | G96 | 0.2+ | 0.3+ | | | | | |
| 2004 09 12 | 691 | 0.1− | 0.1+ | 2005 12 10 | 691 | 0.1+ | 0.1+ | 2006 03 05 | G96 | 0.3− | 0.4+ | | | | | |
| 2005 11 06 | G96 | 0.0 | 0.4− | 2005 12 10 | 691 | 0.1+ | 0.0 | 2006 03 05 | G96 | 0.1− | 0.5+ | | | | | |
| 2005 11 06 | G96 | 1.3− | 0.4− | 2005 12 10 | 691 | 0.3− | 0.2+ | 2006 03 05 | G96 | 0.6+ | 0.0 | | | | | |

**2005 VK$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.94476 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28903363 | $\omega$ | 291.60361 | | −0.88881636 | | +0.44771378 |
| $a$ | 2.2655334 | $\Omega$ | 275.10701 | | −0.37572668 | | −0.83409610 |
| $e$ | 0.1487139 | $i$ | 5.63287 | | −0.26236411 | | −0.32223604 |
| $P$ | 3.41 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 699 | 0.2− | 0.1+ | 2004 08 23 | 691 | 0.1− | 0.1+ | 2005 11 25 | 691 | 0.2− | 0.6+ |
| 2003 01 26 | 699 | 1.8+ | 0.3+ | 2004 08 23 | 691 | 0.2− | 0.0 | 2005 12 06 | 691 | 0.2− | 0.1+ |
| 2003 01 26 | 699 | 0.6− | 0.3+ | 2005 11 06 | G96 | 0.1− | 0.1− | 2005 12 06 | 691 | 0.3− | 0.1+ |
| 2003 01 26 | 699 | 0.2+ | 0.2+ | 2005 11 06 | G96 | 0.1− | 0.1− | 2005 12 06 | 691 | 0.0 | 0.1− |
| 2003 01 31 | 644 | 0.2− | 0.1+ | 2005 11 06 | G96 | 0.2− | 0.2− | 2005 12 28 | G96 | 0.1− | 0.4− |
| 2003 01 31 | 644 | 0.5− | 0.1− | 2005 11 06 | G96 | 0.3− | 0.0 | 2005 12 28 | G96 | 0.6+ | 0.7− |
| 2003 01 31 | 644 | 0.3− | 0.1− | 2005 11 25 | 691 | 0.5+ | 0.3− | 2005 12 28 | G96 | 0.1− | 0.3− |
| 2004 08 23 | 691 | 0.3+ | 0.0 | 2005 11 25 | 691 | 0.3+ | 0.2+ | 2005 12 28 | G96 | 0.1− | 0.6− |

**2005 VL$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.31544 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24187782 | $\omega$ | 121.43925 | | +0.63775730 | | +0.77023359 |
| $a$ | 2.5511658 | $\Omega$ | 188.18684 | | −0.71231173 | | +0.58859859 |
| $e$ | 0.2071084 | $i$ | 0.97206 | | −0.29304884 | | +0.24554411 |
| $P$ | 4.07 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 21 | 691 | 0.1− | 0.8− | 2004 11 20 | 691 | 0.1− | 0.4+ | 2006 02 07 | 691 | 0.1− | 0.0 |
| 2000 12 21 | 691 | 0.2+ | 0.2+ | 2004 11 20 | 691 | 0.0 | 0.1+ | 2006 02 24 | G96 | 0.3− | 0.1+ |
| 2000 12 21 | 691 | 0.0 | 0.2+ | 2005 11 07 | 568 | 0.1+ | 0.0 | 2006 02 24 | G96 | 0.4+ | 0.0 |
| 2002 02 12 | 291 | 0.4− | 0.0 | 2005 11 07 | 568 | 0.2+ | 0.0 | 2006 02 24 | G96 | 0.4+ | 0.2− |
| 2002 02 12 | 291 | 0.0 | 0.1− | 2005 11 07 | 568 | 0.2+ | 0.0 | 2006 02 24 | G96 | 0.1+ | 0.0 |
| 2002 02 12 | 291 | 0.6+ | 0.7+ | 2006 01 30 | 691 | 0.1− | 0.2− | 2006 02 28 | 291 | 0.1− | 0.2+ |
| 2004 11 10 | 691 | 0.0 | 0.1+ | 2006 01 30 | 691 | 0.3+ | 0.4− | 2006 02 28 | 291 | 0.1− | 0.5+ |
| 2004 11 10 | 691 | 0.2+ | 0.1− | 2006 01 30 | 691 | 0.1+ | 0.1− | 2006 02 28 | 291 | 0.1− | 0.3+ |
| 2004 11 10 | 691 | 0.1+ | 0.2− | 2006 02 07 | 691 | 0.6− | 0.8− | | | | |
| 2004 11 20 | 691 | 0.3− | 0.2+ | 2006 02 07 | 691 | 0.1+ | 0.2− | | | | |

**2005 VM$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.70763 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25806577 | $\omega$ | 263.18412 | | +0.89399209 | | +0.41417726 |
| $a$ | 2.4433318 | $\Omega$ | 72.23270 | | −0.30625270 | | +0.84333589 |
| $e$ | 0.2577135 | $i$ | 10.34339 | | −0.32708932 | | +0.34240587 |
| $P$ | 3.82 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2005 11 10 | G96 | 0.2+ | 0.2+ | 2005 11 25 | G96 | 0.3− | 0.2− |
| 2001 11 20 | 704 | 0.3− | 0.0 | 2005 11 10 | G96 | 0.2− | 0.2+ | 2005 12 10 | 691 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.1− | 2005 11 10 | G96 | 0.0 | 0.1− | 2005 12 10 | 691 | 0.0 | 0.5+ |
| 2001 11 20 | 704 | 0.4− | 0.4− | 2005 11 25 | 691 | 0.2− | 0.1+ | 2005 12 10 | 691 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.4− | 0.1− | 2005 11 25 | 691 | 0.1+ | 0.1+ | 2005 12 28 | G96 | 0.2− | 0.5− |
| 2001 12 10 | 691 | 0.0 | 0.1+ | 2005 11 25 | 691 | 0.1+ | 0.0 | 2005 12 28 | G96 | 0.1+ | 0.5− |
| 2001 12 10 | 691 | 0.6+ | 0.1− | 2005 11 25 | G96 | 0.2− | 0.2− | 2005 12 28 | G96 | 0.1+ | 0.1− |
| 2001 12 10 | 691 | 0.1− | 0.0 | 2005 11 25 | G96 | 0.1− | 0.1− | 2005 12 28 | G96 | 0.5+ | 0.1− |
| 2005 11 10 | G96 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.1+ | 0.2− | | | | |

**2005 VN$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.35673 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28257240 | $\omega$ | 57.44371 | | +0.69007384 | | +0.71740354 |
| $a$ | 2.2999385 | $\Omega$ | 256.50709 | | −0.69260050 | | +0.61629314 |
| $e$ | 0.1554712 | $i$ | 5.63925 | | −0.21000631 | | +0.32483062 |
| $P$ | 3.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 0.3− | 0.3+ | 2005 11 12 | 691 | 0.0 | 0.0 | 2005 12 07 | 691 | 0.2− | 0.0 |
| 2001 06 30 | 644 | 0.3− | 0.5+ | 2005 11 12 | 691 | 0.2+ | 0.1− | 2006 01 23 | G96 | 0.3− | 0.3− |
| 2001 06 30 | 644 | 0.2− | 0.1+ | 2005 11 25 | 691 | 0.1− | 0.6+ | 2006 01 23 | G96 | 0.2+ | 0.3− |
| 2001 08 25 | 704 | 0.5+ | 0.5+ | 2005 11 25 | 691 | 0.2+ | 0.5+ | 2006 01 23 | G96 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 0.4+ | 0.4− | 2005 11 25 | 691 | 0.1− | 0.1− | 2006 01 23 | G96 | 0.3+ | 0.0 |
| 2001 08 25 | 704 | 0.2− | 1.0− | 2005 12 07 | 691 | 0.2− | 0.1− | | | | |
| 2005 11 12 | 691 | 0.0 | 0.2− | 2005 12 07 | 691 | 0.1+ | 0.3− | | | | |

**2005 VO$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.06556 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22028818 | $\omega$ | 292.15730 | | −0.62376284 | | +0.78153454 |
| $a$ | 2.7152423 | $\Omega$ | 299.24645 | | −0.71233885 | | −0.57427745 |
| $e$ | 0.0087351 | $i$ | 0.73034 | | −0.32170372 | | −0.24373999 |
| $P$ | 4.47 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.5− | 0.8+ | 2004 08 10 | 599 | 0.2+ | 0.4+ | 2005 12 04 | G96 | 0.2+ | 0.1− |
| 2000 10 01 | 704 | 1.1− | 1.1+ | 2004 08 10 | 599 | 0.6+ | 0.4+ | 2005 12 04 | G96 | 0.0 | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.7− | 2004 08 10 | 599 | 0.2+ | 1.0+ | 2005 12 04 | G96 | 0.3+ | 0.1− |
| 2002 01 09 | 645 | 0.0 | 0.2− | 2005 11 12 | 691 | 0.1+ | 0.5+ | 2005 12 25 | G96 | 0.1+ | 0.5− |
| 2002 01 09 | 645 | 0.0 | 0.1− | 2005 11 12 | 691 | 0.1+ | 0.4+ | 2005 12 25 | G96 | 1.0− | 0.8− |
| 2002 01 21 | 691 | 0.1+ | 0.1− | 2005 11 12 | 691 | 0.1− | 0.3+ | 2005 12 25 | G96 | 0.1− | 0.6− |
| 2002 01 21 | 691 | 0.1+ | 0.7+ | 2005 11 26 | G96 | 0.4− | 0.0 | 2005 12 25 | G96 | 0.7− | 0.1− |
| 2002 01 21 | 691 | 0.3+ | 1.1+ | 2005 11 26 | G96 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.0 | 0.2+ |
| 2003 04 25 | 691 | 0.0 | 0.5+ | 2005 11 26 | G96 | 0.4− | 0.2− | 2006 01 23 | G96 | 0.2+ | 0.1+ |
| 2003 04 25 | 691 | 0.1+ | 0.4+ | 2005 11 26 | G96 | 0.2− | 0.1+ | 2006 01 23 | G96 | 0.0 | 0.2+ |
| 2003 04 25 | 691 | 0.1+ | 0.4+ | 2005 12 04 | G96 | 0.2− | 0.4− | 2006 01 23 | G96 | 0.1+ | 0.2+ |

**2005 VS$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.86224 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20382937 | $\omega$ | 263.40140 | | +0.95538296 | | +0.25621644 |
| $a$ | 2.8595095 | $\Omega$ | 81.67816 | | −0.17608092 | | +0.89350662 |
| $e$ | 0.0738486 | $i$ | 8.54125 | | −0.23714745 | | +0.36878050 |
| $P$ | 4.84 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 07 | 691 | 0.0 | 0.2+ | 2005 11 03 | 703 | 0.3+ | 0.7+ | 2005 11 25 | 703 | 1.2− | 1.3+ |
| 2003 04 07 | 691 | 0.1− | 0.2+ | 2005 11 04 | 703 | 0.5+ | 0.3− | 2005 11 25 | 703 | (1.4− | 2.3+) |
| 2003 04 07 | 691 | 0.1− | 0.1+ | 2005 11 04 | 703 | 0.0 | 0.6− | 2005 11 25 | 703 | 0.5− | 0.6− |
| 2003 05 02 | 691 | 0.2+ | 0.2− | 2005 11 04 | 703 | 0.1+ | 0.4− | 2005 11 25 | 703 | 0.6− | 0.3+ |
| 2003 05 02 | 691 | 0.1+ | 0.1− | 2005 11 04 | 703 | 0.1+ | 0.0 | 2006 01 28 | G96 | 1.2+ | 0.4− |
| 2003 05 02 | 691 | 0.1+ | 0.1+ | 2005 11 10 | 703 | 1.5− | 0.5− | 2006 01 28 | G96 | 0.5+ | 0.2− |
| 2005 11 03 | 703 | 0.3+ | 0.5+ | 2005 11 10 | 703 | 0.9− | 0.5+ | 2006 01 28 | G96 | 0.9+ | 1.4− |
| 2005 11 03 | 703 | 1.2+ | 0.9+ | 2005 11 10 | 703 | 0.4− | 0.4− | 2006 01 28 | G96 | 0.7+ | 0.7− |
| 2005 11 03 | 703 | 1.1+ | 0.1+ | 2005 11 10 | 703 | 1.4− | 1.5+ | | | | |

**2005 VY$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.41566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17697437 | $\omega$ | 281.53347 | | −0.97345528 | +0.19149933 | |
| $a$ | 3.1419249 | $\Omega$ | 269.59891 | | −0.12833769 | −0.91017794 | |
| $e$ | 0.1840278 | $i$ | 7.20119 | | −0.18951057 | −0.36729296 | |
| $P$ | 5.57 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 1.0− | 0.6− | 2005 11 06 | G96 | 0.3− | 0.2− | 2005 12 28 | G96 | 0.1− | 0.2− | |
| 2001 01 03 | 704 | 0.2+ | 0.3+ | 2005 11 21 | 691 | 0.1− | 0.1− | 2006 01 07 | G96 | 0.1− | 0.7− | |
| 2001 01 03 | 704 | 0.8+ | 0.1+ | 2005 11 21 | 691 | 0.3+ | 0.2+ | 2006 01 07 | G96 | 0.2− | 0.9− | |
| 2001 01 03 | 704 | 0.0 | 0.2+ | 2005 11 21 | 691 | 0.2+ | 0.4− | 2006 01 07 | G96 | 0.0 | 0.8− | |
| 2002 05 30 | 644 | 0.0 | 0.2+ | 2005 12 05 | 691 | 0.1− | 1.3+ | 2006 01 07 | G96 | 0.3− | 0.7− | |
| 2002 05 30 | 644 | 0.1− | 0.1+ | 2005 12 05 | 691 | 0.1+ | 0.5+ | 2006 03 05 | G96 | 0.3− | 0.1+ | |
| 2002 05 30 | 644 | 0.1+ | 0.3+ | 2005 12 05 | 691 | 0.1− | 0.3− | 2006 03 05 | G96 | 0.0 | 0.2+ | |
| 2005 11 06 | G96 | 0.1+ | 0.2− | 2005 12 28 | G96 | 0.9+ | 0.7− | 2006 03 05 | G96 | 0.7− | 0.0 | |
| 2005 11 06 | G96 | 0.0 | 0.0 | 2005 12 28 | G96 | 0.2+ | 0.1+ | 2006 03 05 | G96 | 0.2+ | 0.2+ | |
| 2005 11 06 | G96 | 0.1− | 0.1− | 2005 12 28 | G96 | 0.2− | 0.3− | | | | | |

**2005 WF$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.04601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18424099 | $\omega$ | 22.41764 | | +0.25877054 | −0.96250907 | |
| $a$ | 3.0587587 | $\Omega$ | 52.67953 | | +0.86999587 | +0.19565796 | |
| $e$ | 0.1829720 | $i$ | 5.86963 | | +0.41969632 | +0.18786767 | |
| $P$ | 5.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 05 | 691 | 0.2+ | 0.1− | 2005 11 26 | G96 | 0.3− | 0.1+ | 2005 12 01 | 704 | 0.6+ | 0.8+ | |
| 1994 10 05 | 691 | 0.1+ | 0.3− | 2005 11 26 | G96 | 0.1− | 0.2− | 2005 12 01 | 704 | 0.9+ | 0.7+ | |
| 1994 10 05 | 691 | 0.0 | 0.2− | 2005 11 26 | G96 | 0.4− | 0.0 | 2005 12 01 | 704 | 0.2− | 1.0+ | |
| 1996 01 14 | 691 | 0.2+ | 0.2− | 2005 11 28 | 703 | 1.5− | 0.8− | 2005 12 01 | 704 | 0.4+ | 0.3+ | |
| 1996 01 14 | 691 | 0.1− | 0.0 | 2005 11 28 | 703 | 0.8+ | 0.7− | 2005 12 02 | 704 | 0.0 | 0.4+ | |
| 1996 01 14 | 691 | 0.2− | 0.1− | 2005 11 28 | 703 | 1.3+ | 1.2− | 2005 12 02 | 704 | 1.1+ | 0.2− | |
| 2005 10 01 | G96 | 0.4− | 0.1+ | 2005 11 28 | 703 | 1.8− | 1.0− | 2005 12 02 | 704 | 0.8+ | 0.4+ | |
| 2005 10 01 | G96 | 0.0 | 0.2+ | 2005 11 29 | 704 | 1.2+ | 0.4− | 2005 12 04 | 704 | 0.6+ | 0.2− | |
| 2005 10 01 | G96 | 0.1− | 0.2+ | 2005 11 29 | 704 | 0.4− | 0.3+ | 2005 12 04 | 704 | 0.8+ | 0.2− | |
| 2005 10 01 | G96 | 0.4− | 0.2+ | 2005 11 29 | 704 | 0.5− | 0.0 | 2005 12 04 | 704 | 1.3+ | 0.0 | |
| 2005 11 12 | 691 | 0.1− | 0.3+ | 2005 11 29 | 704 | 0.5− | 0.9+ | 2005 12 04 | 704 | 0.6− | 0.3− | |
| 2005 11 12 | 691 | 0.0 | 0.3+ | 2005 11 30 | 704 | 0.1+ | 0.4+ | 2005 12 04 | 704 | 1.5+ | 0.0 | |
| 2005 11 12 | 691 | 0.0 | 0.1+ | 2005 11 30 | 704 | 0.8+ | 0.4+ | 2005 12 31 | G96 | 0.1− | 0.2− | |
| 2005 11 21 | 703 | 0.4− | 0.3+ | 2005 11 30 | 704 | 0.2+ | 1.2− | 2005 12 31 | G96 | 0.1− | 0.0 | |
| 2005 11 21 | 703 | 1.7− | 0.3− | 2005 11 30 | 704 | 0.0 | 0.3+ | 2005 12 31 | G96 | 0.6− | 0.0 | |
| 2005 11 21 | 703 | 0.0 | 0.6− | 2005 12 01 | 704 | 0.5+ | 0.5− | 2005 12 31 | G96 | 0.6− | 0.2− | |
| 2005 11 21 | 703 | 1.3− | 0.4− | 2005 12 01 | 704 | 0.0 | 0.1+ | 2006 01 27 | G96 | 0.5− | 0.4− | |
| 2005 11 22 | 691 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.3− | 0.8+ | 2006 01 27 | G96 | 0.2− | 0.1+ | |
| 2005 11 22 | 691 | 0.0 | 0.2+ | 2005 12 01 | 704 | 0.1+ | 0.8+ | 2006 01 27 | G96 | 0.4− | 0.1− | |
| 2005 11 22 | 691 | 0.1− | 0.0 | 2005 12 01 | 704 | 0.2+ | 0.3− | 2006 01 27 | G96 | 0.5− | 0.3− | |
| 2005 11 26 | G96 | 0.1− | 0.1− | 2005 12 01 | 704 | 0.4+ | 0.5− | | | | | |

**2005 WN$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.71363 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26832776 | $\omega$ | 339.32343 | | +0.76744438 | −0.63819590 | |
| $a$ | 2.3806323 | $\Omega$ | 60.48377 | | +0.59763584 | +0.67763166 | |
| $e$ | 0.1871608 | $i$ | 4.02722 | | +0.23207872 | +0.36540570 | |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.0 | 1.1+ | 2005 11 25 | G96 | 0.1− | 0.2− | 2005 12 01 | 704 | 0.5+ | 0.1+ | |
| 2001 09 12 | 704 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.2+ | 0.1− | 2005 12 01 | 704 | 0.3+ | 0.1− | |
| 2001 09 12 | 704 | 0.8+ | 0.2+ | 2005 11 25 | G96 | 0.0 | 0.2− | 2005 12 01 | 704 | 0.6+ | 0.2− | |
| 2001 09 21 | 704 | 0.8− | 0.4+ | 2005 11 25 | G96 | 0.1+ | 0.1− | 2005 12 01 | 704 | 0.3+ | 0.3− | |
| 2001 09 21 | 704 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.2− | 2005 12 04 | 704 | 0.2+ | 1.1+ | |
| 2001 09 21 | 704 | 0.1+ | 0.5+ | 2005 11 25 | G96 | 0.1+ | 0.3− | 2005 12 04 | 704 | 0.4− | 0.2− | |
| 2001 09 21 | 704 | 0.8− | 0.0 | 2005 11 25 | G96 | 0.0 | 0.3− | 2005 12 04 | G96 | 0.1− | 0.2− | |
| 2001 10 10 | 644 | 0.2+ | 1.3− | 2005 11 26 | G96 | 0.0 | 0.2− | 2005 12 04 | G96 | 0.2− | 0.2− | |
| 2001 10 10 | 644 | 0.6+ | 1.0− | 2005 11 26 | G96 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.1+ | 0.1− | |
| 2001 10 10 | 644 | 0.3+ | 0.9− | 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.2− | 0.0 | |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2005 11 26 | G96 | 0.3− | 0.0 | 2005 12 04 | 704 | 0.5+ | 0.4− | |
| 2003 03 23 | 645 | 0.0 | 0.1− | 2005 11 26 | G96 | 0.1+ | 0.4− | 2005 12 04 | 704 | 0.7+ | 0.9− | |
| 2005 10 29 | 704 | 0.2− | 0.6+ | 2005 11 26 | G96 | 0.2+ | 0.1− | 2005 12 06 | 704 | 0.1+ | 0.7+ | |
| 2005 10 29 | 704 | 0.0 | 0.3+ | 2005 11 28 | 703 | 0.5− | 0.1− | 2005 12 06 | 704 | 0.1− | 0.7+ | |
| 2005 10 29 | 704 | 0.6− | 0.9+ | 2005 11 28 | 703 | 0.5+ | 0.5− | 2005 12 06 | 704 | 0.9+ | 0.5− | |
| 2005 11 21 | 703 | 0.1− | 0.0 | 2005 11 28 | 703 | 0.9− | 0.6− | 2005 12 06 | 704 | 0.0 | 0.1+ | |
| 2005 11 21 | 703 | 0.6− | 0.9+ | 2005 11 28 | 703 | 0.3− | 0.3− | 2005 12 06 | 704 | 1.3+ | 0.7+ | |
| 2005 11 21 | 703 | 0.6− | 1.1− | 2005 11 29 | 704 | 0.0 | 0.1− | 2005 12 28 | G96 | 0.2+ | 0.2+ | |
| 2005 11 21 | 703 | 1.1− | 0.0 | 2005 11 29 | 704 | 0.3+ | 0.4− | 2005 12 28 | G96 | 0.1− | 0.1+ | |
| 2005 11 22 | 691 | 0.1− | 0.4+ | 2005 11 29 | 704 | 0.4+ | 0.1+ | 2005 12 28 | G96 | 0.1+ | 0.2− | |
| 2005 11 22 | 691 | 0.2− | 0.2+ | 2005 11 29 | 704 | 0.0 | 0.2− | 2005 12 28 | G96 | 0.2+ | 0.1+ | |
| 2005 11 22 | 691 | 0.2− | 0.1+ | 2005 11 29 | 704 | 0.3+ | 0.4+ | | | | | |
| 2005 11 25 | G96 | 0.1− | 0.1− | 2005 12 01 | 704 | 0.6+ | 0.2+ | | | | | |

**2005 WL$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.34227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24608845 | $\omega$ | 86.47043 | | −0.90865233 | −0.41520497 | |
| $a$ | 2.5219815 | $\Omega$ | 68.99328 | | +0.36182572 | −0.83581482 | |
| $e$ | 0.1291947 | $i$ | 2.71527 | | +0.20840608 | −0.35919134 | |
| $P$ | 4.01 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 21 | 691 | 0.3+ | 0.2+ | 2003 05 24 | 691 | 0.0 | 0.0 | 2005 11 28 | G96 | 0.2+ | 0.1− | |
| 1999 04 21 | 691 | 0.4− | 0.3− | 2003 05 24 | 691 | 0.1− | 0.0 | 2005 11 28 | G96 | 0.2+ | 0.1+ | |
| 1999 04 21 | 691 | 0.4+ | 0.2+ | 2003 05 24 | 691 | 0.4− | 0.2+ | 2005 11 28 | G96 | 0.1+ | 0.2− | |
| 2000 07 30 | 807 | 0.3− | 0.7+ | 2005 10 25 | G96 | 0.2+ | 0.3− | 2005 12 02 | G96 | 0.2− | 0.2+ | |
| 2000 07 30 | 807 | 0.3− | 0.6+ | 2005 10 25 | G96 | 0.4+ | 0.1− | 2005 12 02 | G96 | 0.3− | 0.1+ | |
| 2001 11 21 | 704 | 1.0− | 0.9+ | 2005 10 25 | G96 | 0.8+ | 0.2− | 2005 12 02 | G96 | 0.8− | 0.9− | |
| 2001 11 21 | 704 | 0.1+ | 0.8+ | 2005 10 25 | G96 | 0.4+ | 0.0 | 2005 12 02 | G96 | 0.1+ | 0.0 | |
| 2001 11 21 | 704 | 0.1+ | 1.6+ | 2005 11 22 | 691 | 0.1+ | 0.1+ | 2005 12 28 | G96 | 0.0 | 0.2+ | |
| 2001 12 15 | 704 | 0.8− | 0.1− | 2005 11 22 | 691 | 0.1+ | 0.0 | 2005 12 28 | G96 | 0.1− | 0.1− | |
| 2001 12 15 | 704 | 0.9− | 0.0 | 2005 11 22 | 691 | 0.1− | 0.2+ | 2005 12 28 | G96 | 0.2− | 0.2− | |
| 2001 12 15 | 704 | 0.5+ | 0.9+ | 2005 11 25 | G96 | 0.0 | 0.4+ | 2005 12 28 | G96 | 0.3− | 0.1+ | |
| 2003 04 29 | 704 | 0.5+ | 0.2+ | 2005 11 25 | G96 | 0.2+ | 0.1+ | 2006 01 07 | G96 | 0.4− | 0.8− | |
| 2003 04 29 | 704 | 0.7+ | 0.6+ | 2005 11 25 | G96 | 0.0 | 0.0 | 2006 01 07 | G96 | 0.1+ | 0.4− | |
| 2003 04 29 | 704 | 0.7+ | 1.0+ | 2005 11 25 | G96 | 0.2− | 0.1+ | 2006 01 07 | G96 | 0.6+ | 0.0 | |
| 2003 04 29 | 704 | 0.1− | 0.5+ | 2005 11 28 | G96 | 0.2+ | 0.0 | 2006 01 07 | G96 | 0.5+ | 0.3− | |

**2005 WK$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.55084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23742083 | $\omega$ | 27.46140 | | +0.99515202 | −0.09760581 | |
| $a$ | 2.5829946 | $\Omega$ | 338.12993 | | +0.08324502 | +0.90128823 | |
| $e$ | 0.1164103 | $i$ | 1.85612 | | +0.05237110 | +0.42208130 | |
| $P$ | 4.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 19 | 691 | 0.5− | 1.0+ | 2005 10 28 | G96 | 0.2− | 0.7− | 2005 11 21 | 691 | 0.1+ | 0.1− | |
| 1994 01 19 | 691 | 0.5+ | 0.4− | 2005 10 28 | G96 | 0.1− | 0.3− | 2005 11 21 | 691 | 0.2+ | 0.1+ | |
| 1994 01 19 | 691 | 0.1− | 0.9− | 2005 10 30 | G96 | 0.1+ | 0.4− | 2005 11 21 | 691 | 0.1+ | 0.1− | |
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2005 10 30 | G96 | 0.1+ | 0.1− | 2005 11 25 | 691 | 0.1+ | 0.2− | |
| 2001 12 18 | 704 | 0.4− | 1.0+ | 2005 10 30 | G96 | 0.6+ | 0.2− | 2005 11 25 | 691 | 0.3− | 0.0 | |
| 2001 12 18 | 704 | 0.0 | 0.9+ | 2005 10 30 | G96 | 0.6+ | 0.5+ | 2005 11 25 | 691 | 0.1− | 0.1+ | |
| 2001 12 18 | 704 | 0.0 | 0.6+ | 2005 11 12 | 691 | 0.2− | 0.2+ | 2005 12 05 | 704 | 0.9+ | 0.1− | |
| 2005 10 28 | G96 | 0.3+ | 0.3− | 2005 11 12 | 691 | 0.1− | 0.0 | 2005 12 05 | 704 | 0.5+ | 0.1+ | |
| 2005 10 28 | G96 | 0.3+ | 0.3− | 2005 11 12 | 691 | 0.5− | 0.0 | 2005 12 05 | 704 | 0.1− | 0.1+ | |

**2005 WV$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.94580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17879494 | $\omega$ | 95.11672 | | −0.01061704 | −0.99993921 | |
| $a$ | 3.1205602 | $\Omega$ | 355.48839 | | +0.90178703 | −0.00828868 | |
| $e$ | 0.1381569 | $i$ | 2.16853 | | +0.43205027 | −0.00727176 | |
| $P$ | 5.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 02 | 691 | 0.1− | 0.1− | 2005 11 12 | 691 | 0.1+ | 0.1+ | 2005 12 22 | 703 | 1.8− | 0.2− |
| 2001 01 02 | 691 | 0.2− | 0.0 | 2005 11 21 | 691 | 0.1− | 0.1+ | 2005 12 22 | 703 | 0.6− | 1.1+ |
| 2001 01 02 | 691 | 0.1− | 0.1− | 2005 11 21 | 691 | 0.3− | 0.6+ | 2005 12 22 | 703 | 0.4− | 0.2− |
| 2001 02 03 | 691 | 0.0 | 0.2+ | 2005 11 21 | 691 | 0.1− | 0.0 | 2005 12 28 | G96 | 0.5− | 0.7− |
| 2001 02 03 | 691 | 0.3+ | 0.1+ | 2005 11 25 | 691 | 0.2+ | 0.1+ | 2005 12 28 | G96 | 0.4+ | 0.4− |
| 2001 02 03 | 691 | 0.1+ | 0.2+ | 2005 11 25 | 691 | 0.1+ | 0.1+ | 2005 12 28 | G96 | 1.0+ | 0.2− |
| 2005 10 30 | G96 | 0.2− | 0.1− | 2005 11 25 | 691 | 0.0 | 0.4+ | 2006 01 02 | G96 | 0.7+ | 0.7− |
| 2005 10 30 | G96 | 0.1+ | 0.0 | 2005 12 05 | 704 | 0.6+ | 1.8− | 2006 01 02 | G96 | 1.2+ | 0.1− |
| 2005 10 30 | G96 | 0.2− | 0.0 | 2005 12 05 | 704 | 0.2+ | 0.1+ | 2006 01 02 | G96 | 0.5+ | 0.9− |
| 2005 10 30 | G96 | 0.0 | 0.2− | 2005 12 05 | 704 | 0.4+ | 1.6− | 2006 01 02 | G96 | 0.0 | 0.8− |
| 2005 11 12 | 691 | 0.2+ | 0.1− | 2005 12 05 | 704 | 0.9− | 0.3− | | | | |
| 2005 11 12 | 691 | 0.0 | 0.2+ | 2005 12 22 | 703 | 0.9− | 0.8+ | | | | |

**2005 WZ$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.50953 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19284053 | $\omega$ | 86.58818 | | +0.29766557 | −0.95462238 | |
| $a$ | 2.9671341 | $\Omega$ | 346.08299 | | +0.85936070 | +0.27229438 | |
| $e$ | 0.0642145 | $i$ | 2.27700 | | +0.41580571 | +0.12063118 | |
| $P$ | 5.11 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 691 | 0.4+ | 0.5+ | 2005 11 25 | 691 | 0.1+ | 0.0 | 2005 12 08 | 704 | 0.1+ | 0.3+ |
| 2002 03 11 | 691 | 0.2+ | 0.4+ | 2005 11 25 | 691 | 0.1− | 0.0 | 2005 12 28 | G96 | 0.4+ | 0.2− |
| 2002 03 11 | 691 | 0.1+ | 0.5+ | 2005 11 29 | 691 | 0.6+ | 0.2− | 2005 12 28 | 644 | 0.1+ | 0.0 |
| 2004 09 13 | 691 | 0.1+ | 0.6+ | 2005 11 29 | 691 | 0.2+ | 0.2− | 2005 12 28 | G96 | 0.1+ | 0.5− |
| 2004 09 13 | 691 | 0.2− | 0.3+ | 2005 11 29 | 691 | 0.5+ | 0.1− | 2005 12 28 | G96 | 0.2+ | 0.6− |
| 2004 09 13 | 691 | 0.3− | 0.1+ | 2005 12 01 | 704 | 0.7− | 0.9+ | 2005 12 28 | G96 | 0.3+ | 0.5− |
| 2005 11 06 | G96 | 0.2+ | 0.2− | 2005 12 01 | 704 | 0.1− | 0.3− | 2005 12 28 | 644 | 0.3+ | 0.1− |
| 2005 11 06 | G96 | 0.2+ | 0.2− | 2005 12 01 | 704 | 0.6− | 0.1− | 2005 12 28 | 644 | 0.2+ | 0.1− |
| 2005 11 06 | G96 | 0.0 | 0.1− | 2005 12 01 | 704 | 0.2− | 0.4− | 2006 03 03 | G96 | 0.9+ | 0.0 |
| 2005 11 06 | G96 | 0.2− | 0.2− | 2005 12 01 | 704 | 0.0 | 0.2+ | 2006 03 03 | G96 | 0.0 | 0.3+ |
| 2005 11 12 | 691 | 0.3+ | 0.0 | 2005 12 02 | 704 | 0.2− | 0.2+ | 2006 03 03 | G96 | 0.1− | 0.1− |
| 2005 11 12 | 691 | 1.2− | 1.3+ | 2005 12 02 | 704 | 0.7− | 0.2+ | 2006 03 03 | G96 | 0.9+ | 0.7+ |
| 2005 11 12 | 691 | 0.1+ | 0.1− | 2005 12 02 | 704 | 0.4− | 0.6+ | 2006 03 03 | G96 | 0.2− | 0.1+ |
| 2005 11 21 | 691 | 0.1− | 0.1− | 2005 12 02 | 704 | 0.2− | 1.2+ | 2006 03 03 | G96 | 0.1− | 0.1+ |
| 2005 11 21 | 691 | 0.2− | 0.1− | 2005 12 02 | 704 | (0.4− | 1.7+) | 2006 03 03 | G96 | 0.1+ | 0.4− |
| 2005 11 21 | 691 | 0.3− | 0.1− | 2005 12 02 | 704 | 0.2+ | 0.4+ | 2006 03 03 | G96 | 0.7+ | 0.1− |
| 2005 11 21 | 703 | 0.6− | 0.2− | 2005 12 02 | 704 | 0.7− | 0.7+ | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2005 11 21 | 703 | (1.9+ | 1.3−) | 2005 12 02 | 704 | 0.0 | 1.0+ | 2006 11 20 | G96 | 0.5− | 1.0− |
| 2005 11 21 | 703 | (1.5+ | 1.8−) | 2005 12 08 | 704 | 0.8+ | 0.3+ | 2006 11 20 | G96 | 0.4− | 0.3− |
| 2005 11 21 | 703 | 0.1+ | 0.5− | 2005 12 08 | 704 | 0.0 | 0.5− | 2006 11 20 | G96 | 0.2− | 0.7− |
| 2005 11 25 | 691 | 0.1+ | 0.2− | 2005 12 08 | 704 | (1.8− | 1.2+) | | | | |

**2005 WP$_{27}$ = 1996 QR**

Id. Minor Planet Center; 2004 GM$_8$ = 1996 QR (*MPO* 89541) is invalid.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.77403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23507822 | $\omega$ | 301.99676 | | +0.96259886 | +0.26940189 | |
| $a$ | 2.6001263 | $\Omega$ | 42.39389 | | −0.23197041 | +0.87433279 | |
| $e$ | 0.1849362 | $i$ | 2.44319 | | −0.13997561 | +0.40368899 | |
| $P$ | 4.19 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 19 | 566 | 0.1− | 0.0 | 2005 11 21 | 691 | 0.0 | 0.0 | 2005 12 04 | 704 | 0.8+ | 0.0 |
| 1996 08 19 | 566 | 0.5+ | 0.4− | 2005 11 21 | 691 | 0.0 | 0.1+ | 2005 12 04 | 704 | 0.4+ | 1.2+ |
| 1996 08 19 | 566 | 0.1+ | 0.4− | 2005 11 25 | 691 | 0.1+ | 0.0 | 2005 12 06 | 704 | 0.6− | 0.5− |
| 1996 08 20 | 566 | 0.3− | 0.5+ | 2005 11 25 | 691 | 0.1+ | 0.0 | 2005 12 06 | 704 | 0.5− | 0.7− |
| 1996 08 20 | 566 | 0.1− | 0.4+ | 2005 11 25 | 691 | 0.1− | 0.1− | 2005 12 06 | 704 | 0.2+ | 0.2− |
| 1996 08 20 | 566 | 0.2− | 0.3+ | 2005 11 29 | 704 | 0.5+ | 0.3+ | 2005 12 06 | 704 | 1.0− | 1.5− |
| 2001 12 19 | 704 | 0.4− | 0.2− | 2005 11 29 | 704 | 0.4+ | 0.0 | 2005 12 06 | 704 | 0.0 | 0.6− |
| 2001 12 19 | 704 | 0.2+ | 1.4+ | 2005 11 29 | 704 | 0.0 | 0.4+ | 2005 12 10 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.4+ | 0.2+ | 2005 11 29 | 704 | 0.7+ | 0.1+ | 2005 12 10 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.2− | 0.5+ | 2005 12 01 | 704 | 0.5− | 0.6+ | 2005 12 10 | 691 | 0.0 | 0.1− |
| 2005 10 28 | G96 | 0.3− | 0.2− | 2005 12 01 | 704 | 0.6− | 0.2+ | 2005 12 28 | 644 | 0.1+ | 0.1+ |
| 2005 10 28 | G96 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.1− | 0.3+ | 2005 12 28 | 644 | 0.1− | 0.2+ |
| 2005 10 28 | G96 | 0.3− | 0.2− | 2005 12 01 | 704 | 0.1+ | 0.2− | 2005 12 28 | 644 | 0.1− | 0.2+ |
| 2005 10 28 | G96 | 0.0 | 0.0 | 2005 12 01 | 704 | 1.0+ | 1.0+ | 2005 12 31 | G96 | 0.2+ | 0.5− |
| 2005 10 28 | G96 | 0.3− | 0.3− | 2005 12 02 | 691 | 0.3− | 0.1+ | 2005 12 31 | G96 | 0.2− | 0.2− |
| 2005 10 28 | G96 | 0.0 | 0.0 | 2005 12 02 | 691 | 0.1− | 0.1+ | 2005 12 31 | G96 | 0.4+ | 0.4− |
| 2005 10 28 | G96 | 0.3+ | 0.2− | 2005 12 02 | 691 | 0.0 | 0.0 | 2005 12 31 | G96 | 0.1− | 0.4− |
| 2005 10 28 | G96 | 0.0 | 0.3− | 2005 12 02 | 704 | 0.3− | 0.2+ | 2006 01 26 | G96 | 0.1− | 0.2− |
| 2005 11 12 | 691 | 0.2+ | 0.1+ | 2005 12 02 | 704 | 0.4− | 0.2− | 2006 01 26 | G96 | 0.1+ | 0.3− |
| 2005 11 12 | 691 | 0.1+ | 0.0 | 2005 12 02 | 704 | 0.7− | 0.2+ | 2006 01 26 | G96 | 0.3− | 0.6− |
| 2005 11 12 | 691 | 0.2+ | 0.1− | 2005 12 04 | 704 | 0.2+ | 0.0 | 2006 01 26 | G96 | 0.5+ | 0.1− |
| 2005 11 21 | 691 | 0.2+ | 0.1− | 2005 12 04 | 704 | 0.3− | 0.5+ | | | | |

**2005 WC$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.66144 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19152468 | $\omega$ | 93.62491 | | +0.96707414 | +0.17402882 | |
| $a$ | 2.9807089 | $\Omega$ | 256.41879 | | −0.23050692 | +0.90821819 | |
| $e$ | 0.1115359 | $i$ | 11.01312 | | +0.10786176 | +0.38059648 | |
| $P$ | 5.15 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 21 | 691 | 0.0 | 0.2+ | 2005 11 29 | 691 | 0.1− | 0.1+ | 2005 12 25 | 691 | 0.0 | 0.0 |
| 2005 11 21 | 691 | 0.3+ | 0.2− | 2005 12 04 | G96 | 0.5+ | 0.4− | 2005 12 25 | 691 | 0.1− | 0.1+ |
| 2005 11 21 | 691 | 0.0 | 0.5+ | 2005 12 04 | G96 | 0.1+ | 0.6− | 2005 12 25 | 691 | 0.1− | 0.0 |
| 2005 11 25 | 691 | 0.2− | 0.1− | 2005 12 04 | G96 | 0.3− | 0.1− | 2006 11 21 | 568 | 0.5− | 0.5+ |
| 2005 11 25 | 691 | 0.0 | 0.2− | 2005 12 04 | G96 | 0.2− | 0.1− | 2006 11 21 | 568 | 0.1+ | 0.0 |
| 2005 11 25 | 691 | 0.1− | 0.2− | 2005 12 23 | 691 | 0.2+ | 0.1− | 2006 11 22 | 568 | 0.1+ | 0.1− |
| 2005 11 29 | 691 | 0.1+ | 0.0 | 2005 12 23 | 691 | 0.1+ | 0.0 | 2006 11 22 | 568 | 0.2+ | 0.2− |
| 2005 11 29 | 691 | 0.1− | 0.2+ | 2005 12 23 | 691 | 0.0 | 0.2+ | 2006 11 22 | 568 | 0.2+ | 0.1− |

**2005 WG$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.55932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28723992 | $\omega$ | 304.28025 | | +0.98822459 | −0.09557877 | |
| $a$ | 2.2749552 | $\Omega$ | 61.46909 | | +0.13997577 | +0.88010299 | |
| $e$ | 0.1305519 | $i$ | 7.81656 | | −0.06179768 | +0.46506283 | |
| $P$ | 3.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 24 | 644 | 0.2− | 0.1+ | 2005 11 30 | 704 | 0.1+ | 0.3+ | 2005 12 10 | 691 | 0.0 | 0.1+ |
| 2001 07 24 | 644 | 0.1+ | 0.2+ | 2005 12 01 | 704 | 0.6− | 0.5− | 2005 12 10 | 691 | 0.1− | 0.2+ |
| 2001 07 24 | 644 | 0.0 | 0.3+ | 2005 12 01 | 704 | 0.7+ | 0.9+ | 2005 12 10 | 691 | 1.4− | 0.5+ |
| 2003 02 01 | 644 | 0.1+ | 0.5+ | 2005 12 01 | 704 | 0.3+ | 0.3− | 2005 12 10 | 704 | 0.0 | 0.5− |
| 2003 02 01 | 644 | 0.1− | 0.4+ | 2005 12 01 | 704 | 0.8− | 0.4+ | 2005 12 10 | 704 | 0.3+ | 1.0− |
| 2003 02 01 | 644 | 0.2+ | 0.3+ | 2005 12 01 | 704 | 1.0+ | 0.2− | 2005 12 10 | 704 | 0.7+ | 0.5− |
| 2005 10 25 | G96 | 0.4+ | 0.5− | 2005 12 01 | 704 | 0.0 | 0.1+ | 2005 12 10 | 704 | 0.3+ | 1.0− |
| 2005 10 25 | G96 | 0.9+ | 0.4− | 2005 12 01 | 704 | 0.2+ | 0.3+ | 2005 12 21 | 691 | 0.4+ | 0.0 |
| 2005 10 25 | G96 | 0.4+ | 0.3− | 2005 12 01 | 704 | 1.5+ | 1.1+ | 2005 12 21 | 691 | 0.3+ | 0.0 |
| 2005 11 05 | 691 | 0.1+ | 0.3− | 2005 12 01 | 704 | 0.0 | 0.4+ | 2005 12 21 | 691 | 0.2+ | 0.1− |
| 2005 11 05 | 691 | 0.1+ | 0.3− | 2005 12 01 | 704 | 0.1− | 0.0 | 2005 12 23 | 691 | 0.3+ | 0.1− |
| 2005 11 05 | 691 | 0.2+ | 0.2− | 2005 12 01 | 704 | 0.3+ | 0.5− | 2005 12 23 | 691 | 0.4+ | 0.0 |
| 2005 11 21 | 691 | 0.3− | 0.1− | 2005 12 01 | 704 | 0.3− | 0.3− | 2005 12 23 | 691 | 0.4+ | 0.1− |
| 2005 11 21 | 691 | 0.0 | 0.3− | 2005 12 01 | 704 | 0.1− | 0.7+ | 2005 12 23 | 703 | 1.0− | 0.6+ |
| 2005 11 21 | 691 | 0.4− | 0.1+ | 2005 12 01 | 704 | (0.4+ | 2.4+) | 2005 12 23 | 703 | 1.3− | 0.9− |
| 2005 11 25 | 691 | 0.6− | 0.0 | 2005 12 02 | 704 | 0.7− | 0.1− | 2005 12 23 | 703 | 0.5− | 0.1+ |
| 2005 11 25 | 691 | 0.1− | 0.1+ | 2005 12 02 | 704 | 0.2+ | 0.6+ | 2005 12 23 | 703 | 0.6+ | 0.8− |
| 2005 11 25 | 691 | 0.1− | 0.0 | 2005 12 02 | 704 | 0.0 | 0.7+ | 2005 12 25 | 691 | 0.4+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 26 | G96 | 0.2+ | 0.1− | 2005 12 02 | 704 | 0.2− | 0.9+ | 2005 12 25 | 691 | 0.4+ | 0.2− |
| 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 02 | 704 | 0.2− | 0.4+ | 2005 12 25 | 691 | 0.4+ | 0.0 |
| 2005 11 26 | G96 | 0.5+ | 0.3− | 2005 12 02 | 704 | 0.4+ | 0.2+ | 2005 12 28 | 644 | 0.0 | 0.0 |
| 2005 11 26 | G96 | 0.5− | 0.1− | 2005 12 02 | 704 | 0.6− | 1.2+ | 2005 12 28 | 644 | 0.2+ | 0.3+ |
| 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 02 | 704 | 0.5+ | 0.4+ | 2005 12 28 | 644 | 0.1+ | 0.0 |
| 2005 11 26 | G96 | 0.4− | 0.0 | 2005 12 02 | 704 | 0.2− | 1.6+ | 2006 01 02 | G96 | 0.2− | 0.3− |
| 2005 11 26 | G96 | 0.0 | 0.2− | 2005 12 02 | 704 | 0.8+ | 0.7− | 2006 01 02 | G96 | 0.2− | 0.2− |
| 2005 11 26 | G96 | 0.4− | 0.0 | 2005 12 04 | 704 | 0.1− | 0.7+ | 2006 01 02 | G96 | 0.1− | 0.3− |
| 2005 11 28 | 703 | 0.6− | 0.1− | 2005 12 04 | 704 | 1.1− | 0.2− | 2006 01 02 | G96 | 0.2+ | 0.3− |
| 2005 11 28 | 703 | 0.6− | 0.6+ | 2005 12 04 | 704 | 0.1− | 0.3+ | 2006 01 05 | 704 | 0.9+ | 0.7+ |
| 2005 11 28 | 703 | 0.3+ | 0.0 | 2005 12 04 | 704 | 0.3− | 0.5− | 2006 01 05 | 704 | 0.4+ | 0.3− |
| 2005 11 28 | 703 | 0.7+ | 0.4− | 2005 12 04 | 704 | 0.6+ | 0.8− | 2006 01 05 | 704 | 0.3+ | 0.3+ |
| 2005 11 29 | 704 | 0.2− | 0.8+ | 2005 12 05 | 704 | 0.1− | 0.2+ | 2006 01 05 | 704 | 0.3− | 0.9− |
| 2005 11 29 | 704 | 0.6− | 0.4− | 2005 12 05 | 704 | 0.2+ | 1.2+ | 2006 01 05 | 704 | 0.4+ | 0.1+ |
| 2005 11 29 | 704 | 0.2− | 0.4+ | 2005 12 05 | 704 | 0.3+ | 0.1− | 2006 02 01 | G96 | 0.2+ | 0.5+ |
| 2005 11 29 | 704 | 0.9− | 0.7+ | 2005 12 05 | 704 | 0.3+ | 0.0 | 2006 02 01 | G96 | 0.1+ | 0.7− |
| 2005 11 30 | 704 | 0.2− | 0.4− | 2005 12 05 | 704 | 0.1+ | 0.3+ | 2006 02 01 | G96 | 0.5+ | 0.7− |
| 2005 11 30 | 704 | 0.4− | 0.5+ | 2005 12 06 | 704 | 0.3− | 0.2− | 2006 02 01 | G96 | 0.1− | 0.3− |
| 2005 11 30 | 704 | 0.4+ | 0.7+ | 2005 12 06 | 704 | 0.7− | 1.1− | | | | |
| 2005 11 30 | 704 | 0.3− | 0.5− | 2005 12 06 | 704 | 0.2− | 0.4+ | | | | |

**2005 WT$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.82182 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18546246 | $\omega$ | 322.64787 | | +0.85675482 | | −0.48928187 |
| $a$ | 3.0453138 | $\Omega$ | 67.40592 | | +0.50545920 | | +0.73389806 |
| $e$ | 0.1503778 | $i$ | 10.16993 | | +0.10238245 | | +0.47116546 |
| $P$ | 5.31 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.7+ | 0.4− | 2005 12 01 | 704 | 0.9+ | 0.0 | 2005 12 22 | 703 | 0.5− | 0.2− |
| 2001 01 21 | 704 | 0.1+ | 0.1+ | 2005 12 04 | 704 | (4.4+ | 1.1+) | 2005 12 22 | 703 | 0.2− | 0.4+ |
| 2001 01 21 | 704 | 0.4− | 0.2− | 2005 12 04 | 704 | (4.0+ | 1.6+) | 2005 12 22 | 703 | 0.1+ | 0.3− |
| 2001 01 21 | 704 | 0.4− | 0.2− | 2005 12 04 | 704 | (3.5+ | 0.9+) | 2005 12 28 | 703 | 0.2− | 0.7+ |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2005 12 04 | 704 | (3.5+ | 1.5+) | 2005 12 28 | 703 | 0.8− | 0.5+ |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2005 12 04 | 704 | (4.2+ | 1.2+) | 2005 12 28 | 703 | 0.2− | 1.0+ |
| 2005 10 28 | G96 | 0.2− | 0.0 | 2005 12 05 | 691 | 0.1+ | 0.0 | 2005 12 28 | 703 | 0.2− | 0.6− |
| 2005 10 28 | G96 | 0.1+ | 0.3− | 2005 12 05 | 691 | 0.1+ | 0.0 | 2005 12 29 | 704 | 0.1+ | 0.2− |
| 2005 10 28 | G96 | 0.2− | 0.1− | 2005 12 05 | 691 | 0.1+ | 0.0 | 2005 12 29 | 704 | 0.2+ | 0.2+ |
| 2005 10 28 | G96 | 0.4− | 0.1− | 2005 12 05 | G96 | 0.1− | 0.2− | 2005 12 29 | 704 | 0.0 | 0.7+ |
| 2005 11 21 | 691 | 0.3+ | 0.9− | 2005 12 05 | G96 | 0.1− | 0.2− | 2005 12 30 | G96 | 0.1+ | 0.3− |
| 2005 11 21 | 691 | 0.1− | 0.0 | 2005 12 05 | G96 | 0.1+ | 0.3− | 2005 12 30 | G96 | 0.2+ | 0.5− |
| 2005 11 21 | 691 | 0.0 | 0.1+ | 2005 12 05 | G96 | 0.1+ | 0.3− | 2005 12 30 | G96 | 0.2− | 0.4− |
| 2005 11 21 | 703 | 0.3+ | 0.1− | 2005 12 06 | 691 | 0.2+ | 0.1+ | 2005 12 30 | G96 | 0.0 | 0.3− |
| 2005 11 21 | 703 | 0.8− | 0.1− | 2005 12 06 | 691 | 0.0 | 0.0 | 2006 01 05 | 704 | 0.5+ | 0.3+ |
| 2005 11 21 | 703 | 0.9− | 1.8− | 2005 12 06 | 691 | 0.1− | 0.1+ | 2006 01 05 | 704 | 0.5− | 0.2− |
| 2005 11 21 | 703 | 0.4− | 1.7− | 2005 12 06 | 704 | 0.3+ | 1.3+ | 2006 01 05 | 704 | 0.2− | 0.7− |
| 2005 11 25 | 691 | 0.1+ | 0.1+ | 2005 12 06 | 704 | 0.6+ | 0.5+ | 2006 01 05 | 703 | 0.5− | 0.3+ |
| 2005 11 25 | 691 | 0.0 | 0.1+ | 2005 12 06 | 704 | 1.2− | 0.6+ | 2006 01 05 | 703 | 0.7− | 0.5+ |
| 2005 11 25 | 691 | 0.1+ | 0.2+ | 2005 12 06 | 704 | 0.1+ | 1.3+ | 2006 01 05 | 704 | 0.6− | 1.2+ |
| 2005 11 29 | 704 | 0.3+ | 0.7+ | 2005 12 10 | 691 | 0.1− | 0.1+ | 2006 01 05 | 703 | 0.9− | 0.3− |
| 2005 11 29 | 704 | 0.3+ | 0.4+ | 2005 12 10 | 691 | 1.0− | 0.3− | 2006 01 05 | 704 | 0.5− | 0.0 |
| 2005 11 29 | 704 | 0.2+ | 1.1+ | 2005 12 10 | 691 | 0.1+ | 0.4− | 2006 01 05 | 703 | 0.6− | 0.8+ |
| 2005 11 29 | 704 | 0.2− | 0.6+ | 2005 12 10 | 704 | 0.3+ | 0.2+ | 2006 02 02 | G96 | 0.4− | 0.3− |
| 2005 11 29 | 704 | 0.4+ | 0.5+ | 2005 12 10 | 704 | 0.6+ | 0.1− | 2006 02 02 | G96 | 0.3− | 0.4− |
| 2005 12 01 | 704 | 1.1+ | 0.3+ | 2005 12 10 | 704 | 0.8+ | 0.8+ | 2006 02 02 | G96 | 0.3− | 0.5− |
| 2005 12 01 | 704 | 1.2+ | 0.4+ | 2005 12 10 | 704 | 0.4+ | 0.3− | 2006 02 02 | G96 | 0.3− | 0.6− |
| 2005 12 01 | 704 | 0.7+ | 0.5+ | 2005 12 10 | 704 | 0.8+ | 0.2− | | | | |
| 2005 12 01 | 704 | 0.3+ | 0.4− | 2005 12 22 | 703 | 1.1+ | 1.0− | | | | |

**2005 WU$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.39310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22774548 | $\omega$ | 108.29396 | | −0.58030789 | | −0.81438871 |
| $a$ | 2.6556421 | $\Omega$ | 17.17980 | | +0.74236841 | | −0.53085157 |
| $e$ | 0.1976637 | $i$ | 0.72005 | | +0.33486102 | | −0.23445177 |
| $P$ | 4.33 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 691 | 0.1+ | 0.0 | 2002 02 08 | 691 | 0.1− | 0.2+ | 2005 11 26 | 691 | 0.2− | 0.2− |
| 2002 01 14 | 691 | 0.1+ | 0.2− | 2002 02 12 | 704 | 0.3+ | 1.1+ | 2005 11 26 | 691 | 0.2+ | 0.0 |
| 2002 01 14 | 691 | 0.1+ | 0.4− | 2002 02 12 | 704 | 1.7+ | 0.7+ | 2005 11 26 | 691 | 0.4− | 0.2+ |
| 2002 01 21 | 291 | 0.1+ | 0.1− | 2002 02 12 | 704 | 0.7+ | 0.3+ | 2005 11 26 | G96 | 0.5+ | 0.1− |
| 2002 01 21 | 291 | 0.2− | 0.2+ | 2002 02 12 | 704 | 0.6+ | 1.6− | 2005 11 26 | G96 | 0.2− | 0.1− |
| 2002 01 21 | 291 | 0.4− | 0.3+ | 2005 11 21 | 691 | 0.1− | 0.4+ | 2005 11 26 | G96 | 0.5− | 0.5− |
| 2002 02 08 | 691 | 0.6− | 0.0 | 2005 11 21 | 691 | 0.8+ | 0.0 | 2005 11 26 | G96 | 0.3− | 0.2− |
| 2002 02 08 | 691 | 0.1+ | 0.1− | 2005 11 21 | 691 | 0.1− | 0.0 | | | | |

**2005 WA$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.97822 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26955671 | $\omega$ | 256.45073 | | +0.90631865 | | +0.39929892 |
| $a$ | 2.3733910 | $\Omega$ | 79.87174 | | −0.31253664 | | +0.85372313 |
| $e$ | 0.1210746 | $i$ | 8.08041 | | −0.28444219 | | +0.33424121 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 645 | 0.0 | 0.1− | 2001 10 24 | 644 | 0.1− | 0.2+ | 2005 12 04 | 691 | 0.1− | 0.4+ |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2001 11 18 | 645 | 0.0 | 0.1− | 2005 12 04 | 691 | 0.9− | 0.3− |
| 2001 10 15 | 644 | 0.3+ | 0.1+ | 2001 11 18 | 645 | 0.1+ | 0.1− | 2005 12 04 | G96 | 0.1+ | 0.2− |
| 2001 10 15 | 644 | 0.4+ | 0.3+ | 2005 11 22 | 691 | 0.5+ | 0.2− | 2005 12 04 | G96 | 0.1− | 0.3− |
| 2001 10 15 | 644 | 0.4+ | 0.4+ | 2005 11 22 | 691 | 0.4+ | 1.5− | 2005 12 04 | G96 | 0.2− | 0.1− |
| 2001 10 20 | 704 | 0.8− | 1.5+ | 2005 11 22 | 691 | 0.0 | 0.0 | 2005 12 28 | 691 | 0.2− | 0.0 |
| 2001 10 20 | 704 | 0.4− | 1.5+ | 2005 11 26 | 691 | 0.4+ | 0.3+ | 2005 12 28 | 691 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 0.1+ | 0.4+ | 2005 11 26 | 691 | 0.6− | 1.5+ | 2005 12 28 | 691 | 0.1+ | 0.1− |
| 2001 10 24 | 644 | 0.5− | 0.3+ | 2005 11 26 | 691 | 0.2+ | 0.2+ | | | | |
| 2001 10 24 | 644 | 0.2− | 0.5+ | 2005 12 04 | 691 | 0.2+ | 0.2+ | | | | |

**2005 WP$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.02136 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20638882 | $\omega$ | 275.92944 | | +0.97800314 | | −0.20103882 |
| $a$ | 2.8358196 | $\Omega$ | 95.67768 | | +0.20656908 | | +0.89643781 |
| $e$ | 0.1081753 | $i$ | 3.20399 | | +0.02896663 | | +0.39494639 |
| $P$ | 4.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1+ | 0.2+ | 2005 11 22 | 691 | 0.1+ | 0.4− | 2005 12 25 | G96 | 0.1− | 0.3− |
| 1995 10 21 | 691 | 0.1− | 0.4− | 2005 11 26 | 691 | 0.1+ | 0.1− | 2005 12 25 | G96 | 0.0 | 0.6− |
| 1995 10 21 | 691 | 0.1+ | 0.0 | 2005 11 26 | 691 | 0.3+ | 0.1− | 2005 12 25 | G96 | 0.7+ | 0.1− |
| 2000 11 02 | 691 | 0.1− | 0.8+ | 2005 11 26 | 691 | 0.1− | 0.0 | 2006 01 05 | 691 | 0.0 | 0.1+ |
| 2000 11 02 | 691 | 0.0 | 0.8+ | 2005 11 26 | 691 | 0.2+ | 0.1− | 2006 01 05 | 691 | 0.4+ | 0.2− |
| 2000 11 02 | 691 | 0.2− | 0.5+ | 2005 11 26 | 691 | 0.3+ | 0.0 | 2006 01 05 | 691 | 0.1+ | 0.1− |
| 2000 11 02 | 691 | 0.0 | 0.7− | 2005 11 26 | 691 | 0.1+ | 0.0 | 2006 01 05 | G96 | 0.4− | 0.4− |
| 2000 11 02 | 691 | 0.1+ | 0.9− | 2005 11 30 | 691 | 0.2+ | 0.3+ | 2006 01 05 | G96 | 0.2− | 0.0 |
| 2000 11 02 | 691 | 0.1− | 0.6− | 2005 11 30 | 691 | 0.1− | 0.2− | 2006 01 05 | G96 | 0.1+ | 0.3− |
| 2005 11 22 | 691 | 0.2+ | 0.2+ | 2005 11 30 | 691 | 1.7− | 0.5+ | 2006 01 05 | G96 | 0.1− | 0.3− |
| 2005 11 22 | 691 | 0.0 | 0.0 | 2005 12 25 | 691 | 0.2− | 0.0 | 2006 01 21 | G96 | 0.5+ | 0.7− |
| 2005 11 22 | 691 | 0.6+ | 0.1+ | 2005 12 25 | 691 | 0.2− | 0.1+ | 2006 01 21 | G96 | 0.2+ | 0.4− |
| 2005 11 22 | 691 | 0.0 | 0.3+ | 2005 12 25 | 691 | 0.2− | 0.3+ | 2006 01 21 | G96 | 0.0 | 0.3− |
| 2005 11 22 | 691 | 0.2− | 0.2+ | 2005 12 25 | G96 | 0.1− | 0.2− | 2006 01 21 | G96 | 0.8+ | 0.4− |

**2005 WS$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.01737 | | | (2000.0) | | |
| $n$ | 0.22097070 | $\omega$ | 345.11427 | | +0.28524594 | −0.95669991 |
| $a$ | 2.7096483 | $\Omega$ | 88.28634 | | +0.88518438 | +0.23976623 |
| $e$ | 0.0962192 | $i$ | 3.32455 | | +0.36753688 | +0.16503770 |
| $P$ | 4.46 | $H$ | 16.9 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.6+ | 0.1− | 2005 11 30 | 691 | 0.0 | 0.0 | 2006 01 05 | G96 | 0.2+ | 0.3− |
| 1993 01 22 | 691 | 0.8− | 0.1− | 2005 11 30 | 691 | 0.0 | 0.8− | 2006 01 05 | G96 | 0.7− | 0.4− |
| 1993 01 22 | 691 | 0.2+ | 0.1+ | 2005 11 30 | 691 | 0.2+ | 0.1+ | 2006 01 05 | G96 | 0.4+ | 0.4− |
| 1998 03 21 | 691 | 0.0 | 0.3− | 2005 12 07 | 291 | 0.5− | 0.3+ | 2006 01 05 | G96 | 0.0 | 0.2− |
| 1998 03 21 | 691 | 0.0 | 0.2+ | 2005 12 07 | 291 | 0.3− | 0.1+ | 2006 01 21 | 291 | 0.9+ | 0.3− |
| 1998 03 21 | 691 | 0.1+ | 0.3+ | 2005 12 07 | 291 | 0.0 | 0.2+ | 2006 01 21 | 291 | 0.0 | 0.0 |
| 2005 11 22 | 691 | 0.2− | 0.2+ | 2005 12 27 | 691 | 0.3+ | 0.2+ | 2006 01 21 | 291 | 0.2− | 0.2+ |
| 2005 11 22 | 691 | 0.1+ | 0.1− | 2005 12 27 | 691 | 0.3+ | 0.9+ | 2006 01 23 | G96 | 0.1+ | 0.1+ |
| 2005 11 22 | 691 | 0.4− | 0.0 | 2005 12 27 | 691 | 0.2+ | 0.3+ | 2006 01 23 | G96 | 0.3− | 0.5− |
| 2005 11 26 | 691 | 0.1+ | 0.2− | 2006 01 05 | 691 | 0.0 | 0.3− | 2006 01 23 | G96 | 1.4− | 0.3+ |
| 2005 11 26 | 691 | 0.5− | 0.0 | 2006 01 05 | 691 | 0.4+ | 0.2− | 2006 01 23 | G96 | 1.4− | 0.3− |
| 2005 11 26 | 691 | 0.2+ | 0.0 | 2006 01 05 | 691 | 0.1+ | 0.1+ | | | | |

**2005 WT$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 278.46029 | | | (2000.0) | | |
| $n$ | 0.26877802 | $\omega$ | 164.43181 | | −0.50468091 | +0.85712499 |
| $a$ | 2.3779728 | $\Omega$ | 75.15972 | | −0.80302084 | −0.42222443 |
| $e$ | 0.1602552 | $i$ | 6.12393 | | −0.31694591 | −0.29506489 |
| $P$ | 3.67 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 704 | 1.3− | 1.6+ | 2003 02 23 | 599 | 0.7− | 0.2+ | 2005 11 26 | 691 | 0.1+ | 0.6+ |
| 2001 10 24 | 704 | 0.0 | 0.2− | 2003 02 23 | 599 | 0.1− | 0.2+ | 2005 11 26 | 691 | 0.4+ | 0.3+ |
| 2001 10 24 | 704 | 0.0 | 0.3− | 2003 03 07 | 644 | 0.2+ | 0.8+ | 2005 11 26 | 691 | 0.6− | 0.5− |
| 2001 10 24 | 704 | 0.6+ | 0.7+ | 2003 03 07 | 644 | 0.3+ | 0.6+ | 2005 12 02 | G96 | 0.0 | 0.4− |
| 2003 02 04 | 699 | 0.1+ | 0.3− | 2003 03 07 | 644 | 0.1+ | 0.5+ | 2005 12 02 | G96 | 0.6+ | 0.3− |
| 2003 02 04 | 699 | 0.4+ | 0.1+ | 2004 08 21 | E12 | 0.3− | 0.6+ | 2005 12 02 | G96 | 0.4+ | 0.2− |
| 2003 02 04 | 699 | 0.8+ | 1.0− | 2004 08 21 | E12 | 0.4− | 1.0+ | 2005 12 04 | 691 | 0.8− | 0.0 |
| 2003 02 04 | 699 | 0.4− | 1.3+ | 2004 08 21 | E12 | 0.3− | 0.1+ | 2005 12 04 | 691 | 0.1+ | 0.4− |
| 2003 02 12 | 608 | 0.4+ | 0.2+ | 2004 08 21 | E12 | 0.0 | 0.5+ | 2005 12 04 | 691 | 0.2− | 0.6+ |
| 2003 02 12 | 608 | 0.2+ | 0.7+ | 2005 11 25 | G96 | 0.2+ | 0.0 | 2006 01 07 | G96 | 0.5+ | 0.6− |
| 2003 02 12 | 608 | 0.5+ | 0.2+ | 2005 11 25 | G96 | 0.5+ | 0.2− | 2006 01 07 | G96 | 0.9+ | 0.5− |
| 2003 02 23 | 599 | 0.4− | 0.1+ | 2005 11 25 | G96 | 0.0 | 0.1− | 2006 01 07 | G96 | 1.2+ | 0.9− |
| 2003 02 23 | 599 | 0.2− | 0.1+ | 2005 11 25 | G96 | 0.3+ | 0.1− | 2006 01 07 | G96 | 0.5+ | 1.0− |

**2005 WO$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 218.92312 | | | (2000.0) | | |
| $n$ | 0.31277306 | $\omega$ | 240.70671 | | +0.35928111 | +0.93194973 |
| $a$ | 2.1493963 | $\Omega$ | 50.43234 | | −0.83273229 | +0.34378331 |
| $e$ | 0.0605052 | $i$ | 3.63361 | | −0.42127666 | +0.11525078 |
| $P$ | 3.15 | $H$ | 17.9 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 16 | E12 | 1.3+ | 0.7+ | 2004 06 17 | 691 | 0.2− | 0.1+ | 2005 11 26 | G96 | 0.4− | 0.2− |
| 2004 05 16 | E12 | 1.0+ | 2.3+ | 2005 10 01 | G96 | 0.5− | 0.7+ | 2005 11 26 | G96 | 0.1− | 0.1− |
| 2004 05 16 | E12 | 0.3+ | 0.4+ | 2005 10 01 | G96 | 0.0 | 0.7+ | 2005 11 26 | G96 | 0.3+ | 0.2− |
| 2004 05 16 | E12 | 1.2+ | 0.9+ | 2005 10 01 | G96 | 0.0 | 0.8+ | 2005 12 05 | G96 | 0.3− | 0.1− |
| 2004 06 11 | 691 | 0.0 | 0.0 | 2005 10 01 | G96 | 0.5+ | 0.5+ | 2005 12 05 | G96 | 0.0 | 0.2+ |
| 2004 06 11 | 691 | 0.2− | 0.1+ | 2005 11 21 | 691 | 0.1+ | 0.3+ | 2005 12 05 | G96 | 0.1+ | 0.0 |
| 2004 06 11 | 691 | 0.4− | 0.2− | 2005 11 21 | 691 | 0.1− | 0.1+ | 2005 12 05 | G96 | 0.3− | 0.1+ |
| 2004 06 17 | 691 | 0.3+ | 0.2− | 2005 11 21 | 691 | 0.1− | 0.1+ | | | | |
| 2004 06 17 | 691 | 0.3− | 0.1+ | 2005 11 26 | G96 | 0.0 | 0.1+ | | | | |

**2005 WX$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 87.33319 | | | (2000.0) | | |
| $n$ | 0.20149344 | $\omega$ | 118.80970 | | +0.87700870 | −0.47988047 |
| $a$ | 2.8815674 | $\Omega$ | 269.87688 | | +0.43208353 | +0.80944726 |
| $e$ | 0.1156358 | $i$ | 1.36862 | | +0.21014178 | +0.33839305 |
| $P$ | 4.89 | $H$ | 16.3 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 01 | 691 | 0.3− | 0.3+ | 2005 11 26 | G96 | 0.0 | 0.2+ | 2006 01 23 | 701 | 0.4− | 0.7+ |
| 2003 05 01 | 691 | 0.4+ | 0.6+ | 2005 11 26 | G96 | 0.1− | 0.4+ | 2006 01 23 | G96 | 0.0 | 0.2+ |
| 2003 05 01 | 691 | 0.3+ | 0.6+ | 2005 11 26 | G96 | 0.2+ | 0.4+ | 2006 01 23 | G96 | 0.0 | 0.4+ |
| 2004 06 22 | 691 | 0.2− | 0.3+ | 2005 12 04 | G96 | 0.2− | 0.5+ | 2006 01 23 | G96 | 0.5− | 0.3+ |
| 2004 06 22 | 691 | 0.0 | 0.3+ | 2005 12 04 | G96 | 0.2− | 0.5+ | 2006 01 23 | 701 | 0.5+ | 0.4+ |
| 2004 06 22 | 691 | 0.1− | 0.3+ | 2005 12 04 | G96 | 0.4− | 0.2+ | 2006 01 23 | 701 | 0.1− | 0.3+ |
| 2005 11 21 | 703 | 0.6+ | 0.8+ | 2005 12 04 | G96 | 0.1+ | 0.2+ | 2006 03 03 | G96 | 0.7− | 0.3+ |
| 2005 11 21 | 703 | 0.4+ | 0.6+ | 2006 01 22 | 701 | 0.3+ | 0.8+ | 2006 03 03 | G96 | 1.0+ | 0.3+ |
| 2005 11 21 | 703 | 1.0− | 0.6+ | 2006 01 22 | 701 | 0.5− | 0.7− | 2006 03 03 | G96 | 0.1− | 0.4+ |
| 2005 11 21 | 703 | 0.2− | 0.3− | 2006 01 22 | 701 | 0.3+ | 0.1− | 2006 03 03 | G96 | 0.3− | 0.7+ |
| 2005 11 26 | G96 | 0.2− | 0.4+ | 2006 01 23 | G96 | 0.0 | 0.1+ | | | | |

**2005 WC$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 122.40778 | | | (2000.0) | | |
| $n$ | 0.28608913 | $\omega$ | 113.73776 | | +0.94858466 | −0.31559049 |
| $a$ | 2.2810518 | $\Omega$ | 264.66591 | | +0.28079986 | +0.87445362 |
| $e$ | 0.1835875 | $i$ | 1.39765 | | +0.14607733 | +0.36842029 |
| $P$ | 3.45 | $H$ | 17.1 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 26 | 691 | 0.1− | 0.1− | 2005 11 29 | 704 | 0.2− | 0.1− | 2005 12 06 | 704 | 1.6− | 1.3− |
| 1998 11 26 | 691 | 0.0 | 0.0 | 2005 11 29 | 704 | 0.2+ | 0.0 | 2005 12 06 | 704 | 0.6− | 0.3− |
| 1998 11 26 | 691 | 0.2+ | 0.1− | 2005 12 01 | 704 | 0.4+ | 0.2+ | 2005 12 06 | 704 | 0.3− | 0.8− |
| 2001 07 17 | 644 | 0.2+ | 0.4+ | 2005 12 01 | 704 | 0.3− | 1.0+ | 2005 12 25 | G96 | 0.0 | 0.2− |
| 2001 07 17 | 644 | 0.2− | 0.1− | 2005 12 01 | 704 | 0.2+ | 1.2+ | 2005 12 25 | G96 | 0.0 | 0.3− |
| 2001 07 17 | 644 | 0.1− | 0.1+ | 2005 12 01 | 704 | 0.4− | 0.8+ | 2005 12 25 | G96 | 0.0 | 0.1− |
| 2005 10 29 | G96 | 0.3+ | 0.1− | 2005 12 01 | 704 | 0.1+ | 0.3− | 2005 12 25 | G96 | 0.0 | 0.3− |
| 2005 10 29 | G96 | 0.1+ | 0.2− | 2005 12 02 | G96 | 0.1− | 0.1− | 2005 12 27 | G96 | 0.2+ | 0.3− |
| 2005 10 29 | G96 | 0.2+ | 0.1− | 2005 12 02 | G96 | 1.4+ | 1.4+ | 2005 12 27 | G96 | 0.4− | 0.0 |
| 2005 10 29 | G96 | 0.0 | 0.6− | 2005 12 02 | G96 | 0.3+ | 0.2− | 2005 12 27 | G96 | 0.2− | 0.0 |
| 2005 11 25 | 691 | 0.2− | 0.0 | 2005 12 02 | G96 | 0.1− | 0.3− | 2005 12 27 | G96 | 0.2− | 0.2− |
| 2005 11 25 | 691 | 0.0 | 0.1− | 2005 12 04 | 691 | 0.7+ | 0.3+ | 2006 01 05 | G96 | 0.4− | 0.1− |
| 2005 11 25 | 691 | 0.1+ | 0.1+ | 2005 12 04 | 691 | 0.5− | 0.5+ | 2006 01 05 | G96 | 0.1− | 0.3− |
| 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 04 | 691 | 0.0 | 0.1− | 2006 01 05 | G96 | 0.2− | 0.1− |
| 2005 11 26 | G96 | 0.1− | 0.1− | 2005 12 04 | 704 | 0.3− | 0.7− | 2006 01 05 | G96 | 0.1+ | 0.1− |
| 2005 11 26 | G96 | 0.2− | 0.1− | 2005 12 04 | 704 | 0.8+ | 0.7+ | 2006 02 20 | G96 | 0.1+ | 0.1− |
| 2005 11 26 | G96 | 0.1+ | 0.2− | 2005 12 04 | 704 | 0.3+ | 0.8+ | 2006 02 20 | G96 | 0.2+ | 0.3+ |
| 2005 11 29 | 704 | 0.0 | 0.5− | 2005 12 04 | 704 | 0.1+ | 0.0 | 2006 02 20 | G96 | 0.3+ | 0.2+ |
| 2005 11 29 | 704 | 0.0 | 0.2− | 2005 12 04 | 704 | 0.0 | 0.2+ | 2006 02 20 | G96 | 0.1− | 0.5− |

**2005 WV$_{47}$ = 2003 KM$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.13507 | | | (2000.0) | | |
| $n$ | 0.25412828 | $\omega$ | 94.57564 | | −0.87132671 | −0.48851282 |
| $a$ | 2.4685052 | $\Omega$ | 56.18825 | | +0.42521392 | −0.79877591 |
| $e$ | 0.1587383 | $i$ | 3.19541 | | +0.24491403 | −0.35115847 |
| $P$ | 3.88 | $H$ | 17.3 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 807 | 0.1− | 0.1− | 2005 11 25 | 691 | 0.2+ | 0.0 | 2005 12 04 | G96 | 0.4− | 0.2− |
| 2000 08 26 | 807 | 0.1+ | 0.0 | 2005 11 26 | G96 | 0.3+ | 0.4− | 2005 12 04 | G96 | 0.2+ | 0.2+ |
| 2003 05 30 | 807 | 0.1− | 0.0 | 2005 11 26 | G96 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.1− | 0.1− |
| 2003 05 30 | 807 | 0.1+ | 0.0 | 2005 11 26 | G96 | 0.2+ | 0.3− | 2005 12 31 | G96 | 0.2+ | 0.2− |
| 2003 06 04 | 691 | (0.2+ | 3.1+) | 2005 11 26 | G96 | 0.0 | 0.4− | 2005 12 31 | G96 | 0.1+ | 0.3− |
| 2003 06 04 | 691 | (0.2− | 3.0+) | 2005 11 29 | 691 | 0.1+ | 0.3+ | 2005 12 31 | G96 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 04 | 691 | (0.1− | 2.7+) | 2005 11 29 | 691 | 0.7− | 0.0 | 2005 12 31 | G96 | 0.2− | 0.1− | | |
| 2005 11 25 | 691 | 0.3+ | 0.0 | 2005 11 29 | 691 | 0.3− | 0.0 | | | | | | |
| 2005 11 25 | 691 | 0.1+ | 0.1+ | 2005 12 04 | G96 | 1.1+ | 0.7+ | | | | | | |

**2005 WW$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.48162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25800682 | $\omega$ | 147.85656 | | −0.99141837 | +0.12926738 | |
| $a$ | 2.4437039 | $\Omega$ | 39.58528 | | −0.12547816 | −0.89917678 | |
| $e$ | 0.1238805 | $i$ | 1.75201 | | −0.03667211 | −0.41805628 | |
| $P$ | 3.82 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 644 | 0.2+ | 0.8− | 2003 04 30 | 691 | 0.3+ | 0.6+ | 2005 11 26 | G96 | 0.7− | 0.1− |
| 2003 03 27 | 644 | 0.4− | 0.1+ | 2003 04 30 | 691 | 0.7+ | 0.7+ | 2005 11 26 | G96 | 0.5− | 0.5− |
| 2003 03 27 | 691 | 0.1− | 0.1+ | 2003 04 30 | 691 | 0.2+ | 0.3+ | 2005 11 26 | G96 | 0.2− | 0.3− |
| 2003 03 27 | 644 | 0.5+ | 0.3+ | 2005 11 12 | 691 | 0.5+ | 0.4− | 2005 11 26 | G96 | 0.4+ | 0.3+ |
| 2003 03 27 | 691 | 0.2− | 0.2− | 2005 11 12 | 691 | 0.0 | 0.3+ | 2005 12 04 | G96 | 0.3− | 0.2− |
| 2003 03 27 | 691 | 0.3− | 0.0 | 2005 11 12 | 691 | 0.3+ | 0.3+ | 2005 12 04 | G96 | 0.3− | 0.0 |
| 2003 04 07 | 291 | 0.0 | 0.5− | 2005 11 25 | 691 | 0.1+ | 0.2+ | 2005 12 04 | G96 | 0.2− | 0.3− |
| 2003 04 07 | 291 | 0.2− | 0.5− | 2005 11 25 | 691 | 0.2− | 0.3+ | 2005 12 04 | G96 | 0.8− | 0.3− |
| 2003 04 07 | 291 | 0.2− | 0.2− | 2005 11 25 | 691 | 0.2− | 0.1+ | | | | |

**2005 WT$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.39547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22007669 | $\omega$ | 31.23703 | | +0.35790105 | +0.90884667 | |
| $a$ | 2.7169815 | $\Omega$ | 260.48571 | | −0.89526201 | +0.26878475 | |
| $e$ | 0.1642884 | $i$ | 12.54708 | | −0.26535404 | +0.31898666 | |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 12 | 644 | 0.2+ | 0.1+ | 2004 08 20 | 703 | 0.5+ | 0.2+ | 2005 11 25 | 691 | 0.2+ | 0.2− |
| 2004 07 12 | 644 | 0.1+ | 0.2− | 2004 09 16 | 699 | 1.8+ | 0.4+ | 2005 11 25 | 691 | 0.0 | 0.0 |
| 2004 07 12 | 644 | 0.2+ | 0.1+ | 2004 09 16 | 699 | 0.3− | 0.3− | 2005 11 26 | G96 | 0.5+ | 0.2+ |
| 2004 08 20 | 703 | 0.5− | 0.4− | 2004 09 16 | 699 | 0.2+ | 0.4− | 2005 11 26 | G96 | 0.1+ | 0.4− |
| 2004 08 20 | 703 | 0.6− | 0.4− | 2004 09 16 | 699 | 0.9− | 0.2+ | 2005 11 26 | G96 | 0.1− | 0.1− |
| 2004 08 20 | 703 | 0.6− | 0.5+ | 2005 11 25 | 691 | 0.3− | 0.3+ | 2005 11 26 | G96 | 0.1− | 0.1− |

**2005 WW$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.82875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27605609 | $\omega$ | 12.06550 | | −0.15891228 | +0.98504740 | |
| $a$ | 2.3359910 | $\Omega$ | 248.81958 | | −0.91165401 | −0.17227807 | |
| $e$ | 0.1151645 | $i$ | 4.09258 | | −0.37899058 | +0.00137699 | |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.1− | 0.4+ | 2005 11 25 | G96 | 0.5− | 0.1+ | 2005 12 04 | G96 | 0.3− | 0.1+ |
| 2001 09 28 | 644 | 0.1+ | 0.1− | 2005 11 25 | G96 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.3+ | 0.0 |
| 2001 09 28 | 644 | 0.1+ | 0.4− | 2005 11 26 | G96 | 0.1+ | 0.3+ | 2005 12 25 | G96 | 0.2+ | 0.7− |
| 2003 01 11 | 291 | 0.1− | 0.1+ | 2005 11 26 | G96 | 0.0 | 0.2+ | 2005 12 25 | G96 | 0.0 | 0.1+ |
| 2003 01 11 | 291 | 0.0 | 0.0 | 2005 11 26 | G96 | 0.0 | 0.1+ | 2005 12 25 | G96 | 0.3+ | 0.9− |
| 2003 01 11 | 291 | 0.0 | 0.1− | 2005 11 26 | G96 | 0.4+ | 0.3+ | 2005 12 25 | G96 | 0.1− | 0.6− |
| 2005 10 27 | G96 | 0.0 | 0.0 | 2005 12 02 | G96 | 0.2− | 0.1− | 2006 01 05 | G96 | 0.2+ | 0.2+ |
| 2005 10 27 | G96 | 0.4− | 0.4− | 2005 12 02 | G96 | 0.2+ | 0.0 | 2006 01 05 | G96 | 0.0 | 0.1− |
| 2005 10 27 | G96 | 0.2− | 0.2+ | 2005 12 02 | G96 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.3− |
| 2005 10 27 | G96 | 1.0− | 0.2− | 2005 12 02 | G96 | 1.0+ | 1.9+ | 2006 01 05 | G96 | 0.6+ | 0.1+ |
| 2005 11 25 | G96 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.1− | 0.2− | | | | |
| 2005 11 25 | G96 | 0.2− | 0.1− | 2005 12 04 | G96 | 0.4+ | 0.2− | | | | |

**2005 WE$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.76425 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19752026 | $\omega$ | 336.62571 | | +0.87757699 | −0.47937196 | |
| $a$ | 2.9200813 | $\Omega$ | 52.02101 | | +0.44142449 | +0.80152738 | |
| $e$ | 0.1551121 | $i$ | 0.56843 | | +0.18709103 | +0.35743025 | |
| $P$ | 4.99 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.2− | 0.0 | 2005 10 26 | 691 | 0.1− | 0.3+ | 2005 11 26 | G96 | 0.0 | 0.2+ |
| 1995 11 16 | 691 | 0.2+ | 0.1− | 2005 10 26 | 691 | 0.5− | 0.1− | 2005 11 26 | G96 | 0.5− | 0.5− |
| 1995 11 16 | 691 | 0.1+ | 0.1− | 2005 11 11 | 691 | 0.2+ | 0.2+ | 2005 12 01 | 143 | 0.4+ | 0.7− |
| 2000 11 27 | 691 | 0.1− | 0.0 | 2005 11 11 | 691 | 0.2− | 0.4+ | 2005 12 01 | 143 | 0.9+ | 0.2+ |
| 2000 11 27 | 691 | 0.1+ | 0.1− | 2005 11 11 | 691 | 0.2+ | 0.4+ | 2005 12 01 | 143 | 0.7+ | 0.3+ |
| 2000 11 27 | 691 | 0.0 | 0.0 | 2005 11 20 | 143 | 0.7− | 0.2+ | 2006 01 21 | G96 | 0.4+ | 0.8− |
| 2002 02 13 | 291 | 0.1+ | 0.0 | 2005 11 20 | 143 | 0.2+ | 0.3+ | 2006 01 21 | G96 | 0.3+ | 1.4− |
| 2002 02 13 | 291 | 0.1+ | 0.3+ | 2005 11 20 | 143 | 0.1+ | 0.3− | 2006 01 21 | G96 | 0.1− | 0.1− |
| 2002 02 13 | 291 | 0.1− | 0.0 | 2005 11 26 | G96 | 0.2+ | 0.2− | 2006 01 21 | G96 | 0.3+ | 0.6− |
| 2005 10 26 | 691 | 0.2− | 0.1− | 2005 11 26 | G96 | 0.1− | 0.1− | | | | |

**2005 WJ$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.10383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18925686 | $\omega$ | 146.92638 | | −0.25896206 | −0.96574467 | |
| $a$ | 3.0044729 | $\Omega$ | 318.07542 | | +0.88070083 | −0.22902678 | |
| $e$ | 0.3762525 | $i$ | 1.42446 | | +0.39661657 | −0.12199983 | |
| $P$ | 5.21 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 691 | 0.6− | 0.5+ | 2005 12 27 | 691 | 0.3+ | 0.3+ | 2006 01 27 | 699 | 0.5+ | 0.1− |
| 1994 09 12 | 691 | 0.4+ | 0.1− | 2005 12 30 | 699 | 0.1+ | 0.3+ | 2006 01 27 | 704 | 0.1+ | 0.0 |
| 1994 09 12 | 691 | 0.1− | 0.3+ | 2005 12 30 | 699 | 0.4− | 0.2+ | 2006 01 27 | 704 | 1.1− | 0.9+ |
| 2001 02 03 | 691 | 0.2+ | 0.4+ | 2005 12 30 | 699 | 0.3− | 0.2+ | 2006 01 27 | 699 | 0.8+ | 0.2+ |
| 2001 02 03 | 691 | 0.1+ | 0.3+ | 2005 12 31 | 704 | 0.0 | 0.5+ | 2006 01 27 | 704 | 0.4+ | 0.3+ |
| 2001 02 03 | 691 | 0.3+ | 0.2+ | 2005 12 31 | 704 | 0.8+ | 0.3+ | 2006 01 27 | 704 | 0.8− | 1.2+ |
| 2001 03 26 | 691 | 0.0 | 0.0 | 2005 12 31 | 704 | 0.2− | 0.3+ | 2006 01 27 | 704 | 0.0 | 1.0+ |
| 2001 03 26 | 691 | 0.0 | 0.1− | 2005 12 31 | 704 | 0.1+ | 0.7+ | 2006 01 27 | 704 | 0.7− | 0.1− |
| 2001 03 26 | 691 | 0.0 | 0.1+ | 2006 01 04 | 691 | 0.2+ | 0.2+ | 2006 01 27 | 699 | 0.3+ | 0.7+ |
| 2001 04 13 | 691 | 0.3− | 0.2− | 2006 01 04 | 691 | 0.1+ | 0.2+ | 2006 01 27 | 704 | 0.1+ | 0.9+ |
| 2001 04 13 | 691 | 0.2− | 0.2− | 2006 01 04 | 691 | 0.2+ | 0.2+ | 2006 01 27 | 699 | 0.8+ | 0.0 |
| 2001 04 13 | 691 | 0.2+ | 0.1− | 2006 01 07 | G96 | 0.1+ | 0.3− | 2006 02 02 | 703 | 0.3− | 0.6− |
| 2005 10 30 | G96 | 0.3+ | 0.3− | 2006 01 07 | G96 | 0.0 | 0.3− | 2006 02 02 | 703 | 0.5− | 0.4− |
| 2005 10 30 | G96 | 0.0 | 0.0 | 2006 01 07 | G96 | 0.3− | 0.3− | 2006 02 02 | 703 | 0.6− | 0.4− |
| 2005 10 30 | G96 | 0.2+ | 0.1− | 2006 01 07 | G96 | 0.1+ | 0.2− | 2006 02 02 | 703 | 0.2− | 0.9− |
| 2005 10 30 | G96 | 0.0 | 0.3− | 2006 01 08 | 691 | 1.5− | 2.2− | 2006 02 03 | 699 | 1.0+ | 0.7+ |
| 2005 11 25 | 703 | 1.0− | 0.0 | 2006 01 08 | 691 | 0.2+ | 0.1+ | 2006 02 03 | 699 | 0.5+ | 0.2+ |
| 2005 11 25 | 703 | 0.1+ | 0.4− | 2006 01 08 | 691 | 0.4+ | 0.0 | 2006 02 03 | 699 | 0.5− | 0.1− |
| 2005 11 25 | 703 | 0.4− | 1.2− | 2006 01 10 | 703 | 0.4− | 0.6− | 2006 02 03 | 699 | 0.4+ | 0.3− |
| 2005 11 25 | 703 | 0.1+ | 1.5− | 2006 01 10 | 703 | 0.2− | 0.4− | 2006 02 04 | 704 | 0.0 | 0.7+ |
| 2005 11 28 | G96 | 0.2− | 0.3− | 2006 01 10 | 703 | 0.2+ | 0.4− | 2006 02 04 | 704 | 0.3− | 0.6+ |
| 2005 11 28 | G96 | 0.4− | 0.4− | 2006 01 10 | 703 | 1.1− | 1.1+ | 2006 02 04 | 704 | 0.4− | 0.5+ |
| 2005 11 28 | G96 | 0.6+ | 0.2− | 2006 01 18 | 703 | 0.6− | 0.8− | 2006 02 04 | 704 | 0.1− | 0.6+ |
| 2005 11 28 | G96 | 0.5− | 0.2− | 2006 01 18 | 703 | 0.5− | 0.7− | 2006 02 04 | 704 | 0.9− | 0.9+ |
| 2005 12 04 | 704 | 0.9− | 0.2+ | 2006 01 18 | 703 | 0.5− | 0.2− | 2006 02 06 | G96 | 0.1+ | 0.3− |
| 2005 12 04 | 704 | 0.9− | 0.8+ | 2006 01 20 | 699 | 0.5+ | 0.2+ | 2006 02 06 | G96 | 0.3+ | 0.3− |
| 2005 12 04 | 704 | 0.3− | 1.5+ | 2006 01 20 | 699 | 0.6− | 0.1+ | 2006 02 06 | G96 | 0.4+ | 0.2− |
| 2005 12 04 | 704 | 0.9+ | 0.9+ | 2006 01 20 | 699 | 0.6+ | 0.2+ | 2006 02 06 | G96 | 0.1+ | 0.3− |
| 2005 12 04 | 704 | 1.7+ | 0.6− | 2006 01 22 | G96 | 0.5+ | 0.1− | 2006 02 24 | 644 | 0.1+ | 0.3+ |
| 2005 12 04 | G96 | 0.1− | 0.2− | 2006 01 22 | G96 | 0.0 | 0.1− | 2006 02 24 | 644 | 0.3+ | 0.1+ |
| 2005 12 04 | G96 | 0.0 | 0.3− | 2006 01 22 | G96 | 0.1+ | 0.1− | 2006 02 24 | 644 | 0.0 | 0.2+ |
| 2005 12 04 | G96 | 0.2+ | 0.2− | 2006 01 22 | G96 | 0.1+ | 0.2− | 2006 02 24 | 644 | 0.2+ | 0.0 |
| 2005 12 04 | G96 | 0.3− | 0.3− | 2006 01 23 | 691 | 0.1+ | 0.0 | 2006 02 24 | 644 | 0.2− | 0.2+ |
| 2005 12 05 | G96 | 0.1+ | 0.2− | 2006 01 23 | 691 | 0.1+ | 0.0 | 2006 02 24 | 644 | 0.1− | 0.1+ |
| 2005 12 05 | G96 | 0.1− | 0.1− | 2006 01 23 | 691 | 0.1+ | 0.1− | 2006 03 23 | G96 | 0.2− | 0.1− |
| 2005 12 05 | G96 | 0.2− | 0.1− | 2006 01 23 | G96 | 0.1+ | 0.2− | 2006 03 23 | G96 | 0.0 | 0.1+ |
| 2005 12 05 | G96 | 0.1+ | 0.0 | 2006 01 23 | G96 | 0.0 | 0.2− | 2006 03 23 | G96 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 12 06 | 699 | 1.5− | 0.8+ | 2006 01 23 | G96 | 0.4+ | 0.2− | 2006 03 23 | G96 | 0.0 | 0.0 |
| 2005 12 06 | 699 | 0.4− | 0.4+ | 2006 01 23 | G96 | 0.4+ | 0.2− | 2006 03 25 | G96 | 0.3+ | 0.1+ |
| 2005 12 06 | 699 | 0.1+ | 0.2+ | 2006 01 24 | 704 | 0.6+ | 0.3+ | 2006 03 25 | G96 | 0.1+ | 0.2+ |
| 2005 12 06 | 699 | 0.2− | 0.9− | 2006 01 24 | 704 | 1.0+ | 0.2+ | 2006 03 25 | G96 | 0.1− | 0.2− |
| 2005 12 26 | G96 | 0.1+ | 0.1− | 2006 01 24 | 704 | 0.7+ | 0.1+ | 2006 03 25 | G96 | 0.3− | 0.2+ |
| 2005 12 26 | G96 | 0.1− | 0.3− | 2006 01 24 | 704 | 0.8+ | 0.3+ | 2006 05 24 | G96 | 0.4+ | 0.1+ |
| 2005 12 26 | G96 | 0.1− | 0.3− | 2006 01 24 | 704 | 0.5+ | 0.2+ | 2006 05 24 | G96 | 0.1− | 0.5− |
| 2005 12 26 | G96 | 0.2− | 0.3− | 2006 01 27 | 704 | 0.1+ | 1.0− | 2006 05 24 | G96 | 0.3− | 0.0 |
| 2005 12 27 | 691 | 0.1+ | 0.2+ | 2006 01 27 | 704 | 0.1− | 0.5+ | 2006 05 24 | G96 | 0.3− | 0.2− |
| 2005 12 27 | 691 | 0.3+ | 0.3+ | 2006 01 27 | 704 | 1.6− | 0.5+ | | | | |

**2005 WF$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.95835 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26746390 | $\omega$ | 227.48152 | | −0.12385793 | | −0.99226077 |
| $a$ | 2.3857555 | $\Omega$ | 229.63546 | | +0.91377715 | | −0.11058736 |
| $e$ | 0.1464217 | $i$ | 0.66317 | | +0.38687275 | | −0.05647118 |
| $P$ | 3.69 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.2− | 0.1+ | 2005 11 22 | 691 | 0.1+ | 0.1+ | 2005 11 28 | G96 | 0.1+ | 0.3− |
| 2001 09 12 | 695 | 0.1+ | 0.4+ | 2005 11 22 | 691 | 0.2− | 0.1+ | 2005 12 02 | G96 | 0.3+ | 0.1+ |
| 2004 07 16 | 807 | 0.0 | 0.1− | 2005 11 25 | G96 | 0.7+ | 0.1+ | 2005 12 02 | G96 | 0.1+ | 0.1+ |
| 2004 07 16 | 807 | 0.0 | 0.2− | 2005 11 25 | G96 | 0.1− | 0.1+ | 2005 12 02 | G96 | 0.1− | 0.1+ |
| 2005 10 25 | G96 | 0.1− | 0.3− | 2005 11 25 | G96 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.2− | 0.1+ |
| 2005 10 25 | G96 | 0.0 | 0.2− | 2005 11 25 | G96 | 0.2− | 0.0 | 2005 12 25 | G96 | 0.5− | 0.0 |
| 2005 10 25 | G96 | 0.1+ | 0.5− | 2005 11 28 | G96 | 0.2+ | 0.0 | 2005 12 25 | G96 | 0.0 | 0.6− |
| 2005 10 25 | G96 | 0.9− | 0.5− | 2005 11 28 | G96 | 0.2+ | 0.1− | 2005 12 25 | G96 | 0.8− | 0.1− |
| 2005 11 22 | 691 | 0.3+ | 0.1+ | 2005 11 28 | G96 | 0.2+ | 0.1− | 2005 12 25 | G96 | 0.1− | 0.0 |

**2005 WG$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.01466 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20143672 | $\omega$ | 188.96389 | | +0.51746186 | | −0.85451557 |
| $a$ | 2.8821082 | $\Omega$ | 229.88786 | | +0.78870688 | | +0.49673834 |
| $e$ | 0.2367224 | $i$ | 3.38270 | | +0.33192572 | | +0.15183601 |
| $P$ | 4.89 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.0 | 0.1+ | 2005 10 25 | G96 | 0.0 | 0.2− | 2005 11 29 | G96 | 0.0 | 0.3+ |
| 1995 11 18 | 691 | 0.0 | 0.1+ | 2005 10 25 | G96 | 0.2− | 0.3− | 2005 11 29 | G96 | 0.5+ | 0.0 |
| 1995 11 18 | 691 | 0.1− | 0.1− | 2005 11 22 | 691 | 0.0 | 0.1− | 2005 12 02 | 695 | 0.3− | 0.1+ |
| 2002 04 06 | 807 | 0.2+ | 0.2+ | 2005 11 22 | 691 | 0.0 | 0.3+ | 2005 12 02 | 695 | 0.2− | 0.2+ |
| 2002 04 06 | 807 | 0.1− | 0.1+ | 2005 11 22 | 691 | 0.1− | 0.0 | 2005 12 02 | 695 | 0.3− | 0.2+ |
| 2005 09 30 | G96 | 0.1+ | 0.1+ | 2005 11 28 | G96 | 0.3− | 0.1+ | 2005 12 29 | G96 | 0.1− | 0.1− |
| 2005 09 30 | G96 | 0.3− | 0.3+ | 2005 11 28 | G96 | 0.3+ | 0.2− | 2005 12 29 | G96 | 0.0 | 0.3− |
| 2005 09 30 | G96 | 0.3− | 0.2+ | 2005 11 28 | G96 | 0.1− | 0.1− | 2005 12 29 | G96 | 0.3+ | 0.3− |
| 2005 09 30 | G96 | 0.4+ | 0.3+ | 2005 11 28 | G96 | 0.3+ | 0.1− | 2005 12 29 | G96 | 0.1+ | 0.3− |
| 2005 10 25 | G96 | 0.5+ | 0.7− | 2005 11 29 | G96 | 0.3− | 0.2− | | | | |
| 2005 10 25 | G96 | 0.2+ | 0.3− | 2005 11 29 | G96 | 0.1− | 0.2+ | | | | |

**2005 WF$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.10093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18681366 | $\omega$ | 162.14038 | | +0.44785948 | | −0.88146320 |
| $a$ | 3.0306117 | $\Omega$ | 261.02839 | | +0.80071079 | | +0.46996672 |
| $e$ | 0.1191523 | $i$ | 8.72375 | | +0.39784937 | | +0.04641010 |
| $P$ | 5.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.2− | 0.4− | 2005 12 01 | 704 | 1.3− | 0.1− | 2005 12 25 | G96 | 0.3+ | 0.4− |
| 1996 01 15 | 691 | 0.0 | 0.1− | 2005 12 01 | 704 | 0.4− | 0.8+ | 2005 12 28 | 691 | 0.0 | 0.3+ |
| 1996 01 15 | 691 | 0.1− | 0.3− | 2005 12 01 | 704 | 1.5+ | 0.3+ | 2005 12 28 | 691 | 0.0 | 0.2+ |
| 2002 04 08 | 644 | 0.3+ | 0.8+ | 2005 12 02 | 691 | 0.2+ | 0.0 | 2005 12 28 | 691 | 0.2+ | 0.2+ |
| 2002 04 08 | 644 | 0.2+ | 1.1+ | 2005 12 02 | 691 | 0.0 | 0.1+ | 2006 01 05 | G96 | 0.0 | 0.3− |
| 2002 04 08 | 644 | 0.7+ | 1.4+ | 2005 12 02 | 691 | 0.0 | 0.3+ | 2006 01 05 | G96 | 0.6− | 0.6− |
| 2005 11 11 | 599 | 0.7+ | 0.2+ | 2005 12 02 | G96 | 0.1+ | 0.2− | 2006 01 05 | G96 | 0.0 | 0.2− |
| 2005 11 11 | 599 | 0.5+ | 0.2+ | 2005 12 02 | G96 | 0.4+ | 0.3− | 2006 01 05 | G96 | 0.0 | 0.0 |
| 2005 11 11 | 599 | 0.4+ | 0.1+ | 2005 12 02 | G96 | 0.3+ | 0.2− | 2006 01 06 | G96 | 0.0 | 0.0 |
| 2005 11 11 | 599 | 0.2+ | 0.2+ | 2005 12 02 | G96 | 0.2+ | 0.5− | 2006 01 06 | G96 | 0.3− | 0.3− |
| 2005 11 21 | 691 | 0.1− | 0.3− | 2005 12 04 | 704 | 0.8+ | 0.7+ | 2006 01 06 | G96 | 0.2+ | 0.4− |
| 2005 11 21 | 691 | 0.1− | 0.1− | 2005 12 04 | 704 | 0.1+ | 0.8+ | 2006 01 06 | G96 | 0.2− | 0.1− |
| 2005 11 21 | 691 | 0.1− | 0.1− | 2005 12 04 | 704 | 0.1− | 0.6+ | 2006 01 22 | G96 | 0.3− | 0.1+ |
| 2005 11 28 | 704 | 0.2− | 1.0− | 2005 12 06 | 691 | 0.2+ | 0.0 | 2006 01 22 | G96 | 0.0 | 0.0 |
| 2005 11 28 | 704 | 0.4+ | 0.8− | 2005 12 06 | 691 | 0.2+ | 0.1+ | 2006 01 22 | G96 | 0.3− | 0.0 |
| 2005 11 28 | 704 | 0.6− | 0.9− | 2005 12 06 | 691 | 0.1+ | 0.2+ | 2006 01 22 | G96 | 0.0 | 0.3− |
| 2005 11 28 | 704 | 0.5+ | 0.1+ | 2005 12 06 | 704 | 0.0 | 0.8− | 2006 01 22 | G96 | 0.0 | 0.7− |
| 2005 11 29 | 691 | 0.0 | 0.3− | 2005 12 06 | 704 | 0.8− | 0.7+ | 2006 01 22 | G96 | 0.4− | 0.7− |
| 2005 11 29 | 691 | 0.1+ | 0.2− | 2005 12 06 | 704 | 0.3+ | 0.2+ | 2006 01 22 | G96 | 0.1− | 0.4− |
| 2005 11 29 | 691 | 0.1+ | 0.0 | 2005 12 06 | 704 | 0.4− | 1.3+ | 2006 01 22 | G96 | 0.3− | 1.1− |
| 2005 11 30 | 704 | 0.8+ | 1.6+ | 2005 12 10 | 691 | 0.2+ | 0.0 | 2006 02 25 | G96 | 0.3− | 0.1+ |
| 2005 11 30 | 704 | 0.5− | 0.7+ | 2005 12 10 | 691 | 1.3− | 0.7+ | 2006 02 25 | G96 | 0.5− | 0.1+ |
| 2005 11 30 | 704 | 0.8+ | 0.3+ | 2005 12 10 | 691 | 0.3+ | 0.1+ | 2006 02 25 | G96 | 0.1− | 0.2+ |
| 2005 11 30 | 704 | 0.1+ | 0.4+ | 2005 12 25 | G96 | 0.2+ | 0.3− | 2006 02 25 | G96 | 0.5− | 0.2+ |
| 2005 12 01 | 704 | 0.1+ | 0.8+ | 2005 12 25 | G96 | 0.2+ | 0.4− | | | | |
| 2005 12 01 | 704 | 0.3− | 0.0 | 2005 12 25 | G96 | 0.3− | 0.4− | | | | |

**2005 WF$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.17531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27843617 | $\omega$ | 328.41362 | | +0.03981656 | | −0.97984352 |
| $a$ | 2.3226599 | $\Omega$ | 118.64022 | | +0.95693864 | | −0.01898574 |
| $e$ | 0.1056867 | $i$ | 12.88818 | | +0.28754667 | | +0.19886230 |
| $P$ | 3.54 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 704 | 0.8− | 1.0+ | 2003 03 08 | 644 | 0.3+ | 0.5+ | 2005 11 29 | 703 | 0.4− | 0.3− |
| 1998 12 22 | 704 | 2.0+ | 0.2− | 2003 03 08 | 644 | 0.3+ | 0.5+ | 2005 12 05 | 703 | (0.2− | 1.8−) |
| 1998 12 22 | 704 | 0.4− | 1.2− | 2003 03 08 | 644 | 0.1+ | 0.3+ | 2005 12 05 | 703 | 0.5+ | 0.4− |
| 1998 12 22 | 704 | 0.1− | 2.3− | 2003 03 22 | 644 | 0.0 | 0.4+ | 2005 12 05 | 703 | 0.1+ | 0.4+ |
| 2000 05 07 | 691 | 0.2− | 0.6− | 2003 03 22 | 644 | 0.4+ | 0.1+ | 2005 12 05 | 703 | 0.3+ | 0.3− |
| 2000 05 07 | 691 | 0.0 | 0.5− | 2003 03 22 | 644 | 0.4+ | 0.8+ | 2005 12 06 | 704 | 0.5+ | 0.2− |
| 2000 05 07 | 691 | 0.2− | 0.4− | 2005 11 12 | 703 | 0.7− | 0.1− | 2005 12 06 | 704 | 0.0 | 0.3+ |
| 2002 12 14 | 645 | 0.1+ | 0.1− | 2005 11 12 | 703 | 1.1− | 0.7− | 2005 12 06 | 704 | 0.6+ | 0.0 |
| 2002 12 14 | 645 | 0.0 | 0.1− | 2005 11 22 | 703 | 0.5+ | 0.3− | 2005 12 06 | 704 | 0.4− | 0.7+ |
| 2003 01 27 | 704 | 0.5+ | 0.3+ | 2005 11 22 | 703 | 0.3+ | 0.8− | 2006 01 23 | 703 | 0.1+ | 0.9− |
| 2003 01 27 | 704 | 0.2+ | 0.8+ | 2005 11 22 | 703 | 0.1+ | 0.4+ | 2006 01 23 | 703 | 1.1− | 0.2+ |
| 2003 01 27 | 704 | 1.0+ | 1.6+ | 2005 11 22 | 703 | 0.4+ | 0.2− | 2006 01 23 | 703 | 0.7− | 0.6− |
| 2003 01 27 | 704 | 0.1− | 0.1− | 2005 11 29 | 703 | 0.2− | 0.2− | 2006 01 23 | 703 | 1.0+ | 0.2− |
| 2003 01 28 | 645 | 0.2− | 0.0 | 2005 11 29 | 703 | 0.1+ | 0.7+ | | | | |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2005 11 29 | 703 | 0.4+ | 0.6+ | | | | |

**2005 WU$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.96562 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18984164 | $\omega$ | 123.85968 | | −0.96114468 | | −0.27034680 |
| $a$ | 2.9982999 | $\Omega$ | 40.53497 | | +0.21631394 | | −0.86319889 |
| $e$ | 0.1153298 | $i$ | 4.92525 | | +0.17149106 | | −0.42638044 |
| $P$ | 5.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 644 | 0.2− | 0.2+ | 2005 10 30 | G96 | 0.0 | 0.3− | 2005 11 29 | 691 | 0.3− | 0.3− |
| 2002 04 05 | 644 | 0.5− | 0.4+ | 2005 10 30 | G96 | 0.0 | 0.0 | 2005 11 29 | 691 | 0.1+ | 0.0 |
| 2002 04 05 | 644 | 0.3− | 0.2+ | 2005 10 30 | G96 | 0.2+ | 0.2− | 2005 11 29 | 691 | 0.2+ | 0.4− |
| 2002 04 10 | 704 | 0.6− | 0.3+ | 2005 10 30 | G96 | 0.2+ | 0.5− | 2005 12 02 | 691 | 2.1− | 0.5+ |
| 2002 04 10 | 704 | 1.1+ | 0.4+ | 2005 11 12 | 691 | 0.1− | 0.3+ | 2005 12 02 | 691 | 0.7− | 0.2+ |
| 2002 04 10 | 704 | 0.9+ | 0.8− | 2005 11 12 | 691 | 0.0 | 0.1− | 2005 12 02 | 691 | 0.5+ | 0.5+ |
| 2002 04 10 | 704 | 0.2− | 0.3+ | 2005 11 12 | 691 | 0.3+ | 0.0 | 2005 12 10 | 691 | 0.2+ | 0.1− |
| 2002 04 14 | 644 | 0.2− | 0.5− | 2005 11 25 | 691 | 0.5+ | 0.0 | 2005 12 10 | 691 | 0.5+ | 0.1− |
| 2002 04 14 | 644 | 0.1− | 0.3− | 2005 11 25 | 691 | 0.2+ | 0.1− | 2005 12 10 | 691 | 0.5+ | 0.1− |
| 2002 04 14 | 644 | 0.0 | 0.4− | 2005 11 25 | 691 | 0.0 | 0.1− | | | | |

**2005 WF$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.54389 | | | (2000.0) | | |
| $n$ | 0.27428071 | $\omega$ | 76.17247 | | −0.82365422 | −0.56466057 |
| $a$ | 2.3460605 | $\Omega$ | 69.42440 | | +0.49625281 | −0.76244681 |
| $e$ | 0.1433454 | $i$ | 3.21229 | | +0.27445742 | −0.31596410 |
| $P$ | 3.59 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 645 | 0.0 | 0.2− | 2003 03 25 | 644 | 0.2+ | 0.4+ | 2005 11 25 | 691 | 0.2− | 0.4+ |
| 2002 12 11 | 645 | 0.1− | 0.0 | 2003 03 28 | 691 | 0.1− | 0.1+ | 2005 11 25 | 691 | 0.0 | 0.2+ |
| 2003 02 22 | 644 | 0.3+ | 0.6+ | 2003 03 28 | 691 | 0.1+ | 0.3− | 2005 11 29 | G96 | 0.1− | 0.2+ |
| 2003 02 22 | 644 | 0.5+ | 0.7+ | 2003 03 28 | 691 | 0.0 | 0.4+ | 2005 11 29 | G96 | 0.1− | 0.2+ |
| 2003 02 22 | 644 | 0.1− | 0.4+ | 2003 03 30 | 645 | 0.1− | 0.1− | 2005 11 29 | G96 | 0.3+ | 0.2+ |
| 2003 03 06 | 699 | 1.0+ | 0.6+ | 2003 03 30 | 645 | 0.1− | 0.1− | 2005 11 29 | G96 | 0.1+ | 0.1+ |
| 2003 03 06 | 699 | 0.5+ | 1.3+ | 2005 10 28 | G96 | 0.1− | 0.1− | 2006 01 05 | G96 | 0.1+ | 0.3− |
| 2003 03 06 | 699 | 0.1− | 0.7− | 2005 10 28 | G96 | 0.4− | 0.1− | 2006 01 05 | G96 | 0.4+ | 0.7− |
| 2003 03 06 | 699 | 1.6+ | 1.1+ | 2005 10 28 | G96 | 0.5− | 0.0 | 2006 01 05 | G96 | 0.1+ | 0.2− |
| 2003 03 25 | 644 | 0.3+ | 0.6+ | 2005 10 28 | G96 | 0.1− | 0.2− | 2006 01 05 | G96 | 0.5+ | 0.8− |
| 2003 03 25 | 644 | 0.0 | 0.4+ | 2005 11 25 | 691 | 0.1+ | 0.0 | | | | |

**2005 WY$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.83192 | | | (2000.0) | | |
| $n$ | 0.21337616 | $\omega$ | 292.34110 | | +0.99243948 | +0.02205387 |
| $a$ | 2.7735678 | $\Omega$ | 66.56900 | | +0.03389652 | +0.89621367 |
| $e$ | 0.0861614 | $i$ | 7.56137 | | −0.11796143 | +0.44307414 |
| $P$ | 4.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 14 | 691 | 0.4+ | 0.1+ | 2005 11 04 | 691 | 0.1+ | 0.3+ | 2005 11 29 | G96 | 0.3+ | 0.1− |
| 1994 05 14 | 691 | 0.1− | 0.0 | 2005 11 04 | 691 | 0.3− | 0.2+ | 2005 12 04 | G96 | 0.1− | 0.1− |
| 1994 05 14 | 691 | 0.2− | 0.1+ | 2005 11 04 | 691 | 0.0 | 0.0 | 2005 12 04 | G96 | 0.0 | 0.0 |
| 2003 04 08 | 691 | 0.0 | 0.2+ | 2005 11 25 | G96 | 0.3− | 0.0 | 2005 12 04 | G96 | 0.1+ | 0.1− |
| 2003 04 08 | 691 | 0.2− | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.0 | 2005 12 04 | G96 | 0.1+ | 0.4− |
| 2003 04 08 | 691 | 0.1+ | 0.2− | 2005 11 25 | G96 | 0.2− | 0.1+ | 2006 01 23 | G96 | 0.1− | 0.2− |
| 2005 10 28 | G96 | 0.2− | 0.2− | 2005 11 25 | G96 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.2+ | 0.1+ |
| 2005 10 28 | G96 | 0.1+ | 0.2− | 2005 11 29 | G96 | 0.1+ | 0.0 | 2006 01 23 | G96 | 0.1+ | 0.2− |
| 2005 10 28 | G96 | 0.1− | 0.2− | 2005 11 29 | G96 | 0.1− | 0.1− | 2006 01 23 | G96 | 0.1− | 0.7+ |
| 2005 10 28 | G96 | 0.2+ | 0.3− | 2005 11 29 | G96 | 0.4+ | 0.1− | | | | |

**2005 WB$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.44686 | | | (2000.0) | | |
| $n$ | 0.22500178 | $\omega$ | 206.55843 | | −0.53807012 | −0.82443444 |
| $a$ | 2.6771872 | $\Omega$ | 276.46979 | | +0.80135216 | −0.43579056 |
| $e$ | 0.0187388 | $i$ | 10.17125 | | +0.26137187 | −0.36110171 |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.4+ | 0.4+ | 2005 10 30 | G96 | 0.3− | 0.0 | 2005 12 05 | 691 | 0.0 | 0.0 |
| 2002 02 07 | 644 | 0.4+ | 0.5+ | 2005 11 28 | G96 | 0.0 | 0.4− | 2005 12 05 | 691 | 0.2− | 0.2+ |
| 2002 02 07 | 644 | 0.0 | 0.8+ | 2005 11 28 | G96 | 0.1+ | 0.3− | 2005 12 05 | 691 | 1.0+ | 1.2+ |
| 2004 10 15 | 291 | 0.1+ | 0.2+ | 2005 11 28 | G96 | 0.1+ | 0.3− | 2005 12 25 | 691 | 0.1+ | 0.3− |
| 2004 10 15 | 291 | 0.1− | 0.0 | 2005 11 28 | G96 | 0.4− | 0.3− | 2005 12 25 | 691 | 0.2− | 0.1− |
| 2004 10 15 | 291 | 0.1− | 0.1+ | 2005 11 29 | G96 | 0.1− | 0.4− | 2005 12 25 | 691 | 0.1− | 0.0 |
| 2005 10 30 | G96 | 0.6− | 0.3− | 2005 11 29 | G96 | 0.2− | 0.1− | 2006 01 10 | 691 | 0.2+ | 0.2− |
| 2005 10 30 | G96 | 0.6− | 0.1− | 2005 11 29 | G96 | 0.1− | 0.1− | 2006 01 10 | 691 | 0.1− | 0.3− |
| 2005 10 30 | G96 | 0.2− | 0.0 | 2005 11 29 | G96 | 0.2− | 0.2− | 2006 01 10 | 691 | 0.2− | 0.2− |

**2005 WQ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 70.72420 | | | (2000.0) | | |
| $n$ | 0.18351702 | $\omega$ | 191.30810 | | +0.40258120 | −0.91538276 |
| $a$ | 3.0667978 | $\Omega$ | 234.95228 | | +0.84000760 | +0.37015491 |
| $e$ | 0.2246491 | $i$ | 0.11682 | | +0.36375212 | +0.15830272 |
| $P$ | 5.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 13 | 691 | 0.3− | 0.0 | 2005 10 28 | G96 | 0.3− | 0.2− | 2005 12 05 | 691 | 0.0 | 0.0 |
| 2001 02 13 | 691 | 0.1+ | 0.3+ | 2005 11 28 | G96 | 0.1− | 0.2− | 2005 12 05 | 691 | 0.0 | 0.2+ |
| 2001 02 13 | 691 | 0.3+ | 0.3+ | 2005 11 28 | G96 | 0.7− | 0.4+ | 2005 12 05 | 691 | 0.1− | 0.2+ |
| 2004 08 22 | 691 | 0.0 | 0.3+ | 2005 11 28 | G96 | 0.2+ | 0.1− | 2006 01 06 | 691 | 0.1− | 0.1+ |
| 2004 08 22 | 691 | 0.1− | 0.3+ | 2005 11 28 | G96 | 0.0 | 0.3− | 2006 01 06 | 691 | 0.4+ | 0.1+ |
| 2004 08 22 | 691 | 0.1− | 0.0 | 2005 11 29 | G96 | 0.1+ | 0.2− | 2006 01 06 | 691 | 0.2+ | 0.0 |
| 2005 10 28 | G96 | 0.3+ | 0.2− | 2005 11 29 | G96 | 0.2− | 0.5− | 2006 01 10 | 691 | 0.4− | 0.1− |
| 2005 10 28 | G96 | 0.2− | 0.1− | 2005 11 29 | G96 | 0.6− | 0.2− | 2006 01 10 | 691 | 0.4+ | 0.2− |
| 2005 10 28 | G96 | 0.5+ | 0.2− | 2005 11 29 | G96 | 0.1+ | 0.1− | 2006 01 10 | 691 | 0.1− | 0.0 |

**2005 WC$_{90}$ = 2001 YR$_{68}$**

Id. Minor Planet Center; 2000 TO$_{31}$ = 2001 YR$_{68}$ (*MPO* 25271) is invalid

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 90.40579 | | | (2000.0) | | |
| $n$ | 0.23171916 | $\omega$ | 342.39121 | | +0.79852938 | −0.59981997 |
| $a$ | 2.6251941 | $\Omega$ | 54.57347 | | +0.55949577 | +0.70852027 |
| $e$ | 0.1413647 | $i$ | 3.56466 | | +0.22207051 | +0.37177282 |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.6+ | 0.4− | 2005 10 01 | G96 | 1.0− | 1.4+ | 2005 12 04 | 704 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.0 | 0.6− | 2005 10 01 | G96 | 0.7− | 0.4+ | 2005 12 04 | 704 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.0 | 0.3− | 2005 11 03 | 691 | 0.2− | 0.3+ | 2005 12 04 | 704 | 0.5+ | 0.1+ |
| 2001 12 18 | 704 | 0.3+ | 1.3+ | 2005 11 03 | 691 | 0.1− | 0.2+ | 2005 12 04 | 704 | 0.3− | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 0.1− | 2005 11 03 | 691 | 0.2− | 0.4+ | 2005 12 05 | 699 | 0.6+ | 0.1− |
| 2001 12 19 | 704 | 0.7− | 0.2− | 2005 11 21 | 703 | 0.1+ | 1.5+ | 2005 12 05 | 699 | 1.0− | 0.5− |
| 2001 12 19 | 704 | 0.5+ | 1.2− | 2005 11 21 | 703 | 0.8+ | 0.2+ | 2005 12 05 | 699 | 0.1+ | 0.8+ |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2005 11 21 | 703 | 1.0− | 1.1+ | 2005 12 05 | 699 | 0.1− | 0.7+ |
| 2001 12 19 | 704 | 0.1+ | 0.2− | 2005 11 21 | 703 | (1.9− | 3.3+) | 2005 12 10 | 699 | 1.3+ | 0.4− |
| 2001 12 19 | 704 | 0.1+ | 0.5− | 2005 11 26 | G96 | 0.0 | 0.1+ | 2005 12 10 | 699 | 1.2+ | 0.6− |
| 2002 01 08 | 644 | 0.5− | 0.4− | 2005 11 26 | G96 | 0.1+ | 0.0 | 2005 12 10 | 699 | 0.7− | 0.0 |
| 2002 01 08 | 644 | 0.8− | 0.7− | 2005 11 26 | G96 | 0.4− | 0.0 | 2005 12 10 | 699 | 0.1+ | 0.7− |
| 2002 01 08 | 704 | 0.4+ | 1.5− | 2005 11 26 | G96 | 0.1+ | 0.1+ | 2005 12 10 | 704 | 0.8+ | 0.0 |
| 2002 01 08 | 704 | 0.1− | 1.2− | 2005 11 29 | 704 | 0.6+ | 0.1− | 2005 12 10 | 704 | 0.5− | 0.1+ |
| 2002 01 08 | 704 | 0.7− | 0.2+ | 2005 11 29 | 704 | 0.1+ | 0.6+ | 2005 12 10 | 704 | 0.4+ | 0.6− |
| 2002 01 08 | 704 | 0.1− | 0.3− | 2005 11 29 | 704 | 0.2− | 0.5+ | 2005 12 10 | 704 | 0.8− | 1.0+ |
| 2002 01 08 | 644 | 0.1− | 0.4− | 2005 11 29 | 704 | 0.2+ | 0.2+ | 2005 12 28 | G96 | 0.1− | 0.1− |
| 2002 01 08 | 704 | 0.0 | 1.4− | 2005 11 29 | 704 | 0.3+ | 0.2− | 2005 12 28 | G96 | 0.4− | 0.1− |
| 2003 05 06 | 691 | 0.3+ | 1.0+ | 2005 12 01 | 704 | (0.4− | 1.7+) | 2005 12 28 | G96 | 0.1+ | 0.0 |
| 2003 05 06 | 691 | 0.3+ | 1.0+ | 2005 12 01 | 704 | 0.5− | 1.2+ | 2006 01 25 | G96 | 0.2− | 0.2− |
| 2003 05 06 | 691 | 0.7+ | 0.6+ | 2005 12 01 | 704 | 0.2− | 0.9+ | 2006 01 25 | G96 | 0.2+ | 0.4− |
| 2005 10 01 | G96 | 0.6− | 0.5+ | 2005 12 01 | 704 | 0.1+ | 1.3+ | 2006 01 25 | G96 | 0.1+ | 0.4− |
| 2005 10 01 | G96 | 0.7− | 0.3+ | 2005 12 01 | 704 | 0.3+ | 1.1+ | 2006 01 25 | G96 | 0.5+ | 0.3− |

**2005 WF$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 59.88339 | | | (2000.0) | | |
| $n$ | 0.17871787 | $\omega$ | 352.83361 | | +0.10015916 | −0.96440851 |
| $a$ | 3.1214572 | $\Omega$ | 91.19954 | | +0.92458455 | −0.00064724 |
| $e$ | 0.2586874 | $i$ | 14.16803 | | +0.36757523 | +0.26441599 |
| $P$ | 5.51 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 0.4+ | 0.1− | 2005 11 29 | 704 | 0.2+ | 0.4+ | 2005 12 29 | 704 | 0.1− | 0.1− |
| 2001 03 20 | 699 | 1.1− | 0.7+ | 2005 11 29 | 704 | 0.1+ | 0.2+ | 2005 12 29 | 704 | 0.5+ | 0.3− |
| 2001 03 20 | 699 | 1.6+ | 1.6+ | 2005 12 04 | 704 | 0.1− | 0.0 | 2006 01 06 | 704 | 0.3− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 0.1− | 0.4− | 2005 12 04 | 704 | 0.2+ | 0.7+ | 2006 01 06 | 704 | 0.1+ | 0.8− |
| 2004 08 21 | E12 | 1.0− | 0.6+ | 2005 12 04 | 704 | 0.6+ | 0.1− | 2006 01 06 | 704 | 0.2− | 0.6− |
| 2004 08 21 | E12 | 0.1+ | 0.3+ | 2005 12 06 | 699 | 0.2− | 1.3+ | 2006 01 06 | 704 | 0.1+ | 0.9− |
| 2004 08 21 | E12 | 0.2+ | 0.1− | 2005 12 06 | 699 | 0.6+ | 0.6+ | 2006 01 06 | 704 | 1.3− | 0.3− |
| 2004 08 21 | E12 | 0.1+ | 0.7+ | 2005 12 06 | 699 | 1.2+ | 1.2+ | 2006 01 07 | 691 | 0.0 | 0.1+ |
| 2005 10 29 | G96 | 0.5− | 0.2− | 2005 12 06 | 699 | 0.7+ | 0.9+ | 2006 01 07 | 691 | 0.0 | 0.2+ |
| 2005 10 29 | G96 | 0.1+ | 0.2− | 2005 12 10 | 704 | 0.4− | 0.3+ | 2006 01 07 | 691 | 0.0 | 0.2+ |
| 2005 10 29 | G96 | 0.4− | 0.7− | 2005 12 10 | 704 | 0.7− | 0.8+ | 2006 01 18 | 644 | 0.1+ | 0.1− |
| 2005 10 29 | G96 | 0.1+ | 0.2− | 2005 12 10 | 704 | 0.9− | 0.2+ | 2006 01 18 | 644 | 0.1− | 0.1− |
| 2005 11 26 | G96 | 0.3+ | 0.3− | 2005 12 10 | 704 | 1.2− | 0.4+ | 2006 01 18 | 644 | 0.0 | 0.2− |
| 2005 11 26 | G96 | 0.1− | 0.3− | 2005 12 10 | 704 | 0.0 | 0.3+ | 2006 01 24 | 703 | 0.7+ | 0.7− |
| 2005 11 26 | G96 | 0.5+ | 0.2− | 2005 12 10 | 704 | 0.7− | 0.3+ | 2006 01 24 | 703 | 0.2+ | 0.9− |
| 2005 11 26 | G96 | 0.1+ | 0.3− | 2005 12 10 | 704 | 0.0 | 0.3− | 2006 01 24 | 703 | 0.2+ | 1.1− |
| 2005 11 29 | 704 | 0.0 | 0.1− | 2005 12 21 | 703 | 0.8+ | 1.5− | 2006 01 24 | 703 | 0.1+ | 0.6− |
| 2005 11 29 | 704 | 0.4+ | 0.5+ | 2005 12 21 | 703 | 0.6− | 0.3− | 2006 02 06 | 704 | 0.4+ | 1.0− |
| 2005 11 29 | 704 | 0.4− | 0.5− | 2005 12 21 | 703 | 0.1+ | 0.5− | 2006 02 06 | 704 | 0.2+ | 1.6+ |
| 2005 11 29 | 704 | 0.3− | 0.7+ | 2005 12 21 | 703 | 0.2+ | 0.7− | 2006 02 06 | 704 | 1.2− | 0.9+ |
| 2005 11 29 | 704 | 0.2+ | 0.1− | 2005 12 29 | 704 | 0.8+ | 0.3− | 2006 02 06 | 704 | 0.8− | 1.0+ |
| 2005 11 29 | 704 | 0.5+ | 1.1+ | 2005 12 29 | 704 | 0.0 | 0.1− | | | | |

**2005 WA**$_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.25399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26656408 | $\omega$ | 255.86210 | | −0.99510492 | +0.09478755 | |
| $a$ | 2.3911214 | $\Omega$ | 289.57116 | | −0.07529723 | −0.91044421 | |
| $e$ | 0.1203943 | $i$ | 1.70020 | | −0.06400410 | −0.40262470 | |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.1− | 1.0+ | 2003 05 11 | 691 | 0.2+ | 0.1+ | 2005 11 30 | 691 | 0.4+ | 0.1− |
| 2001 11 20 | 704 | 0.3− | 0.6+ | 2003 05 11 | 691 | 0.0 | 0.2+ | 2005 11 30 | 691 | 0.3+ | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.9+ | 2003 05 11 | 691 | 0.1+ | 0.1+ | 2005 11 30 | 691 | 0.1+ | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.8+ | 2003 05 25 | 691 | 0.3+ | 0.6+ | 2006 01 05 | 691 | 0.1− | 0.2+ |
| 2001 11 20 | 704 | 0.6+ | 0.8+ | 2003 05 25 | 691 | 0.1+ | 0.6+ | 2006 01 05 | 691 | 0.4− | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 1.3+ | 2003 05 25 | 691 | 0.1+ | 0.7+ | 2006 01 05 | 691 | 0.3− | 0.0 |
| 2001 11 21 | 704 | 0.1− | 1.9+ | 2004 09 07 | 691 | 0.2+ | 0.5− | 2006 01 25 | 691 | 0.3− | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 1.5+ | 2004 09 07 | 691 | 0.2+ | 0.3+ | 2006 01 25 | 691 | 0.2− | 0.1+ |
| 2003 03 25 | 699 | 0.3+ | 0.8+ | 2004 09 07 | 691 | 0.6− | 0.4+ | 2006 01 25 | 691 | 0.1− | 0.1+ |
| 2003 03 25 | 699 | 1.3+ | 0.3− | 2004 10 08 | 691 | 0.0 | 0.5+ | 2006 01 25 | G96 | 0.0 | 0.4− |
| 2003 03 25 | 699 | 0.5− | 0.0 | 2004 10 08 | 691 | 0.0 | 0.2+ | 2006 01 25 | G96 | 0.1− | 0.5− |
| 2003 03 25 | 699 | 0.8− | 2.6+ | 2004 10 08 | 691 | 0.3− | 0.2+ | 2006 01 25 | G96 | 0.0 | 0.4− |
| 2003 04 26 | 608 | 0.3+ | 0.5− | 2005 11 26 | 691 | 0.1+ | 0.1+ | 2006 01 25 | G96 | 0.0 | 0.3− |
| 2003 04 26 | 608 | 0.2+ | 0.8− | 2005 11 26 | 691 | 0.3+ | 0.2− | | | | |
| 2003 04 26 | 608 | 0.0 | 0.2− | 2005 11 26 | 691 | 0.1+ | 0.1− | | | | |

**2005 WH**$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.68082 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21566005 | $\omega$ | 220.13521 | | +0.51044054 | +0.84118923 | |
| $a$ | 2.7539513 | $\Omega$ | 81.25829 | | −0.73539631 | +0.53459260 | |
| $e$ | 0.0845354 | $i$ | 10.40275 | | −0.44569353 | +0.08131071 | |
| $P$ | 4.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 691 | 0.2+ | 0.0 | 2005 11 28 | G96 | 0.0 | 0.4− | 2005 12 22 | 703 | 0.7+ | 0.7+ |
| 2003 03 24 | 691 | 0.3− | 0.0 | 2005 11 28 | G96 | 0.3− | 0.3− | 2005 12 22 | 703 | 0.4+ | 1.2+ |
| 2003 03 24 | 691 | 0.3+ | 0.1+ | 2005 11 30 | 691 | 0.2− | 0.0 | 2005 12 22 | 703 | 0.5− | 1.2− |
| 2004 08 21 | E12 | 0.0 | 0.1− | 2005 11 30 | 691 | 0.4+ | 1.1+ | 2005 12 26 | G96 | 0.2+ | 0.5− |
| 2004 08 21 | E12 | 0.4− | 0.0 | 2005 11 30 | 691 | 0.0 | 0.2− | 2005 12 26 | G96 | 0.0 | 0.3− |
| 2004 08 21 | E12 | 0.0 | 0.2− | 2005 12 04 | 691 | 0.1− | 0.4+ | 2005 12 26 | G96 | 0.1− | 0.7− |
| 2004 08 21 | E12 | 0.2+ | 0.6+ | 2005 12 04 | 691 | 0.0 | 0.0 | 2005 12 26 | G96 | 0.1+ | 0.7− |
| 2005 11 01 | G96 | 0.6+ | 0.3− | 2005 12 04 | 691 | 0.3− | 0.1− | 2006 01 23 | G96 | 0.4− | 0.6− |
| 2005 11 01 | G96 | 0.2+ | 0.3− | 2005 12 04 | G96 | 0.1− | 0.4− | 2006 01 23 | G96 | 0.5− | 0.0 |
| 2005 11 01 | G96 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.1+ | 0.1− | 2006 01 23 | G96 | 0.4+ | 0.2− |
| 2005 11 01 | G96 | 0.1+ | 0.2+ | 2005 12 04 | G96 | 0.1− | 0.1− | 2006 01 23 | G96 | 0.3− | 0.3− |
| 2005 11 28 | G96 | 0.5− | 0.1− | 2005 12 04 | G96 | 0.2+ | 0.2− | | | | |
| 2005 11 28 | G96 | 0.0 | 0.4− | 2005 12 22 | 703 | 0.5+ | 0.4+ | | | | |

**2005 WR**$_{99}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.58792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19120991 | $\omega$ | 256.65239 | | +0.86778198 | +0.44932878 | |
| $a$ | 2.9839791 | $\Omega$ | 76.29891 | | −0.32755323 | +0.83840387 | |
| $e$ | 0.0709050 | $i$ | 12.62012 | | −0.37371555 | +0.30851678 | |
| $P$ | 5.15 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 17 | 691 | 0.3+ | 0.8− | 2005 11 30 | 691 | 0.1+ | 0.1+ | 2005 12 01 | 704 | 0.6− | 0.3+ |
| 2000 12 17 | 691 | 0.1+ | 0.7− | 2005 11 30 | 691 | 0.3+ | 0.4+ | 2005 12 01 | 704 | 0.1− | 0.1− |
| 2000 12 17 | 691 | 0.2+ | 0.7− | 2005 11 30 | 691 | 0.1− | 0.1+ | 2005 12 01 | 704 | 1.0+ | 1.4+ |
| 2003 05 23 | 691 | 0.5+ | 0.0 | 2005 11 30 | 704 | 0.7− | 0.6− | 2005 12 01 | 704 | 1.0+ | 0.8− |
| 2003 05 23 | 691 | 0.2+ | 0.6+ | 2005 11 30 | 704 | 1.0+ | 0.4+ | 2005 12 02 | 703 | 0.1− | 1.0+ |
| 2003 05 23 | 691 | 0.2− | 0.7+ | 2005 11 30 | 704 | 0.6+ | 0.4− | 2005 12 02 | 703 | 0.8− | 0.0 |
| 2005 10 29 | G96 | 0.2− | 0.5− | 2005 11 30 | 704 | 0.1+ | 0.1+ | 2005 12 02 | 703 | 0.2− | 0.1+ |
| 2005 10 29 | G96 | 0.1− | 0.5− | 2005 12 01 | 704 | 0.3+ | 0.3+ | 2005 12 02 | 703 | 0.5− | 0.3+ |
| 2005 11 28 | G96 | 0.5+ | 0.1− | 2005 12 01 | 704 | 0.1− | 0.3− | 2005 12 25 | G96 | 0.6− | 0.3+ |
| 2005 11 28 | G96 | 0.1− | 0.4+ | 2005 12 01 | 704 | 0.5− | 0.1+ | 2005 12 25 | G96 | 0.6− | 0.2+ |
| 2005 11 28 | G96 | 0.2+ | 0.2+ | 2005 12 01 | 704 | 0.6+ | 0.1− | 2005 12 25 | G96 | 0.3− | 0.3+ |
| 2005 11 28 | G96 | 0.3− | 0.3+ | 2005 12 01 | 704 | 0.8− | 0.2+ | 2005 12 25 | G96 | 0.5− | 0.2+ |

**2005 WT**$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.93247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19062197 | $\omega$ | 332.90461 | | +0.51654941 | −0.85453351 | |
| $a$ | 2.9901117 | $\Omega$ | 85.94921 | | +0.79513499 | +0.45517827 | |
| $e$ | 0.1830872 | $i$ | 3.12086 | | +0.31770591 | +0.25017039 | |
| $P$ | 5.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 04 | 691 | 0.1+ | 0.1+ | 2005 12 02 | 703 | 0.2− | 0.9− | 2005 12 25 | G96 | 0.0 | 0.3− |
| 2000 12 04 | 691 | 0.0 | 0.1− | 2005 12 02 | 703 | 0.9− | 0.4− | 2005 12 25 | G96 | 0.4− | 0.4− |
| 2000 12 04 | 691 | 0.1− | 0.1− | 2005 12 02 | 703 | 0.3− | 0.5− | 2005 12 25 | G96 | 0.1+ | 0.3− |
| 2003 06 01 | 807 | 0.1− | 0.1− | 2005 12 04 | 691 | 0.2− | 0.4+ | 2006 01 05 | G96 | 0.1+ | 0.0 |
| 2003 06 01 | 807 | 0.1+ | 0.1− | 2005 12 04 | 691 | 0.0 | 0.2+ | 2006 01 05 | G96 | 0.3+ | 0.0 |
| 2005 11 28 | G96 | 0.2− | 0.2− | 2005 12 04 | 691 | 0.0 | 0.1+ | 2006 01 05 | G96 | 0.1− | 0.1− |
| 2005 11 28 | G96 | 0.1+ | 0.3− | 2005 12 04 | G96 | 0.2+ | 0.2− | 2006 01 05 | G96 | 0.1− | 0.1+ |
| 2005 11 28 | G96 | 0.4+ | 0.4− | 2005 12 04 | G96 | 0.1− | 0.1− | 2006 01 21 | G96 | 0.0 | 0.3− |
| 2005 11 28 | G96 | 0.9− | 0.5− | 2005 12 04 | G96 | 0.3+ | 0.1− | 2006 01 21 | G96 | 0.5+ | 0.5− |
| 2005 11 30 | 691 | 0.2+ | 0.1+ | 2005 12 04 | G96 | 0.0 | 0.2− | 2006 01 21 | G96 | 0.5+ | 0.2− |
| 2005 11 30 | 691 | 0.2+ | 0.2+ | 2005 12 06 | 704 | 0.5− | 0.7− | 2006 01 21 | G96 | 0.1− | 0.4+ |
| 2005 11 30 | 691 | 0.0 | 0.0 | 2005 12 06 | 704 | 0.7+ | 0.3+ | 2006 02 20 | G96 | 0.2− | 0.3+ |
| 2005 12 01 | 704 | 0.2− | 0.3+ | 2005 12 06 | 704 | 0.5− | 0.2+ | 2006 02 20 | G96 | 0.7− | 0.1− |
| 2005 12 01 | 704 | 1.0+ | 0.3− | 2005 12 06 | 704 | 0.6− | 0.4+ | 2006 02 20 | G96 | 0.4+ | 0.4+ |
| 2005 12 01 | 704 | 0.5+ | 0.7+ | 2005 12 06 | 704 | 0.2− | 0.4+ | 2006 02 20 | G96 | 0.0 | 0.3+ |
| 2005 12 02 | 703 | 0.4− | 0.2− | 2005 12 25 | G96 | 0.5+ | 0.0 | | | | |

**2005 WC**$_{100}$ **= 2001 XK**$_{161}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.14192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23930292 | $\omega$ | 328.36004 | | +0.56522703 | −0.82321072 | |
| $a$ | 2.5694335 | $\Omega$ | 87.17001 | | +0.76756590 | +0.50113870 | |
| $e$ | 0.1484307 | $i$ | 3.05992 | | +0.30225981 | +0.26680352 | |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 1.4− | 0.1+ | 2005 11 28 | 703 | 0.4− | 0.3− | 2005 12 01 | 704 | 0.8− | 0.9+ |
| 2001 12 14 | 704 | 0.5− | 1.3− | 2005 11 28 | 703 | 0.8+ | 1.0− | 2005 12 01 | 704 | 0.2− | 0.6+ |
| 2001 12 14 | 704 | 0.2+ | 0.2− | 2005 11 28 | 703 | 0.0 | 0.5+ | 2005 12 01 | 704 | 0.7− | 0.5− |
| 2001 12 14 | 704 | 0.1+ | 0.0 | 2005 11 28 | 703 | 1.3+ | 0.3+ | 2005 12 01 | 704 | 0.2+ | 0.5+ |
| 2001 12 17 | 704 | 0.4+ | 0.3+ | 2005 11 28 | 703 | 0.5− | 0.4− | 2006 01 21 | G96 | 1.1− | 1.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2005 11 28 | 703 | 1.0+ | 0.6+ | 2006 01 21 | G96 | 1.0+ | 0.4+ |
| 2001 12 17 | 704 | 0.5+ | 0.5+ | 2005 11 30 | G96 | 0.3− | 0.1− | 2006 01 21 | G96 | 0.4+ | 0.2+ |
| 2001 12 17 | 704 | 0.5+ | 0.2+ | 2005 11 30 | G96 | 0.4− | 0.3− | 2006 01 21 | G96 | 0.1− | 0.3+ |
| 2005 11 28 | 703 | (2.6− | 0.4+) | 2005 11 30 | G96 | 0.3− | 0.2− | | | | |
| 2005 11 28 | 703 | 0.6+ | 0.2− | 2005 11 30 | G96 | 0.5− | 0.2− | | | | |

**2005 WE$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.19811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18183552 | $\omega$ | 253.04667 | | +0.92479139 | −0.37970969 | |
| $a$ | 3.0856754 | $\Omega$ | 129.26225 | | +0.35985665 | +0.85233926 | |
| $e$ | 0.1939407 | $i$ | 1.78466 | | +0.12354786 | +0.35963640 | |
| $P$ | 5.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.1+ | 0.1− | 2005 11 21 | 699 | (2.6+ | 0.5+) | 2005 12 01 | 704 | 0.7+ | 0.8+ |
| 2000 11 24 | 691 | 0.3+ | 0.1− | 2005 11 28 | 703 | 0.1− | 1.3+ | 2005 12 01 | 704 | 0.6+ | 1.0+ |
| 2000 11 24 | 691 | 0.5− | 0.1− | 2005 11 28 | 703 | 1.2− | 0.3− | 2005 12 01 | 704 | 0.2− | 0.1+ |
| 2000 12 17 | 691 | 0.2+ | 0.1− | 2005 11 28 | 703 | 0.8− | 0.8+ | 2005 12 01 | 704 | 0.8+ | 0.4− |
| 2000 12 17 | 691 | 0.0 | 0.0 | 2005 11 28 | 703 | (1.7+ | 1.0+) | 2005 12 04 | 704 | 0.9− | 0.6+ |
| 2000 12 17 | 691 | 0.0 | 0.1− | 2005 11 28 | 703 | 0.0 | 0.2+ | 2005 12 04 | 704 | 0.2+ | 0.7+ |
| 2004 07 21 | E12 | 0.8+ | 0.9− | 2005 11 28 | 703 | 0.1− | 0.5− | 2005 12 04 | 704 | 0.2− | 1.2− |
| 2004 07 21 | E12 | 0.8− | 0.0 | 2005 11 28 | 703 | 0.2+ | 0.4− | 2005 12 04 | 704 | 0.7− | 0.9+ |
| 2004 07 21 | E12 | 0.2+ | 0.1− | 2005 11 28 | 703 | 0.1+ | 0.6− | 2006 01 22 | G96 | 0.2+ | 0.3− |
| 2004 07 21 | E12 | 0.0 | 0.4− | 2005 11 30 | G96 | 0.2− | 0.6− | 2006 01 22 | G96 | 0.1− | 0.2− |
| 2005 11 21 | 699 | (1.7+ | 0.1+) | 2005 11 30 | G96 | (1.9+ | 0.2−) | 2006 01 22 | G96 | 0.1+ | 0.4− |
| 2005 11 21 | 699 | 0.9+ | 0.4− | 2005 11 30 | G96 | 0.3+ | 0.4− | 2006 01 22 | G96 | 0.3− | 0.0 |
| 2005 11 21 | 699 | 0.0 | 0.3+ | 2005 11 30 | G96 | 0.4+ | 0.5− | | | | |

**2005 WJ$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.47117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23352002 | $\omega$ | 274.30571 | | −0.07132271 | −0.99745329 | |
| $a$ | 2.6116801 | $\Omega$ | 179.78415 | | +0.92655935 | −0.06629512 | |
| $e$ | 0.0383669 | $i$ | 1.70763 | | +0.36932484 | −0.02630395 | |
| $P$ | 4.22 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.4− | 0.8− | 2003 04 01 | 807 | 1.7+ | 0.3− | 2005 11 29 | G96 | 0.0 | 0.4+ |
| 1994 02 10 | 691 | 0.1− | 0.2− | 2003 04 04 | 807 | 0.4− | 0.4+ | 2005 11 30 | G96 | 0.4+ | 0.3+ |
| 1994 02 10 | 691 | 0.1+ | 0.2− | 2003 04 04 | 807 | 0.9− | 0.6+ | 2005 11 30 | G96 | 0.7+ | 0.6+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2003 04 25 | 291 | 0.4+ | 0.3− | 2005 11 30 | G96 | 0.2− | 0.5+ |
| 2000 09 03 | 645 | 0.1+ | 0.1− | 2003 04 25 | 291 | 0.0 | 0.4+ | 2005 11 30 | G96 | 0.0 | 0.4+ |
| 2003 04 01 | 807 | 0.1− | 0.5+ | 2003 04 25 | 291 | 0.1+ | 0.0 | 2006 01 22 | G96 | 0.2− | 0.7+ |
| 2003 04 01 | 807 | 0.3− | 0.5+ | 2005 11 29 | G96 | 0.0 | 0.1+ | 2006 01 22 | G96 | 0.5− | 0.6+ |
| 2003 04 01 | 807 | 0.6− | 0.9+ | 2005 11 29 | G96 | 0.2− | 0.3− | 2006 01 22 | G96 | 0.4− | 0.6+ |
| 2003 04 01 | 807 | 0.1− | 0.4+ | 2005 11 29 | G96 | 0.3− | 0.1+ | 2006 01 22 | G96 | 0.2− | 0.1+ |

**2005 WU$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.50409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20087917 | $\omega$ | 324.59727 | | +0.27320245 | −0.95607470 | |
| $a$ | 2.8874387 | $\Omega$ | 109.34077 | | +0.90648760 | +0.21892260 | |
| $e$ | 0.0955239 | $i$ | 6.46334 | | +0.32193268 | +0.19492065 | |
| $P$ | 4.91 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 27 | 691 | 0.2+ | 0.2− | 2005 11 06 | 704 | 0.3+ | 0.1+ | 2005 11 30 | 704 | 0.9+ | 0.3− |
| 1992 01 27 | 691 | 0.1+ | 0.3− | 2005 11 10 | 703 | 0.3− | 0.5− | 2005 11 30 | 704 | 0.6+ | 0.0 |
| 1992 01 27 | 691 | 0.4− | 0.0 | 2005 11 10 | 703 | 0.9− | 0.3+ | 2005 11 30 | 704 | 0.4+ | 0.5+ |
| 2002 03 11 | 644 | 0.2+ | 0.9+ | 2005 11 10 | 703 | 0.5− | 0.1+ | 2006 01 26 | G96 | 0.7− | 1.1− |
| 2002 03 11 | 644 | 0.4+ | 0.9+ | 2005 11 10 | 703 | 1.0+ | 0.3− | 2006 01 26 | G96 | 0.3− | 0.1− |
| 2002 03 11 | 644 | 0.3+ | 1.0+ | 2005 11 21 | 699 | 0.7− | 0.5+ | 2006 01 26 | G96 | 0.3− | 0.5− |
| 2005 11 04 | G96 | 0.1− | 0.1− | 2005 11 21 | 699 | 0.5+ | 1.9+ | 2006 01 26 | G96 | 0.1+ | 0.4− |
| 2005 11 04 | G96 | 0.2+ | 0.2− | 2005 11 21 | 699 | 1.4− | 1.4− | 2006 02 27 | G96 | 0.7+ | 0.5− |
| 2005 11 04 | G96 | 0.5+ | 0.0 | 2005 11 21 | 699 | 0.6+ | 0.2+ | 2006 02 27 | G96 | 0.4+ | 0.0 |
| 2005 11 04 | G96 | 0.4+ | 0.1− | 2005 11 25 | 703 | 0.9− | 0.5− | 2006 02 27 | G96 | 0.8+ | 0.3− |
| 2005 11 06 | 704 | 1.2− | 0.3+ | 2005 11 25 | 703 | 0.4+ | 0.4+ | 2006 02 27 | G96 | 0.6+ | 0.2+ |
| 2005 11 06 | 704 | 0.7− | 0.1− | 2005 11 25 | 703 | 0.5+ | 1.2+ | | | | |
| 2005 11 06 | 704 | 0.3+ | 0.6+ | 2005 11 25 | 703 | 0.5− | 0.2+ | | | | |

**2005 WD$_{103}$ = 2005 VP$_{123}$ = 2005 XP$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.76218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28701877 | $\omega$ | 348.00240 | | −0.38819733 | −0.91920772 | |
| $a$ | 2.2761236 | $\Omega$ | 124.80561 | | +0.85204001 | −0.38528737 | |
| $e$ | 0.1934389 | $i$ | 4.61256 | | +0.35118464 | −0.08130690 | |
| $P$ | 3.43 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 18 | 327 | 0.1+ | 0.1+ | 2003 04 04 | 691 | 0.1− | 0.3+ | 2005 11 30 | 644 | 0.2− | 0.1+ |
| 1996 01 18 | 327 | 0.6+ | 0.2+ | 2003 04 04 | 691 | 0.0 | 0.1− | 2005 11 30 | 704 | 0.4+ | 1.5+ |
| 1996 01 18 | 327 | 0.7− | 0.4− | 2005 11 02 | 703 | 0.2+ | 0.2− | 2005 11 30 | 644 | 0.1− | 0.3+ |
| 2000 05 28 | 691 | 0.3− | 0.4+ | 2005 11 02 | 703 | 0.2− | 0.3+ | 2005 11 30 | 704 | 0.2+ | 1.0+ |
| 2000 05 28 | 691 | 0.4+ | 0.4+ | 2005 11 02 | 703 | 2.2− | 1.6− | 2005 11 30 | 704 | 0.4+ | 0.3+ |
| 2000 05 28 | 691 | 0.2+ | 0.4+ | 2005 11 02 | 703 | 2.1− | 0.8+ | 2005 11 30 | 644 | 0.0 | 0.0 |
| 2003 02 22 | 644 | 0.1+ | 0.4+ | 2005 11 10 | 703 | 1.0− | 1.0+ | 2005 12 07 | 704 | 0.5+ | 0.2− |
| 2003 02 22 | 644 | 0.0 | 0.6+ | 2005 11 10 | 703 | 0.1− | 0.5− | 2005 12 07 | 704 | 1.8+ | 0.1− |
| 2003 02 22 | 644 | 0.2− | 0.5+ | 2005 11 10 | 703 | 0.1− | 0.5− | 2005 12 07 | 704 | 0.3+ | 1.2+ |
| 2003 03 25 | 644 | 0.3+ | 0.6+ | 2005 11 10 | 703 | 0.3− | 0.4+ | 2005 12 07 | 704 | 0.4+ | 0.6− |
| 2003 03 25 | 644 | 0.4+ | 0.4+ | 2005 11 26 | 703 | 0.4+ | 0.1− | 2005 12 07 | 704 | 0.6+ | 1.0+ |
| 2003 03 25 | 644 | 0.4+ | 0.2+ | 2005 11 26 | 703 | 0.2+ | 0.2+ | 2006 01 26 | G96 | 0.1− | 0.2+ |
| 2003 03 31 | 645 | 0.0 | 0.1− | 2005 11 26 | 703 | 0.8+ | 0.8− | 2006 01 26 | G96 | 0.1− | 0.2+ |
| 2003 03 31 | 645 | 0.0 | 0.1− | 2005 11 26 | 703 | 1.7− | 0.6− | 2006 01 26 | G96 | 0.1+ | 0.2− |
| 2003 04 04 | 691 | 0.1− | 0.2+ | 2005 11 30 | 704 | 0.3+ | 1.1+ | 2006 01 26 | G96 | 0.2+ | 0.5− |

**2005 WT$_{103}$ = 2006 BV$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.01736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28863412 | $\omega$ | 98.80285 | | +0.95245344 | −0.28317054 | |
| $a$ | 2.2676234 | $\Omega$ | 277.70521 | | +0.21530821 | +0.88669300 | |
| $e$ | 0.1355553 | $i$ | 6.51613 | | +0.21558018 | +0.36549963 | |
| $P$ | 3.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 699 | 0.0 | 0.6− | 2005 11 06 | 691 | 0.0 | 0.0 | 2005 12 02 | 704 | 0.3− | 0.1− |
| 1998 10 29 | 699 | 0.4+ | 0.1− | 2005 11 06 | 691 | 0.1+ | 0.0 | 2005 12 05 | 704 | 0.2− | 0.6+ |
| 1998 10 29 | 699 | 0.4− | 0.5+ | 2005 11 06 | 691 | 0.1− | 0.0 | 2005 12 05 | 704 | 0.1+ | 1.4+ |
| 2001 07 25 | 691 | 0.1− | 0.1+ | 2005 11 28 | 704 | 0.1− | 0.0 | 2005 12 05 | 704 | 0.1− | 0.1+ |
| 2001 07 25 | 691 | 0.0 | 0.1− | 2005 11 28 | 704 | 0.4− | 0.7− | 2005 12 29 | 703 | 0.1− | 1.0+ |
| 2001 07 25 | 691 | 0.0 | 0.3+ | 2005 11 28 | 704 | 0.2− | 0.3− | 2005 12 29 | 703 | 1.2+ | 0.5+ |
| 2005 10 30 | 704 | 0.3− | 0.6− | 2005 11 28 | 704 | 0.0 | 0.1− | 2005 12 29 | 703 | 0.6+ | 0.3+ |
| 2005 10 30 | 704 | 0.7− | 0.2− | 2005 11 28 | 704 | 0.6− | 0.0 | 2005 12 29 | 703 | 0.2− | 0.1+ |
| 2005 10 30 | 704 | 0.2− | 0.5− | 2005 11 30 | 704 | 0.1+ | 1.3+ | 2006 01 25 | G96 | 0.1+ | 0.0 |
| 2005 10 30 | 704 | 1.0+ | 0.2− | 2005 11 30 | 704 | 0.0 | 0.6+ | 2006 01 25 | G96 | 0.2+ | 0.1+ |
| 2005 11 02 | 704 | 0.0 | 0.1− | 2005 11 30 | 704 | 0.4+ | 0.6+ | 2006 01 25 | G96 | 0.3+ | 0.4− |
| 2005 11 02 | 704 | 0.5+ | 0.0 | 2005 11 30 | 704 | 0.3+ | 0.4+ | 2006 01 25 | G96 | 0.1− | 0.1+ |
| 2005 11 02 | 704 | 0.3− | 1.1− | 2005 12 02 | 704 | 0.7− | 0.2+ | | | | |
| 2005 11 02 | 704 | 0.7− | 1.9− | 2005 12 02 | 704 | 0.2+ | 0.3− | | | | |

**2005 WE$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.76635 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27914541 | $\omega$ | 341.54210 | | −0.19060270 | −0.98060560 | |
| $a$ | 2.3187240 | $\Omega$ | 119.42374 | | +0.90713295 | −0.19371158 | |
| $e$ | 0.1645940 | $i$ | 3.00380 | | +0.37520717 | −0.02980731 | |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 15 | 691 | 0.2− | 0.1− | 2005 11 21 | 703 | 1.7+ | 0.6− | 2005 12 07 | 704 | 0.0 | 1.3+ |
| 1996 04 15 | 691 | 0.1+ | 0.4− | 2005 11 28 | 703 | 0.5− | 0.0 | 2005 12 07 | 704 | 0.2− | 0.3− |
| 1996 04 15 | 691 | 0.3− | 0.3− | 2005 11 28 | 703 | 0.4− | 1.3− | 2005 12 07 | 704 | 0.1+ | 0.8+ |
| 2003 03 26 | 644 | 0.3+ | 0.7+ | 2005 11 28 | 703 | 0.8− | 0.7− | 2005 12 21 | 703 | 0.1+ | 0.6− |
| 2003 03 26 | 644 | 0.7+ | 0.9+ | 2005 11 28 | 703 | 0.3+ | 0.2− | 2005 12 21 | 703 | 0.2− | 1.0+ |
| 2003 03 26 | 644 | 0.1+ | 0.9+ | 2005 11 30 | 704 | 0.1+ | 0.1− | 2005 12 21 | 703 | (3.1− | 2.0−) |
| 2005 11 01 | G96 | 0.4− | 0.3− | 2005 11 30 | 704 | 0.4− | 0.2− | 2005 12 21 | 703 | 0.9− | 0.8− |
| 2005 11 01 | G96 | 0.0 | 0.2− | 2005 11 30 | 704 | 0.8− | 0.4− | 2006 01 25 | G96 | 0.1− | 0.1− |
| 2005 11 01 | G96 | 0.2− | 0.5− | 2005 12 07 | 691 | 0.4+ | 0.0 | 2006 01 25 | G96 | 0.1+ | 0.2− |
| 2005 11 01 | G96 | 0.1+ | 0.5− | 2005 12 07 | 691 | 0.3+ | 0.2− | 2006 01 25 | G96 | 0.2− | 0.2− |
| 2005 11 21 | 703 | 0.4− | 0.5+ | 2005 12 07 | 691 | 0.3+ | 0.4+ | 2006 01 25 | G96 | 0.2− | 0.2− |
| 2005 11 21 | 703 | 0.9− | 2.0+ | 2005 12 07 | 704 | 0.6− | 0.1− | | | | |
| 2005 11 21 | 703 | 0.7+ | 0.0 | 2005 12 07 | 704 | 0.1+ | 0.2+ | | | | |

**2005 WN$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.79837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17999121 | $\omega$ | 21.13169 | | +0.72268181 | −0.69103745 | |
| $a$ | 3.1067181 | $\Omega$ | 22.59968 | | +0.62877608 | +0.64883767 | |
| $e$ | 0.1655160 | $i$ | 2.09973 | | +0.28700461 | +0.31855443 | |
| $P$ | 5.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 691 | 0.1+ | 0.0 | 2005 11 29 | 704 | 0.2− | 0.1− | 2005 12 04 | 704 | 0.9+ | 0.1− |
| 2001 01 21 | 691 | 0.1− | 0.0 | 2005 11 29 | 704 | 0.1− | 0.4+ | 2005 12 06 | 704 | 0.1+ | 0.3+ |
| 2001 01 21 | 691 | 0.0 | 0.0 | 2005 11 29 | 704 | 0.0 | 0.4+ | 2005 12 06 | 704 | 0.5+ | 0.5− |
| 2002 04 09 | 807 | 0.3− | 0.1− | 2005 11 30 | 704 | 0.5+ | 0.7+ | 2005 12 06 | 704 | 0.4+ | 0.9+ |
| 2002 04 09 | 807 | 0.1+ | 0.2− | 2005 11 30 | 704 | 0.5+ | 0.6+ | 2005 12 06 | 704 | 0.1+ | 0.3− |
| 2005 10 27 | G96 | 0.7− | 0.1+ | 2005 11 30 | 704 | 0.8+ | 0.2− | 2005 12 28 | G96 | 0.4− | 0.0 |
| 2005 10 27 | G96 | 0.5− | 0.1+ | 2005 12 01 | 704 | 0.7+ | 0.4− | 2005 12 28 | G96 | 0.3− | 0.2− |
| 2005 10 27 | G96 | 0.8− | 0.1− | 2005 12 01 | 704 | 0.0 | 0.1− | 2005 12 28 | G96 | 0.7− | 0.2− |
| 2005 10 27 | G96 | 0.5− | 0.2− | 2005 12 01 | 704 | 0.4− | 0.1− | 2005 12 28 | G96 | 0.3− | 0.1− |
| 2005 11 21 | 691 | 0.5− | 0.0 | 2005 12 01 | 704 | 0.7+ | 0.2− | 2006 01 25 | G96 | 0.0 | 0.5− |
| 2005 11 21 | 691 | 0.2− | 0.0 | 2005 12 01 | 704 | 0.8+ | 0.9+ | 2006 01 25 | G96 | 0.2− | 0.3− |
| 2005 11 21 | 691 | 0.1− | 0.2− | 2005 12 02 | 704 | 0.7+ | 0.6+ | 2006 01 25 | G96 | 0.2+ | 0.2+ |
| 2005 11 21 | 703 | 1.0− | 0.0 | 2005 12 02 | 704 | 0.2+ | 0.1− | 2006 01 25 | G96 | 0.3− | 0.0 |
| 2005 11 21 | 703 | 1.0− | 0.5− | 2005 12 02 | 704 | 1.4+ | 0.5− | 2006 03 03 | G96 | 0.0 | 0.1− |
| 2005 11 21 | 703 | 0.4− | 1.0− | 2005 12 02 | 704 | 0.4+ | 0.0 | 2006 03 03 | G96 | 0.2+ | 0.3+ |
| 2005 11 21 | 703 | 0.6+ | 0.1− | 2005 12 04 | 704 | 0.2+ | 0.2+ | 2006 03 03 | G96 | 0.6− | 0.6+ |
| 2005 11 29 | 704 | 0.3+ | 0.2+ | 2005 12 04 | 704 | 0.2+ | 0.0 | 2006 03 03 | G96 | 0.6+ | 0.0 |
| 2005 11 29 | 704 | 0.2+ | 0.5+ | 2005 12 04 | 704 | 0.2+ | 0.3− | | | | |

**2005 WQ$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.06280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19072438 | $\omega$ | 255.85677 | | +0.93908278 | −0.34360421 | |
| $a$ | 2.9890412 | $\Omega$ | 124.23931 | | +0.31882519 | +0.86252648 | |
| $e$ | 0.1774405 | $i$ | 0.53542 | | +0.12835120 | +0.37146228 | |
| $P$ | 5.17 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 691 | 0.2+ | 0.3− | 2005 11 29 | 704 | 0.2− | 0.2+ | 2005 12 02 | 704 | 0.9− | 0.3− |
| 2001 01 04 | 691 | 0.2− | 0.0 | 2005 11 30 | 704 | 0.5− | 0.7− | 2005 12 02 | 704 | 0.3− | 0.9+ |
| 2001 01 04 | 691 | 0.0 | 0.2− | 2005 11 30 | 704 | 0.8+ | 0.8− | 2005 12 04 | 704 | 1.6− | 0.9− |
| 2002 03 20 | 695 | 0.2+ | 0.4+ | 2005 11 30 | 704 | 0.3− | 0.1+ | 2005 12 04 | 704 | 0.3− | 0.6+ |
| 2002 03 20 | 695 | 0.1+ | 0.5+ | 2005 11 30 | 704 | 1.7+ | 0.5− | 2005 12 04 | 704 | 0.5+ | 0.7+ |
| 2005 09 30 | G96 | 0.4− | 0.2− | 2005 12 01 | 704 | 0.4− | 1.7− | 2005 12 04 | 704 | 0.3+ | 1.1+ |
| 2005 09 30 | G96 | 0.2− | 0.3− | 2005 12 01 | 704 | 0.4+ | 0.2− | 2005 12 04 | 704 | 0.9+ | 0.7+ |
| 2005 09 30 | G96 | 0.2− | 0.0 | 2005 12 01 | 704 | 0.1+ | 0.2− | 2005 12 04 | 704 | 1.3+ | 1.2+ |
| 2005 09 30 | G96 | 0.0 | 0.2− | 2005 12 01 | 704 | 0.5+ | 0.5+ | 2005 12 05 | 704 | 1.9+ | 0.3+ |
| 2005 10 25 | G96 | 0.2+ | 0.3− | 2005 12 01 | 704 | 0.2+ | 0.5− | 2005 12 05 | 704 | 0.2− | 0.6− |
| 2005 10 25 | G96 | 0.1+ | 0.1− | 2005 12 01 | 704 | 0.4+ | 0.2− | 2005 12 05 | 704 | 1.4+ | 0.5+ |
| 2005 10 25 | G96 | 0.0 | 0.1− | 2005 12 01 | 704 | 0.2− | 0.1+ | 2005 12 05 | 704 | 0.1− | 0.5+ |
| 2005 10 25 | G96 | 0.1− | 0.2− | 2005 12 01 | 704 | 0.2− | 0.2+ | 2005 12 05 | 704 | 0.1+ | 0.9− |
| 2005 10 25 | G96 | 0.1− | 0.3− | 2005 12 01 | 704 | 0.3− | 0.6+ | 2005 12 23 | 691 | 0.1− | 0.2− |
| 2005 10 25 | G96 | 0.3+ | 0.4− | 2005 12 02 | 704 | 0.8+ | 1.8+ | 2005 12 23 | 691 | 0.0 | 0.2+ |
| 2005 10 25 | G96 | 0.2− | 0.1− | 2005 12 02 | 704 | 1.0+ | 0.1− | 2005 12 23 | 691 | 0.0 | 0.2+ |
| 2005 10 25 | G96 | 0.3− | 0.6− | 2005 12 02 | 704 | 1.2− | 0.8+ | 2006 01 05 | G96 | 0.2− | 0.3− |
| 2005 11 05 | 691 | 0.3− | 0.0 | 2005 12 02 | 704 | 1.4+ | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.6− |
| 2005 11 05 | 691 | 0.2− | 0.1− | 2005 12 02 | 704 | 0.5− | 0.2− | 2006 01 05 | G96 | 0.1− | 0.5− |
| 2005 11 05 | 691 | 0.2− | 0.1+ | 2005 12 02 | 704 | 0.4+ | 0.2− | 2006 01 05 | G96 | 0.6− | 0.3− |
| 2005 11 22 | 691 | 0.2− | 0.0 | 2005 12 02 | 704 | 0.0 | 0.8− | 2006 01 21 | G96 | 0.2− | 0.6− |
| 2005 11 22 | 691 | 0.3− | 0.1− | 2005 12 02 | 704 | 0.2+ | 0.7+ | 2006 01 21 | G96 | 0.4+ | 0.2− |
| 2005 11 22 | 691 | 0.3− | 0.1+ | 2005 12 02 | 704 | 0.3+ | 1.3+ | 2006 01 21 | G96 | 0.3+ | 0.7− |
| 2005 11 29 | 704 | (2.3− | 0.3+) | 2005 12 02 | 704 | 0.7+ | 0.2+ | 2006 01 21 | G96 | 0.4+ | 0.7− |
| 2005 11 29 | 704 | 0.1− | 0.9+ | 2005 12 02 | 704 | 0.2− | 0.5+ | | | | |
| 2005 11 29 | 704 | 0.5− | 1.5+ | 2005 12 02 | 704 | 0.3− | 0.2− | | | | |

**2005 WS$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.42998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21329483 | $\omega$ | 125.45167 | | +0.67975467 | +0.73337124 | |
| $a$ | 2.7742728 | $\Omega$ | 187.39761 | | −0.69559729 | +0.64029471 | |
| $e$ | 0.1028517 | $i$ | 4.45922 | | −0.23254678 | +0.22844980 | |
| $P$ | 4.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 14 | 327 | 0.2+ | 0.6+ | 2005 08 31 | 691 | 0.0 | 0.2+ | 2005 10 01 | 703 | 0.4− | 0.3− |
| 1996 10 14 | 327 | 0.7− | 0.0 | 2005 08 31 | 691 | 0.1+ | 0.1+ | 2005 10 13 | 691 | 0.0 | 0.4+ |
| 1996 10 14 | 327 | 0.3+ | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.0 | 2005 10 13 | 691 | 0.5+ | 0.5+ |
| 2004 05 15 | 599 | 0.5+ | 0.1+ | 2005 09 14 | 691 | 0.2− | 0.2− | 2005 10 13 | 691 | 0.1− | 0.3+ |
| 2004 05 15 | 599 | 0.2+ | 0.0 | 2005 09 14 | 691 | 0.2− | 0.3− | 2005 11 25 | G96 | 0.1+ | 0.6− |
| 2004 05 15 | 599 | 0.9− | 0.1− | 2005 09 14 | 691 | 0.2− | 0.4− | 2005 11 25 | G96 | 0.1+ | 0.0 |
| 2004 06 09 | 691 | 0.0 | 0.2+ | 2005 09 22 | 644 | 0.1− | 0.1− | 2005 11 25 | G96 | 0.3− | 0.1− |
| 2004 06 09 | 691 | 0.2− | 0.2+ | 2005 09 22 | 644 | 0.3− | 0.1− | 2005 11 25 | G96 | 0.2− | 0.1+ |
| 2004 06 09 | 691 | 0.3+ | 0.2− | 2005 09 22 | 644 | 0.1+ | 0.2− | 2005 12 01 | G96 | 0.2+ | 0.1− |
| 2005 08 25 | 644 | 0.1− | 0.2+ | 2005 10 01 | 703 | 1.0+ | 0.5− | 2005 12 01 | G96 | 0.7+ | 0.1− |
| 2005 08 25 | 644 | 0.1+ | 0.3− | 2005 10 01 | 703 | 0.9− | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.1+ |
| 2005 08 25 | 644 | 0.7+ | 0.3− | 2005 10 01 | 703 | 0.1− | 0.0 | 2005 12 01 | G96 | 0.0 | 0.1+ |

**2005 WD$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.17613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22572269 | $\omega$ | 353.17468 | | +0.38482774 | −0.89803170 | |
| $a$ | 2.6714839 | $\Omega$ | 74.01558 | | +0.85696311 | +0.26185205 | |
| $e$ | 0.0595856 | $i$ | 12.81220 | | +0.34281458 | +0.35351460 | |
| $P$ | 4.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 03 | 644 | 0.1+ | 0.5− | 2005 11 28 | 703 | 0.9− | 0.0 | 2005 12 31 | G96 | 0.0 | 0.2− |
| 2002 02 03 | 644 | 0.1− | 0.3− | 2005 12 01 | 704 | 1.1− | 0.0 | 2005 12 31 | G96 | 0.5− | 0.5− |
| 2002 02 03 | 644 | 0.0 | 0.2− | 2005 12 01 | 704 | 0.5− | 0.1− | 2005 12 31 | G96 | 0.2− | 0.0 |
| 2003 05 06 | 691 | 0.1− | 0.2+ | 2005 12 01 | 704 | 0.5− | 1.4+ | 2006 01 04 | 699 | 1.1+ | 0.2− |
| 2003 05 06 | 691 | 0.3+ | 0.2+ | 2005 12 01 | 704 | 0.6− | 0.4+ | 2006 01 04 | 699 | 1.1− | 0.5+ |
| 2003 05 06 | 691 | 0.0 | 0.1+ | 2005 12 01 | G96 | 0.3− | 0.5− | 2006 01 04 | 699 | 1.0− | 0.0 |
| 2005 11 03 | 703 | 0.1− | 0.8+ | 2005 12 01 | G96 | 0.1− | 0.1− | 2006 01 04 | 699 | 1.9+ | 1.1+ |
| 2005 11 03 | 703 | 0.2− | 0.1+ | 2005 12 01 | G96 | 0.1+ | 0.1+ | 2006 01 23 | G96 | 0.6+ | 0.0 |
| 2005 11 03 | 703 | 0.8+ | 0.2+ | 2005 12 01 | G96 | 0.1− | 0.1− | 2006 01 23 | G96 | 0.2− | 0.3− |
| 2005 11 03 | 703 | 0.1+ | 0.2+ | 2005 12 21 | 699 | 0.7+ | 0.2+ | 2006 01 23 | G96 | 0.6+ | 0.0 |
| 2005 11 03 | G96 | 0.2− | 0.1− | 2005 12 21 | 699 | 0.5+ | 0.2+ | 2006 01 23 | G96 | 0.8+ | 0.1− |
| 2005 11 03 | G96 | 0.2− | 0.2− | 2005 12 21 | 699 | 1.2− | 0.9+ | 2006 01 25 | G96 | 0.2+ | 0.1+ |
| 2005 11 03 | G96 | 0.2− | 0.1− | 2005 12 21 | 699 | 0.9+ | 0.3+ | 2006 01 25 | G96 | 0.4+ | 0.3− |
| 2005 11 03 | G96 | 0.2− | 0.1− | 2005 12 25 | G96 | 0.0 | 0.3− | 2006 01 25 | G96 | 0.7+ | 0.1− |
| 2005 11 28 | 703 | 0.1− | 0.2+ | 2005 12 25 | G96 | 0.3− | 0.3− | 2006 01 25 | G96 | 0.4+ | 0.1+ |
| 2005 11 28 | 703 | 0.1− | 0.2+ | 2005 12 25 | G96 | 0.0 | 0.4− | | | | |
| 2005 11 28 | 703 | 0.2+ | 0.9− | 2005 12 31 | G96 | 0.1− | 0.0 | | | | |

**2005 WS$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.69546 | | | (2000.0) | | |
| $n$ | 0.12547795 | $\omega$ | 223.49498 | | −0.11234122 | −0.99334047 |
| $a$ | 3.9514616 | $\Omega$ | 232.97158 | | +0.92022102 | −0.09429083 |
| $e$ | 0.2100922 | $i$ | 1.83593 | | +0.37493028 | −0.06621145 |
| $P$ | 7.85 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 11 | 691 | 0.4− | 0.2+ | 2005 12 01 | G96 | 0.3− | 0.2− | 2006 01 06 | G96 | 0.0 | 0.1− |
| 2004 09 11 | 691 | 0.1+ | 0.0 | 2005 12 01 | G96 | 0.4− | 0.0 | 2006 01 06 | G96 | 0.2− | 0.1+ |
| 2004 09 11 | 691 | 0.3− | 0.1+ | 2005 12 04 | G96 | 0.1+ | 0.1− | 2006 01 06 | G96 | 0.6− | 0.2+ |
| 2004 09 21 | 691 | 0.3+ | 0.1− | 2005 12 04 | G96 | 0.3− | 0.3− | 2006 01 06 | G96 | 0.4− | 0.0 |
| 2004 09 21 | 691 | 0.0 | 0.2− | 2005 12 04 | G96 | 0.1+ | 0.1− | 2006 02 25 | G96 | 0.3− | 0.3+ |
| 2004 09 21 | 691 | 0.3+ | 0.1+ | 2005 12 04 | G96 | 0.1− | 0.1− | 2006 02 25 | G96 | 0.2+ | 0.1+ |
| 2005 11 05 | 691 | 0.2− | 0.0 | 2005 12 21 | 699 | 0.6+ | 0.4− | 2006 02 25 | G96 | 0.1+ | 0.2+ |
| 2005 11 05 | 691 | 0.0 | 0.0 | 2005 12 21 | 699 | 0.2− | 1.0+ | 2006 02 25 | G96 | 0.0 | 0.1− |
| 2005 11 05 | 691 | 0.1− | 0.0 | 2005 12 21 | 699 | 0.2− | 0.0 | 2006 11 16 | G96 | (6.8− | 2.9+) |
| 2005 11 30 | 691 | 0.2+ | 0.0 | 2005 12 21 | 699 | 1.1+ | 0.3− | 2006 11 16 | G96 | (6.7− | 1.9+) |
| 2005 11 30 | 691 | 0.2+ | 0.1+ | 2005 12 26 | G96 | 0.2− | 0.1− | 2006 11 16 | G96 | (6.5− | 2.2+) |
| 2005 11 30 | 691 | 0.2+ | 0.1+ | 2005 12 26 | G96 | 0.1+ | 0.3− | 2006 11 16 | G96 | (6.4− | 2.7+) |
| 2005 12 01 | G96 | 0.0 | 0.0 | 2005 12 26 | G96 | 0.7− | 0.2− | | | | |
| 2005 12 01 | G96 | 0.1− | 0.2− | 2005 12 26 | G96 | 0.0 | 0.0 | | | | |

**2005 WT$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 150.29109 | | | (2000.0) | | |
| $n$ | 0.29165694 | $\omega$ | 83.85697 | | +0.82103923 | +0.56251968 |
| $a$ | 2.2519280 | $\Omega$ | 241.87287 | | −0.55763721 | +0.75378599 |
| $e$ | 0.3449245 | $i$ | 6.33394 | | −0.12221022 | +0.33967379 |
| $P$ | 3.38 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 699 | 0.4− | 0.7+ | 2005 11 30 | 691 | 0.0 | 0.0 | 2005 12 04 | 704 | 0.2+ | 0.2+ |
| 1998 09 19 | 699 | 0.5+ | 0.4− | 2005 11 30 | 691 | 0.1− | 0.2+ | 2005 12 04 | 704 | 0.0 | 0.6− |
| 1998 09 19 | 699 | 0.0 | 0.3− | 2005 11 30 | 691 | 0.3− | 0.0 | 2005 12 04 | 704 | 0.4+ | 0.0 |
| 1998 10 18 | 699 | 0.5+ | 0.1+ | 2005 12 01 | 704 | 0.3− | 0.0 | 2005 12 04 | 704 | 0.1− | 1.1− |
| 1998 10 18 | 699 | 0.1− | 1.0− | 2005 12 01 | 704 | 0.4− | 0.8+ | 2005 12 04 | 704 | 0.6+ | 1.0− |
| 1998 10 18 | 699 | 0.5− | 0.5+ | 2005 12 01 | 704 | 0.3− | 1.0− | 2005 12 04 | 704 | 1.7+ | 1.1− |
| 2005 11 10 | G96 | 0.1+ | 0.3+ | 2005 12 01 | 704 | 0.0 | 0.1+ | 2005 12 05 | 704 | 0.1+ | 0.1+ |
| 2005 11 10 | G96 | 0.1− | 0.3+ | 2005 12 01 | 704 | 0.4− | 0.0 | 2005 12 05 | 704 | 1.1− | 0.3+ |
| 2005 11 10 | G96 | 0.2+ | 0.3+ | 2005 12 01 | G96 | 0.1+ | 0.2− | 2005 12 05 | 704 | 0.8− | 0.2+ |
| 2005 11 10 | G96 | 0.2+ | 0.2− | 2005 12 01 | G96 | 0.1− | 0.1− | 2006 01 25 | G96 | 0.3− | 0.4− |
| 2005 11 22 | 691 | 0.0 | 0.2+ | 2005 12 01 | G96 | 0.2+ | 0.2− | 2006 01 25 | G96 | 0.3+ | 0.2− |
| 2005 11 22 | 691 | 0.1+ | 0.2+ | 2005 12 01 | G96 | 0.0 | 0.2− | 2006 01 25 | G96 | 0.3+ | 0.0 |
| 2005 11 22 | 691 | 0.4+ | 0.1− | 2005 12 04 | 704 | 0.1+ | 1.4+ | 2006 01 25 | G96 | 0.6− | 0.2− |

**2005 WP$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 127.63179 | | | (2000.0) | | |
| $n$ | 0.29252728 | $\omega$ | 284.85179 | | +0.97993608 | −0.17050401 |
| $a$ | 2.2474591 | $\Omega$ | 85.04525 | | +0.19794176 | +0.89315575 |
| $e$ | 0.1569321 | $i$ | 5.94673 | | −0.02333105 | +0.41617447 |
| $P$ | 3.37 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 699 | 0.2+ | 0.9− | 2005 11 03 | G96 | 0.1− | 0.0 | 2006 01 21 | G96 | 0.4− | 0.0 |
| 1998 09 24 | 699 | 0.0 | 0.9+ | 2005 11 30 | 704 | 0.2+ | 0.1+ | 2006 01 21 | G96 | 0.2− | 0.0 |
| 1998 09 24 | 699 | 0.3− | 0.2+ | 2005 11 30 | 704 | 0.4− | 1.1+ | 2006 01 21 | G96 | 0.0 | 0.2+ |
| 2004 05 24 | 735 | 0.1− | 1.5+ | 2005 11 30 | 704 | 0.1− | 0.7+ | 2006 01 21 | G96 | 0.1− | 0.0 |
| 2004 05 24 | 735 | 0.2− | 0.4+ | 2005 11 30 | 704 | 0.4+ | 0.5+ | 2006 01 23 | G96 | 0.4+ | 0.0 |
| 2004 05 24 | 735 | 1.0+ | 0.0 | 2005 12 01 | G96 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.2+ | 0.1− |
| 2005 11 03 | G96 | 0.2− | 0.2− | 2005 12 01 | G96 | 0.1+ | 0.0 | 2006 01 23 | G96 | 0.5+ | 0.2+ |
| 2005 11 03 | G96 | 0.0 | 0.2− | 2005 12 01 | G96 | 0.1+ | 0.0 | 2006 01 23 | G96 | 0.2+ | 0.5− |
| 2005 11 03 | G96 | 0.3− | 0.2− | 2005 12 01 | G96 | 0.3− | 0.1− | | | | |

**2005 WF$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 240.78931 | | | (2000.0) | | |
| $n$ | 0.27529389 | $\omega$ | 31.96609 | | −0.11996294 | +0.99037219 |
| $a$ | 2.3403007 | $\Omega$ | 231.23762 | | −0.92849561 | −0.13655422 |
| $e$ | 0.2104565 | $i$ | 5.08253 | | −0.35143249 | +0.02271286 |
| $P$ | 3.58 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 11 | 599 | 0.1− | 0.5+ | 2004 07 16 | 704 | 0.3− | 0.4+ | 2005 11 30 | G96 | 0.3+ | 0.4− |
| 2004 06 11 | 599 | 0.3+ | 0.8+ | 2004 07 16 | 704 | 0.5+ | 0.2− | 2005 12 01 | G96 | 0.6− | 0.4+ |
| 2004 06 11 | 599 | 0.2− | 0.8+ | 2004 07 16 | 704 | 0.1+ | 0.6− | 2005 12 01 | G96 | 0.5− | 0.6+ |
| 2004 06 16 | 704 | 0.4− | 0.3− | 2004 07 16 | 704 | 0.2+ | 0.3− | 2005 12 01 | G96 | 0.4− | 0.4+ |
| 2004 06 16 | 704 | 0.8− | 0.3− | 2005 10 25 | G96 | 0.6+ | 0.5+ | 2005 12 01 | G96 | 0.8− | 0.5+ |
| 2004 06 16 | 704 | 0.3+ | 0.8+ | 2005 10 25 | G96 | 0.2+ | 0.3− | 2005 12 04 | G96 | 0.1+ | 0.0 |
| 2004 06 16 | 704 | 0.0 | 0.2+ | 2005 10 25 | G96 | 0.2− | 0.2− | 2005 12 04 | G96 | 0.0 | 0.0 |
| 2004 06 16 | 704 | 0.2+ | 0.5+ | 2005 10 25 | G96 | 0.4+ | 0.3− | 2005 12 04 | G96 | 0.4+ | 0.0 |
| 2004 06 25 | 691 | 0.1− | 0.3− | 2005 11 30 | G96 | 0.3− | 0.0 | 2005 12 04 | G96 | 1.3+ | 0.5− |
| 2004 06 25 | 691 | 0.0 | 0.2+ | 2005 11 30 | G96 | 0.0 | 0.1− | | | | |
| 2004 06 25 | 691 | 0.1+ | 0.3− | 2005 11 30 | G96 | 0.4− | 0.3+ | | | | |

**2005 WW$_{116}$ = 2005 YQ$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 178.57289 | | | (2000.0) | | |
| $n$ | 0.21993616 | $\omega$ | 225.09801 | | +0.72303715 | +0.68027814 |
| $a$ | 2.7181388 | $\Omega$ | 91.63532 | | −0.59510240 | +0.70170426 |
| $e$ | 0.0434802 | $i$ | 6.90428 | | −0.35081392 | +0.21173753 |
| $P$ | 4.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 704 | 0.9+ | 0.8+ | 2003 04 29 | 691 | 0.4+ | 0.2− | 2005 12 01 | 691 | 0.2− | 0.2+ |
| 2002 01 14 | 704 | 0.8+ | 0.1+ | 2003 04 29 | 691 | 0.6+ | 0.0 | 2005 12 01 | 691 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 0.7+ | 0.7+ | 2003 05 06 | 691 | 0.1+ | 0.5− | 2005 12 01 | 691 | 0.3− | 0.1− |
| 2002 01 14 | 704 | 1.2+ | 0.7+ | 2003 05 06 | 691 | 0.3+ | 0.5− | 2005 12 24 | 291 | 0.1+ | 0.5+ |
| 2002 01 14 | 704 | 1.1+ | 0.8+ | 2003 05 06 | 691 | 0.0 | 0.5− | 2005 12 24 | 291 | 0.0 | 0.5+ |
| 2002 02 08 | 645 | 0.2− | 0.2− | 2003 05 29 | 691 | 0.3+ | 0.8+ | 2005 12 24 | 291 | 0.2− | 0.5+ |
| 2002 02 08 | 645 | 0.1− | 0.2− | 2003 05 29 | 691 | 0.1+ | 0.0 | 2006 02 20 | G96 | 0.6+ | 0.7+ |
| 2003 04 11 | 691 | 0.7− | 0.7+ | 2003 05 29 | 691 | 0.5+ | 0.6+ | 2006 02 20 | G96 | 0.5+ | 0.7+ |
| 2003 04 11 | 691 | 0.5− | 0.8+ | 2005 11 30 | G96 | 0.1+ | 0.8+ | 2006 02 20 | G96 | 0.7+ | 0.8+ |
| 2003 04 11 | 691 | 0.7− | 0.5+ | 2005 11 30 | G96 | 1.5− | 0.1− | 2006 02 20 | G96 | 1.2+ | 1.4+ |
| 2003 04 29 | 691 | 0.1+ | 0.1− | 2005 11 30 | G96 | 0.0 | 0.0 | | | | |

**2005 WK$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.48176 | | | (2000.0) | | |
| $n$ | 0.17578543 | $\omega$ | 164.71419 | | −0.83188554 | +0.48972631 |
| $a$ | 3.1560761 | $\Omega$ | 47.67408 | | −0.53896588 | −0.60090868 |
| $e$ | 0.1218854 | $i$ | 20.67454 | | −0.13222038 | −0.63172534 |
| $P$ | 5.61 | $H$ | 14.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 704 | 0.5+ | 0.1+ | 2002 04 17 | 704 | 0.5− | 0.0 | 2002 05 13 | 704 | (2.2+ | 2.4−) |
| 2002 03 21 | 704 | 0.8+ | 0.3+ | 2002 04 17 | 704 | 0.5+ | 0.2+ | 2005 10 28 | 691 | 0.2− | 0.3− |
| 2002 03 21 | 704 | 0.5− | 0.2− | 2002 04 17 | 704 | 0.3+ | 0.1− | 2005 10 28 | 691 | 0.1− | 0.1− |
| 2002 03 21 | 704 | 0.0 | 0.1− | 2002 04 17 | 704 | 0.4+ | 0.1+ | 2005 10 28 | 691 | 0.1− | 0.0 |
| 2002 03 21 | 704 | 0.3− | 0.0 | 2002 04 22 | 644 | 0.0 | 0.2− | 2005 11 28 | 704 | 1.5+ | 0.8− |
| 2002 04 11 | 644 | 0.4− | 0.2− | 2002 04 22 | 644 | 0.3− | 0.0 | 2005 11 28 | 704 | 0.1+ | 1.6+ |
| 2002 04 11 | 699 | 0.3+ | 0.6+ | 2002 04 22 | 644 | 0.2+ | 0.3− | 2005 11 28 | 704 | 1.3+ | 0.3+ |
| 2002 04 11 | 644 | 0.1+ | 0.2+ | 2002 05 06 | 644 | 0.3+ | 0.4− | 2005 11 28 | 704 | 0.4+ | 0.7+ |
| 2002 04 11 | 644 | 0.1− | 0.0 | 2002 05 06 | 644 | 0.0 | 0.3− | 2005 12 01 | 644 | 0.6− | 0.2− |
| 2002 04 11 | 699 | 0.4− | 0.3+ | 2002 05 06 | 644 | 0.0 | 0.0 | 2005 12 01 | 644 | 0.4− | 0.0 |
| 2002 04 11 | 699 | 0.3+ | 0.0 | 2002 05 13 | 704 | 0.3− | 0.5+ | 2005 12 01 | 644 | 0.5− | 0.1− |
| 2002 04 11 | 699 | 0.9− | 0.7− | 2002 05 13 | 704 | 0.1+ | 0.0 | | | | |
| 2002 04 17 | 704 | 0.1− | 0.0 | 2002 05 13 | 704 | 0.3− | 0.2+ | | | | |

**2005 WK$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.66536 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17097255 | $\omega$ | 112.55957 | | +0.22233924 | −0.97349864 | |
| $a$ | 3.2150307 | $\Omega$ | 324.45987 | | +0.85727733 | +0.22135639 | |
| $e$ | 0.0648121 | $i$ | 5.28409 | | +0.46437145 | +0.05746075 | |
| $P$ | 5.76 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 07 | 691 | 0.1+ | 0.0 | 2005 11 28 | 703 | 0.0 | 0.8− | 2005 12 10 | 703 | 0.6− | 1.2+ |
| 2004 09 07 | 691 | 0.1− | 0.2+ | 2005 11 28 | 703 | 0.5− | 1.2− | 2006 03 04 | G96 | 0.2+ | 0.1− |
| 2004 09 07 | 691 | 0.0 | 0.2− | 2005 12 01 | 644 | 0.0 | 0.0 | 2006 03 04 | G96 | 0.1+ | 0.2+ |
| 2005 10 29 | 691 | 0.8+ | 1.3− | 2005 12 01 | 644 | 0.0 | 0.2+ | 2006 03 04 | G96 | 0.2− | 0.1− |
| 2005 10 29 | 691 | 0.2+ | 0.2+ | 2005 12 01 | 644 | 0.1+ | 0.0 | 2006 03 04 | G96 | 0.1+ | 0.4+ |
| 2005 10 29 | 691 | 1.4− | 0.8+ | 2005 12 02 | 704 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.3− | 0.3+ |
| 2005 11 06 | 691 | 0.2+ | 0.2+ | 2005 12 02 | 704 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.7− | 0.1+ |
| 2005 11 06 | 691 | 0.2+ | 0.1+ | 2005 12 02 | 704 | 1.1+ | 0.3− | 2006 11 16 | G96 | 0.6+ | 0.8− |
| 2005 11 06 | 691 | 0.2+ | 0.3− | 2005 12 10 | 703 | 1.0− | 1.3+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2005 11 28 | 703 | 1.1− | 0.0 | 2005 12 10 | 703 | 1.2− | 0.1− | | | | |
| 2005 11 28 | 703 | 0.4+ | 0.0 | 2005 12 10 | 703 | 0.5+ | 1.1+ | | | | |

**2005 WC$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.24048 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28931643 | $\omega$ | 137.67424 | | +0.99627129 | +0.04972954 | |
| $a$ | 2.2640568 | $\Omega$ | 219.64101 | | −0.06966041 | +0.94577493 | |
| $e$ | 0.1908651 | $i$ | 6.34462 | | +0.05090122 | +0.32099338 | |
| $P$ | 3.41 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 11 | 699 | 0.1− | 0.8+ | 2005 11 06 | 704 | 0.8+ | 1.1+ | 2005 12 02 | 704 | 0.5− | 0.2+ |
| 1998 10 11 | 699 | 0.7− | 0.8+ | 2005 11 06 | 704 | 0.5− | 0.3− | 2005 12 02 | 704 | 0.7− | 0.0 |
| 1998 10 11 | 699 | 0.1+ | 0.9+ | 2005 11 06 | 704 | 0.1+ | 0.7+ | 2005 12 02 | 704 | 0.2− | 1.1+ |
| 2004 04 22 | 691 | 0.2+ | 0.5+ | 2005 11 06 | 704 | 0.5+ | 0.2− | 2005 12 02 | 704 | 0.2+ | 0.7+ |
| 2004 04 22 | 691 | 0.1+ | 0.6+ | 2005 11 21 | 699 | 0.5− | 0.7− | 2005 12 07 | 704 | 0.4+ | 0.6+ |
| 2004 04 22 | 691 | 0.1+ | 0.6+ | 2005 11 21 | 699 | 0.7− | 0.4− | 2005 12 07 | 704 | 0.1+ | 0.3+ |
| 2005 09 30 | G96 | 0.3− | 0.2− | 2005 11 21 | 699 | 0.3− | 0.2− | 2005 12 07 | 704 | 0.4+ | 1.1− |
| 2005 09 30 | G96 | 0.0 | 0.1− | 2005 11 30 | 704 | 0.1− | 0.0 | 2005 12 07 | 704 | 0.7+ | 0.5− |
| 2005 09 30 | G96 | 0.2+ | 0.1+ | 2005 11 30 | 704 | 0.8− | 0.4− | 2005 12 10 | 699 | 1.5+ | 1.5+ |
| 2005 09 30 | G96 | 0.1− | 0.0 | 2005 11 30 | 704 | 0.4− | 0.2+ | 2005 12 10 | 699 | 1.0− | 0.3− |
| 2005 10 28 | 704 | 0.1− | 0.2− | 2005 11 30 | 704 | 0.2− | 0.8− | 2005 12 10 | 699 | 0.4+ | 1.1− |
| 2005 10 28 | 704 | 0.4+ | 0.3− | 2005 12 01 | 704 | 0.3− | 0.8+ | 2005 12 10 | 699 | 0.9+ | 0.1+ |
| 2005 10 28 | 704 | 0.0 | 1.3+ | 2005 12 01 | 704 | 0.9− | 0.0 | 2006 01 31 | G96 | 0.1+ | 0.1+ |
| 2005 10 31 | 704 | 0.0 | 0.0 | 2005 12 01 | 704 | 0.3− | 0.4+ | 2006 01 31 | G96 | 0.3− | 0.2+ |
| 2005 10 31 | 704 | 1.0+ | 0.1+ | 2005 12 01 | 704 | 0.0 | 0.1+ | 2006 01 31 | G96 | 0.3− | 0.4− |
| 2005 10 31 | 704 | 0.1− | 0.1+ | 2005 12 01 | 704 | 0.2+ | 0.2+ | 2006 01 31 | G96 | 0.1− | 0.4− |
| 2005 11 06 | 704 | 0.2+ | 0.7+ | 2005 12 02 | 704 | 0.1+ | 0.2+ | | | | |

**2005 WJ$_{132}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.34876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21109553 | $\omega$ | 59.95628 | | +0.64771029 | +0.74968208 | |
| $a$ | 2.7935087 | $\Omega$ | 251.05414 | | −0.73909778 | +0.57499533 | |
| $e$ | 0.2016521 | $i$ | 8.25642 | | −0.18494823 | +0.32765400 | |
| $P$ | 4.67 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 28 | 691 | 0.3+ | 0.1− | 2005 11 25 | G96 | 0.2− | 0.2− | 2005 12 04 | 691 | 0.0 | 0.0 |
| 2003 03 28 | 691 | 0.1+ | 0.2+ | 2005 11 25 | G96 | 0.0 | 0.2− | 2005 12 04 | 691 | 0.2− | 0.3+ |
| 2003 03 28 | 691 | 0.3− | 0.1− | 2005 11 25 | G96 | 0.3+ | 0.1− | 2005 12 25 | G96 | 0.3− | 0.2+ |
| 2005 10 28 | G96 | 0.4− | 0.1+ | 2005 12 02 | G96 | 0.0 | 0.0 | 2005 12 25 | G96 | 0.1+ | 0.1− |
| 2005 10 28 | G96 | 0.3+ | 0.2+ | 2005 12 02 | G96 | 0.3+ | 0.1− | 2005 12 25 | G96 | 0.7− | 0.1− |
| 2005 10 28 | G96 | 0.1− | 0.1− | 2005 12 02 | G96 | 0.0 | 0.1− | 2005 12 25 | G96 | 1.1+ | 0.2− |
| 2005 10 28 | G96 | 0.4− | 0.1+ | 2005 12 02 | G96 | 0.1+ | 0.2+ | | | | |
| 2005 11 25 | G96 | 0.3+ | 0.0 | 2005 12 04 | 691 | 0.1− | 0.3+ | | | | |

**2005 WU$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.36262 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23180743 | $\omega$ | 154.10775 | | +0.79054365 | −0.61230845 | |
| $a$ | 2.6245276 | $\Omega$ | 243.65319 | | +0.55973469 | +0.72966701 | |
| $e$ | 0.1131298 | $i$ | 0.69778 | | +0.24847096 | +0.30440830 | |
| $P$ | 4.25 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 691 | 0.2− | 0.7− | 2005 11 26 | 691 | 0.4+ | 0.5+ | 2005 12 02 | G96 | 0.1+ | 0.1− |
| 2001 12 20 | 691 | 0.0 | 0.1− | 2005 11 26 | 691 | 0.3− | 0.4+ | 2005 12 02 | 695 | 0.3+ | 0.2+ |
| 2001 12 20 | 691 | 0.0 | 0.5− | 2005 12 01 | 704 | 0.1+ | 1.0− | 2005 12 25 | G96 | 0.2− | 0.1+ |
| 2003 04 29 | 691 | 0.5+ | 0.3+ | 2005 12 01 | 704 | 0.5− | 0.2− | 2005 12 25 | G96 | 0.2− | 0.4− |
| 2003 04 29 | 691 | 0.0 | 0.3+ | 2005 12 01 | 704 | 0.1− | 0.4+ | 2005 12 25 | G96 | 0.1− | 0.3− |
| 2003 04 29 | 691 | 0.0 | 0.6+ | 2005 12 02 | 695 | 0.1+ | 0.1+ | 2005 12 25 | G96 | 0.7− | 0.4− |
| 2005 11 05 | 691 | 0.1− | 0.4+ | 2005 12 02 | 695 | 0.0 | 0.1+ | 2006 01 05 | G96 | 0.2+ | 0.1− |
| 2005 11 05 | 691 | 0.2+ | 0.2+ | 2005 12 02 | G96 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.1− | 0.2− |
| 2005 11 05 | 691 | 0.0 | 0.3+ | 2005 12 02 | G96 | 0.2− | 0.1− | 2006 01 05 | G96 | 0.1+ | 0.0 |
| 2005 11 26 | 691 | 0.0 | 0.5+ | 2005 12 02 | G96 | 0.0 | 0.0 | 2006 01 05 | G96 | 0.3− | 0.0 |

**2005 WF$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.63037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25280824 | $\omega$ | 86.64327 | | −0.85031356 | −0.52471111 | |
| $a$ | 2.4770906 | $\Omega$ | 61.70425 | | +0.46271060 | −0.78210341 | |
| $e$ | 0.0966028 | $i$ | 2.64021 | | +0.25073043 | −0.33614358 | |
| $P$ | 3.90 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 691 | 0.0 | 0.2− | 2003 05 05 | 691 | 0.2+ | 0.0 | 2005 11 26 | G96 | 0.1− | 0.1+ |
| 2003 04 04 | 691 | 0.1− | 0.2+ | 2003 05 05 | 691 | 0.5+ | 0.8+ | 2005 11 26 | G96 | 0.0 | 0.4− |
| 2003 04 04 | 691 | 0.2+ | 0.3− | 2005 11 12 | 691 | 0.0 | 0.2+ | 2005 12 02 | G96 | 0.5− | 0.3− |
| 2003 04 10 | 291 | 0.4− | 0.4− | 2005 11 12 | 691 | 0.2− | 0.5+ | 2005 12 02 | G96 | 1.0− | 0.5− |
| 2003 04 10 | 291 | 0.1− | 0.2− | 2005 11 12 | 691 | 0.6+ | 0.2+ | 2005 12 02 | G96 | 0.5− | 0.2− |
| 2003 04 10 | 291 | 0.2− | 0.1− | 2005 11 26 | G96 | 0.1− | 0.7− | 2005 12 02 | G96 | 0.2− | 0.2− |
| 2003 05 05 | 691 | 0.1+ | 0.6+ | 2005 11 26 | G96 | 0.4+ | 0.4− | | | | |

**2005 WZ$_{141}$ = 2000 WA$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.76159 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18684667 | $\omega$ | 6.37911 | | +0.73112534 | −0.67967448 | |
| $a$ | 3.0302548 | $\Omega$ | 36.66746 | | +0.62148707 | +0.62774492 | |
| $e$ | 0.1703977 | $i$ | 5.68419 | | +0.28144194 | +0.37944554 | |
| $P$ | 5.27 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 691 | 0.1− | 0.1+ | 2005 09 25 | 691 | 0.5+ | 0.3+ | 2005 10 29 | G96 | 0.6+ | 0.3+ |
| 2000 11 19 | 691 | 0.1+ | 0.2− | 2005 10 01 | 691 | 0.1+ | 0.7+ | 2005 10 29 | G96 | 0.0 | 0.3+ |
| 2000 11 19 | 691 | 0.0 | 0.2− | 2005 10 01 | 691 | 0.1+ | 0.6+ | 2005 10 29 | G96 | 0.1+ | 0.2+ |
| 2000 11 20 | 704 | 0.6− | 1.7+ | 2005 10 01 | 691 | (1.1− | 3.5−) | 2005 10 29 | G96 | 0.0 | 0.1− |
| 2000 11 20 | 704 | 0.2− | 0.6+ | 2005 10 07 | 703 | 1.0− | 0.1− | 2005 11 29 | G96 | 1.0+ | 0.0 |
| 2000 11 20 | 704 | 0.4+ | 0.3+ | 2005 10 07 | 703 | 0.5− | 0.4+ | 2005 11 29 | G96 | 0.1− | 0.1− |
| 2003 04 01 | 695 | 0.3+ | 0.7+ | 2005 10 07 | 703 | 0.9− | 0.5− | 2005 11 29 | G96 | 0.4+ | 0.1+ |
| 2003 04 01 | 695 | 0.4+ | 0.6+ | 2005 10 07 | 703 | 0.8− | 0.6+ | 2005 11 29 | G96 | 0.4+ | 0.3− |
| 2003 05 30 | 807 | 0.1− | 0.1+ | 2005 10 07 | 703 | 0.1− | 0.7+ | 2005 12 02 | G96 | 0.6− | 0.4+ |
| 2003 05 30 | 807 | 0.1+ | 0.2+ | 2005 10 07 | 703 | 2.0+ | 0.7+ | 2005 12 02 | G96 | 0.4+ | 0.1− |
| 2005 09 25 | 691 | 0.5+ | 0.7+ | 2005 10 07 | 703 | 0.3− | 1.9+ | 2005 12 02 | G96 | 0.7− | 0.8− |
| 2005 09 25 | 691 | 0.0 | 0.5+ | 2005 10 07 | 703 | 0.5− | 1.3− | 2005 12 02 | G96 | 0.1− | 0.5+ |

**2005 WB$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.62215 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27392825 | $\omega$ | 287.73861 | | −0.36708312 | | +0.92780185 |
| $a$ | 2.3480725 | $\Omega$ | 320.52029 | | −0.80883235 | | −0.35372610 |
| $e$ | 0.0845066 | $i$ | 6.01145 | | −0.45939114 | | −0.11858150 |
| $P$ | 3.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 291 | 0.1+ | 0.1− | 2003 03 06 | 644 | 0.3+ | 1.3+ | 2004 08 21 | E12 | 0.7− | 0.4+ |
| 2003 01 04 | 291 | 0.1− | 0.2+ | 2003 03 06 | 644 | 0.5+ | 1.1+ | 2004 08 21 | E12 | 0.2+ | 0.2+ |
| 2003 01 04 | 291 | 0.1− | 0.0 | 2003 03 12 | 644 | 0.2+ | 0.3+ | 2004 08 21 | E12 | 0.5− | 0.2+ |
| 2003 01 31 | 704 | 0.4+ | 0.8− | 2003 03 12 | 644 | 0.2− | 0.0 | 2005 11 28 | 691 | 0.1+ | 0.2+ |
| 2003 01 31 | 704 | 0.8− | 0.0 | 2003 03 12 | 644 | 0.5+ | 0.2+ | 2005 11 28 | 691 | 0.1+ | 0.1+ |
| 2003 01 31 | 704 | 0.1+ | 0.7− | 2004 07 08 | E12 | 0.4+ | 0.3+ | 2005 11 28 | 691 | 0.1− | 0.1− |
| 2003 01 31 | 704 | 0.7− | 1.3− | 2004 07 08 | E12 | 0.2+ | 0.4+ | 2005 12 02 | 691 | 0.2− | 0.2+ |
| 2003 01 31 | 704 | 0.2− | 0.9− | 2004 07 08 | E12 | 1.0+ | 0.5− | 2005 12 02 | 691 | 0.1+ | 0.1+ |
| 2003 01 31 | 704 | 1.1+ | 0.7− | 2004 07 08 | E12 | 0.8− | 0.3− | 2005 12 02 | 691 | 0.0 | 0.3+ |
| 2003 01 31 | 704 | 0.5− | 0.7− | 2004 07 19 | 699 | 0.2+ | 0.5+ | 2006 02 02 | G96 | 0.1− | 0.1− |
| 2003 02 22 | 644 | 0.0 | 1.4+ | 2004 07 19 | 699 | 0.6− | 0.3+ | 2006 02 02 | G96 | 0.3+ | 0.5− |
| 2003 02 22 | 644 | 0.1+ | 1.3+ | 2004 07 19 | 699 | 0.7− | 0.1+ | 2006 02 02 | G96 | 0.2+ | 0.4− |
| 2003 02 22 | 644 | 0.3+ | 1.1+ | 2004 07 19 | 699 | 0.7+ | 1.1+ | 2006 02 02 | G96 | 0.3− | 0.4− |
| 2003 03 06 | 644 | 0.4+ | 0.6+ | 2004 08 21 | E12 | 0.4− | 0.1+ | | | | |

**2005 WG$_{150}$ = 2004 QU$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.48077 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22593134 | $\omega$ | 258.64037 | | +0.27547796 | | +0.96069997 |
| $a$ | 2.6698389 | $\Omega$ | 27.42431 | | −0.85052299 | | +0.26014205 |
| $e$ | 0.0453763 | $i$ | 4.25443 | | −0.44802069 | | +0.09685908 |
| $P$ | 4.36 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 28 | 691 | 0.5− | 0.3+ | 2004 08 22 | 568 | 0.1+ | 0.1+ | 2005 12 02 | 691 | 0.0 | 0.3− |
| 2003 04 28 | 691 | 0.4+ | 0.1+ | 2004 08 22 | 568 | 0.2− | 0.2+ | 2005 12 02 | 691 | 0.2− | 0.3− |
| 2003 04 28 | 691 | 0.3+ | 0.1− | 2005 11 28 | 691 | 0.2− | 0.3+ | 2005 12 05 | 691 | 0.1+ | 0.3+ |
| 2004 08 21 | 568 | 0.3+ | 0.4+ | 2005 11 28 | 691 | 0.9− | 0.2+ | 2005 12 05 | 691 | 0.5+ | 0.1+ |
| 2004 08 21 | 568 | 0.4− | 0.1+ | 2005 11 28 | 691 | 0.2+ | 0.1+ | 2005 12 05 | 691 | 0.3+ | 0.1+ |
| 2004 08 22 | 568 | 0.0 | 0.0 | 2005 12 02 | 691 | 0.2+ | 0.3− | | | | |

**2005 WD$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.65557 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26056775 | $\omega$ | 188.41182 | | +0.93002057 | | +0.36197419 |
| $a$ | 2.4276660 | $\Omega$ | 150.11917 | | −0.32932616 | | +0.89757887 |
| $e$ | 0.1268113 | $i$ | 7.32662 | | −0.16311354 | | +0.25164827 |
| $P$ | 3.78 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 704 | 1.2− | 0.1− | 2001 11 18 | 704 | 0.3− | 0.0 | 2005 11 25 | 703 | 0.1− | 0.3− |
| 2001 10 16 | 704 | 0.1+ | 0.7+ | 2001 11 18 | 608 | 0.5+ | 0.3+ | 2005 11 25 | 703 | 1.1+ | 0.9− |
| 2001 10 16 | 704 | 0.0 | 1.5+ | 2001 11 18 | 608 | 0.0 | 0.9− | 2005 11 25 | 703 | 0.5− | 0.4− |
| 2001 10 16 | 704 | 0.3− | 0.3+ | 2001 11 18 | 608 | 0.6− | 0.1− | 2005 11 29 | 644 | 0.2+ | 0.6+ |
| 2001 10 16 | 704 | 0.5+ | 0.4+ | 2003 02 22 | 699 | 0.6+ | 0.5+ | 2005 11 29 | 644 | 0.2− | 0.1+ |
| 2001 10 24 | 644 | 0.3− | 0.7+ | 2003 02 22 | 699 | 0.6− | 1.6+ | 2005 11 29 | 644 | 0.2+ | 0.1+ |
| 2001 10 24 | 644 | 0.0 | 0.6+ | 2003 02 22 | 699 | 1.3+ | 0.6+ | 2005 12 01 | 703 | 0.2+ | 0.0 |
| 2001 10 24 | 644 | 0.2+ | 0.1+ | 2003 02 22 | 699 | 0.5− | 0.2+ | 2005 12 01 | 703 | 0.6− | 0.1+ |
| 2001 11 18 | 704 | 0.3− | 0.0 | 2004 06 12 | 704 | 0.2+ | 0.9− | 2005 12 01 | 703 | 0.7+ | 0.3+ |
| 2001 11 18 | 704 | 0.0 | 0.1− | 2004 06 12 | 704 | 0.7− | 1.8+ | 2005 12 01 | 703 | 0.5− | 0.7− |
| 2001 11 18 | 704 | 0.3+ | 0.2− | 2004 06 12 | 704 | 0.6+ | 1.2+ | | | | |
| 2001 11 18 | 704 | 0.2+ | 0.3+ | 2005 11 25 | 703 | 0.2− | 0.2− | | | | |

**2005 WK$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.06222 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26779694 | $\omega$ | 85.87433 | | −0.98196734 | | −0.18504782 |
| $a$ | 2.3837771 | $\Omega$ | 83.45859 | | +0.15429524 | | −0.90274772 |
| $e$ | 0.1534787 | $i$ | 2.23226 | | +0.10923885 | | −0.38833473 |
| $P$ | 3.68 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 30 | 807 | 0.0 | 0.2+ | 2006 01 07 | 691 | 0.3− | 0.2+ | 2006 01 27 | 246 | 0.4+ | 0.1+ |
| 2003 05 30 | 807 | 0.1+ | 0.3+ | 2006 01 07 | 691 | 0.4+ | 0.3− | 2006 01 27 | 246 | 0.1+ | 1.2+ |
| 2004 09 11 | 691 | 0.0 | 0.2+ | 2006 01 18 | 703 | 0.7− | 0.2+ | 2006 01 27 | 246 | 0.9− | 0.9+ |
| 2004 09 11 | 691 | 0.2− | 0.2− | 2006 01 18 | 703 | 0.2+ | 0.5− | 2006 01 27 | 246 | 0.2− | 0.6+ |
| 2004 09 11 | 691 | 0.1+ | 0.1+ | 2006 01 18 | 703 | 0.7+ | 0.5− | 2006 02 02 | 703 | 0.0 | 0.9− |
| 2005 11 26 | G96 | 0.3− | 0.3+ | 2006 01 18 | 703 | 0.8− | 0.4+ | 2006 02 02 | 703 | 1.0+ | 0.5+ |
| 2005 11 26 | G96 | 0.4+ | 0.2− | 2006 01 24 | 704 | 0.7+ | 0.6− | 2006 02 02 | 703 | 0.0 | 0.0 |
| 2005 11 26 | G96 | 0.7+ | 0.5− | 2006 01 24 | 704 | 0.9+ | 0.9− | 2006 02 02 | 703 | 1.7− | 0.6− |
| 2005 11 26 | G96 | 0.6− | 0.2− | 2006 01 24 | 704 | (0.3+ | 2.0−) | 2006 02 06 | G96 | 0.2+ | 0.3+ |
| 2005 12 02 | G96 | 0.1+ | 0.1− | 2006 01 24 | 704 | 0.5+ | 0.7− | 2006 02 06 | G96 | 0.3+ | 0.8+ |
| 2005 12 02 | G96 | 0.1+ | 0.3− | 2006 01 24 | 704 | 1.5+ | 0.9− | 2006 02 06 | G96 | 0.3+ | 0.4+ |
| 2005 12 02 | G96 | 0.2+ | 0.3− | 2006 01 27 | G96 | 0.4− | 0.2− | 2006 02 06 | G96 | 0.2− | 0.6+ |
| 2005 12 02 | G96 | 0.3− | 0.1+ | 2006 01 27 | G96 | 0.2− | 0.1− | 2006 02 07 | G96 | 0.7− | 0.0 |
| 2005 12 29 | 691 | 0.2+ | 0.1+ | 2006 01 27 | G96 | 0.2− | 0.2− | 2006 02 07 | G96 | 1.5− | 0.3− |
| 2005 12 29 | 691 | 0.0 | 0.4+ | 2006 01 27 | G96 | 0.1− | 0.3− | 2006 02 07 | G96 | 0.4− | 0.4− |
| 2005 12 29 | 691 | 0.2+ | 0.1+ | 2006 01 27 | 246 | 0.7− | 0.2+ | 2006 02 07 | G96 | 0.2− | 0.1− |
| 2006 01 07 | 691 | 0.0 | 0.2+ | 2006 01 27 | 246 | 0.3− | 0.7+ | | | | |

**2005 WW$_{159}$ = 2001 UZ$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.96599 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26334755 | $\omega$ | 260.12942 | | +0.98373915 | | +0.17004160 |
| $a$ | 2.4105521 | $\Omega$ | 90.06367 | | −0.13361596 | | +0.90801757 |
| $e$ | 0.2042597 | $i$ | 3.31468 | | −0.12001688 | | +0.38287068 |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 03 | 691 | 0.0 | 0.6− | 2001 10 17 | 704 | 0.6+ | 0.1− | 2005 12 04 | 691 | 0.0 | 0.1+ |
| 1994 12 03 | 691 | 0.0 | 0.2+ | 2001 10 18 | 644 | 0.4− | 0.2+ | 2005 12 04 | 704 | 0.6+ | 0.2+ |
| 1994 12 03 | 691 | 0.2− | 0.2− | 2001 10 18 | 644 | 0.4− | 0.1+ | 2005 12 04 | 704 | 0.7+ | 0.1− |
| 1996 04 11 | 691 | 0.6− | 0.6− | 2001 10 18 | 644 | 0.5− | 0.2+ | 2005 12 04 | 704 | 1.0+ | 0.0 |
| 1996 04 11 | 691 | 0.2− | 0.1− | 2001 10 20 | 704 | 0.0 | 0.6− | 2005 12 08 | 691 | 0.1− | 0.1+ |
| 1996 04 11 | 691 | 0.5+ | 0.2− | 2001 10 20 | 704 | 0.2− | 0.8− | 2005 12 08 | 691 | 0.1− | 0.1+ |
| 2001 10 17 | 704 | 0.6+ | 1.1− | 2001 10 20 | 704 | 0.1− | 0.6− | 2005 12 08 | 691 | 0.2− | 0.0 |
| 2001 10 17 | 704 | 0.5+ | 1.0− | 2001 10 20 | 704 | 0.4− | 0.9− | 2006 01 05 | G96 | 0.3− | 0.1− |
| 2001 10 17 | 704 | 1.1+ | 1.3− | 2005 11 30 | 691 | 0.2− | 0.2+ | 2006 01 05 | G96 | 0.0 | 0.3− |
| 2001 10 17 | 704 | 0.5+ | 0.4− | 2005 11 30 | 691 | 0.1+ | 0.1+ | 2006 01 05 | G96 | 0.2− | 0.1+ |
| 2001 10 17 | 704 | 0.5+ | 0.9+ | 2005 11 30 | 691 | 0.1− | 0.1+ | 2006 01 05 | G96 | 0.1+ | 0.0 |
| 2001 10 17 | 704 | 0.1− | 0.1− | 2005 12 04 | 691 | 0.0 | 0.2+ | | | | |
| 2001 10 17 | 704 | 0.2+ | 1.1+ | 2005 12 04 | 691 | 0.1+ | 0.4+ | | | | |

**2005 WX$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.83244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17937558 | $\omega$ | 357.37932 | | −0.94504021 | | −0.32690863 |
| $a$ | 3.1138224 | $\Omega$ | 163.53625 | | +0.30032344 | | −0.87453886 |
| $e$ | 0.1035682 | $i$ | 1.10260 | | +0.12924716 | | −0.35820739 |
| $P$ | 5.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 291 | 0.3+ | 0.4+ | 2005 11 30 | G96 | 0.3+ | 0.1− | 2005 12 26 | G96 | 0.4+ | 0.2− |
| 2002 04 09 | 291 | 0.1− | 0.4+ | 2005 11 30 | G96 | 0.4− | 0.3− | 2005 12 26 | G96 | 0.5− | 0.5− |
| 2002 04 09 | 291 | 0.1− | 0.5− | 2005 11 30 | G96 | 0.1− | 0.1− | 2005 12 26 | G96 | 0.6+ | 0.0 |
| 2004 10 07 | 691 | 0.2− | 0.1− | 2005 11 30 | G96 | 0.3− | 0.1− | 2006 01 06 | G96 | 0.8− | 0.0 |
| 2004 10 07 | 691 | 0.0 | 0.0 | 2005 12 04 | 691 | 0.1+ | 0.3+ | 2006 01 06 | G96 | 0.3+ | 0.4− |
| 2004 10 07 | 691 | 0.1+ | 0.2+ | 2005 12 04 | 691 | 0.1+ | 0.3+ | 2006 01 06 | G96 | 0.1− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 11 22 | 691 | 0.4− | 0.7− | 2005 12 04 | 691 | 0.5+ | 0.5+ | 2006 01 06 | G96 | 0.1+ | 0.9− |
| 2005 11 22 | 691 | 0.1− | 0.5− | 2005 12 04 | G96 | 0.3− | 0.2− | 2006 01 22 | G96 | 0.4+ | 0.3+ |
| 2005 11 22 | 691 | 0.0 | 0.2+ | 2005 12 04 | G96 | 0.5− | 0.0 | 2006 01 22 | G96 | 0.4− | 0.1− |
| 2005 11 30 | 691 | 0.0 | 0.4+ | 2005 12 04 | G96 | 0.1− | 0.1+ | 2006 01 22 | G96 | 0.1− | 0.0 |
| 2005 11 30 | 691 | 0.2+ | 0.3+ | 2005 12 04 | G96 | 0.4− | 0.1− | 2006 01 22 | G96 | 0.3+ | 0.2− |
| 2005 11 30 | 691 | 0.1+ | 0.3+ | 2005 12 26 | G96 | 0.1− | 0.3− | | | | |

**2005 WM$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.56429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26190321 | $\omega$ | 63.41736 | | −0.90089767 | −0.42061730 | |
| $a$ | 2.4194065 | $\Omega$ | 91.54644 | | +0.35029481 | −0.85027813 | |
| $e$ | 0.0983105 | $i$ | 6.14882 | | +0.25627510 | −0.31639877 | |
| $P$ | 3.76 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 30 | 807 | 0.0 | 0.2− | 2005 11 30 | 691 | 0.2− | 0.2− | 2006 01 06 | G96 | 0.2+ | 0.4− |
| 2000 07 30 | 807 | 0.0 | 0.2− | 2005 11 30 | 691 | 0.1− | 0.3− | 2006 01 06 | G96 | 0.7+ | 0.3− |
| 2003 04 28 | 691 | 0.0 | 0.0 | 2005 12 04 | 691 | 0.1+ | 0.1+ | 2006 01 06 | G96 | 0.1− | 0.3− |
| 2003 04 28 | 691 | 0.2− | 0.0 | 2005 12 04 | 691 | 0.4+ | 0.7+ | 2006 01 06 | G96 | 0.2− | 0.4− |
| 2003 04 28 | 691 | 0.3+ | 0.1+ | 2005 12 04 | 691 | 0.1+ | 0.1− | 2006 01 21 | G96 | 0.1− | 0.2− |
| 2005 11 22 | 691 | 0.0 | 0.2− | 2005 12 21 | 703 | 0.1+ | 0.0 | 2006 01 21 | G96 | 0.2+ | 0.3− |
| 2005 11 22 | 691 | 0.0 | 0.4− | 2005 12 21 | 703 | 1.0− | 0.5− | 2006 01 21 | G96 | 0.1− | 0.3− |
| 2005 11 22 | 691 | 0.5− | 1.3+ | 2005 12 21 | 703 | 0.9+ | 0.3− | 2006 01 21 | G96 | 0.1+ | 0.2− |
| 2005 11 30 | 691 | 0.3− | 0.1− | 2005 12 21 | 703 | 1.3+ | 0.3+ | | | | |

**2005 WG$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.33114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28108375 | $\omega$ | 82.85635 | | −0.99257666 | −0.06049383 | |
| $a$ | 2.3080518 | $\Omega$ | 93.63557 | | +0.01473652 | −0.92095199 | |
| $e$ | 0.1033713 | $i$ | 6.06873 | | +0.12072455 | −0.38495185 | |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.1− | 0.5+ | 2003 03 07 | 699 | 1.1+ | 0.6− | 2005 12 04 | 691 | 0.2− | 0.0 |
| 2001 10 11 | 644 | 0.1− | 0.6+ | 2003 03 07 | 699 | 0.3+ | 0.5− | 2005 12 04 | 691 | 0.0 | 0.1+ |
| 2001 10 11 | 644 | 0.0 | 0.7+ | 2003 03 07 | 699 | 0.5− | 0.2+ | 2005 12 04 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2003 03 07 | 699 | 0.8− | 0.9+ | 2005 12 08 | 691 | 0.0 | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 11 30 | 691 | 0.1+ | 0.1− | 2005 12 08 | 691 | 0.1− | 0.0 |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2005 11 30 | 691 | 0.1− | 0.2+ | 2005 12 08 | 691 | 0.1− | 0.1+ |
| 2001 10 25 | 645 | 0.0 | 0.1− | 2005 11 30 | 691 | 0.4+ | 0.2− | | | | |

**2005 WF$_{172}$ = 2002 CB$_{131}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.27937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21746524 | $\omega$ | 269.82926 | | −0.63934637 | −0.76841534 | |
| $a$ | 2.7386897 | $\Omega$ | 219.95878 | | +0.72158086 | −0.58709262 | |
| $e$ | 0.1414077 | $i$ | 2.48290 | | +0.26562621 | −0.25467651 | |
| $P$ | 4.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.3− | 1.0− | 2002 02 11 | 704 | 0.5+ | 0.3+ | 2005 12 04 | G96 | 0.1− | 0.0 |
| 2002 02 06 | 644 | 0.1− | 1.1− | 2002 02 11 | 704 | 0.3+ | 0.5+ | 2005 12 04 | G96 | 0.3+ | 0.2− |
| 2002 02 06 | 644 | 0.4− | 1.2− | 2005 11 30 | G96 | 0.4− | 0.1+ | 2005 12 04 | G96 | 0.2+ | 0.4+ |
| 2002 02 07 | 704 | 0.2+ | 1.9+ | 2005 11 30 | G96 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.3− | 0.0 |
| 2002 02 07 | 704 | 0.4+ | 0.2+ | 2005 11 30 | G96 | 0.4+ | 0.2− | 2005 12 04 | G96 | 0.2+ | 0.1+ |
| 2002 02 07 | 704 | 0.9− | 0.4+ | 2005 11 30 | G96 | 0.1− | 0.1+ | 2005 12 05 | G96 | 0.2+ | 0.0 |
| 2002 02 11 | 704 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.2+ | 0.0 | 2005 12 05 | G96 | 0.0 | 0.1− |
| 2002 02 11 | 704 | 0.3+ | 0.2+ | 2005 12 04 | G96 | 0.0 | 0.2− | 2005 12 05 | G96 | 0.1− | 0.0 |
| 2002 02 11 | 704 | 0.1+ | 0.2− | 2005 12 04 | G96 | 0.0 | 0.1+ | 2005 12 05 | G96 | 0.1− | 0.1− |

**2005 WF$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.89373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21426892 | $\omega$ | 167.57809 | | −0.22255392 | +0.94200243 | |
| $a$ | 2.7658583 | $\Omega$ | 89.15710 | | −0.91459302 | −0.11250261 | |
| $e$ | 0.0923847 | $i$ | 14.55011 | | −0.33762311 | −0.31618757 | |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 31 | 691 | 0.1− | 0.2+ | 2002 02 21 | 704 | 0.1+ | 0.8+ | 2005 12 04 | 691 | 0.2− | 0.3+ |
| 2000 12 31 | 691 | 0.1− | 0.1+ | 2002 02 21 | 704 | 0.6− | 0.1− | 2005 12 04 | 691 | 0.2+ | 0.0 |
| 2000 12 31 | 691 | 0.1+ | 0.1+ | 2002 02 21 | 704 | 0.7− | 0.1− | 2005 12 04 | 691 | 0.2+ | 0.3+ |
| 2002 02 06 | 704 | 0.9+ | 0.4+ | 2002 02 21 | 704 | 0.2+ | 0.8+ | 2006 01 28 | 691 | 0.4+ | 2.3− |
| 2002 02 06 | 704 | 0.7− | 0.2− | 2004 10 04 | 644 | 0.4− | 0.3+ | 2006 01 28 | 691 | 0.0 | 0.2− |
| 2002 02 06 | 704 | 0.5+ | 1.5+ | 2004 10 04 | 644 | 0.3− | 0.4+ | 2006 01 28 | 691 | 0.2+ | 0.3+ |
| 2002 02 06 | 704 | 0.6+ | 1.0+ | 2004 10 04 | 644 | 0.2− | 0.4+ | 2006 02 03 | 691 | 0.0 | 0.1+ |
| 2002 02 12 | 644 | 0.3+ | 0.0 | 2005 11 30 | 691 | 0.1+ | 0.1− | 2006 02 03 | 691 | 0.1− | 0.3− |
| 2002 02 12 | 644 | 0.3+ | 0.2− | 2005 11 30 | 691 | 0.2− | 0.4+ | 2006 02 03 | 691 | 0.3− | 0.5+ |
| 2002 02 12 | 644 | 0.4+ | 0.1− | 2005 11 30 | 691 | 0.2+ | 0.0 | | | | |

**2005 WV$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.82517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29221396 | $\omega$ | 284.40550 | | −0.51777525 | −0.85496448 | |
| $a$ | 2.2490654 | $\Omega$ | 196.88347 | | +0.82003765 | −0.48574429 | |
| $e$ | 0.0935645 | $i$ | 6.07447 | | +0.24381766 | −0.18190168 | |
| $P$ | 3.37 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 14 | 691 | 0.1− | 0.1− | 2003 02 09 | 608 | 0.3+ | 0.8− | 2005 11 25 | 703 | 0.5− | 0.4+ |
| 1991 09 14 | 691 | 0.1+ | 0.2− | 2003 02 09 | 608 | 0.2+ | 0.3− | 2005 11 29 | 683 | (0.0 | 3.2−) |
| 1991 09 14 | 691 | 0.1+ | 0.1+ | 2003 02 19 | 644 | 0.4− | 0.5− | 2005 11 29 | 683 | (0.4− | 2.1−) |
| 2000 04 05 | 704 | 0.8− | 0.2− | 2003 02 19 | 644 | 0.3− | 0.6− | 2005 11 29 | 683 | 0.7+ | 0.8− |
| 2000 04 05 | 704 | 0.8+ | 0.4+ | 2003 02 19 | 644 | 0.2− | 0.5− | 2005 11 30 | 704 | 0.2− | 0.2+ |
| 2000 04 05 | 704 | 1.4+ | 0.7+ | 2005 09 30 | 291 | 0.1− | 0.1+ | 2005 11 30 | 704 | 0.5+ | 0.7+ |
| 2000 04 05 | 704 | 0.5− | 0.6+ | 2005 09 30 | 291 | 0.1− | 0.4+ | 2005 11 30 | 704 | 0.2+ | 0.2− |
| 2000 04 05 | 704 | 0.5+ | 0.3+ | 2005 09 30 | 291 | 0.1+ | 0.3+ | 2005 12 05 | 683 | (2.7+ | 1.0−) |
| 2000 04 29 | 691 | 0.1− | 0.1+ | 2005 11 06 | G96 | 0.1− | 0.2− | 2005 12 05 | 683 | 0.2+ | 0.4− |
| 2000 04 29 | 691 | 0.1− | 0.0 | 2005 11 06 | G96 | 0.5+ | 0.3− | 2005 12 05 | 683 | (2.2+ | 4.0+) |
| 2000 04 29 | 691 | 0.0 | 0.2+ | 2005 11 06 | G96 | 0.1− | 0.3− | 2005 12 10 | 699 | 0.2− | 0.1+ |
| 2003 02 03 | 608 | 0.2− | 0.2+ | 2005 11 06 | G96 | 0.1+ | 0.4− | 2005 12 10 | 699 | (1.1− | 2.2−) |
| 2003 02 03 | 608 | 0.2+ | 0.8+ | 2005 11 25 | 703 | 0.6− | 0.7+ | 2005 12 10 | 699 | 1.1− | 0.5+ |
| 2003 02 03 | 608 | 0.1− | 0.3− | 2005 11 25 | 703 | (2.5+ | 2.0+) | 2005 12 10 | 699 | (0.3+ | 2.2−) |
| 2003 02 09 | 608 | 0.1+ | 0.4− | 2005 11 25 | 703 | 0.7+ | 0.7+ | | | | |

**2005 WJ$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.71687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29132598 | $\omega$ | 222.01956 | | +0.27572069 | −0.96068173 | |
| $a$ | 2.2536333 | $\Omega$ | 212.01573 | | +0.89752395 | +0.26947198 | |
| $e$ | 0.1432575 | $i$ | 3.53533 | | +0.34413494 | +0.06689899 | |
| $P$ | 3.38 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 691 | 0.4− | 0.0 | 2005 11 10 | 691 | 0.2+ | 0.3+ | 2005 12 07 | 704 | 0.6+ | 0.2− |
| 2000 05 07 | 691 | 0.0 | 0.2− | 2005 11 10 | 691 | 0.2− | 0.1− | 2005 12 07 | 704 | 0.8− | 0.2− |
| 2000 05 07 | 691 | 0.3+ | 0.3− | 2005 11 21 | 703 | 0.5+ | 0.3− | 2005 12 23 | 703 | 0.2+ | 1.6+ |
| 2003 02 22 | 644 | 0.4+ | 1.0+ | 2005 11 21 | 703 | 0.4− | 0.2+ | 2005 12 23 | 703 | 0.9+ | 0.4+ |
| 2003 02 22 | 644 | 0.3+ | 0.1+ | 2005 11 21 | 703 | 0.1− | 0.2− | 2005 12 23 | 703 | 1.1− | 1.7− |
| 2003 02 22 | 644 | 0.3− | 0.4+ | 2005 11 21 | 703 | 0.3− | 0.6− | 2005 12 23 | 703 | 0.5− | 0.0 |
| 2005 10 01 | G96 | 0.2− | 0.3− | 2005 11 30 | 704 | 0.2− | 0.3+ | 2006 01 28 | G96 | 0.0 | 0.7− |
| 2005 10 01 | G96 | 0.3− | 0.3− | 2005 11 30 | 704 | 0.2+ | 0.1+ | 2006 01 28 | G96 | 0.0 | 0.8− |
| 2005 10 01 | G96 | 0.2− | 0.0 | 2005 11 30 | 704 | 1.2+ | 0.6+ | 2006 01 28 | G96 | 0.3− | 0.7− |
| 2005 10 01 | G96 | 0.2+ | 0.5− | 2005 11 30 | 704 | 0.1− | 0.1+ | 2006 01 28 | G96 | 0.1+ | 0.3− |
| 2005 11 10 | 691 | 0.1− | 0.3− | 2005 12 07 | 704 | 0.7+ | 1.0+ | | | | |

**2005 WK$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.59329 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23967680 | $\omega$ | 235.63909 | | −0.31799125 | | −0.93525422 |
| $a$ | 2.5667607 | $\Omega$ | 233.66000 | | +0.92087298 | | −0.26565883 |
| $e$ | 0.1423672 | $i$ | 11.13070 | | +0.22555382 | | −0.23393361 |
| $P$ | 4.11 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.2− | 0.4+ | 2002 02 15 | 704 | 0.5+ | 0.2+ | 2005 11 29 | 644 | 0.0 | 0.3− |
| 2000 09 23 | 704 | 0.0 | 0.1+ | 2002 02 20 | 644 | 0.1− | 0.1+ | 2005 11 29 | 644 | 0.0 | 0.1+ |
| 2000 09 23 | 704 | 0.1+ | 0.5− | 2002 02 20 | 644 | 0.2+ | 0.8+ | 2005 11 29 | 644 | 0.0 | 0.4− |
| 2000 09 23 | 704 | 1.0− | 0.3+ | 2002 02 20 | 644 | 0.0 | 0.1+ | 2005 12 07 | 704 | 0.0 | 0.5− |
| 2002 01 12 | 704 | 0.2+ | 0.2− | 2004 09 12 | 704 | 0.4+ | 0.9+ | 2005 12 07 | 704 | 0.2+ | 0.0 |
| 2002 01 12 | 704 | 0.6− | 0.1− | 2004 09 12 | 704 | 0.0 | 0.5+ | 2005 12 07 | 704 | 0.5− | 0.7+ |
| 2002 01 12 | 704 | 0.3+ | 0.6− | 2004 09 12 | 704 | 1.1− | 0.2− | 2005 12 07 | 704 | 0.1− | 0.4+ |
| 2002 01 12 | 704 | 0.5+ | 0.6− | 2004 09 12 | 704 | 1.6− | 0.7+ | 2005 12 07 | 704 | 0.2− | 0.1− |
| 2002 01 12 | 704 | 0.1+ | 0.2− | 2004 09 22 | 704 | 2.0+ | 0.4+ | 2005 12 27 | 703 | 0.0 | 0.4+ |
| 2002 02 08 | 644 | 0.5+ | 0.2+ | 2004 09 22 | 704 | 1.0+ | 0.1− | 2005 12 27 | 703 | 0.2− | 0.4− |
| 2002 02 08 | 644 | 0.1+ | 0.4+ | 2004 09 22 | 704 | 0.3− | 0.3− | 2005 12 27 | 703 | 0.6− | 0.6− |
| 2002 02 08 | 644 | 1.1− | 1.4+ | 2005 11 29 | 644 | 0.2+ | 0.1− | 2005 12 27 | 703 | 0.2+ | 0.0 |
| 2002 02 15 | 704 | 0.4+ | 0.6+ | 2005 11 29 | 644 | 0.0 | 0.2+ | | | | |
| 2002 02 15 | 704 | 0.3+ | 0.2+ | 2005 11 29 | 644 | 0.3+ | 0.6− | | | | |

**2005 WU$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.98311 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25983977 | $\omega$ | 252.68660 | | −0.52522554 | | −0.84162007 |
| $a$ | 2.4321982 | $\Omega$ | 229.67059 | | +0.82990028 | | −0.47392605 |
| $e$ | 0.1172513 | $i$ | 9.49475 | | +0.18815859 | | −0.25897829 |
| $P$ | 3.79 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.5+ | 0.4+ | 2001 11 20 | 704 | 0.4− | 0.1− | 2005 12 08 | 704 | 0.5− | 0.8+ |
| 2001 10 21 | 704 | 0.8+ | 0.4+ | 2001 11 20 | 704 | 0.6− | 0.3− | 2005 12 08 | 704 | 0.4− | 0.9− |
| 2001 10 21 | 704 | 0.5+ | 0.3+ | 2001 11 20 | 704 | 1.0− | 0.4+ | 2005 12 08 | 704 | 0.6− | 0.3− |
| 2001 10 21 | 704 | 1.0+ | 0.2+ | 2001 11 20 | 704 | 0.1− | 0.2+ | 2005 12 08 | 704 | 1.3+ | 0.3+ |
| 2001 11 09 | 704 | 0.3− | 0.5+ | 2003 04 28 | 691 | 0.1− | 0.2+ | 2005 12 21 | 703 | 0.5+ | 0.1− |
| 2001 11 09 | 704 | 0.3− | 0.1+ | 2003 04 28 | 691 | 0.0 | 0.1+ | 2005 12 21 | 703 | 0.7− | 0.3+ |
| 2001 11 09 | 704 | 0.2+ | 0.0 | 2003 04 28 | 691 | 0.1+ | 0.1+ | 2005 12 21 | 703 | 0.7− | 0.0 |
| 2001 11 09 | 704 | 0.2+ | 0.2− | 2005 11 30 | 704 | 0.1− | 0.2− | 2005 12 21 | 703 | 0.4+ | 0.6+ |
| 2001 11 09 | 704 | 0.1+ | 0.4+ | 2005 11 30 | 704 | 0.3+ | 0.6− | | | | |
| 2001 11 20 | 704 | 0.6− | 0.0 | 2005 11 30 | 704 | 0.4+ | 0.8− | | | | |

**2005 WO$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.93320 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21661779 | $\omega$ | 55.11328 | | −0.99645099 | | +0.04765442 |
| $a$ | 2.7458279 | $\Omega$ | 127.51839 | | −0.06891346 | | −0.93519213 |
| $e$ | 0.0513186 | $i$ | 5.01872 | | +0.04833591 | | −0.35091983 |
| $P$ | 4.55 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 704 | 0.2+ | 0.1+ | 2005 11 30 | 691 | 0.5+ | 0.4+ | 2006 02 25 | 704 | 0.6+ | 0.7+ |
| 2001 01 21 | 704 | 0.2− | 0.0 | 2005 11 30 | 691 | 0.1+ | 0.5+ | 2006 02 25 | 704 | 1.5+ | 0.7− |
| 2001 01 21 | 704 | 0.5+ | 0.4− | 2005 11 30 | 691 | 0.2+ | 0.3+ | 2006 02 25 | 704 | 0.1− | 0.7− |
| 2001 01 21 | 704 | 0.3− | 0.7− | 2005 12 06 | 691 | 0.1+ | 0.3+ | 2006 02 25 | 704 | (2.4+ | 0.9−) |
| 2001 01 21 | 704 | 0.5− | 0.8+ | 2005 12 06 | 691 | 0.4+ | 0.1+ | 2006 03 04 | 691 | 0.0 | 0.3− |
| 2001 01 21 | 704 | 0.2+ | 0.3− | 2005 12 06 | 691 | 0.4+ | 0.1+ | 2006 03 04 | 691 | 0.0 | 0.3− |
| 2001 01 21 | 704 | 0.6− | 0.4− | 2005 12 07 | 291 | 0.3− | 0.4+ | 2006 03 04 | 691 | 0.2− | 0.4− |
| 2001 01 21 | 704 | 0.4+ | 1.0+ | 2005 12 07 | 291 | 0.3− | 0.7+ | 2006 03 08 | 691 | 0.2+ | 0.2− |
| 2001 01 21 | 704 | 0.4− | 0.3− | 2005 12 07 | 291 | 0.2− | 0.7+ | 2006 03 08 | 691 | 0.3+ | 0.2− |
| 2001 01 21 | 704 | 0.5+ | 0.6+ | 2005 12 07 | 291 | 0.4− | 0.2+ | 2006 03 08 | 691 | 0.3+ | 0.5− |
| 2001 02 20 | 691 | 0.0 | 0.4− | 2005 12 07 | 291 | 0.4− | 0.3+ | 2006 03 23 | 703 | 0.5− | 0.2− |
| 2001 02 20 | 691 | 0.1+ | 0.4− | 2005 12 07 | 291 | 0.1− | 0.2+ | 2006 03 23 | 703 | 0.2− | 0.1− |
| 2001 02 20 | 691 | 0.0 | 0.4− | 2005 12 08 | 291 | 0.4− | 0.5+ | 2006 03 23 | 703 | 0.3+ | 0.7− |
| 2002 05 10 | 644 | (0.7+ | 1.9+) | 2005 12 08 | 291 | 0.2− | 0.4+ | 2006 03 23 | 703 | 0.4− | 0.6− |
| 2002 05 10 | 644 | 0.1+ | 0.1+ | 2005 12 08 | 291 | 0.3− | 0.6+ | 2006 03 24 | 699 | 0.7− | 0.4+ |
| 2002 05 10 | 644 | 0.1− | 0.0 | 2006 02 02 | G96 | 0.1− | 0.3− | 2006 03 24 | 699 | 0.2− | 0.5− |
| 2002 06 02 | 644 | 0.1+ | 0.7+ | 2006 02 02 | G96 | 0.2+ | 0.4− | 2006 03 24 | 699 | (1.5− | 0.3+) |
| 2002 06 02 | 644 | 0.0 | 0.6+ | 2006 02 02 | G96 | 0.1+ | 0.7− | 2006 03 24 | 699 | (1.9+ | 1.2−) |
| 2002 06 02 | 644 | 0.1− | 0.7+ | 2006 02 02 | G96 | 0.0 | 0.6− | | | | |

**2005 WA$_{194}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.40650 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19722502 | $\omega$ | 216.83717 | | +0.99236177 | | −0.09500481 |
| $a$ | 2.9229948 | $\Omega$ | 148.34121 | | +0.11327208 | | +0.95440317 |
| $e$ | 0.1016652 | $i$ | 8.62269 | | −0.04886260 | | +0.28299943 |
| $P$ | 5.00 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 03 | 608 | 0.1+ | 0.0 | 2003 04 10 | 691 | 0.3+ | 0.4+ | 2005 11 03 | 703 | 0.2− | 0.8+ |
| 2000 12 03 | 608 | 0.1− | 0.4− | 2005 10 22 | 703 | 0.3+ | 1.5− | 2005 11 03 | 703 | 0.9+ | 1.0+ |
| 2000 12 03 | 608 | 0.1+ | 0.7− | 2005 10 22 | 703 | 0.9− | 0.7+ | 2005 11 03 | 703 | 0.3− | 0.2− |
| 2002 02 11 | 704 | (1.1+ | 2.7−) | 2005 10 22 | 703 | 0.0 | 0.3+ | 2005 11 03 | 703 | 0.3+ | 0.6+ |
| 2002 02 11 | 704 | (2.9+ | 1.5−) | 2005 10 22 | 703 | 0.7+ | 0.1− | 2005 11 29 | 703 | 0.0 | 0.1+ |
| 2002 02 11 | 704 | (2.7+ | 2.1−) | 2005 10 22 | 644 | 0.2− | 0.3+ | 2005 11 29 | 703 | 0.2+ | 0.5− |
| 2002 02 11 | 704 | (3.4+ | 3.1−) | 2005 10 22 | 644 | 0.2− | 0.0 | 2005 11 29 | 703 | 1.2− | 0.1− |
| 2002 02 19 | 691 | 0.1− | 0.0 | 2005 10 22 | 644 | 0.4− | 0.1+ | 2005 11 29 | 703 | 0.3− | 0.6− |
| 2002 02 19 | 691 | 0.4+ | 0.3− | 2005 10 28 | 703 | 0.3+ | 1.3+ | 2005 12 05 | 699 | (2.9+ | 0.0 ) |
| 2002 02 19 | 691 | 0.2− | 0.1+ | 2005 10 28 | 703 | 0.7− | 0.4− | 2005 12 05 | 699 | 1.7+ | 0.8+ |
| 2003 04 10 | 691 | 0.1+ | 0.3+ | 2005 10 28 | 703 | 0.7− | 1.9+ | 2005 12 05 | 699 | 0.5+ | 0.0 |
| 2003 04 10 | 691 | 0.1− | 0.3+ | 2005 10 28 | 703 | 1.2− | 0.6+ | 2005 12 05 | 699 | 0.5+ | 0.9− |

**2005 WV$_{195}$ = 1995 XY$_2$ = 2002 HT$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.27747 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21237569 | $\omega$ | 60.62342 | | −0.99388757 | | +0.08899444 |
| $a$ | 2.7822715 | $\Omega$ | 124.40925 | | −0.10651280 | | −0.92859694 |
| $e$ | 0.0322262 | $i$ | 4.54148 | | +0.02902619 | | −0.36026061 |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.3− | 0.3+ | 2005 12 06 | G96 | 0.3− | 0.2− | 2006 01 23 | G96 | 0.6− | 0.0 |
| 1995 11 30 | 691 | 0.2+ | 0.1− | 2005 12 06 | G96 | 0.5− | 0.3− | 2006 01 23 | G96 | 0.0 | 0.3+ |
| 1995 11 30 | 691 | 0.4+ | 0.7− | 2006 01 05 | G96 | 0.4− | 0.5− | 2006 01 24 | 691 | 0.3+ | 0.3− |
| 1995 12 14 | 691 | 0.6− | 0.6+ | 2006 01 05 | G96 | 0.0 | 0.2+ | 2006 01 24 | 691 | 0.4+ | 0.2− |
| 1995 12 14 | 691 | 0.2− | 0.0 | 2006 01 05 | G96 | 0.6− | 0.3− | 2006 01 24 | 691 | 0.4+ | 0.1− |
| 1995 12 14 | 691 | 0.3+ | 0.0 | 2006 01 05 | G96 | 0.3− | 0.4− | 2006 01 24 | 704 | 0.6+ | 0.3+ |
| 2002 04 16 | 704 | 0.1− | 0.4− | 2006 01 06 | 691 | 0.1+ | 0.2+ | 2006 01 24 | 704 | 1.3+ | 0.8− |
| 2002 04 16 | 704 | 0.5− | 0.6+ | 2006 01 06 | 691 | 0.2− | 0.1− | 2006 01 24 | 704 | 0.3− | 0.3+ |
| 2002 04 16 | 704 | 0.1+ | 0.5− | 2006 01 06 | 691 | 0.1− | 0.1− | 2006 01 24 | 704 | (2.0+ | 0.6−) |
| 2002 04 16 | 704 | 0.5+ | 0.5+ | 2006 01 10 | 691 | 0.5− | 0.1+ | 2006 02 02 | 691 | 0.1+ | 0.1+ |
| 2005 11 25 | G96 | 0.1+ | 0.2+ | 2006 01 10 | 691 | 0.1+ | 0.0 | 2006 02 02 | 691 | 0.2+ | 0.2+ |
| 2005 11 25 | G96 | 0.3+ | 0.1− | 2006 01 10 | 691 | 0.7− | 0.6+ | 2006 02 02 | 691 | 0.2+ | 0.1+ |
| 2005 11 25 | G96 | 0.5− | 0.2− | 2006 01 20 | 691 | 0.1+ | 0.1− | 2006 02 06 | G96 | 0.4− | 0.1− |
| 2005 11 25 | G96 | 0.2+ | 0.3− | 2006 01 20 | 691 | 0.1+ | 0.1+ | 2006 02 06 | G96 | 0.2+ | 0.1− |
| 2005 12 06 | G96 | 0.1− | 0.3− | 2006 01 20 | 691 | 0.2− | 0.0 | 2006 02 06 | G96 | 0.2− | 0.2− |
| 2005 12 06 | G96 | 0.1+ | 0.2− | 2006 01 23 | G96 | 0.2− | 0.2+ | 2006 02 06 | G96 | 0.0 | 0.3− |

**2005 WY$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.16419 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21971465 | $\omega$ | 299.44844 | | +0.85300415 | | −0.51113199 |
| $a$ | 2.7199654 | $\Omega$ | 91.47392 | | +0.50790920 | | +0.76650336 |
| $e$ | 0.1271526 | $i$ | 6.05737 | | +0.12005064 | | +0.38886590 |
| $P$ | 4.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 26 | 291 | 0.4+ | 0.1+ | 2005 11 26 | G96 | 0.3− | 0.3− | 2006 01 07 | G96 | 0.5− | 0.4− |
| 2003 05 26 | 291 | 0.4+ | 0.3− | 2005 12 02 | G96 | 0.0 | 0.2+ | 2006 01 07 | G96 | 0.0 | 0.2− |
| 2003 05 26 | 291 | 0.7− | 0.5+ | 2005 12 02 | G96 | 0.3− | 0.1+ | 2006 01 07 | 691 | 0.2+ | 0.2+ |
| 2004 08 21 | E12 | 0.5− | 0.8+ | 2005 12 02 | G96 | 0.2− | 0.1+ | 2006 01 07 | G96 | 0.1− | 0.1− |
| 2004 08 21 | E12 | 0.4+ | 0.1− | 2005 12 02 | G96 | 0.1− | 0.2+ | 2006 01 07 | 691 | 0.0 | 0.2+ |
| 2004 08 21 | E12 | 0.4− | 0.3+ | 2005 12 30 | 691 | 0.1− | 0.4+ | 2006 01 25 | G96 | 0.3+ | 0.5− |
| 2004 08 21 | E12 | 0.3+ | 0.4− | 2005 12 30 | 691 | 0.1+ | 0.0 | 2006 01 25 | G96 | 0.0 | 0.6− |
| 2005 11 26 | G96 | 0.2+ | 0.1+ | 2005 12 30 | 691 | 0.2+ | 0.2+ | 2006 01 25 | G96 | 0.3− | 0.5− |
| 2005 11 26 | G96 | 0.1− | 0.4+ | 2006 01 07 | 691 | 0.3+ | 0.2+ | 2006 01 25 | G96 | 1.1− | 1.5− |
| 2005 11 26 | G96 | 0.0 | 0.3− | 2006 01 07 | G96 | 0.4− | 0.1− | | | | |

**2005 WS$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.20109 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25826978 | $\omega$ | 92.34439 | | −0.11942674 | +0.99283793 | |
| $a$ | 2.4420449 | $\Omega$ | 170.79477 | | −0.91862863 | −0.10928491 | |
| $e$ | 0.1539261 | $i$ | 1.13822 | | −0.37664133 | −0.04826646 | |
| $P$ | 3.82 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 691 | 0.2+ | 0.3− | 2004 09 09 | 704 | (3.3− | 0.9−) | 2004 10 04 | 691 | 0.1+ | 0.6+ |
| 2001 11 16 | 691 | 0.2− | 0.0 | 2004 09 09 | 704 | 0.5+ | 0.4− | 2004 10 04 | 691 | 0.0 | 0.3+ |
| 2001 11 16 | 691 | 0.1− | 0.0 | 2004 09 09 | 704 | 0.0 | 0.2+ | 2005 11 26 | 691 | 0.5− | 0.3+ |
| 2003 04 05 | 691 | 0.1+ | 0.2+ | 2004 09 09 | 704 | 1.0+ | 0.5− | 2005 11 26 | 691 | 0.1− | 0.4+ |
| 2003 04 05 | 291 | 0.1+ | 0.2+ | 2004 09 15 | 699 | 0.4+ | 0.1− | 2005 11 26 | 691 | 0.4− | 0.5+ |
| 2003 04 05 | 691 | 0.2+ | 0.3+ | 2004 09 15 | 699 | 1.4− | 0.8+ | 2005 12 08 | 691 | 0.1+ | 0.2− |
| 2003 04 05 | 291 | 0.3+ | 0.4+ | 2004 09 15 | 699 | 0.3+ | 0.7+ | 2005 12 08 | 691 | 0.5+ | 0.2− |
| 2003 04 05 | 291 | 0.3+ | 0.6+ | 2004 09 15 | 699 | 0.1+ | 0.2+ | 2005 12 08 | 691 | 0.2+ | 0.0 |
| 2003 04 05 | 691 | 0.2− | 0.1+ | 2004 09 18 | E12 | 0.6+ | 0.5+ | 2006 01 22 | G96 | 0.1+ | 0.7− |
| 2004 09 06 | E12 | 0.2+ | 0.1+ | 2004 09 18 | E12 | 0.4+ | 0.7− | 2006 01 22 | G96 | 0.3+ | 0.2− |
| 2004 09 06 | E12 | 0.0 | 0.4+ | 2004 09 18 | E12 | 0.0 | 1.0+ | 2006 01 22 | G96 | 0.6+ | 0.4− |
| 2004 09 06 | E12 | 0.3− | 0.3+ | 2004 09 18 | E12 | 0.8− | 0.6− | 2006 01 22 | G96 | 0.2− | 0.2− |
| 2004 09 06 | E12 | 0.0 | 0.4+ | 2004 10 04 | 691 | 0.1− | 0.5+ | | | | |

**2005 WP$_{207}$ = 2002 AN$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.10878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23035200 | $\omega$ | 194.52394 | | −0.49634617 | −0.86107036 | |
| $a$ | 2.6355710 | $\Omega$ | 285.33969 | | +0.80747751 | −0.41120273 | |
| $e$ | 0.1594061 | $i$ | 6.57629 | | +0.31877978 | −0.29911562 | |
| $P$ | 4.28 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 31 | 691 | 0.1− | 0.5− | 2002 01 15 | 704 | 0.5− | 0.2− | 2005 11 29 | 704 | 0.3− | 1.1+ |
| 1998 01 31 | 691 | 0.2− | 0.5− | 2002 01 15 | 704 | 0.3+ | 0.5+ | 2005 12 05 | 704 | 0.1− | 1.8+ |
| 1998 01 31 | 691 | 1.0− | 0.9− | 2002 01 15 | 704 | 0.2− | 0.7+ | 2005 12 05 | 704 | 0.2+ | 1.1+ |
| 2000 10 02 | 645 | 0.1+ | 0.3− | 2005 11 21 | 703 | 0.2− | 0.7+ | 2005 12 05 | 704 | 0.1− | 1.0− |
| 2000 10 02 | 645 | 0.2+ | 0.2− | 2005 11 21 | 703 | 0.4− | 0.5+ | 2006 01 27 | G96 | 0.4− | 0.1+ |
| 2002 01 08 | 704 | 0.7+ | 0.1− | 2005 11 21 | 703 | 0.7− | 0.6− | 2006 01 27 | G96 | 0.1− | 0.3− |
| 2002 01 08 | 704 | 0.7+ | 0.4− | 2005 11 21 | 703 | 0.6+ | 0.5+ | 2006 01 27 | G96 | 0.2− | 0.4− |
| 2002 01 08 | 704 | 0.7+ | 0.1− | 2005 11 29 | 704 | 0.4+ | 0.8− | 2006 01 27 | G96 | 0.9− | 0.3− |
| 2002 01 08 | 704 | 0.7+ | 0.2− | 2005 11 29 | 704 | 0.2− | 0.3+ | | | | |

**2005 WQ$_{207}$ = 2004 RG$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.41495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17640992 | $\omega$ | 63.98227 | | +0.70910341 | +0.56295983 | |
| $a$ | 3.1486234 | $\Omega$ | 258.76340 | | −0.69430099 | +0.66247662 | |
| $e$ | 0.1336828 | $i$ | 25.64884 | | +0.12295730 | +0.49416694 | |
| $P$ | 5.59 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 06 | 704 | 0.1+ | 0.9+ | 2005 11 25 | 691 | 0.3− | 0.2− | 2006 01 06 | G96 | 0.2− | 0.9+ |
| 2004 09 06 | 704 | 0.2+ | 0.5+ | 2005 11 25 | 691 | 0.4− | 0.2− | 2006 01 06 | G96 | 0.2− | 0.5− |
| 2004 09 06 | 704 | 0.2− | 0.5− | 2005 11 25 | 691 | 1.2+ | 1.0+ | 2006 01 06 | G96 | 0.2− | 0.2+ |
| 2004 09 08 | 704 | 0.3− | 0.8− | 2005 12 02 | 691 | 0.0 | 0.0 | 2006 01 06 | G96 | 0.3− | 0.3− |
| 2004 09 08 | 704 | 0.4+ | 0.1− | 2005 12 02 | 691 | 0.8+ | 0.3− | 2006 01 25 | G96 | 0.1− | 0.2+ |
| 2004 09 08 | 704 | 0.2− | 0.0 | 2005 12 02 | 691 | 0.0 | 0.3− | 2006 01 25 | G96 | 0.2− | 0.3+ |
| 2005 11 21 | 691 | 0.7− | 0.0 | 2005 12 10 | 691 | 0.2+ | 0.0 | 2006 01 25 | G96 | 0.1+ | 0.1− |
| 2005 11 21 | 691 | 0.2− | 0.1+ | 2005 12 10 | 691 | 0.1+ | 0.2− | 2006 01 25 | G96 | 0.1− | 0.1+ |
| 2005 11 21 | 691 | 0.5− | 0.0 | 2005 12 10 | 691 | 0.1− | 0.1− | | | | |

**2005 WR$_{207}$ = 2001 YG$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.61570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26581615 | $\omega$ | 99.53467 | | +0.84194874 | −0.53949790 | |
| $a$ | 2.3956046 | $\Omega$ | 293.11519 | | +0.49155046 | +0.77308139 | |
| $e$ | 0.1826119 | $i$ | 0.49967 | | +0.22248698 | +0.33359734 | |
| $P$ | 3.71 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 01 22 | G96 | 0.3− | 0.3− |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2001 12 19 | 704 | 0.7− | 0.8+ | 2006 01 22 | G96 | 0.1− | 0.3− |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 12 19 | 704 | 0.4− | 0.9+ | 2006 01 22 | G96 | 0.5− | 0.2− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.7− | 0.1+ | 2006 02 02 | 691 | 0.3+ | 0.3+ |
| 2001 12 17 | 704 | 0.1− | 0.5+ | 2005 11 25 | G96 | 0.4+ | 0.0 | 2006 02 02 | 691 | 0.6+ | 0.1+ |
| 2001 12 17 | 704 | 0.9+ | 0.2− | 2005 11 25 | G96 | 0.2+ | 0.3+ | 2006 02 02 | 691 | 0.6− | 0.0 |
| 2001 12 17 | 704 | 0.3+ | 0.8+ | 2005 11 25 | G96 | 0.1− | 0.1+ | 2006 03 05 | G96 | 0.2+ | 1.2+ |
| 2001 12 17 | 704 | 0.3+ | 0.6+ | 2006 01 20 | 691 | 0.0 | 1.7− | 2006 03 05 | G96 | 0.7+ | 0.4+ |
| 2001 12 17 | 704 | 0.7+ | 1.0− | 2006 01 20 | 691 | 0.4− | 0.1+ | 2006 03 05 | G96 | 0.0 | 0.5+ |
| 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 01 20 | 691 | 0.1+ | 0.1− | 2006 03 05 | G96 | 0.7− | 0.0 |
| 2001 12 19 | 704 | 0.4− | 0.2+ | 2006 01 22 | G96 | 0.3− | 0.2− | | | | |

**2005 WS$_{207}$ = 2003 FC$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.06260 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28462127 | $\omega$ | 178.74449 | | −0.65350553 | −0.75402129 | |
| $a$ | 2.2888877 | $\Omega$ | 312.05703 | | +0.69368271 | −0.56161547 | |
| $e$ | 0.2202031 | $i$ | 5.11532 | | +0.30287757 | −0.34064638 | |
| $P$ | 3.46 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.3− | 1.1− | 2003 03 31 | 704 | 0.1+ | 0.0 | 2005 12 10 | 703 | 1.1+ | 0.3− |
| 1995 12 27 | 691 | 0.1− | 0.1− | 2003 03 31 | 704 | 0.2− | 0.3− | 2005 12 28 | 644 | 0.4+ | 0.2− |
| 1995 12 27 | 691 | 0.2− | 0.1+ | 2003 03 31 | 704 | 0.3+ | 0.5+ | 2005 12 28 | 644 | 0.0 | 0.3+ |
| 2003 03 30 | 699 | 0.9− | 0.0 | 2005 11 28 | 703 | 0.1− | 0.2+ | 2005 12 28 | 644 | 0.3− | 0.0 |
| 2003 03 30 | 699 | 0.1+ | 0.9+ | 2005 11 28 | 703 | 0.6+ | 0.7+ | 2006 02 01 | G96 | 0.5− | 0.1+ |
| 2003 03 30 | 699 | 0.8− | 0.3− | 2005 11 28 | 703 | 0.4+ | 0.3+ | 2006 02 01 | G96 | 0.6− | 0.1+ |
| 2003 03 30 | 699 | 0.2− | 0.1+ | 2005 11 28 | 703 | 0.7− | 0.6+ | 2006 02 01 | G96 | 0.3− | 0.1− |
| 2003 03 30 | 691 | 0.3+ | 0.2+ | 2005 12 10 | 703 | 0.9− | 0.4+ | 2006 02 01 | G96 | 0.8− | 0.1+ |
| 2003 03 30 | 691 | 0.0 | 0.2+ | 2005 12 10 | 703 | 0.3+ | 0.1− | | | | |
| 2003 03 30 | 691 | 0.5+ | 0.2+ | 2005 12 10 | 703 | 0.0 | 0.8+ | | | | |

**2005 WU$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.41345 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21283520 | $\omega$ | 159.16273 | | +0.34629925 | +0.93361637 | |
| $a$ | 2.7782655 | $\Omega$ | 130.97660 | | −0.87701077 | +0.35694621 | |
| $e$ | 0.0324096 | $i$ | 6.98824 | | −0.33305996 | +0.03082018 | |
| $P$ | 4.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 12 | 691 | 0.1− | 0.1+ | 2005 11 25 | G96 | 0.6+ | 0.3− | 2006 02 06 | G96 | 0.0 | 0.1− |
| 1993 06 12 | 691 | 0.2+ | 0.1− | 2005 11 25 | G96 | 0.2− | 0.0 | 2006 02 06 | G96 | 0.2+ | 0.4− |
| 1993 06 12 | 691 | 0.2− | 0.1− | 2006 01 07 | G96 | 0.2− | 0.0 | 2006 02 06 | G96 | 0.0 | 0.4− |
| 2002 04 13 | 644 | 0.4+ | 0.6+ | 2006 01 07 | G96 | 0.6− | 0.1+ | 2006 02 24 | 691 | 0.4+ | 0.2− |
| 2002 04 13 | 644 | 0.1+ | 0.4+ | 2006 01 07 | G96 | 0.1+ | 0.3− | 2006 02 24 | 691 | 0.0 | 0.1+ |
| 2002 04 13 | 644 | 0.0 | 0.7+ | 2006 01 07 | G96 | 0.2+ | 0.1− | 2006 02 24 | 691 | 0.1− | 0.3− |
| 2003 08 04 | 704 | 0.0 | 1.1− | 2006 01 27 | G96 | 0.4+ | 0.5− | 2006 03 04 | 691 | 0.4− | 0.2+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 04 | 704 | 0.3+ | 1.8− | 2006 01 27 | G96 | 0.1− | 0.6− | 2006 03 04 | 691 | 0.2− | 0.1− | | | |
| 2003 08 04 | 704 | 0.2+ | 1.6− | 2006 01 27 | G96 | 0.1− | 0.5− | 2006 03 04 | 691 | 0.0 | 0.1− | | | |
| 2005 11 25 | G96 | 0.1− | 0.3− | 2006 01 27 | G96 | 0.0 | 0.5− | | | | | | | |
| 2005 11 25 | G96 | 0.2− | 0.1− | 2006 02 06 | G96 | 0.3− | 0.2− | | | | | | | |

**2005 WV$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 171.36977 | | (2000.0) | | | |
| $n$ | 0.18224866 | $\omega$ | 226.29495 | | +0.65856954 | +0.69428354 |
| $a$ | 3.0810104 | $\Omega$ | 87.31381 | | −0.57941621 | +0.71396332 |
| $e$ | 0.1273630 | $i$ | 16.89323 | | −0.48016978 | +0.09070139 |
| $P$ | 5.41 | $H$ | 14.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 20 | E12 | 1.2+ | 0.4− | 2005 11 26 | 691 | 0.4+ | 0.1+ | 2006 01 05 | G96 | 0.3+ | 0.2− | | | |
| 2004 07 20 | E12 | 0.3− | 0.3− | 2005 11 26 | 691 | 0.0 | 0.2+ | 2006 01 05 | G96 | 0.3− | 0.3− | | | |
| 2004 07 20 | E12 | 0.9+ | 0.7− | 2005 12 08 | 691 | 0.0 | 0.0 | 2006 01 05 | G96 | 0.1+ | 0.4− | | | |
| 2004 07 20 | E12 | 0.0 | 0.2− | 2005 12 08 | 691 | 0.1+ | 0.0 | 2006 01 25 | G96 | 0.2+ | 0.2− | | | |
| 2004 09 21 | 704 | 0.3− | 0.8+ | 2005 12 08 | 691 | 0.4− | 0.0 | 2006 01 25 | G96 | 0.0 | 0.2− | | | |
| 2004 09 21 | 704 | 0.6− | 0.0 | 2005 12 25 | G96 | 0.7− | 0.3− | 2006 01 25 | G96 | 0.2+ | 0.2− | | | |
| 2004 09 21 | 704 | 0.1− | 0.2+ | 2005 12 25 | G96 | 0.2− | 0.3+ | 2006 01 25 | G96 | 0.4+ | 0.1− | | | |
| 2004 09 21 | 704 | 0.3− | 0.2+ | 2005 12 25 | G96 | 0.2+ | 0.3− | | | | | | | |
| 2005 11 26 | 691 | 0.1+ | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.4− | | | | | | | |

**2005 WW$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.55708 | | (2000.0) | | | |
| $n$ | 0.18007030 | $\omega$ | 40.01982 | | +0.52019334 | −0.85356647 |
| $a$ | 3.1058083 | $\Omega$ | 18.69047 | | +0.75889015 | +0.44656193 |
| $e$ | 0.1468232 | $i$ | 5.13669 | | +0.39177114 | +0.26834070 |
| $P$ | 5.47 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.2+ | 0.4+ | 2002 04 14 | 704 | 1.0− | 0.4+ | 2005 12 04 | 704 | 0.1− | 1.3− | | | |
| 1999 10 15 | 704 | 0.2− | 0.5+ | 2005 11 28 | 691 | 0.0 | 0.3+ | 2005 12 04 | 704 | 0.8− | 0.5− | | | |
| 1999 10 15 | 704 | 0.4− | 0.2− | 2005 11 28 | 691 | 0.2+ | 0.1+ | 2005 12 04 | 704 | 1.3− | 0.5+ | | | |
| 1999 10 15 | 704 | 0.1+ | 0.2− | 2005 11 28 | 691 | 0.0 | 0.1+ | 2005 12 29 | 704 | 0.2− | 0.7+ | | | |
| 2001 05 20 | 807 | 0.3+ | 0.1− | 2005 12 02 | 691 | (2.5− | 0.4−) | 2005 12 29 | 704 | 0.5+ | 0.2+ | | | |
| 2001 05 21 | 807 | 0.3− | 0.0 | 2005 12 02 | 691 | 0.0 | 0.1− | 2005 12 29 | 704 | 0.3+ | 0.1− | | | |
| 2002 04 14 | 704 | 1.0+ | 0.5− | 2005 12 02 | 691 | 0.1+ | 0.1− | | | | | | | |
| 2002 04 14 | 704 | 0.4+ | 0.8+ | 2005 12 04 | 704 | 0.4+ | 0.4− | | | | | | | |

**2005 WX$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 115.78832 | | (2000.0) | | | |
| $n$ | 0.21530648 | $\omega$ | 68.61999 | | +0.93575666 | −0.34911047 |
| $a$ | 2.7569654 | $\Omega$ | 311.77581 | | +0.29373317 | +0.84977920 |
| $e$ | 0.0619051 | $i$ | 3.82994 | | +0.19514173 | +0.39496480 |
| $P$ | 4.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 19 | 291 | 0.5− | 0.0 | 2005 11 28 | 691 | 0.3− | 0.1− | 2005 12 29 | G96 | 0.1+ | 0.4− | | | |
| 2002 01 19 | 291 | 0.1+ | 0.2− | 2005 11 28 | 691 | 0.3− | 0.2+ | 2005 12 29 | G96 | 0.2+ | 0.2− | | | |
| 2002 01 19 | 291 | 0.5+ | 0.1+ | 2005 12 10 | 691 | 0.0 | 0.2+ | 2006 01 27 | G96 | 0.1+ | 0.6+ | | | |
| 2002 02 13 | 291 | 0.0 | 0.0 | 2005 12 10 | 691 | 0.1+ | 0.1+ | 2006 01 27 | G96 | 0.2+ | 0.5− | | | |
| 2002 02 13 | 291 | 0.1− | 0.1− | 2005 12 10 | 691 | (1.3− | 2.3+) | 2006 01 27 | G96 | 0.7− | 0.2− | | | |
| 2002 02 13 | 291 | 0.0 | 0.3+ | 2005 12 29 | G96 | 0.2+ | 0.3− | 2006 01 27 | G96 | 0.1+ | 0.1− | | | |
| 2005 11 28 | 691 | 0.4+ | 0.0 | 2005 12 29 | G96 | 0.5+ | 0.3− | | | | | | | |

**2005 WY$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 124.43861 | | (2000.0) | | | |
| $n$ | 0.26331356 | $\omega$ | 201.20061 | | +0.64658998 | −0.76280597 |
| $a$ | 2.4107596 | $\Omega$ | 208.51578 | | +0.70197060 | +0.59854518 |
| $e$ | 0.1813885 | $i$ | 0.83542 | | +0.29859451 | +0.24468494 |
| $P$ | 3.74 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | (3.2− | 4.5−) | 2005 11 29 | G96 | 0.0 | 0.1− | 2006 02 04 | 691 | 0.0 | 0.1− | | | |
| 2001 12 14 | 704 | 0.9− | 0.4− | 2006 01 05 | G96 | 0.4− | 0.7− | 2006 02 23 | G96 | 0.4+ | 0.4+ | | | |
| 2001 12 14 | 704 | 0.5− | 1.2+ | 2006 01 05 | G96 | 0.5+ | 0.3+ | 2006 02 23 | G96 | 0.2+ | 0.6+ | | | |
| 2001 12 17 | 704 | 0.9+ | 0.7− | 2006 01 05 | G96 | 0.1− | 0.0 | 2006 02 23 | G96 | 0.1− | 0.5+ | | | |
| 2001 12 17 | 704 | 0.2+ | 0.2− | 2006 01 05 | G96 | 0.8− | 0.2− | 2006 02 23 | G96 | 1.0− | 0.2+ | | | |
| 2001 12 17 | 704 | 0.0 | 0.5+ | 2006 01 22 | G96 | 0.2− | 0.1+ | 2006 03 05 | G96 | 0.0 | 0.1+ | | | |
| 2001 12 17 | 704 | 0.0 | 0.2+ | 2006 01 22 | G96 | 0.0 | 0.3− | 2006 03 05 | G96 | 1.1+ | 0.2− | | | |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 01 22 | G96 | 0.2− | 0.4− | 2006 03 05 | G96 | 0.2+ | 0.2+ | | | |
| 2005 11 29 | G96 | 0.1+ | 0.5− | 2006 01 22 | G96 | 0.5− | 0.2− | 2006 03 05 | G96 | 0.2+ | 0.7+ | | | |
| 2005 11 29 | G96 | 0.1+ | 0.1− | 2006 02 04 | 691 | 0.0 | 0.1− | | | | | | | |
| 2005 11 29 | G96 | 0.0 | 0.2− | 2006 02 04 | 691 | 0.1+ | 0.0 | | | | | | | |

**2005 WF$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.21363 | | (2000.0) | | | |
| $n$ | 0.22822330 | $\omega$ | 228.60531 | | −0.71160224 | −0.70030683 |
| $a$ | 2.6519341 | $\Omega$ | 266.85808 | | +0.66031514 | −0.63915260 |
| $e$ | 0.1662576 | $i$ | 3.24399 | | +0.24001283 | −0.31789039 |
| $P$ | 4.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.1− | 0.9− | 2005 11 25 | 691 | 0.1+ | 0.0 | 2006 01 06 | G96 | 0.2− | 0.4− | | | |
| 2002 01 13 | 704 | 0.3− | 1.1− | 2005 12 07 | 691 | 0.1− | 0.0 | 2006 01 06 | G96 | 0.5− | 0.4− | | | |
| 2002 01 13 | 704 | 0.5− | 1.8− | 2005 12 07 | 691 | 0.1+ | 0.2− | 2006 01 22 | G96 | 0.6− | 0.0 | | | |
| 2002 02 11 | 704 | 0.2+ | 0.4+ | 2005 12 07 | 691 | 0.8+ | 1.6+ | 2006 01 22 | G96 | 0.2+ | 0.2− | | | |
| 2002 02 11 | 704 | 0.2+ | 0.4+ | 2005 12 25 | G96 | 0.3− | 0.2− | 2006 01 22 | G96 | 0.1+ | 0.1− | | | |
| 2002 02 11 | 704 | 0.1+ | 1.4+ | 2005 12 25 | G96 | 0.1− | 0.3− | 2006 01 22 | G96 | 0.1+ | 0.3− | | | |
| 2002 02 11 | 704 | 0.9− | 1.6+ | 2005 12 25 | G96 | 0.3− | 0.5− | 2006 02 24 | G96 | 0.1− | 0.4− | | | |
| 2002 02 11 | 704 | 1.3+ | 0.2+ | 2005 12 25 | G96 | 1.7− | 1.2− | 2006 02 24 | G96 | 0.1+ | 0.2− | | | |
| 2005 11 25 | 691 | 0.1− | 0.2− | 2006 01 06 | G96 | 0.4− | 0.2− | 2006 02 24 | G96 | 0.1− | 0.2− | | | |
| 2005 11 25 | 691 | 0.3+ | 0.1− | 2006 01 06 | G96 | 0.5− | 0.2− | 2006 02 24 | G96 | 0.3+ | 0.5− | | | |

**2005 XP$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.14143 | | (2000.0) | | | |
| $n$ | 0.24433728 | $\omega$ | 133.68606 | | −0.88756953 | +0.41981497 |
| $a$ | 2.5340172 | $\Omega$ | 71.97289 | | −0.45878309 | −0.76826374 |
| $e$ | 0.1712535 | $i$ | 11.50564 | | −0.04169425 | −0.48324551 |
| $P$ | 4.03 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 15 | 704 | 1.2+ | 1.9− | 2003 05 26 | 691 | 0.1+ | 0.1+ | 2005 12 04 | 701 | 0.9+ | 0.6+ | | | |
| 1999 05 15 | 704 | 1.6+ | 1.0+ | 2003 05 26 | 691 | 0.1+ | 0.0 | 2005 12 04 | 701 | 0.3+ | 0.2− | | | |
| 1999 05 15 | 704 | 1.7+ | 0.6− | 2005 10 28 | G96 | 0.5− | 0.2+ | 2005 12 05 | 701 | 0.5− | 0.3− | | | |
| 1999 05 15 | 704 | (5.6− | 0.8−) | 2005 10 28 | G96 | 0.0 | 0.3+ | 2005 12 05 | 701 | 0.4− | 0.2− | | | |
| 2003 04 24 | 699 | 0.3+ | 0.2+ | 2005 10 28 | G96 | 0.2− | 0.2− | 2005 12 05 | 701 | 0.3+ | 0.1+ | | | |
| 2003 04 24 | 699 | 0.1+ | 0.2+ | 2005 10 28 | G96 | 0.6+ | 0.0 | 2005 12 06 | 701 | 1.0+ | 0.3− | | | |
| 2003 04 24 | 699 | 0.4− | 0.6+ | 2005 11 25 | G96 | 0.5+ | 0.1+ | 2005 12 06 | 701 | (2.6+ | 0.3+) | | | |
| 2003 04 24 | 699 | 0.7− | 0.3+ | 2005 11 25 | G96 | 0.1+ | 0.2− | 2005 12 07 | 691 | 0.0 | 0.0 | | | |
| 2003 05 05 | 704 | 0.5− | 0.5+ | 2005 11 25 | G96 | 0.2− | 0.2− | 2005 12 07 | 691 | 0.1− | 0.1+ | | | |
| 2003 05 05 | 704 | 0.1+ | 0.4− | 2005 11 25 | G96 | 0.5+ | 0.2− | 2005 12 07 | 691 | 0.1+ | 0.1+ | | | |
| 2003 05 05 | 704 | 0.9− | 0.1− | 2005 12 04 | 691 | 0.1+ | 0.2+ | 2005 12 07 | 701 | 0.5− | 0.3− | | | |
| 2003 05 05 | 704 | 0.2+ | 0.6− | 2005 12 04 | 691 | 0.5− | 0.2+ | 2005 12 07 | 701 | 0.3− | 0.3− | | | |
| 2003 05 05 | 704 | 0.6+ | 0.1− | 2005 12 04 | 691 | 0.1+ | 0.1− | 2005 12 07 | 701 | 1.1− | 0.4− | | | |
| 2003 05 26 | 691 | 0.3+ | 0.3+ | 2005 12 04 | 701 | 0.3+ | 0.2− | | | | | | | |

### 2005 XY$_1$ = 1998 DJ$_{25}$ = 2001 XZ$_{246}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 314.90015 | | (2000.0) | | | |
| $n$ | 0.20481966 | $\omega$ | 100.97741 | | −0.52211763 | −0.85277116 |
| $a$ | 2.8502850 | $\Omega$ | 20.51342 | | +0.76703726 | −0.47628602 |
| $e$ | 0.0143915 | $i$ | 2.16056 | | +0.37289008 | −0.21431981 |
| $P$ | 4.81 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 31 | 691 | 0.3+ | 0.8− | 2001 12 19 | 704 | 1.2+ | 1.0+ | 2005 10 13 | 691 | 0.2− | 0.5+ |
| 1996 12 31 | 691 | 0.0 | 0.9− | 2001 12 19 | 704 | 0.2− | 0.6+ | 2005 10 13 | 691 | 0.4− | 0.8+ |
| 1996 12 31 | 691 | 0.1− | 0.7− | 2001 12 19 | 704 | 0.2+ | 1.9+ | 2005 10 25 | G96 | 0.1+ | 0.0 |
| 1998 02 23 | 691 | 0.1+ | 0.3+ | 2003 04 07 | 691 | 0.0 | 0.3+ | 2005 10 25 | G96 | 0.3+ | 0.0 |
| 1998 02 23 | 691 | 0.2+ | 0.2+ | 2003 04 07 | 691 | 0.2− | 0.6+ | 2005 10 25 | G96 | 0.0 | 0.1+ |
| 1998 02 23 | 691 | 0.0 | 0.0 | 2003 04 07 | 691 | 0.1+ | 0.2+ | 2005 10 25 | G96 | 0.1+ | 0.1− |
| 1998 03 02 | 691 | 0.0 | 0.1− | 2005 09 14 | 691 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.7+ | 0.2+ |
| 1998 03 02 | 691 | 0.3+ | 0.0 | 2005 09 14 | 691 | 0.0 | 0.2+ | 2005 12 01 | G96 | 0.1− | 0.6+ |
| 1998 03 02 | 691 | 0.3+ | 0.2− | 2005 09 14 | 691 | 0.0 | 0.2+ | 2005 12 01 | G96 | 0.1+ | 0.2+ |
| 2001 12 15 | 704 | 0.1+ | 0.4+ | 2005 09 29 | G96 | 0.1+ | 0.3− | 2005 12 01 | G96 | 0.3+ | 0.3+ |
| 2001 12 15 | 704 | 0.4− | 0.1+ | 2005 09 29 | G96 | 0.1+ | 0.2− | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 2001 12 15 | 704 | 0.1− | 0.5− | 2005 09 29 | G96 | 0.2+ | 0.1− | 2005 12 02 | G96 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.9− | 1.0+ | 2005 09 29 | G96 | 0.3− | 0.3− | 2005 12 02 | G96 | 0.2− | 0.3− |
| 2001 12 19 | 704 | 0.0 | 2.0+ | 2005 10 13 | 691 | 0.5− | 0.0 | 2005 12 02 | G96 | 0.4− | 0.2− |

### 2005 XA$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 184.88534 | | (2000.0) | | | |
| $n$ | 0.22797579 | $\omega$ | 32.90116 | | +0.58146462 | +0.81318106 |
| $a$ | 2.6538532 | $\Omega$ | 272.66463 | | −0.75178410 | +0.52520239 |
| $e$ | 0.0489277 | $i$ | 1.44605 | | −0.31099769 | +0.25079675 |
| $P$ | 4.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.1+ | 0.0 | 2005 12 01 | 704 | 0.1+ | 1.5+ | 2005 12 04 | G96 | 0.1− | 0.2+ |
| 2000 09 28 | 691 | 0.1+ | 0.1− | 2005 12 01 | 704 | 0.3+ | 1.5+ | 2005 12 23 | 691 | 0.3+ | 0.5− |
| 2000 09 28 | 691 | 0.0 | 0.2− | 2005 12 01 | 704 | 0.3+ | 0.4− | 2005 12 23 | 691 | 0.0 | 0.2− |
| 2004 08 12 | 807 | 0.1− | 0.3+ | 2005 12 01 | 704 | 0.5− | 0.8− | 2005 12 23 | 691 | 0.2− | 0.8− |
| 2004 08 12 | 807 | 0.0 | 0.3+ | 2005 12 01 | 704 | 0.1− | 0.2+ | 2005 12 28 | G96 | 0.0 | 0.1+ |
| 2005 10 27 | G96 | 0.7+ | 0.3+ | 2005 12 02 | G96 | 0.2+ | 0.1− | 2005 12 28 | G96 | 0.2+ | 0.3+ |
| 2005 10 27 | G96 | 0.4+ | 0.1+ | 2005 12 02 | G96 | 0.0 | 0.0 | 2005 12 28 | G96 | 0.1+ | 0.3− |
| 2005 10 27 | G96 | 0.2+ | 0.4+ | 2005 12 02 | G96 | 0.1− | 0.2+ | 2005 12 28 | G96 | 0.0 | 0.3+ |
| 2005 10 27 | G96 | 0.5− | 0.1+ | 2005 12 02 | G96 | 0.3+ | 0.0 | 2006 01 07 | G96 | 0.5− | 0.5− |
| 2005 11 12 | 691 | 0.3− | 0.3+ | 2005 12 04 | G96 | 0.3− | 0.2+ | 2006 01 07 | G96 | 0.0 | 0.3− |
| 2005 11 12 | 691 | 0.1+ | 0.3+ | 2005 12 04 | G96 | 0.0 | 0.1− | 2006 01 07 | G96 | 0.5− | 0.0 |
| 2005 11 12 | 691 | 0.1+ | 0.4+ | 2005 12 04 | G96 | 0.2+ | 0.1+ | 2006 01 07 | G96 | 0.0 | 0.4− |

### 2005 XH$_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 131.18015 | | (2000.0) | | | |
| $n$ | 0.64804752 | $\omega$ | 159.02364 | | −0.47389145 | +0.73966787 |
| $a$ | 1.3225075 | $\Omega$ | 79.76433 | | −0.86116490 | −0.27595334 |
| $e$ | 0.6917655 | $i$ | 29.04879 | | −0.18390735 | −0.61379247 |
| $P$ | 1.52 | $H$ | 18.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 12 01 | 644 | 0.1− | 0.4+ | 2005 12 13 | F65 | 0.1+ | 0.2− | 2006 01 03 | H45 | 0.1+ | 0.1+ |
| 2005 12 01 | 644 | 0.3+ | 0.4+ | 2005 12 13 | F65 | 0.1+ | 0.0 | 2006 01 03 | H45 | 0.5− | 0.1+ |
| 2005 12 01 | 644 | 0.3+ | 0.6+ | 2005 12 13 | F65 | 0.1+ | 0.5− | 2006 01 03 | H45 | 0.1+ | 0.5− |
| 2005 12 07 | 703 | 0.4− | 0.3− | 2005 12 18 | J95 | 0.0 | 0.3− | 2006 01 03 | H45 | 0.7+ | 0.2+ |
| 2005 12 07 | 703 | 0.1+ | 0.1+ | 2005 12 18 | J95 | 0.1+ | 0.2− | 2006 01 03 | H45 | 0.4+ | 0.2+ |
| 2005 12 07 | 703 | 0.5− | 0.8+ | 2005 12 18 | J95 | 0.1− | 0.1− | 2006 01 06 | H45 | 1.6+ | 0.4+ |
| 2005 12 07 | 703 | 0.6− | 0.4+ | 2005 12 22 | 704 | 0.4− | 0.1− | 2006 01 06 | H45 | 1.4+ | 0.1− |
| 2005 12 07 | 703 | 0.1+ | 0.3− | 2005 12 22 | 704 | 0.3+ | 0.1− | 2006 01 06 | H45 | 0.0 | 0.7+ |
| 2005 12 07 | 703 | 0.2+ | 0.0 | 2005 12 22 | 704 | 0.5− | 0.7− | 2006 01 06 | H45 | 0.3− | 0.3− |
| 2005 12 07 | 703 | 0.4− | 0.5+ | 2005 12 22 | 704 | 0.4− | 0.3+ | 2006 01 06 | H45 | 1.4− | 0.6+ |
| 2005 12 07 | 703 | 0.1+ | 0.1− | 2005 12 30 | 448 | 0.3− | 0.2− | 2006 01 12 | 118 | 0.5− | 0.2− |
| 2005 12 07 | 703 | 0.3− | 0.2+ | 2005 12 30 | 448 | 0.1+ | 0.4− | 2006 01 12 | 118 | 0.0 | 0.0 |
| 2005 12 07 | 703 | (0.1+ | 2.1+) | 2005 12 30 | 448 | 0.3+ | 0.1− | 2006 01 12 | 118 | 0.6− | 0.1+ |
| 2005 12 07 | 703 | 1.0− | 0.0 | 2005 12 30 | 696 | 0.1+ | 0.1− | 2006 01 12 | 118 | 0.2+ | 0.2+ |
| 2005 12 08 | 854 | 0.2− | 0.5+ | 2005 12 30 | 696 | 0.0 | 0.2− | 2006 08 11 | 568 | 0.0 | 0.0 |
| 2005 12 08 | 854 | 0.4− | 0.6+ | 2006 01 02 | H45 | 0.0 | 0.4+ | 2006 08 11 | 568 | 0.0 | 0.0 |
| 2005 12 08 | 854 | 0.3+ | 0.8+ | 2006 01 02 | H45 | 0.1− | 0.5+ | 2006 08 24 | J50 | 0.4− | 0.2− |
| 2005 12 08 | 703 | 0.0 | 0.2+ | 2006 01 02 | H45 | 0.2− | 0.8− | 2006 08 24 | J50 | 0.2− | 0.9− |
| 2005 12 08 | 703 | 0.1− | 0.2+ | 2006 01 02 | H45 | 0.1− | 0.7− | 2006 08 24 | J50 | 0.1+ | 0.4− |
| 2005 12 08 | 703 | 0.1+ | 0.1− | 2006 01 02 | H45 | 0.3+ | 0.2+ | 2006 09 04 | 568 | 0.0 | 0.0 |
| 2005 12 08 | 703 | 1.5+ | 0.2+ | 2006 01 02 | H45 | 0.0 | 0.0 | 2006 09 04 | 568 | 0.1+ | 0.0 |

### 2005 XD$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 295.45812 | | (2000.0) | | | |
| $n$ | 0.26639988 | $\omega$ | 32.24738 | | −0.59890509 | +0.79997142 |
| $a$ | 2.3921039 | $\Omega$ | 201.03350 | | −0.75481147 | −0.57927391 |
| $e$ | 0.1034531 | $i$ | 5.89407 | | −0.26753007 | −0.15648473 |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 704 | 0.2+ | 1.4+ | 2003 04 06 | 691 | 0.1+ | 0.0 | 2005 12 05 | 691 | 0.0 | 0.2− |
| 2003 03 06 | 704 | 1.0− | 0.2+ | 2003 04 06 | 691 | 0.3+ | 0.2− | 2005 12 05 | 691 | 0.1+ | 0.1− |
| 2003 03 06 | 704 | 0.3− | 0.2+ | 2003 04 06 | 691 | 0.2+ | 0.0 | 2005 12 08 | 691 | 0.1+ | 0.0 |
| 2003 03 06 | 704 | 1.1− | 0.1− | 2005 12 01 | 691 | 0.0 | 0.1− | 2005 12 08 | 691 | 0.0 | 0.0 |
| 2003 03 25 | 644 | 0.1+ | 0.2− | 2005 12 01 | 691 | 0.0 | 0.1− | 2005 12 08 | 691 | 0.1− | 0.0 |
| 2003 03 25 | 644 | 0.0 | 0.2− | 2005 12 01 | 691 | 0.1+ | 0.2+ | | | | |
| 2003 03 25 | 644 | 0.0 | 0.2− | 2005 12 05 | 691 | 0.3− | 0.3+ | | | | |

### 2005 XQ$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 104.20860 | | (2000.0) | | | |
| $n$ | 0.26989239 | $\omega$ | 319.67727 | | +0.61404619 | −0.78595270 |
| $a$ | 2.3714226 | $\Omega$ | 92.31698 | | +0.74148834 | +0.54306412 |
| $e$ | 0.1664653 | $i$ | 4.14884 | | +0.27044834 | +0.29556677 |
| $P$ | 3.65 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.1− | 0.3+ | 2001 10 25 | 645 | 0.1+ | 0.0 | 2005 12 05 | 691 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.3− | 1.1+ | 2001 11 18 | 645 | 0.1+ | 0.1− | 2005 12 05 | 691 | 0.1+ | 0.5+ |
| 2001 09 16 | 704 | 0.8− | 0.2+ | 2001 11 18 | 645 | 0.1+ | 0.2− | 2006 01 05 | 691 | 0.1− | 0.0 |
| 2001 10 10 | 644 | 1.2− | 0.9+ | 2005 12 01 | 691 | 0.2− | 0.5+ | 2006 01 05 | 691 | 0.0 | 0.0 |
| 2001 10 10 | 644 | 1.7− | 0.8+ | 2005 12 01 | 691 | 0.2+ | 0.1+ | 2006 01 05 | 691 | 0.0 | 0.1+ |
| 2001 10 10 | 644 | 1.6− | 1.8+ | 2005 12 01 | 691 | 0.0 | 0.0 | | | | |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2005 12 05 | 691 | 0.1− | 0.5− | | | | |

### 2005 XY$_{16}$ = 1995 KB$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.00573 | | (2000.0) | | | |
| $n$ | 0.24579496 | $\omega$ | 337.53444 | | −0.95024602 | −0.31148959 |
| $a$ | 2.5239887 | $\Omega$ | 184.31902 | | +0.29077869 | −0.88401474 |
| $e$ | 0.0342064 | $i$ | 1.97487 | | +0.11171507 | −0.34855728 |
| $P$ | 4.01 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 27 | 691 | 0.3− | 0.6− | 2003 05 05 | 704 | 1.1+ | 0.8+ | 2005 12 01 | 691 | 0.0 | 0.1+ |
| 1995 05 27 | 691 | 0.5− | 0.2− | 2003 05 05 | 704 | 0.1+ | 0.4− | 2005 12 01 | 691 | 0.4− | 0.3+ |
| 1995 05 27 | 691 | 0.7− | 0.1− | 2003 05 05 | 704 | 0.5+ | 0.2− | 2005 12 01 | 691 | 0.1− | 0.1+ |
| 1995 05 30 | 691 | 0.7+ | 0.6+ | 2003 05 05 | 704 | 1.0+ | 0.6− | 2005 12 04 | 691 | 0.2− | 0.2+ |
| 1995 05 30 | 691 | 0.8+ | 0.4+ | 2003 05 05 | 704 | 0.5+ | 0.3− | 2005 12 04 | 691 | 0.2+ | 0.1+ |
| 1995 05 30 | 691 | (2.4+ | 0.4+) | 2003 06 01 | 691 | 0.2− | 1.1+ | 2005 12 04 | 691 | 0.0 | 0.2+ |
| 2003 04 20 | 413 | 0.2− | 0.7+ | 2003 06 01 | 691 | 0.1− | 0.1+ | 2005 12 28 | 691 | 0.2+ | 0.4+ |
| 2003 04 20 | 413 | 0.5− | 0.6+ | 2003 06 01 | 691 | 0.3+ | 0.4+ | 2005 12 28 | 691 | 0.1− | 0.4+ |
| 2003 04 20 | 413 | 0.4− | 0.1− | 2004 10 04 | 691 | 0.4− | 0.5+ | 2005 12 28 | 691 | 0.3+ | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 04 20 | 413 | 0.2+ | 0.2− | 2004 10 04 | 691 | 0.1− | 0.3+ | |
| 2003 04 20 | 413 | 0.4− | 0.1+ | 2004 10 04 | 691 | 0.0 | 0.4+ | |

**2005 XC$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.10414 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21592993 | $\omega$ | 256.28191 | | −0.15058318 | | +0.98841122 |
| $a$ | 2.7516561 | $\Omega$ | 5.17355 | | −0.80477567 | | −0.11129106 |
| $e$ | 0.0768690 | $i$ | 12.28234 | | −0.57416098 | | −0.10323546 |
| $P$ | 4.56 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 645 | 0.1− | 0.0 | 2005 08 25 | 644 | 0.0 | 0.0 | 2005 10 01 | 704 | 0.9+ | 1.4+ |
| 2003 02 01 | 645 | 0.1− | 0.0 | 2005 08 25 | 644 | 0.3− | 0.3+ | 2005 10 01 | 704 | 0.8− | 1.5+ |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2005 08 29 | 699 | 1.3− | 0.2+ | 2005 12 02 | G96 | 0.4+ | 0.1− |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2005 08 29 | 699 | 0.8+ | 1.7− | 2005 12 02 | G96 | 0.6− | 0.0 |
| 2003 04 26 | 645 | 0.0 | 0.1+ | 2005 08 29 | 699 | 0.3− | 0.9− | 2005 12 02 | G96 | 0.4− | 0.2− |
| 2003 04 26 | 645 | 0.1+ | 0.0 | 2005 08 29 | 699 | 0.2− | 0.2− | 2005 12 02 | G96 | 0.3+ | 0.3− |
| 2005 08 25 | 644 | 0.3− | 0.3+ | 2005 09 12 | 691 | 0.2+ | 0.0 | 2005 12 04 | G96 | 0.2− | 0.1+ |
| 2005 08 25 | 644 | 0.3− | 0.0 | 2005 09 12 | 691 | 0.0 | 0.1− | 2005 12 04 | G96 | 0.1+ | 0.2+ |
| 2005 08 25 | 644 | 0.1− | 0.1+ | 2005 09 12 | 691 | 0.1− | 0.0 | 2005 12 04 | G96 | 0.4+ | 0.1− |
| 2005 08 25 | 644 | 0.3− | 0.2− | 2005 10 01 | 704 | 1.2+ | 0.1+ | 2005 12 04 | G96 | 0.2+ | 0.5+ |

**2005 XO$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.37749 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27458192 | $\omega$ | 63.69056 | | +0.88578288 | | +0.44958406 |
| $a$ | 2.3443445 | $\Omega$ | 269.40311 | | −0.45620085 | | +0.79788570 |
| $e$ | 0.1065244 | $i$ | 6.61347 | | −0.08526125 | | +0.40156268 |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 19 | 691 | 0.3+ | 0.2− | 2004 07 18 | 704 | 0.5+ | 1.1+ | 2005 12 05 | 691 | 0.4+ | 0.1+ |
| 2004 06 19 | 691 | 0.0 | 0.0 | 2004 07 18 | 704 | 0.9+ | 0.5− | 2005 12 05 | 691 | 0.2+ | 0.1+ |
| 2004 06 19 | 691 | 0.1+ | 0.3− | 2005 12 04 | G96 | 0.1+ | 0.7− | 2006 01 10 | 691 | 0.2+ | 0.2− |
| 2004 07 11 | 704 | 0.8− | 0.2+ | 2005 12 04 | G96 | 0.2+ | 0.4− | 2006 01 10 | 691 | 0.1+ | 0.3+ |
| 2004 07 11 | 704 | 0.0 | 0.1+ | 2005 12 04 | G96 | 0.3+ | 0.7− | 2006 01 10 | 691 | 0.0 | 0.3− |
| 2004 07 11 | 704 | 0.4− | 0.6− | 2005 12 04 | G96 | 0.1− | 0.1− | | | | |
| 2004 07 18 | 704 | 1.0− | 0.6+ | 2005 12 05 | 691 | 1.0− | 0.3+ | | | | |

**2005 XY$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.53725 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23636811 | $\omega$ | 261.29313 | | +0.85442720 | | −0.46866558 |
| $a$ | 2.5906583 | $\Omega$ | 126.34224 | | +0.51379762 | | +0.82632523 |
| $e$ | 0.1384457 | $i$ | 16.16790 | | −0.07724094 | | +0.31231264 |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.4+ | 0.2− | 2005 10 08 | 703 | 1.5− | 0.1+ | 2005 10 31 | 644 | 0.6+ | 0.8+ |
| 2001 11 17 | 704 | 0.4− | 1.4+ | 2005 10 08 | 703 | 0.7− | 1.5− | 2005 12 01 | 703 | 0.7+ | 0.3+ |
| 2001 11 17 | 704 | 0.1− | 0.9+ | 2005 10 08 | 703 | 0.4− | 0.3+ | 2005 12 01 | 703 | 0.3− | 0.1− |
| 2001 12 07 | 704 | 0.2+ | 1.0− | 2005 10 08 | 703 | 0.2− | 0.3− | 2005 12 01 | 703 | 0.5+ | 0.6+ |
| 2001 12 07 | 704 | 0.7+ | 1.5− | 2005 10 31 | 703 | 0.2+ | 0.1− | 2005 12 01 | 703 | 0.5+ | 0.2+ |
| 2001 12 07 | 704 | 1.4− | 0.3+ | 2005 10 31 | 703 | 0.4+ | 0.1+ | 2005 12 06 | 703 | 0.1+ | 0.2− |
| 2001 12 07 | 704 | 0.2+ | 0.1− | 2005 10 31 | 703 | 0.4+ | 0.1+ | 2005 12 06 | 703 | 0.8− | 0.5+ |
| 2001 12 14 | 644 | 0.1− | 0.2+ | 2005 10 31 | 703 | 0.5+ | 0.0 | 2005 12 06 | 703 | 0.8− | 0.4− |
| 2001 12 14 | 644 | 0.3+ | 0.3+ | 2005 10 31 | 644 | 0.1+ | 0.2− | 2005 12 06 | 703 | 0.3+ | 1.0− |
| 2001 12 14 | 644 | 0.0 | 0.1+ | 2005 10 31 | 644 | 0.3+ | 0.5+ | | | | |

**2005 XQ$_{29}$ = 2004 ND$_{12}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.12589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19880843 | $\omega$ | 210.06113 | | +0.99411693 | | +0.09791651 |
| $a$ | 2.9074540 | $\Omega$ | 144.22814 | | −0.07668389 | | +0.93817363 |
| $e$ | 0.2078977 | $i$ | 4.54307 | | −0.07649252 | | +0.33202802 |
| $P$ | 4.96 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 11 | 704 | 0.1+ | 0.2− | 2005 12 07 | 704 | 0.0 | 1.0+ | 2005 12 09 | 704 | 0.2+ | 0.8− |
| 2004 07 11 | 704 | 0.2− | 0.0 | 2005 12 07 | 704 | 0.5− | 0.8+ | 2005 12 09 | 704 | 0.0 | 0.6− |
| 2004 07 11 | 704 | 0.2+ | 0.1+ | 2005 12 07 | 704 | 0.2− | 0.2+ | 2005 12 09 | 704 | 0.1+ | 1.2− |
| 2004 07 16 | 704 | 0.2− | 0.5+ | 2005 12 07 | 704 | 0.1− | 0.2+ | 2005 12 10 | 704 | 0.2+ | 0.8+ |
| 2004 07 16 | 704 | 0.7− | 0.2− | 2005 12 07 | 704 | (2.2+ | 1.0−) | 2005 12 10 | 704 | 0.8− | 1.4+ |
| 2004 07 16 | 704 | 0.7+ | 0.5− | 2005 12 08 | 704 | 0.5+ | 0.7− | 2005 12 10 | 704 | 0.1+ | 0.7+ |
| 2004 07 16 | 704 | 0.3+ | 0.2+ | 2005 12 08 | 704 | 0.5+ | 1.9− | | | | |
| 2004 07 16 | 704 | 0.1− | 0.0 | 2005 12 08 | 704 | (0.3+ | 3.9−) | | | | |

**2005 XS$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.42151 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24278539 | $\omega$ | 289.18662 | | −0.77134879 | | −0.63344741 |
| $a$ | 2.5448040 | $\Omega$ | 211.59615 | | +0.61900997 | | −0.72436662 |
| $e$ | 0.0634345 | $i$ | 6.72598 | | +0.14780968 | | −0.27209812 |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 22 | 691 | 0.0 | 0.1+ | 2003 04 24 | 699 | 0.0 | 0.4+ | 2005 12 07 | 704 | 0.7− | 0.3+ |
| 1999 04 22 | 691 | 0.1− | 0.1− | 2004 08 20 | 691 | 0.0 | 0.1− | 2005 12 07 | 704 | 0.7− | 0.7+ |
| 1999 04 22 | 691 | 0.1+ | 0.1− | 2004 08 20 | 691 | 0.0 | 0.2+ | 2005 12 08 | 704 | 0.2− | 0.2− |
| 2003 04 24 | 699 | 1.0+ | 0.3− | 2004 08 20 | 691 | 0.1− | 0.1+ | 2005 12 08 | 704 | 0.2+ | 0.6+ |
| 2003 04 24 | 699 | 1.0− | 1.2+ | 2005 12 07 | 704 | 0.6+ | 0.2+ | 2005 12 08 | 704 | 0.6+ | 0.0 |
| 2003 04 24 | 699 | 0.4+ | 0.3+ | 2005 12 07 | 704 | 0.9− | 0.2− | 2005 12 08 | 704 | 1.0+ | 0.4− |

**2005 XH$_{50}$ = 1999 VW$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.41157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17795880 | $\omega$ | 334.42823 | | +0.91074965 | | −0.40544120 |
| $a$ | 3.1303272 | $\Omega$ | 49.71935 | | +0.39434152 | | +0.79746969 |
| $e$ | 0.0776694 | $i$ | 5.90142 | | +0.12259625 | | +0.44683278 |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.8+ | 0.3− | 2002 04 07 | 807 | 0.3− | 0.5+ | 2005 12 06 | 691 | 0.3− | 0.0 |
| 1999 11 09 | 704 | 1.0+ | 0.4+ | 2002 04 07 | 807 | 0.3− | 0.5+ | 2005 12 06 | 691 | 0.3+ | 0.2+ |
| 1999 11 09 | 704 | 0.4− | 0.7− | 2002 04 08 | 644 | 0.1+ | 0.4− | 2005 12 06 | 691 | 0.0 | 0.1+ |
| 1999 11 09 | 704 | 0.2− | 0.5+ | 2002 04 08 | 644 | 0.8+ | 0.1− | 2005 12 08 | 691 | 0.1− | 0.2+ |
| 1999 11 09 | 704 | 0.6− | 0.5+ | 2002 04 08 | 644 | 0.3− | 0.4− | 2005 12 08 | 691 | 0.0 | 0.3− |
| 1999 11 12 | 704 | 0.4+ | 0.8− | 2005 12 02 | 691 | 0.1− | 0.0 | 2005 12 08 | 691 | 0.1− | 0.1− |
| 1999 11 12 | 704 | 1.1− | 0.4+ | 2005 12 02 | 691 | 0.2+ | 0.0 | | | | |
| 1999 11 12 | 704 | 0.0 | 0.0 | 2005 12 02 | 691 | 0.1+ | 0.2− | | | | |

**2005 XR$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.56830 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17086674 | $\omega$ | 183.94974 | | −0.73908631 | | +0.67332179 |
| $a$ | 3.2163579 | $\Omega$ | 38.39845 | | −0.61715225 | | −0.66511244 |
| $e$ | 0.1113702 | $i$ | 1.82014 | | −0.26995284 | | −0.32289816 |
| $P$ | 5.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.1− | 0.0 | 2002 04 08 | 691 | 0.2− | 0.0 | 2005 12 05 | G96 | 0.2− | 0.0 |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2002 04 13 | 691 | 0.2+ | 0.1− | 2005 12 05 | G96 | 0.0 | 0.1− |
| 2002 04 06 | 807 | 0.1− | 0.2+ | 2002 04 13 | 691 | 0.3+ | 0.2− | 2005 12 06 | 691 | 0.3− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 06 | 807 | 0.1+ | 0.1+ | 2002 04 13 | 691 | 0.4− | 0.0 | 2005 12 06 | 691 | 0.2+ | 0.2− |
| 2002 04 08 | 691 | 0.0 | 0.0 | 2005 12 05 | G96 | 0.1+ | 0.1− | 2005 12 06 | 691 | 0.2+ | 0.0 |
| 2002 04 08 | 691 | 0.2+ | 0.2+ | 2005 12 05 | G96 | 0.3− | 0.3+ | | | | |

**2005 XV$_{57}$ = 1997 KO$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.94525 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18748699 | $\omega$ | 119.85875 | | +0.26386070 | | +0.96350273 |
| $a$ | 3.0233514 | $\Omega$ | 165.23282 | | −0.93479222 | | +0.26698041 |
| $e$ | 0.0600189 | $i$ | 10.20665 | | −0.23778358 | | +0.01959468 |
| $P$ | 5.26 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 31 | 691 | 0.7− | 0.2+ | 2005 12 07 | 691 | 0.7+ | 0.0 | 2006 03 03 | 691 | 0.0 | 0.3+ |
| 1997 05 31 | 691 | 0.1+ | 0.8+ | 2005 12 07 | 691 | 0.1+ | 0.0 | 2006 03 03 | 691 | 0.1+ | 0.4+ |
| 1997 05 31 | 691 | 0.4+ | 0.3+ | 2006 01 06 | G96 | 1.2− | 0.8− | 2006 03 05 | G96 | 0.3− | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 01 06 | G96 | 0.6− | 0.1− | 2006 03 05 | G96 | 0.1+ | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2006 01 06 | G96 | 0.6− | 0.5− | 2006 03 05 | G96 | 0.2− | 0.1+ |
| 2003 09 28 | 699 | 0.3− | 0.1+ | 2006 01 06 | G96 | 0.7− | 0.9− | 2006 03 05 | G96 | 0.1+ | 0.0 |
| 2003 09 28 | 699 | 0.2− | 1.6+ | 2006 02 07 | G96 | 0.1− | 0.0 | 2006 03 09 | 699 | 0.9+ | 0.0 |
| 2003 09 28 | 699 | 0.1− | 0.1+ | 2006 02 07 | G96 | 0.4− | 0.6− | 2006 03 09 | 699 | 0.6+ | 0.1+ |
| 2003 09 28 | 699 | 0.1+ | 0.9+ | 2006 02 07 | G96 | 0.7− | 0.2− | 2006 03 09 | 699 | 1.3− | 0.8− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 02 07 | G96 | 0.4− | 0.4− | 2006 03 09 | 699 | 0.2+ | 1.2− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 02 21 | G96 | 0.2− | 0.3− | 2006 03 24 | 699 | 0.2+ | 1.4− |
| 2003 10 21 | 291 | 0.1− | 0.4+ | 2006 02 21 | G96 | 0.5− | 0.2− | 2006 03 24 | 699 | 1.4+ | 0.1+ |
| 2003 10 21 | 291 | 0.1− | 0.5+ | 2006 02 21 | G96 | 0.2− | 0.2− | 2006 03 24 | 699 | 1.6+ | 0.8− |
| 2003 10 21 | 291 | 0.2− | 0.3+ | 2006 02 21 | G96 | 0.5− | 0.2− | 2006 03 24 | 699 | (0.5− | 2.0+) |
| 2005 12 01 | 691 | 0.2+ | 0.4+ | 2006 02 27 | 691 | 0.3+ | 0.1+ | 2006 04 06 | 691 | 0.3− | 0.3− |
| 2005 12 01 | 691 | 0.1− | 0.7+ | 2006 02 27 | 691 | 0.0 | 0.8+ | 2006 04 06 | 691 | 0.0 | 0.3+ |
| 2005 12 01 | 691 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.0 | 0.1+ | 2006 04 06 | 691 | 0.1− | 0.8+ |
| 2005 12 07 | 691 | 0.1+ | 0.4+ | 2006 03 03 | 691 | 0.1+ | 0.2+ | | | | |

**2005 XA$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.95969 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28737825 | $\omega$ | 84.88618 | | +0.89939139 | | +0.43404699 |
| $a$ | 2.2742251 | $\Omega$ | 249.38097 | | −0.41984134 | | +0.82457035 |
| $e$ | 0.2202443 | $i$ | 3.18159 | | −0.12177180 | | +0.36288697 |
| $P$ | 3.43 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 25 | 691 | 0.6+ | 0.1− | 2001 08 19 | 704 | 0.2− | 1.3+ | 2004 05 23 | 691 | 0.1+ | 0.2+ |
| 1998 12 25 | 691 | 0.3− | 0.1− | 2001 08 19 | 704 | 0.5+ | 0.9+ | 2005 12 04 | 691 | 0.3+ | 0.1+ |
| 1998 12 25 | 691 | 0.0 | 0.7− | 2001 09 20 | 704 | 0.6− | 2.1− | 2005 12 04 | 691 | 0.0 | 0.2+ |
| 2001 07 24 | 608 | 0.0 | 0.5+ | 2001 09 20 | 704 | 0.9− | 1.5− | 2005 12 04 | 691 | 0.2+ | 0.4+ |
| 2001 07 24 | 608 | 0.3+ | 0.5+ | 2001 09 20 | 704 | 1.4− | 1.1− | 2005 12 07 | 291 | 0.3− | 0.4+ |
| 2001 07 24 | 608 | 0.4+ | 0.3+ | 2003 01 11 | 291 | 0.3− | 0.1+ | 2005 12 07 | 291 | 0.1+ | 0.4+ |
| 2001 08 07 | 608 | 0.6− | 0.6+ | 2003 01 11 | 291 | 0.3+ | 0.0 | 2005 12 07 | 291 | 0.0 | 0.4+ |
| 2001 08 07 | 608 | 0.2+ | 0.9+ | 2003 01 11 | 291 | 0.2− | 0.0 | 2005 12 08 | 691 | 0.0 | 0.0 |
| 2001 08 07 | 608 | 0.3− | 0.7+ | 2004 05 23 | 691 | 0.1+ | 0.2+ | 2005 12 08 | 691 | 0.3− | 0.1+ |
| 2001 08 19 | 704 | 1.2+ | 0.4+ | 2004 05 23 | 691 | 0.0 | 0.0 | 2005 12 08 | 691 | 0.1+ | 0.1+ |

**2005 XQ$_{63}$ = 2005 WZ$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.52762 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29788686 | $\omega$ | 102.11260 | | −0.97180517 | | −0.22282019 |
| $a$ | 2.2204201 | $\Omega$ | 65.05318 | | +0.16935492 | | −0.88716792 |
| $e$ | 0.0831758 | $i$ | 4.87856 | | +0.16405371 | | −0.40408446 |
| $P$ | 3.31 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.0 | 2003 03 07 | 644 | 0.3− | 0.7+ | 2005 12 07 | 691 | 0.2+ | 0.0 |
| 2000 05 04 | 645 | 0.0 | 0.1− | 2005 11 26 | G96 | 0.4− | 0.1+ | 2005 12 28 | G96 | 0.2− | 0.4− |
| 2003 01 28 | 644 | 0.3+ | 0.5+ | 2005 11 26 | G96 | 0.1− | 0.0 | 2005 12 28 | G96 | 0.2+ | 0.2− |
| 2003 01 28 | 644 | 0.4+ | 0.2+ | 2005 11 26 | G96 | 0.2− | 0.1− | 2005 12 28 | G96 | 0.2+ | 0.3− |
| 2003 01 28 | 644 | 0.7+ | 0.0 | 2005 11 26 | G96 | 0.5− | 0.1− | 2005 12 28 | G96 | 0.6+ | 0.3− |
| 2003 03 03 | 644 | 0.2− | 0.0 | 2005 12 05 | G96 | 0.0 | 0.0 | 2006 02 01 | G96 | 0.2− | 0.5− |
| 2003 03 03 | 644 | 0.0 | 0.1+ | 2005 12 05 | G96 | 0.0 | 0.0 | 2006 02 01 | G96 | 0.1+ | 0.2− |
| 2003 03 03 | 644 | 0.1+ | 0.4+ | 2005 12 05 | G96 | 0.0 | 0.2+ | 2006 02 01 | G96 | 0.1− | 0.2− |
| 2003 03 07 | 644 | 0.2− | 0.3+ | 2005 12 07 | 691 | 0.1− | 0.1− | 2006 02 01 | G96 | 0.3− | 0.3− |
| 2003 03 07 | 644 | 0.1− | 0.3+ | 2005 12 07 | 691 | 0.2+ | 0.0 | | | | |

**2005 XH$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.15495 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30964488 | $\omega$ | 46.53560 | | −0.90813317 | | −0.41454974 |
| $a$ | 2.1638481 | $\Omega$ | 108.89453 | | +0.36400199 | | −0.85098471 |
| $e$ | 0.0983750 | $i$ | 3.55552 | | +0.20687362 | | −0.32244926 |
| $P$ | 3.18 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 11 | 691 | 0.7+ | 0.6+ | 2005 12 06 | 691 | 0.1+ | 0.1+ | 2006 02 28 | 704 | 1.1+ | 0.5− |
| 2003 04 11 | 691 | 0.6+ | 0.6+ | 2005 12 06 | 691 | 0.2+ | 0.2− | 2006 02 28 | 704 | 0.6+ | 1.3+ |
| 2003 04 11 | 691 | 0.5+ | 1.1+ | 2005 12 07 | 291 | 0.2− | 0.0 | 2006 03 23 | 703 | (0.1+ | 2.7−) |
| 2003 04 23 | 599 | (0.3− | 2.1−) | 2005 12 07 | 291 | 0.1− | 0.5+ | 2006 03 23 | 703 | (0.8− | 2.1−) |
| 2003 04 23 | 599 | 0.8+ | 0.9− | 2005 12 07 | 291 | 0.3+ | 0.4+ | 2006 03 23 | 703 | 1.1− | 1.2− |
| 2003 04 23 | 599 | 0.3− | 0.2− | 2005 12 07 | 291 | 0.1+ | 0.2− | 2006 03 23 | 703 | 0.8− | 1.0− |
| 2003 05 01 | 704 | 1.6− | 0.1+ | 2005 12 07 | 291 | 0.3− | 0.4+ | 2006 03 24 | 699 | 0.4+ | 0.3− |
| 2003 05 01 | 704 | 0.4+ | 0.9− | 2005 12 07 | 291 | 0.3− | 0.0 | 2006 03 24 | 699 | 0.4− | 0.0 |
| 2003 05 01 | 704 | 0.7+ | 1.3+ | 2006 02 22 | 703 | 1.3− | 0.7− | 2006 03 24 | 699 | 0.6− | 0.3− |
| 2003 05 01 | 704 | 0.6+ | 0.7− | 2006 02 22 | 703 | 0.5− | 0.0 | 2006 03 24 | 704 | 0.3+ | 0.1+ |
| 2003 05 06 | 691 | 0.4− | 0.5− | 2006 02 22 | 703 | 0.9− | 0.1+ | 2006 03 24 | 704 | 0.1+ | 0.2− |
| 2003 05 06 | 691 | 0.8− | 0.2− | 2006 02 22 | 703 | (2.2− | 0.3−) | 2006 03 24 | 699 | 0.5+ | 0.4− |
| 2003 05 06 | 691 | 0.5− | 0.4− | 2006 02 28 | 704 | 0.2+ | 0.4+ | 2006 03 24 | 704 | 0.8+ | 0.4− |
| 2005 12 06 | 691 | 0.5+ | 0.4− | 2006 02 28 | 704 | 0.7+ | 0.0 | 2006 03 24 | 704 | 0.8− | 1.1− |

**2005 XA$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.92076 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22044990 | $\omega$ | 158.52284 | | −0.06673517 | | −0.99537978 |
| $a$ | 2.7139142 | $\Omega$ | 295.24818 | | +0.90396194 | | −0.03102795 |
| $e$ | 0.0294762 | $i$ | 4.37730 | | +0.42237332 | | −0.09086453 |
| $P$ | 4.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 1.3+ | 0.7+ | 2002 02 11 | 704 | 0.2− | 0.1− | 2005 12 01 | 691 | 0.2− | 0.4− |
| 2002 01 09 | 704 | 0.5− | 1.1− | 2002 02 11 | 704 | 0.7− | 0.0 | 2005 12 01 | 691 | (2.8+ | 0.1+) |
| 2002 01 09 | 704 | 1.1+ | 0.1+ | 2002 02 11 | 704 | 0.4+ | 0.2− | 2005 12 05 | 691 | 0.0 | 0.1+ |
| 2002 01 09 | 704 | 0.7− | 0.5− | 2002 02 11 | 704 | 0.1+ | 0.7+ | 2005 12 05 | 691 | 0.3+ | 0.0 |
| 2002 01 22 | 291 | 0.1− | 0.1+ | 2005 11 28 | 704 | 0.9− | 0.1− | 2005 12 05 | 691 | 0.1− | 0.1+ |
| 2002 01 22 | 291 | 0.2+ | 0.1+ | 2005 11 28 | 704 | 1.1+ | 0.1+ | 2005 12 10 | 691 | 0.2− | 0.3+ |
| 2002 01 22 | 291 | 0.2− | 0.0 | 2005 11 28 | 704 | 0.2+ | 1.1+ | 2005 12 10 | 691 | 0.3+ | 0.1− |
| 2002 02 11 | 704 | 0.3− | 0.5− | 2005 12 01 | 691 | 0.2− | 0.5− | 2005 12 10 | 691 | 0.1+ | 0.2+ |

**2005 XH$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.92131 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28227692 | $\omega$ | 167.84128 | | +0.86992844 | | −0.48981932 |
| $a$ | 2.3015432 | $\Omega$ | 221.64744 | | +0.44492941 | | +0.82973651 |
| $e$ | 0.1667892 | $i$ | 4.96020 | | +0.21274944 | | +0.26760858 |
| $P$ | 3.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 16 | 699 | 0.1− | 0.8+ | 2005 09 09 | 704 | 0.3− | 0.1+ | 2005 10 07 | 704 | 0.5− | 0.1+ |
| 1998 09 16 | 699 | 0.7− | 0.4+ | 2005 09 23 | 699 | 0.3− | 0.2− | 2005 10 07 | 704 | 0.5− | 0.4− |
| 1998 09 16 | 699 | 0.4− | 0.1− | 2005 09 23 | 699 | 0.8− | 0.2+ | 2005 10 20 | 644 | 0.5+ | 0.3+ |
| 1998 09 27 | 699 | 1.0+ | 0.6+ | 2005 09 23 | 699 | 1.2+ | 0.4− | 2005 10 20 | 644 | 0.1− | 0.1+ |
| 1998 09 27 | 699 | 0.1− | 0.5− | 2005 09 23 | 699 | 0.3− | 0.3− | 2005 10 20 | 644 | 0.3+ | 0.5+ |
| 1998 09 27 | 699 | 0.1+ | 0.5− | 2005 09 29 | 644 | 0.2+ | 0.0 | 2005 10 30 | G96 | 0.1− | 0.5− |
| 2005 08 31 | 699 | 1.4+ | 0.3+ | 2005 09 29 | 644 | 0.3− | 0.2− | 2005 10 30 | G96 | 0.0 | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 31 | 699 | 0.4− | 0.1− | 2005 09 29 | 644 | 0.0 | 0.1+ | 2005 10 30 | G96 | 0.1+ | 0.1− |
| 2005 08 31 | 699 | 0.7+ | 0.2+ | 2005 10 01 | 703 | 0.3+ | 0.3− | 2005 10 30 | G96 | 0.0 | 0.2− |
| 2005 08 31 | 699 | 1.2+ | 0.1+ | 2005 10 01 | 703 | 0.2− | 0.1+ | 2005 12 04 | G96 | 0.4+ | 0.6+ |
| 2005 09 09 | 704 | 0.5+ | 0.2− | 2005 10 01 | 703 | 0.2− | 0.0 | 2005 12 04 | G96 | 0.3− | 0.1+ |
| 2005 09 09 | 704 | 0.7+ | 0.5+ | 2005 10 01 | 703 | 1.3− | 0.2− | 2005 12 04 | G96 | 0.3+ | 0.2+ |
| 2005 09 09 | 704 | 0.3+ | 0.2− | 2005 10 07 | 704 | 1.4− | 0.3− | 2005 12 04 | G96 | 0.3+ | 0.1− |
| 2005 09 09 | 704 | 0.3+ | 0.3+ | 2005 10 07 | 704 | 1.2− | 0.5− | | | | |

**2005 XG$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.98057 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27946253 | $\omega$ | 137.19446 | | −0.98943494 | | −0.13880171 |
| $a$ | 2.3169696 | $\Omega$ | 34.89214 | | +0.10516300 | | −0.88590689 |
| $e$ | 0.1392928 | $i$ | 4.19690 | | +0.09979598 | | −0.44260938 |
| $P$ | 3.53 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 691 | 0.2− | 0.1+ | 2003 04 25 | 691 | 0.2− | 0.0 | 2005 12 10 | 691 | 0.0 | 0.2− |
| 2001 11 16 | 691 | 0.5− | 0.1+ | 2003 04 25 | 291 | 0.3+ | 0.0 | 2005 12 10 | 691 | 0.2+ | 0.2− |
| 2001 11 16 | 691 | 0.0 | 1.4+ | 2003 04 25 | 691 | 0.1+ | 0.2+ | 2005 12 10 | 691 | 0.2− | 0.0 |
| 2003 03 31 | 807 | 1.3− | 0.5+ | 2003 04 25 | 291 | 0.5+ | 0.6+ | 2005 12 28 | 691 | 0.1− | 0.0 |
| 2003 03 31 | 807 | 0.3+ | 0.4+ | 2003 04 25 | 691 | 0.0 | 0.1+ | 2005 12 28 | 691 | 0.1+ | 0.2− |
| 2003 03 31 | 807 | 1.4+ | 0.1+ | 2003 05 05 | 691 | 0.1− | 0.1+ | 2005 12 28 | 691 | 0.0 | 0.1+ |
| 2003 03 31 | 807 | 0.5− | 0.3+ | 2003 05 05 | 691 | 0.2− | 0.1− | | | | |
| 2003 04 25 | 291 | 0.2− | 0.1− | 2003 05 05 | 691 | 0.3+ | 0.1+ | | | | |

**2005 XO$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.76505 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23801621 | $\omega$ | 19.59627 | | +0.91920666 | | +0.36916780 |
| $a$ | 2.5786854 | $\Omega$ | 317.91491 | | −0.38303673 | | +0.75755410 |
| $e$ | 0.2424504 | $i$ | 11.79643 | | −0.09133449 | | +0.53835576 |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 704 | 0.2− | 0.9− | 2002 03 12 | 645 | 0.0 | 0.0 | 2004 12 02 | 704 | 0.5+ | 0.4+ |
| 2000 11 19 | 704 | 0.4− | 0.5− | 2004 08 26 | 704 | 0.5+ | 0.3+ | 2004 12 02 | 704 | 0.2+ | 0.6+ |
| 2000 11 19 | 704 | 0.2− | 0.3− | 2004 08 26 | 704 | 0.4− | 0.6+ | 2004 12 02 | 704 | 0.6+ | 0.5− |
| 2000 11 19 | 704 | 0.8− | 0.4+ | 2004 08 26 | 704 | 0.3− | 1.8+ | 2004 12 02 | 704 | 1.0+ | 1.1+ |
| 2000 12 06 | 704 | 1.3+ | 0.4− | 2004 09 11 | 704 | 0.7+ | 0.6− | 2004 12 02 | 704 | 0.8+ | 0.0 |
| 2000 12 06 | 704 | 0.6+ | 0.7− | 2004 09 11 | 704 | 0.1+ | 0.1− | 2005 12 01 | 695 | 0.0 | 0.2+ |
| 2000 12 06 | 704 | 0.6− | 0.8− | 2004 09 11 | 704 | 0.9− | 0.5− | 2005 12 01 | 695 | 0.0 | 0.2+ |
| 2000 12 19 | 704 | 0.7+ | 0.1− | 2004 09 11 | 704 | 1.7− | 0.0 | 2005 12 02 | 695 | 0.0 | 0.3+ |
| 2000 12 19 | 704 | 0.5+ | 0.6+ | 2004 09 14 | 704 | 0.8− | 0.5− | 2006 01 07 | G96 | 0.2+ | 0.2+ |
| 2000 12 19 | 704 | 0.3+ | 0.5− | 2004 09 14 | 704 | 0.5− | 0.9+ | 2006 01 07 | G96 | 0.0 | 0.0 |
| 2000 12 19 | 704 | 0.7− | 1.2+ | 2004 09 14 | 704 | 0.1+ | 0.3− | 2006 01 07 | G96 | 0.3− | 0.0 |
| 2000 12 19 | 704 | 0.3− | 0.5+ | 2004 09 14 | 704 | 0.8− | 0.5− | 2006 01 07 | G96 | 0.1+ | 0.1− |
| 2002 02 20 | 691 | 0.4− | 0.2+ | 2004 11 03 | 703 | 0.3+ | 0.1+ | 2006 01 21 | G96 | 0.4+ | 0.1− |
| 2002 02 20 | 691 | 0.0 | 0.1+ | 2004 11 03 | 703 | 0.2+ | 0.7− | 2006 01 21 | G96 | 0.4− | 0.1+ |
| 2002 02 20 | 691 | 0.3+ | 0.1+ | 2004 11 03 | 703 | 0.0 | 0.1− | 2006 01 21 | G96 | 0.4+ | 0.6− |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2004 11 03 | 703 | 0.8− | 0.6+ | 2006 01 21 | G96 | 0.4− | 0.3+ |

**2005 XQ$_{114}$ = 2004 TM$_{223}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.51981 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18149759 | $\omega$ | 208.91837 | | −0.25747117 | | −0.96429560 |
| $a$ | 3.0895043 | $\Omega$ | 256.05852 | | +0.89838253 | | −0.21526121 |
| $e$ | 0.1887366 | $i$ | 3.66198 | | +0.35583344 | | −0.15426150 |
| $P$ | 5.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 08 | 691 | 0.3− | 0.1− | 2006 01 09 | 691 | 0.2− | 0.2+ | 2006 02 03 | G96 | 0.0 | 0.0 |
| 2004 10 08 | 691 | 0.1− | 0.1+ | 2006 01 09 | 691 | 0.7+ | 0.5− | 2006 02 03 | G96 | 0.0 | 0.3− |
| 2004 10 08 | 691 | 0.2− | 0.1− | 2006 01 23 | 704 | 0.7+ | 1.1+ | 2006 02 03 | 704 | 0.1+ | 1.1+ |
| 2004 10 12 | 691 | 0.3+ | 0.1− | 2006 01 23 | 704 | 0.2− | 0.1− | 2006 02 03 | 704 | 0.2+ | 1.7− |
| 2004 10 12 | 691 | 0.3+ | 0.3+ | 2006 01 23 | 704 | 1.1− | 1.0+ | 2006 02 03 | 704 | 1.6+ | 1.3+ |
| 2004 10 12 | 691 | 0.1− | 0.3+ | 2006 01 23 | 704 | 0.9+ | 1.1+ | 2006 02 03 | 704 | (2.2+ | 0.6+) |
| 2005 12 01 | G96 | 0.6− | 0.4− | 2006 02 03 | G96 | 0.2− | 0.5− | 2006 02 21 | 699 | 0.2− | 0.6+ |
| 2005 12 01 | G96 | 0.3− | 0.6− | 2006 02 03 | G96 | 0.1− | 0.5− | 2006 02 21 | 699 | 0.3+ | 0.9− |
| 2005 12 01 | G96 | 0.1− | 0.6− | 2006 02 03 | G96 | 0.2− | 0.5− | 2006 02 21 | 699 | 0.5− | 0.2+ |
| 2005 12 01 | G96 | 0.4− | 0.4− | 2006 02 03 | G96 | 0.1+ | 0.3− | 2006 02 21 | 699 | 0.8− | 0.7+ |
| 2006 01 09 | 691 | 0.1+ | 0.1+ | 2006 02 03 | G96 | 0.1− | 0.4− | | | | |

**2005 XR$_{114}$ = 2001 YL$_{146}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.83588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26801478 | $\omega$ | 126.86975 | | +0.99985109 | | +0.01697822 |
| $a$ | 2.3824853 | $\Omega$ | 232.15763 | | −0.01681506 | | +0.91828074 |
| $e$ | 0.1896549 | $i$ | 0.22409 | | −0.00387988 | | +0.39556569 |
| $P$ | 3.68 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3− | 0.5− | 2001 12 19 | 704 | 0.5+ | 1.0+ | 2006 01 10 | G96 | 0.4− | 0.1+ |
| 2001 12 18 | 704 | 0.5− | 0.3− | 2005 12 02 | G96 | 0.6+ | 0.5− | 2006 01 10 | G96 | 0.4+ | 0.1+ |
| 2001 12 18 | 704 | 0.5+ | 0.8− | 2005 12 02 | G96 | 0.5+ | 0.5− | 2006 01 10 | G96 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.5− | 2005 12 02 | G96 | 0.5− | 0.4+ | 2006 01 10 | G96 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.2− | 1.9+ | 2005 12 02 | G96 | 0.6− | 0.8+ | 2006 01 21 | G96 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.6+ | 0.4− | 2005 12 26 | G96 | 0.1+ | 0.2− | 2006 01 21 | G96 | 0.3− | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2005 12 26 | G96 | 0.2− | 0.3− | 2006 01 21 | G96 | 0.4+ | 0.1+ |
| 2001 12 19 | 704 | 0.5− | 0.3− | 2005 12 26 | G96 | 0.1− | 0.5− | 2006 01 21 | G96 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.2− | 2005 12 26 | G96 | 0.1− | 0.2− | | | | |

**2005 XS$_{114}$ = 2002 CC$_{303}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.17456 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23464670 | $\omega$ | 209.78459 | | +0.42667929 | | +0.90315379 |
| $a$ | 2.6033132 | $\Omega$ | 85.50808 | | −0.82007092 | | +0.40851327 |
| $e$ | 0.0676085 | $i$ | 2.73203 | | −0.38135084 | | +0.13202322 |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 12 | 704 | 1.1+ | 0.7+ | 2005 12 05 | G96 | 0.1+ | 0.1+ | 2006 01 31 | 691 | 0.0 | 0.1+ |
| 2002 02 12 | 704 | 0.6+ | 0.9+ | 2005 12 05 | G96 | 0.4− | 0.2+ | 2006 01 31 | 691 | 0.1− | 0.2+ |
| 2002 02 12 | 704 | 0.5+ | 0.2− | 2005 12 05 | G96 | 0.3+ | 0.3− | 2006 02 07 | G96 | 0.3− | 0.3− |
| 2002 02 15 | 291 | 0.6− | 0.2− | 2006 01 23 | 691 | 0.0 | 0.1+ | 2006 02 07 | G96 | 0.1− | 0.4− |
| 2002 02 15 | 291 | 0.7− | 0.6− | 2006 01 23 | 691 | 0.2+ | 0.0 | 2006 02 07 | G96 | 0.0 | 0.6− |
| 2002 02 15 | 291 | 0.7− | 0.5− | 2006 01 23 | 691 | 0.5+ | 0.1− | 2006 02 07 | G96 | 0.2− | 0.3+ |
| 2005 12 05 | G96 | 0.0 | 0.1+ | 2006 01 31 | 691 | 0.1− | 0.4+ | | | | |

**2005 XT$_{114}$ = 2004 TR$_{178}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.14210 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28441094 | $\omega$ | 138.04011 | | −0.79254097 | | −0.60979979 |
| $a$ | 2.2900160 | $\Omega$ | 4.39294 | | +0.54151882 | | −0.70737207 |
| $e$ | 0.1407122 | $i$ | 3.59102 | | +0.28042141 | | −0.35744785 |
| $P$ | 3.47 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 07 | 691 | 0.1+ | 0.1− | 2006 02 20 | 691 | 0.0 | 0.1+ | 2006 03 21 | 704 | 0.4+ | 0.3+ |
| 2004 10 07 | 691 | 0.1− | 0.2− | 2006 02 20 | 691 | 0.0 | 0.1+ | 2006 03 21 | G96 | 0.1+ | 0.1+ |
| 2004 10 07 | 691 | 0.0 | 0.2− | 2006 02 20 | G96 | 0.4− | 0.2− | 2006 03 21 | G96 | 0.2− | 0.1+ |
| 2004 10 11 | 691 | 0.0 | 0.2+ | 2006 02 20 | G96 | 0.4− | 0.2− | 2006 03 21 | G96 | 0.0 | 0.0 |
| 2004 10 11 | 691 | 0.4− | 0.5+ | 2006 02 20 | G96 | 0.5− | 0.1− | 2006 03 21 | G96 | 0.2− | 0.0 |
| 2004 10 11 | 691 | 0.0 | 0.4+ | 2006 02 20 | G96 | 0.0 | 0.1+ | 2006 03 21 | 704 | 0.2+ | 0.3+ |
| 2005 12 06 | 691 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.1+ | 0.1− | 2006 03 24 | 699 | 0.7+ | 0.4+ |
| 2005 12 06 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.1+ | 0.0 | 2006 03 24 | 699 | 0.5+ | 0.0 |
| 2005 12 06 | 691 | 0.1+ | 0.1− | 2006 03 02 | 691 | 0.0 | 0.2+ | 2006 03 24 | 699 | 0.4− | 0.3+ |
| 2006 02 20 | 691 | 0.3+ | 0.1+ | 2006 03 21 | 704 | 1.1+ | 0.5+ | 2006 03 24 | 699 | 1.6− | 1.5− |

**2005 XU$_{114}$ = 2000 EW$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.01588 | | (2000.0) | | −0.98136627 | −0.15218278 |
| $n$ | 0.17098388 | $\omega$ | 207.39161 | | −0.15218278 | |
| $a$ | 3.2148887 | $\Omega$ | 323.25668 | | +0.19153742 | −0.82336137 |
| $e$ | 0.0869316 | $i$ | 11.30827 | | −0.01528622 | −0.54673253 |
| $P$ | 5.76 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 14 | 691 | 0.5− | 1.3+ | 2000 03 11 | 704 | 0.4+ | 0.7+ | 2006 02 06 | G96 | 0.4− | 0.4− |
| 1991 09 14 | 691 | 0.3− | 0.1− | 2000 03 11 | 704 | 1.0+ | 0.3+ | 2006 02 22 | 699 | 0.5+ | 0.4+ |
| 1991 09 14 | 691 | 0.3− | 0.5+ | 2000 03 11 | 704 | 1.0+ | 0.7+ | 2006 02 22 | 699 | 0.4− | 1.0+ |
| 1994 01 11 | 691 | 0.9− | 0.5− | 2003 10 01 | 691 | 0.0 | 0.1+ | 2006 02 22 | 699 | 0.5+ | 0.3+ |
| 1994 01 11 | 691 | 0.0 | 0.0 | 2003 10 01 | 691 | 0.0 | 0.1− | 2006 02 22 | 699 | 0.2+ | 0.4+ |
| 1994 01 11 | 691 | 0.1+ | 0.1+ | 2003 10 01 | 691 | 0.0 | 0.1− | 2006 02 24 | 644 | 0.6+ | 0.0 |
| 2000 03 03 | 704 | 0.6+ | 0.4+ | 2005 12 07 | 691 | 0.2+ | 0.4+ | 2006 02 24 | 644 | 0.1+ | 0.0 |
| 2000 03 03 | 704 | 1.0+ | 0.3+ | 2005 12 07 | 691 | 0.2− | 0.2+ | 2006 02 24 | 644 | 0.1+ | 0.4+ |
| 2000 03 03 | 704 | 0.7+ | 0.4+ | 2005 12 07 | 691 | 0.3− | 0.1+ | 2006 02 24 | 644 | 0.3+ | 0.4+ |
| 2000 03 03 | 704 | 0.4+ | 0.5+ | 2006 02 06 | G96 | 0.3+ | 0.0 | 2006 02 24 | 644 | 0.0 | 0.0 |
| 2000 03 03 | 704 | 0.8+ | 0.6+ | 2006 02 06 | G96 | 0.2− | 0.4− | 2006 02 24 | 644 | 0.2− | 0.1+ |
| 2000 03 11 | 704 | 1.1+ | 1.0− | 2006 02 06 | G96 | 0.3− | 0.0 | | | | |

**2005 XW$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 89.64236 | | (2000.0) | | −0.31470234 | −0.94878100 |
| $n$ | 0.26231458 | $\omega$ | 142.28880 | | −0.94878100 | |
| $a$ | 2.4168763 | $\Omega$ | 326.02836 | | +0.85827701 | −0.27189539 |
| $e$ | 0.0849380 | $i$ | 2.85947 | | +0.40536775 | −0.16089598 |
| $P$ | 3.76 | $H$ | 18.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 807 | 0.4− | 0.3+ | 2006 01 07 | G96 | 0.0 | 0.2− | 2006 01 26 | G96 | 0.3− | 0.1− |
| 2000 08 28 | 807 | 0.1+ | 0.4+ | 2006 01 07 | G96 | 0.3+ | 0.1− | 2006 01 26 | G96 | 0.3− | 0.1− |
| 2001 12 18 | 645 | 0.1+ | 0.0 | 2006 01 07 | G96 | 0.1+ | 0.4+ | 2006 01 26 | G96 | 0.1− | 0.2− |
| 2001 12 18 | 645 | 0.2+ | 0.1+ | 2006 01 07 | G96 | 0.1− | 0.1+ | 2006 01 26 | G96 | 0.4+ | 0.4− |
| 2001 12 19 | 645 | 0.1− | 0.0 | 2006 01 26 | G96 | 0.3− | 0.2− | 2006 02 07 | 691 | 0.3+ | 0.4+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2006 01 26 | G96 | 0.4− | 0.0 | 2006 02 07 | 691 | 0.0 | 0.1+ |
| 2005 12 01 | 695 | 0.0 | 0.0 | 2006 01 26 | G96 | 0.0 | 0.3− | 2006 02 07 | 691 | 0.1+ | 0.0 |
| 2005 12 01 | 695 | 0.2− | 0.0 | 2006 01 26 | G96 | 0.1− | 0.2− | | | | |

**2005 XX$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 82.55393 | | (2000.0) | | +0.30937206 | −0.94860112 |
| $n$ | 0.18362986 | $\omega$ | 188.24773 | | −0.94860112 | |
| $a$ | 3.0655413 | $\Omega$ | 243.75232 | | +0.87665822 | +0.31166840 |
| $e$ | 0.0670418 | $i$ | 4.26297 | | +0.36845528 | +0.05494294 |
| $P$ | 5.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.7+ | 0.1+ | 2004 11 05 | 691 | 0.2− | 0.4+ | 2006 01 04 | 691 | 0.1− | 0.5+ |
| 1999 11 03 | 704 | 0.4+ | 0.3− | 2004 11 05 | 691 | 0.1− | 0.3+ | 2006 01 23 | 704 | 0.1− | 0.7− |
| 1999 11 03 | 704 | 0.9− | 1.6− | 2004 11 05 | 691 | 0.4− | 0.6+ | 2006 01 23 | 704 | 0.1+ | 0.3− |
| 2002 05 19 | 291 | 0.4+ | 0.6+ | 2005 12 01 | G96 | 0.1− | 0.1+ | 2006 01 23 | 704 | 0.5+ | 0.8+ |
| 2002 05 19 | 291 | 0.3+ | 0.4+ | 2005 12 01 | G96 | 0.3− | 0.2− | 2006 01 23 | 704 | 0.7+ | 0.7+ |
| 2002 05 19 | 291 | 0.3− | 0.5+ | 2005 12 01 | G96 | 0.1+ | 0.1− | 2006 01 31 | G96 | 0.4− | 0.3− |
| 2004 10 10 | 704 | 0.1+ | 0.7+ | 2005 12 01 | G96 | 0.1− | 0.0 | 2006 01 31 | G96 | 0.4− | 0.3− |
| 2004 10 10 | 704 | 0.2− | 0.1+ | 2006 01 04 | 691 | 0.5+ | 0.0 | 2006 01 31 | G96 | 0.5− | 0.2− |
| 2004 10 10 | 704 | 0.3+ | 0.5+ | 2006 01 04 | 691 | 0.1− | 0.6+ | 2006 01 31 | G96 | 0.5− | 0.3− |

**2005 XY$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 299.26764 | | (2000.0) | | +0.58711287 | +0.80950499 |
| $n$ | 0.26920562 | $\omega$ | 306.92349 | | +0.80950499 | |
| $a$ | 2.3754541 | $\Omega$ | 359.02865 | | −0.73517641 | +0.53300192 |
| $e$ | 0.1854061 | $i$ | 1.32210 | | −0.33884232 | +0.24619227 |
| $P$ | 3.66 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 19 | 691 | 1.2− | 0.2− | 2002 02 07 | 691 | 0.1+ | 0.0 | 2006 02 28 | G96 | 0.4+ | 0.1+ |
| 1996 09 19 | 691 | 1.3+ | 0.2− | 2005 12 01 | 695 | 0.5− | 0.4+ | 2006 02 28 | G96 | 0.2− | 0.0 |
| 1996 09 19 | 691 | 0.9− | 0.3+ | 2005 12 01 | 695 | 0.0 | 0.1+ | 2006 02 28 | G96 | 0.3− | 0.1− |
| 1999 05 18 | 691 | 0.2+ | 0.4− | 2006 02 07 | G96 | 0.6− | 0.8+ | 2006 03 21 | G96 | 0.3− | 0.0 |
| 1999 05 18 | 691 | 0.2+ | 0.7− | 2006 02 07 | G96 | 0.1+ | 0.1+ | 2006 03 21 | G96 | 0.2− | 0.5− |
| 1999 05 18 | 691 | 0.0 | 0.3− | 2006 02 07 | G96 | 0.8− | 0.6− | 2006 03 21 | G96 | 0.1− | 0.4− |
| 2000 10 25 | 691 | 0.4+ | 0.3− | 2006 02 07 | G96 | 0.0 | 0.4− | 2006 03 21 | G96 | 0.7− | 0.2− |
| 2000 10 25 | 691 | 0.5+ | 0.2− | 2006 02 20 | 691 | 0.1− | 0.9+ | 2006 04 21 | G96 | 0.4− | 0.2− |
| 2000 10 25 | 691 | 0.5+ | 0.4− | 2006 02 20 | 691 | 0.2+ | 0.1+ | 2006 04 21 | G96 | 0.1− | 0.5− |
| 2002 02 07 | 691 | 0.2− | 0.2+ | 2006 02 20 | 691 | 0.2+ | 0.1+ | 2006 04 21 | G96 | 0.1− | 0.6− |
| 2002 02 07 | 691 | 0.5− | 0.1− | 2006 02 28 | G96 | 0.4+ | 0.6+ | 2006 04 21 | G96 | 0.1+ | 0.0 |

**2005 XZ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.48167 | | (2000.0) | | −0.96267727 | −0.24627769 |
| $n$ | 0.24590646 | $\omega$ | 243.94910 | | −0.24627769 | |
| $a$ | 2.5232256 | $\Omega$ | 281.62594 | | +0.27060382 | −0.86800364 |
| $e$ | 0.0681826 | $i$ | 6.58055 | | +0.00510421 | −0.43118092 |
| $P$ | 4.01 | $H$ | 16.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.1− | 1.4− | 2005 12 02 | 691 | 0.0 | 0.3+ | 2005 12 27 | G96 | 1.4− | 0.8− |
| 2001 12 18 | 704 | 0.9− | 1.1+ | 2005 12 02 | 691 | 1.1− | 0.5+ | 2005 12 27 | G96 | 1.8+ | 0.2− |
| 2001 12 18 | 704 | 0.5− | 1.4+ | 2005 12 02 | 691 | 0.2+ | 0.1+ | 2006 01 25 | G96 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.3+ | 0.8− | 2005 12 06 | 691 | 0.0 | 0.2+ | 2006 01 25 | G96 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.7+ | 0.5− | 2005 12 06 | 691 | 0.1+ | 0.3+ | 2006 01 25 | G96 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 1.5+ | 0.3+ | 2005 12 06 | 691 | 0.8+ | 1.5− | 2006 01 25 | G96 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 0.9− | 0.1+ | 2005 12 27 | G96 | 0.1+ | 0.1+ | | | | |
| 2001 12 19 | 704 | 1.0+ | 0.4+ | 2005 12 27 | G96 | 0.1− | 0.3+ | | | | |

**2005 XA$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 135.84601 | | (2000.0) | | +0.96751333 | +0.03089771 |
| $n$ | 0.18445692 | $\omega$ | 81.21313 | | +0.03089771 | |
| $a$ | 3.0563711 | $\Omega$ | 276.73410 | | −0.13564011 | +0.90100684 |
| $e$ | 0.0702974 | $i$ | 14.63545 | | +0.21335349 | +0.43270314 |
| $P$ | 5.34 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.2+ | 0.0 | 2004 10 13 | 704 | 0.5− | 0.1− | 2005 12 21 | 691 | 0.5− | 0.3− |
| 1999 10 14 | 704 | 0.0 | 0.3− | 2004 10 13 | 704 | 1.4+ | 1.0− | 2006 01 05 | 691 | 0.1− | 0.1− |
| 1999 10 14 | 704 | 0.2− | 0.1+ | 2005 12 07 | 691 | 0.1+ | 0.0 | 2006 01 05 | 691 | 0.2− | 0.2− |
| 2004 09 11 | 704 | 0.2− | 1.1+ | 2005 12 07 | 691 | 0.2+ | 0.3− | 2006 01 05 | 691 | 0.3+ | 0.9+ |
| 2004 09 11 | 704 | 0.7− | 0.4+ | 2005 12 07 | 691 | 0.1− | 0.2− | 2006 01 25 | G96 | 0.1− | 0.7− |
| 2004 09 11 | 704 | 0.7+ | 1.1− | 2005 12 21 | 691 | 0.1− | 0.1+ | 2006 01 25 | G96 | 0.5− | 0.7− |
| 2004 10 13 | 704 | 0.8− | 0.9+ | 2005 12 21 | 691 | 0.6+ | 0.6+ | 2006 01 25 | G96 | 0.3− | 0.6− |

**2005 XB$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 76.11539 | | (2000.0) | | +0.36837721 | −0.92748937 |
| $n$ | 0.22376963 | $\omega$ | 144.27920 | | −0.92748937 | |
| $a$ | 2.6870059 | $\Omega$ | 284.02981 | | +0.83697943 | +0.36070657 |
| $e$ | 0.1693085 | $i$ | 3.76653 | | +0.40467725 | +0.09825599 |
| $P$ | 4.40 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 25 | 691 | 0.6− | 0.2− | 2005 12 10 | 704 | 0.7+ | 0.8+ | 2006 01 06 | G96 | 1.7− | 0.3+ |
| 1992 12 25 | 691 | 0.3+ | 1.3− | 2005 12 21 | 691 | 0.5+ | 0.6+ | 2006 01 25 | G96 | 0.3+ | 0.0 |
| 1992 12 25 | 691 | 0.4− | 0.3− | 2005 12 21 | 691 | 0.4− | 0.3− | 2006 01 25 | G96 | 0.1+ | 0.2+ |
| 2000 10 07 | 691 | 0.0 | 0.3− | 2005 12 21 | 691 | 0.1− | 0.3+ | 2006 01 25 | G96 | 0.2− | 0.1+ |
| 2000 10 07 | 691 | 0.1+ | 0.5− | 2006 01 05 | 704 | 0.5− | 0.2− | 2006 01 25 | G96 | 0.1+ | 0.1− |
| 2000 10 07 | 691 | 0.1+ | 0.1+ | 2006 01 05 | 704 | 0.0 | 0.3+ | 2006 01 25 | G96 | 0.0 | 0.3+ |
| 2002 02 11 | 704 | 0.9+ | 0.2− | 2006 01 05 | 704 | 0.3− | 0.2− | 2006 01 25 | G96 | 0.2+ | 0.3+ |
| 2002 02 11 | 704 | 0.0 | 0.0 | 2006 01 05 | 704 | 0.3+ | 0.0 | 2006 01 25 | G96 | 0.0 | 0.2+ |
| 2002 02 11 | 704 | 0.7− | 0.8+ | 2006 01 06 | G96 | 0.2+ | 0.2+ | 2006 01 25 | G96 | 0.3− | 0.0 |
| 2005 12 10 | 704 | 0.2+ | 0.8+ | 2006 01 06 | G96 | 0.2− | 0.1+ | | | | |
| 2005 12 10 | 704 | 0.7+ | 0.4+ | 2006 01 06 | G96 | 0.4+ | 0.2+ | | | | |

### 2005 XC$_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.01482 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21777362 | $\omega$ | 74.95604 | | +0.61584493 | +0.78419022 | |
| $a$ | 2.7361036 | $\Omega$ | 233.31145 | | −0.75437822 | +0.55907922 | |
| $e$ | 0.0367885 | $i$ | 5.44062 | | −0.22726312 | +0.26921388 | |
| $P$ | 4.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 24 | 691 | 0.7− | 0.5+ | 2005 10 27 | G96 | 0.1+ | 0.3− | 2005 11 25 | G96 | 0.1+ | 0.1− |
| 1995 06 24 | 691 | 0.1+ | 0.0 | 2005 10 27 | G96 | 0.1+ | 0.2− | 2005 11 25 | G96 | 0.3− | 0.4− |
| 1995 06 24 | 691 | 0.1+ | 0.9+ | 2005 10 27 | G96 | 0.7+ | 0.2− | 2005 12 02 | G96 | 0.1+ | 0.2+ |
| 1995 07 03 | 691 | 0.1+ | 0.2− | 2005 11 05 | 691 | 0.2+ | 0.0 | 2005 12 02 | G96 | 0.5+ | 0.0 |
| 1995 07 03 | 691 | 0.2+ | 0.6− | 2005 11 05 | 691 | 0.1+ | 0.2+ | 2005 12 02 | G96 | 0.2+ | 0.0 |
| 1995 07 03 | 691 | 0.2+ | 0.5− | 2005 11 05 | 691 | 0.0 | 0.1+ | 2005 12 02 | G96 | 0.0 | 0.0 |
| 2005 10 27 | G96 | 0.2+ | 0.3− | 2005 11 25 | 691 | 0.3− | 0.3+ | 2005 12 29 | G96 | 0.3+ | 0.2+ |
| 2005 10 27 | G96 | 0.4− | 0.6− | 2005 11 25 | 691 | 0.1− | 0.2+ | 2005 12 29 | G96 | 0.0 | 0.1+ |
| 2005 10 27 | G96 | 0.4− | 0.7− | 2005 11 25 | 691 | 0.1− | 0.1+ | 2005 12 29 | G96 | 0.8+ | 0.0 |
| 2005 10 27 | G96 | 0.0 | 0.3− | 2005 11 25 | G96 | 0.2− | 0.0 | 2005 12 29 | G96 | 0.1+ | 0.1− |
| 2005 10 27 | G96 | 0.4− | 0.4− | 2005 11 25 | G96 | 0.4− | 0.1− | | | | |

### 2005 XF$_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.42193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19517704 | $\omega$ | 30.88405 | | −0.94060812 | +0.33922054 | |
| $a$ | 2.9434064 | $\Omega$ | 168.92005 | | −0.32416553 | −0.88548560 | |
| $e$ | 0.0475848 | $i$ | 4.06722 | | −0.10086168 | −0.31756050 | |
| $P$ | 5.05 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 691 | 0.4− | 0.2− | 2001 04 16 | 645 | 0.1+ | 0.0 | 2006 02 07 | G96 | 0.1+ | 0.0 |
| 2001 02 21 | 691 | 0.4− | 0.2+ | 2001 04 16 | 645 | 0.0 | 0.0 | 2006 02 20 | G96 | 0.1− | 0.1− |
| 2001 02 21 | 691 | 0.1− | 0.2+ | 2003 09 18 | 691 | 0.1− | 0.3+ | 2006 02 20 | G96 | 0.4− | 0.0 |
| 2001 03 18 | 699 | 0.6+ | 1.3+ | 2003 09 18 | 691 | 0.1− | 0.3+ | 2006 02 20 | G96 | 0.4+ | 0.2− |
| 2001 03 18 | 704 | 1.4+ | 0.1− | 2003 09 18 | 691 | 0.1− | 0.2+ | 2006 02 20 | G96 | 0.8− | 0.2− |
| 2001 03 18 | 704 | 1.5+ | 0.0 | 2005 12 01 | 691 | 0.2− | 0.4+ | 2006 02 24 | 691 | 0.1− | 0.0 |
| 2001 03 18 | 704 | (1.7+ | 0.9+) | 2005 12 01 | 691 | 0.1+ | 0.2− | 2006 02 24 | 691 | 0.2+ | 0.1+ |
| 2001 03 18 | 704 | 0.7+ | 0.5+ | 2005 12 01 | 691 | 0.2+ | 0.2− | 2006 02 24 | 691 | (1.0+ | 2.5−) |
| 2001 03 18 | 699 | 0.2− | 0.3− | 2006 02 07 | G96 | 0.4+ | 0.8− | 2006 03 02 | 691 | 0.1− | 0.2+ |
| 2001 03 18 | 699 | 0.2+ | 0.6− | 2006 02 07 | G96 | 0.1+ | 0.4− | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 2001 03 18 | 699 | 0.3− | 0.7− | 2006 02 07 | G96 | 0.3+ | 0.0 | 2006 03 02 | 691 | 0.1− | 0.2+ |

### 2005 YJ

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.07549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17438099 | $\omega$ | 41.39302 | | +0.68020641 | −0.73125392 | |
| $a$ | 3.1729992 | $\Omega$ | 6.38080 | | +0.49217744 | +0.40419535 | |
| $e$ | 0.1852448 | $i$ | 27.23595 | | +0.54321323 | +0.54944865 | |
| $P$ | 5.65 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 29 | 704 | 0.1− | 0.2− | 2004 09 21 | 704 | 0.1− | 0.0 | 2005 11 21 | 699 | 1.6− | 1.1+ |
| 1999 12 29 | 704 | 1.1+ | 0.6− | 2004 10 09 | 644 | 0.3+ | 0.6+ | 2005 11 21 | 699 | 2.2− | 1.1− |
| 1999 12 29 | 704 | 1.2+ | 1.4− | 2004 10 09 | 644 | 0.0 | 0.4+ | 2005 11 21 | 699 | 0.0 | 0.1− |
| 2004 08 23 | 699 | 0.3− | 0.1+ | 2004 10 09 | 644 | 0.3+ | 0.2+ | 2005 11 21 | 699 | 0.2− | 1.9+ |
| 2004 08 23 | 699 | 0.4− | 0.3− | 2004 11 03 | 699 | 0.0 | 0.4+ | 2005 12 20 | 704 | 0.5+ | 0.2− |
| 2004 08 23 | 699 | 0.4− | 0.4+ | 2004 11 03 | 699 | 0.5+ | 0.2+ | 2005 12 20 | 704 | 0.2+ | 0.6− |
| 2004 08 23 | 699 | 0.5− | 0.1− | 2004 11 03 | 699 | 0.1+ | 0.2+ | 2005 12 20 | 704 | 0.6+ | 0.5− |
| 2004 09 07 | 704 | 0.1− | 0.2+ | 2004 11 03 | 699 | 0.3− | 0.6+ | 2005 12 20 | 704 | 0.3+ | 0.4+ |
| 2004 09 07 | 704 | 0.1− | 0.4− | 2005 10 13 | 699 | 0.2− | 0.5+ | 2005 12 21 | 704 | 0.8+ | 0.6+ |
| 2004 09 07 | 704 | 0.2− | 0.3+ | 2005 10 13 | 699 | 1.3+ | 1.5− | 2005 12 21 | 704 | 0.4− | 0.1− |
| 2004 09 07 | 704 | 0.1+ | 0.0 | 2005 10 13 | 699 | 0.8− | 0.1+ | 2005 12 21 | 704 | 0.4− | 1.0+ |
| 2004 09 07 | 704 | 0.2+ | 0.4− | 2005 10 13 | 699 | 1.1+ | 0.1+ | 2005 12 21 | 704 | 0.1− | 0.4+ |
| 2004 09 21 | 704 | 0.3− | 0.5− | 2005 11 21 | 699 | 0.7+ | 1.0− | 2006 02 01 | 703 | 0.5+ | 0.4+ |
| 2004 09 21 | 704 | 0.0 | 0.0 | 2005 11 21 | 699 | 0.5− | 0.7− | 2006 02 01 | 703 | 0.7+ | 0.5+ |
| 2004 09 21 | 704 | 0.3+ | 0.3− | 2005 11 21 | 699 | 1.1+ | 1.1+ | 2006 02 01 | 703 | 0.3− | 0.1− |
| 2004 09 21 | 704 | 0.2− | 0.5− | 2005 11 21 | 699 | 0.4+ | 0.7+ | 2006 02 01 | 703 | 0.4− | 0.5+ |

### 2005 YC$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.63407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24034607 | $\omega$ | 81.83591 | | +0.07235707 | −0.99736216 | |
| $a$ | 2.5619935 | $\Omega$ | 4.02816 | | +0.87975377 | +0.06110165 | |
| $e$ | 0.1913296 | $i$ | 4.70364 | | +0.46989122 | +0.03918311 | |
| $P$ | 4.10 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.0 | 0.1+ | 2001 10 24 | 691 | 0.1+ | 0.5+ | 2005 09 23 | 703 | 2.5− | 0.8− |
| 1993 12 14 | 691 | 0.2+ | 0.4− | 2001 10 24 | 691 | 0.1− | 0.0 | 2005 09 29 | G96 | 0.0 | 0.1− |
| 1993 12 14 | 691 | 0.0 | 0.0 | 2001 10 24 | 691 | 0.0 | 0.2+ | 2005 09 29 | G96 | 0.4+ | 0.2− |
| 1997 09 30 | 691 | 0.9+ | 0.2− | 2003 03 24 | 691 | 0.3− | 0.0 | 2005 09 29 | G96 | 0.7+ | 0.2− |
| 1997 09 30 | 691 | 0.2+ | 0.0 | 2003 03 24 | 691 | 0.2− | 0.0 | 2005 09 29 | G96 | 0.5+ | 0.2− |
| 1997 09 30 | 691 | 0.1+ | 0.2− | 2003 03 24 | 691 | 0.2− | 0.2− | 2005 11 29 | G96 | 0.8− | 0.2+ |
| 1997 11 21 | 691 | 0.4− | 0.0 | 2003 03 30 | 291 | 0.1− | 0.0 | 2005 11 29 | G96 | 0.2+ | 0.0 |
| 1997 11 21 | 691 | 0.6− | 0.2− | 2003 03 30 | 291 | 0.1− | 0.2+ | 2005 11 29 | G96 | 0.4− | 0.2+ |
| 1997 11 21 | 691 | 0.1− | 0.3− | 2003 03 30 | 291 | 0.2− | 0.1+ | 2005 11 29 | G96 | 0.6− | 0.3− |
| 2001 10 08 | 644 | 0.5− | 0.4+ | 2003 04 07 | 691 | 0.4+ | 0.2+ | 2005 12 21 | 291 | 0.3− | 0.3+ |
| 2001 10 08 | 644 | 0.2− | 0.6+ | 2003 04 07 | 691 | 0.2+ | 0.2+ | 2005 12 21 | 291 | 0.2− | 0.3+ |
| 2001 10 08 | 644 | 1.0− | 1.1+ | 2003 04 07 | 691 | 0.9+ | 0.5+ | 2005 12 21 | 291 | 0.3− | 0.7+ |
| 2001 10 18 | 644 | 0.1− | 0.0 | 2005 09 23 | 703 | 0.6+ | 0.0 | 2005 12 22 | 291 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.4+ | 0.3+ | 2005 09 23 | 703 | 0.4− | 0.9+ | 2005 12 22 | 291 | 0.3+ | 0.1− |
| 2001 10 18 | 644 | 0.1+ | 0.1− | 2005 09 23 | 703 | 0.7+ | 0.5+ | 2005 12 22 | 291 | 0.1+ | 0.1+ |

### 2005 YM$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.19356 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18079962 | $\omega$ | 116.89695 | | +0.95400671 | −0.23471552 | |
| $a$ | 3.0974505 | $\Omega$ | 257.15842 | | +0.15832200 | +0.92273099 | |
| $e$ | 0.0695488 | $i$ | 11.02736 | | +0.25456892 | +0.30573867 | |
| $P$ | 5.45 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 10 30 | G96 | 0.5+ | 0.5− | 2005 12 21 | 691 | 1.6+ | 0.2− | 2006 01 07 | G96 | 0.5− | 0.0 |
| 2005 10 30 | G96 | 0.1+ | 0.3− | 2005 12 23 | 691 | 0.1− | 0.1+ | 2006 01 07 | G96 | 1.3− | 0.6− |
| 2005 10 30 | G96 | 0.6+ | 0.6− | 2005 12 23 | 691 | 0.2− | 0.1+ | 2006 01 07 | G96 | 0.9− | 0.3− |
| 2005 10 30 | G96 | 0.4+ | 0.5− | 2005 12 23 | 691 | 0.2− | 0.0 | 2006 11 21 | 568 | 0.4− | 0.4+ |
| 2005 11 12 | 691 | 0.2− | 0.3+ | 2005 12 28 | G96 | 0.2− | 0.2+ | 2006 11 21 | 568 | 0.1+ | 0.1− |
| 2005 11 12 | 691 | 0.7− | 0.2+ | 2005 12 28 | G96 | 0.3− | 0.0 | 2006 11 22 | 568 | 0.1+ | 0.0 |
| 2005 11 12 | 691 | 0.0 | 0.4+ | 2005 12 28 | G96 | 0.1− | 0.3− | 2006 11 22 | 568 | 0.1+ | 0.0 |
| 2005 12 21 | 691 | 0.2+ | 0.1− | 2005 12 28 | G96 | 0.2− | 0.1− | 2006 11 22 | 568 | 0.2+ | 0.1+ |
| 2005 12 21 | 691 | 0.0 | 0.1− | 2006 01 07 | G96 | 0.2− | 0.1− | | | | |

**2005 YB$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 254.53927 | | (2000.0) | | | |
| $n$ | 0.22696869 | $\omega$ | 120.33185 | | −0.47416538 | +0.87986524 |
| $a$ | 2.6616978 | $\Omega$ | 121.33009 | | −0.81998756 | −0.42821683 |
| $e$ | 0.1050716 | $i$ | 2.12625 | | −0.32060504 | −0.20607646 |
| $P$ | 4.34 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 21 | 691 | 0.1− | 0.6+ | 2003 05 05 | 704 | 0.2+ | 0.4+ | 2005 11 30 | G96 | 0.5+ | 0.1− |
| 1997 12 21 | 691 | 0.1− | 0.2− | 2003 05 05 | 691 | 0.2+ | 0.0 | 2005 11 30 | G96 | 0.1+ | 0.2+ |
| 1997 12 21 | 691 | 0.4+ | 0.4− | 2004 08 12 | 704 | 0.3+ | 1.8+ | 2005 11 30 | G96 | 0.3+ | 0.3− |
| 2000 08 31 | 691 | 0.1+ | 0.4− | 2004 08 12 | 704 | 1.1+ | 0.2− | 2005 11 30 | G96 | 0.2− | 0.0 |
| 2000 08 31 | 691 | 0.3− | 0.0 | 2004 08 12 | 704 | 0.2+ | 1.1+ | 2005 12 23 | 691 | 0.1− | 0.5+ |
| 2000 08 31 | 691 | 0.3+ | 0.6− | 2004 10 04 | 691 | 0.7− | 0.4+ | 2005 12 23 | 691 | 0.0 | 0.4+ |
| 2003 04 01 | 695 | 0.5+ | 0.5+ | 2004 10 04 | 691 | 0.1− | 0.4+ | 2005 12 23 | 691 | 0.0 | 0.2+ |
| 2003 04 01 | 695 | 0.6+ | 0.4+ | 2004 10 04 | 691 | 0.1− | 0.3+ | 2005 12 25 | 691 | 0.0 | 0.3+ |
| 2003 05 05 | 704 | 0.7− | 0.7+ | 2005 10 25 | G96 | 0.4+ | 0.1+ | 2005 12 25 | 691 | 0.8− | 0.1− |
| 2003 05 05 | 691 | 0.0 | 0.2+ | 2005 10 25 | G96 | 0.1− | 0.7− | 2005 12 25 | 691 | 0.0 | 0.2+ |
| 2003 05 05 | 704 | 0.3− | 0.8+ | 2005 10 25 | G96 | 0.4+ | 0.7− | | | | |
| 2003 05 05 | 691 | 0.0 | 0.0 | 2005 10 25 | G96 | 0.9+ | 0.4− | | | | |

**2005 YF$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 133.80687 | | (2000.0) | | | |
| $n$ | 0.20294095 | $\omega$ | 341.22065 | | +0.96295181 | −0.26868555 |
| $a$ | 2.8678489 | $\Omega$ | 34.39194 | | +0.25235493 | +0.86765599 |
| $e$ | 0.0833225 | $i$ | 2.34000 | | +0.09508310 | +0.41830749 |
| $P$ | 4.86 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 13 | 691 | 0.1+ | 0.3+ | 2005 12 05 | G96 | 0.2+ | 0.3− | 2005 12 29 | G96 | 0.2+ | 0.2− |
| 2002 03 13 | 691 | 0.2+ | 0.3+ | 2005 12 24 | 691 | 0.3+ | 0.4− | 2005 12 29 | G96 | 0.2+ | 0.1− |
| 2002 03 13 | 691 | 0.2+ | 0.2+ | 2005 12 24 | 691 | 0.3+ | 0.1+ | 2005 12 29 | G96 | 0.4− | 0.5− |
| 2004 09 11 | 691 | 0.1− | 0.4+ | 2005 12 24 | 691 | 0.3+ | 0.1− | 2005 12 29 | G96 | 0.4+ | 0.5− |
| 2004 09 11 | 691 | 0.0 | 0.2+ | 2005 12 24 | 291 | 0.5− | 0.1+ | 2006 01 05 | 691 | 1.2− | 0.6− |
| 2004 09 11 | 691 | 0.4− | 0.2+ | 2005 12 24 | 291 | 0.7− | 0.0 | 2006 01 05 | 691 | 0.3+ | 0.1+ |
| 2005 11 10 | G96 | 0.4+ | 0.1+ | 2005 12 24 | 291 | 0.2− | 0.1+ | 2006 01 05 | 691 | 0.3+ | 0.2+ |
| 2005 11 10 | G96 | 0.4+ | 0.2− | 2005 12 25 | 291 | 0.4− | 0.4+ | 2006 01 06 | 704 | 1.0+ | 0.4+ |
| 2005 11 10 | G96 | 0.5+ | 0.3− | 2005 12 25 | 291 | 0.1− | 0.1+ | 2006 01 06 | 704 | 0.6+ | 0.5+ |
| 2005 11 10 | G96 | 0.6+ | 0.1+ | 2005 12 25 | 291 | 0.2− | 0.0 | 2006 01 06 | 704 | 1.2+ | 0.0 |
| 2005 12 05 | G96 | 0.2− | 0.2− | 2005 12 28 | 691 | 0.2+ | 0.1− | 2006 01 09 | 691 | 0.1+ | 0.1− |
| 2005 12 05 | G96 | 0.0 | 0.5− | 2005 12 28 | 691 | 0.2+ | 0.0 | 2006 01 09 | 691 | 0.2− | 0.1+ |
| 2005 12 05 | G96 | 0.4+ | 0.1− | 2005 12 28 | 691 | 0.2+ | 0.1− | 2006 01 09 | 691 | 0.2− | 0.6+ |

**2005 YD$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 174.14246 | | (2000.0) | | | |
| $n$ | 0.15493096 | $\omega$ | 23.73470 | | +0.91766439 | +0.38196461 |
| $a$ | 3.4332906 | $\Omega$ | 313.33838 | | −0.38441072 | +0.78359774 |
| $e$ | 0.0656643 | $i$ | 8.66081 | | −0.10060051 | +0.48997717 |
| $P$ | 6.36 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.1− | 0.4− | 2005 12 26 | 691 | 0.1− | 0.0 | 2006 01 27 | G96 | 0.0 | 0.5− |
| 2000 02 05 | 691 | 0.0 | 0.1− | 2005 12 28 | G96 | 0.1+ | 0.2− | 2006 02 06 | G96 | 0.2− | 0.2+ |
| 2000 02 05 | 691 | 0.2− | 0.1− | 2005 12 28 | G96 | 0.1− | 0.2− | 2006 02 06 | G96 | 0.4+ | 0.0 |
| 2003 09 16 | 291 | 0.2+ | 0.2− | 2005 12 28 | G96 | 0.7− | 0.3− | 2006 02 06 | G96 | 0.1− | 0.4+ |
| 2003 09 16 | 291 | 0.0 | 0.1− | 2005 12 28 | G96 | 0.0 | 0.1− | 2006 02 06 | G96 | 0.1− | 0.3+ |
| 2003 09 16 | 291 | 0.1− | 0.0 | 2005 12 30 | 691 | 0.2− | 0.2+ | 2006 02 23 | G96 | 0.7+ | 0.3+ |
| 2005 12 22 | 691 | 0.0 | 0.2+ | 2005 12 30 | 691 | 0.3+ | 0.0 | 2006 02 23 | G96 | 0.1+ | 0.1+ |
| 2005 12 22 | 691 | 0.5− | 0.2− | 2005 12 30 | 691 | 0.2+ | 0.2+ | 2006 02 23 | G96 | 0.0 | 0.5+ |
| 2005 12 22 | 691 | 0.2+ | 0.1+ | 2006 01 27 | G96 | 0.1− | 0.2− | 2006 02 23 | G96 | 0.5+ | 0.6+ |
| 2005 12 26 | 691 | 0.1+ | 0.1− | 2006 01 27 | G96 | 0.3+ | 0.2− | | | | |
| 2005 12 26 | 691 | 0.0 | 0.0 | 2006 01 27 | G96 | 0.1+ | 0.5− | | | | |

**2005 YE$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.14936 | | (2000.0) | | | |
| $n$ | 0.19092112 | $\omega$ | 87.75327 | | −0.92367002 | +0.37027943 |
| $a$ | 2.9869875 | $\Omega$ | 113.96668 | | −0.38025657 | −0.85394204 |
| $e$ | 0.0343820 | $i$ | 6.19602 | | −0.04731431 | −0.36561746 |
| $P$ | 5.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 27 | 691 | 0.1+ | 0.4− | 2005 12 26 | G96 | 0.1+ | 0.4− | 2006 01 11 | 291 | 0.9+ | 0.0 |
| 1997 06 27 | 691 | 0.2− | 0.2+ | 2005 12 26 | G96 | 0.1+ | 0.7− | 2006 01 11 | 291 | 0.1+ | 0.2+ |
| 1997 06 27 | 691 | 0.0 | 0.1− | 2005 12 26 | G96 | 0.0 | 0.2− | 2006 01 11 | 291 | 0.6+ | 0.5− |
| 2002 05 09 | 644 | 0.2− | 0.1+ | 2005 12 28 | 691 | 0.1− | 0.0 | 2006 01 11 | 291 | 0.0 | 0.2+ |
| 2002 05 09 | 644 | 0.0 | 0.1− | 2005 12 28 | 691 | 0.1+ | 0.1− | 2006 01 11 | 291 | 0.1+ | 0.0 |
| 2002 05 09 | 644 | 0.2+ | 0.1− | 2005 12 28 | 691 | 0.2+ | 0.4− | 2006 01 11 | 291 | 0.1− | 0.2+ |
| 2005 10 11 | 691 | 0.2− | 0.3+ | 2006 01 04 | G96 | 0.1+ | 0.4− | 2006 01 11 | 291 | 0.1− | 0.2+ |
| 2005 10 11 | 691 | 0.2− | 0.2− | 2006 01 04 | G96 | 0.1+ | 0.1− | 2006 01 11 | 291 | 0.0 | 0.2+ |
| 2005 10 11 | 691 | 0.5+ | 0.7− | 2006 01 04 | G96 | 0.6+ | 0.4− | 2006 01 22 | G96 | 0.0 | 0.4− |
| 2005 11 03 | G96 | 0.3+ | 0.1+ | 2006 01 04 | G96 | 0.0 | 0.6− | 2006 01 22 | G96 | 0.4− | 0.8− |
| 2005 11 03 | G96 | 0.0 | 0.1− | 2006 01 09 | 691 | 0.2+ | 0.0 | 2006 01 22 | G96 | 0.0 | 0.4− |
| 2005 11 03 | G96 | 0.3+ | 0.1− | 2006 01 09 | 691 | 0.1+ | 0.1− | 2006 01 22 | G96 | 0.3+ | 1.0− |
| 2005 11 03 | G96 | 0.5+ | 0.0 | 2006 01 09 | 691 | 0.0 | 0.4+ | 2006 01 22 | G96 | 0.2− | 0.5− |
| 2005 12 24 | 691 | 0.5+ | 0.1+ | 2006 01 11 | 291 | 1.2− | 0.8+ | 2006 01 22 | G96 | 0.0 | 0.5− |
| 2005 12 24 | 691 | 0.3+ | 0.7− | 2006 01 11 | 291 | 0.9− | 0.2+ | 2006 01 22 | G96 | 0.4+ | 0.5− |
| 2005 12 24 | 691 | 0.6+ | 0.0 | 2006 01 11 | 291 | 0.9− | 0.5+ | 2006 02 23 | G96 | 0.0 | 0.2− |
| 2005 12 24 | 691 | 0.2+ | 0.7− | 2006 01 11 | 291 | 0.3− | 0.4+ | 2006 02 23 | G96 | 0.1+ | 0.1+ |
| 2005 12 24 | 691 | 0.2+ | 0.4− | 2006 01 11 | 291 | 0.3− | 0.5+ | 2006 02 23 | G96 | 0.4− | 0.2− |
| 2005 12 24 | 691 | 0.7+ | 0.3− | 2006 01 11 | 291 | 0.6− | 0.4+ | 2006 02 23 | G96 | 0.3− | 0.1− |
| 2005 12 26 | G96 | 0.2+ | 0.5− | 2006 01 11 | 291 | 0.5− | 0.7+ | | | | |

**2005 YN$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 113.01257 | | (2000.0) | | | |
| $n$ | 0.21982172 | $\omega$ | 91.62803 | | +0.72579185 | −0.68592672 |
| $a$ | 2.7190821 | $\Omega$ | 311.68459 | | +0.60005623 | +0.66841301 |
| $e$ | 0.1676675 | $i$ | 4.01238 | | +0.33639071 | +0.28762576 |
| $P$ | 4.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.3+ | 0.4+ | 2005 12 25 | 691 | 0.1− | 0.2+ | 2006 01 23 | G96 | 0.3− | 0.2− |
| 2000 10 25 | 704 | 0.3+ | 1.0+ | 2005 12 25 | 691 | 0.1+ | 0.2+ | 2006 01 23 | G96 | 0.0 | 0.3− |
| 2000 10 25 | 704 | 0.1+ | 0.2− | 2005 12 26 | G96 | 0.1− | 0.5− | 2006 01 23 | G96 | 0.1− | 0.1− |
| 2001 02 28 | 568 | 0.0 | 0.2− | 2005 12 26 | G96 | 0.0 | 0.7− | 2006 01 23 | G96 | 0.2− | 0.0 |
| 2001 02 28 | 568 | 0.0 | 0.2− | 2005 12 26 | G96 | 0.1+ | 0.1− | 2006 02 06 | G96 | 0.3+ | 0.1+ |
| 2004 08 22 | 691 | 0.4− | 0.1+ | 2005 12 26 | G96 | 0.2− | 0.3− | 2006 02 06 | G96 | 1.4− | 0.2− |
| 2004 08 22 | 691 | 0.5− | 0.2+ | 2005 12 29 | 691 | 0.0 | 0.2+ | 2006 02 06 | G96 | 0.5+ | 0.4− |
| 2004 08 22 | 691 | 0.4− | 0.4+ | 2005 12 29 | 691 | 0.2− | 0.1+ | 2006 02 20 | G96 | 0.2− | 0.0 |
| 2004 09 10 | 691 | 0.3+ | 0.0 | 2005 12 29 | 691 | 0.1+ | 0.4+ | 2006 02 20 | G96 | 0.1− | 0.0 |
| 2004 09 10 | 691 | 0.4+ | 0.2− | 2006 01 23 | 691 | 0.3+ | 0.5+ | 2006 02 20 | G96 | 0.1+ | 0.2− |
| 2004 09 10 | 691 | 0.4+ | 0.2− | 2006 01 23 | 691 | 0.1+ | 0.1+ | 2006 02 20 | G96 | 0.1+ | 0.1− |
| 2005 12 25 | 691 | 0.1− | 0.2+ | 2006 01 23 | 691 | 0.3+ | 0.2− | | | | |

**2005 YU$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 52.08692 | | (2000.0) | | | |
| $n$ | 0.22780915 | $\omega$ | 277.50293 | | −0.08940553 | −0.99598183 |
| $a$ | 2.6551472 | $\Omega$ | 177.60807 | | +0.95575899 | −0.08725605 |
| $e$ | 0.1829026 | $i$ | 7.13062 | | +0.28023454 | −0.02016358 |
| $P$ | 4.33 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.2+ | 0.4+ | 2002 02 16 | 644 | 0.3− | 0.1+ | 2005 12 01 | 703 | 0.4− | 0.4− |
| 2000 09 20 | 691 | 0.3+ | 0.4− | 2002 02 16 | 644 | 0.3− | 0.6+ | 2005 12 22 | 703 | 0.3+ | 0.6− |
| 2000 09 20 | 691 | 0.5− | 0.2− | 2002 02 16 | 644 | 0.2− | 0.8+ | 2005 12 22 | 703 | 0.1− | 0.2+ |
| 2002 01 08 | 608 | 0.4+ | 0.0 | 2002 03 05 | 557 | 0.1+ | 0.4+ | 2005 12 22 | 703 | 0.4+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 608 | 0.5+ | 0.5− | 2002 03 05 | 557 | 0.2− | 0.2+ | 2005 12 22 | 703 | 0.5+ | 0.0 |
| 2002 01 08 | 608 | 0.3+ | 0.3− | 2002 03 06 | 557 | 0.6− | 0.3− | 2005 12 27 | 703 | 0.8− | 0.3+ |
| 2002 02 03 | 608 | 0.2+ | 0.8− | 2005 12 01 | 703 | 0.0 | 0.7− | 2005 12 27 | 703 | 0.6− | 0.6+ |
| 2002 02 03 | 608 | 0.2− | 0.8− | 2005 12 01 | 703 | 0.1+ | 0.1− | 2005 12 27 | 703 | 0.1+ | 1.0+ |
| 2002 02 03 | 608 | 0.1− | 0.8− | 2005 12 01 | 703 | 0.1+ | 0.0 | 2005 12 27 | 703 | 0.4+ | 1.0+ |

**2005 YE$_{41}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.11407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21011672 | $\omega$ | 243.95497 | | +0.96890931 | +0.21695249 | |
| $a$ | 2.8021775 | $\Omega$ | 103.32682 | | −0.15973112 | +0.91562313 | |
| $e$ | 0.0861580 | $i$ | 7.02082 | | −0.18894636 | +0.33847585 | |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 691 | 0.4+ | 1.4+ | 2005 12 01 | 691 | 0.4+ | 0.2+ | 2005 12 27 | G96 | 0.1+ | 0.3− |
| 2003 03 31 | 691 | 0.2− | 1.3+ | 2005 12 01 | 691 | 0.1+ | 0.1+ | 2005 12 27 | G96 | 0.1− | 0.5− |
| 2003 03 31 | 691 | 0.0 | 1.1+ | 2005 12 01 | 691 | 0.4+ | 0.0 | 2005 12 27 | G96 | 0.3− | 0.3− |
| 2003 04 30 | 691 | 0.3− | 0.5− | 2005 12 21 | 691 | 0.4− | 0.2+ | 2005 12 27 | G96 | 0.5− | 0.3+ |
| 2003 04 30 | 691 | 0.2− | 1.1− | 2005 12 21 | 691 | 0.1+ | 0.1+ | 2006 03 05 | G96 | 0.0 | 0.3+ |
| 2003 04 30 | 691 | 0.3− | 1.2− | 2005 12 21 | 691 | 0.2− | 0.0 | 2006 03 05 | G96 | 0.1+ | 0.3− |
| 2003 06 01 | 691 | 0.2+ | 0.3− | 2005 12 25 | 691 | (0.7+ | 2.4−) | 2006 03 05 | G96 | 0.3− | 0.1− |
| 2003 06 01 | 691 | 0.1+ | 0.2− | 2005 12 25 | 691 | 0.2+ | 0.0 | 2006 03 05 | G96 | 0.3+ | 0.0 |
| 2003 06 01 | 691 | 0.2+ | 0.6− | 2005 12 25 | 691 | 0.2+ | 0.1− | | | | |

**2005 YO$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.51006 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17458608 | $\omega$ | 308.10665 | | +0.64052384 | −0.74661003 | |
| $a$ | 3.1705137 | $\Omega$ | 101.08093 | | +0.74937596 | +0.55653478 | |
| $e$ | 0.0834126 | $i$ | 10.55293 | | +0.16782394 | +0.36447566 | |
| $P$ | 5.65 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 691 | 0.2+ | 0.1− | 2005 12 27 | 703 | 0.1− | 0.2+ | 2006 01 07 | G96 | 0.2− | 0.3− |
| 2002 03 21 | 691 | 0.3− | 0.1+ | 2005 12 27 | 703 | 1.6− | 0.2+ | 2006 01 07 | 691 | 0.1+ | 0.2+ |
| 2002 03 21 | 691 | 0.2+ | 0.2+ | 2005 12 27 | 703 | 0.3+ | 0.1+ | 2006 01 24 | 704 | 0.2− | 0.8− |
| 2004 10 04 | 644 | 0.2− | 0.3+ | 2005 12 28 | G96 | 0.4− | 0.2− | 2006 01 24 | 704 | 0.3− | 0.9+ |
| 2004 10 04 | 644 | 0.1+ | 0.4+ | 2005 12 28 | G96 | 0.1− | 0.3− | 2006 01 24 | 704 | 0.0 | 0.2+ |
| 2004 10 04 | 644 | 0.3− | 0.2+ | 2005 12 28 | G96 | 0.1− | 0.1− | 2006 01 24 | 704 | 0.9+ | 0.4+ |
| 2005 10 29 | G96 | 0.3+ | 0.0 | 2005 12 28 | G96 | 0.2− | 0.2− | 2006 01 24 | 704 | 0.6+ | 0.2+ |
| 2005 10 29 | G96 | 0.1+ | 0.2− | 2006 01 05 | 704 | 0.4− | 0.6+ | 2006 01 26 | G96 | 0.4− | 0.3− |
| 2005 10 29 | G96 | 0.5+ | 0.3− | 2006 01 05 | 704 | 0.4− | 0.6+ | 2006 01 26 | G96 | 0.0 | 0.4− |
| 2005 10 29 | G96 | 0.4+ | 0.2− | 2006 01 05 | 704 | 1.8− | 1.1+ | 2006 01 26 | G96 | 0.1+ | 0.3− |
| 2005 12 24 | 691 | 0.2+ | 0.1− | 2006 01 07 | 691 | 0.0 | 0.0 | 2006 01 26 | G96 | 0.2+ | 0.3− |
| 2005 12 24 | 691 | 0.1+ | 0.2− | 2006 01 07 | G96 | 0.3+ | 0.3− | 2006 01 26 | G96 | 0.4− | 0.2− |
| 2005 12 24 | 691 | 0.3+ | 0.3+ | 2006 01 07 | G96 | 0.5− | 0.5− | 2006 01 26 | G96 | 0.2+ | 0.4− |
| 2005 12 27 | 703 | 0.4+ | 0.4+ | 2006 01 07 | 691 | 0.2+ | 0.1+ | 2006 01 26 | G96 | 0.1+ | 0.4− |

**2005 YL$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.41936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22705006 | $\omega$ | 254.89791 | | +0.98278123 | −0.14675896 | |
| $a$ | 2.6610618 | $\Omega$ | 113.43721 | | +0.17734351 | +0.91975712 | |
| $e$ | 0.1485606 | $i$ | 7.02817 | | −0.05186842 | +0.36401738 | |
| $P$ | 4.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 291 | 0.0 | 0.3− | 2004 09 21 | 704 | 0.1− | 0.4− | 2006 01 07 | G96 | 0.8− | 0.0 |
| 2003 04 05 | 291 | 0.3+ | 1.2− | 2004 09 21 | 704 | 0.1+ | 0.3− | 2006 01 07 | G96 | 0.2− | 0.4− |
| 2003 04 05 | 291 | 0.1− | 0.3− | 2004 09 21 | 704 | 0.5+ | 0.2− | 2006 01 23 | 691 | 0.0 | 0.2− |
| 2003 05 27 | 691 | 0.3− | 0.8+ | 2004 09 21 | 704 | 0.7− | 0.5+ | 2006 01 23 | 691 | 0.0 | 0.0 |
| 2003 05 27 | 691 | 0.3+ | 0.8+ | 2005 12 22 | 691 | 0.1+ | 0.3+ | 2006 01 23 | 691 | 0.1+ | 0.0 |
| 2003 05 27 | 691 | 0.1− | 0.6+ | 2005 12 22 | 691 | 0.1− | 0.4+ | 2006 01 23 | G96 | 0.2− | 0.4− |
| 2004 08 23 | 699 | 1.0+ | 0.2+ | 2005 12 22 | 691 | 0.0 | 0.2+ | 2006 01 23 | G96 | 0.1− | 0.1− |
| 2004 08 23 | 699 | 0.5+ | 0.3− | 2005 12 27 | 691 | 0.2+ | 0.1+ | 2006 01 23 | G96 | 0.0 | 0.2− |
| 2004 08 23 | 699 | 0.6+ | 1.6+ | 2005 12 27 | 691 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.1+ | 0.3− |
| 2004 08 23 | 699 | 0.3+ | 0.2− | 2005 12 27 | 691 | 0.5+ | 0.1− | 2006 02 06 | G96 | 0.3+ | 0.3− |
| 2004 09 07 | 704 | 0.2+ | 0.3+ | 2006 01 04 | 691 | 0.6+ | 0.1+ | 2006 02 06 | G96 | 0.1+ | 0.7− |
| 2004 09 07 | 704 | 1.1− | 0.5− | 2006 01 04 | 691 | 0.5− | 0.4+ | 2006 02 06 | G96 | 0.4− | 0.4− |
| 2004 09 07 | 704 | 0.1− | 0.1+ | 2006 01 04 | 691 | 0.2− | 0.2+ | 2006 02 06 | G96 | 0.0 | 0.6− |
| 2004 09 07 | 704 | 1.2− | 0.1− | 2006 01 07 | G96 | 0.9− | 0.4− | | | | |
| 2004 09 07 | 704 | 0.3− | 0.1− | 2006 01 07 | G96 | 0.2− | 0.0 | | | | |

**2005 YE$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.73266 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24236155 | $\omega$ | 62.17936 | | +0.84050325 | −0.54101008 | |
| $a$ | 2.5477701 | $\Omega$ | 330.54516 | | +0.47372074 | +0.76010667 | |
| $e$ | 0.0892499 | $i$ | 3.42374 | | +0.26295048 | +0.35992493 | |
| $P$ | 4.07 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 1.2− | 0.1− | 2002 01 08 | 704 | 0.9− | 0.3− | 2005 11 10 | G96 | 0.1+ | 0.2− |
| 1994 01 11 | 691 | 0.2− | 0.5− | 2002 01 08 | 704 | 1.6− | 0.3+ | 2005 11 10 | G96 | 0.4+ | 0.0 |
| 1994 01 11 | 691 | 1.1+ | 0.1− | 2002 01 08 | 704 | 1.3− | 0.8− | 2005 11 10 | G96 | 0.4− | 0.4− |
| 1997 12 31 | 691 | 1.3− | 0.2− | 2002 01 08 | 704 | 0.7− | 1.2− | 2005 11 10 | G96 | 0.2− | 0.1− |
| 1997 12 31 | 691 | 0.5− | 0.6− | 2002 01 09 | 645 | 0.0 | 0.0 | 2005 12 24 | 691 | 0.8− | 0.2+ |
| 1997 12 31 | 691 | 0.6− | 0.1− | 2002 01 09 | 645 | 0.2+ | 0.1+ | 2005 12 24 | 691 | 0.0 | 0.2+ |
| 1998 01 28 | 691 | 0.4+ | 0.9− | 2002 01 18 | 704 | 0.0 | 0.1+ | 2005 12 24 | 691 | 0.0 | 0.2+ |
| 1998 01 28 | 691 | 0.4+ | 0.6− | 2002 01 18 | 704 | 0.0 | 0.1+ | 2005 12 28 | 691 | 0.1+ | 0.5+ |
| 1998 01 28 | 691 | 0.6+ | 0.8− | 2002 01 18 | 704 | 1.0+ | 0.0 | 2005 12 28 | 691 | 0.9+ | 0.7+ |
| 2000 08 09 | 691 | 0.3+ | 0.5− | 2004 08 09 | 699 | 0.8+ | 0.4− | 2005 12 28 | 691 | 0.1− | 0.4+ |
| 2000 08 09 | 691 | 0.1+ | 0.5− | 2004 08 09 | 699 | 0.6− | 0.8− | 2006 01 05 | 691 | 0.1− | 0.0 |
| 2000 08 09 | 691 | 0.0 | 0.2− | 2004 08 09 | 699 | 0.3− | 1.3+ | 2006 01 05 | 691 | 0.3− | 0.0 |
| 2000 09 21 | 695 | 0.4+ | 0.1− | 2004 08 09 | 699 | 0.0 | 0.2+ | 2006 01 05 | 691 | 0.0 | 0.3+ |
| 2000 09 21 | 695 | 0.2+ | 0.1− | 2004 08 21 | E12 | 0.2+ | 1.0− | 2006 01 06 | 704 | 1.3+ | 0.1+ |
| 2001 12 18 | 704 | 0.8+ | 0.5− | 2004 08 21 | E12 | 0.5+ | 0.2− | 2006 01 06 | 704 | 0.7+ | 0.5+ |
| 2001 12 18 | 704 | 0.1− | 0.3− | 2004 08 21 | E12 | 0.2+ | 0.2+ | 2006 01 06 | 704 | 1.0+ | 1.5+ |
| 2001 12 18 | 704 | 1.2− | 0.9− | 2004 08 21 | E12 | 0.4− | 0.0 | 2006 01 06 | 704 | 0.5+ | 0.6+ |

**2005 YZ$_{57}$ = 2002 AO$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.57402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24186030 | $\omega$ | 92.59079 | | +0.91276225 | −0.37056507 | |
| $a$ | 2.5512890 | $\Omega$ | 289.20368 | | +0.26327559 | +0.85540268 | |
| $e$ | 0.2224609 | $i$ | 10.48742 | | +0.31233161 | +0.36189472 | |
| $P$ | 4.08 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 291 | 0.0 | 0.1+ | 2002 01 15 | 704 | 0.1− | 0.8+ | 2005 12 28 | G96 | 0.0 | 0.4− |
| 2001 12 14 | 291 | 0.2+ | 0.0 | 2002 01 15 | 704 | 0.5− | 1.2+ | 2005 12 28 | G96 | 0.3− | 0.5− |
| 2001 12 14 | 291 | 0.4− | 0.1− | 2005 12 24 | 691 | 0.1− | 0.5+ | 2005 12 28 | G96 | 0.3− | 0.5− |
| 2002 01 13 | 691 | 0.2− | 0.4− | 2005 12 24 | 691 | 0.4+ | 0.1− | 2005 12 28 | 691 | 0.5+ | 0.3− |
| 2002 01 13 | 691 | 0.1− | 0.4− | 2005 12 24 | 691 | 0.5+ | 0.0 | 2005 12 28 | G96 | 0.0 | 0.4− |
| 2002 01 13 | 691 | 0.1− | 0.3− | 2005 12 24 | 291 | 0.1− | 0.0 | 2005 12 28 | 691 | 0.3+ | 0.1+ |
| 2002 01 14 | 704 | 0.1+ | 0.3+ | 2005 12 24 | 291 | 0.2− | 0.0 | 2005 12 28 | 691 | 0.2+ | 0.2− |
| 2002 01 14 | 704 | 0.9+ | 0.3+ | 2005 12 24 | 291 | 0.3− | 0.0 | 2006 01 05 | 691 | 0.2+ | 0.3− |
| 2002 01 14 | 704 | 0.0 | 0.7+ | 2005 12 24 | 291 | 0.2− | 0.0 | 2006 01 05 | 691 | 0.1+ | 0.2− |
| 2002 01 14 | 704 | 0.8+ | 0.4+ | 2005 12 24 | 291 | 0.2− | 0.2+ | 2006 01 05 | 691 | 0.9− | 0.6+ |
| 2002 01 15 | 704 | 0.8+ | 0.7+ | 2005 12 24 | 291 | 0.0 | 0.1+ | | | | |

**2005 YV$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.01674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24178746 | $\omega$ | 293.76758 | | −0.75410088 | +0.65535819 | |
| $a$ | 2.5518014 | $\Omega$ | 287.20866 | | −0.58504861 | −0.69998640 | |
| $e$ | 0.0792432 | $i$ | 2.57201 | | −0.29841245 | −0.28376873 | |
| $P$ | 4.08 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 691 | 0.0 | 0.8+ | 2004 08 20 | 691 | 0.5+ | 0.1+ | 2005 11 25 | 691 | 0.2− | 0.3+ |
| 2003 03 27 | 691 | 0.5+ | 0.2+ | 2004 08 20 | 691 | 0.2+ | 0.4+ | 2005 11 25 | 691 | 0.3+ | 0.5+ |
| 2003 03 27 | 691 | 0.0 | 0.3+ | 2004 08 20 | 691 | 0.0 | 0.2+ | 2005 12 23 | 691 | 0.4− | 0.3+ |
| 2003 03 28 | 599 | 0.2+ | 0.4+ | 2004 09 11 | 691 | 0.4− | 0.3+ | 2005 12 23 | 691 | 0.1+ | 0.2− |
| 2003 03 28 | 599 | 0.7+ | 0.3− | 2004 09 11 | 691 | 0.5− | 0.1+ | 2005 12 23 | 691 | 0.1− | 0.0 |
| 2003 03 28 | 599 | 0.4− | 0.5+ | 2004 09 11 | 691 | 0.5− | 0.2+ | 2005 12 28 | G96 | 0.2− | 0.3− |
| 2003 03 28 | 599 | 0.5− | 0.5+ | 2005 11 12 | 691 | 0.1− | 0.1− | 2005 12 28 | G96 | 0.1− | 0.3− |
| 2003 04 08 | 644 | 0.3+ | 0.4− | 2005 11 12 | 691 | 0.1+ | 0.4+ | 2005 12 28 | G96 | 0.3− | 0.3− |
| 2003 04 08 | 644 | 0.0 | 0.1+ | 2005 11 12 | 691 | 0.3+ | 0.1+ | 2005 12 28 | G96 | 0.1− | 0.6− |
| 2003 04 08 | 644 | 0.1+ | 0.2+ | 2005 11 25 | 691 | 0.1+ | 0.2+ | | | | |

### 2005 YD$_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.56069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28625476 | $\omega$ | 131.89762 | | −0.78203300 | +0.62174529 | |
| $a$ | 2.2801718 | $\Omega$ | 86.59156 | | −0.58383045 | −0.70663498 | |
| $e$ | 0.1118350 | $i$ | 2.47431 | | −0.21809719 | −0.33778663 | |
| $P$ | 3.44 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.1+ | 0.0 | 2004 09 11 | 691 | 0.2− | 0.1+ | 2005 12 29 | 691 | 0.0 | 0.1+ |
| 2003 04 01 | 645 | 0.1+ | 0.0 | 2005 12 25 | 691 | 0.1− | 0.1+ | 2005 12 29 | 691 | 0.2− | 0.3− |
| 2003 04 06 | 691 | 0.6− | 0.4− | 2005 12 25 | 691 | 0.0 | 0.1+ | 2006 01 07 | G96 | 0.2− | 0.3− |
| 2003 04 06 | 691 | 0.2− | 0.3+ | 2005 12 25 | 691 | 0.1+ | 0.6+ | 2006 01 07 | G96 | 0.2+ | 0.1− |
| 2003 04 06 | 691 | 0.0 | 0.2+ | 2005 12 28 | G96 | 0.2− | 0.2− | 2006 01 07 | G96 | 0.0 | 0.0 |
| 2004 07 17 | 807 | 0.5− | 0.4+ | 2005 12 28 | G96 | 0.3− | 0.3− | 2006 01 07 | G96 | 0.2− | 0.1− |
| 2004 07 17 | 807 | 0.4− | 0.3+ | 2005 12 28 | G96 | 0.4− | 0.1− | 2006 01 09 | 691 | 0.5+ | 0.0 |
| 2004 09 11 | 691 | 0.0 | 0.2+ | 2005 12 28 | G96 | 0.1− | 0.4− | 2006 01 09 | 691 | 0.1− | 0.1− |
| 2004 09 11 | 691 | 0.2+ | 0.1− | 2005 12 29 | 691 | 0.2− | 0.1+ | 2006 01 09 | 691 | 0.3+ | 0.1− |

### 2005 YU$_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.60102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24307639 | $\omega$ | 303.47081 | | −0.21927564 | +0.97525554 | |
| $a$ | 2.5427726 | $\Omega$ | 313.83570 | | −0.88168472 | −0.21044529 | |
| $e$ | 0.1131709 | $i$ | 2.23993 | | −0.41779210 | −0.06774513 | |
| $P$ | 4.05 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 691 | 0.1+ | 0.1+ | 2003 04 07 | 691 | 0.1− | 0.3− | 2005 12 27 | G96 | 0.0 | 0.1− |
| 2003 03 26 | 691 | 0.3+ | 0.1− | 2003 04 07 | 691 | 0.2− | 0.2− | 2005 12 27 | G96 | 0.4− | 0.3− |
| 2003 03 26 | 691 | 0.2+ | 0.1+ | 2005 12 07 | 691 | 0.1+ | 0.0 | 2005 12 28 | G96 | 0.2+ | 0.1− |
| 2003 04 01 | 644 | 0.4− | 0.9+ | 2005 12 07 | 691 | 0.4− | 0.2+ | 2005 12 28 | G96 | 0.4+ | 0.5− |
| 2003 04 01 | 644 | 0.1+ | 0.7+ | 2005 12 07 | 691 | 0.1+ | 0.3+ | 2005 12 28 | G96 | 0.4+ | 0.1− |
| 2003 04 01 | 644 | 0.2− | 0.8+ | 2005 12 27 | G96 | 0.3− | 0.3− | 2005 12 28 | G96 | 0.2+ | 0.5− |
| 2003 04 07 | 691 | 0.1− | 0.2− | 2005 12 27 | G96 | 0.4+ | 0.1− | | | | |

### 2005 YU$_{73}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.72575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15783922 | $\omega$ | 129.92374 | | +0.02147051 | −0.99916704 | |
| $a$ | 3.3909868 | $\Omega$ | 318.80579 | | +0.90044772 | +0.03440870 | |
| $e$ | 0.0531659 | $i$ | 3.02031 | | +0.43443403 | −0.02193799 | |
| $P$ | 6.24 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 12 | 691 | 0.1+ | 0.2+ | 2004 09 22 | 691 | 0.1+ | 0.1− | 2005 12 04 | 691 | 0.0 | 0.2− |
| 1997 08 12 | 691 | 0.5− | 0.2+ | 2004 10 12 | 691 | 0.2+ | 0.3+ | 2005 12 04 | 691 | 0.1− | 0.0 |
| 1997 08 12 | 691 | 0.4+ | 0.4− | 2004 10 12 | 691 | 0.0 | 0.0 | 2005 12 24 | 691 | 0.2+ | 0.1+ |
| 2000 01 28 | 691 | 0.2+ | 0.5+ | 2004 10 12 | 691 | 0.1+ | 0.3+ | 2005 12 24 | 691 | 0.2+ | 0.1+ |
| 2000 01 28 | 691 | 0.0 | 0.5+ | 2004 10 21 | 704 | 0.6+ | 0.3− | 2005 12 24 | 691 | 0.1+ | 0.0 |
| 2000 01 28 | 691 | 0.0 | 0.3+ | 2004 10 21 | 704 | 0.6− | 0.5+ | 2005 12 28 | 691 | 0.2+ | 0.0 |
| 2000 02 05 | 691 | 0.2− | 0.1− | 2004 10 21 | 704 | 0.2− | 0.6+ | 2005 12 28 | 691 | 0.1− | 0.1− |
| 2000 02 05 | 691 | 0.4+ | 1.0+ | 2004 10 21 | 704 | 0.6− | 0.2+ | 2005 12 28 | 691 | 0.0 | 0.1− |
| 2000 02 05 | 691 | 0.0 | 0.0 | 2004 11 04 | 703 | 1.3− | 1.1− | 2005 12 29 | G96 | 0.2+ | 0.4− |
| 2000 02 14 | 691 | 0.1− | 0.0 | 2004 11 04 | 703 | 0.5− | 0.8+ | 2005 12 29 | G96 | 0.2+ | 0.4− |
| 2000 02 14 | 691 | 0.1+ | 0.3− | 2004 11 04 | 703 | 1.0− | 1.2− | 2005 12 29 | G96 | 0.4+ | 0.5− |
| 2000 02 14 | 691 | 0.0 | 0.4− | 2004 11 04 | 703 | 0.1− | 0.3− | 2005 12 29 | G96 | 0.2− | 0.6− |
| 2004 09 09 | 691 | 0.1− | 0.1− | 2005 10 30 | G96 | 0.3+ | 0.3− | 2005 12 31 | 704 | 0.6+ | 0.4− |
| 2004 09 09 | 691 | 0.3+ | 0.2+ | 2005 10 30 | G96 | 0.0 | 0.3− | 2005 12 31 | 704 | 0.7+ | 0.6− |
| 2004 09 09 | 691 | 0.0 | 0.3+ | 2005 10 30 | G96 | 0.3− | 0.5− | 2005 12 31 | 704 | 1.7+ | 0.5− |
| 2004 09 22 | 691 | 0.0 | 0.0 | 2005 10 30 | G96 | 0.1− | 0.5− | | | | |
| 2004 09 22 | 691 | 0.2+ | 0.2− | 2005 12 04 | 691 | 1.5− | 0.2− | | | | |

### 2005 YM$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.51565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22293809 | $\omega$ | 169.71257 | | −0.90693104 | −0.42110163 | |
| $a$ | 2.6936833 | $\Omega$ | 345.36488 | | +0.38299700 | −0.81208117 | |
| $e$ | 0.0543236 | $i$ | 2.77377 | | +0.17546903 | −0.40397720 | |
| $P$ | 4.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 1.1+ | 0.4− | 2002 03 17 | 691 | 0.1− | 0.0 | 2005 11 10 | G96 | 0.7− | 0.8− |
| 2002 02 10 | 704 | 0.6− | 0.0 | 2002 03 17 | 691 | 0.1+ | 0.0 | 2005 12 24 | 691 | 0.0 | 0.2+ |
| 2002 02 10 | 704 | 1.2+ | 0.6+ | 2004 09 17 | 691 | 0.3− | 0.3+ | 2005 12 24 | 691 | 0.2− | 0.1− |
| 2002 02 10 | 704 | 0.6+ | 1.8+ | 2004 09 17 | 691 | 0.2− | 0.4+ | 2005 12 24 | 691 | 0.1+ | 0.1+ |
| 2002 02 16 | 644 | 0.2− | 0.6+ | 2004 09 17 | 691 | 0.1+ | 0.3+ | 2005 12 28 | 691 | 0.1− | 0.0 |
| 2002 02 16 | 644 | 0.1− | 0.7+ | 2005 11 10 | G96 | 0.1− | 0.4− | 2005 12 28 | 691 | 0.1+ | 0.2− |
| 2002 02 16 | 644 | 0.1− | 0.5+ | 2005 11 10 | G96 | 0.4+ | 0.4− | 2005 12 28 | 691 | 0.1+ | 0.1− |
| 2002 03 17 | 691 | 0.1+ | 0.3+ | 2005 11 10 | G96 | 0.1− | 0.5− | | | | |

### 2005 YA$_{85}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.32779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27874527 | $\omega$ | 76.93959 | | +0.96200090 | +0.24781032 | |
| $a$ | 2.3209425 | $\Omega$ | 268.62427 | | −0.27302521 | +0.87823778 | |
| $e$ | 0.1502857 | $i$ | 6.58527 | | +0.00339187 | +0.40900910 | |
| $P$ | 3.54 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.3+ | 0.8− | 2001 09 29 | 644 | 0.5− | 0.4+ | 2005 12 25 | G96 | 0.7+ | 0.5− |
| 2001 09 10 | 704 | 0.3+ | 0.0 | 2001 09 29 | 644 | 0.4− | 0.2+ | 2005 12 25 | G96 | 0.4+ | 0.2− |
| 2001 09 10 | 704 | 0.4+ | 1.2− | 2001 09 29 | 644 | 0.5− | 0.1+ | 2005 12 25 | G96 | 0.1+ | 0.3− |
| 2001 09 25 | 704 | 0.2− | 0.3− | 2005 11 29 | 691 | 0.1+ | 0.1− | 2005 12 28 | 691 | 0.3+ | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.1+ | 2005 11 29 | 691 | 0.2+ | 0.0 | 2005 12 28 | 691 | 0.3− | 0.0 |
| 2001 09 25 | 704 | 0.1− | 0.0 | 2005 11 29 | 691 | 0.1− | 0.0 | 2005 12 28 | 691 | 0.4− | 0.0 |
| 2001 09 25 | 704 | 0.8+ | 1.3+ | 2005 12 25 | G96 | 0.1− | 0.4− | | | | |

### 2005 YT$_{85}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.38802 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28147652 | $\omega$ | 71.92057 | | +0.98983554 | −0.01601776 | |
| $a$ | 2.3059043 | $\Omega$ | 288.80860 | | −0.04792485 | +0.89795093 | |
| $e$ | 0.2712823 | $i$ | 8.58540 | | +0.13389855 | +0.43980400 | |
| $P$ | 3.50 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 1.0+ | 1.2− | 2001 09 19 | 704 | 0.1− | 0.0 | 2005 12 25 | G96 | 0.2− | 0.2− |
| 2001 07 20 | 699 | 1.0+ | 0.5− | 2001 09 19 | 704 | 0.4+ | 0.0 | 2005 12 25 | G96 | 0.4+ | 0.2− |
| 2001 07 20 | 699 | 0.7− | 0.8+ | 2001 09 19 | 704 | 0.4+ | 0.4− | 2005 12 25 | G96 | 0.1− | 0.6− |
| 2001 07 20 | 699 | 0.4+ | 0.4− | 2001 09 25 | 644 | 0.1+ | 0.5+ | 2005 12 25 | G96 | 0.1+ | 0.6− |
| 2001 09 09 | 699 | 1.1− | 0.1− | 2001 09 25 | 644 | 0.1− | 0.5+ | 2005 12 28 | 691 | 0.0 | 0.1+ |
| 2001 09 09 | 699 | 0.2− | 0.1+ | 2001 09 25 | 644 | 0.4+ | 0.4+ | 2005 12 28 | 691 | 0.1− | 0.1+ |
| 2001 09 09 | 699 | 0.8− | 0.6− | 2005 12 01 | G96 | 0.2+ | 0.3− | 2005 12 28 | 691 | 0.1− | 0.5+ |
| 2001 09 09 | 699 | 0.3− | 0.8+ | 2005 12 01 | G96 | 0.2+ | 0.2+ | 2006 01 09 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.0 | 0.5− | 2005 12 01 | G96 | 0.1+ | 0.3− | 2006 01 09 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.4+ | 0.1− | 2005 12 01 | G96 | 0.4− | 0.3+ | 2006 01 09 | 691 | 0.0 | 0.3− |

**2005 YA$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.79687 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24724913 | $\omega$ | 149.66489 | | +0.06421490 | | −0.99577594 |
| $a$ | 2.5140825 | $\Omega$ | 296.58341 | | +0.90021406 | | +0.08618244 |
| $e$ | 0.1345665 | $i$ | 4.20834 | | +0.43068677 | | −0.03166801 |
| $P$ | 3.99 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2− | 1.2+ | 2005 11 10 | G96 | 0.4+ | 0.3− | 2005 12 31 | 704 | 0.6+ | 0.4+ |
| 2001 12 18 | 704 | 0.4− | 0.5− | 2005 11 10 | G96 | 0.0 | 0.5− | 2005 12 31 | 704 | 0.3+ | 1.4+ |
| 2001 12 18 | 704 | 0.5− | 0.6+ | 2005 11 10 | G96 | 0.1− | 0.3− | 2005 12 31 | 704 | 0.6+ | 0.8+ |
| 2002 01 04 | 608 | 0.4− | 0.8− | 2005 12 26 | 291 | 0.5− | 0.2+ | 2006 01 05 | 691 | 0.1+ | 0.1+ |
| 2002 01 04 | 608 | 0.3− | 0.6− | 2005 12 26 | 291 | 0.2− | 0.3+ | 2006 01 05 | 691 | 0.0 | 0.0 |
| 2002 01 04 | 608 | 0.4− | 0.2− | 2005 12 26 | 291 | 0.2− | 0.3+ | 2006 01 05 | 691 | 0.2+ | 0.1+ |
| 2002 01 14 | 704 | 0.7+ | 0.4− | 2005 12 28 | G96 | 0.5+ | 0.0 | 2006 01 07 | G96 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 1.1+ | 0.3− | 2005 12 28 | G96 | 0.1+ | 0.4− | 2006 01 07 | G96 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.5− | 0.0 | 2005 12 28 | 691 | 0.1+ | 0.1− | 2006 01 07 | G96 | 0.3− | 0.3− |
| 2002 01 14 | 704 | 0.3− | 1.4− | 2005 12 28 | G96 | 0.1+ | 0.4− | 2006 01 07 | G96 | 0.3− | 0.3− |
| 2002 01 14 | 704 | 0.7+ | 0.8− | 2005 12 28 | 691 | 0.1+ | 0.1− | | | | |
| 2005 11 10 | G96 | 0.2+ | 0.3− | 2005 12 28 | 691 | 0.1+ | 0.0 | | | | |

**2005 YX$_{94}$ = 2002 UG$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.73056 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37101349 | $\omega$ | 327.82696 | | +0.07415085 | | +0.96591251 |
| $a$ | 1.9181221 | $\Omega$ | 305.24625 | | −0.83852180 | | −0.07423225 |
| $e$ | 0.0810912 | $i$ | 17.67968 | | −0.53979888 | | +0.24799716 |
| $P$ | 2.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.1+ | 0.4+ | 2005 12 24 | 704 | 0.2− | 0.4+ | 2005 12 30 | 704 | 0.2− | 0.5− |
| 2001 03 19 | 699 | 0.2+ | 0.2− | 2005 12 24 | 704 | 0.9− | 0.2+ | 2005 12 30 | 704 | 0.0 | 0.5− |
| 2001 03 19 | 699 | 0.3− | 0.1+ | 2005 12 24 | 704 | 1.4− | 0.1− | 2005 12 30 | 704 | 0.0 | 0.4− |
| 2001 03 19 | 699 | 0.1− | 0.4− | 2005 12 29 | 704 | 0.2+ | 0.2− | 2005 12 30 | 704 | 0.4+ | 1.0− |
| 2002 10 28 | 704 | 0.1+ | 0.2+ | 2005 12 29 | 644 | 0.1− | 0.1− | 2006 01 05 | 703 | 0.4− | 0.6+ |
| 2002 10 28 | 704 | 0.6+ | 0.1+ | 2005 12 29 | 704 | 1.2+ | 0.3− | 2006 01 05 | 703 | (1.5− | 2.4+) |
| 2002 10 28 | 704 | 0.4+ | 1.0+ | 2005 12 29 | 704 | 1.0+ | 0.3+ | 2006 01 05 | 703 | 0.4− | 0.0 |
| 2002 10 30 | 704 | 0.5− | 0.3− | 2005 12 29 | 644 | 0.0 | 0.1− | 2006 01 05 | 703 | 0.2− | 0.2− |
| 2002 10 30 | 704 | 1.2− | 0.3− | 2005 12 29 | 704 | 0.8+ | 0.0 | 2006 01 07 | 704 | 0.2− | 0.2+ |
| 2002 10 30 | 704 | 0.7+ | 0.7− | 2005 12 29 | 644 | 0.0 | 0.3− | 2006 01 07 | 704 | 0.1+ | 0.4+ |
| 2005 12 24 | 704 | 0.2− | 0.9+ | 2005 12 30 | 704 | (1.7+ | 0.5−) | 2006 01 07 | 704 | 0.5+ | 0.6+ |

**2005 YP$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.90816 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27461826 | $\omega$ | 67.91404 | | +0.95475564 | | −0.28474081 |
| $a$ | 2.3441377 | $\Omega$ | 308.52326 | | +0.21599093 | | +0.86228268 |
| $e$ | 0.1240600 | $i$ | 6.29738 | | +0.20442501 | | +0.41879738 |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 704 | 0.2+ | 0.4− | 2001 11 12 | 704 | 0.2+ | 1.2+ | 2005 12 29 | G96 | 0.4− | 0.3− |
| 2001 10 26 | 704 | 0.4+ | 0.8− | 2001 11 12 | 704 | 1.6− | 0.6+ | 2005 12 29 | G96 | 0.4− | 0.3− |
| 2001 10 26 | 704 | 0.1− | 0.3− | 2001 11 12 | 704 | 0.6+ | 0.5+ | 2005 12 29 | G96 | 0.3− | 0.1− |
| 2001 11 11 | 699 | 1.2+ | 0.4− | 2001 11 12 | 704 | 1.5+ | 0.6− | 2005 12 29 | G96 | 0.1− | 0.0 |
| 2001 11 11 | 699 | 1.1− | 0.2− | 2005 12 26 | 691 | 0.1+ | 0.0 | 2006 01 05 | 691 | 0.1+ | 0.1− |
| 2001 11 11 | 699 | 0.3− | 1.2+ | 2005 12 26 | 691 | 0.0 | 0.1− | 2006 01 05 | 691 | 0.1+ | 0.2+ |
| 2001 11 11 | 699 | 1.1− | 0.7− | 2005 12 26 | 691 | 0.1+ | 0.0 | 2006 01 05 | 691 | 0.2− | 0.1+ |

**2005 YK$_{107}$ = 2004 TR$_{305}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.40340 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21424752 | $\omega$ | 201.77008 | | +0.57278413 | | +0.81906647 |
| $a$ | 2.7660425 | $\Omega$ | 103.18848 | | −0.74707427 | | +0.53788027 |
| $e$ | 0.0530735 | $i$ | 1.90584 | | −0.33734014 | | +0.19953678 |
| $P$ | 4.60 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.3+ | 0.2− | 2004 10 15 | 691 | 0.0 | 0.2+ | 2005 12 25 | G96 | 0.5− | 0.7− |
| 2000 11 24 | 691 | 0.0 | 0.0 | 2004 10 15 | 691 | 0.0 | 0.1+ | 2005 12 29 | 691 | 0.2+ | 0.1− |
| 2000 11 24 | 691 | 0.2− | 0.3− | 2004 10 15 | 691 | 0.2+ | 0.3+ | 2005 12 29 | 691 | 0.5+ | 0.0 |
| 2002 03 20 | 291 | 0.3+ | 0.1+ | 2005 12 25 | 691 | 0.0 | 0.2+ | 2005 12 29 | 691 | 0.3+ | 0.1+ |
| 2002 03 20 | 291 | 0.2− | 0.2+ | 2005 12 25 | 691 | 0.2+ | 0.2− | 2006 01 04 | 691 | 0.1− | 0.1− |
| 2002 03 20 | 291 | 0.2+ | 0.7+ | 2005 12 25 | 691 | 0.2− | 0.0 | 2006 01 04 | 691 | 0.3− | 0.4+ |
| 2004 10 10 | 691 | 0.8− | 0.2+ | 2005 12 25 | G96 | 0.6− | 0.4+ | 2006 01 04 | 691 | 0.1− | 0.1+ |
| 2004 10 10 | 691 | 0.1− | 0.3+ | 2005 12 25 | G96 | 0.4− | 0.2− | | | | |
| 2004 10 10 | 691 | 0.4+ | 0.1− | 2005 12 25 | G96 | 0.2− | 0.6− | | | | |

**2005 YU$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.26268 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24536393 | $\omega$ | 113.45201 | | −0.14159925 | | +0.98959061 |
| $a$ | 2.5269437 | $\Omega$ | 148.37415 | | −0.92518030 | | −0.12306185 |
| $e$ | 0.1337658 | $i$ | 2.80838 | | −0.35212365 | | −0.07460701 |
| $P$ | 4.02 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 06 | 691 | 0.4+ | 0.4− | 2003 05 27 | 691 | 0.5− | 0.2− | 2005 12 29 | 691 | 0.3+ | 0.1+ |
| 2002 01 06 | 691 | 0.7+ | 0.0 | 2004 10 11 | 691 | 0.2− | 0.6+ | 2005 12 29 | 691 | 0.4− | 0.2+ |
| 2002 01 06 | 691 | 1.2− | 0.3− | 2004 10 11 | 691 | 0.0 | 0.8+ | 2005 12 29 | 691 | 0.2− | 0.4− |
| 2003 04 25 | 691 | 0.1+ | 1.0+ | 2004 10 11 | 691 | 0.5− | 0.1+ | 2005 12 31 | 691 | 0.2− | 0.1− |
| 2003 04 25 | 691 | 0.5+ | 0.8+ | 2005 11 01 | G96 | (3.8+ | 1.1+) | 2005 12 31 | 691 | 0.2− | 0.5+ |
| 2003 04 25 | 691 | 0.3+ | 1.0+ | 2005 11 01 | G96 | (4.7+ | 0.9+) | 2005 12 31 | 691 | 0.5− | 0.0 |
| 2003 05 11 | 691 | 0.0 | 0.3+ | 2005 11 01 | G96 | (6.1+ | 0.1−) | 2006 01 06 | 691 | 0.5− | 0.2− |
| 2003 05 11 | 691 | 0.4− | 1.0− | 2005 11 01 | G96 | (7.4+ | 0.3−) | 2006 01 06 | 691 | 0.5− | 0.3+ |
| 2003 05 11 | 691 | 1.4+ | 0.2+ | 2005 12 25 | 691 | 0.3− | 0.2+ | 2006 01 06 | 691 | 0.5− | 0.3+ |
| 2003 05 27 | 691 | 0.5− | 0.1− | 2005 12 25 | 691 | 0.7− | 0.1− | | | | |
| 2003 05 27 | 691 | 0.4− | 0.3− | 2005 12 25 | 691 | 0.1− | 0.3+ | | | | |

**2005 YS$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.30179 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21513636 | $\omega$ | 323.55961 | | −0.31142700 | | −0.94930810 |
| $a$ | 2.7584186 | $\Omega$ | 144.52918 | | +0.88833634 | | −0.30680947 |
| $e$ | 0.0455178 | $i$ | 4.22458 | | +0.33744893 | | −0.06842569 |
| $P$ | 4.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.3− | 0.7− | 2006 01 02 | G96 | 0.2+ | 0.3+ | 2006 01 23 | G96 | 0.1+ | 0.6− |
| 1993 04 19 | 691 | 0.1+ | 0.2+ | 2006 01 02 | G96 | 0.5+ | 0.4− | 2006 02 04 | G96 | 0.0 | 0.0 |
| 1993 04 19 | 691 | 0.2+ | 0.2+ | 2006 01 02 | G96 | 0.4− | 0.1− | 2006 02 04 | G96 | 0.1− | 0.0 |
| 2000 12 30 | 691 | 0.1+ | 0.2− | 2006 01 06 | 691 | 0.3+ | 0.2+ | 2006 02 04 | G96 | 0.1− | 0.3− |
| 2000 12 30 | 691 | 0.1− | 0.1− | 2006 01 06 | 691 | 0.4+ | 0.1+ | 2006 02 04 | G96 | 0.3− | 0.3− |
| 2000 12 30 | 691 | 0.0 | 0.1− | 2006 01 06 | 691 | 0.1+ | 0.6+ | 2006 03 25 | G96 | 0.3− | 0.3+ |
| 2005 12 25 | 691 | 0.4− | 0.1− | 2006 01 09 | G96 | 0.3+ | 0.1+ | 2006 03 25 | G96 | 0.1− | 0.4+ |
| 2005 12 25 | 691 | 0.2+ | 0.1− | 2006 01 09 | G96 | 0.3− | 0.1+ | 2006 03 25 | G96 | 0.2+ | 0.1+ |
| 2005 12 25 | 691 | 0.0 | 0.1− | 2006 01 09 | G96 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.1− | 0.1+ |
| 2005 12 29 | 691 | 0.1− | 0.1+ | 2006 01 09 | G96 | 0.1− | 0.3− | 2006 03 25 | G96 | 1.1− | 0.3+ |
| 2005 12 29 | 691 | 0.1− | 0.1+ | 2006 01 23 | G96 | 0.5− | 0.3− | 2006 03 25 | G96 | 0.6− | 0.2+ |
| 2005 12 29 | 691 | 0.1− | 0.1+ | 2006 01 23 | G96 | 0.5− | 0.3− | 2006 03 25 | G96 | 0.0 | 0.6+ |
| 2006 01 02 | G96 | 2.0+ | 1.5− | 2006 01 23 | G96 | 0.4− | 0.2− | 2006 03 25 | G96 | 0.6− | 0.2+ |

**2005 YV$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 145.53173 | | | (2000.0) | | |
| $n$ | 0.26554737 | $\omega$ | 98.09729 | | +0.97636427 | −0.21219435 |
| $a$ | 2.3972209 | $\Omega$ | 274.16067 | | +0.17852312 | +0.89887983 |
| $e$ | 0.1440300 | $i$ | 2.35977 | | +0.12182904 | +0.38339094 |
| $P$ | 3.71 | $H$ | 17.4 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.8− | 0.6+ | 2005 12 02 | G96 | 0.1− | 0.2− | 2005 12 25 | G96 | 0.4− | 0.2− |
| 2001 11 19 | 704 | 0.1− | 1.4+ | 2005 12 02 | G96 | 0.2+ | 0.4− | 2005 12 25 | G96 | 0.3− | 0.4− |
| 2001 11 19 | 704 | 0.2− | 0.2+ | 2005 12 02 | G96 | 0.1− | 0.7− | 2005 12 29 | 691 | 0.2− | 0.2+ |
| 2001 12 15 | 704 | 0.4− | 0.3− | 2005 12 02 | G96 | 0.3+ | 0.2− | 2005 12 29 | 691 | 0.1+ | 0.4+ |
| 2001 12 15 | 704 | 0.9+ | 0.1− | 2005 12 25 | 691 | 0.1+ | 0.3+ | 2005 12 29 | 691 | 0.1+ | 0.4+ |
| 2001 12 15 | 704 | 1.1+ | 0.0 | 2005 12 25 | 691 | 0.1+ | 0.2+ | 2006 01 06 | 691 | 0.7− | 0.4+ |
| 2002 01 14 | 291 | 0.1− | 0.3− | 2005 12 25 | 691 | 0.0 | 0.3+ | 2006 01 06 | 691 | 0.1+ | 0.2+ |
| 2002 01 14 | 291 | 0.2+ | 0.4− | 2005 12 25 | G96 | 0.4− | 0.0 | 2006 01 06 | 691 | 0.9+ | 1.3− |
| 2002 01 14 | 291 | 0.1− | 0.2− | 2005 12 25 | G96 | 0.3− | 0.3− | | | | |

**2005 YX$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.59025 | | | (2000.0) | | |
| $n$ | 0.25791552 | $\omega$ | 20.09771 | | −0.36444986 | +0.93116048 |
| $a$ | 2.4442806 | $\Omega$ | 228.53020 | | −0.85633688 | −0.33967248 |
| $e$ | 0.1251918 | $i$ | 0.82520 | | −0.36587353 | −0.13252458 |
| $P$ | 3.82 | $H$ | 17.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 691 | 0.1+ | 0.1+ | 2003 05 11 | 691 | 0.1+ | 0.5+ | 2005 12 25 | 691 | 0.2+ | 0.4+ |
| 1999 04 12 | 691 | 0.4− | 0.6− | 2003 05 11 | 691 | 0.1+ | 0.4+ | 2005 12 25 | G96 | 0.4− | 0.5+ |
| 1999 04 12 | 691 | 0.0 | 0.6− | 2003 05 25 | 691 | 0.4− | 0.6+ | 2005 12 25 | G96 | 0.4− | 0.6+ |
| 1999 04 19 | 691 | 0.6− | 1.0− | 2003 05 25 | 691 | 0.2+ | 0.3+ | 2005 12 25 | G96 | 0.3− | 0.2− |
| 1999 04 19 | 691 | 0.0 | 0.5− | 2003 05 25 | 691 | 0.2+ | 0.5+ | 2005 12 25 | G96 | 0.3− | 0.2− |
| 1999 04 19 | 691 | 0.2− | 0.3− | 2004 10 15 | 691 | 0.1+ | 0.4+ | 2005 12 29 | 691 | 0.2− | 0.3+ |
| 2003 04 25 | 691 | 0.3+ | 0.3+ | 2004 10 15 | 691 | 0.2− | 0.3+ | 2005 12 29 | 691 | 0.1+ | 0.1+ |
| 2003 04 25 | 691 | 0.3+ | 0.6+ | 2004 10 15 | 691 | 0.2− | 0.1+ | 2005 12 29 | 691 | 0.2+ | 0.5+ |
| 2003 04 25 | 691 | 0.5+ | 0.6+ | 2005 12 25 | 691 | 0.3+ | 0.2+ | | | | |
| 2003 05 11 | 691 | 0.1+ | 0.1+ | 2005 12 25 | 691 | 0.0 | 0.3+ | | | | |

**2005 YB$_{117}$ = 2006 AD$_{34}$**

Id. Minor Planet Center (d, *MPO* 104420)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 92.24670 | | | (2000.0) | | |
| $n$ | 0.21722294 | $\omega$ | 354.21313 | | +0.25081772 | −0.96637953 |
| $a$ | 2.7407258 | $\Omega$ | 81.25129 | | +0.89043425 | +0.20738866 |
| $e$ | 0.0787359 | $i$ | 3.28164 | | +0.37975955 | +0.15198867 |
| $P$ | 4.54 | $H$ | 17.6 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.3+ | 0.1+ | 2005 12 25 | 691 | 0.2+ | 0.5+ | 2006 01 06 | G96 | 0.7− | 0.4− |
| 1995 09 18 | 691 | 0.1− | 0.2− | 2005 12 25 | 691 | 0.2+ | 0.5+ | 2006 01 07 | 691 | 0.2+ | 0.0 |
| 1995 09 18 | 691 | 0.1− | 0.0 | 2005 12 25 | 691 | 0.3+ | 0.3+ | 2006 01 07 | 691 | 0.2+ | 0.1+ |
| 2000 12 22 | 691 | 0.1+ | 0.6+ | 2005 12 29 | 691 | 0.0 | 0.4+ | 2006 01 07 | 691 | 0.3+ | 0.2+ |
| 2000 12 22 | 691 | 0.5− | 0.2− | 2005 12 29 | 691 | 0.1+ | 0.2+ | 2006 01 27 | G96 | 0.3− | 0.2− |
| 2000 12 22 | 691 | 0.3+ | 0.2+ | 2005 12 29 | 691 | 0.1+ | 0.3+ | 2006 01 27 | G96 | 0.0 | 0.1− |
| 2002 03 12 | 691 | 0.2+ | 0.5− | 2006 01 06 | G96 | 0.0 | 0.3− | 2006 01 27 | G96 | 0.0 | 0.3− |
| 2002 03 12 | 691 | 0.3− | 0.6+ | 2006 01 06 | G96 | 0.2− | 0.4− | 2006 01 27 | G96 | 0.0 | 0.1− |
| 2002 03 12 | 691 | 0.5+ | 0.4+ | 2006 01 06 | G96 | 0.5− | 1.1− | | | | |

**2005 YH$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 105.67810 | | | (2000.0) | | |
| $n$ | 0.18606255 | $\omega$ | 302.77145 | | +0.53627577 | −0.80247084 |
| $a$ | 3.0387623 | $\Omega$ | 112.61062 | | +0.83767991 | +0.46802955 |
| $e$ | 0.0592518 | $i$ | 16.46386 | | +0.10344401 | +0.37012011 |
| $P$ | 5.30 | $H$ | 15.3 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 06 | 691 | 0.1+ | 0.2− | 2005 12 30 | 704 | 0.9− | 0.9− | 2006 01 22 | 691 | 0.2− | 0.0 |
| 1997 07 06 | 691 | 0.2+ | 0.1+ | 2005 12 30 | 704 | 1.0− | 0.7+ | 2006 01 22 | 691 | 0.0 | 0.2+ |
| 1997 07 06 | 691 | 0.2− | 0.2+ | 2006 01 03 | 704 | 0.1− | 0.2− | 2006 01 24 | 703 | 0.1− | 0.4− |
| 2002 05 05 | 644 | 0.2+ | 0.0 | 2006 01 03 | 704 | 0.5+ | 0.6+ | 2006 01 24 | 703 | 0.3+ | 0.9− |
| 2002 05 05 | 644 | 0.1− | 0.1− | 2006 01 03 | 704 | 0.5− | 0.4− | 2006 01 24 | 703 | 0.5+ | 1.4+ |
| 2002 05 05 | 644 | 0.1− | 0.0 | 2006 01 03 | 704 | 0.4+ | 0.1− | 2006 01 24 | 703 | 0.3− | 1.3+ |
| 2005 11 03 | G96 | 0.0 | 0.1− | 2006 01 03 | 704 | 0.3− | 0.1+ | 2006 01 28 | G96 | 0.3+ | 0.3− |
| 2005 11 03 | G96 | 0.1− | 0.3− | 2006 01 05 | 704 | 0.6+ | 0.2+ | 2006 01 28 | G96 | 0.3+ | 0.5− |
| 2005 11 03 | G96 | 0.3− | 0.2− | 2006 01 05 | 704 | 1.0+ | 0.7+ | 2006 01 28 | G96 | 0.3− | 0.3− |
| 2005 11 03 | G96 | 0.0 | 0.4− | 2006 01 05 | 704 | 0.0 | 1.1+ | 2006 01 28 | G96 | 0.2+ | 0.4− |
| 2005 12 25 | 691 | 0.0 | 0.1− | 2006 01 07 | 691 | 0.3+ | 0.0 | 2006 02 02 | 703 | 0.8− | 0.3− |
| 2005 12 25 | 691 | 0.0 | 0.1− | 2006 01 07 | 691 | 0.3+ | 0.1+ | 2006 02 02 | 703 | 0.1− | 0.0 |
| 2005 12 25 | 691 | 0.1− | 0.2− | 2006 01 07 | 691 | 0.3+ | 0.0 | 2006 02 02 | 703 | 0.2− | 0.1− |
| 2005 12 29 | 691 | 0.2+ | 0.3+ | 2006 01 18 | 703 | 0.8− | 1.1− | 2006 02 02 | 703 | 0.5− | 0.1− |
| 2005 12 29 | 691 | 0.2+ | 0.3+ | 2006 01 18 | 703 | 0.9− | 0.8− | 2006 02 06 | 691 | 0.1+ | 0.0 |
| 2005 12 29 | 691 | 0.1+ | 0.3+ | 2006 01 18 | 703 | 1.5− | 0.0 | 2006 02 06 | 691 | 0.1+ | 0.3− |
| 2005 12 30 | 704 | 0.1− | 0.2− | 2006 01 18 | 703 | 1.4+ | 1.1− | 2006 02 06 | 691 | 0.3− | 0.1+ |
| 2005 12 30 | 704 | 0.1+ | 0.2+ | 2006 01 22 | 691 | 0.1− | 0.0 | | | | |

**2005 YP$_{124}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.53461 | | | (2000.0) | | |
| $n$ | 0.20970282 | $\omega$ | 131.04573 | | −0.09851590 | −0.99254598 |
| $a$ | 2.8058635 | $\Omega$ | 324.41524 | | +0.87203786 | −0.05137259 |
| $e$ | 0.0665699 | $i$ | 7.08201 | | +0.47942110 | −0.11051395 |
| $P$ | 4.70 | $H$ | 16.2 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 17 | 691 | 0.3− | 0.2+ | 2005 12 26 | 691 | 0.0 | 0.0 | 2006 01 06 | 704 | 0.4+ | 0.1− |
| 1999 08 17 | 691 | 0.3− | 0.4+ | 2005 12 26 | 691 | 0.5− | 0.1+ | 2006 01 06 | 704 | 0.3+ | 0.1+ |
| 1999 08 17 | 691 | 0.0 | 0.2+ | 2005 12 26 | 691 | 0.1+ | 0.3+ | 2006 01 06 | 704 | 0.4− | 0.6− |
| 2002 04 05 | 644 | 0.9+ | 0.8+ | 2005 12 29 | 704 | 0.8+ | 0.7+ | 2006 01 06 | 704 | 0.0 | 0.3− |
| 2002 04 05 | 644 | 0.8+ | 1.3+ | 2005 12 29 | 704 | 0.3− | 0.1+ | 2006 01 06 | 704 | 0.6− | 0.1− |
| 2002 04 05 | 644 | 0.5+ | 1.6+ | 2005 12 29 | 704 | 0.2+ | 0.9+ | 2006 03 26 | G96 | 0.4+ | 0.4+ |
| 2004 10 06 | 699 | (0.6+ | 2.2+) | 2005 12 30 | 699 | 0.3− | 0.3+ | 2006 03 26 | G96 | 0.1− | 0.2− |
| 2004 10 06 | 699 | 0.2+ | 0.8+ | 2005 12 30 | 699 | 0.7+ | 0.3− | 2006 03 26 | G96 | 0.6− | 0.0 |
| 2004 10 06 | 699 | 0.2− | 0.6+ | 2005 12 30 | 699 | 0.1+ | 0.3+ | 2006 03 26 | G96 | 0.1+ | 0.2− |
| 2004 10 06 | 699 | 1.5− | 1.8+ | 2005 12 30 | 699 | 0.4− | 0.6− | | | | |

**2005 YY$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 71.01512 | | | (2000.0) | | |
| $n$ | 0.46530455 | $\omega$ | 314.48207 | | −0.25651826 | +0.96488777 |
| $a$ | 1.6493438 | $\Omega$ | 300.57591 | | −0.86712441 | −0.25555351 |
| $e$ | 0.7320089 | $i$ | 3.76138 | | −0.42695860 | −0.06069592 |
| $P$ | 2.12 | $H$ | 18.3 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 12 30 | 691 | 0.1+ | 0.1− | 2006 01 21 | 448 | 0.1+ | 0.6− | 2006 02 05 | 941 | 0.5+ | 0.2− |
| 2005 12 30 | 691 | 0.3− | 0.0 | 2006 01 21 | 448 | 0.6− | 0.1− | 2006 02 05 | 941 | 0.1− | 0.3− |
| 2005 12 30 | 691 | 0.1− | 0.0 | 2006 01 22 | G96 | 0.4− | 0.2− | 2006 02 06 | G96 | 0.1− | 0.2− |
| 2005 12 31 | 734 | 0.1+ | 0.5− | 2006 01 22 | G96 | 0.3− | 0.2− | 2006 02 06 | G96 | 0.1+ | 0.3− |
| 2005 12 31 | 734 | 0.0 | 0.1− | 2006 01 22 | G96 | 0.2+ | 0.2− | 2006 02 06 | G96 | 0.2− | 0.3− |
| 2005 12 31 | 734 | 0.0 | 0.4− | 2006 01 22 | G96 | 0.3− | 0.3− | 2006 02 06 | G96 | 0.1+ | 0.2− |
| 2005 12 31 | 734 | 0.5− | 0.1− | 2006 01 23 | 691 | 0.0 | 0.1− | 2006 02 07 | 691 | 0.1+ | 0.1− |
| 2005 12 31 | 711 | 0.4+ | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.1− | 2006 02 07 | 691 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 12 31 | 711 | 0.1+ | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.2− | 2006 02 07 | 691 | 0.3+ | 0.1− |
| 2005 12 31 | 711 | 0.3+ | 0.2+ | 2006 01 24 | 704 | 0.1+ | 0.3+ | 2006 02 11 | A53 | 0.3− | 0.3+ |
| 2006 01 01 | A50 | 0.9+ | 0.1+ | 2006 01 24 | 704 | 0.0 | 0.5+ | 2006 02 11 | A53 | 0.4+ | 0.1− |
| 2006 01 01 | A50 | 0.4+ | 0.7+ | 2006 01 24 | 704 | 0.1− | 0.3+ | 2006 02 11 | A53 | 0.7+ | 0.6+ |
| 2006 01 01 | A50 | 0.4− | 0.1− | 2006 01 24 | 704 | 0.2+ | 0.1+ | 2006 02 11 | A56 | 0.5+ | 0.4+ |
| 2006 01 02 | 711 | 0.1+ | 0.1− | 2006 01 24 | 704 | 0.3+ | 0.4+ | 2006 02 11 | A56 | 0.5+ | 0.1+ |
| 2006 01 02 | 711 | 0.1+ | 0.1+ | 2006 01 25 | H45 | 0.2− | 0.2− | 2006 02 11 | A56 | 0.7+ | 0.7− |
| 2006 01 02 | 711 | 0.4− | 0.3− | 2006 01 25 | H45 | (2.2− | 0.3−) | 2006 02 19 | H36 | 0.4− | 0.6− |
| 2006 01 04 | 703 | 0.8− | 1.1+ | 2006 01 25 | H45 | 0.1+ | 0.6− | 2006 02 19 | H36 | 1.1− | 0.3− |
| 2006 01 04 | 703 | 0.5− | 0.5+ | 2006 01 25 | H45 | 1.2− | 0.9− | 2006 02 19 | H36 | 0.6+ | 0.2+ |
| 2006 01 04 | 703 | 0.2− | 0.9− | 2006 01 27 | 704 | 0.5+ | 0.4− | 2006 02 19 | 932 | 0.1+ | 0.2− |
| 2006 01 04 | 703 | 1.5+ | 1.4− | 2006 01 27 | 704 | 0.4− | 0.2+ | 2006 02 20 | 932 | 0.1+ | 0.0 |
| 2006 01 04 | 691 | 0.3+ | 0.1+ | 2006 01 27 | 704 | 0.2+ | 0.0 | 2006 02 20 | 932 | 0.1− | 0.3− |
| 2006 01 04 | 691 | 0.2+ | 0.1− | 2006 01 27 | 704 | 0.1− | 0.2+ | 2006 02 21 | 151 | 0.5− | 0.1− |
| 2006 01 04 | 691 | 0.4+ | 0.1− | 2006 01 27 | 704 | 0.1− | 0.4+ | 2006 02 21 | 151 | 0.4− | 0.0 |
| 2006 01 05 | 291 | 0.2− | 0.4+ | 2006 01 27 | 704 | 0.2− | 0.2+ | 2006 02 21 | 151 | 0.4− | 0.0 |
| 2006 01 05 | 291 | 0.0 | 0.5+ | 2006 01 27 | 704 | 0.3+ | 0.4+ | 2006 02 21 | 151 | 0.1+ | 0.1− |
| 2006 01 05 | 291 | 0.2− | 0.5+ | 2006 01 27 | 704 | 0.2+ | 0.1+ | 2006 02 21 | 151 | 0.1− | 0.1− |
| 2006 01 07 | 291 | 0.1− | 0.4+ | 2006 01 27 | 113 | 0.0 | 0.5− | 2006 02 21 | 151 | 0.2− | 0.0 |
| 2006 01 07 | 291 | 0.1− | 0.4+ | 2006 01 27 | 113 | 0.4− | 0.0 | 2006 02 23 | 704 | 0.0 | 0.3+ |
| 2006 01 07 | 291 | 0.1+ | 0.4+ | 2006 01 27 | 113 | 0.1− | 0.0 | 2006 02 23 | 704 | 0.3+ | 0.2− |
| 2006 01 07 | G96 | 0.2− | 0.2− | 2006 01 27 | 113 | 0.0 | 0.2− | 2006 02 23 | 704 | 0.1+ | 0.6+ |
| 2006 01 07 | G96 | 0.0 | 0.1− | 2006 01 27 | 113 | 0.0 | 0.6− | 2006 02 23 | 704 | 0.4− | 0.8+ |
| 2006 01 07 | G96 | 0.2− | 0.2− | 2006 01 30 | A48 | 1.1− | 0.3+ | 2006 02 23 | 704 | 0.0 | 0.0 |
| 2006 01 07 | G96 | 0.5− | 0.4− | 2006 01 30 | A48 | 1.2− | 0.5+ | 2006 02 26 | 704 | 0.1− | 0.4+ |
| 2006 01 08 | 691 | 0.0 | 0.1+ | 2006 01 30 | A48 | 1.2− | 0.7+ | 2006 02 26 | 704 | 0.2− | 0.1+ |
| 2006 01 08 | 691 | 0.2+ | 0.0 | 2006 01 30 | A48 | 1.4− | 0.8+ | 2006 02 26 | 704 | 0.6+ | 0.1− |
| 2006 01 08 | 691 | 0.0 | 0.0 | 2006 01 30 | A48 | 0.9− | 0.6+ | 2006 02 26 | 704 | 0.1− | 1.2+ |
| 2006 01 09 | 701 | 0.5− | 0.4+ | 2006 01 31 | 151 | 0.5− | 0.1− | 2006 02 28 | 734 | 0.2+ | 0.0 |
| 2006 01 09 | 701 | 0.1− | 0.2+ | 2006 01 31 | 151 | 0.8− | 0.2− | 2006 02 28 | 734 | 0.0 | 0.1− |
| 2006 01 09 | 701 | 0.3− | 0.0 | 2006 01 31 | 151 | 0.7− | 0.2− | 2006 02 28 | 734 | 0.1+ | 0.2+ |
| 2006 01 11 | 291 | 0.1− | 0.2+ | 2006 01 31 | 151 | (1.6− | 0.3−) | 2006 03 01 | 198 | 0.2− | 0.4+ |
| 2006 01 11 | 291 | 0.2− | 0.3+ | 2006 02 04 | 704 | 0.6+ | 0.6+ | 2006 03 01 | 198 | 0.2− | 0.4+ |
| 2006 01 11 | 291 | 0.1− | 0.2+ | 2006 02 04 | 704 | 0.1− | 0.3+ | 2006 03 01 | 198 | 0.1− | 0.4+ |
| 2006 01 17 | 448 | 0.6− | 0.6− | 2006 02 04 | 704 | 0.5+ | 0.4− | 2006 03 01 | 198 | 0.0 | 0.3+ |
| 2006 01 17 | 448 | 0.2− | 0.6− | 2006 02 04 | 704 | 0.2− | 0.3+ | 2006 08 24 | J50 | 0.4+ | 0.4+ |
| 2006 01 17 | 448 | 0.3− | 0.8− | 2006 02 04 | 670 | 0.0 | 0.4− | 2006 08 24 | J50 | 0.0 | 0.3+ |
| 2006 01 21 | 691 | 0.6+ | 0.8− | 2006 02 04 | 704 | 0.5− | 0.3+ | 2006 09 25 | J50 | 0.0 | 0.1+ |
| 2006 01 21 | 691 | 0.1+ | 0.0 | 2006 02 04 | 670 | 0.5+ | 0.2− | 2006 09 25 | J50 | 0.2− | 0.2+ |
| 2006 01 21 | 691 | 0.7+ | 0.3− | 2006 02 04 | 130 | 0.2+ | 0.4− | 2006 09 25 | J50 | 0.2− | 0.2+ |
| 2006 01 21 | 691 | 0.4− | 0.4+ | 2006 02 04 | 130 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2006 01 21 | 691 | 0.6+ | 0.4− | 2006 02 04 | 130 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.4− |
| 2006 01 21 | 691 | 0.0 | 0.1+ | 2006 02 04 | 130 | 0.6− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2006 01 21 | 291 | 0.4+ | 0.1− | 2006 02 04 | 130 | 0.7− | 0.3− | 2006 11 15 | 691 | 0.8− | 0.4− |
| 2006 01 21 | 291 | 0.4− | 0.1+ | 2006 02 05 | 941 | 1.0+ | 0.3− | 2006 11 15 | 691 | 0.3+ | 0.8+ |
| 2006 01 21 | 291 | 0.3+ | 0.1− | 2006 02 05 | 941 | 0.5+ | 0.3− | | | | |
| 2006 01 21 | 448 | 0.8− | 1.0− | 2006 02 05 | 941 | 0.5+ | 0.2− | | | | |

**2005 YO$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.77849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25299486 | $\omega$ | 137.19122 | | −0.52161834 | +0.84421755 | |
| $a$ | 2.4758723 | $\Omega$ | 101.01223 | | −0.81281027 | −0.44777829 | |
| $e$ | 0.1078647 | $i$ | 7.21810 | | −0.25933334 | −0.29460370 | |
| $P$ | 3.90 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 28 | 691 | 0.4+ | 0.5− | 2003 06 03 | 691 | 0.1+ | 0.3+ | 2005 12 30 | 691 | 0.1+ | 0.1− |
| 2003 04 28 | 691 | 0.1− | 0.3+ | 2005 12 26 | 691 | 0.1− | 0.1+ | 2006 01 08 | 691 | 0.1+ | 0.2− |
| 2003 04 28 | 691 | 0.0 | 0.3+ | 2005 12 26 | 691 | 0.0 | 0.4+ | 2006 01 08 | 691 | 0.1+ | 0.1− |
| 2003 05 30 | 704 | 0.6− | 0.6+ | 2005 12 26 | 691 | 0.0 | 0.1− | 2006 01 08 | 691 | 0.2− | 0.0 |
| 2003 05 30 | 704 | 0.5− | 0.5+ | 2005 12 28 | G96 | 1.1+ | 0.9− | 2006 01 08 | G96 | 0.2− | 0.5− |
| 2003 05 30 | 704 | 1.1− | 0.1+ | 2005 12 28 | G96 | 0.4− | 0.1− | 2006 01 08 | G96 | 0.5− | 0.6− |
| 2003 05 30 | 704 | 0.6− | 0.8+ | 2005 12 28 | G96 | 0.1+ | 0.2+ | 2006 01 08 | G96 | 0.3+ | 0.3− |
| 2003 05 30 | 704 | 0.4− | 0.2− | 2005 12 28 | G96 | 0.4− | 0.0 | 2006 01 08 | G96 | 0.0 | 0.6− |
| 2003 06 03 | 691 | 0.1+ | 0.1− | 2005 12 30 | 691 | 0.1+ | 0.3+ | | | | |
| 2003 06 03 | 691 | 0.3+ | 0.7− | 2005 12 30 | 691 | 0.0 | 0.4+ | | | | |

**2005 YH$_{143}$ = 2006 BD$_{134}$ = 2004 TX$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.60076 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27084844 | $\omega$ | 235.19731 | | −0.89713373 | +0.44030009 | |
| $a$ | 2.3658388 | $\Omega$ | 330.87751 | | −0.37740808 | −0.80612232 | |
| $e$ | 0.1775422 | $i$ | 4.22716 | | −0.22959578 | −0.39535129 | |
| $P$ | 3.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 699 | 0.2+ | 1.2+ | 2005 12 28 | G96 | 0.1− | 0.2− | 2006 01 27 | G96 | 0.0 | 0.1− |
| 1999 03 24 | 699 | 1.5+ | 0.5− | 2005 12 30 | 691 | 0.2− | 0.2+ | 2006 01 27 | G96 | 0.3+ | 0.1− |
| 1999 03 24 | 699 | 0.9− | 0.8+ | 2005 12 30 | 691 | 0.2− | 0.6+ | 2006 01 27 | G96 | 0.1+ | 0.2− |
| 2004 10 06 | 691 | 0.3− | 0.2− | 2005 12 30 | 691 | 0.3− | 0.4+ | 2006 01 27 | G96 | 0.0 | 0.3− |
| 2004 10 06 | 691 | 0.1+ | 0.3+ | 2006 01 05 | 699 | 1.4+ | 0.6+ | 2006 01 30 | 691 | 0.2+ | 0.1+ |
| 2004 10 06 | 691 | 0.1− | 0.4+ | 2006 01 05 | 699 | 0.7− | 1.1− | 2006 01 30 | 691 | 0.3+ | 0.4+ |
| 2004 10 10 | 691 | 0.2− | 0.2− | 2006 01 05 | 699 | (1.1− | 2.0+) | 2006 01 30 | 691 | 0.3+ | 0.3+ |
| 2004 10 10 | 691 | 0.5+ | 0.2+ | 2006 01 05 | 699 | 1.0+ | 0.4+ | 2006 02 02 | 703 | 0.1− | 1.4− |
| 2004 10 10 | 691 | 0.2− | 0.1− | 2006 01 08 | G96 | 0.7+ | 0.9− | 2006 02 02 | 703 | 0.2+ | 0.8− |
| 2005 12 28 | G96 | 0.0 | 0.2− | 2006 01 08 | G96 | 0.2− | 0.9− | 2006 02 02 | 703 | 0.9− | 0.5− |
| 2005 12 28 | G96 | 0.8− | 0.1− | 2006 01 08 | G96 | 0.4− | 0.9− | 2006 02 02 | 703 | 1.0− | 0.4− |
| 2005 12 28 | G96 | 0.6− | 0.1− | 2006 01 08 | G96 | 0.2− | 0.9− | | | | |

**2005 YL$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.36679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16922339 | $\omega$ | 279.99085 | | −0.59161475 | +0.79848504 | |
| $a$ | 3.2371472 | $\Omega$ | 313.13633 | | −0.66690164 | −0.56233940 | |
| $e$ | 0.2260141 | $i$ | 8.78238 | | −0.45302780 | −0.21493264 | |
| $P$ | 5.82 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.8+ | 0.1− | 2005 12 28 | G96 | 0.4− | 0.3− | 2006 01 30 | 691 | 0.2− | 0.0 |
| 2002 08 07 | 644 | 0.4− | 0.2+ | 2005 12 28 | G96 | 0.4− | 0.4− | 2006 02 06 | G96 | 0.6− | 0.4− |
| 2002 08 08 | 644 | 0.0 | 0.5+ | 2005 12 30 | 691 | 0.3− | 0.2+ | 2006 02 06 | G96 | 0.0 | 0.2− |
| 2002 08 08 | 644 | 0.3− | 0.2+ | 2005 12 30 | 691 | 0.4+ | 0.5+ | 2006 02 06 | G96 | 0.1+ | 0.4− |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2005 12 30 | 691 | 0.0 | 0.2+ | 2006 02 06 | G96 | 0.4− | 0.5− |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2006 01 04 | 691 | 0.1− | 0.0 | 2006 02 25 | G96 | 0.3− | 0.0 |
| 2002 08 17 | 644 | 0.0 | 0.2− | 2006 01 04 | 691 | 0.3+ | 0.1− | 2006 02 25 | G96 | 0.3− | 0.0 |
| 2002 08 17 | 644 | 0.3+ | 0.1− | 2006 01 04 | 691 | 0.0 | 0.3− | 2006 02 25 | G96 | 0.2− | 0.1+ |
| 2002 08 17 | 644 | 0.2− | 0.1+ | 2006 01 25 | 691 | 0.3+ | 0.2+ | 2006 02 25 | G96 | 0.7− | 0.1+ |
| 2002 08 17 | 644 | 0.3− | 0.4− | 2006 01 25 | 691 | 0.1+ | 0.1+ | 2006 03 03 | 291 | 0.2+ | 0.2+ |
| 2002 08 17 | 644 | 0.1+ | 0.1− | 2006 01 25 | 691 | 0.2− | 0.2− | 2006 03 03 | 291 | 0.0 | 0.2+ |
| 2005 12 28 | G96 | 0.3− | 0.3− | 2006 01 30 | 691 | 0.2+ | 0.0 | 2006 03 03 | 291 | 0.2+ | 0.0 |
| 2005 12 28 | G96 | 0.0 | 0.1− | 2006 01 30 | 691 | 0.0 | 0.2− | | | | |

**2005 YW$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.09222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20572486 | $\omega$ | 306.46800 | | +0.56872069 | −0.82039063 | |
| $a$ | 2.8419179 | $\Omega$ | 108.76676 | | +0.77327432 | +0.50870030 | |
| $e$ | 0.0437033 | $i$ | 3.59051 | | +0.28036334 | +0.26111917 | |
| $P$ | 4.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 691 | 0.1+ | 0.1− | 2005 12 28 | G96 | 0.6− | 0.4− | 2006 01 08 | 691 | 0.2+ | 0.3− |
| 2000 12 30 | 691 | 0.1− | 0.0 | 2005 12 30 | 691 | 0.1+ | 0.5+ | 2006 01 25 | 691 | 0.0 | 0.0 |
| 2000 12 30 | 691 | 0.0 | 0.1− | 2005 12 30 | 691 | 0.0 | 0.1− | 2006 01 25 | 691 | 0.1+ | 0.0 |
| 2004 10 14 | 691 | 0.6+ | 0.4+ | 2005 12 30 | 691 | 0.1+ | 0.1− | 2006 01 25 | 691 | 0.4− | 0.1+ |
| 2004 10 14 | 691 | 0.0 | 0.5− | 2006 01 04 | 691 | 0.2+ | 0.7+ | 2006 03 04 | G96 | 0.5+ | 0.3− |
| 2004 10 14 | 691 | 0.6− | 0.2+ | 2006 01 04 | 691 | 0.1+ | 0.2+ | 2006 03 04 | G96 | 0.1+ | 0.2− |
| 2005 12 28 | G96 | 0.1+ | 0.8− | 2006 01 04 | 691 | 0.0 | 0.2+ | 2006 03 04 | G96 | 0.5+ | 0.4− |
| 2005 12 28 | G96 | 1.0− | 0.8− | 2006 01 08 | 691 | 0.3− | 0.4− | 2006 03 04 | G96 | 0.1+ | 0.5− |
| 2005 12 28 | G96 | 0.2+ | 0.4− | 2006 01 08 | 691 | 0.1− | 0.3+ | | | | |

**2005 YY$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.55048 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28663379 | $\omega$ | 5.31409 | | +0.25076161 | −0.96423985 | |
| $a$ | 2.2781613 | $\Omega$ | 70.18481 | | +0.88477419 | +0.19232833 | |
| $e$ | 0.1514084 | $i$ | 5.23210 | | +0.39280180 | +0.18234946 | |
| $P$ | 3.44 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 291 | 0.2− | 0.1+ | 2005 12 25 | 691 | 0.1− | 0.2+ | 2006 01 06 | 704 | 0.2+ | 0.6+ |
| 2001 10 17 | 291 | 0.0 | 0.0 | 2005 12 25 | 691 | 0.0 | 0.2+ | 2006 01 09 | G96 | 0.1+ | 0.0 |
| 2001 10 17 | 291 | 0.2+ | 0.1− | 2005 12 30 | 699 | 0.6− | 0.9− | 2006 01 09 | G96 | 0.4− | 0.1− |
| 2003 03 26 | 691 | 0.1− | 0.1− | 2005 12 30 | 699 | 0.9+ | 0.7− | 2006 01 09 | G96 | 0.3− | 0.0 |
| 2003 03 26 | 691 | 0.1+ | 0.3− | 2005 12 30 | 699 | 0.9+ | 2.1− | 2006 01 09 | G96 | 0.4− | 0.0 |
| 2003 03 26 | 691 | 0.1− | 0.3+ | 2005 12 30 | 699 | 2.1+ | 0.9− | 2006 01 24 | 703 | 0.5+ | 0.4− |
| 2005 10 30 | G96 | 0.6− | 0.2− | 2006 01 06 | 691 | 0.1− | 0.0 | 2006 01 24 | 703 | 0.4− | 0.3− |
| 2005 10 30 | G96 | 0.2− | 0.4− | 2006 01 06 | 691 | 0.2− | 0.3− | 2006 01 24 | 703 | 0.4− | 1.0+ |
| 2005 10 30 | G96 | 0.1− | 0.3− | 2006 01 06 | 704 | 0.4+ | 0.7+ | 2006 01 24 | 703 | 0.7− | 0.1− |
| 2005 10 30 | G96 | 0.2+ | 0.4− | 2006 01 06 | 691 | 0.0 | 0.3+ | | | | |
| 2005 12 25 | 691 | 0.0 | 0.4+ | 2006 01 06 | 704 | 0.3+ | 1.2+ | | | | |

**2005 YS$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.96268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17586169 | $\omega$ | 45.65554 | | −0.79351912 | −0.52577564 | |
| $a$ | 3.1551637 | $\Omega$ | 100.29042 | | +0.43100554 | −0.84103151 | |
| $e$ | 0.1860244 | $i$ | 18.14481 | | +0.42960636 | −0.12738122 | |
| $P$ | 5.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 18 | 691 | 0.4+ | 0.1+ | 2005 12 29 | 704 | 0.2+ | 0.3+ | 2006 01 02 | 704 | 0.5+ | 0.6+ |
| 1996 06 18 | 691 | 0.9− | 0.1− | 2005 12 30 | 704 | 0.6− | 1.4+ | 2006 01 03 | 704 | 1.5+ | 0.7+ |
| 1996 06 18 | 691 | 0.5+ | 0.0 | 2005 12 30 | 704 | 0.1− | 0.1+ | 2006 01 03 | 704 | 1.2+ | 0.4− |
| 2001 02 24 | 608 | 0.0 | 0.2+ | 2005 12 30 | G96 | 0.3− | 0.2− | 2006 01 03 | 704 | 0.2+ | 0.9+ |
| 2001 02 24 | 608 | 0.2+ | 0.1+ | 2005 12 30 | 704 | 0.3− | 0.5− | 2006 01 03 | 704 | 0.9+ | 0.4+ |
| 2001 02 24 | 608 | 0.1− | 0.3− | 2005 12 30 | G96 | 0.3− | 0.2− | 2006 01 05 | 699 | 0.1− | 0.6− |
| 2005 11 01 | G96 | 0.1− | 0.1+ | 2005 12 30 | 704 | 0.6− | 0.1− | 2006 01 05 | 703 | 0.4+ | 0.5+ |
| 2005 11 01 | G96 | 0.5− | 0.0 | 2005 12 30 | G96 | 0.4− | 0.4− | 2006 01 05 | 699 | 1.6+ | 0.2+ |
| 2005 11 01 | G96 | 0.2− | 0.3− | 2005 12 30 | 704 | 0.2− | 0.8− | 2006 01 05 | 703 | 0.9− | 0.5− |
| 2005 11 01 | G96 | 0.0 | 0.1− | 2005 12 31 | 704 | 0.8+ | 0.5+ | 2006 01 05 | 703 | 0.8+ | 0.1+ |
| 2005 11 26 | G96 | 0.3− | 0.1− | 2005 12 31 | 704 | 0.3+ | 0.4+ | 2006 01 05 | 699 | 0.1+ | 0.5+ |
| 2005 11 26 | G96 | 0.2− | 0.0 | 2005 12 31 | 704 | 0.4+ | 0.3− | 2006 01 05 | 703 | 0.9− | 0.5+ |
| 2005 11 26 | G96 | 0.4− | 0.1− | 2005 12 31 | 704 | 0.7− | 0.1+ | 2006 01 05 | 699 | 0.9− | 0.2+ |
| 2005 11 26 | G96 | 0.2− | 0.2− | 2005 12 31 | 704 | 0.2− | 0.4+ | 2006 01 06 | 704 | 0.0 | 0.4− |
| 2005 12 29 | 704 | 0.0 | 0.9+ | 2005 12 31 | 704 | 0.6− | 0.1+ | 2006 01 06 | 704 | 0.3+ | 0.0 |
| 2005 12 29 | 704 | 0.5+ | 0.3+ | 2005 12 31 | 704 | 0.8− | 0.2+ | 2006 01 06 | 704 | 0.5− | 0.3− |
| 2005 12 29 | G96 | 0.3− | 0.3− | 2005 12 31 | 704 | 1.0+ | 0.1− | 2006 01 06 | 704 | 0.1+ | 0.1+ |
| 2005 12 29 | G96 | 0.2− | 0.4− | 2006 01 02 | 704 | 0.0 | 0.0 | 2006 01 06 | 704 | 0.1+ | 0.5− |
| 2005 12 29 | 704 | 0.8+ | 0.3+ | 2006 01 02 | 704 | 0.5+ | 0.3+ | 2006 01 20 | 291 | 0.1− | 0.4− |
| 2005 12 29 | G96 | 0.2− | 0.4− | 2006 01 02 | 704 | 0.0 | 0.3+ | 2006 01 20 | 291 | 0.1− | 0.4− |
| 2005 12 29 | 704 | 0.2− | 0.0 | 2006 01 02 | 704 | 0.8+ | 0.6+ | 2006 01 20 | 291 | 0.4− | 0.3− |

**2005 YO$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.69702 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27332842 | $\omega$ | 329.24894 | | −0.01202061 | −0.99387378 | |
| $a$ | 2.3515065 | $\Omega$ | 121.23216 | | +0.94156605 | −0.04823804 | |
| $e$ | 0.1113119 | $i$ | 7.38214 | | +0.33661384 | +0.09943838 | |
| $P$ | 3.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 645 | 0.1− | 0.1− | 2003 03 26 | 644 | 0.4− | 0.2+ | 2005 12 27 | 704 | 1.5+ | 0.1+ |
| 2001 09 21 | 645 | 0.1− | 0.1− | 2003 03 26 | 644 | 0.1− | 0.2+ | 2005 12 27 | 704 | 0.4− | 0.8− |
| 2001 10 17 | 704 | 0.8+ | 0.8− | 2003 03 26 | 644 | 0.0 | 0.3+ | 2005 12 27 | 704 | 0.5− | 0.4− |
| 2001 10 17 | 704 | 0.2− | 0.3− | 2003 05 02 | 691 | 0.0 | 0.1+ | 2005 12 30 | 704 | 0.4+ | 0.3− |
| 2001 10 17 | 704 | 0.5+ | 0.1− | 2003 05 02 | 691 | 0.3+ | 0.2− | 2005 12 30 | 704 | 0.5− | 0.2− |
| 2001 10 17 | 704 | 0.0 | 0.6+ | 2003 05 02 | 691 | 0.0 | 0.0 | 2005 12 30 | 704 | 0.3− | 0.4− |
| 2001 10 17 | 704 | 0.9+ | 0.2+ | 2005 11 30 | 704 | 0.3− | 0.7+ | 2005 12 30 | 704 | 0.3− | 0.3− |
| 2001 10 23 | 644 | 0.2+ | 1.4+ | 2005 11 30 | 704 | 0.2+ | 0.7+ | 2006 01 28 | 691 | 0.2+ | 0.2+ |
| 2001 10 23 | 644 | 0.2+ | 1.3+ | 2005 11 30 | 704 | 0.6− | 0.2+ | 2006 01 28 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 644 | 0.5+ | 1.3+ | 2005 11 30 | 704 | 0.4+ | 0.4+ | 2006 01 28 | 691 | 0.1− | 0.1− |

**2005 YY$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.15448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18064990 | $\omega$ | 231.71214 | | +0.96030619 | +0.07387226 | |
| $a$ | 3.0991617 | $\Omega$ | 122.48202 | | −0.01344099 | +0.97543050 | |
| $e$ | 0.3259919 | $i$ | 18.59479 | | −0.27862404 | +0.20755293 | |
| $P$ | 5.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 28 | 645 | 0.1+ | 0.1+ | 2004 08 21 | E12 | 0.1+ | 0.4+ | 2005 12 27 | 691 | 0.3− | 0.2+ |
| 2003 04 28 | 645 | 0.0 | 0.1+ | 2004 08 21 | E12 | 0.5− | 0.1− | 2005 12 27 | 691 | 0.1+ | 0.4+ |
| 2004 07 17 | 704 | 0.8+ | 0.1+ | 2004 08 21 | E12 | 0.3− | 0.4+ | 2005 12 31 | 691 | 0.3+ | 0.4+ |
| 2004 07 17 | 704 | 0.5− | 1.3+ | 2004 08 21 | E12 | 0.0 | 0.2+ | 2005 12 31 | 691 | 0.2− | 0.2− |
| 2004 07 17 | 704 | 0.8− | 1.9+ | 2004 09 18 | E12 | 0.4+ | 0.5− | 2005 12 31 | 691 | 0.2+ | 0.3+ |
| 2004 08 08 | 704 | 0.2+ | 0.1− | 2004 09 18 | E12 | 0.1+ | 0.4+ | 2006 01 04 | 691 | 0.1+ | 0.1− |
| 2004 08 08 | 704 | 0.3− | 0.2+ | 2004 09 18 | E12 | 0.9− | 0.1+ | 2006 01 04 | 691 | 0.1+ | 0.3+ |
| 2004 08 08 | 704 | 0.4+ | 0.6+ | 2004 09 18 | E12 | 0.4+ | 0.7− | 2006 01 04 | 691 | 0.1− | 0.0 |
| 2004 08 08 | 704 | 0.1− | 0.2+ | 2005 12 27 | 691 | 0.3− | 0.3+ | | | | |

**2005 YP$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.40810 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22822338 | $\omega$ | 225.77083 | | +0.93499188 | −0.35429126 | |
| $a$ | 2.6519335 | $\Omega$ | 154.96565 | | +0.33543191 | +0.86834425 | |
| $e$ | 0.1101980 | $i$ | 2.21664 | | +0.11521985 | +0.34706768 | |
| $P$ | 4.32 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 291 | 0.3+ | 0.8+ | 2004 09 10 | 691 | 0.2+ | 0.5+ | 2005 12 27 | 691 | 0.1− | 0.1+ |
| 2002 02 13 | 291 | 0.4+ | 0.9+ | 2004 09 15 | 691 | 0.4− | 0.4+ | 2005 12 27 | G96 | 0.4− | 0.7− |
| 2002 02 13 | 291 | 0.1+ | 1.1+ | 2004 09 15 | 691 | 1.0− | 0.2+ | 2005 12 27 | G96 | 0.0 | 0.8− |
| 2004 08 12 | 807 | 0.2− | 0.1− | 2004 09 15 | 691 | 0.3+ | 0.3+ | 2005 12 27 | G96 | 0.0 | 1.0− |
| 2004 08 12 | 807 | 0.1− | 0.6+ | 2005 11 01 | G96 | 0.3+ | 0.8− | 2005 12 27 | G96 | 0.4+ | 0.1− |
| 2004 08 22 | 691 | 0.1+ | 0.3+ | 2005 11 01 | G96 | 0.4+ | 0.6− | 2005 12 31 | 691 | 0.4− | 0.3+ |
| 2004 08 22 | 691 | 0.1− | 0.3+ | 2005 11 01 | G96 | 0.1− | 0.7− | 2005 12 31 | 691 | 0.1+ | 0.2+ |
| 2004 08 22 | 691 | 0.1− | 0.2+ | 2005 11 01 | G96 | 0.4− | 0.4− | 2005 12 31 | 691 | 0.1+ | 0.0 |
| 2004 09 10 | 691 | 0.3+ | 0.4− | 2005 12 27 | 691 | 0.1+ | 0.1− | | | | |
| 2004 09 10 | 691 | 0.1+ | 0.4+ | 2005 12 27 | 691 | 0.0 | 0.1− | | | | |

**2005 YT$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.32502 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31003372 | $\omega$ | 285.85704 | | +0.66327205 | −0.74685157 | |
| $a$ | 2.1620385 | $\Omega$ | 122.49324 | | +0.70647686 | +0.60379489 | |
| $e$ | 0.0737580 | $i$ | 3.24742 | | +0.24690205 | +0.27864757 | |
| $P$ | 3.18 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 291 | 0.3− | 0.0 | 2003 02 04 | 644 | 0.1+ | 0.1+ | 2005 12 28 | 691 | 0.1+ | 0.2+ |
| 2003 01 27 | 291 | 0.3+ | 0.1− | 2003 02 04 | 644 | 0.0 | 0.3+ | 2005 12 28 | 691 | 0.7− | 0.6+ |
| 2003 01 27 | 291 | 0.0 | 0.1− | 2003 02 04 | 644 | 0.0 | 0.1+ | 2005 12 28 | 691 | 0.3+ | 0.1+ |
| 2003 01 30 | 644 | 0.1+ | 0.2+ | 2005 12 04 | 691 | 0.1+ | 0.1+ | 2005 12 30 | 704 | 0.3+ | 0.6− |
| 2003 01 30 | 644 | 0.1− | 0.1+ | 2005 12 04 | 691 | 0.1− | 0.1− | 2005 12 30 | 704 | 0.4+ | 1.8− |
| 2003 01 30 | 644 | 0.0 | 0.1+ | 2005 12 04 | 691 | 0.1+ | 0.0 | 2005 12 30 | 704 | 0.4+ | 0.8− |

**2005 YS$_{166}$ = 2000 QO$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.40416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23930025 | $\omega$ | 308.74989 | | −0.42457358 | | −0.90526062 |
| $a$ | 2.5694526 | $\Omega$ | 166.34862 | | +0.84973435 | | −0.40432730 |
| $e$ | 0.1424537 | $i$ | 3.76745 | | +0.31255209 | | −0.13047088 |
| $P$ | 4.12 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 807 | 0.2− | 0.0 | 2005 12 27 | 691 | 0.4+ | 0.1+ | 2006 01 04 | 691 | 0.6+ | 0.2+ |
| 2000 08 25 | 807 | 0.1− | 0.0 | 2006 01 02 | G96 | 1.1− | 0.2− | 2006 01 04 | 691 | 0.2− | 0.3+ |
| 2000 08 27 | 807 | 0.2+ | 0.1− | 2006 01 02 | G96 | 0.5− | 1.0− | 2006 02 04 | G96 | 0.3− | 0.4− |
| 2000 08 27 | 807 | 0.2+ | 0.1− | 2006 01 02 | G96 | 0.4− | 0.6− | 2006 02 04 | G96 | 0.0 | 0.3− |
| 2005 12 27 | 691 | 0.1+ | 0.2− | 2006 01 02 | G96 | 0.4− | 0.5− | 2006 02 04 | G96 | 0.2+ | 0.3− |
| 2005 12 27 | 691 | 0.5− | 0.1+ | 2006 01 04 | 691 | 0.2+ | 0.2+ | 2006 02 04 | G96 | 0.2+ | 0.1− |

**2005 YT$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.06093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17702619 | $\omega$ | 53.04266 | | −0.98811592 | | +0.01235515 |
| $a$ | 3.1413118 | $\Omega$ | 127.15318 | | −0.05598019 | | −0.95723596 |
| $e$ | 0.1584197 | $i$ | 11.08305 | | +0.14315426 | | −0.28904441 |
| $P$ | 5.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 0.1− | 0.4− | 2005 12 27 | 691 | 0.1+ | 0.5+ | 2006 01 23 | G96 | 0.7− | 0.3+ |
| 1995 02 05 | 691 | 0.1− | 0.5− | 2005 12 27 | 691 | 0.1− | 0.4+ | 2006 01 23 | G96 | 0.4− | 0.0 |
| 1995 02 05 | 691 | 0.0 | 0.3− | 2005 12 27 | 691 | 0.1− | 0.5+ | 2006 01 23 | G96 | 0.3− | 0.3+ |
| 1996 06 17 | 691 | 0.2+ | 0.0 | 2006 01 02 | G96 | 0.6+ | 0.2− | 2006 02 06 | G96 | 0.0 | 0.1− |
| 1996 06 17 | 691 | 0.3+ | 0.2+ | 2006 01 02 | G96 | 0.2+ | 0.1− | 2006 02 06 | G96 | 0.1+ | 0.2+ |
| 1996 06 17 | 691 | 0.4− | 0.4+ | 2006 01 02 | G96 | 0.0 | 0.3− | 2006 02 06 | G96 | 0.2+ | 0.1− |
| 2001 03 16 | 704 | 0.4+ | 0.1− | 2006 01 02 | G96 | 0.2+ | 0.4− | 2006 02 06 | G96 | 0.2+ | 0.1+ |
| 2001 03 16 | 704 | 0.1− | 1.0− | 2006 01 07 | 691 | 0.1− | 0.1− | 2006 02 28 | G96 | 0.2+ | 0.2+ |
| 2001 03 16 | 704 | 0.2− | 0.7− | 2006 01 07 | 691 | 0.1+ | 0.2− | 2006 02 28 | G96 | 0.2+ | 0.3+ |
| 2001 03 16 | 704 | 0.3+ | 1.3+ | 2006 01 07 | 691 | 0.0 | 0.2+ | 2006 02 28 | G96 | 0.1+ | 0.2+ |
| 2001 03 16 | 704 | 0.0 | 0.7+ | 2006 01 23 | G96 | 0.3− | 0.1+ | 2006 02 28 | G96 | 0.1+ | 0.3+ |

**2005 YX$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.08768 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20949132 | $\omega$ | 33.21655 | | +0.93304066 | | −0.35958871 |
| $a$ | 2.8077517 | $\Omega$ | 347.84239 | | +0.31710429 | | +0.83700340 |
| $e$ | 0.0894502 | $i$ | 3.11639 | | +0.16994114 | | +0.41245761 |
| $P$ | 4.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 645 | 0.1− | 0.2+ | 2005 10 30 | G96 | 0.3+ | 0.3− | 2005 11 28 | 704 | 0.7+ | 0.2+ |
| 2000 11 30 | 645 | 0.0 | 0.1+ | 2005 11 06 | 691 | 0.2− | 0.2+ | 2005 11 28 | 704 | (2.2+ | 1.4+) |
| 2002 02 10 | 704 | 0.1+ | 0.6− | 2005 11 06 | 691 | 0.3− | 0.3+ | 2005 12 28 | 644 | 0.1+ | 0.0 |
| 2002 02 10 | 704 | 0.3− | 0.2− | 2005 11 06 | 691 | 0.1− | 0.1+ | 2005 12 28 | 644 | 0.4+ | 0.2− |
| 2002 02 10 | 704 | 0.3− | 0.0 | 2005 11 10 | 691 | (3.1+ | 0.9+) | 2005 12 28 | 644 | 0.1+ | 0.1− |
| 2003 04 26 | 691 | 0.1− | 0.7+ | 2005 11 10 | 691 | 0.1+ | 0.3+ | 2006 01 02 | G96 | 0.2− | 0.7− |
| 2003 04 26 | 691 | 0.3+ | 0.6+ | 2005 11 10 | 691 | 0.0 | 0.1+ | 2006 01 02 | G96 | 0.3+ | 0.6− |
| 2003 04 26 | 691 | 0.6+ | 0.6+ | 2005 11 21 | 691 | 0.0 | 0.1+ | 2006 01 02 | G96 | 0.7− | 0.6− |
| 2005 10 30 | G96 | 0.1+ | 0.5− | 2005 11 21 | 691 | 0.1+ | 0.2+ | 2006 01 02 | G96 | 0.2− | 0.2− |
| 2005 10 30 | G96 | 0.2− | 0.2− | 2005 11 21 | 691 | 0.1− | 0.1+ | | | | |
| 2005 10 30 | G96 | 0.0 | 0.4− | 2005 11 28 | 704 | 0.8+ | 0.1+ | | | | |

**2005 YZ$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.44020 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19094947 | $\omega$ | 53.44708 | | −0.52372875 | | +0.85186730 |
| $a$ | 2.9866918 | $\Omega$ | 184.97966 | | −0.80045514 | | −0.49431125 |
| $e$ | 0.0910041 | $i$ | 3.63608 | | −0.29151290 | | −0.17314300 |
| $P$ | 5.16 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.2+ | 0.2− | 2002 05 19 | 644 | 0.4+ | 0.2+ | 2006 01 02 | G96 | 0.0 | 0.2− |
| 1999 11 01 | 691 | 0.1+ | 0.1− | 2002 05 19 | 644 | 0.2+ | 0.5+ | 2006 01 02 | G96 | 0.4− | 0.1− |
| 1999 11 01 | 691 | 0.1− | 0.1− | 2003 09 19 | 291 | 0.1− | 0.0 | 2006 01 02 | G96 | 0.6− | 0.0 |
| 1999 11 14 | 691 | 0.2+ | 0.1− | 2003 09 19 | 291 | 0.1− | 0.1+ | 2006 01 02 | G96 | 0.0 | 0.0 |
| 1999 11 14 | 691 | 0.3− | 0.2+ | 2003 09 19 | 291 | 0.0 | 0.1− | 2006 01 31 | G96 | 0.2+ | 0.1− |
| 1999 11 14 | 691 | 0.1− | 0.2+ | 2004 10 11 | 695 | 0.1+ | 0.0 | 2006 01 31 | G96 | 0.5− | 0.0 |
| 2002 04 21 | 691 | 0.1− | 0.3+ | 2004 10 11 | 695 | 0.1− | 0.3+ | 2006 01 31 | G96 | 1.5− | 0.4+ |
| 2002 04 21 | 691 | 0.0 | 0.5+ | 2004 11 03 | 691 | 0.1− | 0.3+ | 2006 02 01 | G96 | 0.1+ | 0.1− |
| 2002 04 21 | 691 | 0.3+ | 0.1+ | 2004 11 03 | 691 | 0.1+ | 0.7+ | 2006 02 01 | G96 | 0.5− | 0.1− |
| 2002 05 10 | 704 | 0.3− | 1.0+ | 2004 11 03 | 691 | 0.2− | 0.3+ | 2006 02 01 | G96 | 0.1+ | 0.1− |
| 2002 05 10 | 704 | 0.1+ | 0.5− | 2005 12 29 | 291 | 0.3+ | 0.1+ | 2006 02 01 | G96 | 0.0 | 0.2+ |
| 2002 05 10 | 704 | 0.2− | 0.3− | 2005 12 29 | 291 | 0.3+ | 0.1+ | | | | |
| 2002 05 19 | 644 | 0.3+ | 0.3+ | 2005 12 29 | 291 | 0.1+ | 0.1− | | | | |

**2005 YX$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.46392 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24138625 | $\omega$ | 61.34757 | | +0.46000161 | | −0.88790120 |
| $a$ | 2.5546282 | $\Omega$ | 1.30310 | | +0.70719067 | | +0.36263635 |
| $e$ | 0.1153630 | $i$ | 13.93340 | | +0.53691701 | | +0.28306597 |
| $P$ | 4.08 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 22 | 809 | 0.2+ | 1.6+ | 2002 02 02 | 644 | 0.5+ | 1.1+ | 2005 11 10 | 703 | 0.8+ | 0.5− |
| 1992 09 22 | 809 | 0.6− | 0.7+ | 2002 02 02 | 644 | 0.5+ | 1.5+ | 2005 11 10 | 703 | 0.1− | 0.6− |
| 1992 09 22 | 809 | 1.5− | 0.6+ | 2002 02 02 | 644 | 0.4+ | 1.2+ | 2005 12 22 | 704 | 0.2+ | 0.3+ |
| 2000 08 01 | 704 | 0.4− | 0.1+ | 2002 02 12 | 644 | 0.3+ | 0.6+ | 2005 12 22 | 704 | 0.5+ | 0.2− |
| 2000 08 01 | 704 | 0.7+ | 0.5+ | 2002 02 12 | 644 | 0.3+ | 0.4+ | 2005 12 22 | 704 | 0.5+ | 0.3+ |
| 2000 08 01 | 704 | 0.6+ | 1.8− | 2002 02 12 | 644 | 0.5+ | 0.3+ | 2005 12 22 | 704 | 0.3+ | 0.5+ |
| 2000 08 01 | 704 | 0.3− | 1.8− | 2002 03 05 | 704 | 0.0 | 0.2+ | 2005 12 22 | 704 | 1.2+ | 0.1+ |
| 2001 12 09 | 704 | 0.1− | 1.3+ | 2002 03 05 | 704 | 0.4+ | 0.8+ | 2005 12 30 | 703 | 0.3− | 0.2− |
| 2001 12 09 | 704 | 0.5+ | 2.0+ | 2002 03 05 | 704 | 0.1− | 0.3+ | 2005 12 30 | 703 | 0.2− | 0.1− |
| 2001 12 09 | 704 | 0.6+ | 1.8+ | 2002 03 05 | 704 | 0.4+ | 1.0+ | 2005 12 30 | 703 | 0.1− | 0.1− |
| 2001 12 20 | 645 | 0.1− | 0.1− | 2004 08 16 | 644 | 0.0 | 0.5+ | 2005 12 30 | 703 | 0.3− | 0.1+ |
| 2001 12 20 | 645 | 0.1− | 0.2− | 2004 08 16 | 644 | 0.2+ | 0.4+ | 2006 02 03 | 703 | 0.2− | 0.3− |
| 2001 12 22 | 704 | 0.4+ | 0.0 | 2004 08 16 | 644 | 0.0 | 0.5+ | 2006 02 03 | 703 | 0.5− | 0.2− |
| 2001 12 22 | 704 | 1.2+ | 0.8+ | 2004 09 05 | E12 | 0.1+ | 0.3− | 2006 02 03 | 703 | 0.5− | 0.3− |
| 2001 12 22 | 704 | 0.6+ | 0.4− | 2004 09 05 | E12 | 0.4+ | 0.3− | 2006 02 03 | 703 | 0.4− | 0.5− |
| 2001 12 22 | 704 | 0.6+ | 0.0 | 2005 10 31 | 699 | 1.0+ | 0.5− | 2006 02 28 | 703 | 0.5− | 0.3+ |
| 2002 01 25 | 704 | 0.3+ | 0.3− | 2005 10 31 | 699 | 0.9− | 0.1− | 2006 02 28 | 703 | 0.0 | 0.8− |
| 2002 01 25 | 704 | 0.4+ | 1.0− | 2005 10 31 | 699 | 0.4− | 0.9− | 2006 02 28 | 703 | 0.2− | 0.5+ |
| 2002 01 25 | 704 | 0.0 | 0.4− | 2005 10 31 | 699 | 1.1− | 0.4+ | 2006 02 28 | 703 | 1.2− | 1.7− |
| 2002 01 25 | 704 | 0.1+ | 0.1− | 2005 11 10 | 703 | 0.2− | 0.7− | | | | |
| 2002 01 25 | 704 | 0.3− | 0.5− | 2005 11 10 | 703 | 0.5+ | 0.7− | | | | |

**2005 YO$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.88688 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23462463 | $\omega$ | 66.47214 | | +0.11847804 | | −0.99131177 |
| $a$ | 2.6034765 | $\Omega$ | 17.02131 | | +0.82492554 | | +0.06624092 |
| $e$ | 0.1431076 | $i$ | 11.25449 | | +0.55268509 | | +0.11363587 |
| $P$ | 4.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 26 | 446 | 0.3+ | 0.2+ | 2002 04 01 | 644 | 0.4− | 0.3− | 2005 12 30 | 703 | 0.5− | 0.4− |
| 2001 12 26 | 446 | 0.0 | 0.3− | 2002 04 01 | 644 | 0.5− | 0.3− | 2005 12 30 | 703 | 0.3− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 23 | 704 | 0.5+ | 0.5− | 2002 04 01 | 644 | 0.4− | 0.2− | 2005 12 30 | 703 | 0.1+ | 0.2− |
| 2002 01 23 | 704 | 0.8+ | 0.0 | 2005 11 11 | 703 | 0.1+ | 0.6− | 2006 01 22 | 704 | 0.8− | 0.4+ |
| 2002 01 23 | 704 | 0.3+ | 0.8+ | 2005 11 11 | 703 | 0.7− | 0.5− | 2006 01 22 | 704 | 0.3− | 0.0 |
| 2002 01 23 | 704 | 0.4+ | 0.4− | 2005 11 11 | 703 | 0.1+ | 0.7+ | 2006 01 22 | 704 | 0.2− | 0.1− |
| 2002 01 23 | 704 | 0.1− | 0.5+ | 2005 11 11 | 703 | 0.3− | 0.5+ | 2006 01 22 | 704 | 0.7− | 0.2+ |
| 2002 02 12 | 644 | 0.1− | 0.1− | 2005 12 23 | 704 | 0.3+ | 1.2− | 2006 01 22 | 703 | 0.4− | 0.5+ |
| 2002 02 12 | 644 | 0.0 | 0.0 | 2005 12 23 | 704 | 0.3+ | 0.1− | 2006 01 22 | 703 | 0.4− | 0.3− |
| 2002 02 12 | 644 | 1.0− | 0.2+ | 2005 12 23 | 704 | 0.2+ | 0.8− | 2006 01 22 | 703 | 0.5− | 0.4+ |
| 2002 02 22 | 644 | 0.4+ | 0.3+ | 2005 12 23 | 704 | 1.5+ | 0.2+ | 2006 01 22 | 703 | 0.2+ | 0.9+ |
| 2002 02 22 | 644 | 0.3− | 0.1− | 2005 12 23 | 704 | 1.9+ | 0.1− | | | | |
| 2002 02 22 | 644 | 0.0 | 0.0 | 2005 12 30 | 703 | 0.4− | 0.1− | | | | |

**2005 YX$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 355.95005 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.17847766 | $\omega$ | 215.82404 | | −0.93186241 | −0.28801955 |
| $a$ | 3.1242574 | $\Omega$ | 305.94397 | | +0.36242642 | −0.76700015 |
| $e$ | 0.1516675 | $i$ | 15.81422 | | −0.01671955 | −0.57337206 |
| $P$ | 5.52 | $H$ | 14.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 704 | 0.2− | 0.2+ | 2001 03 15 | 608 | 0.0 | 0.9+ | 2005 12 24 | 704 | 0.5− | 0.5− |
| 2001 01 26 | 704 | 0.9+ | 0.7+ | 2001 03 15 | 608 | 0.3− | 0.5+ | 2005 12 24 | 704 | 0.6− | 0.8− |
| 2001 01 26 | 704 | 0.2− | 0.0 | 2001 03 15 | 608 | 0.6+ | 0.2+ | 2005 12 24 | 704 | 0.3− | 0.2− |
| 2001 01 26 | 704 | 0.1+ | 1.2+ | 2001 03 23 | 699 | 1.7+ | 1.1− | 2005 12 30 | 704 | (0.9+ | 2.4+) |
| 2001 01 26 | 704 | 0.8+ | 0.2− | 2001 03 23 | 699 | 0.1+ | 0.6− | 2005 12 30 | 704 | 1.0+ | 1.2+ |
| 2001 02 17 | 704 | 0.5+ | 0.9+ | 2001 03 23 | 699 | 0.2+ | 0.6+ | 2005 12 30 | 704 | 0.7+ | 1.8+ |
| 2001 02 17 | 704 | 1.0+ | 0.1− | 2001 03 23 | 699 | 0.2− | 0.9− | 2005 12 30 | 704 | 0.6+ | 0.1+ |
| 2001 02 17 | 704 | 0.2− | 0.2− | 2004 10 04 | 644 | 0.6− | 0.4+ | 2006 01 07 | 704 | 0.7+ | 0.3− |
| 2001 02 17 | 704 | 1.3− | 0.7+ | 2004 10 04 | 644 | 0.1− | 0.4+ | 2006 01 07 | 704 | 0.3+ | 0.8− |
| 2001 02 17 | 608 | 1.0− | 0.5− | 2004 10 04 | 644 | 0.3+ | 0.1+ | 2006 01 07 | 704 | 0.1− | 0.7− |
| 2001 02 17 | 608 | 0.9− | 0.7− | 2005 12 24 | 704 | 0.8− | 0.9− | 2006 01 07 | 704 | 0.7− | 0.1+ |
| 2001 02 17 | 608 | 0.8− | 0.7− | 2005 12 24 | 704 | 0.6− | 0.1+ | | | | |

**2005 YA$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 116.42257 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22452670 | $\omega$ | 273.39786 | | +0.89907691 | −0.38783019 |
| $a$ | 2.6809624 | $\Omega$ | 109.50329 | | +0.43540368 | +0.84051070 |
| $e$ | 0.1955493 | $i$ | 12.44250 | | −0.04565465 | +0.37832461 |
| $P$ | 4.39 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 10 | 704 | 2.1− | 1.5+ | 2000 10 02 | 699 | 0.8+ | 0.7+ | 2005 12 27 | 704 | 1.7+ | 0.7+ |
| 2000 08 10 | 704 | 1.1− | 1.8+ | 2000 10 18 | 699 | 0.1− | 0.4+ | 2005 12 31 | 691 | 0.1− | 0.0 |
| 2000 08 10 | 704 | 0.6+ | 0.5− | 2000 10 18 | 699 | 1.7− | 0.0 | 2005 12 31 | 691 | 0.1+ | 0.1+ |
| 2000 08 10 | 704 | 0.6+ | 0.7− | 2000 10 18 | 699 | 1.9− | 0.2− | 2005 12 31 | 691 | 0.0 | 0.1+ |
| 2000 09 20 | 704 | 2.6− | 1.6+ | 2000 10 18 | 699 | 0.0 | 0.5+ | 2005 12 31 | 704 | 0.0 | 0.2− |
| 2000 09 20 | 704 | 0.2+ | 0.5− | 2002 02 08 | 704 | 0.7− | 0.2+ | 2005 12 31 | 704 | 0.1+ | 0.9− |
| 2000 09 20 | 704 | 0.1+ | 0.5− | 2002 02 08 | 704 | 0.9+ | 0.8+ | 2005 12 31 | 704 | 0.6− | 0.2+ |
| 2000 09 20 | 704 | 1.4+ | 2.4− | 2002 02 08 | 704 | 0.1+ | 0.6+ | 2005 12 31 | 704 | 0.6− | 0.1+ |
| 2000 10 02 | 699 | 0.4− | 0.5+ | 2004 07 21 | E12 | 0.2+ | 0.3+ | 2006 01 06 | 691 | 0.0 | 0.4− |
| 2000 10 02 | 699 | 1.1+ | 0.0 | 2004 07 21 | E12 | 0.1− | 0.3+ | 2006 01 06 | 691 | 0.1+ | 0.0 |
| 2000 10 02 | 699 | 0.6− | 0.4− | 2004 07 21 | E12 | 0.1− | 0.2+ | 2006 01 06 | 691 | 0.9− | 0.4− |
| 2000 10 02 | 699 | 2.2+ | 0.7+ | 2004 07 21 | E12 | 0.1+ | 0.1− | 2006 01 24 | 704 | 0.1− | 0.4+ |
| 2000 10 02 | 699 | 0.1− | 0.4+ | 2005 12 27 | 704 | 0.7+ | 0.2+ | 2006 01 24 | 704 | 0.5+ | 0.3+ |
| 2000 10 02 | 699 | (3.2+ | 1.2−) | 2005 12 27 | 704 | (0.8+ | 2.3+) | 2006 01 24 | 704 | 0.0 | 0.0 |
| 2000 10 02 | 699 | 0.4− | 0.5− | 2005 12 27 | 704 | 1.3+ | 1.0+ | 2006 01 24 | 704 | 0.1+ | 0.3+ |

**2005 YM$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 48.38953 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23987618 | $\omega$ | 72.16192 | | −0.53748951 | −0.83655287 |
| $a$ | 2.5653382 | $\Omega$ | 50.82520 | | +0.71248678 | −0.51789531 |
| $e$ | 0.1024415 | $i$ | 7.87595 | | +0.45107385 | −0.17878408 |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.3− | 0.1− | 2002 02 10 | 704 | 0.5− | 0.1− | 2006 01 02 | 703 | 0.8− | 0.0 |
| 2001 12 23 | 704 | 0.5+ | 0.3+ | 2002 02 10 | 704 | 0.1− | 0.0 | 2006 01 02 | 703 | 0.5+ | 1.5− |
| 2001 12 23 | 704 | 0.2− | 0.1+ | 2002 02 10 | 704 | 0.0 | 0.8− | 2006 01 07 | 704 | 1.1+ | 0.7+ |
| 2001 12 23 | 704 | 0.1− | 0.3− | 2002 02 10 | 704 | 0.1+ | 0.4− | 2006 01 07 | 703 | 0.4− | 0.3− |
| 2002 01 08 | 704 | (2.5+ | 0.8−) | 2002 02 10 | 704 | 0.2− | 0.0 | 2006 01 07 | 703 | 0.4− | 0.8− |
| 2002 01 08 | 704 | 0.2− | 0.1+ | 2005 12 29 | 644 | 0.3− | 0.1− | 2006 01 07 | 704 | 1.0+ | 0.2+ |
| 2002 01 08 | 704 | 0.7− | 0.1+ | 2005 12 29 | 644 | 0.3− | 0.0 | 2006 01 07 | 703 | (1.2+ | 2.2−) |
| 2002 01 14 | 644 | 0.4+ | 0.5+ | 2005 12 29 | 644 | 0.2− | 0.2− | 2006 01 07 | 703 | 0.7− | 0.1+ |
| 2002 01 14 | 644 | 1.1+ | 0.6+ | 2006 01 02 | 703 | 0.3− | 1.1+ | 2006 01 07 | 704 | 0.3+ | 0.1− |
| 2002 01 14 | 644 | 0.5+ | 0.5+ | 2006 01 02 | 703 | 0.1+ | 0.2− | 2006 01 07 | 704 | 0.5+ | 0.4+ |

**2005 YT$_{175}$ = 2001 UU$_{110}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 100.35699 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27403451 | $\omega$ | 35.50815 | | +0.29409934 | −0.95555606 |
| $a$ | 2.3474655 | $\Omega$ | 37.40031 | | +0.86894407 | +0.25840900 |
| $e$ | 0.1613300 | $i$ | 1.92943 | | +0.39804745 | +0.14190629 |
| $P$ | 3.60 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.6+ | 1.1+ | 2001 11 16 | 291 | 0.4+ | 0.4− | 2005 12 30 | 691 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.5− | 0.4+ | 2001 11 16 | 291 | 0.6+ | 0.7− | 2005 12 30 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 704 | 0.5− | 0.0 | 2001 11 16 | 291 | 0.7+ | 0.5− | 2006 01 04 | 691 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 1.2− | 0.2+ | 2003 03 07 | 695 | 0.3+ | 0.8+ | 2006 01 04 | 691 | 0.2− | 0.7+ |
| 2001 10 21 | 704 | 0.3− | 0.7+ | 2003 03 07 | 695 | 0.3+ | 0.7+ | 2006 01 04 | 691 | 0.2− | 0.1− |
| 2001 10 23 | 704 | (0.6− | 4.0−) | 2005 12 22 | 691 | 0.2+ | 0.2− | 2006 01 28 | G96 | 0.0 | 0.4− |
| 2001 10 23 | 704 | (0.4+ | 3.3−) | 2005 12 22 | 691 | 0.4+ | 0.1+ | 2006 01 28 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | (0.1+ | 3.4−) | 2005 12 22 | 691 | 0.0 | 0.9+ | 2006 01 28 | G96 | 0.3− | 0.3− |
| 2001 10 23 | 704 | (0.3+ | 3.4−) | 2005 12 30 | 691 | 0.0 | 0.1− | 2006 01 28 | G96 | 0.2− | 0.3− |

**2005 YJ$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 196.79603 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.26546447 | $\omega$ | 227.77399 | | +0.91346532 | +0.38973632 |
| $a$ | 2.3977199 | $\Omega$ | 108.98381 | | −0.32731158 | +0.87455648 |
| $e$ | 0.1244192 | $i$ | 7.10680 | | −0.24176071 | +0.28854213 |
| $P$ | 3.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.0 | 0.0 | 2004 09 16 | E12 | 0.1+ | 0.6− | 2006 01 07 | G96 | 0.0 | 0.2− |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2005 12 26 | G96 | 1.0+ | 0.1− | 2006 01 07 | G96 | 0.3+ | 0.4− |
| 2004 08 08 | 704 | 0.4+ | 0.8+ | 2005 12 26 | G96 | 0.4− | 0.3− | 2006 01 07 | G96 | 0.2+ | 0.1− |
| 2004 08 08 | 704 | 0.1− | 0.6+ | 2005 12 26 | G96 | 0.1+ | 0.5− | 2006 01 09 | 291 | 0.2− | 0.1+ |
| 2004 08 08 | 704 | 0.2+ | 0.5+ | 2005 12 26 | G96 | 0.4− | 0.1− | 2006 01 09 | 291 | 0.1+ | 0.2+ |
| 2004 08 22 | E12 | 0.1+ | 0.0 | 2005 12 30 | 691 | 0.3+ | 0.2− | 2006 01 09 | 291 | 0.1+ | 0.3+ |
| 2004 08 22 | E12 | 0.3− | 0.4+ | 2005 12 30 | 691 | 0.1− | 0.3− | 2006 01 09 | G96 | 0.0 | 0.1+ |
| 2004 08 22 | E12 | 0.2+ | 1.0− | 2005 12 30 | 691 | 0.3− | 0.4− | 2006 01 09 | G96 | 0.4− | 0.2+ |
| 2004 08 22 | E12 | 0.4− | 0.1− | 2006 01 04 | 691 | 0.6+ | 0.1− | 2006 01 09 | G96 | 0.4− | 0.3− |
| 2004 09 16 | E12 | 0.2− | 0.3− | 2006 01 04 | 691 | 0.0 | 0.8+ | 2006 01 09 | G96 | 0.2− | 0.1− |
| 2004 09 16 | E12 | 0.3+ | 0.1+ | 2006 01 04 | 691 | 0.2− | 0.2+ | | | | |
| 2004 09 16 | E12 | 0.4− | 0.6− | 2006 01 07 | G96 | 0.4− | 0.3− | | | | |

**2005 YC$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 38.59867 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27586906 | $\omega$ | 84.50791 | | −0.80745852 | | −0.58691683 | |
| $a$ | 2.3370467 | $\Omega$ | 59.53965 | | +0.51023415 | | −0.74543966 | |
| $e$ | 0.1401664 | $i$ | 3.95762 | | +0.29609434 | | −0.31598788 | |
| $P$ | 3.57 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 691 | 0.2− | 0.4+ | 2003 05 11 | 691 | 0.4− | 0.3+ | 2005 11 30 | 691 | 0.2− | 0.0 |
| 2001 10 25 | 691 | 0.1− | 0.5+ | 2003 05 11 | 691 | 0.4+ | 0.2+ | 2005 12 29 | 704 | 0.0 | 0.7+ |
| 2001 10 25 | 691 | 0.2− | 0.3+ | 2003 05 27 | 291 | 0.3+ | 0.3+ | 2005 12 29 | 704 | 0.6+ | 0.1− |
| 2003 04 25 | 691 | 0.3− | 0.1− | 2003 05 27 | 291 | 0.1+ | 0.8+ | 2005 12 29 | 704 | 0.0 | 1.1+ |
| 2003 04 25 | 691 | 0.0 | 0.1− | 2003 05 27 | 291 | 0.2+ | 0.1+ | 2006 01 03 | 704 | 0.1− | 0.6+ |
| 2003 04 25 | 691 | 0.3+ | 0.3− | 2005 11 30 | 691 | 0.1+ | 0.1+ | 2006 01 03 | 704 | 0.0 | 0.9− |
| 2003 05 11 | 691 | 0.1+ | 0.2+ | 2005 11 30 | 691 | 0.0 | 0.1+ | 2006 01 03 | 704 | 0.1+ | 0.7− |

**2005 YA$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 303.49852 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28033816 | $\omega$ | 318.80034 | | −0.13583848 | | +0.98723496 | |
| $a$ | 2.3121424 | $\Omega$ | 303.23467 | | −0.88094152 | | −0.15876354 | |
| $e$ | 0.1265056 | $i$ | 5.70568 | | −0.45331000 | | +0.01269968 | |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 691 | 0.4− | 0.2− | 2006 01 04 | 691 | 0.6+ | 0.4+ | 2006 01 27 | 691 | 0.2+ | 0.0 |
| 1999 01 18 | 691 | 0.2− | 0.8− | 2006 01 04 | 691 | 0.5+ | 0.0 | 2006 01 27 | 691 | 0.2+ | 0.1− |
| 1999 01 18 | 691 | 0.0 | 0.5− | 2006 01 05 | G96 | 0.0 | 0.5− | 2006 02 24 | G96 | 0.2− | 0.1+ |
| 2003 03 29 | 699 | 0.4− | 0.1+ | 2006 01 05 | G96 | 0.2+ | 0.1− | 2006 02 24 | G96 | 0.0 | 0.0 |
| 2003 03 29 | 699 | 0.5+ | 0.8+ | 2006 01 05 | G96 | 0.6− | 0.6− | 2006 02 24 | G96 | 0.1− | 0.2+ |
| 2003 03 29 | 699 | 0.1+ | 0.3− | 2006 01 05 | G96 | 0.2− | 0.3− | 2006 02 24 | G96 | 0.5− | 0.0 |
| 2003 03 29 | 699 | 0.0 | 0.2− | 2006 01 24 | 704 | 0.2+ | 0.2− | 2006 03 03 | G96 | 0.0 | 1.0+ |
| 2005 12 30 | 691 | 0.0 | 0.6+ | 2006 01 24 | 704 | 0.6+ | 0.6− | 2006 03 03 | G96 | 0.1+ | 0.2+ |
| 2005 12 30 | 691 | 0.1− | 0.5+ | 2006 01 24 | 704 | 0.5+ | 0.2− | 2006 03 03 | G96 | 0.4− | 0.1+ |
| 2005 12 30 | 691 | 0.0 | 0.1+ | 2006 01 24 | 704 | 1.1− | 1.7+ | 2006 03 03 | G96 | 0.3− | 0.0 |
| 2006 01 04 | 691 | 0.4− | 0.1− | 2006 01 27 | 691 | 0.1+ | 0.0 | | | | |

**2005 YZ$_{194}$ = 1999 TY$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 136.65172 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18629372 | $\omega$ | 240.57994 | | +0.98190180 | | −0.11139773 | |
| $a$ | 3.0362480 | $\Omega$ | 125.40489 | | +0.15252199 | | +0.94454680 | |
| $e$ | 0.1127067 | $i$ | 10.83107 | | −0.11227595 | | +0.30890432 | |
| $P$ | 5.29 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 17 | 691 | 0.2− | 0.5+ | 2004 09 17 | 699 | 0.1+ | 0.5+ | 2004 10 20 | 703 | 0.4− | 0.3+ |
| 1996 02 17 | 691 | 0.2− | 0.1+ | 2004 09 17 | 699 | 0.9− | 0.7+ | 2004 10 20 | 703 | 0.7+ | 0.3+ |
| 1996 02 17 | 691 | 0.4+ | 0.0 | 2004 09 17 | 699 | 0.6− | 0.5− | 2005 12 31 | 691 | 0.0 | 0.1− |
| 1999 10 04 | 703 | 0.8+ | 1.8+ | 2004 09 17 | 699 | 1.9− | 0.5− | 2005 12 31 | 691 | 0.1− | 0.0 |
| 1999 10 04 | 703 | 0.4+ | 0.3− | 2004 09 21 | 704 | 0.0 | 0.4− | 2005 12 31 | 691 | 0.2− | 0.2− |
| 1999 10 04 | 703 | 0.2+ | 0.7+ | 2004 09 21 | 704 | 0.1+ | 0.2− | 2006 01 04 | 691 | 0.6+ | 1.0− |
| 1999 10 04 | 703 | 0.4− | 0.6− | 2004 09 21 | 704 | 1.0+ | 0.3− | 2006 01 04 | 691 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.1− | 1.0− | 2004 09 21 | 704 | 0.3− | 0.3− | 2006 01 04 | 691 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 0.1− | 0.5− | 2004 09 21 | 704 | 0.2− | 0.1+ | 2006 01 04 | 691 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.1− | 0.3− | 2004 10 04 | 644 | 0.2+ | 0.1− | 2006 01 04 | 691 | 0.1− | 0.0 |
| 1999 10 09 | 704 | 0.4− | 0.3+ | 2004 10 04 | 644 | 0.4+ | 0.0 | 2006 01 04 | 691 | 0.0 | 0.1+ |
| 2001 01 21 | 704 | 0.0 | 0.8+ | 2004 10 04 | 644 | 0.0 | 0.1+ | 2006 04 08 | G96 | 0.2− | 0.0 |
| 2001 01 21 | 704 | 0.9+ | 0.4+ | 2004 10 04 | 644 | 0.5+ | 0.0 | 2006 04 08 | G96 | 0.1+ | 0.4+ |
| 2001 01 21 | 704 | 0.2+ | 0.9+ | 2004 10 04 | 644 | 0.4+ | 0.2+ | 2006 04 08 | G96 | 0.5− | 0.3− |
| 2004 09 08 | 704 | 0.8− | 1.1+ | 2004 10 04 | 644 | 0.3+ | 0.4+ | 2006 04 08 | G96 | 0.3+ | 0.0 |
| 2004 09 08 | 704 | 0.2− | 0.7+ | 2004 10 20 | 703 | 0.0 | 0.5+ | | | | |
| 2004 09 08 | 704 | 0.6+ | 0.4− | 2004 10 20 | 703 | 0.2+ | 0.2+ | | | | |

**2005 YN$_{196}$ = 2004 TR$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 60.38530 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.12444698 | $\omega$ | 336.43485 | | +0.54179278 | | −0.83949210 | |
| $a$ | 3.9732554 | $\Omega$ | 80.73571 | | +0.77767138 | | +0.48199202 | |
| $e$ | 0.1986322 | $i$ | 2.40385 | | +0.31888527 | | +0.25087191 | |
| $P$ | 7.92 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 24 | 807 | 0.0 | 0.1+ | 2004 11 05 | 691 | 0.1+ | 0.1+ | 2006 01 04 | 291 | 0.1− | 0.2− |
| 2003 08 24 | 807 | 0.0 | 0.0 | 2004 11 05 | 691 | 0.1+ | 0.0 | 2006 01 05 | 691 | 0.2+ | 0.1− |
| 2004 10 05 | 691 | 0.1− | 0.2− | 2004 11 05 | 691 | 0.0 | 0.2+ | 2006 01 05 | 691 | 0.1+ | 0.2− |
| 2004 10 05 | 691 | 0.3− | 0.1− | 2005 12 24 | 691 | 0.1+ | 0.2− | 2006 01 05 | 691 | 0.1+ | 0.1− |
| 2004 10 05 | 691 | 0.1− | 0.2− | 2005 12 24 | 691 | 0.1+ | 0.0 | 2006 01 30 | 291 | 0.2− | 0.2+ |
| 2004 10 09 | 691 | 0.1− | 0.2+ | 2005 12 24 | 691 | 0.0 | 0.1+ | 2006 01 30 | 291 | 0.1− | 0.0 |
| 2004 10 09 | 691 | 0.2+ | 0.0 | 2006 01 04 | 291 | 0.2+ | 0.4+ | 2006 01 30 | 291 | 0.2− | 0.2+ |
| 2004 10 09 | 691 | 0.1+ | 0.1+ | 2006 01 04 | 291 | 0.4− | 0.0 | | | | |

**2005 YW$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 286.41027 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27546955 | $\omega$ | 327.04261 | | −0.03410195 | | +0.99437212 | |
| $a$ | 2.3393057 | $\Omega$ | 300.81978 | | −0.88981835 | | −0.07590481 | |
| $e$ | 0.0760005 | $i$ | 6.70741 | | −0.45503885 | | +0.07390901 | |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 03 | 691 | 0.2+ | 0.3+ | 2006 01 04 | 691 | 0.4+ | 0.6+ | 2006 01 23 | 691 | 0.0 | 0.1− |
| 2003 05 03 | 691 | 0.2− | 0.3+ | 2006 01 04 | 691 | 0.3− | 0.3+ | 2006 01 23 | 691 | 0.1+ | 0.4− |
| 2003 05 03 | 691 | 0.3+ | 0.2− | 2006 01 07 | G96 | 0.1+ | 0.4− | 2006 01 23 | 691 | 0.0 | 0.2− |
| 2004 09 13 | 644 | 0.1− | 0.4+ | 2006 01 07 | G96 | 0.2− | 0.5− | 2006 01 24 | 704 | 0.2− | 0.8+ |
| 2004 09 13 | 644 | 0.1+ | 0.4+ | 2006 01 07 | G96 | 0.6+ | 0.5− | 2006 01 24 | 704 | 1.5+ | 1.3+ |
| 2004 09 13 | 644 | 0.3− | 0.4+ | 2006 01 07 | G96 | 0.1− | 0.4− | 2006 01 24 | 704 | 0.3− | 1.1+ |
| 2004 09 13 | 644 | 0.0 | 0.0 | 2006 01 08 | 691 | 0.2− | 0.0 | 2006 01 24 | 704 | 0.4+ | 1.3+ |
| 2004 09 13 | 644 | 0.0 | 0.2+ | 2006 01 08 | 691 | 0.0 | 0.1+ | 2006 02 24 | G96 | 0.9− | 0.4− |
| 2004 09 13 | 644 | 0.2− | 0.3− | 2006 01 08 | 691 | 0.2+ | 0.1− | 2006 02 24 | G96 | 0.6− | 0.4− |
| 2005 12 22 | 691 | 0.1− | 0.0 | 2006 01 22 | G96 | 0.4− | 0.7− | 2006 02 24 | G96 | 0.3− | 0.3− |
| 2005 12 22 | 691 | 0.2− | 0.0 | 2006 01 22 | G96 | 0.4− | 0.7− | 2006 02 24 | G96 | 0.4− | 0.5− |
| 2005 12 22 | 691 | 0.2− | 0.1+ | 2006 01 22 | G96 | 0.3− | 0.8− | | | | |
| 2006 01 04 | 691 | 0.6+ | 0.3+ | 2006 01 22 | G96 | 0.3− | 0.8− | | | | |

**2005 YW$_{203}$ = 2002 CX$_{287}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 155.55395 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23049259 | $\omega$ | 244.07995 | | +0.95569036 | | −0.29374049 | |
| $a$ | 2.6344992 | $\Omega$ | 132.99540 | | +0.27864353 | | +0.88153156 | |
| $e$ | 0.0372067 | $i$ | 1.51199 | | +0.09494057 | | +0.36961957 | |
| $P$ | 4.28 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 08 | 691 | 0.7− | 0.0 | 2005 12 25 | G96 | 0.1+ | 0.1− | 2006 01 08 | 691 | 0.3+ | 0.1− |
| 1991 09 08 | 691 | 0.1+ | 0.4+ | 2005 12 25 | G96 | 0.6+ | 0.0 | 2006 01 08 | 691 | 0.0 | 0.2− |
| 1991 09 08 | 691 | 0.3+ | 0.3+ | 2005 12 25 | G96 | 0.0 | 0.3− | 2006 01 22 | G96 | 0.2+ | 0.2− |
| 2002 02 09 | 691 | (2.2− | 2.3−) | 2006 01 04 | 691 | 0.0 | 0.5+ | 2006 01 22 | G96 | 0.9− | 0.0 |
| 2002 02 09 | 691 | 0.7− | 0.5− | 2006 01 04 | 691 | 0.1+ | 0.2+ | 2006 01 22 | G96 | 0.0 | 0.2− |
| 2002 02 09 | 691 | 0.7− | 0.3− | 2006 01 04 | G96 | 0.0 | 0.2− | 2006 02 20 | G96 | 0.1− | 0.2− |
| 2002 02 12 | 704 | 0.8+ | 0.5− | 2006 01 04 | G96 | 0.3− | 0.2− | 2006 02 20 | G96 | 0.1+ | 0.3− |
| 2002 02 12 | 704 | 0.6− | 0.2+ | 2006 01 04 | 691 | 0.1− | 0.3+ | 2006 02 20 | G96 | 0.2− | 0.1− |
| 2002 02 12 | 704 | 0.6+ | 1.1+ | 2006 01 04 | G96 | 0.6− | 0.1+ | 2006 02 20 | G96 | 0.5− | 0.5+ |
| 2002 02 12 | 704 | 1.0+ | 1.1+ | 2006 01 04 | G96 | 0.2+ | 0.0 | | | | |
| 2005 12 25 | G96 | 0.3+ | 0.3− | 2006 01 08 | 691 | 0.4+ | 0.3+ | | | | |

**2005 YD$_{204}$ = 2005 XN$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.98015 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25944510 | $\omega$ | 23.48244 | | +0.98993556 | +0.14146191 | |
| $a$ | 2.4346642 | $\Omega$ | 328.38429 | | −0.13102495 | +0.90543811 | |
| $e$ | 0.2005634 | $i$ | 0.43889 | | −0.05347951 | +0.40021289 | |
| $P$ | 3.80 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.1− | 2004 08 21 | E12 | 0.1− | 0.1+ | 2005 12 25 | G96 | 0.1− | 0.0 |
| 1999 03 20 | 645 | 0.1− | 0.1− | 2004 08 21 | E12 | 0.1− | 0.7+ | 2006 01 04 | 691 | 0.5+ | 0.5+ |
| 2002 01 14 | 691 | 0.2+ | 0.2+ | 2004 09 09 | 704 | 0.5− | 1.0+ | 2006 01 04 | 691 | 0.5+ | 0.5+ |
| 2002 01 14 | 691 | 0.0 | 0.5+ | 2004 09 09 | 704 | 0.6− | 0.4+ | 2006 01 04 | 691 | 0.1+ | 0.2− |
| 2002 01 14 | 691 | 0.0 | 0.4+ | 2004 09 09 | 704 | 0.8− | 1.3+ | 2006 01 07 | 291 | 1.2− | 0.5+ |
| 2003 04 07 | 291 | 0.4+ | 1.1+ | 2004 09 09 | 704 | 1.0− | 0.5+ | 2006 01 07 | 291 | 0.3+ | 0.3+ |
| 2003 04 07 | 291 | 0.5+ | 0.8+ | 2004 10 13 | 704 | 1.6+ | 1.8+ | 2006 01 07 | 291 | 0.2+ | 0.4+ |
| 2003 04 07 | 291 | 0.3+ | 0.2+ | 2004 10 13 | 704 | 0.7+ | 1.4+ | 2006 01 07 | G96 | 0.5− | 0.1+ |
| 2004 08 08 | 704 | 0.0 | 0.2+ | 2004 10 13 | 704 | 0.3− | 1.2− | 2006 01 07 | G96 | 0.1− | 0.1− |
| 2004 08 08 | 704 | 0.0 | 0.3+ | 2005 12 01 | 695 | 0.1+ | 0.0 | 2006 01 07 | G96 | 0.9− | 0.1− |
| 2004 08 08 | 704 | 0.1− | 0.7+ | 2005 12 01 | 695 | 0.2+ | 0.0 | 2006 01 07 | G96 | 0.4+ | 0.4− |
| 2004 08 08 | 704 | 0.4− | 0.7+ | 2005 12 02 | 695 | 0.1+ | 0.1+ | 2006 02 20 | 691 | 0.6− | 0.1+ |
| 2004 08 08 | 704 | 0.5− | 0.7+ | 2005 12 25 | G96 | 0.4+ | 0.6− | 2006 02 20 | 691 | 0.4+ | 0.3− |
| 2004 08 21 | E12 | 0.3− | 0.3+ | 2005 12 25 | G96 | 0.5+ | 0.3− | 2006 02 20 | 691 | 0.1+ | 0.2− |
| 2004 08 21 | E12 | 0.2− | 0.3+ | 2005 12 25 | G96 | 0.0 | 0.3− | | | | |

**2005 YT$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.21601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23877420 | $\omega$ | 39.26246 | | +0.98392629 | +0.06283032 | |
| $a$ | 2.5732251 | $\Omega$ | 316.22368 | | −0.14545085 | +0.82502897 | |
| $e$ | 0.1331804 | $i$ | 13.98160 | | +0.10360068 | +0.56158663 | |
| $P$ | 4.13 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 704 | 0.3− | 0.7+ | 2002 01 07 | 704 | 0.7+ | 0.2+ | 2005 09 16 | 704 | 1.3− | 0.6− |
| 2001 10 19 | 704 | 0.0 | 0.2+ | 2002 01 07 | 704 | 0.9+ | 0.4− | 2005 12 22 | 703 | 0.7+ | 0.7− |
| 2001 10 19 | 704 | 0.4+ | 0.2+ | 2002 01 07 | 704 | 1.3+ | 0.3− | 2005 12 22 | 703 | 0.1− | 0.8− |
| 2001 12 08 | 704 | 0.3+ | 0.9+ | 2002 02 08 | 704 | 1.0− | 0.3+ | 2005 12 22 | 703 | 0.6− | 0.4− |
| 2001 12 08 | 704 | 0.6− | 0.8− | 2002 02 08 | 704 | 0.4+ | 0.4+ | 2005 12 22 | 703 | 0.9− | 0.4− |
| 2001 12 08 | 704 | 0.6− | 0.1− | 2002 02 08 | 704 | 0.2− | 0.8+ | 2005 12 30 | 703 | 0.2− | 0.5+ |
| 2001 12 20 | 644 | 0.0 | 0.1+ | 2002 02 08 | 704 | 1.5− | 0.1+ | 2005 12 30 | 703 | 0.6+ | 1.8− |
| 2001 12 20 | 644 | 0.0 | 0.1+ | 2005 09 16 | 704 | 0.3+ | 0.9+ | 2005 12 30 | 703 | 0.3+ | 0.3− |
| 2001 12 20 | 644 | 0.2+ | 0.1+ | 2005 09 16 | 704 | 0.3− | 0.8+ | 2005 12 30 | 703 | 1.5+ | 1.4+ |

**2005 YB$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.73104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29600652 | $\omega$ | 311.59154 | | +0.98893586 | +0.12423410 | |
| $a$ | 2.2298135 | $\Omega$ | 41.46283 | | −0.07065724 | +0.87498714 | |
| $e$ | 0.2247809 | $i$ | 7.03248 | | −0.13043553 | +0.46793525 | |
| $P$ | 3.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 21 | 704 | 0.4− | 1.3+ | 2001 09 11 | 704 | 0.3+ | 0.2+ | 2001 10 20 | 704 | 0.0 | 0.5+ |
| 1998 11 21 | 704 | 0.0 | 0.3− | 2001 09 11 | 704 | 0.0 | 0.1− | 2005 12 29 | 703 | 0.0 | 1.5+ |
| 1998 11 21 | 704 | 1.4+ | 1.8− | 2001 09 11 | 704 | 0.2+ | 0.8− | 2005 12 29 | 703 | 0.7+ | 1.9+ |
| 1998 11 21 | 704 | 0.5− | 0.7− | 2001 09 11 | 704 | 0.0 | 0.3− | 2005 12 29 | 703 | 1.4+ | 1.1+ |
| 2001 08 16 | 644 | 0.1− | 0.2− | 2001 09 25 | 704 | 0.4− | 0.0 | 2005 12 29 | 703 | 0.3− | 1.0+ |
| 2001 08 16 | 644 | 0.2− | 0.2− | 2001 09 25 | 704 | 0.2− | 0.7+ | 2006 01 05 | 703 | 0.3− | 0.6− |
| 2001 08 16 | 644 | 0.2− | 0.2− | 2001 09 25 | 704 | 0.7+ | 0.8+ | 2006 01 05 | 703 | 0.2+ | 1.9− |
| 2001 08 27 | 644 | 0.1+ | 0.5− | 2001 09 25 | 704 | 0.3+ | 0.4+ | 2006 01 05 | 703 | 1.5− | 0.1− |
| 2001 08 27 | 644 | 0.0 | 0.5− | 2001 10 10 | 644 | 0.2− | 0.6+ | 2006 01 05 | 703 | 1.8− | 0.2− |
| 2001 08 27 | 644 | 0.1+ | 0.3− | 2001 10 10 | 644 | 0.1− | 0.7+ | 2006 01 07 | 704 | 0.6+ | 0.9− |
| 2001 08 27 | 644 | 0.1− | 0.4+ | 2001 10 10 | 644 | 0.3− | 0.5+ | 2006 01 07 | 704 | 0.4+ | 0.7− |
| 2001 08 27 | 644 | 0.0 | 0.6+ | 2001 10 20 | 704 | 0.5+ | 0.5− | 2006 01 07 | 704 | 1.3+ | 0.4− |
| 2001 08 27 | 644 | 0.2− | 0.5+ | 2001 10 20 | 704 | 0.4− | 0.6− | 2006 01 07 | 704 | 0.6+ | 0.2+ |
| 2001 09 11 | 704 | 0.1+ | 0.1− | 2001 10 20 | 704 | 0.2− | 0.2− | 2006 01 07 | 704 | 0.9− | 1.1+ |

**2005 YU$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.38971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29325632 | $\omega$ | 292.90564 | | +0.99048086 | −0.03306659 | |
| $a$ | 2.2437328 | $\Omega$ | 69.20346 | | +0.08921856 | +0.89342985 | |
| $e$ | 0.1541882 | $i$ | 8.21756 | | −0.10482227 | +0.44798405 | |
| $P$ | 3.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 704 | 0.8+ | 0.0 | 2001 09 11 | 704 | 0.3+ | 0.1− | 2005 10 11 | 691 | 0.0 | 0.4+ |
| 1998 12 17 | 704 | 0.8+ | 1.2− | 2001 09 11 | 704 | 0.4− | 0.5+ | 2005 12 29 | 703 | 0.9+ | 0.1− |
| 1998 12 17 | 704 | 1.3+ | 1.0+ | 2001 09 11 | 704 | 0.1− | 0.1− | 2005 12 29 | 703 | 0.1− | 0.5− |
| 1998 12 17 | 704 | 2.8− | 0.2− | 2001 09 11 | 704 | 0.1− | 0.6− | 2005 12 29 | 703 | 0.5− | 0.7− |
| 2001 08 12 | 644 | 0.2+ | 0.7+ | 2001 09 11 | 704 | 0.3+ | 0.2− | 2005 12 29 | 703 | 0.6+ | 1.2− |
| 2001 08 12 | 644 | 0.1+ | 0.3+ | 2001 10 15 | 644 | 0.2− | 0.4− | 2006 01 05 | 703 | 0.3− | 0.3− |
| 2001 08 12 | 644 | 0.0 | 0.2+ | 2001 10 15 | 644 | 0.0 | 0.4− | 2006 01 05 | 703 | 0.3− | 0.5+ |
| 2001 08 19 | 704 | 0.4+ | 0.6− | 2001 10 15 | 644 | 0.1+ | 0.5− | 2006 01 05 | 703 | 0.3− | 0.5− |
| 2001 08 19 | 704 | 0.1+ | 0.7− | 2001 10 23 | 644 | 0.9− | 1.2+ | 2006 01 05 | 703 | 1.1− | 0.5+ |
| 2001 08 19 | 704 | 0.6− | 0.1+ | 2001 10 23 | 644 | 0.3+ | 0.6+ | 2006 01 06 | 704 | 0.2− | 0.1− |
| 2001 08 26 | 644 | 0.2+ | 0.3− | 2001 10 23 | 644 | 0.4+ | 0.5+ | 2006 01 06 | 704 | 0.0 | 0.3− |
| 2001 08 26 | 644 | 0.3+ | 0.3− | 2005 10 11 | 691 | 0.2− | 0.1− | 2006 01 06 | 704 | 0.8+ | 0.5+ |
| 2001 08 26 | 644 | 0.2+ | 0.3− | 2005 10 11 | 691 | 0.1− | 0.5+ | 2006 01 06 | 704 | 1.1+ | 0.0 |

**2005 YQ$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.64962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21893723 | $\omega$ | 7.17554 | | +0.94957123 | +0.31285656 | |
| $a$ | 2.7264004 | $\Omega$ | 334.56265 | | −0.29003726 | +0.85113301 | |
| $e$ | 0.1908025 | $i$ | 2.78405 | | −0.11913380 | +0.42153691 | |
| $P$ | 4.50 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 23 | 691 | 0.0 | 0.3+ | 2004 09 18 | E12 | 0.2− | 0.2+ | 2005 12 29 | G96 | 0.1+ | 0.0 |
| 2004 08 23 | 691 | 0.0 | 0.0 | 2004 09 18 | E12 | 0.9− | 0.8+ | 2005 12 29 | G96 | 0.4− | 0.6− |
| 2004 08 23 | 691 | 0.0 | 0.2− | 2004 09 18 | E12 | 0.0 | 0.3+ | 2005 12 29 | G96 | 0.2− | 0.3− |
| 2004 09 06 | E12 | 0.7+ | 0.1− | 2004 09 18 | E12 | 0.3− | 1.2− | 2005 12 29 | G96 | 0.5− | 0.1− |
| 2004 09 06 | E12 | 0.5− | 0.0 | 2004 10 04 | 691 | 0.2+ | 0.2− | 2006 01 05 | 691 | 0.3+ | 0.2+ |
| 2004 09 06 | E12 | 0.4+ | 0.2+ | 2004 10 04 | 691 | 0.1+ | 0.0 | 2006 01 05 | 691 | 0.1− | 0.2+ |
| 2004 09 06 | E12 | 0.3− | 0.1− | 2004 10 04 | 691 | 0.0 | 0.1+ | 2006 01 05 | 691 | 0.1+ | 0.1− |

**2005 YT$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.37242 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22845389 | $\omega$ | 200.07894 | | +0.98540165 | +0.16954486 | |
| $a$ | 2.6501493 | $\Omega$ | 150.14664 | | −0.15165832 | +0.91538630 | |
| $e$ | 0.1625155 | $i$ | 1.77648 | | −0.07735208 | +0.36513349 | |
| $P$ | 4.31 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 1.5+ | 0.9+ | 2004 07 16 | 599 | 0.9− | 0.5+ | 2005 12 01 | 691 | 0.4+ | 0.1+ |
| 2000 10 01 | 704 | 1.3+ | 0.7− | 2004 08 09 | 699 | 0.7− | 0.0 | 2005 12 25 | 691 | 0.1+ | 0.1+ |
| 2000 10 01 | 704 | 1.6− | 0.8+ | 2004 08 09 | 699 | 0.7− | 0.5+ | 2005 12 25 | 691 | 0.0 | 0.0 |
| 2000 10 01 | 704 | 0.5− | 1.5+ | 2004 08 09 | 699 | 0.9+ | 1.1− | 2005 12 25 | 691 | 0.1+ | 0.1+ |
| 2000 10 01 | 704 | (1.8− | 2.3+) | 2004 08 09 | 699 | 0.1+ | 0.3− | 2005 12 25 | 291 | 0.2− | 0.3+ |
| 2000 10 02 | 704 | 0.3− | 1.0− | 2004 08 21 | E12 | 0.2− | 0.2− | 2005 12 25 | 291 | 0.2− | 0.1+ |
| 2000 10 02 | 704 | 0.3− | 1.6− | 2004 08 21 | E12 | 0.4− | 0.0 | 2005 12 25 | 291 | 0.3− | 0.0 |
| 2000 10 02 | 704 | 0.3+ | 0.5− | 2004 08 21 | E12 | 0.4+ | 1.5+ | 2006 01 06 | 691 | 0.1+ | 0.1− |
| 2004 07 16 | 599 | 0.7+ | 0.3− | 2004 08 21 | E12 | 0.9− | 0.1− | 2006 01 06 | 691 | 0.2+ | 0.0 |
| 2004 07 16 | 599 | 0.2+ | 0.5+ | 2005 12 01 | 691 | 0.2+ | 0.0 | 2006 01 06 | 691 | 0.2− | 0.3− |
| 2004 07 16 | 599 | 1.2+ | 0.2+ | 2005 12 01 | 691 | 0.1− | 0.0 | | | | |

**2005 YD$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.90929 | | (2000.0) | | | |
| $n$ | 0.25310256 | $\omega$ | 243.04198 | | −0.86074741 | −0.50747858 |
| $a$ | 2.4751700 | $\Omega$ | 266.43814 | | +0.48000918 | −0.78320778 |
| $e$ | 0.0449577 | $i$ | 2.28203 | | +0.16942572 | −0.35923679 |
| $P$ | 3.89 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.2− | 1.0+ | 2003 05 08 | 691 | 0.2− | 0.2− | 2006 01 05 | G96 | 0.2− | 0.4− |
| 2000 07 31 | 807 | 0.3− | 1.0+ | 2003 05 08 | 691 | 0.9− | 0.0 | 2006 01 05 | G96 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | 0.3+ | 1.1+ | 2003 05 08 | 691 | 0.1− | 0.4− | 2006 01 21 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.0 | 1.1+ | 2005 11 29 | 691 | 1.0− | 0.1− | 2006 01 21 | G96 | 0.1− | 0.5− |
| 2001 12 19 | 704 | 0.8− | 0.7+ | 2005 11 29 | 691 | 0.0 | 0.3+ | 2006 01 21 | G96 | 0.1− | 0.2− |
| 2001 12 19 | 704 | 0.3− | 0.7+ | 2005 11 29 | 691 | 0.8+ | 0.6+ | 2006 01 21 | G96 | 0.1+ | 0.2− |
| 2003 04 09 | 644 | 0.5− | 0.1− | 2005 12 25 | G96 | 0.1− | 0.2− | 2006 02 20 | G96 | 0.7+ | 0.7− |
| 2003 04 09 | 644 | 0.4− | 0.3− | 2005 12 25 | G96 | 0.1− | 0.3− | 2006 02 20 | G96 | 1.0+ | 0.2+ |
| 2003 04 09 | 644 | 0.0 | 0.1− | 2005 12 25 | G96 | 0.1− | 0.1− | 2006 02 20 | G96 | 0.7+ | 0.4− |
| 2003 04 24 | 691 | 0.5+ | 0.4+ | 2005 12 25 | G96 | 0.1− | 0.3− | 2006 02 20 | G96 | 0.0 | 0.2− |
| 2003 04 24 | 691 | 0.5+ | 0.6+ | 2006 01 05 | G96 | 0.3− | 0.2− | | | | |
| 2003 04 24 | 691 | 0.6+ | 0.4+ | 2006 01 05 | G96 | 0.3− | 0.5− | | | | |

**2005 YH$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.76181 | | (2000.0) | | | |
| $n$ | 0.21697239 | $\omega$ | 91.02044 | | −0.62437130 | +0.76124019 |
| $a$ | 2.7428353 | $\Omega$ | 138.59037 | | −0.77956237 | −0.59306812 |
| $e$ | 0.1499086 | $i$ | 15.35424 | | −0.04942661 | −0.26226622 |
| $P$ | 4.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 07 | 691 | 0.0 | 0.1− | 2002 05 14 | 644 | 0.8+ | 0.5+ | 2006 01 05 | G96 | 0.8+ | 0.2+ |
| 1997 03 07 | 691 | 0.1+ | 0.1− | 2002 05 14 | 644 | 0.5+ | 0.1− | 2006 01 05 | G96 | 0.1+ | 0.1+ |
| 1997 03 07 | 691 | 0.1− | 0.0 | 2005 12 25 | G96 | 0.2+ | 0.3− | 2006 01 05 | G96 | 0.4− | 0.3+ |
| 2002 04 21 | 644 | 0.4+ | 0.1+ | 2005 12 25 | G96 | 0.4− | 0.1− | 2006 01 27 | G96 | 0.4− | 0.6+ |
| 2002 04 21 | 644 | 0.2+ | 0.0 | 2005 12 25 | G96 | 0.6− | 0.3− | 2006 01 27 | G96 | 0.2− | 0.0 |
| 2002 04 21 | 644 | 0.7+ | 0.4+ | 2005 12 25 | G96 | 0.3+ | 0.1+ | 2006 01 27 | G96 | 0.0 | 0.1− |
| 2002 05 06 | 704 | 0.4− | 0.4+ | 2006 01 05 | G96 | 0.2+ | 0.1− | 2006 02 02 | G96 | 1.8+ | 1.6− |
| 2002 05 06 | 704 | 0.8− | 0.2+ | 2006 01 05 | G96 | 0.5− | 0.5+ | 2006 02 02 | G96 | 0.0 | 0.6+ |
| 2002 05 06 | 704 | 1.0− | 0.8− | 2006 01 05 | G96 | 0.1− | 0.0 | 2006 02 02 | G96 | 0.4− | 0.5+ |
| 2002 05 06 | 704 | 0.8− | 0.1− | 2006 01 05 | G96 | 0.2+ | 0.4− | 2006 02 02 | G96 | 0.3− | 0.4+ |
| 2002 05 14 | 644 | 0.4+ | 0.3− | 2006 01 05 | G96 | 0.3− | 0.3+ | | | | |

**2005 YU$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 170.92829 | | (2000.0) | | | |
| $n$ | 0.18488802 | $\omega$ | 46.30194 | | +0.99249192 | −0.00717405 |
| $a$ | 3.0516182 | $\Omega$ | 313.69804 | | −0.05515113 | +0.86478238 |
| $e$ | 0.0843688 | $i$ | 9.72278 | | +0.10917027 | +0.50209558 |
| $P$ | 5.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 01 05 | G96 | 0.7+ | 0.2+ | 2006 02 02 | 691 | 0.1− | 0.0 |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 01 05 | G96 | 0.2+ | 0.4+ | 2006 02 02 | 691 | 0.3− | 0.1− |
| 2003 07 05 | 691 | 0.2− | 0.4+ | 2006 01 05 | G96 | 0.2+ | 0.2+ | 2006 02 05 | G96 | 0.1− | 0.2− |
| 2003 07 05 | 691 | 0.3− | 0.5+ | 2006 01 05 | G96 | 0.2+ | 0.3+ | 2006 02 05 | G96 | 0.1− | 0.0 |
| 2003 07 05 | 691 | 0.1− | 0.3+ | 2006 01 22 | G96 | 0.1− | 0.4− | 2006 02 05 | G96 | 0.0 | 0.1− |
| 2004 10 14 | 644 | 0.1− | 0.3+ | 2006 01 22 | G96 | 0.2+ | 0.5− | 2006 02 05 | G96 | 0.8− | 1.0+ |
| 2004 10 14 | 644 | 0.1+ | 0.5+ | 2006 01 22 | G96 | 0.5+ | 0.0 | 2006 02 24 | G96 | 0.2− | 0.2+ |
| 2004 10 14 | 644 | 0.0 | 0.3+ | 2006 01 22 | G96 | 0.4− | 0.0 | 2006 02 24 | G96 | 0.3− | 0.1+ |
| 2005 12 26 | G96 | 0.2− | 0.2+ | 2006 01 24 | 691 | 0.3+ | 0.2+ | 2006 02 24 | G96 | 0.2− | 0.0 |
| 2005 12 26 | G96 | 0.4+ | 0.0 | 2006 01 24 | 691 | 0.4+ | 0.0 | 2006 02 24 | G96 | 0.0 | 0.1− |
| 2005 12 26 | G96 | 0.0 | 0.0 | 2006 01 24 | 691 | 0.3+ | 0.3+ | | | | |
| 2005 12 26 | G96 | 0.5+ | 0.3+ | 2006 02 02 | 691 | 0.1− | 0.4+ | | | | |

**2005 YK$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.04886 | | (2000.0) | | | |
| $n$ | 0.21609747 | $\omega$ | 69.69203 | | +0.28187776 | −0.95944735 |
| $a$ | 2.7502337 | $\Omega$ | 3.93799 | | +0.86679047 | +0.25358663 |
| $e$ | 0.0504225 | $i$ | 1.99378 | | +0.41136263 | +0.12310402 |
| $P$ | 4.56 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 695 | 0.3− | 0.4− | 2002 03 20 | 695 | 0.3+ | 0.2− | 2005 12 28 | 691 | 0.0 | 0.3+ |
| 2002 02 06 | 695 | 0.4− | 0.4− | 2002 03 20 | 695 | 1.2− | 0.2+ | 2005 12 28 | 691 | 0.0 | 0.0 |
| 2002 03 12 | 291 | 0.0 | 0.3− | 2004 07 17 | 807 | 0.3− | 0.4+ | 2006 01 05 | 691 | 0.1+ | 0.4− |
| 2002 03 12 | 291 | 0.7+ | 0.3+ | 2004 07 17 | 807 | 0.1− | 0.4+ | 2006 01 05 | 691 | 0.1− | 0.1− |
| 2002 03 12 | 291 | 0.2− | 0.4+ | 2005 12 28 | 691 | 0.1+ | 0.4+ | 2006 01 05 | 691 | 0.2− | 0.2− |

**2005 YK$_{236}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.77025 | | (2000.0) | | | |
| $n$ | 0.20974288 | $\omega$ | 126.05818 | | −0.16155025 | −0.98627127 |
| $a$ | 2.8055062 | $\Omega$ | 333.17775 | | +0.87930035 | −0.12811640 |
| $e$ | 0.1226850 | $i$ | 4.34842 | | +0.44803171 | −0.10418810 |
| $P$ | 4.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 21 | 691 | 0.2+ | 0.2− | 2005 12 28 | G96 | 0.1+ | 0.7− | 2006 01 28 | G96 | 0.5− | 0.6− |
| 1999 08 21 | 691 | 0.0 | 0.1+ | 2005 12 28 | G96 | 1.4− | 0.6− | 2006 01 28 | G96 | 0.2− | 0.5− |
| 1999 08 21 | 691 | 0.2− | 0.1− | 2006 01 07 | 691 | 0.3+ | 0.0 | 2006 02 07 | G96 | 0.7− | 0.3− |
| 2004 09 11 | 691 | 0.0 | 0.0 | 2006 01 07 | 691 | 0.1− | 0.0 | 2006 02 07 | G96 | 0.4− | 0.5− |
| 2004 09 11 | 691 | 0.2+ | 0.3+ | 2006 01 07 | 691 | 0.1− | 0.0 | 2006 02 07 | G96 | 0.4+ | 0.7− |
| 2004 09 11 | 691 | 0.2− | 0.3− | 2006 01 24 | 408 | 0.9+ | 1.3+ | 2006 02 07 | G96 | 1.2− | 0.2− |
| 2005 10 29 | 291 | 0.5− | 0.2+ | 2006 01 24 | 408 | 0.7+ | 1.2+ | 2006 02 25 | G96 | 0.6+ | 0.3− |
| 2005 10 29 | 291 | 0.4+ | 0.1+ | 2006 01 25 | 408 | 1.8+ | 1.0+ | 2006 02 25 | G96 | 0.2− | 0.1− |
| 2005 10 29 | 291 | 0.2+ | 0.0 | 2006 01 25 | 408 | 1.6+ | 0.9+ | 2006 02 25 | G96 | 0.3− | 0.3+ |
| 2005 12 28 | G96 | 0.4− | 0.5− | 2006 01 28 | G96 | 0.3− | 0.6− | 2006 02 25 | G96 | 0.1− | 0.2+ |
| 2005 12 28 | G96 | 1.0− | 0.7− | 2006 01 28 | G96 | 0.4− | 0.4− | | | | |

**2005 YX$_{240}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 133.34370 | | (2000.0) | | | |
| $n$ | 0.22443298 | $\omega$ | 260.85395 | | +0.98127960 | −0.10405937 |
| $a$ | 2.6817087 | $\Omega$ | 104.99367 | | +0.15604007 | +0.92278055 |
| $e$ | 0.3272849 | $i$ | 9.65803 | | −0.11287974 | +0.37100904 |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 10 | 699 | 0.4− | 0.1− | 2000 10 05 | 704 | 0.1− | 0.6− | 2005 12 29 | 691 | 0.2+ | 0.2− |
| 2000 09 10 | 699 | 0.4+ | 0.0 | 2000 10 27 | 704 | 0.0 | 0.1− | 2006 01 07 | 691 | 0.1− | 0.4+ |
| 2000 09 10 | 699 | 0.4+ | 0.4− | 2000 10 27 | 704 | 0.4− | 0.5+ | 2006 01 07 | 691 | 0.1+ | 0.1+ |
| 2000 09 10 | 699 | 1.1+ | 0.2+ | 2000 10 27 | 704 | 0.6− | 0.9+ | 2006 01 07 | 691 | 0.2− | 0.2+ |
| 2000 09 28 | 699 | 0.2− | 0.0 | 2000 10 27 | 704 | 0.7+ | 0.4+ | 2006 01 28 | G96 | 0.1− | 0.6− |
| 2000 09 28 | 699 | 0.1− | 0.4+ | 2000 10 27 | 704 | 0.3+ | 0.5+ | 2006 01 28 | G96 | 0.4+ | 0.5− |
| 2000 09 28 | 699 | 0.6− | 0.0 | 2005 10 29 | G96 | 0.5− | 0.4− | 2006 01 28 | G96 | 0.0 | 0.5− |
| 2000 09 28 | 699 | 0.1+ | 0.1− | 2005 10 29 | G96 | 0.9− | 0.4− | 2006 01 28 | G96 | 0.2+ | 0.3− |
| 2000 10 05 | 704 | 0.5− | 0.2+ | 2005 10 29 | G96 | 0.3+ | 0.2− | 2006 02 06 | 691 | 0.2− | 0.4+ |
| 2000 10 05 | 704 | 0.3+ | 0.5− | 2005 10 29 | G96 | 0.2+ | 0.3− | 2006 02 06 | 691 | 0.1+ | 0.4− |
| 2000 10 05 | 704 | 0.1+ | 0.6− | 2005 12 29 | 691 | 0.1+ | 0.1+ | 2006 02 06 | 691 | 0.1+ | 0.2− |
| 2000 10 05 | 704 | 0.3− | 0.8− | 2005 12 29 | 691 | 0.1+ | 0.1+ | | | | |

**2005 YX$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.74364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29684584 | $\omega$ | 68.78965 | | +0.96580708 | +0.23821201 | |
| $a$ | 2.2256083 | $\Omega$ | 277.31632 | | −0.25915261 | +0.87556462 | |
| $e$ | 0.1541794 | $i$ | 5.92182 | | −0.00752340 | +0.42028756 | |
| $P$ | 3.32 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.5− | 0.6+ | 2001 09 16 | 704 | 1.2+ | 0.2− | 2006 01 09 | G96 | 0.4− | 0.4− |
| 2001 08 11 | 644 | 0.8− | 0.4+ | 2001 09 16 | 704 | 0.6+ | 0.7− | 2006 01 09 | 691 | 0.0 | 0.4+ |
| 2001 08 11 | 644 | 0.5− | 0.4+ | 2001 09 16 | 704 | 0.6+ | 0.7− | 2006 01 09 | G96 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.0 | 0.4+ | 2001 09 25 | 704 | 0.6− | 0.5+ | 2006 01 09 | G96 | 0.4+ | 0.0 |
| 2001 08 25 | 704 | 0.8+ | 0.3− | 2001 09 25 | 704 | 0.9− | 0.7+ | 2006 01 09 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.2+ | 0.0 | 2001 09 25 | 704 | 0.2− | 0.1+ | 2006 01 09 | 691 | 0.0 | 0.3+ |
| 2001 08 25 | 704 | 0.3+ | 0.4− | 2001 09 25 | 704 | 0.7− | 0.4+ | 2006 01 23 | G96 | 0.2− | 0.1− |
| 2001 09 16 | 644 | 0.1− | 0.3− | 2001 09 25 | 704 | 0.6− | 0.0 | 2006 01 23 | G96 | 0.5− | 0.1− |
| 2001 09 16 | 644 | 0.1+ | 0.6− | 2005 12 28 | 691 | 0.1+ | 0.3− | 2006 01 23 | G96 | 0.4− | 0.3− |
| 2001 09 16 | 644 | 0.1− | 0.5− | 2005 12 28 | 691 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.3− | 0.1− |
| 2001 09 16 | 704 | 0.5+ | 0.5+ | 2005 12 28 | 691 | 0.3+ | 0.2− | | | | |
| 2001 09 16 | 704 | 0.4+ | 0.0 | 2006 01 09 | G96 | 0.3+ | 0.2− | | | | |

**2005 YT$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.64182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18517189 | $\omega$ | 232.88554 | | +0.99925536 | +0.01799458 | |
| $a$ | 3.0484987 | $\Omega$ | 126.05847 | | −0.00390068 | +0.92716934 | |
| $e$ | 0.1552740 | $i$ | 2.41973 | | −0.03838645 | +0.37421011 | |
| $P$ | 5.32 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 695 | 0.2− | 0.2+ | 2004 10 06 | 699 | 0.3+ | 0.5+ | 2005 12 29 | 691 | 0.1− | 0.1+ |
| 2002 03 20 | 695 | 0.3+ | 0.0 | 2005 12 05 | 691 | 0.0 | 0.2+ | 2005 12 29 | 691 | 0.9+ | 0.7− |
| 2004 10 06 | 699 | 0.2− | 0.2+ | 2005 12 05 | 691 | 0.1− | 0.3+ | 2006 01 06 | 691 | 0.1+ | 0.0 |
| 2004 10 06 | 699 | 0.6+ | 0.5− | 2005 12 05 | 691 | 0.2− | 0.0 | 2006 01 06 | 691 | 0.2− | 0.1+ |
| 2004 10 06 | 699 | 0.7− | 0.1− | 2005 12 29 | 691 | 0.4− | 0.0 | 2006 01 06 | 691 | 0.1− | 0.0 |

**2005 YM$_{256}$ = 1998 HD$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.61509 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22262123 | $\omega$ | 43.89245 | | −0.01880139 | +0.99838220 | |
| $a$ | 2.6962387 | $\Omega$ | 225.11110 | | −0.93694186 | −0.03632668 | |
| $e$ | 0.1295192 | $i$ | 4.34381 | | −0.34897918 | +0.04374192 | |
| $P$ | 4.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.6− | 0.7+ | 2002 02 06 | 644 | 0.1− | 0.2+ | 2004 11 13 | H55 | 0.1− | 1.2− |
| 1998 04 21 | 704 | (2.5+ | 0.3−) | 2002 02 06 | 644 | 0.0 | 0.5+ | 2004 11 13 | H55 | 0.8+ | 1.1− |
| 1998 04 21 | 704 | 0.4− | 1.2− | 2002 02 06 | 644 | 0.3− | 0.5+ | 2004 12 10 | 691 | 0.2+ | 0.2+ |
| 1998 04 21 | 704 | 1.3+ | 0.0 | 2002 03 06 | 644 | 0.1− | 0.6+ | 2004 12 10 | 691 | 0.0 | 0.1+ |
| 1998 04 21 | 704 | (3.7− | 0.8+) | 2002 03 06 | 644 | 0.2+ | 0.4+ | 2004 12 10 | 691 | 0.5− | 0.1+ |
| 1998 04 22 | 704 | 0.6+ | 0.0 | 2002 03 06 | 644 | 0.3+ | 0.2+ | 2005 12 30 | 691 | 0.4+ | 0.0 |
| 1998 04 22 | 704 | (1.6− | 2.7+) | 2004 10 08 | 691 | 0.1+ | 0.1− | 2005 12 30 | 691 | 0.0 | 0.2+ |
| 1998 04 22 | 704 | 0.6+ | 0.5− | 2004 10 08 | 691 | 0.1+ | 0.1+ | 2005 12 30 | 691 | 0.0 | 0.3− |
| 1998 04 22 | 704 | (5.1− | 0.0 ) | 2004 10 08 | 691 | 0.2− | 0.1+ | 2006 01 10 | 691 | 0.0 | 0.4+ |
| 1999 09 04 | 703 | 0.8− | 0.9+ | 2004 10 18 | 695 | 0.1+ | 0.1+ | 2006 01 10 | 691 | 0.3− | 0.1+ |
| 1999 09 04 | 703 | 0.0 | 0.2− | 2004 10 18 | 695 | 0.1− | 0.0 | 2006 01 10 | 691 | 0.1+ | 0.0 |
| 1999 09 04 | 703 | 1.0+ | 1.3+ | 2004 11 04 | 703 | 0.2− | 0.4− | 2006 02 03 | G96 | 0.3− | 0.2− |
| 1999 09 04 | 703 | 1.1+ | 1.0+ | 2004 11 04 | 703 | 0.2+ | 0.4− | 2006 02 03 | G96 | 0.3− | 0.4− |
| 1999 10 13 | 704 | 1.8− | 0.0 | 2004 11 04 | 703 | 1.0+ | 0.5+ | 2006 02 03 | G96 | 0.1− | 0.5− |
| 1999 10 13 | 704 | 0.1− | 0.3− | 2004 11 04 | 703 | 0.6+ | 0.3+ | 2006 02 03 | G96 | 0.2− | 0.2− |
| 1999 10 13 | 704 | 1.4− | 0.8− | 2004 11 13 | H55 | 0.1+ | 0.8− | | | | |

**2005 YG$_{263}$ = 2000 WR$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.26570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21388384 | $\omega$ | 258.70865 | | +0.43801843 | −0.89876069 | |
| $a$ | 2.7691771 | $\Omega$ | 165.26840 | | +0.85144954 | +0.40791548 | |
| $e$ | 0.1992411 | $i$ | 4.33278 | | +0.28839823 | +0.16073018 | |
| $P$ | 4.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 1.8− | 0.1+ | 2002 04 14 | 691 | 0.3+ | 0.3+ | 2006 01 23 | 704 | 0.5+ | 1.2+ |
| 2000 11 27 | 704 | 0.6+ | 0.2− | 2002 04 14 | 691 | 0.0 | 0.8+ | 2006 01 23 | 704 | 0.2+ | 1.5+ |
| 2000 11 27 | 704 | 0.6+ | 0.5+ | 2004 08 10 | 704 | 0.3− | 0.9+ | 2006 01 23 | 704 | 0.1− | 0.4+ |
| 2000 11 27 | 704 | 1.0+ | 0.2+ | 2004 08 10 | 704 | 0.3+ | 0.3− | 2006 01 23 | 704 | 0.6− | 0.8+ |
| 2000 11 27 | 704 | 0.3+ | 0.8− | 2004 08 10 | 704 | 1.3+ | 0.5− | 2006 02 03 | G96 | 0.0 | 0.6− |
| 2000 11 27 | 704 | 1.3− | 0.2+ | 2004 09 13 | 691 | 0.3− | 0.2+ | 2006 02 03 | G96 | 0.1+ | 0.5− |
| 2000 11 27 | 704 | 0.2− | 0.7− | 2004 09 13 | 691 | 0.4− | 0.8+ | 2006 02 03 | G96 | 0.5− | 0.4− |
| 2000 11 27 | 704 | 0.4− | 0.5− | 2004 09 13 | 691 | 0.1− | 0.9+ | 2006 02 03 | G96 | 0.4− | 0.5− |
| 2000 11 27 | 704 | 1.3− | 0.2+ | 2004 10 11 | 695 | 0.2− | 0.3+ | 2006 02 20 | 691 | 0.0 | 0.2− |
| 2000 11 29 | 704 | 1.3+ | 1.1+ | 2004 10 11 | 695 | 0.3− | 0.3+ | 2006 02 20 | 691 | 0.1− | 0.3− |
| 2000 11 29 | 704 | 0.7+ | 0.2− | 2005 12 25 | 699 | (1.0− | 2.8+) | 2006 02 20 | 691 | 0.0 | 0.2+ |
| 2000 11 29 | 704 | 0.1+ | 0.4+ | 2005 12 25 | 699 | 1.2+ | 0.6− | 2006 03 03 | G96 | 0.2+ | 0.2+ |
| 2000 11 29 | 704 | 0.1+ | 0.3+ | 2005 12 25 | 699 | 1.4+ | 0.5+ | 2006 03 03 | G96 | 0.1− | 0.1− |
| 2000 11 29 | 704 | 0.1+ | 0.4+ | 2005 12 25 | 699 | 1.2+ | 1.2+ | 2006 03 03 | G96 | 0.5− | 0.1+ |
| 2002 04 07 | 807 | 0.2+ | 0.5+ | 2005 12 30 | 691 | 0.1− | 0.0 | 2006 03 03 | G96 | 0.1+ | 0.0 |
| 2002 04 07 | 807 | 0.3+ | 0.4+ | 2005 12 30 | 691 | 0.1− | 0.1+ | | | | |
| 2002 04 14 | 691 | 0.2+ | 0.4+ | 2005 12 30 | 691 | 0.1− | 0.2+ | | | | |

**2005 YS$_{266}$ = 2001 WA$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.59460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26516038 | $\omega$ | 111.31875 | | +0.91268625 | −0.40676056 | |
| $a$ | 2.3995527 | $\Omega$ | 272.70044 | | +0.35881955 | +0.84374789 | |
| $e$ | 0.1073081 | $i$ | 2.25858 | | +0.19558206 | +0.35019329 | |
| $P$ | 3.72 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.3+ | 0.5+ | 2001 11 21 | 704 | 0.1+ | 0.7+ | 2005 12 25 | 691 | 0.4− | 0.1+ |
| 2001 11 19 | 704 | 0.3− | 0.6+ | 2005 11 28 | G96 | 0.3+ | 0.1− | 2005 12 29 | 691 | 0.4+ | 0.1+ |
| 2001 11 19 | 704 | 0.4+ | 0.4+ | 2005 11 28 | G96 | 0.3− | 0.2− | 2005 12 29 | 691 | 0.6+ | 0.3− |
| 2001 11 19 | 704 | 0.8− | 0.3− | 2005 11 28 | G96 | 0.0 | 0.3+ | 2005 12 29 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.6− | 0.3− | 2005 11 28 | G96 | 0.2− | 0.0 | 2006 01 06 | 691 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 1.1+ | 0.6− | 2005 12 25 | 691 | (0.2+ | 1.7+) | 2006 01 06 | 691 | 0.6+ | 0.0 |
| 2001 11 21 | 704 | 0.2− | 1.1− | 2005 12 25 | 691 | 0.0 | 0.1+ | 2006 01 06 | 691 | 1.5− | 0.0 |

**2005 YP$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.35348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18175508 | $\omega$ | 299.01013 | | +0.89111115 | +0.45354280 | |
| $a$ | 3.0865858 | $\Omega$ | 34.02478 | | −0.40657822 | +0.81249479 | |
| $e$ | 0.1913920 | $i$ | 1.51846 | | −0.20153182 | +0.36626650 | |
| $P$ | 5.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 691 | 1.0− | 0.6+ | 2004 07 16 | 704 | 0.4+ | 1.8+ | 2005 10 27 | G96 | 0.4+ | 0.3− |
| 1999 09 07 | 691 | 0.8− | 0.5+ | 2004 08 03 | E12 | 0.5+ | 0.5+ | 2005 11 22 | 691 | 0.3− | 0.7+ |
| 1999 09 07 | 691 | (4.5+ | 2.9−) | 2004 08 03 | E12 | 0.5− | 0.5+ | 2005 11 22 | 691 | 0.4− | 0.5+ |
| 1999 09 16 | 691 | 0.9− | 0.3+ | 2004 08 03 | E12 | 0.1+ | 1.1+ | 2005 11 22 | 691 | 0.6− | 0.1− |
| 1999 09 16 | 691 | 0.4− | 0.5+ | 2004 08 03 | E12 | 0.2− | 0.8+ | 2005 12 21 | 691 | 0.1+ | 0.4+ |
| 1999 09 16 | 691 | 0.8− | 0.3+ | 2004 08 22 | 691 | 0.0 | 0.2+ | 2005 12 21 | 691 | 0.1+ | 0.4+ |
| 1999 10 09 | 704 | 0.5+ | 1.3+ | 2004 08 22 | 691 | 0.1− | 0.2+ | 2005 12 21 | 691 | 0.3+ | 0.4+ |
| 1999 10 09 | 704 | 0.9− | 0.9+ | 2004 08 22 | 691 | 0.1+ | 0.2+ | 2005 12 28 | G96 | 0.6− | 0.1+ |
| 1999 10 09 | 704 | 1.5− | 0.3+ | 2004 08 22 | E12 | 0.6− | 0.6− | 2005 12 28 | G96 | 0.5+ | 0.8+ |
| 2003 05 11 | 691 | 0.4+ | 0.6+ | 2004 08 22 | E12 | 0.3+ | 0.3− | 2005 12 28 | G96 | 0.2+ | 0.6+ |
| 2003 05 11 | 691 | 0.4+ | 1.0+ | 2004 08 22 | E12 | 0.0 | 0.1+ | 2005 12 28 | G96 | 0.0 | 0.1+ |
| 2003 05 11 | 691 | 0.1+ | 0.8+ | 2004 08 22 | E12 | 0.6− | 0.8+ | 2006 01 07 | G96 | 0.9− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 16 | 704 | 0.3− | 1.0− | 2005 10 27 | G96 | 1.0+ | 0.3+ | 2006 01 07 | G96 | 0.1+ | 0.2+ | | |
| 2004 07 16 | 704 | 0.1− | 0.3− | 2005 10 27 | G96 | 0.7+ | 0.3+ | 2006 01 07 | G96 | 0.3− | 0.1+ | | |
| 2004 07 16 | 704 | 0.7− | 0.4+ | 2005 10 27 | G96 | 0.0 | 0.2− | 2006 01 07 | G96 | 0.2− | 0.0 | | |

**2005 YN$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.93679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25887482 | $\omega$ | 249.00366 | | +0.95319084 | +0.29557264 | |
| $a$ | 2.4382385 | $\Omega$ | 93.76065 | | −0.24824192 | +0.88534320 | |
| $e$ | 0.2001121 | $i$ | 3.66297 | | −0.17263593 | +0.35889307 | |
| $P$ | 3.81 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 03 | E12 | 0.4− | 0.5+ | 2004 08 11 | 704 | 0.3+ | 0.1+ | 2006 01 07 | 691 | 0.4+ | 0.2− |
| 2004 08 03 | E12 | 0.2− | 0.1+ | 2004 08 22 | E12 | 0.9− | 0.3− | 2006 01 07 | 691 | 0.1− | 0.1− |
| 2004 08 03 | E12 | 0.1− | 1.5+ | 2004 08 22 | E12 | 0.5− | 0.1+ | 2006 01 07 | 691 | 0.3+ | 0.2− |
| 2004 08 03 | E12 | 0.9+ | 0.6− | 2004 08 22 | E12 | 0.5− | 0.1− | 2006 01 27 | G96 | 0.5− | 0.5− |
| 2004 08 11 | 704 | 0.4− | 0.6+ | 2005 12 25 | 691 | 0.1− | 0.9+ | 2006 01 27 | G96 | 0.1− | 0.6− |
| 2004 08 11 | 704 | 0.2+ | 1.0− | 2005 12 25 | 691 | 0.2− | 0.1− | 2006 01 27 | G96 | 0.1− | 0.7− |
| 2004 08 11 | 704 | 1.8+ | 1.2− | 2005 12 25 | 691 | 0.1− | 0.1+ | 2006 01 27 | G96 | 0.3− | 0.5− |

**2005 YG$_{290}$ = 2004 TX$_{248}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.43528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26698981 | $\omega$ | 252.23564 | | −0.29418236 | +0.95574920 | |
| $a$ | 2.3885789 | $\Omega$ | 0.65633 | | −0.86161190 | −0.26500636 | |
| $e$ | 0.1631503 | $i$ | 2.21217 | | −0.41362020 | −0.12773053 | |
| $P$ | 3.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 695 | 0.2+ | 0.2+ | 2004 10 07 | 691 | 0.1− | 0.2+ | 2006 01 07 | 691 | 0.0 | 1.7+ |
| 2000 09 19 | 695 | 0.3+ | 0.3+ | 2004 10 07 | 691 | 0.4− | 0.2+ | 2006 01 27 | G96 | 0.7− | 0.4− |
| 2000 09 27 | 691 | 0.3− | 0.3+ | 2004 10 13 | 691 | 0.3+ | 0.1− | 2006 01 27 | G96 | 0.2− | 0.8− |
| 2000 09 27 | 691 | 0.1− | 0.2+ | 2004 10 13 | 691 | 0.2− | 0.1+ | 2006 01 27 | G96 | 0.3− | 0.3− |
| 2000 09 27 | 691 | 0.2− | 0.2+ | 2004 10 13 | 691 | 0.2+ | 0.0 | 2006 01 27 | G96 | 0.7− | 0.6− |
| 2003 04 29 | 704 | 0.5+ | 0.4+ | 2005 12 25 | 691 | 0.0 | 0.1+ | 2006 02 20 | 691 | 0.0 | 0.4+ |
| 2003 04 29 | 704 | 0.0 | 0.4+ | 2005 12 25 | 691 | 0.2+ | 0.5− | 2006 02 20 | 691 | 0.2+ | 0.3+ |
| 2003 04 29 | 704 | 0.3+ | 1.9+ | 2005 12 25 | 691 | 0.2− | 0.1+ | 2006 02 20 | 691 | 0.2+ | 0.3− |
| 2003 04 29 | 704 | 0.5+ | 1.2+ | 2006 01 07 | 691 | 0.1+ | 0.2− | | | | |
| 2004 10 07 | 691 | 0.0 | 0.0 | 2006 01 07 | 691 | 0.2+ | 0.1− | | | | |

**2005 YH$_{290}$ = 2004 TB$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.37811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27366599 | $\omega$ | 342.74729 | | −0.49322212 | +0.86926186 | |
| $a$ | 2.3495724 | $\Omega$ | 257.68896 | | −0.79403307 | −0.46555642 | |
| $e$ | 0.1362680 | $i$ | 1.95928 | | −0.35530752 | −0.16625593 | |
| $P$ | 3.60 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 09 | 691 | 0.2− | 0.3− | 2004 10 15 | 691 | 0.2− | 0.1+ | 2006 01 06 | G96 | 0.8− | 0.5− |
| 1997 10 09 | 691 | 0.1− | 0.2− | 2004 10 15 | 691 | 0.4+ | 0.1− | 2006 01 06 | G96 | 0.8− | 0.0 |
| 1997 10 09 | 691 | 0.4+ | 0.0 | 2005 12 27 | G96 | 0.8+ | 0.0 | 2006 01 21 | G96 | 0.1− | 0.4− |
| 2003 04 28 | 699 | 1.3+ | 0.0 | 2005 12 27 | G96 | 0.2+ | 0.1− | 2006 01 21 | G96 | 0.1− | 0.2− |
| 2003 04 28 | 699 | 0.9− | 0.3− | 2005 12 27 | G96 | 0.4− | 0.3− | 2006 01 21 | G96 | 0.1− | 0.3− |
| 2003 04 28 | 699 | 1.3+ | 1.0+ | 2005 12 27 | G96 | 0.1− | 0.1+ | 2006 01 21 | G96 | 0.8+ | 0.3+ |
| 2003 04 28 | 699 | 1.3− | 0.2+ | 2006 01 06 | 691 | 0.0 | 0.6+ | 2006 02 02 | 691 | 0.4+ | 0.0 |
| 2004 10 10 | 691 | 0.4− | 0.5+ | 2006 01 06 | 691 | 0.2− | 0.3+ | 2006 02 02 | 691 | 0.4+ | 0.3− |
| 2004 10 10 | 691 | 0.0 | 0.2+ | 2006 01 06 | 691 | 0.1− | 0.5+ | 2006 02 02 | 691 | 0.4+ | 0.5− |
| 2004 10 10 | 691 | 0.1+ | 0.2− | 2006 01 06 | G96 | 1.7− | 0.1− | | | | |
| 2004 10 15 | 691 | 0.1− | 0.0 | 2006 01 06 | G96 | 0.8− | 0.4− | | | | |

**2005 YJ$_{290}$ = 2004 RL$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.36295 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24116945 | $\omega$ | 231.30636 | | +0.94975437 | −0.30384468 | |
| $a$ | 2.5561590 | $\Omega$ | 146.19083 | | +0.31232155 | +0.90424497 | |
| $e$ | 0.1011144 | $i$ | 7.76025 | | +0.02053986 | +0.30003239 | |
| $P$ | 4.09 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.1− | 2004 09 12 | 691 | 0.2+ | 0.0 | 2006 01 31 | G96 | 0.5+ | 0.1+ |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2005 12 30 | 691 | 0.0 | 0.0 | 2006 01 31 | G96 | 0.2− | 0.0 |
| 2004 09 07 | 691 | 0.2− | 0.1+ | 2005 12 30 | 691 | 0.0 | 0.2+ | 2006 01 31 | G96 | 0.4+ | 0.1− |
| 2004 09 07 | 691 | 0.1− | 0.2+ | 2005 12 30 | 691 | 0.3− | 0.1− | 2006 01 31 | G96 | 0.3+ | 0.1+ |
| 2004 09 07 | 691 | 0.1− | 0.1− | 2006 01 24 | 691 | 0.2+ | 0.0 | 2006 01 31 | G96 | 0.6+ | 0.1+ |
| 2004 09 12 | 691 | 0.2+ | 0.0 | 2006 01 24 | 691 | 0.2− | 0.1− | 2006 01 31 | G96 | 0.0 | 0.4+ |
| 2004 09 12 | 691 | 0.1− | 0.2+ | 2006 01 24 | 691 | 0.1− | 0.0 | 2006 01 31 | G96 | 0.2+ | 0.4+ |

**2005 YK$_{290}$ = 2002 GR$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.40941 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21407055 | $\omega$ | 283.77958 | | −0.53077195 | +0.83277090 | |
| $a$ | 2.7675668 | $\Omega$ | 313.02990 | | −0.67035344 | −0.52615057 | |
| $e$ | 0.1318963 | $i$ | 12.43417 | | −0.51856282 | −0.17221556 | |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.2+ | 0.0 | 2003 08 25 | 704 | 0.1+ | 0.2+ | 2006 02 07 | G96 | 0.6− | 0.2− |
| 2002 04 08 | 644 | 0.2+ | 0.2+ | 2003 08 25 | 704 | 0.2− | 0.2− | 2006 02 07 | G96 | 0.3− | 0.2+ |
| 2002 04 08 | 644 | 0.2+ | 0.2+ | 2005 12 30 | G96 | 0.0 | 0.3+ | 2006 02 07 | G96 | 0.1+ | 0.4− |
| 2002 04 09 | 704 | 0.0 | 0.0 | 2005 12 30 | G96 | 0.2+ | 0.2+ | 2006 02 07 | G96 | 0.4+ | 0.2+ |
| 2002 04 09 | 704 | 0.1+ | 0.1+ | 2005 12 30 | G96 | 0.1− | 0.2+ | 2006 02 23 | G96 | 0.1− | 0.2+ |
| 2002 04 09 | 704 | 0.4+ | 0.3+ | 2005 12 30 | G96 | 0.1+ | 0.4+ | 2006 02 23 | G96 | 0.5− | 0.4+ |
| 2002 04 09 | 704 | 0.2− | 0.1+ | 2006 01 27 | G96 | 0.3+ | 0.3+ | 2006 02 23 | G96 | 0.0 | 0.3+ |
| 2002 04 09 | 704 | 0.1− | 0.3+ | 2006 01 27 | G96 | 0.1− | 0.1+ | 2006 02 23 | G96 | 0.4− | 0.4+ |
| 2003 08 04 | 704 | 1.7− | 0.2− | 2006 01 27 | G96 | 0.1− | 0.4+ | 2006 04 26 | G96 | 0.1+ | 0.5− |
| 2003 08 04 | 704 | 1.4− | 0.3+ | 2006 01 27 | G96 | 0.1− | 0.3+ | 2006 04 26 | G96 | 0.1+ | 0.4− |
| 2003 08 04 | 704 | 1.1+ | 0.5− | 2006 02 04 | 701 | 0.2+ | 0.5+ | 2006 04 26 | G96 | 0.1− | 0.3− |
| 2003 08 04 | 704 | 1.2− | 0.9+ | 2006 02 04 | 701 | 0.4+ | 0.6+ | 2006 04 26 | G96 | 0.5− | 0.6− |
| 2003 08 25 | 704 | 0.6+ | 0.7+ | 2006 02 07 | 701 | 2.5+ | 0.8+ | | | | |
| 2003 08 25 | 704 | 1.1+ | 1.6+ | 2006 02 07 | 701 | 0.6− | 1.6− | | | | |

**2005 YL$_{290}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.58779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24230064 | $\omega$ | 198.99701 | | −0.85070252 | −0.52561718 | |
| $a$ | 2.5481971 | $\Omega$ | 309.29188 | | +0.48321072 | −0.77775514 | |
| $e$ | 0.0185768 | $i$ | 0.41751 | | +0.20691211 | −0.34470787 | |
| $P$ | 4.07 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 14 | 691 | 0.1+ | 0.3+ | 2004 10 15 | 691 | 0.1− | 0.1+ | 2006 01 23 | 691 | 0.5− | 0.1− |
| 2002 02 14 | 691 | 0.0 | 0.1+ | 2005 12 25 | G96 | 0.3− | 0.0 | 2006 01 23 | 691 | 0.0 | 0.1+ |
| 2002 02 14 | 691 | 0.2+ | 0.3+ | 2005 12 25 | G96 | 0.3− | 0.2− | 2006 01 23 | 691 | 0.3+ | 0.0 |
| 2004 10 11 | 691 | 0.8− | 0.2+ | 2005 12 25 | G96 | 0.4− | 0.7− | 2006 02 25 | G96 | 0.0 | 0.1− |
| 2004 10 11 | 691 | 0.1− | 0.3+ | 2005 12 25 | G96 | 1.0− | 0.8− | 2006 02 25 | G96 | 0.3− | 0.4+ |
| 2004 10 11 | 691 | 0.3+ | 0.1− | 2006 01 08 | 691 | 0.3+ | 0.1+ | 2006 02 25 | G96 | 0.7− | 0.1− |
| 2004 10 15 | 691 | 0.6+ | 0.2− | 2006 01 08 | 691 | 0.2+ | 0.3− | 2006 02 25 | G96 | 0.0 | 0.3− |
| 2004 10 15 | 691 | 0.0 | 0.1− | 2006 01 08 | 691 | 0.1+ | 0.0 | | | | |

**2006 AQ$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.74383 | | | (2000.0) | | |
| $n$ | 0.25743846 | $\omega$ | 269.01161 | | −0.86778126 | +0.33964444 |
| $a$ | 2.4472994 | $\Omega$ | 290.76666 | | −0.13067977 | −0.86025742 |
| $e$ | 0.6372050 | $i$ | 22.82818 | | −0.47945645 | −0.38026152 |
| $P$ | 3.83 | $H$ | 21.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 01 06 | G96 | 0.5− | 0.1− | 2006 01 07 | G96 | 0.3− | 0.2− | 2006 01 19 | F65 | 0.2+ | 0.2+ |
| 2006 01 06 | G96 | 0.1− | 0.2+ | 2006 01 07 | G96 | 0.1+ | 0.2− | 2006 01 19 | F65 | 0.0 | 0.1− |
| 2006 01 06 | G96 | 0.1− | 0.1− | 2006 01 08 | G96 | 0.9+ | 0.0 | 2006 01 23 | 448 | 0.3− | 0.4− |
| 2006 01 06 | G96 | 0.7− | 0.1− | 2006 01 08 | G96 | 0.7+ | 0.2− | 2006 01 31 | 734 | 0.3+ | 1.2− |
| 2006 01 06 | G96 | 1.8+ | 0.3+ | 2006 01 08 | G96 | 0.5+ | 0.2+ | 2006 01 31 | 734 | 0.3+ | 0.6+ |
| 2006 01 06 | G96 | 0.6+ | 0.1+ | 2006 01 08 | G96 | 0.2− | 0.0 | 2006 01 31 | 734 | 0.4− | 0.8+ |
| 2006 01 06 | G96 | 1.5+ | 0.4− | 2006 01 10 | 691 | 0.2− | 0.6+ | 2006 08 11 | 568 | 0.0 | 0.1+ |
| 2006 01 06 | G96 | 0.6− | 0.0 | 2006 01 10 | 691 | 0.2+ | 0.1+ | 2006 08 11 | 568 | 0.0 | 0.0 |
| 2006 01 07 | G96 | 0.1+ | 0.1− | 2006 01 10 | 691 | 0.8− | 0.4− | 2006 08 16 | 568 | 0.0 | 0.0 |
| 2006 01 07 | G96 | 0.7− | 0.0 | 2006 01 19 | F65 | 0.3+ | 0.1− | 2006 08 16 | 568 | 0.1+ | 0.1− |

**2006 AE$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 114.32511 | | | (2000.0) | | |
| $n$ | 0.24385238 | $\omega$ | 20.15427 | | +0.59677534 | −0.79953706 |
| $a$ | 2.5373754 | $\Omega$ | 33.30979 | | +0.71823353 | +0.49457469 |
| $e$ | 0.0496824 | $i$ | 7.09404 | | +0.35777058 | +0.34078787 |
| $P$ | 4.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.2− | 0.1+ | 2002 01 20 | 699 | 0.9− | 0.5+ | 2006 01 02 | 703 | 1.4+ | 1.0+ |
| 2001 12 09 | 704 | 0.7− | 0.4− | 2002 01 20 | 699 | (0.6+ | 2.2+) | 2006 01 02 | 703 | 0.2− | 0.6− |
| 2001 12 09 | 704 | 0.2− | 0.8+ | 2002 01 20 | 699 | 0.1+ | 1.5+ | 2006 01 05 | 703 | 0.1+ | 0.3− |
| 2001 12 19 | 644 | 0.4+ | 0.2+ | 2002 02 03 | 644 | 0.2− | 0.4+ | 2006 01 05 | 703 | 0.7− | 1.1+ |
| 2001 12 19 | 644 | 0.2+ | 0.3+ | 2002 02 03 | 644 | 0.1− | 0.3+ | 2006 01 05 | 703 | 0.4+ | 0.3− |
| 2001 12 19 | 644 | 0.3+ | 0.0 | 2002 02 03 | 644 | 0.1+ | 0.3+ | 2006 01 05 | 703 | 0.4+ | 0.1− |
| 2002 01 08 | 704 | 0.8− | 0.7− | 2004 09 07 | 704 | 0.1+ | 0.7+ | 2006 01 30 | 703 | 0.2− | 0.6+ |
| 2002 01 08 | 704 | 0.7+ | 1.0− | 2004 09 07 | 704 | 0.3− | 0.5− | 2006 01 30 | 703 | 0.2+ | 0.3− |
| 2002 01 08 | 704 | 0.1− | 0.7− | 2004 09 07 | 704 | 0.7+ | 0.4+ | 2006 01 30 | 703 | 0.2− | 0.6+ |
| 2002 01 09 | 645 | 0.0 | 0.2− | 2004 09 07 | 704 | 0.5− | 0.7− | 2006 01 30 | 703 | 0.1− | 0.4+ |
| 2002 01 09 | 645 | 0.0 | 0.2− | 2006 01 02 | 703 | 0.5+ | 0.3+ | | | | |
| 2002 01 20 | 699 | 0.3+ | 1.0+ | 2006 01 02 | 703 | 1.1− | 1.7+ | | | | |

**2006 AV$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 278.00512 | | | (2000.0) | | |
| $n$ | 0.17787702 | $\omega$ | 166.50433 | | −0.19094884 | +0.96005865 |
| $a$ | 3.1312866 | $\Omega$ | 92.19923 | | −0.91853262 | −0.10128287 |
| $e$ | 0.1840526 | $i$ | 11.80987 | | −0.34617390 | −0.26082402 |
| $P$ | 5.54 | $H$ | 14.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 0.0 | 0.2+ | 2002 07 05 | 704 | 0.8+ | 0.9+ | 2006 01 02 | 704 | (2.9− | 0.6−) |
| 2002 06 08 | 704 | 0.2+ | 0.2+ | 2002 07 14 | 704 | 0.8− | 0.4− | 2006 01 06 | 691 | 0.2− | 0.2− |
| 2002 06 08 | 704 | 0.1− | 0.2+ | 2002 07 14 | 704 | 0.3− | 0.4− | 2006 01 06 | 691 | 0.0 | 0.0 |
| 2002 06 08 | 704 | 0.0 | 0.2+ | 2002 07 14 | 704 | 0.6− | 0.2− | 2006 01 06 | 704 | 0.2+ | 0.7− |
| 2002 06 08 | 704 | 0.5− | 0.5− | 2002 07 14 | 704 | 1.8− | 0.6− | 2006 01 06 | 691 | 0.1− | 0.2− |
| 2002 06 18 | 704 | 0.3+ | 0.7− | 2002 07 14 | 704 | 0.2+ | 0.1+ | 2006 01 06 | 704 | 1.3+ | 0.2− |
| 2002 06 18 | 704 | 0.2+ | 0.1+ | 2005 12 25 | 691 | 0.3+ | 0.0 | 2006 01 06 | 704 | 0.3+ | 0.4− |
| 2002 06 18 | 704 | 0.5+ | 0.1+ | 2005 12 25 | 691 | 0.2− | 0.2− | 2006 01 10 | 691 | 0.8+ | 0.3− |
| 2002 06 18 | 704 | 0.7+ | 0.4+ | 2005 12 25 | 691 | 0.1+ | 0.0 | 2006 01 10 | 691 | 0.3+ | 0.4− |
| 2002 07 05 | 704 | 0.3+ | 0.1− | 2006 01 02 | 704 | 1.1− | 1.2+ | 2006 01 10 | 691 | 0.4− | 1.3+ |
| 2002 07 05 | 704 | 0.1− | 0.3− | 2006 01 02 | 704 | 1.7− | 0.0 | | | | |
| 2002 07 05 | 704 | 0.6+ | 0.4+ | 2006 01 02 | 704 | 1.2− | 0.2− | | | | |

**2006 AH$_{15}$ = 2000 QN$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 160.25276 | | | (2000.0) | | |
| $n$ | 0.24662427 | $\omega$ | 234.25594 | | +0.98066138 | −0.19350094 |
| $a$ | 2.5183273 | $\Omega$ | 136.87974 | | +0.19055174 | +0.90982086 |
| $e$ | 0.1365949 | $i$ | 2.45986 | | +0.04464635 | +0.36712859 |
| $P$ | 4.00 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | I03 | 1.1− | 0.8− | 2004 08 23 | 691 | 0.1− | 0.1+ | 2006 01 05 | G96 | 1.0− | 0.2− |
| 2000 08 29 | I03 | 0.6− | 0.3− | 2004 10 04 | 691 | 0.0 | 0.1+ | 2006 01 06 | 691 | 0.1+ | 0.7+ |
| 2000 08 29 | I03 | 1.8+ | 0.9+ | 2004 10 04 | 691 | 0.2+ | 0.1+ | 2006 01 06 | 691 | 0.4− | 0.1− |
| 2000 08 30 | I03 | 0.1− | 0.2− | 2004 10 04 | 691 | 0.0 | 0.2− | 2006 01 06 | 691 | 0.5+ | 0.2− |
| 2000 08 30 | I03 | 0.1+ | 0.3+ | 2005 12 25 | G96 | 0.1+ | 0.3− | 2006 01 10 | 691 | 0.1− | 0.2+ |
| 2000 08 30 | I03 | 0.5− | 0.1+ | 2005 12 25 | G96 | 0.2− | 0.0 | 2006 01 10 | 691 | 0.1+ | 0.0 |
| 2002 02 12 | 291 | 0.1+ | 0.4+ | 2005 12 25 | G96 | 0.3+ | 0.5− | 2006 01 10 | 691 | 0.4+ | 0.3− |
| 2002 02 12 | 291 | 0.2+ | 0.7+ | 2005 12 25 | G96 | 0.1− | 0.5− | 2006 02 05 | G96 | 0.4− | 0.8− |
| 2002 02 12 | 291 | 0.2+ | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.8− | 2006 02 05 | G96 | 0.8− | 0.3− |
| 2004 08 23 | 691 | 0.1+ | 0.1+ | 2006 01 05 | G96 | 0.2+ | 0.3− | 2006 02 05 | G96 | 0.5− | 0.7− |
| 2004 08 23 | 691 | 0.0 | 0.1− | 2006 01 05 | G96 | 0.9− | 0.7− | 2006 02 05 | G96 | 0.7− | 0.7− |

**2006 AL$_{15}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.94137 | | | (2000.0) | | |
| $n$ | 0.28035503 | $\omega$ | 80.44684 | | −0.86108064 | +0.50666069 |
| $a$ | 2.3120496 | $\Omega$ | 129.98160 | | −0.48569009 | −0.79464796 |
| $e$ | 0.1445927 | $i$ | 3.20484 | | −0.15048347 | −0.33440929 |
| $P$ | 3.52 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.3− | 0.3− | 2006 01 05 | G96 | 0.4− | 0.0 | 2006 02 05 | G96 | 0.0 | 0.0 |
| 1999 01 13 | 691 | 0.0 | 0.4− | 2006 01 05 | G96 | 0.4+ | 0.1− | 2006 02 05 | G96 | 0.1− | 0.1− |
| 1999 01 13 | 691 | 0.3+ | 0.5+ | 2006 01 05 | G96 | 0.2− | 0.4− | 2006 02 25 | G96 | 0.7+ | 0.0 |
| 2003 05 28 | 691 | 0.2+ | 0.1− | 2006 01 06 | 691 | 0.3+ | 0.9+ | 2006 02 25 | G96 | 0.2+ | 0.2− |
| 2003 05 28 | 691 | 0.2− | 0.1+ | 2006 01 06 | 691 | 0.1+ | 0.4+ | 2006 02 25 | G96 | 0.4− | 0.7− |
| 2003 05 28 | 691 | 0.0 | 0.2+ | 2006 01 06 | 691 | 0.2+ | 0.3+ | 2006 02 25 | G96 | 0.2− | 0.1− |
| 2005 12 25 | G96 | 0.1− | 0.0 | 2006 01 10 | 691 | 0.2+ | 0.3+ | 2006 03 24 | G96 | 0.2+ | 0.2+ |
| 2005 12 25 | G96 | 0.1+ | 0.0 | 2006 01 10 | 691 | 0.2+ | 0.1+ | 2006 03 24 | G96 | 0.5− | 0.2− |
| 2005 12 25 | G96 | 0.7− | 0.1− | 2006 01 10 | 691 | 0.2+ | 0.4+ | 2006 03 24 | G96 | 0.3+ | 0.3+ |
| 2005 12 25 | G96 | 0.2+ | 0.1− | 2006 02 05 | G96 | 0.1− | 0.0 | 2006 03 24 | G96 | 0.1+ | 0.5− |
| 2006 01 05 | G96 | 0.3− | 0.1− | 2006 02 05 | G96 | 0.4− | 0.1− | | | | |

**2006 AE$_{16}$ = 1999 AS$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.92541 | | | (2000.0) | | |
| $n$ | 0.27883752 | $\omega$ | 56.55512 | | −0.96028320 | +0.27730223 |
| $a$ | 2.3204306 | $\Omega$ | 139.51983 | | −0.26922087 | −0.89163190 |
| $e$ | 0.1510733 | $i$ | 2.73511 | | −0.07332325 | −0.35790505 |
| $P$ | 3.53 | $H$ | 18.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 11 | 691 | 0.7− | 0.2− | 2003 05 11 | 691 | 0.6− | 0.3− | 2006 01 08 | 691 | 0.2+ | 0.1+ |
| 1999 01 11 | 691 | 0.7− | 0.0 | 2003 05 28 | 691 | 0.3− | 0.3+ | 2006 01 08 | 691 | 0.3+ | 0.0 |
| 1999 01 11 | 691 | 0.3− | 0.1− | 2003 05 28 | 691 | 0.2+ | 0.6+ | 2006 01 08 | 691 | 0.4+ | 0.4+ |
| 1999 01 15 | 691 | 0.4+ | 0.6− | 2003 05 28 | 691 | 0.1+ | 0.4+ | 2006 01 22 | G96 | 0.6− | 0.5− |
| 1999 01 15 | 691 | 0.4+ | 0.3+ | 2006 01 04 | 691 | 0.1− | 0.4+ | 2006 01 22 | G96 | 0.0 | 0.4− |
| 1999 01 15 | 691 | 0.5+ | 0.8− | 2006 01 04 | 691 | 0.1+ | 0.4+ | 2006 01 22 | G96 | 0.4− | 0.2− |
| 2003 04 25 | 691 | 0.2+ | 0.2+ | 2006 01 04 | 691 | 0.4+ | 0.8+ | 2006 01 22 | G96 | 0.3− | 0.3− |
| 2003 04 25 | 691 | 0.3+ | 0.1− | 2006 01 06 | G96 | 0.3− | 0.0 | 2006 02 20 | G96 | 0.3+ | 0.2+ |
| 2003 04 25 | 691 | 0.4+ | 0.1+ | 2006 01 06 | G96 | 0.6− | 0.3− | 2006 02 20 | G96 | 0.8− | 0.0 |
| 2003 05 11 | 691 | 0.2− | 0.4− | 2006 01 06 | G96 | 0.2− | 0.1+ | 2006 02 20 | G96 | 0.7− | 0.1+ |
| 2003 05 11 | 691 | 0.2+ | 0.3− | 2006 01 06 | G96 | 0.5− | 0.5− | 2006 02 20 | G96 | 0.1+ | 0.3− |

### 2006 $AG_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.24148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23335285 | $\omega$ | 155.31555 | | −0.44663234 | | +0.86312189 |
| $a$ | 2.6129272 | $\Omega$ | 87.40003 | | −0.85508514 | | −0.33424799 |
| $e$ | 0.1112085 | $i$ | 13.64542 | | −0.26334189 | | −0.37854840 |
| $P$ | 4.22 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 23 | 704 | 0.2+ | 0.1− | 2002 02 21 | 704 | 0.4+ | 0.0 | 2006 01 06 | 704 | 1.0+ | 0.5− |
| 2002 01 23 | 704 | 1.0− | 0.2− | 2002 03 16 | 699 | 0.5+ | 0.1− | 2006 01 06 | 704 | 0.9+ | 0.5+ |
| 2002 01 23 | 704 | 0.8− | 0.4− | 2002 03 16 | 699 | 1.4− | 0.7− | 2006 01 06 | 704 | 0.1− | 0.1− |
| 2002 01 23 | 704 | 0.5− | 0.6− | 2002 03 16 | 699 | 0.5− | 0.1+ | 2006 01 06 | 704 | 1.3+ | 1.1+ |
| 2002 02 07 | 704 | 0.7+ | 0.9+ | 2002 03 16 | 699 | 1.5+ | 0.2− | 2006 01 06 | 704 | 1.2+ | 0.8+ |
| 2002 02 07 | 704 | 0.5+ | 0.5+ | 2005 12 22 | 703 | 0.3− | 0.5− | 2006 01 27 | 703 | 1.0− | 1.4− |
| 2002 02 07 | 704 | 0.2+ | 0.8+ | 2005 12 22 | 703 | 0.1− | 0.1− | 2006 01 27 | 703 | 0.5− | 1.1− |
| 2002 02 07 | 704 | 0.2+ | 0.8+ | 2005 12 22 | 703 | 0.0 | 0.0 | 2006 01 27 | 703 | 1.8− | 0.3− |
| 2002 02 07 | 704 | 0.9+ | 0.7+ | 2005 12 22 | 703 | 0.3+ | 1.0− | 2006 01 27 | 703 | 1.6− | 1.4+ |
| 2002 02 21 | 704 | 0.3− | 0.2− | 2006 01 05 | 703 | 1.5+ | 0.4− | 2006 02 02 | 703 | 0.4+ | 0.8+ |
| 2002 02 21 | 704 | 0.0 | 0.3− | 2006 01 05 | 703 | 0.2+ | 0.1+ | 2006 02 02 | 703 | 0.7− | 0.1− |
| 2002 02 21 | 704 | 0.2− | 0.4− | 2006 01 05 | 703 | 1.1− | 0.1+ | 2006 02 02 | 703 | 0.1+ | 0.7+ |
| 2002 02 21 | 704 | 0.1− | 0.3− | 2006 01 05 | 703 | 0.5+ | 0.3+ | 2006 02 02 | 703 | 0.1− | 0.8− |

### 2006 $AK_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.52165 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24034192 | $\omega$ | 212.76525 | | +0.81600220 | | +0.56250730 |
| $a$ | 2.5620230 | $\Omega$ | 112.44176 | | −0.49449404 | | +0.79856454 |
| $e$ | 0.2403283 | $i$ | 8.28215 | | −0.29935941 | | +0.21419668 |
| $P$ | 4.10 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.1− | 2004 10 05 | 644 | 0.4+ | 0.9+ | 2004 10 20 | 703 | 0.6− | 0.1+ |
| 2000 10 02 | 645 | 0.1+ | 0.0 | 2004 10 14 | 699 | (2.4+ | 0.4−) | 2006 01 04 | 691 | 0.3+ | 0.0 |
| 2004 08 15 | E12 | 0.1+ | 0.8+ | 2004 10 14 | 699 | 0.4+ | 0.2− | 2006 01 04 | 691 | 0.2− | 0.5+ |
| 2004 08 15 | E12 | 0.6− | 0.8− | 2004 10 14 | 699 | 1.5− | 0.7+ | 2006 01 04 | 691 | 0.3+ | 0.1+ |
| 2004 08 15 | E12 | 0.5+ | 0.9+ | 2004 10 14 | 699 | 0.3+ | 0.1+ | 2006 01 07 | G96 | 0.6− | 0.1− |
| 2004 08 15 | E12 | 1.1− | 0.2+ | 2004 10 20 | 703 | 0.4+ | 1.4− | 2006 01 07 | G96 | 0.1+ | 0.5− |
| 2004 10 05 | 644 | 0.0 | 0.4+ | 2004 10 20 | 703 | 0.4+ | 0.0 | 2006 01 07 | G96 | 0.8− | 0.4− |
| 2004 10 05 | 644 | 0.2+ | 0.7+ | 2004 10 20 | 703 | (2.3− | 0.4−) | 2006 01 07 | G96 | 0.7− | 0.2− |

### 2006 $AE_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.41133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18425465 | $\omega$ | 312.98755 | | +0.80240321 | | −0.56617808 |
| $a$ | 3.0586075 | $\Omega$ | 82.35992 | | +0.58781160 | | +0.69520565 |
| $e$ | 0.0978525 | $i$ | 10.97302 | | +0.10308541 | | +0.44286734 |
| $P$ | 5.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 03 | 691 | 0.0 | 0.2+ | 2004 09 04 | 644 | 0.0 | 0.3+ | 2006 01 05 | 704 | 0.1+ | 0.2+ |
| 1997 05 03 | 691 | 0.2+ | 0.1+ | 2004 09 04 | 644 | 0.4+ | 0.2− | 2006 01 05 | 704 | 0.2− | 0.3− |
| 1997 05 03 | 691 | 0.0 | 0.1+ | 2004 09 07 | 704 | 0.6− | 1.2+ | 2006 01 05 | 704 | 0.2− | 0.6+ |
| 2001 01 18 | 704 | 0.1+ | 0.1+ | 2004 09 07 | 704 | 0.3+ | 0.0 | 2006 01 05 | 704 | 0.2+ | 0.6+ |
| 2001 01 18 | 704 | 0.5+ | 0.0 | 2004 09 07 | 704 | 0.6+ | 1.0+ | 2006 01 07 | G96 | 0.0 | 0.1− |
| 2001 01 18 | 704 | 0.3+ | 0.9+ | 2004 09 07 | 704 | 1.0+ | 1.2− | 2006 01 07 | G96 | 0.1+ | 0.0 |
| 2001 01 18 | 704 | 0.9+ | 2.1+ | 2005 11 22 | 691 | 0.2+ | 0.3− | 2006 01 07 | G96 | 0.2+ | 0.1− |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2005 11 22 | 691 | 0.1− | 0.0 | 2006 01 07 | G96 | 0.1− | 0.1− |
| 2001 02 22 | 645 | 0.0 | 0.1− | 2005 11 22 | 691 | 0.4− | 0.1− | 2006 01 27 | G96 | 0.2+ | 0.1− |
| 2004 08 23 | 699 | 0.5+ | 1.6− | 2005 11 30 | 704 | 0.9+ | 0.9+ | 2006 01 27 | G96 | 0.0 | 0.3− |
| 2004 08 23 | 699 | 1.2− | 0.2− | 2005 11 30 | 704 | 0.2− | 1.4+ | 2006 01 27 | G96 | 0.2+ | 0.2− |
| 2004 08 23 | 699 | 0.2− | 0.5+ | 2005 11 30 | 704 | 0.6+ | 0.7+ | 2006 01 27 | G96 | 0.0 | 0.3− |
| 2004 08 23 | 699 | 0.9− | 0.6+ | 2005 11 30 | 704 | 0.7− | 0.8− | | | | |
| 2004 09 04 | 644 | 0.0 | 0.3− | 2006 01 05 | 704 | 0.0 | 0.8+ | | | | |

### 2006 $AM_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.17045 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22706767 | $\omega$ | 62.87710 | | +0.99605788 | | −0.05686204 |
| $a$ | 2.6609243 | $\Omega$ | 300.31227 | | +0.02184030 | | +0.90110136 |
| $e$ | 0.0852419 | $i$ | 4.52337 | | +0.08597501 | | +0.42986399 |
| $P$ | 4.34 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 695 | 0.2− | 0.2+ | 2004 09 09 | 691 | 0.3− | 0.1− | 2006 01 05 | 691 | 0.0 | 0.0 |
| 2002 02 08 | 695 | 0.4+ | 0.2+ | 2004 09 23 | 691 | 0.1+ | 0.0 | 2006 01 05 | 691 | 0.2− | 0.1+ |
| 2004 08 25 | 691 | 0.1− | 0.1+ | 2004 09 23 | 691 | 0.1+ | 0.2− | 2006 01 05 | 691 | 0.6+ | 0.1+ |
| 2004 08 25 | 691 | 0.1+ | 0.3+ | 2004 09 23 | 691 | 0.1− | 0.0 | 2006 01 07 | G96 | 0.2− | 0.0 |
| 2004 08 25 | 691 | 0.1− | 0.1+ | 2005 12 28 | 691 | 0.2− | 0.0 | 2006 01 07 | G96 | 0.0 | 0.3− |
| 2004 09 09 | 691 | 0.2− | 0.2− | 2005 12 28 | 691 | 0.4− | 0.1+ | 2006 01 07 | G96 | 0.3− | 0.1− |
| 2004 09 09 | 691 | 0.4+ | 0.3+ | 2005 12 28 | 691 | 0.3+ | 0.1− | 2006 01 07 | G96 | 0.3− | 0.1− |

### 2006 $AW_{27}$ = 1999 $XC_{244}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.55654 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19080028 | $\omega$ | 352.57491 | | +0.53393310 | | −0.83765426 |
| $a$ | 2.9882485 | $\Omega$ | 65.08926 | | +0.78213392 | | +0.43758210 |
| $e$ | 0.0283448 | $i$ | 7.29165 | | +0.32121951 | | +0.32689027 |
| $P$ | 5.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 06 | 691 | 0.1+ | 0.3− | 2004 10 07 | 699 | 0.2− | 0.0 | 2006 01 06 | 703 | 1.4− | 1.1− |
| 1999 12 06 | 691 | 0.1− | 0.3+ | 2004 10 07 | 699 | 0.1− | 1.1+ | 2006 01 06 | 703 | 0.3− | 0.4+ |
| 1999 12 06 | 691 | 0.2− | 0.2− | 2004 10 07 | 699 | 0.6− | 0.1+ | 2006 01 06 | 703 | 0.5− | 0.8+ |
| 1999 12 13 | 691 | 0.0 | 0.0 | 2004 10 07 | 699 | 0.1+ | 0.9+ | 2006 01 06 | 703 | 0.4− | 0.4− |
| 1999 12 13 | 691 | 0.0 | 0.4+ | 2005 03 11 | G96 | 0.4− | 0.1− | 2006 01 07 | G96 | 0.2− | 0.5− |
| 1999 12 13 | 691 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.2+ | 0.3− | 2006 01 07 | G96 | 0.3− | 0.5− |
| 2002 04 02 | 691 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.6− | 0.3− | 2006 01 07 | G96 | 0.0 | 0.6− |
| 2002 04 02 | 691 | 0.3− | 0.2+ | 2005 03 11 | G96 | 0.5+ | 0.4+ | 2006 01 07 | G96 | 0.1− | 0.4− |
| 2002 04 02 | 691 | 0.2+ | 0.1+ | 2006 01 05 | 703 | 0.3+ | 0.3− | 2006 01 25 | 703 | 0.8+ | 0.3+ |
| 2002 05 19 | 644 | 0.4+ | 0.5+ | 2006 01 05 | 703 | 0.3− | 1.0+ | 2006 01 25 | 703 | 0.5− | 0.6+ |
| 2002 05 19 | 644 | 0.8+ | 0.7+ | 2006 01 05 | 703 | 0.4− | 1.0− | 2006 01 25 | 703 | 1.5+ | 1.0+ |
| 2002 05 19 | 644 | 0.5+ | 0.6+ | 2006 01 05 | 703 | 0.4− | 0.1− | 2006 01 25 | 703 | 2.1+ | 0.7+ |

### 2006 $AF_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.73010 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26745594 | $\omega$ | 145.33209 | | +0.10078384 | | +0.98260337 |
| $a$ | 2.3858028 | $\Omega$ | 129.92725 | | −0.95264191 | | +0.14052305 |
| $e$ | 0.2232526 | $i$ | 11.73676 | | −0.28690767 | | −0.12142445 |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.3− | 0.4+ | 2006 01 02 | G96 | 0.2− | 0.2+ | 2006 02 20 | G96 | 0.5− | 0.0 |
| 2000 09 22 | 704 | 1.0− | 0.4+ | 2006 01 02 | G96 | 0.5− | 0.1+ | 2006 02 20 | G96 | 0.5− | 0.1+ |
| 2000 09 22 | 704 | 0.7+ | 1.4+ | 2006 01 02 | G96 | 0.3+ | 0.0 | 2006 02 20 | G96 | 0.2− | 0.2+ |
| 2003 03 03 | 704 | 3.0+ | 0.3+ | 2006 01 02 | G96 | 0.2+ | 0.1− | 2006 02 20 | G96 | 0.0 | 0.3− |
| 2003 03 03 | 704 | 1.3+ | 0.4− | 2006 01 07 | 691 | 0.0 | 0.1− | 2006 02 24 | G96 | 0.0 | 0.2+ |
| 2003 03 03 | 704 | 2.1+ | 0.2− | 2006 01 07 | 691 | 0.2− | 0.0 | 2006 02 24 | G96 | 0.0 | 0.6+ |
| 2003 03 03 | 704 | 2.4+ | 0.2+ | 2006 01 07 | 691 | 0.6+ | 0.6+ | 2006 03 23 | G96 | 0.5− | 0.1− |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.0 | 0.4− | 2006 03 23 | G96 | 0.2− | 0.3− |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2006 01 23 | G96 | 0.4+ | 0.6− | 2006 03 23 | G96 | 0.1+ | 0.1− |
| 2003 03 27 | 704 | 0.6+ | 1.7+ | 2006 01 23 | G96 | 0.3+ | 0.4− | 2006 03 23 | G96 | 0.0 | 0.0 |
| 2003 03 27 | 704 | 0.5+ | 0.6+ | 2006 01 23 | G96 | 0.1+ | 0.3− | 2006 03 23 | G96 | 0.3+ | 0.4− |
| 2003 03 27 | 704 | 0.6+ | 0.4+ | 2006 02 04 | G96 | 0.1− | 0.0 | 2006 03 23 | G96 | 0.4− | 0.3− |
| 2003 03 27 | 704 | 0.6+ | 0.2− | 2006 02 04 | G96 | 0.1+ | 0.0 | 2006 03 23 | G96 | 0.6− | 0.1+ |
| 2003 03 31 | 645 | 0.2− | 0.0 | 2006 02 04 | G96 | 0.1+ | 0.3− | 2006 03 23 | G96 | 0.4+ | 0.5+ |
| 2003 03 31 | 645 | 0.1− | 0.0 | 2006 02 04 | G96 | 0.1− | 0.0 | | | | |

**2006 AG$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.98522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23395962 | $\omega$ | 248.12543 | | +0.92021735 | +0.32178417 | |
| $a$ | 2.6084076 | $\Omega$ | 92.53529 | | −0.22244651 | +0.89838821 | |
| $e$ | 0.1877636 | $i$ | 12.88837 | | −0.32205215 | +0.29892068 | |
| $P$ | 4.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 699 | 0.8− | 0.5− | 2004 07 25 | 699 | 0.0 | 1.1+ | 2005 12 29 | G96 | 0.3− | 0.5− |
| 2000 09 29 | 699 | 0.3+ | 0.0 | 2004 07 25 | 699 | 0.6− | 0.2− | 2005 12 29 | G96 | 0.4− | 0.3− |
| 2000 09 29 | 699 | 0.6− | 1.1+ | 2004 07 25 | 699 | 0.8+ | 0.1+ | 2006 01 05 | 691 | 0.1− | 0.3+ |
| 2000 09 29 | 699 | 0.3+ | 1.1+ | 2004 07 25 | 699 | 0.0 | 0.1− | 2006 01 05 | 691 | 0.3+ | 0.3+ |
| 2003 04 28 | 645 | 0.1+ | 0.1+ | 2004 08 09 | 644 | 0.0 | 0.1− | 2006 01 05 | 691 | 0.2+ | 0.1+ |
| 2003 04 28 | 645 | 0.0 | 0.1+ | 2004 08 09 | 644 | 0.2− | 0.0 | 2006 01 07 | 691 | 0.2− | 0.2+ |
| 2004 07 10 | 644 | 0.3− | 0.4+ | 2004 08 09 | 644 | 0.1− | 0.2+ | 2006 01 07 | 691 | 0.1− | 0.1+ |
| 2004 07 10 | 644 | 0.5− | 1.4+ | 2005 12 29 | G96 | 0.1− | 0.1+ | 2006 01 07 | 691 | 0.1+ | 0.1+ |
| 2004 07 10 | 644 | 0.0 | 0.1− | 2005 12 29 | G96 | 0.2+ | 0.1− | | | | |

**2006 AS$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.34465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29638592 | $\omega$ | 34.84068 | | +0.74624703 | −0.66555922 | |
| $a$ | 2.2279101 | $\Omega$ | 6.92291 | | +0.58566740 | +0.64781672 | |
| $e$ | 0.0990299 | $i$ | 5.75900 | | +0.31640015 | +0.37062706 | |
| $P$ | 3.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 645 | 0.0 | 0.0 | 2003 03 24 | 691 | 0.5+ | 1.1+ | 2006 01 05 | 703 | 0.2− | 1.1− |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2003 03 24 | 291 | 0.3− | 0.5+ | 2006 01 05 | 703 | 0.0 | 1.1− |
| 2003 02 22 | 644 | 0.3+ | 0.4− | 2003 03 24 | 291 | 0.0 | 0.4+ | 2006 01 05 | 703 | 0.2− | 0.8− |
| 2003 02 22 | 644 | 0.2+ | 0.3− | 2003 03 24 | 291 | 0.3− | 0.5+ | 2006 01 07 | 704 | 0.1− | 0.6− |
| 2003 02 22 | 644 | 0.1+ | 0.1− | 2003 03 30 | 645 | 0.0 | 0.1− | 2006 01 07 | 704 | 0.2− | 0.0 |
| 2003 03 07 | 699 | 0.1+ | 0.5− | 2003 03 30 | 645 | 0.1+ | 0.2− | 2006 01 07 | 704 | 1.0− | 0.9+ |
| 2003 03 07 | 699 | 1.1+ | 0.2− | 2003 03 31 | 645 | 0.2− | 0.1− | 2006 01 07 | 704 | 0.3+ | 0.8− |
| 2003 03 07 | 699 | 0.2− | 1.3− | 2003 03 31 | 645 | 0.1− | 0.0 | 2006 01 09 | 699 | 1.1+ | 0.8− |
| 2003 03 07 | 699 | 0.1+ | 0.7− | 2005 12 26 | 703 | 0.7+ | 0.1− | 2006 01 09 | 699 | 1.4− | 1.2+ |
| 2003 03 23 | 645 | 0.0 | 0.1− | 2005 12 26 | 703 | 0.1+ | 1.1+ | 2006 01 09 | 699 | (2.2− | 0.1+) |
| 2003 03 23 | 645 | 0.0 | 0.1− | 2005 12 26 | 703 | 0.2+ | 0.8+ | 2006 01 09 | 699 | 0.9+ | 0.9+ |
| 2003 03 24 | 691 | 0.3+ | 0.9+ | 2005 12 26 | 703 | 0.1− | 0.8+ | | | | |
| 2003 03 24 | 691 | 0.2+ | 1.2+ | 2006 01 05 | 703 | 0.1+ | 0.0 | | | | |

**2006 AP$_{32}$ = 1999 RA$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.78789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21242259 | $\omega$ | 175.97737 | | +0.72902532 | +0.68118311 | |
| $a$ | 2.7818620 | $\Omega$ | 140.80636 | | −0.63093295 | +0.70679448 | |
| $e$ | 0.1566325 | $i$ | 6.10145 | | −0.26541606 | +0.19086940 | |
| $P$ | 4.64 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.2− | 0.2− | 2002 03 13 | 691 | 0.1+ | 0.2− | 2006 01 09 | 691 | 0.0 | 0.1− |
| 1999 09 07 | 704 | 0.2− | 0.8− | 2002 03 13 | 691 | 0.0 | 0.1− | 2006 02 04 | G96 | 0.0 | 0.6− |
| 1999 09 07 | 704 | 0.6− | 0.4+ | 2006 01 05 | 691 | 0.1+ | 0.2− | 2006 02 04 | G96 | 0.3− | 0.1+ |
| 1999 09 07 | 704 | 0.2+ | 0.8− | 2006 01 05 | 691 | 0.2+ | 0.7+ | 2006 02 04 | G96 | 0.4− | 0.1− |
| 1999 09 07 | 704 | 0.0 | 1.6− | 2006 01 05 | 691 | 0.2+ | 0.2− | 2006 02 04 | G96 | 0.2− | 0.3+ |
| 1999 09 13 | 704 | 0.7+ | 0.7+ | 2006 01 07 | 691 | 0.1− | 0.1− | 2006 02 24 | G96 | 0.8− | 0.2− |
| 1999 09 13 | 704 | 0.0 | 0.4+ | 2006 01 07 | 691 | 0.1− | 0.1− | 2006 02 24 | G96 | 0.7− | 0.4− |
| 1999 09 13 | 704 | 0.8+ | 0.0 | 2006 01 07 | 691 | 0.1− | 0.2+ | 2006 02 24 | G96 | 0.4− | 0.4+ |
| 1999 09 13 | 704 | 0.5− | 1.1+ | 2006 01 09 | 691 | 0.0 | 0.3+ | 2006 02 24 | G96 | 0.2− | 0.1− |
| 2002 03 13 | 691 | 0.1− | 0.2+ | 2006 01 09 | 691 | 0.4+ | 0.4− | | | | |

**2006 AR$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.65630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22817730 | $\omega$ | 256.23558 | | +0.92993684 | +0.29625750 | |
| $a$ | 2.6522905 | $\Omega$ | 86.18763 | | −0.19129032 | +0.89565937 | |
| $e$ | 0.2234406 | $i$ | 12.60984 | | −0.31404694 | +0.33170134 | |
| $P$ | 4.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 645 | 0.0 | 0.0 | 2004 07 12 | 644 | 0.3− | 0.1+ | 2004 09 18 | E12 | 0.0 | 0.7+ |
| 2000 11 27 | 645 | 0.0 | 0.0 | 2004 09 03 | E12 | 0.0 | 1.0+ | 2006 01 06 | 704 | 0.3− | 1.3+ |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2004 09 03 | E12 | 0.3+ | 0.9− | 2006 01 06 | 704 | 0.4− | 0.2+ |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2004 09 03 | E12 | 0.2+ | 0.1+ | 2006 01 06 | 704 | 1.3+ | 0.2− |
| 2003 04 27 | 645 | 0.0 | 0.0 | 2004 09 03 | E12 | 0.1+ | 0.7+ | 2006 01 07 | 291 | 0.2− | 0.0 |
| 2003 04 27 | 645 | 0.0 | 0.0 | 2004 09 18 | E12 | 0.5− | 0.2− | 2006 01 07 | 291 | 0.0 | 0.1+ |
| 2004 07 12 | 644 | 0.2− | 0.3− | 2004 09 18 | E12 | 0.0 | 0.2− | 2006 01 07 | 291 | 0.0 | 0.0 |
| 2004 07 12 | 644 | 0.3− | 0.4+ | 2004 09 18 | E12 | 0.2+ | 0.2− | | | | |

**2006 AL$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.90613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23771572 | $\omega$ | 29.28990 | | −0.01824544 | −0.97522385 | |
| $a$ | 2.5808580 | $\Omega$ | 62.53577 | | +0.86217126 | −0.12700292 | |
| $e$ | 0.1357733 | $i$ | 14.38696 | | +0.50628828 | +0.18113173 | |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 704 | 0.1+ | 0.1+ | 2006 01 06 | 703 | 0.6+ | 0.9− | 2006 01 22 | 704 | 0.5+ | 0.3− |
| 2002 02 07 | 704 | 0.2+ | 0.2− | 2006 01 07 | 704 | 0.9− | 0.3− | 2006 01 22 | 704 | 0.3− | 0.1+ |
| 2002 02 07 | 704 | 0.6+ | 0.0 | 2006 01 07 | 704 | 0.5+ | 0.2− | 2006 01 22 | 704 | 0.0 | 1.2+ |
| 2002 02 07 | 704 | 0.6+ | 0.3− | 2006 01 07 | 704 | 0.8− | 0.4+ | 2006 02 04 | 703 | 0.9− | 0.8+ |
| 2002 02 07 | 704 | 0.1+ | 0.5− | 2006 01 07 | 704 | 0.2+ | 1.2+ | 2006 02 04 | 703 | 1.2+ | 0.5+ |
| 2002 02 21 | 704 | 0.5− | 0.3+ | 2006 01 07 | 704 | 0.7+ | 0.7+ | 2006 02 04 | 703 | 1.4− | 0.7− |
| 2002 02 21 | 704 | 1.0− | 0.2+ | 2006 01 22 | 703 | 0.3+ | 0.5− | 2006 02 04 | 703 | 0.7− | 0.9− |
| 2002 02 21 | 704 | 0.2− | 0.4+ | 2006 01 22 | 703 | 0.2− | 0.0 | 2006 02 07 | 704 | 0.7− | 1.4+ |
| 2006 01 06 | 703 | 0.4− | 0.1− | 2006 01 22 | 704 | 0.9+ | 0.8+ | 2006 02 07 | 704 | 0.6+ | 0.4− |
| 2006 01 06 | 703 | 0.4+ | 0.8+ | 2006 01 22 | 703 | 0.3+ | 1.4− | 2006 02 07 | 704 | 1.3+ | 1.0+ |
| 2006 01 06 | 703 | 1.1− | 0.3− | 2006 01 22 | 703 | 0.7− | 1.6− | 2006 02 07 | 704 | 0.4+ | 1.5− |

**2006 AP$_{35}$ = 2006 BM$_{17}$ = 2004 TM$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.41215 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28317153 | $\omega$ | 328.90316 | | −0.41740532 | +0.90863965 | |
| $a$ | 2.2966932 | $\Omega$ | 276.42355 | | −0.83120983 | −0.38715626 | |
| $e$ | 0.1877702 | $i$ | 0.69858 | | −0.36723701 | −0.15647369 | |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 691 | 0.0 | 0.3− | 2003 05 05 | 691 | 0.3+ | 0.9+ | 2006 01 04 | G96 | 0.4− | 0.3− |
| 1999 01 14 | 691 | 0.0 | 0.6− | 2003 05 05 | 691 | 0.1+ | 0.9+ | 2006 01 04 | 691 | 0.3+ | 0.2+ |
| 1999 01 14 | 691 | 0.1− | 0.3+ | 2003 05 10 | 691 | 0.0 | 0.2− | 2006 01 04 | 691 | 0.2+ | 0.4+ |
| 2000 09 03 | 691 | 0.2− | 0.3+ | 2003 05 10 | 691 | 0.0 | 0.3− | 2006 01 04 | 691 | 0.0 | 0.0 |
| 2000 09 03 | 691 | 0.7− | 1.2+ | 2003 05 10 | 691 | 0.0 | 1.0− | 2006 01 08 | 691 | 0.2+ | 0.4+ |
| 2000 09 03 | 691 | 0.1− | 0.3+ | 2004 10 07 | 691 | 0.3− | 1.0+ | 2006 01 08 | 691 | 0.1− | 0.4+ |
| 2003 04 25 | 691 | 0.1+ | 1.1+ | 2004 10 07 | 691 | 0.0 | 0.6+ | 2006 01 08 | 691 | 0.0 | 0.7+ |
| 2003 04 25 | 691 | 0.7+ | 0.8+ | 2004 10 07 | 691 | 0.2− | 0.8+ | 2006 01 22 | G96 | 0.1+ | 0.0 |
| 2003 04 25 | 691 | 0.4+ | 0.8+ | 2004 10 09 | 691 | 0.4− | 1.0+ | 2006 01 22 | G96 | 0.3− | 0.0 |
| 2003 04 29 | 699 | 0.8+ | 0.9− | 2004 10 09 | 691 | 0.1− | 0.8+ | 2006 01 22 | G96 | 0.2− | 0.0 |
| 2003 04 29 | 699 | 0.2− | 0.7− | 2004 10 09 | 691 | 0.3− | 0.7+ | 2006 01 24 | 704 | 0.5+ | 1.4+ |
| 2003 04 29 | 699 | 0.1+ | 0.5− | 2006 01 04 | G96 | 0.4− | 0.5− | 2006 01 24 | 704 | 0.0 | 1.6+ |
| 2003 04 29 | 699 | 1.1− | 2.4+ | 2006 01 04 | G96 | 0.6− | 0.3+ | 2006 01 24 | 704 | 0.4+ | 0.8+ |
| 2003 05 05 | 691 | 0.4+ | 1.3+ | 2006 01 04 | G96 | 0.2+ | 0.3− | | | | |

**2006 AO$_{37}$ = 2006 BL$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 242.04136 | | $\omega$ | 188.44629 | +0.59572789 | +0.79824441 |
| $n$ | 0.24480144 | | $\Omega$ | 118.16541 | −0.73088773 | +0.58469396 |
| $a$ | 2.5308131 | | $i$ | 5.79160 | −0.33303364 | +0.14470253 |
| $e$ | 0.1492291 | | $H$ | 17.1 | $G$ 0.15 | $U$ 1 |
| $P$ | 4.03 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 691 | 0.2− | 0.0 | 2004 10 16 | 735 | 0.9− | 1.3+ | 2006 01 25 | 691 | 0.0 | 0.0 |
| 2002 01 14 | 691 | 0.3− | 0.0 | 2004 10 16 | 735 | 0.3− | 1.3+ | 2006 01 25 | 691 | 0.2+ | 0.2+ |
| 2002 01 14 | 691 | 0.2− | 0.2+ | 2004 10 16 | 735 | 0.1− | 0.8+ | 2006 01 25 | 691 | 0.3+ | 0.2− |
| 2002 01 21 | 291 | 0.2− | 0.0 | 2006 01 04 | 691 | 0.8− | 0.4− | 2006 01 30 | 691 | 0.3+ | 0.1+ |
| 2002 01 21 | 291 | 0.2− | 0.2+ | 2006 01 04 | 691 | 0.2− | 0.2+ | 2006 01 30 | 691 | 0.2+ | 0.6+ |
| 2002 01 21 | 291 | 0.2− | 0.3− | 2006 01 04 | 691 | 0.1− | 0.1− | 2006 01 30 | 691 | 0.1+ | 0.2+ |
| 2002 02 07 | 691 | 0.5+ | 0.2+ | 2006 01 08 | 691 | 0.2+ | 0.6− | 2006 03 04 | G96 | 0.0 | 0.1− |
| 2002 02 07 | 691 | 0.5+ | 0.0 | 2006 01 08 | 691 | 0.3+ | 0.3+ | 2006 03 04 | G96 | 0.4− | 0.3− |
| 2002 02 07 | 691 | 0.4+ | 0.1− | 2006 01 08 | 691 | 0.1+ | 0.1+ | 2006 03 04 | G96 | 0.3+ | 0.1− |
| 2003 05 28 | 691 | 0.0 | 0.2+ | 2006 01 09 | 291 | 0.1− | 0.0 | 2006 03 04 | G96 | 1.0− | 0.4− |
| 2003 05 28 | 691 | 0.1+ | 0.4+ | 2006 01 09 | 291 | 0.2− | 0.0 | | | | |
| 2003 05 28 | 691 | 0.1+ | 0.2+ | 2006 01 09 | 291 | 0.0 | 0.1+ | | | | |

**2006 AE$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 248.97614 | | $\omega$ | 341.86043 | +0.60384656 | +0.79651012 |
| $n$ | 0.28386665 | | $\Omega$ | 325.26697 | −0.72449626 | +0.53239144 |
| $a$ | 2.2929423 | | $i$ | 3.08625 | −0.33237705 | +0.28658504 |
| $e$ | 0.2158001 | | $H$ | 17.4 | $G$ 0.15 | $U$ 4 |
| $P$ | 3.47 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 04 | 327 | 0.3+ | 1.0− | 2004 09 13 | 644 | 0.4+ | 0.2+ | 2006 01 07 | G96 | 0.5− | 0.2− |
| 1997 09 04 | 327 | 0.1+ | 0.4− | 2004 09 22 | 704 | 0.2+ | 0.0 | 2006 01 07 | G96 | 0.2− | 0.1+ |
| 1997 09 04 | 327 | 0.5+ | 0.5− | 2004 09 22 | 704 | 0.5+ | 1.4+ | 2006 01 08 | G96 | 0.7− | 0.1− |
| 2004 09 10 | 704 | 0.9+ | 0.1− | 2004 09 22 | 704 | 0.7+ | 0.2+ | 2006 01 08 | G96 | 1.1− | 0.5− |
| 2004 09 10 | 704 | 1.0− | 0.3+ | 2004 10 05 | 691 | 0.2+ | 0.2− | 2006 01 08 | G96 | 0.0 | 1.0+ |
| 2004 09 10 | 704 | 1.4− | 0.9+ | 2004 10 05 | 691 | 0.0 | 0.1− | 2006 01 08 | G96 | 0.2− | 0.5− |
| 2004 09 10 | 704 | 1.2− | 0.5+ | 2004 10 05 | 691 | 0.1− | 0.1− | 2006 01 08 | 691 | 0.2+ | 0.1+ |
| 2004 09 13 | 704 | 0.3+ | 0.6+ | 2004 10 08 | 699 | (0.6+ | 2.4+) | 2006 01 08 | 691 | 0.7+ | 0.0 |
| 2004 09 13 | 704 | 0.5− | 0.1+ | 2004 10 08 | 699 | (2.2− | 0.8+) | 2006 01 08 | 691 | 0.6+ | 0.5− |
| 2004 09 13 | 704 | 0.3− | 0.6− | 2004 10 08 | 699 | 0.1+ | 0.1− | 2006 01 30 | 691 | 0.4− | 0.2+ |
| 2004 09 13 | 704 | 0.4+ | 0.6− | 2004 10 08 | 699 | 0.5− | 0.8− | 2006 01 30 | 691 | 0.2+ | 0.2+ |
| 2004 09 13 | 644 | 0.2+ | 0.7+ | 2006 01 07 | G96 | 0.2+ | 0.6− | 2006 01 30 | 691 | 0.6− | 0.2+ |
| 2004 09 13 | 644 | 0.1+ | 0.6+ | 2006 01 07 | G96 | 0.1− | 0.4− | | | | |

**2006 AG$_{41}$ = 2004 TT$_{88}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.44163 | | $\omega$ | 337.58664 | +0.70274664 | −0.71035183 |
| $n$ | 0.21098819 | | $\Omega$ | 67.73989 | +0.65901087 | +0.62912929 |
| $a$ | 2.7944561 | | $i$ | 2.43610 | +0.26805191 | +0.31558931 |
| $e$ | 0.0734773 | | $H$ | 17.2 | $G$ 0.15 | $U$ 5 |
| $P$ | 4.67 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 05 | 691 | 0.7− | 0.2+ | 2006 01 07 | 691 | 0.1− | 0.2+ | 2006 01 25 | 691 | 0.2+ | 0.2− |
| 2004 10 05 | 691 | 0.0 | 0.1− | 2006 01 07 | 691 | 0.4− | 0.1− | 2006 01 26 | G96 | 0.1+ | 0.1+ |
| 2004 10 05 | 691 | 0.2+ | 0.1− | 2006 01 08 | 691 | 0.5+ | 0.0 | 2006 01 26 | G96 | 0.4− | 0.4− |
| 2004 10 09 | 691 | 0.4+ | 0.1+ | 2006 01 08 | 691 | 0.1− | 0.0 | 2006 01 26 | G96 | 0.4− | 0.3+ |
| 2004 10 09 | 691 | 0.1− | 0.1− | 2006 01 08 | 691 | 0.0 | 0.2− | 2006 01 26 | G96 | 0.2+ | 0.0 |
| 2004 10 09 | 691 | 0.2+ | 0.1− | 2006 01 25 | 691 | 0.1+ | 0.3+ | | | | |
| 2006 01 07 | 691 | 0.1+ | 0.0 | 2006 01 25 | 691 | 0.0 | 0.0 | | | | |

**2006 AP$_{42}$ = 2002 EF$_{76}$ = 2002 EU$_{145}$**

Id. Minor Planet Center (d, *MPO* 87831; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.84731 | | $\omega$ | 328.21265 | −0.91785497 | −0.39687991 |
| $n$ | 0.23006109 | | $\Omega$ | 188.40927 | +0.37139595 | −0.85401003 |
| $a$ | 2.6377923 | | $i$ | 2.09550 | +0.14002610 | −0.33638251 |
| $e$ | 0.1390807 | | $H$ | 17.8 | $G$ 0.15 | $U$ 4 |
| $P$ | 4.28 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 691 | 1.1− | 1.3+ | 2002 03 13 | 644 | 0.0 | 0.5+ | 2006 01 08 | G96 | 0.2+ | 0.4− |
| 2000 11 20 | 691 | 0.4− | 0.2+ | 2002 03 16 | 691 | 0.3− | 0.6− | 2006 01 08 | G96 | 0.5+ | 0.1− |
| 2000 11 20 | 691 | 1.1+ | 0.2− | 2002 03 16 | 691 | 0.4− | 0.2− | 2006 01 08 | G96 | 0.3+ | 0.2− |
| 2002 03 10 | 291 | 0.5+ | 0.6+ | 2002 03 16 | 691 | 0.7− | 0.1− | 2006 01 10 | 691 | 0.9− | 0.2+ |
| 2002 03 10 | 291 | 0.7+ | 0.6+ | 2006 01 06 | 691 | 0.5− | 0.9− | 2006 01 10 | 691 | 0.3− | 0.2+ |
| 2002 03 10 | 291 | 0.7+ | 0.6+ | 2006 01 06 | 691 | 0.7+ | 0.5− | 2006 01 10 | 691 | 0.2− | 0.2+ |
| 2002 03 13 | 644 | 0.4+ | 0.8+ | 2006 01 06 | 691 | 0.5+ | 0.2− | | | | |
| 2002 03 13 | 644 | 0.5+ | 1.2+ | 2006 01 08 | G96 | 0.2− | 0.7− | | | | |

**2006 AQ$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 161.48622 | | $\omega$ | 243.30521 | +0.99516998 | +0.02181566 |
| $n$ | 0.28374417 | | $\Omega$ | 115.31393 | +0.01354722 | +0.93514517 |
| $a$ | 2.2936021 | | $i$ | 6.07779 | −0.09722752 | +0.35359241 |
| $e$ | 0.1964589 | | $H$ | 17.5 | $G$ 0.15 | $U$ 3 |
| $P$ | 3.47 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.3− | 0.5− | 2001 09 25 | 704 | 0.1+ | 0.2+ | 2005 11 30 | G96 | 0.2+ | 0.0 |
| 2001 08 27 | 699 | 0.0 | 1.5+ | 2001 09 25 | 704 | 0.3+ | 0.2− | 2005 11 30 | G96 | 0.4+ | 0.1− |
| 2001 08 27 | 699 | 0.5+ | 0.1− | 2001 09 25 | 704 | 0.8+ | 0.2+ | 2005 11 30 | G96 | 0.1+ | 0.6− |
| 2001 08 27 | 699 | 0.1− | 0.0 | 2001 09 25 | 704 | 1.0+ | 0.1+ | 2005 11 30 | G96 | 0.2+ | 0.7− |
| 2001 09 12 | 704 | 0.0 | 0.4− | 2001 10 11 | 704 | 0.4+ | 0.2− | 2006 01 05 | 691 | 0.3− | 0.6+ |
| 2001 09 12 | 704 | 0.4+ | 1.5− | 2001 10 11 | 704 | 0.6+ | 0.2+ | 2006 01 05 | 691 | 0.2− | 0.1+ |
| 2001 09 12 | 704 | 0.4+ | 0.5− | 2001 10 11 | 704 | 0.7+ | 0.8− | 2006 01 05 | 691 | 0.5− | 0.3+ |
| 2001 09 18 | 699 | 1.2− | 0.1− | 2001 10 11 | 704 | 0.9− | 0.5+ | 2006 01 09 | 691 | 0.1+ | 0.2− |
| 2001 09 18 | 699 | 0.2− | 0.3− | 2001 10 15 | 644 | 0.6− | 0.2− | 2006 01 09 | 691 | 0.7+ | 0.6− |
| 2001 09 18 | 699 | 1.4− | 1.3+ | 2001 10 15 | 644 | 0.4− | 0.1+ | 2006 01 09 | 691 | 0.0 | 0.0 |
| 2001 09 18 | 699 | 0.3+ | 0.6+ | 2001 10 15 | 644 | 0.2− | 0.2+ | | | | |

**2006 AY$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 302.98651 | | $\omega$ | 141.63216 | −0.29759608 | +0.95244770 |
| $n$ | 0.23747267 | | $\Omega$ | 110.96907 | −0.89230184 | −0.25312808 |
| $a$ | 2.5826187 | | $i$ | 4.01751 | −0.33946134 | −0.16961593 |
| $e$ | 0.2770191 | | $H$ | 15.8 | $G$ 0.15 | $U$ 2 |
| $P$ | 4.15 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 02 | 691 | 0.0 | 0.1− | 2002 01 14 | 704 | 0.6+ | 0.7− | 2003 07 23 | 704 | 0.4− | 1.0− |
| 1991 10 02 | 691 | 0.2− | 0.0 | 2002 02 12 | 704 | 0.1− | 0.6+ | 2003 08 04 | 704 | 0.1+ | 1.6+ |
| 1991 10 02 | 691 | 0.0 | 0.2+ | 2002 02 12 | 704 | 0.2− | 0.1+ | 2003 08 04 | 704 | 0.3+ | 1.3+ |
| 1995 08 29 | 809 | 1.9+ | 0.4− | 2002 02 12 | 704 | 0.2− | 0.3+ | 2003 08 04 | 704 | 0.1− | 1.3+ |
| 1995 08 31 | 809 | 1.0− | 1.3− | 2002 02 12 | 704 | 1.1− | 0.9+ | 2003 08 04 | 704 | 0.4− | 0.7+ |
| 1995 09 01 | 809 | 1.0− | 1.3− | 2002 02 12 | 704 | 0.3− | 1.3+ | 2006 01 04 | G96 | 0.1− | 0.0 |
| 1999 07 21 | 699 | 0.2+ | 0.6− | 2003 06 25 | 704 | 2.4+ | 0.9+ | 2006 01 04 | G96 | 0.4− | 0.1+ |
| 1999 07 21 | 699 | 0.5+ | 0.1+ | 2003 06 25 | 704 | 0.6+ | 0.5+ | 2006 01 04 | G96 | 0.2− | 0.2− |
| 1999 07 21 | 699 | 0.1− | 0.5+ | 2003 06 25 | 704 | 0.2+ | 0.1− | 2006 01 04 | G96 | 0.0 | 0.1− |
| 1999 08 08 | 699 | 0.2+ | 1.2+ | 2003 06 25 | 704 | 0.9+ | 2.0− | 2006 01 10 | G96 | 0.1− | 0.3+ |
| 1999 08 08 | 699 | 0.1+ | 0.5+ | 2003 07 02 | 704 | 0.5− | 0.6+ | 2006 01 10 | G96 | 0.0 | 0.1+ |
| 1999 08 08 | 699 | 0.4+ | 0.6+ | 2003 07 02 | 704 | 0.7− | 0.0 | 2006 01 10 | G96 | 0.3+ | 0.3+ |
| 1999 09 07 | 704 | 0.1+ | 0.1+ | 2003 07 02 | 704 | 0.6− | 0.9+ | 2006 01 10 | G96 | 0.4+ | 0.0 |
| 1999 09 07 | 704 | 0.1+ | 0.5− | 2003 07 02 | 704 | 0.8− | 0.0 | 2006 01 22 | G96 | 0.3+ | 0.1+ |
| 1999 09 07 | 704 | 0.5+ | 0.8+ | 2003 07 02 | 704 | 0.6− | 0.6+ | 2006 01 22 | G96 | 0.1− | 0.0 |
| 2002 01 14 | 704 | 0.6+ | 1.5+ | 2003 07 23 | 704 | 0.6− | 0.4− | 2006 01 22 | G96 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.6+ | 0.7+ | 2003 07 23 | 704 | 0.9− | 0.0 | 2006 01 22 | G96 | 0.0 | 0.0 |
| 2002 01 14 | 704 | 1.2+ | 0.5+ | 2003 07 23 | 704 | 0.6− | 0.9− | | | | |

**2006 AH$_{67}$ = 1998 FX$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.23253 | | (2000.0) | | −0.60390247 | −0.79650343 |
| $n$ | 0.23509471 | $\omega$ | 329.20391 | | +0.74644063 | −0.57823963 |
| $a$ | 2.6000048 | $\Omega$ | 157.90270 | | +0.27951422 | −0.17669524 |
| $e$ | 0.1612117 | $i$ | 4.53344 | | | |
| $P$ | 4.19 | $H$ | 17.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 18 | 691 | 0.0 | 0.0 | 2002 03 04 | 209 | 0.2− | 0.6+ | 2006 01 10 | G96 | 0.5+ | 0.2+ |
| 1998 03 18 | 691 | 0.2− | 0.2− | 2002 03 04 | 209 | 0.0 | 0.6+ | 2006 01 10 | G96 | 0.4− | 0.1− |
| 1998 03 18 | 691 | 1.0+ | 0.4− | 2002 03 04 | 209 | 0.1+ | 1.1+ | 2006 01 10 | G96 | 0.0 | 0.4− |
| 1998 03 25 | 691 | 0.2− | 0.9− | 2002 03 14 | 704 | 0.4− | 0.3+ | 2006 01 10 | G96 | 0.2+ | 0.1+ |
| 1998 03 25 | 691 | 0.8− | 0.2− | 2002 03 14 | 704 | 0.3+ | 0.2− | 2006 01 31 | G96 | 0.3− | 0.2− |
| 1998 03 25 | 691 | 0.5− | 0.5− | 2002 03 14 | 704 | 0.8+ | 0.1+ | 2006 01 31 | G96 | 0.1− | 0.1− |
| 2002 02 11 | 691 | 0.1+ | 0.4+ | 2002 03 14 | 704 | (2.3+ | 2.8−) | 2006 01 31 | G96 | 0.1+ | 0.3− |
| 2002 02 11 | 704 | 0.0 | 0.3+ | 2002 03 18 | 691 | 0.2+ | 0.7+ | 2006 01 31 | G96 | 0.3− | 0.2− |
| 2002 02 11 | 691 | 0.1+ | 0.1− | 2002 03 18 | 691 | 0.3+ | 0.4+ | 2006 03 03 | G96 | 0.7− | 0.2− |
| 2002 02 11 | 704 | 0.0 | 0.1+ | 2002 03 18 | 691 | 0.4+ | 0.7+ | 2006 03 03 | G96 | 0.5− | 0.7− |
| 2002 02 11 | 704 | 0.3− | 1.4+ | 2006 01 09 | 691 | 0.3+ | 0.5− | 2006 03 03 | G96 | 0.7− | 0.3− |
| 2002 02 11 | 691 | 0.0 | 0.3+ | 2006 01 09 | 691 | 0.1+ | 0.3− | 2006 03 03 | G96 | 0.5− | 0.1− |
| 2002 02 11 | 704 | 1.1− | 0.0 | 2006 01 09 | 691 | 0.0 | 0.4− | | | | |

**2006 AC$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 44.91527 | | (2000.0) | | −0.82327392 | −0.56758327 |
| $n$ | 0.29533372 | $\omega$ | 303.66730 | | +0.52795591 | −0.76024359 |
| $a$ | 2.2331986 | $\Omega$ | 201.75443 | | +0.20852483 | −0.31603624 |
| $e$ | 0.1600044 | $i$ | 1.28685 | | | |
| $P$ | 3.34 | $H$ | 19.0 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.4− | 0.7− | 2003 03 24 | 691 | 0.6+ | 0.1− | 2005 12 25 | 691 | 0.2− | 0.3+ |
| 1993 04 17 | 691 | 0.3− | 0.7− | 2003 04 07 | 691 | 0.2− | 0.6+ | 2005 12 25 | 691 | 0.0 | 0.1− |
| 1993 04 17 | 691 | 0.0 | 0.3− | 2003 04 07 | 691 | 0.4− | 0.1+ | 2006 01 06 | 691 | 0.0 | 0.2− |
| 2003 03 10 | 291 | 0.4− | 0.3+ | 2003 04 07 | 691 | 0.1+ | 0.1+ | 2006 01 06 | 691 | 0.0 | 0.2+ |
| 2003 03 10 | 291 | 0.1− | 0.2+ | 2005 12 05 | 691 | 0.3− | 0.1− | 2006 01 06 | 691 | 0.3− | 0.1+ |
| 2003 03 10 | 291 | 0.2− | 0.2+ | 2005 12 05 | 691 | 0.1− | 0.5− | 2006 01 10 | 691 | 0.3+ | 0.3+ |
| 2003 03 24 | 691 | 0.3+ | 0.3+ | 2005 12 05 | 691 | 0.4+ | 0.4− | 2006 01 10 | 691 | 0.1− | 0.3+ |
| 2003 03 24 | 691 | 0.8+ | 0.3− | 2005 12 25 | 691 | 0.1+ | 0.1− | 2006 01 10 | 691 | 0.0 | 0.1− |

**2006 AV$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.81972 | | (2000.0) | | −0.74249789 | +0.64962463 |
| $n$ | 0.23295732 | $\omega$ | 271.92852 | | −0.50076751 | −0.70028968 |
| $a$ | 2.6158839 | $\Omega$ | 308.62860 | | −0.44489188 | −0.29594291 |
| $e$ | 0.1912798 | $i$ | 12.06990 | | | |
| $P$ | 4.23 | $H$ | 17.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 19 | 691 | 0.7− | 0.4− | 2002 02 16 | 644 | 0.8− | 0.6+ | 2006 01 06 | 691 | 0.0 | 0.3+ |
| 2002 01 19 | 691 | 0.6− | 0.4− | 2003 07 05 | 691 | 0.3− | 0.2+ | 2006 01 06 | 691 | 0.3+ | 0.1− |
| 2002 01 19 | 691 | 0.6− | 0.2− | 2003 07 05 | 691 | 0.3− | 0.2+ | 2006 01 06 | 691 | 0.3+ | 0.0 |
| 2002 02 11 | 704 | 2.1+ | 1.3+ | 2003 07 05 | 691 | 0.3− | 0.7+ | 2006 01 10 | 691 | 0.7− | 0.9+ |
| 2002 02 11 | 704 | 2.5+ | 1.0+ | 2003 08 05 | 691 | 0.4− | 0.9+ | 2006 01 10 | 691 | 0.3− | 0.7+ |
| 2002 02 11 | 704 | 2.7+ | 0.9+ | 2003 08 05 | 691 | 0.1− | 0.6+ | 2006 01 10 | 691 | 0.4+ | 0.5+ |
| 2002 02 11 | 704 | 2.5+ | 1.8+ | 2003 08 05 | 691 | 0.4− | 0.7+ | 2006 02 28 | G96 | 0.3+ | 0.0 |
| 2002 02 11 | 704 | 1.8+ | 2.1+ | 2005 12 25 | 691 | 0.3+ | 0.1+ | 2006 02 28 | G96 | 0.2+ | 0.2+ |
| 2002 02 16 | 644 | 0.3− | 0.7+ | 2005 12 25 | 691 | 0.4+ | 0.1− | 2006 02 28 | G96 | 0.0 | 0.5+ |
| 2002 02 16 | 644 | 0.6− | 0.2+ | 2005 12 25 | 691 | 0.2+ | 0.2− | 2006 02 28 | G96 | 0.3− | 0.3+ |

**2006 AH$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 117.43349 | | (2000.0) | | +0.81301542 | −0.50567497 |
| $n$ | 0.17489430 | $\omega$ | 316.69102 | | +0.58149114 | +0.68002095 |
| $a$ | 3.1667877 | $\Omega$ | 75.83328 | | +0.02956325 | +0.53090897 |
| $e$ | 0.1586501 | $i$ | 17.31759 | | | |
| $P$ | 5.64 | $H$ | 15.0 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 21 | 704 | 0.6− | 0.5+ | 2004 10 06 | 704 | 0.3− | 0.1− | 2006 01 22 | 704 | 1.6+ | 0.1− |
| 2004 09 21 | 704 | 0.9− | 0.2+ | 2004 10 06 | 704 | 0.3+ | 1.1+ | 2006 01 22 | 704 | 0.1+ | 0.7− |
| 2004 09 21 | 704 | 0.4− | 0.1− | 2004 10 15 | 608 | 0.3− | 0.7− | 2006 01 22 | 704 | 1.0+ | 0.3+ |
| 2004 09 21 | 704 | 0.2− | 0.0 | 2004 10 15 | 608 | 0.2− | 0.9− | 2006 01 22 | 704 | 0.3+ | 0.2+ |
| 2004 09 21 | 699 | 1.2+ | 0.9− | 2004 10 15 | 608 | 0.2+ | 0.5− | 2006 02 04 | 703 | 1.3− | 0.2− |
| 2004 09 21 | 699 | 0.2+ | 0.7+ | 2006 01 06 | 703 | 0.8− | 1.5+ | 2006 02 04 | 703 | 0.2+ | 0.3+ |
| 2004 09 21 | 699 | 0.7+ | 0.4− | 2006 01 06 | 703 | 0.2+ | 0.3− | 2006 02 04 | 703 | 0.2− | 1.0− |
| 2004 09 21 | 699 | 1.6+ | 0.1− | 2006 01 06 | 703 | 0.3− | 0.4− | 2006 02 04 | 703 | 0.5+ | 0.1+ |
| 2004 10 06 | 704 | 1.1− | 1.3+ | 2006 01 06 | 703 | 1.2− | 0.5+ | | | | |

**2006 AF$_{100}$ = 1999 VZ$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 117.25780 | | (2000.0) | | +0.17756368 | −0.98402824 |
| $n$ | 0.20439921 | $\omega$ | 104.49649 | | +0.89087792 | +0.16618202 |
| $a$ | 2.8541924 | $\Omega$ | 335.26488 | | +0.41810007 | +0.06381197 |
| $e$ | 0.0879266 | $i$ | 1.73000 | | | |
| $P$ | 4.82 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.2+ | 0.0 | 2004 10 23 | 691 | 0.1− | 0.3+ | 2006 02 06 | G96 | 0.1+ | 0.2+ |
| 1995 12 27 | 691 | 0.1− | 0.2− | 2004 10 23 | 691 | 0.0 | 0.1+ | 2006 02 21 | G96 | 0.2− | 0.1+ |
| 1995 12 27 | 691 | 0.3− | 0.3− | 2006 01 04 | G96 | 0.9+ | 0.5− | 2006 02 21 | G96 | 0.1+ | 0.2− |
| 1999 11 13 | 691 | 0.1− | 0.3− | 2006 01 04 | G96 | 0.4+ | 0.4− | 2006 02 21 | G96 | 0.0 | 0.1− |
| 1999 11 13 | 691 | 0.3− | 0.1− | 2006 01 04 | G96 | 0.5− | 0.3+ | 2006 02 21 | G96 | 0.2− | 0.2+ |
| 1999 11 13 | 691 | 0.3− | 0.1+ | 2006 01 04 | G96 | 1.0− | 0.2+ | 2006 03 03 | 691 | 0.2+ | 0.2+ |
| 1999 11 15 | 691 | 0.3+ | 0.3+ | 2006 01 28 | G96 | 0.4− | 0.5− | 2006 03 03 | 691 | 0.2+ | 0.3+ |
| 1999 11 15 | 691 | 0.2+ | 0.1+ | 2006 01 28 | G96 | 0.3− | 1.5− | 2006 03 03 | 691 | 0.2+ | 0.5+ |
| 1999 11 15 | 691 | 0.2+ | 0.1− | 2006 01 28 | G96 | 0.1− | 0.6− | 2006 03 25 | G96 | 0.9− | 0.9+ |
| 2004 10 07 | 691 | 0.1+ | 0.0 | 2006 01 28 | G96 | 1.2+ | 0.7− | 2006 03 25 | G96 | 0.7+ | 1.4+ |
| 2004 10 07 | 691 | 0.1− | 0.0 | 2006 02 06 | G96 | 0.6− | 0.7− | 2006 03 25 | G96 | 0.3− | 0.2+ |
| 2004 10 07 | 691 | 0.1− | 0.1− | 2006 02 06 | G96 | 0.1+ | 0.4− | 2006 03 25 | G96 | 0.1+ | 0.0 |
| 2004 10 23 | 691 | 0.0 | 0.4+ | 2006 02 06 | G96 | 0.2− | 0.4− | | | | |

**2006 AG$_{100}$ = 2004 VH$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.95213 | | (2000.0) | | −0.96946886 | +0.24161525 |
| $n$ | 0.17396266 | $\omega$ | 39.97314 | | −0.24219875 | −0.91680204 |
| $a$ | 3.1780839 | $\Omega$ | 153.91840 | | −0.03833909 | −0.31795610 |
| $e$ | 0.0730612 | $i$ | 5.46342 | | | |
| $P$ | 5.67 | $H$ | 15.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 07 | 691 | 0.3− | 0.0 | 2004 11 10 | 691 | 0.1+ | 0.1− | 2006 02 07 | G96 | 0.1− | 0.4− |
| 1995 03 07 | 691 | 0.1+ | 0.9− | 2006 01 06 | G96 | 0.8− | 0.5− | 2006 02 07 | G96 | 0.6− | 0.0 |
| 2001 03 15 | 691 | 0.1+ | 0.4+ | 2006 01 06 | G96 | 0.7− | 0.3− | 2006 02 24 | G96 | 0.2− | 0.0 |
| 2001 03 15 | 691 | 0.0 | 0.3+ | 2006 01 06 | G96 | 0.6+ | 0.1− | 2006 02 24 | G96 | 0.1− | 0.2− |
| 2001 03 15 | 691 | 0.1+ | 0.4+ | 2006 01 06 | G96 | 0.3− | 0.2+ | 2006 02 24 | G96 | 0.2+ | 0.1− |
| 2004 11 04 | 691 | 0.0 | 0.0 | 2006 02 01 | 691 | 0.3+ | 0.1− | 2006 02 24 | G96 | 0.2− | 0.1+ |
| 2004 11 04 | 691 | 0.0 | 0.2+ | 2006 02 01 | 691 | 0.3+ | 0.2+ | 2006 04 21 | G96 | 0.2− | 0.4+ |
| 2004 11 04 | 691 | 0.1− | 0.1+ | 2006 02 01 | 691 | 0.2+ | 0.1+ | 2006 04 21 | G96 | 0.2− | 0.2+ |
| 2004 11 10 | 691 | 0.1− | 0.1+ | 2006 02 07 | G96 | 0.4− | 0.4− | 2006 04 21 | G96 | 0.4− | 0.6+ |
| 2004 11 10 | 691 | 0.0 | 0.1+ | 2006 02 07 | G96 | 0.1+ | 0.4− | 2006 04 21 | G96 | 0.1+ | 0.6+ |

**2006 AH$_{100}$ = 2004 WT$_1$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.43397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26647213 | $\omega$ | 337.88409 | | −0.40013100 | | +0.91605687 |
| $a$ | 2.3916715 | $\Omega$ | 268.52088 | | −0.83672022 | | −0.37722584 |
| $e$ | 0.1623894 | $i$ | 1.55403 | | −0.37389097 | | −0.13616340 |
| $P$ | 3.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 17 | 599 | 0.3− | 0.3− | 2006 01 06 | G96 | 0.4− | 0.1− | 2006 03 09 | G96 | 0.3+ | 0.3− |
| 2004 11 17 | 599 | 0.1− | 0.2− | 2006 01 06 | G96 | 0.4+ | 0.2− | 2006 03 09 | G96 | 0.4+ | 0.1− |
| 2004 11 17 | 599 | 0.5+ | 0.2+ | 2006 02 06 | 691 | 0.2+ | 0.3+ | 2006 03 09 | G96 | 0.0 | 0.3− |
| 2004 11 17 | 599 | 0.0 | 0.3+ | 2006 02 06 | 691 | 0.6+ | 0.1+ | 2006 04 02 | G96 | 0.1− | 0.1− |
| 2004 11 21 | 599 | 0.2+ | 0.8+ | 2006 02 06 | 691 | 0.3− | 1.0+ | 2006 04 02 | G96 | 0.0 | 0.0 |
| 2004 11 21 | 599 | 0.2+ | 0.4− | 2006 02 27 | G96 | 0.3− | 0.1− | 2006 04 02 | G96 | 0.1− | 0.0 |
| 2004 11 21 | 599 | 0.5− | 0.5− | 2006 02 27 | G96 | 0.1− | 0.1− | 2006 04 02 | G96 | 0.1− | 0.2+ |
| 2006 01 06 | G96 | 0.0 | 0.4− | 2006 02 27 | G96 | 0.3− | 0.2− | | | | |
| 2006 01 06 | G96 | 0.3− | 0.0 | 2006 03 09 | G96 | 0.0 | 0.1+ | | | | |

**2006 AJ$_{100}$ = 2002 CE$_{151}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.65532 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23739405 | $\omega$ | 15.73519 | | +0.85219810 | | +0.50701113 |
| $a$ | 2.5831888 | $\Omega$ | 313.06009 | | −0.49710171 | | +0.70752254 |
| $e$ | 0.1122747 | $i$ | 10.18696 | | −0.16324302 | | +0.49229216 |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.5− | 0.6− | 2002 02 11 | 704 | 0.5+ | 0.4− | 2006 02 01 | 691 | 0.3− | 0.0 |
| 2002 02 10 | 704 | 0.7− | 0.1− | 2006 01 07 | G96 | 0.4+ | 0.2− | 2006 02 01 | 691 | 0.5+ | 0.3− |
| 2002 02 10 | 704 | 0.7+ | 0.6+ | 2006 01 07 | G96 | 0.1− | 0.3− | 2006 02 01 | 691 | 0.1+ | 0.1− |
| 2002 02 11 | 704 | 0.1+ | 0.2− | 2006 01 07 | G96 | 0.5+ | 0.2− | 2006 02 23 | G96 | 0.1+ | 0.8+ |
| 2002 02 11 | 704 | 0.1− | 0.8+ | 2006 01 07 | G96 | 0.5− | 0.2+ | 2006 02 23 | G96 | 0.2− | 0.0 |
| 2002 02 11 | 704 | 0.2− | 0.5− | 2006 01 22 | G96 | 0.1+ | 0.3+ | 2006 02 23 | G96 | 0.2− | 0.4− |
| 2002 02 11 | 704 | 0.8+ | 0.6− | 2006 01 22 | G96 | 0.2+ | 0.0 | 2006 02 23 | G96 | 0.6− | 0.1− |
| 2002 02 11 | 704 | 0.6− | 0.8− | 2006 01 22 | G96 | 0.3− | 0.1+ | | | | |
| 2002 02 11 | 704 | 0.0 | 1.7+ | 2006 01 22 | G96 | 0.3+ | 0.1+ | | | | |

**2006 AK$_{100}$ = 2004 TT$_{193}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.41547 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21205513 | $\omega$ | 73.34615 | | +0.67581413 | | −0.73654450 |
| $a$ | 2.7850748 | $\Omega$ | 334.07013 | | +0.64962299 | | +0.61307911 |
| $e$ | 0.0652100 | $i$ | 3.65599 | | +0.34823157 | | +0.28572049 |
| $P$ | 4.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 07 | 691 | 0.1− | 0.0 | 2006 01 07 | G96 | 0.1− | 0.4+ | 2006 02 04 | 691 | 0.2− | 1.2+ |
| 2004 10 07 | 691 | 0.2+ | 0.0 | 2006 01 07 | G96 | 0.3− | 0.3− | 2006 02 04 | 691 | 0.3+ | 0.2− |
| 2004 10 07 | 691 | 0.2− | 0.2+ | 2006 01 07 | G96 | 0.5+ | 0.8− | 2006 02 23 | G96 | 0.3+ | 0.1− |
| 2004 10 11 | 691 | 0.0 | 0.3− | 2006 02 01 | 691 | 0.2− | 0.2− | 2006 02 23 | G96 | 1.0− | 0.8− |
| 2004 10 11 | 691 | 0.1− | 0.0 | 2006 02 01 | 691 | 0.1− | 0.2+ | 2006 02 23 | G96 | 0.0 | 0.3+ |
| 2004 10 11 | 691 | 0.1+ | 0.2+ | 2006 02 01 | 691 | 0.4+ | 0.2+ | 2006 02 23 | G96 | 0.5+ | 0.1+ |
| 2006 01 07 | G96 | 0.4− | 0.1+ | 2006 02 04 | 691 | 0.2+ | 0.1− | | | | |

**2006 AL$_{100}$ = 2004 TB$_{227}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.62407 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21629398 | $\omega$ | 182.89975 | | −0.97935802 | | −0.20111348 |
| $a$ | 2.7485677 | $\Omega$ | 345.45027 | | +0.18704021 | | −0.86361866 |
| $e$ | 0.1196006 | $i$ | 4.63009 | | +0.07664093 | | −0.46229448 |
| $P$ | 4.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 807 | 0.0 | 0.1+ | 2006 01 07 | 691 | 0.1+ | 0.0 | 2006 02 04 | 704 | 1.1+ | 0.4+ |
| 2002 04 09 | 807 | 0.1+ | 0.1+ | 2006 01 28 | G96 | 0.3− | 0.4− | 2006 02 04 | 704 | 1.6+ | 1.1− |
| 2004 10 08 | 691 | 0.1− | 0.1+ | 2006 01 28 | G96 | 0.2− | 0.2− | 2006 02 07 | G96 | 0.3+ | 0.3+ |
| 2004 10 08 | 691 | 0.2+ | 0.2− | 2006 01 28 | G96 | 0.1+ | 0.3− | 2006 02 07 | G96 | 0.3+ | 0.8− |
| 2004 10 08 | 691 | 0.2− | 0.1+ | 2006 01 28 | G96 | 1.7− | 0.8− | 2006 02 07 | G96 | 0.0 | 0.3− |
| 2004 10 12 | 691 | 0.3+ | 0.2+ | 2006 01 28 | G96 | 0.4− | 0.6− | 2006 02 07 | G96 | 2.4− | 0.1− |
| 2004 10 12 | 691 | 0.4− | 0.0 | 2006 01 28 | G96 | 0.4+ | 0.4− | 2006 03 04 | G96 | 0.1− | 0.1− |
| 2004 10 12 | 691 | 0.3+ | 0.2− | 2006 01 28 | G96 | 0.3− | 0.3− | 2006 03 04 | G96 | 0.4+ | 0.2+ |
| 2006 01 07 | 691 | 0.4+ | 0.3+ | 2006 01 28 | G96 | 0.6− | 0.4− | 2006 03 04 | G96 | 0.6− | 0.2+ |
| 2006 01 07 | 691 | 0.0 | 0.4+ | 2006 02 04 | 704 | 0.2+ | 1.3+ | 2006 03 04 | G96 | 0.0 | 0.3+ |

**2006 AM$_{100}$ = 1990 SY$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.89415 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21567503 | $\omega$ | 131.30276 | | +0.20118447 | | +0.97835735 |
| $a$ | 2.7538237 | $\Omega$ | 150.19972 | | −0.92530995 | | +0.20602288 |
| $e$ | 0.0163944 | $i$ | 5.58778 | | −0.32144410 | | +0.01927329 |
| $P$ | 4.57 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 25 | 809 | 1.0− | 0.2+ | 2004 10 15 | 699 | 0.8+ | 0.0 | 2006 02 03 | 699 | 1.3− | 0.6− |
| 1990 09 25 | 809 | 0.2+ | 0.4− | 2004 10 15 | 699 | 1.1+ | 0.4− | 2006 02 03 | 699 | 1.7+ | 1.8+ |
| 1990 09 25 | 809 | 0.4+ | 1.5+ | 2004 10 15 | 699 | 0.7− | 0.1+ | 2006 02 03 | 699 | 1.0− | 0.2+ |
| 1999 09 14 | 704 | 2.2− | 1.5+ | 2004 10 15 | 699 | 1.1− | 0.1− | 2006 02 03 | 704 | 0.6+ | 0.7+ |
| 1999 09 14 | 704 | 0.4+ | 1.3+ | 2006 01 08 | G96 | 0.2− | 0.1+ | 2006 02 03 | 704 | 0.8+ | 0.4+ |
| 1999 09 14 | 704 | 0.6− | 0.2+ | 2006 01 08 | G96 | 0.2− | 0.0 | 2006 02 03 | 704 | 0.2+ | 0.2+ |
| 1999 09 14 | 704 | 0.9+ | 1.2+ | 2006 01 08 | G96 | 0.3+ | 0.1+ | 2006 02 03 | 704 | 0.9+ | 0.9− |
| 2002 03 16 | 704 | 0.2− | 1.5+ | 2006 01 08 | G96 | 0.2+ | 0.1− | 2006 02 24 | G96 | 0.0 | 0.1− |
| 2002 03 16 | 704 | 0.3+ | 0.7+ | 2006 02 01 | 691 | 0.1− | 0.0 | 2006 02 24 | G96 | 0.1− | 0.0 |
| 2002 03 16 | 704 | 0.5+ | 0.7+ | 2006 02 01 | 691 | 0.2− | 0.0 | 2006 02 24 | G96 | 0.0 | 0.1+ |
| 2002 03 16 | 704 | 0.5+ | 0.9+ | 2006 02 01 | 691 | 0.2+ | 0.0 | 2006 02 24 | G96 | 0.1− | 0.1− |
| 2002 03 16 | 704 | 0.4+ | 0.4+ | 2006 02 03 | 699 | 1.1− | 0.3− | | | | |

**2006 AN$_{100}$ = 2002 GC$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.68031 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21861729 | $\omega$ | 137.83174 | | +0.52859033 | | +0.84772626 |
| $a$ | 2.7290597 | $\Omega$ | 163.91795 | | −0.81520244 | | +0.52144891 |
| $e$ | 0.0435951 | $i$ | 9.17847 | | −0.23672188 | | +0.09721740 |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.3− | 0.5− | 2003 10 24 | 291 | 0.3− | 0.2+ | 2006 02 01 | G96 | 0.1+ | 0.2+ |
| 1997 03 05 | 691 | 0.3+ | 0.3− | 2003 10 24 | 291 | 0.2+ | 0.3+ | 2006 02 01 | G96 | 0.3− | 0.0 |
| 1997 03 05 | 691 | 0.2− | 0.3+ | 2003 10 24 | 291 | 0.1+ | 0.3+ | 2006 02 20 | 703 | 0.0 | 0.4− |
| 2002 04 13 | 644 | 0.1+ | 0.1+ | 2006 01 09 | G96 | 0.4+ | 0.2− | 2006 02 20 | 703 | 0.2− | 0.1− |
| 2002 04 13 | 644 | 0.0 | 0.1+ | 2006 01 09 | G96 | 0.2+ | 0.1− | 2006 02 20 | 703 | 0.1+ | 0.2+ |
| 2002 04 13 | 644 | 0.1− | 0.2+ | 2006 01 09 | G96 | 0.5+ | 0.2− | 2006 02 20 | 703 | 0.1− | 1.0+ |
| 2002 04 16 | 704 | 0.4− | 0.4+ | 2006 01 09 | G96 | 0.1+ | 0.4− | 2006 02 25 | 691 | 0.1− | 0.6+ |
| 2002 04 16 | 704 | 0.3+ | 0.7− | 2006 02 01 | G96 | 0.0 | 0.3− | 2006 02 25 | 691 | 0.1+ | 0.3+ |
| 2002 04 16 | 704 | 0.0 | 0.1− | 2006 02 01 | G96 | 0.3− | 0.1+ | 2006 02 25 | 691 | 0.1+ | 0.4+ |

**2006 AO$_{100}$ = 2004 SG$_{43}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.51340 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21357009 | $\omega$ | 103.69592 | | +0.90833330 | | −0.41190471 |
| $a$ | 2.7718885 | $\Omega$ | 280.66857 | | +0.34951171 | | +0.84283459 |
| $e$ | 0.1423628 | $i$ | 4.23443 | | +0.22972196 | | +0.34635873 |
| $P$ | 4.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 18 | 704 | 0.8+ | 0.5− | 2006 01 10 | G96 | 0.5− | 0.3+ | 2006 01 10 | G96 | 0.3+ | 0.7+ |
| 2004 09 18 | 704 | 0.5− | 1.0− | 2006 01 10 | G96 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.5− | 0.1+ |
| 2004 09 18 | 704 | 0.2− | 1.7− | 2006 01 10 | G96 | 1.0− | 0.4+ | 2006 01 23 | G96 | 0.5+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 18 | 704 | 0.1− | 0.6+ | 2006 01 10 | G96 | 0.6+ | 1.1− | 2006 01 23 | G96 | 0.4+ | 0.2− |
| 2004 09 22 | 704 | 0.2− | 0.7− | 2006 01 10 | G96 | 0.4+ | 0.0 | 2006 01 23 | G96 | 0.2+ | 0.1− |
| 2004 09 22 | 704 | 0.1+ | 0.7+ | 2006 01 10 | G96 | 0.2+ | 0.2+ | 2006 02 04 | G96 | 0.5− | 0.1− |
| 2004 09 22 | 704 | 0.3− | 0.2− | 2006 01 10 | G96 | 0.0 | 0.0 | 2006 02 04 | G96 | 0.4+ | 0.1+ |
| 2004 09 22 | 704 | 0.1+ | 1.0+ | 2006 01 10 | G96 | 0.0 | 0.1− | 2006 02 04 | G96 | 0.1− | 0.1+ |
| 2004 09 22 | 704 | 0.3+ | 1.7+ | 2006 01 10 | G96 | 0.2− | 0.1+ | 2006 02 04 | G96 | 0.2− | 0.2+ |
| 2006 01 10 | G96 | 0.1+ | 0.5− | 2006 01 10 | G96 | 0.1+ | 0.1+ | | | | |

**2006 AP$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.40691 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17580381 | $\omega$ | 193.01725 | | +0.20257551 | +0.93586938 | |
| $a$ | 3.1558562 | $\Omega$ | 89.23052 | | −0.87064938 | +0.30688283 | |
| $e$ | 0.0438390 | $i$ | 16.75722 | | −0.44825530 | −0.17312261 | |
| $P$ | 5.61 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 11 | 644 | 0.4+ | 0.2+ | 2002 05 05 | 644 | 0.2+ | 0.2− | 2006 01 06 | 691 | 0.0 | 0.0 |
| 2002 04 11 | 644 | 0.4+ | 0.1− | 2002 05 05 | 644 | 0.2+ | 0.2− | 2006 01 06 | 691 | 0.0 | 0.0 |
| 2002 04 11 | 644 | 0.1+ | 0.0 | 2002 05 13 | 644 | 0.2− | 0.1+ | 2006 01 06 | 691 | 0.1+ | 0.0 |
| 2002 04 22 | 644 | 0.3+ | 0.0 | 2002 05 13 | 644 | 0.2+ | 0.1+ | 2006 01 31 | G96 | 0.2− | 0.0 |
| 2002 04 22 | 644 | 0.1+ | 0.2− | 2002 05 13 | 644 | 0.2+ | 0.2− | 2006 01 31 | G96 | 0.2− | 0.2− |
| 2002 04 22 | 644 | 0.2+ | 0.2− | 2002 06 10 | 645 | 0.0 | 0.0 | 2006 01 31 | G96 | 0.1− | 0.1− |
| 2002 05 05 | 644 | 0.4+ | 0.1+ | 2002 06 10 | 645 | 0.1− | 0.0 | 2006 01 31 | G96 | 0.2− | 0.0 |

**2006 AQ$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.04276 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24101004 | $\omega$ | 248.57685 | | −0.97507451 | +0.21575986 | |
| $a$ | 2.5572859 | $\Omega$ | 303.84868 | | −0.17342041 | −0.88657681 | |
| $e$ | 0.1251437 | $i$ | 3.57202 | | −0.13840183 | −0.40918120 | |
| $P$ | 4.09 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.0 | 0.5− | 2006 01 05 | G96 | 0.3+ | 0.1+ | 2006 02 07 | G96 | 0.5− | 0.9− |
| 2002 02 11 | 704 | 0.4+ | 0.2+ | 2006 01 05 | G96 | 0.1+ | 0.2+ | 2006 02 07 | G96 | 0.1− | 0.7− |
| 2002 02 11 | 704 | 0.4− | 0.3− | 2006 01 22 | G96 | 0.2− | 0.0 | 2006 02 07 | G96 | 0.3− | 0.4− |
| 2002 02 11 | 704 | 0.2− | 0.4+ | 2006 01 22 | G96 | 0.1− | 0.0 | 2006 02 07 | G96 | 0.5− | 0.2− |
| 2002 03 10 | 691 | 0.5+ | 0.1+ | 2006 01 22 | G96 | 0.1− | 0.2+ | 2006 02 24 | G96 | 0.3− | 0.2− |
| 2002 03 10 | 691 | 0.1− | 0.1+ | 2006 01 22 | G96 | 0.1− | 0.1− | 2006 02 24 | G96 | 0.1+ | 0.3+ |
| 2002 03 10 | 691 | 0.3− | 0.1− | 2006 02 04 | 691 | 0.1+ | 0.0 | 2006 02 24 | G96 | 0.1+ | 0.0 |
| 2006 01 05 | G96 | 0.4+ | 0.0 | 2006 02 04 | 691 | 0.2+ | 0.1− | 2006 02 24 | G96 | 0.6− | 0.2− |
| 2006 01 05 | G96 | 0.0 | 0.3+ | 2006 02 04 | 691 | 0.1+ | 0.3+ | | | | |

**2006 AR$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.60918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26326651 | $\omega$ | 299.16653 | | −0.94437345 | +0.32870809 | |
| $a$ | 2.4110468 | $\Omega$ | 260.02550 | | −0.29792142 | −0.86854827 | |
| $e$ | 0.1171490 | $i$ | 0.60954 | | −0.13928967 | −0.37091089 | |
| $P$ | 3.74 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.1+ | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.1+ | 2006 02 05 | G96 | 0.1+ | 0.0 |
| 2000 09 27 | 691 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.1+ | 2006 02 23 | G96 | 0.5− | 0.3− |
| 2000 09 27 | 691 | 0.2− | 0.0 | 2006 01 05 | G96 | 0.2+ | 0.5+ | 2006 02 23 | G96 | 0.2− | 0.5+ |
| 2004 10 06 | 691 | 0.0 | 0.2− | 2006 01 22 | G96 | 0.7+ | 0.0 | 2006 02 23 | G96 | 0.7− | 0.3+ |
| 2004 10 06 | 691 | 0.1− | 0.1+ | 2006 01 22 | G96 | 0.9+ | 0.4− | 2006 02 23 | G96 | 0.1+ | 0.2+ |
| 2004 10 06 | 691 | 0.0 | 0.1+ | 2006 01 22 | G96 | 0.1+ | 0.1− | 2006 03 05 | G96 | 0.1+ | 0.0 |
| 2004 10 15 | 691 | 0.1− | 0.1+ | 2006 01 22 | G96 | 0.2+ | 0.1+ | 2006 03 05 | G96 | 0.3− | 0.1− |
| 2004 10 15 | 691 | 0.5+ | 0.1− | 2006 02 05 | G96 | 0.3+ | 0.2− | 2006 03 05 | G96 | 0.2− | 0.1+ |
| 2004 10 15 | 691 | 0.1− | 0.3− | 2006 02 05 | G96 | 0.1+ | 0.4− | 2006 03 05 | G96 | 0.1− | 0.5+ |
| 2006 01 05 | G96 | 0.1− | 0.2− | 2006 02 05 | G96 | 0.1− | 0.0 | | | | |

**2006 AS$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.71030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27370394 | $\omega$ | 154.85099 | | +0.03212781 | −0.99895091 | |
| $a$ | 2.3493552 | $\Omega$ | 293.29378 | | +0.91089786 | +0.04270292 | |
| $e$ | 0.1468196 | $i$ | 2.03607 | | +0.41137926 | −0.01653924 | |
| $P$ | 3.60 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.6+ | 0.4+ | 2003 03 30 | 695 | 0.0 | 0.3+ | 2006 01 22 | G96 | 0.8+ | 0.9− |
| 2001 11 19 | 704 | 0.2+ | 0.4+ | 2006 01 05 | G96 | 0.7− | 0.5− | 2006 02 04 | 691 | 0.1+ | 0.5+ |
| 2001 11 19 | 704 | 0.4+ | 0.2+ | 2006 01 05 | G96 | 0.0 | 0.4− | 2006 02 04 | 691 | 0.1+ | 0.3+ |
| 2001 11 19 | 704 | 1.2− | 0.3− | 2006 01 05 | G96 | 0.4− | 0.6− | 2006 02 04 | 691 | 0.1+ | 0.3+ |
| 2002 01 07 | 691 | 0.1+ | 0.2+ | 2006 01 05 | G96 | 0.1− | 0.4− | 2006 02 07 | G96 | 0.3− | 0.2− |
| 2002 01 07 | 691 | 0.4− | 0.1+ | 2006 01 22 | G96 | 0.6+ | 1.0− | 2006 02 07 | G96 | 0.3− | 0.4− |
| 2002 01 07 | 691 | 0.2+ | 0.0 | 2006 01 22 | G96 | 0.0 | 0.6− | 2006 02 07 | G96 | 0.4− | 0.3− |
| 2003 03 30 | 695 | 0.4+ | 1.0+ | 2006 01 22 | G96 | 0.7− | 0.1− | 2006 02 07 | G96 | 0.2+ | 0.1− |

**2006 AT$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.38279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28612366 | $\omega$ | 219.76651 | | +0.95858023 | +0.27696895 | |
| $a$ | 2.2808683 | $\Omega$ | 124.03186 | | −0.23665709 | +0.90428191 | |
| $e$ | 0.2397945 | $i$ | 4.59730 | | −0.15848460 | +0.32490373 | |
| $P$ | 3.44 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 1.1+ | 0.5− | 2003 03 23 | 645 | 0.1− | 0.0 | 2006 02 06 | G96 | 0.4− | 0.4− |
| 2001 11 19 | 699 | 0.3− | 0.1+ | 2003 03 23 | 645 | 0.1+ | 0.0 | 2006 02 06 | G96 | 0.0 | 0.5− |
| 2001 11 19 | 699 | 0.1− | 0.4− | 2006 01 06 | 691 | 0.4− | 0.3+ | 2006 02 06 | G96 | 0.6− | 0.4− |
| 2001 11 19 | 699 | 0.2+ | 0.5− | 2006 01 06 | 691 | 0.3+ | 0.2− | 2006 02 06 | G96 | 0.3+ | 0.2− |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2006 01 06 | 691 | 0.1− | 0.6+ | 2006 02 06 | G96 | 0.4− | 0.3− |
| 2001 12 11 | 704 | 0.9− | 0.2+ | 2006 01 23 | G96 | 0.1+ | 0.0 | 2006 02 06 | G96 | 0.1+ | 0.2+ |
| 2001 12 11 | 704 | 0.6− | 0.3+ | 2006 01 23 | G96 | 0.1+ | 0.3− | 2006 03 04 | G96 | 0.2+ | 0.2− |
| 2001 12 11 | 704 | 0.6+ | 0.6+ | 2006 01 23 | G96 | 0.1− | 0.0 | 2006 03 04 | G96 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.5− | 0.1− | 2006 01 23 | G96 | 0.5+ | 0.0 | 2006 03 04 | G96 | 0.6+ | 0.5− |
| 2001 12 11 | 704 | 0.6+ | 0.1+ | 2006 02 06 | G96 | 0.1+ | 0.4− | 2006 03 04 | G96 | 0.3− | 0.5+ |
| 2001 12 11 | 704 | 0.2− | 0.2+ | 2006 02 06 | G96 | 0.2+ | 0.2− | | | | |

**2006 AU$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.70296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26370661 | $\omega$ | 62.86808 | | −0.27861541 | +0.96039181 | |
| $a$ | 2.4083635 | $\Omega$ | 190.95727 | | −0.88946990 | −0.25983497 | |
| $e$ | 0.2071090 | $i$ | 1.38196 | | −0.36223852 | −0.10066454 | |
| $P$ | 3.74 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 695 | 0.3+ | 0.0 | 2006 01 06 | G96 | 0.2+ | 0.8− | 2006 02 07 | 691 | 0.2+ | 0.1+ |
| 2002 02 08 | 695 | 0.2− | 0.2+ | 2006 01 06 | G96 | 0.2− | 0.8− | 2006 03 03 | 691 | 0.0 | 0.1+ |
| 2003 07 24 | 644 | 0.1− | 0.5+ | 2006 01 06 | G96 | 0.4+ | 0.2− | 2006 03 03 | 691 | 0.1− | 0.0 |
| 2003 07 24 | 644 | 0.2− | 0.8+ | 2006 01 30 | 691 | 0.6+ | 0.1+ | 2006 03 03 | 691 | 0.1+ | 0.1+ |
| 2003 07 24 | 644 | 0.3− | 0.5+ | 2006 01 30 | 691 | 0.8− | 0.3+ | 2006 03 25 | G96 | 0.2− | 0.1− |
| 2004 11 10 | 695 | 0.2− | 0.4+ | 2006 01 30 | 691 | 0.5+ | 0.1+ | 2006 03 25 | G96 | 0.8− | 0.3− |
| 2004 11 10 | 695 | 0.1− | 0.5+ | 2006 02 07 | 691 | 0.2+ | 0.0 | 2006 03 25 | G96 | 0.3− | 0.2+ |
| 2006 01 06 | G96 | 0.4− | 0.6− | 2006 02 07 | 691 | 0.0 | 0.1+ | 2006 03 25 | G96 | 0.5− | 0.0 |

**2006 AV$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.81761 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19486877 | $\omega$ | 166.16531 | | −0.88161095 | | −0.47192006 |
| $a$ | 2.9465098 | $\Omega$ | 345.66885 | | +0.43016879 | | −0.79703883 |
| $e$ | 0.1078554 | $i$ | 1.69465 | | +0.19420850 | | −0.37685615 |
| $P$ | 5.06 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.2− | 0.1+ | 2006 01 07 | G96 | 0.6+ | 0.0 | 2006 02 02 | 691 | 0.1+ | 0.2+ |
| 2001 02 02 | 691 | 0.1+ | 0.1− | 2006 01 07 | G96 | 0.1− | 0.1− | 2006 02 02 | 691 | 0.2− | 0.4+ |
| 2001 02 02 | 691 | 0.2− | 0.0 | 2006 01 07 | G96 | 1.0− | 0.2− | 2006 02 02 | 691 | 0.4+ | 0.0 |
| 2001 02 21 | 691 | 0.1+ | 0.4+ | 2006 01 23 | G96 | 0.3+ | 0.5− | 2006 02 25 | G96 | 0.0 | 0.1+ |
| 2001 02 21 | 691 | 0.0 | 0.2− | 2006 01 23 | G96 | 0.1− | 0.5− | 2006 02 25 | G96 | 0.4− | 0.2− |
| 2001 02 21 | 691 | 0.2+ | 0.3− | 2006 01 23 | G96 | 0.2− | 0.1+ | 2006 02 25 | G96 | 0.1− | 0.2− |
| 2006 01 07 | G96 | 0.3+ | 0.0 | 2006 01 23 | G96 | 0.6− | 0.4− | 2006 02 25 | G96 | 0.0 | 0.2− |

**2006 AW$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.41525 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27440921 | $\omega$ | 326.58792 | | −0.45094258 | | −0.89167907 |
| $a$ | 2.3453280 | $\Omega$ | 150.16080 | | +0.83530221 | | −0.43719420 |
| $e$ | 0.0597477 | $i$ | 4.55180 | | +0.31451712 | | −0.11734426 |
| $P$ | 3.59 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 15 | 691 | 0.1− | 0.7+ | 2006 01 07 | G96 | 0.4+ | 0.5− | 2006 02 20 | 703 | 0.9− | 0.3− |
| 1993 08 15 | 691 | 0.2− | 0.2+ | 2006 01 07 | G96 | 0.6+ | 0.1− | 2006 02 20 | 703 | 0.2− | 0.1+ |
| 1993 08 15 | 691 | 0.4− | 0.3+ | 2006 01 07 | G96 | 0.4+ | 0.0 | 2006 02 20 | 703 | 1.0− | 1.4− |
| 2000 07 03 | 691 | 0.2+ | 0.6− | 2006 01 07 | G96 | 0.7+ | 0.1+ | 2006 02 20 | G96 | 0.3− | 0.2− |
| 2000 07 03 | 691 | 0.0 | 0.4− | 2006 01 23 | G96 | 0.4+ | 0.2+ | 2006 02 20 | G96 | 0.3− | 0.3− |
| 2000 07 03 | 691 | 0.2− | 0.3− | 2006 01 23 | G96 | 0.4+ | 0.5+ | 2006 02 20 | G96 | 0.4− | 0.1− |
| 2001 12 20 | 704 | 0.3+ | 1.4+ | 2006 01 23 | G96 | 0.2+ | 0.4+ | 2006 02 20 | G96 | 0.2− | 0.1+ |
| 2001 12 20 | 704 | 1.6+ | 0.7+ | 2006 01 23 | G96 | 0.2+ | 0.4+ | 2006 03 05 | G96 | 0.4− | 0.2− |
| 2001 12 20 | 704 | 0.8+ | 0.5− | 2006 02 07 | 691 | 0.2− | 0.0 | 2006 03 05 | G96 | 0.3− | 0.1− |
| 2003 05 22 | 691 | 0.0 | 0.4+ | 2006 02 07 | 691 | 0.0 | 0.2+ | 2006 03 05 | G96 | 0.1− | 0.0 |
| 2003 05 22 | 691 | 0.5+ | 0.3+ | 2006 02 07 | 691 | 0.0 | 0.3+ | 2006 03 05 | G96 | 0.6− | 0.2+ |
| 2003 05 22 | 691 | 0.6+ | 0.0 | 2006 02 20 | 703 | 0.6− | 0.7+ | | | | |

**2006 AX$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.67200 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29838334 | $\omega$ | 313.10677 | | −0.09088680 | | −0.99268874 |
| $a$ | 2.2179564 | $\Omega$ | 141.89230 | | +0.94698486 | | −0.11083049 |
| $e$ | 0.1057202 | $i$ | 7.39457 | | +0.30815460 | | +0.04780875 |
| $P$ | 3.30 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.1− | 0.1− | 2006 01 09 | 691 | 0.1+ | 0.1− | 2006 02 23 | 691 | 0.5− | 0.6+ |
| 2003 04 01 | 645 | 0.1− | 0.0 | 2006 01 09 | 691 | 0.2+ | 0.2− | 2006 02 23 | 691 | 0.2+ | 0.4− |
| 2003 04 10 | 691 | 0.4+ | 0.3+ | 2006 02 01 | 691 | 0.2− | 0.3− | 2006 03 04 | G96 | 0.1+ | 0.6+ |
| 2003 04 10 | 691 | 0.1+ | 0.4+ | 2006 02 01 | 691 | 0.2+ | 0.1+ | 2006 03 04 | G96 | 0.1+ | 0.3+ |
| 2003 04 10 | 691 | 0.7+ | 0.0 | 2006 02 01 | 691 | 0.1− | 0.1+ | 2006 03 04 | G96 | 0.2+ | 0.4+ |
| 2006 01 09 | 691 | 0.3+ | 0.2− | 2006 02 23 | 691 | 0.3− | 0.1+ | 2006 03 04 | G96 | 0.3− | 0.3+ |

**2006 AY$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.79465 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18071874 | $\omega$ | 27.35616 | | +0.97741982 | | +0.18206290 |
| $a$ | 3.0983746 | $\Omega$ | 321.66990 | | −0.21124814 | | +0.82997554 |
| $e$ | 0.0705916 | $i$ | 9.95870 | | −0.00497125 | | +0.52725109 |
| $P$ | 5.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 24 | 644 | 0.0 | 0.5+ | 2006 01 20 | 691 | 0.4+ | 0.5+ | 2006 02 07 | G96 | 0.1+ | 0.6− |
| 2003 07 24 | 644 | 0.4− | 0.5+ | 2006 01 20 | 691 | 0.8+ | 0.3+ | 2006 03 23 | G96 | 0.3− | 0.3+ |
| 2003 07 24 | 644 | 0.4− | 0.4+ | 2006 01 20 | 691 | 0.5− | 0.2+ | 2006 03 23 | G96 | 0.0 | 0.1+ |
| 2003 09 29 | 291 | 0.1− | 0.1+ | 2006 02 04 | 703 | 0.3+ | 0.6+ | 2006 03 23 | G96 | 0.2− | 0.4+ |
| 2003 09 29 | 291 | 0.1+ | 0.1+ | 2006 02 04 | 703 | 0.7+ | 0.1+ | 2006 03 23 | G96 | 0.5− | 0.1− |
| 2003 09 29 | 291 | 0.0 | 0.2− | 2006 02 04 | 703 | 0.0 | 0.3− | 2006 04 19 | G96 | 0.1+ | 0.2+ |
| 2006 01 10 | G96 | 0.2− | 0.3− | 2006 02 04 | 703 | 0.2− | 0.8− | 2006 04 19 | G96 | 0.6− | 0.2+ |
| 2006 01 10 | G96 | 0.4− | 0.2− | 2006 02 07 | G96 | 0.3− | 0.6− | 2006 04 19 | G96 | 0.0 | 0.2+ |
| 2006 01 10 | G96 | 0.6− | 0.6− | 2006 02 07 | G96 | 0.0 | 0.4− | 2006 04 19 | G96 | 0.4+ | 0.4+ |
| 2006 01 10 | G96 | 0.3− | 0.3− | 2006 02 07 | G96 | 0.4− | 0.6− | | | | |

**2006 AA$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.54824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22253713 | $\omega$ | 261.55997 | | +0.59116596 | | −0.80619761 |
| $a$ | 2.6969179 | $\Omega$ | 152.15746 | | +0.75862621 | | +0.54576123 |
| $e$ | 0.1816700 | $i$ | 2.92558 | | +0.27387788 | | +0.22845151 |
| $P$ | 4.43 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 23 | 691 | 0.1− | 0.1− | 2006 01 05 | G96 | 0.2+ | 0.1− | 2006 02 03 | 704 | 0.7− | 0.3− |
| 2004 08 23 | 691 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.4− | 0.1− | 2006 02 03 | 704 | 0.8+ | 1.2+ |
| 2004 08 23 | 691 | 0.2+ | 0.0 | 2006 01 22 | G96 | 0.6+ | 0.2− | 2006 02 03 | 704 | 0.1+ | 0.6− |
| 2004 10 04 | 691 | 0.1+ | 0.0 | 2006 01 22 | G96 | 0.3− | 0.1− | 2006 03 05 | G96 | 0.2+ | 0.1+ |
| 2004 10 04 | 691 | 0.1+ | 0.0 | 2006 01 22 | G96 | 0.0 | 0.3+ | 2006 03 05 | G96 | 0.2+ | 0.4− |
| 2004 10 04 | 691 | 0.2− | 0.0 | 2006 01 31 | G96 | 0.2− | 0.4+ | 2006 03 05 | G96 | 0.2− | 0.1− |
| 2006 01 05 | G96 | 0.2− | 0.1+ | 2006 01 31 | G96 | 0.0 | 0.4+ | 2006 03 05 | G96 | 0.0 | 0.1+ |
| 2006 01 05 | G96 | 0.3− | 0.1− | 2006 01 31 | G96 | 0.8− | 0.1+ | | | | |
| 2006 01 05 | G96 | 0.7+ | 0.0 | 2006 02 03 | 704 | 0.2+ | 0.7− | | | | |

**2006 BX$_1$ = 2004 SN$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.33120 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23744295 | $\omega$ | 23.32063 | | +0.91821321 | | +0.39166935 |
| $a$ | 2.5828342 | $\Omega$ | 313.48354 | | −0.37500277 | | +0.81170035 |
| $e$ | 0.1693598 | $i$ | 4.66324 | | −0.12750460 | | +0.43328704 |
| $P$ | 4.15 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.5− | 0.5− | 2004 09 18 | 704 | 1.3− | 1.6− | 2006 01 05 | G96 | 0.2− | 0.1+ |
| 2000 11 20 | 704 | 0.7− | 0.2− | 2004 09 18 | 704 | 1.4− | 0.6− | 2006 01 05 | G96 | 0.4− | 0.3− |
| 2000 11 20 | 704 | 0.4− | 0.1− | 2004 09 18 | 704 | 0.3+ | 0.0 | 2006 01 05 | G96 | 0.5− | 0.2− |
| 2000 11 20 | 704 | 1.1+ | 0.1+ | 2004 10 21 | 704 | 0.1+ | 0.7+ | 2006 01 20 | 691 | 0.1+ | 0.5+ |
| 2000 11 20 | 704 | 0.8+ | 0.6− | 2004 10 21 | 704 | 0.5− | 0.2+ | 2006 01 20 | 691 | 0.8+ | 0.7− |
| 2002 02 11 | 704 | 0.5+ | 0.0 | 2004 10 21 | 704 | 0.0 | 0.4+ | 2006 01 20 | 691 | 0.2+ | 0.1+ |
| 2002 02 11 | 704 | 0.1− | 0.3− | 2004 10 21 | 704 | 0.2− | 0.7+ | 2006 01 22 | G96 | 0.2− | 0.0 |
| 2002 02 11 | 704 | 1.1− | 1.7− | 2004 10 21 | 704 | 0.2− | 0.3+ | 2006 01 22 | G96 | 0.1− | 0.2− |
| 2004 08 27 | 703 | 0.6+ | 0.3+ | 2004 11 04 | 703 | 0.0 | 0.7− | 2006 01 22 | G96 | 0.1+ | 0.4− |
| 2004 08 27 | 703 | 0.1− | 1.1+ | 2004 11 04 | 703 | 0.1− | 0.4+ | 2006 01 22 | G96 | 0.2− | 0.1− |
| 2004 08 27 | 703 | 0.5− | 0.6− | 2004 11 04 | 703 | 0.1− | 0.9+ | 2006 01 24 | 691 | 0.1− | 0.4+ |
| 2004 08 27 | 703 | 0.1− | 1.2− | 2004 11 04 | 703 | 0.0 | 0.1+ | 2006 01 24 | 691 | 0.0 | 0.1+ |
| 2004 09 16 | 699 | 0.9− | 0.8− | 2004 11 13 | 703 | 1.5+ | 0.1+ | 2006 01 24 | 691 | 0.2+ | 0.0 |
| 2004 09 16 | 699 | 0.3+ | 0.4− | 2004 11 13 | 703 | 0.6+ | 0.2+ | 2006 02 23 | G96 | 0.3− | 0.3+ |
| 2004 09 16 | 699 | 0.4− | 0.0 | 2004 11 13 | 703 | 0.1+ | 0.5+ | 2006 02 23 | G96 | 0.7− | 0.6+ |
| 2004 09 16 | 699 | 0.6+ | 0.4+ | 2004 11 13 | 703 | 1.2+ | 1.0+ | 2006 02 23 | G96 | 0.5− | 0.0 |
| 2004 09 18 | 704 | 0.0 | 0.7− | 2006 01 05 | G96 | 1.2− | 0.1− | 2006 02 23 | G96 | 0.4− | 0.4+ |

### 2006 $BA_2$ = 2006 $CG_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.39918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22808063 | $\omega$ | 26.24243 | | +0.96283150 | +0.26459280 | |
| $a$ | 2.6530399 | $\Omega$ | 318.29659 | | −0.25994422 | +0.85312324 | |
| $e$ | 0.0811076 | $i$ | 4.67985 | | −0.07337917 | +0.44963473 | |
| $P$ | 4.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 0.7− | 0.5− | 2004 10 21 | 704 | 1.2− | 1.9+ | 2006 01 22 | G96 | 0.3− | 0.3− |
| 2000 11 20 | 704 | 0.1− | 0.2− | 2004 11 04 | 703 | 0.4+ | 1.0− | 2006 01 22 | G96 | 0.2− | 0.6− |
| 2000 11 20 | 704 | 0.1+ | 0.2+ | 2004 11 04 | 703 | 0.3− | 0.3− | 2006 01 22 | G96 | 0.2− | 0.6− |
| 2000 11 20 | 704 | 0.0 | 0.1− | 2004 11 04 | 703 | 0.6− | 0.8− | 2006 01 24 | 691 | 0.3− | 0.0 |
| 2000 11 20 | 704 | 0.7+ | 0.4+ | 2004 11 04 | 703 | 0.2+ | 0.6− | 2006 01 24 | 691 | 0.0 | 0.3+ |
| 2004 10 08 | 699 | 1.0+ | 0.2+ | 2004 12 02 | 644 | 0.1+ | 0.2+ | 2006 01 24 | 691 | 0.5+ | 0.1− |
| 2004 10 08 | 699 | 0.4+ | 0.4− | 2004 12 02 | 644 | 0.3− | 0.5+ | 2006 02 06 | G96 | 0.3+ | 0.3− |
| 2004 10 08 | 699 | 0.6+ | 0.0 | 2004 12 02 | 644 | 0.0 | 0.5+ | 2006 02 06 | G96 | 0.2− | 0.3− |
| 2004 10 08 | 699 | 0.1+ | 0.2+ | 2006 01 20 | 691 | 0.3+ | 0.3− | 2006 02 06 | G96 | 0.3− | 0.3− |
| 2004 10 21 | 704 | (3.3− | 0.9+) | 2006 01 20 | 691 | 0.1+ | 0.3+ | 2006 02 06 | G96 | 0.4− | 0.0 |
| 2004 10 21 | 704 | 0.9− | 1.0− | 2006 01 20 | 691 | 0.3− | 0.6+ | | | | |
| 2004 10 21 | 704 | 0.5+ | 0.9+ | 2006 01 22 | G96 | 0.3− | 0.9− | | | | |

### 2006 $BH_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.44679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26681656 | $\omega$ | 272.46116 | | −0.85600497 | +0.51690039 | |
| $a$ | 2.3896128 | $\Omega$ | 298.66352 | | −0.47045364 | −0.78556860 | |
| $e$ | 0.1374223 | $i$ | 0.54425 | | −0.21431018 | −0.34014109 | |
| $P$ | 3.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 24 | 291 | 0.2− | 0.2+ | 2004 10 13 | 691 | 0.0 | 0.0 | 2006 01 23 | 691 | 0.2+ | 0.0 |
| 2004 09 24 | 291 | 0.1− | 0.2+ | 2006 01 21 | 691 | 0.0 | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.0 |
| 2004 09 24 | 291 | 0.2− | 0.1+ | 2006 01 21 | 691 | 0.0 | 0.0 | 2006 01 23 | 691 | 0.0 | 0.0 |
| 2004 10 04 | 291 | 0.0 | 0.0 | 2006 01 21 | 691 | 0.1+ | 0.3+ | 2006 02 20 | G96 | 0.1+ | 0.0 |
| 2004 10 04 | 291 | 0.3+ | 0.1+ | 2006 01 22 | G96 | 0.4− | 0.2− | 2006 02 20 | G96 | 0.2+ | 0.0 |
| 2004 10 04 | 291 | 0.6+ | 0.3− | 2006 01 22 | G96 | 0.2− | 0.2− | 2006 02 20 | G96 | 0.3− | 0.0 |
| 2004 10 13 | 691 | 0.2+ | 0.0 | 2006 01 22 | G96 | 0.2− | 0.2− | 2006 02 20 | G96 | 0.1− | 0.1+ |
| 2004 10 13 | 691 | 0.5− | 0.1− | 2006 01 22 | G96 | 0.5− | 0.3− | | | | |

### 2006 $BT_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.83993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.52489622 | $\omega$ | 342.39935 | | +0.20269382 | +0.94837094 | |
| $a$ | 1.5220202 | $\Omega$ | 298.68372 | | −0.86167329 | +0.05438492 | |
| $e$ | 0.6330279 | $i$ | 16.14479 | | −0.46522506 | +0.31246574 | |
| $P$ | 1.88 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 01 22 | G96 | 0.2+ | 0.4− | 2006 01 30 | 291 | 0.3+ | 0.1− | 2006 11 18 | J95 | 0.1+ | 0.6− |
| 2006 01 22 | G96 | 0.2+ | 0.3− | 2006 01 30 | 291 | 0.1+ | 0.0 | 2006 11 18 | 941 | 0.1− | 0.3− |
| 2006 01 22 | G96 | 0.1− | 0.6− | 2006 02 06 | 291 | 0.8− | 0.2+ | 2006 11 18 | 941 | 0.2+ | 0.2− |
| 2006 01 22 | G96 | 0.0 | 0.5− | 2006 02 06 | 291 | 0.2+ | 0.3+ | 2006 11 18 | 941 | 0.1− | 0.7− |
| 2006 01 22 | G96 | 0.3− | 0.7− | 2006 02 06 | 291 | 0.1− | 0.7+ | 2006 11 18 | 941 | 0.1+ | 0.6− |
| 2006 01 22 | G96 | 0.1− | 0.7− | 2006 11 17 | 703 | 0.2− | 0.5+ | 2006 11 18 | 113 | 0.1+ | 0.3+ |
| 2006 01 22 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.1− | 2006 11 18 | 113 | 0.7+ | 0.1+ |
| 2006 01 22 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.7− | 0.1+ | 2006 11 18 | 113 | 0.6+ | 0.5+ |
| 2006 01 23 | 734 | 0.5+ | 0.9− | 2006 11 17 | 703 | 0.1+ | 0.3− | 2006 11 19 | 711 | 0.7− | 0.5+ |
| 2006 01 23 | 734 | 0.4+ | 1.1− | 2006 11 18 | 734 | 0.7+ | 0.2+ | 2006 11 19 | 711 | (2.0− | 0.0 ) |
| 2006 01 23 | 734 | 0.6− | 0.6+ | 2006 11 18 | 734 | 0.5− | 0.4− | 2006 11 19 | 711 | 0.1+ | 0.6+ |
| 2006 01 23 | 291 | 0.2+ | 0.1+ | 2006 11 18 | 734 | 1.1+ | 0.2− | 2006 11 19 | G96 | (1.8− | 0.2+) |
| 2006 01 23 | 291 | 0.1+ | 0.2+ | 2006 11 18 | 711 | 0.4− | 0.2− | 2006 11 19 | G96 | 0.2− | 0.2− |
| 2006 01 23 | 291 | 0.1− | 0.1+ | 2006 11 18 | 711 | 0.0 | 0.2+ | 2006 11 19 | G96 | 0.1− | 0.1+ |
| 2006 01 23 | 651 | (3.8+ | 2.5+) | 2006 11 18 | 711 | 0.3+ | 0.7+ | 2006 11 19 | G96 | 0.8− | 0.3− |
| 2006 01 24 | G96 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.1− | 2006 11 19 | G96 | 0.1+ | 0.3+ |
| 2006 01 24 | G96 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.2+ | 2006 11 19 | G96 | 0.1+ | 0.1+ |
| 2006 01 24 | G96 | 0.7+ | 0.6− | 2006 11 18 | G96 | 0.2+ | 0.0 | 2006 11 19 | G96 | 0.3+ | 0.1+ |
| 2006 01 24 | G96 | 0.2− | 0.2+ | 2006 11 18 | G96 | (1.6+ | 0.2+) | 2006 11 19 | 448 | 0.0 | 0.2− |
| 2006 01 25 | 291 | 0.3− | 0.2− | 2006 11 18 | 651 | 0.4− | 0.1+ | 2006 11 19 | 448 | 1.2+ | 0.3− |
| 2006 01 25 | 291 | 0.3− | 0.2+ | 2006 11 18 | 651 | 0.6− | 0.3− | 2006 11 19 | 448 | 0.3+ | 0.2− |
| 2006 01 25 | 291 | 0.1+ | 0.1− | 2006 11 18 | 651 | 0.2+ | 0.6− | 2006 11 20 | 291 | 0.2+ | 0.3+ |
| 2006 01 25 | 734 | 0.0 | 0.4+ | 2006 11 18 | D35 | 0.0 | 1.4+ | 2006 11 20 | 291 | 0.5+ | 0.5+ |
| 2006 01 25 | 734 | 0.4− | 0.2+ | 2006 11 18 | D35 | 0.3+ | 0.3+ | 2006 11 27 | 448 | 0.5+ | 1.9+ |
| 2006 01 25 | 734 | 1.1+ | 0.1− | 2006 11 18 | J95 | 0.8− | 0.4− | 2006 11 27 | 448 | 1.7− | 0.3+ |
| 2006 01 30 | 291 | 0.0 | 0.0 | 2006 11 18 | J95 | 0.2− | 0.1− | 2006 11 27 | 448 | 0.4− | 0.1− |

### 2006 $BN_9$ = 2004 $RO_{129}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.93929 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23527871 | $\omega$ | 294.98515 | | −0.14614537 | −0.98910509 | |
| $a$ | 2.5986491 | $\Omega$ | 163.38973 | | +0.92847430 | −0.14331199 | |
| $e$ | 0.1057866 | $i$ | 3.54630 | | +0.34143374 | −0.03365698 | |
| $P$ | 4.19 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 07 | 691 | 0.1− | 0.3+ | 2005 12 27 | 691 | 0.0 | 0.3− | 2006 01 31 | G96 | 0.5− | 0.2− |
| 2004 09 07 | 691 | 0.0 | 0.1− | 2006 01 22 | 699 | 1.4+ | 0.3− | 2006 01 31 | G96 | 0.6− | 0.2− |
| 2004 09 07 | 691 | 0.1+ | 0.0 | 2006 01 22 | 699 | 0.4+ | 0.3+ | 2006 01 31 | G96 | 0.2− | 0.4− |
| 2004 09 12 | 691 | 0.1+ | 0.1− | 2006 01 22 | 699 | 0.8+ | 0.3− | 2006 01 31 | G96 | 0.3− | 0.3− |
| 2004 09 12 | 691 | 0.1− | 0.0 | 2006 01 22 | 699 | (1.8+ | 1.3−) | 2006 02 01 | G96 | 0.2− | 0.1− |
| 2004 09 12 | 691 | 0.0 | 0.2− | 2006 01 23 | 704 | 0.6+ | 1.1+ | 2006 02 01 | G96 | 0.4− | 0.3− |
| 2005 12 27 | 691 | 0.3− | 0.4+ | 2006 01 23 | 704 | 0.3+ | 1.4+ | 2006 02 01 | G96 | 0.2− | 0.3− |
| 2005 12 27 | 691 | 0.1+ | 0.0 | 2006 01 23 | 704 | (1.0+ | 1.8+) | 2006 02 01 | G96 | 0.4− | 0.6− |

### 2006 $BQ_9$ = 2003 $SD_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.53552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18951029 | $\omega$ | 259.15392 | | −0.97235239 | −0.12228817 | |
| $a$ | 3.0017938 | $\Omega$ | 273.60429 | | +0.19466531 | −0.89502542 | |
| $e$ | 0.0983363 | $i$ | 11.49793 | | −0.12898161 | −0.42892319 | |
| $P$ | 5.20 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.2+ | 0.4+ | 2003 10 17 | 645 | 0.1− | 0.0 | 2006 01 23 | 703 | 0.4− | 0.3− |
| 2003 09 16 | 691 | 0.5+ | 0.1+ | 2006 01 22 | 699 | (0.7− | 2.4+) | 2006 01 23 | 703 | 0.7− | 0.4− |
| 2003 09 16 | 691 | 0.2+ | 0.3+ | 2006 01 22 | 699 | 1.0− | 0.5− | 2006 01 28 | 699 | (1.7+ | 0.6−) |
| 2003 09 21 | 691 | 0.2− | 0.3− | 2006 01 22 | 699 | 0.4+ | 0.5− | 2006 01 28 | 699 | 1.3+ | 0.5+ |
| 2003 09 21 | 691 | 0.3− | 0.2+ | 2006 01 22 | 699 | 0.0 | 0.4− | 2006 01 28 | 699 | 1.4+ | 0.9+ |
| 2003 09 21 | 691 | 0.0 | 0.5− | 2006 01 23 | 703 | 0.6+ | 0.9− | 2006 01 28 | 699 | 0.3− | 0.6+ |
| 2003 10 17 | 645 | 0.0 | 0.0 | 2006 01 23 | 703 | 1.3− | 1.2+ | | | | |

### 2006 $BG_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.30870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23513479 | $\omega$ | 262.64519 | | +0.97788055 | −0.17254705 | |
| $a$ | 2.5997093 | $\Omega$ | 107.23606 | | +0.20420578 | +0.90990723 | |
| $e$ | 0.0508181 | $i$ | 7.11053 | | −0.04527286 | +0.37722190 | |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 07 | 699 | 1.6− | 0.7+ | 2004 11 12 | 704 | 0.8− | 0.4− | 2006 01 26 | 703 | 0.2+ | 0.2+ |
| 2004 10 07 | 699 | 0.8+ | 0.2− | 2004 11 12 | 704 | 0.2+ | 0.3+ | 2006 01 26 | 703 | 0.3− | 2.0+ |
| 2004 10 07 | 699 | 1.1− | 0.2− | 2004 11 12 | 704 | 0.5− | 0.9+ | 2006 01 26 | 703 | 0.8− | 1.5+ |
| 2004 10 07 | 699 | 0.4+ | 0.3+ | 2004 11 12 | 704 | 0.5− | 0.6+ | 2006 02 01 | 691 | 0.2− | 0.2− |
| 2004 10 20 | 683 | 0.9− | 0.8+ | 2006 01 20 | 691 | 0.1+ | 0.2+ | 2006 02 01 | 691 | 0.1− | 0.1− |
| 2004 10 20 | 704 | 0.3+ | 0.4− | 2006 01 20 | 691 | 0.2− | 0.1− | 2006 02 01 | 691 | 0.2− | 0.2− |
| 2004 10 20 | 683 | 0.5+ | 0.1− | 2006 01 20 | 691 | 0.1− | 0.5− | 2006 02 04 | 704 | 1.2+ | 0.4− |
| 2004 10 20 | 704 | 0.2− | 0.7− | 2006 01 23 | 691 | 0.1+ | 0.1− | 2006 02 04 | 704 | 0.6+ | 0.2− |
| 2004 10 20 | 683 | 1.4+ | 0.1− | 2006 01 23 | 691 | 0.0 | 0.0 | 2006 02 04 | 704 | 1.5+ | 1.1+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 10 20 | 704 | 1.1+ | 0.6− | 2006 01 23 | 691 | 0.0 | 0.1− | |
| 2004 10 20 | 704 | 0.8+ | 0.8− | 2006 01 26 | 703 | (0.5− | 2.4+) | |

**2006 BL$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.47284 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30118450 | $\omega$ | 338.73665 | | −0.80005468 | | −0.59986961 |
| $a$ | 2.2041830 | $\Omega$ | 164.39424 | | +0.55477938 | | −0.74504341 |
| $e$ | 0.0941718 | $i$ | 1.76888 | | +0.22832507 | | −0.29166208 |
| $P$ | 3.27 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 291 | 1.3− | 0.2+ | 2006 01 23 | G96 | 0.2+ | 0.0 | 2006 02 24 | G96 | 0.1− | 0.4− |
| 2001 10 23 | 291 | 0.6+ | 0.2+ | 2006 01 23 | G96 | 0.4− | 0.2− | 2006 02 28 | 291 | 0.4− | 0.4+ |
| 2001 10 23 | 291 | 0.5+ | 0.1+ | 2006 01 23 | G96 | 0.1+ | 0.2− | 2006 02 28 | 291 | 0.0 | 0.5+ |
| 2003 04 05 | 691 | 0.0 | 0.3+ | 2006 01 23 | G96 | 0.1+ | 0.2− | 2006 02 28 | 291 | 0.1− | 0.4+ |
| 2003 04 05 | 691 | 0.2+ | 0.1+ | 2006 01 24 | 704 | 0.4+ | 1.6+ | 2006 03 09 | G96 | 0.1− | 0.2− |
| 2003 04 05 | 691 | 0.3+ | 0.1+ | 2006 01 24 | 704 | 0.4+ | 0.3+ | 2006 03 09 | G96 | 0.1− | 0.6− |
| 2003 05 08 | 691 | 0.0 | 0.2+ | 2006 01 24 | 704 | 1.3+ | 0.7+ | 2006 03 09 | G96 | 0.1− | 0.5− |
| 2003 05 08 | 691 | 0.2− | 0.3− | 2006 02 03 | 691 | 0.2− | 0.4− | 2006 03 09 | G96 | 0.1− | 0.3− |
| 2003 05 08 | 691 | 0.1− | 0.2+ | 2006 02 03 | 691 | 0.2+ | 0.3− | 2006 03 23 | G96 | 0.2+ | 0.1− |
| 2005 12 25 | G96 | 0.2− | 0.4− | 2006 02 03 | 691 | 0.3+ | 0.1− | 2006 03 23 | G96 | 0.3− | 0.3− |
| 2005 12 25 | G96 | 0.2− | 0.1− | 2006 02 24 | G96 | 0.1+ | 0.1− | 2006 03 23 | G96 | 0.1+ | 0.6− |
| 2005 12 25 | G96 | 0.2− | 0.2− | 2006 02 24 | G96 | 0.1+ | 0.5− | 2006 03 23 | G96 | 0.1+ | 0.1− |
| 2005 12 25 | G96 | 0.3− | 0.0 | 2006 02 24 | G96 | 0.0 | 0.3− | | | | |

**2006 BS$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.49649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24016948 | $\omega$ | 325.91257 | | +0.82887956 | | +0.55942708 |
| $a$ | 2.5632493 | $\Omega$ | 0.07152 | | −0.49200034 | | +0.72906823 |
| $e$ | 0.1134177 | $i$ | 4.97282 | | −0.26625990 | | +0.39433598 |
| $P$ | 4.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 13 | 691 | 2.1− | 0.1− | 2002 02 20 | 704 | 0.1− | 0.8+ | 2006 01 20 | 691 | 0.5+ | 0.4+ |
| 1994 03 13 | 691 | 0.3+ | 0.4− | 2002 03 12 | 691 | 0.6+ | 0.0 | 2006 01 20 | 691 | 0.5− | 0.2+ |
| 1994 03 13 | 691 | 0.8+ | 0.1− | 2002 03 12 | 691 | 1.1+ | 0.1− | 2006 01 25 | 691 | 0.5− | 0.1− |
| 2000 11 29 | 704 | 0.3+ | 0.3− | 2002 03 12 | 691 | 0.5+ | 0.2+ | 2006 01 25 | 691 | 0.5− | 0.0 |
| 2000 11 29 | 704 | 0.6+ | 0.2− | 2004 10 21 | 704 | 0.1+ | 0.3+ | 2006 01 25 | 691 | 0.2− | 0.1− |
| 2000 11 29 | 704 | 0.6− | 1.3+ | 2004 10 21 | 704 | 0.5− | 0.0 | 2006 02 03 | G96 | 0.5− | 0.1− |
| 2000 11 29 | 704 | 0.3− | 0.3+ | 2004 10 21 | 704 | 0.6+ | 0.1− | 2006 02 03 | G96 | 0.7− | 0.1− |
| 2000 11 29 | 704 | 0.4− | 0.1− | 2004 10 21 | 704 | 0.1− | 0.0 | 2006 02 03 | G96 | 0.5+ | 0.5− |
| 2002 02 10 | 704 | 0.7+ | 1.6− | 2004 10 21 | 704 | 0.2− | 0.2− | 2006 02 03 | G96 | 0.2− | 0.2− |
| 2002 02 10 | 704 | 0.4+ | 0.4+ | 2004 11 03 | 699 | 1.1+ | 0.3+ | 2006 03 08 | 691 | 0.3+ | 0.3+ |
| 2002 02 10 | 704 | 0.2+ | 0.4+ | 2004 11 03 | 699 | 1.0− | 1.7− | 2006 03 08 | 691 | 0.2+ | 0.2− |
| 2002 02 20 | 704 | 0.5− | 0.0 | 2004 11 03 | 699 | 0.7+ | 0.3+ | 2006 03 08 | 691 | 0.1− | 0.2− |
| 2002 02 20 | 704 | 0.1− | 1.0− | 2004 11 03 | 699 | 0.3+ | 0.8− | | | | |
| 2002 02 20 | 704 | 0.6− | 0.1− | 2006 01 20 | 691 | 0.3− | 0.6+ | | | | |

**2006 BO$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.41522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19806207 | $\omega$ | 7.80600 | | +0.79023987 | | −0.61244173 |
| $a$ | 2.9147535 | $\Omega$ | 29.99160 | | +0.55994978 | | +0.70782587 |
| $e$ | 0.0496972 | $i$ | 2.39426 | | +0.24895219 | | +0.35199101 |
| $P$ | 4.98 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.4− | 0.3+ | 2005 12 05 | 691 | 0.6+ | 0.4+ | 2006 02 24 | 691 | (1.8+ | 0.7+) |
| 1999 12 12 | 704 | 0.0 | 0.5+ | 2006 01 21 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.3+ | 0.2− |
| 1999 12 12 | 704 | 0.2+ | 0.4+ | 2006 01 21 | 691 | 0.1+ | 0.3+ | 2006 03 02 | 691 | 0.1+ | 0.2− |
| 2004 11 18 | 599 | 0.3+ | 0.7+ | 2006 01 21 | 691 | 0.4− | 0.1− | 2006 03 02 | 691 | 0.1+ | 0.0 |
| 2004 11 18 | 599 | 0.4+ | 0.4− | 2006 01 25 | 691 | 0.1− | 0.2− | 2006 03 03 | G96 | (0.6+ | 1.6−) |
| 2004 11 18 | 599 | (2.0+ | 0.2−) | 2006 01 25 | 691 | 0.3− | 0.2− | 2006 03 03 | G96 | 0.2+ | 0.3− |
| 2004 11 18 | 599 | 0.0 | 0.1+ | 2006 01 25 | 691 | 0.5− | 0.0 | 2006 03 03 | G96 | 0.2+ | 0.7+ |
| 2004 12 02 | 703 | 0.3+ | 1.2− | 2006 02 21 | G96 | 0.5− | 0.4− | 2006 03 03 | G96 | 0.2− | 0.5+ |
| 2004 12 02 | 703 | 0.1− | 0.1− | 2006 02 21 | G96 | 0.3− | 0.4− | 2006 03 29 | 691 | 0.2− | 0.0 |
| 2004 12 02 | 703 | 0.6− | 1.2− | 2006 02 21 | G96 | 0.0 | 0.0 | 2006 03 29 | 691 | 0.0 | 0.1− |
| 2004 12 02 | 703 | (2.6− | 0.2−) | 2006 02 21 | G96 | 0.2− | 0.2− | 2006 03 29 | 691 | 0.1− | 0.4− |
| 2005 12 05 | 691 | 0.1+ | 0.2+ | 2006 02 24 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 12 05 | 691 | 0.1+ | 0.7+ | 2006 02 24 | 691 | 0.5+ | 0.2+ | | | | |

**2006 BK$_{48}$ = 1995 DR$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.56603 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17241846 | $\omega$ | 137.49178 | | −0.98749992 | | +0.15468802 |
| $a$ | 3.1970313 | $\Omega$ | 51.43196 | | −0.15301056 | | −0.89471280 |
| $e$ | 0.1082320 | $i$ | 2.21785 | | −0.03783751 | | −0.41899955 |
| $P$ | 5.72 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.2+ | 0.1+ | 2003 08 25 | 807 | 0.1+ | 0.3+ | 2006 01 26 | G96 | 0.4+ | 0.1+ |
| 1995 02 24 | 691 | 1.0− | 0.3− | 2004 11 04 | 691 | 0.1+ | 0.1− | 2006 01 26 | G96 | 0.1+ | 0.4+ |
| 1995 02 24 | 691 | 0.2− | 0.6− | 2004 11 04 | 691 | 0.4− | 0.5− | 2006 01 26 | G96 | 0.5+ | 0.0 |
| 1995 03 01 | 691 | 0.4+ | 0.2− | 2004 11 04 | 691 | 0.2+ | 0.1− | 2006 01 26 | G96 | 0.6+ | 0.1+ |
| 1995 03 01 | 691 | 0.1+ | 0.1− | 2004 11 19 | 691 | 0.0 | 0.0 | 2006 01 30 | 691 | 0.4+ | 0.3+ |
| 1995 03 01 | 691 | 0.0 | 0.2− | 2004 11 19 | 691 | 0.1− | 0.4+ | 2006 01 30 | 691 | 0.2+ | 0.2+ |
| 1998 10 18 | 691 | 0.2− | 0.0 | 2004 11 19 | 691 | 0.4+ | 0.1+ | 2006 01 30 | 691 | 0.0 | 0.1+ |
| 1998 10 18 | 691 | 0.0 | 0.1+ | 2006 01 08 | 691 | 0.1− | 0.6+ | 2006 03 04 | G96 | 0.4− | 0.4− |
| 1998 10 18 | 691 | 0.2+ | 0.6− | 2006 01 08 | 691 | 0.2− | 0.2+ | 2006 03 04 | G96 | 0.3+ | 0.3− |
| 2001 03 03 | 691 | 0.3+ | 0.2+ | 2006 01 08 | 691 | 0.3− | 0.3+ | 2006 03 04 | G96 | 0.3− | 0.3− |
| 2001 03 03 | 691 | 0.1− | 0.5+ | 2006 01 25 | 691 | 0.0 | 0.2− | 2006 03 04 | G96 | 0.4− | 0.2− |
| 2001 03 03 | 691 | 0.2− | 0.2− | 2006 01 25 | 691 | 0.0 | 0.1− | | | | |
| 2003 08 25 | 807 | 0.2+ | 0.3+ | 2006 01 25 | 691 | 0.0 | 0.4− | | | | |

**2006 BL$_{50}$ = 1999 VT$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.99239 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19722518 | $\omega$ | 223.17839 | | −0.04067869 | | +0.99862645 |
| $a$ | 2.9229932 | $\Omega$ | 44.52077 | | −0.90342683 | | −0.02264316 |
| $e$ | 0.0339288 | $i$ | 2.69938 | | −0.42680816 | | −0.04724928 |
| $P$ | 5.00 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.0 | 0.1− | 2002 05 14 | 291 | 0.3+ | 0.1+ | 2006 01 08 | G96 | 0.2+ | 0.7− |
| 1999 11 09 | 691 | 0.0 | 0.4+ | 2002 05 14 | 291 | 0.3+ | 0.1− | 2006 01 08 | G96 | 0.3− | 0.7− |
| 1999 11 09 | 691 | 0.3+ | 0.1+ | 2002 06 05 | 291 | 0.1− | 0.3+ | 2006 01 25 | 691 | 0.1− | 0.0 |
| 1999 11 14 | 691 | 0.5− | 0.6+ | 2002 06 05 | 291 | 0.3+ | 0.8+ | 2006 01 25 | 691 | 0.0 | 0.0 |
| 1999 11 14 | 691 | 0.5− | 0.4+ | 2002 06 05 | 291 | 0.1− | 0.3+ | 2006 01 25 | 691 | 0.2+ | 0.0 |
| 1999 11 14 | 691 | 0.4− | 0.5+ | 2004 10 15 | G96 | 0.1+ | 0.0 | 2006 01 26 | G96 | 0.2− | 0.7− |
| 2001 01 04 | 691 | 0.3+ | 0.4+ | 2004 10 15 | G96 | 0.5+ | 0.7− | 2006 01 26 | G96 | 0.0 | 0.6− |
| 2001 01 04 | 691 | 0.2+ | 0.2+ | 2004 10 15 | G96 | 0.1− | 0.0 | 2006 01 26 | G96 | 0.3− | 0.3− |
| 2001 01 04 | 691 | 0.0 | 0.4− | 2004 10 15 | G96 | 1.0+ | 0.5− | 2006 01 26 | G96 | 0.7− | 0.4− |
| 2002 04 09 | 291 | 0.1− | 0.3+ | 2004 11 09 | 695 | 0.2− | 0.4+ | 2006 01 30 | 691 | 0.0 | 0.4+ |
| 2002 04 09 | 291 | 0.0 | 0.1+ | 2004 11 09 | 695 | 0.4+ | 0.5+ | 2006 01 30 | 691 | 0.3− | 0.1+ |
| 2002 04 09 | 291 | 0.1+ | 0.1+ | 2006 01 08 | G96 | 0.1− | 0.7− | 2006 01 30 | 691 | 0.1− | 0.3+ |
| 2002 05 14 | 291 | 0.0 | 0.0 | 2006 01 08 | G96 | 0.2+ | 0.4− | | | | |

**2006 BT$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.77214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16976514 | $\omega$ | 119.46680 | | −0.54547223 | | +0.83646905 |
| $a$ | 3.2302567 | $\Omega$ | 117.38297 | | −0.78806681 | | −0.49046052 |
| $e$ | 0.0854414 | $i$ | 3.40390 | | −0.28532568 | | −0.24447497 |
| $P$ | 5.81 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.4+ | 0.3+ | 2003 09 26 | 645 | 0.0 | 0.1+ | 2006 01 26 | G96 | 0.0 | 0.4+ |
| 2000 01 28 | 691 | 0.2+ | 0.5− | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 01 26 | G96 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.1+ | 0.1+ | 2003 09 28 | 645 | 0.1+ | 0.0 | 2006 01 26 | G96 | 0.1− | 0.4+ |
| 2000 02 05 | 691 | 0.3− | 0.8− | 2003 09 30 | 691 | 0.0 | 0.0 | 2006 01 26 | G96 | 0.4+ | 0.1+ |
| 2000 02 05 | 691 | 0.6− | 0.7− | 2003 09 30 | 691 | 0.2− | 0.2+ | 2006 02 25 | G96 | 0.1+ | 0.7+ |
| 2000 02 05 | 691 | 0.3− | 0.8− | 2003 09 30 | 691 | 0.1+ | 0.2+ | 2006 02 25 | G96 | 0.4+ | 0.1− |
| 2001 05 24 | 645 | 0.0 | 0.1− | 2006 01 25 | 691 | 0.2− | 0.6+ | 2006 02 25 | G96 | 0.0 | 0.3+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2006 01 25 | 691 | 0.5+ | 0.5+ | 2006 02 25 | G96 | 0.1− | 0.8+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2006 01 25 | 691 | 0.3+ | 0.7+ | | | | |

**2006 BW$_{53}$ = 2006 DE$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.16381 | | | (2000.0) | | |
| $n$ | 0.26178308 | $\omega$ | 247.57821 | | −0.36870345 | +0.92954698 |
| $a$ | 2.4201466 | $\Omega$ | 0.78647 | | −0.84133764 | −0.33352542 |
| $e$ | 0.1659674 | $i$ | 1.73289 | | −0.39523252 | −0.15717253 |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 691 | 0.1− | 0.4+ | 2006 01 25 | 691 | 0.9+ | 0.0 | 2006 02 01 | G96 | 0.7− | 0.4− |
| 2002 01 14 | 691 | 0.4− | 0.3+ | 2006 01 25 | 691 | 0.4+ | 0.4+ | 2006 02 01 | G96 | 0.3− | 0.8+ |
| 2002 01 14 | 691 | 0.1− | 0.0 | 2006 01 25 | 691 | 0.2+ | 0.3− | 2006 02 01 | G96 | 0.6+ | 1.0+ |
| 2002 01 21 | 291 | 0.2+ | 0.1+ | 2006 01 26 | G96 | 0.1− | 0.8− | 2006 02 25 | G96 | 0.4− | 0.2− |
| 2002 01 21 | 291 | 0.4+ | 0.2+ | 2006 01 26 | G96 | 0.4− | 0.7− | 2006 02 25 | G96 | 0.2− | 0.1− |
| 2002 01 21 | 291 | 0.5+ | 0.0 | 2006 01 26 | G96 | 0.7− | 0.5− | 2006 02 25 | G96 | 0.2− | 0.2− |
| 2002 02 08 | 695 | 0.0 | 0.3− | 2006 01 26 | G96 | 0.4− | 0.8− | 2006 02 25 | G96 | 0.2− | 0.1+ |
| 2002 02 08 | 695 | 0.5− | 0.0 | 2006 01 31 | 691 | 0.0 | 0.2+ | 2006 03 02 | 691 | 0.3− | 0.2− |
| 2003 08 05 | 691 | 0.1− | 0.4+ | 2006 01 31 | 691 | 0.2+ | 0.2+ | 2006 03 02 | 691 | 0.2− | 0.3+ |
| 2003 08 05 | 691 | 0.2− | 0.3+ | 2006 01 31 | 691 | 0.0 | 0.1+ | 2006 03 02 | 691 | 0.1− | 0.1+ |
| 2003 08 05 | 691 | 0.0 | 0.3+ | 2006 02 01 | G96 | 0.6− | 0.6− | | | | |

**2006 BG$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.28873 | | | (2000.0) | | |
| $n$ | 0.55283313 | $\omega$ | 167.51961 | | +0.62612954 | +0.76784091 |
| $a$ | 1.4703024 | $\Omega$ | 141.01118 | | −0.73262525 | +0.63886536 |
| $e$ | 0.5982133 | $i$ | 12.44438 | | −0.26687459 | +0.04765905 |
| $P$ | 1.78 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 01 26 | G96 | 0.4+ | 1.0− | 2006 01 31 | 691 | 0.2− | 0.6− | 2006 05 03 | G96 | 0.0 | 0.4+ |
| 2006 01 26 | G96 | 0.1− | 0.6− | 2006 02 01 | F65 | 0.3+ | 0.2− | 2006 11 01 | 474 | 0.1− | 1.5+ |
| 2006 01 26 | G96 | 0.3+ | 0.3− | 2006 02 01 | F65 | 0.3− | 0.0 | 2006 11 01 | 474 | 0.5+ | 1.2+ |
| 2006 01 26 | G96 | 0.6+ | 1.0− | 2006 02 01 | F65 | 0.2− | 0.2+ | 2006 11 01 | 474 | 0.7− | 0.7− |
| 2006 01 26 | G96 | 0.1− | 0.2+ | 2006 02 01 | F65 | 0.1− | 0.0 | 2006 11 11 | 844 | 0.7− | 0.2− |
| 2006 01 26 | G96 | 0.1+ | 0.5− | 2006 02 04 | 691 | 0.3+ | 0.3− | 2006 11 11 | 844 | 0.6− | 0.6+ |
| 2006 01 26 | G96 | 0.8− | 0.0 | 2006 02 04 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 844 | (2.0− | 0.3+) |
| 2006 01 27 | 291 | 0.0 | 0.1+ | 2006 02 04 | 691 | 0.3+ | 0.3− | 2006 11 11 | 844 | (2.0+ | 1.9−) |
| 2006 01 27 | 291 | 0.0 | 0.3+ | 2006 02 06 | 291 | (1.7+ | 0.7+) | 2006 11 11 | 844 | 0.9+ | 0.3− |
| 2006 01 27 | 291 | 0.5− | 0.5+ | 2006 02 06 | 291 | (0.7+ | 1.6−) | 2006 11 12 | 474 | 0.2− | 0.4+ |
| 2006 01 27 | G96 | 0.1− | 0.1− | 2006 02 06 | 291 | 0.4+ | 1.2+ | 2006 11 12 | 474 | 0.2− | 0.3+ |
| 2006 01 27 | G96 | 0.9− | 0.1+ | 2006 02 24 | 696 | 0.1− | 0.1− | 2006 11 12 | 474 | 0.1− | 0.3+ |
| 2006 01 27 | G96 | 0.1− | 0.1− | 2006 02 24 | 696 | 0.1+ | 0.9− | 2006 11 14 | E12 | 0.2− | 0.3+ |
| 2006 01 27 | G96 | 0.4− | 0.3− | 2006 02 24 | G96 | 0.2− | 0.3+ | 2006 11 14 | E12 | 0.1− | 0.3+ |
| 2006 01 27 | G96 | 1.0− | 0.2− | 2006 02 24 | G96 | 0.4+ | 0.2− | 2006 11 14 | E12 | 0.2− | 0.2+ |
| 2006 01 27 | G96 | 0.4− | 0.5− | 2006 02 24 | G96 | 0.1− | 0.1− | 2006 11 14 | E12 | 0.0 | 0.2+ |
| 2006 01 27 | G96 | 0.0 | 0.8− | 2006 02 24 | G96 | 0.5+ | 0.0 | 2006 11 17 | E12 | 0.1− | 0.0 |
| 2006 01 27 | G96 | 0.3+ | 1.2− | 2006 03 20 | 198 | 0.1− | 0.9+ | 2006 11 17 | E12 | 0.4+ | 0.1− |
| 2006 01 28 | G96 | 0.4− | 0.3− | 2006 03 20 | 198 | 0.0 | 0.8+ | 2006 11 17 | E12 | 0.2+ | 0.1− |
| 2006 01 28 | G96 | 0.5+ | 0.5− | 2006 03 20 | 198 | 0.1+ | 0.8+ | 2006 11 17 | E12 | 0.1− | 0.1+ |
| 2006 01 28 | G96 | 0.1− | 0.0 | 2006 03 20 | 198 | 0.2+ | 0.6+ | 2006 11 22 | E12 | 0.2− | 0.0 |
| 2006 01 28 | G96 | 0.4+ | 0.1− | 2006 05 03 | G96 | 0.2+ | 0.7+ | 2006 11 22 | E12 | 0.1− | 0.4− |
| 2006 01 31 | 691 | 0.1− | 0.0 | 2006 05 03 | G96 | 0.8− | 0.4+ | 2006 11 22 | E12 | 0.1+ | 0.6− |
| 2006 01 31 | 691 | 0.1+ | 0.1+ | 2006 05 03 | G96 | 0.0 | 0.1− | 2006 11 22 | E12 | 0.2− | 0.3− |

**2006 BB$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.02167 | | | (2000.0) | | |
| $n$ | 0.21596365 | $\omega$ | 260.16949 | | −0.51461958 | +0.85615464 |
| $a$ | 2.7513696 | $\Omega$ | 338.66151 | | −0.72799470 | −0.46497137 |
| $e$ | 0.1581206 | $i$ | 7.34819 | | −0.45297947 | −0.22539045 |
| $P$ | 4.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.2+ | 0.2+ | 2006 01 25 | 691 | 0.1+ | 0.0 | 2006 01 31 | 691 | 0.3+ | 0.2+ |
| 2003 09 16 | 691 | 0.2− | 0.4+ | 2006 01 25 | 691 | 0.1+ | 0.0 | 2006 02 20 | G96 | 0.2− | 0.1+ |
| 2003 09 16 | 691 | 0.3− | 0.5+ | 2006 01 25 | 291 | 0.5− | 0.1+ | 2006 02 20 | G96 | 0.4− | 0.2+ |
| 2003 09 27 | 691 | 0.3− | 0.1+ | 2006 01 25 | 291 | 0.0 | 0.1− | 2006 02 20 | G96 | 0.4− | 0.0 |
| 2003 09 27 | 691 | 0.1+ | 0.4+ | 2006 01 25 | 291 | 0.8− | 0.2− | 2006 02 20 | G96 | 0.1− | 0.0 |
| 2003 09 27 | 691 | 0.1− | 0.1+ | 2006 01 27 | G96 | 0.2− | 0.5− | 2006 02 20 | 703 | 0.6+ | 1.1+ |
| 2003 09 29 | 645 | 0.0 | 0.1− | 2006 01 27 | G96 | 0.4− | 0.4− | 2006 02 20 | 703 | 0.8+ | 0.1− |
| 2003 09 29 | 645 | 0.0 | 0.1− | 2006 01 27 | G96 | 0.3− | 0.2− | 2006 02 20 | 703 | 0.0 | 0.2− |
| 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 01 27 | G96 | 0.5− | 0.8− | 2006 02 20 | 703 | 0.3− | 0.3+ |
| 2003 10 19 | 645 | 0.2+ | 0.1− | 2006 01 28 | G96 | 0.1+ | 0.6− | 2006 03 05 | G96 | 0.3+ | 0.6+ |
| 2003 10 23 | 645 | 0.1− | 0.1+ | 2006 01 28 | G96 | 0.1+ | 0.7− | 2006 03 05 | G96 | 0.3− | 0.3+ |
| 2003 10 23 | 645 | 0.1+ | 0.2− | 2006 01 28 | G96 | 0.3− | 0.7− | 2006 03 05 | G96 | 0.1+ | 0.5+ |
| 2003 10 24 | 645 | 0.0 | 0.0 | 2006 01 28 | G96 | 0.3− | 0.4− | 2006 03 05 | G96 | 0.1+ | 0.5+ |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2006 01 31 | 691 | 0.4+ | 0.2+ | | | | |
| 2006 01 25 | 691 | 0.4+ | 0.1+ | 2006 01 31 | 691 | 0.5+ | 0.2+ | | | | |

**2006 BC$_{62}$ = 2001 SD$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 116.54234 | | | (2000.0) | | |
| $n$ | 0.28587310 | $\omega$ | 18.06355 | | +0.38569838 | −0.91682618 |
| $a$ | 2.2822008 | $\Omega$ | 49.38519 | | +0.82882568 | +0.29513171 |
| $e$ | 0.1891797 | $i$ | 7.81956 | | +0.40532056 | +0.26893685 |
| $P$ | 3.45 | $H$ | 17.6 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1− | 1.4− | 2001 10 11 | 704 | 0.0 | 0.0 | 2006 01 22 | 703 | 1.4+ | 1.2− |
| 2001 09 25 | 704 | 0.8+ | 0.1− | 2001 10 11 | 704 | 0.6− | 0.3− | 2006 01 27 | 703 | 1.5− | 0.7− |
| 2001 09 25 | 704 | 0.7+ | 0.2− | 2001 10 11 | 704 | 0.2− | 0.4− | 2006 01 27 | 703 | 0.4− | 0.2+ |
| 2001 09 25 | 704 | 0.2+ | 0.7− | 2001 10 16 | 644 | 0.0 | 0.1− | 2006 01 27 | 703 | 0.2+ | 0.4+ |
| 2001 09 26 | 704 | 0.3− | 1.2+ | 2001 10 16 | 644 | 0.4− | 0.1− | 2006 01 27 | 703 | 0.3− | 0.1− |
| 2001 09 26 | 704 | 0.8+ | 1.1+ | 2001 10 16 | 644 | 0.1− | 0.0 | 2006 01 28 | 703 | 0.4+ | 0.3− |
| 2001 09 26 | 704 | 0.6− | 0.7+ | 2006 01 22 | 703 | 0.2+ | 0.1+ | 2006 01 28 | 703 | 0.4− | 0.5− |
| 2001 09 26 | 704 | 0.8− | 0.2+ | 2006 01 22 | 703 | 0.4+ | 1.5+ | 2006 01 28 | 703 | 0.1+ | 0.3− |
| 2001 10 11 | 704 | 0.6+ | 0.1+ | 2006 01 22 | 703 | 1.1+ | 0.9+ | 2006 01 28 | 703 | 1.2− | 0.0 |

**2006 BL$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 268.79119 | | | (2000.0) | | |
| $n$ | 0.16391070 | $\omega$ | 184.91110 | | +0.13756588 | +0.98844564 |
| $a$ | 3.3067232 | $\Omega$ | 93.00597 | | −0.90657505 | +0.15153506 |
| $e$ | 0.2075529 | $i$ | 3.65416 | | −0.39899538 | −0.00351260 |
| $P$ | 6.01 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 608 | 1.0+ | 0.3− | 2002 08 13 | 704 | 0.2+ | 0.9+ | 2006 01 23 | 691 | 0.2+ | 0.6+ |
| 2001 04 15 | 608 | 0.1− | 0.6+ | 2002 08 13 | 704 | 0.6+ | 0.0 | 2006 01 27 | G96 | 0.2+ | 0.6− |
| 2001 04 15 | 608 | 0.3− | 0.9+ | 2002 08 13 | 704 | 0.0 | 0.6− | 2006 01 27 | G96 | 0.3− | 0.3− |
| 2002 07 18 | 644 | 0.1+ | 0.7+ | 2002 08 29 | 644 | 0.4− | 0.4+ | 2006 01 27 | G96 | 0.2− | 0.5− |
| 2002 07 18 | 644 | 0.0 | 0.6+ | 2002 08 29 | 644 | 0.4− | 0.3+ | 2006 01 27 | G96 | 0.1− | 0.5− |
| 2002 07 18 | 644 | 0.1− | 0.8+ | 2002 08 29 | 644 | 0.4− | 0.4+ | 2006 01 31 | 691 | 0.2− | 0.3+ |
| 2002 08 11 | 644 | 0.0 | 0.4+ | 2003 10 21 | 691 | 0.1+ | 0.1+ | 2006 01 31 | 691 | 0.3+ | 0.0 |
| 2002 08 11 | 644 | 0.1+ | 0.4+ | 2003 10 21 | 691 | 0.0 | 0.0 | 2006 01 31 | 691 | 0.3+ | 0.1+ |
| 2002 08 11 | 644 | 0.1+ | 0.3+ | 2003 10 21 | 691 | 0.2− | 0.2+ | 2006 02 07 | 691 | 0.1+ | 0.6+ |
| 2002 08 13 | 704 | 0.3− | 0.3+ | 2006 01 23 | 691 | 0.1+ | 0.1+ | 2006 02 07 | 691 | 0.3− | 0.1− |
| 2002 08 13 | 704 | 0.6− | 0.0 | 2006 01 23 | 691 | 0.2+ | 0.1− | 2006 02 07 | 691 | 0.2− | 0.3+ |

**2006 BN$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.24728 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17305339 | $\omega$ | 285.13740 | | −0.28535380 | | +0.95645253 |
| $a$ | 3.1892065 | $\Omega$ | 328.07599 | | −0.82870317 | | −0.27841636 |
| $e$ | 0.0918181 | $i$ | 6.66945 | | −0.48148132 | | −0.08765208 |
| $P$ | 5.70 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 644 | 0.1+ | 0.0 | 2003 10 29 | 691 | 0.0 | 0.0 | 2006 02 02 | 703 | (0.2+ | 2.1+) |
| 2003 09 17 | 644 | 0.2+ | 0.2+ | 2003 10 29 | 691 | 0.1− | 0.3+ | 2006 02 02 | 703 | 0.2+ | 0.0 |
| 2003 09 17 | 644 | 0.4+ | 0.1+ | 2006 01 23 | 691 | 0.3+ | 0.1+ | 2006 02 02 | 703 | 0.8− | 0.3+ |
| 2003 09 20 | 691 | 0.1− | 0.1+ | 2006 01 23 | 691 | 0.1+ | 0.1+ | 2006 02 03 | 691 | 0.3− | 0.2+ |
| 2003 09 20 | 691 | 0.1− | 0.1+ | 2006 01 23 | 691 | 0.0 | 0.1+ | 2006 02 03 | 691 | 0.1− | 0.3+ |
| 2003 09 20 | 691 | 0.2+ | 0.1− | 2006 01 27 | G96 | 0.2− | 0.2− | 2006 02 03 | 691 | 0.3− | 0.2+ |
| 2003 09 27 | 704 | 0.3− | 0.1− | 2006 01 27 | G96 | 0.3− | 0.4− | 2006 02 06 | G96 | 0.3+ | 0.6− |
| 2003 09 27 | 704 | 0.2+ | 0.7+ | 2006 01 27 | G96 | 0.4− | 0.6− | 2006 02 06 | G96 | 0.2+ | 0.7− |
| 2003 09 27 | 704 | 0.4− | 0.2− | 2006 01 27 | G96 | 0.2− | 0.6− | 2006 02 06 | G96 | 0.1+ | 1.0− |
| 2003 10 15 | 644 | 0.1− | 0.1+ | 2006 01 31 | 691 | 0.2+ | 0.0 | 2006 02 06 | G96 | 0.1+ | 1.2− |
| 2003 10 15 | 644 | 0.1− | 0.1+ | 2006 01 31 | 691 | 0.2+ | 0.1− | 2006 05 25 | 291 | 0.3− | 0.1+ |
| 2003 10 15 | 644 | 0.1+ | 0.5− | 2006 01 31 | 691 | 0.1+ | 0.0 | 2006 05 25 | 291 | 0.9+ | 0.4+ |
| 2003 10 29 | 691 | 0.0 | 0.2− | 2006 02 02 | 703 | 0.8− | 0.0 | 2006 05 25 | 291 | 0.0 | 0.3+ |

**2006 BY$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.02692 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23679563 | $\omega$ | 229.04661 | | +0.60227892 | | +0.79756698 |
| $a$ | 2.5875392 | $\Omega$ | 78.01847 | | −0.72161875 | | +0.56208799 |
| $e$ | 0.2516423 | $i$ | 1.98409 | | −0.34135976 | | +0.21896119 |
| $P$ | 4.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 691 | 0.2− | 0.1+ | 2003 05 11 | 608 | 0.9+ | 0.7− | 2006 01 27 | G96 | 0.4− | 0.1− |
| 1998 02 28 | 691 | 0.1+ | 0.4− | 2003 05 24 | 608 | 0.7+ | 1.2− | 2006 01 27 | G96 | 0.5− | 0.4+ |
| 1998 02 28 | 691 | 0.0 | 0.2− | 2003 05 24 | 608 | (0.6+ | 1.6−) | 2006 01 27 | G96 | 0.2− | 0.5+ |
| 2002 02 12 | 704 | 1.1+ | 1.1+ | 2003 05 24 | 608 | (1.8+ | 0.2+) | 2006 01 27 | G96 | 0.2− | 0.4− |
| 2002 02 12 | 704 | 0.4+ | 0.7+ | 2003 06 02 | 291 | 0.0 | 0.3+ | 2006 01 31 | 691 | 0.1+ | 0.2− |
| 2002 02 12 | 704 | 0.3− | 0.6+ | 2003 06 02 | 291 | 0.0 | 0.3+ | 2006 01 31 | 691 | 0.3+ | 0.2− |
| 2002 02 19 | 291 | 0.1− | 0.5+ | 2003 06 02 | 291 | 0.1+ | 0.4+ | 2006 01 31 | 691 | 0.1+ | 0.2− |
| 2002 02 19 | 291 | 0.1+ | 0.0 | 2003 06 26 | 688 | 0.4+ | 0.2+ | 2006 02 02 | 691 | 0.0 | 0.0 |
| 2002 02 19 | 291 | 0.2− | 0.1+ | 2003 06 26 | 688 | 0.0 | 0.3+ | 2006 02 02 | 691 | 0.2− | 0.0 |
| 2003 05 05 | 704 | 1.1− | 0.2− | 2006 01 23 | 691 | 0.0 | 0.1− | 2006 02 02 | 691 | 0.0 | 0.0 |
| 2003 05 05 | 704 | 0.3− | 0.1− | 2006 01 23 | 691 | 0.1+ | 0.0 | 2006 02 03 | 691 | 0.2− | 0.4− |
| 2003 05 05 | 704 | 0.5− | 0.1− | 2006 01 23 | 691 | 0.2+ | 0.0 | 2006 02 03 | 691 | 0.2+ | 0.1− |
| 2003 05 05 | 704 | 0.6− | 0.4− | 2006 01 23 | G96 | 0.4− | 0.0 | 2006 02 03 | 691 | 0.0 | 0.1− |
| 2003 05 05 | 704 | 0.1− | 0.4+ | 2006 01 23 | G96 | 0.6− | 0.1− | 2006 02 07 | 691 | 0.1+ | 0.1+ |
| 2003 05 11 | 608 | 0.0 | 0.9− | 2006 01 23 | G96 | 0.4− | 0.1− | 2006 02 07 | 691 | 0.1+ | 0.5+ |
| 2003 05 11 | 608 | 0.3+ | 1.2− | 2006 01 23 | G96 | 0.0 | 0.3+ | 2006 02 07 | 691 | 0.1− | 0.1− |

**2006 BN$_{70}$ = 2001 UT$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.75693 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.08096020 | $\omega$ | 309.66158 | | +0.70920532 | | +0.70482064 |
| $a$ | 5.2920221 | $\Omega$ | 5.59142 | | −0.58610196 | | +0.60204962 |
| $e$ | 0.0686204 | $i$ | 9.44561 | | −0.39180646 | | +0.37518545 |
| $P$ | 12.17 | $H$ | 13.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1− | 0.1+ | 2001 10 21 | 704 | 0.4− | 1.3− | 2006 01 23 | 691 | 0.1− | 0.1− |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2001 10 23 | 691 | 0.2+ | 0.1+ | 2006 01 23 | 691 | 0.1− | 0.4+ |
| 2000 09 26 | 691 | 0.0 | 0.3+ | 2001 10 23 | 691 | 0.3+ | 0.1+ | 2006 01 27 | 691 | 0.1+ | 0.4+ |
| 2000 09 26 | 691 | 0.0 | 0.3− | 2001 10 23 | 691 | 0.0 | 0.1− | 2006 01 27 | 691 | 0.1+ | 0.1+ |
| 2000 09 26 | 691 | 0.2− | 0.4+ | 2002 11 24 | 644 | 0.9+ | 0.2+ | 2006 01 27 | 691 | 0.1+ | 0.7+ |
| 2001 10 21 | 704 | 0.5+ | 0.5− | 2002 11 24 | 644 | 0.7− | 0.5− | 2006 02 04 | 691 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.9− | 0.5− | 2002 11 24 | 644 | 0.1+ | 0.2− | 2006 02 04 | 691 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.2+ | 0.2− | 2006 01 23 | 691 | 0.1− | 0.3+ | 2006 02 04 | 691 | 0.2+ | 0.3− |

**2006 BS$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.96323 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26461105 | $\omega$ | 267.55113 | | +0.98815360 | | −0.06939292 |
| $a$ | 2.4028725 | $\Omega$ | 96.40474 | | +0.11706179 | | +0.91759556 |
| $e$ | 0.0901614 | $i$ | 7.91727 | | −0.09924212 | | +0.39141157 |
| $P$ | 3.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.0 | 0.3− | 2002 01 14 | 704 | 1.1− | 0.9− | 2004 09 21 | 704 | 0.9− | 1.1+ |
| 2001 12 19 | 644 | 0.2− | 0.2− | 2002 01 14 | 704 | 0.1+ | 0.2− | 2006 01 23 | 691 | 0.2+ | 0.0 |
| 2001 12 19 | 644 | 0.1− | 0.1− | 2002 01 14 | 704 | 0.1− | 0.0 | 2006 01 23 | 691 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.1− | 0.5+ | 2003 04 29 | 691 | 0.1+ | 0.6+ | 2006 01 23 | 691 | 0.3− | 0.1− |
| 2001 12 19 | 704 | 0.1− | 1.2+ | 2003 04 29 | 691 | 0.3+ | 0.5+ | 2006 01 27 | 691 | 0.0 | 0.3+ |
| 2001 12 19 | 704 | 0.1− | 1.6+ | 2003 04 29 | 691 | 0.2+ | 0.6+ | 2006 01 27 | 691 | 0.1+ | 0.4+ |
| 2001 12 20 | 645 | 0.1+ | 0.0 | 2004 09 21 | 704 | 0.7− | 2.1+ | 2006 01 27 | 691 | 0.2− | 0.1+ |
| 2001 12 20 | 645 | 0.1+ | 0.1+ | 2004 09 21 | 704 | 0.2− | 0.7+ | 2006 02 04 | 691 | 0.3+ | 0.0 |
| 2002 01 14 | 704 | 0.4− | 1.4− | 2004 09 21 | 704 | 0.3− | 1.6+ | 2006 02 04 | 691 | 0.2+ | 0.1+ |
| 2002 01 14 | 704 | 0.4− | 0.9− | 2004 09 21 | 704 | 1.4− | 2.5+ | 2006 02 04 | 691 | 0.3+ | 0.1+ |

**2006 BO$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.79473 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18677415 | $\omega$ | 270.69022 | | −0.12611849 | | +0.99189658 |
| $a$ | 3.0310391 | $\Omega$ | 352.01537 | | −0.86057718 | | −0.11708693 |
| $e$ | 0.1376230 | $i$ | 6.34006 | | −0.49345825 | | −0.04931350 |
| $P$ | 5.28 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 09 | 691 | 0.4− | 0.2+ | 2003 09 29 | 691 | 0.3+ | 0.1− | 2006 01 23 | 691 | 0.6+ | 0.4+ |
| 1993 11 09 | 691 | 0.2+ | 0.4− | 2003 09 29 | 691 | 0.0 | 0.2+ | 2006 01 27 | 691 | 0.1+ | 0.2+ |
| 1993 11 09 | 691 | 0.3+ | 0.3− | 2003 10 24 | 691 | 0.4− | 0.2+ | 2006 01 27 | 691 | 0.2− | 0.2− |
| 2003 09 18 | 291 | 0.1− | 0.1− | 2003 10 24 | 691 | 0.1+ | 0.5+ | 2006 01 27 | 691 | 0.2− | 0.3+ |
| 2003 09 18 | 291 | 0.2− | 0.3− | 2003 10 24 | 691 | 0.1− | 0.3+ | 2006 02 04 | 691 | 0.3− | 0.3+ |
| 2003 09 18 | 291 | 0.1− | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.0 | 2006 02 04 | 691 | 0.5− | 0.2− |
| 2003 09 29 | 691 | 0.1+ | 0.1− | 2006 01 23 | 691 | 0.3+ | 0.4− | 2006 02 04 | 691 | 0.2+ | 0.2− |

**2006 BY$_{74}$ = 2004 TN$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.18046 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20274947 | $\omega$ | 337.33047 | | +0.83453623 | | −0.54933933 |
| $a$ | 2.8696542 | $\Omega$ | 56.05900 | | +0.51295726 | | +0.74679755 |
| $e$ | 0.0761951 | $i$ | 2.91142 | | +0.20105752 | | +0.37485961 |
| $P$ | 4.86 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 08 | 691 | 0.3− | 0.2+ | 2004 10 15 | 691 | 0.1− | 0.0 | 2006 01 27 | 691 | 0.2− | 0.2+ |
| 2004 10 08 | 691 | 0.4+ | 0.0 | 2004 10 15 | 691 | 0.0 | 0.1− | 2006 01 27 | 691 | 0.3− | 0.2+ |
| 2004 10 08 | 691 | 0.0 | 0.0 | 2004 10 15 | 691 | 0.1+ | 0.2+ | 2006 01 27 | 691 | 0.1− | 0.2+ |
| 2004 10 12 | 691 | 0.1− | 0.2+ | 2006 01 23 | 691 | 0.3− | 0.2+ | 2006 01 31 | 691 | 0.0 | 0.1− |
| 2004 10 12 | 691 | 0.1+ | 0.1− | 2006 01 23 | 691 | 0.3+ | 0.8− | 2006 01 31 | 691 | 0.2+ | 0.3− |
| 2004 10 12 | 691 | 0.1− | 0.3− | 2006 01 23 | 691 | 0.2+ | 0.2+ | 2006 01 31 | 691 | 0.2+ | 0.1+ |

**2006 BX$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.82575 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18220058 | $\omega$ | 235.69512 | | +0.76239462 | | +0.64582728 |
| $a$ | 3.0815523 | $\Omega$ | 84.04180 | | −0.57943430 | | +0.70934982 |
| $e$ | 0.1693131 | $i$ | 2.34886 | | −0.28811515 | | +0.28236495 |
| $P$ | 5.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 16 | 691 | 1.3− | 0.1+ | 2003 08 31 | 704 | 0.1+ | 0.5+ | 2006 01 27 | G96 | 0.3− | 0.1+ | | |
| 1993 12 16 | 691 | 0.5+ | 0.7+ | 2003 08 31 | 704 | 0.1+ | 1.1+ | 2006 01 27 | G96 | 0.0 | 0.3+ | | |
| 1993 12 16 | 691 | 0.4+ | 0.8+ | 2003 09 17 | 704 | 0.6− | 1.4+ | 2006 01 27 | G96 | 0.2+ | 0.0 | | |
| 2002 06 06 | 291 | 0.5+ | 1.0+ | 2003 09 17 | 704 | 0.1− | 0.8+ | 2006 01 27 | G96 | 0.6− | 0.2− | | |
| 2002 06 06 | 291 | 0.3+ | 0.9+ | 2003 09 17 | 704 | 0.9− | 0.5+ | 2006 01 31 | 691 | 0.1− | 0.2+ | | |
| 2002 06 06 | 291 | 0.2+ | 0.9+ | 2003 09 17 | 704 | 0.6− | 1.0+ | 2006 01 31 | 691 | 0.3+ | 0.2+ | | |
| 2003 07 25 | 644 | 0.3− | 0.3+ | 2003 09 17 | 704 | 0.2− | 1.5− | 2006 01 31 | 691 | 0.2+ | 0.1+ | | |
| 2003 07 25 | 644 | 0.4− | 0.5+ | 2004 12 20 | G96 | 0.0 | 0.3+ | 2006 02 03 | 691 | 0.2+ | 0.5+ | | |
| 2003 07 25 | 644 | 0.3− | 0.4+ | 2004 12 20 | G96 | 0.2− | 0.3+ | 2006 02 03 | 691 | 0.0 | 0.1− | | |
| 2003 08 02 | 608 | 1.2+ | 0.7− | 2004 12 20 | G96 | 0.1− | 0.1+ | 2006 02 03 | 691 | 0.2+ | 0.1− | | |
| 2003 08 02 | 608 | 0.6+ | 0.0 | 2004 12 20 | G96 | 0.1+ | 0.3+ | 2006 02 07 | 691 | 0.2− | 0.1− | | |
| 2003 08 02 | 608 | 0.0 | 0.0 | 2006 01 20 | 691 | 0.3− | 0.1− | 2006 02 07 | 691 | 0.2+ | 0.0 | | |
| 2003 08 23 | 704 | 0.2− | 1.6+ | 2006 01 20 | 691 | 0.3+ | 0.2− | 2006 02 07 | 691 | 0.1+ | 0.0 | | |
| 2003 08 23 | 704 | 0.6− | 1.2+ | 2006 01 20 | 691 | 0.5+ | 1.6+ | 2006 02 07 | G96 | 1.1− | 0.2− | | |
| 2003 08 23 | 704 | 0.9− | 1.8+ | 2006 01 23 | G96 | 0.2+ | 0.5+ | 2006 02 07 | G96 | 0.3− | 0.3− | | |
| 2003 08 31 | 704 | 0.2+ | 0.8+ | 2006 01 23 | G96 | 0.2+ | 0.2+ | 2006 02 07 | G96 | 0.5− | 0.3− | | |
| 2003 08 31 | 704 | 0.6− | 0.2+ | 2006 01 23 | G96 | 0.1+ | 0.4+ | 2006 02 07 | G96 | 0.8− | 0.3+ | | |
| 2003 08 31 | 704 | 0.2− | 0.1− | 2006 01 23 | G96 | 0.1+ | 0.2+ | | | | | | |

### 2006 BG$_{78}$ = 2003 RU$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 201.92911 | | (2000.0) | | | |
| $n$ | 0.17243591 | $\omega$ | 203.72675 | | +0.80887816 | +0.58710134 |
| $a$ | 3.1968156 | $\Omega$ | 120.28308 | | −0.53334041 | +0.75558057 |
| $e$ | 0.1899651 | $i$ | 2.12797 | | −0.24751592 | +0.29053403 |
| $P$ | 5.72 | $H$ | 16.2 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 691 | 0.1− | 0.2+ | 2003 09 01 | 704 | 0.3− | 1.5+ | 2006 01 23 | G96 | 0.6− | 0.1− | | |
| 2001 03 20 | 691 | 0.6+ | 1.0+ | 2003 09 01 | 704 | 0.1+ | 0.5+ | 2006 01 23 | G96 | 0.6− | 0.3− | | |
| 2001 03 20 | 691 | 0.1+ | 0.4+ | 2003 09 04 | 691 | 0.1− | 0.2+ | 2006 01 27 | 691 | 0.2+ | 0.1+ | | |
| 2003 07 25 | 644 | 0.2− | 0.4+ | 2003 09 04 | 691 | 0.0 | 0.2+ | 2006 01 27 | 691 | 0.3+ | 0.2+ | | |
| 2003 07 25 | 644 | 0.1− | 0.7+ | 2003 09 04 | 691 | 0.1+ | 0.2+ | 2006 01 27 | 691 | 0.2− | 0.6+ | | |
| 2003 07 25 | 644 | 0.1− | 0.6+ | 2003 11 24 | 695 | 0.1+ | 0.1+ | 2006 02 02 | 691 | 0.2+ | 0.3+ | | |
| 2003 09 01 | 704 | 0.9− | 0.0 | 2003 11 24 | 695 | 0.6+ | 0.2+ | 2006 02 02 | 691 | 0.0 | 0.3− | | |
| 2003 09 01 | 704 | 1.1− | 0.6+ | 2006 01 23 | G96 | 0.4− | 0.3− | 2006 02 02 | 691 | 0.2+ | 0.2+ | | |
| 2003 09 01 | 704 | 0.2− | 0.6+ | 2006 01 23 | G96 | 0.1+ | 0.2− | | | | | | |

### 2006 BU$_{78}$ = 2003 QB$_{102}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.30853 | | (2000.0) | | | |
| $n$ | 0.18377847 | $\omega$ | 40.76977 | | +0.95862376 | −0.27452873 |
| $a$ | 3.0638885 | $\Omega$ | 334.86060 | | +0.19254270 | +0.82016769 |
| $e$ | 0.0572074 | $i$ | 10.21365 | | +0.20968501 | +0.50195512 |
| $P$ | 5.36 | $H$ | 15.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 30 | 291 | 0.1+ | 0.2+ | 2003 10 01 | 291 | 0.1+ | 0.4− | 2006 01 27 | G96 | 0.4− | 0.0 | | |
| 2003 08 30 | 291 | 0.1+ | 0.1+ | 2003 10 01 | 291 | 0.1+ | 0.3− | 2006 01 31 | 691 | 0.2+ | 0.1− | | |
| 2003 08 30 | 291 | 0.1− | 0.2+ | 2006 01 23 | 691 | 0.0 | 0.0 | 2006 01 31 | 691 | 0.1+ | 0.2− | | |
| 2003 09 01 | 704 | 0.0 | 1.2− | 2006 01 23 | 691 | 0.1+ | 0.0 | 2006 01 31 | 691 | 0.2− | 0.0 | | |
| 2003 09 01 | 704 | 0.9− | 0.4− | 2006 01 23 | 691 | 0.0 | 0.1+ | 2006 02 04 | 691 | 0.2+ | 0.1+ | | |
| 2003 09 01 | 704 | 0.1+ | 0.6− | 2006 01 27 | G96 | 0.1− | 0.1− | 2006 02 04 | 691 | 0.0 | 0.2+ | | |
| 2003 09 01 | 704 | 0.8+ | 0.2+ | 2006 01 27 | G96 | 0.1− | 0.1− | 2006 02 04 | 691 | 0.0 | 0.1+ | | |
| 2003 10 01 | 291 | 0.3− | 0.7+ | 2006 01 27 | G96 | 1.0− | 0.4− | | | | | | |

### 2006 BF$_{83}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 1.44768 | | (2000.0) | | | |
| $n$ | 0.19307175 | $\omega$ | 39.14695 | | −0.98532212 | +0.11717458 |
| $a$ | 2.9647647 | $\Omega$ | 146.94211 | | −0.14173210 | −0.96686196 |
| $e$ | 0.0453600 | $i$ | 13.15432 | | +0.09514378 | −0.22682165 |
| $P$ | 5.10 | $H$ | 15.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.2+ | 0.3− | 2003 07 25 | 644 | 0.6− | 0.8+ | 2006 02 01 | G96 | 0.6− | 0.0 | | |
| 2001 02 02 | 691 | 0.1− | 0.2+ | 2003 07 25 | 644 | 0.4+ | 0.6+ | 2006 02 03 | 704 | 1.0+ | 0.2+ | | |
| 2001 02 02 | 691 | 0.0 | 0.0 | 2006 01 24 | 704 | 1.3− | 0.5+ | 2006 02 03 | 704 | 0.4+ | 0.1− | | |
| 2001 02 22 | 704 | 0.2+ | 0.4+ | 2006 01 24 | 704 | 0.1− | 0.1+ | 2006 02 03 | 704 | 0.8+ | 0.5− | | |
| 2001 02 22 | 704 | 0.3+ | 0.4− | 2006 01 24 | 704 | 0.0 | 0.0 | 2006 02 03 | 704 | 1.0+ | 0.3− | | |
| 2001 02 22 | 704 | 0.6+ | 0.2+ | 2006 01 24 | 704 | 0.4− | 0.5+ | 2006 02 03 | 704 | 1.1+ | 0.0 | | |
| 2001 02 22 | 704 | 0.5− | 0.4− | 2006 01 27 | 704 | 0.2− | 0.3+ | 2006 02 26 | 699 | 1.3+ | 0.0 | | |
| 2001 03 03 | 704 | 0.4− | 1.1− | 2006 01 27 | 704 | 0.1+ | 0.8+ | 2006 02 26 | 699 | 0.3− | 0.5− | | |
| 2001 03 03 | 704 | 0.2− | 0.4+ | 2006 01 27 | 704 | 0.0 | 0.6+ | 2006 02 26 | 699 | 0.5+ | 0.6− | | |
| 2001 03 03 | 704 | 0.2− | 1.1+ | 2006 01 27 | 704 | 0.5− | 0.2+ | 2006 02 26 | 699 | 0.2+ | 0.0 | | |
| 2002 06 04 | 291 | 0.1− | 0.0 | 2006 01 27 | 704 | 1.2− | 0.4+ | 2006 05 04 | G96 | 0.4− | 0.1− | | |
| 2002 06 04 | 291 | 0.0 | 0.1+ | 2006 02 01 | G96 | 0.4− | 0.0 | 2006 05 04 | G96 | 0.2− | 0.3− | | |
| 2002 06 04 | 291 | 0.2+ | 0.0 | 2006 02 01 | G96 | 0.6− | 0.1+ | 2006 05 04 | G96 | 0.3− | 0.1+ | | |
| 2003 07 25 | 644 | 0.1− | 0.4+ | 2006 02 01 | G96 | 0.2− | 0.1− | 2006 05 04 | G96 | 0.2+ | 0.8+ | | |

### 2006 BJ$_{87}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 244.67829 | | (2000.0) | | | |
| $n$ | 0.18565783 | $\omega$ | 186.82608 | | +0.56388331 | +0.80999719 |
| $a$ | 3.0431769 | $\Omega$ | 117.62051 | | −0.74885335 | +0.58371976 |
| $e$ | 0.1799137 | $i$ | 10.47317 | | −0.34821584 | +0.05635412 |
| $P$ | 5.31 | $H$ | 15.7 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.2+ | 2002 06 02 | 291 | 0.0 | 0.4+ | 2006 01 25 | 691 | 0.1+ | 0.0 | | |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2002 06 02 | 291 | 0.1+ | 0.3+ | 2006 01 27 | 691 | 0.2+ | 0.0 | | |
| 1998 09 25 | 645 | 0.1− | 0.2+ | 2002 06 15 | 291 | 0.1+ | 0.3+ | 2006 01 27 | 691 | 0.1+ | 0.1+ | | |
| 1998 09 25 | 645 | 0.1− | 0.1+ | 2002 06 15 | 291 | 0.2− | 0.4+ | 2006 01 27 | 691 | 0.4+ | 0.1+ | | |
| 2002 05 18 | 291 | 0.1+ | 0.1− | 2002 06 15 | 291 | 0.1+ | 0.4+ | 2006 01 31 | 691 | 0.5− | 0.1− | | |
| 2002 05 18 | 704 | 0.8+ | 2.3+ | 2003 09 19 | 699 | 0.7− | 0.6+ | 2006 01 31 | 691 | 0.1− | 0.6+ | | |
| 2002 05 18 | 704 | 0.0 | 1.5+ | 2003 09 19 | 699 | 0.4+ | 0.0 | 2006 01 31 | 691 | 0.1+ | 0.2+ | | |
| 2002 05 18 | 291 | 0.3+ | 0.1+ | 2003 09 19 | 699 | 0.3− | 0.5+ | 2006 02 04 | 691 | 0.0 | 0.6+ | | |
| 2002 05 18 | 291 | 0.1+ | 0.1+ | 2003 09 19 | 699 | 0.9− | 1.5+ | 2006 02 04 | 691 | 0.2+ | 0.4+ | | |
| 2002 05 18 | 704 | 0.5+ | 1.5+ | 2006 01 25 | 691 | 0.2+ | 0.4+ | 2006 02 04 | 691 | 0.3− | 0.2+ | | |
| 2002 06 02 | 291 | 0.1+ | 0.2+ | 2006 01 25 | 691 | 0.3+ | 0.0 | | | | | | |

### 2006 BU$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 180.77271 | | (2000.0) | | | |
| $n$ | 0.27774402 | $\omega$ | 205.17048 | | +0.97682565 | −0.21377421 |
| $a$ | 2.3265171 | $\Omega$ | 167.15974 | | +0.20355648 | +0.91255971 |
| $e$ | 0.2239822 | $i$ | 2.73232 | | +0.06615439 | +0.34861923 |
| $P$ | 3.55 | $H$ | 17.1 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 24 | 691 | 0.3+ | 0.7+ | 2004 08 08 | 704 | 0.1+ | 0.8+ | 2006 01 26 | 691 | 0.1− | 0.1+ | | |
| 1996 04 24 | 691 | 0.5+ | 0.0 | 2004 08 26 | 703 | 0.7− | 0.0 | 2006 01 26 | 691 | 0.1− | 0.1+ | | |
| 1996 04 24 | 691 | 0.3+ | 0.4+ | 2004 08 26 | 703 | 1.4− | 0.1− | 2006 01 28 | G96 | 0.1+ | 0.0 | | |
| 1997 09 23 | 691 | 0.4− | 0.5+ | 2004 08 26 | 703 | 0.5− | 1.5− | 2006 01 28 | G96 | 0.3+ | 0.2− | | |
| 1997 09 23 | 691 | 0.4− | 0.7+ | 2004 08 26 | 703 | 0.6− | 0.9− | 2006 01 28 | G96 | 0.5+ | 0.3− | | |
| 1997 09 23 | 691 | 0.4− | 0.3+ | 2004 09 07 | 704 | 1.1+ | 0.2− | 2006 01 28 | G96 | 0.9− | 0.2− | | |
| 2001 12 17 | 704 | 1.8+ | 0.3+ | 2004 09 07 | 704 | 0.1+ | 0.1+ | 2006 01 30 | 691 | 0.2− | 0.5+ | | |
| 2001 12 17 | 704 | 0.9+ | 0.2+ | 2004 09 07 | 704 | 1.1+ | 0.8+ | 2006 01 30 | 691 | 0.1+ | 0.5+ | | |
| 2001 12 17 | 704 | 0.1− | 0.6+ | 2004 09 07 | 704 | 0.9+ | 0.5+ | 2006 01 30 | 691 | 0.2− | 0.2+ | | |
| 2001 12 17 | 704 | 0.9+ | 0.2− | 2004 09 07 | 704 | 0.2+ | 0.1+ | 2006 02 23 | 691 | 0.3+ | 0.9+ | | |
| 2004 08 08 | 704 | 0.4+ | 0.5+ | 2004 10 10 | 644 | 0.1− | 0.8+ | 2006 02 23 | 691 | 0.2− | 0.1+ | | |
| 2004 08 08 | 704 | 0.1+ | 0.4+ | 2004 10 10 | 644 | 0.3+ | 0.4+ | 2006 02 23 | 691 | 0.2− | 0.2− | | |
| 2004 08 08 | 704 | 0.1− | 0.7+ | 2004 10 10 | 644 | 0.2+ | 0.2+ | | | | | | |
| 2004 08 08 | 704 | 0.1+ | 0.4+ | 2006 01 26 | 691 | 0.1− | 0.5+ | | | | | | |

**2006 BB$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.56658 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21554901 | $\omega$ | 194.45699 | | −0.00428054 | | +0.98379390 |
| $a$ | 2.7548969 | $\Omega$ | 75.53714 | | −0.89810989 | | +0.07504534 |
| $e$ | 0.1165001 | $i$ | 10.66803 | | −0.43975027 | | −0.16284273 |
| $P$ | 4.57 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 644 | 0.1+ | 0.1+ | 2002 04 01 | 644 | 0.2− | 0.7− | 2006 01 27 | 703 | 0.8− | 0.1+ |
| 2002 03 10 | 644 | 0.4+ | 0.3+ | 2002 04 01 | 644 | 0.3− | 0.9− | 2006 01 27 | 703 | 0.1− | 0.3+ |
| 2002 03 10 | 644 | 0.5+ | 0.1− | 2002 04 01 | 644 | 0.2− | 0.7− | 2006 01 27 | 703 | 0.3− | 0.7+ |
| 2002 03 20 | 699 | 1.3+ | 0.2+ | 2002 04 16 | 704 | 0.1+ | 0.8+ | 2006 01 27 | 703 | 1.0− | 0.5+ |
| 2002 03 20 | 699 | 1.0− | 0.8+ | 2002 04 16 | 704 | 0.5− | 0.1+ | 2006 01 29 | 941 | 0.3− | 0.2− |
| 2002 03 20 | 699 | 0.6− | 0.1+ | 2002 04 16 | 704 | 0.1− | 0.7+ | 2006 01 29 | 941 | 0.2− | 0.3− |
| 2002 03 20 | 699 | 0.5+ | 0.4− | 2002 04 16 | 704 | 0.3+ | 0.2− | 2006 01 29 | 941 | 0.1− | 0.3− |
| 2002 03 20 | 704 | 0.7− | 0.8− | 2006 01 06 | 704 | 0.1− | 0.0 | 2006 01 29 | 941 | 0.2+ | 0.1− |
| 2002 03 20 | 704 | 0.3− | 0.2− | 2006 01 06 | 704 | 0.8+ | 0.8+ | 2006 01 29 | 941 | 0.1+ | 0.3− |
| 2002 03 20 | 704 | 0.1+ | 0.4+ | 2006 01 06 | 704 | 0.5− | 0.0 | 2006 02 04 | 941 | 0.1+ | 0.3+ |
| 2002 03 20 | 704 | 0.7− | 0.4+ | 2006 01 06 | 704 | 0.8+ | 0.8− | 2006 02 04 | 941 | 0.4+ | 0.1− |
| 2002 03 20 | 704 | 1.4+ | 0.2+ | 2006 01 06 | 704 | 0.5+ | 0.6− | 2006 02 04 | 941 | 0.4+ | 0.2− |

**2006 BC$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.89512 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17926727 | $\omega$ | 90.85212 | | +0.64520886 | | −0.73985329 |
| $a$ | 3.1150765 | $\Omega$ | 316.90116 | | +0.54164398 | | +0.61889114 |
| $e$ | 0.1312799 | $i$ | 16.19667 | | +0.53882032 | | +0.26380082 |
| $P$ | 5.50 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 28 | 691 | 0.0 | 0.2+ | 2004 11 04 | 644 | 0.4+ | 0.3+ | 2006 02 07 | G96 | 0.4− | 0.5− |
| 1998 06 28 | 691 | 0.2− | 0.1+ | 2004 11 04 | 644 | 0.4+ | 0.1− | 2006 02 07 | G96 | 0.2− | 0.4− |
| 1998 06 28 | 691 | 0.4− | 0.4+ | 2006 01 05 | 704 | 0.2− | 0.0 | 2006 02 07 | G96 | 0.1− | 0.5+ |
| 2004 09 14 | 704 | 0.2− | 0.3− | 2006 01 05 | 704 | 0.1− | 1.3+ | 2006 03 04 | G96 | 0.9+ | 0.3+ |
| 2004 09 14 | 704 | 0.5− | 1.0− | 2006 01 05 | 704 | 0.6+ | 1.5+ | 2006 03 04 | G96 | 0.4+ | 0.3+ |
| 2004 09 14 | 704 | 0.4− | 0.5− | 2006 01 18 | 703 | 0.5− | 1.8− | 2006 03 04 | G96 | 0.3+ | 0.3+ |
| 2004 10 04 | 644 | 0.1+ | 0.4+ | 2006 01 18 | 703 | 0.2− | 0.1− | 2006 03 04 | G96 | 0.3+ | 0.3+ |
| 2004 10 04 | 644 | 0.4+ | 0.1+ | 2006 01 18 | 703 | 0.4− | 0.4+ | 2006 03 24 | G96 | 0.2+ | 0.1+ |
| 2004 10 04 | 704 | 0.1− | 0.3− | 2006 01 18 | 703 | 0.9+ | 0.4− | 2006 03 24 | G96 | 0.2+ | 0.0 |
| 2004 10 04 | 704 | 0.3− | 0.3− | 2006 01 24 | 224 | 0.4+ | 1.0+ | 2006 03 24 | G96 | 0.7+ | 0.0 |
| 2004 10 04 | 644 | 0.4+ | 0.2+ | 2006 01 25 | 224 | 0.3+ | 0.7+ | 2006 03 24 | G96 | 0.3+ | 0.2+ |
| 2004 10 04 | 704 | 0.8− | 0.5− | 2006 01 25 | 224 | 0.7− | 0.2+ | 2006 04 20 | G96 | 0.3− | 0.7+ |
| 2004 10 04 | 704 | 0.2+ | 0.1+ | 2006 01 28 | G96 | 0.2+ | 0.3− | 2006 04 20 | G96 | 0.1− | 0.6+ |
| 2004 10 23 | 704 | 0.1− | 1.3+ | 2006 01 28 | G96 | 0.0 | 0.4− | 2006 04 20 | G96 | 0.1+ | 0.1− |
| 2004 10 23 | 704 | 0.3− | 0.8+ | 2006 01 28 | G96 | 0.2− | 0.4− | 2006 04 20 | G96 | 0.2− | 0.3+ |
| 2004 10 23 | 704 | 0.4+ | 0.3− | 2006 01 28 | G96 | 0.1+ | 0.4− | | | | |
| 2004 11 04 | 644 | 0.7+ | 0.2− | 2006 02 07 | G96 | 0.1− | 0.4− | | | | |

**2006 BB$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.16175 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25377209 | $\omega$ | 344.26741 | | +0.77279374 | | −0.62289956 |
| $a$ | 2.4708145 | $\Omega$ | 54.90421 | | +0.59714104 | | +0.64874428 |
| $e$ | 0.2409531 | $i$ | 8.54681 | | +0.21497070 | | +0.43718073 |
| $P$ | 3.88 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 0.9+ | 1.0− | 2002 02 03 | 644 | 0.1− | 0.3+ | 2006 02 04 | 703 | 0.4− | 0.5+ |
| 2001 12 22 | 704 | 0.8− | 0.2+ | 2002 02 03 | 644 | 0.2− | 0.2+ | 2006 02 04 | 703 | 0.7+ | 0.8+ |
| 2001 12 22 | 704 | 1.2+ | 0.4− | 2002 02 03 | 644 | 0.3+ | 0.4+ | 2006 02 04 | 703 | 0.2− | 0.1− |
| 2001 12 22 | 704 | 1.2− | 1.3+ | 2006 01 22 | 703 | 0.9− | 1.1+ | 2006 02 04 | 703 | 0.5− | 0.6− |
| 2002 01 05 | 699 | 1.4+ | 0.9+ | 2006 01 22 | 703 | 0.3+ | 0.2+ | 2006 02 06 | 699 | 0.3− | 0.7− |
| 2002 01 05 | 699 | 1.3− | 0.5− | 2006 01 22 | 703 | 0.4− | 0.9− | 2006 02 06 | 704 | 1.2− | 0.5+ |
| 2002 01 05 | 699 | 0.2− | 0.4+ | 2006 01 22 | 703 | 1.3+ | 0.5− | 2006 02 06 | 699 | 1.2+ | 0.5+ |
| 2002 01 05 | 699 | 0.8− | 0.2− | 2006 01 27 | 703 | 0.2− | 0.6+ | 2006 02 06 | 704 | 0.3− | 0.7+ |
| 2002 01 14 | 644 | 0.2+ | 0.2− | 2006 01 27 | 703 | 0.4− | 0.4− | 2006 02 06 | 699 | 0.4− | 1.0+ |
| 2002 01 14 | 644 | 0.2+ | 0.4− | 2006 01 27 | 703 | 0.3+ | 1.0− | 2006 02 06 | 704 | 1.4+ | 0.4− |
| 2002 01 14 | 644 | 0.3+ | 0.3− | 2006 01 27 | 703 | 0.0 | 1.7− | 2006 02 06 | 699 | (3.6+ | 2.0+) |

**2006 BN$_{101}$ = 2002 CS$_{264}$ = 2004 TF$_{246}$**

Id. Minor Planet Center (*MPO* 101251; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.92825 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24174315 | $\omega$ | 250.08453 | | +0.84624528 | | +0.53262961 |
| $a$ | 2.5521132 | $\Omega$ | 77.73011 | | −0.48363148 | | +0.77833046 |
| $e$ | 0.0351104 | $i$ | 0.77489 | | −0.22353864 | | +0.33242653 |
| $P$ | 4.08 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 695 | 0.1+ | 0.1+ | 2004 10 13 | 691 | 0.0 | 0.1+ | 2006 01 30 | 691 | 0.1+ | 0.7+ |
| 2002 02 08 | 695 | 0.3− | 0.2+ | 2004 10 13 | 691 | 0.4− | 0.3+ | 2006 01 30 | 691 | 0.2− | 0.7+ |
| 2002 02 09 | 691 | 0.2− | 0.3− | 2004 10 13 | 691 | 0.3− | 0.0 | 2006 02 06 | G96 | 0.1− | 0.3− |
| 2002 02 09 | 691 | 0.5+ | 0.2+ | 2006 01 23 | G96 | 0.2+ | 0.3− | 2006 02 06 | G96 | 0.0 | 0.6− |
| 2002 02 09 | 691 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.5+ | 0.4+ | 2006 02 06 | G96 | 0.6− | 0.4− |
| 2004 10 07 | 691 | 0.1+ | 0.5− | 2006 01 23 | G96 | 0.3− | 0.3− | 2006 02 06 | G96 | 0.1+ | 0.2− |
| 2004 10 07 | 691 | 0.3+ | 0.1− | 2006 01 23 | G96 | 0.6+ | 0.3− | | | | |
| 2004 10 07 | 691 | 0.2+ | 0.1+ | 2006 01 30 | 691 | 0.3− | 0.2+ | | | | |

**2006 BM$_{102}$ = 2004 TM$_{236}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.95554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22273107 | $\omega$ | 322.81165 | | −0.74436292 | | −0.66776123 |
| $a$ | 2.6953522 | $\Omega$ | 175.28682 | | +0.62465246 | | −0.69857363 |
| $e$ | 0.0362679 | $i$ | 3.02285 | | +0.23607868 | | −0.25707941 |
| $P$ | 4.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 08 | 691 | 0.1− | 0.3+ | 2006 01 23 | G96 | 0.3− | 0.3+ | 2006 01 31 | G96 | 0.1+ | 0.1− |
| 2004 10 08 | 691 | 0.1− | 0.2+ | 2006 01 23 | G96 | 0.2− | 0.3+ | 2006 01 31 | G96 | 0.2− | 0.2− |
| 2004 10 08 | 691 | 0.2+ | 0.0 | 2006 01 23 | G96 | 0.2− | 0.2+ | 2006 01 31 | G96 | 0.0 | 0.1− |
| 2004 10 12 | 691 | 0.2+ | 0.3− | 2006 01 30 | 691 | 0.8+ | 0.5− | 2006 02 24 | G96 | 0.1− | 0.3− |
| 2004 10 12 | 691 | 0.2− | 0.2− | 2006 01 30 | 691 | 0.1− | 0.1+ | 2006 02 24 | G96 | 0.2+ | 0.4− |
| 2004 10 12 | 691 | 0.0 | 0.0 | 2006 01 30 | 691 | 0.4− | 0.3+ | 2006 02 24 | G96 | 0.1+ | 0.2− |
| 2006 01 23 | G96 | 0.4− | 0.3+ | 2006 01 31 | G96 | 0.4+ | 0.2+ | 2006 02 24 | G96 | 0.5− | 0.3+ |

**2006 BF$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.97873 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20347924 | $\omega$ | 305.92364 | | +0.76784483 | | −0.64024320 |
| $a$ | 2.8627888 | $\Omega$ | 93.89735 | | +0.59477554 | | +0.69943428 |
| $e$ | 0.1337077 | $i$ | 1.28806 | | +0.23802601 | | +0.31761666 |
| $P$ | 4.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 09 | 691 | 0.2− | 0.1+ | 2004 10 06 | 691 | 0.1+ | 0.2− | 2006 01 25 | 691 | 0.3+ | 0.2− |
| 2004 09 09 | 691 | 0.2− | 0.0 | 2004 10 06 | 691 | 0.2+ | 0.1− | 2006 01 30 | 691 | 0.1− | 0.3+ |
| 2004 09 09 | 691 | 0.2+ | 0.3+ | 2004 10 14 | 691 | 0.1+ | 0.1− | 2006 01 30 | 691 | 0.2− | 0.3+ |
| 2004 09 23 | 691 | 0.2− | 0.0 | 2004 10 14 | 691 | 0.1+ | 0.1− | 2006 01 30 | 691 | 0.3+ | 0.1+ |
| 2004 09 23 | 691 | 0.1− | 0.1+ | 2004 10 14 | 691 | 0.0 | 0.1− | 2006 02 07 | 691 | 0.1− | 0.4+ |
| 2004 09 23 | 691 | 0.0 | 0.2+ | 2006 01 25 | 691 | 0.1− | 0.2− | 2006 02 07 | 691 | 0.1− | 0.3− |
| 2004 10 06 | 691 | 0.0 | 0.0 | 2006 01 25 | 691 | 0.0 | 0.3− | 2006 02 07 | 691 | 0.0 | 0.1+ |

**2006 BE$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 150.00785 | | (2000.0) | | | |
| $n$ | 0.21437521 | $\omega$ | 233.00388 | | +0.80833105 | −0.58837567 |
| $a$ | 2.7649440 | $\Omega$ | 163.00764 | | +0.55987249 | +0.75755126 |
| $e$ | 0.1243019 | $i$ | 3.99714 | | +0.18205415 | +0.28271924 |
| $P$ | 4.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 14 | 691 | 1.1− | 0.6− | 2006 01 26 | 691 | 0.0 | 0.3+ | 2006 02 25 | 691 | 0.3+ | 0.1+ |
| 1995 12 14 | 691 | 0.9− | 0.9− | 2006 01 26 | 691 | 0.0 | 0.0 | 2006 02 25 | 691 | 0.3+ | 0.6+ |
| 1995 12 14 | 691 | (4.4+ | 2.4+) | 2006 01 30 | 691 | 0.2+ | 0.3− | 2006 02 28 | G96 | 0.7+ | 0.2+ |
| 1995 12 20 | 691 | 0.9− | 0.2− | 2006 01 30 | 691 | 0.1+ | 0.4− | 2006 02 28 | G96 | 0.1+ | 0.1+ |
| 1995 12 20 | 691 | 0.8− | 0.4− | 2006 01 30 | 691 | 0.1− | 0.2− | 2006 02 28 | G96 | 0.0 | 0.3+ |
| 1995 12 20 | 691 | 0.8− | 0.3− | 2006 02 24 | G96 | 0.5− | 0.6+ | 2006 02 28 | G96 | 0.2− | 0.2+ |
| 1999 08 21 | 691 | 0.4− | 0.5+ | 2006 02 24 | G96 | 0.3− | 0.3+ | 2006 04 27 | 807 | 0.1− | 0.1+ |
| 1999 08 21 | 691 | 0.1+ | 0.5+ | 2006 02 24 | G96 | 0.1+ | 0.0 | 2006 04 27 | 807 | 0.1− | 0.2− |
| 1999 08 21 | 691 | 0.1+ | 0.2− | 2006 02 24 | G96 | 0.1− | 0.2+ | 2006 04 28 | 807 | 0.4+ | 0.1+ |
| 2006 01 26 | 691 | 0.1− | 0.1− | 2006 02 25 | 691 | 0.4− | 0.3+ | | | | |

**2006 BT$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 285.64093 | | (2000.0) | | | |
| $n$ | 0.23303259 | $\omega$ | 269.96642 | | +0.22948400 | +0.97331004 |
| $a$ | 2.6153207 | $\Omega$ | 13.30087 | | −0.88922099 | +0.21055896 |
| $e$ | 0.1145536 | $i$ | 0.53788 | | −0.39575641 | +0.09128249 |
| $P$ | 4.23 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 10 | 691 | 0.1+ | 0.2− | 2006 01 26 | G96 | 0.2+ | 0.1+ | 2006 02 25 | G96 | 0.4+ | 0.1− |
| 1994 05 10 | 691 | 0.1− | 0.3+ | 2006 01 26 | G96 | 0.2− | 0.5− | 2006 02 25 | G96 | 0.1− | 0.3− |
| 1994 05 10 | 691 | 0.0 | 0.1+ | 2006 01 26 | G96 | 0.1− | 0.4− | 2006 02 25 | G96 | 0.3+ | 0.3− |
| 2000 12 21 | 691 | 0.1− | 0.1− | 2006 01 26 | G96 | 0.0 | 0.5− | 2006 02 25 | G96 | 0.1+ | 0.4− |
| 2000 12 21 | 691 | 0.0 | 0.1+ | 2006 01 30 | 691 | 0.2− | 0.0 | 2006 03 09 | G96 | 0.2− | 0.0 |
| 2000 12 21 | 691 | 0.0 | 0.2+ | 2006 01 30 | 691 | 0.7− | 0.2+ | 2006 03 09 | G96 | 0.2− | 0.1+ |
| 2006 01 07 | G96 | 0.2− | 0.2− | 2006 01 30 | 691 | 0.1− | 0.3+ | 2006 03 09 | G96 | 0.7+ | 0.0 |
| 2006 01 07 | G96 | 0.1− | 0.3− | 2006 01 31 | 691 | 0.4+ | 0.3+ | 2006 03 09 | G96 | 0.8− | 0.5− |
| 2006 01 07 | G96 | 0.1− | 0.1− | 2006 01 31 | 691 | 0.3+ | 0.1+ | | | | |
| 2006 01 07 | G96 | 0.8− | 0.4− | 2006 01 31 | 691 | 0.4+ | 0.1− | | | | |

**2006 BP$_{134}$ = 2004 YZ$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 190.95301 | | (2000.0) | | | |
| $n$ | 0.18138979 | $\omega$ | 231.21817 | | +0.90020306 | +0.43301892 |
| $a$ | 3.0907283 | $\Omega$ | 103.07898 | | −0.38340839 | +0.83835868 |
| $e$ | 0.1650797 | $i$ | 2.71516 | | −0.20647630 | +0.33113342 |
| $P$ | 5.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 08 | 644 | 0.3− | 0.7+ | 2004 12 19 | G96 | 0.3− | 0.5− | 2006 01 30 | 691 | 0.1− | 0.2+ |
| 2003 07 08 | 644 | 0.0 | 0.6+ | 2005 12 30 | 691 | 0.1+ | 0.1− | 2006 02 03 | 691 | 0.3− | 0.5+ |
| 2003 07 08 | 644 | 0.2− | 0.4+ | 2005 12 30 | 691 | 0.1+ | 0.4+ | 2006 02 03 | 691 | 0.0 | 0.1− |
| 2004 12 18 | G96 | 0.2+ | 0.2+ | 2005 12 30 | 691 | 0.2+ | 0.5+ | 2006 02 03 | 691 | 0.4− | 0.3+ |
| 2004 12 18 | G96 | 0.2+ | 0.2+ | 2006 01 27 | G96 | 0.2− | 0.3− | 2006 02 06 | G96 | 0.1+ | 0.3− |
| 2004 12 18 | G96 | 0.1+ | 0.5+ | 2006 01 27 | G96 | 0.1+ | 0.1− | 2006 02 06 | G96 | 0.4+ | 0.5− |
| 2004 12 18 | G96 | 0.3+ | 0.4+ | 2006 01 27 | G96 | 0.1− | 0.2− | 2006 02 06 | G96 | 0.9+ | 0.9− |
| 2004 12 19 | G96 | 0.0 | 0.4− | 2006 01 27 | G96 | 0.3− | 0.4− | 2006 02 06 | G96 | 0.1+ | 0.8− |
| 2004 12 19 | G96 | 0.1− | 0.6− | 2006 01 30 | 691 | 0.5+ | 0.6+ | | | | |
| 2004 12 19 | G96 | 0.4− | 0.0 | 2006 01 30 | 691 | 0.1− | 0.9− | | | | |

**2006 BZ$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 268.77367 | | (2000.0) | | | |
| $n$ | 0.30502596 | $\omega$ | 187.63335 | | +0.58385511 | +0.80549025 |
| $a$ | 2.1856377 | $\Omega$ | 118.14374 | | −0.73865184 | +0.57891488 |
| $e$ | 0.2006235 | $i$ | 6.60880 | | −0.33690750 | +0.12666104 |
| $P$ | 3.23 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 608 | 0.7− | 1.5− | 2004 09 21 | 699 | 0.1+ | 0.3+ | 2004 11 03 | 699 | 2.4+ | 0.2+ |
| 2001 11 21 | 608 | 0.5− | 0.6− | 2004 09 21 | 699 | 0.7− | 0.1+ | 2004 11 03 | 699 | 0.1+ | 1.0+ |
| 2001 11 21 | 608 | 0.3+ | 0.3− | 2004 09 21 | 699 | 0.5+ | 0.8− | 2004 11 03 | 699 | 0.1− | 0.6− |
| 2001 12 11 | 704 | 0.9+ | 0.4+ | 2004 09 21 | 699 | 0.4− | 0.5− | 2006 01 28 | G96 | 0.1+ | 0.2− |
| 2001 12 11 | 704 | 0.2+ | 0.4− | 2004 10 07 | 704 | 0.5+ | 0.0 | 2006 01 28 | G96 | 0.2+ | 0.6− |
| 2001 12 11 | 704 | 0.7+ | 0.4− | 2004 10 07 | 704 | 0.5+ | 0.1− | 2006 01 28 | G96 | 0.2− | 0.2− |
| 2004 08 11 | 704 | 1.3− | 0.5+ | 2004 10 07 | 704 | 0.1+ | 1.0+ | 2006 01 28 | G96 | 0.1− | 0.3− |
| 2004 08 11 | 704 | 0.3− | 0.8+ | 2004 10 07 | 704 | 0.1+ | 0.6+ | 2006 01 30 | 691 | 0.6+ | 0.0 |
| 2004 08 11 | 704 | 0.8− | 0.4+ | 2004 10 07 | 704 | 0.0 | 0.5+ | 2006 01 30 | 691 | 0.3− | 0.3+ |
| 2004 08 11 | 704 | 0.5+ | 0.3+ | 2004 10 18 | 704 | 0.6− | 0.3− | 2006 01 30 | 691 | 0.4+ | 0.2+ |
| 2004 08 11 | 704 | 0.1+ | 0.6− | 2004 10 18 | 704 | 0.2+ | 0.9− | 2006 02 07 | 691 | 0.2− | 0.2+ |
| 2004 09 08 | 704 | 0.9− | 0.3+ | 2004 10 18 | 704 | 0.4+ | 0.7+ | 2006 02 07 | 691 | 0.2− | 0.3+ |
| 2004 09 08 | 704 | 1.0− | 0.0 | 2004 10 18 | 704 | 0.0 | 0.9+ | 2006 02 07 | 691 | 0.3− | 0.2+ |
| 2004 09 08 | 704 | 2.0− | 0.5− | 2004 11 03 | 699 | 0.5+ | 0.4+ | | | | |

**2006 BH$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 188.00042 | | (2000.0) | | | |
| $n$ | 0.17818838 | $\omega$ | 203.35233 | | +0.99492768 | +0.04404167 |
| $a$ | 3.1276379 | $\Omega$ | 153.63336 | | −0.02296547 | +0.97476645 |
| $e$ | 0.1210144 | $i$ | 11.74988 | | −0.09793622 | +0.21883943 |
| $P$ | 5.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 645 | 0.1+ | 0.1+ | 2003 09 01 | 704 | 0.4+ | 0.8+ | 2006 01 28 | G96 | 0.8− | 0.1+ |
| 2001 03 19 | 645 | 0.0 | 0.0 | 2003 09 18 | 699 | 1.3− | 0.4− | 2006 01 28 | G96 | 0.6− | 0.1− |
| 2002 06 18 | 291 | 0.4− | 0.5+ | 2003 09 18 | 699 | 0.9+ | 0.5− | 2006 01 28 | G96 | 0.5− | 0.1− |
| 2002 06 18 | 291 | 0.1+ | 0.1− | 2003 09 18 | 699 | 0.5− | 0.0 | 2006 01 28 | G96 | 0.3+ | 0.0 |
| 2002 06 18 | 291 | 0.3+ | 0.2− | 2003 09 18 | 699 | 0.3+ | 0.1+ | 2006 01 30 | 691 | 0.0 | 0.1+ |
| 2003 08 22 | 704 | 0.9− | 0.9+ | 2003 09 28 | 704 | 0.4+ | 1.1+ | 2006 01 30 | 691 | 0.1+ | 0.4+ |
| 2003 08 22 | 704 | 0.1+ | 0.3+ | 2003 09 28 | 704 | 0.1− | 1.2+ | 2006 01 30 | 691 | 0.0 | 0.5+ |
| 2003 08 22 | 704 | 1.3+ | 1.7+ | 2003 09 28 | 704 | 0.1+ | 0.6+ | 2006 02 07 | 691 | 0.1+ | 0.4+ |
| 2003 09 01 | 704 | 0.4+ | 1.5+ | 2003 09 28 | 704 | 0.0 | 0.0 | 2006 02 07 | 691 | 0.0 | 0.3+ |
| 2003 09 01 | 704 | 0.9− | 0.4+ | 2006 01 26 | 691 | 0.2− | 0.5+ | 2006 02 07 | 691 | 0.3+ | 0.5− |
| 2003 09 01 | 704 | 1.3− | 0.4+ | 2006 01 26 | 691 | 0.2+ | 0.4+ | | | | |
| 2003 09 01 | 704 | 0.6− | 0.2+ | 2006 01 26 | 691 | 0.2+ | 0.0 | | | | |

**2006 BD$_{141}$ = 2000 OZ$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 218.17640 | | (2000.0) | | | |
| $n$ | 0.26562899 | $\omega$ | 233.91323 | | +0.83030095 | +0.55370884 |
| $a$ | 2.3967298 | $\Omega$ | 92.38355 | | −0.48879899 | +0.77807291 |
| $e$ | 0.2053140 | $i$ | 3.63238 | | −0.26772352 | +0.29666322 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 27 | 684 | 0.3− | 0.2+ | 2004 09 17 | 704 | 0.7− | 0.2− | 2005 12 28 | G96 | 0.0 | 0.6− |
| 2000 07 27 | 684 | 0.2− | 0.1+ | 2004 10 07 | 704 | 0.7+ | 0.6+ | 2005 12 28 | G96 | 1.3− | 0.3+ |
| 2000 07 28 | 684 | 0.3+ | 0.5+ | 2004 10 07 | 704 | 1.1+ | 0.3+ | 2005 12 28 | G96 | 0.9+ | 0.8− |
| 2000 07 28 | 684 | 0.1+ | 0.3− | 2004 10 07 | 704 | 0.1+ | 0.7+ | 2006 01 24 | 461 | 0.1− | 0.1+ |
| 2004 09 08 | 704 | 0.4− | 0.6+ | 2004 10 07 | 704 | 0.6+ | 0.6+ | 2006 01 24 | 461 | 0.9− | 0.9+ |
| 2004 09 08 | 704 | 0.7− | 0.0 | 2004 10 20 | 703 | 0.4+ | 0.5− | 2006 01 30 | 691 | 0.4+ | 0.2− |
| 2004 09 08 | 704 | 1.1+ | 0.4+ | 2004 10 20 | 703 | 0.4− | 0.7− | 2006 01 30 | 691 | 0.1+ | 0.4+ |
| 2004 09 08 | 704 | 1.0− | 0.1+ | 2004 10 20 | 703 | 1.1+ | 0.8− | 2006 01 30 | 691 | 0.1− | 0.1+ |
| 2004 09 17 | 704 | 0.6− | 0.4+ | 2004 10 20 | 703 | 0.2− | 0.4− | | | | |
| 2004 09 17 | 704 | 1.3− | 1.0− | 2005 12 28 | G96 | 0.3− | 0.3+ | | | | |

**2006 BW$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.56930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18016106 | $\omega$ | 265.79365 | | −0.22136342 | | +0.97510944 |
| $a$ | 3.1047652 | $\Omega$ | 351.38591 | | −0.85789794 | | −0.20088598 |
| $e$ | 0.0950237 | $i$ | 4.84172 | | −0.46369101 | | −0.09384242 |
| $P$ | 5.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 691 | 0.1− | 0.2+ | 2003 09 29 | 691 | 0.0 | 0.2+ | 2006 01 28 | 621 | 0.1− | 0.1− |
| 2001 02 20 | 691 | 0.1− | 0.1+ | 2003 09 29 | 691 | 0.1+ | 0.3+ | 2006 01 28 | 621 | 0.8− | 1.4− |
| 2001 02 20 | 691 | 0.3− | 0.7− | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 01 28 | 621 | 0.1+ | 1.4− |
| 2001 04 13 | 691 | 0.1− | 0.3+ | 2003 10 18 | 645 | 0.1+ | 0.1+ | 2006 01 29 | 621 | 0.4+ | 0.3− |
| 2001 04 13 | 691 | 0.2+ | 0.0 | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 01 31 | 691 | 0.2+ | 0.2+ |
| 2001 04 13 | 691 | 0.3+ | 0.2− | 2003 10 22 | 645 | 0.1− | 0.0 | 2006 01 31 | 691 | 0.3+ | 0.3+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2004 11 11 | 691 | 0.3− | 0.2− | 2006 01 31 | 691 | 0.0 | 0.4+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2004 11 11 | 691 | 0.1+ | 0.2− | 2006 02 03 | 691 | 0.0 | 0.6+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2004 11 11 | 691 | 0.2+ | 0.3− | 2006 02 03 | 691 | 0.2+ | 0.6+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 01 28 | 621 | 0.4− | 1.8− | 2006 02 03 | 691 | 0.2− | 0.3+ |
| 2003 09 29 | 691 | 0.0 | 0.2+ | 2006 01 28 | 621 | 0.2+ | 0.6− | | | | |

**2006 BZ$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.24757 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.95182962 | $\omega$ | 95.30918 | | −0.56580233 | | +0.82439104 |
| $a$ | 1.0235206 | $\Omega$ | 140.21943 | | −0.76589959 | | −0.51840533 |
| $e$ | 0.0985340 | $i$ | 1.40785 | | −0.30539406 | | −0.22723408 |
| $P$ | 1.04 | $H$ | 25.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 01 31 | G96 | 0.4− | 0.2− | 2006 02 02 | G96 | 0.1− | 0.2+ | 2006 02 03 | G96 | 0.2− | 0.3− |
| 2006 01 31 | G96 | 0.4− | 0.2− | 2006 02 02 | G96 | 0.0 | 0.4− | 2006 02 03 | G96 | 0.2− | 0.6− |
| 2006 01 31 | G96 | 0.1− | 0.3− | 2006 02 02 | G96 | 0.0 | 0.4− | 2006 02 04 | 291 | 0.3+ | 0.2+ |
| 2006 01 31 | G96 | 0.5− | 0.3− | 2006 02 02 | G96 | 0.0 | 0.1− | 2006 02 04 | 291 | 1.0− | 0.2+ |
| 2006 01 31 | G96 | 0.6− | 0.2+ | 2006 02 02 | 246 | 0.1− | 0.5+ | 2006 02 04 | G96 | 0.1− | 0.3− |
| 2006 01 31 | G96 | 0.3− | 0.3− | 2006 02 02 | 246 | 0.4+ | 0.1+ | 2006 02 04 | G96 | 0.0 | 0.3− |
| 2006 01 31 | G96 | 0.7− | 0.0 | 2006 02 02 | 246 | 0.6+ | 0.3+ | 2006 02 04 | G96 | 0.3+ | 0.2− |
| 2006 02 01 | G96 | 0.1+ | 0.4− | 2006 02 02 | 246 | 0.9+ | 0.2− | 2006 02 07 | 691 | 1.2− | 0.9− |
| 2006 02 01 | G96 | 0.1+ | 0.4− | 2006 02 02 | 246 | 0.1− | 1.1+ | 2006 02 07 | 691 | 0.1− | 0.2− |
| 2006 02 01 | G96 | 0.3− | 0.5− | 2006 02 02 | 246 | 1.0+ | 0.2+ | 2006 02 07 | 691 | 1.1− | 0.3− |
| 2006 02 02 | 651 | 0.6+ | 0.6+ | 2006 02 02 | 246 | 0.4+ | 0.1+ | 2006 02 07 | 448 | 0.4− | 0.5− |
| 2006 02 02 | 651 | 0.1+ | 0.1− | 2006 02 03 | 734 | 0.2− | 0.6− | 2006 02 07 | 448 | 0.6− | 1.1− |
| 2006 02 02 | 651 | 0.5+ | 0.3+ | 2006 02 03 | 734 | 0.1+ | 0.9+ | 2006 02 07 | 448 | 0.3+ | 0.4− |
| 2006 02 02 | 651 | 0.5+ | 0.1+ | 2006 02 03 | 734 | 0.1− | 0.3+ | 2006 02 07 | 291 | 0.2+ | 0.4+ |
| 2006 02 02 | 673 | (2.4+ | 1.0−) | 2006 02 03 | 734 | 0.4− | 0.7+ | 2006 02 07 | 291 | 1.8+ | 0.1− |
| 2006 02 02 | 673 | (2.3+ | 0.9−) | 2006 02 03 | 734 | 0.1+ | 0.1+ | 2006 02 17 | J95 | 0.3− | 0.2+ |
| 2006 02 02 | 673 | 0.9+ | 0.3− | 2006 02 03 | 711 | 0.4− | 0.9+ | 2006 02 17 | J95 | 0.2+ | 0.2+ |
| 2006 02 02 | 673 | 1.2− | 1.6+ | 2006 02 03 | G96 | 0.1− | 0.6− | 2006 02 17 | J95 | 0.2+ | 0.0 |
| 2006 02 02 | 711 | 1.9+ | 1.0+ | 2006 02 03 | 711 | 0.2+ | 0.8+ | 2006 11 27 | 291 | 0.1− | 0.4− |
| 2006 02 02 | 711 | 1.2+ | 0.5+ | 2006 02 03 | G96 | 0.2− | 0.5− | 2006 11 27 | 291 | 0.2+ | 0.9+ |
| 2006 02 02 | 711 | 0.1+ | 0.4− | 2006 02 03 | 711 | 0.9+ | 0.7+ | 2006 11 27 | 291 | 0.0 | 0.4− |

**2006 BG$_{149}$ = 2004 RA$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.92488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23627802 | $\omega$ | 72.44233 | | +0.87648678 | | −0.19255594 |
| $a$ | 2.5913168 | $\Omega$ | 296.61489 | | −0.09379288 | | +0.83066726 |
| $e$ | 0.0670847 | $i$ | 29.57330 | | +0.47220104 | | +0.52241183 |
| $P$ | 4.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 644 | 0.2− | 0.2− | 2004 09 10 | 704 | 0.1− | 0.5+ | 2006 01 23 | 704 | 0.3− | 0.1+ |
| 2002 02 08 | 644 | 0.4− | 0.2− | 2004 09 10 | 704 | 0.6+ | 0.3− | 2006 01 28 | 699 | (1.7+ | 0.5−) |
| 2002 02 08 | 644 | 0.3− | 0.5− | 2005 12 05 | G96 | 0.2+ | 0.0 | 2006 01 28 | 699 | 0.5+ | 0.4+ |
| 2004 09 09 | 704 | 0.4+ | 0.0 | 2005 12 05 | G96 | 0.1+ | 0.2− | 2006 01 28 | 699 | 0.5− | 0.1+ |
| 2004 09 09 | 704 | 0.8+ | 0.1− | 2005 12 05 | G96 | 0.0 | 0.4− | 2006 01 28 | 699 | 1.5+ | 0.9− |
| 2004 09 09 | 704 | 0.6− | 0.0 | 2005 12 05 | G96 | 0.1+ | 0.4− | 2006 01 31 | 703 | 1.1+ | 1.4+ |
| 2004 09 10 | 704 | 0.8− | 0.2+ | 2006 01 23 | 704 | 0.0 | 0.1− | 2006 01 31 | 703 | 0.9+ | 0.4− |
| 2004 09 10 | 704 | 0.4− | 0.5− | 2006 01 23 | 704 | 0.2− | 0.4+ | 2006 01 31 | 703 | 0.0 | 0.6− |
| 2004 09 10 | 704 | 0.4+ | 0.1− | 2006 01 23 | 704 | 1.3− | 0.7+ | 2006 01 31 | 703 | 1.2− | 0.4+ |

**2006 BQ$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.35301 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21444927 | $\omega$ | 224.09423 | | −0.11209804 | | +0.98338251 |
| $a$ | 2.7643074 | $\Omega$ | 40.11207 | | −0.83930153 | | −0.01676200 |
| $e$ | 0.1312928 | $i$ | 12.80577 | | −0.53198400 | | −0.18077025 |
| $P$ | 4.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 644 | 0.1− | 0.2− | 2002 04 16 | 704 | 0.4− | 0.0 | 2006 01 06 | 703 | 0.1− | 0.2+ |
| 2002 03 11 | 644 | 0.2+ | 0.2− | 2002 04 16 | 704 | 0.4− | 0.4− | 2006 01 06 | 703 | 0.1+ | 1.9+ |
| 2002 03 11 | 644 | 0.2− | 0.6− | 2004 10 09 | 691 | 0.0 | 0.1− | 2006 01 24 | 699 | 1.3+ | 0.6− |
| 2002 03 20 | 704 | 0.1− | 0.1+ | 2004 10 09 | 691 | 0.1− | 0.1− | 2006 01 24 | 699 | 0.6+ | 0.6+ |
| 2002 03 20 | 704 | 0.1+ | 0.1− | 2004 10 09 | 691 | 0.1+ | 0.2− | 2006 01 24 | 699 | 0.7− | 0.1− |
| 2002 03 20 | 704 | 0.5+ | 0.9+ | 2004 10 23 | 691 | 0.2+ | 0.3+ | 2006 01 24 | 699 | 0.6+ | 0.2− |
| 2002 03 20 | 704 | 0.0 | 0.1− | 2004 10 23 | 691 | 0.1− | 0.1+ | 2006 01 27 | 703 | 0.4− | 1.3+ |
| 2002 03 20 | 704 | 0.4+ | 0.4+ | 2004 10 23 | 691 | 0.0 | 0.2+ | 2006 01 27 | 703 | 0.0 | 0.9− |
| 2002 04 01 | 644 | 0.4+ | 0.4+ | 2004 11 09 | 703 | 0.2− | 0.7− | 2006 01 27 | 703 | 1.3− | 1.5− |
| 2002 04 01 | 644 | 0.2+ | 0.2+ | 2004 11 09 | 703 | 0.2− | 0.2+ | 2006 01 27 | 703 | 0.1+ | 0.6− |
| 2002 04 01 | 644 | 0.3+ | 0.3+ | 2004 11 09 | 703 | 0.4− | 0.1− | 2006 01 27 | 703 | 0.1− | 0.1+ |
| 2002 04 16 | 704 | 0.2− | 0.5+ | 2004 11 09 | 703 | 0.3+ | 0.6+ | 2006 01 27 | 703 | 0.5− | 0.3− |
| 2002 04 16 | 704 | 0.3− | 0.5− | 2006 01 06 | 703 | 0.6+ | 0.7− | 2006 01 27 | 703 | 0.4− | 0.2− |
| 2002 04 16 | 704 | 0.3+ | 0.3+ | 2006 01 06 | 703 | 0.0 | 0.3+ | 2006 01 27 | 703 | 0.1+ | 0.2− |

**2006 BF$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.57915 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21838422 | $\omega$ | 249.74425 | | +0.55649373 | | +0.82609733 |
| $a$ | 2.7310011 | $\Omega$ | 54.38441 | | −0.71573284 | | +0.53089774 |
| $e$ | 0.0134169 | $i$ | 6.26810 | | −0.42194932 | | +0.18897301 |
| $P$ | 4.51 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 19 | 699 | 0.1− | 0.1+ | 2002 04 16 | 704 | 0.4− | 0.3− | 2006 01 26 | 703 | 0.2− | 0.3− |
| 2002 03 19 | 699 | 1.1− | 1.5+ | 2004 10 09 | 691 | 0.0 | 0.2+ | 2006 01 26 | 703 | 0.4− | 0.1+ |
| 2002 03 19 | 699 | 1.1+ | 0.8− | 2004 10 09 | 691 | 0.2+ | 0.3+ | 2006 02 04 | 703 | 0.5− | 1.4− |
| 2002 03 19 | 699 | 1.0− | 0.5+ | 2004 10 09 | 691 | 0.2− | 0.4+ | 2006 02 04 | 703 | 0.9+ | 0.1− |
| 2002 04 02 | 644 | 0.3+ | 0.0 | 2004 10 14 | 704 | 1.1− | 1.7− | 2006 02 04 | 703 | 0.1+ | 1.7+ |
| 2002 04 02 | 644 | 0.5+ | 0.1− | 2004 10 14 | 704 | 0.1− | 0.3+ | 2006 02 04 | 703 | 0.1+ | 1.4+ |
| 2002 04 02 | 644 | 0.4+ | 0.3+ | 2004 10 14 | 704 | 0.4+ | 0.4− | 2006 02 20 | 704 | 1.1− | 0.3− |
| 2002 04 12 | 644 | 0.2+ | 0.0 | 2004 10 14 | 704 | 0.7− | 0.4+ | 2006 02 20 | 704 | 0.6+ | 0.3+ |
| 2002 04 12 | 644 | 0.3+ | 0.0 | 2006 01 24 | 699 | 0.9− | 0.4− | 2006 02 20 | 704 | 0.7+ | 0.8+ |
| 2002 04 12 | 644 | 0.2+ | 0.1+ | 2006 01 24 | 699 | 0.2+ | 0.8− | 2006 02 20 | 704 | 0.5+ | 0.3+ |
| 2002 04 16 | 704 | 0.6+ | 0.3− | 2006 01 24 | 699 | 0.4− | 0.7− | 2006 05 03 | G96 | 0.1− | 0.5− |
| 2002 04 16 | 704 | 0.4+ | 0.7+ | 2006 01 24 | 699 | (2.3− | 0.2−) | 2006 05 03 | G96 | 0.5− | 0.2− |
| 2002 04 16 | 704 | 0.6+ | 0.7+ | 2006 01 26 | 703 | 0.3+ | 0.3− | 2006 05 03 | G96 | 0.8− | 0.4− |
| 2002 04 16 | 704 | 0.2− | 0.6+ | 2006 01 26 | 703 | 1.1+ | 0.9− | 2006 05 03 | G96 | 0.6− | 0.0 |

**2006 BG$_{156}$ = 1997 JT$_2$ = 2004 SO**

Id. Minor Planet Center (*MPO* 97092; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.61188 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21142406 | $\omega$ | 274.28224 | | +0.47628570 | | −0.86852990 |
| $a$ | 2.7906141 | $\Omega$ | 146.15437 | | +0.87231169 | | +0.44711128 |
| $e$ | 0.1814104 | $i$ | 14.25472 | | +0.11056336 | | +0.21388622 |
| $P$ | 4.66 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 02 | 568 | 0.3+ | 0.2− | 2004 09 16 | G90 | 0.1− | 0.2+ | 2006 01 31 | 691 | 0.2+ | 0.0 |
| 1997 05 02 | 568 | 0.3− | 0.4+ | 2004 09 17 | G90 | 0.2− | 0.1+ | 2006 01 31 | 691 | 0.2+ | 0.3− |
| 1997 05 03 | 568 | 0.1− | 0.1− | 2004 09 17 | G90 | 0.2− | 0.3− | 2006 01 31 | 691 | 0.1+ | 0.1+ |
| 1997 05 03 | 568 | 0.1+ | 0.0 | 2004 09 17 | G90 | 0.2+ | 0.1− | 2006 02 04 | 691 | 0.3+ | 0.1− |
| 1997 05 03 | 568 | 0.1− | 0.2− | 2006 01 25 | 691 | 0.3− | 0.4+ | 2006 02 04 | 691 | 0.1− | 0.5− |
| 2004 09 16 | G90 | 0.1+ | 0.2+ | 2006 01 25 | 691 | 0.3− | 0.6+ | 2006 02 04 | 691 | 0.3+ | 0.1− |
| 2004 09 16 | G90 | 0.3+ | 0.2− | 2006 01 25 | 691 | 0.5− | 0.0 | | | | |

**2006 BH$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.26733 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30397826 | $\omega$ | 142.98477 | | +0.04345778 | +0.99595375 | |
| $a$ | 2.1906569 | $\Omega$ | 129.36744 | | −0.93925666 | +0.06756081 | |
| $e$ | 0.2270754 | $i$ | 5.83985 | | −0.34045314 | −0.05925924 | |
| $P$ | 3.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 29 | 699 | 0.3+ | 0.5− | 2003 04 27 | 699 | 0.6+ | 0.2+ | 2006 01 31 | 691 | 0.4− | 0.0 |
| 2003 03 29 | 699 | 0.2− | 0.8+ | 2003 04 27 | 699 | 0.1+ | 0.1+ | 2006 01 31 | 691 | 0.1− | 0.0 |
| 2003 03 29 | 699 | 0.2− | 0.6− | 2003 05 02 | 704 | 0.7− | 0.2+ | 2006 01 31 | 691 | 0.4+ | 0.1+ |
| 2003 03 29 | 699 | 0.1− | 1.1− | 2003 05 02 | 704 | 0.3− | 0.3+ | 2006 02 08 | 703 | 0.6− | 0.2− |
| 2003 04 08 | 704 | 0.3+ | 0.1+ | 2003 05 02 | 704 | 0.3− | 0.1+ | 2006 02 08 | 703 | 1.7− | 0.3− |
| 2003 04 08 | 704 | 0.2+ | 0.4+ | 2003 05 02 | 704 | 0.2+ | 0.0 | 2006 02 08 | 703 | (2.2− | 0.7+) |
| 2003 04 08 | 704 | 0.2− | 0.9+ | 2003 05 02 | 704 | 0.2+ | 0.8+ | 2006 02 08 | 703 | 1.8− | 0.2+ |
| 2003 04 08 | 704 | 0.8+ | 1.7− | 2006 01 25 | 691 | 0.2+ | 0.3+ | 2006 02 25 | 691 | 0.3+ | 0.2− |
| 2003 04 27 | 699 | 0.3+ | 0.1− | 2006 01 25 | 691 | 0.2+ | 0.2+ | 2006 02 25 | 691 | 0.4+ | 0.0 |
| 2003 04 27 | 699 | 1.1− | 0.0 | 2006 01 25 | 691 | 0.3− | 0.1− | 2006 02 25 | 691 | 0.3+ | 0.0 |

**2006 BG$_{158}$ = 1998 SU$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.55051 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18172829 | $\omega$ | 248.28124 | | +0.75279725 | −0.65808260 | |
| $a$ | 3.0868890 | $\Omega$ | 152.86566 | | +0.61540399 | +0.69555070 | |
| $e$ | 0.1517399 | $i$ | 1.87889 | | +0.23361128 | +0.28833405 | |
| $P$ | 5.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1− | 0.0 | 2006 01 31 | 691 | 0.1− | 0.1− | 2006 03 05 | 691 | 0.3+ | 0.0 |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 01 31 | 691 | 0.1− | 0.1+ | 2006 03 05 | 691 | 0.0 | 0.3+ |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2006 02 04 | 691 | 0.0 | 0.3− | 2006 03 05 | 691 | 0.0 | 0.0 |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2006 02 04 | 691 | 0.6+ | 0.8− | 2006 03 24 | G96 | 0.2− | 0.4+ |
| 2006 01 25 | 691 | 0.0 | 0.1+ | 2006 02 04 | 691 | 0.4− | 0.6− | 2006 03 24 | G96 | 0.3− | 0.3− |
| 2006 01 25 | 691 | 0.2− | 0.1+ | 2006 02 07 | 691 | 0.2− | 0.2+ | 2006 03 24 | G96 | 0.3− | 0.3+ |
| 2006 01 25 | 691 | 0.8+ | 0.5+ | 2006 02 07 | 691 | 0.0 | 0.6+ | 2006 03 24 | G96 | 0.5− | 0.2− |
| 2006 01 31 | 691 | 0.2− | 0.0 | 2006 02 07 | 691 | 0.3− | 0.2− | | | | |

**2006 BT$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.82532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18347595 | $\omega$ | 291.17703 | | −0.55176445 | −0.83187373 | |
| $a$ | 3.0672555 | $\Omega$ | 192.83301 | | +0.82942182 | −0.53986959 | |
| $e$ | 0.0719795 | $i$ | 15.54261 | | +0.08726651 | −0.12855711 | |
| $P$ | 5.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.2+ | 0.1+ | 2001 04 14 | 691 | 0.1− | 0.5+ | 2006 01 28 | 703 | 0.7+ | 0.2− |
| 2001 03 19 | 699 | 0.1− | 0.6+ | 2003 09 27 | 691 | 0.0 | 0.3+ | 2006 01 28 | 703 | 1.0+ | 0.2− |
| 2001 03 19 | 699 | 0.0 | 0.8+ | 2003 09 27 | 691 | 0.0 | 0.1− | 2006 01 28 | 703 | 0.7− | 0.7+ |
| 2001 03 19 | 699 | (0.8− | 3.4−) | 2003 09 27 | 691 | 0.1− | 0.0 | 2006 02 23 | 699 | 0.1+ | 0.5+ |
| 2001 03 26 | 608 | 0.3− | 0.0 | 2006 01 26 | 699 | 1.1+ | 1.5− | 2006 02 23 | 699 | 0.4− | 0.3+ |
| 2001 03 26 | 608 | 0.2− | 0.2− | 2006 01 26 | 699 | 1.2− | 0.8+ | 2006 02 23 | 699 | 0.7+ | 0.5− |
| 2001 03 26 | 608 | 0.3− | 0.5− | 2006 01 26 | 699 | 0.9− | 0.1+ | 2006 02 23 | 699 | 0.1+ | 0.8− |
| 2001 04 14 | 691 | 0.2− | 0.4+ | 2006 01 26 | 699 | 0.5+ | 0.8+ | | | | |
| 2001 04 14 | 691 | 0.7+ | 0.2− | 2006 01 28 | 703 | 0.9− | 1.0+ | | | | |

**2006 BW$_{164}$ = 2006 FV$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.20011 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23236517 | $\omega$ | 5.02361 | | +0.91969313 | +0.39257393 | |
| $a$ | 2.6203262 | $\Omega$ | 331.85833 | | −0.36075975 | +0.83775957 | |
| $e$ | 0.0823984 | $i$ | 0.86119 | | −0.15497400 | +0.37953209 | |
| $P$ | 4.24 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.5− | 0.8+ | 2006 01 26 | 691 | 0.5+ | 0.1− | 2006 02 07 | G96 | 0.8+ | 0.1+ |
| 1995 09 29 | 691 | 0.1− | 0.6+ | 2006 01 26 | 691 | 0.3− | 0.5+ | 2006 02 20 | 691 | 0.4+ | 0.6+ |
| 1995 09 29 | 691 | 0.1− | 0.8+ | 2006 01 26 | 691 | 0.0 | 0.5+ | 2006 02 20 | 691 | 0.6+ | 0.0 |
| 1999 09 13 | 691 | 0.1− | 0.6+ | 2006 01 31 | 691 | 0.1+ | 0.2+ | 2006 02 20 | 691 | 0.0 | 0.0 |
| 1999 09 13 | 691 | 0.5− | 1.0+ | 2006 01 31 | 691 | 0.1+ | 0.1+ | 2006 03 05 | 691 | 0.0 | 0.5+ |
| 1999 09 13 | 691 | 0.2− | 0.6+ | 2006 01 31 | 691 | 0.2+ | 0.3+ | 2006 03 05 | 691 | 0.1+ | 0.0 |
| 2002 03 18 | 691 | 0.0 | 0.4+ | 2006 02 04 | G96 | 0.3+ | 0.9− | 2006 03 05 | 691 | 0.4+ | 0.4− |
| 2002 03 18 | 691 | 0.1− | 0.2+ | 2006 02 04 | G96 | 0.0 | 0.4− | 2006 03 23 | G96 | 0.3− | 0.2+ |
| 2002 03 18 | 691 | 0.0 | 0.1+ | 2006 02 04 | G96 | 0.7− | 1.0− | 2006 03 23 | G96 | 0.4+ | 0.0 |
| 2004 11 17 | 599 | 1.2+ | 0.1+ | 2006 02 04 | G96 | 0.1+ | 0.1− | 2006 03 23 | G96 | 0.4− | 0.3− |
| 2004 11 17 | 599 | 0.4− | 0.2− | 2006 02 04 | 691 | 0.2+ | 0.6+ | 2006 03 23 | G96 | 0.3− | 0.3− |
| 2004 11 17 | 599 | 0.3− | 0.3− | 2006 02 04 | 691 | 0.4+ | 0.2+ | 2006 03 26 | 691 | 0.2− | 0.5+ |
| 2004 12 19 | G96 | 0.5− | 0.3− | 2006 02 04 | 691 | 0.5− | 0.4+ | 2006 03 26 | 691 | 0.5+ | 0.4+ |
| 2004 12 19 | G96 | 0.2− | 0.4− | 2006 02 07 | G96 | 0.8− | 0.8+ | 2006 03 26 | 691 | 0.3+ | 0.1+ |
| 2004 12 19 | G96 | 0.4− | 0.0 | 2006 02 07 | G96 | 0.1− | 0.1+ | | | | |
| 2004 12 19 | G96 | 0.1− | 0.4− | 2006 02 07 | G96 | 1.0− | 0.2+ | | | | |

**2006 BA$_{167}$ = 2000 TT$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.90648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26722658 | $\omega$ | 304.51181 | | +0.51650498 | +0.85628323 | |
| $a$ | 2.3871678 | $\Omega$ | 356.58553 | | −0.77842081 | +0.46891563 | |
| $e$ | 0.1911338 | $i$ | 1.23017 | | −0.35676833 | +0.21655754 | |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 0.2− | 0.4+ | 2006 01 07 | G96 | 0.3+ | 0.2− | 2006 02 02 | G96 | 0.1− | 0.0 |
| 2000 10 02 | 704 | 0.4− | 0.1− | 2006 01 07 | G96 | 0.3− | 0.3− | 2006 02 02 | G96 | 0.1− | 0.3− |
| 2000 10 02 | 704 | 0.2− | 0.3− | 2006 01 26 | G96 | 0.0 | 0.4+ | 2006 02 02 | G96 | 0.2+ | 0.2− |
| 2000 10 06 | 699 | 0.6+ | 0.1+ | 2006 01 26 | G96 | 0.3− | 0.4+ | 2006 02 02 | G96 | 0.5+ | 0.5− |
| 2000 10 06 | 699 | 0.3− | 1.1+ | 2006 01 26 | G96 | 0.1− | 0.4+ | 2006 02 04 | 691 | 0.0 | 0.2+ |
| 2000 10 06 | 699 | 0.4− | 0.7− | 2006 01 26 | G96 | 0.6− | 0.3+ | 2006 02 04 | 691 | 0.1− | 0.1+ |
| 2000 10 06 | 699 | 0.4+ | 0.6+ | 2006 01 31 | 691 | 0.1+ | 0.0 | 2006 02 04 | 691 | 0.0 | 0.2+ |
| 2004 12 19 | G96 | 0.1+ | 0.5− | 2006 01 31 | 691 | 0.4+ | 0.2+ | 2006 03 24 | G96 | 0.0 | 0.2− |
| 2004 12 19 | G96 | 0.3+ | 0.4− | 2006 01 31 | 691 | 0.0 | 0.1+ | 2006 03 24 | G96 | 0.3+ | 0.3− |
| 2004 12 19 | G96 | 0.1+ | 0.1+ | 2006 02 01 | G96 | 0.2− | 0.4− | 2006 03 24 | G96 | 0.1− | 0.0 |
| 2004 12 19 | G96 | 0.2− | 0.2− | 2006 02 01 | G96 | 0.2− | 0.1− | 2006 03 24 | G96 | 0.1+ | 0.0 |
| 2006 01 07 | G96 | 0.4− | 0.1+ | 2006 02 01 | G96 | 0.1− | 0.7− | | | | |
| 2006 01 07 | G96 | 0.0 | 0.2− | 2006 02 01 | G96 | 0.5+ | 0.3− | | | | |

**2006 BV$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.83409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28125498 | $\omega$ | 173.50961 | | +0.55820764 | +0.82383370 | |
| $a$ | 2.3071149 | $\Omega$ | 130.37242 | | −0.76693129 | +0.55762541 | |
| $e$ | 0.1292857 | $i$ | 7.42860 | | −0.31657642 | +0.10174442 | |
| $P$ | 3.50 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 11 | 691 | 0.0 | 0.4− | 2004 09 08 | 704 | 0.1+ | 0.5− | 2004 10 20 | 703 | 0.5− | 0.3+ |
| 1999 01 11 | 691 | 0.0 | 0.1− | 2004 09 08 | 704 | 0.4− | 0.2+ | 2006 01 05 | G96 | 1.2− | 0.5− |
| 1999 01 11 | 691 | 0.1− | 0.0 | 2004 09 13 | 644 | 0.3− | 0.4+ | 2006 01 05 | G96 | 0.3+ | 0.4− |
| 2003 03 27 | 644 | 0.8+ | 0.1+ | 2004 09 13 | 644 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.7− | 0.0 |
| 2003 03 27 | 644 | 0.2+ | 0.2+ | 2004 09 13 | 644 | 0.1− | 0.2+ | 2006 01 05 | G96 | 0.2− | 0.8− |
| 2003 03 27 | 644 | 0.3+ | 0.5+ | 2004 09 14 | 699 | 1.2+ | 0.3+ | 2006 01 27 | 691 | 0.0 | 0.2+ |
| 2003 04 01 | 645 | 0.1− | 0.1+ | 2004 09 14 | 699 | 0.2− | 0.4+ | 2006 01 27 | 691 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2004 09 14 | 699 | 0.4+ | 0.9+ | 2006 01 27 | 691 | 0.0 | 0.3+ | | |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2004 09 14 | 699 | 0.2− | 0.8− | 2006 02 01 | 691 | 0.3− | 0.0 | | |
| 2003 04 01 | 645 | 0.1+ | 0.0 | 2004 10 04 | 644 | 0.0 | 0.4+ | 2006 02 01 | 691 | 0.1+ | 0.3+ | | |
| 2004 08 22 | E12 | 0.4− | 0.5+ | 2004 10 04 | 644 | 0.6+ | 0.5+ | 2006 02 01 | 691 | 0.2− | 0.1− | | |
| 2004 08 22 | E12 | 0.4+ | 0.1+ | 2004 10 04 | 644 | 0.1− | 0.1+ | 2006 02 02 | 691 | 0.4+ | 0.2+ | | |
| 2004 08 22 | E12 | 0.1− | 0.0 | 2004 10 20 | 703 | 0.2− | 0.8− | 2006 02 02 | 691 | 0.1+ | 0.3+ | | |
| 2004 08 22 | E12 | 0.3− | 0.6+ | 2004 10 20 | 703 | 1.0− | 1.3+ | 2006 02 02 | 691 | 0.2+ | 0.5− | | |
| 2004 09 08 | 704 | 0.9− | 0.9+ | 2004 10 20 | 703 | 0.1+ | 0.1− | | | | | | |

**2006 BD$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.51663 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17964640 | $\omega$ | 236.11379 | | +0.80109968 | +0.58966763 | |
| $a$ | 3.1106922 | $\Omega$ | 87.54349 | | −0.50962155 | +0.76191591 | |
| $e$ | 0.1662926 | $i$ | 5.89564 | | −0.31388721 | +0.26791086 | |
| $P$ | 5.49 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.1+ | 0.6− | 2003 08 23 | 644 | 0.5− | 0.3+ | 2006 01 27 | 691 | 0.2+ | 0.1+ |
| 1995 02 01 | 691 | 0.1+ | 0.4− | 2003 09 13 | 608 | 0.1− | 1.2+ | 2006 01 31 | 691 | 0.2+ | 0.0 |
| 1995 02 01 | 691 | 0.6− | 0.7− | 2003 09 13 | 608 | 1.0+ | 1.1+ | 2006 01 31 | 691 | 0.3+ | 0.4+ |
| 2002 05 10 | 704 | 0.3+ | 0.4+ | 2003 09 13 | 608 | 0.6+ | 0.9+ | 2006 01 31 | 691 | 0.2+ | 0.4+ |
| 2002 05 10 | 704 | 0.3− | 0.1− | 2003 09 22 | 644 | 0.6− | 0.0 | 2006 02 04 | 691 | 0.2+ | 0.1+ |
| 2002 05 10 | 704 | 0.3+ | 0.4+ | 2003 09 22 | 644 | 0.5− | 0.0 | 2006 02 04 | 691 | 0.2− | 0.3+ |
| 2002 05 10 | 704 | 0.2+ | 1.2+ | 2003 09 22 | 644 | 0.5− | 0.5+ | 2006 02 04 | 691 | 0.2− | 0.7+ |
| 2003 08 23 | 644 | 0.4− | 0.0 | 2006 01 27 | 691 | 0.2+ | 0.4+ | | | | |
| 2003 08 23 | 644 | 0.4− | 0.1+ | 2006 01 27 | 691 | 0.1− | 0.2+ | | | | |

**2006 BL$_{177}$ = 2001 WG$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.73793 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27034308 | $\omega$ | 217.64292 | | +0.19449755 | −0.98064247 | |
| $a$ | 2.3687863 | $\Omega$ | 221.15556 | | +0.90810012 | +0.18872709 | |
| $e$ | 0.1984471 | $i$ | 1.96853 | | +0.37084346 | +0.05217690 | |
| $P$ | 3.65 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 291 | 0.6− | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.2+ | 2006 01 27 | G96 | 0.4− | 0.2− |
| 2001 10 21 | 291 | 0.4+ | 0.0 | 2001 11 21 | 704 | 0.5− | 0.4+ | 2006 02 02 | G96 | 0.1+ | 0.3− |
| 2001 10 21 | 291 | 0.2+ | 0.1+ | 2005 11 30 | G96 | 0.1− | 0.3− | 2006 02 02 | G96 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2005 11 30 | G96 | 0.1+ | 0.0 | 2006 02 02 | G96 | 0.1+ | 0.5− |
| 2001 11 20 | 704 | 0.2+ | 0.7− | 2005 11 30 | G96 | 0.1+ | 0.2− | 2006 02 02 | G96 | 0.1+ | 0.4− |
| 2001 11 20 | 704 | 1.0+ | 0.1− | 2005 11 30 | G96 | 0.3− | 0.2− | 2006 02 04 | 691 | 0.3+ | 0.2+ |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2006 01 27 | G96 | 0.5− | 0.4− | 2006 02 04 | 691 | 0.3+ | 0.2+ |
| 2001 11 20 | 704 | 1.0− | 0.4− | 2006 01 27 | G96 | 0.5− | 0.3− | 2006 02 04 | 691 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 0.6+ | 0.4− | 2006 01 27 | G96 | 0.4− | 0.1− | | | | |

**2006 BB$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.06888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26594903 | $\omega$ | 354.11649 | | +0.96372432 | +0.26674198 | |
| $a$ | 2.3948066 | $\Omega$ | 350.39809 | | −0.24257856 | +0.86105285 | |
| $e$ | 0.1469982 | $i$ | 3.15268 | | −0.11131524 | +0.43293960 | |
| $P$ | 3.71 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 09 | 691 | 0.0 | 0.1+ | 2004 10 06 | 691 | 0.3+ | 0.1− | 2006 01 31 | 691 | 0.0 | 0.0 |
| 2004 09 09 | 691 | 0.2− | 0.0 | 2004 10 14 | 691 | 0.1+ | 0.0 | 2006 01 31 | 691 | 0.5+ | 0.3− |
| 2004 09 09 | 691 | 0.2+ | 0.0 | 2004 10 14 | 691 | 0.1− | 0.1− | 2006 01 31 | 691 | 0.0 | 0.3− |
| 2004 09 22 | 691 | 0.2− | 0.0 | 2004 10 14 | 691 | 0.1− | 0.1+ | 2006 02 04 | 691 | 0.1− | 0.0 |
| 2004 09 22 | 691 | 0.0 | 0.0 | 2006 01 27 | G96 | 0.2+ | 0.2+ | 2006 02 04 | 691 | 0.4− | 0.7+ |
| 2004 09 22 | 691 | 0.1− | 0.0 | 2006 01 27 | G96 | 0.3+ | 0.5− | 2006 02 04 | 691 | 0.3− | 0.0 |
| 2004 10 06 | 691 | 0.1+ | 0.1+ | 2006 01 27 | G96 | 0.3+ | 0.0 | | | | |
| 2004 10 06 | 691 | 0.0 | 0.0 | 2006 01 27 | G96 | 0.2+ | 0.1− | | | | |

**2006 BW$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.41704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29361666 | $\omega$ | 142.13700 | | −0.30578800 | +0.94747135 | |
| $a$ | 2.2418966 | $\Omega$ | 109.88425 | | −0.89607139 | −0.25310937 | |
| $e$ | 0.2114389 | $i$ | 5.72240 | | −0.32179149 | −0.19553437 | |
| $P$ | 3.36 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 644 | 0.4+ | 0.4+ | 2003 04 09 | 704 | 0.1+ | 0.2− | 2006 01 31 | 691 | 0.2− | 0.1− |
| 2003 03 26 | 644 | 0.2− | 0.3+ | 2003 04 09 | 704 | 0.5− | 0.3+ | 2006 02 03 | 691 | 0.3+ | 0.4+ |
| 2003 03 26 | 644 | 0.4+ | 0.3+ | 2006 01 28 | G96 | 0.6− | 0.2− | 2006 02 03 | 691 | 0.5− | 0.5− |
| 2003 03 31 | 704 | 0.7− | 0.9− | 2006 01 28 | G96 | 0.0 | 0.3− | 2006 02 03 | 691 | 0.1+ | 0.3+ |
| 2003 03 31 | 704 | 0.0 | 0.2− | 2006 01 28 | G96 | 0.0 | 0.0 | 2006 02 07 | G96 | 0.5− | 0.3+ |
| 2003 03 31 | 704 | 0.9+ | 0.1− | 2006 01 28 | G96 | 0.4− | 0.5− | 2006 02 07 | G96 | 0.7− | 0.0 |
| 2003 04 09 | 704 | 0.3− | 0.2− | 2006 01 31 | 691 | 0.3+ | 0.1− | 2006 02 07 | G96 | 0.3− | 0.2− |
| 2003 04 09 | 704 | 0.0 | 0.3+ | 2006 01 31 | 691 | 0.6+ | 0.2+ | 2006 02 07 | G96 | 0.0 | 0.1− |

**2006 BZ$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.32239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17433810 | $\omega$ | 297.78119 | | −0.14995399 | +0.95092187 | |
| $a$ | 3.1735196 | $\Omega$ | 320.48157 | | −0.68912971 | −0.29683188 | |
| $e$ | 0.2341465 | $i$ | 25.17352 | | −0.70895278 | +0.08739812 | |
| $P$ | 5.65 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.1+ | 0.3− | 2002 09 04 | 644 | 0.2+ | 0.1+ | 2006 01 30 | 691 | 0.1+ | 0.0 |
| 2002 08 16 | 644 | 0.1− | 0.3− | 2002 09 04 | 644 | 0.2+ | 0.4+ | 2006 01 30 | 691 | 0.2+ | 0.1− |
| 2002 08 16 | 644 | 0.2− | 0.1− | 2006 01 05 | G96 | 1.0+ | 0.1+ | 2006 01 30 | 691 | 0.4− | 0.2− |
| 2002 08 27 | 644 | 0.2− | 0.1− | 2006 01 05 | G96 | 0.2− | 0.4+ | 2006 01 31 | G96 | 0.4+ | 0.5+ |
| 2002 08 27 | 644 | 0.0 | 0.3− | 2006 01 05 | G96 | 0.1− | 0.2− | 2006 01 31 | G96 | 0.1− | 0.2+ |
| 2002 08 27 | 644 | 0.4− | 0.1+ | 2006 01 05 | G96 | 0.1− | 0.0 | 2006 01 31 | G96 | 0.5− | 0.0 |
| 2002 09 04 | 644 | 0.5− | 0.1− | 2006 01 05 | G96 | 0.4− | 0.4+ | 2006 01 31 | G96 | 0.4− | 0.2+ |
| 2002 09 04 | 644 | 0.1+ | 0.4+ | 2006 01 05 | G96 | 1.0− | 0.2− | 2006 02 03 | 691 | 0.2+ | 0.3− |
| 2002 09 04 | 644 | 0.4+ | 0.3− | 2006 01 05 | G96 | 0.6+ | 0.0 | 2006 02 03 | 691 | 0.2+ | 0.1− |
| 2002 09 04 | 644 | 0.3+ | 0.3+ | 2006 01 05 | G96 | 0.6+ | 0.3− | 2006 02 03 | 691 | 0.2− | 0.4+ |

**2006 BE$_{204}$ = 2004 VJ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.53507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17039170 | $\omega$ | 63.38132 | | +0.60362484 | −0.79719203 | |
| $a$ | 3.2223331 | $\Omega$ | 349.46728 | | +0.70831868 | +0.54258514 | |
| $e$ | 0.1616141 | $i$ | 3.46305 | | +0.36595314 | +0.26473805 | |
| $P$ | 5.78 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 15 | 695 | 0.0 | 0.0 | 2004 11 09 | 703 | 0.5+ | 1.4− | 2006 02 04 | 691 | 0.2+ | 0.0 |
| 2004 10 15 | 695 | 0.0 | 0.1− | 2006 01 31 | 691 | 0.4+ | 0.1− | 2006 02 04 | 691 | 0.1− | 0.0 |
| 2004 11 05 | 691 | 0.4− | 0.1+ | 2006 01 31 | 691 | 0.2− | 0.5+ | 2006 02 04 | 691 | 0.2− | 0.3+ |
| 2004 11 05 | 691 | 0.2+ | 0.2+ | 2006 01 31 | 691 | 0.2− | 0.3− | 2006 02 25 | G96 | 0.3+ | 0.0 |
| 2004 11 05 | 691 | 0.3+ | 0.1− | 2006 02 02 | G96 | 0.1+ | 0.3− | 2006 02 25 | G96 | 0.7+ | 0.1− |
| 2004 11 09 | 703 | 0.4− | 0.3− | 2006 02 02 | G96 | 0.2− | 0.2− | 2006 02 25 | G96 | 0.5− | 0.1+ |
| 2004 11 09 | 703 | 0.6− | 0.6+ | 2006 02 02 | G96 | 0.0 | 0.5− | 2006 02 25 | G96 | 0.2− | 0.1− |
| 2004 11 09 | 703 | 0.3+ | 0.5+ | 2006 02 02 | G96 | 0.3− | 0.4− | | | | |

**2006 BN$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.17869 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26379853 | $\omega$ | 270.62562 | | +0.89548940 | −0.44397183 | |
| $a$ | 2.4078040 | $\Omega$ | 115.73233 | | +0.42097613 | +0.82194971 | |
| $e$ | 0.1926197 | $i$ | 1.99936 | | +0.14449162 | +0.35677402 | |
| $P$ | 3.74 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 12 | 704 | 1.2+ | 1.8− | 2004 09 15 | 691 | 0.1+ | 0.0 | 2006 01 31 | 691 | 0.0 | 0.3+ |
| 2004 08 12 | 704 | 1.1+ | 0.6− | 2004 09 15 | 691 | 0.1− | 0.3− | 2006 01 31 | 691 | 0.0 | 0.1− |
| 2004 08 12 | 704 | 0.3− | 0.6− | 2006 01 07 | G96 | 0.6+ | 0.9− | 2006 02 01 | G96 | 0.1− | 0.2− |
| 2004 08 22 | 691 | 0.1− | 0.3+ | 2006 01 07 | G96 | 0.7+ | 0.3− | 2006 02 01 | G96 | 0.2+ | 0.3+ |
| 2004 08 22 | 691 | 0.2− | 0.2+ | 2006 01 07 | G96 | 0.1− | 0.8− | 2006 02 01 | G96 | 0.3− | 0.0 |
| 2004 08 22 | 691 | 0.2− | 0.3+ | 2006 01 07 | G96 | 0.1+ | 0.4− | 2006 02 01 | G96 | 0.4+ | 0.0 |
| 2004 09 15 | 691 | 0.1− | 0.1+ | 2006 01 31 | 691 | 0.4− | 0.3+ | | | | |

**2006 BA$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.61706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25559524 | $\omega$ | 209.84525 | | +0.99769863 | +0.03620586 | |
| $a$ | 2.4590511 | $\Omega$ | 147.92550 | | −0.01657805 | +0.95009474 | |
| $e$ | 0.2060746 | $i$ | 6.19770 | | −0.06574665 | +0.30985339 | |
| $P$ | 3.86 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2004 09 11 | 691 | 0.0 | 0.0 | 2006 02 01 | G96 | 0.2+ | 0.5+ |
| 1999 03 20 | 645 | 0.1− | 0.1+ | 2004 09 11 | 691 | 0.0 | 0.2+ | 2006 02 02 | G96 | 0.5− | 0.3− |
| 2004 08 10 | 704 | 0.8+ | 0.6+ | 2004 09 11 | 691 | 0.1− | 0.1+ | 2006 02 02 | G96 | 0.2+ | 0.1+ |
| 2004 08 10 | 704 | 0.0 | 0.5− | 2006 01 31 | G96 | 0.5+ | 0.3+ | 2006 02 02 | G96 | 0.0 | 0.2− |
| 2004 08 10 | 704 | 0.7− | 0.8+ | 2006 01 31 | G96 | 0.0 | 0.3+ | 2006 02 02 | G96 | 0.1+ | 0.3− |
| 2004 08 10 | 704 | 0.1− | 0.6+ | 2006 01 31 | G96 | 0.0 | 1.0+ | 2006 02 02 | G96 | 0.6− | 0.3− |
| 2004 08 10 | 704 | 0.3− | 0.0 | 2006 02 01 | 291 | 0.2− | 0.2− | 2006 02 02 | G96 | 0.0 | 0.2− |
| 2004 08 10 | 704 | 0.6+ | 0.2+ | 2006 02 01 | 291 | 0.3+ | 0.8+ | 2006 02 02 | G96 | 0.3− | 0.1− |
| 2004 08 10 | 704 | 0.0 | 0.4+ | 2006 02 01 | 291 | 0.6+ | 1.0+ | 2006 02 02 | G96 | 0.1− | 0.1− |
| 2004 08 20 | 691 | 0.2− | 0.3+ | 2006 02 01 | G96 | 0.1− | 0.3+ | 2006 02 04 | 691 | 0.1− | 0.3− |
| 2004 08 20 | 691 | 0.0 | 0.2+ | 2006 02 01 | G96 | 0.0 | 0.1+ | 2006 02 04 | 691 | 0.1+ | 0.2+ |
| 2004 08 20 | 691 | 0.2− | 0.3+ | 2006 02 01 | G96 | 0.4− | 0.2+ | 2006 02 04 | 691 | 0.1− | 0.1− |

**2006 BT$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.88297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18309642 | $\omega$ | 342.37749 | | −0.69573050 | −0.71750690 | |
| $a$ | 3.0714926 | $\Omega$ | 151.67885 | | +0.66731427 | −0.66304396 | |
| $e$ | 0.0572262 | $i$ | 4.08640 | | +0.26580204 | −0.21343982 | |
| $P$ | 5.38 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.1+ | 0.4+ | 2006 01 31 | G96 | 0.7+ | 1.1+ | 2006 02 04 | 691 | 0.2+ | 0.1+ |
| 1996 03 27 | 691 | 0.0 | 0.1+ | 2006 02 01 | G96 | 0.2− | 0.1− | 2006 02 23 | G96 | 0.2+ | 0.0 |
| 1996 03 27 | 691 | 0.1+ | 0.1− | 2006 02 01 | G96 | 0.4− | 0.2− | 2006 02 23 | G96 | 0.0 | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2006 02 01 | G96 | 0.5− | 0.1− | 2006 02 23 | G96 | 0.2− | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.2− | 2006 02 01 | G96 | 0.2− | 0.3− | 2006 02 23 | G96 | 0.3− | 0.0 |
| 2001 02 22 | 691 | 0.2− | 0.2+ | 2006 02 01 | G96 | 0.1− | 0.4− | 2006 03 05 | G96 | 0.2− | 0.0 |
| 2001 02 22 | 691 | 0.1− | 0.3+ | 2006 02 01 | G96 | 0.3− | 0.5− | 2006 03 05 | G96 | 0.1− | 0.1+ |
| 2001 02 22 | 691 | 0.2− | 0.3+ | 2006 02 01 | G96 | 0.2− | 0.4− | 2006 03 05 | G96 | 0.1+ | 0.2+ |
| 2005 10 06 | G96 | 0.5− | 0.3+ | 2006 02 01 | G96 | 0.5− | 0.8− | 2006 03 05 | G96 | 0.2− | 0.2+ |
| 2005 10 06 | G96 | 0.3− | 0.4+ | 2006 02 03 | 699 | 0.2− | 0.2− | 2006 04 19 | G96 | 0.6− | 0.4+ |
| 2005 10 06 | G96 | 0.2+ | 0.3− | 2006 02 03 | 699 | 0.3+ | 0.5+ | 2006 04 19 | G96 | 0.6− | 0.0 |
| 2005 10 06 | G96 | 0.8− | 0.3+ | 2006 02 03 | 699 | 0.9− | 0.6+ | 2006 04 19 | G96 | 0.2− | 0.1− |
| 2005 11 30 | G96 | 0.2− | 0.4− | 2006 02 03 | 699 | (0.9− | 1.6+) | 2006 04 19 | G96 | 0.2− | 0.0 |
| 2005 11 30 | G96 | 0.0 | 0.2− | 2006 02 03 | 704 | 0.6+ | 1.5+ | 2006 05 25 | G96 | 0.6− | 0.6− |
| 2005 11 30 | G96 | 0.3+ | 0.0 | 2006 02 03 | 704 | (0.0 | 1.7+) | 2006 05 25 | G96 | 0.1− | 0.0 |
| 2005 11 30 | G96 | 0.1− | 0.3− | 2006 02 03 | 704 | 1.0+ | 1.0+ | 2006 05 25 | G96 | 0.3− | 0.1+ |
| 2006 01 31 | G96 | 0.3+ | 0.5− | 2006 02 03 | 704 | 1.1+ | 1.4+ | 2006 05 25 | G96 | 0.1+ | 0.2− |
| 2006 01 31 | G96 | 0.1− | 0.2− | 2006 02 04 | 691 | 0.2+ | 0.3− | | | | |
| 2006 01 31 | G96 | 0.0 | 0.1− | 2006 02 04 | 691 | 0.2+ | 0.1+ | | | | |

**2006 BF$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.77369 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.06706720 | $\omega$ | 53.39506 | | −0.80901755 | +0.53992336 | |
| $a$ | 5.9996965 | $\Omega$ | 156.32595 | | −0.51525085 | −0.84164043 | |
| $e$ | 0.4869186 | $i$ | 35.35120 | | +0.28285538 | +0.01114185 | |
| $P$ | 14.70 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 09 | 261 | 0.9− | 1.3+ | 2006 02 20 | 703 | 0.0 | 0.2− | 2006 03 09 | G96 | 0.0 | 0.3− |
| 1992 04 09 | 261 | 0.8+ | 1.1− | 2006 02 20 | 703 | 0.3− | 0.7− | 2006 03 23 | G96 | 0.1+ | 0.1− |
| 1992 04 27 | 261 | 0.1− | 0.7+ | 2006 02 20 | 703 | 0.5+ | 0.5− | 2006 03 23 | G96 | 0.2− | 0.0 |
| 1992 04 27 | 261 | 0.2+ | 0.2+ | 2006 02 21 | 699 | 0.3− | 1.0− | 2006 03 23 | G96 | 0.2+ | 0.3− |
| 2006 01 31 | 703 | 0.4− | 0.6− | 2006 02 21 | 699 | 1.3− | 1.7+ | 2006 03 23 | G96 | 0.2− | 0.4− |
| 2006 01 31 | 703 | 0.4+ | 0.1+ | 2006 02 21 | 699 | 0.4+ | 0.1− | 2006 05 26 | 693 | 0.4+ | 0.8− |
| 2006 01 31 | 703 | 0.6− | 0.0 | 2006 02 21 | 699 | 0.3− | 0.4+ | 2006 05 26 | 693 | 0.4+ | 0.6− |
| 2006 01 31 | 703 | 0.5− | 0.4− | 2006 02 25 | 691 | 0.0 | 0.2+ | 2006 05 26 | 693 | 0.7+ | 0.4− |
| 2006 02 02 | G96 | 0.1+ | 0.3− | 2006 02 25 | 691 | 0.2− | 1.2+ | 2006 05 26 | 693 | 0.8+ | 0.4− |
| 2006 02 02 | G96 | 0.3+ | 0.1+ | 2006 02 25 | 691 | 0.1+ | 0.0 | 2006 11 27 | 204 | 0.1− | 0.4− |
| 2006 02 02 | G96 | 0.3+ | 0.2− | 2006 03 09 | G96 | 0.7+ | 0.1− | 2006 11 27 | 204 | 0.0 | 0.4− |
| 2006 02 02 | G96 | 0.1− | 0.1− | 2006 03 09 | G96 | 0.3+ | 0.5− | | | | |
| 2006 02 20 | 703 | 0.2− | 1.1− | 2006 03 09 | G96 | 0.1− | 0.1− | | | | |

**2006 BD$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.88995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30593202 | $\omega$ | 341.74721 | | −0.06851420 | −0.99724050 | |
| $a$ | 2.1813202 | $\Omega$ | 112.17351 | | +0.91912910 | −0.07423838 | |
| $e$ | 0.1161778 | $i$ | 1.76898 | | +0.38795297 | −0.00023322 | |
| $P$ | 3.22 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 1.3+ | 0.4− | 2003 04 25 | 691 | 0.1+ | 0.0 | 2006 01 30 | 621 | 0.1− | 0.6+ |
| 2001 09 21 | 704 | 0.3− | 0.6− | 2003 04 25 | 691 | 0.2+ | 0.0 | 2006 02 02 | 621 | 0.1+ | 0.3+ |
| 2001 09 21 | 704 | 0.6− | 0.8− | 2004 08 23 | 691 | 0.2+ | 0.1− | 2006 02 02 | 621 | 0.4+ | 0.2− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 08 23 | 691 | 0.1+ | 0.1− | 2006 02 02 | 621 | 0.1− | 0.4+ |
| 2001 10 14 | 645 | 0.1− | 0.0 | 2004 08 23 | 691 | 0.2− | 0.4+ | 2006 05 04 | G96 | 0.2+ | 0.2− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 09 16 | 691 | 0.3− | 0.1− | 2006 05 04 | G96 | 0.2− | 0.1+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2004 09 16 | 691 | 0.1− | 0.4+ | 2006 05 04 | G96 | 0.1− | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2004 09 16 | 691 | 0.1+ | 0.0 | 2006 05 04 | G96 | 0.5+ | 0.0 |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2006 01 30 | 621 | 0.2− | 0.1+ | | | | |
| 2003 04 25 | 691 | 0.3− | 0.1+ | 2006 01 30 | 621 | 0.2+ | 0.2+ | | | | |

**2006 BS$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.88434 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17537501 | $\omega$ | 307.60299 | | +0.78212928 | +0.62145210 | |
| $a$ | 3.1609981 | $\Omega$ | 14.16500 | | −0.49688090 | +0.66608597 | |
| $e$ | 0.0526479 | $i$ | 10.71754 | | −0.37600951 | +0.41246426 | |
| $P$ | 5.62 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 30 | 704 | 0.4− | 1.2− | 2004 11 04 | 703 | 0.9− | 0.0 | 2006 01 05 | 703 | 1.0− | 0.8+ |
| 1999 12 30 | 704 | 0.1+ | 0.6+ | 2004 11 04 | 703 | 0.1+ | 0.4− | 2006 01 05 | 703 | 0.0 | 0.6+ |
| 1999 12 30 | 704 | 0.3+ | 0.1− | 2004 11 19 | 704 | 0.3+ | 0.7+ | 2006 01 05 | 703 | 0.0 | 0.2− |
| 2001 03 27 | 699 | 1.0+ | 0.3− | 2004 11 19 | 704 | 0.2− | 0.4+ | 2006 01 24 | 699 | 0.8− | 0.0 |
| 2001 03 27 | 699 | 0.3− | 0.5− | 2004 11 19 | 704 | 0.0 | 0.1+ | 2006 01 24 | 699 | 0.5+ | 0.2− |
| 2001 03 27 | 699 | 1.2+ | 0.8+ | 2004 11 19 | 704 | 0.2+ | 0.1+ | 2006 01 24 | 699 | 0.2+ | 0.5− |
| 2001 03 27 | 699 | 1.6− | 0.6+ | 2004 11 19 | 704 | 0.5+ | 0.1+ | 2006 01 24 | 699 | 0.7+ | 0.3− |
| 2004 10 21 | 704 | 0.4+ | 0.6+ | 2004 12 11 | 703 | 0.3+ | 0.3− | 2006 02 02 | 703 | 0.9− | 0.5+ |
| 2004 10 21 | 704 | 0.3+ | 0.2+ | 2004 12 11 | 703 | 0.4− | 0.3+ | 2006 02 02 | 703 | 0.1+ | 0.3− |
| 2004 10 21 | 704 | 0.1+ | 0.1+ | 2004 12 11 | 703 | 0.5− | 0.7− | 2006 02 02 | 703 | 0.3+ | 0.3+ |
| 2004 11 04 | 703 | 0.0 | 0.4− | 2004 12 11 | 703 | 0.5− | 0.4+ | 2006 02 02 | 703 | 0.5+ | 0.0 |
| 2004 11 04 | 703 | 0.1− | 0.5− | 2006 01 05 | 703 | 0.3+ | 0.6− | | | | |

**2006 BJ$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.63966 | | | (2000.0) | | |
| $n$ | 0.27764647 | $\omega$ | 147.91534 | | −0.56523464 | +0.82429804 |
| $a$ | 2.3270619 | $\Omega$ | 87.64681 | | −0.76352267 | −0.50793922 |
| $e$ | 0.1671705 | $i$ | 1.85187 | | −0.31231865 | −0.25006096 |
| $P$ | 3.55 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 05 | 704 | 0.2− | 0.2− | 2003 06 01 | 807 | 0.2− | 0.1− | 2006 02 03 | 691 | 0.1+ | 0.2− |
| 2003 05 05 | 704 | 0.2+ | 0.5− | 2003 06 01 | 807 | 0.3− | 0.2− | 2006 02 03 | 691 | 0.4+ | 0.1− |
| 2003 05 05 | 704 | 0.6− | 0.9− | 2006 01 27 | G96 | 0.2− | 0.3− | 2006 02 07 | G96 | 0.5− | 0.1+ |
| 2003 05 05 | 704 | 0.5− | 0.3− | 2006 01 27 | G96 | 0.2− | 0.2− | 2006 02 07 | G96 | 0.4+ | 0.6+ |
| 2003 05 29 | 291 | 0.0 | 0.1+ | 2006 01 27 | G96 | 0.1− | 0.4− | 2006 02 07 | G96 | 0.4− | 0.2+ |
| 2003 05 29 | 291 | 0.3+ | 0.2+ | 2006 01 27 | G96 | 0.0 | 0.1− | 2006 02 07 | G96 | 0.2− | 0.1− |
| 2003 05 29 | 291 | 0.1+ | 0.2+ | 2006 02 03 | 691 | 0.2− | 0.4+ | | | | |

**2006 BW$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 155.46198 | | | (2000.0) | | |
| $n$ | 0.27705821 | $\omega$ | 263.70704 | | +0.91416599 | −0.39436508 |
| $a$ | 2.3303547 | $\Omega$ | 119.48479 | | +0.40125932 | +0.84774669 |
| $e$ | 0.2031844 | $i$ | 6.17830 | | +0.05737165 | +0.35468540 |
| $P$ | 3.56 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.1− | 0.3− | 2001 12 18 | 704 | (0.2− | 2.3−) | 2006 01 07 | G96 | 0.5− | 0.4− |
| 2001 11 17 | 704 | 0.4− | 0.1− | 2001 12 18 | 704 | 0.2− | 1.0− | 2006 01 07 | G96 | 0.7+ | 0.2− |
| 2001 11 17 | 704 | 0.5− | 0.2− | 2001 12 18 | 704 | 1.5− | 0.6+ | 2006 01 28 | G96 | 0.7− | 0.4− |
| 2001 11 17 | 704 | 0.8− | 0.0 | 2002 01 08 | 644 | 0.1− | 0.1+ | 2006 01 28 | G96 | 0.6− | 0.2− |
| 2001 11 21 | 608 | 0.0 | 0.3− | 2002 01 08 | 644 | 0.1+ | 0.1− | 2006 01 28 | G96 | 0.4− | 0.2− |
| 2001 11 21 | 608 | 0.7+ | 0.5+ | 2002 01 08 | 644 | 0.2− | 0.2+ | 2006 01 28 | G96 | 0.8− | 0.4− |
| 2001 11 21 | 608 | 1.0+ | 0.3− | 2004 06 11 | 691 | 0.0 | 0.1+ | 2006 02 03 | 691 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 1.1+ | 0.2− | 2004 06 11 | 691 | 0.1+ | 0.2+ | 2006 02 03 | 691 | 0.2+ | 0.0 |
| 2001 12 11 | 704 | 0.1− | 0.0 | 2004 06 11 | 691 | 0.1+ | 0.1+ | 2006 02 03 | 691 | 0.4+ | 0.2+ |
| 2001 12 11 | 704 | 0.0 | 1.1+ | 2004 06 20 | 691 | 0.4− | 0.1+ | 2006 02 07 | 691 | 0.1+ | 0.0 |
| 2001 12 11 | 704 | 0.0 | 0.6+ | 2004 06 20 | 691 | 0.0 | 0.2+ | 2006 02 07 | 691 | 0.1+ | 0.0 |
| 2001 12 11 | 704 | 0.3− | 0.8+ | 2004 06 20 | 691 | 0.2+ | 0.4− | 2006 02 07 | 691 | 0.2− | 0.4+ |
| 2001 12 18 | 704 | 1.2+ | 0.4+ | 2006 01 07 | G96 | 0.6− | 0.3− | | | | |
| 2001 12 18 | 704 | 0.0 | 0.7− | 2006 01 07 | G96 | 0.0 | 0.4− | | | | |

**2006 BV$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 156.97851 | | | (2000.0) | | |
| $n$ | 0.22460950 | $\omega$ | 121.06053 | | +0.92887908 | −0.35997558 |
| $a$ | 2.6803035 | $\Omega$ | 260.16068 | | +0.30247611 | +0.87311034 |
| $e$ | 0.0555721 | $i$ | 5.07655 | | +0.21375655 | +0.32877943 |
| $P$ | 4.39 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 25 | 704 | 0.6− | 1.0− | 2004 10 10 | 704 | 0.7− | 0.0 | 2006 01 23 | 704 | 0.2+ | 0.8+ |
| 2000 11 25 | 704 | 0.0 | 1.3− | 2004 10 10 | 704 | 0.0 | 1.0+ | 2006 01 23 | 704 | (3.1+ | 4.9+) |
| 2000 11 25 | 704 | 0.7+ | 0.5− | 2004 10 10 | 704 | 0.5− | 0.4+ | 2006 01 30 | 703 | 1.3+ | 0.3− |
| 2000 11 25 | 704 | 0.1+ | 0.3− | 2004 10 21 | 704 | 0.9+ | 1.6− | 2006 01 30 | 703 | 0.3+ | 0.3− |
| 2004 09 13 | 704 | 0.4+ | 0.3+ | 2004 10 21 | 704 | 0.3− | 0.0 | 2006 01 30 | 703 | 0.5+ | 0.3+ |
| 2004 09 13 | 704 | 0.7− | 0.2− | 2004 10 21 | 704 | 0.3− | 0.4+ | 2006 01 30 | 703 | 0.7+ | 0.5+ |
| 2004 09 13 | 704 | 0.1− | 0.7+ | 2004 10 21 | 704 | 0.7− | 1.2− | 2006 02 03 | 704 | 0.1− | 0.2− |
| 2004 10 09 | 699 | 0.1+ | 0.7+ | 2004 10 21 | 704 | 0.6− | 0.3− | 2006 02 03 | 704 | 1.2− | 0.5− |
| 2004 10 09 | 699 | 0.6− | 0.9+ | 2005 10 06 | G96 | 0.7− | 0.7− | 2006 02 03 | 704 | 0.3+ | 0.5− |
| 2004 10 09 | 699 | 0.5+ | 0.3+ | 2005 10 06 | G96 | 1.0− | 0.5− | 2006 02 03 | 704 | 0.3+ | 0.4− |
| 2004 10 09 | 699 | 2.4+ | 0.4+ | 2005 10 06 | G96 | 0.0 | 0.6− | 2006 02 03 | 704 | 0.9− | 1.0− |
| 2004 10 10 | 704 | 0.7− | 1.6+ | 2005 10 06 | G96 | 0.3− | 0.2− | | | | |
| 2004 10 10 | 704 | 0.4− | 0.0 | 2006 01 23 | 704 | 2.3− | 0.6+ | | | | |

**2006 BP$_{231}$ = 1998 AX$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.01122 | | | (2000.0) | | |
| $n$ | 0.25290044 | $\omega$ | 127.91234 | | −0.54650305 | +0.82942847 |
| $a$ | 2.4764885 | $\Omega$ | 108.57691 | | −0.80155692 | −0.47804896 |
| $e$ | 0.0969822 | $i$ | 7.01003 | | −0.24257147 | −0.28899413 |
| $P$ | 3.90 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 06 | 691 | 0.4− | 0.2+ | 2002 01 14 | 704 | 0.4− | 0.3+ | 2006 01 31 | 691 | 0.0 | 0.3+ |
| 1998 01 06 | 691 | 0.2+ | 0.4− | 2002 02 10 | 704 | 0.6+ | 0.3− | 2006 01 31 | 691 | 0.1− | 0.4+ |
| 1998 01 06 | 691 | 0.2+ | 0.6− | 2002 02 10 | 704 | 0.2− | 1.1+ | 2006 02 03 | 691 | 0.4+ | 0.1− |
| 2002 01 04 | 691 | 0.3+ | 0.1+ | 2002 02 10 | 704 | 0.0 | 0.9+ | 2006 02 03 | 691 | 0.5− | 0.5− |
| 2002 01 04 | 691 | 0.1+ | 0.3+ | 2005 12 05 | G96 | 0.7− | 0.3+ | 2006 02 03 | 691 | 0.2+ | 0.1− |
| 2002 01 04 | 691 | 0.2+ | 0.0 | 2005 12 05 | G96 | 0.3− | 0.4+ | 2006 02 07 | 691 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.5− | 0.3− | 2005 12 05 | G96 | 0.1+ | 0.5+ | 2006 02 07 | 691 | 0.1+ | 0.4− |
| 2002 01 14 | 704 | 0.8− | 0.7+ | 2005 12 05 | G96 | 0.4+ | 0.1+ | 2006 02 07 | 691 | 0.1− | 0.2− |
| 2002 01 14 | 704 | 0.4− | 0.9+ | 2006 01 31 | 691 | 0.0 | 0.1+ | | | | |

**2006 BL$_{238}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 169.88126 | | | (2000.0) | | |
| $n$ | 0.23890810 | $\omega$ | 275.46068 | | +0.99678047 | −0.02589516 |
| $a$ | 2.5722636 | $\Omega$ | 86.03893 | | +0.05431270 | +0.91427106 |
| $e$ | 0.2146443 | $i$ | 4.36236 | | −0.05898154 | +0.40427450 |
| $P$ | 4.13 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 1.8− | 1.5− | 2004 09 21 | 704 | 0.0 | 0.1− | 2006 01 23 | 691 | 0.2+ | 0.3− |
| 2000 09 23 | 699 | 1.9+ | 0.7− | 2004 09 21 | 704 | 0.1− | 0.6− | 2006 01 31 | 691 | 0.2− | 0.3+ |
| 2000 09 23 | 699 | 0.6− | 0.4+ | 2004 09 21 | 704 | 0.4+ | 0.9+ | 2006 01 31 | 691 | 0.1− | 0.1− |
| 2000 09 23 | 699 | 0.9+ | 1.5+ | 2004 09 21 | 704 | 1.6+ | 0.5− | 2006 01 31 | 691 | 0.2− | 0.2− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2004 10 04 | 644 | 0.0 | 0.2+ | 2006 02 04 | 691 | 0.3+ | 0.3+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2004 10 04 | 644 | 0.2+ | 0.2+ | 2006 02 04 | 691 | 0.3− | 0.0 |
| 2004 09 13 | 691 | 0.2− | 0.0 | 2004 10 04 | 644 | 0.1− | 0.1+ | 2006 02 04 | 691 | 0.1− | 0.6+ |
| 2004 09 13 | 691 | 0.3− | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.6− | | | | |
| 2004 09 13 | 691 | 0.0 | 0.0 | 2006 01 23 | 691 | 0.2+ | 0.1− | | | | |

**2006 BA$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 347.03074 | | | (2000.0) | | |
| $n$ | 0.18153305 | $\omega$ | 60.44084 | | −0.85450750 | +0.51915978 |
| $a$ | 3.0891020 | $\Omega$ | 150.82523 | | −0.48784820 | −0.79084739 |
| $e$ | 0.0836621 | $i$ | 2.00217 | | −0.17838460 | −0.32408876 |
| $P$ | 5.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.0 | 0.3+ | 2003 09 29 | 691 | 0.5− | 0.2+ | 2006 02 04 | G96 | 0.3− | 0.3+ |
| 2003 09 18 | 691 | 0.2− | 0.1+ | 2003 09 29 | 691 | 0.5− | 0.1+ | 2006 02 04 | G96 | 0.1− | 0.1− |
| 2003 09 18 | 691 | 0.1− | 0.3+ | 2003 10 19 | 645 | 0.1+ | 0.1− | 2006 02 04 | G96 | 0.4− | 0.2− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 02 04 | 691 | 0.1+ | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.1+ | 2006 01 31 | 691 | 0.0 | 0.3− | 2006 05 03 | G96 | 0.0 | 0.2− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 01 31 | 691 | 0.0 | 0.1+ | 2006 05 03 | G96 | 0.0 | 0.3− |
| 2003 09 28 | 645 | 0.1+ | 0.1+ | 2006 01 31 | 691 | 0.0 | 0.3+ | 2006 05 03 | G96 | 0.5− | 0.7− |
| 2003 09 29 | 645 | 0.1+ | 0.1− | 2006 02 04 | 691 | 0.2+ | 0.0 | 2006 05 03 | G96 | 0.5+ | 0.0 |
| 2003 09 29 | 645 | 0.1+ | 0.1− | 2006 02 04 | G96 | 0.0 | 0.2+ | | | | |
| 2003 09 29 | 691 | 0.2− | 0.2+ | 2006 02 04 | 691 | 0.1− | 0.1+ | | | | |

**2006 BC$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 177.17527 | | | (2000.0) | | |
| $n$ | 0.28469657 | $\omega$ | 238.97929 | | +0.94236828 | −0.33164412 |
| $a$ | 2.2884841 | $\Omega$ | 140.34133 | | +0.32571078 | +0.87913598 |
| $e$ | 0.1601433 | $i$ | 3.97181 | | +0.07651472 | +0.34224567 |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 26 | 691 | 0.0 | 0.1− | 2004 08 08 | 704 | 0.6− | 0.9+ | 2005 10 24 | 568 | 0.3− | 0.1− |
| 1996 03 26 | 691 | 0.2− | 0.6− | 2004 08 08 | 704 | 0.3− | 1.0+ | 2005 10 24 | 568 | 0.2− | 0.1− |
| 1996 03 26 | 691 | 0.0 | 0.2+ | 2004 08 08 | 704 | 0.4− | 0.8+ | 2005 11 07 | 568 | 0.1− | 0.3+ |
| 2001 11 17 | 704 | 0.5− | 0.0 | 2004 08 21 | E12 | 0.2− | 0.6− | 2005 11 07 | 568 | 0.1− | 0.3+ |
| 2001 11 17 | 704 | 0.7+ | 0.3+ | 2004 08 21 | E12 | 0.1+ | 0.0 | 2005 11 07 | 568 | 0.1− | 0.3+ |
| 2001 11 17 | 704 | 0.2− | 0.5+ | 2004 08 21 | E12 | 0.0 | 0.5− | 2006 01 31 | 691 | 0.2+ | 0.3+ |
| 2001 12 11 | 704 | 1.1− | 0.1+ | 2004 08 21 | E12 | 0.1+ | 0.5− | 2006 01 31 | 691 | 0.2+ | 0.4+ |
| 2001 12 11 | 704 | 0.1− | 1.1− | 2004 09 12 | 691 | 0.2+ | 0.1+ | 2006 01 31 | 691 | 0.4+ | 0.2+ |
| 2001 12 11 | 704 | 1.5+ | 1.0− | 2004 09 12 | 691 | 0.1− | 0.2+ | 2006 02 04 | 691 | 0.0 | 0.5+ |
| 2004 08 08 | 704 | 0.2− | 0.5+ | 2004 09 12 | 691 | 0.1− | 0.4+ | 2006 02 04 | 691 | 0.0 | 0.2+ |
| 2004 08 08 | 704 | 0.3+ | 1.1+ | 2005 10 24 | 568 | 0.3− | 0.1− | 2006 02 04 | 691 | 0.1− | 0.4+ |

**2006 BU$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 290.16182 | | | (2000.0) | | |
| $n$ | 0.27451755 | $\omega$ | 156.88265 | | +0.49361138 | +0.85974339 |
| $a$ | 2.3447109 | $\Omega$ | 142.32820 | | −0.82767112 | +0.51068664 |
| $e$ | 0.2223416 | $i$ | 12.38794 | | −0.26703618 | +0.00636072 |
| $P$ | 3.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 31 | 691 | (2.0− | 6.6−) | 2003 04 28 | 645 | 0.1− | 0.1− | 2006 01 31 | 691 | 0.4+ | 0.6+ |
| 1995 01 31 | 691 | 0.7+ | 0.1− | 2003 04 28 | 645 | 0.1− | 0.1− | 2006 02 04 | 691 | 0.1+ | 0.5+ |
| 1995 01 31 | 691 | 0.7+ | 0.4+ | 2003 05 10 | 704 | 1.0+ | 0.3− | 2006 02 04 | 691 | 0.1+ | 0.5+ |
| 2000 10 05 | 704 | 0.0 | 0.4+ | 2003 05 10 | 704 | 0.1+ | 0.2+ | 2006 02 04 | 691 | 0.3+ | 0.6+ |
| 2000 10 05 | 704 | 0.6− | 0.8+ | 2003 05 10 | 704 | 0.9+ | 0.0 | 2006 02 20 | 691 | 0.2+ | 1.1+ |
| 2000 10 05 | 704 | 0.5+ | 0.2+ | 2003 05 10 | 704 | 0.2− | 0.8+ | 2006 02 20 | 691 | 0.1+ | 0.8+ |
| 2000 10 05 | 704 | 0.6+ | 1.3+ | 2006 01 07 | G96 | 1.0− | 0.0 | 2006 02 20 | 691 | 0.3+ | 0.8+ |
| 2000 10 05 | 704 | 1.3− | 0.6+ | 2006 01 07 | G96 | 0.2− | 0.4− | 2006 02 20 | 703 | 0.4+ | 0.9+ |
| 2003 04 25 | 699 | 1.1− | 0.7− | 2006 01 07 | G96 | 0.6− | 0.4+ | 2006 02 20 | 703 | 0.3− | 1.2+ |
| 2003 04 25 | 699 | 0.2− | 0.3+ | 2006 01 07 | G96 | 0.4− | 0.5+ | 2006 02 20 | 703 | 0.2+ | 1.2+ |
| 2003 04 25 | 699 | 0.9+ | 0.4− | 2006 01 31 | 691 | 0.1− | 0.4+ | 2006 02 20 | 703 | 2.1− | 0.2+ |
| 2003 04 25 | 699 | 0.5+ | 0.5+ | 2006 01 31 | 691 | 0.8+ | 0.7+ | | | | |

**2006 BT$_{268}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 152.50434 | | | (2000.0) | | |
| $n$ | 0.26481726 | $\omega$ | 347.02313 | | +0.74753519 | −0.64956808 |
| $a$ | 2.4016250 | $\Omega$ | 54.36791 | | +0.62364511 | +0.61448992 |
| $e$ | 0.0687352 | $i$ | 9.82942 | | +0.22859991 | +0.44773144 |
| $P$ | 3.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 327 | 0.6− | 1.4− | 2002 01 14 | 644 | 0.4+ | 0.7+ | 2006 01 27 | 703 | 0.7+ | 0.1+ |
| 1997 12 04 | 327 | 0.1− | 0.6− | 2002 01 14 | 644 | 0.5+ | 0.7+ | 2006 01 27 | 703 | 1.7+ | 0.5− |
| 1997 12 04 | 327 | 0.4− | 0.8− | 2003 05 05 | 704 | 0.3+ | 1.2+ | 2006 01 27 | 703 | 0.5− | 0.7+ |
| 2001 12 14 | 704 | 1.2+ | 0.1− | 2003 05 05 | 704 | 0.6+ | 0.5+ | 2006 01 27 | 703 | 0.0 | 0.6+ |
| 2001 12 14 | 704 | 0.3+ | 0.4+ | 2003 05 05 | 704 | 0.1+ | 0.0 | 2006 02 04 | 703 | 0.4− | 0.2− |
| 2001 12 14 | 704 | 0.6+ | 0.3+ | 2003 05 05 | 704 | 0.6+ | 0.9+ | 2006 02 04 | 703 | 1.4− | 0.1− |
| 2001 12 14 | 704 | 0.7+ | 0.9+ | 2004 09 07 | 704 | 0.6− | 0.2+ | 2006 02 04 | 703 | 1.1− | 0.2+ |
| 2001 12 23 | 704 | 0.3+ | 0.1+ | 2004 09 07 | 704 | 0.2+ | 0.8+ | 2006 02 04 | 703 | 0.8− | 1.4− |
| 2001 12 23 | 704 | 0.2+ | 0.1− | 2004 09 07 | 704 | 0.1− | 0.1+ | 2006 03 06 | 703 | 0.8− | 1.1+ |
| 2001 12 23 | 704 | 0.4+ | 0.0 | 2004 09 21 | 704 | 0.5− | 0.6+ | 2006 03 06 | 703 | 0.6− | 1.6+ |
| 2001 12 23 | 704 | 0.4− | 0.2+ | 2004 09 21 | 704 | 0.5− | 0.6+ | 2006 03 06 | 703 | 0.7+ | 0.2+ |
| 2001 12 23 | 704 | 0.1+ | 1.2+ | 2004 09 21 | 704 | 0.2+ | 0.8+ | 2006 03 06 | 703 | 0.0 | 0.4− |
| 2002 01 14 | 644 | 0.4+ | 0.4+ | 2004 09 21 | 704 | 0.5− | 1.0+ | | | | |

**2006 BV$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.52431 | | | (2000.0) | | |
| $n$ | 0.18043401 | $\omega$ | 135.70532 | | +0.09307947 | −0.97975461 |
| $a$ | 3.1016333 | $\Omega$ | 308.14022 | | +0.83941153 | +0.17295943 |
| $e$ | 0.3090499 | $i$ | 13.02425 | | +0.53546661 | −0.10082627 |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 11 | 704 | 0.0 | 0.3+ | 2004 09 24 | 704 | 0.2+ | 0.1+ | 2006 01 31 | 703 | 0.4− | 0.5− |
| 2004 09 11 | 704 | 0.4+ | 0.7+ | 2004 09 24 | 704 | 0.1− | 0.1− | 2006 01 31 | 703 | 0.5+ | 0.2− |
| 2004 09 11 | 704 | 0.2+ | 0.3− | 2004 09 24 | 704 | 0.3+ | 0.4+ | 2006 02 07 | 703 | 0.8+ | 0.6− |
| 2004 09 11 | 704 | 0.4− | 1.8− | 2004 10 10 | 704 | 0.8− | 1.1+ | 2006 02 07 | 703 | 0.5− | 0.7+ |
| 2004 09 11 | 704 | 0.1+ | 0.7− | 2004 10 10 | 704 | 0.5− | 0.1+ | 2006 02 07 | 703 | 0.8− | 0.7+ |
| 2004 09 22 | 699 | 0.2+ | 0.0 | 2004 10 10 | 704 | 0.5− | 0.2− | 2006 02 07 | 703 | 0.9− | 1.4+ |
| 2004 09 22 | 699 | 0.2+ | 0.5− | 2004 10 10 | 704 | 0.8− | 0.2− | 2006 02 22 | 703 | 0.3− | 0.4+ |
| 2004 09 22 | 699 | 0.7+ | 0.2− | 2004 10 10 | 704 | 0.1+ | 0.7+ | 2006 02 22 | 703 | 1.1+ | 1.3− |
| 2004 09 22 | 699 | 0.9+ | 0.1− | 2006 01 31 | 703 | 0.4+ | 0.1− | 2006 02 22 | 703 | 0.6+ | 0.1+ |
| 2004 09 24 | 704 | 0.1− | 0.1+ | 2006 01 31 | 703 | 0.1− | 0.8− | 2006 02 22 | 703 | 0.7− | 0.4− |

**2006 BW$_{273}$ = 1998 ST$_{169}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 150.61944 | | | (2000.0) | | |
| $n$ | 0.17927018 | $\omega$ | 44.04935 | | +0.90926687 | −0.40717831 |
| $a$ | 3.1150428 | $\Omega$ | 339.49302 | | +0.27998109 | +0.75171046 |
| $e$ | 0.1622068 | $i$ | 14.25342 | | +0.30796811 | +0.51878436 |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 699 | 0.2− | 0.4− | 2006 01 23 | 691 | 0.3− | 0.4− | 2006 02 27 | G96 | 0.1+ | 0.1− |
| 1998 09 18 | 699 | 0.2− | 0.1+ | 2006 02 01 | 691 | 0.0 | 0.1+ | 2006 02 27 | G96 | 0.2+ | 0.1− |
| 1998 09 18 | 699 | 0.1− | 0.4− | 2006 02 01 | 691 | 0.0 | 0.1+ | 2006 02 27 | G96 | 0.2− | 0.1− |
| 1998 09 25 | 699 | 0.6− | 0.2− | 2006 02 01 | 691 | 0.3+ | 0.1+ | 2006 03 24 | G96 | 0.1− | 0.1− |
| 1998 09 25 | 699 | 0.7+ | 0.2− | 2006 02 20 | 691 | 0.2+ | 0.0 | 2006 03 24 | G96 | 0.2− | 0.3− |
| 1998 09 25 | 699 | 0.4+ | 1.1+ | 2006 02 20 | 691 | 0.1− | 0.1− | 2006 03 24 | G96 | 0.2− | 0.3+ |
| 2006 01 23 | 691 | 0.2+ | 0.1+ | 2006 02 20 | 691 | 0.1+ | 0.4+ | 2006 03 24 | G96 | 0.4− | 0.3+ |
| 2006 01 23 | 691 | 0.2+ | 0.3− | 2006 02 27 | G96 | 0.0 | 0.1− | | | | |

**2006 BX$_{273}$ = 2004 TH$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.16175 | | | (2000.0) | | |
| $n$ | 0.23155088 | $\omega$ | 107.76475 | | −0.89934592 | −0.43539758 |
| $a$ | 2.6264658 | $\Omega$ | 46.44618 | | +0.37729209 | −0.81909662 |
| $e$ | 0.1038943 | $i$ | 3.16974 | | +0.22096966 | −0.37350995 |
| $P$ | 4.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 644 | 0.3+ | 0.4+ | 2006 01 23 | 691 | 0.3+ | 0.0 | 2006 02 20 | 703 | 0.4+ | 0.2+ |
| 2002 04 14 | 644 | 0.2+ | 0.9+ | 2006 01 23 | 691 | 0.4+ | 0.1+ | 2006 02 20 | 703 | 0.1− | 1.0+ |
| 2002 04 14 | 644 | 0.2+ | 0.2+ | 2006 01 23 | 691 | 0.2+ | 0.3− | 2006 02 20 | 703 | 0.2− | 0.2− |
| 2004 10 11 | 691 | 0.3+ | 0.3+ | 2006 01 31 | 691 | 0.2+ | 0.2− | 2006 02 20 | 703 | 0.3− | 0.5− |
| 2004 10 11 | 691 | 0.1+ | 0.1+ | 2006 01 31 | 691 | 0.4+ | 0.2− | 2006 03 03 | 699 | 0.6+ | 0.6− |
| 2004 10 11 | 691 | 0.1+ | 0.0 | 2006 01 31 | 691 | 2.5− | 0.2+ | 2006 03 03 | 699 | 0.3− | 0.3+ |
| 2004 10 15 | 691 | 0.5− | 0.0 | 2006 02 04 | 691 | 0.6+ | 0.2+ | 2006 03 03 | 699 | 0.4+ | 1.0+ |
| 2004 10 15 | 691 | 0.0 | 0.1+ | 2006 02 04 | 691 | 0.0 | 0.3− | 2006 03 03 | 699 | 0.4+ | 0.8+ |
| 2004 10 15 | 691 | 0.2− | 0.1+ | 2006 02 04 | 691 | 0.2+ | 0.1− | | | | |

**2006 BY$_{273}$ = 2005 AT$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 98.61137 | | | (2000.0) | +0.33512067 | −0.94213746 |
| $n$ | 0.08152315 | $\omega$ | 80.38783 | | +0.84421787 | +0.30424136 |
| $a$ | 5.2676319 | $\Omega$ | 350.01998 | | +0.41831845 | +0.14076296 |
| $e$ | 0.0806460 | $i$ | 2.78983 | | | |
| $P$ | 12.09 | $H$ | 14.1 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2005 01 19 | 691 | 0.1− | 0.4− | 2006 02 04 | 691 | 0.5+ | 0.9+ |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2005 01 19 | 691 | 0.1− | 0.3− | 2006 03 23 | G96 | 0.2− | 0.2+ |
| 2001 09 23 | 291 | 0.6+ | 0.2+ | 2005 01 19 | 691 | 0.0 | 0.2− | 2006 03 23 | G96 | 0.6− | 0.5+ |
| 2001 09 23 | 291 | 0.8− | 0.1− | 2006 01 25 | 691 | 0.6+ | 0.3− | 2006 03 23 | G96 | 0.3+ | 0.2− |
| 2001 09 23 | 291 | 0.7− | 0.1+ | 2006 01 25 | 691 | 0.4+ | 0.3− | 2006 03 23 | G96 | 0.1− | 0.1− |
| 2001 10 21 | 691 | 0.3+ | 0.1+ | 2006 01 25 | 691 | 0.3+ | 0.4+ | 2006 04 07 | G96 | 0.2− | 0.5+ |
| 2001 10 21 | 691 | 0.0 | 0.6+ | 2006 01 31 | 691 | 0.1− | 0.1+ | 2006 04 07 | G96 | 0.4− | 0.0 |
| 2001 10 21 | 691 | 0.2+ | 0.0 | 2006 01 31 | 691 | 0.2− | 0.3+ | 2006 04 07 | G96 | 0.5− | 0.0 |
| 2005 01 15 | 691 | 0.0 | 0.0 | 2006 01 31 | 691 | 0.1+ | 0.2+ | 2006 04 07 | G96 | 0.7− | 0.3+ |
| 2005 01 15 | 691 | 0.1− | 0.0 | 2006 02 04 | 691 | 0.1− | 0.3+ | | | | |
| 2005 01 15 | 691 | 0.1+ | 0.1− | 2006 02 04 | 691 | 0.1− | 0.2− | | | | |

**2006 BZ$_{273}$ = 2001 YK$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 142.44169 | | | (2000.0) | +0.68056556 | −0.73243346 |
| $n$ | 0.27013643 | $\omega$ | 11.92631 | | +0.66944728 | +0.61091408 |
| $a$ | 2.3699942 | $\Omega$ | 35.19105 | | +0.29777653 | +0.30054154 |
| $e$ | 0.1789025 | $i$ | 1.91724 | | | |
| $P$ | 3.65 | $H$ | 17.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 06 | 691 | 0.4+ | 0.4+ | 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 02 04 | 691 | 0.1+ | 0.1+ |
| 1995 02 06 | 691 | 0.6+ | 1.0+ | 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 02 04 | 691 | 0.2+ | 0.3+ |
| 1995 02 06 | 691 | 0.1+ | 0.2+ | 2003 04 01 | 695 | 0.1+ | 0.4+ | 2006 02 20 | 691 | 0.3+ | 0.3+ |
| 1997 10 21 | 691 | 0.3− | 0.7+ | 2003 04 01 | 695 | 0.6+ | 0.8+ | 2006 02 20 | 691 | 0.3+ | 0.4+ |
| 1997 10 21 | 691 | 0.6− | 0.4+ | 2004 08 12 | 704 | 0.2− | 1.0+ | 2006 02 20 | 691 | (1.8− | 3.4−) |
| 1997 10 21 | 691 | 0.4− | 0.2+ | 2004 08 12 | 704 | 0.5+ | 0.5+ | 2006 02 24 | 691 | 0.0 | 0.2+ |
| 1999 03 21 | 645 | 0.1− | 0.3+ | 2004 08 12 | 704 | 0.6− | 1.4+ | 2006 02 24 | 691 | 0.1− | 0.2+ |
| 1999 03 21 | 645 | 0.1− | 0.3+ | 2004 08 21 | E12 | 0.2− | 0.8+ | 2006 02 24 | 691 | 0.1− | 0.5+ |
| 1999 04 09 | 691 | 0.2+ | 0.1− | 2004 08 21 | E12 | 0.6+ | 0.1− | 2006 02 27 | G96 | 0.3− | 0.1− |
| 1999 04 09 | 691 | 0.1+ | 0.9− | 2004 08 21 | E12 | 0.2− | 0.6+ | 2006 02 27 | G96 | 0.0 | 0.3− |
| 1999 04 09 | 691 | 0.6+ | 1.1− | 2004 08 21 | E12 | 0.3+ | 0.6+ | 2006 02 27 | G96 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.5+ | 1.2− | 2006 01 26 | 291 | 0.1+ | 0.3+ | 2006 03 24 | 691 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.5+ | 1.5− | 2006 01 26 | 291 | 0.2− | 0.5+ | 2006 03 24 | 691 | 0.2+ | 0.4+ |
| 2001 12 18 | 704 | 0.7+ | 0.6− | 2006 01 26 | 291 | 0.0 | 0.3+ | 2006 03 24 | 691 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.4+ | 0.5− | 2006 02 04 | 691 | 0.5+ | 0.0 | | | | |

**2006 BA$_{274}$ = 2004 RL$_{44}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 162.02865 | | | (2000.0) | +0.75988577 | −0.64905641 |
| $n$ | 0.27465442 | $\omega$ | 62.63804 | | +0.55767492 | +0.67938632 |
| $a$ | 2.3439319 | $\Omega$ | 337.77290 | | +0.33402440 | +0.34228644 |
| $e$ | 0.1607966 | $i$ | 5.46814 | | | |
| $P$ | 3.59 | $H$ | 17.7 | $G$ 0.15 | $U$ 5 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 08 | 704 | 1.0+ | 1.1− | 2004 09 09 | 699 | (0.2− | 3.0+) | 2006 02 21 | G96 | 0.2+ | 0.0 |
| 2004 09 08 | 704 | 0.7− | 0.5− | 2006 01 30 | 691 | 0.1+ | 0.2+ | 2006 02 21 | G96 | 0.1− | 0.6− |
| 2004 09 08 | 704 | 0.2− | 0.2− | 2006 01 30 | 691 | 0.3− | 0.4+ | 2006 03 03 | 691 | 0.1− | 0.2+ |
| 2004 09 09 | 704 | 0.7− | 0.1− | 2006 01 30 | 691 | 0.0 | 0.1+ | 2006 03 03 | 691 | 0.1− | 0.0 |
| 2004 09 09 | 704 | 0.1+ | 0.4+ | 2006 02 07 | 691 | 0.2+ | 0.3− | 2006 03 03 | 691 | 0.3− | 0.2+ |
| 2004 09 09 | 704 | 0.5+ | 0.5− | 2006 02 07 | 691 | 0.0 | 0.0 | 2006 04 02 | G96 | 0.5− | 0.2+ |
| 2004 09 09 | 699 | 0.2+ | 1.0+ | 2006 02 07 | 691 | 0.2− | 0.1+ | 2006 04 02 | G96 | 0.4+ | 0.1+ |
| 2004 09 09 | 699 | 0.7− | 0.7+ | 2006 02 21 | G96 | 0.2+ | 0.1− | 2006 04 02 | G96 | 0.2− | 0.5+ |
| 2004 09 09 | 699 | 0.6+ | 0.5+ | 2006 02 21 | G96 | 0.2+ | 0.5− | 2006 04 02 | G96 | 0.5+ | 0.4− |

**2006 BB$_{274}$ = 2003 KP$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.86036 | | | (2000.0) | −0.87198207 | −0.48941633 |
| $n$ | 0.27142181 | $\omega$ | 336.03201 | | +0.46585937 | −0.83644344 |
| $a$ | 2.3625059 | $\Omega$ | 174.62750 | | +0.15040717 | −0.24664554 |
| $e$ | 0.0483046 | $i$ | 6.68830 | | | |
| $P$ | 3.63 | $H$ | 16.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 30 | 704 | (1.5+ | 2.7−) | 2004 10 04 | 691 | 0.0 | 0.4+ | 2006 04 02 | G96 | 0.2− | 0.5+ |
| 2003 05 30 | 704 | (1.9+ | 2.5−) | 2006 01 31 | 703 | 0.9+ | 1.1+ | 2006 04 02 | G96 | 0.8− | 0.0 |
| 2003 05 30 | 704 | (1.6+ | 2.1−) | 2006 01 31 | 703 | 0.2+ | 1.4+ | 2006 04 02 | G96 | 0.5− | 0.1+ |
| 2003 05 30 | 704 | 1.6+ | 1.8− | 2006 01 31 | 703 | 0.6+ | 1.3+ | 2006 04 02 | G96 | 0.7− | 0.0 |
| 2003 06 04 | 691 | 0.3+ | 0.9+ | 2006 01 31 | 703 | 1.0+ | 0.8+ | 2006 04 03 | G96 | 0.5− | 0.2+ |
| 2003 06 04 | 691 | 0.3− | 0.1− | 2006 03 23 | 703 | 0.5+ | 1.4− | 2006 04 03 | G96 | 0.3− | 0.3+ |
| 2003 06 04 | 691 | 0.2− | 0.5+ | 2006 03 23 | 703 | 0.9− | 0.4− | 2006 04 03 | G96 | 0.2− | 0.2+ |
| 2004 10 04 | 691 | 0.1− | 0.5+ | 2006 03 23 | 703 | 0.1− | 0.3− | 2006 04 03 | G96 | 1.2+ | 0.6+ |
| 2004 10 04 | 691 | 0.3− | 0.3+ | 2006 03 23 | 703 | 0.6+ | 0.4− | | | | |

**2006 BE$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.29163 | | | (2000.0) | +0.45684474 | +0.88299821 |
| $n$ | 0.17648230 | $\omega$ | 178.09685 | | −0.81776265 | +0.46455138 |
| $a$ | 3.1477624 | $\Omega$ | 119.07258 | | −0.35008161 | +0.06712813 |
| $e$ | 0.0826568 | $i$ | 7.08069 | | | |
| $P$ | 5.58 | $H$ | 15.4 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 03 | 557 | 0.7− | 0.4+ | 2003 09 20 | 644 | 0.2− | 0.0 | 2006 02 01 | 691 | 0.2+ | 0.0 |
| 1997 08 03 | 557 | 0.6− | 0.5+ | 2003 09 20 | 644 | 0.4− | 0.3+ | 2006 02 01 | 691 | 0.4+ | 0.1+ |
| 1997 08 03 | 557 | 0.2+ | 1.0+ | 2003 09 20 | 644 | 0.4− | 0.6+ | 2006 02 09 | 644 | 0.3− | 0.0 |
| 1997 08 03 | 557 | 0.8+ | 0.2+ | 2004 12 13 | 691 | 0.2+ | 0.1− | 2006 02 09 | 644 | 0.1− | 0.3− |
| 2000 02 04 | 691 | 0.1+ | 0.3+ | 2004 12 13 | 691 | 0.0 | 0.1− | 2006 02 09 | 644 | 0.1− | 0.3+ |
| 2000 02 04 | 691 | 0.2+ | 0.5+ | 2004 12 13 | 691 | 0.0 | 0.2− | 2006 02 20 | 691 | 0.2+ | 0.0 |
| 2000 02 04 | 691 | 0.1+ | 0.2+ | 2006 01 23 | 691 | 0.3− | 0.4+ | 2006 02 20 | 691 | 0.1+ | 0.2− |
| 2000 02 12 | 691 | 0.2− | 0.5− | 2006 01 23 | 691 | 0.1− | 0.2+ | 2006 02 20 | 691 | 0.1− | 0.3− |
| 2000 02 12 | 691 | 0.1− | 0.1− | 2006 01 23 | 691 | 0.1+ | 0.3+ | | | | |
| 2000 02 12 | 691 | 0.1− | 0.2− | 2006 02 01 | 691 | 0.2− | 0.3+ | | | | |

**2006 BF$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 97.65413 | | | (2000.0) | +0.08150846 | −0.99661052 |
| $n$ | 0.18974754 | $\omega$ | 90.06914 | | +0.85316841 | +0.07554016 |
| $a$ | 2.9992910 | $\Omega$ | 355.21274 | | +0.51522815 | +0.03257529 |
| $e$ | 0.1060183 | $i$ | 7.66274 | | | |
| $P$ | 5.19 | $H$ | 15.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 13 | 691 | 0.2+ | 0.1+ | 2006 01 23 | 691 | 0.1+ | 0.2− | 2006 02 20 | 691 | 0.2+ | 0.4+ |
| 2001 04 13 | 691 | 0.1+ | 0.2+ | 2006 01 23 | 691 | 0.9− | 0.0 | 2006 02 20 | 703 | (2.5− | 1.3−) |
| 2001 04 13 | 691 | 0.6+ | 0.4− | 2006 02 01 | 691 | 0.3+ | 0.2− | 2006 02 20 | 703 | 1.2+ | 1.6− |
| 2001 04 16 | 645 | 0.1− | 0.0 | 2006 02 01 | 691 | 0.2+ | 0.1− | 2006 02 20 | 703 | 1.1− | 0.1+ |
| 2001 04 16 | 645 | 0.1− | 0.0 | 2006 02 01 | 691 | 0.1+ | 0.1− | 2006 02 20 | 703 | 1.2− | 0.1− |
| 2004 12 11 | 703 | 0.8− | 0.2− | 2006 02 09 | 644 | 0.1− | 0.1− | 2006 05 03 | G96 | 0.3+ | 0.1− |
| 2004 12 11 | 703 | 0.2+ | 0.5+ | 2006 02 09 | 644 | 0.0 | 0.3− | 2006 05 03 | G96 | 0.3+ | 0.2+ |
| 2004 12 11 | 703 | 0.4+ | 0.0 | 2006 02 09 | 644 | 0.1+ | 0.0 | 2006 05 03 | G96 | 0.2+ | 0.0 |
| 2004 12 11 | 703 | (3.0− | 1.2−) | 2006 02 20 | 691 | 0.2+ | 0.4+ | 2006 05 03 | G96 | 0.2+ | 0.1− |
| 2006 01 23 | 691 | 0.1− | 0.1− | 2006 02 20 | 691 | 0.1− | 0.4+ | | | | |

**2006 BG$_{274}$ = 2002 CV$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.09276 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25359772 | $\omega$ | 195.47568 | | −0.97839172 | | −0.20658050 |
| $a$ | 2.4719470 | $\Omega$ | 332.59774 | | +0.19162878 | | −0.89036748 |
| $e$ | 0.1295070 | $i$ | 1.07194 | | +0.07764051 | | −0.40567258 |
| $P$ | 3.89 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 30 | 691 | 0.2− | 0.9− | 2002 02 12 | 704 | 0.8+ | 0.9+ | 2006 01 23 | G96 | 0.3+ | 0.1− |
| 1998 01 30 | 691 | 0.4− | 0.1− | 2002 02 12 | 704 | 0.4+ | 1.1+ | 2006 01 23 | G96 | 0.1− | 0.8− |
| 1998 01 30 | 691 | 0.4− | 0.5− | 2002 02 13 | 644 | 0.2+ | 0.7+ | 2006 02 07 | G96 | 0.5+ | 0.3− |
| 2002 02 09 | 691 | 0.2+ | 0.1− | 2002 02 13 | 644 | 0.1− | 0.5+ | 2006 02 07 | G96 | 0.5− | 0.4+ |
| 2002 02 09 | 691 | 0.3+ | 0.5− | 2002 02 13 | 644 | 0.2+ | 0.4+ | 2006 02 07 | G96 | 0.4− | 0.5− |
| 2002 02 09 | 691 | 0.2+ | 0.3− | 2002 03 14 | 704 | 0.5− | 0.0 | 2006 02 07 | G96 | 0.3− | 0.1− |
| 2002 02 10 | 704 | 0.0 | 0.5+ | 2002 03 14 | 704 | 0.6− | 1.2+ | 2006 02 20 | G96 | 0.1− | 0.0 |
| 2002 02 10 | 704 | 0.1− | 0.3+ | 2002 03 14 | 704 | 0.7− | 0.9+ | 2006 02 20 | G96 | 0.5− | 0.6− |
| 2002 02 10 | 704 | 0.2− | 0.0 | 2002 03 14 | 704 | 0.4+ | 0.3+ | 2006 02 20 | G96 | 0.6− | 0.2+ |
| 2002 02 10 | 704 | 0.5+ | 0.7+ | 2002 03 14 | 704 | 0.5− | 0.7+ | 2006 02 20 | G96 | 0.2+ | 0.2+ |
| 2002 02 10 | 704 | 0.4− | 0.8+ | 2004 10 07 | 691 | 0.5− | 0.2+ | 2006 03 02 | 691 | 0.5− | 0.1− |
| 2002 02 12 | 704 | 1.1+ | 0.4+ | 2004 10 07 | 691 | 0.3+ | 0.1− | 2006 03 02 | 691 | 0.2+ | 0.1+ |
| 2002 02 12 | 704 | 1.1+ | 0.5+ | 2004 10 07 | 691 | 0.3+ | 0.2− | 2006 03 02 | 691 | 0.1− | 0.4+ |
| 2002 02 12 | 704 | 0.1− | 0.5+ | 2004 10 15 | 691 | 0.4− | 0.1+ | 2006 05 26 | G96 | 0.0 | 0.0 |
| 2002 02 12 | 704 | 0.7+ | 0.2+ | 2004 10 15 | 691 | 0.1+ | 0.3+ | 2006 05 26 | G96 | 0.4+ | 0.5− |
| 2002 02 12 | 704 | 0.1+ | 0.7+ | 2004 10 15 | 691 | 0.1− | 0.4+ | 2006 05 26 | G96 | 0.3+ | 0.2− |
| 2002 02 12 | 704 | 1.1+ | 0.4+ | 2006 01 23 | G96 | 0.0 | 0.1− | 2006 05 26 | G96 | 0.3+ | 0.6− |
| 2002 02 12 | 704 | 0.2− | 0.4− | 2006 01 23 | G96 | 0.1+ | 0.1− | | | | |

**2006 BH$_{274}$ = 1995 EK$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.82111 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17568601 | $\omega$ | 262.78001 | | +0.59640227 | | −0.80236323 |
| $a$ | 3.1572666 | $\Omega$ | 150.57000 | | +0.75351435 | | +0.54987502 |
| $e$ | 0.0550540 | $i$ | 2.65380 | | +0.27662331 | | +0.23205756 |
| $P$ | 5.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.3+ | 0.0 | 2004 11 10 | 691 | 0.3− | 0.5− | 2006 02 20 | G96 | 0.1− | 0.0 |
| 1995 03 02 | 691 | 0.5− | 0.2− | 2004 11 10 | 691 | 0.1− | 0.3+ | 2006 02 20 | G96 | 0.1− | 0.2+ |
| 1995 03 02 | 691 | 0.1+ | 0.4+ | 2004 11 10 | 691 | 0.4+ | 0.2+ | 2006 02 20 | G96 | 0.2+ | 0.1− |
| 1995 03 08 | 691 | 0.0 | 0.6− | 2006 01 23 | G96 | 0.2− | 0.1− | 2006 03 05 | G96 | 0.3+ | 0.3+ |
| 1995 03 08 | 691 | 0.4+ | 0.4+ | 2006 01 23 | G96 | 0.3+ | 0.3− | 2006 03 05 | G96 | 0.1+ | 0.3+ |
| 1995 03 08 | 691 | 0.1+ | 0.7+ | 2006 01 23 | G96 | 0.1+ | 0.4− | 2006 03 05 | G96 | 0.2− | 0.4+ |
| 2003 08 24 | 807 | 0.0 | 0.3− | 2006 01 23 | G96 | 0.6+ | 0.1+ | 2006 03 05 | G96 | 0.2+ | 0.5+ |
| 2003 08 24 | 807 | 0.0 | 0.3− | 2006 02 04 | 691 | 0.0 | 0.2− | 2006 03 24 | G96 | 0.5+ | 0.3+ |
| 2003 09 04 | 291 | 0.1− | 0.5+ | 2006 02 04 | 691 | 0.3− | 0.1− | 2006 03 24 | G96 | 0.6− | 0.2+ |
| 2003 09 04 | 291 | 0.2− | 0.3+ | 2006 02 04 | 691 | 0.1+ | 0.2+ | 2006 03 24 | G96 | 0.3+ | 0.2+ |
| 2003 09 04 | 291 | 0.1− | 0.6+ | 2006 02 20 | G96 | 0.1+ | 0.2+ | 2006 03 24 | G96 | 0.3− | 0.7+ |

**2006 BJ$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.98182 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23875109 | $\omega$ | 95.03569 | | +0.06707609 | | −0.99770812 |
| $a$ | 2.5733912 | $\Omega$ | 351.10356 | | +0.89108416 | | +0.06391827 |
| $e$ | 0.1492000 | $i$ | 3.30119 | | +0.44885389 | | +0.02220278 |
| $P$ | 4.13 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 01 25 | 691 | 0.1− | 0.1− | 2006 02 07 | 691 | 0.5+ | 0.4+ |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 01 25 | 691 | 0.3+ | 0.3− | 2006 02 07 | G96 | 0.5− | 0.2− |
| 2002 02 13 | 691 | 0.0 | 0.0 | 2006 01 25 | 691 | 0.1− | 0.0 | 2006 02 07 | G96 | 0.9− | 0.8− |
| 2002 02 13 | 691 | 0.3+ | 0.3+ | 2006 01 30 | 691 | 0.4− | 0.1− | 2006 02 07 | G96 | 0.1+ | 0.6− |
| 2002 02 13 | 691 | 0.1− | 0.2+ | 2006 01 30 | 691 | 0.2+ | 0.4+ | 2006 02 07 | G96 | 0.3− | 0.2+ |
| 2004 09 07 | 691 | 0.2− | 0.3+ | 2006 01 30 | 691 | 0.2+ | 0.4− | 2006 03 04 | 691 | 0.1+ | 0.0 |
| 2004 09 07 | 691 | 0.2− | 0.4+ | 2006 02 07 | 691 | 0.3+ | 0.2+ | 2006 03 04 | 691 | 0.1− | 0.1+ |
| 2004 09 07 | 691 | 0.3− | 0.5+ | 2006 02 07 | 691 | 0.1− | 0.3+ | 2006 03 04 | 691 | 0.3− | 0.1− |

**2006 BK$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.75428 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17295316 | $\omega$ | 27.21780 | | +0.98604118 | | −0.11627463 |
| $a$ | 3.1904385 | $\Omega$ | 338.44138 | | +0.01037032 | | +0.75726507 |
| $e$ | 0.1410779 | $i$ | 18.92504 | | +0.16617834 | | +0.64267397 |
| $P$ | 5.70 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 28 | 704 | 1.3− | 0.4+ | 2006 01 26 | 691 | 0.1+ | 0.0 | 2006 02 04 | 691 | 0.1− | 0.1+ |
| 2003 08 28 | 704 | 0.0 | 0.1− | 2006 01 26 | 691 | 0.5+ | 0.5+ | 2006 02 04 | 691 | 0.6+ | 0.1+ |
| 2003 08 28 | 704 | 0.8− | 1.5− | 2006 01 26 | G96 | 1.1− | 0.3− | 2006 02 21 | G96 | 0.7+ | 0.5− |
| 2003 08 28 | 704 | 0.2− | 0.1− | 2006 01 26 | G96 | 0.5− | 0.5− | 2006 02 21 | G96 | 0.4+ | 0.1+ |
| 2003 09 30 | 699 | 0.4− | 0.1+ | 2006 01 26 | G96 | 0.7− | 0.6− | 2006 02 21 | G96 | 0.0 | 0.4− |
| 2003 09 30 | 699 | 0.3− | 0.6− | 2006 01 26 | G96 | 0.1− | 0.8− | 2006 02 21 | G96 | 0.3− | 0.2− |
| 2003 09 30 | 699 | 0.3− | 0.8+ | 2006 01 26 | 291 | 0.3+ | 0.2+ | 2006 03 05 | 691 | 0.2+ | 0.2− |
| 2003 09 30 | 699 | 0.8− | 0.3+ | 2006 01 26 | 291 | 0.1− | 0.1− | 2006 03 05 | 691 | 0.0 | 0.0 |
| 2003 09 30 | 704 | 0.8+ | 0.5+ | 2006 01 26 | 291 | 0.1− | 0.1− | 2006 03 05 | 691 | 0.3− | 0.2− |
| 2003 09 30 | 704 | 0.2− | 0.4+ | 2006 01 26 | G96 | 0.3− | 0.4− | 2006 04 02 | G96 | 0.1− | 0.5+ |
| 2003 09 30 | 704 | 1.4+ | 0.3− | 2006 01 26 | G96 | 0.1+ | 0.3− | 2006 04 02 | G96 | 0.7− | 0.6+ |
| 2003 09 30 | 704 | 0.7+ | 0.7− | 2006 01 26 | G96 | 0.1+ | 0.2+ | 2006 04 02 | G96 | 0.0 | 0.6+ |
| 2003 09 30 | 704 | 1.2+ | 0.8+ | 2006 01 26 | G96 | 0.5− | 0.1+ | 2006 04 02 | G96 | 0.5− | 0.1− |
| 2006 01 26 | 691 | 0.0 | 0.0 | 2006 02 04 | 691 | 0.3− | 0.2+ | | | | |

**2006 BL$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.69582 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30796688 | $\omega$ | 175.36691 | | +0.60823763 | | +0.79014887 |
| $a$ | 2.1717011 | $\Omega$ | 132.07279 | | −0.73148820 | | +0.59494398 |
| $e$ | 0.1313519 | $i$ | 5.84365 | | −0.30817527 | | +0.14733101 |
| $P$ | 3.20 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 645 | 0.1+ | 0.1+ | 2004 10 20 | 703 | 0.4+ | 0.3− | 2006 02 25 | G96 | 0.1+ | 0.2− |
| 2003 03 23 | 645 | 0.1+ | 0.1+ | 2004 10 20 | 703 | 1.4+ | 0.6+ | 2006 02 25 | G96 | 0.0 | 0.1+ |
| 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 01 27 | G96 | 0.4− | 0.1− | 2006 02 25 | G96 | 0.0 | 0.0 |
| 2003 03 30 | 645 | 0.2− | 0.3− | 2006 01 27 | G96 | 0.4− | 0.6− | 2006 02 25 | G96 | 0.4+ | 0.1+ |
| 2004 09 08 | 704 | 1.5− | 0.8+ | 2006 01 27 | G96 | 0.4− | 0.3− | 2006 03 05 | 691 | 0.1+ | 0.7+ |
| 2004 09 08 | 704 | 0.0 | 0.1+ | 2006 01 27 | G96 | 0.4− | 0.0 | 2006 03 05 | 691 | 0.6− | 0.5+ |
| 2004 09 08 | 704 | 0.2+ | 0.7+ | 2006 02 04 | 691 | 0.0 | 0.1− | 2006 03 05 | 691 | 0.4+ | 0.2+ |
| 2004 10 20 | 703 | 0.1+ | 0.7− | 2006 02 04 | 691 | 0.4+ | 0.4− | | | | |
| 2004 10 20 | 703 | 0.6− | 0.9− | 2006 02 04 | 691 | 0.0 | 0.2− | | | | |

**2006 BM$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.47589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16936073 | $\omega$ | 257.28385 | | +0.52689813 | | −0.84917009 |
| $a$ | 3.2353969 | $\Omega$ | 160.79080 | | +0.81598989 | | +0.49359162 |
| $e$ | 0.0430044 | $i$ | 6.26344 | | +0.23777901 | | +0.18782299 |
| $P$ | 5.82 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 691 | 0.1− | 0.6− | 2006 01 30 | 691 | 0.1+ | 0.3+ | 2006 03 06 | G96 | 0.2− | 0.2+ |
| 2000 03 12 | 691 | 0.1+ | 0.7− | 2006 01 30 | 691 | 0.2− | 0.4+ | 2006 03 06 | G96 | 0.2− | 0.1− |
| 2000 03 12 | 691 | 0.5− | 0.8− | 2006 01 30 | 691 | 0.2+ | 0.4+ | 2006 03 06 | G96 | 0.3+ | 0.1− |
| 2003 09 29 | 691 | 0.0 | 0.1+ | 2006 02 20 | 691 | 0.3+ | 0.1+ | 2006 03 26 | 691 | 0.3− | 0.6− |
| 2003 09 29 | 691 | 0.0 | 0.2+ | 2006 02 20 | 691 | 0.2+ | 0.0 | 2006 03 26 | 691 | 0.2+ | 0.4+ |
| 2003 09 29 | 691 | 0.1− | 0.2+ | 2006 02 20 | 691 | 0.2− | 0.3+ | 2006 03 26 | 691 | 0.5+ | 0.1+ |
| 2004 12 14 | 599 | 0.1− | 0.1+ | 2006 03 03 | 691 | 0.1+ | 0.4+ | 2006 05 03 | G96 | 0.2+ | 0.5+ |
| 2004 12 14 | 599 | 0.2− | 0.1+ | 2006 03 03 | 691 | 0.5+ | 0.3+ | 2006 05 03 | G96 | 0.5− | 0.1+ |
| 2004 12 14 | 599 | 0.1− | 0.0 | 2006 03 03 | 691 | 0.2− | 0.4+ | 2006 05 03 | G96 | 0.3− | 0.2+ |
| 2004 12 14 | 599 | 0.3+ | 0.2− | 2006 03 06 | G96 | 0.2− | 0.2+ | 2006 05 03 | G96 | 1.1− | 0.1+ |

**2006 BN$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 282.94515 | | (2000.0) | | | |
| $n$ | 0.29053502 | $\omega$ | 348.83870 | | +0.63847243 | +0.76952859 |
| $a$ | 2.2577216 | $\Omega$ | 320.83727 | | −0.70449533 | +0.57734482 |
| $e$ | 0.1277359 | $i$ | 1.21290 | | −0.30990205 | +0.27294451 |
| $P$ | 3.39 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 691 | 0.3− | 0.1− | 2006 01 30 | 691 | 0.3− | 0.2+ | 2006 03 03 | 691 | 0.1− | 0.2+ |
| 2003 04 26 | 691 | 0.1+ | 0.0 | 2006 01 30 | 691 | 0.6+ | 0.0 | 2006 03 03 | 691 | 0.3− | 0.1− |
| 2003 04 26 | 691 | 0.1+ | 0.2− | 2006 02 21 | G96 | 1.0+ | 0.2− | 2006 03 08 | G96 | 0.2− | 0.4− |
| 2003 05 22 | 691 | 0.2− | 0.1− | 2006 02 21 | G96 | 0.8+ | 0.1− | 2006 03 08 | G96 | (2.6− | 0.1−) |
| 2003 05 22 | 691 | 0.2+ | 0.6+ | 2006 02 21 | G96 | 0.4− | 0.1− | 2006 03 08 | G96 | 0.0 | 0.2+ |
| 2003 05 22 | 691 | 0.2+ | 0.3− | 2006 02 21 | G96 | 0.1+ | 0.2+ | 2006 03 08 | G96 | 0.2− | 0.1+ |
| 2006 01 30 | 691 | 0.1− | 0.2− | 2006 03 03 | 691 | 0.0 | 0.2− | | | | |

**2006 BO$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.88659 | | (2000.0) | | | |
| $n$ | 0.26742125 | $\omega$ | 153.39527 | | +0.76385569 | +0.64515270 |
| $a$ | 2.3860092 | $\Omega$ | 166.38446 | | −0.60451317 | +0.72465664 |
| $e$ | 0.1539684 | $i$ | 4.23684 | | −0.22602722 | +0.24217916 |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 22 | 691 | 0.2− | 0.2+ | 2006 01 30 | 691 | 0.1+ | 0.4+ | 2006 03 06 | G96 | 0.1+ | 0.0 |
| 1996 06 22 | 691 | 0.7− | 1.2+ | 2006 01 30 | 691 | 0.5+ | 0.5+ | 2006 03 23 | G96 | 0.1+ | 0.3+ |
| 1996 06 22 | 691 | 0.5+ | 0.2+ | 2006 01 30 | 691 | 0.1− | 0.1+ | 2006 03 23 | G96 | 0.3− | 0.4+ |
| 2000 09 27 | 704 | 0.2− | 0.7+ | 2006 02 21 | G96 | 0.4− | 0.3+ | 2006 03 23 | G96 | 0.4+ | 0.2+ |
| 2000 09 27 | 704 | 0.6− | 1.7+ | 2006 02 21 | G96 | 0.2− | 0.3+ | 2006 03 23 | G96 | 0.5+ | 0.5+ |
| 2000 09 27 | 704 | 0.1+ | 0.8− | 2006 02 21 | G96 | 0.1+ | 0.2+ | 2006 03 24 | G96 | 0.8− | 0.0 |
| 2000 09 27 | 704 | 0.1− | 0.1+ | 2006 02 21 | G96 | 0.3+ | 0.4− | 2006 03 24 | G96 | 0.3− | 0.0 |
| 2003 06 04 | 691 | 0.2− | 0.4− | 2006 03 06 | G96 | 0.3+ | 0.4+ | 2006 03 24 | G96 | 0.2+ | 0.4+ |
| 2003 06 04 | 691 | 0.1+ | 0.4− | 2006 03 06 | G96 | 0.1− | 0.1+ | 2006 03 24 | G96 | 0.6+ | 0.3+ |
| 2003 06 04 | 691 | 0.1+ | 0.1+ | 2006 03 06 | G96 | 0.2− | 0.2+ | | | | |

**2006 BP$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 155.18909 | | (2000.0) | | | |
| $n$ | 0.24263972 | $\omega$ | 277.26114 | | +0.75796328 | −0.65129956 |
| $a$ | 2.5458225 | $\Omega$ | 123.38596 | | +0.61422099 | +0.69401496 |
| $e$ | 0.1622908 | $i$ | 2.47539 | | +0.21960018 | +0.30684217 |
| $P$ | 4.06 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 20 | 291 | 0.1− | 0.5+ | 2004 10 07 | 699 | 0.3+ | 0.9+ | 2006 02 20 | 691 | 0.4+ | 0.8− |
| 2002 02 20 | 291 | 0.1+ | 0.2+ | 2004 11 05 | 691 | 0.1− | 0.2+ | 2006 03 02 | 691 | 0.0 | 0.2− |
| 2002 02 20 | 291 | 0.1+ | 0.1− | 2004 11 05 | 691 | 0.2+ | 0.1− | 2006 03 02 | 691 | 0.9− | 0.1+ |
| 2002 03 09 | 691 | 0.4+ | 0.0 | 2004 11 05 | 691 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.4− | 0.4+ |
| 2002 03 09 | 691 | 0.1+ | 0.3+ | 2006 01 31 | 691 | 0.1+ | 0.2− | 2006 03 29 | 691 | 0.1+ | 0.0 |
| 2002 03 09 | 691 | 0.2− | 0.1− | 2006 01 31 | 691 | 0.3+ | 0.4+ | 2006 03 29 | 691 | 0.4+ | 0.2− |
| 2004 10 07 | 699 | (2.9+ | 0.2+) | 2006 01 31 | 691 | 0.5− | 0.4+ | 2006 03 29 | 691 | 0.2+ | 0.0 |
| 2004 10 07 | 699 | 0.3− | 0.8− | 2006 02 20 | 691 | 0.2− | 0.4− | | | | |
| 2004 10 07 | 699 | 0.5− | 0.3− | 2006 02 20 | 691 | 0.1+ | 0.5− | | | | |

**2006 BQ$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.26516 | | (2000.0) | | | |
| $n$ | 0.17961728 | $\omega$ | 242.40836 | | −0.64658425 | +0.76204317 |
| $a$ | 3.1110284 | $\Omega$ | 347.12363 | | −0.63296866 | −0.56148625 |
| $e$ | 0.1289150 | $i$ | 9.01387 | | −0.42576929 | −0.32252658 |
| $P$ | 5.49 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 699 | 0.7+ | 0.6− | 2006 02 04 | 704 | 1.2+ | 0.2− | 2006 05 03 | G96 | 0.6− | 0.5− |
| 2001 03 29 | 699 | 0.3− | 0.1+ | 2006 02 04 | 691 | 0.1− | 0.1+ | 2006 05 03 | G96 | 0.2− | 0.1− |
| 2001 03 29 | 699 | 0.0 | 1.3+ | 2006 02 04 | 704 | 0.3+ | 1.0+ | 2006 05 24 | G96 | 0.0 | 0.1− |
| 2001 03 29 | 699 | 0.0 | 0.2− | 2006 02 04 | 704 | 0.3+ | 0.1− | 2006 05 24 | G96 | 0.5+ | 0.1− |
| 2003 10 01 | 691 | 0.0 | 0.1− | 2006 02 04 | 691 | 0.2− | 0.2+ | 2006 05 24 | G96 | 0.1+ | 0.1− |
| 2003 10 01 | 691 | 0.0 | 0.0 | 2006 02 04 | 704 | 0.3+ | 0.1+ | 2006 05 24 | G96 | 0.0 | 0.2− |
| 2003 10 01 | 691 | 0.0 | 0.1+ | 2006 02 20 | 703 | 0.4+ | 0.1+ | 2006 05 25 | G96 | 0.1− | 0.2− |
| 2006 01 23 | 691 | 0.1+ | 0.2+ | 2006 02 20 | 703 | 0.4− | 1.1− | 2006 05 25 | G96 | 0.2− | 0.1+ |
| 2006 01 23 | 691 | 0.1+ | 0.1+ | 2006 02 20 | 703 | 0.1+ | 0.2− | 2006 05 25 | G96 | 0.2− | 0.6− |
| 2006 01 23 | 691 | 0.2+ | 0.1− | 2006 02 20 | 703 | 0.5− | 0.3− | 2006 05 25 | G96 | 1.3− | 0.3+ |
| 2006 02 04 | 704 | 1.0+ | 0.1− | 2006 05 03 | G96 | 0.1− | 0.0 | | | | |
| 2006 02 04 | 691 | 0.4− | 0.1− | 2006 05 03 | G96 | 0.4− | 0.2− | | | | |

**2006 BT$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.25391 | | (2000.0) | | | |
| $n$ | 0.17346113 | $\omega$ | 12.79367 | | −0.22724466 | −0.97284946 |
| $a$ | 3.1842068 | $\Omega$ | 90.35378 | | +0.88957065 | −0.22569719 |
| $e$ | 0.1167463 | $i$ | 2.51390 | | +0.39626244 | −0.05123183 |
| $P$ | 5.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 11 | 695 | 0.4+ | 0.2+ | 2006 02 01 | 691 | 0.3+ | 0.2+ | 2006 02 27 | G96 | 0.1+ | 0.0 |
| 2004 10 11 | 695 | 0.4+ | 0.2+ | 2006 02 01 | 691 | 0.0 | 0.4− | 2006 02 27 | G96 | 0.4− | 0.0 |
| 2004 11 10 | 691 | 0.1+ | 0.1+ | 2006 02 03 | G96 | 0.4+ | 0.3+ | 2006 02 27 | G96 | 0.1− | 0.1+ |
| 2004 11 10 | 691 | 0.5− | 0.2− | 2006 02 03 | G96 | 0.7− | 0.0 | 2006 02 27 | G96 | 0.0 | 0.2+ |
| 2004 11 10 | 691 | 0.3+ | 0.1+ | 2006 02 03 | G96 | 1.4− | 0.1− | 2006 02 27 | G96 | 0.1− | 0.5+ |
| 2006 01 23 | 691 | 0.1− | 0.1− | 2006 02 03 | G96 | 1.6− | 0.4− | 2006 02 27 | G96 | 0.3− | 0.2+ |
| 2006 01 23 | 691 | 0.3+ | 0.2+ | 2006 02 20 | 691 | 0.4− | 0.5+ | 2006 02 27 | G96 | 0.1+ | 0.1+ |
| 2006 01 23 | 691 | 0.1+ | 0.3+ | 2006 02 20 | 691 | 0.7+ | 0.9− | 2006 02 27 | G96 | 0.4+ | 0.9+ |
| 2006 02 01 | 691 | 0.1− | 0.3+ | 2006 02 20 | 691 | 0.1+ | 0.6− | | | | |

**2006 BV$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 63.30903 | | (2000.0) | | | |
| $n$ | 0.23206338 | $\omega$ | 170.45742 | | −0.86845396 | −0.49562303 |
| $a$ | 2.6225975 | $\Omega$ | 339.81801 | | +0.45252308 | −0.78252360 |
| $e$ | 0.1173290 | $i$ | 2.00378 | | +0.20251068 | −0.37684828 |
| $P$ | 4.25 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.5− | 0.3+ | 2006 01 23 | G96 | 0.1+ | 0.0 | 2006 02 24 | 691 | 0.2− | 0.2+ |
| 1995 09 18 | 691 | 0.0 | 0.5+ | 2006 02 07 | G96 | 0.9+ | 0.2+ | 2006 02 24 | 691 | 0.1− | 0.0 |
| 1995 09 18 | 691 | 0.1+ | 0.3+ | 2006 02 07 | G96 | 0.7− | 0.4− | 2006 03 06 | 691 | 0.1+ | 0.0 |
| 2004 10 13 | 691 | 0.2− | 0.0 | 2006 02 07 | G96 | 0.5− | 0.7+ | 2006 03 06 | 691 | 0.0 | 0.0 |
| 2004 10 13 | 691 | 0.1+ | 0.2− | 2006 02 07 | G96 | 0.0 | 0.5− | 2006 03 06 | 691 | 0.2+ | 0.0 |
| 2004 10 13 | 691 | 0.1+ | 0.0 | 2006 02 24 | 691 | 0.3− | 0.4+ | 2006 03 21 | G96 | 0.1+ | 0.1− |
| 2006 01 23 | G96 | 0.0 | 0.0 | 2006 02 24 | 691 | 0.0 | 0.0 | 2006 03 21 | G96 | 0.5− | 0.3− |
| 2006 01 23 | G96 | 0.1− | 0.2+ | 2006 02 24 | 691 | 0.1− | 0.1+ | 2006 03 21 | G96 | 0.3− | 0.3− |
| 2006 01 23 | G96 | 0.3+ | 0.3− | 2006 02 24 | 691 | 1.0+ | 0.4+ | 2006 03 21 | G96 | 0.2− | 0.4− |

**2006 BW$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.78858 | | (2000.0) | | | |
| $n$ | 0.18063510 | $\omega$ | 325.86291 | | +0.67697497 | +0.73467590 |
| $a$ | 3.0993309 | $\Omega$ | 346.55954 | | −0.62565126 | +0.54278109 |
| $e$ | 0.1798632 | $i$ | 10.96947 | | −0.38764080 | +0.40698896 |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.4− | 0.2− | 2003 11 14 | 644 | 0.1− | 1.0+ | 2006 03 25 | 691 | 0.0 | 0.4− |
| 2002 07 16 | 644 | 0.1+ | 0.8+ | 2006 01 23 | G96 | 0.2− | 0.2− | 2006 03 25 | 691 | 0.2+ | 0.1+ |
| 2002 07 16 | 644 | 0.1+ | 0.1− | 2006 01 23 | G96 | 0.0 | 0.1− | 2006 03 25 | G96 | 0.1− | 0.1− |
| 2002 07 16 | 644 | 0.2− | 0.3− | 2006 01 23 | G96 | 0.4+ | 0.7− | 2006 03 25 | G96 | 0.3− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.3+ | 0.5+ | 2006 01 23 | G96 | 0.0 | 0.3− | 2006 03 25 | G96 | 0.1− | 0.4+ |
| 2002 07 16 | 644 | 0.0 | 0.2− | 2006 02 07 | G96 | 0.5− | 0.1− | 2006 03 25 | G96 | 0.4− | 0.1+ |
| 2002 07 16 | 644 | 0.2− | 0.2− | 2006 02 07 | G96 | 0.6− | 0.3− | 2006 04 02 | 691 | 0.4− | 0.2+ |
| 2002 07 16 | 644 | 0.0 | 0.8+ | 2006 02 07 | G96 | 0.2− | 0.0 | 2006 04 02 | 691 | 0.0 | 0.4+ |
| 2002 07 16 | 644 | 0.3+ | 0.3− | 2006 02 07 | G96 | 0.2− | 0.7+ | 2006 04 02 | 691 | 0.2+ | 0.1− |
| 2002 07 27 | 644 | 0.1+ | 0.1− | 2006 02 20 | G96 | 0.2− | 0.2− | 2006 04 02 | 691 | 0.0 | 0.2+ |
| 2002 07 27 | 644 | 0.0 | 0.2− | 2006 02 20 | G96 | 0.2+ | 0.1+ | 2006 04 02 | 691 | 0.2− | 0.3+ |
| 2002 07 27 | 644 | 0.1+ | 0.2− | 2006 02 20 | G96 | 0.8+ | 0.1+ | 2006 04 02 | 691 | 0.1+ | 0.2+ |
| 2002 08 13 | 644 | 0.2− | 0.9+ | 2006 02 20 | G96 | 0.2− | 0.2+ | 2006 04 02 | G96 | 0.6− | 0.2+ |
| 2002 08 13 | 644 | 0.3− | 0.6+ | 2006 03 02 | 691 | 0.1+ | 0.5+ | 2006 04 02 | G96 | 0.3− | 0.0 |
| 2002 08 13 | 644 | 0.5− | 0.7+ | 2006 03 02 | 691 | 0.3+ | 0.2+ | 2006 04 02 | G96 | 0.5− | 0.1+ |
| 2003 11 14 | 644 | 0.4− | 0.5+ | 2006 03 02 | 691 | 1.3+ | 0.4− | 2006 04 02 | G96 | 0.5− | 0.1+ |
| 2003 11 14 | 644 | 0.2− | 0.6+ | 2006 03 25 | 691 | 0.4− | 0.6− | | | | |

**2006 BE$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.82398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23916946 | $\omega$ | 119.85936 | | −0.30892258 | | −0.94770789 |
| $a$ | 2.5703893 | $\Omega$ | 347.34421 | | +0.69655729 | | −0.16809756 |
| $e$ | 0.1487715 | $i$ | 21.44539 | | +0.64759152 | | −0.27128024 |
| $P$ | 4.12 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 23 | 704 | 0.4+ | 0.7+ | 2004 10 23 | 704 | 1.2− | 0.4+ | 2006 02 25 | 691 | 0.1+ | 0.2+ |
| 2004 09 23 | 704 | 0.0 | 0.2+ | 2004 10 23 | 704 | 1.3− | 0.1+ | 2006 02 25 | 691 | 0.1− | 0.0 |
| 2004 09 23 | 704 | 0.9− | 0.2− | 2006 01 26 | G96 | 0.2− | 0.3− | 2006 03 05 | 699 | 0.2− | 0.5− |
| 2004 09 23 | 704 | 0.2+ | 0.2+ | 2006 01 26 | G96 | 0.5− | 0.3− | 2006 03 05 | 699 | 0.2+ | 0.5+ |
| 2004 10 16 | 704 | 0.1− | 0.1+ | 2006 01 26 | G96 | 0.6− | 0.4− | 2006 03 05 | 699 | 0.1+ | 0.8− |
| 2004 10 16 | 704 | 0.0 | 0.2− | 2006 01 26 | G96 | 0.3− | 0.1− | 2006 03 05 | 699 | 0.9+ | 0.6+ |
| 2004 10 16 | 704 | 0.1+ | 0.5− | 2006 02 07 | 703 | (0.7− | 1.9+) | 2006 03 25 | 644 | 0.4+ | 0.0 |
| 2004 10 16 | 704 | 0.9+ | 0.4− | 2006 02 07 | 703 | (2.2− | 0.8+) | 2006 03 25 | 644 | 0.0 | 0.2− |
| 2004 10 16 | 704 | 0.7+ | 0.5− | 2006 02 07 | 703 | (0.4+ | 1.9+) | 2006 03 25 | 644 | 0.0 | 0.4− |
| 2004 10 23 | 704 | 1.0+ | 0.4+ | 2006 02 07 | 703 | 0.3+ | 0.7+ | | | | |
| 2004 10 23 | 704 | 0.0 | 0.1+ | 2006 02 25 | 691 | 0.0 | 0.0 | | | | |

**2006 BF$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.02815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30227301 | $\omega$ | 249.26610 | | +0.39291850 | | −0.91957090 |
| $a$ | 2.1988881 | $\Omega$ | 177.59461 | | +0.86121422 | | +0.36718103 |
| $e$ | 0.0379575 | $i$ | 2.86826 | | +0.32237420 | | +0.13988370 |
| $P$ | 3.26 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4+ | 0.0 | 2006 01 27 | 291 | 0.2+ | 0.2+ | 2006 03 05 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.8+ | 0.8+ | 2006 02 04 | G96 | 0.4− | 0.5− | 2006 03 05 | 691 | 0.1− | 0.2− |
| 2001 10 20 | 704 | 0.9+ | 0.5− | 2006 02 04 | G96 | 0.3− | 0.4− | 2006 03 05 | 691 | 0.3− | 0.1− |
| 2001 10 26 | 691 | 0.1− | 0.2− | 2006 02 04 | G96 | 1.3− | 0.6− | 2006 03 24 | 291 | 0.4+ | 0.1+ |
| 2001 10 26 | 691 | 0.2+ | 0.1+ | 2006 02 04 | G96 | 0.2− | 0.7− | 2006 03 24 | 291 | 0.2+ | 0.3+ |
| 2001 10 26 | 691 | 0.5− | 0.1+ | 2006 03 03 | 691 | (3.4+ | 0.1+) | 2006 03 24 | 291 | 0.3− | 0.1+ |
| 2006 01 27 | 291 | 0.3+ | 0.1− | 2006 03 03 | 691 | 0.1− | 0.2+ | | | | |
| 2006 01 27 | 291 | 0.2+ | 0.2+ | 2006 03 03 | 691 | 0.2+ | 0.2− | | | | |

**2006 BG$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.70240 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17932399 | $\omega$ | 212.13664 | | +0.96832419 | | −0.24307221 |
| $a$ | 3.1144196 | $\Omega$ | 161.66970 | | +0.24967925 | | +0.93989313 |
| $e$ | 0.0955087 | $i$ | 10.46681 | | +0.00292247 | | +0.23982663 |
| $P$ | 5.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 15 | 699 | 0.3− | 1.1− | 2006 01 28 | G96 | 1.0− | 0.3− | 2006 03 03 | 691 | 0.0 | 0.0 |
| 2003 09 15 | 699 | 0.0 | 0.7− | 2006 01 28 | G96 | 0.2− | 0.7+ | 2006 03 03 | 691 | 0.4+ | 0.0 |
| 2003 09 15 | 699 | 0.3+ | 0.4+ | 2006 02 07 | 691 | 0.5+ | 0.1+ | 2006 03 06 | G96 | 0.2− | 0.3− |
| 2003 09 15 | 699 | 0.1+ | 0.9+ | 2006 02 07 | 691 | 0.2+ | 0.0 | 2006 03 06 | G96 | 0.6− | 0.0 |
| 2003 09 22 | 699 | 0.6− | 0.3− | 2006 02 07 | 691 | 0.2+ | 0.0 | 2006 03 06 | G96 | 0.6− | 0.0 |
| 2003 09 22 | 699 | 0.8+ | 0.3+ | 2006 02 21 | G96 | 0.7− | 0.0 | 2006 03 06 | G96 | 0.1− | 0.3− |
| 2003 09 22 | 699 | 0.0 | 0.5− | 2006 02 21 | G96 | 0.2− | 0.0 | 2006 03 06 | G96 | 0.1− | 0.1− |
| 2003 09 22 | 699 | 0.2− | 0.9+ | 2006 02 21 | G96 | 0.7− | 0.1− | 2006 03 06 | G96 | 0.5− | 0.1+ |
| 2006 01 28 | G96 | 0.7− | 0.0 | 2006 02 21 | G96 | 0.0 | 0.1+ | 2006 03 06 | G96 | 0.3− | 0.1+ |
| 2006 01 28 | G96 | 0.6− | 0.5− | 2006 03 03 | 691 | 0.3+ | 0.1− | | | | |

**2006 BJ$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.91131 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27434725 | $\omega$ | 52.78230 | | −0.79918077 | | +0.60033684 |
| $a$ | 2.3456811 | $\Omega$ | 164.04017 | | −0.58033256 | | −0.75756948 |
| $e$ | 0.0538239 | $i$ | 6.28388 | | −0.15660209 | | −0.25628921 |
| $P$ | 3.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 25 | 691 | 0.4+ | 0.7+ | 2006 01 30 | 703 | 2.0− | 0.4− | 2006 03 25 | G96 | 0.3− | 0.0 |
| 2003 05 25 | 691 | 0.1+ | 0.4− | 2006 01 30 | 703 | 0.5+ | 0.8− | 2006 03 25 | G96 | 0.2− | 0.6− |
| 2003 05 25 | 691 | 0.4− | 0.3+ | 2006 02 02 | 691 | 0.2+ | 0.2− | 2006 03 25 | G96 | 0.5− | 0.4− |
| 2004 10 08 | 704 | (1.4− | 2.7+) | 2006 02 02 | 691 | 0.2+ | 0.1+ | 2006 03 25 | G96 | 0.4− | 0.3− |
| 2004 10 08 | 704 | 0.9− | 1.2+ | 2006 02 02 | 691 | 0.1+ | 0.2+ | 2006 04 20 | G96 | 0.1− | 0.2− |
| 2004 10 08 | 704 | 0.2− | 1.7+ | 2006 02 21 | 699 | (2.5+ | 0.6+) | 2006 04 20 | G96 | 0.0 | 0.1− |
| 2004 10 08 | 704 | (1.9− | 2.8+) | 2006 02 21 | 699 | 1.3+ | 0.1+ | 2006 04 20 | G96 | 0.6− | 0.3+ |
| 2006 01 30 | 703 | 0.1− | 1.5+ | 2006 02 21 | 699 | 0.8+ | 0.3− | 2006 04 20 | G96 | 0.8− | 0.4− |
| 2006 01 30 | 703 | 0.3+ | 1.2+ | 2006 02 21 | 699 | 0.2+ | 1.5+ | | | | |

**2006 BM$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.21695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26430258 | $\omega$ | 241.21318 | | −0.09164705 | | +0.99561330 |
| $a$ | 2.4047418 | $\Omega$ | 23.55086 | | −0.89639530 | | −0.07424443 |
| $e$ | 0.1695688 | $i$ | 2.70268 | | −0.43367762 | | −0.05693784 |
| $P$ | 3.73 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 695 | 0.2+ | 0.2+ | 2006 03 02 | G96 | 0.1− | 0.1− | 2006 04 07 | G96 | 0.0 | 0.0 |
| 2002 02 07 | 695 | 0.1+ | 0.4+ | 2006 03 02 | G96 | 0.0 | 0.1+ | 2006 04 07 | G96 | 0.1− | 0.1− |
| 2003 09 04 | 691 | 0.1− | 0.1+ | 2006 03 02 | G96 | 0.1+ | 0.3+ | 2006 04 07 | G96 | 0.1+ | 0.1− |
| 2003 09 04 | 691 | 0.1− | 0.0 | 2006 03 02 | G96 | 0.2+ | 0.2+ | 2006 05 05 | G96 | 0.2+ | 0.2− |
| 2003 09 04 | 691 | 0.0 | 0.1+ | 2006 03 24 | G96 | 0.2− | 0.2+ | 2006 05 05 | G96 | 0.7− | 0.2+ |
| 2006 01 31 | G96 | 0.2− | 0.0 | 2006 03 24 | G96 | 0.1− | 0.1− | 2006 05 05 | G96 | 0.2+ | 0.2− |
| 2006 01 31 | G96 | 0.5+ | 0.1+ | 2006 03 24 | G96 | 0.2+ | 0.1+ | 2006 05 05 | G96 | 0.0 | 0.0 |
| 2006 01 31 | G96 | 0.7+ | 0.5+ | 2006 03 24 | G96 | 0.2− | 0.1+ | | | | |
| 2006 01 31 | G96 | 0.3+ | 0.1+ | 2006 04 07 | G96 | 0.2− | 0.1− | | | | |

**2006 CV**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.20452 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.80396078 | $\omega$ | 284.56449 | | −0.22876109 | | +0.95849779 |
| $a$ | 1.1454588 | $\Omega$ | 330.47843 | | −0.70592956 | | −0.28368686 |
| $e$ | 0.3815662 | $i$ | 20.20024 | | −0.67032217 | | −0.02835063 |
| $P$ | 1.23 | $H$ | 19.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 02 03 | 703 | 0.0 | 0.4+ | 2006 02 04 | 734 | 0.2− | 0.2− | 2006 02 18 | F65 | 0.1+ | 0.0 |
| 2006 02 03 | 703 | 0.2− | 0.2− | 2006 02 04 | 673 | 0.1− | 0.0 | 2006 02 20 | 932 | 0.2+ | 0.3− |
| 2006 02 03 | 703 | 0.3+ | 0.3+ | 2006 02 04 | 673 | 0.2+ | 0.2+ | 2006 02 20 | 932 | 0.2+ | 0.3− |
| 2006 02 03 | 703 | 1.1+ | 0.6+ | 2006 02 04 | 673 | 0.3+ | 0.1+ | 2006 02 20 | 932 | 0.1− | 0.4− |
| 2006 02 03 | 703 | 0.0 | 0.5+ | 2006 02 04 | 673 | 0.2+ | 0.1+ | 2006 02 20 | A13 | (2.2− | 1.6−) |
| 2006 02 03 | 703 | 0.3− | 0.5+ | 2006 02 04 | 854 | 0.4− | 0.1− | 2006 02 20 | A13 | (2.1− | 1.7−) |
| 2006 02 03 | 703 | 0.6− | 0.1− | 2006 02 04 | 854 | 0.0 | 0.1+ | 2006 02 20 | A13 | (2.2− | 1.8−) |
| 2006 02 03 | 703 | 0.1+ | 0.8+ | 2006 02 04 | 854 | 0.1+ | 0.2− | 2006 02 26 | 932 | 0.1+ | 0.0 |
| 2006 02 03 | G96 | 0.1− | 0.3+ | 2006 02 04 | 565 | 0.8− | 0.4+ | 2006 02 26 | 932 | 0.2+ | 0.1− |
| 2006 02 03 | G96 | 0.2− | 0.1+ | 2006 02 04 | 565 | (1.8+ | 1.4+) | 2006 02 27 | 704 | 1.4+ | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 02 03 | G96 | 0.1+ | 0.4+ | 2006 02 04 | 565 | 0.3− | 0.6+ | 2006 02 27 | 704 | 0.2+ | 0.4+ | | |
| 2006 02 03 | G96 | 0.1+ | 0.6+ | 2006 02 04 | 565 | (1.6− | 1.2+) | 2006 02 27 | 704 | 0.0 | 0.3+ | | |
| 2006 02 03 | G96 | 0.1+ | 0.3+ | 2006 02 04 | 565 | (2.6− | 2.4+) | 2006 02 27 | 704 | 0.7+ | 0.9+ | | |
| 2006 02 03 | G96 | 0.4+ | 0.6+ | 2006 02 05 | 941 | 0.4− | 0.3− | 2006 02 27 | 198 | 0.2+ | 0.1− | | |
| 2006 02 03 | G96 | (0.3− | 1.5+) | 2006 02 05 | 941 | 0.3− | 0.2− | 2006 02 27 | 198 | 0.2+ | 0.2+ | | |
| 2006 02 03 | G96 | 0.7+ | 0.4+ | 2006 02 05 | 941 | 0.1+ | 0.1− | 2006 02 27 | 198 | 0.3+ | 0.1− | | |
| 2006 02 03 | 703 | 0.4+ | 0.6+ | 2006 02 05 | 941 | 0.4+ | 0.3− | 2006 02 27 | 198 | 0.5+ | 0.5− | | |
| 2006 02 03 | 703 | (0.2− | 1.7+) | 2006 02 06 | A53 | 0.5+ | 0.0 | 2006 02 27 | 198 | 0.5+ | 1.0− | | |
| 2006 02 03 | 130 | 0.5− | 0.5− | 2006 02 06 | A53 | 0.2+ | 0.4+ | 2006 03 01 | 198 | 0.2+ | 0.6+ | | |
| 2006 02 03 | 130 | 0.1− | 0.1− | 2006 02 06 | A53 | 0.1− | 0.0 | 2006 03 01 | 198 | 0.2+ | 0.6+ | | |
| 2006 02 03 | 130 | 0.0 | 0.0 | 2006 02 08 | 704 | 0.3+ | 0.3− | 2006 03 01 | 198 | 0.1+ | 0.4+ | | |
| 2006 02 03 | 130 | 0.2+ | 0.4− | 2006 02 08 | 704 | 0.4+ | 0.1+ | 2006 03 01 | 198 | 0.3+ | 0.2+ | | |
| 2006 02 03 | 595 | 0.3− | 0.3+ | 2006 02 08 | 704 | 0.7+ | 0.4+ | 2006 03 01 | 204 | 0.0 | 0.1+ | | |
| 2006 02 03 | 595 | 0.3− | 0.1+ | 2006 02 08 | 704 | 1.2+ | 0.2− | 2006 03 01 | 204 | 0.1+ | 0.0 | | |
| 2006 02 03 | 595 | 0.2− | 0.2+ | 2006 02 08 | 704 | 0.3+ | 0.1+ | 2006 03 02 | 932 | 0.2+ | 0.4− | | |
| 2006 02 04 | 711 | 0.1− | 0.2+ | 2006 02 10 | J95 | 0.2− | 0.3− | 2006 03 02 | 932 | 0.3+ | 0.1+ | | |
| 2006 02 04 | 711 | 0.2− | 0.3+ | 2006 02 10 | J95 | 0.1− | 0.0 | 2006 03 02 | 932 | 0.2+ | 0.2− | | |
| 2006 02 04 | 711 | 1.2+ | 0.3+ | 2006 02 10 | J95 | 0.2− | 0.1− | 2006 06 29 | 568 | 0.1− | 0.1+ | | |
| 2006 02 04 | 703 | 0.3− | 0.6+ | 2006 02 10 | J95 | 0.0 | 0.5− | 2006 06 29 | 568 | 0.2− | 0.0 | | |
| 2006 02 04 | 932 | 0.1− | 0.2− | 2006 02 11 | A53 | 0.1+ | 0.4+ | 2006 06 29 | 568 | 0.2− | 0.0 | | |
| 2006 02 04 | 703 | 0.0 | 0.5+ | 2006 02 11 | A53 | 1.0− | 0.9+ | 2006 08 11 | 568 | 0.1+ | 0.1+ | | |
| 2006 02 04 | 703 | 0.0 | 0.4+ | 2006 02 11 | A53 | 1.0− | 0.2− | 2006 08 11 | 568 | 0.1+ | 0.1+ | | |
| 2006 02 04 | 932 | 0.1− | 0.2− | 2006 02 18 | F65 | 1.0− | 0.6− | 2006 08 16 | 568 | 0.0 | 0.1− | | |
| 2006 02 04 | 734 | 0.2+ | 0.4− | 2006 02 18 | F65 | 0.6− | 0.4− | 2006 08 16 | 568 | 0.0 | 0.1− | | |
| 2006 02 04 | 932 | 0.0 | 0.4− | 2006 02 18 | F65 | (1.7− | 1.3−) | 2006 11 19 | 696 | 0.4+ | 0.0 | | |
| 2006 02 04 | 734 | 0.0 | 0.4− | 2006 02 18 | F65 | 0.3+ | 0.2+ | 2006 11 19 | 696 | 0.8+ | 0.0 | | |

### 2006 $CL_3$ = 2004 $PO_{48}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.63535 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26211871 | $\omega$ | 193.60101 | | +0.99841031 | | +0.05460428 |
| $a$ | 2.4180802 | $\Omega$ | 163.24993 | | −0.04610859 | | +0.93383658 |
| $e$ | 0.2189964 | $i$ | 2.77888 | | −0.03241681 | | +0.35350758 |
| $P$ | 3.76 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 08 08 | 704 | 0.1+ | 0.3− | 2006 01 31 | G96 | 0.6+ | 0.1− | 2006 02 02 | G96 | 0.2+ | 0.1− |
| 2004 08 08 | 704 | 0.1+ | 0.3+ | 2006 01 31 | G96 | 0.2− | 1.7+ | 2006 02 02 | G96 | 0.2− | 0.1− |
| 2004 08 08 | 704 | 0.2+ | 0.4+ | 2006 02 01 | G96 | 0.1+ | 0.3− | 2006 02 02 | G96 | 0.2− | 0.0 |
| 2004 08 11 | 704 | 0.4− | 0.2+ | 2006 02 01 | G96 | 0.0 | 0.1− | 2006 02 02 | G96 | 0.1− | 0.1− |
| 2004 08 11 | 704 | 0.5− | 0.0 | 2006 02 01 | G96 | 0.7− | 0.0 | 2006 02 02 | G96 | 0.5+ | 0.4+ |
| 2004 08 11 | 704 | 0.1− | 0.2− | 2006 02 01 | G96 | 0.4− | 0.5− | 2006 02 04 | 691 | 0.1− | 0.3+ |
| 2004 08 11 | 704 | 0.5+ | 0.3− | 2006 02 02 | G96 | 0.5− | 0.1− | 2006 02 04 | 691 | 0.4+ | 0.1− |
| 2006 01 31 | G96 | 0.1+ | 0.5− | 2006 02 02 | G96 | 0.1+ | 0.3+ | 2006 02 04 | 691 | 0.3+ | 0.3+ |
| 2006 01 31 | G96 | 0.1− | 0.2− | 2006 02 02 | G96 | 0.2+ | 0.5− | | | | |

### 2006 $CX_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.63243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22400155 | $\omega$ | 138.07918 | | +0.20092469 | | +0.97227896 |
| $a$ | 2.6851509 | $\Omega$ | 143.04274 | | −0.94332639 | | +0.22495345 |
| $e$ | 0.2279926 | $i$ | 11.47383 | | −0.26412988 | | −0.06379316 |
| $P$ | 4.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 25 | 704 | 0.4+ | 0.2+ | 2003 08 25 | 704 | 0.0 | 0.3− | 2006 02 02 | G96 | 0.0 | 0.1+ |
| 2003 07 25 | 704 | 0.2− | 0.1− | 2003 08 25 | 704 | 0.1− | 0.3+ | 2006 02 02 | G96 | 0.3− | 0.1+ |
| 2003 07 25 | 704 | 0.7+ | 0.4+ | 2003 08 25 | 704 | 0.7+ | 0.3+ | 2006 02 02 | G96 | 0.2− | 0.2+ |
| 2003 08 04 | 704 | 0.8− | 0.1− | 2006 02 01 | G96 | 0.1+ | 0.4− | 2006 02 04 | 691 | 0.0 | 0.3+ |
| 2003 08 04 | 704 | 0.4+ | 0.9− | 2006 02 01 | G96 | 0.1− | 0.2− | 2006 02 04 | 691 | 0.1+ | 0.0 |
| 2003 08 04 | 704 | 0.8− | 0.2− | 2006 02 01 | G96 | 0.3− | 0.2− | 2006 02 04 | 691 | 0.1+ | 0.2− |
| 2003 08 04 | 704 | 0.3− | 0.4+ | 2006 02 01 | G96 | 0.1− | 0.1− | | | | |

### 2006 $CO_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.23950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24545838 | $\omega$ | 82.52715 | | +0.20054217 | | +0.97956828 |
| $a$ | 2.5262954 | $\Omega$ | 199.06184 | | −0.91612322 | | +0.18203755 |
| $e$ | 0.1658326 | $i$ | 2.65479 | | −0.34713266 | | +0.08548872 |
| $P$ | 4.02 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.7+ | 0.4+ | 2003 08 05 | 704 | 0.0 | 0.7+ | 2006 02 02 | 691 | 0.3+ | 0.2+ |
| 1999 10 06 | 704 | 0.4+ | 0.8+ | 2003 08 05 | 704 | 0.6− | 1.2+ | 2006 02 02 | 691 | 0.1+ | 0.6+ |
| 1999 10 06 | 704 | 0.4+ | 0.1− | 2003 08 24 | 704 | 0.5− | 0.2+ | 2006 02 02 | 691 | 0.5+ | 0.4+ |
| 2002 02 11 | 704 | 0.7− | 1.0+ | 2003 08 24 | 704 | 0.5+ | 0.3+ | 2006 02 06 | 691 | 0.1− | 0.2− |
| 2002 02 11 | 704 | 0.7− | 0.3+ | 2003 08 24 | 704 | 0.1+ | 0.2+ | 2006 02 06 | 691 | 0.1+ | 0.5+ |
| 2002 02 11 | 704 | 0.7− | 0.7− | 2004 12 11 | 691 | 0.2− | 0.1+ | 2006 02 06 | 691 | 0.4+ | 0.1− |
| 2003 07 24 | 644 | 0.6− | 0.4+ | 2004 12 11 | 691 | 0.1− | 0.2+ | 2006 05 04 | G96 | 0.2+ | 0.2+ |
| 2003 07 24 | 644 | 0.1+ | 1.3+ | 2004 12 11 | 691 | 0.1+ | 0.2+ | 2006 05 04 | G96 | 0.6− | 0.2− |
| 2003 07 24 | 644 | 0.3− | 0.7+ | 2006 02 01 | G96 | 0.0 | 0.0 | 2006 05 04 | G96 | 0.3− | 0.5− |
| 2003 08 05 | 704 | 0.3− | 0.4+ | 2006 02 01 | G96 | 0.5+ | 0.2+ | 2006 05 04 | G96 | 0.1− | 0.5+ |
| 2003 08 05 | 704 | 0.1+ | 0.6− | 2006 02 01 | G96 | 0.3+ | 0.0 | | | | |
| 2003 08 05 | 704 | 1.0− | 0.2+ | 2006 02 01 | G96 | 0.1+ | 0.2− | | | | |

### 2006 $CW_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.33572 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29382725 | $\omega$ | 168.77692 | | +0.59834683 | | +0.79946154 |
| $a$ | 2.2408253 | $\Omega$ | 137.94510 | | −0.74114522 | | +0.57752720 |
| $e$ | 0.1272314 | $i$ | 4.56505 | | −0.30444184 | | +0.16529844 |
| $P$ | 3.35 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 18 | 809 | 0.1− | 0.4− | 2004 09 13 | 699 | 1.0+ | 0.4+ | 2006 02 01 | 691 | 0.1− | 0.1+ |
| 2003 03 26 | 644 | 0.2+ | 1.2+ | 2004 09 13 | 699 | 0.6− | 0.6+ | 2006 02 01 | 691 | 0.3− | 0.2+ |
| 2003 03 26 | 644 | 0.3+ | 1.1+ | 2004 09 13 | 699 | 1.3+ | 0.0 | 2006 02 05 | G96 | 0.3− | 0.4− |
| 2003 03 26 | 644 | 0.4+ | 1.0+ | 2004 09 17 | 704 | 0.1+ | 0.4+ | 2006 02 05 | G96 | 0.4− | 0.6− |
| 2004 09 08 | 704 | 0.0 | 0.9− | 2004 09 17 | 704 | 2.3− | 2.2+ | 2006 02 05 | G96 | 0.3− | 0.0 |
| 2004 09 08 | 704 | 0.2+ | 0.4− | 2004 09 17 | 704 | 0.4− | 0.8− | 2006 02 05 | G96 | 0.1+ | 0.1+ |
| 2004 09 08 | 704 | 0.5+ | 0.5+ | 2004 09 17 | 704 | 0.2+ | 0.4+ | 2006 03 02 | 695 | 0.1+ | 0.1+ |
| 2004 09 08 | 704 | 0.6− | 0.5− | 2004 09 17 | 704 | 1.0− | 0.2− | 2006 03 02 | 695 | 0.1+ | 0.1+ |
| 2004 09 13 | 699 | 0.6+ | 0.7+ | 2006 02 01 | 691 | 0.6+ | 0.3− | 2006 03 02 | 695 | 0.0 | 0.1+ |

### 2006 $CS_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.19886 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.08166508 | $\omega$ | 168.96661 | | +0.69130528 | | +0.71273678 |
| $a$ | 5.2615268 | $\Omega$ | 144.58058 | | −0.67756053 | | +0.69653081 |
| $e$ | 0.0654689 | $i$ | 11.82425 | | −0.25101542 | | +0.08277145 |
| $P$ | 12.07 | $H$ | 13.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 27 | 807 | 0.0 | 0.3+ | 2006 02 04 | 691 | 0.0 | 0.4+ | 2006 05 25 | 291 | 0.4+ | 0.6+ |
| 2000 08 27 | 807 | 0.1− | 0.4+ | 2006 02 07 | G96 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4− | 0.7− |
| 2003 11 18 | 691 | 0.1− | 0.2− | 2006 02 07 | G96 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2003 11 18 | 691 | 0.1− | 0.1− | 2006 02 07 | G96 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2003 11 18 | 691 | 0.2+ | 0.1+ | 2006 02 07 | G96 | 0.5+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2006 01 08 | G96 | 0.2− | 0.3− | 2006 05 24 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2006 01 08 | G96 | 0.3+ | 0.5− | 2006 05 24 | G96 | 0.3− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.2+ |
| 2006 01 08 | G96 | 0.6− | 0.4− | 2006 05 24 | G96 | 0.1− | 0.4− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2006 01 08 | G96 | 0.1− | 0.8− | 2006 05 24 | G96 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2006 02 01 | G96 | 0.1− | 0.3+ | 2006 05 25 | 291 | 0.3+ | 0.2+ | 2006 11 19 | G96 | 0.1+ | 0.2− |
| 2006 02 01 | G96 | 0.1− | 0.2+ | 2006 05 25 | G96 | 0.2− | 0.5+ | 2006 11 19 | G96 | 0.2− | 0.3− |
| 2006 02 01 | G96 | 0.1− | 0.1− | 2006 05 25 | G96 | 0.3− | 0.3+ | 2006 11 19 | G96 | 0.2+ | 0.7− |
| 2006 02 01 | G96 | 0.1− | 0.1− | 2006 05 25 | 291 | 0.4+ | 0.2+ | 2006 11 19 | G96 | 0.5− | 0.0 |
| 2006 02 04 | 691 | 0.0 | 0.1− | 2006 05 25 | G96 | 0.5− | 0.1+ | | | | |
| 2006 02 04 | 691 | 0.3− | 0.1− | 2006 05 25 | G96 | 0.4− | 0.1− | | | | |

**2006 $CO_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.21949 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17512971 | $\omega$ | 287.25479 | | −0.38974372 | +0.91029979 | |
| $a$ | 3.1639492 | $\Omega$ | 318.91413 | | −0.74359076 | −0.40041509 | |
| $e$ | 0.1879687 | $i$ | 12.25332 | | −0.54329791 | −0.10498598 | |
| $P$ | 5.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 644 | 0.0 | 0.3+ | 2003 10 02 | 691 | 0.2+ | 0.1− | 2006 02 06 | G96 | 0.1+ | 0.0 |
| 2002 07 17 | 644 | 0.0 | 0.3+ | 2003 10 02 | 691 | 0.0 | 0.0 | 2006 02 06 | G96 | 0.2− | 0.1+ |
| 2002 07 17 | 644 | 0.0 | 0.2+ | 2003 10 02 | 691 | 0.2− | 0.2+ | 2006 02 06 | G96 | 0.4− | 0.0 |
| 2002 08 06 | 644 | 0.4− | 0.1+ | 2006 02 02 | 691 | 0.3+ | 0.0 | 2006 02 06 | G96 | 0.8− | 0.1+ |
| 2002 08 06 | 644 | 0.1− | 0.1+ | 2006 02 02 | 691 | 0.4+ | 0.0 | | | | |
| 2002 08 06 | 644 | 0.1− | 0.3+ | 2006 02 02 | 691 | 0.2− | 0.3+ | | | | |

**2006 $CB_{26}$ = 1993 $UD_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.71908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25967610 | $\omega$ | 34.68548 | | +0.87346489 | −0.48687316 | |
| $a$ | 2.4332201 | $\Omega$ | 354.44600 | | +0.43763926 | +0.78841306 | |
| $e$ | 0.2158893 | $i$ | 2.18427 | | +0.21337984 | +0.37597789 | |
| $P$ | 3.80 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 22 | 809 | 1.2+ | 0.5− | 2002 01 14 | 704 | 0.7+ | 0.3+ | 2006 02 02 | 691 | 0.1− | 0.3− |
| 1993 10 22 | 809 | 1.6− | 0.3− | 2002 01 14 | 704 | 0.1+ | 0.9− | 2006 02 02 | 691 | 0.2+ | 0.3+ |
| 1993 10 22 | 809 | 0.7+ | 0.0 | 2002 01 14 | 704 | 0.7− | 1.2− | 2006 02 04 | 703 | 0.8+ | 1.3+ |
| 2001 12 15 | 645 | 0.0 | 0.0 | 2006 01 10 | G96 | 1.0− | 0.0 | 2006 02 04 | 703 | 0.9+ | 0.3+ |
| 2001 12 15 | 645 | 0.1+ | 0.0 | 2006 01 10 | G96 | 0.5− | 0.0 | 2006 02 04 | 703 | 0.1+ | 0.1− |
| 2001 12 18 | 645 | 0.1− | 0.1+ | 2006 01 10 | G96 | 1.1− | 0.1− | 2006 02 04 | 703 | 0.8− | 0.2− |
| 2001 12 18 | 645 | 0.1− | 0.1+ | 2006 01 10 | G96 | 0.4− | 0.2− | 2006 02 07 | G96 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 1.0+ | 0.6+ | 2006 01 25 | 691 | 0.2+ | 0.1− | 2006 02 07 | G96 | 0.8− | 0.4− |
| 2001 12 19 | 704 | 0.4+ | 0.5+ | 2006 01 25 | 691 | 0.0 | 0.1− | 2006 02 07 | G96 | 0.2− | 0.6− |
| 2001 12 19 | 704 | 1.1+ | 0.2+ | 2006 01 25 | 691 | 0.2+ | 0.2+ | 2006 02 07 | G96 | 0.3− | 0.3− |
| 2001 12 19 | 704 | 1.0+ | 0.2+ | 2006 02 02 | 691 | 0.2+ | 0.2− | | | | |

**2006 $CW_{26}$ = 2006 $JB_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.18648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17867795 | $\omega$ | 103.06530 | | −0.70537099 | +0.70877658 | |
| $a$ | 3.1219222 | $\Omega$ | 122.07111 | | −0.65454971 | −0.64622528 | |
| $e$ | 0.1209197 | $i$ | 0.63261 | | −0.27205965 | −0.28289335 | |
| $P$ | 5.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 691 | 0.1− | 0.5+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.5− | 1.1− |
| 2003 09 29 | 691 | 0.0 | 0.2+ | 2004 11 20 | 691 | 0.3− | 0.1− | 2006 02 02 | 691 | 0.1+ | 0.5+ |
| 2003 09 29 | 691 | 0.2− | 0.3+ | 2004 11 20 | 691 | 0.4+ | 0.2+ | 2006 02 02 | 691 | 0.1+ | 0.3+ |
| 2003 10 18 | 645 | 0.1+ | 0.0 | 2004 11 20 | 691 | 0.1− | 0.0 | 2006 02 02 | 691 | 0.3+ | 0.2+ |
| 2003 10 18 | 291 | 0.2+ | 0.4+ | 2006 01 07 | G96 | 0.2+ | 0.2+ | 2006 02 05 | G96 | 0.1− | 0.2− |
| 2003 10 18 | 645 | 0.0 | 0.2− | 2006 01 07 | G96 | 0.7− | 0.1+ | 2006 02 05 | G96 | 0.2+ | 0.2− |
| 2003 10 18 | 291 | 0.3+ | 0.4+ | 2006 01 07 | G96 | 0.5− | 0.1− | 2006 02 05 | G96 | 0.1− | 0.0 |
| 2003 10 18 | 291 | 0.2− | 0.6+ | 2006 01 07 | G96 | 0.3− | 0.0 | 2006 02 05 | G96 | 0.2+ | 0.1− |
| 2003 10 23 | 645 | 0.1− | 0.1− | 2006 01 22 | G96 | 0.1− | 0.6− | 2006 05 01 | 695 | 0.1+ | 0.1+ |
| 2003 10 23 | 645 | 0.1− | 0.1− | 2006 01 22 | G96 | 0.3− | 0.6− | 2006 05 01 | 695 | 0.1+ | 0.2+ |
| 2003 10 24 | 645 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.3− | 1.2− | 2006 05 02 | 695 | 0.1− | 0.2+ |

**2006 $CQ_{27}$ = 2001 $VA_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.94310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29674811 | $\omega$ | 13.23526 | | +0.91062485 | +0.41144773 | |
| $a$ | 2.2260970 | $\Omega$ | 322.39497 | | −0.38463280 | +0.80997966 | |
| $e$ | 0.1961908 | $i$ | 3.60621 | | −0.15106289 | +0.41790395 | |
| $P$ | 3.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.8− | 1.0− | 2004 08 08 | 644 | 0.4+ | 0.5+ | 2004 09 09 | 704 | 0.3− | 0.2+ |
| 2001 11 10 | 704 | 0.2+ | 1.6− | 2004 08 08 | 704 | 0.2− | 0.2+ | 2006 02 02 | 691 | 0.5+ | 0.2+ |
| 2001 11 10 | 704 | 0.8+ | 0.7− | 2004 08 08 | 704 | 0.3− | 1.0+ | 2006 02 02 | 691 | 0.0 | 0.1+ |
| 2001 11 10 | 704 | 0.8− | 0.0 | 2004 08 08 | 704 | 0.2− | 0.1+ | 2006 02 02 | 691 | 0.1+ | 0.2+ |
| 2001 11 12 | 704 | 0.0 | 0.4+ | 2004 08 08 | 704 | 1.0− | 0.2+ | 2006 02 04 | G96 | 0.2− | 0.0 |
| 2001 11 12 | 704 | 0.0 | 0.4+ | 2004 08 21 | E12 | 0.3+ | 0.5− | 2006 02 04 | G96 | 0.4+ | 0.0 |
| 2001 11 12 | 704 | 0.1− | 0.7+ | 2004 08 21 | E12 | 0.2− | 0.1− | 2006 02 04 | G96 | 1.2− | 0.2+ |
| 2001 11 12 | 704 | 0.0 | 1.4+ | 2004 08 21 | E12 | 0.0 | 0.1+ | 2006 02 05 | G96 | 0.3+ | 0.2− |
| 2001 11 12 | 704 | 0.7+ | 0.3+ | 2004 08 21 | E12 | 0.1+ | 0.4− | 2006 02 05 | G96 | 0.1+ | 0.0 |
| 2004 08 08 | 644 | 0.2+ | 0.6+ | 2004 09 09 | 704 | 0.9+ | 0.2+ | 2006 02 05 | G96 | 0.9− | 1.5+ |
| 2004 08 08 | 644 | 0.2+ | 0.5+ | 2004 09 09 | 704 | 0.4− | 0.1+ | 2006 02 05 | G96 | 0.3+ | 0.4− |
| 2004 08 08 | 704 | 0.7− | 0.1− | 2004 09 09 | 704 | 0.2+ | 0.2− | | | | |

**2006 $CN_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.42472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17718680 | $\omega$ | 29.28463 | | +0.96287933 | +0.17682289 | |
| $a$ | 3.1394132 | $\Omega$ | 318.87977 | | −0.26519129 | +0.76065678 | |
| $e$ | 0.1679905 | $i$ | 18.06700 | | +0.05036832 | +0.62460782 | |
| $P$ | 5.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 24 | 644 | 0.1− | 0.0 | 2003 08 24 | 704 | 0.2− | 0.9+ | 2006 02 03 | 691 | 0.3+ | 0.2− |
| 2003 07 24 | 644 | 0.3− | 0.3+ | 2003 09 01 | 704 | 0.1+ | 0.6− | 2006 02 03 | 691 | 0.1+ | 0.0 |
| 2003 07 24 | 644 | 0.0 | 0.2+ | 2003 09 01 | 704 | 0.3− | 0.7− | 2006 02 04 | G96 | 0.4+ | 0.1+ |
| 2003 08 04 | 691 | 0.2+ | 0.1− | 2003 09 01 | 704 | 0.3− | 0.2+ | 2006 02 04 | G96 | 0.4− | 0.3+ |
| 2003 08 04 | 691 | 0.2− | 0.0 | 2006 02 02 | 691 | 0.3− | 0.7− | 2006 02 04 | G96 | 0.8− | 0.1− |
| 2003 08 04 | 691 | 0.1+ | 0.2− | 2006 02 02 | 691 | 0.0 | 0.2+ | 2006 02 04 | G96 | 0.2+ | 0.4+ |
| 2003 08 24 | 704 | 0.3+ | 0.2− | 2006 02 02 | 691 | 0.0 | 0.4+ | | | | |
| 2003 08 24 | 704 | 0.3+ | 1.1+ | 2006 02 03 | 691 | 0.0 | 0.1+ | | | | |

**2006 $CQ_{37}$ = 2000 $BS_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.09201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17542924 | $\omega$ | 332.76823 | | +0.28668228 | +0.94547556 | |
| $a$ | 3.1603466 | $\Omega$ | 313.43635 | | −0.83567344 | +0.16790229 | |
| $e$ | 0.1150928 | $i$ | 12.28965 | | −0.46846897 | +0.27907848 | |
| $P$ | 5.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 691 | 0.1− | 0.0 | 2006 01 25 | 461 | 0.2+ | 0.3+ | 2006 02 02 | G96 | 0.3− | 0.1− |
| 2000 01 29 | 691 | 0.1+ | 0.4− | 2006 01 26 | 461 | 0.4− | 0.3− | 2006 02 02 | G96 | 0.6− | 0.3− |
| 2000 01 29 | 691 | 0.0 | 0.3− | 2006 01 26 | 461 | 0.0 | 0.1− | 2006 02 02 | G96 | 0.5− | 0.1− |
| 2000 01 30 | 691 | 0.0 | 0.2− | 2006 01 26 | 461 | 0.3+ | 0.3− | 2006 02 02 | G96 | 0.8− | 0.2− |
| 2000 01 30 | 691 | 0.2+ | 0.4− | 2006 01 26 | 461 | 1.1+ | 0.7− | 2006 02 06 | 691 | 0.3− | 0.2+ |
| 2000 01 30 | 691 | 0.2− | 1.4+ | 2006 02 02 | 691 | 0.1+ | 0.4+ | 2006 02 06 | 691 | 0.5+ | 0.0 |
| 2006 01 25 | 461 | 0.8+ | 0.1+ | 2006 02 02 | 691 | 0.2− | 0.1+ | 2006 02 06 | 691 | 0.1+ | 0.3− |
| 2006 01 25 | 461 | 0.3+ | 0.5+ | 2006 02 02 | 691 | 0.1− | 0.1− | | | | |

**2006 CZ$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 125.82758 | | (2000.0) | | | |
| $n$ | 0.26723758 | $\omega$ | 272.71239 | | +0.13202406 | −0.99107632 |
| $a$ | 2.3871023 | $\Omega$ | 169.64670 | | +0.94522350 | +0.12029197 |
| $e$ | 0.0673624 | $i$ | 5.86609 | | +0.29853340 | +0.05742448 |
| $P$ | 3.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 09 | 691 | 0.4− | 0.1− | 2004 09 17 | 704 | 0.2+ | 0.1+ | 2006 02 03 | G96 | 0.3− | 0.1− |
| 1995 03 09 | 691 | 0.0 | 0.4− | 2004 09 17 | 704 | 0.8− | 0.6− | 2006 02 03 | G96 | 0.2− | 0.0 |
| 1995 03 09 | 691 | 0.4− | 0.0 | 2004 10 07 | 704 | 0.4+ | 1.5+ | 2006 02 03 | G96 | 0.0 | 0.0 |
| 2002 01 08 | 644 | 0.5+ | 0.7+ | 2004 10 07 | 704 | 0.5− | 0.8+ | 2006 02 03 | G96 | 0.9− | 0.2− |
| 2002 01 08 | 644 | 0.5+ | 0.8+ | 2004 10 07 | 704 | 0.4− | 0.4+ | 2006 02 07 | 691 | 0.0 | 0.4+ |
| 2002 01 08 | 644 | 0.5+ | 0.4+ | 2004 10 07 | 704 | 0.9+ | 0.7+ | 2006 02 07 | 691 | 0.0 | 0.5+ |
| 2002 01 14 | 704 | 0.3+ | 0.3− | 2004 10 07 | 704 | 0.6− | 0.4+ | 2006 02 07 | 691 | 0.0 | 0.5+ |
| 2002 01 14 | 704 | 1.0+ | 0.3− | 2004 10 08 | 699 | 1.6+ | 1.8− | 2006 02 20 | 703 | 1.4− | 0.6+ |
| 2002 01 14 | 704 | 0.0 | 0.9− | 2004 10 08 | 699 | 1.8− | 0.6+ | 2006 02 20 | 703 | 0.2− | 0.6+ |
| 2002 01 14 | 704 | 1.4+ | 1.3− | 2004 10 08 | 699 | 1.1− | 0.6+ | 2006 02 20 | 703 | 0.3+ | 0.0 |
| 2002 02 06 | 644 | 0.1+ | 0.5+ | 2004 10 08 | 699 | 0.9− | 0.1+ | 2006 02 20 | 703 | 0.3− | 0.5+ |
| 2002 02 06 | 644 | 0.3+ | 0.4+ | 2004 10 15 | 691 | 0.2+ | 0.2+ | 2006 05 03 | G96 | 0.0 | 0.3− |
| 2002 02 06 | 644 | 0.2+ | 0.4+ | 2004 10 15 | 691 | 0.2− | 0.1+ | 2006 05 03 | G96 | 0.3+ | 0.1+ |
| 2003 06 04 | 691 | 0.4+ | 0.6+ | 2004 10 15 | 691 | 0.2− | 0.3+ | 2006 05 03 | G96 | 0.1+ | 0.1− |
| 2003 06 04 | 691 | 0.4+ | 0.5+ | 2006 01 08 | G96 | 0.1+ | 0.1− | 2006 05 03 | G96 | 0.3− | 0.3− |
| 2003 06 04 | 691 | 0.2+ | 0.0 | 2006 01 08 | G96 | 0.0 | 0.0 | 2006 05 28 | G96 | 0.8+ | 0.2+ |
| 2004 09 08 | 704 | 0.4+ | 0.4− | 2006 01 08 | G96 | 0.7+ | 0.2+ | 2006 05 28 | G96 | 0.4− | 0.4+ |
| 2004 09 08 | 704 | 0.5+ | 0.1+ | 2006 01 08 | G96 | 0.4+ | 0.6− | 2006 05 28 | G96 | 1.0+ | 0.2+ |
| 2004 09 08 | 704 | 0.9− | 0.7+ | 2006 02 02 | 691 | 0.2+ | 0.1+ | 2006 05 28 | G96 | 0.3− | 0.2− |
| 2004 09 17 | 704 | 0.4− | 0.3− | 2006 02 02 | 691 | 0.1− | 0.3+ | | | | |
| 2004 09 17 | 704 | 0.1+ | 0.1− | 2006 02 02 | 691 | 0.0 | 0.1+ | | | | |

**2006 CL$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 160.66065 | | (2000.0) | | | |
| $n$ | 0.27738100 | $\omega$ | 33.27927 | | +0.77027519 | −0.63757066 |
| $a$ | 2.3285465 | $\Omega$ | 6.38212 | | +0.55560121 | +0.66062740 |
| $e$ | 0.2019618 | $i$ | 6.92798 | | +0.31302305 | +0.39632700 |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 1.4− | 0.0 | 2004 08 22 | E12 | 0.2− | 0.3+ | 2006 02 04 | G96 | 0.3− | 0.1− |
| 2001 12 09 | 704 | 0.5− | 0.7+ | 2006 02 02 | G96 | 0.2+ | 0.0 | 2006 02 04 | G96 | 0.8− | 0.3− |
| 2001 12 09 | 704 | 0.2− | 0.9+ | 2006 02 02 | G96 | 0.1+ | 0.2+ | 2006 02 06 | G96 | 0.6− | 0.7− |
| 2001 12 09 | 704 | 0.5+ | 0.6+ | 2006 02 02 | G96 | 0.2− | 0.1+ | 2006 02 06 | G96 | 0.1+ | 0.3− |
| 2001 12 09 | 704 | 2.6+ | 0.3+ | 2006 02 02 | G96 | 0.6+ | 0.2+ | 2006 02 06 | G96 | 0.7− | 0.8− |
| 2001 12 14 | 704 | 0.1− | 0.3+ | 2006 02 02 | G96 | 0.7+ | 0.4+ | 2006 02 06 | G96 | 0.5− | 0.5− |
| 2001 12 14 | 704 | 0.2− | 1.0+ | 2006 02 02 | G96 | 0.5+ | 0.6+ | 2006 03 03 | G96 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.4+ | 0.4+ | 2006 02 02 | G96 | 0.2+ | 0.2+ | 2006 03 03 | G96 | 0.8+ | 0.6− |
| 2001 12 14 | 704 | 0.2− | 0.1+ | 2006 02 02 | G96 | 0.5+ | 0.2+ | 2006 03 03 | G96 | 0.0 | 0.5+ |
| 2001 12 23 | 704 | 0.1− | 1.1− | 2006 02 04 | G96 | 0.5− | 0.0 | 2006 03 03 | G96 | 0.4− | 0.4+ |
| 2001 12 23 | 704 | 0.6+ | 1.2− | 2006 02 04 | G96 | 0.7− | 0.0 | 2006 03 29 | 691 | 0.3+ | 0.3+ |
| 2001 12 23 | 704 | 0.9− | 0.9− | 2006 02 04 | G96 | 1.0− | 0.3− | 2006 03 29 | 691 | 0.5+ | 0.2+ |
| 2004 08 22 | E12 | 0.5− | 0.0 | 2006 02 04 | G96 | 1.1− | 0.3− | 2006 03 29 | 691 | 0.4+ | 0.1+ |
| 2004 08 22 | E12 | 1.1− | 0.0 | 2006 02 04 | G96 | 0.8− | 0.2− | | | | |
| 2004 08 22 | E12 | 1.4+ | 0.5+ | 2006 02 04 | G96 | 0.3− | 0.1+ | | | | |

**2006 CB$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.27486 | | (2000.0) | | | |
| $n$ | 0.25950827 | $\omega$ | 3.81823 | | −0.99983393 | −0.01273837 |
| $a$ | 2.4342691 | $\Omega$ | 175.39107 | | +0.00917135 | −0.96968522 |
| $e$ | 0.1472942 | $i$ | 9.33403 | | +0.01574809 | −0.24402523 |
| $P$ | 3.80 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 19 | 209 | 0.3− | 0.7+ | 2006 03 02 | G96 | 0.2− | 0.1− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2002 02 19 | 209 | 0.8− | 0.1+ | 2006 03 02 | G96 | 0.2+ | 0.1− |
| 2002 01 18 | 209 | 0.2− | 0.1− | 2006 02 02 | 691 | 0.1− | 0.2+ | 2006 03 02 | G96 | 0.0 | 0.2− |
| 2002 01 18 | 209 | 0.3− | 0.0 | 2006 02 02 | 691 | 0.1+ | 0.2− | 2006 03 23 | 703 | 0.4− | 0.6+ |
| 2002 01 19 | 209 | 0.0 | 0.1+ | 2006 02 02 | 691 | 0.1+ | 0.0 | 2006 03 23 | 703 | 1.1− | 0.4+ |
| 2002 02 07 | 644 | 0.4+ | 0.3− | 2006 02 06 | 691 | 0.0 | 0.2− | 2006 03 23 | 703 | 0.6+ | 0.3− |
| 2002 02 07 | 644 | 0.4+ | 0.2− | 2006 02 06 | 691 | 0.1+ | 0.0 | 2006 03 23 | 703 | 0.2+ | 0.5+ |
| 2002 02 07 | 644 | 0.5+ | 0.0 | 2006 02 06 | 691 | 0.0 | 0.1− | | | | |
| 2002 02 19 | 209 | 0.3+ | 0.4+ | 2006 03 02 | G96 | 0.1− | 0.1− | | | | |

**2006 CT$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.92883 | | (2000.0) | | | |
| $n$ | 0.27843322 | $\omega$ | 15.90857 | | −0.97293290 | −0.22247860 |
| $a$ | 2.3226763 | $\Omega$ | 151.00805 | | +0.19546805 | −0.93654442 |
| $e$ | 0.0544208 | $i$ | 7.40755 | | +0.12326322 | −0.27090187 |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 09 | 691 | 0.1+ | 0.4− | 2003 05 01 | 691 | 0.3− | 0.2+ | 2006 02 04 | 291 | 0.3+ | 0.4+ |
| 1996 04 09 | 691 | 0.2+ | 0.2+ | 2003 05 01 | 691 | 0.1+ | 0.0 | 2006 02 04 | 291 | 0.2+ | 0.5+ |
| 1996 04 09 | 691 | 0.4− | 0.2− | 2004 09 11 | 691 | 0.4− | 1.0+ | 2006 02 04 | 291 | 0.2+ | 0.4+ |
| 2003 04 09 | 704 | 0.1− | 0.5− | 2004 09 11 | 691 | 0.3− | 1.1+ | 2006 02 22 | 703 | 0.9− | 0.8+ |
| 2003 04 09 | 704 | 0.2− | 0.7− | 2004 09 11 | 691 | 0.5− | 1.6+ | 2006 02 22 | 703 | 1.3+ | 0.2+ |
| 2003 04 09 | 704 | 0.1+ | 0.1− | 2006 02 03 | G96 | 0.1− | 0.0 | 2006 02 22 | 703 | 1.9− | 0.7+ |
| 2003 04 09 | 704 | 0.1− | 0.7+ | 2006 02 03 | G96 | 0.4+ | 0.1− | 2006 02 22 | 703 | 0.8+ | 0.7+ |
| 2003 04 24 | 691 | 0.3+ | 1.1+ | 2006 02 03 | G96 | 0.1− | 0.0 | 2006 03 25 | G96 | 0.1+ | 0.0 |
| 2003 04 24 | 691 | 0.3+ | 0.9+ | 2006 02 03 | 704 | 0.6+ | 1.1+ | 2006 03 25 | G96 | 0.2+ | 0.4− |
| 2003 04 24 | 691 | 0.4+ | 0.6+ | 2006 02 03 | 704 | 0.4− | 0.6+ | 2006 03 25 | G96 | 0.1− | 0.2− |
| 2003 05 01 | 691 | 0.1− | 0.1+ | 2006 02 03 | 704 | 0.6− | 1.2+ | 2006 03 25 | G96 | 0.0 | 0.2− |

**2006 CG$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 93.55132 | | (2000.0) | | | |
| $n$ | 0.21104757 | $\omega$ | 142.94935 | | +0.07385247 | −0.99689334 |
| $a$ | 2.7939319 | $\Omega$ | 302.79993 | | +0.90699360 | +0.07855492 |
| $e$ | 0.0603556 | $i$ | 1.86641 | | +0.41461840 | +0.00572631 |
| $P$ | 4.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 15 | 691 | 0.0 | 0.1+ | 2004 10 14 | 691 | 0.0 | 0.0 | 2006 01 22 | G96 | 0.3+ | 0.6− |
| 2004 09 15 | 691 | 0.1− | 0.0 | 2004 10 14 | 691 | 0.1− | 0.0 | 2006 01 22 | G96 | 0.6+ | 0.2− |
| 2004 09 15 | 691 | 0.1− | 0.1− | 2004 10 14 | 691 | 0.2− | 0.1− | 2006 02 04 | 691 | 0.0 | 0.2+ |
| 2004 09 22 | 691 | 0.3− | 0.3− | 2006 01 05 | G96 | 0.6− | 0.2− | 2006 02 04 | 691 | 0.1− | 0.2+ |
| 2004 09 22 | 691 | 0.1+ | 0.1+ | 2006 01 05 | G96 | 0.2− | 0.3+ | 2006 02 04 | 691 | 0.1+ | 0.0 |
| 2004 09 22 | 691 | 0.1+ | 0.4+ | 2006 01 05 | G96 | 0.4+ | 0.0 | 2006 02 05 | G96 | 0.0 | 0.1− |
| 2004 10 04 | 691 | 0.0 | 0.0 | 2006 01 05 | G96 | 0.3− | 0.1− | 2006 02 05 | G96 | 0.3− | 0.3− |
| 2004 10 04 | 691 | 0.3+ | 0.0 | 2006 01 22 | G96 | 0.3− | 0.4− | 2006 02 05 | G96 | 0.2+ | 0.1− |
| 2004 10 04 | 691 | 0.3+ | 0.1− | 2006 01 22 | G96 | 0.0 | 0.1− | | | | |

**2006 CJ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 197.24982 | | (2000.0) | | | |
| $n$ | 0.20301128 | $\omega$ | 189.50951 | | +0.99948898 | −0.03156955 |
| $a$ | 2.8671864 | $\Omega$ | 172.29429 | | +0.03123243 | +0.93107304 |
| $e$ | 0.0830359 | $i$ | 2.14345 | | +0.00680602 | +0.36346438 |
| $P$ | 4.85 | $H$ | 16.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.5+ | 0.3− | 1999 12 16 | 691 | 0.3+ | 0.1− | 2006 02 04 | G96 | 0.6− | 0.3− |
| 1996 02 10 | 691 | 0.1− | 0.0 | 2003 07 07 | 691 | 0.3− | 0.0 | 2006 02 04 | G96 | 0.4− | 0.4− |
| 1996 02 10 | 691 | 0.2− | 0.2− | 2003 07 07 | 691 | 0.2+ | 0.5+ | 2006 02 04 | G96 | 0.6− | 0.4− |
| 1999 11 29 | 691 | 0.5− | 0.0 | 2003 07 07 | 691 | 0.1+ | 0.3− | 2006 02 07 | 691 | 0.3+ | 0.3+ |
| 1999 11 29 | 691 | 0.6− | 0.0 | 2004 12 11 | 691 | 0.1+ | 0.3+ | 2006 02 07 | 691 | 0.1+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 29 | 691 | 0.6− | 0.1− | 2004 12 11 | 691 | 0.1+ | 0.3+ | 2006 02 07 | 691 | 0.1− | 0.1− |
| 1999 12 09 | 691 | 0.3− | 0.2− | 2004 12 11 | 691 | 0.2+ | 0.6+ | 2006 03 23 | G96 | 0.5− | 0.1− |
| 1999 12 09 | 691 | 0.4+ | 0.2− | 2006 01 26 | 691 | 0.3− | 0.4+ | 2006 03 23 | G96 | 0.3− | 0.4+ |
| 1999 12 09 | 691 | 0.3+ | 0.2− | 2006 01 26 | 691 | 0.1+ | 0.0 | 2006 03 23 | G96 | 0.1+ | 0.7− |
| 1999 12 16 | 691 | 0.2+ | 0.3− | 2006 01 26 | 691 | 0.3+ | 0.0 | 2006 03 23 | G96 | 0.4− | 0.2− |
| 1999 12 16 | 691 | 0.6+ | 0.1+ | 2006 02 04 | G96 | 0.3− | 0.2− | | | | |

**2006 CP$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.37367 | | | (2000.0) | | |
| $n$ | 0.16940851 | $\omega$ | 2.31109 | | −0.32581875 | −0.94415475 |
| $a$ | 3.2347886 | $\Omega$ | 106.70718 | | +0.86659222 | −0.31902088 |
| $e$ | 0.1156470 | $i$ | 2.94042 | | +0.37796833 | −0.08244688 |
| $P$ | 5.82 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 691 | 0.1− | 0.1− | 2006 01 20 | 691 | 0.8+ | 0.3− | 2006 02 07 | G96 | 0.2− | 0.2− |
| 2000 02 07 | 691 | 0.1+ | 0.0 | 2006 01 20 | 691 | 0.6− | 0.2+ | 2006 02 07 | G96 | 0.7− | 0.5− |
| 2000 02 07 | 691 | 0.0 | 0.1− | 2006 01 30 | 691 | 1.1+ | 0.1− | 2006 02 24 | 691 | 0.4− | 0.1− |
| 2003 08 26 | 807 | 0.2− | 0.3+ | 2006 01 30 | 691 | 0.0 | 0.1− | 2006 02 24 | 691 | 0.1+ | 0.4− |
| 2003 08 26 | 807 | 0.0 | 0.3+ | 2006 01 30 | 691 | 0.2+ | 0.4+ | 2006 02 24 | 691 | 0.2− | 0.2+ |
| 2006 01 07 | G96 | 0.6+ | 0.2− | 2006 02 07 | 691 | 0.2− | 0.3+ | 2006 03 04 | 691 | 0.1+ | 0.3− |
| 2006 01 07 | G96 | 0.3− | 0.4− | 2006 02 07 | 691 | 0.2− | 0.1+ | 2006 03 04 | 691 | 0.1− | 0.1+ |
| 2006 01 07 | G96 | 0.0 | 0.4− | 2006 02 07 | 691 | 0.1− | 0.3+ | 2006 03 04 | 691 | 0.2− | 0.3+ |
| 2006 01 07 | G96 | 0.4− | 0.5− | 2006 02 07 | G96 | 0.3− | 0.3− | | | | |
| 2006 01 20 | 691 | 0.1+ | 0.6+ | 2006 02 07 | G96 | 0.2− | 0.3− | | | | |

**2006 CH$_{65}$ = 1999 TT$_{72}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 143.69977 | | | (2000.0) | | |
| $n$ | 0.20040219 | $\omega$ | 278.53339 | | +0.63623922 | −0.77063032 |
| $a$ | 2.8920185 | $\Omega$ | 131.88905 | | +0.72569495 | +0.58176723 |
| $e$ | 0.1026131 | $i$ | 2.80646 | | +0.26185205 | +0.26014572 |
| $P$ | 4.92 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.2− | 0.1− | 2006 02 01 | G96 | 0.6− | 0.6− | 2006 03 02 | 691 | 0.1− | 0.2+ |
| 1999 10 09 | 691 | 0.1+ | 0.1− | 2006 02 01 | G96 | 0.2+ | 0.0 | 2006 03 02 | 691 | 0.1+ | 0.1− |
| 1999 10 09 | 691 | 0.1+ | 0.1+ | 2006 02 20 | 691 | 0.0 | 0.5+ | 2006 03 02 | 691 | 0.1− | 0.2+ |
| 1999 10 15 | 691 | 0.4+ | 0.1+ | 2006 02 20 | 691 | 0.7+ | 0.2+ | 2006 03 29 | 691 | 0.0 | 0.4− |
| 1999 10 15 | 691 | 0.6− | 0.0 | 2006 02 20 | 691 | 0.1+ | 0.4− | 2006 03 29 | 691 | 0.4− | 0.3− |
| 1999 10 15 | 691 | 0.2+ | 0.0 | 2006 02 24 | 691 | 0.1− | 0.9+ | 2006 03 29 | 691 | 0.1+ | 0.1+ |
| 2006 02 01 | G96 | 0.1− | 0.1+ | 2006 02 24 | 691 | 0.1+ | 0.2+ | | | | |
| 2006 02 01 | G96 | 0.1+ | 0.0 | 2006 02 24 | 691 | 0.1+ | 0.5− | | | | |

**2006 CJ$_{65}$ = 1999 TQ$_{87}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 77.60544 | | | (2000.0) | | |
| $n$ | 0.20279549 | $\omega$ | 359.12733 | | −0.58392505 | −0.81066809 |
| $a$ | 2.8692201 | $\Omega$ | 126.59851 | | +0.74514298 | −0.55624105 |
| $e$ | 0.0121860 | $i$ | 3.07007 | | +0.32216996 | −0.18279262 |
| $P$ | 4.86 | $H$ | 16.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 691 | 0.5+ | 0.2+ | 2006 02 01 | G96 | 0.1− | 0.1+ | 2006 03 03 | G96 | 0.2+ | 0.1+ |
| 1999 10 15 | 691 | 0.2+ | 0.1+ | 2006 02 01 | G96 | 0.8+ | 0.3− | 2006 03 03 | G96 | 0.5− | 0.0 |
| 1999 10 15 | 691 | 0.1+ | 0.1− | 2006 02 04 | 691 | 0.4+ | 0.9+ | 2006 03 03 | G96 | 0.4− | 0.1+ |
| 1999 10 19 | 691 | 0.1− | 0.2+ | 2006 02 04 | 691 | 0.3+ | 0.3+ | 2006 03 03 | G96 | 0.1− | 0.2+ |
| 1999 10 19 | 691 | 0.5− | 0.5− | 2006 02 04 | 691 | 0.7+ | 0.4+ | 2006 03 29 | 691 | 0.2+ | 0.0 |
| 1999 10 19 | 691 | 0.3− | 0.1+ | 2006 02 24 | 691 | 0.1− | 0.3− | 2006 03 29 | 691 | 0.2− | 0.2− |
| 2006 02 01 | G96 | 0.2− | 0.6− | 2006 02 24 | 691 | 0.3+ | 0.3− | 2006 03 29 | 691 | 0.4+ | 0.2+ |
| 2006 02 01 | G96 | 1.5− | 0.4− | 2006 02 24 | 691 | 0.1− | 0.2− | | | | |

**2006 CK$_{65}$ = 1999 TM$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 217.66501 | | | (2000.0) | | |
| $n$ | 0.21618392 | $\omega$ | 168.91356 | | +0.91609012 | +0.39927172 |
| $a$ | 2.7495005 | $\Omega$ | 167.36153 | | −0.37957716 | +0.89318296 |
| $e$ | 0.1685066 | $i$ | 9.70703 | | −0.12922880 | +0.20689680 |
| $P$ | 4.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 691 | 0.1− | 0.8− | 2002 03 05 | 291 | 0.1− | 0.1− | 2006 02 02 | 691 | 0.0 | 0.3+ |
| 1997 03 10 | 691 | 0.2− | 0.8− | 2002 03 05 | 291 | 0.1− | 0.2− | 2006 02 02 | G96 | 0.1+ | 0.1− |
| 1997 03 10 | 691 | 0.3− | 0.7− | 2002 03 05 | 291 | 0.1− | 0.3− | 2006 02 02 | G96 | 0.0 | 0.0 |
| 1999 10 07 | 704 | 0.7+ | 0.6− | 2003 07 01 | 704 | 0.6− | 1.0+ | 2006 02 02 | G96 | 0.1− | 0.1+ |
| 1999 10 07 | 704 | 0.3− | 0.1+ | 2003 07 01 | 704 | 0.5+ | 0.7+ | 2006 02 02 | G96 | 0.1− | 0.1− |
| 1999 10 07 | 704 | 0.0 | 0.6+ | 2003 07 01 | 704 | 0.3− | 0.5+ | 2006 02 06 | 691 | 0.1− | 0.2+ |
| 1999 10 08 | 704 | 0.1+ | 1.4− | 2005 02 04 | 691 | 0.3− | 0.2+ | 2006 02 06 | 691 | 0.3+ | 0.2+ |
| 1999 10 08 | 704 | 0.2+ | 1.2− | 2005 02 04 | 691 | 0.4− | 0.3+ | 2006 02 06 | 691 | 0.4+ | 0.1+ |
| 1999 10 08 | 704 | 0.2+ | 0.7− | 2005 02 04 | 691 | 0.0 | 0.0 | 2006 02 08 | 291 | 0.1− | 0.1− |
| 1999 10 08 | 704 | 0.1+ | 0.0 | 2006 02 02 | 691 | 0.2+ | 0.2+ | 2006 02 08 | 291 | 0.2− | 0.6+ |
| 1999 10 08 | 704 | 0.9+ | 0.5− | 2006 02 02 | 691 | 0.5+ | 0.1+ | 2006 02 08 | 291 | 0.1+ | 0.5+ |

**2006 CL$_{65}$ = 2004 RR$_{330}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.25660 | | | (2000.0) | | |
| $n$ | 0.26190561 | $\omega$ | 257.18888 | | +0.25605522 | −0.96665398 |
| $a$ | 2.4193917 | $\Omega$ | 177.96211 | | +0.92460923 | +0.24371376 |
| $e$ | 0.1122742 | $i$ | 6.42063 | | +0.28201683 | +0.07863645 |
| $P$ | 3.76 | $H$ | 17.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1− | 0.2+ | 2004 09 21 | 691 | 0.1+ | 0.1+ | 2006 02 27 | G96 | 0.1+ | 0.0 |
| 2000 09 03 | 645 | 0.0 | 0.2+ | 2006 02 06 | 691 | 0.4+ | 0.1+ | 2006 03 09 | G96 | 0.4+ | 0.2− |
| 2002 03 20 | 291 | 0.1+ | 0.2+ | 2006 02 06 | 691 | 0.3+ | 0.5+ | 2006 03 09 | G96 | 0.2− | 0.1+ |
| 2002 03 20 | 291 | 0.1+ | 0.5+ | 2006 02 06 | 691 | 0.2+ | 0.0 | 2006 03 09 | G96 | 0.1− | 0.1+ |
| 2002 03 20 | 291 | 0.0 | 0.8+ | 2006 02 27 | G96 | 0.3− | 0.1+ | 2006 03 09 | G96 | 0.3− | 0.1+ |
| 2004 09 15 | 691 | 0.0 | 0.3− | 2006 02 27 | G96 | 0.5− | 0.1+ | 2006 04 07 | G96 | 0.2+ | 0.3+ |
| 2004 09 15 | 691 | 0.1− | 0.1− | 2006 02 27 | G96 | 0.3+ | 0.1− | 2006 04 07 | G96 | 0.4− | 0.7+ |
| 2004 09 15 | 691 | 0.1− | 0.3+ | 2006 02 27 | G96 | 0.2− | 0.1+ | 2006 04 07 | G96 | 0.2− | 0.2+ |
| 2004 09 21 | 691 | 0.2+ | 0.2+ | 2006 02 27 | G96 | 0.4− | 0.2+ | 2006 04 07 | G96 | 0.2− | 0.1+ |
| 2004 09 21 | 691 | 0.0 | 0.1− | 2006 02 27 | G96 | 0.3− | 0.2+ | | | | |

**2006 CN$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 118.96517 | | | (2000.0) | | |
| $n$ | 0.19872805 | $\omega$ | 270.46060 | | +0.65832480 | −0.75197006 |
| $a$ | 2.9082379 | $\Omega$ | 138.30133 | | +0.70930810 | +0.60463857 |
| $e$ | 0.1199112 | $i$ | 2.92148 | | +0.25197317 | +0.26258947 |
| $P$ | 4.96 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 29 | 691 | 0.3+ | 0.1+ | 2006 01 05 | G96 | 0.0 | 0.5− | 2006 02 05 | G96 | 0.1− | 0.0 |
| 1994 09 29 | 691 | 0.0 | 0.2+ | 2006 01 05 | G96 | 0.0 | 0.2− | 2006 02 05 | G96 | 0.3− | 0.0 |
| 1994 09 29 | 691 | 0.4− | 0.1− | 2006 01 05 | G96 | 0.7− | 0.1− | 2006 02 05 | G96 | 0.3− | 0.1− |
| 1999 10 17 | 691 | 0.1− | 0.6− | 2006 01 22 | G96 | 0.0 | 0.3− | 2006 02 05 | G96 | 0.2+ | 0.0 |
| 1999 10 17 | 691 | 0.4+ | 0.2− | 2006 01 22 | G96 | 0.7+ | 0.5− | 2006 02 20 | G96 | 0.1− | 0.1− |
| 1999 10 17 | 691 | 0.2− | 0.1+ | 2006 01 22 | G96 | 0.2+ | 0.2− | 2006 02 20 | G96 | 0.0 | 0.2+ |
| 2004 10 14 | 691 | 0.3− | 0.1− | 2006 01 22 | G96 | 0.2− | 0.4− | 2006 02 20 | G96 | 0.2− | 0.4− |
| 2004 10 14 | 691 | 0.0 | 0.2+ | 2006 02 02 | 691 | 0.2+ | 0.2+ | 2006 02 20 | G96 | 0.2− | 0.2+ |
| 2004 10 14 | 691 | 0.2+ | 0.4+ | 2006 02 02 | 691 | 0.1+ | 0.2+ | | | | |
| 2006 01 05 | G96 | 0.2+ | 0.5− | 2006 02 02 | 691 | 0.1− | 0.3+ | | | | |

**2006 CP$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 275.29823 | | | (2000.0) | | |
| $n$ | 0.29745035 | $\omega$ | 325.53429 | | +0.63391714 | +0.77268823 |
| $a$ | 2.2225919 | $\Omega$ | 343.72277 | | −0.68025119 | +0.53663138 |
| $e$ | 0.2104644 | $i$ | 6.80183 | | −0.36797741 | +0.33908652 |
| $P$ | 3.31 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 644 | 0.5+ | 0.2− | 2004 11 09 | 703 | 0.1− | 0.4− | 2006 02 24 | 691 | 0.0 | 0.3+ |
| 2003 03 26 | 644 | 0.3+ | 0.0 | 2004 11 09 | 703 | 0.5− | 0.3− | 2006 02 24 | 691 | (0.9+ | 2.4+) |
| 2003 03 26 | 644 | 0.6+ | 1.9+ | 2004 11 09 | 703 | 0.4− | 0.1+ | 2006 03 02 | 695 | 0.3− | 0.2− |
| 2003 04 03 | 699 | 0.1− | 0.8+ | 2004 11 09 | 703 | 0.7− | 0.3+ | 2006 03 02 | 695 | 0.5− | 0.2− |
| 2003 04 03 | 699 | 0.2− | 0.4− | 2006 02 01 | 691 | 0.2− | 0.2− | 2006 03 02 | 695 | 0.4− | 0.2− |
| 2003 04 03 | 699 | 0.2+ | 0.9− | 2006 02 01 | 691 | 0.1+ | 0.5+ | 2006 03 24 | G96 | 0.3+ | 0.3− |
| 2003 04 03 | 699 | 0.6− | 0.1− | 2006 02 01 | 691 | 0.2− | 0.3− | 2006 03 24 | G96 | 0.7− | 0.7− |
| 2004 10 15 | 704 | 0.0 | 0.3− | 2006 02 20 | 691 | 0.3+ | 0.0 | 2006 03 24 | G96 | 0.5− | 0.7− |
| 2004 10 15 | 704 | 0.8+ | 0.0 | 2006 02 20 | 691 | 0.1+ | 0.1+ | 2006 03 24 | G96 | 0.5− | 0.3− |
| 2004 10 15 | 704 | 0.6+ | 0.8+ | 2006 02 20 | 691 | 0.3+ | 0.4− | | | | |
| 2004 10 15 | 704 | 0.2+ | 0.4+ | 2006 02 24 | 691 | 0.0 | 0.2+ | | | | |

**2006 CQ$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.43443 | | | (2000.0) | | |
| $n$ | 0.17162069 | $\omega$ | 6.68699 | | −0.99276061 | −0.11813513 |
| $a$ | 3.2069311 | $\Omega$ | 166.47077 | | +0.10545797 | −0.94376114 |
| $e$ | 0.1165381 | $i$ | 5.31991 | | +0.05748906 | −0.30880251 |
| $P$ | 5.74 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 691 | 0.0 | 0.5+ | 2005 02 02 | 704 | 0.2− | 0.1− | 2006 04 08 | 691 | 0.2+ | 0.3+ |
| 2003 10 29 | 691 | 0.0 | 0.3+ | 2005 02 02 | 704 | 0.0 | 0.5+ | 2006 04 21 | 691 | 0.2− | 0.2+ |
| 2003 10 29 | 691 | 0.3− | 0.4+ | 2005 02 02 | 704 | 0.2− | 1.0+ | 2006 04 21 | 691 | 0.3+ | 0.1− |
| 2003 11 29 | 691 | 0.0 | 0.2+ | 2005 02 02 | 704 | 0.6+ | 1.3− | 2006 04 21 | 691 | 0.0 | 0.4+ |
| 2003 11 29 | 691 | 0.2+ | 0.4+ | 2006 02 04 | 691 | 0.0 | 0.4+ | 2006 05 08 | 691 | 0.0 | 0.1+ |
| 2003 11 29 | 691 | 0.4− | 0.3+ | 2006 02 04 | 691 | 0.1+ | 0.3− | 2006 05 08 | 691 | 0.1− | 0.3+ |
| 2005 01 17 | 691 | 0.0 | 0.0 | 2006 02 04 | 691 | 0.0 | 0.5− | 2006 05 08 | 691 | 0.0 | 0.1+ |
| 2005 01 17 | 691 | 0.1+ | 0.1− | 2006 04 08 | 691 | 0.2+ | 0.2+ | | | | |
| 2005 01 17 | 691 | 0.1− | 0.0 | 2006 04 08 | 691 | 0.0 | 0.6+ | | | | |

**2006 CR$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 185.14682 | | | (2000.0) | | |
| $n$ | 0.25432117 | $\omega$ | 224.93766 | | +0.91420086 | −0.40353528 |
| $a$ | 2.4672569 | $\Omega$ | 158.77604 | | +0.39475325 | +0.86584446 |
| $e$ | 0.1156655 | $i$ | 5.92412 | | +0.09168781 | +0.29575775 |
| $P$ | 3.88 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 15 | 691 | 0.7+ | 0.2− | 2002 02 16 | 644 | 0.1+ | 0.6+ | 2006 02 21 | G96 | 0.2− | 0.2+ |
| 1999 05 15 | 691 | 0.4− | 1.7+ | 2002 02 16 | 644 | 0.1+ | 0.1+ | 2006 03 03 | 691 | 0.0 | 0.6+ |
| 2000 10 02 | 704 | 0.7+ | 0.4+ | 2006 02 06 | G96 | 0.1− | 0.2− | 2006 03 03 | 691 | 0.2+ | 0.6+ |
| 2000 10 02 | 704 | 0.2− | 1.1+ | 2006 02 06 | G96 | 0.0 | 0.1− | 2006 03 03 | 691 | 0.0 | 0.5+ |
| 2000 10 02 | 704 | 0.4− | 1.3+ | 2006 02 06 | G96 | 0.1+ | 0.1+ | 2006 03 29 | 691 | 0.2+ | 0.1+ |
| 2000 10 02 | 704 | 0.0 | 0.9+ | 2006 02 06 | G96 | 0.1+ | 0.1− | 2006 03 29 | 691 | 0.1+ | 0.1− |
| 2000 10 02 | 645 | 0.1− | 0.2+ | 2006 02 21 | G96 | 0.1+ | 0.1− | 2006 03 29 | 691 | 0.1+ | 0.3+ |
| 2000 10 02 | 645 | 0.1− | 0.2+ | 2006 02 21 | G96 | 0.5− | 0.6+ | | | | |
| 2002 02 16 | 644 | 0.7+ | 0.7+ | 2006 02 21 | G96 | 0.0 | 0.0 | | | | |

**2006 CV$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.12027 | | | (2000.0) | | |
| $n$ | 0.23549752 | $\omega$ | 80.73862 | | −0.92757293 | −0.36629025 |
| $a$ | 2.5970391 | $\Omega$ | 77.74674 | | +0.30629720 | −0.85847665 |
| $e$ | 0.2104374 | $i$ | 4.32853 | | +0.21398712 | −0.35895583 |
| $P$ | 4.19 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 19 | 644 | 0.4+ | 0.7+ | 2006 03 24 | 691 | 0.1+ | 0.2+ | 2006 04 19 | 703 | 0.5− | 0.0 |
| 2002 05 19 | 644 | 0.2+ | 0.3+ | 2006 04 19 | 699 | 1.3+ | 0.2+ | 2006 04 27 | 704 | 0.1− | 0.8+ |
| 2002 05 19 | 644 | 0.1− | 0.4+ | 2006 04 19 | 699 | 0.6+ | 0.3+ | 2006 04 27 | 704 | 0.2+ | 0.3− |
| 2004 10 13 | 691 | 0.1− | 0.4+ | 2006 04 19 | 699 | 0.8+ | 0.4− | 2006 04 27 | 704 | 1.2+ | 0.9+ |
| 2004 10 13 | 691 | 0.1− | 0.3+ | 2006 04 19 | 699 | 0.5+ | 0.3− | 2006 05 07 | G96 | 0.0 | 0.6− |
| 2004 10 13 | 691 | 0.2− | 0.3+ | 2006 04 19 | 703 | 0.0 | 0.6− | 2006 05 07 | G96 | 0.1+ | 0.2+ |
| 2006 02 02 | G96 | 0.0 | 0.3− | 2006 04 19 | 703 | 1.5− | 0.4− | 2006 05 07 | G96 | 0.2− | 0.0 |
| 2006 02 02 | G96 | 0.4+ | 0.2− | 2006 04 19 | 703 | 0.5− | 1.5− | 2006 05 07 | G96 | 0.1− | 0.1− |
| 2006 02 02 | G96 | 0.2+ | 0.5− | 2006 04 19 | 703 | 1.6− | 0.8− | 2006 05 21 | G96 | 0.0 | 0.4+ |
| 2006 02 02 | G96 | 0.0 | 0.1− | 2006 04 19 | 703 | 0.4− | 0.8+ | 2006 05 21 | G96 | 0.3− | 0.2+ |
| 2006 03 24 | 691 | 0.3+ | 0.2+ | 2006 04 19 | 703 | 1.0+ | 1.3+ | 2006 05 21 | G96 | 0.1− | 0.2+ |
| 2006 03 24 | 691 | 0.2− | 0.1+ | 2006 04 19 | 703 | 0.9− | 0.8+ | 2006 05 21 | G96 | 0.1+ | 0.2+ |

**2006 CW$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 51.39104 | | | (2000.0) | | |
| $n$ | 0.23198643 | $\omega$ | 87.26636 | | −0.82785285 | −0.53146249 |
| $a$ | 2.6231774 | $\Omega$ | 60.56900 | | +0.39689051 | −0.78103919 |
| $e$ | 0.1289641 | $i$ | 11.89131 | | +0.39640583 | −0.32791066 |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 645 | 0.1− | 0.1− | 2002 04 16 | 704 | 0.3− | 0.0 | 2006 03 16 | 644 | 0.7+ | 0.3+ |
| 2002 03 12 | 645 | 0.1− | 0.1− | 2002 04 16 | 704 | 0.5+ | 0.8− | 2006 03 16 | 644 | 0.5+ | 0.1+ |
| 2002 03 20 | 704 | 0.2+ | 0.2+ | 2002 04 16 | 704 | 0.2+ | 0.4− | 2006 03 16 | 644 | 0.8− | 0.7+ |
| 2002 03 20 | 704 | 0.1− | 0.8+ | 2002 04 16 | 704 | 0.5+ | 0.8− | 2006 03 16 | 644 | 0.1− | 0.9+ |
| 2002 03 20 | 704 | 0.9+ | 0.6+ | 2006 02 04 | 703 | 0.6− | 0.0 | 2006 03 24 | 703 | (1.8+ | 1.7−) |
| 2002 03 20 | 704 | 0.8− | 0.3+ | 2006 02 04 | 703 | 1.0− | 0.5+ | 2006 03 24 | 703 | 0.1+ | 0.2− |
| 2002 03 20 | 704 | 0.4+ | 0.2+ | 2006 02 04 | 703 | 0.7− | 0.1− | 2006 03 24 | 703 | (1.2+ | 1.7−) |
| 2002 04 04 | 049 | 0.1+ | 0.1+ | 2006 02 04 | 703 | 0.8− | 0.5− | 2006 03 24 | 703 | 0.8+ | 1.4− |
| 2002 04 04 | 049 | 1.1+ | 0.0 | 2006 03 06 | 703 | 0.1+ | 0.4+ | 2006 04 24 | 703 | 0.0 | 0.5− |
| 2002 04 04 | 049 | 0.4+ | 0.0 | 2006 03 06 | 703 | 0.3− | 0.0 | 2006 04 24 | 703 | 0.2+ | 0.8+ |
| 2002 04 12 | 644 | 0.1+ | 0.8+ | 2006 03 06 | 703 | 0.7+ | 0.1+ | 2006 04 24 | 703 | 1.0− | 0.6− |
| 2002 04 12 | 644 | 0.2+ | 1.2+ | 2006 03 06 | 703 | 1.1+ | 0.6− | 2006 04 24 | 703 | (0.1+ | 1.8−) |
| 2002 04 12 | 644 | 0.1+ | 0.9+ | 2006 03 16 | 644 | 1.1+ | 0.8+ | | | | |
| 2002 04 16 | 704 | 0.1− | 0.4− | 2006 03 16 | 644 | 0.3+ | 0.3+ | | | | |

**2006 CZ$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.51773 | | | (2000.0) | | |
| $n$ | 0.22484598 | $\omega$ | 251.95786 | | +0.26959081 | +0.95446916 |
| $a$ | 2.6784238 | $\Omega$ | 34.50869 | | −0.77609074 | +0.29386382 |
| $e$ | 0.1947056 | $i$ | 13.02766 | | −0.57009119 | +0.05130955 |
| $P$ | 4.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 18 | 691 | 0.1− | 0.1+ | 2006 02 06 | 691 | 0.3+ | 0.2− | 2006 05 04 | G96 | 0.7− | 0.0 |
| 2003 11 18 | 691 | 0.2+ | 0.0 | 2006 02 06 | 691 | 0.1− | 0.4+ | 2006 05 04 | G96 | 0.4− | 0.0 |
| 2003 11 18 | 691 | 0.3+ | 0.1+ | 2006 02 06 | 691 | 0.2− | 0.1− | 2006 05 04 | G96 | 0.3− | 0.2− |
| 2003 12 01 | 691 | 0.1− | 0.2− | 2006 04 02 | 691 | 0.3+ | 0.0 | 2006 05 24 | 699 | 0.4+ | 1.2+ |
| 2003 12 01 | 691 | 0.1− | 0.2+ | 2006 04 02 | 691 | 0.5− | 0.3− | 2006 05 24 | 699 | 0.7+ | 0.2+ |
| 2003 12 01 | 691 | 0.4− | 0.2+ | 2006 04 02 | 691 | 0.5+ | 0.2+ | 2006 05 24 | 699 | 1.6+ | 0.8+ |
| 2006 02 06 | 691 | 0.1− | 0.1− | 2006 04 26 | 807 | 0.0 | 0.2− | 2006 05 24 | 699 | 0.5+ | 0.1− |
| 2006 02 06 | 691 | 0.1− | 0.3− | 2006 04 26 | 807 | 0.0 | 0.2− | | | | |
| 2006 02 06 | 691 | 0.5− | 0.4+ | 2006 05 04 | G96 | 0.4− | 0.1− | | | | |

**2006 DZ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 151.67331 | | (2000.0) | | | |
| $n$ | 0.24626915 | $\omega$ | 244.12543 | | +0.76900069 | −0.63832823 |
| $a$ | 2.5207477 | $\Omega$ | 155.49577 | | +0.61209603 | +0.71981595 |
| $e$ | 0.1764362 | $i$ | 4.74070 | | +0.18432684 | +0.27276743 |
| $P$ | 4.00 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 14 | 699 | 2.0− | 0.2− | 2004 09 17 | 691 | 0.0 | 0.2− | 2006 02 20 | 691 | 0.2+ | 0.0 | |
| 2004 09 14 | 699 | 0.8+ | 0.8+ | 2004 09 17 | 704 | 0.2− | 0.4+ | 2006 02 20 | 691 | 0.1+ | 0.1− | |
| 2004 09 14 | 699 | 0.5+ | 0.2+ | 2004 10 07 | 704 | 0.6+ | 0.4+ | 2006 02 21 | G96 | 0.3+ | 0.7− | |
| 2004 09 14 | 699 | 0.8+ | 0.0 | 2004 10 07 | 704 | 0.1+ | 0.9+ | 2006 02 21 | G96 | 0.4+ | 0.4− | |
| 2004 09 17 | 691 | 0.1+ | 0.0 | 2004 10 07 | 704 | 1.2+ | 0.4− | 2006 02 21 | G96 | 0.2− | 0.6− | |
| 2004 09 17 | 704 | 0.3− | 0.2− | 2004 10 07 | 704 | 1.2− | 1.4− | 2006 02 21 | G96 | 0.3− | 0.5− | |
| 2004 09 17 | 704 | 0.1− | 0.4− | 2006 01 31 | 691 | 0.0 | 0.3− | 2006 03 03 | 691 | 0.0 | 0.1+ | |
| 2004 09 17 | 691 | 0.0 | 0.1+ | 2006 01 31 | 691 | 0.3− | 0.1+ | 2006 03 03 | 691 | 0.2− | 0.1− | |
| 2004 09 17 | 704 | 0.1− | 0.3+ | 2006 01 31 | 691 | 0.2− | 0.2+ | 2006 03 03 | 691 | 0.3− | 0.1+ | |
| 2004 09 17 | 704 | 0.6− | 0.4+ | 2006 02 20 | 691 | 0.7+ | 0.5+ | | | | | |

**2006 DR$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 255.91825 | | (2000.0) | | | |
| $n$ | 0.23024450 | $\omega$ | 174.59792 | | +0.80971997 | +0.58249980 |
| $a$ | 2.6363913 | $\Omega$ | 149.42486 | | −0.54348888 | +0.79007562 |
| $e$ | 0.1817546 | $i$ | 8.02881 | | −0.22129938 | +0.19098295 |
| $P$ | 4.28 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 03 | 691 | 0.0 | 0.0 | 2003 08 05 | 704 | 0.5− | 0.5− | 2006 02 20 | 691 | 0.5+ | 0.1− | |
| 2003 07 03 | 691 | 0.2− | 0.1+ | 2003 08 05 | 704 | 0.0 | 0.5− | 2006 02 20 | 691 | 0.1+ | 0.1+ | |
| 2003 07 03 | 691 | 0.0 | 0.1+ | 2003 08 25 | 704 | 0.4+ | 0.7− | 2006 02 20 | 691 | 0.6+ | 0.1− | |
| 2003 07 25 | 704 | 1.1+ | 0.3− | 2003 08 25 | 704 | 0.3+ | 0.2− | 2006 02 21 | G96 | 0.6+ | 0.4− | |
| 2003 07 25 | 704 | 0.2+ | 0.8− | 2003 08 25 | 704 | 0.4− | 0.1+ | 2006 02 21 | G96 | 0.3+ | 0.5− | |
| 2003 07 25 | 704 | 0.1− | 0.8− | 2003 08 25 | 704 | 0.2− | 0.5+ | 2006 02 21 | G96 | 0.1− | 0.5− | |
| 2003 07 25 | 704 | 0.2− | 1.4+ | 2003 08 25 | 704 | 0.2+ | 0.2+ | 2006 02 21 | G96 | 0.0 | 0.7− | |
| 2003 08 05 | 704 | 0.7+ | 0.2− | 2006 01 30 | 691 | 0.9− | 0.4+ | 2006 02 24 | 691 | 0.1+ | 0.5+ | |
| 2003 08 05 | 704 | 0.5− | 0.3− | 2006 01 30 | 691 | 0.5− | 0.1+ | 2006 02 24 | 691 | 0.3+ | 0.3− | |
| 2003 08 05 | 704 | 0.4− | 0.6+ | 2006 01 30 | 691 | 0.7− | 0.2− | 2006 02 24 | 691 | 0.2+ | 0.2− | |

**2006 DV$_5$ = 2000 SU$_{374}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.41596 | | (2000.0) | | | |
| $n$ | 0.27381185 | $\omega$ | 113.70949 | | −0.55355696 | +0.81957854 |
| $a$ | 2.3487379 | $\Omega$ | 121.85814 | | −0.81336930 | −0.49390232 |
| $e$ | 0.1746501 | $i$ | 10.02611 | | −0.17889963 | −0.29043332 |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.0 | 2006 01 23 | 691 | 0.3+ | 0.1− | 2006 02 22 | 699 | (1.6+ | 0.2+) | |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2006 01 23 | 691 | 0.1+ | 0.0 | 2006 02 22 | 699 | 0.5− | 0.3+ | |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2006 02 20 | 703 | 0.8− | 0.8− | 2006 02 28 | 703 | (2.0− | 1.1−) | |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2006 02 20 | 703 | 0.2− | 0.5+ | 2006 02 28 | 703 | (2.0− | 0.3−) | |
| 2005 10 24 | 568 | 0.3− | 0.1+ | 2006 02 20 | 703 | 0.9+ | 0.2+ | 2006 02 28 | 703 | 0.4− | 0.7− | |
| 2005 10 24 | 568 | 0.0 | 0.1+ | 2006 02 20 | 703 | 0.9− | 0.0 | 2006 02 28 | 703 | 0.4− | 0.4− | |
| 2005 10 24 | 568 | 0.2− | 0.1+ | 2006 02 22 | 699 | 0.4− | 0.3+ | | | | | |
| 2006 01 23 | 691 | 0.1+ | 0.1+ | 2006 02 22 | 699 | 1.1+ | 0.1+ | | | | | |

**2006 DB$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.71226 | | (2000.0) | | | |
| $n$ | 0.30904740 | $\omega$ | 108.39048 | | −0.79271150 | +0.60309968 |
| $a$ | 2.1666362 | $\Omega$ | 108.79631 | | −0.58869748 | −0.71957349 |
| $e$ | 0.0589275 | $i$ | 5.38028 | | −0.15825218 | −0.34421616 |
| $P$ | 3.19 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 691 | 0.5− | 0.0 | 2003 04 09 | 691 | 0.2+ | 0.6− | 2006 02 20 | 703 | 0.2− | 0.9+ | |
| 2000 04 13 | 691 | 0.6− | 0.1− | 2003 04 09 | 691 | 0.1+ | 0.5− | 2006 02 20 | 703 | 0.3− | 0.2− | |
| 2000 04 13 | 691 | 0.3− | 0.0 | 2003 04 09 | 704 | 0.1+ | 0.6+ | 2006 02 20 | 703 | 0.2− | 0.9− | |
| 2000 05 11 | 699 | 0.5+ | 0.2+ | 2003 04 09 | 704 | 0.2− | 0.4+ | 2006 02 21 | 699 | 0.9+ | 0.0 | |
| 2000 05 11 | 699 | 1.2+ | 0.0 | 2003 04 09 | 691 | 0.1+ | 0.5− | 2006 02 21 | 699 | 0.1− | 0.0 | |
| 2000 05 11 | 699 | 2.1+ | 1.3+ | 2003 04 09 | 704 | 0.3− | 0.7+ | 2006 02 21 | 699 | 0.9+ | 0.5+ | |
| 2000 05 11 | 699 | 1.4+ | 0.3+ | 2003 04 09 | 704 | 0.1+ | 0.1+ | 2006 02 21 | 699 | 0.9+ | 0.3− | |
| 2003 03 27 | 691 | 0.3− | 0.1+ | 2003 04 09 | 704 | 0.4− | 0.5+ | 2006 02 22 | 704 | 1.1+ | 1.4+ | |
| 2003 03 27 | 691 | 0.1− | 0.1− | 2005 10 07 | 568 | 0.1+ | 0.1+ | 2006 02 22 | 704 | 0.5+ | 0.8+ | |
| 2003 03 27 | 691 | 0.4− | 0.2+ | 2005 10 07 | 568 | 0.2+ | 0.1+ | 2006 02 22 | 704 | 0.3+ | 1.7+ | |
| 2003 04 01 | 704 | 0.6+ | 1.1+ | 2006 02 09 | 644 | 0.2+ | 0.1+ | 2006 02 28 | 703 | 0.9− | 1.2− | |
| 2003 04 01 | 704 | 0.0 | 0.2+ | 2006 02 09 | 644 | 0.2+ | 0.1− | 2006 02 28 | 703 | 0.7− | 1.8− | |
| 2003 04 01 | 704 | 1.3+ | 0.2+ | 2006 02 09 | 644 | 0.1+ | 0.1+ | 2006 02 28 | 703 | 1.4− | 0.1− | |
| 2003 04 01 | 704 | 0.6+ | 0.1− | 2006 02 20 | 703 | 0.0 | 0.5+ | 2006 02 28 | 703 | 1.5− | 0.2− | |

**2006 DZ$_9$ = 1998 HF$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.53970 | | (2000.0) | | | |
| $n$ | 0.24230469 | $\omega$ | 113.35975 | | −0.81482343 | +0.57208999 |
| $a$ | 2.5481687 | $\Omega$ | 101.66082 | | −0.56066541 | −0.73661896 |
| $e$ | 0.1911082 | $i$ | 5.48894 | | −0.14736715 | −0.36070148 |
| $P$ | 4.07 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 19 | 704 | 1.2+ | 1.2− | 2002 04 02 | 644 | 0.4+ | 0.2+ | 2006 02 22 | 703 | 1.1− | 0.4− | |
| 1998 04 19 | 704 | 0.7− | 1.2− | 2002 04 16 | 704 | 0.3+ | 0.7+ | 2006 02 22 | 703 | (2.1+ | 3.2−) | |
| 1998 04 19 | 704 | (2.5− | 1.1+) | 2002 04 16 | 704 | 0.8+ | 1.1+ | 2006 02 22 | 703 | 0.1− | 0.1− | |
| 1998 04 19 | 704 | 0.1+ | 1.1+ | 2002 04 16 | 704 | 0.3+ | 1.0+ | 2006 02 22 | 703 | 0.4− | 0.4+ | |
| 2000 12 01 | 691 | 0.0 | 0.2+ | 2002 04 16 | 704 | 0.5+ | 0.4+ | 2006 02 22 | 703 | 0.9+ | 0.4− | |
| 2000 12 01 | 691 | 0.1− | 0.2− | 2006 02 01 | 691 | 0.7+ | 0.3+ | 2006 02 22 | 703 | 0.6− | 0.2+ | |
| 2000 12 01 | 691 | 0.1+ | 0.0 | 2006 02 01 | 691 | 0.5+ | 0.0 | 2006 02 22 | 703 | 0.8− | 0.5− | |
| 2002 03 09 | 699 | 0.3+ | 0.0 | 2006 02 01 | 691 | 0.1+ | 0.0 | 2006 02 22 | 703 | 0.6− | 0.0 | |
| 2002 03 09 | 699 | 0.9− | 0.3− | 2006 02 21 | 703 | 0.4− | 0.1− | 2006 02 22 | 703 | 0.5− | 0.8− | |
| 2002 03 09 | 699 | 0.1− | 0.9+ | 2006 02 21 | 703 | 0.0 | 0.7− | 2006 02 23 | 699 | (2.1+ | 0.1+) | |
| 2002 03 09 | 699 | 0.4− | 0.1+ | 2006 02 21 | 703 | 1.4+ | 0.5+ | 2006 02 23 | 699 | 0.9+ | 0.0 | |
| 2002 03 12 | 645 | 0.1− | 0.1− | 2006 02 21 | 703 | 0.9− | 1.0− | 2006 02 23 | 699 | 0.8− | 1.1+ | |
| 2002 03 12 | 645 | 0.1− | 0.1− | 2006 02 21 | 703 | 1.0+ | 0.0 | 2006 02 23 | 699 | 0.6+ | 0.7+ | |
| 2002 03 20 | 699 | 0.8+ | 0.3+ | 2006 02 21 | 703 | 0.3− | 0.9− | 2006 03 19 | 699 | 0.1+ | 0.2− | |
| 2002 03 20 | 699 | 0.4+ | 0.9+ | 2006 02 21 | 703 | 1.1− | 0.1− | 2006 03 19 | 699 | 1.4+ | 0.0 | |
| 2002 03 20 | 699 | 0.3− | 0.2− | 2006 02 21 | 703 | 0.3+ | 0.9+ | 2006 03 19 | 699 | 1.0+ | 1.9+ | |
| 2002 03 20 | 699 | 0.0 | 0.2+ | 2006 02 22 | 703 | 0.1− | 0.1+ | 2006 03 19 | 699 | 0.0 | 0.1− | |
| 2002 04 02 | 644 | 0.1+ | 0.3− | 2006 02 22 | 703 | 1.7− | 0.1− | | | | | |
| 2002 04 02 | 644 | 0.1+ | 0.1− | 2006 02 22 | 703 | 0.9− | 0.2+ | | | | | |

**2006 DM$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 211.01051 | | (2000.0) | | | |
| $n$ | 0.19270169 | $\omega$ | 213.54119 | | +0.94517670 | +0.28845096 |
| $a$ | 2.9685591 | $\Omega$ | 128.93325 | | −0.23925760 | +0.93074630 |
| $e$ | 0.1153054 | $i$ | 11.35028 | | −0.22225393 | +0.22473846 |
| $P$ | 5.11 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 06 | 691 | 0.2− | 0.4− | 2003 07 25 | 644 | 0.4− | 0.8+ | 2006 01 23 | 691 | 0.3+ | 0.3+ | |
| 1997 07 06 | 691 | 0.2+ | 0.7− | 2003 07 25 | 644 | 0.4− | 0.7+ | 2006 02 20 | 691 | 0.3− | 0.4+ | |
| 1997 07 06 | 691 | 0.4− | 0.1− | 2003 07 25 | 644 | 0.6− | 0.5+ | 2006 02 20 | 691 | 0.1+ | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 20 | 691 | 0.4− | 0.1− | 2003 08 23 | 644 | 0.6− | 0.9+ | 2006 02 20 | 691 | 0.0 | 0.0 |
| 2002 04 20 | 691 | 0.1+ | 0.3− | 2003 08 23 | 644 | 0.4− | 0.7+ | 2006 02 20 | 703 | 0.3+ | 0.2− |
| 2002 04 20 | 691 | 0.2+ | 0.1+ | 2003 08 23 | 644 | 0.4− | 0.7+ | 2006 02 20 | 703 | 0.4+ | 0.2− |
| 2002 05 06 | 644 | 0.1+ | 1.1+ | 2003 08 31 | 704 | 0.2− | 1.3+ | 2006 02 20 | 703 | (2.6− | 0.7−) |
| 2002 05 06 | 644 | 0.3− | 0.6+ | 2003 08 31 | 704 | 0.4− | 0.4+ | 2006 02 20 | 703 | 0.9− | 1.8− |
| 2002 05 06 | 644 | 0.2+ | 0.5+ | 2003 08 31 | 704 | 0.0 | 1.2+ | 2006 02 22 | 704 | 0.1+ | 0.8+ |
| 2002 05 18 | 704 | 0.8+ | 0.0 | 2003 08 31 | 704 | 0.7+ | 0.8− | 2006 02 22 | 704 | 0.3− | 1.1+ |
| 2002 05 18 | 704 | 0.9+ | 1.0+ | 2003 08 31 | 704 | 0.1+ | 0.1− | 2006 02 22 | 704 | 0.2+ | 1.1+ |
| 2002 05 18 | 704 | 0.4+ | 0.8− | 2004 12 18 | 704 | 0.3+ | 0.6+ | 2006 02 22 | 704 | 0.4+ | 0.8+ |
| 2002 05 18 | 704 | 1.0+ | 0.4− | 2004 12 18 | 704 | 0.3− | 0.7+ | 2006 02 24 | 691 | 0.1− | 0.1+ |
| 2002 06 08 | 644 | 0.5+ | 1.7+ | 2004 12 18 | 704 | 1.3+ | 0.9+ | 2006 02 24 | 691 | 0.0 | 0.2+ |
| 2002 06 08 | 644 | 0.4+ | 1.5+ | 2006 01 23 | 691 | 0.0 | 0.2+ | 2006 02 24 | 691 | 0.0 | 0.1+ |
| 2002 06 08 | 644 | 0.0 | 1.6+ | 2006 01 23 | 691 | 0.1− | 0.2− | | | | |

### 2006 DB$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.47066 | | | (2000.0) | | |
| $n$ | 0.18920764 | $\omega$ | 181.01979 | | −0.95675283 | +0.28741552 |
| $a$ | 3.0049940 | $\Omega$ | 15.90516 | | −0.26572401 | −0.80065212 |
| $e$ | 0.0912365 | $i$ | 9.43071 | | −0.11838399 | −0.52568860 |
| $P$ | 5.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1+ | 0.5+ | 2006 02 22 | 703 | 0.4− | 0.3+ | 2006 02 25 | G96 | 1.3− | 0.9− |
| 2003 09 18 | 691 | 0.1− | 0.1− | 2006 02 22 | 703 | 0.9− | 0.1− | 2006 02 25 | G96 | 0.1− | 0.3− |
| 2003 09 18 | 691 | 0.1+ | 0.2+ | 2006 02 23 | 699 | 0.1+ | 1.1− | 2006 02 25 | G96 | 0.1− | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 02 23 | 699 | 0.4− | 0.4− | 2006 02 25 | G96 | 0.2+ | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 02 23 | 699 | 1.4− | 0.6+ | 2006 03 04 | 691 | 0.1+ | 0.4+ |
| 2003 09 28 | 645 | 0.1− | 0.0 | 2006 02 23 | 699 | 0.6+ | 0.6− | 2006 03 04 | 691 | 0.1+ | 0.3+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 02 25 | 691 | 0.5+ | 0.0 | 2006 03 04 | 691 | 0.4+ | 0.2+ |
| 2006 02 22 | 703 | 1.0− | 0.0 | 2006 02 25 | 691 | 0.5+ | 0.0 | | | | |
| 2006 02 22 | 703 | 0.5− | 0.9− | 2006 02 25 | 691 | 0.1− | 0.1− | | | | |

### 2006 DJ$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.91450 | | | (2000.0) | | |
| $n$ | 0.25265649 | $\omega$ | 326.73515 | | +0.91996185 | +0.39150669 |
| $a$ | 2.4780824 | $\Omega$ | 10.27406 | | −0.33104479 | +0.80297560 |
| $e$ | 0.1192312 | $i$ | 6.37926 | | −0.20995130 | +0.44939148 |
| $P$ | 3.90 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 04 | 691 | 0.2+ | 0.3− | 2004 10 14 | 152 | 0.7+ | 0.4+ | 2006 02 20 | 691 | 0.4+ | 0.3+ |
| 2004 10 04 | 691 | 0.1+ | 0.0 | 2004 11 09 | 703 | 1.3− | 0.7− | 2006 02 20 | 691 | 0.1+ | 0.4+ |
| 2004 10 04 | 691 | 0.2− | 0.0 | 2004 11 09 | 703 | 0.4− | 1.1+ | 2006 02 20 | 691 | 0.2− | 0.2− |
| 2004 10 12 | 152 | 1.7+ | 1.5+ | 2004 11 09 | 703 | 0.3− | 0.5− | 2006 02 24 | 691 | 0.2− | 0.1+ |
| 2004 10 12 | 152 | 1.4− | 0.2+ | 2004 11 09 | 703 | 1.8+ | 0.7− | 2006 02 24 | 691 | 0.0 | 0.0 |
| 2004 10 12 | 152 | 1.5− | 0.5− | 2006 01 23 | 691 | 0.3− | 0.1− | 2006 02 24 | 691 | 0.2+ | 0.1− |
| 2004 10 14 | 152 | 0.8+ | 1.3+ | 2006 01 23 | 691 | 0.1+ | 0.0 | | | | |
| 2004 10 14 | 152 | 0.8− | 0.6− | 2006 01 23 | 691 | 0.1− | 0.2− | | | | |

### 2006 DV$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.84290 | | | (2000.0) | | |
| $n$ | 0.26550653 | $\omega$ | 0.84049 | | +0.36705697 | −0.92868849 |
| $a$ | 2.3974667 | $\Omega$ | 67.62666 | | +0.85310576 | +0.31338687 |
| $e$ | 0.1833747 | $i$ | 3.28443 | | +0.37078261 | +0.19830877 |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 644 | 0.9+ | 1.5+ | 2002 01 14 | 704 | 0.6+ | 0.9− | 2006 02 01 | 691 | 0.1− | 0.3+ |
| 2001 12 13 | 644 | 1.0+ | 1.1+ | 2002 01 14 | 704 | 0.0 | 0.8− | 2006 02 20 | 691 | 0.3− | 0.1− |
| 2001 12 13 | 644 | 0.2+ | 1.3+ | 2002 01 14 | 704 | 0.4+ | 0.6− | 2006 02 20 | 691 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 1.0− | 1.9− | 2006 01 23 | 691 | 0.0 | 0.1− | 2006 02 20 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.4− | 0.1− | 2006 01 23 | 691 | 0.0 | 0.1− | 2006 02 24 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 1.0− | 0.4+ | 2006 01 23 | 691 | 0.0 | 0.2− | 2006 02 24 | 691 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 1.0− | 0.3− | 2006 02 01 | 691 | 0.0 | 0.1+ | 2006 02 24 | 691 | 0.1− | 0.2+ |
| 2002 01 14 | 704 | 0.4+ | 0.2+ | 2006 02 01 | 691 | 0.1+ | 0.1+ | | | | |

### 2006 DL$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 300.72837 | | | (2000.0) | | |
| $n$ | 0.26572288 | $\omega$ | 172.36629 | | +0.36473389 | +0.92820590 |
| $a$ | 2.3961651 | $\Omega$ | 118.99963 | | −0.85865780 | +0.36583377 |
| $e$ | 0.2434206 | $i$ | 4.82094 | | −0.36010551 | +0.06781936 |
| $P$ | 3.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 691 | 0.6− | 0.2+ | 2002 02 07 | 691 | 0.4+ | 0.1− | 2006 01 31 | 691 | 0.1+ | 0.2+ |
| 2002 01 14 | 691 | 0.5− | 0.0 | 2002 02 07 | 691 | 0.4+ | 0.1− | 2006 02 20 | 691 | 0.2+ | 0.2+ |
| 2002 01 14 | 691 | 0.0 | 0.2− | 2003 06 26 | 704 | 0.1− | 0.3− | 2006 02 20 | 691 | 0.1− | 0.1+ |
| 2002 01 21 | 291 | 0.0 | 0.3+ | 2003 06 26 | 704 | 0.2+ | 0.3− | 2006 02 20 | 691 | 0.3+ | 0.2+ |
| 2002 01 21 | 291 | 0.1− | 0.1+ | 2003 06 26 | 704 | 0.1− | 0.4+ | 2006 02 24 | 691 | 0.0 | 0.1+ |
| 2002 01 21 | 291 | 0.1− | 0.1+ | 2006 01 31 | 691 | 0.3+ | 0.4− | 2006 02 24 | 691 | 0.8− | 0.1− |
| 2002 02 07 | 691 | 0.5+ | 0.3− | 2006 01 31 | 691 | 0.0 | 0.1− | 2006 02 24 | 691 | 0.2+ | 0.0 |

### 2006 DQ$_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 110.96327 | | | (2000.0) | | |
| $n$ | 0.25834471 | $\omega$ | 298.58697 | | +0.06845967 | −0.99752225 |
| $a$ | 2.4415728 | $\Omega$ | 147.47519 | | +0.92553526 | +0.05743862 |
| $e$ | 0.1639530 | $i$ | 1.72723 | | +0.37242147 | +0.04062217 |
| $P$ | 3.82 | $H$ | 18.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 21 | 691 | 0.1− | 0.2+ | 2006 01 30 | 691 | 0.1− | 0.2− | 2006 02 24 | 691 | 0.2+ | 0.3− |
| 2002 01 21 | 691 | 0.2+ | 0.1− | 2006 01 30 | 691 | 0.0 | 0.5+ | 2006 02 25 | G96 | (3.3− | 0.7+) |
| 2002 01 21 | 691 | 0.0 | 0.1+ | 2006 01 30 | 691 | 0.3+ | 0.4− | 2006 02 25 | G96 | 0.0 | 0.1− |
| 2002 02 06 | 695 | 0.0 | 0.0 | 2006 02 20 | 691 | 0.6− | 0.3− | 2006 02 25 | G96 | 0.0 | 0.7− |
| 2002 02 06 | 695 | 0.5− | 0.2+ | 2006 02 20 | 691 | 0.2− | 0.0 | 2006 02 25 | G96 | 0.7− | 0.3− |
| 2002 02 11 | 704 | 0.3+ | 0.8− | 2006 02 20 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.3+ | 0.2− |
| 2002 02 11 | 704 | 0.2+ | 0.4− | 2006 02 24 | 691 | 0.2− | 0.6− | 2006 03 02 | 691 | 0.4+ | 1.6+ |
| 2002 02 11 | 704 | 0.3− | 0.1+ | 2006 02 24 | 691 | 0.2− | 0.4+ | 2006 03 02 | 691 | 0.3+ | 0.0 |

### 2006 DJ$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 174.28064 | | | (2000.0) | | |
| $n$ | 0.17851573 | $\omega$ | 45.38792 | | +0.96031968 | −0.26323507 |
| $a$ | 3.1238132 | $\Omega$ | 329.52232 | | +0.17525085 | +0.82658630 |
| $e$ | 0.0275651 | $i$ | 10.46890 | | +0.21696369 | +0.49745591 |
| $P$ | 5.52 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 691 | 0.2+ | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 02 20 | G96 | 0.4− | 0.1− |
| 2003 09 20 | 691 | 0.4+ | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 02 20 | G96 | 1.2− | 0.1+ |
| 2003 09 20 | 691 | 0.2+ | 0.3+ | 2006 01 23 | G96 | 0.3− | 0.5− | 2006 02 24 | G96 | 0.6− | 0.6+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.3+ | 0.6− | 2006 02 24 | G96 | 0.2− | 0.1+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.1− | 0.2− | 2006 02 24 | G96 | 0.3− | 0.3+ |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2006 01 23 | G96 | 0.5+ | 0.6− | 2006 02 24 | G96 | 0.2+ | 0.2− |
| 2003 09 29 | 645 | 0.0 | 0.1+ | 2006 02 07 | 691 | 0.2+ | 0.2− | 2006 03 24 | 691 | 0.2− | 0.2+ |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2006 02 07 | 691 | 0.2− | 0.4+ | 2006 03 24 | 691 | 0.2+ | 0.1− |
| 2003 10 19 | 645 | 0.3− | 0.0 | 2006 02 07 | 691 | 0.2+ | 0.1− | 2006 03 24 | 691 | 0.6+ | 0.2+ |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2006 02 20 | G96 | 0.1− | 0.4+ | | | | |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2006 02 20 | G96 | 0.4− | 0.0 | | | | |

**2006 DZ$_{27}$ = 1996 EN$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 38.90117 | | (2000.0) | | | |
| $n$ | 0.29752676 | $\omega$ | 202.79447 | | −0.95605442 | +0.29290987 |
| $a$ | 2.2222113 | $\Omega$ | 354.19289 | | −0.24572124 | −0.82431375 |
| $e$ | 0.1150883 | $i$ | 7.26604 | | −0.15994069 | −0.48446945 |
| $P$ | 3.31 | $H$ | 18.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.1+ | 0.1− | 2006 02 20 | 691 | 0.1+ | 0.1− | 2006 02 25 | G96 | 0.0 | 0.1− |
| 1996 03 12 | 691 | 0.2+ | 0.1− | 2006 02 20 | 691 | 0.3+ | 0.3− | 2006 02 25 | G96 | 0.2+ | 0.1+ |
| 1996 03 17 | 691 | 0.3+ | 0.1+ | 2006 02 24 | 691 | 0.1+ | 0.4+ | 2006 02 25 | G96 | 0.0 | 0.4− |
| 1996 03 17 | 691 | 0.5− | 0.2+ | 2006 02 24 | 691 | 0.1− | 0.3+ | 2006 03 06 | 691 | 0.0 | 0.1− |
| 1996 03 17 | 691 | 0.3− | 0.2− | 2006 02 24 | 691 | 0.1− | 0.5+ | 2006 03 06 | 691 | 0.0 | 0.1− |
| 2006 02 20 | 691 | 0.0 | 0.3− | 2006 02 25 | G96 | 0.2− | 0.3− | 2006 03 06 | 691 | 0.1− | 0.0 |

**2006 DH$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 294.40368 | | (2000.0) | | | |
| $n$ | 0.20065042 | $\omega$ | 142.03614 | | +0.74130752 | +0.67109050 |
| $a$ | 2.8896329 | $\Omega$ | 175.77077 | | −0.64427219 | +0.71571425 |
| $e$ | 0.3098833 | $i$ | 7.82101 | | −0.18808644 | +0.19336662 |
| $P$ | 4.91 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 10 | 691 | 0.1− | 0.4+ | 2002 07 18 | 704 | 0.1+ | 0.1+ | 2006 03 24 | G96 | 0.1− | 0.1− |
| 1993 12 10 | 691 | 0.0 | 0.3+ | 2002 07 18 | 704 | 0.0 | 0.1+ | 2006 03 24 | G96 | 0.3− | 0.3− |
| 1993 12 10 | 691 | 0.0 | 0.4+ | 2002 07 18 | 704 | 0.1− | 0.4+ | 2006 03 24 | G96 | 0.3− | 0.3− |
| 2002 07 04 | 333 | 0.2+ | 0.6− | 2002 08 14 | 704 | 0.5− | 1.4+ | 2006 03 24 | G96 | 0.1+ | 0.4− |
| 2002 07 04 | 333 | 0.3− | 0.2− | 2002 08 14 | 704 | 1.4− | 0.0 | 2006 04 20 | 691 | 0.1+ | 0.1+ |
| 2002 07 04 | 333 | 0.2+ | 0.3+ | 2002 08 14 | 704 | 1.0− | 0.4+ | 2006 04 20 | 691 | 0.0 | 0.2+ |
| 2002 07 09 | 704 | 1.0+ | 0.1− | 2002 08 14 | 704 | 1.2− | 0.5+ | 2006 04 20 | 691 | 0.1+ | 0.1− |
| 2002 07 09 | 704 | 0.5+ | 0.5+ | 2006 02 20 | 691 | 0.2+ | 0.6+ | 2006 05 06 | G96 | 0.1− | 0.5− |
| 2002 07 09 | 704 | 0.5+ | 0.4+ | 2006 02 20 | 691 | 0.3+ | 0.4+ | 2006 05 06 | G96 | 0.4+ | 0.1+ |
| 2002 07 09 | 704 | 0.4+ | 0.3+ | 2006 02 20 | 691 | 0.1+ | 0.3+ | 2006 05 06 | G96 | 0.0 | 0.2− |
| 2002 07 09 | 704 | 0.8+ | 0.0 | 2006 02 24 | 691 | 0.0 | 0.3+ | 2006 05 06 | G96 | 0.0 | 0.2− |
| 2002 07 18 | 704 | 0.1+ | 0.3+ | 2006 02 24 | 691 | 0.6− | 0.2− | | | | |
| 2002 07 18 | 704 | 0.1+ | 0.2+ | 2006 02 24 | 691 | 0.2+ | 0.1+ | | | | |

**2006 DV$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.71303 | | (2000.0) | | | |
| $n$ | 0.17929229 | $\omega$ | 243.39797 | | +0.40389171 | −0.91480660 |
| $a$ | 3.1147866 | $\Omega$ | 182.78055 | | +0.84372336 | +0.37276538 |
| $e$ | 0.1240789 | $i$ | 0.71975 | | +0.35355675 | +0.15548265 |
| $P$ | 5.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 19 | 691 | 0.1− | 0.0 | 2000 02 11 | 691 | 0.3− | 0.0 | 2006 02 20 | 691 | 0.0 | 0.2+ |
| 1998 11 19 | 691 | 0.0 | 0.1+ | 2000 02 26 | 691 | 0.5+ | 0.0 | 2006 02 20 | 691 | 0.2+ | 0.3+ |
| 1998 11 19 | 691 | 0.1− | 0.4+ | 2000 02 26 | 691 | 0.4+ | 0.0 | 2006 02 24 | 691 | 0.0 | 0.0 |
| 2000 02 03 | 691 | 0.2− | 0.0 | 2000 02 26 | 691 | 0.1+ | 0.1+ | 2006 02 24 | 691 | 0.2+ | 0.0 |
| 2000 02 03 | 691 | 0.1− | 0.0 | 2003 09 28 | 691 | 0.2− | 0.1+ | 2006 02 24 | 691 | 0.2+ | 0.0 |
| 2000 02 03 | 691 | 0.3− | 0.0 | 2003 09 28 | 691 | 0.1+ | 0.3+ | 2006 03 06 | 691 | 0.2− | 0.1+ |
| 2000 02 11 | 691 | 0.1− | 0.2− | 2003 09 28 | 691 | 0.3− | 0.5+ | 2006 03 06 | 691 | 0.0 | 0.1+ |
| 2000 02 11 | 691 | 0.2− | 0.2− | 2006 02 20 | 691 | 0.3+ | 0.7+ | 2006 03 06 | 691 | 0.0 | 0.4+ |

**2006 DF$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.84330 | | (2000.0) | | | |
| $n$ | 0.21406046 | $\omega$ | 149.82798 | | −0.91006829 | −0.41440447 |
| $a$ | 2.7676537 | $\Omega$ | 5.70244 | | +0.36554888 | −0.81016549 |
| $e$ | 0.0374310 | $i$ | 3.85553 | | +0.19531954 | −0.41460923 |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 06 | 807 | 0.4− | 0.3− | 2004 10 23 | 691 | 0.1+ | 0.2+ | 2006 02 21 | 699 | 0.6+ | 0.5− |
| 2002 04 06 | 807 | 0.3− | 0.2− | 2004 11 09 | 695 | 0.1− | 0.1+ | 2006 02 21 | 699 | 0.4− | 0.2− |
| 2002 05 07 | 644 | 0.5+ | 0.7+ | 2004 11 09 | 695 | 0.1+ | 0.1+ | 2006 02 21 | 699 | 0.2− | 0.5+ |
| 2002 05 07 | 644 | 0.4+ | 0.6+ | 2004 12 12 | 691 | 0.3− | 0.0 | 2006 02 21 | 699 | 0.1− | 0.6− |
| 2002 05 07 | 644 | 0.6+ | 1.2+ | 2004 12 12 | 691 | 0.1+ | 0.0 | 2006 02 24 | 691 | 0.2+ | 0.2+ |
| 2004 10 08 | 691 | 0.2+ | 0.4+ | 2004 12 12 | 691 | 0.2− | 0.2− | 2006 02 24 | 691 | 0.3+ | 0.1− |
| 2004 10 08 | 691 | 0.5− | 0.4+ | 2006 02 01 | 691 | 0.9− | 0.1+ | 2006 02 24 | 691 | 0.1+ | 0.1+ |
| 2004 10 08 | 691 | 0.2− | 0.3+ | 2006 02 01 | 691 | 0.5− | 0.2− | 2006 05 03 | G96 | 0.2− | 0.3− |
| 2004 10 15 | 695 | 0.2− | 0.0 | 2006 02 01 | 691 | 0.1+ | 0.0 | 2006 05 03 | G96 | 0.1+ | 0.2− |
| 2004 10 15 | 695 | 0.5− | 0.0 | 2006 02 01 | 691 | 0.2+ | 0.1+ | 2006 05 03 | G96 | 0.0 | 0.2− |
| 2004 10 23 | 691 | 0.3+ | 0.1− | 2006 02 01 | 691 | 0.3+ | 0.1+ | 2006 05 03 | G96 | 0.3− | 0.3− |
| 2004 10 23 | 691 | 0.6+ | 0.4− | 2006 02 01 | 691 | 0.2+ | 0.1+ | | | | |

**2006 DW$_{38}$ = 2003 UV$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.18014 | | (2000.0) | | | |
| $n$ | 0.18061657 | $\omega$ | 267.64997 | | +0.54486092 | +0.83806724 |
| $a$ | 3.0995429 | $\Omega$ | 35.41058 | | −0.74904745 | +0.50132571 |
| $e$ | 0.1588576 | $i$ | 2.74474 | | −0.37690118 | +0.21521115 |
| $P$ | 5.46 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.0 | 0.4− | 2003 11 21 | 691 | 0.1− | 0.2− | 2006 02 21 | G96 | 0.1− | 0.7− |
| 2000 02 05 | 695 | 0.2− | 0.3− | 2003 11 21 | 691 | 0.3+ | 0.2+ | 2006 02 21 | G96 | 0.3− | 0.2− |
| 2003 10 19 | 291 | 0.0 | 0.2− | 2003 11 21 | 691 | 0.4− | 0.2− | 2006 02 24 | 691 | 0.0 | 0.0 |
| 2003 10 19 | 291 | 0.0 | 0.1+ | 2005 10 31 | 568 | 0.5− | 0.8− | 2006 02 24 | 691 | 0.4− | 0.5+ |
| 2003 10 19 | 291 | 0.0 | 0.0 | 2005 10 31 | 568 | 0.1− | 1.0− | 2006 02 24 | 691 | 0.1− | 0.0 |
| 2003 10 22 | 691 | 0.1+ | 0.1+ | 2005 10 31 | 568 | 0.5− | 0.8− | 2006 03 02 | 691 | 0.1+ | 0.0 |
| 2003 10 22 | 691 | 0.1− | 0.3+ | 2006 02 21 | G96 | 0.2− | 0.1+ | 2006 03 02 | 691 | 0.2+ | 0.3+ |
| 2003 10 22 | 691 | 0.1+ | 0.2+ | 2006 02 21 | G96 | 0.1+ | 0.2− | 2006 03 02 | 691 | 0.6+ | 0.1+ |

**2006 DK$_{41}$ = 2000 CC$_{16}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 104.81262 | | (2000.0) | | | |
| $n$ | 0.17347349 | $\omega$ | 131.45727 | | +0.29206589 | −0.91788524 |
| $a$ | 3.1840556 | $\Omega$ | 299.63964 | | +0.75919329 | +0.39335501 |
| $e$ | 0.1052410 | $i$ | 18.00611 | | +0.58165546 | −0.05252166 |
| $P$ | 5.68 | $H$ | 15.4 | $G$ | 0.15 | $U$ 7 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.1− | 0.0 | 2000 02 03 | 704 | 1.0− | 0.4+ | 2006 02 24 | 703 | 0.2− | 0.5+ |
| 2000 02 02 | 704 | 0.0 | 0.4− | 2000 02 03 | 704 | 0.2+ | 0.7+ | 2006 02 24 | 703 | 0.4+ | 0.5+ |
| 2000 02 02 | 704 | 0.4+ | 0.4− | 2006 02 23 | 699 | 0.7+ | 0.1− | 2006 02 24 | 703 | 0.3+ | 0.2− |
| 2000 02 02 | 704 | 0.2+ | 0.4− | 2006 02 23 | 699 | 0.6− | 0.4− | 2006 03 04 | 703 | 1.1− | 1.2+ |
| 2000 02 02 | 704 | 1.1− | 0.7− | 2006 02 23 | 699 | 0.3+ | 0.6+ | 2006 03 04 | 703 | 0.1− | 0.1+ |
| 2000 02 03 | 704 | 0.9+ | 0.2− | 2006 02 23 | 699 | 0.1− | 0.7− | 2006 03 04 | 703 | 1.1− | 0.6− |
| 2000 02 03 | 704 | 0.4+ | 1.0+ | 2006 02 24 | 703 | 0.5+ | 0.6− | 2006 03 04 | 703 | 1.0+ | 0.2− |

**2006 DZ$_{42}$ = 1998 SE$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 188.93465 | | (2000.0) | | | |
| $n$ | 0.18532255 | $\omega$ | 244.18141 | | +0.99804331 | −0.06077776 |
| $a$ | 3.0468463 | $\Omega$ | 119.29996 | | +0.06168492 | +0.91867822 |
| $e$ | 0.0812029 | $i$ | 0.96478 | | +0.01022344 | +0.39030294 |
| $P$ | 5.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.2− | 0.1+ | 2003 09 04 | 291 | 0.4− | 0.1− | 2006 01 30 | 691 | 0.4+ | 0.0 |
| 1996 04 12 | 691 | 0.2+ | 0.3+ | 2003 09 04 | 291 | 0.1− | 0.7+ | 2006 02 20 | 691 | 0.4− | 0.3+ |
| 1996 04 12 | 691 | 0.3+ | 0.4+ | 2003 09 04 | 291 | 0.0 | 0.5+ | 2006 02 20 | 691 | 0.3+ | 0.1+ |
| 1998 09 21 | 691 | 0.2+ | 0.3− | 2003 09 21 | 691 | 0.4− | 0.0 | 2006 02 20 | 691 | 0.2+ | 0.5+ |
| 1998 09 21 | 691 | 0.1+ | 0.0 | 2003 09 21 | 691 | 0.3+ | 0.1+ | 2006 02 25 | G96 | 0.4− | 0.0 |
| 1998 09 21 | 691 | 0.2− | 0.0 | 2003 09 21 | 691 | 0.1+ | 0.0 | 2006 02 25 | G96 | 0.2− | 0.2− |
| 1998 09 27 | 691 | 0.0 | 0.0 | 2006 01 26 | G96 | 0.3+ | 0.7− | 2006 02 25 | G96 | 0.4− | 0.2− |
| 1998 09 27 | 691 | 0.1+ | 0.1− | 2006 01 26 | G96 | 0.1− | 1.0− | 2006 02 25 | G96 | 0.2− | 0.4+ |
| 1998 09 27 | 691 | 0.0 | 0.1+ | 2006 01 26 | G96 | 1.4− | 0.3− | 2006 03 03 | 691 | 0.2+ | 0.0 |
| 2000 01 13 | 691 | 0.1− | 0.3+ | 2006 01 26 | G96 | 1.2− | 0.3− | 2006 03 03 | 691 | 0.3− | 0.0 |
| 2000 01 13 | 691 | 0.4+ | 0.1+ | 2006 01 30 | 691 | 0.1− | 0.1+ | 2006 03 03 | 691 | 0.7+ | 0.7− |
| 2000 01 13 | 691 | 0.3− | 0.4+ | 2006 01 30 | 691 | 0.1+ | 0.3+ | | | | |

**2006 DX$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.72787 | | (2000.0) | | | |
| $n$ | 0.23877467 | $\omega$ | 255.39037 | | −0.03651771 | +0.99931428 |
| $a$ | 2.5732217 | $\Omega$ | 12.52165 | | −0.90566614 | −0.03050653 |
| $e$ | 0.0749944 | $i$ | 1.61700 | | −0.42241603 | −0.02098389 |
| $P$ | 4.13 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 04 | 209 | 0.9− | 0.6+ | 2002 03 20 | 691 | 0.1− | 0.5− | 2006 02 25 | G96 | 0.0 | 0.1+ |
| 2002 03 04 | 209 | 1.0− | 0.1+ | 2002 03 20 | 691 | 0.0 | 0.3− | 2006 02 25 | G96 | 0.1+ | 0.3− |
| 2002 03 04 | 209 | 1.1− | 1.2+ | 2002 03 20 | 691 | 0.3+ | 0.0 | 2006 02 25 | G96 | 0.3+ | 0.4− |
| 2002 03 05 | 691 | 0.2+ | 0.1+ | 2002 03 20 | 695 | 0.3+ | 0.0 | 2006 02 25 | G96 | 0.1+ | 0.3− |
| 2002 03 05 | 691 | 0.4+ | 0.2+ | 2002 04 06 | 807 | 0.3− | 0.1+ | 2006 03 05 | G96 | 0.1+ | 0.2+ |
| 2002 03 05 | 691 | 0.6+ | 0.1+ | 2002 04 06 | 807 | 0.2− | 0.2+ | 2006 03 05 | G96 | 0.1− | 0.3+ |
| 2002 03 12 | 291 | 0.6− | 0.0 | 2006 02 20 | 703 | 0.3− | 0.0 | 2006 03 05 | G96 | 0.1− | 0.1+ |
| 2002 03 12 | 291 | 0.1− | 0.1+ | 2006 02 20 | 703 | 0.0 | 0.0 | 2006 03 05 | G96 | 0.2+ | 0.7+ |
| 2002 03 12 | 291 | 0.2+ | 0.0 | 2006 02 20 | 703 | 0.3+ | 0.3− | | | | |
| 2002 03 20 | 695 | 0.1− | 0.1− | 2006 02 20 | 703 | 0.6− | 0.5− | | | | |

**2006 DC$_{48}$ = 2003 SH$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 157.97426 | | (2000.0) | | | |
| $n$ | 0.18743188 | $\omega$ | 89.29182 | | +0.84956394 | −0.52743458 |
| $a$ | 3.0239440 | $\Omega$ | 302.54044 | | +0.48042970 | +0.77944595 |
| $e$ | 0.0691791 | $i$ | 0.49885 | | +0.21778066 | +0.33804847 |
| $P$ | 5.26 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 14 | 691 | 0.3− | 0.4+ | 2003 09 21 | 291 | (2.0− | 0.0 ) | 2006 02 25 | 691 | 0.0 | 0.0 |
| 1998 09 14 | 691 | 0.3+ | 0.5− | 2006 01 30 | 691 | 0.2+ | 0.4+ | 2006 02 25 | 691 | 0.2+ | 0.6− |
| 1998 09 14 | 691 | 0.1+ | 0.1− | 2006 01 30 | 691 | 0.2+ | 0.0 | 2006 02 25 | 691 | 0.1+ | 0.2− |
| 2003 09 20 | 291 | 0.2− | 0.0 | 2006 01 30 | 691 | 0.2+ | 0.3+ | 2006 02 28 | G96 | 0.5− | 0.1+ |
| 2003 09 20 | 291 | 0.1+ | 0.3+ | 2006 02 21 | G96 | 0.6− | 0.2+ | 2006 02 28 | G96 | 0.2− | 0.0 |
| 2003 09 20 | 291 | 0.1− | 0.2+ | 2006 02 21 | G96 | 0.3− | 0.1− | 2006 02 28 | G96 | 0.5− | 0.0 |
| 2003 09 21 | 291 | 0.2− | 0.1− | 2006 02 21 | G96 | 0.1− | 0.2+ | 2006 02 28 | G96 | 0.2− | 0.3+ |
| 2003 09 21 | 291 | 0.2+ | 0.1+ | 2006 02 21 | G96 | 0.8− | 0.2+ | | | | |

**2006 DO$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 325.67202 | | (2000.0) | | | |
| $n$ | 0.29372687 | $\omega$ | 112.07753 | | +0.02176212 | +0.99880474 |
| $a$ | 2.2413358 | $\Omega$ | 159.02681 | | −0.95642673 | +0.03354793 |
| $e$ | 0.1681032 | $i$ | 7.02348 | | −0.29116031 | −0.03554750 |
| $P$ | 3.36 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 16 | 691 | 0.2− | 0.7− | 2003 05 02 | 704 | 0.7− | 1.3+ | 2006 02 21 | G96 | 0.2− | 0.1+ |
| 1993 06 16 | 691 | 0.1− | 0.5− | 2003 05 02 | 704 | 0.8+ | 0.3+ | 2006 02 21 | G96 | 0.3+ | 0.1− |
| 1993 06 16 | 691 | 0.0 | 0.6− | 2003 05 02 | 704 | 0.0 | 0.2+ | 2006 02 21 | G96 | 0.3− | 0.3− |
| 2000 07 30 | 704 | 0.1+ | 0.1+ | 2003 05 02 | 704 | 0.1+ | 0.2+ | 2006 02 25 | 691 | 0.2+ | 0.1+ |
| 2000 07 30 | 704 | 0.8− | 1.2+ | 2003 05 02 | 704 | 0.1− | 1.0+ | 2006 02 25 | 691 | 0.1+ | 0.3+ |
| 2000 07 30 | 704 | 0.4+ | 1.0+ | 2003 05 02 | 704 | 0.3+ | 0.5+ | 2006 02 25 | 691 | 0.2+ | 0.1+ |
| 2000 07 30 | 704 | 0.7+ | 1.3+ | 2003 05 02 | 704 | 0.2− | 0.9+ | 2006 02 28 | G96 | 0.0 | 0.0 |
| 2000 07 30 | 704 | 0.9− | 0.8+ | 2003 05 02 | 704 | 0.1+ | 0.2− | 2006 02 28 | G96 | 0.3− | 0.0 |
| 2003 04 27 | 699 | 0.2− | 0.4+ | 2003 05 02 | 704 | 0.0 | 0.2+ | 2006 02 28 | G96 | 0.1− | 0.2− |
| 2003 04 27 | 699 | 0.2+ | 0.4− | 2003 05 09 | 704 | 0.2+ | 0.3− | 2006 02 28 | G96 | 0.2+ | 0.1− |
| 2003 04 27 | 699 | 0.2+ | 0.4+ | 2003 05 09 | 704 | 1.1− | 0.1+ | 2006 03 02 | 695 | 0.0 | 0.1+ |
| 2003 04 27 | 699 | 0.3+ | 0.9− | 2003 05 09 | 704 | 0.8− | 0.4+ | 2006 03 02 | 695 | 0.2− | 0.2+ |
| 2003 05 02 | 704 | 0.3+ | 0.3+ | 2003 05 09 | 704 | 0.1+ | 0.4+ | 2006 03 02 | 695 | 0.1+ | 0.1+ |
| 2003 05 02 | 704 | 0.9+ | 0.4+ | 2003 05 09 | 704 | 0.5− | 0.1+ | 2006 03 24 | G96 | 0.2+ | 0.1− |
| 2003 05 02 | 704 | 0.2+ | 0.0 | 2006 02 04 | G96 | 0.2− | 0.2+ | 2006 03 24 | G96 | 0.3− | 0.1+ |
| 2003 05 02 | 704 | 0.9+ | 0.5+ | 2006 02 04 | G96 | 0.4− | 0.2+ | 2006 03 24 | G96 | 0.3− | 0.2− |
| 2003 05 02 | 704 | 0.3+ | 0.1+ | 2006 02 04 | G96 | 0.2− | 0.1+ | 2006 03 24 | G96 | 0.0 | 0.0 |
| 2003 05 02 | 704 | 0.1+ | 0.4− | 2006 02 04 | G96 | 0.1+ | 0.1+ | | | | |

**2006 DZ$_{53}$ = 2004 RO$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 174.89156 | | (2000.0) | | | |
| $n$ | 0.27458318 | $\omega$ | 186.05770 | | +0.93115526 | −0.36451524 |
| $a$ | 2.3443373 | $\Omega$ | 195.32914 | | +0.33592626 | +0.86706778 |
| $e$ | 0.1811370 | $i$ | 1.92081 | | +0.14178655 | +0.33959108 |
| $P$ | 3.59 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 09 | 704 | 1.2− | 0.5+ | 2006 01 30 | 691 | 0.4− | 0.2+ | 2006 02 25 | 691 | 0.1+ | 0.2− |
| 2004 09 09 | 704 | 0.2+ | 0.1+ | 2006 01 30 | 691 | 0.4+ | 0.1− | 2006 02 25 | 691 | 0.6+ | 0.2− |
| 2004 09 09 | 704 | 0.7+ | 0.5− | 2006 01 30 | 691 | 0.1− | 0.1+ | 2006 02 25 | 691 | 0.0 | 0.2+ |
| 2004 09 09 | 704 | 0.3+ | 0.6+ | 2006 02 24 | G96 | 0.9− | 0.0 | 2006 03 03 | G96 | 0.2− | 0.2+ |
| 2004 09 16 | 691 | 0.3+ | 0.1− | 2006 02 24 | G96 | 0.0 | 0.3− | 2006 03 03 | G96 | 0.8− | 0.0 |
| 2004 09 16 | 691 | 0.3− | 0.1+ | 2006 02 24 | G96 | 0.3− | 0.1+ | 2006 03 03 | G96 | 0.8− | 0.7+ |
| 2004 09 16 | 691 | 0.1− | 0.1− | 2006 02 24 | G96 | 0.2+ | 0.4− | 2006 03 03 | G96 | 0.3+ | 0.4+ |

**2006 DH$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.17132 | | (2000.0) | | | |
| $n$ | 0.30363758 | $\omega$ | 108.25121 | | +0.39974251 | +0.91661448 |
| $a$ | 2.1922952 | $\Omega$ | 185.31850 | | −0.85962424 | +0.37303001 |
| $e$ | 0.1928056 | $i$ | 3.01763 | | −0.31820133 | +0.14375846 |
| $P$ | 3.25 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 05 | 704 | 0.5− | 0.9+ | 2003 06 05 | 691 | 0.5− | 0.2− | 2006 02 25 | 691 | 0.1+ | 0.2+ |
| 2003 05 05 | 704 | 0.4− | 1.8+ | 2003 06 05 | 691 | 0.2− | 0.1− | 2006 02 28 | G96 | 0.6+ | 0.2+ |
| 2003 05 05 | 704 | 0.0 | 0.9+ | 2003 06 05 | 691 | 0.3− | 0.1+ | 2006 02 28 | G96 | 0.7− | 0.1+ |
| 2003 05 10 | 691 | 0.3− | 0.6− | 2006 02 24 | G96 | 0.7+ | 0.3− | 2006 02 28 | G96 | 0.4− | 0.5+ |
| 2003 05 10 | 691 | 0.0 | 0.6− | 2006 02 24 | G96 | 0.5− | 0.9− | 2006 02 28 | G96 | 0.3− | 0.8− |
| 2003 05 10 | 691 | 0.1− | 0.5− | 2006 02 24 | G96 | 0.5− | 0.3− | 2006 03 04 | 691 | 0.2+ | 0.2− |
| 2003 05 29 | 691 | 0.6+ | 0.5+ | 2006 02 24 | G96 | 0.2− | 0.1− | 2006 03 04 | 691 | 0.1− | 0.3+ |
| 2003 05 29 | 691 | 0.3+ | 0.0 | 2006 02 25 | 691 | 0.2+ | 0.1+ | 2006 03 04 | 691 | 0.0 | 0.1− |
| 2003 05 29 | 691 | 0.7+ | 0.5+ | 2006 02 25 | 691 | 0.0 | 0.2+ | | | | |

**2006 DP$_{60}$ = 2003 TT$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 278.82272 | | (2000.0) | | | |
| $n$ | 0.19238088 | $\omega$ | 118.53484 | | +0.60084469 | +0.79909784 |
| $a$ | 2.9718583 | $\Omega$ | 188.48745 | | −0.77364353 | +0.57480079 |
| $e$ | 0.0188675 | $i$ | 8.06052 | | −0.20115008 | +0.17620070 |
| $P$ | 5.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 691 | 0.2− | 0.0 | 2006 02 24 | 691 | 0.1− | 0.2− | 2006 03 02 | 691 | 0.2+ | 0.1+ |
| 2003 10 01 | 691 | 0.3− | 0.1+ | 2006 02 24 | 691 | 0.1+ | 0.2− | 2006 03 02 | 691 | 0.1+ | 0.2+ |
| 2003 10 01 | 691 | 0.1+ | 0.1+ | 2006 02 25 | G96 | 0.3− | 0.2− | 2006 03 23 | G96 | 0.3− | 0.4+ |
| 2003 10 16 | 691 | 0.2+ | 0.1− | 2006 02 25 | G96 | 0.7− | 0.2− | 2006 03 23 | G96 | 0.1− | 0.4+ |
| 2003 10 16 | 691 | 0.0 | 0.1− | 2006 02 25 | G96 | 0.6− | 0.8− | 2006 03 23 | G96 | 0.4− | 0.4+ |
| 2003 10 16 | 691 | 0.3+ | 0.0 | 2006 02 25 | G96 | 0.5− | 0.1+ | 2006 03 23 | G96 | 0.0 | 0.1− |
| 2006 02 24 | 691 | 0.1+ | 0.2+ | 2006 03 02 | 691 | 0.4+ | 0.1− | | | | |

**2006 DW$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.65559 | | (2000.0) | | | |
| $n$ | 0.28619741 | $\omega$ | 91.81819 | | −0.87331178 | +0.46711286 |
| $a$ | 2.2804764 | $\Omega$ | 116.05088 | | −0.48528893 | −0.80928006 |
| $e$ | 0.0533445 | $i$ | 8.85652 | | −0.04267528 | −0.35619007 |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.2− | 0.0 | 2003 05 23 | 691 | 0.3+ | 1.1+ | 2006 02 09 | 644 | 0.2− | 0.1+ |
| 1992 01 31 | 691 | 0.6+ | 0.2+ | 2003 06 01 | 691 | 0.2− | 0.2+ | 2006 02 21 | 703 | 1.2− | 1.1− |
| 1992 01 31 | 691 | 0.4− | 0.1+ | 2003 06 01 | 691 | 0.3− | 0.3+ | 2006 02 21 | 703 | 0.1+ | 0.9− |
| 2001 12 11 | 704 | 1.1− | 2.2+ | 2003 06 01 | 691 | 0.0 | 0.6+ | 2006 02 21 | 703 | 1.0+ | 0.1− |
| 2001 12 11 | 704 | 0.3+ | 0.8+ | 2003 07 04 | 691 | 0.4− | 0.3− | 2006 02 21 | 703 | 0.3− | 1.2− |
| 2001 12 11 | 704 | 0.5− | 0.7+ | 2003 07 04 | 691 | 0.3− | 0.4− | 2006 02 22 | 704 | 0.4− | 0.2+ |
| 2001 12 11 | 704 | 0.2+ | 0.7+ | 2003 07 04 | 691 | 0.6− | 0.4− | 2006 02 22 | 704 | 0.1− | 0.4+ |
| 2003 05 01 | 691 | 0.0 | 0.7− | 2006 02 09 | 644 | 0.2− | 0.2− | 2006 02 22 | 704 | 0.3− | 1.6+ |
| 2003 05 01 | 691 | 0.2+ | 1.1− | 2006 02 09 | 644 | 0.1− | 0.3+ | 2006 02 26 | 699 | 0.0 | 0.6− |
| 2003 05 01 | 691 | 1.1+ | 0.8− | 2006 02 09 | 644 | 0.2+ | 0.0 | 2006 02 26 | 699 | 0.2+ | 0.4+ |
| 2003 05 23 | 691 | 0.1+ | 1.1+ | 2006 02 09 | 644 | 0.2− | 0.0 | 2006 02 26 | 699 | 0.4+ | 0.8− |
| 2003 05 23 | 691 | 0.3+ | 1.3+ | 2006 02 09 | 644 | 0.4+ | 0.2− | 2006 02 26 | 699 | 0.1+ | 0.4− |

**2006 DY$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.05239 | | (2000.0) | | | |
| $n$ | 0.24005243 | $\omega$ | 149.16426 | | −0.31609861 | +0.92844773 |
| $a$ | 2.5640824 | $\Omega$ | 101.79950 | | −0.90601697 | −0.23440744 |
| $e$ | 0.1959906 | $i$ | 11.49708 | | −0.28145146 | −0.28816308 |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.4− | 0.3+ | 2002 03 20 | 704 | 0.6− | 0.9− | 2003 09 25 | 644 | 0.7+ | 0.8+ |
| 2001 01 26 | 691 | 0.2+ | 0.1+ | 2002 03 20 | 704 | 0.2− | 0.1− | 2003 09 25 | 644 | 0.5+ | 0.8+ |
| 2001 01 26 | 691 | 0.0 | 0.4+ | 2002 05 05 | 704 | 2.1+ | 0.0 | 2003 09 25 | 644 | 0.6+ | 0.7+ |
| 2002 02 10 | 704 | 0.3+ | 0.3+ | 2002 05 05 | 704 | 0.3+ | 0.9+ | 2006 02 04 | 704 | 0.6+ | 0.1− |
| 2002 02 10 | 704 | 0.1+ | 0.6+ | 2002 05 05 | 704 | 0.2+ | 0.7+ | 2006 02 04 | 704 | 0.9+ | 0.9− |
| 2002 02 10 | 704 | 0.6+ | 0.1+ | 2002 05 05 | 704 | 1.1+ | 0.7+ | 2006 02 04 | 704 | 1.4+ | 0.1+ |
| 2002 02 10 | 704 | 0.9+ | 0.4+ | 2002 05 05 | 704 | 0.9+ | 0.5+ | 2006 02 04 | 704 | 0.3+ | 0.4− |
| 2002 02 21 | 644 | 0.3+ | 0.2+ | 2002 05 19 | 644 | 0.2+ | 1.1+ | 2006 02 04 | 704 | 0.6+ | 0.5− |
| 2002 02 21 | 644 | 0.1+ | 0.2− | 2002 05 19 | 644 | 0.5+ | 0.8+ | 2006 02 22 | 699 | 0.2− | 0.1− |
| 2002 02 21 | 644 | 0.2+ | 0.5+ | 2002 05 19 | 644 | 0.4+ | 0.8+ | 2006 02 22 | 699 | 0.5+ | 0.3+ |
| 2002 03 06 | 704 | 0.2− | 0.0 | 2003 08 23 | 644 | 0.6− | 0.6+ | 2006 02 22 | 699 | 0.1+ | 0.1+ |
| 2002 03 06 | 704 | 0.2+ | 0.2− | 2003 08 23 | 644 | 0.5− | 0.6+ | 2006 02 22 | 699 | 0.1+ | 0.2− |
| 2002 03 06 | 704 | 0.4− | 0.4− | 2003 08 23 | 644 | 0.8− | 0.5+ | 2006 02 26 | 703 | 1.4− | 0.5− |
| 2002 03 06 | 704 | 2.1− | 1.1+ | 2003 09 03 | 608 | 0.2+ | 0.5− | 2006 02 26 | 703 | 0.7− | 0.9− |
| 2002 03 06 | 704 | 1.6− | 1.0+ | 2003 09 03 | 608 | 0.0 | 1.0− | 2006 02 26 | 703 | 1.9− | 0.6− |
| 2002 03 20 | 704 | 0.1− | 0.6− | 2003 09 03 | 608 | 0.7− | 0.4− | 2006 02 26 | 703 | 1.2− | 0.4− |

**2006 DY$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.48250 | | (2000.0) | | | |
| $n$ | 0.23813609 | $\omega$ | 307.29913 | | −0.26014991 | +0.95349425 |
| $a$ | 2.5778199 | $\Omega$ | 306.93033 | | −0.81466675 | −0.30137155 |
| $e$ | 0.1388007 | $i$ | 10.97759 | | −0.51830504 | −0.00488913 |
| $P$ | 4.14 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.0 | 0.1− | 2003 09 19 | 691 | 0.1− | 0.0 | 2006 02 22 | 699 | 1.0+ | 0.1+ |
| 2002 04 08 | 644 | 0.1+ | 0.1− | 2003 09 19 | 691 | 0.1+ | 0.2− | 2006 02 24 | 703 | 0.5− | 0.8+ |
| 2002 04 08 | 644 | 0.0 | 0.3+ | 2003 09 19 | 691 | 0.0 | 0.0 | 2006 02 24 | 703 | 1.2− | 0.3+ |
| 2003 08 22 | 644 | 0.3+ | 0.0 | 2003 09 29 | 691 | 0.2− | 0.1− | 2006 02 24 | 703 | 0.8− | 0.3− |
| 2003 08 22 | 644 | 0.3+ | 0.2+ | 2003 09 29 | 691 | 0.1− | 0.0 | 2006 02 24 | 703 | 0.1− | 0.2+ |
| 2003 08 22 | 644 | 0.6+ | 0.3+ | 2003 09 29 | 691 | 0.2− | 0.0 | 2006 03 25 | 644 | 0.2+ | 0.0 |
| 2003 09 18 | 644 | 0.2+ | 0.4+ | 2006 02 22 | 699 | 0.2− | 1.3− | 2006 03 25 | 644 | 0.4+ | 0.1− |
| 2003 09 18 | 644 | 0.1+ | 0.3+ | 2006 02 22 | 699 | 0.2+ | 0.1− | 2006 03 25 | 644 | 0.6+ | 0.2− |
| 2003 09 18 | 644 | 0.1+ | 0.3+ | 2006 02 22 | 699 | 0.5+ | 0.6+ | | | | |

**2006 DZ$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 74.27801 | | (2000.0) | | | |
| $n$ | 0.22731941 | $\omega$ | 206.00559 | | −0.40872818 | −0.90699316 |
| $a$ | 2.6589593 | $\Omega$ | 268.26171 | | +0.85406113 | −0.34090160 |
| $e$ | 0.2959685 | $i$ | 5.82893 | | +0.32174657 | −0.24728426 |
| $P$ | 4.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 01 | 807 | 0.0 | 0.3− | 2004 09 17 | 691 | 0.0 | 0.1− | 2006 02 24 | 703 | 1.4− | 0.2+ |
| 2003 06 01 | 807 | 0.1+ | 0.2+ | 2006 01 31 | 699 | 0.2− | 0.1+ | 2006 02 24 | 703 | 0.9− | 1.9+ |
| 2004 08 25 | 691 | 0.2− | 0.1+ | 2006 01 31 | 699 | 0.8+ | 1.0− | 2006 03 03 | 704 | 0.2+ | 0.3− |
| 2004 08 25 | 691 | 0.1+ | 0.2+ | 2006 01 31 | 699 | 1.5+ | 0.4+ | 2006 03 03 | 704 | 0.2+ | 0.4+ |
| 2004 08 25 | 691 | 0.2− | 0.2− | 2006 01 31 | 699 | 0.2+ | 0.4− | 2006 03 03 | 704 | 0.7+ | 0.6+ |
| 2004 09 09 | 691 | 0.2+ | 0.1+ | 2006 02 22 | 699 | 0.3+ | 1.0− | 2006 03 25 | 644 | 0.1− | 0.1− |
| 2004 09 09 | 691 | 0.0 | 0.0 | 2006 02 22 | 699 | 0.4+ | 0.3− | 2006 03 25 | 644 | 0.2− | 0.3− |
| 2004 09 09 | 691 | 0.5+ | 0.4− | 2006 02 22 | 699 | 0.0 | 0.4− | 2006 03 25 | 644 | 0.1+ | 0.2− |
| 2004 09 17 | 691 | 0.2− | 0.1+ | 2006 02 24 | 703 | 0.9− | 0.0 | | | | |
| 2004 09 17 | 691 | 0.1+ | 0.0 | 2006 02 24 | 703 | 0.9− | 0.9− | | | | |

**2006 DP$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.28247 | | (2000.0) | | | |
| $n$ | 0.18582126 | $\omega$ | 359.68491 | | +0.61063988 | −0.79129451 |
| $a$ | 3.0413924 | $\Omega$ | 52.67906 | | +0.72664749 | +0.54423303 |
| $e$ | 0.1551036 | $i$ | 2.24671 | | +0.31480527 | +0.27868155 |
| $P$ | 5.30 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2004 10 23 | 691 | 0.2+ | 0.0 | 2006 02 21 | G96 | 0.2+ | 0.3+ |
| 2001 04 16 | 645 | 0.1+ | 0.1− | 2004 11 12 | 703 | 1.4− | 1.6− | 2006 02 21 | G96 | 0.8− | 0.3− |
| 2004 10 13 | 691 | 0.1+ | 0.3+ | 2004 11 12 | 703 | 1.2+ | 1.1− | 2006 02 21 | G96 | 0.8− | 0.3− |
| 2004 10 13 | 691 | 0.1− | 0.1+ | 2004 11 12 | 703 | 0.3+ | 1.3− | 2006 02 21 | G96 | 0.4− | 0.2− |
| 2004 10 13 | 691 | 0.4+ | 0.3+ | 2004 11 12 | 703 | 1.0+ | 1.4− | 2006 02 22 | 291 | 0.1− | 0.2+ |
| 2004 10 15 | G96 | 0.5− | 0.7− | 2004 12 13 | 691 | 0.1− | 0.4+ | 2006 02 22 | 291 | 0.4− | 0.1− |
| 2004 10 15 | G96 | 0.1− | 0.8− | 2004 12 13 | 691 | 0.2− | 0.1+ | 2006 02 22 | 291 | 1.5+ | 0.7+ |
| 2004 10 15 | G96 | 0.3− | 0.8− | 2004 12 13 | 691 | 0.1+ | 0.1+ | 2006 02 27 | G96 | 0.1− | 0.2+ |
| 2004 10 15 | G96 | 2.9− | 1.9+ | 2006 02 04 | 691 | 0.0 | 0.1− | 2006 02 27 | G96 | 0.3− | 0.2− |
| 2004 10 23 | 691 | 0.1+ | 0.2+ | 2006 02 04 | 691 | 0.2− | 0.2− | 2006 02 27 | G96 | 0.4− | 0.1− |
| 2004 10 23 | 691 | 0.1+ | 0.1+ | 2006 02 04 | 691 | 0.1− | 0.0 | 2006 02 27 | G96 | 0.0 | 0.1− |

**2006 DM$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 199.92963 | | (2000.0) | | | |
| $n$ | 0.23650337 | $\omega$ | 17.13199 | | +0.84691120 | −0.52691545 |
| $a$ | 2.5896704 | $\Omega$ | 15.30200 | | +0.45062926 | +0.63992263 |
| $e$ | 0.1349133 | $i$ | 15.70265 | | +0.28226707 | +0.55933813 |
| $P$ | 4.17 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 17 | 704 | 0.1+ | 0.0 | 2004 12 16 | 704 | 0.6− | 1.6+ | 2006 02 22 | G96 | 0.4− | 0.4− |
| 2001 01 17 | 704 | 0.3+ | 0.5− | 2004 12 16 | 704 | 0.6− | 0.4− | 2006 02 22 | G96 | 0.8+ | 0.0 |
| 2001 01 17 | 704 | 0.7− | 0.7− | 2004 12 16 | 704 | 0.3− | 0.1− | 2006 02 28 | G96 | 0.8− | 0.3− |
| 2001 01 17 | 704 | 0.5+ | 0.0 | 2004 12 16 | 704 | 0.1+ | 0.3+ | 2006 02 28 | G96 | 0.4− | 0.2+ |
| 2001 01 17 | 704 | 0.9− | 0.3+ | 2005 01 15 | 704 | 0.1+ | 1.4− | 2006 02 28 | G96 | 0.1− | 0.4− |
| 2002 04 09 | 807 | 0.6+ | 0.0 | 2005 01 15 | 704 | 1.5− | 0.2+ | 2006 02 28 | G96 | 0.2+ | 0.0 |
| 2002 04 09 | 807 | 0.4+ | 0.2+ | 2005 01 15 | 704 | 1.2− | 0.2+ | 2006 03 25 | G96 | 0.1− | 0.3+ |
| 2004 11 20 | 704 | 1.4+ | 0.1− | 2005 01 15 | 704 | 1.9− | 0.4− | 2006 03 25 | G96 | 0.1− | 0.9+ |
| 2004 11 20 | 704 | 0.5+ | 0.0 | 2005 02 14 | 704 | 0.2− | 0.1− | 2006 03 25 | G96 | 0.5− | 0.0 |
| 2004 11 20 | 704 | 0.9+ | 0.4− | 2005 02 14 | 704 | 0.5+ | 0.4+ | 2006 03 25 | G96 | 0.2− | 0.1+ |
| 2004 11 20 | 704 | 0.3+ | 0.4− | 2005 02 14 | 704 | 1.4+ | 1.3− | 2006 04 07 | 703 | 2.4+ | 0.4− |
| 2004 12 10 | 704 | 1.2+ | 1.5+ | 2005 02 14 | 704 | 0.8+ | 0.9− | 2006 04 07 | 703 | 0.1− | 0.6− |
| 2004 12 10 | 704 | 0.1+ | 0.9+ | 2006 02 22 | G96 | 0.2− | 0.3− | 2006 04 07 | 703 | 0.7+ | 1.7+ |
| 2004 12 10 | 704 | 0.8+ | 1.1+ | 2006 02 22 | G96 | 0.6− | 0.4− | 2006 04 07 | 703 | 1.2− | 0.1+ |

**2006 DE$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.20055 | | (2000.0) | | | |
| $n$ | 0.27413398 | $\omega$ | 156.04477 | | −0.54134301 | +0.83176927 |
| $a$ | 2.3468976 | $\Omega$ | 80.96741 | | −0.79012670 | −0.45326780 |
| $e$ | 0.0716235 | $i$ | 7.14937 | | −0.28748487 | −0.32048117 |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.6+ | 0.1− | 2002 01 09 | 645 | 0.1− | 0.0 | 2006 02 23 | 699 | 1.3− | 0.6− |
| 2001 12 19 | 704 | 0.8+ | 0.3− | 2002 01 17 | 644 | 0.2− | 0.6+ | 2006 02 28 | 703 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.5+ | 0.2− | 2002 01 17 | 644 | 0.1+ | 0.7+ | 2006 02 28 | 703 | 0.7− | 0.9− |
| 2001 12 19 | 704 | 1.2+ | 0.1+ | 2002 01 17 | 644 | 0.0 | 0.5+ | 2006 02 28 | 703 | 0.1− | 1.1− |
| 2002 01 08 | 704 | 0.2− | 0.5+ | 2004 12 20 | 691 | 0.3+ | 0.1+ | 2006 02 28 | 703 | 0.4+ | 0.1− |
| 2002 01 08 | 704 | 2.4+ | 0.3− | 2004 12 20 | 691 | 0.1− | 0.1− | 2006 03 24 | 699 | 0.1− | 0.1− |
| 2002 01 08 | 704 | 0.8+ | 0.2+ | 2004 12 20 | 691 | 0.1− | 0.0 | 2006 03 24 | 699 | 1.2+ | 0.7+ |
| 2002 01 08 | 704 | 0.4+ | 0.1+ | 2006 02 23 | 699 | 0.5− | 0.2+ | 2006 03 24 | 699 | 0.0 | 0.1+ |
| 2002 01 08 | 704 | 0.1+ | 0.7− | 2006 02 23 | 699 | 0.1+ | 0.8+ | 2006 03 24 | 699 | 1.8+ | 0.7+ |
| 2002 01 09 | 645 | 0.2− | 0.0 | 2006 02 23 | 699 | 1.1− | 0.0 | | | | |

**2006 DH$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 275.58556 | | (2000.0) | | | |
| $n$ | 0.21456348 | $\omega$ | 330.15661 | | +0.62783522 | +0.77775943 |
| $a$ | 2.7633264 | $\Omega$ | 338.68790 | | −0.69665051 | +0.54419800 |
| $e$ | 0.1571700 | $i$ | 4.76944 | | −0.34713254 | +0.31454540 |
| $P$ | 4.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.2− | 0.1+ | 2003 10 24 | 704 | 0.3− | 0.2− | 2006 02 24 | G96 | 0.2− | 0.4− |
| 2003 09 18 | 691 | 0.3− | 0.1+ | 2003 10 24 | 704 | 0.4+ | 0.7+ | 2006 03 02 | 691 | 0.1+ | 0.2− |
| 2003 09 18 | 691 | 0.1− | 0.0 | 2006 02 24 | 691 | 0.0 | 0.2+ | 2006 03 02 | 691 | 0.1+ | 0.1+ |
| 2003 09 27 | 704 | 1.9+ | 0.3− | 2006 02 24 | 691 | 0.3+ | 0.0 | 2006 03 02 | 691 | 0.3+ | 0.3+ |
| 2003 09 27 | 704 | 0.1− | 0.1− | 2006 02 24 | 691 | 0.5− | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.1+ |
| 2003 09 27 | 704 | 0.2− | 0.0 | 2006 02 24 | G96 | 0.0 | 0.2+ | 2006 04 02 | 691 | 0.0 | 0.3+ |
| 2003 10 24 | 704 | 0.4+ | 0.8− | 2006 02 24 | G96 | 0.1+ | 0.5− | 2006 04 02 | 691 | 0.3− | 0.4− |
| 2003 10 24 | 704 | 0.3+ | 0.1+ | 2006 02 24 | G96 | 0.3− | 0.2− | | | | |

**2006 DR$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.14413 | | (2000.0) | | | |
| $n$ | 0.18107935 | $\omega$ | 28.61633 | | −0.87994348 | +0.47507767 |
| $a$ | 3.0942598 | $\Omega$ | 179.74373 | | −0.46332042 | −0.85778188 |
| $e$ | 0.0467718 | $i$ | 10.57844 | | −0.10504120 | −0.19624335 |
| $P$ | 5.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 691 | 0.7+ | 0.3+ | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.1− | 0.3+ |
| 2001 02 22 | 691 | 0.6+ | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.2+ | 0.0 |
| 2001 02 22 | 691 | 0.1+ | 0.1− | 2003 10 23 | 645 | 0.0 | 0.1+ | 2006 03 02 | 691 | 0.5+ | 0.2+ |
| 2001 05 24 | 645 | 0.1− | 0.1+ | 2003 10 23 | 645 | 0.1+ | 0.1+ | 2006 03 05 | 691 | 0.0 | 0.1+ |
| 2001 05 24 | 645 | 0.1− | 0.2+ | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 03 05 | 691 | 0.2+ | 0.0 |
| 2003 09 30 | 691 | 0.4− | 0.4+ | 2003 10 24 | 645 | 0.0 | 0.1+ | 2006 03 05 | 691 | 0.2− | 0.2+ |
| 2003 09 30 | 691 | 0.3− | 0.2+ | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 03 09 | 691 | 0.1− | 0.6+ |
| 2003 09 30 | 691 | 0.3− | 0.3+ | 2003 11 16 | 645 | 0.0 | 0.1− | 2006 03 09 | 691 | 0.2+ | 0.3− |
| 2003 10 19 | 691 | 0.1+ | 0.1+ | 2006 02 24 | 691 | 0.1− | 0.2+ | 2006 03 09 | 691 | 0.3− | 0.1+ |
| 2003 10 19 | 691 | 0.4+ | 0.4+ | 2006 02 24 | 691 | 0.0 | 0.0 | | | | |
| 2003 10 19 | 691 | 0.3− | 0.4+ | 2006 02 24 | 691 | 0.0 | 0.3− | | | | |

**2006 DX$_{84}$ = 1997 BM$_7$ = 2004 VA$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 173.01165 | | (2000.0) | | | |
| $n$ | 0.22826878 | $\omega$ | 160.07735 | | +0.84886985 | −0.52789627 |
| $a$ | 2.6515819 | $\Omega$ | 231.81617 | | +0.48015289 | +0.79163980 |
| $e$ | 0.1300578 | $i$ | 1.99065 | | +0.22107280 | +0.30762308 |
| $P$ | 4.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.2− | 0.3− | 2004 11 11 | 291 | 0.1+ | 0.1+ | 2006 02 24 | 691 | 0.2+ | 0.2+ |
| 1997 01 31 | 691 | 0.9− | 0.8− | 2004 11 19 | 691 | 0.1+ | 0.3+ | 2006 02 24 | 691 | 0.2+ | 0.2+ |
| 1997 01 31 | 691 | 0.3+ | 0.1− | 2004 11 19 | 691 | 0.0 | 0.1+ | 2006 02 24 | 691 | 0.4− | 0.8+ |
| 1997 02 07 | 691 | 0.0 | 0.5− | 2004 11 19 | 691 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.1+ | 0.1+ |
| 1997 02 07 | 691 | 0.4+ | 0.0 | 2004 11 19 | 703 | 1.1− | 1.0+ | 2006 03 02 | 691 | 0.3− | 0.3+ |
| 1997 02 07 | 691 | 0.0 | 0.1+ | 2004 11 19 | 703 | 0.1+ | 0.2+ | 2006 03 02 | 691 | 0.0 | 0.2+ |
| 2000 12 29 | 691 | 0.0 | 0.0 | 2004 11 19 | 703 | 0.1+ | 0.3+ | 2006 03 05 | 691 | 0.4+ | 0.1− |
| 2000 12 29 | 691 | 0.1− | 0.0 | 2004 11 19 | 703 | 0.1− | 0.5+ | 2006 03 05 | 691 | 0.3+ | 0.2+ |
| 2000 12 29 | 691 | 0.0 | 0.2− | 2004 12 09 | G92 | 0.2− | 0.3− | 2006 03 05 | 691 | 0.2+ | 0.1+ |
| 2004 11 11 | 291 | 0.0 | 0.1+ | 2004 12 09 | G92 | 0.0 | 0.1− | | | | |
| 2004 11 11 | 291 | 0.1+ | 0.1+ | 2004 12 09 | G92 | 0.1− | 0.1− | | | | |

**2006 DY$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 149.18133 | | (2000.0) | | | |
| $n$ | 0.24699374 | $\omega$ | 160.46895 | | +0.52418499 | −0.85101381 |
| $a$ | 2.5158153 | $\Omega$ | 257.90608 | | +0.77695566 | +0.49315081 |
| $e$ | 0.1052841 | $i$ | 1.85848 | | +0.34866889 | +0.18049316 |
| $P$ | 3.99 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 17 | 691 | 0.1+ | 0.0 | 2004 10 13 | 691 | 0.1− | 0.4− | 2006 03 02 | 691 | 0.2− | 0.2+ |
| 2004 09 17 | 691 | 0.3− | 0.3+ | 2004 10 13 | 691 | 0.0 | 0.1− | 2006 03 02 | 691 | 0.5− | 0.2+ |
| 2004 09 17 | 691 | 0.0 | 0.2+ | 2004 10 13 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.1− | 0.3− |
| 2004 10 05 | 691 | 0.2+ | 0.1+ | 2006 02 24 | 691 | 0.1− | 0.2+ | 2006 03 05 | 691 | 0.1+ | 0.3− |
| 2004 10 05 | 691 | 0.1+ | 0.1− | 2006 02 24 | 691 | 0.1+ | 0.5+ | 2006 03 05 | 691 | 0.4+ | 0.4− |
| 2004 10 05 | 691 | 0.0 | 0.1+ | 2006 02 24 | 691 | 0.1+ | 0.3+ | 2006 03 05 | 691 | 0.2+ | 0.2− |

**2006 DC$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.67029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31343355 | $\omega$ | 226.92342 | | +0.98933467 | +0.14109278 | |
| $a$ | 2.1463756 | $\Omega$ | 124.93390 | | −0.11749865 | +0.91987546 | |
| $e$ | 0.0923291 | $i$ | 2.53012 | | −0.08608704 | +0.36595351 | |
| $P$ | 3.14 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3− | 0.5+ | 2004 10 07 | 704 | 0.3− | 0.8+ | 2005 10 31 | 568 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.6− | 0.7+ | 2004 10 07 | 704 | 0.8+ | 1.3+ | 2005 12 03 | 568 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.6+ | 2004 10 07 | 704 | 0.3+ | 0.7+ | 2005 12 03 | 568 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.3+ | 0.8+ | 2004 10 13 | 683 | 0.2+ | 2.6+ | 2005 12 03 | 568 | 0.3+ | 0.1+ |
| 2003 04 30 | 691 | 0.1− | 1.6+ | 2004 10 13 | 683 | 0.6+ | 0.6+ | 2006 02 24 | 691 | 0.3+ | 0.5+ |
| 2003 04 30 | 691 | 0.6+ | 1.2+ | 2004 10 13 | 683 | 0.1+ | 0.3− | 2006 02 24 | 691 | 0.1+ | 0.3+ |
| 2003 04 30 | 691 | 0.9+ | 1.1+ | 2004 10 14 | 683 | 1.9− | 0.5+ | 2006 02 24 | 691 | 0.0 | 0.9+ |
| 2004 09 22 | 704 | 1.1− | 0.9+ | 2004 10 14 | 683 | 0.3+ | 0.1+ | 2006 03 02 | 691 | 0.0 | 0.3− |
| 2004 09 22 | 704 | 1.3− | 1.1+ | 2004 10 14 | 683 | 0.6− | 0.8− | 2006 03 02 | 691 | 0.1− | 0.4− |
| 2004 09 22 | 704 | 0.8− | 0.4+ | 2004 10 15 | 683 | 1.2− | 1.1− | 2006 03 02 | 691 | 0.2− | 0.6− |
| 2004 10 05 | 699 | 0.7− | 0.1+ | 2004 10 15 | 683 | 1.1+ | 0.3− | 2006 03 06 | 691 | 0.1− | 0.1− |
| 2004 10 05 | 699 | 0.5− | 1.1+ | 2004 10 15 | 683 | 2.0− | 0.0 | 2006 03 06 | 691 | 0.1+ | 0.2− |
| 2004 10 05 | 699 | 0.1− | 0.5+ | 2005 10 31 | 568 | 0.0 | 0.1− | 2006 03 06 | 691 | 0.1− | 0.2− |
| 2004 10 05 | 699 | 2.6+ | 1.7+ | 2005 10 31 | 568 | 0.0 | 0.2− | | | | |

**2006 DX$_{87}$ = 2003 UA$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.11389 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18410983 | $\omega$ | 262.34409 | | +0.81010085 | +0.58605241 | |
| $a$ | 3.0602112 | $\Omega$ | 61.77704 | | −0.53015855 | +0.74441241 | |
| $e$ | 0.1423873 | $i$ | 1.08660 | | −0.25033683 | +0.31998865 | |
| $P$ | 5.35 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.0 | 0.6+ | 2003 10 22 | 460 | 0.4+ | 0.9− | 2005 01 18 | 691 | 0.1+ | 0.1+ |
| 1992 10 01 | 691 | 0.9− | 0.6+ | 2003 10 22 | 460 | 0.5− | 0.1+ | 2005 01 18 | 691 | 0.3+ | 0.5+ |
| 1992 10 01 | 691 | 0.1− | 0.8+ | 2003 10 22 | 691 | 0.0 | 0.2+ | 2005 01 18 | 691 | 0.3+ | 0.2+ |
| 2000 02 10 | 691 | 0.1+ | 0.4− | 2003 10 22 | 691 | 0.1− | 0.0 | 2006 02 24 | 691 | 0.3+ | 0.0 |
| 2000 02 10 | 691 | 0.0 | 0.2− | 2003 10 22 | 691 | 0.2− | 0.0 | 2006 02 24 | 691 | 0.0 | 0.2+ |
| 2000 02 10 | 691 | 0.1− | 0.1− | 2003 11 20 | 691 | 0.1+ | 0.3− | 2006 02 24 | 691 | 0.1+ | 0.2+ |
| 2002 07 05 | 644 | 0.3+ | 0.2+ | 2003 11 20 | 691 | 0.3− | 0.3− | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 2002 07 05 | 644 | 0.1− | 0.1+ | 2003 11 20 | 691 | 0.2− | 0.0 | 2006 03 02 | 691 | 0.0 | 0.4+ |
| 2002 07 05 | 644 | 0.4+ | 0.5+ | 2004 12 18 | G96 | 0.1− | 0.8− | 2006 03 02 | 691 | 0.2+ | 0.4+ |
| 2003 10 20 | 291 | 0.2− | 0.0 | 2004 12 18 | G96 | 1.2− | 0.5− | 2006 03 06 | 691 | 0.3− | 0.3+ |
| 2003 10 20 | 291 | 0.5+ | 0.2+ | 2004 12 18 | G96 | 0.2− | 0.4− | 2006 03 06 | 691 | 0.0 | 0.2+ |
| 2003 10 20 | 291 | 0.5+ | 0.0 | 2004 12 18 | G96 | 0.6− | 0.6− | 2006 03 06 | 691 | 0.2+ | 0.5+ |

**2006 DG$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.90241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18549394 | $\omega$ | 186.88246 | | +0.66134845 | −0.75005586 | |
| $a$ | 3.0449692 | $\Omega$ | 221.71498 | | +0.68860352 | +0.61022855 | |
| $e$ | 0.0291852 | $i$ | 0.50526 | | +0.29739438 | +0.25502417 | |
| $P$ | 5.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 26 | 691 | 0.0 | 0.3− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.0 | 0.4+ |
| 2000 01 26 | 691 | 0.3− | 0.4− | 2003 10 22 | 645 | 0.0 | 0.1+ | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 2000 01 26 | 691 | 0.1+ | 0.1+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 03 06 | 691 | 0.1− | 0.2+ |
| 2003 09 18 | 691 | 0.0 | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 06 | 691 | 0.3+ | 0.2+ |
| 2003 09 18 | 691 | 0.0 | 0.5+ | 2005 12 03 | 568 | 0.0 | 0.2+ | 2006 03 06 | 691 | 0.2+ | 0.2+ |
| 2003 09 18 | 691 | 0.1+ | 0.4+ | 2005 12 03 | 568 | 0.1− | 0.2+ | 2006 04 21 | G96 | 0.3− | 0.3+ |
| 2003 09 28 | 291 | 0.1− | 0.5+ | 2005 12 03 | 568 | 0.1− | 0.2+ | 2006 04 21 | G96 | 0.4+ | 0.4+ |
| 2003 09 28 | 291 | 0.8+ | 0.2+ | 2006 02 24 | 691 | 0.3+ | 0.1+ | 2006 04 21 | G96 | 0.7+ | 0.4+ |
| 2003 09 28 | 291 | 0.1− | 0.4+ | 2006 02 24 | 691 | 0.6+ | 0.5+ | 2006 04 21 | G96 | 0.3− | 0.3+ |
| 2003 09 29 | 645 | 0.2− | 0.0 | 2006 02 24 | 691 | 0.6− | 0.5+ | | | | |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.1+ | 0.1+ | | | | |

**2006 DL$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.92256 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20974665 | $\omega$ | 234.48279 | | +0.52518095 | +0.85073799 | |
| $a$ | 2.8054726 | $\Omega$ | 67.21042 | | −0.77330697 | +0.48726721 | |
| $e$ | 0.0527268 | $i$ | 1.28860 | | −0.35522007 | +0.19701661 | |
| $P$ | 4.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.3− | 0.4+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.1− | 0.3− |
| 2003 09 18 | 691 | 0.0 | 0.2+ | 2006 02 24 | 691 | 0.0 | 0.1+ | 2006 03 24 | G96 | 0.4− | 0.2− |
| 2003 09 18 | 691 | 0.2− | 0.2+ | 2006 02 24 | 691 | 0.1− | 0.3+ | 2006 03 24 | G96 | 0.3− | 0.1+ |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2006 02 24 | 691 | 0.3+ | 0.1+ | 2006 03 24 | G96 | 0.3− | 0.2− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2006 03 02 | 691 | 0.2+ | 0.1+ | 2006 03 24 | G96 | 0.2− | 0.4− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.1− | 0.1− | | | | |

**2006 DO$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.68420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17976955 | $\omega$ | 233.61589 | | +0.56651625 | −0.82402604 | |
| $a$ | 3.1092714 | $\Omega$ | 181.91069 | | +0.80387888 | +0.55432877 | |
| $e$ | 0.1584956 | $i$ | 10.99223 | | +0.18121279 | +0.11704998 | |
| $P$ | 5.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.1− | 0.2+ | 2003 09 29 | 704 | 0.8+ | 0.3− | 2006 02 24 | 691 | 0.4+ | 0.1− |
| 2003 09 17 | 691 | 0.4+ | 0.1− | 2003 09 29 | 704 | 0.4− | 0.3− | 2006 02 24 | 691 | 0.4− | 0.1+ |
| 2003 09 17 | 691 | 0.0 | 0.0 | 2003 09 29 | 704 | 0.2+ | 0.2+ | 2006 02 24 | 691 | 0.3+ | 0.1+ |
| 2003 09 29 | 691 | 0.0 | 0.2− | 2003 09 29 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.1− | 0.0 |
| 2003 09 29 | 704 | 0.5− | 0.2− | 2003 10 16 | 644 | 0.1− | 0.4+ | 2006 03 02 | 691 | 0.2− | 0.0 |
| 2003 09 29 | 704 | 0.5− | 2.0+ | 2003 10 16 | 644 | 0.2− | 0.1− | 2006 03 02 | 691 | (3.0− | 1.5−) |
| 2003 09 29 | 691 | 0.0 | 0.3− | 2003 10 16 | 644 | 0.1+ | 0.2+ | | | | |

**2006 DG$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.51624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18711487 | $\omega$ | 256.79176 | | +0.12073515 | −0.99254205 | |
| $a$ | 3.0273585 | $\Omega$ | 186.34613 | | +0.95952599 | +0.12103118 | |
| $e$ | 0.0540217 | $i$ | 8.75873 | | +0.25442660 | +0.01455096 | |
| $P$ | 5.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.2− | 0.2+ | 2003 09 27 | 691 | 0.3+ | 0.2− | 2006 02 24 | 691 | 0.3− | 0.0 |
| 2003 09 17 | 691 | 0.1+ | 0.0 | 2003 10 20 | 691 | 0.0 | 0.2+ | 2006 03 02 | 691 | 0.3+ | 0.1− |
| 2003 09 17 | 691 | 0.2+ | 0.1+ | 2003 10 20 | 691 | 0.4− | 0.0 | 2006 03 02 | 691 | 0.1+ | 0.0 |
| 2003 09 21 | 644 | 0.6− | 0.1+ | 2003 10 20 | 691 | 0.2− | 0.2+ | 2006 03 02 | 691 | 0.2+ | 0.1− |
| 2003 09 21 | 644 | 0.4− | 0.2+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 06 | 691 | 0.3− | 0.4+ |
| 2003 09 21 | 644 | 0.0 | 0.1+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 06 | 691 | 0.1− | 0.7+ |
| 2003 09 27 | 691 | 0.0 | 0.1− | 2006 02 24 | 691 | 0.2− | 0.4− | 2006 03 06 | 691 | 0.0 | 0.2+ |
| 2003 09 27 | 691 | 0.1+ | 0.0 | 2006 02 24 | 691 | 0.3+ | 0.4− | | | | |

**2006 DN$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.09110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19010430 | $\omega$ | 317.37818 | | +0.75937317 | +0.65062499 | |
| $a$ | 2.9955374 | $\Omega$ | 2.06377 | | −0.54001798 | +0.63560886 | |
| $e$ | 0.1030179 | $i$ | 10.05213 | | −0.36295037 | +0.41555807 | |
| $P$ | 5.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.1− | 0.7+ | 2003 10 23 | 699 | 0.2− | 0.1+ | 2003 11 21 | 704 | 0.3− | 0.8+ |
| 2002 07 16 | 644 | 0.1− | 0.4+ | 2003 11 14 | 644 | 0.0 | 0.3− | 2006 01 27 | G96 | 0.2− | 0.1+ |
| 2002 07 16 | 644 | 0.4− | 0.3+ | 2003 11 14 | 644 | 0.0 | 0.2− | 2006 01 27 | G96 | 0.3− | 0.4+ |
| 2003 10 18 | 644 | 0.3− | 0.2+ | 2003 11 14 | 644 | 0.3− | 0.1+ | 2006 01 27 | G96 | 0.3− | 0.1− |
| 2003 10 18 | 644 | 0.1+ | 0.4+ | 2003 11 19 | 704 | 0.1− | 0.1+ | 2006 01 27 | G96 | 0.6− | 0.1− |
| 2003 10 18 | 644 | 0.4+ | 0.5+ | 2003 11 19 | 704 | 0.4+ | 0.2− | 2006 02 24 | 691 | 0.0 | 0.3+ |
| 2003 10 23 | 691 | 0.1+ | 0.3+ | 2003 11 19 | 704 | 0.5+ | 1.5+ | 2006 02 24 | 691 | 0.1+ | 0.3+ |
| 2003 10 23 | 691 | 0.1+ | 0.2+ | 2003 11 19 | 704 | 0.3− | 0.4− | 2006 02 24 | 691 | 0.1+ | 0.1+ |
| 2003 10 23 | 691 | 0.2+ | 0.2+ | 2003 11 19 | 704 | 0.1− | 1.2− | 2006 03 02 | 691 | 0.1+ | 0.2+ |
| 2003 10 23 | 699 | 1.7− | 1.3+ | 2003 11 21 | 704 | 0.5− | 1.1− | 2006 03 02 | 691 | 0.2+ | 0.1− |
| 2003 10 23 | 699 | 1.7− | 0.9+ | 2003 11 21 | 704 | 0.9+ | 0.3− | 2006 03 02 | 691 | 0.2+ | 0.2− |
| 2003 10 23 | 699 | 0.0 | 1.9− | 2003 11 21 | 704 | 0.9+ | 0.3− | | | | |

**2006 DO$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.52127 | | (2000.0) | | | |
| $n$ | 0.23463274 | $\omega$ | 109.53379 | | +0.40004635 | +0.91644861 |
| $a$ | 2.6034164 | $\Omega$ | 184.08255 | | −0.88190065 | +0.38219094 |
| $e$ | 0.1890248 | $i$ | 7.43506 | | −0.24942767 | +0.11854128 |
| $P$ | 4.20 | $H$ | 17.1 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.4+ | 1.0+ | 2003 09 29 | 704 | 0.1+ | 0.3− | 2006 02 24 | 691 | 0.1+ | 0.2+ |
| 2002 04 08 | 644 | 0.1+ | 0.8+ | 2003 09 29 | 704 | 0.0 | 0.1− | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 2002 04 08 | 644 | 0.2+ | 1.0+ | 2003 10 16 | 691 | 0.3− | 0.2− | 2006 03 02 | 691 | 0.2+ | 0.2+ |
| 2003 09 16 | 691 | 0.3+ | 0.3+ | 2003 10 16 | 691 | 0.4− | 0.2− | 2006 03 02 | 691 | 0.1− | 0.0 |
| 2003 09 16 | 691 | 0.2+ | 0.5+ | 2003 10 16 | 691 | 0.3− | 0.1+ | 2006 03 23 | G96 | 0.4− | 0.5+ |
| 2003 09 16 | 691 | 0.4+ | 0.5+ | 2003 10 23 | 691 | 0.0 | 0.2− | 2006 03 23 | G96 | 0.1− | 0.4+ |
| 2003 09 28 | 691 | 0.2+ | 0.2+ | 2003 10 23 | 691 | 0.0 | 0.5− | 2006 03 23 | G96 | 0.1+ | 0.2+ |
| 2003 09 28 | 691 | 0.3+ | 0.2+ | 2003 10 23 | 691 | 0.5− | 0.2+ | 2006 03 23 | G96 | 0.3− | 0.2+ |
| 2003 09 28 | 691 | 0.2− | 0.4+ | 2006 02 24 | 691 | 0.1+ | 0.1+ | | | | |
| 2003 09 29 | 704 | 0.6+ | 1.7+ | 2006 02 24 | 691 | 0.1− | 0.0 | | | | |

**2006 DO$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 232.70957 | | (2000.0) | | | |
| $n$ | 0.18083392 | $\omega$ | 349.79186 | | +0.80995633 | +0.58211053 |
| $a$ | 3.0970589 | $\Omega$ | 334.19745 | | −0.52584353 | +0.66675916 |
| $e$ | 0.1202580 | $i$ | 9.46000 | | −0.25972933 | +0.46538108 |
| $P$ | 5.45 | $H$ | 15.9 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 691 | 0.2+ | 0.1+ | 2003 09 30 | 704 | 0.1+ | 0.1− | 2006 02 25 | 691 | 0.2+ | 0.1+ |
| 2003 09 19 | 691 | 0.1+ | 0.0 | 2003 09 30 | 704 | 1.1− | 0.5+ | 2006 02 25 | 691 | 0.0 | 0.1+ |
| 2003 09 19 | 691 | 0.3+ | 0.0 | 2003 09 30 | 704 | 0.2+ | 0.2+ | 2006 02 28 | G96 | 0.6− | 0.1− |
| 2003 09 22 | 699 | 1.8− | 0.8− | 2003 09 30 | 704 | 0.4− | 0.1− | 2006 02 28 | G96 | 0.2− | 0.1+ |
| 2003 09 22 | 699 | 0.4− | 0.8− | 2006 01 26 | 691 | 0.3+ | 0.0 | 2006 02 28 | G96 | 0.2+ | 0.0 |
| 2003 09 22 | 699 | 0.3+ | 0.6+ | 2006 01 26 | 691 | 0.6− | 0.2− | 2006 02 28 | G96 | 0.5− | 0.2− |
| 2003 09 22 | 699 | 0.9+ | 0.1+ | 2006 01 26 | 691 | 0.1+ | 0.5+ | | | | |
| 2003 09 30 | 704 | 0.2− | 0.1− | 2006 02 25 | 691 | 0.3+ | 0.4− | | | | |

**2006 DG$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 195.77880 | | (2000.0) | | | |
| $n$ | 0.23511886 | $\omega$ | 164.42328 | | +0.94449643 | −0.32778134 |
| $a$ | 2.5998267 | $\Omega$ | 214.73581 | | +0.29712982 | +0.88094307 |
| $e$ | 0.0980998 | $i$ | 2.21708 | | +0.14014409 | +0.34131907 |
| $P$ | 4.19 | $H$ | 16.4 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.0 | 0.5+ | 2004 12 20 | G96 | 0.2− | 0.8− | 2006 03 05 | 691 | 0.0 | 0.1+ |
| 2002 04 14 | 704 | 0.1− | 0.3+ | 2004 12 20 | G96 | 0.5+ | 0.4− | 2006 03 05 | 691 | 0.1− | 0.5− |
| 2002 04 14 | 704 | 0.2+ | 0.5− | 2006 02 25 | 691 | 0.1+ | 0.2+ | 2006 03 05 | 691 | 0.1− | 0.0 |
| 2004 11 10 | 691 | 0.1− | 0.4− | 2006 02 25 | 691 | 0.1+ | 0.1+ | 2006 03 08 | 691 | 0.2+ | 0.0 |
| 2004 11 10 | 691 | 0.1− | 0.2− | 2006 02 25 | 691 | 0.1+ | 0.3− | 2006 03 08 | 691 | 0.1− | 0.2+ |
| 2004 11 10 | 691 | 0.1+ | 0.3− | 2006 02 27 | G96 | 0.6− | 0.2+ | 2006 03 08 | 691 | 0.0 | 0.3+ |
| 2004 12 10 | 704 | 0.6− | 1.3+ | 2006 02 27 | G96 | 0.4− | 0.3+ | 2006 04 24 | G96 | 0.1+ | 0.4− |
| 2004 12 10 | 704 | 0.7− | 0.6+ | 2006 02 27 | G96 | 0.2− | 0.0 | 2006 04 24 | G96 | 0.6− | 0.3− |
| 2004 12 10 | 704 | 0.7+ | 1.7+ | 2006 02 27 | G96 | 0.6− | 0.4+ | 2006 04 24 | G96 | 0.0 | 0.4− |
| 2004 12 10 | 704 | 0.3− | 1.6+ | 2006 03 04 | 691 | 0.0 | 0.2− | 2006 04 24 | G96 | 0.5− | 0.3− |
| 2004 12 20 | G96 | 0.8+ | 0.1− | 2006 03 04 | 691 | 0.1− | 0.0 | | | | |
| 2004 12 20 | G96 | 0.2+ | 0.6− | 2006 03 04 | 691 | 0.4+ | 0.1− | | | | |

**2006 DQ$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.74578 | | (2000.0) | | | |
| $n$ | 0.21318736 | $\omega$ | 26.64294 | | −0.76915800 | +0.63877578 |
| $a$ | 2.7752050 | $\Omega$ | 193.11080 | | −0.60026059 | −0.73234991 |
| $e$ | 0.1010844 | $i$ | 4.80795 | | −0.21927881 | −0.23585823 |
| $P$ | 4.62 | $H$ | 16.6 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.3− | 1.0− | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 02 27 | G96 | 0.1− | 0.1− |
| 2001 03 23 | 691 | 0.4+ | 0.1− | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 03 04 | 691 | 0.0 | 0.1− |
| 2001 03 23 | 691 | 0.4− | 0.1− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.2+ | 0.0 |
| 2001 03 23 | 691 | 0.0 | 0.5+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.1+ | 0.0 |
| 2003 09 18 | 691 | 0.3− | 0.1+ | 2006 02 25 | 691 | 0.1+ | 0.2+ | 2006 04 02 | G96 | 0.1+ | 0.3+ |
| 2003 09 18 | 691 | 0.2+ | 0.3+ | 2006 02 25 | G96 | 0.0 | 0.1+ | 2006 04 02 | G96 | 0.0 | 0.2+ |
| 2003 09 18 | 691 | 0.0 | 0.6+ | 2006 02 25 | 691 | 0.2+ | 0.0 | 2006 04 02 | G96 | 0.0 | 0.2+ |
| 2003 09 29 | 691 | 0.1+ | 0.1+ | 2006 02 25 | G96 | 0.1+ | 0.1− | 2006 04 02 | G96 | 0.0 | 0.1+ |
| 2003 09 29 | 691 | 0.0 | 0.2+ | 2006 02 25 | G96 | 0.2+ | 0.0 | 2006 05 20 | G96 | 0.9− | 1.2+ |
| 2003 09 29 | 691 | 0.1+ | 0.1+ | 2006 02 25 | G96 | 0.2+ | 0.1+ | 2006 05 20 | G96 | 0.1+ | 0.3+ |
| 2003 09 29 | 645 | 0.0 | 0.1− | 2006 02 25 | 691 | 0.1− | 0.1+ | 2006 05 20 | G96 | 0.3− | 0.0 |
| 2003 09 29 | 645 | 0.1+ | 0.0 | 2006 02 27 | G96 | 0.2+ | 0.2+ | 2006 05 20 | G96 | 0.2+ | 0.2− |
| 2003 10 18 | 645 | 0.0 | 0.1+ | 2006 02 27 | G96 | 0.7− | 0.2+ | | | | |
| 2003 10 18 | 645 | 0.1− | 0.1− | 2006 02 27 | G96 | 0.4− | 0.1− | | | | |

**2006 DT$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 127.93822 | | (2000.0) | | | |
| $n$ | 0.23302259 | $\omega$ | 130.96709 | | +0.34074955 | −0.93991851 |
| $a$ | 2.6153955 | $\Omega$ | 299.09870 | | +0.85517860 | +0.31917366 |
| $e$ | 0.1438613 | $i$ | 1.38019 | | +0.39058842 | +0.12116672 |
| $P$ | 4.23 | $H$ | 17.8 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 26 | 691 | 0.3+ | 0.4− | 2004 10 15 | 691 | 0.1− | 0.1+ | 2006 02 27 | G96 | 0.1+ | 0.3+ |
| 2000 11 26 | 691 | 0.2− | 0.3− | 2004 10 15 | 691 | 0.0 | 0.1− | 2006 03 02 | 691 | 0.1− | 0.2+ |
| 2000 11 26 | 691 | 0.1+ | 0.4− | 2004 10 15 | 691 | 0.1+ | 0.0 | 2006 03 02 | 691 | 0.3+ | 0.1+ |
| 2004 09 10 | 691 | 0.2+ | 0.3+ | 2004 11 11 | 691 | 0.5− | 0.5+ | 2006 03 02 | 691 | 0.1+ | 0.5+ |
| 2004 09 10 | 691 | 0.2+ | 0.3+ | 2004 11 11 | 691 | 0.1− | 0.7+ | 2006 04 02 | G96 | 0.8− | 0.2− |
| 2004 09 10 | 691 | 0.1− | 0.1− | 2004 11 11 | 691 | 0.3− | 0.3+ | 2006 04 02 | G96 | 0.3+ | 0.3− |
| 2004 10 06 | 691 | 0.3− | 0.3− | 2006 02 27 | G96 | 0.8+ | 0.3− | 2006 04 02 | G96 | 0.2+ | 0.2+ |
| 2004 10 06 | 691 | 0.0 | 0.1− | 2006 02 27 | G96 | 0.2+ | 0.0 | 2006 04 02 | G96 | 0.4− | 0.0 |
| 2004 10 06 | 691 | 0.1+ | 0.0 | 2006 02 27 | G96 | 0.1+ | 0.3+ | | | | |

**2006 DS$_{113}$ = 2000 QC$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 289.56112 | | (2000.0) | | | |
| $n$ | 0.28126991 | $\omega$ | 302.20868 | | +0.62713009 | +0.77879751 |
| $a$ | 2.3070333 | $\Omega$ | 6.67897 | | −0.66986625 | +0.54809578 |
| $e$ | 0.1308262 | $i$ | 6.66611 | | −0.39747586 | +0.30506632 |
| $P$ | 3.50 | $H$ | 15.9 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 1.1+ | 1.5− | 2000 10 02 | 704 | 0.8− | 1.4+ | 2006 02 28 | 704 | 1.0+ | 1.6+ |
| 2000 08 29 | 704 | 0.5− | 0.8− | 2000 10 02 | 704 | 0.2− | 1.1+ | 2006 02 28 | 704 | 0.5+ | 0.9+ |
| 2000 08 29 | 704 | 0.1+ | 0.3− | 2000 10 02 | 704 | 0.4− | 0.0 | 2006 02 28 | 704 | 0.4− | 0.5+ |
| 2000 09 05 | 704 | 0.5− | 0.4+ | 2000 10 02 | 704 | 0.2+ | 0.4+ | 2006 03 03 | 691 | 0.3+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 704 | 0.7− | 0.1− | 2000 10 02 | 704 | 0.2− | 0.3− | 2006 03 03 | 691 | 0.4+ | 0.2− |
| 2000 09 05 | 704 | 0.1+ | 0.8+ | 2004 11 19 | 704 | 0.8− | 0.4− | 2006 03 03 | 691 | 0.1+ | 0.0 |
| 2000 09 23 | 699 | 0.0 | 0.0 | 2004 11 19 | 704 | 1.5− | 0.2+ | 2006 03 04 | G96 | 0.0 | 0.1− |
| 2000 09 23 | 699 | 0.1− | 0.0 | 2004 11 19 | 704 | 0.1− | 0.0 | 2006 03 04 | G96 | 0.0 | 0.1− |
| 2000 09 23 | 699 | 0.3+ | 0.4+ | 2004 11 19 | 704 | 0.3− | 0.1+ | 2006 03 04 | G96 | 0.3− | 0.2− |
| 2000 09 23 | 699 | (1.2+ | 2.3−) | 2004 12 15 | 704 | 0.8+ | 0.5+ | 2006 03 04 | G96 | 0.4− | 0.2− |
| 2000 09 24 | 704 | 0.2+ | 0.8+ | 2004 12 15 | 704 | 0.7− | 0.4− | 2006 03 23 | 703 | 0.1+ | 0.1+ |
| 2000 09 24 | 704 | 0.2+ | 0.2− | 2004 12 15 | 704 | 0.9+ | 0.7+ | 2006 03 23 | 703 | 0.9− | 0.2+ |
| 2000 09 24 | 704 | 0.3+ | 0.2+ | 2004 12 15 | 704 | 0.1− | 0.4+ | 2006 03 23 | 703 | 1.3− | 0.1− |
| 2000 09 24 | 704 | 0.4− | 0.2+ | 2004 12 17 | 704 | 0.6− | 1.2− | 2006 03 23 | 703 | 0.6+ | 0.8+ |
| 2000 09 24 | 704 | 0.2− | 0.3+ | 2004 12 17 | 704 | 1.0+ | 0.0 | 2006 04 21 | G96 | 0.5+ | 0.4+ |
| 2000 09 24 | 704 | 0.1− | 0.4+ | 2004 12 17 | 704 | 1.6+ | 0.1+ | 2006 04 21 | G96 | 0.3+ | 0.4+ |
| 2000 09 24 | 704 | 0.2− | 1.0+ | 2006 02 27 | 691 | 0.1+ | 0.2+ | 2006 04 21 | G96 | 0.6+ | 0.5+ |
| 2000 09 24 | 704 | 0.4− | 0.1− | 2006 02 27 | 691 | 0.1+ | 0.1− | 2006 04 21 | G96 | 0.1− | 0.3+ |
| 2000 09 24 | 704 | 0.4− | 0.1− | 2006 02 27 | 691 | 0.1+ | 0.0 | | | | |
| 2000 09 24 | 704 | 0.1+ | 0.4+ | 2006 02 28 | 704 | 1.1− | 0.3+ | | | | |

**2006 DX$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.78527 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22300817 | $\omega$ | 0.16128 | | −0.88414242 | | −0.46552638 |
| $a$ | 2.6931189 | $\Omega$ | 151.98547 | | +0.42856893 | | −0.84192314 |
| $e$ | 0.0116404 | $i$ | 4.85057 | | +0.18606680 | | −0.27285641 |
| $P$ | 4.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 30 | 644 | 0.2− | 0.5− | 2006 01 07 | G96 | 0.5− | 0.2− | 2006 03 02 | 691 | 0.2+ | 0.0 |
| 2002 04 30 | 644 | 0.3− | 0.4− | 2006 02 20 | 691 | 0.1+ | 0.1+ | 2006 03 03 | 691 | 0.4+ | 0.1− |
| 2002 04 30 | 644 | 0.0 | 0.9− | 2006 02 20 | 691 | 0.3− | 0.1+ | 2006 03 03 | 691 | 0.0 | 0.1+ |
| 2003 07 24 | 644 | 0.1− | 1.1+ | 2006 02 20 | 691 | 0.2− | 0.1+ | 2006 03 03 | 691 | 0.1− | 0.1− |
| 2003 07 24 | 644 | 0.6− | 1.0+ | 2006 02 24 | 691 | 0.3+ | 0.2− | 2006 03 06 | 691 | 0.1+ | 0.1+ |
| 2003 07 24 | 644 | 0.1− | 0.9+ | 2006 02 24 | 691 | 0.1+ | 0.2+ | 2006 03 06 | 691 | 0.1− | 0.1+ |
| 2004 12 15 | 599 | 0.1+ | 0.2− | 2006 02 24 | 691 | (0.7+ | 1.7+) | 2006 03 06 | 691 | 0.1+ | 0.4+ |
| 2004 12 15 | 599 | 0.3+ | 0.6+ | 2006 02 27 | 691 | 0.1− | 0.2+ | 2006 03 26 | G96 | 0.1− | 0.0 |
| 2004 12 15 | 599 | 0.3− | 0.1+ | 2006 02 27 | 691 | 0.2+ | 0.0 | 2006 03 26 | G96 | 0.3− | 0.0 |
| 2006 01 07 | G96 | 0.3− | 0.4− | 2006 02 27 | 691 | 0.2+ | 0.2+ | 2006 03 26 | G96 | 0.2− | 0.2− |
| 2006 01 07 | G96 | 0.8− | 0.5− | 2006 03 02 | 691 | 0.0 | 0.0 | 2006 03 26 | G96 | 0.1+ | 0.0 |
| 2006 01 07 | G96 | 1.3− | 0.2− | 2006 03 02 | 691 | 0.1+ | 0.1− | | | | |

**2006 DV$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.42491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17110516 | $\omega$ | 56.48892 | | +0.29936532 | | −0.95235109 |
| $a$ | 3.2133694 | $\Omega$ | 16.39686 | | +0.79240669 | | +0.21407520 |
| $e$ | 0.1228714 | $i$ | 11.93471 | | +0.53148099 | | +0.21725381 |
| $P$ | 5.76 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 691 | 0.3− | 0.2− | 2003 11 20 | 645 | 0.1+ | 0.0 | 2006 03 23 | 691 | 0.4+ | 0.1+ |
| 2003 09 22 | 691 | 0.0 | 0.2+ | 2003 11 20 | 645 | 0.1+ | 0.0 | 2006 03 23 | 691 | 0.3+ | 0.1+ |
| 2003 09 22 | 691 | 0.1− | 0.1− | 2006 02 27 | 691 | 0.1+ | 0.1− | 2006 04 07 | G96 | 0.2+ | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.8− | 1.2+ | 2006 04 07 | G96 | 0.2+ | 0.3+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2006 02 27 | 691 | 0.0 | 0.3− | 2006 04 07 | G96 | 0.0 | 0.3+ |
| 2003 09 28 | 645 | 0.1− | 0.1+ | 2006 03 02 | G96 | 0.4+ | 0.1− | 2006 04 07 | G96 | 0.0 | 0.5+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 02 | G96 | 0.0 | 0.1− | 2006 04 26 | 807 | 0.3+ | 0.4+ |
| 2003 10 24 | 691 | 0.4− | 0.5+ | 2006 03 02 | G96 | 0.1+ | 0.2− | 2006 04 26 | 807 | 0.2+ | 0.5+ |
| 2003 10 24 | 691 | 0.2− | 0.4+ | 2006 03 02 | G96 | 0.4+ | 0.4+ | | | | |
| 2003 10 24 | 691 | 0.0 | 0.5+ | 2006 03 23 | 691 | 0.8+ | 0.4+ | | | | |

**2006 DD$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.99531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20946055 | $\omega$ | 180.78070 | | +0.32513165 | | +0.94521241 |
| $a$ | 2.8080266 | $\Omega$ | 108.19323 | | −0.86746645 | | +0.31046979 |
| $e$ | 0.0461002 | $i$ | 1.77194 | | −0.37655194 | | +0.10090596 |
| $P$ | 4.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 691 | 0.0 | 0.3+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.0 | 0.2+ |
| 2003 09 27 | 691 | 0.1− | 0.0 | 2006 02 27 | 691 | 0.2+ | 0.3+ | 2006 03 02 | 691 | 0.4+ | 0.6− |
| 2003 09 27 | 691 | 0.1+ | 0.0 | 2006 02 27 | 691 | 0.3+ | 0.3+ | 2006 03 03 | 691 | 0.2− | 0.1+ |
| 2003 10 18 | 291 | 0.0 | 0.3+ | 2006 02 27 | 691 | 0.2+ | 0.1+ | 2006 03 03 | 691 | 0.3− | 0.6+ |
| 2003 10 18 | 291 | 0.1+ | 0.4+ | 2006 03 02 | G96 | 0.1− | 0.2− | 2006 03 03 | 691 | 0.3− | 0.4+ |
| 2003 10 18 | 291 | 0.2− | 0.5+ | 2006 03 02 | G96 | 0.7− | 0.1− | 2006 03 06 | 691 | 0.1− | 0.4− |
| 2003 10 19 | 645 | 0.0 | 0.1− | 2006 03 02 | G96 | 0.4− | 0.2− | 2006 03 06 | 691 | 0.2− | 0.4− |
| 2003 10 19 | 645 | 0.0 | 0.1− | 2006 03 02 | G96 | 0.1− | 0.1− | 2006 03 06 | 691 | 0.0 | 0.5− |
| 2003 10 22 | 645 | 0.1+ | 0.0 | 2006 03 02 | 691 | 0.4+ | 0.1+ | | | | |

**2006 DJ$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.26561 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25671774 | $\omega$ | 63.38311 | | −0.12561737 | | −0.98934335 |
| $a$ | 2.4518776 | $\Omega$ | 34.08414 | | +0.85709577 | | −0.14559770 |
| $e$ | 0.0788036 | $i$ | 7.54874 | | +0.49960696 | | +0.00102574 |
| $P$ | 3.84 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 644 | 0.1− | 0.0 | 2002 02 03 | 644 | 0.1− | 0.1+ | 2006 02 27 | 703 | (2.4− | 0.7+) |
| 2002 01 14 | 644 | 0.1− | 0.3+ | 2006 02 04 | 704 | 0.3− | 0.1+ | 2006 02 27 | 703 | 0.7− | 0.5+ |
| 2002 01 14 | 644 | 0.4− | 0.1− | 2006 02 04 | 704 | 0.6+ | 0.8− | 2006 02 27 | 703 | 1.5− | 0.8− |
| 2002 01 20 | 699 | 0.5− | 0.0 | 2006 02 04 | 704 | 0.2+ | 0.2+ | 2006 03 03 | 699 | 1.8+ | 0.5− |
| 2002 01 20 | 699 | 0.8+ | 0.4+ | 2006 02 04 | 704 | (0.6+ | 3.1−) | 2006 03 03 | 699 | 0.3+ | 0.8+ |
| 2002 01 20 | 699 | 0.4+ | 0.9− | 2006 02 20 | 704 | 1.5+ | 0.2+ | 2006 03 03 | 699 | 0.1− | 0.2− |
| 2002 01 20 | 699 | 0.4− | 0.5− | 2006 02 20 | 704 | 0.6+ | 0.3+ | 2006 03 03 | 699 | 1.8− | 1.4− |
| 2002 02 03 | 644 | 0.1− | 0.4+ | 2006 02 20 | 704 | 0.6+ | 0.5+ | | | | |
| 2002 02 03 | 644 | 0.5+ | 0.4+ | 2006 02 27 | 703 | 1.1− | 1.0+ | | | | |

**2006 DP$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.91589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17361817 | $\omega$ | 157.70646 | | +0.08897545 | | +0.95674817 |
| $a$ | 3.1822865 | $\Omega$ | 116.44054 | | −0.95415667 | | +0.16165802 |
| $e$ | 0.2106735 | $i$ | 18.01913 | | −0.28577687 | | −0.24186697 |
| $P$ | 5.68 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.2− | 0.1− | 2002 08 31 | 699 | 0.5+ | 0.1− | 2006 02 27 | 703 | 0.3− | 0.7− |
| 2002 07 29 | 644 | 0.4− | 0.1− | 2002 08 31 | 704 | 0.1+ | 0.1+ | 2006 02 27 | 703 | 0.1+ | 0.7+ |
| 2002 07 29 | 644 | 0.2− | 0.2− | 2002 08 31 | 699 | 0.2+ | 0.3− | 2006 02 27 | 703 | 0.7+ | 0.2+ |
| 2002 08 13 | 704 | 0.3− | 0.5− | 2002 08 31 | 704 | 0.5− | 0.3− | 2006 03 06 | 703 | 0.6− | 1.5− |
| 2002 08 13 | 704 | 0.5+ | 1.4+ | 2002 08 31 | 699 | 0.3+ | 0.1+ | 2006 03 06 | 703 | 0.2+ | 0.4− |
| 2002 08 13 | 704 | 0.4+ | 0.0 | 2006 02 20 | 704 | 0.3+ | 0.4+ | 2006 03 06 | 703 | 1.7− | 0.7+ |
| 2002 08 13 | 704 | 0.0 | 0.1+ | 2006 02 20 | 704 | 0.1− | 1.3+ | 2006 03 06 | 703 | (2.7− | 1.0−) |
| 2002 08 31 | 704 | 0.8− | 0.7− | 2006 02 20 | 704 | 1.5+ | 0.2− | | | | |
| 2002 08 31 | 699 | 0.3+ | 0.7+ | 2006 02 27 | 703 | 0.0 | 0.2− | | | | |

**2006 DK$_{121}$ = 2002 JG$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.26945 | | (2000.0) | | | |
| $n$ | 0.21506213 | $\omega$ | 178.20162 | | −0.67706217 | +0.72725599 |
| $a$ | 2.7590533 | $\Omega$ | 49.16328 | | −0.67704349 | −0.55556607 |
| $e$ | 0.1490323 | $i$ | 8.56134 | | −0.28844225 | −0.40304474 |
| $P$ | 4.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 691 | 0.1− | 0.2+ | 2002 05 13 | 704 | 0.0 | 0.3− | 2006 02 22 | 703 | 0.4− | 0.2+ |
| 1999 11 12 | 691 | 0.0 | 0.1− | 2002 05 13 | 704 | 0.9− | 0.9− | 2006 02 28 | 703 | 0.2− | 1.0− |
| 1999 11 12 | 691 | 0.0 | 0.0 | 2002 05 13 | 704 | 0.1+ | 1.4+ | 2006 02 28 | 703 | 0.1− | 1.3+ |
| 2002 05 11 | 704 | 0.8+ | 0.3− | 2002 05 30 | 644 | 0.2− | 0.0 | 2006 02 28 | 703 | 0.1− | 0.1+ |
| 2002 05 11 | 704 | 0.3+ | 0.5+ | 2002 05 30 | 644 | 0.2+ | 0.1+ | 2006 02 28 | 703 | 0.7− | 0.3+ |
| 2002 05 11 | 704 | 0.2− | 0.3− | 2002 05 30 | 644 | 0.1+ | 0.1+ | 2006 03 03 | 699 | 0.0 | 0.4− |
| 2002 05 11 | 704 | 0.1+ | 0.1+ | 2006 02 22 | 703 | 0.5+ | 0.3− | 2006 03 03 | 699 | 0.8+ | 0.1+ |
| 2002 05 11 | 704 | 0.0 | 0.6+ | 2006 02 22 | 703 | 0.4− | 0.2− | 2006 03 03 | 699 | (2.8+ | 0.3+) |
| 2002 05 13 | 704 | 0.1− | 0.7− | 2006 02 22 | 703 | 0.6+ | 0.7− | 2006 03 03 | 699 | 0.0 | 0.8+ |

**2006 DR$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.96808 | | (2000.0) | | | |
| $n$ | 0.20378490 | $\omega$ | 261.38174 | | +0.28404249 | +0.95866336 |
| $a$ | 2.8599254 | $\Omega$ | 25.13967 | | −0.86334242 | +0.26337208 |
| $e$ | 0.0385203 | $i$ | 2.27514 | | −0.41708480 | +0.10770195 |
| $P$ | 4.84 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 691 | 0.4− | 0.5+ | 2003 10 22 | 645 | 0.0 | 0.1+ | 2006 03 03 | G96 | 0.2− | 0.1+ |
| 2001 03 21 | 691 | 0.6+ | 1.1− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 03 | G96 | 0.2− | 0.2− |
| 2001 03 21 | 691 | 0.5− | 0.1+ | 2003 10 24 | 691 | 0.5+ | 0.2+ | 2006 03 03 | G96 | 0.2− | 0.1+ |
| 2003 09 17 | 691 | 0.1− | 0.1− | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 24 | 691 | 0.3+ | 0.2− |
| 2003 09 17 | 691 | 0.2+ | 0.1− | 2003 10 24 | 645 | 0.0 | 0.1+ | 2006 03 24 | 691 | 0.6+ | 0.2+ |
| 2003 09 17 | 691 | 0.1− | 0.1+ | 2003 10 24 | 691 | 0.2− | 0.1− | 2006 03 24 | 691 | 0.0 | 0.5+ |
| 2003 09 29 | 691 | 0.0 | 0.2− | 2003 10 24 | 691 | 0.1+ | 0.2+ | 2006 03 24 | G96 | 0.4− | 0.1+ |
| 2003 09 29 | 691 | 0.0 | 0.1+ | 2006 02 24 | 691 | 0.1− | 0.1+ | 2006 03 24 | G96 | 0.2− | 0.2+ |
| 2003 09 29 | 691 | 0.2− | 0.2+ | 2006 02 24 | 691 | 0.3− | 0.4− | 2006 03 24 | G96 | 0.3− | 0.0 |
| 2003 10 18 | 291 | 0.3+ | 0.1+ | 2006 02 24 | 691 | 0.8+ | 0.1+ | 2006 03 24 | G96 | 0.2− | 0.1− |
| 2003 10 18 | 291 | 0.3+ | 0.1+ | 2006 03 02 | 691 | 0.2− | 1.0+ | 2006 03 24 | G96 | 0.9− | 0.2+ |
| 2003 10 18 | 291 | 0.2− | 0.1− | 2006 03 02 | 691 | 0.2+ | 0.3− | 2006 03 24 | G96 | 0.1− | 0.1− |
| 2003 10 19 | 645 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.0 | 0.2− | 2006 03 24 | G96 | 0.2− | 0.1+ |
| 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 03 | G96 | 0.1− | 0.1+ | 2006 03 24 | G96 | 0.6− | 0.2− |

**2006 DU$_{127}$ = 2006 CN$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 296.66832 | | (2000.0) | | | |
| $n$ | 0.22245173 | $\omega$ | 258.05628 | | −0.01653884 | +0.99983673 |
| $a$ | 2.6976081 | $\Omega$ | 11.00386 | | −0.90187778 | −0.01177481 |
| $e$ | 0.1359668 | $i$ | 2.18538 | | −0.43167457 | −0.01370639 |
| $P$ | 4.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 291 | 0.3− | 0.0 | 2006 02 02 | G96 | 0.0 | 0.1+ | 2006 03 03 | 691 | 0.3− | 0.0 |
| 2002 03 21 | 291 | 0.3− | 0.1+ | 2006 02 02 | G96 | 0.2+ | 0.2− | 2006 03 05 | 691 | 0.3− | 0.2− |
| 2002 03 21 | 291 | 0.4− | 0.1+ | 2006 02 02 | G96 | 0.2− | 0.0 | 2006 03 05 | 691 | 0.0 | 0.3+ |
| 2002 04 04 | 691 | 0.2+ | 0.1− | 2006 02 04 | 691 | 0.5+ | 0.2+ | 2006 03 05 | 691 | 0.2+ | 0.1+ |
| 2002 04 04 | 691 | 0.3+ | 0.1+ | 2006 02 04 | 691 | 0.8+ | 1.0− | 2006 03 05 | 691 | 0.1− | 0.1+ |
| 2002 04 04 | 691 | 0.5+ | 0.1− | 2006 02 04 | 691 | 0.1− | 0.4− | 2006 03 05 | 691 | 0.3+ | 0.1+ |
| 2003 08 22 | 644 | 0.6− | 1.5+ | 2006 02 25 | G96 | 0.2− | 0.2− | 2006 03 05 | 691 | 0.1− | 0.5+ |
| 2003 08 22 | 644 | 0.7− | 1.3+ | 2006 02 25 | G96 | 0.4− | 0.5− | 2006 03 08 | 691 | 0.2− | 0.7+ |
| 2003 08 22 | 644 | 0.6− | 1.6+ | 2006 02 25 | G96 | 0.4− | 0.0 | 2006 03 08 | 691 | 0.0 | 0.2+ |
| 2004 11 04 | 691 | 0.1− | 0.1− | 2006 02 25 | G96 | 0.2− | 0.3− | 2006 03 08 | 691 | 0.2− | 0.6+ |
| 2004 11 04 | 691 | 0.2+ | 0.1+ | 2006 03 03 | 691 | 0.3− | 0.2+ | | | | |
| 2004 11 04 | 691 | 0.0 | 0.1+ | 2006 03 03 | 691 | 0.2+ | 0.1+ | | | | |

**2006 DB$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.28893 | | (2000.0) | | | |
| $n$ | 0.30076257 | $\omega$ | 219.76692 | | −0.23944303 | +0.97037185 |
| $a$ | 2.2062439 | $\Omega$ | 36.41268 | | −0.87635901 | −0.20166993 |
| $e$ | 0.1595308 | $i$ | 3.12255 | | −0.41792575 | −0.13307033 |
| $P$ | 3.28 | $H$ | 18.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 695 | 0.2− | 0.2+ | 2003 06 05 | 691 | 0.2− | 0.2+ | 2006 03 04 | 691 | 0.2+ | 0.0 |
| 2003 03 30 | 695 | 0.3− | 0.0 | 2003 06 05 | 691 | 0.1+ | 0.1− | 2006 03 04 | 691 | 0.1− | 0.1+ |
| 2003 05 03 | 691 | 0.5− | 0.2+ | 2003 06 05 | 691 | 0.1+ | 0.4+ | 2006 03 04 | G96 | 0.3+ | 0.1− |
| 2003 05 03 | 691 | 0.2− | 0.0 | 2006 02 25 | 691 | 0.0 | 0.3+ | 2006 03 04 | G96 | 0.2+ | 0.1− |
| 2003 05 03 | 691 | 0.2− | 0.3− | 2006 02 25 | 691 | 0.5+ | 0.2− | 2006 03 04 | G96 | 0.3− | 0.1+ |
| 2003 05 10 | 691 | 1.2+ | 0.4− | 2006 02 25 | 691 | 0.2+ | 0.2− | 2006 03 04 | G96 | 0.3− | 0.1+ |
| 2003 05 10 | 691 | 0.2− | 0.2+ | 2006 03 03 | G96 | 0.5− | 0.2+ | 2006 03 08 | 691 | 0.1+ | 0.2+ |
| 2003 05 10 | 691 | 0.1+ | 0.0 | 2006 03 03 | G96 | 0.1− | 0.5+ | 2006 03 08 | 691 | 0.7− | 0.4− |
| 2003 05 25 | 926 | 0.2+ | 0.4− | 2006 03 03 | G96 | 0.5− | 0.3+ | 2006 03 08 | 691 | 0.1− | 0.2+ |
| 2003 05 25 | 926 | 0.2− | 0.1− | 2006 03 03 | G96 | 0.2+ | 0.6− | | | | |
| 2003 05 25 | 926 | 0.1− | 0.3− | 2006 03 04 | 691 | 0.3+ | 0.0 | | | | |

**2006 DJ$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 223.45659 | | (2000.0) | | | |
| $n$ | 0.17897021 | $\omega$ | 241.20215 | | +0.95556429 | +0.27802091 |
| $a$ | 3.1185226 | $\Omega$ | 102.51403 | | −0.22315045 | +0.89942595 |
| $e$ | 0.0659898 | $i$ | 5.76051 | | −0.19261560 | +0.33724965 |
| $P$ | 5.51 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 691 | 0.0 | 0.6− | 2003 09 19 | 599 | 0.5+ | 0.6+ | 2006 02 25 | 691 | 0.1− | 0.6+ |
| 1998 12 12 | 691 | 0.1− | 0.4− | 2003 09 28 | 704 | 0.5− | 0.6+ | 2006 02 25 | 691 | 0.2+ | 0.2+ |
| 1998 12 12 | 691 | 0.1+ | 0.2− | 2003 09 28 | 704 | 0.5− | 0.2+ | 2006 02 25 | 691 | 0.0 | 0.1− |
| 1998 12 25 | 691 | 0.2− | 0.3− | 2003 09 28 | 704 | 0.1− | 1.1+ | 2006 03 04 | 691 | 0.1− | 0.2+ |
| 1998 12 25 | 691 | 0.4+ | 0.4− | 2003 09 30 | 645 | 0.1− | 0.1+ | 2006 03 04 | 691 | 0.4+ | 0.2+ |
| 1998 12 25 | 691 | 0.0 | 0.6− | 2003 09 30 | 645 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.3− | 0.2+ |
| 2001 05 24 | 645 | 0.0 | 0.1− | 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 08 | 691 | 0.1+ | 0.2+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 08 | 691 | 0.2− | 0.1− |
| 2003 09 18 | 599 | 0.2+ | 0.3+ | 2004 12 19 | 691 | 0.4+ | 0.7+ | 2006 03 08 | 691 | 0.0 | 0.6+ |
| 2003 09 18 | 599 | 1.6− | 0.4− | 2004 12 19 | 691 | 0.1+ | 0.2+ | | | | |
| 2003 09 19 | 599 | 0.8− | 0.3− | 2004 12 19 | 691 | 0.3+ | 0.1+ | | | | |

**2006 DP$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 131.92796 | | (2000.0) | | | |
| $n$ | 0.21175545 | $\omega$ | 50.29560 | | +0.26587730 | −0.96343276 |
| $a$ | 2.7877018 | $\Omega$ | 24.34677 | | +0.85792946 | +0.22074321 |
| $e$ | 0.0422304 | $i$ | 4.62826 | | +0.43962064 | +0.15188732 |
| $P$ | 4.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.1− | 0.1+ | 2004 12 02 | 703 | 0.1+ | 0.7− | 2006 02 25 | 691 | 0.2− | 0.1− |
| 1999 10 04 | 691 | 0.0 | 0.0 | 2004 12 02 | 703 | 0.4+ | 2.1− | 2006 03 04 | 691 | 0.1− | 0.2− |
| 1999 10 04 | 691 | 0.2+ | 0.2− | 2004 12 15 | 704 | 0.9− | 0.5+ | 2006 03 04 | 691 | 0.1− | 0.0 |
| 2004 11 19 | 704 | 1.0− | 1.4+ | 2004 12 15 | 704 | 0.0 | 1.2+ | 2006 03 04 | 691 | 0.0 | 0.1− |
| 2004 11 19 | 704 | 0.5+ | 0.7+ | 2004 12 15 | 704 | 0.2− | 0.4+ | 2006 03 08 | 691 | 0.5+ | 0.5+ |
| 2004 11 19 | 704 | 0.2− | 0.1+ | 2004 12 15 | 704 | 0.7+ | 0.1− | 2006 03 08 | 691 | 0.2− | 0.0 |
| 2004 11 19 | 704 | 0.1− | 1.2+ | 2004 12 15 | 704 | 0.1+ | 1.2− | 2006 03 08 | 691 | 0.1+ | 0.1+ |
| 2004 12 02 | 703 | 0.1+ | 0.8− | 2006 02 25 | 691 | 0.0 | 0.1− | | | | |
| 2004 12 02 | 703 | 0.7+ | 0.3− | 2006 02 25 | 691 | 0.0 | 0.1− | | | | |

**2006 DR$_{143}$ = 2004 XG$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 178.02957 | | | (2000.0) | | |
| $n$ | 0.18774319 | $\omega$ | 347.53977 | | +0.97915672 | −0.20277369 |
| $a$ | 3.0206002 | $\Omega$ | 24.16885 | | +0.18869669 | +0.88704213 |
| $e$ | 0.2291459 | $i$ | 1.62585 | | +0.07513769 | +0.41477595 |
| $P$ | 5.25 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 08 | 644 | 0.3− | 0.5+ | 2003 08 25 | 704 | 0.5+ | 0.6+ | 2006 01 30 | 691 | 0.3+ | 0.2+ |
| 2003 07 08 | 644 | 0.3− | 0.5+ | 2003 08 25 | 704 | 0.1− | 1.0+ | 2006 01 30 | 691 | 0.4+ | 0.2− |
| 2003 07 08 | 644 | 0.0 | 0.2+ | 2003 08 25 | 704 | 0.1+ | 0.6+ | 2006 02 25 | G96 | 0.3− | 0.4− |
| 2003 07 25 | 644 | 0.0 | 0.1+ | 2003 08 25 | 704 | 0.1+ | 0.7+ | 2006 02 25 | G96 | 0.2− | 0.1− |
| 2003 07 25 | 644 | 0.1− | 0.0 | 2004 12 03 | 691 | 0.1+ | 0.0 | 2006 02 25 | G96 | 0.2− | 0.0 |
| 2003 07 25 | 644 | 0.5− | 0.0 | 2004 12 03 | 691 | 0.2+ | 0.0 | 2006 02 25 | G96 | 0.1+ | 0.3− |
| 2003 08 04 | 704 | 0.4− | 0.1− | 2004 12 03 | 691 | 0.3+ | 0.0 | 2006 03 03 | 691 | 0.2− | 0.6+ |
| 2003 08 04 | 704 | 0.5+ | 0.7+ | 2004 12 15 | 691 | 0.2− | 0.1+ | 2006 03 03 | 691 | 0.2+ | 0.1+ |
| 2003 08 04 | 704 | 0.1− | 0.2− | 2004 12 15 | 691 | 0.0 | 0.2+ | 2006 03 03 | 691 | 0.3− | 0.1− |
| 2003 08 04 | 704 | 0.2− | 0.3+ | 2004 12 15 | 691 | 0.3− | 0.2+ | | | | |
| 2003 08 04 | 704 | 0.8− | 0.2− | 2006 01 30 | 691 | 0.3+ | 0.6+ | | | | |

**2006 DU$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 155.42162 | | | (2000.0) | | |
| $n$ | 0.24351622 | $\omega$ | 253.90719 | | +0.72555151 | −0.68706028 |
| $a$ | 2.5397100 | $\Omega$ | 149.45787 | | +0.65709384 | +0.67482483 |
| $e$ | 0.1502391 | $i$ | 4.40470 | | +0.20445706 | +0.26936895 |
| $P$ | 4.05 | $H$ | 17.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 10 07 | 699 | 0.7+ | 0.9+ | 2004 10 12 | 683 | 0.6+ | 0.4− | 2006 03 03 | G96 | 0.1+ | 0.0 |
| 2004 10 07 | 699 | 0.3− | 0.6+ | 2004 10 12 | 683 | 1.2− | 1.1+ | 2006 03 03 | G96 | 0.5− | 0.1− |
| 2004 10 07 | 699 | 0.2+ | 0.1+ | 2006 02 25 | G96 | 0.3+ | 0.1+ | 2006 03 06 | G96 | 0.2+ | 0.3+ |
| 2004 10 07 | 699 | 0.4− | 0.0 | 2006 02 25 | G96 | 0.1− | 0.2+ | 2006 03 06 | G96 | 0.3+ | 0.0 |
| 2004 10 10 | 683 | 1.1− | 0.5− | 2006 02 25 | G96 | 0.2+ | 0.2− | 2006 03 06 | G96 | 0.5+ | 0.1− |
| 2004 10 10 | 683 | 1.7+ | 1.3− | 2006 02 25 | G96 | 0.1− | 0.2+ | 2006 03 06 | G96 | 0.0 | 0.0 |
| 2004 10 10 | 683 | 0.5− | 0.6− | 2006 03 03 | G96 | 0.1− | 0.1+ | | | | |
| 2004 10 12 | 683 | 0.4+ | 0.2+ | 2006 03 03 | G96 | 0.7− | 0.5− | | | | |

**2006 DC$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 248.21740 | | | (2000.0) | | |
| $n$ | 0.29391386 | $\omega$ | 330.30863 | | +0.93339975 | +0.35881525 |
| $a$ | 2.2403851 | $\Omega$ | 8.66684 | | −0.32368298 | +0.84679190 |
| $e$ | 0.1688006 | $i$ | 1.54614 | | −0.15490074 | +0.39267682 |
| $P$ | 3.35 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.6− | 0.4− | 2004 10 10 | 691 | 0.1− | 0.2+ | 2006 02 25 | G96 | 0.1− | 0.8− |
| 1996 03 11 | 691 | 0.1− | 0.5− | 2004 10 10 | 691 | 0.1+ | 0.2+ | 2006 02 25 | G96 | 0.8− | 0.4− |
| 1996 03 11 | 691 | 0.2+ | 0.2− | 2004 10 14 | 691 | 0.0 | 0.3+ | 2006 03 03 | 691 | 0.2+ | 0.2+ |
| 2003 04 05 | 691 | 0.6+ | 0.8+ | 2004 10 14 | 691 | 0.1− | 0.3+ | 2006 03 03 | 691 | 0.0 | 0.4+ |
| 2003 04 05 | 691 | 0.2+ | 1.0+ | 2004 10 14 | 691 | 0.2− | 0.3+ | 2006 03 03 | 691 | 0.2+ | 0.2+ |
| 2003 04 05 | 691 | 0.2+ | 0.6+ | 2006 02 25 | G96 | 0.3− | 0.3− | | | | |
| 2004 10 10 | 691 | 0.1− | 0.2+ | 2006 02 25 | G96 | 0.0 | 0.2− | | | | |

**2006 DN$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 128.40753 | | | (2000.0) | | |
| $n$ | 0.16805529 | $\omega$ | 238.94296 | | +0.33209486 | −0.94309383 |
| $a$ | 3.2521302 | $\Omega$ | 191.69796 | | +0.89138931 | +0.31966013 |
| $e$ | 0.1130518 | $i$ | 4.79321 | | +0.30844464 | +0.09160476 |
| $P$ | 5.86 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1− | 0.0 | 2003 10 01 | 699 | 0.7− | 0.7+ | 2006 02 25 | G96 | 0.4− | 0.2− |
| 2003 09 18 | 691 | 0.1− | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 02 25 | 691 | 0.1− | 0.1+ |
| 2003 09 18 | 691 | 0.1− | 0.1+ | 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.3+ | 0.1− |
| 2003 09 26 | 704 | 0.3− | 0.4+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 03 04 | 691 | 0.2+ | 0.0 |
| 2003 09 26 | 704 | 0.0 | 0.5+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 03 04 | 691 | 0.2+ | 0.2− |
| 2003 09 26 | 704 | 0.8+ | 0.8+ | 2006 02 25 | 691 | 0.1− | 0.3+ | 2006 05 03 | G96 | 0.5+ | 0.6+ |
| 2003 09 26 | 704 | 0.8− | 0.3− | 2006 02 25 | G96 | 0.3− | 0.1− | 2006 05 03 | G96 | 0.3+ | 0.3+ |
| 2003 10 01 | 699 | 1.1+ | 0.5− | 2006 02 25 | 691 | 0.1− | 0.1+ | 2006 05 03 | G96 | 0.4− | 0.6+ |
| 2003 10 01 | 699 | 0.6+ | 0.3− | 2006 02 25 | G96 | 0.6− | 0.3− | 2006 05 03 | G96 | 0.1− | 0.2+ |
| 2003 10 01 | 699 | 0.1− | 0.2+ | 2006 02 25 | G96 | 0.1− | 0.4+ | | | | |

**2006 DR$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.77160 | | | (2000.0) | | |
| $n$ | 0.26884244 | $\omega$ | 222.93362 | | +0.61968650 | −0.78469233 |
| $a$ | 2.3775929 | $\Omega$ | 188.81324 | | +0.74500047 | +0.59439981 |
| $e$ | 0.1033511 | $i$ | 5.88262 | | +0.24690675 | +0.17591704 |
| $P$ | 3.67 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 09 10 | 691 | 0.3+ | 0.0 | 2004 10 06 | 691 | 0.1− | 0.1+ | 2006 02 25 | 691 | 0.2+ | 0.6+ |
| 2004 09 10 | 691 | 0.0 | 0.3+ | 2004 10 06 | 691 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.0 | 0.3+ |
| 2004 09 10 | 691 | 0.0 | 0.2+ | 2004 11 11 | 691 | 0.2+ | 0.5− | 2006 03 04 | 691 | 0.2− | 0.2− |
| 2004 09 23 | 691 | 0.3− | 0.0 | 2004 11 11 | 691 | 0.3+ | 0.1− | 2006 03 04 | 691 | 0.1− | 0.2− |
| 2004 09 23 | 691 | 0.0 | 0.2− | 2004 11 11 | 691 | 0.4− | 0.6+ | 2006 03 05 | 691 | 0.1+ | 0.1− |
| 2004 09 23 | 691 | 0.2− | 0.3− | 2006 02 25 | 691 | 0.5− | 0.2− | 2006 03 05 | 691 | 0.2+ | 0.1− |
| 2004 10 06 | 691 | 0.1+ | 0.1+ | 2006 02 25 | 691 | 0.0 | 0.2+ | 2006 03 05 | 691 | 0.4+ | 0.1− |

**2006 DH$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 115.78275 | | | (2000.0) | | |
| $n$ | 0.21988271 | $\omega$ | 272.41215 | | −0.15847344 | −0.98727106 |
| $a$ | 2.7185792 | $\Omega$ | 186.75119 | | +0.94536961 | −0.14777655 |
| $e$ | 0.0834627 | $i$ | 6.59015 | | +0.28489027 | −0.05880431 |
| $P$ | 4.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 24 | 644 | 0.4− | 0.8+ | 2006 02 25 | 691 | 0.3− | 0.1+ | 2006 04 07 | G96 | 0.4− | 0.0 |
| 2003 07 24 | 644 | 0.1− | 1.0+ | 2006 02 25 | 691 | 0.1− | 0.1− | 2006 04 21 | 691 | 0.2+ | 0.1+ |
| 2003 07 24 | 644 | 0.1− | 0.8+ | 2006 02 25 | 691 | 0.1+ | 0.2− | 2006 04 21 | 691 | 0.4+ | 0.1+ |
| 2004 11 10 | 691 | 0.1− | 0.0 | 2006 03 04 | 691 | 0.0 | 0.1+ | 2006 04 21 | 691 | 0.2+ | 0.0 |
| 2004 11 10 | 691 | 0.1+ | 0.0 | 2006 03 04 | 691 | 0.2+ | 0.2+ | 2006 04 25 | G96 | 0.2+ | 0.7− |
| 2004 11 10 | 691 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.4+ | 0.2+ | 2006 04 25 | G96 | 0.4− | 0.6− |
| 2006 01 07 | 291 | 0.3+ | 0.6+ | 2006 03 25 | G96 | 0.3− | 0.1− | 2006 04 25 | G96 | 0.1+ | 0.5− |
| 2006 01 07 | 291 | 0.4− | 0.6+ | 2006 03 25 | G96 | 0.5− | 0.1− | 2006 04 25 | G96 | 0.0 | 0.5− |
| 2006 01 07 | 291 | 0.1+ | 0.5+ | 2006 03 25 | G96 | 0.4− | 0.4− | 2006 05 21 | G96 | 0.2− | 0.3− |
| 2006 02 25 | G96 | 0.2− | 0.1− | 2006 03 25 | G96 | 0.0 | 0.2− | 2006 05 21 | G96 | 0.5− | 0.3− |
| 2006 02 25 | G96 | 0.1+ | 0.2− | 2006 04 07 | G96 | 0.2− | 0.0 | 2006 05 21 | G96 | 0.2− | 0.2− |
| 2006 02 25 | G96 | 0.1− | 0.1+ | 2006 04 07 | G96 | 0.3− | 0.1− | 2006 05 21 | G96 | 0.2+ | 0.2− |
| 2006 02 25 | G96 | 0.4− | 0.3− | 2006 04 07 | G96 | 0.4− | 0.1− | | | | |

**2006 DU$_{152}$ = 2003 SB$_{268}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.36678 | | | (2000.0) | | |
| $n$ | 0.22216765 | $\omega$ | 278.46509 | | +0.09167406 | +0.99578831 |
| $a$ | 2.6999072 | $\Omega$ | 356.79407 | | −0.90476313 | +0.08277896 |
| $e$ | 0.1031158 | $i$ | 1.25805 | | −0.41593213 | +0.03941173 |
| $P$ | 4.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 25 | 691 | 0.0 | 0.2− | 2003 10 24 | 691 | 0.7+ | 0.3+ | 2006 04 07 | G96 | 0.1+ | 0.5+ |
| 2001 01 25 | 691 | 0.1+ | 0.1− | 2003 10 24 | 691 | 0.1+ | 0.3+ | 2006 04 07 | G96 | 0.3− | 0.6+ |
| 2001 01 25 | 691 | 0.2− | 0.1+ | 2003 10 24 | 691 | 0.0 | 0.0 | 2006 04 07 | G96 | 0.1− | 0.5+ |
| 2002 04 06 | 807 | 0.1+ | 0.0 | 2006 02 25 | 691 | 0.3+ | 0.2+ | 2006 04 19 | 691 | 0.2+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 06 | 807 | 0.0 | 0.0 | 2006 02 25 | 691 | 0.7+ | 0.3+ | 2006 04 19 | 691 | 0.2− | 0.7+ |
| 2003 09 16 | 291 | 0.1− | 0.3+ | 2006 02 25 | 691 | 0.3+ | 0.5+ | 2006 04 19 | 691 | 0.3+ | 0.1+ |
| 2003 09 16 | 291 | 0.7− | 0.3+ | 2006 03 04 | 691 | 0.5+ | 0.3+ | 2006 04 19 | G96 | 0.0 | 0.2+ |
| 2003 09 16 | 291 | 0.8− | 0.4+ | 2006 03 04 | 691 | 0.1+ | 0.2+ | 2006 04 19 | G96 | 0.5− | 0.2+ |
| 2003 09 29 | 691 | 0.9− | 0.6− | 2006 03 04 | 691 | 0.3+ | 0.4+ | 2006 04 19 | G96 | 0.2− | 0.2+ |
| 2003 09 29 | 691 | 0.1− | 0.7+ | 2006 03 25 | G96 | 0.1− | 0.3+ | 2006 04 19 | G96 | 0.1− | 0.2+ |
| 2003 09 29 | 691 | 0.1− | 0.6+ | 2006 03 25 | G96 | 0.0 | 0.5+ | 2006 05 03 | G96 | 0.2− | 0.0 |
| 2003 09 30 | 291 | 0.0 | 0.4+ | 2006 03 25 | G96 | 0.0 | 0.2+ | 2006 05 03 | G96 | 0.3− | 0.0 |
| 2003 09 30 | 291 | 0.1+ | 0.5+ | 2006 03 25 | G96 | 0.5− | 0.3+ | 2006 05 03 | G96 | 0.3− | 0.3+ |
| 2003 09 30 | 291 | 0.0 | 0.5+ | 2006 04 07 | G96 | 0.1− | 0.3+ | 2006 05 03 | G96 | 0.1+ | 0.1+ |

**2006 DE$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 243.78770 | | (2000.0) | | | |
| $n$ | 0.28822159 | $\omega$ | 5.26564 | | +0.99785302 | +0.06304211 |
| $a$ | 2.2697867 | $\Omega$ | 351.06176 | | −0.06348435 | +0.86443802 |
| $e$ | 0.1269901 | $i$ | 6.55990 | | −0.01609650 | +0.49877109 |
| $P$ | 3.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.0 | 0.4+ | 2004 12 02 | 704 | 0.5+ | 0.4+ | 2006 01 26 | G96 | 0.4− | 0.3− |
| 1999 02 09 | 691 | 0.4+ | 0.1+ | 2004 12 02 | 704 | 0.7− | 0.1− | 2006 01 26 | G96 | 0.5− | 0.4− |
| 1999 02 09 | 691 | 0.1+ | 0.1+ | 2004 12 02 | 703 | 2.1+ | 2.5+ | 2006 01 26 | G96 | 0.0 | 0.6+ |
| 2002 01 08 | 704 | 0.3+ | 0.2− | 2004 12 02 | 704 | 1.5− | 0.4+ | 2006 01 26 | G96 | 0.4+ | 0.0 |
| 2002 01 08 | 704 | 0.3+ | 0.4− | 2004 12 02 | 703 | 0.4+ | 0.7+ | 2006 02 25 | G96 | 0.4− | 0.2− |
| 2002 01 08 | 704 | 0.7+ | 0.1+ | 2004 12 02 | 703 | 0.8− | 0.1+ | 2006 02 25 | G96 | 0.2+ | 0.0 |
| 2002 01 20 | 699 | 0.9− | 0.5+ | 2004 12 02 | 703 | 0.0 | 0.3− | 2006 02 25 | G96 | 0.2− | 0.1+ |
| 2002 01 20 | 699 | 0.3+ | 0.8− | 2004 12 11 | 703 | 0.2+ | 0.6− | 2006 02 25 | G96 | 0.3− | 0.1+ |
| 2002 01 20 | 699 | 0.2− | 0.8+ | 2004 12 11 | 703 | 0.3− | 0.4+ | 2006 02 25 | 691 | 0.0 | 0.4+ |
| 2002 01 20 | 699 | 0.7+ | 0.1− | 2004 12 11 | 703 | 0.5+ | 0.1− | 2006 02 25 | 691 | 0.3+ | 0.3+ |
| 2002 02 08 | 645 | 0.1− | 0.2− | 2004 12 11 | 703 | 2.2− | 0.5+ | 2006 02 25 | 691 | 0.4+ | 0.0 |
| 2002 02 08 | 645 | 0.1− | 0.2− | 2004 12 17 | 699 | 0.8+ | 0.1+ | 2006 03 04 | 691 | 0.5− | 0.1− |
| 2004 11 04 | 704 | 0.3+ | 0.3+ | 2004 12 17 | 699 | 0.4− | 0.2− | 2006 03 04 | 691 | 0.3+ | 0.4+ |
| 2004 11 04 | 704 | 0.6+ | 0.2+ | 2004 12 17 | 699 | 0.1− | 1.0+ | 2006 03 04 | 691 | 0.5+ | 0.2+ |
| 2004 11 04 | 704 | 0.3− | 0.8+ | 2004 12 17 | 699 | 0.7− | 0.4− | | | | |

**2006 DS$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 214.41075 | | (2000.0) | | | |
| $n$ | 0.18423114 | $\omega$ | 183.48990 | | +0.98329638 | +0.17985764 |
| $a$ | 3.0588677 | $\Omega$ | 166.05428 | | −0.16406198 | +0.94225813 |
| $e$ | 0.0609861 | $i$ | 6.65229 | | −0.07881551 | +0.28249043 |
| $P$ | 5.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1− | 0.2− | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 03 | 691 | 0.0 | 0.3− |
| 2003 09 18 | 691 | 0.4− | 0.1− | 2006 02 27 | 691 | 0.4+ | 0.1− | 2006 03 24 | G96 | 0.2− | 0.1− |
| 2003 09 18 | 691 | 0.1− | 0.1− | 2006 02 27 | 691 | 0.1+ | 0.2− | 2006 03 24 | G96 | 0.4− | 0.2− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.2+ | 0.5+ | 2006 03 24 | G96 | 0.1− | 0.0 |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2006 03 03 | 691 | 0.1− | 0.0 | 2006 03 24 | G96 | 0.5− | 0.1− |
| 2003 09 28 | 645 | 0.1+ | 0.1+ | 2006 03 03 | 691 | 0.3− | 0.0 | | | | |

**2006 DR$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 184.61042 | | (2000.0) | | | |
| $n$ | 0.25208790 | $\omega$ | 13.39768 | | +0.86954110 | −0.49297233 |
| $a$ | 2.4818073 | $\Omega$ | 16.23918 | | +0.44279086 | +0.75167100 |
| $e$ | 0.1055664 | $i$ | 6.07739 | | +0.21871107 | +0.43814266 |
| $P$ | 3.91 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 07 | 807 | 0.4+ | 0.4+ | 2004 11 09 | 703 | 0.3− | 0.3+ | 2006 03 03 | 691 | 0.3+ | 0.1− |
| 2002 04 07 | 807 | 0.2− | 0.0 | 2004 11 09 | 703 | 1.9+ | 0.3+ | 2006 03 03 | 691 | 0.1− | 0.1+ |
| 2004 10 12 | 152 | 0.0 | 1.4+ | 2004 11 09 | 703 | 0.1− | 0.6+ | 2006 03 04 | G96 | 0.0 | 0.0 |
| 2004 10 12 | 152 | 0.4− | 0.1− | 2004 11 09 | 703 | 0.9− | 1.1− | 2006 03 04 | G96 | 0.1+ | 0.0 |
| 2004 10 12 | 152 | 0.5− | 0.9− | 2006 02 27 | 691 | 0.1− | 0.1+ | 2006 03 04 | G96 | 0.2− | 0.1− |
| 2004 11 05 | 691 | 0.1− | 0.3+ | 2006 02 27 | 691 | 0.0 | 0.1+ | 2006 03 04 | G96 | 2.3− | 1.0− |
| 2004 11 05 | 691 | 0.1+ | 0.2− | 2006 02 27 | 691 | 0.4+ | 0.1− | | | | |
| 2004 11 05 | 691 | 0.0 | 0.2− | 2006 03 03 | 691 | 0.2+ | 0.0 | | | | |

**2006 DQ$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 147.27091 | | (2000.0) | | | |
| $n$ | 0.17472116 | $\omega$ | 43.18189 | | +0.58988748 | −0.80662092 |
| $a$ | 3.1688794 | $\Omega$ | 10.85066 | | +0.67628650 | +0.46823684 |
| $e$ | 0.0615901 | $i$ | 11.44561 | | +0.44121348 | +0.36071728 |
| $P$ | 5.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 645 | 0.0 | 0.1− | 2003 10 19 | 645 | 0.1− | 0.1− | 2006 03 03 | 691 | 0.1− | 0.1+ |
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 03 | 691 | 0.2− | 0.2+ |
| 2003 09 29 | 691 | 0.2− | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 03 03 | 691 | 0.2+ | 0.3− |
| 2003 09 29 | 691 | 0.2− | 0.2+ | 2003 10 24 | 691 | 0.1+ | 0.0 | 2006 03 04 | G96 | 0.0 | 0.1− |
| 2003 09 29 | 691 | 0.2− | 0.3+ | 2003 10 24 | 691 | 0.0 | 0.2+ | 2006 03 04 | G96 | 0.2− | 0.3− |
| 2003 10 18 | 291 | 0.1+ | 0.3+ | 2003 10 24 | 691 | 0.1+ | 0.2+ | 2006 03 04 | G96 | 0.1+ | 0.4− |
| 2003 10 18 | 291 | 0.4+ | 0.4+ | 2006 02 27 | 691 | 0.1+ | 0.0 | 2006 03 04 | G96 | 0.2− | 0.5− |
| 2003 10 18 | 291 | 0.2+ | 0.2+ | 2006 02 27 | 691 | 0.0 | 0.1+ | | | | |
| 2003 10 19 | 645 | 0.1− | 0.0 | 2006 02 27 | 691 | 0.0 | 0.1+ | | | | |

**2006 DM$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 273.60329 | | (2000.0) | | | |
| $n$ | 0.21303389 | $\omega$ | 163.83349 | | +0.70790119 | +0.70045257 |
| $a$ | 2.7765377 | $\Omega$ | 151.03730 | | −0.66702004 | +0.70524889 |
| $e$ | 0.1306826 | $i$ | 10.80584 | | −0.23229329 | +0.10949978 |
| $P$ | 4.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 699 | 0.2− | 0.1− | 2003 10 18 | 699 | 1.8+ | 0.6− | 2006 02 27 | 691 | 0.1+ | 0.1− |
| 2003 09 22 | 699 | 0.2− | 0.6− | 2003 10 18 | 699 | 0.3+ | 0.1+ | 2006 02 27 | 691 | 0.3+ | 0.1− |
| 2003 09 22 | 699 | 0.2− | 0.0 | 2003 10 18 | 699 | 0.4− | 0.3+ | 2006 02 27 | 691 | 0.0 | 0.1− |
| 2003 09 22 | 699 | 0.0 | 0.0 | 2003 10 18 | 699 | 1.0− | 1.0− | 2006 03 03 | 691 | 0.1− | 0.0 |
| 2003 09 30 | 691 | 0.1− | 0.2+ | 2005 12 02 | 568 | 0.0 | 0.1+ | 2006 03 03 | 691 | 0.1− | 0.3+ |
| 2003 09 30 | 691 | 0.0 | 0.2+ | 2005 12 02 | 568 | 0.0 | 0.2+ | 2006 03 03 | 691 | 0.2− | 0.0 |
| 2003 09 30 | 691 | 0.0 | 0.1+ | 2005 12 02 | 568 | 0.1− | 0.1+ | | | | |

**2006 DO$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 145.99616 | | (2000.0) | | | |
| $n$ | 0.17754326 | $\omega$ | 45.36767 | | +0.51592371 | −0.85525070 |
| $a$ | 3.1352096 | $\Omega$ | 13.81148 | | +0.71687945 | +0.39995282 |
| $e$ | 0.0533581 | $i$ | 11.76399 | | +0.46894198 | +0.32952084 |
| $P$ | 5.55 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.6+ | 0.4+ | 2003 10 18 | 645 | 0.1+ | 0.1− | 2006 02 27 | 691 | 0.3+ | 0.1+ |
| 2003 09 17 | 691 | 0.6+ | 0.4+ | 2003 10 18 | 291 | 0.1− | 0.1+ | 2006 02 27 | 691 | 0.1− | 0.2+ |
| 2003 09 17 | 691 | 0.5+ | 0.5− | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 02 27 | 691 | 0.2+ | 0.2+ |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 18 | 291 | 0.2+ | 0.2+ | 2006 03 03 | 691 | 0.1− | 0.5− |
| 2003 09 26 | 645 | 0.1+ | 0.1− | 2003 10 22 | 645 | 0.0 | 0.1− | 2006 03 03 | 691 | 0.1+ | 0.2+ |
| 2003 09 29 | 645 | 0.5− | 0.1− | 2003 10 22 | 645 | 0.2+ | 0.0 | 2006 03 03 | 691 | 0.1− | 0.2− |
| 2003 09 29 | 645 | 0.6− | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 05 05 | G96 | 0.2− | 0.5+ |
| 2003 09 29 | 691 | 0.0 | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 05 05 | G96 | 0.1− | 0.1+ |
| 2003 09 29 | 691 | 0.1+ | 0.3+ | 2003 11 16 | 645 | 0.1+ | 0.1+ | 2006 05 05 | G96 | 0.0 | 0.2+ |
| 2003 09 29 | 691 | 0.1+ | 0.3+ | 2003 11 16 | 645 | 0.0 | 0.1+ | 2006 05 05 | G96 | 0.4− | 0.4+ |

**2006 DB$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.01038 | | | (2000.0) | | |
| $n$ | 0.23934196 | $\omega$ | 250.38940 | | −0.18923685 | +0.98132856 |
| $a$ | 2.5691541 | $\Omega$ | 8.91484 | | −0.79704529 | −0.13304754 |
| $e$ | 0.1688968 | $i$ | 12.82724 | | −0.57350521 | −0.13889781 |
| $P$ | 4.12 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 691 | 0.2+ | 0.1− | 2006 02 27 | 691 | 0.1− | 0.3+ | 2006 03 26 | G96 | 0.3− | 0.2− |
| 2002 03 20 | 691 | 0.1+ | 0.1+ | 2006 02 27 | 691 | 0.3+ | 0.0 | 2006 04 21 | G96 | 0.3+ | 0.2− |
| 2002 03 20 | 691 | 0.3− | 0.2− | 2006 02 27 | 691 | 0.3+ | 0.2+ | 2006 04 21 | G96 | 0.6+ | 0.3− |
| 2002 04 04 | 644 | 0.3+ | 0.5+ | 2006 03 03 | 691 | 0.2− | 0.1− | 2006 04 21 | G96 | 0.5+ | 0.0 |
| 2002 04 04 | 644 | 0.2+ | 0.1+ | 2006 03 03 | 691 | 0.1+ | 0.1− | 2006 04 21 | G96 | 0.1− | 0.3− |
| 2002 04 04 | 644 | 0.1− | 0.6+ | 2006 03 03 | 691 | 0.2− | 0.0 | 2006 05 03 | G96 | 0.6− | 0.3− |
| 2002 04 15 | 644 | 0.1+ | 0.0 | 2006 03 26 | G96 | 0.5− | 0.0 | 2006 05 03 | G96 | 0.4− | 0.2+ |
| 2002 04 15 | 644 | 0.1− | 0.1+ | 2006 03 26 | G96 | 0.3− | 0.4− | 2006 05 03 | G96 | 0.2− | 0.1+ |
| 2002 04 15 | 644 | 0.1+ | 0.2− | 2006 03 26 | G96 | 0.0 | 0.4− | 2006 05 03 | G96 | 0.1− | 0.6+ |

**2006 DX$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.31021 | | | (2000.0) | | |
| $n$ | 0.30612096 | $\omega$ | 107.13303 | | −0.20855508 | +0.97667846 |
| $a$ | 2.1804226 | $\Omega$ | 150.67998 | | −0.93225549 | −0.18275487 |
| $e$ | 0.1952861 | $i$ | 5.98152 | | −0.29564249 | −0.11269362 |
| $P$ | 3.22 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 08 | 608 | 0.4+ | 0.0 | 2003 05 02 | 704 | 0.4+ | 0.8+ | 2006 02 27 | 691 | 0.1+ | 0.2+ |
| 2003 04 08 | 608 | 0.5+ | 0.6− | 2003 05 21 | 699 | 0.5− | 0.5− | 2006 02 27 | 691 | 0.1+ | 0.0 |
| 2003 04 08 | 608 | 0.0 | 0.7− | 2003 05 21 | 699 | 0.2+ | 0.0 | 2006 03 03 | 691 | 0.1− | 0.2− |
| 2003 04 24 | 699 | 1.7− | 0.7− | 2003 05 21 | 699 | 0.1− | 0.3− | 2006 03 03 | 691 | 0.1− | 0.2+ |
| 2003 04 24 | 699 | 0.7− | 0.2+ | 2003 05 21 | 699 | 1.3− | 0.3+ | 2006 03 03 | 691 | 0.1+ | 0.1+ |
| 2003 04 24 | 699 | 0.1− | 0.1+ | 2003 06 22 | 699 | 0.7+ | 0.7+ | 2006 03 04 | G96 | 0.2− | 0.1− |
| 2003 04 24 | 699 | 0.3+ | 1.0+ | 2003 06 22 | 699 | 0.2+ | 0.5− | 2006 03 04 | G96 | 0.0 | 0.2− |
| 2003 05 02 | 704 | 0.1+ | 0.0 | 2003 06 22 | 699 | 0.2− | 0.8+ | 2006 03 04 | G96 | 0.0 | 0.1− |
| 2003 05 02 | 704 | 0.7+ | 0.5− | 2003 06 22 | 699 | 0.0 | 0.6− | | | | |
| 2003 05 02 | 704 | 1.0+ | 0.4+ | 2006 02 27 | 691 | 0.0 | 0.1+ | | | | |

**2006 DE$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 123.61549 | | | (2000.0) | | |
| $n$ | 0.28363799 | $\omega$ | 82.45163 | | +0.19210306 | −0.98134023 |
| $a$ | 2.2941745 | $\Omega$ | 356.44110 | | +0.83998775 | +0.16875819 |
| $e$ | 0.1914331 | $i$ | 7.62032 | | +0.50746132 | +0.09215215 |
| $P$ | 3.47 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.4− | 0.4− | 2006 02 27 | 691 | 0.2+ | 0.2− | 2006 03 24 | G96 | 0.7+ | 0.0 |
| 2001 10 14 | 704 | 0.3+ | 0.3− | 2006 02 27 | G96 | 0.2+ | 0.5− | 2006 04 07 | G96 | 0.2+ | 0.1− |
| 2001 10 14 | 704 | 0.0 | 0.4+ | 2006 02 27 | G96 | 0.4− | 0.5− | 2006 04 07 | G96 | 0.3− | 0.0 |
| 2001 10 14 | 704 | 0.2+ | 0.9− | 2006 02 27 | G96 | 0.2− | 0.5− | 2006 04 07 | G96 | 0.6− | 0.4+ |
| 2001 10 14 | 704 | 0.2+ | 0.9+ | 2006 02 27 | G96 | 0.1+ | 0.5− | 2006 04 07 | G96 | 0.1+ | 0.3+ |
| 2001 11 11 | 704 | 0.1− | 0.5+ | 2006 03 03 | 691 | 0.2+ | 0.2+ | 2006 04 25 | G96 | 0.4+ | 0.1− |
| 2001 11 11 | 704 | 0.2− | 0.0 | 2006 03 03 | 691 | 0.3+ | 0.1+ | 2006 04 25 | G96 | 0.1− | 0.2− |
| 2001 11 11 | 704 | 0.1− | 0.0 | 2006 03 03 | 691 | 0.8− | 1.1+ | 2006 04 25 | G96 | 0.1+ | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.4− | 2006 03 24 | G96 | 0.1− | 0.0 | 2006 04 25 | G96 | 0.4− | 0.4− |
| 2006 02 27 | 691 | 0.1+ | 0.5− | 2006 03 24 | G96 | 0.4− | 0.3− | | | | |
| 2006 02 27 | 691 | 0.3+ | 0.1− | 2006 03 24 | G96 | 0.1− | 0.1+ | | | | |

**2006 DG$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.75980 | | | (2000.0) | | |
| $n$ | 0.30070260 | $\omega$ | 131.64609 | | −0.02970668 | +0.99882824 |
| $a$ | 2.2065372 | $\Omega$ | 136.60606 | | −0.93281438 | −0.01396989 |
| $e$ | 0.1092775 | $i$ | 3.18794 | | −0.35913068 | −0.04633565 |
| $P$ | 3.28 | $H$ | 18.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.1+ | 0.3− | 2003 04 29 | 691 | 0.1− | 0.3+ | 2006 02 27 | G96 | 0.0 | 0.1+ |
| 1993 03 23 | 691 | 0.4− | 0.4− | 2003 04 29 | 691 | 0.2+ | 0.4+ | 2006 02 27 | G96 | 0.1+ | 0.2+ |
| 1993 03 23 | 691 | 0.3− | 0.9− | 2003 05 06 | 691 | 0.1− | 0.0 | 2006 03 03 | 691 | 0.3+ | 0.4+ |
| 2003 04 11 | 691 | 1.0+ | 0.0 | 2003 05 06 | 691 | 0.1− | 0.1− | 2006 03 03 | 691 | 0.0 | 0.3+ |
| 2003 04 11 | 691 | 0.1+ | 0.1+ | 2003 05 06 | 691 | 0.5− | 0.2− | 2006 03 03 | 691 | 0.1+ | 0.2+ |
| 2003 04 11 | 691 | 0.2− | 0.3− | 2006 02 27 | G96 | 0.2+ | 0.1+ | | | | |
| 2003 04 29 | 691 | 0.0 | 0.4+ | 2006 02 27 | G96 | 0.2− | 0.5+ | | | | |

**2006 DY$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 109.63741 | | | (2000.0) | | |
| $n$ | 0.16836503 | $\omega$ | 87.96561 | | +0.04976542 | −0.99875667 |
| $a$ | 3.2481404 | $\Omega$ | 359.16495 | | +0.81821347 | +0.04244396 |
| $e$ | 0.0612848 | $i$ | 11.54593 | | +0.57275659 | +0.02614606 |
| $P$ | 5.85 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.3− | 0.3− | 2003 10 24 | 704 | 0.0 | 0.5+ | 2006 02 27 | G96 | 0.2− | 0.3− |
| 2003 09 18 | 691 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.2+ | 0.7− | 2006 02 27 | G96 | 0.1− | 0.2− |
| 2003 09 18 | 691 | 0.2− | 0.0 | 2003 10 24 | 704 | 0.9+ | 0.6− | 2006 02 27 | G96 | 0.4+ | 0.2− |
| 2003 09 29 | 691 | 0.1− | 0.3+ | 2006 02 02 | G96 | 0.0 | 0.1+ | 2006 03 03 | 691 | 0.0 | 0.1+ |
| 2003 09 29 | 691 | 0.3− | 0.2+ | 2006 02 02 | G96 | 0.4+ | 0.5− | 2006 03 03 | 691 | 0.1− | 0.1+ |
| 2003 09 29 | 691 | 0.2− | 0.2+ | 2006 02 02 | G96 | 0.1+ | 0.3+ | 2006 03 03 | 691 | 0.0 | 0.0 |
| 2003 09 29 | 012 | 0.3+ | 0.4+ | 2006 02 02 | G96 | 0.0 | 0.1− | 2006 04 21 | G96 | 0.3− | 0.5+ |
| 2003 09 29 | 012 | 0.9+ | 1.4− | 2006 02 27 | 691 | 0.2+ | 0.1− | 2006 04 21 | G96 | 0.0 | 0.3+ |
| 2003 09 29 | 012 | 1.4+ | 0.8− | 2006 02 27 | 691 | 0.1− | 0.1− | 2006 04 21 | G96 | 0.4− | 0.1+ |
| 2003 09 29 | 012 | 0.8− | 0.8+ | 2006 02 27 | 691 | 0.1+ | 0.0 | | | | |
| 2003 09 29 | 012 | 0.7+ | 0.5+ | 2006 02 27 | G96 | 0.1− | 0.1− | | | | |

**2006 DT$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 130.23186 | | | (2000.0) | | |
| $n$ | 0.21219683 | $\omega$ | 63.24573 | | +0.28561993 | −0.95826515 |
| $a$ | 2.7838347 | $\Omega$ | 10.18092 | | +0.85289555 | +0.24836060 |
| $e$ | 0.0831192 | $i$ | 3.96212 | | +0.43702453 | +0.14158010 |
| $P$ | 4.64 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.1− | 0.6+ | 2004 12 11 | 703 | 0.3+ | 0.7− | 2006 03 23 | 703 | (3.4+ | 6.0−) |
| 1999 11 09 | 704 | 0.7− | 0.5+ | 2004 12 20 | G96 | 0.4+ | 0.5− | 2006 03 23 | 703 | 0.4+ | 0.8− |
| 1999 11 09 | 704 | 0.0 | 0.3+ | 2004 12 20 | G96 | 0.2+ | 0.4− | 2006 03 23 | 703 | 1.2+ | 0.7− |
| 1999 11 09 | 704 | 0.4− | 0.8+ | 2004 12 20 | G96 | 0.4+ | 0.3− | 2006 03 23 | 703 | 0.3− | 2.0+ |
| 2004 11 09 | 703 | 0.3− | 0.1− | 2004 12 20 | G96 | 0.2+ | 0.2− | 2006 03 24 | 699 | 0.9+ | 1.6+ |
| 2004 11 09 | 703 | 0.6− | 0.2+ | 2005 11 30 | 691 | 0.4+ | 0.5+ | 2006 03 24 | 699 | 0.7+ | 1.4+ |
| 2004 11 09 | 703 | 0.3− | 0.2− | 2005 11 30 | 691 | 0.1+ | 0.2+ | 2006 03 24 | 699 | 0.9+ | 1.2+ |
| 2004 11 09 | 703 | 0.3− | 0.4− | 2005 11 30 | 691 | 0.2− | 0.1+ | 2006 03 24 | 699 | 0.1− | 0.5+ |
| 2004 12 02 | 703 | 0.7+ | 1.1+ | 2006 02 27 | G96 | 0.7− | 0.1− | 2006 04 21 | G96 | 0.2− | 0.4+ |
| 2004 12 02 | 703 | 0.2− | 0.8+ | 2006 02 27 | G96 | 0.4− | 0.3− | 2006 04 21 | G96 | 0.1− | 0.1+ |
| 2004 12 02 | 703 | 0.6+ | 0.3+ | 2006 02 27 | G96 | 0.4− | 0.1− | 2006 04 21 | G96 | 0.2− | 0.2+ |
| 2004 12 02 | 703 | 0.8− | 0.2− | 2006 02 27 | G96 | 0.3− | 0.2− | 2006 04 21 | G96 | 0.2− | 0.3+ |
| 2004 12 11 | 703 | 0.0 | 0.1− | 2006 03 03 | 691 | 0.5− | 0.0 | 2006 05 24 | G96 | 0.6+ | 0.5+ |
| 2004 12 11 | 703 | 0.5+ | 1.1− | 2006 03 03 | 691 | 0.3− | 0.1+ | 2006 05 24 | G96 | 0.1− | 0.6+ |
| 2004 12 11 | 703 | 0.2− | 0.4+ | 2006 03 03 | 691 | 0.3− | 0.2− | | | | |

**2006 DE$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 145.49047 | | | (2000.0) | | |
| $n$ | 0.25329150 | $\omega$ | 131.31312 | | +0.43205799 | −0.90141663 |
| $a$ | 2.4739389 | $\Omega$ | 293.06857 | | +0.81813061 | +0.40474442 |
| $e$ | 0.1175911 | $i$ | 1.73276 | | +0.37945778 | +0.15372056 |
| $P$ | 3.89 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 14 | 691 | 1.2+ | 0.3− | 2004 10 06 | 691 | 0.1− | 0.1+ | 2006 02 27 | G96 | 0.1− | 0.3+ |
| 2002 02 14 | 691 | 0.6+ | 0.7− | 2004 10 06 | 691 | 0.2− | 0.0 | 2006 02 27 | G96 | 0.1− | 0.5− |
| 2002 02 14 | 691 | 1.7− | 1.3+ | 2004 10 15 | 691 | 0.2+ | 0.3− | 2006 03 05 | 691 | 0.2− | 0.2+ |
| 2004 09 23 | 691 | 0.2− | 0.0 | 2004 10 15 | 691 | 0.2+ | 0.3− | 2006 03 05 | 691 | 0.0 | 0.2− |
| 2004 09 23 | 691 | 0.1− | 0.0 | 2004 10 15 | 691 | 0.2+ | 0.1− | 2006 03 05 | 691 | 0.3+ | 0.2− |
| 2004 09 23 | 691 | 0.1+ | 0.6+ | 2006 02 27 | G96 | 0.2− | 0.0 | | | | |
| 2004 10 06 | 691 | 0.1− | 0.1+ | 2006 02 27 | G96 | 0.2− | 0.2+ | | | | |

**2006 DP$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 191.97161 | | | (2000.0) | | |
| $n$ | 0.18822659 | $\omega$ | 324.26735 | | +0.93122254 | −0.35661545 |
| $a$ | 3.0154264 | $\Omega$ | 56.79366 | | +0.35176380 | +0.82553567 |
| $e$ | 0.1332892 | $i$ | 5.15420 | | +0.09532477 | +0.43739716 |
| $P$ | 5.24 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 644 | 0.1− | 0.0 | 2005 02 04 | G96 | 0.1+ | 0.2+ | 2006 02 27 | 691 | 0.3+ | 0.0 |
| 2003 09 18 | 644 | 0.2− | 0.2+ | 2005 02 04 | G96 | 0.2− | 0.0 | 2006 03 03 | 691 | 0.1− | 0.0 |
| 2003 09 18 | 644 | 0.0 | 0.5+ | 2005 02 04 | G96 | 0.2+ | 0.2+ | 2006 03 03 | 691 | 0.0 | 0.4+ |
| 2003 09 22 | 691 | 0.3+ | 0.0 | 2005 02 04 | G96 | 0.0 | 0.4− | 2006 03 03 | 691 | 0.7− | 0.4+ |
| 2003 09 22 | 691 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.3+ | 0.5− | | | | |
| 2003 09 22 | 691 | 0.2− | 0.0 | 2006 02 27 | 691 | 0.2+ | 0.2− | | | | |

**2006 DX$_{189}$ = 2004 XN$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 280.86504 | | | (2000.0) | | |
| $n$ | 0.28725114 | $\omega$ | 40.41723 | | +0.79457243 | +0.60621372 |
| $a$ | 2.2748960 | $\Omega$ | 282.23399 | | −0.56566748 | +0.71871677 |
| $e$ | 0.1823241 | $i$ | 1.99681 | | −0.22062403 | +0.34051597 |
| $P$ | 3.43 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.5+ | 0.7+ | 2004 12 10 | 691 | 0.1+ | 0.1+ | 2006 02 27 | G96 | 0.3− | 0.1+ |
| 2000 07 29 | 807 | 0.8+ | 0.9+ | 2004 12 16 | 691 | 0.1− | 0.3+ | 2006 02 27 | G96 | 0.1+ | 0.4+ |
| 2000 08 07 | 608 | 0.8− | 0.4+ | 2004 12 16 | 691 | 0.1− | 0.2+ | 2006 02 27 | G96 | 0.2− | 0.2+ |
| 2000 08 07 | 608 | 1.0− | 0.4+ | 2004 12 16 | 691 | 0.1− | 0.4+ | 2006 02 27 | G96 | 0.1+ | 0.4+ |
| 2000 08 07 | 608 | 0.6− | 0.4+ | 2006 02 25 | 691 | 0.1− | 0.2− | 2006 02 27 | G96 | 0.2− | 0.2+ |
| 2003 06 04 | 691 | 0.0 | 0.7+ | 2006 02 25 | 691 | 0.2+ | 0.2− | 2006 03 05 | 691 | 0.1− | 0.1+ |
| 2003 06 04 | 691 | 0.1+ | 0.2+ | 2006 02 25 | 691 | 0.3+ | 0.0 | 2006 03 05 | 691 | 0.1− | 0.4+ |
| 2003 06 04 | 691 | 0.3+ | 0.0 | 2006 02 27 | G96 | 0.0 | 0.4+ | 2006 03 05 | 691 | 0.1+ | 0.0 |
| 2004 12 10 | 691 | 0.1+ | 0.1+ | 2006 02 27 | G96 | 0.2+ | 0.1+ | | | | |
| 2004 12 10 | 691 | 0.0 | 0.2+ | 2006 02 27 | G96 | 0.1+ | 0.1+ | | | | |

**2006 DJ$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.90434 | | | (2000.0) | | |
| $n$ | 0.29624605 | $\omega$ | 304.79957 | | −0.59463978 | +0.79670420 |
| $a$ | 2.2286114 | $\Omega$ | 288.35182 | | −0.69547921 | −0.57712082 |
| $e$ | 0.1507104 | $i$ | 6.53422 | | −0.40337602 | −0.17942681 |
| $P$ | 3.33 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 691 | 0.2− | 0.0 | 1999 01 17 | 691 | 0.2+ | 0.0 | 2006 03 05 | 699 | 0.3+ | 0.1+ |
| 1998 12 22 | 691 | 0.4+ | 0.1+ | 1999 01 17 | 691 | 0.3+ | 0.0 | 2006 03 05 | 699 | 0.1+ | 0.1− |
| 1998 12 22 | 691 | 0.1+ | 0.1+ | 2006 02 24 | 703 | 0.4− | 0.6− | 2006 03 05 | 699 | 0.2+ | 0.5+ |
| 1999 01 07 | 691 | 0.2− | 0.2− | 2006 02 24 | 703 | 0.8+ | 0.4+ | 2006 03 25 | 644 | 0.0 | 0.1+ |
| 1999 01 07 | 691 | 0.4− | 0.5− | 2006 02 24 | 703 | 0.7− | 0.1+ | 2006 03 25 | 644 | 0.1+ | 0.0 |
| 1999 01 07 | 691 | 0.6− | 0.3+ | 2006 02 24 | 703 | 0.1− | 0.3− | 2006 03 25 | 644 | 0.0 | 0.2− |
| 1999 01 17 | 691 | 0.4+ | 0.3+ | 2006 03 05 | 699 | 0.4− | 0.0 | | | | |

**2006 DU$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 290.11241 | | | (2000.0) | | |
| $n$ | 0.23229088 | $\omega$ | 39.01068 | | +0.05872240 | +0.98630762 |
| $a$ | 2.6208848 | $\Omega$ | 234.88515 | | −0.95658494 | +0.01144935 |
| $e$ | 0.0501663 | $i$ | 10.85912 | | −0.28547667 | +0.16451807 |
| $P$ | 4.24 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 25 | 691 | 0.1− | 0.0 | 2003 07 01 | 704 | 0.6− | 0.9+ | 2004 11 04 | 703 | 0.4− | 0.2− |
| 2000 11 25 | 691 | 0.0 | 0.0 | 2003 07 01 | 704 | 0.3− | 0.1+ | 2004 11 19 | 703 | 0.4− | 0.0 |
| 2000 11 25 | 691 | 0.1+ | 0.1− | 2003 07 01 | 704 | 0.6− | 0.3− | 2004 11 19 | 703 | 1.1− | 0.6− |
| 2002 03 09 | 644 | 0.4− | 0.2− | 2003 07 01 | 704 | 0.1+ | 1.0+ | 2004 11 19 | 703 | 2.0+ | 0.6+ |
| 2002 03 09 | 644 | 0.1+ | 0.2+ | 2003 07 26 | 704 | 0.5+ | 0.8+ | 2004 11 19 | 703 | 0.2− | 0.7+ |
| 2002 03 09 | 644 | 0.0 | 0.1− | 2003 07 26 | 704 | 0.0 | 1.1+ | 2006 01 26 | 699 | 0.5− | 0.5− |
| 2002 03 23 | 704 | (1.8+ | 3.5+) | 2003 07 26 | 704 | 0.7+ | 0.6+ | 2006 01 26 | 699 | 0.4+ | 0.8+ |
| 2002 03 23 | 704 | (0.5− | 4.1+) | 2003 07 26 | 704 | 0.7− | 0.8+ | 2006 01 26 | 699 | 0.1+ | 0.7− |
| 2002 03 23 | 704 | 0.1+ | 1.3+ | 2004 10 10 | 691 | 0.1+ | 0.5+ | 2006 01 26 | 699 | 0.5+ | 1.5− |
| 2002 03 23 | 704 | 0.2+ | 0.8+ | 2004 10 10 | 691 | 0.0 | 0.4+ | 2006 02 24 | 703 | 1.0− | 0.3+ |
| 2002 04 08 | 644 | 0.2+ | 0.5− | 2004 10 10 | 691 | 0.0 | 0.6+ | 2006 02 24 | 703 | 0.7− | 0.1+ |
| 2002 04 08 | 644 | 0.4+ | 0.1− | 2004 10 28 | 049 | 0.5+ | 0.1− | 2006 02 24 | 703 | 0.1+ | 0.3+ |
| 2002 04 08 | 644 | 0.2+ | 0.2− | 2004 10 28 | 049 | 0.5+ | 0.2+ | 2006 02 24 | 703 | 0.6− | 0.2− |
| 2002 04 19 | 644 | 0.1+ | 0.1+ | 2004 10 28 | 049 | 1.2− | 0.4+ | 2006 03 04 | 703 | 0.9+ | 1.7+ |
| 2002 04 19 | 644 | 0.5+ | 0.1− | 2004 11 04 | 703 | 0.4− | 1.1+ | 2006 03 04 | 703 | 0.6+ | 0.4− |
| 2002 04 19 | 644 | 0.1− | 0.0 | 2004 11 04 | 703 | 0.0 | 0.2− | 2006 03 04 | 703 | 0.5+ | 0.0 |
| 2003 07 01 | 704 | 0.4− | 2.0+ | 2004 11 04 | 703 | 0.8− | 0.7+ | 2006 03 04 | 703 | 0.3+ | 0.2− |

**2006 DO$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.05099 | | | (2000.0) | | |
| $n$ | 0.24084926 | $\omega$ | 196.75827 | | −0.16948136 | +0.96309177 |
| $a$ | 2.5584239 | $\Omega$ | 63.89765 | | −0.87539994 | −0.04964319 |
| $e$ | 0.2099473 | $i$ | 13.46600 | | −0.45271517 | −0.26455586 |
| $P$ | 4.09 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.5− | 0.1+ | 2002 04 17 | 704 | 0.2− | 0.5+ | 2006 02 24 | 703 | 0.7− | 0.5+ |
| 1998 04 23 | 704 | 0.2+ | 0.6− | 2002 04 17 | 704 | 1.1+ | 0.1+ | 2006 02 24 | 703 | 0.5− | 0.3− |
| 1998 04 23 | 704 | 1.3− | 0.8+ | 2002 04 22 | 644 | 0.1− | 0.3+ | 2006 02 24 | 703 | 0.2− | 0.3+ |
| 1998 04 23 | 704 | 1.0+ | 1.6− | 2002 04 22 | 644 | 0.2− | 0.7+ | 2006 03 06 | 703 | 0.5+ | 0.7− |
| 2002 03 20 | 704 | 0.4− | 1.3+ | 2002 04 22 | 644 | 0.0 | 0.8+ | 2006 03 06 | 703 | 0.4+ | 0.4+ |
| 2002 03 20 | 704 | 1.3− | 0.4− | 2002 05 06 | 644 | 0.4− | 0.3+ | 2006 03 06 | 703 | 0.8− | 0.4+ |
| 2002 03 20 | 704 | 0.6− | 0.0 | 2002 05 06 | 644 | 0.2+ | 0.0 | 2006 03 06 | 703 | 0.0 | 1.6+ |
| 2002 04 13 | 644 | 0.1− | 0.5− | 2002 05 06 | 644 | 0.0 | 0.0 | 2006 03 25 | 699 | 0.3− | 0.4− |
| 2002 04 13 | 644 | 0.3− | 0.5− | 2002 05 11 | 699 | 0.9+ | 0.4+ | 2006 03 25 | 699 | 0.8− | 0.8− |
| 2002 04 13 | 644 | 0.1− | 0.5− | 2002 05 11 | 699 | 1.1− | 0.8− | 2006 03 25 | 699 | 1.3+ | 1.3− |
| 2002 04 17 | 704 | 0.9+ | 0.3+ | 2002 05 11 | 699 | 0.4− | 0.5− | 2006 03 25 | 699 | 0.5+ | 0.2− |
| 2002 04 17 | 704 | 1.2+ | 0.6+ | 2002 05 11 | 699 | 0.2+ | 0.9+ | | | | |
| 2002 04 17 | 704 | 1.4+ | 0.3− | 2006 02 24 | 703 | 0.2+ | 0.4− | | | | |

**2006 DQ$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.32081 | | | (2000.0) | | |
| $n$ | 0.18196589 | $\omega$ | 142.51589 | | −0.13995143 | +0.95795814 |
| $a$ | 3.0842014 | $\Omega$ | 118.15787 | | −0.96326486 | −0.07316954 |
| $e$ | 0.2104458 | $i$ | 16.50385 | | −0.22920385 | −0.27742102 |
| $P$ | 5.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 291 | 0.2− | 0.1+ | 2006 02 21 | 703 | 0.5− | 1.2+ | 2006 02 28 | 703 | 0.2− | 0.6+ |
| 2003 10 20 | 291 | 0.3− | 0.5+ | 2006 02 21 | 703 | 0.6+ | 0.4− | 2006 03 24 | 703 | 0.2− | 0.5+ |
| 2003 10 20 | 291 | 0.5− | 0.0 | 2006 02 21 | 703 | 0.5+ | 0.5− | 2006 03 24 | 703 | 0.2− | 0.1− |
| 2003 10 22 | 645 | 0.1+ | 0.0 | 2006 02 21 | 703 | 1.5+ | 0.4− | 2006 03 24 | 703 | 0.8+ | 0.2− |
| 2003 10 22 | 645 | 0.2+ | 0.0 | 2006 02 28 | 703 | 0.7− | 0.6− | 2006 03 24 | 703 | 0.1− | 0.2− |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2006 02 28 | 703 | 0.9− | 0.0 | | | | |
| 2003 10 24 | 645 | 0.1− | 0.1− | 2006 02 28 | 703 | 0.5− | 0.0 | | | | |

**2006 DF$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.16436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20858131 | $\omega$ | 64.67587 | | −0.53215141 | +0.84660694 | |
| $a$ | 2.8159123 | $\Omega$ | 173.15480 | | −0.80007413 | −0.49958340 | |
| $e$ | 0.0462697 | $i$ | 4.07053 | | −0.27694090 | −0.18350237 | |
| $P$ | 4.73 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1− | 0.1− | 2006 02 24 | 691 | 0.1+ | 0.1− | 2006 04 07 | G96 | 0.3− | 0.2− |
| 2003 09 18 | 691 | 0.3− | 0.4+ | 2006 02 24 | 691 | 0.1+ | 0.5+ | 2006 04 07 | G96 | 0.5− | 0.3− |
| 2003 09 18 | 691 | 0.0 | 0.4+ | 2006 02 24 | 691 | 0.3+ | 0.0 | 2006 04 07 | G96 | 0.1− | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 06 | 691 | 0.0 | 0.0 | 2006 04 21 | 691 | 0.1+ | 0.3+ |
| 2003 09 26 | 645 | 0.2− | 0.3+ | 2006 03 06 | 691 | 0.2+ | 0.5+ | 2006 04 21 | 691 | 0.2+ | 0.0 |
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2006 03 06 | 691 | 0.2− | 0.0 | 2006 04 21 | 691 | 0.1− | 0.1+ |
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2006 04 07 | G96 | 0.0 | 0.1+ | | | | |

**2006 DH$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.17139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24183630 | $\omega$ | 155.39308 | | +0.89897383 | +0.43800190 | |
| $a$ | 2.5514578 | $\Omega$ | 178.62998 | | −0.40606583 | +0.83396018 | |
| $e$ | 0.1776616 | $i$ | 1.49827 | | −0.16418465 | +0.33565571 | |
| $P$ | 4.08 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.0 | 1.0− | 2002 03 18 | 691 | 0.3− | 0.3− | 2006 02 24 | 691 | 0.0 | 0.2+ |
| 1994 04 06 | 691 | 0.2+ | 0.0 | 2002 03 18 | 691 | 0.1− | 0.5− | 2006 02 24 | 691 | 0.0 | 0.1− |
| 1994 04 06 | 691 | 0.3− | 0.2− | 2002 04 04 | 691 | 0.1− | 0.1− | 2006 02 24 | 691 | 0.1− | 0.1− |
| 1995 09 02 | 010 | (0.7− | 4.4−) | 2002 04 04 | 691 | 0.8− | 0.0 | 2006 03 06 | 691 | 0.3+ | 0.2+ |
| 1995 09 02 | 010 | (0.3+ | 4.6−) | 2002 04 04 | 691 | 0.1+ | 0.2+ | 2006 03 06 | 691 | 0.3+ | 0.1+ |
| 1995 09 02 | 010 | (1.8+ | 4.5−) | 2003 08 04 | 704 | 1.0− | 1.1+ | 2006 03 06 | 691 | 0.2+ | 0.1+ |
| 1995 10 02 | 691 | 0.5+ | 0.0 | 2003 08 04 | 704 | 1.3+ | 0.0 | 2006 03 21 | G96 | 0.4+ | 1.7− |
| 1995 10 02 | 691 | 0.5+ | 0.3− | 2003 08 04 | 704 | 0.2+ | 1.3+ | 2006 03 21 | G96 | 0.7− | 0.2− |
| 1995 10 02 | 691 | 0.6+ | 0.2− | 2003 08 04 | 704 | 0.4+ | 1.1+ | 2006 03 21 | G96 | 0.1− | 0.0 |
| 1999 08 08 | 699 | 1.4+ | 0.1− | 2003 08 25 | 704 | 0.2+ | 0.7+ | 2006 03 21 | G96 | 0.1− | 0.5− |
| 1999 08 08 | 699 | 0.1− | 0.8+ | 2003 08 25 | 704 | 0.5+ | 0.7+ | 2006 04 25 | G96 | 0.4− | 0.4− |
| 1999 08 08 | 691 | 0.6− | 0.3+ | 2003 08 25 | 704 | 0.4+ | 0.8+ | 2006 04 25 | G96 | 0.2− | 0.6− |
| 1999 08 08 | 699 | 0.4+ | 0.3− | 2003 08 25 | 704 | 0.1− | 0.4+ | 2006 04 25 | G96 | 0.5− | 1.0− |
| 1999 08 08 | 691 | 0.5− | 0.0 | 2003 08 31 | 608 | 0.3− | 0.6+ | 2006 04 25 | G96 | 0.4− | 0.5− |
| 1999 08 08 | 691 | 0.6− | 0.3+ | 2003 08 31 | 608 | 0.4− | 0.3− | | | | |
| 2002 03 18 | 691 | 0.1+ | 0.1+ | 2003 08 31 | 608 | 0.8− | 0.3− | | | | |

**2006 DO$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.64041 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26761761 | $\omega$ | 162.10161 | | +0.35075202 | +0.93574092 | |
| $a$ | 2.3848419 | $\Omega$ | 128.41536 | | −0.86484829 | +0.33879024 | |
| $e$ | 0.2106502 | $i$ | 2.69967 | | −0.35918025 | +0.09803115 | |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 291 | 0.1− | 0.1+ | 2006 03 03 | 691 | 0.1+ | 0.2+ | 2006 03 06 | G96 | 0.4− | 0.1− |
| 2002 01 13 | 291 | 0.1− | 0.0 | 2006 03 03 | 691 | 0.4+ | 0.0 | 2006 03 09 | 291 | 0.4− | 0.2+ |
| 2002 01 13 | 291 | 0.2+ | 0.2− | 2006 03 03 | 691 | 0.3+ | 0.1+ | 2006 03 09 | 291 | 0.3− | 0.0 |
| 2002 02 08 | 291 | 0.1− | 0.1− | 2006 03 06 | G96 | 0.7− | 0.2− | 2006 03 09 | 291 | 0.3− | 0.1− |
| 2002 02 08 | 291 | 0.1+ | 0.1+ | 2006 03 06 | G96 | 0.2− | 0.2− | 2006 03 29 | 291 | 0.1+ | 0.2+ |
| 2002 02 08 | 291 | 0.2+ | 0.0 | 2006 03 06 | G96 | 0.6− | 0.3− | 2006 03 29 | 291 | 0.1+ | 0.2− |
| 2006 02 27 | 691 | 0.3+ | 0.1− | 2006 03 06 | G96 | 0.6− | 0.2+ | 2006 03 29 | 291 | 0.1+ | 0.1+ |
| 2006 02 27 | 691 | 0.2+ | 0.2+ | 2006 03 06 | G96 | 0.7− | 0.1+ | | | | |
| 2006 02 27 | 691 | 0.4+ | 0.4− | 2006 03 06 | G96 | 0.6− | 0.1− | | | | |

**2006 DP$_{214}$ = 2000 TH$_{37}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.68031 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28039902 | $\omega$ | 153.39762 | | +0.66475579 | +0.74676028 | |
| $a$ | 2.3118078 | $\Omega$ | 158.24516 | | −0.69519391 | +0.62873673 | |
| $e$ | 0.1552401 | $i$ | 3.27681 | | −0.27350534 | +0.21688526 | |
| $P$ | 3.52 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.8− | 0.3− | 2000 10 05 | 691 | 0.3− | 0.4− | 2006 03 24 | G96 | 0.8+ | 1.9− |
| 2000 10 01 | 704 | 0.0 | 0.1− | 2006 02 20 | 691 | 0.3+ | 0.4− | 2006 03 24 | G96 | 0.7− | 0.1+ |
| 2000 10 01 | 704 | 0.8+ | 0.4+ | 2006 02 20 | 691 | 0.1− | 0.3+ | 2006 03 24 | G96 | 0.5− | 0.4+ |
| 2000 10 01 | 704 | 0.1− | 0.8+ | 2006 02 20 | 691 | 0.4+ | 0.1+ | 2006 03 24 | G96 | 0.4− | 0.4+ |
| 2000 10 01 | 704 | 0.1+ | 0.3+ | 2006 03 06 | 691 | 0.1+ | 0.1+ | 2006 04 19 | 291 | 0.0 | 0.2+ |
| 2000 10 05 | 691 | 0.2− | 0.4− | 2006 03 06 | 691 | 0.0 | 0.2+ | 2006 04 19 | 291 | 0.1+ | 0.2+ |
| 2000 10 05 | 691 | 0.4+ | 0.3− | 2006 03 06 | 691 | 0.0 | 0.4+ | 2006 04 19 | 291 | 0.2+ | 0.1+ |

**2006 DQ$_{214}$ = 2004 XM$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.60026 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26447601 | $\omega$ | 316.90481 | | +0.64128961 | +0.76728645 | |
| $a$ | 2.4036904 | $\Omega$ | 352.97925 | | −0.69390137 | +0.57750355 | |
| $e$ | 0.2250199 | $i$ | 2.05057 | | −0.32748821 | +0.27885685 | |
| $P$ | 3.73 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 691 | 0.0 | 0.1+ | 2004 12 15 | 691 | 0.2+ | 0.3− | 2006 03 03 | 691 | 0.1+ | 0.2+ |
| 2000 11 30 | 691 | 0.1+ | 0.1+ | 2004 12 15 | 691 | 0.0 | 0.2+ | 2006 03 06 | G96 | 0.4+ | 0.0 |
| 2000 11 30 | 691 | 0.1− | 0.1+ | 2004 12 15 | 691 | 0.3− | 0.1− | 2006 03 06 | G96 | 0.2− | 0.0 |
| 2002 02 07 | 691 | 0.3− | 0.0 | 2006 02 21 | G96 | 0.3− | 0.2− | 2006 03 06 | G96 | 0.2− | 0.1− |
| 2002 02 07 | 691 | 0.1+ | 0.1− | 2006 02 21 | G96 | 0.2− | 0.4+ | 2006 03 06 | G96 | 0.3− | 0.1+ |
| 2002 02 07 | 691 | 0.2+ | 0.2+ | 2006 02 21 | G96 | 0.7− | 0.2− | 2006 03 24 | G96 | 0.4+ | 0.3+ |
| 2004 12 11 | 691 | 0.1+ | 0.2+ | 2006 02 21 | G96 | 0.6− | 0.5− | 2006 03 24 | G96 | 0.1+ | 1.0− |
| 2004 12 11 | 691 | 0.1− | 0.0 | 2006 03 03 | 691 | 0.2+ | 0.5+ | 2006 03 24 | G96 | 0.1− | 1.0− |
| 2004 12 11 | 691 | 0.3+ | 0.2− | 2006 03 03 | 691 | 0.1+ | 0.2+ | 2006 03 24 | G96 | 0.0 | 0.6− |

**2006 DR$_{214}$ = 2005 CL$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.83811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20390088 | $\omega$ | 156.59493 | | +0.17157253 | +0.96653128 | |
| $a$ | 2.8588409 | $\Omega$ | 122.77830 | | −0.93593342 | +0.22035485 | |
| $e$ | 0.0838923 | $i$ | 13.11216 | | −0.30755731 | −0.13138123 | |
| $P$ | 4.83 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 11 | 327 | 0.1− | 0.6− | 2005 02 09 | G96 | 0.2+ | 0.1+ | 2006 04 29 | 691 | 0.3+ | 0.0 |
| 1996 05 11 | 327 | 0.2− | 0.5− | 2005 02 09 | G96 | 0.2− | 0.2− | 2006 04 29 | 691 | 0.0 | 0.2+ |
| 2002 08 19 | 644 | 0.2+ | 0.6+ | 2005 02 09 | G96 | 0.3− | 0.1− | 2006 04 29 | 691 | 0.0 | 0.2+ |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2006 02 24 | 691 | 0.3− | 0.7+ | 2006 05 07 | 691 | 0.0 | 0.1+ |
| 2002 08 19 | 644 | 0.0 | 0.4+ | 2006 02 24 | 691 | 0.1+ | 0.2+ | 2006 05 07 | 691 | 0.1− | 0.1+ |
| 2002 08 30 | 644 | 0.3− | 0.1+ | 2006 02 24 | 691 | 0.5+ | 0.1+ | 2006 05 07 | 691 | 0.2− | 0.2+ |
| 2002 08 30 | 644 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.1+ | 0.0 | 2006 05 27 | 703 | 0.0 | 0.3− |
| 2002 08 30 | 644 | 0.2− | 0.1− | 2006 03 05 | 691 | 0.1− | 0.3+ | 2006 05 27 | 703 | 0.8− | 1.2− |
| 2005 02 02 | 691 | 0.0 | 0.3+ | 2006 03 05 | 691 | 0.1+ | 0.1+ | 2006 05 27 | 703 | 1.1+ | 2.2− |
| 2005 02 02 | 691 | 0.2+ | 0.0 | 2006 04 18 | 691 | 0.4− | 0.2− | 2006 05 27 | 703 | 0.1− | 0.1+ |
| 2005 02 02 | 691 | 0.0 | 0.0 | 2006 04 18 | 691 | 0.0 | 0.0 | | | | |
| 2005 02 09 | G96 | 0.0 | 0.2− | 2006 04 18 | 691 | 0.2+ | 0.4− | | | | |

**2006 DS$_{214}$ = 2003 UL$_{52}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.98560 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17584682 | $\omega$ | 288.59027 | | +0.11855320 | | +0.99172810 |
| $a$ | 3.1553415 | $\Omega$ | 347.89825 | | −0.79938374 | | +0.06593381 |
| $e$ | 0.0896321 | $i$ | 13.57232 | | −0.58900829 | | +0.11012769 |
| $P$ | 5.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 18 | 644 | 0.0 | 0.1− | 2006 02 25 | G96 | 0.3+ | 0.1+ | 2006 03 06 | G96 | 0.4− | 0.1+ |
| 2003 10 18 | 644 | 0.1+ | 0.4+ | 2006 02 25 | G96 | 0.3+ | 0.1+ | 2006 03 06 | G96 | 0.3− | 0.1+ |
| 2003 10 18 | 644 | 0.0 | 0.3+ | 2006 02 25 | G96 | 0.1− | 0.1− | 2006 03 06 | G96 | 0.2− | 0.1+ |
| 2003 10 19 | 644 | 0.2+ | 0.1+ | 2006 03 06 | G96 | 0.3− | 0.1− | 2006 03 23 | G96 | 0.3+ | 0.2− |
| 2003 10 19 | 644 | 0.2− | 0.6− | 2006 03 06 | G96 | 0.1− | 0.1− | 2006 03 23 | G96 | 0.2− | 0.1− |
| 2003 10 19 | 644 | 0.0 | 0.0 | 2006 03 06 | G96 | 0.0 | 0.1− | 2006 03 23 | G96 | 0.1+ | 0.1+ |
| 2006 02 25 | G96 | 0.2+ | 0.1− | 2006 03 06 | G96 | 0.5+ | 0.0 | 2006 03 23 | G96 | 0.0 | 0.1+ |

**2006 DT$_{214}$ = 1999 FF$_{68}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.01733 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28614879 | $\omega$ | 36.43176 | | −0.63241662 | | +0.77450745 |
| $a$ | 2.2807347 | $\Omega$ | 194.35621 | | −0.72311370 | | −0.59660451 |
| $e$ | 0.2015981 | $i$ | 3.16515 | | −0.27776933 | | −0.21024096 |
| $P$ | 3.44 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.1− | 2006 02 25 | G96 | 0.1− | 0.3+ | 2006 04 09 | 691 | 0.1− | 0.0 |
| 1999 03 20 | 645 | 0.1− | 0.1− | 2006 02 25 | G96 | 0.0 | 0.4− | 2006 04 09 | 691 | 0.1− | 0.2+ |
| 1999 03 21 | 645 | 0.1− | 0.2− | 2006 03 24 | 691 | 0.1+ | 0.7+ | 2006 04 29 | 691 | 0.2− | 0.2− |
| 1999 03 21 | 645 | 0.0 | 0.2− | 2006 03 24 | 691 | 0.3+ | 0.1+ | 2006 04 29 | 691 | 0.2+ | 0.2− |
| 2006 02 25 | G96 | 0.6+ | 0.3+ | 2006 03 24 | 691 | 0.2+ | 0.3+ | 2006 04 29 | 691 | 0.2− | 0.1− |
| 2006 02 25 | G96 | 0.8− | 0.1+ | 2006 04 09 | 691 | 0.2+ | 0.3− | | | | |

**2006 DU$_{214}$ = 1999 TZ$_{55}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.84559 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21235182 | $\omega$ | 248.51956 | | −0.06479290 | | −0.99754575 |
| $a$ | 2.7824800 | $\Omega$ | 205.23958 | | +0.93704925 | | −0.05167536 |
| $e$ | 0.0683709 | $i$ | 3.56846 | | +0.34313349 | | −0.04724554 |
| $P$ | 4.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.1− | 0.2− | 2006 02 27 | G96 | 0.3− | 0.0 | 2006 03 09 | 691 | 0.0 | 0.4− |
| 1999 10 06 | 691 | 0.3+ | 0.3+ | 2006 02 27 | G96 | 0.3− | 0.2+ | 2006 03 09 | 691 | 0.2− | 0.1+ |
| 1999 10 06 | 691 | 0.1− | 0.0 | 2006 02 27 | G96 | 0.2+ | 0.3+ | 2006 04 02 | G96 | 0.7+ | 0.2− |
| 1999 10 11 | 691 | 0.1− | 0.2+ | 2006 03 05 | 691 | 0.0 | 0.1+ | 2006 04 02 | G96 | 0.6− | 0.2+ |
| 1999 10 11 | 691 | 0.2− | 0.1− | 2006 03 05 | 691 | 0.1+ | 0.6− | 2006 04 02 | G96 | 0.3+ | 0.0 |
| 1999 10 11 | 691 | 0.2+ | 0.3− | 2006 03 05 | 691 | 0.3+ | 0.1− | 2006 04 02 | G96 | 0.3− | 0.2− |
| 2006 02 27 | G96 | 0.2+ | 0.3− | 2006 03 09 | 691 | 0.0 | 0.8+ | | | | |

**2006 DV$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.78716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28782185 | $\omega$ | 81.90806 | | +0.48472754 | | −0.87376380 |
| $a$ | 2.2718878 | $\Omega$ | 338.95447 | | +0.75264599 | | +0.43979954 |
| $e$ | 0.0904301 | $i$ | 6.34698 | | +0.44560433 | | +0.20763714 |
| $P$ | 3.42 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 2.3+ | 1.6+ | 2006 01 23 | 691 | 0.2+ | 0.0 | 2006 02 25 | G96 | 0.1− | 0.5− |
| 2001 11 12 | 704 | 0.5− | 0.5− | 2006 02 01 | 691 | 0.1+ | 0.2+ | 2006 02 25 | G96 | 0.5+ | 0.2+ |
| 2001 11 12 | 704 | 0.4− | 1.3− | 2006 02 01 | 691 | 0.2+ | 0.0 | 2006 02 25 | G96 | 0.3+ | 0.0 |
| 2001 11 12 | 704 | 1.3− | 0.0 | 2006 02 01 | 691 | 0.0 | 0.2+ | 2006 02 25 | G96 | 0.2+ | 0.2+ |
| 2004 07 16 | 807 | 0.3− | 0.6+ | 2006 02 20 | 703 | 0.8− | 0.0 | 2006 02 25 | G96 | 0.6+ | 0.3+ |
| 2004 07 16 | 807 | 0.5− | 0.5+ | 2006 02 20 | 703 | (3.5− | 0.3−) | 2006 03 24 | G96 | 0.2− | 0.1+ |
| 2004 09 22 | 691 | 0.0 | 0.2− | 2006 02 20 | 703 | 0.2+ | 0.8+ | 2006 03 24 | G96 | 0.1− | 0.1+ |
| 2004 09 22 | 691 | 0.0 | 0.0 | 2006 02 20 | 703 | 0.9− | 1.1+ | 2006 03 24 | G96 | 0.0 | 0.1− |
| 2004 09 22 | 691 | 0.0 | 0.4+ | 2006 02 25 | G96 | 0.2+ | 0.1− | 2006 03 24 | G96 | 0.4− | 0.2− |
| 2006 01 23 | 691 | 0.4+ | 0.2− | 2006 02 25 | G96 | 0.1+ | 0.2− | | | | |
| 2006 01 23 | 691 | 0.2+ | 0.1− | 2006 02 25 | G96 | 0.1+ | 0.1− | | | | |

**2006 DW$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.30819 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19988041 | $\omega$ | 101.34104 | | +0.71085892 | | −0.70332687 |
| $a$ | 2.8970493 | $\Omega$ | 303.35360 | | +0.64374527 | | +0.65251619 |
| $e$ | 0.1436509 | $i$ | 0.22651 | | +0.28332245 | | +0.28205306 |
| $P$ | 4.93 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 691 | 0.2+ | 0.6+ | 2006 02 20 | 691 | 0.2+ | 0.7+ | 2006 03 23 | G96 | 0.3+ | 0.1− |
| 1998 09 15 | 691 | 0.5− | 0.5+ | 2006 02 20 | 691 | 0.0 | 0.6+ | 2006 04 07 | G96 | 0.0 | 0.1− |
| 1998 09 15 | 691 | 0.3− | 0.7+ | 2006 02 20 | 691 | 0.0 | 0.2+ | 2006 04 07 | G96 | 0.9+ | 0.7+ |
| 2003 08 22 | 644 | 0.3− | 0.2+ | 2006 03 06 | 691 | 0.2+ | 0.1+ | 2006 04 07 | G96 | 0.6− | 0.4+ |
| 2003 08 22 | 644 | 0.2− | 0.4+ | 2006 03 06 | 691 | 0.3+ | 0.1+ | 2006 04 07 | G96 | 0.0 | 0.1+ |
| 2003 08 22 | 644 | 0.0 | 0.8+ | 2006 03 06 | 691 | 0.0 | 0.1+ | 2006 05 03 | G96 | 0.0 | 0.1− |
| 2004 12 03 | 691 | 0.1− | 0.5+ | 2006 03 23 | G96 | 0.3+ | 0.2+ | 2006 05 03 | G96 | 0.2− | 0.0 |
| 2004 12 03 | 691 | 0.1+ | 0.4+ | 2006 03 23 | G96 | 0.1− | 0.3+ | 2006 05 03 | G96 | 0.5− | 0.1− |
| 2004 12 03 | 691 | 0.1+ | 0.3+ | 2006 03 23 | G96 | 0.0 | 0.0 | 2006 05 03 | G96 | 0.2− | 0.4− |

**2006 DX$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.13955 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23073628 | $\omega$ | 301.47833 | | −0.56471858 | | −0.82527656 |
| $a$ | 2.6326439 | $\Omega$ | 182.91115 | | +0.77805556 | | −0.53102531 |
| $e$ | 0.1837546 | $i$ | 3.83378 | | +0.27517717 | | −0.19217367 |
| $P$ | 4.27 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 29 | 691 | 0.1+ | 0.0 | 2006 02 23 | 699 | 1.1− | 1.9+ | 2006 03 03 | G96 | 0.3− | 0.3+ |
| 2000 10 29 | 691 | 0.4− | 0.1+ | 2006 02 23 | 699 | 1.3+ | 0.5− | 2006 03 24 | 691 | 0.1+ | 0.5− |
| 2000 10 29 | 691 | 0.1+ | 0.3+ | 2006 02 23 | 699 | 0.5+ | 0.1+ | 2006 03 24 | 691 | 0.5+ | 0.1+ |
| 2002 03 20 | 691 | 0.3− | 0.7+ | 2006 02 23 | 699 | 0.8− | 0.3− | 2006 03 24 | 691 | 0.2− | 0.2− |
| 2002 03 20 | 691 | 0.1− | 0.0 | 2006 02 25 | 691 | 0.0 | 0.3− | 2006 05 04 | G96 | 0.3+ | 0.1+ |
| 2002 03 20 | 691 | 0.2+ | 0.0 | 2006 02 25 | 691 | 0.2− | 0.1+ | 2006 05 04 | G96 | 0.5− | 0.2− |
| 2002 04 05 | 644 | 0.4+ | 0.1+ | 2006 02 25 | 691 | 0.1+ | 0.1+ | 2006 05 04 | G96 | 0.3− | 0.0 |
| 2002 04 05 | 644 | 0.5+ | 0.1+ | 2006 03 03 | G96 | 0.1− | 0.1− | 2006 05 04 | G96 | 0.2− | 0.1− |
| 2002 04 05 | 644 | 0.5+ | 0.1− | 2006 03 03 | G96 | 0.5− | 0.0 | | | | |

**2006 DY$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.85217 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20008005 | $\omega$ | 77.34151 | | +0.10736094 | | −0.99415614 |
| $a$ | 2.8951219 | $\Omega$ | 6.52682 | | +0.86933539 | | +0.08836483 |
| $e$ | 0.0323010 | $i$ | 5.69438 | | +0.48242057 | | +0.06200994 |
| $P$ | 4.93 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 691 | 0.3+ | 0.1+ | 2003 09 29 | 691 | 0.2− | 0.0 | 2006 04 07 | G96 | 0.1+ | 0.6+ |
| 2001 03 21 | 691 | 0.1+ | 0.6+ | 2006 02 24 | 691 | 0.1+ | 0.3− | 2006 04 07 | G96 | 0.1− | 0.5+ |
| 2001 03 21 | 691 | 0.0 | 0.2+ | 2006 02 24 | 691 | 0.1− | 0.0 | 2006 04 07 | G96 | 0.4− | 0.3+ |
| 2003 09 17 | 691 | 0.6− | 0.1− | 2006 02 24 | 691 | 0.5+ | 0.2− | 2006 04 07 | G96 | 0.9− | 0.4+ |
| 2003 09 17 | 691 | 0.6− | 0.4+ | 2006 03 24 | G96 | 0.3− | 0.3− | 2006 04 19 | G96 | 0.3− | 0.4+ |
| 2003 09 17 | 691 | 0.4+ | 0.1− | 2006 03 24 | G96 | 0.0 | 0.5− | 2006 04 19 | G96 | 0.4− | 0.2− |
| 2003 09 29 | 691 | 0.4+ | 0.1+ | 2006 03 24 | G96 | 0.0 | 0.4− | 2006 04 19 | G96 | 0.4− | 0.1+ |
| 2003 09 29 | 691 | 0.3+ | 0.0 | 2006 03 24 | G96 | 0.2+ | 0.8− | 2006 04 19 | G96 | 0.3− | 0.2− |

### 2006 $DZ_{214}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.76577 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21975989 | $\omega$ | 151.03316 | +0.01603042 | | −0.99958023 | |
| $a$ | 2.7195921 | $\Omega$ | 298.03917 | +0.91201639 | | +0.02451081 | |
| $e$ | 0.0525847 | $i$ | 1.56679 | +0.40984037 | | −0.01544642 | |
| $P$ | 4.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 22 | 691 | 0.1− | 0.3− | 2004 11 04 | 691 | 0.1+ | 0.2+ | 2006 02 25 | G96 | 0.4− | 0.1+ |
| 2000 12 22 | 691 | 0.2− | 0.2+ | 2004 11 04 | 691 | 0.1+ | 0.1+ | 2006 02 25 | G96 | 0.5− | 0.2+ |
| 2000 12 22 | 691 | 0.2− | 0.1− | 2005 03 11 | G96 | 0.3− | 0.1− | 2006 02 25 | 691 | 0.5+ | 0.2+ |
| 2001 01 21 | 704 | 0.9+ | 0.5+ | 2005 03 11 | G96 | 0.5+ | 0.2− | 2006 03 04 | 691 | 0.0 | 0.3+ |
| 2001 01 21 | 704 | 0.2+ | 0.9+ | 2005 03 11 | G96 | 1.4− | 0.1− | 2006 03 04 | 691 | 0.3− | 0.1− |
| 2001 01 21 | 704 | 1.2+ | 1.6+ | 2005 03 11 | G96 | 0.1− | 0.1− | 2006 03 04 | 691 | 0.1+ | 0.1+ |
| 2003 10 24 | 291 | 0.3+ | 0.9+ | 2006 02 25 | 691 | 0.1+ | 0.3+ | 2006 03 24 | 699 | (2.2− | 0.1+) |
| 2003 10 24 | 291 | 0.4− | 0.5+ | 2006 02 25 | G96 | 0.0 | 0.4+ | 2006 03 24 | 699 | 0.9+ | 1.6− |
| 2003 10 24 | 291 | 0.6− | 0.8+ | 2006 02 25 | 691 | 0.3+ | 0.2+ | 2006 03 24 | 699 | 1.0+ | 1.2+ |
| 2004 11 04 | 691 | 0.0 | 0.1− | 2006 02 25 | G96 | 0.6− | 0.2+ | 2006 03 24 | 699 | 1.0− | 0.3+ |

### 2006 $DA_{215}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.58433 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18850024 | $\omega$ | 108.27970 | +0.47332789 | | +0.88032500 | |
| $a$ | 3.0125073 | $\Omega$ | 190.14569 | −0.86051460 | | +0.45445499 | |
| $e$ | 0.0948363 | $i$ | 10.28203 | −0.18834895 | | +0.13600940 | |
| $P$ | 5.23 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 1.3+ | 2.1− | 2006 02 25 | 691 | 0.4+ | 0.0 | 2006 04 02 | G96 | 0.4− | 0.1+ |
| 1992 09 30 | 691 | 0.6− | 0.7+ | 2006 02 25 | 691 | 0.1+ | 0.2+ | 2006 04 02 | G96 | 0.4− | 0.1− |
| 1992 09 30 | 691 | 0.4− | 0.3+ | 2006 03 04 | 691 | 0.2+ | 0.1+ | 2006 04 02 | G96 | 0.0 | 0.1+ |
| 2002 07 20 | 644 | 0.0 | 1.3+ | 2006 03 04 | 691 | 0.1− | 0.1+ | 2006 04 19 | G96 | 0.1− | 0.1− |
| 2002 07 20 | 644 | 0.3− | 0.8+ | 2006 03 04 | 691 | 0.0 | 0.0 | 2006 04 19 | G96 | 0.8− | 0.2− |
| 2002 07 20 | 644 | 0.1− | 1.2+ | 2006 03 24 | 699 | 1.2− | 0.0 | 2006 04 19 | G96 | 0.3− | 0.2− |
| 2003 10 02 | 291 | 0.2− | 0.0 | 2006 03 24 | 699 | 0.6+ | 1.0− | 2006 05 21 | G96 | 0.1− | 0.5− |
| 2003 10 02 | 291 | 0.1+ | 0.8+ | 2006 03 24 | 699 | 0.4+ | 0.3+ | 2006 05 21 | G96 | 0.8− | 0.3− |
| 2003 10 02 | 291 | 0.1− | 0.1+ | 2006 03 24 | 699 | 0.7+ | 0.5+ | 2006 05 21 | G96 | 0.2− | 0.5− |
| 2006 02 25 | 691 | 0.0 | 0.1+ | 2006 04 02 | G96 | 0.1+ | 0.0 | 2006 05 21 | G96 | 0.1+ | 0.3− |

### 2006 $DB_{215}$ = 2004 $XE_{138}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.63166 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20194260 | $\omega$ | 190.69601 | +0.23308757 | | −0.97230329 | |
| $a$ | 2.8772930 | $\Omega$ | 245.82685 | +0.89359836 | | +0.22113760 | |
| $e$ | 0.0409467 | $i$ | 1.08149 | +0.38360418 | | +0.07566030 | |
| $P$ | 4.88 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 691 | 0.2+ | 0.1+ | 2004 12 13 | 691 | 0.1+ | 0.1− | 2006 03 09 | 691 | 0.1− | 0.5+ |
| 2001 03 02 | 691 | 0.3+ | 0.2+ | 2004 12 18 | 691 | 0.0 | 0.0 | 2006 03 09 | 691 | 0.4+ | 0.6+ |
| 2001 03 02 | 691 | 0.1− | 0.6+ | 2004 12 18 | 691 | 0.1− | 0.1+ | 2006 03 09 | 691 | 0.6+ | 0.2− |
| 2003 09 16 | 691 | 0.1− | 0.3+ | 2004 12 18 | 691 | 0.0 | 0.2+ | 2006 03 25 | G96 | 0.0 | 0.1− |
| 2003 09 16 | 691 | 0.2− | 0.3+ | 2006 02 25 | G96 | 0.7− | 0.4+ | 2006 03 25 | G96 | 0.2+ | 0.3− |
| 2003 09 16 | 691 | 0.3− | 0.3+ | 2006 02 25 | G96 | 0.2− | 0.1− | 2006 03 25 | G96 | 0.4− | 0.4− |
| 2003 10 17 | 691 | 0.3− | 0.4+ | 2006 02 25 | G96 | 0.5− | 0.3+ | 2006 03 25 | G96 | 0.0 | 0.4− |
| 2003 10 17 | 691 | 0.2+ | 0.5+ | 2006 02 25 | G96 | 0.3+ | 0.6− | 2006 05 06 | G96 | 0.4− | 0.0 |
| 2003 10 17 | 691 | 0.1− | 0.2+ | 2006 02 25 | 691 | 0.3− | 0.1+ | 2006 05 06 | G96 | 0.4− | 0.0 |
| 2004 12 13 | 691 | 0.0 | 0.1− | 2006 02 25 | 691 | 0.7+ | 0.1+ | 2006 05 06 | G96 | 0.4− | 0.3+ |
| 2004 12 13 | 691 | 0.0 | 0.0 | 2006 02 25 | 691 | 0.2− | 0.2+ | 2006 05 06 | G96 | 0.3− | 0.1+ |

### 2006 $DC_{215}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.84929 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28075180 | $\omega$ | 330.81769 | −0.13781679 | | +0.99012936 | |
| $a$ | 2.3098707 | $\Omega$ | 291.25093 | −0.90333755 | | −0.13621228 | |
| $e$ | 0.1468376 | $i$ | 1.56801 | −0.40618691 | | −0.03301627 | |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 31 | 691 | 0.2+ | 0.2+ | 2000 10 02 | 704 | 0.7− | 0.7+ | 2006 03 09 | 691 | 0.0 | 0.3+ |
| 1994 12 31 | 691 | 0.1+ | 0.4+ | 2000 10 02 | 704 | 0.5+ | 0.2+ | 2006 03 09 | 691 | 0.1− | 0.2+ |
| 1994 12 31 | 691 | 0.6− | 0.3+ | 2001 12 20 | 691 | 0.2+ | 0.5− | 2006 03 23 | 703 | 0.6+ | 0.4+ |
| 1995 01 07 | 691 | 0.4− | 0.6− | 2001 12 20 | 691 | 0.1− | 1.0+ | 2006 03 23 | 703 | 1.9+ | 0.3− |
| 1995 01 07 | 691 | 0.0 | 0.7− | 2001 12 20 | 691 | 0.1+ | 0.4+ | 2006 03 23 | 703 | 2.0+ | 0.2− |
| 1995 01 07 | 691 | 0.6+ | 0.7− | 2006 02 27 | G96 | 0.3− | 0.2+ | 2006 03 23 | 703 | 0.9− | 0.3− |
| 2000 09 24 | 691 | 0.1+ | 0.0 | 2006 02 27 | G96 | 0.0 | 0.1− | 2006 04 02 | G96 | 0.2+ | 0.2− |
| 2000 09 24 | 691 | 0.1+ | 0.2+ | 2006 02 27 | G96 | 0.1− | 0.1+ | 2006 04 02 | G96 | 0.0 | 0.2− |
| 2000 09 24 | 691 | 0.1− | 0.2+ | 2006 02 27 | G96 | 0.3+ | 0.6+ | 2006 04 02 | G96 | 0.6− | 0.0 |
| 2000 10 02 | 704 | 1.3− | 0.3+ | 2006 03 09 | 691 | 0.2− | 0.3+ | 2006 04 02 | G96 | 0.3− | 0.2− |

### 2006 $DG_{215}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.61086 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20929610 | $\omega$ | 226.46295 | +0.58004073 | | +0.81415963 | |
| $a$ | 2.8094973 | $\Omega$ | 79.00856 | −0.73940098 | | +0.53982481 | |
| $e$ | 0.0589703 | $i$ | 1.54094 | −0.34181711 | | +0.21385339 | |
| $P$ | 4.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 691 | 0.2− | 0.2+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2006 03 02 | 691 | 1.4− | 0.5+ |
| 2001 02 22 | 691 | 0.1+ | 0.2− | 2006 02 24 | 691 | 0.2− | 0.3+ | 2006 03 06 | 691 | 0.5+ | 0.1+ |
| 2001 02 22 | 691 | 0.2+ | 0.1+ | 2006 02 24 | 691 | 0.2+ | 0.4− | 2006 03 06 | 691 | 0.3+ | 0.2+ |
| 2003 09 18 | 691 | 0.2− | 0.4+ | 2006 02 24 | 691 | 0.1− | 0.1+ | 2006 03 06 | 691 | 0.4+ | 0.2− |
| 2003 09 18 | 691 | 0.3− | 0.4+ | 2006 02 27 | 691 | 0.3− | 0.4− | 2006 03 26 | G96 | 0.2− | 0.1− |
| 2003 09 18 | 691 | 0.3− | 0.3+ | 2006 02 27 | 691 | 0.5+ | 0.1− | 2006 03 26 | G96 | 0.2+ | 0.2− |
| 2003 09 26 | 645 | 0.1+ | 0.1− | 2006 02 27 | 691 | 0.3+ | 0.6+ | 2006 03 26 | G96 | 0.2− | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 02 | 691 | 0.4− | 0.5− | 2006 03 26 | G96 | 0.0 | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 03 02 | 691 | 0.2+ | 0.4− | | | | |

### 2006 $DJ_{215}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.34786 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22670011 | $\omega$ | 114.97613 | +0.64581379 | | +0.76139114 | |
| $a$ | 2.6637997 | $\Omega$ | 195.66061 | −0.75406635 | | +0.62445822 | |
| $e$ | 0.2735135 | $i$ | 12.11210 | −0.11961807 | | +0.17417078 | |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 704 | 0.6+ | 0.3− | 2006 02 25 | G96 | 0.3− | 0.3− | 2006 04 09 | 691 | 0.1− | 0.7+ |
| 2002 05 08 | 704 | 0.2− | 0.2+ | 2006 02 25 | G96 | 0.4+ | 0.3− | 2006 04 09 | 691 | 0.0 | 0.1− |
| 2002 05 08 | 704 | 0.4− | 0.9+ | 2006 02 25 | G96 | 0.6+ | 0.3− | 2006 04 09 | 691 | 0.1+ | 0.4− |
| 2002 05 18 | 704 | 0.7− | 0.3− | 2006 02 25 | G96 | 0.3− | 0.0 | 2006 04 19 | G96 | 0.1− | 0.1+ |
| 2002 05 18 | 291 | 1.0+ | 0.8− | 2006 03 25 | 691 | 0.4+ | 0.2+ | 2006 04 19 | G96 | 0.3− | 0.0 |
| 2002 05 18 | 704 | 0.1− | 0.3+ | 2006 03 25 | 691 | 0.2+ | 0.0 | 2006 04 19 | G96 | 0.5− | 0.2− |
| 2002 05 18 | 291 | 0.1− | 0.1+ | 2006 03 25 | 691 | 0.1+ | 0.4− | 2006 04 19 | G96 | 0.2− | 0.2+ |
| 2002 05 18 | 704 | 0.6− | 0.3+ | 2006 03 25 | G96 | 0.8− | 0.0 | 2006 05 25 | G96 | 0.0 | 0.0 |
| 2002 05 18 | 704 | 1.3− | 0.1− | 2006 03 25 | G96 | 0.6− | 0.1− | 2006 05 25 | G96 | 0.5+ | 0.3− |
| 2002 05 18 | 291 | 0.0 | 0.2+ | 2006 03 25 | G96 | 0.4+ | 0.4+ | 2006 05 25 | G96 | 0.5− | 0.0 |
| 2002 05 18 | 704 | 0.7− | 0.8+ | 2006 03 25 | G96 | 0.3− | 0.2+ | 2006 05 25 | G96 | 0.0 | 0.0 |

**2006 DM$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.39280 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28972073 | $\omega$ | 89.40319 | | +0.04519850 | | +0.99896036 |
| $a$ | 2.2619500 | $\Omega$ | 183.20553 | | −0.95360583 | | +0.04137297 |
| $e$ | 0.1204988 | $i$ | 6.09883 | | −0.29764580 | | +0.01914356 |
| $P$ | 3.40 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 11 | 691 | 0.7− | 0.5− | 2006 02 28 | G96 | 0.5− | 0.1− | 2006 04 25 | 691 | 0.2+ | 0.3− |
| 1996 06 11 | 691 | 0.2+ | 0.0 | 2006 03 24 | G96 | 0.6− | 0.0 | 2006 05 30 | G96 | 0.0 | 0.0 |
| 1996 06 11 | 691 | 0.4+ | 0.0 | 2006 03 24 | G96 | 0.2+ | 0.0 | 2006 05 30 | G96 | 1.1− | 0.8+ |
| 2000 09 27 | 691 | 0.0 | 0.2+ | 2006 03 24 | G96 | 0.2− | 0.0 | 2006 05 30 | G96 | 0.5− | 0.1− |
| 2000 09 27 | 691 | 0.1− | 0.2+ | 2006 04 08 | 691 | 0.1+ | 0.1+ | 2006 05 30 | G96 | 0.3− | 0.1− |
| 2000 09 27 | 691 | 0.0 | 0.2+ | 2006 04 08 | 691 | 0.2− | 0.2+ | 2006 05 30 | G96 | 0.2+ | 0.2− |
| 2006 02 28 | G96 | 0.0 | 0.2− | 2006 04 08 | 691 | 0.2+ | 0.2− | 2006 05 30 | G96 | 0.1− | 0.3+ |
| 2006 02 28 | G96 | 0.0 | 0.4− | 2006 04 25 | 691 | 0.3+ | 0.6+ | 2006 05 30 | G96 | 0.2+ | 0.2+ |
| 2006 02 28 | G96 | 0.5− | 0.2− | 2006 04 25 | 691 | 0.3+ | 0.4+ | 2006 05 30 | G96 | 0.1− | 0.3+ |

**2006 EN$_1$ = 1998 VK$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.70431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17546212 | $\omega$ | 68.65125 | | −0.66257374 | | −0.74770720 |
| $a$ | 3.1599519 | $\Omega$ | 62.92252 | | +0.66761693 | | −0.61615617 |
| $e$ | 0.0208760 | $i$ | 2.82810 | | +0.33953450 | | −0.24755912 |
| $P$ | 5.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.5+ | 0.2− | 2003 10 20 | 691 | 0.4− | 0.1+ | 2006 03 05 | G96 | 0.4− | 0.3+ |
| 1998 11 14 | 691 | 0.4+ | 0.3− | 2003 10 20 | 691 | 0.3− | 0.2+ | 2006 03 05 | G96 | 0.2− | 0.0 |
| 1998 11 23 | 691 | (1.6+ | 6.2−) | 2003 10 20 | 691 | 0.1− | 0.2+ | 2006 03 05 | G96 | 0.2− | 0.3+ |
| 1998 11 23 | 691 | 0.5− | 0.1− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 05 | G96 | 0.2− | 0.0 |
| 1998 11 23 | 691 | 0.2− | 0.4− | 2003 10 22 | 645 | 0.0 | 0.1+ | 2006 03 05 | G96 | 0.0 | 0.1+ |
| 2001 04 16 | 691 | 0.2+ | 0.4+ | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 03 05 | G96 | 0.5− | 0.3− |
| 2001 04 16 | 691 | 0.1+ | 0.3+ | 2003 10 24 | 645 | 0.1− | 0.1+ | 2006 03 05 | G96 | 0.4− | 0.6− |
| 2001 04 16 | 691 | 0.1+ | 0.3+ | 2005 12 10 | 691 | 0.1− | 0.3+ | 2006 03 06 | G96 | 0.9− | 0.8+ |
| 2003 09 17 | 691 | 0.0 | 0.3+ | 2005 12 10 | 691 | 0.5+ | 0.7+ | 2006 03 06 | G96 | 0.4+ | 0.6+ |
| 2003 09 17 | 691 | 0.1+ | 0.1− | 2005 12 10 | 691 | 0.6+ | 0.3+ | 2006 03 06 | G96 | 1.0+ | 0.3+ |
| 2003 09 17 | 691 | 0.3+ | 0.0 | 2006 03 02 | 408 | 0.4− | 1.4− | 2006 03 06 | G96 | 0.2+ | 0.1+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 02 | 408 | 0.8− | 1.1− | 2006 03 08 | G96 | 0.2+ | 0.1− |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2006 03 03 | 408 | (2.4− | 0.7+) | 2006 03 08 | G96 | 0.1+ | 0.2− |
| 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 03 03 | 408 | (2.0− | 0.5+) | 2006 03 08 | G96 | 0.1+ | 0.4− |
| 2003 09 28 | 645 | 0.1+ | 0.1+ | 2006 03 04 | 691 | 0.0 | 0.4+ | 2006 03 08 | 691 | 0.3+ | 0.1+ |
| 2003 09 30 | 691 | 0.0 | 0.2+ | 2006 03 04 | 691 | 0.1+ | 0.3+ | 2006 03 08 | G96 | 0.0 | 0.3− |
| 2003 09 30 | 691 | 0.1− | 0.4+ | 2006 03 04 | 691 | 0.0 | 0.2+ | 2006 03 08 | 691 | 0.1+ | 0.3+ |
| 2003 09 30 | 691 | 0.1− | 0.2+ | 2006 03 04 | 408 | 0.5− | 0.7+ | 2006 03 08 | 691 | 0.6+ | 0.1− |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2006 03 04 | 408 | 0.5− | 1.2+ | | | | |
| 2003 10 19 | 645 | 0.1− | 0.0 | 2006 03 05 | G96 | 0.0 | 0.0 | | | | |

**2006 EV$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.23387 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17899343 | $\omega$ | 56.16021 | | +0.43966979 | | −0.89804171 |
| $a$ | 3.1182528 | $\Omega$ | 7.79839 | | +0.78456910 | | +0.37613128 |
| $e$ | 0.2056829 | $i$ | 6.15374 | | +0.43719766 | | +0.22813669 |
| $P$ | 5.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 19 | 704 | 0.5+ | 0.1− | 2004 12 15 | 704 | 0.3− | 1.1+ | 2006 03 06 | 691 | 0.4+ | 0.1− |
| 2004 11 19 | 704 | 0.7− | 0.1+ | 2006 03 02 | 691 | 0.1+ | 0.3− | 2006 03 09 | G96 | 0.0 | 0.4+ |
| 2004 11 19 | 704 | 0.4+ | 0.5− | 2006 03 02 | 691 | 0.0 | 0.3− | 2006 03 09 | G96 | 0.5+ | 0.3+ |
| 2004 12 02 | 703 | 0.9− | 0.3+ | 2006 03 02 | 691 | 0.1− | 0.2+ | 2006 03 09 | G96 | 0.1− | 0.0 |
| 2004 12 02 | 703 | 0.5− | 0.4+ | 2006 03 03 | G96 | 0.3− | 0.1− | 2006 03 09 | G96 | 2.9− | 0.1− |
| 2004 12 02 | 703 | 0.1− | 0.2− | 2006 03 03 | G96 | 0.5− | 0.5+ | 2006 04 26 | 807 | 0.0 | 0.1− |
| 2004 12 02 | 703 | 2.2+ | 2.1− | 2006 03 03 | G96 | 1.0− | 0.3+ | 2006 04 26 | 807 | 0.0 | 0.0 |
| 2004 12 15 | 704 | 1.0− | 0.3− | 2006 03 03 | G96 | 0.1− | 0.2− | 2006 04 27 | 807 | 0.0 | 0.2− |
| 2004 12 15 | 704 | 0.2+ | 0.7+ | 2006 03 06 | 691 | 0.6+ | 0.0 | | | | |
| 2004 12 15 | 704 | 0.4+ | 0.5+ | 2006 03 06 | 691 | 0.0 | 0.3+ | | | | |

**2006 EO$_9$ = 2004 XO$_{51}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.47164 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25832062 | $\omega$ | 253.95187 | | +0.99586213 | | −0.08336146 |
| $a$ | 2.4417245 | $\Omega$ | 110.81881 | | +0.09086963 | | +0.91849311 |
| $e$ | 0.1985498 | $i$ | 2.21874 | | −0.00115537 | | +0.38655047 |
| $P$ | 3.82 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 10 | 704 | 0.4− | 0.2+ | 2004 12 14 | 599 | 0.4+ | 0.2− | 2006 03 03 | 691 | 1.0− | 0.6+ |
| 2004 12 10 | 704 | 0.8+ | 0.5− | 2006 02 24 | 691 | 1.1+ | 1.3+ | 2006 03 03 | 691 | 0.2+ | 0.2+ |
| 2004 12 10 | 704 | 0.7− | 0.7+ | 2006 02 24 | 691 | 0.5− | 0.8− | 2006 03 03 | 691 | 0.9+ | 0.3+ |
| 2004 12 10 | 704 | 0.5− | 0.7+ | 2006 02 24 | 691 | 0.3− | 0.6− | 2006 03 06 | 691 | 0.1− | 0.0 |
| 2004 12 14 | 599 | 0.3+ | 0.3− | 2006 03 02 | 691 | 0.3− | 0.3− | 2006 03 06 | 691 | 0.2− | 0.3− |
| 2004 12 14 | 599 | 0.1+ | 0.3− | 2006 03 02 | 691 | 0.6+ | 0.2+ | 2006 03 06 | 691 | 0.4− | 0.2− |
| 2004 12 14 | 599 | 0.0 | 0.3− | 2006 03 02 | 691 | 0.1− | 0.4− | | | | |

**2006 EF$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.62222 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17702321 | $\omega$ | 2.85224 | | +0.99924723 | | +0.02883443 |
| $a$ | 3.1413470 | $\Omega$ | 355.25626 | | −0.03879336 | | +0.74617381 |
| $e$ | 0.1845154 | $i$ | 18.28956 | | +0.00020126 | | +0.66512647 |
| $P$ | 5.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 704 | 0.4+ | 0.4− | 2003 10 17 | 699 | (3.5− | 2.2+) | 2006 03 02 | 691 | 0.2− | 0.4− |
| 2003 09 30 | 704 | 0.0 | 0.6+ | 2003 10 22 | 704 | 0.6− | 0.9+ | 2006 03 06 | 691 | 0.1+ | 0.1− |
| 2003 09 30 | 704 | 0.1− | 1.5+ | 2003 10 22 | 704 | 0.9+ | 0.6+ | 2006 03 06 | 691 | 0.0 | 0.0 |
| 2003 09 30 | 704 | 0.5+ | 0.6+ | 2003 10 22 | 704 | 1.0− | 0.4+ | 2006 03 06 | 691 | 0.0 | 0.2+ |
| 2003 10 05 | 691 | 0.1+ | 0.3− | 2003 10 22 | 704 | 0.3− | 0.5+ | 2006 03 21 | G96 | 0.0 | 0.6+ |
| 2003 10 05 | 691 | 0.1− | 0.0 | 2003 11 18 | 691 | 0.1+ | 0.1− | 2006 03 21 | G96 | 0.6− | 0.0 |
| 2003 10 05 | 691 | 0.1+ | 0.2− | 2003 11 18 | 691 | 0.1− | 0.0 | 2006 03 21 | G96 | 0.9+ | 0.1− |
| 2003 10 17 | 699 | 0.1+ | 1.0− | 2003 11 18 | 691 | 0.1+ | 0.1− | 2006 03 21 | G96 | 0.6+ | 0.3− |
| 2003 10 17 | 699 | 0.1− | 0.0 | 2006 03 02 | 691 | 0.4− | 0.2+ | | | | |
| 2003 10 17 | 699 | 0.7− | 1.0− | 2006 03 02 | 691 | 0.4+ | 0.1+ | | | | |

**2006 EE$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.36526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12511679 | $\omega$ | 1.38902 | | +0.99847392 | | +0.05507442 |
| $a$ | 3.9590621 | $\Omega$ | 355.44783 | | −0.05115086 | | +0.89443846 |
| $e$ | 0.1935493 | $i$ | 2.94597 | | −0.02081874 | | +0.44378671 |
| $P$ | 7.88 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.3+ | 0.2− | 2002 10 16 | 644 | 0.4− | 0.7+ | 2006 02 25 | 691 | 0.4+ | 0.1+ |
| 2001 07 27 | 699 | 0.3− | 0.9+ | 2002 10 16 | 644 | 0.4− | 0.3+ | 2006 02 25 | 691 | 0.1+ | 0.1+ |
| 2001 07 27 | 699 | 0.1− | 1.8+ | 2002 10 26 | 608 | 0.5− | 1.4+ | 2006 02 25 | 691 | 0.1− | 0.3− |
| 2001 07 27 | 699 | 0.0 | 0.1− | 2002 10 26 | 608 | 0.3− | 1.4+ | 2006 03 02 | 691 | 0.2− | 0.0 |
| 2001 08 16 | 704 | 1.1+ | 1.2+ | 2002 10 26 | 608 | 0.6− | 0.7+ | 2006 03 02 | 691 | 0.3+ | 0.4+ |
| 2001 08 16 | 704 | 0.6+ | 0.2− | 2002 11 04 | 699 | 0.8− | 0.6+ | 2006 03 02 | 691 | 0.2+ | 0.8+ |
| 2001 08 16 | 704 | 0.7− | 0.0 | 2002 11 04 | 699 | 0.1+ | 0.1− | 2006 03 04 | 691 | 0.7+ | 0.2+ |
| 2001 08 26 | 608 | 0.1− | 0.5+ | 2002 11 04 | 699 | 0.0 | 0.3+ | 2006 03 04 | 691 | 0.3+ | 0.7+ |
| 2001 08 26 | 608 | 0.2− | 0.9+ | 2002 11 04 | 699 | 0.4− | 0.1− | 2006 03 04 | 691 | 0.2− | 0.5+ |
| 2001 08 26 | 608 | 0.4− | 0.7+ | 2002 11 12 | 704 | 0.7+ | 1.0+ | 2006 03 06 | 691 | 0.1+ | 0.2+ |
| 2001 09 20 | 291 | 0.3+ | 0.4+ | 2002 11 12 | 704 | 0.0 | 0.8+ | 2006 03 06 | 691 | 0.5+ | 0.6+ |
| 2001 09 20 | 291 | 0.5− | 0.5+ | 2002 11 12 | 704 | 0.1+ | 0.8+ | 2006 03 06 | 691 | 0.3+ | 0.2+ |
| 2001 09 20 | 291 | 0.7− | 0.0 | 2002 11 12 | 704 | 0.7− | 0.5− | 2006 03 18 | D35 | 0.9− | 0.7+ |
| 2002 10 12 | 704 | 1.0+ | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.3− | 2006 03 18 | D35 | (2.1− | 0.0 ) |
| 2002 10 12 | 704 | 0.4− | 0.7+ | 2005 03 10 | G96 | 0.4− | 0.1− | 2006 03 18 | D35 | 1.8− | 0.2+ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.1− | 0.3− | 2005 03 10 | G96 | 0.2+ | 0.2− |
| 2002 10 16 | 644 | 0.3− | 0.4+ | 2005 03 10 | G96 | 0.1+ | 0.1+ |

**2006 EL$_{24}$ = 2003 QX$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.09450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17522341 | $\omega$ | 74.01936 | | +0.68183612 | −0.72998830 | |
| $a$ | 3.1628211 | $\Omega$ | 332.80995 | | +0.62556080 | +0.61523811 | |
| $e$ | 0.1043504 | $i$ | 5.91389 | | +0.37917435 | +0.29765608 | |
| $P$ | 5.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 30 | 291 | 0.6− | 0.1+ | 2003 10 24 | 695 | 0.0 | 0.3+ | 2006 03 03 | 691 | 0.1− | 0.5+ |
| 2003 08 30 | 291 | 0.2− | 0.1+ | 2005 12 01 | 695 | 0.0 | 0.7+ | 2006 03 03 | 691 | 0.1+ | 0.1− |
| 2003 08 30 | 291 | 0.2− | 0.5+ | 2005 12 01 | 695 | 0.1+ | 0.5+ | 2006 03 03 | 691 | 0.2+ | 0.3− |
| 2003 08 31 | 691 | 0.2− | 0.0 | 2006 02 21 | G96 | 0.0 | 0.4+ | 2006 03 05 | 691 | 0.7+ | 0.0 |
| 2003 08 31 | 691 | 0.2+ | 0.3+ | 2006 02 21 | G96 | 0.4+ | 0.3+ | 2006 03 05 | 691 | 0.3− | 0.5+ |
| 2003 08 31 | 691 | 0.4+ | 0.1+ | 2006 02 21 | G96 | 1.0− | 0.1+ | 2006 03 05 | 691 | 0.3+ | 0.3+ |
| 2003 10 24 | 695 | 0.1− | 0.3+ | 2006 02 21 | G96 | 0.6− | 0.2− | | | | |

**2006 EN$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.96805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18392417 | $\omega$ | 350.13714 | | +0.84416686 | +0.53342423 | |
| $a$ | 3.0622702 | $\Omega$ | 337.37777 | | −0.48192063 | +0.71157165 | |
| $e$ | 0.0088786 | $i$ | 7.96491 | | −0.23480805 | +0.45730119 | |
| $P$ | 5.36 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.0 | 0.1− | 2003 09 30 | 691 | 0.0 | 0.4+ | 2006 02 21 | G96 | 0.0 | 0.6− |
| 2003 09 16 | 691 | 0.1+ | 0.2+ | 2003 10 18 | 645 | 0.1− | 0.0 | 2006 03 03 | 691 | 0.1+ | 0.0 |
| 2003 09 16 | 691 | 0.2− | 0.2+ | 2003 10 18 | 645 | 0.1+ | 0.0 | 2006 03 03 | 691 | 0.2− | 0.1+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 01 31 | 691 | 0.1− | 0.1− | 2006 03 03 | 691 | 0.0 | 0.1+ |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2006 01 31 | 691 | 0.1+ | 0.0 | 2006 03 05 | 691 | 0.1− | 0.2− |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2006 01 31 | 691 | 0.1+ | 0.0 | 2006 03 05 | 691 | 0.2+ | 0.1− |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2006 02 21 | G96 | 0.2− | 0.2− | 2006 03 05 | 691 | 0.0 | 0.2+ |
| 2003 09 30 | 691 | 0.2+ | 0.2+ | 2006 02 21 | G96 | 0.1− | 0.3+ | | | | |
| 2003 09 30 | 691 | 0.2+ | 0.1− | 2006 02 21 | G96 | 0.1− | 0.1+ | | | | |

**2006 EL$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.30056 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27474974 | $\omega$ | 64.14392 | | −0.39614740 | +0.91818480 | |
| $a$ | 2.3433897 | $\Omega$ | 182.52103 | | −0.85770313 | −0.37082028 | |
| $e$ | 0.1767801 | $i$ | 2.57824 | | −0.32773860 | −0.13938793 | |
| $P$ | 3.59 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 05 | 704 | 1.0+ | 1.7− | 2003 05 27 | 691 | 0.2− | 0.2− | 2006 01 31 | G96 | 0.2− | 0.2− |
| 2003 05 05 | 704 | 0.5− | 0.2− | 2003 05 27 | 608 | 0.6+ | 0.7− | 2006 01 31 | G96 | 0.3+ | 0.3− |
| 2003 05 05 | 704 | 1.1− | 0.5− | 2003 05 27 | 608 | 0.2+ | 0.1− | 2006 03 03 | G96 | 0.5− | 0.4+ |
| 2003 05 05 | 704 | (0.8+ | 2.1−) | 2003 05 27 | 608 | 0.1− | 0.5− | 2006 03 03 | G96 | 0.4− | 0.0 |
| 2003 05 11 | 691 | 0.4+ | 1.2+ | 2006 01 06 | 691 | 0.4− | 0.4+ | 2006 03 03 | G96 | 0.4− | 0.1+ |
| 2003 05 11 | 691 | 0.0 | 0.6+ | 2006 01 06 | 691 | 0.1+ | 0.6+ | 2006 03 03 | G96 | 0.2− | 0.0 |
| 2003 05 11 | 691 | 0.3− | 0.7+ | 2006 01 06 | 691 | 0.2+ | 0.3− | 2006 03 04 | 691 | 0.3+ | 0.4− |
| 2003 05 27 | 691 | 0.2+ | 0.5− | 2006 01 31 | G96 | 0.2+ | 0.0 | 2006 03 04 | 691 | 0.1+ | 0.3− |
| 2003 05 27 | 691 | 0.1− | 0.8− | 2006 01 31 | G96 | 0.3+ | 0.1+ | 2006 03 04 | 691 | 0.2− | 0.1− |

**2006 EA$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.59590 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22436578 | $\omega$ | 35.49917 | | +0.54281631 | −0.83904855 | |
| $a$ | 2.6822441 | $\Omega$ | 21.69763 | | +0.74579141 | +0.46146008 | |
| $e$ | 0.1393505 | $i$ | 5.69930 | | +0.38619377 | +0.28818766 | |
| $P$ | 4.39 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.4+ | 0.4+ | 1995 10 15 | 691 | 0.0 | 0.1+ | 2006 03 04 | G96 | 0.2− | 0.2+ |
| 1995 09 18 | 691 | 0.3+ | 0.1+ | 2004 10 11 | 691 | 0.2− | 0.1+ | 2006 03 04 | G96 | 0.3+ | 0.1+ |
| 1995 09 18 | 691 | 0.7− | 0.1− | 2004 10 11 | 691 | 0.1+ | 0.2− | 2006 03 04 | G96 | 0.4− | 0.1+ |
| 1995 09 30 | 691 | 0.1+ | 0.1− | 2004 10 11 | 691 | 0.1+ | 0.1+ | 2006 03 26 | G96 | 0.1+ | 0.1+ |
| 1995 09 30 | 691 | 0.3+ | 0.1− | 2006 03 03 | 691 | 0.2+ | 0.6− | 2006 03 26 | G96 | 0.1+ | 0.1− |
| 1995 09 30 | 691 | 0.0 | 0.3− | 2006 03 03 | 691 | 0.3− | 0.4+ | 2006 03 26 | G96 | 0.3+ | 0.1+ |
| 1995 10 15 | 691 | 0.1+ | 0.2+ | 2006 03 03 | 691 | 0.1+ | 0.1− | 2006 03 26 | G96 | 0.3+ | 0.6+ |
| 1995 10 15 | 691 | 0.5− | 0.1− | 2006 03 04 | G96 | 0.5− | 0.2− | | | | |

**2006 EU$_{34}$ = 2003 UG$_{194}$ = 2004 YF$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.74646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18810523 | $\omega$ | 260.93972 | | +0.99803677 | +0.02726284 | |
| $a$ | 3.0167232 | $\Omega$ | 97.48356 | | −0.00309664 | +0.92066653 | |
| $e$ | 0.0904016 | $i$ | 3.26017 | | −0.06255404 | +0.38939682 | |
| $P$ | 5.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 17 | 691 | 0.4+ | 0.4+ | 2003 10 24 | 704 | 0.8+ | 1.1+ | 2006 02 27 | 691 | 0.3+ | 0.3+ |
| 1993 12 17 | 691 | 0.4− | 0.3+ | 2004 12 16 | 691 | 0.1+ | 0.4− | 2006 02 27 | 691 | 0.5+ | 0.0 |
| 1993 12 17 | 691 | 0.2− | 0.2− | 2004 12 16 | 691 | 0.6+ | 0.6+ | 2006 02 27 | 691 | 0.1+ | 0.1+ |
| 2003 10 20 | 704 | 1.1− | 0.9+ | 2004 12 16 | 691 | 0.4− | 0.4− | 2006 03 03 | 691 | 0.3+ | 0.1+ |
| 2003 10 20 | 704 | 0.3− | 1.5+ | 2004 12 19 | G96 | 0.4− | 0.2− | 2006 03 03 | 691 | 0.5+ | 0.2− |
| 2003 10 20 | 704 | 0.7− | 1.5+ | 2004 12 19 | G96 | 0.3− | 0.5− | 2006 03 03 | 691 | 0.6+ | 0.1− |
| 2003 10 20 | 704 | (1.9− | 1.3+) | 2004 12 19 | G96 | 0.3− | 0.2− | 2006 03 04 | G96 | 0.3− | 0.1+ |
| 2003 10 20 | 704 | 1.7− | 1.4+ | 2004 12 19 | G96 | 0.6− | 0.4− | 2006 03 04 | G96 | 0.5− | 0.4+ |
| 2003 10 24 | 704 | (0.4− | 2.3+) | 2005 03 16 | G96 | 0.3− | 0.1− | 2006 03 04 | G96 | 0.3− | 0.1− |
| 2003 10 24 | 704 | 0.1+ | 0.6+ | 2005 03 16 | G96 | 0.4− | 0.0 | 2006 03 04 | G96 | 0.1+ | 0.2+ |
| 2003 10 24 | 704 | 0.5− | 1.9+ | 2005 03 16 | G96 | 0.4− | 0.1+ | 2006 07 26 | 568 | 0.2− | 0.1+ |
| 2003 10 24 | 704 | 0.0 | 0.1+ | 2005 03 16 | G96 | 0.1− | 0.5− | 2006 07 26 | 568 | 0.1+ | 0.2+ |

**2006 EK$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.19992 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18492112 | $\omega$ | 262.42643 | | −0.59141049 | −0.80513882 | |
| $a$ | 3.0512541 | $\Omega$ | 223.93167 | | +0.76284338 | −0.54072397 | |
| $e$ | 0.0819030 | $i$ | 3.68197 | | +0.26134959 | −0.24365769 | |
| $P$ | 5.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.2− | 0.5+ | 2003 09 28 | 645 | 0.2− | 0.0 | 2006 03 04 | 691 | 0.0 | 0.1+ |
| 2003 09 16 | 691 | 0.5+ | 0.5+ | 2004 12 11 | 691 | 0.2+ | 0.0 | 2006 03 05 | 691 | 0.3+ | 0.1+ |
| 2003 09 16 | 691 | 0.3+ | 0.0 | 2004 12 11 | 691 | 0.1+ | 0.1− | 2006 03 05 | 691 | 0.1+ | 0.5+ |
| 2003 09 26 | 645 | 0.0 | 0.1+ | 2004 12 11 | 691 | 0.3− | 0.1+ | 2006 03 05 | 691 | 0.1− | 0.3+ |
| 2003 09 26 | 645 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.2+ | 0.6+ | | | | |
| 2003 09 28 | 645 | 0.1− | 0.0 | 2006 03 04 | 691 | 0.3+ | 0.3+ | | | | |

**2006 EO$_{40}$ = 2003 QD$_{80}$ = 2004 XC$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.80304 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21310379 | $\omega$ | 61.62148 | | +0.79675665 | −0.60262903 | |
| $a$ | 2.7759306 | $\Omega$ | 335.35422 | | +0.50988343 | +0.71030047 | |
| $e$ | 0.0510135 | $i$ | 6.18279 | | +0.32434199 | +0.36374646 | |
| $P$ | 4.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 691 | 0.7− | 0.2− | 2004 12 12 | 644 | 0.4+ | 0.2+ | 2006 03 04 | 691 | 0.0 | 0.2+ |
| 2001 02 01 | 691 | 0.9− | 0.3+ | 2004 12 12 | 644 | 0.5+ | 0.2+ | 2006 03 04 | 691 | 0.1− | 0.8+ |
| 2001 02 01 | 691 | 1.0− | 0.4− | 2004 12 12 | 644 | 0.6+ | 0.2+ | 2006 03 04 | 691 | 0.2− | 0.2+ |
| 2001 03 02 | 691 | 0.1+ | 0.2− | 2004 12 15 | 703 | 0.1+ | 0.2+ | 2006 03 05 | 691 | 0.1+ | 0.1+ |
| 2001 03 02 | 691 | 0.4+ | 0.4− | 2004 12 15 | 703 | 0.1− | 0.2− | 2006 03 05 | 691 | 0.2− | 0.2+ |
| 2001 03 02 | 691 | 0.4+ | 0.3− | 2004 12 15 | 703 | (3.7− | 2.3+) | 2006 03 05 | 691 | 0.3− | 0.6+ |
| 2001 03 15 | 691 | 0.6+ | 0.3− | 2004 12 15 | 703 | (0.4+ | 3.7+) | 2006 03 08 | 691 | 0.3+ | 0.1+ |
| 2001 03 15 | 691 | 0.1+ | 0.2− | 2004 12 20 | 703 | 1.8+ | 0.5− | 2006 03 08 | 691 | 0.4+ | 0.0 |
| 2001 03 15 | 691 | 0.4+ | 0.3+ | 2004 12 20 | 703 | 0.1− | 0.6− | 2006 03 08 | 691 | 0.4+ | 0.1+ |
| 2003 08 22 | 644 | 0.3− | 0.8+ | 2004 12 20 | 703 | 0.2+ | 0.5− | 2006 03 09 | 691 | 0.5+ | 0.2− |
| 2003 08 22 | 644 | 0.8− | 1.0+ | 2004 12 20 | 703 | 0.4− | 0.1− | 2006 03 09 | 691 | 0.1+ | 0.1− |
| 2003 08 22 | 644 | 0.2− | 0.8+ | 2005 12 03 | 568 | 0.1+ | 0.1+ | 2006 03 09 | 691 | 0.1− | 0.1+ |
| 2003 08 26 | 807 | 0.1− | 0.3+ | 2005 12 03 | 568 | 0.1+ | 0.1+ | | | | |
| 2003 08 26 | 807 | 0.3− | 0.8+ | 2005 12 03 | 568 | 0.2+ | 0.1+ | | | | |

**2006 EB$_{41}$ = 2004 XB$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.82754 | | (2000.0) | | | |
| $n$ | 0.16894436 | $\omega$ | 357.41422 | | −0.58225177 | +0.81224091 |
| $a$ | 3.2407106 | $\Omega$ | 236.97433 | | −0.74516269 | −0.55053336 |
| $e$ | 0.0182702 | $i$ | 2.41447 | | −0.32513911 | −0.19281527 |
| $P$ | 5.83 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.1− | 0.6+ | 2002 09 14 | 644 | 0.4− | 0.3− | 2005 01 16 | 691 | 0.1− | 0.2+ |
| 2002 07 22 | 644 | 0.1+ | 0.1+ | 2002 09 14 | 644 | 0.4− | 0.1+ | 2005 01 16 | 691 | 0.3− | 0.2+ |
| 2002 08 07 | 644 | 0.4− | 0.0 | 2003 10 23 | 291 | 0.2− | 0.1+ | 2005 01 16 | 691 | 0.1− | 0.5− |
| 2002 08 07 | 644 | 0.6− | 0.4− | 2003 10 23 | 291 | 0.1− | 0.1+ | 2006 03 04 | 691 | 0.1+ | 0.2+ |
| 2002 08 07 | 644 | 0.0 | 0.2+ | 2003 10 23 | 291 | 0.2− | 0.4+ | 2006 03 04 | 691 | 0.1− | 0.5+ |
| 2002 08 16 | 644 | 0.3− | 0.5+ | 2003 11 19 | 291 | 0.0 | 0.5+ | 2006 03 04 | 691 | 0.2+ | 0.1+ |
| 2002 08 16 | 644 | 0.1+ | 0.5+ | 2003 11 19 | 291 | 0.1+ | 0.3+ | 2006 03 05 | 691 | 0.3+ | 0.1+ |
| 2002 08 16 | 644 | 0.3− | 0.5+ | 2003 11 19 | 291 | 0.0 | 0.3+ | 2006 03 05 | 691 | 0.0 | 0.3+ |
| 2002 08 17 | 644 | 0.1+ | 0.8+ | 2004 12 13 | 691 | 0.6+ | 0.0 | 2006 03 05 | 691 | 0.1+ | 0.2+ |
| 2002 08 17 | 644 | 0.4+ | 0.6+ | 2004 12 13 | 691 | 0.3− | 0.0 | 2006 03 09 | 691 | 0.3+ | 0.1− |
| 2002 08 27 | 644 | 0.0 | 0.6+ | 2004 12 13 | 691 | 0.3− | 0.1− | 2006 03 09 | 691 | 0.1− | 0.5+ |
| 2002 08 27 | 644 | 0.0 | 0.5+ | 2004 12 18 | 691 | 0.2+ | 0.4+ | 2006 03 09 | 691 | 0.1+ | 0.3+ |
| 2002 08 27 | 644 | 0.4+ | 0.3+ | 2004 12 18 | 691 | 0.0 | 0.0 | | | | |
| 2002 09 14 | 644 | 0.0 | 0.3− | 2004 12 18 | 691 | 0.1+ | 0.6− | | | | |

**2006 ED$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.19066 | | (2000.0) | | | |
| $n$ | 0.25398044 | $\omega$ | 118.56506 | | +0.60984041 | +0.79218911 |
| $a$ | 2.4694630 | $\Omega$ | 189.11993 | | −0.76842093 | +0.58392617 |
| $e$ | 0.2013488 | $i$ | 8.36019 | | −0.19396894 | +0.17738840 |
| $P$ | 3.88 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 22 | 926 | 0.3+ | 0.2− | 2003 09 02 | 704 | 0.9− | 0.8+ | 2003 09 29 | 691 | 0.3+ | 0.1+ |
| 2003 06 22 | 926 | 0.1− | 0.4− | 2003 09 02 | 704 | 1.8− | 0.2+ | 2003 09 29 | 691 | 0.4+ | 0.0 |
| 2003 06 22 | 926 | 0.1+ | 0.0 | 2003 09 02 | 704 | 0.5− | 0.0 | 2006 03 04 | 691 | 0.0 | 0.0 |
| 2003 07 23 | 644 | 0.1− | 0.2− | 2003 09 02 | 704 | 0.9− | 0.0 | 2006 03 04 | 691 | 0.3− | 0.4+ |
| 2003 07 23 | 644 | 0.0 | 0.2+ | 2003 09 02 | 704 | 1.0− | 0.4+ | 2006 03 04 | 691 | 0.1+ | 0.3+ |
| 2003 07 23 | 644 | 0.7+ | 0.2+ | 2003 09 18 | 704 | 0.8− | 0.3− | 2006 03 05 | 691 | 0.4+ | 0.1− |
| 2003 08 01 | 704 | 0.4+ | 0.1+ | 2003 09 18 | 704 | 1.0− | 0.3+ | 2006 03 05 | 691 | 0.0 | 0.2− |
| 2003 08 01 | 704 | 0.4+ | 0.0 | 2003 09 18 | 704 | 0.1+ | 0.2+ | 2006 03 05 | 691 | 0.0 | 0.1− |
| 2003 08 01 | 704 | 0.4+ | 0.5+ | 2003 09 18 | 704 | 0.6− | 0.9+ | 2006 03 25 | G96 | 0.1− | 0.1+ |
| 2003 08 01 | 704 | 0.2+ | 0.2+ | 2003 09 24 | 644 | 0.3+ | 0.2+ | 2006 03 25 | G96 | 0.3− | 0.1+ |
| 2003 08 28 | 608 | 0.3+ | 1.3− | 2003 09 24 | 644 | 0.1− | 0.4+ | 2006 03 25 | G96 | 0.3− | 0.1− |
| 2003 08 28 | 608 | 0.7+ | 1.6− | 2003 09 24 | 644 | 0.1+ | 0.4+ | 2006 03 25 | G96 | 0.8+ | 0.2+ |
| 2003 08 28 | 608 | 0.4+ | 0.5− | 2003 09 29 | 691 | 0.3+ | 0.1+ | | | | |

**2006 EF$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 168.56918 | | (2000.0) | | | |
| $n$ | 0.18837698 | $\omega$ | 52.00849 | | +0.73999662 | −0.67203370 |
| $a$ | 3.0138213 | $\Omega$ | 350.10759 | | +0.55505007 | +0.63352250 |
| $e$ | 0.0881788 | $i$ | 9.32987 | | +0.37990055 | +0.38343181 |
| $P$ | 5.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 645 | 0.1− | 0.0 | 2003 10 17 | 691 | 0.3+ | 0.0 | 2006 02 25 | G96 | 0.8− | 0.1+ |
| 2003 09 26 | 645 | 0.2− | 0.0 | 2003 10 17 | 691 | 0.4+ | 0.1+ | 2006 03 04 | 691 | 0.5+ | 0.4+ |
| 2003 09 27 | 691 | 0.1+ | 0.2+ | 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.4+ | 0.3+ |
| 2003 09 27 | 691 | 0.2+ | 0.4+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 03 04 | 691 | 0.1− | 0.2− |
| 2003 09 27 | 691 | 0.1+ | 0.2+ | 2003 10 23 | 645 | 0.1+ | 0.0 | 2006 03 05 | 691 | 0.2+ | 0.1+ |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.3+ | 0.3− |
| 2003 09 29 | 645 | 0.0 | 0.0 | 2003 11 19 | 645 | 0.1− | 0.0 | 2006 03 05 | 691 | 0.6− | 1.1+ |
| 2003 10 16 | 644 | 0.6+ | 0.5+ | 2003 11 19 | 645 | 0.0 | 0.0 | 2006 03 09 | 691 | 0.2− | 0.1+ |
| 2003 10 16 | 644 | 0.1+ | 0.4+ | 2006 02 25 | G96 | 0.1− | 0.1− | 2006 03 09 | 691 | 0.5+ | 0.4− |
| 2003 10 16 | 644 | 0.5+ | 0.3+ | 2006 02 25 | G96 | 0.2− | 0.6− | 2006 03 09 | 691 | 0.2− | 0.0 |
| 2003 10 17 | 691 | 0.1+ | 0.0 | 2006 02 25 | G96 | 0.1− | 0.4− | | | | |

**2006 EC$_{42}$ = 2004 XT$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 120.40289 | | (2000.0) | | | |
| $n$ | 0.18489241 | $\omega$ | 180.07760 | | +0.05672495 | −0.99758708 |
| $a$ | 3.0515700 | $\Omega$ | 266.67062 | | +0.91602637 | +0.06794969 |
| $e$ | 0.0825815 | $i$ | 2.29797 | | +0.39708685 | −0.01424281 |
| $P$ | 5.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.3− | 0.4+ | 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.1+ | 0.4+ |
| 2003 09 16 | 691 | 0.5− | 0.5+ | 2004 12 03 | 691 | 0.1+ | 0.0 | 2006 03 05 | 691 | 0.3+ | 0.7+ |
| 2003 09 16 | 691 | 0.2− | 0.4+ | 2004 12 03 | 691 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.1+ | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.1+ | 2004 12 03 | 691 | 0.1− | 0.1+ | 2006 03 05 | 691 | 0.1+ | 0.5+ |
| 2003 09 26 | 645 | 0.0 | 0.1+ | 2004 12 16 | 704 | 0.3+ | 0.1+ | 2006 03 09 | 691 | 0.3+ | 0.5+ |
| 2003 09 28 | 691 | 0.1+ | 0.2+ | 2004 12 16 | 704 | 0.1− | 1.0+ | 2006 03 09 | 691 | 0.2− | 0.7+ |
| 2003 09 28 | 691 | 0.2+ | 0.1− | 2004 12 16 | 704 | 0.5− | 0.3− | 2006 03 09 | 691 | 0.4+ | 0.1+ |
| 2003 09 28 | 691 | 0.1− | 0.2+ | 2006 03 04 | 691 | 0.3+ | 0.2+ | | | | |
| 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.0 | 0.0 | | | | |

**2006 EA$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.70404 | | (2000.0) | | | |
| $n$ | 0.17173758 | $\omega$ | 167.13586 | | +0.25045874 | +0.96078357 |
| $a$ | 3.2054757 | $\Omega$ | 117.26336 | | −0.89967589 | +0.27638973 |
| $e$ | 0.1689195 | $i$ | 7.69457 | | −0.35756637 | −0.02244209 |
| $P$ | 5.74 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 699 | 0.8+ | 0.2+ | 2002 08 26 | 644 | 0.3− | 0.4+ | 2006 02 22 | 703 | 0.1+ | 0.4− |
| 2001 05 15 | 699 | 0.3− | 1.7+ | 2002 08 26 | 644 | 0.5− | 0.5+ | 2006 02 22 | 703 | 1.1+ | 0.4− |
| 2001 05 15 | 699 | 0.7+ | 0.2− | 2003 11 18 | 691 | 0.2− | 0.2+ | 2006 02 22 | 703 | 1.5− | 0.8+ |
| 2001 05 15 | 699 | 0.3+ | 1.0+ | 2003 11 18 | 691 | 0.2− | 0.1− | 2006 02 22 | 703 | 0.7− | 0.6− |
| 2001 05 29 | 704 | 0.1− | 0.3+ | 2003 11 18 | 691 | 0.2− | 0.3+ | 2006 02 22 | 703 | 1.0− | 0.1− |
| 2001 05 29 | 704 | 0.2− | 1.5+ | 2003 12 22 | 691 | 0.2− | 0.1+ | 2006 02 22 | 703 | 0.3+ | 0.1− |
| 2001 05 29 | 704 | 0.1− | 0.4+ | 2003 12 22 | 691 | 0.2− | 0.3− | 2006 02 22 | 703 | 0.1− | 0.0 |
| 2002 08 15 | 699 | 1.1− | 2.1+ | 2003 12 22 | 691 | 0.1+ | 0.2+ | 2006 03 04 | 691 | 0.2+ | 0.3+ |
| 2002 08 15 | 699 | 0.4+ | 0.5+ | 2004 12 18 | 691 | 0.4+ | 0.7+ | 2006 03 04 | 691 | 0.1+ | 0.3+ |
| 2002 08 15 | 699 | 1.6+ | 1.1+ | 2004 12 18 | 691 | 0.4+ | 0.5+ | 2006 03 04 | 691 | 0.1+ | 0.2+ |
| 2002 08 15 | 699 | 0.1− | 0.8+ | 2004 12 18 | 691 | 0.6− | 0.3− | 2006 03 08 | 691 | 0.1+ | 0.3+ |
| 2002 08 19 | 644 | 0.1− | 0.6+ | 2005 01 16 | 691 | 0.2+ | 0.1+ | 2006 03 08 | 691 | 0.3+ | 0.4+ |
| 2002 08 19 | 644 | 0.7− | 0.8+ | 2005 01 16 | 691 | 0.3+ | 0.2+ | 2006 03 08 | 691 | 0.1+ | 0.1− |
| 2002 08 19 | 644 | 0.3− | 0.3+ | 2005 01 16 | 691 | 0.1+ | 0.0 | | | | |
| 2002 08 26 | 644 | 0.2− | 0.2+ | 2006 02 22 | 703 | 1.6− | 1.0− | | | | |

**2006 EM$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.25313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24433080 | $\omega$ | 144.09745 | | +0.51462293 | +0.85268150 | |
| $a$ | 2.5340620 | $\Omega$ | 156.47302 | | −0.82984167 | +0.52172395 | |
| $e$ | 0.1634113 | $i$ | 13.02797 | | −0.21569895 | +0.02717296 | |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 691 | 0.0 | 0.3+ | 2003 09 01 | 704 | 0.6− | 1.0+ | 2006 03 04 | 691 | 0.4+ | 0.0 |
| 2002 03 09 | 691 | 0.1+ | 0.1− | 2003 09 22 | 291 | 0.3+ | 0.0 | 2006 03 04 | 691 | 0.4+ | 0.0 |
| 2002 03 09 | 691 | 0.0 | 0.2+ | 2003 09 22 | 291 | 0.4+ | 0.0 | 2006 03 04 | 691 | 0.8− | 0.1+ |
| 2003 08 05 | 704 | 0.3+ | 1.0− | 2003 09 22 | 291 | 0.3+ | 0.1− | 2006 03 08 | 691 | 0.2+ | 0.2− |
| 2003 08 05 | 704 | 0.9− | 0.2− | 2003 09 25 | 644 | 0.2− | 0.4+ | 2006 03 08 | 691 | 0.1− | 0.0 |
| 2003 08 05 | 704 | 0.6− | 0.3− | 2003 09 25 | 644 | 0.2+ | 0.2+ | 2006 03 08 | 691 | 0.1+ | 0.1+ |
| 2003 08 05 | 704 | 0.2+ | 0.3− | 2003 09 25 | 644 | 0.1+ | 0.0 | 2006 03 09 | G96 | 0.2+ | 0.0 |
| 2003 08 05 | 704 | 0.1− | 0.6− | 2006 01 26 | G96 | 0.3− | 0.2− | 2006 03 09 | G96 | 0.4+ | 0.0 |
| 2003 09 01 | 704 | 1.5− | 0.6+ | 2006 01 26 | G96 | 0.4− | 0.0 | 2006 03 09 | G96 | 0.4+ | 0.0 |
| 2003 09 01 | 704 | 0.3− | 0.7+ | 2006 01 26 | G96 | 0.0 | 0.2− | 2006 03 09 | G96 | 0.4− | 0.4− |
| 2003 09 01 | 704 | 0.0 | 0.3+ | 2006 01 26 | G96 | 0.8− | 0.1− | | | | |

**2006 EZ$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.01824 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22006524 | $\omega$ | 141.06670 | | +0.76009452 | +0.64979615 | |
| $a$ | 2.7170758 | $\Omega$ | 178.38477 | | −0.62959004 | +0.73817893 | |
| $e$ | 0.1722808 | $i$ | 9.42061 | | −0.16084996 | +0.18126451 | |
| $P$ | 4.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 599 | 0.3− | 0.3+ | 2003 09 29 | 704 | 0.3− | 1.1+ | 2006 02 25 | 691 | 0.1− | 0.1+ |
| 2003 09 19 | 599 | 0.2− | 0.5+ | 2003 09 29 | 704 | 0.2+ | 0.1+ | 2006 02 25 | 691 | 0.2+ | 0.2− |
| 2003 09 19 | 599 | 0.3− | 0.4+ | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 02 25 | 691 | 0.1+ | 0.0 |
| 2003 09 19 | 599 | (0.8− | 3.4+) | 2003 09 29 | 645 | 0.1+ | 0.1− | 2006 03 04 | 691 | 0.1− | 0.2− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 09 29 | 691 | 0.0 | 0.3+ | 2006 03 04 | 691 | 0.1+ | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 09 29 | 691 | 0.2− | 0.3+ | 2006 03 04 | 691 | 0.3− | 0.1+ |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2003 09 29 | 691 | 0.2− | 0.3+ | 2006 03 08 | 691 | 0.4+ | 0.2− |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2003 10 01 | 699 | (2.9+ | 0.6+) | 2006 03 08 | 691 | 0.4+ | 0.3+ |
| 2003 09 29 | 704 | 0.8+ | 0.1+ | 2003 10 01 | 699 | 0.5− | 0.0 | 2006 03 08 | 691 | 0.6− | 0.2+ |
| 2003 09 29 | 704 | 0.1+ | 0.4− | 2003 10 01 | 699 | 0.4− | 0.2− | | | | |
| 2003 09 29 | 704 | 1.5− | 0.8+ | 2003 10 01 | 699 | 0.4+ | 1.3+ | | | | |

**2006 EA$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.96402 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22668413 | $\omega$ | 43.24055 | | −0.73599422 | +0.67698691 | |
| $a$ | 2.6639248 | $\Omega$ | 179.36490 | | −0.64528639 | −0.70103119 | |
| $e$ | 0.1958260 | $i$ | 5.76689 | | −0.20473882 | −0.22415173 | |
| $P$ | 4.35 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 809 | 0.1− | 0.4− | 2002 06 13 | 291 | 0.3+ | 0.2+ | 2006 03 04 | 691 | 0.2+ | 0.4+ |
| 2002 05 12 | 644 | 0.6− | 0.4− | 2003 09 18 | 691 | 0.4+ | 0.3+ | 2006 03 04 | 691 | 0.0 | 0.3+ |
| 2002 05 12 | 644 | 0.7− | 0.7− | 2003 09 18 | 691 | 0.2− | 0.3+ | 2006 03 08 | 691 | 0.0 | 0.7+ |
| 2002 05 12 | 644 | 0.6− | 0.5− | 2003 09 18 | 691 | 0.0 | 0.2+ | 2006 03 08 | 691 | 0.0 | 0.3+ |
| 2002 06 01 | 704 | 1.0− | 0.6+ | 2003 09 26 | 645 | 0.0 | 0.1+ | 2006 03 08 | 691 | 0.3+ | 0.3+ |
| 2002 06 01 | 704 | 0.0 | 0.2− | 2003 09 26 | 645 | 0.2+ | 0.1+ | 2006 03 24 | 699 | 0.1+ | 2.1+ |
| 2002 06 01 | 704 | 0.5− | 0.4+ | 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 03 24 | 699 | 0.8− | 1.2+ |
| 2002 06 01 | 704 | 0.1− | 0.0 | 2003 09 28 | 645 | 0.1− | 0.1+ | 2006 03 24 | 699 | 0.3+ | 0.9+ |
| 2002 06 01 | 704 | 0.3− | 0.2+ | 2003 09 29 | 645 | 0.2− | 0.2+ | 2006 03 24 | 699 | 2.1+ | 1.3+ |
| 2002 06 13 | 291 | 0.4+ | 0.4+ | 2003 09 29 | 645 | 0.2− | 0.2+ | | | | |
| 2002 06 13 | 291 | 0.3+ | 0.0 | 2006 03 04 | 691 | 0.2+ | 0.3+ | | | | |

**2006 EX$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.84243 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00343116 | $\omega$ | 163.43234 | | +0.13084651 | +0.87834249 | |
| $a$ | 43.5353602 | $\Omega$ | 247.92183 | | +0.84400791 | +0.14461651 | |
| $e$ | 0.9408075 | $i$ | 150.25386 | | +0.52012482 | −0.45563202 | |
| $P$ | 287 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 03 05 | 703 | 0.4+ | 0.3− | 2006 05 01 | 290 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.3− |
| 2006 03 05 | 703 | 0.8− | 0.0 | 2006 05 01 | 290 | 0.1+ | 0.2− | 2006 11 20 | H45 | 0.0 | 0.0 |
| 2006 03 05 | 703 | 0.3+ | 0.5− | 2006 05 01 | 290 | 0.1+ | 0.2− | 2006 11 20 | H45 | 0.3− | 0.1− |
| 2006 03 05 | 703 | 0.2− | 0.9+ | 2006 05 08 | 461 | 0.9− | 1.1− | 2006 11 20 | H45 | 0.4+ | 0.1+ |
| 2006 03 05 | 703 | 0.0 | 0.0 | 2006 05 08 | 461 | 0.2− | 0.2+ | 2006 11 20 | H45 | 0.3+ | 0.2− |
| 2006 03 05 | 703 | 0.3− | 0.2− | 2006 05 26 | 693 | 0.1+ | 0.1− | 2006 11 20 | H45 | 0.1− | 0.0 |
| 2006 03 05 | 703 | 0.1+ | 0.2− | 2006 05 26 | 693 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2006 03 05 | 703 | 0.2+ | 0.1+ | 2006 05 26 | 693 | 0.1+ | 0.1− | 2006 11 22 | 704 | 1.0− | 0.8+ |
| 2006 03 06 | J95 | 0.1− | 0.3− | 2006 05 26 | 693 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2006 03 06 | J95 | 0.0 | 0.2− | 2006 08 27 | 204 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.5− | 0.1− |
| 2006 03 06 | J95 | 0.3− | 0.4− | 2006 09 02 | 204 | 0.1− | 0.0 | 2006 11 23 | H45 | 0.2+ | 0.1+ |
| 2006 03 06 | G96 | 0.4+ | 0.2+ | 2006 09 02 | 204 | 0.3− | 0.2+ | 2006 11 23 | H45 | 0.0 | 0.0 |
| 2006 03 06 | G96 | 0.5+ | 0.3+ | 2006 09 02 | 147 | 0.3− | 0.3+ | 2006 11 23 | H45 | 0.2+ | 0.1+ |
| 2006 03 06 | G96 | 0.1− | 0.0 | 2006 09 20 | 693 | 0.0 | 0.2+ | 2006 11 23 | H45 | 0.2− | 0.0 |
| 2006 03 06 | G96 | 0.1− | 0.5+ | 2006 09 20 | 693 | 0.1+ | 0.1+ | 2006 11 23 | H45 | 0.1− | 0.1− |
| 2006 03 06 | 734 | 0.0 | 0.1+ | 2006 09 20 | 693 | 0.2+ | 0.2+ | 2006 11 23 | H45 | 0.2− | 0.0 |
| 2006 03 06 | 734 | 0.4+ | 0.2− | 2006 09 20 | 693 | 0.0 | 0.0 | 2006 11 24 | H45 | 0.1+ | 0.1+ |
| 2006 03 06 | 734 | 0.7− | 0.2− | 2006 10 16 | 693 | 0.1− | 0.0 | 2006 11 24 | H45 | 0.0 | 0.2− |
| 2006 03 07 | H36 | 1.5+ | 0.3− | 2006 10 16 | 693 | 0.1− | 0.0 | 2006 11 24 | H45 | 0.0 | 0.1+ |
| 2006 03 07 | H36 | 0.8− | 0.7− | 2006 10 16 | 693 | 0.2− | 0.1+ | 2006 11 24 | H45 | 0.1+ | 0.1+ |
| 2006 03 08 | G96 | 0.2− | 0.0 | 2006 10 16 | 693 | 0.0 | 0.1− | 2006 11 24 | H45 | 0.0 | 0.2+ |
| 2006 03 08 | G96 | 0.3+ | 0.3+ | 2006 10 28 | 204 | 0.2− | 0.1− | 2006 11 24 | H45 | 0.2− | 0.1+ |
| 2006 03 08 | G96 | 0.4+ | 0.1+ | 2006 10 28 | 204 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.6− |
| 2006 03 08 | G96 | 0.1+ | 0.2+ | 2006 11 14 | 143 | 0.4+ | 0.3+ | 2006 11 29 | 704 | 0.2− | 0.2− |
| 2006 03 09 | G96 | 0.2− | 0.5+ | 2006 11 14 | 143 | 0.5+ | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.0 |
| 2006 03 09 | G96 | 0.3− | 0.3+ | 2006 11 18 | H45 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.2− | 0.4− |
| 2006 03 09 | G96 | 0.2− | 0.3+ | 2006 11 18 | H45 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.3+ |
| 2006 03 09 | G96 | 0.3− | 0.2+ | 2006 11 18 | H45 | 0.1− | 0.2− | 2006 11 30 | 473 | 0.5+ | 1.2− |
| 2006 03 22 | J95 | 0.3− | 0.3+ | 2006 11 18 | H45 | 0.4− | 0.5− | 2006 11 30 | 473 | 0.1− | 0.3+ |
| 2006 03 22 | J95 | 0.1+ | 0.1− | 2006 11 18 | H45 | 0.1− | 0.3− | 2006 11 30 | 473 | 0.7− | 1.9+ |
| 2006 03 22 | J95 | 0.4+ | 0.4+ | 2006 11 18 | H45 | 0.4− | 0.7− | 2006 12 02 | H45 | 0.1− | 0.2− |
| 2006 04 02 | G96 | 0.1+ | 0.5+ | 2006 11 18 | H45 | 0.2+ | 0.4− | 2006 12 02 | H45 | 0.1+ | 0.2− |
| 2006 04 02 | G96 | 0.4+ | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.0 | 2006 12 02 | H45 | 0.0 | 0.1+ |
| 2006 04 02 | G96 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.2+ | 2006 12 02 | H45 | 0.1− | 0.3+ |
| 2006 05 01 | 290 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 1.2+ | 2006 12 02 | H45 | 0.2+ | 0.1− |
| 2006 05 01 | 290 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.7− | 2006 12 02 | H45 | 0.1− | 0.1− |

**2006 EO$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.81032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18470999 | $\omega$ | 95.35732 | | +0.33989619 | −0.93479245 | |
| $a$ | 3.0535787 | $\Omega$ | 334.02354 | | +0.74238673 | +0.33400359 | |
| $e$ | 0.2247799 | $i$ | 13.61708 | | +0.57734957 | +0.12084977 | |
| $P$ | 5.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.0 | 0.6− | 2006 02 01 | 691 | 0.2− | 0.3+ | 2006 03 05 | 691 | 0.0 | 0.1− |
| 1999 11 01 | 704 | 0.7+ | 0.7− | 2006 02 01 | 691 | 0.0 | 0.2+ | 2006 03 05 | 691 | 0.0 | 0.2− |
| 1999 11 01 | 704 | 0.2− | 0.2+ | 2006 02 01 | 691 | 0.1+ | 0.1+ | 2006 03 05 | 691 | 0.2− | 0.3+ |
| 2004 08 11 | 644 | 0.2− | 0.3+ | 2006 02 04 | 704 | 0.7+ | 0.8− | 2006 03 05 | 691 | 0.3+ | 0.2− |
| 2004 08 11 | 644 | 0.1− | 0.2− | 2006 02 04 | 704 | 2.7+ | 0.9− | 2006 03 09 | 691 | 0.7− | 0.0 |
| 2004 08 11 | 644 | 0.6+ | 0.2− | 2006 02 04 | 704 | 0.1− | 0.5− | 2006 03 09 | 691 | 0.2+ | 0.2+ |
| 2004 09 10 | 704 | 0.3− | 0.3− | 2006 02 04 | 704 | 1.1− | 0.2− | 2006 03 09 | 691 | 0.8− | 0.7+ |
| 2004 09 10 | 704 | 0.1+ | 0.5+ | 2006 02 22 | 703 | 0.1+ | 2.8− | 2006 03 24 | G96 | 0.2− | 0.1− |
| 2004 09 10 | 704 | 0.3+ | 0.6− | 2006 02 22 | 703 | 0.9− | 0.1− | 2006 03 24 | G96 | 0.2− | 0.4+ |
| 2004 09 10 | 704 | 1.3− | 1.6+ | 2006 02 22 | 703 | 0.9+ | 1.5− | 2006 03 24 | G96 | 0.2+ | 0.1− |
| 2006 01 23 | 691 | 0.2+ | 0.1+ | 2006 02 22 | 703 | 0.1+ | 0.9+ | 2006 03 24 | G96 | 0.3− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 01 23 | 691 | 0.1+ | 0.1− | 2006 03 05 | 691 | 0.1− | 0.2+ | | | | | |
| 2006 01 23 | 691 | 0.3+ | 0.2+ | 2006 03 05 | 691 | 0.2+ | 0.1+ | | | | | |

**2006 EP$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.90605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22876306 | $\omega$ | 37.91735 | | −0.96499540 | +0.26083220 | |
| $a$ | 2.6477610 | $\Omega$ | 157.15679 | | −0.25456245 | −0.90639268 | |
| $e$ | 0.1452059 | $i$ | 4.04648 | | −0.06310188 | −0.33229336 | |
| $P$ | 4.31 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 15 | 699 | 1.0+ | 0.2− | 2006 01 26 | 691 | 0.1+ | 0.1+ | 2006 03 05 | 691 | 0.1+ | 0.1+ | |
| 2002 04 15 | 699 | 0.5− | 0.3+ | 2006 02 04 | G96 | 0.2+ | 0.0 | 2006 03 05 | 691 | 0.0 | 0.1− | |
| 2002 04 15 | 699 | 0.1− | 0.3+ | 2006 02 04 | G96 | 0.5− | 1.2+ | 2006 03 09 | 699 | 0.0 | 0.7− | |
| 2002 04 15 | 699 | 0.1+ | 1.2+ | 2006 02 04 | G96 | 0.6+ | 0.1+ | 2006 03 09 | 699 | 1.4− | 0.2− | |
| 2003 08 04 | 691 | 0.0 | 0.1+ | 2006 02 21 | G96 | 0.4− | 0.0 | 2006 03 09 | 699 | 0.6− | 0.2− | |
| 2003 08 04 | 691 | 0.1+ | 0.2+ | 2006 02 21 | G96 | 0.4− | 0.3− | 2006 03 09 | 699 | 0.1− | 1.5− | |
| 2003 08 04 | 691 | 0.2− | 0.2− | 2006 02 21 | G96 | 0.0 | 0.2− | 2006 03 26 | 691 | 0.0 | 0.1− | |
| 2006 01 04 | G96 | 0.9− | 0.5+ | 2006 02 21 | 699 | 0.2− | 0.1− | 2006 03 26 | 691 | 0.0 | 0.2+ | |
| 2006 01 04 | G96 | 2.0− | 0.2+ | 2006 02 21 | G96 | 0.0 | 0.2− | 2006 03 26 | 691 | 0.2− | 0.1− | |
| 2006 01 04 | G96 | 0.2+ | 0.2+ | 2006 02 21 | 699 | 0.4+ | 0.6− | 2006 05 28 | G96 | 0.4− | 0.6− | |
| 2006 01 04 | G96 | 0.2− | 0.1+ | 2006 02 21 | 699 | 1.5+ | 0.4+ | 2006 05 28 | G96 | 0.3− | 0.2− | |
| 2006 01 26 | 691 | 0.3+ | 0.4+ | 2006 02 21 | 699 | 1.3+ | 0.9− | 2006 05 28 | G96 | 0.3− | 0.5− | |
| 2006 01 26 | 691 | 0.2+ | 0.3+ | 2006 03 05 | 691 | 0.1+ | 0.2− | 2006 05 28 | G96 | 0.2+ | 0.0 | |

**2006 EP$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.08364 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30587287 | $\omega$ | 115.40203 | | +0.49173126 | +0.87071145 | |
| $a$ | 2.1816015 | $\Omega$ | 184.07837 | | −0.83337448 | +0.46798740 | |
| $e$ | 0.1618403 | $i$ | 6.35317 | | −0.25236352 | +0.15116008 | |
| $P$ | 3.22 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 25 | 691 | 0.5− | 0.8+ | 2003 04 24 | 691 | 0.4− | 0.7− | 2006 03 09 | 691 | 0.0 | 0.3+ | |
| 2000 06 25 | 691 | 0.5+ | 0.1− | 2003 05 02 | 691 | 0.4+ | 1.0+ | 2006 03 09 | 691 | 0.3− | 0.0 | |
| 2000 06 25 | 691 | 0.5+ | 0.1+ | 2003 05 02 | 691 | 0.6+ | 0.7+ | 2006 04 02 | G96 | 0.1+ | 0.3− | |
| 2000 07 05 | 691 | 0.1− | 0.5− | 2003 05 02 | 691 | 0.8+ | 0.7+ | 2006 04 02 | G96 | 0.0 | 0.3− | |
| 2000 07 05 | 691 | 0.3− | 0.3− | 2003 05 08 | 691 | 0.3− | 0.1− | 2006 04 02 | G96 | 0.0 | 0.2− | |
| 2000 07 05 | 691 | 0.1− | 0.5− | 2003 05 08 | 691 | 0.3− | 0.1+ | 2006 04 02 | G96 | 0.0 | 0.2− | |
| 2003 04 05 | 691 | 0.3− | 0.3+ | 2003 05 08 | 691 | 0.5− | 0.4− | 2006 04 21 | G96 | 0.7− | 0.6− | |
| 2003 04 05 | 691 | 0.2− | 0.3+ | 2006 03 05 | 691 | 0.1+ | 0.1− | 2006 04 21 | G96 | 0.0 | 0.3+ | |
| 2003 04 05 | 691 | 0.0 | 0.1+ | 2006 03 05 | 691 | 0.0 | 0.0 | 2006 04 21 | G96 | 0.3− | 0.1− | |
| 2003 04 24 | 691 | 0.3+ | 0.5− | 2006 03 05 | 691 | 0.2+ | 0.1− | 2006 04 21 | G96 | 0.1− | 0.3− | |
| 2003 04 24 | 691 | 0.1− | 0.6− | 2006 03 09 | 691 | 0.1− | 0.6− | | | | | |

**2006 ED$_{58}$ = 1991 PR$_{28}$ = 2004 XH$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.36722 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24255728 | $\omega$ | 35.52449 | | +0.96425898 | +0.26153178 | |
| $a$ | 2.5463993 | $\Omega$ | 309.25815 | | −0.25401496 | +0.86683338 | |
| $e$ | 0.1559387 | $i$ | 3.14600 | | −0.07537256 | +0.42450092 | |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 08 05 | 809 | 1.2+ | 0.1+ | 2002 04 04 | 644 | 0.9+ | 0.2+ | 2006 01 10 | G96 | 0.3− | 0.5− | |
| 1991 08 05 | 809 | (2.5+ | 0.3+) | 2002 04 04 | 644 | 0.6+ | 0.2+ | 2006 03 03 | G96 | 0.0 | 0.1+ | |
| 1991 08 05 | 809 | 1.0− | 0.1+ | 2004 12 12 | 691 | 0.2− | 0.0 | 2006 03 03 | G96 | 0.3+ | 1.3+ | |
| 1998 03 24 | 691 | 0.5− | 0.2− | 2004 12 12 | 691 | 0.3− | 0.1− | 2006 03 03 | G96 | 0.4− | 0.4+ | |
| 1998 03 24 | 691 | 0.3− | 0.1+ | 2004 12 12 | 691 | 0.2− | 0.2+ | 2006 03 03 | G96 | 0.2− | 0.1+ | |
| 1998 03 24 | 691 | 0.1− | 0.0 | 2004 12 17 | 704 | 0.0 | 0.0 | 2006 03 05 | 691 | 0.2+ | 0.0 | |
| 2001 01 05 | 691 | 0.1− | 0.1− | 2004 12 17 | 704 | 0.5− | 0.1+ | 2006 03 05 | 691 | 0.5+ | 0.3+ | |
| 2001 01 05 | 691 | 0.6+ | 0.0 | 2004 12 17 | 704 | 0.3+ | 0.9+ | 2006 03 05 | 691 | 0.4+ | 0.1− | |
| 2001 01 05 | 691 | 0.2+ | 0.1− | 2004 12 17 | 704 | 0.3+ | 0.1+ | 2006 03 09 | 691 | 0.2− | 0.0 | |
| 2002 03 20 | 695 | 0.9− | 0.0 | 2006 01 10 | G96 | 0.0 | 1.3− | 2006 03 09 | 691 | 0.3+ | 0.1− | |
| 2002 03 20 | 695 | 0.3− | 0.6+ | 2006 01 10 | G96 | 0.4− | 1.3− | 2006 03 09 | 691 | 0.1− | 0.2+ | |
| 2002 04 04 | 644 | 0.6+ | 0.2+ | 2006 01 10 | G96 | 0.6− | 1.1− | | | | | |

**2006 EF$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.75193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25709390 | $\omega$ | 358.23712 | | −0.22687847 | +0.97320628 | |
| $a$ | 2.4494854 | $\Omega$ | 258.64823 | | −0.89309002 | −0.22319587 | |
| $e$ | 0.1498801 | $i$ | 2.18376 | | −0.38847956 | −0.05525527 | |
| $P$ | 3.83 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.0 | 0.4− | 2003 07 24 | 644 | 0.5− | 0.7+ | 2006 01 10 | G96 | 0.3+ | 0.2+ | |
| 2002 02 11 | 704 | 0.0 | 0.5− | 2003 07 24 | 644 | 0.1− | 0.8+ | 2006 01 10 | G96 | 0.2− | 0.2+ | |
| 2002 02 11 | 704 | 0.1− | 0.6− | 2003 07 31 | 599 | 0.0 | 0.2− | 2006 01 10 | G96 | 0.4− | 0.1− | |
| 2002 02 11 | 704 | 0.2− | 0.7− | 2003 07 31 | 599 | 0.3+ | 0.0 | 2006 01 10 | G96 | 0.5− | 0.1− | |
| 2002 02 11 | 704 | 0.5+ | 0.9− | 2003 07 31 | 599 | 0.2+ | 2.2+ | 2006 03 05 | 691 | 0.2+ | 0.1+ | |
| 2002 02 13 | 645 | 0.0 | 0.0 | 2003 08 04 | 704 | 0.3− | 0.2+ | 2006 03 05 | 691 | 0.1+ | 0.3+ | |
| 2002 02 13 | 645 | 0.1− | 0.1− | 2003 08 04 | 704 | 0.2− | 0.6+ | 2006 03 05 | 691 | 0.2+ | 0.4+ | |
| 2002 02 21 | 691 | 0.1− | 0.2+ | 2003 08 04 | 704 | 0.5− | 0.2+ | 2006 03 09 | 691 | 0.1+ | 0.3+ | |
| 2002 02 21 | 691 | 0.0 | 0.5+ | 2004 12 03 | 291 | 0.1− | 0.4+ | 2006 03 09 | 691 | 0.1+ | 0.3+ | |
| 2002 02 21 | 691 | 0.2+ | 0.3+ | 2004 12 03 | 291 | 0.2+ | 0.4+ | 2006 03 09 | 691 | 0.0 | 0.1− | |
| 2003 07 24 | 644 | 0.7− | 0.4+ | 2004 12 03 | 291 | 0.2− | 0.2+ | | | | | |

**2006 EC$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.97987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18585589 | $\omega$ | 311.88560 | | −0.80003830 | −0.59887472 | |
| $a$ | 3.0410146 | $\Omega$ | 191.48070 | | +0.58988165 | −0.77429333 | |
| $e$ | 0.0223075 | $i$ | 10.38703 | | +0.10944570 | −0.20449674 | |
| $P$ | 5.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 13 | 691 | 0.4+ | 0.1+ | 2003 09 27 | 691 | 0.3− | 0.4+ | 2006 03 05 | 691 | 0.2+ | 0.4+ | |
| 1996 05 13 | 691 | 0.3+ | 0.2− | 2003 10 20 | 691 | 0.0 | 0.3+ | 2006 03 05 | 691 | 0.4+ | 0.4+ | |
| 1996 05 13 | 691 | 0.1− | 1.0+ | 2003 10 20 | 691 | 0.2+ | 0.4+ | 2006 03 09 | 691 | 0.3+ | 0.2+ | |
| 2001 05 24 | 645 | 0.0 | 0.1+ | 2003 10 20 | 691 | 0.1+ | 0.4+ | 2006 03 09 | 691 | 0.3+ | 0.4+ | |
| 2001 05 24 | 645 | 0.1− | 0.1+ | 2003 11 16 | 645 | 0.0 | 0.2+ | 2006 03 09 | 691 | 0.1− | 0.1− | |
| 2003 09 20 | 291 | 0.2− | 0.2+ | 2003 11 16 | 645 | 0.0 | 0.2+ | 2006 05 03 | G96 | 0.2− | 0.0 | |
| 2003 09 20 | 291 | 0.2− | 0.1+ | 2006 02 25 | 691 | 0.0 | 0.5+ | 2006 05 03 | G96 | 0.6− | 0.0 | |
| 2003 09 20 | 291 | 0.3− | 0.2+ | 2006 02 25 | 691 | 0.0 | 0.2+ | 2006 05 03 | G96 | 0.9− | 1.4+ | |
| 2003 09 27 | 691 | 0.0 | 0.3+ | 2006 02 25 | 691 | 0.2+ | 0.1+ | 2006 05 03 | G96 | 0.6− | 0.6+ | |
| 2003 09 27 | 691 | 0.2− | 0.2+ | 2006 03 05 | 691 | 0.4+ | 0.4+ | | | | | |

**2006 EM$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.85365 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21152107 | $\omega$ | 119.66806 | | +0.89697599 | +0.44107806 | |
| $a$ | 2.7897607 | $\Omega$ | 214.18413 | | −0.42169179 | +0.83348093 | |
| $e$ | 0.1044702 | $i$ | 3.03378 | | −0.13270312 | +0.33280577 | |
| $P$ | 4.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 05 | 691 | 0.0 | 0.1+ | 2003 10 24 | 704 | 0.3+ | 0.4− | 2006 03 09 | 691 | 0.1+ | 0.2+ | |
| 1997 05 05 | 691 | 0.1− | 0.2+ | 2003 10 24 | 704 | 0.2+ | 0.9− | 2006 03 09 | 691 | 0.4+ | 0.2+ | |
| 1997 05 05 | 691 | 0.1+ | 0.4− | 2003 10 24 | 704 | 1.3− | 1.5− | 2006 03 09 | 691 | 0.4+ | 0.2− | |
| 2003 09 21 | 691 | 0.0 | 0.2+ | 2006 02 25 | 691 | 0.6− | 0.5+ | 2006 05 03 | G96 | 0.3− | 0.7+ | |
| 2003 09 21 | 691 | 0.2+ | 0.3+ | 2006 02 25 | 691 | 0.3− | 0.1+ | 2006 05 03 | G96 | 0.0 | 0.9+ | |
| 2003 09 21 | 691 | 0.2+ | 0.2+ | 2006 02 25 | 691 | 0.1+ | 0.4− | 2006 05 03 | G96 | 0.1− | 0.0 | |
| 2003 10 19 | 691 | 0.1− | 0.1+ | 2006 03 05 | 691 | 0.2− | 0.3+ | 2006 05 03 | G96 | 0.3− | 0.1− | |
| 2003 10 19 | 691 | 0.1− | 0.0 | 2006 03 05 | 691 | 0.2+ | 0.5− | | | | | |
| 2003 10 19 | 691 | 0.1− | 0.3+ | 2006 03 05 | 691 | 0.2+ | 0.0 | | | | | |

**2006 ER$_{71}$ = 2004 XY$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 71.50853 | | (2000.0) | | | |
| $n$ | 0.17584815 | $\omega$ | 23.87070 | | −0.67988578 | −0.73331424 |
| $a$ | 3.1553257 | $\Omega$ | 108.96411 | | +0.67240423 | −0.62469001 |
| $e$ | 0.1146278 | $i$ | 0.14283 | | +0.29262242 | −0.26835167 |
| $P$ | 5.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 28 | 691 | 0.1− | 0.1− | 2004 12 10 | 691 | 0.4+ | 0.3+ | 2006 03 21 | G96 | 0.1− | 0.3+ |
| 2000 01 28 | 691 | 0.2− | 0.2− | 2004 12 12 | 691 | 0.2− | 0.2− | 2006 03 21 | G96 | 0.7− | 0.3+ |
| 2000 01 28 | 691 | 0.1− | 0.2− | 2004 12 12 | 691 | 0.3− | 0.3+ | 2006 04 07 | G96 | 0.2+ | 0.1+ |
| 2000 02 05 | 691 | 0.3+ | 0.4− | 2004 12 12 | 691 | 0.1+ | 0.1+ | 2006 04 07 | G96 | 0.2− | 0.4+ |
| 2000 02 05 | 691 | 0.2− | 0.3− | 2006 03 02 | 691 | 1.0+ | 0.1− | 2006 04 07 | G96 | 0.1− | 0.3+ |
| 2000 02 05 | 691 | 0.3− | 0.2− | 2006 03 02 | 691 | 0.1− | 0.1+ | 2006 04 07 | G96 | 0.5− | 0.1+ |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2006 03 02 | 691 | 0.2− | 0.6− | 2006 04 25 | G96 | 0.0 | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2006 03 06 | 691 | 0.0 | 0.3+ | 2006 04 25 | G96 | 0.6+ | 0.1− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 06 | 691 | 0.0 | 0.1+ | 2006 04 25 | G96 | 0.3− | 0.0 |
| 2003 09 28 | 645 | 0.1+ | 0.0 | 2006 03 06 | 691 | 0.0 | 0.6+ | 2006 04 25 | G96 | 0.2− | 0.3+ |
| 2004 12 10 | 691 | 0.0 | 0.1+ | 2006 03 21 | G96 | 0.8− | 0.0 | | | | |
| 2004 12 10 | 691 | 0.1− | 0.3+ | 2006 03 21 | G96 | 0.2− | 0.4− | | | | |

**2006 ES$_{71}$ = 2002 LV$_{50}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.34208 | | (2000.0) | | | |
| $n$ | 0.23896134 | $\omega$ | 246.62942 | | +0.88443411 | +0.38398884 |
| $a$ | 2.5718815 | $\Omega$ | 89.90537 | | −0.26844971 | +0.88347474 |
| $e$ | 0.1418911 | $i$ | 15.37862 | | −0.38172117 | +0.26837466 |
| $P$ | 4.12 | $H$ | 16.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 644 | 0.2+ | 0.3+ | 2002 06 10 | 704 | 0.4+ | 1.7− | 2006 05 06 | 691 | 0.2− | 0.5− |
| 2002 06 08 | 644 | 0.4+ | 0.1+ | 2006 03 02 | 691 | 0.1− | 0.1− | 2006 05 06 | 691 | 0.3− | 0.5− |
| 2002 06 08 | 644 | 0.1− | 1.3+ | 2006 03 02 | 691 | 0.2+ | 0.1+ | 2006 05 26 | 703 | 0.8+ | 0.4+ |
| 2002 06 10 | 644 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.3− | 0.4+ | 2006 05 26 | 703 | 0.0 | 0.1− |
| 2002 06 10 | 644 | 0.1+ | 0.2+ | 2006 04 25 | 691 | 0.1− | 0.2+ | 2006 05 26 | 703 | 0.3− | 0.8+ |
| 2002 06 10 | 704 | 0.4− | 0.1+ | 2006 04 25 | 691 | 0.0 | 0.2− | 2006 05 26 | 703 | 0.6+ | 0.2+ |
| 2002 06 10 | 644 | 0.0 | 0.1+ | 2006 04 25 | 691 | 0.0 | 0.1− | | | | |
| 2002 06 10 | 704 | 0.7− | 0.6− | 2006 05 06 | 691 | 0.2− | 0.4− | | | | |

**2006 ET$_{71}$ = 2003 SS$_{240}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.62900 | | (2000.0) | | | |
| $n$ | 0.18995990 | $\omega$ | 174.89504 | | −0.96293422 | −0.26955595 |
| $a$ | 2.9970553 | $\Omega$ | 349.45136 | | +0.24553232 | −0.86080370 |
| $e$ | 0.0570777 | $i$ | 3.08824 | | +0.11167616 | −0.43169037 |
| $P$ | 5.19 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 691 | 0.1− | 0.3+ | 2006 03 04 | 691 | 0.4+ | 0.2+ | 2006 04 02 | G96 | 0.4− | 0.1− |
| 2003 09 27 | 691 | 0.2+ | 0.5− | 2006 03 04 | 691 | 0.2− | 0.2+ | 2006 04 02 | G96 | 0.0 | 0.5− |
| 2003 09 27 | 691 | 0.0 | 0.1+ | 2006 03 25 | G96 | 0.2− | 0.1− | 2006 04 02 | G96 | 0.3+ | 0.1+ |
| 2003 09 29 | 691 | 0.3+ | 0.1+ | 2006 03 25 | G96 | 0.4− | 0.3− | 2006 04 21 | 691 | 0.3+ | 0.2+ |
| 2003 09 29 | 691 | 0.3− | 0.1+ | 2006 03 25 | G96 | 0.2− | 0.2− | 2006 04 21 | 691 | 0.1+ | 0.2− |
| 2003 09 29 | 691 | 0.1− | 0.0 | 2006 03 25 | G96 | 0.2+ | 0.1− | 2006 04 21 | 691 | 0.1+ | 0.6+ |
| 2006 03 04 | 691 | 0.5+ | 0.1+ | 2006 04 02 | G96 | 0.4− | 0.2+ | | | | |

**2006 EW$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 273.27433 | | (2000.0) | | | |
| $n$ | 0.21105412 | $\omega$ | 293.29359 | | +0.75649243 | +0.65328499 |
| $a$ | 2.7938741 | $\Omega$ | 25.94877 | | −0.57155826 | +0.68316306 |
| $e$ | 0.0923087 | $i$ | 4.01345 | | −0.31786847 | +0.32635404 |
| $P$ | 4.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 807 | 0.1− | 0.5+ | 2006 03 02 | G96 | 0.9+ | 0.0 | 2006 03 24 | G96 | 0.0 | 0.0 |
| 2001 05 22 | 807 | 0.4+ | 0.2+ | 2006 03 02 | G96 | 0.1− | 0.0 | 2006 03 24 | G96 | 0.0 | 0.1+ |
| 2003 09 21 | 691 | 0.0 | 0.0 | 2006 03 02 | G96 | 0.0 | 0.1− | 2006 04 07 | G96 | 0.0 | 0.0 |
| 2003 09 21 | 691 | 0.1− | 0.2− | 2006 03 24 | G96 | 0.5− | 0.5− | 2006 04 07 | G96 | 0.5− | 0.2− |
| 2003 09 21 | 691 | 0.1− | 0.1+ | 2006 03 24 | G96 | 0.0 | 0.5− | 2006 04 07 | G96 | 0.2+ | 0.2− |
| 2003 09 29 | 704 | 0.1− | 0.5+ | 2006 03 24 | G96 | 0.3− | 0.2+ | 2006 04 07 | G96 | 0.3− | 0.0 |
| 2003 09 29 | 704 | 0.3− | 1.2+ | 2006 03 24 | G96 | 0.3− | 0.1− | 2006 04 26 | 691 | 0.1+ | 0.4+ |
| 2003 09 29 | 704 | 0.2+ | 0.8+ | 2006 03 24 | G96 | 0.4+ | 0.2+ | 2006 04 26 | 691 | 0.0 | 0.1+ |
| 2006 03 02 | G96 | 0.4+ | 0.1− | 2006 03 24 | G96 | 0.3− | 0.0 | 2006 04 26 | 691 | 0.2+ | 0.3+ |

**2006 EX$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 162.42127 | | (2000.0) | | | |
| $n$ | 0.24280451 | $\omega$ | 72.42826 | | +0.46852326 | −0.88343310 |
| $a$ | 2.5446705 | $\Omega$ | 349.62778 | | +0.79818678 | +0.42603693 |
| $e$ | 0.0924098 | $i$ | 1.79812 | | +0.37866055 | +0.19503459 |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 695 | 0.7− | 0.2− | 2006 03 02 | 691 | 0.3+ | 0.1+ | 2006 03 25 | G96 | 0.3− | 0.2+ |
| 2002 03 20 | 695 | 0.2− | 0.3− | 2006 03 02 | 691 | 0.1− | 0.0 | 2006 03 25 | G96 | 0.6− | 0.3− |
| 2002 04 09 | 691 | 0.1− | 0.1− | 2006 03 02 | 691 | 0.4+ | 0.1+ | 2006 05 03 | G96 | 0.9− | 0.7− |
| 2002 04 09 | 691 | 0.1+ | 0.2+ | 2006 03 09 | 691 | 0.3+ | 0.2+ | 2006 05 03 | G96 | 0.1+ | 0.3− |
| 2002 04 09 | 691 | 0.2+ | 0.1− | 2006 03 09 | 691 | 0.2− | 0.1+ | 2006 05 03 | G96 | 0.5− | 0.3− |
| 2004 11 11 | 691 | 0.0 | 0.1+ | 2006 03 09 | 691 | 0.2− | 0.0 | 2006 05 03 | G96 | 0.1− | 0.2− |
| 2004 11 11 | 691 | 0.1+ | 0.0 | 2006 03 25 | G96 | 0.4− | 0.1+ | | | | |
| 2004 11 11 | 691 | 0.1− | 0.2− | 2006 03 25 | G96 | 0.1− | 0.2− | | | | |

**2006 EY$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.17892 | | (2000.0) | | | |
| $n$ | 0.17658425 | $\omega$ | 195.35539 | | −0.75789689 | +0.64986212 |
| $a$ | 3.1465508 | $\Omega$ | 25.45430 | | −0.58364986 | −0.63627513 |
| $e$ | 0.0633173 | $i$ | 7.64772 | | −0.29145351 | −0.41573211 |
| $P$ | 5.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 691 | 0.1− | 0.1+ | 2006 03 04 | G96 | 1.4+ | 0.1− | 2006 05 06 | G96 | 0.2− | 0.2+ |
| 2003 10 19 | 691 | 0.1− | 0.1− | 2006 03 26 | 699 | 0.5− | 0.8+ | 2006 05 06 | G96 | 0.1+ | 0.4+ |
| 2003 10 19 | 691 | 0.1+ | 0.1− | 2006 03 26 | 699 | 0.5− | 0.1+ | 2006 05 06 | G96 | 0.4+ | 0.0 |
| 2003 10 23 | 695 | 0.2+ | 0.1− | 2006 03 26 | 699 | 1.6− | 1.4− | 2006 05 06 | G96 | 0.1+ | 0.2+ |
| 2003 10 23 | 695 | 0.1+ | 0.1− | 2006 03 26 | 699 | 0.4+ | 1.7− | 2006 05 21 | G96 | 0.6− | 0.3− |
| 2006 03 04 | G96 | 0.5− | 0.2+ | 2006 03 29 | 691 | 0.3+ | 0.0 | 2006 05 21 | G96 | 0.2+ | 0.3− |
| 2006 03 04 | G96 | 1.1− | 0.3+ | 2006 03 29 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 03 04 | G96 | 0.3+ | 0.2+ | 2006 03 29 | 691 | 0.2+ | 0.2+ | | | | |

**2006 EZ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.85981 | | (2000.0) | | | |
| $n$ | 0.18436515 | $\omega$ | 160.80870 | | −0.93984531 | −0.34160024 |
| $a$ | 3.0573853 | $\Omega$ | 359.21676 | | +0.31087838 | −0.85500497 |
| $e$ | 0.0599380 | $i$ | 1.08742 | | +0.14158185 | −0.39022529 |
| $P$ | 5.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.1− | 0.0 | 2001 05 24 | 291 | 0.5− | 0.1− | 2006 04 07 | G96 | 0.2− | 0.0 |
| 2000 02 05 | 691 | 0.3− | 0.3− | 2006 03 04 | 691 | 0.1+ | 0.2+ | 2006 04 07 | G96 | 0.5+ | 0.4− |
| 2000 02 05 | 691 | 0.1+ | 0.3− | 2006 03 04 | 691 | 0.0 | 0.1+ | 2006 04 07 | G96 | 0.0 | 0.5− |
| 2000 02 12 | 691 | 0.2+ | 0.1+ | 2006 03 04 | 691 | 0.0 | 0.1+ | 2006 04 07 | G96 | 0.1+ | 0.0 |
| 2000 02 12 | 691 | 0.1− | 0.3+ | 2006 03 25 | G96 | 0.0 | 0.1− | 2006 04 21 | 691 | 0.0 | 0.5+ |
| 2000 02 12 | 691 | 0.2+ | 0.3+ | 2006 03 25 | G96 | 0.3− | 0.0 | 2006 04 21 | 691 | 0.1− | 0.1− |
| 2001 05 24 | 291 | 0.5+ | 0.2+ | 2006 03 25 | G96 | 0.3+ | 0.2− | 2006 04 21 | 691 | 0.2− | 0.8− |
| 2001 05 24 | 291 | 0.0 | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.1− | | | | |

**2006 EA$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.00616 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30007220 | $\omega$ | 33.29011 | | −0.72231973 | +0.69134053 | |
| $a$ | 2.2096265 | $\Omega$ | 190.50136 | | −0.65350508 | −0.69058444 | |
| $e$ | 0.1257771 | $i$ | 5.47577 | | −0.22624174 | −0.21246507 | |
| $P$ | 3.28 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 25 | 691 | 0.1− | 0.3+ | 2006 03 05 | 691 | 0.1− | 0.1+ | 2006 05 03 | G96 | 0.1− | 0.5− |
| 2003 05 25 | 691 | 0.0 | 0.3+ | 2006 03 05 | 691 | 0.1+ | 0.1+ | 2006 05 03 | G96 | 0.1+ | 0.6− |
| 2003 05 25 | 691 | 0.2+ | 0.4+ | 2006 04 21 | G96 | 0.2+ | 0.3− | 2006 05 03 | G96 | 0.2− | 0.1− |
| 2003 07 04 | 691 | 0.1+ | 0.1− | 2006 04 21 | G96 | 0.0 | 0.2+ | 2006 05 25 | G96 | 0.4− | 0.4− |
| 2003 07 04 | 691 | 0.1− | 0.3− | 2006 04 21 | G96 | 0.2− | 0.3− | 2006 05 25 | G96 | 0.0 | 0.3− |
| 2003 07 04 | 691 | 0.0 | 0.4− | 2006 04 21 | G96 | 0.0 | 0.1− | 2006 05 25 | G96 | 0.1+ | 0.7− |
| 2006 03 05 | 691 | 0.1− | 0.2+ | 2006 05 03 | G96 | 0.2+ | 0.2− | 2006 05 25 | G96 | 0.1− | 0.5− |

**2006 FZ$_1$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.09908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18157258 | $\omega$ | 224.29626 | | +0.89562263 | −0.42368062 | |
| $a$ | 3.0886537 | $\Omega$ | 159.54003 | | +0.43152169 | +0.90147962 | |
| $e$ | 0.1639655 | $i$ | 22.80406 | | −0.10793116 | +0.08848290 | |
| $P$ | 5.43 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 17 | 644 | 0.1+ | 0.3+ | 2004 12 18 | 703 | 0.2− | 0.7+ | 2006 03 03 | G96 | 0.1+ | 0.1− |
| 2003 08 17 | 644 | 0.1− | 0.2+ | 2006 02 02 | 691 | 0.1+ | 0.2+ | 2006 03 03 | G96 | 0.3− | 0.3+ |
| 2003 08 17 | 644 | 0.0 | 0.4+ | 2006 02 02 | 691 | 0.1+ | 0.1+ | 2006 03 03 | G96 | 0.8+ | 1.5+ |
| 2004 11 11 | 703 | 0.3− | 0.5− | 2006 02 02 | 691 | 0.1− | 0.1+ | 2006 03 23 | G96 | 0.0 | 0.2− |
| 2004 11 11 | 703 | 1.1− | 0.2+ | 2006 02 02 | G96 | 0.4− | 0.1+ | 2006 03 23 | G96 | 0.0 | 0.2− |
| 2004 11 11 | 703 | 0.3+ | 0.9+ | 2006 02 02 | G96 | 0.5− | 0.1− | 2006 03 23 | G96 | 0.4− | 0.2− |
| 2004 11 11 | 703 | 1.6+ | 0.1+ | 2006 02 02 | G96 | 0.2− | 0.0 | 2006 03 23 | G96 | 0.2− | 0.0 |
| 2004 12 18 | 703 | 0.7− | 0.9− | 2006 02 25 | 691 | 0.0 | 0.1− | 2006 03 24 | 691 | 0.3+ | 0.1− |
| 2004 12 18 | 703 | 0.6+ | 0.6− | 2006 02 25 | 691 | 0.3+ | 0.1+ | 2006 03 24 | 691 | 0.3+ | 0.1+ |
| 2004 12 18 | 703 | 0.4− | 0.3+ | 2006 02 25 | 691 | 0.0 | 0.0 | 2006 03 24 | 691 | 0.3+ | 0.4− |

**2006 FM$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.09795 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24344541 | $\omega$ | 90.88358 | | −0.48923516 | −0.87188951 | |
| $a$ | 2.5402024 | $\Omega$ | 28.43833 | | +0.78125508 | −0.44901739 | |
| $e$ | 0.1193942 | $i$ | 2.57470 | | +0.38767183 | −0.19542790 | |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.1+ | 0.2− | 2002 05 04 | 291 | 0.3+ | 0.2− | 2006 04 09 | 691 | 0.1+ | 0.0 |
| 2002 04 14 | 704 | 0.1− | 0.0 | 2002 05 04 | 291 | 0.1+ | 0.1− | 2006 04 09 | 691 | 0.0 | 0.3+ |
| 2002 04 14 | 704 | 0.1+ | 0.3+ | 2006 03 23 | G96 | 0.1− | 0.2− | 2006 04 09 | 691 | 0.4+ | 0.1− |
| 2002 04 14 | 704 | 0.2− | 0.2+ | 2006 03 23 | G96 | 0.6− | 0.4− | 2006 04 19 | G96 | 0.2− | 0.1− |
| 2002 04 14 | 704 | 0.8+ | 0.2− | 2006 03 23 | G96 | 0.5− | 0.6− | 2006 04 19 | G96 | 0.0 | 0.3− |
| 2002 04 19 | 291 | 0.1− | 0.1+ | 2006 03 23 | G96 | 0.5− | 0.5− | 2006 04 19 | G96 | 0.4− | 0.3− |
| 2002 04 19 | 291 | 0.4− | 0.2+ | 2006 03 24 | 691 | 0.2+ | 0.2− | 2006 05 03 | 691 | 0.2+ | 0.2− |
| 2002 04 19 | 291 | 0.5− | 0.2+ | 2006 03 24 | 691 | 0.1+ | 0.2− | 2006 05 03 | 691 | 0.2− | 0.2+ |
| 2002 05 04 | 291 | 0.6+ | 0.2− | 2006 03 24 | 691 | 0.1+ | 0.6+ | 2006 05 03 | 691 | 0.5− | 0.1+ |

**2006 FJ$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.63868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.42617324 | $\omega$ | 101.39020 | | −0.03518727 | +0.99924108 | |
| $a$ | 1.7488206 | $\Omega$ | 166.55952 | | −0.94266031 | −0.02763375 | |
| $e$ | 0.3452772 | $i$ | 4.12186 | | −0.33189365 | −0.02745254 | |
| $P$ | 2.31 | $H$ | 19.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1983 08 10 | 260 | 0.6− | 0.1+ | 2006 03 25 | 673 | 0.4− | 0.2+ | 2006 04 06 | 143 | 0.2− | 0.2+ |
| 1983 08 10 | 260 | 0.9+ | 0.9+ | 2006 03 25 | G96 | 0.3− | 0.1− | 2006 04 06 | 143 | (2.7+ | 2.1−) |
| 1983 10 01 | 260 | 2.3− | 0.7− | 2006 03 25 | G96 | 0.3− | 0.0 | 2006 04 06 | 143 | 0.2− | 0.0 |
| 1983 10 01 | 260 | 1.4+ | 0.6+ | 2006 03 25 | G96 | 0.1− | 0.2− | 2006 04 06 | 143 | 1.9+ | 1.9− |
| 2006 03 06 | 691 | 0.1+ | 0.2+ | 2006 03 25 | 651 | 0.5+ | 0.2+ | 2006 04 08 | 682 | 0.6− | 0.7+ |
| 2006 03 06 | 691 | 0.3+ | 0.6− | 2006 03 25 | 651 | 0.1+ | 0.2− | 2006 04 08 | 682 | 0.7− | 0.2+ |
| 2006 03 06 | 691 | 0.0 | 0.2+ | 2006 03 25 | 651 | 0.1+ | 0.6− | 2006 04 08 | 682 | 0.9− | 0.8+ |
| 2006 03 24 | 699 | 0.3− | 0.1− | 2006 03 25 | A50 | 0.2+ | 0.1− | 2006 04 18 | 012 | 0.2+ | 0.1− |
| 2006 03 24 | 699 | 0.1− | 0.4+ | 2006 03 25 | A50 | 0.5+ | 0.0 | 2006 04 18 | 012 | 0.2− | 0.4+ |
| 2006 03 24 | 699 | 0.3+ | 0.2+ | 2006 03 25 | A50 | 0.3+ | 0.4+ | 2006 04 18 | 012 | 0.3+ | 0.3+ |
| 2006 03 24 | 704 | 0.3− | 0.8+ | 2006 03 25 | A50 | 0.4− | 0.2+ | 2006 04 18 | 012 | 0.3− | 1.0+ |
| 2006 03 24 | 704 | 0.6+ | 0.5− | 2006 03 25 | A50 | 0.0 | 0.0 | 2006 04 22 | 644 | 0.2− | 0.1+ |
| 2006 03 24 | 699 | 0.4− | 0.1− | 2006 03 25 | A50 | 0.1+ | 0.2+ | 2006 04 22 | 644 | 0.2− | 0.2− |
| 2006 03 24 | 704 | 1.1+ | 0.4+ | 2006 03 26 | 734 | 0.3+ | 0.7− | 2006 04 22 | 644 | 0.1− | 0.2− |
| 2006 03 24 | 704 | 0.1− | 0.1− | 2006 03 26 | 734 | 0.6− | 0.5− | 2006 05 01 | A50 | 0.6+ | 0.1− |
| 2006 03 24 | J87 | 0.4+ | 0.4− | 2006 03 26 | 734 | 0.7− | 0.3+ | 2006 05 01 | A50 | 0.3+ | 0.1− |
| 2006 03 24 | J87 | 0.6+ | 0.4− | 2006 03 26 | G96 | 0.4− | 0.2− | 2006 05 01 | A50 | 0.4− | 0.3+ |
| 2006 03 24 | J87 | 0.5− | 0.3+ | 2006 03 26 | G96 | 0.2− | 0.1− | 2006 05 01 | A50 | 0.3+ | 0.3+ |
| 2006 03 24 | 176 | 0.0 | 0.4− | 2006 03 26 | G96 | 0.4− | 0.1− | 2006 05 01 | A50 | 0.4+ | 0.2+ |
| 2006 03 24 | 176 | 0.2+ | 0.2− | 2006 03 26 | G96 | 0.1− | 0.0 | 2006 05 01 | A50 | 0.3− | 0.9+ |
| 2006 03 24 | 176 | 0.1+ | 0.3− | 2006 03 26 | 118 | 0.9+ | 0.4+ | 2006 07 15 | 734 | 0.7− | 1.1− |
| 2006 03 24 | 176 | 0.1+ | 0.1− | 2006 03 26 | 118 | 1.2− | 0.0 | 2006 07 15 | 734 | 0.2+ | 0.4− |
| 2006 03 25 | 734 | 0.2− | 0.2− | 2006 03 29 | 704 | 0.4+ | 0.6− | 2006 07 15 | 734 | 0.2+ | 0.1− |
| 2006 03 25 | 734 | 0.1− | 0.3− | 2006 03 29 | 704 | 0.3+ | 0.4− | 2006 07 15 | 734 | 0.0 | 0.3− |
| 2006 03 25 | 734 | 0.3− | 0.4− | 2006 03 29 | 704 | 0.8− | 1.0+ | 2006 07 21 | 696 | 0.1− | 0.4− |
| 2006 03 25 | 673 | 0.2− | 0.1+ | 2006 03 29 | 704 | 1.4+ | 1.6+ | 2006 07 21 | 696 | 0.2− | 0.2+ |
| 2006 03 25 | 673 | 0.2− | 0.0 | 2006 04 06 | 143 | 0.6− | 0.1− | | | | |
| 2006 03 25 | 673 | 0.2− | 0.1+ | 2006 04 06 | 143 | (2.1+ | 2.4−) | | | | |

**2006 FU$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.37519 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19228187 | $\omega$ | 290.28714 | | +0.07869279 | −0.99669253 | |
| $a$ | 2.9728785 | $\Omega$ | 155.17300 | | +0.93171601 | +0.06629536 | |
| $e$ | 0.1166243 | $i$ | 2.76903 | | +0.35455991 | +0.04699929 | |
| $P$ | 5.13 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2003 09 16 | 691 | 0.1− | 0.5+ | 2006 03 23 | 691 | 0.2+ | 0.0 |
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2003 09 16 | 691 | 0.0 | 0.5+ | 2006 03 23 | 691 | 0.3+ | 0.3− |
| 1998 09 25 | 645 | (0.01+ | 0.06−) | 2003 09 23 | 461 | 0.0 | 0.3− | 2006 03 26 | G96 | 0.2− | 0.2+ |
| 1998 09 25 | 645 | (0.01+ | 0.06−) | 2003 09 23 | 461 | 0.5− | 0.2+ | 2006 03 26 | G96 | 0.1− | 0.3+ |
| 2001 04 29 | 691 | 0.2+ | 0.0 | 2003 09 23 | 461 | 0.8− | 0.8+ | 2006 03 26 | G96 | 0.7− | 0.4+ |
| 2001 04 29 | 691 | 0.8− | 0.2+ | 2003 09 23 | 461 | 1.0− | 0.1+ | 2006 03 26 | G96 | 0.5− | 0.0 |
| 2001 04 29 | 691 | 0.1+ | 0.8+ | 2004 12 11 | 691 | 0.0 | 0.0 | 2006 04 30 | 691 | 0.1− | 0.3− |
| 2003 08 26 | 807 | 0.2− | 0.3+ | 2004 12 11 | 691 | 0.1− | 0.4+ | 2006 04 30 | 691 | 0.3+ | 0.1+ |
| 2003 08 26 | 807 | 0.2− | 0.2+ | 2004 12 11 | 691 | 0.0 | 0.3+ | 2006 04 30 | 691 | 0.0 | 0.0 |
| 2003 09 16 | 691 | 0.4− | 0.3+ | 2006 03 23 | 691 | 0.6+ | 0.2+ | | | | |

**2006 FF$_{15}$ = 1996 HB$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 38.51924 | | (2000.0) | | −0.98499569 | −0.10680219 |
| $n$ | 0.18687460 | $\omega$ | 122.27304 | | −0.02720389 | −0.87176921 |
| $a$ | 3.0299528 | $\Omega$ | 51.95752 | | +0.17042135 | −0.47813360 |
| $e$ | 0.0174709 | $i$ | 9.91163 | | | |
| $P$ | 5.27 | $H$ | 14.9 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 809 | (2.5+ | 1.3+) | 2001 03 20 | 699 | 1.0− | 0.8+ | 2006 03 25 | 291 | 0.1− | 0.2+ |
| 1996 04 18 | 809 | 0.3− | 0.3+ | 2006 03 23 | 703 | 0.2− | 0.5− | 2006 03 25 | 291 | 0.2− | 0.2+ |
| 1996 04 18 | 809 | 0.3− | 0.1− | 2006 03 23 | 703 | 0.6+ | 0.0 | 2006 03 25 | 291 | 0.3− | 0.4+ |
| 1996 04 20 | 809 | (2.7+ | 3.0+) | 2006 03 23 | 703 | 0.4+ | 0.4− | 2006 04 02 | 703 | 0.7− | 0.9− |
| 1996 04 20 | 809 | 0.8+ | 0.4+ | 2006 03 23 | 703 | 0.3− | 0.8− | 2006 04 02 | 703 | (1.5− | 1.0−) |
| 1996 04 20 | 809 | (2.4+ | 0.6+) | 2006 03 24 | 699 | 1.1+ | 0.6− | 2006 04 02 | 703 | (1.9+ | 2.6−) |
| 2001 03 20 | 699 | 0.1+ | 0.6− | 2006 03 24 | 699 | (1.6+ | 0.8−) | 2006 04 02 | 703 | 0.1+ | 0.8− |
| 2001 03 20 | 699 | 0.3− | 0.1− | 2006 03 24 | 699 | 1.4+ | 0.3+ | | | | |
| 2001 03 20 | 699 | 0.4+ | 1.1− | 2006 03 24 | 699 | 0.3+ | 0.8+ | | | | |

**2006 FM$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 122.09716 | | (2000.0) | | −0.11940197 | −0.99203216 |
| $n$ | 0.24651272 | $\omega$ | 268.39990 | | +0.98307124 | −0.11246310 |
| $a$ | 2.5190870 | $\Omega$ | 188.76892 | | +0.13897519 | −0.05678250 |
| $e$ | 0.0952877 | $i$ | 15.28609 | | | |
| $P$ | 4.00 | $H$ | 16.8 | $G$ 0.15 | $U$ 5 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 691 | 0.0 | 0.1+ | 2002 04 12 | 704 | 0.0 | 1.8+ | 2006 04 19 | G96 | 0.1+ | 0.3− |
| 2002 03 21 | 691 | 0.2− | 0.2+ | 2006 03 23 | G96 | 0.1+ | 0.5− | 2006 04 19 | G96 | 0.2+ | 0.1+ |
| 2002 03 21 | 691 | 0.2+ | 0.2+ | 2006 03 23 | G96 | 0.2+ | 0.3− | 2006 04 19 | G96 | 0.0 | 0.1+ |
| 2002 04 02 | 691 | 0.1− | 0.3− | 2006 03 23 | G96 | 0.2− | 0.5− | 2006 04 19 | G96 | 0.2− | 0.1+ |
| 2002 04 02 | 691 | 0.2+ | 0.0 | 2006 03 23 | G96 | 0.1− | 0.3− | 2006 05 06 | G96 | 0.2− | 0.2− |
| 2002 04 02 | 691 | 0.1− | 0.3− | 2006 03 25 | G96 | 0.2− | 0.3− | 2006 05 06 | G96 | 0.2− | 0.2− |
| 2002 04 12 | 704 | 0.2+ | 0.0 | 2006 03 25 | G96 | 0.1+ | 0.1− | 2006 05 06 | G96 | 0.1− | 0.0 |
| 2002 04 12 | 704 | 0.4+ | 1.3+ | 2006 03 25 | G96 | 0.2+ | 0.2− | 2006 05 06 | G96 | 0.1− | 0.2− |
| 2002 04 12 | 704 | 0.1− | 0.0 | 2006 03 25 | G96 | 0.0 | 0.5− | | | | |

**2006 FA$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 277.38878 | | (2000.0) | | +0.96213150 | +0.27223697 |
| $n$ | 0.25905341 | $\omega$ | 170.68943 | | −0.25723884 | +0.92352916 |
| $a$ | 2.4371177 | $\Omega$ | 173.46392 | | −0.09017290 | +0.27014982 |
| $e$ | 0.1416949 | $i$ | 6.95539 | | | |
| $P$ | 3.80 | $H$ | 16.7 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 24 | 644 | 0.3+ | 0.4+ | 2003 09 15 | 699 | 1.2+ | 0.1+ | 2006 03 23 | 691 | 0.2+ | 0.5− |
| 2003 07 24 | 644 | 0.2− | 0.3+ | 2003 09 15 | 699 | 0.6+ | 0.1− | 2006 03 23 | 691 | 0.3+ | 0.4− |
| 2003 07 24 | 644 | 0.1− | 0.4+ | 2003 09 15 | 699 | 0.6− | 0.3− | 2006 03 26 | 691 | 0.9− | 0.3+ |
| 2003 08 05 | 704 | 0.1+ | 0.2− | 2003 09 24 | 644 | 0.2− | 0.4+ | 2006 03 26 | 691 | 0.2+ | 0.1+ |
| 2003 08 05 | 704 | 0.1+ | 0.1+ | 2003 09 24 | 644 | 0.2− | 0.4+ | 2006 03 26 | 691 | 0.1− | 0.5+ |
| 2003 08 05 | 704 | 0.3− | 0.9− | 2003 09 24 | 644 | 0.2− | 0.4+ | 2006 04 09 | G96 | 0.1− | 0.1− |
| 2003 09 01 | 704 | 0.6+ | 0.9+ | 2003 09 29 | 291 | 0.1− | 0.2− | 2006 04 09 | G96 | 0.0 | 0.4+ |
| 2003 09 01 | 704 | 0.5+ | 1.1+ | 2003 09 29 | 291 | 0.2− | 0.0 | 2006 04 09 | G96 | 0.2+ | 0.3+ |
| 2003 09 01 | 704 | 0.9− | 0.4− | 2003 09 29 | 291 | 0.0 | 0.5− | 2006 04 09 | G96 | 0.3+ | 0.1− |
| 2003 09 15 | 699 | 0.2+ | 0.7− | 2006 03 23 | 691 | 0.2+ | 0.3− | | | | |

**2006 FN$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 239.79779 | | (2000.0) | | +0.89678429 | +0.44223872 |
| $n$ | 0.19469314 | $\omega$ | 275.76894 | | −0.39901903 | +0.82221419 |
| $a$ | 2.9482815 | $\Omega$ | 57.98502 | | −0.19121128 | +0.35831375 |
| $e$ | 0.0572575 | $i$ | 0.96246 | | | |
| $P$ | 5.06 | $H$ | 17.0 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.3− | 0.1+ | 2003 10 18 | 645 | 0.1− | 0.2+ | 2006 03 24 | G96 | 0.6+ | 0.0 |
| 2003 09 18 | 691 | 0.2+ | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 03 24 | G96 | 0.2+ | 0.4+ |
| 2003 09 18 | 691 | 0.1+ | 0.4+ | 2003 10 23 | 645 | 0.1+ | 0.2− | 2006 03 26 | G96 | 0.3+ | 0.5− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 06 | 691 | 0.1+ | 0.1+ | 2006 03 26 | G96 | 0.1− | 0.5− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 06 | 691 | 0.3− | 0.1+ | 2006 03 26 | G96 | 0.4− | 0.1− |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 03 06 | 691 | 0.4+ | 0.1− | 2006 03 26 | G96 | 0.1− | 0.3− |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.1− | 0.2+ | | | | |
| 2003 10 18 | 645 | 0.0 | 0.1+ | 2006 03 24 | G96 | 0.9− | 0.3+ | | | | |

**2006 FF$_{27}$ = 2003 UP$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 296.74775 | | (2000.0) | | +0.66769932 | +0.74196299 |
| $n$ | 0.20500053 | $\omega$ | 278.15559 | | −0.63321036 | +0.60884136 |
| $a$ | 2.8486083 | $\Omega$ | 33.98540 | | −0.39143615 | +0.28071893 |
| $e$ | 0.0774133 | $i$ | 6.22049 | | | |
| $P$ | 4.81 | $H$ | 16.4 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 291 | 0.3+ | 0.1+ | 2006 03 24 | G96 | 0.3− | 0.1− | 2006 04 27 | 807 | 0.0 | 0.1+ |
| 2003 10 20 | 291 | 0.3− | 0.1− | 2006 03 24 | G96 | 0.2+ | 0.1+ | 2006 04 27 | 807 | 0.3+ | 0.1− |
| 2003 10 20 | 291 | 0.2− | 0.1+ | 2006 03 24 | G96 | 0.1+ | 0.2+ | 2006 05 05 | G96 | 1.0− | 0.1+ |
| 2003 11 21 | 691 | 0.1− | 0.2+ | 2006 03 26 | G96 | 0.1− | 0.2− | 2006 05 05 | G96 | 0.2− | 0.5− |
| 2003 11 21 | 691 | 0.0 | 0.0 | 2006 03 26 | G96 | 0.0 | 0.2− | 2006 05 05 | G96 | 0.4+ | 0.3− |
| 2003 11 21 | 691 | 0.1+ | 0.3− | 2006 03 26 | G96 | 0.1+ | 0.2− | 2006 05 05 | G96 | 0.2+ | 0.1+ |
| 2006 03 24 | G96 | 0.3− | 0.0 | 2006 03 26 | G96 | 0.1− | 0.1− | 2006 05 23 | G96 | 0.5+ | 0.4+ |
| 2006 03 24 | G96 | 0.4+ | 0.1+ | 2006 04 19 | G96 | 0.2+ | 0.0 | 2006 05 23 | G96 | 0.1− | 0.1− |
| 2006 03 24 | G96 | 0.3+ | 0.1+ | 2006 04 19 | G96 | 0.3+ | 0.3+ | 2006 05 23 | G96 | 0.3− | 0.3+ |
| 2006 03 24 | G96 | 0.1+ | 0.2+ | 2006 04 19 | G96 | 0.1− | 0.2+ | 2006 05 23 | G96 | 0.3− | 0.2+ |
| 2006 03 24 | G96 | 0.4− | 0.1+ | 2006 04 19 | G96 | 0.3+ | 0.1+ | | | | |

**2006 FL$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.91190 | | (2000.0) | | +0.81344287 | −0.57840543 |
| $n$ | 0.21089509 | $\omega$ | 351.02624 | | +0.53892852 | +0.70986219 |
| $a$ | 2.7952785 | $\Omega$ | 44.49878 | | +0.21878468 | +0.40192391 |
| $e$ | 0.0713336 | $i$ | 5.01759 | | | |
| $P$ | 4.67 | $H$ | 16.3 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 699 | 0.8+ | 0.4− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 24 | G96 | 1.0+ | 0.6− |
| 2003 10 01 | 699 | 0.6+ | 0.7− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 03 25 | 691 | 0.2− | 0.3+ |
| 2003 10 01 | 699 | 1.7− | 0.4+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 25 | 691 | 0.1− | 0.2+ |
| 2003 10 01 | 699 | 0.2− | 0.7+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 03 25 | 691 | 0.1− | 0.1+ |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.2+ | 0.3− |
| 2003 10 19 | 645 | 0.0 | 0.1− | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.4+ | 0.2+ |
| 2003 10 19 | 691 | 0.0 | 0.2+ | 2006 03 24 | G96 | 0.5− | 0.1+ | 2006 04 02 | 691 | 0.1− | 0.3− |
| 2003 10 19 | 691 | 0.2+ | 0.2+ | 2006 03 24 | G96 | 0.1− | 0.3− | | | | |
| 2003 10 19 | 691 | 0.1+ | 0.2+ | 2006 03 24 | G96 | 0.4− | 0.3+ | | | | |

**2006 FM$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.22188 | | | (2000.0) | | |
| $n$ | 0.23880052 | $\omega$ | 52.58901 | | −0.22983685 | +0.97275496 |
| $a$ | 2.5730361 | $\Omega$ | 204.17628 | | −0.91471828 | −0.22657326 |
| $e$ | 0.2278879 | $i$ | 4.25378 | | −0.33236348 | −0.04911560 |
| $P$ | 4.13 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 19 | 691 | 0.1− | 0.0 | 2002 05 19 | 644 | 0.5+ | 0.3+ | 2006 03 26 | G96 | 0.6− | 0.0 |
| 2002 04 19 | 691 | 0.3− | 0.3+ | 2002 05 19 | 644 | 0.6+ | 0.3+ | 2006 03 26 | G96 | 0.3− | 0.5+ |
| 2002 04 19 | 691 | 0.2− | 0.1+ | 2003 11 20 | 695 | 0.2− | 0.4+ | 2006 04 19 | G96 | 0.1+ | 0.2− |
| 2002 05 09 | 704 | 0.6− | 0.2− | 2003 11 20 | 695 | 0.1− | 0.3+ | 2006 04 19 | G96 | 0.3− | 0.1− |
| 2002 05 09 | 704 | 0.2− | 0.5− | 2006 03 25 | 691 | 0.4+ | 0.0 | 2006 04 19 | G96 | 0.0 | 0.3− |
| 2002 05 09 | 704 | 0.5− | 0.9− | 2006 03 25 | 691 | 0.2+ | 0.1+ | 2006 04 19 | G96 | 0.0 | 0.1− |
| 2002 05 09 | 704 | 0.1− | 0.1+ | 2006 03 25 | 691 | 0.3+ | 0.2− | 2006 05 20 | G96 | 0.2− | 0.4− |
| 2002 05 09 | 704 | 0.2+ | 0.5− | 2006 03 26 | G96 | 0.2− | 0.1+ | 2006 05 20 | G96 | 0.7− | 0.6− |
| 2002 05 09 | 644 | 0.4+ | 0.5+ | 2006 03 26 | G96 | 0.2− | 0.0 | 2006 05 20 | G96 | 0.4− | 0.3− |
| 2002 05 09 | 644 | 0.2+ | 0.3+ | 2006 03 26 | G96 | 0.2− | 0.0 | 2006 05 20 | G96 | 0.1− | 0.3− |
| 2002 05 09 | 644 | 1.4+ | 0.2+ | 2006 03 26 | G96 | 0.7− | 0.4+ | | | | |
| 2002 05 19 | 644 | 0.6+ | 0.7+ | 2006 03 26 | G96 | 0.5− | 0.4+ | | | | |

**2006 FL$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 131.57287 | | | (2000.0) | | |
| $n$ | 0.17667412 | $\omega$ | 77.32069 | | −0.13178440 | −0.98956514 |
| $a$ | 3.1454836 | $\Omega$ | 20.52691 | | +0.83276582 | −0.14239809 |
| $e$ | 0.0450117 | $i$ | 9.56330 | | +0.53771178 | −0.02199131 |
| $P$ | 5.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 22 | 691 | 0.2− | 0.3+ | 2003 10 30 | 704 | 0.9+ | 0.3− | 2006 03 26 | 691 | 0.0 | 0.2− |
| 2003 10 22 | 691 | 0.2+ | 0.1+ | 2003 11 21 | 691 | 0.0 | 0.1+ | 2006 05 31 | G96 | 0.4+ | 0.0 |
| 2003 10 22 | 691 | 0.0 | 0.2+ | 2003 11 21 | 691 | 0.0 | 0.4− | 2006 05 31 | G96 | 0.2− | 0.4+ |
| 2003 10 25 | 704 | (2.6− | 0.4+) | 2003 11 21 | 691 | 0.1− | 0.1− | 2006 05 31 | G96 | 0.2+ | 0.0 |
| 2003 10 25 | 704 | 1.3− | 0.7+ | 2006 03 25 | G96 | 0.3− | 0.2− | 2006 05 31 | G96 | 0.0 | 0.2+ |
| 2003 10 25 | 704 | 0.8+ | 0.1− | 2006 03 25 | G96 | 0.8− | 0.4− | 2006 06 01 | G96 | 0.2− | 0.2− |
| 2003 10 25 | 704 | 1.0− | 0.2− | 2006 03 25 | G96 | 0.2+ | 0.6− | 2006 06 01 | G96 | 0.0 | 0.3− |
| 2003 10 25 | 704 | 0.1+ | 0.2− | 2006 03 25 | G96 | 0.6− | 0.2− | 2006 06 01 | G96 | 0.0 | 0.3+ |
| 2003 10 30 | 704 | 0.5− | 0.6− | 2006 03 26 | 691 | 0.2+ | 0.8+ | 2006 06 01 | G96 | 0.2+ | 0.2+ |
| 2003 10 30 | 704 | 0.7+ | 0.3+ | 2006 03 26 | 691 | 0.3+ | 0.2− | | | | |

**2006 FK$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 99.61364 | | | (2000.0) | | |
| $n$ | 0.20105550 | $\omega$ | 79.72184 | | −0.58332423 | −0.80038550 |
| $a$ | 2.8857503 | $\Omega$ | 46.88532 | | +0.65120412 | −0.56258531 |
| $e$ | 0.0552024 | $i$ | 10.91783 | | +0.48545446 | −0.20707686 |
| $P$ | 4.90 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.0 | 0.2+ | 2004 12 22 | 703 | 0.4− | 0.4+ | 2006 04 19 | 703 | 0.3− | 0.5+ |
| 1999 12 12 | 704 | 1.0+ | 0.0 | 2004 12 22 | 703 | 0.4− | 0.5+ | 2006 04 19 | 703 | 1.0− | 0.1− |
| 1999 12 12 | 704 | 0.4− | 0.8+ | 2004 12 22 | 703 | 0.8+ | 0.1+ | 2006 04 19 | 703 | 0.1− | 0.6+ |
| 2001 03 19 | 645 | 0.1− | 0.0 | 2006 03 24 | 691 | 0.1+ | 0.2+ | 2006 04 27 | 704 | 0.8+ | 0.4+ |
| 2001 03 19 | 645 | 0.1− | 0.1− | 2006 03 24 | 691 | 0.2− | 0.2+ | 2006 04 27 | 704 | 0.3+ | 1.4+ |
| 2001 03 26 | 608 | 0.1+ | 0.3+ | 2006 03 24 | 691 | 0.1− | 0.2+ | 2006 04 27 | 704 | 0.4+ | 0.4+ |
| 2001 03 26 | 608 | 0.1+ | 0.1+ | 2006 03 24 | 704 | 0.1+ | 1.0+ | 2006 04 27 | 704 | 0.1− | 0.3+ |
| 2001 03 26 | 608 | 0.0 | 0.3− | 2006 03 24 | 704 | 0.8+ | 0.6− | 2006 04 27 | 704 | 1.0+ | 0.1− |
| 2003 09 19 | 699 | 0.2+ | 0.3+ | 2006 03 24 | 704 | 0.7+ | 0.6+ | 2006 05 07 | G96 | 0.2− | 0.6− |
| 2003 09 19 | 699 | 0.5+ | 0.1+ | 2006 03 29 | 704 | 0.0 | 0.3− | 2006 05 07 | G96 | 0.8+ | 0.3− |
| 2003 09 19 | 699 | 0.6− | 0.7+ | 2006 03 29 | 704 | 0.5+ | 0.4+ | 2006 05 07 | G96 | 0.2− | 0.2− |
| 2003 09 19 | 699 | 0.8+ | 1.8+ | 2006 03 29 | 704 | 0.9+ | 0.9+ | 2006 05 07 | G96 | 0.4− | 0.1− |
| 2003 10 25 | 704 | 1.2− | 0.4+ | 2006 03 29 | 704 | 0.2− | 0.3+ | 2006 05 21 | G96 | 0.2− | 0.1− |
| 2003 10 25 | 704 | 0.0 | 0.2+ | 2006 04 19 | 699 | 0.5+ | 0.3− | 2006 05 21 | G96 | 0.2+ | 0.3− |
| 2003 10 25 | 704 | 1.0− | 0.7+ | 2006 04 19 | 699 | 1.2+ | 0.3− | 2006 05 21 | G96 | 0.0 | 0.2− |
| 2003 10 25 | 704 | 0.2− | 0.3− | 2006 04 19 | 699 | 0.1+ | 0.8+ | 2006 05 21 | G96 | 0.4+ | 0.2− |
| 2003 10 25 | 704 | 2.2− | 1.2+ | 2006 04 19 | 699 | 0.2+ | 1.3+ | | | | |
| 2004 12 22 | 703 | 0.4− | 0.2+ | 2006 04 19 | 703 | 0.2− | 0.5+ | | | | |

**2006 FA$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 139.24918 | | | (2000.0) | | |
| $n$ | 0.22203027 | $\omega$ | 44.41476 | | −0.04611305 | −0.99608508 |
| $a$ | 2.7010207 | $\Omega$ | 48.38137 | | +0.88612939 | −0.07564182 |
| $e$ | 0.1369543 | $i$ | 5.79011 | | +0.46113803 | +0.04574752 |
| $P$ | 4.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 02 | 691 | 0.2− | 0.1+ | 2005 01 07 | 704 | 0.2− | 0.7+ | 2006 04 02 | 691 | 0.0 | 0.0 |
| 2004 12 02 | 691 | 0.1− | 0.0 | 2005 01 07 | 704 | 0.0 | 0.5+ | 2006 04 07 | 691 | 0.4− | 0.1+ |
| 2004 12 02 | 691 | 0.1+ | 0.0 | 2006 03 26 | G96 | 0.2+ | 0.4+ | 2006 04 07 | 691 | 0.4+ | 0.5− |
| 2004 12 12 | 691 | 0.1+ | 0.5− | 2006 03 26 | G96 | 0.1+ | 0.3− | 2006 04 07 | 691 | 0.1+ | 0.2− |
| 2004 12 12 | 691 | 0.1+ | 0.1+ | 2006 03 26 | G96 | 0.0 | 0.0 | 2006 04 26 | 807 | 0.2+ | 0.0 |
| 2004 12 12 | 691 | 0.0 | 0.1+ | 2006 03 26 | G96 | 0.5− | 0.1+ | 2006 04 26 | 807 | 0.0 | 0.1+ |
| 2005 01 07 | 704 | 0.3− | 1.0− | 2006 04 02 | 691 | 0.3− | 0.6+ | | | | |
| 2005 01 07 | 704 | 0.2− | 0.9+ | 2006 04 02 | 691 | 0.2+ | 0.1− | | | | |

**2006 FW$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 109.13808 | | | (2000.0) | | |
| $n$ | 0.27179394 | $\omega$ | 63.61374 | | −0.16007781 | −0.98401270 |
| $a$ | 2.3603489 | $\Omega$ | 35.86939 | | +0.85153164 | −0.17765986 |
| $e$ | 0.1772736 | $i$ | 7.65629 | | +0.49926842 | −0.01248947 |
| $P$ | 3.63 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2+ | 0.2− | 2001 12 19 | 644 | 0.1+ | 0.1− | 2006 03 03 | G96 | 0.2− | 0.5+ |
| 2001 11 11 | 704 | 0.7− | 0.7− | 2001 12 19 | 644 | 0.2+ | 0.1+ | 2006 03 03 | G96 | 0.2− | 0.4+ |
| 2001 11 11 | 704 | 0.3− | 0.5+ | 2002 01 04 | 644 | 0.3− | 0.4− | 2006 03 03 | G96 | 0.2− | 0.3+ |
| 2001 12 09 | 704 | 0.4+ | 0.4+ | 2002 01 04 | 644 | 0.5+ | 0.0 | 2006 03 03 | G96 | 0.0 | 0.3+ |
| 2001 12 09 | 704 | 0.3+ | 0.0 | 2002 01 04 | 644 | 0.1+ | 0.4+ | 2006 03 23 | 703 | 1.1+ | 1.6− |
| 2001 12 09 | 704 | 0.1− | 0.5+ | 2002 01 14 | 644 | 0.4− | 0.3− | 2006 03 23 | 703 | 1.3− | 0.7− |
| 2001 12 09 | 704 | 0.4+ | 0.8+ | 2002 01 14 | 644 | 0.4− | 0.5− | 2006 03 23 | 703 | 0.8− | 0.1− |
| 2001 12 09 | 704 | 0.2− | 0.2+ | 2002 01 14 | 644 | 0.5− | 0.4− | 2006 03 23 | 703 | 0.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.2+ | 0.3− | 2006 03 03 | 703 | 1.6+ | 1.0+ | 2006 03 24 | 699 | 0.2+ | 0.6+ |
| 2001 12 14 | 704 | 0.2+ | 0.0 | 2006 03 03 | 703 | (4.6+ | 0.6+) | 2006 03 24 | 699 | 0.1− | 0.4− |
| 2001 12 14 | 704 | 0.1− | 0.3− | 2006 03 03 | 703 | 0.7+ | 1.9− | 2006 03 24 | 699 | 0.8− | 1.8+ |
| 2001 12 19 | 644 | 0.3+ | 0.0 | 2006 03 03 | 703 | (0.8− | 2.5−) | 2006 03 24 | 699 | 0.0 | 0.4− |

**2006 FS$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.88336 | | | (2000.0) | | |
| $n$ | 0.27215490 | $\omega$ | 267.03604 | | −0.39252432 | +0.91967944 |
| $a$ | 2.3582614 | $\Omega$ | 339.84197 | | −0.83103908 | −0.35962635 |
| $e$ | 0.1782319 | $i$ | 1.77841 | | −0.39407957 | −0.15766613 |
| $P$ | 3.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 0.6+ | 0.2− | 2003 07 25 | 644 | 0.1− | 0.2+ | 2006 03 24 | 699 | 0.5− | 0.2+ |
| 1999 05 13 | 704 | 2.0+ | 0.7− | 2003 07 25 | 644 | 0.1+ | 0.4+ | 2006 03 24 | 699 | 0.5− | 1.7+ |
| 1999 05 13 | 704 | 1.1+ | 1.3− | 2003 07 25 | 644 | 0.1− | 0.1− | 2006 03 24 | 699 | 0.6+ | 0.4− |
| 1999 05 13 | 704 | (4.3− | 0.4+) | 2003 07 25 | 644 | 0.2− | 0.0 | 2006 03 24 | 699 | 0.3− | 0.7− |
| 2003 07 05 | 691 | 0.4− | 0.1− | 2003 08 04 | 704 | 1.0+ | 0.5− | 2006 03 25 | G96 | 0.0 | 0.1− |
| 2003 07 05 | 691 | 0.4− | 0.1+ | 2003 08 04 | 704 | 0.5+ | 0.8+ | 2006 03 25 | G96 | 0.0 | 0.1− |
| 2003 07 05 | 691 | 0.1+ | 0.2+ | 2003 08 04 | 704 | 0.3− | 0.6− | 2006 03 25 | G96 | 0.2− | 0.0 |
| 2003 07 08 | 644 | 0.1+ | 0.1+ | 2003 08 04 | 704 | 0.2+ | 0.2− | 2006 03 25 | G96 | 0.0 | 0.1− |
| 2003 07 08 | 644 | 0.1− | 0.4+ | 2003 08 04 | 704 | 0.7+ | 0.0 | 2006 04 24 | G96 | 0.1− | 0.4− |
| 2003 07 08 | 644 | 0.0 | 0.2+ | 2006 03 04 | 691 | 0.8+ | 0.0 | 2006 04 24 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 25 | 644 | 0.1+ | 0.6+ | 2006 03 04 | 691 | 0.5+ | 0.3− | 2006 04 24 | G96 | 0.2+ | 0.8− |
| 2003 07 25 | 644 | 0.2− | 0.2+ | 2006 03 04 | 691 | 0.7− | 1.3+ | 2006 04 24 | G96 | 0.3− | 0.5− |

**2006 FV$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.41768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18594123 | $\omega$ | 201.71312 | | +0.79980782 | +0.57198809 | |
| $a$ | 3.0400840 | $\Omega$ | 122.10330 | | −0.51424808 | +0.80935891 | |
| $e$ | 0.0448188 | $i$ | 12.40938 | | −0.30960678 | +0.13329582 | |
| $P$ | 5.30 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 26 | 691 | 0.2− | 0.1− | 2003 10 18 | 699 | 0.3+ | 1.1− | 2006 02 23 | 699 | 0.2− | 1.3+ |
| 2000 01 26 | 691 | 0.1− | 0.2− | 2003 10 18 | 704 | 1.4− | 0.6+ | 2006 02 23 | 699 | (2.4+ | 3.3+) |
| 2000 01 26 | 691 | 0.3− | 0.3− | 2003 10 18 | 699 | 1.5− | 1.1+ | 2006 02 23 | 699 | 0.0 | 0.2+ |
| 2000 02 04 | 691 | 0.1+ | 0.3+ | 2003 10 18 | 699 | 0.2+ | 0.1− | 2006 02 23 | 699 | 0.0 | 0.7− |
| 2000 02 04 | 691 | 0.0 | 0.2+ | 2003 10 18 | 704 | 1.4− | 1.4+ | 2006 03 24 | 699 | 1.2+ | 0.1− |
| 2000 02 04 | 691 | 0.2+ | 0.2+ | 2003 10 18 | 699 | 0.6+ | 0.1+ | 2006 03 24 | 699 | 0.2+ | 0.1− |
| 2000 02 14 | 691 | 0.0 | 0.1+ | 2003 10 18 | 704 | 1.1− | 0.3+ | 2006 03 24 | 699 | 0.4+ | 0.0 |
| 2000 02 14 | 691 | 0.0 | 0.3− | 2003 10 18 | 704 | 0.2+ | 0.2+ | 2006 03 24 | 699 | 0.5+ | 1.0− |
| 2000 02 14 | 691 | 0.2+ | 0.2− | 2003 10 29 | 699 | 1.0+ | 0.3− | 2006 04 02 | 703 | 0.6− | 1.3− |
| 2003 10 02 | 608 | 0.6+ | 1.6− | 2003 10 29 | 699 | 0.9− | 0.9+ | 2006 04 02 | 703 | 1.3− | 0.4− |
| 2003 10 02 | 608 | 1.2+ | 1.0− | 2003 10 29 | 699 | 0.5+ | 0.7+ | 2006 04 02 | 703 | 1.5− | 0.4− |
| 2003 10 02 | 608 | 0.8+ | 0.7− | 2003 10 29 | 699 | 0.8+ | 0.1+ | 2006 04 02 | 703 | 0.6− | 0.1+ |

**2006 FV$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.36730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17786437 | $\omega$ | 132.81111 | | −0.94086463 | −0.31744637 | |
| $a$ | 3.1314351 | $\Omega$ | 29.27600 | | +0.19413483 | −0.79143506 | |
| $e$ | 0.0112711 | $i$ | 14.00292 | | +0.27764259 | −0.52235844 | |
| $P$ | 5.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 23 | 704 | 0.6+ | 0.3+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 02 28 | 703 | 0.1+ | 0.3+ |
| 2001 04 23 | 704 | 1.1+ | 0.3− | 2003 09 28 | 645 | 0.1− | 0.0 | 2006 02 28 | 703 | 0.7+ | 0.2+ |
| 2001 04 23 | 704 | 0.2− | 0.9− | 2003 10 02 | 691 | 0.1+ | 0.4+ | 2006 03 25 | 703 | (0.2− | 2.0−) |
| 2001 04 23 | 704 | 0.1+ | 0.1− | 2003 10 02 | 691 | 0.1− | 0.2+ | 2006 03 25 | 703 | 0.3+ | 1.0+ |
| 2001 05 01 | 691 | 0.2− | 0.2+ | 2003 10 02 | 691 | 0.1+ | 0.4+ | 2006 03 25 | 703 | 1.3− | 1.1+ |
| 2001 05 01 | 691 | 0.0 | 0.3+ | 2003 10 25 | 704 | 0.3− | 0.0 | 2006 03 25 | 703 | 0.3+ | 0.9− |
| 2001 05 01 | 691 | 0.1+ | 0.6+ | 2003 10 25 | 704 | 0.3+ | 0.3+ | 2006 04 02 | 703 | 0.2+ | 0.2+ |
| 2001 05 16 | 608 | 0.3+ | 0.2+ | 2003 10 25 | 704 | 0.4+ | 0.1+ | 2006 04 02 | 703 | 0.3− | 0.1− |
| 2001 05 16 | 608 | 0.9+ | 0.0 | 2003 10 25 | 704 | 0.0 | 0.8+ | 2006 04 02 | 703 | 0.9− | 0.3− |
| 2001 05 16 | 608 | 0.6+ | 0.2− | 2003 11 16 | 645 | 0.0 | 0.1+ | 2006 04 02 | 703 | 0.1+ | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 11 16 | 645 | 0.0 | 0.1+ | 2006 04 19 | 703 | 0.9+ | 0.5− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 11 19 | 645 | 0.0 | 0.0 | 2006 04 19 | 703 | 0.3+ | 1.6+ |
| 2003 09 28 | 704 | 0.2+ | 0.2+ | 2003 11 19 | 645 | 0.2− | 0.0 | 2006 04 19 | 703 | 0.5+ | 0.1− |
| 2003 09 28 | 704 | 0.2− | 0.4+ | 2006 02 28 | 703 | 0.6+ | 0.3− | 2006 04 19 | 703 | 0.1+ | 0.3+ |
| 2003 09 28 | 704 | 0.3+ | 0.1− | 2006 02 28 | 703 | 0.6+ | 0.5+ | | | | |

**2006 FH$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.57545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22656900 | $\omega$ | 26.61549 | | −0.87622981 | −0.42491949 | |
| $a$ | 2.6648272 | $\Omega$ | 126.37120 | | +0.37632599 | −0.89799233 | |
| $e$ | 0.0689384 | $i$ | 16.39701 | | +0.30099847 | −0.11425065 | |
| $P$ | 4.35 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.2− | 0.2− | 2002 05 15 | 704 | 1.4+ | 0.2− | 2004 12 19 | 703 | 1.5− | 1.2− |
| 1997 02 02 | 691 | 0.1+ | 0.5− | 2002 05 15 | 704 | 0.8+ | 0.7− | 2004 12 19 | 703 | 0.4− | 0.3− |
| 1997 02 02 | 691 | 0.2− | 0.3− | 2004 12 07 | 704 | 0.8+ | 2.3− | 2006 02 24 | 683 | 0.1− | 1.4+ |
| 2000 12 19 | 608 | 0.5+ | 1.2+ | 2004 12 07 | 704 | 0.1− | 0.2− | 2006 02 24 | 683 | 0.2+ | 0.8+ |
| 2000 12 19 | 608 | 0.6+ | 1.1+ | 2004 12 07 | 704 | 0.7+ | 0.6− | 2006 02 24 | 683 | 0.8+ | 2.3+ |
| 2000 12 19 | 608 | 0.7+ | 1.2+ | 2004 12 07 | 704 | 0.2− | 0.9+ | 2006 03 25 | 703 | 0.4− | 0.9− |
| 2001 01 04 | 704 | 0.2+ | 0.1− | 2004 12 07 | 704 | 0.3+ | 0.1− | 2006 03 25 | 703 | 0.7− | 0.1− |
| 2001 01 04 | 704 | 0.0 | 0.6+ | 2004 12 12 | 704 | 0.1+ | 0.1− | 2006 03 25 | 703 | (0.6− | 2.3−) |
| 2001 01 04 | 704 | 1.4− | 1.1− | 2004 12 12 | 704 | 0.2+ | 0.3− | 2006 03 25 | 703 | 0.9− | 0.3− |
| 2001 01 04 | 704 | 0.1+ | 2.1+ | 2004 12 12 | 704 | 0.5+ | 0.5− | 2006 04 02 | 703 | 0.2− | 0.3− |
| 2001 01 04 | 704 | 0.0 | 0.3+ | 2004 12 12 | 704 | 0.5+ | 1.2− | 2006 04 02 | 703 | 0.6+ | 0.2− |
| 2002 05 15 | 704 | 1.5− | 0.9− | 2004 12 19 | 703 | 0.1− | 0.4+ | 2006 04 02 | 703 | 0.2+ | 0.5− |
| 2002 05 15 | 704 | 0.7− | 1.0− | 2004 12 19 | 703 | 0.0 | 0.1− | 2006 04 02 | 703 | 0.7+ | 0.1− |

**2006 FW$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.39987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26438074 | $\omega$ | 55.47473 | | −0.38075738 | +0.92460911 | |
| $a$ | 2.4042678 | $\Omega$ | 192.15943 | | −0.86461941 | −0.36023402 | |
| $e$ | 0.1526109 | $i$ | 3.00355 | | −0.32780649 | −0.12381213 | |
| $P$ | 3.73 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.0 | 0.4+ | 2002 02 21 | 691 | 0.4+ | 0.1− | 2006 02 25 | 691 | 0.3− | 0.3− |
| 1992 09 30 | 691 | 0.2− | 0.5+ | 2002 02 21 | 691 | 0.1+ | 0.4+ | 2006 02 25 | 691 | 0.1+ | 0.0 |
| 1992 09 30 | 691 | 0.6− | 1.1+ | 2002 02 21 | 691 | 0.9− | 0.2+ | 2006 02 25 | 691 | 0.1− | 0.3− |
| 2000 11 18 | 691 | 0.3+ | 0.6− | 2002 03 09 | 291 | 0.4+ | 0.3+ | 2006 03 26 | 699 | 0.4+ | 0.6+ |
| 2000 11 18 | 691 | 0.3+ | 0.4− | 2002 03 09 | 291 | 0.1+ | 0.2+ | 2006 03 26 | 699 | 0.2− | 0.4+ |
| 2000 11 18 | 691 | 0.4− | 0.2− | 2002 03 09 | 291 | 0.1+ | 0.3+ | 2006 03 26 | 699 | 0.5− | 0.3+ |
| 2002 02 11 | 704 | 0.6+ | 1.1+ | 2002 03 13 | 704 | 0.2+ | 0.0 | 2006 03 26 | 699 | 0.3+ | 0.1− |
| 2002 02 11 | 704 | 0.0 | 0.3+ | 2002 03 13 | 704 | 0.2+ | 0.1− | 2006 04 02 | 704 | (0.7+ | 2.0+) |
| 2002 02 11 | 704 | 0.4− | 0.1+ | 2002 03 13 | 704 | 0.2+ | 0.3− | 2006 04 02 | 704 | 0.1− | 0.7− |
| 2002 02 11 | 704 | 0.3+ | 1.0+ | 2002 03 13 | 704 | 0.1− | 0.1+ | 2006 04 02 | 704 | 0.4+ | 1.4+ |
| 2002 02 11 | 704 | 1.0+ | 0.8+ | 2003 08 25 | 704 | 0.5− | 2.0+ | 2006 04 02 | 704 | 0.4+ | 1.2− |
| 2002 02 13 | 645 | 0.1+ | 0.2+ | 2003 08 25 | 704 | 1.0− | 2.2+ | | | | |
| 2002 02 13 | 645 | 0.1+ | 0.2+ | 2003 08 25 | 704 | (1.1− | 3.3+) | | | | |

**2006 FU$_{52}$ = 2004 TD$_{317}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.44090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27812101 | $\omega$ | 92.73143 | | −0.57676461 | −0.81504879 | |
| $a$ | 2.3244142 | $\Omega$ | 32.68967 | | +0.70309346 | −0.52962881 | |
| $e$ | 0.1509291 | $i$ | 5.85750 | | +0.41593530 | −0.23492295 | |
| $P$ | 3.54 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 645 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.5− | 0.1− | 2006 04 19 | G96 | 0.1+ | 0.2+ |
| 2002 01 09 | 645 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.2+ | 0.1+ | 2006 04 19 | G96 | 0.0 | 0.1+ |
| 2004 10 11 | 691 | 0.2− | 0.1+ | 2006 03 25 | G96 | 0.2+ | 0.1+ | 2006 05 05 | G96 | 0.5+ | 0.2+ |
| 2004 10 11 | 691 | 0.1− | 0.0 | 2006 03 25 | G96 | 0.3− | 0.3+ | 2006 05 05 | G96 | 0.3+ | 0.4+ |
| 2004 10 11 | 691 | 0.2+ | 0.0 | 2006 03 25 | G96 | 0.1− | 0.0 | 2006 05 05 | G96 | 0.1− | 0.4− |
| 2004 10 15 | 691 | 0.1− | 0.4+ | 2006 03 25 | G96 | 0.2− | 0.0 | 2006 05 05 | G96 | 0.2+ | 0.5− |
| 2004 10 15 | 691 | 0.2− | 0.3+ | 2006 03 25 | G96 | 0.4− | 0.0 | 2006 05 22 | G96 | 0.7− | 0.3+ |
| 2004 10 15 | 691 | 0.1− | 0.1+ | 2006 04 07 | 691 | 0.3+ | 0.2+ | 2006 05 22 | G96 | 0.1− | 0.4+ |
| 2006 03 23 | 691 | 0.1+ | 0.5− | 2006 04 07 | 691 | 0.0 | 0.4+ | 2006 05 22 | G96 | 0.2− | 0.1+ |
| 2006 03 23 | 691 | 0.3− | 0.3− | 2006 04 07 | 691 | 0.3+ | 0.4+ | 2006 05 22 | G96 | 0.3− | 0.2+ |
| 2006 03 23 | 691 | 0.5+ | 0.2+ | 2006 04 19 | G96 | 0.1− | 0.2− | | | | |
| 2006 03 25 | G96 | 0.6− | 0.2+ | 2006 04 19 | G96 | 0.2+ | 0.2+ | | | | |

**2006 FV$_{52}$ = 1999 VC$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.04674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22217763 | $\omega$ | 286.65423 | | −0.53025863 | −0.84584686 | |
| $a$ | 2.6998263 | $\Omega$ | 195.77542 | | +0.83625926 | −0.51051684 | |
| $e$ | 0.1233522 | $i$ | 12.32716 | | +0.13962891 | −0.15464683 | |
| $P$ | 4.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 02 | 691 | 0.2+ | 0.6− | 2001 01 26 | 704 | 0.7+ | 0.1− | 2006 04 09 | 691 | 0.2− | 0.3+ |
| 1999 11 02 | 691 | 0.2+ | 1.1− | 2001 01 26 | 704 | 0.2− | 0.7+ | 2006 04 09 | 691 | 0.3+ | 0.1− |
| 1999 11 02 | 691 | 0.2+ | 0.3− | 2001 01 26 | 704 | 0.3+ | 0.5+ | 2006 04 09 | 691 | 0.1− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 691 | 0.2− | 0.5+ | 2006 03 25 | 691 | 0.3+ | 0.3− | 2006 04 19 | G96 | 0.3− | 0.2− |
| 1999 11 03 | 691 | 0.1− | 0.0 | 2006 03 25 | 691 | 0.2+ | 0.2− | 2006 04 19 | G96 | 0.3− | 0.1+ |
| 1999 11 03 | 691 | 0.1− | 0.3+ | 2006 03 25 | 691 | 0.1+ | 0.3− | 2006 04 19 | G96 | 0.3− | 0.8+ |
| 2000 11 27 | 645 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.0 | 0.1− | 2006 04 27 | 691 | 0.5− | 0.1− |
| 2000 11 27 | 645 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.6− | 0.1− | 2006 04 27 | 691 | 0.2+ | 0.5− |
| 2001 01 26 | 704 | 0.1+ | 0.1− | 2006 03 25 | G96 | 0.3− | 0.3− | 2006 04 27 | 691 | 0.1− | 0.3− |
| 2001 01 26 | 704 | 0.1+ | 0.6− | 2006 03 25 | G96 | 0.5− | 0.0 | | | | |

**2006 FW$_{52}$ = 2003 OL$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 314.23445 | | (2000.0) | | | |
| $n$ | 0.28023651 | $\omega$ | 121.28216 | | +0.60158389 | +0.79758420 |
| $a$ | 2.3127015 | $\Omega$ | 186.27638 | | −0.79821627 | +0.60234859 |
| $e$ | 0.2578266 | $i$ | 23.86429 | | +0.03078326 | +0.03218091 |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 645 | 0.0 | 0.0 | 2003 07 28 | 704 | 0.1− | 0.2− | 2006 04 07 | G96 | 0.2+ | 0.1− |
| 2000 10 01 | 645 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.2+ | 0.3+ | 2006 04 20 | 703 | 2.5− | 1.9+ |
| 2003 07 27 | 704 | 0.1+ | 0.0 | 2006 03 25 | G96 | 0.1+ | 0.3+ | 2006 04 20 | 703 | 0.6− | 1.6− |
| 2003 07 27 | 704 | 0.7+ | 0.5− | 2006 03 25 | G96 | 0.2+ | 0.1+ | 2006 04 20 | 703 | 0.2− | 0.5+ |
| 2003 07 27 | 704 | 0.1− | 0.2+ | 2006 03 25 | G96 | 0.1+ | 0.1− | 2006 04 20 | 703 | 0.1+ | 0.7+ |
| 2003 07 27 | 704 | 0.6+ | 0.1− | 2006 04 07 | G96 | 0.1− | 0.0 | 2006 04 21 | 691 | 0.4+ | 0.6− |
| 2003 07 28 | 704 | 0.7− | 0.5+ | 2006 04 07 | G96 | 0.4+ | 0.2+ | 2006 04 21 | 691 | 0.1+ | 0.1− |
| 2003 07 28 | 704 | 0.6− | 0.3+ | 2006 04 07 | G96 | 0.0 | 0.3+ | 2006 04 21 | 691 | 0.0 | 0.1+ |

**2006 FX$_{52}$ = 2003 SU$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.38168 | | (2000.0) | | | |
| $n$ | 0.23247575 | $\omega$ | 342.43138 | | −0.98519537 | +0.16622188 |
| $a$ | 2.6194952 | $\Omega$ | 207.24359 | | −0.14422260 | −0.93591670 |
| $e$ | 0.0322282 | $i$ | 5.25875 | | −0.09268183 | −0.31053216 |
| $P$ | 4.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3+ | 0.4+ | 2003 09 22 | 691 | 0.2− | 0.2+ | 2006 04 09 | 691 | 0.2+ | 0.4+ |
| 1999 10 06 | 704 | 0.6− | 0.6+ | 2003 09 22 | 691 | 0.1+ | 0.0 | 2006 04 09 | 691 | 0.0 | 0.2− |
| 1999 10 06 | 704 | 0.4+ | 0.7+ | 2003 09 22 | 691 | 0.1− | 0.3+ | 2006 04 09 | 691 | 0.3+ | 0.2+ |
| 1999 10 06 | 704 | 0.7− | 0.5+ | 2003 09 23 | 644 | 0.1− | 0.5+ | 2006 04 18 | 699 | 0.6+ | 1.0− |
| 1999 10 06 | 704 | 0.3− | 0.3+ | 2003 09 23 | 644 | 0.2− | 0.5+ | 2006 04 18 | 699 | 0.2+ | 1.2+ |
| 2001 01 21 | 704 | 0.0 | 1.0+ | 2003 09 23 | 644 | 0.0 | 0.5+ | 2006 04 18 | 699 | 0.0 | 0.6+ |
| 2001 01 21 | 704 | 0.2− | 0.0 | 2006 03 25 | 691 | 0.5+ | 0.1+ | 2006 04 18 | 699 | 0.6− | 0.6+ |
| 2001 01 21 | 704 | 0.5+ | 0.8+ | 2006 03 25 | 691 | 0.1+ | 0.2+ | 2006 05 24 | G96 | 0.6− | 0.0 |
| 2001 01 21 | 704 | 0.6+ | 0.0 | 2006 03 25 | 691 | 0.1+ | 0.0 | 2006 05 24 | G96 | 0.3− | 0.4+ |
| 2001 01 21 | 704 | 0.5− | 0.8+ | 2006 03 25 | G96 | 0.3− | 0.3+ | 2006 05 24 | G96 | 0.1+ | 0.2− |
| 2002 05 18 | 644 | 0.1− | 0.1− | 2006 03 25 | G96 | 1.0− | 0.0 | 2006 05 24 | G96 | 0.1− | 0.1+ |
| 2002 05 18 | 644 | 0.2+ | 0.1+ | 2006 03 25 | G96 | 0.8− | 0.1− | | | | |
| 2002 05 18 | 644 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.5− | 0.0 | | | | |

**2006 FY$_{52}$ = 1999 VL$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.14498 | | (2000.0) | | | |
| $n$ | 0.24212070 | $\omega$ | 164.11140 | | +0.29827988 | +0.95418612 |
| $a$ | 2.5494594 | $\Omega$ | 123.23743 | | −0.87876357 | +0.28419432 |
| $e$ | 0.1263170 | $i$ | 1.61833 | | −0.37256368 | +0.09360790 |
| $P$ | 4.07 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.2+ | 0.2− | 2002 04 18 | 691 | 0.1+ | 0.6+ | 2006 04 02 | 691 | 0.0 | 0.2+ |
| 1999 11 09 | 691 | 0.1+ | 0.3− | 2003 09 21 | 691 | 0.3+ | 0.5+ | 2006 04 02 | 691 | 0.2+ | 0.2+ |
| 1999 11 09 | 691 | 0.0 | 0.2− | 2003 09 21 | 691 | 0.3− | 0.3+ | 2006 04 27 | 807 | 0.1+ | 0.1+ |
| 1999 11 13 | 691 | 0.3− | 0.2− | 2003 09 21 | 691 | 0.2− | 0.3+ | 2006 04 27 | 807 | 0.1− | 0.2− |
| 1999 11 13 | 691 | 0.3− | 0.2− | 2003 10 19 | 645 | 0.0 | 0.2+ | 2006 05 06 | G96 | 0.2− | 0.1− |
| 1999 11 13 | 691 | 0.5− | 0.1− | 2003 10 19 | 645 | 0.0 | 0.2+ | 2006 05 06 | G96 | 0.2− | 0.0 |
| 2000 12 25 | 691 | 0.1+ | 0.2− | 2005 01 13 | 291 | 0.5+ | 0.2+ | 2006 05 06 | G96 | 0.1− | 0.1− |
| 2000 12 25 | 691 | 0.4+ | 0.2+ | 2005 01 13 | 291 | 0.5− | 0.0 | 2006 05 06 | G96 | 0.4− | 0.2+ |
| 2000 12 25 | 691 | 0.3+ | 0.3+ | 2005 01 13 | 291 | 0.5− | 0.5+ | 2006 05 24 | G96 | 0.2− | 0.1− |
| 2002 04 13 | 644 | 0.1+ | 0.6+ | 2006 03 26 | G96 | 0.3− | 0.2+ | 2006 05 24 | G96 | 0.2− | 0.0 |
| 2002 04 13 | 644 | 0.6+ | 0.2+ | 2006 03 26 | G96 | 0.0 | 0.0 | 2006 05 24 | G96 | 0.3− | 0.1− |
| 2002 04 13 | 644 | 0.4+ | 0.3+ | 2006 03 26 | G96 | 0.5− | 0.1+ | 2006 05 24 | G96 | 0.4− | 0.2− |
| 2002 04 18 | 691 | 0.5+ | 0.3+ | 2006 03 26 | G96 | 0.6− | 0.0 | | | | |
| 2002 04 18 | 691 | 0.1+ | 0.6+ | 2006 04 02 | 691 | 0.3+ | 0.0 | | | | |

**2006 FZ$_{52}$ = 2004 VR$_{107}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.81385 | | (2000.0) | | | |
| $n$ | 0.30761828 | $\omega$ | 176.83219 | | −0.87229230 | +0.48857143 |
| $a$ | 2.1733414 | $\Omega$ | 32.43925 | | −0.44945454 | −0.78490423 |
| $e$ | 0.0889719 | $i$ | 2.14772 | | −0.19260519 | −0.38108175 |
| $P$ | 3.20 | $H$ | 18.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 09 | 568 | 0.0 | 0.1− | 2006 04 09 | 691 | 0.4− | 0.3+ | 2006 04 21 | G96 | 0.1+ | 0.0 |
| 2004 11 09 | 568 | 0.1+ | 0.1− | 2006 04 09 | 691 | 0.0 | 0.2+ | 2006 04 21 | G96 | 0.4− | 0.2− |
| 2004 11 09 | 568 | 0.0 | 0.1− | 2006 04 09 | 691 | 0.0 | 0.2− | 2006 04 21 | G96 | 0.1− | 0.3+ |
| 2004 11 10 | 568 | 0.0 | 0.2+ | 2006 04 19 | G96 | 0.3− | 0.1+ | 2006 05 23 | G96 | 0.1− | 0.2− |
| 2006 03 26 | G96 | 0.4+ | 0.1+ | 2006 04 19 | G96 | 0.0 | 0.1− | 2006 05 23 | G96 | 0.1+ | 0.3− |
| 2006 03 26 | G96 | 0.1− | 0.0 | 2006 04 19 | G96 | 0.4− | 0.2− | 2006 05 23 | G96 | 0.1− | 0.3+ |
| 2006 03 26 | G96 | 0.1− | 0.2+ | 2006 04 19 | G96 | 0.4− | 0.2+ | 2006 05 23 | G96 | 0.1− | 0.3+ |
| 2006 03 26 | G96 | 0.0 | 0.2− | 2006 04 21 | G96 | 1.9+ | 0.6− | | | | |

**2006 FA$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.00008 | | (2000.0) | | | |
| $n$ | 0.19051764 | $\omega$ | 117.45743 | | −0.93040758 | +0.36376112 |
| $a$ | 2.9912032 | $\Omega$ | 83.90275 | | −0.35021508 | −0.84612422 |
| $e$ | 0.0300394 | $i$ | 2.59039 | | −0.10812555 | −0.38955313 |
| $P$ | 5.17 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 0.4+ | 0.1− | 2003 10 18 | 691 | 0.2− | 0.4+ | 2006 04 09 | 691 | 0.1+ | 0.2+ |
| 1995 02 05 | 691 | 0.1− | 0.1+ | 2003 10 18 | 691 | 0.3− | 0.4+ | 2006 04 09 | 691 | 0.0 | 0.5+ |
| 1995 02 05 | 691 | 0.3− | 0.1− | 2003 10 18 | 691 | 0.1+ | 0.4+ | 2006 04 09 | 691 | 0.0 | 0.1+ |
| 2001 04 27 | 691 | 0.3− | 0.1+ | 2003 11 24 | 691 | 0.0 | 0.3+ | 2006 04 24 | 691 | 0.2+ | 0.1− |
| 2001 04 27 | 691 | 0.3− | 0.6+ | 2003 11 24 | 691 | 0.3− | 0.3+ | 2006 04 24 | 691 | 0.6+ | 0.2− |
| 2001 04 27 | 691 | 0.2− | 0.2+ | 2003 11 24 | 691 | 0.1− | 0.1+ | 2006 04 24 | 691 | 0.1+ | 0.1− |
| 2001 05 17 | 691 | 0.4+ | 0.2− | 2006 03 23 | 691 | 0.1− | 0.2− | 2006 05 03 | 691 | 0.2+ | 0.3+ |
| 2001 05 17 | 691 | 0.1+ | 0.0 | 2006 03 23 | 691 | 0.4− | 0.4+ | 2006 05 03 | 691 | 0.0 | 0.3+ |
| 2001 05 17 | 691 | 0.6+ | 0.0 | 2006 03 23 | 691 | 0.1+ | 0.1− | 2006 05 03 | 691 | 0.1− | 0.2+ |

**2006 FB$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 158.24333 | | (2000.0) | | | |
| $n$ | 0.20994074 | $\omega$ | 275.23261 | | +0.29184698 | −0.95604841 |
| $a$ | 2.8037432 | $\Omega$ | 157.73601 | | +0.90440736 | +0.26623889 |
| $e$ | 0.0778377 | $i$ | 4.27264 | | +0.31124374 | +0.12283437 |
| $P$ | 4.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 691 | 0.0 | 0.5+ | 2003 10 16 | 644 | 0.1− | 0.5+ | 2006 04 02 | 691 | 0.1− | 0.1+ |
| 2001 03 02 | 691 | 0.3+ | 0.1+ | 2003 10 16 | 644 | 0.1− | 0.7+ | 2006 04 07 | 691 | 0.4− | 0.3+ |
| 2001 03 02 | 691 | 0.3+ | 0.2+ | 2004 12 11 | 691 | 0.2− | 0.2+ | 2006 04 07 | 691 | 0.0 | 0.1+ |
| 2001 03 27 | 691 | 0.1− | 0.1− | 2004 12 11 | 691 | 0.2+ | 0.2+ | 2006 04 07 | 691 | 0.4+ | 0.2+ |
| 2001 03 27 | 691 | 0.2− | 0.1− | 2004 12 11 | 691 | 0.0 | 0.2+ | 2006 05 09 | G96 | 0.1− | 0.3− |
| 2001 03 27 | 691 | 0.1− | 0.1+ | 2006 03 23 | 691 | 1.0+ | 0.3+ | 2006 05 09 | G96 | 0.1− | 0.5− |
| 2003 09 28 | 691 | 0.0 | 0.5+ | 2006 03 23 | 691 | 0.1− | 0.3+ | 2006 05 09 | G96 | 0.6− | 0.2− |
| 2003 09 28 | 691 | 0.1− | 0.7+ | 2006 03 23 | 691 | 0.4+ | 0.1− | 2006 05 09 | G96 | 0.5− | 0.1− |
| 2003 09 28 | 691 | 0.3− | 0.5+ | 2006 04 02 | 691 | 0.1− | 0.4+ | | | | |
| 2003 10 16 | 644 | 0.8− | 0.9+ | 2006 04 02 | 691 | 0.2− | 0.0 | | | | |

**2006 FC$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 92.95569 | | (2000.0) | | | |
| $n$ | 0.23711857 | $\omega$ | 116.05211 | | −0.81777786 | −0.57459814 |
| $a$ | 2.5851892 | $\Omega$ | 28.91065 | | +0.50081960 | −0.73854647 |
| $e$ | 0.1049564 | $i$ | 3.89123 | | +0.28358261 | −0.35268412 |
| $P$ | 4.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 1.1+ | 0.2+ | 2004 12 02 | 644 | 0.1+ | 0.7+ | 2006 04 09 | 691 | 0.0 | 0.0 |
| 2002 05 11 | 704 | 0.2− | 0.5+ | 2006 03 23 | G96 | 0.3+ | 0.5− | 2006 04 30 | 699 | 0.2− | 0.4+ |
| 2002 05 11 | 704 | 0.2+ | 0.1+ | 2006 03 23 | G96 | 0.1− | 0.2− | 2006 04 30 | 699 | 1.0+ | 1.6− |
| 2002 05 11 | 704 | 0.6− | 0.7+ | 2006 03 23 | G96 | 0.1− | 0.5− | 2006 04 30 | 699 | 0.3− | 1.1+ |
| 2002 05 11 | 704 | 0.1+ | 0.5+ | 2006 03 23 | G96 | 0.5− | 0.7− | 2006 04 30 | 699 | 0.7+ | 0.2− |
| 2004 11 04 | 691 | 0.2− | 0.1+ | 2006 03 25 | 691 | 0.0 | 0.3− | 2006 05 23 | G96 | 0.4+ | 0.4− |
| 2004 11 04 | 691 | 0.1− | 0.1− | 2006 03 25 | 691 | 0.2+ | 0.3− | 2006 05 23 | G96 | 0.1+ | 0.1− |
| 2004 11 04 | 691 | 0.1− | 0.0 | 2006 03 25 | 691 | 1.3− | 1.1+ | 2006 05 23 | G96 | 0.5+ | 0.1+ |
| 2004 12 02 | 644 | 0.0 | 0.5+ | 2006 04 09 | 691 | 0.4+ | 0.1+ | 2006 05 23 | G96 | 0.0 | 0.0 |
| 2004 12 02 | 644 | 1.0+ | 0.7+ | 2006 04 09 | 691 | 0.2+ | 0.1− | | | | |

**2006 FD$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.63398 | | (2000.0) | | | |
| $n$ | 0.29017784 | $\omega$ | 194.57366 | | +0.04470614 | +0.99881451 |
| $a$ | 2.2595739 | $\Omega$ | 77.99140 | | −0.91458264 | +0.04867710 |
| $e$ | 0.0325847 | $i$ | 1.12826 | | −0.40192033 | +0.00033318 |
| $P$ | 3.40 | $H$ | 18.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 691 | 0.0 | 0.3+ | 2004 11 17 | 599 | 1.0+ | 0.1− | 2006 05 03 | 691 | 0.0 | 0.1− |
| 2000 08 03 | 691 | 0.2− | 0.4+ | 2006 03 24 | G96 | 0.3− | 0.1+ | 2006 05 03 | 691 | 0.5+ | 0.0 |
| 2000 08 03 | 691 | 0.1− | 0.0 | 2006 03 24 | G96 | 0.2+ | 0.1+ | 2006 05 03 | 691 | 0.1− | 0.2+ |
| 2002 01 14 | 291 | 0.0 | 0.2+ | 2006 03 24 | G96 | 0.5− | 0.0 | 2006 05 19 | G96 | 0.5− | 0.1− |
| 2002 01 14 | 291 | 0.1− | 0.1+ | 2006 03 24 | G96 | 0.1+ | 0.2+ | 2006 05 19 | G96 | 0.1− | 0.2+ |
| 2002 01 14 | 291 | 0.2+ | 0.3+ | 2006 04 19 | G96 | 0.3+ | 0.4+ | 2006 05 19 | G96 | 0.3− | 0.1+ |
| 2004 11 17 | 599 | 0.4− | 0.1+ | 2006 04 19 | G96 | 0.5+ | 0.4+ | 2006 05 19 | G96 | 0.1+ | 0.3+ |
| 2004 11 17 | 599 | 0.7− | 0.0 | 2006 04 19 | G96 | 0.1− | 0.1+ | | | | |
| 2004 11 17 | 599 | 0.1− | 1.1+ | 2006 04 19 | G96 | 0.1+ | 0.0 | | | | |

**2006 FE$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.86108 | | (2000.0) | | | |
| $n$ | 0.26992106 | $\omega$ | 168.99398 | | +0.99310754 | +0.11708361 |
| $a$ | 2.3712547 | $\Omega$ | 184.29312 | | −0.11224584 | +0.93688713 |
| $e$ | 0.1622356 | $i$ | 4.11347 | | −0.03373837 | +0.32944490 |
| $P$ | 3.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 695 | 0.4− | 0.2+ | 2005 01 19 | 691 | 0.1+ | 0.2− | 2006 04 07 | 691 | 0.2+ | 0.1− |
| 2002 03 20 | 695 | 0.4+ | 0.1− | 2006 03 24 | G96 | 0.3− | 0.1− | 2006 04 26 | 807 | 0.0 | 0.2− |
| 2003 07 22 | 608 | 0.4+ | 0.1− | 2006 03 24 | G96 | 0.5− | 0.3+ | 2006 04 26 | 807 | 0.0 | 0.0 |
| 2003 07 22 | 608 | 0.2+ | 0.3− | 2006 03 24 | G96 | 0.2− | 0.2+ | 2006 05 26 | G96 | 0.4− | 0.0 |
| 2003 07 22 | 608 | 0.5− | 0.1− | 2006 03 24 | G96 | 0.5− | 0.0 | 2006 05 26 | G96 | 0.3− | 0.2+ |
| 2005 01 19 | 691 | 0.1− | 0.1− | 2006 04 07 | 691 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.3+ | 0.2− |
| 2005 01 19 | 691 | 0.1− | 0.1+ | 2006 04 07 | 691 | 0.2+ | 0.1+ | 2006 05 26 | G96 | 0.2− | 0.3− |

**2006 FF$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.09911 | | (2000.0) | | | |
| $n$ | 0.17364442 | $\omega$ | 11.11221 | | −0.72126111 | +0.69219067 |
| $a$ | 3.1819657 | $\Omega$ | 212.73875 | | −0.63907768 | −0.67925344 |
| $e$ | 0.1059871 | $i$ | 2.71140 | | −0.26713691 | −0.24389926 |
| $P$ | 5.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 691 | 0.2+ | 0.1+ | 2005 01 16 | 691 | 0.1− | 0.5+ | 2006 04 19 | G96 | 0.4− | 0.1− |
| 1997 11 02 | 691 | 0.2− | 0.2− | 2006 03 25 | 691 | 0.4− | 0.1− | 2006 05 06 | G96 | 0.6− | 0.2+ |
| 1997 11 02 | 691 | 0.0 | 0.3+ | 2006 03 25 | 691 | 0.1− | 0.1+ | 2006 05 06 | G96 | 0.8− | 0.0 |
| 2000 03 11 | 704 | 0.4− | 0.1− | 2006 03 25 | 691 | 0.3− | 0.2+ | 2006 05 06 | G96 | 0.6− | 0.2+ |
| 2000 03 11 | 704 | 0.8− | 0.5+ | 2006 04 09 | 691 | 0.4+ | 0.3+ | 2006 05 06 | G96 | 0.3− | 0.1+ |
| 2000 03 11 | 704 | 1.3+ | 0.3+ | 2006 04 09 | 691 | 0.3+ | 0.1+ | 2006 05 26 | 291 | 0.5+ | 0.1+ |
| 2002 10 05 | 645 | 0.1− | 0.2+ | 2006 04 09 | 691 | 0.0 | 0.4+ | 2006 05 26 | 291 | 0.7+ | 0.3+ |
| 2002 10 05 | 645 | 0.1− | 0.2+ | 2006 04 19 | G96 | 0.3− | 0.2+ | 2006 05 26 | 291 | 0.6+ | 0.1+ |
| 2005 01 16 | 691 | 0.2+ | 0.3+ | 2006 04 19 | G96 | 0.7− | 0.1+ | | | | |
| 2005 01 16 | 691 | 0.3+ | 0.4+ | 2006 04 19 | G96 | 0.1− | 0.1+ | | | | |

**2006 FG$_{53}$ = 2005 AR$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 245.13670 | | (2000.0) | | | |
| $n$ | 0.24673609 | $\omega$ | 155.78205 | | +0.99350035 | −0.11221988 |
| $a$ | 2.5175664 | $\Omega$ | 210.68000 | | +0.09738505 | +0.92471011 |
| $e$ | 0.0835491 | $i$ | 2.14217 | | +0.05893397 | +0.36375530 |
| $P$ | 3.99 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.3+ | 1.0− | 2003 09 01 | 704 | 0.2− | 0.7+ | 2006 03 25 | G96 | 0.7− | 0.2− |
| 2002 04 14 | 704 | 0.5+ | 0.4+ | 2003 09 01 | 704 | 0.0 | 0.9+ | 2006 03 25 | G96 | 1.2− | 0.2− |
| 2002 04 14 | 704 | 0.9+ | 0.2+ | 2005 01 15 | 704 | 0.3− | 1.8− | 2006 04 09 | 691 | 0.2+ | 0.6+ |
| 2002 04 14 | 704 | 0.5+ | 0.0 | 2005 01 15 | 704 | 0.4+ | 1.2− | 2006 04 09 | 691 | 0.2+ | 0.0 |
| 2002 04 14 | 704 | 0.5+ | 0.4+ | 2005 01 15 | 704 | (0.7+ | 2.2−) | 2006 04 09 | 691 | 0.3+ | 0.1+ |
| 2002 04 19 | 291 | 0.1− | 0.0 | 2005 01 15 | 704 | 0.0 | 0.0 | 2006 04 19 | G96 | 0.4− | 0.0 |
| 2002 04 19 | 291 | 0.2− | 0.2+ | 2005 01 16 | 691 | 0.1+ | 0.4+ | 2006 04 19 | G96 | 0.2− | 0.0 |
| 2002 04 19 | 291 | 0.2− | 0.5+ | 2005 01 16 | 691 | 0.0 | 0.5+ | 2006 04 19 | G96 | 0.5− | 0.1− |
| 2003 08 04 | 704 | 0.1− | 0.8+ | 2005 01 16 | 691 | 0.1− | 0.4+ | 2006 04 19 | G96 | 0.1+ | 0.5− |
| 2003 08 04 | 704 | 0.0 | 0.3− | 2006 03 25 | 691 | 0.0 | 0.1− | 2006 05 06 | G96 | 0.7− | 0.2− |
| 2003 08 04 | 704 | 0.3− | 0.0 | 2006 03 25 | 691 | 0.1+ | 0.2+ | 2006 05 06 | G96 | 0.5− | 0.3− |
| 2003 08 04 | 704 | 0.6− | 0.0 | 2006 03 25 | 691 | 0.3+ | 0.1− | 2006 05 06 | G96 | 0.3− | 0.5− |
| 2003 09 01 | 704 | 0.1+ | 0.1+ | 2006 03 25 | G96 | 0.3− | 0.8− | 2006 05 06 | G96 | 0.6− | 0.6− |
| 2003 09 01 | 704 | 0.3+ | 0.2+ | 2006 03 25 | G96 | 0.3+ | 0.1− | | | | |

**2006 FH$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 286.07546 | | (2000.0) | | | |
| $n$ | 0.20286484 | $\omega$ | 268.15640 | | +0.85201885 | +0.52157536 |
| $a$ | 2.8685661 | $\Omega$ | 60.40311 | | −0.45739871 | +0.78346096 |
| $e$ | 0.0677530 | $i$ | 2.96509 | | −0.25465723 | +0.33785808 |
| $P$ | 4.86 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 688 | 0.2+ | 0.3+ | 2006 03 25 | 691 | 0.3− | 0.5+ | 2006 05 08 | G96 | 0.3− | 0.3− |
| 2000 03 03 | 688 | 0.0 | 0.6+ | 2006 04 02 | 691 | 0.1+ | 0.0 | 2006 05 08 | G96 | 0.0 | 0.1+ |
| 2002 08 06 | 644 | 0.3+ | 0.1+ | 2006 04 02 | 691 | 0.2− | 0.0 | 2006 05 08 | G96 | 0.4− | 0.4− |
| 2002 08 06 | 644 | 0.2− | 0.1− | 2006 04 02 | 691 | 0.3+ | 0.2− | 2006 05 22 | G96 | 0.5− | 0.0 |
| 2002 08 06 | 644 | 0.0 | 0.3− | 2006 04 07 | 691 | 0.1+ | 0.1− | 2006 05 22 | G96 | 0.8− | 0.0 |
| 2005 02 04 | G96 | 0.0 | 0.5− | 2006 04 07 | 691 | 0.0 | 0.2+ | 2006 05 22 | G96 | 0.7− | 0.1− |
| 2005 02 04 | G96 | 0.2− | 0.4− | 2006 04 07 | 691 | 0.2+ | 0.2+ | 2006 05 22 | G96 | 0.5− | 0.3− |
| 2005 02 04 | G96 | 0.3− | 0.4− | 2006 04 26 | 691 | 0.3+ | 0.1+ | 2006 05 31 | G96 | 0.4− | 0.5− |
| 2005 02 04 | G96 | 0.1− | 0.3− | 2006 04 26 | 691 | 0.4+ | 0.1+ | 2006 05 31 | G96 | 0.0 | 0.4− |
| 2006 03 25 | 691 | 0.1+ | 0.1− | 2006 04 26 | 691 | 0.1− | 0.3+ | 2006 05 31 | G96 | 0.2− | 0.4− |
| 2006 03 25 | 691 | 0.3+ | 0.2− | 2006 05 08 | G96 | 0.5− | 0.2− | 2006 05 31 | G96 | 0.1− | 0.2− |

**2006 FJ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.67321 | | (2000.0) | | | |
| $n$ | 0.17607215 | $\omega$ | 141.78582 | | −0.99818922 | +0.00187080 |
| $a$ | 3.1526489 | $\Omega$ | 38.45252 | | −0.02968877 | −0.88461305 |
| $e$ | 0.0986735 | $i$ | 5.54812 | | +0.05231505 | −0.46632205 |
| $P$ | 5.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.0 | 0.5− | 2005 02 04 | G96 | 1.0− | 0.5− | 2006 05 04 | G96 | 0.3− | 0.1− |
| 2000 03 11 | 699 | 0.2− | 0.4+ | 2006 03 25 | 691 | 0.1+ | 0.1− | 2006 05 04 | G96 | 0.1− | 0.3+ |
| 2000 03 11 | 699 | 0.2+ | 0.3− | 2006 03 25 | 691 | 0.0 | 0.3− | 2006 05 04 | G96 | 0.3− | 0.4− |
| 2000 03 11 | 699 | 0.1− | 0.5+ | 2006 03 25 | 691 | 0.2− | 1.1− | 2006 05 04 | G96 | 1.1− | 0.7+ |
| 2003 11 21 | 691 | 0.2− | 0.2+ | 2006 04 02 | 691 | 0.4+ | 0.0 | 2006 05 23 | G96 | 0.1− | 0.3+ |
| 2003 11 21 | 691 | 0.1− | 0.0 | 2006 04 02 | 691 | 0.2+ | 0.0 | 2006 05 23 | G96 | 0.3− | 0.1− |
| 2003 11 21 | 691 | 0.2+ | 0.1+ | 2006 04 02 | 691 | 0.3+ | 1.3+ | 2006 05 23 | G96 | 0.2− | 0.2+ |
| 2005 02 04 | G96 | 0.6+ | 0.1+ | 2006 04 26 | 691 | 0.2+ | 0.0 | 2006 05 23 | G96 | 0.1− | 0.3− |
| 2005 02 04 | G96 | 0.3+ | 0.0 | 2006 04 26 | 691 | 0.1+ | 0.1− | | | | |
| 2005 02 04 | G96 | 0.0 | 0.2+ | 2006 04 26 | 691 | 0.3− | 0.1+ | | | | |

### 2006 FK$_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.01948 | | | (2000.0) | | |
| $n$ | 0.23181333 | $\omega$ | 5.09109 | | −0.69271661 | +0.72028693 |
| $a$ | 2.6244831 | $\Omega$ | 221.07052 | | −0.66364142 | −0.65640692 |
| $e$ | 0.0742832 | $i$ | 3.18263 | | −0.28235396 | −0.22431382 |
| $P$ | 4.25 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.1+ | 0.3− | 2006 03 26 | 691 | 0.2+ | 0.1− | 2006 05 02 | G96 | 0.2− | 0.1− |
| 1999 10 09 | 691 | 0.1+ | 0.3− | 2006 03 26 | 691 | 0.2− | 0.1+ | 2006 05 02 | G96 | 0.2+ | 0.1− |
| 1999 10 09 | 691 | 0.3+ | 0.2− | 2006 03 26 | 691 | 0.2+ | 0.1− | 2006 05 02 | G96 | 0.3+ | 0.1− |
| 1999 10 13 | 645 | 0.0 | 0.1+ | 2006 04 21 | 703 | 1.1− | 0.3+ | 2006 05 23 | G96 | 0.1+ | 0.3− |
| 1999 10 13 | 645 | 0.1− | 0.1+ | 2006 04 21 | 703 | 0.4− | 0.2+ | 2006 05 23 | G96 | 0.1+ | 0.1− |
| 2003 09 18 | 691 | 0.2+ | 0.1− | 2006 04 21 | 703 | 0.2+ | 1.3+ | 2006 05 23 | G96 | 0.0 | 0.3− |
| 2003 09 18 | 691 | 0.1− | 0.0 | 2006 04 21 | 703 | 0.1− | 0.1− | 2006 05 23 | G96 | 0.4+ | 0.3− |
| 2003 09 18 | 691 | 0.2− | 0.1+ | 2006 05 02 | G96 | 0.1+ | 0.4− | | | | |

### 2006 FL$_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.51528 | | | (2000.0) | | |
| $n$ | 0.26510437 | $\omega$ | 306.28085 | | −0.21154399 | +0.97709880 |
| $a$ | 2.3998907 | $\Omega$ | 311.48967 | | −0.88660379 | −0.20173115 |
| $e$ | 0.1627193 | $i$ | 1.75630 | | −0.41131843 | −0.06769395 |
| $P$ | 3.72 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 31 | 691 | 0.0 | 0.0 | 2003 09 28 | 691 | 0.0 | 0.1− | 2006 04 21 | 703 | 0.0 | 0.6− |
| 1998 01 31 | 691 | 0.2− | 0.1+ | 2003 09 28 | 691 | 0.0 | 0.0 | 2006 05 09 | G96 | 0.5+ | 0.1+ |
| 1998 01 31 | 691 | 0.0 | 0.1− | 2003 09 28 | 691 | 0.0 | 0.2+ | 2006 05 09 | G96 | 0.1− | 0.1+ |
| 1999 08 13 | 691 | 0.3− | 1.1+ | 2006 03 26 | 691 | 0.2+ | 0.0 | 2006 05 09 | G96 | 0.2− | 0.3+ |
| 1999 08 13 | 691 | 0.2− | 0.6+ | 2006 03 26 | 691 | 0.0 | 0.1− | 2006 05 09 | G96 | 0.3− | 0.2+ |
| 1999 08 13 | 691 | 0.5+ | 1.4− | 2006 03 26 | 691 | 0.3+ | 0.2+ | 2006 05 31 | G96 | 0.5− | 0.2+ |
| 2002 03 21 | 291 | 0.2+ | 0.2+ | 2006 04 21 | 703 | 0.4− | 0.5− | 2006 05 31 | G96 | 0.0 | 0.2+ |
| 2002 03 21 | 291 | 0.0 | 0.2+ | 2006 04 21 | 703 | 1.0− | 0.8− | 2006 05 31 | G96 | 0.1− | 0.1− |
| 2002 03 21 | 291 | 0.3+ | 0.2+ | 2006 04 21 | 703 | 0.5− | 0.1− | 2006 05 31 | G96 | 0.1− | 0.1− |

### 2006 FS$_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.37680 | | | (2000.0) | | |
| $n$ | 0.25650747 | $\omega$ | 269.78417 | | +0.56987270 | +0.82122741 |
| $a$ | 2.4532174 | $\Omega$ | 35.00770 | | −0.73253155 | +0.52359146 |
| $e$ | 0.1913003 | $i$ | 2.87965 | | −0.37234747 | +0.22679842 |
| $P$ | 3.84 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 704 | 0.8− | 0.1+ | 2006 03 25 | 691 | 0.2+ | 0.2+ | 2006 05 01 | 568 | 0.1− | 0.5− |
| 2003 09 26 | 704 | 1.4− | 0.6− | 2006 03 25 | 691 | 0.3+ | 0.1− | 2006 05 01 | 568 | 0.0 | 0.4− |
| 2003 09 26 | 704 | 0.4− | 0.1+ | 2006 04 02 | 691 | 0.3+ | 0.4+ | 2006 05 04 | G96 | 1.0− | 0.9+ |
| 2003 10 01 | 691 | 0.1− | 0.1+ | 2006 04 02 | 691 | 0.1− | 0.0 | 2006 05 04 | G96 | 0.1− | 0.1− |
| 2003 10 01 | 691 | 0.1− | 0.2− | 2006 04 02 | 691 | 0.5+ | 0.3+ | 2006 05 04 | G96 | 0.4− | 0.1+ |
| 2003 10 01 | 691 | 0.0 | 0.2+ | 2006 04 19 | G96 | 0.3− | 0.3+ | 2006 05 04 | G96 | 0.1− | 0.1+ |
| 2003 10 18 | 691 | 0.2+ | 0.3+ | 2006 04 19 | G96 | 0.2+ | 0.3+ | 2006 05 23 | G96 | 0.1− | 0.5− |
| 2003 10 18 | 691 | 0.3+ | 0.0 | 2006 04 19 | G96 | 0.6− | 0.0 | 2006 05 23 | G96 | 0.3− | 0.6− |
| 2003 10 18 | 691 | 0.2+ | 0.3+ | 2006 04 19 | G96 | 0.3− | 0.1+ | 2006 05 23 | G96 | 0.3− | 0.3− |
| 2006 03 25 | 691 | 0.1− | 0.1+ | 2006 05 01 | 568 | 0.1+ | 0.5− | 2006 05 23 | G96 | 0.0 | 0.2− |

### 2006 GN

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.03343 | | | (2000.0) | | |
| $n$ | 0.21103120 | $\omega$ | 151.70330 | | +0.25718413 | +0.96552966 |
| $a$ | 2.7940763 | $\Omega$ | 133.16873 | | −0.89666736 | +0.25390694 |
| $e$ | 0.2190066 | $i$ | 3.15255 | | −0.36033869 | +0.05730397 |
| $P$ | 4.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 20 | 809 | (4.1+ | 1.1+) | 2002 06 11 | 644 | 0.1+ | 0.1+ | 2006 02 27 | 691 | 0.2− | 0.1− |
| 1993 08 20 | 809 | 2.9+ | 1.5+ | 2002 06 16 | 644 | 0.2− | 0.1+ | 2006 02 27 | 691 | 0.0 | 0.2+ |
| 1993 08 20 | 809 | 2.6+ | 0.3+ | 2002 06 16 | 644 | 0.6− | 0.1+ | 2006 04 01 | D35 | 0.8− | 1.0+ |
| 1993 09 10 | 691 | 0.5− | 0.9+ | 2002 06 16 | 644 | 0.2− | 0.6+ | 2006 04 01 | D35 | 0.7− | 0.7+ |
| 1993 09 10 | 691 | 1.2− | 0.2+ | 2002 07 05 | 704 | 0.4− | 1.0+ | 2006 04 01 | D35 | 0.5− | 0.6+ |
| 1993 09 10 | 691 | 1.3− | 0.1+ | 2002 07 05 | 704 | 0.8+ | 0.1− | 2006 04 02 | 691 | 0.6+ | 0.3+ |
| 1997 05 05 | 691 | 0.1− | 0.0 | 2002 07 05 | 704 | 0.6+ | 1.5− | 2006 04 02 | 691 | 0.6+ | 0.2+ |
| 1997 05 05 | 691 | 0.1− | 0.1− | 2002 07 05 | 704 | 0.2− | 0.3+ | 2006 04 02 | 691 | 0.9+ | 0.2+ |
| 1997 05 05 | 691 | 0.1+ | 0.2− | 2002 07 14 | 704 | 0.5− | 0.6+ | 2006 04 02 | D35 | 0.6− | 0.9+ |
| 2001 05 20 | 807 | 0.2+ | 0.2+ | 2002 07 14 | 704 | 0.0 | 1.1− | 2006 04 02 | D35 | 0.8− | 0.5+ |
| 2001 05 21 | 807 | 0.2+ | 0.1+ | 2002 07 14 | 704 | 0.6+ | 1.4− | 2006 04 02 | D35 | 1.3− | 0.3+ |
| 2002 06 11 | 644 | 0.1− | 0.1+ | 2002 07 14 | 704 | 0.0 | 0.6− | | | | |
| 2002 06 11 | 644 | 0.1+ | 0.0 | 2006 02 27 | 691 | 0.1+ | 0.1+ | | | | |

### 2006 GR

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 262.01312 | | | (2000.0) | | |
| $n$ | 0.21737971 | $\omega$ | 171.26291 | | +0.86808267 | +0.49488563 |
| $a$ | 2.7394079 | $\Omega$ | 158.93650 | | −0.46176104 | +0.83381746 |
| $e$ | 0.0540646 | $i$ | 6.22900 | | −0.18223397 | +0.24461533 |
| $P$ | 4.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 02 | 644 | 0.1− | 0.1+ | 2003 09 27 | 691 | 0.3− | 0.3+ | 2006 04 02 | 461 | 0.4− | 0.6+ |
| 2002 06 02 | 644 | 0.2− | 0.7− | 2005 12 01 | 695 | 0.1+ | 0.2+ | 2006 04 02 | 461 | 0.1− | 0.3+ |
| 2002 06 10 | 644 | 0.3+ | 0.8− | 2005 12 01 | 695 | 0.6+ | 0.1− | 2006 04 02 | 461 | 0.3+ | 0.1− |
| 2002 06 10 | 644 | 0.3− | 0.2+ | 2006 03 02 | G96 | 0.3− | 0.7+ | 2006 04 04 | 461 | 1.2+ | 0.9+ |
| 2003 09 21 | 691 | 0.0 | 0.3+ | 2006 03 02 | G96 | 0.1− | 0.2+ | 2006 04 04 | 461 | 0.3− | 0.2+ |
| 2003 09 21 | 691 | 0.1+ | 0.1− | 2006 03 02 | G96 | 0.1+ | 0.6+ | 2006 04 04 | 461 | 0.4− | 0.1+ |
| 2003 09 21 | 691 | 0.1− | 0.1+ | 2006 03 02 | G96 | 0.9+ | 1.0+ | 2006 04 04 | 461 | 0.2+ | 0.7+ |
| 2003 09 27 | 691 | 0.1− | 0.3+ | 2006 03 31 | 461 | 0.4+ | 0.0 | 2006 04 23 | 461 | 0.3+ | 0.0 |
| 2003 09 27 | 691 | 0.1− | 0.3+ | 2006 03 31 | 461 | 0.3+ | 0.4+ | 2006 04 23 | 461 | 0.5− | 0.1+ |

### 2006 GW$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.74451 | | | (2000.0) | | |
| $n$ | 0.21682482 | $\omega$ | 259.27351 | | +0.77634105 | +0.62470650 |
| $a$ | 2.7440797 | $\Omega$ | 62.01129 | | −0.53479984 | +0.72327386 |
| $e$ | 0.1198069 | $i$ | 5.45094 | | −0.33359213 | +0.29430717 |
| $P$ | 4.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 05 | 691 | 0.1+ | 0.7− | 2003 10 22 | 645 | 0.1− | 0.1+ | 2005 02 04 | G96 | 0.2+ | 0.3− |
| 1994 10 05 | 691 | 0.4+ | 0.4− | 2003 10 22 | 645 | 0.1− | 0.1+ | 2005 02 04 | G96 | 0.2− | 0.3− |
| 1994 10 05 | 691 | 0.3+ | 0.5− | 2003 10 24 | 645 | 0.1− | 0.0 | 2005 02 04 | G96 | 0.3− | 0.7− |
| 2003 09 28 | 704 | 0.3− | 1.5+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.1+ | 0.0 |
| 2003 09 28 | 704 | 0.5− | 1.1+ | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.3− | 0.2+ |
| 2003 09 28 | 704 | 0.1− | 0.9+ | 2003 11 16 | 645 | 0.2+ | 0.0 | 2006 02 27 | 691 | 1.1− | 0.2− |
| 2003 10 19 | 645 | 0.1− | 0.0 | 2005 01 18 | 691 | 0.2− | 0.2+ | 2006 04 02 | 691 | 0.1+ | 0.1+ |
| 2003 10 19 | 645 | 0.1− | 0.0 | 2005 01 18 | 691 | 0.3+ | 0.1+ | 2006 04 02 | 691 | 0.5+ | 0.9+ |
| 2003 10 20 | 704 | 0.8+ | 1.6+ | 2005 01 18 | 691 | 0.1+ | 0.1− | 2006 04 02 | 691 | 0.0 | 0.1+ |
| 2003 10 20 | 704 | 0.3+ | 0.6+ | 2005 01 18 | 691 | 0.0 | 0.1+ | 2006 04 07 | 691 | 0.2+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 704 | 0.2+ | 0.2+ | 2005 01 18 | 691 | 0.0 | 0.1− | 2006 04 07 | 691 | 0.8+ | 0.3− | | |
| 2003 10 20 | 704 | 0.5+ | 0.7+ | 2005 01 18 | 691 | 0.1+ | 0.3+ | 2006 04 07 | 691 | 0.0 | 0.1− | | |
| 2003 10 20 | 704 | 0.6+ | 0.4+ | 2005 02 04 | G96 | 0.4− | 0.3− | | | | | | |

**2006 GO$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.72280 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21338982 | $\omega$ | 71.93142 | | −0.20026566 | | −0.97265129 |
| $a$ | 2.7734494 | $\Omega$ | 30.39334 | | +0.78776705 | | −0.23125923 |
| $e$ | 0.1499367 | $i$ | 13.44748 | | +0.58250900 | | −0.02164817 |
| $P$ | 4.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 15 | 704 | 0.4− | 0.2− | 2004 12 02 | 703 | 0.1+ | 0.2− | 2006 04 02 | 691 | 0.1+ | 0.2+ | | |
| 2001 02 15 | 704 | 0.2− | 0.4− | 2004 12 02 | 704 | 0.2+ | 2.1+ | 2006 04 02 | 691 | 0.1+ | 0.3+ | | |
| 2001 02 15 | 704 | 0.0 | 0.6− | 2004 12 02 | 703 | 0.4− | 0.0 | 2006 04 07 | 691 | 0.1+ | 0.1+ | | |
| 2004 11 19 | 704 | 0.6− | 0.7− | 2004 12 02 | 703 | 0.6+ | 0.3+ | 2006 04 07 | 691 | 0.1+ | 0.0 | | |
| 2004 11 19 | 704 | 0.5− | 0.1− | 2004 12 02 | 703 | 0.5+ | 0.0 | 2006 04 07 | 691 | 0.1+ | 0.0 | | |
| 2004 11 19 | 704 | 0.1+ | 0.4− | 2004 12 11 | 703 | 0.1− | 0.4− | 2006 05 25 | G96 | 0.1− | 0.1− | | |
| 2004 11 19 | 704 | 0.3+ | 0.1− | 2004 12 11 | 703 | 0.1+ | 0.0 | 2006 05 25 | G96 | 0.3− | 0.4− | | |
| 2004 11 19 | 704 | 1.0+ | 0.6+ | 2004 12 11 | 703 | 0.4+ | 0.7− | 2006 05 25 | G96 | 0.1+ | 0.4− | | |
| 2004 12 02 | 704 | 0.9− | 0.1+ | 2004 12 11 | 703 | 0.3+ | 0.0 | 2006 05 25 | G96 | 0.2− | 0.2− | | |
| 2004 12 02 | 704 | 1.4− | 0.2+ | 2006 04 02 | 691 | 0.1− | 0.1+ | | | | | | |

**2006 GQ$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.66812 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27728281 | $\omega$ | 339.13063 | | +0.93643109 | | −0.33979103 |
| $a$ | 2.3290961 | $\Omega$ | 41.06630 | | +0.33780217 | | +0.80587171 |
| $e$ | 0.1179890 | $i$ | 7.64551 | | +0.09479718 | | +0.48488436 |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 11 09 | 703 | 0.9+ | 1.3+ | 2004 12 02 | 703 | 0.6− | 0.6− | 2006 04 08 | G96 | 0.1− | 0.2− | | |
| 2004 11 09 | 703 | 0.3+ | 0.3+ | 2004 12 02 | 703 | 0.3+ | 0.4− | 2006 04 08 | G96 | 0.1− | 0.1− | | |
| 2004 11 09 | 703 | 1.1− | 1.1− | 2004 12 02 | 703 | 1.2− | 0.1− | 2006 04 08 | G96 | 0.7− | 0.1− | | |
| 2004 11 09 | 703 | 0.2− | 0.2− | 2006 04 02 | 691 | 0.2+ | 0.1+ | 2006 04 08 | G96 | 0.3− | 0.2− | | |
| 2004 11 19 | 704 | 1.0+ | 0.1− | 2006 04 02 | 691 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.4+ | 0.0 | | |
| 2004 11 19 | 704 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.2− | 0.0 | 2006 05 19 | G96 | 0.1+ | 0.5+ | | |
| 2004 11 19 | 704 | 0.1+ | 0.5+ | 2006 04 07 | 691 | 0.3+ | 0.1− | 2006 05 19 | G96 | 0.1− | 0.1+ | | |
| 2004 11 19 | 704 | 0.1+ | 0.9+ | 2006 04 07 | 691 | 0.0 | 0.2− | 2006 05 19 | G96 | 0.3+ | 0.4+ | | |
| 2004 12 02 | 703 | 0.2+ | 0.2− | 2006 04 07 | 691 | 0.1− | 0.2+ | | | | | | |

**2006 GD$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.19139 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17137141 | $\omega$ | 255.17279 | | +0.64294894 | | +0.76101724 |
| $a$ | 3.2100402 | $\Omega$ | 55.17002 | | −0.65598862 | | +0.60540368 |
| $e$ | 0.1730699 | $i$ | 6.04377 | | −0.39534238 | | +0.23310757 |
| $P$ | 5.75 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.3+ | 0.0 | 2002 10 11 | 704 | 0.7+ | 0.2+ | 2006 04 07 | 691 | 0.3+ | 0.3+ | | |
| 2002 09 14 | 608 | 0.3− | 1.0+ | 2002 10 31 | 699 | 0.1− | 0.6+ | 2006 04 08 | G96 | 0.6− | 0.2+ | | |
| 2002 09 14 | 608 | 0.3− | 0.7+ | 2002 10 31 | 699 | 0.4− | 0.2− | 2006 04 08 | G96 | 0.0 | 0.3+ | | |
| 2002 10 01 | 699 | 0.2− | 0.6+ | 2002 10 31 | 699 | 0.2− | 1.3+ | 2006 04 08 | G96 | 0.2− | 0.0 | | |
| 2002 10 01 | 699 | 1.2− | 0.7− | 2002 10 31 | 699 | 1.1− | 1.3− | 2006 04 08 | G96 | 0.2− | 0.2+ | | |
| 2002 10 01 | 699 | 0.7− | 0.2− | 2005 03 09 | 703 | 0.2− | 0.8− | 2006 05 07 | G96 | 0.5− | 0.0 | | |
| 2002 10 01 | 699 | 0.7− | 0.6+ | 2005 03 09 | 703 | 0.7+ | 1.0+ | 2006 05 07 | G96 | 0.2− | 0.1− | | |
| 2002 10 04 | 704 | 0.7− | 0.7+ | 2005 03 09 | 703 | (3.5+ | 0.4−) | 2006 05 07 | G96 | 0.5− | 0.1− | | |
| 2002 10 04 | 704 | 0.1− | 1.2+ | 2005 03 09 | 703 | (4.6+ | 0.1+) | 2006 05 07 | G96 | 0.1− | 0.1+ | | |
| 2002 10 04 | 704 | 0.8− | 1.0+ | 2006 04 02 | 691 | 0.1+ | 0.5+ | 2006 05 24 | G96 | 0.4− | 0.2+ | | |
| 2002 10 04 | 704 | 0.3− | 0.4+ | 2006 04 02 | 691 | 0.4+ | 0.5+ | 2006 05 24 | G96 | 0.2− | 0.1+ | | |
| 2002 10 04 | 704 | 1.2+ | 1.3+ | 2006 04 02 | 691 | 0.7+ | 0.1+ | 2006 05 24 | G96 | 0.2− | 0.4+ | | |
| 2002 10 11 | 704 | 0.1− | 0.5+ | 2006 04 07 | 691 | 0.3+ | 0.1− | 2006 05 24 | G96 | 0.8− | 0.2+ | | |
| 2002 10 11 | 704 | 0.8+ | 0.1+ | 2006 04 07 | 691 | 0.1+ | 0.3+ | | | | | | |

**2006 GB$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.45565 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23309033 | $\omega$ | 48.38532 | | −0.26828349 | | −0.96095682 |
| $a$ | 2.6148887 | $\Omega$ | 57.29823 | | +0.85818913 | | −0.27034442 |
| $e$ | 0.1405207 | $i$ | 4.61590 | | +0.43764756 | | −0.05895658 |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 02 | 699 | 0.7− | 0.7+ | 2004 12 19 | G96 | 0.3+ | 0.1+ | 2006 04 20 | 703 | 1.2+ | 2.8− | | |
| 2004 12 02 | 699 | 0.9− | 0.1+ | 2006 04 02 | 691 | 0.7− | 0.2− | 2006 05 06 | G96 | 0.1+ | 0.1+ | | |
| 2004 12 02 | 699 | 0.1+ | 0.4− | 2006 04 02 | 691 | 0.2+ | 0.3− | 2006 05 06 | G96 | 0.1+ | 0.0 | | |
| 2004 12 02 | 699 | 2.2+ | 0.5− | 2006 04 02 | 691 | 0.5− | 1.4+ | 2006 05 06 | G96 | 0.2+ | 0.3+ | | |
| 2004 12 10 | 704 | 1.6− | 0.7− | 2006 04 07 | 691 | 0.3+ | 0.1− | 2006 05 06 | G96 | 0.1− | 0.1+ | | |
| 2004 12 10 | 704 | 0.4+ | 0.1+ | 2006 04 07 | 691 | 0.4+ | 0.1+ | 2006 05 26 | G96 | 0.3− | 0.3+ | | |
| 2004 12 10 | 704 | 0.1+ | 0.8+ | 2006 04 07 | 691 | 0.6+ | 0.1− | 2006 05 26 | G96 | 0.1− | 0.2+ | | |
| 2004 12 19 | G96 | 0.1+ | 0.3− | 2006 04 20 | 703 | 1.2− | 0.3+ | 2006 05 26 | G96 | 0.1− | 0.3+ | | |
| 2004 12 19 | G96 | 0.1+ | 0.1− | 2006 04 20 | 703 | 0.6− | 2.1− | 2006 05 26 | G96 | 0.2+ | 0.3+ | | |
| 2004 12 19 | G96 | 0.1− | 0.1− | 2006 04 20 | 703 | 0.4− | 0.1− | | | | | | |

**2006 GY$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.46631 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25330578 | $\omega$ | 226.80681 | | +0.82355655 | | +0.56430567 |
| $a$ | 2.4738459 | $\Omega$ | 98.75937 | | −0.50207608 | | +0.77241606 |
| $e$ | 0.2053477 | $i$ | 3.33904 | | −0.26395875 | | +0.29143188 |
| $P$ | 3.89 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.0 | 0.2− | 2003 10 15 | 699 | 1.2+ | 0.8+ | 2006 03 23 | 691 | 0.2+ | 0.1+ | | |
| 1999 09 09 | 704 | 0.1− | 0.5+ | 2003 10 15 | 699 | 0.2+ | 1.4+ | 2006 03 23 | 691 | 0.5+ | 0.1+ | | |
| 1999 09 09 | 704 | 0.3− | 0.0 | 2003 10 23 | 645 | 0.2− | 0.1+ | 2006 04 02 | 691 | 0.1+ | 0.4+ | | |
| 1999 09 09 | 704 | 0.0 | 0.9− | 2003 10 23 | 645 | 0.2− | 0.1+ | 2006 04 02 | 691 | 0.1− | 0.1+ | | |
| 1999 09 09 | 704 | 0.3+ | 1.0+ | 2003 10 25 | 704 | 1.2+ | 0.4+ | 2006 04 02 | 691 | 0.2− | 0.3+ | | |
| 2003 09 28 | 704 | 0.2− | 0.8+ | 2003 10 25 | 704 | 1.1+ | 0.4+ | 2006 04 02 | G96 | 0.3− | 0.0 | | |
| 2003 09 28 | 704 | 0.9− | 1.2+ | 2003 10 25 | 704 | 1.0+ | 0.8+ | 2006 04 02 | G96 | 0.1+ | 0.1+ | | |
| 2003 09 28 | 699 | 0.1+ | 0.2+ | 2003 10 25 | 704 | 0.8+ | 0.7+ | 2006 04 02 | G96 | 0.1+ | 0.1+ | | |
| 2003 09 28 | 704 | 0.3− | 0.7+ | 2005 01 15 | 691 | 0.1+ | 0.4+ | 2006 04 02 | G96 | 0.0 | 0.2+ | | |
| 2003 09 28 | 699 | 1.2+ | 1.1− | 2005 01 15 | 691 | 0.1+ | 0.1+ | 2006 04 07 | 691 | 0.1− | 0.5+ | | |
| 2003 09 28 | 704 | 0.8− | 0.1+ | 2005 01 15 | 691 | 0.6+ | 0.4+ | 2006 04 07 | 691 | 0.3− | 0.4+ | | |
| 2003 09 28 | 699 | 1.2− | 0.4+ | 2005 03 10 | G96 | 0.2− | 0.3− | 2006 04 07 | 691 | 0.1+ | 0.4+ | | |
| 2003 09 28 | 704 | 0.8− | 0.2+ | 2005 03 10 | G96 | 0.2− | 0.5− | 2006 05 05 | 691 | 0.2+ | 0.2+ | | |
| 2003 09 28 | 699 | 0.4− | 0.2− | 2005 03 10 | G96 | 0.9− | 0.3+ | 2006 05 05 | 691 | 0.0 | 0.4+ | | |
| 2003 10 15 | 699 | 0.4− | 1.5+ | 2005 03 10 | G96 | 0.6− | 0.1− | 2006 05 05 | 691 | 0.2+ | 0.1+ | | |
| 2003 10 15 | 699 | 1.5+ | 1.3+ | 2006 03 23 | 691 | 0.8+ | 0.5+ | | | | | | |

**2006 GZ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.95289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28846711 | $\omega$ | 345.16462 | | −0.69742457 | | −0.71639255 |
| $a$ | 2.2684986 | $\Omega$ | 149.04854 | | +0.66132443 | | −0.65382738 |
| $e$ | 0.1081878 | $i$ | 2.17414 | | +0.27613217 | | −0.24349840 |
| $P$ | 3.42 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 691 | 1.1+ | 0.2− | 2004 10 07 | 691 | 0.1− | 0.2+ | 2006 04 09 | G96 | 0.1+ | 0.2+ | | |
| 1999 03 13 | 691 | 0.4− | 0.5− | 2004 10 07 | 691 | 0.1− | 0.3+ | 2006 04 09 | G96 | 0.3− | 0.2+ | | |
| 1999 03 13 | 691 | 1.4− | 0.9− | 2006 03 23 | 691 | 0.7+ | 0.6− | 2006 04 26 | 807 | 0.1+ | 0.2+ | | |
| 2001 12 17 | 704 | 1.6− | 0.6− | 2006 03 23 | 691 | 0.1+ | 0.2− | 2006 04 26 | 807 | 0.2+ | 0.2+ | | |
| 2001 12 17 | 704 | 1.6− | 1.1+ | 2006 03 23 | 691 | 0.0 | 0.4+ | 2006 05 06 | G96 | 0.2− | 0.1− | | |
| 2001 12 17 | 704 | 0.8− | 0.4− | 2006 04 02 | 691 | 0.1+ | 0.1+ | 2006 05 06 | G96 | 0.4− | 0.2+ | | |
| 2001 12 17 | 704 | 0.1+ | 0.7+ | 2006 04 02 | 691 | 0.1+ | 0.3+ | 2006 05 06 | G96 | 0.1+ | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 15 | 704 | 0.7+ | 0.2− | 2006 04 02 | 691 | 0.3− | 0.5+ | 2006 05 06 | G96 | 0.1+ | 0.1− |
| 2002 01 15 | 704 | 0.4+ | 0.6+ | 2006 04 07 | 691 | 0.2+ | 0.5+ | 2006 05 26 | G96 | 0.2− | 0.2+ |
| 2002 01 15 | 704 | 0.9+ | 1.4+ | 2006 04 07 | 691 | 0.3+ | 0.4+ | 2006 05 26 | G96 | 0.1+ | 0.1− |
| 2002 01 15 | 704 | 0.8+ | 0.5+ | 2006 04 07 | 691 | 0.2+ | 0.8+ | 2006 05 26 | G96 | 0.2− | 0.3+ |
| 2002 01 15 | 704 | 1.3+ | 0.5+ | 2006 04 09 | G96 | 0.2− | 0.1− | 2006 05 26 | G96 | 0.5− | 0.1+ |
| 2004 10 07 | 691 | 0.1− | 0.4+ | 2006 04 09 | G96 | 0.7− | 0.1+ | | | | |

**2006 GK$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.83558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22051811 | $\omega$ | 210.29022 | | +0.86257837 | | −0.50592343 |
| $a$ | 2.7133546 | $\Omega$ | 180.10303 | | +0.48276387 | | +0.82320429 |
| $e$ | 0.0439477 | $i$ | 6.05453 | | +0.15131954 | | +0.25763574 |
| $P$ | 4.47 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 04 02 | 691 | 0.1+ | 0.3+ |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 04 02 | 691 | 0.6− | 0.5+ |
| 2003 09 18 | 691 | 0.1− | 0.0 | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.3+ | 0.1− |
| 2003 09 18 | 691 | 0.1− | 0.4+ | 2003 09 29 | 645 | 0.1− | 0.0 | 2006 04 07 | 691 | 0.2− | 0.2+ |
| 2003 09 18 | 691 | 0.2+ | 0.2+ | 2006 03 23 | 691 | 0.4− | 0.6− | 2006 04 07 | 691 | 0.1+ | 0.4+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 23 | 691 | 0.5− | 0.1+ | 2006 04 07 | 691 | 0.6+ | 0.4+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 23 | 691 | 0.7+ | 0.4− | | | | |

**2006 GV$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.11776 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21405054 | $\omega$ | 290.47880 | | +0.97560151 | | −0.21492536 |
| $a$ | 2.7677392 | $\Omega$ | 81.95318 | | +0.21450674 | | +0.88962375 |
| $e$ | 0.0832120 | $i$ | 2.59438 | | +0.04678189 | | +0.40295988 |
| $P$ | 4.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 31 | 691 | 0.5+ | 0.6+ | 2003 10 22 | 645 | 0.1− | 0.1− | 2006 04 02 | 691 | 0.3+ | 0.3+ |
| 1994 10 31 | 691 | 0.5− | 0.0 | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 04 02 | 691 | 0.0 | 0.2− |
| 1994 10 31 | 691 | 0.3− | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.1− | 2006 04 07 | 691 | 0.4+ | 0.4+ |
| 2003 09 30 | 691 | 0.2− | 0.1+ | 2003 11 16 | 645 | 0.1+ | 0.0 | 2006 04 07 | 691 | 0.2+ | 0.3+ |
| 2003 09 30 | 691 | 0.2− | 0.1+ | 2003 11 16 | 645 | 0.1+ | 0.0 | 2006 04 07 | 691 | 0.1+ | 0.1− |
| 2003 09 30 | 691 | 0.3− | 0.0 | 2006 03 26 | G96 | 0.4+ | 0.1− | 2006 05 24 | G96 | 0.5− | 0.2+ |
| 2003 10 19 | 691 | 0.0 | 0.8+ | 2006 03 26 | G96 | 0.2+ | 0.5− | 2006 05 24 | G96 | 0.6− | 0.1− |
| 2003 10 19 | 691 | 0.2+ | 0.5+ | 2006 03 26 | G96 | 0.4− | 0.3+ | 2006 05 24 | G96 | 0.3− | 0.4+ |
| 2003 10 19 | 691 | 0.0 | 0.6+ | 2006 03 26 | G96 | 1.0− | 0.1+ | 2006 05 24 | G96 | 0.4− | 0.1+ |
| 2003 10 22 | 645 | 0.1− | 0.1− | 2006 04 02 | 691 | 0.0 | 0.3+ | | | | |

**2006 GT$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.19063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22763673 | $\omega$ | 158.55537 | | +0.89391960 | | +0.44818862 |
| $a$ | 2.6564878 | $\Omega$ | 174.80566 | | −0.42012372 | | +0.84237950 |
| $e$ | 0.0460734 | $i$ | 3.73079 | | −0.15621714 | | +0.29920517 |
| $P$ | 4.33 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 291 | 0.5− | 0.2− | 2003 10 18 | 645 | 0.0 | 0.1− | 2006 04 02 | 691 | 0.0 | 0.0 |
| 2003 09 16 | 291 | 0.8+ | 0.1− | 2003 10 18 | 645 | 0.1− | 0.0 | 2006 04 02 | 691 | 0.1− | 0.3+ |
| 2003 09 16 | 291 | 0.9+ | 0.1+ | 2003 10 22 | 645 | 0.1+ | 0.1− | 2006 04 02 | 691 | 0.3+ | 0.0 |
| 2003 09 27 | 691 | 0.5− | 0.0 | 2003 10 22 | 645 | 0.1+ | 0.1− | 2006 04 07 | 691 | 0.2+ | 0.0 |
| 2003 09 27 | 691 | 0.6− | 0.4+ | 2003 10 24 | 645 | 0.0 | 0.1+ | 2006 04 07 | 691 | 0.1+ | 0.2− |
| 2003 09 27 | 691 | 0.9− | 0.0 | 2003 10 24 | 645 | 0.1+ | 0.2+ | 2006 04 07 | 691 | 0.4− | 0.1− |

**2006 GR$_{27}$ = 1998 SS$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.20058 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20860912 | $\omega$ | 167.95619 | | +0.94380308 | | +0.33033644 |
| $a$ | 2.8156621 | $\Omega$ | 172.72793 | | −0.30979520 | | +0.89543066 |
| $e$ | 0.1245417 | $i$ | 4.82992 | | −0.11516375 | | +0.29846570 |
| $P$ | 4.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 809 | (0.6− | 3.8+) | 2003 11 16 | 703 | 2.4+ | 1.0+ | 2005 01 19 | 691 | 0.2− | 0.1− |
| 1998 09 21 | 809 | (0.3− | 3.0+) | 2003 11 16 | 703 | 0.0 | 0.1− | 2006 03 25 | 691 | 0.2+ | 0.1− |
| 1998 09 21 | 809 | 0.9− | 1.8+ | 2003 11 16 | 703 | 0.5− | 1.3+ | 2006 03 25 | 691 | 0.3+ | 0.2+ |
| 2001 03 16 | 691 | 0.1− | 0.4− | 2003 11 16 | 703 | 0.2− | 1.5− | 2006 03 25 | 691 | 0.0 | 0.0 |
| 2001 03 16 | 691 | 0.3− | 0.2− | 2003 11 18 | 691 | 0.1− | 0.2+ | 2006 04 02 | 691 | 0.9− | 0.7− |
| 2001 03 16 | 691 | 0.3− | 0.0 | 2003 11 18 | 691 | 0.0 | 0.4+ | 2006 04 02 | 691 | 0.2+ | 0.1+ |
| 2001 03 28 | 691 | 0.0 | 0.7+ | 2003 11 18 | 691 | 0.0 | 0.1+ | 2006 04 02 | 691 | 0.0 | 0.3+ |
| 2001 03 28 | 691 | 0.3+ | 0.5+ | 2003 12 01 | 704 | 0.1− | 0.3+ | 2006 04 07 | 691 | 0.2+ | 0.3+ |
| 2001 03 28 | 691 | 0.1+ | 0.6+ | 2003 12 01 | 704 | 0.4− | 0.1+ | 2006 04 07 | 691 | 0.1− | 0.3+ |
| 2001 03 28 | 691 | 0.0 | 0.2+ | 2003 12 01 | 704 | 0.9− | 1.2+ | 2006 04 07 | 691 | 0.4+ | 0.2+ |
| 2001 03 28 | 691 | 0.3+ | 0.1+ | 2003 12 22 | 691 | 0.1+ | 0.1+ | 2006 05 30 | G96 | 0.3− | 0.2+ |
| 2001 03 28 | 691 | 0.5+ | 0.2− | 2003 12 22 | 691 | 0.5− | 0.2− | 2006 05 30 | G96 | 0.7− | 0.1+ |
| 2002 06 23 | 644 | 0.1+ | 0.7+ | 2003 12 22 | 691 | 0.2+ | 0.3+ | 2006 05 30 | G96 | 0.2− | 0.2− |
| 2002 06 23 | 644 | 0.2+ | 1.0+ | 2005 01 19 | 691 | 0.1+ | 0.3− | 2006 05 30 | G96 | 0.6− | 0.0 |
| 2002 06 23 | 644 | 0.2− | 0.6+ | 2005 01 19 | 691 | 0.0 | 0.0 | | | | |

**2006 GR$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.63293 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25854242 | $\omega$ | 279.65372 | | +0.84208235 | | +0.53874501 |
| $a$ | 2.4403279 | $\Omega$ | 47.75305 | | −0.48034224 | | +0.77063253 |
| $e$ | 0.2032034 | $i$ | 1.97543 | | −0.24529298 | | +0.34041051 |
| $P$ | 3.81 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.1− | 0.2+ | 2003 09 29 | 691 | 0.1+ | 0.2+ | 2003 11 19 | 645 | 0.1+ | 0.0 |
| 2003 09 17 | 691 | 0.1+ | 0.1+ | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.4+ | 0.2+ |
| 2003 09 17 | 691 | 0.0 | 0.3− | 2003 10 18 | 645 | 0.1+ | 0.1+ | 2006 04 02 | 691 | 0.2+ | 0.3+ |
| 2003 09 22 | 699 | 1.0− | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.3+ |
| 2003 09 22 | 699 | (0.1− | 2.0+) | 2003 10 23 | 645 | 0.1+ | 0.0 | 2006 04 07 | 691 | 0.1− | 0.0 |
| 2003 09 22 | 699 | 0.9− | 0.4− | 2003 10 24 | 691 | 0.1− | 0.5+ | 2006 04 07 | 691 | 0.2+ | 0.2+ |
| 2003 09 22 | 699 | (2.1− | 1.1−) | 2003 10 24 | 691 | 0.2+ | 0.6+ | 2006 04 07 | 691 | 0.1− | 0.1+ |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2003 10 24 | 691 | 0.1+ | 0.2+ | 2006 05 06 | G96 | 0.5− | 0.2− |
| 2003 09 26 | 645 | 0.1− | 0.2− | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 05 06 | G96 | 0.6− | 0.5− |
| 2003 09 29 | 691 | 0.1− | 0.3+ | 2003 11 16 | 645 | 0.1− | 0.0 | 2006 05 06 | G96 | 0.1− | 0.0 |
| 2003 09 29 | 691 | 0.1− | 0.2+ | 2003 11 19 | 645 | 0.1− | 0.1+ | 2006 05 06 | G96 | 0.6− | 0.0 |

**2006 GH$_{32}$ = 2000 TJ$_{74}$ = 2002 GG$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.30013 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21033734 | $\omega$ | 311.10100 | | −0.19959262 | | −0.97570842 |
| $a$ | 2.8002177 | $\Omega$ | 150.04947 | | +0.94450131 | | −0.21610912 |
| $e$ | 0.2168800 | $i$ | 10.42162 | | +0.26092156 | | +0.03591557 |
| $P$ | 4.69 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 1.1+ | 0.2− | 2000 12 01 | 608 | 1.0+ | 0.5+ | 2006 01 02 | 704 | 0.1− | 0.4− |
| 2000 10 01 | 704 | 0.0 | 0.1− | 2000 12 01 | 608 | 1.0+ | 0.6+ | 2006 01 02 | 704 | 0.3+ | 0.3− |
| 2000 10 01 | 704 | 0.7− | 0.4− | 2000 12 22 | 699 | 0.1+ | 0.7+ | 2006 01 02 | 704 | 0.1+ | 0.3− |
| 2000 10 01 | 704 | 0.2− | 1.0− | 2000 12 22 | 699 | 0.5− | 0.8+ | 2006 04 07 | G96 | 1.3− | 0.5+ |
| 2000 10 01 | 704 | 0.8+ | 0.7− | 2000 12 22 | 699 | 0.3+ | 1.3+ | 2006 04 07 | G96 | 0.0 | 0.7+ |
| 2000 10 29 | 704 | 0.2+ | 0.4+ | 2000 12 22 | 699 | 0.6− | 0.9+ | 2006 04 07 | G96 | 0.1+ | 0.9+ |
| 2000 10 29 | 704 | 0.3− | 0.4+ | 2002 04 11 | 704 | 0.5− | 0.2+ | 2006 04 07 | G96 | 0.0 | 0.8+ |
| 2000 10 29 | 704 | 0.3− | 0.3+ | 2002 04 11 | 704 | 0.0 | 0.3− | 2006 04 08 | G96 | 0.2− | 1.1+ |
| 2000 10 29 | 704 | 0.7− | 0.0 | 2002 04 11 | 704 | 0.5− | 0.5− | 2006 04 08 | G96 | 0.1+ | 1.1+ |
| 2000 11 19 | 699 | 0.1− | 0.7− | 2002 04 11 | 704 | 0.3− | 0.0 | 2006 04 08 | G96 | 0.2− | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 699 | 0.3− | 0.1+ | 2002 04 11 | 704 | 0.5+ | 0.7+ | 2006 04 08 | G96 | 0.1+ | 1.0+ |
| 2000 11 19 | 699 | 0.0 | 0.2− | 2002 04 16 | 704 | 0.4+ | 0.4+ | 2006 04 08 | G96 | (0.1+ | 2.9+) |
| 2000 11 19 | 699 | 0.2− | 1.3− | 2002 04 16 | 704 | 0.3+ | 0.4+ | 2006 04 08 | G96 | (0.5− | 2.7+) |
| 2000 11 26 | 704 | 2.8− | 0.3− | 2002 04 16 | 704 | 0.1+ | 0.3− | 2006 04 08 | G96 | (0.0 | 2.3+) |
| 2000 11 26 | 704 | 0.8− | 0.3+ | 2004 10 04 | 691 | 0.0 | 0.4+ | 2006 04 08 | G96 | (0.1+ | 3.2+) |
| 2000 11 26 | 704 | 0.6+ | 0.4− | 2004 10 04 | 691 | 0.0 | 0.5+ | 2006 04 09 | G96 | 0.2− | 0.2− |
| 2000 11 26 | 704 | 0.4− | 0.0 | 2004 10 04 | 691 | 0.2− | 0.4+ | 2006 04 09 | G96 | 0.2− | 0.1− |
| 2000 11 26 | 704 | 2.2+ | 1.8− | 2006 01 02 | 704 | 0.6+ | 0.6− | 2006 04 09 | G96 | 0.1+ | 0.0 |
| 2000 12 01 | 608 | 0.8+ | 0.5+ | 2006 01 02 | 704 | 0.1+ | 0.2− | 2006 04 09 | G96 | 0.0 | 0.3− |

**2006 GA$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.17751 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21603695 | $\omega$ | 266.12604 | | +0.29591391 | | +0.95497368 |
| $a$ | 2.7507472 | $\Omega$ | 21.12456 | | −0.85107278 | | +0.27378296 |
| $e$ | 0.0544139 | $i$ | 3.41260 | | −0.43371659 | | +0.11431605 |
| $P$ | 4.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.4− | 0.1+ | 2006 03 24 | G96 | 1.0− | 0.4− | 2006 04 08 | G96 | 0.1+ | 0.4− |
| 2003 09 18 | 691 | 0.4− | 0.1+ | 2006 03 24 | G96 | 0.1− | 0.8− | 2006 04 08 | G96 | 0.1+ | 0.3+ |
| 2003 09 18 | 691 | 0.4− | 0.4+ | 2006 03 24 | G96 | 0.2− | 0.2− | 2006 04 08 | G96 | 0.2+ | 0.5+ |
| 2003 09 26 | 645 | 0.2+ | 0.1− | 2006 03 24 | G96 | 0.6− | 0.2+ | 2006 04 08 | G96 | 0.1+ | 0.4+ |
| 2003 09 26 | 645 | 0.2+ | 0.0 | 2006 04 07 | G96 | 0.6+ | 0.2− | 2006 04 08 | G96 | 0.0 | 0.2+ |
| 2003 09 29 | 704 | 0.5− | 0.2+ | 2006 04 07 | G96 | 0.1+ | 0.4− | 2006 04 19 | G96 | 0.2− | 0.1+ |
| 2003 09 29 | 704 | 0.3− | 0.7− | 2006 04 07 | G96 | 0.2− | 0.2− | 2006 04 19 | G96 | 0.0 | 0.0 |
| 2003 09 29 | 704 | 1.3− | 0.4− | 2006 04 07 | G96 | 0.2− | 0.1+ | 2006 04 19 | G96 | 0.4− | 0.1+ |
| 2006 03 06 | 691 | 0.2+ | 0.4+ | 2006 04 08 | G96 | 0.2+ | 0.6− | 2006 04 19 | G96 | 0.1+ | 0.1+ |
| 2006 03 06 | 691 | 0.3+ | 0.1− | 2006 04 08 | G96 | 0.2− | 0.1+ | | | | |
| 2006 03 06 | 691 | 0.0 | 0.2− | 2006 04 08 | G96 | 0.4− | 0.1+ | | | | |

**2006 GM$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.34155 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23425227 | $\omega$ | 16.79180 | | +0.68375594 | | −0.72394116 |
| $a$ | 2.6062346 | $\Omega$ | 30.26040 | | +0.64687751 | | +0.54326939 |
| $e$ | 0.1218625 | $i$ | 10.47069 | | +0.33767928 | | +0.42516770 |
| $P$ | 4.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.3− | 0.5+ | 2002 04 14 | 704 | 0.4+ | 1.3+ | 2006 04 08 | 691 | 0.2− | 0.3+ |
| 1991 10 13 | 691 | 1.1+ | 0.2+ | 2002 04 14 | 704 | 0.6+ | 1.1+ | 2006 04 08 | 691 | 0.1− | 0.1+ |
| 1991 10 13 | 691 | 1.2− | 0.0 | 2002 04 14 | 704 | 1.6+ | 0.5+ | 2006 04 09 | 691 | 0.0 | 0.4+ |
| 2002 04 06 | 807 | 0.2+ | 0.0 | 2002 05 07 | 644 | 0.4+ | 0.2+ | 2006 04 09 | 691 | 0.5+ | 0.1+ |
| 2002 04 06 | 807 | 0.0 | 0.0 | 2002 05 07 | 644 | 0.5+ | 0.1− | 2006 04 09 | 691 | 0.3− | 0.0 |
| 2002 04 12 | 691 | 0.5− | 0.3− | 2002 05 07 | 644 | 0.5+ | 0.1+ | 2006 05 19 | G96 | 0.7− | 0.4+ |
| 2002 04 12 | 691 | 0.1− | 0.2− | 2006 03 23 | 691 | 0.3+ | 0.3− | 2006 05 19 | G96 | 0.1− | 0.2+ |
| 2002 04 12 | 691 | 0.3− | 0.2− | 2006 03 23 | 691 | 0.2+ | 0.3− | 2006 05 19 | G96 | 0.4− | 0.6+ |
| 2002 04 14 | 704 | 0.9− | 0.4− | 2006 03 23 | 691 | 0.4+ | 0.5− | 2006 05 19 | G96 | 0.2− | 0.4+ |
| 2002 04 14 | 704 | 0.5+ | 0.7+ | 2006 04 08 | 691 | 0.0 | 0.4+ | | | | |

**2006 GP$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.18745 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18018620 | $\omega$ | 141.06622 | | +0.42306569 | | +0.90153905 |
| $a$ | 3.1044765 | $\Omega$ | 153.59051 | | −0.87398147 | | +0.43245700 |
| $e$ | 0.0514398 | $i$ | 11.77805 | | −0.23910628 | | +0.01443222 |
| $P$ | 5.47 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.1− | 0.5− | 2002 08 08 | 699 | 0.0 | 0.2+ | 2003 11 19 | 644 | 0.0 | 0.5+ |
| 2000 02 02 | 691 | 0.0 | 0.1− | 2002 08 08 | 699 | 0.0 | 0.4− | 2006 03 23 | 703 | 0.5+ | 0.3− |
| 2000 02 02 | 691 | 0.2− | 0.2− | 2002 08 08 | 699 | 0.1− | 0.0 | 2006 03 23 | 703 | 1.0− | 0.5− |
| 2000 03 03 | 704 | 0.6− | 0.5+ | 2002 08 16 | 608 | 0.1− | 0.1− | 2006 03 23 | 703 | 0.9+ | 0.2− |
| 2000 03 03 | 704 | 0.4+ | 0.4+ | 2002 08 16 | 608 | 0.2− | 0.0 | 2006 03 23 | 703 | 0.7− | 0.2− |
| 2000 03 03 | 704 | 0.4+ | 0.8+ | 2002 08 16 | 608 | 0.1+ | 0.2− | 2006 04 07 | 703 | 0.2− | 0.6+ |
| 2000 03 03 | 704 | 1.2+ | 0.3− | 2002 08 17 | 644 | 1.1− | 0.6− | 2006 04 07 | 703 | 0.3− | 0.3+ |
| 2001 05 02 | 644 | 0.5+ | 1.2+ | 2002 08 17 | 644 | 0.3+ | 0.5+ | 2006 04 07 | 703 | 0.9− | 1.3+ |
| 2001 05 02 | 644 | 0.6+ | 1.1+ | 2002 08 17 | 644 | 0.0 | 0.4+ | 2006 04 07 | 703 | (1.0+ | 2.3+) |
| 2001 05 02 | 644 | 0.5+ | 1.2+ | 2002 08 27 | 644 | 0.1− | 0.1− | 2006 04 09 | G96 | 0.2+ | 0.1+ |
| 2001 05 15 | 644 | 0.2− | 0.5− | 2002 08 27 | 644 | 0.4− | 0.4+ | 2006 04 09 | G96 | 0.4+ | 0.0 |
| 2001 05 15 | 644 | 0.8− | 0.5− | 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 04 09 | G96 | 0.2+ | 0.1− |
| 2001 05 15 | 644 | 0.5− | 0.5− | 2002 09 05 | 704 | 0.6− | 0.5− | 2006 04 19 | 644 | 0.2− | 0.5+ |
| 2001 05 20 | 608 | 0.3− | 0.2− | 2002 09 05 | 704 | 0.5+ | 0.8+ | 2006 04 19 | 644 | 0.7+ | 0.4+ |
| 2001 05 20 | 608 | 0.4− | 0.4− | 2002 09 05 | 704 | 0.1− | 0.2+ | 2006 04 19 | 644 | 0.1+ | 0.1+ |
| 2002 07 23 | 644 | 0.4+ | 0.1− | 2002 09 14 | 644 | 0.2− | 0.3+ | 2006 04 23 | 699 | 0.6− | 0.8− |
| 2002 07 23 | 644 | 0.4+ | 0.1+ | 2002 09 14 | 644 | 0.2+ | 0.4− | 2006 04 23 | 699 | 0.9+ | 1.1+ |
| 2002 08 06 | 644 | 0.3+ | 0.3+ | 2002 09 14 | 644 | 0.1− | 0.0 | 2006 04 23 | 699 | 0.8+ | 0.6− |
| 2002 08 06 | 644 | 0.4+ | 0.5+ | 2003 11 19 | 644 | 0.3− | 0.4+ | 2006 04 23 | 699 | 1.0+ | 0.3− |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2003 11 19 | 644 | 0.1− | 0.7+ | 2006 04 26 | 699 | (1.1+ | 2.4+) |
| 2002 08 07 | 644 | 0.0 | 0.0 | 2003 11 19 | 644 | 0.2− | 0.8+ | 2006 04 26 | 699 | 0.9− | 1.1+ |
| 2002 08 07 | 644 | 0.4+ | 0.6− | 2003 11 19 | 644 | 0.0 | 0.9+ | 2006 04 26 | 699 | (0.6− | 3.7+) |
| 2002 08 08 | 699 | 0.7+ | 0.7− | 2003 11 19 | 644 | 0.6− | 0.4− | 2006 04 26 | 699 | (2.1+ | 0.5+) |

**2006 GN$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.01797 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26409417 | $\omega$ | 56.73643 | | −0.68638073 | | −0.72498714 |
| $a$ | 2.4060067 | $\Omega$ | 76.71890 | | +0.64614758 | | −0.64406313 |
| $e$ | 0.1365446 | $i$ | 3.37103 | | +0.33372864 | | −0.24408265 |
| $P$ | 3.73 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 17 | 691 | 0.2+ | 0.7− | 2002 03 05 | 699 | 0.0 | 0.1− | 2006 04 02 | 691 | 0.1− | 0.0 |
| 1993 12 17 | 691 | 0.2− | 0.2+ | 2002 03 05 | 699 | 0.9− | 0.7− | 2006 04 02 | 691 | 0.2+ | 0.1+ |
| 1993 12 17 | 691 | 0.0 | 0.5+ | 2002 03 05 | 699 | 0.1− | 0.6− | 2006 04 08 | G96 | 0.5− | 0.1− |
| 2002 02 08 | 704 | 0.6− | 0.4+ | 2002 03 05 | 699 | 0.1− | 0.9− | 2006 04 08 | G96 | 0.5− | 0.3− |
| 2002 02 08 | 704 | 0.7+ | 0.2+ | 2002 03 11 | 644 | 0.1− | 0.0 | 2006 04 08 | G96 | 0.8− | 0.4− |
| 2002 02 08 | 704 | 0.6+ | 0.9+ | 2002 03 11 | 644 | 0.0 | 0.0 | 2006 05 07 | G96 | 0.0 | 0.1− |
| 2002 02 08 | 704 | 0.2+ | 0.3+ | 2002 03 11 | 644 | 0.1+ | 0.1+ | 2006 05 07 | G96 | 1.4+ | 0.4+ |
| 2002 02 08 | 704 | 0.0 | 1.1+ | 2006 03 23 | 691 | 0.0 | 0.2+ | 2006 05 07 | G96 | 0.6− | 0.2− |
| 2002 02 22 | 644 | 0.2+ | 0.2− | 2006 03 23 | 691 | 0.1− | 0.0 | 2006 05 07 | G96 | 0.1+ | 0.3− |
| 2002 02 22 | 644 | 0.0 | 0.2− | 2006 03 23 | 691 | 0.1+ | 0.0 | | | | |
| 2002 02 22 | 644 | 0.0 | 0.4− | 2006 04 02 | 691 | 0.3+ | 0.0 | | | | |

**2006 GQ$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.62572 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17749770 | $\omega$ | 325.44724 | | −0.83455209 | | −0.55091081 |
| $a$ | 3.1357462 | $\Omega$ | 181.15186 | | +0.54227691 | | −0.81998220 |
| $e$ | 0.1318877 | $i$ | 12.88506 | | +0.09725516 | | −0.15532698 |
| $P$ | 5.55 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 645 | 0.0 | 0.0 | 2003 09 27 | 691 | 0.2− | 0.1+ | 2006 04 02 | G96 | 0.0 | 0.2+ |
| 2001 06 15 | 645 | 0.0 | 0.0 | 2003 09 29 | 645 | 0.0 | 0.0 | 2006 04 02 | G96 | 0.0 | 0.2+ |
| 2003 09 17 | 691 | 0.2− | 1.3+ | 2003 09 29 | 645 | 0.1− | 0.1− | 2006 04 02 | G96 | 0.1− | 0.2+ |
| 2003 09 17 | 691 | 0.4+ | 0.5− | 2006 03 24 | 699 | 0.8− | 1.1+ | 2006 04 21 | G96 | 0.2− | 0.2+ |
| 2003 09 17 | 691 | 0.2− | 0.0 | 2006 03 24 | 699 | 1.0+ | 1.1+ | 2006 04 21 | G96 | 0.4− | 0.3+ |
| 2003 09 27 | 691 | 0.4+ | 0.2+ | 2006 03 24 | 699 | 0.9+ | 0.1− | 2006 04 21 | G96 | 0.6− | 0.2+ |
| 2003 09 27 | 691 | 0.3+ | 0.4+ | 2006 03 24 | 699 | 0.9+ | 0.1− | 2006 04 21 | G96 | 0.3− | 0.2+ |

**2006 GR$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.28686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26116770 | $\omega$ | 32.46547 | | −0.99616395 | | −0.05176116 |
| $a$ | 2.4239467 | $\Omega$ | 144.35995 | | +0.02789908 | | −0.95208311 |
| $e$ | 0.0748697 | $i$ | 6.95482 | | +0.08293988 | | −0.30142748 |
| $P$ | 3.77 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 23 | 703 | 0.9+ | 0.7+ | 2003 04 24 | 699 | 0.4− | 0.9+ | 2004 09 17 | 704 | 0.6+ | 0.1+ |
| 1999 03 23 | 703 | 0.1+ | 0.1+ | 2003 04 24 | 699 | 1.4− | 0.4+ | 2004 09 17 | 704 | 0.3− | 1.4+ |
| 1999 03 23 | 703 | 1.6− | 0.8+ | 2003 04 24 | 699 | 0.4− | 0.6+ | 2004 09 17 | 704 | 2.0− | 0.7+ |
| 1999 03 23 | 703 | 0.3+ | 0.0 | 2003 04 24 | 699 | 0.4− | 0.6+ | 2004 09 21 | 704 | 0.8− | 1.5+ |
| 2000 07 31 | 807 | 0.1− | 0.1+ | 2003 05 02 | 691 | 0.6+ | 0.5+ | 2004 09 21 | 704 | 0.2+ | 0.7− |
| 2000 07 31 | 807 | 0.1− | 0.2+ | 2003 05 02 | 691 | 0.4+ | 0.9+ | 2004 09 21 | 704 | 0.2− | 1.7+ |
| 2001 11 17 | 704 | 0.2+ | 0.7+ | 2003 05 02 | 691 | 0.4+ | 0.3+ | 2004 09 21 | 704 | 0.8− | 1.4+ |
| 2001 11 17 | 704 | 0.3+ | 1.3+ | 2003 05 30 | 704 | 1.0− | 1.2+ | 2005 12 30 | 704 | 0.9+ | 0.2− |
| 2001 11 17 | 704 | 0.2+ | 0.6+ | 2003 05 30 | 704 | 1.5+ | 1.3+ | 2005 12 30 | 704 | 0.7+ | 0.6+ |
| 2001 11 17 | 704 | 0.8+ | 0.6+ | 2003 05 30 | 704 | 0.8+ | 1.7+ | 2005 12 30 | 704 | 1.9+ | 0.3+ |
| 2001 11 17 | 704 | 0.7+ | 1.7+ | 2003 05 30 | 704 | 0.5+ | 0.3+ | 2005 12 30 | 704 | 0.7− | 1.7+ |
| 2001 12 11 | 704 | 0.6+ | 0.3+ | 2004 09 09 | 704 | 0.5− | 0.9+ | 2006 04 08 | G96 | 0.6− | 0.1+ |
| 2001 12 11 | 704 | 0.1− | 1.0− | 2004 09 09 | 704 | 0.4− | 0.3+ | 2006 04 08 | G96 | 0.5− | 0.5+ |
| 2001 12 11 | 704 | 0.0 | 0.5+ | 2004 09 09 | 704 | 0.2− | 0.2+ | 2006 04 08 | G96 | 0.7− | 0.6+ |
| 2001 12 11 | 704 | 0.5− | 0.5+ | 2004 09 09 | 704 | 1.0− | 0.6+ | 2006 04 08 | G96 | 1.0− | 0.1+ |
| 2001 12 19 | 704 | 0.9− | 1.0+ | 2004 09 09 | 699 | 1.0− | 0.9+ | 2006 04 19 | G96 | 0.7− | 0.3+ |
| 2001 12 19 | 704 | 1.2− | 0.7+ | 2004 09 09 | 699 | 1.7+ | 0.1+ | 2006 04 19 | G96 | 0.4− | 0.2+ |
| 2001 12 19 | 704 | 0.9− | 1.6+ | 2004 09 09 | 699 | 0.2− | 0.7+ | 2006 04 19 | G96 | 0.5− | 0.0 |
| 2001 12 19 | 704 | 0.8+ | 2.0+ | 2004 09 09 | 699 | 0.1+ | 0.3+ | 2006 04 19 | G96 | 0.7− | 0.2+ |

**2006 GM$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.14216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17878760 | $\omega$ | 223.22509 | | +0.71230658 | | +0.67674889 |
| $a$ | 3.1206456 | $\Omega$ | 93.18460 | | −0.58243848 | | +0.71789271 |
| $e$ | 0.0959947 | $i$ | 10.74160 | | −0.39164365 | | +0.16322072 |
| $P$ | 5.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.1− | 0.2− | 2002 09 09 | 644 | 0.4− | 0.4+ | 2005 02 01 | 703 | 0.0 | 0.1− |
| 1992 11 18 | 691 | 0.5− | 0.0 | 2002 09 09 | 644 | 0.1− | 0.1+ | 2005 02 01 | 703 | 0.6− | 0.2+ |
| 1992 11 18 | 691 | 0.6+ | 0.2− | 2002 09 09 | 644 | 0.4− | 1.3+ | 2006 03 05 | 703 | 0.8− | 0.4+ |
| 2001 04 26 | 291 | 0.1+ | 0.3+ | 2003 11 19 | 699 | 0.1− | 0.0 | 2006 03 05 | 703 | 1.1+ | 0.3+ |
| 2001 04 26 | 291 | 0.4+ | 0.3+ | 2003 11 19 | 699 | 0.8+ | 0.4+ | 2006 03 05 | 703 | 0.7− | 0.9+ |
| 2001 04 26 | 291 | 0.2+ | 0.4+ | 2003 11 19 | 699 | 1.5− | 0.3− | 2006 03 05 | 703 | 0.2− | 1.3+ |
| 2002 08 11 | 608 | 0.5+ | 0.7− | 2003 11 19 | 699 | 0.3− | 0.8+ | 2006 04 07 | 703 | 0.1+ | 1.9− |
| 2002 08 11 | 608 | 0.4+ | 0.7+ | 2003 12 22 | 691 | 0.2− | 0.4+ | 2006 04 07 | 703 | 1.7− | 0.5+ |
| 2002 08 11 | 608 | 0.2− | 1.1+ | 2003 12 22 | 691 | 0.0 | 0.5+ | 2006 04 07 | 703 | (1.0− | 3.3−) |
| 2002 08 13 | 644 | 0.2− | 0.5+ | 2003 12 22 | 691 | 0.3+ | 0.3+ | 2006 04 07 | 703 | 1.4+ | 0.4− |
| 2002 08 13 | 644 | 0.5− | 0.3+ | 2005 01 13 | 691 | 0.0 | 0.7+ | 2006 04 23 | 699 | 0.3− | 0.5+ |
| 2002 08 13 | 644 | 0.5− | 0.2+ | 2005 01 13 | 691 | 0.3+ | 0.0 | 2006 04 23 | 699 | 1.4− | 0.3+ |
| 2002 08 20 | 644 | 0.1− | 0.8+ | 2005 01 13 | 691 | 0.4+ | 0.1+ | 2006 04 23 | 699 | 0.4+ | 0.4− |
| 2002 08 20 | 644 | 0.4− | 0.0 | 2005 02 01 | 703 | 1.3− | 0.1+ | 2006 04 23 | 699 | 1.1+ | 0.9+ |
| 2002 08 20 | 644 | 0.4− | 0.4+ | 2005 02 01 | 703 | 0.0 | 0.2+ | | | | |

**2006 GX$_{53}$ = 2001 XP$_{229}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.95888 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29506683 | $\omega$ | 74.79129 | | −0.75487907 | | −0.65271777 |
| $a$ | 2.2345451 | $\Omega$ | 64.41654 | | +0.57113170 | | −0.70229802 |
| $e$ | 0.0996262 | $i$ | 4.07943 | | +0.32243786 | | −0.28414256 |
| $P$ | 3.34 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.0 | 0.0 | 2006 04 02 | 691 | 1.3− | 1.6− | 2006 05 09 | G96 | 0.2+ | 0.2− |
| 2001 12 15 | 704 | 0.1+ | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.5+ | 2006 05 09 | G96 | 0.3+ | 0.0 |
| 2001 12 15 | 704 | 0.2− | 1.1+ | 2006 04 02 | 691 | 0.1+ | 0.7+ | 2006 05 09 | G96 | 0.1− | 0.4+ |
| 2001 12 18 | 704 | 0.6+ | 0.2− | 2006 04 29 | 691 | 1.3+ | 0.1+ | 2006 05 19 | G96 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.7− | 0.3+ | 2006 04 29 | 691 | 0.1− | 0.2+ | 2006 05 19 | G96 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | 0.2+ | 0.3− | 2006 04 29 | 691 | 0.0 | 0.1+ | 2006 05 19 | G96 | 0.1− | 0.3− |
| 2001 12 18 | 704 | 0.1− | 1.0− | 2006 05 09 | G96 | 0.4− | 0.3− | 2006 05 19 | G96 | 0.1+ | 0.3+ |

**2006 GY$_{53}$ = 1997 EE$_{21}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.43561 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23121823 | $\omega$ | 35.15581 | | −0.59393144 | | +0.80445339 |
| $a$ | 2.6289844 | $\Omega$ | 198.41420 | | −0.74519618 | | −0.55478507 |
| $e$ | 0.1523112 | $i$ | 1.81576 | | −0.30319645 | | −0.21229287 |
| $P$ | 4.26 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.2+ | 0.1− | 2006 04 02 | 691 | 0.1− | 0.2− | 2006 05 01 | 691 | 0.2− | 0.2+ |
| 1997 03 04 | 691 | 0.3+ | 0.0 | 2006 04 02 | 691 | 0.1− | 0.5− | 2006 05 01 | 691 | 0.7+ | 1.7+ |
| 1997 03 04 | 691 | 0.1− | 0.6− | 2006 04 21 | G96 | 0.3− | 0.1+ | 2006 05 06 | 691 | 0.3+ | 0.6− |
| 1997 03 11 | 691 | 0.0 | 0.0 | 2006 04 21 | G96 | 0.1− | 0.1− | 2006 05 06 | 691 | 0.1− | 0.1− |
| 1997 03 11 | 691 | 0.2− | 0.5+ | 2006 04 21 | G96 | 0.6− | 0.1+ | 2006 05 06 | 691 | 0.2− | 0.0 |
| 1997 03 11 | 691 | 0.1− | 0.4+ | 2006 04 21 | G96 | 0.5+ | 0.3− | | | | |
| 2006 04 02 | 691 | 0.3+ | 0.3− | 2006 05 01 | 691 | 0.1− | 0.0 | | | | |

**2006 GZ$_{53}$ = 2004 XW$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.77869 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23283388 | $\omega$ | 359.85709 | | −0.86836706 | | −0.49552819 |
| $a$ | 2.6168085 | $\Omega$ | 150.41223 | | +0.45503925 | | −0.81198998 |
| $e$ | 0.0669370 | $i$ | 2.29357 | | +0.19717487 | | −0.30842191 |
| $P$ | 4.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 26 | 691 | 0.1− | 0.2− | 2006 04 07 | 691 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.0 | 0.2− |
| 2000 12 26 | 691 | 0.1+ | 0.0 | 2006 04 07 | 691 | 0.3− | 0.0 | 2006 05 26 | G96 | 0.3− | 0.2− |
| 2000 12 26 | 691 | 0.0 | 0.3+ | 2006 04 07 | 691 | 0.1− | 0.2− | 2006 05 26 | G96 | 0.2+ | 0.1− |
| 2004 12 10 | 691 | 0.6− | 0.2− | 2006 04 26 | 691 | 0.1− | 0.2+ | 2006 05 26 | G96 | 0.0 | 0.1+ |
| 2004 12 10 | 691 | 0.4− | 0.1− | 2006 04 26 | 691 | 0.2+ | 0.3+ | 2006 05 26 | G96 | 0.0 | 0.1− |
| 2004 12 10 | 691 | 0.7+ | 0.6− | 2006 04 26 | 691 | 0.1− | 0.1+ | 2006 05 26 | G96 | 0.4− | 0.3− |
| 2004 12 16 | 704 | 0.8+ | 0.6+ | 2006 05 08 | 691 | 0.3− | 0.2+ | 2006 05 26 | G96 | 0.2− | 0.2− |
| 2004 12 16 | 704 | 0.1+ | 1.6+ | 2006 05 08 | 691 | 0.6+ | 0.7− | 2006 05 26 | G96 | 0.0 | 0.2− |
| 2004 12 16 | 704 | 0.3+ | 0.8+ | 2006 05 08 | 691 | 0.2+ | 0.2+ | | | | |

**2006 GA$_{54}$ = 2005 CR$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.73204 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17845810 | $\omega$ | 178.58252 | | −0.00710778 | | +0.99787787 |
| $a$ | 3.1244856 | $\Omega$ | 91.00726 | | −0.91809469 | | +0.01913926 |
| $e$ | 0.0556858 | $i$ | 3.71160 | | −0.39629739 | | −0.06223696 |
| $P$ | 5.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1+ | 0.4+ | 2005 02 09 | G96 | 0.0 | 0.0 | 2006 04 21 | 703 | 0.8− | 0.5− |
| 2003 12 19 | 691 | 0.2− | 0.2+ | 2006 04 08 | 691 | 0.0 | 0.0 | 2006 05 05 | 691 | 0.3+ | 0.2+ |
| 2003 12 19 | 691 | 0.1− | 0.3+ | 2006 04 08 | 691 | 0.3− | 0.9+ | 2006 05 05 | 691 | 0.4+ | 0.2+ |
| 2005 02 04 | G96 | 0.0 | 0.2− | 2006 04 08 | 691 | 0.0 | 0.1+ | 2006 05 05 | 691 | 0.0 | 0.0 |
| 2005 02 04 | G96 | 0.1− | 0.2− | 2006 04 21 | 691 | 0.3+ | 0.2− | 2006 05 23 | G96 | 0.4− | 0.1− |
| 2005 02 04 | G96 | 0.4− | 0.3− | 2006 04 21 | 691 | 0.3+ | 0.1+ | 2006 05 23 | G96 | 0.3− | 0.4− |
| 2005 02 04 | G96 | 0.2− | 0.4− | 2006 04 21 | 691 | 0.2+ | 0.0 | 2006 05 23 | G96 | 0.2+ | 0.3− |
| 2005 02 09 | G96 | 0.1+ | 0.3− | 2006 04 21 | 703 | 0.3− | 0.0 | 2006 05 23 | G96 | 0.1− | 0.5− |
| 2005 02 09 | G96 | 0.1− | 0.2− | 2006 04 21 | 703 | 0.9− | 0.0 | | | | |
| 2005 02 09 | G96 | 0.2+ | 0.4− | 2006 04 21 | 703 | 1.9− | 0.1− | | | | |

**2006 GB$_{54}$ = 4259 T-3**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.56143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22943654 | $\omega$ | 215.02169 | | +0.43016852 | | +0.89813229 |
| $a$ | 2.6425770 | $\Omega$ | 80.61045 | | −0.80572835 | | +0.42752453 |
| $e$ | 0.1567640 | $i$ | 5.30263 | | −0.40713250 | | +0.10286480 |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 2.3+ | 1.3− | 2003 10 28 | 704 | 0.0 | 0.4+ | 2006 04 24 | 704 | 0.8+ | 0.3+ |
| 1977 10 11 | 675 | (3.2+ | 1.7−) | 2003 10 28 | 704 | 0.7− | 1.5+ | 2006 04 24 | 704 | 0.3− | 1.1+ |
| 1977 10 16 | 675 | 0.8− | 1.8+ | 2003 11 20 | 691 | 0.3− | 0.3+ | 2006 04 30 | 699 | 0.2− | 0.5+ |
| 1977 10 16 | 675 | 0.2− | 1.5+ | 2003 11 20 | 691 | 0.2− | 0.4+ | 2006 04 30 | 699 | 0.3+ | 0.8+ |
| 1977 10 17 | 675 | 0.6− | 2.1− | 2003 11 20 | 691 | 0.0 | 0.1+ | 2006 04 30 | 699 | 0.1− | 0.2− |
| 1977 10 17 | 675 | 0.4− | 0.0 | 2005 01 13 | 691 | 0.2+ | 0.4+ | 2006 04 30 | 699 | 0.8+ | 0.5− |
| 1999 11 28 | 691 | 0.2− | 0.3− | 2005 01 13 | 691 | 0.2− | 0.5+ | 2006 05 25 | 703 | 1.7− | 0.7+ |
| 1999 11 28 | 691 | 0.1− | 0.5− | 2005 01 13 | 691 | 0.1+ | 0.1+ | 2006 05 25 | 703 | 1.5+ | 1.2− |
| 1999 11 28 | 691 | 0.5+ | 0.4− | 2006 04 02 | G96 | 0.1− | 0.2+ | 2006 05 25 | 703 | 1.3+ | 0.6− |
| 2002 06 08 | 704 | 0.2+ | 0.8+ | 2006 04 02 | G96 | 1.1− | 0.6+ | 2006 05 25 | 703 | 0.1+ | 1.6− |
| 2002 06 08 | 704 | 0.1− | 1.4+ | 2006 04 02 | G96 | 0.6− | 0.0 | 2006 05 30 | G96 | 0.1− | 0.2− |
| 2002 06 08 | 704 | 0.4− | 0.8+ | 2006 04 02 | G96 | 0.6+ | 0.4− | 2006 05 30 | G96 | 0.2− | 0.2+ |
| 2003 10 28 | 704 | 0.7+ | 0.7+ | 2006 04 24 | 704 | 0.4+ | 0.7+ | 2006 05 30 | G96 | 0.3− | 0.0 |
| 2003 10 28 | 704 | 0.6− | 1.9+ | 2006 04 24 | 704 | 0.6+ | 0.3+ | 2006 05 30 | G96 | 0.4− | 0.1+ |

### 2006 GE$_{54}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 335.83017 | | (2000.0) | | | |
| $n$ | 0.24579285 | $\omega$ | 244.99007 | | +0.53439034 | +0.83710944 |
| $a$ | 2.5240031 | $\Omega$ | 57.81258 | | −0.71712401 | +0.52226223 |
| $e$ | 0.1876347 | $i$ | 7.94227 | | −0.44739258 | +0.16275733 |
| $P$ | 4.01 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 691 | 0.2− | 0.1+ | 2006 04 08 | 691 | 0.1+ | 0.5− | 2006 05 05 | 691 | 0.1+ | 0.1+ |
| 2003 10 24 | 691 | 0.1− | 0.1− | 2006 04 24 | 691 | 0.5− | 0.6− | 2006 05 05 | 691 | 0.0 | 0.1− |
| 2003 10 24 | 691 | 0.0 | 0.1− | 2006 04 24 | 691 | 0.1− | 0.2− | 2006 05 23 | G96 | 0.1− | 0.1+ |
| 2003 11 21 | 691 | 0.2+ | 0.1+ | 2006 04 24 | 691 | 0.4− | 0.3− | 2006 05 23 | G96 | 0.1+ | 0.5+ |
| 2003 11 21 | 691 | 0.0 | 0.3+ | 2006 05 01 | 691 | 0.1− | 0.2− | 2006 05 23 | G96 | 0.2− | 0.1+ |
| 2003 11 21 | 691 | 0.1− | 0.3+ | 2006 05 01 | 691 | 0.1+ | 0.1+ | 2006 05 23 | G96 | 0.5− | 0.3+ |
| 2006 04 08 | 691 | 0.5+ | 1.2+ | 2006 05 01 | 691 | 0.9+ | 0.9+ | | | | |
| 2006 04 08 | 691 | 0.1− | 0.4− | 2006 05 05 | 691 | 0.1− | 0.1+ | | | | |

### 2006 HL

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.93019 | | (2000.0) | | | |
| $n$ | 0.26040794 | $\omega$ | 233.43092 | | +0.13324054 | +0.98715884 |
| $a$ | 2.4286591 | $\Omega$ | 44.48432 | | −0.86439407 | +0.15924246 |
| $e$ | 0.1311476 | $i$ | 7.22415 | | −0.48484003 | −0.01261994 |
| $P$ | 3.78 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 11 | 644 | 0.1+ | 0.2+ | 2003 08 31 | 704 | 0.7+ | 0.6− | 2006 04 18 | 691 | 0.3+ | 0.2− |
| 2002 03 11 | 644 | 0.1− | 0.1+ | 2003 09 14 | 644 | 0.7− | 0.1+ | 2006 04 19 | 703 | 1.2− | 0.3− |
| 2002 03 11 | 644 | 0.4+ | 0.6+ | 2003 09 14 | 644 | 0.2− | 0.1− | 2006 04 19 | 703 | 0.9− | 0.5− |
| 2003 07 25 | 644 | 0.4− | 0.1+ | 2003 09 14 | 644 | 0.4− | 0.0 | 2006 04 19 | 703 | 1.8− | 1.9+ |
| 2003 07 25 | 644 | 0.1+ | 0.2+ | 2003 09 19 | 699 | 1.1+ | 0.2− | 2006 04 19 | 703 | 0.9− | 0.2− |
| 2003 07 25 | 644 | 0.3− | 0.3+ | 2003 09 19 | 699 | 0.7+ | 0.6− | 2006 04 19 | 703 | 1.1− | 0.5+ |
| 2003 08 23 | 644 | 0.3− | 0.5+ | 2003 09 19 | 699 | 0.3− | 0.1+ | 2006 04 19 | 703 | 0.2− | 0.0 |
| 2003 08 23 | 644 | 0.6− | 0.4+ | 2003 09 19 | 699 | 0.4− | 0.5+ | 2006 04 19 | 703 | 0.6+ | 0.7− |
| 2003 08 23 | 644 | 0.2− | 0.7+ | 2006 03 24 | 691 | 0.4+ | 0.1− | 2006 04 19 | 703 | 1.1− | 0.0 |
| 2003 08 31 | 704 | 0.0 | 0.7− | 2006 03 24 | 691 | 0.1+ | 0.1− | 2006 05 19 | G96 | 0.2− | 0.0 |
| 2003 08 31 | 704 | 0.0 | 0.1+ | 2006 03 24 | 691 | 0.2+ | 0.1− | 2006 05 19 | G96 | 0.4− | 0.1− |
| 2003 08 31 | 704 | 0.0 | 0.3+ | 2006 04 18 | 691 | 0.3+ | 0.1+ | 2006 05 19 | G96 | 0.1+ | 0.0 |
| 2003 08 31 | 704 | 0.8+ | 0.6− | 2006 04 18 | 691 | 0.4+ | 0.1+ | 2006 05 19 | G96 | 0.1− | 0.0 |

### 2006 HV$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.68984 | | (2000.0) | | | |
| $n$ | 0.24992549 | $\omega$ | 186.95882 | | −0.34951322 | +0.92735467 |
| $a$ | 2.4961021 | $\Omega$ | 62.65850 | | −0.85220582 | −0.25539529 |
| $e$ | 0.0926050 | $i$ | 8.65142 | | −0.38934016 | −0.27347132 |
| $P$ | 3.94 | $H$ | 16.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 608 | 1.8− | 0.6− | 2006 04 18 | 644 | 0.3− | 0.2− | 2006 04 27 | 704 | 0.6+ | 0.5− |
| 2002 04 04 | 608 | 1.4− | 0.7− | 2006 04 18 | 644 | 0.4− | 0.1− | 2006 04 30 | 699 | 0.8− | 0.5− |
| 2002 04 04 | 608 | 1.4− | 0.4− | 2006 04 18 | 644 | 1.0+ | 0.4− | 2006 04 30 | 699 | 0.9− | 0.9+ |
| 2002 04 09 | 699 | 1.8+ | 2.2− | 2006 04 19 | 699 | 0.3− | 0.3+ | 2006 04 30 | 699 | 0.2+ | 0.1− |
| 2002 04 09 | 699 | 0.5− | 0.3− | 2006 04 19 | 699 | 0.3− | 0.3+ | 2006 04 30 | 699 | 0.3− | 0.1+ |
| 2002 04 09 | 699 | 0.8+ | 1.8+ | 2006 04 19 | 699 | 0.7+ | 0.3+ | 2006 05 30 | G96 | 0.1− | 0.2− |
| 2002 04 09 | 699 | 0.5+ | 1.1+ | 2006 04 19 | 699 | 0.7+ | 0.9− | 2006 05 30 | G96 | 0.2+ | 0.3− |
| 2002 04 11 | 704 | 0.2+ | 0.0 | 2006 04 27 | 704 | 0.7+ | 0.1+ | 2006 05 30 | G96 | 0.1− | 0.1+ |
| 2002 04 11 | 704 | 0.6+ | 0.7+ | 2006 04 27 | 704 | 1.0− | 0.2+ | 2006 05 30 | G96 | 0.2+ | 0.3+ |
| 2002 04 11 | 704 | 1.3+ | 1.0+ | 2006 04 27 | 704 | 0.2− | 0.0 | | | | |

### 2006 HA$_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.09656 | | (2000.0) | | | |
| $n$ | 0.23620742 | $\omega$ | 67.96111 | | −0.67837779 | +0.73439234 |
| $a$ | 2.5918331 | $\Omega$ | 159.27367 | | −0.69468543 | −0.63151745 |
| $e$ | 0.1587060 | $i$ | 3.51749 | | −0.23919809 | −0.24870385 |
| $P$ | 4.17 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 691 | 0.0 | 0.0 | 2006 04 20 | 691 | 0.1− | 0.3+ | 2006 05 01 | 703 | 0.2− | 0.6+ |
| 2003 09 27 | 691 | 0.0 | 0.0 | 2006 04 20 | 691 | 0.2+ | 0.0 | 2006 05 01 | 703 | 0.1+ | 1.1+ |
| 2003 09 27 | 691 | 0.1+ | 0.1+ | 2006 04 24 | 691 | 0.1+ | 0.1− | 2006 05 01 | 703 | 0.2− | 0.3+ |
| 2003 09 29 | 645 | 0.1+ | 0.1+ | 2006 04 24 | 691 | 0.1− | 0.1− | 2006 05 01 | 703 | 0.9− | 0.1− |
| 2003 09 29 | 645 | 0.0 | 0.2− | 2006 04 24 | 691 | 0.2+ | 0.0 | 2006 05 06 | 691 | 0.1+ | 0.0 |
| 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 04 27 | 691 | 0.2− | 0.1+ | 2006 05 06 | 691 | 0.1− | 0.2− |
| 2003 10 19 | 645 | 0.1− | 0.0 | 2006 04 27 | 691 | 0.0 | 0.2+ | 2006 05 06 | 691 | 0.0 | 0.3− |
| 2006 04 18 | 691 | 0.0 | 0.0 | 2006 04 27 | 691 | 0.2+ | 0.1+ | 2006 05 30 | G96 | 0.0 | 0.4− |
| 2006 04 18 | 691 | 0.2− | 0.0 | 2006 05 01 | 691 | 0.1+ | 0.1− | 2006 05 30 | G96 | 0.6− | 0.5− |
| 2006 04 18 | 691 | 0.2− | 0.1− | 2006 05 01 | 691 | 0.1− | 0.1− | 2006 05 30 | G96 | 0.7− | 0.3− |
| 2006 04 20 | 691 | 0.1− | 0.1− | 2006 05 01 | 691 | 0.9+ | 0.4+ | 2006 05 30 | G96 | 0.8− | 0.5− |

### 2006 HG$_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 245.36710 | | (2000.0) | | | |
| $n$ | 0.21342884 | $\omega$ | 187.72950 | | +0.99852684 | −0.05346936 |
| $a$ | 2.7731113 | $\Omega$ | 175.30584 | | +0.05383152 | +0.95486750 |
| $e$ | 0.0605859 | $i$ | 6.47556 | | +0.00680615 | +0.29217987 |
| $P$ | 4.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.1− | 0.4+ | 2003 10 05 | 691 | 0.2− | 0.2+ | 2006 04 24 | 691 | 0.4− | 0.8+ |
| 2001 03 24 | 691 | 0.3− | 0.5+ | 2003 10 05 | 691 | 0.1+ | 0.2+ | 2006 04 24 | 691 | 0.3− | 0.1+ |
| 2001 03 24 | 691 | 0.2+ | 0.8+ | 2003 10 05 | 691 | 0.3− | 0.2+ | 2006 04 24 | 691 | 0.0 | 0.1+ |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.1− | 2006 04 27 | 691 | 0.2+ | 0.0 |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.0 | 2006 04 27 | 691 | 0.2+ | 0.0 |
| 2003 09 16 | 691 | 0.1− | 0.4+ | 2006 04 18 | 691 | 0.4+ | 0.1− | 2006 04 27 | 691 | 0.2− | 0.3+ |
| 2003 09 16 | 691 | 0.2− | 0.2+ | 2006 04 18 | 691 | 0.0 | 0.2+ | 2006 05 01 | 691 | 0.1+ | 0.2− |
| 2003 09 16 | 691 | 0.0 | 0.7+ | 2006 04 18 | 691 | 0.5+ | 0.2− | 2006 05 01 | 691 | 0.3+ | 0.4+ |
| 2003 09 28 | 691 | 0.1− | 0.2+ | 2006 04 20 | 691 | 0.4− | 0.4− | 2006 05 01 | 691 | 0.2+ | 0.3+ |
| 2003 09 28 | 691 | 0.2− | 0.1+ | 2006 04 20 | 691 | 0.0 | 0.0 | | | | |
| 2003 09 28 | 691 | 0.3− | 0.1+ | 2006 04 20 | 691 | 0.2− | 0.5− | | | | |

### 2006 HE$_4$ = 2004 VB$_{82}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.79964 | | (2000.0) | | | |
| $n$ | 0.23183192 | $\omega$ | 321.70149 | | −0.06863956 | +0.99706878 |
| $a$ | 2.6243428 | $\Omega$ | 304.33802 | | −0.90493087 | −0.07648806 |
| $e$ | 0.1567711 | $i$ | 2.34601 | | −0.41998660 | +0.00185254 |
| $P$ | 4.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 17 | 691 | 0.1+ | 0.1− | 2003 08 04 | 704 | 0.6− | 1.1+ | 2006 02 07 | G96 | 0.3− | 0.1− |
| 2002 02 17 | 691 | 0.1− | 0.1− | 2003 08 04 | 704 | 0.1− | 0.3+ | 2006 02 24 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 17 | 691 | 0.1− | 0.0 | 2004 11 08 | 621 | 0.6− | 0.4+ | 2006 02 24 | 691 | 0.1+ | 0.1+ |
| 2002 03 13 | 704 | 0.1+ | 0.8+ | 2004 11 08 | 621 | 0.3− | 0.1− | 2006 02 24 | 691 | 0.2+ | 0.3− |
| 2002 03 13 | 704 | 1.1+ | 0.7+ | 2004 11 08 | 621 | 0.1+ | 0.2+ | 2006 02 24 | G96 | 0.3− | 0.0 |
| 2002 03 13 | 704 | 0.0 | 0.5+ | 2004 11 09 | 621 | 0.5− | 0.4+ | 2006 02 24 | G96 | 0.1− | 0.1− |
| 2002 03 13 | 704 | 1.0+ | 1.3+ | 2004 11 09 | 621 | 0.1− | 0.3− | 2006 02 24 | G96 | 0.2− | 0.2+ |
| 2002 03 13 | 644 | 0.2− | 0.9+ | 2004 11 09 | 621 | 0.1+ | 0.2+ | 2006 02 24 | G96 | 0.4+ | 0.8− |
| 2002 03 13 | 644 | 0.5+ | 0.0 | 2004 11 11 | 691 | 0.0 | 0.4+ | 2006 04 19 | G96 | 0.3+ | 0.4+ |
| 2002 03 13 | 644 | 0.2− | 0.2+ | 2004 11 11 | 691 | 0.2+ | 0.2+ | 2006 04 19 | G96 | 0.2− | 0.2+ |
| 2003 07 06 | 691 | 0.0 | 0.2+ | 2004 11 11 | 691 | 0.0 | 0.2+ | 2006 04 19 | G96 | 0.4− | 0.3+ |
| 2003 07 06 | 691 | 0.2− | 0.3+ | 2006 01 21 | G96 | 0.3− | 0.9− | 2006 04 19 | G96 | 0.3+ | 0.4− |
| 2003 07 06 | 691 | 0.0 | 0.2+ | 2006 01 21 | G96 | 0.4+ | 0.5− | 2006 04 19 | G96 | 0.1− | 0.4+ |
| 2003 07 25 | 704 | 0.5− | 1.3+ | 2006 01 21 | G96 | 0.1+ | 0.3− | 2006 04 19 | G96 | 0.4− | 0.4+ |
| 2003 07 25 | 644 | 0.8− | 0.1+ | 2006 01 21 | G96 | 0.6− | 0.2− | 2006 04 19 | G96 | 0.2+ | 0.5+ |
| 2003 07 25 | 704 | 0.5+ | 0.8+ | 2006 02 01 | 691 | 0.2+ | 0.1− | 2006 04 19 | G96 | 0.2− | 0.1+ |
| 2003 07 25 | 704 | 0.3+ | 0.7− | 2006 02 01 | 691 | 0.0 | 0.3+ | 2006 04 20 | G96 | 0.3− | 1.0+ |
| 2003 07 25 | 644 | 0.6− | 0.2+ | 2006 02 01 | 691 | 0.3+ | 0.2+ | 2006 04 20 | G96 | 0.3− | 0.8+ |
| 2003 07 25 | 644 | 0.7− | 0.2+ | 2006 02 07 | G96 | 0.0 | 0.2− | 2006 04 20 | G96 | 0.4− | 1.0+ |
| 2003 08 04 | 704 | 0.8+ | 0.2− | 2006 02 07 | G96 | 0.0 | 0.3− | 2006 04 20 | G96 | 0.8− | 0.3+ |
| 2003 08 04 | 704 | 0.4+ | 1.5− | 2006 02 07 | G96 | 0.0 | 0.4− | | | | |

**2006 HY$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.15176 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20294233 | $\omega$ | 290.99042 | | +0.89182485 | | +0.45138843 |
| $a$ | 2.8678359 | $\Omega$ | 42.19214 | | −0.39672945 | | +0.81220955 |
| $e$ | 0.0719726 | $i$ | 2.55576 | | −0.21738026 | | +0.36954583 |
| $P$ | 4.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 17 | 691 | 0.2− | 0.3+ | 2003 10 20 | 691 | 0.1+ | 0.5+ | 2006 03 24 | G96 | 0.4− | 0.2+ |
| 2001 03 17 | 691 | 0.5+ | 0.1+ | 2003 10 20 | 691 | 0.3− | 0.4+ | 2006 04 19 | G96 | 0.6+ | 0.3+ |
| 2001 03 17 | 691 | 0.3− | 0.3− | 2003 10 24 | 645 | 0.1+ | 0.0 | 2006 04 19 | G96 | 0.1+ | 0.3+ |
| 2003 09 21 | 691 | 0.0 | 0.0 | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 04 19 | G96 | 0.1− | 0.1+ |
| 2003 09 21 | 691 | 0.1− | 0.2+ | 2005 01 18 | 691 | 0.2− | 0.0 | 2006 04 19 | G96 | 0.2+ | 0.0 |
| 2003 09 21 | 691 | 0.5− | 0.0 | 2005 01 18 | 691 | 0.2− | 0.2− | 2006 04 20 | 691 | 0.2+ | 0.4+ |
| 2003 09 29 | 704 | 0.1+ | 0.4+ | 2005 01 18 | 691 | 0.4+ | 0.1+ | 2006 04 20 | 691 | 0.2+ | 0.5+ |
| 2003 09 29 | 704 | 1.6− | 0.7+ | 2006 03 24 | G96 | 0.0 | 0.2+ | 2006 04 20 | 691 | 0.5+ | 0.6+ |
| 2003 09 29 | 704 | 1.1− | 1.3+ | 2006 03 24 | G96 | 0.4− | 0.4+ | | | | |
| 2003 10 20 | 691 | 0.1+ | 0.3+ | 2006 03 24 | G96 | 0.1− | 0.2+ | | | | |

**2006 HR$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.67628 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36767696 | $\omega$ | 241.64770 | | +0.93539906 | | −0.04635458 |
| $a$ | 1.9297088 | $\Omega$ | 119.01295 | | +0.11806126 | | +0.97542099 |
| $e$ | 0.0888229 | $i$ | 23.63096 | | −0.33330187 | | +0.21541854 |
| $P$ | 2.68 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 704 | 0.5+ | 0.2− | 2003 03 24 | 645 | 0.1− | 0.1− | 2006 04 19 | G96 | 0.3− | 0.1+ |
| 2000 01 08 | 704 | 0.2− | 0.5+ | 2004 07 20 | E12 | 0.0 | 0.1+ | 2006 04 19 | G96 | 0.2+ | 0.0 |
| 2000 01 08 | 704 | 0.5− | 0.3+ | 2004 07 20 | E12 | 0.0 | 0.4+ | 2006 04 19 | G96 | 0.0 | 0.2− |
| 2000 01 08 | 704 | 0.3− | 0.0 | 2004 07 20 | E12 | 0.6− | 0.1+ | 2006 04 19 | G96 | 0.2+ | 0.1+ |
| 2003 02 01 | 644 | 0.0 | 0.8+ | 2004 07 20 | E12 | 0.0 | 0.8+ | 2006 04 20 | G96 | 0.3− | 0.1+ |
| 2003 02 01 | 644 | 0.1+ | 0.8+ | 2004 08 10 | E12 | 0.3+ | 0.3+ | 2006 04 20 | G96 | 0.1− | 0.4+ |
| 2003 02 01 | 644 | 0.1+ | 0.6+ | 2004 08 10 | E12 | 0.3− | 0.0 | 2006 04 20 | G96 | 0.3− | 0.4+ |
| 2003 03 07 | 645 | 0.0 | 0.0 | 2004 08 10 | E12 | 0.2− | 0.6+ | 2006 04 27 | 703 | 0.4− | 0.9+ |
| 2003 03 07 | 645 | 0.1+ | 0.0 | 2004 08 10 | E12 | 0.3− | 0.5+ | 2006 04 27 | 703 | 1.5+ | 0.3+ |
| 2003 03 09 | 644 | 0.0 | 0.8+ | 2004 08 23 | E12 | 0.4− | 0.0 | 2006 04 27 | 703 | 0.3+ | 0.1+ |
| 2003 03 09 | 644 | 0.3+ | 0.4+ | 2004 08 23 | E12 | 0.1+ | 0.0 | 2006 04 27 | 703 | 0.7− | 0.4− |
| 2003 03 09 | 644 | 0.2+ | 0.6+ | 2004 08 23 | E12 | 0.7+ | 0.4− | | | | |
| 2003 03 24 | 645 | 0.0 | 0.1− | 2004 08 23 | E12 | 0.0 | 0.3+ | | | | |

**2006 HX$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.22243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27138251 | $\omega$ | 343.76194 | | +0.98047471 | | +0.19578205 |
| $a$ | 2.3627339 | $\Omega$ | 5.05662 | | −0.14905512 | | +0.80097594 |
| $e$ | 0.0985713 | $i$ | 12.05280 | | −0.12826504 | | +0.56577993 |
| $P$ | 3.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 691 | 0.0 | 0.1− | 2006 02 24 | G96 | 0.3+ | 0.2− | 2006 04 07 | G96 | 0.0 | 0.2+ |
| 2000 08 25 | 691 | 0.0 | 0.0 | 2006 02 24 | G96 | 0.4+ | 0.5− | 2006 04 07 | G96 | 0.2− | 0.5+ |
| 2000 08 25 | 691 | 0.1+ | 0.0 | 2006 02 24 | 691 | 0.3− | 0.1+ | 2006 04 07 | G96 | 0.1+ | 0.4+ |
| 2000 09 27 | 704 | 0.4− | 0.8+ | 2006 03 06 | 691 | 0.2+ | 0.0 | 2006 04 19 | 691 | 0.1− | 0.4− |
| 2000 09 27 | 704 | 0.4− | 0.4− | 2006 03 06 | 691 | 0.4+ | 0.2− | 2006 04 19 | 691 | 0.4+ | 0.2− |
| 2000 09 27 | 704 | 0.2+ | 0.0 | 2006 03 06 | 691 | 0.3+ | 0.3+ | 2006 04 19 | 691 | 0.1− | 0.1+ |
| 2000 09 27 | 704 | 0.5+ | 0.4− | 2006 03 25 | G96 | 0.2− | 0.0 | 2006 04 21 | 691 | 0.0 | 0.1− |
| 2006 02 24 | 691 | 0.8− | 0.3+ | 2006 03 25 | G96 | 0.0 | 0.2− | 2006 04 21 | 691 | 0.1+ | 0.2+ |
| 2006 02 24 | G96 | 0.4+ | 0.0 | 2006 03 25 | G96 | 0.0 | 0.1− | 2006 04 21 | 691 | 0.1+ | 0.2− |
| 2006 02 24 | 691 | 0.1− | 0.0 | 2006 03 25 | G96 | 0.3+ | 0.0 | | | | |
| 2006 02 24 | G96 | 1.2− | 0.0 | 2006 04 07 | G96 | 0.3− | 0.4+ | | | | |

**2006 HN$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.49656 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17435542 | $\omega$ | 95.11095 | | +0.44631439 | | +0.87340145 |
| $a$ | 3.1733094 | $\Omega$ | 204.53765 | | −0.88606870 | | +0.46179323 |
| $e$ | 0.0874478 | $i$ | 27.98442 | | +0.12524263 | | +0.15465098 |
| $P$ | 5.65 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 01 | 910 | 0.9+ | 0.6+ | 2002 10 04 | 699 | 0.8− | 0.9+ | 2006 03 24 | 703 | 1.2− | 0.4+ |
| 1997 09 01 | 910 | 0.3+ | 0.6+ | 2002 10 09 | 704 | 0.2− | 0.3+ | 2006 03 24 | 703 | 0.6− | 1.5+ |
| 1997 09 01 | 910 | 0.5+ | 0.6+ | 2002 10 09 | 704 | 0.7+ | 0.0 | 2006 03 24 | 703 | 0.1+ | 0.6− |
| 2001 04 29 | 691 | 0.2− | 0.2+ | 2002 10 09 | 704 | 1.0+ | 0.5+ | 2006 03 24 | 703 | 0.1+ | 0.8+ |
| 2001 04 29 | 691 | 0.3− | 0.1+ | 2002 10 09 | 704 | 0.2− | 0.6− | 2006 04 19 | 699 | 0.9− | 0.6+ |
| 2001 04 29 | 691 | 0.2− | 0.0 | 2002 10 09 | 049 | 0.7+ | 0.1− | 2006 04 19 | 699 | 0.1+ | 1.2+ |
| 2001 05 23 | 704 | 0.2+ | 0.8+ | 2002 10 09 | 049 | 0.8+ | 0.3+ | 2006 04 19 | 699 | 0.5+ | 0.3− |
| 2001 05 23 | 704 | 0.5+ | 0.8+ | 2002 10 09 | 049 | 0.4− | 0.4+ | 2006 04 19 | 699 | 0.8− | 1.3+ |
| 2001 05 23 | 704 | 0.2+ | 0.2− | 2003 11 26 | 699 | 0.6+ | 1.0+ | 2006 04 19 | 644 | 0.0 | 0.0 |
| 2002 08 01 | 704 | 0.0 | 0.4+ | 2003 11 26 | 699 | 0.2− | 0.1+ | 2006 04 19 | 644 | 0.2+ | 0.0 |
| 2002 08 01 | 704 | 0.2+ | 1.0+ | 2003 11 26 | 699 | 0.4− | 0.6+ | 2006 04 19 | 644 | 0.1+ | 0.2+ |
| 2002 08 01 | 704 | 0.3− | 1.0+ | 2003 11 26 | 699 | 1.1− | 1.7+ | 2006 04 21 | 703 | 0.1+ | 0.7− |
| 2002 08 17 | 704 | 0.9+ | 0.0 | 2003 12 10 | 644 | 0.1+ | 0.5+ | 2006 04 21 | 703 | 1.2+ | 1.6+ |
| 2002 08 17 | 704 | 0.5+ | 0.3− | 2003 12 10 | 644 | 0.4+ | 0.2+ | 2006 04 21 | 703 | 0.8− | 0.3+ |
| 2002 08 17 | 704 | 0.1+ | 0.4− | 2003 12 10 | 644 | 0.1+ | 0.8+ | 2006 04 21 | 703 | 1.0+ | 0.1+ |
| 2002 08 17 | 704 | 0.1+ | 0.1+ | 2003 12 13 | 704 | 0.2+ | 0.1− | 2006 04 24 | 699 | 0.6+ | 0.2+ |
| 2002 10 04 | 699 | 1.4− | 1.7+ | 2003 12 13 | 704 | 0.4− | 0.4+ | 2006 04 24 | 699 | 0.2− | 0.8− |
| 2002 10 04 | 699 | 1.3− | 0.3+ | 2003 12 13 | 704 | 0.5+ | 0.5+ | 2006 04 24 | 699 | 0.5+ | 0.3+ |
| 2002 10 04 | 699 | 0.4− | 0.6− | 2003 12 13 | 704 | 0.5− | 0.9+ | 2006 04 24 | 699 | 1.2+ | 1.2+ |

**2006 HT$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.80338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23245328 | $\omega$ | 302.91571 | | +0.97774035 | | −0.07030877 |
| $a$ | 2.6196640 | $\Omega$ | 61.81718 | | +0.15985960 | | +0.85987688 |
| $e$ | 0.2086549 | $i$ | 12.96037 | | −0.13589968 | | +0.50563665 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 14 | 691 | 0.3− | 0.0 | 1999 10 04 | 703 | 0.7− | 0.3+ | 2006 04 21 | 691 | 0.2− | 0.0 |
| 1991 12 14 | 691 | 0.3− | 0.6+ | 2006 04 19 | 691 | 0.1+ | 0.1+ | 2006 04 25 | 691 | 0.1− | 0.3+ |
| 1991 12 14 | 691 | 0.7+ | 0.6− | 2006 04 19 | 691 | 0.3+ | 0.6− | 2006 04 25 | 691 | 0.1− | 0.0 |
| 1999 10 04 | 703 | 0.0 | 1.2+ | 2006 04 19 | 691 | 0.5+ | 0.0 | 2006 04 25 | 691 | 0.1− | 0.1+ |
| 1999 10 04 | 703 | 0.1− | 0.9− | 2006 04 21 | 691 | 0.1+ | 0.4− | | | | |
| 1999 10 04 | 703 | 0.7+ | 0.6− | 2006 04 21 | 691 | 0.4− | 0.4+ | | | | |

**2006 HR$_{12}$ = 2006 FS$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 280.26590 | | (2000.0) | | | |
| $n$ | 0.20947615 | $\omega$ | 114.97878 | | +0.57455846 | +0.81842516 |
| $a$ | 2.8078872 | $\Omega$ | 190.10131 | | −0.76628147 | +0.53449854 |
| $e$ | 0.0183317 | $i$ | 2.59057 | | −0.28756787 | +0.21093026 |
| $P$ | 4.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 17 | 691 | 0.4+ | 0.1− | 2006 03 04 | 691 | 0.0 | 0.3+ | 2006 03 25 | G96 | 0.8− | 0.0 | |
| 2003 09 17 | 691 | 0.5+ | 0.2− | 2006 03 04 | 691 | 0.2+ | 0.1− | 2006 04 19 | G96 | 0.2− | 0.1− | |
| 2003 09 17 | 691 | 0.1+ | 0.1+ | 2006 03 04 | 691 | 0.3+ | 0.2+ | 2006 04 19 | G96 | 0.3− | 0.4+ | |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2006 03 23 | G96 | 0.7− | 0.5− | 2006 04 19 | G96 | 0.1− | 0.1+ | |
| 2003 09 26 | 645 | 0.1− | 0.0 | 2006 03 23 | G96 | 1.1− | 0.4− | 2006 04 19 | G96 | 0.6− | 0.4− | |
| 2003 09 27 | 691 | 0.1+ | 0.1+ | 2006 03 23 | G96 | 0.5− | 0.5− | 2006 04 21 | 691 | 0.5+ | 0.3+ | |
| 2003 09 27 | 691 | 0.1− | 0.1+ | 2006 03 23 | G96 | 0.3− | 0.2− | 2006 04 21 | 691 | 0.3− | 0.1− | |
| 2003 09 27 | 691 | 0.2− | 0.1− | 2006 03 25 | G96 | 0.1+ | 0.4+ | 2006 04 21 | 691 | 0.5+ | 0.1− | |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.2− | 0.1+ | | | | | |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 25 | G96 | 0.0 | 0.1− | | | | | |

**2006 HL$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.11173 | | (2000.0) | | | |
| $n$ | 0.26772798 | $\omega$ | 352.21283 | | −0.32362165 | +0.94290466 |
| $a$ | 2.3841864 | $\Omega$ | 258.87912 | | −0.86372694 | −0.32837060 |
| $e$ | 0.1961615 | $i$ | 4.60270 | | −0.38632216 | −0.05570954 |
| $P$ | 3.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 16 | 644 | 0.3+ | 0.6+ | 2003 08 28 | 704 | 0.5− | 0.2+ | 2006 03 05 | 691 | 0.1+ | 0.3+ | |
| 2002 02 16 | 644 | 0.3+ | 0.7+ | 2003 08 28 | 704 | 0.1− | 0.1+ | 2006 03 05 | 691 | 0.2+ | 0.2+ | |
| 2002 02 16 | 644 | 0.1+ | 0.7+ | 2003 09 02 | 704 | 0.2+ | 0.2+ | 2006 03 05 | 691 | 0.0 | 0.2+ | |
| 2003 08 05 | 704 | 0.2+ | 1.7+ | 2003 09 02 | 704 | 1.2− | 0.4− | 2006 04 19 | 644 | 0.4− | 0.1+ | |
| 2003 08 05 | 704 | 1.0+ | 1.2+ | 2003 09 02 | 704 | 0.4− | 0.4+ | 2006 04 19 | 644 | 0.1− | 0.2+ | |
| 2003 08 05 | 704 | 1.0− | 0.1+ | 2003 09 18 | 644 | 0.1+ | 0.6+ | 2006 04 19 | 644 | 0.2− | 0.2+ | |
| 2003 08 22 | 608 | 0.0 | 0.4− | 2003 09 18 | 644 | 0.1− | 0.3+ | 2006 04 21 | 699 | 0.1+ | 0.1− | |
| 2003 08 22 | 608 | 0.4+ | 0.2− | 2003 09 18 | 644 | 0.3+ | 0.5+ | 2006 04 21 | 699 | 0.6+ | 0.5+ | |
| 2003 08 22 | 608 | 0.1− | 0.5− | 2004 12 03 | 291 | 0.0 | 0.2+ | 2006 04 21 | 699 | 0.5+ | 0.8+ | |
| 2003 08 28 | 704 | 1.0− | 1.6+ | 2004 12 03 | 291 | 0.1+ | 0.2+ | 2006 04 21 | 699 | 0.2+ | 0.2− | |
| 2003 08 28 | 704 | 0.1+ | 0.7+ | 2004 12 03 | 291 | 0.1− | 0.2+ | | | | | |

**2006 HM$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 145.95254 | | (2000.0) | | | |
| $n$ | 0.18497794 | $\omega$ | 46.99321 | | +0.40102242 | −0.91451945 |
| $a$ | 3.0506292 | $\Omega$ | 19.55945 | | +0.78741036 | +0.31441325 |
| $e$ | 0.0581277 | $i$ | 9.15159 | | +0.46815161 | +0.25455547 |
| $P$ | 5.33 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 691 | 0.7− | 0.3− | 2003 10 24 | 691 | 0.4− | 0.5+ | 2006 04 21 | G96 | 0.2+ | 0.1+ | |
| 2003 09 22 | 691 | 0.1− | 0.5− | 2003 10 24 | 691 | 0.0 | 0.4+ | 2006 04 21 | G96 | 0.1+ | 0.3+ | |
| 2003 09 22 | 691 | 0.1+ | 0.3+ | 2006 02 27 | 691 | 0.2+ | 0.1+ | 2006 04 21 | G96 | 0.1+ | 0.4+ | |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 02 27 | 691 | 0.3+ | 0.2+ | 2006 04 24 | 621 | 0.3+ | 0.4+ | |
| 2003 09 26 | 645 | 0.1− | 0.1+ | 2006 02 27 | 691 | 0.1+ | 0.0 | 2006 04 24 | 621 | 1.1+ | 0.2− | |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 04 20 | 691 | 0.7+ | 1.2+ | 2006 04 24 | 621 | 0.4+ | 0.0 | |
| 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 04 20 | 691 | 0.3+ | 0.3− | | | | | |
| 2003 10 24 | 691 | 0.2− | 0.6+ | 2006 04 20 | 691 | 0.7− | 0.9+ | | | | | |

**2006 HP$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.19937 | | (2000.0) | | | |
| $n$ | 0.17755978 | $\omega$ | 232.83692 | | +0.31869066 | +0.91297440 |
| $a$ | 3.1350151 | $\Omega$ | 57.65267 | | −0.74562358 | +0.40742733 |
| $e$ | 0.2063586 | $i$ | 17.55263 | | −0.58521939 | −0.02192513 |
| $P$ | 5.55 | $H$ | 15.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.4+ | 0.1− | 2002 10 08 | 699 | 0.4+ | 0.7+ | 2006 04 18 | 703 | 0.5− | 0.0 | |
| 2002 09 29 | 608 | 0.0 | 0.1+ | 2002 10 16 | 644 | 0.3− | 0.2+ | 2006 04 18 | 703 | 1.5− | 0.9− | |
| 2002 09 29 | 608 | 0.0 | 0.1+ | 2002 10 16 | 644 | 0.1− | 0.3+ | 2006 04 23 | 699 | 0.1− | 0.6− | |
| 2002 10 08 | 699 | 0.1− | 0.9− | 2002 10 16 | 644 | 0.8+ | 0.4+ | 2006 04 23 | 699 | 0.3+ | 1.2+ | |
| 2002 10 08 | 699 | 0.0 | 1.1− | 2006 04 18 | 703 | 0.4+ | 0.4+ | 2006 04 23 | 699 | 0.6+ | 0.5− | |
| 2002 10 08 | 699 | 1.0− | 0.4+ | 2006 04 18 | 703 | 1.6+ | 0.2− | 2006 04 23 | 699 | 0.7− | 0.7+ | |

**2006 HF$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 308.25492 | | (2000.0) | | | |
| $n$ | 0.25848404 | $\omega$ | 234.32487 | | +0.79746716 | +0.59738661 |
| $a$ | 2.4406953 | $\Omega$ | 88.84225 | | −0.52258379 | +0.75403437 |
| $e$ | 0.1638442 | $i$ | 4.86020 | | −0.30158301 | +0.27305936 |
| $P$ | 3.81 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 01 | 704 | 0.1− | 0.3− | 2003 09 17 | 608 | 0.0 | 0.6− | 2006 04 24 | 691 | 0.4− | 0.1− | |
| 2003 09 01 | 704 | 0.2− | 1.2+ | 2003 09 24 | 644 | 0.1+ | 0.2+ | 2006 04 27 | 691 | 0.1+ | 0.3+ | |
| 2003 09 01 | 704 | 0.1− | 0.9− | 2003 09 24 | 644 | 0.0 | 0.2+ | 2006 04 27 | 691 | 0.1+ | 0.3− | |
| 2003 09 01 | 704 | 0.0 | 0.5− | 2003 09 24 | 644 | 0.2+ | 0.0 | 2006 04 27 | 691 | 0.0 | 0.2− | |
| 2003 09 17 | 704 | 0.5+ | 1.0+ | 2006 04 18 | 691 | 0.2+ | 0.0 | 2006 05 01 | 691 | 0.1+ | 0.2− | |
| 2003 09 17 | 704 | 0.1− | 0.4+ | 2006 04 18 | 691 | 0.0 | 0.8+ | 2006 05 01 | 691 | 0.2+ | 0.0 | |
| 2003 09 17 | 704 | 0.6− | 0.2+ | 2006 04 18 | 691 | 0.5+ | 0.3− | 2006 05 01 | 691 | 0.1− | 0.4+ | |
| 2003 09 17 | 608 | 0.4+ | 0.3− | 2006 04 24 | 691 | 0.2− | 0.1+ | | | | | |
| 2003 09 17 | 608 | 0.2− | 0.6− | 2006 04 24 | 691 | 0.3− | 0.6− | | | | | |

**2006 HR$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 59.31477 | | (2000.0) | | | |
| $n$ | 0.21617110 | $\omega$ | 34.56173 | | −0.97097079 | +0.23260114 |
| $a$ | 2.7496091 | $\Omega$ | 158.67973 | | −0.23903769 | −0.93501838 |
| $e$ | 0.1345142 | $i$ | 8.82656 | | −0.00875867 | −0.26765152 |
| $P$ | 4.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1− | 0.2− | 2001 03 20 | 691 | 0.1+ | 0.2+ | 2006 04 24 | 691 | 0.3− | 0.4− | |
| 2001 02 20 | 645 | 0.1− | 0.2− | 2003 09 28 | 645 | 0.1+ | 0.1− | 2006 04 24 | 691 | 0.0 | 0.1− | |
| 2001 02 27 | 691 | 0.1+ | 0.7+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2006 05 07 | 691 | 0.0 | 0.4+ | |
| 2001 02 27 | 691 | 0.2− | 0.6+ | 2006 04 20 | 691 | 0.2+ | 0.3− | 2006 05 07 | 691 | 0.1+ | 0.0 | |
| 2001 02 27 | 691 | 0.0 | 0.3+ | 2006 04 20 | 691 | 0.3+ | 0.1+ | 2006 05 07 | 691 | 0.1+ | 0.0 | |
| 2001 03 20 | 691 | 0.3+ | 0.1− | 2006 04 20 | 691 | 0.4− | 0.1+ | | | | | |
| 2001 03 20 | 691 | 0.2+ | 0.4+ | 2006 04 24 | 691 | 0.0 | 0.3− | | | | | |

**2006 HE$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.45393 | | (2000.0) | | | |
| $n$ | 0.26558779 | $\omega$ | 241.08194 | | +0.92207988 | +0.38219224 |
| $a$ | 2.3969776 | $\Omega$ | 96.39267 | | −0.33034324 | +0.85916446 |
| $e$ | 0.2074642 | $i$ | 3.50811 | | −0.20159870 | +0.34024333 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 26 | 704 | 0.5+ | 0.9− | 2003 09 17 | 704 | 0.8− | 1.7+ | 2006 04 21 | G96 | 0.5− | 0.3+ | |
| 2003 08 26 | 704 | 0.2− | 0.8+ | 2003 09 22 | 608 | 1.0+ | 1.6− | 2006 04 24 | 691 | 0.0 | 0.1+ | |
| 2003 08 26 | 704 | 0.6− | 0.2− | 2003 09 22 | 608 | 1.1+ | 1.5− | 2006 04 24 | 691 | 0.5+ | 0.1+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 26 | 704 | 0.4− | 0.6+ | 2003 09 22 | 608 | 0.6+ | 1.7− | 2006 04 24 | 691 | 0.0 | 0.0 |
| 2003 08 31 | 704 | 0.5− | 0.3− | 2003 09 25 | 644 | 0.5+ | 0.3+ | 2006 04 27 | 691 | 0.0 | 0.2+ |
| 2003 08 31 | 704 | 0.2− | 0.5+ | 2003 09 25 | 644 | 0.5+ | 0.3+ | 2006 04 27 | 691 | 0.1− | 0.4− |
| 2003 08 31 | 704 | 1.0− | 0.2+ | 2003 09 25 | 644 | 0.6+ | 0.2+ | 2006 04 27 | 691 | 0.3+ | 0.3+ |
| 2003 08 31 | 704 | 0.7− | 0.5+ | 2005 01 15 | 691 | 0.1− | 0.4+ | 2006 05 01 | 691 | 0.2+ | 0.3− |
| 2003 08 31 | 704 | 0.2− | 0.6+ | 2005 01 15 | 691 | 0.0 | 0.3+ | 2006 05 01 | 691 | 0.1− | 0.1− |
| 2003 09 17 | 704 | 0.3− | 0.3− | 2005 01 15 | 691 | 0.3+ | 0.1+ | 2006 05 01 | 691 | 0.1+ | 0.2− |
| 2003 09 17 | 704 | 0.5+ | 1.2+ | 2006 04 21 | G96 | 0.2− | 0.0 | 2006 05 06 | 691 | 0.3+ | 0.1+ |
| 2003 09 17 | 704 | 0.2− | 0.9+ | 2006 04 21 | G96 | 0.3− | 0.1+ | 2006 05 06 | 691 | 0.4− | 0.5+ |
| 2003 09 17 | 704 | 0.9− | 0.8+ | 2006 04 21 | G96 | 0.2− | 0.2+ | 2006 05 06 | 691 | 0.3− | 0.1− |

### 2006 HU$_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.20138 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.56157615 | $\omega$ | 274.18977 | | +0.69322935 | | +0.66138365 |
| $a$ | 1.4550021 | $\Omega$ | 44.74364 | | −0.38513373 | | +0.67579248 |
| $e$ | 0.4198614 | $i$ | 24.00429 | | −0.60918395 | | +0.32538624 |
| $P$ | 1.76 | $H$ | 19.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 04 25 | 703 | 0.1− | 0.3+ | 2006 04 26 | 651 | 0.5+ | 0.1+ | 2006 05 23 | 649 | 0.2− | 1.1− |
| 2006 04 25 | 703 | 0.6− | 0.0 | 2006 04 26 | 651 | 0.7+ | 0.3+ | 2006 05 23 | 649 | 0.3+ | 0.0 |
| 2006 04 25 | 703 | (2.3− | 0.5+) | 2006 04 26 | 701 | 0.3+ | 0.9+ | 2006 05 23 | 649 | 0.3− | 0.4− |
| 2006 04 25 | 703 | 0.2− | 0.5+ | 2006 04 29 | 673 | 0.5+ | 0.5− | 2006 09 13 | 474 | 0.1− | 1.0− |
| 2006 04 25 | 703 | 0.7− | 0.5+ | 2006 04 29 | 673 | 0.2+ | 0.5− | 2006 09 13 | 474 | 0.2− | 0.5+ |
| 2006 04 25 | 703 | 0.1− | 0.3− | 2006 04 29 | 673 | 0.3+ | 0.2+ | 2006 09 13 | 474 | 0.3+ | 0.5− |
| 2006 04 25 | 703 | 0.7− | 0.4− | 2006 04 29 | 673 | 0.8+ | 0.7+ | 2006 09 13 | 474 | 0.2− | 0.8− |
| 2006 04 25 | 703 | 0.7− | 0.1+ | 2006 04 29 | 941 | 1.0− | 0.0 | 2006 09 25 | 448 | 0.1+ | 0.1+ |
| 2006 04 25 | J95 | 0.5− | 0.3+ | 2006 04 29 | 941 | 0.9− | 0.0 | 2006 09 25 | 448 | 1.2− | 0.8+ |
| 2006 04 25 | J95 | 0.4− | 0.2+ | 2006 04 29 | 941 | 1.0− | 0.1− | 2006 09 29 | 448 | 0.2+ | 0.0 |
| 2006 04 25 | J95 | 0.3+ | 0.1+ | 2006 04 29 | 941 | 0.9− | 0.1− | 2006 10 04 | 448 | 0.2+ | 0.6+ |
| 2006 04 25 | 113 | 0.4+ | 0.7− | 2006 05 01 | A50 | 0.4+ | 0.1+ | 2006 10 04 | 448 | 0.3− | 0.3+ |
| 2006 04 25 | 113 | 0.6+ | 0.3+ | 2006 05 01 | A50 | 0.1+ | 0.6+ | 2006 10 04 | 448 | 0.4+ | 0.1− |
| 2006 04 25 | 113 | 0.2+ | 0.0 | 2006 05 01 | A50 | 0.5+ | 0.3+ | 2006 10 18 | F84 | 0.5− | 0.3− |
| 2006 04 26 | 703 | 1.1− | 1.0− | 2006 05 01 | A50 | 0.6+ | 0.2+ | 2006 10 18 | F84 | 0.1− | 0.2− |
| 2006 04 26 | 703 | 0.3− | 0.0 | 2006 05 01 | A50 | 0.7+ | 0.1+ | 2006 10 30 | A17 | 1.0+ | 0.6+ |
| 2006 04 26 | 703 | 0.5− | 0.0 | 2006 05 03 | 246 | 0.5+ | 0.2+ | 2006 10 30 | A17 | 0.1+ | 0.1+ |
| 2006 04 26 | 701 | (2.4+ | 0.4+) | 2006 05 03 | 246 | 1.3+ | 0.3− | 2006 10 30 | A17 | 0.0 | 0.2− |
| 2006 04 26 | G96 | 0.2− | 0.4− | 2006 05 03 | 246 | 0.2− | 0.1− | 2006 11 03 | 130 | 0.1− | 0.4− |
| 2006 04 26 | G96 | 0.4− | 0.3− | 2006 05 03 | 246 | (1.6+ | 0.8−) | 2006 11 03 | 130 | 0.3− | 0.1− |
| 2006 04 26 | G96 | 0.3− | 0.0 | 2006 05 03 | 246 | 1.2+ | 1.2− | 2006 11 12 | A94 | 0.4− | 0.4+ |
| 2006 04 26 | G96 | 0.0 | 0.2− | 2006 05 03 | 246 | 0.7+ | 1.3− | 2006 11 12 | A94 | 0.8− | 1.0+ |
| 2006 04 26 | 701 | (4.4+ | 2.5+) | 2006 05 03 | 246 | 0.3+ | 1.2− | 2006 11 12 | A94 | 0.5− | 1.0− |
| 2006 04 26 | 701 | 1.3+ | 0.3+ | 2006 05 22 | A50 | 0.4+ | 0.4+ | 2006 11 18 | 170 | 0.6+ | 0.1+ |
| 2006 04 26 | 696 | 0.5− | 0.1+ | 2006 05 22 | A50 | 0.4+ | 0.4+ | 2006 11 18 | 170 | 0.4+ | 0.1+ |
| 2006 04 26 | 696 | 0.1+ | 0.4+ | 2006 05 22 | A50 | 0.6+ | 0.2− | 2006 11 18 | 170 | 0.5+ | 0.1+ |
| 2006 04 26 | 651 | 0.5+ | 0.2+ | 2006 05 22 | A50 | 0.7+ | 0.2+ | | | | |

### 2006 HQ$_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.56839 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21476334 | $\omega$ | 238.61770 | | −0.63144930 | | +0.77534944 |
| $a$ | 2.7616117 | $\Omega$ | 352.20072 | | −0.68332180 | | −0.56265158 |
| $e$ | 0.0585930 | $i$ | 4.33118 | | −0.36652845 | | −0.28680385 |
| $P$ | 4.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 645 | 0.0 | 0.0 | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 04 02 | G96 | 0.1− | 0.2+ |
| 2003 09 26 | 645 | 0.0 | 0.1+ | 2006 03 04 | 691 | 0.1+ | 0.6+ | 2006 04 02 | G96 | 0.6− | 0.1+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.1+ | 0.2+ | 2006 04 19 | 691 | 0.2+ | 0.1+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 03 04 | 691 | 0.4+ | 0.6+ | 2006 04 19 | 691 | 0.3+ | 0.0 |
| 2003 09 29 | 691 | 0.1+ | 0.2+ | 2006 03 25 | G96 | 0.1− | 0.1+ | 2006 04 19 | 691 | 0.1− | 0.2− |
| 2003 09 29 | 691 | 0.0 | 0.4+ | 2006 03 25 | G96 | 0.3− | 0.2+ | 2006 04 26 | 691 | 0.2+ | 0.0 |
| 2003 09 29 | 691 | 0.2+ | 0.3+ | 2006 03 25 | G96 | 0.3− | 0.1+ | 2006 04 26 | 691 | 0.0 | 0.1− |
| 2003 10 18 | 645 | 0.1− | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.0 | 2006 04 26 | 691 | 0.2+ | 0.1− |
| 2003 10 18 | 645 | 0.0 | 0.0 | 2006 04 02 | G96 | 0.3− | 0.2+ | | | | |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2006 04 02 | G96 | 0.3− | 0.1+ | | | | |

### 2006 HA$_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.29033 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18777853 | $\omega$ | 293.64472 | | +0.02051425 | | −0.99762201 |
| $a$ | 3.0202212 | $\Omega$ | 154.91018 | | +0.96451282 | | +0.00241948 |
| $e$ | 0.0908764 | $i$ | 8.92676 | | +0.26323790 | | +0.06888008 |
| $P$ | 5.25 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.0 | 0.0 | 2005 01 13 | 703 | 0.0 | 0.4− | 2006 04 19 | 691 | 0.3+ | 0.2+ |
| 1995 03 23 | 691 | (4.1+ | 2.8+) | 2005 01 13 | 703 | 0.7− | 0.6+ | 2006 04 19 | 699 | (2.4+ | 0.2+) |
| 1995 03 23 | 691 | 0.1− | 0.2− | 2005 01 13 | 703 | 0.2+ | 0.3− | 2006 04 19 | 691 | 0.1+ | 0.1+ |
| 2000 03 09 | 704 | 0.7− | 0.3+ | 2005 01 13 | 703 | 0.1+ | 0.2− | 2006 04 19 | 691 | 0.3+ | 0.3+ |
| 2000 03 09 | 704 | 0.4− | 0.3− | 2005 01 18 | 703 | 0.1− | 1.0− | 2006 04 19 | 699 | 0.4− | 1.6− |
| 2000 03 09 | 704 | 1.1+ | 0.2+ | 2005 01 18 | 703 | 0.4+ | 0.5+ | 2006 04 19 | 699 | 0.8+ | 0.1+ |
| 2003 09 18 | 599 | 0.0 | 0.6+ | 2005 01 18 | 703 | 0.8− | 0.2+ | 2006 04 19 | 699 | 1.0+ | 1.9+ |
| 2003 09 18 | 599 | 0.1− | 0.2+ | 2005 01 18 | 703 | 0.0 | 1.3+ | 2006 04 25 | 691 | 0.0 | 0.1+ |
| 2003 09 18 | 599 | 0.1− | 0.2+ | 2005 02 02 | 644 | 0.8+ | 0.2+ | 2006 04 25 | 691 | 0.2+ | 0.3+ |
| 2003 09 19 | 599 | 0.1+ | 0.5+ | 2005 02 02 | 644 | 0.7+ | 0.8+ | 2006 04 25 | 691 | 0.1+ | 0.5+ |
| 2003 09 28 | 704 | 0.0 | 0.1+ | 2005 02 02 | 644 | 0.7+ | 0.2+ | 2006 04 27 | 703 | 0.4− | 1.8+ |
| 2003 09 28 | 704 | 0.8− | 1.7+ | 2005 03 17 | G96 | 0.5− | 0.0 | 2006 04 27 | 703 | 1.1− | 0.8− |
| 2003 09 28 | 704 | 0.8− | 0.4+ | 2005 03 17 | G96 | 0.3− | 0.1− | 2006 04 27 | 703 | 1.1− | 0.3+ |
| 2003 09 28 | 704 | 0.9− | 1.6+ | 2005 03 17 | G96 | 0.2− | 0.1+ | 2006 04 27 | 703 | 1.1− | 1.1− |
| 2003 09 28 | 704 | 0.6+ | 0.9+ | 2005 03 17 | G96 | 0.2− | 0.2+ | | | | |

### 2006 HF$_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.39496 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25558722 | $\omega$ | 224.07807 | | +0.88366589 | | −0.46615317 |
| $a$ | 2.4591025 | $\Omega$ | 163.55519 | | +0.46036626 | | +0.84879689 |
| $e$ | 0.2683374 | $i$ | 8.70525 | | +0.08483805 | | +0.24948961 |
| $P$ | 3.86 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 704 | 0.1+ | 0.2+ | 2005 01 18 | 703 | 0.5− | 1.0+ | 2005 04 06 | G96 | 0.1− | 0.2− |
| 2001 01 04 | 704 | 0.2+ | 0.6+ | 2005 01 18 | 703 | 1.1+ | 0.3+ | 2005 04 06 | G96 | 0.3+ | 0.7− |
| 2001 01 04 | 704 | 0.3+ | 0.4− | 2005 02 02 | 704 | 0.1+ | 0.3+ | 2006 04 19 | 691 | 0.2+ | 0.2+ |
| 2001 01 04 | 704 | 0.2− | 0.0 | 2005 02 02 | 704 | 0.6+ | 0.8+ | 2006 04 19 | 691 | 0.0 | 0.3+ |
| 2001 01 04 | 704 | 0.4+ | 0.6− | 2005 02 02 | 703 | 0.2+ | 0.4− | 2006 04 19 | 691 | 0.2− | 0.0 |
| 2001 01 19 | 704 | 0.1− | 0.2+ | 2005 02 02 | 704 | 0.3+ | 0.4+ | 2006 04 21 | 691 | 0.1+ | 0.8− |
| 2001 01 19 | 704 | 0.7− | 0.5+ | 2005 02 02 | 703 | 0.1+ | 0.6+ | 2006 04 21 | 691 | 0.1− | 0.3− |
| 2001 01 19 | 704 | 0.7+ | 0.6− | 2005 02 02 | 703 | 0.8− | 0.3+ | 2006 04 21 | 691 | 0.3− | 0.4+ |
| 2001 01 19 | 704 | 0.7− | 0.3− | 2005 02 02 | 703 | 0.6− | 0.2− | 2006 04 25 | 691 | 0.4+ | 0.1+ |
| 2005 01 13 | 703 | 0.4− | 0.5− | 2005 03 13 | G96 | 0.4+ | 0.4− | 2006 04 25 | 691 | 0.1+ | 0.0 |
| 2005 01 13 | 703 | 0.0 | 0.8+ | 2005 03 13 | G96 | 0.1+ | 0.3− | 2006 04 25 | 691 | 0.1− | 0.1+ |
| 2005 01 13 | 703 | 0.3− | 0.6+ | 2005 03 13 | G96 | 0.1+ | 0.3− | 2006 05 05 | G96 | 0.2− | 0.1− |
| 2005 01 13 | 703 | 0.5+ | 0.5− | 2005 03 13 | G96 | 0.2+ | 0.2− | 2006 05 05 | G96 | 0.2+ | 0.2+ |
| 2005 01 18 | 703 | 1.5− | 1.4− | 2005 04 06 | G96 | 0.7+ | 0.4+ | 2006 05 05 | G96 | 0.1+ | 0.2− |
| 2005 01 18 | 703 | 0.3+ | 0.2− | 2005 04 06 | G96 | 0.4− | 0.1+ | 2006 05 05 | G96 | 0.2− | 0.2− |

### 2006 HH$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.55381 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27278036 | $\omega$ | 178.60189 | | +0.51277393 | | +0.85715598 |
| $a$ | 2.3546552 | $\Omega$ | 122.24463 | | −0.78823490 | | +0.49240195 |
| $e$ | 0.2086000 | $i$ | 3.28335 | | −0.34021853 | | +0.15107594 |
| $P$ | 3.61 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 644 | 0.1− | 0.5+ | 2003 09 26 | 645 | 0.0 | 0.1− | 2006 04 21 | 691 | 0.1− | 0.1+ |
| 2003 09 19 | 644 | 0.3− | 0.3+ | 2003 09 26 | 645 | 0.1+ | 0.1− | 2006 04 25 | 691 | 0.2− | 0.1+ |
| 2003 09 19 | 644 | 0.1+ | 0.3+ | 2003 09 28 | 645 | 0.0 | 0.1− | 2006 04 25 | 691 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 644 | 0.3− | 0.3+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 04 25 | 691 | 0.1− | 0.2− |
| 2003 09 19 | 644 | 0.0 | 0.0 | 2003 10 02 | 691 | 0.2− | 0.1+ | 2006 05 08 | 691 | 0.2+ | 0.1− |
| 2003 09 19 | 644 | 0.1− | 0.5+ | 2003 10 02 | 691 | 0.0 | 0.2+ | 2006 05 08 | 691 | 0.4+ | 0.3+ |
| 2003 09 25 | 644 | 0.3+ | 0.5+ | 2003 10 02 | 691 | 0.1+ | 0.1+ | 2006 05 08 | 691 | 0.2− | 0.1− |
| 2003 09 25 | 644 | 0.1− | 0.4+ | 2006 04 21 | 691 | 0.0 | 0.1+ | | | | |
| 2003 09 25 | 644 | 0.1− | 0.7+ | 2006 04 21 | 691 | 0.3+ | 0.3− | | | | |

**2006 HB$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.35592 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26111410 | $\omega$ | 159.39063 | | −0.74425239 | | −0.66786366 |
| $a$ | 2.4242785 | $\Omega$ | 338.70236 | | +0.61012606 | | −0.67568614 |
| $e$ | 0.1413113 | $i$ | 1.07580 | | +0.27172516 | | −0.31209994 |
| $P$ | 3.77 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 691 | 0.1+ | 0.2+ | 2002 04 14 | 704 | 0.6+ | 0.3+ | 2006 05 04 | 691 | 0.3− | 0.1+ |
| 2002 03 20 | 691 | 0.0 | 0.1+ | 2006 04 24 | G96 | 0.0 | 0.8− | 2006 05 04 | 691 | 0.3− | 0.1− |
| 2002 03 20 | 691 | 0.0 | 0.2− | 2006 04 24 | G96 | 1.0− | 0.6− | 2006 05 04 | 691 | 0.1+ | 0.3− |
| 2002 04 04 | 644 | 0.2+ | 0.4+ | 2006 04 24 | G96 | 0.5− | 0.4− | 2006 05 20 | 691 | 0.2+ | 0.7+ |
| 2002 04 04 | 644 | 0.1− | 0.2+ | 2006 04 24 | G96 | 0.5− | 0.2− | 2006 05 20 | 691 | 0.2+ | 0.2+ |
| 2002 04 04 | 644 | 0.1− | 0.4+ | 2006 04 26 | 691 | 0.2+ | 0.3− | 2006 05 20 | 691 | 0.3+ | 0.4+ |
| 2002 04 14 | 704 | 0.8− | 0.5− | 2006 04 26 | 691 | 0.1− | 0.1− | | | | |
| 2002 04 14 | 704 | 0.1− | 0.4− | 2006 04 26 | 691 | 0.2+ | 0.3− | | | | |

**2006 HY$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.65325 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22010955 | $\omega$ | 315.11207 | | +0.47206303 | | −0.87873446 |
| $a$ | 2.7167111 | $\Omega$ | 106.60017 | | +0.82808906 | | +0.41454176 |
| $e$ | 0.0658804 | $i$ | 4.22393 | | +0.30236568 | | +0.23660278 |
| $P$ | 4.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 644 | 0.6− | 0.6+ | 2005 02 28 | A13 | 0.6+ | 0.4− | 2006 04 25 | 691 | 0.1− | 0.2+ |
| 2003 09 19 | 644 | 0.3− | 0.1− | 2005 02 28 | A13 | 0.6+ | 0.1− | 2006 05 02 | 691 | 0.3+ | 0.4+ |
| 2003 09 19 | 644 | 0.2− | 0.5+ | 2005 03 14 | G96 | 0.4+ | 0.5− | 2006 05 02 | 691 | 0.0 | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 03 14 | G96 | 0.1+ | 0.2+ | 2006 05 02 | 691 | 0.1+ | 0.5− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 03 14 | G96 | 0.3+ | 0.1− | 2006 05 06 | 691 | 0.2− | 0.0 |
| 2003 10 02 | 691 | 0.2+ | 0.4+ | 2005 03 14 | G96 | 0.0 | 0.0 | 2006 05 06 | 691 | 0.4− | 0.6− |
| 2003 10 02 | 691 | 0.6+ | 0.4− | 2006 04 24 | 691 | 0.2+ | 0.1− | 2006 05 06 | 691 | 0.2+ | 0.1+ |
| 2003 10 02 | 691 | 0.3− | 0.2+ | 2006 04 24 | 691 | 0.2− | 0.0 | 2006 05 09 | 691 | 0.1− | 0.3+ |
| 2005 02 28 | A13 | 1.6− | 0.1+ | 2006 04 24 | 691 | 0.2− | 0.3+ | 2006 05 09 | 691 | 0.0 | 0.1+ |
| 2005 02 28 | A13 | 0.7− | 0.3+ | 2006 04 25 | 691 | 0.4+ | 0.3− | 2006 05 09 | 691 | 0.3− | 0.1− |
| 2005 02 28 | A13 | 0.3+ | 0.3+ | 2006 04 25 | 691 | 0.2+ | 0.2+ | | | | |

**2006 HD$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.35756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27490256 | $\omega$ | 2.97116 | | +0.19783694 | | −0.97317640 |
| $a$ | 2.3425212 | $\Omega$ | 75.63999 | | +0.89683038 | | +0.13134677 |
| $e$ | 0.0917054 | $i$ | 6.96196 | | +0.39567134 | | +0.18888015 |
| $P$ | 3.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.6− | 1.0− | 2002 04 16 | 704 | 0.6− | 1.0+ | 2006 04 26 | 691 | 0.1− | 0.3− |
| 1995 03 28 | 691 | 0.8− | 1.0− | 2004 12 10 | 704 | 1.3+ | 0.4+ | 2006 04 30 | 691 | 0.0 | 0.2+ |
| 1995 03 28 | 691 | 0.3− | 1.2− | 2004 12 10 | 704 | 0.0 | 0.4+ | 2006 04 30 | 691 | 0.2+ | 0.4− |
| 2002 03 12 | 704 | 0.8+ | 0.3+ | 2004 12 10 | 704 | 0.6− | 0.1+ | 2006 04 30 | 691 | 0.2+ | 0.1− |
| 2002 03 12 | 704 | 0.8+ | 0.7− | 2004 12 16 | 704 | 0.8− | 1.0+ | 2006 05 02 | G96 | 0.2− | 0.1+ |
| 2002 03 12 | 704 | 0.2− | 0.5+ | 2004 12 16 | 704 | 0.5− | 0.7+ | 2006 05 02 | G96 | 0.0 | 0.0 |
| 2002 03 12 | 704 | 0.5− | 0.1+ | 2004 12 16 | 704 | 0.6+ | 0.0 | 2006 05 02 | G96 | 0.1+ | 0.1+ |
| 2002 03 20 | 704 | 0.5− | 0.0 | 2005 01 12 | 704 | 0.5− | 0.2− | 2006 05 02 | G96 | 0.4− | 0.1+ |
| 2002 03 20 | 704 | 0.0 | 0.2+ | 2005 01 12 | 704 | 0.1− | 0.3− | 2006 05 06 | 691 | 0.1+ | 0.1+ |
| 2002 03 20 | 704 | 0.6+ | 1.9+ | 2005 01 12 | 704 | 0.1− | 0.3+ | 2006 05 06 | 691 | 0.1+ | 0.5+ |
| 2002 03 20 | 704 | 0.8+ | 0.7+ | 2005 01 12 | 704 | 0.4+ | 0.5− | 2006 05 06 | 691 | 0.2+ | 0.4+ |
| 2002 03 20 | 704 | 0.6+ | 1.6+ | 2006 04 24 | 691 | 0.0 | 0.1− | 2006 05 08 | 691 | 0.2− | 0.5+ |
| 2002 04 16 | 704 | 0.3+ | 1.0+ | 2006 04 24 | 691 | 0.0 | 0.2+ | 2006 05 08 | 691 | 0.2+ | 0.4+ |
| 2002 04 16 | 704 | 0.4+ | 0.2− | 2006 04 24 | 691 | 0.1+ | 0.2+ | 2006 05 08 | 691 | 0.5− | 0.4+ |
| 2002 04 16 | 704 | 0.7+ | 0.5+ | 2006 04 26 | 691 | 0.5+ | 0.1− | | | | |
| 2002 04 16 | 704 | 0.6+ | 1.0+ | 2006 04 26 | 691 | 0.0 | 0.1+ | | | | |

**2006 HB$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.62953 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23786071 | $\omega$ | 347.70650 | | −0.99908211 | | −0.01100542 |
| $a$ | 2.5798091 | $\Omega$ | 191.89800 | | +0.01944619 | | −0.97763539 |
| $e$ | 0.1158223 | $i$ | 11.58356 | | −0.03816783 | | −0.21001889 |
| $P$ | 4.14 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 699 | 0.4+ | 0.7+ | 2006 04 19 | 699 | 0.8+ | 1.1− | 2006 04 26 | G96 | 0.1− | 0.3− |
| 2002 04 05 | 699 | 0.8+ | 0.2+ | 2006 04 19 | 699 | 1.5− | 0.1− | 2006 04 26 | G96 | 0.3− | 0.3− |
| 2002 04 05 | 699 | 0.4− | 1.3− | 2006 04 19 | 699 | 1.3+ | 0.6+ | 2006 04 27 | 691 | 0.2+ | 0.3− |
| 2002 04 05 | 699 | 0.2+ | 0.7+ | 2006 04 25 | 691 | 0.2+ | 0.2+ | 2006 04 27 | 691 | 0.2+ | 0.0 |
| 2002 04 16 | 704 | 0.1− | 0.7− | 2006 04 25 | 691 | 0.2− | 0.1− | 2006 04 27 | 691 | 0.5+ | 0.1− |
| 2002 04 16 | 704 | 0.3− | 0.4− | 2006 04 25 | 691 | 0.2− | 0.1+ | 2006 04 30 | 691 | 0.2− | 0.1+ |
| 2002 04 16 | 704 | 1.1− | 0.5+ | 2006 04 26 | 691 | 0.2+ | 0.0 | 2006 04 30 | 691 | 0.0 | 0.2+ |
| 2002 05 07 | 644 | 0.6+ | 0.0 | 2006 04 26 | 691 | 0.4− | 0.6+ | 2006 04 30 | 691 | 0.1+ | 0.2+ |
| 2002 05 07 | 644 | 0.1+ | 0.0 | 2006 04 26 | 691 | 0.1+ | 0.1− | 2006 05 01 | 691 | 0.0 | 0.0 |
| 2002 05 07 | 644 | 0.1− | 0.1+ | 2006 04 26 | G96 | 0.0 | 0.1− | 2006 05 01 | 691 | 0.4− | 0.2− |
| 2006 04 19 | 699 | 0.8− | 0.5− | 2006 04 26 | G96 | 0.1− | 0.2− | 2006 05 01 | 691 | 0.0 | 0.1− |

**2006 HF$_{46}$ = 2002 QB$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.09528 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17395446 | $\omega$ | 55.37272 | | −0.90113328 | | −0.39659634 |
| $a$ | 3.1781837 | $\Omega$ | 100.70255 | | +0.31597938 | | −0.87738632 |
| $e$ | 0.0497378 | $i$ | 10.26664 | | +0.29684314 | | −0.27000850 |
| $P$ | 5.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.0 | 0.5+ | 2002 10 09 | 644 | 0.4− | 0.1− | 2006 04 25 | 703 | 0.4+ | 1.6+ |
| 2002 08 19 | 644 | 0.1+ | 0.2+ | 2002 10 09 | 644 | 0.5+ | 0.7+ | 2006 04 26 | 703 | (1.9+ | 0.2+) |
| 2002 08 19 | 644 | 0.4− | 0.6+ | 2002 10 09 | 644 | 0.3+ | 0.2+ | 2006 04 26 | 703 | 0.0 | 0.3+ |
| 2002 08 20 | 644 | 0.4− | 0.6+ | 2003 11 29 | 691 | 0.3− | 0.6+ | 2006 04 26 | 703 | (1.3+ | 2.9+) |
| 2002 08 20 | 644 | 0.1+ | 0.0 | 2003 11 29 | 691 | 0.2− | 0.3+ | 2006 04 26 | 703 | 1.6+ | 0.2+ |
| 2002 08 20 | 644 | 0.0 | 0.5+ | 2003 11 29 | 691 | 0.1− | 0.6+ | 2006 05 01 | 703 | 0.3− | 0.6+ |
| 2002 09 09 | 644 | 0.2+ | 0.3+ | 2005 01 13 | 691 | 0.3− | 0.2+ | 2006 05 01 | 703 | 0.6− | 0.3+ |
| 2002 09 09 | 644 | 0.0 | 0.3− | 2005 01 13 | 691 | 0.1+ | 0.2+ | 2006 06 01 | 691 | 0.5+ | 0.2− |
| 2002 09 09 | 644 | 0.0 | 0.2− | 2005 01 13 | 691 | 0.4+ | 0.1+ | 2006 06 01 | 691 | 0.3+ | 0.3+ |
| 2002 09 17 | 644 | 0.1− | 0.7+ | 2006 04 25 | 703 | 0.1+ | 0.5+ | 2006 06 01 | 691 | 0.1− | 0.5+ |
| 2002 09 17 | 644 | 0.1− | 0.2− | 2006 04 25 | 703 | 0.4+ | 1.7+ | | | | |
| 2002 09 17 | 644 | 1.2− | 0.9+ | 2006 04 25 | 703 | 0.7− | 0.6+ | | | | |

**2006 HS$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.48758 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28047946 | $\omega$ | 112.88502 | | +0.37815583 | | +0.92574096 |
| $a$ | 2.3113657 | $\Omega$ | 179.32996 | | −0.88625404 | | +0.36244941 |
| $e$ | 0.1390786 | $i$ | 6.67654 | | −0.26749194 | | +0.10786150 |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | I03 | 0.1− | 0.1− | 2003 07 23 | 644 | 0.2− | 0.2+ | 2006 04 27 | 704 | 0.2− | 0.2+ |
| 2002 02 07 | I03 | 0.3− | 0.3− | 2003 08 05 | 704 | 0.1+ | 0.6+ | 2006 04 27 | 704 | 0.8+ | 0.1+ |
| 2002 02 07 | I03 | 0.2+ | 0.2− | 2003 08 05 | 704 | 0.6− | 0.1− | 2006 04 27 | 704 | 0.7+ | 0.6+ |
| 2002 02 07 | I03 | 0.1+ | 0.2− | 2003 08 05 | 704 | 0.4+ | 0.8+ | 2006 04 27 | 704 | 0.1− | 0.4− |
| 2002 02 07 | I03 | 0.0 | 0.0 | 2003 08 05 | 704 | 0.3+ | 1.4− | 2006 04 30 | 699 | 0.0 | 0.5+ |
| 2002 02 07 | I03 | 0.2+ | 0.0 | 2003 08 05 | 704 | 2.6+ | 1.2+ | 2006 04 30 | 699 | 0.7+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | I03 | 0.1− | 0.0 | 2003 08 24 | 704 | 0.2− | 0.1+ | 2006 04 30 | 699 | 0.5+ | 0.5+ | | |
| 2002 02 07 | I03 | 0.1+ | 0.2− | 2003 08 24 | 704 | 0.6− | 0.2− | 2006 04 30 | 699 | 1.0+ | 0.2− | | |
| 2002 02 07 | I03 | 0.4+ | 0.0 | 2003 08 24 | 704 | 0.9− | 1.1− | 2006 05 01 | 691 | 0.7+ | 0.2+ | | |
| 2002 02 07 | I03 | 0.2− | 0.3− | 2003 08 24 | 704 | 0.7− | 0.1− | 2006 05 01 | 691 | 0.1− | 0.0 | | |
| 2002 02 07 | I03 | 0.2+ | 0.0 | 2006 04 20 | 691 | 0.1− | 0.1− | 2006 05 01 | 691 | 0.2− | 0.1+ | | |
| 2002 02 07 | I03 | 0.1− | 0.2+ | 2006 04 20 | 691 | 0.1− | 0.0 | 2006 05 07 | G96 | 0.6− | 0.1− | | |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2006 04 20 | 691 | 0.1− | 0.0 | 2006 05 07 | G96 | 0.6− | 0.4− | | |
| 2002 03 12 | 645 | 0.0 | 0.1+ | 2006 04 27 | 691 | 0.2− | 0.3− | 2006 05 07 | G96 | 0.8− | 0.1− | | |
| 2003 07 23 | 644 | 0.1− | 0.2+ | 2006 04 27 | 691 | 0.2− | 0.2− | | | | | | |
| 2003 07 23 | 644 | 0.2− | 0.3+ | 2006 04 27 | 691 | 0.1− | 0.2− | | | | | | |

**2006 HE$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.26042 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26066869 | $\omega$ | 66.00969 | | −0.72600045 | | +0.68769359 |
| $a$ | 2.4270393 | $\Omega$ | 157.43809 | | −0.63183182 | | −0.66648751 |
| $e$ | 0.1455068 | $i$ | 0.14001 | | −0.27149936 | | −0.28787484 |
| $P$ | 3.78 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 691 | 0.7+ | 0.4− | 2002 03 21 | 291 | 0.7+ | 0.4+ | 2006 03 23 | G96 | 0.4− | 0.1− |
| 2002 02 11 | 691 | 0.4− | 0.1− | 2002 03 21 | 291 | 0.5+ | 0.2+ | 2006 03 23 | G96 | 0.3− | 0.1− |
| 2002 02 11 | 691 | 0.8+ | 0.0 | 2004 11 10 | 695 | 0.1− | 0.7+ | 2006 04 25 | 691 | 0.4+ | 0.1+ |
| 2002 02 13 | 645 | 0.2− | 0.0 | 2004 11 10 | 695 | 0.1− | 0.9+ | 2006 04 25 | 691 | 0.1+ | 0.1− |
| 2002 02 13 | 645 | 0.2− | 0.0 | 2006 03 23 | 691 | 0.0 | 0.6− | 2006 04 25 | 691 | 0.2− | 0.5+ |
| 2002 03 05 | 691 | 0.1+ | 0.0 | 2006 03 23 | 691 | 0.2− | 0.1+ | 2006 04 27 | 691 | 0.1+ | 0.1+ |
| 2002 03 05 | 691 | 0.1− | 0.4− | 2006 03 23 | 691 | 0.3+ | 0.1− | 2006 04 27 | 691 | 0.1− | 0.0 |
| 2002 03 05 | 691 | 0.1− | 0.1+ | 2006 03 23 | G96 | 0.8− | 0.1+ | 2006 04 27 | 691 | 0.1+ | 0.2+ |
| 2002 03 21 | 291 | 0.3− | 0.1+ | 2006 03 23 | G96 | 0.2− | 0.1− | | | | |

**2006 HP$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.40144 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22792550 | $\omega$ | 311.08064 | | +0.25129401 | | +0.96786959 |
| $a$ | 2.6542435 | $\Omega$ | 333.46948 | | −0.88193740 | | +0.22516130 |
| $e$ | 0.0696163 | $i$ | 1.14579 | | −0.39879537 | | +0.11194127 |
| $P$ | 4.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 11 | 691 | 0.5+ | 0.1+ | 2003 09 28 | 645 | 0.1+ | 0.1− | 2006 04 19 | 691 | 0.1− | 0.2+ |
| 1997 03 11 | 691 | 0.2− | 0.4+ | 2003 09 28 | 645 | 0.1+ | 0.1− | 2006 04 19 | 691 | 0.1+ | 0.4+ |
| 1997 03 11 | 691 | 0.0 | 0.1+ | 2003 09 28 | 291 | 0.0 | 0.1+ | 2006 04 19 | 691 | 0.4+ | 0.2+ |
| 2003 09 18 | 691 | 0.3+ | 0.4+ | 2003 10 18 | 645 | 0.1− | 0.1+ | 2006 04 26 | G96 | 0.6+ | 1.1− |
| 2003 09 18 | 691 | 0.1− | 0.3+ | 2003 10 18 | 645 | 0.1− | 0.2+ | 2006 04 26 | G96 | 0.5− | 0.3− |
| 2003 09 18 | 691 | 0.1+ | 0.4+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 04 26 | G96 | 0.2− | 0.3− |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2003 10 23 | 645 | 0.2− | 0.1− | 2006 04 26 | G96 | 0.4− | 0.2− |
| 2003 09 26 | 645 | 0.1+ | 0.1− | 2006 03 25 | 691 | 0.0 | 0.1− | 2006 04 27 | 691 | 0.4+ | 0.1− |
| 2003 09 28 | 291 | 0.0 | 0.2+ | 2006 03 25 | 691 | 0.2+ | 0.4− | 2006 04 27 | 691 | 0.2+ | 0.5+ |
| 2003 09 28 | 291 | 0.1− | 0.2+ | 2006 03 25 | 691 | 0.4− | 0.4+ | 2006 04 27 | 691 | 0.2− | 0.4+ |

**2006 HX$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.89974 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24036799 | $\omega$ | 140.49364 | | −0.49586042 | | +0.85679764 |
| $a$ | 2.5618378 | $\Omega$ | 99.35091 | | −0.82862230 | | −0.41807387 |
| $e$ | 0.1690995 | $i$ | 8.24455 | | −0.25982212 | | −0.30184770 |
| $P$ | 4.10 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.9− | 0.5− | 2002 04 02 | 049 | 0.3+ | 0.1− | 2006 02 08 | 703 | 0.2+ | 0.6+ |
| 1998 04 23 | 704 | 1.3+ | 1.2− | 2002 04 02 | 049 | 0.2− | 0.2+ | 2006 03 24 | 699 | 0.7+ | 0.4− |
| 1998 04 23 | 704 | 0.7− | 2.7+ | 2002 04 02 | 049 | 0.6− | 0.1− | 2006 03 24 | 699 | 0.5+ | 0.8+ |
| 1998 04 23 | 704 | 1.2+ | 0.0 | 2002 04 16 | 704 | 0.5+ | 0.7− | 2006 03 24 | 699 | 0.2+ | 0.0 |
| 2002 03 09 | 703 | 0.6− | 1.1+ | 2002 04 16 | 704 | 0.5+ | 0.1+ | 2006 03 24 | 699 | 0.4− | 1.4− |
| 2002 03 09 | 703 | 1.2+ | 0.7+ | 2002 04 16 | 704 | 0.3+ | 0.1+ | 2006 04 19 | 703 | 1.0+ | 0.6+ |
| 2002 03 09 | 703 | 0.3− | 1.4+ | 2002 04 16 | 704 | 1.3− | 0.5+ | 2006 04 19 | 703 | 0.4− | 0.0 |
| 2002 03 09 | 703 | 0.6+ | 0.4+ | 2003 08 23 | 644 | 0.3− | 0.2+ | 2006 04 19 | 703 | 0.2− | 1.0− |
| 2002 03 20 | 704 | 0.9+ | 0.2+ | 2003 08 23 | 644 | 0.1− | 0.2+ | 2006 04 19 | 703 | 0.1− | 0.8− |
| 2002 03 20 | 704 | 0.4− | 0.3− | 2003 08 23 | 644 | 0.0 | 0.3+ | 2006 04 25 | 703 | 0.4− | 0.7− |
| 2002 03 20 | 704 | 0.7− | 0.5− | 2006 02 08 | 703 | 0.1− | 0.3− | 2006 04 25 | 703 | 0.2− | 1.5− |
| 2002 03 20 | 704 | 0.5+ | 0.5+ | 2006 02 08 | 703 | 0.6+ | 0.3+ | 2006 04 25 | 703 | 0.0 | 0.6− |
| 2002 03 20 | 704 | 0.5− | 0.4− | 2006 02 08 | 703 | 0.1+ | 1.3+ | 2006 04 25 | 703 | 1.9− | 0.4− |

**2006 HK$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.97051 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25161053 | $\omega$ | 45.55857 | | −0.94411713 | | −0.31090739 |
| $a$ | 2.4849453 | $\Omega$ | 116.04483 | | +0.25709558 | | −0.90242228 |
| $e$ | 0.1247697 | $i$ | 6.99724 | | +0.20626366 | | −0.29827943 |
| $P$ | 3.92 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 704 | 1.3+ | 0.0 | 2002 04 11 | 699 | 0.4+ | 0.4− | 2006 04 23 | 699 | 0.3− | 0.3+ |
| 1998 03 25 | 704 | 0.1+ | 1.2− | 2002 04 11 | 704 | 0.5+ | 0.2+ | 2006 04 26 | 699 | 0.3+ | 0.6− |
| 1998 03 25 | 704 | 1.2− | 0.2+ | 2002 04 11 | 704 | 0.5+ | 0.1+ | 2006 04 26 | 699 | 0.6+ | 0.4+ |
| 1998 03 25 | 704 | 1.5− | 0.1+ | 2002 04 11 | 704 | 0.5+ | 0.7+ | 2006 04 26 | 699 | 1.0− | 1.4− |
| 2002 03 20 | 704 | 0.3+ | 0.1− | 2002 04 30 | 644 | 0.0 | 0.4− | 2006 04 26 | 699 | 0.1+ | 0.9− |
| 2002 03 20 | 704 | 0.7+ | 0.2− | 2002 04 30 | 644 | 0.2− | 0.3− | 2006 05 17 | 644 | 0.5− | 0.0 |
| 2002 03 20 | 704 | 0.2+ | 0.0 | 2002 04 30 | 644 | 1.3− | 0.2− | 2006 05 17 | 644 | 0.7− | 0.2− |
| 2002 03 20 | 704 | 0.1− | 0.2+ | 2003 07 06 | 691 | 0.2+ | 0.0 | 2006 05 17 | 644 | 0.8− | 0.3+ |
| 2002 04 11 | 699 | 0.3+ | 0.9+ | 2003 07 06 | 691 | 0.2− | 0.2+ | 2006 05 19 | 699 | 0.5+ | 0.3+ |
| 2002 04 11 | 699 | 0.3+ | 0.7+ | 2003 07 06 | 691 | 0.0 | 0.1− | 2006 05 19 | 699 | 0.2+ | 0.3+ |
| 2002 04 11 | 699 | 0.3− | 0.2+ | 2006 04 23 | 699 | 1.1− | 0.5− | 2006 05 19 | 699 | (1.2− | 3.6+) |
| 2002 04 11 | 704 | 0.7+ | 0.1− | 2006 04 23 | 699 | 1.0+ | 0.0 | 2006 05 19 | 699 | 0.2+ | 1.2+ |
| 2002 04 11 | 704 | 0.2+ | 0.7+ | 2006 04 23 | 699 | 0.4− | 0.4− | | | | |

**2006 HV$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.34715 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23003944 | $\omega$ | 117.42633 | | +0.33050302 | | +0.94324123 |
| $a$ | 2.6379578 | $\Omega$ | 171.67265 | | −0.92579111 | | +0.33072064 |
| $e$ | 0.1840505 | $i$ | 13.01440 | | −0.18351721 | | +0.03032879 |
| $P$ | 4.28 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 17 | 704 | 0.1+ | 1.6+ | 2002 06 06 | 644 | 0.2+ | 0.5+ | 2006 05 01 | 703 | 0.1+ | 0.2− |
| 2002 04 17 | 704 | 0.2+ | 1.2+ | 2002 07 11 | 704 | 0.1+ | 0.4− | 2006 05 01 | 703 | 0.4− | 1.0− |
| 2002 04 17 | 704 | 0.2+ | 1.0+ | 2002 07 11 | 704 | 0.0 | 0.3− | 2006 05 01 | 703 | 0.7− | 1.1+ |
| 2002 05 15 | 704 | 0.5− | 1.1− | 2002 07 11 | 704 | 0.1− | 1.0− | 2006 05 01 | 703 | 0.4+ | 0.0 |
| 2002 05 15 | 704 | 0.6− | 2.4− | 2003 11 20 | 645 | 0.1+ | 0.1− | 2006 05 02 | 621 | 0.1− | 0.3− |
| 2002 05 15 | 704 | 0.5+ | 1.3− | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 02 | 621 | 0.1+ | 0.1− |
| 2002 05 30 | 644 | 0.2+ | 0.7+ | 2003 11 28 | 645 | 0.0 | 0.1+ | 2006 05 02 | 621 | 0.0 | 0.1− |
| 2002 05 30 | 644 | 0.3− | 0.6+ | 2003 11 28 | 645 | 0.1− | 0.1+ | 2006 05 04 | 621 | 0.1+ | 0.2+ |
| 2002 05 30 | 644 | 0.0 | 1.0+ | 2006 04 27 | 621 | 0.2+ | 0.3− | 2006 05 04 | 621 | 0.0 | 0.0 |
| 2002 06 06 | 644 | 0.2+ | 0.8+ | 2006 04 27 | 621 | 0.1+ | 0.2− | 2006 05 04 | 621 | 0.0 | 0.1+ |
| 2002 06 06 | 644 | 0.0 | 0.5+ | 2006 04 27 | 621 | 0.1− | 0.2− | | | | |

**2006 HN$_{61}$ = 2000 DJ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.20016 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17600132 | $\omega$ | 11.11893 | | −0.60969255 | | −0.79194821 |
| $a$ | 3.1534946 | $\Omega$ | 116.45686 | | +0.72436902 | | −0.57363001 |
| $e$ | 0.1292019 | $i$ | 2.11633 | | +0.32181442 | | −0.20920477 |
| $P$ | 5.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 27 | 691 | 0.3+ | 0.3+ | 2000 03 03 | 704 | 0.5+ | 0.6+ | 2006 03 03 | G96 | 0.1− | 0.2+ |
| 1998 11 27 | 691 | 0.7− | 1.4− | 2003 10 18 | 291 | 0.1− | 0.4+ | 2006 03 03 | G96 | 0.4− | 0.3− |
| 1998 11 27 | 691 | (0.1+ | 2.9−) | 2003 10 18 | 291 | 0.3+ | 0.3+ | 2006 03 03 | G96 | 0.1− | 0.5+ |
| 1998 12 15 | 910 | 1.6+ | 0.5+ | 2003 10 18 | 291 | 0.1+ | 0.6+ | 2006 03 03 | G96 | 0.6− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 910 | 1.1+ | 0.8+ | 2003 10 19 | 645 | 0.1− | 0.0 | 2006 03 23 | 691 | 0.2+ | 0.2+ |
| 1998 12 15 | 910 | 0.4+ | 1.1+ | 2003 10 19 | 645 | 0.1− | 0.1+ | 2006 03 23 | 691 | 0.2+ | 0.1− |
| 2000 02 29 | 704 | 0.2+ | 0.1− | 2003 10 22 | 645 | 0.1− | 0.0 | 2006 03 23 | 691 | 0.3+ | 0.3+ |
| 2000 02 29 | 704 | 0.9− | 0.4− | 2003 10 22 | 645 | 0.1− | 0.1+ | 2006 04 24 | 691 | 0.4− | 0.0 |
| 2000 02 29 | 704 | 0.2− | 0.2− | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 04 24 | 691 | 0.1+ | 0.1+ |
| 2000 02 29 | 704 | 0.6+ | 1.2+ | 2003 10 24 | 645 | 0.2+ | 0.2+ | 2006 04 24 | 691 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.2+ | 0.7+ | 2006 03 03 | G96 | 0.3− | 0.3+ | 2006 04 29 | 691 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.3+ | 0.5+ | 2006 03 03 | G96 | 0.1− | 0.4− | 2006 04 29 | 691 | 0.1+ | 0.2+ |
| 2000 03 03 | 704 | 0.3+ | 0.8+ | 2006 03 03 | G96 | 0.3− | 0.1− | 2006 04 29 | 691 | 0.9+ | 0.8+ |
| 2000 03 03 | 704 | 0.1+ | 1.7+ | 2006 03 03 | G96 | 0.2− | 0.2+ | | | | |

**2006 HQ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.71531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26746013 | $\omega$ | 149.72883 | | +0.06617699 | | +0.99735486 |
| $a$ | 2.3857779 | $\Omega$ | 124.04981 | | −0.92259294 | | +0.07263732 |
| $e$ | 0.1750579 | $i$ | 2.07948 | | −0.38005641 | | −0.00266468 |
| $P$ | 3.69 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 695 | 0.5− | 0.6− | 2002 03 09 | 291 | 0.2− | 0.6− | 2006 05 01 | 691 | 0.2+ | 0.3− |
| 2002 02 06 | 695 | 0.9− | 0.6− | 2006 04 02 | 691 | 0.3− | 0.3+ | 2006 05 01 | 691 | 0.2+ | 0.4− |
| 2002 02 13 | 691 | 0.1+ | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.2+ | 2006 05 01 | 691 | 0.1+ | 0.4− |
| 2002 02 13 | 691 | 0.4+ | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.2+ | 2006 05 19 | G96 | 0.3− | 0.0 |
| 2002 02 13 | 691 | 0.5+ | 0.3+ | 2006 04 24 | 691 | 0.0 | 0.1+ | 2006 05 19 | G96 | 0.4− | 0.1− |
| 2002 03 09 | 291 | 0.2− | 0.2− | 2006 04 24 | 691 | 0.2+ | 0.3+ | 2006 05 19 | G96 | 0.2− | 0.3+ |
| 2002 03 09 | 291 | 0.3− | 0.1− | 2006 04 24 | 691 | 0.6− | 0.3+ | 2006 05 19 | G96 | 0.1+ | 0.1− |

**2006 HC$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 252.42704 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23278499 | $\omega$ | 273.79254 | | +0.97756059 | | −0.20664198 |
| $a$ | 2.6171748 | $\Omega$ | 98.13637 | | +0.20593720 | | +0.89658864 |
| $e$ | 0.0663487 | $i$ | 2.36902 | | +0.04433024 | | +0.39169874 |
| $P$ | 4.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 599 | 0.3+ | 0.3− | 2003 09 28 | 699 | 0.4− | 0.4− | 2006 05 01 | 691 | 0.3+ | 0.1− |
| 2003 09 20 | 599 | 0.2− | 0.0 | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 01 | 691 | 0.0 | 0.3− |
| 2003 09 20 | 599 | 0.2− | 0.1− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 05 | 691 | 0.1+ | 0.1+ |
| 2003 09 20 | 599 | 0.1− | 0.3+ | 2006 04 24 | 691 | 0.1+ | 0.2+ | 2006 05 05 | 691 | 0.3− | 0.1+ |
| 2003 09 28 | 699 | 0.1+ | 0.1+ | 2006 04 24 | 691 | 0.2− | 0.1− | 2006 05 05 | 691 | 0.2− | 0.2− |
| 2003 09 28 | 699 | 1.0+ | 0.5+ | 2006 04 24 | 691 | 0.1+ | 0.1+ | | | | |
| 2003 09 28 | 699 | 0.9− | 0.1− | 2006 05 01 | 691 | 0.1+ | 0.2+ | | | | |

**2006 HD$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.43417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18221201 | $\omega$ | 320.45419 | | −0.98503255 | | −0.15355196 |
| $a$ | 3.0814235 | $\Omega$ | 210.98079 | | +0.16934241 | | −0.94685401 |
| $e$ | 0.0678226 | $i$ | 8.75065 | | −0.03215626 | | −0.28264693 |
| $P$ | 5.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.1+ | 0.7+ | 2005 02 14 | 703 | 0.4+ | 1.0+ | 2006 05 06 | 691 | 0.2+ | 0.0 |
| 2000 03 09 | 704 | 0.9+ | 0.8+ | 2005 02 14 | 703 | 0.6− | 0.7+ | 2006 05 06 | 691 | 0.1− | 0.2− |
| 2000 03 09 | 704 | 0.2− | 0.7+ | 2005 02 14 | 703 | 0.1− | 0.5+ | 2006 05 09 | 691 | 0.2+ | 0.1− |
| 2002 08 28 | 644 | 0.3− | 1.3+ | 2005 03 03 | 703 | 0.4+ | 0.8− | 2006 05 09 | 691 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.5− | 1.2+ | 2005 03 03 | 703 | 1.7− | 0.6− | 2006 05 09 | 691 | 0.0 | 0.1− |
| 2002 08 28 | 644 | 0.3− | 1.1+ | 2005 03 03 | 703 | 0.6+ | 0.7− | 2006 05 19 | 703 | 1.1− | 0.2− |
| 2005 01 18 | 703 | 0.3− | 0.0 | 2005 03 03 | 703 | 0.0 | 0.3+ | 2006 05 19 | 703 | 0.9− | 0.6− |
| 2005 01 18 | 703 | 0.1− | 0.5+ | 2006 04 24 | 691 | 0.6− | 0.7+ | 2006 05 19 | 703 | 1.3− | 0.9− |
| 2005 01 18 | 703 | 0.6− | 0.2− | 2006 04 24 | 691 | 0.3+ | 0.4+ | 2006 05 19 | 703 | (2.2− | 0.2+) |
| 2005 01 18 | 703 | 0.3− | 0.1− | 2006 04 24 | 691 | 0.2+ | 0.1− | 2006 05 24 | G96 | 0.0 | 0.1+ |
| 2005 02 04 | 644 | 1.1+ | 0.1+ | 2006 05 01 | 691 | 0.2+ | 0.1+ | 2006 05 24 | G96 | 0.1− | 0.0 |
| 2005 02 04 | 644 | 0.6+ | 0.0 | 2006 05 01 | 691 | 0.2+ | 0.1+ | 2006 05 24 | G96 | 0.3− | 0.0 |
| 2005 02 04 | 644 | 0.8+ | 0.0 | 2006 05 01 | 691 | 0.3+ | 0.0 | 2006 05 24 | G96 | 0.1+ | 0.1− |
| 2005 02 14 | 703 | 0.2− | 0.3+ | 2006 05 06 | 691 | 0.1+ | 0.4− | | | | |

**2006 HN$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.90059 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21421214 | $\omega$ | 249.39953 | | +0.00928360 | | −0.99966302 |
| $a$ | 2.7663470 | $\Omega$ | 200.11443 | | +0.94169000 | | +0.01689463 |
| $e$ | 0.0569224 | $i$ | 4.04224 | | +0.33635361 | | −0.01970852 |
| $P$ | 4.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 27 | 691 | 0.0 | 0.4+ | 2003 10 19 | 691 | 0.0 | 0.2+ | 2005 01 17 | 691 | 0.1+ | 0.3+ |
| 1998 08 27 | 691 | 0.1− | 0.1+ | 2003 10 19 | 691 | 0.2− | 0.2+ | 2006 04 24 | 691 | 0.1− | 0.6+ |
| 1998 08 27 | 691 | 0.1− | 0.2+ | 2003 10 19 | 691 | 0.2− | 0.2+ | 2006 04 24 | 691 | 0.1− | 0.7+ |
| 2003 09 21 | 644 | 0.7− | 0.6+ | 2005 01 07 | 599 | 0.2+ | 0.5+ | 2006 04 24 | 691 | 0.1+ | 0.4+ |
| 2003 09 21 | 644 | 0.3+ | 0.5+ | 2005 01 07 | 599 | 0.4+ | 0.1+ | 2006 05 01 | 691 | 0.2+ | 0.0 |
| 2003 09 21 | 644 | 0.0 | 0.6+ | 2005 01 07 | 599 | 0.4+ | 0.4+ | 2006 05 01 | 691 | 0.1+ | 0.4+ |
| 2003 09 30 | 691 | 0.1+ | 0.4+ | 2005 01 07 | 599 | 0.0 | 0.4+ | 2006 05 01 | 691 | 0.2+ | 0.1+ |
| 2003 09 30 | 691 | 0.1− | 0.2+ | 2005 01 17 | 691 | 0.1+ | 0.8+ | | | | |
| 2003 09 30 | 691 | 0.2− | 0.2+ | 2005 01 17 | 691 | 0.0 | 0.4+ | | | | |

**2006 HW$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.61107 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27339955 | $\omega$ | 65.70544 | | +0.55778365 | | +0.82953025 |
| $a$ | 2.3510986 | $\Omega$ | 238.22525 | | −0.77275000 | | +0.50693650 |
| $e$ | 0.1763671 | $i$ | 1.85462 | | −0.30287760 | | +0.23429672 |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 10 | 291 | 0.5+ | 0.5+ | 2003 09 26 | 704 | 0.2− | 0.7+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2002 03 10 | 291 | 0.5+ | 0.5+ | 2003 09 26 | 704 | 0.1− | 0.4+ | 2003 11 20 | 645 | 0.0 | 0.0 |
| 2002 03 10 | 291 | 0.5+ | 0.4+ | 2003 09 29 | 704 | 0.1+ | 0.5+ | 2006 04 24 | G96 | 0.4− | 0.3− |
| 2002 04 09 | 291 | 0.3+ | 0.7+ | 2003 09 29 | 704 | 0.7+ | 0.7+ | 2006 04 24 | G96 | 0.2− | 0.2+ |
| 2002 04 09 | 291 | 0.1− | 0.8+ | 2003 09 29 | 704 | 0.2+ | 1.0+ | 2006 04 24 | G96 | 0.1− | 0.3− |
| 2002 04 09 | 291 | 0.3− | 0.6+ | 2003 09 29 | 704 | 0.4+ | 1.0+ | 2006 04 24 | G96 | 0.4− | 0.1− |
| 2003 08 28 | 704 | 0.2− | 0.0 | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 04 30 | 691 | 0.2− | 0.1− |
| 2003 08 28 | 704 | 0.2+ | 0.1− | 2003 10 18 | 645 | 0.0 | 0.0 | 2006 04 30 | 691 | 0.0 | 0.0 |
| 2003 08 28 | 704 | 0.0 | 0.1+ | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 04 30 | 691 | 0.0 | 0.0 |
| 2003 08 28 | 704 | 0.0 | 0.0 | 2003 10 19 | 645 | 0.0 | 0.0 | 2006 05 04 | 691 | 0.0 | 0.2+ |
| 2003 09 19 | 704 | 0.4+ | 1.0+ | 2003 10 22 | 645 | 0.1− | 0.0 | 2006 05 04 | 691 | 0.1− | 0.1+ |
| 2003 09 19 | 704 | 0.1− | 0.3− | 2003 10 22 | 645 | 0.1− | 0.0 | 2006 05 04 | 691 | 0.2+ | 0.2+ |
| 2003 09 19 | 704 | 0.2− | 1.0+ | 2003 10 24 | 691 | 0.0 | 0.2+ | 2006 05 20 | 691 | 0.1+ | 0.2+ |
| 2003 09 19 | 704 | 0.0 | 0.4+ | 2003 10 24 | 691 | 0.2− | 0.6+ | 2006 05 20 | 691 | 0.3+ | 0.1+ |
| 2003 09 26 | 704 | 0.0 | 1.5+ | 2003 10 24 | 691 | 0.3− | 0.4+ | 2006 05 20 | 691 | 0.1+ | 0.1+ |
| 2003 09 26 | 704 | 0.8+ | 0.3+ | 2003 10 24 | 645 | 0.0 | 0.0 | | | | |
| 2003 09 26 | 704 | 0.2− | 0.6+ | 2003 10 24 | 645 | 0.1− | 0.0 | | | | |

**2006 HU$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.20728 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18730690 | $\omega$ | 196.76208 | | +0.89369454 | | +0.44796036 |
| $a$ | 3.0252890 | $\Omega$ | 136.59636 | | −0.40730769 | | +0.83367865 |
| $e$ | 0.1817638 | $i$ | 2.11256 | | −0.18817683 | | +0.32297280 |
| $P$ | 5.26 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 21 | 691 | 0.2+ | 0.1− | 2002 08 17 | 644 | 0.5+ | 0.6+ | 2006 04 25 | 691 | 0.5− | 0.6+ |
| 1996 05 21 | 691 | 0.2− | 0.5− | 2002 08 17 | 644 | 0.5+ | 0.0 | 2006 04 25 | 691 | 0.3− | 0.1+ |
| 1996 05 21 | 691 | 0.3+ | 0.3− | 2002 08 17 | 644 | 0.3+ | 0.3− | 2006 04 25 | 691 | 0.1+ | 0.3+ |
| 1997 08 11 | 691 | 0.4− | 0.2+ | 2002 08 27 | 644 | 0.2− | 0.3− | 2006 04 26 | G96 | 0.2+ | 0.3− |
| 1997 08 11 | 691 | 0.4− | 0.4+ | 2002 08 27 | 644 | 0.4+ | 0.3− | 2006 04 26 | G96 | 0.5+ | 0.2− |
| 1997 08 11 | 691 | 0.5− | 0.3+ | 2002 08 27 | 644 | 0.2+ | 0.6− | 2006 04 26 | G96 | 0.2+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 691 | 0.5+ | 0.5− | 2003 12 19 | 691 | 0.2+ | 0.3+ | 2006 04 26 | G96 | 0.2− | 0.2− |
| 2001 05 15 | 691 | 0.0 | 0.3+ | 2003 12 19 | 691 | 0.3+ | 0.4+ | 2006 04 30 | 691 | 0.1+ | 0.6+ |
| 2001 05 15 | 691 | 0.4+ | 0.5+ | 2003 12 19 | 691 | 0.0 | 0.3+ | 2006 04 30 | 691 | 0.1+ | 0.3+ |
| 2002 07 14 | 644 | 0.4+ | 0.7+ | 2006 03 25 | G96 | 0.2− | 0.1− | 2006 04 30 | 691 | 0.1− | 0.1− |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2006 03 25 | G96 | 0.3+ | 0.2+ | 2006 05 01 | 691 | 0.2− | 0.2− |
| 2002 07 14 | 644 | 0.2+ | 0.5+ | 2006 03 25 | G96 | 0.7− | 0.1− | 2006 05 01 | 691 | 0.0 | 0.5+ |
| 2002 08 12 | 608 | 0.2+ | 0.1+ | 2006 03 25 | G96 | 0.0 | 0.3+ | 2006 05 01 | 691 | 0.3+ | 0.1+ |
| 2002 08 12 | 608 | 0.2− | 0.1+ | 2006 04 05 | 461 | 0.3+ | 0.2+ | | | | |
| 2002 08 12 | 608 | 0.6− | 0.4+ | 2006 04 05 | 461 | 1.5− | 0.4+ | | | | |

**2006 HK$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.49718 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25587991 | $\omega$ | 203.71065 | | +0.99369236 | | −0.10680710 |
| $a$ | 2.4572269 | $\Omega$ | 162.31890 | | +0.11213840 | | +0.94830160 |
| $e$ | 0.1048191 | $i$ | 6.46020 | | −0.00069472 | | +0.29885837 |
| $P$ | 3.85 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 691 | 0.1− | 0.8+ | 2003 09 15 | 699 | 1.1− | 1.1+ | 2006 04 25 | 691 | 0.0 | 0.2+ |
| 1999 10 15 | 691 | 0.4− | 0.2+ | 2003 09 15 | 699 | 0.8− | 1.2− | 2006 04 25 | 691 | 0.1− | 0.3+ |
| 1999 10 15 | 691 | 0.4+ | 0.2− | 2003 09 24 | 644 | 0.1+ | 0.1− | 2006 04 29 | 691 | 0.0 | 0.0 |
| 2003 09 02 | 704 | 0.2− | 0.5+ | 2003 09 24 | 644 | 0.3− | 0.2− | 2006 04 29 | 691 | 0.3+ | 0.0 |
| 2003 09 02 | 704 | 0.9− | 1.5− | 2003 09 24 | 644 | 0.2+ | 0.0 | 2006 04 29 | 691 | 0.5+ | 0.0 |
| 2003 09 02 | 704 | 0.2+ | 0.0 | 2005 01 08 | 599 | 0.2+ | 0.8+ | 2006 05 03 | 691 | 0.4− | 0.0 |
| 2003 09 02 | 704 | 0.5+ | 0.3− | 2005 01 08 | 599 | 0.2− | 0.4+ | 2006 05 03 | 691 | 0.3− | 0.2+ |
| 2003 09 15 | 699 | 0.6+ | 1.0+ | 2005 01 08 | 599 | 0.4+ | 1.0+ | 2006 05 03 | 691 | 0.0 | 0.7− |
| 2003 09 15 | 699 | 1.7+ | 0.6+ | 2006 04 25 | 691 | 0.2+ | 0.2+ | | | | |

**2006 HS$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.00726 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22304493 | $\omega$ | 291.33500 | | +0.95471530 | | −0.26755260 |
| $a$ | 2.6928230 | $\Omega$ | 84.36863 | | +0.29749695 | | +0.86403151 |
| $e$ | 0.0574910 | $i$ | 7.51368 | | −0.00377571 | | +0.42645652 |
| $P$ | 4.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 691 | 0.1− | 0.3+ | 2003 10 27 | 699 | 1.1− | 0.1− | 2006 04 25 | 691 | 0.0 | 0.1− |
| 2003 10 20 | 691 | 0.1− | 0.4+ | 2003 10 27 | 699 | 1.1− | 0.5+ | 2006 04 25 | 691 | 0.0 | 0.1− |
| 2003 10 20 | 691 | 0.2− | 0.4+ | 2003 10 27 | 699 | 0.6+ | 1.8− | 2006 04 29 | 691 | 0.1+ | 0.2+ |
| 2003 10 23 | 645 | 0.1+ | 0.1− | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 04 29 | 691 | 0.2− | 0.1+ |
| 2003 10 23 | 645 | 0.1+ | 0.0 | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 04 29 | 691 | 0.0 | 0.1+ |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2003 11 28 | 645 | 0.0 | 0.0 | 2006 05 03 | 691 | 0.4− | 0.1− |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2003 11 28 | 645 | 0.0 | 0.0 | 2006 05 03 | 691 | 0.2+ | 0.2− |
| 2003 10 27 | 699 | 0.9− | 0.7+ | 2006 04 25 | 691 | 0.1− | 0.4+ | 2006 05 03 | 691 | 0.3+ | 0.2− |

**2006 HO$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.74658 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26765889 | $\omega$ | 84.24884 | | +0.34946377 | | +0.93667384 |
| $a$ | 2.3845967 | $\Omega$ | 206.24130 | | −0.87870790 | | +0.31921994 |
| $e$ | 0.1894735 | $i$ | 2.94827 | | −0.32518842 | | +0.14401648 |
| $P$ | 3.68 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 691 | 0.2+ | 0.1+ | 2003 09 02 | 704 | 0.6− | 1.1+ | 2006 04 26 | G96 | 0.7+ | 0.3+ |
| 2002 03 09 | 691 | 0.1+ | 0.6+ | 2003 09 02 | 704 | 0.1+ | 0.7+ | 2006 04 26 | G96 | 0.2− | 0.1− |
| 2002 03 09 | 691 | 0.1+ | 0.4+ | 2003 09 24 | 644 | 0.0 | 0.1+ | 2006 04 26 | G96 | 0.0 | 0.5− |
| 2003 08 28 | 644 | 0.2+ | 0.3+ | 2003 09 24 | 644 | 0.5− | 0.2+ | 2006 04 26 | G96 | 0.3− | 0.7− |
| 2003 08 28 | 644 | 0.1+ | 0.2− | 2003 09 24 | 644 | 0.7− | 0.2+ | 2006 04 30 | 691 | 0.1+ | 0.1− |
| 2003 08 28 | 644 | 0.4+ | 0.1+ | 2003 09 27 | 691 | 0.2− | 0.2− | 2006 04 30 | 691 | 0.2+ | 0.1+ |
| 2003 08 28 | 644 | 0.4+ | 0.1− | 2003 09 27 | 691 | 0.0 | 0.0 | 2006 04 30 | 691 | 0.4+ | 0.3+ |
| 2003 08 28 | 644 | 0.2+ | 0.2+ | 2003 09 27 | 691 | 0.0 | 0.1+ | 2006 05 19 | G96 | 0.2− | 0.1+ |
| 2003 08 28 | 644 | 0.6+ | 0.1− | 2006 03 25 | 691 | 0.4− | 0.0 | 2006 05 19 | G96 | 0.0 | 0.3− |
| 2003 09 02 | 704 | 0.1− | 0.5+ | 2006 03 25 | 691 | 0.0 | 0.0 | 2006 05 19 | G96 | 0.2+ | 0.1− |
| 2003 09 02 | 704 | 0.9− | 0.7+ | 2006 03 25 | 691 | 0.3− | 0.0 | 2006 05 19 | G96 | 0.2− | 0.2− |

**2006 HU$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.31820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27627190 | $\omega$ | 279.21069 | | −0.79982641 | | −0.59555077 |
| $a$ | 2.3347743 | $\Omega$ | 224.28329 | | +0.58415655 | | −0.74368385 |
| $e$ | 0.0677414 | $i$ | 6.15107 | | +0.13798130 | | −0.30373280 |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.1− | 0.3+ | 2004 10 15 | G96 | 0.0 | 0.1+ | 2006 04 26 | 691 | 0.2+ | 0.3− |
| 2002 02 07 | 644 | 0.2− | 0.2− | 2004 10 15 | G96 | 0.3− | 0.2− | 2006 04 26 | 691 | 0.2+ | 0.0 |
| 2002 02 07 | 644 | 0.1+ | 0.2− | 2004 10 15 | G96 | 0.2− | 0.2+ | 2006 04 26 | 691 | 0.2+ | 0.1− |
| 2002 02 15 | 704 | 0.3− | 0.3− | 2004 11 10 | 691 | 0.1+ | 0.0 | 2006 04 30 | 691 | 0.2+ | 0.2+ |
| 2002 02 15 | 704 | 0.2− | 0.4− | 2004 11 10 | 691 | 0.0 | 0.2+ | 2006 04 30 | 691 | 0.2+ | 0.0 |
| 2002 02 15 | 704 | 0.4− | 0.6+ | 2004 11 10 | 691 | 0.0 | 0.3+ | 2006 04 30 | 691 | 0.0 | 0.3+ |
| 2002 02 15 | 704 | 0.5+ | 0.2+ | 2006 04 07 | 691 | 0.2− | 0.0 | 2006 05 04 | 691 | 0.2− | 0.2+ |
| 2002 02 15 | 704 | 1.6+ | 1.2− | 2006 04 07 | 691 | 0.1− | 0.3− | 2006 05 04 | 691 | 0.1− | 0.1− |
| 2002 03 06 | 644 | 0.0 | 0.1+ | 2006 04 07 | 691 | 0.3− | 0.1+ | 2006 05 04 | 691 | 0.2− | 0.2+ |
| 2002 03 06 | 644 | 0.4− | 0.1+ | 2006 04 07 | 691 | 0.6− | 0.1− | 2006 05 06 | 691 | (1.2+ | 3.1−) |
| 2002 03 06 | 644 | 0.5− | 0.4+ | 2006 04 07 | 691 | 0.9+ | 0.5+ | 2006 05 06 | 691 | 0.0 | 0.0 |
| 2004 10 15 | G96 | 0.1− | 0.1− | 2006 04 07 | 691 | 0.2− | 0.0 | 2006 05 06 | 691 | 0.0 | 0.0 |

**2006 HR$_{79}$ = 2003 US$_{290}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.52879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21308414 | $\omega$ | 91.89631 | | +0.48664792 | | +0.87322840 |
| $a$ | 2.7761012 | $\Omega$ | 207.27044 | | −0.82194773 | | +0.44782622 |
| $e$ | 0.0658469 | $i$ | 3.17984 | | −0.29593196 | | +0.19215579 |
| $P$ | 4.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.1+ | 0.1− | 2006 04 26 | 691 | 0.3+ | 0.2+ | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 2003 10 23 | 691 | 0.1+ | 0.0 | 2006 04 26 | 691 | 0.2+ | 0.0 | 2006 04 30 | 691 | 0.0 | 0.2+ |
| 2003 10 23 | 691 | 0.1+ | 0.0 | 2006 04 26 | 691 | 0.5− | 0.1− | 2006 04 30 | 691 | 0.2+ | 0.3+ |
| 2003 10 24 | 695 | 0.2− | 0.1+ | 2006 04 28 | 807 | 0.0 | 0.3− | 2006 05 01 | 695 | 0.0 | 0.2− |
| 2003 10 24 | 695 | 0.1− | 0.0 | 2006 04 28 | 807 | 0.1− | 0.2− | 2006 05 01 | 695 | 0.1− | 0.1− |

**2006 HB$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.67549 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23543836 | $\omega$ | 264.24377 | | −0.93480499 | | −0.35464234 |
| $a$ | 2.5974741 | $\Omega$ | 254.98353 | | +0.33321415 | | −0.85705279 |
| $e$ | 0.0309227 | $i$ | 1.13874 | | +0.12291442 | | −0.37375036 |
| $P$ | 4.19 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.8+ | 0.1+ | 2003 10 17 | 691 | 0.7− | 0.6+ | 2006 04 30 | 691 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.3+ | 0.6− | 2003 10 17 | 691 | 0.5− | 0.2+ | 2006 04 30 | 691 | 0.2+ | 0.1− |
| 1999 10 06 | 704 | 0.3− | 0.2+ | 2005 01 06 | 704 | 0.6+ | 0.5− | 2006 05 03 | G96 | 0.6− | 0.0 |
| 1999 10 06 | 704 | 0.2+ | 0.1− | 2005 01 06 | 704 | 0.6+ | 0.3− | 2006 05 03 | G96 | 0.4− | 0.0 |
| 1999 10 06 | 704 | 1.0− | 0.2+ | 2005 01 06 | 704 | 1.5− | 0.6+ | 2006 05 03 | G96 | 0.2− | 0.1− |
| 2003 09 17 | 691 | 0.9+ | 0.3+ | 2005 01 17 | 691 | 0.1− | 0.2− | 2006 05 03 | G96 | 0.0 | 0.1− |
| 2003 09 17 | 691 | 0.6+ | 0.5+ | 2005 01 17 | 691 | 0.0 | 0.0 | 2006 05 04 | 691 | 0.3+ | 0.2− |
| 2003 09 17 | 691 | 0.5− | 0.0 | 2005 01 17 | 691 | 0.3+ | 0.6+ | 2006 05 04 | 691 | 0.1+ | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2005 03 13 | G96 | 0.2− | 0.1− | 2006 05 04 | 691 | 0.1− | 0.6− |
| 2003 09 26 | 645 | 0.1− | 0.1− | 2005 03 13 | G96 | 0.3+ | 0.9+ | 2006 05 20 | 691 | 0.1− | 0.1+ |
| 2003 09 27 | 691 | 0.2+ | 0.3+ | 2005 03 13 | G96 | 0.6− | 0.1+ | 2006 05 20 | 691 | 0.2+ | 0.0 |
| 2003 09 27 | 691 | 0.4+ | 0.1+ | 2005 03 13 | G96 | 0.2+ | 0.0 | 2006 05 20 | 691 | 0.0 | 0.2− |
| 2003 09 27 | 691 | 0.1− | 0.2+ | 2006 04 26 | 691 | 0.0 | 0.2− | 2006 06 02 | 691 | 0.1− | 0.6+ |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 04 26 | 691 | 0.2+ | 0.0 | 2006 06 02 | 691 | 0.2− | 0.5+ |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 04 26 | 691 | 0.1− | 0.4+ | 2006 06 02 | 691 | 0.2+ | 0.3+ |
| 2003 10 17 | 691 | 0.2− | 0.1− | 2006 04 30 | 691 | 0.1+ | 0.1+ | | | | |

**2006 HK$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.12063 | | | (2000.0) | | |
| $n$ | 0.18636157 | $\omega$ | 86.04486 | | −0.25163743 | −0.96557116 |
| $a$ | 3.0355110 | $\Omega$ | 18.93016 | | +0.78755252 | −0.24390442 |
| $e$ | 0.0801077 | $i$ | 11.73145 | | +0.56252967 | −0.09045977 |
| $P$ | 5.29 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 10 22 | 645 | 0.1+ | 0.0 | 2006 04 18 | 691 | 0.0 | 0.0 |
| 2003 09 28 | 645 | 0.1+ | 0.1− | 2003 10 24 | 645 | 0.1+ | 0.0 | 2006 04 18 | 691 | 0.3+ | 0.1− |
| 2003 09 30 | 691 | 0.0 | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.2+ | 2006 04 18 | 691 | 0.1− | 0.6+ |
| 2003 09 30 | 691 | 0.0 | 0.2+ | 2003 11 19 | 645 | 0.1− | 0.0 | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 2003 09 30 | 691 | 0.1+ | 0.3+ | 2003 11 19 | 645 | 0.1− | 0.1− | 2006 04 30 | 691 | 0.1+ | 0.2− |
| 2003 10 20 | 691 | 0.4− | 0.1+ | 2006 03 24 | G96 | 0.5− | 0.1+ | 2006 04 30 | 691 | 0.0 | 0.2− |
| 2003 10 20 | 691 | 0.3− | 0.1+ | 2006 03 24 | G96 | 0.3− | 0.0 | 2006 05 01 | 691 | 0.1+ | 0.2− |
| 2003 10 20 | 691 | 0.9− | 0.1+ | 2006 03 24 | G96 | 0.0 | 0.1+ | 2006 05 01 | 691 | 0.1+ | 0.1− |
| 2003 10 22 | 645 | 0.1+ | 0.1− | 2006 03 24 | G96 | 0.2− | 0.3+ | 2006 05 01 | 691 | 0.1− | 0.2+ |

**2006 HQ$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.79078 | | | (2000.0) | | |
| $n$ | 0.25944274 | $\omega$ | 121.75799 | | +0.82990276 | +0.55694626 |
| $a$ | 2.4346789 | $\Omega$ | 204.44424 | | −0.53489884 | +0.77762207 |
| $e$ | 0.1121843 | $i$ | 4.53871 | | −0.15857065 | +0.29174436 |
| $P$ | 3.80 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 02 | 291 | 0.1+ | 0.1+ | 2003 10 24 | 704 | 0.4− | 0.2+ | 2006 04 26 | 691 | 0.1− | 0.2+ |
| 2002 04 02 | 291 | 0.3+ | 0.7+ | 2003 10 24 | 704 | 0.6− | 1.0− | 2006 04 26 | 691 | 0.1− | 0.2− |
| 2002 04 02 | 291 | 0.1− | 0.3+ | 2003 10 24 | 704 | 1.1+ | 1.7+ | 2006 04 26 | 691 | 0.1− | 0.0 |
| 2003 09 21 | 644 | 0.1− | 0.0 | 2003 10 24 | 704 | 1.1− | 0.0 | 2006 05 02 | 691 | 0.3+ | 0.0 |
| 2003 09 21 | 644 | 0.2+ | 0.0 | 2003 10 24 | 704 | 0.3− | 1.5+ | 2006 05 02 | 691 | 0.2+ | 0.3+ |
| 2003 09 21 | 644 | 0.1+ | 0.2− | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 05 02 | 691 | 0.0 | 0.5+ |
| 2003 09 27 | 704 | 1.3+ | 0.7+ | 2003 10 24 | 645 | 0.0 | 0.0 | 2006 05 21 | 691 | 0.3+ | 0.4− |
| 2003 09 27 | 704 | 0.7+ | 0.3+ | 2003 11 19 | 645 | 0.1+ | 0.1+ | 2006 05 21 | 691 | 0.2− | 0.4− |
| 2003 09 27 | 704 | 0.7− | 0.3− | 2003 11 19 | 645 | 0.1− | 0.0 | 2006 05 21 | 691 | 0.2− | 0.3− |

**2006 HS$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 239.64473 | | | (2000.0) | | |
| $n$ | 0.22654178 | $\omega$ | 252.86756 | | +0.90511776 | −0.42067445 |
| $a$ | 2.6650407 | $\Omega$ | 131.96207 | | +0.41474668 | +0.84175679 |
| $e$ | 0.0979631 | $i$ | 4.75211 | | +0.09352559 | +0.33834675 |
| $P$ | 4.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 23 | 691 | 0.2+ | 0.6+ | 2003 10 16 | 644 | 0.1− | 0.6+ | 2003 11 20 | 645 | 0.1− | 0.1+ |
| 1993 05 23 | 691 | 1.0+ | 0.2− | 2003 10 19 | 645 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.0 | 0.5+ |
| 1993 05 23 | 691 | 0.9− | 0.4+ | 2003 10 19 | 645 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.3+ | 0.6+ |
| 2003 09 28 | 699 | 1.6+ | 0.9+ | 2003 10 22 | 645 | 0.1+ | 0.1− | 2005 03 10 | G96 | 0.2+ | 0.5+ |
| 2003 09 28 | 699 | 0.2− | 0.2+ | 2003 10 22 | 645 | 0.0 | 0.1− | 2005 03 10 | G96 | 0.3+ | 0.7+ |
| 2003 09 28 | 699 | 1.1+ | 0.5− | 2003 10 29 | 699 | 0.2− | 0.1− | 2006 04 29 | 691 | 0.1− | 0.1+ |
| 2003 09 28 | 699 | 0.8− | 0.2+ | 2003 10 29 | 699 | 1.2+ | 0.1− | 2006 04 29 | 691 | 0.1+ | 0.2+ |
| 2003 10 05 | 691 | 0.2− | 0.3+ | 2003 10 29 | 699 | 1.2− | 1.1+ | 2006 04 29 | 691 | 0.2+ | 0.3+ |
| 2003 10 05 | 691 | 0.3− | 0.3+ | 2003 10 29 | 699 | 0.6− | 0.3+ | 2006 05 03 | 691 | 0.1− | 0.1− |
| 2003 10 05 | 691 | 0.4− | 0.2+ | 2003 11 16 | 645 | 0.0 | 0.1+ | 2006 05 03 | 691 | 0.1+ | 0.1− |
| 2003 10 16 | 644 | 0.4− | 0.7+ | 2003 11 16 | 645 | 0.0 | 0.1+ | 2006 05 03 | 691 | 0.0 | 0.0 |
| 2003 10 16 | 644 | 0.1− | 0.7+ | 2003 11 20 | 645 | 0.0 | 0.1+ | | | | |

**2006 HW$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 149.24289 | | | (2000.0) | | |
| $n$ | 0.20051371 | $\omega$ | 30.12205 | | +0.27159119 | −0.96182944 |
| $a$ | 2.8909462 | $\Omega$ | 44.14306 | | +0.87311616 | +0.23159923 |
| $e$ | 0.0920828 | $i$ | 2.75717 | | +0.40485355 | +0.14575981 |
| $P$ | 4.92 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.0 | 0.1− | 2001 04 23 | 691 | 0.1− | 0.1+ | 2006 04 30 | 691 | 0.3+ | 0.1− |
| 2001 03 24 | 691 | 0.1+ | 0.2+ | 2001 04 23 | 691 | 0.4+ | 0.1− | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 2001 03 24 | 691 | 0.1+ | 0.1+ | 2006 03 24 | G96 | 0.2+ | 0.2+ | 2006 05 03 | 691 | 0.0 | 0.1− |
| 2001 04 13 | 691 | 0.3− | 0.0 | 2006 03 24 | G96 | 0.6− | 0.1− | 2006 05 03 | 691 | 0.1− | 0.2− |
| 2001 04 13 | 691 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.2− | 0.1− | 2006 05 03 | 691 | 0.2− | 0.1+ |
| 2001 04 13 | 691 | 0.0 | 0.1− | 2006 03 24 | G96 | 0.3+ | 0.2− | | | | |
| 2001 04 23 | 691 | 0.1− | 0.1+ | 2006 04 30 | 691 | 0.0 | 0.2+ | | | | |

**2006 HD$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.84934 | | | (2000.0) | | |
| $n$ | 0.25857007 | $\omega$ | 358.11188 | | +0.95382623 | −0.30025039 |
| $a$ | 2.4401538 | $\Omega$ | 19.36666 | | +0.27589217 | +0.86518283 |
| $e$ | 0.1935539 | $i$ | 1.39549 | | +0.11873933 | +0.40163214 |
| $P$ | 3.81 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 25 | 644 | 0.1+ | 0.1− | 2003 08 31 | 704 | 0.1− | 0.9+ | 2005 03 10 | G96 | 0.2− | 0.3+ |
| 2003 07 25 | 644 | 0.1− | 0.1+ | 2003 09 19 | 699 | 0.8− | 0.9+ | 2005 03 10 | G96 | 0.1− | 0.0 |
| 2003 07 25 | 644 | 0.1+ | 0.1+ | 2003 09 19 | 699 | 1.0+ | 1.1− | 2005 03 10 | G96 | 0.0 | 0.1+ |
| 2003 08 04 | 704 | 0.5− | 0.2− | 2003 09 19 | 699 | 0.6+ | 0.4− | 2006 04 30 | 691 | 0.2+ | 0.1+ |
| 2003 08 04 | 704 | 0.8− | 0.7+ | 2003 09 19 | 699 | 0.1+ | 0.0 | 2006 04 30 | 691 | 0.5+ | 0.2− |
| 2003 08 04 | 704 | 0.2− | 0.6+ | 2003 09 24 | 644 | 0.1− | 0.2+ | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 2003 08 04 | 704 | 0.8− | 0.2+ | 2003 09 24 | 644 | 0.1− | 0.1+ | 2006 05 04 | 691 | 0.2+ | 0.3+ |
| 2003 08 22 | 704 | 0.5+ | 0.7+ | 2003 09 24 | 644 | 0.1− | 0.1+ | 2006 05 04 | 691 | 0.2− | 0.2+ |
| 2003 08 22 | 704 | 0.1− | 0.3+ | 2003 10 24 | 704 | 0.7+ | 0.8+ | 2006 05 04 | 691 | 0.1− | 0.0 |
| 2003 08 22 | 704 | 0.8− | 1.2+ | 2003 10 24 | 704 | 0.7− | 0.4+ | 2006 05 04 | 691 | 0.5+ | 0.2− |
| 2003 08 22 | 704 | 1.2+ | 0.9+ | 2003 10 24 | 704 | 0.2+ | 0.5− | 2006 05 04 | 691 | 0.2− | 0.3+ |
| 2003 08 31 | 704 | 0.0 | 0.0 | 2005 02 01 | 691 | 0.2+ | 0.6+ | 2006 05 04 | 691 | 0.2− | 0.1− |
| 2003 08 31 | 704 | 0.5− | 0.2+ | 2005 02 01 | 691 | 0.0 | 0.7+ | 2006 05 20 | 691 | 0.0 | 0.3− |
| 2003 08 31 | 704 | 0.7− | 0.1− | 2005 02 01 | 691 | 0.5+ | 0.5+ | 2006 05 20 | 691 | 0.1− | 0.2+ |
| 2003 08 31 | 704 | 0.6− | 0.7+ | 2005 03 10 | G96 | 0.1+ | 0.1− | 2006 05 20 | 691 | 0.6− | 0.0 |

**2006 HC$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.38073 | | | (2000.0) | | |
| $n$ | 0.27294185 | $\omega$ | 219.21604 | | +0.39980973 | +0.91582435 |
| $a$ | 2.3537263 | $\Omega$ | 74.37935 | | −0.83082319 | +0.37944170 |
| $e$ | 0.1871131 | $i$ | 2.24081 | | −0.38714985 | +0.13149048 |
| $P$ | 3.61 | $H$ | 18.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2006 04 26 | 691 | 0.1+ | 0.0 | 2006 05 08 | 691 | 0.1− | 0.2− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 04 26 | 691 | 0.0 | 0.2− | 2006 05 08 | 691 | 0.2+ | 0.3+ |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 04 30 | 691 | 0.0 | 0.2+ | 2006 05 08 | 691 | 0.1− | 0.5− |
| 2003 09 28 | 645 | 0.1− | 0.0 | 2006 04 30 | 691 | 0.2− | 0.1+ | 2006 05 21 | 691 | 0.1+ | 0.0 |
| 2003 09 30 | 691 | 0.1+ | 0.1+ | 2006 04 30 | 691 | 0.1− | 0.1+ | 2006 05 21 | 691 | 0.2− | 0.0 |
| 2003 09 30 | 691 | 0.1− | 0.3+ | 2006 05 04 | 691 | 0.2+ | 0.1+ | 2006 05 21 | 691 | 0.3+ | 0.2+ |
| 2003 09 30 | 691 | 0.1+ | 0.0 | 2006 05 04 | 691 | 0.3+ | 0.2− | | | | |
| 2006 04 26 | 691 | 0.5− | 0.4− | 2006 05 04 | 691 | 0.0 | 0.5+ | | | | |

**2006 HD$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.64465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18950085 | $\omega$ | 70.92156 | | −0.79486477 | −0.57280129 | |
| $a$ | 3.0018934 | $\Omega$ | 73.64863 | | +0.44805416 | −0.77657672 | |
| $e$ | 0.0537607 | $i$ | 12.04391 | | +0.40919125 | −0.26234954 | |
| $P$ | 5.20 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 704 | 0.0 | 0.4− | 2005 01 07 | 703 | 0.9+ | 1.2− | 2006 04 19 | 703 | 0.4− | 0.3+ |
| 2001 05 21 | 704 | 0.1+ | 0.4+ | 2005 01 07 | 703 | 0.3+ | 1.3+ | 2006 04 30 | 691 | 0.1+ | 0.2+ |
| 2001 05 21 | 704 | 0.3+ | 0.7+ | 2005 01 17 | 704 | 0.8+ | 0.7+ | 2006 04 30 | 691 | 0.1− | 0.1+ |
| 2001 05 21 | 704 | 0.0 | 0.3+ | 2005 01 17 | 704 | 0.3+ | 0.2+ | 2006 04 30 | 691 | 0.3− | 0.4+ |
| 2003 10 23 | 691 | 0.2− | 0.4+ | 2005 01 17 | 704 | 0.3+ | 0.1− | 2006 05 05 | 691 | 1.1+ | 0.9+ |
| 2003 10 23 | 691 | 0.3− | 0.4+ | 2005 01 17 | 704 | 1.2− | 0.0 | 2006 05 05 | 691 | 0.2+ | 0.1+ |
| 2003 10 23 | 691 | 0.3− | 0.4+ | 2005 01 31 | 644 | 0.2+ | 0.2− | 2006 05 05 | 691 | 0.2− | 0.1+ |
| 2003 11 19 | 644 | 0.1− | 0.7+ | 2005 01 31 | 644 | 0.4+ | 0.3− | 2006 05 05 | 699 | 1.0+ | 0.3+ |
| 2003 11 19 | 644 | 0.1− | 0.8+ | 2005 01 31 | 644 | 0.0 | 0.1− | 2006 05 05 | 699 | 0.9+ | 1.2− |
| 2003 11 19 | 644 | 0.3− | 0.3+ | 2006 04 19 | 703 | 0.6− | 0.1− | 2006 05 05 | 699 | 0.3− | 0.7− |
| 2005 01 07 | 703 | 0.5− | 0.5+ | 2006 04 19 | 703 | 0.1+ | 0.9+ | 2006 05 05 | 699 | 0.1+ | 1.0− |
| 2005 01 07 | 703 | 0.8− | 0.3+ | 2006 04 19 | 703 | 1.6− | 0.0 | | | | |

**2006 HT$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.83600 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22308435 | $\omega$ | 271.71160 | | +0.88626298 | +0.40787548 | |
| $a$ | 2.6925058 | $\Omega$ | 64.26783 | | −0.26459937 | +0.83477415 | |
| $e$ | 0.1836836 | $i$ | 14.10214 | | −0.38016457 | +0.36985094 | |
| $P$ | 4.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 704 | 1.1+ | 0.2− | 2003 12 01 | 691 | 0.3− | 0.0 | 2006 05 05 | 691 | 0.1+ | 0.1− |
| 2003 11 21 | 704 | 0.1+ | 0.1− | 2003 12 01 | 691 | 0.1− | 0.2+ | 2006 05 05 | 691 | 0.5− | 0.1− |
| 2003 11 21 | 704 | 0.2− | 0.0 | 2003 12 22 | 704 | 0.1+ | 0.6− | 2006 05 08 | 691 | 0.1+ | 0.1+ |
| 2003 11 21 | 704 | 0.4+ | 0.1− | 2003 12 22 | 704 | 0.0 | 0.2+ | 2006 05 08 | 691 | 0.1+ | 0.0 |
| 2003 11 26 | 704 | 0.8− | 0.9+ | 2003 12 22 | 704 | 0.9+ | 0.4− | 2006 05 08 | 691 | 0.1− | 0.3− |
| 2003 11 26 | 704 | 0.6+ | 0.6+ | 2006 04 30 | 691 | 0.2− | 0.3− | 2006 05 09 | 691 | 0.5− | 0.4+ |
| 2003 11 26 | 704 | 0.3+ | 0.3− | 2006 04 30 | 691 | 0.3+ | 0.2− | 2006 05 09 | 691 | 0.1+ | 0.5+ |
| 2003 11 26 | 704 | 0.0 | 0.9− | 2006 04 30 | 691 | 0.2− | 0.1− | 2006 05 09 | 691 | 0.1+ | 0.2− |
| 2003 12 01 | 691 | 0.3− | 0.0 | 2006 05 05 | 691 | 0.6+ | 0.4+ | | | | |

**2006 HJ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.01105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26202714 | $\omega$ | 45.16513 | | +0.34757793 | +0.93723327 | |
| $a$ | 2.4186435 | $\Omega$ | 245.19281 | | −0.86874186 | +0.31065863 | |
| $e$ | 0.1591574 | $i$ | 1.76695 | | −0.35281321 | +0.15838250 | |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 09 | 691 | 0.2+ | 0.1− | 2003 08 20 | 097 | 2.0− | 0.5+ | 2004 12 18 | 691 | 0.2− | 0.4+ |
| 2002 03 09 | 691 | 0.2− | 0.3+ | 2003 08 25 | 704 | 0.8+ | 0.2− | 2006 03 09 | 691 | 0.5+ | 0.5+ |
| 2002 03 09 | 691 | 0.4+ | 0.6+ | 2003 08 25 | 704 | 0.3− | 0.3− | 2006 03 09 | 691 | 0.1+ | 0.3+ |
| 2003 07 24 | 644 | 0.3− | 0.6+ | 2003 08 25 | 704 | 0.0 | 0.3+ | 2006 03 09 | 691 | 0.6+ | 0.1− |
| 2003 07 24 | 644 | 0.0 | 0.8+ | 2003 08 25 | 704 | 0.2+ | 0.6+ | 2006 04 26 | 691 | 0.1+ | 0.1− |
| 2003 07 24 | 644 | 0.1+ | 0.9+ | 2003 08 25 | 704 | 0.5− | 0.3+ | 2006 04 26 | 691 | 0.1− | 0.3+ |
| 2003 08 04 | 704 | 0.7− | 1.6+ | 2003 09 01 | 704 | 1.1+ | 0.3+ | 2006 04 26 | 691 | 0.5− | 0.2− |
| 2003 08 04 | 704 | 0.0 | 0.9− | 2003 09 01 | 704 | 0.8+ | 0.1− | 2006 05 03 | G96 | 0.6− | 0.1+ |
| 2003 08 04 | 704 | 0.2+ | 0.2+ | 2003 09 01 | 704 | 0.5− | 0.3+ | 2006 05 03 | G96 | 0.1− | 0.3− |
| 2003 08 04 | 704 | 1.6+ | 0.4+ | 2003 09 01 | 704 | 0.2− | 0.8+ | 2006 05 03 | G96 | 1.0− | 0.4− |
| 2003 08 20 | 097 | 1.9− | 0.2− | 2004 12 18 | 691 | 0.0 | 0.2+ | 2006 05 03 | G96 | 0.4− | 0.2+ |
| 2003 08 20 | 097 | 0.3− | 0.0 | 2004 12 18 | 691 | 0.2+ | 0.2+ | | | | |

**2006 HT$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.51670 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22110627 | $\omega$ | 238.18580 | | +0.64792797 | −0.76157585 | |
| $a$ | 2.7085405 | $\Omega$ | 171.38765 | | +0.72636487 | +0.61229689 | |
| $e$ | 0.0259370 | $i$ | 5.30337 | | +0.22931075 | +0.21235525 | |
| $P$ | 4.46 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 09 27 | 691 | 0.2− | 0.6+ | 2006 04 02 | 691 | 0.1+ | 0.3+ |
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2003 09 27 | 691 | 0.2− | 0.5+ | 2006 04 02 | 691 | 0.1− | 0.5+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 09 27 | 691 | 0.2+ | 0.4+ | 2006 04 02 | 691 | 0.1+ | 0.4+ |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 09 29 | 645 | 0.1+ | 0.0 | 2006 04 30 | 691 | 0.1+ | 0.2− |
| 2001 05 23 | 807 | 0.5− | 0.2+ | 2003 09 29 | 645 | 0.1+ | 0.0 | 2006 04 30 | 691 | 0.0 | 0.1+ |
| 2001 05 24 | 807 | 0.4− | 0.2+ | 2003 10 19 | 645 | 0.1+ | 0.1− | 2006 04 30 | 691 | 0.0 | 0.2+ |
| 2003 09 22 | 699 | 0.5− | 0.4− | 2003 10 19 | 645 | 0.0 | 0.1− | 2006 05 07 | G96 | 0.6+ | 0.4− |
| 2003 09 22 | 699 | 1.0− | 0.2+ | 2003 10 24 | 691 | 0.6− | 0.3+ | 2006 05 07 | G96 | 0.1− | 0.3− |
| 2003 09 22 | 699 | 0.2− | 0.4+ | 2003 10 24 | 691 | 0.5− | 0.3+ | 2006 05 07 | G96 | 0.6− | 0.2− |
| 2003 09 22 | 699 | 0.6+ | 0.3− | 2003 10 24 | 691 | 0.1− | 0.5+ | 2006 05 07 | G96 | 0.1− | 0.2− |

**2006 HF$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.91749 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26715673 | $\omega$ | 110.74406 | | −0.93740377 | +0.34404022 | |
| $a$ | 2.3875839 | $\Omega$ | 89.41064 | | −0.33620641 | −0.85369457 | |
| $e$ | 0.1667828 | $i$ | 3.09271 | | −0.09077124 | −0.39095001 | |
| $P$ | 3.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 10 | 704 | 0.6− | 0.0 | 2004 11 10 | 695 | 0.4− | 0.3+ | 2006 04 30 | 699 | 0.6+ | 0.9− |
| 2002 02 10 | 704 | 0.8− | 0.2− | 2006 04 02 | 691 | 0.2+ | 0.0 | 2006 05 07 | G96 | 0.4− | 0.1− |
| 2002 02 10 | 704 | 0.3+ | 0.0 | 2006 04 02 | 691 | 0.1− | 0.3+ | 2006 05 07 | G96 | 0.1+ | 0.0 |
| 2002 02 10 | 704 | 0.1+ | 0.9+ | 2006 04 02 | 691 | 0.1+ | 0.0 | 2006 05 07 | G96 | 0.5− | 0.1− |
| 2002 02 10 | 704 | 0.7+ | 0.4+ | 2006 04 24 | 704 | 0.0 | 0.4− | 2006 05 07 | G96 | 0.1+ | 0.0 |
| 2002 02 20 | 704 | 0.1− | 0.5− | 2006 04 24 | 704 | 0.2− | 0.3+ | 2006 05 24 | G96 | 0.3− | 0.0 |
| 2002 02 20 | 704 | 1.1+ | 0.9− | 2006 04 24 | 704 | 0.1+ | 1.4+ | 2006 05 24 | G96 | 0.0 | 0.1− |
| 2002 02 20 | 704 | 0.6− | 0.3− | 2006 04 24 | 704 | 0.4+ | 0.1+ | 2006 05 24 | G96 | 0.1− | 0.0 |
| 2002 02 20 | 704 | 0.1− | 0.2− | 2006 04 30 | 699 | 0.4+ | 0.8+ | 2006 05 24 | G96 | 0.3− | 0.1− |
| 2002 02 20 | 704 | 0.2− | 0.2+ | 2006 04 30 | 699 | 0.4− | 0.2+ | | | | |
| 2004 11 10 | 695 | 0.3+ | 0.3+ | 2006 04 30 | 699 | 0.1− | 1.5− | | | | |

**2006 HQ$_{132}$ = 2000 DL$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.89878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16591210 | $\omega$ | 58.76273 | | −0.97871751 | −0.20491844 | |
| $a$ | 3.2800768 | $\Omega$ | 109.41060 | | +0.18409913 | −0.90039567 | |
| $e$ | 0.2112857 | $i$ | 0.66677 | | +0.09066170 | −0.38379171 | |
| $P$ | 5.94 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.0 | 0.0 | 2006 02 07 | G96 | 0.4+ | 0.1− | 2006 03 02 | 691 | 0.1− | 0.4+ |
| 2000 02 27 | 691 | 0.4− | 0.2− | 2006 02 07 | G96 | 0.5− | 1.1− | 2006 03 02 | 691 | (0.9− | 2.3+) |
| 2000 02 27 | 691 | 0.8− | 0.0 | 2006 02 07 | G96 | 0.1+ | 0.3+ | 2006 03 02 | 691 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 1.5+ | 0.8− | 2006 02 07 | G96 | 0.3+ | 0.2+ | 2006 03 24 | G96 | 0.0 | 0.5− |
| 2000 03 03 | 704 | 0.8+ | 1.0− | 2006 02 20 | 691 | 0.1− | 0.0 | 2006 03 24 | G96 | 0.1+ | 0.3− |
| 2000 03 03 | 704 | 1.3+ | 0.1− | 2006 02 20 | 691 | 0.3+ | 0.1− | 2006 03 24 | G96 | 0.5− | 0.4− |
| 2006 01 07 | G96 | 0.6− | 0.1− | 2006 02 20 | 691 | 0.1+ | 0.1− | 2006 03 24 | G96 | 0.6− | 0.3− |
| 2006 01 07 | G96 | 1.0− | 0.4+ | 2006 02 24 | 691 | 0.2− | 0.1− | 2006 04 26 | 807 | 0.4− | 0.1− |
| 2006 01 07 | G96 | 0.8− | 0.1+ | 2006 02 24 | 691 | 0.0 | 0.2+ | 2006 04 26 | 807 | 0.3− | 0.1− |
| 2006 01 07 | G96 | 1.7+ | 0.3− | 2006 02 24 | 691 | 1.0+ | 0.8+ | 2006 04 27 | 807 | 0.3− | 0.1− |

**2006 HF$_{137}$ = 2006 FT$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.56329 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18456435 | $\omega$ | 14.31646 | | −0.12509697 | −0.99134325 | |
| $a$ | 3.0551849 | $\Omega$ | 82.88134 | | +0.90627742 | −0.13052966 | |
| $e$ | 0.1516150 | $i$ | 2.30252 | | +0.40374743 | −0.01416220 | |
| $P$ | 5.34 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.2+ | 0.2+ | 2003 09 29 | 691 | 0.1+ | 0.1+ | 2006 03 25 | 691 | 0.2+ | 0.3+ |
| 2000 04 10 | 695 | 0.1+ | 0.4+ | 2004 12 18 | G96 | 0.3− | 0.1− | 2006 04 02 | 691 | 0.3+ | 0.1− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2004 12 18 | G96 | 0.4− | 0.1− | 2006 04 02 | 691 | 0.7+ | 0.3+ |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2004 12 18 | G96 | 0.0 | 0.1− | 2006 04 02 | 691 | 0.3+ | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2004 12 18 | G96 | 0.1+ | 0.1− | 2006 04 26 | 807 | 0.0 | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.1+ | 2005 01 18 | 691 | 0.1+ | 0.1+ | 2006 04 26 | 691 | 0.2− | 0.1− |
| 2003 09 29 | 645 | 0.0 | 0.1+ | 2005 01 18 | 691 | 0.1+ | 0.2+ | 2006 04 26 | 691 | 0.5− | 0.3+ |
| 2003 09 29 | 645 | 0.2− | 0.1− | 2005 01 18 | 691 | 0.1+ | 0.2+ | 2006 04 26 | 691 | 0.2− | 0.3− |
| 2003 09 29 | 691 | 0.3+ | 0.2+ | 2006 03 25 | 691 | 0.9− | 0.3+ | 2006 04 26 | 807 | 0.0 | 0.1+ |
| 2003 09 29 | 691 | 0.1+ | 0.2+ | 2006 03 25 | 691 | 0.9+ | 0.7+ | 2006 04 27 | 807 | 0.2+ | 0.2+ |

**2006 HE$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.81445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17981582 | $\omega$ | 232.50066 | | −0.29678686 | −0.90104637 | |
| $a$ | 3.1087380 | $\Omega$ | 237.71135 | | +0.95081442 | −0.24805788 | |
| $e$ | 0.1079091 | $i$ | 21.97073 | | +0.08871017 | −0.35578466 | |
| $P$ | 5.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 16 | 691 | 0.2+ | 0.3+ | 2003 11 24 | 704 | 0.1− | 1.0− | 2006 04 28 | 807 | 0.0 | 0.4+ |
| 2003 11 16 | 691 | 0.5+ | 0.1+ | 2003 11 24 | 704 | 0.5− | 0.8− | 2006 04 28 | 807 | 0.2+ | 0.4+ |
| 2003 11 16 | 691 | 0.3+ | 0.1− | 2003 11 24 | 704 | 0.6− | 0.6− | 2006 05 20 | 691 | 0.1− | 0.0 |
| 2003 11 21 | 704 | 1.1− | 0.7− | 2003 12 16 | 291 | 0.1− | 0.1+ | 2006 05 20 | 691 | 0.1− | 0.1− |
| 2003 11 21 | 704 | 0.3− | 0.7+ | 2003 12 16 | 291 | 0.2− | 0.1− | 2006 05 20 | 691 | 0.1+ | 0.1+ |
| 2003 11 21 | 704 | 0.8− | 0.1+ | 2003 12 16 | 291 | 0.2− | 0.2+ | | | | |
| 2003 11 21 | 704 | 1.7+ | 0.6+ | 2006 04 27 | 807 | 0.2+ | 0.3+ | | | | |

**2006 HX$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.48598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19094597 | $\omega$ | 318.45679 | | +0.99137632 | −0.12632042 | |
| $a$ | 2.9867284 | $\Omega$ | 48.83516 | | +0.12910178 | +0.89578509 | |
| $e$ | 0.1992108 | $i$ | 2.65510 | | +0.02248832 | +0.42615985 | |
| $P$ | 5.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 644 | 0.1− | 0.3− | 2002 08 11 | 644 | 0.2+ | 0.3+ | 2006 04 26 | 691 | 0.2+ | 0.4+ |
| 2002 07 17 | 644 | 0.1+ | 0.2− | 2002 08 11 | 644 | 0.3+ | 0.3+ | 2006 04 26 | 691 | 0.1+ | 0.2+ |
| 2002 07 17 | 644 | 0.2− | 0.4− | 2002 08 11 | 644 | 0.5− | 1.6− | 2006 04 26 | 691 | 0.4− | 0.2− |
| 2002 08 08 | 644 | 0.3+ | 0.5+ | 2006 04 02 | 691 | 0.2+ | 0.1− | 2006 05 01 | 568 | 0.2+ | 0.1− |
| 2002 08 08 | 644 | 0.3− | 0.7+ | 2006 04 02 | 691 | 0.0 | 0.2+ | 2006 05 01 | 568 | 0.2+ | 0.0 |
| 2002 08 08 | 644 | 0.3+ | 0.6+ | 2006 04 02 | 691 | 0.1− | 0.5− | 2006 05 01 | 568 | 0.2+ | 0.1− |

**2006 HW$_{151}$ = 2003 SV**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.62619 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27514681 | $\omega$ | 69.84869 | | −0.06759354 | +0.99766566 | |
| $a$ | 2.3411346 | $\Omega$ | 196.28461 | | −0.92783302 | −0.06643575 | |
| $e$ | 0.1925025 | $i$ | 1.98514 | | −0.36682011 | −0.01579649 | |
| $P$ | 3.58 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 691 | 0.2− | 0.1+ | 2006 04 19 | G96 | 0.1− | 0.2+ | 2006 05 08 | G96 | 0.3− | 0.0 |
| 2003 09 16 | 691 | 0.1− | 0.1+ | 2006 04 19 | G96 | 0.0 | 0.1+ | 2006 05 08 | G96 | 0.2− | 0.3− |
| 2003 09 16 | 691 | 0.0 | 0.0 | 2006 04 30 | 699 | 0.1− | 0.5− | 2006 05 22 | G96 | 0.3− | 0.2+ |
| 2003 09 17 | 291 | 0.2+ | 0.1− | 2006 04 30 | 699 | 0.2− | 0.2+ | 2006 05 22 | G96 | 0.3+ | 0.1− |
| 2003 09 17 | 291 | 0.1+ | 0.1− | 2006 04 30 | 699 | 0.5− | 0.3+ | 2006 05 22 | G96 | 0.0 | 0.1+ |
| 2003 09 17 | 291 | 0.1+ | 0.1+ | 2006 04 30 | 699 | 1.0+ | 0.1− | 2006 05 22 | G96 | 0.0 | 0.1+ |
| 2006 04 19 | G96 | 0.0 | 0.1+ | 2006 05 08 | G96 | 0.1+ | 0.1− | | | | |
| 2006 04 19 | G96 | 0.0 | 0.0 | 2006 05 08 | G96 | 0.1+ | 0.1− | | | | |

**2006 HX$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.20842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21213003 | $\omega$ | 224.10551 | | +0.52881264 | −0.84862185 | |
| $a$ | 2.7844192 | $\Omega$ | 193.98850 | | +0.79393582 | +0.50046246 | |
| $e$ | 0.0844575 | $i$ | 3.33843 | | +0.30003851 | +0.17140095 | |
| $P$ | 4.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 07 | 691 | 0.4− | 0.4− | 2005 01 13 | 691 | 0.1− | 0.2+ | 2006 05 06 | G96 | 0.0 | 0.4+ |
| 1994 10 07 | 691 | 0.3− | 1.0+ | 2005 03 17 | G96 | 0.3+ | 0.1− | 2006 05 06 | G96 | 0.7+ | 0.4+ |
| 1994 10 07 | 691 | 0.5− | 0.2− | 2005 03 17 | G96 | 0.2+ | 0.0 | 2006 05 22 | G96 | 0.6− | 0.2+ |
| 1994 11 01 | 691 | 0.4+ | 0.3+ | 2005 03 17 | G96 | 0.6+ | 0.2− | 2006 05 22 | G96 | 0.5+ | 0.5+ |
| 1994 11 01 | 691 | 0.0 | 0.6+ | 2005 03 17 | G96 | 0.4− | 0.0 | 2006 05 22 | G96 | 0.2+ | 0.5+ |
| 1994 11 01 | 691 | 0.2+ | 0.4+ | 2006 04 19 | G96 | 0.2+ | 0.5+ | 2006 05 22 | G96 | 0.3+ | 0.1− |
| 2003 09 28 | 691 | 0.0 | 0.1− | 2006 04 19 | G96 | 0.0 | 0.6+ | 2006 05 30 | G96 | 0.2+ | 0.7+ |
| 2003 09 28 | 691 | 0.0 | 0.2+ | 2006 04 19 | G96 | 0.1− | 0.7+ | 2006 05 30 | G96 | 0.3− | 0.7+ |
| 2003 09 28 | 691 | 0.1− | 0.0 | 2006 04 19 | G96 | 0.3+ | 0.8+ | 2006 05 30 | G96 | 0.3+ | 1.0+ |
| 2005 01 13 | 691 | 0.2− | 0.0 | 2006 05 06 | G96 | 0.2+ | 0.6+ | 2006 05 30 | G96 | 0.4+ | 0.7+ |
| 2005 01 13 | 691 | 0.2+ | 0.1+ | 2006 05 06 | G96 | 0.5+ | 0.5+ | | | | |

**2006 HY$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.68698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22117296 | $\omega$ | 146.17142 | | +0.00742568 | +0.99631737 | |
| $a$ | 2.7079961 | $\Omega$ | 124.11311 | | −0.93878929 | +0.03636711 | |
| $e$ | 0.1331741 | $i$ | 5.92189 | | −0.34441185 | −0.07764751 | |
| $P$ | 4.46 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 644 | 0.0 | 0.5− | 2005 01 19 | 691 | 0.3− | 0.1+ | 2006 05 05 | 691 | 0.1+ | 0.5+ |
| 2002 07 09 | 644 | 0.2− | 0.4− | 2005 01 19 | 691 | 0.0 | 0.3− | 2006 05 23 | 691 | 0.0 | 0.1+ |
| 2002 07 09 | 644 | 0.2+ | 0.6− | 2006 04 19 | 691 | 0.0 | 0.1− | 2006 05 23 | 691 | 0.1+ | 0.1− |
| 2002 08 08 | 644 | 0.1+ | 0.5+ | 2006 04 19 | 691 | 0.1+ | 0.2+ | 2006 05 23 | 691 | 0.1+ | 0.1− |
| 2002 08 08 | 644 | 0.2− | 0.9+ | 2006 04 19 | 691 | 0.1− | 0.2+ | 2006 06 16 | 691 | 0.1− | 0.1− |
| 2002 08 08 | 644 | 0.1+ | 0.5+ | 2006 05 05 | 691 | 0.5+ | 0.3+ | 2006 06 16 | 691 | 0.4− | 0.3− |
| 2005 01 19 | 691 | 0.2+ | 0.0 | 2006 05 05 | 691 | 0.1+ | 0.2+ | 2006 06 16 | 691 | 0.5− | 1.0− |

**2006 HZ$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.77644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27842730 | $\omega$ | 345.26679 | | −0.70666534 | +0.70295052 | |
| $a$ | 2.3227092 | $\Omega$ | 239.69140 | | −0.63936156 | −0.68316205 | |
| $e$ | 0.0347800 | $i$ | 5.35213 | | −0.30305263 | −0.19786403 | |
| $P$ | 3.54 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 15 | 691 | 0.7− | 0.3− | 2006 04 21 | 703 | 0.5− | 0.2+ | 2006 05 31 | G96 | 0.4+ | 0.1+ |
| 1993 10 15 | 691 | 0.1− | 0.2− | 2006 04 21 | 703 | 0.3+ | 0.1− | 2006 05 31 | G96 | 0.2− | 0.3+ |
| 1993 10 15 | 691 | 0.7+ | 0.6+ | 2006 04 21 | 703 | 0.4− | 0.4− | 2006 05 31 | G96 | 0.2+ | 0.1+ |
| 2002 03 05 | 645 | 0.0 | 0.0 | 2006 04 21 | 703 | 0.6− | 0.3+ | 2006 05 31 | G96 | 0.2+ | 0.0 |
| 2002 03 05 | 645 | 0.0 | 0.0 | 2006 05 06 | G96 | 0.4− | 0.1+ | 2006 06 01 | G96 | 0.7+ | 0.0 |
| 2004 11 11 | 691 | 0.1+ | 0.1+ | 2006 05 06 | G96 | 0.1+ | 0.4+ | 2006 06 01 | G96 | 0.7+ | 0.1− |
| 2004 11 11 | 691 | 0.1− | 0.1+ | 2006 05 06 | G96 | 0.1− | 0.1+ | 2006 06 01 | G96 | 0.1+ | 0.0 |
| 2004 11 11 | 691 | 0.1+ | 0.1+ | 2006 05 06 | G96 | 0.1+ | 0.2+ | 2006 06 01 | G96 | 0.0 | 0.1− |

**2006 HA$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 356.65761 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20297815 | $\omega$ | 247.87610 | | −0.16053999 | | +0.98699978 | |
| $a$ | 2.8674984 | $\Omega$ | 12.89269 | | −0.89250009 | | −0.14185582 | |
| $e$ | 0.0210676 | $i$ | 1.96173 | | −0.42150979 | | −0.07555366 | |
| $P$ | 4.86 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 19 | 691 | 0.6+ | 0.0 | 2003 11 20 | 691 | 0.1− | 0.2− | 2006 04 24 | G96 | 0.4− | 0.9− |
| 1993 09 19 | 691 | 0.4− | 0.2+ | 2005 01 19 | 691 | 0.1− | 0.1+ | 2006 05 05 | 691 | 0.2− | 0.3− |
| 1993 09 19 | 691 | 0.3− | 0.0 | 2005 01 19 | 691 | 0.2+ | 0.2+ | 2006 05 05 | 691 | 0.2+ | 0.2− |
| 1998 09 27 | 691 | 0.0 | 0.4− | 2005 01 19 | 691 | 0.0 | 0.1+ | 2006 05 05 | 691 | 0.5+ | 0.1− |
| 1998 09 27 | 691 | 0.0 | 0.5− | 2005 03 10 | G96 | 0.0 | 0.4− | 2006 05 20 | 691 | 0.2+ | 0.3+ |
| 1998 09 27 | 691 | 0.5+ | 0.0 | 2005 03 10 | G96 | 0.1− | 0.4− | 2006 05 20 | 691 | 0.3− | 0.5+ |
| 2003 10 19 | 691 | 0.1+ | 0.3+ | 2005 03 10 | G96 | 0.2− | 0.4− | 2006 05 20 | 691 | 0.0 | 0.2− |
| 2003 10 19 | 691 | 0.0 | 0.2+ | 2005 03 10 | G96 | 0.1+ | 0.4− | 2006 06 02 | 691 | 0.3+ | 0.6+ |
| 2003 10 19 | 691 | 0.8− | 0.1+ | 2006 04 24 | G96 | 0.2+ | 0.5− | 2006 06 02 | 691 | 0.0 | 0.3+ |
| 2003 11 20 | 691 | 0.1+ | 0.4+ | 2006 04 24 | G96 | 0.5+ | 0.4− | 2006 06 02 | 691 | 0.5− | 0.2+ |
| 2003 11 20 | 691 | 0.2+ | 0.3+ | 2006 04 24 | G96 | 0.2− | 0.4− | | | | |

**2006 HC$_{152}$ = 2002 RZ$_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 101.99591 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17436301 | $\omega$ | 87.47309 | | −0.86710187 | | −0.49701239 | |
| $a$ | 3.1732173 | $\Omega$ | 62.72254 | | +0.44081274 | | −0.79679588 | |
| $e$ | 0.0638853 | $i$ | 2.15117 | | +0.23198809 | | −0.34364954 | |
| $P$ | 5.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 691 | 0.2− | 0.1− | 2002 09 15 | 644 | 0.6+ | 0.4+ | 2005 03 16 | G96 | 0.1− | 0.1+ |
| 1999 01 10 | 691 | 0.2− | 0.2− | 2002 09 16 | 644 | 0.2+ | 0.3+ | 2006 04 26 | 807 | 0.0 | 0.2+ |
| 1999 01 10 | 691 | 0.4+ | 0.1+ | 2002 09 16 | 644 | 0.4− | 0.1− | 2006 04 26 | 807 | 0.2− | 0.2+ |
| 2002 09 13 | 644 | 0.0 | 0.7+ | 2002 09 16 | 644 | 0.8− | 0.2− | 2006 05 09 | G96 | 0.0 | 0.2+ |
| 2002 09 13 | 644 | 0.2+ | 0.2+ | 2003 12 01 | 691 | 0.1− | 0.4+ | 2006 05 09 | G96 | 0.0 | 0.5+ |
| 2002 09 13 | 644 | 0.6− | 0.4− | 2003 12 01 | 691 | 0.1+ | 0.3+ | 2006 05 09 | G96 | 1.0− | 0.9+ |
| 2002 09 13 | 644 | 0.6− | 0.1+ | 2003 12 01 | 691 | 0.1+ | 0.2+ | 2006 05 09 | G96 | 0.4+ | 0.1+ |
| 2002 09 13 | 644 | 0.3+ | 0.2+ | 2005 02 02 | 691 | 0.2+ | 0.2+ | 2006 05 20 | 691 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.0 | 0.5+ | 2005 02 02 | 691 | 0.2− | 0.4+ | 2006 05 20 | 691 | 0.2− | 0.2− |
| 2002 09 15 | 644 | 0.2− | 0.0 | 2005 02 02 | 691 | 0.2+ | 0.1− | 2006 05 20 | 691 | 0.1− | 0.0 |
| 2002 09 15 | 644 | 0.4− | 0.4− | 2005 03 16 | G96 | 0.5− | 0.2+ | 2006 06 01 | 691 | 0.2+ | 0.0 |
| 2002 09 15 | 644 | 0.3− | 0.1+ | 2005 03 16 | G96 | 0.4− | 0.4+ | 2006 06 01 | 691 | 0.3+ | 0.0 |
| 2002 09 15 | 644 | 0.5− | 0.5+ | 2005 03 16 | G96 | 0.4− | 0.0 | 2006 06 01 | 691 | 0.4+ | 0.5+ |

**2006 JZ**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 0.95727 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.24035898 | $\omega$ | 261.91848 | | −0.11378601 | | +0.99349834 | |
| $a$ | 2.5619018 | $\Omega$ | 1.56241 | | −0.84946285 | | −0.09535008 | |
| $e$ | 0.1270188 | $i$ | 7.82645 | | −0.51523356 | | −0.06220452 | |
| $P$ | 4.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 704 | 0.6+ | 0.2− | 2003 10 02 | 691 | 0.0 | 0.2− | 2006 05 03 | 428 | 0.3− | 0.0 |
| 2002 05 17 | 704 | 0.5− | 0.5+ | 2003 10 02 | 691 | 0.1− | 0.3− | 2006 05 03 | 428 | 0.3+ | 0.5− |
| 2002 05 17 | 704 | 0.1+ | 1.5+ | 2003 10 17 | 699 | 1.3+ | 1.0+ | 2006 05 04 | 428 | 0.3− | 0.1− |
| 2002 05 17 | 704 | 1.0+ | 0.9+ | 2003 10 17 | 699 | (2.8+ | 4.9+) | 2006 05 04 | 428 | 0.1− | 0.8− |
| 2002 06 05 | 644 | 0.1− | 0.1+ | 2003 10 17 | 699 | 1.5− | 0.9+ | 2006 05 05 | 699 | 0.1+ | 0.1− |
| 2002 06 05 | 644 | 0.0 | 0.5+ | 2003 10 21 | 704 | 0.5− | 0.6+ | 2006 05 05 | 699 | 0.1+ | 0.8+ |
| 2002 06 05 | 644 | 0.1+ | 0.3+ | 2003 10 21 | 704 | 0.1− | 0.7+ | 2006 05 05 | 699 | (0.3− | 2.1+) |
| 2003 09 27 | 704 | 1.2− | 0.5+ | 2003 10 21 | 704 | 0.3− | 1.0+ | 2006 05 05 | 699 | 0.1− | 0.2+ |
| 2003 09 27 | 704 | 0.8− | 0.6+ | 2005 01 06 | 703 | 0.4+ | 0.0 | 2006 05 16 | E12 | 0.2+ | 0.7+ |
| 2003 09 27 | 704 | 1.9− | 1.0− | 2005 01 06 | 703 | 0.1− | 0.6+ | 2006 05 16 | E12 | 0.4+ | 0.8+ |
| 2003 09 27 | 704 | 0.6+ | 0.1+ | 2005 01 06 | 703 | 0.6− | 1.6+ | 2006 05 16 | E12 | 0.2− | 0.4+ |
| 2003 10 02 | 691 | 0.1− | 0.7− | 2005 01 06 | 703 | 0.6+ | 1.3+ | 2006 05 16 | E12 | 1.0+ | 0.2+ |

**2006 JA$_3$ = 2005 AL$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 300.40101 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20407077 | $\omega$ | 277.81323 | | +0.70460507 | | +0.70913462 | |
| $a$ | 2.8572540 | $\Omega$ | 37.02827 | | −0.63308042 | | +0.64456354 | |
| $e$ | 0.0631171 | $i$ | 2.44461 | | −0.32053219 | | +0.28577253 | |
| $P$ | 4.83 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.3− | 0.2− | 2005 03 14 | G96 | 0.3− | 0.2− | 2006 05 02 | G96 | 0.2+ | 0.2+ |
| 2000 02 03 | 691 | 0.3+ | 0.2− | 2005 03 14 | G96 | 0.1− | 0.3− | 2006 05 02 | G96 | 0.6+ | 0.0 |
| 2000 02 03 | 691 | 0.2− | 0.7− | 2005 03 14 | G96 | 0.6+ | 0.3− | 2006 05 02 | G96 | 0.3+ | 0.1+ |
| 2005 01 15 | 691 | 0.2− | 0.4+ | 2005 03 14 | G96 | 0.2− | 0.3− | 2006 05 04 | G96 | 0.6− | 0.2− |
| 2005 01 15 | 691 | 0.2− | 0.2+ | 2006 04 19 | G96 | 0.4− | 0.1+ | 2006 05 04 | G96 | 0.0 | 0.1− |
| 2005 01 15 | 691 | 0.2+ | 0.5+ | 2006 04 19 | G96 | 0.4+ | 0.0 | 2006 05 04 | G96 | 0.5− | 0.1− |
| 2005 01 19 | 691 | 0.2+ | 0.3+ | 2006 04 19 | G96 | 0.2− | 0.1+ | 2006 05 04 | G96 | 0.3− | 0.3− |
| 2005 01 19 | 691 | 0.5+ | 0.4− | 2006 04 19 | G96 | 0.1− | 0.1− | | | | |
| 2005 01 19 | 691 | 0.1− | 0.3+ | 2006 05 02 | G96 | 0.3+ | 0.1− | | | | |

**2006 JE$_7$ = 1999 VB$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 289.49739 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23617509 | $\omega$ | 287.06890 | | +0.93027953 | | +0.30383654 | |
| $a$ | 2.5920696 | $\Omega$ | 55.70110 | | −0.16158942 | | +0.84247931 | |
| $e$ | 0.1320425 | $i$ | 14.40970 | | −0.32934609 | | +0.44487298 | |
| $P$ | 4.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.1+ | 0.0 | 1999 11 17 | 691 | 0.0 | 0.1− | 2006 04 21 | 691 | 0.3− | 0.0 |
| 1999 11 09 | 704 | 0.6− | 0.5− | 1999 11 17 | 691 | 0.1− | 0.1+ | 2006 05 01 | 691 | 0.2+ | 0.1− |
| 1999 11 09 | 704 | 0.3− | 0.1− | 1999 11 17 | 691 | 0.1− | 0.2+ | 2006 05 01 | 691 | 0.1+ | 0.0 |
| 1999 11 09 | 704 | 0.1+ | 0.3+ | 2003 10 22 | 691 | 0.0 | 0.0 | 2006 05 01 | 691 | 0.2+ | 0.0 |
| 1999 11 09 | 704 | 0.6− | 0.2− | 2003 10 22 | 691 | 0.0 | 0.0 | 2006 05 05 | 691 | 0.1+ | 0.1+ |
| 1999 11 12 | 704 | (2.7+ | 0.6+) | 2003 10 22 | 691 | 0.0 | 0.0 | 2006 05 05 | 691 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 0.4+ | 0.6+ | 2006 04 21 | 691 | 0.3− | 0.2+ | 2006 05 05 | 691 | 0.1+ | 0.3− |
| 1999 11 12 | 704 | 1.8+ | 0.6− | 2006 04 21 | 691 | 0.2− | 0.0 | | | | |

**2006 JP$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 110.63851 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18075956 | $\omega$ | 74.24521 | | −0.50503425 | | −0.84443376 | |
| $a$ | 3.0979081 | $\Omega$ | 47.50055 | | +0.66976572 | | −0.51389498 | |
| $e$ | 0.1552376 | $i$ | 14.01300 | | +0.54438431 | | −0.15114089 | |
| $P$ | 5.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 645 | 0.0 | 0.0 | 2003 10 05 | 691 | 0.2+ | 0.3+ | 2006 05 01 | 691 | 0.1− | 0.1− |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 01 | 691 | 0.0 | 0.0 |
| 2003 09 30 | 645 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 01 | 691 | 0.3+ | 0.4− |
| 2003 09 30 | 645 | 0.1+ | 0.0 | 2006 04 02 | 691 | 0.0 | 0.0 | 2006 05 06 | 691 | 0.1+ | 0.2+ |
| 2003 10 05 | 691 | 0.1− | 0.2+ | 2006 04 02 | 691 | 0.3+ | 0.1− | 2006 05 06 | 691 | 0.1− | 0.2+ |
| 2003 10 05 | 691 | 0.6− | 0.1− | 2006 04 02 | 691 | 0.0 | 0.1− | 2006 05 06 | 691 | 0.4− | 0.2+ |

**2006 JM$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $M$ | 309.08459 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25865188 | $\omega$ | 261.20631 | | +0.80091359 | | +0.59609807 | |
| $a$ | 2.4396393 | $\Omega$ | 62.18296 | | −0.52113579 | | +0.74049450 | |
| $e$ | 0.1854635 | $i$ | 3.66970 | | −0.29488117 | | +0.31037878 | |
| $P$ | 3.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.6+ | 0.1− | 2003 09 22 | 691 | 0.2+ | 0.0 | 2006 05 02 | G96 | 0.1− | 0.1− |
| 1999 08 13 | 699 | 0.3− | 0.5− | 2003 09 22 | 691 | 0.2+ | 0.1+ | 2006 05 06 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.4+ | 1.4− | 2003 09 28 | 704 | 0.0 | 0.2+ | 2006 05 06 | 691 | 0.7+ | 0.4+ | | |
| 2003 09 02 | 704 | 1.1− | 0.0 | 2003 09 28 | 704 | 0.4− | 0.7+ | 2006 05 06 | 691 | 0.2+ | 0.1− | | |
| 2003 09 02 | 704 | 0.7− | 0.5+ | 2003 09 28 | 704 | 0.3+ | 1.8+ | 2006 05 06 | 691 | 0.0 | 0.2+ | | |
| 2003 09 02 | 704 | 0.8− | 0.2+ | 2003 09 28 | 704 | 0.7+ | 1.2− | 2006 05 06 | 691 | 0.3− | 0.2+ | | |
| 2003 09 02 | 704 | 1.5− | 0.3− | 2003 09 28 | 704 | 0.9− | 0.7+ | 2006 05 06 | 691 | 0.3− | 0.0 | | |
| 2003 09 18 | 704 | 0.4+ | 0.2+ | 2006 04 07 | 691 | 0.0 | 0.2+ | 2006 05 22 | G96 | 0.7− | 0.2− | | |
| 2003 09 18 | 704 | 0.3+ | 0.3− | 2006 04 07 | 691 | 0.1+ | 0.0 | 2006 05 22 | G96 | 0.4− | 0.4− | | |
| 2003 09 18 | 704 | 0.1+ | 0.5+ | 2006 04 07 | 691 | 0.2+ | 0.3− | 2006 05 22 | G96 | 0.3− | 0.3− | | |
| 2003 09 18 | 704 | 0.2+ | 0.3− | 2006 05 02 | G96 | 0.3− | 0.3+ | 2006 05 22 | G96 | 0.0 | 0.5− | | |
| 2003 09 18 | 704 | 1.3− | 0.5+ | 2006 05 02 | G96 | 0.0 | 0.1+ | | | | | | |
| 2003 09 22 | 691 | 0.3+ | 0.2− | 2006 05 02 | G96 | 0.1− | 0.0 | | | | | | |

**2006 JZ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.97611 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26839141 | $\omega$ | 252.85915 | | +0.79217221 | | +0.60282610 |
| $a$ | 2.3802559 | $\Omega$ | 69.96585 | | −0.51432483 | | +0.74340080 |
| $e$ | 0.2569358 | $i$ | 5.81613 | | −0.32853183 | | +0.28975151 |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.2− | 0.1− | 2003 10 29 | 704 | 1.3+ | 0.9+ | 2006 05 02 | G96 | 0.2− | 0.1+ | | |
| 1999 07 14 | 704 | 0.1− | 0.6+ | 2003 11 21 | 704 | 0.3− | 0.7+ | 2006 05 02 | G96 | 0.6− | 0.1− | | |
| 1999 07 14 | 704 | 0.2− | 0.4− | 2003 11 21 | 704 | 0.8+ | 0.9+ | 2006 05 06 | 691 | 0.0 | 0.5− | | |
| 1999 07 14 | 704 | 0.4+ | 0.1+ | 2003 11 21 | 704 | 1.1− | 0.7+ | 2006 05 06 | 691 | 0.1+ | 0.2+ | | |
| 2003 10 16 | 699 | 0.8+ | 1.0− | 2003 11 21 | 691 | 0.2+ | 0.1− | 2006 05 06 | 691 | 0.4+ | 0.3+ | | |
| 2003 10 16 | 699 | 0.1+ | 0.8+ | 2003 11 21 | 704 | 0.4− | 2.7+ | 2006 05 21 | 691 | 0.1− | 1.3+ | | |
| 2003 10 16 | 699 | 0.5− | 0.7− | 2003 11 21 | 691 | 0.2+ | 0.0 | 2006 05 21 | 691 | 0.2+ | 0.2+ | | |
| 2003 10 16 | 699 | 1.5− | 1.5− | 2003 11 21 | 691 | 0.2+ | 0.1− | 2006 05 21 | 691 | 0.6+ | 0.0 | | |
| 2003 10 21 | 644 | 0.0 | 0.2− | 2003 11 30 | 691 | 0.2− | 0.4+ | 2006 06 19 | G96 | 0.2+ | 0.2− | | |
| 2003 10 21 | 644 | 0.0 | 0.1− | 2003 11 30 | 691 | 0.4− | 0.1+ | 2006 06 19 | G96 | 0.4− | 0.3+ | | |
| 2003 10 21 | 644 | 0.1− | 0.2− | 2003 11 30 | 691 | 0.4− | 0.5+ | 2006 06 19 | G96 | 0.9− | 0.0 | | |
| 2003 10 29 | 704 | 0.6− | 0.9− | 2006 05 02 | G96 | 0.2− | 0.2+ | 2006 06 19 | G96 | 0.4− | 0.6− | | |
| 2003 10 29 | 704 | 0.2+ | 0.5+ | 2006 05 02 | G96 | 0.5− | 0.2+ | | | | | | |

**2006 JC$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.63906 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28918156 | $\omega$ | 248.00652 | | +0.32226998 | | −0.94663748 |
| $a$ | 2.2647607 | $\Omega$ | 183.20305 | | +0.89510255 | | +0.30623895 |
| $e$ | 0.1323603 | $i$ | 4.53806 | | +0.30811278 | | +0.10047481 |
| $P$ | 3.41 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 11 | 704 | 0.8+ | 0.4+ | 2002 03 13 | 704 | 0.3+ | 0.3− | 2006 05 06 | 691 | 0.2+ | 0.5+ | | |
| 2002 02 11 | 704 | 0.4+ | 0.7+ | 2002 03 13 | 704 | 0.8+ | 0.4+ | 2006 05 06 | 691 | 0.5+ | 0.1− | | |
| 2002 02 11 | 704 | 0.5+ | 0.0 | 2002 03 13 | 704 | 0.3− | 1.2+ | 2006 05 06 | 691 | 0.0 | 0.3+ | | |
| 2002 02 11 | 704 | 0.5− | 0.5+ | 2002 03 13 | 704 | 0.5+ | 0.7+ | 2006 05 30 | G96 | 0.7− | 0.2− | | |
| 2002 03 05 | 645 | 0.2− | 0.1− | 2006 05 02 | G96 | 0.4− | 0.6− | 2006 05 30 | G96 | 0.1− | 0.3− | | |
| 2002 03 05 | 645 | 0.1− | 0.1− | 2006 05 02 | G96 | 0.7− | 0.2− | 2006 05 30 | G96 | 0.1− | 0.6− | | |
| 2002 03 12 | 645 | 0.1+ | 0.0 | 2006 05 02 | G96 | 0.2− | 0.5− | 2006 05 30 | G96 | 0.1+ | 0.2+ | | |
| 2002 03 12 | 645 | 0.1+ | 0.0 | 2006 05 02 | G96 | 0.6− | 0.2− | | | | | | |

**2006 JW$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.82830 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25829614 | $\omega$ | 101.45095 | | +0.13388956 | | +0.99093610 |
| $a$ | 2.4418788 | $\Omega$ | 176.19225 | | −0.96122252 | | +0.13253972 |
| $e$ | 0.1023459 | $i$ | 9.46405 | | −0.24109094 | | +0.02188316 |
| $P$ | 3.82 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.1+ | 0.2+ | 2006 04 24 | 691 | 0.1− | 0.0 | 2006 06 19 | 691 | 0.0 | 0.0 | | |
| 2003 09 18 | 691 | 0.1− | 0.3+ | 2006 05 02 | 691 | 0.1+ | 0.0 | 2006 06 19 | 691 | 0.0 | 0.2+ | | |
| 2003 09 18 | 691 | 0.2− | 0.4+ | 2006 05 02 | 691 | 0.1+ | 0.4+ | 2006 06 19 | 691 | 0.1− | 0.3+ | | |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2006 05 02 | 691 | 0.0 | 0.1− | 2006 06 20 | 291 | 0.2+ | 0.0 | | |
| 2003 09 26 | 645 | 0.0 | 0.1+ | 2006 05 06 | 691 | 0.2− | 0.3− | 2006 06 20 | 291 | 0.1+ | 0.0 | | |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 05 06 | 691 | 0.3− | 0.0 | 2006 06 20 | 291 | 0.5+ | 0.0 | | |
| 2003 09 28 | 645 | 0.0 | 0.1− | 2006 05 06 | 691 | 0.1+ | 0.0 | 2006 06 20 | G96 | 0.2− | 0.5− | | |
| 2003 09 29 | 645 | 0.1− | 0.1− | 2006 05 26 | 703 | 0.2− | 0.8− | 2006 06 20 | G96 | 0.1− | 0.3− | | |
| 2003 09 29 | 645 | 0.0 | 0.1− | 2006 05 26 | 703 | (2.8− | 0.7−) | 2006 06 20 | G96 | 0.6− | 0.5− | | |
| 2006 04 24 | 691 | 0.2− | 0.0 | 2006 05 26 | 703 | 0.5+ | 1.0− | 2006 06 20 | G96 | 0.6− | 0.7− | | |
| 2006 04 24 | 691 | 0.0 | 0.3+ | 2006 05 26 | 703 | (3.6− | 0.5+) | | | | | | |

**2006 JK$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.25341 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23592943 | $\omega$ | 333.38081 | | −0.96925748 | | +0.24029864 |
| $a$ | 2.5938686 | $\Omega$ | 220.63686 | | −0.20879182 | | −0.91698065 |
| $e$ | 0.0799728 | $i$ | 4.65750 | | −0.13017648 | | −0.31843846 |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.0 | 0.4+ | 2003 10 22 | 691 | 0.1+ | 0.1+ | 2006 05 02 | G96 | 0.3− | 0.2− | | |
| 1991 11 06 | 691 | 0.2+ | 0.4+ | 2003 10 22 | 691 | 0.1− | 0.3+ | 2006 05 02 | G96 | 0.4− | 0.4− | | |
| 1991 11 06 | 691 | 0.0 | 0.3+ | 2003 10 22 | 691 | 0.1+ | 0.4+ | 2006 05 02 | G96 | 0.5− | 0.0 | | |
| 1995 11 20 | 691 | 0.1− | 0.3− | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 05 04 | G96 | 0.8− | 0.2− | | |
| 1995 11 20 | 691 | 0.1− | 0.4− | 2003 10 22 | 645 | 0.1− | 0.1+ | 2006 05 04 | G96 | 0.1− | 0.2− | | |
| 1995 11 20 | 691 | 0.1− | 0.4− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 04 | G96 | 0.5− | 0.2+ | | |
| 2002 06 11 | 644 | 0.1− | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 05 04 | G96 | 0.1− | 0.3+ | | |
| 2002 06 11 | 644 | 0.1− | 0.4+ | 2004 12 16 | 691 | 0.0 | 0.1− | 2006 05 06 | 691 | 0.0 | 0.1+ | | |
| 2002 06 11 | 644 | 0.2+ | 0.1− | 2004 12 16 | 691 | 0.1+ | 0.2+ | 2006 05 06 | 691 | 0.2+ | 0.1+ | | |
| 2003 09 30 | 691 | 0.1− | 0.1+ | 2004 12 16 | 691 | 0.0 | 0.4+ | 2006 05 06 | 691 | 0.3+ | 0.4+ | | |
| 2003 09 30 | 691 | 0.2+ | 0.1+ | 2006 04 09 | 691 | 0.7+ | 0.5+ | 2006 05 20 | G96 | 0.4− | 0.2+ | | |
| 2003 09 30 | 691 | 0.2+ | 0.5+ | 2006 04 09 | 691 | 0.2− | 0.1+ | 2006 05 20 | G96 | 0.5− | 0.0 | | |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2006 04 09 | 691 | 0.3+ | 0.2− | 2006 05 20 | G96 | 0.3− | 0.1+ | | |
| 2003 10 19 | 645 | 0.0 | 0.0 | 2006 05 02 | G96 | 0.2− | 0.0 | 2006 05 20 | G96 | 0.1− | 0.1− | | |

**2006 JL$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.89641 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27463766 | $\omega$ | 236.84483 | | +0.47605459 | | +0.87696547 |
| $a$ | 2.3440272 | $\Omega$ | 61.71676 | | −0.78000848 | | +0.45551795 |
| $e$ | 0.2343562 | $i$ | 4.27222 | | −0.40615120 | | +0.15308479 |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 699 | 0.6− | 0.6− | 2003 10 06 | 699 | 0.4− | 0.9− | 2006 05 06 | 691 | 0.3− | 0.1− | | |
| 2003 09 16 | 699 | 0.3− | 0.9+ | 2006 04 26 | 807 | 0.4− | 0.3− | 2006 05 06 | 691 | 0.1+ | 0.1+ | | |
| 2003 09 16 | 699 | 0.6− | 0.0 | 2006 04 26 | 807 | 0.1− | 0.5− | 2006 05 07 | G96 | 0.3− | 0.4− | | |
| 2003 09 16 | 699 | 0.3+ | 0.4+ | 2006 04 27 | 691 | 0.3− | 0.3− | 2006 05 07 | G96 | 0.3− | 0.2+ | | |
| 2003 09 22 | 691 | 0.2+ | 0.0 | 2006 04 27 | 691 | 0.3− | 0.0 | 2006 05 07 | G96 | 0.1− | 0.1− | | |
| 2003 09 22 | 691 | 0.1+ | 0.1+ | 2006 04 27 | 691 | 0.0 | 0.3+ | 2006 05 07 | G96 | 0.1− | 0.4− | | |
| 2003 09 22 | 691 | 0.3+ | 0.1+ | 2006 04 30 | 699 | 0.7+ | 0.1− | 2006 05 08 | 691 | 0.3+ | 0.5− | | |
| 2003 09 28 | 704 | 0.1− | 0.4+ | 2006 04 30 | 699 | 0.3− | 0.5− | 2006 05 08 | 691 | 0.1− | 0.9+ | | |
| 2003 09 28 | 704 | 0.2+ | 0.1+ | 2006 04 30 | 699 | 1.1+ | 0.4+ | 2006 05 08 | 691 | 0.5+ | 0.5− | | |
| 2003 09 28 | 704 | 0.0 | 0.3− | 2006 04 30 | 699 | 1.7+ | 0.8+ | 2006 05 22 | G96 | 0.1+ | 0.1+ | | |
| 2003 09 28 | 704 | 0.1+ | 0.1− | 2006 05 05 | G96 | 0.3− | 0.0 | 2006 05 22 | G96 | 0.5− | 0.1+ | | |
| 2003 09 28 | 704 | 0.1− | 0.2− | 2006 05 05 | G96 | 0.7− | 0.5+ | 2006 05 22 | G96 | 0.7− | 0.1+ | | |
| 2003 10 06 | 699 | (2.9+ | 1.2−) | 2006 05 05 | G96 | 0.5− | 0.2− | 2006 05 22 | G96 | 0.2− | 0.1+ | | |
| 2003 10 06 | 699 | 0.0 | 1.0− | 2006 05 05 | G96 | 0.2+ | 0.2− | | | | | | |
| 2003 10 06 | 699 | 0.7− | 0.4+ | 2006 05 06 | 691 | 0.2+ | 0.1+ | | | | | | |

**2006 JR$_{27}$ = 2006 GW$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.93127 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21839257 | $\omega$ | 110.97202 | | −0.99287577 | | +0.10591022 |
| $a$ | 2.7309315 | $\Omega$ | 75.13942 | | −0.11900845 | | −0.90409150 |
| $e$ | 0.0234313 | $i$ | 3.23810 | | +0.00589083 | | −0.41400674 |
| $P$ | 4.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 691 | 0.5− | 0.2+ | 2003 11 20 | 645 | 0.1− | 0.0 | 2006 05 02 | G96 | 0.4− | 0.1+ |
| 2003 10 19 | 691 | 0.1− | 0.3+ | 2005 01 17 | 691 | 0.0 | 0.2+ | 2006 05 07 | 691 | 0.2+ | 0.4+ |
| 2003 10 19 | 691 | 0.2+ | 0.3+ | 2005 01 17 | 691 | 0.0 | 0.2+ | 2006 05 07 | 691 | 0.0 | 0.2+ |
| 2003 10 23 | 645 | 0.1+ | 0.0 | 2005 01 17 | 691 | 0.1+ | 0.3+ | 2006 05 07 | 691 | 0.4+ | 0.6+ |
| 2003 10 23 | 645 | 0.0 | 0.1+ | 2006 04 08 | 691 | 0.3+ | 0.1+ | 2006 05 23 | G96 | 0.3− | 0.2+ |
| 2003 10 24 | 645 | 0.0 | 0.1+ | 2006 04 08 | 691 | 0.2+ | 0.2+ | 2006 05 23 | G96 | 0.2− | 0.1− |
| 2003 10 24 | 645 | 0.1− | 0.1+ | 2006 04 08 | 691 | 0.2+ | 0.3+ | 2006 05 23 | G96 | 0.0 | 0.4+ |
| 2003 11 16 | 645 | 0.0 | 0.0 | 2006 05 02 | G96 | 0.2− | 0.1− | 2006 05 23 | G96 | 0.4− | 0.2− |
| 2003 11 16 | 645 | 0.0 | 0.0 | 2006 05 02 | G96 | 0.2+ | 0.1− | | | | |
| 2003 11 20 | 645 | 0.1− | 0.1− | 2006 05 02 | G96 | 0.4− | 0.0 | | | | |

**2006 JQ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.78790 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27977508 | $\omega$ | 88.09883 | | −0.75758196 | | −0.64746174 |
| $a$ | 2.3152436 | $\Omega$ | 51.53971 | | +0.54890745 | | −0.70059992 |
| $e$ | 0.1022720 | $i$ | 6.07303 | | +0.35322824 | | −0.29992172 |
| $P$ | 3.52 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.0 | 2002 03 11 | 644 | 0.3− | 0.7+ | 2006 05 08 | 691 | 0.2− | 0.3− |
| 2000 09 26 | 645 | 0.0 | 0.1+ | 2002 03 11 | 644 | 0.3+ | 1.0+ | 2006 05 20 | 691 | 0.0 | 0.2− |
| 2002 01 21 | 644 | 0.1− | 0.7− | 2002 03 11 | 644 | 0.4+ | 0.9+ | 2006 05 20 | 691 | 0.0 | 0.2+ |
| 2002 01 21 | 644 | 0.2− | 0.7− | 2006 05 04 | 691 | 0.1− | 0.2+ | 2006 05 20 | 691 | 0.1+ | 0.2+ |
| 2002 01 21 | 644 | 0.2− | 0.9− | 2006 05 04 | 691 | 0.0 | 0.2− | 2006 06 02 | 691 | 0.3+ | 0.3+ |
| 2002 02 08 | 704 | 0.1− | 0.8+ | 2006 05 04 | 691 | 0.3− | 0.6− | 2006 06 02 | 691 | 0.1+ | 0.1− |
| 2002 02 08 | 704 | 0.0 | 0.4− | 2006 05 08 | 691 | 0.3− | 0.0 | 2006 06 02 | 691 | 0.3+ | 0.4+ |
| 2002 02 08 | 704 | 0.2+ | 0.1− | 2006 05 08 | 691 | 0.2+ | 0.1− | | | | |

**2006 JH$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.58417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21221444 | $\omega$ | 226.09612 | | +0.50993392 | | +0.84947709 |
| $a$ | 2.7836807 | $\Omega$ | 75.02261 | | −0.74357072 | | +0.51447822 |
| $e$ | 0.2384449 | $i$ | 8.06227 | | −0.43251588 | | +0.11705058 |
| $P$ | 4.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.3− | 1.0− | 2002 08 13 | 644 | 0.2+ | 0.6+ | 2006 05 05 | 691 | 0.1− | 0.1− |
| 2002 07 16 | 644 | 0.3− | 0.8− | 2002 08 13 | 644 | 0.1+ | 0.7+ | 2006 05 05 | 691 | 0.2− | 0.0 |
| 2002 07 16 | 644 | 0.2− | 1.0− | 2002 08 13 | 644 | 0.2+ | 0.6+ | 2006 05 05 | 691 | 0.1+ | 0.1− |
| 2002 07 29 | 644 | 0.2+ | 0.4+ | 2006 03 26 | 691 | 0.2+ | 0.1− | 2006 05 07 | 691 | 0.7+ | 0.0 |
| 2002 07 29 | 644 | 0.2+ | 0.2+ | 2006 03 26 | 691 | 0.0 | 0.1+ | 2006 05 07 | 691 | 0.4− | 0.4+ |
| 2002 07 29 | 644 | 0.2− | 0.3+ | 2006 03 26 | 691 | (1.2+ | 4.1−) | 2006 05 07 | 691 | 0.2− | 0.1− |

**2006 JN$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.45204 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21225292 | $\omega$ | 355.93050 | | +0.23365430 | | +0.96528246 |
| $a$ | 2.7833443 | $\Omega$ | 287.55180 | | −0.88859301 | | +0.16323465 |
| $e$ | 0.1968580 | $i$ | 7.03483 | | −0.39472538 | | +0.20392209 |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 09 | 691 | 0.2− | 0.1− | 2002 07 28 | 608 | 0.3− | 1.5− | 2005 01 16 | 691 | 0.0 | 0.0 |
| 2000 01 09 | 691 | 0.0 | 0.0 | 2002 08 06 | 644 | 0.1+ | 1.2+ | 2006 04 21 | E12 | 0.7+ | 0.2− |
| 2000 01 09 | 691 | 0.1+ | 0.2+ | 2002 08 06 | 644 | 0.0 | 1.2+ | 2006 04 21 | E12 | 1.3− | 0.5− |
| 2002 07 14 | 704 | 0.2− | 1.2− | 2002 08 06 | 644 | 0.1+ | 1.2+ | 2006 04 21 | E12 | 1.3− | 1.1+ |
| 2002 07 14 | 704 | 0.3− | 0.5+ | 2002 08 14 | 704 | 0.5+ | 1.1+ | 2006 04 21 | E12 | 0.3− | 1.8+ |
| 2002 07 14 | 704 | 0.7− | 0.0 | 2002 08 14 | 704 | 0.4+ | 0.5− | 2006 05 06 | 291 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 0.8− | 0.1+ | 2002 08 14 | 704 | 0.5+ | 0.7+ | 2006 05 06 | 291 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 0.0 | 0.7+ | 2002 08 14 | 704 | 0.6+ | 0.3− | 2006 05 06 | 291 | 0.2+ | 0.2+ |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2003 11 20 | 691 | 0.3+ | 0.5+ | 2006 05 07 | 291 | 0.1+ | 0.0 |
| 2002 07 22 | 644 | 0.0 | 0.4+ | 2003 11 20 | 691 | 0.2− | 0.1+ | 2006 05 07 | 291 | 0.1+ | 0.2+ |
| 2002 07 22 | 644 | 0.3+ | 0.4+ | 2003 11 20 | 691 | 0.3− | 0.2+ | 2006 05 07 | 291 | 0.0 | 0.1− |
| 2002 07 28 | 608 | 0.8− | 1.0− | 2005 01 16 | 691 | 0.2+ | 0.1+ | | | | |
| 2002 07 28 | 608 | 0.2− | 1.2− | 2005 01 16 | 691 | 0.1+ | 0.1+ | | | | |

**2006 JW$_{41}$ = 2004 LL$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.01733 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.08262009 | $\omega$ | 194.77702 | | +0.96796174 | | −0.25109535 |
| $a$ | 5.2209027 | $\Omega$ | 179.75711 | | +0.24849685 | | +0.95730150 |
| $e$ | 0.0564591 | $i$ | 14.94421 | | +0.03604696 | | +0.14326536 |
| $P$ | 11.93 | $H$ | 13.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 691 | 0.0 | 0.2− | 2003 05 29 | 691 | 0.8+ | 0.6+ | 2006 05 08 | G96 | 0.3+ | 0.4+ |
| 1996 10 08 | 691 | 0.0 | 0.4+ | 2003 05 29 | 691 | 1.1+ | 0.2+ | 2006 05 08 | 291 | 0.1− | 0.1+ |
| 1996 10 08 | 691 | 0.0 | 0.6+ | 2004 05 28 | 291 | 0.4− | 0.2− | 2006 05 08 | G96 | 0.3+ | 0.4+ |
| 2002 04 05 | 291 | 0.1− | 0.2+ | 2004 05 28 | 291 | 0.4− | 0.0 | 2006 05 08 | G96 | 0.4+ | 0.3+ |
| 2002 04 05 | 291 | 0.3− | 0.3+ | 2004 05 28 | 291 | 0.3− | 0.1− | 2006 05 08 | 291 | 0.1+ | 0.1+ |
| 2002 04 05 | 291 | 0.1+ | 0.4+ | 2004 06 12 | 691 | 0.1− | 0.1− | 2006 05 09 | G96 | 0.1− | 0.2+ |
| 2002 04 20 | 644 | 0.0 | 0.4+ | 2004 06 12 | 691 | 0.2+ | 0.4− | 2006 05 09 | G96 | 0.3+ | 0.0 |
| 2002 04 20 | 644 | 0.3+ | 0.0 | 2004 06 12 | 691 | 0.0 | 0.4− | 2006 05 09 | G96 | 0.1+ | 0.3+ |
| 2002 04 20 | 644 | 0.0 | 0.4+ | 2004 06 19 | 691 | 0.1− | 0.2− | 2006 05 09 | G96 | 0.0 | 0.2+ |
| 2002 04 21 | 691 | 0.0 | 0.4+ | 2004 06 19 | 691 | 0.0 | 0.3− | 2006 05 09 | 291 | 0.0 | 0.4+ |
| 2002 04 21 | 691 | 0.2− | 0.2+ | 2004 06 19 | 691 | 0.1− | 0.3− | 2006 05 09 | 291 | 0.1− | 0.2+ |
| 2002 04 21 | 691 | 0.1− | 0.3+ | 2006 05 07 | 691 | 0.0 | 0.1+ | 2006 05 09 | 291 | 0.4− | 0.0 |
| 2003 05 06 | 691 | 0.4− | 0.3− | 2006 05 07 | 691 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.4+ | 0.2+ |
| 2003 05 06 | 691 | 0.3− | 0.4− | 2006 05 07 | 691 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.2+ | 0.4+ |
| 2003 05 06 | 691 | 0.2− | 0.1− | 2006 05 08 | G96 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.1− |
| 2003 05 29 | 691 | 0.9+ | 0.5+ | 2006 05 08 | 291 | 0.1− | 0.1+ | | | | |

**2006 JL$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.49274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17080161 | $\omega$ | 140.79625 | | −0.89536384 | | +0.38660359 |
| $a$ | 3.2171754 | $\Omega$ | 63.29122 | | −0.44477373 | | −0.75138036 |
| $e$ | 0.1161174 | $i$ | 14.32654 | | −0.02235897 | | −0.53475716 |
| $P$ | 5.77 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.1− | 0.5− | 2003 11 30 | 291 | 0.0 | 0.0 | 2006 04 21 | 703 | 0.4− | 0.0 |
| 2000 04 12 | 691 | 0.0 | 0.4− | 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 05 06 | 691 | (0.1− | 2.0+) |
| 2000 04 12 | 691 | 0.3− | 0.4− | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 05 06 | 691 | 0.4+ | 0.3+ |
| 2000 04 27 | 699 | 0.1+ | 0.2− | 2003 12 19 | 691 | 0.2− | 0.3+ | 2006 05 06 | 691 | 0.3+ | 0.4+ |
| 2000 04 27 | 699 | 0.1− | 0.2+ | 2005 01 15 | 699 | 0.5+ | 1.0+ | 2006 05 09 | 691 | 0.4+ | 0.5+ |
| 2000 04 27 | 699 | 0.2+ | 0.2− | 2005 01 15 | 699 | 0.3− | 0.0 | 2006 05 09 | 691 | 0.4+ | 0.8+ |
| 2000 04 27 | 699 | 0.2+ | 0.8+ | 2005 01 15 | 699 | 0.4− | 0.0 | 2006 05 09 | 691 | 0.4+ | 0.3+ |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2005 01 15 | 699 | 0.8+ | 1.1+ | 2006 06 19 | G96 | 0.2− | 0.0 |
| 2000 05 04 | 645 | 0.1− | 0.0 | 2006 04 21 | 703 | 0.7− | 0.1+ | 2006 06 19 | G96 | 0.7− | 0.2− |
| 2003 11 30 | 291 | 0.2− | 0.1+ | 2006 04 21 | 703 | 0.3− | 0.1+ | 2006 06 19 | G96 | 0.0 | 0.0 |
| 2003 11 30 | 291 | 0.1+ | 0.1+ | 2006 04 21 | 703 | 0.9− | 1.2− | 2006 06 19 | G96 | 0.9− | 0.7− |

**2006 JR$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.70872 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22914599 | $\omega$ | 225.34400 | | +0.38770944 | | +0.91173342 |
| $a$ | 2.6448103 | $\Omega$ | 67.91072 | | −0.79884836 | | +0.40580977 |
| $e$ | 0.3332404 | $i$ | 8.42332 | | −0.45991596 | | +0.06372291 |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 704 | 0.1− | 0.5+ | 2006 05 06 | G96 | 0.1− | 0.2+ | 2006 05 27 | 704 | 0.5+ | 0.1+ |
| 2002 08 13 | 704 | 0.1− | 0.1− | 2006 05 08 | E12 | 0.3+ | 0.3+ | 2006 05 27 | 704 | 0.9− | 0.4+ |
| 2002 08 13 | 704 | 0.3+ | 0.6− | 2006 05 08 | E12 | 0.2− | 0.6+ | 2006 06 04 | 704 | 0.5− | 0.1− |
| 2002 08 13 | 704 | 0.5− | 0.3+ | 2006 05 08 | E12 | 0.2− | 0.1+ | 2006 06 04 | 704 | 0.6− | 0.3− |
| 2002 08 13 | 704 | 0.0 | 1.4+ | 2006 05 16 | E12 | 0.7− | 0.3+ | 2006 06 04 | 704 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 21 | 644 | 0.3− | 0.2− | 2006 05 16 | E12 | 0.2+ | 0.1− | 2006 06 04 | 704 | 0.1+ | 0.7+ | | |
| 2002 08 21 | 644 | 0.0 | 0.4− | 2006 05 16 | E12 | 0.7− | 0.1− | 2006 06 14 | 644 | 0.2− | 0.0 | | |
| 2002 08 21 | 644 | 0.0 | 0.5− | 2006 05 16 | E12 | 0.5+ | 0.4− | 2006 06 14 | 644 | 0.0 | 0.1− | | |
| 2002 09 01 | 644 | 0.2+ | 0.1− | 2006 05 25 | 704 | 0.3− | 0.2− | 2006 06 14 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 01 | 644 | 0.3+ | 0.1− | 2006 05 25 | 704 | 1.3+ | 0.4− | 2006 06 16 | 644 | 0.1+ | 0.2+ | | |
| 2002 09 01 | 644 | 0.1+ | 0.1− | 2006 05 25 | 704 | 0.4+ | 0.6− | 2006 06 16 | 644 | 0.3+ | 0.3+ | | |
| 2006 05 06 | G96 | 0.5+ | 0.1− | 2006 05 25 | 704 | 0.4− | 0.5− | 2006 06 16 | 644 | 0.3− | 0.3− | | |
| 2006 05 06 | G96 | 0.0 | 0.1− | 2006 05 27 | 704 | 0.6− | 0.1− | | | | | | |
| 2006 05 06 | G96 | 0.0 | 0.2+ | 2006 05 27 | 704 | 1.0+ | 0.3− | | | | | | |

**2006 JG$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.69761 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23913636 | $\omega$ | 239.37410 | | +0.57234112 | | +0.78619974 |
| $a$ | 2.5706265 | $\Omega$ | 67.35836 | | −0.63901915 | | +0.60572849 |
| $e$ | 0.1897179 | $i$ | 14.62660 | | −0.51388732 | | +0.12240492 |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.3− | 0.3+ | 2006 05 07 | G96 | 0.4− | 0.5− | 2006 05 21 | 291 | 0.5+ | 0.5+ | | |
| 2003 11 19 | 691 | 0.0 | 0.0 | 2006 05 07 | G96 | 0.2− | 0.2− | 2006 05 21 | G96 | 0.1+ | 0.3− | | |
| 2003 11 19 | 691 | 0.1+ | 0.5+ | 2006 05 07 | G96 | 0.2+ | 0.2− | 2006 05 21 | G96 | 0.1− | 0.1+ | | |
| 2003 11 24 | 695 | 0.2+ | 0.2+ | 2006 05 09 | G96 | 0.5− | 0.3− | 2006 05 21 | G96 | 0.1+ | 0.0 | | |
| 2003 11 24 | 695 | 0.7+ | 0.2− | 2006 05 09 | G96 | 0.1− | 0.8− | 2006 05 21 | G96 | 0.2− | 0.2− | | |
| 2003 12 19 | 291 | 0.1− | 0.1+ | 2006 05 09 | G96 | 0.3− | 0.2− | 2006 05 21 | G96 | 0.1− | 0.0 | | |
| 2003 12 19 | 291 | 0.1− | 0.0 | 2006 05 09 | G96 | 0.5− | 0.6− | 2006 05 21 | G96 | 0.6− | 0.1+ | | |
| 2003 12 19 | 291 | 0.4− | 0.0 | 2006 05 21 | 291 | 0.4+ | 0.6+ | 2006 05 21 | G96 | 0.5− | 0.2+ | | |
| 2006 05 07 | G96 | 0.4− | 0.4− | 2006 05 21 | 291 | 0.5+ | 0.6+ | 2006 05 21 | G96 | 0.1+ | 0.0 | | |

**2006 JE$_{46}$ = 1999 VN$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.31878 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24661194 | $\omega$ | 18.14795 | | −0.47511327 | | +0.87763270 |
| $a$ | 2.5184112 | $\Omega$ | 223.54473 | | −0.81829991 | | −0.46720630 |
| $e$ | 0.1261877 | $i$ | 5.28599 | | −0.32350059 | | −0.10714067 |
| $P$ | 4.00 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.1+ | 0.5+ | 2002 07 29 | 644 | 0.3− | 0.3+ | 2005 03 03 | 703 | 0.0 | 0.4+ | | |
| 1999 11 09 | 704 | 0.7− | 0.8− | 2002 08 05 | 644 | 0.3− | 0.2− | 2005 03 03 | 703 | 0.5+ | 0.5− | | |
| 1999 11 09 | 704 | 1.0− | 0.7+ | 2002 08 05 | 644 | 0.3− | 0.1+ | 2005 03 03 | 703 | 0.9− | 0.5− | | |
| 1999 11 30 | 691 | 0.2+ | 0.2− | 2002 08 05 | 644 | 0.0 | 0.1− | 2005 03 17 | 703 | 0.2− | 1.0+ | | |
| 1999 11 30 | 691 | 0.2+ | 0.0 | 2003 10 23 | 691 | 0.3+ | 0.0 | 2005 03 17 | 703 | 0.4+ | 1.8+ | | |
| 1999 11 30 | 691 | 0.0 | 0.2− | 2003 10 23 | 691 | 0.3+ | 0.2− | 2005 03 17 | 703 | 0.0 | 0.3+ | | |
| 2002 06 10 | 644 | 0.1− | 0.7+ | 2003 10 23 | 691 | 0.1− | 0.1− | 2005 03 17 | 703 | 1.6+ | 1.7+ | | |
| 2002 06 10 | 644 | 0.3− | 1.2+ | 2003 11 16 | 691 | 0.2− | 0.1+ | 2006 05 10 | G96 | 0.0 | 0.4+ | | |
| 2002 06 10 | 644 | 0.1− | 0.6+ | 2003 11 16 | 691 | 0.1− | 0.1+ | 2006 05 10 | G96 | 0.1− | 0.6+ | | |
| 2002 06 23 | 950 | 0.1− | 0.2+ | 2003 11 16 | 691 | 0.3− | 0.2+ | 2006 05 10 | G96 | 0.4− | 0.3+ | | |
| 2002 06 23 | 950 | 0.0 | 0.1+ | 2003 11 23 | 291 | 0.1+ | 0.3+ | 2006 05 10 | G96 | 0.1− | 0.2+ | | |
| 2002 06 23 | 950 | 0.1− | 0.1+ | 2003 11 23 | 291 | 0.0 | 0.1+ | 2006 05 11 | G96 | 0.1+ | 0.9+ | | |
| 2002 07 03 | 644 | 0.1− | 0.7− | 2003 11 23 | 291 | 0.1+ | 0.2+ | 2006 05 11 | G96 | 0.2+ | 0.3+ | | |
| 2002 07 03 | 644 | 0.4+ | 0.7− | 2003 11 30 | 691 | 0.1− | 0.4+ | 2006 05 11 | G96 | 0.0 | 0.9+ | | |
| 2002 07 03 | 644 | 0.2− | 0.7− | 2003 11 30 | 691 | 0.0 | 0.5+ | 2006 05 11 | G96 | 0.3+ | 0.7+ | | |
| 2002 07 14 | 704 | 0.2+ | 0.6+ | 2003 11 30 | 691 | 0.1− | 0.3+ | 2006 06 11 | 644 | 0.3− | 0.1+ | | |
| 2002 07 14 | 704 | 0.3− | 0.5− | 2005 02 14 | 703 | 0.5+ | 0.1+ | 2006 06 11 | 644 | 0.4− | 0.0 | | |
| 2002 07 14 | 704 | 1.1+ | 1.5+ | 2005 02 14 | 703 | 0.2− | 1.2+ | 2006 06 11 | 644 | 0.2− | 0.4+ | | |
| 2002 07 14 | 704 | 0.5− | 1.2+ | 2005 02 14 | 703 | 0.9+ | 0.9+ | 2006 08 13 | 644 | 0.3+ | 0.4+ | | |
| 2002 07 29 | 644 | 0.2+ | 0.1+ | 2005 02 14 | 703 | 1.7− | 0.5− | 2006 08 13 | 644 | 0.2− | 0.3− | | |
| 2002 07 29 | 644 | 0.0 | 0.4+ | 2005 03 03 | 703 | 1.2+ | 0.7+ | 2006 08 13 | 644 | 0.1− | 0.2− | | |

**2006 JE$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.84509 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25780644 | $\omega$ | 227.89427 | | +0.91500782 | | +0.39451186 |
| $a$ | 2.4449700 | $\Omega$ | 108.71262 | | −0.33884969 | | +0.86504516 |
| $e$ | 0.2412070 | $i$ | 5.11161 | | −0.21895564 | | +0.30993105 |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 699 | 0.3− | 0.4− | 2003 10 16 | 644 | 0.2− | 0.3+ | 2006 04 27 | 691 | 0.0 | 0.1− | | |
| 2003 09 28 | 699 | 0.9− | 0.2+ | 2003 10 22 | 608 | 1.0− | 0.8− | 2006 05 01 | 691 | 0.8− | 0.1− | | |
| 2003 09 28 | 699 | 0.5− | 0.6+ | 2003 10 22 | 608 | 0.6− | 1.3− | 2006 05 01 | 691 | 0.3+ | 0.2− | | |
| 2003 09 28 | 699 | 0.8+ | 0.2− | 2003 10 22 | 608 | 0.2− | 0.9− | 2006 05 01 | 691 | 0.1+ | 0.2+ | | |
| 2003 09 28 | 699 | 0.1− | 0.0 | 2003 10 29 | 699 | 1.0− | 0.2− | 2006 05 07 | G96 | 0.1+ | 0.4− | | |
| 2003 09 28 | 699 | 0.3+ | 1.2− | 2003 10 29 | 699 | 0.5+ | 0.0 | 2006 05 07 | G96 | 0.3− | 0.7− | | |
| 2003 09 28 | 699 | 0.2+ | 1.0+ | 2003 10 29 | 699 | 1.4+ | 1.4+ | 2006 05 07 | G96 | 0.1+ | 0.8− | | |
| 2003 09 28 | 699 | 0.8+ | 0.6+ | 2003 10 29 | 699 | 1.0+ | 0.4+ | 2006 05 07 | G96 | 0.2+ | 0.6− | | |
| 2003 10 16 | 644 | 0.1− | 0.3+ | 2006 04 27 | 691 | 0.1− | 0.2+ | | | | | | |
| 2003 10 16 | 644 | 0.2− | 0.2+ | 2006 04 27 | 691 | 0.4+ | 0.6+ | | | | | | |

**2006 JG$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.25626 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28412588 | $\omega$ | 326.12944 | | +0.69017900 | | −0.71969269 |
| $a$ | 2.2915474 | $\Omega$ | 80.09840 | | +0.67975222 | | +0.60902026 |
| $e$ | 0.2035673 | $i$ | 4.39367 | | +0.24817306 | | +0.33337180 |
| $P$ | 3.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.7− | 0.9+ | 2005 01 07 | 704 | 0.1− | 0.4+ | 2006 04 20 | 691 | 0.1− | 0.1+ | | |
| 2000 09 24 | 704 | 0.9− | 0.2+ | 2005 01 07 | 704 | 0.4+ | 0.8+ | 2006 05 02 | G96 | 0.8− | 0.0 | | |
| 2000 09 24 | 704 | 0.6− | 1.1+ | 2005 01 07 | 704 | 0.7− | 0.8+ | 2006 05 02 | G96 | 0.6− | 0.0 | | |
| 2000 09 24 | 704 | 0.5+ | 0.5+ | 2005 01 07 | 704 | 1.0+ | 0.9+ | 2006 05 02 | G96 | 0.9− | 0.0 | | |
| 2000 09 24 | 704 | 0.5+ | 0.4+ | 2005 01 17 | 691 | 0.1+ | 0.0 | 2006 05 02 | G96 | 0.7− | 0.0 | | |
| 2004 12 21 | 703 | 0.1+ | 1.0− | 2005 01 17 | 691 | 0.1− | 0.0 | 2006 05 06 | 691 | 1.5+ | 0.2− | | |
| 2004 12 21 | 703 | 0.9+ | 0.2+ | 2005 01 17 | 691 | 0.1− | 0.0 | 2006 05 06 | 691 | 0.1+ | 0.1− | | |
| 2004 12 21 | 703 | 0.9− | 1.6+ | 2006 04 20 | 691 | 0.2− | 0.8+ | 2006 05 06 | 691 | 0.1− | 0.2+ | | |
| 2004 12 21 | 703 | 0.4+ | 0.3− | 2006 04 20 | 691 | 0.1− | 0.2+ | | | | | | |

**2006 JH$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.62201 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18558192 | $\omega$ | 249.41937 | | +0.01261493 | | +0.99915458 |
| $a$ | 3.0440067 | $\Omega$ | 21.41621 | | −0.87287559 | | +0.03009247 |
| $e$ | 0.0779932 | $i$ | 6.15152 | | −0.48777974 | | −0.02801003 |
| $P$ | 5.31 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.1− | 0.5+ | 2003 11 20 | 704 | 0.8+ | 0.5− | 2006 04 09 | 691 | 0.2+ | 0.4+ | | |
| 2002 08 20 | 644 | 0.4− | 0.7+ | 2003 11 20 | 691 | 0.1− | 0.2+ | 2006 04 09 | 691 | 0.1+ | 0.6+ | | |
| 2002 08 20 | 644 | 0.6− | 0.5+ | 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 04 09 | 691 | 0.3+ | 0.2+ | | |
| 2002 08 29 | 644 | 0.1− | 0.6+ | 2003 11 20 | 691 | 0.4− | 0.3− | 2006 05 05 | 699 | 0.1− | 0.5− | | |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2003 12 18 | 691 | 0.1− | 0.2+ | 2006 05 05 | 699 | 0.3+ | 0.6+ | | |
| 2002 08 29 | 644 | 0.7− | 0.8+ | 2003 12 18 | 691 | 0.1+ | 0.2+ | 2006 05 05 | 699 | 1.5+ | 0.3+ | | |
| 2002 09 05 | 699 | 0.7− | 0.6+ | 2003 12 18 | 691 | 0.1− | 0.3+ | 2006 05 05 | 699 | 0.9− | 0.3− | | |
| 2002 09 05 | 704 | (0.5+ | 3.2+) | 2005 01 18 | 691 | 0.2− | 0.7+ | 2006 05 09 | G96 | 0.0 | 0.3+ | | |
| 2002 09 05 | 699 | 0.6− | 0.7+ | 2005 01 18 | 691 | 0.1+ | 0.5+ | 2006 05 09 | G96 | 0.1+ | 0.2+ | | |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2005 01 18 | 691 | 0.2+ | 0.4+ | 2006 05 09 | G96 | 0.1+ | 0.1+ | | |
| 2002 09 05 | 699 | 0.9− | 0.1+ | 2005 02 04 | 460 | 0.4− | 0.0 | 2006 05 09 | G96 | 0.1+ | 0.6+ | | |
| 2002 09 05 | 704 | 2.3− | 0.3+ | 2005 02 04 | 460 | 2.0+ | 0.3− | 2006 05 31 | G96 | 0.5− | 0.2+ | | |
| 2002 09 05 | 699 | 0.7+ | 0.0 | 2005 02 04 | 460 | 0.2− | 1.0+ | 2006 05 31 | G96 | 0.1+ | 0.1+ | | |
| 2003 11 20 | 704 | 0.5+ | 0.0 | 2005 02 10 | 460 | 0.9+ | 0.9− | 2006 05 31 | G96 | 0.3− | 0.0 | | |
| 2003 11 20 | 704 | 0.1− | 0.4− | 2005 02 10 | 460 | 0.5+ | 0.2− | 2006 05 31 | G96 | 0.1− | 0.3+ | | |
| 2003 11 20 | 704 | 0.6+ | 0.3+ | 2005 02 10 | 460 | 0.7− | 1.7+ | | | | | | |

**2006 JB$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.30576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28463417 | $\omega$ | 106.60231 | | −0.10934539 | | +0.99294914 |
| $a$ | 2.2888185 | $\Omega$ | 156.97162 | | −0.95076622 | | −0.09104296 |
| $e$ | 0.0926277 | $i$ | 6.72027 | | −0.28997789 | | −0.07591558 |
| $P$ | 3.46 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 644 | 0.2+ | 0.4+ | 2003 07 24 | 644 | 0.1− | 0.4+ | 2006 05 05 | G96 | 0.3− | 0.1− |
| 2002 02 06 | 644 | 0.2+ | 0.2+ | 2003 07 24 | 644 | 0.2− | 0.3+ | 2006 05 24 | 699 | 0.2+ | 1.6+ |
| 2002 02 06 | 644 | 0.2− | 0.1+ | 2003 07 24 | 644 | 0.1− | 0.5+ | 2006 05 24 | 699 | 0.3+ | 0.5− |
| 2003 07 03 | 691 | 0.0 | 0.1− | 2006 05 05 | G96 | 0.2− | 0.3+ | 2006 05 24 | 699 | 0.5+ | 0.9− |
| 2003 07 03 | 691 | 0.1+ | 0.1− | 2006 05 05 | G96 | 0.3− | 0.1+ | 2006 05 24 | 699 | 0.6+ | 0.5− |
| 2003 07 03 | 691 | 0.0 | 0.1+ | 2006 05 05 | G96 | 0.9− | 0.1− | | | | |

**2006 JW$_{59}$ = 2004 TJ$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.99245 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28040131 | $\omega$ | 300.62221 | | −0.86465873 | | −0.50196086 |
| $a$ | 2.3117952 | $\Omega$ | 209.26181 | | +0.47378688 | | −0.80158699 |
| $e$ | 0.1358516 | $i$ | 2.34669 | | +0.16700680 | | −0.32479777 |
| $P$ | 3.51 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.0 | 0.2− | 2002 02 11 | 704 | 0.3+ | 0.8+ | 2004 10 13 | 691 | 0.4− | 0.0 |
| 2002 01 13 | 704 | 0.5− | 0.4− | 2002 02 11 | 704 | 0.1+ | 0.5+ | 2004 10 13 | 691 | 0.1− | 0.2+ |
| 2002 01 13 | 704 | 0.8− | 0.2− | 2002 02 11 | 704 | 0.5− | 1.1+ | 2006 05 01 | 695 | 0.1+ | 0.2+ |
| 2002 01 13 | 704 | 0.2− | 0.6− | 2002 02 11 | 704 | 0.2+ | 1.0+ | 2006 05 01 | 695 | 0.0 | 0.2+ |
| 2002 01 22 | 704 | 1.0− | 0.6− | 2002 02 21 | 691 | 0.3+ | 0.1− | 2006 05 02 | 695 | 0.0 | 0.6+ |
| 2002 01 22 | 704 | 0.1+ | 0.3+ | 2002 02 21 | 691 | 0.2+ | 0.3− | 2006 05 02 | 695 | 0.2+ | 0.2+ |
| 2002 01 22 | 704 | 0.2+ | 1.2+ | 2002 02 21 | 691 | 0.3+ | 0.3− | 2006 05 02 | 695 | 0.1+ | 0.1+ |
| 2002 02 06 | 644 | 0.3− | 0.2+ | 2004 10 07 | 291 | 0.3+ | 0.2+ | 2006 05 20 | G96 | 0.4+ | 0.1+ |
| 2002 02 06 | 644 | 0.3− | 0.1− | 2004 10 07 | 291 | 0.6+ | 0.2+ | 2006 05 20 | G96 | 0.2− | 0.4+ |
| 2002 02 06 | 644 | 0.3− | 0.2+ | 2004 10 07 | 291 | 0.1− | 0.0 | 2006 05 20 | G96 | 0.3+ | 0.4+ |
| 2002 02 11 | 704 | 0.2+ | 0.1+ | 2004 10 13 | 691 | 0.5− | 0.0 | 2006 05 20 | G96 | 0.2− | 0.2+ |

**2006 JO$_{60}$ = 2004 AK$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.24862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21326351 | $\omega$ | 304.31014 | | +0.99777656 | | +0.04301652 |
| $a$ | 2.7745444 | $\Omega$ | 53.27675 | | −0.01684742 | | +0.90180374 |
| $e$ | 0.1854865 | $i$ | 3.64142 | | −0.06448334 | | +0.42999952 |
| $P$ | 4.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 17 | 644 | 0.6− | 0.5+ | 2004 01 13 | 691 | 0.1− | 0.2+ | 2006 05 01 | 695 | 0.1+ | 0.1+ |
| 2002 06 17 | 644 | 0.0 | 0.1+ | 2004 01 13 | 691 | 0.0 | 0.1+ | 2006 05 02 | 695 | 0.1− | 0.2+ |
| 2002 06 17 | 644 | 0.5− | 0.5+ | 2004 01 13 | 691 | 0.1+ | 0.3+ | 2006 05 02 | 695 | 0.3− | 0.1+ |
| 2002 08 10 | 807 | 0.4+ | 0.1+ | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 05 20 | 691 | 0.1+ | 0.5− |
| 2002 08 10 | 807 | 0.1+ | 0.1− | 2004 01 28 | 691 | 0.0 | 0.3− | 2006 05 20 | 691 | 0.2+ | 0.5+ |
| 2002 08 10 | 807 | 0.2+ | 0.1+ | 2004 01 28 | 691 | 0.0 | 0.1− | 2006 05 20 | 691 | 0.2− | 0.0 |
| 2002 08 10 | 807 | 0.2+ | 0.3− | 2006 05 01 | 695 | 0.1− | 0.1+ | | | | |

**2006 JZ$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.95390 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26897833 | $\omega$ | 175.49172 | | +0.99923917 | | +0.03899736 |
| $a$ | 2.3767921 | $\Omega$ | 182.27354 | | −0.03619434 | | +0.92208961 |
| $e$ | 0.2022863 | $i$ | 0.77877 | | −0.01452772 | | +0.38500644 |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.0 | 0.1+ | 2003 08 25 | 704 | 0.2+ | 0.0 | 2005 03 08 | G96 | 0.2− | 0.1− |
| 1996 10 07 | 691 | 0.0 | 0.4+ | 2003 08 26 | 807 | 0.2− | 0.0 | 2005 03 08 | G96 | 0.0 | 0.2+ |
| 1996 10 07 | 691 | 0.3− | 0.5+ | 2003 08 26 | 807 | 0.0 | 0.0 | 2006 04 02 | 691 | 0.1+ | 0.2+ |
| 2003 08 04 | 704 | 0.5+ | 0.6− | 2003 09 04 | 691 | 0.2− | 0.1− | 2006 04 02 | 691 | 0.1+ | 0.3+ |
| 2003 08 04 | 704 | 0.3− | 0.3− | 2003 09 04 | 691 | 0.4− | 0.2+ | 2006 04 02 | 691 | 0.2+ | 0.0 |
| 2003 08 04 | 704 | 0.1− | 0.2− | 2003 09 04 | 691 | 0.2− | 0.3+ | 2006 05 01 | 695 | 0.0 | 0.0 |
| 2003 08 04 | 704 | 0.4+ | 0.3+ | 2003 09 14 | 699 | 0.4+ | 0.6+ | 2006 05 01 | 695 | 0.3− | 0.1+ |
| 2003 08 04 | 704 | 0.1+ | 0.2+ | 2003 09 14 | 699 | 1.3+ | 0.9− | 2006 05 02 | 695 | 0.2− | 0.1+ |
| 2003 08 25 | 704 | 0.2+ | 1.1+ | 2003 09 14 | 699 | 0.4− | 1.2− | 2006 05 02 | 695 | 0.1− | 0.0 |
| 2003 08 25 | 704 | 0.6+ | 0.2+ | 2003 09 14 | 699 | 0.7− | 1.5− | 2006 05 06 | 691 | 0.4+ | 0.1− |
| 2003 08 25 | 704 | 0.7+ | 0.5+ | 2005 03 08 | G96 | 0.5+ | 0.4+ | 2006 05 06 | 691 | 0.1− | 0.3+ |
| 2003 08 25 | 704 | 0.5+ | 0.0 | 2005 03 08 | G96 | 0.2− | 0.1− | 2006 05 06 | 691 | 0.1− | 0.3+ |

**2006 JN$_{62}$ = 2000 CU$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.91155 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17756029 | $\omega$ | 189.66065 | | +0.68220237 | | +0.72999711 |
| $a$ | 3.1350091 | $\Omega$ | 123.36876 | | −0.66748660 | | +0.64484071 |
| $e$ | 0.1939009 | $i$ | 2.83327 | | −0.29843183 | | +0.22646120 |
| $P$ | 5.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 691 | 0.4− | 0.2+ | 2003 10 24 | 704 | 1.2+ | 1.0+ | 2006 01 27 | G96 | 0.7+ | 0.2+ |
| 2000 02 08 | 691 | 0.2+ | 0.5− | 2003 10 24 | 704 | 0.5− | 0.0 | 2006 02 25 | G96 | 0.6+ | 0.7+ |
| 2000 02 08 | 691 | 0.0 | 0.7− | 2003 10 29 | 699 | 1.0− | 1.0− | 2006 02 25 | G96 | 0.1− | 0.1+ |
| 2003 10 05 | 291 | 0.0 | 0.1+ | 2003 10 29 | 699 | 0.7− | 0.3+ | 2006 02 25 | G96 | 0.5+ | 0.6+ |
| 2003 10 05 | 291 | 0.0 | 0.2+ | 2003 10 29 | 699 | 0.5+ | 1.2− | 2006 02 25 | G96 | 0.0 | 0.7+ |
| 2003 10 05 | 291 | 0.1− | 0.2+ | 2003 10 29 | 699 | 0.2− | 0.5+ | 2006 05 01 | 695 | 0.4− | 0.4+ |
| 2003 10 24 | 704 | 0.9− | 0.3+ | 2006 01 27 | G96 | 0.0 | 0.9+ | 2006 05 01 | 695 | 0.4− | 0.4+ |
| 2003 10 24 | 704 | 0.6+ | 0.4− | 2006 01 27 | G96 | 0.3+ | 0.3+ | 2006 05 02 | 695 | 0.4− | 0.4+ |
| 2003 10 24 | 704 | 0.5+ | 0.0 | 2006 01 27 | G96 | 0.3+ | 0.3+ | | | | |

**2006 JU$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.37592 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18854548 | $\omega$ | 188.61559 | | +0.74220083 | | −0.66523188 |
| $a$ | 3.0120254 | $\Omega$ | 213.54208 | | +0.62330768 | | +0.72975179 |
| $e$ | 0.1044571 | $i$ | 8.45764 | | +0.24622238 | | +0.15788880 |
| $P$ | 5.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.1+ | 2003 10 28 | 704 | 0.5− | 0.2− | 2005 02 04 | 703 | 0.1− | 0.1− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2003 10 28 | 704 | 0.5− | 1.0− | 2006 05 01 | 568 | 0.1+ | 0.4+ |
| 2003 09 28 | 691 | 0.2− | 0.2+ | 2003 11 18 | 644 | 0.3+ | 0.5+ | 2006 05 01 | 568 | 0.0 | 0.5+ |
| 2003 09 28 | 691 | 0.2− | 0.2+ | 2003 11 18 | 644 | 0.3+ | 0.6+ | 2006 05 01 | 568 | 0.1+ | 0.4+ |
| 2003 09 28 | 691 | 0.2− | 0.1+ | 2003 11 18 | 644 | 0.2+ | 0.4+ | 2006 05 02 | 568 | 0.3+ | 0.4+ |
| 2003 10 21 | 691 | 0.0 | 0.1+ | 2003 11 23 | 291 | 0.5+ | 0.1+ | 2006 05 03 | G96 | 0.3− | 0.0 |
| 2003 10 21 | 691 | 0.1+ | 0.2+ | 2003 11 23 | 291 | 0.4+ | 0.3− | 2006 05 03 | G96 | 0.5+ | 0.2+ |
| 2003 10 21 | 691 | 0.1+ | 0.3+ | 2003 11 23 | 291 | 0.1− | 0.2+ | 2006 05 03 | G96 | 0.4− | 0.1− |
| 2003 10 28 | 704 | 0.5− | 0.7− | 2005 02 04 | 703 | 0.9− | 0.4− | 2006 05 03 | G96 | 0.1− | 0.5− |
| 2003 10 28 | 704 | 0.5− | 0.7− | 2005 02 04 | 703 | 0.6+ | 0.2+ | | | | |
| 2003 10 28 | 704 | 0.4− | 0.8− | 2005 02 04 | 703 | 0.1− | 1.0− | | | | |

**2006 JJ$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.17322 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20957359 | $\omega$ | 81.06964 | | +0.39243284 | | +0.91558048 |
| $a$ | 2.8070169 | $\Omega$ | 212.48173 | | −0.89501520 | | +0.35812057 |
| $e$ | 0.1599011 | $i$ | 9.40963 | | −0.21200063 | | +0.18292633 |
| $P$ | 4.70 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 644 | 0.2+ | 0.1− | 2002 08 04 | 644 | 0.1+ | 0.1+ | 2006 05 02 | 568 | 0.3− | 0.3+ |
| 2002 07 17 | 644 | 0.3− | 0.0 | 2002 08 04 | 644 | 0.0 | 0.1+ | 2006 05 22 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 17 | 644 | 0.3+ | 0.3− | 2002 08 04 | 644 | 0.1+ | 0.0 | 2006 05 22 | G96 | 0.5+ | 0.4+ |
| 2002 07 28 | 644 | 0.2− | 0.1+ | 2006 05 01 | 568 | 0.0 | 0.1− | 2006 05 22 | G96 | 0.4− | 0.2− |
| 2002 07 28 | 644 | 0.2− | 0.2+ | 2006 05 01 | 568 | 0.0 | 0.1− | 2006 05 22 | G96 | 0.1− | 0.0 |
| 2002 07 28 | 644 | 0.0 | 0.0 | 2006 05 01 | 568 | 0.1+ | 0.1− | | | | |

**2006 JY$_{73}$ = 2000 TE$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.75493 | | | | | |
| $n$ | 0.27194516 | $\omega$ | 130.80209 | | +0.90375014 | −0.42801888 |
| $a$ | 2.3594738 | $\Omega$ | 254.54058 | | +0.39085198 | +0.83079186 |
| $e$ | 0.1894194 | $i$ | 0.35436 | | +0.17455779 | +0.35578748 |
| $P$ | 3.62 | $H$ | 18.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.3+ | 0.3+ | 2000 10 03 | 691 | 0.0 | 0.1− | 2000 11 18 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.8− | 0.1+ | 2000 10 03 | 691 | 0.1+ | 0.1− | 2006 05 01 | 568 | 0.2+ | 0.4+ |
| 2000 10 01 | 704 | 0.4+ | 0.8+ | 2000 10 03 | 691 | 0.0 | 0.1− | 2006 05 01 | 568 | 0.2+ | 0.3+ |
| 2000 10 01 | 704 | 0.5− | 0.4+ | 2000 11 18 | 691 | 0.1+ | 0.1+ | 2006 05 01 | 568 | 0.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.3+ | 0.1− | 2000 11 18 | 691 | 0.1− | 0.1+ | 2006 05 02 | 568 | 0.1− | 0.2+ |

**2006 JV$_{79}$ = 2005 EN$_{289}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.22823 | | | | | |
| $n$ | 0.22079414 | $\omega$ | 338.71983 | | +0.49972435 | −0.85325593 |
| $a$ | 2.7110926 | $\Omega$ | 81.02633 | | +0.81490880 | +0.40478035 |
| $e$ | 0.1688611 | $i$ | 8.68166 | | +0.29359705 | +0.32879657 |
| $P$ | 4.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 703 | 0.7+ | 0.4+ | 2006 05 09 | G96 | 0.0 | 0.4+ | 2006 05 21 | 691 | 0.2+ | 0.1− |
| 2005 03 09 | 703 | 0.8+ | 0.5+ | 2006 05 09 | G96 | 0.2− | 0.1− | 2006 05 21 | 691 | 0.5+ | 0.2+ |
| 2005 03 09 | 703 | 0.8+ | 0.9+ | 2006 05 09 | G96 | 0.1+ | 0.4+ | 2006 05 21 | 691 | 0.4+ | 0.0 |
| 2005 03 09 | 703 | 0.8− | 0.3− | 2006 05 09 | G96 | 0.2− | 0.0 | 2006 05 29 | 691 | 0.3+ | 0.2− |
| 2005 03 16 | 703 | 0.5− | 0.4− | 2006 05 21 | G96 | 0.0 | 0.4− | 2006 05 29 | 691 | 0.2+ | 0.2− |
| 2005 03 16 | 703 | 0.3+ | 0.2+ | 2006 05 21 | G96 | 0.1+ | 0.0 | 2006 05 29 | 691 | 0.3− | 0.1− |
| 2005 03 16 | 703 | (3.4− | 0.3−) | 2006 05 21 | G96 | 0.3− | 0.2+ | | | | |
| 2005 03 16 | 703 | 1.4− | 1.3− | 2006 05 21 | G96 | 0.9− | 0.2− | | | | |

**2006 JW$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.83821 | | | | | |
| $n$ | 0.22312318 | $\omega$ | 216.16977 | | +0.84982099 | +0.52242052 |
| $a$ | 2.6921934 | $\Omega$ | 112.19218 | | −0.46413588 | +0.80455668 |
| $e$ | 0.0979442 | $i$ | 4.32732 | | −0.24976421 | +0.28242759 |
| $P$ | 4.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.0 | 0.3+ | 2005 02 09 | 691 | 0.2− | 0.3+ | 2006 05 21 | 691 | 0.2− | 0.2+ |
| 2003 12 21 | 691 | 0.5− | 0.8+ | 2005 02 09 | 691 | 0.3− | 0.3+ | 2006 05 29 | 691 | 0.1+ | 0.0 |
| 2003 12 21 | 691 | 0.1+ | 0.3+ | 2006 05 06 | G96 | 0.2− | 0.1− | 2006 05 29 | 691 | 0.1+ | 0.2+ |
| 2005 02 01 | 691 | 0.3− | 0.0 | 2006 05 06 | G96 | 1.5− | 0.5+ | 2006 05 29 | 691 | 0.2+ | 0.1+ |
| 2005 02 01 | 691 | 0.2+ | 0.2− | 2006 05 06 | G96 | 0.1− | 0.1− | 2006 06 02 | 691 | 0.4− | 1.0+ |
| 2005 02 01 | 691 | 0.1− | 0.1− | 2006 05 21 | 691 | 0.1− | 0.0 | 2006 06 02 | 691 | 0.5+ | 0.6− |
| 2005 02 09 | 691 | 0.6+ | 0.4− | 2006 05 21 | 691 | 0.0 | 0.3+ | 2006 06 02 | 691 | 0.5+ | 0.1− |

**2006 JX$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 143.09384 | | | | | |
| $n$ | 0.19926446 | $\omega$ | 357.23341 | | −0.55970872 | −0.82356540 |
| $a$ | 2.9030163 | $\Omega$ | 126.78455 | | +0.76249643 | −0.55530036 |
| $e$ | 0.0196339 | $i$ | 6.59709 | | +0.32453864 | −0.11567865 |
| $P$ | 4.95 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 06 | 691 | 0.0 | 0.0 | 2003 11 26 | 691 | 0.4− | 0.6+ | 2006 05 22 | 691 | 0.1+ | 0.5+ |
| 1995 02 06 | 691 | 0.3+ | 0.4− | 2003 12 21 | 691 | 0.0 | 0.5+ | 2006 05 22 | 691 | 0.0 | 0.3+ |
| 1995 02 06 | 691 | 0.2− | 0.1− | 2003 12 21 | 691 | 0.1− | 0.3+ | 2006 05 22 | 691 | 0.0 | 0.3+ |
| 2001 05 26 | 691 | 0.1− | 0.2+ | 2003 12 21 | 691 | 0.0 | 0.3+ | 2006 05 30 | 691 | 0.1+ | 0.1+ |
| 2001 05 26 | 691 | 0.1+ | 0.3+ | 2005 02 02 | 691 | 0.1+ | 0.2+ | 2006 05 30 | 691 | 0.0 | 0.1+ |
| 2001 05 26 | 691 | 0.2− | 0.2+ | 2005 02 02 | 691 | 0.0 | 0.3+ | 2006 05 30 | 691 | 0.1− | 0.0 |
| 2002 08 30 | 644 | 0.0 | 0.4+ | 2005 02 02 | 691 | 0.2+ | 0.4+ | 2006 06 17 | 691 | 0.2+ | 0.1+ |
| 2002 08 30 | 644 | 0.3− | 0.8+ | 2006 05 08 | G96 | 0.3− | 0.1− | 2006 06 17 | 691 | 0.5+ | 0.4+ |
| 2002 08 30 | 644 | 0.0 | 0.2+ | 2006 05 08 | G96 | 0.1− | 0.0 | 2006 06 17 | 691 | 0.2+ | 0.4+ |
| 2003 11 26 | 691 | 0.3− | 0.6+ | 2006 05 08 | G96 | 0.1+ | 0.1+ | | | | |
| 2003 11 26 | 691 | 0.1− | 0.4+ | 2006 05 08 | G96 | 0.2− | 0.6− | | | | |

**2006 JY$_{79}$ = 1993 PG$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.34375 | | | | | |
| $n$ | 0.21630362 | $\omega$ | 351.86847 | | −0.55447917 | +0.82978488 |
| $a$ | 2.7484860 | $\Omega$ | 244.43501 | | −0.75952251 | −0.53568835 |
| $e$ | 0.1063237 | $i$ | 4.02526 | | −0.34011530 | −0.15650890 |
| $P$ | 4.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 14 | 691 | 0.2+ | 0.0 | 2005 01 16 | 691 | 0.2+ | 0.3+ | 2006 05 28 | 691 | 0.2+ | 0.2+ |
| 1993 08 14 | 691 | 0.1+ | 0.1+ | 2005 01 16 | 691 | 0.0 | 0.5+ | 2006 06 04 | 691 | 0.3+ | 0.3+ |
| 1993 08 14 | 691 | 0.0 | 0.6− | 2006 05 01 | 691 | 0.8+ | 0.7− | 2006 06 04 | 691 | 0.1+ | 0.2+ |
| 1993 08 15 | 691 | 0.2− | 0.1+ | 2006 05 01 | 691 | 0.3− | 0.5+ | 2006 06 04 | 691 | 0.2+ | 0.4+ |
| 1993 08 15 | 691 | 0.1− | 0.7+ | 2006 05 01 | 691 | 0.1+ | 0.2+ | 2006 06 19 | G96 | 0.3− | 0.0 |
| 1993 08 15 | 691 | 0.3− | 0.5+ | 2006 05 20 | 691 | 0.1+ | 0.5− | 2006 06 19 | G96 | 0.6− | 0.1− |
| 2003 10 21 | 691 | 0.1− | 0.0 | 2006 05 20 | 691 | 0.2+ | 0.3+ | 2006 06 19 | G96 | 0.5− | 0.1− |
| 2003 10 21 | 691 | 0.3− | 0.2+ | 2006 05 20 | 691 | 0.0 | 0.2+ | 2006 06 19 | G96 | 0.4− | 0.5− |
| 2003 10 21 | 691 | 0.2+ | 0.3+ | 2006 05 28 | 691 | 0.2− | 0.1+ | | | | |
| 2005 01 16 | 691 | 0.1+ | 0.4+ | 2006 05 28 | 691 | 0.9− | 0.1− | | | | |

**2006 KT**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.14702 | | | | | |
| $n$ | 0.26726878 | $\omega$ | 124.86246 | | +0.64700635 | +0.76248242 |
| $a$ | 2.3869165 | $\Omega$ | 185.45489 | | −0.70569763 | +0.59790936 |
| $e$ | 0.1773167 | $i$ | 1.10280 | | −0.28874494 | +0.24723464 |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 19 | 291 | 0.2+ | 0.4+ | 2003 10 21 | 644 | 0.0 | 0.1+ | 2006 05 19 | G96 | 0.1+ | 0.3− |
| 2002 04 19 | 291 | 0.2+ | 0.5+ | 2003 10 26 | 691 | 0.3+ | 0.2+ | 2006 05 19 | G96 | 0.1+ | 0.1− |
| 2002 04 19 | 291 | 0.2+ | 0.4+ | 2003 10 26 | 691 | 0.3+ | 0.5+ | 2006 05 19 | G96 | 0.2+ | 0.0 |
| 2003 09 22 | 291 | 0.3− | 0.1+ | 2003 10 26 | 691 | 0.5− | 0.4+ | 2006 05 20 | E12 | 1.6− | 0.5− |
| 2003 09 22 | 291 | 0.3− | 0.2+ | 2003 10 28 | 704 | 0.5+ | 0.3− | 2006 05 20 | E12 | 0.1+ | 0.5+ |
| 2003 09 22 | 291 | 0.3− | 0.3+ | 2003 10 28 | 704 | 0.1+ | 0.4− | 2006 05 20 | E12 | 0.3− | 0.2− |
| 2003 09 29 | 691 | 0.1+ | 0.1− | 2003 10 28 | 704 | 0.3− | 0.8+ | 2006 05 20 | E12 | 0.1+ | 0.4+ |
| 2003 09 29 | 691 | 0.1+ | 0.2− | 2006 05 18 | 644 | 0.3− | 0.3− | 2006 05 24 | 691 | 0.2+ | 0.5+ |
| 2003 09 29 | 691 | 0.2+ | 0.2− | 2006 05 18 | 644 | 0.3+ | 0.3− | 2006 05 24 | 691 | 0.1+ | 0.1− |
| 2003 10 21 | 644 | 0.1− | 0.2+ | 2006 05 18 | 644 | 0.5− | 0.1+ | 2006 05 24 | 691 | 0.2+ | 0.0 |
| 2003 10 21 | 644 | 0.5− | 0.1+ | 2006 05 19 | G96 | 0.1− | 0.1− | | | | |

**2006 KD$_{4}$ = 2006 JQ$_{56}$**

Id. Minor Planet Center (d, *MPO* 104420)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.28062 | | | | | |
| $n$ | 0.22198760 | $\omega$ | 228.57097 | | +0.63085430 | +0.73711986 |
| $a$ | 2.7013669 | $\Omega$ | 82.22729 | | −0.61880973 | +0.66632074 |
| $e$ | 0.1481335 | $i$ | 14.15110 | | −0.46807837 | +0.11256549 |
| $P$ | 4.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 13 | 691 | 0.2+ | 0.3+ | 2003 11 26 | 691 | 0.2− | 0.0 | 2006 05 20 | 703 | 0.6+ | 0.1− |
| 1997 04 13 | 691 | 0.1− | 0.1− | 2003 11 26 | 691 | 0.1− | 0.0 | 2006 05 20 | 703 | 0.4− | 0.5− |
| 1997 04 13 | 691 | 0.1− | 0.1− | 2003 12 01 | 704 | 0.6+ | 0.9+ | 2006 05 20 | 703 | 0.1+ | 0.4− |
| 2002 06 08 | 704 | 0.0 | 0.1+ | 2003 12 01 | 704 | 0.1− | 0.7− | 2006 05 20 | 703 | 0.7+ | 0.7+ |
| 2002 06 08 | 704 | 0.0 | 0.3+ | 2003 12 01 | 704 | 1.8+ | 0.2+ | 2006 05 21 | 644 | 0.5+ | 0.2− |
| 2002 06 08 | 704 | 0.1+ | 0.7+ | 2003 12 01 | 704 | 0.7− | 0.6+ | 2006 05 21 | 644 | 0.4+ | 0.1− |
| 2002 06 08 | 704 | 0.3− | 0.7+ | 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 05 21 | 644 | 0.4+ | 0.2− |
| 2002 06 08 | 704 | 0.0 | 0.3+ | 2003 12 21 | 691 | 0.2− | 0.1+ | 2006 05 26 | 703 | 0.2− | 0.5− |
| 2003 10 29 | 699 | 0.8+ | 0.6+ | 2003 12 21 | 691 | 0.0 | 0.2+ | 2006 05 26 | 703 | 0.9+ | 0.6− |
| 2003 10 29 | 699 | 0.4+ | 0.5− | 2006 05 07 | 703 | 0.4− | 0.4+ | 2006 05 26 | 703 | 0.2− | 0.1+ |
| 2003 10 29 | 699 | 0.1+ | 2.3+ | 2006 05 07 | 703 | 0.1+ | 1.3+ | 2006 05 26 | 703 | 0.1− | 0.1+ |
| 2003 10 29 | 699 | 0.3− | 0.0 | 2006 05 07 | 703 | 0.1+ | 1.1+ | 2006 05 30 | 699 | (4.2+ | 0.7+) |
| 2003 11 19 | 699 | 0.3+ | 0.9+ | 2006 05 07 | 703 | 0.4+ | 0.5+ | 2006 05 30 | 699 | 0.1− | 0.9+ |
| 2003 11 19 | 699 | 0.7− | 0.8+ | 2006 05 19 | 699 | 0.5− | 0.2+ | 2006 05 30 | 699 | 0.6− | 1.6+ |
| 2003 11 19 | 699 | 0.5− | 0.3+ | 2006 05 19 | 699 | 0.1+ | 0.1+ | 2006 05 30 | 699 | 1.3+ | 0.3− |
| 2003 11 19 | 699 | 0.9− | 0.1+ | 2006 05 19 | 699 | 0.8− | 0.0 | | | | |
| 2003 11 26 | 691 | 0.3− | 0.1− | 2006 05 19 | 699 | (2.1− | 1.0−) | | | | |

**2006 KN$_{10}$ = 2006 HV$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.94698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21106027 | $\omega$ | 98.06868 | | +0.59699230 | +0.80199044 | |
| $a$ | 2.7938198 | $\Omega$ | 208.61651 | | −0.75172249 | +0.55038357 | |
| $e$ | 0.1787731 | $i$ | 2.42757 | | −0.28020260 | +0.23214062 | |
| $P$ | 4.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 1.6− | 0.6− | 2002 09 05 | 699 | 0.8+ | 0.7+ | 2006 05 20 | 691 | 0.4− | 0.5+ |
| 2002 08 12 | 704 | 1.4− | 1.6− | 2002 09 05 | 704 | 0.1+ | 0.0 | 2006 05 20 | 691 | 0.3− | 0.6+ |
| 2002 08 12 | 704 | 0.6− | 1.2− | 2002 09 05 | 699 | 1.0+ | 0.8+ | 2006 05 25 | 644 | 0.3− | 0.2− |
| 2002 08 12 | 704 | 0.6− | 1.8− | 2002 09 05 | 704 | 0.5+ | 0.6+ | 2006 05 25 | 644 | 0.7− | 0.3− |
| 2002 08 12 | 704 | 0.7− | 1.0− | 2002 09 15 | 608 | 0.5− | 1.2+ | 2006 05 25 | G96 | 0.5− | 0.0 |
| 2002 08 17 | 644 | 0.4− | 0.5− | 2002 09 15 | 608 | 0.4− | 1.4+ | 2006 05 25 | G96 | 0.3− | 0.2− |
| 2002 08 17 | 644 | 0.5− | 0.3− | 2002 09 15 | 608 | 0.6− | 0.9+ | 2006 05 25 | G96 | 0.5− | 0.0 |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2006 04 24 | G06 | 0.2+ | 2.6− | 2006 05 25 | 644 | 0.9− | 0.1− |
| 2002 08 27 | 644 | 0.5+ | 0.9− | 2006 04 24 | G06 | 0.3+ | 2.4− | 2006 05 25 | G96 | 0.4− | 0.1+ |
| 2002 08 27 | 644 | 0.1+ | 0.9− | 2006 04 24 | G06 | 0.7− | 3.0− | 2006 05 28 | 691 | 0.4+ | 0.6+ |
| 2002 08 27 | 644 | 0.3+ | 0.7− | 2006 04 24 | G06 | 0.5− | 2.8− | 2006 05 28 | 691 | 0.5+ | 0.1+ |
| 2002 09 05 | 699 | 1.5+ | 0.7+ | 2006 05 19 | G96 | 0.6− | 0.5+ | 2006 05 28 | 691 | 0.5+ | 0.2− |
| 2002 09 05 | 704 | 0.6+ | 0.5+ | 2006 05 19 | G96 | 0.9− | 0.3+ | 2006 06 01 | 691 | 0.7+ | 0.3− |
| 2002 09 05 | 699 | 0.9+ | 0.4+ | 2006 05 19 | G96 | 0.6− | 0.5+ | 2006 06 01 | 691 | 0.4+ | 0.6+ |
| 2002 09 05 | 704 | 0.4+ | 0.9+ | 2006 05 19 | G96 | 0.4− | 0.5+ | 2006 06 01 | 691 | 0.2+ | 0.1− |
| 2002 09 05 | 704 | 0.8+ | 0.4+ | 2006 05 20 | 691 | 0.3− | 0.6+ | | | | |

**2006 KW$_{12}$ = 2004 YJ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.09978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22190246 | $\omega$ | 305.22793 | | +0.12138207 | −0.97750847 | |
| $a$ | 2.7020578 | $\Omega$ | 136.75865 | | +0.97273914 | +0.08255540 | |
| $e$ | 0.1412444 | $i$ | 14.58076 | | +0.19759795 | +0.19406647 | |
| $P$ | 4.44 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 25 | 691 | 0.0 | 0.1+ | 2004 12 19 | 704 | 0.3+ | 0.5+ | 2005 03 13 | G96 | 0.0 | 0.2− |
| 1992 02 25 | 691 | 0.1− | 0.5− | 2004 12 19 | 704 | 0.2− | 1.0+ | 2006 05 20 | 691 | 0.0 | 0.2+ |
| 1992 02 25 | 691 | 0.0 | 0.1− | 2004 12 19 | 704 | 0.3− | 0.1+ | 2006 05 20 | 691 | 0.5+ | 0.2+ |
| 2001 03 18 | 699 | 0.6+ | 0.2+ | 2004 12 19 | 704 | 0.4− | 0.6− | 2006 05 20 | 691 | 0.1+ | 0.4+ |
| 2001 03 18 | 699 | 0.3+ | 0.2+ | 2004 12 19 | 704 | 1.2− | 0.0 | 2006 05 21 | 691 | 0.1− | 0.8− |
| 2001 03 18 | 699 | 0.2+ | 0.9− | 2005 01 13 | 703 | 0.2− | 0.3+ | 2006 05 21 | 691 | 0.1− | 0.4+ |
| 2001 03 18 | 699 | 0.0 | 0.1+ | 2005 01 13 | 703 | 0.6+ | 0.2− | 2006 05 21 | 691 | 0.0 | 0.2+ |
| 2004 12 18 | 704 | 0.2+ | 0.3− | 2005 01 13 | 703 | 0.6− | 0.2+ | 2006 05 22 | 691 | 0.1− | 0.2+ |
| 2004 12 18 | 704 | 0.6+ | 0.5+ | 2005 01 13 | 703 | 1.0+ | 0.4+ | 2006 05 22 | 691 | 0.1− | 0.2+ |
| 2004 12 18 | 704 | (2.0+ | 0.2−) | 2005 03 13 | G96 | 0.2− | 0.1+ | 2006 05 22 | 691 | 0.0 | 0.3− |
| 2004 12 18 | 704 | 0.2+ | 0.1+ | 2005 03 13 | G96 | 0.0 | 0.2− | | | | |
| 2004 12 18 | 704 | 0.5− | 1.0+ | 2005 03 13 | G96 | 0.0 | 0.5− | | | | |

**2006 KD$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.59828 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23174340 | $\omega$ | 131.28600 | | +0.11169695 | +0.98628474 | |
| $a$ | 2.6250110 | $\Omega$ | 144.56948 | | −0.96286878 | +0.13765807 | |
| $e$ | 0.1669356 | $i$ | 12.09971 | | −0.24577939 | −0.09106405 | |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 01 | 644 | 0.3− | 0.6− | 2006 05 20 | 691 | 0.0 | 0.1+ | 2006 05 26 | 703 | 0.2− | 0.6+ |
| 2002 07 01 | 644 | 0.0 | 0.5− | 2006 05 20 | 691 | 0.1+ | 0.0 | 2006 05 26 | 703 | 0.2+ | 0.5− |
| 2002 07 01 | 644 | 0.1+ | 0.2− | 2006 05 22 | 691 | 0.0 | 0.0 | 2006 05 26 | 703 | 0.4− | 0.5− |
| 2002 07 09 | 704 | 0.5+ | 0.1− | 2006 05 22 | 691 | 0.3+ | 0.1− | 2006 05 28 | 691 | 0.0 | 0.2− |
| 2002 07 09 | 704 | 0.3− | 0.3+ | 2006 05 22 | 691 | 0.1+ | 0.2+ | 2006 05 28 | 691 | 0.1+ | 0.3− |
| 2002 07 09 | 704 | 0.8+ | 0.6+ | 2006 05 24 | 691 | 0.0 | 0.0 | 2006 05 28 | 691 | 0.3+ | 0.1− |
| 2002 07 28 | 644 | 0.1− | 0.1− | 2006 05 24 | 691 | 0.0 | 0.2+ | 2006 05 29 | 704 | 0.4− | 0.3+ |
| 2002 07 28 | 644 | 0.3− | 0.1+ | 2006 05 24 | 691 | 0.0 | 0.1+ | 2006 05 29 | 704 | 0.2− | 0.2− |
| 2002 07 28 | 644 | 0.4− | 0.4+ | 2006 05 26 | 691 | 0.3− | 0.0 | 2006 05 29 | 704 | 0.1− | 0.2− |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 26 | 691 | 0.1− | 0.0 | 2006 05 29 | 704 | 0.1− | 0.0 |
| 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 26 | 691 | 0.1− | 0.0 | | | | |
| 2006 05 20 | 691 | 0.1+ | 0.1+ | 2006 05 26 | 703 | 0.5− | 0.4+ | | | | |

**2006 KM$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.24023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28039893 | $\omega$ | 249.12036 | | +0.77209681 | +0.63444393 | |
| $a$ | 2.3118083 | $\Omega$ | 71.48210 | | −0.56773192 | +0.71456024 | |
| $e$ | 0.2315794 | $i$ | 2.21856 | | −0.28556432 | +0.29476188 | |
| $P$ | 3.52 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 699 | 0.0 | 0.8− | 2003 10 24 | 691 | 0.7− | 0.6+ | 2006 05 20 | G96 | 0.0 | 0.3− |
| 2003 09 22 | 699 | 0.4+ | 1.2+ | 2003 10 24 | 691 | 0.6− | 0.2+ | 2006 05 20 | G96 | 0.6− | 0.0 |
| 2003 09 22 | 699 | 0.8− | 1.1+ | 2003 10 24 | 691 | 0.3− | 0.4+ | 2006 05 21 | 691 | 0.1+ | 0.2− |
| 2003 09 22 | 699 | 0.7− | 0.0 | 2003 11 20 | 645 | 0.1+ | 0.1− | 2006 05 21 | 691 | 0.1− | 0.1− |
| 2003 09 29 | 645 | 0.1+ | 0.1− | 2003 11 20 | 645 | 0.1+ | 0.2− | 2006 05 21 | 691 | 0.2− | 0.3+ |
| 2003 09 29 | 645 | 0.1+ | 0.1− | 2006 05 04 | 691 | 0.0 | 0.3− | 2006 05 24 | 691 | 0.1+ | 0.3− |
| 2003 10 01 | 699 | 0.8+ | 0.5+ | 2006 05 04 | 691 | 0.4− | 0.1− | 2006 05 24 | 691 | 0.5+ | 0.3+ |
| 2003 10 01 | 699 | 0.1+ | 0.3+ | 2006 05 04 | 691 | 0.0 | 0.1+ | 2006 05 24 | 691 | 0.2+ | 0.0 |
| 2003 10 01 | 699 | 0.0 | 0.5− | 2006 05 20 | G96 | 0.5− | 0.2+ | | | | |
| 2003 10 01 | 699 | 0.3− | 0.2− | 2006 05 20 | G96 | 0.1− | 0.1− | | | | |

**2006 KV$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.67307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20304494 | $\omega$ | 253.84782 | | +0.60437076 | −0.79655759 | |
| $a$ | 2.8668696 | $\Omega$ | 158.94629 | | +0.74620454 | +0.55926147 | |
| $e$ | 0.0611431 | $i$ | 2.42995 | | +0.27913217 | +0.22961404 | |
| $P$ | 4.85 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 20 | 809 | 0.1+ | 1.2− | 2000 02 26 | 691 | 0.4+ | 0.3− | 2006 05 06 | G96 | 0.5− | 0.1− |
| 1993 10 20 | 809 | 0.7− | 1.3− | 2002 08 06 | 644 | 0.9+ | 0.2+ | 2006 05 06 | G96 | 0.3+ | 0.3− |
| 1993 10 20 | 809 | 0.2+ | 1.8− | 2002 08 06 | 644 | 0.9+ | 0.0 | 2006 05 06 | G96 | 0.6− | 0.4+ |
| 2000 02 02 | 691 | 0.1− | 0.0 | 2002 08 06 | 644 | 0.4+ | 0.7+ | 2006 05 06 | G96 | 0.1+ | 0.2+ |
| 2000 02 02 | 691 | 0.6− | 0.0 | 2003 11 19 | 599 | 0.1− | 2.3+ | 2006 05 20 | 691 | 0.1+ | 0.1+ |
| 2000 02 02 | 691 | 0.1+ | 0.4− | 2003 11 19 | 599 | 0.1− | 0.7+ | 2006 05 20 | 691 | 0.1− | 0.1+ |
| 2000 02 11 | 691 | 0.0 | 0.1+ | 2003 11 19 | 599 | 0.4− | 0.6+ | 2006 05 20 | 691 | 0.1− | 0.0 |
| 2000 02 11 | 691 | 0.3+ | 0.4+ | 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 05 21 | G96 | 0.2+ | 0.0 |
| 2000 02 11 | 691 | 0.1− | 0.2− | 2005 04 02 | G96 | 0.9− | 0.4+ | 2006 05 21 | G96 | 0.1+ | 0.2− |
| 2000 02 26 | 691 | 0.3+ | 0.1+ | 2005 04 02 | G96 | 1.0− | 0.0 | 2006 05 21 | G96 | 0.2− | 0.3− |
| 2000 02 26 | 691 | 0.4+ | 0.4− | 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 05 21 | G96 | 0.2− | 0.1− |

**2006 KJ$_{16}$ = 2004 YB$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 294.66718 | | (2000.0) | | | |
| $n$ | 0.35566400 | $\omega$ | 264.50336 | | +0.91303751 | −0.05152076 |
| $a$ | 1.9729199 | $\Omega$ | 97.97502 | | +0.19038508 | +0.93112675 |
| $e$ | 0.1041980 | $i$ | 24.11440 | | −0.36071599 | +0.36103821 |
| $P$ | 2.77 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 18 | 704 | 0.1− | 0.1+ | 2004 12 21 | 704 | 1.3+ | 0.1− | 2006 05 25 | 691 | 0.2+ | 0.2+ |
| 2004 12 18 | 704 | 0.6− | 0.4− | 2006 05 20 | 644 | 0.4+ | 0.0 | 2006 05 25 | 691 | 0.0 | 0.0 |
| 2004 12 18 | 704 | 0.1− | 0.3− | 2006 05 20 | 644 | 0.3+ | 0.4+ | 2006 05 25 | 691 | 0.3+ | 0.1− |
| 2004 12 18 | 704 | 1.1+ | 0.8+ | 2006 05 20 | 644 | 0.4+ | 0.1+ | 2006 06 18 | 691 | 0.1+ | 0.2+ |
| 2004 12 18 | 704 | 0.2− | 0.4+ | 2006 05 21 | 691 | 1.0− | 0.1− | 2006 06 18 | 691 | 0.1− | 0.1− |
| 2004 12 21 | 704 | 1.0− | 0.0 | 2006 05 21 | 691 | 0.2+ | 0.1− | 2006 06 18 | 691 | 0.1− | 0.0 |
| 2004 12 21 | 704 | 0.4− | 0.3− | 2006 05 21 | 691 | 0.2+ | 0.1− | | | | |

**2006 KN$_{16}$ = 1999 XD$_{239}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 178.44807 | | (2000.0) | | | |
| $n$ | 0.21271465 | $\omega$ | 303.95252 | | +0.59514248 | −0.80312273 |
| $a$ | 2.7793151 | $\Omega$ | 109.49961 | | +0.74684985 | +0.53976914 |
| $e$ | 0.0650548 | $i$ | 1.71869 | | +0.29668288 | +0.25227596 |
| $P$ | 4.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 08 | 691 | 0.2− | 0.3+ | 2003 08 24 | 807 | 1.3− | 0.2+ | 2006 03 23 | 691 | 0.1− | 0.3+ |
| 1994 10 08 | 691 | 0.3− | 0.2− | 2003 08 24 | 807 | 1.3− | 0.3+ | 2006 04 02 | 691 | 0.2+ | 0.3+ |
| 1994 10 08 | 691 | 0.8− | 0.2− | 2003 09 16 | 691 | 0.6− | 0.2+ | 2006 04 02 | 691 | 0.3+ | 0.2+ |
| 1998 07 25 | 691 | 0.9+ | 0.8+ | 2003 09 16 | 691 | 1.0− | 0.3+ | 2006 04 02 | 691 | 0.3+ | 0.2+ |
| 1998 07 25 | 691 | 0.4+ | 0.4+ | 2003 09 16 | 691 | 0.5− | 0.4+ | 2006 04 29 | 691 | 0.4− | 0.1− |
| 1998 07 25 | 691 | 0.6+ | 0.4+ | 2003 09 28 | 691 | 0.2+ | 0.4+ | 2006 04 29 | 691 | 0.4+ | 0.1+ |
| 1999 12 07 | 691 | 0.2+ | 0.3+ | 2003 09 28 | 691 | 0.1− | 0.6+ | 2006 04 29 | 691 | 0.1− | 0.0 |
| 1999 12 07 | 691 | 0.3+ | 0.1+ | 2003 09 28 | 691 | 0.0 | 0.3+ | 2006 05 21 | G96 | 0.5− | 0.0 |
| 1999 12 07 | 691 | 0.3+ | 0.1+ | 2004 12 12 | 691 | 0.3+ | 0.6+ | 2006 05 21 | G96 | 0.2− | 0.1+ |
| 1999 12 08 | 704 | 0.4+ | 0.4− | 2004 12 12 | 691 | 0.3+ | 0.4+ | 2006 05 21 | G96 | 0.1+ | 0.4+ |
| 1999 12 08 | 704 | 0.6− | 1.2− | 2004 12 12 | 691 | 0.3+ | 0.3+ | 2006 05 21 | G96 | 0.2− | 0.4+ |
| 1999 12 08 | 704 | 0.9+ | 0.3+ | 2004 12 19 | 691 | 0.3+ | 0.4+ | 2006 05 22 | G96 | 0.3− | 0.4+ |
| 1999 12 08 | 704 | 0.2− | 0.5− | 2004 12 19 | 691 | 0.2+ | 0.1− | 2006 05 22 | G96 | 0.4+ | 0.0 |
| 2001 03 20 | 691 | 0.0 | 0.6+ | 2004 12 19 | 691 | 0.0 | 0.3+ | 2006 05 22 | G96 | 0.5− | 0.1+ |
| 2001 03 20 | 691 | 0.1− | 0.3+ | 2006 03 23 | 691 | 0.2+ | 0.8+ | 2006 05 22 | G96 | 0.3− | 0.4+ |
| 2001 03 20 | 691 | 0.2− | 0.5+ | 2006 03 23 | 691 | 0.1+ | 0.9+ | | | | |

**2006 KD$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 89.21910 | | (2000.0) | | | |
| $n$ | 0.17780638 | $\omega$ | 322.42010 | | −0.79936973 | −0.60083130 |
| $a$ | 3.1321158 | $\Omega$ | 180.67446 | | +0.59528847 | −0.79126797 |
| $e$ | 0.1262799 | $i$ | 15.40760 | | +0.08148415 | −0.11356387 |
| $P$ | 5.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 28 | 691 | 0.2− | 1.0− | 2003 10 20 | 691 | 0.1+ | 0.4+ | 2006 05 23 | 691 | 0.2+ | 0.2− |
| 1995 04 28 | 691 | 0.0 | 1.2− | 2003 10 22 | 645 | 0.1− | 0.1+ | 2006 05 23 | 691 | 0.2+ | 0.1− |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2003 10 22 | 645 | 0.2+ | 0.2− | 2006 05 25 | 691 | 0.1+ | 0.3+ |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 25 | 691 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 0.3− | 1.6− | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 25 | 691 | 0.0 | 0.2+ |
| 2000 03 11 | 704 | 0.1− | 0.2− | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 05 29 | 691 | 0.1+ | 0.2− |
| 2000 03 11 | 704 | 1.1− | 1.1− | 2003 10 24 | 645 | 0.1− | 0.0 | 2006 05 29 | 691 | 0.0 | 0.0 |
| 2000 03 11 | 704 | 0.6+ | 0.0 | 2006 05 21 | 691 | 0.1+ | 0.3+ | 2006 05 29 | 691 | 0.1− | 0.0 |
| 2000 03 11 | 704 | 0.6− | 0.7− | 2006 05 21 | 691 | 0.0 | 0.1+ | 2006 05 31 | 691 | 0.1− | 0.7+ |
| 2003 10 20 | 691 | 0.2+ | 0.0 | 2006 05 21 | 691 | 0.0 | 0.0 | 2006 05 31 | 691 | 0.1− | 0.4+ |
| 2003 10 20 | 691 | 0.1− | 0.4+ | 2006 05 23 | 691 | 0.2− | 0.3+ | 2006 05 31 | 691 | 0.2− | 0.4+ |

**2006 KK$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 201.52755 | | (2000.0) | | | |
| $n$ | 0.22452051 | $\omega$ | 226.04230 | | +0.64440416 | −0.76447763 |
| $a$ | 2.6810116 | $\Omega$ | 183.96250 | | +0.75442316 | +0.63938698 |
| $e$ | 0.1219524 | $i$ | 14.93638 | | +0.12485584 | +0.08220854 |
| $P$ | 4.39 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 291 | 0.6+ | 0.2− | 2003 09 26 | 645 | 0.1− | 0.1− | 2006 05 23 | 691 | 0.3− | 0.1− |
| 2002 06 05 | 291 | 0.6− | 0.2+ | 2003 09 26 | 645 | 0.1− | 0.2− | 2006 05 25 | 691 | 0.1− | 0.2+ |
| 2002 06 05 | 291 | 0.0 | 0.6− | 2003 09 28 | 691 | 0.0 | 0.0 | 2006 05 25 | 691 | 0.3− | 0.3+ |
| 2003 09 17 | 691 | 0.1+ | 0.3+ | 2003 09 28 | 691 | 0.3− | 0.3+ | 2006 05 25 | 691 | 0.1+ | 0.1− |
| 2003 09 17 | 691 | 0.2− | 0.3+ | 2003 09 28 | 691 | 0.1+ | 0.1− | 2006 05 29 | 691 | 0.0 | 0.2+ |
| 2003 09 17 | 691 | 0.1+ | 0.3+ | 2006 05 21 | 691 | 0.4+ | 0.0 | 2006 05 29 | 691 | 0.1− | 0.0 |
| 2003 09 22 | 699 | 0.9+ | 1.1+ | 2006 05 21 | 691 | 0.1− | 0.3− | 2006 05 29 | 691 | 0.0 | 0.0 |
| 2003 09 22 | 699 | 0.6+ | 0.8+ | 2006 05 21 | 691 | 0.2+ | 0.2− | 2006 05 31 | 691 | 0.2+ | 0.8+ |
| 2003 09 22 | 699 | 0.3+ | 0.0 | 2006 05 23 | 691 | 0.1+ | 0.1+ | 2006 05 31 | 691 | 0.2+ | 0.1− |
| 2003 09 22 | 699 | 1.9+ | 0.1+ | 2006 05 23 | 691 | 0.1− | 0.1− | 2006 05 31 | 691 | 0.1− | 0.0 |

**2006 KL$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.40315 | | (2000.0) | | | |
| $n$ | 0.23692557 | $\omega$ | 243.47851 | | +0.75474260 | +0.59034662 |
| $a$ | 2.5865929 | $\Omega$ | 78.97690 | | −0.44853518 | +0.78262693 |
| $e$ | 0.1524688 | $i$ | 16.94658 | | −0.47872727 | +0.19744861 |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 04 | 644 | 0.5− | 0.5+ | 2006 03 02 | 691 | 0.4+ | 0.2− | 2006 05 06 | 691 | 0.1− | 0.2+ |
| 2002 06 04 | 644 | 0.3− | 0.9+ | 2006 03 02 | 691 | 0.2+ | 0.2+ | 2006 05 06 | 691 | 0.1+ | 0.2+ |
| 2002 06 04 | 644 | 0.1− | 0.6+ | 2006 04 20 | 691 | 0.0 | 0.2+ | 2006 05 20 | 703 | 0.8+ | 1.3− |
| 2002 06 08 | 704 | 0.4+ | 0.1+ | 2006 04 20 | 691 | 0.1− | 0.2+ | 2006 05 20 | 703 | 0.4− | 1.8− |
| 2002 06 08 | 704 | 0.0 | 0.4− | 2006 04 20 | 691 | 0.3− | 0.3+ | 2006 05 20 | 703 | 1.0− | 0.5+ |
| 2002 06 08 | 704 | 0.9+ | 0.4− | 2006 04 30 | 703 | (2.1− | 0.0 ) | 2006 05 20 | 703 | 1.6− | 0.4− |
| 2003 11 18 | 691 | 0.1− | 0.2+ | 2006 04 30 | 703 | 0.2+ | 0.4− | 2006 05 23 | 691 | 0.1+ | 0.1− |
| 2003 11 18 | 691 | 0.0 | 0.3+ | 2006 04 30 | 703 | 0.2− | 0.5+ | 2006 05 23 | 691 | 0.1+ | 0.1+ |
| 2003 11 18 | 691 | 0.2− | 0.1+ | 2006 04 30 | 703 | 0.2− | 0.0 | 2006 05 23 | 691 | 0.2+ | 0.1+ |
| 2006 03 02 | 691 | 0.4+ | 0.2− | 2006 05 06 | 691 | 0.1+ | 0.0 | | | | |

**2006 KU$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 38.33849 | | (2000.0) | | | |
| $n$ | 0.21299922 | $\omega$ | 175.21879 | | −0.69355072 | +0.71709038 |
| $a$ | 2.7768390 | $\Omega$ | 50.84895 | | −0.66387860 | −0.59896412 |
| $e$ | 0.0498588 | $i$ | 5.10892 | | −0.27973667 | −0.35640338 |
| $P$ | 4.63 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1− | 2003 10 28 | 704 | 0.2− | 0.0 | 2006 05 20 | G96 | 0.1− | 0.1+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2003 11 15 | 291 | 0.1− | 0.2+ | 2006 05 20 | G96 | 0.2− | 0.3− |
| 1998 09 25 | 699 | (3.6− | 1.4+) | 2003 11 15 | 291 | 0.1− | 0.1− | 2006 05 21 | E12 | 0.9− | 1.0+ |
| 1998 09 25 | 699 | (2.9− | 0.7+) | 2003 11 15 | 291 | 0.3− | 0.2+ | 2006 05 21 | E12 | 0.1− | 0.6− |
| 1998 09 25 | 699 | (3.3− | 1.1−) | 2006 05 07 | G96 | 0.1+ | 0.4+ | 2006 05 21 | E12 | 0.5+ | 0.2+ |
| 2003 10 21 | 691 | 0.4+ | 0.3+ | 2006 05 07 | G96 | 0.2+ | 0.6+ | 2006 05 21 | E12 | 0.9+ | 0.6+ |
| 2003 10 21 | 691 | 0.0 | 0.4+ | 2006 05 07 | G96 | 0.5+ | 0.5+ | 2006 05 26 | G96 | 0.4+ | 0.3+ |
| 2003 10 21 | 691 | 0.0 | 0.4+ | 2006 05 07 | G96 | 0.4+ | 0.5+ | 2006 05 26 | G96 | 0.2− | 0.1+ |
| 2003 10 28 | 704 | 0.5− | 0.1+ | 2006 05 20 | G96 | 0.2− | 0.0 | 2006 05 26 | G96 | 0.1+ | 0.2+ |
| 2003 10 28 | 704 | 1.0− | 0.3− | 2006 05 20 | G96 | 0.4− | 0.1− | 2006 05 26 | G96 | 0.1+ | 0.3+ |

**2006 KN$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.78074 | | | (2000.0) | | |
| $n$ | 0.29599435 | $\omega$ | 333.22254 | | −0.47634711 | +0.86826338 |
| $a$ | 2.2298746 | $\Omega$ | 268.04643 | | −0.77980909 | −0.49001351 |
| $e$ | 0.1920186 | $i$ | 7.97196 | | −0.40619111 | −0.07749496 |
| $P$ | 3.33 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.0 | 2003 07 25 | 644 | 0.7− | 0.2+ | 2006 05 16 | E12 | 0.1− | 0.0 |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2003 07 25 | 644 | 0.7− | 0.1+ | 2006 05 22 | E12 | 0.2− | 0.6+ |
| 2003 07 03 | 691 | 0.1− | 0.1− | 2003 07 25 | 644 | 0.5− | 0.2+ | 2006 05 22 | E12 | 0.4− | 0.2+ |
| 2003 07 03 | 691 | 0.2− | 0.0 | 2003 08 02 | 608 | 0.6+ | 0.3− | 2006 05 22 | E12 | 0.5+ | 0.4− |
| 2003 07 03 | 691 | 0.1+ | 0.1− | 2003 08 02 | 608 | 1.0+ | 0.4− | 2006 05 22 | E12 | 0.1− | 0.1+ |
| 2003 07 09 | 691 | 0.1+ | 0.0 | 2003 08 02 | 608 | 0.7+ | 0.3− | 2006 05 24 | 644 | 0.3+ | 0.1+ |
| 2003 07 09 | 691 | 0.0 | 0.1+ | 2006 05 16 | E12 | 0.2− | 0.0 | 2006 05 24 | 644 | 0.4+ | 0.1+ |
| 2003 07 09 | 691 | 0.1+ | 0.1+ | 2006 05 16 | E12 | 0.4− | 0.1− | 2006 05 24 | 644 | 0.4+ | 0.1− |

**2006 KB$_{25}$ = 2003 UK$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.46081 | | | (2000.0) | | |
| $n$ | 0.22483596 | $\omega$ | 306.00512 | | +0.98573280 | −0.14510586 |
| $a$ | 2.6785034 | $\Omega$ | 62.47827 | | +0.16788836 | +0.88379823 |
| $e$ | 0.0941201 | $i$ | 5.51914 | | −0.01201407 | +0.44479768 |
| $P$ | 4.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 691 | 0.6+ | 0.2+ | 2003 10 28 | 704 | 0.4+ | 0.3− | 2006 05 19 | G96 | 0.2+ | 0.2+ |
| 2001 03 18 | 691 | 0.1+ | 0.2− | 2003 10 28 | 704 | 0.8+ | 1.3+ | 2006 05 19 | G96 | 0.7− | 0.1+ |
| 2001 03 18 | 691 | 0.1+ | 0.1+ | 2003 11 20 | 691 | 0.1− | 0.2+ | 2006 05 24 | 691 | 0.2− | 0.3− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2003 11 20 | 691 | 0.3+ | 0.0 | 2006 05 24 | 691 | 0.1− | 0.1− |
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2003 11 20 | 691 | 0.3− | 0.5+ | 2006 05 24 | 691 | 0.0 | 0.2− |
| 2003 10 19 | 691 | 0.2− | 0.1− | 2006 05 19 | G96 | 0.1− | 0.1+ | 2006 06 01 | 691 | 0.4+ | 0.0 |
| 2003 10 19 | 691 | 0.1+ | 0.0 | 2006 05 19 | G96 | 0.2+ | 0.3− | 2006 06 01 | 691 | 0.4− | 0.1+ |
| 2003 10 19 | 691 | 0.4− | 0.2− | 2006 05 19 | G96 | 0.0 | 0.0 | 2006 06 01 | 691 | 0.1+ | 0.3+ |
| 2003 10 24 | 695 | 0.5− | 0.2− | 2006 05 19 | G96 | 0.3− | 0.3+ | 2006 06 01 | 691 | 0.3+ | 0.0 |
| 2003 10 24 | 695 | 0.2− | 0.3− | 2006 05 19 | G96 | 0.3− | 0.1+ | 2006 06 01 | 691 | 0.5+ | 0.1+ |
| 2003 10 28 | 704 | 0.5+ | 0.4+ | 2006 05 19 | G96 | 0.6− | 0.0 | 2006 06 01 | 691 | 0.0 | 0.5+ |

**2006 KR$_{26}$ = 2000 CQ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 111.71238 | | | (2000.0) | | |
| $n$ | 0.18218808 | $\omega$ | 334.89547 | | −0.29106233 | −0.93937305 |
| $a$ | 3.0816933 | $\Omega$ | 131.46145 | | +0.91351719 | −0.32917564 |
| $e$ | 0.2665150 | $i$ | 13.99838 | | +0.28419897 | +0.09602956 |
| $P$ | 5.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 704 | 0.1+ | 0.0 | 2000 03 26 | 699 | 0.0 | 0.4− | 2006 05 20 | 691 | 0.1+ | 0.0 |
| 2000 02 05 | 704 | 0.5+ | 1.2− | 2000 03 26 | 699 | 0.4+ | 0.2− | 2006 05 24 | 691 | 0.0 | 0.7− |
| 2000 02 05 | 704 | 1.1− | 0.2− | 2000 03 26 | 699 | 0.4− | 0.6+ | 2006 05 24 | 691 | 0.0 | 0.4− |
| 2000 02 05 | 704 | 0.6+ | 0.2+ | 2006 05 20 | 691 | 0.1+ | 0.5+ | 2006 05 24 | 691 | 0.2− | 0.0 |
| 2000 02 06 | 704 | 0.4+ | 0.1+ | 2006 05 20 | 691 | 0.1+ | 0.0 | 2006 05 26 | 691 | 0.0 | 0.1+ |
| 2000 02 06 | 704 | 0.3+ | 0.1− | 2006 05 20 | 691 | 0.1+ | 0.4+ | 2006 05 26 | 691 | 0.3− | 0.3− |
| 2000 02 06 | 704 | 0.7− | 1.0+ | 2006 05 20 | 691 | 0.1− | 0.1+ | 2006 05 26 | 691 | 0.1+ | 0.1+ |
| 2000 03 26 | 699 | 0.2− | 0.0 | 2006 05 20 | 691 | 0.1+ | 0.1+ | | | | |

**2006 KE$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.07568 | | | (2000.0) | | |
| $n$ | 0.30312400 | $\omega$ | 231.21750 | | +0.39695810 | +0.91581043 |
| $a$ | 2.1947708 | $\Omega$ | 62.27294 | | −0.81930454 | +0.38349677 |
| $e$ | 0.1238606 | $i$ | 3.94864 | | −0.41372012 | +0.11925387 |
| $P$ | 3.25 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 20 | 691 | 0.4+ | 0.3− | 2000 09 23 | 691 | 0.4− | 1.3+ | 2006 05 20 | G96 | 0.5+ | 0.1+ |
| 2000 08 20 | 691 | 0.3+ | 0.4− | 2002 01 22 | 291 | 0.1− | 0.2+ | 2006 05 24 | 691 | 0.1+ | 0.3+ |
| 2000 08 20 | 691 | 0.1+ | 0.3− | 2002 01 22 | 291 | 0.3− | 0.1− | 2006 05 24 | 691 | 0.8− | 0.8+ |
| 2000 09 05 | 645 | 0.1+ | 0.2− | 2002 01 22 | 291 | 0.5+ | 0.3+ | 2006 05 24 | 691 | 0.3+ | 0.3− |
| 2000 09 05 | 645 | 0.0 | 0.2− | 2006 05 20 | G96 | 0.2+ | 0.9+ | 2006 05 28 | 691 | 0.2+ | 0.1− |
| 2000 09 23 | 691 | 0.4− | 1.2+ | 2006 05 20 | G96 | 0.1+ | 0.1+ | 2006 05 28 | 691 | 0.2+ | 0.1− |
| 2000 09 23 | 691 | 0.8− | 1.1+ | 2006 05 20 | G96 | 0.0 | 0.1+ | 2006 05 28 | 691 | 0.2+ | 0.1− |

**2006 KR$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 190.45904 | | | (2000.0) | | |
| $n$ | 0.22915256 | $\omega$ | 190.32095 | | +0.32987207 | −0.94357939 |
| $a$ | 2.6447599 | $\Omega$ | 240.42331 | | +0.86848751 | +0.31538365 |
| $e$ | 0.1162820 | $i$ | 1.91242 | | +0.37001873 | +0.10095090 |
| $P$ | 4.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3+ | 1.1− | 2003 10 22 | 645 | 0.0 | 0.1+ | 2005 03 11 | G96 | 0.1+ | 0.1+ |
| 1999 10 06 | 704 | 0.0 | 0.2− | 2003 10 22 | 645 | 0.0 | 0.0 | 2005 03 11 | G96 | 0.3− | 0.1+ |
| 1999 10 06 | 704 | 0.2− | 1.0+ | 2003 10 23 | 645 | 0.0 | 0.1− | 2006 05 20 | 691 | 0.2+ | 0.1− |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2003 10 23 | 645 | 0.1− | 0.1− | 2006 05 20 | 691 | 0.6+ | 0.5+ |
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2005 01 17 | 691 | 0.1+ | 0.3+ | 2006 05 20 | 691 | 0.3+ | 0.3+ |
| 2003 09 27 | 691 | 0.0 | 0.5+ | 2005 01 17 | 691 | 0.4+ | 0.4+ | 2006 05 24 | 691 | 0.2− | 0.4− |
| 2003 09 27 | 691 | 0.3− | 0.5+ | 2005 01 17 | 691 | 0.6+ | 0.4+ | 2006 05 24 | 691 | 0.0 | 0.1− |
| 2003 09 27 | 691 | 0.1− | 0.4+ | 2005 02 02 | 703 | 0.2+ | 0.2− | 2006 05 24 | 691 | 0.0 | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 02 02 | 703 | 0.0 | 0.1− | 2006 05 28 | 691 | 0.0 | 0.0 |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2005 02 02 | 703 | 1.7− | 1.0+ | 2006 05 28 | 691 | 0.7− | 0.6+ |
| 2003 10 17 | 691 | 0.1− | 0.0 | 2005 02 02 | 703 | 0.4− | 0.7− | 2006 05 28 | 691 | 0.1+ | 0.3+ |
| 2003 10 17 | 691 | 0.1− | 0.4+ | 2005 03 11 | G96 | 0.3− | 0.0 | | | | |
| 2003 10 17 | 691 | 0.2+ | 0.2+ | 2005 03 11 | G96 | 0.1− | 0.0 | | | | |

**2006 KC$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.86016 | | | (2000.0) | | |
| $n$ | 0.26841509 | $\omega$ | 176.84283 | | −0.85129254 | +0.52436361 |
| $a$ | 2.3801158 | $\Omega$ | 34.80283 | | −0.48210381 | −0.76776080 |
| $e$ | 0.1348845 | $i$ | 1.86170 | | −0.20706743 | −0.36822025 |
| $P$ | 3.67 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 645 | 0.1− | 0.1− | 2002 03 16 | 704 | 0.4+ | 0.1+ | 2006 05 20 | 691 | 0.1− | 0.1− |
| 2002 03 05 | 645 | 0.1− | 0.1− | 2002 03 16 | 704 | 0.8+ | 0.8+ | 2006 05 24 | 691 | 0.0 | 0.1− |
| 2002 03 09 | 644 | 0.5+ | 0.3+ | 2002 03 16 | 704 | 0.1+ | 1.1+ | 2006 05 24 | 691 | 0.2+ | 0.1+ |
| 2002 03 09 | 644 | 0.9+ | 0.5+ | 2002 04 06 | 807 | 0.1− | 0.0 | 2006 05 24 | 691 | 0.5+ | 0.1− |
| 2002 03 09 | 644 | 0.3+ | 0.4+ | 2002 04 06 | 807 | 0.1− | 0.1− | 2006 05 28 | 691 | 0.1− | 0.1− |
| 2002 03 16 | 704 | 1.0+ | 1.5+ | 2006 05 20 | 691 | 0.3− | 0.1− | 2006 05 28 | 691 | 0.1− | 0.3+ |
| 2002 03 16 | 704 | 0.6+ | 0.2+ | 2006 05 20 | 691 | 0.0 | 0.1− | 2006 05 28 | 691 | 0.1− | 0.1+ |

### 2006 KO$_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.73255 | | (2000.0) | | | |
| $n$ | 0.26948835 | $\omega$ | 107.33316 | | +0.08010284 | +0.99677371 |
| $a$ | 2.3737923 | $\Omega$ | 167.25812 | | −0.92303993 | +0.07609536 |
| $e$ | 0.1719809 | $i$ | 1.31705 | | −0.37627228 | +0.02552765 |
| $P$ | 3.66 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 291 | 0.2− | 0.5+ | 2003 10 24 | 691 | 0.2− | 0.3+ | 2006 05 24 | 691 | 0.1+ | 0.2− |
| 2003 09 16 | 291 | 0.3− | 0.1− | 2003 10 24 | 691 | 0.4− | 0.3+ | 2006 05 24 | 691 | 0.0 | 0.3− |
| 2003 09 16 | 291 | 0.3+ | 0.0 | 2003 10 24 | 691 | 0.1− | 0.1+ | 2006 05 24 | 691 | 0.1− | 0.1− |
| 2003 10 19 | 645 | 0.0 | 0.1− | 2006 05 20 | 691 | 0.0 | 0.0 | 2006 05 25 | 644 | 0.2− | 0.2− |
| 2003 10 19 | 645 | 0.2+ | 0.1+ | 2006 05 20 | 691 | 0.1+ | 0.1+ | 2006 05 25 | 644 | 0.5− | 0.1− |
| 2003 10 22 | 645 | 0.0 | 0.1− | 2006 05 20 | 691 | 0.0 | 0.1+ | 2006 05 25 | 644 | 0.1− | 0.2− |
| 2003 10 22 | 645 | 0.1+ | 0.1− | 2006 05 20 | E12 | 0.6− | 0.2− | 2006 05 28 | 691 | 0.0 | 0.3+ |
| 2003 10 23 | 645 | 0.1− | 0.1− | 2006 05 20 | E12 | 0.8+ | 0.6− | 2006 05 28 | 691 | 0.3+ | 0.0 |
| 2003 10 23 | 645 | 0.1− | 0.0 | 2006 05 20 | E12 | 0.9− | 0.2− | 2006 05 28 | 691 | 0.0 | 0.4+ |

### 2006 KP$_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 282.03702 | | (2000.0) | | | |
| $n$ | 0.23553949 | $\omega$ | 193.75598 | | +0.99412311 | −0.10809913 |
| $a$ | 2.5967306 | $\Omega$ | 172.44257 | | +0.10303495 | +0.92833720 |
| $e$ | 0.1938110 | $i$ | 2.53411 | | +0.03321196 | +0.35567488 |
| $P$ | 4.18 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 699 | 0.3+ | 0.7+ | 2003 12 01 | 704 | 0.2+ | 0.9+ | 2006 05 23 | 291 | 0.2− | 0.4+ |
| 2003 11 19 | 699 | 1.0+ | 1.1+ | 2003 12 01 | 704 | 0.2+ | 1.1+ | 2006 05 23 | 291 | 0.2+ | 0.5+ |
| 2003 11 19 | 699 | 0.2+ | 0.6+ | 2003 12 01 | 704 | 0.0 | 0.4+ | 2006 05 23 | 291 | 0.3+ | 0.5+ |
| 2003 11 19 | 699 | 0.3− | 0.9+ | 2005 03 08 | G96 | 0.2+ | 0.3+ | 2006 05 24 | 691 | 0.2+ | 0.2+ |
| 2003 11 24 | 699 | 1.0− | 0.8− | 2005 03 08 | G96 | 0.2− | 0.1− | 2006 05 24 | 691 | 0.6+ | 0.1− |
| 2003 11 24 | 699 | 0.1+ | 0.5− | 2005 03 08 | G96 | 0.2+ | 0.2− | 2006 05 24 | 691 | 0.0 | 0.2+ |
| 2003 11 24 | 699 | 0.5− | 0.0 | 2005 03 08 | G96 | 0.1− | 0.3− | 2006 06 01 | 691 | 0.3− | 0.1− |
| 2003 11 24 | 699 | 0.6− | 0.9+ | 2006 05 20 | 691 | 0.3+ | 0.3− | 2006 06 01 | 691 | 0.1+ | 0.1− |
| 2003 12 01 | 704 | 0.3+ | 0.4+ | 2006 05 20 | 691 | 0.1− | 0.2− | 2006 06 01 | 691 | 0.6− | 0.3+ |
| 2003 12 01 | 704 | 0.9− | 0.6− | 2006 05 20 | 691 | 0.3− | 0.2+ | | | | |

### 2006 KG$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.39201 | | (2000.0) | | | |
| $n$ | 0.20991120 | $\omega$ | 234.91567 | | +0.98434666 | −0.11554308 |
| $a$ | 2.8040062 | $\Omega$ | 131.32534 | | +0.14957789 | +0.94705054 |
| $e$ | 0.1955619 | $i$ | 10.20765 | | −0.09321002 | +0.29957483 |
| $P$ | 4.70 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 699 | 0.3+ | 0.2+ | 2003 12 05 | 703 | 0.4− | 0.5+ | 2005 02 09 | 691 | 0.2+ | 0.2+ |
| 1998 10 18 | 699 | 0.4+ | 0.9+ | 2003 12 05 | 703 | 0.4+ | 1.1+ | 2005 02 09 | 691 | 0.2+ | 0.1+ |
| 1998 10 18 | 699 | 0.3+ | 0.8+ | 2003 12 05 | 703 | 1.7− | 0.3+ | 2006 05 22 | 691 | 0.3+ | 0.3+ |
| 2000 02 04 | 691 | 0.0 | 0.2− | 2003 12 14 | 703 | 0.5+ | 0.5+ | 2006 05 22 | 691 | 0.1+ | 0.5+ |
| 2000 02 04 | 691 | 0.2+ | 0.4− | 2003 12 14 | 703 | 0.5+ | 1.9+ | 2006 05 22 | 691 | 0.2+ | 0.5+ |
| 2000 02 04 | 691 | 0.2+ | 0.2− | 2003 12 14 | 703 | 1.7− | 0.2− | 2006 05 24 | 691 | 0.1+ | 0.3+ |
| 2001 04 16 | 645 | 0.2− | 0.0 | 2003 12 14 | 703 | 1.1− | 0.4+ | 2006 05 24 | 691 | 0.1+ | 0.4+ |
| 2001 04 16 | 645 | 0.2− | 0.1− | 2003 12 21 | 703 | 0.8+ | 0.9+ | 2006 05 24 | 691 | 0.1+ | 0.5+ |
| 2003 11 01 | 704 | 0.7− | 0.6+ | 2003 12 21 | 703 | 0.4+ | 1.4+ | 2006 05 26 | 691 | 0.3+ | 0.3+ |
| 2003 11 01 | 704 | 0.9− | 0.6+ | 2003 12 21 | 703 | 1.1− | 0.5+ | 2006 05 26 | 691 | 0.2+ | 0.4+ |
| 2003 11 01 | 704 | 0.5− | 0.6+ | 2003 12 21 | 703 | 0.3− | 0.3+ | 2006 05 26 | 691 | 0.3+ | 0.3+ |
| 2003 12 05 | 703 | 0.2− | 0.3− | 2005 02 09 | 691 | 0.9+ | 0.5− | | | | |

### 2006 KR$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.55921 | | (2000.0) | | | |
| $n$ | 0.29179870 | $\omega$ | 310.04095 | | +0.00758749 | +0.99938771 |
| $a$ | 2.2511986 | $\Omega$ | 320.35365 | | −0.90038258 | −0.00803195 |
| $e$ | 0.1511861 | $i$ | 3.06862 | | −0.43503292 | +0.03405415 |
| $P$ | 3.38 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 691 | 0.7+ | 0.2− | 2003 07 06 | 691 | 0.1− | 0.5+ | 2006 05 20 | 699 | 1.4+ | 1.0− |
| 2002 01 14 | 691 | 0.1+ | 0.3+ | 2003 07 25 | 704 | 1.5− | 1.2+ | 2006 05 20 | 699 | 0.2− | 0.7− |
| 2002 01 14 | 691 | 0.0 | 0.1− | 2003 07 25 | 704 | 0.6− | 0.1+ | 2006 05 20 | 699 | 0.3+ | 0.0 |
| 2002 01 21 | 291 | 0.4+ | 0.4+ | 2003 07 25 | 704 | 1.6− | 1.1− | 2006 05 20 | 699 | 0.1− | 0.4+ |
| 2002 01 21 | 291 | 0.4+ | 0.2+ | 2003 08 04 | 704 | 0.7+ | 0.4− | 2006 05 24 | 699 | 1.2− | 0.7+ |
| 2002 01 21 | 291 | 0.1+ | 0.4+ | 2003 08 04 | 704 | 0.6+ | 0.3+ | 2006 05 24 | 699 | 0.5− | 0.3+ |
| 2002 02 14 | 291 | 0.3− | 0.6+ | 2003 08 04 | 704 | 0.9+ | 1.0+ | 2006 05 24 | 644 | 0.0 | 0.0 |
| 2002 02 14 | 291 | 0.3− | 0.4+ | 2003 08 04 | 704 | 0.9+ | 1.1+ | 2006 05 24 | 699 | 0.0 | 0.0 |
| 2002 02 14 | 291 | 0.3− | 0.2+ | 2004 12 14 | 691 | 0.1− | 0.1+ | 2006 05 24 | 644 | 0.1+ | 0.2− |
| 2003 07 06 | 691 | 0.2− | 0.4+ | 2004 12 14 | 691 | 0.0 | 0.0 | 2006 05 24 | 699 | 0.1− | 0.0 |
| 2003 07 06 | 691 | 0.3− | 0.5+ | 2004 12 14 | 691 | 0.2+ | 0.0 | 2006 05 24 | 644 | 0.1+ | 0.0 |

### 2006 KS$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.84612 | | (2000.0) | | | |
| $n$ | 0.23780002 | $\omega$ | 137.09090 | | +0.09240393 | +0.98200170 |
| $a$ | 2.5802480 | $\Omega$ | 137.41406 | | −0.96673801 | +0.12810212 |
| $e$ | 0.2526178 | $i$ | 14.08878 | | −0.23849347 | −0.13878946 |
| $P$ | 4.14 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 15 | 704 | 1.1− | 0.0 | 2002 06 06 | 644 | 0.1+ | 0.1+ | 2006 05 21 | 699 | 1.1+ | 1.3+ |
| 2002 05 15 | 704 | 1.2+ | 0.5− | 2002 06 06 | 644 | 0.2+ | 0.1− | 2006 05 21 | 699 | 1.5+ | 0.9+ |
| 2002 05 15 | 704 | 0.0 | 0.8+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 05 21 | 699 | 0.3+ | 0.3− |
| 2002 05 15 | 704 | 0.6+ | 0.8− | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 05 25 | 703 | 0.4− | 0.3+ |
| 2002 05 15 | 704 | 0.6− | 0.9− | 2006 04 27 | 703 | 0.4− | 0.8− | 2006 05 25 | 703 | 0.4+ | 0.2+ |
| 2002 05 29 | 644 | 0.0 | 0.0 | 2006 04 27 | 703 | 0.6− | 0.8− | 2006 05 25 | 703 | 1.5− | 0.5+ |
| 2002 05 29 | 644 | 0.3− | 0.1− | 2006 04 27 | 703 | 0.9− | 0.2− | 2006 05 25 | 703 | 0.7− | 0.5− |
| 2002 05 29 | 644 | 0.4− | 0.2+ | 2006 04 27 | 703 | 0.4+ | 0.5− | | | | |
| 2002 06 06 | 644 | 0.1− | 0.1+ | 2006 05 21 | 699 | 0.9+ | 1.3+ | | | | |

### 2006 KD$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.60541 | | (2000.0) | | | |
| $n$ | 0.34383814 | $\omega$ | 217.77241 | | +0.52644457 | +0.77035920 |
| $a$ | 2.0179017 | $\Omega$ | 86.80483 | | −0.66553274 | +0.63668335 |
| $e$ | 0.5114371 | $i$ | 21.11777 | | −0.52907683 | −0.03436589 |
| $P$ | 2.87 | $H$ | 18.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 22 | 644 | 0.2− | 0.1− | 2006 05 30 | 300 | 0.6− | 0.2+ | 2006 06 09 | 160 | 0.1+ | 0.0 |
| 2003 03 22 | 644 | 0.1+ | 0.1+ | 2006 05 30 | 300 | 0.5+ | 0.3− | 2006 06 09 | 160 | 0.0 | 0.0 |
| 2003 03 22 | 644 | 0.1+ | 0.0 | 2006 05 30 | 300 | 0.8− | 0.4+ | 2006 06 09 | 160 | 0.4+ | 0.2− |
| 2006 05 26 | 704 | 0.9+ | 0.5+ | 2006 05 30 | 379 | 0.3+ | 0.1+ | 2006 06 09 | 160 | 0.3+ | 0.2− |
| 2006 05 26 | 704 | 0.1+ | 0.9− | 2006 05 31 | 300 | 0.6+ | 0.4− | 2006 06 09 | 160 | 0.2+ | 0.1− |
| 2006 05 26 | 704 | 0.0 | 0.0 | 2006 05 31 | 300 | 0.1+ | 0.2+ | 2006 06 09 | 160 | 0.1+ | 0.1− |
| 2006 05 26 | 704 | 0.0 | 0.5+ | 2006 05 31 | 300 | 0.4+ | 0.5− | 2006 06 09 | 160 | 0.3+ | 0.1− |
| 2006 05 26 | 704 | 0.2+ | 0.7+ | 2006 05 31 | 300 | 0.4+ | 0.0 | 2006 06 10 | H45 | 0.2+ | 0.3− |
| 2006 05 26 | 176 | 0.0 | 0.1+ | 2006 05 31 | 300 | 0.3+ | 0.2+ | 2006 06 10 | H45 | 0.2+ | 0.4− |
| 2006 05 26 | 176 | 0.0 | 0.1+ | 2006 05 31 | 300 | 0.2+ | 0.5+ | 2006 06 10 | H45 | 0.2− | 0.2− |
| 2006 05 26 | 176 | 0.0 | 0.4+ | 2006 06 02 | J95 | 0.0 | 0.1+ | 2006 06 10 | H45 | 0.0 | 0.0 |
| 2006 05 26 | 176 | 0.0 | 0.4+ | 2006 06 02 | J95 | 0.1− | 0.0 | 2006 06 10 | H45 | 0.3− | 0.1− |
| 2006 05 27 | I77 | 0.4− | 0.3− | 2006 06 02 | J95 | 0.1− | 0.1− | 2006 06 10 | H45 | 0.1+ | 0.4− |
| 2006 05 27 | I77 | 0.4− | 0.8− | 2006 06 02 | 734 | 0.3− | 0.1+ | 2006 06 10 | 699 | 0.0 | 0.5+ |
| 2006 05 27 | I77 | 0.3+ | 0.1− | 2006 06 02 | 734 | 0.3− | 0.0 | 2006 06 10 | 699 | 0.1+ | 0.4+ |
| 2006 05 27 | G92 | 0.4− | 0.0 | 2006 06 02 | 703 | 0.4− | 0.2− | 2006 06 10 | 699 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 05 27 | G92 | 0.4+ | 0.3− | 2006 06 02 | 703 | 0.6+ | 0.1+ | 2006 06 15 | E12 | 0.4− | 0.2− |
| 2006 05 27 | G92 | 0.1+ | 0.1− | 2006 06 03 | 203 | 0.2− | 0.1− | 2006 06 15 | E12 | 0.1+ | 0.1− |
| 2006 05 28 | 157 | 0.2+ | 0.2− | 2006 06 04 | 203 | 0.5− | 0.4+ | 2006 06 15 | E12 | 0.6− | 0.0 |
| 2006 05 28 | 157 | 0.2+ | 0.1− | 2006 06 04 | H45 | 0.0 | 0.2− | 2006 06 15 | E12 | 0.1− | 0.0 |
| 2006 05 28 | 157 | 0.1− | 0.0 | 2006 06 04 | H45 | 0.1− | 0.0 | 2006 06 15 | E12 | 0.0 | 0.0 |
| 2006 05 28 | 157 | 0.1− | 0.1+ | 2006 06 04 | H45 | 0.3+ | 0.0 | 2006 06 15 | E12 | 0.5− | 0.0 |
| 2006 05 28 | 204 | 0.1+ | 0.0 | 2006 06 04 | H45 | 0.2+ | 0.2− | 2006 06 15 | E12 | 0.1+ | 0.0 |
| 2006 05 28 | 204 | 0.1+ | 0.0 | 2006 06 04 | H45 | 0.4+ | 0.0 | 2006 06 15 | E12 | 0.3− | 0.3− |
| 2006 05 28 | 204 | 0.0 | 0.0 | 2006 06 04 | H45 | 0.0 | 0.1− | 2006 06 15 | E12 | 0.3− | 0.0 |
| 2006 05 28 | 932 | 0.0 | 0.2− | 2006 06 04 | H45 | 0.2− | 0.2− | 2006 06 15 | E12 | 0.0 | 0.1+ |
| 2006 05 28 | 932 | 0.1+ | 0.1− | 2006 06 06 | 379 | 0.1− | 0.3+ | 2006 06 15 | E12 | 0.2− | 0.3− |
| 2006 05 28 | 932 | 0.2+ | 0.1− | 2006 06 06 | 379 | 0.8+ | 0.1+ | 2006 06 15 | E12 | 0.2− | 0.1− |
| 2006 05 29 | A50 | 0.3− | 0.2+ | 2006 06 06 | 379 | 0.4+ | 0.2− | 2006 06 15 | E12 | 0.2− | 0.1+ |
| 2006 05 29 | A50 | 0.3− | 0.5+ | 2006 06 06 | 379 | 0.3+ | 0.1− | 2006 06 15 | E12 | 0.5− | 0.2+ |
| 2006 05 29 | A50 | 0.3− | 0.4+ | 2006 06 06 | 379 | 0.5+ | 0.3− | 2006 06 15 | E12 | 1.0− | 0.5− |
| 2006 05 29 | A50 | 0.3− | 0.6+ | 2006 06 06 | 379 | 0.6+ | 0.4+ | 2006 09 13 | 474 | 0.0 | 0.1+ |
| 2006 05 29 | A50 | 0.0 | 0.1+ | 2006 06 06 | 379 | 0.1+ | 0.2+ | 2006 09 13 | 474 | 0.1+ | 0.3− |
| 2006 05 30 | J95 | 0.1− | 0.0 | 2006 06 06 | 379 | 0.2− | 0.3+ | 2006 10 17 | 448 | 0.9+ | 0.9− |
| 2006 05 30 | J95 | 0.0 | 0.0 | 2006 06 06 | 379 | 0.4− | 0.5+ | 2006 10 17 | 448 | 0.7+ | 0.3− |
| 2006 05 30 | 704 | 0.1− | 0.9+ | 2006 06 07 | 473 | 0.2− | 0.2+ | 2006 10 17 | 448 | 0.3+ | 0.8− |
| 2006 05 30 | 704 | 0.1+ | 0.5+ | 2006 06 09 | H45 | 0.2+ | 0.4− | 2006 10 22 | E12 | 0.3− | 1.0+ |
| 2006 05 30 | 704 | 0.4− | 0.8+ | 2006 06 09 | H45 | 0.1− | 0.3− | 2006 10 22 | E12 | 0.4− | 0.6+ |
| 2006 05 30 | 704 | 0.6+ | 0.1+ | 2006 06 09 | H45 | 0.1+ | 0.2− | 2006 10 22 | E12 | 0.6− | 0.7+ |
| 2006 05 30 | 704 | 0.2+ | 0.4+ | 2006 06 09 | H45 | 0.1− | 0.3− | 2006 10 22 | E12 | 0.3− | 1.0+ |
| 2006 05 30 | 379 | 0.2+ | 0.9+ | 2006 06 09 | H45 | 0.1+ | 0.3− | 2006 11 24 | 703 | 0.1+ | 0.8+ |
| 2006 05 30 | 379 | 0.1+ | 0.9+ | 2006 06 09 | H45 | 0.0 | 0.2− | 2006 11 24 | 703 | 0.4− | 0.8+ |
| 2006 05 30 | 379 | 0.1− | 0.3+ | 2006 06 09 | H45 | 0.2+ | 0.5− | 2006 11 24 | 703 | 0.9− | 1.3+ |
| 2006 05 30 | 379 | 0.2− | 0.3+ | 2006 06 09 | 160 | 0.1+ | 0.0 | 2006 11 24 | 703 | 0.4− | 1.9+ |

### 2006 $KO_{42}$ = 2003 $SF_{60}$ = 2004 $YL_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.09808 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28129572 | $\omega$ | 243.54212 | | +0.61148146 | | +0.79038412 |
| $a$ | 2.3068922 | $\Omega$ | 64.20442 | | −0.71046118 | | +0.56912760 |
| $e$ | 0.1157149 | $i$ | 2.36757 | | −0.34833221 | | +0.22668638 |
| $P$ | 3.50 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 28 | 691 | 0.4− | 0.5− | 2003 09 18 | 699 | 0.6− | 0.4+ | 2006 05 20 | G96 | 0.1+ | 0.0 |
| 2000 11 28 | 691 | 1.0+ | 0.7+ | 2004 12 18 | G96 | 0.2− | 0.5+ | 2006 05 20 | G96 | 0.4+ | 0.0 |
| 2000 11 28 | 691 | 0.6− | 0.3− | 2004 12 18 | G96 | 0.1− | 0.7+ | 2006 05 24 | 644 | 0.1− | 0.2− |
| 2003 09 17 | 699 | 0.4+ | 0.7+ | 2004 12 18 | G96 | 0.0 | 0.2+ | 2006 05 24 | 644 | 0.3− | 0.1− |
| 2003 09 17 | 699 | 1.3− | 0.9+ | 2004 12 18 | G96 | 0.1+ | 0.2− | 2006 05 24 | 644 | 0.1+ | 0.9+ |
| 2003 09 17 | 699 | (0.4− | 2.3−) | 2004 12 19 | G96 | 0.1+ | 0.1+ | 2006 06 04 | G96 | 0.2− | 0.3− |
| 2003 09 17 | 699 | 0.6+ | 0.6− | 2004 12 19 | G96 | 0.2− | 0.2− | 2006 06 04 | G96 | 0.3+ | 0.3+ |
| 2003 09 18 | 699 | 0.3+ | 0.3+ | 2004 12 19 | G96 | 0.2− | 0.4+ | 2006 06 04 | G96 | 0.0 | 0.4+ |
| 2003 09 18 | 699 | (0.9+ | 1.8+) | 2004 12 19 | G96 | 0.7+ | 0.1− | 2006 06 04 | G96 | 0.6− | 0.2− |
| 2003 09 18 | 699 | 0.3+ | 0.9− | 2006 05 20 | G96 | 0.4+ | 0.2− | | | | |

### 2006 $KE_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.26529 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23060591 | $\omega$ | 230.07234 | | +0.98440522 | | +0.16789893 |
| $a$ | 2.6336361 | $\Omega$ | 120.20244 | | −0.13710771 | | +0.91925878 |
| $e$ | 0.1746555 | $i$ | 3.48268 | | −0.11021727 | | +0.35605230 |
| $P$ | 4.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 691 | 0.3+ | 0.1− | 2003 12 19 | 704 | 0.9+ | 1.2+ | 2006 05 25 | 691 | 0.0 | 0.1− |
| 2003 11 24 | 691 | 0.2− | 0.0 | 2005 04 02 | 691 | 0.0 | 0.1+ | 2006 05 25 | 691 | 0.1− | 0.2+ |
| 2003 11 24 | 691 | 0.2+ | 0.1+ | 2005 04 02 | 691 | 0.2− | 0.0 | 2006 05 25 | 691 | 0.1+ | 0.3− |
| 2003 12 16 | 691 | 0.3− | 0.0 | 2005 04 02 | 691 | 0.3+ | 0.1− | 2006 06 02 | 691 | 0.0 | 0.0 |
| 2003 12 16 | 691 | 0.0 | 0.1− | 2006 05 21 | G96 | 0.4− | 0.2+ | 2006 06 02 | 691 | 0.2+ | 0.1− |
| 2003 12 16 | 691 | 0.1− | 0.3− | 2006 05 21 | G96 | 0.2− | 0.1− | 2006 06 02 | 691 | (3.2− | 0.3−) |
| 2003 12 19 | 704 | 0.2− | 0.1+ | 2006 05 21 | G96 | 0.4− | 0.3+ | | | | |
| 2003 12 19 | 704 | 0.2+ | 0.0 | 2006 05 21 | G96 | 0.2− | 0.1+ | | | | |

### 2006 $KS_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.61825 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27777470 | $\omega$ | 113.19775 | | +0.87614562 | | +0.47895018 |
| $a$ | 2.3263457 | $\Omega$ | 218.24729 | | −0.46819854 | | +0.81858117 |
| $e$ | 0.1894807 | $i$ | 5.05524 | | −0.11471257 | | +0.31706719 |
| $P$ | 3.55 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 16 | 644 | 0.2+ | 0.4+ | 2003 10 22 | 691 | 0.1− | 0.4+ | 2006 05 25 | 691 | 0.2− | 0.2− |
| 2003 09 16 | 644 | 0.3− | 0.4+ | 2003 10 23 | 645 | 0.1+ | 0.0 | 2006 05 25 | 691 | 0.1+ | 0.0 |
| 2003 09 16 | 644 | 0.2+ | 0.8+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 05 25 | 691 | 0.1+ | 0.1− |
| 2003 09 30 | 691 | 0.1− | 0.2− | 2003 10 24 | 645 | 0.1+ | 0.1− | 2006 05 29 | 691 | 0.1− | 0.1− |
| 2003 09 30 | 691 | 0.2+ | 0.0 | 2003 10 24 | 645 | 0.0 | 0.1− | 2006 05 29 | 691 | 0.2− | 0.0 |
| 2003 09 30 | 691 | 0.1− | 0.1− | 2006 05 21 | 691 | 0.2− | 0.2+ | 2006 05 29 | 691 | 0.1+ | 0.2+ |
| 2003 10 22 | 691 | 0.4− | 0.2+ | 2006 05 21 | 691 | 0.4+ | 0.2+ | | | | |
| 2003 10 22 | 691 | 0.2− | 0.2+ | 2006 05 21 | 691 | 0.0 | 0.3− | | | | |

### 2006 $KH_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.31328 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28407440 | $\omega$ | 92.12383 | | +0.64006203 | | +0.76751008 |
| $a$ | 2.2918243 | $\Omega$ | 217.74873 | | −0.72587921 | | +0.58898751 |
| $e$ | 0.1873291 | $i$ | 3.30926 | | −0.25183324 | | +0.25302567 |
| $P$ | 3.47 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 07 | 691 | 0.1− | 0.7− | 2003 10 24 | 691 | 0.0 | 0.2− | 2006 05 08 | G96 | 0.8− | 1.2+ |
| 1999 06 07 | 691 | 0.3+ | 0.9+ | 2003 10 24 | 691 | 0.7+ | 0.1− | 2006 05 21 | G96 | 0.2− | 0.1− |
| 1999 06 07 | 691 | 0.1− | 0.1+ | 2003 11 19 | 645 | 0.0 | 0.1+ | 2006 05 21 | G96 | 0.0 | 0.2+ |
| 2003 09 29 | 691 | 0.0 | 0.4+ | 2003 11 19 | 645 | 0.0 | 0.0 | 2006 05 21 | G96 | 0.3− | 0.0 |
| 2003 09 29 | 691 | 0.0 | 0.4+ | 2005 01 17 | 691 | 0.5+ | 0.3+ | 2006 05 21 | G96 | 0.5− | 0.1+ |
| 2003 09 29 | 691 | 0.0 | 0.3+ | 2005 01 17 | 691 | 0.1− | 0.2+ | 2006 05 24 | 644 | 1.3+ | 0.8− |
| 2003 10 18 | 645 | 0.0 | 0.1− | 2005 01 17 | 691 | 0.1− | 0.6+ | 2006 05 24 | 644 | 0.2+ | 0.4+ |
| 2003 10 18 | 645 | 0.1− | 0.1− | 2006 04 25 | G96 | 0.5− | 0.2+ | 2006 05 24 | 644 | 0.0 | 0.4+ |
| 2003 10 19 | 645 | 0.1− | 0.0 | 2006 04 25 | G96 | 0.0 | 0.0 | 2006 05 25 | 644 | 0.1+ | 0.5+ |
| 2003 10 19 | 645 | 0.0 | 0.1+ | 2006 04 25 | G96 | 0.2− | 0.1− | 2006 05 25 | 644 | 0.1− | 0.1+ |
| 2003 10 22 | 645 | 0.0 | 0.0 | 2006 04 25 | G96 | 0.2+ | 0.1− | 2006 05 25 | 644 | 0.4+ | 0.2+ |
| 2003 10 22 | 645 | 0.1− | 0.0 | 2006 05 08 | G96 | 0.0 | 0.6+ | | | | |
| 2003 10 24 | 691 | 0.4+ | 0.1+ | 2006 05 08 | G96 | 0.7+ | 0.3+ | | | | |

### 2006 $KW_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.87189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24166562 | $\omega$ | 219.09767 | | +0.91897182 | | −0.39342975 |
| $a$ | 2.5526590 | $\Omega$ | 164.00850 | | +0.38162507 | | +0.87042751 |
| $e$ | 0.0795714 | $i$ | 5.52605 | | +0.09926277 | | +0.29592056 |
| $P$ | 4.08 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.2+ | 0.4+ | 2003 09 28 | 699 | 0.1+ | 0.6− | 2003 10 29 | 699 | 0.1+ | 0.4+ |
| 1995 11 14 | 691 | 0.2+ | 0.1− | 2003 09 28 | 704 | 0.8+ | 0.9+ | 2003 10 29 | 699 | 0.3+ | 0.6+ |
| 1995 11 14 | 691 | 0.1− | 0.4+ | 2003 09 28 | 699 | 0.9− | 0.3− | 2005 03 09 | G96 | 0.1− | 0.1+ |
| 1999 10 11 | 704 | 0.7− | 0.6− | 2003 10 02 | 327 | (4.1− | 1.7−) | 2005 03 09 | G96 | 0.0 | 0.0 |
| 1999 10 11 | 704 | 0.3− | 0.8− | 2003 10 02 | 327 | (5.9− | 4.1−) | 2005 03 09 | G96 | 0.1+ | 0.1− |
| 1999 10 11 | 704 | 0.3− | 1.0− | 2003 10 02 | 327 | (3.8− | 2.4−) | 2005 03 09 | G96 | 0.1+ | 0.0 |
| 1999 10 11 | 704 | 0.3− | 1.6− | 2003 10 15 | 699 | 0.1− | 0.6− | 2006 05 22 | 691 | 0.3− | 0.1+ |
| 1999 10 11 | 704 | 0.2− | 0.2− | 2003 10 15 | 699 | 0.7− | 0.4− | 2006 05 22 | 691 | 0.2+ | 0.2− |
| 1999 10 11 | 704 | 0.2+ | 0.3− | 2003 10 15 | 699 | 0.6+ | 0.7+ | 2006 05 22 | 691 | 0.4+ | 0.2+ |
| 1999 10 11 | 704 | 0.3− | 0.4− | 2003 10 15 | 699 | 1.2+ | 1.1+ | 2006 05 24 | G96 | 0.3+ | 0.0 |
| 1999 10 11 | 704 | 0.2+ | 1.6− | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 05 24 | G96 | 0.2+ | 0.1+ |
| 1999 10 11 | 704 | 0.3− | 0.7− | 2003 10 19 | 645 | 0.1+ | 0.0 | 2006 05 24 | G96 | 0.5− | 0.2+ |
| 2003 09 28 | 704 | 1.2+ | 1.2+ | 2003 10 22 | 645 | 0.1+ | 0.1+ | 2006 05 24 | G96 | 0.6+ | 0.3+ |
| 2003 09 28 | 704 | 0.8+ | 0.7+ | 2003 10 22 | 645 | 0.0 | 0.0 | 2006 05 25 | G96 | 0.5− | 0.1+ |
| 2003 09 28 | 699 | 0.6− | 0.0 | 2003 10 23 | 645 | 0.1+ | 0.1+ | 2006 05 25 | G96 | 0.4− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 704 | 0.5+ | 0.0 | 2003 10 23 | 645 | 0.1+ | 0.1+ | 2006 05 25 | G96 | 0.4− | 0.2− |
| 2003 09 28 | 699 | 0.2+ | 0.1+ | 2003 10 29 | 699 | 0.1+ | 0.4+ | | | | |
| 2003 09 28 | 704 | 0.6+ | 1.4+ | 2003 10 29 | 699 | 1.3− | 1.5+ | | | | |

**2006 KA$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.22269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21370543 | $\omega$ | 136.84728 | | +0.81377185 | | +0.58104783 |
| $a$ | 2.7707181 | $\Omega$ | 187.65910 | | −0.55563826 | | +0.77146153 |
| $e$ | 0.2257854 | $i$ | 5.42541 | | −0.17041567 | | +0.25928850 |
| $P$ | 4.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.2− | 0.1− | 2002 09 14 | 644 | 0.3− | 0.7− | 2006 05 24 | G96 | 0.1+ | 0.2− |
| 2002 08 12 | 704 | 0.7− | 0.1+ | 2002 09 14 | 644 | 0.0 | 0.9− | 2006 05 24 | G96 | 0.2− | 0.1+ |
| 2002 08 12 | 704 | 0.5− | 0.2+ | 2002 09 14 | 644 | 0.1− | 1.1− | 2006 05 24 | G96 | 0.3− | 0.1− |
| 2002 08 16 | 644 | 0.4+ | 0.4+ | 2006 04 30 | 691 | 0.1− | 0.4− | 2006 05 24 | G96 | 0.7− | 0.1− |
| 2002 08 16 | 644 | 0.5+ | 0.4+ | 2006 04 30 | 691 | 0.1− | 0.3− | 2006 05 26 | 691 | 0.2+ | 0.0 |
| 2002 08 16 | 644 | 0.4+ | 0.4+ | 2006 04 30 | 691 | 0.5− | 0.8+ | 2006 05 26 | 691 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.3+ | 0.4+ | 2006 05 22 | 691 | 0.3− | 0.0 | 2006 05 26 | 691 | 0.4+ | 0.0 |
| 2002 08 28 | 644 | 0.0 | 0.3+ | 2006 05 22 | 691 | 0.4+ | 0.1− | | | | |
| 2002 08 28 | 644 | 0.2+ | 0.3+ | 2006 05 22 | 691 | 0.1+ | 0.0 | | | | |

**2006 KZ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.62338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24192299 | $\omega$ | 222.00084 | | +0.99701553 | | −0.04448459 |
| $a$ | 2.5508482 | $\Omega$ | 140.41531 | | +0.06270917 | | +0.94335418 |
| $e$ | 0.2259819 | $i$ | 5.68266 | | −0.04502890 | | +0.32879175 |
| $P$ | 4.07 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 12 14 | 644 | 0.0 | 0.3+ | 2006 05 22 | 691 | 0.1+ | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2003 12 14 | 644 | 0.3− | 0.4+ | 2006 05 22 | 691 | 0.3− | 0.1− |
| 2003 11 18 | 691 | 0.3+ | 0.0 | 2003 12 14 | 644 | 0.4− | 0.1+ | 2006 05 24 | G96 | 0.2− | 0.4− |
| 2003 11 18 | 691 | 0.3+ | 0.2− | 2003 12 17 | 691 | 0.1+ | 0.3− | 2006 05 24 | G96 | 0.6− | 0.2− |
| 2003 11 18 | 691 | 0.2+ | 0.0 | 2003 12 17 | 691 | 0.2− | 0.1+ | 2006 05 24 | G96 | 0.5− | 0.4− |
| 2003 12 01 | 704 | 0.7+ | 0.9+ | 2003 12 17 | 691 | 0.0 | 0.3− | 2006 05 24 | G96 | 0.8− | 0.4− |
| 2003 12 01 | 704 | 0.2− | 0.4+ | 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 05 26 | 691 | 0.3+ | 0.2+ |
| 2003 12 01 | 704 | 0.8− | 0.4+ | 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 05 26 | 691 | 0.1+ | 0.2+ |
| 2003 12 01 | 704 | 0.9+ | 0.6− | 2003 12 28 | 691 | 0.2− | 0.1− | 2006 05 26 | 691 | 0.2+ | 0.1+ |
| 2003 12 01 | 704 | 0.9− | 0.7+ | 2006 05 22 | 691 | 0.1+ | 0.1+ | | | | |

**2006 KM$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.46414 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20842611 | $\omega$ | 243.09476 | | −0.17718819 | | +0.98394640 |
| $a$ | 2.8173100 | $\Omega$ | 16.74017 | | −0.87469934 | | −0.14751959 |
| $e$ | 0.0628072 | $i$ | 4.24153 | | −0.45111575 | | −0.10043629 |
| $P$ | 4.73 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 599 | 0.4+ | 0.5+ | 2006 03 03 | G96 | 0.3− | 0.2+ | 2006 05 24 | G96 | 0.9− | 0.0 |
| 2003 09 19 | 599 | 0.7+ | 0.3+ | 2006 03 03 | G96 | 0.3− | 0.0 | 2006 05 24 | G96 | 0.9− | 0.4− |
| 2003 09 19 | 599 | 0.3+ | 0.7+ | 2006 03 24 | 699 | 0.2− | 0.1− | 2006 05 24 | G96 | 1.0− | 0.3− |
| 2003 09 26 | 645 | 0.0 | 0.0 | 2006 03 24 | 699 | 0.4− | 0.5− | 2006 05 25 | 291 | 0.4+ | 0.0 |
| 2003 09 26 | 645 | 0.0 | 0.1− | 2006 03 24 | 699 | 1.2+ | 0.1+ | 2006 05 25 | 291 | 0.5+ | 0.3+ |
| 2003 09 29 | 704 | 0.7+ | 0.6− | 2006 03 24 | 699 | 0.2− | 0.4− | 2006 05 25 | G96 | 0.1+ | 0.0 |
| 2003 09 29 | 704 | 0.4+ | 1.4+ | 2006 03 26 | G96 | 0.1+ | 0.0 | 2006 05 25 | G96 | 0.6− | 0.3− |
| 2003 09 29 | 704 | 0.1− | 0.7+ | 2006 03 26 | G96 | 0.1− | 0.3+ | 2006 05 25 | 291 | 0.3+ | 0.2+ |
| 2003 09 29 | 704 | 0.9− | 0.5− | 2006 03 26 | G96 | 0.2+ | 0.2+ | 2006 05 25 | G96 | 0.3− | 0.1− |
| 2006 03 03 | G96 | 0.1+ | 0.4+ | 2006 03 26 | G96 | 0.0 | 0.0 | 2006 05 25 | G96 | 0.5− | 0.2− |
| 2006 03 03 | G96 | 0.2+ | 0.2+ | 2006 05 24 | G96 | 0.3− | 0.3− | | | | |

**2006 KU$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.73633 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23269954 | $\omega$ | 100.79334 | | +0.87504818 | | +0.44917447 |
| $a$ | 2.6178155 | $\Omega$ | 232.76425 | | −0.48289607 | | +0.83567011 |
| $e$ | 0.2056447 | $i$ | 13.09409 | | +0.03319722 | | +0.31606608 |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 14 | 704 | 0.3− | 0.1− | 2003 12 17 | 691 | 0.3+ | 0.2+ | 2006 05 24 | 691 | 0.0 | 0.1+ |
| 2002 06 14 | 704 | 0.1+ | 0.5+ | 2003 12 17 | 691 | 0.1− | 0.1+ | 2006 05 25 | 644 | 0.2− | 0.4− |
| 2002 06 14 | 704 | 0.2− | 0.1+ | 2003 12 28 | 691 | 0.2+ | 0.1− | 2006 05 25 | 644 | 0.6− | 0.0 |
| 2002 06 14 | 704 | 0.4+ | 0.3− | 2003 12 28 | 691 | 0.1− | 0.5− | 2006 05 25 | 644 | 0.6− | 0.6− |
| 2003 11 23 | 691 | 0.3+ | 0.3+ | 2003 12 28 | 691 | 0.4− | 0.4− | 2006 05 28 | 691 | 0.2− | 0.3+ |
| 2003 11 23 | 691 | 0.1− | 0.3+ | 2006 05 16 | E12 | 0.7− | 0.6+ | 2006 05 28 | 691 | 0.2+ | 0.1+ |
| 2003 11 23 | 691 | 0.3+ | 0.4+ | 2006 05 16 | E12 | 0.6+ | 0.2+ | 2006 05 28 | 691 | 0.2+ | 0.3− |
| 2003 12 01 | 704 | 0.8− | 0.2+ | 2006 05 16 | E12 | 0.4− | 0.6− | 2006 06 02 | 691 | 0.2+ | 0.1+ |
| 2003 12 01 | 704 | 0.3+ | 0.2+ | 2006 05 16 | E12 | 0.5− | 0.7− | 2006 06 02 | 691 | 0.2+ | 0.1− |
| 2003 12 01 | 704 | 0.5+ | 0.8+ | 2006 05 24 | 691 | 0.0 | 0.3+ | 2006 06 02 | 691 | 0.2+ | 0.3+ |
| 2003 12 17 | 691 | 0.4− | 0.2− | 2006 05 24 | 691 | 0.1− | 0.1+ | | | | |

**2006 KQ$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.41937 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22402415 | $\omega$ | 133.00624 | | +0.99332627 | | +0.09529011 |
| $a$ | 2.6849703 | $\Omega$ | 221.65075 | | −0.11147422 | | +0.93778380 |
| $e$ | 0.0392241 | $i$ | 5.61126 | | +0.02960436 | | +0.33388821 |
| $P$ | 4.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 691 | 0.2+ | 0.1− | 2003 10 24 | 704 | 0.6− | 1.1+ | 2006 05 24 | 691 | 0.1+ | 0.0 |
| 2003 09 28 | 691 | 0.0 | 0.0 | 2003 10 24 | 704 | 0.4+ | 0.7+ | 2006 05 24 | 691 | 0.9− | 0.3− |
| 2003 09 28 | 691 | 0.2+ | 0.2− | 2003 11 18 | 291 | 0.4+ | 0.1+ | 2006 05 25 | G96 | 0.1− | 0.3− |
| 2003 10 19 | 691 | 0.1− | 0.1− | 2003 11 18 | 291 | 0.9− | 0.1+ | 2006 05 25 | G96 | 0.5− | 0.5− |
| 2003 10 19 | 691 | 0.2− | 0.1− | 2003 11 18 | 291 | 0.2− | 0.1− | 2006 05 25 | G96 | 0.3− | 0.3− |
| 2003 10 19 | 691 | 0.3− | 0.0 | 2003 11 28 | 691 | 0.2+ | 0.2+ | 2006 05 25 | G96 | 0.1− | 0.6− |
| 2003 10 24 | 704 | 0.8+ | 0.0 | 2003 11 28 | 691 | 0.3+ | 0.0 | 2006 06 02 | 691 | 0.2+ | 0.2− |
| 2003 10 24 | 704 | 0.4− | 0.3+ | 2003 11 28 | 691 | 0.4+ | 0.4− | 2006 06 02 | 691 | 0.5+ | 0.7+ |
| 2003 10 24 | 704 | 0.0 | 0.2+ | 2006 05 24 | 691 | 0.3+ | 0.0 | 2006 06 02 | 691 | 0.1+ | 0.0 |

**2006 KO$_{72}$ = 2001 AT$_{52}$ = 2003 QB$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.66256 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22864780 | $\omega$ | 263.99720 | | −0.71950681 | | −0.62532637 |
| $a$ | 2.6486508 | $\Omega$ | 236.86225 | | +0.68827162 | | −0.70012320 |
| $e$ | 0.1496227 | $i$ | 21.14945 | | −0.09269373 | | −0.34466569 |
| $P$ | 4.31 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 22 | 327 | 0.5+ | 1.1+ | 2003 08 27 | 644 | 0.7− | 0.9+ | 2006 05 26 | G96 | 0.1− | 0.3− |
| 1995 12 22 | 327 | 0.2− | 1.3− | 2003 08 27 | 644 | 0.7− | 0.8+ | 2006 05 26 | G96 | 0.3− | 0.4− |
| 1995 12 22 | 327 | 0.7+ | 1.0+ | 2003 08 28 | 673 | 0.4− | 0.8+ | 2006 05 28 | 704 | (1.8+ | 0.0 ) |
| 2001 01 04 | 608 | 0.9− | 0.9− | 2003 08 28 | 673 | 0.4− | 0.9+ | 2006 05 28 | 704 | 0.5+ | 0.3+ |
| 2001 01 04 | 608 | 1.0− | 0.9− | 2003 08 28 | 673 | 0.2− | 0.8+ | 2006 05 28 | 704 | 0.0 | 1.3+ |
| 2001 01 04 | 608 | 0.8− | 0.9− | 2006 05 22 | E12 | 0.4− | 0.3− | 2006 05 28 | 704 | 1.2+ | 0.3+ |
| 2001 02 25 | 608 | 0.8+ | 2.3+ | 2006 05 22 | E12 | 0.2− | 0.2− | 2006 06 17 | 691 | 0.3+ | 0.1+ |
| 2001 02 25 | 608 | 1.2+ | 2.6+ | 2006 05 22 | E12 | 0.6− | 0.0 | 2006 06 17 | 691 | 0.0 | 0.0 |
| 2001 02 25 | 608 | 1.2+ | 2.0+ | 2006 05 26 | G96 | 0.3− | 0.4− | 2006 06 17 | 691 | 0.2+ | 0.2+ |
| 2003 08 27 | 644 | 0.4− | 0.8+ | 2006 05 26 | G96 | 0.2− | 0.3− | | | | |

**2006 KS$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.91425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22684931 | $\omega$ | 75.85705 | | +0.43318289 | | +0.89927293 |
| $a$ | 2.6626315 | $\Omega$ | 219.98877 | | −0.85899446 | | +0.39158934 |
| $e$ | 0.1502688 | $i$ | 5.40240 | | −0.27291224 | | +0.19484861 |
| $P$ | 4.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 644 | 0.1+ | 0.3− | 2002 07 29 | 644 | 0.0 | 0.2− | 2006 05 26 | G96 | 0.1− | 0.0 |
| 2002 07 09 | 644 | 0.2− | 0.2+ | 2006 05 08 | G96 | 0.2− | 0.1+ | 2006 05 26 | G96 | 0.2+ | 0.1− |
| 2002 07 09 | 644 | 0.3+ | 0.2+ | 2006 05 08 | G96 | 0.0 | 0.2+ | 2006 05 26 | G96 | 0.2+ | 0.2− |
| 2002 07 21 | 644 | 0.0 | 0.2+ | 2006 05 08 | G96 | 0.5+ | 0.1− | 2006 05 26 | G96 | 0.5− | 0.1− |
| 2002 07 21 | 644 | 0.1+ | 0.3− | 2006 05 08 | G96 | 0.1− | 0.0 | 2006 06 21 | 691 | 0.0 | 0.1+ |
| 2002 07 21 | 644 | 0.0 | 0.1+ | 2006 05 24 | 644 | 0.6+ | 0.3− | 2006 06 21 | 691 | 0.1− | 0.1− |
| 2002 07 29 | 644 | 0.0 | 0.0 | 2006 05 24 | 644 | 0.2− | 0.2− | 2006 06 21 | 691 | 0.0 | 0.2+ |
| 2002 07 29 | 644 | 0.3− | 0.1+ | 2006 05 24 | 644 | 0.2− | 0.0 | | | | |

**2006 KR$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.65522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22584714 | $\omega$ | 80.08717 | | +0.70387168 | | +0.69032765 |
| $a$ | 2.6705025 | $\Omega$ | 236.02367 | | −0.70474838 | | +0.64920897 |
| $e$ | 0.2616747 | $i$ | 11.64384 | | −0.08885036 | | +0.31933594 |
| $P$ | 4.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 18 | 704 | 1.2− | 1.2+ | 2002 08 14 | 644 | 0.1+ | 0.4− | 2006 05 28 | 703 | 0.5− | 0.1− |
| 2002 07 18 | 704 | 0.4+ | 0.9+ | 2002 09 11 | 644 | 0.8+ | 0.1− | 2006 05 28 | 703 | 0.3− | 0.5− |
| 2002 07 18 | 704 | 0.1− | 0.6+ | 2002 09 11 | 644 | 0.6+ | 0.4− | 2006 05 28 | 703 | (2.2− | 2.1+) |
| 2002 08 03 | 644 | 0.3+ | 0.4+ | 2002 09 11 | 644 | 0.2+ | 0.1− | 2006 05 28 | 704 | 0.6+ | 1.0+ |
| 2002 08 03 | 644 | 0.5+ | 0.3+ | 2006 05 24 | 644 | 0.2+ | 0.2− | 2006 05 28 | 704 | 0.9− | 0.1− |
| 2002 08 03 | 644 | 0.4+ | 0.1+ | 2006 05 24 | 644 | 0.0 | 0.2− | 2006 05 28 | 704 | 0.4+ | 0.2+ |
| 2002 08 13 | 699 | 0.1+ | 0.1+ | 2006 05 24 | 644 | 0.2+ | 0.2− | 2006 05 28 | 704 | 0.8+ | 0.4− |
| 2002 08 13 | 699 | 0.9− | 0.3− | 2006 05 26 | G96 | 0.2− | 0.2− | 2006 06 23 | 644 | 0.1− | 0.3− |
| 2002 08 13 | 699 | 0.6− | 0.6− | 2006 05 26 | G96 | 0.2− | 0.2− | 2006 06 23 | 644 | 0.4− | 0.5− |
| 2002 08 13 | 699 | 0.2− | 0.5− | 2006 05 26 | G96 | 0.1+ | 0.0 | 2006 06 23 | 644 | 0.2− | 0.2− |
| 2002 08 14 | 644 | 0.1− | 0.4− | 2006 05 26 | G96 | 0.2+ | 0.1− | | | | |
| 2002 08 14 | 644 | 0.3− | 0.4− | 2006 05 28 | 703 | 0.2+ | 1.1+ | | | | |

**2006 KW$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.53416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21459124 | $\omega$ | 258.64321 | | +0.00843800 | | −0.99963520 |
| $a$ | 2.7630881 | $\Omega$ | 190.97092 | | +0.96197556 | | +0.01511964 |
| $e$ | 0.1666619 | $i$ | 7.74788 | | +0.27300517 | | −0.02237983 |
| $P$ | 4.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 291 | 0.1− | 0.1− | 2003 10 20 | 691 | 0.0 | 0.0 | 2006 05 24 | G96 | 0.2+ | 0.1− |
| 2003 09 20 | 291 | 0.1− | 0.1− | 2003 10 20 | 691 | 0.0 | 0.2+ | 2006 05 24 | G96 | 0.2− | 0.0 |
| 2003 09 20 | 291 | 0.2− | 0.1+ | 2003 10 20 | 691 | 0.0 | 0.1+ | 2006 05 24 | G96 | 0.5− | 0.0 |
| 2003 09 27 | 691 | 0.1− | 0.3− | 2003 11 16 | 645 | 0.1+ | 0.0 | 2006 05 26 | 691 | 0.1+ | 0.3+ |
| 2003 09 27 | 691 | 0.0 | 0.1− | 2003 11 16 | 645 | 0.0 | 0.0 | 2006 05 26 | 691 | 0.1− | 0.0 |
| 2003 09 27 | 691 | 0.0 | 0.1+ | 2006 05 24 | G96 | 0.4− | 0.1− | 2006 05 26 | 691 | 0.2+ | 0.2− |

**2006 KY$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.93196 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21861733 | $\omega$ | 284.53166 | | −0.45108074 | | −0.89200939 |
| $a$ | 2.7290594 | $\Omega$ | 192.40430 | | +0.86208419 | | −0.42705478 |
| $e$ | 0.1933029 | $i$ | 7.77926 | | +0.23094807 | | −0.14813322 |
| $P$ | 4.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.3+ | 0.1− | 2005 02 02 | 703 | 0.1− | 1.0+ | 2006 05 24 | G96 | 0.3− | 0.4+ |
| 2001 03 25 | 695 | 0.2− | 0.1+ | 2005 02 02 | 703 | 0.5+ | 1.3+ | 2006 05 24 | G96 | 0.0 | 0.0 |
| 2003 09 16 | 691 | 0.1+ | 0.4+ | 2005 02 02 | 703 | 0.8+ | 1.7+ | 2006 05 26 | 691 | 0.4+ | 0.3+ |
| 2003 09 16 | 691 | 0.1+ | 0.1− | 2005 02 02 | 703 | 0.3+ | 1.2+ | 2006 05 26 | 691 | 0.2− | 0.2− |
| 2003 09 16 | 691 | 0.1− | 0.3+ | 2005 02 09 | 704 | 0.1+ | 0.3+ | 2006 05 26 | 691 | 0.0 | 0.2− |
| 2003 09 26 | 645 | 0.1+ | 0.0 | 2005 02 09 | 704 | 0.5− | 0.1− | 2006 05 30 | 691 | 0.3+ | 0.5+ |
| 2003 09 26 | 645 | 0.1− | 0.1+ | 2005 02 09 | 704 | 0.4− | 0.7− | 2006 05 30 | 691 | 0.0 | 0.2+ |
| 2003 09 28 | 645 | 0.1− | 0.0 | 2006 05 24 | G96 | 0.3− | 0.3+ | 2006 05 30 | 691 | 0.1− | 0.3+ |
| 2003 09 28 | 645 | 0.0 | 0.0 | 2006 05 24 | G96 | 0.0 | 0.2− | | | | |

**2006 KR$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.79950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17540781 | $\omega$ | 233.07980 | | +0.22088245 | | −0.97252831 |
| $a$ | 3.1606041 | $\Omega$ | 204.46774 | | +0.94172757 | | +0.23227085 |
| $e$ | 0.0214138 | $i$ | 10.21926 | | +0.25369299 | | −0.01545737 |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.1− | 1.1− | 2002 10 04 | 704 | 1.0− | 0.5+ | 2006 05 25 | G96 | 0.4− | 0.8− |
| 1991 10 13 | 691 | 0.1+ | 0.1− | 2002 10 04 | 644 | 0.0 | 0.1+ | 2006 05 25 | G96 | 0.6− | 0.3− |
| 1991 10 13 | 691 | 0.2+ | 0.2− | 2002 10 16 | 644 | 0.0 | 0.2+ | 2006 05 25 | G96 | 0.7− | 0.2− |
| 2002 09 06 | 704 | 1.1+ | 0.6+ | 2002 10 16 | 644 | 0.9− | 0.2− | 2006 05 26 | 691 | 0.7+ | 0.3+ |
| 2002 09 06 | 704 | 0.5+ | 0.4+ | 2002 10 16 | 644 | 0.1+ | 0.2+ | 2006 05 26 | 691 | 0.0 | 0.2− |
| 2002 09 06 | 704 | 0.1− | 1.4+ | 2005 03 10 | 699 | 0.3+ | 0.4+ | 2006 05 26 | 691 | 0.1+ | 0.3− |
| 2002 10 04 | 644 | 0.0 | 0.0 | 2005 03 10 | 699 | 0.0 | 0.9− | 2006 05 30 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 644 | 0.0 | 0.1+ | 2005 03 10 | 699 | 0.0 | 0.1− | 2006 05 30 | 691 | 0.1− | 0.1+ |
| 2002 10 04 | 704 | 0.0 | 0.5+ | 2005 03 10 | 699 | 0.4− | 0.3+ | 2006 05 30 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.6− | 0.4+ | 2006 05 25 | G96 | 0.8− | 0.8− | | | | |

**2006 KO$_{82}$ = 2005 GS$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.11459 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28399196 | $\omega$ | 199.71595 | | +0.95774481 | | +0.28625903 |
| $a$ | 2.2922678 | $\Omega$ | 143.61287 | | −0.25716248 | | +0.89578184 |
| $e$ | 0.2171357 | $i$ | 2.69947 | | −0.12881121 | | +0.34004509 |
| $P$ | 3.47 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 08 | 691 | (0.7+ | 5.7−) | 2005 04 10 | 695 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.3− |
| 1996 12 08 | 691 | 0.0 | 0.5+ | 2005 04 10 | 695 | 0.1− | 0.1+ | 2006 08 28 | 699 | 1.1− | 0.1+ |
| 1996 12 08 | 691 | 0.2+ | 0.4+ | 2005 04 11 | 695 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.3+ |
| 2002 04 09 | 807 | 1.0+ | 0.3− | 2006 05 25 | G96 | 0.1+ | 0.4− | 2006 08 28 | 699 | 0.0 | 0.0 |
| 2002 04 09 | 807 | 1.0+ | 0.1− | 2006 05 25 | G96 | 0.2+ | 0.5− | 2006 08 28 | 703 | 0.1− | 0.8+ |
| 2003 11 23 | 691 | 0.1− | 0.4+ | 2006 05 25 | G96 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.1+ |
| 2003 11 23 | 691 | 0.0 | 1.0+ | 2006 05 25 | G96 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.0 |
| 2003 11 23 | 691 | 0.5− | 1.0+ | 2006 05 26 | G96 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2003 12 16 | 691 | 0.2+ | 0.8+ | 2006 05 26 | G96 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.4+ |
| 2003 12 16 | 691 | 0.1+ | 0.6+ | 2006 05 26 | G96 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.2+ |
| 2003 12 16 | 691 | 0.0 | 0.7+ | 2006 05 26 | G96 | 0.2− | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.3− | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 0.6− | 0.2− | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2005 03 10 | G96 | 0.9− | 0.0 | 2006 08 15 | 644 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.0 |
| 2005 03 10 | G96 | 0.6− | 0.1+ | 2006 08 28 | 699 | 1.5+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.1+ |

**2006 KX$_{82}$ = 2000 SE$_{339}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.36851 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27024375 | $\omega$ | 77.62509 | | −0.32352553 | | −0.94619350 |
| $a$ | 2.3693667 | $\Omega$ | 31.25398 | | +0.86280765 | | −0.29803790 |
| $e$ | 0.1727444 | $i$ | 0.77383 | | +0.38845101 | | −0.12606061 |
| $P$ | 3.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 06 | 910 | 0.5− | 0.9− | 2002 03 20 | 699 | 1.7+ | 1.1+ | 2004 12 19 | G96 | 0.3+ | 0.1+ |
| 1997 12 06 | 910 | 0.1− | 0.7− | 2002 03 20 | 699 | 0.9+ | 1.3− | 2004 12 19 | G96 | 0.2+ | 0.3− |
| 1997 12 06 | 910 | 0.0 | 0.2− | 2002 03 20 | 699 | 0.8− | 0.5+ | 2004 12 19 | G96 | 0.1+ | 0.6− |
| 1998 01 25 | 566 | 0.3− | 0.3+ | 2004 11 04 | 703 | 0.2+ | 0.4+ | 2006 05 19 | G96 | 0.5− | 0.2− |
| 1998 01 25 | 566 | 0.1− | 0.5+ | 2004 11 04 | 703 | 0.4− | 0.4− | 2006 05 19 | G96 | 0.5− | 0.1+ |
| 1998 01 25 | 566 | 0.8− | 0.3+ | 2004 11 04 | 703 | 0.2− | 0.8+ | 2006 05 19 | G96 | 0.1− | 0.1+ |
| 2000 09 25 | 608 | 0.1− | 0.2+ | 2004 11 04 | 703 | 0.2− | 0.3+ | 2006 05 19 | G96 | 0.2− | 0.2+ |
| 2000 09 25 | 608 | 0.4− | 0.6− | 2004 11 17 | 599 | 0.2− | 0.2+ | 2006 05 26 | G96 | 0.3− | 0.1− |
| 2000 09 25 | 608 | 0.6− | 0.6+ | 2004 11 17 | 599 | 0.0 | 0.2+ | 2006 05 26 | G96 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.4− | 0.3− | 2004 12 02 | 699 | 0.5− | 0.0 | 2006 05 26 | G96 | 0.2+ | 0.3+ |
| 2000 10 01 | 704 | 1.0+ | 0.6+ | 2004 12 02 | 699 | 0.3− | 0.9+ | 2006 05 26 | G96 | 0.4− | 0.2− |
| 2000 10 01 | 704 | 0.5+ | 0.5+ | 2004 12 02 | 699 | 0.3− | 0.6− | 2006 05 28 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.5+ | 0.2+ | 2004 12 02 | 699 | 1.3+ | 0.4+ | 2006 05 28 | 691 | 0.1− | 0.1+ |
| 2002 03 20 | 699 | 1.7+ | 0.1+ | 2004 12 19 | G96 | 0.1− | 0.1− | 2006 05 28 | 691 | 0.0 | 0.1− |

**2006 KA**$_{83}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.01058 | | (2000.0) | | | |
| $n$ | 0.22153773 | $\omega$ | 34.05605 | | −0.55940688 | +0.82783106 |
| $a$ | 2.7050227 | $\Omega$ | 202.02024 | | −0.78324149 | −0.54448327 |
| $e$ | 0.1796746 | $i$ | 6.42383 | | −0.27128715 | −0.13503222 |
| $P$ | 4.45 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 05 | 691 | 0.4− | 0.2− | 2002 07 21 | 644 | 0.4− | 0.4+ | 2006 05 19 | 644 | 0.1− | 0.1+ |
| 1997 05 05 | 691 | 0.6+ | 0.0 | 2002 07 21 | 644 | 0.4+ | 0.0 | 2006 05 19 | 644 | 0.1+ | 0.0 |
| 1997 05 05 | 691 | 0.3− | 0.2− | 2002 08 05 | 644 | 0.0 | 0.2+ | 2006 05 25 | G96 | 0.4− | 0.0 |
| 2001 02 22 | 645 | 0.0 | 0.2+ | 2002 08 05 | 644 | 0.2− | 0.5+ | 2006 05 25 | G96 | 0.3+ | 0.0 |
| 2001 02 22 | 645 | 0.0 | 0.2+ | 2002 08 05 | 644 | 0.0 | 0.4+ | 2006 05 25 | G96 | 0.4− | 0.0 |
| 2001 03 20 | 608 | 0.1+ | 1.2− | 2002 08 13 | 644 | 0.0 | 0.3+ | 2006 05 28 | 704 | 0.7+ | 1.5+ |
| 2001 03 20 | 608 | 0.1+ | 1.2− | 2002 08 13 | 644 | 0.2− | 0.2+ | 2006 05 28 | 704 | 0.5+ | 0.7+ |
| 2001 03 20 | 608 | 0.0 | 1.2− | 2002 08 13 | 704 | 0.2− | 0.4− | 2006 05 28 | 704 | 0.2− | 1.7+ |
| 2002 07 12 | 644 | 0.4− | 0.2+ | 2002 08 13 | 644 | 0.0 | 0.2+ | 2006 05 28 | 704 | 0.7+ | 0.2+ |
| 2002 07 12 | 644 | 0.3− | 0.1+ | 2002 08 13 | 704 | 0.5− | 0.3+ | 2006 06 04 | G96 | 0.2− | 0.2− |
| 2002 07 12 | 644 | 0.1− | 0.1+ | 2002 08 13 | 704 | 0.9+ | 0.1− | 2006 06 04 | G96 | 0.4− | 1.5− |
| 2002 07 21 | 644 | 0.0 | 0.5+ | 2006 05 19 | 644 | 0.2+ | 0.1− | 2006 06 04 | G96 | 0.6− | 1.9− |

**2006 KW**$_{89}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 78.92086 | | (2000.0) | | | |
| $n$ | 0.21978298 | $\omega$ | 113.25032 | | −0.95799753 | +0.09567009 |
| $a$ | 2.7194016 | $\Omega$ | 73.12600 | | −0.21511187 | −0.86316342 |
| $e$ | 0.0562945 | $i$ | 16.41014 | | +0.18965128 | −0.49577831 |
| $P$ | 4.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.4− | 0.2+ | 2005 01 15 | 704 | 1.5+ | 0.1+ | 2006 05 21 | G96 | 0.3+ | 0.6− |
| 1999 11 12 | 704 | 0.0 | 0.4+ | 2005 01 15 | 704 | 1.3+ | 0.1+ | 2006 05 21 | G96 | 0.2+ | 0.4− |
| 1999 11 12 | 704 | 0.8− | 0.3+ | 2005 01 15 | 704 | 0.4+ | 0.5+ | 2006 05 21 | G96 | 0.4− | 0.3− |
| 1999 11 12 | 704 | 0.2− | 0.3+ | 2005 01 15 | 704 | 0.3− | 0.5− | 2006 05 28 | 704 | 0.2+ | 0.7+ |
| 1999 12 05 | 695 | 0.7+ | 0.4+ | 2005 01 31 | 704 | 0.6− | 0.4− | 2006 05 28 | 704 | 0.3− | 1.5+ |
| 1999 12 05 | 695 | 0.4− | 0.7+ | 2005 01 31 | 704 | 0.1− | 0.6− | 2006 05 28 | 704 | 1.0+ | 0.2+ |
| 2001 03 23 | 608 | 0.5+ | 0.7+ | 2005 01 31 | 704 | 0.3+ | 0.2+ | 2006 05 28 | 704 | 0.2− | 0.2− |
| 2001 03 23 | 608 | 0.1+ | 0.2+ | 2005 01 31 | 704 | 0.3+ | 0.4− | 2006 05 28 | 704 | 0.5+ | 1.7+ |
| 2001 03 23 | 608 | 0.2+ | 0.2+ | 2005 02 14 | 704 | 0.3− | 0.1− | 2006 06 20 | 691 | 0.1− | 0.1− |
| 2005 01 15 | 703 | 0.8− | 0.5− | 2005 02 14 | 704 | 0.1− | 0.7+ | 2006 06 20 | 691 | 0.0 | 0.2− |
| 2005 01 15 | 703 | 1.0− | 0.4− | 2005 02 14 | 704 | 0.1− | 0.3− | 2006 06 20 | 691 | 0.2− | 0.0 |
| 2005 01 15 | 703 | 0.4− | 0.4+ | 2005 02 14 | 704 | 0.4+ | 0.1+ | | | | |
| 2005 01 15 | 703 | 0.6− | 0.9− | 2006 05 21 | G96 | 0.0 | 0.4− | | | | |

**2006 KQ**$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.11923 | | (2000.0) | | | |
| $n$ | 0.26508721 | $\omega$ | 120.12469 | | +0.88955998 | +0.45247283 |
| $a$ | 2.3999942 | $\Omega$ | 213.08988 | | −0.44865552 | +0.83945682 |
| $e$ | 0.1246375 | $i$ | 6.61157 | | −0.08597243 | +0.30096607 |
| $P$ | 3.72 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 08 28 | 644 | 0.0 | 0.1+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 04 24 | G96 | 0.4− | 0.7− |
| 2003 08 28 | 644 | 0.0 | 0.1+ | 2003 10 23 | 645 | 0.1− | 0.0 | 2006 05 25 | 691 | 0.0 | 0.0 |
| 2003 08 28 | 644 | 0.2+ | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.0 | 2006 05 25 | 691 | 0.3+ | 0.0 |
| 2003 09 30 | 691 | 0.0 | 0.1+ | 2003 10 24 | 645 | 0.1+ | 0.0 | 2006 05 25 | 691 | 0.2− | 0.2− |
| 2003 09 30 | 691 | 0.1− | 0.1+ | 2003 11 19 | 645 | 0.1− | 0.1− | 2006 05 29 | 691 | 0.1− | 0.4+ |
| 2003 09 30 | 691 | 0.1− | 0.2− | 2003 11 19 | 645 | 0.0 | 0.1− | 2006 05 29 | 691 | 0.1+ | 0.0 |
| 2003 10 15 | 644 | 0.3− | 0.4+ | 2006 04 24 | G96 | 0.5− | 0.1+ | 2006 05 29 | 691 | 0.0 | 0.2− |
| 2003 10 15 | 644 | 0.1− | 0.5+ | 2006 04 24 | G96 | 0.1− | 0.3− | | | | |
| 2003 10 15 | 644 | 0.1− | 0.4+ | 2006 04 24 | G96 | 0.5+ | 0.1− | | | | |

**2006 KF**$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.81354 | | (2000.0) | | | |
| $n$ | 0.24424224 | $\omega$ | 196.68588 | | +0.20768768 | +0.96198858 |
| $a$ | 2.5346745 | $\Omega$ | 85.56846 | | −0.87593955 | +0.26358784 |
| $e$ | 0.0943314 | $i$ | 10.24489 | | −0.43542592 | −0.07141017 |
| $P$ | 4.04 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 22 | 691 | 0.2− | 0.4+ | 2003 11 20 | 645 | 0.1− | 0.1− | 2006 05 26 | G96 | 0.3+ | 0.4− |
| 2003 10 22 | 691 | 0.1+ | 0.2+ | 2003 11 20 | 645 | 0.1− | 0.1− | 2006 05 26 | G96 | 0.2− | 0.8− |
| 2003 10 22 | 691 | 0.1− | 0.3+ | 2006 05 08 | G96 | 0.2+ | 0.5− | 2006 05 28 | 704 | 0.6− | 0.1− |
| 2003 10 23 | 645 | 0.1+ | 0.0 | 2006 05 08 | G96 | 0.1+ | 0.1− | 2006 05 28 | 704 | 0.2+ | 1.5+ |
| 2003 10 23 | 645 | 0.1+ | 0.1+ | 2006 05 08 | G96 | 0.1− | 0.4− | 2006 05 28 | 704 | 0.1− | 0.2+ |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2006 05 08 | G96 | 0.1+ | 0.1+ | 2006 05 28 | 704 | 0.0 | 0.5+ |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2006 05 26 | G96 | 0.0 | 0.6− | | | | |

**2006 KV**$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.03771 | | (2000.0) | | | |
| $n$ | 0.21940653 | $\omega$ | 58.36357 | | +0.09687406 | +0.99144461 |
| $a$ | 2.7225113 | $\Omega$ | 217.50535 | | −0.95490438 | +0.06779729 |
| $e$ | 0.1416085 | $i$ | 8.26122 | | −0.28066536 | +0.11153971 |
| $P$ | 4.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 02 | 691 | 0.0 | 0.1+ | 2002 08 12 | 704 | 0.3+ | 0.2− | 2006 05 30 | G96 | 0.4− | 0.1− |
| 1994 12 02 | 691 | 0.1+ | 0.4− | 2002 08 12 | 704 | 0.7+ | 0.1− | 2006 05 30 | G96 | 0.4− | 0.4− |
| 1994 12 02 | 691 | 0.1− | 0.2− | 2002 08 12 | 704 | 0.2+ | 1.0− | 2006 05 30 | G96 | 0.1− | 0.2− |
| 2002 07 20 | 644 | 0.1+ | 0.1+ | 2002 08 25 | 644 | 0.4− | 0.4+ | 2006 06 21 | 644 | 0.2+ | 0.0 |
| 2002 07 20 | 644 | 0.3− | 0.2+ | 2002 08 25 | 644 | 0.3− | 0.4+ | 2006 06 21 | 644 | 0.2− | 0.2− |
| 2002 07 20 | 644 | 0.2− | 0.1− | 2002 08 25 | 644 | 0.4− | 0.5+ | 2006 06 21 | 644 | 0.2− | 0.1− |
| 2002 08 04 | 644 | 0.3− | 0.2+ | 2006 05 29 | 704 | 1.2+ | 0.5− | 2006 06 21 | 644 | 0.0 | 0.1− |
| 2002 08 04 | 644 | 0.3− | 0.2+ | 2006 05 29 | 704 | 0.5+ | 0.3+ | 2006 06 21 | 644 | 0.2− | 0.2− |
| 2002 08 04 | 644 | 0.0 | 0.2+ | 2006 05 29 | 704 | 0.0 | 0.4+ | 2006 06 21 | 644 | 0.1− | 0.2− |
| 2002 08 12 | 704 | 0.8+ | 0.2− | 2006 05 29 | 704 | 0.4− | 0.0 | | | | |
| 2002 08 12 | 704 | 0.1+ | 0.2− | 2006 05 30 | G96 | 0.0 | 0.2− | | | | |

**2006 KC$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.65062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24288594 | $\omega$ | 113.74241 | | +0.47147606 | | +0.88164515 |
| $a$ | 2.5441017 | $\Omega$ | 184.54514 | | −0.87325781 | | +0.46353228 |
| $e$ | 0.1389074 | $i$ | 14.84388 | | −0.12300864 | | +0.08854180 |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 15 | 704 | 1.3+ | 0.5+ | 2003 10 19 | 699 | 0.5− | 0.5− | 2006 05 20 | 691 | 0.2− | 0.3+ |
| 2002 05 15 | 704 | 0.2+ | 1.4+ | 2003 10 19 | 699 | 1.2+ | 0.8− | 2006 05 20 | 691 | 0.0 | 0.2+ |
| 2002 05 15 | 704 | 0.1− | 0.7+ | 2003 10 19 | 699 | 0.0 | 0.4+ | 2006 05 29 | 704 | 0.4− | 1.3− |
| 2002 05 15 | 704 | 0.3− | 0.0 | 2003 10 19 | 699 | 2.4− | 2.6+ | 2006 05 29 | 704 | 1.6+ | 0.2− |
| 2002 05 15 | 704 | 0.3+ | 0.1+ | 2003 11 19 | 644 | 0.1− | 0.1+ | 2006 05 29 | 704 | 1.9+ | 0.8− |
| 2002 05 30 | 644 | 0.1− | 0.0 | 2003 11 19 | 644 | 0.0 | 0.4+ | 2006 05 29 | 704 | 1.8+ | 0.1− |
| 2002 05 30 | 644 | 0.2− | 0.2+ | 2003 11 19 | 644 | 0.0 | 0.1+ | 2006 05 29 | 704 | 1.0+ | 1.3− |
| 2002 05 30 | 644 | 0.3− | 0.1+ | 2003 11 20 | 645 | 0.1+ | 0.0 | 2006 05 31 | G96 | 0.5− | 0.3− |
| 2002 06 06 | 644 | 0.0 | 0.2+ | 2003 11 20 | 645 | 0.0 | 0.0 | 2006 05 31 | G96 | 0.4− | 0.3− |
| 2002 06 06 | 644 | 0.1+ | 0.1+ | 2006 04 25 | 691 | 0.0 | 0.5+ | 2006 05 31 | G96 | 0.3− | 0.2− |
| 2002 06 06 | 644 | 0.0 | 0.0 | 2006 04 25 | 691 | 0.1+ | 0.4+ | 2006 05 31 | G96 | 0.5− | 0.3− |
| 2002 06 14 | 704 | 0.6− | 0.5− | 2006 04 25 | 691 | 0.3+ | 0.4+ | 2006 06 21 | 703 | 1.1− | 0.7+ |
| 2002 06 14 | 704 | 0.1− | 0.8− | 2006 05 20 | 703 | 0.0 | 0.5+ | 2006 06 21 | 703 | 1.2− | 0.7− |
| 2002 06 14 | 704 | 0.3− | 0.1− | 2006 05 20 | 703 | 1.4− | 0.8− | 2006 06 21 | 703 | 0.1− | 0.5+ |
| 2002 06 30 | 644 | 0.1+ | 0.2− | 2006 05 20 | 703 | 0.4+ | 0.1− | 2006 06 21 | 703 | 0.3+ | 0.3+ |
| 2002 06 30 | 644 | 0.0 | 0.1− | 2006 05 20 | 703 | 1.0− | 1.8− | | | | |
| 2002 06 30 | 644 | 0.1+ | 0.3− | 2006 05 20 | 691 | 0.2− | 0.2+ | | | | |

**2006 KQ$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 130.29964 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22133676 | $\omega$ | 41.25898 | | −0.72879534 | | −0.67168706 |
| $a$ | 2.7066599 | $\Omega$ | 96.02191 | | +0.58790760 | | −0.71340957 |
| $e$ | 0.0492869 | $i$ | 7.68671 | | +0.35102993 | | −0.19970801 |
| $P$ | 4.45 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 30 | 645 | 0.0 | 0.0 | 2003 11 20 | 645 | 0.0 | 0.1+ | 2006 05 26 | G96 | 0.0 | 0.2+ |
| 2003 09 30 | 645 | 0.0 | 0.1− | 2003 11 20 | 645 | 0.0 | 0.1+ | 2006 05 26 | G96 | 0.5− | 0.3+ |
| 2003 10 20 | 691 | 0.2− | 0.4+ | 2003 11 28 | 645 | 0.1+ | 0.0 | 2006 05 26 | G96 | 0.4− | 0.0 |
| 2003 10 20 | 691 | 0.5− | 0.4+ | 2003 11 28 | 645 | 0.1+ | 0.1+ | 2006 05 30 | 408 | 0.9+ | 1.6+ |
| 2003 10 20 | 691 | 0.3− | 0.6+ | 2005 01 18 | 703 | 0.3− | 0.6+ | 2006 05 30 | 408 | 1.3+ | 1.5+ |
| 2003 10 22 | 645 | 0.0 | 0.1− | 2005 01 18 | 703 | 0.9+ | 0.6+ | 2006 05 31 | 408 | (1.8+ | 2.3+) |
| 2003 10 22 | 645 | 0.1+ | 0.1− | 2005 01 18 | 703 | 0.0 | 0.2+ | 2006 05 31 | 408 | (2.6+ | 2.5+) |
| 2003 10 24 | 645 | 0.0 | 0.1− | 2005 01 18 | 703 | 0.1+ | 0.7+ | | | | |
| 2003 10 24 | 645 | 0.1− | 0.0 | 2006 05 26 | G96 | 0.2− | 0.3+ | | | | |

**2006 KU$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.31782 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20998553 | $\omega$ | 110.39546 | | +0.83820162 | | +0.54441027 |
| $a$ | 2.8033445 | $\Omega$ | 216.64083 | | −0.51830869 | | +0.77688291 |
| $e$ | 0.0928503 | $i$ | 3.09087 | | −0.16962942 | | +0.31633905 |
| $P$ | 4.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 691 | 0.1+ | 0.1+ | 2002 08 06 | 644 | 0.2− | 0.1+ | 2005 03 13 | G96 | 0.2+ | 0.1+ |
| 1998 10 18 | 691 | 0.2+ | 0.2+ | 2002 08 06 | 644 | 0.2− | 0.0 | 2005 03 13 | G96 | 0.0 | 0.3+ |
| 1998 10 18 | 691 | 0.3+ | 0.5+ | 2002 08 08 | 699 | 0.3+ | 0.5+ | 2005 03 13 | G96 | 0.4+ | 0.2+ |
| 1998 11 16 | 691 | 0.6− | 0.3− | 2002 08 08 | 699 | 0.0 | 0.4− | 2006 04 25 | G96 | 0.8− | 0.7− |
| 1998 11 16 | 691 | 0.6− | 0.1− | 2002 08 08 | 699 | 0.3+ | 0.4− | 2006 04 25 | G96 | 0.5+ | 0.7− |
| 1998 11 16 | 691 | 0.4+ | 0.8− | 2002 08 08 | 699 | 0.5+ | 0.5− | 2006 04 25 | G96 | 0.8+ | 1.2− |
| 1998 11 25 | 691 | 0.1+ | 0.1+ | 2002 08 17 | 644 | 0.5− | 1.2+ | 2006 04 25 | G96 | 0.1− | 1.8− |
| 1998 11 25 | 691 | 0.2+ | 0.4− | 2002 08 17 | 644 | 0.2− | 1.3+ | 2006 05 28 | 691 | 0.1+ | 0.1+ |
| 1998 11 25 | 691 | 0.1+ | 0.3− | 2002 08 17 | 644 | 0.0 | 0.8+ | 2006 05 28 | 691 | 0.0 | 0.2+ |
| 2001 04 13 | 691 | 0.0 | 0.2+ | 2003 12 19 | 691 | 0.1+ | 0.4+ | 2006 05 28 | 691 | 0.5+ | 0.2− |
| 2001 04 13 | 691 | 0.1− | 0.0 | 2003 12 19 | 691 | 0.1− | 0.2+ | 2006 06 01 | 691 | 0.3− | 0.2+ |
| 2001 04 13 | 691 | 0.2+ | 0.3+ | 2003 12 19 | 691 | 0.0 | 0.4+ | 2006 06 01 | 691 | 0.2− | 0.0 |
| 2002 08 06 | 644 | 0.6− | 0.3+ | 2005 03 13 | G96 | 0.2− | 0.1− | 2006 06 01 | 691 | 0.4− | 0.2+ |

**2006 KL$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.24228 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17827732 | $\omega$ | 52.82937 | | −0.39378446 | | +0.91821597 |
| $a$ | 3.1265976 | $\Omega$ | 194.16573 | | −0.88885428 | | −0.39217975 |
| $e$ | 0.0318630 | $i$ | 10.02032 | | −0.23424746 | | −0.05544794 |
| $P$ | 5.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.1− | 0.1− | 2006 01 31 | 691 | 0.4+ | 0.3− | 2006 04 30 | 691 | 0.1+ | 0.1+ |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2006 03 25 | 691 | 0.0 | 0.4+ | 2006 04 30 | 691 | 0.0 | 0.2+ |
| 2003 11 26 | 691 | 0.1− | 0.4+ | 2006 03 25 | 691 | 0.2+ | 0.0 | 2006 04 30 | 691 | 0.0 | 0.3− |
| 2003 11 26 | 691 | 0.1− | 0.2+ | 2006 03 25 | 691 | 0.5− | 0.2+ | 2006 05 30 | G96 | 0.4− | 0.2− |
| 2003 11 26 | 691 | 0.4− | 0.2+ | 2006 04 02 | 691 | 0.2+ | 0.2+ | 2006 05 30 | G96 | 0.6− | 0.0 |
| 2003 12 22 | 691 | 0.4+ | 0.4− | 2006 04 02 | 691 | 0.1+ | 0.4+ | 2006 05 30 | G96 | 0.4+ | 0.1− |
| 2003 12 22 | 691 | 0.2+ | 0.4+ | 2006 04 02 | 691 | 0.0 | 0.3+ | 2006 05 30 | G96 | 0.4− | 0.3− |
| 2003 12 22 | 691 | 0.1− | 0.3+ | 2006 04 07 | 691 | 0.0 | 0.9+ | 2006 06 01 | 691 | 0.2+ | 0.2− |
| 2006 01 31 | 691 | 0.3− | 0.1− | 2006 04 07 | 691 | 0.1+ | 0.3+ | 2006 06 01 | 691 | 0.1− | 0.2+ |
| 2006 01 31 | 691 | 0.2+ | 0.4− | 2006 04 07 | 691 | 0.0 | 0.2+ | 2006 06 01 | 691 | 0.1+ | 0.1− |

**2006 KE$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.63794 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25554716 | $\omega$ | 42.91857 | | +0.59814804 | | +0.80058635 |
| $a$ | 2.4593594 | $\Omega$ | 263.85017 | | −0.74466163 | | +0.53875523 |
| $e$ | 0.1768249 | $i$ | 2.06252 | | −0.29613845 | | +0.26230571 |
| $P$ | 3.86 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 21 | 599 | 0.1− | 0.2− | 2003 10 19 | 691 | 0.0 | 0.1+ | 2005 01 19 | 691 | 0.0 | 0.2+ |
| 2003 09 21 | 599 | 0.3+ | 0.2+ | 2003 10 24 | 704 | 0.3− | 0.1− | 2006 04 09 | 691 | 0.6+ | 0.1+ |
| 2003 09 21 | 599 | 0.2+ | 0.1− | 2003 10 24 | 704 | 0.3− | 0.2+ | 2006 04 09 | 691 | 0.3− | 0.4+ |
| 2003 09 21 | 599 | 0.1+ | 0.0 | 2003 10 24 | 704 | 0.8− | 0.2+ | 2006 04 09 | 691 | 0.1− | 0.4+ |
| 2003 09 21 | 644 | 0.0 | 0.2+ | 2003 10 24 | 704 | 0.3− | 0.2+ | 2006 05 31 | G96 | 0.3+ | 0.0 |
| 2003 09 21 | 644 | 0.1+ | 0.1− | 2003 10 24 | 704 | 0.9− | 0.6+ | 2006 05 31 | G96 | 0.1+ | 0.1− |
| 2003 09 21 | 644 | 0.1− | 0.2+ | 2004 12 20 | G96 | 0.8− | 0.0 | 2006 05 31 | G96 | 0.2− | 0.3+ |
| 2003 10 01 | 691 | 0.0 | 0.2+ | 2004 12 20 | G96 | 0.3− | 0.1− | 2006 05 31 | G96 | 0.0 | 0.1+ |
| 2003 10 01 | 691 | 0.2+ | 0.3+ | 2004 12 20 | G96 | 0.1− | 0.0 | 2006 06 01 | G96 | 0.0 | 0.1− |
| 2003 10 01 | 691 | 0.1− | 0.2− | 2004 12 20 | G96 | 0.2− | 0.2− | 2006 06 01 | G96 | 0.0 | 0.1+ |
| 2003 10 19 | 691 | 0.0 | 0.2+ | 2005 01 19 | 691 | 0.1+ | 0.2− | 2006 06 01 | G96 | 0.3+ | 0.0 |
| 2003 10 19 | 691 | 0.0 | 0.1+ | 2005 01 19 | 691 | 0.3+ | 0.3+ | 2006 06 01 | G96 | 0.1+ | 0.2+ |

**2006 KY$_{107}$ = 1999 VR$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.62901 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22153666 | $\omega$ | 62.15260 | | −0.14099618 | | −0.98400308 |
| $a$ | 2.7050314 | $\Omega$ | 36.46804 | | +0.83163776 | | −0.17739816 |
| $e$ | 0.0781587 | $i$ | 10.55671 | | +0.53712076 | | +0.01636565 |
| $P$ | 4.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.3+ | 0.2+ | 2006 04 02 | 691 | 0.1− | 0.0 | 2006 05 31 | G96 | 0.2− | 0.1+ |
| 1999 11 05 | 691 | 0.0 | 0.2+ | 2006 04 02 | 691 | 0.4+ | 0.2+ | 2006 05 31 | G96 | 0.1− | 0.0 |
| 1999 11 05 | 691 | 0.0 | 0.0 | 2006 04 19 | G96 | 0.1− | 0.5+ | 2006 05 31 | G96 | 0.1− | 0.1+ |
| 1999 11 14 | 691 | 0.1− | 0.2− | 2006 04 19 | G96 | 0.5− | 0.1+ | 2006 05 31 | G96 | 0.6− | 0.1+ |
| 1999 11 14 | 691 | 0.2− | 0.6− | 2006 04 19 | G96 | 0.5− | 0.1+ | 2006 06 01 | G96 | 0.3− | 0.2− |
| 1999 11 14 | 691 | 0.0 | 0.2+ | 2006 04 19 | G96 | 0.5− | 0.3+ | 2006 06 01 | G96 | 0.3+ | 0.2+ |
| 2006 03 25 | 691 | 0.1+ | 0.1− | 2006 05 02 | G96 | 0.7− | 0.1+ | 2006 06 01 | G96 | 0.3+ | 0.2− |
| 2006 03 25 | 691 | 0.0 | 0.2− | 2006 05 02 | G96 | 0.3− | 0.3− | 2006 06 01 | G96 | 0.3− | 0.0 |
| 2006 03 25 | 691 | 0.5+ | 0.2− | 2006 05 02 | G96 | 0.0 | 0.1+ | | | | |
| 2006 04 02 | 691 | 0.1+ | 0.3− | 2006 05 02 | G96 | 0.4− | 0.2+ | | | | |

**2006 KB$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.55213 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21537061 | $\omega$ | 299.02990 | +0.07313452 | | +0.99727909 | |
| $a$ | 2.7564181 | $\Omega$ | 335.15902 | −0.90718707 | | +0.06266433 | |
| $e$ | 0.0642980 | $i$ | 1.26316 | −0.41432229 | | +0.03882788 | |
| $P$ | 4.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 0.2− | 0.7− | 2003 10 19 | 691 | 0.2− | 0.3+ | 2006 03 26 | 691 | 0.3+ | 0.7+ |
| 1992 03 25 | 691 | 0.7− | 0.8− | 2003 10 24 | 704 | 0.4+ | 0.6+ | 2006 03 26 | 691 | 0.1+ | 0.4+ |
| 2001 03 29 | 691 | 0.4+ | 0.2+ | 2003 10 24 | 704 | 0.4+ | 0.6+ | 2006 03 26 | 691 | 0.4+ | 0.5+ |
| 2001 03 29 | 691 | 0.1+ | 0.4+ | 2003 10 24 | 704 | 0.2+ | 0.7+ | 2006 04 09 | 691 | 0.4+ | 0.4+ |
| 2001 03 29 | 691 | 0.6+ | 0.6+ | 2003 10 24 | 704 | 0.1+ | 0.2− | 2006 04 09 | 691 | 0.3+ | 0.7+ |
| 2003 09 20 | 599 | 0.6+ | 0.8+ | 2003 10 25 | 691 | 0.2− | 0.3+ | 2006 04 09 | 691 | 0.2+ | 0.4+ |
| 2003 09 20 | 599 | 0.2+ | 0.2+ | 2003 10 25 | 691 | 0.0 | 0.1+ | 2006 05 31 | G96 | 0.1− | 0.4+ |
| 2003 09 20 | 599 | 0.2− | 0.2+ | 2003 10 25 | 691 | 0.5− | 0.2+ | 2006 05 31 | G96 | 0.2− | 0.3+ |
| 2003 09 20 | 599 | 0.2− | 0.6+ | 2003 11 28 | 691 | 0.1− | 0.2− | 2006 05 31 | G96 | 0.2− | 0.2+ |
| 2003 09 28 | 691 | 0.2− | 0.3+ | 2003 11 28 | 691 | 0.3+ | 0.3− | 2006 05 31 | G96 | 0.3− | 0.2+ |
| 2003 09 28 | 691 | 0.2− | 0.5+ | 2003 11 28 | 691 | 0.3+ | 0.2+ | 2006 06 01 | G96 | 0.6− | 0.1+ |
| 2003 09 28 | 691 | 0.1− | 0.4+ | 2005 01 18 | 691 | 0.1− | 0.0 | 2006 06 01 | G96 | 0.3− | 0.2+ |
| 2003 10 19 | 691 | 0.3− | 0.2+ | 2005 01 18 | 691 | 0.1− | 0.0 | 2006 06 01 | G96 | 0.6− | 0.1+ |
| 2003 10 19 | 691 | 0.3− | 0.4+ | 2005 01 18 | 691 | 0.1− | 0.1+ | 2006 06 01 | G96 | 0.3− | 0.1+ |

**2006 KJ$_{109}$ = 1998 UU$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.22736 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21158741 | $\omega$ | 329.86916 | +0.99916593 | | −0.00746189 | |
| $a$ | 2.7891776 | $\Omega$ | 30.63687 | +0.02506533 | | +0.88822096 | |
| $e$ | 0.2087189 | $i$ | 4.51854 | −0.03223618 | | +0.45935590 | |
| $P$ | 4.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 699 | 0.1− | 0.4+ | 2003 12 27 | 704 | 0.4+ | 1.6+ | 2006 05 03 | G96 | 0.2− | 0.1+ |
| 1998 10 17 | 699 | 0.7+ | 0.3− | 2003 12 27 | 704 | 1.3+ | 0.2+ | 2006 05 03 | G96 | 0.4− | 0.1− |
| 1998 10 17 | 699 | 0.5− | 0.3− | 2003 12 27 | 704 | 0.4+ | 0.2− | 2006 05 31 | G96 | 0.5+ | 0.6+ |
| 2003 11 20 | 704 | 1.1− | 0.9+ | 2003 12 27 | 704 | 1.3+ | 0.8− | 2006 05 31 | G96 | 0.1− | 0.3+ |
| 2003 11 20 | 704 | 0.9− | 0.5+ | 2004 01 11 | 644 | 0.2− | 0.6− | 2006 05 31 | G96 | 0.3+ | 0.1+ |
| 2003 11 20 | 704 | 1.9− | 1.8+ | 2004 01 11 | 644 | 0.1− | 0.4+ | 2006 05 31 | G96 | 0.8− | 0.5+ |
| 2003 11 26 | 704 | 0.5+ | 0.4+ | 2004 01 11 | 644 | 0.1− | 0.2− | 2006 06 01 | G96 | 0.1+ | 0.1− |
| 2003 11 26 | 704 | 0.2+ | 0.1− | 2006 04 02 | 691 | 0.0 | 0.2− | 2006 06 01 | G96 | 0.4− | 0.1+ |
| 2003 11 26 | 704 | 0.3+ | 1.0− | 2006 04 02 | 691 | 0.4+ | 0.1+ | 2006 06 01 | G96 | 0.2+ | 0.0 |
| 2003 12 18 | 704 | 0.3+ | 0.4− | 2006 04 02 | 691 | 0.2+ | 0.2− | 2006 06 01 | G96 | 0.3− | 0.3+ |
| 2003 12 18 | 704 | 0.3− | 1.3− | 2006 05 03 | G96 | 0.3− | 0.0 | | | | |
| 2003 12 18 | 704 | 0.0 | 0.3− | 2006 05 03 | G96 | 0.5− | 0.3+ | | | | |

**2006 KU$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.71917 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27455718 | $\omega$ | 335.13269 | +0.98039858 | | −0.18119389 | |
| $a$ | 2.3444853 | $\Omega$ | 35.57992 | +0.19557696 | | +0.84748306 | |
| $e$ | 0.1343304 | $i$ | 7.64237 | +0.02383868 | | +0.49894011 | |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 24 | 704 | 0.5− | 0.6+ | 2000 11 20 | 704 | 0.1− | 0.4+ | 2006 05 04 | G96 | 0.0 | 0.6+ |
| 2000 10 24 | 704 | 0.3− | 0.1+ | 2000 11 20 | 704 | 0.4+ | 0.7+ | 2006 05 04 | G96 | 0.3− | 1.8+ |
| 2000 10 24 | 704 | 0.3+ | 0.5+ | 2000 11 20 | 704 | 0.0 | 0.7+ | 2006 05 04 | G96 | 0.2− | 0.6+ |
| 2000 10 24 | 704 | 0.8+ | 0.1− | 2004 12 21 | 703 | 0.6+ | 0.5+ | 2006 05 31 | G96 | 0.1+ | 0.0 |
| 2000 11 05 | 704 | 0.0 | 0.3− | 2004 12 21 | 703 | 0.5− | 0.1− | 2006 05 31 | G96 | 0.4− | 0.0 |
| 2000 11 05 | 704 | 0.5+ | 1.1+ | 2004 12 21 | 703 | 0.9− | 0.2− | 2006 05 31 | G96 | 0.3− | 0.3− |
| 2000 11 05 | 704 | 0.3− | 0.1− | 2004 12 21 | 703 | 0.3+ | 1.3− | 2006 05 31 | G96 | 0.0 | 0.2+ |
| 2000 11 05 | 704 | 0.3− | 0.0 | 2006 04 02 | 691 | 0.2+ | 0.1− | 2006 06 01 | G96 | 0.1− | 0.4− |
| 2000 11 05 | 704 | 0.4− | 0.3+ | 2006 04 02 | 691 | 0.4+ | 0.0 | 2006 06 01 | G96 | 0.1+ | 0.1+ |
| 2000 11 20 | 704 | 0.2− | 0.4+ | 2006 04 02 | 691 | 0.3+ | 0.1+ | 2006 06 01 | G96 | 0.2+ | 0.2+ |
| 2000 11 20 | 704 | 1.2− | 0.3− | 2006 05 04 | G96 | 0.2− | 1.1+ | 2006 06 01 | G96 | 0.3− | 0.0 |

**2006 KV$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.44431 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28219927 | $\omega$ | 279.58325 | +0.35763551 | | +0.93382030 | |
| $a$ | 2.3019654 | $\Omega$ | 11.38353 | −0.83848159 | | +0.32521793 | |
| $e$ | 0.1610981 | $i$ | 2.53981 | −0.41115139 | | +0.14904010 | |
| $P$ | 3.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.6+ | 0.2+ | 2003 09 19 | 691 | 0.4− | 0.4+ | 2004 12 15 | 691 | 0.3− | 0.3+ |
| 1995 02 25 | 691 | 0.0 | 0.2+ | 2003 09 19 | 691 | 0.2− | 0.5+ | 2006 05 31 | G96 | 0.2− | 0.1+ |
| 1995 02 25 | 691 | 0.2+ | 0.0 | 2003 09 24 | 644 | 0.2+ | 0.6+ | 2006 05 31 | G96 | 0.2+ | 0.3+ |
| 1996 09 07 | 691 | 0.0 | 0.2− | 2003 09 24 | 644 | 0.1− | 0.7+ | 2006 05 31 | G96 | 0.1+ | 0.2− |
| 1996 09 07 | 691 | 0.1− | 0.6− | 2003 09 24 | 644 | 0.1− | 0.5+ | 2006 05 31 | G96 | 0.1+ | 0.5+ |
| 1996 09 07 | 691 | 0.3+ | 0.2− | 2003 09 24 | 644 | 0.2+ | 0.6+ | 2006 06 01 | G96 | 0.1− | 0.4+ |
| 1996 09 21 | 691 | 0.5− | 0.5− | 2003 09 24 | 644 | 0.1− | 0.6+ | 2006 06 01 | G96 | 0.1− | 0.2+ |
| 1996 09 21 | 691 | 0.1+ | 0.3+ | 2003 09 24 | 644 | 0.2+ | 0.6+ | 2006 06 01 | G96 | 0.0 | 0.5+ |
| 2003 09 01 | 704 | 1.8+ | 0.8− | 2003 09 24 | 608 | 0.3+ | 0.5+ | 2006 06 01 | G96 | 1.0− | 0.8+ |
| 2003 09 01 | 704 | 1.4− | 1.2+ | 2003 09 24 | 608 | 0.0 | 0.7+ | 2006 06 17 | 691 | 0.1+ | 0.1+ |
| 2003 09 01 | 704 | 0.4+ | 0.0 | 2003 09 24 | 608 | 0.1− | 0.4+ | 2006 06 17 | 691 | 0.0 | 0.1+ |
| 2003 09 01 | 704 | 1.0+ | 1.6− | 2004 12 15 | 691 | 0.3+ | 0.2+ | 2006 06 17 | 691 | 0.2+ | 0.1+ |
| 2003 09 19 | 691 | 0.2− | 0.4+ | 2004 12 15 | 691 | 0.4− | 0.5+ | | | | |

**2006 KM$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.86355 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21000260 | $\omega$ | 334.54227 | +0.91130592 | | −0.37594158 | |
| $a$ | 2.8031926 | $\Omega$ | 48.60672 | +0.40556555 | | +0.74933597 | |
| $e$ | 0.1888812 | $i$ | 12.93271 | +0.07097964 | | +0.54512708 | |
| $P$ | 4.69 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 699 | 0.9+ | 1.1− | 2003 12 03 | 704 | 0.1+ | 0.3− | 2006 05 09 | G96 | 0.4+ | 0.5+ |
| 1998 10 20 | 699 | 0.1− | 0.0 | 2003 12 03 | 704 | 0.1− | 1.0+ | 2006 05 09 | G96 | 0.0 | 0.7+ |
| 1998 10 20 | 699 | 0.2+ | 0.5+ | 2003 12 03 | 704 | 0.1− | 0.5− | 2006 05 09 | G96 | 0.1+ | 0.4+ |
| 1998 11 11 | 704 | 1.1− | 0.9+ | 2003 12 03 | 704 | 0.2+ | 0.4+ | 2006 05 31 | G96 | 0.1− | 0.3+ |
| 1998 11 11 | 704 | 0.4+ | 1.2+ | 2003 12 03 | 704 | 0.8+ | 0.8+ | 2006 05 31 | G96 | 0.3+ | 0.1− |
| 1998 11 11 | 704 | 1.7− | 1.2+ | 2003 12 03 | 704 | 0.3+ | 0.1− | 2006 05 31 | G96 | 0.2+ | 0.2+ |
| 1998 11 11 | 704 | 0.3− | 0.2+ | 2003 12 17 | 704 | 1.2+ | 0.7− | 2006 05 31 | G96 | 0.1+ | 0.1− |
| 2001 08 19 | 807 | 0.1+ | 0.7+ | 2003 12 17 | 704 | 0.8− | 0.4+ | 2006 05 31 | G96 | 0.4+ | 0.7+ |
| 2001 08 20 | 807 | 0.3+ | 0.7+ | 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 05 31 | G96 | 0.3+ | 0.5+ |
| 2003 11 20 | 704 | 0.1+ | 0.2− | 2003 12 17 | 704 | 0.1+ | 0.5− | 2006 05 31 | G96 | 0.6+ | 0.2+ |
| 2003 11 20 | 704 | 0.4− | 0.2− | 2003 12 17 | 704 | 0.4+ | 0.9+ | 2006 05 31 | G96 | 0.4+ | 0.2+ |
| 2003 11 20 | 704 | 0.2− | 0.4+ | 2003 12 29 | 704 | 1.1− | 1.9+ | 2006 06 01 | G96 | 0.1+ | 0.4+ |
| 2003 12 03 | 704 | 0.5− | 0.7+ | 2003 12 29 | 704 | 0.4+ | 0.2+ | 2006 06 01 | G96 | 0.2+ | 0.0 |
| 2003 12 03 | 704 | 0.5− | 0.2− | 2003 12 29 | 704 | 0.1+ | 3.0− | 2006 06 01 | G96 | 0.3+ | 0.3+ |
| 2003 12 03 | 704 | 0.5− | 1.5+ | 2006 05 09 | G96 | 0.4− | 0.6+ | 2006 06 01 | G96 | 0.1+ | 0.2+ |

**2006 KQ$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.84301 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18776984 | $\omega$ | 19.30567 | −0.09722798 | | −0.97631183 | |
| $a$ | 3.0203144 | $\Omega$ | 76.64313 | +0.88501834 | | −0.17365595 | |
| $e$ | 0.0788850 | $i$ | 11.45898 | +0.45529030 | | +0.12906903 | |
| $P$ | 5.25 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 16 | 703 | 0.2+ | 0.6+ | 2005 03 01 | 703 | 0.9+ | 0.1− | 2005 04 02 | 699 | 0.2+ | 0.9+ |
| 2003 11 16 | 703 | 1.2− | 0.0 | 2005 03 01 | 703 | 0.0 | 0.4− | 2005 04 02 | 699 | (2.9+ | 0.3+) |
| 2003 11 16 | 703 | (0.6− | 3.8−) | 2005 03 09 | 703 | (2.3+ | 0.1−) | 2006 05 21 | 691 | 0.2+ | 0.3− |
| 2003 11 16 | 703 | (1.5− | 2.1+) | 2005 03 09 | 703 | 0.1− | 0.2− | 2006 05 21 | 691 | 0.2− | 0.0 |
| 2003 12 01 | 704 | 0.7+ | 0.5+ | 2005 03 09 | 703 | 0.8− | 0.4− | 2006 05 21 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 704 | 0.3+ | 0.2+ | 2005 03 09 | 703 | 1.0− | 0.5− | 2006 05 29 | 691 | 0.1+ | 0.5+ |
| 2003 12 01 | 704 | 0.8+ | 0.3+ | 2005 03 11 | 699 | 0.4− | 0.2+ | 2006 05 29 | 691 | 0.1− | 0.0 |
| 2003 12 22 | 691 | 0.0 | 0.3+ | 2005 03 11 | 699 | 0.0 | 0.3+ | 2006 05 29 | 691 | 0.0 | 0.1+ |
| 2003 12 22 | 691 | 0.3− | 0.0 | 2005 03 11 | 699 | 0.4− | 0.2+ | 2006 06 02 | 691 | 0.0 | 0.2+ |
| 2003 12 22 | 691 | 0.4− | 0.2+ | 2005 03 11 | 699 | 1.0+ | 0.0 | 2006 06 02 | 691 | 0.0 | 0.2+ |
| 2005 03 01 | 703 | 0.8− | 0.4+ | 2005 04 02 | 699 | 0.4+ | 1.0− | 2006 06 02 | 691 | 0.3+ | 0.0 |
| 2005 03 01 | 703 | 0.2+ | 0.4− | 2005 04 02 | 699 | 0.9+ | 1.3+ | | | | |

### 2006 KY$_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.69335 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22273877 | $\omega$ | 20.91904 | | +0.07668631 | −0.97032937 | |
| $a$ | 2.6952901 | $\Omega$ | 65.28619 | | +0.87518467 | −0.04467136 | |
| $e$ | 0.1535011 | $i$ | 14.62098 | | +0.47767249 | +0.23762447 | |
| $P$ | 4.42 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 15 | 703 | 1.2− | 0.5− | 2005 01 31 | 704 | 0.3+ | 0.1+ | 2005 03 01 | 704 | 1.8− | 1.3+ |
| 2005 01 15 | 703 | 0.5− | 1.0− | 2005 01 31 | 704 | 0.1+ | 0.9+ | 2006 05 25 | 691 | 0.0 | 0.0 |
| 2005 01 15 | 703 | 0.8− | 0.3− | 2005 02 14 | 704 | 1.2+ | 1.2− | 2006 05 25 | 691 | 0.1− | 0.1+ |
| 2005 01 15 | 703 | 0.1− | 1.3− | 2005 02 14 | 704 | 0.2+ | 0.9+ | 2006 05 25 | 691 | 0.2− | 0.2+ |
| 2005 01 15 | 704 | 0.7+ | 0.1+ | 2005 02 14 | 704 | 0.1+ | 0.8+ | 2006 05 29 | 691 | 0.0 | 0.1+ |
| 2005 01 15 | 704 | 0.3+ | 0.1− | 2005 02 14 | 704 | 0.5− | 0.7− | 2006 05 29 | 691 | 0.3+ | 0.4− |
| 2005 01 15 | 704 | 0.2+ | 0.3+ | 2005 02 14 | 704 | 1.7+ | 0.7− | 2006 05 29 | 691 | 0.0 | 0.1− |
| 2005 01 31 | 704 | 0.5+ | 1.0+ | 2005 03 01 | 704 | 0.4− | 1.0+ | 2006 06 02 | 691 | 0.0 | 0.2− |
| 2005 01 31 | 704 | 0.2+ | 0.6+ | 2005 03 01 | 704 | 0.3− | 0.1− | 2006 06 02 | 691 | 0.2+ | 0.2+ |
| 2005 01 31 | 704 | 0.5− | 0.7+ | 2005 03 01 | 704 | 0.4+ | 1.8− | 2006 06 02 | 691 | 0.2− | 0.1+ |

### 2006 KW$_{117}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.37807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29002683 | $\omega$ | 43.70061 | | +0.88667949 | +0.46116884 | |
| $a$ | 2.2603582 | $\Omega$ | 288.80913 | | −0.43336391 | +0.80357480 | |
| $e$ | 0.2520940 | $i$ | 2.02860 | | −0.16123029 | +0.37628559 | |
| $P$ | 3.40 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.6− | 0.3− | 2003 08 25 | 704 | 0.2+ | 0.4− | 2006 05 06 | G96 | 0.3+ | 0.4− |
| 1993 10 12 | 691 | 0.6+ | 1.2+ | 2003 08 25 | 704 | 0.1+ | 0.1− | 2006 05 06 | G96 | 0.4+ | 0.2+ |
| 1993 10 12 | 691 | 0.1− | 0.6− | 2003 09 01 | 704 | 0.3− | 0.1+ | 2006 05 06 | G96 | 0.1− | 0.1+ |
| 2003 07 24 | 644 | 0.2− | 0.7+ | 2003 09 01 | 704 | 0.2+ | 0.2− | 2006 05 31 | G96 | 0.3+ | 0.1+ |
| 2003 07 24 | 644 | 0.6− | 1.2+ | 2003 09 01 | 704 | 0.7− | 0.1+ | 2006 05 31 | G96 | 0.3− | 0.1− |
| 2003 07 24 | 644 | 0.3+ | 0.5+ | 2003 09 01 | 704 | 1.0+ | 0.8+ | 2006 05 31 | G96 | 0.3+ | 0.4+ |
| 2003 08 18 | 608 | 0.2− | 0.6− | 2003 09 01 | 704 | 0.4− | 0.8+ | 2006 05 31 | G96 | 0.2+ | 0.0 |
| 2003 08 18 | 608 | 0.3+ | 0.7− | 2003 10 01 | 291 | 0.1+ | 0.1+ | 2006 06 02 | G96 | 0.2− | 0.0 |
| 2003 08 18 | 608 | 0.3+ | 1.2− | 2003 10 01 | 291 | 0.1+ | 0.0 | 2006 06 02 | G96 | 0.1− | 0.1+ |
| 2003 08 25 | 704 | 0.0 | 1.3− | 2003 10 01 | 291 | 0.0 | 0.2− | 2006 06 02 | G96 | 0.5− | 0.0 |
| 2003 08 25 | 704 | 0.2− | 0.4+ | 2006 05 06 | G96 | 0.3− | 0.4− | 2006 06 02 | G96 | 0.1− | 0.2+ |

### 2006 KM$_{120}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.99166 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29475251 | $\omega$ | 207.73015 | | +0.97544677 | +0.20589914 | |
| $a$ | 2.2361334 | $\Omega$ | 140.13968 | | −0.17266778 | +0.93528246 | |
| $e$ | 0.1912563 | $i$ | 7.00475 | | −0.13670930 | +0.28784070 | |
| $P$ | 3.34 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 645 | 0.1+ | 0.0 | 2003 08 05 | 691 | 0.1− | 0.0 | 2006 06 04 | 691 | 0.3+ | 0.0 |
| 2002 03 05 | 645 | 0.1− | 0.1+ | 2003 08 05 | 691 | 0.1− | 0.1− | 2006 06 04 | 691 | 0.5+ | 0.2+ |
| 2002 03 09 | 291 | 0.1− | 0.2+ | 2003 08 05 | 691 | 0.2− | 0.0 | 2006 06 04 | 691 | 0.0 | 0.0 |
| 2002 03 09 | 291 | 0.1+ | 0.1+ | 2003 08 25 | 704 | 1.8− | 0.1+ | 2006 06 16 | 691 | 1.5− | 1.1− |
| 2002 03 09 | 291 | 0.3+ | 0.1+ | 2003 08 25 | 704 | 0.6+ | 0.0 | 2006 06 16 | 691 | 0.4+ | 0.0 |
| 2003 08 04 | 704 | 0.2+ | 1.0+ | 2003 08 25 | 704 | 0.6− | 0.4+ | 2006 06 16 | 691 | 0.2+ | 0.0 |
| 2003 08 04 | 704 | 0.0 | 0.3+ | 2003 08 25 | 704 | 1.4+ | 0.2− | 2006 06 20 | 691 | 0.0 | 0.2+ |
| 2003 08 04 | 704 | 0.7+ | 0.3+ | 2006 05 31 | 691 | 0.2+ | 0.3+ | 2006 06 20 | 691 | 0.0 | 0.2− |
| 2003 08 04 | 704 | 0.1− | 0.8+ | 2006 05 31 | 691 | 0.1− | 0.1+ | 2006 06 20 | 691 | 0.4− | 0.2+ |
| 2003 08 04 | 704 | 0.4+ | 0.6+ | 2006 05 31 | 691 | 0.2+ | 0.2− | | | | |

### 2006 KD$_{122}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.67392 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18035208 | $\omega$ | 135.17329 | | +0.94239350 | −0.25962801 | |
| $a$ | 3.1025725 | $\Omega$ | 240.96416 | | +0.19663045 | +0.94006225 | |
| $e$ | 0.3364174 | $i$ | 13.95982 | | +0.27061218 | +0.22107978 | |
| $P$ | 5.46 | $H$ | 13.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 24 | 704 | 0.2+ | 0.6+ | 2002 12 14 | 704 | 0.0 | 0.2− | 2003 01 09 | 704 | 0.9− | 0.3+ |
| 2001 06 24 | 704 | 0.2− | 0.0 | 2002 12 14 | 704 | 0.0 | 0.1− | 2003 01 09 | 704 | 0.3+ | 0.1+ |
| 2001 06 24 | 704 | 0.0 | 0.8− | 2003 01 01 | 704 | 0.2+ | 0.2+ | 2003 01 09 | 704 | 0.6− | 0.3+ |
| 2002 10 11 | 704 | 1.2+ | 0.5+ | 2003 01 01 | 704 | 0.6+ | 0.7+ | 2006 05 24 | 644 | 0.0 | 0.6+ |
| 2002 10 11 | 704 | 0.4+ | 0.1− | 2003 01 01 | 704 | 0.3+ | 0.0 | 2006 05 24 | 644 | 0.4+ | 0.5+ |
| 2002 10 11 | 704 | 0.7+ | 0.2+ | 2003 01 01 | 704 | 0.4+ | 0.2− | 2006 05 24 | 644 | 0.1+ | 0.5+ |
| 2002 10 11 | 704 | 0.5+ | 0.4+ | 2003 01 01 | 704 | 0.1− | 0.4− | 2006 06 04 | 704 | 0.4+ | 0.5− |
| 2002 11 11 | 704 | 0.4− | 0.0 | 2003 01 05 | 704 | 0.4− | 1.5− | 2006 06 04 | 704 | 0.1+ | 0.3+ |
| 2002 11 11 | 704 | 1.3− | 0.9+ | 2003 01 05 | 704 | 0.4− | 1.2+ | 2006 06 04 | 704 | 0.4− | 1.0− |
| 2002 11 11 | 704 | 0.9− | 0.6+ | 2003 01 05 | 704 | 0.4− | 0.9− | 2006 06 22 | 644 | 0.2− | 0.8+ |
| 2002 11 11 | 704 | 0.7− | 1.2+ | 2003 01 05 | 704 | 0.2+ | 0.8− | 2006 06 22 | 644 | 0.3− | 0.2+ |
| 2002 12 14 | 704 | 0.2− | 0.3+ | 2003 01 05 | 704 | 2.8+ | 1.1− | 2006 06 22 | 644 | 0.2− | 0.7+ |
| 2002 12 14 | 704 | 0.1− | 0.3+ | 2003 01 09 | 704 | 0.3− | 0.2+ | | | | |

### 2006 KS$_{122}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.74948 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22714245 | $\omega$ | 244.62095 | | +0.31628026 | +0.87349742 | |
| $a$ | 2.6603402 | $\Omega$ | 49.18349 | | −0.59447651 | +0.48651349 | |
| $e$ | 0.1746606 | $i$ | 29.27616 | | −0.73929999 | −0.01751772 | |
| $P$ | 4.34 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 704 | 1.0+ | 1.4+ | 2005 03 09 | 703 | 0.6− | 0.8− | 2006 06 06 | E12 | 0.9+ | 0.2− |
| 1998 10 29 | 704 | 0.8− | 2.4+ | 2005 04 11 | 703 | 0.1+ | 0.2− | 2006 06 06 | E12 | 0.1+ | 0.4+ |
| 1998 10 29 | 704 | 1.7+ | 1.7− | 2005 04 11 | 703 | 0.3− | 0.0 | 2006 08 05 | E12 | 0.6+ | 0.5− |
| 1998 10 29 | 704 | (4.6− | 0.2+) | 2005 04 11 | 703 | 0.2− | 0.3+ | 2006 08 05 | E12 | 0.2− | 0.6− |
| 2001 05 23 | 704 | 0.8+ | 1.0+ | 2005 04 11 | 703 | 0.5+ | 0.6− | 2006 08 05 | E12 | 0.5+ | 0.9− |
| 2001 05 23 | 704 | 1.0+ | 0.9+ | 2006 05 30 | E12 | (1.4− | 1.5−) | 2006 08 05 | E12 | 0.1− | 0.3− |
| 2001 05 23 | 704 | 1.8+ | 0.8+ | 2006 05 30 | E12 | 0.3− | 0.4+ | 2006 08 20 | E12 | 0.5− | 0.7− |
| 2005 03 09 | 703 | 1.0− | 0.1− | 2006 05 30 | E12 | 0.7− | 0.3+ | 2006 08 20 | E12 | 0.0 | 0.2− |
| 2005 03 09 | 703 | 0.2− | 0.1− | 2006 06 06 | E12 | 0.2+ | 1.1+ | 2006 08 20 | E12 | 0.3− | 0.1+ |
| 2005 03 09 | 703 | (4.2− | 1.2+) | 2006 06 06 | E12 | 0.2+ | 0.6+ | 2006 08 20 | E12 | 0.0 | 0.2− |

### 2006 KO$_{126}$ = 2001 BO$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.88332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27056530 | $\omega$ | 138.85482 | | +0.03589515 | +0.99547232 | |
| $a$ | 2.3674891 | $\Omega$ | 133.00176 | | −0.94550583 | +0.06234876 | |
| $e$ | 0.0876831 | $i$ | 6.91212 | | −0.32362055 | −0.07174603 | |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 16 | 691 | 0.7− | 0.3− | 2005 03 16 | 703 | 0.1+ | 0.8+ | 2006 07 25 | 644 | 0.1− | 0.5+ |
| 2001 01 16 | 691 | 0.1+ | 0.5+ | 2006 05 26 | G96 | 0.3− | 0.1+ | 2006 07 25 | 644 | 0.2− | 0.5+ |
| 2001 01 16 | 691 | 0.2+ | 0.2+ | 2006 05 26 | G96 | 0.2+ | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2001 01 19 | 691 | 0.3+ | 0.1− | 2006 05 26 | G96 | 0.3+ | 0.6+ | 2006 08 15 | 644 | 0.1− | 0.4+ |
| 2001 01 19 | 691 | 0.1+ | 0.2+ | 2006 05 26 | G96 | 0.3− | 0.4+ | 2006 08 15 | 644 | 0.1− | 0.5+ |
| 2001 01 19 | 691 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 08 21 | 807 | 0.0 | 0.2+ |
| 2005 03 16 | 703 | 0.6− | 0.4+ | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 08 21 | 807 | 0.1− | 0.3+ |
| 2005 03 16 | 703 | 0.5+ | 0.5− | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 08 22 | 807 | 0.0 | 0.4+ |
| 2005 03 16 | 703 | 0.5+ | 1.1+ | 2006 07 25 | 644 | 0.2− | 0.3+ | | | | |

**2006 KP$_{133}$ = 2005 EH$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 209.47338 | | (2000.0) | | | |
| $n$ | 0.20781523 | $\omega$ | 111.73820 | | +0.44644755 | −0.89469383 |
| $a$ | 2.8228283 | $\Omega$ | 311.73754 | | +0.81367375 | +0.41261250 |
| $e$ | 0.1968370 | $i$ | 1.10621 | | +0.37231655 | +0.17109609 |
| $P$ | 4.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.2+ | 0.5+ | 2005 03 12 | 691 | 0.1+ | 0.1− | 2006 05 26 | 568 | 0.0 | 0.6− |
| 2005 03 11 | G96 | 0.4+ | 0.5+ | 2005 03 12 | 691 | 0.2− | 0.2− | 2006 06 04 | G96 | 0.2+ | 0.3+ |
| 2005 03 11 | G96 | 0.1+ | 0.6+ | 2006 05 25 | 568 | 0.0 | 0.0 | 2006 06 04 | G96 | 0.2+ | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 05 25 | 568 | 0.1− | 0.1+ | 2006 06 04 | G96 | 0.4+ | 0.0 |
| 2005 03 12 | 691 | 0.1− | 0.1− | 2006 05 25 | 568 | 0.1− | 0.3− | 2006 06 04 | G96 | 0.7− | 0.5+ |

**2006 LE**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 68.64525 | | (2000.0) | | | |
| $n$ | 0.23487836 | $\omega$ | 76.43170 | | −0.15984778 | +0.98631278 |
| $a$ | 2.6016011 | $\Omega$ | 184.93915 | | −0.98459644 | −0.15636143 |
| $e$ | 0.1428785 | $i$ | 28.01849 | | +0.07084170 | +0.05232791 |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.4+ | 1.1+ | 2006 06 02 | 734 | 0.9+ | 0.6+ |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2005 04 04 | 703 | 0.6− | 0.9− | 2006 06 02 | G96 | 0.3− | 0.0 |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2005 04 04 | 703 | 0.5− | 0.0 | 2006 06 02 | G96 | 0.0 | 0.1− |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2005 04 04 | 703 | 0.4− | 0.8+ | 2006 06 02 | G96 | 0.1+ | 0.0 |
| 2002 10 04 | 644 | 0.0 | 0.4+ | 2006 06 01 | G96 | 0.1− | 0.6− | 2006 06 02 | 291 | 0.2− | 0.4− |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 06 01 | G96 | 0.3+ | 0.2− | 2006 06 02 | 291 | 0.2− | 0.1+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 06 01 | G96 | 0.0 | 0.1− | 2006 06 02 | 291 | 0.1− | 0.4− |
| 2005 03 03 | 691 | 0.3+ | 0.2− | 2006 06 01 | G96 | 0.2− | 0.8− | 2006 06 02 | 291 | 0.1− | 0.1+ |
| 2005 03 03 | 691 | 0.5+ | 0.3+ | 2006 06 01 | G96 | 0.5+ | 0.2− | 2006 06 02 | 291 | 0.0 | 0.0 |
| 2005 03 03 | 691 | 0.0 | 0.5− | 2006 06 01 | G96 | 0.7+ | 0.1− | 2006 06 02 | 291 | 0.5− | 1.1+ |
| 2005 03 13 | 703 | 0.1− | 1.5− | 2006 06 01 | G96 | 0.5+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2005 03 13 | 703 | 0.5− | 0.8− | 2006 06 01 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 03 13 | 703 | 0.2− | 0.0 | 2006 06 02 | 734 | 0.7+ | 0.3− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2005 03 13 | 703 | 0.5− | 0.5− | 2006 06 02 | 734 | 0.6+ | 0.6− | 2006 11 16 | G96 | 0.4− | 0.3− |

**2006 LF$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 57.25794 | | (2000.0) | | | |
| $n$ | 0.23275396 | $\omega$ | 34.90556 | | −0.90735610 | +0.41774272 |
| $a$ | 2.6174074 | $\Omega$ | 169.47097 | | −0.41978372 | −0.89460890 |
| $e$ | 0.0466357 | $i$ | 14.85908 | | −0.02205753 | −0.15863777 |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 19 | 644 | 0.1− | 0.0 | 2003 10 18 | 699 | 1.1+ | 0.4+ | 2006 06 15 | 691 | 0.2− | 0.2+ |
| 2003 09 19 | 644 | 0.5− | 0.1− | 2003 10 18 | 699 | 0.6− | 1.0− | 2006 06 16 | 691 | 0.1+ | 0.0 |
| 2003 09 19 | 644 | 0.0 | 0.1− | 2006 05 27 | 703 | 0.0 | 1.3− | 2006 06 16 | 691 | 0.0 | 0.0 |
| 2003 10 02 | 691 | 0.0 | 0.1+ | 2006 05 27 | 703 | 0.8+ | 0.5− | 2006 06 16 | 691 | 0.1+ | 0.1− |
| 2003 10 02 | 691 | 0.2+ | 0.0 | 2006 05 27 | 703 | 1.5− | 1.2+ | 2006 06 18 | 691 | 0.1− | 0.2+ |
| 2003 10 02 | 691 | 0.3+ | 0.1− | 2006 05 27 | 703 | 0.3− | 0.7− | 2006 06 18 | 691 | 0.1− | 0.0 |
| 2003 10 18 | 699 | 1.8− | 1.0+ | 2006 06 15 | 691 | 0.0 | 0.3+ | 2006 06 18 | 691 | 0.2+ | 0.1+ |
| 2003 10 18 | 699 | 0.2− | 0.3− | 2006 06 15 | 691 | 0.3+ | 0.4− | | | | |

**2006 LY$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.48179 | | (2000.0) | | | |
| $n$ | 0.30313491 | $\omega$ | 108.86627 | | +0.35230663 | +0.93588072 |
| $a$ | 2.1947181 | $\Omega$ | 181.76907 | | −0.88825767 | +0.33346630 |
| $e$ | 0.2811048 | $i$ | 5.02590 | | −0.29475135 | +0.11369916 |
| $P$ | 3.25 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 18 | 010 | 0.3+ | 0.4+ | 2006 07 24 | 704 | 1.1+ | 0.3+ | 2006 08 30 | 704 | 0.9+ | 0.1− |
| 1993 08 18 | 010 | 0.5− | 0.7+ | 2006 07 24 | 704 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.1+ |
| 1993 08 18 | 010 | 0.3− | 1.0+ | 2006 07 26 | 644 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.1+ |
| 2003 10 21 | 644 | 0.1+ | 0.2+ | 2006 07 26 | 644 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.3+ | 0.5+ |
| 2003 10 21 | 644 | 0.2− | 0.3+ | 2006 07 26 | 644 | 0.4− | 0.2− | 2006 09 14 | 703 | 1.0− | 0.1+ |
| 2003 10 21 | 644 | 0.1+ | 0.3+ | 2006 08 14 | E12 | 0.5+ | 0.3− | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2006 06 02 | 691 | 0.1− | 0.3+ | 2006 08 14 | E12 | 0.3+ | 0.2− | 2006 09 14 | 703 | 1.0− | 0.2+ |
| 2006 06 02 | 691 | 0.2− | 0.3+ | 2006 08 14 | E12 | 0.1+ | 0.4− | 2006 09 14 | 703 | 1.2− | 0.4− |
| 2006 06 02 | 691 | 0.3− | 0.2+ | 2006 08 14 | E12 | 0.2− | 0.3− | 2006 09 18 | 699 | 0.1− | 1.2+ |
| 2006 06 20 | 644 | 0.0 | 0.5− | 2006 08 14 | E12 | 0.3+ | 0.1− | 2006 09 18 | 699 | 1.0+ | 0.1− |
| 2006 06 20 | 644 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.4− | 0.3− | 2006 09 18 | 699 | 0.5− | 0.4+ |
| 2006 06 20 | 644 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.4− | 0.2− | 2006 09 18 | 699 | 0.3+ | 1.5+ |
| 2006 06 22 | 644 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.2+ | 1.3− | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2006 06 22 | 644 | 0.4− | 0.1− | 2006 08 18 | 704 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2006 06 22 | 644 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.4− |
| 2006 07 21 | 703 | 0.2+ | 0.3− | 2006 08 18 | 644 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2006 07 21 | 703 | 1.3+ | 0.0 | 2006 08 18 | 704 | 0.6− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.3+ |
| 2006 07 21 | 703 | 1.3+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2006 07 21 | 703 | 0.0 | 0.0 | 2006 08 18 | 704 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2006 07 24 | 704 | 0.1+ | 0.3− | 2006 08 18 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.9− |
| 2006 07 24 | 704 | (0.4− | 1.9+) | 2006 08 30 | 704 | 0.6+ | 0.2+ | | | | |

**2006 LS$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.85989 | | (2000.0) | | | |
| $n$ | 0.23726537 | $\omega$ | 167.05500 | | +0.93557126 | +0.35201280 |
| $a$ | 2.5841228 | $\Omega$ | 172.15905 | | −0.33960492 | +0.91872108 |
| $e$ | 0.2671712 | $i$ | 11.91560 | | −0.09682417 | +0.17899317 |
| $P$ | 4.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 23 | 699 | 0.5− | 0.5+ | 2002 10 04 | 704 | 0.3− | 0.2+ | 2006 06 19 | 704 | 0.1+ | 0.7− |
| 1998 08 23 | 699 | 0.0 | 0.4+ | 2002 10 04 | 704 | 0.1+ | 0.7− | 2006 06 19 | 704 | 0.8+ | 0.1− |
| 1998 08 23 | 699 | 0.1+ | 0.8+ | 2002 10 04 | 704 | 0.5− | 0.2+ | 2006 06 19 | 704 | 0.6+ | 0.1+ |
| 1998 08 23 | 704 | 0.7− | 1.8+ | 2005 03 03 | 691 | 0.1− | 0.1+ | 2006 06 19 | 704 | 0.4+ | 0.7− |
| 1998 08 23 | 704 | 0.7− | 0.6+ | 2005 03 03 | 691 | 0.0 | 0.2+ | 2006 06 23 | 644 | 0.0 | 0.2− |
| 1998 08 23 | 704 | 0.0 | 0.3− | 2005 03 03 | 691 | 0.2+ | 0.2+ | 2006 06 23 | 644 | 0.0 | 0.4− |
| 1998 08 23 | 704 | 2.0+ | 0.1− | 2005 04 04 | G96 | 0.6− | 0.1+ | 2006 06 23 | 644 | 0.0 | 0.3− |
| 1998 08 23 | 704 | 0.3− | 1.5− | 2005 04 04 | G96 | 0.3− | 0.2− | 2006 07 21 | 703 | 0.1− | 0.4+ |
| 1998 09 15 | 699 | 1.1+ | 0.2+ | 2005 04 04 | G96 | 0.2− | 0.1− | 2006 07 21 | 703 | 0.1+ | 0.3+ |
| 1998 09 15 | 699 | 0.9− | 1.0+ | 2005 04 04 | G96 | 0.4− | 0.2+ | 2006 07 21 | 703 | 0.6− | 0.7+ |
| 1998 09 15 | 699 | 0.8− | 1.6+ | 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 07 21 | 703 | 0.2− | 0.4+ |
| 2001 03 16 | 691 | 0.2− | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.2− |
| 2001 03 16 | 691 | 0.1+ | 0.1− | 2005 04 16 | 691 | 0.0 | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.1− |
| 2001 03 16 | 691 | 0.0 | 0.1+ | 2006 06 04 | 704 | 0.6− | 0.1− | 2006 08 18 | 644 | 0.0 | 0.1− |
| 2002 10 04 | 704 | 0.2− | 0.7− | 2006 06 04 | 704 | 0.6− | 0.2− | | | | |
| 2002 10 04 | 704 | 0.3+ | 0.3− | 2006 06 04 | 704 | 0.5+ | 0.5− | | | | |

**2006 LX$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 123.09567 | | (2000.0) | | | |
| $n$ | 0.22289820 | $\omega$ | 66.28492 | | −0.98783210 | −0.05443457 |
| $a$ | 2.6940047 | $\Omega$ | 110.33186 | | +0.00110596 | −0.93918193 |
| $e$ | 0.1058713 | $i$ | 8.93806 | | +0.15552013 | −0.33907843 |
| $P$ | 4.42 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 28 | 910 | 0.4− | 0.6+ | 2004 03 15 | 691 | 0.1+ | 0.1− | 2005 04 02 | 703 | 0.0 | 0.6+ |
| 1998 09 28 | 910 | 0.4+ | 0.7+ | 2005 02 09 | 704 | 0.4+ | 0.1− | 2005 04 02 | 703 | 0.6− | 0.4− |
| 1998 09 28 | 910 | 0.1− | 0.7+ | 2005 02 09 | 704 | 1.3+ | 0.6+ | 2005 04 02 | 699 | 0.4+ | 0.9− |
| 2001 05 03 | 608 | 0.2− | 0.4− | 2005 02 09 | 704 | 0.2+ | 0.3+ | 2005 04 02 | 699 | 0.1+ | 0.0 |
| 2001 05 03 | 608 | 0.5− | 0.6− | 2005 02 09 | 704 | 0.5+ | 1.2+ | 2005 04 02 | 699 | 0.2+ | 0.4− |
| 2001 05 03 | 608 | 0.2+ | 0.7− | 2005 03 16 | 703 | 1.1− | 0.2+ | 2005 04 02 | 699 | 0.8+ | 0.9− |
| 2001 05 15 | 644 | 0.1− | 0.6+ | 2005 03 16 | 703 | 0.8− | 0.1− | 2005 04 12 | 704 | 0.1+ | 0.2− |
| 2001 05 15 | 644 | 0.3− | 0.6+ | 2005 03 16 | 703 | 0.2− | 0.5− | 2005 04 12 | 704 | 0.9+ | 0.0 |
| 2001 05 15 | 644 | 0.6− | 0.2+ | 2005 03 16 | 703 | 0.6− | 0.2+ | 2005 04 12 | 704 | 0.4+ | 0.2− |
| 2002 08 19 | 644 | 0.0 | 0.6+ | 2005 03 16 | 703 | 0.1− | 0.2+ | 2005 04 12 | 704 | 0.4+ | 1.0+ |
| 2002 08 19 | 644 | 0.2+ | 0.4+ | 2005 03 16 | 703 | 0.1+ | 1.1+ | 2005 04 12 | 704 | 1.2+ | 0.9+ |
| 2002 08 19 | 644 | 0.3+ | 0.7+ | 2005 03 16 | 704 | 0.1+ | 0.0 | 2006 06 03 | G96 | 0.1+ | 0.3+ |
| 2002 08 30 | 644 | 0.3− | 0.7+ | 2005 03 16 | 703 | 0.2− | 1.1+ | 2006 06 03 | G96 | 0.5+ | 0.3+ |
| 2002 08 30 | 644 | 0.1− | 0.6+ | 2005 03 16 | 704 | 0.4+ | 0.3+ | 2006 06 03 | G96 | 0.3+ | 0.2+ |
| 2002 08 30 | 644 | 0.0 | 0.9+ | 2005 03 16 | 703 | 0.4+ | 0.9+ | 2006 06 03 | G96 | 0.1− | 0.4+ |
| 2003 11 26 | 691 | 0.0 | 0.0 | 2005 03 16 | 704 | 0.5+ | 0.1+ | 2006 06 21 | 691 | 0.6− | 0.1+ |
| 2003 11 26 | 691 | 0.1− | 0.2+ | 2005 03 16 | 704 | 0.3+ | 0.6+ | 2006 06 21 | 691 | 0.1+ | 0.1+ |
| 2003 11 26 | 691 | 0.3− | 0.1+ | 2005 03 16 | 704 | 0.9+ | 0.2+ | 2006 06 21 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2005 04 02 | 703 | 1.0− | 0.3+ | | | | |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2005 04 02 | 703 | 1.0− | 0.0 | | | | |

## 2006 $MS_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.64395 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.21933984 | $\omega$ | 184.13769 | | +0.59374993 | +0.78483094 |
| $a$ | 2.7230631 | $\Omega$ | 122.38285 | | −0.73208838 | +0.61844015 |
| $e$ | 0.0665223 | $i$ | 12.13234 | | −0.33392757 | +0.03965070 |
| $P$ | 4.49 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 29 | 691 | 0.3− | 0.1− | 2002 07 28 | 608 | 0.2+ | 0.4− | 2002 08 29 | 644 | 0.5− | 0.3+ |
| 1996 01 29 | 691 | 0.1+ | 0.2− | 2002 08 08 | 644 | 0.5− | 0.1+ | 2006 05 25 | G96 | 0.6− | 0.1− |
| 1996 01 29 | 691 | 0.1+ | 0.3− | 2002 08 08 | 644 | 0.3+ | 0.1+ | 2006 05 25 | G96 | 0.5− | 0.1− |
| 1997 07 01 | 691 | 0.3− | 0.2+ | 2002 08 08 | 644 | 0.1+ | 0.4+ | 2006 05 25 | G96 | 0.2− | 0.1− |
| 1997 07 01 | 691 | 0.1+ | 0.2+ | 2002 08 13 | 704 | 0.1− | 1.4− | 2006 06 18 | 644 | 0.6+ | 0.3− |
| 1997 07 01 | 691 | 0.4− | 0.1+ | 2002 08 13 | 704 | 0.0 | 0.9− | 2006 06 18 | 644 | 0.2+ | 0.2+ |
| 1997 07 07 | 910 | 0.9+ | 0.1+ | 2002 08 13 | 704 | 1.2+ | 0.7− | 2006 06 18 | 644 | 0.1− | 0.1+ |
| 1997 07 07 | 910 | 0.9+ | 0.2− | 2002 08 13 | 704 | 0.3− | 0.0 | 2006 06 19 | 691 | 0.0 | 0.1+ |
| 1997 07 07 | 910 | 1.2+ | 0.4− | 2002 08 13 | 704 | 0.3+ | 0.6− | 2006 06 19 | 691 | 0.1+ | 0.1+ |
| 2002 07 28 | 608 | 0.3+ | 0.6− | 2002 08 29 | 644 | 0.4− | 0.5+ | 2006 06 19 | 691 | 0.0 | 0.2− |
| 2002 07 28 | 608 | 0.3+ | 0.0 | 2002 08 29 | 644 | 0.7− | 0.1+ | | | | |

## 2006 $MZ_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.93837 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.50134940 | $\omega$ | 138.44405 | | +0.99551037 | −0.09088745 |
| $a$ | 1.5693111 | $\Omega$ | 226.79125 | | +0.07442229 | +0.92413947 |
| $e$ | 0.4825400 | $i$ | 2.07816 | | +0.05848443 | +0.37108721 |
| $P$ | 1.97 | $H$ | 20.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 645 | 0.0 | 0.0 | 2006 06 25 | 941 | 1.1+ | 1.1+ | 2006 07 01 | A13 | 1.1+ | 0.6+ |
| 2002 12 07 | 645 | 0.0 | 0.1+ | 2006 06 25 | 941 | 0.8+ | 1.2+ | 2006 07 01 | A13 | 1.4+ | 1.0+ |
| 2006 06 20 | 703 | 0.2− | 0.3− | 2006 06 25 | 941 | 0.1− | 0.9+ | 2006 07 02 | A13 | 1.5+ | 0.7+ |
| 2006 06 20 | 703 | 0.3− | 0.6+ | 2006 06 26 | A50 | 0.7+ | 0.1− | 2006 07 02 | A50 | 0.1− | 0.7− |
| 2006 06 20 | 703 | 0.3+ | 0.1+ | 2006 06 26 | A50 | 0.4+ | 0.2− | 2006 07 02 | A50 | 0.3− | 0.1− |
| 2006 06 20 | 703 | 0.2− | 0.3− | 2006 06 26 | A50 | 0.5+ | 0.3− | 2006 07 02 | A50 | 0.1− | 0.4− |
| 2006 06 20 | 703 | 0.8− | 0.3+ | 2006 06 26 | A50 | 0.7+ | 0.1− | 2006 07 02 | A50 | 0.2− | 0.3− |
| 2006 06 20 | 703 | 0.8− | 0.1− | 2006 06 26 | A50 | 0.3+ | 0.1− | 2006 07 02 | A50 | 0.2− | 0.4− |
| 2006 06 20 | 703 | 0.2+ | 0.2− | 2006 06 27 | 198 | 0.3+ | 0.1− | 2006 07 03 | A50 | 0.7+ | 0.2+ |
| 2006 06 20 | 703 | 0.4− | 0.1+ | 2006 06 27 | 198 | 0.1− | 0.0 | 2006 07 03 | A50 | 0.5+ | 0.0 |
| 2006 06 20 | 703 | 0.8− | 0.6+ | 2006 06 27 | 198 | 0.1− | 0.1+ | 2006 07 03 | A50 | 0.1+ | 0.2+ |
| 2006 06 20 | 703 | 0.1− | 0.0 | 2006 06 27 | 198 | 0.0 | 0.1+ | 2006 07 03 | A50 | 0.0 | 0.5+ |
| 2006 06 20 | 703 | 0.2− | 1.2+ | 2006 06 27 | 198 | 0.2+ | 0.3− | 2006 07 03 | A50 | 0.2− | 0.5+ |
| 2006 06 20 | 703 | 0.6+ | 2.0− | 2006 06 27 | 734 | 0.2− | 0.2− | 2006 07 04 | 170 | 0.8− | 1.5− |
| 2006 06 21 | 461 | 0.0 | 0.2− | 2006 06 27 | 734 | 0.1− | 0.2− | 2006 07 04 | 170 | 0.8− | 1.5− |
| 2006 06 21 | 461 | 0.2+ | 0.1+ | 2006 06 27 | 734 | 0.3− | 0.1− | 2006 07 04 | 170 | 0.8− | 1.7− |
| 2006 06 21 | 461 | 0.2− | 0.3+ | 2006 06 27 | 734 | 0.1− | 0.4− | 2006 07 04 | A50 | 0.6+ | 0.7+ |
| 2006 06 21 | H06 | 1.5− | 0.2− | 2006 06 27 | A50 | 0.3− | 0.4+ | 2006 07 04 | A50 | 0.2+ | 0.2+ |
| 2006 06 21 | 703 | 0.3− | 0.3− | 2006 06 27 | A50 | 0.4− | 0.1+ | 2006 07 04 | A50 | 0.1− | 0.3+ |
| 2006 06 21 | H06 | 0.3− | 0.1+ | 2006 06 27 | A50 | 0.8− | 0.3+ | 2006 07 04 | A50 | 0.6− | 0.6+ |
| 2006 06 21 | 673 | 0.2− | 0.4− | 2006 06 27 | A50 | 0.9− | 0.2− | 2006 07 04 | A50 | 0.4− | 0.3+ |
| 2006 06 21 | 854 | 0.3− | 0.0 | 2006 06 27 | A50 | 0.7− | 0.2− | 2006 07 05 | A50 | 0.9− | 0.3+ |
| 2006 06 21 | 703 | 0.1− | 0.2− | 2006 06 29 | 734 | 0.1− | 0.1+ | 2006 07 05 | A50 | 0.5− | 0.0 |
| 2006 06 21 | 854 | 0.8− | 0.1− | 2006 06 29 | 734 | 0.2− | 0.5− | 2006 07 05 | A50 | 0.4− | 0.0 |
| 2006 06 21 | 673 | 0.6+ | 0.7+ | 2006 06 29 | 734 | 0.3− | 0.5− | 2006 07 05 | A50 | 0.6− | 0.2− |
| 2006 06 21 | 854 | 0.5− | 0.1+ | 2006 06 29 | A13 | 1.6+ | 0.1− | 2006 07 08 | J95 | 0.1+ | 0.2+ |
| 2006 06 21 | 703 | 0.6− | 0.2+ | 2006 06 30 | A13 | 1.4+ | 0.6+ | 2006 07 08 | J95 | 0.1− | 0.0 |
| 2006 06 21 | 673 | 1.0+ | 0.6+ | 2006 06 30 | A13 | 1.3+ | 0.7+ | 2006 07 08 | J95 | 0.5− | 0.1+ |
| 2006 06 21 | 673 | 0.2+ | 0.0 | 2006 06 30 | 198 | 1.2− | 0.4+ | 2006 07 11 | 204 | 0.2− | 0.3− |
| 2006 06 23 | A50 | 0.4− | 0.0 | 2006 07 01 | 198 | 0.3− | 0.5− | 2006 07 11 | 204 | 0.2− | 0.1− |
| 2006 06 23 | A50 | 0.1− | 0.0 | 2006 07 01 | 198 | 0.6− | 0.6− | 2006 07 12 | J95 | 0.0 | 0.7− |
| 2006 06 23 | A50 | 0.1+ | 0.0 | 2006 07 01 | 703 | 0.4− | 0.2+ | 2006 07 12 | J95 | 0.8+ | 0.4− |
| 2006 06 23 | A50 | 0.1+ | 0.0 | 2006 07 01 | 703 | 1.6− | 0.7− | 2006 07 12 | J95 | 0.4+ | 0.2+ |
| 2006 06 23 | A50 | 0.3+ | 0.0 | 2006 07 01 | 703 | 0.9− | 0.7− | 2006 07 12 | J95 | 0.1− | 0.3− |
| 2006 06 24 | A50 | 0.4+ | 0.2− | 2006 07 01 | 703 | 0.4− | 0.0 | 2006 07 17 | J95 | 0.1+ | 0.5+ |
| 2006 06 24 | A50 | 0.9+ | 0.0 | 2006 07 01 | A50 | 0.8+ | 0.1+ | 2006 07 17 | J95 | 0.3− | 0.5+ |
| 2006 06 24 | A50 | 0.5+ | 0.4+ | 2006 07 01 | A50 | 0.4+ | 0.2+ | 2006 11 24 | 291 | 0.9+ | 0.0 |
| 2006 06 24 | A50 | 0.2+ | 0.5+ | 2006 07 01 | A50 | 0.4+ | 0.3+ | 2006 11 24 | 291 | 0.3− | 0.1+ |
| 2006 06 24 | A50 | 0.3− | 0.2+ | 2006 07 01 | A50 | 0.3+ | 0.4+ | 2006 11 24 | 291 | 0.1− | 0.8+ |
| 2006 06 25 | 941 | 2.2+ | 1.1+ | 2006 07 01 | A50 | 0.1− | 0.5+ | | | | |

## 2006 $MF_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.39394 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.27056565 | $\omega$ | 180.53927 | | +0.85083944 | +0.52154916 |
| $a$ | 2.3674870 | $\Omega$ | 147.76774 | | −0.48162042 | +0.82261835 |
| $e$ | 0.1302536 | $i$ | 6.86026 | | −0.21003336 | +0.22646308 |
| $P$ | 3.64 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 22 | 691 | 0.1− | 0.3+ | 2005 03 08 | G96 | 0.4+ | 0.3+ | 2006 06 16 | 691 | 0.3+ | 0.1+ |
| 2003 09 22 | 691 | 0.2− | 0.4+ | 2005 03 08 | G96 | 0.2− | 0.0 | 2006 06 16 | 691 | 0.1+ | 0.3− |
| 2003 09 22 | 691 | 0.1− | 0.3+ | 2005 03 08 | G96 | 0.4− | 0.2+ | 2006 06 20 | 691 | 0.0 | 0.0 |
| 2005 02 04 | 691 | 0.1− | 0.4+ | 2006 05 23 | 691 | 0.1− | 0.4+ | 2006 06 20 | 691 | 0.0 | 0.1+ |
| 2005 02 04 | 691 | 0.2+ | 0.4+ | 2006 05 23 | 691 | 0.3− | 0.3+ | 2006 06 20 | 691 | 0.3+ | 0.1− |
| 2005 02 04 | 691 | 0.2+ | 0.3+ | 2006 05 23 | 691 | 0.2− | 0.3+ | | | | |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 06 16 | 691 | 0.1+ | 0.2+ | | | | |

## 2006 $MT_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.75923 | | (2000.0) | | **P** | **Q** |
| $n$ | 0.22832913 | $\omega$ | 173.48835 | | +0.33530310 | +0.91737984 |
| $a$ | 2.6511146 | $\Omega$ | 115.92382 | | −0.87476907 | +0.38767432 |
| $e$ | 0.2273973 | $i$ | 13.79425 | | −0.34978695 | −0.09012685 |
| $P$ | 4.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 27 | 691 | 0.4− | 0.5− | 2002 08 13 | 704 | 0.1+ | 0.6− | 2005 01 19 | 691 | 0.3+ | 0.4+ |
| 1993 05 27 | 691 | 0.1− | 0.6− | 2002 08 13 | 704 | 0.0 | 0.7− | 2006 06 04 | 703 | 0.3− | 0.4+ |
| 1993 05 27 | 691 | 0.1+ | 0.4− | 2002 08 13 | 704 | 0.3+ | 0.6+ | 2006 06 04 | 703 | 0.6− | 0.5+ |
| 2002 06 08 | 644 | 0.0 | 1.8+ | 2002 08 19 | 644 | 0.1− | 0.0 | 2006 06 04 | 703 | 0.4− | 0.0 |
| 2002 06 08 | 644 | 0.2+ | 1.7+ | 2002 08 19 | 644 | 0.1− | 0.0 | 2006 06 04 | 703 | 0.5− | 1.0− |
| 2002 06 08 | 644 | 0.8+ | 1.7+ | 2002 08 19 | 644 | 0.5− | 0.0 | 2006 06 16 | 691 | 0.0 | 0.1− |
| 2002 07 15 | 644 | 0.4− | 0.1+ | 2002 08 31 | 704 | 0.4+ | 0.5− | 2006 06 16 | 691 | 0.3+ | 0.3+ |
| 2002 07 15 | 644 | 0.5− | 0.4+ | 2002 08 31 | 704 | 0.3− | 0.2+ | 2006 06 16 | 691 | 0.2+ | 0.2+ |
| 2002 07 15 | 644 | 0.3− | 0.3+ | 2002 08 31 | 704 | 0.3− | 0.1+ | 2006 06 20 | 691 | 0.1+ | 0.2+ |
| 2002 08 13 | 704 | 0.8+ | 1.0− | 2005 01 19 | 691 | 0.2− | 0.3+ | 2006 06 20 | 691 | 0.2+ | 0.3+ |
| 2002 08 13 | 704 | 0.0 | 0.3+ | 2005 01 19 | 691 | 0.0 | 0.5+ | 2006 06 20 | 691 | 0.1+ | 0.2+ |

**2006 MK$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.67406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17296347 | $\omega$ | 200.36187 | | +0.77620196 | +0.62323386 | |
| $a$ | 3.1903117 | $\Omega$ | 120.72026 | | −0.56202368 | +0.75249253 | |
| $e$ | 0.1246217 | $i$ | 6.36748 | | −0.28572696 | +0.21291908 | |
| $P$ | 5.70 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.1+ | 0.1− | 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 06 20 | 691 | 0.1− | 0.1− |
| 2001 09 18 | 645 | 0.1+ | 0.0 | 2006 05 24 | G96 | 0.1+ | 0.3+ | 2006 06 20 | 691 | 0.0 | 0.2+ |
| 2001 10 16 | 644 | 1.2− | 0.1+ | 2006 05 24 | G96 | 0.2− | 0.1− | 2006 07 18 | D35 | 0.4− | 0.1− |
| 2001 10 16 | 644 | 1.0− | 0.1+ | 2006 05 24 | G96 | 0.1+ | 0.3+ | 2006 07 18 | D35 | 0.0 | 0.0 |
| 2001 10 16 | 644 | 1.4− | 0.1− | 2006 05 24 | G96 | 0.6− | 0.5− | 2006 07 18 | D35 | 0.0 | 0.2+ |
| 2001 10 24 | 644 | 0.1− | 0.9+ | 2006 06 19 | G96 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.1− | 0.0 |
| 2001 10 24 | 644 | 0.2− | 0.9+ | 2006 06 19 | G96 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.0 | 0.1+ |
| 2001 10 24 | 644 | 0.3− | 0.4+ | 2006 06 19 | G96 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.4+ | 0.0 |
| 2005 04 07 | 691 | 0.0 | 0.1+ | 2006 06 19 | G96 | 0.4− | 0.4− | | | | |
| 2005 04 07 | 691 | 0.0 | 0.0 | 2006 06 20 | 691 | 0.5+ | 0.1+ | | | | |

**2006 MO$_3$ = 1998 MU$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.14501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24326294 | $\omega$ | 115.17835 | | +0.88704234 | +0.43262938 | |
| $a$ | 2.5414725 | $\Omega$ | 219.74431 | | −0.45900519 | +0.86396932 | |
| $e$ | 0.1813584 | $i$ | 14.60401 | | +0.04970042 | +0.25766031 | |
| $P$ | 4.05 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 19 | 704 | 1.1+ | 0.3+ | 2003 12 12 | 644 | 0.1− | 0.3+ | 2006 06 16 | 644 | 0.5− | 0.2+ |
| 1998 06 19 | 704 | 0.7+ | 0.0 | 2004 01 12 | 644 | 0.2+ | 0.2+ | 2006 06 16 | 644 | 0.6− | 0.2+ |
| 1998 06 19 | 704 | 1.1+ | 0.4+ | 2004 01 12 | 644 | 0.1+ | 0.1+ | 2006 06 16 | 644 | 0.6− | 0.6+ |
| 1998 06 19 | 704 | 0.1− | 0.6− | 2004 01 12 | 644 | 0.3+ | 0.0 | 2006 06 19 | 704 | 1.2+ | 0.1+ |
| 1998 06 25 | 704 | 1.2− | 1.1− | 2004 02 11 | 644 | 0.1+ | 0.0 | 2006 06 19 | 704 | 0.3+ | 0.1+ |
| 1998 06 25 | 704 | 1.2+ | 1.2− | 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 06 19 | 704 | 0.3− | 0.4+ |
| 1998 06 25 | 704 | (0.8− | 2.6−) | 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 06 19 | 704 | 0.3+ | 0.5+ |
| 1998 06 25 | 704 | 1.7− | 0.1+ | 2005 03 13 | 703 | 0.1+ | 0.6− | 2006 06 19 | 704 | 0.6+ | 0.6+ |
| 1998 06 25 | 704 | 0.4− | 1.0− | 2005 03 13 | 703 | 0.2− | 0.5− | 2006 06 24 | 704 | 0.4− | 0.3+ |
| 2003 12 12 | 644 | 0.3− | 0.1− | 2005 03 13 | 703 | 0.3− | 0.2+ | 2006 06 24 | 704 | 0.6− | 0.4+ |
| 2003 12 12 | 644 | 0.3− | 0.1− | 2005 03 13 | 703 | 0.2+ | 0.1+ | 2006 06 24 | 704 | 0.1+ | 0.2+ |

**2006 MK$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.71226 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26401060 | $\omega$ | 213.35721 | | +0.93141598 | +0.35013394 | |
| $a$ | 2.4065145 | $\Omega$ | 125.83477 | | −0.30134685 | +0.89497457 | |
| $e$ | 0.1125751 | $i$ | 7.03916 | | −0.20409398 | +0.27645388 | |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 23 | 691 | 0.2− | 0.2− | 2006 07 20 | 644 | 0.1+ | 0.0 | 2006 07 22 | G96 | 0.4+ | 0.0 |
| 2003 11 23 | 691 | 0.0 | 0.5− | 2006 07 20 | 644 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.0 | 0.1− |
| 2003 11 23 | 691 | 0.3+ | 0.1− | 2006 07 20 | 644 | 0.2+ | 0.2− | 2006 07 22 | G96 | 0.3− | 0.1− |
| 2003 11 29 | 291 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 07 22 | G96 | 0.0 | 0.1+ |
| 2003 11 29 | 291 | 0.1− | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 07 22 | G96 | 0.4− | 0.1+ |
| 2003 11 29 | 291 | 0.2− | 0.5+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 07 22 | G96 | 0.1− | 0.1+ |
| 2003 11 30 | 704 | 0.8+ | 0.9+ | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 07 22 | G96 | 0.4− | 0.0 |
| 2003 11 30 | 704 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 08 14 | 644 | 0.1− | 0.6− |
| 2003 11 30 | 704 | 0.4− | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2003 11 30 | 704 | 0.1− | 0.9− | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 08 14 | 644 | 0.3− | 0.0 |
| 2006 06 18 | 691 | 0.4+ | 0.3+ | 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 08 20 | 644 | 0.4− | 0.1− |
| 2006 06 18 | 691 | 0.2+ | 0.3+ | 2006 07 22 | G96 | 0.0 | 0.6− | 2006 08 20 | 644 | 0.1− | 0.2− |
| 2006 06 18 | 691 | 0.1+ | 0.3+ | 2006 07 22 | G96 | 0.5− | 0.1− | 2006 08 20 | 644 | 0.3− | 0.0 |
| 2006 06 22 | 691 | 0.2− | 0.2− | 2006 07 22 | G96 | 0.5− | 0.4− | 2006 08 20 | 644 | 0.5− | 0.0 |
| 2006 06 22 | 691 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.4− | 0.1− | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2006 06 22 | 691 | 0.1+ | 0.3+ | 2006 07 22 | G96 | 0.4− | 0.2− | 2006 08 20 | 644 | 0.3+ | 0.3− |

**2006 MK$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.56606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28744814 | $\omega$ | 275.43138 | | +0.83743027 | −0.43056601 | |
| $a$ | 2.2738565 | $\Omega$ | 110.44861 | | +0.52143360 | +0.81396671 | |
| $e$ | 0.3130605 | $i$ | 21.05567 | | −0.16376065 | +0.38996295 | |
| $P$ | 3.43 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 29 | 704 | 1.0+ | 0.2− | 2005 06 05 | 695 | 1.9− | 0.9− | 2006 06 18 | 691 | 0.2− | 0.3+ |
| 2003 11 29 | 704 | 1.1+ | 0.1− | 2005 06 05 | 695 | 2.3+ | 0.2+ | 2006 06 18 | 691 | 0.1+ | 0.2+ |
| 2003 11 29 | 704 | 0.1+ | 0.3+ | 2005 06 05 | 695 | 0.3− | 0.8+ | 2006 06 22 | 691 | 0.1+ | 0.2− |
| 2003 11 29 | 704 | 0.3+ | 0.0 | 2006 05 30 | G96 | 0.6− | 0.3− | 2006 06 22 | 691 | 0.1− | 0.2− |
| 2003 11 29 | 704 | 0.1− | 0.2+ | 2006 05 30 | G96 | 0.1+ | 0.0 | 2006 06 22 | 691 | 0.5+ | 0.3+ |
| 2003 12 14 | 704 | 1.4− | 0.1+ | 2006 05 30 | G96 | 0.3− | 0.2− | 2006 07 21 | 644 | 0.3+ | 0.1+ |
| 2003 12 14 | 704 | 0.2− | 0.1+ | 2006 05 30 | G96 | 0.2− | 0.2− | 2006 07 21 | 644 | 0.3− | 0.5+ |
| 2003 12 14 | 704 | 0.8− | 0.2− | 2006 06 18 | 691 | 0.1+ | 0.3− | 2006 07 21 | 644 | 0.6− | 0.3− |

**2006 MF$_9$ = 2004 BL$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.44562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17233716 | $\omega$ | 86.37012 | | −0.55293192 | +0.83157710 | |
| $a$ | 3.1980366 | $\Omega$ | 149.87306 | | −0.79991490 | −0.51217121 | |
| $e$ | 0.1194086 | $i$ | 5.99264 | | −0.23324333 | −0.21484921 | |
| $P$ | 5.72 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2004 04 14 | 645 | 0.0 | 0.0 | 2005 04 18 | 703 | 1.5− | 0.9− |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2005 02 09 | 691 | 0.0 | 0.6+ | 2005 05 08 | 703 | 1.4− | 1.7− |
| 2001 09 21 | 704 | 0.0 | 0.1+ | 2005 02 09 | 691 | 0.3+ | 0.1+ | 2005 05 08 | 703 | 1.0− | 0.7− |
| 2001 09 21 | 704 | 0.8− | 0.8+ | 2005 02 09 | 691 | 0.0 | 0.4+ | 2005 05 08 | 703 | 1.2− | 1.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.1− | 2005 04 01 | 699 | 0.4+ | 0.4+ | 2005 05 08 | 703 | 0.2− | 1.4− |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2005 04 01 | 699 | 0.8− | 0.3− | 2006 06 19 | G96 | 0.4− | 0.3− |
| 2004 01 28 | 691 | 0.3+ | 0.2+ | 2005 04 01 | 699 | 0.1+ | 0.5+ | 2006 06 19 | G96 | 0.7− | 0.1− |
| 2004 01 28 | 691 | 0.1− | 0.3+ | 2005 04 01 | 699 | 0.2+ | 0.7+ | 2006 06 19 | G96 | 0.7− | 0.2− |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2005 04 13 | 699 | (3.8+ | 0.7−) | 2006 06 19 | G96 | 0.5− | 0.2− |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2005 04 13 | 699 | 1.2+ | 1.0+ | 2006 06 22 | 691 | 0.2+ | 0.6+ |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 699 | 0.2+ | 1.3+ | 2006 06 22 | 691 | 0.1+ | 0.4+ |
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2005 04 13 | 699 | 1.9+ | 0.2− | 2006 06 22 | 691 | 0.2+ | 0.4+ |
| 2004 02 11 | 691 | 0.2+ | 0.0 | 2005 04 18 | 703 | 0.8− | 1.5− | 2006 08 20 | 644 | 0.6− | 0.2+ |
| 2004 02 11 | 691 | 0.0 | 0.2+ | 2005 04 18 | 703 | 0.0 | 0.5+ | 2006 08 20 | 644 | 0.1− | 0.3+ |
| 2004 04 14 | 645 | 0.1− | 0.0 | 2005 04 18 | 703 | 1.1− | 0.7+ | 2006 08 20 | 644 | 0.0 | 0.3+ |

**2006 MH$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.32123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20980927 | $\omega$ | 349.99759 | | +0.98265799 | −0.16507746 | |
| $a$ | 2.8049143 | $\Omega$ | 20.10741 | | +0.18253359 | +0.78101326 | |
| $e$ | 0.2428476 | $i$ | 14.22120 | | +0.03263069 | +0.60230201 | |
| $P$ | 4.70 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 0.1− | 1.7+ | 2002 11 07 | 704 | 1.2+ | 0.2+ | 2006 06 26 | E12 | 0.3+ | 0.8− |
| 1997 10 30 | 704 | 0.4− | 1.2− | 2002 11 07 | 704 | 1.8+ | 0.1− | 2006 06 26 | E12 | 0.1− | 0.3+ |
| 1997 10 30 | 704 | 0.0 | 0.3− | 2002 12 07 | 704 | 1.1− | 0.0 | 2006 06 26 | E12 | (1.2+ | 1.8+) |
| 1997 10 30 | 704 | 0.6+ | 0.1− | 2002 12 07 | 704 | 0.3− | 0.2+ | 2006 06 26 | E12 | 0.1− | 0.8+ |
| 1997 10 30 | 704 | 0.4+ | 0.4+ | 2002 12 07 | 704 | 0.5− | 0.6− | 2006 07 26 | E12 | 0.2− | 0.2+ |
| 2000 04 12 | 691 | 0.3− | 0.3+ | 2002 12 15 | 704 | 0.1+ | 0.2− | 2006 07 26 | E12 | 0.5− | 0.4+ |
| 2000 04 12 | 691 | 0.1− | 0.3+ | 2002 12 15 | 704 | 0.0 | 0.1− | 2006 07 26 | E12 | 0.3+ | 0.0 |
| 2000 04 12 | 691 | 0.1+ | 0.0 | 2002 12 15 | 704 | 0.2− | 0.1+ | 2006 07 26 | E12 | 0.2− | 0.6+ |
| 2002 10 05 | 704 | 0.3+ | 0.6+ | 2002 12 15 | 704 | 0.7+ | 0.6+ | 2006 08 12 | E12 | 0.3− | 0.2+ |
| 2002 10 05 | 704 | 0.8− | 0.1+ | 2002 12 15 | 704 | 0.3− | 0.5+ | 2006 08 12 | E12 | 0.7− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 1.7− | 0.7+ | 2003 12 25 | 645 | 0.1+ | 0.0 | 2006 08 12 | E12 | 0.1+ | 0.1− |
| 2002 10 30 | 704 | 1.0− | 0.2− | 2003 12 25 | 645 | 0.1+ | 0.1+ | 2006 08 12 | E12 | 0.7− | 1.1+ |
| 2002 10 30 | 704 | 0.7− | 0.8− | 2006 06 18 | E12 | 0.0 | 0.2+ | 2006 08 26 | E12 | 0.3− | 0.2+ |
| 2002 10 30 | 704 | 2.1− | 0.3− | 2006 06 18 | E12 | 0.3+ | 0.1+ | 2006 08 26 | E12 | 0.2+ | 0.5− |
| 2002 11 07 | 704 | 1.0+ | 0.5+ | 2006 06 18 | E12 | 0.5+ | 0.2+ | 2006 08 26 | E12 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 1.4+ | 0.5+ | 2006 06 18 | E12 | 0.3+ | 0.7+ | 2006 08 26 | E12 | 0.2+ | 0.2+ |

**2006 $MO_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.45761 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17635178 | $\omega$ | 285.53340 | | −0.26780356 | | +0.93513561 |
| $a$ | 3.1493154 | $\Omega$ | 326.02296 | | −0.64516873 | | −0.35285674 |
| $e$ | 0.2849481 | $i$ | 24.52233 | | −0.71556870 | | −0.03183553 |
| $P$ | 5.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.1− | 0.1− | 2006 07 10 | F84 | 0.4+ | 0.4− | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 1995 07 22 | 691 | 0.6− | 0.7+ | 2006 07 18 | E12 | 0.3− | 0.3− | 2006 08 17 | 644 | 0.1− | 0.2+ |
| 1995 07 22 | 691 | 0.1+ | 0.1− | 2006 07 18 | E12 | 0.6+ | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.3+ |
| 2005 03 04 | 703 | 0.1− | 0.4+ | 2006 07 18 | E12 | 0.6− | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.4+ |
| 2005 03 04 | 703 | 1.0+ | 1.4+ | 2006 07 18 | E12 | 0.5+ | 0.5− | 2006 08 20 | 644 | 0.3+ | 0.1+ |
| 2005 03 04 | 703 | 0.6− | 0.9− | 2006 08 12 | 644 | 0.5+ | 0.4+ | 2006 08 20 | 644 | 0.1− | 0.2+ |
| 2005 03 04 | 703 | 0.7+ | 0.1+ | 2006 08 12 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 703 | 1.5+ | 0.4+ |
| 2006 06 29 | F84 | 1.3− | 0.7+ | 2006 08 12 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.4− | 1.0− |
| 2006 06 29 | F84 | 0.5− | 0.7− | 2006 08 12 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5− |
| 2006 06 30 | F84 | 0.2− | 0.7− | 2006 08 12 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.6+ |
| 2006 06 30 | F84 | 0.0 | 0.2− | 2006 08 12 | 644 | 0.2+ | 0.1+ | 2006 09 17 | F84 | 0.6+ | 0.7− |
| 2006 06 30 | F84 | 0.1− | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2006 07 10 | F84 | 0.2+ | 0.8− | 2006 08 14 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2006 07 10 | F84 | 0.6+ | 0.6− | 2006 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1− |

**2006 NE = 2003 $YT_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.87120 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22059251 | $\omega$ | 247.94218 | | +0.66504811 | | +0.70354846 |
| $a$ | 2.7127444 | $\Omega$ | 66.27803 | | −0.54361970 | | +0.68602371 |
| $e$ | 0.1858638 | $i$ | 15.87715 | | −0.51204358 | | +0.18544822 |
| $P$ | 4.47 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 11 | 699 | 1.0+ | 0.5− | 2001 05 23 | 699 | 0.6− | 1.1+ | 2005 04 10 | 703 | 0.5+ | 0.3− |
| 1998 11 11 | 699 | 1.4− | 0.4+ | 2001 05 23 | 699 | 0.7− | 0.4+ | 2005 04 10 | 703 | 1.1− | 0.6− |
| 1998 11 11 | 699 | 0.1− | 0.1− | 2001 05 23 | 699 | 1.4+ | 1.0− | 2005 04 10 | 703 | 1.2− | 0.5+ |
| 2001 03 23 | 608 | 0.1+ | 0.5− | 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 07 01 | 428 | 0.1− | 0.0 |
| 2001 03 23 | 608 | 0.5+ | 0.7− | 2003 12 17 | 704 | 0.7− | 0.7+ | 2006 07 01 | 428 | 0.1+ | 0.1− |
| 2001 03 23 | 608 | 0.2+ | 0.8− | 2003 12 17 | 704 | 0.1+ | 0.9+ | 2006 07 02 | 428 | 0.1− | 0.7+ |
| 2001 04 17 | 699 | 0.0 | 0.4− | 2003 12 29 | 704 | 0.4+ | 0.0 | 2006 07 02 | 428 | 0.2− | 0.1+ |
| 2001 04 17 | 699 | 0.4− | 0.3− | 2003 12 29 | 704 | 0.4+ | 0.2+ | 2006 07 02 | 428 | 0.3+ | 0.4+ |
| 2001 04 17 | 699 | 0.5− | 0.7+ | 2003 12 29 | 704 | 0.0 | 0.2− | 2006 07 03 | 428 | 0.4+ | 0.2− |
| 2001 04 17 | 699 | 0.1+ | 2.2+ | 2003 12 29 | 704 | 0.5+ | 0.5+ | | | | |
| 2001 05 23 | 699 | 1.3+ | 0.1− | 2005 04 10 | 703 | 0.0 | 0.3− | | | | |

**2006 OS = 2006 $ND_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.80272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24152254 | $\omega$ | 282.05800 | | +0.74099403 | | +0.67091762 |
| $a$ | 2.5536671 | $\Omega$ | 35.81508 | | −0.59580492 | | +0.67626943 |
| $e$ | 0.1357678 | $i$ | 2.76594 | | −0.30974883 | | +0.30418612 |
| $P$ | 4.08 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | 1.3+ | 0.6− | 2002 08 18 | 644 | 0.4− | 0.3+ | 2006 07 04 | E12 | 1.0− | 0.5+ |
| 1998 08 17 | 704 | 0.0 | 0.0 | 2003 12 22 | 704 | 0.2+ | 0.1− | 2006 07 17 | 428 | 0.1− | 0.8− |
| 1998 08 17 | 704 | 1.0− | 0.8+ | 2003 12 22 | 704 | 0.2+ | 0.9+ | 2006 07 17 | 428 | 0.1− | 0.2+ |
| 1998 08 17 | 704 | 0.0 | 1.1+ | 2003 12 22 | 704 | 0.2− | 0.1− | 2006 07 17 | A44 | 0.1− | 0.5+ |
| 2001 03 14 | 691 | 0.2+ | 0.5+ | 2003 12 22 | 704 | 0.0 | 1.2+ | 2006 07 17 | A44 | 1.2+ | 0.6+ |
| 2001 03 14 | 691 | 0.2+ | 0.3+ | 2003 12 22 | 704 | 0.4− | 1.1+ | 2006 07 17 | A44 | 0.6+ | 0.7+ |
| 2001 03 14 | 691 | 0.0 | 0.7+ | 2004 01 13 | 691 | 0.0 | 0.3+ | 2006 07 19 | A44 | 0.2+ | 0.5+ |
| 2001 05 22 | 807 | 0.7+ | 0.6− | 2004 01 13 | 691 | 0.0 | 0.4+ | 2006 07 19 | A44 | 0.0 | 0.5+ |
| 2001 05 23 | 807 | 0.5+ | 0.5− | 2004 01 13 | 691 | 0.5− | 0.3+ | 2006 07 19 | 644 | 0.1− | 0.5+ |
| 2002 08 08 | 644 | 0.4− | 0.0 | 2004 01 28 | 691 | 0.1− | 0.1− | 2006 07 19 | 644 | 0.4− | 0.2+ |
| 2002 08 08 | 644 | 0.4− | 0.1+ | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 07 19 | 644 | 0.1− | 0.4+ |
| 2002 08 08 | 644 | 0.4− | 0.2+ | 2004 01 28 | 691 | 0.4+ | 0.2+ | 2006 07 19 | A44 | 0.5− | 0.1+ |
| 2002 08 13 | 704 | 0.2+ | 0.5+ | 2005 03 16 | G96 | 0.1− | 0.3+ | 2006 07 19 | A44 | 1.3+ | 1.3− |
| 2002 08 13 | 704 | 0.9+ | 0.6+ | 2005 03 16 | G96 | 0.1− | 0.1− | 2006 07 19 | A44 | 0.9− | 0.5+ |
| 2002 08 13 | 704 | 0.3+ | 0.1+ | 2005 03 16 | G96 | 0.1+ | 0.1− | 2006 07 20 | 428 | 0.1− | 0.3− |
| 2002 08 13 | 704 | 0.5− | 0.2+ | 2005 03 16 | G96 | 0.2− | 0.2+ | 2006 07 20 | 428 | 0.1+ | 0.4− |
| 2002 08 13 | 704 | 0.7− | 0.0 | 2006 07 04 | E12 | 0.6+ | 0.0 | 2006 07 24 | A44 | 0.0 | 0.2+ |
| 2002 08 18 | 644 | 0.5− | 0.2+ | 2006 07 04 | E12 | 0.0 | 0.1+ | 2006 07 24 | A44 | 1.0− | 0.7+ |
| 2002 08 18 | 644 | 0.5− | 0.0 | 2006 07 04 | E12 | 1.0+ | 0.6+ | 2006 07 24 | A44 | 0.6− | 0.7+ |

**2006 OZ**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.71040 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30157929 | $\omega$ | 318.67398 | | +0.99826989 | | +0.01529826 |
| $a$ | 2.2022589 | $\Omega$ | 40.55633 | | +0.01236883 | | +0.88931681 |
| $e$ | 0.4657562 | $i$ | 5.00929 | | −0.05748259 | | +0.45703565 |
| $P$ | 3.27 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 20 | 261 | 0.0 | 1.5− | 2006 09 11 | 844 | 0.3+ | 0.2− | 2006 11 10 | G72 | 0.6− | 0.4+ |
| 1993 10 20 | 261 | 0.2+ | 0.9+ | 2006 09 11 | 844 | 0.0 | 0.4+ | 2006 11 10 | G72 | 0.2− | 0.5− |
| 2006 07 18 | E12 | 0.1− | 0.1+ | 2006 09 11 | 844 | 0.0 | 0.2+ | 2006 11 10 | G72 | 1.0− | 0.6− |
| 2006 07 18 | E12 | 0.0 | 0.0 | 2006 09 11 | 844 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2006 07 18 | E12 | 0.2+ | 0.1+ | 2006 09 11 | 844 | 0.7+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2006 07 18 | E12 | 0.1− | 0.1+ | 2006 09 12 | E12 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2006 07 18 | E12 | 0.0 | 0.2+ | 2006 09 12 | E12 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2006 07 18 | E12 | 0.1+ | 0.1− | 2006 09 12 | E12 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2006 07 18 | E12 | 0.1− | 0.5− | 2006 09 12 | E12 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2006 07 18 | E12 | 0.1− | 0.4+ | 2006 09 28 | E12 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2006 07 18 | E12 | 0.2− | 0.2+ | 2006 09 28 | E12 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2006 07 18 | E12 | 0.3− | 0.2+ | 2006 09 28 | E12 | 0.3− | 0.4− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2006 07 18 | E12 | 0.2− | 0.1+ | 2006 09 28 | E12 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2006 07 19 | I77 | 0.8+ | 0.1+ | 2006 09 29 | 808 | 0.5− | 1.2− | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2006 07 19 | I77 | 0.3+ | 0.3+ | 2006 09 29 | 808 | 0.6+ | 0.3+ | 2006 11 16 | 246 | 0.3− | 0.6+ |
| 2006 07 19 | I77 | 0.4− | 1.2+ | 2006 09 29 | 808 | 0.6+ | 0.4+ | 2006 11 16 | 246 | 0.4+ | 0.2+ |
| 2006 07 19 | 734 | 0.1− | 0.1− | 2006 10 10 | A81 | 0.3− | 0.5− | 2006 11 16 | 246 | 0.0 | 0.2− |
| 2006 07 19 | 734 | 0.0 | 0.3+ | 2006 10 10 | A81 | 0.0 | 0.3− | 2006 11 16 | 246 | 0.1− | 0.2+ |
| 2006 07 19 | 734 | 0.2− | 0.2+ | 2006 10 11 | 046 | 0.2− | 0.2+ | 2006 11 16 | 246 | 0.2+ | 0.5+ |
| 2006 07 19 | 734 | 0.0 | 0.4+ | 2006 10 11 | 046 | 1.0− | 0.6+ | 2006 11 16 | 246 | 0.1− | 0.1− |
| 2006 07 19 | E12 | 0.1+ | 0.4− | 2006 10 11 | 046 | 1.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2006 07 19 | E12 | 0.3− | 0.0 | 2006 10 11 | 046 | 0.4− | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2006 07 19 | E12 | 0.7− | 0.4+ | 2006 10 11 | 046 | 0.6− | 0.4+ | 2006 11 17 | 703 | 0.9− | 0.2+ |
| 2006 07 19 | E12 | 0.3+ | 0.4− | 2006 10 11 | 046 | 1.0− | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.0 |
| 2006 07 19 | E12 | 0.0 | 0.0 | 2006 10 11 | 046 | 0.8− | 0.6+ | 2006 11 17 | H45 | 0.2+ | 0.1− |
| 2006 07 20 | I77 | 0.2− | 0.5− | 2006 10 11 | 046 | 0.4− | 0.5+ | 2006 11 17 | H45 | 0.3− | 0.2− |
| 2006 07 20 | I77 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 17 | H45 | 0.1− | 0.1+ |
| 2006 07 20 | I77 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 17 | H45 | 0.2− | 0.0 |
| 2006 07 20 | 734 | (2.2+ | 0.4+) | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 17 | H45 | 0.1+ | 0.4− |
| 2006 07 20 | 734 | 0.9+ | 0.2− | 2006 10 17 | 046 | 0.1+ | 0.2+ | 2006 11 18 | 711 | 0.3− | 0.0 |
| 2006 07 20 | 734 | 0.2− | 0.9− | 2006 10 17 | 046 | 0.2− | 0.0 | 2006 11 18 | 711 | 0.2− | 0.1+ |
| 2006 07 20 | E12 | 0.4− | 0.1+ | 2006 10 17 | 046 | 0.1+ | 0.5+ | 2006 11 18 | 711 | 0.0 | 0.2+ |
| 2006 07 20 | E12 | 1.0− | 0.5+ | 2006 10 17 | 046 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2006 07 20 | E12 | 0.2− | 0.0 | 2006 10 17 | 046 | 0.0 | 0.6+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2006 07 20 | E12 | 0.0 | 0.2+ | 2006 10 17 | 046 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2006 07 20 | E12 | 0.1+ | 0.2+ | 2006 10 17 | 130 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2006 07 22 | E12 | 0.2− | 0.2+ | 2006 10 17 | 130 | 0.4+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2006 07 22 | E12 | 0.3+ | 0.1+ | 2006 10 17 | 130 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2006 07 24 | I77 | 0.2+ | 0.7− | 2006 10 17 | 130 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.5− | 0.5− |
| 2006 07 24 | I77 | 0.3+ | 0.6− | 2006 10 22 | 704 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2006 07 24 | I77 | 0.6− | 0.1+ | 2006 10 22 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.7+ |
| 2006 08 02 | 844 | 0.2+ | 0.0 | 2006 10 22 | 704 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 02 | 844 | 0.0 | 0.1− | 2006 10 22 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2006 08 02 | 844 | 0.2+ | 0.1+ | 2006 10 22 | 704 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2006 08 02 | 844 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.7− |
| 2006 08 02 | 844 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2006 08 03 | E12 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.6− | 2006 11 19 | 704 | 0.6− | 0.7− |
| 2006 08 03 | E12 | 0.1− | 0.1+ | 2006 10 22 | 703 | 1.0+ | 0.8− | 2006 11 21 | 704 | 0.4− | 1.1+ |
| 2006 08 03 | E12 | 0.1− | 0.1+ | 2006 10 25 | 151 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2006 08 14 | E12 | 0.1+ | 0.0 | 2006 10 25 | 151 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.3− | 1.0+ |
| 2006 08 14 | E12 | 0.1+ | 0.1+ | 2006 10 25 | 151 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 2006 08 14 | E12 | 0.1− | 0.3− | 2006 10 25 | 151 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.1− | 0.9+ |
| 2006 08 14 | E12 | 0.4− | 0.2+ | 2006 10 25 | 151 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2006 08 16 | 423 | 0.0 | 0.1− | 2006 10 25 | 151 | 0.9+ | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2006 08 16 | 423 | 0.2+ | 0.1+ | 2006 10 25 | 639 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.8+ |
| 2006 08 16 | 423 | 0.0 | 0.1− | 2006 10 25 | 639 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2006 08 18 | 423 | 0.2+ | 0.1+ | 2006 10 25 | 639 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2006 08 18 | 423 | 0.1− | 0.0 | 2006 10 26 | A89 | 0.8+ | 0.7− | 2006 11 25 | 704 | 2.9+ | 1.5− |
| 2006 08 18 | 423 | 0.1− | 0.0 | 2006 10 26 | A89 | 1.2+ | 0.3− | 2006 11 25 | 704 | 0.7− | 0.8+ |
| 2006 08 20 | E12 | 0.2+ | 0.3− | 2006 10 27 | 204 | 0.3− | 0.2− | 2006 11 25 | 704 | 0.3+ | 0.1+ |
| 2006 08 20 | E12 | 0.3+ | 0.1+ | 2006 10 27 | 204 | 0.1− | 0.2− | 2006 11 25 | 704 | 2.0+ | 0.1− |
| 2006 08 20 | E12 | 0.4+ | 0.2− | 2006 10 27 | 704 | 1.1+ | 0.9+ | 2006 11 26 | 113 | 0.3+ | 0.6− |
| 2006 08 20 | E12 | 0.3− | 0.2− | 2006 10 27 | 704 | 1.2+ | 0.2+ | 2006 11 26 | 113 | 0.2+ | 0.3− |
| 2006 08 23 | E12 | 0.3+ | 0.0 | 2006 10 27 | 704 | 1.5+ | 0.3+ | 2006 11 26 | 113 | 0.2+ | 0.3− |
| 2006 08 23 | E12 | 0.2− | 0.1+ | 2006 10 27 | 704 | 1.3+ | 0.8+ | 2006 11 26 | 113 | 0.3+ | 0.9− |
| 2006 08 23 | E12 | 0.1+ | 0.1+ | 2006 10 27 | 704 | (1.8+ | 0.7+) | 2006 11 26 | 113 | 0.2+ | 0.4− |
| 2006 08 31 | 808 | 0.6− | 0.1− | 2006 11 06 | 644 | 0.2− | 0.1+ | 2006 11 26 | 198 | 0.2− | 0.2+ |
| 2006 08 31 | 808 | 0.4+ | 0.4+ | 2006 11 06 | 644 | 0.2− | 0.1+ | 2006 11 26 | 198 | 0.3− | 0.2+ |
| 2006 08 31 | 808 | 0.0 | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.0 | 2006 11 26 | 198 | 0.2− | 0.2+ |
| 2006 09 03 | E12 | 0.0 | 0.1+ | 2006 11 08 | G72 | 0.4+ | 0.1− | 2006 11 26 | 198 | 0.2− | 0.2+ |
| 2006 09 03 | E12 | 0.1− | 0.0 | 2006 11 08 | G72 | 0.9+ | 0.8− | 2006 11 26 | 198 | 0.3− | 0.2+ |
| 2006 09 03 | E12 | 0.2+ | 0.2− | 2006 11 08 | G72 | 0.3+ | 0.2+ | 2006 11 27 | 113 | 0.1+ | 0.1− |
| 2006 09 03 | E12 | 0.1+ | 0.2− | 2006 11 08 | G72 | 0.3+ | 0.1+ | 2006 11 27 | 113 | 0.0 | 0.4− |
| 2006 09 03 | 423 | 0.1− | 0.1− | 2006 11 08 | G72 | 0.0 | 0.1− | 2006 11 27 | 113 | 0.2− | 0.5− |
| 2006 09 03 | 423 | 0.1− | 0.2− | 2006 11 08 | G72 | (1.9+ | 0.3−) | 2006 11 27 | 113 | 0.0 | 0.6− |
| 2006 09 03 | 423 | 0.0 | 0.1− | 2006 11 09 | A53 | 0.2+ | 0.2+ | 2006 11 27 | 113 | 0.1+ | 0.7− |
| 2006 09 11 | 844 | 0.0 | 0.3− | 2006 11 09 | A53 | 0.0 | 0.6− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2006 09 11 | 844 | 0.3+ | 0.4+ | 2006 11 09 | A53 | 0.0 | 0.3− | 2006 11 28 | 704 | 1.2+ | 0.5− |
| 2006 09 11 | 844 | 0.2+ | 0.1− | 2006 11 10 | G72 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2006 09 11 | 844 | 0.1− | 0.4+ | 2006 11 10 | G72 | 0.8− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 1.4+ |
| 2006 09 11 | 844 | 0.8+ | 0.3− | 2006 11 10 | G72 | 0.1− | 0.3− | | | | |

### 2006 OS$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.68856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26262610 | $\omega$ | 43.99107 | | +0.99961727 | | −0.01432959 |
| $a$ | 2.4149647 | $\Omega$ | 316.81311 | | +0.00304652 | | +0.90720874 |
| $e$ | 0.2272377 | $i$ | 1.98150 | | +0.02749588 | | +0.42043664 |
| $P$ | 3.75 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 691 | 0.0 | 0.1− | 2006 07 21 | 704 | 0.4+ | 1.2− | 2006 08 15 | 644 | 0.1+ | 0.1+ |
| 1995 08 27 | 691 | 0.2+ | 0.2− | 2006 07 30 | D35 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 1995 08 27 | 691 | 0.2+ | 0.4− | 2006 07 30 | D35 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2001 04 16 | 645 | 0.1− | 0.0 | 2006 07 30 | D35 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2001 04 16 | 645 | 0.0 | 0.2− | 2006 07 30 | D35 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2006 06 03 | G96 | 0.3+ | 0.2− | 2006 07 30 | D35 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2006 06 03 | G96 | 0.2+ | 0.1+ | 2006 07 30 | D35 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3+ |
| 2006 06 03 | G96 | 0.2− | 0.4− | 2006 08 06 | D35 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 2006 06 03 | G96 | 0.2+ | 0.3+ | 2006 08 06 | D35 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2006 07 19 | D35 | 0.0 | 0.2+ | 2006 08 06 | D35 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.4+ |
| 2006 07 19 | D35 | 0.1+ | 0.4+ | 2006 08 11 | 644 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2006 07 19 | D35 | 0.0 | 0.3+ | 2006 08 11 | 644 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2+ |
| 2006 07 20 | D35 | 0.3− | 0.4+ | 2006 08 11 | 644 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.2+ |
| 2006 07 20 | D35 | 0.6+ | 0.3+ | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 2006 07 20 | D35 | 0.7+ | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2006 07 21 | 704 | 0.7− | 0.3− | 2006 08 13 | 644 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 2006 07 21 | 704 | 0.3− | 0.5− | 2006 08 15 | 644 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.4+ |
| 2006 07 21 | 704 | 0.1+ | 0.0 | 2006 08 15 | 644 | 0.0 | 0.1+ | | | | |

### 2006 OH$_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.41226 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25498203 | $\omega$ | 346.64493 | | +0.46405993 | | +0.88139700 |
| $a$ | 2.4629920 | $\Omega$ | 310.92723 | | −0.80160033 | | +0.37546373 |
| $e$ | 0.1519585 | $i$ | 6.70751 | | −0.37694203 | | +0.28664667 |
| $P$ | 3.87 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.6+ | 1.0+ | 2006 07 20 | 644 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.1+ |
| 1993 01 26 | 691 | 0.2− | 0.2+ | 2006 07 20 | 644 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.2+ | 0.1− |
| 1993 01 26 | 691 | 0.1+ | 0.0 | 2006 07 20 | D35 | 0.5+ | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.3+ |
| 2001 02 03 | 691 | 0.1+ | 0.1− | 2006 07 20 | D35 | 0.4+ | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.1+ |
| 2001 02 03 | 691 | 0.1+ | 0.4+ | 2006 07 20 | D35 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.1− |
| 2001 02 03 | 691 | 0.1− | 0.1− | 2006 07 28 | D35 | 0.8− | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.2+ |
| 2002 06 30 | 644 | 0.4− | 0.5+ | 2006 07 28 | D35 | 1.0− | 0.1− | 2006 08 18 | 644 | 0.4+ | 0.0 |
| 2002 06 30 | 644 | 0.1− | 0.3+ | 2006 07 28 | D35 | 0.2− | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2002 06 30 | 644 | 0.1− | 0.3+ | 2006 08 06 | D35 | 0.8− | 0.2+ | 2006 08 18 | 644 | 0.2+ | 0.0 |
| 2003 12 25 | 691 | 0.0 | 0.2+ | 2006 08 06 | D35 | 0.0 | 0.0 | 2006 08 21 | 807 | 0.1+ | 0.3− |
| 2003 12 25 | 691 | 0.1− | 0.0 | 2006 08 06 | D35 | 0.7− | 0.1+ | 2006 08 21 | 807 | 0.1+ | 0.2− |
| 2003 12 25 | 691 | 0.1+ | 0.0 | 2006 08 06 | D35 | 0.0 | 0.1− | 2006 08 22 | 807 | 0.1+ | 0.0 |
| 2005 03 03 | 703 | 0.0 | 1.1+ | 2006 08 06 | D35 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2005 03 03 | 703 | 0.3− | 0.2− | 2006 08 06 | D35 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2005 03 03 | 703 | 0.3+ | 1.2− | 2006 08 11 | 644 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2005 03 03 | 703 | 1.0− | 1.3− | 2006 08 11 | 644 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2006 06 22 | 644 | 0.6− | 0.3+ | 2006 08 11 | 644 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.2+ |
| 2006 06 22 | 644 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.0 |
| 2006 06 22 | 644 | 0.1− | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2006 07 19 | D35 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.5− | 0.4− |
| 2006 07 19 | D35 | 0.4+ | 0.2+ | 2006 08 15 | 644 | 0.1+ | 0.0 | 2006 10 22 | G96 | (0.7+ | 2.6+) |
| 2006 07 19 | D35 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2006 07 20 | 644 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.1− |

### 2006 ON$_3$ = 1985 QX$_1$ = 2003 XQ

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.57103 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28049945 | $\omega$ | 137.86653 | | +0.94867424 | | +0.31385987 |
| $a$ | 2.3112559 | $\Omega$ | 203.92491 | | −0.30966732 | | +0.89693708 |
| $e$ | 0.2533794 | $i$ | 5.49700 | | −0.06421323 | | +0.31144159 |
| $P$ | 3.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1985 08 16 | 675 | 0.9− | 1.1+ | 2003 12 01 | 704 | 1.1− | 1.1+ | 2006 07 22 | 644 | 0.1+ | 0.1− |
| 1985 08 16 | 675 | (3.2+ | 3.3+) | 2003 12 04 | 704 | 1.2+ | 0.4+ | 2006 07 22 | 644 | 0.1− | 0.3− |
| 1985 08 17 | 675 | (3.1− | 0.5−) | 2003 12 04 | 704 | 0.0 | 0.8+ | 2006 07 24 | 704 | 0.1+ | 0.8− |
| 1985 08 17 | 675 | 0.2+ | 1.6+ | 2003 12 04 | 704 | 0.6− | 0.0 | 2006 07 24 | 704 | 0.1− | 0.9− |
| 1999 07 13 | 704 | 0.6− | 0.7+ | 2003 12 22 | 704 | 0.8+ | 0.8− | 2006 07 24 | 704 | 0.5+ | 0.1− |
| 1999 07 13 | 704 | 0.4+ | 0.0 | 2003 12 22 | 704 | 0.1− | 0.7− | 2006 07 24 | 704 | 1.4− | 0.1+ |
| 1999 07 13 | 704 | 0.3− | 0.0 | 2003 12 22 | 704 | 0.1− | 1.0+ | 2006 07 24 | 704 | 0.4− | 1.2− |
| 1999 07 13 | 704 | 0.7− | 0.3+ | 2003 12 22 | 704 | 0.6+ | 0.6+ | 2006 08 27 | E12 | 0.1− | 0.3+ |
| 1999 07 13 | 704 | 0.3− | 0.4+ | 2005 03 13 | 691 | 0.1− | 0.1− | 2006 08 27 | E12 | 0.2+ | 0.2− |
| 1999 09 08 | 704 | 0.1− | 0.2+ | 2005 03 13 | 691 | 0.1− | 0.0 | 2006 08 27 | E12 | 0.5+ | 0.3+ |
| 1999 09 08 | 704 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.2− | 0.3− | 2006 08 27 | E12 | 0.3+ | 0.2− |
| 1999 09 08 | 704 | 0.8+ | 0.4− | 2006 05 26 | 644 | 0.2+ | 0.2− | 2006 09 12 | 704 | 0.4+ | 0.0 |
| 2002 04 08 | 691 | 0.4+ | 0.1+ | 2006 05 26 | 644 | 0.0 | 0.2− | 2006 09 12 | 704 | 0.4+ | 0.2− |
| 2002 04 08 | 691 | 0.0 | 0.5+ | 2006 05 26 | 644 | 0.4+ | 0.0 | 2006 09 12 | 704 | 0.5+ | 0.4− |
| 2002 04 08 | 691 | 0.1− | 0.5+ | 2006 06 11 | 644 | 0.4− | 0.1+ | 2006 09 12 | 704 | 0.1+ | 0.1+ |
| 2002 04 13 | 644 | 0.4+ | 0.2+ | 2006 06 11 | 644 | 0.1− | 0.2− | 2006 09 12 | 704 | 0.1+ | 0.2+ |
| 2002 04 13 | 644 | 0.3− | 0.4+ | 2006 06 11 | 644 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2002 04 13 | 644 | 1.1+ | 0.1+ | 2006 07 21 | 644 | 0.1+ | 1.2+ | 2006 11 18 | G96 | 0.2− | 0.2+ |
| 2003 12 01 | 704 | 0.4− | 0.2+ | 2006 07 21 | 644 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 2003 12 01 | 704 | 0.5− | 0.3− | 2006 07 21 | 644 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2003 12 01 | 704 | 0.2+ | 1.0+ | 2006 07 22 | 644 | 0.2− | 0.2− | | | | |

**2006 $OD_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.98813 | | (2000.0) | | | |
| $n$ | 0.26735246 | $\omega$ | 202.30392 | | +0.96895118 | −0.24722482 |
| $a$ | 2.3864184 | $\Omega$ | 172.00678 | | +0.23065066 | +0.89844036 |
| $e$ | 0.2473087 | $i$ | 1.51369 | | +0.08907231 | +0.36288401 |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.3+ |
| 2003 12 25 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.8− | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 2004 01 31 | 691 | 0.2+ | 0.1− | 2006 09 20 | 704 | 1.1+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.1+ |
| 2004 01 31 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.4+ | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 2004 01 31 | 691 | 0.6− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.7− | 2006 10 01 | 704 | 0.4− | 0.4− |
| 2004 02 11 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.7+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2004 02 11 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 0.8+ | 0.7− | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 2004 02 11 | 691 | 0.4− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2+ |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 09 21 | A50 | 0.6− | 0.3− | 2006 10 17 | G96 | 0.4+ | 1.2+ |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 09 21 | A50 | 0.3− | 0.1+ | 2006 10 17 | G96 | (0.5+ | 1.6+) |
| 2006 07 22 | G96 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.7+ | 0.6+ |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2006 07 22 | G96 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2006 07 22 | G96 | 0.4+ | 0.2+ | 2006 09 24 | 608 | (3.0+ | 5.5+) | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 09 24 | 608 | (2.5+ | 4.6+) | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 24 | 608 | (2.3+ | 5.2+) | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 08 17 | 644 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 1.1− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2006 09 17 | 704 | 1.5+ | 0.9− | 2006 09 27 | 704 | 0.6+ | 1.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 09 17 | 704 | 1.0+ | 0.2− | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 09 17 | 704 | 0.5+ | 1.0+ | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2006 09 18 | 699 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 699 | 0.2− | 0.4− | 2006 09 27 | 704 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 09 18 | 699 | 0.6− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2006 09 18 | 699 | 0.0 | 0.7+ | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.5+ | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.7− |
| 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2006 09 19 | 703 | 0.7− | 0.2+ | 2006 09 28 | 704 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.5− | 0.6+ |
| 2006 09 19 | 703 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.0 |
| 2006 09 19 | 703 | 0.6− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 1.1− | 0.8+ |
| 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.5+ |

**2006 $OG_4$ = 2005 $EX_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.16791 | | (2000.0) | | | |
| $n$ | 0.26948866 | $\omega$ | 315.37435 | | +0.48732299 | +0.87221572 |
| $a$ | 2.3737905 | $\Omega$ | 343.64599 | | −0.75381659 | +0.39597822 |
| $e$ | 0.2120322 | $i$ | 8.55891 | | −0.44076848 | +0.28712539 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 691 | 0.2+ | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.5+ |
| 2005 03 09 | 691 | 0.0 | 0.2+ | 2006 09 06 | 644 | 0.5+ | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2005 03 09 | 691 | 0.4+ | 0.2+ | 2006 09 16 | 644 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2005 03 10 | 695 | 0.2+ | 0.1− | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2005 03 10 | 695 | 0.1+ | 0.0 | 2006 09 16 | 644 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.9− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2005 03 11 | G96 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.0 | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.4+ | 2006 09 17 | 703 | 0.8+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2005 03 11 | G96 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.4− | 0.1+ |
| 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2006 07 22 | G96 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2006 07 22 | G96 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.3− | 1.4+ | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2006 07 22 | G96 | 0.8− | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2006 07 22 | G96 | 0.5− | 0.6+ | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2006 09 06 | 644 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.5+ | 0.1+ | | | | |

**2006 $OH_4$ = 2005 $GN_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.69332 | | (2000.0) | | | |
| $n$ | 0.30187485 | $\omega$ | 2.88337 | | +0.99712138 | +0.07554790 |
| $a$ | 2.2008212 | $\Omega$ | 352.77446 | | −0.07054935 | +0.89331884 |
| $e$ | 0.0965443 | $i$ | 2.93445 | | −0.02778009 | +0.44302817 |
| $P$ | 3.26 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 25 | 691 | 0.1+ | 0.3− | 2006 07 22 | G96 | 0.5− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.2− |
| 1998 01 25 | 691 | (5.0+ | 1.1+) | 2006 07 22 | G96 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.3+ |
| 1998 01 25 | 691 | 0.2− | 0.2− | 2006 07 22 | G96 | 0.4− | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.3+ |
| 2003 12 25 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 1.4− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2003 12 25 | 691 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.7− | 2006 10 17 | 703 | 0.1− | 1.0+ |
| 2003 12 25 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2005 03 11 | G96 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.7− | 1.3− | 2006 10 17 | 703 | 0.2+ | 0.6+ |
| 2005 03 11 | G96 | 0.6− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2005 03 11 | G96 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 03 11 | G96 | 0.8− | 0.3− | 2006 09 15 | 691 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2005 04 11 | 691 | 0.0 | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.6+ | 0.3+ |
| 2005 04 11 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 04 11 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2005 04 17 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 04 17 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2005 04 17 | 691 | 0.1+ | 0.9+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.5+ |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2006 07 21 | G96 | 0.1− | 0.4− | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2006 07 22 | G96 | 0.3− | 0.1− | 2006 10 11 | 691 | 0.1− | 0.0 | | | | |

**2006 $OO_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 290.90099 | | (2000.0) | | | |
| $n$ | 0.17876089 | $\omega$ | 85.34207 | | −0.21840306 | −0.97552518 |
| $a$ | 3.1209565 | $\Omega$ | 17.33720 | | +0.85796576 | −0.20440738 |
| $e$ | 0.0958505 | $i$ | 4.91070 | | +0.46496758 | −0.08104470 |
| $P$ | 5.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 13 | 291 | 0.2− | 0.2− | 2006 07 22 | G96 | 0.5+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.4− |
| 2003 03 13 | 291 | 1.0+ | 0.5+ | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.1− |
| 2003 03 13 | 291 | 0.1+ | 0.4+ | 2006 07 22 | G96 | 0.7− | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.3− |
| 2003 04 01 | 645 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.0 |
| 2003 04 01 | 645 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.4+ | 0.4+ |
| 2006 07 21 | G96 | 0.5− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2006 07 21 | G96 | 0.6− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1+ | | | | |
| 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.3− | | | | |

### 2006 $OP_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 326.21228 | | (2000.0) | | | |
| $n$ | 0.18002278 | $\omega$ | 54.32873 | | +0.41297128 | −0.91027653 |
| $a$ | 3.1063549 | $\Omega$ | 11.39036 | | +0.78056155 | +0.33725286 |
| $e$ | 0.1186213 | $i$ | 8.49610 | | +0.46923170 | +0.24011901 |
| $P$ | 5.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2001 12 09 | 704 | 0.2+ | 0.7+ | 2006 09 20 | 699 | 1.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2001 12 09 | 704 | 0.7+ | 0.5+ | 2006 09 20 | 699 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2001 12 09 | 704 | 0.6− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 12 09 | 704 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.5+ | 1.4+ | 2006 10 21 | 644 | 0.3− | 0.4− |
| 2001 12 22 | 704 | (1.3− | 1.8−) | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2001 12 22 | 704 | 0.1+ | 0.9− | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 12 22 | 704 | 0.9− | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 12 22 | 704 | 1.0+ | 0.9− | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2003 01 31 | 291 | 0.6− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.3− |
| 2003 01 31 | 291 | 0.5− | 0.5− | 2006 10 12 | 691 | 0.3+ | 0.4+ | 2006 11 14 | 703 | 0.4− | 0.5− |
| 2003 01 31 | 291 | 0.3− | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.7− | 0.3− |
| 2003 03 24 | 691 | 0.5+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.5+ | 1.3− |
| 2003 03 24 | 691 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 19 | 704 | 1.0− | 0.6− |
| 2003 03 24 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3− | 0.9− |
| 2003 04 06 | 691 | 0.8+ | 1.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.8− | 0.9− |
| 2003 04 06 | 691 | 1.0+ | 0.8+ | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 11 19 | 704 | 1.4− | 0.2+ |
| 2003 04 06 | 691 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 1.2− | 1.0− |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.5− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.8+ |
| 2006 07 21 | G96 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.5− | 0.4+ | 2006 11 22 | 704 | 1.3+ | 0.9− |
| 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 25 | G96 | 0.4− | 0.5− |
| 2006 07 22 | G96 | 0.5− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.4− | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2006 07 22 | G96 | 0.7− | 0.5− | 2006 10 20 | 691 | (2.4− | 0.6+) | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2006 07 22 | G96 | 0.9− | 0.2+ | 2006 10 20 | 691 | 0.5+ | 0.8+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2006 09 20 | 699 | 0.7− | 1.0− | 2006 10 20 | 691 | 0.2− | 0.1− | | | | |

### 2006 $OS_4$ = 2004 $GV_{80}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 96.12842 | | (2000.0) | | | |
| $n$ | 0.19869229 | $\omega$ | 251.93715 | | +0.15508629 | +0.98761024 |
| $a$ | 2.9085869 | $\Omega$ | 27.01953 | | −0.88526452 | +0.14969917 |
| $e$ | 0.1412076 | $i$ | 3.02370 | | −0.43846889 | +0.04707619 |
| $P$ | 4.96 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 691(0.04− | 0.02−) | 2004 04 21 | 691 | 0.5+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.1+ |
| 1996 09 13 | 691(0.04− | 0.02−) | 2004 04 21 | 691 | 0.3+ | 0.1− | 2006 10 04 | G96 | 0.3− | 0.1+ |
| 1996 09 13 | 691(0.04− | 0.02−) | 2004 04 21 | 691 | 0.4+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.3− |
| 2001 10 14 | 691(80.9− | 32.8−) | 2006 07 21 | G96 | 0.2+ | 0.5− | 2006 10 12 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 691(81.0− | 32.6−) | 2006 07 21 | G96 | 0.6+ | 0.3+ | 2006 10 12 | 691 | 0.5− | 0.2+ |
| 2001 10 14 | 691(81.0− | 32.8−) | 2006 07 21 | G96 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.4− | 0.4+ |
| 2001 11 18 | 691(77.7− | 34.4−) | 2006 07 21 | G96 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2001 11 18 | 691(78.0− | 33.6−) | 2006 07 22 | G96 | 0.1− | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 11 18 | 691(77.6− | 33.7−) | 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.6− |
| 2004 03 15 | 703 | 0.7− | 0.4− | 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2004 03 15 | 703 | 0.2− | 0.6+ | 2006 07 22 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 703 | (0.3+ | 4.3+) | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2004 03 15 | 703 | (1.3− | 2.1+) | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2004 04 13 | 691 | 0.6− | 0.1+ | 2006 09 27 | G96 | 0.6+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.2− |
| 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.2− | | | | |

### 2006 $OU_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 324.30283 | | (2000.0) | | | |
| $n$ | 0.26121199 | $\omega$ | 247.84004 | | +0.74526561 | −0.66463062 |
| $a$ | 2.4236727 | $\Omega$ | 153.72074 | | +0.64750458 | +0.70232434 |
| $e$ | 0.3804461 | $i$ | 6.91971 | | +0.15911309 | +0.25496403 |
| $P$ | 3.77 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 04 | 691 | 0.1− | 0.0 | 2006 07 22 | A55 | 0.6− | 0.0 | 2006 08 13 | A55 | 0.9+ | 0.6− |
| 1991 09 04 | 691 | 0.2+ | 0.0 | 2006 07 22 | A55 | 0.2− | 0.6+ | 2006 08 15 | A55 | 0.2− | 0.5+ |
| 1991 09 04 | 691 | 0.0 | 0.1+ | 2006 07 23 | A55 | 0.5+ | 0.4− | 2006 08 15 | A55 | 0.1− | 0.1+ |
| 2000 03 03 | 691 | 0.0 | 0.1− | 2006 07 23 | A55 | 0.7+ | 0.2− | 2006 09 19 | A55 | 0.3− | 0.4− |
| 2000 03 03 | 691 | 0.2− | 0.3− | 2006 07 23 | A55 | 0.2− | 0.4− | 2006 09 19 | A55 | 1.3+ | 0.3− |
| 2000 03 03 | 691 | 0.2+ | 0.0 | 2006 07 24 | A55 | 1.5+ | 0.2+ | 2006 09 26 | G96 | 0.6− | 0.3− |
| 2006 07 21 | A55 | 0.5− | 0.6+ | 2006 08 01 | A55 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2006 07 21 | A55 | 1.1− | 0.1+ | 2006 08 01 | A55 | 0.2+ | 1.0− | 2006 09 26 | G96 | 0.5− | 0.0 |
| 2006 07 21 | A55 | 1.4− | 1.1+ | 2006 08 13 | A55 | 0.7+ | 0.4− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2006 07 22 | A55 | 0.3+ | 0.0 | 2006 08 13 | A55 | 0.2− | 0.2− | | | | |

### 2006 $OV_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.44810 | | (2000.0) | | | |
| $n$ | 0.26180397 | $\omega$ | 89.58776 | | +0.93303299 | +0.35895754 |
| $a$ | 2.4200178 | $\Omega$ | 249.37591 | | −0.33962991 | +0.85626060 |
| $e$ | 0.2436980 | $i$ | 1.49840 | | −0.11874753 | +0.37143946 |
| $P$ | 3.76 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 15 | 691 | 0.0 | 0.1− | 2006 08 06 | 958 | 0.2− | 0.6+ | 2006 08 30 | 704 | 0.2+ | 0.2− |
| 1991 09 15 | 691 | 0.3+ | 0.4− | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.0 |
| 1991 09 15 | 691 | 0.1+ | 0.4− | 2006 08 15 | 644 | 0.3− | 0.4+ | 2006 09 01 | 704 | 0.8+ | 0.3− |
| 1999 12 27 | 691 | 0.3+ | 0.1+ | 2006 08 15 | 644 | 0.4− | 0.0 | 2006 09 01 | 704 | 0.5− | 0.5− |
| 1999 12 27 | 691 | 0.5− | 0.3− | 2006 08 17 | 941 | 0.2+ | 0.5− | 2006 09 01 | 704 | 0.5− | 0.4+ |
| 1999 12 27 | 691 | 0.3+ | 0.3+ | 2006 08 17 | 941 | 0.3+ | 0.5− | 2006 09 17 | 704 | 0.5+ | 0.9+ |
| 2006 05 26 | G96 | 0.1+ | 0.1+ | 2006 08 17 | 941 | 0.2+ | 0.5− | 2006 09 17 | 704 | 1.3+ | 0.6+ |
| 2006 05 26 | G96 | 0.2+ | 0.7− | 2006 08 17 | 941 | 0.4+ | 0.2− | 2006 09 17 | 704 | 0.8+ | 0.2+ |
| 2006 05 26 | G96 | 0.1+ | 0.3+ | 2006 08 24 | 704 | 0.6+ | 0.8+ | 2006 09 17 | 704 | 0.7+ | 1.2+ |
| 2006 05 26 | G96 | 0.3+ | 0.4+ | 2006 08 24 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.8+ | 1.0+ |
| 2006 07 22 | 941 | 0.0 | 0.4− | 2006 08 24 | 704 | 1.1+ | 0.2− | 2006 09 20 | 699 | 0.4− | 0.4+ |
| 2006 07 22 | 941 | 0.0 | 0.3− | 2006 08 24 | 704 | 0.1− | 0.5+ | 2006 09 20 | 699 | 0.6− | 0.4+ |
| 2006 07 22 | 941 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 20 | 699 | 0.5− | 0.2+ |
| 2006 07 22 | 941 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.9− | 0.2− | 2006 09 20 | 699 | 0.3+ | 0.5+ |
| 2006 07 23 | 941 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.8+ | 2006 09 27 | G96 | 0.0 | 0.2+ |
| 2006 07 23 | 941 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.1− | 2006 09 27 | G96 | 0.1− | 0.1+ |
| 2006 07 23 | 941 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2006 07 23 | 941 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.5− | 0.3− | 2006 09 27 | G96 | 0.5− | 0.1− |
| 2006 07 24 | 941 | 0.2+ | 0.3− | 2006 08 28 | 699 | 1.0− | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2006 07 24 | 941 | 0.3+ | 0.3− | 2006 08 29 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2006 07 24 | 941 | 0.3+ | 0.2− | 2006 08 29 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2006 07 24 | 941 | 0.3+ | 0.3− | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2006 07 29 | 941 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 703 | (1.9− | 1.3+) |
| 2006 07 29 | 941 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.3− | 0.7− | 2006 10 21 | 703 | 0.7+ | 0.3− |
| 2006 07 29 | 941 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.7+ | 1.0+ |
| 2006 08 02 | 941 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 703 | (1.6− | 0.6−) |
| 2006 08 02 | 941 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 08 02 | 941 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.9− | 0.7+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 08 06 | 958 | 1.3+ | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.6− | 0.1− |
| 2006 08 06 | 958 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.8− | 1.4+ | 2006 11 16 | G96 | 0.0 | 0.1− |

**2006 OB$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.77201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.51922940 | $\omega$ | 357.23237 | | +0.99353213 | +0.11354840 | |
| $a$ | 1.5330743 | $\Omega$ | 356.24743 | | −0.10394102 | +0.90653683 | |
| $e$ | 0.2186468 | $i$ | 0.71243 | | −0.04571832 | +0.40656823 | |
| $P$ | 1.90 | $H$ | 20.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 644 | 0.5+ | 0.5+ | 2006 08 30 | 704 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.4+ |
| 2002 05 07 | 644 | 0.7− | 0.5+ | 2006 08 30 | 704 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.8+ |
| 2002 05 07 | 644 | 0.6+ | 0.5− | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2002 05 18 | 644 | 0.1+ | 0.4+ | 2006 08 30 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2002 05 18 | 644 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.6+ | 0.6+ | 2006 09 26 | H45 | 0.1− | 0.4− |
| 2006 07 21 | 704 | 0.6+ | 0.2− | 2006 08 30 | A86 | 1.0− | 0.7− | 2006 09 26 | H45 | 0.1+ | 0.6− |
| 2006 07 21 | 704 | 0.9+ | 1.1+ | 2006 08 30 | A86 | 1.3− | 0.2+ | 2006 09 26 | H45 | 0.0 | 0.3− |
| 2006 07 21 | 704 | 0.8+ | 0.3+ | 2006 08 30 | A86 | 1.2− | 0.4+ | 2006 09 26 | H45 | 0.1+ | 0.4− |
| 2006 07 21 | 704 | 0.9+ | 0.1− | 2006 08 31 | 808 | 0.9− | 0.4+ | 2006 09 26 | H45 | 0.1+ | 0.2− |
| 2006 07 22 | J87 | 1.0− | 0.3+ | 2006 08 31 | 808 | 0.4− | 0.5− | 2006 09 29 | 808 | 0.2+ | 0.2− |
| 2006 07 22 | J87 | 0.3+ | 0.6− | 2006 08 31 | 808 | 0.0 | 0.2− | 2006 09 29 | 808 | 0.1+ | 0.1− |
| 2006 07 22 | J87 | 0.3+ | 0.0 | 2006 09 01 | A78 | 0.4− | 0.0 | 2006 09 29 | 808 | 0.2+ | 0.2− |
| 2006 07 22 | I77 | 0.7+ | 0.1− | 2006 09 01 | A78 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.0 | 0.4− |
| 2006 07 22 | I77 | 0.3+ | 0.1− | 2006 09 01 | A78 | 0.6− | 0.1+ | 2006 09 29 | 704 | 1.0+ | 0.1− |
| 2006 07 22 | I77 | 0.1+ | 0.5− | 2006 09 02 | 808 | 0.3− | 0.3− | 2006 09 29 | 704 | 0.8+ | 0.3+ |
| 2006 07 22 | 734 | 0.3− | 0.1+ | 2006 09 02 | 808 | (2.1− | 1.2−) | 2006 09 29 | 704 | 0.8+ | 0.2+ |
| 2006 07 22 | 734 | 0.2− | 0.3+ | 2006 09 02 | 808 | 0.6− | 1.1− | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2006 07 22 | 734 | 0.3− | 0.1− | 2006 09 04 | 203 | 0.2− | 0.2+ | 2006 09 29 | H45 | 0.0 | 0.4− |
| 2006 07 22 | 734 | 0.2+ | 0.0 | 2006 09 05 | 203 | 0.2+ | 0.6+ | 2006 09 29 | H45 | 0.0 | 0.2− |
| 2006 07 22 | 734 | 0.1+ | 0.1− | 2006 09 05 | 595 | 0.1− | 0.4+ | 2006 09 29 | H45 | 0.1+ | 0.2− |
| 2006 07 23 | A44 | 0.6− | 0.3− | 2006 09 05 | 595 | 0.3+ | 0.0 | 2006 09 29 | H45 | 0.0 | 0.2− |
| 2006 07 23 | J95 | 0.2+ | 0.1− | 2006 09 05 | 595 | 0.2− | 0.2+ | 2006 09 29 | H45 | 0.1+ | 0.2− |
| 2006 07 23 | J95 | 0.5− | 0.4− | 2006 09 13 | H45 | 0.3− | 0.4− | 2006 09 29 | A41 | 0.3+ | 0.3+ |
| 2006 07 23 | A44 | 0.1− | 0.2− | 2006 09 13 | H45 | 0.2− | 0.0 | 2006 09 29 | A41 | 0.2+ | 0.4+ |
| 2006 07 23 | J95 | 0.0 | 0.2− | 2006 09 13 | H45 | 0.2− | 0.0 | 2006 09 29 | A41 | 0.4+ | 0.4+ |
| 2006 07 23 | A44 | 0.3− | 0.2− | 2006 09 13 | H45 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 2006 07 24 | J95 | 0.2+ | 0.1− | 2006 09 13 | H45 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.3− | 0.5+ |
| 2006 07 24 | J95 | 0.6+ | 0.4− | 2006 09 13 | H45 | 0.5− | 0.0 | 2006 09 30 | 704 | 0.8+ | 0.2+ |
| 2006 07 24 | J95 | 0.1+ | 0.4− | 2006 09 13 | 113 | 0.6+ | 0.4− | 2006 09 30 | 704 | 0.5− | 0.8+ |
| 2006 07 25 | H45 | 0.1− | 0.2+ | 2006 09 13 | 113 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.3+ | 1.0+ |
| 2006 07 25 | H45 | 0.2− | 0.3+ | 2006 09 13 | 113 | 0.3+ | 0.3− | 2006 10 03 | H45 | 0.2− | 0.2− |
| 2006 07 25 | H45 | 0.0 | 0.0 | 2006 09 13 | 113 | 0.3+ | 0.3− | 2006 10 03 | H45 | 0.2+ | 0.3− |
| 2006 07 25 | H45 | 0.2− | 0.2+ | 2006 09 13 | 113 | 0.3+ | 0.9− | 2006 10 03 | H45 | 0.2+ | 0.5− |
| 2006 07 25 | H45 | 0.0 | 0.2+ | 2006 09 13 | 198 | 0.1− | 0.2+ | 2006 10 03 | H45 | 0.2+ | 0.5− |
| 2006 07 25 | H45 | 0.0 | 0.2+ | 2006 09 13 | 198 | 0.1− | 0.2+ | 2006 10 03 | H45 | 0.2+ | 0.4− |
| 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 13 | 198 | 0.2− | 0.3+ | 2006 10 03 | H45 | 0.0 | 0.1− |
| 2006 07 25 | 644 | 0.0 | 0.1+ | 2006 09 13 | 198 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 2006 07 25 | 644 | 0.1+ | 0.0 | 2006 09 13 | 198 | 0.1− | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.4− |
| 2006 07 31 | H45 | 0.3− | 0.3+ | 2006 09 15 | H45 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2006 07 31 | H45 | 0.3− | 0.2+ | 2006 09 15 | H45 | 0.1− | 0.2− | 2006 10 12 | 151 | 0.2+ | 0.1− |
| 2006 07 31 | H45 | 0.6− | 0.3+ | 2006 09 15 | H45 | 0.0 | 0.2− | 2006 10 12 | 151 | 0.3+ | 0.0 |
| 2006 07 31 | H45 | 0.6− | 0.3+ | 2006 09 15 | H45 | 0.0 | 0.3− | 2006 10 12 | 151 | 0.4+ | 0.0 |
| 2006 07 31 | H45 | 0.3− | 0.2+ | 2006 09 15 | H45 | 0.1− | 0.3− | 2006 10 14 | H45 | 0.8− | 0.9− |
| 2006 07 31 | H45 | 0.3− | 0.2+ | 2006 09 16 | J68 | (2.3+ | 2.5+) | 2006 10 14 | H45 | 0.4− | 0.7− |
| 2006 07 31 | H45 | 0.5− | 0.1+ | 2006 09 16 | J68 | 0.7− | 0.1− | 2006 10 14 | H45 | 0.3− | 0.4− |
| 2006 07 31 | H45 | 0.4− | 0.2+ | 2006 09 16 | J68 | (0.6+ | 4.6−) | 2006 10 14 | H45 | 0.3− | 0.3− |
| 2006 08 01 | H45 | 0.1+ | 0.4− | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 10 14 | H45 | 0.2− | 0.1− |
| 2006 08 01 | H45 | 0.1+ | 0.2− | 2006 09 16 | 699 | 0.5− | 0.2+ | 2006 10 14 | H45 | 0.1+ | 0.2− |
| 2006 08 01 | H45 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | (1.7− | 0.1+) |
| 2006 08 01 | H45 | 0.4+ | 0.6− | 2006 09 16 | 699 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2006 08 01 | H45 | 0.2+ | 0.3− | 2006 09 16 | H45 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.6+ | 0.3− |
| 2006 08 01 | H45 | 0.1− | 0.1− | 2006 09 16 | H45 | 0.0 | 0.2− | 2006 10 17 | 046 | 0.0 | 0.4− |
| 2006 08 01 | H45 | 0.1+ | 0.1− | 2006 09 16 | H45 | 0.2− | 0.2− | 2006 10 17 | 046 | 0.7− | 0.1− |
| 2006 08 16 | 649 | 0.1− | 0.2+ | 2006 09 16 | H45 | 0.2− | 0.3− | 2006 10 17 | 046 | 0.0 | 0.4− |
| 2006 08 16 | 649 | 0.1− | 0.1− | 2006 09 16 | H45 | 0.1− | 0.3− | 2006 10 17 | 046 | 0.4− | 0.3− |
| 2006 08 16 | 649 | 0.2− | 0.1− | 2006 09 17 | 704 | 1.5+ | 0.9− | 2006 10 17 | 046 | 0.1+ | 0.3+ |
| 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | (1.8+ | 0.1−) | 2006 10 17 | 046 | 0.2− | 0.4+ |
| 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | (2.1+ | 0.3+) | 2006 10 17 | 046 | 0.1+ | 0.6+ |
| 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.9+ | 2006 10 17 | 046 | 0.6− | 0.6+ |
| 2006 08 18 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 704 | (0.6+ | 2.4+) | 2006 10 17 | 130 | 0.5+ | 0.1− |
| 2006 08 18 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 704 | 0.3+ | 1.1− | 2006 10 17 | 130 | 0.3+ | 0.0 |
| 2006 08 18 | 704 | 0.0 | 0.7+ | 2006 09 18 | 704 | (2.1+ | 1.7+) | 2006 10 17 | 130 | 0.4+ | 0.3− |
| 2006 08 18 | 704 | 0.0 | 0.5− | 2006 09 18 | 704 | 0.5+ | 1.2+ | 2006 10 17 | 130 | 0.2+ | 0.4− |
| 2006 08 18 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 704 | (3.6+ | 2.6+) | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 18 | 704 | (0.1− | 2.6+) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 10 20 | H45 | 0.2+ | 0.5− |
| 2006 08 21 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 10 20 | H45 | 0.1− | 0.0 |
| 2006 08 21 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 10 20 | H45 | 0.2− | 0.4− |
| 2006 08 21 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 608 | 0.7+ | 1.4− | 2006 10 20 | H45 | 0.5+ | 0.6− |
| 2006 08 21 | 704 | 0.1+ | 1.2+ | 2006 09 19 | 608 | 0.7+ | 1.4− | 2006 10 20 | H45 | 0.5+ | 0.6− |
| 2006 08 21 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 608 | 0.6+ | 1.4− | 2006 10 20 | H45 | 0.2+ | 0.3− |
| 2006 08 21 | H51 | 0.0 | 0.6+ | 2006 09 20 | 704 | (2.6+ | 1.7−) | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2006 08 21 | H51 | 0.6+ | 0.3+ | 2006 09 20 | 704 | (3.9+ | 0.3+) | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2006 08 21 | H51 | 0.1+ | 0.4− | 2006 09 20 | 704 | (3.7+ | 0.6+) | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | (0.3− | 2.5+) | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 20 | H45 | 0.1− | 0.0 | 2006 10 23 | 704 | 1.1− | 0.5+ |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 20 | H45 | 0.0 | 0.1− | 2006 10 23 | 704 | 1.0− | 0.2+ |
| 2006 08 23 | 644 | 0.1− | 0.2− | 2006 09 20 | H45 | 0.2− | 0.1− | 2006 10 23 | 704 | 0.8− | 0.2− |
| 2006 08 23 | 644 | 0.0 | 0.2− | 2006 09 20 | H45 | 0.2+ | 0.1− | 2006 10 23 | 704 | 1.4− | 0.5− |
| 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 20 | H45 | 0.2+ | 0.0 | 2006 10 25 | A41 | 0.2− | 0.3+ |
| 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 20 | 157 | 0.0 | 0.0 | 2006 10 25 | A41 | 0.4+ | 1.1+ |
| 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 20 | 157 | 0.3− | 0.3− | 2006 10 25 | A41 | 0.2− | 0.5+ |
| 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 20 | 157 | 0.2− | 0.2− | 2006 10 28 | 704 | 1.0+ | 0.3+ |
| 2006 08 25 | 704 | 0.6+ | 0.9− | 2006 09 21 | 160 | 0.2+ | 0.3+ | 2006 10 28 | 704 | 0.3− | 0.4+ |
| 2006 08 25 | 704 | 0.9+ | 1.0+ | 2006 09 21 | 160 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.5+ | 0.5+ |
| 2006 08 25 | 704 | 0.4− | 1.4+ | 2006 09 21 | 160 | 0.4+ | 0.1+ | 2006 10 28 | 704 | 0.4+ | 0.6− |
| 2006 08 25 | 704 | (0.5− | 3.2+) | 2006 09 21 | 160 | 0.3− | 0.2+ | 2006 10 28 | 704 | 0.2− | 0.2+ |
| 2006 08 25 | H45 | 0.0 | 0.4+ | 2006 09 21 | 160 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.6+ |
| 2006 08 25 | H45 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2006 08 25 | H45 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2006 08 25 | H45 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.2+ |
| 2006 08 25 | H45 | 0.0 | 0.4+ | 2006 09 23 | A53 | 0.4+ | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.9+ |
| 2006 08 25 | H45 | 0.0 | 0.6+ | 2006 09 23 | A53 | 0.5+ | 0.6+ | 2006 11 17 | 703 | 1.0+ | 0.1+ |
| 2006 08 27 | 699 | 0.1− | 0.1− | 2006 09 23 | A53 | 0.0 | 0.6+ | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 2006 08 27 | 699 | 0.2+ | 0.5+ | 2006 09 25 | H51 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.2+ | 1.0− |
| 2006 08 27 | 699 | 0.2− | 0.1− | 2006 09 25 | H51 | 0.0 | 0.3− | | | | |
| 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 09 25 | H51 | 0.4+ | 0.4− | | | | |

**2006 OG$_5$ = 2004 AQ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.72071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21912675 | $\omega$ | 238.10108 | | +0.99125436 | −0.09148418 | |
| $a$ | 2.7248282 | $\Omega$ | 126.97521 | | +0.11805226 | +0.93683309 | |
| $e$ | 0.0722125 | $i$ | 6.83720 | | −0.05897843 | +0.33760095 | |
| $P$ | 4.50 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 691 | 0.1− | 0.4− | 2006 05 25 | G96 | 0.3+ | 0.1− | 2006 07 20 | D35 | 0.2+ | 0.3+ |
| 2003 12 22 | 691 | 0.2− | 0.0 | 2006 05 25 | G96 | 1.0+ | 0.0 | 2006 07 20 | D35 | 0.5+ | 0.2+ |
| 2003 12 22 | 691 | 0.0 | 0.0 | 2006 05 25 | G96 | 0.1+ | 0.4− | 2006 07 22 | D35 | 0.4− | 0.0 |
| 2004 01 15 | 691 | 0.2− | 0.2+ | 2006 06 20 | 691 | 0.6− | 0.0 | 2006 07 22 | D35 | 0.0 | 0.4+ |
| 2004 01 15 | 691 | 0.2− | 0.2+ | 2006 06 20 | 691 | 0.2+ | 0.5+ | 2006 07 22 | D35 | 0.2− | 0.5+ |
| 2004 01 15 | 691 | 0.0 | 0.4+ | 2006 06 20 | 691 | 0.1+ | 0.5+ | 2006 07 28 | D35 | 0.7− | 0.2+ |
| 2004 01 27 | 691 | 0.4+ | 0.5+ | 2006 07 18 | D35 | 0.4− | 0.5+ | 2006 07 28 | D35 | 0.3− | 0.3+ |
| 2004 01 27 | 691 | 0.4+ | 0.4+ | 2006 07 18 | D35 | 0.3− | 0.3+ | 2006 07 28 | D35 | 0.5+ | 0.4− |
| 2004 01 27 | 691 | 0.0 | 0.4+ | 2006 07 18 | D35 | 0.2− | 0.3+ | | | | |
| 2006 05 25 | G96 | 0.2+ | 0.2− | 2006 07 20 | D35 | 0.2+ | 0.7+ | | | | |

**2006 OM$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.05637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28363498 | $\omega$ | 4.31562 | | +0.67535968 | +0.73421610 | |
| $a$ | 2.2941908 | $\Omega$ | 308.18441 | | −0.67924778 | +0.58261381 | |
| $e$ | 0.1770480 | $i$ | 5.06520 | | −0.28724860 | +0.34855109 | |
| $P$ | 3.47 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 699 | 1.9+ | 0.2+ | 2003 11 19 | 704 | 0.3+ | 0.3+ | 2006 07 23 | 644 | 0.5− | 0.1+ |
| 2003 10 23 | 699 | 0.3− | 0.2− | 2003 11 24 | 691 | 0.1− | 0.2− | 2006 07 23 | 644 | 0.2+ | 0.4+ |
| 2003 10 23 | 699 | 0.3+ | 0.7− | 2003 11 24 | 704 | 0.1+ | 0.2+ | 2006 07 23 | 644 | 0.8+ | 0.7− |
| 2003 10 23 | 699 | 0.9+ | 1.2+ | 2003 11 24 | 691 | 0.1+ | 0.1− | 2006 08 13 | 644 | 0.3+ | 0.4+ |
| 2003 11 14 | 644 | 0.2− | 0.1− | 2003 11 24 | 704 | 0.3− | 0.7+ | 2006 08 13 | 644 | 0.2+ | 0.2− |
| 2003 11 14 | 644 | 0.3− | 0.1− | 2003 11 24 | 691 | 0.3− | 0.2− | 2006 08 13 | 644 | 0.1− | 0.1+ |
| 2003 11 14 | 644 | 0.2− | 0.1+ | 2003 11 24 | 704 | 0.5− | 0.1− | 2006 08 20 | 644 | 0.2− | 0.0 |
| 2003 11 19 | 704 | 0.8− | 0.4+ | 2006 07 19 | 644 | 0.0 | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.3− |
| 2003 11 19 | 704 | 0.5+ | 0.2− | 2006 07 19 | 644 | 0.1+ | 0.3+ | 2006 08 20 | 644 | 0.5− | 0.4− |
| 2003 11 19 | 704 | 0.3− | 0.4+ | 2006 07 19 | 644 | 0.3− | 0.1+ | | | | |

**2006 OB$_6$ = 2003 YA$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.29878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26871238 | $\omega$ | 30.17351 | | +0.98647435 | +0.15980605 | |
| $a$ | 2.3783600 | $\Omega$ | 320.57825 | | −0.15952243 | +0.88479262 | |
| $e$ | 0.3269636 | $i$ | 3.29276 | | −0.03769550 | +0.43772599 | |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 703 | 0.4+ | 1.9+ | 2004 01 31 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 1999 12 13 | 703 | 0.1− | 0.6+ | 2006 07 21 | 704 | 0.2+ | 0.7− | 2006 09 26 | G96 | 0.1− | 0.0 |
| 1999 12 13 | 703 | 0.1+ | 0.3− | 2006 07 21 | 704 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 1999 12 13 | 703 | 0.8− | 0.3− | 2006 07 21 | 704 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2003 12 19 | 691 | 0.0 | 0.4− | 2006 07 21 | 704 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.2− | 0.7− |
| 2003 12 19 | 691 | 0.1+ | 0.7− | 2006 07 21 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.9+ | 0.4− |
| 2003 12 19 | 691 | 0.0 | 0.0 | 2006 07 23 | 644 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.7+ |
| 2003 12 21 | 691 | 0.2− | 0.2− | 2006 07 23 | 644 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.4− |
| 2003 12 21 | 691 | 0.2− | 0.2+ | 2006 07 23 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2003 12 21 | 691 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2004 01 31 | 691 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2004 01 31 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.1− |

**2006 OD$_6$ = 2002 TX$_{191}$ = 2003 YO$_{180}$**

Id. Minor Planet Center (*MPO* 103952, unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.21346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21794400 | $\omega$ | 342.63791 | | +0.50354479 | +0.85301386 | |
| $a$ | 2.7346774 | $\Omega$ | 317.31986 | | −0.76672378 | +0.36803366 | |
| $e$ | 0.1273585 | $i$ | 11.67230 | | −0.39821764 | +0.37002512 | |
| $P$ | 4.52 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 699 | 0.5+ | 0.7+ | 2005 04 02 | E12 | 0.1+ | 0.2+ | 2006 08 23 | A50 | 0.2− | 0.4− |
| 2002 10 05 | 699 | (0.4+ | 1.6+) | 2005 04 02 | E12 | 0.2− | 0.1+ | 2006 08 23 | A50 | 0.5− | 0.2+ |
| 2002 10 05 | 699 | 0.7− | 0.1+ | 2005 04 02 | E12 | 0.3− | 0.6+ | 2006 08 23 | A50 | 0.1− | 0.2− |
| 2002 10 05 | 699 | 0.2− | 0.6+ | 2005 04 06 | 699 | 1.0+ | 0.9− | 2006 08 23 | A50 | 0.4+ | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 0.9+ | 2005 04 06 | 699 | 0.3− | 0.9+ | 2006 08 23 | A50 | 0.9+ | 0.4+ |
| 2002 10 06 | 704 | 0.2− | 1.1+ | 2005 04 06 | 699 | 0.2+ | 1.1− | 2006 08 28 | 703 | 0.0 | 0.9+ |
| 2002 10 06 | 704 | 0.6− | 0.6− | 2005 04 06 | 699 | 1.3− | 0.6− | 2006 08 28 | 703 | 0.1+ | 0.1+ |
| 2002 10 06 | 704 | 0.1− | 0.1− | 2005 04 14 | 703 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.7− | 0.1+ |
| 2002 11 14 | 644 | 0.1− | 0.4− | 2005 04 14 | 703 | (1.6+ | 0.1+) | 2006 08 28 | 703 | (2.7− | 0.2+) |
| 2002 11 14 | 644 | 0.2+ | 0.3+ | 2005 04 14 | 703 | 0.5+ | 0.3+ | 2006 08 30 | 704 | 0.8− | 0.8+ |
| 2002 11 14 | 644 | 0.1− | 0.2− | 2005 04 14 | 703 | 0.7+ | 1.2+ | 2006 08 30 | 704 | 0.0 | 0.3− |
| 2002 11 14 | 644 | 0.4+ | 0.1+ | 2006 06 20 | 703 | 0.2+ | 0.7+ | 2006 08 30 | 704 | 0.2+ | 0.4+ |
| 2002 11 14 | 644 | 0.1− | 0.1+ | 2006 06 20 | 703 | 0.9− | 0.6+ | 2006 08 30 | 704 | 0.1+ | 0.3− |
| 2002 11 14 | 644 | 0.2+ | 0.2+ | 2006 06 20 | 703 | 0.6− | 0.6− | 2006 08 30 | 704 | 0.6− | 0.4+ |
| 2003 12 23 | 704 | 0.7+ | 0.7− | 2006 06 20 | 703 | (1.2− | 1.8+) | 2006 08 30 | 704 | 0.4+ | 0.4+ |
| 2003 12 23 | 704 | 0.2+ | 0.3− | 2006 07 18 | G96 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.1+ |
| 2003 12 23 | 704 | 0.4+ | 1.0+ | 2006 07 18 | G96 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.2− | 0.6− |
| 2003 12 23 | 704 | 0.6+ | 0.4+ | 2006 07 18 | G96 | 0.3− | 0.4− | 2006 08 30 | 704 | 0.6− | 0.4+ |
| 2003 12 28 | 704 | 0.6− | 0.1+ | 2006 07 18 | G96 | 0.1− | 0.1− | 2006 09 01 | 704 | 0.2+ | 0.3+ |
| 2003 12 28 | 704 | 0.4− | 0.6− | 2006 07 18 | G96 | 0.3− | 0.5− | 2006 09 01 | 704 | 0.3+ | 0.2+ |
| 2003 12 28 | 704 | 0.2− | 0.4− | 2006 07 18 | G96 | 0.0 | 0.2− | 2006 09 01 | 704 | 1.1+ | 0.1− |
| 2003 12 28 | 704 | 0.6− | 0.7− | 2006 07 18 | G96 | 0.4− | 0.4− | 2006 09 12 | 704 | 0.4+ | 0.5− |
| 2003 12 28 | 704 | 0.2+ | 0.0 | 2006 07 18 | G96 | 0.6− | 0.3− | 2006 09 12 | 704 | 0.8+ | 0.6− |
| 2004 01 13 | 699 | 1.3+ | 1.1− | 2006 07 20 | 644 | 0.6− | 0.1+ | 2006 09 12 | 704 | 0.9+ | 0.7− |
| 2004 01 13 | 699 | 0.9− | 0.4− | 2006 07 20 | 644 | 0.3− | 0.1− | 2006 09 12 | 704 | 0.6+ | 0.5− |
| 2004 01 13 | 699 | 0.7− | 0.9+ | 2006 07 20 | 644 | 0.3− | 0.0 | 2006 09 12 | 704 | 0.3+ | 0.3+ |
| 2004 01 13 | 699 | 0.9− | 0.4+ | 2006 07 21 | 704 | 1.2+ | 0.6+ | 2006 09 14 | 703 | 0.8+ | 1.1+ |
| 2004 01 18 | 691 | 0.2+ | 0.2− | 2006 07 21 | 704 | 1.2+ | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.7+ |
| 2004 01 18 | 691 | 0.1+ | 0.2− | 2006 07 21 | 704 | 0.4+ | 0.4− | 2006 09 14 | 703 | 0.5+ | 0.2+ |
| 2004 01 18 | 691 | 0.1+ | 0.1− | 2006 07 21 | 704 | 0.4+ | 0.9+ | 2006 09 14 | 703 | 0.0 | 0.3+ |
| 2004 01 24 | 704 | (0.3+ | 1.8+) | 2006 07 21 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 704 | 0.0 | 0.2− |
| 2004 01 24 | 704 | (2.0+ | 2.8+) | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.2+ |
| 2004 01 24 | 704 | (0.1+ | 2.0+) | 2006 07 25 | 644 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.3− |
| 2004 01 24 | 704 | 0.3+ | 0.4+ | 2006 07 25 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.8− | 0.5− |
| 2004 01 31 | 704 | (2.2− | 0.4−) | 2006 08 16 | A50 | 0.2− | 0.2− | 2006 09 25 | 704 | (0.3− | 2.0−) |
| 2004 01 31 | 704 | 0.2+ | 0.9+ | 2006 08 16 | A50 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2004 01 31 | 704 | 0.3− | 0.0 | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2004 02 15 | 704 | 0.6− | 1.2+ | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2004 02 15 | 704 | 0.8+ | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2004 02 15 | 704 | 0.4− | 0.8− | 2006 08 19 | 699 | 0.3− | 0.1+ | 2006 10 20 | 703 | 1.7− | 0.8− |
| 2004 02 23 | 704 | 0.9− | 0.2− | 2006 08 19 | 699 | 0.1+ | 0.1− | 2006 10 20 | 703 | 0.2− | 0.7− |
| 2004 02 23 | 704 | 0.4+ | 0.4+ | 2006 08 19 | 699 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.4− | 0.9− |
| 2004 02 23 | 704 | 0.9− | 0.3− | 2006 08 19 | 699 | 0.0 | 0.6+ | 2006 10 20 | 703 | 0.0 | 0.9− |
| 2004 02 23 | 704 | 0.8+ | 0.9+ | 2006 08 19 | A50 | 0.0 | 0.3− | | | | |
| 2005 04 02 | E12 | 0.2+ | 0.3+ | 2006 08 19 | A50 | 0.1+ | 0.3− | | | | |

**2006 OP$_6$ = 2000 QE$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.43679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17792255 | $\omega$ | 146.46435 | | +0.56935100 | +0.82204232 | |
| $a$ | 3.1307524 | $\Omega$ | 158.23618 | | −0.75964228 | +0.53037460 | |
| $e$ | 0.1774260 | $i$ | 1.43197 | | −0.31429771 | +0.20724190 | |
| $P$ | 5.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 704 | 0.7+ | 0.9− | 2006 07 22 | G96 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2000 08 31 | 704 | 0.6− | 0.4+ | 2006 07 22 | G96 | 1.2− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2000 08 31 | 704 | 0.5+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.3+ |
| 2000 08 31 | 704 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.2+ |
| 2000 08 31 | 704 | 0.8+ | 0.5− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.9+ | 0.6− |
| 2000 09 05 | 704 | 0.3+ | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.2− |
| 2000 09 05 | 704 | 0.7+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2000 09 05 | 704 | 0.8− | 0.1− | 2006 10 11 | 691 | 0.7− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2000 09 05 | 704 | 1.1− | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2000 09 05 | 704 | 0.6− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.4− | 0.6− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.4− | 0.5− | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2006 07 22 | G96 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.3+ |

**2006 OQ$_6$ = 2005 JR$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.63231 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31565060 | $\omega$ | 311.01604 | | −0.42218719 | −0.90649121 | |
| $a$ | 2.1363134 | $\Omega$ | 163.95398 | | +0.83769571 | −0.39250366 | |
| $e$ | 0.0201935 | $i$ | 1.16642 | | +0.34644462 | −0.15561027 | |
| $P$ | 3.12 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 15 | 691 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2003 11 15 | 691 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2003 11 15 | 691 | 0.3− | 0.3+ | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2005 05 07 | G96 | 0.4− | 0.0 | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2005 05 07 | G96 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.3+ |
| 2005 05 07 | G96 | 0.3− | 0.0 | 2006 07 22 | G96 | 0.8+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2005 05 07 | G96 | 0.4− | 0.2+ | 2006 07 22 | G96 | 0.1+ | 0.6+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 07 22 | G96 | 0.7− | 0.2+ | 2006 11 14 | G96 | 0.6+ | 0.1+ |
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 07 22 | G96 | 1.1− | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2005 05 08 | 691 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 17 | 703 | 1.1− | 0.4+ |
| 2005 06 13 | G96 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2005 06 13 | G96 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.5− | 0.8− |
| 2005 06 13 | G96 | 0.5− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1− | | | | |

**2006 OS$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.73238 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23046623 | $\omega$ | 299.21243 | | +0.65355261 | | +0.75586199 |
| $a$ | 2.6347001 | $\Omega$ | 11.84840 | | −0.61093744 | | +0.55744540 |
| $e$ | 0.1492537 | $i$ | 11.02453 | | −0.44679349 | | +0.34340543 |
| $P$ | 4.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2002 12 12 | 644 | 0.1− | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2002 12 12 | 644 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2004 02 16 | 691 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2004 03 16 | 691 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.0 | 0.7− |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.5− | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.5+ | 0.6− | 2006 10 27 | 703 | 0.0 | 0.1+ |
| 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.5− | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2006 07 22 | G96 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 10 | 644 | 0.8− | 0.6+ |
| 2006 07 22 | G96 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.5+ |
| 2006 07 22 | G96 | 0.1+ | 1.0− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.5+ |
| 2006 07 22 | G96 | 0.5+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | (1.8− | 0.7+) |
| 2006 07 22 | G96 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.5− |
| 2006 07 22 | G96 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.8− |
| 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ | 2006 11 14 | 703 | 1.1− | 1.1− |
| 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | | | |
| 2006 10 12 | 644 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.1− | | | | |

**2006 OF$_7$ = 2003 AX$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.29021 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22813913 | $\omega$ | 63.01593 | | +0.98751714 | | −0.03505051 |
| $a$ | 2.6525863 | $\Omega$ | 298.64057 | | −0.04154581 | | +0.88244022 |
| $e$ | 0.3196086 | $i$ | 10.07697 | | +0.15193369 | | +0.46911697 |
| $P$ | 4.32 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 10 | 691 | 0.2− | 0.4+ | 2006 07 24 | 704 | 0.6− | 0.3− | 2006 10 03 | 703 | 0.3− | 0.0 |
| 1997 07 10 | 691 | 0.3− | 0.1+ | 2006 07 25 | J95 | 0.0 | 0.2− | 2006 10 03 | 703 | 0.2− | 0.7− |
| 1997 07 10 | 691 | 0.1− | 0.0 | 2006 07 25 | J95 | 0.0 | 0.1+ | 2006 10 16 | 704 | 0.7+ | 0.3− |
| 1997 09 01 | 566 | 0.3+ | 0.6+ | 2006 07 25 | J95 | 0.2+ | 0.2− | 2006 10 16 | 704 | 0.5+ | 0.2− |
| 1997 09 01 | 566 | 0.2+ | 0.5+ | 2006 07 25 | 734 | 0.1− | 0.3− | 2006 10 16 | 704 | 0.4+ | 0.3+ |
| 1997 09 01 | 566 | 0.0 | 0.5+ | 2006 07 25 | 734 | 0.1− | 0.4+ | 2006 10 16 | 704 | 0.9+ | 0.6+ |
| 2003 01 05 | 704 | 0.1+ | 0.7+ | 2006 07 25 | 734 | 0.3+ | 0.8− | 2006 10 16 | 704 | 0.5+ | 0.7+ |
| 2003 01 05 | 704 | 0.3+ | 0.5+ | 2006 07 25 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 703 | 0.4− | 1.4− |
| 2003 01 05 | 704 | 0.3+ | 0.4+ | 2006 07 25 | G96 | 0.4− | 0.0 | 2006 10 23 | 703 | 0.7+ | 1.4− |
| 2003 01 05 | 704 | 0.1+ | 0.2+ | 2006 07 25 | G96 | 0.1− | 0.1− | 2006 10 23 | 703 | 0.2− | 0.3− |
| 2003 01 05 | 704 | 0.2+ | 0.3+ | 2006 07 25 | 704 | 0.2− | 0.8+ | 2006 10 23 | 703 | 0.4− | 0.5− |
| 2003 01 09 | 704 | 0.7− | 0.8+ | 2006 07 25 | G96 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.4− | 0.1+ |
| 2003 01 09 | 704 | 0.5+ | 0.3− | 2006 07 25 | G96 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.4− | 0.2+ |
| 2003 01 09 | 704 | 0.1+ | 0.0 | 2006 07 25 | 704 | 0.7− | 0.8+ | 2006 11 14 | 704 | 0.3− | 0.5+ |
| 2003 01 09 | 704 | 0.6− | 0.2+ | 2006 09 18 | 704 | 0.7− | 0.5− | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2003 01 09 | 704 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.3+ | 0.6− | 2006 12 01 | 704 | 0.3+ | 1.0+ |
| 2003 01 09 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 704 | 0.2− | 0.7− | 2006 12 01 | 704 | 0.2+ | 0.2+ |
| 2003 01 09 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.2− | 0.0 | 2006 12 01 | 704 | 0.4+ | 0.4+ |
| 2006 07 24 | 704 | 0.4− | 0.6+ | 2006 09 18 | 704 | 0.6− | 0.1− | 2006 12 01 | 704 | 0.1+ | 1.4+ |
| 2006 07 24 | 704 | 0.0 | 0.5+ | 2006 10 03 | 703 | 0.7− | 0.9− | 2006 12 01 | 704 | 0.4+ | 0.2− |
| 2006 07 24 | 704 | 0.2+ | 0.2+ | 2006 10 03 | 703 | 0.1− | 0.1− | | | | |

**2006 OQ$_7$ = 1999 RC$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.90588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27783643 | $\omega$ | 193.42441 | | +0.99009993 | | +0.13531416 |
| $a$ | 2.3260011 | $\Omega$ | 158.69077 | | −0.11742914 | | +0.94413986 |
| $e$ | 0.2052057 | $i$ | 5.89323 | | −0.07689291 | | +0.30048296 |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 1.7+ | 0.8+ | 2003 11 30 | 704 | 0.1+ | 0.0 | 2006 07 19 | 644 | 0.1− | 0.3+ |
| 1992 09 27 | 691 | 1.1− | 0.8− | 2003 11 30 | 704 | 0.0 | 0.2+ | 2006 07 19 | 644 | 0.1− | 0.3+ |
| 1992 09 27 | 691 | 0.9− | 0.5− | 2003 12 20 | 704 | (0.8+ | 2.5+) | 2006 07 19 | 644 | 0.9+ | 1.1+ |
| 1999 08 12 | 699 | 1.1+ | 0.5+ | 2003 12 20 | 704 | 0.3+ | 1.5+ | 2006 07 20 | 644 | 0.1− | 0.1+ |
| 1999 08 12 | 699 | 0.1+ | 0.1+ | 2003 12 20 | 704 | (1.1+ | 1.8+) | 2006 07 20 | 644 | 0.0 | 0.2+ |
| 1999 08 12 | 699 | 0.1+ | 0.4+ | 2003 12 20 | 704 | 0.5− | 0.6+ | 2006 07 20 | 644 | 0.1− | 0.1+ |
| 1999 09 06 | 699 | 0.5+ | 0.0 | 2003 12 27 | 608 | 0.3− | 0.5+ | 2006 07 24 | 704 | 0.3+ | 0.3− |
| 1999 09 06 | 699 | 1.0− | 1.0+ | 2003 12 27 | 608 | 0.4+ | 0.0 | 2006 07 24 | 704 | 1.1− | 0.3− |
| 1999 09 06 | 699 | 0.7+ | 1.7+ | 2003 12 27 | 608 | 0.4− | 0.4+ | 2006 07 24 | 704 | 0.6− | 0.0 |
| 1999 09 07 | 704 | 0.2+ | 1.2− | 2005 03 16 | G96 | 0.6+ | 0.2+ | 2006 07 24 | 704 | 0.2− | 0.2+ |
| 1999 09 07 | 704 | 0.7+ | 0.5+ | 2005 03 16 | G96 | 0.4+ | 0.7+ | 2006 10 28 | G96 | 0.4+ | 0.5+ |
| 1999 09 07 | 704 | 0.2+ | 0.1− | 2005 03 16 | G96 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 1999 09 07 | 704 | 0.3+ | 0.0 | 2005 03 16 | G96 | 0.2+ | 0.8+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2003 11 30 | 704 | 0.1+ | 0.2+ | 2006 06 21 | 644 | 0.5− | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.6− |
| 2003 11 30 | 704 | 0.0 | 0.3− | 2006 06 21 | 644 | 0.4− | 0.3+ | | | | |
| 2003 11 30 | 704 | 0.3− | 0.7+ | 2006 06 21 | 644 | 0.4− | 0.2+ | | | | |

**2006 OO$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.06191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25857484 | $\omega$ | 244.84487 | | +0.93233385 | | −0.16533902 |
| $a$ | 2.4401238 | $\Omega$ | 123.09070 | | +0.23013837 | | +0.95728717 |
| $e$ | 0.2717707 | $i$ | 22.57179 | | −0.27890845 | | +0.23720093 |
| $P$ | 3.81 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 06 20 | 703 | 0.4− | 1.0+ | 2006 07 23 | G96 | 0.1+ | 0.5− |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2006 07 01 | 703 | 0.4− | 1.2− | 2006 07 23 | G96 | 0.3+ | 0.2+ |
| 2004 01 16 | 691 | 0.2− | 0.1− | 2006 07 01 | 703 | 0.2+ | 0.1− | 2006 08 17 | 644 | 0.3+ | 0.4+ |
| 2004 02 13 | 691 | 0.1− | 0.9+ | 2006 07 01 | 703 | 0.3− | 1.1− | 2006 08 17 | 644 | 0.4+ | 0.1+ |
| 2004 02 13 | 691 | 0.2− | 0.4− | 2006 07 01 | 703 | 0.3− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.9+ |
| 2004 02 13 | 691 | 0.2+ | 0.1− | 2006 07 20 | 644 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.1− |
| 2006 06 20 | 703 | 0.5− | 0.7+ | 2006 07 20 | 644 | 0.5+ | 0.1− | 2006 08 18 | 644 | 0.0 | 0.1− |
| 2006 06 20 | 703 | 1.2− | 0.1+ | 2006 07 20 | 644 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.3+ | 0.2− |
| 2006 06 20 | 703 | 0.2+ | 0.6+ | 2006 07 23 | G96 | 0.1+ | 0.0 | | | | |

**2006 OU$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.39890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30017340 | $\omega$ | 200.30603 | | +0.82964503 | | +0.55019927 |
| $a$ | 2.2091298 | $\Omega$ | 125.95477 | | −0.49471476 | | +0.80313242 |
| $e$ | 0.1911589 | $i$ | 6.71902 | | −0.25874008 | | +0.22860246 |
| $P$ | 3.28 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 699 | 0.9+ | 0.4+ | 2006 06 19 | G96 | 0.2+ | 0.0 | 2006 08 12 | 644 | 0.0 | 0.0 |
| 2003 09 28 | 699 | 1.0− | 0.1− | 2006 07 20 | 644 | 0.5+ | 0.2+ | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2003 09 28 | 699 | 0.4+ | 0.3− | 2006 07 20 | 644 | 0.4− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2003 09 28 | 699 | 0.7+ | 0.8− | 2006 07 20 | 644 | 0.0 | 0.6+ | 2006 08 14 | 644 | 0.0 | 0.2− |
| 2003 09 30 | 645 | 0.0 | 0.0 | 2006 07 20 | 644 | 0.3− | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.1− |
| 2003 09 30 | 645 | 0.0 | 0.1+ | 2006 07 20 | 644 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.2− |
| 2006 05 30 | G96 | 0.0 | 0.1+ | 2006 07 20 | 644 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.0 |
| 2006 05 30 | G96 | 0.2+ | 0.1+ | 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 08 15 | 644 | 0.1− | 0.2− |
| 2006 05 30 | G96 | 0.2− | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.1− |
| 2006 05 30 | G96 | 0.1+ | 0.0 | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 08 15 | 644 | 0.2− | 0.1− |
| 2006 06 19 | G96 | 0.2− | 0.3− | 2006 07 21 | G96 | 0.4+ | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.1− |
| 2006 06 19 | G96 | 0.2+ | 0.4− | 2006 08 12 | 644 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.1− | 0.0 |
| 2006 06 19 | G96 | 0.3− | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.1− | 2006 08 15 | 644 | 0.0 | 0.1+ |

**2006 OV$_8$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.81866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25991060 | $\omega$ | 134.88002 | | −0.07291256 | | +0.99695643 |
| $a$ | 2.4317563 | $\Omega$ | 130.91816 | | −0.92502601 | | −0.05725554 |
| $e$ | 0.1651179 | $i$ | 2.09302 | | −0.37284130 | | −0.05291199 |
| $P$ | 3.79 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 30 | 691 | 0.1− | 0.1+ | 2005 02 09 | 699 | 0.7+ | 0.5+ | 2006 08 13 | 644 | 0.4− | 0.3+ |
| 1995 09 30 | 691 | 0.1− | 0.1+ | 2006 05 24 | G96 | 0.2− | 0.1+ | 2006 08 13 | 644 | 0.3− | 0.2+ |
| 1995 09 30 | 691 | 0.0 | 0.1+ | 2006 05 24 | G96 | 0.2+ | 0.2+ | 2006 08 20 | 644 | 0.4− | 0.3+ |
| 1998 03 23 | 691 | 0.1+ | 0.3− | 2006 05 24 | G96 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.2+ |
| 1998 03 23 | 691 | 0.0 | 1.3+ | 2006 05 24 | G96 | 0.1+ | 0.3+ | 2006 08 20 | 644 | 0.4− | 0.2+ |
| 1998 03 23 | 691 | 0.6+ | 0.3+ | 2006 07 20 | 644 | 0.6− | 0.1− | 2006 08 29 | 704 | 1.0+ | 1.8− |
| 2003 10 20 | 691 | 0.4− | 0.3+ | 2006 07 20 | 644 | 0.6− | 0.3+ | 2006 08 29 | 704 | 0.7+ | 0.9− |
| 2003 10 20 | 691 | 0.0 | 0.3+ | 2006 07 20 | 644 | 0.3− | 0.3+ | 2006 08 29 | 704 | 0.3+ | 0.9− |
| 2003 10 20 | 691 | 0.5− | 0.3+ | 2006 07 21 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 704 | 0.2− | 0.5+ |
| 2003 11 15 | 691 | 0.1+ | 0.3+ | 2006 07 21 | 704 | 0.3+ | 1.0+ | 2006 08 29 | 704 | 0.1− | 0.4+ |
| 2003 11 15 | 691 | 0.1− | 0.4+ | 2006 07 21 | 704 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.6+ | 0.2+ |
| 2003 11 15 | 691 | 0.1+ | 0.4+ | 2006 08 12 | 644 | 0.4− | 0.1+ | 2006 10 23 | G96 | 0.9+ | 0.2+ |
| 2005 02 09 | 699 | 0.0 | 0.6+ | 2006 08 12 | 644 | 0.5− | 0.1+ | 2006 10 23 | G96 | 0.8+ | 0.2+ |
| 2005 02 09 | 699 | 0.1+ | 0.0 | 2006 08 12 | 644 | 0.4− | 0.1+ | 2006 10 23 | G96 | 1.2+ | 0.5+ |
| 2005 02 09 | 699 | 0.1− | 0.8+ | 2006 08 13 | 644 | 0.4− | 0.1+ | | | | |

**2006 OG$_9$ = 1999 XF$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.49561 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26040988 | $\omega$ | 123.17878 | | +0.98156126 | | +0.18258123 |
| $a$ | 2.4286471 | $\Omega$ | 226.37170 | | −0.19080672 | | +0.91822222 |
| $e$ | 0.2060299 | $i$ | 4.48343 | | −0.01141400 | | +0.35147126 |
| $P$ | 3.78 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.0 | 0.1− | 1999 12 08 | 704 | 0.1− | 0.9+ | 2006 07 21 | 703 | 0.4− | 0.1− |
| 1995 10 22 | 691 | 0.1− | 0.1− | 1999 12 08 | 704 | 0.4− | 0.2− | 2006 07 21 | 703 | 0.5+ | 0.4+ |
| 1995 10 22 | 691 | 0.1+ | 0.1+ | 2006 06 21 | 699 | 0.0 | 0.3+ | 2006 07 21 | 703 | 0.2− | 0.5− |
| 1999 12 07 | 704 | 0.2+ | 0.3+ | 2006 06 21 | 699 | 0.0 | 0.5+ | 2006 07 24 | 704 | 0.1+ | 0.4+ |
| 1999 12 07 | 704 | 1.4− | 1.1+ | 2006 06 21 | 699 | 0.5+ | 0.1+ | 2006 07 24 | 704 | 0.1+ | 0.9+ |
| 1999 12 07 | 704 | 0.3+ | 0.3+ | 2006 06 21 | 699 | 0.6− | 0.5+ | 2006 07 24 | 704 | 0.3− | 0.2+ |
| 1999 12 07 | 704 | 0.4− | 0.1+ | 2006 06 21 | 644 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 1999 12 07 | 704 | 0.4+ | 0.5− | 2006 06 21 | 644 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.5+ | 0.0 | 2006 06 21 | 644 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 1999 12 08 | 704 | 1.0+ | 0.2− | 2006 07 21 | 703 | 0.0 | 0.7− | 2006 09 25 | G96 | 0.2− | 0.4− |

**2006 OV$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.12029 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27005678 | $\omega$ | 261.71559 | | +0.24514972 | | +0.96944190 |
| $a$ | 2.3704602 | $\Omega$ | 22.48152 | | −0.87978400 | | +0.22642912 |
| $e$ | 0.1790814 | $i$ | 1.37349 | | −0.40728581 | | +0.09440471 |
| $P$ | 3.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 06 | 807 | 0.1− | 0.1+ | 2006 07 24 | A44 | 0.5+ | 1.0− | 2006 08 15 | A44 | 0.2+ | 0.3+ |
| 2002 04 06 | 807 | 0.0 | 0.1+ | 2006 07 25 | A44 | 0.2+ | 0.3− | 2006 08 15 | A44 | 0.1+ | 0.7+ |
| 2002 05 11 | 704 | 0.1+ | 0.2− | 2006 07 25 | A44 | 0.3+ | 0.5+ | 2006 08 20 | 644 | 0.1− | 0.6+ |
| 2002 05 11 | 704 | 0.6− | 0.3+ | 2006 07 25 | A44 | 0.0 | 0.6− | 2006 08 20 | 644 | 0.1− | 0.7+ |
| 2002 05 11 | 704 | 0.1− | 1.1+ | 2006 07 25 | A44 | 0.3− | 0.8− | 2006 08 20 | 644 | 0.1− | 0.5+ |
| 2002 05 11 | 704 | 0.6+ | 0.3− | 2006 07 25 | A44 | 0.2− | 0.4− | 2006 09 01 | A44 | 0.1+ | 0.6− |
| 2002 05 11 | 704 | 0.5+ | 0.6+ | 2006 07 27 | A44 | 0.1+ | 0.0 | 2006 09 01 | A44 | 0.3− | 1.0+ |
| 2003 11 18 | 291 | 0.2− | 0.1+ | 2006 07 27 | A44 | 0.2− | 0.1+ | 2006 09 13 | A44 | 0.1− | 0.1+ |
| 2003 11 18 | 291 | 0.2− | 0.1+ | 2006 07 28 | A44 | 0.3− | 0.4− | 2006 09 13 | A44 | 0.1+ | 0.3− |
| 2003 11 18 | 291 | 0.2+ | 0.2+ | 2006 08 15 | A44 | 0.2+ | 0.1+ | 2006 09 13 | A44 | 0.1+ | 0.1− |

**2006 OP$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.48501 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27742192 | $\omega$ | 27.14916 | | +0.69578343 | | +0.71058345 |
| $a$ | 2.3283175 | $\Omega$ | 287.15021 | | −0.67726855 | | +0.60055414 |
| $e$ | 0.2620608 | $i$ | 6.28906 | | −0.23915000 | | +0.36661409 |
| $P$ | 3.55 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 704 | 0.8− | 0.6− | 2006 07 25 | 224 | 0.2− | 0.0 | 2006 08 30 | 699 | 0.2− | 0.2+ |
| 1999 09 18 | 704 | 0.9− | 0.4+ | 2006 07 27 | 224 | 1.0− | 0.7− | 2006 08 30 | 699 | 0.2+ | 0.3− |
| 1999 09 18 | 704 | 0.2+ | 0.5+ | 2006 07 27 | 224 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.3− | 0.3+ |
| 1999 09 18 | 704 | 0.7+ | 0.5+ | 2006 07 27 | 224 | 0.5− | 0.4+ | 2006 08 30 | 699 | 0.3− | 0.9− |
| 1999 10 10 | 704 | 1.3− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.3− | 2006 09 16 | 691 | 0.1+ | 0.2− |
| 1999 10 10 | 704 | 0.7+ | 0.1− | 2006 08 16 | 644 | 0.2− | 0.4− | 2006 09 16 | 691 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.7+ | 0.4− | 2006 08 16 | 644 | 0.2− | 0.4− | 2006 09 16 | 691 | 0.0 | 0.2− |
| 1999 10 10 | 704 | 0.7+ | 0.2− | 2006 08 27 | 699 | 0.8+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2006 07 21 | 703 | 0.7+ | 0.2− | 2006 08 27 | 699 | 0.6− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 |
| 2006 07 21 | 703 | 0.9+ | 0.7+ | 2006 08 27 | 699 | 0.8− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2006 07 21 | 703 | 0.5− | 0.4+ | 2006 08 27 | 699 | (2.1− | 0.9+) | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2006 07 21 | 703 | 1.5+ | 0.6+ | 2006 08 27 | 122 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2006 07 25 | 224 | 0.0 | 0.3+ | 2006 08 27 | 122 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2006 07 25 | 224 | 0.5− | 0.0 | 2006 08 27 | 122 | 0.1− | 0.3− | | | | |

**2006 OS$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.13610 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22400060 | $\omega$ | 76.16734 | | +0.89633952 | | −0.37660597 |
| $a$ | 2.6851585 | $\Omega$ | 305.44962 | | +0.20529535 | | +0.82027763 |
| $e$ | 0.1831414 | $i$ | 16.69132 | | +0.39297492 | | +0.43047945 |
| $P$ | 4.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.1− | 0.1+ | 2002 12 10 | 704 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.1+ | 1.2+ |
| 2002 10 13 | 644 | 0.2− | 0.1+ | 2002 12 10 | 704 | 0.6− | 0.2+ | 2006 08 30 | 699 | 0.5− | 0.2− |
| 2002 10 13 | 644 | 0.0 | 0.1+ | 2006 07 21 | 703 | 0.4+ | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.9+ |
| 2002 10 19 | 644 | 0.2− | 0.8− | 2006 07 21 | 703 | 0.4− | 0.3− | 2006 08 30 | 699 | 0.4+ | 0.2+ |
| 2002 10 19 | 644 | 0.3− | 0.8− | 2006 07 21 | 703 | 0.5+ | 0.0 | 2006 09 11 | 703 | (0.4− | 2.9+) |
| 2002 10 19 | 644 | 0.2− | 0.8− | 2006 07 21 | 703 | 0.2+ | 0.3+ | 2006 09 11 | 703 | (2.5+ | 2.1+) |
| 2002 11 15 | 704 | 0.1+ | 0.2+ | 2006 07 25 | 224 | 0.3− | 0.4− | 2006 09 11 | 703 | 0.4+ | 0.2+ |
| 2002 11 15 | 704 | 0.2− | 0.6+ | 2006 07 25 | 224 | 0.5− | 0.2− | 2006 09 11 | 703 | 0.5− | 0.9+ |
| 2002 11 15 | 704 | 0.1− | 0.9+ | 2006 07 25 | 224 | 0.9− | 0.7− | 2006 09 26 | 703 | 0.3+ | 0.6− |
| 2002 11 15 | 704 | 0.7+ | 0.4+ | 2006 08 27 | 699 | 0.8+ | 0.0 | 2006 09 26 | 703 | 0.5+ | 0.9− |
| 2002 11 15 | 704 | 0.9+ | 0.1− | 2006 08 27 | 699 | 0.6+ | 0.2− | 2006 09 26 | 703 | 0.6− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2002 12 10 | 704 | 0.4+ | 0.5− | 2006 08 27 | 699 | 0.1+ | 0.5− | | | | |

**2006 OV$_{11}$ = 2002 VA$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.97571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21095860 | $\omega$ | 78.34927 | | +0.98763532 | −0.12243503 | |
| $a$ | 2.7947173 | $\Omega$ | 288.62426 | | +0.06960517 | +0.90207861 | |
| $e$ | 0.0945240 | $i$ | 5.93034 | | +0.14046920 | +0.41384036 | |
| $P$ | 4.67 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.0 | 0.4− | 2002 11 27 | 699 | 0.3+ | 0.2+ | 2006 07 25 | 644 | 0.1− | 0.0 |
| 1997 10 21 | 691 | 0.4+ | 0.2− | 2002 11 27 | 699 | 0.1+ | 0.5− | 2006 08 29 | 703 | 0.5− | 0.6+ |
| 1997 10 21 | 691 | 0.1− | 0.1− | 2002 11 27 | 699 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.2− | 0.3− |
| 1998 12 14 | 691 | 0.0 | 1.1+ | 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.4− |
| 1998 12 14 | 691 | 0.2− | 0.3− | 2002 12 06 | 704 | 0.6+ | 0.3− | 2006 08 29 | 703 | 1.0− | 0.3− |
| 1998 12 14 | 691 | 0.2+ | 0.1− | 2002 12 06 | 704 | 0.1+ | 0.8− | 2006 08 30 | 704 | 0.7+ | 0.2− |
| 1998 12 23 | 691 | (2.9+ | 0.6−) | 2002 12 06 | 704 | 0.5− | 0.3+ | 2006 08 30 | 704 | 0.6+ | 0.3+ |
| 1998 12 23 | 691 | 0.2+ | 0.0 | 2002 12 11 | 644 | 0.1− | 0.8− | 2006 08 30 | 704 | 0.5− | 0.7+ |
| 1998 12 23 | 691 | 0.1+ | 0.0 | 2002 12 11 | 644 | 0.2+ | 0.5− | 2006 08 30 | 704 | 0.6+ | 0.4+ |
| 1999 01 07 | 691 | 0.0 | 0.0 | 2002 12 11 | 644 | 0.5+ | 0.0 | 2006 08 30 | 704 | 0.8− | 0.4+ |
| 1999 01 07 | 691 | 0.1+ | 0.1+ | 2002 12 13 | 644 | 0.1+ | 0.8+ | 2006 09 16 | 699 | 0.1− | 0.0 |
| 1999 01 07 | 691 | 0.1+ | 0.2+ | 2002 12 13 | 644 | 0.2− | 0.6+ | 2006 09 16 | 699 | 0.2+ | 0.2+ |
| 2002 10 04 | 699 | 0.5− | 0.0 | 2002 12 13 | 644 | 0.1+ | 0.9+ | 2006 09 16 | 699 | 0.5− | 0.1+ |
| 2002 10 04 | 699 | 0.9− | 0.6+ | 2006 05 26 | G96 | 0.1− | 0.1− | 2006 09 16 | 699 | 0.9− | 0.5+ |
| 2002 10 04 | 699 | 1.2− | 0.7+ | 2006 05 26 | G96 | 0.1− | 0.2− | 2006 09 18 | 699 | 1.2+ | 0.7− |
| 2002 10 04 | 699 | 0.8− | 0.7− | 2006 05 26 | G96 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2002 11 14 | 644 | 0.2+ | 0.3+ | 2006 05 26 | G96 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.1− |
| 2002 11 14 | 644 | 0.1+ | 0.5− | 2006 07 21 | 703 | 1.3+ | 1.1− | 2006 09 18 | 691 | 0.1+ | 0.4+ |
| 2002 11 14 | 644 | 0.3+ | 0.2+ | 2006 07 21 | 703 | 1.0− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2002 11 24 | 644 | 0.0 | 0.1− | 2006 07 21 | 703 | 0.5− | 0.3+ | 2006 09 18 | 699 | 1.1+ | 0.5+ |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2006 07 21 | 703 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.6+ |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2006 07 25 | 644 | 0.1− | 0.2− | | | | |
| 2002 11 27 | 699 | 0.6+ | 0.6− | 2006 07 25 | 644 | 0.2− | 0.1+ | | | | |

**2006 OA$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.49408 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22466570 | $\omega$ | 57.95902 | | +0.98892344 | −0.00888125 | |
| $a$ | 2.6798565 | $\Omega$ | 302.15271 | | −0.06360481 | +0.87655260 | |
| $e$ | 0.2814757 | $i$ | 10.07865 | | +0.13410765 | +0.48122414 | |
| $P$ | 4.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 1.2− | 0.6− | 2006 08 16 | 644 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 0.3− | 1.2− | 2006 08 18 | 704 | 0.8+ | 0.4− | 2006 09 20 | 703 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.6+ | 0.6− | 2006 08 18 | 704 | 0.4+ | 0.1− | 2006 09 20 | 703 | 0.2− | 0.5− |
| 2002 10 30 | 704 | 0.6+ | 0.3+ | 2006 08 18 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 703 | 0.1− | 0.7− |
| 2002 10 30 | 704 | 0.1− | 1.3− | 2006 08 18 | 704 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.4− | 0.1− |
| 2002 10 30 | 704 | 0.6− | 0.1− | 2006 08 18 | 704 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.8+ |
| 2002 11 07 | 704 | (1.8− | 0.1+) | 2006 08 18 | 704 | 0.2− | 0.8+ | 2006 10 16 | 703 | 1.0− | 0.9− |
| 2002 11 07 | 704 | 0.7− | 0.7+ | 2006 08 18 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.6− |
| 2002 11 07 | 704 | 0.5+ | 1.2+ | 2006 08 18 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2002 11 07 | 704 | (0.1+ | 2.2+) | 2006 08 18 | 704 | 0.4+ | 0.3− | 2006 10 22 | 703 | 0.1+ | 1.4+ |
| 2002 12 15 | 704 | 0.9− | 0.3+ | 2006 08 29 | 704 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.8+ | 0.7− |
| 2002 12 15 | 704 | 0.3+ | 0.3+ | 2006 08 29 | 704 | 0.3− | 0.8+ | 2006 10 22 | 703 | 1.5+ | 1.3− |
| 2002 12 15 | 704 | 1.4+ | 0.6+ | 2006 08 29 | 704 | 0.1+ | 1.0+ | 2006 10 22 | 703 | 0.1− | 0.6+ |
| 2006 07 21 | 703 | 0.1− | 1.5− | 2006 09 11 | 703 | 0.2− | 0.4− | 2006 11 13 | 703 | 0.7− | 0.7− |
| 2006 07 21 | 703 | 0.8− | 0.8− | 2006 09 11 | 703 | 0.3− | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.6+ |
| 2006 07 21 | 703 | 0.9− | 0.1− | 2006 09 11 | 703 | 0.1+ | 0.5− | 2006 11 13 | 703 | 0.4+ | 0.8− |
| 2006 07 21 | 703 | (1.5− | 0.3−) | 2006 09 11 | 703 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2006 07 25 | 644 | 0.3− | 0.3− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | (0.5+ | 1.6+) |
| 2006 07 25 | 644 | 0.4− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2006 07 25 | 644 | 0.3− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.7+ |
| 2006 08 16 | 644 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 19 | 703 | 1.3− | 0.4− |
| 2006 08 16 | 644 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ | | | | |

**2006 OE$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.66831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23151546 | $\omega$ | 200.18421 | | +0.97484806 | −0.22219434 | |
| $a$ | 2.6267337 | $\Omega$ | 172.58911 | | +0.21845719 | +0.93723143 | |
| $e$ | 0.4224815 | $i$ | 7.72941 | | +0.04413300 | +0.26875069 | |
| $P$ | 4.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.1+ | 0.7+ | 2006 07 26 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | (0.2+ | 1.6+) |
| 2002 12 01 | 704 | 0.1− | 0.8+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.4+ |
| 2002 12 01 | 704 | 0.4+ | 1.0+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.2− | 0.8+ |
| 2002 12 08 | 608 | 0.3− | 1.1− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.4+ | 1.1+ |
| 2002 12 08 | 608 | 0.7− | 0.1+ | 2006 08 19 | 644 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.8+ |
| 2002 12 08 | 608 | 0.1+ | 0.2− | 2006 08 19 | 644 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2002 12 14 | 704 | 0.0 | 0.3− | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.7− |
| 2002 12 14 | 704 | 0.5+ | 0.2− | 2006 08 29 | 703 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.4− | 0.7− |
| 2002 12 14 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 703 | (0.3+ | 1.8−) | 2006 10 19 | 703 | (0.1− | 1.6−) |
| 2002 12 14 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.7+ | 0.6− | 2006 10 19 | 703 | 0.2− | 1.1− |
| 2003 01 05 | 704 | (0.0 | 2.0−) | 2006 08 30 | 704 | 1.4+ | 0.8− | 2006 10 19 | 703 | 0.3− | 1.3− |
| 2003 01 05 | 704 | 0.7− | 0.4− | 2006 08 30 | 704 | 0.0 | 0.7+ | 2006 10 19 | 703 | 0.8− | 0.6− |
| 2003 01 05 | 704 | (2.0− | 0.8−) | 2006 08 30 | 704 | 1.0+ | 0.9− | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2006 07 21 | 703 | 0.7− | 0.3+ | 2006 08 30 | 704 | 1.1+ | 0.7− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2006 07 21 | 703 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.9+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2006 07 21 | 703 | 0.3− | 0.6+ | 2006 09 18 | 704 | 0.7− | 1.0+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2006 07 21 | 703 | 0.4− | 0.7− | 2006 09 18 | 704 | 1.1− | 1.1+ | 2006 11 17 | 704 | 0.7+ | 0.3+ |
| 2006 07 26 | 644 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.2− |
| 2006 07 26 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.5− | 0.6+ | 2006 11 17 | 704 | 0.3+ | 0.1+ |

**2006 OL$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.66826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28302902 | $\omega$ | 185.60620 | | +0.71130025 | +0.69647145 | |
| $a$ | 2.2974641 | $\Omega$ | 129.78132 | | −0.64000111 | +0.69748613 | |
| $e$ | 0.2099538 | $i$ | 7.08297 | | −0.29060374 | +0.16864345 | |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.7+ | 1.3− | 2006 08 23 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.7− | 0.2− |
| 1999 09 08 | 703 | 0.1− | 1.4− | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.7− | 0.9− |
| 1999 09 08 | 703 | 0.4+ | 0.5+ | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.4− |
| 1999 09 08 | 703 | 0.1− | 1.4− | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | (1.8+ | 0.2−) |
| 2003 12 16 | 691 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.7+ | 0.4− |
| 2003 12 16 | 691 | 0.4+ | 0.3− | 2006 08 29 | 703 | 0.9− | 0.1− | 2006 09 20 | 703 | (0.5− | 3.1−) |
| 2003 12 16 | 691 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 09 20 | 703 | (0.8+ | 1.9−) |
| 2006 07 21 | 703 | 0.1+ | 0.9− | 2006 08 29 | 703 | 0.6− | 0.1+ | 2006 09 20 | 703 | 0.9− | 0.5− |
| 2006 07 21 | 703 | 0.2+ | 1.3− | 2006 08 29 | 703 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.9− | 1.1+ |
| 2006 07 21 | 703 | 0.8+ | 0.0 | 2006 08 29 | 703 | 0.7− | 0.2+ | 2006 09 21 | 699 | 0.4− | 0.8− |
| 2006 07 21 | 703 | 0.6− | 1.2+ | 2006 08 29 | 703 | 0.4− | 0.1+ | 2006 09 21 | 699 | 0.6− | 0.8− |
| 2006 07 25 | 644 | 0.4+ | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.3− | 2006 09 21 | 699 | 0.2− | 0.5+ |
| 2006 07 25 | 644 | 0.6+ | 0.4− | 2006 08 29 | 703 | 0.5− | 0.4− | 2006 09 25 | 699 | 1.0+ | 1.5− |
| 2006 07 25 | 644 | 0.5+ | 0.2− | 2006 08 30 | 699 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.2− |
| 2006 08 06 | 699 | 0.6+ | 2.5+ | 2006 08 30 | 699 | 0.0 | 0.1− | 2006 09 25 | 699 | (1.6+ | 0.0 ) |
| 2006 08 06 | 699 | 1.4− | 2.0+ | 2006 08 30 | 699 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.1− | 0.1− |
| 2006 08 06 | 699 | 0.9− | 1.6+ | 2006 08 30 | 699 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.4− | 0.4+ |
| 2006 08 06 | 699 | 0.5+ | 0.4− | 2006 08 31 | 704 | 1.3+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.8+ |
| 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 08 31 | 704 | (0.4+ | 1.5+) | 2006 09 26 | 703 | 0.8+ | 0.6+ |
| 2006 08 17 | 644 | 0.0 | 0.3− | 2006 08 31 | 704 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.7+ |
| 2006 08 17 | 644 | 0.1− | 0.1− | 2006 08 31 | 704 | 1.2+ | 0.8+ | | | | |
| 2006 08 23 | 644 | 0.1− | 0.2− | 2006 08 31 | 704 | 1.3+ | 1.1+ | | | | |

**2006 OP$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.46712 | | (2000.0) | | | |
| $n$ | 0.27012584 | $\omega$ | 181.67621 | | +0.88345267 | +0.46292688 |
| $a$ | 2.3700561 | $\Omega$ | 150.40447 | | −0.42814062 | +0.86024267 |
| $e$ | 0.2343620 | $i$ | 8.40402 | | −0.19028132 | +0.21373174 |
| $P$ | 3.65 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.3+ | 0.1− | 2006 05 24 | G96 | 0.2+ | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.3+ |
| 1999 10 08 | 704 | 0.2− | 0.6+ | 2006 05 24 | G96 | 0.1− | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.2+ |
| 1999 10 08 | 704 | 1.2− | 0.9+ | 2006 05 24 | G96 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.4− |
| 1999 10 08 | 704 | 0.4+ | 0.5+ | 2006 05 24 | G96 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.2− |
| 1999 10 08 | 704 | 0.4− | 0.2+ | 2006 07 24 | 704 | 0.5+ | 0.9+ | 2006 09 17 | 704 | 0.9+ | 0.3− |
| 1999 11 02 | 703 | 0.4+ | 0.2+ | 2006 07 24 | 704 | 0.2− | 0.7− | 2006 09 17 | 704 | 0.6+ | 1.1− |
| 1999 11 02 | 703 | 1.0− | 1.0+ | 2006 07 24 | 704 | 0.9+ | 0.4− | 2006 09 26 | G96 | 0.3− | 0.2− |
| 1999 11 02 | 703 | 0.1+ | 0.6− | 2006 07 26 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 1999 11 02 | 703 | 0.7+ | 0.3+ | 2006 07 26 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 1.2− | 1.0− |
| 2001 03 25 | 695 | 0.4+ | 0.5+ | 2006 07 26 | 644 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2001 03 25 | 695 | 0.2+ | 0.6+ | 2006 08 13 | 644 | 0.5− | 0.6+ | 2006 10 23 | G96 | (0.6+ | 2.0−) |
| 2002 06 08 | 644 | 0.1+ | 0.8+ | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.5− | 0.0 |
| 2002 06 08 | 644 | 0.3+ | 0.8+ | 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2002 06 08 | 644 | 0.1− | 0.7+ | 2006 08 15 | 644 | 0.1− | 0.2+ | | | | |

**2006 OG$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.35912 | | (2000.0) | | | |
| $n$ | 0.23895536 | $\omega$ | 206.11863 | | +0.75638416 | +0.64399368 |
| $a$ | 2.5719244 | $\Omega$ | 113.30586 | | −0.57615761 | +0.73892535 |
| $e$ | 0.2290956 | $i$ | 7.17416 | | −0.30971829 | +0.19814508 |
| $P$ | 4.12 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2002 09 10 | 644 | 0.3− | 1.2+ | 2006 08 17 | F84 | 0.6+ | 0.1− |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2006 07 27 | F84 | 0.3− | 0.7− | 2006 09 14 | 644 | 0.0 | 0.3− |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2006 07 27 | F84 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.4− | 0.0 |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2006 07 28 | F84 | 0.9− | 0.6+ | 2006 09 14 | 644 | 0.5− | 0.2− |
| 2002 09 10 | 644 | 0.2− | 1.2+ | 2006 07 28 | F84 | 0.4+ | 1.1− | | | | |
| 2002 09 10 | 644 | 0.4− | 1.4+ | 2006 08 17 | F84 | 1.2+ | 0.2+ | | | | |

**2006 OJ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.12849 | | (2000.0) | | | |
| $n$ | 0.26876512 | $\omega$ | 162.55581 | | +0.56367988 | +0.82573856 |
| $a$ | 2.3780489 | $\Omega$ | 141.74779 | | −0.76173026 | +0.52926891 |
| $e$ | 0.1881878 | $i$ | 1.89876 | | −0.31942447 | +0.19501344 |
| $P$ | 3.67 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 18 | 644 | 0.1− | 0.2− | 2006 07 29 | J87 | 0.1+ | 0.4− | 2006 08 04 | J87 | 0.4+ | 0.2+ |
| 2002 05 18 | 644 | 0.2+ | 0.1− | 2006 07 29 | J87 | 0.6+ | 0.1− | 2006 08 04 | J87 | 0.3+ | 0.4+ |
| 2002 05 18 | 644 | 0.1− | 0.2− | 2006 07 29 | J87 | 0.1− | 0.2− | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2005 03 12 | 695 | 0.0 | 0.0 | 2006 07 29 | J87 | 0.2+ | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.1+ |
| 2005 03 12 | 695 | 0.0 | 0.1+ | 2006 07 29 | J87 | 0.3− | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.0 |
| 2006 07 21 | G96 | 0.0 | 0.4− | 2006 07 30 | J87 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.6− | 0.5− |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 07 30 | J87 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2006 07 21 | G96 | 0.4− | 0.4− | 2006 07 30 | J87 | 0.9+ | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 07 30 | J87 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.5+ | 0.4− |
| 2006 07 29 | J87 | 0.2− | 0.5− | 2006 07 30 | J87 | 1.7− | 0.8+ | | | | |
| 2006 07 29 | J87 | 0.0 | 1.2+ | 2006 08 04 | J87 | 0.0 | 0.0 | | | | |

**2006 OT$_{17}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 324.44313 | | (2000.0) | | | |
| $n$ | 0.18273736 | $\omega$ | 344.00576 | | +0.99773106 | −0.03257945 |
| $a$ | 3.0755147 | $\Omega$ | 18.17076 | | +0.05987763 | +0.82948573 |
| $e$ | 0.0661786 | $i$ | 10.89034 | | −0.03077982 | +0.55757691 |
| $P$ | 5.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.4− | 0.4− | 2006 08 12 | 644 | 0.0 | 0.1− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.3− | 0.2− | 2006 08 12 | 644 | 0.0 | 0.3+ |
| 2004 01 23 | 699 | 0.5+ | 0.7− | 2006 07 18 | E12 | 0.2+ | 0.0 | 2006 08 12 | 644 | 0.2− | 0.0 |
| 2004 01 23 | 699 | 0.8+ | 0.1+ | 2006 07 31 | E12 | 0.3− | 0.2− | 2006 08 19 | 644 | 0.2+ | 0.5+ |
| 2004 01 23 | 699 | 0.2− | 0.4+ | 2006 07 31 | E12 | 0.4+ | 0.2− | 2006 08 19 | 644 | 0.2− | 0.8+ |
| 2004 01 23 | 699 | 1.0− | 0.2+ | 2006 07 31 | E12 | 0.2− | 0.2+ | 2006 08 19 | 644 | 0.5+ | 0.2+ |
| 2006 07 18 | E12 | 0.4− | 0.1− | 2006 07 31 | E12 | 0.7+ | 0.7− | | | | |

**2006 OS$_{18}$ = 1997 MH$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.15846 | | (2000.0) | | | |
| $n$ | 0.23247074 | $\omega$ | 286.62788 | | +0.95135912 | −0.19525939 |
| $a$ | 2.6195328 | $\Omega$ | 85.11583 | | +0.28007119 | +0.87040419 |
| $e$ | 0.2899256 | $i$ | 13.83780 | | −0.12835868 | +0.45196274 |
| $P$ | 4.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 27 | 691 | 0.1− | 0.1+ | 1998 12 16 | 699 | 0.6+ | 0.7− | 2004 04 16 | 645 | 0.0 | 0.2+ |
| 1997 06 27 | 691 | 0.4− | 0.2+ | 1998 12 27 | 691 | 0.0 | 0.1− | 2006 06 19 | 644 | 0.5+ | 0.8+ |
| 1997 06 27 | 691 | 0.0 | 0.2+ | 1998 12 27 | 691 | 0.3+ | 0.1− | 2006 06 19 | 644 | 0.4+ | 0.4+ |
| 1997 07 01 | 691 | 0.1− | 0.5+ | 1998 12 27 | 691 | 0.3+ | 0.2− | 2006 06 19 | 644 | 0.5+ | 0.1− |
| 1997 07 01 | 691 | 0.2+ | 0.4− | 1999 01 23 | 691 | 1.2− | 0.1+ | 2006 07 20 | E12 | 0.6+ | 0.8+ |
| 1997 07 01 | 691 | 0.3+ | 0.2− | 1999 01 23 | 691 | 1.2− | 0.1− | 2006 07 20 | E12 | 0.2+ | 0.3+ |
| 1998 11 13 | 704 | 1.9+ | 1.7+ | 1999 01 23 | 691 | 1.0− | 0.0 | 2006 07 20 | E12 | 1.7− | 0.5+ |
| 1998 11 13 | 704 | 1.1− | 1.5− | 2002 08 13 | 704 | 0.1+ | 0.2+ | 2006 07 20 | E12 | 0.3+ | 0.5+ |
| 1998 11 13 | 704 | 1.0− | 0.6− | 2002 08 13 | 704 | 0.5+ | 0.1+ | 2006 07 20 | E12 | 0.1− | 0.3− |
| 1998 11 13 | 704 | (3.2+ | 1.0+) | 2002 08 13 | 704 | 0.3+ | 0.2− | 2006 07 29 | E12 | 0.3− | 0.3+ |
| 1998 11 13 | 704 | 1.1− | 2.1+ | 2002 08 13 | 704 | 0.9− | 0.8+ | 2006 07 29 | E12 | 0.0 | 0.2+ |
| 1998 11 16 | 699 | 0.1− | 1.5+ | 2002 08 13 | 704 | 0.5− | 0.0 | 2006 07 29 | E12 | 0.1+ | 0.2+ |
| 1998 11 16 | 699 | 0.6+ | 0.0 | 2002 10 07 | 644 | 0.3− | 0.4+ | 2006 07 29 | E12 | 0.2− | 0.3+ |
| 1998 11 16 | 699 | 2.6+ | 0.5+ | 2002 10 07 | 644 | 0.2− | 0.4+ | 2006 08 26 | E12 | 0.0 | 0.3− |
| 1998 12 16 | 699 | 0.9+ | 0.4+ | 2002 10 07 | 644 | 0.4− | 0.5+ | 2006 08 26 | E12 | 0.1+ | 0.1+ |
| 1998 12 16 | 699 | 0.8− | 1.1− | 2004 04 16 | 645 | 0.1+ | 0.1+ | 2006 08 26 | E12 | 0.4− | 0.4− |

**2006 OF$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 337.94032 | | (2000.0) | | | |
| $n$ | 0.24447225 | $\omega$ | 322.49111 | | +0.99742942 | +0.03901232 |
| $a$ | 2.5330845 | $\Omega$ | 35.41523 | | −0.00594221 | +0.88094312 |
| $e$ | 0.2358000 | $i$ | 5.95336 | | −0.07140899 | +0.47161134 |
| $P$ | 4.03 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 691 | 0.2+ | 0.2+ | 2002 08 13 | 704 | 2.3− | 0.9+ | 2006 07 20 | E12 | 0.1+ | 0.1− |
| 2001 04 15 | 691 | 0.2+ | 0.2+ | 2002 08 13 | 704 | 1.4− | 0.8+ | 2006 07 20 | E12 | 0.1− | 0.8+ |
| 2001 04 15 | 691 | 0.0 | 0.3+ | 2002 08 13 | 704 | 1.9+ | 1.3− | 2006 07 20 | E12 | 0.3− | 0.3− |
| 2002 06 20 | 644 | 0.1+ | 0.0 | 2002 08 13 | 704 | 1.0− | 2.0− | 2006 07 20 | E12 | 0.3− | 0.3− |
| 2002 06 20 | 644 | 0.5+ | 0.0 | 2002 08 13 | 644 | 0.4+ | 0.0 | 2006 07 20 | E12 | 0.2+ | 0.5+ |
| 2002 06 20 | 644 | 0.1− | 0.3+ | 2002 08 13 | 644 | 0.1− | 0.0 | 2006 07 29 | E12 | 0.3+ | 0.8− |
| 2002 06 20 | 644 | 0.1+ | 0.1+ | 2002 08 13 | 644 | 0.3+ | 0.1+ | 2006 07 29 | E12 | 0.2− | 0.4− |
| 2002 06 20 | 644 | 0.2+ | 0.1+ | 2002 08 30 | 644 | 0.4+ | 0.3+ | 2006 07 29 | E12 | 0.2+ | 0.6− |
| 2002 06 20 | 644 | 0.0 | 0.2+ | 2002 08 30 | 644 | 0.5+ | 0.4+ | 2006 07 29 | E12 | 0.5− | 0.4+ |
| 2002 07 16 | 644 | 0.5+ | 0.2+ | 2002 08 30 | 644 | 0.2+ | 0.4+ | 2006 08 19 | 644 | 0.4+ | 0.6+ |
| 2002 07 16 | 644 | 0.2+ | 0.1+ | 2005 04 01 | 691 | 0.0 | 0.1+ | 2006 08 19 | 644 | 0.1+ | 0.4+ |
| 2002 07 16 | 644 | 0.2+ | 0.2+ | 2005 04 01 | 691 | 0.2− | 0.1− | 2006 08 19 | 644 | 0.1+ | 0.5+ |
| 2002 08 13 | 704 | 0.3− | 1.1− | 2005 04 01 | 691 | 0.2− | 0.7− | | | | |

**2006 OD$_{20}$ = 2005 GR$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.25574 | | (2000.0) | | | |
| $n$ | 0.24066077 | $\omega$ | 330.12657 | | +0.89003306 | −0.41269901 |
| $a$ | 2.5597596 | $\Omega$ | 55.51344 | | +0.45081517 | +0.73346511 |
| $e$ | 0.2081757 | $i$ | 13.59174 | | +0.06787362 | +0.54010042 |
| $P$ | 4.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 691 | 0.1+ | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 08 13 | E12 | 0.2+ | 0.1+ |
| 2005 04 12 | 691 | 0.2− | 0.2+ | 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 08 13 | E12 | 0.4+ | 0.1− |
| 2005 04 12 | 691 | 0.1− | 0.6− | 2006 07 18 | E12 | 0.1+ | 0.2+ | 2006 08 13 | E12 | 0.9+ | 0.2− |
| 2005 04 15 | 691 | 0.4+ | 0.1− | 2006 07 18 | E12 | 0.1+ | 0.6− | 2006 08 25 | E12 | 0.4− | 0.2− |
| 2005 04 15 | 691 | 0.1− | 0.1+ | 2006 07 18 | E12 | 0.8− | 0.1+ | 2006 08 25 | E12 | 0.1− | 0.2+ |
| 2005 04 15 | 691 | 0.1+ | 0.3− | 2006 07 18 | E12 | 0.1+ | 0.1+ | 2006 08 25 | E12 | 0.2+ | 0.4+ |
| 2005 04 15 | 691 | 0.4− | 0.4+ | 2006 08 13 | E12 | 0.4+ | 0.3− | 2006 08 25 | E12 | 1.2− | 0.4+ |

**2006 OE$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.18389 | | (2000.0) | | | |
| $n$ | 0.18587091 | $\omega$ | 256.80176 | | +0.35211845 | +0.92993533 |
| $a$ | 3.0408507 | $\Omega$ | 34.41395 | | −0.76960162 | +0.35211603 |
| $e$ | 0.0963159 | $i$ | 10.80860 | | −0.53265930 | +0.10599331 |
| $P$ | 5.30 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.2+ | 0.1− | 2005 05 08 | G96 | 0.1− | 0.2− | 2006 08 13 | E12 | 0.2+ | 0.1+ |
| 2005 04 04 | G96 | 0.1− | 0.2− | 2005 05 08 | G96 | 0.1+ | 0.1− | 2006 08 13 | E12 | 0.2+ | 0.2− |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2005 05 08 | G96 | 0.0 | 0.0 | 2006 08 13 | E12 | 0.5− | 0.5− |
| 2005 04 04 | G96 | 0.1+ | 0.0 | 2005 05 08 | G96 | 0.3− | 0.0 | 2006 08 26 | E12 | 0.3+ | 0.0 |
| 2005 04 13 | 699 | (2.1+ | 1.6−) | 2006 07 18 | E12 | 0.0 | 0.9+ | 2006 08 26 | E12 | 0.1− | 0.0 |
| 2005 04 13 | 699 | 0.2− | 0.2+ | 2006 07 18 | E12 | 0.1+ | 0.4+ | 2006 08 26 | E12 | 0.1+ | 0.1+ |
| 2005 04 13 | 699 | 0.5+ | 0.7+ | 2006 07 18 | E12 | 0.6− | 0.4− | 2006 08 26 | E12 | 0.2+ | 0.2− |
| 2005 04 13 | 699 | (1.7+ | 0.2+) | 2006 07 18 | E12 | 0.1− | 0.3− | | | | |

**2006 OF$_{20}$ = 2005 EU$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 32.02218 | | (2000.0) | | | |
| $n$ | 0.26316444 | $\omega$ | 245.11629 | | +0.37314010 | +0.92278633 |
| $a$ | 2.4116702 | $\Omega$ | 47.14783 | | −0.79690510 | +0.37181385 |
| $e$ | 0.1257915 | $i$ | 7.53093 | | −0.47508812 | +0.10109330 |
| $P$ | 3.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 27 | 691 | 0.3+ | 0.1− | 2005 03 11 | 703 | 0.6+ | 0.7+ | 2006 08 14 | 644 | 0.1+ | 0.2+ |
| 2003 10 27 | 691 | 0.2− | 0.2− | 2005 03 16 | 703 | 0.4+ | 0.1− | 2006 08 14 | 644 | 0.0 | 0.2+ |
| 2003 10 27 | 691 | 0.2− | 0.4+ | 2005 03 16 | 703 | 0.7− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2003 11 19 | 691 | 0.0 | 0.2− | 2005 03 16 | 703 | 0.1+ | 0.4− | 2006 08 25 | E12 | 0.5+ | 0.3− |
| 2003 11 19 | 691 | 0.0 | 0.0 | 2005 03 16 | 703 | 1.8+ | 1.3+ | 2006 08 25 | E12 | 0.5+ | 0.2+ |
| 2003 11 19 | 691 | 0.0 | 0.1+ | 2006 07 18 | E12 | 0.1+ | 0.1+ | 2006 08 25 | E12 | 0.0 | 0.1− |
| 2005 03 11 | 703 | 0.8− | 0.5− | 2006 07 18 | E12 | 0.1− | 0.0 | 2006 08 25 | E12 | 0.1− | 0.3− |
| 2005 03 11 | 703 | 0.8− | 0.6− | 2006 07 18 | E12 | 0.1− | 0.0 | | | | |
| 2005 03 11 | 703 | 0.5− | 0.2− | 2006 07 18 | E12 | 1.0− | 0.1+ | | | | |

**2006 OG$_{20}$ = 2000 JE$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.02578 | | (2000.0) | | | |
| $n$ | 0.19137285 | $\omega$ | 225.95625 | | +0.83973579 | +0.50574507 |
| $a$ | 2.9822852 | $\Omega$ | 102.72409 | | −0.42199544 | +0.83690667 |
| $e$ | 0.2468766 | $i$ | 11.69060 | | −0.34170697 | +0.20930635 |
| $P$ | 5.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.1+ | 2001 09 11 | 704 | 0.4+ | 0.0 | 2006 08 14 | 644 | 0.5+ | 0.1+ |
| 2000 05 04 | 645 | 0.1+ | 0.1+ | 2001 09 11 | 704 | 0.8+ | 1.1− | 2006 08 14 | 644 | 0.8− | 0.1− |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2001 09 11 | 704 | 1.0− | 0.2− | 2006 08 25 | E12 | 0.0 | 0.5+ |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2001 09 11 | 704 | 0.7+ | 1.8+ | 2006 08 25 | E12 | 0.8− | 0.9+ |
| 2001 08 25 | 699 | 0.0 | 0.7− | 2006 07 18 | E12 | 0.3+ | 0.2− | 2006 08 25 | E12 | 0.1− | 0.2− |
| 2001 08 25 | 699 | 0.7+ | 0.0 | 2006 07 18 | E12 | 0.2+ | 0.6− | 2006 08 25 | E12 | 0.6+ | 0.0 |
| 2001 08 25 | 699 | 0.8− | 0.2− | 2006 07 18 | E12 | 0.4− | 0.2+ | | | | |
| 2001 08 25 | 699 | 0.4− | 0.2− | 2006 08 14 | 644 | 0.5+ | 0.1− | | | | |

**2006 OH$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.86879 | | (2000.0) | | | |
| $n$ | 0.30309781 | $\omega$ | 350.24749 | | +0.31879578 | +0.94527870 |
| $a$ | 2.1948972 | $\Omega$ | 298.31457 | | −0.86421235 | +0.25982078 |
| $e$ | 0.1961987 | $i$ | 4.52192 | | −0.38923805 | +0.19733562 |
| $P$ | 3.25 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 21 | 291 | 0.1+ | 0.3+ | 2003 09 30 | 704 | 0.1+ | 0.7+ | 2006 08 14 | E12 | 0.1− | 0.1− |
| 2002 02 21 | 291 | 0.0 | 0.1+ | 2003 09 30 | 704 | 0.1− | 0.3− | 2006 08 14 | E12 | 0.0 | 0.3+ |
| 2002 02 21 | 291 | 0.0 | 0.0 | 2003 10 26 | 691 | 0.2− | 0.2− | 2006 08 14 | E12 | 0.1− | 0.2− |
| 2003 09 19 | 644 | 0.0 | 0.1+ | 2003 10 26 | 691 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.1+ |
| 2003 09 19 | 644 | 0.2+ | 0.2+ | 2003 10 26 | 691 | 0.5− | 0.3− | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2003 09 19 | 644 | 0.2+ | 0.1+ | 2006 07 25 | G96 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.1− | 0.1+ |
| 2003 09 20 | 691 | 0.2+ | 0.0 | 2006 07 25 | G96 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.9+ | 0.6− |
| 2003 09 20 | 691 | 0.1+ | 0.1− | 2006 07 25 | G96 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.7− | 0.1+ |
| 2003 09 20 | 691 | 0.3+ | 0.2+ | 2006 07 25 | G96 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.3− | 0.3− |
| 2003 09 30 | 704 | 0.2+ | 0.0 | 2006 08 14 | E12 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.2− | 0.3+ |
| 2003 09 30 | 704 | 0.0 | 0.8+ | 2006 08 14 | E12 | 0.1+ | 0.5+ | | | | |

**2006 OJ$_{20}$ = 2003 WD$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.89808 | | (2000.0) | | | |
| $n$ | 0.28166668 | $\omega$ | 260.14493 | | +0.88039106 | +0.46731193 |
| $a$ | 2.3048663 | $\Omega$ | 71.95695 | | −0.39496721 | +0.81681586 |
| $e$ | 0.2302949 | $i$ | 4.87575 | | −0.26251188 | +0.33827713 |
| $P$ | 3.50 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 691 | 0.2− | 0.0 | 2003 12 01 | 291 | 0.3− | 0.1+ | 2006 08 12 | 644 | 0.2+ | 0.1+ |
| 2003 11 24 | 691 | 0.0 | 0.0 | 2003 12 14 | 691 | 0.3+ | 0.1+ | 2006 08 12 | 644 | 0.2+ | 0.1+ |
| 2003 11 24 | 691 | 0.1+ | 0.1− | 2003 12 14 | 691 | 0.2+ | 0.2+ | 2006 08 26 | E12 | 0.1+ | 0.5+ |
| 2003 11 30 | 691 | 0.2− | 0.2− | 2003 12 14 | 691 | 0.3+ | 0.1+ | 2006 08 26 | E12 | 0.2+ | 0.8− |
| 2003 11 30 | 691 | 0.1+ | 0.1− | 2006 07 31 | E12 | 0.6− | 0.4+ | 2006 08 26 | E12 | 0.1+ | 0.5− |
| 2003 11 30 | 691 | 0.1+ | 0.2− | 2006 07 31 | E12 | 0.1− | 0.2+ | 2006 08 26 | E12 | 0.1+ | 0.5+ |
| 2003 12 01 | 291 | 0.1− | 0.1+ | 2006 07 31 | E12 | 0.1− | 0.3− | | | | |
| 2003 12 01 | 291 | 0.4− | 0.2+ | 2006 08 12 | 644 | 0.1− | 0.1+ | | | | |

**2006 OK$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.11381 | | (2000.0) | | | |
| $n$ | 0.21064826 | $\omega$ | 268.73087 | | +0.69784879 | +0.70865038 |
| $a$ | 2.7974616 | $\Omega$ | 46.13034 | | −0.58628990 | +0.64860313 |
| $e$ | 0.2250073 | $i$ | 8.29666 | | −0.41142584 | +0.27772040 |
| $P$ | 4.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 28 | 291 | 0.3− | 0.2+ | 2006 07 31 | E12 | 0.4− | 0.1+ | 2006 08 13 | E12 | 0.6+ | 0.2− |
| 2002 12 28 | 291 | 0.1− | 0.1+ | 2006 07 31 | E12 | 0.5− | 0.2− | 2006 08 13 | E12 | 0.2− | 0.4+ |
| 2002 12 28 | 291 | 0.4+ | 0.3− | 2006 07 31 | E12 | 0.1− | 0.3+ | 2006 08 26 | E12 | 0.6+ | 0.7− |
| 2004 01 28 | 691 | 0.3+ | 0.3− | 2006 07 31 | E12 | 0.1− | 0.5+ | 2006 08 26 | E12 | 0.0 | 0.5+ |
| 2004 01 28 | 691 | 0.1− | 0.3+ | 2006 08 13 | E12 | 0.4+ | 0.1− | 2006 08 26 | E12 | 0.6− | 0.9− |
| 2004 01 28 | 691 | 0.2− | 0.1+ | 2006 08 13 | E12 | 0.3− | 0.5+ | 2006 08 26 | E12 | 0.7+ | 0.0 |

**2006 $OL_{20}$ = 2003 $WK_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.80750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28937690 | $\omega$ | 241.98452 | | +0.92146229 | +0.36307272 | |
| $a$ | 2.2637414 | $\Omega$ | 96.44745 | | −0.28933244 | +0.87874789 | |
| $e$ | 0.1687555 | $i$ | 7.99169 | | −0.25921802 | +0.30980696 | |
| $P$ | 3.41 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 608 | 0.0 | 0.2− | 2003 11 29 | 691 | 0.1− | 0.2− | 2006 07 31 | E12 | 0.3+ | 0.4+ |
| 2003 10 23 | 608 | 0.3+ | 0.5+ | 2003 11 29 | 691 | 0.2+ | 0.2− | 2006 07 31 | E12 | 0.3− | 0.1− |
| 2003 10 23 | 608 | 0.2− | 0.0 | 2003 11 29 | 691 | 0.1+ | 0.1− | 2006 08 14 | 644 | 0.3− | 0.1− |
| 2003 11 19 | 644 | 0.1− | 0.1− | 2003 12 12 | 644 | 0.1− | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.1+ |
| 2003 11 19 | 644 | 0.2+ | 0.3− | 2003 12 12 | 644 | 0.1− | 0.4+ | 2006 08 14 | 644 | 0.1− | 0.0 |
| 2003 11 19 | 644 | 0.0 | 0.0 | 2003 12 12 | 644 | 0.0 | 0.5+ | 2006 08 26 | E12 | 0.1− | 0.1− |
| 2003 11 21 | 699 | 0.2− | 0.1+ | 2006 06 22 | 644 | 0.1+ | 0.2+ | 2006 08 26 | E12 | 0.1+ | 0.0 |
| 2003 11 21 | 699 | 0.4+ | 0.4+ | 2006 06 22 | 644 | 0.2− | 0.1− | 2006 08 26 | E12 | 0.0 | 0.3− |
| 2003 11 21 | 699 | 0.2− | 0.3+ | 2006 06 22 | 644 | 0.0 | 0.3− | 2006 08 26 | E12 | 0.2+ | 0.4+ |
| 2003 11 21 | 699 | 0.7− | 0.1+ | 2006 07 31 | E12 | 0.2+ | 0.1− | | | | |

**2006 PS**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.78204 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23880508 | $\omega$ | 50.79179 | | +0.83627715 | +0.47302868 | |
| $a$ | 2.5730033 | $\Omega$ | 279.32976 | | −0.54830682 | +0.72108872 | |
| $e$ | 0.2606841 | $i$ | 16.31975 | | −0.00040537 | +0.50623604 | |
| $P$ | 4.13 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 20 | 644 | 0.2+ | 0.0 | 2006 08 06 | 699 | 0.2+ | 0.6+ | 2006 08 28 | 691 | 0.1+ | 0.1− |
| 2002 09 20 | 644 | 0.1− | 0.2+ | 2006 08 06 | 699 | 0.8+ | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.1− |
| 2002 09 20 | 644 | 0.1− | 0.1− | 2006 08 06 | 699 | 0.8+ | 0.6− | 2006 08 29 | 699 | 0.3− | 0.4+ |
| 2002 09 26 | 644 | 0.1− | 0.0 | 2006 08 10 | 644 | 0.5− | 0.2− | 2006 08 29 | 699 | 0.0 | 0.5− |
| 2002 09 26 | 644 | 0.1+ | 0.0 | 2006 08 10 | 644 | 0.6− | 0.1− | 2006 08 29 | 699 | 0.7− | 0.2− |
| 2002 09 26 | 644 | 0.1− | 0.1− | 2006 08 10 | 644 | 0.5− | 0.0 | 2006 08 29 | 699 | 0.1− | 0.7− |
| 2006 07 01 | 703 | 0.4− | 0.9− | 2006 08 25 | 704 | 0.8− | 0.2+ | 2006 09 01 | 704 | 0.1+ | 0.4+ |
| 2006 07 01 | 703 | 0.0 | 0.6+ | 2006 08 25 | 704 | 0.7− | 0.7+ | 2006 09 01 | 704 | 0.0 | 0.2− |
| 2006 07 01 | 703 | 0.5+ | 0.0 | 2006 08 25 | 704 | 0.1+ | 0.3+ | 2006 09 01 | 704 | 0.1+ | 0.2− |
| 2006 07 01 | 703 | 0.6− | 0.3+ | 2006 08 25 | 704 | 0.1− | 0.7+ | 2006 09 01 | 704 | 0.2+ | 0.2+ |
| 2006 08 06 | 699 | 0.6+ | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.1− | | | | |

**2006 $PM_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.31674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17966194 | $\omega$ | 341.01803 | | +0.24976801 | +0.91719808 | |
| $a$ | 3.1105128 | $\Omega$ | 302.31159 | | −0.83409184 | +0.04095488 | |
| $e$ | 0.1660351 | $i$ | 21.54919 | | −0.49184016 | +0.39632105 | |
| $P$ | 5.49 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 07 | 691 | 0.1+ | 0.0 | 2004 02 13 | 699 | 0.5+ | 1.8− | 2006 08 29 | 699 | 0.2+ | 0.3− |
| 1998 01 07 | 691 | 0.2− | 0.6− | 2004 02 19 | 704 | (1.4+ | 2.2+) | 2006 08 29 | 699 | 0.6+ | 0.4+ |
| 1998 01 07 | 691 | 0.1− | 0.7− | 2004 02 19 | 704 | 1.9+ | 0.4+ | 2006 08 29 | 699 | 0.3+ | 0.3− |
| 2001 08 23 | 704 | 1.2− | 0.3− | 2004 02 19 | 704 | 0.8+ | 1.1+ | 2006 09 06 | 644 | 0.1+ | 0.3+ |
| 2001 08 23 | 704 | 1.9− | 0.9− | 2004 02 19 | 704 | 1.7+ | 0.8+ | 2006 09 06 | 644 | 0.3+ | 0.3+ |
| 2001 08 23 | 704 | 0.7− | 0.5+ | 2004 02 19 | 704 | 0.3+ | 1.5+ | 2006 09 06 | 644 | 0.2+ | 0.5+ |
| 2001 08 23 | 704 | 0.4− | 0.2+ | 2006 06 03 | 703 | 0.8− | 0.6− | 2006 09 11 | 703 | 0.1+ | 0.3− |
| 2001 09 26 | 704 | 0.5− | 0.3+ | 2006 06 03 | 703 | 0.9+ | 0.0 | 2006 09 11 | 703 | 0.1+ | 0.0 |
| 2001 09 26 | 704 | 0.3+ | 0.9+ | 2006 06 03 | 703 | 0.5+ | 0.7− | 2006 09 11 | 703 | 1.8− | 1.0− |
| 2001 09 26 | 704 | 0.2+ | 0.8− | 2006 08 10 | 644 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.3+ | 0.4− |
| 2001 09 26 | 704 | 0.2− | 0.0 | 2006 08 10 | 644 | 0.5+ | 0.4+ | 2006 09 20 | 699 | (2.1+ | 0.5−) |
| 2001 10 25 | 704 | 0.0 | 1.1+ | 2006 08 10 | 644 | 0.5+ | 0.0 | 2006 09 20 | 699 | 0.9+ | 0.1− |
| 2001 10 25 | 704 | 0.3+ | 0.2− | 2006 08 13 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 699 | (1.2− | 2.7+) |
| 2001 10 25 | 704 | 0.1+ | 0.8+ | 2006 08 13 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.7+ |
| 2001 10 25 | 704 | 0.2− | 0.5+ | 2006 08 13 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 2004 02 13 | 699 | 0.8− | 0.7+ | 2006 08 26 | 704 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.6+ | 0.2+ |
| 2004 02 13 | 699 | 0.9− | 1.1+ | 2006 08 26 | 704 | 0.4− | 1.1+ | 2006 09 27 | 703 | 0.6− | 0.4− |
| 2004 02 13 | 699 | 1.7− | 0.8+ | 2006 08 26 | 704 | 1.2− | 0.2− | 2006 09 27 | 703 | 0.3+ | 0.7− |

**2006 $PP_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.29024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29326996 | $\omega$ | 160.96095 | | +0.48592839 | +0.87322807 | |
| $a$ | 2.2436632 | $\Omega$ | 138.09080 | | −0.80883760 | +0.46520988 | |
| $e$ | 0.2475810 | $i$ | 3.14901 | | −0.33114249 | +0.14509484 | |
| $P$ | 3.36 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 20 | 291 | 0.1− | 0.3+ | 2005 03 04 | G96 | 0.1+ | 0.1− | 2006 08 11 | 644 | 0.2− | 0.2− |
| 2002 02 20 | 291 | 0.0 | 0.6+ | 2006 05 05 | G96 | 0.1+ | 0.1+ | 2006 08 13 | 644 | 0.4− | 0.3− |
| 2002 02 20 | 291 | 0.3− | 0.0 | 2006 05 05 | G96 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.2− | 0.3− |
| 2002 03 05 | 645 | 0.0 | 0.1+ | 2006 05 05 | G96 | 0.3+ | 0.2− | 2006 08 13 | 644 | 0.1− | 0.3− |
| 2002 03 05 | 645 | 0.1− | 0.0 | 2006 05 05 | G96 | 0.4− | 0.6− | 2006 08 14 | 644 | 0.4+ | 0.7− |
| 2002 03 15 | 691 | 1.0+ | 0.0 | 2006 06 04 | G96 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.3− |
| 2002 03 15 | 691 | 0.3+ | 0.0 | 2006 06 04 | G96 | 0.7− | 0.8+ | 2006 08 14 | 644 | 0.1− | 0.2− |
| 2002 03 15 | 691 | 0.3+ | 0.0 | 2006 06 04 | G96 | 0.7− | 0.6+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2003 10 02 | 291 | 0.3− | 0.4+ | 2006 06 04 | G96 | 0.2− | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2003 10 02 | 291 | 0.3− | 0.5+ | 2006 06 18 | 691 | 0.2+ | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.0 |
| 2003 10 02 | 291 | 0.0 | 0.5+ | 2006 06 18 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2005 03 04 | G96 | 0.2+ | 0.0 | 2006 06 18 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.1+ |
| 2005 03 04 | G96 | 0.1− | 0.4− | 2006 08 11 | 644 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2+ |
| 2005 03 04 | G96 | 0.2− | 0.0 | 2006 08 11 | 644 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.6+ | 0.0 |

**2006 $PD_2$ = 2002 $RN_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.14387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23025075 | $\omega$ | 345.20352 | | +0.28061767 | +0.94084372 | |
| $a$ | 2.6363436 | $\Omega$ | 300.76985 | | −0.85663969 | +0.15625472 | |
| $e$ | 0.1538305 | $i$ | 12.76935 | | −0.43292282 | +0.30066186 | |
| $P$ | 4.28 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.1− | 0.0 | 2005 03 13 | 703 | 1.0+ | 0.6− | 2006 08 15 | 644 | 0.0 | 0.3+ |
| 2002 09 11 | 644 | 0.1− | 0.0 | 2005 03 13 | 703 | 0.4− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.0 |
| 2002 09 11 | 644 | 0.2− | 0.0 | 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.2− | 0.0 |
| 2002 09 12 | 644 | 0.1+ | 0.1+ | 2006 08 12 | 644 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.1+ | 0.1− |
| 2002 09 12 | 644 | 0.2+ | 0.1− | 2006 08 12 | 644 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.1+ | 0.2− |
| 2002 09 12 | 644 | 0.1+ | 0.0 | 2006 08 13 | 644 | 0.1+ | 0.0 | 2006 08 20 | 644 | 0.2− | 0.1− |
| 2005 03 13 | 703 | 0.3− | 0.5+ | 2006 08 13 | 644 | 0.0 | 0.1− | | | | |
| 2005 03 13 | 703 | 0.3− | 0.1+ | 2006 08 13 | 644 | 0.1− | 0.1− | | | | |

**2006 $PL_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.25830 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23914082 | $\omega$ | 140.12350 | | +0.74003463 | +0.67256820 | |
| $a$ | 2.5705945 | $\Omega$ | 177.61037 | | −0.62227771 | +0.68518991 | |
| $e$ | 0.1900519 | $i$ | 1.19764 | | −0.25518461 | +0.27958328 | |
| $P$ | 4.12 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.5+ | 0.9+ | 2002 08 18 | 644 | 0.4+ | 0.6+ | 2006 08 12 | 644 | 0.3− | 0.2+ |
| 1994 11 01 | 691 | 0.8+ | 0.7+ | 2002 09 05 | 704 | 0.3+ | 0.4− | 2006 08 12 | 644 | 0.2− | 0.3− |
| 1994 11 01 | 691 | 0.1+ | 0.1− | 2002 09 05 | 704 | 0.5+ | 0.1− | 2006 08 12 | 644 | 0.1+ | 0.1− |
| 1998 08 30 | 691 | 0.1+ | 0.2− | 2002 09 05 | 704 | 0.3+ | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.2+ |
| 1998 08 30 | 691 | 0.4+ | 0.0 | 2002 09 05 | 704 | 0.5+ | 0.5+ | 2006 08 13 | 644 | 0.1+ | 0.1+ |
| 1998 08 30 | 691 | 0.3+ | 0.2− | 2002 09 05 | 704 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.1+ | 0.3+ |
| 1998 09 28 | 691 | 1.7− | 0.1+ | 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.1+ |
| 1998 09 28 | 691 | 1.4− | 0.0 | 2002 09 14 | 644 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.2+ | 0.0 |
| 1998 09 28 | 691 | 0.6− | 0.3+ | 2002 09 14 | 644 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.1− |
| 2001 03 26 | 691 | 0.4+ | 0.6+ | 2005 03 11 | 695 | 0.4+ | 0.3+ | 2006 08 15 | 644 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 691 | 0.3+ | 0.4+ | 2005 03 11 | 695 | 0.4+ | 0.4+ | 2006 08 15 | 644 | 0.1+ | 0.5+ | | |
| 2001 03 26 | 691 | 0.1+ | 0.8+ | 2005 04 02 | G96 | 0.3− | 0.6+ | 2006 08 15 | 644 | 0.2+ | 0.0 | | |
| 2001 05 21 | 807 | 0.3− | 0.5+ | 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.4+ | | |
| 2001 05 22 | 807 | 0.1− | 0.6+ | 2005 04 02 | G96 | 0.5− | 0.1+ | 2006 08 18 | 644 | 0.4+ | 0.1+ | | |
| 2002 08 17 | 644 | 0.2− | 0.3+ | 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 08 18 | 644 | 0.4+ | 0.2+ | | |
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2006 06 05 | G96 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 2002 08 17 | 644 | 0.3+ | 0.1− | 2006 06 05 | G96 | 0.3− | 0.5− | 2006 09 26 | G96 | 0.3− | 0.3− | | |
| 2002 08 18 | 644 | 0.2+ | 0.5+ | 2006 06 05 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.5− | | |
| 2002 08 18 | 644 | 0.4+ | 0.3+ | 2006 06 05 | G96 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | | |

### 2006 $PQ_2$ = 2005 $JW_{135}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.66557 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20490840 | $\omega$ | 86.90397 | | −0.47609301 | | +0.87833633 |
| $a$ | 2.8494620 | $\Omega$ | 154.52432 | | −0.84141442 | | −0.44072244 |
| $e$ | 0.0698381 | $i$ | 5.75570 | | −0.25565057 | | −0.18517295 |
| $P$ | 4.81 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 699 | 0.2− | 0.4− | 2005 05 15 | 644 | 0.3− | 0.1− | 2006 08 13 | 644 | 0.1+ | 0.0 | | |
| 2005 04 01 | 699 | 0.6+ | 0.0 | 2005 05 15 | 644 | 0.3− | 0.2+ | 2006 08 13 | 644 | 0.1− | 0.0 | | |
| 2005 04 01 | 699 | 0.1− | 0.3− | 2006 08 12 | 644 | 0.5+ | 0.4− | 2006 08 13 | 644 | 0.1+ | 0.3+ | | |
| 2005 04 01 | 699 | 0.6− | 0.5+ | 2006 08 12 | 644 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.2− | 0.2+ | | |
| 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 08 12 | 644 | 0.2+ | 0.1− | 2006 08 20 | 644 | 0.1− | 0.1− | | |
| 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 08 13 | 644 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.3− | 0.3− | | |
| 2005 05 08 | 691 | 0.0 | 0.2− | 2006 08 13 | 644 | 0.2− | 0.3+ | | | | | | |
| 2005 05 15 | 644 | 0.3− | 0.0 | 2006 08 13 | 644 | 0.0 | 0.2+ | | | | | | |

### 2006 $PY_2$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.57239 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18980688 | $\omega$ | 147.72463 | | +0.46622671 | | +0.87917873 |
| $a$ | 2.9986660 | $\Omega$ | 149.73032 | | −0.84746669 | | +0.47575905 |
| $e$ | 0.1029598 | $i$ | 11.25400 | | −0.25383630 | | +0.02642122 |
| $P$ | 5.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 691 | 0.0 | 0.4− | 2006 08 12 | 644 | 0.3− | 0.1− | 2006 08 29 | 291 | 0.1+ | 0.0 | | |
| 1999 02 12 | 691 | 0.0 | 0.1− | 2006 08 12 | 644 | 0.2− | 0.4− | 2006 08 29 | 291 | 0.2− | 0.1− | | |
| 1999 02 12 | 691 | 0.2− | 0.3− | 2006 08 13 | 644 | 0.6− | 0.1+ | 2006 08 29 | 291 | 0.1+ | 0.1+ | | |
| 2005 04 13 | 703 | 0.4+ | 0.8− | 2006 08 13 | 644 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.5− | 0.1+ | | |
| 2005 04 13 | 703 | 0.8− | 0.4+ | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.0 | | |
| 2005 04 13 | 703 | 1.3+ | 1.0+ | 2006 08 28 | 291 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2+ | | |
| 2005 04 13 | 703 | 0.8− | 0.4− | 2006 08 28 | 291 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2006 08 12 | 644 | 0.1+ | 0.2− | 2006 08 28 | 291 | 0.2+ | 0.0 | | | | | | |

### 2006 $PU_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.61315 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21302246 | $\omega$ | 48.41935 | | +0.98188118 | | −0.18878982 |
| $a$ | 2.7766371 | $\Omega$ | 322.45431 | | +0.16489185 | | +0.89374656 |
| $e$ | 0.3376600 | $i$ | 1.53864 | | +0.09338104 | | +0.40690968 |
| $P$ | 4.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 31 | 704 | 0.8− | 1.6+ | 2006 08 15 | 644 | 0.4− | 0.1+ | 2006 08 29 | 704 | 0.3+ | 1.1− | | |
| 1997 10 31 | 704 | 1.1+ | 0.2− | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 08 29 | 704 | 0.4+ | 0.6+ | | |
| 1997 10 31 | 704 | (0.2− | 2.3+) | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.4+ | 0.1− | | |
| 1997 10 31 | 704 | (3.0− | 0.6+) | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 08 29 | 704 | 0.0 | 0.2− | | |
| 1997 11 06 | 704 | 0.2+ | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 16 | 699 | 1.5+ | 0.1− | | |
| 1997 11 06 | 704 | 0.7− | 0.2+ | 2006 08 16 | D35 | 0.1+ | 0.7+ | 2006 09 16 | 699 | 0.3+ | 0.5− | | |
| 1997 11 06 | 704 | 0.0 | 0.0 | 2006 08 16 | D35 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.0 | 0.4− | | |
| 1997 11 06 | 704 | 1.0− | 0.0 | 2006 08 16 | D35 | 0.1− | 0.2+ | 2006 09 16 | 699 | (2.0− | 1.8+) | | |
| 1997 11 06 | 704 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.4+ | 0.1− | 2006 09 18 | 699 | (1.7+ | 1.5+) | | |
| 1997 11 08 | 910 | 0.2+ | 0.2− | 2006 08 19 | 699 | 0.0 | 0.0 | 2006 09 18 | 699 | 1.1+ | 0.5+ | | |
| 1997 11 08 | 910 | 0.5+ | 0.5− | 2006 08 19 | 699 | 0.8− | 0.5+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | | |
| 1997 11 08 | 910 | 0.3+ | 0.3− | 2006 08 19 | 699 | 0.5− | 0.0 | 2006 09 18 | 699 | (2.4− | 2.1+) | | |
| 2002 11 07 | 645 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.6+ | 0.8+ | 2006 10 17 | G96 | 0.4+ | 0.5− | | |
| 2002 11 07 | 645 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.4− | 0.1− | | |
| 2006 07 25 | 644 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 10 17 | G96 | 0.1− | 0.4− | | |
| 2006 07 25 | 644 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.4− | 0.4− | | |
| 2006 07 25 | 644 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.8+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | | |
| 2006 08 13 | 644 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3+ | | |
| 2006 08 13 | 644 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.4− | 2006 10 21 | G96 | 0.6− | 0.1+ | | |
| 2006 08 15 | 644 | 0.4− | 0.0 | 2006 08 29 | 704 | 0.2+ | 0.4+ | | | | | | |

### 2006 $PY_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.80707 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17203293 | $\omega$ | 358.01407 | | +0.88924130 | | +0.40944624 |
| $a$ | 3.2018059 | $\Omega$ | 334.54141 | | −0.41287946 | | +0.52645509 |
| $e$ | 0.1591827 | $i$ | 28.32708 | | −0.19692758 | | +0.74511664 |
| $P$ | 5.73 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.3− | 0.8− | 2006 08 15 | 428 | 0.7− | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 19 | 704 | 0.1+ | 0.1+ | 2006 08 15 | 428 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.1+ | | |
| 2001 08 19 | 704 | 0.2− | 0.9+ | 2006 08 16 | E12 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.1+ | | |
| 2001 12 08 | 704 | 0.2+ | 0.0 | 2006 08 16 | E12 | 0.1− | 0.5− | 2006 09 14 | 644 | 0.1− | 0.3+ | | |
| 2001 12 08 | 704 | 0.6− | 0.2+ | 2006 08 16 | E12 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.3+ | | |
| 2001 12 08 | 704 | 0.4+ | 0.5− | 2006 08 16 | E12 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1+ | | |
| 2001 12 08 | 704 | 0.7+ | 0.5+ | 2006 08 28 | 704 | 0.4− | 1.3− | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2001 12 08 | 704 | 0.7− | 0.1+ | 2006 08 28 | 704 | 0.8+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2006 06 22 | E12 | 0.1− | 0.3+ | 2006 08 28 | 704 | 0.9+ | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.0 | | |
| 2006 06 22 | E12 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 0.2− | 1.1− | 2006 10 22 | G96 | 0.0 | 0.0 | | |
| 2006 06 22 | E12 | 0.1− | 0.4+ | 2006 08 28 | 704 | 0.8+ | 0.7− | 2006 11 18 | G96 | 0.4+ | 0.1+ | | |
| 2006 06 22 | E12 | (1.7+ | 2.0+) | 2006 08 28 | E12 | 0.3− | 0.8+ | 2006 11 18 | G96 | 0.4− | 0.3− | | |
| 2006 08 14 | 428 | 0.3− | 0.1− | 2006 08 28 | E12 | 0.6+ | 0.4+ | 2006 11 18 | G96 | 0.5+ | 0.0 | | |
| 2006 08 14 | 428 | 0.2− | 0.3− | 2006 08 28 | E12 | 0.3− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.4+ | | |
| 2006 08 15 | 428 | 0.6− | 0.4− | 2006 08 28 | E12 | 0.4− | 0.3+ | | | | | | |

### 2006 $PN_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.44610 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23340753 | $\omega$ | 163.86380 | | +0.25564806 | | +0.94562897 |
| $a$ | 2.6125191 | $\Omega$ | 120.55647 | | −0.91080695 | | +0.30531826 |
| $e$ | 0.1658929 | $i$ | 13.50311 | | −0.32415238 | | −0.11210092 |
| $P$ | 4.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 16 | 691 | 0.0 | 2.8− | 2002 10 08 | 644 | 0.2− | 0.7+ | 2006 08 17 | F84 | 0.4+ | 0.7− | | |
| 1996 02 16 | 691 | 0.0 | 0.7+ | 2002 10 08 | 644 | 0.3− | 0.7+ | 2006 08 17 | F84 | 0.7+ | 0.5− | | |
| 1996 02 16 | 691 | 0.1− | 0.8+ | 2002 10 08 | 644 | 0.1− | 0.5+ | 2006 08 17 | F84 | 0.7+ | 0.6− | | |
| 2001 03 31 | 704 | 0.7+ | 0.7+ | 2006 08 14 | F84 | 1.2− | 0.5− | 2006 08 22 | F84 | 0.0 | 0.2− | | |
| 2001 03 31 | 704 | 0.1− | 0.4− | 2006 08 14 | F84 | 0.2+ | 0.1+ | 2006 08 22 | F84 | 0.5− | 0.5− | | |
| 2001 03 31 | 704 | 0.3− | 0.1+ | 2006 08 14 | F84 | 0.3+ | 0.4− | 2006 08 22 | F84 | 0.4+ | 0.1+ | | |
| 2001 04 25 | 699 | 0.3− | 0.9− | 2006 08 16 | E12 | 0.1+ | 0.3− | 2006 09 11 | F84 | 0.1− | 0.2− | | |
| 2001 04 25 | 699 | 0.6+ | 0.2− | 2006 08 16 | E12 | 0.4− | 0.6− | 2006 09 11 | F84 | 0.2− | 0.6− | | |
| 2001 04 25 | 699 | 0.3− | 0.4+ | 2006 08 16 | E12 | 0.2− | 0.4− | 2006 09 11 | F84 | 1.1+ | 0.4+ | | |
| 2001 04 25 | 699 | (2.4− | 0.3−) | 2006 08 16 | E12 | 0.1− | 0.7− | | | | | | |

### 2006 $PR_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.36522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36967502 | $\omega$ | 208.25160 | | −0.27819560 | | −0.91170905 |
| $a$ | 1.9227492 | $\Omega$ | 259.25164 | | +0.92901066 | | −0.17543445 |
| $e$ | 0.1147671 | $i$ | 17.92144 | | +0.24402131 | | −0.37149611 |
| $P$ | 2.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.2+ | 0.3− | 2006 08 18 | A74 | 0.1+ | 0.2+ | 2006 09 05 | A44 | 0.2− | 0.3− |
| 2001 10 25 | 704 | 0.1+ | 0.6− | 2006 08 18 | A74 | 0.2+ | 0.1− | 2006 09 05 | A44 | 0.2− | 0.1+ |
| 2001 10 25 | 704 | 0.2− | 1.5− | 2006 08 18 | A74 | 0.7+ | 0.5+ | 2006 09 05 | A44 | 0.2− | 0.7− |
| 2001 10 25 | 704 | (1.7+ | 1.6+) | 2006 08 18 | A74 | 0.5− | 0.1+ | 2006 09 09 | A44 | 0.4− | 0.5+ |
| 2001 10 25 | 704 | 0.3+ | 0.5− | 2006 08 20 | 198 | 0.5− | 0.0 | 2006 09 09 | A44 | 0.0 | 0.3− |
| 2001 12 07 | 644 | 0.1− | 1.0+ | 2006 08 20 | 198 | 0.1− | 0.1+ | 2006 09 09 | A44 | 0.4− | 0.0 |
| 2001 12 07 | 644 | 0.3− | 1.0+ | 2006 08 20 | 198 | 0.5+ | 0.1+ | 2006 09 20 | A44 | 0.5− | 0.1− |
| 2001 12 07 | 644 | 0.1− | 0.7+ | 2006 08 23 | A44 | 0.1− | 0.2− | 2006 09 20 | A44 | 0.6− | 0.1− |
| 2005 02 04 | 704 | 0.9+ | 0.3− | 2006 08 23 | A44 | 0.3+ | 0.1+ | 2006 09 20 | A74 | 0.6+ | 0.3+ |
| 2005 02 04 | 704 | 0.0 | 0.3+ | 2006 08 23 | A44 | 0.4+ | 0.1− | 2006 09 20 | A44 | 0.6+ | 0.5+ |
| 2005 02 04 | 704 | 0.7+ | 0.0 | 2006 09 01 | A44 | 0.3− | 0.1+ | 2006 09 20 | A74 | 0.4+ | 0.3− |
| 2005 02 04 | 704 | 0.2− | 0.8+ | 2006 09 01 | A44 | 0.0 | 0.4− | 2006 09 20 | A74 | 0.1+ | 0.3+ |
| 2005 02 04 | 704 | 1.3− | 0.8− | 2006 09 01 | A44 | 0.0 | 0.1− | 2006 09 20 | A74 | 0.7+ | 0.4+ |
| 2006 08 13 | A74 | 0.1+ | 0.1− | 2006 09 04 | 198 | 0.0 | 0.3+ | 2006 09 20 | A74 | 0.0 | 0.2− |
| 2006 08 13 | A74 | 0.0 | 0.3− | 2006 09 04 | 198 | 0.3− | 0.2+ | 2006 09 20 | A74 | 0.4+ | 0.4+ |
| 2006 08 13 | A74 | 0.9− | 0.0 | 2006 09 04 | 198 | 0.3− | 0.1+ | | | | |

**2006 PX$_4$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.59375 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22442432 | $\omega$ | 322.25235 | | +0.23941998 | +0.96121936 | |
| $a$ | 2.6817777 | $\Omega$ | 321.05565 | | −0.82933353 | +0.12915841 | |
| $e$ | 0.2586390 | $i$ | 12.57760 | | −0.50486034 | +0.24367079 | |
| $P$ | 4.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.1− | 0.1− | 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.0 |
| 2002 09 03 | 644 | 0.0 | 0.4+ | 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.9− | 1.1− |
| 2002 09 03 | 644 | 0.1− | 0.3+ | 2006 08 12 | 644 | 0.0 | 0.0 | 2006 08 19 | 644 | 0.3+ | 0.1− |
| 2002 10 03 | 644 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 08 19 | 644 | 0.4+ | 0.0 |
| 2002 10 03 | 644 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 08 19 | 644 | 0.2+ | 0.0 |
| 2002 10 03 | 644 | 0.1+ | 0.0 | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2005 03 13 | G96 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2005 03 13 | G96 | 0.4+ | 0.3+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2005 03 13 | G96 | 0.1+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2005 03 13 | G96 | 0.2− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.5+ | | | | |

**2006 PC$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.88462 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24210916 | $\omega$ | 2.81437 | | +0.85172044 | −0.52063256 | |
| $a$ | 2.5495405 | $\Omega$ | 28.80599 | | +0.47832260 | +0.72629581 | |
| $e$ | 0.2815658 | $i$ | 7.06674 | | +0.21396210 | +0.44881637 | |
| $P$ | 4.07 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 28 | 675 | 0.1− | 0.2+ | 2002 08 19 | 644 | 0.3− | 0.2+ | 2006 08 12 | 644 | 0.1− | 0.0 |
| 1998 09 22 | 699 | 0.4+ | 0.5− | 2002 08 19 | 644 | 0.0 | 0.2+ | 2006 08 12 | 644 | 0.2+ | 0.1+ |
| 1998 09 22 | 699 | 0.3− | 0.0 | 2002 08 31 | 704 | 0.2+ | 0.0 | 2006 08 12 | 644 | 0.2− | 0.2+ |
| 1998 09 22 | 699 | 0.4+ | 0.4+ | 2002 08 31 | 704 | 0.5+ | 0.2− | 2006 08 12 | 644 | 0.2+ | 0.0 |
| 2002 08 13 | 704 | 0.1+ | 0.1+ | 2002 08 31 | 704 | 0.4− | 0.5− | 2006 08 19 | 644 | 0.4+ | 0.4+ |
| 2002 08 13 | 704 | 0.4− | 0.6− | 2006 07 31 | E12 | 0.2+ | 0.0 | 2006 08 19 | 644 | 0.0 | 0.3+ |
| 2002 08 13 | 704 | 0.1+ | 0.7+ | 2006 07 31 | E12 | 0.4− | 0.1− | 2006 08 19 | 644 | 0.1− | 0.2+ |
| 2002 08 13 | 644 | 0.1+ | 0.4− | 2006 07 31 | E12 | 0.0 | 0.1− | 2006 08 26 | E12 | 0.3+ | 0.1+ |
| 2002 08 13 | 644 | 0.1− | 0.3− | 2006 07 31 | E12 | 0.1+ | 0.8− | 2006 08 26 | E12 | 0.0 | 0.2+ |
| 2002 08 13 | 644 | 0.2− | 0.4− | 2006 08 12 | 644 | 0.2− | 0.0 | 2006 08 26 | E12 | 0.2− | 0.3+ |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2006 08 12 | 644 | 0.0 | 0.1− | 2006 08 26 | E12 | 0.1+ | 0.3+ |

**2006 PP$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.23420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30810389 | $\omega$ | 319.03009 | | +0.48232906 | +0.87547274 | |
| $a$ | 2.1710572 | $\Omega$ | 339.75131 | | −0.77931602 | +0.41315322 | |
| $e$ | 0.1390257 | $i$ | 4.98973 | | −0.40003152 | +0.25070280 | |
| $P$ | 3.20 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 291 | 0.3+ | 0.5+ | 2003 10 29 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.4+ |
| 2002 02 13 | 291 | 0.3+ | 0.5+ | 2003 10 29 | 691 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.3+ | 0.7+ |
| 2002 02 13 | 291 | 0.0 | 0.7+ | 2003 10 29 | 691 | 0.1+ | 0.3+ | 2006 08 20 | 644 | 0.2− | 0.4+ |
| 2002 03 05 | 645 | 0.0 | 0.0 | 2005 02 04 | G96 | 1.0+ | 0.3− | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2002 03 05 | 645 | 0.0 | 0.0 | 2005 02 04 | G96 | 0.6− | 0.4− | 2006 08 20 | 644 | 0.2− | 0.4+ |
| 2003 09 18 | 691 | 0.1+ | 0.0 | 2005 02 04 | G96 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.5− |
| 2003 09 18 | 691 | 0.0 | 0.1+ | 2005 02 04 | G96 | 0.8− | 0.7− | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2003 09 18 | 691 | 0.1+ | 0.0 | 2006 08 12 | 644 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2003 09 29 | 691 | 0.1− | 0.0 | 2006 08 12 | 644 | 0.3− | 1.1+ | 2006 09 30 | G96 | 0.1− | 0.5+ |
| 2003 09 29 | 691 | 0.4− | 0.1− | 2006 08 12 | 644 | 0.7− | 0.3+ | | | | |
| 2003 09 29 | 691 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.0 | 0.2+ | | | | |

**2006 PC$_6$ = 1996 GE$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.79958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22512169 | $\omega$ | 270.07953 | | +0.74976988 | −0.65596152 | |
| $a$ | 2.6762365 | $\Omega$ | 130.91360 | | +0.64361483 | +0.69244672 | |
| $e$ | 0.0279717 | $i$ | 6.60674 | | +0.15363944 | +0.30038646 | |
| $P$ | 4.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.1+ | 0.2− | 2005 02 09 | 691 | 0.1− | 0.8+ | 2006 08 12 | 644 | 0.1+ | 0.3− |
| 1996 04 13 | 691 | 0.2+ | 0.5− | 2005 02 09 | 691 | 0.2+ | 0.3+ | 2006 08 12 | 644 | 0.1+ | 0.2− |
| 1996 04 13 | 691 | 0.1+ | 0.2− | 2005 02 09 | 691 | 0.1− | 0.6− | 2006 08 12 | 644 | 0.1+ | 0.1+ |
| 1996 04 21 | 691 | 0.5− | 0.1− | 2005 04 07 | 691 | 0.3+ | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.3− |
| 1996 04 21 | 691 | 0.3− | 0.0 | 2005 04 07 | 691 | 0.3+ | 0.7+ | 2006 08 14 | 644 | 0.3− | 0.2− |
| 1996 04 21 | 691 | 0.1− | 0.2− | 2005 04 07 | 691 | 0.2+ | 0.5+ | 2006 08 14 | 644 | 0.3+ | 0.2− |
| 2002 10 01 | 699 | 0.2− | 0.9+ | 2006 05 26 | G96 | 0.5− | 0.3− | 2006 08 15 | 644 | 0.1− | 0.5− |
| 2002 10 01 | 699 | 0.6+ | 0.9+ | 2006 05 26 | G96 | 0.1+ | 0.6− | 2006 08 15 | 644 | 0.1+ | 0.4− |
| 2002 10 01 | 699 | 1.1− | 2.0+ | 2006 05 26 | G96 | 0.1+ | 0.2− | 2006 08 15 | 644 | 0.2+ | 0.1− |
| 2002 10 01 | 699 | 0.5− | 0.5+ | 2006 05 26 | G96 | 0.0 | 0.4− | | | | |

**2006 PO$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.04913 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21931427 | $\omega$ | 21.28555 | | +0.96984780 | +0.10309201 | |
| $a$ | 2.7232747 | $\Omega$ | 330.02729 | | −0.23212245 | +0.66684305 | |
| $e$ | 0.2072409 | $i$ | 26.23354 | | +0.07425914 | +0.73803278 | |
| $P$ | 4.49 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 23 | 691 | 0.2− | 0.9+ | 2006 08 12 | 644 | 0.1− | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.3+ |
| 1997 09 23 | 691 | 0.2− | 0.0 | 2006 08 12 | 644 | 0.4− | 0.3+ | 2006 08 23 | 644 | 0.1+ | 0.3+ |
| 1997 09 23 | 691 | 0.4− | 0.0 | 2006 08 19 | 644 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.4− | 0.9− |
| 2004 02 16 | 291 | 0.5+ | 0.3+ | 2006 08 19 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.4− | 0.1− |
| 2004 02 16 | 291 | 0.8+ | 0.7+ | 2006 08 19 | 644 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.9− | 0.8− |
| 2004 02 16 | 291 | 0.1+ | 0.4+ | 2006 08 23 | 704 | 0.4+ | 0.1− | 2006 09 16 | 703 | 1.9− | 0.4+ |
| 2006 08 12 | 644 | 0.1− | 0.4+ | 2006 08 23 | 704 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.5+ | 0.5− |
| 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 08 23 | 704 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.6− |
| 2006 08 12 | 644 | 0.4− | 0.3+ | 2006 08 23 | 704 | 0.1− | 1.2+ | 2006 09 26 | G96 | 0.6+ | 0.3− |
| 2006 08 12 | 644 | 0.1− | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.3+ | | | | |

**2006 PS$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.74514 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22575338 | $\omega$ | 276.46283 | +0.99525244 | | −0.04784643 | |
| $a$ | 2.6712419 | $\Omega$ | 86.30290 | +0.07805198 | | +0.91258666 | |
| $e$ | 0.1816598 | $i$ | 4.87207 | −0.05814188 | | +0.40607427 | |
| $P$ | 4.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 291 | 0.2− | 0.1− | 2002 10 05 | 704 | 0.5+ | 0.9− | 2006 08 12 | 644 | 0.2+ | 0.2− |
| 2001 05 23 | 291 | 0.1− | 0.1− | 2002 10 05 | 704 | 0.0 | 1.4− | 2006 08 12 | 644 | 0.1− | 0.1− |
| 2001 05 23 | 291 | 0.3+ | 0.4+ | 2002 10 10 | 644 | 0.1− | 0.0 | 2006 08 12 | 644 | 0.1− | 0.0 |
| 2002 10 03 | 704 | 0.6− | 2.8+ | 2002 10 10 | 644 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.3− | 0.0 | 2002 10 10 | 644 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.1− | 0.1− |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2002 10 31 | 704 | 0.1+ | 0.7+ | 2006 08 17 | 644 | 0.3+ | 0.2− |
| 2002 10 03 | 704 | 0.0 | 0.5− | 2002 10 31 | 704 | 0.2+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.0 |
| 2002 10 05 | 704 | 0.3− | 0.2− | 2002 10 31 | 704 | 0.4+ | 0.1− | 2006 08 24 | 644 | 0.2− | 0.1− |
| 2002 10 05 | 704 | 0.8− | 0.2− | 2002 10 31 | 704 | 0.6+ | 0.0 | 2006 08 24 | 644 | 0.0 | 0.1+ |
| 2002 10 05 | 704 | 0.3+ | 0.1− | 2002 10 31 | 704 | 0.2− | 0.1− | | | | |

**2006 PB$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.76540 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26080298 | $\omega$ | 9.60597 | +0.99905994 | | +0.03660807 | |
| $a$ | 2.4262060 | $\Omega$ | 348.22119 | −0.04330803 | | +0.86646672 | |
| $e$ | 0.1277365 | $i$ | 6.53096 | +0.00191068 | | +0.49789083 | |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 05 | 691 | 0.1+ | 0.6+ | 2005 03 14 | G96 | 1.3− | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.1− |
| 1991 09 05 | 691 | 0.0 | 0.2− | 2006 08 12 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.3− |
| 1991 09 05 | 691 | 0.4− | 0.0 | 2006 08 12 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.5− |
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2006 08 12 | 644 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 04 16 | 645 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.9+ | 0.3− |
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.6− |
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.6− |
| 2005 03 14 | G96 | 0.3− | 0.2− | 2006 08 20 | 644 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2005 03 14 | G96 | 1.0− | 0.1− | 2006 08 20 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.7− |
| 2005 03 14 | G96 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.9+ | 2006 11 17 | G96 | 0.3+ | 0.3+ |

**2006 PF$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.36789 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28651993 | $\omega$ | 151.32074 | −0.34840802 | | +0.93112178 | |
| $a$ | 2.2787647 | $\Omega$ | 98.11645 | −0.87944713 | | −0.28492099 | |
| $e$ | 0.1770353 | $i$ | 6.25225 | −0.32432175 | | −0.22766699 | |
| $P$ | 3.44 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 20 | 691 | 0.0 | 0.2+ | 2002 04 01 | 644 | 0.3+ | 0.8+ | 2003 10 23 | 691 | 0.2+ | 0.3+ |
| 1999 06 20 | 691 | 0.1− | 0.2− | 2002 04 01 | 644 | 0.5+ | 0.9+ | 2003 10 23 | 691 | 0.0 | 0.1+ |
| 1999 06 20 | 691 | 0.2− | 0.2− | 2002 04 16 | 704 | 0.0 | 0.9− | 2003 10 23 | 691 | 0.2− | 0.5+ |
| 1999 07 16 | 704 | 0.2+ | 0.3+ | 2002 04 16 | 704 | 1.0− | 0.3+ | 2006 08 12 | 644 | 0.2+ | 0.1+ |
| 1999 07 16 | 704 | 0.1− | 0.1− | 2002 04 16 | 704 | 0.3+ | 1.3+ | 2006 08 12 | 644 | 0.1− | 0.3+ |
| 1999 07 16 | 704 | 0.5+ | 0.3+ | 2002 04 16 | 704 | 0.2+ | 0.2− | 2006 08 12 | 644 | 0.1− | 0.0 |
| 1999 07 16 | 704 | 0.1+ | 0.5+ | 2002 04 16 | 704 | 0.8+ | 1.3+ | 2006 08 14 | 644 | 0.1− | 0.3+ |
| 2002 03 12 | 704 | 0.7+ | 0.5− | 2002 04 16 | 704 | 0.0 | 0.3− | 2006 08 14 | 644 | 0.2− | 0.4+ |
| 2002 03 12 | 704 | 0.5+ | 0.3− | 2002 04 16 | 704 | 0.4+ | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.0 |
| 2002 03 12 | 704 | 0.8− | 0.9+ | 2002 04 16 | 704 | 0.1+ | 1.1+ | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 03 12 | 704 | 0.4+ | 0.2+ | 2002 04 16 | 704 | 0.4+ | 0.2− | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 03 20 | 704 | 0.5+ | 0.7+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.3− | 0.2+ |
| 2002 03 20 | 704 | 0.0 | 0.9+ | 2003 09 26 | 645 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.5− | 0.2+ |
| 2002 03 20 | 704 | 0.2− | 1.2+ | 2003 09 28 | 645 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2002 03 20 | 704 | 0.4+ | 0.8+ | 2003 09 28 | 645 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.0 | 0.3+ |
| 2002 03 20 | 704 | 0.6+ | 1.8+ | 2003 09 30 | 645 | 0.1− | 0.1+ | | | | |
| 2002 04 01 | 644 | 0.6+ | 0.6+ | 2003 09 30 | 645 | 0.1− | 0.1+ | | | | |

**2006 PT$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.15719 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26684833 | $\omega$ | 349.75319 | +0.94484930 | | +0.32737185 | |
| $a$ | 2.3894231 | $\Omega$ | 351.12056 | −0.29603030 | | +0.84148068 | |
| $e$ | 0.1948225 | $i$ | 3.47362 | −0.14009231 | | +0.42981151 | |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.6− | 0.1+ |
| 1995 09 26 | 691 | 0.3− | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.5− | 0.5+ |
| 1995 09 26 | 691 | 0.2+ | 0.1− | 2006 08 15 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 699 | (0.8− | 3.1−) |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.1− | 2006 08 28 | E12 | 0.2− | 0.1− |
| 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.0 | 2006 08 28 | E12 | 0.3− | 0.4− |
| 2005 03 13 | 691 | 0.0 | 0.4− | 2006 08 19 | 699 | 0.1+ | 0.8− | 2006 08 28 | E12 | 0.3− | 0.6+ |
| 2005 04 05 | G96 | 0.4+ | 0.2+ | 2006 08 19 | 699 | 0.5− | 0.5− | 2006 08 28 | E12 | 0.5+ | 0.1− |
| 2005 04 05 | G96 | 0.3− | 0.2− | 2006 08 19 | 699 | 0.6+ | 0.1− | 2006 09 13 | 644 | 0.2+ | 0.3+ |
| 2005 04 05 | G96 | 0.7− | 0.4+ | 2006 08 19 | 699 | 0.2+ | 0.6− | 2006 09 13 | 644 | 0.2+ | 0.2− |
| 2005 04 05 | G96 | 0.5− | 0.3+ | 2006 08 28 | 699 | 0.3+ | 0.4+ | 2006 09 13 | 644 | 0.5+ | 0.0 |
| 2006 08 12 | 644 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2006 08 12 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2006 08 12 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2006 08 14 | 644 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.1− |

**2006 PP$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.36860 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25827062 | $\omega$ | 320.77263 | −0.17229024 | | +0.98501922 | |
| $a$ | 2.4420396 | $\Omega$ | 299.30524 | −0.90164503 | | −0.16068055 | |
| $e$ | 0.1612013 | $i$ | 0.47927 | −0.39667658 | | −0.06260108 | |
| $P$ | 3.82 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 16 | 691 | 0.1− | 0.4− | 1999 11 05 | 691 | 0.4+ | 0.5− | 2006 08 15 | 644 | 0.0 | 0.4− |
| 1994 04 16 | 691 | 0.4− | 0.5+ | 1999 11 05 | 691 | 0.1+ | 0.3− | 2006 08 15 | 644 | 0.1− | 0.2+ |
| 1994 04 16 | 691 | 0.5− | 0.1− | 2003 11 16 | 691 | 0.2− | 0.3+ | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 1998 06 01 | 691 | 0.2+ | 0.4− | 2003 11 16 | 691 | 0.1+ | 0.2− | 2006 08 18 | 644 | 0.0 | 0.0 |
| 1998 06 01 | 691 | 0.1+ | 0.2+ | 2003 11 16 | 691 | 0.4+ | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.2− |
| 1998 06 01 | 691 | 0.8+ | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.4− | 0.2+ |
| 1999 10 06 | 704 | 1.1+ | 0.5+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.6− | 0.2− |
| 1999 10 06 | 704 | 0.3− | 0.4− | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.6− |
| 1999 10 06 | 704 | 0.3+ | 1.1+ | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.5− | 0.1− |
| 1999 10 13 | 645 | 0.1− | 0.0 | 2006 08 13 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4− | 0.3+ |
| 1999 10 13 | 645 | 0.1− | 0.0 | 2006 08 13 | 644 | 0.1− | 0.1+ | | | | |
| 1999 11 05 | 691 | 0.1+ | 0.1− | 2006 08 13 | 644 | 0.2+ | 0.0 | | | | |

**2006 PQ$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.98909 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27374834 | $\omega$ | 116.19090 | +0.46803714 | | −0.87977975 | |
| $a$ | 2.3491012 | $\Omega$ | 305.65315 | +0.76982363 | | +0.45216181 | |
| $e$ | 0.2284242 | $i$ | 5.87976 | +0.43395024 | | +0.14675588 | |
| $P$ | 3.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 15 | 566 | 1.3− | 0.3− | 2003 12 03 | 704 | (2.1− | 4.0−) | 2004 01 22 | 704 | 0.0 | 0.5− |
| 1997 01 15 | 566 | 0.7− | 0.5− | 2003 12 03 | 704 | (1.1− | 2.0−) | 2006 07 21 | G96 | 0.3+ | 0.3− |
| 1997 01 15 | 566 | 0.8− | 0.2− | 2003 12 03 | 704 | (3.4− | 4.0−) | 2006 07 21 | G96 | 0.1+ | 0.1− |
| 1997 02 07 | 566 | 1.0+ | 0.0 | 2003 12 03 | 704 | (3.1− | 4.2−) | 2006 07 21 | G96 | 0.1+ | 0.1− |
| 1997 02 07 | 566 | 0.4+ | 0.2− | 2003 12 17 | 704 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.1− | 0.1− |
| 1997 02 07 | 566 | 0.5+ | 0.4− | 2003 12 17 | 704 | 0.7− | 0.7+ | 2006 08 13 | 644 | 0.2+ | 0.7− |
| 1999 09 05 | 699 | 0.5− | 0.4+ | 2003 12 17 | 704 | 0.3+ | 0.1− | 2006 08 13 | 644 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.7+ | 0.7+ | 2003 12 17 | 704 | 1.0− | 1.2+ | 2006 08 13 | 644 | 0.2+ | 0.1− |
| 1999 09 05 | 699 | 1.0− | 0.9+ | 2003 12 17 | 704 | 0.9− | 1.2+ | 2006 08 17 | 644 | 0.2+ | 0.2− |
| 2003 09 27 | 704 | 0.2− | 0.3− | 2003 12 23 | 704 | 0.7+ | 1.2+ | 2006 08 17 | 644 | 0.1+ | 0.2+ |
| 2003 09 27 | 704 | 1.1− | 0.5+ | 2003 12 23 | 704 | 0.2+ | 0.3− | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2003 09 27 | 704 | 0.4+ | 0.5− | 2003 12 23 | 704 | 0.5− | 0.2− | 2006 08 20 | 644 | 0.3− | 0.2− |
| 2003 09 27 | 704 | 0.1− | 0.2+ | 2003 12 23 | 704 | 0.4+ | 0.8− | 2006 08 20 | 644 | 0.1+ | 0.1− |
| 2003 09 27 | 704 | 0.0 | 0.2− | 2003 12 23 | 704 | 1.4+ | 0.4− | 2006 08 20 | 644 | 0.0 | 0.1− |
| 2003 11 19 | 704 | 0.1+ | 0.2− | 2003 12 28 | 704 | 0.5+ | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.9− |
| 2003 11 19 | 704 | 0.0 | 0.2− | 2003 12 28 | 704 | 0.5+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.6− |
| 2003 11 19 | 704 | 0.2− | 0.2− | 2003 12 28 | 704 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.6+ | 0.5− |
| 2003 11 19 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3− | 1.0− |
| 2003 11 19 | 704 | 0.1− | 0.4− | 2004 01 22 | 704 | 0.7− | 0.2− | | | | |
| 2003 12 03 | 704 | (3.2− | 5.2−) | 2004 01 22 | 704 | 0.5+ | 0.4− | | | | |

**2006 PJ$_9$ = 2001 QU$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.36488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20360376 | $\omega$ | 92.58016 | | +0.58994361 | | −0.79235343 |
| $a$ | 2.8616214 | $\Omega$ | 319.90634 | | +0.61117537 | | +0.56395267 |
| $e$ | 0.1489244 | $i$ | 13.96074 | | +0.52766581 | | +0.23266593 |
| $P$ | 4.84 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2004 03 17 | 704 | 0.1− | 0.7− | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 1999 03 21 | 645 | 0.1+ | 0.2+ | 2006 08 13 | 644 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2001 07 27 | 699 | 0.4− | 0.6− | 2006 08 13 | 644 | 0.2− | 0.4+ | 2006 09 13 | 644 | 0.2+ | 0.1+ |
| 2001 07 27 | 699 | 0.0 | 0.4+ | 2006 08 13 | 644 | 0.3+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2001 07 27 | 699 | 1.0+ | 1.2+ | 2006 08 15 | 644 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2001 07 27 | 699 | 0.4− | 0.5+ | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.3+ |
| 2001 08 19 | 704 | (1.9− | 3.2+) | 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.8+ | 1.0+ |
| 2001 08 19 | 704 | (1.9− | 2.2+) | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.3+ |
| 2001 08 19 | 704 | 0.7− | 2.0+ | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2001 08 25 | 608 | 0.3+ | 0.4− | 2006 08 16 | 644 | 0.8− | 0.6+ | 2006 09 14 | 703 | 1.0− | 0.4− |
| 2001 08 25 | 608 | 0.0 | 1.0− | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 26 | H55 | 0.7+ | 0.6+ |
| 2001 08 25 | 608 | 0.4+ | 1.2− | 2006 08 28 | 703 | 0.8+ | 0.6− | 2006 09 26 | H55 | 0.3+ | 0.7+ |
| 2002 12 07 | 704 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 09 26 | H55 | 0.4+ | 0.7+ |
| 2002 12 07 | 704 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.7− | 0.6− | 2006 09 28 | G96 | 0.4− | 0.2− |
| 2002 12 07 | 704 | 0.0 | 0.7+ | 2006 09 12 | 704 | 0.7− | 1.5+ | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 2004 03 17 | 704 | 0.5− | 0.7− | 2006 09 12 | 704 | 0.4− | 0.4− | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2004 03 17 | 704 | 0.3+ | 0.1− | 2006 09 12 | 704 | 0.6− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.3− |

**2006 PK$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.55758 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28002922 | $\omega$ | 12.63470 | | +0.92982986 | | +0.36378309 |
| $a$ | 2.3138426 | $\Omega$ | 325.86745 | | −0.34564357 | | +0.81164286 |
| $e$ | 0.1863721 | $i$ | 5.67466 | | −0.12628121 | | +0.45705331 |
| $P$ | 3.52 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 23 | 691 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.6+ | 0.3+ |
| 1992 09 23 | 691 | 0.0 | 0.2− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.4+ |
| 1992 09 23 | 691 | 0.4− | 0.0 | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.1− |
| 1999 09 05 | 699 | 1.8+ | 0.0 | 2006 08 16 | 644 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.2− | 0.8− |
| 1999 09 05 | 699 | 0.3+ | 0.1− | 2006 08 28 | 699 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.3− |
| 1999 09 05 | 699 | 0.6+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.2− | 2006 09 27 | G96 | 0.3− | 0.5+ |
| 2006 08 13 | 644 | 0.5− | 0.1+ | 2006 08 28 | 699 | 0.6+ | 0.7− | 2006 09 27 | G96 | 0.3+ | 0.4+ |
| 2006 08 13 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.8+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.2+ |
| 2006 08 13 | 644 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.4+ |
| 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.5+ | 0.3− | | | | |
| 2006 08 15 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.3− | | | | |

**2006 PP$_9$ = 2005 MG$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.04270 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17726218 | $\omega$ | 249.14234 | | +0.77334313 | | −0.62816240 |
| $a$ | 3.1385231 | $\Omega$ | 149.58085 | | +0.62620900 | | +0.73571451 |
| $e$ | 0.0981901 | $i$ | 9.75009 | | +0.09900853 | | +0.25325118 |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 21 | 691 | 0.1− | 0.1+ | 2003 01 27 | 704 | 0.2+ | 1.0+ | 2006 08 19 | 699 | 1.4− | 0.3− |
| 1998 03 21 | 691 | 0.1− | 0.0 | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.2+ | 0.5+ |
| 1998 03 21 | 691 | 0.3− | 0.1+ | 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.2− | 0.7+ |
| 2001 10 10 | 644 | 0.1− | 0.5+ | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.6+ | 0.1+ |
| 2001 10 10 | 644 | 0.3− | 0.7+ | 2005 06 11 | 691 | 0.2− | 0.3− | 2006 08 21 | 644 | 0.1− | 0.1+ |
| 2001 10 10 | 644 | 0.1+ | 0.8+ | 2005 06 11 | 691 | 0.1+ | 0.2− | 2006 08 21 | 644 | 0.1− | 0.1+ |
| 2001 10 19 | 699 | 1.7− | 0.2+ | 2005 06 11 | 691 | 0.2− | 0.4− | 2006 08 21 | 644 | 0.3+ | 0.3− |
| 2001 10 19 | 699 | 0.1+ | 1.8+ | 2005 06 30 | 691 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2001 10 19 | 699 | 0.0 | 0.1+ | 2005 06 30 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2001 10 19 | 699 | 0.6− | 1.1+ | 2005 06 30 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 644 | 0.1+ | 0.7+ | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.2+ |
| 2001 10 23 | 644 | 0.2− | 0.4+ | 2005 07 04 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.6− | 0.4− |
| 2001 10 23 | 644 | 0.2+ | 0.5+ | 2005 07 04 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.2+ | 1.1− |
| 2002 01 13 | 645 | 0.2+ | 0.1− | 2006 08 13 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.1− |
| 2002 01 13 | 645 | 0.1+ | 0.1− | 2006 08 13 | 644 | 0.0 | 0.1− | 2006 08 31 | 947 | 0.3+ | 0.6+ |
| 2003 01 27 | 704 | 0.5+ | 0.2+ | 2006 08 13 | 644 | 0.2− | 0.1− | 2006 08 31 | 947 | 0.2+ | 0.0 |
| 2003 01 27 | 704 | 0.8− | 1.2+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 08 31 | 947 | 0.8+ | 0.4− |
| 2003 01 27 | 704 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.0 | | | | |
| 2003 01 27 | 704 | 0.0 | 1.3+ | 2006 08 17 | 644 | 0.0 | 0.0 | | | | |

**2006 PS$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.16375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22520457 | $\omega$ | 289.88707 | | −0.02728942 | | +0.99912922 |
| $a$ | 2.6755798 | $\Omega$ | 338.47586 | | −0.88195534 | | −0.03892688 |
| $e$ | 0.2711836 | $i$ | 4.93482 | | −0.47054231 | | +0.01501696 |
| $P$ | 4.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 09 | G96 | 0.2− | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3+ | 1.3− |
| 2005 02 09 | G96 | 0.0 | 0.2− | 2006 08 13 | 644 | 0.3+ | 0.1− | 2006 08 28 | 699 | 0.5− | 0.3+ |
| 2005 02 09 | G96 | 0.0 | 0.2− | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.3+ | 0.0 |
| 2005 02 09 | G96 | 0.4+ | 0.0 | 2006 08 15 | 644 | 0.3− | 0.3+ | 2006 09 13 | 644 | 0.5+ | 0.2+ |
| 2005 03 04 | G96 | 0.1+ | 0.4− | 2006 08 15 | 644 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2005 03 04 | G96 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.8− | 0.3+ |
| 2005 03 04 | G96 | 0.4− | 0.3+ | 2006 08 19 | 699 | 0.6+ | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2005 03 04 | G96 | 0.2− | 0.2− | 2006 08 19 | 699 | 0.8+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2005 04 02 | G96 | 0.4+ | 0.1+ | 2006 08 19 | 699 | 0.4+ | 0.5− | 2006 10 17 | G96 | 0.6+ | 0.8− |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.5− | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2005 04 02 | G96 | 0.1+ | 0.0 | 2006 08 28 | 699 | 1.3− | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2006 07 25 | 644 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2006 07 25 | 644 | 0.1+ | 0.6− | 2006 08 28 | 703 | 0.0 | 0.1+ | | | | |
| 2006 07 25 | 644 | 0.1+ | 0.2− | 2006 08 28 | 699 | 1.2− | 0.5+ | | | | |

**2006 PX$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.56414 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12629382 | $\omega$ | 164.55340 | | +0.99315508 | | +0.11680161 |
| $a$ | 3.9344255 | $\Omega$ | 188.73911 | | −0.10758061 | | +0.91271606 |
| $e$ | 0.1293002 | $i$ | 0.22725 | | −0.04549055 | | +0.39154411 |
| $P$ | 7.80 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 21 | 691 | 0.8+ | 0.1+ | 2006 08 15 | 644 | 0.6− | 0.1+ | 2006 08 28 | 703 | 0.8+ | 0.7+ |
| 2002 01 21 | 691 | 0.9− | 1.2+ | 2006 08 15 | 644 | 0.1− | 0.3+ | 2006 08 28 | 699 | 1.2+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 21 | 691 | 0.5+ | 0.2− | 2006 08 15 | 644 | 0.0 | 0.4+ | 2006 08 28 | 703 | 1.4− | 0.5+ |
| 2004 04 24 | 691 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.1+ | 1.6+ |
| 2004 04 24 | 691 | 0.2+ | 0.2+ | 2006 08 19 | 699 | 0.2− | 0.9+ | 2006 08 28 | 699 | 0.1+ | 0.1+ |
| 2004 04 24 | 691 | 0.2− | 0.0 | 2006 08 19 | 644 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.6+ | 0.2+ |
| 2006 07 18 | G96 | 0.3− | 0.2− | 2006 08 19 | 699 | (1.0− | 2.1+) | 2006 09 14 | 703 | 0.1− | 0.8− |
| 2006 07 18 | G96 | 0.1− | 0.2− | 2006 08 19 | 644 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.0 |
| 2006 07 18 | G96 | 0.0 | 0.2− | 2006 08 19 | 644 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.0 |
| 2006 07 18 | G96 | 0.2+ | 0.2− | 2006 08 19 | 699 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2006 08 13 | 644 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.9+ | 0.2− | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2006 08 13 | 644 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.0 | 1.1− | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2006 08 13 | 644 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.5+ | 0.5+ | 2006 09 30 | G96 | 0.9− | 0.1− |

**2006 PD$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.70479 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26455109 | $\omega$ | 241.98275 | | +0.91927681 | −0.38900015 | |
| $a$ | 2.4032356 | $\Omega$ | 140.82593 | | +0.38621739 | +0.86199494 | |
| $e$ | 0.1910259 | $i$ | 5.45731 | | +0.07593601 | +0.32502862 | |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 691 | 0.1+ | 0.3− | 2006 08 13 | 644 | 0.1− | 0.2+ | 2006 08 29 | 704 | 0.1− | 0.2+ |
| 2003 12 27 | 691 | 0.3− | 0.2+ | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 08 29 | 704 | 0.3− | 0.7+ |
| 2003 12 27 | 691 | 0.1+ | 0.7+ | 2006 08 15 | 644 | 0.4− | 0.1+ | 2006 08 31 | 704 | 0.0 | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 08 15 | 644 | 0.4− | 0.1+ | 2006 08 31 | 704 | 0.1+ | 0.0 |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 1.2− | 0.9+ | 2006 08 31 | 704 | 0.3+ | 0.3+ |
| 2004 01 27 | 691 | 0.0 | 0.4+ | 2006 08 19 | 699 | 0.2+ | 0.1− | 2006 08 31 | 704 | 0.2− | 0.2− |
| 2005 04 07 | 691 | 0.0 | 0.1+ | 2006 08 19 | 699 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2005 04 07 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.2+ |
| 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.8− | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2005 04 18 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 699 | 0.1+ | 0.5+ | 2006 09 16 | 704 | 1.5+ | 0.3+ |
| 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.7+ | 0.4− | 2006 09 16 | 704 | 0.4− | 0.4− |
| 2005 04 18 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | 1.4− | 0.3− | 2006 09 16 | 704 | 0.6+ | 0.0 |
| 2006 05 26 | G96 | 0.7− | 0.2− | 2006 08 28 | 699 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 1.3+ | 0.4− |
| 2006 05 26 | G96 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 09 24 | 699 | 0.2− | 0.5+ |
| 2006 05 26 | G96 | 0.7− | 0.2+ | 2006 08 28 | 699 | 0.1− | 0.9+ | 2006 09 24 | 699 | 0.2− | 0.3+ |
| 2006 05 26 | G96 | 0.3− | 0.0 | 2006 08 29 | 704 | (1.8+ | 0.6+) | 2006 09 24 | 699 | (2.3+ | 0.2−) |
| 2006 08 13 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.9− | 0.3+ | 2006 09 24 | 699 | 0.4+ | 0.5+ |
| 2006 08 13 | 644 | 0.0 | 0.3+ | 2006 08 29 | 704 | 0.2+ | 0.2+ | | | | |

**2006 PL$_{10}$ = 2003 YN$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.50699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21870393 | $\omega$ | 302.65965 | | −0.37539347 | +0.92528960 | |
| $a$ | 2.7283389 | $\Omega$ | 305.19863 | | −0.82670662 | −0.36061457 | |
| $e$ | 0.0680068 | $i$ | 3.79090 | | −0.41908938 | −0.11745756 | |
| $P$ | 4.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.1+ | 0.2+ | 2005 05 09 | 699 | 0.8− | 0.8− | 2006 08 19 | 699 | 0.2− | 0.6+ |
| 2000 03 03 | 704 | 0.5+ | 0.9+ | 2005 05 09 | 699 | 1.6− | 1.1+ | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2000 03 03 | 704 | 0.6− | 0.6+ | 2005 05 09 | 699 | 1.0+ | 0.3+ | 2006 08 20 | 644 | 0.1− | 0.1− |
| 2000 03 03 | 704 | 0.9+ | 0.0 | 2005 05 09 | 699 | 1.1− | 0.3− | 2006 08 20 | 644 | 0.2− | 0.4+ |
| 2000 03 03 | 704 | 0.7+ | 0.7+ | 2006 06 20 | G96 | 0.8− | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.1− |
| 2002 10 04 | 644 | 0.2− | 0.6+ | 2006 06 20 | G96 | 0.4− | 0.6− | 2006 08 22 | 644 | 0.2− | 0.2− |
| 2002 10 04 | 644 | 0.3− | 0.2− | 2006 06 20 | G96 | 0.8− | 0.1+ | 2006 08 22 | 644 | 0.4+ | 0.1− |
| 2002 10 04 | 644 | 0.4− | 0.4+ | 2006 06 20 | G96 | 0.3− | 0.4− | 2006 08 28 | 691 | 0.4+ | 0.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.2+ | 2006 08 13 | 644 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 2003 12 17 | 691 | 0.4+ | 0.2+ | 2006 08 13 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.5+ | 0.2+ |
| 2003 12 17 | 691 | 0.5+ | 0.1+ | 2006 08 13 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.2− | 1.6− |
| 2003 12 29 | 691 | 1.2− | 0.2+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.3+ |
| 2003 12 29 | 691 | 0.4+ | 0.2+ | 2006 08 18 | 644 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.3− |
| 2003 12 29 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.7− |
| 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.8− |
| 2005 04 12 | 691 | 0.3+ | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.6+ | 0.3+ |
| 2005 04 12 | 691 | 0.3+ | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.6+ | 2006 09 14 | 703 | 1.7− | 1.3+ |
| 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 08 19 | 699 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.8− | 0.6− |
| 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 08 19 | 699 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.7− | 0.4− |
| 2005 05 01 | 644 | 0.5+ | 0.3+ | 2006 08 19 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2005 05 01 | 644 | 0.1− | 0.1+ | 2006 08 19 | 699 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2005 05 01 | 644 | 0.0 | 0.3+ | 2006 08 19 | 644 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2005 05 01 | 644 | 0.0 | 0.4+ | 2006 08 19 | 644 | 0.0 | 0.0 | | | | |

**2006 PP$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.86304 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17697694 | $\omega$ | 97.20559 | | +0.55374458 | −0.82047660 | |
| $a$ | 3.1418944 | $\Omega$ | 318.11966 | | +0.65502041 | +0.53455244 | |
| $e$ | 0.2738564 | $i$ | 12.28771 | | +0.51411595 | +0.20266189 | |
| $P$ | 5.57 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.4+ | 0.7+ | 2001 12 22 | 704 | 0.2+ | 0.3− | 2006 08 19 | 691 | 0.2− | 0.2+ |
| 2001 08 23 | 704 | 0.7− | 0.6− | 2001 12 22 | 704 | 0.1+ | 1.2+ | 2006 08 19 | 691 | 0.3− | 0.2+ |
| 2001 08 23 | 704 | 0.7+ | 0.1− | 2001 12 22 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.1− | 0.9− |
| 2001 09 28 | 704 | 0.3− | 0.7+ | 2006 06 20 | G96 | 0.0 | 0.8− | 2006 09 14 | 703 | 0.4− | 0.5− |
| 2001 09 28 | 704 | 0.2+ | 0.7− | 2006 06 20 | G96 | 0.2− | 0.2− | 2006 09 14 | 703 | 2.0− | 1.4− |
| 2001 09 28 | 704 | 0.2− | 1.5− | 2006 06 20 | G96 | 0.9− | 0.2− | 2006 09 14 | 703 | 0.7+ | 0.2− |
| 2001 09 28 | 704 | 0.1− | 0.1+ | 2006 06 20 | G96 | 0.0 | 0.8+ | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2001 09 28 | 704 | 0.7− | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.4+ | 0.0 |
| 2001 12 09 | 704 | 0.5− | 0.7− | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 2001 12 09 | 704 | 0.4+ | 0.5− | 2006 08 13 | 644 | 0.3+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2001 12 09 | 704 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2001 12 09 | 704 | 0.6+ | 1.2+ | 2006 08 17 | 644 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2001 12 22 | 704 | 0.9− | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.0 | | | | |
| 2001 12 22 | 704 | 0.2+ | 0.3− | 2006 08 19 | 691 | 0.1+ | 0.2+ | | | | |

**2006 PC$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.32585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29354124 | $\omega$ | 42.65044 | | +0.50055845 | +0.86526493 | |
| $a$ | 2.2422806 | $\Omega$ | 257.40393 | | −0.80167528 | +0.45130072 | |
| $e$ | 0.1922756 | $i$ | 1.61640 | | −0.32673842 | +0.21827566 | |
| $P$ | 3.36 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 12 | 691 | 0.3− | 0.4− | 2006 08 13 | 644 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.3+ |
| 1996 09 12 | 691 | 0.4+ | 0.4− | 2006 08 13 | 644 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.3− | 0.1+ |
| 1996 09 12 | 691 | 0.2+ | 0.0 | 2006 08 13 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.4− | 0.5+ |
| 2003 10 22 | 691 | 0.2+ | 0.3+ | 2006 08 13 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | (1.6+ | 0.2+) |
| 2003 10 22 | 691 | 0.2+ | 0.1− | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.3+ |
| 2003 10 22 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.1− |
| 2003 10 22 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 10 19 | G96 | 0.7+ | 0.1− |
| 2003 10 22 | 691 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2003 10 22 | 691 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.4− | 2006 10 19 | G96 | 0.5− | 0.5− |
| 2003 10 29 | 704 | (0.1+ | 1.7−) | 2006 08 28 | 699 | 0.8+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.7− |
| 2003 10 29 | 704 | 0.8− | 0.2+ | 2006 08 28 | 699 | (1.5+ | 1.2+) | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2003 10 29 | 704 | 0.9− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.5− |
| 2003 10 29 | 704 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.9+ | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2006 06 20 | 703 | 0.6− | 1.1+ | 2006 08 30 | 704 | 0.8+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.7− |
| 2006 06 20 | 703 | 0.6+ | 1.3+ | 2006 08 30 | 704 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 06 20 | 703 | 0.6+ | 0.4+ | 2006 08 30 | 704 | 0.5− | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2006 06 20 | 703 | 0.3− | 0.7− | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2006 08 13 | 644 | 0.2− | 0.3− | 2006 08 30 | 704 | 0.6− | 0.6+ | 2006 11 16 | G96 | 1.0+ | 0.4− |
| 2006 08 13 | 644 | 0.2− | 0.5− | 2006 08 30 | 704 | 0.5+ | 0.6− | | | | |

**2006 PZ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.01258 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27002990 | $\omega$ | 108.60079 | | +0.91652884 | +0.39985056 | |
| $a$ | 2.3706175 | $\Omega$ | 227.83164 | | −0.37172940 | +0.84260068 | |
| $e$ | 0.1564741 | $i$ | 0.75118 | | −0.14762160 | +0.36075423 | |
| $P$ | 3.65 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.0 | 0.0 | 2005 04 11 | 695 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.1+ | |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2005 04 11 | 695 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.0 | |
| 1999 11 05 | 691 | 0.2+ | 0.0 | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2+ | |
| 1999 11 05 | 691 | 0.1+ | 0.1− | 2006 08 13 | 644 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.5− | |
| 1999 11 05 | 691 | 0.2+ | 0.4− | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.5− | 0.4− | |
| 2003 12 19 | 291 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.5− | 0.1− | |
| 2003 12 19 | 291 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.1− | |
| 2003 12 19 | 291 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.4− | 1.3+ | |
| 2005 03 13 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.3− | 1.0+ | 2006 10 19 | G96 | 0.5− | 0.6− | |
| 2005 03 13 | 691 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.0 | 0.0 | | | | | |
| 2005 03 13 | 691 | (2.9+ | 1.4−) | 2006 08 28 | 703 | 0.1− | 0.3+ | | | | | |

**2006 PB$_{12}$ = 1999 XU$_{79}$ = 2004 BN$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.08846 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26663858 | $\omega$ | 182.13053 | | +0.91485204 | −0.40360989 | |
| $a$ | 2.3906760 | $\Omega$ | 201.68578 | | +0.37094928 | +0.85184647 | |
| $e$ | 0.2289890 | $i$ | 1.86617 | | +0.15950667 | +0.33385124 | |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 691 | 0.1− | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.7+ | |
| 1995 09 02 | 691 | 0.1− | 0.1− | 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.8− | 0.3− | |
| 1995 09 02 | 691 | 0.1+ | 0.1− | 2006 08 18 | 699 | (3.0− | 2.5+) | 2006 09 17 | 704 | 1.4+ | 1.0+ | |
| 1999 12 07 | 704 | 0.1+ | 0.3− | 2006 08 18 | 699 | 0.7− | 0.1+ | 2006 09 18 | 699 | 0.8+ | 0.0 | |
| 1999 12 07 | 704 | 0.6− | 0.6− | 2006 08 18 | 699 | 1.0− | 0.5+ | 2006 09 18 | 699 | 1.1+ | 0.2+ | |
| 1999 12 07 | 704 | 1.3+ | 0.4+ | 2006 08 18 | 699 | 1.2− | 0.3− | 2006 09 18 | 699 | 0.4− | 0.3+ | |
| 1999 12 07 | 704 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | |
| 1999 12 08 | 704 | 0.1− | 1.3+ | 2006 08 28 | 703 | 0.8− | 0.0 | 2006 09 27 | G96 | 0.3− | 0.0 | |
| 1999 12 08 | 704 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.2+ | |
| 1999 12 08 | 704 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.3− | 0.1+ | |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 1.0+ | 0.1− | 2006 09 27 | G96 | 0.4− | 0.1+ | |
| 2004 01 28 | 691 | 0.5+ | 0.6+ | 2006 08 29 | 704 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.2− | |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 08 29 | 704 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.2− | |
| 2004 02 11 | 691 | 0.3− | 0.0 | 2006 08 30 | 704 | (0.9+ | 1.7+) | 2006 10 19 | G96 | 0.5− | 0.1− | |
| 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.7− | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.2− | |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.5− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.2+ | |
| 2005 04 17 | 691 | 0.4− | 0.5+ | 2006 08 30 | 704 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3+ | |
| 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 09 12 | 699 | 1.0+ | 1.4+ | 2006 10 27 | G96 | 0.1+ | 0.2+ | |
| 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 09 12 | 699 | (1.7− | 1.4+) | 2006 10 27 | G96 | 0.1+ | 0.3+ | |
| 2006 08 13 | 644 | 0.3− | 0.2+ | 2006 09 12 | 699 | 0.6+ | 0.2− | 2006 11 16 | G96 | 0.6− | 0.1+ | |
| 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 09 12 | 699 | (1.6− | 0.1+) | 2006 11 16 | G96 | 0.4− | 0.2− | |
| 2006 08 13 | 644 | 0.4− | 0.2+ | 2006 09 17 | 704 | 1.4+ | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.5− | |
| 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 09 17 | 704 | 1.2+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.1− | |

**2006 PH$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.87254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23537354 | $\omega$ | 349.67187 | | +0.69334135 | +0.71949050 | |
| $a$ | 2.5979510 | $\Omega$ | 324.20367 | | −0.65615564 | +0.60731993 | |
| $e$ | 0.1547429 | $i$ | 3.93507 | | −0.29788848 | +0.33689156 | |
| $P$ | 4.19 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.4+ | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 24 | 699 | 0.9− | 0.6+ | |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.2− | 2006 09 24 | 699 | 0.6− | 1.4+ | |
| 2002 10 04 | 704 | 0.2− | 0.2+ | 2006 08 29 | 704 | 0.2+ | 0.1+ | 2006 09 24 | 699 | 0.2− | 0.7− | |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2006 08 29 | 704 | 0.0 | 0.1− | 2006 09 24 | 699 | 0.4− | 0.3+ | |
| 2005 03 14 | G96 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.3+ | 0.7+ | 2006 09 27 | G96 | 0.3+ | 0.2− | |
| 2005 03 14 | G96 | 0.1− | 0.3+ | 2006 09 09 | 644 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.0 | |
| 2005 03 14 | G96 | 0.2+ | 0.1+ | 2006 09 09 | 644 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2− | |
| 2005 03 14 | G96 | 0.2+ | 0.3+ | 2006 09 09 | 644 | 0.4+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.1− | |
| 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.0 | |
| 2006 08 13 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− | |
| 2006 08 13 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.6− | 0.3− | 2006 10 19 | G96 | 0.7− | 0.1− | |
| 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.6− | 2006 10 19 | G96 | 0.2+ | 0.1− | |

**2006 PL$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.70527 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23976013 | $\omega$ | 241.41592 | | +0.78990135 | −0.60373790 | |
| $a$ | 2.5661660 | $\Omega$ | 155.24115 | | +0.61290597 | +0.77152116 | |
| $e$ | 0.1733818 | $i$ | 14.87361 | | +0.02005328 | +0.20063810 | |
| $P$ | 4.11 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.1+ | 0.1− | 2002 09 13 | 246 | 0.0 | 0.2− | 2006 08 13 | 644 | 0.1+ | 0.2+ | |
| 2000 03 03 | 704 | 0.3− | 0.7+ | 2002 09 13 | 246 | 0.4+ | 0.5− | 2006 08 19 | 691 | 0.3+ | 0.3+ | |
| 2000 03 03 | 704 | 0.7+ | 2.0+ | 2002 09 13 | 246 | 1.2− | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.4+ | |
| 2000 03 03 | 704 | 0.3+ | 0.4+ | 2002 09 13 | 246 | 1.5− | 0.5− | 2006 08 19 | 691 | 0.1+ | 0.3+ | |
| 2002 09 06 | 704 | 0.6+ | 0.5− | 2002 09 13 | 246 | 0.2− | 0.1+ | 2006 08 19 | 691 | 0.2+ | 0.3+ | |
| 2002 09 06 | 704 | 0.1+ | 0.4+ | 2002 09 13 | 246 | 0.0 | 0.3− | 2006 08 19 | 691 | 0.2+ | 0.2+ | |
| 2002 09 06 | 704 | 0.4+ | 0.1− | 2002 09 13 | 246 | 0.3+ | 0.1− | 2006 08 19 | 691 | 0.2+ | 0.2+ | |
| 2002 09 06 | 704 | 0.1+ | 0.6+ | 2002 09 13 | 246 | 0.3− | 0.1+ | 2006 08 21 | 704 | 0.1− | 1.0+ | |
| 2002 09 13 | 704 | 0.6− | 0.6+ | 2004 02 12 | 691 | 0.1− | 0.5+ | 2006 08 21 | 704 | 0.6− | 1.0+ | |
| 2002 09 13 | 704 | 0.4+ | 0.0 | 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 08 21 | 704 | 0.6− | 1.0+ | |
| 2002 09 13 | 704 | 0.4+ | 0.4− | 2004 02 12 | 691 | 0.2+ | 0.6+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | |
| 2002 09 13 | 557 | 0.0 | 0.0 | 2004 03 20 | 691 | 0.4− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.0 | |
| 2002 09 13 | 557 | 0.4− | 0.2− | 2004 03 20 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | |
| 2002 09 13 | 557 | 0.4− | 0.3+ | 2004 03 20 | 691 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 1.2− | 0.4− | |
| 2002 09 13 | 246 | 0.2− | 0.6+ | 2006 05 25 | G96 | 0.1− | 0.2+ | 2006 09 14 | 703 | 1.2− | 0.8− | |
| 2002 09 13 | 246 | 0.5+ | 0.1+ | 2006 05 25 | G96 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.7− | 0.2+ | |
| 2002 09 13 | 246 | 0.0 | 0.4+ | 2006 05 25 | G96 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.2− | 0.9+ | |
| 2002 09 13 | 246 | 0.1+ | 0.2+ | 2006 05 25 | G96 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.2− | 1.0− | |
| 2002 09 13 | 246 | 0.6+ | 0.3+ | 2006 08 13 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.5− | |
| 2002 09 13 | 246 | 0.6+ | 0.2+ | 2006 08 13 | 644 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.1− | |

**2006 PN$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.26109 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12497631 | $\omega$ | 207.24023 | | +0.90029798 | −0.43527285 | |
| $a$ | 3.9620285 | $\Omega$ | 178.56118 | | +0.40658443 | +0.84009391 | |
| $e$ | 0.2181269 | $i$ | 2.39694 | | +0.15541124 | +0.32369703 | |
| $P$ | 7.89 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 03 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.7+ | 1.1+ | 2006 09 14 | 703 | 0.3− | 0.9+ | |
| 1991 11 03 | 691 | 0.3+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.3− | 0.1− | |
| 1991 11 03 | 691 | 0.3− | 0.0 | 2006 08 27 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.6− | 0.5− | |
| 2002 03 20 | 695 | 0.5+ | 0.9+ | 2006 08 27 | 691 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.5− | |
| 2002 03 20 | 695 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.5− | |
| 2006 08 13 | 644 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.7− | 0.6+ | 2006 09 26 | G96 | 0.4− | 0.6− | |
| 2006 08 13 | 644 | 0.5− | 0.2+ | 2006 08 28 | 703 | (1.7− | 1.2+) | 2006 10 27 | G96 | 0.3− | 0.8− | |
| 2006 08 13 | 644 | 0.5− | 0.1− | 2006 08 28 | 703 | (1.8− | 0.5+) | 2006 10 27 | G96 | 0.9− | 0.1+ | |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.5+ | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.4− | |
| 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.9− | 1.1+ | 2006 10 27 | G96 | 0.4+ | 0.5− | |

**2006 PP$_{12}$ = 2003 YO$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.04338 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27726422 | $\omega$ | 115.82527 | | +0.27325178 | −0.95629777 | |
| $a$ | 2.3292002 | $\Omega$ | 317.88096 | | +0.81766096 | +0.28788664 | |
| $e$ | 0.1936366 | $i$ | 8.92575 | | +0.50671887 | +0.05114552 | |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.2− | 0.1− | 2003 12 28 | 704 | 0.0 | 0.5− | 2006 08 13 | 644 | 0.6− | 0.1− |
| 1999 09 09 | 704 | 0.0 | 0.5+ | 2003 12 30 | 704 | 0.8+ | 0.4+ | 2006 08 15 | 644 | 0.6− | 0.1− |
| 1999 09 09 | 704 | 0.4− | 0.6+ | 2003 12 30 | 704 | 0.5+ | 0.3+ | 2006 08 15 | 644 | 0.3− | 0.1+ |
| 1999 09 09 | 704 | 1.3− | 2.1+ | 2003 12 30 | 704 | 0.7+ | 0.0 | 2006 08 15 | 644 | 0.3− | 0.2− |
| 2003 12 17 | 704 | 0.1− | 0.2+ | 2003 12 30 | 704 | 0.2+ | 0.3+ | 2006 08 21 | 644 | 0.6− | 0.2+ |
| 2003 12 17 | 704 | 0.1+ | 0.2− | 2003 12 30 | 704 | 0.9+ | 0.2+ | 2006 08 21 | 644 | 0.0 | 0.1+ |
| 2003 12 17 | 704 | 0.0 | 0.3+ | 2004 01 19 | 691 | 0.1− | 0.2− | 2006 08 21 | 644 | 0.0 | 0.3− |
| 2003 12 17 | 704 | 0.3+ | 0.2+ | 2004 01 19 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.5+ | 0.3− |
| 2003 12 17 | 704 | 0.1+ | 0.5+ | 2004 01 19 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2003 12 28 | 704 | 0.9− | 0.0 | 2004 02 27 | 695 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.4+ | 0.4− |
| 2003 12 28 | 704 | 0.8− | 0.4− | 2004 02 27 | 695 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2003 12 28 | 704 | 0.6− | 0.3− | 2006 08 13 | 644 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.2− |
| 2003 12 28 | 704 | 0.2− | 0.1− | 2006 08 13 | 644 | 0.7− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 |

**2006 PT$_{12}$ = 2002 XH$_{50}$ = 2005 JX$_{138}$ = 2005 KL$_{13}$**

Id. Minor Planet Center (*MPO* 103984; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.57871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20310352 | $\omega$ | 160.30728 | | +0.98852407 | −0.15058427 | |
| $a$ | 2.8663183 | $\Omega$ | 208.36182 | | +0.13498446 | +0.91623533 | |
| $e$ | 0.0811209 | $i$ | 1.45028 | | +0.06781864 | +0.37126433 | |
| $P$ | 4.85 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.0 | 0.2− | 2003 01 29 | 291 | 0.6− | 0.1− | 2006 08 13 | 644 | 0.1+ | 0.4+ |
| 1999 02 09 | 691 | 0.2− | 0.0 | 2004 02 16 | 691 | 0.7+ | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.2+ |
| 1999 02 09 | 691 | 0.1− | 0.1− | 2004 02 16 | 691 | 0.5+ | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.5+ |
| 2000 06 02 | 691 | 0.4− | 0.2− | 2004 02 16 | 691 | 0.4+ | 0.5+ | 2006 08 15 | 644 | 0.1− | 0.6+ |
| 2000 06 02 | 691 | 0.1+ | 0.2− | 2004 03 18 | 704 | (1.7+ | 0.2+) | 2006 08 28 | 703 | (0.9− | 1.9−) |
| 2000 06 02 | 691 | 0.1− | 0.1− | 2004 03 18 | 704 | 0.7− | 0.6+ | 2006 08 28 | 703 | 0.1+ | 0.8− |
| 2001 09 22 | 691 | 0.4+ | 0.4− | 2004 03 18 | 704 | 0.2+ | 0.0 | 2006 08 28 | 703 | 1.1− | 0.9− |
| 2001 09 22 | 691 | 0.1+ | 0.2+ | 2004 03 18 | 704 | 1.0− | 1.0− | 2006 08 28 | 703 | 0.3+ | 1.0− |
| 2001 09 22 | 691 | 0.1+ | 0.3+ | 2005 05 13 | G96 | 0.1− | 0.1+ | 2006 08 29 | 704 | 0.6− | 1.2+ |
| 2002 12 05 | 704 | 0.9+ | 0.5+ | 2005 05 13 | G96 | 0.2+ | 0.2− | 2006 08 29 | 704 | 0.0 | 0.9+ |
| 2002 12 05 | 704 | 0.7− | 0.0 | 2005 05 13 | G96 | 0.2− | 0.1− | 2006 08 29 | 704 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.1− | 2005 05 13 | G96 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.3+ | 1.4+ |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2005 05 18 | 644 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.3+ |
| 2002 12 05 | 704 | 0.6+ | 0.9+ | 2005 05 18 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.3+ |
| 2002 12 05 | 608 | 0.0 | 1.0+ | 2005 05 18 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.8+ |
| 2002 12 05 | 608 | 0.1− | 0.3+ | 2005 05 18 | 644 | 0.3+ | 0.2− | 2006 09 14 | 703 | 1.4− | 0.2− |
| 2002 12 05 | 608 | 0.3− | 0.6+ | 2005 05 18 | 644 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 2002 12 10 | 704 | 1.2− | 0.3− | 2005 05 18 | 644 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.9− | 0.4+ | 2005 06 06 | 691 | 0.6− | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2002 12 10 | 704 | 0.7− | 0.0 | 2005 06 06 | 691 | 0.1− | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 12 11 | 704 | 0.7+ | 0.7+ | 2005 06 06 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.9+ | 0.2− |
| 2002 12 11 | 704 | 0.8− | 0.4+ | 2005 06 11 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.7+ | 0.3− |
| 2002 12 11 | 704 | 0.9+ | 1.5+ | 2005 06 11 | 691 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2002 12 11 | 704 | 0.2− | 1.2+ | 2005 06 11 | 691 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2003 01 29 | 291 | 0.3− | 0.2− | 2006 08 13 | 644 | 0.0 | 0.2+ | | | | |
| 2003 01 29 | 291 | 0.5+ | 0.0 | 2006 08 13 | 644 | 0.2+ | 0.2+ | | | | |

**2006 PB$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.70908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28255027 | $\omega$ | 355.81385 | | −0.06634432 | +0.99587061 | |
| $a$ | 2.3000586 | $\Omega$ | 270.37405 | | −0.91365184 | −0.08559454 | |
| $e$ | 0.1201138 | $i$ | 3.55291 | | −0.40104706 | +0.03025393 | |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 644 | 0.1+ | 1.0+ | 2006 05 24 | G96 | 0.1+ | 0.2− | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2002 05 17 | 644 | 0.5+ | 0.8+ | 2006 05 24 | G96 | 0.4− | 0.4+ | 2006 08 15 | 644 | 0.1+ | 0.1+ |
| 2002 05 17 | 644 | 0.3+ | 0.6+ | 2006 05 24 | G96 | 0.2+ | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2003 10 25 | 704 | 1.1+ | 0.6+ | 2006 07 25 | 644 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.0 |
| 2003 10 25 | 704 | 1.0− | 0.9+ | 2006 07 25 | 644 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.3+ |
| 2003 10 25 | 704 | 0.0 | 0.2+ | 2006 07 25 | 644 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.4− |
| 2003 10 25 | 704 | 1.0− | 1.3+ | 2006 07 25 | 644 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.2− |
| 2003 10 25 | 704 | 0.4+ | 0.6+ | 2006 07 25 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.1− |
| 2003 11 24 | 695 | 0.5− | 0.3− | 2006 07 25 | 644 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.1+ |
| 2003 11 24 | 695 | 0.2− | 0.0 | 2006 08 14 | E12 | 0.8− | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 08 14 | E12 | 0.3+ | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.0 |
| 2005 03 17 | G96 | 0.3+ | 0.0 | 2006 08 14 | E12 | 0.4− | 0.4− | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2005 03 17 | G96 | 0.0 | 0.3+ | 2006 08 14 | E12 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 2005 03 17 | G96 | 0.0 | 0.0 | 2006 08 14 | E12 | 0.2+ | 0.2− | | | | |
| 2006 05 24 | G96 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.1+ | 0.0 | | | | |

**2006 PL$_{13}$ = 2002 JC$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.07945 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28669566 | $\omega$ | 299.88962 | | −0.96032407 | +0.25899656 | |
| $a$ | 2.2778335 | $\Omega$ | 255.28493 | | −0.20443885 | −0.90602439 | |
| $e$ | 0.1071409 | $i$ | 6.13901 | | −0.18969039 | −0.33472463 | |
| $P$ | 3.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 691 | 0.1− | 0.2− | 2003 10 18 | 691 | 0.2+ | 0.2+ | 2006 08 14 | E12 | 0.0 | 0.0 |
| 1996 10 11 | 691 | 0.3− | 0.2+ | 2005 01 13 | 703 | 0.7+ | 0.1+ | 2006 08 14 | E12 | 0.2− | 0.7+ |
| 1996 10 11 | 691 | 0.2− | 0.1− | 2005 01 13 | 703 | 0.1+ | 0.9+ | 2006 08 14 | E12 | 0.7− | 0.1+ |
| 2002 05 09 | 644 | 0.5+ | 0.7+ | 2005 01 13 | 703 | 0.9− | 0.3− | 2006 08 14 | E12 | 0.9− | 0.5+ |
| 2002 05 09 | 644 | 0.2+ | 0.4+ | 2005 01 13 | 703 | 0.4− | 0.4− | 2006 08 14 | E12 | 0.0 | 0.2− |
| 2002 05 09 | 644 | 0.4+ | 0.4+ | 2005 02 14 | 703 | 0.1+ | 0.5− | 2006 08 15 | 644 | 0.3− | 0.2+ |
| 2002 05 11 | 704 | 0.2+ | 0.3+ | 2005 02 14 | 703 | 0.4+ | 0.4+ | 2006 08 15 | 644 | 0.3− | 0.3+ |
| 2002 05 11 | 704 | 0.6+ | 0.4− | 2005 02 14 | 703 | 0.0 | 0.4+ | 2006 08 15 | 644 | 0.3− | 0.1− |
| 2002 05 11 | 704 | 0.3+ | 0.7− | 2005 02 14 | 703 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 2002 05 11 | 704 | 0.3− | 0.0 | 2005 03 03 | 703 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.4− | 0.3− |
| 2002 05 11 | 704 | 0.3− | 0.4− | 2005 03 03 | 703 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2003 10 18 | 691 | 0.1+ | 0.0 | 2005 03 03 | 703 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2003 10 18 | 691 | 0.5+ | 0.4+ | 2005 03 03 | 703 | 0.2− | 0.8+ | | | | |

**2006 PO$_{13}$ = 2003 UD$_{301}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.78867 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28717781 | $\omega$ | 344.04348 | | −0.24443912 | +0.96349896 | |
| $a$ | 2.2752832 | $\Omega$ | 271.71067 | | −0.87727940 | −0.26770726 | |
| $e$ | 0.0910645 | $i$ | 6.27059 | | −0.41307429 | −0.00160449 | |
| $P$ | 3.43 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 17 | 691 | 0.2+ | 0.4− | 2006 07 21 | 703 | 0.2− | 0.2+ | 2006 08 14 | E12 | 0.5+ | 0.7+ |
| 2003 10 17 | 691 | 0.1+ | 0.0 | 2006 07 21 | 703 | 0.1+ | 0.3+ | 2006 08 14 | E12 | 0.3+ | 0.5− |
| 2003 10 17 | 691 | 0.1− | 0.1− | 2006 07 21 | 703 | 0.7− | 0.2+ | 2006 08 14 | E12 | 0.7+ | 0.1+ |
| 2003 10 27 | 691 | 0.1− | 0.1− | 2006 07 21 | 703 | 0.4− | 0.8− | 2006 08 17 | 644 | 0.2− | 0.2+ |
| 2003 10 27 | 691 | 0.0 | 0.2+ | 2006 08 14 | E12 | 0.7− | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.0 |
| 2003 10 27 | 691 | 0.0 | 0.5+ | 2006 08 14 | E12 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.0 |

### 2006 $PR_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.41637 | | | (2000.0) | | |
| $n$ | 0.26398815 | $\omega$ | 155.75766 | | +0.97164535 | +0.23580672 |
| $a$ | 2.4066509 | $\Omega$ | 190.64697 | | −0.22935752 | +0.92217776 |
| $e$ | 0.2003482 | $i$ | 5.38371 | | −0.05744942 | +0.30656707 |
| $P$ | 3.73 | $H$ | 17.4 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.3+ | 0.1+ | 2005 04 05 | G96 | 0.5− | 0.7+ | 2006 08 15 | 644 | 0.1+ | 0.4− |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2005 04 05 | G96 | 0.9− | 0.2− | 2006 08 15 | 644 | 0.1+ | 0.1− |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 07 21 | 703 | 0.7+ | 1.0+ | 2006 08 18 | 644 | 0.2+ | 0.0 |
| 2005 04 02 | G96 | 0.5− | 0.4− | 2006 07 21 | 703 | 1.2− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2006 07 21 | 703 | 0.6+ | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.1− |
| 2005 04 02 | G96 | 0.3+ | 0.2+ | 2006 07 21 | 703 | 0.8− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.2− | 2006 08 14 | E12 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2005 04 02 | G96 | 0.2+ | 0.2− | 2006 08 14 | E12 | 0.9+ | 0.3− | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2005 04 05 | G96 | 0.5+ | 0.5− | 2006 08 14 | E12 | 0.7− | 0.1− | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2005 04 05 | G96 | 0.5+ | 0.1− | 2006 08 15 | 644 | 0.2+ | 0.2− | | | | |

### 2006 $PS_{13}$ = 2003 $TZ_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.09679 | | | (2000.0) | | |
| $n$ | 0.28072330 | $\omega$ | 82.73880 | | +0.16115847 | +0.98651416 |
| $a$ | 2.3100271 | $\Omega$ | 196.61789 | | −0.94035993 | +0.14469418 |
| $e$ | 0.1150207 | $i$ | 5.73870 | | −0.29958497 | +0.07650753 |
| $P$ | 3.51 | $H$ | 17.1 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 02 | 691 | 0.0 | 0.6+ | 2002 05 19 | 644 | 0.2− | 0.4+ | 2006 08 15 | 644 | 0.1+ | 0.4− |
| 1998 02 02 | 691 | 0.1+ | 0.0 | 2002 05 19 | 644 | 0.4− | 0.4+ | 2006 08 15 | 644 | 0.4+ | 0.1+ |
| 1998 02 02 | 691 | 0.1+ | 0.1− | 2003 10 02 | 691 | 0.1+ | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.4+ |
| 2002 04 13 | 644 | 0.4+ | 1.0+ | 2003 10 02 | 691 | 0.3− | 0.6+ | 2006 08 16 | 644 | 0.3− | 0.3+ |
| 2002 04 13 | 644 | 0.8+ | 0.8+ | 2003 10 02 | 691 | 0.2− | 0.5+ | 2006 08 16 | 644 | 0.3− | 0.0 |
| 2002 04 13 | 644 | 0.2+ | 1.3+ | 2006 08 14 | E12 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2002 05 08 | 704 | 0.5− | 1.1+ | 2006 08 14 | E12 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2002 05 08 | 704 | 0.0 | 0.2+ | 2006 08 14 | E12 | 0.3− | 0.5− | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2002 05 08 | 704 | 0.6+ | 0.8− | 2006 08 14 | E12 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2002 05 08 | 704 | 0.3− | 0.0 | 2006 08 14 | E12 | 0.4+ | 0.3+ | | | | |
| 2002 05 19 | 644 | 0.0 | 0.6+ | 2006 08 15 | 644 | 0.6+ | 0.0 | | | | |

### 2006 $PK_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.69918 | | | (2000.0) | | |
| $n$ | 0.08350634 | $\omega$ | 23.57480 | | +0.94606362 | +0.31189725 |
| $a$ | 5.1838977 | $\Omega$ | 317.93300 | | −0.31415811 | +0.81704562 |
| $e$ | 0.0975314 | $i$ | 7.51763 | | −0.07917262 | +0.48492943 |
| $P$ | 11.80 | $H$ | 12.9 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.2− | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2001 02 02 | 691 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.3− | 0.0 |
| 2001 02 02 | 691 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 08 24 | 644 | 0.0 | 0.3− |
| 2002 03 13 | 644 | 1.0+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.2− | 0.0 |
| 2002 03 13 | 644 | 0.9+ | 0.0 | 2006 08 17 | 644 | 0.2+ | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.0 |
| 2002 03 13 | 644 | 0.3+ | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 693 | 0.1+ | 0.1− |
| 2002 03 20 | 699 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 26 | 693 | 0.1+ | 0.3+ |
| 2002 03 20 | 699 | 0.3− | 0.5− | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2002 03 20 | 699 | 0.6− | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 03 20 | 699 | 0.9− | 0.3+ | 2006 08 20 | 644 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2006 08 15 | 644 | 0.2+ | 0.1− | 2006 08 20 | 644 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.6+ | 0.4− |
| 2006 08 15 | 644 | 0.3+ | 0.5− | 2006 08 20 | 644 | 0.5− | 0.1+ | | | | |
| 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.1− | | | | |

### 2006 $PQ_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.65180 | | | (2000.0) | | |
| $n$ | 0.28429797 | $\omega$ | 170.79757 | | +0.46060007 | +0.88293421 |
| $a$ | 2.2906226 | $\Omega$ | 126.57492 | | −0.82140021 | +0.46283750 |
| $e$ | 0.1523988 | $i$ | 6.50392 | | −0.33637668 | +0.07879484 |
| $P$ | 3.47 | $H$ | 17.5 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 691 | 0.1− | 0.1+ | 2006 06 19 | G96 | 0.1− | 0.3− | 2006 08 18 | 644 | 0.0 | 0.3+ |
| 2003 10 29 | 691 | 0.0 | 0.0 | 2006 06 19 | G96 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.4+ |
| 2003 10 29 | 691 | 0.0 | 0.0 | 2006 06 19 | G96 | 0.3− | 0.6− | 2006 08 19 | 699 | 1.4+ | 0.5+ |
| 2005 02 09 | 691 | 0.1+ | 0.3+ | 2006 08 15 | 644 | 0.1+ | 0.4+ | 2006 08 19 | 699 | 0.9+ | 1.2+ |
| 2005 02 09 | 691 | 0.2+ | 0.6+ | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 08 19 | 699 | 1.1+ | 0.4− |
| 2005 02 09 | 691 | 0.2+ | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.6+ | 0.2− |
| 2005 03 11 | 695 | 0.1+ | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.6+ | 2006 08 28 | E12 | 0.4+ | 0.1− |
| 2005 03 11 | 695 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.7− | 0.1− | 2006 08 28 | E12 | 0.8− | 0.4+ |
| 2006 05 26 | G96 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.3− | 0.4+ | 2006 08 28 | E12 | 0.8− | 0.0 |
| 2006 05 26 | G96 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 08 28 | E12 | 0.0 | 0.3+ |
| 2006 05 26 | G96 | 0.2− | 0.1− | 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.2+ |
| 2006 05 26 | G96 | 0.4− | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.4+ | 2006 09 13 | 644 | 0.5− | 0.1+ |
| 2006 06 19 | G96 | 1.0− | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.1+ |

### 2006 $PU_{14}$ = 2005 $CR_{66}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.69447 | | | (2000.0) | | |
| $n$ | 0.26405508 | $\omega$ | 293.30352 | | −0.02458918 | +0.99911975 |
| $a$ | 2.4062442 | $\Omega$ | 335.21485 | | −0.88503937 | −0.03756518 |
| $e$ | 0.1532537 | $i$ | 4.65017 | | −0.46486631 | +0.01867017 |
| $P$ | 3.73 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 691 | 0.0 | 0.0 | 2005 02 14 | 691 | 0.2+ | 0.4+ | 2006 08 23 | 704 | 0.5− | 0.1− |
| 1995 09 02 | 691 | 0.2+ | 0.2− | 2005 02 14 | 691 | 0.3+ | 0.3+ | 2006 08 23 | 704 | 0.7− | 0.4+ |
| 1995 09 02 | 691 | 0.2+ | 0.4− | 2005 02 14 | 691 | 0.3+ | 0.2+ | 2006 08 23 | 704 | 0.0 | 0.7+ |
| 2003 11 21 | 644 | 0.3− | 0.2+ | 2005 03 04 | G96 | 0.4− | 0.1+ | 2006 08 23 | 704 | 0.2+ | 0.7+ |
| 2003 11 21 | 644 | 0.2+ | 0.3+ | 2005 03 04 | G96 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.4− | 0.0 |
| 2003 11 21 | 644 | 0.1+ | 0.3+ | 2005 03 04 | G96 | 0.4− | 0.2+ | 2006 08 28 | 699 | 0.7− | 0.6+ |
| 2003 12 01 | 691 | 0.1− | 0.4+ | 2005 03 04 | G96 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.1+ |
| 2003 12 01 | 691 | 0.0 | 0.2+ | 2005 03 08 | 704 | 1.5+ | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.2− |
| 2003 12 01 | 691 | 0.0 | 0.2+ | 2005 03 08 | 704 | 0.2+ | 1.0+ | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2003 12 19 | 691 | 0.2+ | 0.2− | 2005 03 08 | 704 | 0.5− | 0.5+ | 2006 08 28 | 699 | 1.1− | 0.6+ |
| 2003 12 19 | 691 | 0.3− | 0.1− | 2005 03 08 | 704 | 0.2− | 1.0+ | 2006 08 28 | 703 | 0.4− | 0.1− |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 08 15 | 644 | 0.1+ | 0.4+ | 2006 08 28 | 699 | 0.5− | 0.9+ |
| 2004 12 20 | G96 | 0.3− | 0.0 | 2006 08 15 | 644 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2004 12 20 | G96 | 0.2− | 0.1− | 2006 08 15 | 644 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 2004 12 20 | G96 | 0.1− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.3+ |
| 2004 12 20 | G96 | 0.3− | 0.0 | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.6+ |
| 2005 02 09 | 699 | 0.8− | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.8− |
| 2005 02 09 | 699 | 0.3+ | 0.7+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.0 |
| 2005 02 09 | 699 | 0.4+ | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | (1.6− | 0.3+) |
| 2005 02 09 | 704 | (1.4+ | 1.8+) | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.6− |
| 2005 02 09 | 699 | 0.6+ | 0.3− | 2006 08 19 | 699 | 0.6+ | 0.6+ | 2006 10 17 | G96 | 0.3− | 0.2− |
| 2005 02 09 | 704 | (1.6+ | 0.6+) | 2006 08 19 | 699 | 0.5+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 2005 02 09 | G96 | 0.2− | 0.3− | 2006 08 19 | 699 | 0.5− | 1.4+ | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2005 02 09 | G96 | 0.1− | 0.1− | 2006 08 19 | 699 | 0.3+ | 0.8+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2005 02 09 | 704 | 0.5+ | 0.4+ | 2006 08 20 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2005 02 09 | G96 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.1+ |
| 2005 02 09 | G96 | 0.1+ | 0.2− | 2006 08 20 | 644 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2005 02 09 | 704 | (2.2+ | 0.1+) | 2006 08 23 | 704 | 0.4+ | 0.1+ | | | | |

**2006 PL$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.61321 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21144645 | $\omega$ | 55.83158 | | +0.98798950 | | −0.14972285 |
| $a$ | 2.7904171 | $\Omega$ | 312.74692 | | +0.11903418 | | +0.89512065 |
| $e$ | 0.1117788 | $i$ | 2.98236 | | +0.09852725 | | +0.41993105 |
| $P$ | 4.66 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 691 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2004 02 14 | 691 | 0.2− | 0.5+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 1.0+ | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2004 02 14 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 1.1− | 0.9+ | 2006 08 15 | 644 | 0.5− | 0.5+ |
| 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.2+ | 1.3+ | 2006 08 28 | 703 | 1.3− | 0.1+ |
| 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 699 | (2.1− | 0.5+) | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.6− | | | | |
| 2006 06 20 | G96 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.4+ | 1.0+ | 2006 09 27 | G96 | 0.4− | 0.6− | | | | |
| 2006 06 20 | G96 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.8+ | 2006 09 27 | G96 | 0.0 | 0.4− | | | | |
| 2006 06 20 | G96 | 0.1− | 0.5− | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.1+ | | | | |
| 2006 06 20 | G96 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.3− | 0.1− | | | | |
| 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.3− | | | | |
| 2006 08 15 | 644 | 0.5− | 0.5+ | 2006 08 28 | 703 | 1.3− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2− | | | | |

**2006 PN$_{15}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.57250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22042527 | $\omega$ | 30.68655 | | +0.93441198 | | +0.35489403 |
| $a$ | 2.7141163 | $\Omega$ | 308.49536 | | −0.33418140 | | +0.84392296 |
| $e$ | 0.0490262 | $i$ | 2.22641 | | −0.12327626 | | +0.40229873 |
| $P$ | 4.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.2+ | 0.3+ | 2005 05 16 | G96 | 0.2− | 0.1+ | 2006 08 15 | 644 | 0.5− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.7− |
| 2000 02 12 | 645 | 0.2+ | 0.3+ | 2005 05 16 | G96 | 0.0 | 0.2+ | 2006 08 15 | 644 | 0.1− | 0.3+ | 2005 04 04 | G96 | 0.5+ | 0.3+ |
| 2002 10 10 | 644 | 0.2− | 0.0 | 2006 06 20 | G96 | 0.5+ | 0.1− | 2006 08 15 | 644 | 0.0 | 0.2+ | 2005 04 04 | G96 | 0.5− | 0.2− |
| 2002 10 10 | 644 | 0.3− | 0.1+ | 2006 06 20 | G96 | 0.5− | 0.6− | 2006 08 19 | 691 | 0.2+ | 0.0 | 2005 04 04 | G96 | 0.1− | 0.1+ |
| 2002 10 10 | 644 | 0.0 | 0.2+ | 2006 06 20 | G96 | 0.3+ | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2005 04 04 | G96 | 0.3+ | 0.1+ |
| 2002 10 31 | 644 | 0.2+ | 0.4+ | 2006 06 20 | G96 | 0.4+ | 0.4− | 2006 08 19 | 691 | 0.3− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 644 | 0.3− | 0.3+ | 2006 07 18 | G96 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.2− | 0.4+ | 2006 08 15 | 644 | 0.5− | 0.5+ |
| 2002 10 31 | 644 | 0.1+ | 0.2+ | 2006 07 18 | G96 | 0.5+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.1+ | | | | |
| 2005 05 16 | G96 | 0.1+ | 0.4+ | 2006 07 18 | G96 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ | | | | |
| 2005 05 16 | G96 | 0.3+ | 0.6+ | 2006 07 18 | G96 | 0.1− | 0.1− | | | | | | | | |

**2006 PX$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.27788 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25693836 | $\omega$ | 325.35127 | | +0.92426404 | | +0.38138409 |
| $a$ | 2.4504739 | $\Omega$ | 12.26320 | | −0.32992954 | | +0.82015408 |
| $e$ | 0.2013121 | $i$ | 4.53587 | | −0.19204813 | | +0.42648970 |
| $P$ | 3.84 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 08 31 | 704 | 0.3+ | 0.4+ | 2006 08 17 | 644 | 0.5− | 0.0 |
| 2002 07 06 | 644 | 0.1+ | 0.1− | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 08 31 | 704 | 0.2+ | 0.3− | 2006 08 17 | 644 | 0.2− | 0.2− |
| 2002 07 06 | 644 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.7− | 2006 08 17 | 644 | 0.4− | 0.3− |
| 2005 04 04 | G96 | 0.5+ | 0.3+ | 2006 08 20 | 568 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.6− | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.3− |
| 2005 04 04 | G96 | 0.5− | 0.2− | 2006 08 20 | 568 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 08 20 | 568 | 0.1+ | 0.1− | 2006 09 24 | 699 | (1.6− | 0.8−) | | | | |
| 2005 04 04 | G96 | 0.3+ | 0.1+ | 2006 08 23 | 704 | 0.1− | 0.2+ | 2006 09 24 | 699 | 0.2+ | 0.2− | | | | |
| 2006 08 15 | 644 | 0.0 | 0.0 | 2006 08 23 | 704 | 1.3+ | 0.1− | 2006 09 24 | 699 | 1.2− | 0.7+ | | | | |
| 2006 08 15 | 644 | 0.1− | 0.0 | 2006 08 23 | 704 | 0.9− | 1.0+ | 2006 09 24 | 699 | 1.0− | 0.1+ | | | | |
| 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 08 23 | 704 | 1.4+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.1+ | | | | |
| 2006 08 16 | 644 | 0.2− | 0.3− | 2006 08 23 | 704 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | | | |
| 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 24 | 644 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.1− | | | | |
| 2006 08 16 | 644 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.1− | | | | |
| 2006 08 17 | 644 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.3− | | | | |
| 2006 08 17 | 644 | 0.5− | 0.0 | 2006 08 28 | 699 | 0.3+ | 1.1+ | 2006 11 16 | G96 | 0.6+ | 0.3− | | | | |
| 2006 08 17 | 644 | 0.2− | 0.2− | 2006 08 28 | 699 | 1.1+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.9+ | | | | |
| 2006 08 17 | 644 | 0.4− | 0.3− | 2006 08 28 | 699 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.0 | | | | |
| 2006 08 17 | 644 | 0.2− | 0.3− | 2006 08 28 | 699 | 0.2+ | 0.5− | | | | | | | | |
| 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.1− | 0.6− | | | | | | | | |

**2006 PW$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.28581 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26489115 | $\omega$ | 158.09627 | | +0.91633691 | | +0.40040790 |
| $a$ | 2.4011783 | $\Omega$ | 178.29987 | | −0.36947714 | | +0.84596305 |
| $e$ | 0.2007916 | $i$ | 0.82752 | | −0.15431563 | | +0.35216478 |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.0 | 0.1+ | 2006 08 21 | 704 | 0.2− | 1.3− | 2006 09 17 | 704 | 0.5− | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.1+ |
| 1995 10 15 | 691 | 0.0 | 0.0 | 2006 08 21 | 704 | 0.9− | 0.4− | 2006 09 17 | 704 | 0.1− | 0.6+ | 2006 09 20 | 704 | 0.0 | 0.2+ |
| 1995 10 15 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 17 | 704 | 0.9− | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.4− |
| 2005 04 04 | G96 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.0 | 0.6− | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.6+ |
| 2005 04 04 | G96 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 09 26 | G96 | 1.0+ | 0.3− |
| 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.7− | 2006 09 20 | 704 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 08 29 | 704 | 0.4− | 1.0− | 2006 09 20 | 704 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.3− |
| 2006 08 15 | 644 | 0.3+ | 0.0 | 2006 08 29 | 704 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 1.0+ | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2006 08 15 | 644 | 0.3+ | 0.3− | 2006 08 29 | 704 | 0.2− | 1.0+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2006 08 18 | 691 | 0.4+ | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 20 | G96 | 0.7+ | 0.2− |
| 2006 08 18 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.2− | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.3− | | | | |
| 2006 08 21 | 704 | 1.2+ | 1.2− | 2006 09 17 | 704 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.7+ | 0.2− | | | | |
| 2006 08 21 | 704 | 0.9− | 0.0 | 2006 09 17 | 704 | 0.6− | 0.9+ | 2006 10 20 | G96 | 0.1+ | 0.3− | | | | |

**2006 PB$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.54866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28354536 | $\omega$ | 356.27914 | | +0.84735840 | | +0.53087292 |
| $a$ | 2.2946741 | $\Omega$ | 331.64520 | | −0.48651756 | | +0.76664962 |
| $e$ | 0.2419333 | $i$ | 1.51506 | | −0.21280132 | | +0.36114028 |
| $P$ | 3.48 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 699 | 0.2− | 1.2− | 2006 08 28 | 703 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 1999 08 07 | 699 | 1.1+ | 0.7− | 2006 08 28 | 703 | (0.1+ | 2.0−) | 2006 09 19 | 699 | 0.8− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 1999 08 07 | 699 | 0.7− | 0.4+ | 2006 08 28 | 703 | 0.6− | 0.9− | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 1999 08 08 | 699 | 1.0+ | 0.1− | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.5− | | | | |
| 1999 08 08 | 699 | 1.0+ | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.1− | | | | |
| 1999 08 08 | 699 | 1.5− | 0.9+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.4+ | | | | |
| 1999 08 22 | 703 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.1− | 0.7− | | | | |
| 1999 08 22 | 703 | 0.5+ | 0.4− | 2006 09 12 | 703 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.0 | 1.0+ | | | | |
| 1999 08 22 | 703 | 0.8+ | 0.4+ | 2006 09 12 | 703 | 0.4− | 0.6− | 2006 09 20 | 704 | 0.3− | 0.2− | | | | |
| 1999 08 22 | 703 | 1.0− | 0.7− | 2006 09 12 | 703 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.2+ | | | | |
| 2001 03 25 | 695 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.6− | 0.1+ | | | | |
| 2001 03 25 | 695 | 0.1+ | 0.6+ | 2006 09 13 | 644 | 0.0 | 0.2− | 2006 09 27 | 704 | 1.1+ | 0.2+ | | | | |
| 2006 08 15 | 644 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.2− | | | | |
| 2006 08 15 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 699 | 0.6+ | 0.0 | 2006 09 27 | 704 | (0.6+ | 2.0−) | | | | |
| 2006 08 15 | 644 | 0.5+ | 0.3+ | 2006 09 16 | 699 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 1.0+ | 1.3− | | | | |
| 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.5− | | | | |
| 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.4− | 2006 09 28 | G96 | 0.0 | 0.4− | | | | |
| 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.4+ | 1.2+ | 2006 09 28 | G96 | 0.0 | 0.3− | | | | |
| 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.4− | | | | |

**2006 PF$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.74987 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27140710 | $\omega$ | 142.39676 | | +0.58949571 | +0.80666373 | |
| $a$ | 2.3625912 | $\Omega$ | 163.58684 | | −0.77269101 | +0.57838237 | |
| $e$ | 0.1399746 | $i$ | 8.60756 | | −0.23546424 | +0.12152142 | |
| $P$ | 3.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.0 | 0.4− | 2006 08 27 | 699 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.2− |
| 1998 04 23 | 704 | 0.4− | 0.2− | 2006 08 27 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 1.1+ | 0.1+ |
| 1998 04 23 | 704 | 0.4+ | 0.3− | 2006 08 27 | 699 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 1.0+ | 0.2+ |
| 1998 04 23 | 704 | 1.7− | 0.5− | 2006 08 28 | 703 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.7+ | 0.5+ |
| 1999 10 04 | 703 | 0.2− | 0.9+ | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 1.0− |
| 1999 10 04 | 703 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.4+ | 0.4− |
| 1999 10 04 | 703 | 0.6+ | 0.2− | 2006 08 28 | 703 | 0.6− | 0.4+ | 2006 09 28 | 704 | 0.6− | 0.3+ |
| 1999 10 04 | 703 | 0.2+ | 1.0− | 2006 09 16 | 699 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.7− | 0.2+ |
| 2002 07 09 | 704 | 0.9+ | 0.5− | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 09 28 | 704 | 0.7+ | 0.4− |
| 2002 07 09 | 704 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.5− | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 2002 07 09 | 704 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.6+ |
| 2002 07 09 | 704 | (1.8+ | 0.2−) | 2006 09 17 | 704 | 0.6+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2005 03 11 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 0.2− | 0.6− | 2006 09 30 | 703 | 0.2− | 0.1+ |
| 2005 03 11 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2005 03 11 | 691 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2006 08 15 | 644 | 0.2− | 0.4− | 2006 09 17 | 704 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2006 08 15 | 644 | 0.1+ | 0.3− | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2006 08 15 | 644 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.8− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.5− | 0.0 | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2006 08 21 | 704 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.3− | 1.2+ | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2006 08 21 | 704 | 0.9− | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.5+ | | | | |
| 2006 08 21 | 704 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.3− | 0.7+ | | | | |

**2006 PN$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.68493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17805817 | $\omega$ | 141.07778 | | +0.58311043 | +0.81198198 | |
| $a$ | 3.1291624 | $\Omega$ | 164.53626 | | −0.76747583 | +0.56101976 | |
| $e$ | 0.1266000 | $i$ | 5.56054 | | −0.26638894 | +0.16106545 | |
| $P$ | 5.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 07 | 691 | 0.4− | 1.9+ | 2005 05 17 | G96 | 0.1+ | 0.5− | 2006 09 14 | 703 | (0.3+ | 1.7−) |
| 1994 06 07 | 691 | 0.0 | 0.2− | 2005 06 08 | 691 | 0.0 | 0.2− | 2006 09 14 | 703 | (1.7− | 0.1+) |
| 1994 06 07 | 691 | 0.3+ | 0.4− | 2005 06 08 | 691 | 0.5+ | 0.2− | 2006 09 14 | 703 | (0.0 | 1.8−) |
| 1995 09 17 | 809 | 1.3+ | 0.2− | 2005 06 08 | 691 | 0.1+ | 0.4− | 2006 09 14 | 703 | (0.1+ | 2.6−) |
| 2001 10 18 | 644 | 0.0 | 0.4− | 2006 08 15 | D35 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2001 10 18 | 644 | 0.5+ | 1.3+ | 2006 08 15 | D35 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2001 10 18 | 644 | 0.1− | 0.7+ | 2006 08 15 | D35 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2001 10 24 | 644 | 0.1− | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 10 24 | 644 | 0.4− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.3− |
| 2001 10 24 | 644 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.3+ |
| 2004 03 14 | 691 | 0.2− | 0.7+ | 2006 08 24 | 644 | 0.6− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2004 03 14 | 691 | 0.3+ | 0.1− | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.6− | 0.4− |
| 2005 05 17 | G96 | (1.1− | 3.1−) | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2005 05 17 | G96 | 0.2− | 0.3− | 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2005 05 17 | G96 | 0.5− | 0.5− | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |

**2006 PO$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.01946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23710545 | $\omega$ | 149.08067 | | +0.60649194 | +0.79319597 | |
| $a$ | 2.5852846 | $\Omega$ | 158.10562 | | −0.75623794 | +0.59678017 | |
| $e$ | 0.1943616 | $i$ | 8.45723 | | −0.24550295 | +0.12121710 | |
| $P$ | 4.16 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.2− | 0.2− | 2006 08 15 | D35 | 0.4+ | 0.4+ | 2006 08 25 | 704 | 0.2+ | 0.5+ |
| 2002 09 14 | 608 | 0.5+ | 0.0 | 2006 08 15 | D35 | 0.1+ | 0.3+ | 2006 08 25 | 704 | 0.3− | 1.1+ |
| 2002 09 14 | 608 | 0.0 | 0.6− | 2006 08 18 | 699 | 0.3+ | 0.3− | 2006 08 25 | 704 | 0.0 | 1.3+ |
| 2002 10 01 | 608 | 0.2− | 0.2+ | 2006 08 18 | 699 | 0.6+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1− |
| 2002 10 01 | 608 | 0.5+ | 0.3+ | 2006 08 18 | 699 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.8− |
| 2002 10 01 | 608 | 0.2+ | 0.0 | 2006 08 18 | 699 | (1.6+ | 0.1−) | 2006 08 28 | 703 | 0.3− | 0.5− |
| 2002 10 07 | 608 | 0.1− | 0.4− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.0 | 0.1− |
| 2002 10 07 | 608 | 0.4+ | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.9− | 0.4− |
| 2002 10 07 | 608 | 0.0 | 0.7− | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 2002 10 28 | 644 | 1.8− | 0.2− | 2006 08 20 | A50 | 0.2+ | 0.0 | 2006 09 01 | 152 | 0.6− | 0.3− |
| 2002 10 28 | 644 | 0.2+ | 0.4− | 2006 08 20 | A50 | 0.2− | 0.1+ | 2006 09 01 | 152 | 0.3− | 0.0 |
| 2002 10 28 | 644 | 0.0 | 0.0 | 2006 08 21 | 704 | 0.1+ | 0.1+ | 2006 09 01 | 152 | 0.2− | 0.0 |
| 2002 11 06 | 644 | 0.6− | 1.4+ | 2006 08 21 | 704 | 0.2− | 0.5+ | 2006 09 01 | 152 | 0.3− | 0.4+ |
| 2002 11 06 | 644 | 1.0+ | 0.9+ | 2006 08 21 | 704 | 0.1+ | 0.2+ | 2006 09 01 | 152 | 0.4+ | 0.3− |
| 2005 03 11 | 691 | 0.1+ | 0.1− | 2006 08 21 | 704 | 0.3− | 1.0+ | 2006 09 14 | 703 | 0.1+ | 1.1− |
| 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 08 21 | 704 | 0.7+ | 0.2− | 2006 09 14 | 703 | 0.8− | 0.3+ |
| 2005 03 11 | 691 | 0.3− | 0.1− | 2006 08 25 | 704 | 0.2+ | 0.5− | 2006 09 14 | 703 | 0.4+ | 1.1− |
| 2006 08 15 | D35 | 0.2+ | 0.2+ | 2006 08 25 | 704 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.8− |

**2006 PZ$_{17}$ = 1992 QY$_2$ = 1999 RB$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.51598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28009133 | $\omega$ | 86.15080 | | +0.81773691 | +0.57519721 | |
| $a$ | 2.3135005 | $\Omega$ | 238.73451 | | −0.53750054 | +0.74984629 | |
| $e$ | 0.2575337 | $i$ | 1.42920 | | −0.20591144 | +0.32692309 | |
| $P$ | 3.52 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 08 25 | 261 | 0.9− | 1.0+ | 2006 08 15 | 644 | 0.3− | 0.6− | 2006 08 28 | 699 | 0.3− | 0.3+ |
| 1992 08 25 | 261 | 0.3− | 0.9+ | 2006 08 15 | 644 | 0.1+ | 0.6− | 2006 08 30 | 704 | 0.2+ | 0.8+ |
| 1992 08 27 | 261 | (3.7− | 0.1+) | 2006 08 15 | 644 | 0.2+ | 0.7− | 2006 08 30 | 704 | 0.2− | 0.5+ |
| 1992 08 27 | 261 | 0.1− | 1.1+ | 2006 08 21 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 1.0+ | 0.3+ |
| 1999 09 07 | 704 | 0.3+ | 1.1− | 2006 08 21 | 704 | 0.1+ | 0.5− | 2006 08 30 | 704 | 0.3+ | 0.4+ |
| 1999 09 07 | 704 | 0.3+ | 0.3− | 2006 08 21 | 704 | 1.1+ | 0.0 | 2006 08 30 | 704 | 0.2− | 0.8+ |
| 1999 09 07 | 704 | 0.2+ | 0.9+ | 2006 08 21 | 704 | 0.4+ | 0.6+ | 2006 08 30 | 704 | 0.2− | 0.9+ |
| 1999 09 07 | 704 | 0.7+ | 0.2+ | 2006 08 21 | 644 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.1− | 0.1− |
| 1999 09 14 | 704 | 0.3+ | 0.4− | 2006 08 21 | 644 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.8− | 0.9+ |
| 1999 09 14 | 704 | 0.3+ | 0.5− | 2006 08 21 | 644 | 0.2− | 0.3− | 2006 08 30 | 704 | 1.0+ | 1.0− |
| 1999 09 14 | 704 | 1.2+ | 0.6− | 2006 08 28 | 703 | 0.6− | 0.1− | 2006 09 01 | 704 | 0.1− | 0.2+ |
| 1999 09 14 | 704 | 1.0− | 1.1− | 2006 08 28 | 703 | 1.1− | 0.3− | 2006 09 01 | 704 | 0.6+ | 0.5+ |
| 1999 09 14 | 704 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.8− | 0.3− | 2006 09 01 | 704 | 0.7+ | 0.1+ |
| 1999 09 14 | 703 | (3.5− | 1.9+) | 2006 08 28 | 703 | 0.7− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 1999 09 14 | 703 | 0.1− | 0.7+ | 2006 08 28 | 699 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.8− |
| 1999 09 14 | 703 | 0.1+ | 0.5+ | 2006 08 28 | 699 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.3− |
| 1999 09 14 | 703 | 1.0− | 0.7− | 2006 08 28 | 699 | 0.8− | 0.4− | 2006 09 14 | 703 | 0.1− | 0.7− |

**2006 PK$_{18}$ = 2005 GT$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.30087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27181448 | $\omega$ | 332.74317 | | +0.71207562 | +0.70209068 | |
| $a$ | 2.3602300 | $\Omega$ | 342.65981 | | −0.64162148 | +0.64834067 | |
| $e$ | 0.1939688 | $i$ | 0.79228 | | −0.28507925 | +0.29448779 | |
| $P$ | 3.63 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 644 | 0.0 | 0.1− | 2005 04 12 | 695 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2002 05 09 | 644 | 0.3+ | 0.2+ | 2005 04 12 | 695 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2002 05 09 | 644 | 0.1+ | 0.2+ | 2005 04 13 | 695 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2002 05 19 | 291 | 0.2+ | 0.0 | 2006 08 13 | 644 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.4− | 0.2+ |
| 2002 05 19 | 291 | 0.1+ | 0.3+ | 2006 08 13 | 644 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2002 05 19 | 291 | 0.1− | 0.5+ | 2006 08 13 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.4+ |
| 2003 12 19 | 691 | 0.1− | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.6+ | 2006 11 18 | G96 | 0.8− | 0.2− |
| 2003 12 19 | 691 | 0.1− | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.3+ | | | | |

**2006 PA$_{19}$ = 2004 CQ$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.52241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17746361 | $\omega$ | 159.99777 | | +0.54123924 | | +0.83155560 |
| $a$ | 3.1361477 | $\Omega$ | 142.46962 | | −0.79667288 | | +0.55459668 |
| $e$ | 0.0754244 | $i$ | 11.82172 | | −0.26902119 | | +0.03062354 |
| $P$ | 5.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 02 | 691 | 1.0+ | 1.4+ | 2004 02 23 | 704 | 1.3+ | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.1− |
| 1998 02 02 | 691 | 2.3− | 2.9− | 2004 02 23 | 704 | 0.4+ | 0.6− | 2006 08 20 | 644 | 0.3− | 0.1+ |
| 1998 02 02 | 691 | 1.2+ | 1.6+ | 2004 02 23 | 704 | 0.7+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2004 02 12 | 691 | 0.4− | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.7+ | 0.1+ |
| 2004 02 12 | 691 | 0.3− | 0.1+ | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2004 02 12 | 691 | 0.2− | 0.0 | 2006 08 13 | 644 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2004 02 23 | 704 | 1.1+ | 0.0 | 2006 08 20 | 644 | 0.3+ | 0.1+ | | | | |

**2006 PQ$_{19}$ = 2005 EN$_{122}$ = 2005 EC$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.99449 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25483885 | $\omega$ | 329.30019 | | −0.18283462 | | +0.98302757 |
| $a$ | 2.4639145 | $\Omega$ | 290.16128 | | −0.89871649 | | −0.17334482 |
| $e$ | 0.1574477 | $i$ | 0.92224 | | −0.39859776 | | −0.06006964 |
| $P$ | 3.87 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 23 | 691 | 0.2+ | 0.3+ | 2005 03 11 | G96 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.1+ |
| 2001 02 23 | 691 | 0.3+ | 0.1+ | 2005 03 11 | G96 | 0.5− | 0.1− | 2006 08 20 | 644 | 0.1+ | 0.1+ |
| 2001 02 23 | 691 | 0.2− | 0.4+ | 2005 04 09 | G96 | 0.1+ | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.1+ |
| 2002 07 22 | 644 | 0.2+ | 0.1− | 2005 04 09 | G96 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.1+ |
| 2002 07 22 | 644 | 0.1+ | 0.3+ | 2005 04 09 | G96 | (1.5− | 2.2+) | 2006 08 28 | 691 | 0.1+ | 0.5+ |
| 2002 07 22 | 644 | 0.3− | 0.2+ | 2005 04 09 | G96 | (1.4− | 1.9+) | 2006 08 28 | 691 | 0.2+ | 0.3+ |
| 2002 08 07 | 644 | 0.1− | 0.3+ | 2006 06 20 | G96 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2002 08 07 | 644 | 0.2− | 0.4+ | 2006 06 20 | G96 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2002 08 07 | 644 | 0.1+ | 0.4− | 2006 06 20 | G96 | 0.6− | 0.2− | 2006 09 26 | G96 | 0.9− | 0.4− |
| 2005 03 08 | G96 | 0.2+ | 0.1+ | 2006 06 20 | G96 | 0.6+ | 0.9− | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2005 03 08 | G96 | 0.3+ | 0.0 | 2006 08 13 | 644 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 08 13 | 644 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.6− | 0.2+ |
| 2005 03 08 | G96 | 0.3− | 0.1− | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.7− |
| 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2005 03 11 | G96 | 0.4+ | 0.4− | 2006 08 18 | 644 | 0.0 | 0.0 | | | | |

**2006 PR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.73861 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18930473 | $\omega$ | 37.57640 | | +0.97012859 | | −0.13143767 |
| $a$ | 3.0039664 | $\Omega$ | 328.10521 | | −0.03957598 | | +0.74349348 |
| $e$ | 0.2370865 | $i$ | 22.70010 | | +0.23934130 | | +0.65569931 |
| $P$ | 5.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 704 | (0.4+ | 1.8+) | 2001 09 09 | 704 | 0.7− | 0.9− | 2006 08 29 | 704 | 0.4+ | 0.2− |
| 2001 08 22 | 704 | 0.0 | 0.2+ | 2006 08 13 | 644 | 0.3− | 0.2− | 2006 08 29 | 704 | 0.3− | 0.2− |
| 2001 08 22 | 704 | 0.0 | 0.1− | 2006 08 13 | 644 | 0.2− | 0.0 | 2006 08 29 | 704 | 1.0+ | 1.0+ |
| 2001 08 22 | 704 | 0.0 | 0.9+ | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 09 12 | 699 | 0.5− | 1.0+ |
| 2001 08 22 | 704 | 0.2+ | 0.7+ | 2006 08 19 | 699 | 0.2+ | 0.3+ | 2006 09 12 | 699 | 0.4− | 1.1− |
| 2001 08 26 | 699 | 0.1+ | 1.1− | 2006 08 19 | 699 | 0.0 | 0.6+ | 2006 09 12 | 699 | 0.5− | 0.4+ |
| 2001 08 26 | 699 | 0.6+ | 0.5− | 2006 08 19 | 699 | (2.1− | 0.7+) | 2006 09 12 | 699 | (0.7− | 1.9+) |
| 2001 08 26 | 699 | 0.1− | 0.7+ | 2006 08 19 | 699 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.1− |
| 2001 08 26 | 699 | 0.9− | 0.8− | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.7− | 0.8− |
| 2001 09 09 | 704 | 0.4− | 0.4− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 1.1+ | 0.5+ |
| 2001 09 09 | 704 | 0.1− | 0.8+ | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.2− | 0.5+ |
| 2001 09 09 | 704 | 1.2+ | 0.5+ | 2006 08 29 | 704 | 0.7− | 0.3− | | | | |

**2006 PT$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.54264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23210128 | $\omega$ | 149.92168 | | +0.40221233 | | +0.91353518 |
| $a$ | 2.6223120 | $\Omega$ | 143.69721 | | −0.85909876 | | +0.39948662 |
| $e$ | 0.0833733 | $i$ | 5.87995 | | −0.31650366 | | +0.07657621 |
| $P$ | 4.25 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.4+ | 1.0+ | 2005 04 04 | 703 | 0.6+ | 1.5− | 2006 08 13 | 644 | 0.5− | 0.1+ |
| 2002 09 05 | 704 | 0.6+ | 0.6+ | 2005 04 04 | 703 | 0.2+ | 0.7+ | 2006 08 13 | 644 | 0.1− | 0.0 |
| 2002 09 05 | 704 | 0.1+ | 0.8+ | 2005 04 04 | 703 | 0.1− | 0.3− | 2006 08 19 | 699 | 0.1+ | 0.4− |
| 2002 09 13 | 608 | 0.1− | 0.6− | 2005 04 13 | 704 | 0.7− | 1.1− | 2006 08 19 | 699 | 0.5+ | 0.3+ |
| 2002 09 13 | 608 | 0.6− | 0.8− | 2005 04 13 | 704 | 0.5+ | 0.9− | 2006 08 19 | 699 | 0.0 | 0.2+ |
| 2002 09 13 | 608 | 0.7− | 0.1+ | 2005 04 13 | 704 | 0.5+ | 1.1+ | 2006 08 19 | 699 | 0.1+ | 0.1+ |
| 2002 09 29 | 608 | 0.1+ | 0.7− | 2005 04 14 | 704 | 1.4− | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 2002 09 29 | 608 | 0.1+ | 0.0 | 2005 04 14 | 704 | 0.3− | 0.9+ | 2006 08 27 | 691 | 0.8− | 0.3− |
| 2002 09 29 | 608 | 0.0 | 0.4− | 2005 04 14 | 704 | 0.5+ | 0.1+ | 2006 08 27 | 691 | 0.8+ | 0.2+ |
| 2003 12 22 | 704 | 0.4− | 0.5− | 2006 07 18 | G96 | 0.3− | 0.4− | 2006 08 29 | 704 | 0.7+ | 1.1+ |
| 2003 12 22 | 704 | 0.6− | 0.4+ | 2006 07 18 | G96 | 0.3− | 0.4− | 2006 08 29 | 704 | 0.7+ | 0.3− |
| 2003 12 22 | 704 | 0.6+ | 0.4− | 2006 07 18 | G96 | 0.5− | 0.5− | 2006 08 29 | 704 | 0.1+ | 0.0 |
| 2003 12 22 | 704 | 0.2+ | 0.7− | 2006 07 18 | G96 | 0.4− | 0.6− | | | | |
| 2005 04 04 | 703 | 0.1− | 0.4− | 2006 08 13 | 644 | 0.5− | 0.3− | | | | |

**2006 PX$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.28851 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22375619 | $\omega$ | 40.41188 | | +0.99708136 | | +0.04877374 |
| $a$ | 2.6871135 | $\Omega$ | 316.68245 | | −0.07017527 | | +0.88850607 |
| $e$ | 0.2638407 | $i$ | 4.91141 | | +0.03006971 | | +0.45626537 |
| $P$ | 4.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.9− | 0.3− | 2006 08 21 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 704 | 1.9− | 0.1− |
| 2002 11 24 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | 1.3+ | 0.2− |
| 2002 11 24 | 644 | 0.5+ | 0.5− | 2006 08 29 | 704 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.2− | 0.5− |
| 2002 11 24 | 644 | 0.3+ | 0.1+ | 2006 08 29 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 699 | 0.9− | 1.0+ |
| 2002 11 24 | 644 | 0.2− | 0.9− | 2006 08 29 | 704 | 0.3− | 0.1− | 2006 09 24 | 699 | 0.5+ | 0.8− |
| 2002 11 24 | 644 | 0.7+ | 0.1+ | 2006 08 30 | 704 | 0.3− | 0.5+ | 2006 09 24 | 699 | 0.4+ | 0.1− |
| 2002 12 06 | 704 | 0.0 | 0.5+ | 2006 08 30 | 704 | 0.3− | 0.5+ | 2006 09 24 | 699 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 0.5+ | 0.2− | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 09 24 | 699 | 0.2− | 1.0− |
| 2002 12 06 | 704 | 0.5− | 0.0 | 2006 08 30 | 704 | 0.6− | 0.3− | 2006 09 25 | 699 | 0.9− | 0.2+ |
| 2002 12 06 | 704 | 0.5− | 0.8+ | 2006 09 12 | 699 | 0.5− | 0.8+ | 2006 09 25 | 704 | 0.5+ | 0.3− |
| 2006 08 13 | 644 | 0.2− | 0.7− | 2006 09 12 | 699 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.5+ | 1.1+ |
| 2006 08 13 | 644 | 0.2− | 0.3− | 2006 09 12 | 699 | 1.3+ | 0.1− | 2006 09 25 | 704 | 0.3− | 0.4− |
| 2006 08 13 | 644 | 0.1− | 0.5− | 2006 09 12 | 699 | 0.2+ | 1.2− | 2006 09 25 | 704 | 0.6− | 0.8+ |
| 2006 08 18 | 699 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.2− | 0.0 |
| 2006 08 18 | 699 | 0.1+ | 0.0 | 2006 09 14 | 703 | (0.9− | 2.5−) | 2006 09 25 | 704 | 0.2+ | 0.4+ |
| 2006 08 18 | 699 | 0.9+ | 0.2− | 2006 09 14 | 703 | (0.3+ | 2.1−) | 2006 09 25 | 699 | 1.6+ | 0.2+ |
| 2006 08 18 | 699 | 0.2− | 0.2+ | 2006 09 14 | 703 | (0.3+ | 2.0−) | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2006 08 21 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 704 | 1.3− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2006 08 21 | 704 | 0.9+ | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2006 08 21 | 704 | 0.1+ | 0.2− | 2006 09 18 | 704 | (2.5− | 0.3+) | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2006 08 21 | 704 | 0.0 | 0.6+ | 2006 09 18 | 699 | 0.6+ | 0.0 | | | | |

**2006 PN$_{20}$ = 1998 QG$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.21719 | | (2000.0) | | | |
| $n$ | 0.23968796 | $\omega$ | 5.99650 | | +0.72557560 | +0.66516309 |
| $a$ | 2.5666811 | $\Omega$ | 310.70144 | | −0.64063071 | +0.55935287 |
| $e$ | 0.0928027 | $i$ | 13.45084 | | −0.25126151 | +0.49465385 |
| $P$ | 4.11 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 327 | 0.3+ | 0.4+ | 2002 07 22 | 644 | 0.3+ | 0.4+ | 2006 08 15 | 644 | 0.2− | 0.0 |
| 1998 08 26 | 327 | 0.3− | 0.2+ | 2002 07 22 | 644 | 0.2+ | 0.1+ | 2006 08 15 | 644 | 0.3− | 0.0 |
| 1998 08 26 | 327 | 0.3+ | 0.0 | 2002 07 22 | 644 | 0.6+ | 0.3+ | 2006 08 15 | 644 | 0.0 | 0.1− |
| 1998 08 27 | 327 | 0.3− | 0.1− | 2002 08 17 | 644 | 0.2+ | 0.5− | 2006 08 15 | 644 | 0.2− | 0.2+ |
| 1998 08 27 | 327 | 0.3− | 0.1+ | 2002 08 17 | 644 | 0.0 | 0.5− | 2006 08 15 | 644 | 0.1− | 0.1− |
| 1998 08 27 | 327 | 0.2− | 0.0 | 2002 08 17 | 644 | 0.2+ | 0.3− | 2006 08 15 | 644 | 0.2− | 0.2+ |
| 2002 07 22 | 644 | 0.1− | 0.3− | 2006 08 14 | 644 | 0.5+ | 0.3+ | 2006 08 20 | 644 | 0.2− | 0.0 |
| 2002 07 22 | 644 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.1+ | 0.0 |
| 2002 07 22 | 644 | 0.4− | 0.3− | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.1+ | 0.1− |

**2006 PT$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.51088 | | (2000.0) | | | |
| $n$ | 0.22768878 | $\omega$ | 42.89009 | | +0.62383741 | +0.78059846 |
| $a$ | 2.6560829 | $\Omega$ | 265.74419 | | −0.72714299 | +0.56157287 |
| $e$ | 0.0839028 | $i$ | 2.22050 | | −0.28651346 | +0.27441202 |
| $P$ | 4.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 16 | 691 | 0.3+ | 0.2+ | 2002 10 03 | 704 | 0.1+ | 0.8− | 2006 07 25 | 644 | 0.4+ | 0.2− |
| 1998 10 16 | 691 | 0.3− | 0.2+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 07 25 | 644 | 0.1+ | 0.2− |
| 1998 10 16 | 691 | 0.2+ | 0.1+ | 2002 10 05 | 645 | 0.0 | 0.1− | 2006 07 25 | 644 | 0.1+ | 0.1+ |
| 2000 01 06 | 691 | 0.2+ | 0.1− | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 07 25 | 644 | 0.0 | 0.2− |
| 2000 01 06 | 691 | 0.2− | 0.5− | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.0 | 0.1− |
| 2000 01 06 | 691 | 0.3− | 0.4− | 2005 05 14 | G96 | 0.2+ | 0.4+ | 2006 08 14 | 644 | 0.3− | 0.1− |
| 2002 09 11 | 644 | 0.5− | 0.4+ | 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.3− | 0.1+ |
| 2002 09 11 | 644 | 0.6− | 0.4+ | 2005 05 14 | G96 | 0.6− | 0.4+ | 2006 08 15 | 644 | 0.4+ | 0.4− |
| 2002 09 11 | 644 | 0.5− | 0.4+ | 2005 05 14 | G96 | 0.1− | 0.3+ | 2006 08 15 | 644 | 0.2+ | 0.2− |
| 2002 09 17 | 644 | 0.5− | 0.1+ | 2006 05 24 | G96 | 0.1+ | 0.3− | 2006 08 15 | 644 | 0.3+ | 0.1− |
| 2002 09 17 | 644 | 0.4− | 0.5+ | 2006 05 24 | G96 | 0.1+ | 0.1− | 2006 08 20 | 644 | 0.0 | 0.2− |
| 2002 09 17 | 644 | 0.4− | 0.6+ | 2006 05 24 | G96 | 0.2+ | 0.3− | 2006 08 20 | 644 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.6− | 0.5− | 2006 05 24 | G96 | 0.3+ | 0.4− | 2006 08 20 | 644 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.6− | 0.5− | 2006 07 25 | 644 | 0.8+ | 0.1+ | | | | |
| 2002 10 03 | 704 | 0.4+ | 0.6− | 2006 07 25 | 644 | 0.1+ | 0.1− | | | | |

**2006 PA$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.55308 | | (2000.0) | | | |
| $n$ | 0.27635522 | $\omega$ | 193.72191 | | +0.97445421 | +0.21991934 |
| $a$ | 2.3343050 | $\Omega$ | 153.44105 | | −0.19524597 | +0.92976692 |
| $e$ | 0.2499174 | $i$ | 5.84666 | | −0.11098648 | +0.29524389 |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 0.8− | 0.7+ | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 08 26 | 699 | 0.9+ | 1.4− |
| 1999 09 04 | 699 | 0.7+ | 0.7+ | 2006 08 16 | 644 | 0.3+ | 0.8+ | 2006 08 28 | 703 | 0.4− | 0.3− |
| 1999 09 04 | 699 | 0.3+ | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.6− | 0.5+ |
| 1999 09 14 | 704 | 0.3− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.2− | 2006 08 28 | 703 | 1.0+ | 0.0 |
| 1999 09 14 | 704 | 0.4+ | 1.1− | 2006 08 18 | 644 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.2+ |
| 1999 09 14 | 704 | 0.1+ | 0.1− | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.7− | 0.2+ |
| 1999 09 14 | 704 | 0.3− | 0.7+ | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 08 29 | 704 | 0.4− | 0.0 |
| 1999 09 14 | 704 | 0.1− | 0.3− | 2006 08 21 | 644 | 0.5+ | 0.2+ | 2006 08 29 | 704 | 0.5− | 0.2+ |
| 2006 08 14 | 644 | 0.1− | 0.1− | 2006 08 21 | 644 | 0.4+ | 0.5− | 2006 08 29 | 704 | 0.2− | 0.1+ |
| 2006 08 14 | 644 | 0.2− | 0.2− | 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 08 29 | 704 | 0.4− | 0.2− |
| 2006 08 14 | 644 | 0.2− | 0.3− | 2006 08 26 | 699 | 0.5+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.2− |
| 2006 08 15 | 644 | 0.1+ | 0.2− | 2006 08 26 | 699 | 0.6+ | 0.9+ | 2006 09 13 | 644 | 0.1+ | 0.3− |
| 2006 08 15 | 644 | 0.1− | 0.0 | 2006 08 26 | 699 | 0.1− | 0.6+ | 2006 09 13 | 644 | 0.2+ | 0.3− |

**2006 PK$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.20937 | | (2000.0) | | | |
| $n$ | 0.27744444 | $\omega$ | 275.10938 | | +0.88169305 | −0.46837401 |
| $a$ | 2.3281915 | $\Omega$ | 112.82959 | | +0.45367178 | +0.80841860 |
| $e$ | 0.2474203 | $i$ | 3.54251 | | +0.12961206 | +0.35649004 |
| $P$ | 3.55 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 1.2+ | 0.4− | 2003 12 19 | 704 | 1.0− | 0.8− | 2006 08 16 | 644 | 0.4− | 0.3+ |
| 1999 09 07 | 704 | 0.3− | 0.1+ | 2003 12 19 | 704 | 1.3− | 0.5− | 2006 08 16 | 644 | 0.5− | 0.4+ |
| 1999 09 07 | 704 | 0.4− | 0.8− | 2003 12 19 | 704 | 0.5− | 0.0 | 2006 08 16 | 644 | 0.0 | 0.3+ |
| 1999 09 07 | 704 | 0.7+ | 1.2− | 2003 12 27 | 691 | 0.2+ | 0.4+ | 2006 08 20 | 644 | 0.2− | 0.4+ |
| 1999 09 13 | 704 | 0.7+ | 0.4− | 2003 12 27 | 691 | 0.3+ | 0.3+ | 2006 08 20 | 644 | 0.2− | 0.4+ |
| 1999 09 13 | 704 | 0.7+ | 0.1+ | 2003 12 27 | 691 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.4+ |
| 1999 09 13 | 704 | 0.2− | 0.4− | 2006 08 15 | 644 | 0.2− | 0.6+ | 2006 08 23 | 644 | 0.0 | 0.0 |
| 1999 09 13 | 704 | 1.0− | 0.8− | 2006 08 15 | 644 | 0.6− | 0.5+ | 2006 08 23 | 644 | 0.2+ | 0.2+ |
| 1999 10 16 | 704 | 0.3+ | 1.0+ | 2006 08 15 | 644 | 0.3− | 0.6+ | 2006 08 23 | 644 | 0.0 | 0.2+ |
| 1999 10 16 | 704 | 0.7− | 0.3− | 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 09 14 | 644 | 0.4− | 0.1− |
| 1999 10 16 | 704 | 0.2− | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.4− | 0.2+ |
| 1999 10 16 | 704 | 0.5+ | 0.6− | 2006 08 16 | 644 | 0.5+ | 0.6+ | 2006 09 14 | 644 | 0.9+ | 0.0 |

**2006 PM$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.00873 | | (2000.0) | | | |
| $n$ | 0.28941116 | $\omega$ | 190.61513 | | +0.81297460 | +0.57787127 |
| $a$ | 2.2635627 | $\Omega$ | 133.83721 | | −0.52670400 | +0.78225085 |
| $e$ | 0.1549601 | $i$ | 5.70264 | | −0.24830464 | +0.23269810 |
| $P$ | 3.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 06 | 691 | 0.2+ | 0.2− | 2006 07 18 | G96 | 0.0 | 0.4− | 2006 08 20 | 644 | 0.3+ | 0.0 |
| 1995 04 06 | 691 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.0 | 2006 08 23 | 704 | 0.5+ | 0.5− |
| 1995 04 06 | 691 | 0.0 | 0.4+ | 2006 08 15 | 644 | 0.2+ | 0.3+ | 2006 08 23 | 704 | 0.3+ | 0.5− |
| 2003 11 29 | 691 | 0.1+ | 0.0 | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 08 23 | 704 | 0.5− | 0.0 |
| 2003 11 29 | 691 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.4+ | 0.1− | 2006 08 23 | 704 | 0.7− | 0.3+ |
| 2003 11 29 | 691 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 08 23 | 704 | 0.9− | 0.0 |
| 2005 03 11 | G96 | 0.9+ | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 699 | (0.4+ | 1.6+) |
| 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 08 19 | 699 | 0.1+ | 0.7+ | 2006 08 28 | 699 | 0.4+ | 0.9+ |
| 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 08 19 | 699 | 0.6− | 0.3− | 2006 08 28 | 699 | 0.4− | 0.6− |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 08 19 | 699 | 0.1− | 0.8+ | 2006 08 28 | 699 | 0.8− | 0.1− |
| 2006 07 18 | G96 | 0.3− | 0.5− | 2006 08 19 | 699 | 0.1− | 0.8+ | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2006 07 18 | G96 | 0.3+ | 0.2− | 2006 08 20 | 644 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.3+ | 0.1+ |
| 2006 07 18 | G96 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.4+ | 0.0 | 2006 09 13 | 644 | 0.5+ | 0.1− |

**2006 PO$_{21}$ = 1994 PG$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.77721 | | (2000.0) | | | |
| $n$ | 0.16359096 | $\omega$ | 3.31851 | | +0.81897315 | +0.53236954 |
| $a$ | 3.3110305 | $\Omega$ | 321.88587 | | −0.53414723 | +0.57087236 |
| $e$ | 0.1264863 | $i$ | 20.30234 | | −0.20968959 | +0.62504994 |
| $P$ | 6.02 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 10 | 809 | 1.0− | 0.1+ | 2006 07 25 | 644 | 0.2− | 0.3− | 2006 08 19 | 699 | 0.3+ | 0.3+ |
| 1994 08 10 | 809 | 0.2− | 0.0 | 2006 08 15 | 644 | 0.3+ | 0.0 | 2006 08 19 | 699 | 0.5− | 0.5+ |
| 1994 08 10 | 809 | 0.3− | 0.3− | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.8+ | 0.6+ |
| 1994 08 11 | 809 | 0.9+ | 0.4− | 2006 08 15 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.2+ |
| 1994 08 11 | 809 | 0.5+ | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.1− |
| 1994 08 11 | 809 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.5+ |
| 2000 08 29 | 704 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.3+ | 1.7+ |
| 2000 08 29 | 704 | 0.3+ | 0.7− | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 1.1− | 1.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.3− | 0.1− | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.4− | 1.8− |
| 2006 07 25 | 644 | 0.5+ | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | (1.4+ | 2.8−) |
| 2006 07 25 | 644 | 0.0 | 0.1− | 2006 08 19 | 699 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.5− |

**2006 PE$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.24759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21832338 | $\omega$ | 169.21347 | | +0.93224358 | +0.36069580 | |
| $a$ | 2.7315084 | $\Omega$ | 169.50675 | | −0.34258195 | +0.90535464 | |
| $e$ | 0.1385944 | $i$ | 9.04898 | | −0.11644535 | +0.22412387 | |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | 691 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 09 17 | 704 | 0.1+ | 0.6+ |
| 2005 04 07 | 691 | 0.3− | 0.7+ | 2006 08 28 | 699 | 0.3+ | 0.7+ | 2006 09 17 | 941 | 0.2− | 0.6+ |
| 2005 04 07 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 09 17 | 941 | 0.2− | 0.5+ |
| 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.0 | 0.3− | 2006 09 17 | 941 | 0.4− | 0.3+ |
| 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 1.0− |
| 2005 04 15 | 691 | 0.1− | 0.3− | 2006 08 28 | 699 | 0.6− | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.1− |
| 2006 08 15 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.3+ |
| 2006 08 15 | 644 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.7− |
| 2006 08 15 | 644 | 0.1+ | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.1+ |
| 2006 08 18 | 699 | 0.5− | 0.4− | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.7− |
| 2006 08 18 | 699 | 1.2+ | 0.9+ | 2006 08 30 | 704 | 0.6− | 0.2− | 2006 09 20 | 704 | 0.9− | 0.4+ |
| 2006 08 18 | 699 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.6− | 0.3− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2006 08 18 | 699 | 0.4+ | 1.0+ | 2006 08 30 | 704 | 1.1− | 1.0+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 08 30 | 704 | (0.8− | 1.6+) | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2006 08 24 | 704 | 0.3+ | 0.3− | 2006 09 14 | 703 | 0.7− | 0.4− | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2006 08 24 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.7− | 2006 10 09 | 644 | 0.5+ | 0.2+ |
| 2006 08 24 | 704 | 0.3+ | 0.8− | 2006 09 14 | 703 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2006 08 24 | 704 | 0.2− | 0.7− | 2006 09 17 | 704 | 0.9+ | 1.0+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2006 08 24 | 704 | 0.1− | 0.6− | 2006 09 17 | 704 | 0.0 | 1.1+ | 2006 10 28 | G96 | 0.5− | 0.0 |
| 2006 08 28 | 703 | 1.0− | 0.2− | 2006 09 17 | 704 | 0.8+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.0 |

**2006 PP$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.04634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25949024 | $\omega$ | 210.24586 | | +0.94280574 | −0.33261069 | |
| $a$ | 2.4343818 | $\Omega$ | 169.11350 | | +0.32444948 | +0.90044035 | |
| $e$ | 0.1249476 | $i$ | 6.71340 | | +0.07648450 | +0.28031644 | |
| $P$ | 3.80 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 1.2+ | 0.1− | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.4− | 0.6+ |
| 1999 11 05 | 704 | 0.1+ | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.4+ | 2006 08 30 | 704 | 0.7− | 0.2+ |
| 1999 11 05 | 704 | 0.2− | 1.5+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.7− | 0.3− |
| 1999 11 05 | 704 | 0.6− | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.5+ |
| 1999 11 16 | 703 | 0.4+ | 0.4− | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.4+ |
| 1999 11 16 | 703 | 0.3− | 1.1− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.6+ |
| 1999 11 16 | 703 | 0.4− | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 09 16 | 699 | 1.0+ | 0.6+ |
| 1999 11 16 | 703 | 0.5− | 0.9+ | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 1.2− | 1.0+ |
| 2001 03 20 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.0 |
| 2001 03 20 | 691 | 0.0 | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.3+ |
| 2001 03 20 | 691 | 0.2+ | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.5+ | 2006 09 18 | 699 | 1.3− | 1.3− |
| 2003 12 20 | 704 | 0.2+ | 1.2+ | 2006 08 21 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.3− |
| 2003 12 20 | 704 | 0.1− | 1.0+ | 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 09 18 | 699 | 0.8+ | 0.4− |
| 2003 12 20 | 704 | 0.1+ | 0.9+ | 2006 08 28 | 699 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.4+ | 0.3− |
| 2003 12 20 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 699 | 0.7+ | 0.6+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.9+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.0 |
| 2005 05 04 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2005 05 04 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.8+ | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2006 08 14 | E12 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2006 08 14 | E12 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 2006 08 14 | E12 | 0.5+ | 0.1+ | 2006 08 30 | 704 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2006 08 14 | E12 | 0.7− | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.3− | 0.1+ |

**2006 PS$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.39136 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27319046 | $\omega$ | 334.16406 | | +0.98243057 | −0.17788134 | |
| $a$ | 2.3522981 | $\Omega$ | 36.22404 | | +0.18347553 | +0.86518613 | |
| $e$ | 0.2544822 | $i$ | 5.48310 | | +0.03416000 | +0.46884025 | |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.8+ | 0.2+ | 1999 11 03 | 704 | 1.2− | 0.3− | 2006 08 21 | 644 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.3− | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.1− | 0.9− |
| 1999 10 10 | 704 | 0.2+ | 0.1+ | 2006 08 15 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.9+ | 0.0 |
| 1999 10 10 | 704 | 0.8− | 0.6− | 2006 08 15 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.2− |
| 1999 10 22 | 704 | 0.0 | 0.3− | 2006 08 15 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.9− | 0.8+ |
| 1999 10 22 | 704 | 0.0 | 0.5− | 2006 08 15 | 644 | 0.1+ | 0.6− | 2006 09 26 | 703 | 1.5− | 0.4+ |
| 1999 10 22 | 704 | 0.4− | 0.5+ | 2006 08 15 | 644 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.5− | 0.4+ |
| 1999 10 22 | 704 | 0.2+ | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.7− | 0.0 |
| 1999 10 22 | 704 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 1999 11 03 | 704 | 0.5+ | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 1999 11 03 | 704 | 1.2+ | 0.3+ | 2006 08 21 | 644 | 0.6+ | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 1999 11 03 | 704 | 0.1− | 0.6− | 2006 08 21 | 644 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 |

**2006 PZ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.26998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22312442 | $\omega$ | 201.95934 | | +0.53716088 | +0.80328821 | |
| $a$ | 2.6921834 | $\Omega$ | 101.40840 | | −0.72958180 | +0.59554816 | |
| $e$ | 0.2391186 | $i$ | 15.21563 | | −0.42328310 | −0.00710188 | |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 704 | 0.4+ | 0.2+ | 2004 01 18 | 691 | 0.0 | 0.5+ | 2006 08 25 | E12 | 1.1+ | 0.6+ |
| 2001 04 27 | 704 | 0.5+ | 0.3+ | 2006 08 15 | E12 | 0.2− | 0.0 | 2006 08 25 | E12 | 0.1− | 0.3+ |
| 2001 04 27 | 704 | 0.1− | 1.0+ | 2006 08 15 | E12 | 0.9− | 0.1+ | 2006 08 25 | E12 | 0.7− | 0.9+ |
| 2001 05 23 | 608 | 0.0 | 0.6+ | 2006 08 15 | E12 | 0.1− | 0.1− | 2006 09 09 | 644 | 0.2− | 0.4+ |
| 2001 05 23 | 608 | 0.4+ | 0.9+ | 2006 08 21 | 644 | 0.2+ | 0.2+ | 2006 09 09 | 644 | 0.3+ | 0.1+ |
| 2001 05 23 | 608 | 0.3+ | 1.0+ | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 09 | 644 | 0.1− | 0.3+ |
| 2002 11 06 | 644 | 0.1− | 0.3+ | 2006 08 21 | 644 | 0.2+ | 0.2+ | 2006 09 27 | E12 | 0.3− | 0.3+ |
| 2002 11 06 | 644 | 0.2+ | 0.2+ | 2006 08 25 | E12 | 0.5− | 0.3− | 2006 09 27 | E12 | 0.4+ | 0.1+ |
| 2002 11 06 | 644 | 0.3− | 0.2+ | 2006 08 25 | E12 | 0.3− | 0.5+ | 2006 09 27 | E12 | 0.3+ | 0.6− |
| 2004 01 18 | 691 | 0.1+ | 0.5+ | 2006 08 25 | E12 | 0.4− | 0.4+ | 2006 09 27 | E12 | 0.3− | 0.4+ |
| 2004 01 18 | 691 | 0.0 | 0.5+ | 2006 08 25 | E12 | 0.2− | 0.4+ | | | | |

**2006 PA$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.97187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17589255 | $\omega$ | 320.42065 | | +0.79363672 | +0.60829433 | |
| $a$ | 3.1547946 | $\Omega$ | 2.20087 | | −0.46104484 | +0.61301632 | |
| $e$ | 0.2115130 | $i$ | 16.48618 | | −0.39696147 | +0.50417160 | |
| $P$ | 5.60 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 0.1− | 0.5+ | 2006 08 19 | 644 | 0.2+ | 0.3− | 2006 09 22 | 704 | 0.5+ | 0.7− |
| 2001 09 28 | 704 | 0.3− | 0.7− | 2006 08 22 | J75 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.5+ | 0.5− |
| 2001 09 28 | 704 | 0.1− | 1.3− | 2006 08 22 | J75 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.6− |
| 2001 09 28 | 704 | 1.1− | 0.4− | 2006 08 23 | J75 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.2− | 0.9+ |
| 2001 09 28 | 704 | 0.2− | 0.5− | 2006 08 23 | 644 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.1− | 0.1+ |
| 2001 11 11 | 704 | 0.1+ | 0.4− | 2006 08 23 | 644 | 0.3− | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2001 11 11 | 704 | 0.7+ | 0.2− | 2006 08 23 | 644 | 0.3− | 0.2− | 2006 09 25 | 699 | 0.1− | 0.0 |
| 2001 11 11 | 699 | 0.1− | 1.2+ | 2006 08 30 | 699 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.1+ |
| 2001 11 11 | 704 | 0.6+ | 0.4− | 2006 08 30 | 699 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.4− |
| 2001 11 11 | 699 | 0.5+ | 0.7+ | 2006 08 30 | 699 | 0.6− | 0.1+ | 2006 09 26 | 704 | 0.7+ | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.6+ | 0.1− | 2006 08 30 | 699 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.3− | | |
| 2001 11 11 | 704 | 0.4+ | 0.1− | 2006 09 12 | 704 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.1+ | 0.6+ | | |
| 2001 11 11 | 699 | 0.4− | 0.5+ | 2006 09 12 | 704 | 0.8− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.2+ | | |
| 2001 11 11 | 699 | 0.7− | 0.8+ | 2006 09 12 | 704 | 0.1− | 0.4− | 2006 09 26 | 704 | 0.5+ | 0.3− | | |
| 2004 03 14 | 703 | 0.3+ | 1.4− | 2006 09 12 | 704 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.0 | | |
| 2004 03 14 | 703 | 0.0 | 0.7+ | 2006 09 12 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.8+ | | |
| 2004 03 14 | 703 | 0.6− | 1.0+ | 2006 09 14 | 703 | 0.1− | 0.9− | 2006 09 30 | 703 | 0.3− | 0.1− | | |
| 2004 03 14 | 703 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.0 | | |
| 2005 05 01 | E12 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.6− | 2006 10 19 | 703 | 0.7− | 0.1− | | |
| 2005 05 01 | E12 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.8− | 2006 10 19 | 703 | 0.3+ | 0.1− | | |
| 2005 05 01 | E12 | 0.8− | 0.5− | 2006 09 16 | 704 | 0.3− | 1.1+ | 2006 10 19 | 703 | 0.3+ | 0.1+ | | |
| 2005 05 01 | E12 | 0.5+ | 0.4− | 2006 09 16 | 704 | 0.4+ | 0.7+ | 2006 10 19 | 703 | 0.2− | 1.1− | | |
| 2006 08 07 | E12 | 0.6+ | 0.1+ | 2006 09 16 | 704 | 0.3+ | 1.1+ | 2006 11 11 | 703 | 0.1+ | 1.3+ | | |
| 2006 08 07 | E12 | 0.3+ | 0.1+ | 2006 09 16 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.7− | | |
| 2006 08 07 | E12 | 0.0 | 0.3− | 2006 09 16 | 704 | 0.0 | 1.1+ | 2006 11 11 | 703 | 0.3+ | 0.0 | | |
| 2006 08 07 | E12 | 0.0 | 0.7− | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.3+ | | |
| 2006 08 15 | 644 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2006 08 15 | 644 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.3− | | |
| 2006 08 15 | 644 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.3− | | |
| 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 19 | 704 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.3− | | |
| 2006 08 16 | 644 | 0.1− | 0.4− | 2006 09 19 | 704 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 19 | 704 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.0 | | |
| 2006 08 19 | 644 | 0.2+ | 0.3− | 2006 09 19 | 704 | 0.6+ | 0.6+ | 2006 11 21 | G96 | 0.1− | 0.1− | | |
| 2006 08 19 | 644 | 0.2+ | 0.1− | 2006 09 19 | 704 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.0 | | |

### 2006 $PC_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.44380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28414827 | $\omega$ | 38.15543 | | +0.96284980 | −0.26626194 | |
| $a$ | 2.2914271 | $\Omega$ | 337.16421 | | +0.21038524 | +0.84412969 | |
| $e$ | 0.1783444 | $i$ | 6.65827 | | +0.16928765 | +0.46534896 | |
| $P$ | 3.47 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.6+ | 0.4+ | 2003 12 18 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1+ | | |
| 2003 11 19 | 704 | 0.1− | 0.5+ | 2006 08 12 | 644 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2003 11 19 | 704 | 0.0 | 0.6+ | 2006 08 12 | 644 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.6− | | |
| 2003 12 03 | 704 | 0.3+ | 0.5− | 2006 08 12 | 644 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.3− | | |
| 2003 12 03 | 704 | (1.9− | 1.8+) | 2006 08 14 | 644 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2− | | |
| 2003 12 03 | 704 | (2.4− | 3.4+) | 2006 08 14 | 644 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.5− | | |
| 2003 12 03 | 704 | 1.1− | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.7− | | |
| 2003 12 03 | 704 | (2.8− | 0.6+) | 2006 08 20 | 644 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2003 12 03 | 704 | (1.9− | 0.5−) | 2006 08 20 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.0 | | |
| 2003 12 03 | 704 | (2.7− | 1.5+) | 2006 08 20 | 644 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.0 | | |
| 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1+ | | | | | | |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.1− | | | | | | |

### 2006 $PL_{23}$ = 1977 CS = 2000 $BF_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.52580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.08224338 | $\omega$ | 157.15021 | | −0.43806333 | −0.87777640 | |
| $a$ | 5.2368332 | $\Omega$ | 318.11977 | | +0.77337390 | −0.25802509 | |
| $e$ | 0.0323959 | $i$ | 16.88789 | | +0.45825029 | −0.40364793 | |
| $P$ | 11.98 | $H$ | 12.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 02 11 | 675 | (8.5+ | 0.2−) | 2002 04 08 | 644 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.3− | | |
| 1977 02 12 | 675 | 0.6− | 0.8+ | 2002 04 08 | 644 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.3− | | |
| 1977 02 14 | 675 | 1.4+ | 0.4+ | 2002 04 08 | 644 | 0.2+ | 0.2+ | 2006 10 31 | 291 | 0.5+ | 0.3+ | | |
| 2000 01 31 | 704 | 0.4+ | 0.9+ | 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 10 31 | 291 | 0.3+ | 0.4+ | | |
| 2000 01 31 | 704 | 0.1− | 0.0 | 2006 08 12 | 644 | 0.3− | 0.1+ | 2006 10 31 | 291 | 0.4+ | 0.4+ | | |
| 2000 01 31 | 704 | 0.1− | 0.3− | 2006 08 12 | 644 | 0.7− | 0.1− | 2006 11 01 | G96 | 0.4− | 0.4− | | |
| 2000 02 11 | 704 | 0.0 | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.5+ | 0.0 | | |
| 2000 02 11 | 704 | 0.8+ | 0.5+ | 2006 08 20 | 644 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.7− | 0.1− | | |
| 2000 02 11 | 704 | 0.5− | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.5+ | 2006 11 01 | G96 | 0.4− | 0.0 | | |
| 2000 02 11 | 704 | 0.2− | 0.6− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.5− | 0.2− | | |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 11 23 | G96 | 0.6− | 0.4− | | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.3− | | |
| 2001 05 24 | 644 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.3− | 1.1− | | |
| 2001 05 24 | 644 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.0 | | | | | | |
| 2001 05 24 | 644 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.1− | | | | | | |

### 2006 $PN_{23}$ = 2005 $ES_{227}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.54573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23707464 | $\omega$ | 148.03871 | | +0.14577260 | +0.98360292 | |
| $a$ | 2.5855086 | $\Omega$ | 130.11627 | | −0.93441036 | +0.17214716 | |
| $e$ | 0.1321017 | $i$ | 7.98152 | | −0.32500405 | −0.05376468 | |
| $P$ | 4.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.0 | 0.1+ | 2005 03 16 | 704 | 0.1− | 0.3+ | 2006 05 26 | G96 | 0.2+ | 0.0 | | |
| 2001 03 19 | 699 | 0.7+ | 0.3+ | 2005 03 16 | 704 | 0.8− | 0.1+ | 2006 07 25 | 644 | 0.3− | 0.0 | | |
| 2001 03 19 | 699 | 1.8+ | 0.4− | 2005 03 16 | 704 | 0.6+ | 1.1+ | 2006 07 25 | 644 | 0.1− | 0.1+ | | |
| 2001 03 19 | 645 | 0.1− | 0.0 | 2005 03 16 | 703 | 0.6+ | 0.1− | 2006 07 25 | 644 | 0.1− | 0.1+ | | |
| 2001 03 19 | 645 | 0.1− | 0.0 | 2005 03 16 | 703 | 0.5+ | 0.3− | 2006 08 12 | 644 | 0.1+ | 0.1− | | |
| 2001 03 19 | 699 | 1.0+ | 0.2+ | 2005 03 16 | 703 | 0.5− | 0.2− | 2006 08 12 | 644 | 0.1+ | 0.1− | | |
| 2002 08 30 | 644 | 0.2− | 0.7+ | 2005 03 16 | 703 | 0.2− | 0.6+ | 2006 08 12 | 644 | 0.0 | 0.2− | | |
| 2002 08 30 | 644 | 0.3− | 0.7+ | 2005 04 16 | 691 | 0.4+ | 0.6+ | 2006 08 14 | 644 | 0.3− | 0.2+ | | |
| 2002 08 30 | 644 | 0.2+ | 0.9+ | 2005 04 16 | 691 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.1− | 0.1− | | |
| 2005 03 09 | 704 | 0.9− | 1.4− | 2005 04 16 | 691 | 0.6+ | 0.3+ | 2006 08 14 | 644 | 0.2− | 0.2− | | |
| 2005 03 09 | 704 | 1.0− | 0.4− | 2006 05 26 | G96 | 0.2+ | 0.2− | 2006 08 20 | 644 | 0.1+ | 0.0 | | |
| 2005 03 09 | 704 | 0.4− | 0.7+ | 2006 05 26 | G96 | 0.3+ | 0.3− | 2006 08 20 | 644 | 0.0 | 0.1− | | |
| 2005 03 16 | 704 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.2+ | 0.2− | 2006 08 20 | 644 | 0.0 | 0.2− | | |

### 2006 $PT_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.62544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21707386 | $\omega$ | 19.90549 | | +0.57255845 | +0.77875034 | |
| $a$ | 2.7419805 | $\Omega$ | 285.85540 | | −0.78368283 | +0.42797858 | |
| $e$ | 0.2433609 | $i$ | 15.45657 | | −0.24086936 | +0.45867444 | |
| $P$ | 4.54 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 09 | E12 | 0.1− | 0.2+ | 2006 08 23 | 704 | 0.1− | 1.3+ | 2006 10 02 | 703 | 0.3+ | 0.7− | | |
| 2005 04 09 | E12 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.4+ | 0.9− | 2006 10 19 | 703 | 0.7+ | 0.5− | | |
| 2005 04 09 | E12 | 0.8+ | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.5+ | 0.5− | | |
| 2005 04 09 | E12 | 0.6− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 10 20 | 704 | 0.2− | 0.2− | | |
| 2005 06 09 | E12 | 0.6− | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 10 20 | 704 | 0.4+ | 0.2+ | | |
| 2005 06 09 | E12 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.2− | 2006 10 20 | 704 | 0.2− | 0.2+ | | |
| 2005 06 09 | E12 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.4+ | 2006 10 27 | 703 | 0.3− | 1.0+ | | |
| 2005 06 09 | E12 | 0.3+ | 0.2− | 2006 10 02 | 704 | 0.9− | 0.5+ | 2006 10 27 | 703 | 0.2+ | 0.7+ | | |
| 2006 08 12 | 644 | 0.2+ | 0.3− | 2006 10 02 | 704 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.6+ | | |
| 2006 08 12 | 644 | 0.3+ | 0.4− | 2006 10 02 | 704 | 0.5− | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.0 | | |
| 2006 08 12 | 644 | 0.4+ | 0.4− | 2006 10 02 | 704 | 0.7+ | 0.6− | 2006 11 22 | 703 | 0.1+ | 0.5+ | | |
| 2006 08 23 | 704 | 0.2+ | 0.3+ | 2006 10 02 | 704 | 0.0 | 0.3+ | 2006 11 22 | 703 | 1.2− | 0.1+ | | |
| 2006 08 23 | 704 | 1.3− | 0.0 | 2006 10 02 | 703 | 0.4− | 0.4− | 2006 11 22 | 703 | 0.5− | 0.4− | | |
| 2006 08 23 | 704 | 0.4− | 0.5+ | 2006 10 02 | 703 | 0.3− | 0.3− | 2006 11 22 | 703 | 0.5− | 0.2+ | | |
| 2006 08 23 | 704 | 0.9+ | 0.1+ | 2006 10 02 | 703 | 0.3− | 0.4− | | | | | | |

### 2006 $PV_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.36680 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22028165 | $\omega$ | 195.22528 | | +0.93998723 | −0.34088160 | |
| $a$ | 2.7152959 | $\Omega$ | 184.78485 | | +0.32879024 | +0.91662253 | |
| $e$ | 0.2526231 | $i$ | 10.33035 | | +0.09121947 | +0.20881301 | |
| $P$ | 4.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 17 | 691 | 0.5− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 10 03 | G96 | 0.2+ | 0.0 | | |
| 1996 06 17 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 1.3− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 17 | 691 | 0.0 | 0.3+ | 2006 09 17 | 704 | 1.2− | 1.0+ | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 1997 10 30 | 566 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.8− | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.2+ |
| 1997 10 30 | 566 | 0.4+ | 0.2− | 2006 09 17 | 704 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 1997 10 30 | 566 | 0.5+ | 0.7− | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2004 03 23 | 291 | 0.4+ | 0.7+ | 2006 09 17 | 704 | 0.8+ | 0.7− | 2006 10 16 | 703 | 0.1− | 0.8+ |
| 2004 03 23 | 291 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.7+ |
| 2004 03 23 | 291 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2004 04 12 | 691 | 0.4+ | 0.6+ | 2006 09 20 | 699 | 0.8+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2004 04 12 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 699 | 0.5+ | 0.9+ | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2005 06 13 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2005 06 13 | 691 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2006 08 12 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 27 | 704 | 0.7− | 0.3− |
| 2006 08 12 | 644 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 1.0+ | 0.1+ | 2006 10 27 | 704 | 0.0 | 0.4+ |
| 2006 08 12 | 644 | 0.4− | 0.3+ | 2006 09 22 | 704 | 1.2+ | 0.3− | 2006 10 27 | 704 | 0.2− | 1.0+ |
| 2006 08 19 | 683 | 0.8+ | 0.6− | 2006 09 22 | 704 | 1.0+ | 0.0 | 2006 10 27 | 704 | 0.0 | 0.1+ |
| 2006 08 19 | 683 | 0.6+ | 0.7+ | 2006 09 22 | 704 | 0.3+ | 0.6+ | 2006 10 27 | 704 | 0.6− | 0.3− |
| 2006 08 19 | 683 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.5+ | 0.8+ | 2006 10 28 | 703 | 0.1+ | 0.3− |
| 2006 08 28 | 703 | 0.0 | 0.1− | 2006 09 26 | 704 | (0.5+ | 1.7+) | 2006 10 28 | 703 | 0.1− | 0.8+ |
| 2006 08 28 | 683 | 1.3+ | 0.6− | 2006 09 26 | 704 | 0.1− | 1.2+ | 2006 10 28 | 703 | 0.8+ | 0.3+ |
| 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 09 26 | 704 | 0.4− | 0.9+ | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2006 08 28 | 703 | 0.6− | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.0 | 2006 11 13 | 703 | 0.4− | 0.5− |
| 2006 08 28 | 683 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.9+ | 0.4+ | 2006 11 13 | 703 | 1.2− | 0.3− |
| 2006 08 28 | 703 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.7+ | 2006 11 13 | 703 | 0.8− | 0.6− |
| 2006 08 28 | 683 | 0.5− | 1.1+ | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2006 08 30 | 699 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 11 19 | 703 | 0.5− | 0.1+ |
| 2006 08 30 | 699 | 0.8− | 0.5− | 2006 09 30 | 703 | 1.0− | 0.2− | 2006 11 19 | 703 | 1.0− | 0.6− |
| 2006 08 30 | 699 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.5− | 0.8+ | 2006 11 19 | 703 | 1.0− | 0.3− |
| 2006 08 30 | 699 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.4− | 0.5− | 2006 11 19 | 703 | 0.6− | 1.1− |
| 2006 09 14 | 703 | 0.8− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.5− | | | | |
| 2006 09 14 | 703 | 0.4− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.5− | | | | |

**2006 PD$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.97036 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22382954 | $\omega$ | 253.78224 | | +0.75429514 | | −0.64050090 |
| $a$ | 2.6865264 | $\Omega$ | 145.65746 | | +0.65631511 | | +0.72993521 |
| $e$ | 0.2008258 | $i$ | 14.81115 | | +0.01700914 | | +0.23864865 |
| $P$ | 4.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 644 | 0.1− | 0.4− | 2002 11 05 | 644 | 0.1+ | 0.3− | 2006 08 28 | 699 | 0.9+ | 0.4+ |
| 2002 10 06 | 644 | 0.0 | 0.0 | 2006 08 13 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 1.0+ | 0.3+ |
| 2002 10 06 | 644 | 0.1+ | 0.1+ | 2006 08 13 | 644 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.3− | 1.4− |
| 2002 10 29 | 704 | 0.2+ | 0.2− | 2006 08 13 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.7− | 1.3+ |
| 2002 10 29 | 704 | 0.5− | 0.3+ | 2006 08 19 | 699 | 0.4− | 0.1− | 2006 08 28 | 703 | 1.4− | 0.4− |
| 2002 10 29 | 704 | 0.1+ | 0.8+ | 2006 08 19 | 699 | 0.8+ | 0.5+ | 2006 08 28 | 699 | 0.4− | 0.4+ |
| 2002 11 05 | 644 | 0.1+ | 0.1− | 2006 08 19 | 699 | 0.4+ | 0.8− | 2006 08 28 | 703 | 0.0 | 0.2− |
| 2002 11 05 | 644 | 0.0 | 0.3− | 2006 08 19 | 699 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.3+ | 0.3− |

**2006 PH$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.74093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22365461 | $\omega$ | 40.46385 | | +0.98151655 | | −0.12062856 |
| $a$ | 2.6879270 | $\Omega$ | 325.59226 | | +0.01164011 | | +0.81252884 |
| $e$ | 0.1655726 | $i$ | 15.24370 | | +0.19102298 | | +0.57030311 |
| $P$ | 4.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.1+ | 0.4+ | 2006 07 25 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 1.1− | 0.3− |
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2006 08 13 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.3+ |
| 2002 10 31 | 704 | 0.1− | 0.8+ | 2006 08 13 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.0 |
| 2002 10 31 | 704 | 0.2− | 0.1− | 2006 08 13 | 644 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.7+ |
| 2002 10 31 | 704 | 0.2− | 0.2− | 2006 08 19 | 699 | 0.7− | 0.1− | 2006 09 28 | G96 | 0.9+ | 0.2− |
| 2002 12 10 | 704 | 0.4− | 0.3+ | 2006 08 19 | 699 | 0.5− | 1.3− | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2002 12 10 | 704 | 0.1− | 0.6− | 2006 08 19 | 699 | 1.3+ | 1.0+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.6+ | 0.6− | 2006 08 21 | 644 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2006 07 25 | 644 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.3− | 0.1+ | | | | |
| 2006 07 25 | 644 | 0.2− | 0.0 | 2006 08 21 | 644 | 0.3+ | 0.6− | | | | |

**2006 PK$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.05177 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24051685 | $\omega$ | 337.01504 | | +0.51170650 | | +0.84785395 |
| $a$ | 2.5607807 | $\Omega$ | 323.33675 | | −0.74770572 | | +0.35981772 |
| $e$ | 0.1026843 | $i$ | 13.45385 | | −0.42319336 | | +0.38945461 |
| $P$ | 4.10 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | (0.3− | 1.8−) | 2006 08 13 | 644 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.1− | 0.2− |
| 2002 09 06 | 704 | 0.2+ | 0.8+ | 2006 08 13 | 644 | 0.1− | 0.5− | 2006 08 22 | 644 | 0.1− | 0.3− |
| 2002 09 06 | 704 | 0.8+ | 1.2− | 2006 08 13 | 644 | 0.2− | 0.5− | 2006 08 28 | 691 | 0.1+ | 0.1+ |
| 2002 09 06 | 704 | 0.9− | 0.1− | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 2002 09 13 | 644 | 0.4− | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2002 09 13 | 644 | 0.5− | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.6+ | 2006 08 19 | 699 | 0.6− | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | (0.5− | 1.7+) | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.6+ | 0.5− | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.9+ | 0.4+ | | | | |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.1− | 0.2− | | | | |

**2006 PN$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.55246 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26153077 | $\omega$ | 34.66597 | | +0.99390925 | | −0.09224098 |
| $a$ | 2.4217029 | $\Omega$ | 330.45148 | | +0.05076669 | | +0.86889651 |
| $e$ | 0.1421165 | $i$ | 7.02320 | | +0.09781179 | | +0.48632341 |
| $P$ | 3.77 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 568 | 0.5+ | 0.6+ | 2006 08 19 | 699 | 0.5+ | 0.6− | 2006 09 14 | 703 | 0.2− | 0.2− |
| 2001 07 17 | 568 | 0.4+ | 1.0+ | 2006 08 28 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | (0.5− | 1.6−) |
| 2003 12 23 | 704 | 0.2+ | 1.3+ | 2006 08 28 | 699 | (1.7− | 0.8+) | 2006 09 14 | 703 | 0.4− | 0.7− |
| 2003 12 23 | 704 | 0.0 | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 1.0+ | 0.1+ |
| 2003 12 23 | 704 | 0.8− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2003 12 23 | 704 | 0.8− | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.8+ | 0.1− |
| 2003 12 23 | 704 | 0.7+ | 0.9+ | 2006 08 28 | 703 | 0.7− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.2− |
| 2003 12 28 | 704 | 0.5− | 0.8− | 2006 08 28 | 703 | 0.4− | 0.4− | 2006 09 18 | 699 | (1.7+ | 0.5+) |
| 2003 12 28 | 704 | 1.3+ | 0.7− | 2006 08 28 | 699 | 0.9− | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.8+ |
| 2003 12 28 | 704 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.4− |
| 2003 12 28 | 704 | (1.0− | 1.9+) | 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.2+ |
| 2006 08 13 | 644 | 0.0 | 0.0 | 2006 08 28 | 699 | 1.1− | 0.6− | 2006 09 24 | 699 | 0.5+ | 0.2− |
| 2006 08 13 | 644 | 0.0 | 0.1− | 2006 08 29 | 704 | 0.7+ | 0.7+ | 2006 09 24 | 699 | 0.1+ | 0.4− |
| 2006 08 13 | 644 | 0.3− | 0.1− | 2006 08 29 | 704 | 0.3− | 0.2− | 2006 09 24 | 699 | 0.3+ | 0.8+ |
| 2006 08 19 | 699 | 0.0 | 0.7− | 2006 08 29 | 704 | 0.1− | 1.5+ | 2006 09 24 | 699 | 0.3+ | 0.2+ |
| 2006 08 19 | 699 | 0.2+ | 0.4+ | 2006 08 29 | 704 | 0.2+ | 0.3+ | | | | |
| 2006 08 19 | 699 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.8− | | | | |

**2006 PR$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.01008 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26695784 | $\omega$ | 212.97091 | | +0.73600279 | | +0.67688807 |
| $a$ | 2.3887696 | $\Omega$ | 104.42402 | | −0.61861618 | | +0.67910112 |
| $e$ | 0.2416944 | $i$ | 0.65462 | | −0.27497985 | | +0.28397924 |
| $P$ | 3.69 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 24 | 809 | 0.1− | 0.7− | 2006 08 13 | 644 | 0.7+ | 0.1− | 2006 09 14 | 644 | 0.3+ | 0.3+ |
| 1995 08 25 | 809 | 0.4+ | 0.0 | 2006 08 19 | 699 | 0.2+ | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 1999 12 03 | 691 | 0.5− | 0.0 | 2006 08 19 | 699 | 0.9− | 0.8+ | 2006 09 30 | G96 | 0.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 691 | 0.1+ | 0.2− | 2006 08 19 | 699 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2− |
| 1999 12 03 | 691 | 1.0− | 0.0 | 2006 08 19 | 699 | 0.9− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.2+ |
| 1999 12 16 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.0 | 0.3− |
| 1999 12 16 | 691 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 10 17 | G96 | 0.4+ | 0.6− |
| 1999 12 16 | 691 | 0.6+ | 0.0 | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.8− |
| 2006 08 13 | 644 | 0.1− | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.2− |
| 2006 08 13 | 644 | 0.0 | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.6+ | | | | |

**2006 PW$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.02775 | | | | | |
| $n$ | 0.21995837 | $\omega$ | 20.50030 | | +0.99806516 | −0.00046515 |
| $a$ | 2.7179558 | $\Omega$ | 339.23153 | | −0.03337489 | +0.83969345 |
| $e$ | 0.1804743 | $i$ | 10.09854 | | +0.05245995 | +0.54306049 |
| $P$ | 4.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.3− | 0.4+ | 2006 08 21 | 644 | 0.5+ | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.1− |
| 2002 10 13 | 644 | 0.0 | 0.2+ | 2006 08 21 | 644 | 0.2− | 0.6+ | 2006 09 14 | 644 | 0.6+ | 0.3+ |
| 2002 10 13 | 644 | 0.4+ | 0.5+ | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 1.0− | 0.7− |
| 2002 11 07 | 704 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.4+ |
| 2002 11 07 | 704 | 0.4− | 0.9− | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.1+ | 0.3− | 2006 08 24 | 644 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.4+ |
| 2002 12 03 | 644 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.9− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 12 03 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.5− | 0.0 |
| 2002 12 03 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 02 22 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2004 02 22 | 691 | 0.1+ | 0.8+ | 2006 08 31 | 704 | 0.5− | 0.7+ | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2004 02 22 | 691 | 0.3+ | 0.2+ | 2006 08 31 | 704 | (1.6− | 1.1−) | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2006 08 13 | 644 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.5+ | 0.2+ |
| 2006 08 13 | 644 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.7− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2006 08 13 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.1+ | | | | |

**2006 PN$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.24536 | | | | | |
| $n$ | 0.28059072 | $\omega$ | 325.89077 | | +0.88467807 | +0.46606274 |
| $a$ | 2.3107547 | $\Omega$ | 6.36180 | | −0.40146389 | +0.77404463 |
| $e$ | 0.1842529 | $i$ | 5.91147 | | −0.23700519 | +0.42853287 |
| $P$ | 3.51 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 26 | 691 | 0.0 | 0.4− | 2005 04 04 | G96 | 0.7− | 0.0 | 2006 09 25 | 699 | 0.5− | 1.3− |
| 1992 09 26 | 691 | 0.3− | 0.5− | 2006 08 15 | 644 | 0.4+ | 0.2− | 2006 09 30 | 703 | 0.4− | 0.4− |
| 1992 09 26 | 691 | 0.3+ | 0.0 | 2006 08 15 | 644 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.4− |
| 1999 09 07 | 704 | 0.1− | 0.6+ | 2006 08 15 | 644 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.3+ | 0.8+ |
| 1999 09 07 | 704 | 0.2+ | 0.4+ | 2006 08 23 | 704 | 0.4− | 1.1+ | 2006 11 16 | G96 | 0.1− | 0.5+ |
| 1999 09 07 | 704 | 1.1+ | 0.6+ | 2006 08 23 | 704 | 0.2+ | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.5+ |
| 1999 09 07 | 704 | 0.8+ | 1.7+ | 2006 08 23 | 704 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2005 03 10 | G96 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2006 09 14 | 703 | 1.4− | 0.9− | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2005 03 10 | G96 | 0.6+ | 0.2− | 2006 09 14 | 703 | 0.6+ | 0.8− | 2006 11 21 | G96 | 0.2+ | 0.2+ |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2005 04 04 | G96 | 0.1+ | 0.3− | 2006 09 25 | 699 | (2.1− | 0.4−) | 2006 11 21 | G96 | 0.3+ | 0.3+ |
| 2005 04 04 | G96 | 0.4+ | 0.4− | 2006 09 25 | 699 | 0.9− | 0.3− | | | | |
| 2005 04 04 | G96 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.6− | 0.3+ | | | | |

**2006 PU$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.35501 | | | | | |
| $n$ | 0.28050778 | $\omega$ | 265.44018 | | +0.84325183 | +0.53460830 |
| $a$ | 2.3112102 | $\Omega$ | 62.23296 | | −0.46474049 | +0.77734675 |
| $e$ | 0.2429752 | $i$ | 3.61945 | | −0.27007895 | +0.33155090 |
| $P$ | 3.51 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.1+ | 0.1+ | 2006 08 15 | 644 | 0.0 | 0.5− | 2006 08 31 | 704 | 0.4+ | 0.3− |
| 1999 08 12 | 699 | 0.0 | 1.3+ | 2006 08 23 | 704 | (0.4+ | 1.8−) | 2006 09 18 | 699 | 0.9− | 1.3− |
| 1999 08 12 | 699 | 1.3− | 0.5+ | 2006 08 23 | 704 | (0.1+ | 2.6−) | 2006 09 18 | 699 | 1.1+ | 1.3− |
| 1999 09 08 | 703 | 1.1+ | 1.2− | 2006 08 23 | 704 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.0 | 0.3+ |
| 1999 09 08 | 703 | 1.0− | 0.5+ | 2006 08 23 | 704 | (0.1+ | 2.8−) | 2006 09 18 | 699 | 0.8+ | 0.1− |
| 1999 09 08 | 703 | 0.3+ | 0.7+ | 2006 08 23 | 704 | (0.5+ | 1.7−) | 2006 09 25 | 699 | 0.6+ | 0.5+ |
| 1999 09 08 | 703 | 1.1− | 1.0+ | 2006 08 28 | 704 | 0.6+ | 0.7+ | 2006 09 25 | 699 | 0.3+ | 1.4+ |
| 1999 09 09 | 704 | 0.0 | 0.6− | 2006 08 28 | 704 | (1.5+ | 1.8+) | 2006 09 25 | 699 | 1.3− | 0.2+ |
| 1999 09 09 | 704 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.5− | 0.8+ | 2006 09 25 | 699 | 1.2− | 0.7+ |
| 1999 09 09 | 704 | 0.1− | 0.6− | 2006 08 28 | 704 | 0.4− | 0.7+ | 2006 09 26 | 704 | 0.4+ | 0.5− |
| 1999 09 09 | 704 | 0.6+ | 0.9+ | 2006 08 28 | 699 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.8+ | 0.5− |
| 1999 09 09 | 704 | (2.6+ | 2.2+) | 2006 08 28 | 699 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.6− |
| 2003 12 25 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.2− |
| 2003 12 25 | 691 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.9+ | 0.5+ |
| 2003 12 25 | 691 | 0.0 | 0.3− | 2006 08 31 | 704 | 0.1− | 0.7− | 2006 10 21 | 703 | 0.4− | 1.4− |
| 2006 08 15 | 644 | 0.1+ | 0.2− | 2006 08 31 | 704 | 0.4+ | 0.2− | 2006 10 21 | 703 | 0.5− | 0.5− |
| 2006 08 15 | 644 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.2+ | 0.5+ |

**2006 PZ$_{26}$ = 1998 YG$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.87809 | | | | | |
| $n$ | 0.21280714 | $\omega$ | 104.01140 | | +0.87367634 | −0.48019123 |
| $a$ | 2.7785097 | $\Omega$ | 284.73651 | | +0.40934516 | +0.81236348 |
| $e$ | 0.0534272 | $i$ | 4.63449 | | +0.26291859 | +0.33088059 |
| $P$ | 4.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 691 | 0.0 | 0.1− | 2004 02 12 | 644 | 0.6+ | 0.4+ | 2006 09 11 | 703 | 1.1− | 0.3− |
| 1998 12 22 | 691 | 0.1− | 0.2− | 2004 02 19 | 704 | 0.1− | 1.2+ | 2006 09 11 | 703 | 0.5− | 0.4− |
| 1998 12 22 | 691 | 0.4− | 0.5− | 2004 02 19 | 704 | (0.1+ | 1.9+) | 2006 09 11 | 703 | 0.2+ | 0.1− |
| 1998 12 27 | 691 | 0.1− | 0.6− | 2004 02 19 | 704 | 0.0 | 1.0+ | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 1998 12 27 | 691 | 0.0 | 0.2− | 2004 02 19 | 704 | 1.2+ | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.1− |
| 1998 12 27 | 691 | 0.0 | 0.2+ | 2004 02 19 | 704 | 0.0 | 1.2+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 1999 01 18 | 691 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.5+ |
| 1999 01 18 | 691 | 0.1+ | 0.2+ | 2006 08 15 | 644 | 0.4− | 0.1− | 2006 09 18 | 703 | 1.4− | 0.2+ |
| 1999 01 18 | 691 | 0.0 | 0.1+ | 2006 08 15 | 644 | 0.4− | 0.1+ | 2006 09 18 | 703 | 0.7− | 0.8+ |
| 2001 08 16 | 704 | 0.1+ | 1.4− | 2006 08 24 | 704 | (1.7− | 1.5+) | 2006 09 18 | 703 | 0.0 | 0.9− |
| 2001 08 16 | 704 | 0.2− | 0.0 | 2006 08 24 | 704 | 0.7− | 0.8+ | 2006 09 20 | 699 | 0.7− | 0.5− |
| 2001 08 16 | 704 | 0.8+ | 0.1− | 2006 08 24 | 704 | (0.6− | 1.7+) | 2006 09 20 | 699 | 0.4+ | 0.1+ |
| 2002 11 12 | 704 | 0.5+ | 0.5− | 2006 08 29 | 703 | 0.5+ | 0.7+ | 2006 09 20 | 699 | 0.4− | 1.0+ |
| 2002 11 12 | 704 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 0.1− | 1.4+ | 2006 09 20 | 699 | 0.1− | 0.3− |
| 2002 11 12 | 704 | 1.2− | 0.4− | 2006 08 29 | 703 | 0.2− | 0.3+ | 2006 09 30 | 699 | 0.9− | 0.0 |
| 2002 12 02 | 704 | 0.2− | 1.0+ | 2006 08 29 | 703 | 0.2− | 1.1+ | 2006 09 30 | 699 | 1.0+ | 0.2+ |
| 2002 12 02 | 704 | 0.5− | 0.2+ | 2006 08 30 | 704 | 1.0+ | 0.1− | 2006 09 30 | 699 | 0.0 | 0.1+ |
| 2002 12 02 | 704 | 0.8+ | 0.5− | 2006 08 30 | 704 | 0.9+ | 0.2− | 2006 09 30 | 699 | (1.7+ | 0.1+) |
| 2002 12 02 | 704 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2004 02 12 | 644 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2004 02 12 | 644 | 0.7+ | 0.6+ | 2006 09 11 | 703 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2− |

**2006 PA$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.37318 | | | | | |
| $n$ | 0.22301380 | $\omega$ | 159.94528 | | +0.92166540 | +0.38782580 |
| $a$ | 2.6930736 | $\Omega$ | 177.16134 | | −0.37954360 | +0.90719524 |
| $e$ | 0.1776457 | $i$ | 12.99671 | | −0.08049566 | +0.16305811 |
| $P$ | 4.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.3− | 0.7− | 2006 09 28 | G96 | 0.0 | 0.5− |
| 2000 02 12 | 645 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.8− | 0.2− | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 11 | 703 | 0.4+ | 0.4− | 2006 09 28 | G96 | 0.5+ | 0.4− |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.1+ |
| 2005 04 14 | 691 | 0.1− | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.0 |
| 2005 05 15 | 644 | 0.2− | 0.2− | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.2− |
| 2005 05 15 | 644 | 0.0 | 0.4− | 2006 09 18 | 704 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 15 | 644 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2006 08 15 | 644 | 0.6− | 0.1+ | 2006 09 18 | 704 | 0.1− | 0.1+ | 2006 09 30 | 699 | 0.1− | 1.1− |
| 2006 08 15 | 644 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.2− | 0.4− | 2006 09 30 | 699 | (1.7+ | 1.2+) |
| 2006 08 15 | 644 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.8+ | 1.4+ | 2006 09 30 | 699 | 0.7− | 0.4+ |
| 2006 08 24 | 704 | 0.4+ | 0.8+ | 2006 09 18 | 704 | 0.2+ | 1.0− | 2006 09 30 | 699 | 1.2− | 0.1+ |
| 2006 08 24 | 704 | 0.9+ | 0.2+ | 2006 09 18 | 704 | 0.3+ | 0.6+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2006 08 24 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.5+ |
| 2006 08 24 | 704 | 0.1− | 0.5+ | 2006 09 18 | 704 | 0.5+ | 0.8+ | 2006 10 09 | 644 | 0.7− | 0.4+ |
| 2006 08 24 | 704 | 0.2+ | 0.6− | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 10 09 | 644 | 0.3− | 0.4+ |
| 2006 08 27 | 699 | 0.7+ | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2006 08 27 | 699 | 0.0 | 0.8+ | 2006 09 20 | 704 | 0.3+ | 0.6+ | 2006 10 09 | 644 | 0.4+ | 0.1− |
| 2006 08 27 | 699 | 0.6− | 0.6+ | 2006 09 20 | 699 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2006 08 27 | 699 | 0.2− | 0.5+ | 2006 09 20 | 704 | 0.5+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.4− | 0.5− | 2006 09 20 | 704 | 0.6+ | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2006 08 29 | 703 | 0.2+ | 0.5− | 2006 09 20 | 699 | 1.0+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2006 08 29 | 703 | 0.4− | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2006 08 29 | 703 | 0.3+ | 0.3− | 2006 09 27 | 704 | 0.6− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 01 | 704 | 0.0 | 1.3− | 2006 09 27 | 704 | 0.7− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2006 09 01 | 704 | 0.5+ | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2006 09 01 | 704 | 0.1+ | 1.3+ | 2006 09 27 | 704 | 0.6− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2006 09 01 | 704 | 0.7+ | 0.4− | 2006 09 27 | 704 | 0.5− | 0.3− | | | | |
| 2006 09 11 | 703 | 0.9− | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.7− | | | | |

**2006 PK$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.04589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17536897 | $\omega$ | 257.58549 | | +0.45445254 | | +0.83829356 |
| $a$ | 3.1610708 | $\Omega$ | 43.86347 | | −0.54960326 | | +0.52999948 |
| $e$ | 0.2756389 | $i$ | 25.76652 | | −0.70100581 | | +0.12792362 |
| $P$ | 5.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 09 | 704 | 0.1− | 0.5+ | 2001 11 11 | 645 | 0.0 | 0.1− | 2006 07 21 | E12 | 0.7+ | 0.3− |
| 2000 05 09 | 704 | 0.7+ | 0.9+ | 2001 11 11 | 645 | 0.0 | 0.1− | 2006 07 21 | E12 | 0.5+ | 0.3− |
| 2000 05 09 | 704 | 0.6+ | 0.0 | 2001 11 18 | 704 | 0.4− | 1.6+ | 2006 08 13 | E12 | 0.3+ | 0.1− |
| 2001 10 20 | 704 | 1.2− | 0.8+ | 2001 11 18 | 704 | 0.8− | 0.7+ | 2006 08 13 | E12 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.3− | 0.4+ | 2001 11 18 | 704 | 1.0− | 0.8+ | 2006 08 13 | E12 | 0.3− | 0.6+ |
| 2001 10 20 | 704 | 0.0 | 0.5+ | 2006 06 28 | E12 | 0.0 | 0.4− | 2006 08 13 | E12 | 0.4− | 0.1+ |
| 2001 10 24 | 644 | 0.1− | 0.6+ | 2006 06 28 | E12 | 0.2+ | 0.3+ | 2006 08 20 | E12 | 0.2− | 0.1+ |
| 2001 10 24 | 644 | 0.1− | 0.1+ | 2006 06 28 | E12 | 0.3− | 0.0 | 2006 08 20 | E12 | 0.1− | 0.2+ |
| 2001 10 24 | 644 | 0.2+ | 0.5+ | 2006 06 28 | E12 | 0.2+ | 0.1+ | 2006 08 20 | E12 | 0.5− | 0.0 |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2006 07 21 | E12 | 0.1− | 0.3− | 2006 08 20 | E12 | 0.4− | 0.4− |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2006 07 21 | E12 | 0.4+ | 0.0 | | | | |

**2006 PN$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.69383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22205961 | $\omega$ | 221.24889 | | +0.18698840 | | +0.95107545 |
| $a$ | 2.7007829 | $\Omega$ | 60.89012 | | −0.81123646 | | +0.29069326 |
| $e$ | 0.2126654 | $i$ | 16.35013 | | −0.55401330 | | −0.10465615 |
| $P$ | 4.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 699 | 0.6+ | 2.4+ | 2006 06 18 | E12 | 1.2− | 0.3− | 2006 08 13 | E12 | 0.6− | 0.1+ |
| 2001 05 23 | 699 | 1.5− | 0.3+ | 2006 06 18 | E12 | 0.2− | 0.9+ | 2006 08 13 | E12 | 0.1+ | 0.1+ |
| 2001 05 23 | 699 | 2.1+ | 0.3+ | 2006 06 18 | E12 | 0.6− | 0.1− | 2006 08 13 | E12 | 0.0 | 0.4+ |
| 2001 05 23 | 699 | 1.3− | 0.2− | 2006 06 18 | E12 | 0.8+ | 0.7− | 2006 08 22 | E12 | 0.1− | 0.1− |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.3+ | 0.0 | 2006 08 22 | E12 | 0.1− | 0.0 |
| 2001 05 24 | 645 | 0.0 | 0.1− | 2006 07 18 | E12 | 0.1+ | 0.2+ | 2006 08 22 | E12 | 0.7+ | 0.3− |
| 2002 10 16 | 644 | 0.3− | 0.2+ | 2006 07 18 | E12 | 0.1− | 0.1− | 2006 08 22 | E12 | 0.6+ | 0.4− |
| 2002 10 16 | 644 | 0.0 | 0.3+ | 2006 07 18 | E12 | 0.2+ | 0.1− | | | | |
| 2002 10 16 | 644 | 0.3− | 0.2+ | 2006 08 13 | E12 | 0.2+ | 0.1+ | | | | |

**2006 PA$_{28}$ = 2003 YH$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.32506 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26778417 | $\omega$ | 261.09315 | | +0.95970899 | | +0.16149370 |
| $a$ | 2.3838529 | $\Omega$ | 89.37225 | | −0.06133588 | | +0.91901249 |
| $e$ | 0.2047831 | $i$ | 13.29513 | | −0.27421993 | | +0.35963291 |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 1.0+ | 0.0 | 2003 12 19 | 704 | 0.4+ | 1.3− | 2006 08 23 | E12 | 0.3− | 0.3+ |
| 2003 12 18 | 704 | 0.4− | 0.2− | 2006 07 18 | E12 | 0.2+ | 0.2+ | 2006 08 23 | E12 | 0.3− | 0.5+ |
| 2003 12 18 | 704 | 0.6+ | 0.3+ | 2006 07 18 | E12 | 0.2− | 0.2− | 2006 08 23 | E12 | 0.5+ | 0.0 |
| 2003 12 18 | 704 | 0.1− | 1.1− | 2006 07 18 | E12 | 0.2+ | 0.1+ | 2006 08 23 | E12 | 0.2+ | 0.6− |
| 2003 12 19 | 704 | 0.7− | 1.3+ | 2006 08 14 | E12 | 0.0 | 0.3− | 2006 09 14 | E12 | 0.4− | 0.7− |
| 2003 12 19 | 704 | 0.6− | 0.2− | 2006 08 14 | E12 | 0.1− | 0.1− | 2006 09 14 | E12 | 0.5+ | 0.1+ |
| 2003 12 19 | 704 | 0.0 | 0.3+ | 2006 08 14 | E12 | 0.3− | 0.4+ | 2006 09 14 | E12 | 0.3+ | 0.2+ |
| 2003 12 19 | 704 | 0.2− | 0.9+ | 2006 08 14 | E12 | 0.1+ | 0.2− | 2006 09 14 | E12 | 0.1− | 0.4+ |

**2006 PC$_{28}$ = 1998 SH$_{11}$ = 2002 RJ$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.17761 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23528656 | $\omega$ | 223.21077 | | −0.25275751 | | +0.95912105 |
| $a$ | 2.5985912 | $\Omega$ | 32.76316 | | −0.81125293 | | −0.13840240 |
| $e$ | 0.2156647 | $i$ | 13.60323 | | −0.52724029 | | −0.24684323 |
| $P$ | 4.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 13 | 327 | 0.8− | 0.5− | 2002 09 10 | 644 | 0.7− | 0.2− | 2006 07 18 | E12 | 0.4− | 0.3+ |
| 1997 04 13 | 327 | 0.3− | 0.4− | 2002 09 10 | 644 | 0.1− | 0.2− | 2006 07 18 | E12 | 0.3− | 0.0 |
| 1997 04 13 | 327 | 0.5− | 0.6− | 2002 09 10 | 644 | 0.5− | 0.5− | 2006 07 18 | E12 | 1.3+ | 0.0 |
| 1997 04 13 | 327 | 0.0 | 0.3− | 2002 09 13 | 699 | 0.5+ | 0.9− | 2006 08 14 | E12 | 0.3− | 0.3− |
| 1997 04 13 | 327 | 0.4− | 0.4− | 2002 09 13 | 699 | 0.8+ | 0.4− | 2006 08 14 | E12 | 0.3+ | 0.1+ |
| 1997 04 13 | 327 | 0.3+ | 0.2− | 2002 09 13 | 699 | 1.0− | 1.4− | 2006 08 14 | E12 | 0.5+ | 0.2+ |
| 1998 09 17 | 910 | 0.6+ | 0.0 | 2002 09 13 | 699 | 0.7− | 0.1− | 2006 08 23 | E12 | 0.1+ | 0.0 |
| 1998 09 18 | 910 | 1.0+ | 0.7− | 2005 03 08 | 703 | 1.1− | 0.7− | 2006 08 23 | E12 | 0.2+ | 0.3+ |
| 1998 09 18 | 910 | 0.0 | 0.7− | 2005 03 08 | 703 | 1.0− | 0.5− | 2006 08 23 | E12 | 0.7− | 0.6+ |
| 1998 09 22 | 910 | 0.1− | 0.4+ | 2005 03 08 | 703 | 1.2− | 0.3+ | 2006 08 23 | E12 | 0.5+ | 0.3+ |
| 1998 09 23 | 910 | 1.0+ | 0.0 | 2005 03 08 | 703 | 2.6+ | 0.3+ | | | | |
| 1998 09 23 | 910 | 1.0+ | 0.1− | 2006 07 18 | E12 | 0.4− | 0.2+ | | | | |

**2006 PQ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.18912 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17358438 | $\omega$ | 263.42802 | | +0.88271550 | | +0.16575279 |
| $a$ | 3.1826994 | $\Omega$ | 86.35148 | | +0.01724574 | | +0.92366584 |
| $e$ | 0.2052745 | $i$ | 26.14196 | | −0.46959124 | | +0.34549592 |
| $P$ | 5.68 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 1.4− | 0.5+ | 2005 05 02 | 691 | 0.4+ | 0.2+ | 2006 08 31 | E12 | 0.3− | 0.5+ |
| 2001 11 15 | 704 | 0.1+ | 0.9+ | 2005 05 11 | 691 | 0.0 | 0.4+ | 2006 08 31 | E12 | 0.7+ | 0.1+ |
| 2001 11 15 | 704 | (1.6+ | 1.6+) | 2005 05 11 | 691 | 0.0 | 0.5+ | 2006 08 31 | E12 | 0.2− | 0.4− |
| 2001 11 15 | 704 | 1.6− | 0.5+ | 2005 05 11 | 691 | 0.4− | 0.0 | 2006 09 15 | E12 | 0.2− | 1.4+ |
| 2001 11 15 | 704 | 0.4− | 0.1+ | 2006 08 14 | E12 | 1.2− | 0.2− | 2006 09 15 | E12 | 0.1− | 0.8+ |
| 2001 12 08 | 699 | 0.3+ | 1.2+ | 2006 08 14 | E12 | 0.9− | 0.4+ | 2006 09 15 | E12 | 0.0 | 0.3+ |
| 2001 12 08 | 699 | 0.4− | 1.2+ | 2006 08 14 | E12 | 0.0 | 0.4− | 2006 09 15 | E12 | 0.5+ | 0.1+ |
| 2001 12 08 | 699 | (2.4− | 2.2+) | 2006 08 14 | E12 | 0.9+ | 0.2+ | 2006 09 29 | E12 | 0.1− | 0.3+ |
| 2001 12 08 | 699 | (1.6+ | 0.9−) | 2006 08 22 | E12 | 0.2− | 0.0 | 2006 09 29 | E12 | 0.0 | 0.1+ |
| 2004 05 23 | 645 | 0.1+ | 0.1+ | 2006 08 22 | E12 | 0.1− | 0.2+ | 2006 09 29 | E12 | 0.5+ | 0.2+ |
| 2004 05 23 | 645 | 0.1+ | 0.1+ | 2006 08 22 | E12 | 0.2− | 0.1+ | 2006 09 29 | E12 | 0.0 | 0.3− |
| 2005 05 02 | 691 | 0.1+ | 0.1+ | 2006 08 22 | E12 | 0.3+ | 0.3− | | | | |
| 2005 05 02 | 691 | 0.2+ | 0.0 | 2006 08 31 | E12 | (1.7− | 1.5+) | | | | |

**2006 PR$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.49165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22436835 | $\omega$ | 223.37280 | | +0.17403297 | +0.94723082 | |
| $a$ | 2.6822237 | $\Omega$ | 58.39912 | | −0.79492207 | +0.29648282 | |
| $e$ | 0.2804191 | $i$ | 18.42491 | | −0.58121547 | −0.12186762 | |
| $P$ | 4.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 704 | 0.5+ | 1.2+ | 2002 10 15 | 644 | 0.5− | 0.6+ | 2006 07 28 | E12 | 0.1− | 0.4− |
| 2001 04 15 | 704 | 0.2+ | 0.4− | 2002 10 15 | 644 | 0.5− | 0.5+ | 2006 07 28 | E12 | 0.3+ | 0.2+ |
| 2001 04 15 | 704 | 0.6+ | 0.4− | 2006 04 29 | E12 | 0.6− | 0.9− | 2006 08 14 | E12 | 0.4− | 0.1− |
| 2001 04 15 | 704 | 0.7+ | 1.2− | 2006 04 29 | E12 | 0.2− | 0.2+ | 2006 08 14 | E12 | 0.0 | 0.2− |
| 2001 05 23 | 704 | 0.5+ | 0.5− | 2006 04 29 | E12 | 0.2− | 0.1− | 2006 08 14 | E12 | 0.3− | 0.1+ |
| 2001 05 23 | 704 | 0.4− | 0.3+ | 2006 04 29 | E12 | 1.0+ | 0.7+ | 2006 08 14 | E12 | 0.2− | 0.1− |
| 2001 05 23 | 699 | 0.1− | 0.2+ | 2006 04 29 | E12 | 0.5+ | 0.2− | 2006 08 14 | E12 | 0.2− | 0.1− |
| 2001 05 23 | 699 | 0.4+ | 0.2+ | 2006 04 29 | E12 | 0.5− | 0.8− | 2006 08 23 | E12 | 0.7+ | 0.2− |
| 2001 05 23 | 704 | 0.2− | 0.0 | 2006 04 29 | E12 | 0.3+ | 0.5− | 2006 08 23 | E12 | 0.7+ | 0.2− |
| 2001 05 23 | 704 | 0.3+ | 1.0+ | 2006 05 31 | E12 | 0.2+ | 0.8− | 2006 08 23 | E12 | 0.2+ | 0.1+ |
| 2001 05 23 | 704 | 0.1− | 0.4+ | 2006 05 31 | E12 | 0.4− | 0.4+ | 2006 08 31 | E12 | 0.2+ | 0.1− |
| 2001 05 23 | 699 | 0.1− | 0.8− | 2006 05 31 | E12 | 0.2+ | 0.2+ | 2006 08 31 | E12 | 0.2− | 0.7+ |
| 2001 05 23 | 699 | 0.6− | 0.7+ | 2006 05 31 | E12 | 0.6− | 0.0 | 2006 08 31 | E12 | 0.2− | 0.5+ |
| 2001 05 23 | 699 | 0.4− | 0.1+ | 2006 06 22 | E12 | 0.2+ | 0.3+ | 2006 08 31 | E12 | 0.0 | 0.0 |
| 2001 05 23 | 699 | 0.6− | 1.0+ | 2006 06 22 | E12 | 0.5− | 0.0 | 2006 10 12 | E12 | 0.8+ | 0.2+ |
| 2001 05 23 | 699 | 0.2+ | 0.2+ | 2006 06 22 | E12 | 0.0 | 0.0 | 2006 10 12 | E12 | 0.4− | 0.3+ |
| 2001 05 23 | 699 | 0.7+ | 0.8+ | 2006 06 22 | E12 | 0.2− | 0.2+ | 2006 10 12 | E12 | 0.7− | 0.6+ |
| 2002 10 15 | 644 | 0.5− | 0.6+ | 2006 07 28 | E12 | 0.5+ | 0.2− | | | | |

**2006 PA$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.31246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22838808 | $\omega$ | 71.56354 | | +0.75157422 | +0.61728898 | |
| $a$ | 2.6506584 | $\Omega$ | 249.63990 | | −0.65900166 | +0.68701175 | |
| $e$ | 0.1680838 | $i$ | 14.36346 | | −0.02920607 | +0.38336559 | |
| $P$ | 4.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.8+ | 0.5+ | 2005 05 16 | 644 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.3+ | 0.3+ |
| 2002 10 07 | 704 | 0.1+ | 0.2+ | 2005 05 16 | 644 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.5+ | 0.5+ |
| 2002 10 07 | 704 | 0.1+ | 0.6− | 2005 05 16 | 644 | 0.4+ | 0.1− | 2006 09 16 | 703 | 0.4− | 0.3+ |
| 2002 10 07 | 704 | 0.9− | 0.1+ | 2006 08 10 | 644 | 0.0 | 0.0 | 2006 09 21 | 699 | (2.0− | 1.0−) |
| 2002 10 12 | 704 | 0.4+ | 0.7− | 2006 08 10 | 644 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 0.6+ | 0.6+ |
| 2002 10 12 | 704 | 0.5+ | 0.3− | 2006 08 10 | 644 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.3− | 0.1− |
| 2002 10 12 | 704 | 0.3+ | 0.1+ | 2006 08 24 | 704 | 0.1+ | 0.9− | 2006 10 16 | 106 | 1.1− | 0.5− |
| 2002 11 06 | 704 | 0.9− | 1.3+ | 2006 08 24 | 704 | 0.0 | 0.3− | 2006 10 16 | 106 | 0.2+ | 0.0 |
| 2002 11 06 | 704 | 0.2− | 0.3− | 2006 08 24 | 704 | 0.8− | 0.2+ | 2006 10 16 | 106 | 0.0 | 0.2− |
| 2002 11 06 | 704 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.6+ | 0.2− | 2006 10 16 | 106 | 0.1+ | 0.4− |

**2006 PB$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.27737 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17733401 | $\omega$ | 339.11990 | | +0.90193070 | +0.43114684 | |
| $a$ | 3.1376755 | $\Omega$ | 355.11388 | | −0.34239040 | +0.67830747 | |
| $e$ | 0.1979002 | $i$ | 17.18637 | | −0.26322961 | +0.59498855 | |
| $P$ | 5.56 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.2− | 0.5− | 2006 09 16 | 699 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.1+ | 0.8− |
| 2001 10 25 | 704 | 1.1− | 0.1− | 2006 09 16 | 699 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.1− |
| 2001 10 25 | 704 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2001 10 25 | 704 | 0.1− | 1.0+ | 2006 09 16 | 699 | 0.7− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.7− |
| 2001 10 25 | 704 | 0.9+ | 0.9+ | 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.3− |
| 2004 04 13 | 691 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.5− | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.1+ |
| 2004 04 13 | 691 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.3+ | 0.5+ |
| 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.2+ | 0.4+ |
| 2006 08 10 | 644 | 0.5− | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.6+ |
| 2006 08 10 | 644 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.2− | 2006 09 30 | 704 | 0.5+ | 0.3+ |
| 2006 08 10 | 644 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 10 01 | 703 | 0.5− | 0.5+ |
| 2006 08 18 | 704 | 0.2− | 0.7− | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 10 01 | 703 | 0.0 | 0.0 |
| 2006 08 18 | 704 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 703 | 0.1+ | 0.5+ |
| 2006 08 18 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.1+ | 2006 10 01 | 703 | 0.3− | 0.5+ |
| 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2006 08 18 | 691 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.3− |
| 2006 08 18 | 691 | 0.4− | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2006 08 25 | 704 | 0.3− | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2006 08 25 | 704 | 0.1− | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.8+ | 0.4+ |
| 2006 08 25 | 704 | 0.4+ | 0.8− | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.6+ |
| 2006 08 25 | 704 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2006 09 12 | 703 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2006 09 12 | 703 | 0.9− | 0.2− | 2006 09 25 | 699 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2006 09 12 | 703 | 0.6− | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 1.0− |
| 2006 09 12 | 703 | 0.9− | 0.1+ | 2006 09 26 | 704 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.6− |
| 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.7− |
| 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.1− | 1.2− |
| 2006 09 13 | 644 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.4− | 0.4+ | 2006 11 14 | 644 | 0.4+ | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 11 14 | 644 | 0.1+ | 0.2+ |
| 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.4+ | 1.0+ | 2006 11 14 | 644 | 0.2+ | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.2+ | | | | |

**2006 PC$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.07836 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29237658 | $\omega$ | 212.60416 | | +0.83546703 | +0.53799467 | |
| $a$ | 2.2482313 | $\Omega$ | 114.45131 | | −0.47412380 | +0.80876419 | |
| $e$ | 0.2112839 | $i$ | 7.07082 | | −0.27785150 | +0.23761781 | |
| $P$ | 3.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 16 | 704 | 0.0 | 0.4+ | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.5− | 0.0 |
| 1999 07 16 | 704 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 1999 07 16 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.2+ |
| 1999 07 16 | 704 | 0.1− | 1.1+ | 2006 09 19 | 703 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.7+ |
| 2001 02 02 | 691 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.6+ |
| 2001 02 02 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2001 02 02 | 691 | 0.3+ | 0.6+ | 2006 09 25 | 703 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 04 12 | 644 | 0.2+ | 1.0+ | 2006 09 25 | 703 | 0.9+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2002 04 12 | 644 | 0.3+ | 1.1+ | 2006 09 25 | 703 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2002 04 12 | 644 | 0.4+ | 0.8+ | 2006 09 25 | 703 | 0.5− | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.0 |
| 2006 08 10 | 644 | 0.3− | 0.2+ | 2006 09 25 | 703 | 0.5− | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2006 08 10 | 644 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2006 08 10 | 644 | 0.7− | 0.1− | 2006 09 25 | 703 | 0.4− | 0.1− | 2006 10 28 | 703 | 1.1+ | 0.4− |
| 2006 08 19 | 644 | 0.1− | 0.5+ | 2006 10 04 | 703 | 0.2+ | 0.5− | 2006 10 28 | 703 | 1.3+ | 0.4+ |
| 2006 08 19 | 644 | 0.1− | 0.4+ | 2006 10 04 | 703 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.4+ | 0.4+ |
| 2006 08 19 | 644 | 0.5+ | 0.1+ | 2006 10 04 | 703 | 0.2− | 0.3− | 2006 10 28 | 703 | (1.3+ | 1.8−) |
| 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 10 04 | 703 | 0.0 | 0.1− | | | | |
| 2006 09 13 | 644 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.4− | 0.0 | | | | |

**2006 PF$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.70365 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22008417 | $\omega$ | 344.85829 | | +0.93469883 | +0.35538936 | |
| $a$ | 2.7169200 | $\Omega$ | 354.31349 | | −0.31944798 | +0.83247497 | |
| $e$ | 0.2534621 | $i$ | 3.49552 | | −0.15585598 | +0.42506920 | |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.1− | 0.5+ | 2006 09 29 | 608 | 1.1+ | 0.1+ |
| 2000 03 03 | 645 | 0.2+ | 0.0 | 2006 09 15 | 704 | 0.0 | 0.1+ | 2006 09 29 | 608 | 1.2+ | 0.5+ |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.3− | 2006 09 30 | 691 | 0.3+ | 0.3− |
| 2000 05 04 | 645 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.5− | 0.8− | 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2002 12 06 | 704 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2002 12 06 | 704 | 0.5− | 0.6− | 2006 09 18 | 699 | (2.1+ | 1.3−) | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.6− | 0.3− |
| 2004 02 29 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2005 05 01 | 644 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2005 05 01 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2005 05 01 | 644 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 10 19 | 704 | 0.2+ | 1.4+ |
| 2006 07 21 | G96 | 0.5− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.5− | 2006 10 19 | 704 | (1.6− | 0.5−) |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 10 19 | 704 | 0.7+ | 0.6− |
| 2006 07 21 | G96 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.7− | 0.8− | 2006 10 19 | 704 | (0.1− | 1.6−) |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.5− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2006 08 06 | 699 | 0.2− | 0.7+ | 2006 09 25 | 704 | 1.1− | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2006 08 06 | 699 | 0.3+ | 0.0 | 2006 09 25 | 704 | 0.8− | 0.5− | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2006 08 06 | 699 | 0.1− | 0.8+ | 2006 09 25 | 704 | 0.8− | 1.1− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2006 08 06 | 699 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2006 08 19 | 699 | 0.8− | 0.5− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2006 08 19 | 699 | (0.1− | 2.1+) | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.5+ |
| 2006 08 19 | 699 | 1.1− | 0.7+ | 2006 09 29 | 704 | 0.5− | 0.6+ | 2006 10 29 | 704 | 1.1+ | 0.6+ |
| 2006 08 19 | 699 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.6+ | 2006 10 29 | 704 | 0.4− | 0.3+ |
| 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.0 | 2006 10 29 | 704 | 0.2+ | 0.3+ |
| 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.5+ | 2006 10 29 | 704 | 0.6+ | 0.4− |
| 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.5+ | 2006 10 29 | 704 | 0.2+ | 0.3+ |
| 2006 09 15 | 704 | 0.2+ | 0.5+ | 2006 09 29 | 608 | 1.1+ | 0.7+ | | | | |

## 2006 PG$_{30}$ = 1992 SM$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.65505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28521900 | $\omega$ | 213.22520 | | +0.85453140 | −0.51938545 | |
| $a$ | 2.2856887 | $\Omega$ | 178.05353 | | +0.49784285 | +0.81692752 | |
| $e$ | 0.1127766 | $i$ | 6.51467 | | +0.14808303 | +0.25073529 | |
| $P$ | 3.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 22 | 809 | (2.4+ | 1.0+) | 2005 05 14 | 644 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.1− |
| 1992 09 22 | 809 | 1.4+ | 0.5+ | 2005 06 29 | 644 | 0.6+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1− |
| 1992 09 22 | 809 | 0.5+ | 0.1− | 2005 06 29 | 644 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 1992 09 23 | 809 | (1.1− | 2.4−) | 2005 06 29 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 1992 09 23 | 809 | (1.6− | 2.1−) | 2006 08 06 | 699 | 0.9+ | 1.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 1992 09 23 | 809 | (1.7− | 2.2−) | 2006 08 06 | 699 | 0.2+ | 0.7− | 2006 10 01 | 704 | 0.1− | 0.5+ |
| 1999 09 04 | 699 | 0.1+ | 0.1+ | 2006 08 06 | 699 | 1.5+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 1999 09 04 | 699 | 0.0 | 0.1+ | 2006 08 06 | 699 | 0.7− | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.2+ |
| 1999 09 04 | 699 | 0.0 | 1.1+ | 2006 08 18 | 644 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.2+ | 0.2− |
| 1999 09 14 | 704 | 0.8+ | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 1999 09 14 | 704 | 0.4+ | 0.3− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 1999 09 14 | 704 | 0.6+ | 0.1+ | 2006 08 19 | 699 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.4+ | 0.0 |
| 1999 09 14 | 704 | 0.6+ | 0.7+ | 2006 08 19 | 699 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 1999 09 14 | 704 | 0.2− | 0.2− | 2006 08 19 | 699 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.5− | 1.0− |
| 1999 09 14 | 703 | 0.2+ | 0.5− | 2006 08 19 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.1+ |
| 1999 09 14 | 703 | 0.7− | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 1999 09 14 | 703 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 1999 09 14 | 703 | 0.7− | 0.8− | 2006 09 14 | 703 | 0.5+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1999 10 07 | 704 | 1.1− | 0.2+ | 2006 09 14 | 703 | (2.6− | 0.9−) | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 1999 10 07 | 704 | 0.4− | 0.2− | 2006 09 14 | 691 | 0.9− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 10 07 | 704 | 1.2− | 1.0+ | 2006 09 14 | 703 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 1999 10 07 | 704 | 0.7− | 0.5− | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 1999 10 15 | 704 | 0.2+ | 1.4− | 2006 09 17 | 704 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 1999 10 15 | 704 | 0.0 | 0.7− | 2006 09 17 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 704 | 1.0− | 1.4+ |
| 1999 10 15 | 704 | 0.4− | 0.4− | 2006 09 17 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 704 | 0.0 | 0.0 |
| 1999 10 15 | 704 | 0.0 | 0.6− | 2006 09 17 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 704 | 0.5− | 1.0+ |
| 1999 10 15 | 704 | 1.7− | 0.3+ | 2006 09 17 | 704 | 0.5+ | 0.9+ | 2006 10 22 | 704 | 0.4− | 0.5+ |
| 2003 12 20 | 704 | 0.6+ | 1.1+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 22 | 703 | 1.0− | 0.1+ |
| 2003 12 20 | 704 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2003 12 20 | 704 | 0.4+ | 1.1+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2003 12 20 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.8+ | 0.4+ | 2006 10 22 | 703 | 1.0− | 0.1− |
| 2003 12 20 | 704 | 0.2+ | 1.1+ | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 11 10 | H55 | 0.3− | 0.2− |
| 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 11 10 | H55 | 0.2− | 0.2− |
| 2005 04 18 | 691 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.5− | 2006 11 10 | H55 | 0.5− | 0.1+ |
| 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.2− | 2006 11 10 | 704 | 0.1− | 0.6+ |
| 2005 05 14 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 11 10 | 704 | 0.8− | 1.3+ |
| 2005 05 14 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 11 10 | 704 | 2.4− | 1.8+ |
| 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.2− | 2006 11 10 | 704 | 0.8− | 0.6+ |
| 2005 05 14 | 644 | 0.3+ | 0.5+ | 2006 09 20 | 704 | 0.8− | 0.3− | 2006 11 10 | 704 | 1.3− | 0.4− |
| 2005 05 14 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.4+ | 0.1− | | | | |

## 2006 PH$_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.21398 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23011161 | $\omega$ | 336.53017 | | +0.94267680 | +0.33315893 | |
| $a$ | 2.6374062 | $\Omega$ | 4.15239 | | −0.24873804 | +0.73969223 | |
| $e$ | 0.2827353 | $i$ | 15.31073 | | −0.22246311 | +0.58468841 | |
| $P$ | 4.28 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 14 | 704 | 0.1− | 0.8+ | 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.4− | 1.2+ |
| 2002 10 14 | 704 | 0.4− | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.3+ | 2006 09 25 | 704 | (0.4− | 3.8+) |
| 2002 10 14 | 704 | 0.3− | 0.9− | 2006 08 28 | 703 | 0.2− | 0.8+ | 2006 09 25 | 704 | 1.4− | 0.5+ |
| 2002 12 10 | 704 | 0.6− | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.7+ | 2006 09 25 | 704 | 1.1− | 0.9− |
| 2002 12 10 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 0.6+ | 0.4+ | 2006 09 25 | 704 | 1.0− | 0.3− |
| 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 08 30 | 699 | 0.0 | 0.0 | 2006 10 17 | A50 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.5− | 0.4+ | 2006 08 30 | 699 | 0.1− | 0.3− | 2006 10 17 | A50 | 0.1− | 0.1+ |
| 2002 12 10 | 704 | 0.3− | 0.0 | 2006 09 01 | 224 | 0.0 | 0.1− | 2006 10 18 | A50 | 0.1+ | 0.3− |
| 2002 12 28 | 704 | 0.2− | 0.4− | 2006 09 01 | 224 | 0.2− | 0.2− | 2006 10 18 | A50 | 0.2+ | 0.0 |
| 2002 12 28 | 704 | 0.9+ | 0.4+ | 2006 09 01 | 224 | 0.2− | 0.3− | 2006 10 18 | A50 | 0.3+ | 0.1+ |
| 2002 12 28 | 704 | 0.8+ | 0.4+ | 2006 09 01 | 704 | 0.7+ | 1.1− | 2006 10 18 | A50 | 0.3+ | 0.0 |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.7+ | 0.7− | 2006 10 19 | 703 | 0.2− | 0.5− |
| 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 01 | 704 | (0.5− | 1.8+) | 2006 10 19 | 703 | 0.3− | 0.4− |
| 2004 02 16 | 691 | 0.4+ | 0.2+ | 2006 09 01 | 704 | 0.1− | 0.8+ | 2006 10 19 | 703 | 0.0 | 0.5− |
| 2005 05 04 | 644 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2005 05 04 | 644 | 0.4+ | 0.1+ | 2006 09 01 | 704 | 0.7− | 0.2+ | 2006 10 21 | 704 | 0.5− | 0.2+ |
| 2005 05 04 | 644 | 0.1− | 0.4+ | 2006 09 01 | 704 | 0.5− | 0.1− | 2006 10 21 | 704 | 1.2− | 0.1+ |
| 2005 05 10 | 699 | (1.6− | 4.1−) | 2006 09 01 | 704 | 0.4− | 0.2+ | 2006 10 21 | 704 | 0.5− | 0.0 |
| 2005 05 10 | 699 | 1.1− | 0.7+ | 2006 09 15 | H51 | 0.5+ | 0.6− | 2006 10 21 | 704 | 0.3− | 0.0 |
| 2005 05 10 | 699 | 0.3+ | 0.6+ | 2006 09 15 | H51 | 0.2− | 0.4− | 2006 10 21 | 704 | 0.7− | 0.1− |
| 2005 05 10 | 699 | (2.2+ | 0.5+) | 2006 09 15 | H51 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2005 05 12 | 644 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2005 05 12 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2005 05 12 | 644 | 0.5+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2006 07 25 | 704 | (2.2+ | 0.9−) | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 07 25 | 704 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 07 25 | 704 | 0.8+ | 0.2− | 2006 09 18 | 704 | 0.2+ | 0.9+ | 2006 10 27 | 703 | 0.1− | 0.0 |
| 2006 08 06 | 699 | 0.8+ | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.4− |
| 2006 08 06 | 699 | 0.3− | 0.2− | 2006 09 18 | 704 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.2+ | 0.6− |
| 2006 08 06 | 699 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.3+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.5− |
| 2006 08 19 | 683 | 1.2− | 0.5− | 2006 09 20 | 699 | 0.2+ | 0.5− | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2006 08 19 | 683 | 0.4− | 0.2+ | 2006 09 20 | 699 | 0.3+ | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2006 08 19 | 683 | 0.9− | 0.8+ | 2006 09 20 | 699 | 0.5+ | 0.4+ | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2006 08 21 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 699 | 0.3+ | 0.5− | 2006 11 15 | 703 | 1.1− | 0.2+ |
| 2006 08 21 | 704 | 0.1+ | 0.4+ | 2006 09 21 | H51 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.0 |
| 2006 08 21 | 704 | 0.0 | 0.3+ | 2006 09 21 | H51 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2006 08 21 | 704 | 0.2− | 0.3+ | 2006 09 21 | 704 | 0.0 | 0.6+ | 2006 11 17 | 704 | 0.4+ | 0.6+ |
| 2006 08 21 | 704 | 0.4+ | 0.7+ | 2006 09 21 | 704 | 0.7− | 0.9+ | 2006 11 17 | 704 | 1.9+ | 1.1− |
| 2006 08 25 | 704 | (0.4− | 2.5+) | 2006 09 21 | 704 | 0.3− | 1.0+ | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 2006 08 25 | 704 | 0.4+ | 1.0− | 2006 09 21 | H51 | 0.2+ | 0.1+ | 2006 11 22 | G92 | 1.0+ | 0.0 |
| 2006 08 25 | 704 | (0.4+ | 2.7+) | 2006 09 22 | 704 | 0.8+ | 0.5− | 2006 11 22 | G92 | 0.9+ | 0.0 |
| 2006 08 25 | 704 | 0.2− | 0.4− | 2006 09 22 | 704 | 0.1+ | 0.5+ | 2006 11 22 | G92 | 0.9+ | 0.3+ |
| 2006 08 25 | 704 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 0.0 | 0.8+ | | | | |

**2006 PB$_{31}$ = 2005 JR$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.43104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17503976 | $\omega$ | 125.58838 | | +0.12591101 | +0.98870005 | |
| $a$ | 3.1650331 | $\Omega$ | 151.31889 | | −0.95618410 | +0.14280027 | |
| $e$ | 0.0510598 | $i$ | 9.75949 | | −0.26430736 | −0.04561027 | |
| $P$ | 5.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.0 | 0.1+ | 2005 05 09 | 691 | 0.2+ | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.6+ |
| 2001 09 18 | 645 | 0.0 | 0.1+ | 2005 05 09 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.3+ |
| 2004 02 23 | 704 | 0.7+ | 0.2+ | 2005 05 14 | G96 | 0.2− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2004 02 23 | 704 | 0.4+ | 0.6− | 2005 05 14 | G96 | 0.3− | 0.6− | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 2004 02 23 | 704 | 0.0 | 0.7+ | 2005 05 14 | G96 | 0.6− | 0.3− | 2006 09 14 | 703 | 0.0 | 1.0− |
| 2004 02 23 | 704 | 1.0+ | 0.1− | 2005 05 14 | G96 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.3+ |
| 2004 02 23 | 704 | 0.2+ | 0.4+ | 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.4− | 0.8+ |
| 2004 03 14 | 691 | 0.1− | 0.5+ | 2005 06 05 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.7− | 0.0 |
| 2004 03 14 | 691 | 0.2− | 0.3+ | 2005 06 05 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.0 |
| 2004 03 14 | 691 | 0.0 | 0.5+ | 2006 08 13 | 644 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.6+ | 0.2+ |
| 2004 03 29 | 691 | 0.0 | 0.5+ | 2006 08 13 | 644 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 08 13 | 644 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.3+ | | | | |
| 2005 05 09 | 691 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.0 | 0.2− | | | | |

**2006 PG$_{31}$ = 2002 UX$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.98827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21682226 | $\omega$ | 114.61894 | | −0.03658561 | +0.99671791 | |
| $a$ | 2.7441013 | $\Omega$ | 152.98325 | | −0.96471714 | −0.01637210 | |
| $e$ | 0.1665992 | $i$ | 9.14738 | | −0.26073420 | −0.07928032 | |
| $P$ | 4.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 03 12 | G96 | 0.7+ | 1.6− | 2006 08 28 | 703 | 0.4− | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2005 03 12 | G96 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.7− |
| 2002 10 29 | 645 | 0.0 | 0.1+ | 2005 03 12 | G96 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.4+ | 1.0− |
| 2002 10 29 | 645 | 0.0 | 0.1− | 2005 03 12 | G96 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.5+ |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 08 13 | 644 | 0.4+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 08 13 | 644 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.2− |
| 2005 03 12 | G96 | 0.7+ | 0.6+ | 2006 08 13 | 644 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.4+ |
| 2005 03 12 | G96 | 0.6− | 0.1− | 2006 08 22 | 644 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.8− | 0.1+ |
| 2005 03 12 | G96 | 0.3+ | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.1+ | | | | |
| 2005 03 12 | G96 | 0.6− | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.2− | | | | |

**2006 PJ$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.23918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27166832 | $\omega$ | 255.10613 | | +0.81468562 | −0.57621896 | |
| $a$ | 2.3610765 | $\Omega$ | 140.01906 | | +0.56341785 | +0.75985564 | |
| $e$ | 0.2133010 | $i$ | 5.82952 | | +0.13728681 | +0.30098357 | |
| $P$ | 3.63 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.1− | 0.2− | 1999 10 09 | 704 | 0.6+ | 0.2− | 2006 08 24 | 644 | 0.0 | 0.1− |
| 1997 02 03 | 691 | 0.3+ | 0.1− | 1999 11 03 | 703 | 0.3+ | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 1997 02 03 | 691 | 0.2− | 0.2+ | 1999 11 03 | 703 | 0.9− | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.1+ |
| 1999 09 18 | 691 | 0.0 | 0.4− | 1999 11 03 | 703 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.0 |
| 1999 09 18 | 691 | 0.0 | 0.2− | 1999 11 03 | 703 | 0.5+ | 1.3+ | 2006 08 28 | 703 | (1.9+ | 0.4−) |
| 1999 09 18 | 691 | 0.0 | 0.3− | 2006 08 13 | 644 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.7+ | 0.6− |
| 1999 10 09 | 704 | 0.6+ | 1.2+ | 2006 08 13 | 644 | 0.1+ | 0.5+ | 2006 09 23 | 461 | 0.5− | 0.1+ |
| 1999 10 09 | 704 | 0.3− | 0.1− | 2006 08 13 | 644 | 0.2+ | 0.1+ | 2006 09 23 | 461 | 0.2+ | 0.1+ |
| 1999 10 09 | 704 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.3+ | 0.2+ | | | | |

**2006 PW$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.65297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23563087 | $\omega$ | 263.82967 | | +0.97146754 | −0.08619251 | |
| $a$ | 2.5960592 | $\Omega$ | 100.95926 | | +0.16115268 | +0.92342062 | |
| $e$ | 0.3129641 | $i$ | 13.00645 | | −0.17401333 | +0.37398557 | |
| $P$ | 4.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 644 | 0.1− | 0.5+ | 2002 11 04 | 644 | 0.0 | 0.1+ | 2006 08 25 | E12 | 0.2+ | 0.1+ |
| 2002 10 08 | 644 | 0.1− | 0.6+ | 2002 11 04 | 644 | 0.2− | 0.0 | 2006 08 25 | E12 | 0.1+ | 0.2− |
| 2002 10 08 | 644 | 0.1− | 0.4+ | 2006 07 18 | E12 | 0.4+ | 0.2+ | 2006 08 25 | E12 | 0.1− | 0.5+ |
| 2002 10 18 | 644 | 0.1− | 0.3− | 2006 07 18 | E12 | 0.2+ | 0.1+ | 2006 08 25 | E12 | 0.2+ | 0.0 |
| 2002 10 18 | 644 | 0.2+ | 0.4− | 2006 07 18 | E12 | 0.1− | 0.1+ | 2006 09 12 | E12 | 0.3+ | 0.5− |
| 2002 10 18 | 644 | 0.1+ | 0.2− | 2006 07 18 | E12 | 0.3− | 0.3+ | 2006 09 12 | E12 | 0.0 | 0.7− |
| 2002 10 18 | 644 | 0.2− | 0.3− | 2006 08 14 | E12 | 0.1− | 0.2− | 2006 09 12 | E12 | 0.5− | 0.1− |
| 2002 10 18 | 644 | 0.3+ | 0.1+ | 2006 08 14 | E12 | 0.2− | 0.3+ | 2006 09 12 | E12 | 0.5− | 0.4− |
| 2002 10 18 | 644 | 0.2+ | 0.3− | 2006 08 14 | E12 | 0.2+ | 0.2+ | | | | |
| 2002 11 04 | 644 | 0.1− | 0.1+ | 2006 08 14 | E12 | 0.1+ | 0.1− | | | | |

**2006 PC$_{32}$ = 2000 ED$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.99580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22209332 | $\omega$ | 231.30046 | | +0.90622758 | −0.41970562 | |
| $a$ | 2.7005096 | $\Omega$ | 153.40069 | | +0.41458382 | +0.85851305 | |
| $e$ | 0.0390711 | $i$ | 6.53755 | | +0.08289649 | +0.29462269 | |
| $P$ | 4.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.5+ | 0.3+ | 2002 10 03 | 704 | 0.0 | 0.5+ | 2006 08 16 | 644 | 0.5− | 0.1+ |
| 2000 03 03 | 704 | 0.3− | 0.3+ | 2002 10 03 | 704 | 0.4− | 1.1+ | 2006 08 16 | 644 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.5− | 0.7+ | 2004 01 19 | 699 | 0.5− | 0.7+ | 2006 08 16 | 644 | 0.2+ | 0.3+ |
| 2000 03 03 | 704 | 1.0+ | 0.5+ | 2004 01 19 | 699 | 0.2− | 0.6− | 2006 08 24 | 644 | 0.3+ | 0.3+ |
| 2000 03 11 | 704 | 0.0 | 1.0+ | 2004 01 19 | 699 | 0.9+ | 0.7+ | 2006 08 24 | 644 | 0.1+ | 0.0 |
| 2000 03 11 | 704 | 0.6+ | 0.2+ | 2004 01 19 | 699 | (1.1− | 1.9+) | 2006 08 24 | 644 | 0.2+ | 0.3+ |
| 2000 03 11 | 704 | 0.3− | 0.8+ | 2006 08 14 | 644 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2000 03 11 | 704 | 0.1− | 0.3− | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.9− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.7+ | 0.3+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 10 03 | 704 | (1.8− | 0.1+) | 2006 08 15 | 644 | 0.2− | 0.4+ | | | | |
| 2002 10 03 | 704 | 0.8+ | 0.3− | 2006 08 15 | 644 | 0.4− | 0.4+ | | | | |

**2006 PH$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.59712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16874256 | $\omega$ | 358.55124 | | +0.99998519 | +0.00461168 | |
| $a$ | 3.2432938 | $\Omega$ | 1.19604 | | −0.00243086 | +0.85358189 | |
| $e$ | 0.1058044 | $i$ | 7.95877 | | −0.00486943 | +0.52093827 | |
| $P$ | 5.84 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.6− | 0.8− | 2001 11 24 | 704 | 0.3+ | 0.3− | 2006 08 28 | 699 | 0.9+ | 0.1+ |
| 2000 08 26 | 704 | 0.2− | 0.7+ | 2004 03 31 | 291 | 1.2− | 0.5+ | 2006 08 28 | 699 | 0.4− | 0.5+ |
| 2000 08 26 | 704 | 0.2+ | 1.4+ | 2004 03 31 | 291 | 0.7+ | 0.5+ | 2006 08 28 | 699 | (1.9− | 0.4+) |
| 2001 10 14 | 704 | 0.1− | 1.0+ | 2004 03 31 | 291 | 0.4+ | 0.7+ | 2006 08 28 | 699 | 1.4− | 0.7+ |
| 2001 10 14 | 704 | 0.4+ | 0.6+ | 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.4− |
| 2001 10 14 | 704 | 0.2− | 1.0+ | 2004 04 12 | 691 | 0.7+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.5− | 0.1− | 2004 04 12 | 691 | 0.5+ | 0.0 | 2006 09 14 | 703 | (2.2− | 1.4+) |
| 2001 11 12 | 704 | 0.3− | 0.5+ | 2006 08 15 | 644 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.8− | 1.3+ |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2001 11 12 | 704 | 0.4− | 0.8+ | 2006 08 15 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2001 11 24 | 704 | 0.0 | 0.6+ | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2001 11 24 | 704 | 1.1− | 1.0+ | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.3+ |
| 2001 11 24 | 704 | 0.4+ | 0.7− | 2006 08 24 | 644 | 0.2− | 0.2+ | | | | |

**2006 PN$_{32}$ = 2003 YM$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.84756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28275372 | $\omega$ | 299.41331 | | +0.98300027 | | −0.15480674 |
| $a$ | 2.2989551 | $\Omega$ | 69.64075 | | +0.18241206 | | +0.88460934 |
| $e$ | 0.1579977 | $i$ | 6.04424 | | −0.02088794 | | +0.43988771 |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.0 | 0.4+ | 2006 08 15 | 644 | 0.0 | 0.2− | 2006 09 21 | 699 | 0.8− | 0.1− |
| 2003 12 18 | 704 | 0.7− | 0.6− | 2006 08 15 | 644 | 0.1− | 0.0 | 2006 09 21 | 699 | 0.4− | 0.7+ |
| 2003 12 18 | 704 | 0.4− | 0.2+ | 2006 08 23 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.8− |
| 2003 12 22 | 704 | 0.4+ | 0.6− | 2006 08 23 | 644 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.2+ | 0.8− |
| 2003 12 22 | 704 | 0.2+ | 0.3+ | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.5+ |
| 2003 12 22 | 704 | 0.5+ | 0.3+ | 2006 09 21 | 699 | 1.1− | 0.9− | 2006 09 26 | 703 | 1.6+ | 1.2+ |
| 2006 08 15 | 644 | 0.1− | 0.2− | 2006 09 21 | 699 | 0.1− | 0.2− | | | | |

**2006 PP$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.54814 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23999018 | $\omega$ | 185.09030 | | +0.97904300 | | +0.15728987 |
| $a$ | 2.5645258 | $\Omega$ | 163.99261 | | −0.16634825 | | +0.98408944 |
| $e$ | 0.1009881 | $i$ | 27.97660 | | −0.11748643 | | −0.08263098 |
| $P$ | 4.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 02 | 809 | 0.7+ | 1.9+ | 2006 08 25 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 704 | 0.2+ | 0.9+ |
| 2002 08 12 | 704 | 1.0− | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 19 | 704 | 0.2− | 0.2− |
| 2002 08 12 | 704 | 0.5− | 1.0+ | 2006 08 28 | 703 | 1.1− | 0.4− | 2006 09 19 | 704 | 0.4+ | 1.1+ |
| 2002 08 12 | 704 | 0.2− | 0.8+ | 2006 08 28 | 703 | 1.1− | 1.1− | 2006 09 19 | 704 | 1.1+ | 0.9+ |
| 2002 10 01 | 608 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 09 19 | 704 | 1.2+ | 1.0− |
| 2002 10 01 | 608 | 0.0 | 0.6+ | 2006 08 30 | 704 | 0.4+ | 0.6− | 2006 09 21 | 699 | 0.3+ | 0.2− |
| 2002 10 01 | 608 | 0.2− | 0.6+ | 2006 08 30 | 704 | 0.7+ | 0.2− | 2006 09 21 | 699 | 0.2− | 0.8+ |
| 2002 10 08 | 644 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.6+ | 0.5− | 2006 09 21 | 699 | 0.3+ | 0.2− |
| 2002 10 08 | 644 | 0.0 | 0.1+ | 2006 08 30 | 704 | 1.1+ | 0.1+ | 2006 09 21 | 699 | 0.4+ | 0.2+ |
| 2002 10 08 | 644 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.3− | 0.4− | 2006 09 26 | 703 | 0.7− | 0.2− |
| 2005 05 10 | 703 | 0.8− | 0.5+ | 2006 09 12 | 704 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.3+ | 0.2− |
| 2005 05 10 | 703 | 0.0 | 0.2− | 2006 09 12 | 704 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.0 |
| 2005 05 10 | 703 | 0.5+ | 0.2+ | 2006 09 12 | 704 | 0.9+ | 0.8+ | 2006 09 26 | 703 | 0.0 | 0.3− |
| 2005 05 10 | 703 | 0.6− | 1.3+ | 2006 09 12 | 704 | 1.4− | 0.0 | 2006 10 02 | 703 | 0.1− | 0.5+ |
| 2006 08 15 | 644 | 0.1+ | 0.2− | 2006 09 12 | 704 | 0.2+ | 0.7+ | 2006 10 02 | 703 | 0.5− | 0.5+ |
| 2006 08 15 | 644 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.6− | 0.4− | 2006 10 02 | 703 | 1.3− | 0.4+ |
| 2006 08 15 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.1− | 2006 10 02 | 703 | 0.7− | 0.7+ |
| 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.9− |
| 2006 08 23 | 644 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.2− | 0.5− | 2006 10 21 | 703 | 0.8− | 0.2− |
| 2006 08 23 | 644 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.5+ | 1.0+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2006 08 25 | 704 | 0.2− | 0.6− | 2006 09 16 | 704 | 0.0 | 1.2+ | 2006 10 21 | 703 | 0.6− | 0.7− |
| 2006 08 25 | 704 | (0.8− | 1.6+) | 2006 09 16 | 704 | 0.9+ | 0.3+ | | | | |
| 2006 08 25 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.3+ | 0.4− | | | | |

**2006 PQ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.30289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17193662 | $\omega$ | 327.45776 | | +0.86921988 | | +0.49367017 |
| $a$ | 3.2030014 | $\Omega$ | 3.33766 | | −0.28961741 | | +0.55317024 |
| $e$ | 0.1858686 | $i$ | 27.98960 | | −0.40072255 | | +0.67103833 |
| $P$ | 5.73 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.1+ | 0.9− | 2006 07 30 | E12 | 0.1+ | 0.2+ | 2006 09 27 | E12 | 0.1+ | 0.0 |
| 2001 08 23 | 704 | 0.8− | 0.4+ | 2006 08 15 | E12 | 0.5− | 0.1+ | 2006 09 27 | E12 | 0.3+ | 0.1+ |
| 2001 08 23 | 704 | 0.2− | 0.1+ | 2006 08 15 | E12 | 0.1+ | 0.3− | 2006 09 27 | E12 | 0.7+ | 0.3+ |
| 2001 08 23 | 704 | (1.5− | 1.7−) | 2006 08 15 | E12 | 0.2− | 0.2+ | 2006 10 11 | E12 | 0.1− | 0.9+ |
| 2001 09 26 | 704 | 0.3− | 0.8+ | 2006 08 15 | E12 | 0.1− | 0.6− | 2006 10 11 | E12 | 0.4− | 0.2− |
| 2001 09 26 | 704 | 0.7+ | 0.5− | 2006 08 25 | E12 | 0.0 | 0.2− | 2006 10 11 | E12 | 0.2− | 0.2+ |
| 2001 09 26 | 704 | 0.3− | 0.2− | 2006 08 25 | E12 | 0.0 | 0.2− | 2006 10 11 | E12 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 0.4+ | 0.7+ | 2006 08 25 | E12 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2004 02 13 | 691 | 0.4+ | 0.0 | 2006 08 25 | E12 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2004 02 13 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 2004 02 13 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2006 07 30 | E12 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2006 07 30 | E12 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.6− | 2006 10 12 | 644 | 0.5− | 0.2+ |
| 2006 07 30 | E12 | 0.3− | 0.1+ | 2006 09 27 | E12 | 1.0− | 0.1− | | | | |

**2006 PT$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.85811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18079039 | $\omega$ | 245.11893 | | +0.85506838 | | +0.42296212 |
| $a$ | 3.0975560 | $\Omega$ | 88.62786 | | −0.29665509 | | +0.87347911 |
| $e$ | 0.2363902 | $i$ | 17.45888 | | −0.42526913 | | +0.24111675 |
| $P$ | 5.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.4− | 0.8+ | 2006 08 15 | E12 | 0.3− | 0.4− | 2006 09 12 | E12 | 0.4− | 0.4− |
| 2001 10 28 | 644 | 0.5− | 0.8+ | 2006 08 15 | E12 | 0.2+ | 0.1+ | 2006 09 12 | E12 | 0.5− | 0.2+ |
| 2001 10 28 | 644 | 0.5− | 0.8+ | 2006 08 25 | 428 | 0.8+ | 0.4+ | 2006 09 12 | E12 | 0.2+ | 0.0 |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2006 08 25 | E12 | 0.1− | 0.1− | 2006 09 25 | E12 | 0.5+ | 0.1− |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2006 08 25 | E12 | 0.2− | 0.0 | 2006 09 25 | E12 | 0.3− | 0.2+ |
| 2002 12 13 | 645 | 0.0 | 0.1− | 2006 08 25 | E12 | 0.3+ | 0.1+ | 2006 09 25 | E12 | 0.2+ | 0.2+ |
| 2002 12 13 | 645 | 0.0 | 0.1+ | 2006 08 25 | E12 | 0.2− | 0.2− | 2006 09 25 | E12 | 0.2+ | 0.4− |
| 2006 08 15 | E12 | 0.3− | 0.1− | 2006 08 26 | 428 | 0.3+ | 0.9− | | | | |
| 2006 08 15 | E12 | 0.2+ | 0.0 | 2006 09 12 | E12 | 0.3− | 0.2+ | | | | |

**2006 PU$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.85686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30539147 | $\omega$ | 317.14483 | | +0.70108729 | | +0.71274468 |
| $a$ | 2.1838935 | $\Omega$ | 357.10218 | | −0.48057529 | | +0.44977684 |
| $e$ | 0.2513617 | $i$ | 25.44044 | | −0.52680547 | | +0.53823398 |
| $P$ | 3.23 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 645 | 0.0 | 0.0 | 2006 08 25 | E12 | 0.3− | 0.3− | 2006 09 26 | 704 | 0.4− | 0.6+ |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2006 08 25 | E12 | 0.2− | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.7− |
| 2002 04 06 | 807 | 0.1+ | 1.1+ | 2006 09 17 | 699 | 0.3+ | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.5− |
| 2002 04 06 | 807 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.4− |
| 2006 08 15 | E12 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.5+ |
| 2006 08 15 | E12 | 0.1+ | 0.3+ | 2006 09 17 | 699 | 0.3− | 0.4+ | 2006 09 30 | 703 | (2.2− | 0.7+) |
| 2006 08 15 | E12 | 0.7+ | 0.1+ | 2006 09 20 | 703 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 2006 08 15 | E12 | 0.4+ | 0.0 | 2006 09 20 | 703 | 0.5− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2006 08 25 | E12 | 0.2+ | 0.0 | 2006 09 20 | 703 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2006 08 25 | E12 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.1+ |

**2006 PX$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.62333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22441131 | $\omega$ | 248.79480 | | +0.88785544 | | +0.37694620 |
| $a$ | 2.6818813 | $\Omega$ | 88.26493 | | −0.25879217 | | +0.88325847 |
| $e$ | 0.1745570 | $i$ | 15.30666 | | −0.38044622 | | +0.27886561 |
| $P$ | 4.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.1+ | 0.0 | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 15 | E12 | 0.1+ | 0.6+ |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 15 | E12 | 0.4+ | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2002 12 13 | 644 | 0.1− | 0.3+ | 2006 08 25 | E12 | 0.8− | 0.5+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2002 12 13 | 644 | 0.1− | 0.1− | 2006 08 25 | E12 | 0.2+ | 0.3+ |
| 2002 10 10 | 644 | 0.2− | 0.7+ | 2002 12 13 | 644 | 0.1− | 0.3+ | 2006 08 25 | E12 | 0.4+ | 0.5− |
| 2002 10 10 | 644 | 0.3− | 0.6+ | 2006 08 15 | E12 | 0.4+ | 0.5− | 2006 08 25 | E12 | 0.1− | 0.1− |
| 2002 10 10 | 644 | 0.1− | 0.5+ | 2006 08 15 | E12 | 0.7− | 0.5− | | | | |

**2006 PZ$_{32}$ = 2002 LE$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.23658 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27428548 | $\omega$ | 128.75137 | | +0.62300225 | | +0.78222004 |
| $a$ | 2.3460333 | $\Omega$ | 179.78424 | | −0.72696211 | | +0.57904703 |
| $e$ | 0.2244128 | $i$ | 1.77953 | | −0.28878069 | | +0.22986158 |
| $P$ | 3.59 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 11 | 644 | 0.5− | 0.1− | 2006 09 12 | 703 | 0.3+ | 1.1− | 2006 09 20 | 704 | 1.3− | 0.8+ |
| 2002 06 11 | 644 | 0.6− | 0.1+ | 2006 09 12 | 703 | 0.5− | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.8+ |
| 2002 06 11 | 644 | (1.9+ | 0.3−) | 2006 09 12 | 703 | (1.2− | 1.9−) | 2006 09 20 | 704 | 0.4− | 0.2+ |
| 2002 06 12 | 291 | 0.7− | 0.4− | 2006 09 13 | 644 | 0.2− | 0.3− | 2006 09 23 | 691 | 0.5− | 0.1− |
| 2002 06 12 | 291 | 0.3− | 0.1− | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 09 23 | 691 | 0.4− | 0.2+ |
| 2002 06 12 | 291 | 1.3+ | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.3− | 2006 09 23 | 691 | 0.3− | 0.2+ |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.7+ | 0.3− |
| 2005 03 08 | G96 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 2005 03 08 | G96 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2005 03 08 | G96 | 0.2+ | 0.3− | 2006 09 16 | 699 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2006 08 15 | 644 | 0.3+ | 0.1− | 2006 09 16 | 699 | 0.2+ | 0.4− | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2006 08 15 | 644 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.7+ | 0.5+ | 2006 10 16 | G96 | 0.3+ | 0.6− |
| 2006 08 15 | 644 | 0.1− | 0.4− | 2006 09 16 | 699 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2006 08 27 | 699 | 0.4− | 1.0− | 2006 09 17 | 704 | (0.0 | 1.5−) | 2006 10 27 | G96 | 0.6− | 0.0 |
| 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 09 17 | 704 | (1.6+ | 1.0+) | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2006 08 27 | 699 | 0.9+ | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.5+ | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2006 08 27 | 699 | 0.4+ | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 08 27 | 147 | 0.9− | 1.0− | 2006 09 19 | 699 | 0.3− | 0.5+ | 2006 11 15 | G96 | 0.6− | 0.2+ |
| 2006 08 27 | 147 | 0.3− | 0.5− | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2006 08 27 | 147 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.8+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4+ |
| 2006 08 28 | 204 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4+ |
| 2006 08 28 | 204 | 0.3+ | 0.2− | 2006 09 20 | 704 | 1.3+ | 0.9+ | | | | |
| 2006 09 12 | 703 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.1− | | | | |

**2006 PQ$_{34}$ = 1995 YO$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.45659 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25625301 | $\omega$ | 249.95849 | | +0.81520320 | | +0.57631371 |
| $a$ | 2.4548412 | $\Omega$ | 74.80862 | | −0.50663012 | | +0.75768060 |
| $e$ | 0.2281779 | $i$ | 3.41582 | | −0.28065934 | | +0.30623947 |
| $P$ | 3.85 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.2+ | 0.1+ | 2005 03 03 | 691 | 0.1+ | 0.7+ | 2006 07 21 | 704 | 0.8+ | 0.6+ |
| 1995 12 18 | 691 | 0.1− | 0.2+ | 2005 03 03 | 691 | 0.2− | 0.5+ | 2006 07 21 | 704 | 1.1− | 1.1+ |
| 1995 12 18 | 691 | 0.2− | 0.1− | 2005 04 11 | 691 | 0.4+ | 0.1+ | 2006 07 21 | 704 | 0.1− | 1.2+ |
| 1995 12 23 | 691 | 0.3− | 0.3+ | 2005 04 11 | 691 | 0.3+ | 0.2+ | 2006 08 11 | 644 | 0.4− | 0.4+ |
| 1995 12 23 | 691 | 0.1− | 0.0 | 2005 04 11 | 691 | 0.4+ | 0.3+ | 2006 08 11 | 644 | 0.1− | 0.3+ |
| 1995 12 23 | 691 | 0.1+ | 0.1+ | 2006 06 03 | G96 | 0.2+ | 0.1− | 2006 08 11 | 644 | 0.2+ | 0.4+ |
| 1998 06 26 | 691 | 0.1+ | 0.6− | 2006 06 03 | G96 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.0 |
| 1998 06 26 | 691 | 0.3− | 0.5− | 2006 06 03 | G96 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.4+ | 0.3+ |
| 1998 06 26 | 691 | 0.2− | 0.1− | 2006 06 03 | G96 | 0.1− | 0.0 | 2006 08 14 | 644 | 0.2+ | 0.3+ |
| 1999 12 07 | 704 | 0.6+ | 0.4− | 2006 06 22 | 644 | 0.2+ | 0.1+ | 2006 08 23 | 704 | 0.7− | 1.2+ |
| 1999 12 07 | 704 | 0.3+ | 0.2− | 2006 06 22 | 644 | 0.2+ | 0.2− | 2006 08 23 | 704 | 0.2− | 0.8+ |
| 1999 12 07 | 704 | 0.1− | 0.7− | 2006 06 22 | 644 | 0.0 | 0.1− | 2006 08 23 | 704 | 0.9− | 0.1+ |
| 2005 03 03 | 691 | 0.0 | 0.3+ | 2006 07 21 | 704 | 0.3− | 0.6+ | | | | |

**2006 PW$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.99966 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28150141 | $\omega$ | 121.34155 | | +0.79504427 | | +0.60595533 |
| $a$ | 2.3057683 | $\Omega$ | 201.39798 | | −0.57853001 | | +0.74425369 |
| $e$ | 0.2541534 | $i$ | 4.22571 | | −0.18222961 | | +0.28089959 |
| $P$ | 3.50 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.2− | 0.3+ | 2005 03 17 | G96 | 0.5− | 0.2− | 2006 08 30 | 704 | (1.9− | 1.4+) |
| 1999 07 13 | 704 | 0.3− | 0.6+ | 2006 06 20 | 691 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.7+ | 0.4+ |
| 1999 07 13 | 704 | (0.3+ | 2.8−) | 2006 06 20 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 1.3− | 0.7+ |
| 1999 07 13 | 704 | (0.4− | 3.5−) | 2006 06 20 | 691 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.1+ |
| 2002 04 12 | 291 | 0.3+ | 0.0 | 2006 07 21 | 644 | 0.4− | 0.1− | 2006 09 18 | 704 | 1.4− | 0.8− |
| 2002 04 12 | 291 | 0.2+ | 0.5+ | 2006 07 21 | 644 | 0.4+ | 0.2− | 2006 09 18 | 704 | 0.2+ | 0.1+ |
| 2002 04 12 | 291 | 0.1+ | 0.1+ | 2006 07 21 | 644 | 0.2− | 0.1− | 2006 09 18 | 704 | 1.0+ | 0.6+ |
| 2003 12 17 | 691 | 0.3− | 0.6+ | 2006 08 12 | 644 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2003 12 17 | 691 | 0.4− | 0.7+ | 2006 08 12 | 644 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2003 12 17 | 691 | 0.7+ | 0.0 | 2006 08 12 | 644 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.4− | 0.7− |
| 2005 03 17 | G96 | 0.3− | 0.1− | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.6− |
| 2005 03 17 | G96 | 0.8− | 0.4− | 2006 08 18 | 644 | 0.0 | 0.1− | | | | |
| 2005 03 17 | G96 | 0.5− | 0.0 | 2006 08 18 | 644 | 0.0 | 0.0 | | | | |

**2006 PN$_{35}$ = 2005 EF$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.05816 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25815892 | $\omega$ | 21.48379 | | +0.74487118 | | +0.66587324 |
| $a$ | 2.4427440 | $\Omega$ | 296.69559 | | −0.61882514 | | +0.66583474 |
| $e$ | 0.1962102 | $i$ | 2.70655 | | −0.24944414 | | +0.33656637 |
| $P$ | 3.82 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.5− | 0.2+ | 2006 06 19 | G96 | 0.4+ | 0.2+ | 2006 08 12 | 644 | 0.4− | 0.1− |
| 2005 03 11 | G96 | 0.3+ | 0.1+ | 2006 06 19 | G96 | 0.5+ | 0.2− | 2006 08 12 | 644 | 0.5− | 0.4− |
| 2005 03 11 | G96 | 0.2+ | 0.5+ | 2006 06 19 | G96 | 0.0 | 0.3− | 2006 08 14 | 644 | 0.1− | 0.0 |
| 2005 03 11 | G96 | 0.1− | 0.1+ | 2006 06 19 | G96 | 0.1− | 0.3− | 2006 08 14 | 644 | 0.2− | 0.0 |
| 2005 03 17 | G96 | 0.3+ | 0.0 | 2006 07 25 | 644 | 0.2− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.1− |
| 2005 03 17 | G96 | 0.3+ | 0.0 | 2006 07 25 | 644 | 0.6+ | 0.3+ | 2006 08 29 | 704 | 0.5+ | 0.1+ |
| 2005 03 17 | G96 | 0.1− | 0.2− | 2006 07 25 | 644 | 0.0 | 0.1+ | 2006 08 29 | 704 | 0.0 | 0.5+ |
| 2005 03 17 | G96 | 0.1− | 0.0 | 2006 08 12 | 644 | 0.5− | 0.2− | 2006 08 29 | 704 | 0.2+ | 0.9+ |

**2006 PZ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.83880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17271394 | $\omega$ | 343.24173 | | +0.64195744 | | +0.75988726 |
| $a$ | 3.1933839 | $\Omega$ | 326.49058 | | −0.68051159 | | +0.50320729 |
| $e$ | 0.0825885 | $i$ | 10.67699 | | −0.35326282 | | +0.41152616 |
| $P$ | 5.71 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.2+ | 0.4− | 2006 08 12 | 644 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2000 08 01 | 807 | 0.1+ | 0.4− | 2006 08 12 | 644 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.8− | 0.2+ |
| 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 08 12 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2004 02 17 | 691 | 0.4+ | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2004 03 30 | 691 | 0.9− | 0.1− | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3+ |
| 2004 03 30 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2004 03 30 | 691 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.3+ |
| 2006 07 25 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2006 07 25 | 644 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.3+ |

**2006 PF$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.72338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22825165 | $\omega$ | 287.58490 | | +0.89292464 | | −0.38483200 |
| $a$ | 2.6517145 | $\Omega$ | 95.57104 | | +0.44742926 | | +0.81610818 |
| $e$ | 0.1701985 | $i$ | 13.57710 | | −0.04992641 | | +0.43112848 |
| $P$ | 4.32 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.4− | 0.1− | 2002 10 08 | 644 | 0.4− | 0.5+ | 2006 07 18 | E12 | 0.2− | 0.0 |
| 1994 11 28 | 691 | 0.4+ | 0.1+ | 2002 10 08 | 644 | 0.4− | 0.3+ | 2006 08 12 | 644 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.3+ | 0.1+ | 2002 10 08 | 644 | 0.4− | 0.6+ | 2006 08 12 | 644 | 0.1+ | 0.2+ | | |
| 1998 12 16 | 699 | 0.9− | 1.2+ | 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 08 12 | 644 | 0.0 | 0.5+ | | |
| 1998 12 16 | 699 | 0.3− | 0.7+ | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.1+ | | |
| 1998 12 16 | 699 | 0.1+ | 1.4+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.2+ | 0.4+ | | |
| 2001 05 23 | 291 | 0.3+ | 0.6+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.1+ | 0.4− | | |
| 2001 05 23 | 291 | 0.7− | 0.3+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.3+ | 0.4+ | | |
| 2001 05 23 | 291 | 0.5+ | 0.4+ | 2004 04 16 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.4+ | 0.3+ | | |
| 2002 10 02 | 608 | 0.4− | 0.7− | 2006 07 18 | E12 | 0.5+ | 0.3− | 2006 08 14 | 644 | 0.3+ | 0.2+ | | |
| 2002 10 02 | 608 | 0.5− | 0.2− | 2006 07 18 | E12 | 0.1− | 0.3+ | | | | | | |
| 2002 10 02 | 608 | 0.1− | 0.1− | 2006 07 18 | E12 | 0.3− | 0.0 | | | | | | |

**2006 PL$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.52296 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22660840 | $\omega$ | 215.37771 | | +0.94521795 | | −0.31808308 |
| $a$ | 2.6645183 | $\Omega$ | 162.71624 | | +0.32611824 | | +0.93009128 |
| $e$ | 0.2649919 | $i$ | 14.30123 | | −0.01448882 | | +0.18372091 |
| $P$ | 4.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 09 29 | 608 | 0.4− | 0.1+ | 2006 08 13 | 644 | 0.1− | 0.1+ | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 16 | 644 | 0.4+ | 0.1+ | 2006 08 13 | 644 | 0.2+ | 0.1+ | | |
| 2002 09 16 | 608 | 0.3+ | 1.1− | 2002 10 16 | 644 | 0.4+ | 0.3+ | 2006 08 13 | 644 | 0.2− | 0.1− | | |
| 2002 09 16 | 608 | 0.5+ | 1.2− | 2002 10 16 | 644 | 0.4+ | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.3+ | | |
| 2002 09 16 | 608 | (0.2− | 1.8−) | 2002 11 05 | 644 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.0 | | |
| 2002 09 29 | 608 | 0.1− | 0.8+ | 2002 11 05 | 644 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.3+ | 0.0 | | |
| 2002 09 29 | 608 | 0.3− | 0.5+ | 2002 11 05 | 644 | 0.3+ | 0.1+ | | | | | | |

**2006 PO$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.04683 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18141196 | $\omega$ | 22.93728 | | +0.81622075 | | +0.56546623 |
| $a$ | 3.0904764 | $\Omega$ | 302.09391 | | −0.54937897 | | +0.69621282 |
| $e$ | 0.0674071 | $i$ | 8.03761 | | −0.17879158 | | +0.44219412 |
| $P$ | 5.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 608 | 0.0 | 1.5− | 2004 02 17 | 691 | 0.8+ | 0.3+ | 2006 08 13 | 644 | 0.2+ | 0.4− | | |
| 2001 08 13 | 608 | 0.1− | 0.6− | 2004 02 17 | 691 | 0.3− | 0.1− | 2006 08 13 | 644 | 0.0 | 0.1− | | |
| 2001 08 13 | 608 | 0.1+ | 0.4− | 2004 02 17 | 691 | 0.4− | 0.1− | 2006 08 14 | 644 | 0.2+ | 0.2− | | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 06 21 | 691 | 0.1− | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.2− | | |
| 2001 09 20 | 645 | 0.0 | 0.1+ | 2006 06 21 | 691 | 0.2− | 0.2+ | 2006 08 14 | 644 | 0.1+ | 0.4− | | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 06 21 | 691 | 0.0 | 0.0 | | | | | | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 08 13 | 644 | 0.2+ | 0.0 | | | | | | |

**2006 PP$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.38128 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23173766 | $\omega$ | 51.44637 | | +0.88355955 | | +0.46814083 |
| $a$ | 2.6250544 | $\Omega$ | 280.63652 | | −0.43365700 | | +0.80744516 |
| $e$ | 0.1807642 | $i$ | 0.75267 | | −0.17681662 | | +0.35899370 |
| $P$ | 4.25 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.1− | 0.5− | 2005 03 12 | 695 | 0.1+ | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.3− | | |
| 1998 10 13 | 691 | 0.3+ | 0.3− | 2005 04 05 | G96 | 0.9− | 0.1− | 2006 08 13 | 644 | 0.2− | 0.8− | | |
| 1998 10 13 | 691 | 0.3+ | 0.5− | 2005 04 05 | G96 | 0.6+ | 0.9− | 2006 08 13 | 644 | 0.3+ | 0.5− | | |
| 2002 08 16 | 291 | 0.6+ | 0.0 | 2005 04 05 | G96 | 0.2+ | 0.9+ | 2006 08 13 | 644 | 0.1+ | 0.3− | | |
| 2002 08 16 | 291 | 0.2− | 0.4+ | 2005 04 05 | G96 | 0.3− | 0.1− | 2006 08 14 | 644 | 0.4+ | 0.3− | | |
| 2002 08 16 | 291 | 0.0 | 0.4+ | 2006 05 26 | G96 | 0.3− | 0.5− | 2006 08 14 | 644 | 0.4+ | 0.0 | | |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2006 05 26 | G96 | 0.1− | 0.4− | 2006 08 14 | 644 | 0.4+ | 0.3− | | |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2006 05 26 | G96 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.1− | | |
| 2002 09 12 | 644 | 0.5− | 0.3− | 2006 05 26 | G96 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.5+ | 0.1+ | | |
| 2002 09 12 | 644 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.4− | | |
| 2002 09 12 | 644 | 0.5− | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.2− | 0.4− | | |
| 2005 03 12 | 695 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.2− | | | | | | |

**2006 PL$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.42639 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18146959 | $\omega$ | 47.37882 | | +0.98051552 | | −0.10907841 |
| $a$ | 3.0898221 | $\Omega$ | 318.09207 | | +0.00061714 | | +0.83337555 |
| $e$ | 0.1698722 | $i$ | 14.15797 | | +0.19644064 | | +0.54183678 |
| $P$ | 5.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 699 | 1.0+ | 0.1+ | 2001 09 29 | 644 | 0.5− | 0.1− | 2006 08 20 | 644 | 0.0 | 0.1+ | | |
| 2001 09 10 | 699 | 0.7+ | 0.1− | 2001 09 29 | 644 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.1− | | |
| 2001 09 10 | 699 | 0.3− | 1.2− | 2001 09 29 | 644 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.1− | | |
| 2001 09 10 | 699 | 0.6− | 0.6+ | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.7− | 0.3− | | |
| 2001 09 21 | 699 | 0.6+ | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.2+ | | |
| 2001 09 21 | 699 | 0.3− | 1.2− | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2001 09 21 | 699 | 0.3− | 1.0+ | 2006 08 20 | 644 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.0 | | |
| 2001 09 21 | 699 | 0.4− | 0.4+ | 2006 08 20 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− | | |

**2006 PM$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.91417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24299212 | $\omega$ | 268.80638 | | +0.70402247 | | −0.70754828 |
| $a$ | 2.5433605 | $\Omega$ | 136.22484 | | +0.68162408 | | +0.64908154 |
| $e$ | 0.2532787 | $i$ | 5.06307 | | +0.19935138 | | +0.27940756 |
| $P$ | 4.06 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 704 | 0.0 | 0.5+ | 2004 02 23 | 704 | 1.0− | 0.1+ | 2005 05 08 | 691 | 0.0 | 0.1− | | |
| 2000 03 12 | 704 | 1.0− | 0.4+ | 2004 02 23 | 704 | 1.2+ | 0.4+ | 2006 05 26 | G96 | 0.1+ | 0.0 | | |
| 2000 03 12 | 704 | 0.1+ | 0.1+ | 2004 02 23 | 704 | 0.5+ | 0.3+ | 2006 05 26 | G96 | 0.8− | 0.2+ | | |
| 2000 03 12 | 704 | 0.4+ | 1.8+ | 2004 02 23 | 704 | 0.2+ | 0.0 | 2006 05 26 | G96 | 0.2− | 0.4− | | |
| 2002 07 23 | 644 | 0.2+ | 1.0+ | 2004 02 29 | 691 | 0.0 | 0.1− | 2006 05 26 | G96 | 0.0 | 0.8− | | |
| 2002 07 23 | 644 | 0.0 | 1.4+ | 2004 02 29 | 691 | 0.2+ | 0.2− | 2006 08 14 | 644 | 0.1+ | 0.3+ | | |
| 2002 07 23 | 644 | 0.0 | 0.8+ | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.3+ | | |
| 2002 08 29 | 644 | 0.2− | 1.2+ | 2004 03 15 | 703 | 0.6+ | 0.3+ | 2006 08 14 | 644 | 0.1− | 0.4+ | | |
| 2002 08 29 | 644 | 0.4− | 1.1+ | 2004 03 15 | 703 | 0.5− | 2.2+ | 2006 08 15 | 644 | 0.3− | 0.4+ | | |
| 2002 08 29 | 644 | 0.3− | 1.1+ | 2004 03 15 | 703 | 1.1− | 0.5+ | 2006 08 15 | 644 | 0.2− | 0.3+ | | |
| 2004 02 17 | 704 | 0.4+ | 0.9+ | 2004 03 15 | 703 | 1.0+ | 1.4+ | 2006 08 15 | 644 | 0.0 | 0.1+ | | |
| 2004 02 17 | 704 | 0.8+ | 0.1+ | 2005 05 08 | 691 | 0.1− | 0.4− | | | | | | |
| 2004 02 17 | 704 | 0.2− | 0.3+ | 2005 05 08 | 691 | 0.0 | 0.2− | | | | | | |

**2006 PF$_{41}$ = 1999 VO$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.98448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26449222 | $\omega$ | 137.98273 | | +0.99852268 | | +0.01877649 |
| $a$ | 2.4035922 | $\Omega$ | 221.02583 | | −0.03515785 | | +0.93874737 |
| $e$ | 0.1521057 | $i$ | 4.45524 | | +0.04142931 | | +0.34409419 |
| $P$ | 3.73 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.4+ | 0.6+ | 2006 07 21 | 703 | 0.3− | 0.9+ | 2006 08 16 | 644 | 0.1+ | 0.5− | | |
| 1999 11 09 | 704 | 0.9− | 0.6+ | 2006 07 21 | 703 | 0.2− | 1.4− | 2006 08 16 | 644 | 0.0 | 0.2+ | | |
| 1999 11 09 | 704 | 1.5− | 1.5+ | 2006 07 21 | 703 | 0.5+ | 1.4+ | 2006 09 28 | G96 | 0.3+ | 0.6− | | |
| 1999 11 12 | 691 | 0.3+ | 0.1− | 2006 08 14 | 644 | 0.3+ | 0.4− | 2006 09 28 | G96 | 0.2− | 0.1− | | |
| 1999 11 12 | 691 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2− | | |
| 1999 11 12 | 691 | 0.1+ | 0.5− | 2006 08 14 | 644 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.1− | 0.3− | | |
| 2006 07 21 | 703 | 1.0− | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.2+ | | | | | | |

### 2006 $PQ_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.71977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24155027 | $\omega$ | 52.15226 | | +0.76697615 | +0.63680957 | |
| $a$ | 2.5534716 | $\Omega$ | 268.15114 | | −0.61073068 | +0.68674149 | |
| $e$ | 0.2175606 | $i$ | 4.52623 | | −0.19686447 | +0.35051348 | |
| $P$ | 4.08 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.2+ | 0.4− | 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.5− | 0.0 | |
| 2002 08 16 | 644 | 0.1+ | 0.1− | 2002 09 13 | 644 | 0.3− | 0.0 | 2006 08 14 | 644 | 0.0 | 0.1+ | |
| 2002 08 16 | 644 | 0.1+ | 0.0 | 2006 05 26 | G96 | 0.1+ | 0.3− | 2006 08 16 | 644 | 0.2− | 0.1+ | |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2006 05 26 | G96 | 0.3− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.1+ | |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2006 05 26 | G96 | 0.3+ | 0.4+ | 2006 08 16 | 644 | 0.6+ | 0.2− | |
| 2002 08 28 | 644 | 0.2− | 0.0 | 2006 05 26 | G96 | 0.2− | 0.4− | | | | | |
| 2002 09 13 | 644 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.1− | | | | | |

### 2006 $PR_{41}$ = 2003 $YC_{101}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.39079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25825810 | $\omega$ | 154.89460 | | +0.73660432 | −0.67059778 | |
| $a$ | 2.4421186 | $\Omega$ | 247.51187 | | +0.60336937 | +0.71024768 | |
| $e$ | 0.1075935 | $i$ | 5.45418 | | +0.30554784 | +0.21411877 | |
| $P$ | 3.82 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.7+ | 1.2+ | 2000 01 06 | 691 | 0.0 | 0.1− | 2003 12 23 | 704 | 0.4+ | 0.6+ | |
| 1999 10 06 | 704 | 0.7− | 0.4+ | 2000 01 06 | 691 | 0.2− | 0.4− | 2006 07 21 | 703 | 0.7− | 0.9+ | |
| 1999 10 06 | 704 | 0.3− | 0.9+ | 2000 01 06 | 691 | 0.4+ | 0.2− | 2006 07 21 | 703 | 0.1− | 0.5+ | |
| 1999 10 06 | 704 | 0.0 | 0.9+ | 2000 01 06 | 691 | 0.3− | 0.0 | 2006 07 21 | 703 | 0.6− | 1.0− | |
| 1999 10 06 | 704 | 0.0 | 0.1+ | 2000 01 06 | 691 | 0.1− | 0.5− | 2006 07 21 | 703 | 0.5+ | 0.5− | |
| 1999 11 12 | 704 | 0.1+ | 0.2− | 2000 01 06 | 691 | 0.2− | 0.1− | 2006 08 14 | 644 | 0.3+ | 0.3− | |
| 1999 11 12 | 704 | 0.8+ | 0.0 | 2002 07 12 | 644 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.6+ | 0.4− | |
| 1999 11 12 | 704 | 0.1− | 0.0 | 2002 07 12 | 644 | 0.0 | 0.2− | 2006 08 14 | 644 | 0.3+ | 0.0 | |
| 1999 11 12 | 704 | 0.0 | 0.4+ | 2002 07 12 | 644 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.3+ | 0.1− | |
| 1999 11 12 | 704 | 0.2+ | 0.4+ | 2003 12 19 | 704 | 0.1− | 1.0+ | 2006 08 18 | 644 | 0.1+ | 0.2+ | |
| 1999 12 08 | 704 | 0.9+ | 0.2− | 2003 12 19 | 704 | 0.6− | 1.4+ | 2006 08 18 | 644 | 0.2− | 0.4− | |
| 1999 12 08 | 704 | 0.3− | 0.2+ | 2003 12 19 | 704 | 1.0− | 0.3− | 2006 08 29 | 703 | 0.9+ | 0.7+ | |
| 1999 12 08 | 704 | 0.5+ | 0.4− | 2003 12 23 | 704 | 0.1+ | 0.7+ | 2006 08 29 | 703 | 0.3− | 0.2− | |
| 1999 12 08 | 704 | 0.1− | 0.4− | 2003 12 23 | 704 | 0.9+ | 0.6+ | 2006 08 29 | 703 | 0.4− | 0.0 | |
| 1999 12 08 | 704 | 0.1+ | 1.1− | 2003 12 23 | 704 | 0.5+ | 0.4− | 2006 08 29 | 703 | 0.5− | 0.2+ | |

### 2006 $PT_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.83467 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19168354 | $\omega$ | 241.80938 | | +0.80883868 | −0.58229696 | |
| $a$ | 2.9790617 | $\Omega$ | 153.55033 | | +0.58308260 | +0.77617872 | |
| $e$ | 0.1125808 | $i$ | 10.59765 | | +0.07612276 | +0.24181986 | |
| $P$ | 5.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7+ | 0.6+ | 2005 06 05 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.4− | |
| 2001 09 21 | 704 | 0.7− | 0.3+ | 2005 06 05 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.5+ | |
| 2001 09 21 | 704 | 0.1− | 1.0+ | 2005 06 05 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.1+ | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2006 08 14 | 644 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.2− | |
| 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 08 14 | 644 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− | |
| 2004 03 27 | 691 | 0.2+ | 0.4+ | 2006 08 14 | 644 | 0.8+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.7+ | |
| 2004 03 27 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.0 | |
| 2005 05 14 | G96 | 0.4− | 0.5− | 2006 08 18 | 644 | 0.1+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.0 | |
| 2005 05 14 | G96 | 0.2− | 0.5− | 2006 08 18 | 644 | 0.4− | 0.3+ | 2006 10 20 | G96 | 0.5− | 0.1− | |
| 2005 05 14 | G96 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.4− | 0.6− | 2006 10 20 | G96 | 0.3− | 0.1+ | |
| 2005 05 14 | G96 | 0.9− | 0.5− | 2006 08 28 | 703 | 0.4+ | 0.1− | | | | | |

### 2006 $PD_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.17629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17657286 | $\omega$ | 41.82928 | | +0.82800922 | −0.56006598 | |
| $a$ | 3.1466860 | $\Omega$ | 352.09371 | | +0.44827769 | +0.69009002 | |
| $e$ | 0.1207981 | $i$ | 11.30287 | | +0.33682019 | +0.45836869 | |
| $P$ | 5.58 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 09 | 704 | 0.3+ | 0.0 | 2003 03 03 | 644 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1+ | |
| 2001 10 09 | 704 | 0.6+ | 0.5− | 2003 03 07 | 644 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.8− | 1.2+ | |
| 2001 10 09 | 704 | 0.1+ | 0.1+ | 2003 03 07 | 644 | 0.2− | 0.5+ | 2006 09 20 | 704 | 0.0 | 0.2+ | |
| 2001 10 09 | 704 | 0.6− | 0.8− | 2003 03 07 | 644 | 0.2− | 0.6+ | 2006 09 20 | 644 | 0.6− | 0.2− | |
| 2001 10 19 | 704 | 0.7+ | 0.8− | 2006 08 14 | 644 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.3− | 1.3+ | |
| 2001 10 19 | 704 | 0.4− | 0.2− | 2006 08 14 | 644 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.8− | 0.5− | |
| 2001 10 19 | 704 | 0.7+ | 0.3− | 2006 08 14 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.1+ | |
| 2001 10 19 | 704 | 0.3− | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.7− | |
| 2001 10 19 | 704 | 0.6− | 0.6− | 2006 08 16 | 644 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.2− | |
| 2002 01 08 | 704 | (2.1+ | 0.4+) | 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.5− | 0.3− | |
| 2002 01 08 | 704 | 1.0+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.0 | |
| 2002 01 08 | 704 | (2.6+ | 0.5+) | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− | |
| 2003 01 28 | 644 | 0.0 | 0.9+ | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1− | |
| 2003 01 28 | 644 | 0.2+ | 0.9+ | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.3+ | |
| 2003 01 28 | 644 | 0.1+ | 1.0+ | 2006 09 14 | 644 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.4+ | |
| 2003 02 04 | 699 | (4.0+ | 0.6+) | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 10 09 | 644 | 0.1− | 0.4+ | |
| 2003 02 04 | 699 | 0.6+ | 1.1− | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 13 | 122 | 0.1+ | 0.1− | |
| 2003 02 04 | 699 | (2.0+ | 0.7+) | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 10 13 | 122 | 0.0 | 0.2− | |
| 2003 02 04 | 699 | 0.6+ | 1.0+ | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 10 13 | 122 | 0.2− | 0.4+ | |
| 2003 02 22 | 644 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.7+ | |
| 2003 02 22 | 644 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.8+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3+ | |
| 2003 02 22 | 644 | 0.1+ | 0.2+ | 2006 09 16 | 704 | (1.6+ | 0.6+) | 2006 10 20 | 644 | 0.2− | 0.6+ | |
| 2003 03 03 | 644 | 0.1+ | 0.1− | 2006 09 16 | 704 | 0.9+ | 0.7+ | | | | | |
| 2003 03 03 | 644 | 0.4+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.3+ | | | | | |

### 2006 $PQ_{42}$ = 1996 $GQ_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.56554 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21543370 | $\omega$ | 65.70206 | | −0.36176260 | +0.93225799 | |
| $a$ | 2.7558799 | $\Omega$ | 183.10132 | | −0.88418633 | −0.34472543 | |
| $e$ | 0.1097130 | $i$ | 5.07091 | | −0.29553739 | −0.10981540 | |
| $P$ | 4.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.4+ | 0.1+ | 2005 05 09 | G96 | 0.0 | 0.2− | 2006 08 14 | E12 | 0.2− | 1.5+ | |
| 1996 04 12 | 691 | 0.3+ | 0.2+ | 2005 05 09 | G96 | 0.1− | 0.4− | 2006 08 14 | E12 | 0.3− | 0.6− | |
| 1996 04 19 | 691 | 0.6− | 0.4+ | 2005 05 09 | G96 | 0.1− | 0.2− | 2006 08 14 | E12 | 0.4+ | 0.1+ | |
| 1996 04 19 | 691 | 0.3− | 0.2− | 2006 07 21 | 703 | 0.5+ | 0.2+ | 2006 08 14 | E12 | 0.4+ | 0.7+ | |
| 1996 04 19 | 691 | 0.2+ | 0.2− | 2006 07 21 | 703 | 1.6+ | 0.4− | 2006 08 14 | E12 | 1.3− | 0.1+ | |
| 2005 04 04 | G96 | 0.2+ | 0.1− | 2006 07 21 | 703 | 0.0 | 1.6− | 2006 08 18 | 644 | 0.0 | 0.3+ | |
| 2005 04 04 | G96 | 0.1− | 0.0 | 2006 07 21 | 703 | 1.5− | 0.9− | 2006 08 18 | 644 | 0.1+ | 0.1− | |
| 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.1− | |
| 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 08 14 | 644 | 0.1+ | 0.2+ | | | | | |
| 2005 05 09 | G96 | 0.2− | 0.2− | 2006 08 14 | 644 | 0.2+ | 0.2+ | | | | | |

### 2006 $PK_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.85580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20191884 | $\omega$ | 97.76809 | | +0.99226969 | +0.12306645 | |
| $a$ | 2.8775187 | $\Omega$ | 255.16384 | | −0.11938040 | +0.91139452 | |
| $e$ | 0.0824621 | $i$ | 0.94750 | | −0.03389967 | +0.39270177 | |
| $P$ | 4.88 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 26 | 291 | 0.1− | 0.1+ | 2005 05 11 | 691 | 0.1− | 0.0 | 2006 08 28 | 703 | 1.0− | 1.3+ | |
| 2002 11 26 | 291 | 0.1+ | 0.1+ | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 1.3− | 0.4− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 26 | 291 | 0.0 | 0.3+ | 2006 08 13 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.4+ |
| 2004 02 14 | 691 | 0.3+ | 0.3+ | 2006 08 13 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 291 | 0.1− | 0.6+ |
| 2004 02 14 | 691 | 0.3+ | 0.7+ | 2006 08 13 | 644 | 0.2− | 0.3+ | 2006 09 17 | 291 | 0.1− | 0.5+ |
| 2004 02 14 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.2− | 1.3+ | 2006 09 17 | 291 | 0.0 | 0.4+ |
| 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2004 03 17 | 691 | 0.2− | 0.4+ | 2006 08 28 | 703 | (2.1− | 0.0 ) | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | (4.7− | 0.3−) | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2005 05 11 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.1+ |

**2006 $PO_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.42598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37019048 | $\omega$ | 157.86384 | | +0.98383525 | −0.07047846 | |
| $a$ | 1.9209640 | $\Omega$ | 207.77789 | | +0.05696907 | +0.99471720 | |
| $e$ | 0.0981476 | $i$ | 20.68534 | | +0.16977255 | +0.07463565 | |
| $P$ | 2.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 644 | 0.1+ | 0.3+ | 2006 09 15 | 703 | 0.3+ | 0.1− | 2006 10 29 | 703 | 0.0 | 0.5+ |
| 2001 12 13 | 644 | 0.1+ | 0.0 | 2006 09 15 | 703 | 0.4+ | 0.0 | 2006 10 29 | 703 | 0.7− | 1.1+ |
| 2001 12 13 | 644 | 0.1− | 0.1+ | 2006 09 15 | 703 | 0.4− | 0.2+ | 2006 10 29 | 703 | 0.5− | 0.1− |
| 2006 08 12 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.6+ | 0.5+ |
| 2006 08 12 | 644 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.6− | 1.2− |
| 2006 08 12 | 644 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.0 | 1.1− |
| 2006 09 15 | 703 | 0.3− | 0.2+ | 2006 10 29 | 703 | 0.3+ | 0.5− | 2006 11 13 | 703 | (3.7+ | 1.5+) |

**2006 QC**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.54071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28513582 | $\omega$ | 263.43981 | | +0.88197825 | +0.46808052 | |
| $a$ | 2.2861332 | $\Omega$ | 68.63842 | | −0.40574858 | +0.81342173 | |
| $e$ | 0.1295364 | $i$ | 3.38009 | | −0.23975499 | +0.34531972 | |
| $P$ | 3.46 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 291 | 0.1+ | 0.5+ | 2006 08 19 | 644 | 0.1− | 0.2+ | 2006 08 23 | 644 | 0.3− | 0.3+ |
| 2002 05 08 | 291 | 0.2+ | 0.1+ | 2006 08 19 | 644 | 0.4− | 0.2− | 2006 08 24 | 644 | 0.4− | 0.2+ |
| 2002 05 08 | 291 | 0.1− | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.0 |
| 2003 12 20 | 333 | 0.5− | 1.4+ | 2006 08 22 | F84 | 0.8+ | 0.4− | 2006 08 24 | 644 | 0.4− | 0.2+ |
| 2003 12 20 | 333 | 0.2+ | 0.2− | 2006 08 22 | F84 | 0.5− | 0.1− | 2006 09 11 | F84 | 0.5− | 0.1− |
| 2003 12 21 | 691 | 0.4− | 0.2+ | 2006 08 22 | F84 | 0.2+ | 0.0 | 2006 09 11 | F84 | 0.4+ | 0.5− |
| 2003 12 21 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.7+ | 0.2− | 2006 09 11 | F84 | 0.6+ | 0.3− |
| 2003 12 21 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.5+ | 0.2− | 2006 09 14 | 568 | 0.4− | 0.1+ |
| 2006 08 17 | F84 | 0.9+ | 0.3− | 2006 08 23 | 704 | 0.7− | 0.6+ | 2006 09 14 | 568 | 0.5− | 0.2+ |
| 2006 08 17 | F84 | 0.6− | 0.4− | 2006 08 23 | 704 | 0.9− | 0.8+ | 2006 09 18 | 699 | 0.2+ | 0.6+ |
| 2006 08 18 | F84 | 0.6+ | 0.6− | 2006 08 23 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 699 | 0.7− | 0.2+ |
| 2006 08 18 | F84 | 0.1+ | 0.4− | 2006 08 23 | 644 | 0.3− | 0.3+ | 2006 09 18 | 699 | 1.0+ | 0.6− |
| 2006 08 18 | F84 | 0.1− | 0.3− | 2006 08 23 | 644 | 0.4− | 0.2+ | 2006 09 18 | 699 | (0.8− | 2.2−) |

**2006 QO**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.57691 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28838776 | $\omega$ | 258.42279 | | +0.26436825 | +0.96280713 | |
| $a$ | 2.2689147 | $\Omega$ | 27.10622 | | −0.83026151 | +0.25664049 | |
| $e$ | 0.2152773 | $i$ | 7.03235 | | −0.49068856 | +0.08448722 | |
| $P$ | 3.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 16 | 704 | 0.6+ | 0.8+ | 2006 08 16 | 428 | 0.3− | 0.2− | 2006 08 23 | 644 | 0.2− | 0.4+ |
| 2002 03 16 | 704 | 0.0 | 0.4− | 2006 08 16 | E12 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2002 03 16 | 704 | 0.1+ | 0.9+ | 2006 08 16 | E12 | 0.0 | 0.2− | 2006 08 24 | 644 | 0.3− | 0.3+ |
| 2002 04 15 | 704 | 0.4+ | 0.1+ | 2006 08 16 | E12 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2002 04 15 | 704 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 17 | 699 | (1.8+ | 0.6+) |
| 2002 04 15 | 704 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.1+ |
| 2003 10 22 | 691 | 0.1+ | 0.2− | 2006 08 17 | 644 | 0.3− | 0.3− | 2006 09 17 | 699 | 0.0 | 0.2− |
| 2003 10 22 | 691 | 0.1− | 0.1− | 2006 08 18 | 428 | 0.3− | 0.7− | 2006 09 17 | 699 | 0.4+ | 0.3− |
| 2003 10 22 | 691 | 0.2+ | 0.1− | 2006 08 18 | 428 | 0.1− | 0.0 | 2006 09 20 | 703 | 0.2+ | 0.7− |
| 2003 10 29 | 704 | 0.4+ | 0.6+ | 2006 08 20 | 644 | 0.0 | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.4− |
| 2003 10 29 | 704 | 0.2− | 0.6+ | 2006 08 20 | 644 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.1+ | 0.4− |
| 2003 10 29 | 704 | 0.1− | 1.1+ | 2006 08 20 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 703 | 0.3− | 0.2− |
| 2003 11 30 | 691 | 0.5− | 0.1− | 2006 08 23 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 1.3+ | 0.3− |
| 2003 11 30 | 691 | 0.1− | 0.5+ | 2006 08 23 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | (1.8− | 1.1+) |
| 2003 11 30 | 691 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2006 08 16 | 428 | 0.0 | 0.8+ | 2006 08 23 | 644 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2006 08 16 | E12 | 0.3+ | 0.2− | 2006 08 23 | 644 | 0.0 | 0.3+ | | | | |

**2006 QQ = 2002 $UA_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.49170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23852013 | $\omega$ | 235.24460 | | +0.89019071 | +0.43164012 | |
| $a$ | 2.5750521 | $\Omega$ | 98.79167 | | −0.35473187 | +0.85745441 | |
| $e$ | 0.4123324 | $i$ | 8.48194 | | −0.28587726 | +0.28010488 | |
| $P$ | 4.13 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.4− | 0.0 | 2006 07 18 | E12 | 0.2− | 0.5+ | 2006 08 21 | 428 | 0.2+ | 0.1+ |
| 2002 10 10 | 644 | 0.1+ | 0.1+ | 2006 07 18 | E12 | 0.1− | 0.6+ | 2006 08 21 | 428 | 0.1+ | 0.2− |
| 2002 10 10 | 644 | 0.2− | 0.0 | 2006 07 18 | E12 | 0.5+ | 0.6+ | 2006 09 13 | 428 | 0.4+ | 0.6− |
| 2002 10 15 | 644 | 0.0 | 0.3− | 2006 07 18 | E12 | 0.5− | 0.1− | 2006 09 13 | 428 | 0.5+ | 0.4− |
| 2002 10 15 | 644 | 0.2− | 0.1− | 2006 08 18 | 428 | 0.5+ | 0.0 | 2006 09 13 | 428 | 0.7+ | 0.2− |
| 2002 10 15 | 644 | 0.1− | 0.5− | 2006 08 18 | 428 | 0.2− | 0.3− | 2006 09 27 | E12 | 0.3− | 0.1− |
| 2002 10 28 | 644 | 0.3+ | 1.2+ | 2006 08 19 | 428 | 0.6− | 0.2− | 2006 09 27 | E12 | 0.6+ | 0.6− |
| 2002 10 28 | 644 | 0.3+ | 0.9+ | 2006 08 19 | 428 | 0.5+ | 0.2+ | 2006 09 27 | E12 | 0.8− | 0.8− |
| 2002 10 28 | 644 | 0.1− | 1.0+ | 2006 08 19 | 428 | 0.5− | 0.2+ | 2006 09 27 | E12 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.5− | 2006 08 19 | 428 | 0.5+ | 0.4− | 2006 10 11 | E12 | 0.1− | 0.3− |
| 2002 10 31 | 704 | 0.7− | 0.6+ | 2006 08 19 | 428 | 0.6− | 0.3+ | 2006 10 11 | E12 | 0.6+ | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.2− | 2006 08 20 | 428 | 0.3+ | 0.7+ | 2006 10 11 | E12 | 1.1− | 0.8+ |
| 2002 10 31 | 704 | 0.0 | 0.8− | 2006 08 20 | 428 | 0.3− | 0.3− | 2006 10 11 | E12 | 0.4− | 0.4− |

**2006 QY**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.67148 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18645353 | $\omega$ | 261.75103 | | +0.71588555 | −0.67326518 | |
| $a$ | 3.0345128 | $\Omega$ | 140.26517 | | +0.69815338 | +0.69383289 | |
| $e$ | 0.1320122 | $i$ | 16.82174 | | −0.00947324 | +0.25555807 | |
| $P$ | 5.29 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 644 | 0.7+ | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.0 | 2006 08 19 | 461 | 0.3+ | 0.1+ |
| 2001 08 28 | 644 | 0.1− | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 08 19 | 461 | 0.1− | 0.1+ |
| 2001 08 28 | 644 | 0.2+ | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 08 20 | 461 | 0.8+ | 0.1− |
| 2001 10 14 | 644 | 0.6− | 0.3− | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 08 20 | 461 | 0.1− | 0.4− |
| 2001 10 14 | 644 | 0.2− | 0.1+ | 2006 08 17 | 461 | 0.0 | 0.1− | 2006 08 23 | 704 | (2.4+ | 1.6−) |
| 2001 10 14 | 644 | 0.2+ | 0.3− | 2006 08 17 | 461 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.5− | 0.4− |
| 2001 10 22 | 644 | 0.2− | 0.0 | 2006 08 17 | 461 | 0.0 | 0.1+ | 2006 08 23 | 704 | 0.7+ | 0.1+ |
| 2001 10 22 | 644 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.0 | 0.3+ | 2006 08 23 | 704 | 0.3+ | 0.4− |
| 2005 06 16 | 691 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 08 23 | 704 | 0.5+ | 1.5− |
| 2005 06 16 | 691 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 08 23 | 461 | 0.2− | 0.1+ |
| 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 461 | 0.0 | 0.1+ | 2006 08 23 | 461 | 0.0 | 0.1+ |
| 2006 06 20 | G96 | 0.7+ | 0.0 | 2006 08 18 | 461 | 0.1− | 0.2+ | 2006 08 23 | 461 | 0.0 | 0.1+ |
| 2006 06 20 | G96 | 0.0 | 0.2− | 2006 08 18 | 461 | 0.0 | 0.2+ | 2006 09 22 | 461 | 0.3− | 0.2+ |
| 2006 06 20 | G96 | 0.2− | 0.0 | 2006 08 19 | 644 | 0.0 | 0.2+ | 2006 09 22 | 461 | 0.5− | 0.3− |
| 2006 06 20 | G96 | 0.4− | 0.3− | 2006 08 19 | 644 | 0.0 | 0.2+ | 2006 09 22 | 461 | 0.1+ | 0.1+ |
| 2006 08 15 | 644 | 0.1− | 0.1− | 2006 08 19 | 644 | 0.5− | 0.0 | | | | |
| 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 08 19 | 461 | 0.1− | 0.0 | | | | |

### 2006 QB$_1$ = 1995 YE$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.40559 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23524587 | $\omega$ | 244.31131 | −0.98241620 | | −0.00267226 | |
| $a$ | 2.5988908 | $\Omega$ | 295.05265 | +0.09156844 | | −0.87827802 | |
| $e$ | 0.1974073 | $i$ | 11.89229 | −0.16270720 | | −0.47814284 | |
| $P$ | 4.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 28 | 608 | 0.4+ | 0.2+ | 2006 08 18 | 461 | 0.1+ | 0.5+ | 2006 08 22 | 461 | 0.4+ | 0.2− |
| 1995 12 28 | 608 | 1.0− | 1.3− | 2006 08 18 | 461 | 0.1+ | 0.4− | 2006 08 24 | 461 | 0.7+ | 0.7− |
| 1995 12 29 | 608 | 0.9+ | 0.1+ | 2006 08 18 | 461 | 0.2− | 0.6− | 2006 08 24 | 461 | 0.3+ | 0.8− |
| 1995 12 29 | 608 | 1.0+ | 0.1+ | 2006 08 18 | 461 | 0.8+ | 0.1− | 2006 08 24 | 461 | 0.3+ | 0.7+ |
| 1996 01 16 | 540 | 0.7− | 1.2− | 2006 08 18 | 461 | 0.8+ | 0.2+ | 2006 08 24 | 461 | 0.3+ | 0.2+ |
| 1996 01 16 | 540 | 0.6− | 0.2− | 2006 08 19 | 461 | 0.4− | 0.6+ | 2006 08 24 | 461 | 1.6− | 2.3+ |
| 1996 01 16 | 540 | 0.3− | 1.2+ | 2006 08 19 | 461 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.4− |
| 2002 09 12 | 644 | 0.4+ | 0.5+ | 2006 08 19 | 461 | 0.1− | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.2− |
| 2002 10 06 | 644 | 0.2− | 0.7− | 2006 08 21 | 461 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.3− |
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 08 21 | 461 | 0.2− | 0.4− | 2006 09 22 | 461 | 0.0 | 0.1+ |
| 2003 12 18 | 691 | 0.1− | 0.2+ | 2006 08 21 | 461 | 1.0− | 0.8− | 2006 09 22 | 461 | 0.1− | 0.0 |
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 08 21 | 461 | 0.6− | 0.2+ | 2006 09 22 | 461 | 0.6+ | 0.7+ |
| 2006 08 18 | 461 | 0.1+ | 0.2+ | 2006 08 22 | 461 | 0.0 | 0.5+ | | | | |

### 2006 QN$_1$ = 2003 XY$_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.21606 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26054033 | $\omega$ | 308.03628 | +0.99090165 | | −0.08198358 | |
| $a$ | 2.4278363 | $\Omega$ | 56.90818 | +0.12220731 | | +0.88032742 | |
| $e$ | 0.1502042 | $i$ | 7.31944 | −0.05638525 | | +0.46722834 | |
| $P$ | 3.78 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 704 | 0.4− | 0.1+ | 2003 12 28 | 704 | 0.2+ | 0.3− | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 1999 12 14 | 704 | 0.5− | 0.7− | 2006 08 16 | E12 | 0.1− | 0.4− | 2006 08 20 | 644 | 0.3− | 0.2+ |
| 1999 12 14 | 704 | 0.9+ | 0.7+ | 2006 08 16 | E12 | 0.3+ | 0.4− | 2006 08 23 | 644 | 0.4+ | 0.1− |
| 2003 12 14 | 691 | 0.1− | 0.0 | 2006 08 16 | E12 | 0.2− | 1.0− | 2006 08 23 | 644 | 0.3+ | 0.5− |
| 2003 12 14 | 691 | 0.0 | 0.2+ | 2006 08 16 | E12 | 0.8+ | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.6+ |
| 2003 12 14 | 691 | 0.2− | 0.0 | 2006 08 19 | 644 | 0.4+ | 0.0 | 2006 09 17 | 699 | 0.3+ | 0.1+ |
| 2003 12 28 | 704 | 0.3+ | 0.1+ | 2006 08 19 | 644 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.7− | 1.1+ |
| 2003 12 28 | 704 | 0.7+ | 0.2+ | 2006 08 19 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 1.3− | 0.5− |
| 2003 12 28 | 704 | 0.4+ | 1.4− | 2006 08 20 | 644 | 0.1− | 0.3+ | 2006 09 17 | 699 | (0.5+ | 3.2+) |

### 2006 QP$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.00932 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27807019 | $\omega$ | 262.66216 | +0.94724371 | | +0.30901794 | |
| $a$ | 2.3246974 | $\Omega$ | 79.30939 | −0.24916149 | | +0.87691638 | |
| $e$ | 0.1930277 | $i$ | 4.96659 | −0.20161328 | | +0.36813798 | |
| $P$ | 3.54 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 1.3− | 0.7− | 2003 12 22 | 704 | 0.4+ | 0.5+ | 2006 08 28 | E12 | 0.3− | 0.4− |
| 1999 09 08 | 703 | 0.2− | 0.8+ | 2006 08 16 | E12 | 0.2− | 0.4+ | 2006 08 28 | E12 | 0.2+ | 0.1− |
| 1999 09 08 | 703 | 1.1+ | 0.6+ | 2006 08 16 | E12 | 1.2+ | 0.1− | 2006 08 28 | E12 | 0.2+ | 0.4+ |
| 1999 09 08 | 703 | 0.4+ | 0.7− | 2006 08 16 | E12 | 0.1− | 0.3+ | 2006 08 28 | E12 | 0.3− | 0.6− |
| 2003 12 22 | 704 | 0.5− | 0.2− | 2006 08 16 | E12 | 0.3− | 0.3− | 2006 09 17 | 699 | 0.3− | 0.0 |
| 2003 12 22 | 704 | 0.8+ | 0.6− | 2006 08 19 | 644 | 0.2− | 0.2+ | 2006 09 17 | 699 | 0.2− | 0.2− |
| 2003 12 22 | 704 | 0.1+ | 0.6+ | 2006 08 19 | 644 | 0.1+ | 0.3− | 2006 09 17 | 699 | 0.5+ | 0.7+ |
| 2003 12 22 | 704 | 0.8− | 0.4− | 2006 08 19 | 644 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.2− | 0.1+ |

### 2006 QS$_1$ = 2005 EL$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.22693 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28230078 | $\omega$ | 127.80624 | +0.16343350 | | +0.98624493 | |
| $a$ | 2.3014135 | $\Omega$ | 151.57057 | −0.92067399 | | +0.16147009 | |
| $e$ | 0.1597121 | $i$ | 2.97482 | −0.35446988 | | +0.03533205 | |
| $P$ | 3.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 644 | 0.5+ | 0.2+ | 2005 03 01 | 691 | 0.4+ | 0.0 | 2006 08 17 | 644 | 0.6+ | 0.0 |
| 2002 04 05 | 644 | 0.2+ | 0.5+ | 2005 03 01 | 691 | 0.2+ | 0.6+ | 2006 08 19 | 644 | 0.7− | 0.6+ |
| 2002 04 05 | 644 | 0.6+ | 0.2+ | 2005 03 01 | 691 | 0.1− | 0.3− | 2006 08 19 | 644 | 0.0 | 0.0 |
| 2002 04 20 | 644 | 0.0 | 1.0+ | 2005 03 08 | G96 | 0.2− | 0.3+ | 2006 08 19 | 644 | 0.3− | 0.2+ |
| 2002 04 20 | 644 | 0.1+ | 1.1+ | 2005 03 08 | G96 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.5+ | 0.0 |
| 2002 04 20 | 644 | 0.1− | 1.0+ | 2005 03 08 | G96 | 0.7− | 0.3− | 2006 09 26 | G96 | 0.2− | 0.2+ |
| 2003 09 28 | 691 | 0.2− | 0.2+ | 2005 03 08 | G96 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2003 09 28 | 691 | 0.2− | 0.4+ | 2006 08 17 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2003 09 28 | 691 | 0.0 | 0.4+ | 2006 08 17 | 644 | 0.2+ | 0.0 | | | | |

### 2006 QU$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.17643 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.37397685 | $\omega$ | 26.69392 | +0.93933996 | | +0.26921234 | |
| $a$ | 1.9079760 | $\Omega$ | 315.91328 | −0.34298644 | | +0.73883864 | |
| $e$ | 0.0817671 | $i$ | 17.78569 | +0.00085748 | | +0.61777195 | |
| $P$ | 2.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 12 21 | 703 | 0.0 | 0.3− | 2006 07 21 | 704 | 0.5+ | 1.2+ | 2006 08 30 | 699 | 0.2+ | 0.1+ |
| 2004 12 21 | 703 | 0.8− | 0.5− | 2006 08 16 | 644 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.6− | 0.0 |
| 2004 12 21 | 703 | 0.0 | 0.8− | 2006 08 16 | 644 | 0.2+ | 0.3− | 2006 08 30 | 704 | 0.2− | 0.6− |
| 2004 12 21 | 703 | 0.9− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.9− | 0.0 |
| 2005 01 06 | 703 | (2.9+ | 3.4−) | 2006 08 17 | 644 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.1+ | 0.2− |
| 2005 01 06 | 703 | (1.5− | 0.6−) | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.0 | 0.4− |
| 2005 01 06 | 703 | (1.7+ | 0.5−) | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.4− | 0.4+ |
| 2005 01 06 | 703 | 0.9+ | 0.0 | 2006 08 18 | 704 | (1.6+ | 0.6+) | 2006 09 18 | 703 | 0.5− | 0.2+ |
| 2005 02 01 | 703 | 0.3+ | 0.2+ | 2006 08 18 | 704 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.4− | 0.7+ |
| 2005 02 01 | 703 | 0.0 | 0.2+ | 2006 08 18 | 704 | 1.2+ | 0.2− | 2006 09 18 | 703 | 0.3− | 0.2+ |
| 2005 02 01 | 703 | 0.1+ | 0.5+ | 2006 08 19 | 699 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.2− | 0.9− |
| 2005 02 01 | 703 | 0.2− | 0.0 | 2006 08 19 | 699 | 0.5+ | 0.8− | 2006 10 22 | 703 | 0.4+ | 0.1− |
| 2006 07 21 | 704 | 0.2+ | 0.9+ | 2006 08 19 | 699 | 0.4+ | 0.6− | 2006 10 22 | 703 | 1.1− | 0.0 |
| 2006 07 21 | 704 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.6+ |
| 2006 07 21 | 704 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.5− | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.9+ |

### 2006 QL$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.49267 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22004322 | $\omega$ | 92.12611 | +0.42621086 | | −0.90009436 | |
| $a$ | 2.7172570 | $\Omega$ | 332.08740 | +0.73409284 | | +0.40253847 | |
| $e$ | 0.1991971 | $i$ | 11.13598 | +0.52863221 | | +0.16671210 | |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 1.0− | 0.3− | 2002 12 08 | 699 | 0.8− | 0.5− | 2006 08 28 | 703 | 0.6+ | 0.8− |
| 1997 08 11 | 691 | 0.7+ | 0.7+ | 2002 12 08 | 699 | 0.8− | 0.9− | 2006 08 28 | 703 | 0.1+ | 1.3− |
| 2002 10 13 | 644 | 0.3− | 0.1+ | 2002 12 08 | 699 | 1.1− | 1.1+ | 2006 08 28 | 703 | 0.0 | 1.2− |
| 2002 10 13 | 644 | 0.1− | 0.3− | 2006 08 16 | 644 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.1− | 1.5− |
| 2002 10 13 | 644 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.1− |
| 2002 10 31 | 704 | 0.5+ | 0.8+ | 2006 08 16 | 644 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 1.0− |
| 2002 10 31 | 704 | 1.0+ | 0.7+ | 2006 08 17 | 644 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.8− |
| 2002 10 31 | 704 | 0.7+ | 0.9+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.8− |
| 2002 10 31 | 704 | 0.1+ | 0.8+ | 2006 08 17 | 644 | 0.0 | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 2002 11 15 | 704 | 0.4− | 0.9− | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2002 11 15 | 704 | 0.1+ | 1.1− | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2002 11 15 | 704 | 0.6+ | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 704 | 0.8+ | 0.5+ | 2006 08 19 | 691 | 0.4− | 0.4+ | 2006 09 30 | 291 | 0.0 | 0.2+ |
| 2002 11 15 | 704 | 1.0+ | 0.1− | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 30 | 291 | 0.3+ | 0.5+ |
| 2002 11 25 | 644 | 0.3− | 0.4− | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 30 | 291 | 0.0 | 0.3+ |
| 2002 11 25 | 644 | 0.4− | 0.4− | 2006 08 21 | 704 | 0.2− | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2002 11 25 | 644 | 0.1− | 0.1+ | 2006 08 21 | 704 | 0.6− | 1.2+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2002 12 03 | 644 | 0.6− | 0.0 | 2006 08 21 | 704 | 1.0+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2002 12 03 | 644 | 0.4− | 0.0 | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 12 03 | 644 | 0.6+ | 0.1− | 2006 08 27 | 691 | 0.0 | 0.0 | | | | |
| 2002 12 08 | 699 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.2− | | | | |

**2006 QM$_2$ = 2000 EQ$_{43}$ = 2000 EW$_{78}$**

Id. Minor Planet Center (d, *MPO* 87831)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.68096 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21719002 | $\omega$ | 81.59973 | | −0.60546664 | | +0.78936897 |
| $a$ | 2.7410027 | $\Omega$ | 150.38337 | | −0.78682865 | | −0.57452394 |
| $e$ | 0.1008328 | $i$ | 11.85467 | | −0.11962788 | | −0.21637667 |
| $P$ | 4.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 02 | 120 | 0.3− | 0.7+ | 2005 04 13 | 703 | 0.6+ | 1.3+ | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2000 03 02 | 120 | 0.5− | 0.1− | 2005 05 06 | 704 | 0.7− | 1.1+ | 2006 08 19 | 691 | 0.2+ | 0.0 |
| 2000 03 02 | 120 | (2.8− | 0.1+) | 2005 05 06 | 704 | 2.0+ | 2.5− | 2006 08 19 | 691 | 0.0 | 0.1+ |
| 2000 03 05 | 704 | 0.0 | 0.3+ | 2005 05 06 | 704 | 0.2+ | 1.5+ | 2006 08 19 | 691 | 0.1− | 0.0 |
| 2000 03 05 | 704 | 0.2+ | 0.9+ | 2005 05 06 | 704 | 0.1+ | 0.4+ | 2006 08 28 | 691 | 0.3− | 0.2+ |
| 2000 03 05 | 704 | 0.2+ | 0.4+ | 2005 05 06 | 704 | 1.7+ | 2.9− | 2006 08 28 | 691 | 0.8+ | 1.0+ |
| 2000 03 05 | 704 | 0.2− | 0.9− | 2005 06 01 | 704 | 0.3− | 0.1− | 2006 08 28 | 691 | 0.3− | 0.3+ |
| 2000 03 12 | 704 | 0.2+ | 0.0 | 2005 06 01 | 704 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.4− |
| 2000 03 12 | 704 | 0.5+ | 0.7+ | 2005 06 01 | 704 | 0.1+ | 1.6+ | 2006 08 28 | 703 | 1.0− | 0.6− |
| 2000 03 12 | 704 | (2.1+ | 0.6+) | 2005 06 13 | 699 | 0.2− | 1.9− | 2006 08 28 | 703 | 0.2+ | 0.7− |
| 2000 03 12 | 704 | 0.0 | 0.8+ | 2005 06 13 | 699 | 0.0 | 0.3− | 2006 08 28 | 703 | 1.0+ | 0.4− |
| 2000 03 12 | 704 | 0.6+ | 0.9+ | 2005 06 13 | 699 | 0.5− | 0.4− | 2006 09 14 | 703 | 0.8+ | 0.6− |
| 2002 10 15 | 644 | 0.2− | 0.4+ | 2005 06 13 | 699 | 2.4− | 1.6+ | 2006 09 14 | 703 | 0.6+ | 1.2− |
| 2002 10 15 | 644 | 0.2− | 0.1+ | 2006 08 17 | 644 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.6− | 0.1− |
| 2002 10 15 | 644 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.8+ | 0.3− |
| 2005 04 13 | 703 | 0.4− | 0.6+ | 2006 08 17 | 644 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.6+ | 0.1− |
| 2005 04 13 | 703 | 0.3− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.5+ | 2006 09 14 | 644 | 1.1− | 0.1+ |
| 2005 04 13 | 703 | 0.5− | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.1+ |

**2006 QN$_2$ = 2005 GE$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.84290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27104858 | $\omega$ | 181.56192 | | +0.94064914 | | +0.33846254 |
| $a$ | 2.3646741 | $\Omega$ | 158.60287 | | −0.31062956 | | +0.88824014 |
| $e$ | 0.0699957 | $i$ | 3.92076 | | −0.13670579 | | +0.31060033 |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.8+ | 1.1− | 2005 04 04 | 703 | 0.0 | 2.2− | 2006 08 27 | 691 | 0.0 | 0.0 |
| 1999 10 09 | 704 | 0.0 | 0.3+ | 2005 04 10 | G96 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 1999 10 09 | 704 | 0.6+ | 0.4− | 2005 04 10 | G96 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.1+ |
| 1999 10 09 | 704 | 0.0 | 0.1− | 2005 04 10 | G96 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.5− | 0.5+ |
| 1999 10 09 | 704 | 0.1− | 0.9− | 2005 04 10 | G96 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.1− | 0.2+ |
| 2001 02 13 | 691 | 0.1− | 0.1− | 2005 05 02 | 691 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.3− | 0.4+ |
| 2001 02 13 | 691 | 0.1− | 0.4+ | 2005 05 02 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.0 |
| 2001 02 13 | 691 | 0.1+ | 0.5+ | 2005 05 02 | 691 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.1+ |
| 2003 11 18 | 691 | 0.1− | 0.1+ | 2005 06 27 | G96 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.6− | 0.1− |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2005 06 27 | G96 | 0.6− | 0.3+ | 2006 08 28 | 699 | 0.1− | 0.2− |
| 2003 11 18 | 691 | 0.1+ | 0.1+ | 2005 06 27 | G96 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.9+ |
| 2003 11 23 | 291 | 0.1− | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.4+ | 2006 08 29 | 704 | 0.8+ | 0.2− |
| 2003 11 23 | 291 | 0.0 | 0.6+ | 2006 08 14 | 644 | 0.0 | 0.4+ | 2006 08 29 | 704 | 0.9+ | 1.1− |
| 2003 11 23 | 291 | 0.4− | 0.5+ | 2006 08 14 | 644 | 0.6− | 0.5+ | 2006 08 29 | 704 | 0.5+ | 0.1− |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 08 29 | 704 | 0.8+ | 0.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2003 12 17 | 691 | 0.3+ | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2005 03 10 | 691 | 0.3+ | 0.2+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2005 03 10 | 691 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2005 03 10 | 691 | 0.0 | 0.1− | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2+ |
| 2005 04 04 | 703 | 0.5− | 0.9− | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2005 04 04 | 703 | 1.2− | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.4− |
| 2005 04 04 | 703 | 0.2+ | 0.3+ | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.1− |

**2006 QP$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.30524 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26082468 | $\omega$ | 81.67038 | | +0.60324013 | | −0.79659136 |
| $a$ | 2.4260715 | $\Omega$ | 331.11347 | | +0.69600306 | | +0.54984265 |
| $e$ | 0.1032590 | $i$ | 4.66494 | | +0.38946255 | | +0.25122753 |
| $P$ | 3.78 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.2− | 0.0 | 2004 01 22 | 704 | 0.2+ | 0.3− | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 2003 12 14 | 691 | 0.1+ | 0.0 | 2004 01 22 | 704 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1− |
| 2003 12 14 | 691 | 0.3+ | 0.1− | 2004 01 22 | 704 | 0.6− | 0.3− | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2003 12 23 | 704 | (0.7− | 2.6+) | 2006 08 16 | 644 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.5− | 0.4+ |
| 2003 12 23 | 704 | 0.9− | 0.4+ | 2006 08 16 | 644 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.7− | 0.8− |
| 2003 12 23 | 704 | 0.7− | 1.9+ | 2006 08 16 | 644 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.3+ | 0.8− |
| 2003 12 23 | 704 | 1.4+ | 1.6− | 2006 08 17 | 644 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.4+ | 0.3− |
| 2003 12 28 | 704 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.0 | 0.3+ |
| 2003 12 28 | 704 | 0.5− | 0.5+ | 2006 08 17 | 644 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 2003 12 28 | 704 | 0.2+ | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.7+ | 0.4− |
| 2003 12 28 | 704 | 0.6+ | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.1− | | | | |
| 2004 01 22 | 704 | 0.5− | 0.4− | 2006 08 19 | 691 | 0.0 | 0.2+ | | | | |

**2006 QR$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.08355 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26085802 | $\omega$ | 336.45217 | | +0.99996486 | | +0.00564805 |
| $a$ | 2.4258648 | $\Omega$ | 23.22678 | | −0.00260298 | | +0.91164379 |
| $e$ | 0.1646169 | $i$ | 0.90012 | | −0.00796914 | | +0.41094244 |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 15 | 691 | 0.1− | 0.2+ | 2006 08 18 | 699 | 0.2+ | 0.3− | 2006 08 28 | 699 | 0.0 | 0.8− |
| 1991 09 15 | 691 | 0.6− | 0.7+ | 2006 08 18 | 699 | 0.0 | 1.2− | 2006 08 31 | 704 | 0.2+ | 0.4+ |
| 1991 09 15 | 691 | 0.1− | 0.9+ | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.1− | 0.4+ |
| 2005 04 05 | G96 | 0.0 | 0.8+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 08 31 | 704 | 0.6− | 1.0+ |
| 2005 04 05 | G96 | 0.9+ | 0.3+ | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.4+ | 0.1+ |
| 2005 04 05 | G96 | 0.2− | 0.6+ | 2006 08 21 | 704 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 2005 04 05 | G96 | 0.0 | 0.6+ | 2006 08 21 | 704 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.2− |
| 2005 04 12 | 695 | 0.3+ | 0.4+ | 2006 08 21 | 704 | 0.8+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2005 04 12 | 695 | 0.2+ | 0.4+ | 2006 08 23 | 644 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2006 08 14 | 644 | 0.5+ | 0.4+ | 2006 08 23 | 644 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 2006 08 14 | 644 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.3+ |
| 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.5+ | 1.0− |
| 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2006 08 16 | 644 | 0.3− | 0.0 | 2006 08 27 | A79 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 08 28 | A79 | 0.0 | 1.4+ | 2006 11 17 | G96 | 0.6+ | 0.4+ |
| 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 08 28 | A79 | 1.4− | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 08 17 | 644 | 0.2+ | 0.2− | 2006 08 28 | 699 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2006 08 18 | 699 | 0.6+ | 1.1− | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2006 08 18 | 699 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 0.6− | 0.1− | 2006 11 21 | G96 | 0.6+ | 0.0 |
| 2006 08 18 | 699 | 0.5+ | 0.8− | 2006 08 28 | 699 | 0.7− | 0.8− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2006 08 18 | 699 | 0.1+ | 0.6− | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2006 08 18 | 699 | 0.4− | 1.2+ | 2006 08 28 | 703 | 0.7+ | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.6− |
| 2006 08 18 | 699 | 1.1− | 0.5+ | 2006 08 28 | 699 | 0.2+ | 0.6− | | | | |

### 2006 $QS_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.78229 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18503293 | $\omega$ | 186.80144 | | +0.80834870 | +0.58811199 | |
| $a$ | 3.0500247 | $\Omega$ | 137.13937 | | −0.53828095 | +0.75652438 | |
| $e$ | 0.2774050 | $i$ | 2.22379 | | −0.23838202 | +0.28599850 | |
| $P$ | 5.33 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 691 | 0.1− | 0.8− | 2006 08 17 | 644 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.7− |
| 2001 10 26 | 691 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 1.2+ |
| 2001 10 26 | 691 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | (1.4+ | 2.3+) |
| 2001 11 11 | 291 | 0.6− | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.4− | 1.5− |
| 2001 11 11 | 291 | 0.2+ | 0.5− | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.7− | 0.2− |
| 2001 11 11 | 291 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.1+ |
| 2006 06 20 | G96 | 0.3+ | 0.0 | 2006 08 19 | 691 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2006 06 20 | G96 | 0.7+ | 0.3− | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.5− |
| 2006 06 20 | G96 | 0.0 | 0.3− | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2006 06 20 | G96 | 0.7− | 0.8− | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.5+ | 0.2− |
| 2006 08 17 | 644 | 0.6− | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.2+ | | | | |
| 2006 08 17 | 644 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.7+ | | | | |

### 2006 $QV_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.48558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28495354 | $\omega$ | 338.10187 | | +0.62793822 | +0.77617823 | |
| $a$ | 2.2871080 | $\Omega$ | 330.70512 | | −0.69567116 | +0.52700169 | |
| $e$ | 0.1312518 | $i$ | 6.68136 | | −0.34890577 | +0.34614532 | |
| $P$ | 3.46 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.4− | 0.4+ |
| 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 08 28 | 699 | 1.4− | 0.4− |
| 2003 11 20 | 691 | 0.1− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.2− | 2006 08 28 | 699 | 1.5+ | 0.8− |
| 2005 03 17 | G96 | 0.5+ | 0.5+ | 2006 08 25 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2005 03 17 | G96 | 0.0 | 0.3+ | 2006 08 25 | 704 | 0.7+ | 0.2− | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2005 03 17 | G96 | 0.3+ | 0.2+ | 2006 08 25 | 704 | 1.1+ | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.3+ |
| 2005 03 17 | G96 | 0.1− | 0.4+ | 2006 08 25 | 704 | 1.0+ | 1.3− | 2006 09 14 | 703 | 0.4+ | 0.8− |
| 2006 07 30 | 122 | (2.5+ | 2.3−) | 2006 08 25 | 704 | 0.2+ | 0.0 | 2006 09 14 | 703 | 1.1− | 0.3+ |
| 2006 07 30 | 122 | (3.0+ | 1.7−) | 2006 08 27 | 691 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.3− |
| 2006 07 30 | 122 | (2.1+ | 1.3−) | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.0 |
| 2006 08 17 | 644 | 0.2− | 0.2− | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2006 08 17 | 644 | 0.1− | 0.3− | 2006 08 28 | 699 | 0.4+ | 1.7+ | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.1− | | | | |
| 2006 08 18 | 644 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.0 | 0.6+ | | | | |

### 2006 $QQ_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.44159 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22258795 | $\omega$ | 330.05823 | | +0.30972367 | +0.94652212 | |
| $a$ | 2.6965074 | $\Omega$ | 317.80077 | | −0.84347664 | +0.22964018 | |
| $e$ | 0.3484501 | $i$ | 7.73203 | | −0.43888313 | +0.22663022 | |
| $P$ | 4.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 01 | 566 | 0.4+ | 0.2− | 2006 08 24 | 704 | 0.1+ | 1.3− | 2006 09 01 | 704 | 0.1+ | 0.7+ |
| 1997 08 01 | 566 | 0.1+ | 0.2+ | 2006 08 24 | 704 | 1.3+ | 0.1+ | 2006 09 01 | 704 | 0.2− | 0.2+ |
| 1997 08 01 | 566 | 0.4− | 0.3− | 2006 08 27 | 699 | 0.6− | 0.2− | 2006 09 11 | 703 | 0.4+ | 0.4− |
| 2005 03 13 | G96 | 0.5+ | 0.8+ | 2006 08 27 | 699 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.2+ | 0.2+ |
| 2005 03 13 | G96 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.6− | 0.2+ |
| 2005 03 13 | G96 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 09 11 | 703 | 0.8− | 0.0 |
| 2005 03 13 | G96 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 2006 07 21 | 699 | 0.5+ | 0.3− | 2006 08 29 | 703 | 0.2+ | 0.1− | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2006 07 21 | 699 | 1.6− | 0.4− | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 2006 07 21 | 699 | 1.1+ | 0.6+ | 2006 08 29 | 703 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.7− | 0.4+ |
| 2006 07 21 | 699 | 1.3− | 0.9+ | 2006 08 29 | 703 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.9− | 1.3− |
| 2006 08 18 | 704 | 0.9− | 1.0+ | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.6+ |
| 2006 08 18 | 704 | 1.1+ | 0.4+ | 2006 08 30 | 699 | 0.1+ | 0.9− | 2006 09 17 | 703 | 0.2− | 0.6− |
| 2006 08 18 | 704 | 0.4+ | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 704 | 1.0+ | 0.6+ |
| 2006 08 19 | 644 | 0.3− | 0.3− | 2006 08 30 | 699 | 0.4+ | 0.4− | 2006 09 18 | 704 | 0.1+ | 0.1− |
| 2006 08 19 | 644 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.2− | 0.2− | 2006 09 18 | 704 | 0.5+ | 0.7− |
| 2006 08 19 | 644 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 704 | 1.0+ | 0.5− |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.1− | 0.6+ | 2006 09 20 | 699 | 0.7− | 0.3− |
| 2006 08 22 | 644 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.5− | 0.4+ | 2006 09 20 | 699 | 0.0 | 0.9+ |
| 2006 08 22 | 644 | 0.4+ | 0.2− | 2006 08 30 | 704 | 0.7+ | 0.5+ | 2006 09 20 | 699 | 0.8− | 1.0− |
| 2006 08 24 | 704 | 0.9+ | 0.1+ | 2006 08 30 | 699 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.1− | 0.5+ |
| 2006 08 24 | 704 | 0.0 | 0.2+ | 2006 09 01 | 704 | 0.4− | 0.4+ | | | | |
| 2006 08 24 | 704 | 1.5+ | 0.2− | 2006 09 01 | 704 | 0.4− | 0.2− | | | | |

### 2006 $QX_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.89246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17265377 | $\omega$ | 354.24592 | | +0.93543516 | +0.35297313 | |
| $a$ | 3.1941257 | $\Omega$ | 345.04095 | | −0.32127974 | +0.82618649 | |
| $e$ | 0.1572948 | $i$ | 4.27951 | | −0.14744622 | +0.43911941 | |
| $P$ | 5.71 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 621 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.3+ | 0.7+ |
| 2001 10 13 | 621 | 0.3+ | 0.9+ | 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.3− |
| 2001 10 21 | 704 | 0.8+ | 1.1+ | 2006 08 22 | 644 | 0.1− | 0.4− | 2006 09 20 | 699 | 0.3+ | 0.4+ |
| 2001 10 21 | 704 | (0.6+ | 2.5+) | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.6− | 0.2+ |
| 2001 10 21 | 704 | (0.3+ | 1.9+) | 2006 08 22 | 644 | 0.0 | 0.3− | 2006 09 20 | 699 | 1.4− | 0.7+ |
| 2001 11 24 | 704 | 0.4+ | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 2001 11 24 | 704 | 1.3− | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 09 20 | 699 | (1.9− | 0.4+) |
| 2001 11 24 | 704 | 0.3− | 0.9+ | 2006 08 28 | 703 | 0.8− | 0.7− | 2006 09 20 | 699 | 0.1− | 0.8+ |
| 2001 11 24 | 704 | 0.3− | 1.0− | 2006 08 28 | 703 | 0.5+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2001 11 24 | 704 | (1.9− | 0.5+) | 2006 08 28 | 703 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2004 03 21 | 291 | 0.1+ | 0.6+ | 2006 08 30 | 704 | 0.7− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2004 03 21 | 291 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.6− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2004 03 21 | 291 | 0.6+ | 0.6+ | 2006 08 30 | 704 | 0.5+ | 0.8− | 2006 09 27 | 704 | 0.2+ | 0.3+ |
| 2006 08 18 | 691 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.7− | 2006 09 27 | 704 | 0.3− | 1.2− |
| 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.8+ |
| 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.6+ | 0.8+ | 2006 09 27 | 704 | 0.6− | 0.2+ |
| 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.8+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 1.1+ | 2006 11 13 | G96 | 0.2+ | 0.7− |
| 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.6+ | 2006 11 13 | G96 | 0.5− | 0.3− |
| 2006 08 21 | 704 | 0.1+ | 0.5− | 2006 09 17 | 704 | 0.6+ | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2006 08 21 | 704 | 1.2− | 0.0 | 2006 09 17 | 704 | 0.0 | 0.0 | | | | |
| 2006 08 21 | 704 | (1.1− | 1.7+) | 2006 09 17 | 704 | 0.8+ | 1.1+ | | | | |

### 2006 $QQ_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.88777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23776057 | $\omega$ | 59.45050 | | +0.97039297 | −0.21928238 | |
| $a$ | 2.5805334 | $\Omega$ | 313.00622 | | +0.14527912 | +0.86482489 | |
| $e$ | 0.1792548 | $i$ | 7.95896 | | +0.19295455 | +0.45165601 | |
| $P$ | 4.15 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.4− | 0.4+ | 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 1.3+ | 0.4+ |
| 2002 10 03 | 644 | 0.1+ | 0.1+ | 2006 08 22 | 461 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.6+ | 1.3+ |
| 2002 10 03 | 644 | 0.2+ | 0.3− | 2006 08 22 | 461 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.1+ | 1.2+ |
| 2002 11 01 | 644 | 0.3+ | 0.1+ | 2006 08 22 | 461 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.0 |
| 2002 11 01 | 644 | 0.1− | 0.4− | 2006 08 24 | 461 | 0.0 | 0.3+ | 2006 09 20 | 699 | 1.5− | 0.7− |
| 2002 11 01 | 644 | 0.3+ | 0.0 | 2006 08 24 | 461 | 0.1− | 0.2− | 2006 09 23 | 461 | 0.1− | 0.1− |
| 2002 11 13 | 644 | 0.5− | 0.1+ | 2006 08 24 | 461 | 0.1+ | 0.6+ | 2006 09 23 | 461 | 0.4− | 0.1− |
| 2006 08 18 | 461 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 09 23 | 461 | 0.4− | 0.0 |
| 2006 08 18 | 461 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.2+ | 0.1− | 2006 09 23 | 461 | 0.0 | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 18 | 461 | 0.3− | 0.6− | 2006 08 29 | 703 | 1.4− | 0.5− | 2006 10 12 | 461 | 0.0 | 0.1+ |
| 2006 08 19 | 461 | 0.4− | 0.8− | 2006 08 29 | 703 | 0.7− | 0.6− | 2006 10 12 | 461 | 0.0 | 0.1− |
| 2006 08 19 | 461 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.3+ | 1.3− | 2006 10 16 | 461 | 0.1+ | 0.0 |
| 2006 08 19 | 461 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 10 16 | 461 | 0.4+ | 0.1+ |
| 2006 08 20 | 461 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.9− | 2006 10 17 | 461 | 0.1− | 0.2+ |
| 2006 08 20 | 461 | 0.5+ | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.9− | 2006 10 17 | 461 | 0.2+ | 0.2+ |
| 2006 08 20 | 461 | 0.8+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 17 | 461 | 0.4− | 0.1− |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | (0.6+ | 3.0+) | 2006 10 18 | 461 | 0.1− | 0.0 |
| 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 1.9+ | 0.9+ | 2006 10 18 | 461 | 0.1− | 0.1− |

**2006 QB$_5$ = 2005 EU$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.37056 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26628628 | $\omega$ | 323.09929 | | +0.53742295 | +0.84324767 | |
| $a$ | 2.3927842 | $\Omega$ | 339.40271 | | −0.76643190 | +0.48320429 | |
| $e$ | 0.1618209 | $i$ | 1.70789 | | −0.35179356 | +0.23547181 | |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 691 | 0.1− | 0.5+ | 2006 08 18 | 699 | (1.6+ | 2.1+) | 2006 08 27 | 691 | 0.3− | 0.1+ |
| 2001 02 22 | 691 | 0.5+ | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 08 28 | 699 | 1.4− | 0.6− |
| 2001 02 22 | 691 | 0.4− | 0.4− | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.3− |
| 2003 12 29 | 691 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 1.3− | 0.3− |
| 2003 12 29 | 691 | 0.2− | 0.6+ | 2006 08 19 | 291 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.4+ | 0.4+ |
| 2003 12 29 | 691 | 0.3+ | 0.3+ | 2006 08 19 | 291 | 0.1− | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.2− |
| 2005 03 04 | 691 | 0.2+ | 0.6+ | 2006 08 19 | 291 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.8− | 0.9− |
| 2005 03 04 | 691 | 0.2+ | 0.6+ | 2006 08 20 | 291 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.1+ | 0.7+ |
| 2005 03 04 | 691 | 0.2+ | 0.6+ | 2006 08 20 | 291 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.5− | 0.9+ |
| 2005 03 08 | G96 | 0.2− | 0.2+ | 2006 08 20 | 291 | 0.3+ | 0.1− | 2006 09 11 | G92 | 0.4− | 0.0 |
| 2005 03 08 | G96 | 0.1+ | 0.2+ | 2006 08 21 | 704 | 0.5− | 0.2+ | 2006 09 11 | G92 | 0.8− | 0.5− |
| 2005 03 08 | G96 | 0.4− | 0.2+ | 2006 08 21 | 704 | 0.8− | 1.2+ | 2006 09 11 | G92 | 0.2+ | 0.6− |
| 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 08 21 | 704 | 1.4+ | 0.9− | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2005 04 02 | G96 | 1.2+ | 0.7− | 2006 08 21 | 704 | 0.4+ | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 04 02 | G96 | 0.5+ | 0.1+ | 2006 08 21 | 704 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 08 25 | 704 | 0.7+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.0 | 0.4+ | 2006 08 25 | 704 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2006 08 18 | 699 | 0.3+ | 1.5+ | 2006 08 25 | 704 | 0.7+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2006 08 18 | 699 | 0.4+ | 1.1+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.7− |
| 2006 08 18 | 699 | 1.1+ | 0.3− | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.5− |

**2006 QF$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.26061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23580326 | $\omega$ | 176.39278 | | +0.93385212 | +0.34769445 | |
| $a$ | 2.5947938 | $\Omega$ | 162.53064 | | −0.33473918 | +0.93221968 | |
| $e$ | 0.1606966 | $i$ | 16.21707 | | −0.12597577 | +0.10037446 | |
| $P$ | 4.18 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 08 20 | 291 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2006 08 21 | 291 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.1− |
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2006 08 21 | 291 | 0.3− | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.1+ |
| 1998 09 25 | 645 | 0.1− | 0.0 | 2006 08 21 | 291 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.4− |
| 2001 06 16 | 645 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.6+ | 0.6+ |
| 2001 06 16 | 645 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.7− | 0.2− |
| 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 08 22 | 644 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.3− |
| 2006 08 19 | 691 | 0.1+ | 0.2− | 2006 08 25 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.2− | 0.1− |
| 2006 08 19 | 691 | 0.4+ | 0.2− | 2006 08 25 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.7+ | 1.3− |
| 2006 08 20 | 291 | 0.2+ | 0.1+ | 2006 08 25 | 704 | 1.4+ | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.7+ |
| 2006 08 20 | 291 | 0.0 | 0.2+ | 2006 08 25 | 704 | 0.3− | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.3+ |

**2006 QV$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.52512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22625087 | $\omega$ | 1.16063 | | +0.99768298 | −0.06695135 | |
| $a$ | 2.6673246 | $\Omega$ | 2.76663 | | +0.06022821 | +0.78649454 | |
| $e$ | 0.2614289 | $i$ | 14.50692 | | +0.03164237 | +0.61395753 | |
| $P$ | 4.36 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.3+ | 0.0 | 2006 08 14 | 644 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.7+ | 0.8+ |
| 2002 10 05 | 704 | 0.1− | 0.6+ | 2006 08 14 | 644 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.4− | 0.8− |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.8+ | 0.2− |
| 2002 10 05 | 704 | 0.8− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.3− | 0.8− |
| 2002 10 05 | 704 | 0.3+ | 0.8− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.5+ | 0.1− |
| 2002 10 15 | 704 | 0.4− | 0.6+ | 2006 08 18 | 644 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.0 | 0.1− |
| 2002 10 15 | 704 | (1.9+ | 0.4+) | 2006 08 18 | 644 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.2+ |
| 2002 10 15 | 704 | 1.2+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.1− | 0.4+ |
| 2002 10 15 | 704 | 1.4+ | 0.0 | 2006 08 18 | 428 | 0.9− | 0.6− | 2006 09 25 | 699 | 0.8+ | 0.5+ |
| 2002 10 30 | 704 | 0.0 | 0.6− | 2006 08 18 | 428 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.7+ | 1.5+ |
| 2002 10 30 | 704 | 0.9+ | 0.7− | 2006 08 19 | 428 | 0.9− | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.3+ |
| 2002 10 30 | 704 | 0.5+ | 0.6− | 2006 08 19 | 428 | 0.3+ | 0.6− | 2006 09 26 | 704 | 0.8+ | 0.8+ |
| 2002 10 30 | 704 | 0.1− | 0.8− | 2006 08 19 | 428 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.9+ | 0.4+ |
| 2002 10 30 | 704 | 0.2− | 0.7− | 2006 08 28 | E12 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.2− | 0.6+ |
| 2002 11 15 | 704 | 0.1− | 0.2+ | 2006 08 28 | E12 | 0.7− | 0.3+ | 2006 09 26 | 703 | 0.3− | 1.0+ |
| 2002 11 15 | 704 | 0.6− | 0.9+ | 2006 08 28 | E12 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.8− | 0.0 |
| 2002 11 15 | 704 | 1.0− | 0.5− | 2006 08 28 | E12 | 0.4− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2002 11 15 | 704 | 0.1− | 0.3− | 2006 09 02 | 428 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.4+ |
| 2002 12 07 | 704 | 0.4+ | 0.6+ | 2006 09 02 | 428 | 0.5− | 0.1− | 2006 09 28 | 704 | 0.4− | 0.2+ |
| 2002 12 07 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 09 28 | 704 | 0.7+ | 0.2+ |
| 2002 12 07 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.4+ | 0.3+ |
| 2002 12 07 | 704 | 0.9− | 1.1+ | 2006 09 18 | 699 | 0.2− | 0.3− | 2006 09 28 | 704 | 0.1− | 0.2− |
| 2002 12 15 | 704 | 0.8− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.5+ | 0.0 |
| 2002 12 15 | 704 | 0.3− | 0.2+ | 2006 09 19 | 704 | 0.7− | 0.3− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 12 15 | 704 | 0.4− | 0.3+ | 2006 09 19 | 704 | 0.7+ | 0.8− | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2002 12 15 | 704 | 0.4− | 0.0 | 2006 09 19 | 704 | 0.7+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2006 07 30 | E12 | 0.7− | 0.8+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2006 07 30 | E12 | 0.2− | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.7+ | 0.4− |
| 2006 07 30 | E12 | 0.5− | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2006 08 14 | 644 | 0.2− | 0.1− | 2006 09 20 | 703 | 0.9+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2006 08 14 | 644 | 0.3− | 0.0 | 2006 09 20 | 703 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2006 08 14 | 644 | 0.2− | 0.2− | 2006 09 20 | 703 | 0.3+ | 0.3− | | | | |
| 2006 08 14 | 644 | 0.3− | 0.1− | 2006 09 20 | 703 | 0.3− | 0.1− | | | | |

**2006 QF$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.92978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37770172 | $\omega$ | 250.03419 | | +0.69338198 | −0.69779944 | |
| $a$ | 1.8954111 | $\Omega$ | 153.20448 | | +0.71374481 | +0.69935666 | |
| $e$ | 0.0837754 | $i$ | 23.49383 | | −0.09894328 | +0.15484251 | |
| $P$ | 2.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 19 | 691 | 0.2+ | 0.3+ | 2005 03 12 | 699 | 1.1+ | 1.2+ | 2006 08 28 | 703 | 0.4+ | 0.4− |
| 1993 07 19 | 691 | 0.2+ | 0.0 | 2005 03 31 | 699 | 0.1− | 0.8+ | 2006 08 28 | 703 | 0.8+ | 0.5− |
| 1993 07 19 | 691 | 0.2− | 0.2− | 2005 03 31 | 699 | 0.9− | 0.4+ | 2006 08 28 | 699 | 0.3+ | 0.5+ |
| 2000 03 05 | 704 | 0.6+ | 1.2+ | 2005 03 31 | 699 | 0.5− | 0.8+ | 2006 08 28 | 703 | 0.5− | 0.4− |
| 2000 03 05 | 704 | 0.4− | 0.6+ | 2005 03 31 | 699 | (2.1− | 1.1+) | 2006 08 28 | 703 | 0.6− | 0.2− |
| 2000 03 05 | 704 | 0.4+ | 0.7+ | 2005 04 09 | 703 | 0.8− | 1.3+ | 2006 08 28 | 699 | 0.5+ | 0.9+ |
| 2001 08 18 | 644 | 0.2− | 0.9+ | 2005 04 09 | 703 | (2.0+ | 0.4+) | 2006 08 29 | 704 | 0.0 | 0.0 |
| 2001 08 18 | 644 | 0.1− | 0.6+ | 2005 04 09 | 703 | 1.4− | 0.8− | 2006 08 29 | 704 | 0.3− | 0.2− |
| 2001 08 18 | 644 | 0.0 | 0.9+ | 2005 04 09 | 703 | 0.9+ | 1.0+ | 2006 08 29 | 704 | 0.6− | 0.4− |
| 2001 09 12 | 704 | (0.5− | 2.7−) | 2006 06 21 | 703 | 0.1+ | 1.5− | 2006 08 29 | 704 | 0.3− | 0.1+ |
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2006 06 21 | 703 | 0.6− | 0.2+ | 2006 08 29 | 704 | 0.1− | 0.1+ |
| 2001 09 12 | 704 | 0.2+ | 0.5− | 2006 06 21 | 703 | 0.3− | 0.6− | 2006 09 16 | 704 | 0.6+ | 0.8− |
| 2001 09 26 | 699 | 0.2+ | 0.2+ | 2006 06 21 | 703 | 0.4− | 0.3− | 2006 09 16 | 704 | 0.9+ | 0.4− |
| 2001 09 26 | 699 | 0.2+ | 0.7+ | 2006 07 24 | 703 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.1+ | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 26 | 699 | 0.9− | 1.2− | 2006 07 24 | 703 | 1.1− | 1.1− | 2006 09 16 | 704 | 0.7+ | 0.0 |
| 2001 09 26 | 699 | 0.5− | 0.0 | 2006 07 24 | 703 | (2.3− | 0.5+) | 2006 09 17 | 699 | 0.3− | 0.4+ |
| 2003 06 06 | 699 | 0.0 | 1.3+ | 2006 07 24 | 703 | (1.9− | 0.1−) | 2006 09 17 | 699 | 0.2− | 0.1+ |
| 2003 06 06 | 699 | 0.8+ | 1.1− | 2006 08 18 | 704 | 0.1+ | 0.9+ | 2006 09 17 | 699 | (1.7+ | 0.5+) |
| 2003 06 06 | 699 | 0.1− | 1.0+ | 2006 08 18 | 704 | 0.7+ | 0.2+ | 2006 09 17 | 699 | 0.0 | 0.2− |
| 2003 06 06 | 699 | (1.1+ | 2.4+) | 2006 08 18 | 704 | 0.0 | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.2− |
| 2003 06 25 | 645 | 0.0 | 0.1− | 2006 08 18 | 704 | 0.4+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2− |
| 2003 06 25 | 645 | 0.0 | 0.0 | 2006 08 19 | 691 | (2.5+ | 3.0−) | 2006 09 20 | 644 | 0.3− | 0.1+ |
| 2003 06 26 | 645 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 1.1− | 0.3+ |
| 2003 06 26 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.6− | 0.2+ |
| 2005 01 15 | 699 | 0.5+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 1.0− | 0.8+ |
| 2005 01 15 | 699 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.7− | 1.5+ |
| 2005 01 15 | 699 | 1.1+ | 0.5+ | 2006 08 19 | 699 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.3− |
| 2005 01 15 | 699 | 0.5− | 0.3− | 2006 08 19 | 699 | 0.2− | 0.6+ | 2006 10 11 | E12 | 0.1− | 0.3+ |
| 2005 03 02 | 703 | 0.2+ | 0.2+ | 2006 08 21 | 704 | 0.9+ | 0.8+ | 2006 10 11 | E12 | 0.4− | 0.3− |
| 2005 03 02 | 703 | 0.2− | 0.7+ | 2006 08 21 | 704 | 0.8+ | 0.3+ | 2006 10 11 | E12 | 0.3+ | 0.4+ |
| 2005 03 02 | 703 | 1.0− | 0.2+ | 2006 08 21 | 704 | 0.6+ | 0.3+ | 2006 10 11 | E12 | 0.6+ | 0.5+ |
| 2005 03 02 | 703 | 0.7− | 0.7+ | 2006 08 21 | 704 | 0.4+ | 0.3+ | 2006 10 28 | E12 | 0.5+ | 0.6+ |
| 2005 03 12 | 699 | 0.7+ | 1.0+ | 2006 08 21 | 704 | 0.7+ | 0.7+ | 2006 10 28 | E12 | 0.8− | 1.5− |
| 2005 03 12 | 699 | 0.2− | 0.9+ | 2006 08 28 | 699 | 0.5+ | 0.5+ | 2006 10 28 | E12 | 0.6− | 0.7− |
| 2005 03 12 | 699 | (0.6+ | 2.0+) | 2006 08 28 | 699 | 0.5+ | 0.8+ | 2006 10 28 | E12 | 0.0 | 0.5+ |

### 2006 QN$_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.03266 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27169177 | $\omega$ | 192.88421 | | +0.93201427 | +0.36214538 | |
| $a$ | 2.3609406 | $\Omega$ | 145.87309 | | −0.33023878 | +0.86468488 | |
| $e$ | 0.1726349 | $i$ | 1.44486 | | −0.14930418 | +0.34809595 | |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.4+ | 0.1− | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 08 28 | 691 | 0.0 | 0.3+ |
| 1999 11 12 | 704 | 0.0 | 0.9− | 2006 08 17 | 644 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.8− |
| 1999 11 12 | 704 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.2− |
| 2005 04 04 | G96 | 0.2− | 0.0 | 2006 08 21 | 691 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.3+ |
| 2005 04 04 | G96 | 0.2− | 0.2+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.5− |
| 2005 04 04 | G96 | 0.3+ | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.1− |
| 2005 04 04 | G96 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.4+ |
| 2005 05 09 | G96 | 0.1− | 0.5− | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2005 05 09 | G96 | 0.4− | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.6+ | 0.1− |
| 2005 05 09 | G96 | 0.3+ | 0.4− | 2006 08 25 | 704 | 1.2+ | 0.6− | 2006 09 14 | 703 | 0.4− | 0.2− |
| 2005 05 09 | G96 | 0.2+ | 0.0 | 2006 08 25 | 704 | 0.7+ | 0.3− | 2006 09 17 | 704 | 1.2− | 0.1+ |
| 2006 06 20 | G96 | 0.3+ | 0.8− | 2006 08 25 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.2+ |
| 2006 06 20 | G96 | 0.4+ | 0.8− | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | 1.0+ | 0.1+ |
| 2006 06 20 | G96 | 0.0 | 0.7− | 2006 08 28 | 699 | 0.5− | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.8− |
| 2006 06 20 | G96 | 0.2− | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2006 08 17 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.9− | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.9+ | 1.5− | 2006 09 26 | G96 | 0.1+ | 0.2− |

### 2006 QW$_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.76421 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21212398 | $\omega$ | 89.44697 | | +0.30832687 | −0.95031257 | |
| $a$ | 2.7844721 | $\Omega$ | 342.41016 | | +0.80654262 | +0.28506188 | |
| $e$ | 0.1606490 | $i$ | 8.16152 | | +0.50440415 | +0.12508293 | |
| $P$ | 4.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 704 | 0.5− | 0.5− | 2006 08 18 | 644 | 0.2− | 0.5− | 2006 09 02 | 152 | 0.9+ | 1.1+ |
| 2002 11 06 | 704 | 0.8+ | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 09 02 | 152 | (0.9− | 1.5−) |
| 2002 11 06 | 704 | 0.1− | 1.0− | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.9− |
| 2002 11 06 | 704 | 0.0 | 0.6− | 2006 08 21 | 691 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.8− |
| 2002 11 06 | 704 | 0.6− | 0.4− | 2006 08 28 | 703 | 1.0+ | 0.0 | 2006 09 14 | 703 | (0.8− | 1.6+) |
| 2002 12 06 | 704 | 0.1+ | 0.5+ | 2006 08 28 | 703 | (0.8− | 1.9−) | 2006 09 14 | 703 | 0.9− | 0.4− |
| 2002 12 06 | 704 | 0.2− | 0.3+ | 2006 08 28 | 703 | (2.3+ | 2.3−) | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.7+ | 0.2+ | 2006 08 28 | 703 | (3.7− | 1.4−) | 2006 09 25 | G96 | 0.5− | 0.2− |
| 2002 12 06 | 704 | 0.1+ | 0.8+ | 2006 09 01 | 152 | 1.4+ | 0.5− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 09 01 | 152 | 1.1− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2003 01 04 | 704 | 0.4+ | 0.3+ | 2006 09 01 | 152 | 0.5+ | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.0 |
| 2003 01 04 | 704 | 0.1− | 0.4+ | 2006 09 01 | 152 | 1.0+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2003 01 04 | 704 | 0.0 | 0.2− | 2006 09 01 | 152 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.5− | 0.3− |
| 2003 01 04 | 704 | 1.3− | 0.1− | 2006 09 01 | 152 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2006 08 17 | 644 | 0.3+ | 0.2− | 2006 09 01 | 152 | (2.9− | 1.3+) | 2006 10 19 | G96 | 0.2+ | 0.3+ |
| 2006 08 17 | 644 | 0.3− | 0.6− | 2006 09 01 | 152 | (1.7− | 1.7−) | 2006 10 19 | G96 | 0.3+ | 0.4+ |
| 2006 08 17 | 644 | 0.5− | 0.0 | 2006 09 01 | 152 | 0.4+ | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.5+ |
| 2006 08 18 | 644 | 0.5− | 0.0 | 2006 09 01 | 152 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.3+ |
| 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 09 02 | 152 | 0.7+ | 1.0+ | | | | |

### 2006 QO$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.61993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23648290 | $\omega$ | 177.36395 | | +0.89099411 | +0.45234910 | |
| $a$ | 2.5898198 | $\Omega$ | 155.62385 | | −0.41825386 | +0.85109497 | |
| $e$ | 0.2336481 | $i$ | 5.40209 | | −0.17661595 | +0.26649136 | |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.7+ | 0.1+ |
| 2000 02 11 | 691 | 0.4− | 0.3− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.2+ |
| 2000 02 11 | 691 | 0.1+ | 0.6− | 2006 09 12 | 703 | 0.4− | 0.2+ | 2006 09 19 | 704 | 0.1− | 0.7− |
| 2002 10 03 | 704 | 0.4− | 0.3+ | 2006 09 12 | 703 | 0.4+ | 0.4+ | 2006 09 19 | 704 | 0.6− | 0.4+ |
| 2002 10 03 | 704 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.0 | 2006 09 19 | 704 | 0.4− | 0.4+ |
| 2002 10 03 | 704 | 0.5+ | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 09 19 | 704 | 0.6− | 0.9+ |
| 2002 10 03 | 704 | 0.1− | 0.4− | 2006 09 14 | 644 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.2+ | 0.0 |
| 2002 10 09 | 699 | 1.2+ | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.0 | 0.7+ |
| 2002 10 09 | 699 | 0.5− | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.4+ | 0.0 |
| 2002 10 09 | 699 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.1− | 0.8+ |
| 2002 10 09 | 699 | 0.7− | 1.1+ | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 2002 10 31 | 704 | 0.5+ | 0.2+ | 2006 09 16 | 704 | 0.7− | 0.1− | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2002 10 31 | 704 | 0.1− | 0.3+ | 2006 09 16 | 704 | 0.5+ | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.2− |
| 2002 10 31 | 704 | 0.1− | 0.4+ | 2006 09 16 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.2− |
| 2002 11 07 | 704 | 0.2− | 0.8− | 2006 09 16 | 704 | (1.8+ | 1.4−) | 2006 09 26 | 704 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.8− | 1.1− | 2006 09 16 | 704 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.1− | 0.2− |
| 2002 11 07 | 704 | 0.2+ | 0.4− | 2006 09 16 | 704 | 1.1− | 1.0− | 2006 09 26 | 704 | 0.2− | 0.5− |
| 2002 11 07 | 704 | 0.6+ | 0.3− | 2006 09 16 | 704 | 0.9+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.5− |
| 2002 11 07 | 704 | 0.2− | 0.8− | 2006 09 16 | 704 | 0.7+ | 0.7− | 2006 09 26 | 704 | 0.3− | 0.5− |
| 2003 12 25 | 645 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 0.9+ | 0.2+ | 2006 09 28 | 704 | 0.2− | 0.0 |
| 2003 12 25 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.9+ | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.1+ |
| 2006 07 21 | G96 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 09 28 | 704 | 0.2− | 0.7+ |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.4− |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 09 30 | 704 | 1.2+ | 0.9+ |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.6− | 0.6+ | 2006 09 30 | 704 | 1.0− | 0.1− |
| 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.6− |
| 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2006 08 18 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2006 08 21 | 704 | (1.6+ | 0.2+) | 2006 09 18 | 699 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2006 08 21 | 704 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.5+ | 1.1+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2006 08 21 | 704 | 0.6+ | 0.6+ | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2006 08 21 | 704 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2006 08 24 | 644 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2006 08 25 | 704 | 1.1+ | 0.9− | 2006 09 19 | 703 | 0.7− | 0.5− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 25 | 704 | 0.3+ | 0.2− | 2006 09 19 | 704 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.6+ | 0.3− |
| 2006 08 25 | 704 | 0.3+ | 0.0 | 2006 09 19 | 704 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2006 08 25 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 703 | 0.6− | 0.2− | 2006 11 25 | G96 | 1.0+ | 0.8− |
| 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.2− |

**2006 QP$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.25956 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22452996 | $\omega$ | 294.22105 | | +0.36777778 | +0.92985974 | |
| $a$ | 2.6809364 | $\Omega$ | 357.29711 | | −0.75739029 | +0.29327731 | |
| $e$ | 0.1554394 | $i$ | 12.26561 | | −0.53953634 | +0.22214697 | |
| $P$ | 4.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.1− | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.1+ |
| 2000 03 05 | 704 | 0.3+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2000 03 05 | 704 | 1.1− | 0.6+ | 2006 08 24 | 644 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.2− |
| 2002 11 14 | 644 | 0.2+ | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.7− | 0.3+ |
| 2002 11 14 | 644 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.6− | 0.0 | 2006 09 29 | 704 | 0.6− | 0.2+ |
| 2002 11 14 | 644 | 0.3+ | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.3+ |
| 2002 11 24 | 644 | 0.4+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.2− | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 1.0− | 0.9+ |
| 2002 11 24 | 644 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.3− | 1.0+ |
| 2004 01 18 | 644 | 0.1+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 30 | 704 | 1.0+ | 0.2− |
| 2004 01 18 | 644 | 0.3+ | 0.9+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.5− | 0.6+ |
| 2004 01 18 | 644 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.6+ | 0.2+ | 2006 10 01 | 703 | 0.3− | 1.2+ |
| 2005 04 03 | E12 | 0.4+ | 0.1− | 2006 09 16 | 699 | 0.5+ | 0.3+ | 2006 10 01 | 703 | 0.0 | 0.1+ |
| 2005 04 03 | E12 | 0.5+ | 0.2+ | 2006 09 16 | 699 | 0.5+ | 1.0+ | 2006 10 01 | 703 | 0.4− | 0.5− |
| 2005 04 03 | E12 | 0.7+ | 0.9− | 2006 09 16 | 699 | 0.8+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2005 04 03 | E12 | 0.7+ | 0.2+ | 2006 09 17 | 704 | 0.6+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2005 04 15 | 703 | 0.7− | 0.7+ | 2006 09 17 | 704 | 0.5+ | 0.8− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2005 04 15 | 703 | 0.0 | 1.0+ | 2006 09 17 | 704 | 0.4+ | 1.1− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2005 04 15 | 703 | (1.8− | 1.3+) | 2006 09 17 | 704 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2005 04 15 | 703 | 0.3− | 1.1+ | 2006 09 17 | 704 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2005 05 04 | 644 | 0.6+ | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.6− | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2005 05 04 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2005 05 04 | 644 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.6+ | 2006 10 16 | 703 | 1.3− | 0.1− |
| 2006 08 18 | 699 | (1.7+ | 0.2−) | 2006 09 19 | 699 | 1.2+ | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.5+ |
| 2006 08 18 | 699 | 0.6+ | 0.7− | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2006 08 18 | 699 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2006 08 18 | 699 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.9− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2006 08 18 | 691 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.6− |
| 2006 08 21 | 704 | 0.2− | 0.8+ | 2006 09 25 | 699 | 1.0+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2006 08 21 | 704 | (2.1− | 0.7+) | 2006 09 25 | 699 | 1.0− | 0.9− | 2006 11 11 | 204 | 0.3+ | 0.0 |
| 2006 08 21 | 704 | 0.9− | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 11 | 204 | 0.5− | 0.1+ |
| 2006 08 21 | 704 | 0.6− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.3− | | | | |
| 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.4− | | | | |

**2006 QU$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.34675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21435888 | $\omega$ | 249.64596 | | +0.63764505 | −0.76751070 | |
| $a$ | 2.7650845 | $\Omega$ | 160.28361 | | +0.75932475 | +0.61183661 | |
| $e$ | 0.3046203 | $i$ | 11.25566 | | +0.12974866 | +0.19126759 | |
| $P$ | 4.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.8+ | 0.4+ | 2006 08 27 | A55 | 0.6+ | 0.4+ | 2006 09 12 | 699 | 1.3− | 0.3+ |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2006 08 27 | A55 | 0.9+ | 0.3− | 2006 09 12 | 699 | 0.7− | 0.2− |
| 2002 12 14 | 704 | 1.0+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.3− | 2006 09 12 | 699 | 1.0+ | 1.0+ |
| 2002 12 14 | 704 | 1.2+ | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.7− | 2006 09 12 | 704 | 0.9+ | 1.0− |
| 2003 01 01 | 704 | 0.9− | 1.5− | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 09 12 | 704 | 0.9+ | 1.1+ |
| 2003 01 01 | 704 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 12 | 704 | 0.4+ | 0.1+ |
| 2003 01 01 | 704 | 0.9− | 0.2+ | 2006 08 28 | 699 | 0.9− | 0.2− | 2006 09 12 | 704 | 0.2+ | 1.0+ |
| 2003 01 01 | 704 | 0.6− | 0.8− | 2006 08 28 | 699 | 0.4− | 1.0− | 2006 09 17 | 704 | 0.7+ | 0.8− |
| 2006 08 19 | 691 | 0.1− | 0.1− | 2006 08 28 | 699 | 1.2− | 0.1+ | 2006 09 17 | 704 | 0.5+ | 0.3− |
| 2006 08 19 | 691 | 0.1− | 0.2− | 2006 08 28 | 699 | 1.2− | 0.5+ | 2006 09 17 | 704 | 0.7− | 0.5− |
| 2006 08 19 | 691 | 0.2− | 0.0 | 2006 08 29 | 704 | 1.8+ | 0.8+ | 2006 09 17 | 704 | 0.9− | 0.2− |
| 2006 08 21 | 704 | 1.0+ | 0.4− | 2006 08 29 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.0 |
| 2006 08 21 | 704 | 0.4+ | 0.1+ | 2006 08 29 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 699 | 0.7− | 1.5+ |
| 2006 08 21 | 704 | 0.1+ | 0.7− | 2006 08 29 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.7− | 0.1− |
| 2006 08 21 | 704 | 0.5+ | 0.2− | 2006 08 30 | 704 | 0.9− | 0.6+ | 2006 09 18 | 699 | 0.1+ | 0.1− |
| 2006 08 21 | 704 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 0.6− | 0.0 |
| 2006 08 21 | 644 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.9+ | 0.3+ | 2006 09 25 | 699 | 0.7− | 0.2− |
| 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.6− | 2006 09 25 | 699 | 0.3− | 1.1+ |
| 2006 08 21 | 644 | 0.3− | 0.3− | 2006 08 30 | A55 | 0.2− | 0.2− | 2006 09 25 | 699 | (2.3− | 1.2+) |
| 2006 08 27 | A55 | 0.5+ | 0.0 | 2006 08 30 | A55 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.4− |
| 2006 08 27 | A55 | 0.7+ | 0.7+ | 2006 08 30 | A55 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2006 08 27 | A55 | 0.7+ | 0.3+ | 2006 08 30 | A55 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.5− |
| 2006 08 27 | A55 | 0.4+ | 0.4+ | 2006 09 12 | 699 | 0.5+ | 0.8− | 2006 09 30 | G96 | 0.1− | 0.5− |

**2006 QE$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.81450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21330798 | $\omega$ | 258.92260 | | +0.76023093 | −0.64802028 | |
| $a$ | 2.7741588 | $\Omega$ | 141.44531 | | +0.62115329 | +0.70429847 | |
| $e$ | 0.0994009 | $i$ | 4.23523 | | +0.19030900 | +0.28988512 | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 26 | 691 | 0.3+ | 0.1− | 2002 12 01 | 704 | 0.5+ | 0.0 | 2006 08 27 | 691 | 0.2+ | 0.3− |
| 2001 06 26 | 691 | 0.1+ | 0.1− | 2002 12 01 | 704 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.0 |
| 2001 06 26 | 691 | 0.4− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.1− | 0.2− |
| 2002 11 11 | 704 | 0.5+ | 0.2− | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.1− |
| 2002 11 11 | 704 | 0.3+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.1− |
| 2002 11 11 | 704 | 0.5+ | 1.4+ | 2006 08 21 | 704 | 1.1− | 0.6+ | 2006 08 28 | 703 | 0.7− | 0.5− |
| 2002 11 23 | 644 | 0.2− | 0.5− | 2006 08 21 | 704 | 1.3+ | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.7− |
| 2002 11 23 | 644 | 0.2− | 0.3− | 2006 08 21 | 704 | 0.7+ | 0.1+ | 2006 08 31 | 704 | 1.2− | 1.0− |
| 2002 11 23 | 644 | 0.1+ | 0.1− | 2006 08 21 | 704 | 0.8+ | 0.1− | 2006 08 31 | 704 | 0.4+ | 0.2+ |
| 2002 12 01 | 704 | 0.9− | 0.1− | 2006 08 23 | 807 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.9− | 0.9+ |
| 2002 12 01 | 704 | 0.8− | 0.4− | 2006 08 23 | 807 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.0 | 0.5+ |

**2006 QG$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.44472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28377065 | $\omega$ | 310.64168 | | +0.36185615 | +0.93151818 | |
| $a$ | 2.2934594 | $\Omega$ | 340.47921 | | −0.81892441 | +0.29890903 | |
| $e$ | 0.1202303 | $i$ | 6.27523 | | −0.44544689 | +0.20718898 | |
| $P$ | 3.47 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 691 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.4+ | 2006 08 28 | 703 | 1.3− | 0.1+ |
| 2003 12 01 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.6− | 0.7+ |
| 2003 12 01 | 691 | 0.1− | 0.5+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.6+ |
| 2005 03 08 | G96 | 0.3− | 0.0 | 2006 08 19 | 691 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.4+ |
| 2005 03 08 | G96 | 0.3+ | 0.0 | 2006 08 21 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.2− |
| 2005 03 08 | G96 | 0.6− | 0.0 | 2006 08 21 | 704 | 0.4+ | 1.4− | 2006 09 18 | 699 | 0.5+ | 1.1+ |
| 2005 03 08 | G96 | 0.6− | 0.1− | 2006 08 21 | 704 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.7− | 1.1− |
| 2005 04 02 | 691 | 0.4+ | 0.6+ | 2006 08 21 | 704 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 2005 04 02 | 691 | 0.5+ | 0.5+ | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2005 04 02 | 691 | 0.4+ | 0.6+ | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.3− |
| 2005 04 09 | G96 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2005 04 09 | G96 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2005 04 09 | G96 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2005 04 09 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2006 08 16 | 644 | 0.1+ | 0.6+ | 2006 08 28 | 699 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.4− | 0.3+ |
| 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.6− | 0.9+ | | | | |

**2006 QP$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.40602 | | | (2000.0) | | |
| $n$ | 0.29448775 | $\omega$ | 4.16655 | | +0.80558939 | +0.59225357 |
| $a$ | 2.2374735 | $\Omega$ | 319.50208 | | −0.54430152 | +0.72903402 |
| $e$ | 0.1808229 | $i$ | 1.42667 | | −0.23401194 | +0.34314006 |
| $P$ | 3.35 | $H$ | 17.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 03 | 691 | 0.0 | 0.2− | 2006 08 19 | 691 | 0.5+ | 1.1+ | 2006 08 29 | 704 | 0.4− | 1.1− |
| 1998 02 03 | 691 | 0.2− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.3+ | 0.3+ |
| 1998 02 03 | 691 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.5+ | 0.3+ |
| 2003 11 16 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 704 | 0.3− | 0.6+ | 2006 09 14 | 703 | (0.3+ | 2.2−) |
| 2003 11 16 | 691 | 0.1+ | 0.3− | 2006 08 21 | 704 | 0.5− | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.9− |
| 2003 11 16 | 691 | 0.2+ | 0.1− | 2006 08 21 | 704 | 0.5+ | 0.6− | 2006 09 14 | 703 | 1.2− | 1.1− |
| 2003 11 20 | 704 | 0.8+ | 0.7+ | 2006 08 21 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.2− |
| 2003 11 20 | 704 | 0.1+ | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | (0.3− | 1.6+) |
| 2003 11 20 | 704 | 0.2− | 0.1− | 2006 08 27 | 691 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.5− | 0.3+ |
| 2003 11 30 | 691 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | 1.4− | 1.4+ |
| 2003 11 30 | 691 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.6− | 2006 09 18 | 699 | 0.5− | 1.0+ |
| 2003 11 30 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.6− |
| 2005 03 09 | G96 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2005 03 09 | G96 | 0.7− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2005 03 09 | G96 | 0.4+ | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.6− |
| 2005 03 09 | G96 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 0.5+ | 0.8+ | 2006 10 19 | G96 | 0.3+ | 0.6− |
| 2006 08 13 | 644 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2006 08 13 | 644 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.8− | 0.7− | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 2006 08 13 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.2+ | 0.7− | 2006 10 19 | G96 | 0.4+ | 0.4− |

**2006 QR$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.39173 | | | (2000.0) | | |
| $n$ | 0.22521694 | $\omega$ | 232.64316 | | +0.74769780 | −0.66343709 |
| $a$ | 2.6754819 | $\Omega$ | 168.82315 | | +0.64600170 | +0.71687290 |
| $e$ | 0.2094040 | $i$ | 8.38631 | | +0.15371990 | +0.21434662 |
| $P$ | 4.38 | $H$ | 16.1 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 699 | 0.2+ | 0.1− | 2006 08 19 | A50 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.7− | 0.2− |
| 2002 10 16 | 699 | 0.0 | 0.4− | 2006 08 19 | A50 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.7+ | 0.2+ |
| 2002 10 16 | 699 | 0.1− | 0.3+ | 2006 08 21 | 704 | 0.4− | 0.5+ | 2006 09 20 | 704 | 0.6− | 0.5+ |
| 2002 10 16 | 699 | 0.2+ | 0.2+ | 2006 08 21 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 1.1+ | 0.2− |
| 2002 11 12 | 704 | 1.1− | 0.3+ | 2006 08 21 | 704 | 0.3− | 0.9+ | 2006 09 20 | 704 | 0.1− | 0.7+ |
| 2002 11 12 | 704 | 1.3− | 0.2− | 2006 08 21 | 704 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.4+ |
| 2002 11 12 | 704 | (1.6− | 1.2+) | 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | (0.7+ | 2.9+) |
| 2002 11 12 | 704 | 0.4+ | 0.2+ | 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 1.1+ |
| 2002 11 12 | 704 | (1.9+ | 1.0+) | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.0 | 0.9+ |
| 2002 11 30 | 704 | 0.3+ | 1.3+ | 2006 08 28 | 699 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 0.7− | 0.2− |
| 2002 11 30 | 704 | 0.3+ | 0.5+ | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2002 11 30 | 704 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.4− |
| 2002 11 30 | 704 | 0.2+ | 1.1+ | 2006 08 28 | 703 | 0.4− | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2002 12 13 | 644 | 0.4+ | 0.7− | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2002 12 13 | 644 | 0.2− | 0.8− | 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 12 13 | 644 | 0.6+ | 0.6− | 2006 08 28 | 699 | 1.3+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2004 02 17 | 291 | (1.4− | 2.7+) | 2006 08 28 | 699 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2004 02 17 | 291 | 0.3+ | 0.7+ | 2006 09 02 | 152 | 0.1+ | 1.4+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2004 02 17 | 291 | 0.0 | 0.7+ | 2006 09 02 | 152 | 0.4+ | 0.2− | 2006 10 22 | G96 | 0.5− | 0.0 |
| 2006 08 19 | 691 | 0.3− | 0.0 | 2006 09 02 | 152 | (1.5+ | 1.7−) | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 2006 08 19 | 691 | 0.3− | 0.0 | 2006 09 17 | 704 | (1.6− | 0.4−) | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.6− | 0.2− |

**2006 QS$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.44770 | | | (2000.0) | | |
| $n$ | 0.27898733 | $\omega$ | 51.03313 | | +0.94754686 | −0.31317498 |
| $a$ | 2.3195998 | $\Omega$ | 327.07484 | | +0.24468747 | +0.83930511 |
| $e$ | 0.1212958 | $i$ | 6.74575 | | +0.20562831 | +0.44439662 |
| $P$ | 3.53 | $H$ | 16.7 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 1.5+ | 1.3− | 2006 08 19 | A50 | 0.2+ | 0.1+ | 2006 09 01 | 152 | 0.2+ | 0.0 |
| 1999 09 09 | 704 | 0.0 | 0.3− | 2006 08 21 | 704 | 0.6− | 0.3− | 2006 09 02 | 152 | 0.4− | 0.2− |
| 1999 09 09 | 704 | 0.3+ | 0.4− | 2006 08 21 | 704 | 0.7− | 0.2+ | 2006 09 02 | 152 | 0.3+ | 1.1− |
| 1999 10 09 | 704 | 0.6+ | 1.2− | 2006 08 21 | 704 | 1.3+ | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 1999 10 09 | 704 | 0.9− | 0.1+ | 2006 08 21 | 704 | 0.8− | 1.1+ | 2006 09 13 | 644 | 0.0 | 0.1− |
| 1999 10 09 | 704 | 0.3+ | 0.2− | 2006 08 25 | 704 | 0.9+ | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.2− |
| 1999 10 09 | 704 | 0.4+ | 0.4− | 2006 08 25 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 704 | 0.5+ | 0.6+ |
| 2003 12 17 | 704 | 0.4+ | 0.2− | 2006 08 25 | 704 | (1.1− | 1.9+) | 2006 09 18 | 704 | 0.4+ | 0.0 |
| 2003 12 17 | 704 | 0.2+ | 1.0+ | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 18 | 704 | (0.8− | 1.8−) |
| 2003 12 17 | 704 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 20 | 699 | 1.1+ | 0.6+ |
| 2003 12 17 | 704 | 0.0 | 0.8+ | 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.0 | 0.8+ |
| 2004 02 27 | 695 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.4+ | 0.3+ | 2006 09 20 | 699 | 0.8+ | 0.3− |
| 2004 02 27 | 695 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 09 20 | 699 | 1.0− | 0.2+ |
| 2006 07 18 | G96 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.4+ | 0.1+ |
| 2006 07 18 | G96 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.5− |
| 2006 07 18 | G96 | 0.0 | 0.1− | 2006 09 01 | 704 | (1.9− | 1.2+) | 2006 10 10 | 644 | 0.4+ | 0.3− |
| 2006 07 18 | G96 | 0.3− | 0.0 | 2006 09 01 | 704 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.4+ | 0.3− |
| 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 01 | 704 | 1.4− | 1.0+ | 2006 10 21 | 644 | 0.5+ | 0.4− |
| 2006 08 19 | 691 | (0.1− | 1.7+) | 2006 09 01 | 152 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 01 | 152 | 0.2− | 0.1− | | | | |
| 2006 08 19 | A50 | 0.9− | 0.3+ | 2006 09 01 | 152 | 0.1+ | 0.1− | | | | |

**2006 QU$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.28902 | | | (2000.0) | | |
| $n$ | 0.22097247 | $\omega$ | 128.57923 | | +0.79782896 | +0.60286554 |
| $a$ | 2.7096338 | $\Omega$ | 194.34736 | | −0.55886498 | +0.73663015 |
| $e$ | 0.2196619 | $i$ | 1.08663 | | −0.22613907 | +0.30647864 |
| $P$ | 4.46 | $H$ | 16.3 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 699 | (0.8+ | 2.2+) | 2006 09 17 | 704 | 1.0− | 0.6+ |
| 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.4− |
| 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.0 |
| 2005 04 10 | G96 | 0.0 | 0.3− | 2006 08 27 | 699 | 0.2− | 0.3− | 2006 09 20 | 699 | 0.1+ | 0.4+ |
| 2005 04 10 | G96 | 0.1+ | 0.5− | 2006 08 28 | 703 | 0.5+ | 0.8− | 2006 09 20 | 699 | 0.1+ | 1.4+ |
| 2005 04 10 | G96 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 20 | 699 | 0.4+ | 0.1− |
| 2005 04 10 | G96 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.5− | 2006 09 20 | 699 | 0.7− | 0.0 |
| 2005 05 04 | G96 | 0.3− | 0.5− | 2006 08 28 | 703 | 1.0+ | 0.7− | 2006 09 25 | 699 | (3.0+ | 1.3+) |
| 2005 05 04 | G96 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.2− | 1.2+ |
| 2005 05 04 | G96 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.6− | 0.1− | 2006 09 25 | 699 | 0.6+ | 0.8+ |
| 2005 05 04 | G96 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.9+ | 0.3− |
| 2005 05 13 | G96 | 0.0 | 0.6− | 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2005 05 13 | G96 | 0.2+ | 0.8− | 2006 08 30 | 704 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2005 05 13 | G96 | 0.1+ | 0.5− | 2006 08 30 | 704 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2005 05 13 | G96 | 1.2− | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2006 08 19 | 691 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.6− | 0.9+ | 2006 10 09 | 644 | 0.6− | 0.2+ |
| 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.1− | 0.6+ | 2006 10 09 | 644 | 0.4− | 0.7+ |
| 2006 08 19 | 691 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.3+ |
| 2006 08 19 | A50 | 0.1− | 0.4− | 2006 08 30 | 704 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.6− | 0.4− |
| 2006 08 20 | A50 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2006 08 21 | 704 | 0.3+ | 0.1− | 2006 08 30 | 704 | 0.2+ | 0.8− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2006 08 21 | 704 | 0.3+ | 0.3− | 2006 09 01 | 704 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2006 08 21 | 704 | 0.3+ | 0.8− | 2006 09 01 | 704 | 1.4+ | 0.7− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2006 08 21 | 704 | 0.0 | 0.7− | 2006 09 01 | 704 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.7− |
| 2006 08 21 | 704 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2006 08 25 | 704 | 0.1− | 0.8+ | 2006 09 01 | 704 | 0.7+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 25 | 704 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2006 08 25 | 704 | 0.2+ | 0.9− | 2006 09 14 | 703 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2006 08 27 | 691 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.4+ |
| 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.8+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.7− | 0.4− | | | | |

**2006 QE$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.23759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17246598 | $\omega$ | 223.25579 | | +0.89837066 | −0.43450454 | |
| $a$ | 3.1964439 | $\Omega$ | 162.18176 | | +0.43800245 | +0.87521385 | |
| $e$ | 0.0966057 | $i$ | 12.13227 | | +0.03292435 | +0.21261826 | |
| $P$ | 5.71 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 03 | 691 | 0.1− | 0.4+ | 2001 12 07 | 704 | 0.5− | 0.9− | 2006 08 27 | 691 | 0.3− | 0.4+ |
| 1998 03 03 | 691 | 0.3+ | 0.5+ | 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.3+ | 0.5− |
| 1998 03 03 | 691 | 0.0 | 0.3+ | 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.5+ | 0.7+ |
| 2000 08 03 | 691 | 0.0 | 0.3+ | 2003 01 28 | 645 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.5+ |
| 2000 08 03 | 691 | 0.0 | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.7+ | 0.0 |
| 2000 08 03 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 08 28 | 703 | (0.8− | 4.4−) |
| 2001 10 23 | 644 | 0.4− | 0.5+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 08 28 | 703 | (2.0+ | 2.1−) |
| 2001 10 23 | 644 | 0.4− | 0.6+ | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.8+ |
| 2001 10 23 | 644 | 0.3− | 0.4+ | 2006 08 21 | 704 | 0.7+ | 1.2+ | 2006 09 14 | 703 | 0.9+ | 0.6+ |
| 2001 11 11 | 645 | 0.1+ | 0.0 | 2006 08 21 | 704 | 0.5− | 0.9+ | 2006 09 14 | 703 | 0.8− | 0.4+ |
| 2001 11 11 | 645 | 0.1+ | 0.0 | 2006 08 21 | 704 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.7+ |
| 2001 11 19 | 608 | 0.4+ | 0.6+ | 2006 08 21 | 704 | 1.0− | 0.4− | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 11 19 | 608 | 0.7− | 0.5− | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.6− | 0.3− |
| 2001 11 19 | 608 | 0.4− | 0.5− | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.7+ |
| 2001 12 07 | 704 | 0.2− | 0.3− | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.6− | 0.2+ |
| 2001 12 07 | 704 | 0.7− | 0.7+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 27 | 704 | (0.7− | 1.8−) |

**2006 QN$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.66092 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21699993 | $\omega$ | 120.82435 | | +0.43848473 | +0.89835604 | |
| $a$ | 2.7426033 | $\Omega$ | 174.96370 | | −0.89231121 | +0.43864660 | |
| $e$ | 0.3470958 | $i$ | 17.37919 | | −0.10729325 | +0.02335774 | |
| $P$ | 4.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 704 | 0.4− | 0.1− | 2006 08 28 | 704 | 0.4+ | 0.3− | 2006 09 17 | 704 | 0.7− | 0.2+ |
| 2001 04 15 | 704 | 0.1− | 0.1− | 2006 08 28 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.7− | 0.1+ |
| 2001 04 15 | 704 | 1.1+ | 1.0+ | 2006 08 29 | 703 | 0.7− | 0.7− | 2006 09 17 | 704 | 0.3− | 0.0 |
| 2001 05 23 | 704 | 0.7− | 0.6− | 2006 08 29 | 703 | 0.8− | 0.2− | 2006 09 17 | 704 | 0.0 | 0.3− |
| 2001 05 23 | 704 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.2+ | 0.8− | 2006 09 17 | 704 | 0.6− | 0.3+ |
| 2001 05 23 | 704 | 0.5+ | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.8− | 2006 09 19 | 699 | 0.5− | 0.6+ |
| 2001 05 23 | 704 | 0.2+ | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.8− | 0.7− |
| 2001 05 23 | 704 | 0.1− | 1.1− | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.3+ |
| 2005 03 17 | G96 | 0.0 | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 19 | 699 | 1.2− | 0.5+ |
| 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.4− | 2006 09 19 | 703 | (2.0− | 0.0 ) |
| 2005 03 17 | G96 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.6+ | 0.1− | 2006 09 19 | 703 | 0.7− | 0.3+ |
| 2005 03 17 | G96 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.2+ |
| 2005 04 09 | G96 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.6− | 0.4− |
| 2005 04 09 | G96 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.1− |
| 2005 04 09 | G96 | 0.2+ | 0.4+ | 2006 09 01 | 704 | (1.8+ | 0.9−) | 2006 09 20 | 704 | 0.1+ | 0.3+ |
| 2005 04 09 | G96 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.6+ |
| 2006 08 19 | 644 | 0.1+ | 0.4− | 2006 09 01 | 704 | 0.7+ | 0.8− | 2006 09 20 | 704 | 0.3− | 0.4+ |
| 2006 08 19 | 644 | 0.0 | 0.3− | 2006 09 01 | 704 | 0.6+ | 0.7− | 2006 09 20 | 704 | 0.1+ | 0.1+ |
| 2006 08 19 | 644 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 1.5+ | 0.3− | 2006 09 27 | 704 | 0.4+ | 0.7+ |
| 2006 08 21 | 691 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.7− | 0.1+ | 2006 09 27 | 704 | (1.3+ | 1.8+) |
| 2006 08 21 | 691 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.9− | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.5+ |
| 2006 08 21 | 691 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.1− | 0.2+ | 2006 09 27 | 704 | 1.0+ | 0.5+ |
| 2006 08 24 | 704 | 0.3− | 0.8+ | 2006 09 12 | 703 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.7+ |
| 2006 08 24 | 704 | 0.3+ | 0.2− | 2006 09 13 | 644 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.2− | 0.7− |
| 2006 08 24 | 704 | 0.1− | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.3− | 2006 09 29 | 704 | 1.4+ | 0.5− |
| 2006 08 24 | 704 | 0.2+ | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.3+ | 0.2+ |
| 2006 08 26 | 704 | 1.0+ | 0.1+ | 2006 09 15 | H51 | 0.0 | 0.5− | 2006 09 29 | 704 | 0.2+ | 0.3− |
| 2006 08 26 | 704 | 0.0 | 0.8+ | 2006 09 15 | H51 | 0.1+ | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.1+ |
| 2006 08 26 | 704 | 0.1+ | 0.6+ | 2006 09 15 | H51 | 0.1− | 0.5− | 2006 09 30 | 699 | 0.2− | 0.3+ |
| 2006 08 26 | 704 | 0.4+ | 1.0+ | 2006 09 16 | 699 | 0.2− | 0.4+ | 2006 09 30 | 699 | 0.1− | 0.0 |
| 2006 08 27 | 699 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.4− | 0.6− | 2006 09 30 | 699 | 0.3− | 0.7+ |
| 2006 08 27 | 699 | 0.0 | 0.9+ | 2006 09 16 | 699 | 0.9− | 0.1− | 2006 09 30 | 699 | 0.1− | 0.5+ |
| 2006 08 27 | 699 | 0.5+ | 0.2+ | 2006 09 16 | 699 | 0.2− | 0.5− | 2006 10 19 | 703 | 0.5+ | 0.5− |
| 2006 08 28 | 704 | 0.1+ | 0.2− | 2006 09 16 | 644 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.5− | 0.4+ |
| 2006 08 28 | 704 | 0.2− | 0.2− | 2006 09 16 | 644 | 0.1− | 0.1− | 2006 10 19 | 703 | 1.2+ | 0.3+ |
| 2006 08 28 | 704 | 0.3− | 0.1− | 2006 09 16 | 644 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.8+ | 0.6− |

**2006 QO$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.60822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27855300 | $\omega$ | 1.06734 | | +0.45720543 | +0.88368998 | |
| $a$ | 2.3220104 | $\Omega$ | 296.14633 | | −0.81679834 | +0.37261726 | |
| $e$ | 0.2599327 | $i$ | 6.41369 | | −0.35185746 | +0.28328148 | |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.2− | 1.3− | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.8+ | 0.8+ |
| 1999 10 10 | 704 | 0.2+ | 1.1− | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.0 | 1.3− |
| 1999 10 10 | 704 | 0.3+ | 0.2+ | 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.3− | 0.2+ |
| 1999 10 10 | 704 | 0.9+ | 0.5− | 2006 08 28 | 704 | 0.7+ | 1.3+ | 2006 09 18 | 703 | 0.1+ | 0.3− |
| 2002 05 15 | 644 | 0.3− | 0.5− | 2006 08 28 | 704 | 0.7− | 1.0+ | 2006 09 18 | 703 | 0.4− | 0.6+ |
| 2002 05 15 | 644 | 0.1− | 0.4− | 2006 08 28 | 704 | 0.9+ | 0.7+ | 2006 09 18 | 703 | 0.4− | 0.3− |
| 2002 05 15 | 644 | 0.1− | 0.4− | 2006 08 28 | 704 | 0.6− | 0.9+ | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 2006 07 24 | 703 | 1.2− | 0.1− | 2006 08 28 | 704 | 0.3− | 0.4+ | 2006 09 30 | 699 | 0.9− | 0.8+ |
| 2006 07 24 | 703 | 0.3− | 0.7− | 2006 09 12 | 703 | 0.4− | 0.3+ | 2006 09 30 | 699 | 0.1− | 0.8− |
| 2006 07 24 | 703 | 0.3− | 0.6− | 2006 09 12 | 703 | 0.5+ | 1.2− | 2006 09 30 | 699 | 0.7− | 0.3+ |
| 2006 07 24 | 703 | 0.1+ | 0.3− | 2006 09 12 | 703 | 0.3+ | 0.3− | 2006 09 30 | 699 | 0.1− | 1.0+ |
| 2006 08 19 | 644 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.9− | 0.1− | 2006 10 11 | 644 | 0.5− | 0.2− |
| 2006 08 19 | 644 | 0.2+ | 0.1− | 2006 09 15 | 704 | 1.4+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.9− |
| 2006 08 19 | 644 | 0.1+ | 0.1− | 2006 09 15 | 704 | 1.2+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.3− |

**2006 QT$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.55950 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21215618 | $\omega$ | 320.29980 | | +0.60189940 | +0.79692645 | |
| $a$ | 2.7841903 | $\Omega$ | 346.44684 | | −0.66582912 | +0.46539018 | |
| $e$ | 0.2422900 | $i$ | 12.62927 | | −0.44089534 | +0.38512364 | |
| $P$ | 4.65 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.5− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.1− | 2006 09 27 | 699 | 0.2− | 0.6+ |
| 2000 03 11 | 704 | 0.5+ | 1.0+ | 2006 08 28 | 704 | 0.5− | 0.5+ | 2006 09 27 | 699 | 0.6− | 0.1− |
| 2000 03 11 | 704 | 0.7+ | 1.7+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 27 | 699 | 0.4− | 0.3+ |
| 2000 03 11 | 704 | 0.9+ | 1.1+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 27 | 699 | 0.3− | 0.0 |
| 2000 03 11 | 704 | 1.7+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.5+ |
| 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 09 01 | 704 | 0.5− | 1.1− | 2006 09 29 | 704 | 0.0 | 0.1− |
| 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 09 01 | 704 | 0.4+ | 0.5− | 2006 09 29 | 704 | 0.3+ | 0.4− |
| 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 09 01 | 704 | 0.2− | 0.6+ | 2006 09 29 | 704 | 0.5+ | 0.5− |
| 2005 03 12 | 691 | 0.7+ | 1.5+ | 2006 09 01 | 704 | 0.3− | 0.1− | 2006 09 29 | 704 | 1.3+ | 0.4− |
| 2005 03 12 | 691 | 0.3+ | 0.5+ | 2006 09 01 | 704 | (0.5− | 2.0+) | 2006 10 01 | 703 | 0.0 | 0.7+ |
| 2005 03 12 | 691 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 1.0− | 0.1+ | 2006 10 01 | 703 | 1.0+ | 0.8+ |
| 2006 08 18 | 699 | 0.8− | 0.1+ | 2006 09 12 | 703 | 0.2+ | 0.2+ | 2006 10 01 | 703 | 0.3+ | 0.4+ |
| 2006 08 18 | 699 | 0.8− | 0.8+ | 2006 09 12 | 703 | 0.4− | 0.3− | 2006 10 01 | 703 | 0.6− | 0.7+ |
| 2006 08 18 | 699 | 0.4+ | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.1− |
| 2006 08 18 | 699 | 0.6+ | 0.6+ | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.6+ |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.1+ |
| 2006 08 18 | 644 | 0.0 | 0.2− | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.1+ |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 15 | 704 | 0.4− | 0.6− | 2006 10 01 | 704 | 0.3+ | 0.6+ |
| 2006 08 19 | 291 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 19 | 291 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.0 | | |
| 2006 08 19 | 291 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ | | |
| 2006 08 19 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.5− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1+ | | |
| 2006 08 19 | 691 | 0.4+ | 0.0 | 2006 09 18 | 704 | 1.1+ | 0.7− | 2006 10 21 | 691 | 0.3− | 0.1+ | | |
| 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.4− | 0.3− | 2006 10 21 | 691 | 0.4− | 0.0 | | |
| 2006 08 21 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.4− | | |
| 2006 08 21 | 704 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.2− | | |
| 2006 08 21 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2006 08 21 | 704 | 0.0 | 0.6− | 2006 09 19 | 703 | 0.4− | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.2+ | | |
| 2006 08 21 | 704 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2− | | |
| 2006 08 25 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2006 08 25 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− | | |
| 2006 08 25 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2006 08 25 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.4− | 0.0 | | |
| 2006 08 25 | 704 | 0.0 | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.0 | | |
| 2006 08 28 | 704 | 0.0 | 0.6+ | 2006 09 25 | 704 | (0.4+ | 1.8−) | 2006 10 24 | 644 | 0.2− | 0.1− | | |
| 2006 08 28 | 704 | 0.2− | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.4− | 2006 10 24 | 644 | 0.1− | 0.1+ | | |
| 2006 08 28 | 704 | 0.7− | 0.0 | 2006 09 25 | 704 | (0.6+ | 2.0−) | | | | | | |
| 2006 08 28 | 704 | 1.5− | 1.4+ | 2006 09 25 | 704 | 0.1− | 0.4− | | | | | | |

**2006 QC$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.95033 | | (2000.0) | | | |
| $n$ | 0.18138853 | $\omega$ | 42.16313 | | +0.92332558 | −0.37044379 |
| $a$ | 3.0907426 | $\Omega$ | 338.91709 | | +0.23167032 | +0.74750466 |
| $e$ | 0.1966366 | $i$ | 16.33953 | | +0.30626580 | +0.55136937 |
| $P$ | 5.43 | $H$ | 14.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.7+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 1.4+ | 0.8− | | |
| 2001 08 23 | 704 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.4− | 1.0+ | 2006 09 25 | 704 | 0.2+ | 1.1− | | |
| 2001 08 23 | 704 | 1.0+ | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 704 | (1.9+ | 0.7−) | | |
| 2002 01 07 | 704 | 0.4+ | 0.1+ | 2006 08 30 | 704 | 0.6+ | 1.2− | 2006 09 25 | 704 | (1.6+ | 0.1−) | | |
| 2002 01 07 | 704 | 0.8− | 0.5− | 2006 08 30 | 704 | 0.3+ | 0.3− | 2006 09 25 | 704 | 0.3+ | 0.4+ | | |
| 2002 01 07 | 704 | 0.8− | 0.5− | 2006 09 01 | 704 | 0.2− | 0.5+ | 2006 09 25 | 704 | 0.2− | 0.5+ | | |
| 2003 03 06 | 704 | 0.2+ | 0.3− | 2006 09 01 | 704 | 0.4+ | 1.0− | 2006 09 25 | 699 | 0.3− | 0.5− | | |
| 2003 03 06 | 704 | 0.5+ | 0.6− | 2006 09 01 | 704 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.3− | | |
| 2003 03 06 | 704 | 0.2+ | 1.2+ | 2006 09 01 | 704 | (1.2+ | 2.4−) | 2006 09 25 | 699 | 0.0 | 0.3− | | |
| 2003 03 06 | 704 | 0.4− | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.8+ | 0.6− | | |
| 2006 07 18 | G96 | 0.0 | 0.7− | 2006 09 12 | 703 | 0.9− | 0.4+ | 2006 09 26 | 704 | 0.2+ | 1.0− | | |
| 2006 07 18 | G96 | 0.0 | 0.6− | 2006 09 12 | 703 | 0.2− | 0.0 | 2006 09 26 | 704 | 1.2+ | 0.3+ | | |
| 2006 07 18 | G96 | 0.1+ | 0.5− | 2006 09 12 | 703 | 0.1− | 0.5+ | 2006 09 26 | 704 | 1.0+ | 0.9− | | |
| 2006 07 18 | G96 | 0.3− | 0.9− | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.7+ | 1.2+ | | |
| 2006 08 20 | 691 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.8− | 0.5+ | | |
| 2006 08 20 | 691 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.9+ | 0.1+ | | |
| 2006 08 20 | 691 | 0.2− | 0.0 | 2006 09 16 | 699 | 0.5− | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.1− | | |
| 2006 08 21 | 704 | 0.1+ | 0.5− | 2006 09 16 | 699 | 0.1− | 0.8+ | 2006 10 01 | 704 | 0.1+ | 0.0 | | |
| 2006 08 21 | 704 | 0.3+ | 0.5− | 2006 09 16 | 699 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 2006 08 21 | 704 | 0.9− | 0.0 | 2006 09 16 | 699 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.2− | | |
| 2006 08 24 | 704 | 0.3− | 0.3+ | 2006 09 18 | 704 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1− | | |
| 2006 08 24 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 704 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.0 | | |
| 2006 08 24 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.1− | | |
| 2006 08 24 | 704 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1− | | |
| 2006 08 24 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 704 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1− | | |
| 2006 08 28 | 703 | 0.3+ | 0.8− | 2006 09 19 | 699 | 0.1− | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.1− | | |
| 2006 08 28 | 703 | 0.2− | 0.7− | 2006 09 19 | 703 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.0 | | |
| 2006 08 28 | 703 | 0.5− | 0.5− | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 11 19 | 703 | 1.2− | 0.8+ | | |
| 2006 08 28 | 703 | 0.4− | 0.5− | 2006 09 19 | 703 | 1.1− | 0.7+ | 2006 11 19 | 703 | 0.6+ | 0.1+ | | |
| 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.8+ | 2006 11 19 | 703 | 0.3− | 0.7− | | |
| 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.2+ | 2006 11 19 | 703 | 1.2− | 0.1− | | |
| 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | (2.7− | 0.2−) | | | | | | |

**2006 QF$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.14612 | | (2000.0) | | | |
| $n$ | 0.29805885 | $\omega$ | 283.52016 | | +0.79567887 | +0.60241597 |
| $a$ | 2.2195658 | $\Omega$ | 39.48948 | | −0.51021048 | +0.72277075 |
| $e$ | 0.2398016 | $i$ | 5.70058 | | −0.32646653 | +0.33867010 |
| $P$ | 3.31 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 18 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 428 | 0.2+ | 0.7− | 2006 09 17 | 699 | 0.3+ | 0.1+ | | |
| 2003 10 18 | 691 | 0.3− | 0.2− | 2006 08 18 | 428 | 1.0+ | 0.3+ | 2006 09 26 | 703 | 0.8+ | 0.1+ | | |
| 2003 10 18 | 691 | 0.0 | 0.0 | 2006 08 21 | 428 | 0.0 | 0.6+ | 2006 09 26 | 703 | 1.2− | 0.3+ | | |
| 2003 10 24 | 704 | 0.2+ | 0.2+ | 2006 08 21 | 428 | 0.7− | 0.3− | 2006 09 26 | 703 | 0.5+ | 0.3− | | |
| 2003 10 24 | 704 | 0.2+ | 0.2− | 2006 08 28 | E12 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.1+ | | |
| 2003 10 24 | 704 | 0.1− | 0.2+ | 2006 08 28 | E12 | 0.1+ | 0.2+ | 2006 10 21 | 703 | (2.1+ | 0.1−) | | |
| 2003 10 24 | 704 | 0.3− | 0.8+ | 2006 08 28 | E12 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.4+ | | |
| 2003 11 15 | 691 | 0.1+ | 0.1+ | 2006 08 28 | E12 | 0.5− | 0.0 | 2006 10 21 | 703 | 1.4− | 0.1+ | | |
| 2003 11 15 | 691 | 0.2+ | 0.0 | 2006 09 02 | 428 | 0.5− | 0.2− | 2006 10 21 | 703 | (2.3+ | 2.0+) | | |
| 2003 11 15 | 691 | 0.0 | 0.0 | 2006 09 02 | 428 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.6− | | |
| 2003 11 24 | 704 | 0.1− | 0.8− | 2006 09 17 | 699 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.8− | | |
| 2003 11 24 | 704 | 0.6− | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.1− | | |
| 2003 11 24 | 704 | (3.0− | 0.2−) | 2006 09 17 | 699 | 0.2+ | 0.8− | 2006 11 27 | G96 | 0.6+ | 0.7+ | | |

**2006 QG$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.25645 | | (2000.0) | | | |
| $n$ | 0.29973223 | $\omega$ | 265.78085 | | +0.98039478 | +0.15464256 |
| $a$ | 2.2112970 | $\Omega$ | 85.29104 | | −0.09321621 | +0.90999324 |
| $e$ | 0.1979265 | $i$ | 7.03798 | | −0.17359958 | +0.38470507 |
| $P$ | 3.29 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 27 | 704 | 0.3− | 0.2− | 2006 08 16 | E12 | 0.2− | 0.4+ | 2006 08 28 | E12 | 0.5+ | 0.6+ | | |
| 2003 10 27 | 704 | 0.2+ | 0.6+ | 2006 08 16 | E12 | 0.4+ | 0.1+ | 2006 08 28 | E12 | 0.2− | 0.2+ | | |
| 2003 10 27 | 704 | 1.5+ | 0.6− | 2006 08 16 | E12 | 0.6+ | 0.0 | 2006 09 17 | 699 | 0.2+ | 1.3+ | | |
| 2003 10 27 | 704 | 0.2+ | 0.2− | 2006 08 16 | E12 | 0.4− | 0.6− | 2006 09 17 | 699 | 0.1+ | 0.7− | | |
| 2003 12 01 | 703 | 0.1+ | 0.2− | 2006 08 18 | 428 | 0.9− | 0.2− | 2006 09 17 | 699 | 0.9+ | 0.0 | | |
| 2003 12 01 | 703 | 0.3+ | 0.7− | 2006 08 18 | 428 | 0.8+ | 0.7+ | 2006 09 17 | 699 | 0.3+ | 0.8+ | | |
| 2003 12 01 | 703 | 0.7− | 0.5− | 2006 08 20 | 644 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.2− | | |
| 2003 12 01 | 704 | 0.4− | 0.0 | 2006 08 20 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.2− | 0.3− | | |
| 2003 12 01 | 703 | 0.7− | 0.4+ | 2006 08 20 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.3− | 0.5− | | |
| 2003 12 01 | 704 | 0.0 | 0.5+ | 2006 08 21 | 428 | 0.3− | 0.1− | 2006 09 26 | 703 | 0.6− | 0.9− | | |
| 2003 12 01 | 704 | 0.4− | 0.3+ | 2006 08 21 | 428 | 0.0 | 0.3− | | | | | | |
| 2003 12 01 | 704 | 0.3+ | 0.6+ | 2006 08 28 | E12 | 0.7− | 0.1+ | | | | | | |

**2006 QP$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.09156 | | (2000.0) | | | |
| $n$ | 0.25630639 | $\omega$ | 259.78845 | | +0.95658154 | −0.27006339 |
| $a$ | 2.4545003 | $\Omega$ | 115.80892 | | +0.29143358 | +0.89175588 |
| $e$ | 0.1470651 | $i$ | 6.99432 | | −0.00426876 | +0.36309394 |
| $P$ | 3.85 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 645 | 0.0 | 0.0 | 2006 08 27 | 682 | 0.4+ | 0.2− | 2006 09 25 | 699 | 0.6− | 0.2− | | |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2006 08 27 | 682 | 0.5+ | 0.4− | 2006 09 25 | 699 | 0.5− | 0.7+ | | |
| 2002 08 30 | 644 | 0.4− | 0.0 | 2006 08 28 | 682 | 1.1+ | 0.3+ | 2006 09 29 | 699 | 0.1+ | 0.5+ | | |
| 2002 08 30 | 644 | 0.1− | 0.1− | 2006 08 28 | 682 | 0.6+ | 0.5− | 2006 09 29 | 699 | 0.7− | 0.5− | | |
| 2002 08 30 | 644 | 0.2+ | 0.6− | 2006 08 28 | 682 | 0.0 | 0.6− | 2006 09 29 | 699 | 1.2− | 0.5+ | | |
| 2005 05 16 | 691 | 0.5+ | 0.2+ | 2006 09 12 | 682 | 0.7− | 0.4− | 2006 09 29 | 699 | (1.0+ | 1.6−) | | |
| 2005 05 16 | 691 | 1.2− | 0.6+ | 2006 09 12 | 682 | 0.4− | 0.7− | 2006 10 02 | 703 | 1.5+ | 1.3+ | | |
| 2005 05 16 | 691 | 0.7+ | 0.0 | 2006 09 12 | 682 | 0.9+ | 0.4− | 2006 10 02 | 703 | (0.8+ | 1.8+) | | |
| 2006 08 20 | 682 | 0.1+ | 0.4− | 2006 09 18 | 703 | 0.2+ | 0.7− | 2006 10 02 | 703 | 1.1+ | 1.1+ | | |
| 2006 08 20 | 682 | (1.8+ | 0.1−) | 2006 09 18 | 703 | 1.0− | 1.1+ | 2006 10 02 | 703 | 0.2− | 1.2+ | | |
| 2006 08 20 | 682 | 0.9+ | 0.0 | 2006 09 18 | 703 | 0.5− | 0.5− | 2006 10 17 | 703 | 0.5+ | 0.2− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 21 | 682 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.5− |
| 2006 08 21 | 682 | 0.0 | 0.3− | 2006 09 21 | 699 | 0.2− | 0.9− | 2006 10 17 | 703 | 0.8+ | 1.0+ |
| 2006 08 21 | 682 | 0.6− | 0.4− | 2006 09 21 | 699 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 2.9− | 2.7+ |
| 2006 08 25 | 682 | 0.1− | 0.2− | 2006 09 21 | 699 | (0.1+ | 1.7−) | 2006 10 17 | D35 | 0.4− | 0.2+ |
| 2006 08 25 | 682 | 0.5+ | 0.4− | 2006 09 21 | 699 | 0.5− | 1.0+ | 2006 10 17 | D35 | 0.2− | 0.1+ |
| 2006 08 25 | 682 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.4− | 2006 10 17 | D35 | 0.6− | 0.1+ |
| 2006 08 27 | 682 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.1+ | 0.7− | | | | |

**2006 QV$_{10}$ = 2001 DC$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.22849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26991844 | $\omega$ | 237.13673 | | −0.95015316 | +0.30337588 | |
| $a$ | 2.3712700 | $\Omega$ | 320.39103 | | −0.23483681 | −0.84808802 | |
| $e$ | 0.0551457 | $i$ | 6.47692 | | −0.20508692 | −0.43440739 | |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.3+ | 0.1+ | 2006 08 21 | 291 | 0.1− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.2+ |
| 2001 01 26 | 691 | 0.3+ | 0.2+ | 2006 08 21 | 291 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2001 01 26 | 691 | 0.1+ | 0.6+ | 2006 08 21 | 941 | 0.3− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.3+ |
| 2001 02 16 | 699 | 0.6+ | 0.5+ | 2006 08 21 | 941 | 0.3− | 0.1− | 2006 08 31 | 941 | 0.4− | 0.4+ |
| 2001 02 16 | 699 | 0.6− | 0.8− | 2006 08 21 | 941 | 0.2− | 0.1− | 2006 08 31 | 941 | 0.2− | 0.2+ |
| 2001 02 16 | 699 | 0.7+ | 1.8+ | 2006 08 21 | 941 | 0.4− | 0.3− | 2006 08 31 | 941 | 0.0 | 0.1− |
| 2001 02 16 | 699 | (0.5− | 2.5+) | 2006 08 22 | 941 | 0.2− | 0.3− | 2006 09 15 | 941 | 0.1+ | 0.0 |
| 2001 02 23 | 691 | 0.0 | 0.1+ | 2006 08 22 | 941 | 0.5+ | 0.3− | 2006 09 15 | 941 | 0.1− | 0.2− |
| 2001 02 23 | 691 | 0.1− | 0.1+ | 2006 08 22 | 941 | 0.3+ | 0.0 | 2006 09 15 | 941 | 0.5− | 0.2− |
| 2001 02 23 | 691 | 0.1− | 0.0 | 2006 08 22 | 941 | 0.2+ | 0.2− | 2006 09 15 | 941 | 0.5− | 0.3− |
| 2003 11 18 | 691 | 0.6+ | 0.2− | 2006 08 22 | 941 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2003 11 18 | 691 | 0.1+ | 0.2− | 2006 08 23 | 941 | 0.5− | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2003 11 18 | 691 | 0.1− | 0.2+ | 2006 08 23 | 941 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.7− | 0.1− |
| 2003 12 01 | 691 | 0.2− | 0.2− | 2006 08 23 | 941 | 0.0 | 0.7+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2003 12 01 | 691 | 0.2− | 0.1− | 2006 08 23 | 941 | 0.6+ | 0.4+ | 2006 09 28 | G96 | 0.5− | 0.4− |
| 2003 12 01 | 691 | 0.0 | 0.1− | 2006 08 25 | 941 | 0.7+ | 0.3− | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2006 08 20 | 941 | 0.4+ | 0.2+ | 2006 08 25 | 941 | 0.7+ | 0.4− | 2006 09 28 | G96 | 0.6− | 0.2− |
| 2006 08 20 | 941 | 0.6+ | 0.3+ | 2006 08 25 | 941 | 0.6+ | 0.4− | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2006 08 20 | 941 | 0.3+ | 0.4+ | 2006 08 26 | 941 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.7− | 0.1− |
| 2006 08 20 | 941 | 0.3+ | 0.1+ | 2006 08 26 | 941 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2006 08 21 | 941 | 0.7+ | 0.6+ | 2006 08 26 | 941 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.7− | 0.3− |
| 2006 08 21 | 291 | 0.1+ | 0.4+ | 2006 08 26 | 941 | 0.1+ | 0.2+ | | | | |

**2006 QB$_{12}$ = 2005 EA$_{303}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.46124 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26815429 | $\omega$ | 286.64424 | | +0.99796185 | +0.04975946 | |
| $a$ | 2.3816588 | $\Omega$ | 70.51749 | | −0.02901665 | +0.91144949 | |
| $e$ | 0.1714591 | $i$ | 2.42882 | | −0.05683472 | +0.40839176 | |
| $P$ | 3.68 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | 695 | 0.4− | 1.7+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 18 | 644 | 1.1+ | 0.0 |
| 2005 03 12 | 695 | 0.3− | 0.6− | 2006 08 16 | 644 | 0.2− | 0.3− | 2006 08 18 | 644 | 0.7+ | 0.0 |
| 2005 03 12 | 695 | 0.6+ | 1.0− | 2006 08 16 | E12 | 0.1+ | 0.5− | 2006 08 20 | 644 | 0.6− | 0.3− |
| 2006 08 16 | 644 | 0.1− | 0.4− | 2006 08 16 | E12 | 0.2− | 1.3+ | 2006 08 20 | 644 | 0.3− | 0.1− |
| 2006 08 16 | 644 | 0.3− | 0.2− | 2006 08 16 | E12 | 0.2− | 0.0 | 2006 08 20 | 644 | 0.4− | 0.0 |
| 2006 08 16 | 644 | 0.2− | 0.2− | 2006 08 16 | E12 | 0.6− | 1.0+ | | | | |
| 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 08 18 | 644 | 0.9+ | 0.2− | | | | |

**2006 QC$_{12}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.05662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27525171 | $\omega$ | 278.72421 | | −0.20627691 | +0.97668250 | |
| $a$ | 2.3405398 | $\Omega$ | 339.08233 | | −0.81940183 | −0.20565893 | |
| $e$ | 0.1924667 | $i$ | 9.59456 | | −0.53481818 | −0.06160925 | |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.0 | 0.3− | 2006 08 20 | 644 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.5+ | 0.2− |
| 2005 03 16 | G96 | 0.0 | 0.2+ | 2006 08 20 | 644 | 0.1+ | 0.1+ | 2006 08 28 | E12 | 1.1− | 0.3+ |
| 2005 03 16 | G96 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 08 28 | E12 | 0.7+ | 0.3− |
| 2005 03 16 | G96 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.5− | 0.1+ | 2006 10 17 | G96 | 0.5− | 0.5+ |
| 2006 08 16 | E12 | 0.2+ | 0.3− | 2006 08 23 | 644 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 2006 08 16 | E12 | 0.2+ | 0.6− | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.7+ | 0.5− |
| 2006 08 16 | E12 | 0.3− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3− | 0.3− |
| 2006 08 16 | E12 | 0.2+ | 0.4− | 2006 08 24 | 644 | 0.2− | 0.1+ | | | | |
| 2006 08 20 | 644 | 0.2+ | 0.3+ | 2006 08 28 | E12 | 0.2+ | 0.1+ | | | | |

**2006 QD$_{12}$ = 1999 XV$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.71096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26335714 | $\omega$ | 247.71299 | | +0.89408441 | +0.44569912 | |
| $a$ | 2.4104936 | $\Omega$ | 85.79500 | | −0.39284138 | +0.82787436 | |
| $e$ | 0.1962781 | $i$ | 2.54775 | | −0.21514811 | +0.34055300 | |
| $P$ | 3.74 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.1− | 0.3+ | 1999 12 13 | 691 | 0.0 | 0.4− | 2006 08 16 | E12 | 0.6− | 0.3+ |
| 1995 10 26 | 691 | 0.1− | 0.0 | 2006 07 25 | 644 | 0.1+ | 0.1− | 2006 08 16 | E12 | 0.1+ | 0.5− |
| 1995 10 26 | 691 | 0.0 | 0.1+ | 2006 07 25 | 644 | 0.4+ | 0.2+ | 2006 08 16 | E12 | 0.2− | 0.4+ |
| 1999 12 07 | 691 | 0.1+ | 0.2+ | 2006 07 25 | 644 | 0.4+ | 0.2− | 2006 08 20 | 644 | 0.1+ | 0.0 |
| 1999 12 07 | 691 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.2− | 2006 08 20 | 644 | 0.3+ | 0.2− |
| 1999 12 07 | 691 | 0.3+ | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.3− | 2006 08 20 | 644 | 0.3+ | 0.3− |
| 1999 12 13 | 691 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.3+ | 0.1− | | | | |
| 1999 12 13 | 691 | 0.3− | 0.1− | 2006 08 16 | E12 | 0.8− | 0.0 | | | | |

**2006 QM$_{13}$ = 1999 TK$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.66286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26602355 | $\omega$ | 42.17130 | | +0.38094313 | +0.92286755 | |
| $a$ | 2.3943593 | $\Omega$ | 250.29155 | | −0.86353626 | +0.33326107 | |
| $e$ | 0.0552835 | $i$ | 3.44371 | | −0.33043524 | +0.19300918 | |
| $P$ | 3.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 20 | 691 | 0.3+ | 0.9− | 1999 10 18 | 691 | 0.3+ | 0.5− | 2006 08 19 | 699 | 0.9+ | 0.1− |
| 1998 06 20 | 691 | 0.5− | 0.4+ | 2003 10 27 | 691 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 1.3− | 0.5+ |
| 1998 06 20 | 691 | 0.2+ | 0.1− | 2003 10 27 | 691 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1999 10 10 | 704 | 1.0+ | 0.5+ | 2003 10 27 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.2+ |
| 1999 10 10 | 704 | 0.1+ | 1.1+ | 2005 03 08 | 691 | 1.3− | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 1999 10 10 | 704 | 0.2− | 0.0 | 2005 03 08 | 691 | 0.6+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.6+ |
| 1999 10 13 | 645 | 0.1− | 0.0 | 2005 03 08 | 691 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 08 16 | D35 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2006 08 16 | D35 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.6− |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2006 08 16 | D35 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.6− |
| 1999 10 18 | 691 | 0.2+ | 0.2− | 2006 08 19 | 699 | 1.3− | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.4− |
| 1999 10 18 | 691 | 0.7+ | 0.3− | 2006 08 19 | 699 | (1.5− | 1.6+) | 2006 09 28 | G96 | 0.2− | 0.5− |

**2006 QX$_{14}$ = 2005 EO$_{123}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.16878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21358231 | $\omega$ | 325.70538 | | +0.28945375 | +0.95389652 | |
| $a$ | 2.7717828 | $\Omega$ | 320.95069 | | −0.84755551 | +0.21688843 | |
| $e$ | 0.1967949 | $i$ | 7.23677 | | −0.44482152 | +0.20746287 | |
| $P$ | 4.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 691 | 0.4+ | 0.1+ | 2006 08 14 | 644 | 0.3+ | 0.1− | 2006 08 21 | 644 | 0.0 | 0.1− |
| 2005 03 08 | 691 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.2+ | 0.1− | 2006 08 21 | 644 | 0.8− | 0.4+ |
| 2005 03 08 | 691 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.3− | 0.5+ |
| 2005 03 10 | 691 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | (4.2− | 2.6+) |
| 2005 03 10 | 691 | 0.0 | 0.4− | 2006 08 17 | 644 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.7− | 1.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 691 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.4− | 0.1− |
| 2005 03 10 | 691 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 08 29 | 704 | 1.6+ | 0.2− |
| 2005 03 10 | 691 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.3+ | 0.1− |
| 2005 03 10 | 691 | 0.3− | 0.1− | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.3− | 0.5− |
| 2006 08 14 | 644 | 0.2+ | 0.2− | 2006 08 17 | 644 | 0.2+ | 0.1− | 2006 08 29 | 704 | 0.4+ | 1.1− |
| 2006 08 14 | 644 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.5− | 0.1+ | | | | |

### 2006 $QG_{15}$ = 2002 $TX_{236}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.31029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21792647 | $\omega$ | 52.55305 | | +0.98642927 | −0.04812629 | |
| $a$ | 2.7348240 | $\Omega$ | 309.64162 | | −0.03899951 | +0.86003279 | |
| $e$ | 0.0856412 | $i$ | 11.76221 | | +0.15948774 | +0.50796403 | |
| $P$ | 4.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.7− | 0.1− | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.1− |
| 2002 10 06 | 704 | 1.0+ | 0.8+ | 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2002 10 06 | 704 | 0.9+ | 0.6+ | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.4+ |
| 2002 10 06 | 704 | 0.5+ | 1.2+ | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 2002 10 10 | 704 | (0.0 | 3.2−) | 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2002 10 10 | 704 | (2.0− | 2.6−) | 2004 02 11 | 691 | 0.2+ | 0.4− | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2002 10 10 | 704 | 0.3+ | 1.3− | 2006 06 19 | G96 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.3+ |
| 2002 10 10 | 704 | 1.8− | 1.2− | 2006 06 19 | G96 | 0.1− | 0.1− | 2006 08 19 | 699 | 0.5− | 0.1+ |
| 2002 10 10 | 704 | 0.0 | 0.8− | 2006 06 19 | G96 | 0.1− | 0.1+ | 2006 08 19 | 699 | 0.7− | 0.3+ |
| 2003 12 19 | 291 | 0.5− | 0.1+ | 2006 06 19 | G96 | 0.3− | 0.3− | 2006 08 19 | 699 | 0.2+ | 0.7+ |
| 2003 12 19 | 291 | 0.2− | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 08 19 | 699 | 0.1− | 0.3+ |
| 2003 12 19 | 291 | 0.5+ | 0.2+ | 2006 08 16 | 644 | 0.3+ | 0.1+ | | | | |

### 2006 $QM_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.26114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17746934 | $\omega$ | 134.22686 | | +0.37203785 | +0.92539178 | |
| $a$ | 3.1360802 | $\Omega$ | 157.31179 | | −0.89612421 | +0.37840652 | |
| $e$ | 0.2010738 | $i$ | 10.81471 | | −0.24196948 | +0.02141395 | |
| $P$ | 5.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 08 21 | 644 | 0.3− | 0.4+ |
| 2001 09 18 | 645 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.6− | 0.0 |
| 2001 09 21 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.8+ | 1.1− |
| 2001 09 21 | 645 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.6− |
| 2005 04 04 | 703 | 0.1− | 0.6+ | 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 08 28 | 699 | 1.4+ | 0.4− |
| 2005 04 04 | 703 | 1.0− | 0.6− | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.1− |
| 2005 04 04 | 703 | 1.0− | 0.5+ | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2005 04 04 | 703 | 0.8− | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 2005 05 04 | 691 | 0.3+ | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2005 05 04 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2006 07 21 | 703 | 0.9+ | 0.7+ | 2006 08 19 | 699 | 0.6− | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2006 07 21 | 703 | 0.8− | 1.3− | 2006 08 19 | 699 | (0.4− | 1.7+) | 2006 10 20 | G96 | 0.5− | 0.4− |
| 2006 07 21 | 703 | 0.9− | 0.5+ | 2006 08 19 | 699 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.6+ | 0.3+ |
| 2006 07 21 | 703 | 0.7+ | 0.2+ | 2006 08 19 | 699 | 0.4+ | 0.5+ | | | | |
| 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 08 21 | 644 | 0.1− | 0.4+ | | | | |

### 2006 $QV_{15}$ = 2004 $BB_{78}$ = 2005 $GJ_{192}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.43192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20359164 | $\omega$ | 172.95087 | | +0.22054826 | +0.97405160 | |
| $a$ | 2.8617351 | $\Omega$ | 109.78047 | | −0.89750537 | +0.22306209 | |
| $e$ | 0.0400162 | $i$ | 3.09542 | | −0.38189342 | +0.03829855 | |
| $P$ | 4.84 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.2− | 0.1+ | 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.4− | 0.1− |
| 1995 03 27 | 691 | 0.3− | 0.4− | 2004 01 28 | 691 | 0.4− | 0.4+ | 2006 08 18 | 644 | 0.5− | 0.1+ |
| 1995 03 27 | 691 | 0.1+ | 0.3− | 2004 01 28 | 691 | 0.2− | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.2− |
| 2002 11 04 | 950 | 0.6+ | 0.3+ | 2005 04 12 | 695 | 1.2+ | 0.6+ | 2006 08 18 | 644 | 0.1− | 0.3+ |
| 2002 11 04 | 950 | 0.7+ | 0.3+ | 2005 04 12 | 695 | 0.8+ | 0.7+ | 2006 08 18 | 644 | 0.1− | 0.0 |
| 2002 11 04 | 950 | 0.7+ | 0.1+ | 2005 04 13 | 695 | 0.9+ | 0.8+ | 2006 08 20 | 644 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.4− | 0.7+ | 2006 08 17 | 644 | 0.3+ | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.3+ |
| 2004 01 22 | 704 | 0.6+ | 0.7− | 2006 08 17 | 644 | 0.5− | 0.6+ | 2006 08 20 | 644 | 0.1− | 0.1+ |
| 2004 01 22 | 704 | 0.5+ | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.1+ | | | | |
| 2004 01 22 | 704 | 0.3+ | 0.6− | 2006 08 18 | 644 | 0.1− | 0.2− | | | | |

### 2006 $QA_{17}$ = 2004 $BG_{78}$ = 2005 $GB_{132}$

Id. Minor Planet Center (*MPO* 104016; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.80926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22788027 | $\omega$ | 254.51738 | | +0.95634041 | +0.28678644 | |
| $a$ | 2.6545947 | $\Omega$ | 88.79165 | | −0.24190371 | +0.88481129 | |
| $e$ | 0.1684938 | $i$ | 3.22658 | | −0.16399882 | +0.36723633 | |
| $P$ | 4.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2005 04 10 | 691 | 0.3+ | 0.5+ | 2006 08 20 | 644 | 0.5− | 0.2+ |
| 2002 10 03 | 704 | 0.4− | 0.5+ | 2005 04 10 | 691 | 0.3+ | 0.8+ | 2006 08 20 | 644 | 0.1+ | 0.3+ |
| 2002 10 03 | 704 | 0.4− | 1.3− | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.3+ |
| 2002 10 10 | 644 | 0.3− | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.7+ | 2006 08 23 | 704 | 0.8+ | 0.8− |
| 2002 10 10 | 644 | 0.2− | 0.3+ | 2005 04 14 | 691 | 0.3+ | 0.6+ | 2006 08 23 | 704 | 0.9+ | 1.0− |
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2005 05 03 | 691 | 0.1− | 0.1+ | 2006 08 23 | 704 | 0.5+ | 0.2+ |
| 2002 10 31 | 704 | 0.4+ | 1.3+ | 2005 05 03 | 691 | 0.1+ | 0.3+ | 2006 08 23 | 644 | 0.5− | 0.2+ |
| 2002 10 31 | 704 | 0.9− | 0.6+ | 2005 05 03 | 691 | 0.4+ | 0.2+ | 2006 08 23 | 644 | 0.2− | 0.6+ |
| 2002 10 31 | 704 | 0.6+ | 0.5+ | 2006 07 25 | 644 | 0.6+ | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.2− | 0.7+ | 2006 07 25 | 644 | 0.2+ | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.2+ |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 07 25 | 644 | 0.2+ | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.1+ |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 08 24 | 644 | 0.4− | 0.2+ |
| 2004 01 22 | 704 | 0.8− | 1.3+ | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 08 31 | 704 | 0.9+ | 1.6− |
| 2004 01 22 | 704 | 0.1+ | 1.1+ | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 08 31 | 704 | 0.7− | 1.4+ |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 08 19 | 699 | 0.0 | 0.2− | 2006 08 31 | 704 | 0.2− | 1.2− |
| 2004 01 28 | 691 | 1.2− | 1.1− | 2006 08 19 | 699 | 0.2− | 0.1+ | 2006 08 31 | 704 | 0.9+ | 1.7− |
| 2004 01 28 | 691 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.9− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.3+ |
| 2004 02 13 | 291 | 0.3+ | 0.1− | 2006 08 19 | 699 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 2004 02 13 | 291 | 0.8+ | 0.1− | 2006 08 20 | 644 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.4+ | 0.5+ |
| 2004 02 13 | 291 | 1.0+ | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.3+ | | | | |
| 2005 04 10 | 691 | 0.1+ | 0.6+ | 2006 08 20 | 644 | 0.4− | 0.3+ | | | | |

### 2006 $QT_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.63494 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27453125 | $\omega$ | 288.82384 | | +0.17845149 | −0.98159042 | |
| $a$ | 2.3446329 | $\Omega$ | 150.63471 | | +0.94694074 | +0.15252960 | |
| $e$ | 0.1455496 | $i$ | 7.98066 | | +0.26731685 | +0.11495641 | |
| $P$ | 3.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 05 | 703 | 0.3+ | 0.4− | 2006 08 17 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 691 | 0.5− | 0.1+ |
| 2003 12 05 | 703 | 0.7− | 0.9− | 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 947 | 0.2+ | 0.3− |
| 2003 12 05 | 703 | 0.1+ | 0.1+ | 2006 08 19 | 699 | 0.7+ | 0.0 | 2006 08 30 | 947 | 0.8+ | 0.0 |
| 2003 12 05 | 703 | (2.4+ | 0.6+) | 2006 08 19 | 699 | 0.8+ | 0.0 | 2006 08 30 | 947 | 0.3− | 0.3− |
| 2003 12 22 | 608 | 0.0 | 1.3+ | 2006 08 19 | 699 | 0.3− | 0.5+ | 2006 08 31 | 947 | 0.9− | 0.6− |
| 2003 12 22 | 608 | 0.1+ | 0.4+ | 2006 08 19 | 699 | (1.0+ | 3.0+) | 2006 08 31 | 947 | 0.2+ | 0.2+ |
| 2003 12 22 | 608 | 0.1+ | 0.5+ | 2006 08 25 | 947 | 0.0 | 0.3+ | 2006 08 31 | 947 | 0.1− | 0.4+ |
| 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 08 25 | 947 | 0.5+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 08 25 | 947 | 0.3+ | 0.4− | 2006 09 30 | G96 | 0.0 | 0.8− |
| 2005 04 18 | 691 | 0.2− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2006 08 17 | 644 | 0.4− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.2− |

**2006 QW$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.32732 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28171619 | $\omega$ | 291.01171 | | +0.99154370 | | −0.08676835 |
| $a$ | 2.3045962 | $\Omega$ | 74.06612 | | +0.11965749 | | +0.89911189 |
| $e$ | 0.1933526 | $i$ | 5.75969 | | −0.05023129 | | +0.42903270 |
| $P$ | 3.50 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 291 | 0.2+ | 0.0 | 2003 12 18 | 704 | 1.1+ | 0.6+ | 2006 08 23 | 644 | 0.3− | 0.2− |
| 2002 06 06 | 291 | 0.4+ | 0.1− | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.2− | 0.3+ |
| 2002 06 06 | 291 | 0.4− | 0.7+ | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 08 23 | 644 | 0.1− | 0.0 |
| 2003 11 21 | 695 | 1.0− | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.5− | 2006 09 13 | 644 | 0.2+ | 0.1+ |
| 2003 11 21 | 695 | 0.9− | 0.5+ | 2006 08 20 | 644 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.3+ |
| 2003 12 18 | 704 | 0.4+ | 0.7+ | 2006 08 20 | 644 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.6+ | 0.2+ |
| 2003 12 18 | 704 | 0.0 | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.1− | | | | |

**2006 QC$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.00436 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22988798 | $\omega$ | 207.31924 | | +0.40431036 | | +0.90988395 |
| $a$ | 2.6391163 | $\Omega$ | 86.65349 | | −0.82122989 | | +0.40589577 |
| $e$ | 0.1696975 | $i$ | 5.34391 | | −0.40263458 | | +0.08578936 |
| $P$ | 4.29 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.1− | 0.0 | 2002 09 28 | 608 | (3.1− | 1.5−) | 2006 08 17 | 644 | 0.3− | 0.5− |
| 1996 01 15 | 691 | 0.1+ | 0.2+ | 2002 09 28 | 608 | (2.7− | 1.3−) | 2006 08 17 | 644 | 0.0 | 0.3− |
| 1996 01 15 | 691 | 0.0 | 0.2− | 2002 10 08 | 699 | 0.5− | 0.5+ | 2006 08 17 | 644 | 0.2+ | 0.2− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 08 | 699 | 1.1− | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.5− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 10 08 | 699 | 1.2+ | 0.7− | 2006 08 20 | 644 | 0.1− | 0.3− |
| 2002 09 09 | 599 | 0.2− | 0.1+ | 2002 10 08 | 699 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.1+ | 0.4− |
| 2002 09 09 | 599 | 0.2+ | 0.1+ | 2006 07 29 | D35 | 0.3− | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.1− |
| 2002 09 09 | 599 | 0.3− | 0.4+ | 2006 07 29 | D35 | 0.6+ | 0.8+ | 2006 09 14 | 644 | 0.3+ | 0.0 |
| 2002 09 28 | 608 | (2.6− | 1.4−) | 2006 07 29 | D35 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.1+ |

**2006 QR$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.47950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28117216 | $\omega$ | 336.73385 | | +0.79116747 | | +0.61111854 |
| $a$ | 2.3075680 | $\Omega$ | 345.51731 | | −0.54479295 | | +0.68617081 |
| $e$ | 0.1876650 | $i$ | 5.56501 | | −0.27794727 | | +0.39459315 |
| $P$ | 3.51 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 699 | 1.2+ | 0.2− | 2006 08 21 | 644 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.1− |
| 1999 09 04 | 699 | 0.9− | 0.4+ | 2006 08 23 | 704 | 0.2+ | 1.1+ | 2006 09 14 | 703 | 1.0− | 1.5+ |
| 1999 09 04 | 699 | 0.0 | 0.7− | 2006 08 23 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 1.0+ | 1.4+ |
| 2005 03 08 | G96 | 0.3+ | 0.2− | 2006 08 23 | 704 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.2− | 1.0+ |
| 2005 03 08 | G96 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.4+ | 0.2− |
| 2005 03 08 | G96 | 0.4+ | 0.0 | 2006 08 24 | 644 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.9− | 0.8− |
| 2005 03 08 | G96 | 0.3− | 0.3+ | 2006 08 24 | 644 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.5− | 0.1− |
| 2005 03 08 | G96 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.6− | 1.2+ |
| 2005 03 08 | G96 | 0.4− | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.5− | 0.1+ |
| 2005 03 08 | G96 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.1+ |
| 2005 03 08 | G96 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.3− |
| 2006 08 14 | 644 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 09 25 | G96 | (2.3− | 2.0−) |
| 2006 08 14 | 644 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.8− | 2006 09 25 | G96 | (0.6− | 2.7−) |
| 2006 08 14 | 644 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.8− |
| 2006 08 16 | 644 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.5− | 0.7− |
| 2006 08 16 | 644 | 0.0 | 0.6− | 2006 08 28 | 699 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2006 08 16 | 644 | 0.2+ | 0.4− | 2006 08 28 | 699 | 0.0 | 0.8+ | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2006 08 17 | 644 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.4− | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 08 29 | 704 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.4+ | 0.0 |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.8+ | 0.8+ | 2006 11 18 | 122 | 0.2− | 0.0 |
| 2006 08 21 | 644 | 0.2− | 0.0 | 2006 08 29 | 704 | 0.1− | 0.5+ | | | | |
| 2006 08 21 | 644 | 0.1+ | 0.1− | 2006 08 29 | 704 | 0.1− | 0.8+ | | | | |

**2006 QS$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.04247 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22327219 | $\omega$ | 1.85426 | | +0.99448743 | | +0.10395676 |
| $a$ | 2.6909955 | $\Omega$ | 352.13906 | | −0.09744677 | | +0.86804642 |
| $e$ | 0.1972377 | $i$ | 5.74955 | | −0.03871524 | | +0.48547749 |
| $P$ | 4.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 08 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.9+ | 2006 09 25 | 699 | 0.1− | 0.4+ |
| 1993 10 08 | 691 | 0.4− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.2− |
| 1993 10 08 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.5− | 2006 09 25 | 699 | 0.3+ | 0.3+ |
| 2002 11 24 | 644 | 0.3− | 0.2− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.4− |
| 2002 11 24 | 644 | 0.3− | 0.5− | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.4− |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2002 12 11 | 644 | 0.2+ | 0.8+ | 2006 08 28 | 699 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2002 12 11 | 644 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 2002 12 11 | 644 | 0.3+ | 0.5+ | 2006 08 28 | 699 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.0 | 0.1− |
| 2006 07 25 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 0.6− | 0.4+ | 2006 09 30 | 703 | 0.7− | 0.1− |
| 2006 07 25 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.7− | 2006 09 30 | 703 | 0.0 | 0.2− |
| 2006 07 25 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 1.4− | 0.3− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2006 08 14 | 644 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2006 08 14 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 1.1− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2006 08 14 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 1.3− | 1.1− | 2006 10 16 | G96 | 0.5+ | 0.4− |
| 2006 08 17 | 644 | 0.0 | 0.3− | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2006 08 18 | 699 | 0.3− | 0.8+ | 2006 09 17 | 704 | 0.7+ | 0.5− | 2006 11 13 | G96 | 0.8+ | 0.1− |
| 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2006 08 18 | 699 | 0.7+ | 0.3+ | 2006 09 18 | 699 | 0.9− | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.9− |
| 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.4+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2006 08 18 | 699 | 0.2+ | 0.3− | 2006 09 18 | 699 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 08 18 | 699 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2006 08 28 | 704 | 1.0+ | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.4− | 2006 11 16 | G96 | 0.6+ | 0.0 |
| 2006 08 28 | 704 | 1.0− | 1.4+ | 2006 09 20 | 704 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.7+ | 0.4+ |
| 2006 08 28 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.2− | 0.0 | | | | |
| 2006 08 28 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.7− | | | | |

**2006 QV$_{18}$ = 2005 EJ$_{308}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.11223 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26856815 | $\omega$ | 101.42840 | | +0.62184746 | | +0.78312334 |
| $a$ | 2.3792115 | $\Omega$ | 207.02463 | | −0.72261673 | | +0.57139004 |
| $e$ | 0.1940010 | $i$ | 0.61215 | | −0.30187878 | | +0.24542056 |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.1+ | 0.2+ | 2005 04 12 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.8+ | 0.7− |
| 1999 11 04 | 691 | 0.1− | 0.2− | 2005 04 12 | 691 | 0.6+ | 0.4+ | 2006 08 28 | 699 | 0.2+ | 1.1+ |
| 1999 11 04 | 691 | 0.1− | 0.1+ | 2005 04 12 | 691 | 0.3+ | 0.1+ | 2006 08 29 | 704 | (0.9+ | 1.9+) |
| 2002 06 16 | 644 | 0.0 | 0.2− | 2006 08 17 | 704 | 1.0− | 1.0+ | 2006 08 29 | 704 | 0.5+ | 0.3− |
| 2002 06 16 | 644 | 0.1+ | 0.0 | 2006 08 17 | 704 | 0.5− | 0.1− | 2006 08 29 | 704 | 0.7+ | 0.3+ |
| 2002 06 16 | 644 | 0.2− | 0.1− | 2006 08 17 | 704 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.4+ | 0.7+ |
| 2005 03 08 | G96 | 0.7− | 0.0 | 2006 08 19 | 699 | 0.4− | 0.0 | 2006 08 29 | 704 | 0.4+ | 0.5+ |
| 2005 03 08 | G96 | 0.3− | 0.3+ | 2006 08 19 | 699 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2005 03 08 | G96 | 0.2− | 0.8+ | 2006 08 19 | 699 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.8+ | 0.0 |
| 2005 03 08 | G96 | 0.2− | 0.5+ | 2006 08 19 | 699 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.1− | 0.2− |
| 2005 03 12 | 695 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.5− | 2006 09 14 | 703 | 1.1− | 0.2+ |
| 2005 03 12 | 695 | 0.0 | 0.2+ | 2006 08 28 | 699 | (0.6− | 1.8−) | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 08 28 | 703 | (1.3+ | 2.4−) | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2005 04 02 | G96 | 0.6− | 0.2− | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.4− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.8− | 1.0+ | 2006 10 16 | G96 | 0.4− | 0.1− | | |
| 2005 04 02 | G96 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.6− | 0.8− | | | | | | |

**2006 QX$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.98323 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28485942 | $\omega$ | 339.15444 | | +0.98883992 | +0.14847522 | |
| $a$ | 2.2876118 | $\Omega$ | 12.32611 | | −0.12725220 | +0.88459355 | |
| $e$ | 0.1807024 | $i$ | 3.29684 | | −0.07747571 | +0.44209655 | |
| $P$ | 3.46 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 17 | 691 | 0.6− | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.7− | 0.4− | | |
| 1994 01 17 | 691 | 0.1+ | 0.0 | 2006 08 23 | 704 | 0.6+ | 0.1− | 2006 09 18 | 699 | (1.5+ | 0.8−) | | |
| 1994 01 17 | 691 | 0.7+ | 0.3+ | 2006 08 23 | 704 | 0.0 | 0.3− | 2006 09 20 | 644 | 0.0 | 0.2+ | | |
| 2005 04 04 | G96 | 0.4+ | 0.2− | 2006 08 23 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.2+ | | |
| 2005 04 04 | G96 | 0.1− | 0.0 | 2006 08 23 | 704 | 0.9+ | 1.0+ | 2006 09 20 | 644 | 0.2− | 0.1− | | |
| 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.3− | 1.2+ | 2006 09 30 | 703 | 0.5+ | 0.5+ | | |
| 2005 04 04 | G96 | 0.4+ | 0.5− | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.1− | | |
| 2005 05 04 | G96 | 0.1− | 0.7+ | 2006 08 28 | 704 | 0.0 | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.3− | | |
| 2005 05 04 | G96 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.2+ | 0.3− | | |
| 2005 05 04 | G96 | 0.3− | 0.7+ | 2006 08 28 | 704 | 0.5+ | 0.1− | 2006 09 30 | G96 | 0.6− | 0.3− | | |
| 2005 05 04 | G96 | 0.4+ | 0.9+ | 2006 08 28 | 691 | 0.3− | 0.5− | 2006 09 30 | 703 | 0.4+ | 0.7+ | | |
| 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.8+ | 0.8+ | 2006 09 30 | G96 | 0.4− | 0.3− | | |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.2− | | |
| 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.5− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 08 31 | 704 | 0.9+ | 0.9− | 2006 10 22 | G96 | 0.4− | 0.0 | | |
| 2006 08 17 | 644 | 0.2+ | 0.4+ | 2006 08 31 | 704 | 0.6− | 0.4− | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2006 08 18 | 699 | 0.1− | 0.4− | 2006 08 31 | 704 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2006 08 18 | 699 | 0.8+ | 0.6+ | 2006 08 31 | 704 | 1.0+ | 1.0− | 2006 10 28 | G96 | 0.3− | 0.1− | | |
| 2006 08 18 | 699 | 0.1+ | 0.5+ | 2006 08 31 | 704 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.1− | | |
| 2006 08 18 | 699 | 0.9− | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | | |
| 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.0 | | |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 14 | 703 | 1.2− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2006 08 18 | 644 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.0 | | |
| 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.9− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.1− | | |
| 2006 08 21 | 644 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.0 | | |
| 2006 08 21 | 644 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.5+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.3+ | | |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.8+ | 2006 11 21 | G96 | 0.2+ | 0.4+ | | |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.0 | | |

**2006 QZ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.40681 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22231512 | $\omega$ | 333.81196 | | +0.83830441 | +0.54511327 | |
| $a$ | 2.6987131 | $\Omega$ | 353.13066 | | −0.48462461 | +0.73675160 | |
| $e$ | 0.2245601 | $i$ | 4.72935 | | −0.24976931 | +0.40006075 | |
| $P$ | 4.43 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 691 | 0.1− | 0.0 | 2006 08 18 | 699 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 1.2− | 0.6− | | |
| 1993 10 10 | 691 | 0.1+ | 0.1− | 2006 08 23 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.4− | | |
| 1993 10 10 | 691 | 0.1+ | 0.2− | 2006 08 23 | 704 | 0.2+ | 0.7− | 2006 09 14 | 644 | 0.4+ | 0.0 | | |
| 2002 11 04 | 644 | 0.2− | 1.4+ | 2006 08 23 | 704 | 0.4+ | 1.0− | 2006 09 17 | 704 | 0.0 | 1.2+ | | |
| 2002 11 04 | 644 | 0.3+ | 0.9+ | 2006 08 23 | 704 | (0.5+ | 1.8−) | 2006 09 17 | 704 | 0.7− | 0.7+ | | |
| 2002 11 04 | 644 | 1.1+ | 1.1+ | 2006 08 25 | 704 | (1.4+ | 2.1+) | 2006 09 17 | 704 | 0.1+ | 0.9+ | | |
| 2002 11 12 | 704 | 0.3− | 0.3+ | 2006 08 25 | 704 | (2.5+ | 1.0+) | 2006 09 17 | 704 | 0.7− | 0.5+ | | |
| 2002 11 12 | 704 | 0.2− | 0.6− | 2006 08 25 | 704 | (1.7+ | 0.8+) | 2006 09 17 | 704 | 0.5− | 0.6+ | | |
| 2002 11 12 | 704 | 0.5− | 0.7+ | 2006 08 25 | 704 | (2.1+ | 0.7+) | 2006 09 25 | 699 | 0.5+ | 0.6+ | | |
| 2002 11 12 | 704 | 0.2− | 0.4+ | 2006 08 25 | 704 | (1.5+ | 3.0+) | 2006 09 25 | 699 | 1.2− | 1.1+ | | |
| 2002 11 23 | 644 | 0.9− | 0.7+ | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.1− | | |
| 2002 11 23 | 644 | 0.5− | 1.1+ | 2006 08 28 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.8+ | 0.5− | | |
| 2002 11 23 | 644 | 0.5− | 0.9+ | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.5− | | |
| 2005 03 17 | G96 | 0.3− | 0.6+ | 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2005 03 17 | G96 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.1+ | 0.7− | 2006 09 26 | G96 | 0.2− | 0.5− | | |
| 2005 03 17 | G96 | 0.7− | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.8− | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2005 03 17 | G96 | 0.5− | 0.5+ | 2006 08 28 | 699 | 0.4+ | 0.5− | 2006 10 16 | G96 | 0.3− | 0.4− | | |
| 2005 03 17 | 691 | 0.4+ | 0.5+ | 2006 08 28 | 703 | 0.7− | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.4− | | |
| 2005 03 17 | 691 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.4− | | |
| 2005 03 17 | 691 | 0.5+ | 0.4+ | 2006 08 28 | 699 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.4− | | |
| 2006 07 25 | 644 | 0.2+ | 0.6+ | 2006 08 28 | 699 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 2006 07 25 | 644 | 0.2− | 0.2+ | 2006 08 31 | 704 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.4− | | |
| 2006 07 25 | 644 | 0.0 | 0.4+ | 2006 08 31 | 704 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.4− | | |
| 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 08 31 | 704 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.6− | | |
| 2006 08 16 | 644 | 0.5− | 0.1+ | 2006 08 31 | 704 | 0.1− | 0.8+ | 2006 11 11 | G96 | 0.2− | 0.2+ | | |
| 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 09 12 | 704 | (0.1− | 1.7+) | 2006 11 11 | 703 | 0.5− | 0.4− | | |
| 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 12 | 704 | 0.7+ | 0.9+ | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 12 | 704 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.4− | | |
| 2006 08 18 | 699 | 0.2+ | 1.0+ | 2006 09 14 | 703 | (1.0− | 1.7−) | 2006 11 11 | G96 | 0.3− | 0.9− | | |
| 2006 08 18 | 699 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.7− | 2006 11 11 | 703 | (0.3+ | 2.2−) | | |
| 2006 08 18 | 699 | 1.1− | 0.8+ | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.9+ | 0.2+ | | |

**2006 QL$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.93511 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24531552 | $\omega$ | 279.68055 | | +0.74052655 | +0.66932624 | |
| $a$ | 2.5272761 | $\Omega$ | 38.34231 | | −0.57225203 | +0.67500625 | |
| $e$ | 0.1125275 | $i$ | 5.56785 | | −0.35234648 | +0.31043350 | |
| $P$ | 4.02 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.1+ | 0.6+ | 2003 12 27 | 691 | 0.7− | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.6+ | | |
| 2002 08 30 | 644 | 0.1+ | 0.9+ | 2005 04 02 | 691 | 0.3+ | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.1+ | | |
| 2002 08 30 | 644 | 0.3+ | 0.7+ | 2005 04 02 | 691 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.4+ | | |
| 2002 09 09 | 608 | 0.0 | 0.2− | 2005 04 02 | 691 | 0.3+ | 0.4+ | 2006 08 17 | 644 | 0.2+ | 0.3+ | | |
| 2002 09 09 | 608 | 0.4− | 1.3− | 2005 04 10 | G96 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.3+ | | |
| 2002 09 09 | 608 | 0.3− | 0.3− | 2005 04 10 | G96 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.5− | 0.2+ | | |
| 2003 12 18 | 691 | 0.3+ | 0.2− | 2005 04 10 | G96 | 0.2− | 0.5+ | 2006 08 20 | 644 | 0.2+ | 0.3+ | | |
| 2003 12 18 | 691 | 0.1+ | 0.3+ | 2005 04 10 | G96 | 0.6− | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.1+ | | |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.4− | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.3+ | | |
| 2003 12 27 | 691 | 0.7+ | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.4+ | 2006 09 14 | 703 | 1.2− | 0.8+ | | |
| 2003 12 27 | 691 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.1− | | |
| 2003 12 27 | 691 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.2+ | | |
| 2003 12 27 | 691 | 0.6− | 0.8+ | 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.1− | | |
| 2003 12 27 | 691 | 0.2+ | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.4+ | | | | | | |

**2006 QO$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.07627 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27934920 | $\omega$ | 209.12287 | | +0.87569128 | +0.46696363 | |
| $a$ | 2.3175962 | $\Omega$ | 122.52863 | | −0.40999227 | +0.85351032 | |
| $e$ | 0.1281931 | $i$ | 8.38323 | | −0.25509042 | +0.23122522 | |
| $P$ | 3.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 704 | 0.4+ | 0.5− | 2006 08 17 | 644 | 0.4+ | 0.2+ | 2006 09 17 | 699 | 0.8− | 0.3− | | |
| 1999 09 13 | 704 | 0.3− | 0.6− | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.4− | 0.6− | | |
| 1999 09 13 | 704 | 0.2− | 1.2+ | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 699 | 0.4+ | 0.4+ | | |
| 2003 12 28 | 691 | 0.2+ | 0.1− | 2006 08 18 | 644 | 0.6+ | 0.1+ | 2006 09 17 | 699 | 0.1+ | 0.3− | | |
| 2003 12 28 | 691 | 0.2− | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.9− | 0.4+ | | |
| 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.7+ | | |
| 2006 08 16 | 644 | 0.2− | 0.1− | 2006 08 20 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.6− | 0.8+ | | |
| 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.5− | 0.4− | 2006 09 26 | 703 | 0.8+ | 0.6− | | |
| 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.2− | | |
| 2006 08 17 | 644 | 0.2+ | 0.2− | 2006 08 30 | 699 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.1+ | | |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.3− | | |

**2006 QR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.36457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24158610 | $\omega$ | 263.38210 | | +0.94450303 | | −0.20089544 |
| $a$ | 2.5532191 | $\Omega$ | 107.96334 | | +0.27775663 | | +0.91083836 |
| $e$ | 0.1320253 | $i$ | 15.85671 | | −0.17540037 | | +0.36057525 |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.1+ | 0.3+ | 2004 02 14 | 704 | (1.4− | 2.9+) | 2006 08 18 | 644 | 0.2− | 0.4+ |
| 2004 01 18 | 644 | 0.1+ | 0.0 | 2005 05 11 | 703 | 1.3− | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.5+ |
| 2004 01 18 | 644 | 0.3+ | 0.1− | 2005 05 11 | 703 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.1+ |
| 2004 02 09 | 644 | 0.1+ | 0.3+ | 2005 05 11 | 703 | 0.8+ | 0.4− | 2006 08 20 | 644 | 0.3− | 0.1+ |
| 2004 02 09 | 644 | 0.2− | 0.2+ | 2005 05 11 | 703 | 0.6+ | 0.5+ | 2006 08 20 | 644 | 0.3− | 0.3+ |
| 2004 02 09 | 644 | 0.2− | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 28 | E12 | 0.3+ | 0.2− |
| 2004 02 14 | 704 | 0.4− | 0.8+ | 2006 08 17 | 644 | 0.1− | 0.8+ | 2006 09 28 | E12 | 0.0 | 0.0 |
| 2004 02 14 | 704 | (0.9− | 2.0+) | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 28 | E12 | 0.3+ | 0.2+ |
| 2004 02 14 | 704 | 0.5+ | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 28 | E12 | 0.5+ | 0.6− |

**2006 QS$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.18706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22393057 | $\omega$ | 6.81941 | | +0.99559763 | | −0.09350635 |
| $a$ | 2.6857183 | $\Omega$ | 358.49948 | | +0.06998763 | | +0.78758149 |
| $e$ | 0.2631695 | $i$ | 14.31677 | | +0.06234660 | | +0.60907468 |
| $P$ | 4.40 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.8− | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.7− | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 2002 09 07 | 704 | (0.2− | 2.3+) | 2006 09 16 | 704 | 0.6− | 1.1+ | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2002 09 07 | 704 | 0.1− | 1.0+ | 2006 09 16 | 704 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2002 09 07 | 704 | (2.9− | 1.5+) | 2006 09 16 | 704 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.7− |
| 2002 12 10 | 704 | 0.1− | 0.2− | 2006 09 16 | 704 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2002 12 10 | 704 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2006 09 19 | 704 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.1+ | 2006 10 23 | 704 | (2.5+ | 1.1−) |
| 2002 12 28 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 704 | 0.2− | 0.3+ | 2006 10 23 | 704 | 0.0 | 0.7− |
| 2002 12 28 | 704 | 0.3+ | 1.2+ | 2006 09 19 | 704 | 0.3− | 0.1− | 2006 10 23 | 704 | 0.4+ | 0.0 |
| 2002 12 28 | 704 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.4− | 2006 10 23 | 704 | 1.2− | 0.3− |
| 2002 12 28 | 704 | (0.4+ | 3.1−) | 2006 09 19 | 704 | 0.5− | 0.0 | 2006 10 23 | 704 | 0.7− | 0.0 |
| 2005 05 11 | 644 | 0.4+ | 0.7+ | 2006 09 19 | 704 | 0.0 | 0.1+ | 2006 11 10 | 704 | 0.7+ | 0.5+ |
| 2005 05 11 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 608 | 1.2+ | 1.2+ | 2006 11 10 | 704 | 0.5− | 0.3− |
| 2005 05 11 | 644 | 0.3+ | 0.5+ | 2006 09 19 | 608 | 1.2+ | 1.2+ | 2006 11 10 | 704 | 0.5+ | 0.3− |
| 2006 08 17 | 704 | 0.1− | 0.3+ | 2006 09 19 | 608 | 1.3+ | 0.9+ | 2006 11 10 | 704 | 0.4+ | 0.3+ |
| 2006 08 17 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 11 10 | 704 | 0.2− | 0.3+ |
| 2006 08 17 | 704 | (0.8+ | 2.1+) | 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 644 | 0.1+ | 0.1− |
| 2006 08 21 | 644 | 0.1+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 11 14 | 644 | 0.0 | 0.2− |
| 2006 08 21 | 644 | 0.1+ | 0.3− | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 11 14 | 644 | 0.1− | 0.3− |
| 2006 08 21 | 644 | 0.3− | 0.3− | 2006 09 25 | 699 | (2.2− | 1.6−) | 2006 11 15 | 704 | (1.5− | 1.5+) |
| 2006 08 22 | 644 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.2− |
| 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.7+ | 0.3+ |
| 2006 08 22 | 644 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.7+ | 0.6+ |
| 2006 08 23 | 704 | 1.3− | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.5+ | 0.8− |
| 2006 08 23 | 704 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.1− |
| 2006 08 23 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.1+ | 2006 11 16 | 704 | 1.4+ | 0.7− |
| 2006 08 23 | 704 | 0.4− | 0.6+ | 2006 09 27 | 704 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2006 08 28 | 704 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2006 08 28 | 704 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.1− | 0.1− | 2006 11 16 | 704 | 1.1+ | 0.1+ |
| 2006 08 28 | 704 | 0.3− | 0.6+ | 2006 09 28 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.7− |
| 2006 08 28 | 704 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.4− |
| 2006 08 28 | 704 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2006 08 30 | 699 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.8+ | 1.0+ |
| 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.9+ |
| 2006 08 30 | 699 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2006 08 30 | 704 | 0.7+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.9− | 0.7− |
| 2006 08 30 | 704 | 0.8+ | 0.6− | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2006 08 30 | 699 | 0.6+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2006 08 30 | 704 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.0 | 0.8+ |
| 2006 09 14 | 703 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.9− | 0.7− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2006 09 14 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.9− | 0.8− | 2006 11 22 | 704 | 1.5− | 0.2+ |
| 2006 09 14 | 703 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.4− | 1.2− | | | | |

**2006 QT$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.29567 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22886425 | $\omega$ | 270.91629 | | +0.92448835 | | +0.37879097 |
| $a$ | 2.6469805 | $\Omega$ | 66.82589 | | −0.32857498 | | +0.84881639 |
| $e$ | 0.3112538 | $i$ | 2.67344 | | −0.19328675 | | +0.36881993 |
| $P$ | 4.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.3+ | 0.3− |
| 2002 12 05 | 704 | 0.6+ | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.9+ | 0.2− |
| 2002 12 05 | 704 | 0.6− | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 704 | 1.0+ | 1.3+ | 2006 10 01 | 704 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 704 | 1.5− | 1.5+ | 2006 10 01 | 704 | 0.1− | 1.1− |
| 2002 12 05 | 608 | 1.3− | 1.5+ | 2006 09 19 | 704 | 0.1− | 0.8+ | 2006 10 01 | 704 | 0.0 | 0.1+ |
| 2002 12 05 | 608 | 0.8− | 0.7+ | 2006 09 19 | 704 | 0.4− | 1.2+ | 2006 10 01 | 704 | 0.1− | 0.0 |
| 2002 12 05 | 608 | 0.6− | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.7− | 2006 10 01 | 704 | 0.5+ | 0.4+ |
| 2002 12 11 | 333 | 0.6+ | 0.5+ | 2006 09 21 | 699 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2002 12 11 | 333 | 0.2+ | 0.2− | 2006 09 21 | 699 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2002 12 11 | 333 | 0.4+ | 0.5+ | 2006 09 21 | 699 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.1− | 0.0 |
| 2005 04 11 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.8− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2005 04 11 | 691 | 0.0 | 0.7+ | 2006 09 22 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2005 04 11 | 691 | 0.5+ | 0.5+ | 2006 09 22 | 704 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.3− |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2005 04 11 | 691 | 0.3+ | 0.5+ | 2006 09 22 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2005 04 11 | 691 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.8− |
| 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2005 05 10 | G96 | 0.1− | 1.4− | 2006 09 25 | 699 | 0.4− | 0.5+ | 2006 10 22 | 704 | 0.2+ | 0.8+ |
| 2005 05 10 | G96 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.7+ | 2006 10 22 | 704 | 0.7+ | 0.1+ |
| 2005 05 10 | G96 | 0.3+ | 1.2+ | 2006 09 26 | 704 | 0.3− | 0.2+ | 2006 10 22 | 704 | (1.4+ | 1.9−) |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.3− | 0.9− | 2006 10 22 | 704 | 0.3− | 0.3− |
| 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.7− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.6− |
| 2006 08 17 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 1.4− | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.1− |
| 2006 08 19 | 699 | (0.1− | 1.8−) | 2006 09 26 | 704 | 0.5− | 0.7+ | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 2006 08 19 | 699 | 0.6− | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.4+ |
| 2006 08 19 | 699 | 1.1− | 0.0 | 2006 09 26 | 704 | 0.6− | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 08 19 | 699 | 0.4+ | 0.4+ | 2006 09 26 | 704 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2006 09 16 | 704 | 0.9− | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2006 09 16 | 704 | (1.2− | 1.8+) | 2006 09 28 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2006 09 16 | 704 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.6− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2006 09 16 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.7− | 2006 11 16 | G96 | 0.5+ | 0.4+ |
| 2006 09 18 | 703 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.8+ | 0.3+ | 2006 11 16 | G96 | 0.9+ | 0.0 |

**2006 QW$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.12523 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21928661 | $\omega$ | 94.10913 | | −0.29789237 | | +0.93264246 |
| $a$ | 2.7235037 | $\Omega$ | 155.35365 | | −0.94701457 | | −0.31555632 |
| $e$ | 0.3584426 | $i$ | 29.21863 | | +0.12009807 | | −0.17493499 |
| $P$ | 4.49 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 704 | 0.4+ | 0.8− | 2006 08 19 | 699 | 0.7+ | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.1− |
| 2001 03 15 | 704 | 0.2+ | 0.6+ | 2006 08 19 | 699 | 0.5+ | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.1− |
| 2001 03 15 | 704 | 1.1− | 0.2+ | 2006 08 19 | 699 | 0.6+ | 0.6− | 2006 08 28 | 699 | 0.1− | 0.7+ |
| 2001 03 15 | 704 | 0.3− | 0.1+ | 2006 08 19 | 699 | 1.4− | 0.7− | 2006 08 28 | 699 | 0.2− | 1.0+ |
| 2001 03 15 | 704 | 1.0+ | 0.3− | 2006 08 21 | 644 | 0.0 | 0.4− | 2006 08 29 | 703 | 0.1+ | 0.6− |
| 2001 04 14 | 704 | 1.5− | 0.1+ | 2006 08 21 | 644 | 0.2− | 0.4− | 2006 08 29 | 703 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 14 | 704 | 0.7+ | 0.3+ | 2006 08 21 | 644 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.3− |
| 2001 04 14 | 704 | 0.5+ | 0.4− | 2006 08 21 | 644 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.8− | 1.0+ |
| 2001 04 14 | 704 | 0.1+ | 0.2+ | 2006 08 21 | 644 | 0.1− | 0.3− | 2006 09 12 | 699 | 0.4− | 0.4− |
| 2006 08 16 | 644 | 0.4+ | 0.4− | 2006 08 21 | 644 | 0.0 | 0.3− | 2006 09 12 | 699 | (0.2− | 2.3+) |
| 2006 08 16 | 644 | 0.1+ | 0.5− | 2006 08 24 | 704 | 0.2− | 0.2+ | 2006 09 12 | 699 | 1.1+ | 0.3− |
| 2006 08 16 | 644 | 0.2+ | 0.5− | 2006 08 24 | 704 | 0.1− | 0.6+ | 2006 09 12 | 699 | 0.5+ | 1.2+ |
| 2006 08 18 | 704 | 0.3+ | 0.3+ | 2006 08 24 | 704 | 0.3+ | 0.6− | 2006 09 14 | 703 | (0.7− | 2.6+) |
| 2006 08 18 | 704 | 0.9− | 1.9+ | 2006 08 24 | 704 | 0.5+ | 0.2− | 2006 09 14 | 703 | 0.8− | 0.7− |
| 2006 08 18 | 704 | 0.2+ | 0.3− | 2006 08 24 | 704 | 0.6+ | 0.2− | 2006 09 14 | 703 | 0.0 | 0.1− |
| 2006 08 18 | 704 | 1.5− | 1.0+ | 2006 08 28 | 699 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.3− |
| 2006 08 18 | 704 | 0.8+ | 0.5− | 2006 08 28 | 699 | 0.5− | 0.4+ | | | | |

**2006 QZ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.17466 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18513902 | $\omega$ | 179.18672 | | +0.87090775 | | +0.48004660 |
| $a$ | 3.0488595 | $\Omega$ | 151.35823 | | −0.45212390 | | +0.86656905 |
| $e$ | 0.1048031 | $i$ | 12.68265 | | −0.19262313 | | +0.13643076 |
| $P$ | 5.32 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.4− | 1.4+ | 2005 05 20 | 644 | 0.2+ | 0.1+ | 2006 08 21 | 644 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | (0.2− | 1.8+) | 2005 05 20 | 644 | 0.0 | 0.2+ | 2006 08 21 | 644 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.2+ | 1.0+ | 2006 08 07 | A50 | 0.2− | 0.3+ | 2006 08 21 | 644 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.4− | 2006 08 07 | A50 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | (3.0+ | 1.3+) | 2006 08 07 | A50 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2006 08 07 | A50 | 0.2− | 0.4+ | 2006 08 28 | 691 | 0.2+ | 0.1+ |
| 2001 09 21 | 704 | (4.1+ | 1.3+) | 2006 08 07 | A50 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.7+ | 0.3− |
| 2001 09 21 | 704 | 0.1+ | 0.4− | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.6− | 0.3− |
| 2001 09 21 | 704 | (2.9+ | 1.0+) | 2006 08 18 | 699 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.2− | 0.5− | 2006 08 18 | 699 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | (4.2+ | 0.7+) | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 1.0− |
| 2001 09 21 | 704 | 0.4+ | 0.3− | 2006 08 18 | 699 | 0.5− | 0.2+ | 2006 08 28 | 699 | 0.3− | 1.3− |
| 2001 10 15 | 644 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.3− | 0.8+ |
| 2001 10 15 | 644 | 0.1− | 0.2+ | 2006 08 18 | 699 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.6+ | 0.6+ |
| 2001 10 15 | 644 | 0.2− | 0.3+ | 2006 08 21 | 704 | 0.1+ | 0.0 | 2006 08 29 | 704 | 0.2− | 0.6+ |
| 2001 10 23 | 644 | 0.1− | 0.2− | 2006 08 21 | 704 | 0.4− | 0.4− | 2006 08 29 | 704 | 0.3+ | 0.7+ |
| 2001 10 23 | 644 | 0.0 | 0.1− | 2006 08 21 | 704 | 0.2− | 0.6− | 2006 08 29 | 704 | 0.1+ | 0.3− |
| 2001 10 23 | 644 | 0.3− | 0.1+ | 2006 08 21 | 704 | 0.3+ | 0.0 | 2006 08 31 | 704 | 0.1− | 0.1− |
| 2005 05 20 | 644 | 0.0 | 0.1− | 2006 08 21 | 704 | 0.2+ | 0.4− | 2006 08 31 | 704 | 0.8− | 0.5+ |
| 2005 05 20 | 644 | 0.3− | 0.2+ | 2006 08 21 | 644 | 0.0 | 0.4− | 2006 08 31 | 704 | 0.2− | 0.6+ |
| 2005 05 20 | 644 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.1− | 0.2− | 2006 08 31 | 704 | 0.8+ | 1.4− |
| 2005 05 20 | 644 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.6− | | | | |

**2006 QF$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.47017 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29760733 | $\omega$ | 300.28673 | | +0.21661850 | | +0.97565307 |
| $a$ | 2.2218103 | $\Omega$ | 342.12627 | | −0.85290406 | | +0.17202900 |
| $e$ | 0.2064210 | $i$ | 6.41932 | | −0.47500641 | | +0.13604084 |
| $P$ | 3.31 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 291 | 0.1+ | 0.4+ | 2006 08 18 | 699 | 0.1− | 0.9+ | 2006 09 12 | 699 | 0.1+ | 0.3+ |
| 2002 03 21 | 291 | 0.2+ | 0.3+ | 2006 08 21 | 644 | 0.3+ | 0.0 | 2006 09 12 | 699 | 1.2− | 0.1+ |
| 2002 03 21 | 291 | 0.4+ | 0.5+ | 2006 08 21 | 644 | 0.0 | 0.3− | 2006 09 12 | 699 | 0.5− | 0.4+ |
| 2003 10 17 | 691 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.3+ |
| 2003 10 17 | 691 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 1.0− | 0.9+ |
| 2003 10 17 | 691 | 0.4+ | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 2003 11 22 | 691 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.0 | 0.3+ |
| 2003 11 22 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 1.1− | 0.5− | 2006 09 14 | 703 | 0.0 | 0.2+ |
| 2003 11 22 | 691 | 0.7− | 0.3− | 2006 08 28 | 699 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.2− | 0.5+ |
| 2005 02 04 | G96 | 0.5+ | 0.7+ | 2006 08 28 | 699 | 0.8+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2005 02 04 | G96 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 02 04 | G96 | 0.3+ | 0.3− | 2006 08 28 | 699 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2005 02 04 | G96 | 0.6− | 0.9− | 2006 08 28 | 699 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2006 08 14 | 644 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2006 08 14 | 644 | 0.2+ | 0.1+ | 2006 08 31 | 704 | 0.7+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2006 08 14 | 644 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.2+ | 0.9− | 2006 10 21 | G96 | 0.6− | 0.1− |
| 2006 08 18 | 699 | 0.6+ | 0.8+ | 2006 08 31 | 704 | 0.6− | 0.9− | 2006 10 21 | G96 | 0.3− | 0.4− |
| 2006 08 18 | 699 | 1.3+ | 1.4+ | 2006 09 12 | 699 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.5− | 0.0 |

**2006 QO$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.15779 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28643870 | $\omega$ | 112.51262 | | +0.91749811 | | +0.39753744 |
| $a$ | 2.2791955 | $\Omega$ | 224.06582 | | −0.37129959 | | +0.84462464 |
| $e$ | 0.2336242 | $i$ | 1.04603 | | −0.14259676 | | +0.35857106 |
| $P$ | 3.44 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 10 | 691 | 0.4+ | 0.6+ | 2006 08 25 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.5+ |
| 1999 06 10 | 691 | 0.3+ | 0.3+ | 2006 08 25 | 704 | 0.6− | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.7− |
| 1999 06 10 | 691 | (2.8+ | 4.9−) | 2006 08 25 | 704 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 1999 08 03 | 691 | 0.3− | 0.1− | 2006 08 25 | 704 | 0.4+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.3− |
| 1999 08 03 | 691 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.4− |
| 1999 08 03 | 691 | 0.4− | 0.2− | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.4− |
| 2002 04 02 | 291 | 0.1− | 0.4− | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 29 | 850 | 0.2+ | 0.4− |
| 2002 04 02 | 291 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.3+ | 2006 09 29 | 850 | 0.0 | 0.5− |
| 2002 04 02 | 291 | 0.2+ | 0.2− | 2006 08 30 | 704 | 0.5+ | 1.1− | 2006 09 29 | 850 | 0.5+ | 1.5− |
| 2002 04 09 | 291 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.7+ | 0.1+ | 2006 09 29 | 850 | 0.1+ | 1.1− |
| 2002 04 09 | 291 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2002 04 09 | 291 | 0.2− | 0.1+ | 2006 09 01 | 704 | 0.9+ | 0.5− | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2006 05 26 | G96 | 0.5− | 0.9− | 2006 09 01 | 704 | 0.5− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2006 05 26 | G96 | 0.1+ | 0.6− | 2006 09 01 | 704 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2006 05 26 | G96 | 0.3+ | 0.8− | 2006 09 01 | 704 | 0.2− | 1.1− | 2006 10 20 | 644 | 0.0 | 0.8+ |
| 2006 05 26 | G96 | 0.4− | 0.3− | 2006 09 01 | 704 | 0.5+ | 1.1− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 08 18 | 699 | 0.4− | 0.4+ | 2006 09 02 | 152 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2006 08 18 | 699 | 0.1− | 0.3+ | 2006 09 02 | 152 | 0.9+ | 0.2− | 2006 10 20 | 644 | 0.6− | 0.5+ |
| 2006 08 18 | 699 | 0.5+ | 0.2+ | 2006 09 02 | 152 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.5− | 0.4+ |
| 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.6− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2006 08 19 | A50 | 0.2+ | 0.3− | 2006 09 14 | 703 | 1.1− | 0.9+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2006 08 19 | A50 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.0 | 1.0+ | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2006 08 21 | 704 | (2.5+ | 0.0 ) | 2006 09 17 | 704 | 0.9+ | 0.1− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 08 21 | 704 | 0.6− | 1.1+ | 2006 09 17 | 704 | 0.2+ | 1.0− | 2006 11 11 | G96 | 0.5+ | 0.0 |
| 2006 08 21 | 704 | (1.6+ | 0.8+) | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 2006 08 21 | 704 | 0.4+ | 1.4+ | 2006 09 17 | 704 | 0.8+ | 0.9− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 23 | 152 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 23 | 152 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2006 08 22 | 644 | 0.4− | 0.3− | 2006 09 23 | 152 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 23 | 152 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.0 | 0.6+ | | | | |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.6+ | 0.1− | | | | |

**2006 QQ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.06319 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22514065 | $\omega$ | 62.20265 | | +0.62413238 | | −0.78026606 |
| $a$ | 2.6760862 | $\Omega$ | 348.89826 | | +0.62209272 | | +0.52766418 |
| $e$ | 0.2646150 | $i$ | 12.15460 | | +0.47271495 | | +0.33579068 |
| $P$ | 4.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.4+ | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 12 07 | 704 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 12 07 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 12 07 | 704 | 0.7+ | 0.1− | 2006 09 25 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 12 07 | 704 | 1.3+ | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 12 28 | 704 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.0 | 0.2+ | 2006 10 16 | 683 | (2.3+ | 1.1−) |
| 2002 12 28 | 704 | 0.8− | 0.2− | 2006 09 25 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 683 | (1.6+ | 1.0−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 28 | 704 | 0.7− | 0.0 | 2006 09 26 | 683 | (1.9+ | 0.4−) | 2006 10 16 | 683 | (1.9+ | 0.2+) |
| 2006 08 18 | 699 | 1.2− | 0.4+ | 2006 09 26 | 683 | (2.1+ | 0.6+) | 2006 10 17 | 683 | 1.4+ | 0.6− |
| 2006 08 18 | 699 | 0.6+ | 0.0 | 2006 09 26 | 683 | 0.7+ | 0.6+ | 2006 10 17 | 683 | (1.6+ | 0.6−) |
| 2006 08 18 | 699 | 1.0− | 0.9+ | 2006 09 27 | 699 | 0.2+ | 1.0+ | 2006 10 17 | 683 | 1.4+ | 0.1+ |
| 2006 08 18 | 699 | 0.3− | 0.1− | 2006 09 27 | 699 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2006 08 20 | 644 | 0.1− | 0.2+ | 2006 09 27 | 699 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.2− |
| 2006 08 20 | 644 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2006 08 20 | 644 | 0.1+ | 0.5− | 2006 09 27 | 683 | 1.3− | 0.2+ | 2006 10 17 | 703 | 1.1− | 0.4− |
| 2006 08 26 | 704 | 1.1− | 0.2+ | 2006 09 27 | 703 | 0.9+ | 0.4− | 2006 10 17 | 703 | 0.5+ | 0.5− |
| 2006 08 26 | 704 | 0.3− | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.1− | 2006 10 17 | 703 | 1.0+ | 0.3− |
| 2006 08 26 | 704 | 0.0 | 0.8+ | 2006 09 27 | 683 | (1.8− | 1.4+) | 2006 10 17 | 703 | 1.0+ | 0.0 |
| 2006 08 29 | 703 | 0.7− | 0.8− | 2006 09 27 | 703 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.9+ | 0.5− |
| 2006 08 29 | 703 | 0.9− | 0.7− | 2006 09 27 | 683 | (2.5− | 1.5+) | 2006 10 19 | 683 | (2.2+ | 2.1−) |
| 2006 08 29 | 703 | 0.4+ | 0.2− | 2006 09 28 | 683 | 0.0 | 0.5+ | 2006 10 19 | 683 | (2.9+ | 1.5−) |
| 2006 08 29 | 703 | 0.4− | 0.5− | 2006 09 28 | 683 | (0.5− | 1.6+) | 2006 10 19 | 683 | (1.6+ | 0.8−) |
| 2006 08 30 | 704 | 0.4+ | 0.0 | 2006 09 28 | 683 | 0.2− | 0.3+ | 2006 10 20 | 683 | 1.1+ | 1.9− |
| 2006 08 30 | 704 | 0.6+ | 0.1− | 2006 09 30 | 683 | 0.7− | 0.1− | 2006 10 20 | 683 | 1.2+ | 0.7− |
| 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 683 | 0.1− | 1.1+ | 2006 10 20 | 683 | 1.2+ | 0.0 |
| 2006 08 30 | 704 | 0.1− | 0.5− | 2006 09 30 | 683 | (1.1− | 2.0+) | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2006 08 30 | 704 | 0.7+ | 0.8+ | 2006 10 03 | 704 | 0.9− | 0.3− | 2006 10 22 | 644 | 0.5+ | 0.1+ |
| 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 03 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 03 | 704 | (1.8− | 2.0−) | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.5+ |
| 2006 09 18 | 704 | 1.0− | 0.6− | 2006 10 04 | G96 | 0.3+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2006 09 18 | 704 | 0.3− | 0.5− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 26 | 704 | 0.4− | 1.0− |
| 2006 09 18 | 704 | (2.6− | 0.2−) | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 26 | 704 | 1.4− | 0.0 |
| 2006 09 18 | 704 | 1.2− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.1+ | 2006 10 26 | 704 | 1.1− | 0.1+ |
| 2006 09 18 | 704 | 0.8− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.1+ | 2006 10 26 | 704 | 0.7+ | 0.1− |
| 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.2+ | 2006 10 26 | 704 | 0.3− | 1.0+ |
| 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 26 | 704 | 0.6+ | 0.1− |
| 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 26 | 704 | 0.3+ | 0.5+ |
| 2006 09 19 | 703 | 0.6− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ | | | | |
| 2006 09 19 | 703 | 0.8− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1+ | | | | |

**2006 QS$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.62571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28634331 | $\omega$ | 335.31806 | | +0.51604458 | +0.85452647 | |
| $a$ | 2.2797017 | $\Omega$ | 325.66282 | | −0.76747921 | +0.43068420 | |
| $e$ | 0.1924410 | $i$ | 6.00533 | | −0.38035989 | +0.29033710 | |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.2− | 0.3− | 2005 03 17 | G96 | 0.4− | 0.0 | 2006 09 18 | 704 | 0.4+ | 0.6− |
| 1996 12 13 | 691 | 0.1− | 0.3− | 2005 03 17 | G96 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.1− | 0.3+ |
| 1996 12 13 | 691 | 0.4− | 0.0 | 2006 08 18 | 699 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.7+ | 0.5− |
| 1999 08 07 | 699 | 0.1− | 0.9+ | 2006 08 18 | 699 | 0.2+ | 1.2− | 2006 09 20 | 699 | (2.3− | 0.4+) |
| 1999 08 07 | 699 | 0.9+ | 0.4− | 2006 08 18 | 699 | 0.4− | 0.8+ | 2006 09 20 | 703 | 0.4+ | 0.4+ |
| 1999 08 07 | 699 | 1.2− | 0.8+ | 2006 08 18 | 699 | 0.0 | 0.4+ | 2006 09 20 | 699 | 0.7+ | 0.8+ |
| 1999 08 08 | 691 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.3− | 0.8+ |
| 1999 08 08 | 691 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.4− | 0.2+ |
| 1999 08 08 | 691 | 0.0 | 0.2− | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.1− | 0.0 |
| 1999 08 22 | 703 | 0.3− | 0.5+ | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 22 | 703 | 0.1+ | 0.6+ |
| 1999 08 22 | 703 | 0.6− | 0.8+ | 2006 08 21 | 691 | 1.3− | 0.1− | 2006 09 22 | 703 | 0.5− | 1.2+ |
| 1999 08 22 | 703 | 0.6− | 0.8− | 2006 08 21 | 691 | 0.8+ | 0.7− | 2006 09 22 | 703 | 0.1+ | 0.7+ |
| 1999 08 22 | 703 | 1.0+ | 1.2− | 2006 08 29 | 703 | (1.7+ | 1.6+) | 2006 09 22 | 703 | 0.5− | 0.4+ |
| 1999 09 04 | 699 | 0.5+ | 1.0+ | 2006 08 29 | 703 | 0.6+ | 0.6− | 2006 09 25 | 704 | 0.1− | 0.3− |
| 1999 09 04 | 699 | 1.1+ | 0.6+ | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.5+ |
| 1999 09 04 | 699 | (2.2+ | 0.2+) | 2006 08 29 | 703 | 0.0 | 0.2+ | 2006 09 25 | 704 | 1.1+ | 0.7+ |
| 1999 09 07 | 704 | 1.0+ | 0.1+ | 2006 08 30 | 704 | 0.7− | 1.0+ | 2006 09 25 | 704 | 0.7+ | 0.6− |
| 1999 09 07 | 704 | 1.5+ | 1.1− | 2006 08 30 | 704 | 0.4+ | 1.3+ | 2006 09 25 | 704 | 0.2− | 0.2+ |
| 1999 09 07 | 704 | 0.8+ | 1.5− | 2006 08 30 | 704 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.3+ |
| 2003 12 18 | 691 | 0.5+ | 0.3− | 2006 08 30 | 704 | (1.6+ | 0.5+) | 2006 09 29 | 699 | 0.8− | 0.6+ |
| 2003 12 18 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 09 29 | 699 | (0.5− | 2.3+) |
| 2003 12 18 | 691 | 0.4+ | 0.1+ | 2006 09 17 | 703 | (1.6− | 1.2−) | 2006 09 29 | 699 | 0.5− | 0.9+ |
| 2005 02 16 | 809 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 1.0− | 1.0− | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2005 02 16 | 809 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.7− | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2005 02 16 | 809 | 0.1+ | 0.3+ | 2006 09 18 | 704 | 0.2− | 1.0− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2005 03 17 | G96 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.2− | 0.8− | | | | |
| 2005 03 17 | G96 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.5+ | 0.3+ | | | | |

**2006 QT$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.51005 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22913526 | $\omega$ | 354.37585 | | +0.70642159 | +0.70587667 | |
| $a$ | 2.6448929 | $\Omega$ | 320.55173 | | −0.64615213 | +0.61315626 | |
| $e$ | 0.3519998 | $i$ | 4.69668 | | −0.28888746 | +0.35465127 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 22 | 691 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.1− | 0.3− | 2006 09 24 | 106 | 0.2+ | 0.2− |
| 1993 08 22 | 691 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.3− | 0.2− | 2006 09 24 | 106 | 0.4+ | 0.6− |
| 1993 08 22 | 691 | 0.3+ | 0.3− | 2006 09 01 | 704 | 0.5+ | 0.2− | 2006 09 25 | 106 | 0.1− | 0.5− |
| 2000 02 10 | 691 | 0.2− | 1.3− | 2006 09 01 | 704 | 0.5+ | 0.2− | 2006 09 25 | 704 | 0.8− | 0.4+ |
| 2000 02 10 | 691 | 0.1− | 0.5− | 2006 09 01 | 704 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.6+ |
| 2000 02 10 | 691 | 0.1− | 0.7+ | 2006 09 01 | 704 | 0.4+ | 0.3− | 2006 09 25 | 704 | 0.1− | 0.7+ |
| 2006 08 18 | 699 | 0.1+ | 0.1+ | 2006 09 14 | A50 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.6+ |
| 2006 08 18 | 699 | 0.7− | 0.7+ | 2006 09 14 | A50 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 0.8− | 0.8+ |
| 2006 08 18 | 699 | 0.4+ | 0.0 | 2006 09 15 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 699 | 0.1− | 0.4− |
| 2006 08 18 | 699 | 0.7− | 0.6+ | 2006 09 15 | 704 | 0.6+ | 0.0 | 2006 09 27 | 699 | 0.3+ | 0.3− |
| 2006 08 18 | 644 | 0.0 | 0.2− | 2006 09 15 | 704 | 0.4+ | 0.2− | 2006 09 27 | 699 | 0.3− | 0.2− |
| 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 15 | 704 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.4+ |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 15 | 704 | 0.1+ | 0.1− | 2006 09 29 | 704 | 1.0+ | 0.6+ |
| 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.5+ | 0.3− |
| 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.9+ | 0.1+ |
| 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 703 | 0.3− | 1.0− |
| 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.7− | 0.1− | 2006 10 01 | 703 | 0.5− | 0.1− |
| 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 10 01 | 703 | 0.3− | 0.5+ |
| 2006 08 28 | 704 | (0.4+ | 2.3−) | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 01 | 703 | 0.0 | 0.1− |
| 2006 08 28 | 704 | (0.7+ | 2.0+) | 2006 09 17 | 703 | 0.8− | 0.3− | 2006 10 11 | 691 | 0.1− | 0.2− |
| 2006 08 28 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 2006 08 28 | 704 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.7− | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.2− |
| 2006 08 29 | 703 | 0.4− | 0.6− | 2006 09 18 | 704 | 0.6+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2006 08 29 | 703 | 0.5− | 0.6− | 2006 09 18 | 704 | 0.3+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.7− | 0.1− | 2006 09 19 | 699 | (0.7+ | 1.7+) | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 08 29 | 703 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.5− | 0.6+ |
| 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 1.1− | 0.4+ |
| 2006 08 30 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.9+ | 2006 11 22 | 704 | 1.3+ | 0.3+ |
| 2006 08 30 | 704 | 0.1− | 0.5− | 2006 09 24 | 106 | 0.3− | 0.9− | 2006 11 22 | 704 | 0.6+ | 1.5− |

**2006 QW$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.05673 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22418161 | $\omega$ | 54.80751 | | +0.81206401 | −0.58173477 | |
| $a$ | 2.6837129 | $\Omega$ | 340.63381 | | +0.47979913 | +0.71065463 | |
| $e$ | 0.2701926 | $i$ | 8.01294 | | +0.33218194 | +0.39566988 | |
| $P$ | 4.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3+ | 0.5− | 2006 09 01 | 704 | 0.2+ | 0.8− | 2006 09 29 | 704 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.4− | 2006 09 01 | 704 | 0.2− | 0.6− | 2006 09 29 | 704 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 1.1− | 2006 09 01 | 704 | 1.0− | 1.4− | 2006 09 29 | 704 | 1.1− | 0.4− |
| 2002 12 05 | 704 | 0.4− | 0.6− | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.9− | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 1.0− | 0.4− |
| 2002 12 15 | 704 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 01 | 703 | (0.1− | 1.7+) |
| 2002 12 15 | 704 | 0.4− | 0.8+ | 2006 09 12 | 703 | 1.0+ | 1.4− | 2006 10 01 | 703 | 0.7+ | 0.6+ |
| 2002 12 15 | 704 | 0.0 | 0.1+ | 2006 09 12 | 703 | 1.4+ | 0.5− | 2006 10 01 | 703 | 0.9+ | 0.8+ |
| 2002 12 15 | 704 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.5− | 0.5− | 2006 10 01 | 703 | (4.3− | 2.4−) |
| 2003 01 04 | 704 | (2.9− | 0.3−) | 2006 09 12 | 703 | 0.9+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.3− |
| 2003 01 04 | 704 | (3.5− | 1.1−) | 2006 09 15 | 704 | 0.5+ | 0.4− | 2006 10 01 | 704 | 0.3− | 0.6− |
| 2003 01 04 | 704 | (3.3− | 0.6−) | 2006 09 15 | 704 | 0.6+ | 0.6− | 2006 10 01 | 704 | 0.5− | 0.2− |
| 2003 01 04 | 704 | (3.6− | 1.0−) | 2006 09 15 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | (3.0− | 0.4−) | 2006 09 15 | 704 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.4− | 0.9− | | |
| 2003 01 13 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 704 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.0 | | |
| 2003 01 13 | 704 | 0.2− | 0.5− | 2006 09 18 | 704 | 0.6+ | 0.6− | 2006 10 10 | 644 | 0.2− | 0.1+ | | |
| 2003 01 13 | 704 | 0.5− | 0.7+ | 2006 09 18 | 704 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.1+ | | |
| 2006 08 18 | 699 | 0.3+ | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.4+ | | |
| 2006 08 18 | 699 | 0.6− | 0.1− | 2006 09 18 | 704 | 0.9+ | 0.5− | 2006 10 11 | 691 | 0.2− | 0.2+ | | |
| 2006 08 18 | 699 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 0.5+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | | |
| 2006 08 18 | 699 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1− | | |
| 2006 08 18 | 644 | 0.5− | 0.1− | 2006 09 19 | 703 | 0.6+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2006 08 18 | 644 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2006 08 19 | 691 | 1.2+ | 0.6+ | 2006 09 19 | 699 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 1.1+ | 2006 10 17 | 691 | 0.2− | 0.1+ | | |
| 2006 08 24 | 644 | 0.4− | 0.1− | 2006 09 25 | 704 | 0.5− | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.1+ | | |
| 2006 08 24 | 644 | 0.5− | 0.3− | 2006 09 25 | 704 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.2+ | | |
| 2006 08 24 | 644 | 0.5− | 0.2− | 2006 09 25 | 704 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2006 08 28 | 703 | 0.6− | 0.2− | 2006 09 25 | 704 | 0.8+ | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2006 08 28 | 703 | 0.6− | 0.4− | 2006 09 25 | 704 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2006 08 28 | 703 | 0.5− | 0.4− | 2006 09 27 | 699 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.3− | 0.1+ | | |
| 2006 08 28 | 703 | 0.4− | 0.5− | 2006 09 27 | 699 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.3− | 0.2− | | |
| 2006 09 01 | 704 | 0.4− | 0.1− | 2006 09 27 | 699 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.3− | 0.1− | | |

**2006 QY$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.19556 | | (2000.0) | | +0.99314921 | +0.11385458 |
| $n$ | 0.26608169 | $\omega$ | 197.58571 | | −0.09800125 | +0.93414133 |
| $a$ | 2.3940105 | $\Omega$ | 155.83024 | | −0.06364282 | +0.33825598 |
| $e$ | 0.1970733 | $i$ | 3.68313 | | | |
| $P$ | 3.70 | $H$ | 17.4 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 291 | 0.3+ | 0.1− | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.5+ | 0.4+ | | |
| 2003 12 27 | 291 | 0.2+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 | | |
| 2003 12 27 | 291 | 0.4− | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1+ | | |
| 2005 04 12 | 691 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 1.4− | 0.0 | | |
| 2005 04 12 | 691 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 1.4− | 0.0 | | |
| 2005 05 11 | G96 | 0.4+ | 0.1− | 2006 09 16 | 704 | 1.0+ | 0.3− | 2006 09 26 | 704 | (1.9− | 0.2+) | | |
| 2005 05 11 | G96 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.8− | 1.2− | | |
| 2005 05 11 | G96 | 0.4+ | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.2− | | |
| 2005 05 11 | G96 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.9+ | | |
| 2006 08 06 | D35 | 0.2+ | 0.6− | 2006 09 16 | 699 | 0.4− | 0.7+ | 2006 09 30 | 704 | (1.7+ | 1.0−) | | |
| 2006 08 06 | D35 | 0.4+ | 0.4− | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.4− | | |
| 2006 08 06 | D35 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.5+ | 0.2+ | 2006 09 30 | 704 | 0.9+ | 0.2+ | | |
| 2006 08 06 | D35 | 0.1− | 0.4+ | 2006 09 19 | 699 | 1.0− | 0.7+ | 2006 09 30 | 703 | 0.5+ | 0.7− | | |
| 2006 08 06 | D35 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.5− | 2006 09 30 | 704 | (1.3− | 2.2+) | | |
| 2006 08 06 | D35 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.7− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.2− | | |
| 2006 08 06 | D35 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.0 | | |
| 2006 08 06 | D35 | 0.0 | 0.2+ | 2006 09 19 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.2− | | |
| 2006 08 06 | D35 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2006 08 18 | 699 | (0.0 | 1.7+) | 2006 09 19 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2006 08 18 | 699 | 0.9+ | 1.2+ | 2006 09 19 | 703 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2006 08 18 | 699 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 2006 08 18 | 699 | 1.2− | 1.1+ | 2006 09 19 | 704 | 1.0+ | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.7− | | |
| 2006 08 20 | 644 | 0.0 | 0.2+ | 2006 09 19 | 704 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.3− | | |
| 2006 08 20 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2006 08 20 | 644 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2006 08 21 | 704 | 0.6+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.7+ | 0.1− | | |
| 2006 08 21 | 704 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.7+ | 0.1− | | |
| 2006 08 21 | 704 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1− | | |
| 2006 08 21 | 704 | 1.2+ | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.6− | | | | | | |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.1− | 0.3− | | | | | | |

**2006 QK$_{21}$ = 1999 TT$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.61084 | | (2000.0) | | +0.78424397 | −0.62024912 |
| $n$ | 0.27382391 | $\omega$ | 182.42019 | | +0.56970794 | +0.73000993 |
| $a$ | 2.3486689 | $\Omega$ | 215.92984 | | +0.24575243 | +0.28701312 |
| $e$ | 0.1918576 | $i$ | 1.55153 | | | |
| $P$ | 3.60 | $H$ | 17.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.0 | 0.1− | 1999 10 15 | 704 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.0 | | |
| 1992 11 27 | 691 | 0.0 | 0.2− | 1999 10 15 | 704 | 0.1− | 1.0− | 2006 08 22 | 644 | 0.1+ | 0.5− | | |
| 1992 11 27 | 691 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 08 22 | 644 | 0.4+ | 0.0 | | |
| 1997 01 31 | 691 | 0.4+ | 0.4+ | 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.0 | | |
| 1997 01 31 | 691 | 0.2− | 0.1+ | 2005 04 11 | G96 | 0.7+ | 0.1− | 2006 08 28 | 691 | 0.2+ | 0.0 | | |
| 1997 01 31 | 691 | 0.0 | 0.3+ | 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 08 28 | 691 | 0.3− | 0.3− | | |
| 1999 10 06 | 704 | 0.1+ | 0.3− | 2006 08 19 | 691 | 0.1− | 0.5+ | 2006 08 28 | 703 | 1.2− | 0.2− | | |
| 1999 10 06 | 704 | 0.2+ | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.2+ | | |
| 1999 10 06 | 704 | 0.9+ | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.9− | | |
| 1999 10 06 | 704 | 1.0− | 1.1+ | 2006 08 20 | 644 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.5+ | 1.2+ | | |
| 1999 10 06 | 704 | 0.7− | 0.7+ | 2006 08 20 | 644 | 0.1− | 0.1− | | | | | | |
| 1999 10 15 | 704 | 0.2+ | 0.6+ | 2006 08 20 | 644 | 0.2− | 0.2+ | | | | | | |

**2006 QM$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.54801 | | (2000.0) | | +0.21425947 | +0.97671427 |
| $n$ | 0.22246824 | $\omega$ | 96.64777 | | −0.93404444 | +0.20156321 |
| $a$ | 2.6974746 | $\Omega$ | 185.75987 | | −0.28575140 | +0.07349496 |
| $e$ | 0.0467038 | $i$ | 6.32166 | | | |
| $P$ | 4.43 | $H$ | 15.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.3+ | 0.4− | 2005 03 14 | G96 | 0.4− | 0.1− | 2006 08 19 | 699 | 1.0− | 0.4+ | | |
| 2002 10 11 | 704 | 0.4+ | 0.2+ | 2005 04 11 | G96 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.1− | 0.4+ | | |
| 2002 10 11 | 704 | 0.2− | 0.1− | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 08 19 | 699 | 1.1+ | 0.2+ | | |
| 2002 10 11 | 704 | 0.2+ | 0.4− | 2005 04 11 | G96 | 0.2− | 0.3− | 2006 08 19 | 699 | 0.4− | 0.9+ | | |
| 2002 10 11 | 704 | 0.1− | 0.2+ | 2005 04 11 | G96 | 0.2+ | 0.2− | 2006 08 21 | 644 | 0.0 | 0.3+ | | |
| 2002 10 11 | 704 | 0.8− | 1.1− | 2005 04 27 | 599 | 0.2− | 0.3+ | 2006 08 21 | 644 | 0.2+ | 0.2− | | |
| 2002 10 11 | 704 | 0.4+ | 0.8+ | 2005 04 27 | 599 | 1.0+ | 0.9− | 2006 08 21 | 644 | 0.9+ | 0.5− | | |
| 2002 10 11 | 704 | 0.6− | 0.0 | 2005 04 27 | 599 | 0.1+ | 1.2+ | 2006 08 28 | 703 | 0.7− | 0.3+ | | |
| 2002 10 11 | 704 | 0.5+ | 0.1− | 2005 04 30 | 599 | 0.4− | 1.8− | 2006 08 28 | 703 | 0.8+ | 1.1− | | |
| 2005 03 14 | G96 | 0.0 | 0.1+ | 2005 04 30 | 599 | 0.6+ | 0.1− | 2006 08 28 | 703 | 0.3− | 0.1− | | |
| 2005 03 14 | G96 | 0.1− | 0.1− | 2005 04 30 | 599 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.4− | | |
| 2005 03 14 | G96 | 0.5− | 0.1− | 2005 04 30 | 599 | 0.3− | 0.8+ | | | | | | |

**2006 QO$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.69915 | | (2000.0) | | −0.41675428 | +0.90625575 |
| $n$ | 0.23751954 | $\omega$ | 10.78166 | | −0.84033911 | −0.41380569 |
| $a$ | 2.5822789 | $\Omega$ | 234.62483 | | −0.34662090 | −0.08640234 |
| $e$ | 0.2466911 | $i$ | 4.98318 | | | |
| $P$ | 4.15 | $H$ | 16.6 | $G$ 0.15 | $U$ 5 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.4− | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.3− | | |
| 2002 08 28 | 644 | 0.1− | 0.1− | 2006 08 19 | 699 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.3− | 1.6+ | | |
| 2002 08 28 | 644 | 0.3− | 0.1+ | 2006 08 19 | 699 | 0.6+ | 0.4− | 2006 08 29 | 703 | 0.7− | 0.7− | | |
| 2002 09 13 | 644 | 0.1+ | 0.2− | 2006 08 19 | 699 | 0.5+ | 0.2− | 2006 08 29 | 703 | 0.6− | 0.5+ | | |
| 2002 09 13 | 644 | 0.3+ | 0.1+ | 2006 08 19 | 699 | 1.3− | 0.2+ | 2006 09 16 | 691 | 0.3− | 0.1− | | |
| 2002 09 13 | 644 | 0.4+ | 0.2+ | 2006 08 21 | 644 | 0.6+ | 0.0 | 2006 09 16 | 691 | 0.1− | 0.3+ | | |
| 2006 08 16 | 644 | 0.4+ | 0.0 | 2006 08 21 | 644 | 0.3+ | 0.2+ | 2006 09 16 | 691 | 0.5+ | 0.5− | | |
| 2006 08 16 | 644 | 0.4+ | 0.2− | 2006 08 21 | 644 | 0.3+ | 0.1+ | | | | | | |

**2006 QV$_{21}$ = 2005 EG$_{116}$ = 2005 EE$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.76593 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26515522 | $\omega$ | 295.69768 | | +0.86945286 | +0.49364346 | |
| $a$ | 2.3995838 | $\Omega$ | 34.73121 | | −0.44032894 | +0.79198245 | |
| $e$ | 0.1553311 | $i$ | 1.92919 | | −0.22396907 | +0.35927696 | |
| $P$ | 3.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | G96 | 0.6− | 0.2+ | 2005 03 11 | 691 | 0.3+ | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.0 |
| 2005 03 04 | G96 | 0.6− | 0.1+ | 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 08 20 | 644 | 0.1+ | 0.1− |
| 2005 03 04 | G96 | 0.4+ | 0.3− | 2005 03 11 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 1.2− | 1.2+ |
| 2005 03 04 | G96 | 0.0 | 0.4− | 2006 08 19 | 699 | 0.6+ | 0.5− | 2006 08 23 | 704 | (1.8− | 1.0+) |
| 2005 03 10 | G96 | 0.4− | 0.1− | 2006 08 19 | 699 | 0.5+ | 0.2− | 2006 08 23 | 704 | (2.3− | 2.2+) |
| 2005 03 10 | G96 | 0.6− | 0.4− | 2006 08 19 | 699 | 0.1+ | 0.3− | 2006 08 23 | 704 | (2.2− | 1.1+) |
| 2005 03 10 | G96 | 0.5+ | 0.8+ | 2006 08 19 | 699 | 0.2− | 0.3− | 2006 10 20 | 695 | 0.0 | 0.4+ |
| 2005 03 10 | G96 | 0.5− | 0.4− | 2006 08 20 | 644 | 0.1− | 0.0 | 2006 10 20 | 695 | 0.2− | 0.4+ |

**2006 QZ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.90339 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21363418 | $\omega$ | 19.44489 | | +0.99072516 | +0.09014999 | |
| $a$ | 2.7713342 | $\Omega$ | 334.71647 | | −0.13279392 | +0.80094635 | |
| $e$ | 0.1008593 | $i$ | 13.77128 | | +0.02879987 | +0.59191041 | |
| $P$ | 4.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 30 | 621 | 0.2+ | 0.2+ | 2004 02 13 | 691 | 0.0 | 0.5+ | 2006 08 28 | 699 | 0.0 | 0.5− |
| 1997 07 30 | 621 | 0.0 | 0.2+ | 2006 07 19 | 568 | 0.4− | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.0 |
| 1997 07 30 | 621 | 0.2− | 0.5+ | 2006 07 19 | 568 | 0.5− | 0.4+ | 2006 09 13 | 644 | 0.4+ | 0.1− |
| 1997 07 30 | 621 | 0.1+ | 0.5+ | 2006 07 19 | 568 | 0.5− | 0.4+ | 2006 09 13 | 644 | 0.5− | 0.0 |
| 1997 07 30 | 621 | 0.2− | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | (0.3+ | 1.5−) |
| 1997 07 30 | 621 | 0.9− | 0.1− | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 09 14 | 703 | 1.1+ | 0.1− |
| 1997 07 30 | 621 | 0.4− | 0.0 | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.4− |
| 1997 07 30 | 621 | 0.2− | 0.2+ | 2006 08 19 | 699 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.7− | 1.2− |
| 2002 10 06 | 704 | 1.1− | 0.1+ | 2006 08 19 | 699 | 0.0 | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.4− |
| 2002 10 06 | 704 | 0.7+ | 0.3+ | 2006 08 19 | 699 | 0.3− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2002 10 06 | 704 | 0.0 | 0.1− | 2006 08 19 | 699 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2002 10 06 | 704 | 0.3− | 0.2+ | 2006 08 20 | 644 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2002 11 25 | 644 | 0.5+ | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2002 11 25 | 644 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 11 25 | 644 | 0.2+ | 0.2+ | 2006 08 23 | 704 | (2.0− | 1.1+) | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2004 01 18 | 644 | 0.5+ | 0.1+ | 2006 08 23 | 704 | 0.8+ | 1.0− | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2004 01 18 | 644 | 0.6+ | 0.4+ | 2006 08 23 | 704 | 0.4+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2004 01 18 | 644 | 0.1+ | 0.1− | 2006 08 23 | 704 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2004 02 13 | 691 | 0.6− | 0.9− | 2006 08 28 | 699 | 0.4+ | 1.2− | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.4− |

**2006 QA$_{22}$ = 2004 BL$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.50537 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23376541 | $\omega$ | 292.34775 | | +0.89111043 | −0.45015950 | |
| $a$ | 2.6098520 | $\Omega$ | 94.44632 | | +0.43460809 | +0.81033255 | |
| $e$ | 0.0911578 | $i$ | 3.29243 | | +0.13052971 | +0.37512341 | |
| $P$ | 4.22 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.7− | 1.4+ | 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.3+ |
| 2002 09 05 | 704 | 0.9− | 1.6+ | 2004 02 14 | 691 | 0.3+ | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.0 |
| 2002 09 05 | 704 | 0.9− | 1.6+ | 2004 02 14 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.3+ | 0.3+ |
| 2002 09 05 | 704 | 0.4− | 2.0+ | 2004 02 17 | 645 | 0.1− | 0.1+ | 2006 08 19 | 699 | 0.1+ | 0.9+ |
| 2004 01 19 | 691 | 0.4+ | 0.1+ | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 08 19 | 699 | 1.8− | 0.6+ |
| 2004 01 19 | 691 | 0.1+ | 0.1+ | 2005 04 30 | 691 | 0.1+ | 0.5+ | 2006 08 19 | 699 | 0.4− | 0.1− |
| 2004 01 19 | 691 | 0.0 | 0.2+ | 2005 04 30 | 691 | 0.2+ | 0.5+ | 2006 08 19 | 699 | 0.8+ | 0.7− |
| 2004 01 22 | 704 | 0.1+ | 1.2+ | 2005 04 30 | 691 | 0.1+ | 0.5+ | 2006 08 20 | 644 | 0.2+ | 0.4+ |
| 2004 01 22 | 704 | 0.8+ | 0.6+ | 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 08 20 | 644 | 0.2+ | 0.4+ |
| 2004 01 22 | 704 | 0.8+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 2004 01 22 | 704 | 0.5− | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.4+ | | | | |

**2006 QO$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.44021 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25910343 | $\omega$ | 166.77387 | | +0.19101958 | +0.97896122 | |
| $a$ | 2.4368040 | $\Omega$ | 114.20069 | | −0.90759438 | +0.20398542 | |
| $e$ | 0.1660958 | $i$ | 4.51103 | | −0.37387693 | +0.00498760 | |
| $P$ | 3.80 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 24 | 704 | 1.7− | 0.7− | 2005 03 16 | 703 | 1.2− | 0.2+ | 2006 08 19 | 699 | 0.4+ | 0.3+ |
| 1998 05 24 | 704 | 0.1− | 1.6− | 2005 04 02 | 699 | 1.0− | 1.0− | 2006 08 20 | 644 | 0.5− | 0.1+ |
| 1998 05 24 | 704 | 1.4+ | 1.2+ | 2005 04 02 | 699 | 1.1+ | 1.3+ | 2006 08 20 | 644 | 0.1− | 0.1+ |
| 1998 05 24 | 704 | 0.2+ | 0.1+ | 2005 04 02 | 699 | 0.1+ | 0.2− | 2006 08 20 | 644 | 0.3− | 0.2+ |
| 2003 11 23 | 691 | 0.1− | 0.3− | 2005 04 02 | 699 | 1.5+ | 2.3+ | 2006 08 23 | 704 | 0.1+ | 0.4− |
| 2003 11 23 | 691 | 0.3− | 0.4+ | 2006 07 21 | 704 | 0.4− | 0.4+ | 2006 08 23 | 704 | 0.5+ | 0.1+ |
| 2003 11 23 | 691 | 0.4+ | 0.1+ | 2006 07 21 | 704 | 0.3+ | 0.6+ | 2006 08 23 | 704 | 0.6+ | 0.5− |
| 2005 02 09 | 691 | 0.1− | 0.2+ | 2006 07 21 | 704 | 0.5+ | 0.8+ | 2006 08 28 | 704 | 0.1− | 0.7+ |
| 2005 02 09 | 691 | 0.1+ | 0.0 | 2006 07 21 | 704 | 0.2+ | 0.2− | 2006 08 28 | 704 | 0.5+ | 0.2+ |
| 2005 02 09 | 691 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 08 28 | 704 | 0.3+ | 0.1− |
| 2005 03 12 | 704 | 0.4+ | 0.5+ | 2006 08 18 | 644 | 0.7− | 0.0 | 2006 08 28 | E12 | 0.2+ | 0.5+ |
| 2005 03 12 | 704 | 1.1+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 08 28 | E12 | 0.8− | 0.6+ |
| 2005 03 12 | 704 | 1.0+ | 1.2+ | 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 08 28 | E12 | 0.0 | 0.1− |
| 2005 03 12 | 704 | 0.6+ | 0.7+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 08 28 | E12 | 0.0 | 0.4+ |
| 2005 03 16 | 703 | (0.6+ | 3.3−) | 2006 08 18 | 644 | 0.4− | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.2− |
| 2005 03 16 | 703 | 1.5− | 0.5+ | 2006 08 19 | 699 | 0.8− | 0.4+ | 2006 09 14 | 644 | 0.5− | 0.1+ |
| 2005 03 16 | 703 | 0.3− | 0.2− | 2006 08 19 | 699 | 0.4+ | 0.8+ | 2006 09 14 | 644 | 0.0 | 0.0 |

**2006 QT$_{22}$ = 2004 FP$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.43211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18231032 | $\omega$ | 196.32374 | | +0.98173200 | +0.10389861 | |
| $a$ | 3.0803156 | $\Omega$ | 155.91698 | | −0.09890295 | +0.99433324 | |
| $e$ | 0.0254115 | $i$ | 22.99316 | | −0.16254381 | +0.02250527 | |
| $P$ | 5.41 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.8+ | 0.2− | 2004 03 25 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 699 | 0.6− | 1.2+ |
| 2004 02 23 | 704 | 0.2+ | 0.8− | 2004 03 25 | 704 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 0.3+ | 0.3+ |
| 2004 02 23 | 704 | 1.3+ | 0.1− | 2006 08 19 | 644 | 0.3− | 0.1− | 2006 08 28 | 703 | 1.2− | 0.2− |
| 2004 02 23 | 704 | 0.7+ | 0.2− | 2006 08 19 | 644 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.6− | 0.3+ |
| 2004 02 23 | 704 | 0.4− | 1.0+ | 2006 08 19 | 644 | 0.5− | 0.2− | 2006 08 28 | 703 | 1.0+ | 0.0 |
| 2004 02 23 | 704 | 0.8− | 1.5+ | 2006 08 20 | 644 | 0.1+ | 0.4− | 2006 08 28 | 703 | (5.9− | 3.8+) |
| 2004 02 23 | 704 | 1.0+ | 0.1+ | 2006 08 20 | 644 | 0.3+ | 0.4− | 2006 08 28 | 699 | 0.5− | 0.1+ |
| 2004 02 23 | 704 | 0.7+ | 0.8− | 2006 08 20 | 644 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.2+ | 1.2+ |
| 2004 02 23 | 704 | (2.3− | 0.5+) | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1− | 0.8+ |
| 2004 03 20 | 704 | 1.2− | 0.5− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.4− | 0.3+ |
| 2004 03 20 | 704 | 0.6− | 0.1− | 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 14 | 703 | 1.4+ | 0.5+ |
| 2004 03 20 | 704 | 0.3− | 0.3− | 2006 08 24 | 704 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.7+ | 0.4− |
| 2004 03 22 | 704 | 0.4− | 0.4− | 2006 08 24 | 704 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.5− |
| 2004 03 22 | 704 | 0.8− | 1.0− | 2006 08 24 | 704 | 0.5− | 0.7− | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 2004 03 22 | 704 | 1.4− | 0.5+ | 2006 08 24 | 704 | 0.6+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2004 03 25 | 704 | 0.8+ | 0.6+ | 2006 08 28 | 699 | 0.6+ | 0.2− | | | | |

**2006 QU$_{22}$ = 2005 MT$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.16483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17675662 | $\omega$ | 233.69511 | | +0.83279169 | −0.54544382 | |
| $a$ | 3.1445048 | $\Omega$ | 158.85047 | | +0.55350194 | +0.81743040 | |
| $e$ | 0.2091254 | $i$ | 15.20011 | | +0.00967483 | +0.18519874 | |
| $P$ | 5.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 809 | 0.4− | 0.2− | 2005 06 29 | 691 | 0.0 | 0.1− | 2006 08 24 | 704 | 0.0 | 0.7+ |
| 1995 08 29 | 809 | 0.2− | 0.2− | 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 08 24 | 704 | 0.4+ | 0.3+ |
| 1995 08 30 | 809 | 0.0 | 0.1+ | 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.4+ | 0.5− |
| 1995 08 30 | 809 | 0.6+ | 0.7− | 2005 07 04 | 691 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.1+ | 0.5− |
| 2001 08 20 | 644 | 0.5− | 1.1+ | 2005 07 04 | 691 | 0.3+ | 0.4+ | 2006 08 28 | 703 | (2.5+ | 2.0−) |
| 2001 08 20 | 644 | 0.4− | 0.7+ | 2006 08 18 | 644 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.0 | 0.4+ |
| 2001 08 20 | 644 | 0.1+ | 0.9+ | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 08 28 | 699 | 0.6− | 0.6− |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.8− | 0.0 |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.2− | 1.2+ | 2006 08 28 | 703 | 0.5+ | 0.1− |
| 2001 09 21 | 645 | 0.1+ | 0.1− | 2006 08 19 | 644 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.8+ | 0.3+ |
| 2001 09 21 | 645 | 0.0 | 0.1− | 2006 08 19 | 699 | 1.2− | 0.2− | 2006 08 29 | 704 | 0.5+ | 0.6− |
| 2001 10 14 | 699 | 0.7− | 1.6− | 2006 08 19 | 644 | 0.3− | 0.1− | 2006 08 29 | 704 | 0.1− | 0.2− |
| 2001 10 14 | 699 | 0.4− | 0.3+ | 2006 08 19 | 644 | 0.2+ | 0.1− | 2006 08 29 | 704 | 0.3− | 0.3+ |
| 2001 10 14 | 699 | 0.5− | 0.6+ | 2006 08 19 | 699 | 0.4− | 0.1+ | 2006 09 12 | 699 | 0.4− | 0.2− |
| 2001 10 14 | 699 | 0.1− | 0.9+ | 2006 08 21 | 644 | 0.0 | 0.1+ | 2006 09 12 | 699 | 1.3− | 0.2+ |
| 2001 10 22 | 644 | 0.1+ | 0.9+ | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 09 12 | 699 | 0.5+ | 0.1+ |
| 2001 10 22 | 644 | 0.0 | 0.9+ | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 09 12 | 699 | 0.2− | 1.3− |
| 2001 10 22 | 644 | 0.3+ | 0.8+ | 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2001 11 17 | 699 | 0.1− | 0.6+ | 2006 08 22 | 644 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2001 11 17 | 699 | 1.1− | 0.1− | 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2001 11 17 | 699 | 0.7− | 1.0+ | 2006 08 24 | 704 | 0.0 | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 2001 11 17 | 699 | 0.4+ | 1.5+ | 2006 08 24 | 704 | 0.2+ | 0.6+ | | | | |
| 2005 06 29 | 691 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.1+ | 0.8+ | | | | |

## 2006 $QV_{22}$ = 2004 $BQ_{159}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.78500 | | (2000.0) | | +0.98697106 | −0.15958719 |
| $n$ | 0.21545847 | $\omega$ | 209.27022 | | +0.15676953 | +0.92514312 |
| $a$ | 2.7556687 | $\Omega$ | 159.88177 | | +0.03621390 | +0.34444469 |
| $e$ | 0.3134531 | $i$ | 3.41610 | | | |
| $P$ | 4.57 | $H$ | 17.2 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 20 | 309 | 0.2+ | 0.0 | 2006 08 27 | 691 | 0.5− | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.3+ |
| 2004 01 20 | 309 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.8+ | 0.3− |
| 2004 01 22 | 309 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2004 01 22 | 309 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 29 | 704 | 0.5+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.9− |
| 2006 08 19 | 691 | 0.1− | 0.2− | 2006 08 29 | 704 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3+ |
| 2006 08 21 | 704 | 1.3+ | 0.9+ | 2006 08 29 | 704 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2006 08 21 | 704 | 0.0 | 0.5− | 2006 08 29 | 704 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2006 08 21 | 704 | 0.6− | 1.2− | 2006 08 30 | 704 | (1.1+ | 2.0+) | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2006 08 21 | 644 | 0.4− | 0.4+ | 2006 08 30 | 704 | (0.2− | 1.7+) | 2006 11 17 | G96 | 0.2+ | 0.5+ |
| 2006 08 21 | 644 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.3+ |
| 2006 08 21 | 644 | 0.1+ | 0.4+ | 2006 08 30 | 704 | (0.0 | 1.9−) | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.8− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.5+ | | | | |

## 2006 $QY_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 356.31540 | | (2000.0) | | +0.97767411 | −0.20967451 |
| $n$ | 0.29917234 | $\omega$ | 19.52690 | | +0.17591719 | +0.85261139 |
| $a$ | 2.2140551 | $\Omega$ | 352.53589 | | +0.11491945 | +0.47863391 |
| $e$ | 0.2475637 | $i$ | 6.09000 | | | |
| $P$ | 3.29 | $H$ | 17.3 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 03 | 704 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.5− |
| 2003 12 03 | 704 | 0.5− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2003 12 03 | 704 | 0.4− | 0.6− | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.2+ |
| 2003 12 29 | 704 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.1− | 0.5− |
| 2003 12 29 | 704 | 0.1− | 0.6− | 2006 09 17 | 703 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.4− | 0.1+ |
| 2003 12 29 | 704 | 0.5− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2003 12 29 | 704 | 0.4+ | 0.3+ | 2006 09 18 | 704 | 0.3+ | 0.6− | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2003 12 30 | 704 | (2.1− | 0.1+) | 2006 09 18 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2003 12 30 | 704 | 0.9+ | 0.3− | 2006 09 18 | 704 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.4+ | 1.6+ |
| 2003 12 30 | 704 | 0.1− | 0.7+ | 2006 09 18 | 704 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2003 12 30 | 704 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2006 08 19 | 699 | 0.6− | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2006 08 19 | 699 | 0.5− | 0.6− | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 08 19 | 699 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2006 08 19 | 699 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 08 21 | 704 | 0.9+ | 0.3+ | 2006 09 21 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2006 08 21 | 704 | 1.0+ | 0.9− | 2006 09 21 | 704 | 1.2+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 08 21 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 704 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 08 21 | 704 | 0.1+ | 1.0− | 2006 09 21 | A50 | 0.8+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 08 21 | 704 | 0.2− | 0.8− | 2006 09 22 | A50 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 08 28 | 704 | 0.6− | 0.4+ | 2006 09 25 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 08 28 | 704 | 0.3− | 0.3− | 2006 09 25 | 704 | 0.5+ | 0.3+ | 2006 11 25 | 703 | 0.6− | 1.4− |
| 2006 08 28 | 704 | 1.2− | 1.1+ | 2006 09 25 | 704 | 0.6+ | 0.6+ | 2006 11 25 | 703 | 0.4− | 0.0 |
| 2006 08 28 | 704 | 0.5+ | 0.7+ | 2006 09 25 | 704 | 1.0+ | 0.4− | 2006 11 25 | 703 | 1.3− | 0.7− |
| 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 25 | 703 | 0.5− | 0.5− |
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.5+ | 0.6+ |
| 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 1.7+ | 0.1− |
| 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 09 27 | 699 | (2.0+ | 0.4−) | 2006 11 28 | 704 | 0.1+ | 0.3+ |
| 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.0 | 0.3− | | | | |
| 2006 09 17 | 703 | 0.4− | 0.6− | 2006 09 27 | 699 | 1.0− | 0.2+ | | | | |

## 2006 $QA_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.65088 | | (2000.0) | | +0.99591560 | +0.09019473 |
| $n$ | 0.21792864 | $\omega$ | 352.42618 | | −0.07683906 | +0.87067721 |
| $a$ | 2.7348059 | $\Omega$ | 2.41059 | | −0.04741186 | +0.48351433 |
| $e$ | 0.3240264 | $i$ | 5.63186 | | | |
| $P$ | 4.52 | $H$ | 15.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 566 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.6− | 0.0 | 2006 10 13 | 644 | 0.0 | 0.1− |
| 1997 10 29 | 566 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.1+ | 0.6+ | 2006 10 13 | 644 | 0.1+ | 0.0 |
| 1997 10 29 | 566 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2000 04 05 | 691 | 0.2− | 0.4− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2000 04 05 | 691 | 0.4− | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2000 04 05 | 691 | 0.2− | 0.6− | 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2003 01 05 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2003 01 05 | 704 | 0.5+ | 1.1+ | 2006 09 17 | 704 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.5+ | 0.2− |
| 2003 01 05 | 704 | 1.0+ | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2003 01 05 | 704 | 0.0 | 1.5+ | 2006 09 17 | 704 | 0.5− | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2005 01 20 | 809 | 0.6− | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 19 | 704 | (1.7+ | 0.4−) |
| 2005 01 20 | 809 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 19 | 704 | 0.2+ | 0.8− |
| 2005 01 20 | 809 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 19 | 704 | 0.6− | 0.8+ |
| 2006 07 21 | 704 | 0.9+ | 1.3+ | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 704 | 0.4− | 0.6+ |
| 2006 07 21 | 704 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.2− | 2006 10 19 | 704 | 1.0− | 1.0+ |
| 2006 07 21 | 704 | (1.1− | 1.7−) | 2006 09 20 | 704 | (3.0+ | 1.0−) | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.8− | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.5− |
| 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 21 | A50 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.2− | 0.3− |
| 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 22 | A50 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2006 08 19 | 699 | 0.1+ | 0.4− | 2006 09 25 | H51 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2006 08 19 | 699 | 0.5− | 0.5− | 2006 09 25 | H51 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2006 08 19 | 699 | 0.0 | 0.1− | 2006 09 25 | H51 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2006 08 19 | 699 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2006 08 21 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 08 21 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2006 08 21 | 704 | 0.5− | 1.0+ | 2006 09 27 | 704 | 0.6− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2006 08 21 | 704 | 0.1− | 0.7+ | 2006 09 27 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 08 25 | 704 | 0.4+ | 0.9+ | 2006 09 27 | 704 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 08 25 | 704 | 0.5− | 1.2+ | 2006 09 27 | 704 | 0.5− | 0.0 | 2006 10 24 | 704 | 0.4− | 0.1− |
| 2006 08 25 | 704 | (0.5− | 1.7+) | 2006 09 27 | 704 | 0.6+ | 0.2− | 2006 10 24 | 704 | 0.6− | 0.0 |
| 2006 08 25 | 704 | 0.2− | 1.2+ | 2006 09 29 | 704 | 0.1+ | 0.1− | 2006 10 24 | 704 | 1.0− | 0.2+ |
| 2006 08 25 | 704 | 0.3− | 1.3+ | 2006 09 29 | 704 | 0.0 | 0.1+ | 2006 10 29 | 704 | 1.5+ | 0.0 |
| 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.0 | 0.5− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.4+ | 0.4− |
| 2006 09 06 | 644 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.1− | 0.1+ | 2006 10 29 | 704 | 0.9+ | 0.5− |
| 2006 09 06 | 644 | 0.4− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.3− | 0.1− |
| 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2006 09 06 | 644 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 11 06 | 644 | 0.5− | 0.1+ |
| 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2006 09 14 | 703 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.1+ | 0.3− |
| 2006 09 14 | 703 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.2− | 0.1+ |
| 2006 09 14 | 703 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2006 09 15 | 704 | 0.6+ | 1.4− | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2006 09 15 | 704 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.2− |
| 2006 09 15 | 704 | 0.0 | 0.4+ | 2006 10 13 | 644 | 0.0 | 0.3+ | | | | |

**2006 QB$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.64754 | | (2000.0) | | | |
| $n$ | 0.23008932 | $\omega$ | 333.68960 | | +0.92809259 | +0.37175962 |
| $a$ | 2.6375765 | $\Omega$ | 4.63889 | | −0.27930282 | +0.73227794 |
| $e$ | 0.2654050 | $i$ | 15.01379 | | −0.24623990 | +0.57058198 |
| $P$ | 4.28 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 09 28 | 683 | 0.3− | 0.3− |
| 2002 10 31 | 704 | 0.9+ | 1.3− | 2006 09 14 | 703 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.3+ |
| 2002 10 31 | 704 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 09 29 | 704 | 0.1+ | 0.3− |
| 2002 10 31 | 704 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.2− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.5+ | 1.1+ | 2006 09 29 | 704 | 0.4− | 0.2− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.5− | 0.5+ | 2006 09 30 | 683 | 0.2+ | 0.2− |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 30 | 683 | 0.3+ | 0.7+ |
| 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2006 08 19 | 699 | (2.4− | 1.4−) | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.4+ | 0.5+ |
| 2006 08 19 | 699 | 0.3− | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.8− | 0.4+ |
| 2006 08 19 | 699 | 0.8− | 0.8+ | 2006 09 18 | 704 | 0.3− | 0.1− | 2006 10 03 | 704 | 0.1+ | 1.0+ |
| 2006 08 19 | 699 | 0.1+ | 0.5− | 2006 09 18 | 704 | 0.1+ | 0.6+ | 2006 10 03 | 704 | 0.4+ | 0.1− |
| 2006 08 21 | 704 | 0.0 | 1.0− | 2006 09 18 | 704 | 0.2+ | 0.2+ | 2006 10 03 | 704 | 0.5+ | 0.8+ |
| 2006 08 21 | 704 | 0.5− | 1.1+ | 2006 09 18 | 704 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2006 08 21 | 704 | 0.3+ | 1.1+ | 2006 09 18 | 704 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2006 08 21 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 699 | 1.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2006 08 25 | 704 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 10 15 | 185 | 0.2− | 0.4− |
| 2006 08 25 | 704 | 0.1− | 0.6− | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 15 | 185 | 1.2− | 0.1− |
| 2006 08 25 | 704 | 0.9− | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2006 08 25 | 704 | 0.2− | 0.5− | 2006 09 20 | 608 | 0.3+ | 1.0− | 2006 10 17 | 703 | 1.0− | 0.7− |
| 2006 08 25 | 704 | 0.7− | 0.0 | 2006 09 20 | 608 | 0.3+ | 0.8− | 2006 10 17 | 703 | 0.7− | 0.1− |
| 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 09 20 | 608 | 0.5+ | 1.3− | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2006 08 28 | 703 | 0.7− | 0.3− | 2006 09 21 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2006 08 28 | 703 | 0.5− | 0.3− | 2006 09 21 | 704 | 0.3+ | 0.6− | 2006 10 19 | 644 | 0.8+ | 0.2− |
| 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 21 | 704 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2006 08 31 | 704 | 1.2+ | 0.2+ | 2006 09 25 | 704 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.8− |
| 2006 08 31 | 704 | (1.6+ | 0.4+) | 2006 09 25 | 704 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 08 31 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 704 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2006 08 31 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.2− | 2006 10 26 | 704 | 0.1− | 1.2+ |
| 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.8+ | 0.5− | 2006 10 26 | 704 | 0.5− | 0.1− |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 27 | 683 | 0.2+ | 0.7− | 2006 10 26 | 704 | (1.5− | 1.1+) |
| 2006 09 06 | 644 | 0.0 | 0.2− | 2006 09 27 | 683 | 0.7− | 0.1+ | 2006 10 26 | 704 | 0.4− | 0.8+ |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 27 | 683 | 1.0− | 0.4+ | 2006 10 26 | 704 | 0.2− | 0.8+ |
| 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 28 | 683 | 0.5+ | 0.4+ | | | | |
| 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 28 | 683 | 0.3+ | 1.1+ | | | | |

**2006 QC$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 348.82558 | | (2000.0) | | | |
| $n$ | 0.28127384 | $\omega$ | 336.79126 | | +0.98823856 | −0.11514474 |
| $a$ | 2.3070118 | $\Omega$ | 30.35746 | | +0.15163528 | +0.82298852 |
| $e$ | 0.1383196 | $i$ | 11.48497 | | −0.01978125 | +0.55626575 |
| $P$ | 3.50 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.2+ | 0.6− | 2006 08 19 | 644 | 0.1+ | 0.7+ | 2006 09 26 | 703 | 1.2+ | 1.5− |
| 1999 10 16 | 704 | 0.6+ | 0.4+ | 2006 08 20 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.6− | 0.7+ |
| 1999 10 16 | 704 | 0.6− | 0.3− | 2006 08 20 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.9+ |
| 2003 11 19 | 704 | 1.2+ | 0.9+ | 2006 08 20 | 644 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 2003 11 19 | 704 | 0.1− | 0.9+ | 2006 09 18 | D35 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.6+ | 0.4− |
| 2003 11 19 | 704 | 0.7+ | 0.2+ | 2006 09 18 | D35 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2003 11 19 | 704 | 1.5− | 1.2+ | 2006 09 18 | D35 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.0 |
| 2005 04 01 | 691 | 0.7+ | 0.8+ | 2006 09 20 | 703 | 0.8− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.4− |
| 2005 04 01 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.3− | 0.4+ | 2006 09 26 | 703 | 1.1− | 0.1− |
| 2005 04 01 | 691 | 0.0 | 0.3− | 2006 09 20 | 703 | 0.9− | 0.5− | 2006 09 26 | 703 | 0.9− | 0.5+ |
| 2005 05 06 | G96 | 0.3− | 0.7+ | 2006 09 20 | 703 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.6+ |
| 2005 05 06 | G96 | 0.1− | 0.6+ | 2006 09 21 | 699 | (2.9+ | 0.3−) | 2006 11 25 | G96 | 0.1− | 0.3+ |
| 2005 05 06 | G96 | 0.0 | 0.7+ | 2006 09 21 | 699 | (1.7+ | 0.1−) | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2005 05 06 | G96 | 0.8− | 0.1− | 2006 09 21 | 699 | 0.9+ | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.2+ |
| 2006 08 19 | 644 | 0.4+ | 0.7+ | 2006 09 21 | 699 | 1.0+ | 0.7− | | | | |
| 2006 08 19 | 644 | 0.2− | 0.6+ | 2006 09 26 | 703 | 1.2− | 0.2+ | | | | |

**2006 QE$_{23}$ = 1995 UX$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.26564 | | (2000.0) | | | |
| $n$ | 0.26703091 | $\omega$ | 306.53750 | | +0.94051181 | +0.33131801 |
| $a$ | 2.3883338 | $\Omega$ | 34.29619 | | −0.25306690 | +0.83094562 |
| $e$ | 0.1663241 | $i$ | 7.67691 | | −0.22670395 | +0.44694267 |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1+ | 0.2+ | 2006 08 19 | 644 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.7+ |
| 1995 10 20 | 691 | 0.2+ | 0.3+ | 2006 08 21 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 1.2+ |
| 1995 10 20 | 691 | 0.2+ | 0.2+ | 2006 08 21 | 644 | 0.6− | 0.1+ | 2006 09 30 | 703 | (2.0+ | 1.3−) |
| 1995 10 26 | 691 | 0.2− | 0.0 | 2006 08 21 | 644 | 0.6− | 0.2− | 2006 09 30 | 703 | 0.9+ | 0.3− |
| 1995 10 26 | 691 | 0.3− | 0.3− | 2006 08 28 | 699 | 0.8− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 1995 10 26 | 691 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 1999 12 07 | 703 | 0.6+ | 1.2+ | 2006 08 28 | 699 | (1.4− | 1.5+) | 2006 10 10 | 644 | 0.2− | 0.0 |
| 1999 12 07 | 703 | 0.1− | 0.3− | 2006 08 28 | 699 | 0.7− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 1999 12 07 | 703 | 0.2+ | 0.3− | 2006 09 17 | 699 | 0.2+ | 1.0+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 1999 12 07 | 703 | 0.1− | 0.1− | 2006 09 17 | 699 | 1.3+ | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.8− |
| 2003 12 27 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 699 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.5+ | 0.3+ |
| 2003 12 27 | 691 | 0.0 | 0.0 | 2006 09 17 | 608 | (0.3+ | 2.2−) | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2003 12 27 | 691 | 0.2− | 0.5+ | 2006 09 17 | 608 | (0.3+ | 2.4−) | 2006 10 16 | 703 | 0.8− | 1.1− |
| 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 09 17 | 608 | (0.6+ | 2.0−) | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2005 03 09 | G96 | (1.9− | 0.6+) | 2006 09 19 | A13 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2005 03 09 | G96 | 0.1− | 0.6+ | 2006 09 19 | A13 | 0.6− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.5− |
| 2005 03 09 | G96 | 0.0 | 0.2− | 2006 09 20 | A13 | 1.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 04 01 | 691 | 0.6+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2005 04 01 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 04 01 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2005 04 10 | G96 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.7− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 09 22 | 704 | (0.9− | 1.6+) | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2005 04 10 | G96 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.7− | 0.8+ | 2006 10 23 | 644 | 0.5− | 0.1− |
| 2005 05 06 | G96 | 0.0 | 0.2+ | 2006 09 22 | 608 | 0.5+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2005 05 06 | G96 | 0.6+ | 1.0+ | 2006 09 22 | 608 | 0.8+ | 0.5− | 2006 11 10 | 704 | 1.2+ | 0.0 |
| 2005 05 06 | G96 | 0.3− | 0.3+ | 2006 09 22 | 608 | 0.7+ | 0.5− | 2006 11 10 | 704 | 0.5+ | 0.4+ |
| 2005 05 06 | G96 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.5− | 1.0+ | 2006 11 10 | 704 | 0.9− | 0.9+ |
| 2006 08 19 | 644 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.7+ | 0.2− | | | | |
| 2006 08 19 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | (1.6− | 0.3+) | | | | |

### 2006 QK$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.29148 | | (2000.0) | | | |
| $n$ | 0.22664162 | $\omega$ | 148.08440 | | +0.87659663 | +0.48116399 |
| $a$ | 2.6642579 | $\Omega$ | 183.18404 | | −0.46556180 | +0.84389548 |
| $e$ | 0.2449709 | $i$ | 7.98704 | | −0.12178080 | +0.23732180 |
| $P$ | 4.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | (0.1+ | 1.8+) | 2006 08 21 | 958 | 0.5+ | 0.3− | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2002 10 02 | 704 | 0.3+ | 0.0 | 2006 08 22 | 958 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.4+ |
| 2002 10 02 | 704 | 0.2+ | 0.5+ | 2006 08 23 | 958 | 0.8+ | 0.8+ | 2006 09 14 | 703 | 0.8− | 1.2− |
| 2002 10 30 | 644 | 0.2− | 0.2+ | 2006 08 23 | 958 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.8− | 0.8− |
| 2002 10 30 | 644 | 0.2− | 0.1+ | 2006 08 24 | 608 | 0.8− | 0.9− | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 2002 10 30 | 644 | 0.1− | 0.3− | 2006 08 24 | 608 | 0.2− | 0.8− | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2002 11 06 | 699 | 0.5− | 1.0+ | 2006 08 24 | 608 | 0.1− | 0.9− | 2006 09 15 | 691 | 0.2+ | 0.2+ |
| 2002 11 06 | 699 | 0.2+ | 0.9− | 2006 08 28 | 699 | 0.0 | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2002 11 06 | 699 | 1.1− | 0.0 | 2006 08 28 | 699 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 11 06 | 699 | 1.1+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.9− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 24 | 699 | 1.0+ | 0.6− |
| 2002 11 13 | 644 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.2− | 0.2− | 2006 09 24 | 699 | 0.9+ | 1.0+ |
| 2002 11 13 | 644 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.5+ | 1.1− | 2006 09 24 | 699 | 1.1+ | 0.3− |
| 2006 07 21 | 644 | 0.2+ | 0.2− | 2006 08 29 | 703 | 0.1− | 0.4− | 2006 09 24 | 699 | 0.2− | 0.2+ |
| 2006 07 21 | 644 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2006 07 21 | 644 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.5− | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2006 08 16 | 644 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.3− | 0.8+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2006 08 16 | 644 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2006 08 20 | 958 | 0.2+ | 0.1− | 2006 08 30 | 704 | 0.4− | 0.7+ | 2006 11 13 | G96 | 0.4− | 0.7− |
| 2006 08 20 | 958 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 1.3− |
| 2006 08 20 | 958 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.3+ | 2006 11 13 | G96 | (0.6+ | 2.0−) |
| 2006 08 21 | 958 | 0.5+ | 0.1− | 2006 08 30 | 704 | 0.9− | 1.1+ | | | | |
| 2006 08 21 | 958 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.6− | 0.4+ | | | | |

### 2006 QM$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.22690 | | (2000.0) | | | |
| $n$ | 0.22094747 | $\omega$ | 60.99247 | | +0.95036611 | −0.30749206 |
| $a$ | 2.7098382 | $\Omega$ | 316.86752 | | +0.25582046 | +0.85909269 |
| $e$ | 0.1767539 | $i$ | 3.98092 | | +0.17708796 | +0.40915570 |
| $P$ | 4.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 09 | 691 | 0.1+ | 0.1− | 2006 08 22 | 198 | 0.3+ | 0.0 | 2006 09 09 | A44 | 0.1+ | 0.6− |
| 1993 11 09 | 691 | 0.4− | 0.1+ | 2006 08 22 | 198 | 0.5+ | 0.0 | 2006 09 09 | A44 | 0.1+ | 0.2− |
| 1993 11 09 | 691 | 0.1+ | 0.2− | 2006 08 22 | 198 | 0.1+ | 0.2+ | 2006 09 09 | A44 | 0.2− | 0.0 |
| 1997 08 12 | 691 | 0.0 | 0.6− | 2006 08 22 | 198 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.9− | 0.9+ |
| 1997 08 12 | 691 | 0.3+ | 0.4− | 2006 08 22 | 198 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.2+ | 0.5− |
| 1997 08 12 | 691 | 0.9+ | 1.0− | 2006 08 22 | 198 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.4− | 1.2− |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 08 22 | 198 | 0.3+ | 0.1+ | 2006 09 17 | 703 | (1.7+ | 0.2−) |
| 2002 11 24 | 644 | 0.9+ | 0.5− | 2006 08 23 | A44 | 0.4+ | 0.3− | 2006 09 23 | 198 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.6+ | 0.0 | 2006 08 23 | A44 | 0.2− | 0.6− | 2006 09 23 | 198 | 0.2− | 0.6+ |
| 2002 12 06 | 704 | 0.6− | 0.2+ | 2006 08 23 | A44 | 0.2− | 0.5− | 2006 09 23 | 198 | 0.2− | 0.6+ |
| 2002 12 06 | 704 | 0.2+ | 0.7− | 2006 08 26 | A44 | 0.1− | 0.2− | 2006 09 23 | 198 | 0.6− | 0.7+ |
| 2002 12 06 | 704 | 0.0 | 0.3+ | 2006 08 26 | A44 | 0.1− | 0.2+ | 2006 09 24 | 198 | 0.7− | 1.0+ |
| 2002 12 06 | 704 | 0.1− | 0.6− | 2006 08 26 | A44 | 0.4− | 0.2+ | 2006 09 24 | 198 | 0.4− | 1.3+ |
| 2006 08 20 | 198 | 0.0 | 0.3+ | 2006 09 01 | 198 | 0.1+ | 0.8+ | 2006 09 24 | 198 | (0.4− | 1.5+) |
| 2006 08 20 | 198 | 0.1+ | 0.2+ | 2006 09 01 | A44 | 0.2− | 1.2+ | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 2006 08 20 | 198 | 0.1+ | 0.2+ | 2006 09 01 | A44 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.4+ | 0.3− |
| 2006 08 20 | 198 | 0.1+ | 0.2+ | 2006 09 01 | 198 | 0.1+ | 0.9+ | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2006 08 20 | 198 | 0.1+ | 0.2+ | 2006 09 01 | 198 | 0.3+ | 0.9+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2006 08 21 | 291 | 0.7− | 0.0 | 2006 09 04 | 198 | 0.2− | 0.1+ | 2006 10 24 | 198 | 0.5+ | 0.0 |
| 2006 08 21 | 291 | 0.4− | 0.1+ | 2006 09 04 | 198 | 0.8+ | 0.4+ | 2006 10 24 | 198 | 0.4+ | 0.1+ |
| 2006 08 21 | 291 | 0.6− | 0.1+ | 2006 09 04 | 198 | 0.7+ | 0.4+ | 2006 10 24 | 198 | 0.5+ | 0.2+ |

### 2006 QT$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.56745 | | (2000.0) | | | |
| $n$ | 0.26544432 | $\omega$ | 339.83964 | | +0.95778874 | +0.28740228 |
| $a$ | 2.3978413 | $\Omega$ | 3.47674 | | −0.24722991 | +0.83482592 |
| $e$ | 0.1514348 | $i$ | 6.03643 | | −0.14669053 | +0.46953765 |
| $P$ | 3.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 08 | 691 | 0.2+ | 0.1+ | 2006 08 23 | 673 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.6− | 0.3+ |
| 1991 09 08 | 691 | 0.2− | 0.3+ | 2006 08 23 | 673 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.1+ | 1.1− |
| 1991 09 08 | 691 | 0.2− | 0.0 | 2006 08 23 | 673 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 08 11 | 644 | 0.0 | 0.0 | 2006 08 28 | 673 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.2− |
| 2002 08 11 | 644 | 0.3+ | 0.2+ | 2006 08 28 | 673 | 0.6+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 08 11 | 644 | 0.3− | 0.0 | 2006 08 28 | 673 | 0.9+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.9− |
| 2002 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.1− | 1.0− |
| 2002 08 16 | 644 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2002 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.5− | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.8+ |
| 2002 08 30 | 644 | 0.2+ | 0.6− | 2006 09 18 | 699 | (0.1+ | 1.5+) | 2006 10 17 | 703 | 0.3− | 1.1+ |
| 2002 08 30 | 644 | 0.2− | 0.6− | 2006 09 18 | 699 | (2.1+ | 1.2−) | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2005 03 17 | G96 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2005 03 17 | G96 | 0.6− | 0.0 | 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2005 03 17 | G96 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.6− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2005 03 17 | G96 | 0.4+ | 0.8− | 2006 09 20 | 704 | 0.9+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2006 08 22 | 673 | 0.6+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2006 08 22 | 673 | 0.8+ | 0.0 | 2006 09 29 | 704 | 0.4− | 0.5+ | | | | |
| 2006 08 22 | 673 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 1.1− | 1.1− | | | | |

### 2006 QY$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.23711 | | (2000.0) | | | |
| $n$ | 0.21238336 | $\omega$ | 288.59616 | | +0.59048435 | +0.79969187 |
| $a$ | 2.7822045 | $\Omega$ | 18.87214 | | −0.55359326 | +0.49937746 |
| $e$ | 0.3201051 | $i$ | 19.64153 | | −0.58725015 | +0.33333927 |
| $P$ | 4.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 01 | 910 | 1.0+ | 0.7− | 2006 08 23 | F84 | 0.1− | 0.0 | 2006 09 26 | 703 | (1.7+ | 0.2−) |
| 1997 09 01 | 910 | 0.8+ | 0.8− | 2006 08 23 | F84 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.6+ | 0.7+ |
| 1997 09 01 | 910 | 0.5+ | 0.9− | 2006 08 23 | F84 | 0.2− | 0.1− | 2006 09 28 | 608 | (0.3+ | 1.9−) |
| 2003 01 28 | 645 | 0.1+ | 0.0 | 2006 09 03 | F84 | 0.1+ | 0.6+ | 2006 09 28 | 608 | (0.1− | 2.1−) |
| 2003 01 28 | 645 | 0.1+ | 0.0 | 2006 09 03 | F84 | 0.2− | 0.1+ | 2006 09 28 | 608 | (0.3− | 1.7−) |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2006 09 03 | F84 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2003 02 01 | 645 | 0.2− | 0.1+ | 2006 09 12 | F84 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2006 06 01 | E12 | 0.2+ | 0.3− | 2006 09 12 | F84 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2006 06 01 | E12 | 1.0+ | 0.6− | 2006 09 20 | 703 | 0.1+ | 0.1− | 2006 11 27 | 703 | 1.1− | 1.5− |
| 2006 06 01 | E12 | 0.6− | 0.4+ | 2006 09 20 | 703 | 0.5− | 0.1+ | 2006 11 27 | 703 | 1.1+ | 1.4+ |
| 2006 06 01 | E12 | 0.2− | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.5+ | 1.1+ |
| 2006 08 22 | F84 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.2− | 0.4− | 2006 11 27 | 703 | 0.5− | 0.2− |
| 2006 08 22 | F84 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.6− | 0.0 | | | | |
| 2006 08 22 | F84 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.3− | 1.1+ | | | | |

### 2006 QA$_{24}$ = 2006 QT$_{181}$ = 1999 TD$_{332}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 49.67366 | | (2000.0) | | | |
| $n$ | 0.26711660 | $\omega$ | 297.37369 | | −0.04205609 | +0.99845663 |
| $a$ | 2.3878230 | $\Omega$ | 330.14856 | | −0.88900490 | −0.05396435 |
| $e$ | 0.2154601 | $i$ | 4.17890 | | −0.45596226 | +0.01312255 |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | (1.6− | 3.2+) | 2005 03 04 | 691 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.5+ |
| 1998 03 20 | 704 | (1.9+ | 3.7+) | 2005 03 04 | 691 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.2+ |
| 1998 03 20 | 704 | 1.2− | 0.1+ | 2005 03 04 | 691 | 0.6+ | 0.4+ | 2006 08 28 | 699 | 0.7− | 0.0 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | (2.3− | 1.8+) | 2005 03 04 | G96 | 0.6− | 0.4+ | 2006 08 29 | 704 | 0.9+ | 1.1+ | 1999 10 15 | 704 | 0.1− | 0.6+ | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.3+ |
| 1998 03 23 | 691 | (3.2+ | 3.1−) | 2005 03 04 | G96 | 0.4− | 0.0 | 2006 08 29 | 704 | (0.7− | 1.7+) | 1999 10 15 | 704 | 0.4+ | 1.5+ | 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.8+ |
| 1998 03 23 | 691 | 0.1+ | 0.9+ | 2005 03 04 | G96 | 0.3− | 0.1− | 2006 08 29 | 704 | 1.1+ | 0.1+ | 1999 10 15 | 704 | 0.6− | 0.4+ | 2006 09 17 | 704 | 0.7+ | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.5+ |
| 1998 03 23 | 691 | 0.3+ | 0.9+ | 2005 03 04 | G96 | 0.3− | 0.2− | 2006 08 29 | 704 | 0.0 | 0.9+ | 1999 10 15 | 704 | 1.3+ | 1.0− | 2006 09 18 | 699 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 1998 03 28 | 910 | 1.0+ | 0.8+ | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 12 | 699 | 0.0 | 1.3+ | 1999 11 04 | 704 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.6+ |
| 1998 03 28 | 910 | 1.1+ | 0.1− | 2006 07 25 | 644 | 0.1+ | 0.3+ | 2006 09 12 | 699 | 0.1+ | 0.1− | 1999 11 04 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3− | 0.3+ |
| 1998 03 29 | 910 | 1.1+ | 0.6− | 2006 07 25 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 699 | 0.3+ | 0.4+ | 1999 11 04 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 08 17 | A50 | 1.0− | 0.7+ | 2006 09 12 | 699 | 1.0+ | 0.3− | 1999 11 04 | 704 | 1.4− | 0.4− | 2006 09 20 | 704 | (2.3− | 1.0+) | 2006 10 02 | G96 | 0.0 | 0.5− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 08 17 | A50 | 0.6− | 0.4+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 1999 11 04 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 704 | (1.8− | 0.3+) | 2006 10 02 | G96 | 0.0 | 0.4− |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2006 08 17 | A50 | 0.3− | 1.2+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 20 | 704 | (2.0− | 0.6+) | 2006 10 02 | G96 | 0.0 | 0.4− |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2006 08 18 | A50 | 0.3− | 1.3+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2005 03 10 | G96 | 0.6− | 0.3+ | 2006 09 20 | 704 | 1.2− | 0.8+ | 2006 10 09 | 644 | 0.3− | 0.2− |
| 2003 11 21 | 644 | 0.3− | 0.7+ | 2006 08 19 | 699 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2005 03 10 | G96 | 0.6− | 0.5+ | 2006 09 20 | 704 | (2.2− | 0.8+) | 2006 10 09 | 644 | 0.4− | 0.1− |
| 2003 11 21 | 644 | 0.3+ | 0.6+ | 2006 08 19 | 699 | 0.3− | 1.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2005 03 10 | G96 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2003 11 21 | 644 | 0.1− | 0.8+ | 2006 08 19 | 699 | 1.0− | 1.2+ | 2006 09 26 | G96 | 0.1− | 0.5− | 2005 04 04 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2003 12 01 | 691 | 0.2+ | 0.2+ | 2006 08 19 | 699 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2005 04 04 | 691 | 0.2+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2003 12 01 | 691 | 0.2− | 0.2+ | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.4− | 2005 04 04 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 291 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2003 12 01 | 691 | 0.2− | 0.3+ | 2006 08 21 | 644 | 0.2− | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.1+ | 2005 04 09 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 291 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2005 01 16 | 691 | 0.0 | 0.2+ | 2006 08 21 | 644 | 0.6− | 0.7+ | 2006 10 19 | G96 | 0.3− | 0.8− | 2005 04 09 | 691 | 0.2+ | 0.1+ | 2006 09 24 | 291 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2005 01 16 | 691 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.1− | 0.8+ | 2006 10 19 | G96 | 0.4+ | 0.4− | 2005 04 09 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2005 01 16 | 691 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.1− | 1.0+ | 2006 11 16 | G96 | 0.4− | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 02 04 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.6− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2005 02 04 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.2− | 2006 08 17 | 644 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 02 04 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 699 | 0.7− | 0.4− | 2006 11 16 | G96 | 0.7− | 0.3− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| | | | | | | | | | | | | 2006 08 22 | 644 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| **2006 QH$_{24}$** | | | | | | | | | | | | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC | | | | | | | | | | | | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.5− |
| $M$ 46.37095 (2000.0) **P** **Q** | | | | | | | | | | | | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.2+ | 1.0+ | | | | |
| $n$ 0.27146792 $\omega$ 262.18983 +0.21800640 +0.97579090 | | | | | | | | | | | | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ | | | | |
| $a$ 2.3622383 $\Omega$ 20.42759 −0.87452756 +0.20326747 | | | | | | | | | | | | | | | | | | | | | | | |
| $e$ 0.1743568 $i$ 2.86964 −0.43321444 +0.08071212 | | | | | | | | | | | | **2006 QT$_{24}$ = 1992 SH$_{21}$ = 2001 OE$_{38}$** | | | | | | | | | | | |
| $P$ 3.63 $H$ 16.9 $G$ 0.15 $U$ 2 | | | | | | | | | | | | Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC | | | | | | | | | | | |
| Residuals in seconds of arc | | | | | | | | | | | | $M$ 328.35416 (2000.0) **P** **Q** | | | | | | | | | | | |
| 1998 03 29 | 704 | 0.0 | 0.6− | 2006 08 16 | 644 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.1− | 0.2− | $n$ 0.21241265 $\omega$ 45.87962 +0.60878547 −0.79318944 | | | | | | | | | | | |
| 1998 03 29 | 704 | (1.1+ | 2.6+) | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.5− | $a$ 2.7819488 $\Omega$ 6.67035 +0.68541086 +0.51622857 | | | | | | | | | | | |
| 1998 03 29 | 704 | 0.5+ | 1.7− | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.7− | $e$ 0.2284745 $i$ 7.51466 +0.39948993 +0.32304578 | | | | | | | | | | | |
| 1998 03 29 | 704 | 1.6− | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.8− | 1.3+ | $P$ 4.64 $H$ 15.9 $G$ 0.15 $U$ 0 | | | | | | | | | | | |
| 2005 02 09 | 691 | 0.1+ | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.4− | Residuals in seconds of arc | | | | | | | | | | | |
| 2005 02 09 | 691 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1+ | 1992 09 22 | 809 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.6+ | 2006 09 27 | 704 | 0.4− | 0.5+ |
| 2005 02 09 | 691 | 0.4+ | 0.1+ | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3− | 1992 09 22 | 809 | 0.1+ | 0.8+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.4− | 0.5+ |
| 2005 03 16 | G96 | 0.5− | 0.0 | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.8+ | 0.3− | 1992 09 22 | 809 | 1.1− | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.1− | 0.1+ |
| 2005 03 16 | G96 | 0.8− | 1.0+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.6+ | 0.2− | 1992 09 23 | 809 | 0.6− | 0.8+ | 2006 09 17 | 704 | 0.5+ | 0.4+ | 2006 09 28 | 704 | 0.6− | 0.4+ |
| 2005 03 16 | G96 | 0.1− | 0.6+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.0 | 1992 09 23 | 809 | 1.0− | 1.2+ | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 09 28 | 704 | 0.3− | 0.6+ |
| 2005 03 16 | G96 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.4− | 1992 09 23 | 809 | 0.0 | 1.0+ | 2006 09 17 | 704 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.5− | 0.1+ |
| 2006 08 14 | 644 | 0.6− | 0.1+ | 2006 08 28 | 699 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.7− | 1999 03 19 | 691 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 704 | 0.5− | 0.4+ |
| 2006 08 14 | 644 | 0.2− | 0.5+ | 2006 08 28 | 699 | 0.2− | 1.1+ | 2006 11 17 | G96 | 0.0 | 0.2+ | 1999 03 19 | 691 | 0.4+ | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.7+ | 0.1+ |
| 2006 08 14 | 644 | 0.5− | 0.1+ | 2006 08 28 | 699 | 0.8+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− | 1999 03 19 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.2− | 1.2+ |
| 2006 08 16 | 644 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 1.0− | 1999 03 21 | 645 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.7+ | 0.1− | 2006 09 29 | 704 | 0.4− | 0.0 |
| 2006 08 16 | 644 | 0.7+ | 0.2− | 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.4− | 1999 03 21 | 645 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.4+ | 0.7+ |
| 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.0 | | | | | 2001 07 20 | 644 | 0.0 | 0.3− | 2006 09 18 | 699 | 0.5+ | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.2+ |
| 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.2− | | | | | 2001 07 20 | 644 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.9+ | 0.4+ |
| | | | | | | | | | | | | 2001 07 20 | 644 | 0.1+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.0 |
| **2006 QR$_{24}$ = 2005 GE$_{71}$** | | | | | | | | | | | | 2001 07 26 | 644 | 0.3+ | 1.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.8− |
| Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC | | | | | | | | | | | | 2001 07 26 | 644 | (0.0 | 1.6−) | 2006 09 20 | 704 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.5+ | 0.8+ |
| $M$ 7.95154 (2000.0) **P** **Q** | | | | | | | | | | | | 2001 07 26 | 644 | 0.2− | 1.2− | 2006 09 20 | 704 | 0.1− | 0.5+ | 2006 10 01 | 704 | 0.2+ | 0.3+ |
| $n$ 0.27539191 $\omega$ 346.44331 +0.98866910 +0.14994657 | | | | | | | | | | | | 2001 08 27 | 644 | 0.4− | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| $a$ 2.3397454 $\Omega$ 4.94903 −0.12900441 +0.87267266 | | | | | | | | | | | | 2001 08 27 | 644 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.6− | 0.1+ |
| $e$ 0.1600718 $i$ 4.67524 −0.07675467 +0.46471331 | | | | | | | | | | | | 2001 08 27 | 644 | 0.3− | 0.7+ | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2+ |
| $P$ 3.58 $H$ 16.6 $G$ 0.15 $U$ 2 | | | | | | | | | | | | 2002 11 07 | 645 | (1.4+ | 3.4−) | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.7+ | 0.3+ |
| Residuals in seconds of arc | | | | | | | | | | | | 2002 11 07 | 645 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 17 | 104 | 0.1− | 0.2− |
| 1999 10 12 | 704 | 0.7− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.2+ | 2002 12 14 | 704 | 0.7+ | 0.6− | 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 104 | 0.3+ | 0.1− |
| 1999 10 12 | 704 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.5+ | 2002 12 14 | 704 | 0.1+ | 0.5− | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 17 | 104 | 0.0 | 0.0 |
| 1999 10 12 | 704 | 0.0 | 0.5− | 2006 09 15 | 691 | 0.2− | 1.5− | 2006 09 29 | 704 | 0.2+ | 0.0 | 2002 12 14 | 704 | 0.4+ | 0.9− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− |
| 1999 10 12 | 704 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.7+ | 1.1+ | 2003 01 10 | 704 | 0.2− | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3− |
| 1999 10 12 | 704 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.3+ | 2003 01 10 | 704 | 0.1− | 0.2+ | 2006 09 24 | 291 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2− |
| | | | | | | | | | | | | 2003 01 10 | 704 | 0.3+ | 0.1+ | 2006 09 24 | 291 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| | | | | | | | | | | | | 2003 01 10 | 704 | 0.5+ | 0.4+ | 2006 09 24 | 291 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.0 | 0.8+ | 2006 09 25 | G96 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2004 04 12 | 691 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2004 04 12 | 691 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.6− | 0.8+ | 2006 11 22 | 704 | 0.9− | 0.0 |
| 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.7− | 0.6+ | 2006 11 22 | 704 | 0.7− | 1.4+ |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.7− | 0.6+ |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.3− | 0.1+ | | | | |

### 2006 QU$_{24}$ = 1998 FW$_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.29350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17561741 | $\omega$ | 209.46604 | | +0.94694201 | −0.32006977 | |
| $a$ | 3.1580888 | $\Omega$ | 169.08142 | | +0.31674937 | +0.91391298 | |
| $e$ | 0.1011817 | $i$ | 8.88657 | | +0.05450386 | +0.24963656 | |
| $P$ | 5.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 02 | 809 | (1.1− | 2.7+) | 2003 03 30 | 645 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.2+ |
| 1998 03 18 | 691 | 0.6+ | 0.3− | 2004 03 31 | 691 | 0.1− | 0.4+ | 2006 09 20 | 691 | 0.1+ | 0.1− |
| 1998 03 18 | 691 | 0.6+ | 0.3− | 2004 03 31 | 691 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.2− | 1.5+ |
| 1998 03 18 | 691 | 0.5+ | 0.5− | 2004 03 31 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.9− | 1.3+ |
| 1998 03 25 | 691 | 0.0 | 0.5− | 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.7+ |
| 1998 03 25 | 691 | 0.1− | 0.7− | 2004 04 23 | 691 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.2+ |
| 1998 03 25 | 691 | 0.1− | 0.3− | 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 2000 09 03 | 645 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.7− | 0.5+ |
| 2000 09 03 | 645 | 0.1− | 0.2− | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 09 28 | 704 | 0.7− | 0.7+ |
| 2001 12 11 | 704 | 0.7+ | 0.9− | 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.3− | 0.8+ |
| 2001 12 11 | 704 | 0.1+ | 1.2− | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.7+ | 0.0 |
| 2001 12 11 | 704 | 0.3+ | 0.7− | 2006 08 22 | 644 | 0.1− | 0.5+ | 2006 09 30 | 704 | 0.3+ | 0.0 |
| 2001 12 11 | 704 | 0.5− | 1.1− | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.7+ | 0.2− |
| 2001 12 11 | 704 | 0.2− | 1.3− | 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.4+ | 0.6+ |
| 2003 02 22 | 644 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.8+ |
| 2003 02 22 | 644 | 0.3+ | 0.7+ | 2006 09 18 | 699 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 02 22 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2003 03 30 | 645 | 0.1− | 0.1+ | 2006 09 20 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |

### 2006 QV$_{24}$ = 2006 RL$_{62}$ = 2003 AA$_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.51084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21956119 | $\omega$ | 224.53177 | | +0.99891755 | +0.01022546 | |
| $a$ | 2.7212326 | $\Omega$ | 134.82299 | | +0.00658595 | +0.93462065 | |
| $e$ | 0.1964157 | $i$ | 3.66811 | | −0.04604722 | +0.35549919 | |
| $P$ | 4.49 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 14 | 691 | (6.1+ | 1.0−) | 2006 09 16 | 704 | 0.4− | 0.9− | 2006 09 28 | 704 | 0.5− | 0.1+ |
| 1999 01 14 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 704 | 0.9+ | 0.1+ | 2006 09 28 | 699 | 0.1+ | 0.8+ |
| 1999 01 14 | 691 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.6+ | 0.6− | 2006 09 28 | 704 | 0.4− | 0.1+ |
| 2003 01 02 | 704 | (0.4+ | 2.4+) | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.3− | 0.1− |
| 2003 01 02 | 704 | (1.7− | 1.5+) | 2006 09 18 | 703 | 0.0 | 0.6− | 2006 09 28 | 699 | 0.3− | 0.7+ |
| 2003 01 02 | 704 | 0.8− | 1.5+ | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 09 28 | 699 | 0.0 | 0.0 |
| 2003 01 02 | 704 | (0.9− | 2.7+) | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.5+ |
| 2003 01 07 | 704 | (1.6+ | 1.0+) | 2006 09 18 | 699 | 1.1+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2003 01 07 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2003 01 07 | 704 | 0.5− | 0.7− | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.1+ |
| 2005 05 14 | G96 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.2+ |
| 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 09 19 | 704 | 0.0 | 0.4− | 2006 09 30 | 704 | 0.4− | 0.1+ |
| 2005 05 14 | G96 | 0.7− | 0.0 | 2006 09 19 | 704 | 0.0 | 0.5− | 2006 09 30 | 704 | 0.4+ | 0.2+ |
| 2005 05 14 | G96 | 0.7+ | 0.5− | 2006 09 19 | 704 | 0.3− | 1.3− | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2005 06 08 | 691 | 0.3− | 0.8+ | 2006 09 19 | 704 | 0.3+ | 1.2− | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2005 06 08 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 704 | (0.4− | 1.8−) | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2005 06 08 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 2006 07 21 | 703 | (0.3− | 1.7−) | 2006 09 20 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2006 07 21 | 703 | (2.6+ | 1.5+) | 2006 09 20 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2006 07 21 | 703 | 0.4− | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 07 21 | 703 | 0.6− | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.6− | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2006 08 17 | 644 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 08 17 | 644 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2006 08 17 | 644 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.9+ | 2006 10 22 | 703 | 0.2+ | 0.3+ |
| 2006 08 17 | 644 | 0.3− | 0.4− | 2006 09 26 | 704 | (0.7+ | 2.7+) | 2006 10 22 | 703 | 1.3+ | 0.0 |
| 2006 08 22 | 644 | 0.2+ | 0.3− | 2006 09 26 | 704 | 0.1− | 1.0+ | 2006 10 22 | 703 | 1.2+ | 0.1− |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.3+ |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.9− | 0.6+ | 2006 10 27 | 204 | 0.4− | 0.0 |
| 2006 09 12 | 703 | 0.7− | 0.4− | 2006 09 26 | 704 | 0.6− | 0.4+ | 2006 10 27 | 204 | 0.0 | 0.0 |
| 2006 09 12 | 703 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.8− | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 09 12 | 703 | 1.2− | 0.1− | 2006 09 28 | 704 | 0.5− | 0.5+ | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2006 09 12 | 703 | 0.7− | 0.1− | 2006 09 28 | 699 | 0.1+ | 0.4+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2006 09 16 | 704 | 0.3+ | 0.2− | 2006 09 28 | 704 | 0.7− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3− |

### 2006 QW$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.11848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27382991 | $\omega$ | 229.20080 | | +0.99749416 | +0.05076575 | |
| $a$ | 2.3486346 | $\Omega$ | 127.83160 | | −0.02954204 | +0.93175139 | |
| $e$ | 0.2043909 | $i$ | 3.57704 | | −0.06428580 | +0.35953051 | |
| $P$ | 3.60 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2003 12 22 | 691 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.6− |
| 2003 12 22 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.1− |
| 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.3− |
| 2004 01 15 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 1.4+ | 1.4− | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 2004 01 15 | 691 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2006 08 17 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2006 08 17 | 644 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2006 08 17 | 644 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 08 22 | 644 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 08 22 | 644 | 0.5+ | 0.0 | 2006 09 30 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.4− |
| 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.7− |
| 2006 09 12 | 703 | 0.5− | 0.4− | 2006 09 30 | 704 | 0.2− | 1.0+ | 2006 10 22 | 703 | 0.5− | 0.7− |
| 2006 09 12 | 703 | 0.9− | 0.6− | 2006 09 30 | 704 | 0.7+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.8+ |
| 2006 09 12 | 703 | 1.4− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.4− |
| 2006 09 12 | 703 | (1.7− | 0.2+) | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2006 09 18 | 703 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.7− | 0.2+ | 2006 11 24 | G96 | (0.2− | 3.0+) |
| 2006 09 18 | 703 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 24 | G96 | (1.2− | 2.1+) |

### 2006 QY$_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.80170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26243841 | $\omega$ | 89.39628 | | +0.81719121 | +0.57386221 | |
| $a$ | 2.4161160 | $\Omega$ | 235.58244 | | −0.55130517 | +0.75110069 | |
| $e$ | 0.2084588 | $i$ | 3.73040 | | −0.16811052 | +0.32638920 | |
| $P$ | 3.76 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.2+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.6− | 0.8− | 2006 09 19 | 699 | 0.1+ | 0.4+ |
| 2004 01 11 | 735 | (0.3− | 2.0−) | 2006 08 27 | 699 | 1.5+ | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.1− |
| 2004 01 11 | 735 | 0.0 | 0.9+ | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2006 07 21 | 644 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.5+ |
| 2006 07 21 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2006 07 21 | 644 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.4− | 0.8+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 18 | 704 | 0.4− | 0.6+ | 2006 08 30 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 1.0+ | 0.7+ |
| 2006 08 18 | 704 | 0.2− | 0.3+ | 2006 08 30 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.6+ |
| 2006 08 18 | 704 | 0.6+ | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.6+ | 0.2− |
| 2006 08 18 | 704 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.5+ |
| 2006 08 21 | 644 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.4− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2006 08 21 | 644 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2006 08 24 | 704 | 0.5− | 0.8+ | 2006 09 11 | 703 | 0.4− | 0.4− | 2006 10 21 | 703 | 1.1− | 0.1− |
| 2006 08 24 | 704 | 0.7− | 0.5+ | 2006 09 11 | 703 | 0.4− | 0.3− | 2006 10 21 | 703 | (1.7− | 1.6−) |
| 2006 08 24 | 704 | 0.1+ | 0.0 | 2006 09 11 | 703 | (5.2− | 0.9+) | 2006 10 21 | 703 | 1.3− | 1.3− |
| 2006 08 24 | 704 | 0.6+ | 1.2+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.7− |
| 2006 08 24 | 704 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.3− | 0.1− | | | | |
| 2006 08 27 | 699 | 0.5− | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.0 | | | | |

**2006 QE$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.11357 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27898491 | $\omega$ | 242.15880 | | +0.98881454 | +0.14077495 | |
| $a$ | 2.3196132 | $\Omega$ | 109.71362 | | −0.11167528 | +0.91779262 | |
| $e$ | 0.2198756 | $i$ | 3.00051 | | −0.09886573 | +0.37126691 | |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.3− | 0.3+ | 2006 08 18 | 699 | 0.0 | 0.1− | 2006 08 28 | 704 | 0.2+ | 0.9+ |
| 1999 09 14 | 704 | 1.2+ | 1.2− | 2006 08 18 | 699 | 0.9− | 0.3+ | 2006 08 28 | 699 | 0.2+ | 1.0+ |
| 1999 09 14 | 704 | 0.3+ | 0.7− | 2006 08 18 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.8+ |
| 1999 10 08 | 704 | 0.2+ | 0.4− | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.4− | 0.4− |
| 1999 10 08 | 704 | 0.1+ | 1.0− | 2006 08 18 | 644 | 0.3+ | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.3− |
| 1999 10 08 | 704 | 0.0 | 1.0− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 08 31 | 704 | 1.0− | 0.6+ |
| 2003 12 28 | 291 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 08 31 | 704 | (1.5+ | 0.1+) |
| 2003 12 28 | 291 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 08 31 | 704 | 0.4+ | 0.2− |
| 2003 12 28 | 291 | 0.2+ | 0.6+ | 2006 08 23 | 704 | 0.4+ | 0.9+ | 2006 08 31 | 704 | 0.8+ | 0.6− |
| 2006 08 14 | 644 | 0.2− | 0.1− | 2006 08 23 | 704 | 0.3− | 0.4+ | 2006 09 12 | 704 | 0.0 | 0.1− |
| 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.4− | 0.2+ | 2006 09 12 | 704 | 1.2− | 0.2− |
| 2006 08 14 | 644 | 0.0 | 0.1− | 2006 08 23 | 704 | 0.2− | 0.6+ | 2006 09 12 | 704 | (0.2+ | 1.6+) |
| 2006 08 16 | 644 | 0.3+ | 0.3− | 2006 08 23 | 704 | 0.5+ | 0.3− | 2006 09 14 | 703 | 0.6− | 0.2+ |
| 2006 08 16 | 644 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.0 | 1.0+ |
| 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.1− |
| 2006 08 16 | 644 | 0.0 | 0.4− | 2006 08 28 | 704 | 0.3− | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.2− | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.5− |
| 2006 08 18 | 699 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.4+ | 0.4− |
| 2006 08 18 | 699 | 0.8− | 0.6+ | 2006 08 28 | 704 | 0.1+ | 0.7− | | | | |

**2006 QF$_{25}$ = 2002 UW$_{46}$ = 2005 KU$_{12}$**

Id. Minor Planet Center (*MPO* 104022; unpublished)

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.22212 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22389479 | $\omega$ | 230.24336 | | +0.96431146 | −0.25726695 | |
| $a$ | 2.6860044 | $\Omega$ | 144.53625 | | +0.26368654 | +0.91177963 | |
| $e$ | 0.0902210 | $i$ | 6.19275 | | +0.02393368 | +0.32011187 | |
| $P$ | 4.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | (3.2+ | 3.2+) | 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.4+ | 0.2+ |
| 1996 03 27 | 691 | 0.5− | 0.2+ | 2004 03 19 | 644 | 0.1− | 0.7+ | 2006 08 28 | 691 | 0.1+ | 0.1+ |
| 1996 03 27 | 691 | 0.5− | 0.0 | 2004 03 19 | 644 | 0.0 | 0.4+ | 2006 08 28 | 704 | 0.1− | 0.6+ |
| 1997 07 01 | 691 | 0.1+ | 0.2− | 2004 03 19 | 644 | 0.2+ | 0.5+ | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 1997 07 01 | 691 | 0.5− | 0.1− | 2005 05 10 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 704 | 0.9+ | 0.2+ |
| 1997 07 01 | 691 | 0.3+ | 0.2+ | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.1+ |
| 1997 07 11 | 691 | 0.2+ | 0.1+ | 2005 05 10 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 1997 07 11 | 691 | 0.3− | 0.2− | 2005 05 16 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 0.5+ | 0.6− |
| 1997 07 11 | 691 | 0.5+ | 0.1− | 2005 05 16 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 0.7+ | 0.2− |
| 2002 10 31 | 704 | 0.3+ | 1.2+ | 2005 05 16 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 1.3+ | 0.6+ |
| 2002 10 31 | 704 | 0.2− | 1.0+ | 2005 06 05 | 691 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.6+ |
| 2002 10 31 | 704 | 0.3− | 0.8+ | 2005 06 05 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.4+ | 2005 06 05 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.4− |
| 2002 10 31 | 608 | 0.3+ | 0.9− | 2006 08 18 | 699 | 0.9− | 0.5+ | 2006 08 28 | 703 | 0.8− | 0.2+ |
| 2002 10 31 | 608 | 0.2+ | 0.8− | 2006 08 18 | 699 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.9− | 0.1− |
| 2002 10 31 | 608 | 0.1+ | 0.6− | 2006 08 18 | 699 | 0.5+ | 0.9+ | 2006 08 28 | 699 | 0.3− | 0.3+ |
| 2002 11 06 | 699 | 0.2+ | 0.5+ | 2006 08 18 | 699 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.4− | 0.0 |
| 2002 11 06 | 699 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.4+ | 1.0− |
| 2002 11 06 | 699 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 1.3− | 1.7− |
| 2002 11 06 | 699 | 0.7− | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.6− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.4− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 08 22 | 644 | 0.2− | 0.2+ | | | | |

**2006 QG$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.89729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23489144 | $\omega$ | 200.75098 | | +0.97766449 | +0.18504474 | |
| $a$ | 2.6015046 | $\Omega$ | 148.06838 | | −0.15628956 | +0.95711219 | |
| $e$ | 0.1125826 | $i$ | 10.86012 | | −0.14051945 | +0.22292309 | |
| $P$ | 4.20 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.2− | 0.2+ | 2006 08 18 | 699 | 0.8+ | 0.8+ | 2006 08 28 | 704 | 0.4+ | 0.5+ |
| 2000 02 11 | 691 | 0.3− | 0.0 | 2006 08 18 | 699 | 0.2+ | 1.1+ | 2006 08 28 | 691 | 0.1+ | 0.1+ |
| 2000 02 11 | 691 | 0.1− | 0.1− | 2006 08 18 | 699 | 0.2− | 1.1+ | 2006 08 28 | 704 | 0.3+ | 0.5+ |
| 2000 02 26 | 691 | 0.4+ | 0.2− | 2006 08 18 | 699 | 0.5+ | 0.8+ | 2006 08 28 | 704 | 0.1− | 0.1− |
| 2000 02 26 | 691 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.2− | 0.3− |
| 2000 02 26 | 691 | 0.3+ | 0.3− | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 08 28 | 704 | 0.3− | 0.3+ |
| 2000 03 14 | 691 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.2− | 2006 08 31 | 704 | 0.4− | 0.2− |
| 2000 03 14 | 691 | 0.0 | 0.1+ | 2006 08 21 | 704 | (1.6+ | 1.7−) | 2006 08 31 | 704 | 0.3+ | 1.3− |
| 2000 03 14 | 691 | 0.2− | 0.2+ | 2006 08 21 | 704 | 0.9+ | 1.1− | 2006 08 31 | 704 | 0.3+ | 0.5+ |
| 2002 10 08 | 699 | 0.8+ | 0.6− | 2006 08 21 | 704 | 0.5− | 0.4+ | 2006 08 31 | 704 | 0.2+ | 0.3+ |
| 2002 10 08 | 699 | 0.5− | 0.1− | 2006 08 21 | 704 | (2.6+ | 0.8−) | 2006 09 14 | 703 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.6+ | 0.2+ | 2006 08 21 | 704 | 0.5+ | 0.7+ | 2006 09 14 | 703 | (2.0+ | 0.6−) |
| 2002 10 08 | 699 | 0.3− | 1.4+ | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.6− |
| 2002 11 02 | 608 | 0.6− | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.6− | 0.4− |
| 2002 11 02 | 608 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 1.2− | 0.3− |
| 2002 11 02 | 608 | 0.3− | 0.0 | 2006 08 23 | 704 | 0.7− | 1.0− | 2006 09 30 | 703 | 0.6− | 1.3− |
| 2006 08 14 | 644 | 0.2− | 0.1− | 2006 08 23 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.9− |
| 2006 08 14 | 644 | 0.3+ | 0.2− | 2006 08 23 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 703 | 0.0 | 1.0− |
| 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.0 | | | | |

**2006 QJ$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.22348 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21366739 | $\omega$ | 186.82988 | | +0.99580240 | +0.07982735 | |
| $a$ | 2.7710470 | $\Omega$ | 168.30559 | | −0.06999188 | +0.97938995 | |
| $e$ | 0.2164142 | $i$ | 12.76322 | | −0.05898064 | +0.18553412 | |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 09 | 691 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.6− | 0.6+ | 2006 09 20 | 704 | 0.5− | 0.1− |
| 1995 03 09 | 691 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.8− | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.6+ |
| 2004 02 25 | 926 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.0 | 0.9+ | 2006 09 20 | 704 | 0.2− | 0.5+ |
| 2004 02 25 | 926 | 0.3− | 0.7+ | 2006 08 30 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.4− | 0.1− |
| 2004 02 25 | 926 | 0.1+ | 0.6+ | 2006 08 30 | 704 | (0.5+ | 2.1+) | 2006 09 20 | 704 | 0.0 | 0.1+ |
| 2004 02 25 | 926 | 0.1− | 0.6+ | 2006 08 30 | 704 | 1.0+ | 0.6+ | 2006 09 24 | 701 | 0.0 | 0.4− |
| 2004 02 25 | 926 | 0.6+ | 0.5+ | 2006 09 01 | 704 | 0.0 | 0.5− | 2006 09 24 | 701 | 0.4− | 0.5− |
| 2006 08 18 | 704 | 1.3+ | 0.5+ | 2006 09 01 | 704 | 0.8+ | 0.3− | 2006 09 24 | 701 | 0.0 | 0.1− |
| 2006 08 18 | 704 | 0.2− | 0.3+ | 2006 09 01 | 704 | 0.1− | 0.4+ | 2006 09 24 | 701 | 0.1+ | 0.2− |
| 2006 08 18 | 704 | 0.5+ | 0.3− | 2006 09 01 | 704 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.2− |
| 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.9+ | 2006 09 25 | 699 | 0.4− | 0.6− |
| 2006 08 24 | 704 | 1.0+ | 1.6− | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2006 08 24 | 704 | 0.4+ | 0.8− | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2006 08 24 | 704 | 0.7− | 0.4+ | 2006 09 17 | 704 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2006 08 24 | 704 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 28 | 699 | 0.7− | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.4− |
| 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.4− | 1.9+ | 2006 09 27 | 704 | 0.3− | 0.2− |
| 2006 08 28 | 699 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.2+ |
| 2006 08 28 | 703 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.0 |
| 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.2− |
| 2006 08 28 | 703 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.3+ | | | | |

**2006 QK$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.05120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28746689 | $\omega$ | 205.05417 | | +0.98509284 | +0.15188708 | |
| $a$ | 2.2737576 | $\Omega$ | 145.90231 | | −0.12330329 | +0.95080996 | |
| $e$ | 0.1836504 | $i$ | 8.28291 | | −0.11995165 | +0.26998284 | |
| $P$ | 3.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.1+ | 0.1− | 2006 08 18 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 704 | 0.1+ | 0.6+ |
| 1999 07 13 | 704 | 0.7− | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.3− | 2006 09 19 | 704 | 0.1+ | 0.1+ |
| 1999 07 13 | 704 | 0.5− | 0.2− | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 19 | 704 | 0.1− | 0.3+ |
| 1999 07 13 | 704 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.4− | 0.3− | 2006 09 20 | 644 | 0.3− | 0.2− |
| 1999 07 21 | 699 | 0.6+ | 0.2− | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.5− | 0.3− |
| 1999 07 21 | 699 | 0.3+ | 1.2+ | 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.3− | 0.5− |
| 1999 07 21 | 699 | 0.2− | 0.2+ | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 21 | 699 | 0.1+ | 0.2− |
| 1999 08 07 | 699 | 0.2− | 0.8+ | 2006 08 28 | 704 | 1.0+ | 0.3− | 2006 09 21 | 699 | 0.6− | 0.6− |
| 1999 08 07 | 699 | 0.5+ | 0.2+ | 2006 08 28 | 704 | 1.1+ | 0.2+ | 2006 09 21 | 699 | 0.6+ | 0.1+ |
| 1999 08 07 | 699 | 0.1− | 0.7− | 2006 08 28 | 704 | 0.7+ | 0.4− | 2006 09 21 | 699 | 0.3+ | 0.2− |
| 2001 02 16 | 691 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.2+ | 0.3− | 2006 09 22 | 704 | 0.5− | 1.2− |
| 2001 02 16 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 704 | 0.4− | 0.4− | 2006 09 22 | 704 | 0.5+ | 0.0 |
| 2001 02 16 | 691 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.5+ | 2006 09 22 | 704 | 0.2+ | 0.5− |
| 2002 06 02 | 291 | 0.2− | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.2+ | 2006 09 22 | 704 | 0.3− | 0.3+ |
| 2002 06 02 | 291 | 0.1− | 0.1+ | 2006 08 28 | 699 | 1.2+ | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.3− |
| 2002 06 02 | 291 | 0.3+ | 0.8− | 2006 08 28 | 699 | 0.3− | 0.1+ | 2006 10 02 | 703 | 0.3+ | 0.4− |
| 2002 06 08 | 644 | 0.2− | 0.4+ | 2006 08 30 | 704 | (1.7+ | 0.5+) | 2006 10 02 | 703 | 0.2− | 0.4+ |
| 2002 06 08 | 644 | 0.3+ | 0.1+ | 2006 08 30 | 704 | (1.0+ | 1.8+) | 2006 10 02 | 703 | 0.3− | 0.6+ |
| 2002 06 08 | 644 | 0.0 | 0.4+ | 2006 08 30 | 704 | 1.2+ | 0.4+ | 2006 10 02 | 703 | 0.4− | 0.0 |
| 2006 07 21 | 704 | 1.1+ | 0.3− | 2006 09 14 | 703 | 0.9+ | 0.3− | 2006 10 02 | 703 | 0.4− | 0.1− |
| 2006 07 21 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 10 02 | 703 | 1.0− | 0.0 |
| 2006 07 21 | 704 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.2+ | 0.1+ |
| 2006 07 21 | 703 | (0.1+ | 1.7−) | 2006 09 14 | 703 | 0.3+ | 0.3+ | 2006 10 02 | 703 | 0.4− | 0.1− |
| 2006 07 21 | 703 | 0.5− | 1.0+ | 2006 09 16 | 704 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2006 07 21 | 703 | 0.7+ | 1.2+ | 2006 09 16 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2006 07 21 | 703 | 0.4− | 1.3− | 2006 09 16 | 704 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2006 08 18 | 704 | 0.5− | 0.3− | 2006 09 16 | 704 | 0.4− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2006 08 18 | 704 | 0.3− | 0.1− | 2006 09 19 | 704 | 0.3+ | 1.3+ | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2006 08 18 | 704 | 0.5− | 0.2+ | 2006 09 19 | 704 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.3− | 0.0 |

**2006 QN$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.36787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29364678 | $\omega$ | 214.59206 | | +0.99883500 | −0.03934750 | |
| $a$ | 2.2417433 | $\Omega$ | 147.62854 | | +0.04673368 | +0.93300985 | |
| $e$ | 0.2378959 | $i$ | 2.99088 | | −0.01202517 | +0.35769317 | |
| $P$ | 3.36 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 03 | 704 | 0.7− | 0.1− | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.4+ |
| 2003 12 03 | 704 | 0.6+ | 0.8− | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 09 19 | 704 | 0.7+ | 0.3+ |
| 2003 12 03 | 704 | 0.8+ | 0.0 | 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 09 19 | 699 | 0.6− | 0.3− |
| 2003 12 23 | 704 | 0.8− | 0.4+ | 2006 08 28 | 703 | 0.6+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.3+ |
| 2003 12 23 | 704 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.4− | 0.8− |
| 2003 12 23 | 704 | 0.5+ | 0.3+ | 2006 08 29 | 704 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2004 02 27 | 695 | 0.3− | 0.3+ | 2006 08 29 | 704 | 0.7+ | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.1− |
| 2004 02 27 | 695 | 0.1− | 0.2+ | 2006 08 29 | 704 | 0.3− | 0.6− | 2006 09 20 | 644 | 0.2− | 0.1− |
| 2005 04 10 | G96 | 0.4− | 0.3− | 2006 08 31 | 704 | 0.4− | 0.3+ | 2006 09 25 | 699 | 0.7+ | 0.1− |
| 2005 04 10 | G96 | 0.2+ | 0.4+ | 2006 08 31 | 704 | 0.8− | 0.9+ | 2006 09 25 | 699 | 0.5− | 0.3− |
| 2005 04 10 | G96 | 0.2+ | 0.2+ | 2006 08 31 | 704 | 1.0− | 1.1+ | 2006 09 25 | 699 | 0.3− | 0.0 |
| 2005 04 10 | G96 | 0.4+ | 0.4+ | 2006 08 31 | 704 | 0.3− | 0.9+ | 2006 09 25 | 699 | (3.7− | 0.1−) |
| 2006 08 18 | 704 | 0.8+ | 0.3− | 2006 09 14 | 703 | 0.0 | 0.5− | 2006 09 26 | 704 | 0.7+ | 0.1− |
| 2006 08 18 | 704 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.6− | 2006 09 26 | 704 | 0.3+ | 0.2+ |
| 2006 08 18 | 704 | 0.2− | 1.4+ | 2006 09 14 | 703 | 0.4+ | 0.6− | 2006 09 26 | 704 | 0.8+ | 0.7+ |
| 2006 08 18 | 704 | 0.9+ | 1.4− | 2006 09 14 | 703 | 0.2− | 0.5− | 2006 09 26 | 704 | 0.8+ | 0.5− |
| 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.0 |
| 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1− | 2006 09 28 | 704 | 1.2+ | 0.4− |
| 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.3− | 0.5− | 2006 09 28 | 704 | 0.3+ | 0.2+ |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.5− | 0.7− | 2006 09 28 | 704 | 0.5+ | 1.3+ |
| 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 09 16 | 704 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.1− | 0.7+ |
| 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 16 | 704 | 0.7− | 1.5+ | 2006 09 28 | 704 | 0.3+ | 1.0+ |
| 2006 08 24 | 644 | 0.1− | 0.3− | 2006 09 16 | 704 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.3− | 0.5− |
| 2006 08 24 | 644 | 0.3+ | 0.4− | 2006 09 16 | 704 | 0.7− | 0.4− | 2006 09 30 | 703 | 0.8− | 1.0− |
| 2006 08 24 | 644 | 0.0 | 0.4− | 2006 09 19 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 1.1− | 0.2+ |
| 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 19 | 704 | 1.2+ | 0.5+ | 2006 09 30 | 703 | 0.0 | 1.0− |
| 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 19 | 704 | 1.1− | 0.8+ | | | | |

**2006 QS$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.24720 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17316969 | $\omega$ | 14.56044 | | +0.77508187 | −0.63061621 | |
| $a$ | 3.1877785 | $\Omega$ | 24.67009 | | +0.56980989 | +0.67047799 | |
| $e$ | 0.1886026 | $i$ | 5.44954 | | +0.27306552 | +0.39087397 | |
| $P$ | 5.69 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.8− | 1.3+ | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.3− | 0.8+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.2− | 0.3− |
| 2001 12 09 | 704 | 1.2− | 1.1+ | 2006 09 16 | 704 | 0.1+ | 0.8− | 2006 09 22 | 704 | 0.1+ | 0.4+ |
| 2001 12 17 | 704 | 0.3− | 0.4− | 2006 09 16 | 704 | 1.0− | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.4+ |
| 2001 12 17 | 704 | 0.2− | 0.0 | 2006 09 16 | 704 | 0.4+ | 0.3− | 2006 09 22 | 704 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.9+ | 1.0− | 2006 09 16 | 704 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.7+ | 0.2− |
| 2001 12 17 | 704 | 0.4+ | 0.1− | 2006 09 16 | 704 | 0.9− | 0.2+ | 2006 09 26 | 704 | 1.2+ | 0.7− |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 1.3− | 0.3+ | 2006 09 26 | 704 | 0.5+ | 1.0+ |
| 2002 01 08 | 704 | (1.9+ | 0.7−) | 2006 09 18 | 703 | 0.1− | 0.7− | 2006 09 26 | 704 | 0.9+ | 0.2− |
| 2002 01 08 | 704 | (1.4+ | 2.0−) | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 09 28 | 704 | 0.7+ | 0.6+ |
| 2002 01 08 | 704 | 0.5+ | 1.2− | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 09 28 | 704 | 0.0 | 0.5+ |
| 2002 01 08 | 704 | 0.9+ | 0.1− | 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 09 28 | 704 | 0.4+ | 1.3+ |
| 2003 03 13 | 291 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 09 28 | 704 | 0.2+ | 0.8+ |
| 2003 03 13 | 291 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 09 30 | 704 | (1.9− | 0.5+) |
| 2003 03 13 | 291 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.1− | 0.1− |
| 2003 03 31 | 645 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 09 30 | 704 | 0.3− | 0.6− |
| 2003 03 31 | 645 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.2− | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 1.0+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2006 08 18 | 691 | 0.5− | 0.1+ | 2006 09 19 | J95 | 0.2+ | 0.4− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2006 08 18 | 691 | 0.5− | 0.3+ | 2006 09 19 | J95 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.0 | 1.3− |
| 2006 08 22 | 644 | 0.3− | 0.3− | 2006 09 19 | J95 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 09 19 | 703 | (2.7+ | 1.0−) | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2006 08 22 | 644 | 0.4− | 0.2− | 2006 09 19 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2006 08 24 | 644 | 0.3− | 0.4− | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2006 08 24 | 644 | 0.4− | 0.0 | 2006 09 19 | 704 | 1.4+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2006 08 24 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.7− | 0.2− | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 19 | 704 | (0.5+ | 1.7−) | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2006 08 27 | 691 | 0.4− | 0.1+ | 2006 09 19 | 704 | 0.9+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 09 19 | H06 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2006 09 12 | 703 | 0.1+ | 0.5+ | 2006 09 19 | H06 | 1.4+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2006 09 12 | 703 | 1.3+ | 0.6+ | 2006 09 19 | H06 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.3+ |
| 2006 09 12 | 703 | 0.7+ | 0.4+ | 2006 09 22 | 704 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2006 09 14 | 644 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.2− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |

**2006 QU$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.29368 | | (2000.0) | | | |
| $n$ | 0.26714509 | $\omega$ | 250.01658 | | +0.75882942 | −0.64993980 |
| $a$ | 2.3876532 | $\Omega$ | 150.47451 | | +0.62481971 | +0.70832307 |
| $e$ | 0.2316219 | $i$ | 4.87811 | | +0.18378858 | +0.27542094 |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.9− | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.7− | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.9− | 2006 09 30 | 703 | 0.6− | 0.4− |
| 2004 03 20 | 691 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.6+ | 0.6+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2004 03 20 | 691 | 0.7+ | 0.1− | 2006 09 19 | 703 | 0.6+ | 0.3− | 2006 10 03 | G96 | 0.2− | 0.3− |
| 2004 03 20 | 691 | 0.2+ | 0.2− | 2006 09 19 | 699 | 0.6+ | 0.3+ | 2006 10 03 | G96 | 0.4− | 0.3− |
| 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.5− | 0.4− | 2006 10 03 | G96 | 0.3+ | 0.5+ |
| 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.7− |
| 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 22 | 704 | 1.2+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2006 08 21 | 807 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 2006 08 21 | 807 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2006 08 22 | 807 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.7− | 0.8+ | 2006 10 16 | 703 | (0.1+ | 1.7−) |
| 2006 08 22 | 644 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.2− | 0.9+ | 2006 10 16 | 703 | 0.5+ | 0.4+ |
| 2006 08 22 | 644 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 0.9− | 1.0+ | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.3− | 0.7+ |
| 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.4− | 0.6− | 2006 10 19 | 703 | 0.2+ | 0.7+ |
| 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.2− | 2006 10 19 | 703 | 1.5− | 0.9+ |
| 2006 09 12 | 703 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.6− | 0.7− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2006 09 12 | 703 | 0.1− | 0.9+ | 2006 09 28 | 704 | 0.7− | 0.7+ | 2006 10 22 | 644 | 0.5+ | 0.5− |
| 2006 09 12 | 703 | 0.3− | 0.4− | 2006 09 28 | 704 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2006 09 12 | 703 | 0.5− | 0.2− | 2006 09 28 | 704 | 1.0+ | 1.0− | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2006 09 19 | 699 | 0.7+ | 1.2− | 2006 09 28 | 704 | 0.2− | 0.8+ | 2006 10 24 | 644 | 0.5+ | 0.2− |
| 2006 09 19 | 703 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.2− |

**2006 QZ$_{25}$ = 2002 TY$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.18383 | | (2000.0) | | | |
| $n$ | 0.23953080 | $\omega$ | 188.51933 | | +0.83242370 | −0.54495637 |
| $a$ | 2.5678036 | $\Omega$ | 205.31506 | | +0.52125468 | +0.83157415 |
| $e$ | 0.1478238 | $i$ | 13.58896 | | +0.18805410 | +0.10727063 |
| $P$ | 4.11 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 08 | 691 | 0.4− | 0.2− | 2002 08 30 | 699 | (1.6+ | 1.6+) | 2003 12 01 | 291 | 1.1− | 0.7+ |
| 1997 06 08 | 691 | 0.7− | 0.2+ | 2002 08 30 | 699 | 0.4+ | 1.2− | 2003 12 01 | 291 | 1.1− | 0.6+ |
| 1997 06 08 | 691 | 0.3− | 0.2+ | 2002 09 04 | 644 | 0.1+ | 0.3− | 2003 12 01 | 291 | 1.1− | 0.7+ |
| 1998 09 18 | 699 | 0.1+ | 0.9+ | 2002 09 04 | 644 | 0.3+ | 0.1− | 2005 05 04 | 691 | 0.2+ | 0.4+ |
| 1998 09 18 | 699 | 1.4+ | 0.9+ | 2002 09 04 | 644 | 0.1+ | 0.6− | 2005 05 04 | 691 | 0.2+ | 0.4+ |
| 1998 09 18 | 699 | 0.4+ | 1.1+ | 2002 10 05 | 644 | 0.3+ | 0.0 | 2005 05 04 | 691 | 0.1+ | 0.3+ |
| 1998 10 20 | 327 | 0.8+ | 0.5+ | 2002 10 05 | 644 | 0.2+ | 0.0 | 2006 08 19 | 691 | 0.1− | 0.1+ |
| 1998 10 20 | 327 | 1.0+ | 0.5+ | 2002 10 05 | 644 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.3+ | 0.3+ |
| 1998 10 20 | 327 | 0.8+ | 0.1+ | 2002 10 05 | 704 | 0.1+ | 0.2+ | 2006 08 19 | 691 | 0.6+ | 0.3+ |
| 1998 11 18 | 691 | 0.4− | 0.4+ | 2002 10 05 | 704 | 0.3− | 0.2+ | 2006 08 22 | 644 | 0.3− | 0.1− |
| 1998 11 18 | 691 | 0.9− | 0.5+ | 2002 10 05 | 704 | 0.4− | 0.4− | 2006 08 22 | 644 | 0.3− | 0.5− |
| 1998 11 18 | 691 | 0.8− | 0.5+ | 2002 10 05 | 704 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.2− | 0.1+ |
| 2000 03 04 | 645 | 0.4+ | 0.0 | 2002 10 06 | 644 | 0.0 | 0.2+ | 2006 08 28 | 704 | 1.0+ | 0.0 |
| 2000 03 04 | 645 | 0.3+ | 0.0 | 2002 10 06 | 644 | 0.0 | 0.5+ | 2006 08 28 | 704 | 1.1− | 1.2+ |
| 2002 08 13 | 704 | 1.2− | 0.5+ | 2002 10 06 | 644 | 0.2− | 0.2+ | 2006 08 28 | 704 | 0.4− | 0.1− |
| 2002 08 13 | 704 | 1.4− | 0.9+ | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 08 28 | 704 | 0.2− | 1.1+ |
| 2002 08 13 | 704 | (2.4− | 0.8+) | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.6− |
| 2002 08 13 | 704 | 0.5− | 0.1+ | 2002 11 03 | 608 | 0.7− | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2002 08 30 | 699 | 1.0+ | 1.4+ | 2002 11 03 | 608 | 0.1+ | 0.6− | 2006 10 16 | 703 | 0.5+ | 0.7− |
| 2002 08 30 | 699 | 0.8+ | 0.3+ | 2002 11 03 | 608 | 0.1− | 0.1− | 2006 10 16 | 703 | (1.7− | 0.3−) |

**2006 QA$_{26}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.38281 | | (2000.0) | | | |
| $n$ | 0.22316800 | $\omega$ | 354.24266 | | +0.21757989 | +0.94935294 |
| $a$ | 2.6918330 | $\Omega$ | 288.16275 | | −0.88571228 | +0.09446208 |
| $e$ | 0.1155370 | $i$ | 13.80253 | | −0.41008870 | +0.29967635 |
| $P$ | 4.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 26 | 910 | 0.3+ | 0.7− | 2006 07 21 | 703 | 0.1− | 0.1+ | 2006 08 23 | 644 | 0.6− | 0.3− |
| 2001 08 08 | 413 | 0.0 | 0.1− | 2006 07 21 | 703 | 1.9− | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.2− |
| 2001 08 08 | 413 | 0.4− | 0.5+ | 2006 08 19 | 699 | 0.8+ | 0.3− | 2006 08 23 | 644 | 0.3− | 0.3− |
| 2001 08 08 | 413 | 0.5+ | 0.4+ | 2006 08 19 | 699 | 0.3− | 0.3+ | 2006 09 11 | 703 | 0.7+ | 0.6+ |
| 2004 01 31 | 291 | 0.0 | 0.3+ | 2006 08 19 | 699 | 1.0+ | 0.3+ | 2006 09 11 | 703 | 0.6− | 0.4+ |
| 2004 01 31 | 291 | 0.0 | 0.4+ | 2006 08 19 | 699 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.6+ | 1.3+ |
| 2004 01 31 | 291 | 0.3+ | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 11 | 703 | 1.6+ | 0.7− |
| 2006 07 21 | 703 | 0.4− | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.2− | | | | |
| 2006 07 21 | 703 | 0.5− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2− | | | | |

**2006 QD$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.75681 | | (2000.0) | | | |
| $n$ | 0.23184129 | $\omega$ | 34.99876 | | +0.92978704 | +0.36558231 |
| $a$ | 2.6242721 | $\Omega$ | 303.50196 | | −0.34838748 | +0.83630720 |
| $e$ | 0.1102374 | $i$ | 2.95319 | | −0.11883697 | +0.40858272 |
| $P$ | 4.25 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.2+ | 0.0 | 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.1− | 1.1− |
| 2004 01 19 | 691 | 0.1+ | 0.3− | 2006 08 22 | 644 | 0.0 | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.5− |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.4− | 1.1− |
| 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.2+ | 0.1− | 2006 08 29 | 691 | 0.2+ | 0.2+ |
| 2004 02 14 | 691 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.2− |
| 2004 02 14 | 691 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.9+ | 1.7+ | 2006 08 29 | 691 | 0.1− | 0.0 |
| 2006 08 19 | 691 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | (2.1+ | 1.1−) | 2006 09 28 | G96 | 0.5+ | 0.0 |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | (0.8+ | 2.1+) | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2006 08 22 | 644 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.2− | 0.0 |

**2006 QH$_{26}$ = 1997 TO$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 321.63633 | | (2000.0) | | | |
| $n$ | 0.21123113 | $\omega$ | 145.78763 | | +0.86186552 | −0.50671281 |
| $a$ | 2.7923130 | $\Omega$ | 244.67056 | | +0.46000766 | +0.79832970 |
| $e$ | 0.0819681 | $i$ | 1.31452 | | +0.21349654 | +0.32544097 |
| $P$ | 4.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 910 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 01 | 152 | 0.8− | 0.2− |
| 1997 10 03 | 910 | 0.2− | 0.3+ | 2006 08 19 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 1997 10 03 | 910 | 0.2− | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.3− |
| 1997 10 04 | 910 | 0.3+ | 0.7+ | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.4− |
| 1997 10 04 | 910 | 0.2+ | 0.1− | 2006 08 22 | 644 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.4+ | 0.4− |
| 1997 10 04 | 910 | 0.4− | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.4− | 2006 11 16 | G96 | (2.8+ | 1.1+) |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2006 09 01 | 152 | 0.2− | 0.3+ | 2006 11 16 | G96 | (2.5+ | 1.6+) |
| 2002 11 24 | 644 | 0.2+ | 0.3− | 2006 09 01 | 152 | 0.5+ | 0.3+ | 2006 11 16 | G96 | (2.2+ | 0.5+) |
| 2002 11 24 | 644 | 0.1+ | 0.3− | 2006 09 01 | 152 | 0.9− | 0.5− | 2006 11 16 | G96 | (3.4+ | 1.4+) |

### 2006 QK$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.27135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17693480 | $\omega$ | 162.69030 | | +0.91084842 | −0.41195404 | |
| $a$ | 3.1423933 | $\Omega$ | 221.66666 | | +0.37400248 | +0.84989283 | |
| $e$ | 0.0673132 | $i$ | 2.19620 | | +0.17457749 | +0.32859708 | |
| $P$ | 5.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.0 | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.2+ | 1.3+ |
| 2001 10 14 | 691 | 0.2− | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 09 17 | 703 | 0.8− | 0.0 |
| 2001 10 14 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.8+ | 0.6+ |
| 2001 10 23 | 049 | 0.2− | 0.4+ | 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2001 10 23 | 049 | 0.6+ | 1.0− | 2006 08 22 | 644 | 0.2+ | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2001 10 23 | 049 | 0.2+ | 0.3− | 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2002 12 05 | 291 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.0 |
| 2002 12 05 | 291 | 0.0 | 0.3+ | 2006 09 02 | 152 | 0.5+ | 0.9+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 12 05 | 291 | 0.4+ | 0.6+ | 2006 09 02 | 152 | 0.1+ | 1.3+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 09 02 | 152 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.7+ | 0.3− | 2006 11 16 | G96 | 0.2− | 0.7− |

### 2006 QM$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.14895 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22294351 | $\omega$ | 167.63584 | | +0.93348322 | +0.35837219 | |
| $a$ | 2.6936396 | $\Omega$ | 171.32834 | | −0.33611435 | +0.88728011 | |
| $e$ | 0.0544727 | $i$ | 5.08327 | | −0.12504490 | +0.29035044 | |
| $P$ | 4.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 691 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 701 | 0.0 | 0.6− |
| 2004 01 30 | 691 | 0.3+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 04 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2005 04 04 | G96 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2005 04 04 | G96 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.7− | 0.1− | 2006 10 19 | 695 | 0.2− | 0.1+ |
| 2005 04 04 | G96 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.0 |
| 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.4+ | 2006 10 20 | 695 | 0.2− | 0.1+ |
| 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.6− |
| 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.5+ | 2006 11 17 | G96 | 0.5− | 0.1+ |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.6+ | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 24 | 701 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 24 | 701 | 0.0 | 0.4− | | | | |

### 2006 QN$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.96035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17908629 | $\omega$ | 294.55021 | | +0.11500569 | +0.99146204 | |
| $a$ | 3.1171748 | $\Omega$ | 341.73465 | | −0.82563908 | +0.06100454 | |
| $e$ | 0.2341130 | $i$ | 11.30780 | | −0.55235296 | +0.11524523 | |
| $P$ | 5.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 08 19 | 644 | 0.1+ | 0.2− | 2006 08 27 | 699 | 0.6+ | 1.0− |
| 2004 02 11 | 691 | 0.6+ | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.3+ |
| 2004 02 11 | 691 | 0.6+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.2+ | 0.7− |
| 2004 03 17 | 645 | 0.1− | 0.0 | 2006 08 19 | 644 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.4+ | 0.2− |
| 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 08 19 | 644 | 0.1+ | 0.1− | 2006 09 11 | 703 | 1.1− | 0.3+ |
| 2005 04 15 | 703 | 1.2− | 0.6− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 1.0+ | 0.5− |
| 2005 04 15 | 703 | 0.4+ | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 2005 04 15 | 703 | 0.5− | 0.7− | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 2005 04 15 | 703 | 0.3− | 0.3+ | 2006 08 25 | J87 | 0.1− | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2005 05 01 | E12 | 0.7− | 1.0+ | 2006 08 25 | J87 | 0.6+ | 0.8+ | 2006 09 17 | 703 | 1.2− | 0.1+ |
| 2005 05 01 | E12 | 0.6+ | 0.4+ | 2006 08 25 | J87 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.3+ | 1.2− |
| 2005 05 01 | E12 | 0.9+ | 0.4− | 2006 08 25 | J87 | 0.5− | 1.0+ | 2006 09 17 | 703 | 0.9− | 0.3− |
| 2005 05 01 | E12 | 0.3− | 0.6+ | 2006 08 25 | J87 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.7− |
| 2005 05 11 | 644 | 0.7+ | 0.2+ | 2006 08 25 | J87 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2005 05 11 | 644 | 0.8+ | 0.6+ | 2006 08 27 | 691 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.4− | 0.1− |
| 2005 05 11 | 644 | 0.9+ | 0.3+ | 2006 08 27 | 699 | 1.4+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.2− |

### 2006 QO$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.53485 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27622755 | $\omega$ | 106.30678 | | −0.05013955 | +0.99865080 | |
| $a$ | 2.3350242 | $\Omega$ | 160.80393 | | −0.93130350 | −0.04186211 | |
| $e$ | 0.1857977 | $i$ | 2.35543 | | −0.36077668 | −0.03072695 | |
| $P$ | 3.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.1+ | 0.3− | 2002 06 11 | 644 | 0.1+ | 0.5+ | 2006 08 22 | 644 | 0.3+ | 0.1− |
| 1999 09 03 | 691 | 0.2+ | 0.4+ | 2002 06 11 | 644 | 0.7+ | 1.1+ | 2006 08 22 | 644 | 0.3− | 0.4− |
| 1999 09 03 | 691 | 0.2− | 0.5− | 2005 03 08 | G96 | 0.1+ | 0.9+ | 2006 08 27 | 691 | 0.2+ | 0.3+ |
| 2002 05 12 | 644 | 0.1+ | 0.5− | 2005 03 08 | G96 | 0.8+ | 1.0+ | 2006 08 27 | 691 | 0.3+ | 0.1− |
| 2002 05 12 | 644 | 0.0 | 0.7− | 2005 03 08 | G96 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.1− |
| 2002 05 12 | 644 | 0.6+ | 0.5− | 2005 03 08 | G96 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2002 05 21 | 704 | (1.7− | 1.2−) | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 05 21 | 704 | 0.9− | 0.3− | 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.5− | 0.0 |
| 2002 05 21 | 704 | 1.3− | 0.7− | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2002 06 11 | 644 | 0.7+ | 0.7+ | 2006 08 22 | 644 | 0.4− | 0.2− | | | | |

### 2006 QV$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.24217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24259714 | $\omega$ | 193.73886 | | +0.77065374 | +0.63136169 | |
| $a$ | 2.5461204 | $\Omega$ | 126.77381 | | −0.57399890 | +0.74667060 | |
| $e$ | 0.1912083 | $i$ | 6.19650 | | −0.27679971 | +0.20944075 | |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 691 | 0.5− | 0.6+ | 2005 05 07 | 691 | 0.2− | 0.9+ | 2006 09 26 | 703 | 0.2− | 0.5− |
| 2000 01 27 | 691 | 0.7+ | 0.6− | 2006 08 19 | 699 | (2.9− | 1.1+) | 2006 09 26 | 703 | 0.1+ | 0.8− |
| 2000 01 27 | 691 | 0.0 | 0.5− | 2006 08 19 | 699 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.0 |
| 2000 02 06 | 691 | 0.3+ | 0.2− | 2006 08 19 | 699 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.4− | 1.0+ |
| 2000 02 06 | 691 | 0.1− | 0.3− | 2006 08 19 | 699 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 0.7+ | 0.0 |
| 2000 02 06 | 691 | 0.3+ | 0.4− | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.7− |
| 2002 09 29 | 608 | 0.6− | 1.0+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 10 02 | 703 | 0.3+ | 0.1− |
| 2002 09 29 | 608 | 0.9− | 0.6+ | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 10 02 | 703 | 0.6− | 0.2+ |
| 2002 09 29 | 608 | 0.6− | 1.0+ | 2006 08 28 | 699 | 0.5+ | 1.1− | 2006 10 02 | 703 | 0.0 | 0.7+ |
| 2002 10 08 | 699 | 0.3− | 0.4− | 2006 08 28 | 699 | (2.3+ | 0.0 ) | 2006 10 02 | 703 | 0.4− | 0.1− |
| 2002 10 08 | 699 | 0.9+ | 0.5− | 2006 08 28 | 699 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.2− | 0.5+ |
| 2002 10 08 | 699 | 0.1+ | 0.6− | 2006 08 28 | 699 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.6− | 0.4+ |
| 2002 10 08 | 699 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.8− | 1.2+ |
| 2002 10 15 | 644 | 0.5− | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.7+ | 1.1+ |
| 2002 10 15 | 644 | 0.7− | 0.3+ | 2006 09 18 | 703 | 0.9− | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2002 10 15 | 644 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.8− |
| 2004 01 16 | 691 | 0.1− | 0.7+ | 2006 09 18 | 699 | (1.7+ | 2.1−) | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2004 01 16 | 691 | 0.0 | 0.5+ | 2006 09 18 | 699 | 1.0+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.6− |
| 2004 01 16 | 691 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2005 05 07 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 1.2+ | 0.5+ | | | | |
| 2005 05 07 | 691 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.2− | 1.1+ | | | | |

### 2006 QA$_{27}$ = 1995 US$_{28}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.56169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17626208 | $\omega$ | 165.82244 | | +0.80701744 | +0.58990156 | |
| $a$ | 3.1503837 | $\Omega$ | 157.95968 | | −0.54861167 | +0.76597426 | |
| $e$ | 0.1909806 | $i$ | 4.15427 | | −0.21851337 | +0.25553783 | |
| $P$ | 5.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1− | 0.2− | 2005 06 08 | 691 | 0.6+ | 0.7+ | 2006 09 17 | 704 | 0.2+ | 1.1+ |
| 1995 10 20 | 691 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.9+ |
| 1995 10 20 | 691 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.4+ |
| 1995 10 25 | 691 | 0.1− | 0.3− | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.6+ |
| 1995 10 25 | 691 | 0.5− | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.6− | 0.5+ |
| 1995 10 25 | 691 | 0.4+ | 0.1− | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.7+ |
| 2001 11 17 | 704 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 20 | 704 | 1.0+ | 0.1+ |
| 2001 11 17 | 704 | 0.6− | 0.8− | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.3− |
| 2001 11 17 | 704 | 1.2− | 0.4+ | 2006 08 23 | 644 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.8+ | 0.3+ |
| 2001 12 20 | 691 | 0.9+ | 1.0+ | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.0 |
| 2001 12 20 | 691 | 0.8+ | 1.0+ | 2006 08 27 | 699 | (2.3− | 0.2−) | 2006 09 20 | 704 | 0.4+ | 0.2+ |
| 2001 12 20 | 691 | 1.0+ | 1.0+ | 2006 08 27 | 699 | 0.6− | 0.2− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2003 01 29 | 645 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2003 01 29 | 645 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.8− | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2004 03 14 | 691 | 0.3+ | 0.6+ | 2006 09 12 | 703 | 0.8− | 0.5− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2004 03 14 | 691 | 0.6+ | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.6− | 2006 09 30 | 703 | 1.2− | 0.4+ |
| 2004 03 14 | 691 | 0.5+ | 0.4+ | 2006 09 12 | 703 | 0.9− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2005 05 16 | G96 | 0.3+ | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.8− | 0.2− |
| 2005 05 16 | G96 | 0.1− | 0.3+ | 2006 09 16 | 699 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.7− |
| 2005 05 16 | G96 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2005 05 16 | G96 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.1+ | 1.2+ | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2005 06 08 | 691 | 0.5+ | 0.7+ | 2006 09 16 | 699 | 0.5+ | 1.1+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2005 06 08 | 691 | 0.0 | 0.9+ | 2006 09 17 | 704 | 0.1+ | 0.5+ | | | | |

**2006 QC$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.32009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28457672 | $\omega$ | 146.72423 | | +0.70394028 | +0.71020171 | |
| $a$ | 2.2891265 | $\Omega$ | 168.01106 | | −0.66077441 | +0.65950754 | |
| $e$ | 0.2367424 | $i$ | 2.49275 | | −0.26047124 | +0.24629927 | |
| $P$ | 3.46 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.1+ | 0.1− | 2006 08 25 | 704 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.1− | 0.5+ |
| 1999 08 12 | 699 | 0.4+ | 0.1+ | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.0 |
| 1999 08 12 | 699 | 0.3− | 0.5− | 2006 08 27 | 699 | 0.0 | 0.4− | 2006 09 19 | 699 | 0.3− | 1.4+ |
| 2002 04 19 | 691 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.5+ | 0.3− | 2006 09 20 | 644 | 0.0 | 0.2+ |
| 2002 04 19 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 1.4− | 0.1− | 2006 09 20 | 644 | 0.3− | 0.1− |
| 2002 04 19 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.2− | 0.9+ | 2006 09 20 | 704 | 0.5− | 0.4− |
| 2005 03 10 | 695 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.2− |
| 2005 03 10 | 695 | 0.4+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 1.1− | 2006 09 20 | 704 | 1.3− | 1.4− |
| 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.5+ | 0.1− | 2006 09 20 | 704 | 1.3− | 0.6+ |
| 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.6− | 2006 09 20 | 704 | 0.0 | 0.0 |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 12 | 703 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.3+ |
| 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 12 | 703 | 1.0+ | 0.6+ | 2006 09 25 | 699 | 1.2− | 1.4+ |
| 2006 08 22 | 644 | 0.2+ | 0.2− | 2006 09 12 | 703 | 0.1+ | 0.9− | 2006 09 25 | 699 | 0.5+ | 0.2− |
| 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.8+ | 0.2− | 2006 09 25 | 699 | 0.7+ | 1.6+ |
| 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.6+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.1− |
| 2006 08 25 | 704 | 0.5+ | 1.3− | 2006 09 19 | 699 | 0.5− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− |

**2006 QD$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.11634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26283662 | $\omega$ | 313.73084 | | +0.98379073 | −0.17272836 | |
| $a$ | 2.4136751 | $\Omega$ | 56.27180 | | +0.17662787 | +0.88701752 | |
| $e$ | 0.2179410 | $i$ | 3.32062 | | +0.03095795 | +0.42821120 | |
| $P$ | 3.75 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.0 | 0.4+ | 2006 08 24 | J87 | 0.1+ | 1.0+ | 2006 09 26 | 704 | 0.1+ | 0.7+ |
| 2002 07 05 | 644 | 0.2− | 0.4+ | 2006 08 24 | J87 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.9+ |
| 2002 07 05 | 644 | 0.1− | 0.8+ | 2006 08 24 | J87 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.4− | 0.8+ |
| 2002 08 11 | 644 | 0.0 | 1.0+ | 2006 08 28 | 699 | (1.7+ | 0.2+) | 2006 09 28 | 704 | 0.4− | 0.4− |
| 2002 08 11 | 644 | 0.1+ | 0.8+ | 2006 08 28 | 699 | 0.6− | 0.6+ | 2006 09 28 | 704 | 0.1− | 0.0 |
| 2002 08 11 | 644 | 0.2+ | 0.6+ | 2006 08 28 | 699 | 0.1+ | 0.5− | 2006 09 28 | 704 | 0.1− | 0.9− |
| 2002 08 13 | 704 | 0.4− | 0.4− | 2006 08 28 | 699 | 0.9− | 0.7+ | 2006 09 28 | 704 | 0.2− | 0.6− |
| 2002 08 13 | 704 | 0.2− | 0.6− | 2006 08 31 | 704 | (0.2− | 3.5−) | 2006 09 28 | 704 | 0.9− | 0.4− |
| 2002 08 13 | 704 | 0.0 | 0.7− | 2006 08 31 | 704 | 0.4+ | 0.9− | 2006 09 30 | 704 | 0.1+ | 1.2− |
| 2004 01 22 | 704 | 0.5− | 0.8+ | 2006 08 31 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.5− |
| 2004 01 22 | 704 | 0.5− | 0.5+ | 2006 09 12 | 703 | 0.4− | 0.0 | 2006 09 30 | 704 | 0.1− | 0.5− |
| 2004 01 22 | 704 | (0.6+ | 1.6+) | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 2004 01 22 | 704 | 0.6− | 0.7+ | 2006 09 12 | 703 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.8− |
| 2004 02 18 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 09 30 | 704 | (2.4+ | 1.1−) |
| 2004 02 18 | 691 | 0.4+ | 0.2+ | 2006 09 16 | 704 | (0.4+ | 2.9+) | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2004 02 18 | 691 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 704 | (1.7+ | 0.3+) |
| 2004 02 23 | 704 | (0.2− | 1.9+) | 2006 09 16 | 704 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2004 02 23 | 704 | 0.7+ | 1.2+ | 2006 09 17 | 608 | 1.2+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2004 02 23 | 704 | 0.5− | 0.7+ | 2006 09 17 | 608 | 1.0+ | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2004 03 17 | 645 | 0.0 | 0.0 | 2006 09 17 | 608 | 1.2+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.7+ | 0.3− | 2006 10 16 | 703 | 1.5− | 0.1− |
| 2005 04 10 | G96 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2005 04 10 | G96 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2005 04 10 | G96 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.7+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2005 04 10 | G96 | 0.4− | 0.5+ | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2005 05 14 | G96 | 0.3+ | 0.7+ | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2005 05 14 | G96 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.5− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2005 05 14 | G96 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2005 05 14 | G96 | 0.1+ | 0.3+ | 2006 09 19 | 704 | 0.5+ | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2006 08 19 | 644 | 0.1− | 0.0 | 2006 09 19 | 704 | 0.7+ | 0.2+ | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2006 08 19 | 644 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.1− | 0.4− | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2006 08 19 | 644 | 0.2+ | 0.2− | 2006 09 19 | 704 | 0.1+ | 0.3+ | 2006 10 24 | 644 | 0.2− | 0.3− |
| 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 22 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2006 08 22 | 644 | 0.5− | 0.0 | 2006 09 22 | 704 | (1.7+ | 0.7−) | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.1+ |
| 2006 08 24 | J87 | 0.8− | 0.7+ | 2006 09 22 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2006 08 24 | J87 | 0.7+ | 0.8+ | 2006 09 26 | 704 | 0.0 | 1.1+ | | | | |
| 2006 08 24 | J87 | 0.7− | 0.6+ | 2006 09 26 | 704 | 0.3− | 1.0+ | | | | |

**2006 QG$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.86094 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25602562 | $\omega$ | 242.83233 | | +0.60307761 | −0.79744672 | |
| $a$ | 2.4562945 | $\Omega$ | 170.00753 | | +0.76570490 | +0.57191523 | |
| $e$ | 0.1292989 | $i$ | 6.41732 | | +0.22359206 | +0.19233227 | |
| $P$ | 3.85 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.4− | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.7− |
| 2002 08 27 | 644 | 0.3− | 0.2+ | 2006 09 19 | 699 | (1.6+ | 0.6+) | 2006 09 27 | 704 | 0.1− | 0.1+ |
| 2002 08 27 | 644 | 0.5− | 0.4+ | 2006 09 19 | 699 | 1.0+ | 1.0+ | 2006 09 28 | 704 | 0.7− | 0.5+ |
| 2002 09 05 | 704 | (0.4− | 1.8+) | 2006 09 19 | 699 | 0.6+ | 0.2− | 2006 09 28 | 704 | (2.1− | 0.2+) |
| 2002 09 05 | 704 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 1.0+ | 2006 09 28 | 704 | 1.1− | 0.7+ |
| 2002 09 05 | 704 | 0.9+ | 0.1+ | 2006 09 20 | 704 | 0.4− | 1.0− | 2006 09 28 | 704 | 0.8− | 1.1− |
| 2002 09 05 | 704 | (0.5− | 1.5+) | 2006 09 20 | 704 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2004 03 01 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2004 03 01 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2004 03 01 | 691 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2005 05 08 | 691 | 0.1− | 0.4+ | 2006 09 25 | 699 | (2.0− | 1.1+) | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2006 08 19 | 691 | 0.5+ | 1.0− | 2006 09 26 | 691 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2006 08 19 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2006 08 19 | 691 | 0.5+ | 0.0 | 2006 09 26 | 691 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.6+ | 0.3− | 2006 11 23 | G96 | 0.7+ | 0.3− |
| 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2006 08 22 | 644 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.5+ | 0.1− | 2006 11 23 | G96 | 0.9+ | 0.5− |
| 2006 09 15 | 691 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.7+ | 2006 09 27 | 704 | 0.6− | 1.4− | | | | |

**2006 QH$_{27}$ = 2002 LF$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.06380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28521741 | $\omega$ | 272.90442 | | +0.81443369 | +0.57366422 | |
| $a$ | 2.2856972 | $\Omega$ | 52.10658 | | −0.47874743 | +0.74925573 | |
| $e$ | 0.1380285 | $i$ | 6.34540 | | −0.32786990 | +0.33094593 | |
| $P$ | 3.46 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.8− | 2006 10 02 | 703 | 0.3− | 0.8+ |
| 2002 06 08 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.6− | 0.6− | 2006 10 02 | 703 | 0.7+ | 0.6+ |
| 2002 06 08 | 704 | 0.4− | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.4− | 0.5+ |
| 2002 06 08 | 704 | 0.1+ | 0.4− | 2006 09 20 | 644 | 0.0 | 0.5− | 2006 10 16 | 703 | 1.5− | 1.1+ |
| 2002 06 08 | 704 | 0.9+ | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.2+ | 1.3− |
| 2002 06 09 | 704 | (4.4+ | 0.6−) | 2006 09 22 | 704 | 0.9− | 0.7+ | 2006 10 16 | 703 | (1.9+ | 0.8−) |
| 2002 06 09 | 704 | (3.5+ | 0.4−) | 2006 09 22 | 704 | 0.9+ | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 2002 06 09 | 704 | (3.9+ | 1.0−) | 2006 09 22 | 704 | 0.4+ | 1.3+ | 2006 10 16 | 703 | 0.3+ | 0.3+ |
| 2003 12 22 | 704 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.3+ | 2006 09 24 | 608 | (1.1+ | 1.9−) | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.2− | 1.3+ | 2006 09 24 | 608 | (1.3+ | 1.9−) | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2006 08 19 | 644 | 0.1+ | 0.3+ | 2006 09 24 | 608 | (0.5+ | 2.4−) | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2006 08 19 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 704 | (0.6+ | 1.7+) | 2006 10 21 | 644 | 0.2+ | 0.4− |
| 2006 08 19 | 644 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 1.0+ | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.9− | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.4− |
| 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 08 22 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.7+ | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 08 28 | 699 | (1.9− | 1.1+) | 2006 09 26 | 703 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.7− | 0.9− |
| 2006 08 28 | 699 | 0.3− | 0.6− | 2006 09 26 | 703 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.3+ |
| 2006 08 28 | 699 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.9− | 0.1+ | 2006 10 22 | 703 | 0.6+ | 0.3+ |
| 2006 08 28 | 699 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.2+ |
| 2006 09 12 | 703 | 1.3− | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.6− |
| 2006 09 12 | 703 | 0.3+ | 0.5− | 2006 09 30 | 704 | 0.0 | 0.5− | 2006 11 23 | G96 | 0.4+ | 0.7− |
| 2006 09 12 | 703 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2006 09 12 | 703 | 0.5+ | 1.1− | 2006 09 30 | 704 | 0.7− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 703 | 0.3+ | 1.4− | 2006 09 30 | 704 | 0.7− | 0.4− | | | | |
| 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.3+ | 0.8+ | | | | |

**2006 QO$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.96075 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30843655 | $\omega$ | 40.86182 | | +0.65527672 | +0.75464390 | |
| $a$ | 2.1694959 | $\Omega$ | 270.10674 | | −0.70149202 | +0.59145134 | |
| $e$ | 0.1664114 | $i$ | 1.92212 | | −0.28021662 | +0.28407373 | |
| $P$ | 3.20 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 691 | 0.0 | 0.3− | 2006 08 20 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.5− |
| 2003 10 19 | 691 | 0.3− | 0.2− | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 1.0+ |
| 2003 10 19 | 691 | 0.6+ | 1.1+ | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 19 | 703 | (0.4+ | 1.6−) |
| 2003 10 19 | 691 | 0.1− | 0.3− | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.6+ |
| 2003 10 19 | 691 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.1+ |
| 2003 10 19 | 691 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2003 12 01 | 291 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2003 12 01 | 291 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.9+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2003 12 01 | 291 | 0.4+ | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.8+ | 0.9− |
| 2006 08 20 | 691 | 0.1− | 0.4+ | 2006 09 12 | 703 | 1.2− | 0.3− | | | | |
| 2006 08 20 | 691 | 0.1− | 0.4− | 2006 09 12 | 703 | (0.7− | 2.0+) | | | | |

**2006 QS$_{27}$ = 2005 EM$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.85539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23391511 | $\omega$ | 340.23523 | | +0.19955867 | +0.97784627 | |
| $a$ | 2.6087384 | $\Omega$ | 301.22969 | | −0.88879508 | +0.15347867 | |
| $e$ | 0.2329095 | $i$ | 4.23793 | | −0.41257683 | +0.14234103 | |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 0.0 | 1.2− |
| 2002 10 04 | 704 | 0.2− | 0.7+ | 2006 08 23 | 644 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.8− | 0.5− |
| 2002 10 04 | 704 | 0.4+ | 0.6− | 2006 08 23 | 644 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.6+ | 0.9− |
| 2005 03 08 | 691 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.4+ | 0.7− |
| 2005 03 08 | 691 | 0.0 | 0.1+ | 2006 08 27 | 699 | 1.1− | 0.2+ | 2006 09 16 | 699 | 0.1− | 0.3+ |
| 2005 03 08 | 691 | 0.1+ | 0.0 | 2006 08 27 | 699 | 1.5+ | 0.2− | 2006 09 16 | 699 | 1.5+ | 0.6− |
| 2005 03 13 | 691 | 0.1− | 0.2+ | 2006 08 27 | 699 | 1.1+ | 0.5− | 2006 09 16 | 699 | 0.6− | 1.3− |
| 2005 03 13 | 691 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.4− | 1.0+ |
| 2005 03 13 | 691 | 0.1+ | 0.3− | 2006 08 29 | 703 | 0.5− | 0.5− | 2006 09 19 | 699 | 1.2+ | 0.4+ |
| 2006 08 20 | 691 | 0.2− | 0.1+ | 2006 08 29 | 703 | (0.6− | 3.2−) | 2006 09 19 | 699 | 0.3− | 0.3− |
| 2006 08 20 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | (1.6+ | 3.2−) | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 2006 08 20 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 09 30 | 699 | 0.5+ | 1.3+ |
| 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 30 | 699 | 1.0+ | 0.5− |
| 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 09 30 | 699 | 1.6− | 0.9+ |
| 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.7− | 1.3− | 2006 09 30 | 699 | 1.1− | 0.9+ |

**2006 QC$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.43048 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23528251 | $\omega$ | 218.91303 | | +0.99634421 | +0.05207894 | |
| $a$ | 2.5986211 | $\Omega$ | 137.94848 | | −0.02716249 | +0.94468266 | |
| $e$ | 0.1959677 | $i$ | 5.80280 | | −0.08099635 | +0.32382472 | |
| $P$ | 4.19 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | (1.8− | 0.2+) | 2006 08 28 | 699 | 1.4− | 0.4− | 2006 09 30 | 703 | 0.1− | 0.0 |
| 2002 10 15 | 644 | 0.4− | 0.7+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.6− | 1.1− |
| 2002 10 15 | 644 | 0.5− | 0.5+ | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.7− | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.2+ |
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.5− |
| 2002 10 31 | 704 | 0.6− | 0.4+ | 2006 09 14 | 703 | 1.2− | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.4− |
| 2002 10 31 | 704 | 0.9− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.4− |
| 2002 11 01 | 608 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.7− |
| 2002 11 01 | 608 | 0.3− | 1.1+ | 2006 09 18 | 703 | 0.4+ | 0.9+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2002 11 01 | 608 | 0.3+ | 0.5− | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2002 12 08 | 644 | 0.3+ | 1.1+ | 2006 09 18 | 703 | 0.9+ | 0.5− | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2002 12 08 | 644 | 0.0 | 1.4+ | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.8+ | 0.5− |
| 2002 12 08 | 644 | 0.1+ | 1.3+ | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.4+ | 0.0 |
| 2005 04 18 | 691 | 0.4+ | 1.2+ | 2006 09 18 | 699 | 0.1− | 0.7− | 2006 10 19 | 703 | 0.2− | 0.8+ |
| 2005 04 18 | 691 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.6+ | 0.5+ | 2006 10 19 | 703 | 0.5− | 0.3− |
| 2005 04 18 | 691 | 0.8+ | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.5− |
| 2005 04 30 | 691 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2005 04 30 | 691 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2005 04 30 | 691 | 0.0 | 0.0 | 2006 09 22 | 704 | 1.1+ | 0.6+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2006 08 20 | 691 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2006 08 20 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 1.0+ | 1.5+ | 2006 10 22 | 644 | 0.3− | 0.2− |
| 2006 08 20 | 691 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.8+ | 1.0+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.5− | 0.5− | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.4− | 0.5+ | 2006 10 23 | 644 | 0.4+ | 0.2− |
| 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.6+ | 0.9− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2006 08 28 | 699 | 0.4− | 0.4− | 2006 09 26 | 704 | 0.1− | 0.6− | 2006 10 24 | 644 | 0.0 | 0.2− |
| 2006 08 28 | 699 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.3− |
| 2006 08 28 | 699 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.7+ | | | | |

**2006 QN$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.22781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22894794 | $\omega$ | 203.51595 | | +0.98209777 | −0.17884809 | |
| $a$ | 2.6463354 | $\Omega$ | 166.38387 | | +0.18620035 | +0.96922736 | |
| $e$ | 0.1215928 | $i$ | 14.54898 | | −0.02852008 | +0.16914987 | |
| $P$ | 4.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 17 | 704 | (1.9+ | 0.3−) |
| 2002 10 15 | 644 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.8+ |
| 2002 10 15 | 644 | 0.2− | 0.2+ | 2006 08 25 | 704 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.3− |
| 2002 10 28 | 644 | 0.4+ | 0.2− | 2006 08 25 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 704 | 0.0 | 0.2− |
| 2002 10 28 | 644 | 0.0 | 0.3+ | 2006 08 25 | 704 | 0.1− | 0.6+ | 2006 09 17 | 704 | 0.5− | 0.2+ |
| 2002 10 28 | 644 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.6+ |
| 2004 02 18 | 691 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.8+ | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.7+ |
| 2004 02 18 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.3− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.8+ |
| 2004 02 18 | 691 | 0.2+ | 0.5+ | 2006 08 27 | 699 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.5− |
| 2004 03 15 | 704 | 0.1− | 1.2+ | 2006 08 28 | 703 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.9+ |
| 2004 03 15 | 704 | 0.2− | 0.8+ | 2006 08 28 | 703 | 1.1+ | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.6+ |
| 2004 03 15 | 704 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.0 | 1.3− | 2006 09 27 | 704 | 0.1− | 0.3+ |
| 2004 03 20 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.1− | 0.7− | 2006 09 27 | 704 | 0.7− | 0.8+ |
| 2004 03 20 | 691 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.2+ |
| 2004 03 20 | 691 | 0.3− | 0.2− | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.2+ |
| 2005 05 15 | 644 | 0.2+ | 0.8+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2005 05 15 | 644 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2005 05 15 | 644 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.3+ | 0.5− | 2006 09 30 | G96 | 0.3+ | 0.5− |
| 2006 08 21 | 704 | 1.3− | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.4− |
| 2006 08 21 | 704 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2006 08 21 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 699 | (1.7− | 0.9+) | 2006 09 30 | 703 | (2.2− | 1.4−) |
| 2006 08 21 | 704 | 0.3− | 0.4− | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2006 08 21 | 704 | 1.1− | 0.0 | 2006 09 16 | 699 | (1.7+ | 0.1−) | 2006 09 30 | G96 | 0.1+ | 0.6− |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | 1.3− | 0.5+ | | | | |

**2006 QO$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.99322 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27043492 | $\omega$ | 194.14313 | | +0.99930242 | −0.02119052 | |
| $a$ | 2.3682499 | $\Omega$ | 166.95415 | | +0.02877445 | +0.96178017 | |
| $e$ | 0.1321683 | $i$ | 7.82972 | | −0.02380555 | +0.27300160 | |
| $P$ | 3.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.2+ | 0.5− | 2006 08 28 | 703 | 0.4− | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.5− |
| 1995 07 26 | 691 | 0.0 | 0.7− | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.2+ |
| 1995 07 26 | 691 | 0.1− | 1.1− | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.4− | 0.2+ |
| 1995 09 20 | 691 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.5+ |
| 1995 09 20 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | (0.8− | 1.6−) | 2006 09 25 | 699 | 0.1+ | 0.7+ |
| 1995 09 20 | 691 | 0.3+ | 0.1− | 2006 09 12 | 703 | 0.0 | 0.8+ | 2006 09 25 | 699 | 1.4+ | 0.7+ |
| 1999 10 08 | 703 | 0.2+ | 1.2+ | 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.8+ |
| 1999 10 08 | 703 | 0.4− | 0.7+ | 2006 09 16 | 699 | 0.2− | 0.7+ | 2006 09 27 | 704 | 0.7+ | 0.4− |
| 1999 10 08 | 703 | 1.2+ | 0.8− | 2006 09 16 | 699 | 0.4+ | 1.0+ | 2006 09 27 | 704 | 1.1− | 1.3+ |
| 1999 10 08 | 703 | 0.9+ | 0.5− | 2006 09 16 | 699 | 0.2− | 0.8+ | 2006 09 27 | 704 | (1.2− | 2.3+) |
| 1999 11 05 | 704 | 0.5− | 0.2− | 2006 09 16 | 699 | 0.7− | 0.6+ | 2006 09 27 | 704 | 1.2− | 1.2+ |
| 1999 11 05 | 704 | 0.5− | 1.1− | 2006 09 17 | 704 | 0.1+ | 0.4− | 2006 09 28 | 704 | 1.3+ | 0.0 |
| 1999 11 05 | 704 | 0.4− | 1.1+ | 2006 09 17 | 704 | 0.3+ | 0.8− | 2006 09 28 | 704 | 0.2− | 0.5− |
| 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.2+ | 1.0− | 2006 09 28 | 704 | 0.0 | 0.7− |
| 2005 04 02 | 691 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.3− | 0.3− | 2006 09 28 | 704 | 0.4+ | 0.5− |
| 2005 04 02 | 691 | 0.2+ | 0.8+ | 2006 09 17 | 704 | 0.6− | 0.7− | 2006 09 30 | 703 | 0.6+ | 0.1− |
| 2006 08 21 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.7− |
| 2006 08 21 | 704 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.4− | 0.8− |
| 2006 08 21 | 704 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.6+ | 2006 10 02 | G96 | 0.3− | 0.3− |
| 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2006 08 25 | 704 | 0.6+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2006 08 25 | 704 | 0.7+ | 1.3+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2006 08 25 | 704 | 0.1− | 1.1+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2006 08 27 | 699 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 08 27 | 699 | 0.7+ | 1.3+ | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2006 08 27 | 699 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 2006 08 27 | 699 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 0.8− | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.0 | | | | |

**2006 QQ$_{28}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.24280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27208122 | $\omega$ | 338.84976 | | +0.73567185 | +0.67732194 | |
| $a$ | 2.3586871 | $\Omega$ | 338.51335 | | −0.61959628 | +0.67014791 | |
| $e$ | 0.1918229 | $i$ | 0.73252 | | −0.27365560 | +0.30354041 | |
| $P$ | 3.62 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.2+ | 0.2+ | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.2+ | 1.6− |
| 1992 11 28 | 691 | 0.3+ | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.2− | 0.2+ |
| 1992 11 28 | 691 | 0.6− | 0.1− | 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 08 28 | 699 | (2.3+ | 0.5+) |
| 1999 10 31 | 691 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.9+ | 0.6+ |
| 1999 10 31 | 691 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 18 | 699 | (2.1− | 0.3−) |
| 1999 10 31 | 691 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.1− |
| 2005 03 08 | G96 | 0.3+ | 0.1− | 2006 08 28 | 699 | (1.8+ | 2.8+) | 2006 09 18 | 699 | 0.9− | 1.1− |
| 2005 03 08 | G96 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 1.2+ | 0.4− |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2005 03 08 | G96 | 0.3− | 0.4+ | 2006 08 28 | 703 | 0.7− | 1.8+ | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 2006 08 18 | 644 | 0.3+ | 0.3+ | 2006 08 28 | 699 | 0.6+ | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2006 08 18 | 644 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.3− | 0.3+ | | | | |

**2006 QY$_{28}$ = 1999 VD$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.75939 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26738496 | $\omega$ | 47.31209 | | +0.75475461 | −0.65596536 | |
| $a$ | 2.3862250 | $\Omega$ | 353.66797 | | +0.58051888 | +0.67312200 | |
| $e$ | 0.1390179 | $i$ | 3.85297 | | +0.30552138 | +0.34149117 | |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.0 | 0.1− | 2003 12 28 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.0 |
| 1995 09 17 | 691 | 0.0 | 0.2+ | 2003 12 28 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 699 | (0.4+ | 1.6+) |
| 1995 09 17 | 691 | (0.4− | 3.1−) | 2003 12 28 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 703 | (1.8− | 0.2−) |
| 1995 09 18 | 691 | 0.0 | 0.1− | 2003 12 28 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.3− |
| 1995 09 18 | 691 | 0.1− | 0.2− | 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.4+ | 0.6− |
| 1995 09 18 | 691 | 0.1+ | 0.2− | 2006 08 21 | 704 | 0.5+ | 1.2+ | 2006 08 28 | 699 | 0.5− | 0.7+ |
| 1995 09 20 | 809 | 0.3+ | 0.8+ | 2006 08 21 | 704 | 0.4− | 0.6+ | 2006 08 29 | 704 | (1.7+ | 0.7+) |
| 1995 09 22 | 809 | 0.6+ | 0.2+ | 2006 08 21 | 704 | 1.4− | 0.3+ | 2006 08 29 | 704 | 0.2+ | 0.5− |
| 1995 09 22 | 809 | 0.0 | 1.8− | 2006 08 21 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.2− | 0.4+ |
| 1995 09 23 | 809 | 0.2− | 0.5− | 2006 08 21 | 704 | 0.2− | 0.6− | 2006 09 14 | 703 | (1.7− | 0.1−) |
| 1999 11 03 | 704 | 0.3+ | 1.1− | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.5+ | 1.1+ |
| 1999 11 03 | 704 | 0.3+ | 0.8− | 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.7+ |
| 1999 11 03 | 704 | 0.5− | 0.7+ | 2006 08 21 | 644 | 0.3+ | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.2− |
| 1999 11 04 | 704 | 0.3+ | 0.3+ | 2006 08 21 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.5− | 0.1− |
| 1999 11 04 | 704 | 0.1− | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1999 11 04 | 704 | 1.4+ | 0.3− | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 1999 11 04 | 704 | 0.3− | 1.9− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2003 12 23 | 704 | 0.4− | 0.5+ | 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2003 12 23 | 704 | 0.1− | 0.9− | 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.8+ | 0.1− | 2006 08 24 | 644 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2003 12 28 | 704 | 0.0 | 0.9+ | 2006 08 28 | 699 | 0.3+ | 0.2+ | | | | |
| 2003 12 28 | 704 | 0.6+ | 1.4+ | 2006 08 28 | 703 | 0.4− | 0.6+ | | | | |

### 2006 QA$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.49572 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22274551 | $\omega$ | 336.81298 | | +0.78347067 | +0.62096652 | |
| $a$ | 2.6952357 | $\Omega$ | 344.72683 | | −0.55495375 | +0.68178794 | |
| $e$ | 0.0726346 | $i$ | 5.21960 | | −0.27964272 | +0.38673735 | |
| $P$ | 4.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.7+ | 0.1+ | 2004 01 30 | 691 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.1+ | 0.2− |
| 2000 02 05 | 691 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.4+ | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.4− |
| 2000 02 05 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 0.5− |
| 2000 03 04 | 691 | 0.5− | 0.4− | 2006 08 18 | 644 | 0.2− | 0.5− | 2006 09 14 | 703 | 0.3+ | 0.7− |
| 2000 03 04 | 691 | 0.4− | 0.5− | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 1.4− | 0.1− |
| 2000 03 04 | 691 | 0.6− | 0.5− | 2006 08 21 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2002 11 26 | 711 | 0.1− | 1.3− | 2006 08 21 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2002 11 26 | 711 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2002 11 26 | 711 | 0.9+ | 0.3− | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 08 22 | 644 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.2− | | | | |

### 2006 QD$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.79669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23362203 | $\omega$ | 299.64345 | | +0.60965136 | +0.79265490 | |
| $a$ | 2.6109197 | $\Omega$ | 7.92618 | | −0.71458699 | +0.55222949 | |
| $e$ | 0.1974750 | $i$ | 2.01147 | | −0.34306071 | +0.25834240 | |
| $P$ | 4.22 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.7− | 0.2− | 2006 08 21 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | (1.3+ | 2.6+) |
| 2005 04 02 | G96 | 0.7− | 0.6− | 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.1− |
| 2005 04 02 | G96 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.1− |
| 2005 04 02 | G96 | (0.5− | 2.1−) | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.0 | 0.3− | 2006 08 22 | 644 | 0.2− | 0.2− | 2006 08 31 | 704 | 0.0 | 0.8+ |
| 2005 04 02 | G96 | 0.2− | 0.2− | 2006 08 22 | 644 | 0.0 | 0.4− | 2006 08 31 | 704 | 0.7− | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.3− | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 08 31 | 704 | 0.7+ | 0.4− |
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2006 08 25 | 704 | 1.0+ | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2005 04 05 | G96 | 0.4+ | 0.2+ | 2006 08 25 | 704 | 0.9+ | 1.1+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2005 04 05 | G96 | 0.5+ | 0.5+ | 2006 08 25 | 704 | 0.1+ | 1.1+ | 2006 09 30 | G96 | 0.7− | 0.0 |
| 2005 04 05 | G96 | 0.6+ | 0.3+ | 2006 08 25 | 704 | (1.9− | 0.7+) | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2005 04 05 | G96 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2006 08 16 | 644 | 0.2− | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.5− |
| 2006 08 16 | 644 | 0.1+ | 0.4− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.4+ |
| 2006 08 16 | 644 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.8− | 0.9− | 2006 10 28 | G96 | 0.3+ | 0.5+ |
| 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | (2.2− | 1.8+) | | | | |
| 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 08 28 | 691 | (1.0− | 2.3+) | | | | |

### 2006 QK$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.94223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27833261 | $\omega$ | 215.51847 | | +0.38505442 | +0.92085726 | |
| $a$ | 2.3232360 | $\Omega$ | 77.19818 | | −0.83155377 | +0.37498010 | |
| $e$ | 0.1042422 | $i$ | 3.60285 | | −0.40031416 | +0.10682618 | |
| $P$ | 3.54 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 704 | 0.5+ | 0.1− | 2002 06 16 | 644 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.0 |
| 2002 05 10 | 704 | 0.0 | 0.2− | 2003 10 20 | 691 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.2+ |
| 2002 05 10 | 704 | 0.3− | 0.5− | 2003 10 20 | 691 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.2+ |
| 2002 05 18 | 644 | 0.4+ | 0.2+ | 2003 10 20 | 691 | 0.0 | 0.3+ | 2006 08 23 | 704 | 0.4+ | 0.4− |
| 2002 05 18 | 644 | 0.6+ | 0.1+ | 2006 08 16 | E12 | 0.5− | 0.4+ | 2006 08 23 | 704 | 0.1+ | 0.2− |
| 2002 05 18 | 644 | 0.5+ | 0.2+ | 2006 08 16 | E12 | 0.2− | 0.4− | 2006 08 23 | 704 | 0.1+ | 0.6− |
| 2002 06 08 | 291 | 0.0 | 0.2+ | 2006 08 16 | E12 | 0.2+ | 0.1+ | 2006 08 23 | 704 | 0.6− | 0.0 |
| 2002 06 08 | 291 | 0.1+ | 0.1+ | 2006 08 16 | E12 | 0.5+ | 0.0 | 2006 08 24 | 644 | 0.2+ | 0.1− |
| 2002 06 08 | 291 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.1− | 0.0 |
| 2002 06 16 | 644 | 0.1− | 0.4+ | 2006 08 18 | 644 | 0.2+ | 0.4+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2002 06 16 | 644 | 0.3− | 0.1− | 2006 08 18 | 644 | 0.3− | 0.1− | | | | |

### 2006 QO$_{29}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.11711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29397327 | $\omega$ | 236.84939 | | +0.98888176 | +0.11288286 | |
| $a$ | 2.2400832 | $\Omega$ | 116.50348 | | −0.07219008 | +0.93352983 | |
| $e$ | 0.1865124 | $i$ | 6.20972 | | −0.13000557 | +0.34026390 | |
| $P$ | 3.35 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 691 | 0.0 | 0.1+ | 2006 06 19 | G96 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.2− | 0.0 |
| 2003 11 21 | 691 | 0.1+ | 0.0 | 2006 07 25 | 644 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.2− | 0.1+ |
| 2003 11 21 | 691 | 0.1+ | 0.1− | 2006 07 25 | 644 | 0.2− | 0.3+ | 2006 08 23 | 704 | 0.6− | 0.1+ |
| 2003 11 29 | 691 | 0.1− | 0.0 | 2006 07 25 | 644 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.3+ | 0.4− |
| 2003 11 29 | 691 | 0.1− | 0.1− | 2006 08 14 | 644 | 0.0 | 0.2− | 2006 08 24 | 644 | 0.2+ | 0.1+ |
| 2003 11 29 | 691 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.1− | 0.2+ |
| 2006 06 19 | G96 | 0.3− | 0.2− | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.5+ | 0.2− |
| 2006 06 19 | G96 | 0.2+ | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.1+ | | | | |
| 2006 06 19 | G96 | 0.1+ | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.1+ | | | | |

### 2006 QT$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.98355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26330222 | $\omega$ | 190.25029 | | +0.51037836 | +0.85833661 | |
| $a$ | 2.4108288 | $\Omega$ | 110.45630 | | −0.78495759 | +0.49000259 | |
| $e$ | 0.2104889 | $i$ | 3.22146 | | −0.35122004 | +0.15217008 | |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.1− | 0.1− | 2005 03 03 | 691 | 0.1− | 0.0 | 2006 09 12 | 704 | 1.2+ | 0.3+ |
| 1994 04 02 | 691 | 0.5+ | 0.5− | 2005 03 03 | 691 | 0.0 | 0.0 | 2006 09 12 | 704 | 0.7+ | 0.3+ |
| 1994 04 02 | 691 | 0.3− | 0.8− | 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 09 12 | 704 | 1.1+ | 0.2+ |
| 1995 10 21 | 691 | 0.2− | 0.3− | 2005 04 10 | 691 | 0.2+ | 0.6+ | 2006 09 12 | 704 | 0.2+ | 0.3− |
| 1995 10 21 | 691 | 0.1− | 0.2− | 2005 04 10 | 691 | 0.4− | 0.9+ | 2006 09 14 | 703 | 0.3+ | 0.3+ |
| 1995 10 21 | 691 | 0.1− | 0.0 | 2006 07 21 | 703 | (2.4− | 2.1−) | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 1998 04 20 | 691 | 0.2− | 0.0 | 2006 07 21 | 703 | 0.6+ | 0.8− | 2006 09 14 | 703 | 0.2− | 0.3− |
| 1998 04 20 | 691 | 0.2− | 0.1+ | 2006 07 21 | 703 | 0.7− | 0.5+ | 2006 09 14 | 703 | 0.6− | 0.1+ |
| 1998 04 20 | 691 | 0.4− | 0.1+ | 2006 07 21 | 703 | 0.0 | 0.6− | 2006 09 26 | 704 | 0.6− | 0.4+ |
| 1998 05 01 | 704 | 0.9+ | 1.0+ | 2006 08 17 | 644 | 0.2+ | 1.1− | 2006 09 26 | 704 | 0.6− | 1.2+ |
| 1998 05 01 | 704 | (2.4− | 1.5+) | 2006 08 17 | 644 | 0.3+ | 0.1− | 2006 09 26 | 704 | 1.1− | 0.5+ |
| 1998 05 01 | 704 | 1.0+ | 0.6− | 2006 08 17 | 644 | 0.1− | 0.2− | 2006 09 28 | 704 | 0.2− | 0.2− |
| 1998 05 01 | 704 | (4.9− | 0.7+) | 2006 08 23 | 704 | 0.3+ | 0.5+ | 2006 09 28 | 704 | 0.3+ | 0.2+ |
| 1999 11 28 | 691 | 0.4+ | 0.5+ | 2006 08 23 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.1+ | 1.0+ |
| 1999 11 28 | 691 | 0.4+ | 0.4+ | 2006 08 23 | 704 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 1999 11 28 | 691 | 0.2− | 0.5+ | 2006 08 30 | 699 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.4− | 0.6− |
| 1999 12 09 | 691 | 0.2− | 0.7− | 2006 08 30 | 699 | 0.4− | 0.5+ | 2006 09 30 | 703 | 0.6+ | 0.9+ |
| 1999 12 09 | 691 | 0.2+ | 0.5− | 2006 08 30 | 699 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.5− | 0.5+ |
| 1999 12 09 | 691 | 0.0 | 0.4− | 2006 08 30 | 699 | 0.4+ | 0.1+ | | | | |
| 2005 03 03 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 704 | 0.9+ | 0.2− | | | | |

### 2006 QV$_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.60492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26146627 | $\omega$ | 259.31549 | | +0.74481746 | +0.66528962 | |
| $a$ | 2.4221011 | $\Omega$ | 58.95805 | | −0.58639159 | +0.68932265 | |
| $e$ | 0.1654425 | $i$ | 3.43587 | | −0.31842087 | +0.28674728 | |
| $P$ | 3.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 03 | 691 | 0.8− | 0.2+ | 2005 05 12 | G96 | 0.5− | 0.1+ | 2006 09 16 | 704 | 0.3− | 0.5− |
| 1991 10 03 | 691 | 0.2− | 0.9+ | 2005 05 12 | G96 | 0.3− | 0.2+ | 2006 09 16 | 704 | 0.6− | 0.4− |
| 1991 10 03 | 691 | 0.1+ | 0.3+ | 2005 05 12 | G96 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.2− | 0.1− | 2006 08 17 | 644 | 0.4− | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.7− |
| 1999 12 07 | 704 | 0.9+ | 0.3+ | 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.5+ |
| 1999 12 07 | 704 | 0.4+ | 0.1+ | 2006 08 17 | 644 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 2002 07 05 | 704 | 0.3− | 0.6+ | 2006 08 23 | 704 | 0.3+ | 0.9+ | 2006 09 22 | 704 | (1.8+ | 0.4+) |
| 2002 07 05 | 704 | 0.8+ | 0.0 | 2006 08 23 | 704 | 0.4+ | 0.0 | 2006 09 22 | 704 | 0.3+ | 0.7+ |
| 2002 07 05 | 704 | 0.4− | 0.6+ | 2006 08 23 | 704 | 0.5+ | 0.2− | 2006 09 22 | 704 | 1.3+ | 0.2− |
| 2002 07 05 | 704 | 0.5− | 0.3+ | 2006 08 28 | 704 | 0.5− | 0.2+ | 2006 09 22 | 704 | 1.6+ | 0.4− |
| 2002 07 05 | 704 | 0.1− | 0.2+ | 2006 08 28 | 704 | (1.5+ | 1.6−) | 2006 09 25 | 699 | 0.2+ | 0.3− |
| 2002 07 05 | 644 | 0.5− | 0.6+ | 2006 08 28 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.2− |
| 2002 07 05 | 644 | 0.5− | 0.5+ | 2006 08 28 | 704 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.4− |
| 2002 07 05 | 644 | 0.3− | 0.4+ | 2006 08 28 | 704 | 0.6+ | 0.7+ | 2006 09 25 | 699 | 0.7− | 0.0 |
| 2002 07 14 | 644 | 0.1− | 0.1− | 2006 08 28 | 704 | 0.0 | 1.1+ | 2006 09 26 | 704 | 1.0+ | 0.4+ |
| 2002 07 14 | 644 | 0.3+ | 0.0 | 2006 08 28 | 704 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.9+ | 0.3− |
| 2002 07 14 | 644 | 0.1+ | 0.1− | 2006 08 28 | 704 | 0.8− | 0.6+ | 2006 09 26 | 704 | 0.5+ | 0.1− |
| 2002 08 13 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.2− | 0.5+ | 2006 09 26 | 704 | 0.4+ | 0.4+ |
| 2002 08 13 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 699 | 0.3+ | 0.2− | 2006 09 26 | 704 | 0.4+ | 0.0 |
| 2002 08 13 | 704 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.5+ | 0.2− |
| 2002 08 13 | 704 | 0.1− | 0.6− | 2006 08 28 | 699 | 0.7+ | 0.5+ | 2006 09 28 | 704 | 0.9+ | 1.0+ |
| 2002 08 13 | 704 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.9− | 1.2− | 2006 09 28 | 704 | 0.0 | 0.4− |
| 2002 08 29 | 644 | 0.4+ | 0.2− | 2006 08 30 | 704 | 0.4− | 0.3− | 2006 09 28 | 704 | 0.2+ | 0.5− |
| 2002 08 29 | 644 | 0.3+ | 0.2− | 2006 08 30 | 704 | (1.7− | 0.3−) | 2006 09 30 | 703 | 0.5− | 1.0+ |
| 2002 08 29 | 644 | 0.4+ | 0.2− | 2006 08 30 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 1.2− | 0.2+ |
| 2002 08 29 | 644 | 0.3+ | 0.0 | 2006 08 31 | 704 | 0.0 | 0.9− | 2006 09 30 | 703 | 0.1− | 0.7+ |
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 08 31 | 704 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 01 16 | 691 | 0.2− | 0.5+ | 2006 08 31 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.7− | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2004 01 16 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2005 03 11 | 691 | 0.6+ | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 11 11 | 703 | (0.8+ | 1.8−) |
| 2005 03 11 | 691 | 0.6+ | 0.5+ | 2006 09 14 | 703 | 0.2− | 0.7− | 2006 11 11 | 703 | 1.4− | 0.4− |
| 2005 03 11 | 691 | 0.1− | 1.4+ | 2006 09 16 | 704 | 0.4− | 0.6− | 2006 11 11 | 703 | 0.9− | 0.3+ |
| 2005 05 12 | G96 | 0.2− | 0.2+ | 2006 09 16 | 704 | 0.8− | 0.6− | | | | |

**2006 QB$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.55618 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18358204 | $\omega$ | 256.28479 | | +0.86383683 | | −0.49422469 |
| $a$ | 3.0660737 | $\Omega$ | 133.23126 | | +0.49828117 | | +0.80970097 |
| $e$ | 0.3180074 | $i$ | 7.69915 | | +0.07417417 | | +0.31642740 |
| $P$ | 5.37 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.9− | 0.3− | 2006 08 31 | 704 | 0.3− | 0.8+ | 2006 09 30 | 704 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | (1.7− | 0.1−) | 2006 08 31 | 704 | 1.3+ | 0.1+ | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2001 12 18 | 704 | 0.6− | 0.6+ | 2006 08 31 | 704 | (2.2− | 0.5+) | 2006 09 30 | 704 | 0.6− | 0.2+ |
| 2002 01 09 | 704 | 1.0+ | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.4− |
| 2002 01 09 | 704 | 0.6+ | 0.3− | 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2002 01 09 | 704 | 0.7+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.5− | 0.2− |
| 2002 01 09 | 704 | 0.7− | 0.9+ | 2006 09 18 | 703 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2002 01 09 | 704 | (1.7+ | 1.5+) | 2006 09 21 | 699 | 0.3− | 0.6+ | 2006 10 17 | D35 | 0.2− | 0.3+ |
| 2003 02 09 | 291 | 0.7+ | 0.3+ | 2006 09 21 | 699 | 0.2− | 0.5+ | 2006 10 17 | D35 | 0.2− | 0.2+ |
| 2003 02 09 | 291 | 0.5+ | 0.4+ | 2006 09 21 | 699 | 0.0 | 0.4+ | 2006 10 17 | D35 | 0.4− | 0.3+ |
| 2003 02 09 | 291 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2003 03 23 | 645 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.4− |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2003 03 31 | 645 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2003 03 31 | 645 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2006 08 19 | 699 | 0.3+ | 0.2− | 2006 09 29 | 699 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2006 08 19 | 699 | 0.6− | 0.2− | 2006 09 29 | 699 | 0.0 | 0.4+ | 2006 10 24 | 644 | 0.2+ | 0.3− |
| 2006 08 19 | 699 | (1.8− | 0.8+) | 2006 09 29 | 699 | 0.3+ | 0.2+ | 2006 10 24 | 644 | 0.4+ | 0.3− |
| 2006 08 19 | 699 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.3+ | 0.4− |
| 2006 08 23 | 704 | 0.2+ | 1.1+ | 2006 09 29 | 608 | 0.6+ | 0.5− | 2006 10 28 | 703 | 0.1− | 0.4− |
| 2006 08 23 | 704 | 0.0 | 0.2+ | 2006 09 29 | 608 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.3− | 0.7− |
| 2006 08 23 | 704 | 0.6− | 0.6+ | 2006 09 29 | 608 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.0 | 0.9− |
| 2006 08 23 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 704 | 0.4− | 0.6+ | 2006 10 28 | 703 | 0.3− | 0.7− |
| 2006 08 31 | 704 | 0.9+ | 0.4+ | 2006 09 30 | 704 | 0.3− | 0.4+ | | | | |

**2006 QL$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.31756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22248999 | $\omega$ | 328.37497 | | +0.91379636 | | +0.40575163 |
| $a$ | 2.6972988 | $\Omega$ | 7.75471 | | −0.33820042 | | +0.78529366 |
| $e$ | 0.2100033 | $i$ | 7.87542 | | −0.22493706 | | +0.46763177 |
| $P$ | 4.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 17 | 691 | 0.9+ | 0.3+ | 2006 08 30 | 699 | 0.4− | 0.4+ | 2006 09 22 | 704 | 0.1− | 0.4− |
| 1996 03 17 | 691 | 0.6− | 0.4+ | 2006 08 30 | 699 | 0.8− | 0.7− | 2006 09 26 | 704 | 0.3− | 1.2+ |
| 2002 11 25 | 644 | 0.1− | 0.8+ | 2006 08 30 | 699 | 0.9+ | 1.5+ | 2006 09 26 | 704 | 0.3+ | 0.6+ |
| 2002 11 25 | 644 | 0.0 | 1.0+ | 2006 08 31 | 704 | 0.6− | 0.3+ | 2006 09 26 | 704 | 1.1+ | 0.1+ |
| 2002 11 25 | 644 | 0.6− | 0.9+ | 2006 08 31 | 704 | 0.9− | 1.2+ | 2006 09 26 | 704 | 0.2− | 1.2+ |
| 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 08 31 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.3+ |
| 2005 04 11 | 691 | 0.0 | 0.1+ | 2006 08 31 | 704 | 0.2− | 1.0+ | 2006 09 30 | 703 | 1.4− | 0.2+ |
| 2005 04 11 | 691 | 0.2+ | 0.0 | 2006 09 12 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 1.0+ | 0.5− |
| 2006 08 14 | 644 | 0.3+ | 0.1− | 2006 09 12 | 704 | 1.3+ | 0.1− | 2006 09 30 | 703 | 1.3− | 1.3− |
| 2006 08 14 | 644 | 0.1+ | 0.3− | 2006 09 12 | 704 | 0.7+ | 0.0 | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2006 08 14 | 644 | 0.2+ | 0.1− | 2006 09 12 | 704 | 0.7+ | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 1.2− | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.6− | 0.5− | 2006 10 22 | G96 | 0.6+ | 0.2− |
| 2006 08 16 | 644 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.6+ | 0.3− |
| 2006 08 20 | 644 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.6− | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 08 20 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2006 08 20 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.6− | 0.6− |
| 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.8+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.7− |
| 2006 08 22 | 644 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2006 08 22 | 644 | 0.2+ | 0.4− | 2006 09 18 | 699 | 0.5− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 19 | 704 | (0.3− | 1.7+) | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2006 08 23 | 704 | 0.0 | 0.8− | 2006 09 19 | 704 | 0.0 | 0.8+ | 2006 11 17 | G96 | 0.6+ | 0.3+ |
| 2006 08 23 | 704 | 1.2− | 0.8+ | 2006 09 19 | 704 | (1.7− | 1.1+) | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2006 08 23 | 704 | 0.3− | 0.3− | 2006 09 19 | 704 | 0.8+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 08 23 | 704 | 0.4+ | 0.4− | 2006 09 22 | 704 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2006 08 23 | 704 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2006 08 30 | 699 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.3− | 0.4+ | | | | |

**2006 QP$_{30}$ = 2005 JM$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.52022 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17288913 | $\omega$ | 296.90162 | | +0.21312066 | | +0.97124930 |
| $a$ | 3.1912262 | $\Omega$ | 344.27506 | | −0.69838262 | | +0.07550549 |
| $e$ | 0.1984819 | $i$ | 23.04385 | | −0.68325786 | | +0.22577358 |
| $P$ | 5.70 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 08 23 | 704 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.2− |
| 2004 02 13 | 691 | 0.2+ | 0.3+ | 2006 08 23 | 704 | 0.5− | 0.6+ | 2006 09 20 | 644 | 0.6− | 0.2+ |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.3− | 0.4+ | 2006 09 20 | 644 | 0.4− | 0.1+ |
| 2005 05 15 | 428 | (2.3+ | 0.6−) | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.7− | 0.0 |
| 2005 05 15 | 428 | 0.4+ | 0.8− | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.6− | 0.5− |
| 2005 05 16 | 428 | 0.6+ | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.8− | 0.3− |
| 2005 05 16 | 428 | 0.8− | 1.1+ | 2006 08 28 | 704 | 0.3+ | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2006 04 04 | 809 | 0.2− | 0.1+ | 2006 08 28 | 704 | 1.3− | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2006 04 04 | 809 | 0.2− | 0.0 | 2006 08 28 | 704 | 0.4+ | 1.1+ | 2006 09 30 | 703 | (1.0− | 2.2+) |
| 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.6+ | 0.9+ | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.7+ |
| 2006 08 16 | 644 | 0.7+ | 0.2+ | 2006 08 28 | 699 | 0.8− | 0.4− | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2006 08 21 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.5+ | 0.6− | 2006 09 30 | 703 | (0.9− | 1.9+) |
| 2006 08 21 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.1+ |
| 2006 08 21 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2006 08 21 | 644 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.0 | 0.5− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2006 08 21 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 10 19 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 23 | 704 | 1.0+ | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.3+ | | | | | | |
| 2006 08 23 | 704 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.0 | 0.1+ | | | | | | |

**2006 QS$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.77751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20999360 | $\omega$ | 332.06199 | | +0.87392098 | +0.48605743 | |
| $a$ | 2.8032727 | $\Omega$ | 358.84139 | | −0.41114333 | +0.73567414 | |
| $e$ | 0.1622129 | $i$ | 9.12932 | | −0.25927453 | +0.47173270 | |
| $P$ | 4.69 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 25 | 644 | 0.2− | 0.4+ | 2006 08 28 | 704 | 0.1− | 0.0 | 2006 09 19 | 704 | 0.7− | 0.6+ | | |
| 2001 06 25 | 644 | 0.1− | 0.4+ | 2006 08 28 | 699 | (1.2− | 3.0+) | 2006 09 25 | 699 | 0.1+ | 0.3+ | | |
| 2001 06 25 | 644 | 0.3− | 0.5+ | 2006 08 28 | 699 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.3− | 0.5+ | | |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.4− | 0.1− | | |
| 2002 12 06 | 704 | 0.3+ | 1.1+ | 2006 08 28 | 699 | 0.5+ | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.0 | | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2006 08 31 | 704 | (1.7− | 2.0+) | 2006 09 26 | 704 | 0.0 | 0.0 | | |
| 2004 01 30 | 704 | 0.8+ | 1.2+ | 2006 08 31 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.2+ | | |
| 2004 01 30 | 704 | 0.7+ | 1.1+ | 2006 08 31 | 704 | 1.4+ | 1.1− | 2006 09 26 | 704 | (0.1+ | 1.6+) | | |
| 2004 01 30 | 704 | 1.0+ | 0.7− | 2006 08 31 | 704 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.6− | 0.8+ | | |
| 2004 02 11 | 644 | 0.3− | 0.8+ | 2006 09 12 | 704 | 0.9+ | 0.2− | 2006 09 26 | 704 | 0.4+ | 0.0 | | |
| 2004 02 11 | 644 | 0.4− | 0.6+ | 2006 09 12 | 704 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.7− | 1.1− | | |
| 2004 02 11 | 644 | 0.1− | 0.8+ | 2006 09 12 | 704 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 1.4− | | |
| 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 12 | 704 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.5− | | |
| 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 12 | 704 | 0.4− | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.5− | | |
| 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.3− | | |
| 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.3− | | |
| 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.3− | | |
| 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.5− | 1.0− | | |
| 2006 08 23 | 704 | 0.7− | 0.7+ | 2006 09 16 | 704 | 1.1+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.2+ | | |
| 2006 08 23 | 704 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.1− | | |
| 2006 08 23 | 704 | (1.7− | 1.0+) | 2006 09 16 | 704 | 0.2− | 0.3+ | 2006 11 11 | 703 | (0.1+ | 1.6−) | | |
| 2006 08 23 | 704 | 0.7− | 0.1− | 2006 09 16 | 704 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.8− | | |
| 2006 08 23 | 704 | 0.5− | 0.6+ | 2006 09 16 | 704 | 0.4− | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.4− | | |
| 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.1+ | 1.2+ | 2006 11 13 | G96 | 0.1+ | 0.7− | | |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.5− | | |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.8+ | 0.3+ | 2006 11 13 | G96 | 0.3− | 0.8− | | |
| 2006 08 28 | 704 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.7− | 0.8+ | 2006 11 21 | G96 | 0.5+ | 0.1+ | | |
| 2006 08 28 | 704 | 0.0 | 0.4+ | 2006 09 19 | 704 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2006 08 28 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 704 | 0.0 | 1.0+ | 2006 11 21 | G96 | 0.2+ | 0.0 | | |
| 2006 08 28 | 704 | 0.2+ | 0.0 | 2006 09 19 | 704 | 0.1− | 1.0+ | 2006 11 21 | G96 | 0.2+ | 0.2− | | |

**2006 QU$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.90980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18285091 | $\omega$ | 10.68112 | | +0.99818121 | −0.02198728 | |
| $a$ | 3.0742413 | $\Omega$ | 350.05097 | | −0.02131635 | +0.74223697 | |
| $e$ | 0.2209092 | $i$ | 18.95905 | | +0.05639054 | +0.66977671 | |
| $P$ | 5.39 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 704 | 0.1+ | 1.2− | 2006 08 31 | 106 | 0.3− | 0.6− | 2006 09 27 | 704 | 0.3+ | 0.1+ | | |
| 2001 08 23 | 704 | 0.2+ | 0.2+ | 2006 08 31 | 106 | 0.1+ | 0.8− | 2006 09 27 | 704 | 0.3+ | 0.0 | | |
| 2001 08 23 | 704 | 0.9+ | 0.1− | 2006 09 12 | 703 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.2− | | |
| 2001 08 23 | 704 | 0.4+ | 0.5− | 2006 09 12 | 703 | 0.5− | 0.7− | 2006 09 27 | 704 | 0.3− | 0.6+ | | |
| 2001 08 23 | 704 | 0.2− | 0.7− | 2006 09 12 | 703 | 0.0 | 0.7− | 2006 09 29 | 704 | (1.8− | 0.6+) | | |
| 2001 10 08 | 704 | (0.3+ | 1.9−) | 2006 09 12 | 703 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.4+ | | |
| 2001 10 08 | 704 | 0.1+ | 1.4− | 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.9− | 0.2− | | |
| 2001 10 08 | 704 | 0.2+ | 0.3− | 2006 09 16 | 699 | 0.9− | 1.1+ | 2006 09 29 | 704 | 0.2+ | 0.4+ | | |
| 2001 10 08 | 704 | 0.9+ | 0.9− | 2006 09 16 | 699 | 0.4+ | 0.7+ | 2006 09 30 | 704 | 0.8+ | 0.7+ | | |
| 2001 10 08 | 704 | 0.2− | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.1− | | |
| 2003 03 07 | 645 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.6− | 0.4+ | 2006 09 30 | 704 | 0.4+ | 0.5+ | | |
| 2003 03 07 | 645 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.0 | 0.3+ | | |
| 2006 08 17 | 644 | 0.4− | 0.0 | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.4− | 0.1− | | |
| 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 | | |
| 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.8− | 1.1+ | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− | | |
| 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.7− | | |
| 2006 08 22 | 644 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.3+ | | |
| 2006 08 23 | 704 | 0.2− | 0.1− | 2006 09 19 | 703 | 1.1− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.2+ | | |
| 2006 08 23 | 704 | 0.5− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.1− | | |
| 2006 08 23 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.7− | 2006 10 22 | 703 | 0.3+ | 0.1− | | |
| 2006 08 23 | 704 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.1+ | | |
| 2006 08 23 | 704 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.0 | | |
| 2006 08 27 | 699 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.1− | | |
| 2006 08 27 | 699 | 0.8− | 0.0 | 2006 09 20 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1− | | |
| 2006 08 27 | 699 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2006 08 28 | 703 | 0.5− | 0.7− | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 11 14 | 644 | 0.2+ | 0.2− | | |
| 2006 08 28 | 703 | 0.9− | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.4+ | 2006 11 14 | 644 | 0.3+ | 0.0 | | |
| 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 25 | 699 | 0.3− | 0.3+ | 2006 11 14 | 644 | 0.2+ | 0.3+ | | |
| 2006 08 30 | 704 | (2.6− | 2.1−) | 2006 09 26 | 704 | 0.4+ | 0.1− | 2006 11 15 | 704 | 0.9+ | 0.2− | | |
| 2006 08 30 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.2− | 2006 11 15 | 704 | 1.1− | 0.4− | | |
| 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.9+ | 0.0 | 2006 11 15 | 704 | 0.3− | 0.1− | | |
| 2006 08 30 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.0 | 0.6− | 2006 11 15 | 704 | 0.3+ | 0.3− | | |
| 2006 08 31 | 106 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.2− | 1.5+ | | | | | | |
| 2006 08 31 | 106 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.3− | 0.0 | | | | | | |

**2006 QV$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.37885 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23181100 | $\omega$ | 214.99086 | | +0.97108177 | −0.21737905 | |
| $a$ | 2.6245007 | $\Omega$ | 156.95644 | | +0.23180907 | +0.95743808 | |
| $e$ | 0.2738857 | $i$ | 14.60860 | | −0.05713799 | +0.18989121 | |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.9+ | 0.5+ | 2006 08 28 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.3− | 0.5− | | |
| 2002 10 30 | 704 | 0.2+ | 0.8− | 2006 08 28 | 704 | 0.5− | 0.2+ | 2006 09 21 | 699 | 0.8− | 0.2+ | | |
| 2002 10 30 | 704 | 0.5+ | 0.1− | 2006 08 28 | 704 | 0.1− | 0.6+ | 2006 09 21 | 699 | 0.0 | 0.0 | | |
| 2002 11 06 | 644 | 0.0 | 0.2− | 2006 08 28 | 704 | 0.1− | 1.5+ | 2006 09 21 | 699 | 0.4+ | 0.1+ | | |
| 2002 11 06 | 644 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.8+ | 0.0 | 2006 09 21 | 699 | 0.0 | 0.3− | | |
| 2002 11 06 | 644 | 0.0 | 0.1− | 2006 08 28 | 699 | 0.0 | 0.0 | 2006 09 21 | F84 | 0.4+ | 0.6− | | |
| 2002 11 16 | 644 | 0.3+ | 0.5− | 2006 08 28 | 699 | 0.5+ | 0.2+ | 2006 09 21 | F84 | 0.2+ | 0.4− | | |
| 2002 11 16 | 644 | 0.4+ | 0.5− | 2006 08 28 | 699 | 0.0 | 0.8+ | 2006 09 21 | F84 | 1.0+ | 0.6+ | | |
| 2002 11 16 | 644 | 0.3+ | 0.3− | 2006 08 30 | 704 | 0.5+ | 0.0 | 2006 09 25 | 703 | (1.9+ | 2.6−) | | |
| 2002 11 23 | 644 | 0.5− | 0.5− | 2006 08 30 | 704 | 0.2+ | 0.8+ | 2006 09 25 | 703 | (2.4+ | 0.4−) | | |
| 2002 11 23 | 644 | 0.2− | 0.4− | 2006 08 30 | 704 | 0.1− | 0.9+ | 2006 09 25 | 703 | 0.2+ | 0.8− | | |
| 2002 11 23 | 644 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.8− | 0.3+ | 2006 09 25 | 703 | 1.2+ | 0.6− | | |
| 2002 11 30 | 704 | 0.1+ | 1.1+ | 2006 08 30 | 704 | 0.2− | 0.9+ | 2006 10 02 | 703 | 0.1+ | 0.8+ | | |
| 2002 11 30 | 704 | 1.1− | 0.7+ | 2006 09 01 | 106 | 0.1− | 0.6− | 2006 10 02 | 703 | 0.1+ | 0.8+ | | |
| 2002 11 30 | 704 | 0.5− | 0.6+ | 2006 09 01 | 106 | 0.3− | 0.1− | 2006 10 02 | 703 | 0.3− | 0.9+ | | |
| 2002 11 30 | 704 | 0.1+ | 1.1+ | 2006 09 01 | 106 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.3+ | 0.9+ | | |
| 2004 02 22 | 695 | 0.0 | 0.3+ | 2006 09 01 | 106 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.4− | | |
| 2004 02 22 | 695 | 0.3+ | 0.3+ | 2006 09 12 | 704 | 0.5+ | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.1+ | | |
| 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 704 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.4− | | |
| 2004 03 18 | 691 | 0.3− | 0.3+ | 2006 09 12 | 704 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2004 03 18 | 691 | 0.3+ | 0.5+ | 2006 09 12 | 704 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.3+ | 0.2− | | |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 12 | 704 | 0.4+ | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.3− | | |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.2+ | 0.2− | | |
| 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.2− | | |
| 2006 08 23 | 704 | 1.0− | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.2+ | | |
| 2006 08 23 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.3− | 2006 11 19 | 703 | 1.2− | 0.3− | | |
| 2006 08 23 | 704 | 1.1− | 0.3+ | 2006 09 18 | 703 | 0.4+ | 0.5− | 2006 11 19 | 703 | 1.0− | 0.3+ | | |
| 2006 08 23 | 704 | 0.2− | 0.5− | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 11 19 | 703 | 0.5− | 0.0 | | |
| 2006 08 28 | 704 | (0.8− | 1.7+) | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 11 19 | 703 | 0.3+ | 0.2− | | |

**2006 QC$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.07408 | | (2000.0) | | | |
| $n$ | 0.25748823 | $\omega$ | 102.91605 | | +0.92695727 | −0.37444020 |
| $a$ | 2.4469840 | $\Omega$ | 279.07747 | | +0.33439542 | +0.85282393 |
| $e$ | 0.2051128 | $i$ | 1.35436 | | +0.17008796 | +0.36398611 |
| $P$ | 3.83 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 08 | 691 | 0.1+ | 0.1− | 2006 08 21 | 644 | 0.4− | 0.3− | 2006 08 28 | 699 | 1.5− | 0.6+ |
| 2000 01 08 | 691 | 0.1+ | 0.2+ | 2006 08 21 | 644 | 0.2− | 0.5− | 2006 08 29 | 704 | 0.9+ | 0.5− |
| 2000 01 08 | 691 | 0.1+ | 0.1+ | 2006 08 21 | 644 | 0.2− | 0.3− | 2006 08 29 | 704 | 0.4+ | 0.2− |
| 2000 01 13 | 691 | (0.9− | 2.9−) | 2006 08 24 | A50 | 0.1+ | 0.5− | 2006 08 29 | 704 | 0.4+ | 0.4+ |
| 2000 01 13 | 691 | 0.1− | 0.4+ | 2006 08 24 | A50 | 0.2+ | 0.4− | 2006 08 29 | 704 | 0.3+ | 0.1− |
| 2000 01 13 | 691 | 0.0 | 0.3+ | 2006 08 24 | A50 | 0.5+ | 0.2− | 2006 09 12 | 699 | 0.2+ | 0.4+ |
| 2005 04 12 | G96 | 0.3+ | 0.5+ | 2006 08 24 | A50 | 0.2+ | 0.0 | 2006 09 12 | 699 | 0.6+ | 0.4− |
| 2005 04 12 | G96 | 0.1− | 0.3+ | 2006 08 24 | A50 | 0.4+ | 0.3− | 2006 09 12 | 699 | 0.0 | 0.8+ |
| 2005 04 12 | G96 | 0.3− | 0.6+ | 2006 08 24 | A50 | 0.4+ | 0.4+ | 2006 09 12 | 699 | 0.2− | 1.3− |
| 2005 04 12 | G96 | 0.7+ | 0.5+ | 2006 08 24 | A50 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.5+ |
| 2006 08 16 | A50 | 0.2− | 1.4+ | 2006 08 24 | A50 | 0.3+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.4− |
| 2006 08 16 | A50 | 0.2+ | 1.3+ | 2006 08 24 | A50 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 1.4− | 0.2+ |
| 2006 08 16 | A50 | 0.0 | 1.4+ | 2006 08 28 | 691 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.4− | 0.3− |
| 2006 08 16 | A50 | 0.7− | 1.3+ | 2006 08 28 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | (1.6− | 0.5−) |
| 2006 08 16 | A50 | 0.6− | 1.2+ | 2006 08 28 | 699 | 0.3− | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.4− |
| 2006 08 16 | A50 | 0.7− | 1.1+ | 2006 08 28 | 691 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.3− | 0.2− |
| 2006 08 17 | A50 | 0.3+ | 0.1+ | 2006 08 28 | 699 | (0.6− | 1.6+) | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2006 08 17 | A50 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.6− |
| 2006 08 17 | A50 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.6− |
| 2006 08 17 | A50 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 0.2− | 1.1− | 2006 09 27 | G96 | 0.6+ | 0.5− |
| 2006 08 17 | A50 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.2+ | 0.8− | | | | |
| 2006 08 17 | A50 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.5− | | | | |

**2006 QL$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.08400 | | (2000.0) | | | |
| $n$ | 0.17607459 | $\omega$ | 164.32825 | | +0.86752081 | +0.49520246 |
| $a$ | 3.1526198 | $\Omega$ | 165.70509 | | −0.47426979 | +0.85182835 |
| $e$ | 0.1996308 | $i$ | 10.90558 | | −0.14991937 | +0.17077172 |
| $P$ | 5.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.3− | 0.4+ | 2006 08 24 | 941 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.8+ | 1.2− |
| 2001 10 23 | 644 | 0.4− | 0.5+ | 2006 08 24 | 941 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.1+ |
| 2001 10 23 | 644 | 0.8+ | 0.2+ | 2006 08 24 | 941 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.3− | 0.5+ |
| 2001 10 29 | 644 | 0.0 | 0.0 | 2006 08 24 | 941 | 0.2+ | 0.6− | 2006 09 18 | 699 | (1.9+ | 1.1−) |
| 2001 10 29 | 644 | 0.1− | 0.7− | 2006 08 25 | 941 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.4− | 0.2− |
| 2001 10 29 | 644 | 0.1− | 0.3+ | 2006 08 25 | 941 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 08 25 | 941 | 0.5+ | 0.5− | 2006 09 25 | G96 | 0.4+ | 0.0 |
| 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 08 25 | 941 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.8− |
| 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 08 25 | 941 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.8− |
| 2006 08 22 | 941 | 0.1− | 0.1− | 2006 08 26 | 941 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.3+ |
| 2006 08 22 | 941 | 0.1+ | 0.1+ | 2006 08 26 | 941 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.9− | 0.4+ |
| 2006 08 22 | 941 | 0.1+ | 0.3+ | 2006 08 28 | 703 | (0.4− | 2.8+) | 2006 09 27 | 704 | 0.5+ | 0.5+ |
| 2006 08 22 | 941 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.3+ | 1.3+ | 2006 09 27 | 704 | 0.3− | 1.0+ |
| 2006 08 22 | 941 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.8+ | 1.2+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2006 08 23 | 941 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2006 08 23 | 941 | 0.2− | 0.3− | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2006 08 23 | 941 | 0.1+ | 0.7− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2006 08 23 | 941 | 0.1+ | 0.8− | 2006 08 29 | 691 | 0.7− | 1.0+ | 2006 11 23 | G96 | 0.2+ | 0.7− |
| 2006 08 23 | 941 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2006 08 23 | 941 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.1− | 0.9− | 2006 11 23 | G96 | 0.8− | 0.0 |
| 2006 08 24 | 941 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.6+ | 0.8− | 2006 11 23 | G96 | 0.5− | 0.4− |

**2006 QV$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.24744 | | (2000.0) | | | |
| $n$ | 0.25508027 | $\omega$ | 142.41465 | | +0.82059168 | +0.57148736 |
| $a$ | 2.4623596 | $\Omega$ | 182.74957 | | −0.54863475 | +0.78495143 |
| $e$ | 0.2304660 | $i$ | 6.71807 | | −0.16009124 | +0.23927693 |
| $P$ | 3.86 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 1.5+ | 0.6+ | 2006 08 28 | 703 | 1.0+ | 0.7− | 2006 09 18 | 703 | 0.6+ | 0.2+ |
| 2002 07 09 | 704 | 0.2+ | 0.5− | 2006 08 28 | 699 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.3+ |
| 2002 07 09 | 704 | 0.9− | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.5+ |
| 2002 07 09 | 704 | 0.9− | 0.1− | 2006 08 28 | 703 | 0.7+ | 0.1− | 2006 09 18 | 704 | 0.6− | 0.5− |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2006 08 28 | 699 | 0.3+ | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.4+ | 0.1+ | 2006 09 18 | 704 | 1.5+ | 0.7− |
| 2005 03 11 | G96 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.4+ | 0.3− | 2006 09 18 | 704 | 0.2− | 0.1− |
| 2005 03 11 | G96 | 0.3− | 0.1− | 2006 08 29 | 691 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.0 | 0.5− |
| 2005 04 02 | G96 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.9− | 0.2+ |
| 2005 04 02 | G96 | 0.4+ | 0.2− | 2006 08 29 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | (1.6− | 0.2+) |
| 2005 04 02 | G96 | 0.3− | 0.6− | 2006 08 30 | 704 | 1.4+ | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.8+ |
| 2005 04 02 | G96 | 0.1− | 0.6− | 2006 08 30 | 704 | 0.0 | 0.4− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2006 08 16 | 644 | 0.3− | 0.2− | 2006 08 30 | 704 | 0.7+ | 0.5+ | 2006 09 27 | G96 | 0.5+ | 0.7− |
| 2006 08 16 | 644 | 0.5− | 0.2− | 2006 08 30 | 704 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.6+ | 0.2− |
| 2006 08 16 | 644 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2006 08 18 | 704 | 0.2− | 0.3+ | 2006 09 11 | 703 | (2.6− | 0.8−) | 2006 10 19 | G96 | 0.3− | 0.1+ |
| 2006 08 18 | 699 | 1.2+ | 1.4+ | 2006 09 11 | 703 | 1.2− | 1.1− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2006 08 18 | 704 | 0.7− | 0.8− | 2006 09 11 | 703 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2006 08 18 | 699 | 0.5+ | 1.1+ | 2006 09 11 | 703 | (2.1− | 0.5+) | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2006 08 18 | 704 | 0.3+ | 1.3− | 2006 09 12 | 699 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.8− | 0.2− |
| 2006 08 18 | 699 | 0.0 | 0.7+ | 2006 09 12 | 699 | 0.7+ | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2006 08 18 | 704 | 0.1+ | 0.0 | 2006 09 12 | 699 | 0.8+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4+ |
| 2006 08 18 | 699 | 1.3− | 0.2+ | 2006 09 12 | 699 | (0.8− | 1.5−) | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2006 08 24 | 704 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2006 08 24 | 704 | 0.1− | 0.4− | 2006 09 14 | 703 | 1.0− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2006 08 24 | 704 | 0.5+ | 0.1− | 2006 09 14 | 703 | 1.0− | 0.3+ | 2006 11 17 | G96 | 0.7+ | 0.0 |
| 2006 08 24 | 704 | 0.4+ | 0.3+ | 2006 09 14 | 703 | 1.0− | 0.2− | | | | |
| 2006 08 24 | 704 | 0.3− | 0.6− | 2006 09 18 | 703 | 0.5+ | 0.4+ | | | | |

**2006 QF$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.66566 | | (2000.0) | | | |
| $n$ | 0.18176423 | $\omega$ | 144.22626 | | +0.77318830 | +0.63385388 |
| $a$ | 3.0864822 | $\Omega$ | 176.24596 | | −0.62959105 | +0.77103565 |
| $e$ | 0.1001402 | $i$ | 17.99453 | | −0.07612465 | +0.06110055 |
| $P$ | 5.42 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 28 | 691 | 0.1− | 0.5− | 2006 08 24 | 704 | 0.9− | 1.0+ | 2006 09 19 | 699 | 0.7+ | 0.3− |
| 1995 07 28 | 691 | 0.0 | 0.5− | 2006 08 24 | 704 | 1.0− | 1.0+ | 2006 09 19 | 703 | 1.1+ | 1.1+ |
| 1995 07 28 | 691 | 0.2+ | 0.6− | 2006 08 27 | 699 | (1.7− | 0.9−) | 2006 09 19 | 699 | 0.9+ | 0.6+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.9− | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.5+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 1.1+ |
| 2004 03 18 | 704 | 0.1− | 1.5− | 2006 08 27 | 699 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.5− | 0.2+ | 2006 08 29 | 703 | 0.9+ | 0.5− | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2004 03 18 | 704 | 1.1+ | 0.7+ | 2006 08 29 | 703 | 0.0 | 1.2− | 2006 10 02 | G96 | 0.5+ | 0.1+ |
| 2006 08 19 | 644 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2+ |
| 2006 08 19 | 644 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.0 | 0.5− | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2006 08 19 | 644 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.7− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.8+ | 0.0 | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.0 | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2006 08 24 | 704 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.2− | 0.9+ | | | | |
| 2006 08 24 | 704 | 0.8− | 1.5+ | 2006 09 19 | 699 | 0.6+ | 0.3− | | | | |

**2006 QK$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.45473 | | (2000.0) | | | |
| $n$ | 0.27440146 | $\omega$ | 51.99992 | | +0.99491486 | −0.07833907 |
| $a$ | 2.3453722 | $\Omega$ | 312.39701 | | +0.04167547 | +0.89238711 |
| $e$ | 0.2498459 | $i$ | 4.91749 | | +0.09169287 | +0.44441898 |
| $P$ | 3.59 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.5− | 1.3− | 2006 09 18 | 704 | 1.0+ | 1.0− |
| 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 1.0− | 1.1− | 2006 09 18 | 704 | 0.8+ | 0.3+ |
| 2003 12 28 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.0 |
| 2004 01 15 | 691 | 0.1− | 0.2− | 2006 08 29 | 691 | 0.1+ | 1.0+ | 2006 09 19 | 703 | 0.7+ | 0.8− |
| 2004 01 15 | 691 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.7+ |
| 2004 01 15 | 691 | 0.2+ | 0.0 | 2006 08 30 | 704 | 1.0+ | 0.2− | 2006 09 19 | 703 | 0.7− | 0.3− |
| 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.5− | 0.1− | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2006 08 20 | 691 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 1.4+ | 0.1+ |
| 2006 08 20 | 691 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.2− | 1.3+ | 2006 09 19 | 703 | 0.8+ | 0.0 |
| 2006 08 24 | 704 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 0.7− | 1.4− | 2006 09 19 | 699 | 0.9+ | 0.2− |
| 2006 08 24 | 704 | 0.4+ | 0.3− | 2006 09 12 | 703 | 0.4− | 0.8− | 2006 09 25 | 704 | 0.1+ | 0.3− |
| 2006 08 24 | 704 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 1.8− | 0.9− | 2006 09 25 | 704 | 1.5− | 0.2+ |
| 2006 08 24 | 704 | 0.5− | 0.6+ | 2006 09 12 | 703 | 1.1− | 0.6− | 2006 09 25 | 699 | 0.7+ | 0.1+ |
| 2006 08 24 | 704 | 0.8+ | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.1− | 0.2− |
| 2006 08 27 | 699 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.3+ | 0.0 | 2006 09 25 | 704 | 0.2− | 0.6+ |
| 2006 08 27 | 699 | 1.0− | 0.2− | 2006 09 16 | 699 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.3+ |
| 2006 08 27 | 699 | 0.5+ | 0.0 | 2006 09 16 | 699 | 0.8+ | 0.8+ | 2006 09 25 | 699 | 0.2+ | 0.8− |
| 2006 08 27 | 699 | 0.5− | 0.0 | 2006 09 18 | 704 | 0.8+ | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.5− |
| 2006 08 29 | 703 | 1.3− | 1.5− | 2006 09 18 | 704 | 0.7+ | 0.6+ | | | | |
| 2006 08 29 | 703 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.4+ | 0.3+ | | | | |

**2006 QO$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.42403 | | (2000.0) | | | |
| $n$ | 0.27355282 | $\omega$ | 40.58239 | | +0.98668296 | +0.14447201 |
| $a$ | 2.3502204 | $\Omega$ | 310.94789 | | −0.16265488 | +0.87534535 |
| $e$ | 0.1430508 | $i$ | 5.67814 | | −0.00036600 | +0.46140910 |
| $P$ | 3.60 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5− | 0.9− | 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.9+ | 1.3+ |
| 1999 10 10 | 704 | 0.3− | 0.7− | 2006 08 24 | 704 | 0.8− | 0.7− | 2006 08 30 | 704 | 0.7+ | 0.9− |
| 1999 10 10 | 704 | 0.0 | 0.6+ | 2006 08 24 | 704 | 0.4− | 0.0 | 2006 08 30 | 704 | 0.5− | 1.0− |
| 1999 10 10 | 704 | 0.3+ | 1.0− | 2006 08 24 | 704 | 0.8− | 0.2− | 2006 08 30 | 704 | 0.9− | 0.5+ |
| 1999 10 10 | 704 | 1.4+ | 0.2+ | 2006 08 24 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 704 | 0.8− | 0.0 |
| 2003 12 28 | 704 | 0.6− | 0.3+ | 2006 08 24 | 704 | 0.7+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.3+ |
| 2003 12 28 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.7− | 2006 09 14 | 691 | 0.0 | 0.4− |
| 2003 12 28 | 704 | 0.5− | 1.3+ | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 09 14 | 691 | 0.0 | 0.2+ |
| 2003 12 28 | 704 | 0.7+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.4− | 2006 09 14 | 703 | (2.4+ | 0.5+) |
| 2006 07 25 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.5− | 2006 09 14 | 703 | 1.0+ | 1.2+ |
| 2006 07 25 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 699 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.8+ | 0.9− |
| 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.2− | 0.5+ | 2006 09 14 | 703 | 1.1+ | 0.3− |
| 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.3− | 0.3− | 2006 09 17 | 691 | 0.2− | 0.3+ |
| 2006 08 16 | 644 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.5− | 0.4− | 2006 09 17 | 691 | 0.4− | 0.2+ |
| 2006 08 16 | 644 | 0.2+ | 0.1− | 2006 08 29 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.2+ |
| 2006 08 18 | 699 | 0.9+ | 1.8− | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.3− |
| 2006 08 18 | 699 | 0.3− | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 1.7+ | 1.3− |
| 2006 08 18 | 699 | 0.1− | 1.2+ | 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 703 | (2.3+ | 1.1−) |
| 2006 08 18 | 699 | 0.1− | 0.6+ | 2006 08 30 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.4− |
| 2006 08 21 | 644 | 0.6+ | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.6+ | | | | |
| 2006 08 21 | 644 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.2− | | | | |

**2006 QP$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.34576 | | (2000.0) | | | |
| $n$ | 0.21436151 | $\omega$ | 197.76828 | | +0.99661618 | −0.06848665 |
| $a$ | 2.7650618 | $\Omega$ | 165.92448 | | +0.07699265 | +0.97143874 |
| $e$ | 0.1732972 | $i$ | 10.77111 | | −0.02878067 | +0.22719233 |
| $P$ | 4.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 08 | 691 | 0.6+ | 0.0 | 2006 08 24 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.9+ |
| 1995 03 08 | 691 | 0.3+ | 0.2+ | 2006 08 24 | 704 | 0.7+ | 0.5− | 2006 09 17 | 704 | 0.1+ | 1.1+ |
| 1995 03 08 | 691 | 0.2+ | 0.6+ | 2006 08 24 | 704 | 0.7+ | 0.1− | 2006 09 17 | 704 | 0.1+ | 0.5+ |
| 2000 05 04 | 645 | 0.2− | 0.1− | 2006 08 24 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 704 | 0.1+ | 1.0+ |
| 2000 05 04 | 645 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.4+ |
| 2002 10 31 | 608 | 0.9− | 0.5− | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.0 |
| 2002 10 31 | 608 | 0.4− | 0.5− | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.3+ |
| 2002 10 31 | 608 | 0.2+ | 0.4− | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.2− |
| 2002 11 30 | 704 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.4+ | 0.3− |
| 2002 11 30 | 704 | 0.3− | 1.3+ | 2006 08 28 | 699 | 1.0− | 1.0+ | 2006 09 20 | 704 | 0.0 | 0.4+ |
| 2002 11 30 | 704 | 1.1− | 0.9+ | 2006 08 28 | 699 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.1− |
| 2002 11 30 | 704 | 0.8+ | 0.1− | 2006 08 28 | 699 | 0.6− | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.5− |
| 2002 12 08 | 644 | (0.2+ | 1.8+) | 2006 08 28 | 699 | 0.9− | 0.4− | 2006 09 20 | 704 | 0.5+ | 0.3− |
| 2002 12 08 | 644 | (0.3+ | 1.7+) | 2006 08 30 | 704 | 0.4− | 0.0 | 2006 09 24 | 699 | 0.7+ | 1.3+ |
| 2002 12 08 | 644 | 0.4− | 1.4+ | 2006 08 30 | 704 | 0.3+ | 0.7− | 2006 09 24 | 699 | 1.0+ | 0.2− |
| 2002 12 13 | 644 | (0.1− | 2.2+) | 2006 08 30 | 704 | 0.3− | 0.4− | 2006 09 24 | 699 | 0.4+ | 0.2+ |
| 2002 12 13 | 644 | (0.3− | 2.2+) | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.9+ | 0.4− |
| 2002 12 13 | 644 | (0.6− | 2.0+) | 2006 08 30 | 704 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2004 02 26 | 704 | 1.0+ | 0.9+ | 2006 08 30 | 704 | 1.2− | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.6+ | 0.2− | 2006 08 30 | 704 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2004 02 26 | 704 | 0.5+ | 0.5+ | 2006 08 30 | 704 | 1.4− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2004 02 26 | 704 | (1.3+ | 2.4+) | 2006 08 30 | 704 | 0.5+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.3− |
| 2005 04 18 | 691 | 0.1− | 0.4+ | 2006 09 12 | 699 | 0.1− | 0.7+ | 2006 09 27 | 704 | (1.6− | 0.7+) |
| 2005 04 18 | 691 | 0.6+ | 0.2+ | 2006 09 12 | 699 | 0.5− | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.1− |
| 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 09 12 | 699 | 0.5− | 1.1+ | 2006 09 27 | 704 | 1.1− | 0.6+ |
| 2006 05 25 | G96 | 0.2− | 0.2− | 2006 09 12 | 699 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.8− | 0.5− |
| 2006 05 25 | G96 | 0.4− | 0.2− | 2006 09 12 | 704 | 1.2− | 0.3+ | 2006 10 17 | G96 | 0.8+ | 0.6− |
| 2006 05 25 | G96 | 0.4− | 0.2− | 2006 09 12 | 704 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3− | 0.5− |
| 2006 05 25 | G96 | 0.1− | 0.2− | 2006 09 12 | 704 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.3− |
| 2006 08 16 | 644 | 0.4− | 0.1− | 2006 09 12 | 704 | 1.4+ | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.8− |
| 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.2− | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2006 08 16 | 644 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2006 08 21 | 644 | 0.1+ | 0.5− | 2006 09 14 | 703 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2006 08 21 | 644 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.5+ | 0.1+ | | | | |
| 2006 08 21 | 644 | 0.0 | 0.3− | 2006 09 17 | 704 | 0.2− | 0.9+ | | | | |

**2006 QR$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.87817 | | (2000.0) | | | |
| $n$ | 0.17408272 | $\omega$ | 62.99399 | | +0.66200323 | −0.74528475 |
| $a$ | 3.1766225 | $\Omega$ | 344.71427 | | +0.53536594 | +0.54433420 |
| $e$ | 0.2082965 | $i$ | 17.52542 | | +0.52453316 | +0.38503366 |
| $P$ | 5.66 | $H$ | 14.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 04 | 608 | 0.8− | 1.0+ | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.1+ | 0.7+ |
| 2000 08 04 | 608 | 1.5− | 1.3+ | 2006 08 28 | 703 | 0.7+ | 0.8− | 2006 09 20 | 703 | 0.4− | 0.3+ |
| 2000 08 04 | 608 | 0.7− | 1.4+ | 2006 08 28 | 703 | (2.3+ | 0.4−) | 2006 09 20 | 703 | 0.1+ | 1.4+ |
| 2001 11 08 | 704 | 0.5− | 0.8+ | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 20 | 703 | (1.6+ | 2.1+) |
| 2001 11 08 | 704 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.6− | 0.2+ | 2006 09 25 | 704 | 0.3− | 0.4+ |
| 2001 11 08 | 704 | 0.4− | 0.2+ | 2006 08 30 | 704 | 0.7+ | 0.4− | 2006 09 25 | 704 | 0.0 | 0.5+ |
| 2001 11 08 | 704 | 0.1+ | 0.7+ | 2006 08 30 | 704 | 0.7+ | 0.8+ | 2006 09 25 | 704 | 0.3+ | 0.3+ |
| 2001 12 23 | 704 | 0.7+ | 0.1− | 2006 08 30 | 704 | 0.9− | 0.5+ | 2006 09 25 | 704 | 0.3+ | 0.3+ |
| 2001 12 23 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.6+ | 1.2+ | 2006 09 25 | 704 | 0.0 | 0.2+ |
| 2001 12 23 | 704 | 0.3+ | 0.1− | 2006 08 30 | 704 | 0.1− | 1.5+ | 2006 09 29 | 699 | 0.3− | 0.4− |
| 2001 12 23 | 704 | 0.2− | 0.0 | 2006 09 01 | 704 | 0.1+ | 0.4− | 2006 09 29 | 699 | 0.6− | 0.0 |
| 2001 12 23 | 704 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.9− | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 03 | 291 | 0.3+ | 0.5+ | 2006 09 01 | 704 | 0.7+ | 1.4− | 2006 09 29 | 699 | 0.5− | 0.1+ | | |
| 2003 02 03 | 291 | 0.7+ | 0.9+ | 2006 09 01 | 704 | 0.5+ | 0.0 | 2006 10 01 | 703 | 0.4− | 0.3− | | |
| 2003 02 03 | 291 | 0.3+ | 0.3+ | 2006 09 01 | 704 | 0.3− | 0.6− | 2006 10 01 | 703 | 0.2− | 0.5− | | |
| 2003 03 30 | 644 | 0.5+ | 0.4+ | 2006 09 15 | 704 | 0.4− | 0.3+ | 2006 10 01 | 703 | 0.4− | 0.1− | | |
| 2003 03 30 | 644 | 0.6+ | 0.5+ | 2006 09 15 | 704 | 1.1+ | 0.2− | 2006 10 01 | 703 | 1.4− | 0.3+ | | |
| 2003 03 30 | 644 | 0.2+ | 0.7+ | 2006 09 15 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2006 07 21 | G96 | 0.2− | 0.6− | 2006 09 15 | 704 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2006 07 21 | G96 | 0.4− | 0.7− | 2006 09 17 | 703 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 17 | 703 | 1.1− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 09 17 | 703 | 0.2− | 1.0− | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.8− | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.1+ | | |
| 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 09 18 | 704 | 0.6+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1+ | | |
| 2006 08 24 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.9+ | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.0 | | |
| 2006 08 24 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.7+ | 0.9+ | 2006 10 23 | 703 | 0.3− | 0.6− | | |
| 2006 08 24 | 704 | 0.4− | 0.8+ | 2006 09 18 | 704 | 1.0+ | 0.0 | 2006 10 23 | 703 | 1.0− | 1.2− | | |
| 2006 08 24 | 704 | 1.4+ | 0.8+ | 2006 09 20 | 699 | 0.5+ | 0.4+ | 2006 10 23 | 703 | 0.7− | 0.5− | | |
| 2006 08 24 | 704 | 0.3− | 1.0+ | 2006 09 20 | 699 | 0.5+ | 0.6− | 2006 10 23 | 703 | 0.7− | 0.1− | | |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.1+ | | | | | | |
| 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.3− | 0.6+ | | | | | | |

**2006 QZ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.54977 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26114120 | $\omega$ | 324.43965 | | +0.34043165 | | +0.93507474 |
| $a$ | 2.4241107 | $\Omega$ | 325.15939 | | −0.81777534 | | +0.24263996 |
| $e$ | 0.1721838 | $i$ | 9.94855 | | −0.46405795 | | +0.25838165 |
| $P$ | 3.77 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 26 | 691 | 0.3+ | 0.4+ | 2006 08 24 | 704 | 0.1+ | 0.8+ | 2006 09 16 | 699 | 1.0− | 0.1+ | | |
| 2001 01 26 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.4+ | | |
| 2001 01 26 | 691 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.9− | 2006 09 18 | 703 | 0.5+ | 0.7+ | | |
| 2002 06 20 | 644 | 0.4− | 0.0 | 2006 08 29 | 703 | 1.4+ | 1.5− | 2006 09 18 | 703 | 0.1+ | 0.1− | | |
| 2002 06 20 | 644 | 0.1− | 0.3+ | 2006 08 29 | 703 | 1.2+ | 1.0+ | 2006 09 18 | 703 | 0.2− | 0.1+ | | |
| 2002 06 20 | 644 | 0.2− | 0.3+ | 2006 08 30 | 704 | (1.2+ | 1.6−) | 2006 09 18 | 704 | 1.3+ | 0.1+ | | |
| 2002 08 13 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 704 | (0.3− | 1.6+) | 2006 09 18 | 704 | 0.7+ | 0.3+ | | |
| 2002 08 13 | 704 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.6+ | 1.2+ | 2006 09 18 | 704 | 0.5+ | 0.4− | | |
| 2002 08 13 | 704 | 0.1− | 0.3+ | 2006 08 30 | 704 | 0.6− | 0.5+ | 2006 09 20 | 699 | 0.3− | 0.2+ | | |
| 2002 08 13 | 704 | (1.0+ | 2.0+) | 2006 08 30 | 704 | 0.8+ | 0.8+ | 2006 09 20 | 699 | 0.3+ | 0.0 | | |
| 2005 03 10 | 699 | 0.5− | 0.3− | 2006 09 01 | 704 | (0.0 | 2.1−) | 2006 09 20 | 699 | 0.8− | 1.0− | | |
| 2005 03 10 | 699 | 0.9+ | 1.1+ | 2006 09 01 | 704 | 0.5− | 0.9− | 2006 09 20 | 699 | 0.4− | 0.0 | | |
| 2005 03 10 | 699 | 0.7+ | 0.7+ | 2006 09 01 | 704 | (0.6− | 2.0−) | 2006 09 30 | 699 | 1.2− | 1.2+ | | |
| 2005 03 10 | 699 | 0.9+ | 1.4+ | 2006 09 12 | 703 | 0.8− | 0.3− | 2006 09 30 | 699 | 0.5− | 0.3+ | | |
| 2006 08 22 | 644 | 0.3− | 0.4+ | 2006 09 12 | 703 | 1.0− | 0.4+ | 2006 09 30 | 699 | 0.2− | 0.4− | | |
| 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.9− | 2006 09 30 | 699 | 0.7− | 0.3+ | | |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.7− | 0.3− | 2006 10 01 | 704 | 0.8+ | 0.9+ | | |
| 2006 08 23 | 644 | 0.2− | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.3− | 2006 10 01 | 704 | 1.2+ | 0.3− | | |
| 2006 08 23 | 644 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.4− | 0.2− | 2006 10 01 | 704 | (1.9− | 0.3+) | | |
| 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.8+ | 1.3+ | | |
| 2006 08 24 | 704 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.7+ | 2006 10 10 | 644 | 0.5− | 0.1− | | |
| 2006 08 24 | 704 | 0.9− | 0.7+ | 2006 09 16 | 699 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.2+ | | |
| 2006 08 24 | 704 | 0.4− | 0.3− | 2006 09 16 | 699 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.2− | | |

**2006 QA$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.90309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30098442 | $\omega$ | 327.89003 | | +0.44296654 | | +0.89402175 |
| $a$ | 2.2051597 | $\Omega$ | 328.25732 | | −0.79322398 | | +0.35592742 |
| $e$ | 0.1903031 | $i$ | 7.33025 | | −0.41782337 | | +0.27210435 |
| $P$ | 3.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 644 | 0.3+ | 0.4− | 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.7− | 0.3− | | |
| 2003 10 19 | 644 | 0.0 | 0.6− | 2006 08 27 | 699 | 1.4+ | 0.5− | 2006 09 18 | 704 | 0.3+ | 0.4− | | |
| 2003 10 19 | 644 | 0.2+ | 0.5− | 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 1.0+ | 0.3− | | |
| 2005 02 14 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.2+ | 2006 09 18 | 704 | 1.3+ | 0.3− | | |
| 2005 02 14 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.2+ | 0.5+ | | |
| 2005 02 14 | 691 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.5− | 0.1− | | |
| 2006 07 18 | G96 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | (0.8− | 1.8+) | | |
| 2006 07 18 | G96 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.2− | 0.2+ | 2006 09 19 | 703 | (1.3+ | 3.3+) | | |
| 2006 07 18 | G96 | 0.0 | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.2+ | | |
| 2006 07 18 | G96 | 1.1− | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.1+ | | |
| 2006 08 22 | 644 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.8− | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.3+ | | |
| 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | (3.3+ | 0.3−) | | |
| 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.8− | 0.1− | 2006 09 25 | 704 | 0.7+ | 0.2+ | | |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.6− | 0.5− | 2006 09 25 | 704 | 0.4+ | 0.3+ | | |
| 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 01 | 704 | 0.7+ | 1.3− | 2006 09 25 | 704 | 0.5+ | 0.2− | | |
| 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 01 | 704 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.6+ | 0.2− | | |
| 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 01 | 704 | 0.1− | 0.8− | 2006 09 25 | 699 | 1.3− | 0.6+ | | |
| 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 09 01 | 704 | 0.5+ | 0.2− | 2006 09 25 | 699 | 0.4− | 0.1− | | |
| 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.5− | 0.1+ | 2006 09 25 | 699 | 1.3− | 0.5+ | | |
| 2006 08 24 | 704 | 0.2− | 1.0+ | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 09 25 | 699 | (2.1+ | 0.6−) | | |
| 2006 08 24 | 704 | 0.1+ | 0.9+ | 2006 09 16 | 699 | 0.3+ | 0.3− | 2006 11 22 | 291 | 0.6+ | 0.3+ | | |
| 2006 08 24 | 704 | 0.6− | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.5+ | 2006 11 22 | 291 | 0.9− | 0.2− | | |
| 2006 08 24 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 699 | 0.3− | 0.1+ | 2006 11 22 | 291 | 0.1+ | 0.0 | | |
| 2006 08 27 | 699 | 0.7− | 0.0 | 2006 09 18 | 704 | 1.1+ | 0.1+ | | | | | | |

**2006 QB$_{33}$ = 2002 EM$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.74194 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12372264 | $\omega$ | 191.84128 | | +0.94553996 | | −0.32491812 |
| $a$ | 3.9887479 | $\Omega$ | 187.21024 | | +0.30991937 | | +0.91700482 |
| $e$ | 0.2116978 | $i$ | 8.96347 | | +0.09951969 | | +0.23136634 |
| $P$ | 7.97 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 17 | 704 | (2.3− | 2.7+) | 2006 09 16 | 699 | 0.5+ | 0.6+ | 2006 10 01 | 703 | 0.4− | 0.0 | | |
| 1998 08 17 | 704 | 0.3− | 1.3− | 2006 09 16 | 699 | 0.6− | 0.7+ | 2006 10 01 | 703 | 1.2+ | 1.2+ | | |
| 1998 08 17 | 704 | 0.1− | 1.0− | 2006 09 16 | 699 | 1.2− | 1.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 1998 08 17 | 704 | 0.0 | 0.7− | 2006 09 17 | 704 | 1.0+ | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.1− | | |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.9− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1− | | |
| 2002 03 10 | 291 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 1.2− | 1.4+ | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 03 10 | 291 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.3− | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 03 10 | 291 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2006 08 18 | 644 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.2− | | |
| 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.8+ | 0.8− | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2006 08 24 | 704 | 0.1− | 0.8+ | 2006 09 19 | 699 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2006 08 24 | 704 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2− | | |
| 2006 08 24 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1− | | |
| 2006 08 24 | 704 | 0.4− | 0.8+ | 2006 09 20 | 704 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2006 08 24 | 644 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2− | 0.3− | | |
| 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.7− | 1.6+ | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.2− | 0.1− | | |
| 2006 08 27 | 699 | 0.6+ | 1.1+ | 2006 09 25 | 699 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.1− | | |
| 2006 08 27 | 699 | 1.3+ | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.1− | | |
| 2006 08 27 | 699 | (1.7+ | 0.7+) | 2006 09 25 | 699 | 0.2+ | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.3− | | |
| 2006 08 27 | 699 | 0.5+ | 0.1− | 2006 09 26 | 704 | 0.6− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.3− | | |
| 2006 08 29 | 703 | 0.0 | 0.7− | 2006 09 26 | 704 | 0.2− | 0.7− | 2006 10 24 | 644 | 0.3− | 0.3− | | |
| 2006 08 29 | 703 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.4− | 0.3− | 2006 10 24 | 644 | 0.4− | 0.1− | | |
| 2006 08 29 | 703 | 0.7+ | 0.5+ | 2006 09 26 | 704 | 0.6+ | 1.1− | 2006 10 24 | 644 | 0.5− | 0.2− | | |
| 2006 08 29 | 703 | 0.0 | 0.4− | 2006 09 29 | 704 | 0.1+ | 0.6+ | 2006 11 21 | G96 | 0.6− | 0.6− | | |
| 2006 09 12 | 703 | 0.7+ | 0.7− | 2006 09 29 | 704 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.5− | | |
| 2006 09 12 | 703 | 0.9+ | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | 2006 11 21 | G96 | 0.5− | 0.7− | | |
| 2006 09 12 | 703 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.0 | 1.0+ | 2006 11 21 | G96 | 0.3− | 0.8− | | |
| 2006 09 12 | 703 | 0.7− | 0.6− | 2006 10 01 | 703 | 0.3+ | 0.1− | | | | | | |
| 2006 09 16 | 699 | 0.6+ | 0.0 | 2006 10 01 | 703 | 0.8+ | 0.6+ | | | | | | |

**2006 QD$_{33}$ = 2002 JE$_{26}$ = 2003 XZ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.54863 | | | (2000.0) | | |
| $n$ | 0.28289675 | $\omega$ | 135.92979 | | +0.95700475 | +0.23216742 |
| $a$ | 2.2981802 | $\Omega$ | 211.88847 | | −0.25447742 | +0.95970832 |
| $e$ | 0.2499827 | $i$ | 19.21924 | | +0.13922337 | +0.15829790 |
| $P$ | 3.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 27 | 704 | 0.5− | 0.3+ | 2006 08 14 | 644 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.6+ | 0.0 |
| 1999 07 27 | 704 | 0.7+ | 0.4− | 2006 08 14 | 644 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.3− | 0.3− |
| 1999 07 27 | 704 | 0.8− | 0.9− | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 1999 10 04 | 704 | 0.1+ | 0.4− | 2006 08 23 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.3− |
| 1999 10 04 | 704 | 1.1+ | 1.2− | 2006 08 23 | 704 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.0 |
| 1999 10 04 | 704 | 0.2+ | 0.6− | 2006 08 23 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.2− |
| 1999 10 04 | 704 | 0.2− | 0.2− | 2006 08 23 | 704 | 0.3− | 0.1+ | 2006 10 23 | 703 | 0.3− | 0.3− |
| 1999 10 04 | 704 | 0.2+ | 0.2+ | 2006 08 24 | 704 | 0.6+ | 0.0 | 2006 10 23 | 703 | 0.0 | 0.2− |
| 2002 05 08 | 704 | 1.2+ | 1.3+ | 2006 08 24 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 703 | 0.8− | 0.4− |
| 2002 05 08 | 704 | (0.2− | 1.7+) | 2006 08 24 | 704 | 0.2− | 0.2+ | 2006 10 23 | 703 | 0.9− | 0.8− |
| 2002 05 08 | 704 | 0.8− | 1.4+ | 2006 08 24 | 704 | 0.0 | 0.1− | 2006 10 29 | 703 | 0.8− | 0.0 |
| 2002 05 08 | 704 | 0.8− | 1.0+ | 2006 08 24 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 703 | 0.7− | 0.4+ |
| 2002 05 10 | 704 | 0.4+ | 0.5− | 2006 08 24 | 704 | 0.5+ | 0.1+ | 2006 10 29 | 703 | 0.8− | 0.5− |
| 2002 05 10 | 704 | 0.0 | 0.4− | 2006 08 24 | 704 | 0.1− | 0.0 | 2006 10 29 | 703 | 0.3− | 0.6+ |
| 2002 05 10 | 704 | 0.4+ | 0.4+ | 2006 08 24 | 704 | 0.3− | 0.2+ | 2006 11 15 | 704 | 0.6+ | 0.8+ |
| 2002 05 18 | 704 | (3.6+ | 0.8+) | 2006 09 04 | 203 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.5+ | 0.3− |
| 2002 05 18 | 704 | (2.6+ | 0.8+) | 2006 09 04 | 203 | 0.1− | 0.6− | 2006 11 15 | 704 | 0.5+ | 0.4− |
| 2002 05 18 | 704 | (3.7+ | 0.9+) | 2006 09 20 | 703 | 0.2+ | 0.9+ | 2006 11 15 | 704 | 0.4+ | 0.3+ |
| 2003 12 13 | 704 | 0.4+ | 1.1+ | 2006 09 20 | 703 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 2003 12 13 | 704 | (1.2− | 2.0+) | 2006 09 20 | 703 | 0.7− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2003 12 13 | 704 | 0.5− | 0.3− | 2006 09 22 | 704 | 0.9+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.9+ |
| 2003 12 13 | 704 | 0.9− | 0.5+ | 2006 09 22 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 704 | (1.9+ | 1.2+) |
| 2003 12 15 | 704 | 0.6+ | 0.1− | 2006 09 22 | 704 | 1.2+ | 0.2+ | 2006 11 16 | 704 | (0.7+ | 1.5+) |
| 2003 12 15 | 704 | 0.6− | 0.6+ | 2006 09 22 | 704 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.6+ | 0.9+ |
| 2003 12 15 | 704 | 0.6+ | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2003 12 15 | 704 | 0.4+ | 0.3− | 2006 09 27 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.6− | 0.2+ | 2006 11 19 | 704 | 0.8+ | 0.9+ |
| 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2006 08 12 | 644 | 0.1+ | 0.2+ | 2006 10 03 | 704 | (2.0+ | 0.2+) | | | | |

**2006 QH$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.66335 | | | (2000.0) | | |
| $n$ | 0.26948730 | $\omega$ | 231.29514 | | +0.37690602 | +0.92447400 |
| $a$ | 2.3737985 | $\Omega$ | 60.93799 | | −0.82815084 | +0.36407510 |
| $e$ | 0.1490336 | $i$ | 3.76230 | | −0.41485907 | +0.11312447 |
| $P$ | 3.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 1.1− | 0.1+ | 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.8− |
| 1994 04 03 | 691 | 0.3+ | 0.3− | 2006 08 18 | 691 | 0.4− | 0.1+ | 2006 09 22 | 704 | 1.4− | 0.0 |
| 1999 11 16 | 691 | 0.3+ | 0.8− | 2006 08 24 | J87 | 0.2+ | 0.8+ | 2006 09 22 | 704 | 0.3+ | 0.2− |
| 1999 11 16 | 691 | 0.1+ | 1.0+ | 2006 08 24 | J87 | 0.1− | 1.3+ | 2006 09 22 | 704 | 0.4+ | 0.4− |
| 1999 11 16 | 691 | 0.3+ | 0.2+ | 2006 08 24 | J87 | 0.8− | 0.4+ | 2006 09 22 | 704 | 1.0− | 0.1+ |
| 2002 07 05 | 704 | 0.7− | 1.0+ | 2006 08 25 | J87 | 0.6+ | 0.6+ | 2006 09 26 | 704 | 0.2+ | 1.1+ |
| 2002 07 05 | 704 | 1.0+ | 1.2− | 2006 08 25 | J87 | 0.2− | 0.9+ | 2006 09 26 | 704 | 0.7+ | 0.9+ |
| 2002 07 05 | 704 | 0.2+ | 0.3+ | 2006 08 25 | J87 | 0.5+ | 0.3+ | 2006 09 26 | 704 | (0.0 | 2.3+) |
| 2002 07 05 | 704 | 0.4+ | 0.1+ | 2006 08 28 | 699 | (3.4+ | 0.5−) | 2006 10 16 | 703 | 0.5− | 1.0− |
| 2002 08 11 | 644 | 0.0 | 0.4+ | 2006 08 28 | 699 | 0.8+ | 1.2+ | 2006 10 16 | 703 | 0.7− | 1.0+ |
| 2002 08 11 | 644 | 0.2+ | 0.4− | 2006 08 28 | 699 | (2.1− | 0.9−) | 2006 10 16 | 703 | 0.7+ | 0.8− |
| 2002 08 11 | 644 | 0.3+ | 0.3− | 2006 08 28 | 699 | 0.3− | 0.7+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2005 03 11 | 691 | 0.4+ | 0.5+ | 2006 09 12 | 703 | 1.0+ | 0.9− | 2006 10 22 | 644 | 0.4− | 0.6+ |
| 2005 03 11 | 691 | 0.6+ | 0.8+ | 2006 09 12 | 703 | 0.8+ | 1.0− | 2006 10 22 | 644 | 0.2− | 0.5+ |
| 2005 03 11 | 691 | 0.4+ | 0.5+ | 2006 09 12 | 703 | 1.0− | 0.1− | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2006 08 16 | 644 | 0.0 | 0.4− | 2006 09 12 | 703 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 18 | 703 | 1.1− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 08 18 | 691 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.1− | 0.5− | | | | |

**2006 QW$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.33698 | | | (2000.0) | | |
| $n$ | 0.23365261 | $\omega$ | 88.19149 | | +0.60678352 | +0.79436821 |
| $a$ | 2.6106920 | $\Omega$ | 219.21102 | | −0.74584054 | +0.55675147 |
| $e$ | 0.2445585 | $i$ | 2.55292 | | −0.27483751 | +0.24291344 |
| $P$ | 4.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.0 | 0.1− | 2006 08 24 | A13 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.4− | 0.9+ |
| 1998 11 14 | 691 | 0.1+ | 0.1+ | 2006 08 24 | A13 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.5+ |
| 1998 11 14 | 691 | 0.1+ | 0.2+ | 2006 08 24 | A13 | 0.0 | 0.4− | 2006 08 30 | 704 | 0.1− | 0.4+ |
| 2001 03 26 | 695 | 0.0 | 0.2+ | 2006 08 25 | A13 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.2− | 0.3− |
| 2001 03 26 | 695 | 0.0 | 0.3+ | 2006 08 25 | A13 | 0.2− | 0.3− | 2006 09 11 | 703 | 0.1− | 1.1− |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2006 08 25 | A13 | 0.2− | 0.4− | 2006 09 11 | 703 | 0.5− | 0.1+ |
| 2002 10 03 | 704 | 0.2− | 0.9+ | 2006 08 25 | A13 | 0.4+ | 0.3− | 2006 09 11 | 703 | 0.3+ | 1.1− |
| 2002 10 03 | 704 | 1.3− | 0.3− | 2006 08 25 | A13 | 0.3+ | 0.8+ | 2006 09 11 | 703 | 1.0+ | 0.4− |
| 2002 10 11 | 704 | 1.1+ | 0.9− | 2006 08 28 | 703 | 0.2+ | 0.1− | 2006 09 13 | 644 | 0.4+ | 0.2− |
| 2002 10 11 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.3+ | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.4+ | 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.1− |
| 2005 04 12 | G96 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 14 | 703 | 1.4− | 0.6− |
| 2005 04 12 | G96 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 2005 04 12 | G96 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.5− | 0.2− |
| 2005 04 12 | G96 | 0.1− | 0.1+ | 2006 08 28 | 699 | (2.4− | 0.1+) | 2006 09 14 | 703 | 0.6− | 0.9+ |
| 2006 08 15 | 644 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.5+ | 0.8− | 2006 09 20 | 699 | 0.7+ | 0.3+ |
| 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 699 | (1.3+ | 2.3+) |
| 2006 08 15 | 644 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.5− | 0.4− |
| 2006 08 23 | A13 | 0.5+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.1+ | 0.3+ |
| 2006 08 23 | A13 | 0.2− | 0.6− | 2006 08 30 | 704 | 0.9− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2006 08 23 | A13 | 0.3− | 0.3− | 2006 08 30 | 704 | 0.6+ | 0.5− | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 2006 08 24 | 704 | 1.3+ | 0.4+ | 2006 08 30 | 704 | 0.4− | 0.8− | 2006 09 27 | G96 | 0.3+ | 0.3− |
| 2006 08 24 | 704 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.8+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2006 08 24 | 704 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.8− | 0.2− | | | | |
| 2006 08 24 | 704 | 0.5− | 0.2+ | 2006 08 30 | 704 | 0.6− | 0.6+ | | | | |

**2006 QZ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.56112 | | | (2000.0) | | |
| $n$ | 0.29716354 | $\omega$ | 244.06265 | | +0.51350133 | +0.85603501 |
| $a$ | 2.2240218 | $\Omega$ | 56.96100 | | −0.75979421 | +0.48572579 |
| $e$ | 0.1698555 | $i$ | 4.05869 | | −0.39878458 | +0.17684605 |
| $P$ | 3.32 | $H$ | 17.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 15 | 644 | 0.5+ | 0.6+ | 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 08 27 | 941 | 0.1+ | 0.4+ |
| 2002 04 15 | 644 | 0.2+ | 0.9+ | 2006 08 16 | 644 | 0.7− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 2002 04 15 | 644 | 0.0 | 0.2+ | 2006 08 24 | 941 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.1− | 0.2+ |
| 2003 10 16 | 291 | 0.5− | 0.1− | 2006 08 24 | 941 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.4− | 0.6− |
| 2003 10 16 | 291 | 0.1− | 0.0 | 2006 08 24 | 941 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.1+ | 0.2+ |
| 2003 10 16 | 291 | 0.1− | 0.1− | 2006 08 24 | 941 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 2003 11 20 | 691 | 0.3− | 0.2+ | 2006 08 24 | 941 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.3− | 0.1+ |
| 2003 11 20 | 691 | 0.0 | 0.4− | 2006 08 25 | 941 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.0 |
| 2003 11 20 | 691 | 0.1− | 0.4− | 2006 08 25 | 941 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2003 11 30 | 291 | 0.6+ | 0.6+ | 2006 08 25 | 941 | 0.3+ | 0.0 | 2006 09 30 | 703 | (1.1+ | 1.7+) |
| 2003 11 30 | 291 | 0.1+ | 0.3+ | 2006 08 25 | 941 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2003 11 30 | 291 | 0.4+ | 0.4+ | 2006 08 27 | 941 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 08 27 | 941 | 0.1+ | 0.5+ | | | | |

**2006 QK$_{34}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.27571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23562936 | $\omega$ | 253.34335 | | −0.76164419 | +0.64737665 | |
| $a$ | 2.5960703 | $\Omega$ | 326.98489 | | −0.57296480 | −0.69321932 | |
| $e$ | 0.0960206 | $i$ | 2.97860 | | −0.30267056 | −0.31678137 | |
| $P$ | 4.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 10 | 691 | 1.0− | 0.2+ | 2005 05 10 | 699 | 0.6+ | 0.5− | 2006 08 25 | 104 | 1.2− | 0.3+ |
| 1994 11 10 | 691 | 0.5+ | 0.2+ | 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 08 25 | 104 | 0.3+ | 1.1− |
| 2002 10 30 | 645 | 0.5+ | 0.3+ | 2005 05 19 | 644 | 0.1+ | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 2002 10 30 | 645 | 0.4+ | 0.3+ | 2005 05 19 | 644 | 0.0 | 0.6+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 2005 04 14 | 703 | 0.3− | 0.1+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.1+ |
| 2005 04 14 | 703 | 0.6− | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.4− |
| 2005 04 14 | 703 | 1.0− | 0.5+ | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 1.2− | 0.2+ |
| 2005 04 14 | 703 | 1.3− | 0.7− | 2006 08 23 | 104 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.6+ | 0.5+ |
| 2005 05 10 | 699 | 0.1+ | 1.5− | 2006 08 23 | 104 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.2− |
| 2005 05 10 | 699 | 1.6+ | 0.2− | 2006 08 24 | 104 | 0.0 | 0.1− | | | | |
| 2005 05 10 | 699 | 0.9+ | 0.7+ | 2006 08 25 | 104 | 0.3+ | 0.7− | | | | |

**2006 QE$_{35}$ = 2002 LA$_3$ = 2003 YJ$_{104}$**

Id. Minor Planet Center (*MPO* 104030; unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.34045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28646733 | $\omega$ | 120.33400 | | +0.94120405 | −0.32983774 | |
| $a$ | 2.2790437 | $\Omega$ | 259.00846 | | +0.27874000 | +0.88040771 | |
| $e$ | 0.2348497 | $i$ | 4.26990 | | +0.19088988 | +0.34071885 | |
| $P$ | 3.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 291 | 0.4− | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.4+ | 0.0 |
| 2002 06 05 | 291 | 0.3+ | 0.0 | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.2− |
| 2002 06 05 | 291 | 0.2+ | 0.1− | 2006 08 24 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.0 |
| 2002 06 06 | 291 | 0.2+ | 0.1− | 2006 08 24 | 704 | 0.2− | 1.0+ | 2006 09 18 | 704 | 0.7− | 0.7− |
| 2002 06 06 | 291 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.4+ | 0.0 | 2006 09 18 | 704 | 0.3− | 0.0 |
| 2002 06 06 | 291 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 704 | 0.4− | 0.1− |
| 2003 12 21 | 704 | 0.0 | 0.4+ | 2006 08 24 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 704 | 0.7+ | 0.1+ |
| 2003 12 21 | 704 | 0.3− | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.4+ | 2006 09 25 | 704 | 0.6+ | 0.3+ |
| 2003 12 21 | 704 | 0.5− | 0.2+ | 2006 08 27 | 699 | 0.5− | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.6+ |
| 2003 12 21 | 704 | 0.8− | 0.3+ | 2006 08 27 | 699 | 0.8− | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.7+ |
| 2003 12 23 | 704 | 0.1− | 0.7+ | 2006 08 27 | 699 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.1− | 0.3+ |
| 2003 12 23 | 704 | 1.4+ | 0.9+ | 2006 08 29 | 703 | 0.6− | 0.2+ | 2006 09 29 | 699 | (3.9+ | 1.2−) |
| 2003 12 23 | 704 | 0.2+ | 0.4+ | 2006 08 29 | 704 | 0.6− | 0.2− | 2006 09 29 | 699 | 0.2+ | 0.4+ |
| 2003 12 23 | 704 | 0.1+ | 0.6+ | 2006 08 29 | 703 | 0.4− | 0.0 | 2006 09 29 | 699 | 0.6− | 1.0+ |
| 2003 12 23 | 704 | 0.6+ | 1.1+ | 2006 08 29 | 703 | 0.7− | 0.1+ | 2006 09 29 | 699 | 0.9+ | 0.9+ |
| 2005 04 06 | 691 | 0.2− | 0.2+ | 2006 08 29 | 704 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.4+ | 0.4− |
| 2005 04 06 | 691 | 0.5− | 0.9+ | 2006 08 29 | 703 | 0.5− | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.8− |
| 2005 04 06 | 691 | 0.2+ | 0.1− | 2006 08 29 | 704 | 0.2− | 0.4+ | 2006 11 10 | 704 | 0.6+ | 0.3− |
| 2005 04 15 | 691 | 0.5+ | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.4− | 0.5+ |
| 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.2+ | 0.2− | 2006 11 15 | 704 | (1.8+ | 0.3+) |
| 2005 04 15 | 691 | 0.2+ | 0.1− | 2006 08 29 | 703 | 0.4+ | 0.2− | 2006 11 15 | 704 | (1.5+ | 1.7−) |
| 2006 07 21 | 644 | 0.0 | 0.3− | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.6− | 0.8− |
| 2006 07 21 | 644 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.7− | 0.9− | 2006 11 15 | 704 | 0.4+ | 0.4− |
| 2006 07 21 | 644 | 0.8− | 0.0 | 2006 08 30 | 699 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.7− |
| 2006 08 17 | 644 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2006 08 17 | 644 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.8− | 0.2+ |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.2− | 0.1− | | | | |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.4− | 0.1+ | | | | |

**2006 QK$_{35}$ = 1999 TS$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.54366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27037343 | $\omega$ | 277.44890 | | +0.57098615 | +0.82084553 | |
| $a$ | 2.3686090 | $\Omega$ | 27.38422 | | −0.74098904 | +0.52247322 | |
| $e$ | 0.1936299 | $i$ | 1.70565 | | −0.35342618 | +0.23072569 | |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.1+ | 0.2− | 2005 04 11 | G96 | 0.5+ | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.6− |
| 1999 10 09 | 691 | 0.2+ | 0.2− | 2005 04 11 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.4+ |
| 1999 10 09 | 691 | 0.2+ | 0.3− | 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.0 |
| 1999 10 20 | 691 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.5+ | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.4− |
| 1999 10 20 | 691 | 0.2− | 0.0 | 2006 07 25 | 644 | 0.2− | 0.2+ | 2006 08 28 | 699 | 1.2− | 0.7+ |
| 1999 10 20 | 691 | 0.0 | 0.1+ | 2006 07 25 | 644 | 0.5− | 0.1+ | 2006 08 28 | 699 | (0.3− | 2.5+) |
| 2002 05 30 | 644 | 0.2− | 0.2+ | 2006 07 25 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | 0.6− | 0.0 |
| 2002 05 30 | 644 | 0.5− | 0.2+ | 2006 08 14 | 644 | 0.8+ | 0.2− | 2006 08 28 | 699 | (2.8− | 1.4+) |
| 2002 05 30 | 644 | 0.4+ | 0.1+ | 2006 08 14 | 644 | 0.7+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.5− |
| 2003 11 26 | 691 | 0.2+ | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2003 11 26 | 691 | 0.1+ | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 2003 11 26 | 691 | 0.5− | 0.4+ | 2006 08 16 | 644 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.5+ | 1.0− |
| 2005 03 10 | G96 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.8− |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 2005 03 10 | G96 | 0.6− | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2005 03 10 | G96 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 2005 03 10 | G96 | 0.1+ | 0.2− | 2006 08 18 | 699 | (2.7+ | 0.3+) | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2005 03 10 | G96 | 0.2+ | 0.5− | 2006 08 18 | 699 | 0.7+ | 0.6+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2005 03 10 | G96 | 0.1− | 0.3− | 2006 08 18 | 699 | 0.6+ | 1.1+ | 2006 11 16 | G96 | 0.4− | 0.8− |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 08 18 | 699 | 0.2− | 0.7− | | | | |

**2006 QO$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.04200 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22093113 | $\omega$ | 134.81343 | | +0.42522196 | +0.90176706 | |
| $a$ | 2.7099718 | $\Omega$ | 159.95358 | | −0.88104826 | +0.43200610 | |
| $e$ | 0.2053500 | $i$ | 13.06288 | | −0.20722030 | +0.01367112 | |
| $P$ | 4.46 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 20 | 699 | 1.7+ | 0.4+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 08 30 | 704 | 1.1+ | 0.9+ |
| 2001 06 20 | 699 | 0.3+ | 0.2− | 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.5+ |
| 2001 06 20 | 699 | 0.3− | 0.6+ | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.4− |
| 2001 06 20 | 699 | 1.0+ | 0.1+ | 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2001 07 25 | 644 | 1.1− | 0.7+ | 2006 08 23 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.7− |
| 2001 07 25 | 644 | 0.9− | 0.9+ | 2006 08 23 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.2− | 1.1+ |
| 2001 07 25 | 644 | 0.6− | 1.0+ | 2006 08 27 | 699 | 0.5− | 0.9− | 2006 09 16 | 704 | 0.2− | 1.0+ |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.7+ | 0.0 | 2006 09 16 | 704 | 0.2+ | 0.0 |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.7− | 0.8+ | 2006 09 16 | 704 | 0.4+ | 0.0 |
| 2004 01 18 | 691 | 0.3− | 0.3+ | 2006 08 27 | 699 | 0.5− | 0.4− | 2006 09 16 | 704 | 1.4− | 0.3+ |
| 2004 01 18 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.5− | 2006 09 19 | 699 | 0.1− | 0.9− |
| 2004 01 18 | 691 | 0.6+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 19 | 699 | 0.4− | 0.3+ |
| 2005 04 05 | 699 | 0.0 | 0.5− | 2006 08 28 | 703 | 0.1− | 0.9− | 2006 09 19 | 699 | 0.2− | 0.4− |
| 2005 04 05 | 699 | 0.3− | 1.7+ | 2006 08 28 | 703 | 1.4+ | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.5+ |
| 2005 04 05 | 699 | 0.0 | 1.0+ | 2006 08 30 | 704 | 0.7+ | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.4− |
| 2005 04 05 | 699 | 0.6+ | 1.9+ | 2006 08 30 | 704 | 0.4− | 1.3+ | 2006 09 30 | 703 | 0.1− | 0.6+ |
| 2006 08 17 | 644 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.5+ | 0.1+ |
| 2006 08 17 | 644 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 2006 08 17 | 644 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.6+ | 0.2+ | | | | |

### 2006 $QR_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.90374 | | | (2000.0) | | |
| $n$ | 0.36775085 | $\omega$ | 50.33628 | | +0.83103810 | −0.54645341 |
| $a$ | 1.9294503 | $\Omega$ | 342.00758 | | +0.34897536 | +0.65750039 |
| $e$ | 0.0746096 | $i$ | 19.62626 | | +0.43311879 | +0.51873106 |
| $P$ | 2.68 | $H$ | 18.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 699 | (2.4+ | 1.5−) | 2006 08 17 | 644 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.8− | 0.0 |
| 1998 09 15 | 699 | 0.5+ | 0.5− | 2006 08 18 | 644 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.9+ |
| 1998 09 15 | 699 | 0.7+ | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.3− | 0.2− |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.2− | 1.0+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 08 21 | 644 | 0.8+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.1+ |
| 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.2+ | 2006 08 21 | 644 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 699 | 0.5+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 10 | 448 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1+ |
| 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 09 10 | 448 | 1.3− | 0.0 | | | | |
| 2006 08 17 | 644 | 0.2+ | 0.3+ | 2006 09 10 | 448 | 0.9+ | 0.8− | | | | |

### 2006 $QW_{35}$ = 2001 $TE_{182}$ = 2004 $FL_{68}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.59088 | | | (2000.0) | | |
| $n$ | 0.18087701 | $\omega$ | 317.29356 | | +0.78598991 | +0.61803918 |
| $a$ | 3.0965669 | $\Omega$ | 4.61643 | | −0.50130476 | +0.65201082 |
| $e$ | 0.1332325 | $i$ | 11.27040 | | −0.36181956 | +0.43921459 |
| $P$ | 5.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.1− | 0.6+ | 2006 08 17 | 644 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 704 | 0.5+ | 0.3+ | 2006 08 17 | 644 | 0.4+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.3+ | 0.7− | 2006 08 23 | 704 | 1.3− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2001 10 14 | 704 | 0.8+ | 0.8+ | 2006 08 23 | 704 | (1.9− | 0.6+) | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2001 10 14 | 704 | 0.2− | 0.8− | 2006 08 23 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.7− |
| 2001 10 21 | 704 | 0.6− | 0.7− | 2006 08 23 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 1.1− | 0.5− |
| 2001 10 21 | 704 | 0.4− | 0.4+ | 2006 08 23 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | (0.2− | 2.7−) |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2006 08 23 | 644 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.9− |
| 2004 02 29 | 691 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.7+ | 0.4+ | 2006 10 20 | 695 | 0.1+ | 0.2+ |
| 2004 02 29 | 691 | 0.1+ | 0.5+ | 2006 08 30 | 699 | 0.2− | 0.2− | 2006 10 20 | 695 | 0.1+ | 0.3+ |
| 2004 02 29 | 691 | 0.1− | 0.4+ | 2006 08 30 | 699 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 08 30 | 699 | (1.0+ | 1.9+) | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2004 03 21 | 691 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.9− | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2004 03 21 | 691 | 0.6+ | 0.0 | 2006 09 14 | 703 | 1.4− | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2004 03 22 | 704 | 0.3+ | 1.0+ | 2006 09 14 | 703 | 0.3− | 0.8+ | 2006 11 20 | 291 | 0.2+ | 0.2+ |
| 2004 03 22 | 704 | 1.1− | 0.1− | 2006 09 14 | 703 | 0.4− | 0.8+ | 2006 11 20 | 291 | 0.2+ | 0.2+ |
| 2004 03 22 | 704 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.5− | 0.7− | 2006 11 20 | 291 | 0.0 | 0.2+ |
| 2004 03 22 | 704 | 0.6+ | 1.2+ | 2006 10 02 | G96 | 0.1− | 0.3− | | | | |
| 2006 08 17 | 644 | 0.0 | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.2− | | | | |

### 2006 $QX_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.86057 | | | (2000.0) | | |
| $n$ | 0.29944904 | $\omega$ | 296.78973 | | +0.74747478 | +0.66324365 |
| $a$ | 2.2126910 | $\Omega$ | 21.72743 | | −0.56811755 | +0.66733155 |
| $e$ | 0.2094897 | $i$ | 5.77875 | | −0.34427302 | +0.33878674 |
| $P$ | 3.29 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 644 | 0.4− | 0.1− | 2006 08 30 | 699 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2003 11 21 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 1.0− | 0.9− | 2006 10 16 | 703 | 0.2+ | 0.9+ |
| 2003 11 21 | 644 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2003 11 24 | 704 | (1.4− | 2.0−) | 2006 09 14 | 703 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.5− |
| 2003 11 24 | 704 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2003 11 24 | 704 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2+ |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.4+ |
| 2003 12 01 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.7+ | 0.1+ |
| 2003 12 01 | 691 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2003 12 17 | 691 | 0.5− | 0.3− | 2006 09 26 | 704 | 0.8+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2003 12 17 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2003 12 17 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2006 08 17 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2006 08 17 | 644 | 0.7+ | 0.2− | 2006 09 30 | 703 | 1.0+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2006 08 21 | 644 | 0.3− | 0.2+ | 2006 09 30 | 703 | 1.0− | 1.0− | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2006 08 21 | 644 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2006 08 21 | 644 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 08 30 | 699 | (2.3+ | 0.4+) | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2006 08 30 | 699 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2006 08 30 | 699 | 0.5+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | | | |

### 2006 $QB_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.88576 | | | (2000.0) | | |
| $n$ | 0.22257057 | $\omega$ | 155.08704 | | +0.98953494 | +0.14077275 |
| $a$ | 2.6966478 | $\Omega$ | 196.91120 | | −0.14376589 | +0.94310381 |
| $e$ | 0.2225628 | $i$ | 6.25237 | | −0.01232752 | +0.30122788 |
| $P$ | 4.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 13 | 691 | 0.3− | 0.7+ | 2006 08 30 | 699 | 0.2+ | 0.5− | 2006 09 18 | 704 | 1.4+ | 0.4− |
| 1996 04 13 | 691 | 0.9+ | 0.5+ | 2006 08 30 | 699 | 0.5+ | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 1996 04 13 | 691 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.5+ | 0.3− | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2005 04 10 | G96 | 0.3− | 0.6− | 2006 08 30 | 699 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2005 04 10 | G96 | 0.2+ | 0.4− | 2006 08 30 | 699 | 0.1− | 0.5+ | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2005 04 10 | G96 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.6+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3− |
| 2005 04 10 | G96 | 0.3− | 1.2− | 2006 08 30 | 704 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2006 08 18 | 644 | 0.1+ | 0.5− | 2006 08 30 | 699 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 08 18 | 644 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 08 19 | 644 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.7+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.7+ |
| 2006 08 19 | 644 | 0.1+ | 0.3− | 2006 09 11 | 703 | 0.7− | 0.8− | 2006 10 21 | 703 | (1.8− | 0.9+) |
| 2006 08 19 | 644 | 0.1− | 0.4− | 2006 09 11 | 703 | (1.2− | 2.2−) | 2006 10 21 | 703 | 0.4+ | 0.3− |
| 2006 08 24 | 704 | 0.6− | 0.1− | 2006 09 11 | 703 | 0.5− | 1.0− | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2006 08 24 | 704 | 0.6− | 0.3− | 2006 09 11 | 703 | 0.7+ | 0.9− | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2006 08 24 | 704 | 0.3+ | 0.3− | 2006 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2006 08 24 | 704 | 1.2− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2006 08 24 | 704 | 1.1− | 0.9+ | 2006 09 13 | 644 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2006 08 27 | 699 | 0.7− | 0.3− | 2006 09 17 | 703 | 0.7+ | 1.3+ | 2006 11 13 | G96 | 0.8+ | 0.4+ |
| 2006 08 27 | 699 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.6+ | 0.8+ | 2006 11 13 | G96 | 0.2+ | 0.2+ |
| 2006 08 27 | 699 | 0.7− | 0.3− | 2006 09 17 | 703 | 0.3− | 1.2+ | 2006 11 13 | G96 | 0.2+ | 0.6+ |
| 2006 08 27 | 699 | 0.7− | 0.3− | 2006 09 17 | 703 | 0.6− | 0.7+ | 2006 11 13 | G96 | 0.6+ | 0.1+ |
| 2006 08 29 | 703 | 0.4− | 0.1− | 2006 09 18 | 704 | 1.3+ | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.2+ |
| 2006 08 29 | 703 | 0.5− | 0.2− | 2006 09 18 | 704 | 0.6+ | 0.1+ | 2006 11 16 | G96 | 0.6− | 0.5+ |
| 2006 08 29 | 703 | 0.5− | 0.1+ | 2006 09 18 | 704 | (1.6+ | 0.6+) | 2006 11 16 | G96 | 0.3− | 0.6+ |
| 2006 08 29 | 703 | 0.6− | 0.1− | 2006 09 18 | 704 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.6− | 0.2+ |

### 2006 $QC_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.78435 | | | (2000.0) | | |
| $n$ | 0.26701953 | $\omega$ | 160.51018 | | +0.98309892 | −0.18247874 |
| $a$ | 2.3884017 | $\Omega$ | 210.01597 | | +0.16380769 | +0.91278434 |
| $e$ | 0.1756792 | $i$ | 1.69143 | | +0.08175297 | +0.36541246 |
| $P$ | 3.69 | $H$ | 17.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 1.0− | 0.1− | 2006 08 19 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.2− |
| 1999 11 12 | 704 | 0.4+ | 0.8− | 2006 08 21 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.5+ | 0.1− |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 1.0+ | 0.1− | 2006 08 21 | 704 | 1.0− | 1.4+ | 2006 09 20 | 704 | 1.4+ | 1.0− | 2005 04 02 | G96 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 1999 11 12 | 704 | 0.3− | 0.2− | 2006 08 21 | 704 | (1.9− | 0.9+) | 2006 09 20 | 699 | 0.1+ | 0.9− | 2005 04 02 | G96 | 0.5+ | 0.8− | 2006 09 14 | 703 | 0.1+ | 0.7− | 2006 09 27 | 704 | (2.9− | 0.2−) |
| 1999 11 12 | 704 | 0.1+ | 0.6− | 2006 08 25 | 704 | 0.4+ | 0.9+ | 2006 09 20 | 699 | 0.3+ | 0.2− | 2005 04 02 | G96 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 2003 12 21 | 645 | 0.0 | 0.3+ | 2006 08 25 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 0.2+ | 0.7+ | 2006 08 21 | 644 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 2003 12 21 | 645 | 0.1+ | 0.2+ | 2006 08 25 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 699 | 1.1− | 0.0 | 2006 08 21 | 644 | 0.1− | 0.3− | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.2− |
| 2005 04 05 | G96 | 0.2+ | 0.2+ | 2006 08 25 | 704 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 08 21 | 644 | 0.1+ | 0.3− | 2006 09 16 | 699 | 0.0 | 0.3− | 2006 09 28 | 704 | 0.7+ | 0.6− |
| 2005 04 05 | G96 | 0.3− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 08 23 | 704 | 0.6+ | 0.2− | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2005 04 05 | G96 | 0.7− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 08 23 | 704 | 0.6+ | 0.1− | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.5− | 0.2+ |
| 2005 04 05 | G96 | 0.3− | 0.4+ | 2006 08 27 | 691 | (1.0+ | 2.2+) | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 08 23 | 704 | 0.7− | 0.5+ | 2006 09 17 | 704 | 0.3− | 1.2+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2005 04 10 | 691 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.1+ | 2006 08 24 | 644 | 0.5+ | 0.4− | 2006 09 17 | 704 | 0.5+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2005 04 10 | 691 | 0.2+ | 0.6+ | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 10 19 | G96 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.0 | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2005 04 10 | 691 | 0.8+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 08 24 | 644 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.6− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2005 05 08 | G96 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.8+ | 1.0+ | 2006 10 19 | G96 | 0.4− | 0.3− | 2006 08 27 | 691 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 05 08 | G96 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.9− | 0.1+ | 2006 08 27 | 699 | 0.6+ | 0.1− | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.7− | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 11 13 | G96 | (1.6− | 1.4−) |
| 2005 05 08 | G96 | 0.5+ | 0.1− | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.6− | 2006 08 27 | 699 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 11 13 | G96 | (2.1− | 1.2−) |
| 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.3− | 2006 11 11 | G96 | 0.8− | 0.4− | 2006 08 27 | 691 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 11 13 | G96 | (1.8− | 0.7−) |
| 2006 08 19 | 644 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.7+ | 2006 11 21 | G96 | 0.5+ | 0.1− | 2006 08 27 | 699 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 11 13 | G96 | (1.9− | 1.2−) |
| 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 0.6− | 0.0 | | | | |
| 2006 08 19 | 644 | 0.7+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.6+ | 2006 11 21 | G96 | 0.1− | 0.3− | 2006 08 28 | 704 | 0.3− | 0.6+ | 2006 09 20 | 704 | 0.6− | 0.3+ | | | | |
| 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 09 20 | 704 | 1.0+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.6− | | | | | | | | | | | | |

**2006 QE$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.24271 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27263214 | $\omega$ | 248.80960 | | +0.44722601 | | +0.89181804 |
| $a$ | 2.3555086 | $\Omega$ | 47.94381 | | −0.78278590 | | +0.42714922 |
| $e$ | 0.1204514 | $i$ | 5.26923 | | −0.43270675 | | +0.14901047 |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.0 | 0.2− | 2006 08 22 | 941 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.1− | 2005 04 02 | G96 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 08 24 | 941 | 0.4+ | 0.2− | 2006 09 14 | 703 | 1.2− | 0.2+ | 2005 04 02 | G96 | 0.5+ | 0.8− | 2006 09 14 | 703 | 0.1+ | 0.7− | 2006 09 27 | 704 | (2.9− | 0.2−) |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 08 24 | 941 | 0.2+ | 0.0 | 2006 09 14 | 703 | 1.1− | 0.2+ | 2005 04 02 | G96 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 2005 05 11 | G96 | 0.2− | 0.2+ | 2006 08 24 | 941 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.0+ | 0.3− | 2006 08 21 | 644 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 2005 05 11 | G96 | 0.2− | 0.0 | 2006 08 24 | 941 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.6− | 1.2+ | 2006 08 21 | 644 | 0.1− | 0.3− | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.2− |
| 2005 05 11 | G96 | 0.0 | 0.4− | 2006 08 24 | 941 | 0.3− | 0.2+ | 2006 09 26 | 703 | 1.0− | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.3− | 2006 09 16 | 699 | 0.0 | 0.3− | 2006 09 28 | 704 | 0.7+ | 0.6− |
| 2005 05 11 | G96 | 0.0 | 0.7− | 2006 08 27 | 941 | 0.6+ | 0.4+ | 2006 09 26 | 703 | 0.9− | 0.5− | 2006 08 23 | 704 | 0.6+ | 0.2− | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2006 08 21 | 941 | 0.2+ | 0.1+ | 2006 08 27 | 941 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.3+ | 2006 08 23 | 704 | 0.6+ | 0.1− | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.5− | 0.2+ |
| 2006 08 21 | 941 | 0.1+ | 0.0 | 2006 08 27 | 941 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 08 23 | 704 | 0.7− | 0.5+ | 2006 09 17 | 704 | 0.3− | 1.2+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2006 08 21 | 941 | 0.1+ | 0.1+ | 2006 08 27 | 941 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.5+ | 0.4− | 2006 09 17 | 704 | 0.5+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2006 08 21 | 941 | 0.1− | 0.2− | 2006 08 28 | D35 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.6− | 2006 08 24 | 644 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.0 | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2006 08 21 | 941 | 0.1+ | 0.5− | 2006 08 28 | D35 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 1.2− | 2006 08 24 | 644 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.6− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2006 08 22 | 941 | 0.0 | 0.5− | 2006 08 28 | D35 | 0.1− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 08 22 | 941 | 0.0 | 0.5− | 2006 08 30 | 699 | 0.3+ | 0.2− | 2006 10 09 | 644 | 0.4+ | 0.4+ | 2006 08 27 | 699 | 0.6+ | 0.1− | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 08 22 | 941 | 0.2+ | 0.3− | 2006 08 30 | 699 | 0.2− | 0.5− | 2006 10 09 | 644 | 0.3+ | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 11 13 | G96 | (1.6− | 1.4−) |
| 2006 08 22 | 941 | 0.4+ | 0.3− | 2006 08 30 | 699 | 0.4+ | 0.5+ | | | | | 2006 08 27 | 699 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 11 13 | G96 | (2.1− | 1.2−) |
| 2006 08 22 | 941 | 0.5+ | 0.1− | 2006 08 30 | 699 | 0.9+ | 0.1+ | | | | | 2006 08 27 | 691 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 11 13 | G96 | (1.8− | 0.7−) |
| | | | | | | | | | | | | 2006 08 27 | 699 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 11 13 | G96 | (1.9− | 1.2−) |
| | | | | | | | | | | | | 2006 08 27 | 699 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 0.6− | 0.0 | | | | |
| | | | | | | | | | | | | 2006 08 28 | 704 | 0.3− | 0.6+ | 2006 09 20 | 704 | 0.6− | 0.3+ | | | | |

**2006 QG$_{36}$ = 2005 EY$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.23629 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23242596 | $\omega$ | 310.62007 | | +0.63341300 | | +0.77381172 |
| $a$ | 2.6198693 | $\Omega$ | 358.67817 | | −0.68366704 | | +0.55850563 |
| $e$ | 0.2951498 | $i$ | 4.58044 | | −0.36247393 | | +0.29880910 |
| $P$ | 4.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 03 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 0.0 | 1.1− | 2006 09 20 | 644 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2005 03 03 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 704 | 0.3− | 1.0+ | 2006 09 25 | 699 | 0.4− | 0.8− | 2006 09 14 | 703 | 0.1+ | 0.7− | 2006 09 27 | 704 | (2.9− | 0.2−) |
| 2005 03 03 | 691 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 2005 03 08 | G96 | 0.1+ | 0.1− | 2006 08 28 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.8− | 0.7− | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 2005 03 08 | G96 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.7+ | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.4− | 2006 09 16 | 699 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.4− | 0.2− |
| 2005 03 08 | G96 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2005 03 08 | G96 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.6− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.5− | 0.2+ |
| 2005 04 02 | G96 | (1.4+ | 2.3−) | 2006 09 14 | 703 | 0.9+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 09 17 | 704 | 0.3− | 1.2+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| | | | | | | | | | | | | 2006 09 17 | 704 | 0.5+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| | | | | | | | | | | | | 2006 09 17 | 704 | 0.0 | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| | | | | | | | | | | | | 2006 09 17 | 704 | 0.6− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| | | | | | | | | | | | | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| | | | | | | | | | | | | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| | | | | | | | | | | | | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 11 13 | G96 | (1.6− | 1.4−) |
| | | | | | | | | | | | | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 11 13 | G96 | (2.1− | 1.2−) |
| | | | | | | | | | | | | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 11 13 | G96 | (1.8− | 0.7−) |
| | | | | | | | | | | | | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 11 13 | G96 | (1.9− | 1.2−) |
| | | | | | | | | | | | | 2006 09 20 | 704 | 0.6− | 0.0 | | | | |
| | | | | | | | | | | | | 2006 09 20 | 704 | 0.6− | 0.3+ | | | | |

**2006 QH$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.05066 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21485584 | $\omega$ | 330.83088 | | +0.83157867 | | +0.55512562 |
| $a$ | 2.7608191 | $\Omega$ | 355.33278 | | −0.45811266 | | +0.66756347 |
| $e$ | 0.1305741 | $i$ | 12.54725 | | −0.31402184 | | +0.49617997 |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 03 | 691 | 0.1+ | 0.4− | 2006 09 12 | 703 | 1.5− | 1.2+ | 2006 09 25 | 699 | 1.2+ | 0.4− | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 1997 11 03 | 691 | 0.4+ | 0.6− | 2006 09 12 | 703 | 0.5+ | 0.9+ | 2006 09 25 | 699 | 0.4+ | 1.1+ | 2006 09 14 | 703 | 0.1+ | 0.7− | 2006 09 27 | 704 | (2.9− | 0.2−) |
| 1997 11 03 | 691 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 1.4− | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 2002 12 06 | 704 | 0.8− | 0.3− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 08 21 | 644 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.2− |
| 2002 12 06 | 704 | 0.4− | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 08 21 | 644 | 0.1− | 0.3− | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.2− |
| 2002 12 06 | 704 | 0.6− | 0.5+ | 2006 09 16 | 699 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 08 21 | 644 | 0.1+ | 0.3− | 2006 09 16 | 699 | 0.0 | 0.3− | 2006 09 28 | 704 | 0.7+ | 0.6− |
| 2002 12 12 | 644 | 0.7+ | 0.8+ | 2006 09 16 | 699 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 08 23 | 704 | 0.6+ | 0.2− | 2006 09 16 | 699 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.3+ |
| 2002 12 12 | 644 | 0.4+ | 1.1+ | 2006 09 16 | 699 | 0.1+ | 0.7+ | 2006 09 28 | 701 | 0.3− | 0.4+ | 2006 08 23 | 704 | 0.6+ | 0.1− | 2006 09 16 | 699 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.5− | 0.2+ |
| 2002 12 12 | 644 | 0.6+ | 0.9+ | 2006 09 16 | 699 | 0.3− | 0.1+ | 2006 09 28 | 701 | 0.3− | 0.1− | 2006 08 23 | 704 | 0.7− | 0.5+ | 2006 09 17 | 704 | 0.3− | 1.2+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2004 02 11 | 644 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.3− | 2006 09 28 | 701 | 0.2+ | 0.2− | 2006 08 24 | 644 | 0.5+ | 0.4− | 2006 09 17 | 704 | 0.5+ | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2004 02 11 | 644 | 0.7+ | 0.4+ | 2006 09 17 | 704 | 0.6− | 0.8+ | 2006 09 28 | 701 | 0.3+ | 0.1− | 2006 08 24 | 644 | 0.2+ | 0.3− | 2006 09 17 | 704 | 0.0 | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2004 02 11 | 644 | 1.2+ | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.6− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2004 02 13 | 691 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.4+ | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.2− | 2006 08 27 | 691 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 08 27 | 699 | 0.6+ | 0.1− | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.4− | 1.0− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 11 13 | G96 | (1.6− | 1.4−) |
| 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.9− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 11 13 | G96 | (2.1− | 1.2−) |
| 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 08 27 | 691 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.7− | 0.2+ | 2006 11 13 | G96 | (1.8− | 0.7−) |
| 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 08 27 | 699 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 11 13 | G96 | (1.9− | 1.2−) |
| 2006 08 23 | 704 | 0.4− | 1.3+ | 2006 09 19 | 703 | 0.5− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 08 27 | 699 | 0.8+ | 0.4+ | 2006 09 20 | 704 | 0.6− | 0.0 | | | | |
| 2006 08 23 | 704 | (2.4− | 1.6+) | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.0 | 1.4− | 2006 09 20 | 704 | 0.6− | 0.2+ | | | | |
| 2006 08 23 | 704 | (2.4− | 2.5+) | 2006 09 19 | 699 | 0.6+ | 1.0+ | 2006 10 20 | G96 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.8+ | | | | |
| 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.9+ | 2006 10 20 | G96 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 09 20 | 644 | 0.2+ | 0.0 | | | | |
| 2006 08 23 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.4− | | | | |
| 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.8− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.3+ | | | | |
| 2006 08 28 | 703 | 0.0 | 1.4− | 2006 09 20 | 704 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.4− | | | | |
| 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.8+ | 2006 11 14 | G96 | 0.0 | 0.7− | | | | | | | | |
| 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.3− | 0.9− | | | | | | | | |
| 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.4− | 2006 11 14 | G96 | 0.2− | 0.6− | | | | | | | | |
| 2006 09 12 | 703 | 0.8− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.8− | | | | | | | | |
| 2006 09 12 | 703 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.4− | | | | | | | | | | | | |

**2006 QJ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.07271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17982026 | $\omega$ | 88.18504 | | +0.95443485 | +0.14833484 | |
| $a$ | 3.1086868 | $\Omega$ | 263.22148 | | −0.23702230 | +0.90401530 | |
| $e$ | 0.1157859 | $i$ | 15.11544 | | +0.18131340 | +0.40094029 | |
| $P$ | 5.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.3− | 0.5+ | 2006 08 24 | 941 | 0.0 | 0.0 | 2006 09 15 | 941 | 0.1+ | 0.2− |
| 2001 10 15 | 704 | 1.0+ | 0.1+ | 2006 08 24 | 941 | 0.2− | 0.0 | 2006 09 15 | 941 | 0.0 | 0.1− |
| 2001 10 15 | 704 | 1.9+ | 0.2+ | 2006 08 24 | 941 | 0.3− | 0.0 | 2006 09 15 | 941 | 0.3+ | 0.0 |
| 2001 11 12 | 704 | 0.5+ | 0.1− | 2006 08 24 | 941 | 0.2+ | 0.0 | 2006 09 25 | 941 | 0.1+ | 0.3+ |
| 2001 11 12 | 704 | 1.2− | 0.1+ | 2006 08 25 | 941 | 0.2− | 0.5− | 2006 09 25 | 941 | 0.0 | 0.3+ |
| 2001 11 12 | 704 | 1.1− | 1.2− | 2006 08 25 | 941 | 0.0 | 0.3− | 2006 09 25 | 941 | 0.0 | 0.2+ |
| 2001 11 12 | 704 | 0.8− | 0.3+ | 2006 08 25 | 941 | 0.3− | 0.0 | 2006 09 25 | 941 | 0.0 | 0.1+ |
| 2006 08 23 | 941 | 1.4+ | 0.2− | 2006 08 25 | 941 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2006 08 23 | 941 | 0.4+ | 0.2+ | 2006 08 31 | 941 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2006 08 23 | 941 | 0.4+ | 0.3+ | 2006 08 31 | 941 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2006 08 23 | 941 | 0.1+ | 0.8+ | 2006 08 31 | 941 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2006 08 24 | 941 | 0.4− | 0.1+ | 2006 08 31 | 941 | 0.1− | 0.0 | | | | |
| 2006 08 24 | 941 | 0.1− | 0.1+ | 2006 09 15 | 941 | 0.2− | 0.1− | | | | |

**2006 QM$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.29036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23008547 | $\omega$ | 23.22735 | | +0.96854697 | +0.21265902 | |
| $a$ | 2.6376060 | $\Omega$ | 323.72388 | | −0.24844506 | +0.79756812 | |
| $e$ | 0.1626617 | $i$ | 12.61297 | | −0.01385010 | +0.56450088 | |
| $P$ | 4.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 704 | 1.0+ | 0.9+ | 2006 08 18 | 704 | 0.3+ | 0.5+ | 2006 09 11 | 703 | 0.4+ | 0.7− |
| 2002 08 30 | 704 | 0.5− | 0.6− | 2006 08 18 | 704 | 0.3+ | 0.8+ | 2006 09 11 | 703 | 0.6− | 0.4− |
| 2002 08 30 | 704 | 0.8− | 0.3− | 2006 08 18 | 699 | 0.6− | 0.3− | 2006 09 11 | 703 | 0.5+ | 0.4− |
| 2002 10 06 | 704 | 0.0 | 1.0+ | 2006 08 18 | 699 | (2.0+ | 1.4−) | 2006 09 12 | 699 | 0.6− | 0.6− |
| 2002 10 06 | 704 | 0.5− | 0.6+ | 2006 08 24 | 704 | 0.2− | 0.3− | 2006 09 12 | 699 | 0.5+ | 0.3− |
| 2002 10 06 | 704 | 0.5− | 1.0+ | 2006 08 24 | 704 | 0.3− | 0.2− | 2006 09 12 | 699 | 0.1− | 0.9+ |
| 2002 10 06 | 704 | 2.5+ | 0.5+ | 2006 08 24 | 704 | 0.0 | 0.1− | 2006 09 12 | 699 | 0.4− | 0.7− |
| 2002 10 06 | 704 | 0.4+ | 0.2− | 2006 08 24 | 704 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2002 10 06 | 699 | 0.8− | 0.0 | 2006 08 28 | 703 | 0.4− | 1.1− | 2006 09 17 | 291 | 0.0 | 0.3+ |
| 2002 10 06 | 699 | 0.1− | 0.4− | 2006 08 28 | 703 | 0.1+ | 0.8− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 10 06 | 699 | 0.3− | 0.5− | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2002 10 06 | 699 | 1.0− | 1.1− | 2006 08 28 | 703 | 0.8− | 0.3− | 2006 09 17 | 291 | 0.2+ | 0.2+ |
| 2004 02 23 | 704 | 0.7− | 0.7+ | 2006 08 28 | 699 | 0.0 | 0.0 | 2006 09 17 | 291 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.2− | 1.1− | 2006 08 28 | 699 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.1− | 1.4+ |
| 2004 02 23 | 704 | 0.3+ | 1.2− | 2006 08 28 | 699 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.2− | 1.0+ |
| 2004 02 23 | 704 | 0.3− | 0.1− | 2006 08 28 | 699 | 0.6− | 0.4+ | 2006 09 19 | 699 | (0.3+ | 1.6+) |
| 2006 08 14 | 644 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.2− |
| 2006 08 14 | 644 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.5− |
| 2006 08 14 | 644 | 0.2− | 0.3+ | 2006 08 30 | 704 | 0.6− | 0.9+ | 2006 09 25 | 704 | 0.4+ | 0.6− |
| 2006 08 18 | 704 | 0.3+ | 1.3− | 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 09 25 | 704 | 1.3+ | 1.3− |
| 2006 08 18 | 699 | 1.0− | 0.5− | 2006 08 30 | 704 | 0.1+ | 0.2− | 2006 09 25 | 704 | 0.1+ | 0.3− |
| 2006 08 18 | 704 | 1.4+ | 0.1+ | 2006 09 11 | 703 | 0.4+ | 0.5− | 2006 09 25 | 704 | 0.5− | 0.3+ |

**2006 QP$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.46391 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24118475 | $\omega$ | 350.09089 | | +0.57055973 | +0.80257877 | |
| $a$ | 2.5560509 | $\Omega$ | 314.43988 | | −0.73580653 | +0.40538423 | |
| $e$ | 0.2129258 | $i$ | 14.11774 | | −0.36476067 | +0.43764248 | |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 704 | 0.0 | 0.1+ | 2006 08 24 | 704 | 0.5+ | 0.6− | 2006 09 22 | 691 | 0.0 | 0.2+ |
| 2002 08 16 | 704 | 0.0 | 0.5+ | 2006 08 27 | 699 | 1.2− | 0.6− | 2006 09 22 | 691 | 0.1+ | 0.1− |
| 2002 08 16 | 704 | 1.2− | 0.3+ | 2006 08 27 | 699 | 0.9+ | 0.1+ | 2006 09 22 | 691 | 0.2+ | 0.4+ |
| 2002 09 12 | 644 | 0.8− | 0.6+ | 2006 08 27 | 699 | 0.2− | 0.4− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2002 09 12 | 644 | 0.5− | 0.6+ | 2006 08 27 | 699 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.2+ | 0.2− |
| 2002 09 12 | 644 | 0.5− | 0.6+ | 2006 08 29 | 703 | (1.8− | 0.3+) | 2006 09 25 | 691 | 0.6− | 0.3+ |
| 2002 10 02 | 049 | 0.6+ | 0.1− | 2006 08 29 | 703 | 0.5− | 1.4+ | 2006 09 27 | 691 | 0.2+ | 0.2− |
| 2002 10 02 | 049 | 0.7+ | 0.1+ | 2006 08 29 | 703 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.2− |
| 2002 10 02 | 049 | (0.6+ | 1.9+) | 2006 08 29 | 703 | 0.6− | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.3− |
| 2006 08 18 | 699 | (0.6− | 1.8−) | 2006 08 29 | 703 | (1.7− | 0.3+) | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2006 08 18 | 699 | 0.5− | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.2− |
| 2006 08 18 | 699 | 0.5+ | 0.4− | 2006 08 29 | 703 | 1.1+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.4+ |
| 2006 08 18 | 699 | 0.2− | 0.7− | 2006 08 29 | 703 | 0.7− | 0.7− | 2006 09 30 | 691 | 0.4+ | 0.1− |
| 2006 08 24 | 704 | 0.5+ | 0.7+ | 2006 08 30 | 699 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2006 08 24 | 704 | 0.1− | 0.3− | 2006 08 30 | 699 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2006 08 24 | 704 | 0.3− | 0.1− | 2006 08 30 | 699 | 1.4− | 0.3− | | | | |
| 2006 08 24 | 704 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.6− | 0.5+ | | | | |

**2006 QR$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.26153 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18382553 | $\omega$ | 335.28773 | | +0.55203208 | +0.83076070 | |
| $a$ | 3.0633656 | $\Omega$ | 328.07981 | | −0.74080762 | +0.44935083 | |
| $e$ | 0.0897288 | $i$ | 7.76030 | | −0.38270699 | +0.32851253 | |
| $P$ | 5.36 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.5+ | 0.3− | 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.3+ |
| 2001 09 28 | 644 | 0.4+ | 0.2− | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 08 28 | 699 | 0.8− | 0.5+ |
| 2001 09 28 | 644 | 0.4+ | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.1− | 0.2− |
| 2001 10 15 | 608 | 0.8− | 0.0 | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.5+ | 0.1− |
| 2001 10 15 | 608 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.5+ | 0.5+ |
| 2001 10 15 | 608 | 0.1− | 0.5+ | 2006 08 18 | 699 | (2.5+ | 1.5+) | 2006 08 28 | 699 | 0.2− | 0.7+ |
| 2004 02 17 | 691 | 0.3+ | 0.4+ | 2006 08 18 | 699 | (0.2+ | 1.6+) | 2006 08 28 | 699 | 0.8− | 0.1+ |
| 2004 02 17 | 691 | 0.4+ | 0.4+ | 2006 08 18 | 644 | 0.0 | 0.2− | 2006 08 28 | 699 | 0.8− | 0.8− |
| 2004 02 17 | 691 | 0.1+ | 0.4+ | 2006 08 18 | 699 | 0.5+ | 0.5+ | 2006 08 28 | 699 | 1.0+ | 0.1+ |
| 2004 03 18 | 704 | 0.9+ | 0.3− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 08 28 | 699 | 1.3− | 0.4+ |
| 2004 03 18 | 704 | 0.3+ | 0.9− | 2006 08 18 | 699 | 0.4+ | 1.2+ | 2006 08 28 | 699 | 0.6− | 0.6+ |
| 2004 03 18 | 704 | 0.4− | 0.4− | 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 08 21 | 644 | 0.3− | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2004 03 30 | 691 | 0.2− | 0.0 | 2006 08 21 | 644 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.5− |

**2006 QY$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.59419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28724295 | $\omega$ | 74.50025 | | +0.88893542 | +0.45367588 | |
| $a$ | 2.2749392 | $\Omega$ | 258.48512 | | −0.44102545 | +0.81064040 | |
| $e$ | 0.1705248 | $i$ | 3.68772 | | −0.12365425 | +0.37018961 | |
| $P$ | 3.43 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.1− | 0.3− | 2006 09 22 | 703 | 0.8− | 0.4+ |
| 1996 12 12 | 691 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 09 22 | 703 | 0.1− | 0.2+ |
| 1996 12 12 | 691 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.2− | 0.4+ | 2006 09 22 | 703 | 0.4− | 0.1− |
| 1999 08 12 | 699 | 0.2+ | 0.2− | 2006 08 30 | 704 | 0.5+ | 0.5+ | 2006 09 24 | 106 | 0.5− | 1.0− |
| 1999 08 12 | 699 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 09 24 | 106 | 0.4+ | 0.6− |
| 1999 08 12 | 699 | 0.4− | 0.3+ | 2006 09 15 | 704 | 0.7− | 1.2+ | 2006 09 24 | 106 | 0.3+ | 0.0 |
| 1999 09 05 | 703 | 0.1+ | 1.0− | 2006 09 15 | 704 | 0.1+ | 0.3+ | 2006 09 24 | 106 | 0.4+ | 0.9+ |
| 1999 09 05 | 703 | 1.6− | 0.5+ | 2006 09 15 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.0 | 0.3+ |
| 1999 09 05 | 703 | 1.1+ | 1.3+ | 2006 09 15 | 704 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.8+ | 0.2+ |
| 1999 09 05 | 703 | 0.4− | 1.1− | 2006 09 15 | 704 | 0.7− | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.3+ |
| 2002 05 11 | 704 | 0.0 | 0.5− | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.0 |
| 2002 05 11 | 704 | 0.1− | 0.4− | 2006 09 17 | 703 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.0 | 0.2− |
| 2002 05 11 | 704 | 0.1− | 0.9− | 2006 09 17 | 703 | 0.6+ | 0.1− | 2006 10 01 | 704 | (2.6− | 0.4+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 1.5+ | 0.9− | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.6− | 0.3− |
| 2005 03 08 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.7+ | 0.4− | 2006 10 01 | 704 | 0.8− | 0.7+ |
| 2005 03 08 | 691 | 0.0 | 1.0+ | 2006 09 18 | 704 | 0.4− | 0.4+ | 2006 10 01 | 704 | 1.3+ | 0.4+ |
| 2005 03 08 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 704 | (0.6+ | 1.9+) | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2006 08 18 | 699 | 0.9+ | 1.4+ | 2006 09 18 | 704 | 0.9− | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2006 08 18 | 699 | 0.6+ | 1.0− | 2006 09 18 | 704 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2006 08 18 | 699 | 0.4+ | 0.1− | 2006 09 20 | 699 | 0.6− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2006 08 18 | 699 | 0.8− | 0.8+ | 2006 09 20 | 699 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2006 08 24 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 699 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.3− |
| 2006 08 24 | 704 | 0.0 | 0.6+ | 2006 09 20 | 703 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2006 08 24 | 704 | 0.5− | 0.4− | 2006 09 20 | 699 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 20 | 703 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 09 20 | 703 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.1+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2006 08 29 | 703 | 0.2+ | 0.4+ | 2006 09 22 | 703 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.2− |

**2006 QG$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.57698 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18763393 | $\omega$ | 241.82898 | | +0.94269184 | −0.29821329 | |
| $a$ | 3.0217728 | $\Omega$ | 135.06732 | | +0.32796227 | +0.91070801 | |
| $e$ | 0.0896998 | $i$ | 12.23452 | | −0.06142350 | +0.28579670 | |
| $P$ | 5.25 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 29 | 691 | 0.1− | 0.6− | 2003 01 05 | 704 | 0.1+ | 1.5+ | 2006 08 19 | 699 | 0.2+ | 0.2− |
| 1997 12 29 | 691 | 0.3− | 0.6− | 2004 03 15 | 704 | 0.9+ | 1.5+ | 2006 08 19 | 699 | 0.2+ | 0.1− |
| 1997 12 29 | 691 | 0.1− | 0.3− | 2004 03 15 | 704 | 0.1+ | 0.4+ | 2006 08 19 | 699 | 1.0− | 0.4+ |
| 2001 09 12 | 704 | 0.7+ | 0.7− | 2004 03 15 | 704 | 1.0+ | 0.4+ | 2006 08 23 | 704 | 0.1+ | 1.1− |
| 2001 09 12 | 704 | 0.7+ | 0.2− | 2006 05 02 | G96 | 0.2− | 0.1+ | 2006 08 23 | 704 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.2+ | 0.5− | 2006 05 02 | G96 | 0.2+ | 0.0 | 2006 08 23 | 704 | 1.2− | 0.7+ |
| 2001 09 12 | 704 | 0.4+ | 0.0 | 2006 05 02 | G96 | 0.8+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.0 |
| 2001 09 12 | 704 | 0.7+ | 0.4+ | 2006 05 02 | G96 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.0 | 0.9− |
| 2001 09 17 | 699 | 0.1+ | 1.3+ | 2006 05 26 | G96 | 0.8− | 0.3− | 2006 08 28 | 703 | 0.8+ | 1.3+ |
| 2001 09 17 | 699 | 1.0− | 0.5+ | 2006 05 26 | G96 | 0.7+ | 0.5− | 2006 08 28 | 703 | 0.4+ | 0.2− |
| 2001 09 17 | 699 | 0.2+ | 0.6+ | 2006 05 26 | G96 | 0.1+ | 0.2− | 2006 08 28 | E12 | 0.6− | 0.1− |
| 2001 09 17 | 699 | 0.1− | 0.5+ | 2006 05 26 | G96 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.2+ | 0.1+ |
| 2002 12 14 | 704 | 0.2− | 0.1+ | 2006 08 11 | D35 | 0.3− | 0.3+ | 2006 08 28 | E12 | 1.0+ | 0.6− |
| 2002 12 14 | 704 | 0.4+ | 0.2− | 2006 08 11 | D35 | 0.1+ | 0.2+ | 2006 08 28 | E12 | 0.6+ | 0.3− |
| 2002 12 14 | 704 | 0.3− | 0.3+ | 2006 08 11 | D35 | 1.0− | 0.0 | 2006 09 14 | 644 | 0.5− | 0.2− |
| 2003 01 05 | 704 | 0.2− | 0.3+ | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.7− | 0.2− |
| 2003 01 05 | 704 | 0.1− | 1.5+ | 2006 08 14 | 644 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.6− | 0.0 |
| 2003 01 05 | 704 | 0.5+ | 0.9+ | 2006 08 14 | 644 | 0.2− | 0.3− | | | | |
| 2003 01 05 | 704 | 0.1+ | 0.4+ | 2006 08 19 | 699 | 0.3+ | 0.3+ | | | | |

**2006 QH$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.43495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29753029 | $\omega$ | 233.71363 | | +0.98398066 | +0.16619845 | |
| $a$ | 2.2221938 | $\Omega$ | 116.63937 | | −0.13147697 | +0.92086038 | |
| $e$ | 0.2038754 | $i$ | 4.13801 | | −0.12039877 | +0.35269567 | |
| $P$ | 3.31 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 18 | 699 | 1.0− | 0.2+ | 2003 12 01 | 703 | 1.0− | 1.8− | 2006 08 28 | 704 | 0.6+ | 0.5− |
| 2003 10 18 | 699 | 0.9+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 08 28 | 704 | 0.3− | 0.5− |
| 2003 10 18 | 699 | 1.0− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 08 28 | 704 | 0.3− | 1.9− |
| 2003 10 18 | 699 | 0.9− | 0.6− | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 08 28 | 704 | 0.6− | 0.0 |
| 2003 10 29 | 704 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 08 28 | 704 | 0.5+ | 0.5− |
| 2003 10 29 | 704 | 0.7+ | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 08 28 | E12 | 0.2+ | 0.5− |
| 2003 10 29 | 704 | 0.6+ | 0.1+ | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 08 28 | E12 | 0.1+ | 0.3− |
| 2003 10 29 | 699 | 0.2− | 0.5− | 2006 08 19 | 699 | 0.6+ | 0.5− | 2006 08 28 | E12 | 0.2+ | 0.0 |
| 2003 10 29 | 699 | 0.8+ | 0.6+ | 2006 08 19 | 699 | 0.5− | 0.2− | 2006 08 28 | E12 | 0.0 | 0.3+ |
| 2003 10 29 | 699 | 0.4− | 0.3+ | 2006 08 19 | 699 | 0.7+ | 0.8+ | 2006 09 13 | 644 | 0.0 | 0.2− |
| 2003 10 29 | 699 | 0.4+ | 0.1+ | 2006 08 19 | 699 | 0.4− | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2003 11 15 | 644 | 0.0 | 0.3+ | 2006 08 19 | 699 | 0.5− | 0.6+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2003 11 15 | 644 | 0.1− | 0.5+ | 2006 08 19 | 699 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.2− |
| 2003 11 15 | 644 | 0.0 | 0.5+ | 2006 08 19 | 699 | 0.4+ | 0.1− | 2006 09 14 | 644 | 0.1− | 0.3− |
| 2003 11 21 | 691 | 0.2− | 0.1+ | 2006 08 19 | 699 | 0.2+ | 0.6+ | 2006 09 14 | 644 | 0.5− | 0.2− |
| 2003 11 21 | 691 | 0.0 | 0.2+ | 2006 08 23 | 704 | 0.3− | 0.6− | 2006 09 15 | 644 | 1.1+ | 0.8+ |
| 2003 11 21 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 704 | 0.3+ | 0.0 | 2006 09 15 | 644 | 0.0 | 0.0 |
| 2003 12 01 | 703 | 0.4− | 0.3− | 2006 08 23 | 704 | 0.9− | 1.1+ | 2006 09 15 | 644 | 0.2− | 0.1− |
| 2003 12 01 | 703 | 1.3+ | 0.7− | 2006 08 23 | 704 | 0.3+ | 0.0 | | | | |
| 2003 12 01 | 703 | 0.7+ | 0.7− | 2006 08 23 | 704 | 1.5− | 1.1+ | | | | |

**2006 QN$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.01610 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22951704 | $\omega$ | 3.29506 | | +0.98878434 | −0.14780049 | |
| $a$ | 2.6419591 | $\Omega$ | 5.34925 | | +0.13122448 | +0.79115436 | |
| $e$ | 0.2969747 | $i$ | 13.30846 | | +0.07131380 | +0.59348950 | |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2000 03 09 | 691 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2000 03 09 | 691 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2002 12 07 | 704 | 0.0 | 1.0− | 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 12 07 | 704 | 0.6+ | 0.5− | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 12 07 | 704 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 12 07 | 704 | 0.1+ | 0.5− | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 10 16 | 683 | 0.5+ | 0.1− |
| 2004 01 27 | 691 | 0.4+ | 0.3+ | 2006 09 15 | 704 | 0.5− | 0.8+ | 2006 10 16 | 683 | 0.3+ | 0.8+ |
| 2004 01 27 | 691 | 0.6+ | 0.0 | 2006 09 15 | 704 | 0.1− | 0.2+ | 2006 10 16 | 683 | 0.1+ | 0.3+ |
| 2004 01 27 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 704 | 0.3− | 0.5+ | 2006 10 17 | 683 | 1.0+ | 0.5− |
| 2004 01 27 | 691 | 0.8− | 0.4+ | 2006 09 15 | 704 | 0.5− | 0.5− | 2006 10 17 | 683 | 0.5+ | 0.6− |
| 2004 01 27 | 691 | 0.6+ | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2004 01 27 | 691 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2004 02 29 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 19 | 683 | 0.1+ | 0.3− |
| 2004 03 21 | 691 | 0.3+ | 0.3− | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 10 19 | 704 | 0.9+ | 1.3+ |
| 2004 03 21 | 691 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 10 19 | 683 | 0.1+ | 0.1+ |
| 2004 03 21 | 691 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 19 | 704 | 0.2− | 0.8+ |
| 2006 08 19 | 699 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 10 19 | 683 | 0.0 | 0.1+ |
| 2006 08 19 | 699 | 0.1+ | 0.7+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 19 | 704 | 1.2− | 0.6+ |
| 2006 08 19 | 699 | 0.1− | 0.7+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 19 | 704 | (0.4− | 1.7+) |
| 2006 08 19 | 699 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | 704 | 0.2− | 0.6+ |
| 2006 08 23 | 704 | 0.7− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 683 | 0.3− | 0.9− |
| 2006 08 23 | 704 | 0.3+ | 0.9+ | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 10 20 | 683 | (0.5− | 1.8−) |
| 2006 08 23 | 704 | 0.7+ | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 683 | 0.0 | 0.6− |
| 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2006 08 24 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2006 08 28 | 704 | 0.2− | 0.0 | 2006 09 20 | 608 | 0.7− | 1.0− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2006 08 28 | 704 | 0.1− | 0.6− | 2006 09 20 | 608 | 0.8− | 1.2− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 704 | 0.6+ | 0.8− | 2006 09 20 | 608 | 0.8− | 0.9− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2006 08 28 | 704 | 0.7− | 0.1+ | 2006 09 21 | A50 | 0.3+ | 0.3+ | 2006 10 26 | 704 | 0.2+ | 0.6− |
| 2006 08 28 | 704 | 0.3− | 1.0+ | 2006 09 22 | A50 | 0.1− | 0.2− | 2006 10 26 | 704 | 0.1− | 0.5+ |
| 2006 08 31 | 704 | 0.4− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 26 | 704 | 0.6+ | 1.0+ |
| 2006 08 31 | 704 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 26 | 704 | 0.7+ | 0.7− |
| 2006 08 31 | 704 | 0.5− | 0.9+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 26 | 704 | 0.2+ | 0.1+ |
| 2006 08 31 | 704 | 1.4− | 1.1+ | 2006 09 29 | 704 | 0.4− | 0.6+ | 2006 11 29 | 704 | 0.7− | 1.0+ |
| 2006 09 06 | 644 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.9− | 0.0 | 2006 11 29 | 704 | 0.4− | 0.0 |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.8− | 0.2− | 2006 11 29 | 704 | 2.1+ | 0.3+ |
| 2006 09 06 | 644 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.5− | 0.1− | 2006 11 29 | 704 | 1.2+ | 0.1− |
| 2006 09 14 | 703 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.5− | 0.0 | | | | |

**2006 QQ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.94099 | | $\omega$ | 231.90884 | +0.87725888 | +0.19498702 |
| $n$ | 0.17205812 | | $\Omega$ | 112.81352 | −0.12651145 | +0.97539114 |
| $a$ | 3.2014933 | | $i$ | 28.41511 | −0.46304612 | +0.10291836 |
| $e$ | 0.1955154 | | | | | |
| $P$ | 5.73 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 699 | 0.1+ | 0.7− | 2006 06 22 | E12 | 0.4− | 0.4+ | 2006 08 20 | E12 | 0.1+ | 0.1− |
| 2001 11 16 | 699 | 1.0+ | 1.0− | 2006 06 22 | E12 | 0.2− | 0.2− | 2006 08 23 | E12 | 0.8− | 0.8+ |
| 2001 11 16 | 699 | 1.2− | 0.2+ | 2006 06 22 | E12 | 0.1+ | 0.7− | 2006 08 23 | E12 | 0.0 | 0.7− |
| 2001 11 16 | 699 | 0.0 | 1.0+ | 2006 06 22 | E12 | 0.2− | 0.6+ | 2006 08 23 | E12 | 0.8+ | 0.3+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.4− | 0.7+ | 2006 08 23 | E12 | 0.6− | 0.7− |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 07 18 | E12 | 0.6+ | 0.6+ | 2006 09 14 | E12 | 0.4− | 0.5+ |
| 2003 01 25 | 645 | 0.0 | 0.1+ | 2006 07 18 | E12 | 0.2− | 0.5+ | 2006 09 14 | E12 | 0.2+ | 1.2+ |
| 2003 01 25 | 645 | 0.1− | 0.0 | 2006 08 20 | E12 | 0.4+ | 0.1+ | 2006 09 14 | E12 | 0.4+ | 0.3− |
| 2004 04 13 | 645 | 0.1− | 0.1+ | 2006 08 20 | E12 | 0.7+ | 0.8+ | 2006 09 14 | E12 | 0.1+ | 0.6+ |
| 2004 04 13 | 645 | 0.0 | 0.0 | 2006 08 20 | E12 | 0.2− | 0.7+ | | | | |

**2006 QV$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 347.47523 | | $\omega$ | 315.27096 | +0.98179758 | −0.17606854 |
| $n$ | 0.29374948 | | $\Omega$ | 54.99821 | +0.18930687 | +0.87679558 |
| $a$ | 2.2412208 | | $i$ | 4.98844 | +0.01537587 | +0.44746998 |
| $e$ | 0.1436248 | | | | | |
| $P$ | 3.36 | $H$ | 17.4 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 07 | 807 | 0.1− | 0.1+ | 2006 08 26 | 104 | 0.4− | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.3+ |
| 2002 04 07 | 807 | 0.1− | 0.1+ | 2006 08 26 | 104 | 0.1− | 0.3− | 2006 09 15 | 704 | 0.1− | 0.7− |
| 2003 11 21 | 704 | 0.3+ | 0.5+ | 2006 08 26 | 104 | 0.2− | 0.5− | 2006 09 15 | 704 | 0.3+ | 0.2+ |
| 2003 11 21 | 704 | (0.6− | 2.6+) | 2006 08 27 | D35 | 0.3+ | 0.0 | 2006 09 15 | 704 | 0.0 | 0.4+ |
| 2003 11 21 | 704 | (1.3− | 2.6+) | 2006 08 27 | D35 | 0.5+ | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.2− |
| 2003 11 21 | 704 | (0.6+ | 2.3+) | 2006 08 27 | D35 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.7− | 0.3− |
| 2003 11 30 | 691 | 0.2− | 0.1+ | 2006 08 28 | D35 | 0.9+ | 0.3+ | 2006 09 26 | 703 | 0.7+ | 0.3− |
| 2003 11 30 | 691 | 0.1− | 0.1+ | 2006 08 28 | D35 | 1.2+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.4− |
| 2003 11 30 | 691 | 0.2− | 0.2+ | 2006 08 28 | D35 | 1.4+ | 0.9+ | 2006 10 02 | 703 | 1.4− | 0.2+ |
| 2003 12 14 | 691 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.5− | 0.4− |
| 2003 12 14 | 691 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.7− | 0.5+ |
| 2003 12 14 | 691 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.8+ | 2006 10 02 | 703 | (0.8− | 1.6−) |
| 2003 12 18 | 704 | 0.0 | 0.5− | 2006 08 30 | 699 | 0.1+ | 0.7+ | 2006 10 09 | 644 | 0.3− | 0.2− |
| 2003 12 18 | 704 | 1.0+ | 0.9− | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2003 12 18 | 704 | 0.4− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.4− | 0.4+ |
| 2003 12 18 | 704 | 1.2+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.2+ | 1.1− |
| 2003 12 18 | 704 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.8+ | 0.4− | 2006 10 19 | 703 | (2.1+ | 1.0−) |
| 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.3+ | 1.1− |
| 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.0 |
| 2006 08 16 | 644 | 0.8− | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.2+ |
| 2006 08 24 | 104 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.7− | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2006 08 24 | 104 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.8− |
| 2006 08 24 | 104 | (1.8− | 0.3+) | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.4− | 0.3+ |

**2006 QX$_{39}$ = 1999 TE$_{309}$ = 2005 FD$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.63906 | | $\omega$ | 247.86700 | +0.08552864 | +0.99457077 |
| $n$ | 0.27550134 | | $\Omega$ | 27.24475 | −0.85976097 | +0.10373910 |
| $a$ | 2.3391257 | | $i$ | 7.43987 | −0.50348379 | −0.00819599 |
| $e$ | 0.0966167 | | | | | |
| $P$ | 3.58 | $H$ | 16.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.5− | 1.1− | 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1− |
| 1998 03 29 | 704 | 0.1+ | 0.3+ | 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.1− |
| 1998 03 29 | 704 | 0.9+ | 1.3− | 2003 12 18 | 691 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.7+ |
| 1998 03 29 | 704 | 0.2+ | 1.6+ | 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.2− |
| 1998 03 29 | 704 | (2.8− | 1.1−) | 2003 12 28 | 691 | 0.3− | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.2+ |
| 1998 04 21 | 704 | 0.8+ | 0.5+ | 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 09 21 | 699 | 1.2+ | 0.4+ |
| 1998 04 21 | 704 | 1.3− | 1.4+ | 2005 03 16 | 704 | 0.7+ | 0.1+ | 2006 09 21 | 699 | 0.2− | 0.1+ |
| 1998 04 21 | 704 | 0.4− | 0.2− | 2005 03 16 | 704 | 0.6+ | 0.1− | 2006 09 21 | 699 | 1.0− | 1.4+ |
| 1999 10 06 | 691 | 0.2+ | 0.2− | 2005 03 16 | 704 | 1.4+ | 0.0 | 2006 09 21 | 699 | 0.9− | 0.1− |
| 1999 10 06 | 691 | 0.2+ | 0.1− | 2005 03 16 | 704 | 0.9+ | 0.5+ | 2006 09 26 | 704 | (0.1− | 1.7+) |
| 1999 10 06 | 691 | 0.4+ | 0.0 | 2005 03 16 | 704 | 1.0+ | 0.9+ | 2006 09 26 | 704 | 0.1− | 1.4+ |
| 1999 10 09 | 704 | 1.9− | 0.9− | 2005 03 18 | 703 | 1.0− | 0.9− | 2006 09 26 | 704 | (2.1+ | 0.3+) |
| 1999 10 09 | 704 | 0.4− | 0.3− | 2005 03 18 | 703 | 0.6− | 0.9+ | 2006 09 26 | 703 | 1.1− | 0.4+ |
| 1999 10 09 | 704 | 0.8+ | 0.9− | 2005 03 18 | 703 | 1.2− | 0.2+ | 2006 09 26 | 703 | 0.5+ | 0.3+ |
| 1999 10 09 | 704 | 0.8+ | 0.1− | 2005 03 18 | 703 | 0.5− | 0.9− | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 1999 10 09 | 704 | 0.8+ | 1.1− | 2006 08 24 | 104 | 0.4+ | 0.2− | 2006 09 26 | 703 | 0.4− | 0.5+ |
| 1999 10 13 | 691 | 0.1+ | 0.1− | 2006 08 24 | 104 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 1999 10 13 | 691 | 0.1+ | 0.1− | 2006 08 24 | 104 | 0.0 | 0.6+ | 2006 11 25 | G96 | 0.4− | 0.5− |
| 1999 10 13 | 691 | 0.1+ | 0.1− | 2006 08 26 | 104 | 0.5− | 0.0 | 2006 11 25 | G96 | 0.8− | 0.4− |
| 2003 11 24 | 704 | 1.4+ | 0.4− | 2006 08 26 | 104 | 0.4− | 0.7+ | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2003 11 24 | 704 | 0.5+ | 0.5+ | 2006 08 26 | 104 | 0.0 | 0.3+ | | | | |
| 2003 11 24 | 704 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.2− | 0.1+ | | | | |

**2006 QD$_{40}$ = 2005 GU$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.94501 | | $\omega$ | 213.45487 | +0.99328343 | −0.08953826 |
| $n$ | 0.21985496 | | $\Omega$ | 151.41128 | +0.10617324 | +0.95707285 |
| $a$ | 2.7188080 | | $i$ | 8.80969 | −0.04599199 | +0.27567094 |
| $e$ | 0.0931293 | | | | | |
| $P$ | 4.48 | $H$ | 16.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 08 | 691 | 0.5+ | 0.8+ | 2004 02 26 | 704 | 0.2− | 0.5− | 2006 08 23 | A50 | 0.7+ | 0.5− |
| 1995 02 08 | 691 | 0.3− | 0.2+ | 2004 02 26 | 704 | 0.3+ | 0.3− | 2006 08 25 | A50 | 0.2+ | 0.7+ |
| 2002 10 09 | 699 | 0.2+ | 0.3− | 2005 04 14 | 691 | 0.1− | 0.1+ | 2006 08 25 | A50 | 0.1+ | 1.0+ |
| 2002 10 09 | 699 | 0.2− | 0.5+ | 2005 04 14 | 691 | 0.2− | 0.2+ | 2006 08 25 | A50 | 0.3− | 0.4+ |
| 2002 10 09 | 699 | 0.4+ | 0.7+ | 2005 04 14 | 691 | 0.1− | 0.3+ | 2006 08 25 | A50 | 0.7− | 0.4+ |
| 2002 10 09 | 699 | 0.5− | 1.2+ | 2005 04 18 | 691 | 0.4+ | 0.0 | 2006 08 25 | A50 | 0.9− | 0.4+ |
| 2002 10 31 | 645 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.6+ |
| 2002 10 31 | 704 | 1.2+ | 0.1+ | 2005 04 18 | 691 | 0.2− | 0.4+ | 2006 08 28 | 699 | 1.0− | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.1+ |
| 2002 10 31 | 704 | 0.4+ | 0.5− | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.3− |
| 2002 10 31 | 704 | 0.7+ | 0.3− | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.7− | 0.0 |
| 2002 10 31 | 608 | 0.5− | 0.7− | 2006 08 22 | 644 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.2+ |
| 2002 10 31 | 608 | 0.6− | 0.4− | 2006 08 22 | 644 | 0.6− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.6+ |
| 2002 10 31 | 608 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.6− | 0.2+ | 2006 08 28 | 699 | 0.3− | 1.7+ |
| 2004 02 12 | 691 | 0.1− | 0.5+ | 2006 08 23 | A50 | 1.2+ | 0.7− | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 2004 02 12 | 691 | 0.4+ | 0.2+ | 2006 08 23 | A50 | 1.3+ | 0.2− | 2006 09 14 | 703 | 0.2− | 0.4+ |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 08 23 | A50 | 1.0+ | 0.5− | 2006 09 14 | 703 | 1.0+ | 1.1+ |
| 2004 02 26 | 704 | 0.9− | 0.5+ | 2006 08 23 | A50 | 0.6+ | 0.7− | 2006 09 14 | 703 | 0.9+ | 1.6+ |

**2006 QF$_{40}$ = 2005 KF$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.39175 | | $\omega$ | 137.01657 | +0.48919689 | +0.86958210 |
| $n$ | 0.18229601 | | $\Omega$ | 161.94179 | −0.84741216 | +0.49212028 |
| $a$ | 3.0804768 | | $i$ | 12.51687 | −0.20634687 | +0.04055377 |
| $e$ | 0.1628475 | | | | | |
| $P$ | 5.41 | $H$ | 15.6 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.1+ | 1.4+ | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 16 | J87 | 0.1− | 0.3+ |
| 2001 10 15 | 644 | 0.1+ | 1.0+ | 2006 08 25 | J87 | 0.5+ | 1.0+ | 2006 09 16 | J87 | 1.4+ | 0.6+ |
| 2001 10 15 | 644 | 0.2+ | 1.3+ | 2006 08 25 | J87 | 0.2− | 0.4− | 2006 09 17 | J87 | 0.0 | 0.4− |
| 2001 10 23 | 644 | 0.5− | 0.1+ | 2006 08 25 | J87 | 0.2+ | 0.8+ | 2006 09 17 | 704 | 0.4+ | 0.6+ |
| 2001 10 23 | 644 | 0.4− | 0.3+ | 2006 08 25 | J87 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.3+ | 0.0 |
| 2001 10 23 | 644 | 0.5− | 0.7+ | 2006 08 25 | J87 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.7+ | 1.4− |
| 2004 03 18 | 691 | 0.2+ | 0.9+ | 2006 08 25 | J87 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.7− |
| 2004 03 18 | 691 | 0.2− | 0.4+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 09 30 | 703 | (1.9− | 0.2−) |
| 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 19 | 703 | 0.4+ | 1.4+ | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 1.5− | 0.6− |
| 2005 05 19 | 703 | 1.0+ | 0.7+ | 2006 08 28 | 703 | 0.7− | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2005 05 19 | 703 | (2.8− | 2.1−) | 2006 08 28 | 703 | 0.8− | 1.2− | 2006 09 30 | 703 | 0.0 | 0.7+ |
| 2005 05 19 | 703 | 0.8− | 0.2− | 2006 08 28 | 703 | 0.7+ | 0.8+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2005 05 20 | 644 | 0.2− | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.7− | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2005 05 20 | 644 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2005 05 20 | 644 | 0.0 | 0.6+ | 2006 09 14 | 703 | 0.6+ | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2006 08 18 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 1.0− | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.6+ | 0.9− |

**2006 QJ$_{40}$ = 2001 OL$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.98201 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38967814 | $\omega$ | 255.40723 | | +0.84805959 | | −0.42296615 |
| $a$ | 1.8563735 | $\Omega$ | 128.53466 | | +0.48125801 | | +0.86690031 |
| $e$ | 0.2246365 | $i$ | 24.08398 | | −0.22177841 | | +0.26378683 |
| $P$ | 2.53 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.3+ | 0.4+ | 2006 08 25 | E12 | 1.4+ | 0.1− | 2006 08 26 | E12 | 0.0 | 0.1− |
| 2001 07 20 | 644 | 0.6+ | 0.3+ | 2006 08 25 | E12 | 0.3− | 0.5− | 2006 08 26 | E12 | 0.0 | 0.1+ |
| 2001 07 20 | 644 | 0.2+ | 0.3+ | 2006 08 25 | E12 | 0.7+ | 0.1+ | 2006 08 26 | E12 | 0.4− | 1.0+ |
| 2001 07 27 | 644 | 0.5− | 0.4+ | 2006 08 25 | E12 | 0.2− | 0.2− | 2006 08 26 | E12 | 0.4− | 0.2− |
| 2001 07 27 | 644 | 0.4− | 0.2+ | 2006 08 25 | E12 | 0.1− | 0.2− | 2006 08 27 | E12 | 0.5+ | 0.4− |
| 2001 07 27 | 644 | 0.2− | 0.1+ | 2006 08 25 | E12 | 0.2+ | 0.2− | 2006 08 27 | E12 | 0.3− | 0.4− |
| 2006 07 25 | 644 | 0.2+ | 0.8− | 2006 08 25 | E12 | 0.5+ | 0.5− | 2006 08 27 | E12 | 0.4− | 0.1− |
| 2006 07 25 | 644 | 0.1− | 0.4+ | 2006 08 26 | I77 | 0.1− | 0.5− | 2006 09 23 | E12 | 0.3− | 0.1− |
| 2006 07 25 | 644 | 0.0 | 0.4+ | 2006 08 26 | I77 | 0.1− | 0.4− | 2006 09 23 | E12 | 0.6− | 0.6− |
| 2006 08 25 | E12 | 0.3+ | 1.5+ | 2006 08 26 | I77 | 0.3− | 0.2− | 2006 09 23 | E12 | 0.2− | 0.2+ |
| 2006 08 25 | E12 | 0.3+ | 0.0 | 2006 08 26 | 673 | 0.0 | 0.7+ | 2006 09 23 | E12 | 0.2− | 0.0 |
| 2006 08 25 | E12 | 0.2− | 0.3− | 2006 08 26 | 673 | 0.2− | 0.2− | 2006 09 28 | E12 | 0.1+ | 0.5+ |
| 2006 08 25 | E12 | 0.1+ | 0.4− | 2006 08 26 | E12 | 0.0 | 0.1+ | 2006 09 28 | E12 | 0.7− | 0.0 |
| 2006 08 25 | E12 | 0.2− | 0.0 | 2006 08 26 | E12 | 0.2− | 0.2+ | 2006 09 28 | E12 | 0.5+ | 0.7+ |
| 2006 08 25 | E12 | 0.1− | 0.4− | 2006 08 26 | E12 | 0.3+ | 0.2− | | | | |

**2006 QT$_{40}$ = 2001 SK$_{342}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.64697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17955317 | $\omega$ | 307.53093 | | +0.65493030 | | −0.73143191 |
| $a$ | 3.1117688 | $\Omega$ | 100.43190 | | +0.73986360 | | +0.56946480 |
| $e$ | 0.0980287 | $i$ | 11.13509 | | +0.15384460 | | +0.37512292 |
| $P$ | 5.49 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 644 | 0.6+ | 0.1− | 2003 01 09 | 704 | 0.4+ | 0.1+ | 2006 08 16 | E12 | 0.3− | 0.0 |
| 2001 09 21 | 644 | 0.5+ | 0.3+ | 2003 01 09 | 704 | 0.5+ | 1.0+ | 2006 08 16 | E12 | 1.2+ | 0.7− |
| 2001 09 21 | 644 | 0.4+ | 0.0 | 2003 01 09 | 704 | 0.0 | 0.2+ | 2006 08 16 | E12 | 0.3− | 0.8− |
| 2001 09 25 | 704 | 0.1− | 0.7− | 2003 01 09 | 704 | 0.1− | 1.3+ | 2006 08 16 | E12 | 0.8− | 0.1− |
| 2001 09 25 | 704 | 0.4− | 0.3− | 2003 01 09 | 704 | 1.2− | 0.6− | 2006 08 23 | 644 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 0.1− | 0.5+ | 2003 02 01 | 704 | 0.6− | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.3+ |
| 2001 09 25 | 704 | 0.1− | 0.3− | 2003 02 01 | 704 | 0.3+ | 0.4+ | 2006 08 23 | 644 | 0.1+ | 0.5+ |
| 2001 09 25 | 704 | 0.2− | 0.5+ | 2003 02 01 | 704 | 0.4+ | 0.7+ | 2006 08 24 | 644 | 0.2+ | 0.2+ |
| 2001 09 25 | 704 | 0.3− | 0.4+ | 2003 02 01 | 704 | 2.2+ | 1.6− | 2006 08 24 | 644 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 1.2− | 0.2+ | 2003 02 01 | 704 | 0.1+ | 0.7+ | 2006 08 24 | 644 | 0.2− | 0.0 |
| 2001 09 25 | 704 | 0.1+ | 0.6+ | 2005 06 27 | G96 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2001 10 15 | 644 | 0.0 | 0.3+ | 2005 06 27 | G96 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.3+ | 0.1+ |
| 2001 10 15 | 644 | 0.3− | 0.6+ | 2005 06 27 | G96 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.1− |
| 2001 10 15 | 644 | 0.0 | 0.2+ | 2005 06 27 | G96 | 0.6+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.4+ |
| 2002 12 31 | 704 | 0.5− | 0.5+ | 2005 07 05 | G96 | 0.3+ | 1.0+ | 2006 09 14 | 644 | 0.3+ | 0.2− |
| 2002 12 31 | 704 | 0.5− | 0.5+ | 2005 07 05 | G96 | 0.1+ | 1.0+ | 2006 09 14 | 644 | 0.5− | 0.1− |
| 2002 12 31 | 704 | 0.1− | 0.8+ | 2005 07 05 | G96 | 0.5+ | 1.0+ | | | | |
| 2002 12 31 | 704 | 0.6− | 0.3+ | 2005 07 05 | G96 | 0.2− | 1.3+ | | | | |

**2006 QV$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.28455 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28842723 | $\omega$ | 173.51806 | | +0.86159242 | | +0.50660782 |
| $a$ | 2.2687077 | $\Omega$ | 155.96202 | | −0.46914296 | | +0.81862751 |
| $e$ | 0.1708502 | $i$ | 4.46811 | | −0.19381277 | | +0.27055040 |
| $P$ | 3.42 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 691 | 0.0 | 0.3− | 2006 07 25 | 644 | 0.1+ | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.1+ |
| 2003 11 21 | 691 | 0.1− | 0.2+ | 2006 07 25 | 644 | 0.8+ | 0.3+ | 2006 08 24 | 644 | 0.3+ | 0.1− |
| 2003 11 21 | 691 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.0 |
| 2005 03 04 | G96 | 0.1+ | 0.4+ | 2006 08 14 | 644 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2005 03 04 | G96 | 0.1+ | 0.3− | 2006 08 14 | 644 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2005 03 04 | G96 | 0.0 | 0.7− | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2005 03 04 | G96 | 0.3− | 0.1− | 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2006 07 25 | 644 | 0.0 | 0.3− | 2006 08 17 | 644 | 0.1− | 0.1+ | | | | |

**2006 QA$_{41}$ = 2001 TM$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.94046 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17673224 | $\omega$ | 60.72503 | | +0.65440133 | | −0.75529528 |
| $a$ | 3.1447939 | $\Omega$ | 348.19076 | | +0.61856321 | | +0.56202468 |
| $e$ | 0.0869537 | $i$ | 10.09958 | | +0.43490051 | | +0.33713099 |
| $P$ | 5.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.5+ | 0.9+ | 2001 10 20 | 704 | 0.3− | 0.0 | 2002 12 06 | 645 | 0.0 | 0.0 |
| 2001 10 14 | 704 | 0.5+ | 0.0 | 2001 10 20 | 704 | 0.5+ | 0.4+ | 2006 08 17 | 644 | 0.4+ | 0.2+ |
| 2001 10 14 | 704 | 0.3+ | 0.2− | 2001 10 20 | 704 | 0.7+ | 0.2− | 2006 08 17 | 644 | 0.1+ | 0.2− |
| 2001 10 14 | 704 | 0.3− | 0.8− | 2001 10 20 | 704 | 0.4+ | 0.6− | 2006 08 17 | 644 | 0.3+ | 0.3− |
| 2001 10 14 | 704 | 0.7+ | 0.3− | 2001 10 20 | 644 | 0.6− | 0.2− | 2006 08 18 | 644 | 0.2− | 0.1− |
| 2001 10 18 | 704 | 1.0− | 0.3+ | 2001 10 20 | 644 | 0.1− | 0.2− | 2006 08 18 | 644 | 0.1− | 0.0 |
| 2001 10 18 | 704 | 0.7− | 0.1+ | 2001 10 20 | 644 | 0.3+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.2+ |
| 2001 10 18 | 704 | 0.4− | 0.4+ | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.0 | 0.0 |
| 2001 10 18 | 704 | 0.7− | 0.7+ | 2002 11 07 | 645 | 0.1− | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.2− |
| 2001 10 18 | 704 | 0.1+ | 0.4+ | 2002 12 06 | 645 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.0 |

**2006 QL$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.37820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27940077 | $\omega$ | 62.99609 | | +0.11428079 | | +0.99178210 |
| $a$ | 2.3173110 | $\Omega$ | 213.71960 | | −0.94424782 | | +0.09044465 |
| $e$ | 0.1092895 | $i$ | 5.94707 | | −0.30876522 | | +0.09048778 |
| $P$ | 3.53 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 16 | 704 | 0.2− | 0.5− | 2006 08 17 | 644 | 0.6− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 2002 05 16 | 704 | 0.5+ | 1.0− | 2006 08 17 | 644 | 0.6− | 0.6− | 2006 09 19 | 691 | 0.0 | 0.3− |
| 2002 05 16 | 704 | 0.0 | 0.4+ | 2006 08 22 | 644 | 0.8− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2002 06 11 | 704 | 0.1− | 0.4+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2002 06 11 | 704 | 0.0 | 0.5− | 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.2+ |
| 2002 06 11 | 704 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.3− |
| 2003 10 23 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2003 10 23 | 691 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2003 10 23 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2006 08 17 | 644 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |

**2006 QO$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.65488 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22104000 | $\omega$ | 115.94678 | | +0.99471523 | +0.03357306 | |
| $a$ | 2.7090819 | $\Omega$ | 242.26306 | | −0.06555786 | +0.93498753 | |
| $e$ | 0.1854901 | $i$ | 6.29368 | | +0.07901752 | +0.35308804 | |
| $P$ | 4.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.2− | 0.2+ | 2006 08 17 | 644 | 0.4− | 0.1− | 2006 09 11 | 703 | 0.6+ | 0.0 | |
| 2002 11 14 | 704 | (0.7+ | 2.5−) | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 11 | 703 | 0.4+ | 1.0+ | |
| 2002 11 14 | 704 | 0.3− | 0.2+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 11 | 703 | 0.0 | 0.5+ | |
| 2002 11 14 | 704 | 0.5− | 1.4− | 2006 08 22 | 644 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.6+ | 0.5+ | |
| 2002 11 14 | 704 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.2− | 0.4− | 2006 09 19 | 699 | (1.3+ | 1.7−) | |
| 2002 12 10 | 644 | 0.6+ | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.4− | 2006 09 19 | 699 | 0.3+ | 0.4− | |
| 2002 12 10 | 644 | 0.5+ | 0.2− | 2006 08 30 | 699 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.3− | 0.1− | |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.3+ | |
| 2004 02 18 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | 1.2− | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.7+ | |
| 2004 02 18 | 691 | 0.3− | 0.4+ | 2006 08 30 | 699 | 0.7− | 0.2− | 2006 09 19 | 703 | 0.2+ | 1.4+ | |
| 2004 02 18 | 691 | 0.7+ | 0.7+ | 2006 09 11 | 703 | 0.7− | 0.5− | 2006 09 19 | 703 | 0.2+ | 1.1+ | |
| 2005 05 16 | G96 | 0.0 | 0.1+ | 2006 09 11 | 703 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.2− | 0.2+ | |
| 2005 05 16 | G96 | 0.5+ | 0.3+ | 2006 09 11 | 703 | (1.6− | 0.8−) | 2006 09 26 | 703 | (2.3− | 0.7−) | |
| 2005 05 16 | G96 | 0.3− | 0.1+ | 2006 09 11 | 703 | 1.2− | 1.1− | 2006 09 26 | 703 | 0.2− | 0.3+ | |
| 2005 05 16 | G96 | 0.3+ | 0.4− | 2006 09 11 | 703 | 0.9+ | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.6+ | |

**2006 QP$_{41}$ = 2005 JK$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.41191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24068511 | $\omega$ | 297.17199 | | −0.29689926 | −0.95072773 | |
| $a$ | 2.5595870 | $\Omega$ | 168.92843 | | +0.95419090 | −0.29175306 | |
| $e$ | 0.1340387 | $i$ | 27.69850 | | −0.03702089 | +0.10486631 | |
| $P$ | 4.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.0 | 2005 05 11 | 644 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.3− | 0.3− | |
| 2000 03 04 | 645 | 0.0 | 0.0 | 2005 05 12 | 644 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.4− | 0.1− | |
| 2002 08 28 | 644 | 0.1+ | 0.3+ | 2005 05 12 | 644 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2− | |
| 2002 08 28 | 644 | 0.2− | 0.5+ | 2005 05 12 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.2− | |
| 2002 08 28 | 644 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.5− | 0.8− | 2006 09 19 | 691 | 0.9+ | 1.0+ | |
| 2005 05 11 | 644 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.5− | 2006 09 19 | 691 | 0.1− | 0.1− | |
| 2005 05 11 | 644 | 0.2− | 0.0 | 2006 08 17 | 644 | 0.2− | 0.8− | | | | | |

**2006 QX$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.26070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23388540 | $\omega$ | 343.12956 | | +0.78918406 | +0.61059225 | |
| $a$ | 2.6089593 | $\Omega$ | 338.81514 | | −0.54026465 | +0.63904254 | |
| $e$ | 0.1911204 | $i$ | 10.53498 | | −0.29206613 | +0.46776248 | |
| $P$ | 4.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.8+ | 0.6+ | 2006 09 25 | 704 | 0.5− | 0.3+ | |
| 2002 10 05 | 704 | 0.5− | 0.7− | 2006 09 18 | 704 | 0.1+ | 0.6− | 2006 09 25 | 699 | 0.2− | 0.4+ | |
| 2002 10 05 | 704 | 0.7− | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.1− | 2006 09 25 | 704 | (1.5+ | 0.2+) | |
| 2002 10 05 | 704 | 0.6+ | 1.0+ | 2006 09 18 | 704 | 0.4− | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.9− | |
| 2004 02 17 | 691 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.3− | 2006 09 25 | 699 | 1.1+ | 0.3+ | |
| 2004 02 17 | 691 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.5− | 0.8− | 2006 09 27 | 704 | 0.4− | 0.2− | |
| 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.7− | 2006 09 27 | 704 | 0.6+ | 0.6+ | |
| 2006 08 17 | 644 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.2+ | |
| 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.4+ | |
| 2006 08 17 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.0 | |
| 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1− | |
| 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− | |
| 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 09 24 | 106 | 0.1− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.0 | |
| 2006 09 16 | 699 | 1.5− | 0.7+ | 2006 09 24 | 106 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.5+ | 0.3− | |
| 2006 09 16 | 699 | 0.4+ | 0.5− | 2006 09 24 | 106 | 0.1− | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.1− | |
| 2006 09 16 | 699 | 0.9− | 0.9+ | 2006 09 24 | 106 | 0.4+ | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.1+ | |
| 2006 09 16 | 699 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.6− | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.2− | |
| 2006 09 18 | 704 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.6+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.3+ | |

**2006 QB$_{43}$ = 1995 WF$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.62325 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26631097 | $\omega$ | 223.42505 | | +0.99558447 | −0.08703511 | |
| $a$ | 2.3926363 | $\Omega$ | 141.52647 | | +0.09385535 | +0.92955217 | |
| $e$ | 0.2194667 | $i$ | 3.24000 | | −0.00165415 | +0.35827035 | |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 25 | 691 | 0.4+ | 0.6− | 2006 09 19 | 704 | (0.4− | 2.3+) | 2006 10 15 | 106 | 0.1+ | 0.4+ | |
| 1995 11 25 | 691 | 0.0 | 0.4− | 2006 09 19 | 704 | 0.3− | 1.2+ | 2006 10 15 | 106 | 0.1− | 0.4− | |
| 1995 11 25 | 691 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.4− | 0.4− | 2006 10 15 | 106 | 0.5+ | 0.2− | |
| 2002 07 14 | 704 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.5− | 0.6+ | 2006 10 15 | 106 | 0.3− | 0.4+ | |
| 2002 07 14 | 704 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.2− | |
| 2002 07 14 | 704 | 0.1+ | 0.2− | 2006 09 22 | 704 | (3.3+ | 2.6−) | 2006 10 19 | 644 | 0.4− | 0.1− | |
| 2004 01 28 | 691 | 0.1+ | 0.6+ | 2006 09 22 | 704 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.4− | 0.0 | |
| 2004 01 28 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.7− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.2− | |
| 2004 01 28 | 691 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.4− | |
| 2006 08 17 | 644 | 0.6+ | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.0 | |
| 2006 08 17 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1− | |
| 2006 08 17 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.9+ | 0.8− | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 2006 08 24 | 644 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.2+ | |
| 2006 08 24 | 644 | 0.4− | 0.1− | 2006 09 28 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.5+ | |
| 2006 09 12 | 703 | 0.5− | 0.4− | 2006 09 28 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.4+ | |
| 2006 09 12 | 703 | 1.0− | 0.3+ | 2006 09 28 | 704 | 0.8+ | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.4+ | |
| 2006 09 12 | 703 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.6− | 2006 11 17 | G96 | 0.1+ | 0.3− | |
| 2006 09 12 | 703 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.1− | |
| 2006 09 18 | 703 | 0.5− | 0.7− | 2006 09 30 | 703 | 1.0+ | 1.3+ | 2006 11 17 | G96 | 0.4+ | 0.1− | |
| 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.4+ | 1.1+ | 2006 11 17 | G96 | 0.3+ | 0.3− | |
| 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 09 30 | 704 | 1.0− | 0.4− | 2006 11 24 | G96 | 0.1− | 0.2− | |
| 2006 09 18 | 703 | 0.1− | 0.5− | 2006 09 30 | 704 | 0.7− | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.2− | |
| 2006 09 19 | 704 | 0.7− | 0.9+ | 2006 09 30 | 704 | 0.3− | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.2− | |
| 2006 09 19 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 704 | 0.6− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.1− | |
| 2006 09 19 | 704 | (0.4+ | 2.9+) | 2006 09 30 | 704 | 0.0 | 0.6+ | | | | | |

**2006 QC$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.11963 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29662118 | $\omega$ | 181.95033 | | +0.55500087 | +0.83062961 | |
| $a$ | 2.2267320 | $\Omega$ | 121.76324 | | −0.76248833 | +0.52962188 | |
| $e$ | 0.2414198 | $i$ | 3.03651 | | −0.33254411 | +0.17191598 | |
| $P$ | 3.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 809 | (8.4− | 0.3−) | 2006 09 12 | 703 | 0.8− | 0.6+ | 2006 09 28 | 704 | 0.7+ | 0.7− | |
| 1996 10 07 | 809 | (9.7− | 0.0 ) | 2006 09 16 | 704 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.8+ | 0.9− | |
| 1996 10 07 | 809 | (9.0− | 0.5−) | 2006 09 16 | 704 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.4+ | 0.5− | |
| 2003 11 19 | 691 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.5− | 0.0 | 2006 09 28 | 704 | 0.6+ | 0.1+ | |
| 2003 11 19 | 691 | 0.0 | 0.0 | 2006 09 16 | 704 | 0.8+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.4− | |
| 2003 11 19 | 691 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.1− | 0.8− | |
| 2003 12 21 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.4− | 2006 09 30 | 703 | (3.3− | 0.2−) | |
| 2003 12 21 | 691 | 0.2− | 0.3+ | 2006 09 18 | 703 | 1.2− | 1.1+ | 2006 09 30 | 703 | 1.0− | 1.1− | |
| 2003 12 21 | 691 | 0.2+ | 0.2− | 2006 09 18 | 703 | (0.9+ | 1.8+) | 2006 09 30 | 704 | 1.1+ | 0.7+ | |
| 2005 03 16 | G96 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.6+ | 0.6+ | 2006 09 30 | 704 | 0.3− | 0.5− | |
| 2005 03 16 | G96 | 0.5− | 0.8+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.8− | 0.8− | |
| 2005 03 16 | G96 | 0.8+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.8− | |
| 2005 03 16 | G96 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | |
| 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 09 20 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | |
| 2006 08 17 | 644 | 0.6− | 0.0 | 2006 09 20 | 691 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.9− | |
| 2006 08 17 | 644 | 0.5− | 0.1+ | 2006 09 20 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2006 08 23 | 644 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.6+ | 0.2+ |
| 2006 08 23 | 644 | 0.4+ | 0.1+ | 2006 09 22 | 704 | 0.8− | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.1+ | 1.4+ |
| 2006 09 12 | 703 | 0.7− | 1.1+ | 2006 09 26 | 704 | 0.8− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.4− |
| 2006 09 12 | 703 | 1.0− | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2006 09 12 | 703 | 0.1+ | 0.8− | 2006 09 26 | 704 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.2+ |

**2006 QD$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.15709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21269689 | $\omega$ | 349.48743 | | +0.99249483 | −0.11034662 | |
| $a$ | 2.7794698 | $\Omega$ | 17.11757 | | +0.12111307 | +0.82742859 | |
| $e$ | 0.2096203 | $i$ | 10.31501 | | +0.01690093 | +0.55062287 | |
| $P$ | 4.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 13 | 644 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.4− | 0.6+ | 2006 10 02 | 291 | 0.2− | 0.1− |
| 2001 08 13 | 644 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.4+ | 0.2+ | 2006 10 02 | 291 | 0.2− | 0.0 |
| 2001 09 24 | 644 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.2− | 0.8+ | 2006 10 03 | 291 | 0.0 | 0.1+ |
| 2001 09 24 | 644 | 0.7− | 0.3+ | 2006 09 22 | 704 | 1.0− | 0.4+ | 2006 10 03 | 291 | 0.0 | 0.1+ |
| 2001 09 24 | 644 | 0.6+ | 0.7− | 2006 09 26 | 691 | 0.8+ | 0.1− | 2006 10 03 | 291 | 0.1− | 0.1+ |
| 2001 09 24 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | (0.7− | 2.2+) |
| 2001 09 24 | 644 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | (1.2+ | 1.5+) |
| 2006 08 17 | 644 | 0.4+ | 0.2− | 2006 09 28 | 704 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2006 08 17 | 644 | 0.6+ | 0.2− | 2006 09 28 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.6− |
| 2006 08 23 | 644 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.7+ | 1.3+ |
| 2006 08 23 | 644 | 0.4− | 0.4− | 2006 09 28 | G96 | 0.5− | 0.2− | 2006 10 17 | G96 | 0.2− | 0.7+ |
| 2006 08 23 | 644 | 0.3+ | 0.1− | 2006 09 28 | 704 | 0.3+ | 0.9+ | 2006 10 17 | G96 | 0.2− | 0.3+ |
| 2006 09 12 | 703 | 0.6− | 0.9− | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2006 09 12 | 703 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2006 09 12 | 703 | 1.1+ | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2006 09 12 | 703 | (1.6+ | 1.0−) | 2006 09 30 | 291 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 16 | 704 | 0.6+ | 0.2− | 2006 09 30 | 291 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2006 09 16 | 704 | 0.3− | 1.3+ | 2006 09 30 | 291 | 1.0+ | 1.2− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2006 09 16 | 704 | 0.3+ | 0.5− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 09 16 | 704 | 0.7+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2006 09 16 | 704 | 1.0+ | 0.0 | 2006 09 30 | 691 | (0.1+ | 1.7−) | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 18 | 703 | 1.1− | 0.2− | 2006 10 01 | 704 | 0.7+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 703 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 01 | 704 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2006 09 18 | 699 | 0.2+ | 1.1+ | 2006 10 01 | 291 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 10 01 | 291 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 09 18 | 699 | 0.7− | 0.1− | 2006 10 01 | 291 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2006 09 22 | 704 | 0.3− | 0.5+ | 2006 10 02 | 291 | 0.1− | 0.0 | | | | |

**2006 QK$_{43}$ = 2004 EV$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.12508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17893106 | $\omega$ | 155.88118 | | +0.89564121 | +0.44465546 | |
| $a$ | 3.1189774 | $\Omega$ | 177.63944 | | −0.43800172 | +0.88582517 | |
| $e$ | 0.2772295 | $i$ | 14.63866 | | −0.07733899 | +0.13264723 | |
| $P$ | 5.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.4+ | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 1.1− | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.6− | 0.1+ |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.6+ |
| 2004 03 23 | 691 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 09 28 | 704 | 0.7− | 0.1+ |
| 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.6+ | 0.3− |
| 2004 03 23 | 691 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 09 28 | 704 | 1.1+ | 0.5+ |
| 2005 05 15 | 644 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2005 05 15 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.3+ |
| 2005 05 15 | 644 | 0.2+ | 1.5+ | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 09 30 | 703 | 1.3+ | 0.9+ |
| 2006 08 18 | 699 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2006 08 18 | 699 | 0.4+ | 0.4− | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.6+ |
| 2006 08 18 | 699 | 0.3− | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 09 30 | 704 | 0.2+ | 0.6− |
| 2006 08 18 | 699 | 0.2− | 0.8+ | 2006 09 20 | 704 | 0.9+ | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.8+ |
| 2006 08 25 | 704 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.3+ | 0.3+ |
| 2006 08 25 | 704 | 0.9− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 704 | 0.5+ | 0.2+ |
| 2006 08 25 | 704 | 0.5+ | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.5+ |
| 2006 08 25 | 704 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.4+ |
| 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2006 09 12 | 703 | 0.4+ | 0.3− | 2006 09 22 | 704 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2006 09 12 | 703 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 09 12 | 703 | (2.1− | 1.1+) | 2006 09 22 | 704 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2006 09 12 | 703 | 0.9+ | 0.7+ | 2006 09 22 | 704 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2006 09 17 | 704 | (0.2− | 1.6+) | 2006 09 22 | 704 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.2− | 0.4− |
| 2006 09 17 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.8− | 0.1− | 2006 10 22 | 703 | 1.3− | 0.3− |
| 2006 09 17 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 1.4− | 0.7− | | | | |
| 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.7− | 0.7− | | | | |

**2006 QL$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.44724 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17816285 | $\omega$ | 29.83116 | | +0.87244236 | −0.48871407 | |
| $a$ | 3.1279366 | $\Omega$ | 359.41681 | | +0.40886795 | +0.73179713 | |
| $e$ | 0.0970995 | $i$ | 9.60315 | | +0.26771500 | +0.47500687 | |
| $P$ | 5.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.1+ | 0.3− | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.0 | 1.0+ |
| 1995 10 16 | 691 | 0.5+ | 0.6− | 2006 08 24 | 644 | 0.8− | 0.1− | 2006 09 27 | 704 | (1.0+ | 2.4+) |
| 1995 10 16 | 691 | 0.3+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.4− | 1.2+ |
| 2001 11 11 | 699 | 0.6+ | 1.0− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2001 11 11 | 699 | 0.1+ | 0.7− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2001 11 11 | 699 | 0.7− | 0.1− | 2006 09 16 | 699 | 0.6+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2001 11 11 | 699 | 0.9+ | 0.5+ | 2006 09 16 | 699 | (1.8− | 2.5+) | 2006 10 01 | 703 | 0.3− | 0.7− |
| 2003 02 02 | 644 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 1.0− | 1.0+ | 2006 10 01 | 703 | 0.2+ | 0.2− |
| 2003 02 02 | 644 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.4− | 0.6+ | 2006 10 01 | 703 | 0.4− | 0.8+ |
| 2003 02 07 | 644 | 0.0 | 0.6+ | 2006 09 19 | 699 | (0.1− | 1.9−) | 2006 10 01 | 703 | 0.5− | 1.3− |
| 2003 02 07 | 644 | 0.4+ | 0.9+ | 2006 09 19 | 699 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.3− |
| 2003 02 07 | 644 | 0.2− | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 1.0+ | 0.2− |
| 2003 02 19 | 644 | 0.6+ | 0.8+ | 2006 09 19 | 699 | (0.3− | 2.3+) | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2003 02 19 | 644 | 0.5− | 0.3+ | 2006 09 22 | A50 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2003 03 07 | 644 | 1.0+ | 0.3− | 2006 09 22 | A50 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2003 03 07 | 644 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 24 | 644 | 0.2− | 0.4+ |
| 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2006 08 24 | 644 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.5− | 0.4+ | 2006 10 24 | 644 | 0.5− | 0.0 |

**2006 QM$_{43}$ = 1999 YG$_{11}$ = 2005 EM$_{221}$**

Id. Minor Planet Center (*MPO* 104036, unpublished)

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.81608 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26320861 | $\omega$ | 216.83168 | | +0.84732353 | +0.52992224 | |
| $a$ | 2.4114003 | $\Omega$ | 111.13259 | | −0.47786778 | +0.78952699 | |
| $e$ | 0.1991194 | $i$ | 2.15066 | | −0.23170070 | +0.30956349 | |
| $P$ | 3.74 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.5+ | 0.1− | 2006 08 28 | 704 | 0.8− | 0.2+ | 2006 09 26 | 704 | 0.6− | 0.5+ |
| 1997 01 09 | 691 | 1.3+ | 0.3− | 2006 08 28 | 704 | 0.9− | 0.4+ | 2006 09 26 | 704 | 0.2+ | 0.8+ |
| 1997 01 09 | 691 | 0.5+ | 0.4− | 2006 08 28 | 704 | 1.1− | 0.2+ | 2006 09 26 | 704 | 0.6− | 0.8+ |
| 1999 12 27 | 691 | 0.1+ | 0.4− | 2006 09 12 | 703 | 0.7− | 0.6+ | 2006 09 26 | 704 | 0.1+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 27 | 691 | 0.5+ | 0.4− | 2006 09 12 | 703 | 0.4− | 0.6+ | 2006 09 28 | 704 | 0.2+ | 0.5+ |
| 1999 12 27 | 691 | 0.0 | 0.4− | 2006 09 12 | 703 | 1.1− | 0.0 | 2006 09 28 | 704 | 0.5+ | 0.3+ |
| 2000 01 02 | 691 | 0.1− | 0.5− | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 09 28 | 704 | 0.8+ | 0.2+ |
| 2000 01 02 | 691 | 0.1− | 0.3− | 2006 09 16 | 704 | 0.8− | 0.2+ | 2006 09 28 | 704 | 0.5− | 0.4+ |
| 2000 01 02 | 691 | 0.5− | 0.6− | 2006 09 16 | 704 | 0.5− | 1.1+ | 2006 09 28 | 704 | 1.3+ | 0.7+ |
| 2001 02 20 | 645 | 0.0 | 0.3+ | 2006 09 16 | 704 | 0.3− | 0.7+ | 2006 09 28 | 704 | 0.0 | 0.5− |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.2− | 0.7+ | 2006 09 28 | 704 | 0.5+ | 0.3+ |
| 2001 03 19 | 691 | 0.3+ | 0.7+ | 2006 09 16 | 704 | 0.2− | 0.5+ | 2006 09 28 | 704 | 0.2− | 0.1+ |
| 2001 03 19 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 1.0+ | 0.1+ |
| 2001 03 19 | 691 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 09 28 | 704 | 0.5+ | 0.9+ |
| 2002 07 05 | 704 | 0.3− | 0.5− | 2006 09 18 | 703 | 1.1− | 0.4+ | 2006 09 29 | 493 | 0.4+ | 0.3− |
| 2002 07 05 | 704 | 0.2− | 1.1− | 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 09 29 | 493 | 0.1+ | 0.1− |
| 2002 07 05 | 704 | 0.3− | 1.2− | 2006 09 18 | 703 | 0.5+ | 0.3+ | 2006 09 29 | 493 | 0.7− | 0.4− |
| 2002 07 14 | 644 | 0.4− | 0.6− | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.0 | 0.3− |
| 2002 07 14 | 644 | 0.4− | 0.6− | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.2+ |
| 2002 07 14 | 644 | 0.5− | 0.5− | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 0.0 |
| 2002 07 28 | 608 | 0.4− | 0.3− | 2006 09 18 | 699 | 0.7+ | 1.4− | 2006 09 30 | 703 | (1.5− | 1.0−) |
| 2002 07 28 | 608 | 0.0 | 0.6− | 2006 09 18 | 699 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.2+ |
| 2002 07 28 | 608 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.3− |
| 2003 12 18 | 291 | 0.8− | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.5+ | 0.1+ |
| 2003 12 18 | 291 | 0.7− | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2003 12 18 | 291 | (2.3− | 0.2+) | 2006 09 19 | 704 | 0.4− | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.9+ |
| 2005 03 11 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.5− | 0.4− | 2006 10 16 | 703 | 0.5+ | 1.2− |
| 2005 03 11 | 691 | 0.4+ | 0.5+ | 2006 09 19 | 704 | 1.0− | 0.8+ | 2006 10 16 | 703 | 0.0 | 1.0− |
| 2005 03 11 | 691 | 0.3+ | 0.7+ | 2006 09 19 | 703 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.4− |
| 2005 03 13 | 703 | (1.7+ | 2.1−) | 2006 09 19 | 704 | 0.9− | 1.5+ | 2006 10 16 | 703 | 1.0+ | 0.6− |
| 2005 03 13 | 703 | (1.6− | 0.3−) | 2006 09 19 | 703 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2005 03 13 | 703 | 1.0− | 0.2− | 2006 09 19 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 03 13 | 703 | 1.0+ | 0.3− | 2006 09 19 | 704 | 0.7− | 0.7+ | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2005 04 10 | G96 | 0.2− | 0.3+ | 2006 09 19 | H06 | 1.5+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2005 04 10 | G96 | 0.1− | 0.2+ | 2006 09 19 | H06 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 04 10 | G96 | 0.3− | 0.1− | 2006 09 19 | H06 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 04 10 | G96 | 0.7− | 0.1− | 2006 09 22 | 704 | (2.3+ | 0.8+) | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2006 08 18 | 691 | 0.0 | 0.1− | 2006 09 22 | 704 | (2.1+ | 0.9+) | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 08 18 | 691 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2006 08 18 | 691 | 0.0 | 0.2− | 2006 09 22 | 704 | 1.3+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.3+ | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 1.4− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 08 27 | 691 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.3+ | | | | |
| 2006 08 28 | 704 | 0.8+ | 0.7+ | 2006 09 26 | 704 | 0.2− | 0.7+ | | | | |

## 2006 $QP_{43}$ = 1995 $VB_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.77438 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26495816 | $\omega$ | 269.26481 | | +0.75679432 | +0.65278788 | |
| $a$ | 2.4007734 | $\Omega$ | 49.98234 | | −0.58090017 | +0.69525392 | |
| $e$ | 0.2078097 | $i$ | 2.51609 | | −0.29969545 | +0.30081552 | |
| $P$ | 3.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.0 |
| 1995 11 14 | 691 | 0.7− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.7− |
| 1995 11 19 | 691 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.6+ | 1.4+ | 2006 09 30 | 703 | 0.4+ | 0.2+ |
| 1995 11 19 | 691 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.9+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1995 11 19 | 691 | 0.7+ | 0.4− | 2006 09 16 | 704 | 0.2+ | 0.6+ | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 2002 07 05 | 704 | 0.3− | 0.8− | 2006 09 18 | 703 | 0.0 | 0.5− | 2006 10 09 | 644 | 0.5+ | 0.3+ |
| 2002 07 05 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 10 16 | 703 | (1.2− | 2.5−) |
| 2002 07 05 | 704 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.9− | 1.4− |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 10 16 | 703 | (0.2− | 2.3−) |
| 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.1− | 0.6− |
| 2005 03 10 | G96 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 1.0− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2005 04 11 | G96 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2005 04 11 | G96 | 0.3+ | 0.2+ | 2006 09 19 | 704 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 04 11 | G96 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2006 08 18 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 704 | 0.7− | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2006 08 18 | 691 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2006 08 18 | 691 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 11 15 | G96 | 0.6+ | 0.7− |
| 2006 08 24 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 704 | (1.7+ | 0.2−) | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2006 08 24 | 644 | 0.4+ | 0.1+ | 2006 09 19 | 704 | 0.9− | 0.5+ | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2006 08 24 | 644 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.8+ | 1.0+ | 2006 11 17 | G96 | 0.6+ | 0.2− |
| 2006 08 27 | 691 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.8− | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.4+ |
| 2006 08 27 | 691 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.9+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2006 08 27 | 691 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.2+ | 0.2+ | | | | |
| 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.5− | 0.0 | | | | |

## 2006 $QQ_{43}$ = 2004 $BY_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.22962 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26741501 | $\omega$ | 246.76312 | | +0.97728648 | −0.21003217 | |
| $a$ | 2.3860463 | $\Omega$ | 125.34981 | | +0.20488744 | +0.90236369 | |
| $e$ | 0.1907147 | $i$ | 1.98433 | | +0.05415053 | +0.37633265 | |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3+ | 0.6− | 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 09 22 | 104 | 0.1+ | 0.2+ |
| 1999 12 07 | 704 | 0.1− | 0.4− | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 22 | 104 | 0.2− | 0.0 |
| 1999 12 07 | 704 | 0.3− | 0.9− | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.7+ |
| 2002 07 13 | 644 | 0.5+ | 0.0 | 2006 09 16 | 704 | 0.1− | 1.2+ | 2006 09 25 | 699 | 0.2+ | 0.1− |
| 2002 07 13 | 644 | 0.5− | 0.1+ | 2006 09 16 | 704 | 0.8− | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.7− |
| 2002 07 13 | 644 | 0.3+ | 0.1+ | 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.3− |
| 2004 01 24 | 704 | 0.2− | 0.5+ | 2006 09 16 | 704 | (0.6− | 1.8+) | 2006 09 26 | 704 | 0.2+ | 0.2− |
| 2004 01 24 | 704 | 0.3− | 1.0+ | 2006 09 16 | 699 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.3+ |
| 2004 01 24 | 704 | (3.2+ | 1.8+) | 2006 09 16 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.8+ | 0.6+ |
| 2004 01 24 | 704 | 0.6+ | 0.1+ | 2006 09 16 | 699 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.3− |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.0 |
| 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 1.0− | 0.0 | 2006 09 30 | 704 | (1.7+ | 0.1+) |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 09 30 | 704 | 1.0+ | 1.2+ |
| 2005 04 10 | G96 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.8− | 0.4− | 2006 09 30 | 704 | 0.1+ | 0.3+ |
| 2005 04 10 | G96 | 0.4− | 0.5+ | 2006 09 19 | 703 | 0.8− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.6− |
| 2005 04 10 | G96 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2005 04 10 | G96 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.6+ | 0.6− | 2006 10 21 | G96 | 0.2− | 1.0− |
| 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 09 22 | 704 | (0.1− | 1.9+) | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2006 08 18 | 691 | 0.2+ | 0.1− | 2006 09 22 | 704 | (0.6+ | 2.0+) | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2006 08 24 | 644 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.4− | 0.5+ | 2006 10 24 | 644 | 0.0 | 0.4+ |
| 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.6− | 0.7+ | | | | |
| 2006 08 24 | 644 | 0.3− | 0.2+ | 2006 09 22 | 104 | 0.4− | 0.3+ | | | | |

## 2006 $QU_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.33499 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22485137 | $\omega$ | 265.94181 | | +0.99585204 | +0.02446697 | |
| $a$ | 2.6783810 | $\Omega$ | 92.64058 | | +0.01194852 | +0.91965934 | |
| $e$ | 0.1882745 | $i$ | 5.03298 | | −0.09019945 | +0.39195416 | |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 691 | 0.1+ | 0.0 | 2002 10 08 | 699 | 0.3+ | 0.9+ | 2006 06 03 | G96 | 0.7− | 0.7+ |
| 2001 05 24 | 691 | 0.1+ | 0.2+ | 2002 10 08 | 699 | 2.2− | 0.2− | 2006 07 26 | 644 | 0.1+ | 0.0 |
| 2001 05 24 | 691 | 0.1− | 0.1+ | 2002 10 15 | 644 | 0.4− | 0.2+ | 2006 07 26 | 644 | 0.1− | 0.2+ |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2002 10 15 | 644 | 0.3− | 0.3+ | 2006 07 26 | 644 | 0.4+ | 0.4− |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2002 10 15 | 644 | 0.2− | 0.3+ | 2006 07 26 | 644 | 0.0 | 0.6− |
| 2002 09 15 | 608 | 0.8− | 0.5− | 2002 11 06 | 644 | 0.1+ | 0.4− | 2006 07 26 | 644 | 0.1+ | 0.0 |
| 2002 09 15 | 608 | 0.1− | 1.2− | 2002 11 06 | 644 | 0.1− | 0.1− | 2006 07 26 | 644 | 0.2− | 0.2+ |
| 2002 09 15 | 608 | 0.7− | 0.6− | 2002 11 06 | 644 | 0.2+ | 0.2− | 2006 08 19 | 644 | 0.1+ | 0.2− |
| 2002 09 28 | 608 | 0.2− | 1.5+ | 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 08 19 | 644 | 0.4− | 0.3+ |
| 2002 09 28 | 608 | 0.7+ | 1.6+ | 2004 03 18 | 645 | 0.1+ | 0.0 | 2006 08 19 | 644 | 0.4− | 0.7+ |
| 2002 09 28 | 608 | 0.4− | 1.4+ | 2006 06 03 | G96 | 0.1− | 0.2− | 2006 08 23 | 644 | 0.5+ | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | 0.7+ | 0.5+ | 2006 06 03 | G96 | 0.2− | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.4+ |
| 2002 10 08 | 699 | 0.9− | 1.4+ | 2006 06 03 | G96 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.6+ |

**2006 QL$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.45626 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29750101 | $\omega$ | 85.77880 | | +0.45521782 | | +0.88987027 |
| $a$ | 2.2223396 | $\Omega$ | 211.35618 | | −0.83815596 | | +0.41685441 |
| $e$ | 0.1867486 | $i$ | 3.31912 | | −0.30045187 | | +0.18537344 |
| $P$ | 3.31 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 21 | 691 | 0.2− | 0.1+ | 2006 08 19 | 699 | 0.7+ | 0.3− | 2006 08 30 | 704 | 0.0 | 0.7− |
| 1999 05 21 | 691 | 0.0 | 0.1− | 2006 08 19 | 699 | 0.0 | 1.3+ | 2006 08 30 | 704 | 0.1− | 0.1+ |
| 1999 05 21 | 691 | 0.2+ | 0.0 | 2006 08 19 | 699 | 0.1+ | 0.8+ | 2006 08 30 | 704 | 0.7− | 0.5− |
| 2003 10 19 | 691 | 0.2− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.0 |
| 2003 10 19 | 691 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2003 10 19 | 691 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.4+ | 0.2− |
| 2005 03 13 | G96 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.4+ | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2005 03 13 | G96 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.9− | 0.6− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2005 03 13 | G96 | 0.1− | 0.6+ | 2006 08 29 | 703 | 1.2− | 1.4+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2005 03 13 | G96 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2006 08 19 | 699 | 0.4− | 0.6− | 2006 08 30 | 704 | 0.1+ | 0.8− | 2006 09 28 | G96 | 0.2− | 0.3− |

**2006 QS$_{44}$ = 2004 BE$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.10960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22178290 | $\omega$ | 213.57466 | | +0.89444467 | | +0.43338048 |
| $a$ | 2.7030288 | $\Omega$ | 120.36796 | | −0.37702148 | | +0.86339768 |
| $e$ | 0.0344905 | $i$ | 7.33994 | | −0.24046525 | | +0.25831340 |
| $P$ | 4.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.3+ | 0.3− | 2004 01 24 | 704 | 0.3− | 0.2− | 2006 08 19 | 699 | 0.4+ | 0.5− |
| 2000 03 05 | 704 | 1.0− | 0.1− | 2004 01 24 | 704 | 0.0 | 0.4− | 2006 08 19 | 699 | 0.3+ | 0.5− |
| 2000 03 05 | 704 | 0.6+ | 0.4+ | 2004 01 24 | 704 | 0.8+ | 1.3+ | 2006 08 19 | 699 | 0.5+ | 0.5+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.3+ | 0.2+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.2+ |
| 2002 10 15 | 644 | 0.3− | 0.9+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 2002 10 15 | 644 | 0.1− | 0.7+ | 2006 08 18 | 644 | 0.3− | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2002 10 15 | 644 | 0.0 | 0.8+ | 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2004 01 24 | 704 | 0.3− | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.1+ |
| 2004 01 24 | 704 | 0.4+ | 0.0 | 2006 08 19 | 699 | 0.4− | 0.8+ | | | | |

**2006 QU$_{44}$ = 1995 SA$_{76}$ = 2003 XW$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.64642 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26357449 | $\omega$ | 118.29317 | | +0.13681155 | | +0.99046526 |
| $a$ | 2.4091682 | $\Omega$ | 159.55117 | | −0.92428818 | | +0.13350510 |
| $e$ | 0.1722904 | $i$ | 2.65126 | | −0.35633405 | | +0.03398470 |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.3− | 2005 02 09 | G96 | 0.1− | 0.5− | 2006 08 22 | 644 | 0.1− | 0.0 |
| 1995 09 20 | 691 | 0.2− | 0.2− | 2005 02 09 | G96 | 0.3− | 0.3− | 2006 08 28 | 699 | 0.6+ | 0.2+ |
| 1995 09 20 | 691 | 0.0 | 0.2− | 2005 02 09 | G96 | 0.6− | 0.4− | 2006 08 28 | 699 | 0.6+ | 0.9+ |
| 1995 09 25 | 691 | 0.3+ | 0.1+ | 2005 02 09 | G96 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.0 | 0.2− |
| 1995 09 25 | 691 | 0.3− | 0.4− | 2005 03 11 | 695 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.2− |
| 1995 09 25 | 691 | 0.6+ | 0.2− | 2005 03 11 | 695 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.6− | 0.6+ |
| 2003 12 01 | 691 | 0.0 | 0.2+ | 2005 04 02 | G96 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.9− |
| 2003 12 01 | 691 | 0.3+ | 0.3+ | 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.2− |
| 2003 12 01 | 691 | 0.2+ | 0.1− | 2005 04 02 | G96 | 0.3+ | 0.3− | 2006 08 28 | 699 | 0.4+ | 0.2+ |
| 2003 12 19 | 691 | 0.2− | 0.4+ | 2005 04 02 | G96 | 1.0+ | 0.1− | 2006 08 29 | 704 | 0.4− | 0.5− |
| 2003 12 19 | 691 | 0.2− | 0.2+ | 2006 08 19 | 699 | 1.1− | 1.1+ | 2006 08 29 | 704 | 1.3− | 0.2− |
| 2003 12 19 | 691 | 0.4− | 0.1− | 2006 08 19 | 699 | 1.0+ | 1.2+ | 2006 08 29 | 704 | 0.5+ | 0.4− |
| 2004 12 20 | G96 | 0.2− | 0.1− | 2006 08 19 | 699 | 0.6+ | 1.1+ | 2006 08 29 | 704 | 0.4− | 1.1− |
| 2004 12 20 | G96 | 0.3− | 0.3+ | 2006 08 19 | 699 | 1.2+ | 1.0+ | 2006 08 29 | 704 | 0.3− | 0.0 |
| 2004 12 20 | G96 | 0.2− | 0.3− | 2006 08 22 | 644 | 0.2− | 0.2+ | | | | |
| 2004 12 20 | G96 | 0.3− | 0.0 | 2006 08 22 | 644 | 0.3− | 0.1+ | | | | |

**2006 QX$_{44}$ = 2001 VP$_{84}$ = 2004 FJ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.90081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17379253 | $\omega$ | 2.12383 | | +0.91000402 | | +0.40873333 |
| $a$ | 3.1801576 | $\Omega$ | 333.40989 | | −0.38263968 | | +0.76343687 |
| $e$ | 0.0711271 | $i$ | 8.93204 | | −0.15962315 | | +0.50010121 |
| $P$ | 5.67 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.6− | 0.2− | 2004 03 16 | 703 | 1.8+ | 1.9+ | 2006 08 27 | 691 | 0.5− | 0.4+ |
| 2000 08 01 | 807 | 0.6− | 0.2− | 2004 03 16 | 703 | 1.4+ | 1.6+ | 2006 08 27 | 691 | 0.4− | 0.2+ |
| 2001 11 12 | 704 | 0.6+ | 0.1+ | 2004 03 18 | 704 | 0.4+ | 0.4− | 2006 08 28 | 703 | 0.7− | 0.2− |
| 2001 11 12 | 704 | 0.9+ | 0.0 | 2004 03 18 | 704 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.2+ |
| 2001 11 12 | 704 | 1.4+ | 1.2+ | 2004 03 18 | 704 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.1+ |
| 2001 11 12 | 704 | 0.3+ | 0.1+ | 2004 03 18 | 704 | 0.9+ | 0.8+ | 2006 08 28 | 699 | 0.2− | 1.0− |
| 2001 11 17 | 704 | 0.7+ | 0.9− | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.9− |
| 2001 11 17 | 704 | 0.0 | 0.4− | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 699 | 0.9− | 0.7+ |
| 2001 11 17 | 704 | 0.4− | 1.2+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 28 | 699 | 1.4− | 1.3+ |
| 2001 11 18 | 704 | 0.4+ | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.4+ |
| 2001 11 18 | 704 | 0.2− | 1.2− | 2006 08 18 | 699 | 0.3+ | 0.7− | 2006 08 31 | 704 | 0.5− | 1.0− |
| 2001 11 18 | 704 | 0.1− | 0.1− | 2006 08 18 | 699 | (2.4− | 1.8+) | 2006 08 31 | 704 | 0.4− | 0.0 |
| 2001 11 18 | 704 | 0.0 | 0.6− | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 08 31 | 704 | 0.4+ | 0.1+ |
| 2001 11 18 | 704 | 0.1+ | 0.1− | 2006 08 18 | 699 | 0.3− | 1.4+ | 2006 09 14 | 703 | 0.5− | 0.2− |
| 2002 11 07 | 645 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.7− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 18 | 699 | 0.9+ | 2.0+ | 2006 09 14 | 703 | 0.7+ | 0.1+ |
| 2002 12 13 | 645 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.7− | 0.6− |
| 2002 12 13 | 645 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.7+ | 2.2− |
| 2003 01 09 | 704 | 0.7− | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.6− | 1.5+ |
| 2003 01 09 | 704 | 0.7− | 0.3− | 2006 08 25 | 704 | 0.6− | 1.0+ | 2006 09 18 | 699 | 0.3+ | 0.6− |
| 2003 01 09 | 704 | 0.1+ | 0.4+ | 2006 08 25 | 704 | 0.3− | 0.5+ | 2006 09 18 | 699 | 1.4+ | 0.4+ |
| 2004 03 16 | 703 | 0.2+ | 1.3+ | 2006 08 25 | 704 | 0.8− | 0.5+ | | | | |
| 2004 03 16 | 703 | 0.7+ | 0.3− | 2006 08 27 | 691 | 0.1− | 0.1+ | | | | |

**2006 QG$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.76302 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21921910 | $\omega$ | 168.42759 | | +0.98452041 | | −0.17477558 |
| $a$ | 2.7240629 | $\Omega$ | 201.65138 | | +0.15782799 | | +0.91668600 |
| $e$ | 0.0963372 | $i$ | 2.04328 | | +0.07622258 | | +0.35936093 |
| $P$ | 4.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.2− | 0.2− | 2005 04 07 | G96 | 0.9− | 0.2+ | 2006 08 27 | 691 | 1.1+ | 1.0− |
| 2000 03 29 | 691 | 0.1+ | 0.2− | 2005 04 07 | G96 | 0.2− | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2000 03 29 | 691 | 0.2+ | 0.2− | 2005 04 07 | G96 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.6− | 1.3− |
| 2002 11 04 | 644 | 0.7− | 0.5+ | 2005 06 14 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.6+ |
| 2002 11 04 | 644 | 0.6− | 0.1+ | 2005 06 14 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.8− | 0.3− |
| 2002 11 04 | 644 | 0.2− | 0.4+ | 2005 06 14 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.2+ |
| 2004 02 29 | 691 | 0.1− | 0.6+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.6+ |
| 2004 02 29 | 691 | 0.4+ | 0.8+ | 2006 08 19 | 691 | 0.2− | 0.5+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 08 19 | 691 | 0.4+ | 0.5+ | 2006 08 29 | 691 | 0.6− | 0.5+ |
| 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.5− | 0.6+ | 2006 09 27 | G96 | 0.2− | 0.4− |
| 2004 03 18 | 691 | 0.3+ | 0.3+ | 2006 08 24 | 644 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.4− |
| 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.5− |
| 2005 04 07 | G96 | 1.2− | 0.7− | 2006 08 27 | 691 | 0.1− | 0.4+ | | | | |

**2006 QH$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.52248 | | (2000.0) | | | |
| $n$ | 0.24179817 | $\omega$ | 80.28522 | | +0.88856783 | −0.45565508 |
| $a$ | 2.5517260 | $\Omega$ | 306.80269 | | +0.39055782 | +0.81218176 |
| $e$ | 0.2016799 | $i$ | 3.80655 | | +0.24064871 | +0.36433398 |
| $P$ | 4.08 | $H$ | 17.4 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.4+ | 0.2+ | 2002 09 26 | 608 | 0.8− | 0.0 | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 2002 09 13 | 644 | 0.1+ | 0.1− | 2002 09 26 | 608 | 0.3− | 0.8− | 2006 08 29 | 691 | 0.1− | 0.1− |
| 2002 09 13 | 644 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.9+ | 0.2− | 2006 08 19 | 691 | 0.1− | 0.3− | 2006 09 13 | 644 | 0.3+ | 0.3− |
| 2002 09 14 | 644 | 0.7+ | 0.0 | 2006 08 19 | 691 | 0.4− | 0.2− | 2006 09 13 | 644 | 0.3+ | 0.1+ |
| 2002 09 14 | 644 | 0.5+ | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2002 09 15 | 608 | 0.3− | 0.6+ | 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.8− | 0.6− |
| 2002 09 15 | 608 | 0.1+ | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.8− | 1.7+ |
| 2002 09 15 | 608 | 0.2+ | 0.4+ | 2006 08 28 | 703 | (3.7+ | 1.2+) | 2006 09 17 | 703 | 0.6− | 0.3+ |
| 2002 09 18 | 644 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 09 17 | 703 | 1.0+ | 0.1− |
| 2002 09 18 | 644 | 0.1+ | 0.3− | 2006 08 28 | 703 | 1.7+ | 0.7+ | | | | |
| 2002 09 26 | 608 | 1.6− | 0.9− | 2006 08 28 | 703 | 0.0 | 0.9+ | | | | |

**2006 QL$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.90003 | | (2000.0) | | | |
| $n$ | 0.26328427 | $\omega$ | 336.71942 | | +0.86244005 | +0.50613871 |
| $a$ | 2.4109384 | $\Omega$ | 352.86850 | | −0.45842898 | +0.77726379 |
| $e$ | 0.1807136 | $i$ | 2.10409 | | −0.21456942 | +0.37374404 |
| $P$ | 3.74 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 046 | 0.1+ | 0.5− | 2006 08 14 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.3− |
| 1995 10 26 | 046 | 0.9+ | 0.2+ | 2006 08 14 | 644 | 0.2+ | 0.0 | 2006 09 17 | 704 | 1.2− | 0.3+ |
| 1995 10 26 | 046 | 0.4− | 0.3− | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.0 | 1.3+ |
| 1995 10 27 | 046 | 0.6+ | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.6+ | 0.2+ |
| 1995 10 27 | 046 | 0.6− | 0.2+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.3− | 0.3− |
| 1995 10 27 | 046 | 0.9− | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 02 20 | 645 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.4− | 0.4− |
| 2005 04 05 | G96 | 0.5− | 0.2+ | 2006 08 24 | 644 | 0.3+ | 0.6− | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2005 04 05 | G96 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.6+ | 2006 09 27 | 704 | (0.6− | 1.6+) |
| 2005 04 05 | G96 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.3+ | 0.9+ | 2006 09 27 | 704 | 0.5− | 0.7+ |
| 2005 04 05 | G96 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.2+ | 2006 09 27 | 704 | 0.1− | 1.3+ |
| 2005 04 06 | G96 | 0.5− | 0.3− | 2006 08 28 | 703 | 0.0 | 0.8+ | 2006 10 27 | G96 | 0.2− | 0.6− |
| 2005 04 06 | G96 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2005 04 06 | G96 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2005 04 06 | G96 | 0.4+ | 0.0 | 2006 09 14 | 703 | (1.5+ | 0.6−) | 2006 10 27 | G96 | 0.7+ | 0.4− |

**2006 QR$_{45}$ = 2003 YA$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 44.35966 | | (2000.0) | | | |
| $n$ | 0.27627010 | $\omega$ | 164.54724 | | +0.59014172 | +0.80664527 |
| $a$ | 2.3347845 | $\Omega$ | 141.60374 | | −0.74611813 | +0.56034813 |
| $e$ | 0.2305394 | $i$ | 2.99934 | | −0.30828637 | +0.18797175 |
| $P$ | 3.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 03 | 691 | 0.2− | 0.4− | 2005 03 17 | 704 | (2.4+ | 1.4+) | 2006 09 24 | 958 | 0.0 | 0.4− |
| 1998 04 03 | 691 | 0.2− | 0.4− | 2005 03 17 | 704 | (2.5+ | 0.0 ) | 2006 09 24 | 958 | (0.2+ | 1.6−) |
| 1998 04 03 | 691 | 0.1− | 0.5− | 2005 03 17 | 704 | 0.9+ | 0.5+ | 2006 09 26 | 704 | 0.5+ | 0.3+ |
| 1999 10 10 | 704 | 0.3− | 0.6+ | 2006 08 19 | 699 | 0.7+ | 0.1− | 2006 09 26 | 704 | 0.2− | 0.4− |
| 1999 10 10 | 704 | 0.3− | 0.3− | 2006 08 19 | 699 | 0.2− | 1.0− | 2006 09 26 | 704 | 0.4− | 0.6+ |
| 1999 10 10 | 704 | 0.4− | 0.1− | 2006 08 19 | 699 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.3+ |
| 1999 10 10 | 704 | 0.5− | 0.2− | 2006 08 19 | 699 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1999 11 05 | 704 | 0.4+ | 0.3− | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 1999 11 05 | 704 | 1.0− | 0.6− | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1999 11 05 | 704 | 0.9+ | 0.5+ | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 1999 11 05 | 704 | 0.9+ | 1.9+ | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.2− | 0.1− |
| 2001 02 13 | 691 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 2001 02 13 | 691 | 0.0 | 0.2− | 2006 09 14 | 703 | 1.0− | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.7+ |
| 2001 02 13 | 691 | 0.3− | 0.1+ | 2006 09 14 | 703 | 1.0− | 0.6− | 2006 10 01 | 704 | 0.1+ | 0.4+ |
| 2002 07 14 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2002 07 14 | 704 | 0.4+ | 0.6+ | 2006 09 16 | 704 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 07 14 | 704 | 0.2− | 0.8+ | 2006 09 16 | 704 | (0.3+ | 1.7+) | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 2003 12 19 | 704 | 1.1+ | 0.3− | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2003 12 19 | 704 | 0.3− | 0.7+ | 2006 09 16 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 19 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2003 12 23 | 704 | 0.1− | 0.8+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.2− |
| 2003 12 23 | 704 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 1.0− |
| 2003 12 23 | 704 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | (1.7− | 0.1−) |
| 2004 02 27 | 695 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.8− | 1.0− |
| 2004 02 27 | 695 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 22 | 703 | 1.2+ | 1.0+ |
| 2005 03 01 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.8+ |
| 2005 03 01 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.9− | 0.3− | 2006 10 22 | 703 | 1.3+ | 1.5+ |
| 2005 03 01 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | (1.7+ | 0.4+) |
| 2005 03 14 | 704 | 0.6− | 0.8− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2005 03 14 | 704 | 0.7− | 1.1− | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2005 03 14 | 704 | 0.8+ | 0.1+ | 2006 09 22 | 704 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2005 03 14 | 704 | 1.2+ | 0.0 | 2006 09 22 | 704 | 0.3− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2005 03 16 | G96 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.1+ | 0.2− | 2006 11 15 | A44 | 0.3− | 0.1− |
| 2005 03 16 | G96 | 0.1− | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 11 15 | A44 | 0.4− | 0.4− |
| 2005 03 16 | G96 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.1+ | 0.1− | 2006 11 15 | A44 | 0.4− | 0.2− |
| 2005 03 16 | G96 | 0.6− | 0.3+ | 2006 09 24 | 958 | 0.2− | 0.1+ | | | | |

**2006 QS$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.47057 | | (2000.0) | | | |
| $n$ | 0.22563313 | $\omega$ | 196.95527 | | +0.99174825 | −0.12226832 |
| $a$ | 2.6721908 | $\Omega$ | 169.83259 | | +0.12741550 | +0.97328975 |
| $e$ | 0.1758361 | $i$ | 12.61305 | | −0.01416689 | +0.19431292 |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 08 | 644 | 0.1− | 0.8+ | 2006 08 29 | 704 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.1+ |
| 2002 12 08 | 644 | 0.0 | 0.7+ | 2006 08 29 | 704 | 0.7− | 0.6+ | 2006 09 28 | 704 | 0.1− | 0.4+ |
| 2002 12 08 | 644 | 0.2− | 1.0+ | 2006 08 29 | 704 | 0.5+ | 0.0 | 2006 09 28 | 704 | 0.9+ | 0.3+ |
| 2005 05 02 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 704 | 0.3− | 0.1− | 2006 09 28 | 704 | 0.3+ | 0.8+ |
| 2005 05 02 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 704 | (1.8− | 1.5+) | 2006 09 30 | 704 | 0.2+ | 0.3− |
| 2005 05 02 | 691 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.2+ | 1.0− |
| 2005 06 25 | 644 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.3+ |
| 2005 06 25 | 644 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.7+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.5− |
| 2005 06 25 | 644 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.1+ |
| 2005 06 30 | 644 | 0.4+ | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2005 06 30 | 644 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2005 06 30 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.3− | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.5− |
| 2006 08 19 | 699 | 1.0− | 0.0 | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2006 08 19 | 699 | (0.9− | 1.8−) | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2006 08 19 | 699 | 1.0− | 0.1− | 2006 09 22 | 704 | 1.4− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2006 08 19 | 699 | 0.7− | 0.5+ | 2006 09 22 | 704 | 0.7− | 0.3− | 2006 10 17 | 703 | 0.7− | 0.2− |
| 2006 08 24 | 644 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.0 | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2006 08 24 | 644 | 0.4+ | 0.4− | 2006 09 22 | 704 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2006 08 24 | 644 | 0.1− | 0.4− | 2006 09 22 | 704 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.3+ | 0.2+ |
| 2006 08 25 | 704 | 0.3− | 1.2+ | 2006 09 26 | 704 | 1.1+ | 0.4+ | 2006 10 22 | 703 | 0.6+ | 0.6+ |
| 2006 08 25 | 704 | 0.7− | 0.9− | 2006 09 26 | 704 | 0.5+ | 0.7+ | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2006 08 25 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.5+ | 2006 10 28 | 703 | 0.7+ | 0.5− |
| 2006 08 25 | 704 | 0.3+ | 0.8− | 2006 09 26 | 704 | 0.7+ | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.5− |
| 2006 08 28 | 703 | 0.5− | 0.1− | 2006 09 26 | 704 | 0.7+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.2+ |
| 2006 08 28 | 703 | 1.2− | 0.2− | 2006 09 26 | 704 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.2− | 0.1+ |
| 2006 08 28 | 703 | 0.8− | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.3+ | | | | |
| 2006 08 28 | 703 | 0.4− | 0.9− | 2006 09 26 | 704 | 0.0 | 0.4− | | | | |

**2006 QV$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.66387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22843453 | $\omega$ | 271.13887 | | +0.21515553 | −0.97438263 | |
| $a$ | 2.6502990 | $\Omega$ | 165.90983 | | +0.96831916 | +0.20415408 | |
| $e$ | 0.1753962 | $i$ | 15.60094 | | +0.12675215 | +0.09433766 | |
| $P$ | 4.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 06 | 691 | 0.3+ | 0.4− | 2003 01 28 | 704 | 0.2− | 0.8+ | 2006 09 18 | F84 | 0.1+ | 0.5− |
| 1999 04 06 | 691 | (3.8+ | 5.8−) | 2003 01 28 | 704 | 0.0 | 0.2− | 2006 09 18 | F84 | 0.0 | 0.7− |
| 1999 04 06 | 691 | 0.1+ | 0.3− | 2006 08 19 | 699 | 0.9− | 0.7− | 2006 09 18 | F84 | 0.1+ | 0.4− |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.8− | 1.1− | 2006 09 26 | 703 | 1.4+ | 0.1+ |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | (1.7− | 0.1−) | 2006 09 26 | 703 | 0.2+ | 0.3− |
| 2000 05 10 | 645 | 0.0 | 0.0 | 2006 08 19 | 699 | 0.5− | 0.9− | 2006 09 26 | 703 | 0.0 | 0.6− |
| 2000 05 10 | 645 | 0.0 | 0.0 | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.3− |
| 2002 10 30 | 704 | (0.1− | 1.9+) | 2006 08 23 | 644 | 0.2+ | 0.1− | 2006 10 02 | 703 | 0.3− | 0.2+ |
| 2002 10 30 | 704 | 0.2− | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.6− | 0.9+ |
| 2002 10 30 | 704 | 0.1+ | 0.6− | 2006 09 17 | F84 | 0.0 | 1.4− | 2006 10 02 | 703 | 0.9+ | 1.4+ |
| 2002 10 30 | 704 | 1.1− | 0.5− | 2006 09 17 | F84 | 1.3− | 0.2− | 2006 10 02 | 703 | 0.6+ | 0.5+ |
| 2002 11 16 | 644 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.8+ | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2002 11 16 | 644 | 0.1+ | 0.1− | 2006 09 18 | 703 | 1.1+ | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2002 11 16 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 1.0+ | 2006 10 21 | 703 | 0.7− | 0.0 |
| 2002 11 23 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.4+ |
| 2002 11 23 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.8− | 0.7+ | 2006 10 28 | 703 | 0.5+ | 1.4− |
| 2002 11 23 | 644 | 0.4− | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.3+ | 2006 10 28 | 703 | 0.3+ | 0.1− |
| 2003 01 28 | 704 | 0.3+ | 1.2+ | 2006 09 18 | 699 | 0.9− | 0.7+ | 2006 10 28 | 703 | 0.2+ | 0.2− |
| 2003 01 28 | 704 | 0.2− | 0.7+ | 2006 09 18 | 699 | 0.9+ | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.2− |

**2006 QW$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.75550 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17517323 | $\omega$ | 182.12833 | | +0.99212201 | +0.11475333 | |
| $a$ | 3.1634251 | $\Omega$ | 170.81422 | | −0.10978570 | +0.98964902 | |
| $e$ | 0.0942644 | $i$ | 18.34941 | | −0.06034083 | +0.08617708 | |
| $P$ | 5.63 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 809 | (1.2+ | 4.1+) | 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 1998 03 02 | 809 | 1.6+ | 1.4+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.6− |
| 2000 09 04 | 691 | 0.3− | 0.4− | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.8+ |
| 2000 09 04 | 691 | 0.2+ | 0.6− | 2006 08 23 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.3+ | 0.5+ |
| 2000 09 04 | 691 | 0.1− | 0.5− | 2006 08 23 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 704 | (3.3− | 1.1+) |
| 2001 11 17 | 699 | 0.3+ | 0.9+ | 2006 08 25 | 704 | 0.0 | 0.1+ | 2006 09 20 | 704 | (2.2− | 0.9+) |
| 2001 11 17 | 699 | (2.1+ | 1.0−) | 2006 08 25 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 704 | (2.5− | 3.2+) |
| 2001 11 17 | 699 | 0.1+ | 0.2+ | 2006 08 25 | 704 | 0.1− | 0.8+ | 2006 09 20 | 704 | 1.4− | 1.1+ |
| 2001 11 17 | 699 | 0.2+ | 0.5+ | 2006 08 27 | 699 | 0.5+ | 0.4+ | 2006 09 20 | 704 | (1.6− | 2.3+) |
| 2003 01 25 | 644 | 0.8− | 1.1+ | 2006 08 27 | 699 | 1.0+ | 0.7− | 2006 09 25 | 699 | 0.0 | 0.3− |
| 2003 01 25 | 644 | 0.9− | 0.9+ | 2006 08 27 | 699 | 0.6+ | 0.6+ | 2006 09 25 | 699 | 0.7+ | 0.9− |
| 2003 01 25 | 644 | 1.1− | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.7+ | 2006 09 25 | 699 | 0.3− | 0.5+ |
| 2004 03 20 | 704 | 0.8+ | 0.9+ | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.3+ |
| 2004 03 20 | 704 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.7− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2004 03 20 | 704 | 1.4+ | 1.2+ | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2004 03 20 | 704 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2004 03 20 | 704 | 0.7− | 0.9+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.6− |
| 2005 07 01 | 644 | 0.3− | 0.8+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2005 07 01 | 644 | 0.1− | 0.9+ | 2006 09 12 | 703 | 1.0− | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.3− |
| 2005 07 01 | 644 | 0.1− | 1.0+ | 2006 09 12 | 703 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.6+ |
| 2005 07 29 | 644 | 0.1− | 0.5+ | 2006 09 12 | 703 | 0.7− | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2005 07 29 | 644 | 0.1− | 0.7+ | 2006 09 12 | 703 | 0.6− | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 2005 07 29 | 644 | 0.1+ | 0.9+ | 2006 09 16 | 699 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2006 08 15 | 644 | (1.5+ | 0.5−) | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.0 |
| 2006 08 15 | 644 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.9− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.4− |
| 2006 08 15 | 644 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2006 08 19 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.9− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.1+ | | | | |
| 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.4+ | | | | |

**2006 QB$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.47929 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26466252 | $\omega$ | 278.29609 | | +0.74365742 | +0.66344471 | |
| $a$ | 2.4025610 | $\Omega$ | 40.19933 | | −0.55195933 | +0.67893380 | |
| $e$ | 0.1331587 | $i$ | 7.34814 | | −0.37724600 | +0.31446783 | |
| $P$ | 3.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.1− | 0.2− | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.6+ | 0.5− |
| 2002 07 06 | 644 | 0.0 | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.4+ | 1.4+ |
| 2002 07 06 | 644 | 0.1+ | 0.2+ | 2006 08 23 | 644 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2005 03 18 | 703 | 0.7+ | 0.9− | 2006 08 30 | 699 | 0.8− | 0.1− | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 2005 03 18 | 703 | 0.9− | 0.6+ | 2006 08 30 | 699 | 1.4+ | 1.0− | 2006 09 26 | 703 | 0.2+ | 1.0− |
| 2005 03 18 | 703 | 0.3− | 0.4+ | 2006 08 30 | 699 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.9+ | 0.9− |
| 2005 03 18 | 703 | 1.0− | 0.2+ | 2006 08 30 | 699 | 1.2− | 0.5+ | 2006 10 02 | 703 | 0.4+ | 0.2+ |
| 2005 04 04 | 703 | 0.3+ | 0.8− | 2006 09 14 | 703 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.8+ | 0.1− |
| 2005 04 04 | 703 | 0.7+ | 0.0 | 2006 09 14 | 703 | 0.8+ | 0.1− | 2006 10 02 | 703 | 1.2+ | 0.6+ |
| 2005 04 04 | 703 | (0.1+ | 1.8+) | 2006 09 14 | 703 | 0.4+ | 0.4− | 2006 10 02 | 703 | 1.0− | 0.8+ |
| 2005 04 04 | 703 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.5+ | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2006 08 19 | 644 | 0.3− | 0.0 | 2006 09 20 | 703 | 0.7− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2006 08 19 | 644 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.2+ | 0.1− | 2006 10 21 | 703 | 1.1− | 0.1− |
| 2006 08 19 | 644 | 0.2− | 0.1+ | 2006 09 20 | 703 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.3+ |
| 2006 08 19 | 644 | 0.4− | 0.1+ | 2006 09 21 | 699 | 0.1+ | 1.1+ | 2006 10 21 | 703 | 0.6− | 0.1− |
| 2006 08 19 | 644 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.7− | 0.4+ | 2006 10 21 | 703 | 1.0− | 0.0 |

**2006 QF$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.06759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17346650 | $\omega$ | 355.34773 | | +0.75696990 | +0.64258423 | |
| $a$ | 3.1841411 | $\Omega$ | 323.76455 | | −0.59286526 | +0.59900107 | |
| $e$ | 0.0409837 | $i$ | 11.58118 | | −0.27478601 | +0.47778995 | |
| $P$ | 5.68 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.4+ | 0.2− | 2001 09 29 | 644 | 0.4− | 0.1− | 2006 08 20 | 644 | 0.5+ | 0.1+ |
| 2001 09 10 | 704 | 0.4− | 0.0 | 2001 10 13 | 644 | 0.3− | 0.1− | 2006 08 20 | 644 | 0.3− | 0.1− |
| 2001 09 10 | 704 | 0.4+ | 0.3+ | 2001 10 13 | 644 | 0.2− | 0.3− | 2006 08 24 | 644 | 0.1− | 0.3− |
| 2001 09 10 | 704 | 0.2+ | 0.4+ | 2001 10 13 | 644 | 0.2− | 0.1− | 2006 08 24 | 644 | 0.6− | 0.1− |
| 2001 09 25 | 704 | 0.5+ | 0.7+ | 2006 07 25 | 644 | 0.2+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.3− |
| 2001 09 25 | 704 | 0.5− | 0.2+ | 2006 07 25 | 644 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2006 08 14 | 644 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.4+ | 2006 08 14 | 644 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2001 09 29 | 644 | 0.1+ | 0.1− | 2006 08 14 | 644 | 0.3+ | 0.1+ | | | | |
| 2001 09 29 | 644 | 0.2− | 0.3− | 2006 08 20 | 644 | 0.0 | 0.1+ | | | | |

**2006 QN$_{46}$ = 2000 EM$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.98021 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22575056 | $\omega$ | 175.25226 | | +0.85252963 | +0.51030730 | |
| $a$ | 2.6712641 | $\Omega$ | 153.10563 | | −0.48740085 | +0.85428382 | |
| $e$ | 0.0796618 | $i$ | 14.47235 | | −0.18876874 | +0.09892225 | |
| $P$ | 4.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 10 | 691 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.4− | 2006 08 28 | 691 | 0.2− | 0.0 |
| 2000 03 10 | 691 | 0.2− | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2000 03 10 | 691 | 0.3+ | 0.2+ | 2006 08 20 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.5+ |
| 2000 03 12 | 691 | 0.2− | 0.1− | 2006 08 20 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.2+ |
| 2000 03 12 | 691 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 1.3− | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 691 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.7− | | |
| 2006 08 18 | 644 | 0.3+ | 0.2− | 2006 08 22 | 644 | 0.5+ | 0.3+ | | | | | | |
| 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.2− | | | | | | |

**2006 QT$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 299.79850 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21768156 | $\omega$ | 56.84963 | | +0.64106353 | | −0.76719069 | | |
| $a$ | 2.7368750 | $\Omega$ | 353.15849 | | +0.63086135 | | +0.54258464 | | |
| $e$ | 0.1362119 | $i$ | 10.32671 | | +0.43709439 | | +0.34208238 | | |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 06 | 691 | 0.5− | 2.3+ | 2002 11 14 | 644 | 0.4+ | 0.3− | 2006 08 24 | 644 | 0.7− | 0.4− | | |
| 1993 11 06 | 691 | 0.2+ | 1.6− | 2004 03 29 | 691 | 0.2+ | 0.7+ | 2006 08 24 | 644 | 1.3− | 0.2− | | |
| 2002 11 01 | 644 | 0.1− | 0.1− | 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.9− | 0.3− | | |
| 2002 11 01 | 644 | 0.9+ | 0.2− | 2004 03 29 | 691 | 0.4+ | 0.2− | 2006 10 11 | 291 | 0.5+ | 0.4+ | | |
| 2002 11 01 | 644 | 0.2+ | 0.7− | 2006 08 20 | 644 | 0.4− | 0.2− | 2006 10 11 | 291 | 0.4+ | 0.2+ | | |
| 2002 11 14 | 644 | 0.2− | 0.6− | 2006 08 20 | 644 | 0.8− | 0.1+ | 2006 10 11 | 291 | 0.1+ | 0.5+ | | |
| 2002 11 14 | 644 | 0.3− | 0.6− | 2006 08 20 | 644 | 0.4− | 0.0 | | | | | | |

**2006 QW$_{46}$ = 2005 GL$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 52.98109 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21313550 | $\omega$ | 146.78561 | | +0.02253609 | | +0.98848846 | | |
| $a$ | 2.7756553 | $\Omega$ | 124.07807 | | −0.95210300 | | +0.06686613 | | |
| $e$ | 0.1277077 | $i$ | 10.40626 | | −0.30494590 | | −0.13571841 | | |
| $P$ | 4.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.0 | 0.0 | 2005 04 09 | 699 | 0.4− | 0.3− | 2006 08 20 | 644 | 1.0− | 0.5− | | |
| 2002 10 04 | 645 | 0.0 | 0.0 | 2005 04 09 | 699 | 0.9− | 1.3+ | 2006 08 20 | 644 | 0.0 | 0.3+ | | |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2005 04 09 | 699 | 1.4− | 0.1+ | 2006 08 20 | 644 | 0.0 | 0.1+ | | |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2005 04 09 | 699 | 0.5+ | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.1+ | | |
| 2003 12 28 | 691 | 0.3− | 0.3+ | 2006 07 25 | 644 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.3+ | 0.1+ | | |
| 2003 12 28 | 691 | 0.1+ | 0.2+ | 2006 07 25 | 644 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.3+ | | |
| 2003 12 28 | 691 | 0.2+ | 0.1+ | 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.2− | 0.2+ | | |
| 2005 04 05 | 644 | 0.0 | 0.6+ | 2006 07 25 | 644 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.1+ | 0.2+ | | |
| 2005 04 05 | 644 | 0.0 | 1.0+ | 2006 07 25 | 644 | 0.0 | 0.4+ | 2006 08 24 | 644 | 0.2+ | 0.2+ | | |
| 2005 04 05 | 644 | 0.9+ | 0.3+ | 2006 07 25 | 644 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.1− | 1.0+ | | |
| 2005 04 08 | 704 | 0.9+ | 1.4− | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.2+ | | |
| 2005 04 08 | 704 | 0.6+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.4+ | | |
| 2005 04 08 | 704 | 0.4+ | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2+ | | | | | | |

**2006 QX$_{46}$ = 1998 HX$_{117}$ = 2003 WE$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 63.47464 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26889160 | $\omega$ | 163.82586 | | −0.09521274 | | +0.98666728 | | |
| $a$ | 2.3773031 | $\Omega$ | 100.56784 | | −0.92754671 | | −0.03979857 | | |
| $e$ | 0.0898156 | $i$ | 7.71645 | | −0.36137465 | | −0.15780925 | | |
| $P$ | 3.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 23 | 704 | 0.2− | 1.1− | 2003 11 21 | 691 | 0.1+ | 0.2− | 2005 04 02 | 703 | 0.5+ | 0.4+ | | |
| 1998 04 23 | 704 | 0.3− | 1.7− | 2003 11 21 | 691 | 0.0 | 0.2− | 2005 04 02 | 703 | 0.0 | 0.1+ | | |
| 1998 04 23 | 704 | 0.1− | 1.2− | 2005 03 11 | 703 | 1.2− | 0.3− | 2006 08 20 | 644 | 0.2− | 0.1− | | |
| 1998 04 23 | 704 | 1.5− | 0.7− | 2005 03 11 | 703 | 0.4− | 0.3− | 2006 08 20 | 644 | 0.0 | 0.3− | | |
| 1998 04 23 | 704 | 0.5+ | 0.2− | 2005 03 11 | 703 | 0.8− | 0.7− | 2006 08 20 | 644 | 0.1− | 0.1− | | |
| 1998 04 24 | 704 | 1.2+ | 0.0 | 2005 03 11 | 703 | 0.1+ | 0.2− | 2006 08 24 | 644 | 0.2− | 0.2− | | |
| 1998 04 24 | 704 | 1.3− | 0.5+ | 2005 03 16 | 703 | 0.7+ | 0.5− | 2006 08 24 | 644 | 0.0 | 0.3− | | |
| 1998 04 24 | 704 | (2.2+ | 1.1+) | 2005 03 16 | 703 | 0.2− | 0.8− | 2006 08 24 | 644 | 0.0 | 0.1− | | |
| 2003 11 18 | 691 | 0.0 | 0.1− | 2005 03 16 | 703 | 0.3+ | 0.5− | 2006 09 14 | 644 | 0.3+ | 0.1− | | |
| 2003 11 18 | 691 | 0.0 | 0.1+ | 2005 03 16 | 703 | 0.2− | 1.7+ | 2006 09 14 | 644 | 0.4+ | 0.3+ | | |
| 2003 11 18 | 691 | 0.1+ | 0.2− | 2005 04 02 | 703 | 1.1+ | 1.5+ | 2006 09 14 | 644 | 0.3+ | 0.1+ | | |
| 2003 11 21 | 691 | 0.2+ | 0.3− | 2005 04 02 | 703 | 0.4+ | 0.8+ | | | | | | |

**2006 QY$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 25.65310 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.34474584 | $\omega$ | 160.89225 | | +0.82909720 | | +0.54600153 | | |
| $a$ | 2.0143581 | $\Omega$ | 164.18550 | | −0.55302514 | | +0.83251541 | | |
| $e$ | 0.0557021 | $i$ | 26.20299 | | −0.08222546 | | −0.09381054 | | |
| $P$ | 2.86 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 21 | 644 | 0.5− | 0.5+ | 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.7− | | |
| 2003 07 21 | 644 | 0.4+ | 0.1+ | 2006 05 23 | 291 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.2− | 0.5− | | |
| 2003 07 21 | 644 | 0.4+ | 0.1+ | 2006 05 23 | 291 | 0.2− | 0.2− | 2006 09 12 | 704 | 0.3− | 0.9+ | | |
| 2003 08 28 | 644 | 0.3+ | 0.3+ | 2006 05 23 | 291 | 0.0 | 0.1− | 2006 09 12 | 704 | 1.4+ | 1.2+ | | |
| 2003 08 28 | 644 | 0.3+ | 0.2+ | 2006 08 20 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 704 | 0.6− | 0.2+ | | |
| 2003 08 28 | 644 | 0.4+ | 0.1+ | 2006 08 20 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 704 | 1.0− | 1.0+ | | |
| 2003 09 27 | 704 | 0.0 | 0.5+ | 2006 08 20 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.1+ | | |
| 2003 09 27 | 704 | 0.2− | 0.8− | 2006 08 23 | 644 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.0 | | |
| 2003 09 27 | 704 | 1.2− | 0.6+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.0 | 0.3− | | |
| 2003 09 27 | 704 | 0.1− | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.1− | 0.5+ | | |
| 2005 02 05 | 644 | 0.2+ | 0.5+ | 2006 08 25 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.2+ | | |
| 2005 02 05 | 644 | 0.3+ | 0.1+ | 2006 08 25 | 704 | 0.2+ | 0.5− | 2006 09 14 | 703 | 0.6− | 0.1− | | |
| 2005 02 05 | 644 | 0.6+ | 0.2+ | 2006 08 25 | 704 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.8− | 0.7− | | |
| 2005 03 17 | 703 | 0.8− | 0.6− | 2006 08 25 | 704 | 0.1− | 0.5− | 2006 09 26 | 703 | 0.4− | 0.1+ | | |
| 2005 03 17 | 703 | 0.7− | 1.0+ | 2006 08 27 | 699 | 0.3+ | 0.5− | 2006 09 26 | 703 | 0.3+ | 0.2− | | |
| 2005 03 17 | 703 | 0.7− | 0.7+ | 2006 08 27 | 699 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.7+ | | |
| 2005 03 17 | 703 | 0.2− | 0.7+ | 2006 08 27 | 699 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.3− | | |
| 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.2− | 0.6− | 2006 10 12 | 644 | 0.4− | 0.2− | | |
| 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.7− | 2006 10 12 | 644 | 0.5− | 0.6− | | |
| 2005 04 02 | G96 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.4− | | |

**2006 QF$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 300.56476 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17189542 | $\omega$ | 303.48270 | | +0.67352672 | | −0.71578991 | | |
| $a$ | 3.2035132 | $\Omega$ | 103.02826 | | +0.72531755 | | +0.59195105 | | |
| $e$ | 0.0763768 | $i$ | 10.91083 | | +0.14239460 | | +0.37045751 | | |
| $P$ | 5.73 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.1+ | 0.6+ | 2001 11 11 | 645 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.0 | 0.1+ | | |
| 2001 10 23 | 644 | 0.1+ | 0.5+ | 2001 11 11 | 645 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.1− | | |
| 2001 10 23 | 644 | 0.3− | 0.6+ | 2001 11 21 | 645 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.3− | 0.2− | | |
| 2001 11 04 | 209 | 0.5+ | 0.3+ | 2001 11 21 | 645 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.1− | 0.0 | | |
| 2001 11 04 | 209 | 0.3+ | 0.3+ | 2006 08 20 | 644 | 0.1+ | 0.1+ | | | | | | |
| 2001 11 04 | 209 | 0.7+ | 0.2− | 2006 08 20 | 644 | 0.2+ | 0.0 | | | | | | |

**2006 QK$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 299.47374 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28055608 | $\omega$ | 330.87361 | | +0.36845530 | | −0.92792865 | | |
| $a$ | 2.3109449 | $\Omega$ | 97.45771 | | +0.86358078 | | +0.31914850 | | |
| $e$ | 0.1961091 | $i$ | 3.26499 | | +0.34419316 | | +0.19259453 | | |
| $P$ | 3.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 704 | 0.5+ | 0.3+ | 2006 08 18 | 644 | 0.6+ | 0.1− | 2006 08 28 | 704 | 0.3− | 0.0 | | |
| 2003 12 01 | 704 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.1− | 2006 08 28 | 699 | 0.7+ | 0.3+ | | |
| 2003 12 01 | 704 | 0.3− | 0.1+ | 2006 08 20 | 644 | 0.3− | 0.1+ | 2006 08 28 | 704 | 0.1− | 0.2+ | | |
| 2003 12 01 | 704 | 0.2+ | 0.1+ | 2006 08 20 | 644 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.4+ | 0.1+ | | |
| 2003 12 01 | 704 | 0.5+ | 0.8+ | 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 08 28 | 699 | 0.9+ | 0.6+ | | |
| 2004 01 21 | 704 | 0.1− | 0.8+ | 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.2− | | |
| 2004 01 21 | 704 | 0.0 | 0.3− | 2006 08 22 | 644 | 0.3+ | 0.0 | 2006 09 30 | 703 | 1.1− | 0.8− | | |
| 2004 01 21 | 704 | 0.4− | 1.3− | 2006 08 22 | 644 | 0.5+ | 0.0 | 2006 09 30 | 703 | 1.8− | 0.0 | | |
| 2004 01 21 | 704 | 0.2− | 1.0− | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.5− | 1.0− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 18 | 644 | 0.4+ | 0.2− | 2006 08 22 | 644 | 1.1+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.7+ | |
| 2006 08 18 | 644 | 0.0 | 0.2− | 2006 08 28 | 704 | 0.1− | 0.3+ | | | | | |

**2006 QO$_{47}$ = 2002 XX$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.88965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21994875 | $\omega$ | 320.26790 | | +0.87472540 | −0.48212154 | |
| $a$ | 2.7180350 | $\Omega$ | 68.62142 | | +0.45696723 | +0.78680580 | |
| $e$ | 0.2206869 | $i$ | 3.02468 | | +0.16135804 | +0.38535107 | |
| $P$ | 4.48 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2005 05 10 | 807 | 0.0 | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.3+ | |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2005 06 13 | G96 | 0.8+ | 0.7+ | 2006 08 24 | 644 | 0.2+ | 0.6+ | |
| 2002 12 05 | 704 | 0.3− | 0.2+ | 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.5+ | |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2005 06 13 | G96 | 0.5+ | 0.0 | 2006 09 14 | 703 | 0.8− | 0.6+ | |
| 2002 12 05 | 704 | 0.3+ | 1.0+ | 2005 06 13 | G96 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.1+ | |
| 2002 12 10 | 704 | 0.3− | 0.0 | 2006 08 16 | 644 | 0.5− | 0.5+ | 2006 09 14 | 703 | 0.3+ | 1.3− | |
| 2002 12 10 | 704 | 0.3− | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.9+ | 0.4+ | |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 11 27 | G96 | 1.1+ | 0.3+ | |
| 2002 12 10 | 704 | 0.1+ | 0.0 | 2006 08 20 | 644 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.4− | |
| 2002 12 10 | 704 | 0.5− | 1.1+ | 2006 08 20 | 644 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.6− | |
| 2005 05 10 | 807 | 0.2+ | 0.6+ | 2006 08 20 | 644 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.5− | 1.2− | |

**2006 QQ$_{47}$ = 1995 WN$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.81256 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26129613 | $\omega$ | 278.75491 | | +0.61991396 | +0.78220658 | |
| $a$ | 2.4231524 | $\Omega$ | 29.83651 | | −0.66186926 | +0.56378273 | |
| $e$ | 0.2296350 | $i$ | 7.17315 | | −0.42146858 | +0.26514507 | |
| $P$ | 3.77 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.6+ | 0.1− | 2006 08 20 | 644 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.5− | |
| 1995 10 22 | 691 | 0.4+ | 0.3+ | 2006 08 24 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.2+ | |
| 1995 10 22 | 691 | 0.4+ | 0.3+ | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.2− | |
| 1995 11 17 | 691 | 0.9− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.1+ | |
| 1995 11 17 | 691 | 0.4− | 0.1+ | 2006 08 28 | E12 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.4+ | |
| 1995 11 17 | 691 | 0.6− | 0.2− | 2006 08 28 | E12 | 0.1+ | 0.1+ | 2006 09 26 | 703 | (3.7− | 4.2+) | |
| 1998 05 01 | 704 | (2.5− | 2.8+) | 2006 08 28 | E12 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.2− | 0.3+ | |
| 1998 05 01 | 704 | (0.1− | 2.6+) | 2006 08 28 | E12 | 0.0 | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.2+ | |
| 1998 05 01 | 704 | 0.3+ | 0.5+ | 2006 09 17 | 699 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2+ | |
| 1998 05 01 | 704 | (5.9− | 2.3+) | 2006 09 17 | 699 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.4+ | |
| 2004 01 19 | 691 | 0.2+ | 0.1− | 2006 09 17 | 699 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.4− | 0.0 | |
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 09 17 | 699 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.1+ | |
| 2004 01 19 | 691 | 0.0 | 0.3− | 2006 09 20 | 703 | 0.8− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.2− | |
| 2005 04 10 | 691 | 0.5+ | 0.2+ | 2006 09 20 | 703 | 0.1+ | 0.6+ | 2006 11 27 | G96 | 0.3− | 0.4− | |
| 2005 04 10 | 691 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.4+ | 0.3− | 2006 11 27 | G96 | 0.2− | 0.3− | |
| 2005 04 10 | 691 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.8− | 0.5+ | 2006 11 27 | G96 | 0.4+ | 0.0 | |
| 2006 08 20 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.4+ | 1.1− | | | | | |
| 2006 08 20 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.1− | | | | | |

**2006 QW$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.80788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27321223 | $\omega$ | 221.07450 | | +0.75727579 | −0.65309510 | |
| $a$ | 2.3521732 | $\Omega$ | 179.69996 | | +0.61768725 | +0.71601697 | |
| $e$ | 0.1927560 | $i$ | 4.45913 | | +0.21212224 | +0.24654915 | |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5− | 0.5+ | 2006 08 21 | 704 | 0.6− | 1.0− | 2006 09 20 | 699 | 0.6− | 1.1+ | |
| 1999 10 10 | 704 | 0.2− | 0.4+ | 2006 08 21 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.2+ | |
| 1999 10 10 | 704 | 0.4+ | 0.1+ | 2006 08 21 | 704 | 0.6− | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.1− | |
| 1999 10 10 | 704 | 0.3− | 0.8+ | 2006 08 21 | 704 | 1.1− | 0.5+ | 2006 09 20 | 699 | 1.0− | 0.5+ | |
| 1999 10 10 | 704 | 0.2− | 1.1+ | 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 09 20 | 699 | (2.0− | 1.3+) | |
| 1999 10 19 | 704 | 0.2− | 0.3− | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 27 | G96 | (1.9− | 0.9+) | |
| 1999 10 19 | 704 | 0.3+ | 0.1+ | 2006 08 24 | 644 | 0.2+ | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.1− | |
| 1999 10 19 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 699 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.2− | |
| 1999 10 19 | 704 | 0.2+ | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.0 | 2006 09 27 | G96 | 1.0− | 1.0− | |
| 1999 10 19 | 704 | 0.3− | 0.9− | 2006 08 28 | 699 | 0.8+ | 0.3− | 2006 10 19 | 695 | 0.0 | 0.3+ | |
| 1999 11 05 | 704 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.2+ | 1.2+ | 2006 10 19 | 695 | 0.0 | 0.2+ | |
| 1999 11 05 | 704 | 0.7− | 1.0− | 2006 08 28 | 703 | 0.9+ | 0.8+ | 2006 10 20 | 695 | 0.0 | 0.2+ | |
| 1999 11 05 | 704 | 0.2− | 1.1− | 2006 08 28 | 703 | 0.5− | 1.4+ | 2006 10 27 | G96 | 0.3+ | 0.3− | |
| 1999 11 05 | 704 | 1.0+ | 0.6− | 2006 08 28 | 699 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | |
| 2001 02 22 | 691 | 0.1− | 0.5+ | 2006 08 28 | 699 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.2− | |
| 2001 02 22 | 691 | 0.4+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.0 | |
| 2001 02 22 | 691 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.3− | |
| 2004 01 18 | 691 | 0.3+ | 1.1+ | 2006 09 13 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.2− | |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.1− | |
| 2004 01 18 | 691 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.2+ | 1.2+ | 2006 11 17 | G96 | 0.2+ | 0.2− | |
| 2006 08 19 | A50 | 0.3− | 0.3+ | 2006 09 20 | 704 | (1.6+ | 0.1−) | | | | | |
| 2006 08 19 | A50 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.3− | | | | | |

**2006 QY$_{47}$ = 2001 EY$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.51624 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26618762 | $\omega$ | 351.43205 | | +0.91441598 | +0.39089966 | |
| $a$ | 2.3933754 | $\Omega$ | 344.24849 | | −0.34464817 | +0.61575687 | |
| $e$ | 0.0719159 | $i$ | 22.77215 | | −0.21227591 | +0.68413517 | |
| $P$ | 3.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 704 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.3− | 2006 09 25 | 704 | 0.9+ | 1.2− | |
| 1999 10 31 | 704 | 0.9− | 0.5− | 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 09 25 | 704 | 1.2+ | 0.9− | |
| 1999 10 31 | 704 | 0.5+ | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.8+ | 2006 09 25 | 704 | 0.5+ | 0.8+ | |
| 2001 02 19 | 704 | 1.0+ | 0.5− | 2006 08 29 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.5+ | |
| 2001 02 19 | 704 | 0.2− | 0.1+ | 2006 08 29 | 704 | 0.7+ | 0.8+ | 2006 09 26 | 704 | 0.9− | 0.6− | |
| 2001 02 19 | 704 | 1.0+ | 1.1+ | 2006 08 29 | 704 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.3− | 0.0 | |
| 2001 02 19 | 704 | 0.7+ | 0.7+ | 2006 08 30 | 704 | 0.6− | 0.4− | 2006 09 26 | 704 | 0.5− | 0.3− | |
| 2001 03 02 | 699 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 1.1+ | 1.0+ | 2006 09 26 | 704 | 0.4− | 0.3− | |
| 2001 03 02 | 699 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 1.0+ | 1.4+ | 2006 09 29 | 704 | 0.8− | 0.3+ | |
| 2001 03 02 | 699 | (2.3+ | 0.4+) | 2006 08 31 | 704 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.5+ | |
| 2001 03 02 | 699 | 0.3+ | 1.4+ | 2006 08 31 | 704 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.5− | 0.6+ | |
| 2001 03 18 | 699 | 0.4+ | 0.3− | 2006 08 31 | 704 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.0 | |
| 2001 03 18 | 699 | 0.0 | 0.8+ | 2006 08 31 | 704 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.6− | 0.2+ | |
| 2001 03 18 | 699 | 0.4+ | 0.5+ | 2006 08 31 | 704 | 0.7− | 0.3+ | 2006 09 30 | 699 | 0.3+ | 0.1+ | |
| 2001 03 18 | 699 | 0.1+ | 1.4− | 2006 09 11 | 703 | 0.2+ | 0.2− | 2006 09 30 | 704 | 0.5+ | 0.1+ | |
| 2005 03 19 | E12 | 0.1+ | 0.3− | 2006 09 11 | 703 | 0.4+ | 0.7− | 2006 09 30 | 699 | 0.8+ | 0.3− | |
| 2005 03 19 | E12 | 0.2+ | 0.7+ | 2006 09 11 | 703 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.3− | 0.2+ | |
| 2005 03 19 | E12 | 0.1+ | 0.3− | 2006 09 11 | 703 | 0.7+ | 0.1+ | 2006 09 30 | 699 | 0.1− | 0.0 | |
| 2005 03 19 | E12 | 1.0+ | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.6− | 0.7− | |
| 2005 04 02 | E12 | 0.3− | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 09 30 | 699 | 0.5− | 0.8+ | |
| 2005 04 02 | E12 | 0.3− | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | |
| 2005 04 02 | E12 | 0.7− | 0.5+ | 2006 09 17 | 703 | 0.6− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.1− | |
| 2006 08 21 | 704 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.2+ | 1.2− | 2006 10 10 | 644 | 0.2− | 0.3− | |
| 2006 08 21 | 704 | 0.7− | 0.3+ | 2006 09 17 | 703 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.5+ | |
| 2006 08 21 | 704 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.4− | |
| 2006 08 21 | 704 | 0.5− | 0.5− | 2006 09 18 | 704 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.1− | |
| 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.3− | 0.2− | |
| 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.7− | |
| 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 18 | 704 | (0.6+ | 1.6+) | 2006 10 22 | 703 | 0.2+ | 0.6+ | |
| 2006 08 25 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.7− | 0.1− | |
| 2006 08 25 | 704 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.1− | 0.8+ | 2006 10 22 | 703 | 0.4− | 0.2+ | |
| 2006 08 25 | 704 | 0.1− | 0.9+ | 2006 09 20 | 699 | 0.3− | 0.0 | | | | | |
| 2006 08 28 | 703 | 0.2+ | 0.6− | 2006 09 20 | 699 | 0.0 | 0.1+ | | | | | |

### 2006 $QA_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.31514 | | (2000.0) | | | |
| $n$ | 0.24406814 | $\omega$ | 314.74636 | | +0.37197251 | +0.92608317 |
| $a$ | 2.5358798 | $\Omega$ | 336.86614 | | −0.79963647 | +0.28506092 |
| $e$ | 0.2325889 | $i$ | 9.27123 | | −0.47140000 | +0.24720485 |
| $P$ | 4.04 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.4+ | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.3− | 0.4+ |
| 2002 09 05 | 704 | 0.1− | 0.6− | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2002 09 05 | 704 | 0.4− | 0.2− | 2006 08 23 | 644 | 0.1− | 0.4− | 2006 08 28 | 699 | (2.2− | 0.1+) |
| 2002 09 05 | 704 | 0.6+ | 0.5− | 2006 08 23 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.4+ | 2006 08 23 | 644 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.2− | 0.3+ |
| 2002 09 14 | 644 | 0.1− | 0.4+ | 2006 08 28 | 699 | 1.1+ | 0.0 | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.6− | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 09 27 | G96 | 0.3− | 0.3− |
| 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.5− | 2006 09 27 | G96 | 0.4+ | 0.1− |
| 2005 03 11 | G96 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.8+ | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2005 03 11 | G96 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.5− |
| 2006 08 21 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.1− | 0.3− | | | | |

### 2006 $QP_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.18727 | | (2000.0) | | | |
| $n$ | 0.30196570 | $\omega$ | 154.46128 | | +0.91349235 | +0.40684993 |
| $a$ | 2.2003797 | $\Omega$ | 181.53675 | | −0.38596194 | +0.86485328 |
| $e$ | 0.2360070 | $i$ | 4.71553 | | −0.12870552 | +0.29411210 |
| $P$ | 3.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 05 | 691 | 0.2+ | 0.5− | 2006 08 25 | 704 | 1.2+ | 0.0 | 2006 09 27 | 704 | 0.1− | 0.6+ |
| 1995 03 05 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.5+ |
| 1995 03 05 | 691 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.2+ | 2006 09 29 | 691 | 0.3− | 0.1− |
| 2002 04 08 | 644 | (0.5+ | 1.8+) | 2006 09 14 | 703 | 0.3+ | 0.5− | 2006 09 29 | 691 | 0.4− | 0.1− |
| 2002 04 08 | 644 | 0.5+ | 1.4+ | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 09 29 | 691 | 0.5− | 0.1+ |
| 2002 04 08 | 644 | (0.6+ | 1.8+) | 2006 09 15 | 704 | 0.5− | 0.8− | 2006 10 03 | 691 | 0.1+ | 0.0 |
| 2003 12 01 | 704 | 0.5+ | 0.4+ | 2006 09 15 | 704 | 0.0 | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2003 12 01 | 704 | 0.0 | 0.0 | 2006 09 15 | 704 | (1.6+ | 0.1+) | 2006 10 03 | 691 | 0.0 | 0.0 |
| 2003 12 01 | 704 | 0.0 | 0.1− | 2006 09 15 | 704 | 0.4+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2003 12 01 | 704 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.7+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2003 12 01 | 704 | 0.5+ | 0.2− | 2006 09 17 | 704 | 1.0+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2005 03 09 | G96 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2005 03 09 | G96 | 0.1+ | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2005 03 09 | G96 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2005 03 09 | G96 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.6− |
| 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.4− | 0.4− |
| 2005 04 02 | G96 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 15 | 703 | 1.4− | 0.0 |
| 2005 04 02 | G96 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 1.4− | 0.3+ |
| 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2005 05 06 | G96 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2005 05 06 | G96 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2005 05 06 | G96 | 0.7− | 0.2− | 2006 09 20 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.7− |
| 2005 05 06 | G96 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.8+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6− |
| 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 09 20 | 704 | 1.2+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2006 08 18 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.2− | 0.6− |
| 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.7+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2006 08 21 | 704 | 0.1− | 0.9− | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2006 08 21 | 704 | 0.7+ | 0.3− | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2006 08 21 | 704 | 0.2+ | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2006 08 21 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 31 | 704 | 0.3− | 0.9+ |
| 2006 08 25 | 704 | 0.5− | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 31 | 704 | 2.1+ | 1.2− |
| 2006 08 25 | 704 | 1.0+ | 0.6− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 31 | 704 | 0.8− | 1.1+ |
| 2006 08 25 | 704 | 0.5− | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.3+ | 2006 10 31 | 704 | 0.1− | 0.9+ |
| 2006 08 25 | 704 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.6+ | | | | |

### 2006 $QQ_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.60080 | | (2000.0) | | | |
| $n$ | 0.26207047 | $\omega$ | 355.44318 | | +0.99945436 | +0.03296431 |
| $a$ | 2.4183769 | $\Omega$ | 2.67042 | | −0.02871661 | +0.89835254 |
| $e$ | 0.2188949 | $i$ | 2.56128 | | −0.01631984 | +0.43803660 |
| $P$ | 3.76 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 695 | 0.2+ | 0.4+ | 2006 08 23 | 704 | 1.4+ | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.5+ |
| 2001 03 26 | 695 | 0.2+ | 0.3+ | 2006 08 23 | 704 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.1− |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 08 23 | 704 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.3+ |
| 2003 12 21 | 645 | 0.1+ | 0.1+ | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 2004 01 27 | 691 | 0.3− | 0.3− | 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 2004 01 27 | 691 | 0.0 | 0.2− | 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2006 08 13 | 644 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.8− | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2006 08 13 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.9− | 0.8− | 2006 10 17 | G96 | 0.6+ | 0.4− |
| 2006 08 13 | 644 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.5− | 1.2+ | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.1+ |
| 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.8− | 2006 10 17 | G96 | 1.7+ | 0.0 |
| 2006 08 21 | 644 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.1+ | | | | |

### 2006 $QX_{48}$ = 2005 $HB_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.09355 | | (2000.0) | | | |
| $n$ | 0.28793644 | $\omega$ | 151.94232 | | +0.90936336 | −0.41559344 |
| $a$ | 2.2712850 | $\Omega$ | 232.62628 | | +0.37719999 | +0.84243376 |
| $e$ | 0.1165299 | $i$ | 1.33026 | | +0.17543785 | +0.34291026 |
| $P$ | 3.42 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.2− | 0.7+ | 2006 08 28 | 703 | 0.8+ | 0.8− | 2006 09 20 | 704 | 0.6− | 0.1− |
| 2003 12 19 | 704 | 0.0 | 0.9+ | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.6− | 0.6+ |
| 2003 12 19 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.2− | 1.3+ |
| 2003 12 19 | 704 | 0.4+ | 0.2− | 2006 08 28 | 703 | 0.6− | 0.5+ | 2006 09 27 | 704 | 0.7− | 0.0 |
| 2003 12 19 | 704 | 0.1− | 1.0+ | 2006 09 12 | 703 | 0.3+ | 0.6− | 2006 09 27 | 704 | 0.6− | 0.9+ |
| 2005 04 10 | G96 | 0.3− | 0.2− | 2006 09 12 | 703 | 0.3− | 0.9− | 2006 09 27 | 704 | 0.6− | 0.8+ |
| 2005 04 10 | G96 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.7+ | 0.7− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2005 04 10 | G96 | 0.2− | 0.3+ | 2006 09 12 | 703 | (0.6+ | 1.6−) | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2005 04 10 | G96 | 0.0 | 0.8+ | 2006 09 16 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 09 16 | 691 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 09 16 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.3− | 0.6− | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 2005 05 11 | G96 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.6− |
| 2005 05 11 | G96 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2005 05 11 | G96 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2005 05 11 | G96 | 0.2− | 0.0 | 2006 09 18 | 699 | 1.0+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.1− |
| 2006 08 21 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2006 08 21 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 1.3+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2006 08 21 | 691 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.9− | 0.5− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2006 08 24 | 644 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.1− | 0.1− | 2006 11 18 | 122 | 0.3− | 1.0− |
| 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 11 18 | 122 | 0.5+ | 0.1− |

### 2006 $QC_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.82853 | | (2000.0) | | | |
| $n$ | 0.29056384 | $\omega$ | 226.87976 | | +0.66813478 | +0.73783242 |
| $a$ | 2.2575723 | $\Omega$ | 85.30405 | | −0.65165290 | +0.64250369 |
| $e$ | 0.1607830 | $i$ | 5.52245 | | −0.35908831 | +0.20686306 |
| $P$ | 3.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 16 | 704 | 0.4− | 0.3+ | 2006 08 21 | 644 | 0.0 | 0.4− | 2006 09 20 | 703 | 0.3− | 0.5+ |
| 2002 04 16 | 704 | 0.5+ | 0.4− | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.0 | 1.4+ |
| 2002 04 16 | 704 | 0.2+ | 0.5− | 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.6− |
| 2002 04 16 | 704 | 0.3− | 0.7+ | 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 21 | 699 | (2.2+ | 0.5+) |
| 2003 12 18 | 691 | 0.2− | 0.3− | 2006 08 23 | 644 | 0.1− | 0.3− | 2006 09 21 | 699 | 0.6+ | 0.9− |
| 2003 12 18 | 691 | 0.0 | 0.3+ | 2006 08 30 | 699 | 0.1− | 0.2− | 2006 09 21 | 699 | 1.5− | 0.5− |
| 2003 12 18 | 691 | 0.2+ | 0.2− | 2006 08 30 | 699 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.5− | 0.3+ |
| 2006 08 16 | 644 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.5− | 0.5+ |
| 2006 08 16 | 644 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.6+ | 1.0+ |
| 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 20 | 703 | 0.6+ | 1.1+ | 2006 09 26 | 703 | 0.6+ | 0.4+ |
| 2006 08 21 | 644 | 0.6− | 0.7− | 2006 09 20 | 703 | 0.9+ | 0.3− | | | | |

**2006 QF$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.56097 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27480966 | $\omega$ | 272.57566 | | +0.41880107 | | +0.90764932 |
| $a$ | 2.3430491 | $\Omega$ | 22.24815 | | −0.80112172 | | +0.38376495 |
| $e$ | 0.1940003 | $i$ | 4.22581 | | −0.42756245 | | +0.16999171 |
| $P$ | 3.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 30 | 691 | 0.1− | 0.0 | 2006 08 21 | 644 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.4+ |
| 1999 11 30 | 691 | 0.2+ | 0.0 | 2006 08 23 | 704 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.4− |
| 1999 11 30 | 691 | 0.1+ | 0.3− | 2006 08 23 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.3+ | 0.6− |
| 2002 05 30 | 644 | 0.1+ | 0.2− | 2006 08 23 | 704 | (1.9− | 0.1−) | 2006 09 14 | 703 | 0.7+ | 0.2− |
| 2002 05 30 | 644 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.8+ | 0.7− |
| 2002 05 30 | 644 | 0.3− | 0.2− | 2006 08 23 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 1.4− |
| 2002 06 05 | 644 | 0.3− | 0.2+ | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.9+ | 0.4+ |
| 2002 06 05 | 644 | 0.1+ | 0.1− | 2006 08 30 | 699 | (2.3+ | 0.1+) | 2006 09 30 | 703 | 1.0− | 0.8− |
| 2002 06 05 | 644 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.5− | 1.3+ | 2006 11 17 | G96 | 0.3+ | 0.6− |
| 2003 11 30 | 691 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.8+ | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.3+ |
| 2003 11 30 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.3+ | 0.6+ | 2006 11 17 | G96 | 1.4− | 0.6− |
| 2003 11 30 | 691 | 0.0 | 0.1+ | 2006 09 12 | 704 | 1.2− | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 12 | 704 | 0.8− | 0.3− | | | | |
| 2006 08 21 | 644 | 0.4+ | 0.3+ | 2006 09 12 | 704 | 0.3− | 0.2− | | | | |

**2006 QJ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.94338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25694326 | $\omega$ | 253.84809 | | +0.51528011 | | +0.85243894 |
| $a$ | 2.4504428 | $\Omega$ | 47.51106 | | −0.73329387 | | +0.49198698 |
| $e$ | 0.1522268 | $i$ | 6.89386 | | −0.44358370 | | +0.17690865 |
| $P$ | 3.84 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 29 | 644 | 0.2+ | 0.2− | 2005 03 30 | 703 | 0.5− | 1.5− | 2006 09 14 | 703 | 0.7− | 0.1− |
| 2002 07 29 | 644 | 0.1+ | 0.4− | 2005 03 30 | 703 | 0.2+ | 1.2− | 2006 09 14 | 703 | 0.3+ | 0.8− |
| 2002 07 29 | 644 | 0.1− | 0.3− | 2005 03 30 | 703 | 0.9− | 0.4− | 2006 09 19 | 608 | (0.2+ | 1.5−) |
| 2002 08 13 | 704 | 0.1− | 0.6− | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 19 | 608 | (0.2+ | 1.6−) |
| 2002 08 13 | 704 | 0.6+ | 0.5− | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 19 | 608 | 0.1+ | 1.4− |
| 2002 08 13 | 704 | 0.4− | 0.1− | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 1.2− | 0.8− |
| 2002 08 13 | 704 | 0.4− | 0.8− | 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.3− | 1.0+ |
| 2002 08 13 | 644 | 0.2+ | 0.3+ | 2006 08 21 | 644 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.7+ |
| 2002 08 13 | 644 | 0.3+ | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.6+ | 0.3− |
| 2002 08 13 | 644 | 0.5+ | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.1− | 1.1− |
| 2003 11 24 | 691 | 0.5+ | 0.1− | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 26 | 703 | (0.2+ | 1.8−) |
| 2003 11 24 | 691 | 0.1− | 0.1+ | 2006 08 22 | 644 | 0.6+ | 0.4− | 2006 09 26 | 703 | 0.1− | 0.4− |
| 2003 11 24 | 691 | 0.4− | 0.5− | 2006 08 30 | 699 | 0.3+ | 1.2+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2005 03 10 | 699 | 0.7− | 0.5+ | 2006 08 30 | 699 | 0.0 | 0.3+ | 2006 10 02 | 703 | 1.4+ | 1.2− |
| 2005 03 10 | 699 | (0.4− | 2.0+) | 2006 08 30 | 699 | 0.5− | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.6− |
| 2005 03 10 | 699 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.3− | 0.7+ | 2006 10 02 | 703 | 0.3− | 0.5+ |
| 2005 03 10 | 699 | 1.0+ | 0.3− | 2006 09 14 | 703 | 0.7+ | 0.2+ | 2006 10 02 | 703 | (1.8− | 0.8−) |
| 2005 03 30 | 703 | 0.8− | 1.1− | 2006 09 14 | 703 | 0.5− | 0.3+ | | | | |

**2006 QK$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.63738 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25192897 | $\omega$ | 310.39162 | | +0.98697097 | | −0.13685238 |
| $a$ | 2.4828509 | $\Omega$ | 57.63342 | | +0.16031790 | | +0.88107377 |
| $e$ | 0.2392648 | $i$ | 5.74948 | | −0.01365567 | | +0.45274765 |
| $P$ | 3.91 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.2− | 0.4− | 2006 09 26 | 703 | 0.6− | 0.3+ |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2006 08 30 | F84 | 0.6+ | 0.4− | 2006 09 26 | 703 | 1.1+ | 0.6− |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2006 08 30 | F84 | 0.7+ | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.2− |
| 2002 08 30 | 644 | 0.4+ | 0.1− | 2006 08 30 | F84 | 0.5+ | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.1+ | 0.1− | 2006 09 01 | F84 | 0.0 | 0.8− | 2006 09 27 | 703 | 0.6− | 0.6− |
| 2002 08 30 | 644 | 0.1+ | 0.0 | 2006 09 01 | F84 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 0.6+ | 0.1− |
| 2002 09 09 | 644 | 0.1+ | 0.3− | 2006 09 01 | F84 | 0.5+ | 0.2+ | 2006 10 10 | 644 | 0.5+ | 0.3+ |
| 2002 09 09 | 644 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 09 09 | 644 | 0.1− | 0.8− | 2006 09 14 | 703 | 0.1− | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2006 08 21 | 644 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.9− | 0.7− | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2006 08 21 | 644 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.5− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2006 08 21 | 644 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 1.5− | 0.9+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2006 08 22 | 644 | 0.6− | 0.2+ | 2006 09 21 | 699 | (2.0− | 1.6−) | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.3+ | 1.1+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2006 08 22 | 644 | 0.1− | 0.4+ | 2006 09 21 | 699 | 0.5− | 1.1− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.7− | 2006 11 23 | G96 | 0.1− | 0.3+ |
| 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.4− | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.9− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2006 08 30 | 699 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.3− | 0.7− | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2006 08 30 | 699 | 0.4− | 0.6+ | 2006 09 26 | 703 | 0.9+ | 0.5− | | | | |
| 2006 08 30 | 699 | 0.4+ | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.0 | | | | |

**2006 QL$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.12679 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27212177 | $\omega$ | 331.96558 | | +0.96389439 | | +0.26513283 |
| $a$ | 2.3584528 | $\Omega$ | 12.73264 | | −0.21847979 | | +0.84054825 |
| $e$ | 0.1404114 | $i$ | 6.44564 | | −0.15223069 | | +0.47242271 |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 11 | 703 | 0.1+ | 1.0+ | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 1999 11 11 | 703 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.1+ |
| 1999 11 11 | 703 | 0.0 | 1.3+ | 2006 08 28 | 699 | 0.7− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.4+ |
| 1999 11 11 | 703 | 1.5− | 0.9+ | 2006 08 28 | 699 | (1.9+ | 0.1+) | 2006 09 26 | 704 | 0.9+ | 1.5+ |
| 2005 03 17 | 691 | 0.1− | 0.9+ | 2006 08 28 | 699 | 0.7− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1− |
| 2005 03 17 | 691 | 0.2− | 0.3+ | 2006 08 28 | 699 | 1.3− | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.5+ |
| 2005 03 17 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2005 04 04 | 691 | 0.1− | 0.5+ | 2006 09 14 | 703 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2005 04 04 | 691 | 0.8+ | 0.2− | 2006 09 14 | 703 | (1.5+ | 1.7+) | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2005 04 04 | 691 | 0.5+ | 0.2− | 2006 09 14 | 703 | 0.7+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 16 | 699 | 0.6− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2006 08 21 | 644 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2006 08 21 | 644 | 0.1+ | 0.2− | 2006 09 16 | 699 | 0.3− | 1.1+ | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 19 | 699 | (1.8− | 0.2+) | 2006 11 11 | G96 | 0.2+ | 0.1− |

**2006 QO$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.67747 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19008321 | $\omega$ | 42.01922 | | +0.98167527 | | +0.05891830 |
| $a$ | 2.9957590 | $\Omega$ | 313.61964 | | −0.14991224 | | +0.82587619 |
| $e$ | 0.2675920 | $i$ | 14.49718 | | +0.11764347 | | +0.56076480 |
| $P$ | 5.19 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.0 | 0.5− | 2006 08 24 | 704 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.4− | 1.3− |
| 2001 10 18 | 704 | 0.5− | 0.5+ | 2006 08 24 | 704 | 0.3+ | 0.4+ | 2006 09 11 | 703 | 0.6− | 0.6− |
| 2001 10 18 | 704 | 0.9− | 0.2− | 2006 08 24 | 704 | 0.2+ | 0.7+ | 2006 09 11 | 703 | 0.6− | 0.0 |
| 2001 10 18 | 704 | 0.2+ | 1.0+ | 2006 08 24 | 704 | 0.3+ | 0.5+ | 2006 09 11 | 703 | 0.7− | 0.4− |
| 2001 11 12 | 704 | 1.2+ | 0.4− | 2006 08 29 | 703 | (0.7+ | 1.6+) | 2006 09 11 | 703 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.9+ | 0.3− | 2006 09 11 | 703 | 0.2− | 0.3+ |
| 2001 11 12 | 704 | 0.7+ | 1.2− | 2006 08 29 | 703 | 0.4+ | 0.5+ | 2006 09 16 | 691 | 0.1+ | 0.3+ |
| 2001 11 12 | 704 | 1.1+ | 1.4− | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 09 16 | 691 | 0.0 | 0.1+ |
| 2003 01 29 | 645 | 0.0 | 0.1+ | 2006 08 29 | 704 | 0.4+ | 0.4− | 2006 09 16 | 691 | 0.0 | 0.3+ |
| 2003 01 29 | 645 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.5− | 2006 09 19 | 699 | 1.0− | 0.8+ |
| 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.4+ |
| 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 08 30 | 699 | 1.1+ | 0.1− | 2006 09 19 | 699 | 0.7− | 0.7− |
| 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.6− | 0.8+ |
| 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.1+ |
| 2006 08 22 | 644 | 0.1+ | 0.2+ | 2006 08 30 | 699 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.0 |
| 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 11 | 703 | 0.4− | 0.8− | 2006 09 26 | 703 | 0.6+ | 0.4− |
| 2006 08 24 | 704 | 0.2− | 0.9+ | 2006 09 11 | 703 | 0.1− | 0.5− | 2006 09 26 | 703 | 0.6− | 0.8− |

**2006 QP$_{49}$ = 2005 GH$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.43699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27202027 | $\omega$ | 165.21108 | | +0.99706446 | −0.06729142 | |
| $a$ | 2.3590394 | $\Omega$ | 198.76289 | | +0.05348827 | +0.95351918 | |
| $e$ | 0.1413250 | $i$ | 6.52086 | | +0.05478564 | +0.29372273 | |
| $P$ | 3.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.1− | 1.1+ | 2006 08 27 | 699 | 0.1− | 0.5+ | 2006 09 29 | 699 | 1.1− | 0.1− |
| 1999 10 04 | 691 | 0.1+ | 0.2− | 2006 08 27 | 699 | 0.2− | 0.6+ | 2006 09 29 | 699 | 0.7+ | 0.0 |
| 1999 10 04 | 691 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 09 29 | 699 | 0.5+ | 1.0+ |
| 1999 11 05 | 704 | 0.2− | 0.3+ | 2006 08 29 | 704 | 0.4− | 0.6− | 2006 09 29 | 699 | 0.5+ | 1.0+ |
| 1999 11 05 | 704 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 1999 11 05 | 704 | 0.1− | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 1999 11 05 | 704 | 0.1− | 0.8+ | 2006 08 29 | 704 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2005 04 04 | 691 | 0.5+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.3− | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2005 04 04 | 691 | 0.6+ | 0.5+ | 2006 08 29 | 704 | 1.2+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.6− |
| 2005 04 04 | 691 | 0.1+ | 0.5+ | 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.5− |
| 2005 04 09 | G96 | 0.7− | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2005 04 09 | G96 | 0.6− | 0.2− | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.5− |
| 2005 04 09 | G96 | 0.4− | 0.5+ | 2006 08 30 | 704 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 2005 04 09 | G96 | 0.2− | 0.4+ | 2006 08 30 | 699 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2005 05 04 | G96 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.6+ | 2006 10 02 | G96 | 0.4− | 0.0 |
| 2005 05 04 | G96 | 0.9− | 0.2+ | 2006 08 30 | 699 | 0.6+ | 0.3+ | 2006 10 20 | 703 | 0.8+ | 0.0 |
| 2005 05 04 | G96 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 10 20 | 703 | 0.6+ | 0.4− |
| 2005 05 04 | G96 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.2+ | 0.3+ | 2006 10 20 | 703 | 1.2− | 0.7− |
| 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 11 | 703 | 1.3− | 0.1+ | 2006 10 20 | 703 | (1.9− | 0.5+) |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 11 | 703 | 0.5− | 0.0 | 2006 10 21 | 703 | 0.1− | 0.6+ |
| 2006 08 22 | 644 | 0.0 | 0.3− | 2006 09 11 | 703 | 1.1− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.8+ |
| 2006 08 24 | 704 | 0.0 | 0.3− | 2006 09 11 | 703 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.8+ |
| 2006 08 24 | 704 | 0.1+ | 0.7− | 2006 09 11 | 703 | 0.3− | 0.5− | 2006 10 21 | 703 | 1.1− | 0.2− |
| 2006 08 24 | 704 | 0.4− | 0.3− | 2006 09 11 | 703 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2006 08 24 | 704 | 0.2− | 0.1+ | 2006 09 11 | 703 | 0.8− | 0.8− | 2006 11 11 | 703 | (0.3+ | 1.7+) |
| 2006 08 24 | 704 | 0.3− | 0.2− | 2006 09 11 | 703 | 0.7+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2006 08 25 | A50 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2006 08 25 | A50 | 0.1+ | 0.6+ | 2006 09 18 | 704 | 1.0+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 08 25 | A50 | 0.5+ | 0.3+ | 2006 09 18 | 704 | 1.2+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 08 25 | A50 | 0.4− | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2006 08 25 | A50 | 0.7− | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2006 08 25 | A50 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1− | | | | |
| 2006 08 27 | 699 | 0.5− | 1.0+ | 2006 09 27 | 691 | 0.1− | 0.1− | | | | |

**2006 QY$_{49}$ = 1995 OG$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.34885 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26936627 | $\omega$ | 18.27101 | | +0.92745026 | +0.37356459 | |
| $a$ | 2.3745095 | $\Omega$ | 319.78039 | | −0.34627000 | +0.84087057 | |
| $e$ | 0.2149712 | $i$ | 1.49948 | | −0.14118462 | +0.39164548 | |
| $P$ | 3.66 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 0.5− | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3− | 0.6+ |
| 1995 07 27 | 691 | 0.4− | 0.4− | 2006 08 23 | 644 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.2− | 0.4− |
| 1995 07 27 | 691 | 0.4+ | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.4+ | 0.3− |
| 1995 08 03 | 691 | 0.5+ | 0.4− | 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 1995 08 03 | 691 | 0.3+ | 0.1− | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.4− |
| 1995 08 03 | 691 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.8+ | 0.1+ |
| 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.9− | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.5− | 0.2− |
| 2006 08 22 | 644 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.4− |

**2006 QC$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.03541 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28728720 | $\omega$ | 234.06259 | | +0.98183565 | −0.18231634 | |
| $a$ | 2.2747056 | $\Omega$ | 136.37363 | | +0.18915383 | +0.91894760 | |
| $e$ | 0.2040423 | $i$ | 4.36657 | | +0.01481869 | +0.34970855 | |
| $P$ | 3.43 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 691 | 0.3+ | 0.6+ | 2006 08 18 | 644 | 0.3− | 0.5+ | 2006 08 28 | 703 | 0.4− | 0.1+ |
| 1999 08 08 | 691 | 0.2− | 0.0 | 2006 08 18 | 644 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.3+ | 0.5− |
| 1999 08 08 | 691 | 0.2− | 0.2− | 2006 08 18 | 644 | 0.3− | 0.5+ | 2006 08 28 | 703 | 0.5+ | 0.3+ |
| 2001 02 21 | 691 | 0.5+ | 1.0+ | 2006 08 22 | 644 | 0.6− | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.6+ |
| 2001 02 21 | 691 | 0.1− | 0.0 | 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 09 14 | 703 | 1.4+ | 0.5+ |
| 2001 02 21 | 691 | 0.1+ | 0.8+ | 2006 08 22 | 644 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.5+ | 1.2− |
| 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.7+ |
| 2006 08 16 | 644 | 0.2− | 0.0 | 2006 08 24 | 644 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 2006 08 16 | 644 | 0.5− | 0.1+ | 2006 08 24 | 644 | 0.1+ | 0.1+ | | | | |

**2006 QF$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.37032 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25688341 | $\omega$ | 9.53729 | | +0.90703560 | +0.42062314 | |
| $a$ | 2.4508234 | $\Omega$ | 325.56880 | | −0.38849509 | +0.81860344 | |
| $e$ | 0.1960493 | $i$ | 1.92993 | | −0.16235141 | +0.39110687 | |
| $P$ | 3.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.3+ | 0.2− | 2006 08 22 | 644 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.3− |
| 2002 07 05 | 644 | 0.0 | 0.7− | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.7− |
| 2002 07 05 | 644 | 0.4− | 0.5− | 2006 08 24 | 644 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.2− | 0.1− |
| 2002 08 13 | 704 | 0.4+ | 0.6− | 2006 08 24 | 644 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.0 |
| 2002 08 13 | 704 | 0.5+ | 0.2− | 2006 08 24 | 644 | 0.2+ | 0.1− | 2006 09 14 | 703 | (0.5+ | 1.5−) |
| 2002 08 13 | 704 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.8− |
| 2006 07 18 | G96 | 0.3− | 0.4− | 2006 08 27 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.1+ |
| 2006 07 18 | G96 | 0.3− | 0.1− | 2006 08 27 | 691 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.6− |
| 2006 07 18 | G96 | 0.4− | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.5− |
| 2006 07 18 | G96 | 0.9− | 0.3− | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.6− |
| 2006 08 19 | A50 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.5+ | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2006 08 20 | A50 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2006 08 22 | 644 | 0.6− | 0.1+ | 2006 08 27 | 699 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 08 22 | 644 | 0.4− | 0.0 | 2006 08 27 | 699 | 1.2− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.8− |
| 2006 08 22 | 644 | 0.5− | 0.3+ | 2006 08 27 | 699 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.2− | 1.1− | | | | |

**2006 $QL_{50}$ = 1994 $SJ_9$ = 2000 $DN_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.01550 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24196321 | $\omega$ | 74.20488 | | +0.05607394 | | −0.99807418 |
| $a$ | 2.5505655 | $\Omega$ | 12.66953 | | +0.86350258 | | +0.03514187 |
| $e$ | 0.0910101 | $i$ | 6.94654 | | +0.50121752 | | +0.05111724 |
| $P$ | 4.07 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.0 | 0.1− | 2002 09 13 | 644 | 0.4− | 0.9+ | 2004 01 26 | 699 | 1.0− | 0.3− |
| 1994 09 28 | 691 | 0.1+ | 0.1− | 2002 09 13 | 644 | 0.2− | 0.7+ | 2004 01 26 | 699 | 0.1− | 1.0− |
| 1994 09 28 | 691 | 0.1+ | 0.4− | 2002 09 13 | 644 | 0.3− | 0.8+ | 2006 08 22 | 644 | 0.4− | 0.5+ |
| 1994 10 11 | 691 | 0.2− | 0.4− | 2002 10 11 | 704 | 0.3+ | 1.2+ | 2006 08 22 | 644 | 0.2− | 0.6+ |
| 1994 10 11 | 691 | 0.0 | 0.4− | 2002 10 11 | 704 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.3− | 0.4+ |
| 1994 10 11 | 691 | 0.6+ | 0.2− | 2002 10 11 | 704 | (0.5+ | 2.4+) | 2006 08 24 | 644 | 0.2− | 0.5+ |
| 1998 10 14 | 910 | 0.1+ | 0.1− | 2002 10 11 | 704 | 1.2− | 1.4+ | 2006 08 24 | 644 | 0.0 | 0.3+ |
| 1998 10 14 | 910 | 0.6+ | 0.2− | 2002 10 11 | 704 | 0.6− | 0.6+ | 2006 08 24 | 644 | 0.2− | 0.6+ |
| 1998 10 14 | 910 | 0.5+ | 0.1+ | 2003 12 18 | 704 | 0.7+ | 0.2− | 2006 08 30 | 699 | 0.6− | 1.1+ |
| 2000 02 28 | 704 | 0.1− | 1.8+ | 2003 12 18 | 704 | 0.3+ | 0.1+ | 2006 08 30 | 699 | 0.9− | 0.6+ |
| 2000 02 28 | 704 | 1.0+ | 1.1+ | 2003 12 18 | 704 | 0.7+ | 1.0− | 2006 08 30 | 699 | 0.7+ | 0.4+ |
| 2000 02 28 | 704 | 0.2+ | 0.4+ | 2003 12 18 | 704 | 0.1+ | 0.7− | 2006 08 30 | 699 | (0.6+ | 1.6+) |
| 2000 02 28 | 704 | 0.5+ | 0.7+ | 2003 12 27 | 704 | (3.0+ | 2.0+) | 2006 09 14 | 703 | 0.6− | 0.8+ |
| 2000 03 04 | 704 | 0.5+ | 0.6+ | 2003 12 27 | 704 | 0.3+ | 1.2+ | 2006 09 14 | 703 | 0.4− | 0.2+ |
| 2000 03 04 | 704 | 0.3− | 0.1− | 2003 12 27 | 704 | 1.3+ | 0.2+ | 2006 09 14 | 703 | 1.3− | 0.6− |
| 2000 03 04 | 704 | 0.5− | 0.4+ | 2003 12 27 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 703 | 0.5− | 0.1− |
| 2000 03 04 | 704 | 0.2+ | 0.4+ | 2003 12 29 | 704 | (2.1+ | 1.5+) | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2002 09 04 | 699 | (0.9+ | 1.6+) | 2003 12 29 | 704 | (1.9+ | 1.7+) | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 09 04 | 699 | 1.3+ | 0.1− | 2003 12 29 | 704 | (1.3+ | 2.3+) | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2002 09 04 | 699 | 0.7− | 0.5+ | 2004 01 26 | 699 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2002 09 04 | 699 | 0.3+ | 0.2+ | 2004 01 26 | 699 | 0.7− | 1.0+ | | | | |

**2006 $QM_{50}$ = 1999 $TA_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.88125 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27802374 | $\omega$ | 254.48895 | | +0.99439559 | | +0.08423861 |
| $a$ | 2.3249563 | $\Omega$ | 100.64684 | | −0.05322756 | | +0.92099664 |
| $e$ | 0.1853506 | $i$ | 3.72707 | | −0.09134678 | | +0.38035384 |
| $P$ | 3.55 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.0 | 0.3− | 2006 08 28 | 704 | 0.0 | 0.5+ | 2006 09 19 | 704 | 0.9+ | 0.8− |
| 1999 10 07 | 704 | 0.6+ | 0.3+ | 2006 08 28 | 704 | (0.4− | 1.6−) | 2006 09 19 | 704 | 0.0 | 0.1− |
| 1999 10 07 | 704 | 0.8+ | 0.7+ | 2006 08 28 | 704 | 1.4+ | 0.0 | 2006 09 19 | 704 | (1.3− | 1.7+) |
| 1999 10 07 | 704 | 0.7− | 0.7− | 2006 08 30 | 699 | 0.2− | 0.3− | 2006 09 19 | 704 | 0.4− | 0.2− |
| 1999 10 07 | 704 | 0.3− | 0.6+ | 2006 08 30 | 704 | 1.0+ | 1.0− | 2006 09 22 | 704 | 0.1− | 1.2− |
| 1999 10 08 | 704 | 0.2+ | 0.7+ | 2006 08 30 | 699 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.6− |
| 1999 10 08 | 704 | 0.1+ | 0.6− | 2006 08 30 | 704 | 0.3+ | 0.4− | 2006 09 22 | 704 | 0.0 | 0.2+ |
| 1999 10 08 | 704 | 0.6− | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.2+ | 2006 09 22 | 704 | 0.4+ | 0.3+ |
| 1999 10 08 | 704 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.3+ | 0.2+ | 2006 09 22 | 704 | 0.1+ | 0.5− |
| 1999 10 08 | 704 | 0.2− | 0.3+ | 2006 08 30 | 699 | 0.8+ | 0.0 | 2006 09 26 | 704 | 0.3− | 0.2− |
| 2006 07 21 | 703 | 0.6− | 0.4+ | 2006 09 12 | 704 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.4+ |
| 2006 07 21 | 703 | 0.2− | 0.6+ | 2006 09 12 | 704 | 0.8− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.4− |
| 2006 07 21 | 703 | 0.5− | 0.1− | 2006 09 12 | 704 | 0.3− | 1.0+ | 2006 09 26 | 704 | 0.1+ | 0.1+ |
| 2006 07 21 | 703 | 0.0 | 0.8+ | 2006 09 12 | 704 | 0.4− | 0.9− | 2006 09 26 | 704 | 0.3+ | 0.0 |
| 2006 08 22 | 644 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.3− | 0.6− | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2006 08 22 | 644 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.5+ | 0.1− | 2006 09 26 | 703 | 0.4− | 0.3− |
| 2006 08 22 | 644 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 2006 08 23 | 704 | 0.8− | 0.0 | 2006 09 14 | 703 | (2.8− | 0.6−) | 2006 09 26 | 703 | 0.3+ | 0.2+ |
| 2006 08 23 | 704 | 0.2− | 0.3+ | 2006 09 16 | 704 | 1.5+ | 0.1+ | 2006 10 02 | 703 | 1.0− | 0.7+ |
| 2006 08 23 | 704 | 0.5− | 0.5+ | 2006 09 16 | 704 | 0.3+ | 1.1+ | 2006 10 02 | 703 | 0.6− | 0.2+ |
| 2006 08 23 | 704 | 0.6− | 0.3+ | 2006 09 16 | 704 | 0.1− | 0.6− | 2006 10 02 | 703 | 0.8− | 0.8− |
| 2006 08 28 | 704 | 0.9+ | 0.3− | 2006 09 16 | 704 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.1+ | 0.3+ |

**2006 $QO_{50}$ = 2000 $JH_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.16421 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19211406 | $\omega$ | 155.18955 | | +0.43737148 | | +0.89003828 |
| $a$ | 2.9746095 | $\Omega$ | 140.39686 | | −0.85508322 | | +0.45588169 |
| $e$ | 0.1865682 | $i$ | 11.63854 | | −0.27845804 | | −0.00193718 |
| $P$ | 5.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 15 | 691 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.6+ |
| 1994 02 15 | 691 | 0.8− | 0.4− | 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.2− |
| 1994 02 15 | 691 | 0.6+ | 0.1+ | 2006 08 24 | 104 | 0.7+ | 0.0 | 2006 09 14 | 703 | 0.8+ | 0.3− |
| 2000 05 04 | 691 | 0.2+ | 0.0 | 2006 08 24 | 104 | 0.4− | 0.2+ | 2006 09 15 | 703 | 0.6− | 0.5− |
| 2000 05 04 | 691 | 0.2− | 0.1− | 2006 08 24 | 104 | 0.4+ | 0.6− | 2006 09 15 | 703 | 0.6− | 1.2− |
| 2000 05 04 | 691 | 0.3+ | 0.5− | 2006 08 26 | 104 | 0.1+ | 0.1− | 2006 09 15 | 703 | 0.1− | 0.2− |
| 2000 05 11 | 691 | 0.1+ | 0.1+ | 2006 08 26 | 104 | 0.2+ | 0.0 | 2006 09 15 | 703 | 0.4+ | 0.9− |
| 2000 05 11 | 691 | 0.2− | 0.0 | 2006 08 26 | 104 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.2+ |
| 2000 05 11 | 691 | 0.2− | 0.2+ | 2006 08 30 | 699 | 0.3+ | 1.2− | 2006 09 26 | 703 | 0.4− | 0.3+ |
| 2004 02 13 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.1− | 1.1+ | 2006 09 26 | 703 | 0.6+ | 0.7+ |
| 2004 02 13 | 691 | 0.3+ | 0.4− | 2006 08 30 | 699 | 0.2− | 0.8− | 2006 09 26 | 703 | 0.6− | 0.7− |
| 2004 02 13 | 691 | 0.4− | 0.1+ | 2006 08 30 | 699 | 0.6− | 0.3+ | | | | |
| 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.5+ | 0.8+ | | | | |

**2006 $QR_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.34072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28162759 | $\omega$ | 172.32530 | | +0.72010367 | | +0.69291669 |
| $a$ | 2.3050796 | $\Omega$ | 143.72545 | | −0.63982429 | | +0.68334681 |
| $e$ | 0.2273489 | $i$ | 3.51680 | | −0.26846897 | | +0.23000782 |
| $P$ | 3.50 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 29 | 691 | 1.0+ | 0.3− | 2006 08 27 | 699 | 0.7+ | 0.0 | 2006 09 25 | 699 | 0.8− | 0.0 |
| 1992 09 29 | 691 | 0.6+ | 0.7+ | 2006 08 28 | 703 | 1.0+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.9+ |
| 1992 09 29 | 691 | 1.7− | 0.2− | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.9− | 0.7+ |
| 1999 09 14 | 704 | 0.4+ | 1.3+ | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 09 25 | 699 | 0.3− | 1.1+ |
| 1999 09 14 | 704 | 0.5− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 0.9− | 0.5− |
| 1999 09 14 | 704 | 0.1− | 0.6+ | 2006 09 03 | A79 | 0.8− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.0 |
| 2005 03 10 | G96 | 1.0+ | 0.3+ | 2006 09 03 | A79 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.3− |
| 2005 03 10 | G96 | (0.5+ | 2.1+) | 2006 09 03 | A79 | 0.2+ | 0.6− | 2006 09 30 | 703 | (0.2− | 1.8−) |
| 2005 03 10 | G96 | 0.1− | 0.5+ | 2006 09 12 | 703 | 0.2− | 1.5− | 2006 10 11 | 644 | 0.2+ | 0.4− |
| 2005 03 10 | G96 | 0.4− | 0.5+ | 2006 09 12 | 703 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.3+ | 0.4− |
| 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 12 | 703 | 0.6+ | 0.5− | 2006 10 11 | 644 | 0.3+ | 0.3− |
| 2006 08 22 | 644 | 0.5+ | 0.1− | 2006 09 12 | 703 | 0.4− | 0.7− | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2006 08 24 | 644 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2006 08 24 | 644 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 11 23 | G96 | 1.2+ | 0.2− |
| 2006 08 24 | 644 | 0.2+ | 0.2− | 2006 09 22 | 704 | 1.3− | 0.7+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2006 08 27 | 699 | 1.7+ | 0.3− | 2006 09 22 | 704 | 0.7− | 0.3− | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2006 08 27 | 699 | 0.4+ | 0.3− | 2006 09 22 | 704 | 1.0− | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 09 22 | 704 | (1.7+ | 0.3+) | | | | |

**2006 $QS_{50}$ = 2004 $CG_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.57336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23356059 | $\omega$ | 209.23895 | | +0.94046053 | | +0.33691750 |
| $a$ | 2.6113776 | $\Omega$ | 131.00070 | | −0.29913793 | | +0.88319715 |
| $e$ | 0.1799318 | $i$ | 3.41463 | | −0.16140166 | | +0.32626583 |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 1.4− | 0.8+ | 2006 09 26 | 704 | 0.5+ | 0.6− |
| 2001 05 22 | 691 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.9+ | 0.3+ |
| 2001 05 22 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.6− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.1+ |
| 2002 11 07 | 704 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.1− | 0.8+ |
| 2002 11 07 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.4+ |
| 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 704 | 0.1− | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.1+ |
| 2004 02 11 | 691 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.5− | 0.4− | 2006 10 03 | G96 | 0.3+ | 0.0 |
| 2004 02 11 | 691 | 0.2− | 0.1+ | 2006 09 16 | 704 | 0.0 | 0.8− | 2006 10 03 | G96 | 0.2− | 0.4− |
| 2004 02 11 | 291 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.5− | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2004 02 11 | 291 | 0.1+ | 0.3+ | 2006 09 16 | 704 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.5− |
| 2004 02 11 | 291 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.6+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2004 02 22 | 695 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.5− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2004 02 22 | 695 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.3− | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.5− | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.5− | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2006 08 24 | 644 | 0.2− | 0.6+ | 2006 09 19 | 699 | 1.1− | 0.5+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2006 08 24 | 644 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.6− | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2006 08 24 | 644 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.5− | 2006 10 24 | 644 | 0.1− | 0.2− |
| 2006 08 27 | 691 | 0.6+ | 0.3− | 2006 09 22 | 704 | 0.4+ | 0.2+ | 2006 10 24 | 644 | 0.6− | 0.0 |
| 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.5− | 2006 10 24 | 644 | 0.3+ | 0.3− |
| 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.9+ | 0.5− | | | | |
| 2006 08 28 | 699 | 1.0− | 0.6+ | 2006 09 26 | 704 | 0.6+ | 0.1− | | | | |

## 2006 QW$_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.70071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28900037 | $\omega$ | 163.13381 | | +0.99588227 | +0.09043988 | |
| $a$ | 2.2657072 | $\Omega$ | 191.68260 | | −0.08633333 | +0.92508037 | |
| $e$ | 0.2060824 | $i$ | 1.77048 | | −0.02765983 | +0.36884542 | |
| $P$ | 3.41 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 11 | 691 | 0.2− | 0.4− | 2006 09 17 | 704 | 0.4− | 0.9+ | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 1999 11 11 | 691 | 0.5+ | 0.1+ | 2006 09 17 | 704 | 1.1+ | 0.4− | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 1999 11 11 | 691 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.1− | 0.3+ |
| 2005 03 10 | G96 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.6+ | 2006 09 30 | 704 | 0.0 | 0.4+ |
| 2005 03 10 | G96 | 0.6+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2005 03 10 | G96 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2005 03 10 | G96 | 0.5− | 0.6+ | 2006 09 19 | 699 | 0.6+ | 0.1+ | 2006 09 30 | 704 | 0.1− | 0.5+ |
| 2006 08 22 | 644 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.1− | 2006 09 30 | 704 | 0.2− | 0.1− |
| 2006 08 22 | 644 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.6+ | 2006 09 30 | 703 | (1.3+ | 2.6−) |
| 2006 08 24 | 644 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.0 | 0.1− |
| 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 24 | 106 | 0.4− | 0.6− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2006 08 28 | 704 | 0.4− | 0.3− | 2006 09 24 | 106 | 0.9+ | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 704 | 0.7+ | 1.2− | 2006 09 24 | 106 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2006 08 28 | 704 | 1.2+ | 0.4+ | 2006 09 24 | 106 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.5− |
| 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2006 08 28 | 704 | 0.3+ | 0.7− | 2006 09 25 | 699 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2006 08 28 | 703 | 0.2+ | 0.8− | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2006 08 28 | 703 | 0.8− | 1.1+ | 2006 09 25 | 699 | 0.2− | 0.3− | 2006 10 16 | G96 | 0.7+ | 0.4− |
| 2006 08 28 | 703 | 0.3+ | 1.0− | 2006 09 26 | 704 | 0.7− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 1.4− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 26 | 704 | 1.1− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.3− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2006 09 01 | 704 | 0.4+ | 0.4− | 2006 09 26 | 704 | 1.1− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2006 09 01 | 704 | 0.6− | 0.5− | 2006 09 27 | 704 | 0.7− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 09 01 | 704 | 0.1− | 0.5+ | 2006 09 27 | 704 | 1.0− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 09 01 | 704 | 0.2− | 0.5+ | 2006 09 27 | 704 | 1.0− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2006 09 13 | 644 | 0.2+ | 0.4− | 2006 09 27 | 704 | (2.3− | 0.9+) | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2006 09 13 | 644 | 0.2+ | 0.3− | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.5+ | 0.0 |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | (2.0+ | 0.3−) |
| 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.3− |
| 2006 09 14 | 644 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.3− | 0.9+ | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2006 09 17 | 704 | 0.3− | 0.2− | 2006 09 29 | 704 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2006 09 17 | 704 | 1.0+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.6+ | | | | |

## 2006 QX$_{50}$ = 1996 TT$_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.41107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29582294 | $\omega$ | 338.86707 | | +0.99663735 | −0.07799954 | |
| $a$ | 2.2307359 | $\Omega$ | 25.64557 | | +0.08100587 | +0.89182126 | |
| $e$ | 0.2008532 | $i$ | 3.32480 | | +0.01233020 | +0.44561296 | |
| $P$ | 3.33 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 809 | 0.1+ | 0.3+ | 2006 09 16 | 704 | 0.8− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.8+ |
| 1996 10 06 | 809 | 0.5+ | 0.6+ | 2006 09 16 | 704 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 1996 10 06 | 809 | 0.7+ | 0.3+ | 2006 09 16 | 704 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 1996 10 07 | 809 | 0.5− | 0.7− | 2006 09 16 | 704 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 1996 10 07 | 809 | 0.3− | 0.7− | 2006 09 18 | 703 | 1.2− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1996 10 07 | 809 | 0.2− | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2003 12 18 | 704 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.9+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2003 12 18 | 704 | 0.8− | 0.7+ | 2006 09 18 | 703 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.5+ | 0.7+ | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 2005 03 08 | G96 | 0.4+ | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.5+ | 0.1− |
| 2005 03 08 | G96 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.6− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2005 03 08 | G96 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.7+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2005 03 08 | G96 | 0.6− | 0.1+ | 2006 09 19 | 703 | 1.0− | 0.5− | 2006 10 16 | 703 | 0.4+ | 1.1− |
| 2005 04 09 | G96 | 0.4+ | 0.2+ | 2006 09 19 | 704 | 1.3+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2005 04 09 | G96 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2005 04 09 | G96 | 0.3− | 0.0 | 2006 09 19 | 704 | 0.0 | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2005 04 09 | G96 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.8− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 08 22 | 644 | 0.1− | 0.4− | 2006 09 19 | 703 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 19 | 704 | (1.6− | 1.2+) | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 19 | 704 | 1.0+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.6− | 0.8− | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2006 08 24 | 644 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.8− | 0.2− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.6− | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.9− | 0.8− | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2006 08 27 | 691 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2006 08 28 | 699 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.6+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2006 08 28 | 699 | 0.6− | 0.7+ | 2006 09 26 | 704 | 0.8+ | 0.2− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2006 08 28 | 699 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 08 28 | 699 | 0.6+ | 0.3− | 2006 09 26 | 704 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 09 12 | 703 | 0.7+ | 0.2− | 2006 09 26 | 704 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 09 12 | 703 | 0.4− | 0.4− | 2006 09 28 | 704 | 0.6+ | 0.5− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2006 09 12 | 703 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2006 09 14 | 644 | 0.3+ | 0.2− | 2006 09 28 | 704 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.1+ |
| 2006 09 14 | 644 | 0.4+ | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2006 09 16 | 704 | 0.3− | 0.5− | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.6+ | 0.2− |

## 2006 QY$_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.56888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22000617 | $\omega$ | 301.65528 | | +0.91252682 | +0.40749546 | |
| $a$ | 2.7175621 | $\Omega$ | 34.33341 | | −0.35091908 | +0.82426525 | |
| $e$ | 0.2142484 | $i$ | 3.58284 | | −0.21012046 | +0.39310844 | |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.4− | 2006 09 26 | 704 | 0.4+ | 0.2− |
| 2002 11 14 | 704 | (1.5− | 1.3+) | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.2+ | 0.1+ |
| 2002 11 14 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.8+ | 0.2− |
| 2002 11 14 | 704 | 0.4+ | 1.0+ | 2006 09 16 | 704 | (1.1− | 4.7+) | 2006 09 28 | 704 | (0.3+ | 1.6+) |
| 2002 11 24 | 644 | 0.2+ | 0.6+ | 2006 09 16 | 704 | (0.3− | 4.3+) | 2006 09 28 | 704 | 0.2+ | 0.6+ |
| 2002 11 24 | 644 | 0.2− | 0.7+ | 2006 09 16 | 704 | 1.2− | 0.9+ | 2006 09 28 | 704 | 0.8+ | 0.8+ |
| 2002 11 24 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 1.0− | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.5− |
| 2002 12 11 | 704 | 1.0− | 0.6− | 2006 09 16 | 704 | 1.1− | 1.5+ | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.5− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.6− | 2006 09 30 | 704 | 0.9− | 0.2+ |
| 2002 12 11 | 704 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2005 05 01 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.5− | 2006 09 30 | 704 | 0.2− | 0.3+ |
| 2005 05 01 | 644 | 0.7+ | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.4− |
| 2005 05 01 | 644 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 09 30 | 704 | 0.9− | 0.3+ |
| 2005 05 11 | G96 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 2005 05 11 | G96 | 0.2− | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2005 05 11 | G96 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2005 05 11 | G96 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3− |
| 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 19 | 704 | (2.4+ | 0.5+) | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2006 08 16 | 644 | 0.0 | 0.6− | 2006 09 19 | 704 | 0.8+ | 0.5− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 19 | 704 | (1.8+ | 0.1+) | 2006 10 16 | 703 | 0.1+ | 1.1− |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 19 | 704 | 1.3+ | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.5− |
| 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 19 | H06 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 19 | H06 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2006 08 24 | 644 | 0.1− | 0.0 | 2006 09 19 | H06 | 0.8− | 0.9− | 2006 10 20 | 644 | 0.5+ | 0.0 |
| 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.0 | 1.4+ | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.3− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 08 27 | 691 | 0.4− | 0.1− | 2006 09 22 | 704 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2006 08 27 | 691 | 0.5− | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2006 08 28 | 704 | 0.6+ | 0.3− | 2006 09 22 | 704 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2006 08 28 | 704 | 0.4− | 0.2+ | 2006 09 22 | 704 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 28 | 704 | 0.0 | 0.7+ | 2006 09 22 | 704 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2006 08 28 | 704 | 0.0 | 1.4+ | 2006 09 22 | 704 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 28 | 699 | 0.8+ | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2006 08 28 | 699 | 0.8+ | 0.7− | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 08 28 | 699 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2006 08 28 | 699 | 0.7− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2006 09 12 | 703 | 1.2+ | 0.4+ | 2006 09 25 | 699 | 0.4+ | 0.4+ | 2006 11 18 | 703 | 0.0 | 0.7+ |
| 2006 09 12 | 703 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.3+ | 0.4− | 2006 11 18 | 703 | 0.4− | 1.3− |
| 2006 09 12 | 703 | 0.4+ | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.0 | 2006 11 18 | 703 | 1.3+ | 0.0 |
| 2006 09 12 | 703 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.6+ | 0.5+ | 2006 11 18 | 703 | 0.1− | 0.0 |

### 2006 QK$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.78369 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28131847 | $\omega$ | 278.00005 | | +0.09662984 | | +0.99530999 |
| $a$ | 2.3067678 | $\Omega$ | 357.53134 | | −0.86651910 | | +0.08187517 |
| $e$ | 0.2208701 | $i$ | 6.06397 | | −0.48970126 | | +0.05152170 |
| $P$ | 3.50 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.3+ | 0.3+ | 2006 07 18 | E12 | 0.0 | 0.1+ | 2006 08 14 | 644 | 0.3− | 0.2+ |
| 2002 04 04 | 644 | 0.0 | 0.2+ | 2006 07 18 | E12 | 0.3+ | 0.7− | 2006 08 14 | 644 | 0.1− | 0.1− |
| 2002 04 04 | 644 | 0.5+ | 0.3+ | 2006 07 18 | E12 | 0.3+ | 0.2− | 2006 08 14 | 644 | 0.1− | 0.1+ |
| 2002 04 07 | 807 | 0.3− | 0.1− | 2006 08 12 | 644 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.1− | 0.1− |
| 2002 04 07 | 807 | 0.2− | 0.1− | 2006 08 12 | 644 | 0.3+ | 0.2+ | 2006 08 23 | 644 | 0.0 | 0.0 |
| 2003 10 23 | 691 | 0.1− | 0.2+ | 2006 08 12 | 644 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.0 | 0.1+ |
| 2003 10 23 | 691 | 0.2− | 0.3− | 2006 08 14 | 644 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.2+ |
| 2003 10 23 | 691 | 0.3+ | 0.1+ | 2006 08 14 | 644 | 0.0 | 0.2− | 2006 08 24 | 644 | 0.1− | 0.3+ |
| 2006 07 18 | E12 | 0.2− | 0.3− | 2006 08 14 | 644 | 0.1+ | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.2+ |

### 2006 QR$_{51}$ = 2003 XT$_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.97579 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25940963 | $\omega$ | 183.40676 | | −0.08748656 | | +0.98761862 |
| $a$ | 2.4348861 | $\Omega$ | 81.60363 | | −0.91082470 | | −0.02636991 |
| $e$ | 0.1075209 | $i$ | 7.56347 | | −0.40341599 | | −0.15464184 |
| $P$ | 3.80 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 17 | 644 | 0.1− | 0.0 | 2003 11 19 | 691 | 0.0 | 0.0 | 2006 08 16 | E12 | 0.1− | 0.2+ |
| 2002 06 17 | 644 | 0.1+ | 0.2− | 2003 12 01 | 704 | 0.3− | 0.2+ | 2006 08 16 | E12 | 0.6+ | 0.4− |
| 2002 06 17 | 644 | 0.1+ | 0.0 | 2003 12 01 | 704 | 0.0 | 0.9+ | 2006 08 16 | E12 | 0.2− | 0.9− |
| 2002 07 12 | 644 | 0.1+ | 0.5+ | 2003 12 01 | 704 | 0.0 | 0.5+ | 2006 08 16 | E12 | 0.0 | 0.6− |
| 2002 07 12 | 644 | 0.3+ | 0.4+ | 2003 12 19 | 691 | 0.2− | 0.2− | 2006 08 23 | 644 | 0.7− | 0.0 |
| 2002 07 12 | 644 | 0.2+ | 0.3+ | 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.2+ | 0.2+ |
| 2002 08 05 | 644 | 0.3− | 0.4− | 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.3+ |
| 2002 08 05 | 644 | 0.3− | 0.2− | 2005 03 16 | 703 | 0.3− | 0.4+ | 2006 08 24 | 644 | 0.1+ | 0.3+ |
| 2002 08 05 | 644 | 0.4− | 0.2− | 2005 03 16 | 703 | 0.1+ | 0.2+ | 2006 08 24 | 644 | 0.1− | 0.0 |
| 2003 11 19 | 691 | 0.0 | 0.0 | 2005 03 16 | 703 | 0.1+ | 1.5− | 2006 08 24 | 644 | 0.3+ | 0.3+ |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2005 03 16 | 703 | 0.1− | 0.5+ | | | | |

### 2006 QF$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.31815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19365201 | $\omega$ | 325.18447 | | +0.91341532 | | +0.40547492 |
| $a$ | 2.9588393 | $\Omega$ | 11.06526 | | −0.31858516 | | +0.76654136 |
| $e$ | 0.1298780 | $i$ | 10.66893 | | −0.25332972 | | +0.49800043 |
| $P$ | 5.09 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 809 | 0.9+ | 1.3− | 2001 09 21 | 704 | 0.4− | 0.8+ | 2006 08 28 | E12 | 0.5+ | 0.2− |
| 1996 10 06 | 809 | 0.5+ | 1.4− | 2001 09 21 | 704 | 1.0− | 0.1+ | 2006 08 28 | E12 | 0.1− | 0.2− |
| 1996 10 06 | 809 | 1.7+ | 0.9− | 2001 09 21 | 704 | 1.0− | 0.9+ | 2006 08 28 | E12 | 0.0 | 0.1+ |
| 2001 08 25 | 699 | 0.2+ | 0.1− | 2001 09 27 | 644 | 0.7− | 0.3+ | 2006 08 28 | E12 | 0.3+ | 0.6− |
| 2001 08 25 | 699 | 0.1− | 0.5+ | 2001 09 27 | 644 | 0.4− | 0.3+ | 2006 09 20 | 703 | 0.2− | 0.1− |
| 2001 08 25 | 699 | 0.2+ | 0.8+ | 2001 09 27 | 644 | 0.8− | 0.7+ | 2006 09 20 | 703 | 0.7− | 0.1− |
| 2001 08 25 | 699 | 0.0 | 0.3+ | 2006 08 23 | 644 | 0.5+ | 0.7− | 2006 09 20 | 703 | 0.3− | 0.7+ |
| 2001 09 12 | 704 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.5+ | 0.7− | 2006 09 20 | 703 | 0.7− | 0.3+ |
| 2001 09 12 | 704 | 0.4+ | 0.2− | 2006 08 23 | 644 | 1.1+ | 0.4− | 2006 09 26 | 703 | (0.8+ | 1.7+) |
| 2001 09 12 | 704 | 0.5− | 0.2+ | 2006 08 24 | 644 | 0.2+ | 0.5− | 2006 09 26 | 703 | 0.5− | 0.8+ |
| 2001 09 12 | 704 | 0.3− | 0.1− | 2006 08 24 | 644 | 0.4+ | 0.6− | 2006 09 26 | 703 | 0.4+ | 0.3+ |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2006 08 24 | 644 | 0.4+ | 0.5− | 2006 09 26 | 703 | 0.1− | 1.0+ |

### 2006 QH$_{52}$ = 2004 CU$_{8}$ = 2005 GH$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.92617 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21558789 | $\omega$ | 266.09137 | | +0.87195321 | | +0.48860170 |
| $a$ | 2.7545658 | $\Omega$ | 64.65752 | | −0.43443743 | | +0.80143905 |
| $e$ | 0.0750823 | $i$ | 1.97076 | | −0.22574702 | | +0.34491133 |
| $P$ | 4.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2005 04 02 | G96 | 0.7− | 0.1− | 2006 08 24 | 644 | 0.5+ | 0.1− |
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2005 04 02 | G96 | 1.1− | 0.1+ | 2006 08 24 | 644 | 0.3− | 0.1+ |
| 2004 01 30 | 691 | 0.3+ | 0.1− | 2005 04 07 | 691 | 0.2+ | 0.0 | 2006 08 24 | 644 | 0.1− | 0.0 |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2005 04 07 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 1.0+ |
| 2004 02 11 | 691 | 0.4+ | 0.3+ | 2005 04 07 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.5− |
| 2004 02 11 | 691 | 0.4+ | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 1.0− | 1.2+ |
| 2004 02 12 | 291 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | (0.7+ | 2.5+) |
| 2004 02 12 | 291 | 0.3− | 0.1+ | 2006 08 18 | 644 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2004 02 12 | 291 | 0.8− | 0.3+ | 2006 08 23 | 644 | 0.5− | 0.7+ | 2006 10 22 | G96 | 0.3− | 0.3+ |
| 2005 04 02 | G96 | 0.3− | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 08 23 | 644 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.2+ |

### 2006 QB$_{53}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.11176 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22948331 | $\omega$ | 263.20920 | | +0.93030731 | | −0.29094723 |
| $a$ | 2.6422180 | $\Omega$ | 113.51004 | | +0.34919923 | | +0.88884862 |
| $e$ | 0.2476435 | $i$ | 14.09622 | | −0.11219717 | | +0.35397434 |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.9− | 0.6+ | 2002 12 13 | 644 | 0.1+ | 0.1− | 2006 08 24 | 644 | 0.2− | 0.1− |
| 2002 10 30 | 704 | 0.3− | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 16 | E12 | 0.5+ | 0.3+ |
| 2002 10 30 | 704 | 0.5+ | 1.0+ | 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 16 | E12 | 0.6+ | 0.2− |
| 2002 11 07 | 699 | 0.9− | 0.4− | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 16 | E12 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 699 | 0.1− | 0.1− | 2006 08 23 | 644 | 0.3+ | 0.3− | 2006 09 16 | E12 | 0.4− | 0.2− |
| 2002 11 07 | 699 | 1.3+ | 0.7− | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 10 12 | E12 | 0.0 | 0.4− |
| 2002 11 07 | 699 | 0.1− | 0.6− | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 10 12 | E12 | 0.3+ | 0.1− |
| 2002 12 13 | 644 | 0.3+ | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 10 12 | E12 | 0.4+ | 0.7+ |
| 2002 12 13 | 644 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1− | 2006 10 12 | E12 | 1.0− | 0.2+ |

**2006 QC$_{53}$ = 2003 XU$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.13454 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22693378 | $\omega$ | 251.14952 | | −0.64712872 | | +0.75967465 |
| $a$ | 2.6619707 | $\Omega$ | 338.12771 | | −0.61843941 | | −0.57231138 |
| $e$ | 0.0812863 | $i$ | 9.91996 | | −0.44582183 | | −0.30879460 |
| $P$ | 4.34 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.0 | 0.1− | 2005 05 16 | 644 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.6+ |
| 2003 12 14 | 691 | 0.1+ | 0.1− | 2006 08 23 | 644 | 0.3+ | 0.1− | 2006 08 28 | 703 | 1.1+ | 0.7+ |
| 2003 12 14 | 691 | 0.0 | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.4+ |
| 2003 12 18 | 691 | 0.4− | 0.2+ | 2006 08 23 | 644 | 0.2− | 0.1− | 2006 08 31 | 947 | 0.2+ | 0.3− |
| 2003 12 18 | 691 | 0.2− | 0.4− | 2006 08 24 | 644 | 0.3− | 0.4+ | 2006 08 31 | 947 | 0.1− | 0.0 |
| 2003 12 18 | 691 | 0.2− | 0.3+ | 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 08 31 | 947 | 0.3+ | 0.1− |
| 2003 12 28 | 691 | 0.5+ | 0.1− | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2003 12 28 | 691 | 0.4+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.5− |
| 2003 12 28 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.7− |
| 2005 05 16 | 644 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.4− | 0.4− |
| 2005 05 16 | 644 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.7− | 0.2− | | | | |

**2006 QE$_{54}$ = 2002 GB$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.85088 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29028734 | $\omega$ | 227.02523 | | +0.73178745 | | +0.67409191 |
| $a$ | 2.2590057 | $\Omega$ | 90.32316 | | −0.59241819 | | +0.70201229 |
| $e$ | 0.2018462 | $i$ | 5.76432 | | −0.33693888 | | +0.22973647 |
| $P$ | 3.40 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 07 | 691 | (4.6+ | 3.7+) | 2006 08 16 | E12 | 0.5+ | 0.2+ | 2006 09 14 | 644 | 0.5+ | 0.3+ |
| 1992 05 07 | 691 | 0.1− | 0.1+ | 2006 08 16 | E12 | 0.8+ | 0.2+ | 2006 09 20 | 703 | 0.5− | 0.5+ |
| 1992 05 07 | 691 | 0.3+ | 0.4+ | 2006 08 16 | E12 | 0.6+ | 0.3+ | 2006 09 20 | 703 | 0.8− | 0.6+ |
| 2002 04 11 | 704 | 0.2− | 0.1− | 2006 08 16 | E12 | 0.6− | 1.5− | 2006 09 20 | 703 | 0.5− | 0.6− |
| 2002 04 11 | 704 | 1.2+ | 0.5− | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.8− | 0.6− |
| 2002 04 11 | 704 | 0.6− | 0.2+ | 2006 08 24 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2002 04 11 | 704 | 0.8+ | 0.4− | 2006 08 24 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.6+ |
| 2002 04 13 | 644 | 0.2− | 0.6+ | 2006 08 28 | E12 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2002 04 13 | 644 | 0.2+ | 0.6+ | 2006 08 28 | E12 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.8− |
| 2002 04 13 | 644 | 0.6− | 0.7+ | 2006 08 28 | E12 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.2− | 1.2+ |
| 2003 12 01 | 704 | 0.3− | 0.6+ | 2006 08 28 | E12 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.5− | 1.2+ |
| 2003 12 01 | 704 | 0.3− | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 1.1− |
| 2003 12 01 | 704 | 0.1+ | 1.1+ | 2006 09 14 | 644 | 0.2+ | 0.2+ | | | | |

**2006 QK$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.43174 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17873573 | $\omega$ | 44.26201 | | +0.92667189 | | +0.34843106 |
| $a$ | 3.1212494 | $\Omega$ | 294.86345 | | −0.37332729 | | +0.80964255 |
| $e$ | 0.3141212 | $i$ | 8.93887 | | −0.04365713 | | +0.47230788 |
| $P$ | 5.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.7− | 0.2− | 2006 08 25 | A50 | 0.2+ | 1.5+ | 2006 08 30 | 699 | 0.0 | 0.5− |
| 2001 11 11 | 704 | 0.2+ | 0.5− | 2006 08 25 | A50 | 0.8+ | 0.7+ | 2006 08 30 | 699 | 0.5− | 0.6− |
| 2001 11 11 | 704 | 0.7− | 0.4− | 2006 08 25 | A50 | 0.8+ | 1.0+ | 2006 08 30 | 699 | 0.1+ | 0.4− |
| 2001 11 11 | 704 | 0.6+ | 0.9+ | 2006 08 25 | A50 | 0.8+ | 0.8+ | 2006 09 11 | 703 | 0.6− | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 0.3− | 2006 08 27 | 699 | 0.8− | 0.0 | 2006 09 11 | 703 | 0.2− | 0.4− |
| 2001 12 09 | 704 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 09 11 | 703 | 0.8− | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 0.2+ | 2006 08 27 | 699 | 0.8+ | 1.2− | 2006 09 11 | 703 | 0.0 | 0.6− |
| 2006 08 17 | 644 | 0.1− | 0.5− | 2006 08 27 | 699 | 0.4− | 0.4− | 2006 09 18 | 703 | 0.4− | 0.5− |
| 2006 08 17 | 644 | 0.1− | 0.4− | 2006 08 29 | 703 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.4− | 0.1+ |
| 2006 08 17 | 644 | 0.1− | 0.5− | 2006 08 29 | 704 | 0.5+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.3+ |
| 2006 08 22 | 644 | 0.2+ | 0.5− | 2006 08 29 | 703 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 2006 08 22 | 644 | 0.0 | 0.4− | 2006 08 29 | 703 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2006 08 22 | 644 | 0.1+ | 0.3− | 2006 08 29 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2006 08 25 | A50 | 0.5+ | 1.4+ | 2006 08 29 | 703 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2006 08 25 | A50 | 0.3+ | 1.4+ | 2006 08 29 | 704 | (1.7− | 0.2−) | | | | |

**2006 QW$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.99349 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22905640 | $\omega$ | 155.45367 | | +0.71529992 | | +0.69867638 |
| $a$ | 2.6455000 | $\Omega$ | 160.20419 | | −0.64781193 | | +0.67049611 |
| $e$ | 0.2011255 | $i$ | 2.37723 | | −0.26207963 | | +0.24957219 |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 691 | 0.4− | 0.5− | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 20 | 608 | 0.1− | 0.4+ |
| 2000 02 08 | 691 | 0.4− | 0.2+ | 2006 08 18 | 699 | 0.4+ | 1.5− | 2006 09 22 | D35 | 0.4− | 0.2+ |
| 2000 02 08 | 691 | 0.2− | 0.2+ | 2006 08 18 | 699 | 0.5− | 0.1+ | 2006 09 22 | D35 | 0.4− | 0.0 |
| 2001 05 18 | 704 | 0.3+ | 0.7+ | 2006 08 18 | 699 | 0.2− | 1.5+ | 2006 09 22 | D35 | 0.5− | 0.1+ |
| 2001 05 18 | 704 | 0.2+ | 0.5+ | 2006 08 18 | 699 | 1.1− | 0.4+ | 2006 09 24 | 106 | (0.7+ | 2.0−) |
| 2001 05 18 | 704 | 0.5+ | 0.5+ | 2006 08 25 | 704 | 0.5− | 0.1+ | 2006 09 24 | 106 | 0.6+ | 1.4− |
| 2001 05 26 | 691 | 0.1− | 0.3+ | 2006 08 25 | 704 | 0.4− | 0.7− | 2006 09 24 | 106 | 0.1− | 0.8− |
| 2001 05 26 | 691 | 0.1− | 0.4+ | 2006 08 25 | 704 | 0.1+ | 0.5+ | 2006 09 24 | 106 | 0.5+ | 0.8+ |
| 2001 05 26 | 691 | 0.0 | 0.4+ | 2006 08 27 | 691 | (0.6+ | 2.4−) | 2006 09 25 | 699 | 0.1+ | 0.3+ |
| 2002 10 18 | 644 | 0.0 | 0.9+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.4+ |
| 2002 10 18 | 644 | 0.1+ | 1.2+ | 2006 08 27 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.3+ |
| 2002 10 18 | 644 | 0.2+ | 0.7+ | 2006 09 12 | 703 | 0.3− | 0.4− | 2006 09 25 | 699 | 0.3− | 0.3+ |
| 2002 10 31 | 644 | 0.1− | 0.7+ | 2006 09 12 | 703 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2002 10 31 | 644 | 0.4− | 0.8+ | 2006 09 12 | 703 | 0.2+ | 0.6− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 10 31 | 644 | 0.5− | 0.9+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2002 11 11 | 704 | 0.6+ | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2002 11 11 | 704 | 0.4+ | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.5+ |
| 2002 11 11 | 704 | 1.1+ | 1.0+ | 2006 09 16 | 699 | 1.1− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2002 11 11 | 704 | 0.8+ | 0.2− | 2006 09 16 | 699 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2004 02 11 | 691 | 0.5+ | 0.7+ | 2006 09 16 | 699 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2004 02 11 | 691 | 0.1− | 0.6+ | 2006 09 16 | 699 | 0.7+ | 1.0+ | 2006 10 16 | 703 | 0.7− | 0.9− |
| 2004 02 11 | 691 | 0.4− | 0.6+ | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 10 16 | 703 | 1.0− | 0.2+ |
| 2005 03 17 | 691 | 0.8+ | 0.6− | 2006 09 17 | 704 | 0.5− | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2005 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 1.0+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2005 03 17 | 691 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.8+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2005 04 02 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 1.1− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.7− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2005 04 10 | G96 | 0.0 | 0.2+ | 2006 09 20 | 704 | (0.3− | 5.6−) | 2006 10 21 | 644 | 0.1− | 0.5− |
| 2005 04 10 | G96 | 0.3− | 0.0 | 2006 09 20 | 704 | (0.2+ | 2.9−) | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2005 04 10 | G96 | 0.7− | 0.9+ | 2006 09 20 | 704 | (0.3− | 3.6−) | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 04 10 | G96 | 0.6+ | 0.2+ | 2006 09 20 | 704 | (1.0− | 2.6−) | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 20 | 704 | (0.9− | 5.7−) | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2006 07 21 | G96 | 0.1− | 0.4− | 2006 09 20 | 608 | (0.8− | 1.7+) | | | | |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 20 | 608 | (0.9− | 1.8+) | | | | |

**2006 QU$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.38768 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23671949 | $\omega$ | 358.68349 | | +0.96548815 | | +0.25486902 |
| $a$ | 2.5880940 | $\Omega$ | 346.18913 | | −0.23685598 | | +0.77362170 |
| $e$ | 0.1955209 | $i$ | 12.97874 | | −0.10831375 | | +0.58013037 |
| $P$ | 4.16 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.1+ | 0.5+ | 2004 02 23 | 704 | (2.4+ | 4.9+) | 2006 09 18 | 703 | 0.0 | 0.1− |
| 2000 03 03 | 704 | 0.9+ | 0.4+ | 2004 03 14 | 703 | 0.7− | 0.3− | 2006 09 18 | 703 | 0.5− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.6− | 0.5+ | 2004 03 14 | 703 | 0.6+ | 0.9+ | 2006 09 18 | 703 | 0.4− | 0.2+ |
| 2000 03 03 | 704 | 0.2− | 0.4+ | 2004 03 14 | 703 | (2.9+ | 3.7−) | 2006 09 21 | 704 | 0.6− | 0.4− |
| 2002 10 06 | 704 | 0.1− | 0.5− | 2004 03 14 | 703 | 0.2− | 0.2− | 2006 09 21 | 704 | 0.4− | 0.8+ |
| 2002 10 06 | 704 | 0.1+ | 0.2+ | 2006 08 06 | 699 | 0.0 | 0.0 | 2006 09 21 | 704 | (1.7+ | 0.1+) |
| 2002 10 06 | 704 | 0.4− | 0.2− | 2006 08 06 | 699 | 0.4− | 1.1+ | 2006 09 28 | 703 | 0.3− | 0.0 |
| 2002 10 06 | 704 | 0.2+ | 0.4− | 2006 08 06 | 699 | 0.4+ | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.1− |
| 2002 10 13 | 644 | 0.1− | 0.9− | 2006 08 06 | 699 | 0.4− | 0.9− | 2006 09 28 | 703 | 0.3− | 0.0 |
| 2002 10 13 | 644 | 0.2+ | 0.4− | 2006 08 24 | 704 | (0.1− | 2.0+) | 2006 09 28 | 703 | 0.2− | 0.3+ |
| 2002 10 13 | 644 | 0.1− | 0.8− | 2006 08 24 | 704 | 1.0+ | 0.1− | 2006 09 30 | 704 | (1.6+ | 1.0−) |
| 2002 10 30 | 704 | 0.0 | 0.1− | 2006 08 24 | 704 | (1.6+ | 0.6−) | 2006 09 30 | 704 | (2.4+ | 0.2−) |
| 2002 10 30 | 704 | (1.7+ | 1.4−) | 2006 08 25 | 704 | 0.4− | 0.6+ | 2006 09 30 | 704 | 1.4+ | 0.2+ |
| 2002 10 30 | 704 | 0.5− | 0.8− | 2006 08 25 | 704 | 0.2+ | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2002 10 30 | 704 | 0.0 | 0.9− | 2006 08 25 | 704 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2002 11 15 | 644 | 0.0 | 0.3− | 2006 08 25 | 704 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.4− |
| 2002 11 15 | 644 | 0.4− | 0.4+ | 2006 08 25 | 704 | 0.1+ | 1.2+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 11 15 | 644 | 0.2+ | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 11 15 | 704 | 0.9+ | 0.2+ | 2006 08 30 | 704 | 0.6+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 11 15 | 704 | 0.2+ | 0.4− | 2006 08 30 | 704 | 1.5+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.5− |
| 2002 11 15 | 704 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.1− | 0.6− |
| 2002 11 15 | 704 | 0.5+ | 1.2− | 2006 08 30 | 704 | 0.7− | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 2002 11 15 | 704 | 0.6+ | 0.2− | 2006 08 30 | 699 | 0.2+ | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.3− |
| 2002 12 12 | 644 | 0.0 | 1.0+ | 2006 08 30 | 699 | 0.2+ | 0.0 | 2006 10 21 | 704 | 0.7− | 0.4+ |
| 2002 12 12 | 644 | 0.0 | 0.8+ | 2006 08 30 | 699 | 0.2− | 0.9+ | 2006 10 21 | 704 | 0.1− | 0.0 |
| 2002 12 12 | 644 | 0.0 | 0.8+ | 2006 08 30 | 699 | 0.1+ | 0.5− | 2006 10 21 | 704 | 0.3− | 0.6− |
| 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.4− | 0.0 | 2006 10 21 | 704 | 0.1− | 0.2+ |
| 2004 02 16 | 704 | (2.0+ | 0.4−) | 2006 09 16 | 703 | 0.9− | 0.3− | 2006 10 21 | 704 | 0.6− | 1.4− |
| 2004 02 16 | 704 | 0.5+ | 0.1− | 2006 09 16 | 703 | 1.0+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2004 02 16 | 704 | (0.2− | 1.7+) | 2006 09 16 | 703 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.3− | 0.5− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2004 02 16 | 704 | 0.6+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.2+ |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.5− | 0.2− | 2006 10 27 | 703 | 1.5− | 2.7+ |
| 2004 02 23 | 704 | (2.9+ | 2.9+) | 2006 09 17 | 703 | 0.3− | 0.1− | 2006 10 27 | 703 | 2.0+ | 2.8+ |
| 2004 02 23 | 704 | (2.6+ | 1.2+) | 2006 09 18 | 703 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.5− |

**2006 QA$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.40830 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18807246 | $\omega$ | 129.97853 | | +0.15584477 | | +0.98754802 |
| $a$ | 3.0170736 | $\Omega$ | 148.96737 | | −0.91849762 | | +0.15287932 |
| $e$ | 0.2004242 | $i$ | 2.38779 | | −0.36342060 | | +0.03710549 |
| $P$ | 5.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.0 | 0.4+ | 2006 08 24 | 644 | 0.3− | 0.6− | 2006 09 14 | 703 | 1.6− | 1.9+ |
| 2001 10 16 | 291 | 0.1− | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.4− | 2006 09 26 | G96 | 1.2+ | 0.6− |
| 2001 10 16 | 291 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.6− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 1.6− | 0.0 | 2006 09 26 | G96 | 0.7+ | 0.6− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 08 28 | 703 | 1.1− | 0.7+ | 2006 09 26 | G96 | 0.4+ | 0.6− |
| 2006 08 18 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 1.2− | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2006 08 18 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.4− | 0.5− | 2006 09 30 | G96 | 0.3+ | 0.5− |
| 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.2− |
| 2006 08 24 | 644 | 0.8− | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.4− |

**2006 QB$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.93133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22635522 | $\omega$ | 193.95599 | | +0.88892816 | | +0.45714235 |
| $a$ | 2.6665048 | $\Omega$ | 138.80184 | | −0.41594839 | | +0.83193590 |
| $e$ | 0.1340798 | $i$ | 2.50325 | | −0.19181673 | | +0.31448932 |
| $P$ | 4.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 608 | 0.6− | 0.1− | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.7+ |
| 2002 11 06 | 608 | 0.2− | 0.3+ | 2006 08 27 | 691 | 0.7− | 0.1− | 2006 09 19 | 699 | 0.7+ | 0.6+ |
| 2002 11 06 | 608 | 0.5+ | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.6+ | 1.1+ |
| 2005 04 16 | 691 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2005 04 16 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | (0.5− | 1.7−) | 2006 09 30 | G96 | 0.1− | 0.5− |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 1.0− | 2006 09 30 | G96 | 0.1− | 0.5− |
| 2005 05 11 | G96 | 0.6− | 0.1− | 2006 08 28 | 703 | (0.5− | 1.5−) | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2005 05 11 | G96 | 0.5− | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.5− | 2006 10 02 | G96 | 0.6+ | 0.1+ |
| 2005 05 11 | G96 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.7+ | 0.8− |
| 2005 05 11 | G96 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2006 08 18 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.6− | 2006 10 02 | G96 | 0.5+ | 0.4− |
| 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2006 08 18 | 691 | 0.4− | 0.1+ | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2006 08 21 | 704 | 1.4+ | 0.5+ | 2006 09 14 | 703 | 1.4− | 0.4− | 2006 11 17 | G96 | 0.3− | 0.0 |
| 2006 08 21 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2006 08 21 | 704 | 0.7− | 0.8+ | 2006 09 19 | 699 | 1.5+ | 0.7+ | | | | |

**2006 QC$_{56}$ = 2001 SF$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.71844 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18574658 | $\omega$ | 322.32382 | | +0.11755531 | | +0.98793138 |
| $a$ | 3.0422075 | $\Omega$ | 314.17595 | | −0.87351223 | | +0.05455582 |
| $e$ | 0.0457528 | $i$ | 8.08412 | | −0.47239510 | | +0.14496637 |
| $P$ | 5.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2+ | 0.2− | 2004 03 21 | 691 | 0.2+ | 0.2− | 2006 08 22 | 644 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.6− | 0.2− | 2004 03 21 | 691 | 0.1+ | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.2+ | 0.0 | 2006 06 20 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | (1.8− | 1.5+) |
| 2001 09 16 | 704 | 0.0 | 1.2+ | 2006 06 20 | G96 | 0.4+ | 0.2− | 2006 08 28 | 703 | (1.6+ | 1.1+) |
| 2001 09 21 | 704 | 0.3+ | 0.2− | 2006 06 20 | G96 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.4− | 0.0 |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 06 20 | G96 | 0.3+ | 0.2+ | 2006 08 28 | 703 | (2.8− | 1.2+) |
| 2001 09 21 | 704 | 0.2− | 0.8− | 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.1− | 0.3− | 2006 08 18 | 644 | 0.5− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.4− |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.0 |
| 2004 02 12 | 691 | 0.3− | 0.4+ | 2006 08 19 | 691 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2004 03 21 | 691 | 0.4+ | 0.1− | 2006 08 22 | 644 | 0.9− | 0.5− | | | | |

**2006 QH$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.31770 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12409959 | $\omega$ | 170.25766 | | +0.99086487 | | −0.13421532 |
| $a$ | 3.9806667 | $\Omega$ | 197.47202 | | +0.12059384 | | +0.92549456 |
| $e$ | 0.2628337 | $i$ | 2.51124 | | +0.06036500 | | +0.35418366 |
| $P$ | 7.94 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 699 | 1.8− | 1.6− | 2006 09 12 | 703 | (1.7− | 0.7−) | 2006 09 27 | 704 | 0.2− | 1.1+ |
| 1998 08 26 | 699 | 1.7+ | 0.9+ | 2006 09 12 | 703 | (2.2− | 1.3+) | 2006 09 27 | 704 | 0.0 | 0.3+ |
| 1998 08 26 | 699 | 0.0 | 0.9+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.8+ |
| 2002 04 08 | 807 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2002 04 08 | 807 | 0.3+ | 0.4+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2003 04 24 | 691 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2003 04 24 | 691 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.9+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2003 04 24 | 691 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 2004 04 24 | 291 | 0.1− | 0.5+ | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2004 04 24 | 291 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2004 04 24 | 291 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.1+ | 0.1− |
| 2004 06 11 | 691 | 0.0 | 0.6− | 2006 09 17 | 703 | 0.2+ | 0.9− | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2004 06 11 | 691 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2004 06 11 | 691 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.3− | 2006 09 29 | 704 | 0.0 | 0.1− |
| 2006 08 19 | 691 | 0.3+ | 1.2− | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.3+ | 0.5+ |
| 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.0 | 0.5+ | 2006 10 01 | 704 | 1.0− | 0.4+ |
| 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2006 08 25 | 704 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 10 01 | 704 | 0.3+ | 0.3− |
| 2006 08 25 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.0 | 1.1+ | 2006 10 01 | 704 | 0.8− | 0.0 |
| 2006 08 25 | 704 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.6+ | 2006 10 01 | 704 | 0.3− | 0.1− |
| 2006 08 25 | 704 | 0.3− | 0.6− | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.9− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 25 | 704 | 1.2− | 0.3− | 2006 09 20 | 704 | 0.1+ | 1.3+ | 2006 10 17 | 703 | 0.7− | 0.5+ |
| 2006 08 28 | 703 | 0.2+ | 0.3− | 2006 09 26 | 704 | 0.6+ | 1.4+ | 2006 10 17 | 703 | 0.5− | 0.2− |
| 2006 08 28 | 703 | 0.3+ | 0.9− | 2006 09 26 | 704 | (2.9− | 0.1+) | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2006 08 28 | 703 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2006 08 28 | 703 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.8− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 09 01 | 704 | 0.2− | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2006 09 01 | 704 | 0.7− | 1.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2006 09 01 | 704 | (0.2− | 1.6+) | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2006 09 01 | 704 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2006 09 12 | 703 | 0.9− | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2006 09 12 | 703 | (1.9− | 1.2+) | 2006 09 27 | 704 | 0.1+ | 1.4+ | | | | |

**2006 QN$_{56}$ = 2005 JW$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.65226 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21881907 | $\omega$ | 149.99536 | | +0.96547284 | +0.25957422 | |
| $a$ | 2.7273818 | $\Omega$ | 195.00788 | | −0.25270086 | +0.91270966 | |
| $e$ | 0.1171924 | $i$ | 4.87069 | | −0.06328091 | +0.31556665 | |
| $P$ | 4.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.2+ | 0.7+ | 2006 08 24 | 704 | 0.6− | 0.8+ | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 1993 11 20 | 691 | 0.1− | 0.3+ | 2006 08 24 | 704 | 0.2+ | 1.0− | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 1993 11 20 | 691 | 0.1− | 0.5− | 2006 08 24 | 704 | 0.9+ | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2005 05 13 | 691 | 0.3+ | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 699 | 0.1− | 0.2− |
| 2005 05 13 | 691 | 0.1− | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 09 30 | 699 | 0.3+ | 0.3− |
| 2005 05 13 | 691 | 0.2+ | 0.2− | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 30 | 699 | 0.3+ | 0.7+ |
| 2005 05 14 | G96 | 0.8− | 0.6+ | 2006 08 29 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 699 | 1.1− | 1.0− |
| 2005 05 14 | G96 | 0.5− | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2005 05 14 | G96 | 0.2+ | 0.2− | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 09 13 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2006 08 20 | 691 | 0.3− | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.2+ | | | | |
| 2006 08 20 | 691 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.1− | | | | |

**2006 QO$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.44097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23017765 | $\omega$ | 27.73400 | | +0.74751089 | +0.66253011 | |
| $a$ | 2.6369017 | $\Omega$ | 290.69022 | | −0.61849819 | +0.66799872 | |
| $e$ | 0.2245171 | $i$ | 2.92658 | | −0.24225495 | +0.33886806 | |
| $P$ | 4.28 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.1+ | 0.0 | 2006 08 26 | 704 | 0.8+ | 0.2− | 2006 09 18 | 704 | 0.3− | 0.4− |
| 2002 10 16 | 644 | 0.1+ | 0.1+ | 2006 08 26 | 704 | 1.1+ | 0.4+ | 2006 09 18 | 704 | 0.1+ | 0.4+ |
| 2002 10 16 | 644 | 0.2+ | 0.2+ | 2006 08 26 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 704 | (1.7− | 0.0 ) |
| 2002 10 31 | 644 | 0.4+ | 0.5+ | 2006 08 27 | 699 | (1.9+ | 0.2+) | 2006 09 18 | 704 | 0.5+ | 0.1+ |
| 2002 10 31 | 644 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 0.4+ | 0.5− | 2006 09 19 | 699 | 0.3+ | 0.3+ |
| 2002 10 31 | 644 | 0.7+ | 0.3+ | 2006 08 27 | 699 | 0.2+ | 0.7− | 2006 09 19 | 703 | 0.6− | 0.1− |
| 2002 11 12 | 704 | 2.0− | 1.1− | 2006 08 29 | 703 | 0.4− | 0.9+ | 2006 09 19 | 703 | 0.2− | 0.2− |
| 2002 11 12 | 704 | 0.5− | 0.0 | 2006 08 29 | 703 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.1− |
| 2002 11 12 | 704 | 0.9+ | 0.1− | 2006 08 29 | 703 | 0.7− | 0.6− | 2006 09 19 | 699 | 0.0 | 0.4− |
| 2003 12 18 | 291 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.4− | 0.5− | 2006 09 19 | 703 | 0.2− | 0.2+ |
| 2003 12 18 | 291 | 0.1+ | 0.5+ | 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.1+ |
| 2003 12 18 | 291 | 0.1− | 0.3+ | 2006 08 30 | 704 | 1.3− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 2005 03 14 | G96 | 0.2− | 0.3− | 2006 08 30 | 704 | 0.7− | 1.1+ | 2006 09 25 | 704 | 0.3− | 0.1− |
| 2005 03 14 | G96 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.1− | 0.2+ |
| 2005 03 14 | G96 | 0.4+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.1− |
| 2005 03 14 | G96 | 0.1+ | 0.6+ | 2006 09 01 | 704 | 0.0 | 0.6− | 2006 09 25 | 704 | 0.8+ | 0.3− |
| 2006 06 21 | 703 | 0.9− | 0.6+ | 2006 09 01 | 704 | 0.3− | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.6− |
| 2006 06 21 | 703 | 0.5− | 1.3+ | 2006 09 01 | 704 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.6− | 0.3+ |
| 2006 06 21 | 703 | 0.1− | 0.3− | 2006 09 01 | 704 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.3− |
| 2006 06 21 | 703 | 1.3− | 0.2+ | 2006 09 01 | 704 | (1.8+ | 1.6+) | 2006 09 26 | 704 | 0.1− | 0.7− |
| 2006 08 20 | 691 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2006 08 20 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.5− | 1.0+ | 2006 09 29 | 704 | 1.0+ | 0.3− |
| 2006 08 20 | 691 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.1− | 0.9+ | 2006 09 29 | 704 | 1.4+ | 1.2− |
| 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.7− | 0.9+ | 2006 09 29 | 704 | 1.2+ | 0.9− |
| 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 29 | 704 | 1.3+ | 0.5− |
| 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.5− |
| 2006 08 24 | 704 | 0.0 | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.7− |
| 2006 08 24 | 704 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2006 08 24 | 704 | 0.3− | 0.1− | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2006 08 24 | 704 | 0.5− | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.2− | | | | |
| 2006 08 24 | 704 | 0.0 | 0.3+ | 2006 09 18 | 704 | 0.2− | 0.1+ | | | | |

**2006 QP$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.05919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20958041 | $\omega$ | 203.43881 | | +0.70781118 | −0.70459799 | |
| $a$ | 2.8069559 | $\Omega$ | 201.61595 | | +0.66784893 | +0.69074315 | |
| $e$ | 0.2276363 | $i$ | 7.87108 | | +0.23017634 | +0.16252869 | |
| $P$ | 4.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.5− | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.9+ | 2006 09 25 | 704 | 0.7+ | 0.3− |
| 2003 01 05 | 704 | 0.0 | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.5− | 0.2− |
| 2003 01 05 | 704 | 1.0− | 0.6+ | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 09 25 | 704 | 1.2+ | 0.8+ |
| 2003 01 05 | 704 | 0.9+ | 1.2+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.2− | 0.1+ |
| 2003 01 05 | 704 | 0.4− | 0.2+ | 2006 09 12 | 703 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.2+ | 0.1− |
| 2003 01 27 | 704 | 0.6+ | 0.8− | 2006 09 12 | 703 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.6+ |
| 2003 01 27 | 704 | 0.5+ | 0.0 | 2006 09 12 | 703 | 1.0− | 0.6− | 2006 09 29 | 704 | 0.4− | 0.0 |
| 2003 01 27 | 704 | (3.3+ | 2.2+) | 2006 09 12 | 703 | 0.4− | 0.9− | 2006 09 29 | 704 | 0.9+ | 0.7− |
| 2003 01 28 | 704 | 0.4− | 0.4− | 2006 09 16 | 699 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.2− | 0.9− |
| 2003 01 28 | 704 | 0.5+ | 0.2− | 2006 09 16 | 699 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.6+ | 0.2− |
| 2003 01 28 | 704 | 0.5− | 0.3− | 2006 09 16 | 699 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.8− |
| 2003 01 28 | 704 | 0.4+ | 0.1− | 2006 09 16 | 699 | 0.6+ | 0.7+ | 2006 10 16 | 703 | 1.0+ | 0.8− |
| 2003 01 28 | 704 | 0.1+ | 0.2+ | 2006 09 17 | J75 | (0.5+ | 2.3+) | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 2006 08 18 | 644 | 0.5+ | 0.3− | 2006 09 17 | J75 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.1− |
| 2006 08 18 | 644 | 0.4+ | 0.2− | 2006 09 17 | J75 | 0.4− | 0.9− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2006 08 18 | 644 | 0.2+ | 0.3− | 2006 09 18 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 18 | 704 | 0.5− | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 08 21 | 691 | 0.1− | 0.0 | 2006 09 18 | 704 | (1.7− | 0.8−) | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 08 24 | 704 | 1.0− | 0.1+ | 2006 09 18 | 704 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2006 08 24 | 704 | 0.7+ | 0.8+ | 2006 09 19 | 699 | 0.4+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.4− |
| 2006 08 24 | 704 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 1.0− | 0.6+ | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.9+ | 2006 10 22 | 703 | (0.3− | 1.6−) |
| 2006 08 29 | 703 | 0.6− | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.2− | 1.0− |
| 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.6− | 0.8− |
| 2006 08 29 | 703 | 1.5− | 0.6+ | 2006 09 19 | 699 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.4− |
| 2006 08 30 | 704 | 0.2+ | 0.8− | 2006 09 19 | 703 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.2− | 1.0− |
| 2006 08 30 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | (0.9+ | 1.9−) | 2006 11 14 | G96 | 0.5− | 0.4− |
| 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.7+ | 0.9− | | | | |
| 2006 08 30 | 704 | 0.6+ | 0.0 | 2006 09 25 | 704 | 1.3+ | 0.8+ | | | | |

**2006 QU$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.73476 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22403155 | $\omega$ | 359.13483 | | +0.97182024 | +0.23008511 | |
| $a$ | 2.6849112 | $\Omega$ | 347.20886 | | −0.21485777 | +0.77518495 | |
| $e$ | 0.1811281 | $i$ | 13.38369 | | −0.09696168 | +0.58834440 | |
| $P$ | 4.40 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 645 | 0.0 | 0.1− | 2006 08 29 | 699 | 0.6+ | 0.1− | 2006 09 16 | 703 | 0.5− | 1.1− |
| 2003 01 27 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.5− | 0.6− | 2006 09 16 | 703 | 0.2+ | 0.3− |
| 2004 02 29 | 691 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.1− |
| 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.1+ |
| 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 699 | 0.5+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.2− |
| 2004 03 19 | 644 | 0.4+ | 0.3+ | 2006 08 29 | 683 | 1.4+ | 1.0− | 2006 09 19 | 699 | 0.3− | 0.0 |
| 2004 03 19 | 644 | 0.1− | 0.6+ | 2006 08 29 | 683 | 1.2+ | 1.3− | 2006 09 27 | 699 | 0.1− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 644 | 0.6+ | 0.4+ | 2006 08 29 | 699 | 0.5− | 0.8+ | 2006 09 27 | 699 | 0.5− | 0.2+ | | |
| 2005 06 09 | E12 | 0.1+ | 0.4+ | 2006 08 29 | 683 | 0.7+ | 0.3− | 2006 09 27 | 699 | 0.2− | 0.1− | | |
| 2005 06 09 | E12 | 0.0 | 0.4+ | 2006 08 29 | 699 | 0.3+ | 0.6− | 2006 09 27 | 703 | 0.5+ | 0.5− | | |
| 2005 06 09 | E12 | 0.3+ | 0.4+ | 2006 08 30 | 704 | 0.2+ | 1.4+ | 2006 09 27 | 703 | 0.6− | 0.3− | | |
| 2005 06 09 | E12 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.3− | 0.1− | | |
| 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.0 | 2006 09 27 | 703 | 0.4− | 0.1+ | | |
| 2006 07 22 | G96 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 0.1+ | 0.3+ | 2006 10 03 | 704 | 0.8− | 0.0 | | |
| 2006 07 22 | G96 | 0.5− | 0.0 | 2006 08 30 | 704 | (0.2− | 2.9+) | 2006 10 03 | 704 | 0.6− | 0.3+ | | |
| 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 08 31 | 704 | 0.6− | 0.8+ | 2006 10 03 | 704 | 0.2− | 0.5+ | | |
| 2006 08 24 | 704 | 0.2+ | 0.1− | 2006 08 31 | 704 | 0.0 | 0.6+ | 2006 10 03 | 704 | 0.6− | 0.5+ | | |
| 2006 08 24 | 704 | 0.3+ | 0.9+ | 2006 08 31 | 704 | 0.7− | 0.3− | 2006 10 03 | 704 | 0.3− | 0.8+ | | |
| 2006 08 24 | 704 | 0.3+ | 0.8+ | 2006 08 31 | 704 | 0.9− | 0.1+ | 2006 10 10 | A24 | 0.1− | 0.3+ | | |
| 2006 08 24 | 704 | 0.5+ | 1.1+ | 2006 08 31 | 704 | 0.4− | 0.6+ | 2006 10 10 | A24 | 0.7+ | 0.2+ | | |
| 2006 08 26 | 704 | 1.1+ | 0.4− | 2006 09 01 | 704 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.2+ | | |
| 2006 08 26 | 704 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.9− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2006 08 26 | 704 | 0.2+ | 0.4− | 2006 09 01 | 704 | 0.9− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.1+ | | |
| 2006 08 27 | 683 | (1.8+ | 1.1−) | 2006 09 01 | 704 | 0.5− | 0.8+ | 2006 10 19 | 703 | 0.0 | 0.5− | | |
| 2006 08 27 | 683 | 1.3+ | 0.7− | 2006 09 01 | 704 | 0.0 | 0.9+ | 2006 10 19 | 703 | 0.2− | 0.2− | | |
| 2006 08 27 | 683 | 1.2+ | 0.7− | 2006 09 14 | 644 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.5− | | |
| 2006 08 28 | 683 | (2.3+ | 0.4−) | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.5+ | | |
| 2006 08 28 | 683 | 0.8+ | 0.9− | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1+ | | |
| 2006 08 28 | 683 | 0.7+ | 0.6− | 2006 09 16 | 703 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.4− | 0.1+ | | |
| 2006 08 29 | 703 | 0.6− | 0.4− | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.4− | 0.1+ | | |

### 2006 QV$_{56}$ = 1999 VB$_{170}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.66287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27447470 | $\omega$ | 48.51651 | | +0.99396021 | | −0.10373009 |
| $a$ | 2.3449549 | $\Omega$ | 317.40130 | | +0.07811429 | | +0.89802106 |
| $e$ | 0.2267864 | $i$ | 3.03368 | | +0.07707957 | | +0.42754911 |
| $P$ | 3.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.1− | 1.3− | 2006 08 28 | 703 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.4− | 0.0 | | |
| 1999 10 13 | 704 | 0.4+ | 1.6− | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.2− | | |
| 1999 10 13 | 704 | 0.3− | 0.9− | 2006 08 30 | 704 | 0.7− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.4− | | |
| 1999 10 13 | 704 | 0.6− | 0.5− | 2006 08 30 | 704 | 0.7− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.3− | | |
| 1999 10 13 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.5− | | |
| 1999 10 13 | 704 | 0.0 | 0.5− | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.4− | | |
| 1999 10 13 | 704 | 0.5− | 0.8− | 2006 08 30 | 704 | 0.9+ | 0.2+ | 2006 10 03 | 704 | 0.2− | 0.7− | | |
| 1999 10 13 | 704 | 0.1+ | 1.1− | 2006 08 30 | 699 | 0.1− | 0.0 | 2006 10 03 | 704 | 0.6+ | 0.1− | | |
| 1999 10 13 | 704 | 0.3+ | 0.9− | 2006 08 30 | 699 | 0.5− | 0.6− | 2006 10 03 | 704 | 0.4+ | 0.6− | | |
| 1999 10 13 | 704 | 0.6+ | 0.3− | 2006 08 30 | 699 | 0.2− | 0.0 | 2006 10 03 | 704 | 0.2− | 0.4− | | |
| 1999 11 14 | 704 | 0.1− | 0.7+ | 2006 08 30 | 699 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.7− | 0.3− | | |
| 1999 11 14 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 644 | 0.6− | 0.1− | 2006 10 03 | G96 | 0.4− | 0.3− | | |
| 1999 11 14 | 704 | 0.4+ | 0.8+ | 2006 09 14 | 644 | 0.6− | 0.0 | 2006 10 03 | 704 | 0.2+ | 0.9− | | |
| 1999 11 14 | 704 | 0.3+ | 0.7+ | 2006 09 14 | 644 | 0.5− | 0.2− | 2006 10 03 | G96 | 0.7− | 0.2− | | |
| 1999 11 14 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 1.3+ | 0.1− | 2006 10 03 | G96 | 0.4− | 0.3− | | |
| 1999 11 16 | 704 | 0.5− | 0.1+ | 2006 09 18 | 704 | (0.8+ | 2.5−) | 2006 10 17 | 703 | 0.8− | 0.3− | | |
| 1999 11 16 | 704 | 0.5− | 0.3+ | 2006 09 18 | 704 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.5− | | |
| 1999 11 16 | 704 | 0.4− | 0.3+ | 2006 09 18 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.6− | 0.7− | | |
| 1999 11 16 | 704 | 0.5− | 1.2+ | 2006 09 18 | 704 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.9− | 1.0− | | |
| 1999 11 16 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 699 | 1.0+ | 0.4+ | 2006 10 19 | 704 | 0.2+ | 1.2+ | | |
| 2004 01 24 | 704 | 0.9+ | 1.2+ | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 10 19 | 704 | 0.5+ | 0.2− | | |
| 2004 01 24 | 704 | (1.6+ | 2.1+) | 2006 09 18 | 699 | 0.1− | 0.5+ | 2006 10 19 | 704 | 0.2− | 0.8+ | | |
| 2004 01 24 | 704 | 0.3− | 0.7+ | 2006 09 18 | 699 | 0.1− | 0.3− | 2006 10 19 | 704 | 0.1− | 0.0 | | |
| 2004 01 24 | 704 | (0.2− | 2.4+) | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 10 19 | 704 | 0.8− | 0.6− | | |
| 2006 08 06 | 699 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.3− | 0.0 | | |
| 2006 08 06 | 699 | 0.7− | 0.4+ | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2006 08 06 | 699 | 0.6− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.1− | | |
| 2006 08 06 | 699 | 0.1− | 0.1− | 2006 09 21 | 704 | 1.4+ | 0.1− | 2006 10 29 | 704 | 0.6+ | 1.2+ | | |
| 2006 08 24 | 704 | (0.1− | 1.8+) | 2006 09 21 | 704 | 0.2+ | 0.3− | 2006 10 29 | 704 | 0.5+ | 0.8+ | | |
| 2006 08 24 | 704 | 0.1+ | 1.4+ | 2006 09 21 | 704 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.5+ | 0.7+ | | |
| 2006 08 24 | 704 | (0.8+ | 1.6+) | 2006 09 25 | 704 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.5+ | 0.9+ | | |
| 2006 08 24 | 704 | 0.1+ | 1.1+ | 2006 09 25 | 704 | 0.2+ | 0.3− | 2006 11 10 | 683 | 0.2+ | 0.4− | | |
| 2006 08 24 | 704 | 0.8+ | 1.2+ | 2006 09 25 | 704 | 0.1+ | 0.1+ | 2006 11 10 | 683 | 1.0+ | 0.7− | | |
| 2006 08 26 | 704 | 0.0 | 1.2+ | 2006 09 25 | 704 | 0.2+ | 0.0 | 2006 11 10 | 683 | 0.5+ | 0.7− | | |
| 2006 08 26 | 704 | 0.6+ | 1.3+ | 2006 09 25 | 704 | 0.2− | 0.1+ | 2006 11 11 | 683 | 0.3+ | 0.2+ | | |
| 2006 08 26 | 704 | 0.4+ | 0.8+ | 2006 09 29 | 704 | 0.3− | 0.1− | 2006 11 11 | 683 | 0.7+ | 0.2+ | | |
| 2006 08 28 | 703 | 0.7− | 0.1+ | 2006 09 29 | 704 | 1.0− | 0.4+ | | | | | | |
| 2006 08 28 | 703 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.4− | 0.3− | | | | | | |

### 2006 QH$_{57}$ = 2004 FB$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.98399 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17358217 | $\omega$ | 34.91368 | | −0.93708574 | | +0.33892982 |
| $a$ | 3.1827263 | $\Omega$ | 164.24009 | | −0.34658082 | | −0.93195398 |
| $e$ | 0.0817469 | $i$ | 17.93709 | | +0.04185759 | | −0.12879577 |
| $P$ | 5.68 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 03 22 | 704 | (0.5+ | 1.7+) | 2006 08 29 | 691 | 0.3− | 0.3+ | | |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2004 03 22 | 704 | (0.9+ | 1.8+) | 2006 08 29 | 691 | 0.2− | 0.5+ | | |
| 2004 02 26 | 704 | 0.4− | 0.8+ | 2006 08 25 | 941 | 0.4+ | 0.4+ | 2006 09 17 | 941 | 0.4+ | 0.3+ | | |
| 2004 02 26 | 704 | 0.8− | 0.9+ | 2006 08 25 | 941 | 0.6+ | 0.3+ | 2006 09 17 | 941 | 0.4− | 0.2− | | |
| 2004 02 26 | 704 | (0.2+ | 1.6+) | 2006 08 25 | 941 | 0.4+ | 0.1− | 2006 09 17 | 941 | 0.4− | 0.1+ | | |
| 2004 03 19 | 704 | 0.3+ | 0.2− | 2006 08 25 | 941 | 0.3+ | 0.0 | 2006 09 17 | 941 | 0.6− | 0.2− | | |
| 2004 03 19 | 704 | 1.0+ | 0.7+ | 2006 08 26 | 941 | 0.7+ | 0.4− | 2006 09 25 | G96 | 0.1− | 0.2− | | |
| 2004 03 19 | 704 | 1.3− | 0.5+ | 2006 08 26 | 941 | 1.0+ | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2004 03 19 | 704 | 0.2− | 0.6− | 2006 08 26 | 941 | 1.0+ | 0.7− | 2006 09 25 | G96 | 0.3− | 0.0 | | |
| 2004 03 22 | 704 | 0.8+ | 1.1+ | 2006 08 26 | 941 | 1.4+ | 0.7− | 2006 09 25 | G96 | 0.5− | 0.1− | | |
| 2004 03 22 | 704 | 0.9+ | 0.2+ | 2006 08 29 | 691 | 0.6− | 0.5+ | | | | | | |

### 2006 QK$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.27564 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21872716 | $\omega$ | 7.32709 | | +0.23177498 | | +0.94542554 |
| $a$ | 2.7281458 | $\Omega$ | 276.27547 | | −0.90377953 | | +0.12220206 |
| $e$ | 0.1579735 | $i$ | 13.32075 | | −0.35980957 | | +0.30205496 |
| $P$ | 4.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.1− | 0.2− | 2006 06 03 | 703 | 0.7− | 0.2+ | 2006 08 30 | 699 | 0.5− | 0.3− | | |
| 2002 10 06 | 704 | 0.1+ | 0.9+ | 2006 06 03 | 703 | 1.3+ | 1.2− | 2006 08 30 | 699 | 0.4− | 0.7+ | | |
| 2002 10 06 | 704 | 0.6− | 0.7+ | 2006 08 06 | 699 | 0.3+ | 1.3+ | 2006 08 31 | H06 | 1.1+ | 0.2+ | | |
| 2002 10 06 | 704 | 1.3− | 0.7+ | 2006 08 06 | 699 | 1.5+ | 0.7− | 2006 08 31 | H06 | 0.5+ | 0.7− | | |
| 2002 11 14 | 644 | 0.1− | 0.5+ | 2006 08 06 | 699 | 0.1+ | 0.5+ | 2006 09 11 | 703 | 0.4+ | 0.3+ | | |
| 2002 11 14 | 644 | 0.4+ | 0.3− | 2006 08 06 | 699 | 0.9− | 0.1− | 2006 09 11 | 703 | 0.0 | 0.3− | | |
| 2002 11 14 | 644 | 0.4+ | 0.2− | 2006 08 25 | H06 | 0.2+ | 0.4+ | 2006 09 11 | 703 | 0.1+ | 0.6− | | |
| 2002 11 14 | 644 | 0.5+ | 0.1− | 2006 08 25 | H06 | 0.2+ | 0.3− | 2006 09 11 | 703 | 0.9− | 0.6− | | |
| 2002 11 14 | 644 | 0.1+ | 0.1+ | 2006 08 25 | H06 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.5+ | 0.1− | | |
| 2002 11 14 | 644 | 0.3+ | 0.2− | 2006 08 27 | 699 | 0.9+ | 0.6− | 2006 09 15 | 704 | 0.2+ | 0.2+ | | |
| 2003 12 19 | 704 | 1.1− | 0.4+ | 2006 08 27 | 699 | 0.3− | 0.6+ | 2006 09 15 | 704 | 0.1+ | 0.2− | | |
| 2003 12 19 | 704 | 1.0+ | 0.8+ | 2006 08 27 | 699 | 0.6− | 0.3− | 2006 09 15 | 704 | 0.2− | 1.0− | | |
| 2003 12 19 | 704 | 0.1+ | 0.3− | 2006 08 27 | 699 | 0.7− | 0.1− | 2006 09 15 | 704 | 0.2− | 0.4− | | |
| 2003 12 28 | 691 | 0.2+ | 0.4− | 2006 08 27 | H06 | 1.0− | 0.1− | 2006 09 20 | 699 | 0.9+ | 0.7+ | | |
| 2003 12 28 | 691 | 0.0 | 0.2− | 2006 08 27 | H06 | 0.0 | 0.4− | 2006 09 20 | 699 | 0.4+ | 0.1− | | |
| 2003 12 28 | 691 | 0.4− | 0.2− | 2006 08 27 | H06 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.1− | 0.2+ | | |
| 2006 06 03 | 703 | 0.2− | 0.3− | 2006 08 30 | 699 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 1.2− | 0.1− | | |
| 2006 06 03 | 703 | 0.5− | 0.3+ | 2006 08 30 | 699 | 0.5+ | 0.5+ | | | | | | |

### 2006 QL$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.83593 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22841130 | $\omega$ | 352.28018 | | +0.31600096 | | +0.93127358 |
| $a$ | 2.6504787 | $\Omega$ | 295.99126 | | −0.85933624 | | +0.19995036 |
| $e$ | 0.1829139 | $i$ | 11.63695 | | −0.40210027 | | +0.30454781 |
| $P$ | 4.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 25 | 691 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.4+ | | |
| 1993 07 25 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.9− | 0.0 | 2006 09 20 | 691 | 0.3+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 25 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.0 |
| 2002 09 20 | 644 | 0.2+ | 0.6+ | 2006 08 30 | 699 | 0.5− | 0.6+ | 2006 09 20 | 691 | 0.1− | 0.1+ |
| 2002 09 20 | 644 | 0.2+ | 0.5+ | 2006 08 30 | 699 | 0.1+ | 0.1+ | 2006 09 22 | 691 | 0.2+ | 0.0 |
| 2002 09 27 | 644 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.5− | 0.9+ | 2006 09 22 | 691 | 0.2+ | 0.1+ |
| 2002 09 27 | 644 | 0.1− | 1.0− | 2006 08 30 | 699 | 0.4− | 0.0 | 2006 09 22 | 691 | 0.1+ | 0.1− |
| 2002 09 27 | 644 | 0.4− | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 2006 08 26 | J87 | 0.3− | 0.7− | 2006 09 14 | 691 | 0.0 | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2006 08 26 | J87 | 0.1+ | 0.3− | 2006 09 14 | 691 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2006 08 26 | J87 | 0.5− | 1.0− | 2006 09 16 | J87 | 0.2+ | 0.3− | 2006 09 26 | 703 | 1.6− | 0.2− |
| 2006 08 27 | J87 | 0.8− | 0.4− | 2006 09 16 | J87 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 2006 08 27 | J87 | 0.0 | 0.1+ | 2006 09 16 | J87 | 0.0 | 0.2− | 2006 09 26 | 703 | 1.4− | 0.1− |
| 2006 08 27 | J87 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.4− |
| 2006 08 29 | 703 | 0.2+ | 0.9+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2006 08 29 | 703 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2006 08 29 | 703 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 2006 08 29 | 703 | 0.7+ | 0.5− | 2006 09 19 | 699 | 0.0 | 0.1+ | | | | |
| 2006 08 29 | 703 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.6− | 0.2+ | | | | |

**2006 QP**$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.86003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29919067 | $\omega$ | 125.15576 | | +0.61988267 | +0.78466989 | |
| $a$ | 2.2139647 | $\Omega$ | 183.17272 | | −0.75152627 | +0.59138314 | |
| $e$ | 0.2191519 | $i$ | 6.44947 | | −0.22572938 | +0.18590091 | |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 16 | 807 | 0.0 | 0.3+ | 2006 08 28 | 673 | 0.0 | 0.0 | 2006 10 15 | 703 | (0.8− | 3.9+) |
| 2002 02 16 | 807 | 0.4+ | 0.7+ | 2006 08 28 | 673 | 0.7+ | 0.1− | 2006 10 15 | 703 | 0.5− | 0.7− |
| 2002 02 16 | 807 | 0.5+ | 0.4+ | 2006 09 03 | 673 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 1.2+ | 0.2− |
| 2002 02 16 | 807 | 0.3− | 0.4+ | 2006 09 03 | 673 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.1− |
| 2002 02 16 | 807 | 0.4+ | 0.5+ | 2006 09 03 | 673 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.1+ | 0.5− |
| 2002 04 08 | 644 | (0.9+ | 1.6+) | 2006 09 04 | 673 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 2002 04 08 | 644 | (0.6+ | 1.7+) | 2006 09 04 | 673 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2002 04 08 | 644 | (1.2+ | 1.9+) | 2006 09 04 | 673 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 04 14 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2002 04 14 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.6− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2002 04 14 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.5+ | 0.4+ |
| 2005 04 09 | G96 | 0.5− | 0.4+ | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.6+ | 0.2+ |
| 2005 04 09 | G96 | 0.8+ | 1.3+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2005 04 09 | G96 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2005 04 09 | G96 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2006 08 27 | 673 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2006 08 27 | 673 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 08 27 | 673 | 0.4− | 0.1+ | 2006 10 15 | 703 | 1.5− | 0.0 | | | | |
| 2006 08 28 | 673 | 0.5+ | 0.2− | 2006 10 15 | 703 | 0.7− | 0.3− | | | | |

**2006 QT**$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.68583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17560344 | $\omega$ | 218.86859 | | +0.73901171 | −0.67342376 | |
| $a$ | 3.1582563 | $\Omega$ | 183.63969 | | +0.66834332 | +0.73640379 | |
| $e$ | 0.2745878 | $i$ | 17.44363 | | +0.08472843 | +0.06488367 | |
| $P$ | 5.61 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 699 | 0.8− | 1.2− | 2006 09 12 | 703 | 0.8− | 0.5− | 2006 10 01 | 703 | 0.2+ | 0.4+ |
| 2000 07 10 | 699 | 0.6+ | 0.3− | 2006 09 12 | 703 | 0.1+ | 0.3− | 2006 10 01 | 291 | 0.1− | 0.2− |
| 2000 07 10 | 699 | 1.8− | 0.8+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 01 | 291 | 0.0 | 0.1+ |
| 2000 07 10 | 699 | 0.4− | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 01 | 291 | 0.2+ | 0.3+ |
| 2000 08 31 | 704 | 0.8+ | 0.9+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2000 08 31 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 2000 08 31 | 704 | 0.5− | 0.6+ | 2006 09 18 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 2000 08 31 | 704 | 1.5+ | 1.1+ | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2002 01 12 | 704 | 0.1+ | 0.8+ | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.1+ |
| 2002 01 12 | 704 | 0.1− | 0.7+ | 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2002 01 12 | 704 | 0.2− | 1.1+ | 2006 09 19 | 699 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2002 01 12 | 704 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.8− | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.1− |
| 2002 01 12 | 704 | 0.3− | 0.8+ | 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 2003 03 24 | 691 | 0.1+ | 1.0+ | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2003 03 24 | 691 | 0.1+ | 1.2+ | 2006 09 19 | 703 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2003 03 24 | 691 | 0.3+ | 0.9+ | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 20 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | (1.4+ | 1.8+) |
| 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 20 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 1.3− | 0.6− |
| 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 20 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2006 08 24 | 704 | 0.3+ | 1.0+ | 2006 09 24 | 106 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.9− |
| 2006 08 24 | 704 | 1.1+ | 0.3+ | 2006 09 24 | 106 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2006 08 24 | 704 | 0.4+ | 0.2+ | 2006 09 24 | 106 | 0.0 | 0.7− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2006 08 24 | 704 | 0.3− | 1.5+ | 2006 09 24 | 106 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2006 08 24 | 704 | 0.8+ | 0.2+ | 2006 09 25 | 704 | 0.9− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2006 08 26 | 704 | 0.0 | 0.2+ | 2006 09 25 | 704 | 1.0− | 1.3+ | 2006 11 11 | 703 | 0.1− | 1.4− |
| 2006 08 26 | 704 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2006 08 26 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 704 | 0.5− | 0.8+ | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.4+ |
| 2006 08 27 | 699 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2006 08 27 | 699 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2006 08 27 | 699 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.0 | 2006 11 17 | 704 | 1.1+ | 0.1+ |
| 2006 08 28 | 704 | (1.1− | 3.0−) | 2006 09 25 | 699 | 0.5− | 0.9− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 08 28 | 704 | (2.6− | 0.7−) | 2006 09 26 | 704 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2006 08 28 | 704 | 0.9+ | 0.6− | 2006 09 26 | 704 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.6− |
| 2006 08 28 | 704 | (1.2− | 1.6−) | 2006 09 26 | 704 | 0.6− | 0.1− | 2006 11 17 | 704 | 0.2− | 0.3− |
| 2006 08 29 | 703 | 0.1− | 1.2− | 2006 09 28 | 608 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.6+ | 0.2+ |
| 2006 08 29 | 703 | 0.3+ | 0.2− | 2006 09 28 | 608 | 0.7+ | 0.7− | 2006 11 18 | 703 | 0.2− | 1.4− |
| 2006 08 29 | 703 | 0.8+ | 0.1− | 2006 09 28 | 608 | 0.6+ | 0.7− | 2006 11 18 | 703 | 0.3+ | 0.2− |
| 2006 08 29 | 703 | 0.8+ | 0.0 | 2006 09 29 | 704 | 0.2− | 0.4+ | 2006 11 18 | 703 | 0.4− | 0.2− |
| 2006 08 30 | 704 | 0.5+ | 0.9+ | 2006 09 29 | 704 | 0.1− | 0.5+ | 2006 11 18 | 703 | 0.0 | 0.7− |
| 2006 08 30 | 704 | 0.6+ | 0.8− | 2006 09 29 | 704 | 0.5− | 0.2− | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2006 08 30 | 704 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 1.2+ |
| 2006 08 30 | 704 | 0.7+ | 0.9+ | 2006 09 29 | 704 | 0.1− | 0.3− | 2006 11 20 | 704 | (0.8− | 1.8+) |
| 2006 08 30 | 704 | 0.7+ | 1.2+ | 2006 09 30 | 704 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.6− | 0.7+ |
| 2006 09 01 | 704 | 1.2− | 1.1+ | 2006 09 30 | 704 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.8+ | 0.1− |
| 2006 09 01 | 704 | 0.1− | 1.4+ | 2006 09 30 | 704 | 0.1+ | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2006 09 01 | 704 | 0.1− | 0.4+ | 2006 09 30 | 704 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2006 09 01 | 704 | 0.4− | 0.6+ | 2006 09 30 | 704 | 0.1+ | 0.5+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2006 09 01 | 704 | (0.0 | 1.6−) | 2006 10 01 | 703 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2006 09 12 | 703 | 0.5− | 0.0 | 2006 10 01 | 703 | 0.1− | 0.1+ | | | | |
| 2006 09 12 | 703 | 0.6− | 0.5− | 2006 10 01 | 703 | 0.2− | 0.2+ | | | | |

**2006 QW**$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.11316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18028082 | $\omega$ | 35.31449 | | +0.94942669 | −0.30207606 | |
| $a$ | 3.1033901 | $\Omega$ | 341.68502 | | +0.18648056 | +0.76198615 | |
| $e$ | 0.2361439 | $i$ | 15.82018 | | +0.25261426 | +0.57282384 | |
| $P$ | 5.47 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.5− | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.2+ |
| 2001 12 23 | 704 | 0.4− | 0.1− | 2006 08 30 | 704 | 0.4− | 0.3+ | 2006 10 03 | 704 | 0.5+ | 0.2+ |
| 2001 12 23 | 704 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 10 03 | 704 | 0.2+ | 0.6− |
| 2001 12 23 | 704 | 0.5+ | 0.3+ | 2006 08 31 | 704 | 0.7+ | 0.6+ | 2006 10 09 | 644 | 0.1+ | 0.4− |
| 2001 12 23 | 704 | 0.7+ | 0.4+ | 2006 08 31 | 704 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.3− | 0.4− |
| 2002 01 06 | 704 | 0.2− | 0.0 | 2006 08 31 | 704 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.0 | 0.4− |
| 2002 01 06 | 704 | 0.1− | 0.2− | 2006 08 31 | 704 | 1.1− | 0.4− | 2006 10 10 | A24 | 0.4− | 0.1+ |
| 2002 01 06 | 704 | 0.2− | 0.6− | 2006 09 01 | 704 | 0.1+ | 0.4+ | 2006 10 10 | A24 | 0.0 | 0.0 |
| 2002 12 14 | 645 | 0.1− | 0.0 | 2006 09 01 | 704 | 1.2+ | 0.0 | 2006 10 10 | A24 | 0.0 | 0.2− |
| 2002 12 14 | 645 | 0.2+ | 0.2+ | 2006 09 01 | 704 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2006 07 21 | 703 | 0.9− | 1.1− | 2006 09 01 | 704 | 0.6+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.5− |
| 2006 07 21 | 703 | 0.7− | 0.3− | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.3− |
| 2006 07 21 | 703 | (1.8− | 0.1−) | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 10 13 | A24 | 0.2− | 0.3− |
| 2006 07 21 | 703 | 1.0− | 0.6− | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 10 13 | A24 | 0.1+ | 0.3− |
| 2006 08 24 | 704 | 0.4− | 0.9+ | 2006 09 19 | 699 | 0.6+ | 0.0 | 2006 10 13 | A24 | 0.2+ | 0.1− |
| 2006 08 24 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 699 | 0.4+ | 0.1+ | 2006 10 13 | A24 | 0.1+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 24 | 704 | 0.0 | 0.7+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 13 | A24 | 0.0 | 0.0 |
| 2006 08 24 | 704 | 0.8− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.4− | 2006 10 13 | A24 | 0.6− | 0.2− |
| 2006 08 24 | 608 | (1.2+ | 2.4+) | 2006 09 27 | 699 | 0.3+ | 0.3− | 2006 10 15 | A24 | 0.4+ | 0.1− |
| 2006 08 24 | 608 | (2.1+ | 2.2+) | 2006 09 27 | 699 | 0.5+ | 0.1− | 2006 10 15 | A24 | 0.1− | 0.2− |
| 2006 08 24 | 608 | (1.9+ | 1.4+) | 2006 09 27 | 699 | 0.0 | 0.0 | 2006 10 15 | A24 | 0.3+ | 0.4− |
| 2006 08 26 | 704 | 0.2− | 0.5+ | 2006 09 27 | 699 | 0.2+ | 0.1+ | 2006 10 15 | A24 | 0.9− | 0.5− |
| 2006 08 26 | 704 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.3+ | 0.5+ | 2006 10 15 | A24 | 0.2− | 0.4− |
| 2006 08 26 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 703 | 0.1− | 0.1− | 2006 10 17 | A24 | 0.3− | 0.6+ |
| 2006 08 26 | 704 | 0.5+ | 0.6+ | 2006 09 27 | 703 | 0.2+ | 0.4+ | 2006 10 17 | A24 | 0.1+ | 0.9− |
| 2006 08 26 | 704 | 0.1+ | 1.1+ | 2006 09 27 | 703 | 0.1− | 0.1+ | 2006 10 17 | A24 | 0.2− | 0.1− |
| 2006 08 26 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.8− | 0.1+ | 2006 10 17 | A24 | 0.5+ | 0.0 |
| 2006 08 29 | 703 | 0.7− | 0.7− | 2006 09 27 | 703 | 0.7− | 0.7+ | 2006 10 17 | A24 | 0.4− | 0.3− |
| 2006 08 29 | 703 | 0.4− | 0.4− | 2006 09 27 | 703 | 0.6− | 0.3+ | 2006 10 17 | A24 | 0.3+ | 0.0 |
| 2006 08 29 | 703 | 1.1− | 0.6− | 2006 09 27 | 703 | 0.5− | 0.0 | 2006 10 23 | 703 | 0.2+ | 0.9+ |
| 2006 08 29 | 703 | 1.3− | 0.2− | 2006 09 28 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 703 | 0.4+ | 0.4+ |
| 2006 08 29 | 699 | 0.3+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.5+ | 1.4+ |
| 2006 08 29 | 699 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.2− | 2006 10 23 | 703 | 1.2+ | 0.5+ |
| 2006 08 29 | 699 | 0.3− | 0.1− | 2006 09 28 | 704 | 0.2+ | 0.2− | 2006 10 26 | 704 | 1.9+ | 0.2+ |
| 2006 08 29 | 699 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.2− | 0.0 | 2006 10 26 | 704 | 0.5+ | 0.6+ |
| 2006 08 30 | 704 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.1+ | 0.2+ | 2006 10 26 | 704 | 1.1+ | 0.4− |
| 2006 08 30 | 704 | 0.5+ | 0.2+ | 2006 10 03 | 704 | 0.0 | 0.1+ | 2006 10 26 | 704 | 0.2+ | 0.3+ |

### 2006 QG$_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.07273 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23268727 | $\omega$ | 50.55111 | +0.83109653 | | +0.52312546 | |
| $a$ | 2.6179076 | $\Omega$ | 277.12977 | −0.55054419 | | +0.72595658 | |
| $e$ | 0.1795133 | $i$ | 10.96439 | −0.07861076 | | +0.44646030 | |
| $P$ | 4.24 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.1− | 0.1+ | 2006 07 01 | 703 | 0.5+ | 0.4+ | 2006 08 31 | 704 | 0.3+ | 0.5+ |
| 2002 10 06 | 704 | 0.4− | 0.1+ | 2006 08 17 | 683 | 0.0 | 0.1− | 2006 08 31 | 704 | 0.3+ | 0.7+ |
| 2002 10 06 | 704 | 0.0 | 0.7+ | 2006 08 17 | 683 | 0.3− | 1.1+ | 2006 08 31 | 704 | 0.3+ | 0.6+ |
| 2002 10 06 | 704 | 0.3+ | 0.8+ | 2006 08 17 | 683 | (2.3− | 1.6+) | 2006 08 31 | 704 | 0.9+ | 0.4+ |
| 2002 10 06 | 704 | 0.5+ | 0.6+ | 2006 08 27 | 683 | 0.3+ | 0.5− | 2006 08 31 | 704 | 0.9+ | 0.9+ |
| 2002 11 14 | 704 | 0.7− | 1.2− | 2006 08 27 | 683 | 0.3− | 0.6− | 2006 09 11 | 703 | 0.1+ | 0.9− |
| 2002 11 14 | 704 | 0.5+ | 0.1− | 2006 08 27 | 683 | 1.0− | 0.3+ | 2006 09 11 | 703 | 0.8− | 0.4− |
| 2002 11 14 | 704 | 0.3− | 0.4− | 2006 08 28 | 683 | 1.5− | 1.5− | 2006 09 11 | 703 | 0.3+ | 0.5− |
| 2004 01 23 | 704 | 0.8− | 0.4+ | 2006 08 28 | 683 | (0.1+ | 2.2−) | 2006 09 11 | 703 | 0.0 | 0.2− |
| 2004 01 23 | 704 | 1.1+ | 0.1− | 2006 08 28 | 683 | 1.0− | 1.6− | 2006 09 27 | 703 | 0.8− | 0.1− |
| 2004 01 23 | 704 | 0.1− | 0.1+ | 2006 08 29 | 699 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.8+ | 0.0 |
| 2006 07 01 | 703 | 0.0 | 0.4+ | 2006 08 29 | 699 | 0.6+ | 0.2+ | 2006 09 27 | 703 | 0.9+ | 0.2+ |
| 2006 07 01 | 703 | 1.0− | 0.4− | 2006 08 29 | 699 | 0.4+ | 0.6− | 2006 09 27 | 703 | 0.3+ | 0.7+ |
| 2006 07 01 | 703 | 0.2− | 0.5+ | 2006 08 29 | 699 | 0.0 | 0.3+ | | | | |

### 2006 QH$_{58}$ = 2002 LK$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.07940 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27034712 | $\omega$ | 71.59301 | +0.89468012 | | +0.42318346 | |
| $a$ | 2.3687627 | $\Omega$ | 263.16423 | −0.44456051 | | +0.81213431 | |
| $e$ | 0.2571336 | $i$ | 8.28366 | −0.04374281 | | +0.40168846 | |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 19 | 691 | 0.1− | 0.1+ | 2006 08 28 | 683 | 0.4+ | 1.1+ | 2006 09 26 | 958 | 0.4+ | 0.0 |
| 1995 07 19 | 691 | 0.0 | 0.1+ | 2006 08 29 | 683 | 0.5+ | 0.4− | 2006 09 26 | 958 | 0.2− | 0.4− |
| 1995 07 19 | 691 | 0.1+ | 0.0 | 2006 08 29 | 683 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.1− | 0.1+ |
| 2002 06 06 | 704 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.9− | 1.5− | 2006 09 27 | 703 | 0.3+ | 0.1+ |
| 2002 06 06 | 704 | 0.1+ | 0.3− | 2006 08 31 | 704 | (0.6− | 1.5−) | 2006 09 27 | 703 | 0.3− | 0.6+ |
| 2002 06 06 | 704 | 1.1+ | 0.4− | 2006 08 31 | 704 | 0.2− | 1.4− | 2006 09 27 | 703 | 0.4− | 0.3+ |
| 2002 06 06 | 704 | 0.1− | 1.3− | 2006 08 31 | 704 | (2.3− | 0.6+) | 2006 09 29 | 699 | 0.6+ | 0.1− |
| 2002 06 09 | 704 | 0.1− | 0.9+ | 2006 09 11 | 703 | 0.1+ | 0.2− | 2006 09 29 | 699 | 0.3− | 0.2+ |
| 2002 06 09 | 704 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.1− | 0.4− | 2006 09 29 | 699 | 0.2− | 0.2− |
| 2002 06 09 | 704 | 0.9− | 0.5− | 2006 09 11 | 703 | 0.1− | 0.1− | 2006 10 29 | 703 | 1.2+ | 0.4− |
| 2006 06 21 | 703 | 0.3− | 0.3+ | 2006 09 11 | 703 | 0.2+ | 0.4− | 2006 10 29 | 703 | 0.4− | 0.8− |
| 2006 06 21 | 703 | 0.1+ | 0.5− | 2006 09 16 | 644 | 0.1+ | 0.3+ | 2006 10 29 | 703 | 0.2− | 0.7− |
| 2006 06 21 | 703 | (1.5+ | 1.7−) | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 29 | 703 | 0.1− | 0.4+ |
| 2006 06 21 | 703 | (1.9+ | 1.4−) | 2006 09 16 | 644 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.7+ | 0.1+ |
| 2006 08 26 | 704 | 0.4− | 0.5+ | 2006 09 21 | 699 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.4+ | 1.0− |
| 2006 08 26 | 704 | 0.0 | 0.7+ | 2006 09 21 | 699 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.2+ |
| 2006 08 26 | 704 | (1.5+ | 2.4+) | 2006 09 21 | 699 | 0.2+ | 0.8+ | 2006 11 14 | 703 | 0.8− | 0.2− |
| 2006 08 28 | 683 | 0.1− | 0.4+ | 2006 09 26 | 958 | 0.0 | 0.5+ | | | | |

### 2006 QK$_{58}$ = 2004 FT$_{39}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.24965 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18234888 | $\omega$ | 331.32351 | −0.11473589 | | +0.98490846 | |
| $a$ | 3.0798813 | $\Omega$ | 291.83648 | −0.88270253 | | −0.16091861 | |
| $e$ | 0.1297331 | $i$ | 8.02448 | −0.45571034 | | +0.06372230 | |
| $P$ | 5.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 1.2− | 0.1+ | 2006 08 27 | 683 | (0.3+ | 3.1+) | 2006 10 09 | 644 | 0.2+ | 0.4+ |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 08 27 | 683 | (0.8+ | 1.8+) | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2004 03 18 | 704 | 0.7− | 0.7− | 2006 08 28 | 683 | (2.2+ | 0.3−) | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 08 28 | 683 | 0.1+ | 1.0+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2004 03 19 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 0.5+ | 0.0 | 2006 09 16 | 703 | 0.0 | 0.8+ | 2006 10 24 | 644 | 0.6− | 0.2− |
| 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.4− |
| 2004 03 19 | 704 | 1.4+ | 0.5− | 2006 09 16 | 703 | 0.2+ | 0.7− | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2006 08 27 | 683 | 0.0 | 0.5− | 2006 10 09 | 644 | 0.0 | 0.0 | | | | |

### 2006 QL$_{58}$ = 1993 TP$_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.80051 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22903682 | $\omega$ | 342.84274 | +0.95309664 | | −0.27264034 | |
| $a$ | 2.6456508 | $\Omega$ | 33.87506 | +0.29792692 | | +0.76855744 | |
| $e$ | 0.1828216 | $i$ | 13.63875 | +0.05335123 | | +0.57878035 | |
| $P$ | 4.30 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.8+ | 0.5+ | 2004 03 23 | 704 | 0.3+ | 0.8+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1993 10 09 | 809 | 0.7+ | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ |
| 1993 10 09 | 809 | 0.6+ | 0.3+ | 2004 04 16 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.3− | 0.1+ |
| 1993 10 11 | 809 | 0.6− | 1.6− | 2004 04 16 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 1993 10 11 | 809 | 0.3+ | 1.4− | 2004 04 16 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.1+ |
| 1993 10 11 | 809 | 0.0 | 1.5− | 2004 04 23 | 704 | 0.2+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 1999 01 14 | 704 | 0.8− | 1.8− | 2004 04 23 | 704 | 1.1+ | 0.4− | 2006 10 16 | 691 | 0.3− | 0.0 |
| 1999 01 14 | 704 | 1.7+ | 1.1− | 2004 04 23 | 704 | 0.2− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 1999 01 14 | 704 | 1.2+ | 0.2− | 2004 04 23 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1999 01 14 | 704 | 0.6+ | 0.7+ | 2004 04 23 | 704 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 1999 01 14 | 704 | 1.2+ | 1.0+ | 2005 01 20 | 809 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 1999 02 18 | 704 | 0.0 | 0.0 | 2005 01 20 | 809 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 1999 02 18 | 704 | (0.2− | 2.8+) | 2006 08 23 | 704 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1999 02 18 | 704 | 0.2− | 1.3+ | 2006 08 23 | 704 | 1.1+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 02 18 | 704 | 0.5− | 1.0+ | 2006 08 23 | 704 | 0.5+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1999 02 18 | 704 | 0.7− | 1.8− | 2006 08 23 | 704 | 1.0+ | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 704 | 0.9+ | 0.2− | 2006 08 23 | 704 | 0.7+ | 0.7+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2002 10 04 | 704 | 0.6+ | 0.5+ | 2006 08 27 | 683 | 1.0− | 0.3− | 2006 10 29 | 704 | 0.8− | 0.8+ |
| 2002 10 04 | 704 | 0.4+ | 0.9+ | 2006 08 27 | 683 | (1.4− | 1.9−) | 2006 10 29 | 704 | 1.2− | 0.2+ |
| 2002 10 04 | 704 | 0.5+ | 0.7+ | 2006 08 27 | 683 | 0.3− | 1.4− | 2006 10 29 | 704 | 0.7− | 0.3+ |
| 2002 10 04 | 704 | 0.8+ | 0.3+ | 2006 08 28 | 703 | 0.6+ | 1.1+ | 2006 10 29 | 704 | 0.5− | 0.4+ |
| 2002 10 12 | 704 | 0.9− | 0.2− | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 10 29 | 704 | (2.0− | 0.3+) |
| 2002 10 12 | 704 | 0.4+ | 0.7− | 2006 08 28 | 683 | 1.0+ | 1.0− | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2002 10 12 | 704 | 0.5− | 0.4− | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2002 10 12 | 704 | 0.2− | 0.5− | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2002 11 06 | 704 | 0.4− | 0.4− | 2006 08 28 | 683 | (1.5− | 2.1−) | 2006 11 14 | 703 | 1.0− | 0.2− |
| 2002 11 06 | 704 | 0.3− | 0.1− | 2006 08 28 | 683 | 0.1− | 0.6+ | 2006 11 14 | 703 | 0.1− | 0.2− |
| 2002 11 06 | 704 | 0.2+ | 0.0 | 2006 08 31 | 704 | 0.8+ | 0.5− | 2006 11 14 | 703 | 0.2+ | 0.3− |
| 2002 11 06 | 704 | 0.2+ | 0.6− | 2006 08 31 | 704 | 0.7+ | 0.4− | 2006 11 14 | 703 | 0.1+ | 0.2− |
| 2002 11 06 | 704 | 0.4− | 1.1+ | 2006 08 31 | 704 | 0.2+ | 0.3− | 2006 11 14 | 703 | 0.4+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2006 08 31 | 704 | 1.4− | 0.1− | 2006 11 16 | 704 | (0.8+ | 2.0+) |
| 2002 12 06 | 704 | 0.3− | 0.6− | 2006 08 31 | 704 | 0.1− | 0.0 | 2006 11 16 | 704 | (0.2+ | 1.6+) |
| 2002 12 06 | 704 | 0.5− | 0.7− | 2006 08 31 | 704 | 0.6− | 1.1− | 2006 11 16 | 704 | (0.5+ | 2.3+) |
| 2002 12 06 | 704 | 0.3− | 0.6− | 2006 08 31 | 704 | (3.4+ | 0.6+) | 2006 11 16 | 704 | (0.3+ | 1.6+) |
| 2002 12 06 | 704 | 0.3− | 0.9− | 2006 08 31 | 704 | 1.2+ | 0.1+ | 2006 11 16 | 704 | (0.7− | 1.8+) |
| 2002 12 28 | 704 | 0.2− | 1.1+ | 2006 09 17 | 704 | 0.7+ | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.1+ |
| 2002 12 28 | 704 | 1.2− | 0.6+ | 2006 09 17 | 704 | 0.8+ | 0.5+ | 2006 11 17 | 704 | 0.5+ | 0.4+ |
| 2002 12 28 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 704 | 0.2− | 1.0+ | 2006 11 17 | 704 | 0.6+ | 0.1− |
| 2002 12 28 | 704 | 1.2+ | 0.0 | 2006 09 17 | 704 | 0.5+ | 0.4+ | 2006 11 17 | 704 | 0.5+ | 0.1+ |
| 2003 01 07 | 704 | 0.3+ | 0.8− | 2006 09 17 | 704 | 0.4+ | 1.3+ | 2006 11 17 | 704 | 0.6+ | 0.1− |
| 2003 01 07 | 704 | 0.5− | 0.3− | 2006 09 17 | 699 | 0.1− | 0.8+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2003 01 07 | 704 | 0.4− | 0.5− | 2006 09 17 | 699 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2003 01 14 | 704 | 0.3− | 0.8− | 2006 09 17 | 699 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.1+ |
| 2003 01 14 | 704 | 0.4+ | 0.7− | 2006 09 17 | 699 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2003 01 14 | 704 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2003 01 14 | 704 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2003 01 14 | 704 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.6+ | 0.5− | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2003 01 21 | 704 | 0.0 | 0.9− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2003 01 21 | 704 | (0.2− | 2.1−) | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.6− | 0.4− |
| 2003 01 21 | 704 | 0.2+ | 0.7− | 2006 09 27 | 704 | 0.5− | 0.9+ | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2004 03 15 | 704 | (1.1+ | 2.2−) | 2006 09 27 | 704 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2004 03 15 | 704 | (0.9− | 2.1−) | 2006 09 27 | 704 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2004 03 15 | 704 | 0.3+ | 1.3− | 2006 09 27 | 704 | 0.3− | 1.3+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2004 03 15 | 704 | (0.4− | 1.5−) | 2006 10 04 | 703 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2004 03 15 | 704 | (0.7+ | 2.0−) | 2006 10 04 | 703 | 0.4− | 0.0 | 2006 12 01 | 704 | 0.1− | 0.1− |
| 2004 03 23 | 704 | 0.2− | 0.3+ | 2006 10 04 | 703 | 0.3+ | 0.3+ | 2006 12 01 | 704 | 0.6− | 0.1+ |
| 2004 03 23 | 704 | 0.4+ | 0.0 | 2006 10 04 | 703 | 0.4+ | 0.1+ | 2006 12 01 | 704 | 0.4− | 0.2− |
| 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | | | | |

### 2006 QN$_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.32548 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25180026 | $\omega$ | 183.34119 | | +0.25957539 | | +0.95934755 |
| $a$ | 2.4836969 | $\Omega$ | 101.72542 | | −0.88338969 | | +0.28222634 |
| $e$ | 0.0743813 | $i$ | 6.49659 | | −0.39018363 | | −0.00075048 |
| $P$ | 3.91 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.2− | 0.3+ | 2002 09 03 | 599 | 0.1− | 0.0 | 2006 08 27 | D35 | 0.4− | 0.5+ |
| 2002 08 19 | 644 | 0.0 | 0.1+ | 2002 09 03 | 599 | 0.4+ | 0.3− | 2006 08 27 | D35 | 0.4+ | 0.2+ |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2002 09 03 | 599 | 0.7+ | 0.2− | 2006 08 27 | D35 | 0.1+ | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.4+ | 2002 09 08 | 599 | 0.1+ | 0.3− | 2006 08 28 | D35 | 0.1− | 0.5− |
| 2002 08 30 | 644 | 0.2+ | 0.8− | 2002 09 08 | 599 | 0.5− | 0.0 | 2006 08 28 | D35 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.4+ | 0.2− | 2002 09 08 | 599 | 0.6− | 1.0+ | 2006 08 28 | D35 | 0.2− | 0.0 |

### 2006 QR$_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.98580 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29097428 | $\omega$ | 208.22637 | | +0.76093715 | | +0.63852679 |
| $a$ | 2.2554489 | $\Omega$ | 111.62041 | | −0.56955305 | | +0.74236823 |
| $e$ | 0.1769736 | $i$ | 7.11482 | | −0.31077962 | | +0.20291120 |
| $P$ | 3.39 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 14 | 704 | 0.3+ | 0.3− | 2005 04 18 | 691 | 0.2+ | 0.7+ | 2006 09 17 | 699 | 1.1− | 0.4− |
| 1999 07 14 | 704 | 0.4− | 0.2+ | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 09 25 | 703 | 0.3− | 0.1− |
| 1999 07 14 | 704 | 0.3+ | 0.2+ | 2005 04 18 | 691 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.3− | 0.7− |
| 1999 07 14 | 704 | 0.4− | 0.4+ | 2006 08 27 | D35 | 0.4+ | 0.2+ | 2006 09 25 | 703 | 0.2+ | 0.4− |
| 2002 03 21 | 691 | 0.1− | 0.4+ | 2006 08 27 | D35 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.8− | 0.5− |
| 2002 03 21 | 691 | 0.3+ | 0.5+ | 2006 08 27 | D35 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 03 21 | 691 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 05 07 | 644 | 0.4+ | 1.4+ | 2006 08 28 | 699 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2002 05 07 | 644 | 0.2+ | 1.5+ | 2006 08 28 | 699 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 05 07 | 644 | 0.5+ | 1.5+ | 2006 08 28 | 699 | 1.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 05 18 | 704 | 0.4+ | 0.6− | 2006 08 28 | D35 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2002 05 18 | 704 | 0.0 | 0.5+ | 2006 08 28 | D35 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.0+ | 1.4+ |
| 2002 05 18 | 704 | 0.9+ | 0.4+ | 2006 08 28 | D35 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.8+ | 1.1+ |
| 2002 06 09 | 608 | 0.5− | 0.4− | 2006 08 30 | D35 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.6− | 0.8+ |
| 2002 06 09 | 608 | 0.0 | 0.4− | 2006 08 30 | D35 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.5− | 0.7+ |
| 2002 06 09 | 608 | 0.3+ | 0.5− | 2006 08 30 | D35 | 0.5− | 0.1+ | 2006 10 28 | 703 | 0.0 | 1.1+ |
| 2003 12 01 | 704 | 1.1− | 1.2+ | 2006 09 17 | 699 | 0.5− | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.4+ |
| 2003 12 01 | 704 | 0.1− | 1.1+ | 2006 09 17 | 699 | 0.7+ | 0.0 | 2006 10 28 | 703 | 1.3− | 2.2+ |
| 2003 12 01 | 704 | 1.2+ | 1.4+ | 2006 09 17 | 699 | 0.5+ | 0.4− | | | | |

### 2006 QS$_{58}$ = 2003 YB$_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.35781 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25870014 | $\omega$ | 277.92048 | | +0.99240865 | | +0.01149307 |
| $a$ | 2.4393359 | $\Omega$ | 81.48108 | | +0.04023281 | | +0.91050140 |
| $e$ | 0.1462348 | $i$ | 7.11215 | | −0.11621698 | | +0.41334623 |
| $P$ | 3.81 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.8+ | 1.2+ | 2006 07 31 | E12 | 0.2+ | 0.0 | 2006 08 19 | 644 | 0.2+ | 0.2+ |
| 2003 12 18 | 704 | 0.6− | 0.7+ | 2006 07 31 | E12 | 0.5+ | 0.6+ | 2006 08 26 | E12 | 0.2− | 0.1+ |
| 2003 12 18 | 704 | 0.3− | 0.7− | 2006 07 31 | E12 | 0.5− | 0.2− | 2006 08 26 | E12 | 0.7− | 0.8− |
| 2003 12 22 | 704 | 0.6+ | 0.4− | 2006 07 31 | E12 | 0.5− | 0.4− | 2006 08 26 | E12 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.2− | 0.6− | 2006 08 19 | 644 | 0.8+ | 0.1+ | 2006 08 26 | E12 | 0.3− | 0.0 |
| 2003 12 22 | 704 | 0.3− | 0.3− | 2006 08 19 | 644 | 0.3+ | 0.2+ | | | | |

### 2006 QB$_{59}$ = 2005 GW$_{209}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.85252 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17723297 | $\omega$ | 157.37161 | | +0.67721840 | | +0.71639402 |
| $a$ | 3.1388678 | $\Omega$ | 154.25293 | | −0.72026928 | | +0.69205297 |
| $e$ | 0.1458827 | $i$ | 22.72242 | | −0.15029105 | | −0.08855676 |
| $P$ | 5.56 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.0 | 0.4+ | 2005 06 08 | 703 | 1.4− | 0.9− | 2006 08 28 | 703 | 0.7− | 0.7+ |
| 2004 03 26 | 691 | 0.2− | 0.3+ | 2006 06 21 | 703 | 0.7− | 0.0 | 2006 08 29 | 704 | 0.7+ | 0.7− |
| 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 06 21 | 703 | 0.6+ | 0.5− | 2006 08 29 | 704 | 0.4+ | 1.2− |
| 2005 04 06 | 703 | 0.3+ | 0.3+ | 2006 06 21 | 703 | 0.6+ | 1.4− | 2006 08 29 | 704 | 0.0 | 0.1+ |
| 2005 04 06 | 703 | 0.5+ | 0.1− | 2006 06 21 | 703 | (0.8+ | 2.8−) | 2006 08 29 | 704 | 0.1+ | 1.1+ |
| 2005 04 06 | 703 | 0.3− | 0.1− | 2006 07 21 | 703 | 0.0 | 0.5+ | 2006 09 12 | 704 | 1.0+ | 1.4+ |
| 2005 04 06 | 703 | 0.9+ | 0.4+ | 2006 07 21 | 703 | 0.4− | 0.1+ | 2006 09 12 | 704 | 0.2+ | 1.8+ |
| 2005 04 16 | 703 | 0.6− | 0.6+ | 2006 07 21 | 703 | 0.3+ | 0.2+ | 2006 09 12 | 704 | (0.6− | 2.6+) |
| 2005 04 16 | 703 | 0.4+ | 0.5− | 2006 07 21 | 703 | 1.2− | 0.8− | 2006 09 12 | 704 | (0.8+ | 2.6+) |
| 2005 04 16 | 703 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.2− |
| 2005 04 16 | 703 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2005 05 09 | 703 | 0.5+ | 0.7+ | 2006 08 18 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.1+ |
| 2005 05 09 | 703 | 1.4+ | 0.4+ | 2006 08 19 | 699 | 0.1− | 1.1+ | 2006 09 14 | 703 | 0.5+ | 0.7− |
| 2005 05 09 | 703 | 0.8+ | 0.7− | 2006 08 19 | 699 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.2+ |
| 2005 05 09 | 703 | 0.3− | 0.1− | 2006 08 19 | 699 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2005 06 08 | 703 | 1.7− | 0.8+ | 2006 08 28 | 703 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.0 | 0.3+ |
| 2005 06 08 | 703 | 1.2− | 0.4− | 2006 08 28 | 703 | 0.2− | 0.1+ | | | | |
| 2005 06 08 | 703 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.5− | 0.5+ | | | | |

### 2006 QU$_{59}$ = 2005 JU$_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.68097 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21593207 | $\omega$ | 183.01267 | | +0.97397481 | | −0.22484473 |
| $a$ | 2.7516379 | $\Omega$ | 190.11872 | | +0.21120801 | | +0.94612297 |
| $e$ | 0.2290703 | $i$ | 9.36850 | | +0.08224502 | | +0.23301541 |
| $P$ | 4.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | (42.3+ | 4.1+) | 2006 08 28 | 704 | 0.7+ | 0.5+ | 2006 09 18 | 704 | 0.4+ | 0.2− |
| 2002 12 14 | 704 | (42.0+ | 3.6+) | 2006 08 28 | 704 | 0.4− | 0.0 | 2006 09 18 | 704 | 0.5+ | 0.4− |
| 2002 12 14 | 704 | (42.5+ | 3.5+) | 2006 08 28 | 704 | 0.0 | 0.7+ | 2006 09 18 | 704 | 0.4− | 0.9+ |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.2− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.2− | 0.0 | 2006 08 28 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 699 | 0.2+ | 1.2+ |
| 2005 05 10 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.6− | 0.3− | 2006 09 20 | 699 | 0.1− | 0.6+ |
| 2005 05 16 | 691 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.8+ | 0.3− | 2006 09 20 | 699 | 0.1+ | 0.1+ |
| 2005 05 16 | 691 | 0.0 | 0.3− | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.2+ |
| 2005 05 16 | 691 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.5− | 2006 09 25 | 704 | 0.0 | 0.3+ |
| 2006 05 25 | G96 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.3− | 0.5+ |
| 2006 05 25 | G96 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.4− | 0.2− | 2006 09 29 | G92 | 0.3+ | 0.3− |
| 2006 05 25 | G96 | 0.3+ | 0.3− | 2006 09 11 | 703 | 0.8− | 0.6− | 2006 09 29 | G92 | 0.2− | 0.2+ |
| 2006 05 25 | G96 | 0.3− | 0.3− | 2006 09 11 | 703 | (1.6− | 1.2+) | 2006 09 29 | G92 | 0.1− | 0.5− |
| 2006 08 19 | 644 | 0.3− | 0.5− | 2006 09 13 | 644 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.4+ | 0.0 |
| 2006 08 19 | 644 | 0.3− | 0.4− | 2006 09 13 | 644 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2006 08 19 | 644 | 0.2+ | 0.4− | 2006 09 13 | 644 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.4+ | 0.2+ |
| 2006 08 27 | 699 | 0.3+ | 0.5− | 2006 09 17 | 703 | 0.1− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2006 08 27 | 699 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.5− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2006 08 27 | 699 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2006 08 28 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2006 08 28 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 704 | 0.3− | 1.2− | | | | |

**2006 QW$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.67263 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29802800 | $\omega$ | 82.85023 | | +0.67412238 | +0.73645363 | |
| $a$ | 2.2197190 | $\Omega$ | 229.69746 | | −0.70355591 | +0.61693846 | |
| $e$ | 0.2714438 | $i$ | 4.25051 | | −0.22487351 | +0.27753015 | |
| $P$ | 3.31 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.3− |
| 1999 05 18 | 691 | 0.0 | 0.0 | 2006 08 27 | 699 | 0.2− | 0.1+ | 2006 09 18 | 704 | 0.7+ | 0.0 |
| 1999 05 18 | 691 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.9+ | 0.1+ |
| 2003 11 24 | 703 | (1.9− | 0.1−) | 2006 08 28 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 704 | 0.4− | 0.8− |
| 2003 11 24 | 703 | 0.5− | 0.1− | 2006 08 28 | 704 | 1.2+ | 0.2+ | 2006 09 18 | 704 | 0.7+ | 0.6− |
| 2003 11 24 | 703 | (0.8− | 2.0−) | 2006 08 28 | 704 | 0.5+ | 0.6+ | 2006 09 18 | 704 | 0.1− | 0.9+ |
| 2003 11 24 | 703 | (1.7+ | 0.2+) | 2006 08 28 | 704 | 0.7− | 0.4+ | 2006 09 20 | A13 | 0.1+ | 0.4− |
| 2005 03 17 | G96 | 0.4+ | 0.5+ | 2006 08 28 | 704 | 0.1+ | 0.6+ | 2006 09 20 | A13 | 0.4+ | 0.6− |
| 2005 03 17 | G96 | 0.5+ | 0.2+ | 2006 08 29 | 703 | 0.3− | 0.5− | 2006 09 25 | 704 | 1.0− | 0.1− |
| 2005 03 17 | G96 | 0.4− | 0.2+ | 2006 08 29 | 703 | 0.2+ | 0.6− | 2006 09 25 | 704 | 1.1− | 0.1− |
| 2005 03 17 | G96 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.1+ | 0.4− | 2006 09 25 | 704 | 0.4− | 0.2+ |
| 2006 07 01 | 703 | (3.2− | 1.0−) | 2006 08 29 | 703 | 0.0 | 0.2− | 2006 09 25 | 704 | 1.2− | 0.4− |
| 2006 07 01 | 703 | 0.4− | 0.5− | 2006 08 30 | 699 | 1.0+ | 0.7− | 2006 09 25 | 704 | 0.5− | 0.6− |
| 2006 07 01 | 703 | 0.4− | 0.5− | 2006 08 30 | 699 | 0.8+ | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2006 07 01 | 703 | (1.6− | 0.9−) | 2006 08 30 | 699 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2006 07 21 | 704 | 1.0− | 1.1+ | 2006 08 30 | 699 | 0.6+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2006 07 21 | 704 | (0.6− | 1.6+) | 2006 09 11 | 703 | (1.7+ | 0.4+) | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2006 07 21 | 704 | 1.1− | 0.2+ | 2006 09 11 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 1.2+ |
| 2006 07 21 | 704 | 0.6− | 0.2− | 2006 09 11 | 703 | 0.1− | 0.6+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 11 | 703 | 0.6+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.6+ |
| 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2006 08 19 | 644 | 0.2− | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.5+ |
| 2006 08 19 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.6− | 0.4− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2006 08 19 | 644 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.3+ | | | | |
| 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.1+ | | | | |

**2006 QY$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.55908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27596879 | $\omega$ | 199.40523 | | +0.97187356 | +0.23041230 | |
| $a$ | 2.3364836 | $\Omega$ | 147.15172 | | −0.20246298 | +0.92309486 | |
| $e$ | 0.2634152 | $i$ | 5.15144 | | −0.12029353 | +0.30790591 | |
| $P$ | 3.57 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.8+ | 0.7− | 2006 09 29 | 699 | 0.8− | 0.4− |
| 1998 04 22 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.4− | 0.7− | 2006 09 29 | 699 | 0.7+ | 0.4− |
| 1998 04 22 | 691 | 0.1− | 0.3+ | 2006 09 19 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.1+ |
| 1999 10 10 | 704 | 1.0+ | 0.7+ | 2006 09 19 | 704 | 0.4− | 0.5− | 2006 09 29 | 699 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 0.6− | 0.3− | 2006 09 19 | 704 | 0.6− | 0.9− | 2006 09 29 | 608 | 1.1+ | 0.2− |
| 1999 10 10 | 704 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 09 29 | 608 | 0.9+ | 0.1+ |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 09 29 | 608 | 0.9+ | 0.7− |
| 1999 10 10 | 704 | 0.7− | 0.4− | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2001 03 26 | 695 | 0.2+ | 0.6+ | 2006 09 21 | 699 | 0.4− | 0.1− | 2006 09 30 | 704 | 0.2− | 0.4+ |
| 2001 03 26 | 695 | 0.6+ | 0.7+ | 2006 09 21 | 699 | 1.1− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.1− |
| 2006 08 19 | 699 | 0.4− | 0.0 | 2006 09 21 | 699 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.4− | 0.7+ |
| 2006 08 19 | 699 | 0.1− | 0.2− | 2006 09 22 | 704 | 1.2+ | 0.2− | 2006 09 30 | 703 | 0.8− | 0.0 |
| 2006 08 19 | 699 | 0.0 | 0.6+ | 2006 09 22 | 704 | 1.3+ | 1.4− | 2006 09 30 | 704 | 0.1+ | 0.9+ |
| 2006 08 19 | 699 | 1.0− | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.9+ |
| 2006 08 28 | 704 | (0.5+ | 1.8+) | 2006 09 22 | 704 | 0.2− | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.8+ |
| 2006 08 28 | 704 | 1.0+ | 1.2+ | 2006 09 22 | 704 | 0.8− | 0.7+ | 2006 09 30 | 704 | 0.1− | 0.8+ |
| 2006 08 28 | 704 | 1.2+ | 0.5+ | 2006 09 25 | 699 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2006 08 28 | 703 | 0.4+ | 1.1− | 2006 09 25 | 699 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.3− | 0.3− |
| 2006 08 28 | 703 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2006 08 28 | 703 | 0.2+ | 1.2+ | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 08 28 | 703 | 0.0 | 0.7− | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 09 16 | 704 | 1.0− | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 16 | 704 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2006 09 16 | 704 | 0.5+ | 0.6+ | 2006 09 26 | 704 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2006 09 16 | 704 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.8− | 0.0 |
| 2006 09 16 | 704 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.5− | 2006 10 22 | 703 | 0.0 | 0.2− |
| 2006 09 18 | 703 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.5+ | | | | |
| 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 09 26 | 704 | 0.6+ | 0.1+ | | | | |

**2006 QA$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.76433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17832479 | $\omega$ | 180.78458 | | +0.99676746 | −0.07805141 | |
| $a$ | 3.1260427 | $\Omega$ | 183.85041 | | +0.07516959 | +0.98969620 | |
| $e$ | 0.2254519 | $i$ | 16.47347 | | +0.02835780 | +0.12003918 | |
| $P$ | 5.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 704 | 0.7+ | 0.6+ | 2006 09 11 | 703 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.2+ |
| 2001 12 07 | 704 | 0.1+ | 0.7+ | 2006 09 11 | 703 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2001 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 01 13 | 645 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2002 01 14 | 645 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | (1.2− | 3.6−) | 2006 10 10 | 644 | 0.4+ | 0.3+ |
| 2004 03 19 | 291 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 03 19 | 291 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 03 19 | 291 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 05 14 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2005 05 14 | 691 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.4+ | 1.2+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2005 05 14 | 691 | 0.2− | 0.1+ | 2006 09 18 | 704 | 0.5− | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2006 08 19 | 644 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.9+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2006 08 19 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.6+ | 0.2+ |
| 2006 08 19 | 644 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2006 08 27 | 699 | 0.9+ | 0.2+ | 2006 09 25 | 704 | 0.6− | 0.4+ | 2006 11 09 | 644 | 0.5+ | 0.3+ |
| 2006 08 27 | 699 | 0.4− | 0.3+ | 2006 09 25 | 704 | 0.4− | 0.8+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2006 08 27 | 699 | 0.0 | 0.6− | 2006 09 25 | 704 | 0.9− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 08 27 | 699 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.7− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 08 28 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.7− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.9− |
| 2006 08 28 | 704 | 0.9+ | 0.7+ | 2006 09 29 | 704 | 0.9+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 08 28 | 704 | 0.1+ | 0.7+ | 2006 09 29 | 704 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2006 08 28 | 704 | 1.1− | 0.6+ | 2006 09 29 | 704 | 1.1+ | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2006 08 28 | 704 | 0.6− | 0.9+ | 2006 09 29 | 704 | (1.8+ | 0.2−) | 2006 11 11 | 703 | (1.6− | 0.2−) |
| 2006 08 29 | 703 | 0.6− | 0.1+ | 2006 09 30 | 704 | (0.5+ | 2.4+) | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 08 29 | 703 | 0.1+ | 0.5− | 2006 09 30 | 704 | 0.0 | 0.9− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2006 08 29 | 703 | 1.0− | 0.4− | 2006 09 30 | 704 | 0.6+ | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | 0.8− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2006 09 11 | 703 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.2− | | | | |
| 2006 09 11 | 703 | 1.0− | 0.4− | 2006 10 02 | G96 | 0.3− | 0.1− | | | | |

### 2006 QB$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.04454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18168064 | $\omega$ | 296.01878 | | +0.42695307 | +0.90426641 | |
| $a$ | 3.0874288 | $\Omega$ | 359.22691 | | −0.70236118 | +0.32907415 | |
| $e$ | 0.2720805 | $i$ | 15.70024 | | −0.56956111 | +0.27205230 | |
| $P$ | 5.42 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.8− | 0.9− | 2006 08 29 | 703 | 0.1+ | 1.0− | 2006 09 26 | 704 | 0.2+ | 0.7+ | |
| 2001 09 25 | 704 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 1.0− | 0.7− | 2006 09 26 | 704 | 0.2+ | 0.2+ | |
| 2001 09 25 | 704 | 0.3+ | 0.8+ | 2006 08 29 | 703 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.2+ | 0.2+ | |
| 2001 09 25 | 704 | 0.3+ | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.7+ | |
| 2005 03 09 | 691 | 0.5+ | 0.2+ | 2006 08 30 | 699 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.5+ | |
| 2005 03 09 | 691 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.6+ | |
| 2005 03 09 | 691 | 0.2− | 0.1+ | 2006 08 30 | 699 | 1.1+ | 0.8− | 2006 09 30 | 703 | 0.7+ | 0.3− | |
| 2005 04 05 | 699 | (1.6+ | 0.1+) | 2006 08 31 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.7+ | |
| 2005 04 05 | 699 | 0.9− | 0.6− | 2006 08 31 | 704 | 0.3− | 0.2+ | 2006 10 19 | 703 | 1.1+ | 1.4− | |
| 2005 04 05 | 699 | 0.0 | 0.2+ | 2006 08 31 | 704 | 0.1− | 0.5− | 2006 10 19 | 703 | 1.4− | 0.1+ | |
| 2005 04 05 | 699 | 0.4− | 1.1− | 2006 08 31 | 704 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.1− | 1.2+ | |
| 2005 05 01 | 644 | 0.2− | 0.1− | 2006 09 12 | 704 | 1.2− | 0.4+ | 2006 10 19 | 703 | 0.2+ | 0.2− | |
| 2005 05 01 | 644 | 0.3− | 0.1+ | 2006 09 12 | 704 | (0.8+ | 1.6+) | 2006 10 20 | G96 | 0.1− | 0.1+ | |
| 2005 05 01 | 644 | 0.2+ | 0.3+ | 2006 09 12 | 704 | 0.5− | 0.6+ | 2006 10 20 | G96 | 0.3− | 0.1− | |
| 2006 08 19 | 644 | 0.1+ | 0.1− | 2006 09 12 | 704 | 0.4− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.1− | |
| 2006 08 19 | 644 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.9− | 2006 10 20 | G96 | 0.0 | 0.2− | |
| 2006 08 19 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.4− | 0.4− | |
| 2006 08 28 | 704 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.2+ | |
| 2006 08 28 | 704 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.5− | 2006 11 11 | G96 | 0.3− | 0.5− | |
| 2006 08 28 | 704 | 1.0+ | 0.5+ | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.5− | |
| 2006 08 28 | 704 | 0.1+ | 1.4+ | 2006 09 18 | 699 | 0.6− | 1.0+ | 2006 11 21 | G96 | 0.0 | 0.1+ | |
| 2006 08 29 | 703 | 0.2− | 0.8− | 2006 09 18 | 699 | 0.3− | 0.4− | 2006 11 21 | G96 | 0.1− | 0.1+ | |
| 2006 08 29 | 703 | (2.0− | 0.4+) | 2006 09 18 | 699 | 0.2− | 0.9+ | 2006 11 21 | G96 | 0.0 | 0.2+ | |
| 2006 08 29 | 703 | 0.6− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2+ | |
| 2006 08 29 | 703 | 0.3+ | 0.5− | 2006 09 20 | 644 | 0.8+ | 0.2− | | | | | |
| 2006 08 29 | 703 | 0.6− | 0.6− | 2006 09 20 | 644 | 0.0 | 0.1− | | | | | |

### 2006 QL$_{60}$ = 1995 SY$_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.68525 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26411469 | $\omega$ | 184.68023 | | +0.87785327 | +0.47801277 | |
| $a$ | 2.4058821 | $\Omega$ | 146.71206 | | −0.43763912 | +0.82575705 | |
| $e$ | 0.2071468 | $i$ | 3.09378 | | −0.19453954 | +0.29938118 | |
| $P$ | 3.73 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.1− | 2006 07 25 | 644 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.2+ | |
| 1995 09 20 | 691 | 0.1+ | 0.0 | 2006 07 25 | 644 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.2− | |
| 1995 09 20 | 691 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.3− | |
| 1995 09 25 | 691 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2− | |
| 1995 09 25 | 691 | 0.4+ | 0.1− | 2006 08 16 | 644 | 0.5+ | 0.9+ | 2006 09 30 | G96 | 0.3+ | 0.2− | |
| 1995 09 25 | 691 | 0.3− | 0.0 | 2006 08 20 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.3− | 0.0 | |
| 2006 07 25 | G96 | 0.2− | 0.3− | 2006 08 20 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.5− | 0.0 | |
| 2006 07 25 | G96 | 0.3+ | 0.3− | 2006 08 20 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1+ | |
| 2006 07 25 | G96 | 0.1− | 0.5− | 2006 08 28 | 703 | 0.6− | 0.3− | 2006 10 22 | G96 | 0.3+ | 0.1− | |
| 2006 07 25 | G96 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.7+ | 0.2+ | | | | | |
| 2006 07 25 | 644 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.4+ | | | | | |

### 2006 QT$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.33246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26498456 | $\omega$ | 26.00626 | | +0.79548293 | +0.60516498 | |
| $a$ | 2.4006140 | $\Omega$ | 296.71745 | | −0.56191254 | +0.71729066 | |
| $e$ | 0.1716620 | $i$ | 2.01075 | | −0.22685062 | +0.34535411 | |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.4− | 0.2+ | 2006 06 19 | G96 | 0.0 | 0.3− | 2006 08 21 | 644 | 0.1− | 0.1+ | |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 06 19 | G96 | 0.3+ | 0.2− | 2006 08 28 | 703 | 0.4+ | 0.3− | |
| 2005 03 11 | G96 | 0.4+ | 0.2− | 2006 07 20 | D35 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 1.0− | |
| 2005 03 11 | G96 | 0.2+ | 0.1+ | 2006 07 20 | D35 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.0 | 0.4+ | |
| 2005 04 12 | G96 | 0.1− | 0.1− | 2006 07 20 | D35 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 1.2− | 0.1+ | |
| 2005 04 12 | G96 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.2− | |
| 2005 04 12 | G96 | 0.1+ | 0.2− | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.5+ | 0.0 | |
| 2005 04 12 | G96 | 0.1− | 0.4− | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.1− | |
| 2006 06 19 | G96 | 0.1− | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.5+ | 0.1− | |
| 2006 06 19 | G96 | 0.2− | 0.0 | 2006 08 21 | 644 | 0.2− | 0.1+ | | | | | |

### 2006 QV$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.14105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28339258 | $\omega$ | 232.98522 | | +0.97253364 | −0.23175195 | |
| $a$ | 2.2954988 | $\Omega$ | 140.40196 | | +0.22289413 | +0.90044538 | |
| $e$ | 0.2248465 | $i$ | 1.94779 | | +0.06705610 | +0.36808851 | |
| $P$ | 3.48 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 691 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.5− | 0.4− | |
| 1999 09 18 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.9− | 2006 09 14 | 644 | 0.2+ | 0.2− | |
| 1999 09 18 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.2+ | |
| 2005 04 10 | G96 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 09 25 | 688 | 0.4− | 0.2− | |
| 2005 04 10 | G96 | 0.3− | 0.3− | 2006 08 28 | 699 | 0.2− | 0.3+ | 2006 09 25 | 688 | 0.1− | 0.0 | |
| 2005 04 10 | G96 | 0.2− | 0.7− | 2006 08 28 | 699 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.6+ | 0.1− | |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.5+ | 0.3− | 2006 11 17 | G96 | 0.2− | 0.6− | |
| 2006 06 20 | G96 | 0.1+ | 0.6− | 2006 08 28 | 699 | 0.6+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.1− | |
| 2006 06 20 | G96 | 0.1− | 0.8− | 2006 08 29 | 704 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.4− | |
| 2006 06 20 | G96 | 0.4− | 0.3− | 2006 08 29 | 704 | 0.1− | 0.7+ | 2006 11 21 | G96 | 0.2+ | 0.6− | |
| 2006 06 20 | G96 | 0.3− | 0.1− | 2006 08 29 | 704 | 0.5+ | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.0 | |
| 2006 08 21 | 704 | 0.4− | 0.0 | 2006 08 29 | 704 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.4− | |
| 2006 08 21 | 704 | 0.0 | 0.2− | 2006 08 31 | 704 | 0.5− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.5− | |
| 2006 08 21 | 704 | 0.0 | 0.9− | 2006 08 31 | 704 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.4− | |
| 2006 08 21 | 704 | 0.3+ | 0.4+ | 2006 08 31 | 704 | 0.4+ | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.2− | |
| 2006 08 21 | 704 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.9− | 0.2− | 2006 11 27 | G96 | 0.2− | 0.1+ | |
| 2006 08 28 | 691 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.2− | |
| 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.1− | | | | | |
| 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.1− | 0.2− | | | | | |

### 2006 QZ$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.10162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26663807 | $\omega$ | 308.16849 | | +0.56975347 | +0.82181317 | |
| $a$ | 2.3906791 | $\Omega$ | 356.56268 | | −0.74306258 | +0.51410254 | |
| $e$ | 0.2217778 | $i$ | 1.93252 | | −0.35105409 | +0.24560473 | |
| $P$ | 3.70 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | 695 | 0.3+ | 0.3+ | 2006 08 21 | 644 | 0.1+ | 0.3− | 2006 09 25 | 699 | 0.7− | 0.8+ | |
| 2005 03 10 | 695 | 0.5+ | 0.4+ | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.1− | 0.3+ | |
| 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.6− | 0.8+ | 2006 09 25 | 699 | (0.2+ | 2.2−) | |
| 2005 04 04 | G96 | 0.4− | 0.2− | 2006 08 28 | 691 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− | |
| 2005 04 04 | G96 | 0.2− | 0.5− | 2006 08 28 | 703 | 0.0 | 0.9− | 2006 09 26 | G96 | 0.0 | 0.1− | |
| 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | |
| 2006 08 21 | 704 | 0.8+ | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.2− | 0.3− | |
| 2006 08 21 | 704 | 0.1+ | 0.5− | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.0 | |
| 2006 08 21 | 704 | 0.6+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.9− | 2006 10 27 | G96 | 0.2+ | 0.4− | |
| 2006 08 21 | 704 | 0.0 | 0.8− | 2006 09 18 | 699 | 0.1− | 0.9+ | 2006 10 27 | G96 | 0.2+ | 0.3+ | |
| 2006 08 21 | 704 | 0.2− | 0.6− | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.0 | |
| 2006 08 21 | 644 | 0.0 | 0.2− | 2006 09 18 | 699 | 1.0+ | 0.1− | | | | | |
| 2006 08 21 | 644 | 0.3− | 0.3− | 2006 09 25 | 699 | (1.8− | 1.0−) | | | | | |

**2006 QD$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.42164 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26074197 | $\omega$ | 19.02456 | | +0.75164316 | +0.64868839 | |
| $a$ | 2.4265845 | $\Omega$ | 299.94262 | | −0.62159473 | +0.63618447 | |
| $e$ | 0.0748936 | $i$ | 7.91437 | | −0.22057322 | +0.41769930 | |
| $P$ | 3.78 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 08 | 644 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 22 | 691 | 0.1− | 0.0 |
| 2002 07 08 | 644 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 22 | 691 | 0.1− | 0.1− |
| 2002 07 08 | 644 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2002 08 07 | 644 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2002 08 07 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.6− | 0.3+ |
| 2002 08 07 | 644 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2006 08 21 | 644 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2006 08 21 | 644 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.3− |
| 2006 08 28 | 703 | 1.0+ | 0.9− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2006 08 28 | 703 | 1.2− | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.4+ | 0.0 |
| 2006 08 28 | 703 | 0.9+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1+ | | | | |
| 2006 08 28 | 703 | 0.8− | 0.2+ | 2006 09 22 | 691 | 0.2− | 0.1+ | | | | |

**2006 QF$_{61}$ = 2004 FR$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.43118 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22358096 | $\omega$ | 222.40054 | | +0.67532133 | −0.73720821 | |
| $a$ | 2.6885173 | $\Omega$ | 185.25513 | | +0.72395744 | +0.66819890 | |
| $e$ | 0.1895385 | $i$ | 13.61984 | | +0.14080744 | +0.10017126 | |
| $P$ | 4.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.3− | 0.6− | 2006 09 16 | 699 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 1995 03 27 | 691 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.7− | 0.6− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 1995 03 27 | 691 | 0.2+ | 0.4− | 2006 09 16 | 699 | 0.4− | 0.5− | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2000 04 06 | 691 | 0.3+ | 0.1− | 2006 09 16 | 699 | 1.1− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2000 04 06 | 691 | 0.3− | 0.2− | 2006 09 26 | 704 | (0.5− | 1.6+) | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2000 04 06 | 691 | 0.8+ | 0.4+ | 2006 09 26 | 704 | 0.7− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 06 15 | 645 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.9− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 06 15 | 645 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.7+ | 0.8+ | 2006 10 22 | 703 | 0.2− | 0.1− |
| 2001 07 18 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | (1.5+ | 0.7+) | 2006 10 22 | 703 | 0.6− | 0.0 |
| 2001 07 18 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2001 07 18 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2001 07 18 | 644 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 07 18 | 644 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 07 18 | 644 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2004 03 20 | 291 | 0.1− | 0.4+ | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.2− | 0.5− |
| 2004 03 20 | 291 | 0.2− | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2004 03 20 | 291 | 0.0 | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.9+ | 0.4− |
| 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2006 07 22 | G96 | 0.4− | 0.5− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 10 | 704 | (1.5+ | 1.2+) |
| 2006 07 22 | G96 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 704 | 0.6− | 0.9+ |
| 2006 07 22 | G96 | 1.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 10 | 704 | 0.7+ | 0.4+ |
| 2006 08 21 | 704 | (2.2+ | 1.0+) | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 10 | 704 | 0.8+ | 0.9+ |
| 2006 08 21 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 10 | 704 | 1.1+ | 0.8− |
| 2006 08 21 | 704 | 1.0− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.3+ | 0.0 |
| 2006 08 21 | 704 | 0.2+ | 0.8− | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.1+ | 0.3− |
| 2006 08 28 | 703 | 0.6+ | 1.0+ | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 16 | 703 | 0.0 | 0.8− |
| 2006 08 28 | 703 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 16 | 703 | 0.1− | 0.5+ |
| 2006 08 28 | 703 | 0.8+ | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | | | |
| 2006 08 28 | 703 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | | | | |

**2006 QH$_{61}$ = 2004 EK$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.12985 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23604327 | $\omega$ | 184.94919 | | +0.98361225 | −0.18013009 | |
| $a$ | 2.5930345 | $\Omega$ | 185.44655 | | +0.16809534 | +0.93174641 | |
| $e$ | 0.2761692 | $i$ | 4.68443 | | +0.06519891 | +0.31528047 | |
| $P$ | 4.18 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.2− |
| 2000 03 03 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.9− | 1.3− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.5+ | 0.2− |
| 2002 12 11 | 704 | 0.1− | 0.4− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.6+ | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.3− |
| 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.6− | 1.0− | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2004 03 15 | 691 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2004 03 15 | 691 | 0.4− | 1.3+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.1− |
| 2004 03 27 | 291 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.4+ | 0.1+ |
| 2004 03 27 | 291 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2004 03 27 | 291 | 0.0 | 0.1− | 2006 10 19 | 683 | 1.0− | 1.4− | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2006 08 21 | 704 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2006 08 21 | 704 | 1.0− | 0.1+ | 2006 10 19 | 683 | (0.1− | 1.7−) | 2006 11 11 | 703 | 0.9+ | 0.5− |
| 2006 08 21 | 704 | 0.6− | 0.0 | 2006 10 19 | 683 | 0.4− | 1.1− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2006 08 21 | 704 | 1.1− | 0.3+ | 2006 10 19 | 691 | 0.5− | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 10 20 | 683 | 1.1+ | 1.1− | 2006 11 14 | 704 | 0.4+ | 0.9+ |
| 2006 08 28 | 703 | 0.4− | 0.3− | 2006 10 20 | 683 | 0.9+ | 0.7− | 2006 11 14 | 704 | 0.0 | 0.1− |
| 2006 08 28 | 703 | 0.2+ | 0.4+ | 2006 10 20 | 683 | 0.8− | 0.6− | 2006 11 14 | 704 | 1.3+ | 1.1+ |
| 2006 09 17 | 704 | 0.2+ | 0.9+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 0.0 | 0.5− |
| 2006 09 17 | 704 | 0.2− | 1.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.3− | 0.1+ |
| 2006 09 17 | 704 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2006 09 17 | 704 | 0.6+ | 0.0 | 2006 10 22 | 704 | 1.3+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2006 09 17 | 704 | 0.2− | 1.4+ | 2006 10 22 | 704 | 0.7+ | 0.5− | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2006 09 20 | 704 | (1.8− | 0.1−) | 2006 10 22 | 704 | 0.3− | 0.6− | 2006 11 16 | G96 | 0.6+ | 0.4− |
| 2006 09 20 | 704 | 0.9− | 1.4+ | 2006 10 22 | 683 | 0.6+ | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.3+ |
| 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.5+ |
| 2006 09 20 | 704 | (0.3+ | 1.6+) | 2006 10 22 | 683 | 0.1− | 1.4+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 2006 09 22 | 224 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.4− | 0.4− |
| 2006 09 22 | 224 | 0.5− | 1.4+ | 2006 10 22 | 683 | 0.0 | 0.8+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2006 09 22 | 224 | 0.6− | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 10 23 | 683 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.9− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 23 | 683 | 0.1− | 1.4+ | 2006 11 19 | 704 | 0.4+ | 0.5− |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 23 | 683 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.5− | 0.2− |
| 2006 10 03 | 704 | 0.2− | 1.2+ | 2006 10 27 | 704 | (0.4− | 3.0+) | 2006 11 19 | 704 | 0.9− | 0.2+ |
| 2006 10 03 | 704 | 0.5− | 0.5+ | 2006 10 27 | 704 | (0.7− | 1.8+) | 2006 11 20 | 704 | 0.5− | 0.4− |
| 2006 10 03 | 704 | 1.3+ | 0.6+ | 2006 10 27 | 704 | 1.1− | 0.7+ | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2006 10 03 | 704 | 0.8+ | 1.0+ | 2006 10 27 | 704 | (2.5− | 0.2+) | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2006 10 03 | 704 | 0.8+ | 0.3+ | 2006 11 01 | 703 | 0.3+ | 0.9+ | 2006 11 20 | 704 | 0.8− | 0.4− |
| 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 703 | 0.4+ | 0.6+ | 2006 11 20 | 704 | 0.4− | 0.7− |
| 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 703 | 0.6+ | 0.6+ | | | | |
| 2006 10 11 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 703 | 0.2+ | 0.3+ | | | | |

**2006 QK$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.14011 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23118286 | $\omega$ | 136.10116 | | +0.98931384 | −0.10461844 | |
| $a$ | 2.6292525 | $\Omega$ | 230.18402 | | +0.06755323 | +0.94614662 | |
| $e$ | 0.1903894 | $i$ | 7.59749 | | +0.12920790 | +0.30636834 | |
| $P$ | 4.26 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 15 | 910 | 0.1− | 0.8+ | 2002 12 06 | 291 | 0.2+ | 0.2− | 2006 09 22 | 691 | 0.2− | 0.0 |
| 1998 12 16 | 910 | 0.1+ | 0.4+ | 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 22 | 691 | 0.3+ | 0.0 |
| 1998 12 16 | 910 | 0.1− | 0.8+ | 2006 08 22 | 644 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.1+ |
| 2002 10 03 | 644 | 0.6+ | 0.2+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.4− | 0.1− |
| 2002 10 03 | 644 | 0.2+ | 0.2− | 2006 08 28 | 703 | 1.4+ | 0.0 | 2006 09 25 | 691 | 0.3− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.8+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.6− | 0.6+ |
| 2002 10 31 | 644 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.3− | 1.2+ |
| 2002 10 31 | 644 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 09 26 | 703 | (0.4− | 1.9+) |
| 2002 10 31 | 644 | 0.7− | 0.2+ | 2006 08 29 | 703 | (1.3+ | 2.4+) | 2006 09 26 | 703 | 1.0+ | 0.2+ |
| 2002 11 09 | 695 | 0.1− | 0.4− | 2006 08 29 | 703 | (1.5− | 0.6+) | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2002 11 09 | 695 | 0.3− | 0.1− | 2006 08 29 | 703 | 1.0+ | 0.3− | 2006 09 27 | 691 | 0.4+ | 0.1− |
| 2002 12 06 | 291 | 0.2+ | 0.5− | 2006 08 29 | 703 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2002 12 06 | 291 | 0.2− | 0.1− | 2006 09 22 | 691 | 0.3− | 0.2− | | | | |

**2006 QS$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.92036 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17249059 | $\omega$ | 166.51674 | | +0.96138359 | | +0.27515835 |
| $a$ | 3.1961398 | $\Omega$ | 177.49221 | | −0.26261178 | | +0.92309091 |
| $e$ | 0.1156150 | $i$ | 7.12832 | | −0.08232043 | | +0.26868392 |
| $P$ | 5.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.5− | 0.1− | 2006 08 28 | 703 | 0.7− | 1.4+ | 2006 09 17 | 703 | (1.7+ | 0.6+) |
| 1995 10 21 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 1.2− | 0.8+ | 2006 09 17 | 703 | (0.4+ | 4.1−) |
| 1995 10 21 | 691 | 0.3+ | 0.3+ | 2006 09 02 | 152 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 09 02 | 152 | 1.0+ | 0.2− | 2006 09 27 | G96 | 0.3− | 0.5− |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 02 | 152 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.2− |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 11 | 703 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.0 |
| 2005 06 29 | 691 | 0.1− | 0.1− | 2006 09 11 | 703 | 0.7− | 1.1− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2005 06 29 | 691 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.5− | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2005 06 29 | 691 | 0.3+ | 0.1+ | 2006 09 11 | 703 | (1.8+ | 0.1−) | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.1+ |
| 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.5− | 0.0 |
| 2006 08 22 | 644 | 0.5+ | 0.2+ | 2006 09 13 | 644 | 0.6+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2006 08 28 | 703 | 0.5+ | 0.9+ | 2006 09 17 | 703 | (1.5− | 0.0 ) | 2006 11 11 | G96 | 0.5− | 0.5− |
| 2006 08 28 | 703 | 0.9− | 0.6+ | 2006 09 17 | 703 | 0.5− | 0.9− | 2006 11 11 | G96 | 0.1+ | 0.4− |

**2006 QU$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.41860 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17339410 | $\omega$ | 92.28125 | | +0.46609434 | | −0.85461680 |
| $a$ | 3.1850274 | $\Omega$ | 326.65613 | | +0.55086157 | | +0.48276130 |
| $e$ | 0.2870127 | $i$ | 24.60760 | | +0.69232044 | | +0.19123717 |
| $P$ | 5.68 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.2− | 0.5− | 2006 07 25 | 644 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.9+ | 0.3+ |
| 2000 08 26 | 704 | 0.4+ | 0.2+ | 2006 08 22 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.4− | 0.2− |
| 2000 08 26 | 704 | 0.2+ | 0.6− | 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 1.2− | 0.8+ |
| 2000 08 26 | 704 | 0.0 | 0.3+ | 2006 08 22 | 644 | 0.3+ | 0.3+ | 2006 09 29 | 699 | (1.6− | 0.8+) |
| 2000 08 26 | 704 | 0.2− | 0.7+ | 2006 08 27 | 699 | 0.1+ | 0.7+ | 2006 09 29 | 699 | 0.3+ | 0.7+ |
| 2001 09 07 | 704 | 0.7+ | 0.7+ | 2006 08 27 | 699 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 0.4+ | 0.5+ |
| 2001 09 07 | 704 | 0.9+ | 0.1− | 2006 08 27 | 699 | 0.9+ | 0.1− | 2006 10 01 | 703 | 0.1− | 0.6− |
| 2001 09 07 | 704 | 0.5− | 0.2+ | 2006 08 27 | 699 | 0.5+ | 0.3+ | 2006 10 01 | 703 | 0.9− | 0.1− |
| 2001 09 28 | 704 | 1.5− | 0.4+ | 2006 08 28 | 704 | 1.4− | 0.4+ | 2006 10 01 | 703 | 0.2− | 0.0 |
| 2001 09 28 | 704 | 0.2− | 0.7− | 2006 08 28 | 704 | 1.0− | 0.7− | 2006 10 01 | 703 | 1.1− | 0.7− |
| 2001 09 28 | 704 | 0.3− | 1.1− | 2006 08 28 | 704 | 0.9+ | 0.5− | 2006 10 01 | 704 | 0.0 | 0.6− |
| 2001 09 28 | 704 | 0.0 | 1.5− | 2006 08 30 | 699 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.5− |
| 2001 11 27 | 704 | 0.5− | 0.4+ | 2006 08 30 | 699 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.5+ | 0.6− |
| 2001 11 27 | 704 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.6+ | 0.3− | 2006 10 01 | 704 | 0.1− | 0.4− |
| 2001 11 27 | 704 | 0.3+ | 0.1− | 2006 08 30 | 699 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.7+ | 0.3− |
| 2001 11 27 | 704 | 0.1+ | 0.3+ | 2006 09 11 | 703 | 0.3− | 0.3− | 2006 11 13 | 703 | 0.3− | 1.2+ |
| 2001 11 27 | 704 | 0.2+ | 0.4+ | 2006 09 11 | 703 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.4− | 1.4+ |
| 2002 03 05 | 704 | 0.3+ | 0.8+ | 2006 09 11 | 703 | 0.3− | 0.8− | 2006 11 13 | 703 | 0.6− | 0.7+ |
| 2002 03 05 | 704 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.0 | 0.6− | 2006 11 13 | 703 | (0.8+ | 1.6+) |
| 2002 03 05 | 704 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 11 27 | 703 | 1.2+ | 0.2+ |
| 2002 03 05 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.8− | 0.0 |
| 2002 03 05 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.6− | 2006 11 27 | 703 | 0.2− | 0.6+ |
| 2006 07 25 | 644 | 0.4− | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.7− | 0.2− |
| 2006 07 25 | 644 | 0.4− | 0.1+ | 2006 09 20 | 699 | 0.9+ | 0.2+ | | | | |

**2006 QW$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.71644 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24612666 | $\omega$ | 349.75276 | | +0.77773855 | | +0.61981583 |
| $a$ | 2.5217204 | $\Omega$ | 331.11558 | | −0.56030293 | | +0.60811425 |
| $e$ | 0.1597467 | $i$ | 12.51184 | | −0.28492697 | | +0.49600948 |
| $P$ | 4.00 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.9− | 0.7+ | 2006 08 19 | A50 | 0.3− | 0.4− | 2006 08 29 | 703 | 0.0 | 0.2− |
| 2002 08 28 | 644 | 0.7− | 0.7+ | 2006 08 22 | 644 | 0.4+ | 0.0 | 2006 08 29 | 703 | 0.7+ | 0.9− |
| 2002 08 28 | 644 | 0.9− | 0.8+ | 2006 08 22 | 644 | 0.5+ | 0.4+ | 2006 08 29 | 691 | 0.2− | 0.2+ |
| 2002 09 06 | 704 | 0.8+ | 0.8+ | 2006 08 22 | 644 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.0 | 0.2+ |
| 2002 09 06 | 704 | 0.6+ | 1.0+ | 2006 08 27 | 699 | 0.6− | 0.7− | 2006 08 29 | 691 | 0.2− | 0.0 |
| 2002 09 06 | 704 | 0.2− | 0.8+ | 2006 08 27 | 699 | 1.3+ | 0.6+ | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 2002 10 05 | 645 | 0.1− | 0.1− | 2006 08 27 | 699 | (1.9+ | 0.9+) | 2006 09 13 | 644 | 0.3+ | 0.2+ |
| 2002 10 05 | 645 | 0.1− | 0.1− | 2006 08 27 | 699 | (1.3+ | 1.9+) | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 08 28 | 703 | 1.0+ | 1.2− | 2006 09 17 | 703 | 0.4+ | 0.7+ |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 09 17 | 703 | 0.2− | 0.4+ |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.6− | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.4− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.3− | 0.4− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.6− | 1.3− | | | | |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.5+ | 0.9− | | | | |

**2006 QC$_{62}$ = 1996 JT$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.29346 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21293696 | $\omega$ | 166.10236 | | +0.78190420 | | +0.61909126 |
| $a$ | 2.7773803 | $\Omega$ | 155.19124 | | −0.58732286 | | +0.77090731 |
| $e$ | 0.2170688 | $i$ | 10.04092 | | −0.20899208 | | +0.14975958 |
| $P$ | 4.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 14 | 691 | 0.0 | 0.3− | 2006 08 22 | 644 | 0.3+ | 0.4− | 2006 08 28 | 703 | 0.0 | 0.1− |
| 1996 05 14 | 691 | 0.6+ | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 1.2− | 0.7− |
| 1996 05 14 | 691 | 0.2− | 0.0 | 2006 08 27 | 699 | 0.8+ | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.0 |
| 1996 05 21 | 691 | 0.1− | 0.2− | 2006 08 27 | 699 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.5+ | 0.0 |
| 1996 05 21 | 691 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.3+ | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.2− |
| 1996 05 21 | 691 | 0.3− | 0.1+ | 2006 08 27 | 699 | 1.1− | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.8− | 2006 09 14 | 703 | 0.3+ | 1.0+ |

**2006 QG$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.29146 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28280216 | $\omega$ | 240.49594 | | +0.80120904 | | −0.59583212 |
| $a$ | 2.2986926 | $\Omega$ | 155.94417 | | +0.58513849 | | +0.76082538 |
| $e$ | 0.1610019 | $i$ | 7.78423 | | +0.12520787 | | +0.25715526 |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.5+ | 0.9− | 2006 09 13 | 644 | 0.5− | 0.3− | 2006 10 02 | 703 | 0.0 | 0.2+ |
| 1999 09 14 | 704 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 10 02 | 703 | 0.8− | 0.1+ |
| 1999 09 14 | 704 | 1.2+ | 0.1− | 2006 09 18 | 699 | 0.4− | 0.8+ | 2006 10 02 | 703 | 0.5− | 0.2+ |
| 1999 09 14 | 704 | 0.4+ | 0.5− | 2006 09 18 | 699 | 0.7− | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.3− |
| 1999 09 14 | 704 | 0.3+ | 0.4− | 2006 09 19 | 703 | 0.2− | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 1999 09 14 | 703 | 0.5− | 1.8+ | 2006 09 19 | 703 | 0.3+ | 0.6− | 2006 10 11 | 644 | 0.0 | 0.4+ |
| 1999 09 14 | 703 | 0.2+ | 1.0+ | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.4− | 0.3+ |
| 1999 09 14 | 703 | 0.8− | 0.2− | 2006 09 19 | 703 | 0.2+ | 0.9− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 1999 09 14 | 703 | 1.1− | 0.5− | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 1999 10 16 | 704 | 0.2+ | 0.8+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 1999 10 16 | 704 | 0.4− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.6+ |
| 1999 10 16 | 704 | 0.1− | 0.4+ | 2006 09 22 | 704 | (0.4+ | 1.8+) | 2006 10 16 | 703 | 0.1− | 0.6− |
| 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 22 | 704 | 1.1+ | 1.0− | 2006 10 16 | 703 | (1.8− | 0.5−) |
| 2006 08 22 | 644 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.7+ | 1.1+ | 2006 10 16 | 703 | 0.4+ | 0.5− |
| 2006 08 22 | 644 | 0.2− | 0.1+ | 2006 09 22 | 704 | (0.1− | 1.6+) | 2006 10 16 | 703 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 22 | 704 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.0 | | |
| 2006 08 28 | 703 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.8+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.9− | | |
| 2006 08 28 | 703 | 1.0+ | 0.7+ | 2006 09 26 | 704 | 0.2+ | 1.0+ | 2006 10 16 | 703 | 0.2− | 0.5− | | |
| 2006 08 28 | 703 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2006 09 12 | 703 | 0.4− | 0.0 | 2006 09 26 | 704 | 1.2+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 2006 09 12 | 703 | 0.9− | 0.9− | 2006 09 26 | 704 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.4+ | | |
| 2006 09 12 | 703 | 0.4+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 23 | 703 | 1.3+ | 0.2− | | |
| 2006 09 12 | 703 | 0.0 | 0.7− | 2006 09 30 | 703 | 0.4+ | 0.4− | 2006 11 23 | 703 | 1.1− | 0.2+ | | |
| 2006 09 13 | 644 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 11 23 | 703 | 0.3− | 0.5− | | |
| 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 11 23 | 703 | 0.1− | 0.2+ | | |

**2006 QJ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.56844 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30622490 | $\omega$ | 166.74449 | | +0.63116501 | | +0.76971318 |
| $a$ | 2.1799291 | $\Omega$ | 142.26404 | | −0.72515446 | | +0.62938331 |
| $e$ | 0.2481353 | $i$ | 9.00292 | | −0.27528481 | | +0.10685629 |
| $P$ | 3.22 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 05 | 645 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.5− | 0.1− | 2006 09 17 | 699 | 0.7− | 0.4+ | | |
| 2002 03 05 | 645 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.5− | 0.1− | 2006 09 17 | 699 | 0.2− | 0.1− | | |
| 2005 02 09 | G96 | 0.1− | 0.6+ | 2006 08 28 | 699 | 0.3− | 0.2+ | 2006 09 17 | 699 | 0.6− | 0.5− | | |
| 2005 02 09 | G96 | 0.5+ | 0.7+ | 2006 08 28 | 699 | 0.8+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.5− | | |
| 2005 02 09 | G96 | 0.4− | 0.2+ | 2006 08 28 | 699 | 0.3+ | 1.0+ | 2006 09 19 | 703 | 0.5+ | 0.3+ | | |
| 2005 02 09 | G96 | 0.5+ | 0.4+ | 2006 08 28 | 699 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.3− | | |
| 2005 02 09 | G96 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.0 | 0.0 | | |
| 2005 02 09 | G96 | 0.0 | 0.3+ | 2006 08 30 | 704 | 1.0+ | 0.6+ | 2006 09 25 | 703 | 0.0 | 0.9− | | |
| 2005 02 09 | G96 | 0.6+ | 0.3− | 2006 08 30 | 704 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.1− | 0.1− | | |
| 2005 02 09 | G96 | 0.8− | 0.7− | 2006 08 30 | 704 | 0.1− | 0.6+ | | | | | | |
| 2006 08 22 | 644 | 0.5− | 0.1− | 2006 09 17 | 699 | 0.3− | 0.2+ | | | | | | |

**2006 QL$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.66981 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26987959 | $\omega$ | 143.77791 | | +0.26751504 | | +0.96293521 |
| $a$ | 2.3714976 | $\Omega$ | 141.70474 | | −0.89661972 | | +0.26189091 |
| $e$ | 0.2211421 | $i$ | 3.19302 | | −0.35285801 | | +0.06456733 |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.5− | 0.6− | 2006 08 22 | 644 | 0.5+ | 0.3+ | 2006 09 30 | 704 | 0.8− | 0.1− | | |
| 1998 04 21 | 704 | 0.8+ | 1.8− | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 104 | (1.6− | 0.1−) | | |
| 1998 04 21 | 704 | 2.0− | 0.1− | 2006 08 22 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 012 | 0.6+ | 0.1− | | |
| 1998 04 21 | 704 | 1.6+ | 1.5+ | 2006 08 28 | 703 | (1.9− | 2.0+) | 2006 10 16 | 012 | 0.4+ | 0.6− | | |
| 2001 01 24 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.3− | 1.3+ | 2006 10 16 | 012 | 0.8+ | 0.9− | | |
| 2001 01 24 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | (0.3+ | 2.7+) | 2006 10 16 | 012 | 0.7+ | 0.8− | | |
| 2001 01 24 | 691 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.9+ | 0.0 | 2006 10 16 | 104 | (2.6− | 0.7−) | | |
| 2003 12 25 | 691 | 0.6+ | 0.2− | 2006 09 12 | 703 | 1.2− | 0.3− | 2006 10 16 | 012 | 0.2− | 0.3− | | |
| 2003 12 25 | 691 | 0.2+ | 0.3− | 2006 09 12 | 703 | 0.8− | 0.1+ | 2006 10 16 | 012 | 0.1− | 0.6+ | | |
| 2003 12 25 | 691 | 0.3− | 0.3− | 2006 09 12 | 703 | (1.8− | 1.2+) | 2006 10 17 | 104 | 0.3− | 0.0 | | |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.7+ | 2006 10 17 | 104 | 0.3− | 0.6+ | | |
| 2005 03 10 | G96 | 0.3+ | 0.0 | 2006 09 18 | 699 | 1.0− | 0.6− | 2006 10 17 | 104 | 0.4+ | 0.5+ | | |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2+ | | |
| 2005 03 10 | G96 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.4+ | | |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 09 22 | 704 | 1.0− | 0.3+ | 2006 10 22 | 703 | 0.4− | 1.4+ | | |
| 2005 03 10 | G96 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.1+ | 1.4+ | 2006 10 22 | 703 | 0.1+ | 0.3+ | | |
| 2005 04 02 | 691 | 0.2+ | 0.7+ | 2006 09 22 | 704 | 0.0 | 1.0+ | 2006 10 22 | 703 | 0.6− | 0.4− | | |
| 2005 04 02 | 691 | 0.3+ | 0.3+ | 2006 09 28 | 704 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.4− | | |
| 2005 04 02 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.0 | 0.8− | 2006 11 23 | G96 | 0.5+ | 0.3− | | |
| 2005 04 11 | G96 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− | | |
| 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.5− | | |
| 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.3− | 0.6+ | | | | | | |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.0 | 0.2− | | | | | | |

**2006 QN$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.14881 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28272268 | $\omega$ | 182.97353 | | +0.68444167 | | +0.72668831 |
| $a$ | 2.2991234 | $\Omega$ | 130.22745 | | −0.66730580 | | +0.65693166 |
| $e$ | 0.3253634 | $i$ | 4.42102 | | −0.29367086 | | +0.20091015 |
| $P$ | 3.49 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 08 | 699 | 0.1+ | 1.4+ | 2006 08 23 | 704 | 0.5+ | 0.0 | 2006 09 12 | 704 | 0.7+ | 1.1+ | | |
| 1999 08 08 | 699 | 0.5+ | 0.3+ | 2006 08 23 | 704 | 0.2− | 1.5+ | 2006 09 12 | 704 | 0.3+ | 0.1+ | | |
| 1999 08 08 | 699 | 1.1− | 0.7− | 2006 08 23 | 704 | 0.1+ | 0.6+ | 2006 09 12 | 704 | 0.1− | 0.3+ | | |
| 1999 09 07 | 704 | 0.0 | 0.4+ | 2006 08 23 | 704 | 0.8+ | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.4− | | |
| 1999 09 07 | 704 | 0.1+ | 0.8− | 2006 08 23 | 644 | 0.0 | 0.3− | 2006 09 14 | 644 | 0.4− | 0.3− | | |
| 1999 09 07 | 704 | 0.3− | 0.8− | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.2− | | |
| 1999 09 07 | 704 | 1.1+ | 1.1− | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.2− | | |
| 2006 07 25 | 644 | 0.1− | 0.3− | 2006 08 28 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.9+ | | |
| 2006 07 25 | 644 | 0.3− | 0.6− | 2006 08 28 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.2− | | |
| 2006 07 25 | 644 | 0.3+ | 0.6− | 2006 08 28 | 704 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.1− | | |
| 2006 08 06 | 699 | 1.0+ | 1.0+ | 2006 08 30 | 699 | 0.7− | 0.2− | 2006 09 21 | 699 | 1.3− | 0.7− | | |
| 2006 08 06 | 699 | 0.9− | 0.9+ | 2006 08 30 | 699 | 0.7+ | 0.3− | 2006 09 21 | 699 | 0.2+ | 0.0 | | |
| 2006 08 06 | 699 | 0.7− | 1.8− | 2006 08 30 | 699 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.3+ | | |
| 2006 08 06 | 699 | 0.1− | 0.2− | 2006 09 12 | 704 | 0.4+ | 0.0 | 2006 09 21 | 699 | 0.5− | 0.8− | | |

**2006 QO$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.22198 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26235012 | $\omega$ | 359.09463 | | +0.83581907 | | −0.54804936 |
| $a$ | 2.4166580 | $\Omega$ | 34.20261 | | +0.50406357 | | +0.74269339 |
| $e$ | 0.1972206 | $i$ | 3.30211 | | +0.21754629 | | +0.38477062 |
| $P$ | 3.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 327 | 0.4+ | 0.3− | 2004 02 15 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.9+ | 0.1+ | | |
| 1995 09 27 | 327 | 0.1+ | 0.1− | 2004 02 15 | 704 | 0.1+ | 1.5+ | 2006 09 14 | 703 | 0.2+ | 0.4+ | | |
| 1995 09 27 | 327 | 0.5+ | 0.3+ | 2004 02 15 | 704 | 0.9+ | 1.3+ | 2006 09 16 | 704 | 0.4+ | 0.2+ | | |
| 1995 09 27 | 327 | 0.3− | 0.2− | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 16 | 704 | 0.7− | 0.7+ | | |
| 1999 12 15 | 704 | 0.1+ | 0.4+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 16 | 704 | 0.2− | 0.0 | | |
| 1999 12 15 | 704 | 0.1− | 0.2+ | 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 16 | 704 | 0.9− | 0.0 | | |
| 1999 12 15 | 704 | 0.3+ | 0.0 | 2005 05 14 | G96 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.0 | 1.1− | | |
| 1999 12 15 | 704 | 0.3+ | 0.6+ | 2005 05 14 | G96 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.3− | | |
| 2000 01 04 | 704 | 0.7− | 0.1− | 2005 05 14 | G96 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.1− | 0.4− | | |
| 2000 01 04 | 704 | 0.6− | 0.4− | 2006 08 23 | 704 | (1.6− | 1.2+) | 2006 09 18 | 699 | 0.2+ | 0.0 | | |
| 2000 01 04 | 704 | 0.2− | 0.8+ | 2006 08 23 | 704 | 0.7+ | 0.9+ | 2006 09 18 | 699 | 0.5− | 0.6− | | |
| 2000 01 04 | 704 | 0.1+ | 0.6− | 2006 08 23 | 704 | 0.9+ | 0.5+ | 2006 09 22 | 704 | 0.2− | 0.4+ | | |
| 2001 03 20 | 691 | 0.2+ | 0.7+ | 2006 08 23 | 704 | 0.1− | 0.7+ | 2006 09 22 | 704 | 1.1+ | 0.2+ | | |
| 2001 03 20 | 691 | 0.3+ | 0.4+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.4+ | | |
| 2001 03 20 | 691 | 0.2+ | 0.1+ | 2006 08 23 | 644 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.5+ | 1.2+ | | |
| 2002 06 17 | 644 | 0.2− | 0.5+ | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.3− | | |
| 2002 06 17 | 644 | 0.3− | 0.0 | 2006 08 28 | 704 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.5− | 0.3− | | |
| 2002 06 17 | 644 | 0.1− | 0.1+ | 2006 08 28 | 704 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.6+ | | |
| 2002 07 08 | 644 | 0.2− | 0.1+ | 2006 08 28 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.3− | | |
| 2002 07 08 | 644 | 0.2− | 0.1+ | 2006 08 28 | 704 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.5+ | | |
| 2002 07 08 | 644 | 0.0 | 0.1+ | 2006 08 28 | 704 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.3+ | | |
| 2002 08 09 | 807 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2− | | |
| 2002 08 09 | 807 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.7− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 2004 01 26 | 699 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 | | |
| 2004 01 26 | 699 | 0.5− | 0.7+ | 2006 08 31 | 704 | 0.2− | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2004 01 26 | 699 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 1.3+ | 0.3− | | |
| 2004 01 30 | 704 | 0.5− | 0.7+ | 2006 08 31 | 704 | 0.6+ | 0.1+ | 2006 11 11 | 703 | (2.8+ | 2.9+) | | |
| 2004 01 30 | 704 | 0.1− | 0.8+ | 2006 08 31 | 704 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.5+ | | |
| 2004 01 30 | 704 | 0.5+ | 0.3+ | 2006 08 31 | 704 | 0.2− | 1.3+ | 2006 11 11 | 703 | 1.1+ | 1.0− | | |
| 2004 01 30 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.1− | 0.2− | | | | | | |
| 2004 01 30 | 704 | 0.6+ | 1.0+ | 2006 09 14 | 703 | 0.8− | 0.1− | | | | | | |

**2006 QS$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.24505 | | (2000.0) | | | |
| $n$ | 0.18477492 | $\omega$ | 220.46613 | | +0.99090175 | −0.10018642 |
| $a$ | 3.0528633 | $\Omega$ | 144.97371 | | +0.12138525 | +0.95368431 |
| $e$ | 0.3111167 | $i$ | 9.00838 | | −0.05813213 | +0.28363518 |
| $P$ | 5.33 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 704 | 0.3− | 0.3+ | 2006 08 28 | 699 | 0.6+ | 0.8+ | 2006 09 22 | 608 | (1.7+ | 2.1+) |
| 2001 10 17 | 704 | 0.1− | 0.1+ | 2006 08 30 | 704 | 1.4+ | 0.3− | 2006 09 22 | 608 | (1.8+ | 1.9+) |
| 2001 10 17 | 704 | 1.1− | 0.5+ | 2006 08 30 | 704 | 0.9+ | 0.4+ | 2006 09 25 | 703 | 0.6− | 0.2− |
| 2001 12 07 | 704 | (2.1+ | 0.1−) | 2006 08 30 | 704 | 0.9+ | 0.6+ | 2006 09 25 | 703 | 0.2− | 0.5− |
| 2001 12 07 | 704 | 0.4+ | 1.1+ | 2006 08 31 | 704 | 0.3− | 1.4+ | 2006 09 25 | 703 | 0.9− | 0.2− |
| 2001 12 07 | 704 | (1.7+ | 0.1−) | 2006 08 31 | 704 | 0.2− | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.1+ |
| 2001 12 07 | 704 | 0.5+ | 0.4− | 2006 08 31 | 704 | 0.3− | 0.6− | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2001 12 07 | 704 | 0.6+ | 0.3− | 2006 09 01 | 106 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.3− | 0.2+ |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2006 09 01 | 106 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.5− | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.3+ | 2006 09 01 | 106 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.4+ | 0.2+ | 2006 09 01 | 106 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.5− | 0.2+ |
| 2001 12 19 | 704 | 1.1− | 0.2− | 2006 09 02 | 147 | 0.2+ | 0.1− | 2006 10 09 | 644 | 0.5− | 0.1+ |
| 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 02 | 147 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 02 | 147 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 08 23 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2006 08 23 | 704 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2006 08 23 | 704 | 0.7+ | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 08 23 | 704 | (0.7+ | 1.6+) | 2006 09 17 | 608 | (1.2+ | 1.9+) | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2006 08 23 | 704 | 0.3+ | 1.0+ | 2006 09 17 | 608 | (1.4+ | 1.9+) | 2006 10 24 | 644 | 0.1+ | 0.2− |
| 2006 08 28 | 704 | 0.4− | 0.5− | 2006 09 17 | 608 | (1.8+ | 1.8+) | 2006 10 24 | 644 | 0.2− | 0.3− |
| 2006 08 28 | 704 | 0.9+ | 1.1− | 2006 09 19 | 704 | (1.8− | 1.3+) | 2006 11 23 | 703 | 1.0+ | 0.7− |
| 2006 08 28 | 704 | 0.0 | 0.5− | 2006 09 19 | 704 | 0.6− | 0.3+ | 2006 11 23 | 703 | 0.8+ | 1.3− |
| 2006 08 28 | 704 | 0.5+ | 1.2+ | 2006 09 19 | 704 | 1.0− | 1.4− | 2006 11 23 | 703 | 1.1+ | 0.9− |
| 2006 08 28 | 704 | 1.1− | 0.8+ | 2006 09 19 | 704 | 0.4− | 0.2− | 2006 11 23 | 703 | 0.3+ | 0.2− |
| 2006 08 28 | 699 | 0.1− | 0.2+ | 2006 09 19 | 704 | 1.0− | 0.4+ | | | | |
| 2006 08 28 | 699 | 0.6+ | 0.8− | 2006 09 22 | 608 | (1.9+ | 3.1+) | | | | |

**2006 QT$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.90958 | | (2000.0) | | | |
| $n$ | 0.22296461 | $\omega$ | 214.73287 | | +0.95403666 | −0.29591393 |
| $a$ | 2.6934697 | $\Omega$ | 162.29617 | | +0.29794096 | +0.91944786 |
| $e$ | 0.2723693 | $i$ | 8.97182 | | +0.03232996 | +0.25894128 |
| $P$ | 4.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 08 | 691 | 0.1− | 0.6+ | 2006 08 28 | 704 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.7+ | 0.0 |
| 1995 03 08 | 691 | 0.6+ | 0.4+ | 2006 08 28 | 704 | 0.7+ | 1.2+ | 2006 09 26 | 704 | 0.4+ | 0.3+ |
| 1995 03 08 | 691 | 0.4+ | 0.4− | 2006 08 28 | 704 | (0.2+ | 2.2+) | 2006 09 26 | 704 | 0.4+ | 0.2+ |
| 1997 08 12 | 691 | 0.0 | 0.1+ | 2006 08 31 | 704 | 0.0 | 1.4− | 2006 09 29 | 699 | 0.0 | 0.1+ |
| 1997 08 12 | 691 | 0.1− | 0.0 | 2006 08 31 | 704 | 0.1+ | 0.7− | 2006 09 29 | 699 | 0.3− | 0.5+ |
| 1997 08 12 | 691 | 0.3− | 0.2+ | 2006 08 31 | 704 | 0.0 | 0.5− | 2006 09 29 | 699 | 0.2− | 0.3+ |
| 2002 12 14 | 704 | (0.5+ | 1.6+) | 2006 08 31 | 704 | 0.3+ | 0.4− | 2006 09 29 | 699 | 0.1− | 0.6+ |
| 2002 12 14 | 704 | 0.3+ | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 30 | 704 | 0.5− | 0.1+ |
| 2002 12 14 | 704 | 0.3+ | 0.8+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.4− | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.4− | 0.2+ |
| 2002 12 14 | 704 | 0.1− | 0.4+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.3− | 0.0 |
| 2003 01 05 | 704 | 0.2+ | 0.6+ | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 09 30 | 704 | 0.4− | 0.0 |
| 2003 01 05 | 704 | (1.8+ | 0.2−) | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 2003 01 05 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 291 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.1+ | 0.8+ | 2006 09 14 | 291 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2003 01 05 | 704 | 0.0 | 0.2+ | 2006 09 14 | 291 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2004 03 30 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.6− | 0.1+ |
| 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 09 16 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2004 03 30 | 691 | 0.4− | 0.6+ | 2006 09 16 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2005 05 03 | 691 | 0.2− | 0.5+ | 2006 09 16 | 704 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 2005 05 03 | 691 | 0.3− | 0.7+ | 2006 09 16 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.7+ |
| 2005 05 03 | 691 | 0.4− | 0.5+ | 2006 09 19 | 704 | 0.0 | 1.1+ | 2006 10 16 | 703 | 0.6+ | 0.6+ |
| 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 09 19 | 704 | 1.1− | 0.2+ | 2006 10 16 | 703 | (2.6− | 4.2+) |
| 2005 05 13 | 691 | 0.9+ | 0.2− | 2006 09 19 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2005 05 13 | 691 | 0.5+ | 0.2+ | 2006 09 19 | 704 | 0.7− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2005 06 05 | 691 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2005 06 05 | 691 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 07 21 | 704 | 0.8+ | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2006 07 21 | G96 | 0.2+ | 0.5− | 2006 09 22 | 704 | 1.0+ | 0.6− | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2006 07 21 | 704 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.8+ | 1.4− | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2006 07 21 | G96 | 0.3+ | 0.4− | 2006 09 22 | 704 | 0.8+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 22 | 704 | 0.6+ | 0.9− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2006 07 21 | 704 | 1.1+ | 1.2+ | 2006 09 22 | 704 | 0.6+ | 1.3+ | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2006 07 21 | G96 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2006 07 21 | 704 | (0.0 | 1.6+) | 2006 09 25 | 699 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.1+ | 2006 10 28 | 703 | 0.1− | 0.0 |
| 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.5− | 0.3+ |
| 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.5− | 0.2+ |
| 2006 08 23 | 704 | 0.2− | 0.7+ | 2006 09 26 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2006 08 23 | 704 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.1+ | 2006 11 10 | 704 | 0.5+ | 0.8+ |
| 2006 08 23 | 704 | 0.5+ | 0.5− | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 11 10 | 704 | 1.1+ | 0.5+ |
| 2006 08 23 | 704 | 0.1+ | 0.2− | 2006 09 26 | 704 | 0.2− | 0.4+ | 2006 11 10 | 704 | 0.4+ | 0.9− |
| 2006 08 23 | 704 | 0.6+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.7+ | 2006 11 10 | 704 | (3.9− | 0.3+) |

**2006 QY$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.32817 | | (2000.0) | | | |
| $n$ | 0.26295396 | $\omega$ | 346.50879 | | +0.53792579 | +0.84028551 |
| $a$ | 2.4129569 | $\Omega$ | 315.98167 | | −0.76413646 | +0.45222755 |
| $e$ | 0.1297405 | $i$ | 5.57429 | | −0.35599341 | +0.29901589 |
| $P$ | 3.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 17 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 1.7− | 0.3+ | 2006 09 13 | 644 | 0.3+ | 0.2+ |
| 2002 06 17 | 644 | 0.1+ | 0.6− | 2006 08 29 | 703 | 0.2+ | 0.8− | 2006 09 13 | 644 | 0.1+ | 0.3+ |
| 2002 06 17 | 644 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.4− | 0.9− | 2006 09 13 | 644 | 0.3+ | 0.3+ |
| 2002 07 05 | 704 | 0.3+ | 1.2− | 2006 08 29 | 703 | 0.0 | 0.8− | 2006 09 17 | 703 | 0.5− | 0.8− |
| 2002 07 05 | 704 | 0.1− | 0.2+ | 2006 08 29 | 703 | 1.2− | 1.4+ | 2006 09 17 | 703 | 0.9− | 0.7− |
| 2002 07 05 | 704 | 0.2+ | 0.4− | 2006 08 29 | 691 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.4+ | 0.3− |
| 2002 07 05 | 704 | 0.7− | 1.0+ | 2006 08 29 | 691 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.0 | 1.0− |
| 2002 07 05 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 18 | 704 | 0.3+ | 0.8+ |
| 2006 08 24 | 704 | 0.3− | 1.4+ | 2006 08 30 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 704 | 0.3− | 0.4− |
| 2006 08 24 | 704 | 0.6+ | 0.6− | 2006 08 30 | 704 | 0.0 | 0.7+ | 2006 09 18 | 704 | 1.2+ | 0.4+ |
| 2006 08 24 | 704 | 0.7− | 1.3+ | 2006 08 30 | 704 | 0.4− | 0.4+ | 2006 09 18 | 704 | 1.0− | 0.9− |
| 2006 08 24 | 704 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.2− | 2006 09 30 | 704 | 0.6+ | 1.1+ |
| 2006 08 24 | 704 | 0.4− | 0.8+ | 2006 09 01 | 704 | 0.7+ | 0.9− | 2006 09 30 | 704 | 0.3− | 0.7+ |
| 2006 08 28 | 699 | 1.5+ | 0.4− | 2006 09 01 | 704 | 0.2− | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.2+ |
| 2006 08 28 | 699 | 1.2+ | 0.2+ | 2006 09 01 | 704 | 0.9+ | 0.0 | | | | |
| 2006 08 28 | 699 | 0.4− | 0.4− | 2006 09 01 | 704 | 0.2− | 0.1+ | | | | |

**2006 QA$_{63}$ = 2001 TE$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.37352 | | (2000.0) | | | |
| $n$ | 0.18728774 | $\omega$ | 151.86007 | | +0.80413652 | +0.59381855 |
| $a$ | 3.0254953 | $\Omega$ | 171.55093 | | −0.57427069 | +0.78788034 |
| $e$ | 0.2528869 | $i$ | 10.69839 | | −0.15355009 | +0.16316891 |
| $P$ | 5.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.9− | 1.3− | 2006 09 18 | 703 | 0.8+ | 0.4− |
| 2001 10 10 | 644 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.8− | 2006 09 18 | 703 | 0.3− | 1.1− |
| 2001 10 10 | 644 | 0.1− | 0.5− | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.2− | 0.4− |
| 2001 10 16 | 644 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.6− |
| 2001 10 16 | 644 | 0.0 | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.5+ |
| 2001 10 16 | 644 | 0.2− | 0.6+ | 2006 08 30 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 699 | 0.9+ | 1.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.1− |
| 2006 08 16 | 644 | 0.4+ | 0.0 | 2006 09 12 | 699 | (1.7+ | 0.6+) | 2006 09 27 | G96 | 0.2− | 0.8− |
| 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 12 | 699 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.5− |
| 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 699 | 1.0− | 1.2+ | 2006 10 16 | G96 | 1.1− | 0.5− |
| 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 12 | 699 | 0.1− | 0.8+ | 2006 10 16 | G96 | 0.1+ | 0.4+ |
| 2006 08 24 | 704 | 0.4− | 0.4+ | 2006 09 14 | 703 | (3.0+ | 0.2+) | 2006 10 16 | G96 | 0.5+ | 0.2− |
| 2006 08 24 | 704 | (0.1+ | 1.7+) | 2006 09 14 | 703 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.2+ |
| 2006 08 24 | 704 | 0.7+ | 1.0+ | 2006 09 14 | 703 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.5+ |
| 2006 08 24 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.3− | 0.5− | 2006 10 27 | G96 | 0.7+ | 0.4− |
| 2006 08 28 | 703 | 0.4+ | 0.2− | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.6+ |
| 2006 08 28 | 703 | 0.9− | 0.3− | 2006 09 18 | 703 | 1.4− | 1.2− | 2006 10 27 | G96 | 0.1− | 0.6− |

**2006 QL$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.62604 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28566938 | $\omega$ | 116.97150 | | +0.53916148 | | +0.84213790 |
| $a$ | 2.2832857 | $\Omega$ | 185.68841 | | −0.80518804 | | +0.51179720 |
| $e$ | 0.1378278 | $i$ | 6.03668 | | −0.24693546 | | +0.16990402 |
| $P$ | 3.45 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 03 | 291 | 0.2+ | 0.3+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2002 04 03 | 291 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.4− |
| 2002 04 03 | 291 | 0.0 | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2003 12 22 | 691 | 0.2− | 0.5+ | 2006 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2003 12 22 | 691 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2003 12 22 | 691 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2005 04 09 | G96 | 0.5+ | 0.0 | 2006 09 16 | 644 | 0.4+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.1+ |
| 2005 04 09 | G96 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2005 04 09 | G96 | 0.0 | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.7− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2005 04 09 | G96 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.5+ | 0.7+ | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2006 08 24 | 704 | 0.4− | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2006 08 24 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | (1.8+ | 0.2−) | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2006 08 24 | 704 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.6+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 08 28 | 703 | 1.2− | 0.9+ | 2006 09 20 | 704 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2006 08 28 | 703 | 0.4+ | 1.1+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2− | 0.3+ |
| 2006 08 28 | 703 | 0.3− | 0.7− | 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 15 | G96 | 0.3− | 0.3+ |

**2006 QO$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.89718 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17218379 | $\omega$ | 157.20740 | | +0.92413173 | | +0.38206430 |
| $a$ | 3.1999354 | $\Omega$ | 180.36588 | | −0.38179361 | | +0.92370320 |
| $e$ | 0.2010921 | $i$ | 25.25737 | | +0.01463522 | | −0.02827148 |
| $P$ | 5.72 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.3− | 0.4− | 2006 09 29 | 704 | 0.5+ | 0.4+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.4− | 0.1+ | 2006 09 29 | 704 | 0.5+ | 1.4+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.6+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.5+ | 1.1+ |
| 2000 09 01 | 704 | 0.1− | 0.7+ | 2006 09 06 | 644 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.4+ | 1.1+ |
| 2000 09 01 | 704 | 0.0 | 0.6+ | 2006 09 12 | 703 | 0.8− | 0.9− | 2006 09 30 | 704 | 0.9+ | 0.4+ |
| 2000 09 01 | 704 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.1+ | 0.7− | 2006 09 30 | 704 | (2.0+ | 0.7+) |
| 2000 09 01 | 704 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.8− | 0.4− | 2006 09 30 | 704 | 0.9+ | 0.4+ |
| 2000 09 01 | 704 | 0.7− | 0.3− | 2006 09 12 | 703 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.2− |
| 2000 09 23 | 704 | 0.7− | 0.3− | 2006 09 16 | 699 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.7− | 0.5+ |
| 2000 09 23 | 704 | 0.8− | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.6+ | 2006 10 01 | 703 | 0.7+ | 0.5+ |
| 2000 09 23 | 704 | 0.7− | 0.4− | 2006 09 16 | 699 | 0.3− | 0.4+ | 2006 10 01 | 703 | 0.6− | 0.2− |
| 2000 10 02 | 645 | 0.1+ | 0.3− | 2006 09 18 | 704 | 0.3− | 0.6+ | 2006 10 01 | 703 | 0.8− | 0.4+ |
| 2000 10 02 | 645 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.0 | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2004 03 17 | 691 | 0.3− | 0.6+ | 2006 09 18 | 704 | 0.7− | 0.7+ | 2006 10 09 | 644 | 0.2+ | 0.4+ |
| 2004 03 17 | 691 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2004 03 17 | 691 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.8− | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2006 08 24 | 704 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.5+ |
| 2006 08 24 | 704 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2006 08 24 | 704 | 1.2− | 0.3− | 2006 09 19 | 699 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2006 08 24 | 704 | 0.5− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.4− | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2006 08 27 | 699 | 0.2+ | 1.2+ | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2006 08 27 | 699 | 0.8− | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2006 08 27 | 699 | (1.6+ | 0.9+) | 2006 09 19 | 703 | 0.5+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2006 08 27 | 699 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 08 27 | 699 | 0.1+ | 1.0+ | 2006 09 20 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 08 27 | 699 | 0.0 | 0.3− | 2006 09 20 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 08 27 | 699 | 0.3− | 0.4− | 2006 09 20 | 691 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2006 08 27 | 699 | 0.3+ | 0.3− | 2006 09 25 | 699 | 1.1+ | 1.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2006 08 28 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2006 08 28 | 704 | 0.0 | 0.7+ | 2006 09 25 | 699 | 0.6+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2006 08 28 | 704 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.5+ | 0.1− |
| 2006 08 28 | 704 | 0.9+ | 0.5− | 2006 09 26 | 704 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 08 28 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.8− | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2006 08 29 | 703 | 0.2+ | 0.7− | 2006 09 26 | 704 | (1.6+ | 0.6−) | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2006 08 29 | 703 | 0.6+ | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.6− | 2006 10 24 | 644 | 0.2− | 0.2+ |
| 2006 08 29 | 703 | 0.4+ | 0.7− | 2006 09 27 | 704 | (2.3+ | 0.8+) | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2006 08 29 | 703 | 0.4+ | 0.1− | 2006 09 27 | 704 | (0.2− | 2.1+) | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2006 08 30 | 704 | 0.1− | 0.4+ | 2006 09 27 | 704 | 1.1+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2006 08 30 | 704 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.5+ | | | | |
| 2006 08 30 | 704 | 0.4− | 0.6+ | 2006 09 27 | 704 | (1.7+ | 0.1−) | | | | |

**2006 QP$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.26009 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26427985 | $\omega$ | 130.84095 | | +0.89685651 | | +0.44158921 |
| $a$ | 2.4048796 | $\Omega$ | 202.98837 | | −0.42290006 | | +0.83919940 |
| $e$ | 0.2001645 | $i$ | 3.73539 | | −0.12963001 | | +0.31740090 |
| $P$ | 3.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 704 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.2+ | 0.2− | 2006 09 24 | 106 | 0.3+ | 0.1− |
| 2002 07 05 | 704 | 0.0 | 0.9− | 2006 09 01 | 704 | 1.1+ | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.6− |
| 2002 07 05 | 704 | 0.6+ | 1.0− | 2006 09 01 | 704 | 1.2+ | 0.7− | 2006 09 25 | 699 | 0.7− | 0.2+ |
| 2002 07 05 | 704 | 0.4− | 0.1− | 2006 09 01 | 704 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 2005 03 14 | G96 | 0.1+ | 0.4+ | 2006 09 01 | 704 | 0.1− | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.0 |
| 2005 03 14 | G96 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.9− | 0.2− |
| 2005 03 14 | G96 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.6+ | 0.3+ | 2006 09 26 | 704 | 0.3+ | 0.6+ |
| 2005 03 14 | G96 | 0.2+ | 0.5− | 2006 09 12 | 703 | 0.4+ | 0.8− | 2006 09 26 | 704 | 0.5+ | 0.4− |
| 2005 04 05 | G96 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.3+ | 2006 09 29 | 704 | 0.7− | 0.4+ |
| 2005 04 05 | G96 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.3− | 0.1+ |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.3+ | 0.1− |
| 2005 04 05 | G96 | 0.3− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.2− | 0.3+ |
| 2005 05 04 | G96 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.2− | 0.4− |
| 2005 05 04 | G96 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2005 05 04 | G96 | 0.5+ | 0.6+ | 2006 09 16 | 699 | 0.4+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2005 05 04 | G96 | 0.6− | 0.2+ | 2006 09 18 | 704 | (0.4+ | 1.5+) | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2006 08 24 | 704 | 0.3+ | 1.3+ | 2006 09 18 | 704 | 0.3+ | 1.1+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 08 24 | 704 | 0.9− | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2006 08 24 | 704 | 0.0 | 0.3+ | 2006 09 18 | 704 | 0.7− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2006 08 24 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 704 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2006 08 28 | 704 | 0.8− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2006 08 28 | 704 | (0.2− | 1.6+) | 2006 09 19 | 699 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2006 08 28 | 704 | 1.5− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 28 | 704 | (1.7− | 0.4+) | 2006 09 20 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.6− |
| 2006 08 30 | 704 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2006 08 30 | 704 | 0.0 | 0.6+ | 2006 09 20 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.5− |
| 2006 08 30 | 704 | 1.1− | 0.4− | 2006 09 24 | 106 | 0.1− | 0.6− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2006 08 30 | 704 | 0.1− | 0.1+ | 2006 09 24 | 106 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2006 08 30 | 704 | 0.4− | 0.6− | 2006 09 24 | 106 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.5− |

**2006 QV$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.86972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27594989 | $\omega$ | 218.23682 | | +0.84697737 | −0.53159577 | |
| $a$ | 2.3365903 | $\Omega$ | 173.86774 | | +0.50042511 | +0.79344332 | |
| $e$ | 0.1948424 | $i$ | 3.18724 | | +0.17945486 | +0.29640115 | |
| $P$ | 3.57 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 1.5+ | 1.1− | 2006 08 28 | 703 | 0.0 | 0.6+ | 2006 09 20 | 704 | (0.4− | 1.6+) |
| 1999 10 19 | 704 | 0.7+ | 1.2− | 2006 08 28 | 703 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.3− | 0.6+ |
| 1999 10 19 | 704 | 0.7+ | 0.3− | 2006 09 03 | 152 | 0.8− | 0.8+ | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 1999 10 19 | 704 | 0.2+ | 0.1− | 2006 09 03 | 152 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.3− |
| 1999 10 19 | 704 | 0.9+ | 1.1− | 2006 09 03 | 152 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 1999 11 02 | 703 | 1.6− | 1.7+ | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.7+ | 1.0+ |
| 1999 11 02 | 703 | 0.3+ | 1.5+ | 2006 09 12 | 703 | (1.6− | 0.1−) | 2006 09 25 | 699 | 1.0+ | 0.2− |
| 1999 11 02 | 703 | 0.7− | 0.7− | 2006 09 12 | 703 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 1999 11 02 | 703 | 1.7− | 0.4− | 2006 09 12 | 703 | 0.1− | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1999 11 05 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 1999 11 05 | 704 | 0.6+ | 0.7− | 2006 09 16 | 699 | 0.9− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1999 11 05 | 704 | 0.0 | 0.7− | 2006 09 16 | 699 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.8+ |
| 1999 11 05 | 704 | 0.0 | 0.8− | 2006 09 16 | 699 | 0.5+ | 0.9+ | 2006 09 25 | 699 | 0.2− | 0.2+ |
| 2004 02 16 | 691 | 0.1− | 0.7+ | 2006 09 17 | 704 | 0.6− | 0.7+ | 2006 09 27 | 704 | 0.4+ | 0.9+ |
| 2004 02 16 | 691 | 0.6+ | 0.5+ | 2006 09 17 | 704 | 0.8+ | 0.7− | 2006 09 27 | 704 | (0.1+ | 1.7+) |
| 2004 02 16 | 691 | 0.7+ | 0.2+ | 2006 09 17 | 704 | 0.9+ | 0.1+ | 2006 09 27 | 704 | 0.7− | 0.6+ |
| 2004 02 17 | 645 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.9+ | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.8+ |
| 2004 02 17 | 645 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.2− | 1.1+ |
| 2005 05 11 | 807 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2005 05 11 | 807 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 19 | 703 | (1.5− | 0.9−) | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2006 08 27 | 699 | 1.3+ | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2006 08 27 | 699 | 1.1− | 0.1− | 2006 09 19 | 703 | 0.8− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.7− |
| 2006 08 27 | 699 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.8− | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2006 08 27 | 699 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.6− | 0.6− | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2006 08 28 | 703 | 1.2+ | 0.3+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.5+ | | | | |

**2006 QW$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.73842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24333378 | $\omega$ | 332.14416 | | +0.88069188 | +0.47368581 | |
| $a$ | 2.5409792 | $\Omega$ | 359.56820 | | −0.37456808 | +0.69395835 | |
| $e$ | 0.1895911 | $i$ | 14.50693 | | −0.28996648 | +0.54225784 | |
| $P$ | 4.05 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.6+ | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.3+ | 1.4− |
| 2002 09 05 | 704 | 0.6+ | 0.6− | 2006 09 16 | 699 | 0.3+ | 1.4+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.7− | 0.2− | 2006 09 16 | 699 | 0.7+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 09 17 | 608 | (1.7− | 0.3+) | 2006 09 16 | 699 | 1.0+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 09 17 | 608 | (2.1− | 0.0 ) | 2006 09 16 | 699 | (1.6+ | 0.1−) | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 09 17 | 608 | (1.9− | 0.2−) | 2006 09 17 | 704 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 10 04 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 1.0+ | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.3+ |
| 2002 10 04 | 704 | 0.0 | 0.5− | 2006 09 17 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 10 04 | 704 | 0.3− | 0.5− | 2006 09 20 | 704 | (1.6− | 0.5+) | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2002 10 12 | 704 | 0.6− | 0.1− | 2006 09 20 | 704 | 0.4− | 1.1+ | 2006 10 16 | 703 | (1.6− | 0.5+) |
| 2002 10 12 | 704 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.3− |
| 2002 10 12 | 704 | 0.7+ | 0.4+ | 2006 09 20 | 644 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 2006 08 24 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | (1.8− | 1.3+) | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.4− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2006 08 28 | 699 | 1.3− | 0.7− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2006 08 28 | 699 | 0.6− | 0.3− | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.2− |
| 2006 08 28 | 699 | (2.4− | 0.4−) | 2006 09 25 | G96 | 0.4− | 0.4− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2006 08 28 | 699 | 0.2+ | 0.2− | 2006 09 28 | 704 | 0.3− | 0.1− | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 28 | 704 | 0.9− | 0.3+ | | | | |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.3+ | | | | |

**2006 QX$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.39566 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18351237 | $\omega$ | 8.55836 | | +0.99215404 | +0.11482755 | |
| $a$ | 3.0668496 | $\Omega$ | 344.58329 | | −0.12286880 | +0.82248958 | |
| $e$ | 0.1030415 | $i$ | 10.71968 | | −0.02310003 | +0.55706869 | |
| $P$ | 5.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.0 | 0.1− | 2006 08 28 | 703 | 1.1− | 0.4+ | 2006 09 27 | 691 | 0.3+ | 0.1− |
| 2001 10 13 | 644 | 0.0 | 0.5− | 2006 08 28 | 703 | 1.5+ | 0.6+ | 2006 09 27 | 691 | 0.2+ | 0.3− |
| 2001 10 13 | 644 | 0.0 | 0.5− | 2006 09 17 | 703 | 0.6− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2001 11 11 | 704 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.7− | 0.1+ |
| 2001 11 11 | 704 | 0.4+ | 0.2− | 2006 09 17 | 703 | 0.3− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 11 11 | 704 | 0.3− | 1.0+ | 2006 09 17 | 703 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 11 11 | 704 | 0.5− | 0.3+ | 2006 09 18 | 704 | 0.4+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.1− | 0.7+ | 2006 10 12 | 644 | 0.2+ | 0.5− |
| 2006 07 22 | G96 | 0.9+ | 0.0 | 2006 09 19 | 699 | 1.1+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2006 07 22 | G96 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 07 22 | G96 | 0.6+ | 0.0 | 2006 09 19 | 699 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 07 22 | G96 | 0.3− | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.8− | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 25 | 704 | (1.7− | 0.4+) | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2006 08 24 | 644 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.6− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 0.1+ | 1.0− | 2006 09 25 | 704 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2006 08 28 | 703 | 1.0− | 0.6− | 2006 09 27 | 691 | 0.2− | 0.4+ | | | | |

**2006 QC$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.11736 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24024570 | $\omega$ | 200.22305 | | +0.98033016 | +0.19129006 | |
| $a$ | 2.5627070 | $\Omega$ | 148.62438 | | −0.16581087 | +0.93178194 | |
| $e$ | 0.2978322 | $i$ | 5.35488 | | −0.10704918 | +0.30852962 | |
| $P$ | 4.10 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.1− | 0.1− | 2006 08 25 | 704 | 0.2+ | 1.3+ | 2006 08 28 | 699 | 1.3− | 1.5+ |
| 1994 11 28 | 691 | 0.1− | 0.3+ | 2006 08 25 | 704 | 0.6+ | 1.1+ | 2006 08 28 | 699 | 0.3− | 0.4+ |
| 1994 11 28 | 691 | 0.2+ | 0.0 | 2006 08 25 | 704 | 1.4+ | 1.1− | 2006 08 29 | 704 | 0.1+ | 0.3− |
| 2002 09 28 | 608 | 0.3− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 704 | 0.5+ | 0.2+ |
| 2002 09 28 | 608 | 0.3+ | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 704 | 0.3+ | 0.3− |
| 2002 09 28 | 608 | 0.4+ | 0.9− | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.0 |
| 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.1− |
| 2006 08 16 | 644 | 0.2− | 0.6+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 14 | 644 | 0.3− | 0.2+ |
| 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.6− | 1.3− | 2006 09 14 | 703 | 0.1+ | 1.2− |
| 2006 08 19 | 691 | 0.2− | 0.3− | 2006 08 28 | 699 | 1.2+ | 0.7+ | 2006 09 14 | 703 | (0.9− | 2.8−) |
| 2006 08 19 | 691 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.8+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1− |
| 2006 08 19 | 691 | 0.0 | 0.3− | 2006 08 28 | 699 | 1.6− | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.0 |

**2006 QH$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.35211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21681403 | $\omega$ | 157.68824 | | +0.96497978 | +0.25980952 | |
| $a$ | 2.7441707 | $\Omega$ | 187.53316 | | −0.26232349 | +0.95606331 | |
| $e$ | 0.3134541 | $i$ | 16.04537 | | +0.00064013 | +0.13580120 | |
| $P$ | 4.55 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 566 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.0 | 0.8+ |
| 1997 10 29 | 566 | 0.1+ | 0.1+ | 2006 09 01 | 704 | 0.7− | 0.6+ | 2006 10 01 | 704 | (0.7− | 1.7+) |
| 1997 10 29 | 566 | 0.1− | 0.1+ | 2006 09 01 | 704 | 0.1− | 1.2+ | 2006 10 01 | 704 | 0.4− | 1.0+ |
| 1997 10 30 | 327 | (3.8+ | 1.6+) | 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.4− | 0.0 |
| 1997 10 30 | 327 | 0.5+ | 0.2+ | 2006 09 06 | 644 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 1997 10 30 | 327 | 0.2− | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2000 05 05 | 645 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.7− | 2006 10 01 | 691 | 0.4− | 0.1+ |
| 2000 05 05 | 645 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.3− | 0.7− | 2006 09 14 | 703 | 0.0 | 1.0+ | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2001 09 12 | 704 | 0.3− | 0.3− | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2005 04 07 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2005 04 07 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2005 04 07 | 691 | 0.0 | 0.3+ | 2006 09 15 | H51 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2006 08 06 | 699 | 0.3− | 0.3− | 2006 09 15 | H51 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2006 08 06 | 699 | 0.3+ | 0.1+ | 2006 09 15 | H51 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.4− |
| 2006 08 06 | 699 | 0.0 | 0.3+ | 2006 09 15 | 704 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2006 08 26 | 704 | 0.4+ | 0.1+ | 2006 09 15 | 704 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2006 08 26 | 704 | 0.4+ | 0.5+ | 2006 09 15 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2006 08 26 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2006 08 26 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 08 26 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 08 26 | 704 | 0.9+ | 0.9+ | 2006 09 17 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 08 28 | 703 | 0.1− | 1.1− | 2006 09 17 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 08 28 | 703 | (1.1− | 2.2−) | 2006 09 17 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 0.6− | 1.4− | 2006 09 17 | 704 | 0.2+ | 0.1− | 2006 10 22 | 704 | 0.3+ | 0.6+ |
| 2006 08 29 | 683 | (0.8− | 2.5−) | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 704 | (0.1− | 3.7+) |
| 2006 08 29 | 683 | (1.7− | 2.6−) | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 10 22 | 704 | (1.5− | 0.8−) |
| 2006 08 29 | 683 | (0.9− | 1.9−) | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 22 | 704 | 0.0 | 0.4+ |
| 2006 08 30 | 704 | 0.3+ | 0.4− | 2006 09 18 | 699 | 1.0+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.6+ |
| 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.8+ | 0.2− |
| 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2006 08 30 | 704 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.2+ | 1.3+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2006 08 30 | 699 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 11 10 | 704 | 0.2− | 0.4+ |
| 2006 08 30 | 699 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.3+ | 0.8+ | 2006 11 10 | 704 | 0.4+ | 0.6+ |
| 2006 08 30 | 699 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.2− | 0.7+ | 2006 11 10 | 704 | 0.0 | 0.3+ |
| 2006 08 30 | 699 | 0.6− | 0.4+ | 2006 09 25 | 704 | 0.3− | 0.1+ | 2006 11 10 | 704 | 0.0 | 0.0 |
| 2006 08 31 | 704 | 1.3− | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.2+ |
| 2006 08 31 | 704 | 1.1− | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.3+ | 2006 11 16 | 703 | 0.0 | 0.1− |
| 2006 08 31 | 704 | 0.6− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.2+ | 0.1+ |
| 2006 08 31 | 704 | 1.0− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.5+ | 0.2+ |
| 2006 08 31 | 704 | 1.4− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1− | | | | |
| 2006 09 01 | 704 | 0.5+ | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.4+ | | | | |

### 2006 QS$_{64}$ = 1999 VM$_{207}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.80626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27057297 | $\omega$ | 144.44712 | | +0.99087318 | −0.13448547 | |
| $a$ | 2.3674443 | $\Omega$ | 223.28463 | | +0.12037657 | +0.91341868 | |
| $e$ | 0.1997991 | $i$ | 0.76595 | | +0.06066157 | +0.38416139 | |
| $P$ | 3.64 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 1.9− | 0.6− | 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 1999 11 12 | 704 | 0.3− | 0.4+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.7+ |
| 1999 11 12 | 704 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.8+ |
| 1999 11 12 | 704 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.3+ |
| 1999 11 14 | 691 | 0.3+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.1+ |
| 1999 11 14 | 691 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 1999 11 14 | 691 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.0 | 1.1− | 2006 10 19 | G96 | 0.2− | 0.2− |
| 1999 12 16 | 691 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.8− | 2006 10 19 | G96 | 0.1− | 0.5− |
| 1999 12 16 | 691 | 0.3− | 0.0 | 2006 08 28 | 703 | 1.1+ | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 1999 12 16 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 1.0− |
| 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.4+ | 0.5− |
| 2006 08 16 | 644 | 0.6+ | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.6− | 0.6− |

### 2006 QP$_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.08232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19009455 | $\omega$ | 14.58587 | | +0.99901426 | +0.02313964 | |
| $a$ | 2.9956399 | $\Omega$ | 343.94363 | | −0.03935734 | +0.85641252 | |
| $e$ | 0.2281680 | $i$ | 7.87230 | | +0.02053089 | +0.51577336 | |
| $P$ | 5.18 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.2+ | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.3− | 0.4− |
| 2001 09 28 | 644 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.6− | 1.1+ | 2006 09 27 | G96 | 0.4+ | 0.4− |
| 2001 09 28 | 644 | 0.5+ | 0.1+ | 2006 08 27 | 699 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2001 10 20 | 644 | 0.6− | 0.8+ | 2006 08 27 | 699 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.5− |
| 2001 10 20 | 644 | 0.7− | 0.6+ | 2006 08 27 | 699 | 0.2+ | 0.9+ | 2006 10 19 | G96 | 0.1+ | 0.6− |
| 2001 10 20 | 644 | 0.6− | 0.6+ | 2006 08 28 | 703 | (1.8+ | 0.0 ) | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 08 28 | 703 | (1.6+ | 0.0 ) | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2006 08 16 | 644 | 0.2+ | 0.1− | 2006 08 28 | 703 | (1.6+ | 0.4−) | 2006 11 21 | 291 | 0.2+ | 0.1+ |
| 2006 08 16 | 644 | 0.1+ | 0.3− | 2006 08 28 | 703 | 0.6− | 1.1− | 2006 11 21 | 291 | 0.2+ | 0.3+ |
| 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.5+ | 2006 11 21 | 291 | 0.1+ | 0.2− |
| 2006 08 19 | 691 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 11 24 | 291 | 0.1+ | 0.3− |
| 2006 08 19 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.5− | 2006 11 24 | 291 | 0.3− | 0.3− |
| 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.7− | 2006 11 24 | 291 | 0.4+ | 0.0 |
| 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.5− | | | | |

### 2006 QR$_{65}$ = 2005 JW$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.57770 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20898624 | $\omega$ | 320.36301 | | +0.67473764 | +0.73805460 | |
| $a$ | 2.8122737 | $\Omega$ | 352.06996 | | −0.67318237 | +0.61424411 | |
| $e$ | 0.0551690 | $i$ | 0.88339 | | −0.30257994 | +0.27924824 | |
| $P$ | 4.72 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 691 | 0.2+ | 0.3+ | 2005 05 16 | 691 | 0.3+ | 0.1− | 2006 09 24 | 701 | 0.3− | 0.1+ |
| 1998 12 26 | 691 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 24 | 701 | 1.0− | 0.2− |
| 1998 12 26 | 691 | 0.1+ | 0.3− | 2006 08 27 | 691 | 0.3+ | 0.2− | 2006 09 24 | 701 | 0.2+ | 0.4+ |
| 2005 05 10 | G96 | 0.8− | 0.8+ | 2006 08 27 | 691 | 0.3+ | 0.2− | 2006 09 25 | 701 | 0.2− | 0.5− |
| 2005 05 10 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | (1.6+ | 0.3+) | 2006 09 25 | 701 | 0.9− | 0.3+ |
| 2005 05 10 | G96 | 0.7− | 0.5− | 2006 08 28 | 703 | (2.0− | 0.5−) | 2006 10 27 | G96 | 0.2− | 0.9− |
| 2005 05 10 | G96 | 0.9+ | 0.8− | 2006 08 28 | 703 | 0.9+ | 1.1+ | 2006 10 27 | G96 | 0.5− | 0.3− |
| 2005 05 16 | 691 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.5− | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.4+ |
| 2005 05 16 | 691 | 0.3+ | 0.0 | 2006 09 24 | 701 | 0.6− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.4+ |

### 2006 QW$_{65}$ = 2005 EA$_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.42184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.32043374 | $\omega$ | 191.75489 | | +0.90940037 | +0.41540661 | |
| $a$ | 2.1150009 | $\Omega$ | 143.67788 | | −0.37871351 | +0.84759100 | |
| $e$ | 0.0979595 | $i$ | 2.00231 | | −0.17195070 | +0.33019213 | |
| $P$ | 3.08 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2005 03 04 | G96 | 0.3− | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2005 03 10 | G96 | 0.1+ | 0.3+ | 2006 08 28 | 703 | (3.1− | 0.7−) |
| 2003 09 18 | 691 | 0.2− | 0.1+ | 2005 03 10 | G96 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.3+ |
| 2003 09 18 | 691 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.4+ | 0.2− |
| 2003 09 18 | 691 | 0.1− | 0.2+ | 2005 03 10 | G96 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.6− | 0.2+ |
| 2003 10 22 | 695 | 0.3+ | 0.6+ | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2003 10 22 | 695 | 0.6+ | 0.2+ | 2006 08 18 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.2+ |
| 2005 03 04 | G96 | 0.0 | 0.1+ | 2006 08 18 | 691 | 0.4+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2005 03 04 | G96 | 0.4+ | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.4− |
| 2005 03 04 | G96 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.0 | | | | |

**2006 QB$_{66}$ = 2000 JL$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.06354 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35693998 | $\omega$ | 327.36461 | | −0.75873142 | | −0.64878598 |
| $a$ | 1.9682152 | $\Omega$ | 171.42709 | | +0.64936480 | | −0.76039749 |
| $e$ | 0.0556597 | $i$ | 23.03887 | | +0.05149742 | | +0.02953662 |
| $P$ | 2.76 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 699 | (2.3− | 3.2+) | 2006 08 27 | 699 | 1.4− | 0.1+ | 2006 08 29 | J95 | 0.3− | 0.4+ |
| 1998 09 21 | 699 | 0.0 | 1.3+ | 2006 08 27 | 699 | 1.3+ | 0.3− | 2006 08 29 | J95 | 0.2− | 0.1− |
| 1998 09 21 | 699 | (0.2− | 3.0+) | 2006 08 27 | 699 | 0.3− | 0.1+ | 2006 08 29 | J95 | 0.0 | 0.3− |
| 2000 05 03 | 704 | 0.3+ | 0.9− | 2006 08 27 | 699 | 0.2− | 0.6− | 2006 08 29 | J77 | 0.5+ | 1.1+ |
| 2000 05 03 | 704 | 0.1+ | 0.4+ | 2006 08 27 | 699 | 0.0 | 0.8− | 2006 08 29 | J77 | 0.2+ | 0.3+ |
| 2000 05 03 | 704 | 0.8+ | 0.2− | 2006 08 28 | 704 | 0.6+ | 0.5− | 2006 08 30 | 704 | 0.5+ | 1.2+ |
| 2000 05 03 | 704 | 0.6− | 0.1− | 2006 08 28 | 704 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.5+ | 0.2− |
| 2000 05 03 | 704 | 0.2− | 0.3− | 2006 08 28 | 704 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.3− | 0.4+ |
| 2000 05 04 | 704 | 0.6+ | 0.4− | 2006 08 28 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 1.1− | 0.1− |
| 2000 05 04 | 704 | 0.3− | 0.2− | 2006 08 29 | 703 | 0.3− | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2000 05 04 | 704 | 0.3+ | 0.2− | 2006 08 29 | 703 | 0.5− | 0.1− | 2006 09 23 | 691 | 0.3+ | 0.2+ |
| 2000 05 04 | 704 | 1.9− | 1.5+ | 2006 08 29 | 703 | 0.4+ | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2000 05 28 | 699 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.1− | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2000 05 28 | 699 | 0.8+ | 0.5+ | 2006 08 29 | 673 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.4+ | 0.3+ |
| 2000 05 28 | 699 | 0.2+ | 0.1+ | 2006 08 29 | 673 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2000 05 28 | 699 | 0.3− | 1.1+ | 2006 08 29 | 673 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2005 04 06 | 704 | (0.6+ | 1.6+) | 2006 08 29 | 651 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2005 04 06 | 704 | 0.3+ | 1.2+ | 2006 08 29 | 673 | 0.1− | 0.6− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2005 04 06 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 651 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2005 04 06 | 704 | 0.5− | 1.2+ | 2006 08 29 | 651 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2006 08 27 | 699 | (1.9− | 0.2−) | 2006 08 29 | 682 | 0.6+ | 0.7− | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2006 08 27 | 699 | 0.7− | 0.2+ | 2006 08 29 | 682 | 0.5+ | 0.5− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2006 08 27 | 699 | 0.2+ | 0.7− | 2006 08 29 | 682 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.4− |

**2006 QJ$_{66}$ = 2005 GL$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.29708 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22236296 | $\omega$ | 124.43254 | | +0.09189054 | | +0.99429581 |
| $a$ | 2.6983260 | $\Omega$ | 150.69726 | | −0.94605382 | | +0.10414088 |
| $e$ | 0.2081499 | $i$ | 6.35195 | | −0.31070612 | | −0.02303301 |
| $P$ | 4.43 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2005 04 11 | 695 | 0.3− | 0.0 | 2006 08 28 | 699 | 1.3+ | 0.2− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 04 11 | 695 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.7− |
| 2002 11 08 | 645 | 0.1− | 0.1+ | 2006 07 25 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.5+ | 0.3+ |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2006 07 25 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | (1.3+ | 2.0+) |
| 2005 03 16 | G96 | 0.4− | 0.1+ | 2006 07 25 | 644 | 0.6− | 0.1+ | 2006 08 28 | 703 | 0.2+ | 0.6+ |
| 2005 03 16 | G96 | 0.4− | 0.1+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.1− |
| 2005 03 16 | G96 | 0.3− | 0.1+ | 2006 08 21 | 644 | 0.4− | 0.3− | 2006 08 28 | 699 | 0.5− | 0.1+ |
| 2005 03 16 | G96 | 0.1+ | 0.0 | 2006 08 21 | 644 | 0.5− | 0.2− | 2006 08 29 | 704 | 1.0+ | 0.4+ |
| 2005 04 10 | 695 | 0.3− | 0.0 | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 08 29 | 704 | 1.3+ | 0.9− |
| 2005 04 11 | 691 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1− | 2006 08 29 | 704 | 1.1− | 0.6+ |
| 2005 04 11 | 691 | 0.3+ | 0.2+ | 2006 08 28 | 699 | 0.4+ | 1.0+ | 2006 08 29 | 704 | 0.2− | 0.2− |
| 2005 04 11 | 691 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.1− | 0.2− | | | | |

**2006 QL$_{66}$ = 2000 JR$_{89}$ = 2002 XX$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.11035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20431066 | $\omega$ | 177.14279 | | +0.99852177 | | +0.05435301 |
| $a$ | 2.8550170 | $\Omega$ | 179.74133 | | −0.05049838 | | +0.92871301 |
| $e$ | 0.0563484 | $i$ | 1.88736 | | −0.02010437 | | +0.36679408 |
| $P$ | 4.82 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.2− | 0.7+ | 2003 01 03 | 291 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.8− | 0.1+ |
| 1994 01 10 | 691 | 1.0+ | 0.9+ | 2003 01 03 | 291 | 0.1− | 0.2− | 2006 08 28 | 699 | 0.3+ | 0.2− |
| 1997 10 05 | 910 | 0.2− | 0.5− | 2003 01 03 | 291 | 0.4+ | 0.3− | 2006 08 28 | 699 | 0.2− | 0.3− |
| 1997 10 05 | 910 | 0.0 | 0.8− | 2004 02 26 | 704 | 0.1− | 1.3+ | 2006 08 28 | 699 | 0.0 | 0.3+ |
| 1997 10 05 | 910 | 0.2+ | 0.6− | 2004 02 26 | 704 | 0.9+ | 1.0+ | 2006 08 28 | 699 | 0.4− | 1.0+ |
| 2000 05 03 | 691 | 0.1− | 0.1+ | 2004 02 26 | 704 | 0.4+ | 0.4+ | 2006 08 29 | 704 | 0.6− | 0.9− |
| 2000 05 03 | 691 | 0.1− | 0.0 | 2004 03 18 | 691 | 0.3+ | 0.5+ | 2006 08 29 | 704 | 0.1− | 0.2+ |
| 2000 05 03 | 691 | 0.3− | 0.3+ | 2004 03 18 | 691 | 0.4+ | 0.4+ | 2006 08 29 | 704 | 0.0 | 0.4+ |
| 2001 08 27 | 691 | 0.1− | 0.2+ | 2004 03 18 | 691 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.3− |
| 2001 08 27 | 691 | 0.0 | 0.4+ | 2006 06 20 | G96 | 0.2− | 0.2− | 2006 09 14 | 703 | (2.6− | 0.0 ) |
| 2001 08 27 | 691 | 0.1− | 0.3+ | 2006 06 20 | G96 | 0.6− | 0.1− | 2006 09 14 | 703 | 1.8− | 0.4− |
| 2002 12 05 | 704 | 0.4− | 0.4+ | 2006 06 20 | G96 | 0.4− | 0.4− | 2006 09 17 | 704 | 0.5− | 0.6+ |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 06 20 | G96 | 0.3− | 0.3+ | 2006 09 17 | 704 | 1.1− | 1.0+ |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 08 21 | 704 | 1.2+ | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.7+ |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 08 21 | 704 | 1.2+ | 0.8+ | 2006 09 17 | 704 | 0.1+ | 1.4+ |
| 2002 12 05 | 704 | 0.6− | 0.5+ | 2006 08 21 | 704 | 0.5+ | 0.2− | 2006 09 18 | 699 | 1.0− | 2.0+ |
| 2002 12 10 | 704 | 0.5− | 1.1− | 2006 08 28 | 703 | 0.4− | 0.4+ | 2006 09 18 | 699 | (0.8+ | 3.9+) |
| 2002 12 10 | 704 | 0.5− | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.3+ |
| 2002 12 10 | 704 | 1.4− | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.5+ | 1.2− |

**2006 QS$_{68}$ = 2004 AA$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.09875 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21228364 | $\omega$ | 210.63875 | | −0.95718066 | | +0.28889825 |
| $a$ | 2.7830758 | $\Omega$ | 346.11640 | | −0.24749353 | | −0.84982901 |
| $e$ | 0.0997837 | $i$ | 4.42668 | | −0.15017371 | | −0.44082701 |
| $P$ | 4.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.1− | 0.3− | 2000 04 06 | 699 | 1.2+ | 0.5+ | 2006 08 21 | 691 | 0.1+ | 0.1+ |
| 1995 02 02 | 691 | 0.1− | 0.2− | 2004 01 15 | 691 | 0.1+ | 0.5+ | 2006 08 21 | 691 | 0.1+ | 0.1− |
| 1995 02 02 | 691 | 0.0 | 0.5− | 2004 01 15 | 691 | 0.1+ | 0.4+ | 2006 08 21 | 691 | 0.3− | 0.1− |
| 2000 04 05 | 699 | 0.1+ | 1.6+ | 2004 01 15 | 691 | 0.0 | 0.5+ | 2006 08 28 | 691 | 0.3− | 0.5+ |
| 2000 04 05 | 699 | 2.9− | 1.8+ | 2004 01 22 | 704 | 0.2+ | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.4+ |
| 2000 04 05 | 699 | (3.3+ | 0.7+) | 2004 01 22 | 704 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.7+ |
| 2000 04 05 | 699 | 0.3+ | 0.1+ | 2004 01 22 | 704 | 1.0+ | 1.1+ | 2006 09 26 | G96 | 0.1+ | 0.5+ |
| 2000 04 06 | 699 | 1.3− | 1.6+ | 2005 05 19 | 644 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2000 04 06 | 699 | 0.8+ | 0.6− | 2005 05 19 | 644 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2000 04 06 | 699 | 0.2− | 0.5+ | 2005 05 19 | 644 | 0.5+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2+ |

**2006 QK$_{71}$ = 2004 FT$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.03503 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17163043 | $\omega$ | 35.74292 | | −0.99674249 | | +0.05895022 |
| $a$ | 3.2068097 | $\Omega$ | 147.50496 | | −0.07340758 | | −0.94577990 |
| $e$ | 0.1185274 | $i$ | 5.88027 | | +0.03340251 | | −0.31941392 |
| $P$ | 5.74 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 691 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 08 21 | 691 | 0.1+ | 0.4+ |
| 1998 03 25 | 691 | 0.0 | 0.3− | 2004 03 19 | 704 | 0.4− | 0.2− | 2006 08 21 | 691 | 0.4− | 0.8+ |
| 1998 03 25 | 691 | 0.0 | 0.4− | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 08 28 | 691 | 0.3+ | 0.2+ |
| 2000 08 03 | 691 | 0.5+ | 0.6− | 2004 03 19 | 704 | 0.0 | 0.9+ | 2006 08 28 | 691 | 0.5− | 0.3+ |
| 2000 08 03 | 691 | 0.4+ | 0.3− | 2004 03 23 | 704 | 0.1− | 0.9+ | 2006 08 28 | 691 | 0.1− | 0.7+ |
| 2000 08 03 | 691 | 0.6+ | 0.2− | 2004 03 23 | 704 | (0.5+ | 2.7+) | 2006 09 30 | G96 | 0.1+ | 1.1+ |
| 2000 09 02 | 691 | 0.7− | 0.3− | 2004 03 23 | 704 | 0.4+ | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2000 09 02 | 691 | 0.2− | 0.7− | 2004 03 23 | 704 | 0.6− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2000 09 02 | 691 | 0.1− | 0.1+ | 2004 03 23 | 704 | 0.9+ | 1.3+ | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2004 03 19 | 704 | 0.7+ | 0.5+ | 2006 08 21 | 691 | 0.3− | 0.3+ | | | | |

**2006 QK$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 44.45886 | | | (2000.0) | | |
| $n$ | 0.21317577 | $\omega$ | 296.25058 | | +0.46281031 | +0.88645561 |
| $a$ | 2.7753057 | $\Omega$ | 1.32187 | | −0.78386425 | +0.41016810 |
| $e$ | 0.0451167 | $i$ | 4.34819 | | −0.41396069 | +0.21437951 |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.2− | 0.6+ | 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 1.4− | 0.1− |
| 1995 03 26 | 691 | 0.6+ | 0.7+ | 2006 08 21 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 1.4− | 0.2+ |
| 1995 03 26 | 691 | 0.3+ | 0.2+ | 2006 08 21 | 691 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.9+ | 0.3− |
| 2001 07 12 | 644 | 0.1− | 0.5+ | 2006 08 23 | 807 | 0.2− | 0.0 | 2006 09 18 | 699 | 1.1− | 0.4− |
| 2001 07 12 | 644 | 0.2− | 0.6+ | 2006 08 23 | 807 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.2− |
| 2001 07 12 | 644 | 0.2− | 0.3+ | 2006 08 28 | 703 | 1.3+ | 1.1+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2001 08 12 | 644 | 0.2− | 0.6+ | 2006 08 28 | 691 | 0.1− | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2001 08 12 | 644 | 0.2− | 0.3+ | 2006 08 28 | 703 | (1.2+ | 2.1+) | 2006 09 30 | G96 | 0.1+ | 0.0 |
| 2001 08 12 | 644 | 0.2− | 0.2+ | 2006 08 28 | 703 | (1.8+ | 1.7+) | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2004 02 29 | 691 | 0.2+ | 0.8+ | 2006 08 28 | 691 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | (0.2− | 1.8+) | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2006 08 18 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 1.0− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.6+ |
| 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.8+ | | | | |
| 2006 08 18 | 644 | 0.3− | 0.5+ | 2006 09 14 | 703 | 0.7+ | 0.1− | | | | |

**2006 QH$_{73}$ = 2004 BV$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 278.02304 | | | (2000.0) | | |
| $n$ | 0.24264608 | $\omega$ | 49.62886 | | +0.30172057 | −0.95318005 |
| $a$ | 2.5457780 | $\Omega$ | 22.83452 | | +0.85809828 | +0.26221626 |
| $e$ | 0.0349970 | $i$ | 2.99999 | | +0.41549012 | +0.15063343 |
| $P$ | 4.06 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 17 | 691 | 1.8− | 0.4− | 2004 01 18 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 1998 09 17 | 691 | 0.8+ | 0.0 | 2004 01 22 | 704 | 0.5− | 0.6− | 2006 08 28 | 691 | 0.1− | 0.3+ |
| 1998 09 17 | 691 | 0.7+ | 0.0 | 2004 01 22 | 704 | 0.7+ | 0.5− | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2002 09 12 | 644 | 1.2+ | 0.2− | 2004 01 22 | 704 | (2.4+ | 1.2−) | 2006 09 30 | G96 | 0.5− | 0.9− |
| 2002 09 12 | 644 | 0.5+ | 0.5+ | 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.7− |
| 2002 09 12 | 644 | 1.4+ | 1.5+ | 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.5+ | 0.5− |
| 2004 01 18 | 691 | 0.0 | 0.2+ | 2006 08 21 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.6− |
| 2004 01 18 | 691 | 0.2− | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.0 | | | | |

**2006 QK$_{73}$ = 2003 YT$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.66982 | | | (2000.0) | | |
| $n$ | 0.26107039 | $\omega$ | 8.67185 | | +0.99557001 | −0.09379461 |
| $a$ | 2.4245490 | $\Omega$ | 356.68889 | | +0.07802280 | +0.86302295 |
| $e$ | 0.1315863 | $i$ | 6.51287 | | +0.05246704 | +0.49638086 |
| $P$ | 3.78 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.2+ | 0.2− | 2006 08 21 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 08 06 | 644 | 0.7+ | 0.1− | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2002 08 06 | 644 | 0.8− | 0.1− | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2003 12 18 | 691 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2003 12 18 | 691 | 0.4+ | 0.0 | 2006 08 28 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2003 12 18 | 691 | 0.2+ | 0.6− | 2006 08 30 | 699 | 0.4− | 0.3− | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2003 12 19 | 291 | 0.4− | 0.2+ | 2006 08 30 | 699 | 0.7+ | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2003 12 19 | 291 | 0.2− | 0.2+ | 2006 08 30 | 699 | 0.8+ | 0.2+ | 2006 10 19 | 695 | 0.2+ | 0.3+ |
| 2003 12 19 | 291 | 0.2− | 0.2+ | 2006 08 30 | 699 | 1.0− | 0.5+ | 2006 10 19 | 695 | 0.1+ | 0.5+ |
| 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.5− | | | | |

**2006 QC$_{76}$ = 1996 FT$_{14}$ = 2005 JK$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.66712 | | | (2000.0) | | |
| $n$ | 0.22691312 | $\omega$ | 81.73426 | | −0.81682402 | +0.57467103 |
| $a$ | 2.6621324 | $\Omega$ | 133.32466 | | −0.55284899 | −0.75476814 |
| $e$ | 0.0402345 | $i$ | 3.98171 | | −0.16479233 | −0.31635148 |
| $P$ | 4.34 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 19 | 691 | 0.4+ | 0.6− | 2000 02 05 | 695 | 0.2− | 1.1+ | 2005 05 11 | 691 | 0.0 | 0.4+ |
| 1996 03 19 | 691 | 0.5+ | 0.6− | 2002 10 05 | 645 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.1− | 0.1− |
| 1996 03 19 | 691 | 0.3+ | 0.8− | 2002 10 05 | 645 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.6− | 0.3+ |
| 1996 03 20 | 691 | 0.2− | 1.2+ | 2003 12 21 | 645 | 0.1− | 0.3+ | 2006 08 21 | 691 | 1.1− | 0.1+ |
| 1996 03 20 | 691 | 0.1− | 0.1− | 2003 12 21 | 645 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.1− |
| 1996 03 20 | 691 | 0.8− | 0.3− | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 1997 08 01 | 691 | 0.6− | 0.1+ | 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 1997 08 01 | 691 | 0.6− | 0.1+ | 2005 05 04 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 291 | 0.2+ | 0.6+ |
| 1997 08 01 | 691 | 0.2+ | 0.4− | 2005 05 11 | 691 | 0.4+ | 0.1+ | 2006 09 14 | 291 | 0.3+ | 0.9+ |
| 2000 02 05 | 695 | 0.4+ | 0.6+ | 2005 05 11 | 691 | 0.0 | 0.6+ | 2006 09 14 | 291 | 0.0 | 0.6+ |

**2006 QT$_{76}$ = 2001 HU$_{67}$ = 2002 RH$_{195}$ = 2004 BN$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.41004 | | | (2000.0) | | |
| $n$ | 0.24272232 | $\omega$ | 227.19349 | | +0.98236117 | +0.18508124 |
| $a$ | 2.5452449 | $\Omega$ | 122.12400 | | −0.16105695 | +0.90993025 |
| $e$ | 0.1237968 | $i$ | 1.80485 | | −0.09501154 | +0.37117634 |
| $P$ | 4.06 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 27 | 691 | 0.1+ | 0.2− | 2001 04 27 | I03 | 0.0 | 0.3+ | 2006 08 21 | 691 | 0.0 | 0.3+ |
| 1994 09 27 | 691 | 0.2+ | 0.6− | 2001 04 27 | I03 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.4− | 1.4+ |
| 1994 09 27 | 691 | 0.1− | 0.1− | 2002 09 12 | 644 | 0.3− | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2000 01 05 | 691 | 0.3− | 0.1− | 2002 09 12 | 644 | 0.3− | 0.3+ | 2006 08 28 | 703 | (1.7+ | 0.5+) |
| 2000 01 05 | 691 | 0.3+ | 0.2+ | 2002 09 12 | 644 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.1− |
| 2000 01 05 | 691 | 0.2− | 0.3− | 2002 09 15 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.5+ | 0.1− |
| 2000 02 06 | 691 | 0.4+ | 0.3− | 2002 09 15 | 644 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2000 02 06 | 691 | 0.2+ | 0.2− | 2002 09 15 | 644 | 0.2− | 0.6+ | 2006 08 28 | 691 | 0.2− | 0.0 |
| 2000 02 06 | 691 | 0.4+ | 0.2− | 2004 01 27 | 691 | 0.2− | 0.7+ | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 2001 04 26 | I03 | 0.4− | 0.1+ | 2004 01 27 | 691 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.4+ | 0.3− |
| 2001 04 26 | I03 | 0.4− | 0.2− | 2004 01 27 | 691 | 0.2− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2001 04 26 | I03 | 0.1+ | 0.2− | 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2001 04 27 | I03 | 0.1− | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.2+ | | | | |

**2006 QH$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.05912 | | | (2000.0) | | |
| $n$ | 0.19460817 | $\omega$ | 154.95073 | | +0.76793746 | +0.63844450 |
| $a$ | 2.9491397 | $\Omega$ | 165.02178 | | −0.61614641 | +0.75831633 |
| $e$ | 0.0894536 | $i$ | 11.51240 | | −0.17503047 | +0.13170031 |
| $P$ | 5.06 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1− | 0.2+ | 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.4+ |
| 2001 09 12 | 704 | 0.1− | 0.5+ | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.3+ | 0.3− |
| 2001 09 12 | 704 | 0.6+ | 0.6− | 2006 08 22 | 644 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.1− |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.4+ | 0.3− |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.3− | 0.1− |
| 2001 10 11 | 644 | 0.3− | 0.6+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2001 10 11 | 644 | 0.5− | 0.9+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2001 10 11 | 644 | 0.5− | 1.0+ | 2006 08 28 | 699 | 0.7+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2004 02 18 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.2+ |
| 2004 02 18 | 691 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.4− | 0.6+ | | | | |

**2006 QD$_{78}$ = 1998 FS$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.62093 | | $\omega$ | 184.17416 | +0.91729644 | +0.39382379 |
| $n$ | 0.28968548 | | $\Omega$ | 152.39924 | −0.36156599 | +0.88571411 |
| $a$ | 2.2621335 | | $i$ | 7.30465 | −0.16684509 | +0.24579126 |
| $e$ | 0.1083953 | | | | | |
| $P$ | 3.40 | $H$ | 17.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 691 | 0.3+ | 0.4+ | 2003 12 22 | 691 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.8+ |
| 1998 03 20 | 691 | 0.5+ | 0.4+ | 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.2+ |
| 1998 03 20 | 691 | 0.0 | 0.9+ | 2005 03 11 | 691 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.2+ | 0.1+ |
| 1998 03 25 | 691 | 0.1− | 0.2+ | 2005 03 11 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.7+ |
| 1998 03 25 | 691 | 0.4− | 0.0 | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.8+ |
| 1998 03 25 | 691 | 0.0 | 0.0 | 2006 08 22 | 644 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.6+ |
| 2003 11 26 | 691 | 0.3− | 0.2+ | 2006 08 22 | 644 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 1.5+ |
| 2003 11 26 | 691 | 0.5− | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | (0.6− | 2.9+) |
| 2003 11 26 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.4+ | 2006 09 30 | 703 | 1.0+ | 0.6− |
| 2003 12 22 | 691 | 0.2+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.5− | 1.4− |
| 2003 12 22 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.3− |

**2006 QG$_{78}$ = 1992 SL$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.13269 | | $\omega$ | 221.12460 | +0.99933063 | −0.01616093 |
| $n$ | 0.28194611 | | $\Omega$ | 139.76538 | +0.02694867 | +0.93191468 |
| $a$ | 2.3033431 | | $i$ | 2.91249 | −0.02474005 | +0.36231733 |
| $e$ | 0.1785153 | | | | | |
| $P$ | 3.50 | $H$ | 17.3 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 26 | 691 | 0.5+ | 0.3+ | 2006 07 25 | G96 | 0.5+ | 0.4− | 2006 09 14 | 703 | 0.2− | 0.0 |
| 1992 09 26 | 691 | 0.6+ | 0.2− | 2006 07 25 | G96 | 0.2+ | 0.7− | 2006 09 25 | 699 | 0.6+ | 1.1− |
| 1992 09 26 | 691 | 0.2+ | 0.2+ | 2006 07 25 | G96 | 0.3+ | 0.5− | 2006 09 25 | 699 | 0.7− | 1.0+ |
| 1992 09 27 | 691 | 0.6− | 0.1− | 2006 07 25 | G96 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.4− | 0.1+ |
| 1992 09 27 | 691 | 0.1+ | 0.4+ | 2006 08 22 | 644 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.0 | 0.4+ |
| 1992 09 27 | 691 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.7− |
| 1992 09 27 | 691 | 0.3− | 0.6+ | 2006 08 22 | 644 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 1.2− | 0.7− |
| 1992 09 27 | 691 | 0.6− | 0.3− | 2006 08 23 | 644 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.8+ |
| 1992 09 27 | 691 | 0.2− | 0.1− | 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.5+ |
| 1999 09 07 | 704 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− |
| 1999 09 07 | 704 | 0.5− | 0.6+ | 2006 08 27 | 699 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 1999 09 07 | 704 | 0.3− | 0.8+ | 2006 08 27 | 699 | 0.6− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− |
| 1999 09 07 | 704 | 0.5− | 0.8+ | 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 1999 09 07 | 704 | 0.6+ | 1.2+ | 2006 08 27 | 699 | 0.6− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 1999 10 01 | 691 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 10 01 | 691 | 0.0 | 0.5− | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 10 01 | 691 | 0.2+ | 0.5− | 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.6+ | 0.1− |
| 2005 04 11 | G96 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.8− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.6+ | 0.3− |
| 2005 04 11 | G96 | 0.5− | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.9− | | | | |

**2006 QH$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.65168 | | $\omega$ | 247.56510 | +0.96217514 | −0.27114972 |
| $n$ | 0.26853292 | | $\Omega$ | 128.15752 | +0.26066768 | +0.88812867 |
| $a$ | 2.3794196 | | $i$ | 1.92386 | +0.07919195 | +0.37108665 |
| $e$ | 0.1992472 | | | | | |
| $P$ | 3.67 | $H$ | 17.7 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 24 | 675 | 1.6+ | 1.5− | 2006 09 12 | 703 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.8− | 1.1+ |
| 1973 09 24 | 675 | 0.6− | 0.8− | 2006 09 12 | 703 | 0.5− | 0.5− | 2006 09 26 | 704 | 0.2− | 0.2+ |
| 2001 03 26 | 695 | 0.4+ | 0.5+ | 2006 09 16 | 704 | 0.8+ | 0.6+ | 2006 09 26 | 704 | (1.7− | 0.1−) |
| 2001 03 26 | 695 | 0.2+ | 0.5+ | 2006 09 16 | 704 | 1.4+ | 0.6+ | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 2004 01 16 | 691 | 0.3+ | 0.2− | 2006 09 16 | 704 | 1.2+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.4+ |
| 2004 01 16 | 691 | 0.0 | 0.5+ | 2006 09 16 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2004 01 16 | 691 | 0.2− | 0.4+ | 2006 09 16 | 704 | 0.2+ | 1.1+ | 2006 09 30 | 703 | 1.2− | 0.5− |
| 2006 08 22 | 644 | 0.3− | 0.3+ | 2006 09 16 | 699 | 1.2+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.3− | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2006 08 22 | 644 | 0.3− | 0.5− | 2006 09 16 | 699 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.5− |
| 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.5− |
| 2006 08 28 | 703 | 1.1− | 0.7+ | 2006 09 19 | 703 | (0.8+ | 2.0−) | 2006 10 19 | 695 | 0.0 | 0.1− |
| 2006 08 28 | 703 | 0.8− | 0.6+ | 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 10 19 | 695 | 0.3+ | 0.3− |
| 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 09 19 | 699 | (1.8− | 1.9+) | 2006 10 20 | 695 | 0.0 | 0.2− |
| 2006 08 30 | 704 | 0.4− | 0.6+ | 2006 09 19 | 703 | 1.3− | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.6− |
| 2006 08 30 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.6− | 2006 11 17 | G96 | 0.5− | 0.1+ |
| 2006 08 30 | 704 | 0.0 | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.9+ | 2006 11 17 | G96 | 0.8+ | 0.7− |
| 2006 09 12 | 703 | (1.3− | 1.6−) | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.7+ | 0.4− |
| 2006 09 12 | 703 | 0.2− | 0.5+ | 2006 09 26 | 704 | (1.9− | 0.0 ) | | | | |

**2006 QJ$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.16375 | | $\omega$ | 343.52289 | +0.93388612 | +0.35756077 |
| $n$ | 0.25937979 | | $\Omega$ | 355.52399 | −0.32411584 | +0.84335833 |
| $a$ | 2.4350729 | | $i$ | 1.94531 | −0.15101539 | +0.40111972 |
| $e$ | 0.2359879 | | | | | |
| $P$ | 3.80 | $H$ | 17.8 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.4+ | 0.4− | 2006 09 16 | 699 | 1.0− | 0.0 | 2006 09 20 | 644 | 0.2− | 0.1+ |
| 1991 11 08 | 691 | 0.1+ | 0.2− | 2006 09 16 | 699 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.0 |
| 1991 11 08 | 691 | 0.3− | 0.1+ | 2006 09 16 | 699 | 1.4− | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2002 07 05 | 644 | 0.1+ | 0.8− | 2006 09 16 | 699 | 0.2− | 0.8+ | 2006 09 23 | 691 | 0.4− | 0.8− |
| 2002 07 05 | 644 | 0.0 | 0.1− | 2006 09 17 | 704 | (0.7+ | 2.5+) | 2006 09 23 | 691 | 0.1+ | 0.0 |
| 2002 07 05 | 644 | 0.3+ | 0.7− | 2006 09 17 | 704 | 0.7+ | 0.1− | 2006 10 01 | 703 | 0.1− | 0.3− |
| 2005 04 12 | 695 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.7+ | 0.6+ | 2006 10 01 | 703 | 0.1− | 1.0− |
| 2005 04 12 | 695 | 0.1+ | 0.3+ | 2006 09 17 | 704 | (0.1+ | 1.7+) | 2006 10 01 | 703 | 0.7− | 0.4+ |
| 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.4+ | 2006 10 01 | 703 | 0.5+ | 0.7+ |
| 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 1.0+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.5− | 0.1+ |
| 2006 08 27 | 691 | 0.2+ | 0.2− | 2006 09 20 | 704 | (2.6− | 1.6+) | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.4− | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.0 | | | | |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | (1.7− | 1.0+) | | | | |

**2006 QK$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.23400 | | $\omega$ | 168.06008 | +0.89383725 | +0.44838935 |
| $n$ | 0.28454871 | | $\Omega$ | 165.29928 | −0.41184411 | +0.82221384 |
| $a$ | 2.2892768 | | $i$ | 0.31626 | −0.17731159 | +0.35058720 |
| $e$ | 0.1239386 | | | | | |
| $P$ | 3.46 | $H$ | 17.2 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 699 | 0.4− | 1.2+ | 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.5+ |
| 1999 09 05 | 699 | 0.7+ | 0.1− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.4− | 0.2− |
| 1999 09 05 | 699 | 1.1− | 0.7+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.3− |
| 2001 01 24 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.6− |
| 2001 01 24 | 691 | 0.0 | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.1− |
| 2001 01 24 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2005 03 17 | 691 | 0.3− | 0.1+ | 2006 09 16 | 699 | 0.7− | 1.0+ | 2006 09 23 | 691 | 0.0 | 0.1− |
| 2005 03 17 | 691 | 0.7+ | 0.6+ | 2006 09 16 | 699 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.0 | 0.6+ |
| 2005 03 17 | 691 | 0.3+ | 0.6+ | 2006 09 16 | 699 | 0.4+ | 1.4+ | 2006 09 25 | 699 | 0.4+ | 0.3+ |
| 2005 04 04 | G96 | 0.5− | 0.2+ | 2006 09 16 | 699 | 0.7+ | 1.0+ | 2006 09 25 | 699 | 0.5− | 0.1+ |
| 2005 04 04 | G96 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.1− | 0.6− | 2006 09 25 | 699 | 0.3− | 0.5− |
| 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 17 | 704 | 1.0− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.9− | 1.0− | 2006 10 16 | G96 | 0.3− | 0.5− |
| 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.0 | 0.5− | 2006 10 16 | G96 | 0.2+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 19 | 699 | 1.3+ | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2006 08 22 | 644 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.8− |
| 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.6+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.5− |

**2006 QP$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.09546 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27644062 | $\omega$ | 187.55557 | | +0.79663724 | | +0.59803799 |
| $a$ | 2.3338242 | $\Omega$ | 135.32335 | | −0.54783828 | | +0.77577135 |
| $e$ | 0.2508185 | $i$ | 7.17858 | | −0.25542578 | | +0.20131910 |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.6− | 0.2+ | 2006 08 28 | 704 | 0.1+ | 0.3− | 2006 09 25 | 703 | 0.1− | 0.7− |
| 1999 10 09 | 704 | 0.3+ | 1.3− | 2006 08 28 | 704 | 0.3− | 0.6+ | 2006 09 25 | 703 | 0.2+ | 0.2− |
| 1999 10 09 | 704 | 0.8+ | 0.0 | 2006 08 28 | 704 | 0.6− | 0.2+ | 2006 09 25 | 703 | 0.0 | 0.5− |
| 2002 05 18 | 704 | 0.6+ | 0.9+ | 2006 08 28 | 704 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.5+ | 0.1+ |
| 2002 05 18 | 704 | 0.4− | 0.5− | 2006 08 28 | 704 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.7− |
| 2002 05 18 | 704 | 0.3− | 0.9+ | 2006 08 28 | 699 | 0.5+ | 0.5+ | 2006 10 21 | 703 | 0.0 | 0.5− |
| 2002 05 18 | 704 | 0.1− | 0.9− | 2006 08 28 | 699 | 0.5− | 0.7− | 2006 10 21 | 703 | 0.3+ | 0.4+ |
| 2002 06 16 | 291 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.1+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2002 06 16 | 291 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2002 06 16 | 291 | 0.1+ | 0.7− | 2006 09 19 | 703 | (2.3+ | 2.6−) | 2006 10 23 | 644 | 0.3− | 0.5+ |
| 2006 08 22 | 644 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.4− | 0.1+ |
| 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 09 25 | 703 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2+ |

**2006 QU$_{78}$ = 2002 XC$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.00959 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22393978 | $\omega$ | 345.65452 | | +0.93768396 | | +0.34738785 |
| $a$ | 2.6856447 | $\Omega$ | 353.99788 | | −0.31038063 | | +0.82644177 |
| $e$ | 0.2393121 | $i$ | 4.60449 | | −0.15624547 | | +0.44307525 |
| $P$ | 4.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 08 | 691 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.7− |
| 1993 10 08 | 691 | 0.6+ | 0.2+ | 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.7+ |
| 1993 10 08 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 699 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.2− |
| 1993 11 08 | 691 | 0.4− | 0.4− | 2006 08 29 | 704 | 0.4+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.1− |
| 1993 11 08 | 691 | 0.3− | 0.3− | 2006 08 29 | 704 | 1.2+ | 0.1− | 2006 09 20 | 704 | 1.4+ | 0.1+ |
| 1993 11 08 | 691 | 0.1+ | 0.1− | 2006 08 29 | 704 | 0.4− | 0.2+ | 2006 09 20 | 704 | 1.1− | 1.5+ |
| 2002 11 12 | 704 | 0.7+ | 0.5+ | 2006 08 30 | 704 | 0.0 | 0.5− | 2006 09 20 | 704 | 0.7− | 0.3− |
| 2002 11 12 | 704 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.6− | 1.1+ | 2006 09 20 | 644 | 0.1+ | 0.2− |
| 2002 11 12 | 704 | 0.7− | 1.1+ | 2006 08 30 | 704 | 0.0 | 0.4− | 2006 09 20 | 704 | 1.3− | 0.2+ |
| 2002 11 12 | 704 | 0.6+ | 0.4+ | 2006 08 30 | 704 | 0.9− | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.2− |
| 2002 12 06 | 704 | 0.1+ | 0.9− | 2006 09 01 | A79 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.4+ | 0.4+ |
| 2002 12 06 | 704 | (1.8− | 0.7+) | 2006 09 01 | A79 | 0.5− | 0.3+ | 2006 09 25 | 699 | 0.9+ | 0.0 |
| 2002 12 06 | 704 | 0.2+ | 0.3+ | 2006 09 01 | A79 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.6+ | 0.7+ |
| 2002 12 06 | 704 | 0.3− | 0.1− | 2006 09 01 | A79 | 0.2+ | 0.6− | 2006 09 25 | 699 | 0.9+ | 0.5+ |
| 2002 12 11 | 704 | 0.4− | 0.5+ | 2006 09 01 | A79 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2002 12 11 | 704 | 0.0 | 0.2+ | 2006 09 02 | A79 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.5+ | 0.3− |
| 2002 12 11 | 704 | 1.0− | 0.3− | 2006 09 02 | A79 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.5− |
| 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 02 | A79 | 0.2− | 0.6− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 02 | A79 | 0.8− | 0.5− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 02 | A79 | 0.3− | 0.6− | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2006 08 23 | 704 | 1.3− | 0.0 | 2006 09 02 | A79 | 0.2+ | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2006 08 23 | 704 | 0.4− | 0.4+ | 2006 09 02 | A79 | 0.6− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2006 08 23 | 704 | 0.2+ | 0.3+ | 2006 09 02 | A79 | 0.6− | 0.5+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2006 08 23 | 704 | 0.0 | 0.0 | 2006 09 02 | A79 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2006 08 23 | 704 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2006 08 28 | 699 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.7+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.6− |
| 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.9+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2006 08 28 | 699 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2006 08 28 | 703 | 0.3− | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.7− | 0.5+ | 2006 11 13 | G96 | 0.6− | 1.3+ |
| 2006 08 28 | 703 | 0.4+ | 0.2− | 2006 09 18 | 699 | 1.2+ | 1.4− | 2006 11 13 | G96 | 0.4+ | 0.1− |

**2006 QV$_{78}$ = 2002 TO$_{241}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.42250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23132876 | $\omega$ | 231.52152 | | +0.94208894 | | −0.31200056 |
| $a$ | 2.6281468 | $\Omega$ | 146.14338 | | +0.33243477 | | +0.91716120 |
| $e$ | 0.2169790 | $i$ | 12.75272 | | −0.04422154 | | +0.24793343 |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 608 | 0.1+ | 0.7− | 2006 07 21 | 703 | 1.4+ | 0.8− | 2006 09 12 | 704 | 0.3+ | 1.2+ |
| 2002 10 07 | 608 | 0.3− | 0.3− | 2006 07 21 | 699 | 0.5− | 0.4− | 2006 09 12 | 704 | 0.4− | 0.5+ |
| 2002 10 07 | 608 | 0.1− | 0.5− | 2006 08 23 | 704 | 0.3+ | 0.1− | 2006 09 12 | 704 | 0.5+ | 0.4+ |
| 2002 10 10 | 644 | 0.0 | 0.0 | 2006 08 23 | 704 | 1.2+ | 0.3− | 2006 09 14 | 644 | 0.4− | 0.0 |
| 2002 10 10 | 644 | 0.3− | 0.0 | 2006 08 23 | 704 | 0.7+ | 0.6+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2002 10 10 | 644 | 0.0 | 0.1− | 2006 08 23 | 704 | 0.6+ | 0.0 | 2006 09 14 | 644 | 0.3− | 0.2− |
| 2002 10 28 | 644 | 0.3− | 0.4+ | 2006 08 23 | 704 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.4− | 0.2− |
| 2002 10 28 | 644 | 0.1− | 0.4+ | 2006 08 28 | 704 | 0.5− | 0.7− | 2006 09 20 | 703 | 0.0 | 0.3− |
| 2002 10 28 | 644 | 0.0 | 0.2+ | 2006 08 28 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 703 | 0.7− | 0.5+ |
| 2002 11 06 | 644 | 0.3+ | 0.4+ | 2006 08 28 | 704 | 0.5− | 0.2+ | 2006 09 20 | 703 | 0.5− | 0.2− |
| 2002 11 06 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 704 | 0.1− | 0.2− | 2006 09 21 | 699 | (0.4− | 2.0−) |
| 2002 11 06 | 644 | 0.3+ | 0.2+ | 2006 08 31 | 704 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.4+ | 0.2− |
| 2006 07 21 | 699 | 0.5− | 0.6+ | 2006 08 31 | 704 | 1.1+ | 1.4− | 2006 09 21 | 699 | 1.4− | 0.3+ |
| 2006 07 21 | 703 | 1.3− | 0.6− | 2006 08 31 | 704 | 0.4+ | 0.3− | 2006 09 21 | 699 | 0.1− | 0.7+ |
| 2006 07 21 | 703 | (1.9+ | 1.1+) | 2006 08 31 | 704 | 0.0 | 0.8− | 2006 09 26 | 703 | 0.1− | 0.8− |
| 2006 07 21 | 699 | 0.6+ | 1.0+ | 2006 08 31 | 704 | 1.0+ | 0.2+ | 2006 09 26 | 703 | 0.3− | 1.4− |
| 2006 07 21 | 703 | 0.5− | 1.3+ | 2006 09 12 | 704 | 0.4− | 0.8+ | 2006 09 26 | 703 | 0.6− | 0.0 |
| 2006 07 21 | 699 | 0.4− | 0.2+ | 2006 09 12 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.5− |

**2006 QB$_{79}$ = 1997 WL$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.05097 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20394461 | $\omega$ | 228.59805 | | +0.99380716 | | −0.10497117 |
| $a$ | 2.8584322 | $\Omega$ | 137.39005 | | +0.11104182 | | +0.92599060 |
| $e$ | 0.0916694 | $i$ | 3.08606 | | +0.00412898 | | +0.36266025 |
| $P$ | 4.83 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 28 | 691 | 0.4+ | 0.8− | 2002 12 03 | 644 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 1997 11 28 | 691 | 0.4+ | 0.0 | 2002 12 03 | 644 | 0.9+ | 0.5+ | 2006 09 14 | 703 | 1.1− | 0.9+ |
| 1997 11 28 | 691 | 0.4+ | 0.2− | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 1.0− |
| 1997 12 04 | 691 | 0.0 | 0.3− | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 1997 12 04 | 691 | 0.7− | 0.3+ | 2006 08 23 | 644 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.7− | 1.5+ |
| 1997 12 04 | 691 | 0.1+ | 0.6− | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.2+ |
| 1999 03 10 | 691 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.2+ |
| 1999 03 10 | 691 | 0.5+ | 0.6+ | 2006 08 28 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 1999 03 10 | 691 | 0.2+ | 0.9+ | 2006 08 28 | 699 | (0.4− | 2.2−) | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2001 08 27 | 691 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 08 27 | 691 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2001 08 27 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.9+ | 0.6+ | 2006 11 23 | G96 | 0.4− | 0.5− |
| 2002 11 06 | 291 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2002 11 06 | 291 | 0.2− | 0.6+ | 2006 08 28 | 703 | 0.3− | 0.5− | 2006 11 23 | G96 | 0.5− | 0.3+ |
| 2002 11 06 | 291 | 0.2− | 0.4+ | 2006 08 28 | 699 | 0.5+ | 1.1+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2002 12 03 | 644 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 1.0− | 1.1+ | | | | |

**2006 QD$_{79}$ = 1999 FH$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.50528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19192210 | $\omega$ | 323.20677 | | −0.37388777 | −0.92660920 | |
| $a$ | 2.9765925 | $\Omega$ | 148.69166 | | +0.86824437 | −0.36486535 | |
| $e$ | 0.0439795 | $i$ | 4.41935 | | +0.32612827 | −0.09093220 | |
| $P$ | 5.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.1− |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2004 03 15 | 703 | 0.8− | 0.9+ | 2006 09 14 | 703 | (1.0− | 3.2+) |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.6− | 1.0− |
| 1999 03 22 | 645 | 0.1− | 0.1− | 2004 03 15 | 704 | (1.7+ | 0.4+) | 2006 09 14 | 703 | 0.7− | 0.5+ |
| 2001 09 21 | 704 | 0.2− | 0.3+ | 2004 04 21 | 691 | 0.2+ | 0.8+ | 2006 09 26 | G96 | 0.4+ | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.2− | 2004 04 21 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2004 04 21 | 691 | 0.5− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.0 | 0.5− | 2006 08 23 | 644 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 08 23 | 644 | 0.1+ | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2004 03 15 | 703 | 1.0+ | 1.2+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.1+ |
| 2004 03 15 | 704 | (2.1+ | 0.8+) | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.4− | 0.3− |
| 2004 03 15 | 703 | 0.9+ | 1.2+ | 2006 08 28 | 703 | 1.2+ | 0.4+ | 2006 11 23 | G96 | 0.5− | 0.2+ |
| 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.2+ |
| 2004 03 15 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2004 03 15 | 703 | 0.7+ | 0.7+ | 2006 08 28 | 703 | 0.5− | 1.3− | 2006 11 23 | G96 | 1.6+ | 0.6+ |
| 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.2+ | | | | |

**2006 QK$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.24709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18880318 | $\omega$ | 271.30432 | | +0.39222983 | −0.91578172 | |
| $a$ | 3.0092841 | $\Omega$ | 155.04185 | | +0.90431530 | +0.36664756 | |
| $e$ | 0.1538302 | $i$ | 11.84326 | | +0.16843277 | +0.16405304 | |
| $P$ | 5.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 1.2+ | 0.6+ | 2006 08 24 | 734 | 0.4− | 0.4+ | 2006 08 30 | 734 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.2+ | 1.0− | 2006 08 28 | 691 | 0.1− | 0.4+ | 2006 09 13 | 734 | 0.3+ | 0.0 |
| 2001 09 12 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 13 | 734 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 0.7− | 0.0 | 2006 08 28 | 691 | 0.4+ | 0.2− | 2006 09 13 | 734 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.6− | 0.9+ | 2006 08 30 | 734 | 0.0 | 0.5+ | 2006 09 13 | 734 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.4− | 2006 08 30 | 734 | 0.3− | 0.5− | 2006 09 25 | 734 | 0.0 | 0.5− |
| 2001 09 21 | 704 | 0.0 | 0.4− | 2006 08 30 | 734 | 0.2− | 0.2+ | 2006 09 25 | 734 | 0.4+ | 0.3+ |
| 2006 08 24 | 734 | 0.5+ | 0.2− | 2006 08 30 | 734 | 0.2− | 0.5− | 2006 09 25 | 734 | 0.6− | 0.2+ |
| 2006 08 24 | 734 | 0.5+ | 0.1− | 2006 08 30 | 734 | 0.2− | 0.4− | | | | |
| 2006 08 24 | 734 | 0.9− | 0.4+ | 2006 08 30 | 734 | 0.3− | 0.0 | | | | |

**2006 QM$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.16887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21412239 | $\omega$ | 153.31284 | | +0.99852853 | −0.03608268 | |
| $a$ | 2.7671200 | $\Omega$ | 208.84217 | | +0.02078125 | +0.94412532 | |
| $e$ | 0.1282989 | $i$ | 4.81386 | | +0.05008914 | +0.32760559 | |
| $P$ | 4.60 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.1+ | 0.8+ | 2006 08 16 | 644 | 0.2+ | 0.1− | 2006 08 29 | 691 | 0.2− | 0.2− |
| 2002 12 10 | 644 | 0.3− | 0.8+ | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.8+ | 0.5+ |
| 2002 12 10 | 644 | 0.1− | 0.7+ | 2006 08 24 | 704 | 0.6+ | 0.3− | 2006 08 30 | 704 | 0.1+ | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 0.2+ | 2006 08 24 | 704 | 0.6+ | 0.1+ | 2006 08 30 | 704 | 1.2+ | 0.3+ |
| 2004 02 23 | 704 | 0.0 | 0.9+ | 2006 08 24 | 704 | 0.4+ | 0.5− | 2006 09 14 | 691 | 0.1− | 0.1+ |
| 2004 02 23 | 704 | 0.1+ | 0.3+ | 2006 08 24 | 704 | 1.0+ | 0.7− | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 08 24 | 704 | 0.2− | 1.4− | 2006 09 14 | 691 | 0.3− | 0.3+ |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.3+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2005 05 08 | 691 | 0.1+ | 0.1− | 2006 08 28 | 699 | 0.7− | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.2+ |
| 2005 05 08 | 691 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.4+ |
| 2005 05 08 | 691 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2005 05 08 | G96 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2005 05 08 | G96 | 0.5− | 0.4− | 2006 08 28 | 699 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2005 05 08 | G96 | 0.0 | 0.2− | 2006 08 28 | 699 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2005 05 08 | G96 | 0.8− | 0.3− | 2006 08 29 | 691 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2006 08 16 | 644 | 0.3− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.6− | 0.4− |

**2006 QQ$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.05039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21829698 | $\omega$ | 212.26957 | | +0.88910255 | −0.45733671 | |
| $a$ | 2.7317287 | $\Omega$ | 174.84181 | | +0.45129545 | +0.86921693 | |
| $e$ | 0.1885818 | $i$ | 11.83131 | | +0.07634840 | +0.18789642 | |
| $P$ | 4.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 08 | 644 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.9+ | 2006 09 27 | 704 | 0.1+ | 0.5+ |
| 2002 12 08 | 644 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.8− | 0.4− | 2006 09 27 | 704 | 0.7+ | 0.7+ |
| 2002 12 08 | 644 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.1+ |
| 2002 12 13 | 644 | 0.2− | 0.1+ | 2006 08 29 | 703 | 1.1− | 0.7− | 2006 09 27 | G96 | 0.4+ | 0.5− |
| 2002 12 13 | 644 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.2− |
| 2002 12 13 | 644 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.0 | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 08 30 | 704 | 1.0− | 0.5+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.3+ | 0.1+ | 2006 10 16 | G96 | 0.5− | 0.1− |
| 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.8+ | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2006 08 24 | 704 | 0.6+ | 0.6+ | 2006 08 30 | 704 | 0.4− | 0.5+ | 2006 10 16 | G96 | 0.4− | 0.4− |
| 2006 08 24 | 704 | 0.6− | 0.4− | 2006 09 01 | 704 | 0.4+ | 1.5− | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2006 08 24 | 704 | 0.4+ | 0.5+ | 2006 09 01 | 704 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2006 08 24 | 704 | 0.0 | 0.5− | 2006 09 01 | 704 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2006 08 28 | 699 | 0.2− | 0.1− | 2006 09 13 | 644 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.5− | 0.1+ |
| 2006 08 28 | 699 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2006 08 28 | 699 | 0.1− | 0.3− | 2006 09 13 | 644 | 0.2+ | 0.4− | | | | |

**2006 QR$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.40178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17948433 | $\omega$ | 39.22155 | | +0.96938007 | +0.23495634 | |
| $a$ | 3.1125645 | $\Omega$ | 307.04323 | | −0.24174284 | +0.86196304 | |
| $e$ | 0.1341167 | $i$ | 5.13208 | | −0.04315881 | +0.44923850 | |
| $P$ | 5.49 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.2− | 0.3+ |
| 2001 10 14 | 704 | 0.4+ | 0.7− | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 09 13 | 644 | 0.0 | 0.4+ |
| 2001 10 14 | 704 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.3+ |
| 2001 10 14 | 704 | 0.3+ | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.8− | 2006 09 28 | G96 | 0.1− | 0.2+ |
| 2003 01 05 | 291 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.6− |
| 2003 01 05 | 291 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.3− | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.2− |
| 2003 01 05 | 291 | 0.0 | 0.2+ | 2006 08 28 | 699 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2006 08 24 | 704 | 0.1+ | 0.6+ | 2006 08 28 | 699 | 1.3+ | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.1+ |
| 2006 08 24 | 704 | 0.5− | 0.4+ | 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.6− | 0.3+ |
| 2006 08 24 | 704 | 0.2+ | 0.6− | 2006 08 30 | 704 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2006 08 24 | 704 | 0.1− | 1.1+ | 2006 08 30 | 704 | 0.8− | 0.3+ | | | | |
| 2006 08 24 | 704 | 0.0 | 0.4− | 2006 09 13 | 644 | 0.5− | 0.0 | | | | |

**2006 QS$_{79}$ = 2003 YT$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.24745 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28350494 | $\omega$ | 145.63641 | | +0.94937889 | −0.31085948 | |
| $a$ | 2.2948922 | $\Omega$ | 232.53882 | | +0.27390202 | +0.88966930 | |
| $e$ | 0.1782912 | $i$ | 3.26686 | | +0.15380965 | +0.33444719 | |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 06 | 699 | 0.3− | 1.0+ | 2006 08 29 | 703 | 0.5− | 0.5− | 2006 09 25 | 704 | 0.0 | 0.0 |
| 1999 09 06 | 699 | 0.3− | 0.8+ | 2006 08 29 | 703 | 0.6− | 0.2− | 2006 09 25 | 704 | 0.3− | 0.5+ |
| 1999 09 06 | 699 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.7+ | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.1− |
| 2000 12 23 | 645 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.2− | 0.5+ | 2006 09 29 | 699 | 0.3+ | 0.5− |
| 2000 12 23 | 645 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 704 | 0.4+ | 0.7+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.1− | 0.4+ |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.3+ | 0.6+ | 2006 09 29 | 699 | 0.9− | 0.2− |
| 2003 12 21 | 704 | 0.1− | 1.4− | 2006 09 11 | 703 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.4− |
| 2003 12 21 | 704 | 0.5+ | 0.4− | 2006 09 11 | 703 | 0.4− | 0.2+ | 2006 09 29 | 699 | 1.1+ | 1.1+ |
| 2003 12 21 | 704 | 0.0 | 0.5+ | 2006 09 11 | 703 | 0.5− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2003 12 21 | 704 | 0.6+ | 0.4− | 2006 09 11 | 703 | (2.1− | 0.6−) | 2006 10 09 | 644 | 0.2+ | 0.3− |
| 2003 12 23 | 704 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.4− | 0.4+ | 2006 10 09 | 644 | 0.6+ | 0.2− |
| 2003 12 23 | 704 | 1.1− | 0.9+ | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2003 12 23 | 704 | 0.1− | 0.7+ | 2006 09 17 | 703 | 0.6− | 0.8− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2003 12 23 | 704 | 0.4− | 0.5+ | 2006 09 17 | 703 | 0.4+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2006 08 24 | 704 | 0.8− | 0.0 | 2006 09 18 | 704 | 0.5− | 0.3− | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2006 08 24 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 704 | 0.4+ | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2006 08 24 | 704 | 0.1+ | 0.4− | 2006 09 18 | 704 | 0.6+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.4− |
| 2006 08 24 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.7+ | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.4− |
| 2006 08 24 | 704 | 0.4− | 0.3− | 2006 09 20 | 699 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3− |
| 2006 08 28 | 699 | (0.9− | 1.7+) | 2006 09 20 | 699 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.5− |
| 2006 08 28 | 699 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.2− | 0.1− | 2006 10 21 | 703 | (0.2+ | 1.6+) |
| 2006 08 28 | 699 | 0.5− | 0.1− | 2006 09 20 | 699 | 0.2− | 0.9+ | 2006 10 21 | 703 | 0.4+ | 0.2− |
| 2006 08 28 | 699 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.5− | 0.3− | 2006 10 21 | 703 | 0.4− | 0.6+ |
| 2006 08 29 | 703 | 0.1+ | 0.3− | 2006 09 25 | 704 | (0.8+ | 1.6+) | 2006 10 21 | 703 | 1.0+ | 0.8+ |
| 2006 08 29 | 703 | 0.1+ | 0.3− | 2006 09 25 | 704 | 0.4+ | 1.0− | | | | |

**2006 QV$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.54101 | | | | | |
| $n$ | 0.17776657 | $\omega$ | 182.03330 | | +0.99666400 | −0.08139104 |
| $a$ | 3.1325835 | $\Omega$ | 182.65785 | | +0.07659519 | +0.95832856 |
| $e$ | 0.1812561 | $i$ | 7.47252 | | +0.02817884 | +0.27382816 |
| $P$ | 5.54 | $H$ | 15.9 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | (0.2− | 2.2+) | 2005 06 14 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.7+ |
| 2001 09 19 | 704 | (0.0 | 1.7+) | 2005 06 14 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.5− |
| 2001 09 19 | 704 | (0.2+ | 1.6+) | 2005 06 14 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | (0.2− | 1.5−) |
| 2001 09 19 | 704 | 0.9− | 1.5+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1− |
| 2001 10 17 | 704 | 0.4+ | 1.3+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.9+ |
| 2001 10 17 | 704 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.6− |
| 2001 10 17 | 704 | 0.0 | 1.2+ | 2006 08 24 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 699 | 0.8+ | 0.2− |
| 2001 10 17 | 704 | 0.2+ | 1.5+ | 2006 08 24 | 704 | 0.4− | 0.3+ | 2006 09 18 | 699 | 1.2− | 0.7+ |
| 2001 10 17 | 704 | 0.8− | 0.8+ | 2006 08 24 | 704 | 0.3− | 0.9+ | 2006 09 25 | 699 | 0.6+ | 0.3+ |
| 2001 11 12 | 608 | 0.3− | 0.2− | 2006 08 24 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2001 11 12 | 608 | 0.2+ | 0.7+ | 2006 08 28 | 703 | 1.0− | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.4− |
| 2001 11 12 | 608 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.3− | 0.4− |
| 2003 01 28 | 645 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.5− |
| 2003 01 28 | 645 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2005 05 08 | 691 | (2.1− | 2.6−) | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.4+ | 0.4− |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2005 05 08 | 691 | 0.2− | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2005 06 09 | 691 | 0.1− | 0.2+ | 2006 08 30 | 704 | 0.2+ | 0.8+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2005 06 09 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2005 06 09 | 691 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.4− |

**2006 QY$_{79}$ = 2005 GS$_{156}$ = 2005 HZ$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.14930 | | | | | |
| $n$ | 0.26237243 | $\omega$ | 198.69958 | | +0.83165464 | −0.55464585 |
| $a$ | 2.4165211 | $\Omega$ | 195.07712 | | +0.52171117 | +0.79698112 |
| $e$ | 0.1062688 | $i$ | 5.91494 | | +0.19017891 | +0.23914238 |
| $P$ | 3.76 | $H$ | 15.9 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.4− | 2005 04 10 | G96 | 0.2− | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.7− |
| 1995 09 20 | 691 | 0.0 | 0.4− | 2005 04 10 | G96 | 0.8− | 0.9− | 2006 08 30 | 704 | 0.9+ | 0.3− |
| 1995 09 20 | 691 | 0.0 | 0.0 | 2005 04 10 | G96 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.1− |
| 1999 12 03 | 699 | 0.4+ | 1.6+ | 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.2+ |
| 1999 12 03 | 699 | 0.5+ | 0.4+ | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 11 | 703 | 0.2+ | 0.7− |
| 1999 12 03 | 699 | 0.0 | 0.7+ | 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 11 | 703 | 0.3− | 0.1− |
| 1999 12 14 | 704 | (2.1+ | 3.3+) | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.9− | 0.4− |
| 1999 12 14 | 704 | 0.4+ | 0.7+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 11 | 703 | 0.3− | 0.0 |
| 1999 12 14 | 704 | 1.1− | 1.8+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 12 | 699 | 0.4+ | 0.0 |
| 2002 06 23 | 950 | 0.0 | 0.1− | 2006 08 24 | 704 | 0.4− | 0.5+ | 2006 09 12 | 699 | 0.2+ | 0.0 |
| 2002 06 23 | 950 | 0.1− | 0.2− | 2006 08 24 | 704 | 0.3− | 0.1+ | 2006 09 12 | 699 | 0.8+ | 0.5− |
| 2002 06 23 | 950 | 0.1− | 0.1− | 2006 08 24 | 704 | 0.7− | 0.1+ | 2006 09 12 | 699 | 0.2− | 0.0 |
| 2002 07 03 | 644 | 0.2− | 0.6− | 2006 08 24 | 704 | 0.4− | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.1+ |
| 2002 07 03 | 644 | 0.3− | 0.6− | 2006 08 27 | 699 | 0.0 | 1.0+ | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2002 07 03 | 644 | 0.3− | 1.0− | 2006 08 27 | 699 | 0.5− | 0.4+ | 2006 09 14 | 691 | 0.2− | 0.1− |
| 2002 07 09 | 704 | 0.4− | 1.4+ | 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.7− |
| 2002 07 09 | 704 | 0.5− | 0.1− | 2006 08 27 | 699 | 0.6− | 0.0 | 2006 09 18 | 703 | 0.7− | 0.9− |
| 2002 07 09 | 704 | 1.4− | 0.0 | 2006 08 28 | 703 | 0.7− | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.5− |
| 2002 07 18 | 704 | 0.7+ | 0.1− | 2006 08 28 | 703 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.0 |
| 2002 07 18 | 704 | 0.5+ | 0.7+ | 2006 08 28 | 703 | 0.2− | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2002 07 18 | 704 | 0.6+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2002 07 18 | 704 | 0.5+ | 0.0 | 2006 08 29 | 691 | 0.4− | 0.9+ | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2002 07 18 | 704 | 1.1+ | 0.6+ | 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2002 08 05 | 644 | 0.1+ | 0.3+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 10 21 | 291 | 0.4+ | 0.1+ |
| 2002 08 05 | 644 | 0.4+ | 0.0 | 2006 08 30 | 704 | 1.4+ | 0.5+ | 2006 10 21 | 291 | 0.2+ | 0.1+ |
| 2002 08 05 | 644 | 0.6+ | 0.1+ | 2006 08 30 | 704 | 0.9+ | 0.3− | 2006 10 21 | 291 | 0.4+ | 0.1+ |
| 2003 12 01 | 704 | 0.4− | 0.4− | 2006 08 30 | 704 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.5− | 0.4+ |
| 2003 12 01 | 704 | 0.0 | 0.3+ | 2006 08 30 | 704 | 0.4+ | 0.4+ | 2006 11 16 | G96 | 0.6− | 0.1+ |
| 2003 12 01 | 704 | 0.6+ | 0.7+ | 2006 08 30 | 704 | 0.7+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2+ |

**2006 QC$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.28391 | | | | | |
| $n$ | 0.23773986 | $\omega$ | 331.86712 | | +0.58724529 | +0.80273187 |
| $a$ | 2.5806833 | $\Omega$ | 333.68477 | | −0.69178752 | +0.43122147 |
| $e$ | 0.0798021 | $i$ | 13.53504 | | −0.42020590 | +0.41190969 |
| $P$ | 4.15 | $H$ | 17.3 | $G$ 0.15 | | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2002 11 08 | 645 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.1− | 0.4+ |
| 2002 09 13 | 644 | 0.0 | 0.4+ | 2006 08 16 | 644 | 0.9− | 0.5+ | 2006 08 27 | 691 | 0.1− | 0.1− |
| 2002 09 13 | 644 | 0.3− | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.3+ | 0.5+ | 2006 08 16 | 644 | 0.2+ | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.8+ | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.4+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.0 |

**2006 QH$_{80}$ = 2003 UL$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.45295 | | | | | |
| $n$ | 0.29652894 | $\omega$ | 284.03596 | | −0.12575048 | +0.99111517 |
| $a$ | 2.2271937 | $\Omega$ | 338.59529 | | −0.85822567 | −0.13059101 |
| $e$ | 0.1137196 | $i$ | 6.81874 | | −0.49762989 | −0.02523292 |
| $P$ | 3.32 | $H$ | 17.3 | $G$ 0.15 | | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 03 | 691 | 0.5− | 0.1− | 2005 03 10 | G96 | 0.3+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 1.1+ |
| 2003 10 03 | 691 | 0.2+ | 0.1− | 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 08 28 | 699 | 0.5+ | 0.5+ |
| 2003 10 03 | 691 | 0.3+ | 0.1− | 2005 03 10 | G96 | 0.4− | 0.3+ | 2006 08 28 | 699 | 0.8− | 0.9+ |
| 2003 10 16 | 644 | 0.6− | 0.1+ | 2005 03 10 | G96 | 0.0 | 0.8+ | 2006 08 28 | 699 | 1.4− | 1.3+ |
| 2003 10 16 | 644 | 0.3− | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 08 28 | 699 | 1.0+ | 0.6+ |
| 2003 10 16 | 644 | 0.3− | 0.1+ | 2006 08 16 | 644 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 17 | 691 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.0 |
| 2003 10 17 | 691 | 0.3+ | 0.1+ | 2006 08 24 | 644 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2003 10 17 | 691 | 0.1+ | 0.2− | 2006 08 24 | 644 | 0.1− | 0.6− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2005 02 04 | G96 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.5− | 0.7− | 2006 09 26 | G96 | 0.3+ | 0.1− |
| 2005 02 04 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2005 02 04 | G96 | 0.6+ | 0.7+ | 2006 08 28 | 703 | (1.1− | 1.6+) | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2005 02 04 | G96 | 0.8+ | 0.2− | 2006 08 28 | 703 | 0.9− | 0.5+ | 2006 09 26 | G96 | 1.0+ | 0.1− |

**2006 QW$_{80}$ = 2000 FF$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.55893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21954479 | $\omega$ | 28.02954 | | +0.97938165 | −0.20195979 | |
| $a$ | 2.7213681 | $\Omega$ | 343.61986 | | +0.18196224 | +0.89238834 | |
| $e$ | 0.0909481 | $i$ | 0.99194 | | +0.08775727 | +0.40355334 | |
| $P$ | 4.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.2− | 0.4− | 2006 08 24 | 644 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.9− |
| 2000 03 29 | 691 | 0.1− | 0.3− | 2006 08 28 | 691 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.6− | 1.2− |
| 2000 03 29 | 691 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.6+ | 2006 09 17 | 704 | 0.3− | 0.7− |
| 2000 04 05 | 704 | 0.3− | 1.7+ | 2006 08 28 | 703 | 0.5+ | 0.6+ | 2006 09 17 | 704 | 0.5+ | 0.1− |
| 2000 04 05 | 704 | 1.1− | 0.4+ | 2006 08 28 | 691 | 0.1− | 0.5+ | 2006 09 17 | 704 | 0.6+ | 0.2− |
| 2000 04 05 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.4+ | 2006 09 25 | 701 | 0.2+ | 0.4+ |
| 2000 04 05 | 704 | 0.9+ | 1.6+ | 2006 08 28 | 703 | 1.3− | 0.2− | 2006 09 25 | 701 | 0.1+ | 0.6+ |
| 2002 11 06 | 704 | 0.2− | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.5+ | 2006 09 25 | 701 | 0.2+ | 0.1+ |
| 2002 11 06 | 704 | 0.2− | 1.0− | 2006 09 01 | 152 | 1.1+ | 0.9− | 2006 09 25 | 701 | 0.1− | 0.2+ |
| 2002 11 06 | 704 | 0.4+ | 0.3− | 2006 09 01 | 152 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.6− | 0.2− |
| 2002 11 06 | 704 | 0.9+ | 1.1+ | 2006 09 01 | 152 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 09 01 | 152 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2004 02 29 | 691 | 0.4− | 0.3+ | 2006 09 01 | 152 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 09 01 | 152 | (3.9− | 1.5−) | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2004 03 27 | 691 | (2.1+ | 0.5+) | 2006 09 01 | 152 | (1.7− | 1.9−) | 2006 10 27 | G96 | 0.4− | 0.5− |
| 2004 03 27 | 691 | 0.3+ | 0.2+ | 2006 09 01 | 152 | 0.1+ | 0.9+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2004 03 27 | 691 | 0.4+ | 0.6+ | 2006 09 01 | 152 | 0.7+ | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2005 05 10 | G96 | 0.3+ | 0.1− | 2006 09 02 | 152 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2005 05 10 | G96 | 0.5+ | 0.0 | 2006 09 02 | 152 | 1.0− | 0.6− | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2005 05 10 | G96 | 0.4+ | 0.0 | 2006 09 02 | 152 | 1.1− | 1.0+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2005 05 10 | G96 | 0.4+ | 0.1− | 2006 09 02 | 152 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.8+ | 0.3− | | | | |
| 2006 08 24 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.9− | 0.6− | | | | |

**2006 QZ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.20936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26211866 | $\omega$ | 262.42773 | | +0.68577457 | +0.72738242 | |
| $a$ | 2.4180805 | $\Omega$ | 50.90042 | | −0.65437682 | +0.63128646 | |
| $e$ | 0.1916227 | $i$ | 1.85056 | | −0.31859726 | +0.26905802 | |
| $P$ | 3.76 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.3− | 0.9+ |
| 2005 03 16 | G96 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.6− |
| 2005 03 16 | G96 | 0.2+ | 0.6+ | 2006 08 28 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 699 | 0.3− | 1.1+ |
| 2005 03 16 | G96 | 0.4− | 0.1− | 2006 08 28 | 704 | 1.3− | 1.0+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2005 04 10 | 695 | 0.5+ | 0.4+ | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2005 04 10 | 695 | 0.4+ | 0.4+ | 2006 08 28 | 704 | 0.6+ | 0.5+ | 2006 10 22 | G96 | 0.4− | 0.3− |
| 2006 08 18 | 644 | 0.2− | 0.4− | 2006 08 28 | 704 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.5− | 1.2+ |
| 2006 08 18 | 644 | 0.1− | 0.4− | 2006 08 28 | 699 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.6+ |
| 2006 08 18 | 644 | 0.3− | 0.0 | 2006 08 28 | 699 | (0.1− | 1.6+) | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2006 08 24 | 644 | 0.1− | 0.3− | 2006 08 28 | 699 | (2.5+ | 0.9−) | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2006 08 24 | 644 | 0.1− | 0.4− | 2006 08 28 | 699 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2006 08 24 | 644 | 0.1− | 0.3− | 2006 09 18 | 699 | 0.3− | 1.0+ | | | | |

**2006 QD$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.72120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23862790 | $\omega$ | 302.71272 | | −0.06089422 | +0.99473554 | |
| $a$ | 2.5742768 | $\Omega$ | 323.51885 | | −0.86310988 | −0.09394995 | |
| $e$ | 0.1369246 | $i$ | 7.96825 | | −0.50133146 | +0.04092199 | |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 608 | 0.3+ | 0.2+ | 2005 04 15 | 703 | 0.8− | 1.4− | 2006 09 01 | 152 | 0.3+ | 0.1+ |
| 2001 03 29 | 608 | 0.6− | 0.6− | 2005 04 15 | 703 | 0.3+ | 0.2+ | 2006 09 01 | 152 | 0.0 | 0.3− |
| 2001 03 29 | 608 | 0.2+ | 0.3− | 2005 04 15 | 703 | 1.1+ | 0.4+ | 2006 09 02 | 152 | 0.2+ | 0.3+ |
| 2002 09 06 | 704 | 0.6− | 0.6− | 2006 08 19 | A50 | 0.1+ | 0.5− | 2006 09 02 | 152 | 0.0 | 0.3− |
| 2002 09 06 | 704 | 0.8+ | 1.2− | 2006 08 24 | 644 | 0.1− | 0.6+ | 2006 09 02 | 152 | 0.2+ | 0.2+ |
| 2002 09 06 | 704 | 0.1− | 0.2− | 2006 08 24 | 644 | 0.2− | 0.3+ | 2006 09 02 | 152 | 0.4− | 0.1− |
| 2002 09 06 | 704 | 0.3+ | 1.1− | 2006 08 24 | 644 | 0.1− | 0.2+ | 2006 09 02 | 152 | 0.1+ | 0.8− |
| 2002 09 06 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 699 | 0.1+ | 0.1− | 2006 09 02 | 152 | 0.3+ | 0.2− |
| 2002 09 13 | 644 | 0.4− | 0.2− | 2006 08 28 | 699 | 0.5+ | 0.2− | 2006 09 02 | 152 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.4− | 0.0 | 2006 08 28 | 699 | 0.6− | 0.5− | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.7− | 0.0 | 2006 08 28 | 699 | 0.2− | 0.5− | 2006 09 13 | 644 | 0.2− | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2006 08 29 | 703 | 0.3+ | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.2− |
| 2002 10 04 | 704 | 0.4+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.3+ | 1.0+ | 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 09 13 | 644 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.1− | 0.7+ | 2006 08 29 | 703 | 0.0 | 0.6− | 2006 09 13 | 644 | 0.2− | 0.0 |
| 2005 03 11 | 699 | (0.4+ | 1.6+) | 2006 09 01 | 704 | (2.4+ | 2.7−) | 2006 09 17 | 703 | 0.0 | 1.1+ |
| 2005 03 11 | 699 | 0.1+ | 0.2+ | 2006 09 01 | 704 | (0.8+ | 1.6−) | 2006 09 17 | 703 | 0.1− | 1.5+ |
| 2005 03 11 | 699 | 0.7+ | 0.7+ | 2006 09 01 | 704 | 0.0 | 0.4+ | 2006 09 17 | 703 | 0.5+ | 1.0+ |
| 2005 03 11 | 699 | 0.0 | 1.4+ | 2006 09 01 | 704 | 0.8+ | 0.5− | 2006 09 17 | 703 | 0.1− | 1.2+ |
| 2005 04 06 | 699 | 0.2+ | 0.7+ | 2006 09 01 | 152 | 0.6− | 0.0 | 2006 09 30 | 699 | (0.5+ | 1.9+) |
| 2005 04 06 | 699 | (0.8− | 2.3+) | 2006 09 01 | 152 | 0.0 | 0.4+ | 2006 09 30 | 699 | 0.1+ | 1.1− |
| 2005 04 06 | 699 | 0.6− | 0.1− | 2006 09 01 | 152 | 1.0+ | 0.2− | 2006 09 30 | 699 | (1.6− | 0.3+) |
| 2005 04 06 | 699 | 0.2+ | 0.4+ | 2006 09 01 | 152 | 0.1− | 0.2+ | 2006 09 30 | 699 | 1.4− | 0.6− |
| 2005 04 15 | 703 | (0.9+ | 2.0−) | 2006 09 01 | 152 | 0.4− | 1.0+ | | | | |

**2006 QM$_{81}$ = 2005 GW$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.85573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21839887 | $\omega$ | 160.39060 | | +0.48118297 | +0.87585088 | |
| $a$ | 2.7308790 | $\Omega$ | 138.34983 | | −0.81147894 | +0.46088008 | |
| $e$ | 0.1572273 | $i$ | 3.16716 | | −0.33160952 | +0.14309012 | |
| $P$ | 4.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.0 | 0.5+ | 2006 08 24 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2005 04 10 | 691 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2005 04 10 | 691 | 0.3+ | 0.3+ | 2006 08 24 | 644 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.7− | 0.1+ |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.3− | 0.3− |
| 2005 04 14 | 691 | 0.2− | 0.1− | 2006 08 27 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.6+ | 0.2+ |
| 2005 04 14 | 691 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2005 05 03 | 691 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.6+ | 0.5− | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2005 05 03 | 691 | 0.0 | 0.2− | 2006 09 14 | 703 | (0.4− | 1.6−) | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2005 05 03 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− |

**2006 QO$_{81}$ = 2000 OO$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.07892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17834808 | $\omega$ | 195.04838 | | +0.99839667 | +0.01051905 | |
| $a$ | 3.1257705 | $\Omega$ | 164.03449 | | +0.00146698 | +0.97744278 | |
| $e$ | 0.0300785 | $i$ | 11.66602 | | −0.05658563 | +0.21093831 | |
| $P$ | 5.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 24 | 691 | 0.1− | 0.3− | 2004 03 21 | 691 | 0.1+ | 0.7+ | 2006 09 19 | 699 | 0.4− | 0.1− |
| 2000 07 24 | 691 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.1− | 0.5+ | 2006 09 19 | 699 | 0.5+ | 0.4+ |
| 2000 07 24 | 691 | 0.1− | 0.1− | 2006 08 23 | 644 | 0.1− | 0.4+ | 2006 09 19 | 699 | (1.6− | 0.1−) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 24 | 691 | 0.3+ | 0.0 | 2006 08 23 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 1.3− | 0.5+ |
| 2000 07 24 | 691 | 0.1− | 0.1− | 2006 08 24 | 644 | 0.4− | 0.3+ | 2006 09 25 | 699 | 0.2+ | 0.5− |
| 2000 07 24 | 691 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.6− | 1.4+ |
| 2000 07 25 | 691 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.5+ | 0.5+ | 2006 09 25 | 699 | (0.9+ | 1.6+) |
| 2000 07 25 | 691 | 0.0 | 0.1− | 2006 08 27 | 699 | (0.6− | 2.3+) | 2006 09 25 | 699 | 0.4− | 0.0 |
| 2000 07 25 | 691 | 0.0 | 0.0 | 2006 08 27 | 699 | 0.2− | 1.2+ | 2006 09 30 | G96 | 0.6+ | 0.2− |
| 2000 07 26 | 691 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.5− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.3− |
| 2000 07 26 | 691 | 0.1− | 0.1− | 2006 08 27 | 699 | (1.6− | 0.4−) | 2006 09 30 | G96 | 0.4+ | 0.4− |
| 2000 07 26 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.5− | 0.3− | 2006 09 30 | G96 | 0.4+ | 0.3− |
| 2001 10 23 | 644 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.9+ | 2006 09 30 | 703 | 0.1− | 0.0 |
| 2001 10 23 | 644 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 644 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.9+ | 0.2+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | (0.2− | 1.7−) | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2001 11 21 | 645 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.4− | 0.6− | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 11 21 | 645 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.1− | 0.6− | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2002 01 14 | 645 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2003 01 05 | 704 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.6+ |
| 2003 01 05 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.5− | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.7+ |
| 2003 01 05 | 704 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.3+ | 1.3+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2004 03 21 | 691 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 1.2+ | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.1+ |
| 2004 03 21 | 691 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ |

**2006 QQ$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.31145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20854861 | $\omega$ | 1.70973 | | +0.95013265 | | +0.30864492 |
| $a$ | 2.8162066 | $\Omega$ | 340.13585 | | −0.28764724 | | +0.81220910 |
| $e$ | 0.1034044 | $i$ | 7.53670 | | −0.12044505 | | +0.49502998 |
| $P$ | 4.73 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.4+ |
| 2001 08 19 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 1.2− | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.3+ |
| 2001 08 19 | 704 | 1.0+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.2+ | 2006 09 25 | 699 | 1.4+ | 0.1− |
| 2001 08 26 | 608 | 0.5− | 0.8+ | 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.1+ |
| 2001 08 26 | 608 | 0.6− | 0.6+ | 2006 09 12 | 703 | 1.3+ | 0.1− | 2006 09 25 | 699 | 0.6− | 0.8− |
| 2001 08 26 | 608 | 0.7− | 0.7+ | 2006 09 12 | 703 | 0.4+ | 0.0 | 2006 09 25 | 699 | 1.3− | 0.5− |
| 2001 08 26 | 608 | 0.2− | 0.5+ | 2006 09 12 | 703 | 1.0− | 1.0− | 2006 09 27 | 704 | (1.4− | 3.6+) |
| 2001 08 26 | 608 | 0.5− | 0.3+ | 2006 09 12 | 703 | 0.9+ | 1.0+ | 2006 09 27 | 704 | 0.7− | 0.8+ |
| 2001 08 26 | 608 | 0.1− | 0.3− | 2006 09 16 | 699 | 1.5− | 1.2+ | 2006 09 27 | 704 | 0.5− | 1.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.8+ | 0.1− | 2006 09 27 | 704 | 0.3+ | 1.2+ |
| 2001 09 19 | 704 | 0.5− | 0.4− | 2006 09 16 | 699 | 0.7− | 0.8− | 2006 09 27 | 704 | 0.5− | 0.5+ |
| 2001 09 19 | 704 | 0.6+ | 0.1− | 2006 09 16 | 699 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.3+ | 0.8− | 2006 09 17 | 704 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.4+ |
| 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | (2.2+ | 1.4+) | 2006 09 30 | 704 | 0.8+ | 0.9+ |
| 2004 02 29 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.6− | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.6− |
| 2004 02 29 | 691 | 0.4+ | 0.6+ | 2006 09 17 | 704 | (1.5− | 3.5+) | 2006 09 30 | 704 | 0.4+ | 0.8− |
| 2006 07 25 | G96 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.6− | 2006 10 02 | G96 | 0.5− | 0.3− |
| 2006 07 25 | G96 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2006 07 25 | G96 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.3− | 0.5− | 2006 10 02 | G96 | 0.5+ | 0.0 |
| 2006 07 25 | G96 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 10 02 | 291 | 0.1+ | 0.1− |
| 2006 08 24 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 10 02 | 291 | 0.2+ | 0.1− |
| 2006 08 24 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 10 02 | 291 | 0.3+ | 0.1+ |

**2006 QU$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.57867 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21733095 | $\omega$ | 177.40886 | | +0.70636901 | | +0.70599463 |
| $a$ | 2.7398177 | $\Omega$ | 137.52430 | | −0.65078802 | | +0.67614819 |
| $e$ | 0.1870641 | $i$ | 4.34252 | | −0.27842013 | | +0.21070168 |
| $P$ | 4.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.8− | 0.0 | 2005 05 12 | 691 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.1+ | 0.3− |
| 1993 12 14 | 691 | 0.4− | 0.4+ | 2005 05 12 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | (0.2+ | 2.2+) |
| 1993 12 14 | 691 | 0.9+ | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.3+ |
| 1996 03 26 | 691 | 0.8+ | 1.2− | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.4+ | 1.0− |
| 1996 03 26 | 691 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.8+ | 0.1+ |
| 1996 03 26 | 691 | 0.0 | 0.5+ | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 29 | 704 | 1.4+ | 0.4+ |
| 1996 04 09 | 691 | 0.5− | 0.1− | 2006 08 24 | 644 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 1996 04 09 | 691 | 0.4− | 0.4− | 2006 08 24 | 644 | 0.7− | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 1997 08 13 | 557 | 0.7+ | 0.0 | 2006 08 28 | 699 | 1.2− | 0.4− | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 1997 08 13 | 557 | 0.8− | 0.4+ | 2006 08 28 | 699 | 0.2− | 1.0+ | 2006 09 29 | 704 | 1.2+ | 0.2− |
| 2002 11 24 | 644 | 0.2− | 1.2+ | 2006 08 28 | 699 | 1.0− | 0.8+ | 2006 09 30 | 703 | 0.3+ | 0.5− |
| 2002 11 24 | 644 | 0.0 | 0.9+ | 2006 08 28 | 699 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2002 11 24 | 644 | 0.4+ | 0.8+ | 2006 09 12 | 703 | (1.7+ | 1.5−) | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 2005 04 01 | 691 | 0.1+ | 0.6+ | 2006 09 12 | 703 | 0.1− | 0.9+ | 2006 09 30 | 703 | (1.6− | 0.7−) |
| 2005 04 01 | 691 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.3+ | 1.0+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2005 04 10 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.8− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.2− |
| 2005 04 10 | 691 | 0.1+ | 0.4− | 2006 09 14 | 703 | (1.8− | 0.3−) | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2005 04 18 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 1.0+ | 0.8− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.5− | 2006 10 24 | 644 | 0.3− | 0.4+ |
| 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.3− | 2006 10 24 | 644 | 0.3− | 0.2+ |
| 2005 05 12 | 691 | 0.1− | 0.5+ | 2006 09 22 | 704 | 0.3+ | 0.0 | 2006 10 24 | 644 | 0.3− | 0.0 |

**2006 QY$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.36886 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28373985 | $\omega$ | 132.55404 | | +0.79190292 | | +0.61058851 |
| $a$ | 2.2936254 | $\Omega$ | 189.82414 | | −0.57377086 | | +0.73927289 |
| $e$ | 0.1933433 | $i$ | 2.83923 | | −0.20898986 | | +0.28400224 |
| $P$ | 3.47 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 29 | 691 | 0.3− | 0.2+ | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.8+ | 0.2+ |
| 1995 05 29 | 691 | 0.6+ | 0.2− | 2006 08 28 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.7+ |
| 1995 05 29 | 691 | 0.1+ | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 10 01 | 703 | 0.1− | 1.2+ |
| 1999 09 07 | 704 | 0.3− | 0.8− | 2006 09 13 | 644 | 0.1− | 0.3+ | 2006 10 01 | 703 | 0.8− | 0.4+ |
| 1999 09 07 | 704 | 0.4+ | 1.1− | 2006 09 13 | 644 | 0.3+ | 0.0 | 2006 10 01 | 703 | 0.2− | 0.7+ |
| 1999 09 07 | 704 | (0.5− | 2.5−) | 2006 09 19 | 699 | (0.3− | 2.3−) | 2006 10 01 | 703 | 0.3− | 0.2+ |
| 1999 09 07 | 704 | 0.8+ | 0.8− | 2006 09 19 | 699 | 0.8+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 1999 09 07 | 704 | 0.5− | 0.9− | 2006 09 19 | 699 | 0.0 | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 05 17 | 644 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 05 17 | 644 | 0.7− | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.7− |
| 2002 05 17 | 644 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.1+ | 2006 10 16 | G96 | 0.4− | 0.3− |
| 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.4− | 0.5+ | 2006 10 16 | G96 | 0.8− | 0.2− |
| 2006 08 24 | 644 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.4− | 0.0 |
| 2006 08 28 | 703 | 1.0+ | 1.2− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.5− | 0.1+ |
| 2006 08 28 | 703 | 1.3− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.7− | 0.0 |
| 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.4− | 0.0 |
| 2006 08 28 | 703 | 0.7− | 0.9− | 2006 09 26 | 704 | 0.4− | 0.3− | | | | |
| 2006 08 28 | 691 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.9+ | | | | |

**2006 QZ$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.15107 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18423564 | $\omega$ | 35.01087 | | +0.95036350 | | −0.30829054 |
| $a$ | 3.0588179 | $\Omega$ | 342.79738 | | +0.24306415 | | +0.81994204 |
| $e$ | 0.1448301 | $i$ | 8.16925 | | +0.19423963 | | +0.48234012 |
| $P$ | 5.35 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 644 | 0.3− | 0.8+ | 2006 09 12 | 703 | 0.4+ | 0.4− | 2006 09 24 | 106 | 0.7− | 0.8− |
| 2001 11 11 | 644 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.5+ | 0.4− |
| 2001 11 11 | 644 | 0.3− | 0.2+ | 2006 09 13 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 699 | 0.1+ | 0.6− | 2006 09 13 | 644 | 0.3− | 0.5+ | 2006 09 25 | 704 | 0.2+ | 1.0+ | | |
| 2001 11 20 | 699 | 0.2+ | 0.8− | 2006 09 16 | 699 | 0.7− | 1.1+ | 2006 09 25 | 699 | 0.3+ | 0.4+ | | |
| 2001 11 20 | 699 | 0.9+ | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.8+ | | |
| 2001 11 20 | 699 | 0.6− | 0.5+ | 2006 09 16 | 699 | 0.6− | 1.0+ | 2006 09 25 | 699 | 0.4− | 0.2− | | |
| 2006 07 21 | G96 | 0.1− | 0.4− | 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 09 25 | 699 | 0.1+ | 0.5+ | | |
| 2006 07 21 | G96 | 0.5− | 0.2− | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.5− | 0.7+ | | |
| 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.8+ | 0.2− | 2006 09 29 | 704 | 0.6− | 0.1− | | |
| 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.6− | 2006 09 29 | 704 | 0.4− | 0.5+ | | |
| 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.0 | 1.3− | 2006 09 29 | 704 | (0.2− | 2.1+) | | |
| 2006 08 24 | 644 | 0.5+ | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 10 01 | 703 | 0.4+ | 0.2− | | |
| 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.5− | 0.2+ | 2006 10 01 | 703 | (2.1− | 0.3+) | | |
| 2006 08 27 | 699 | 0.5− | 0.8+ | 2006 09 19 | 703 | 0.9− | 0.4− | 2006 10 01 | 703 | 0.2− | 0.8+ | | |
| 2006 08 27 | 699 | 1.5+ | 1.1+ | 2006 09 19 | 699 | 0.6− | 0.2− | 2006 10 01 | 703 | 0.1+ | 0.6+ | | |
| 2006 08 27 | 699 | 1.4+ | 1.1− | 2006 09 20 | 704 | 0.6− | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.5− | | |
| 2006 08 27 | 699 | 1.5+ | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.4− | | |
| 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.6− | 0.7− | 2006 10 03 | G96 | 0.1− | 0.7− | | |
| 2006 08 28 | 691 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.6− | | |
| 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.0 | | |
| 2006 09 12 | 703 | 0.5+ | 0.7− | 2006 09 24 | 106 | 0.3− | 0.3− | 2006 10 17 | 691 | 0.2− | 0.1− | | |
| 2006 09 12 | 703 | (0.2− | 1.6−) | 2006 09 24 | 106 | 0.7− | 1.4− | 2006 10 17 | 691 | 0.1− | 0.0 | | |
| 2006 09 12 | 703 | 0.5− | 0.4− | 2006 09 24 | 106 | 0.3+ | 0.1+ | | | | | | |

**2006 QF$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 316.94275 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.21362882 | $\omega$ | 236.55802 | | +0.72502109 | | −0.68842842 |
| $a$ | 2.7713805 | $\Omega$ | 166.90827 | | +0.65786845 | | +0.68352749 |
| $e$ | 0.1541902 | $i$ | 5.13322 | | +0.20384681 | | +0.24260354 |
| $P$ | 4.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.3− | 0.1+ | 2006 08 25 | 122 | 0.2− | 0.7+ | 2006 09 24 | 701 | 0.6+ | 0.2+ | | |
| 2002 12 11 | 704 | 0.7+ | 0.6+ | 2006 08 25 | 122 | 1.0+ | 1.0+ | 2006 09 24 | 701 | 0.2+ | 1.1− | | |
| 2002 12 11 | 704 | 0.7− | 1.2+ | 2006 08 27 | 691 | 0.0 | 0.5+ | 2006 09 24 | 701 | 0.8− | 0.1− | | |
| 2004 02 17 | 291 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.5+ | 2006 09 24 | 701 | 0.3− | 0.5+ | | |
| 2004 02 17 | 291 | 0.4− | 0.2+ | 2006 08 27 | 691 | 0.4− | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.1− | | |
| 2004 02 17 | 291 | 0.1− | 0.2− | 2006 09 02 | 152 | 1.1+ | 1.1− | 2006 09 25 | G96 | 0.0 | 0.0 | | |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 02 | 152 | (1.7+ | 0.1+) | 2006 09 25 | G96 | 0.1+ | 0.0 | | |
| 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 09 02 | 152 | 0.0 | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.1− | | |
| 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | (0.3+ | 1.7+) | 2006 09 26 | G96 | 0.3− | 0.2+ | | |
| 2004 03 18 | 704 | 0.3+ | 1.4+ | 2006 09 14 | 703 | 0.6− | 0.6− | 2006 09 26 | G96 | 0.4− | 0.1− | | |
| 2004 03 18 | 704 | (1.8+ | 1.7+) | 2006 09 14 | 703 | 0.5− | 1.0− | 2006 09 26 | G96 | 0.2+ | 0.3+ | | |
| 2004 03 18 | 704 | (2.1+ | 1.6+) | 2006 09 14 | 703 | (1.4− | 1.8−) | 2006 09 26 | G96 | 0.4− | 0.2− | | |

**2006 QL$_{82}$ = 2005 GH$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 24.88728 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.22096198 | $\omega$ | 170.59051 | | +0.65902296 | | +0.75047543 |
| $a$ | 2.7097195 | $\Omega$ | 140.61057 | | −0.69505765 | | +0.63296238 |
| $e$ | 0.1110497 | $i$ | 4.49672 | | −0.28737363 | | +0.19011904 |
| $P$ | 4.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.3+ | 1.8+ | 2005 04 02 | 691 | 0.4− | 1.2+ | 2006 08 25 | 704 | 1.6− | 0.9+ | | |
| 2002 10 31 | 704 | 0.4− | 0.3+ | 2005 04 14 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.7+ | | |
| 2002 10 31 | 704 | 0.6− | 0.3− | 2005 04 14 | 691 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.1− | 0.6+ | | |
| 2002 10 31 | 704 | 0.1+ | 0.4− | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.5+ | | |
| 2003 12 29 | 691 | 0.2+ | 0.5+ | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.9− | | |
| 2003 12 29 | 691 | 0.3− | 0.5+ | 2005 05 13 | 691 | 0.5− | 0.3+ | 2006 08 28 | 703 | 0.6− | 0.5− | | |
| 2003 12 29 | 691 | 0.4− | 0.0 | 2005 05 13 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.9− | | |
| 2004 01 16 | 691 | 0.3+ | 0.4+ | 2006 06 20 | G96 | 0.5+ | 0.0 | 2006 08 28 | 703 | 0.3− | 0.5+ | | |
| 2004 01 16 | 691 | 0.5+ | 0.4+ | 2006 06 20 | G96 | 0.0 | 0.7− | 2006 09 14 | 703 | 0.6− | 0.5− | | |
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 06 20 | G96 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.1+ | 0.1− | | |
| 2004 02 17 | 645 | 0.1+ | 0.2+ | 2006 06 20 | G96 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.3− | 0.7+ | | |
| 2004 02 17 | 645 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.4+ | 2006 09 14 | 703 | 1.0− | 1.0+ | | |
| 2005 04 01 | 691 | 1.2+ | 0.2+ | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 09 15 | 291 | 0.0 | 0.7+ | | |
| 2005 04 01 | 691 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.4+ | 2006 09 15 | 291 | 0.1+ | 0.7+ | | |
| 2005 04 01 | 691 | 0.3+ | 0.6+ | 2006 08 25 | 704 | 0.0 | 1.8+ | 2006 09 15 | 291 | 0.1− | 0.7+ | | |
| 2005 04 02 | 691 | 0.5+ | 0.1+ | 2006 08 25 | 704 | 0.0 | 0.4− | | | | | | |
| 2005 04 02 | 691 | 0.0 | 0.1− | 2006 08 25 | 704 | 0.1+ | 0.3+ | | | | | | |

**2006 QM$_{82}$ = 2002 AC$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 349.90865 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.17874494 | $\omega$ | 200.91862 | | +0.99563039 | | +0.04143580 |
| $a$ | 3.1211422 | $\Omega$ | 156.23594 | | −0.02258775 | | +0.97641300 |
| $e$ | 0.0990965 | $i$ | 11.98585 | | −0.09060857 | | +0.21189791 |
| $P$ | 5.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.5− | 0.2− | 2004 04 16 | 691 | 0.2− | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.8+ | | |
| 2001 10 15 | 644 | 0.6− | 0.1− | 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.2+ | | |
| 2001 10 15 | 644 | 0.5− | 0.1+ | 2004 04 21 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.1− | | |
| 2001 10 23 | 644 | 0.0 | 0.3+ | 2004 04 21 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.4− | 1.1− | | |
| 2001 10 23 | 644 | 0.6+ | 0.1+ | 2005 07 01 | 691 | 0.5+ | 0.3− | 2006 08 28 | 699 | (1.8+ | 0.6+) | | |
| 2001 10 23 | 644 | 0.3+ | 0.1+ | 2005 07 01 | 691 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.1+ | | |
| 2002 01 08 | 645 | 0.1− | 0.0 | 2005 07 01 | 691 | 0.4− | 0.0 | 2006 08 28 | 699 | 0.8− | 0.6+ | | |
| 2002 01 08 | 645 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.1+ | 0.5− | 2006 08 29 | 704 | 0.2− | 0.1− | | |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2006 08 25 | 704 | 0.9− | 0.3+ | 2006 08 29 | 704 | 0.1+ | 0.9+ | | |
| 2002 01 13 | 645 | 0.1+ | 0.0 | 2006 08 25 | 704 | 0.3+ | 0.4+ | 2006 08 29 | 704 | 1.2+ | 0.6+ | | |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.5+ | 1.2+ | 2006 09 14 | 703 | 0.1− | 0.8− | | |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.1− | | |
| 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.9+ | 0.8− | 2006 09 14 | 703 | 0.6− | 0.7− | | |
| 2004 04 16 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.4+ | 1.2− | 2006 09 14 | 703 | 0.5+ | 0.9− | | |

**2006 QO$_{82}$ = 1995 TV$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 29.40469 | | (2000.0) | | **P** | | **Q** |
|---|---|---|---|---|---|---|---|
| $n$ | 0.26652396 | $\omega$ | 119.37769 | | +0.68669394 | | +0.72691402 |
| $a$ | 2.3913614 | $\Omega$ | 193.99802 | | −0.67644155 | | +0.63548691 |
| $e$ | 0.2392505 | $i$ | 1.63163 | | −0.26622973 | | +0.26029290 |
| $P$ | 3.70 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3+ | 0.3− | 2006 09 17 | 704 | (2.6− | 0.5−) | 2006 09 29 | 704 | 0.4− | 0.1+ | | |
| 1995 09 26 | 691 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.6− | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.5+ | | |
| 1995 09 26 | 691 | 0.2+ | 0.1− | 2006 09 17 | 704 | (1.6− | 0.2−) | 2006 10 01 | 704 | 0.2+ | 0.3+ | | |
| 1995 10 01 | 691 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.9+ | 0.7− | 2006 10 01 | 704 | 0.2− | 0.9+ | | |
| 1995 10 01 | 691 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.4+ | 1.0− | 2006 10 01 | 704 | 0.3− | 0.3+ | | |
| 1995 10 01 | 691 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.3+ | | |
| 2005 03 16 | G96 | 1.0− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.8+ | 2006 10 09 | 644 | 0.1− | 0.1− | | |
| 2005 03 16 | G96 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 10 09 | 644 | 0.3− | 0.3− | | |
| 2005 03 16 | G96 | 0.8− | 0.6+ | 2006 09 20 | 704 | 0.2+ | 1.3+ | 2006 10 09 | 644 | 0.1− | 0.2+ | | |
| 2005 03 16 | G96 | 0.3+ | 1.2− | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.4− | 0.3+ | | |
| 2005 04 06 | G96 | 0.7+ | 0.3+ | 2006 09 20 | 704 | 0.2+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2005 04 06 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2005 04 06 | G96 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.8+ | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.0 | | |
| 2005 04 06 | G96 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 1.1+ | 0.9+ | 2006 10 20 | G96 | 0.2+ | 0.1+ | | |
| 2006 08 25 | 704 | 1.5+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.6− | 2006 10 20 | G96 | 0.0 | 0.0 | | |
| 2006 08 25 | 704 | 1.0+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 10 20 | G96 | 0.1− | 0.1− | | |
| 2006 08 25 | 704 | 0.9+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2006 08 25 | 704 | 0.9+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.3− | 0.4+ | | |
| 2006 08 28 | 703 | 0.0 | 0.9− | 2006 09 27 | 291 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2006 08 28 | 703 | 0.0 | 0.2− | 2006 09 27 | 291 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.0 | | |
| 2006 08 28 | 703 | 0.6− | 0.3− | 2006 09 27 | 291 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2006 08 28 | 703 | 0.1− | 0.6− | 2006 09 27 | 704 | 1.1− | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.3− | | |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.4− | | |
| 2006 09 06 | 644 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.4+ | | |
| 2006 09 06 | 644 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.4+ | | |
| 2006 09 12 | 703 | 0.6+ | 0.5+ | 2006 09 27 | 704 | 0.5− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.4+ | | |
| 2006 09 12 | 703 | 1.2− | 0.9+ | 2006 09 28 | G96 | 0.6+ | 0.3− | 2006 11 15 | G96 | 0.5− | 0.4+ | | |
| 2006 09 12 | 703 | (0.3− | 1.8+) | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 12 | 703 | 0.0 | 1.2+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.4+ |
| 2006 09 13 | 644 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.5+ |
| 2006 09 13 | 644 | 0.3− | 0.2− | 2006 09 29 | 704 | 1.0− | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2006 09 13 | 644 | 0.4− | 0.2− | 2006 09 29 | 704 | (0.4− | 2.0+) | | | | |
| 2006 09 17 | 704 | (2.1− | 2.9+) | 2006 09 29 | 704 | 0.2− | 0.0 | | | | |

**2006 QP$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.44262 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31103785 | $\omega$ | 154.27407 | | +0.78204221 | +0.62304123 | |
| $a$ | 2.1573828 | $\Omega$ | 167.15324 | | −0.58292066 | +0.73985195 | |
| $e$ | 0.3090934 | $i$ | 3.90776 | | −0.22048464 | +0.25384784 | |
| $P$ | 3.17 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 26 | 691 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.0 |
| 1993 05 26 | 691 | 0.0 | 0.4− | 2006 09 17 | 704 | (1.8+ | 0.5−) | 2006 10 01 | 704 | 0.7− | 0.3− |
| 1993 05 26 | 691 | 0.4− | 0.1− | 2006 09 17 | 704 | 1.3+ | 0.8− | 2006 10 01 | 704 | 0.1− | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 09 17 | 704 | (1.4+ | 2.2−) | 2006 10 01 | 691 | 0.1− | 0.2− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1− | 0.3− |
| 2002 03 05 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2002 03 05 | 691 | 0.8− | 0.5− | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 03 05 | 691 | 0.7− | 1.1− | 2006 09 18 | 699 | 0.6− | 0.8+ | 2006 10 02 | 691 | 0.7− | 0.3− |
| 2002 03 16 | 291 | 0.8+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.5− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2002 03 16 | 291 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.1− | 2006 10 16 | 703 | 1.1+ | 0.7− |
| 2002 03 16 | 291 | 0.4+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2003 11 26 | 691 | (2.8+ | 0.9−) | 2006 09 20 | 704 | 0.9+ | 0.0 | 2006 10 16 | 703 | 1.0+ | 0.9+ |
| 2003 11 26 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2003 11 26 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2006 07 21 | 703 | 0.6+ | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 2006 07 21 | 703 | 0.1− | 0.8− | 2006 09 20 | 704 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2006 07 21 | 703 | 0.4− | 0.7+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2006 07 21 | 703 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2006 08 25 | 704 | 0.7+ | 0.8+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2006 08 25 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2006 08 25 | 704 | 0.2+ | 1.1+ | 2006 09 26 | 704 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2006 08 25 | 704 | (0.2+ | 1.5+) | 2006 09 26 | 704 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2006 08 28 | 703 | 0.7− | 0.1+ | 2006 09 26 | 704 | 1.1− | 1.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2006 08 28 | 703 | 0.8− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3− | 0.3− |
| 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2006 09 14 | 703 | 0.2− | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2006 09 14 | 703 | 0.3+ | 0.6− | 2006 09 29 | 699 | 1.0+ | 0.6− | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 29 | 699 | 1.0+ | 0.8+ | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2006 09 14 | 703 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2006 09 14 | 703 | 0.2− | 0.3− | 2006 09 29 | 699 | 1.5+ | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.6− |
| 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.9− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.6+ | | | | |
| 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.3+ | | | | |

**2006 QU$_{82}$ = 2005 JQ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.34892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21338364 | $\omega$ | 187.09535 | | +0.82987451 | +0.55618555 | |
| $a$ | 2.7735030 | $\Omega$ | 139.00954 | | −0.50853059 | +0.78667560 | |
| $e$ | 0.1755068 | $i$ | 3.87596 | | −0.22957555 | +0.26795361 | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 20 | 691 | 0.3− | 0.4+ | 2005 05 07 | 691 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.2+ | 0.9+ |
| 1996 05 20 | 691 | 0.3+ | 0.2− | 2006 05 26 | G96 | 0.1− | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.3+ |
| 1996 05 20 | 691 | 0.1+ | 0.1− | 2006 05 26 | G96 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.2+ |
| 2002 11 13 | 704 | 1.1− | 0.9+ | 2006 05 26 | G96 | 0.1− | 0.1− | 2006 08 28 | 699 | 0.4− | 0.2− |
| 2002 11 13 | 704 | 0.6− | 1.2+ | 2006 05 26 | G96 | 0.4+ | 0.2+ | 2006 08 28 | 703 | (2.2− | 0.6+) |
| 2002 11 13 | 704 | 1.5− | 1.6+ | 2006 06 20 | G96 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.5− | 0.7+ |
| 2002 11 13 | 704 | 0.8+ | 1.5+ | 2006 06 20 | G96 | 0.3+ | 0.0 | 2006 08 29 | 704 | 0.1− | 0.8+ |
| 2002 11 23 | 644 | 0.0 | 0.1+ | 2006 06 20 | G96 | 0.1+ | 0.5− | 2006 08 29 | 704 | 0.7+ | 0.1− |
| 2002 11 23 | 644 | 0.6+ | 0.1− | 2006 06 20 | G96 | 0.1− | 0.1− | 2006 08 29 | 704 | 0.1+ | 0.2+ |
| 2002 11 23 | 644 | 0.8+ | 0.4− | 2006 07 18 | G96 | 0.1+ | 0.1− | 2006 08 29 | 704 | 0.2− | 0.0 |
| 2005 04 01 | 691 | 0.0 | 0.1+ | 2006 07 18 | G96 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.3+ | 0.2+ |
| 2005 04 01 | 691 | 0.2+ | 0.5+ | 2006 07 18 | G96 | 0.0 | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.3+ |
| 2005 04 01 | 691 | 0.2+ | 0.1+ | 2006 07 18 | G96 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.3+ | 0.4+ |
| 2005 05 04 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.2− |
| 2005 05 04 | 691 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.4− | 1.2− |
| 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.5− |
| 2005 05 07 | 691 | 0.4− | 0.1− | 2006 08 28 | 699 | 0.5− | 0.7− | 2006 09 14 | 703 | 0.0 | 0.8− |
| 2005 05 07 | 691 | 0.1− | 0.5+ | 2006 08 28 | 703 | 0.5+ | 0.8+ | | | | |

**2006 QD$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.50180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22506755 | $\omega$ | 138.12294 | | +0.65027271 | +0.75962429 | |
| $a$ | 2.6766657 | $\Omega$ | 172.41700 | | −0.71691583 | +0.61828615 | |
| $e$ | 0.0844474 | $i$ | 4.68849 | | −0.25135056 | +0.20172549 | |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.2+ | 0.4− | 2005 05 12 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 699 | (1.9− | 0.4+) |
| 2000 03 03 | 704 | 0.4+ | 0.0 | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 08 28 | 699 | 1.2+ | 0.2− |
| 2000 03 03 | 704 | 0.1− | 0.7+ | 2006 08 16 | 644 | 0.4− | 0.3+ | 2006 08 28 | 699 | (1.8+ | 2.0+) |
| 2002 10 31 | 704 | 0.3− | 0.2− | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 08 28 | 699 | 0.0 | 1.4+ |
| 2002 10 31 | 704 | 0.1+ | 1.1+ | 2006 08 19 | 691 | 0.4− | 0.1+ | 2006 08 29 | 704 | 0.7+ | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.1− | 2006 08 19 | 691 | 0.5− | 0.2+ | 2006 08 29 | 704 | 0.8+ | 0.0 |
| 2002 10 31 | 704 | 0.6− | 1.0+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 08 29 | 704 | 0.9+ | 0.0 |
| 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 704 | 0.9+ | 0.4+ |
| 2004 02 17 | 645 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2005 05 12 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.1+ | | | | |
| 2005 05 12 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.8− | 0.2− | | | | |

**2006 QF$_{83}$ = 2002 RN$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.49849 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24142982 | $\omega$ | 173.33230 | | +0.95896671 | +0.28337154 | |
| $a$ | 2.5543208 | $\Omega$ | 170.19163 | | −0.26253691 | +0.89969988 | |
| $e$ | 0.1730057 | $i$ | 3.07342 | | −0.10703843 | +0.33202515 | |
| $P$ | 4.08 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.4+ | 0.6+ | 2002 09 14 | 644 | 0.1− | 0.9+ | 2006 08 27 | 691 | 0.0 | 0.6− |
| 1994 10 09 | 691 | 0.0 | 1.3− | 2002 09 14 | 644 | 0.3+ | 0.6+ | 2006 08 28 | 703 | 0.1− | 1.4+ |
| 1994 10 09 | 691 | 0.6− | 1.0+ | 2006 08 16 | 644 | 0.3− | 0.4+ | 2006 08 28 | 703 | (1.2− | 1.8−) |
| 1998 09 24 | 691 | 0.3+ | 0.4− | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.9− | 1.0+ |
| 1998 09 24 | 691 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.4− | 2006 08 28 | 703 | 0.5− | 1.2− |
| 1998 09 24 | 691 | 0.3+ | 0.1− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.7− |
| 2002 09 13 | 644 | 0.6− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2002 09 13 | 644 | 0.7− | 0.5− | 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2002 09 13 | 644 | 0.7− | 0.2− | 2006 08 27 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2002 09 14 | 644 | 0.0 | 0.7+ | 2006 08 27 | 691 | 0.3+ | 0.1− | | | | |

**2006 QP$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.70874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23342390 | $\omega$ | 69.70314 | | +0.94409981 | −0.32902413 | |
| $a$ | 2.6123969 | $\Omega$ | 309.50071 | | +0.29170177 | +0.86269798 | |
| $e$ | 0.1217710 | $i$ | 1.51952 | | +0.15357611 | +0.38405118 | |
| $P$ | 4.22 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.2− | 0.7+ | 2006 08 28 | 122 | 0.4+ | 0.5− | 2006 09 17 | 941 | 0.5+ | 0.1− |
| 2002 10 03 | 704 | 0.6+ | 0.4− | 2006 08 28 | 122 | 0.1+ | 0.3− | 2006 09 17 | 941 | 0.5+ | 0.3− |
| 2002 10 03 | 704 | 0.4− | 0.2− | 2006 08 28 | 122 | 0.2+ | 0.1+ | 2006 09 17 | 941 | 0.7+ | 0.6− |
| 2004 02 12 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.1− |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 1.3− | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2004 02 12 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 08 28 | 699 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.4− |
| 2006 08 19 | 691 | 0.0 | 0.5+ | 2006 08 28 | 703 | (1.9− | 0.4+) | 2006 11 16 | G96 | 0.4+ | 0.5− |
| 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 08 28 | 699 | (1.2+ | 1.6+) | 2006 11 16 | G96 | 0.1− | 1.0− |
| 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 08 28 | 699 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.8+ | 0.4− |
| 2006 08 27 | 691 | 0.3− | 0.3+ | 2006 09 17 | 941 | 0.4+ | 0.2+ | | | | |

**2006 QW$_{83}$ = 2003 YV$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.28823 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27066726 | $\omega$ | 273.21577 | | +0.57098529 | | −0.82037648 |
| $a$ | 2.3668945 | $\Omega$ | 141.91110 | | +0.77174144 | | +0.52351199 |
| $e$ | 0.1682854 | $i$ | 2.87631 | | +0.27998381 | | +0.23003831 |
| $P$ | 3.64 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.1+ | 0.6+ | 2005 05 14 | G96 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.5+ | 0.9− |
| 2003 12 19 | 704 | 0.0 | 0.6+ | 2005 05 14 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 1.2− | 0.4− |
| 2003 12 19 | 704 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 08 28 | 699 | (1.8+ | 0.3+) |
| 2003 12 23 | 704 | 0.1− | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.1− | 0.1− |
| 2003 12 23 | 704 | 0.2− | 0.5− | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.5+ |
| 2003 12 23 | 704 | 0.0 | 0.6− | 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.5− | 0.4− |
| 2003 12 23 | 704 | 0.1− | 0.2− | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.8+ |
| 2005 05 14 | G96 | 0.2− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.0 | | | | |
| 2005 05 14 | G96 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.7+ | 0.1− | | | | |

**2006 QG$_{84}$ = 2004 BE$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.97324 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21151715 | $\omega$ | 116.87039 | | −0.30942232 | | +0.95007296 |
| $a$ | 2.7897952 | $\Omega$ | 135.04355 | | −0.89141812 | | −0.27506541 |
| $e$ | 0.0293955 | $i$ | 3.26478 | | −0.33110657 | | −0.14731053 |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 291 | 0.1− | 0.0 | 2004 02 11 | 691 | 0.0 | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2003 12 19 | 291 | 0.3− | 0.1+ | 2005 06 08 | 691 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2003 12 19 | 291 | 1.1− | 0.0 | 2005 06 08 | 691 | 0.3− | 0.1− | 2006 08 28 | 691 | 0.4− | 0.1+ |
| 2004 01 16 | 644 | 0.4+ | 0.2+ | 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2004 01 16 | 644 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2004 01 16 | 644 | 0.3+ | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2004 01 28 | 691 | 0.4+ | 0.1+ | 2006 08 19 | 691 | 0.5+ | 0.4+ | 2006 09 30 | G96 | 0.6− | 0.6− |
| 2004 01 28 | 691 | 0.4+ | 0.1+ | 2006 08 22 | 807 | 0.3+ | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.6− |
| 2004 01 28 | 691 | 0.6+ | 0.1+ | 2006 08 23 | 807 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.9− |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 08 23 | 807 | 0.2+ | 0.3+ | | | | |
| 2004 02 11 | 691 | 0.3− | 0.2+ | 2006 08 27 | 691 | 0.4− | 0.0 | | | | |

**2006 QH$_{84}$ = 2004 FC$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.99809 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18188886 | $\omega$ | 245.58736 | | +0.77534872 | | −0.62468617 |
| $a$ | 3.0850721 | $\Omega$ | 152.78421 | | +0.62755110 | | +0.74564019 |
| $e$ | 0.1094882 | $i$ | 11.70016 | | +0.07080951 | | +0.23192218 |
| $P$ | 5.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.1+ | 0.0 | 2004 03 18 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.1+ | 0.2− | 2006 08 27 | 691 | 0.2+ | 0.0 |
| 2001 10 15 | 644 | 0.1+ | 0.7− | 2004 03 26 | 691 | 0.2+ | 0.0 | 2006 08 27 | 691 | 0.0 | 0.1− |
| 2001 10 15 | 644 | 0.3+ | 0.8− | 2004 03 26 | 691 | 0.5− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2001 10 15 | 644 | 0.0 | 0.6− | 2004 04 26 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.3+ | 0.1+ |
| 2001 10 23 | 644 | 0.6− | 0.3+ | 2004 04 26 | 691 | 0.1− | 0.2− | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 644 | 0.5− | 0.8+ | 2004 04 26 | 691 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.9− |
| 2001 10 23 | 644 | 0.6− | 0.5+ | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.5− | 0.1− |
| 2004 03 18 | 691 | 0.2+ | 0.3+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 1.1− | 1.0− |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.5− |

**2006 QN$_{84}$ = 1995 OB$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.79684 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18293060 | $\omega$ | 161.68336 | | +0.72853472 | | +0.67788572 |
| $a$ | 3.0733485 | $\Omega$ | 154.77765 | | −0.65384166 | | +0.73104940 |
| $e$ | 0.0477510 | $i$ | 13.36883 | | −0.20427493 | | +0.07770275 |
| $P$ | 5.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.1− | 0.0 | 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.3+ | 0.2+ |
| 1995 07 25 | 691 | 0.3+ | 0.2+ | 2005 05 13 | 691 | 0.2+ | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.2+ |
| 1995 07 25 | 691 | 0.3+ | 0.3− | 2005 05 13 | 691 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.2+ | 0.1+ |
| 1995 07 30 | 691 | 0.0 | 0.5− | 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 1995 07 30 | 691 | 0.4− | 0.5− | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.2+ | 0.2+ |
| 1995 07 30 | 691 | 0.1− | 0.6− | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.3− |
| 2001 10 15 | 644 | 0.2− | 0.9+ | 2006 08 21 | 807 | 0.2− | 0.4− | 2006 08 28 | 703 | 0.1− | 0.0 |
| 2001 10 15 | 644 | 0.0 | 0.9+ | 2006 08 21 | 807 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.2+ | 0.0 |
| 2001 10 15 | 644 | 0.2+ | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.0 | 0.2− |

**2006 QO$_{84}$ = 2000 EC$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.71400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22850100 | $\omega$ | 51.08137 | | +0.95729360 | | −0.28891054 |
| $a$ | 2.6497851 | $\Omega$ | 325.70738 | | +0.25888906 | | +0.87343405 |
| $e$ | 0.0873064 | $i$ | 1.11249 | | +0.12870670 | | +0.39197407 |
| $P$ | 4.31 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 691 | 0.5+ | 0.1+ | 2002 11 05 | 291 | 0.0 | 0.2+ | 2006 08 28 | 703 | 1.1− | 0.7+ |
| 2000 03 03 | 691 | 0.7+ | 0.2− | 2002 11 05 | 291 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.6− |
| 2000 03 03 | 691 | 0.6+ | 0.2+ | 2002 11 05 | 291 | 0.4+ | 0.3− | 2006 08 28 | 703 | (2.8− | 1.2−) |
| 2000 03 04 | 691 | 0.5− | 0.0 | 2004 01 31 | 691 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.3− |
| 2000 03 04 | 691 | 0.6− | 0.9− | 2004 01 31 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.7− |
| 2000 03 04 | 691 | 1.2− | 0.2− | 2004 01 31 | 691 | 0.1− | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.8− |
| 2002 10 04 | 644 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2002 10 04 | 644 | 0.1+ | 0.2− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.7− |
| 2002 10 04 | 644 | 0.3+ | 1.0+ | 2006 08 19 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.7− |
| 2002 10 28 | 291 | 0.3− | 0.3− | 2006 08 27 | 691 | 0.4+ | 0.9+ | 2006 09 26 | G96 | 0.1+ | 1.1− |
| 2002 10 28 | 291 | 0.3− | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2002 10 28 | 291 | 0.2− | 0.0 | 2006 08 27 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.6− |

**2006 QD$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.95379 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26161357 | $\omega$ | 151.38164 | | −0.55556049 | | −0.83063310 |
| $a$ | 2.4211918 | $\Omega$ | 332.31784 | | +0.74669061 | | −0.47859860 |
| $e$ | 0.1758160 | $i$ | 4.62165 | | +0.36579458 | | −0.28459100 |
| $P$ | 3.77 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.1+ | 0.2− | 2003 12 18 | 704 | 0.4+ | 1.5+ | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2003 11 19 | 704 | 0.0 | 0.1+ | 2003 12 23 | 704 | 0.3− | 0.1− | 2006 08 27 | 691 | 0.2+ | 0.0 |
| 2003 11 19 | 704 | 0.6− | 0.6− | 2003 12 23 | 704 | 0.2+ | 0.1− | 2006 08 27 | 691 | 0.0 | 0.0 |
| 2003 11 19 | 704 | 0.2+ | 0.2− | 2003 12 23 | 704 | 1.2− | 1.1+ | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2003 11 19 | 704 | 0.0 | 0.1+ | 2003 12 23 | 704 | 0.5+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.2− |
| 2003 12 04 | 704 | 0.2+ | 0.3+ | 2003 12 23 | 704 | 0.4− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 04 | 704 | 0.2− | 0.4− | 2005 02 15 | 809 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.4− |
| 2003 12 04 | 704 | 0.5− | 0.0 | 2005 02 15 | 809 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2003 12 04 | 704 | 0.3− | 0.2− | 2005 02 15 | 809 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2003 12 18 | 704 | 0.7+ | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.5− |
| 2003 12 18 | 704 | 0.3+ | 0.8− | 2006 08 19 | 691 | 0.0 | 0.1+ | | | | |
| 2003 12 18 | 704 | 0.7+ | 0.1− | 2006 08 19 | 691 | 0.3− | 0.1+ | | | | |

**2006 QO$_{85}$ = 1998 FX$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.03909 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27313911 | $\omega$ | 71.22795 | | −0.70769257 | | +0.70603844 |
| $a$ | 2.3525929 | $\Omega$ | 153.66556 | | −0.66835681 | | −0.65703415 |
| $e$ | 0.1752481 | $i$ | 3.37231 | | −0.22906417 | | −0.26422689 |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 704 | 0.7+ | 0.1− | 2005 01 18 | 703 | 0.2+ | 1.8− | 2006 08 19 | 691 | 0.2− | 0.6+ |
| 1998 03 20 | 704 | 1.4+ | 0.1− | 2005 01 18 | 703 | 1.6− | 1.1− | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 1998 03 20 | 704 | (1.5+ | 2.3−) | 2005 01 19 | 691 | 0.3+ | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.2+ |
| 1998 03 20 | 704 | 1.8− | 1.9+ | 2005 01 19 | 691 | 0.3+ | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 1998 03 20 | 704 | 0.9− | 1.7+ | 2005 01 19 | 691 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.3+ |
| 1998 03 22 | 704 | 0.5− | 0.2− | 2005 02 09 | 699 | 0.1− | 0.7+ | 2006 08 27 | 291 | 0.2− | 0.5+ |
| 1998 03 22 | 704 | 0.1− | 1.2+ | 2005 02 09 | 699 | 1.0+ | 0.3− | 2006 08 27 | 291 | 0.3− | 0.6+ |
| 1998 03 22 | 704 | 1.5+ | 0.6+ | 2005 02 09 | 699 | 0.3+ | 0.8+ | 2006 08 27 | 291 | 0.6− | 0.5+ |
| 1998 03 22 | 704 | 0.5+ | 0.1− | 2005 02 09 | 699 | 0.8+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.4+ |
| 1998 03 22 | 704 | 1.3+ | 0.5− | 2005 02 09 | 704 | 0.5− | 0.2− | 2006 08 28 | 703 | 0.5− | 0.4+ |
| 1998 04 19 | 704 | 0.0 | 0.2+ | 2005 02 09 | 704 | 0.6+ | 1.1+ | 2006 08 28 | 703 | 0.3+ | 0.1− |
| 1998 04 19 | 704 | 0.3− | 0.4+ | 2005 02 09 | 704 | 1.2+ | 1.9+ | 2006 08 28 | 703 | 0.5− | 0.0 |
| 1998 04 19 | 704 | 0.8− | 0.5+ | 2005 02 09 | 704 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.3− | 1.4+ |
| 1998 04 19 | 704 | 1.1+ | 0.7+ | 2005 03 09 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2003 10 02 | 691 | 0.2+ | 0.3+ | 2005 03 09 | 691 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2003 10 02 | 691 | 0.1− | 0.1+ | 2005 03 09 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2003 10 02 | 691 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.0 |
| 2005 01 18 | 703 | 1.7− | 1.0+ | 2006 08 18 | 644 | 0.2+ | 0.2+ | | | | |
| 2005 01 18 | 703 | 0.1+ | 0.6+ | 2006 08 18 | 644 | 0.4+ | 0.4+ | | | | |

**2006 QZ$_{85}$ = 2001 TB$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.91584 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18045759 | $\omega$ | 237.66810 | | +0.80551477 | | −0.58780854 |
| $a$ | 3.1013631 | $\Omega$ | 158.04608 | | +0.58838964 | | +0.77836985 |
| $e$ | 0.0799684 | $i$ | 11.57477 | | +0.07031067 | | +0.22050282 |
| $P$ | 5.46 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.0 | 0.1− | 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.7+ | 0.1+ |
| 2001 09 18 | 645 | 0.0 | 0.1− | 2005 07 11 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.5+ | 0.7+ |
| 2001 10 10 | 644 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 08 28 | 699 | 0.5+ | 0.0 |
| 2001 10 10 | 644 | 0.2− | 0.7+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.2+ |
| 2001 10 10 | 644 | 0.2+ | 0.8+ | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 08 28 | 699 | 0.8− | 0.1− |
| 2001 10 15 | 644 | 0.2− | 0.3+ | 2006 08 19 | 691 | 0.2− | 0.1− | 2006 08 28 | 699 | 1.1− | 0.2+ |
| 2001 10 15 | 644 | 0.1− | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 28 | 699 | 0.8− | 0.0 |
| 2001 10 15 | 644 | 0.6− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2005 07 04 | 644 | 0.2+ | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.4− |
| 2005 07 04 | 644 | 0.1+ | 0.4− | 2006 08 27 | 691 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2005 07 04 | 644 | 0.0 | 0.2− | 2006 08 27 | 691 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2005 07 11 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 1.3− | 0.6− | | | | |

**2006 QD$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.81736 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23244764 | $\omega$ | 243.35603 | | +0.72511962 | | −0.68705221 |
| $a$ | 2.6197064 | $\Omega$ | 159.92945 | | +0.67011655 | | +0.68847854 |
| $e$ | 0.1827296 | $i$ | 7.78482 | | +0.15857287 | | +0.23228552 |
| $P$ | 4.24 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | 0.2− | 0.4+ | 2006 08 28 | 703 | 1.3− | 0.8− | 2006 09 30 | G96 | 0.4+ | 0.4− |
| 2002 09 28 | 608 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2002 09 28 | 608 | 0.0 | 0.4− | 2006 08 28 | 703 | 1.4− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2004 02 29 | 291 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.2+ |
| 2004 02 29 | 291 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2004 02 29 | 291 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.6− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 08 27 | 691 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.4+ |
| 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.3+ | | | | |
| 2006 08 27 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.3+ | | | | |

**2006 QM$_{86}$ = 1996 EJ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.88476 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21931198 | $\omega$ | 100.85259 | | −0.25291367 | | +0.96529512 |
| $a$ | 2.7232936 | $\Omega$ | 154.21219 | | −0.93582099 | | −0.22700187 |
| $e$ | 0.2375438 | $i$ | 8.60820 | | −0.24550715 | | −0.12913356 |
| $P$ | 4.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.2+ | 0.2− | 2005 03 08 | 704 | 0.9+ | 1.3+ | 2006 08 28 | 703 | 0.5− | 0.2− |
| 1996 03 12 | 691 | 0.5+ | 0.4− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.7− | 0.8+ |
| 1996 03 12 | 691 | 0.1+ | 0.3− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.0 |
| 1996 03 17 | 691 | 0.4− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 25 | 688 | 0.4− | 0.3− |
| 1996 03 17 | 691 | 0.3− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 25 | 688 | 0.0 | 0.1+ |
| 1996 03 17 | 691 | 0.4− | 0.1+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 1997 08 12 | 691 | 0.4− | 0.4− | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.3− |
| 1997 08 12 | 691 | 0.1+ | 0.2− | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 1997 08 12 | 691 | 0.5+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2005 03 08 | 704 | 0.0 | 1.4+ | 2006 08 28 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 03 08 | 704 | (0.4− | 2.6+) | 2006 08 28 | 703 | 0.5− | 0.2− | | | | |

**2006 QD$_{87}$ = 2001 UF$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.50132 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18756275 | $\omega$ | 179.37168 | | +0.99841597 | | −0.05609143 |
| $a$ | 3.0225372 | $\Omega$ | 183.85206 | | +0.05133104 | | +0.94008078 |
| $e$ | 0.2706295 | $i$ | 3.74934 | | +0.02303631 | | +0.33630622 |
| $P$ | 5.25 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.5+ | 0.1− | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.1− |
| 2001 10 23 | 704 | 0.7+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2001 10 23 | 704 | 0.2− | 0.9+ | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.0 |
| 2001 10 23 | 704 | (0.4− | 1.6+) | 2006 08 27 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 10 25 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2001 10 25 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.8+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2001 10 25 | 691 | 0.3− | 0.4− | 2006 08 28 | 703 | (1.1− | 1.9−) | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.8− | | | | |
| 2006 08 19 | 691 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.1− | | | | |

**2006 QE$_{87}$ = 1996 VY$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.11793 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28551528 | $\omega$ | 193.68208 | | −0.96577218 | | −0.25318001 |
| $a$ | 2.2841072 | $\Omega$ | 331.45965 | | +0.24771516 | | −0.83567822 |
| $e$ | 0.0588600 | $i$ | 6.78260 | | +0.07694991 | | −0.48738260 |
| $P$ | 3.45 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 04 | 691 | 0.2+ | 0.1− | 2003 10 03 | 691 | 0.0 | 0.1+ | 2006 08 28 | 122 | 0.2+ | 0.1+ |
| 1996 11 04 | 691 | 0.3+ | 0.5− | 2003 10 03 | 691 | 0.2− | 0.0 | 2006 09 28 | G96 | 0.4− | 0.1− |
| 1996 11 04 | 691 | 0.3+ | 0.3− | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.0 |
| 1996 11 18 | 691 | 0.3+ | 0.9− | 2006 08 27 | 691 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.6− | 0.0 |
| 1996 11 18 | 691 | 0.2− | 1.5+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.5+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 691 | 0.7− | 0.0 | 2006 08 28 | 122 | 0.2− | 0.4− | |
| 2003 10 03 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 122 | 0.1− | 0.3− | |

**2006 QK$_{87}$ = 2001 UU$_{183}$ = 2004 EP$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.14448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18612160 | $\omega$ | 229.98210 | | +0.84236755 | | −0.53530297 |
| $a$ | 3.0381196 | $\Omega$ | 162.10539 | | +0.53519770 | | +0.81747565 |
| $e$ | 0.0981005 | $i$ | 11.67725 | | +0.06308986 | | +0.21256597 |
| $P$ | 5.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 01 | 691 | 0.4+ | 0.8− | 2002 12 11 | 644 | 0.0 | 0.4− | 2006 09 14 | 703 | 0.4+ | 1.2− | |
| 1994 06 01 | 691 | (1.0− | 2.4−) | 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.4− | |
| 1994 06 01 | 691 | 0.5− | 0.3− | 2002 12 11 | 644 | 0.5− | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.8+ | |
| 2001 09 25 | 704 | 0.7+ | 0.3+ | 2004 03 14 | 691 | 1.1+ | 0.9+ | 2006 09 17 | 704 | 0.2+ | 0.2− | |
| 2001 09 25 | 704 | 0.7+ | 0.5+ | 2004 03 14 | 691 | 0.2− | 0.7+ | 2006 09 17 | 704 | 0.4+ | 0.5+ | |
| 2001 09 25 | 704 | 0.5− | 1.0+ | 2004 03 14 | 691 | 0.3− | 0.3+ | 2006 09 18 | 699 | 1.3+ | 0.2+ | |
| 2001 09 25 | 704 | 0.9+ | 0.9+ | 2004 03 28 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.8− | 0.7+ | |
| 2001 09 25 | 704 | (1.8+ | 0.6−) | 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | |
| 2001 10 10 | 644 | (1.1+ | 4.3−) | 2004 03 28 | 691 | 0.2− | 0.0 | 2006 09 18 | 699 | (2.2− | 0.0 | ) |
| 2001 10 16 | 644 | 0.6− | 0.7+ | 2006 08 18 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2− | |
| 2001 10 16 | 644 | 0.3− | 0.5+ | 2006 08 18 | 691 | 0.3− | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.1− | |
| 2001 10 16 | 644 | 0.4− | 0.7+ | 2006 08 18 | 691 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.0 | |
| 2001 10 17 | 704 | 0.6− | 1.1− | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.5− | 0.0 | |
| 2001 10 17 | 704 | (1.6− | 0.5+) | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2− | |
| 2001 10 17 | 704 | 0.4− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.1− | |
| 2001 10 17 | 704 | 0.2+ | 0.5− | 2006 08 28 | 703 | 0.0 | 1.0− | 2006 10 22 | G96 | 0.1− | 0.4− | |
| 2001 10 21 | 644 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.3− | |
| 2001 10 21 | 644 | 0.4− | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.5− | 2006 11 27 | G96 | 0.6+ | 0.4− | |
| 2001 10 21 | 644 | 0.0 | 0.0 | 2006 08 28 | 703 | 1.1− | 0.3+ | 2006 11 27 | G96 | 0.8+ | 0.3+ | |
| 2002 12 11 | 644 | 0.6+ | 0.5− | 2006 09 14 | 703 | 0.6+ | 0.1− | 2006 11 27 | G96 | 0.6− | 0.3− | |
| 2002 12 11 | 644 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.6+ | 0.0 | |
| 2002 12 11 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.6+ | 0.5− | | | | | |

**2006 QR$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.50312 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22315001 | $\omega$ | 300.25718 | | +0.27847834 | | +0.96004998 |
| $a$ | 2.6919776 | $\Omega$ | 345.83264 | | −0.83814916 | | +0.22896081 |
| $e$ | 0.0423067 | $i$ | 6.44096 | | −0.46899446 | | +0.16087569 |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 11 | 691 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 24 | 701 | 0.2+ | 0.3+ | |
| 2000 02 11 | 691 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 24 | 701 | 0.1+ | 0.2+ | |
| 2000 02 11 | 691 | 0.2− | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 24 | 701 | 0.3− | 0.2+ | |
| 2000 03 03 | 704 | 0.6+ | 0.7+ | 2006 08 28 | 703 | 1.0− | 0.3+ | 2006 09 24 | 701 | 0.0 | 0.1+ | |
| 2000 03 03 | 704 | 0.5+ | 0.6+ | 2006 08 28 | 703 | 0.3+ | 0.6+ | 2006 09 24 | 701 | 0.7− | 0.1+ | |
| 2000 03 03 | 704 | 0.9+ | 0.0 | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.1+ | |
| 2000 03 03 | 704 | 0.8+ | 0.7+ | 2006 08 28 | 703 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.0 | 0.1+ | |
| 2000 03 03 | 704 | 0.4+ | 1.0+ | 2006 08 28 | 703 | 0.6+ | 1.4+ | 2006 09 25 | G96 | 0.2+ | 0.1− | |
| 2006 08 16 | 644 | 0.2+ | 0.3− | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.2+ | |
| 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.9− | 0.9− | 2006 11 16 | G96 | 0.2− | 0.1− | |
| 2006 08 16 | 644 | 0.2+ | 0.4− | 2006 09 14 | 703 | (1.5− | 1.3+) | 2006 11 16 | G96 | 0.0 | 0.2− | |
| 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.1+ | |
| 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | (1.8+ | 0.3+) | 2006 11 16 | G96 | 0.3+ | 0.4+ | |
| 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 09 24 | 701 | 0.1− | 0.3− | | | | | |
| 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 24 | 701 | 0.2− | 0.2− | | | | | |

**2006 QW$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.87478 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18851381 | $\omega$ | 121.91496 | | +0.26168764 | | +0.96366847 |
| $a$ | 3.0123627 | $\Omega$ | 163.00653 | | −0.93576975 | | +0.26690519 |
| $e$ | 0.0350474 | $i$ | 10.54850 | | −0.23633568 | | +0.01023257 |
| $P$ | 5.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.3+ | 0.1− | 2005 06 29 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 1.6− | 1.4− | |
| 2001 10 16 | 644 | 0.0 | 0.6− | 2005 06 29 | 644 | 0.3− | 0.3− | 2006 09 14 | 703 | 0.8− | 0.1− | |
| 2001 10 16 | 644 | 0.0 | 0.3− | 2005 06 29 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1− | |
| 2004 02 26 | 704 | 0.6+ | 0.3+ | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | |
| 2004 02 26 | 704 | 1.2+ | 1.5+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.0 | |
| 2004 02 26 | 704 | 1.0+ | 0.5− | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | |
| 2004 02 26 | 704 | 0.3+ | 1.3− | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.5− | 0.5− | |
| 2004 03 29 | 691 | 0.3− | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.7− | |
| 2004 03 29 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.8+ | 0.0 | |
| 2004 03 29 | 691 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.4− | 1.0+ | 2006 09 30 | G96 | 0.2− | 0.1+ | |
| 2005 06 04 | 691 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.1+ | |
| 2005 06 04 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 10 22 | G96 | 0.8+ | 0.0 | |
| 2005 06 04 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.6− | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.1− | |
| 2005 06 14 | 691 | 0.0 | 0.1− | 2006 09 02 | 152 | (2.6+ | 1.2−) | 2006 10 22 | G96 | 1.1+ | 0.5− | |
| 2005 06 14 | 691 | 0.2+ | 0.1− | 2006 09 02 | 152 | (1.8− | 0.6−) | 2006 11 23 | G96 | 0.5− | 0.3− | |
| 2005 06 14 | 691 | 0.1+ | 0.1− | 2006 09 02 | 152 | 0.4− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.0 | |
| 2005 06 29 | 691 | 0.1+ | 0.1+ | 2006 09 02 | 152 | 0.3− | 1.1+ | 2006 11 23 | G96 | 0.7− | 0.4− | |
| 2005 06 29 | 691 | 0.8− | 0.4+ | 2006 09 14 | 703 | (1.9− | 0.2+) | 2006 11 23 | G96 | 0.1− | 0.1− | |
| 2005 06 29 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | (1.8− | 0.9−) | | | | | |

**2006 QX$_{87}$ = 2002 TH$_{371}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.39996 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22214996 | $\omega$ | 219.40798 | | +0.91756424 | | −0.39187931 |
| $a$ | 2.7000506 | $\Omega$ | 163.28186 | | +0.39743980 | | +0.89945160 |
| $e$ | 0.1239942 | $i$ | 13.49519 | | +0.01083862 | | +0.19343586 |
| $P$ | 4.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.0 | 0.1− | |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 08 28 | 703 | (1.2− | 1.7−) | 2006 09 26 | G96 | 0.3− | 0.3− | |
| 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.5− | 2006 09 30 | G96 | 0.2− | 0.0 | |
| 2004 03 17 | 691 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.5+ | 0.1− | 2006 09 30 | G96 | 0.5− | 0.4− | |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.5− | 1.0− | 2006 09 30 | G96 | 0.0 | 0.2+ | |
| 2006 08 19 | 691 | 0.2+ | 0.2− | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.1− | |
| 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.3+ | | | | | |
| 2006 08 19 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.1+ | 0.2+ | | | | | |

**2006 QK$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.32804 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27679321 | $\omega$ | 338.22297 | | +0.87747982 | | +0.47959561 |
| $a$ | 2.3318419 | $\Omega$ | 353.11368 | | −0.43477185 | | +0.79175686 |
| $e$ | 0.1291373 | $i$ | 1.98331 | | −0.20249100 | | +0.37829766 |
| $P$ | 3.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.6+ | 0.8+ | 2006 09 19 | 703 | 0.4+ | 0.2− | |
| 2005 03 17 | 691 | 0.2− | 0.2+ | 2006 08 28 | 703 | 1.2− | 0.1− | 2006 09 19 | 699 | 1.2+ | 0.5+ | |
| 2005 03 17 | 691 | 0.3+ | 0.1+ | 2006 09 12 | 703 | 0.7− | 0.3− | 2006 09 19 | 699 | 0.2− | 0.1− | |
| 2005 05 08 | G96 | 0.2+ | 0.5− | 2006 09 12 | 703 | (1.9− | 0.7−) | 2006 09 30 | 703 | 0.6− | 0.1− | |
| 2005 05 08 | G96 | 0.2− | 0.4− | 2006 09 12 | 703 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.8+ | |
| 2005 05 08 | G96 | 0.3− | 0.5− | 2006 09 12 | 703 | 1.0− | 0.1− | 2006 09 30 | 703 | 0.5− | 0.7− | |
| 2005 05 08 | G96 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.1+ | 0.8+ | 2006 09 30 | 703 | 0.6− | 0.4+ | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | (0.7+ | 2.1+) | 2006 10 16 | G96 | 0.5+ | 0.1+ |
| 2006 08 18 | 691 | 0.0 | 0.3− | 2006 09 16 | 699 | 1.4+ | 1.1− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2006 08 18 | 691 | 0.1+ | 0.2− | 2006 09 16 | 699 | 0.4+ | 0.4− | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2006 08 27 | 691 | 0.6+ | 0.6− | 2006 09 19 | 699 | (2.4+ | 0.2−) | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2006 08 27 | 691 | 0.8− | 0.9+ | 2006 09 19 | 703 | (2.4+ | 0.7−) | 2006 10 27 | G96 | 0.5+ | 0.1+ |
| 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 1.0− | 2006 10 27 | G96 | 1.1+ | 0.4− |
| 2006 08 28 | 703 | 0.9− | 0.7+ | 2006 09 19 | 699 | (1.8+ | 0.5+) | 2006 10 27 | G96 | 0.6− | 0.8+ |
| 2006 08 28 | 703 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 1.0− | 0.2− | 2006 10 27 | G96 | 1.0− | 0.0 |

**2006 QP$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 338.61611 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23455046 | $\omega$ | 241.10452 | | +0.83222689 | | −0.55210863 | | |
| $a$ | 2.6040253 | $\Omega$ | 152.31505 | | +0.53909576 | | +0.78442838 | | |
| $e$ | 0.3177736 | $i$ | 6.26968 | | +0.12951512 | | +0.28257421 | | |
| $P$ | 4.20 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2002 12 02 | 704 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.5+ | 0.2+ |
| 2002 10 31 | 704 | 0.5+ | 0.0 | 2006 08 18 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.1− |
| 2002 10 31 | 704 | 1.0+ | 0.8− | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 1.2− | 0.7+ |
| 2002 10 31 | 704 | 0.4− | 0.5− | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.6+ | 0.8− |
| 2002 10 31 | 704 | 0.0 | 0.7− | 2006 08 27 | 691 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.6+ |
| 2002 11 06 | 699 | 0.3+ | 1.1+ | 2006 08 27 | 699 | 0.5− | 0.5+ | 2006 09 20 | 644 | 0.5− | 0.2+ |
| 2002 11 06 | 699 | 0.5− | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.2− |
| 2002 11 06 | 699 | 0.2− | 0.3− | 2006 08 27 | 699 | 1.1− | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.6− |
| 2002 11 06 | 699 | 1.0− | 0.3− | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.7− | 0.0 |
| 2002 12 02 | 704 | 0.7+ | 1.1+ | 2006 08 27 | 699 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 1.5+ | 0.0 |
| 2002 12 02 | 704 | 0.2− | 0.1− | 2006 08 27 | 699 | 0.2− | 0.4+ | 2006 09 30 | 703 | 1.1− | 0.3− |

**2006 QQ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 2.30055 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17535415 | $\omega$ | 194.95909 | | +0.96776207 | | +0.24902730 | | |
| $a$ | 3.1612488 | $\Omega$ | 150.53819 | | −0.22249601 | | +0.91543927 | | |
| $e$ | 0.1559079 | $i$ | 4.39713 | | −0.11803433 | | +0.31615873 | | |
| $P$ | 5.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 07 | 608 | 0.3+ | 1.0− | 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.7− |
| 2000 08 07 | 608 | 0.5− | 0.9− | 2006 06 21 | 703 | 1.4− | 0.3− | 2006 09 17 | 704 | 0.7− | 0.6+ |
| 2000 08 07 | 608 | 0.1− | 1.1− | 2006 06 21 | 703 | 0.6− | 0.7− | 2006 09 17 | 704 | (2.6+ | 1.0−) |
| 2001 11 17 | 704 | 0.3+ | 0.3+ | 2006 06 21 | 703 | 0.7+ | 0.1+ | 2006 09 17 | 704 | 0.9− | 0.7+ |
| 2001 11 17 | 704 | 0.4+ | 0.3− | 2006 06 21 | 703 | 1.2− | 0.0 | 2006 09 17 | 704 | 0.3− | 0.1+ |
| 2001 11 17 | 704 | 0.2+ | 0.7+ | 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.9+ | 0.5− |
| 2001 11 17 | 704 | 0.3+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.3− |
| 2003 01 30 | 644 | 0.3− | 0.5+ | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.1+ |
| 2003 01 30 | 644 | 0.4+ | 0.8+ | 2006 08 19 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.1+ |
| 2003 01 30 | 644 | 0.4+ | 0.9+ | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2004 02 17 | 291 | 0.5− | 0.8+ | 2006 08 19 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2004 02 17 | 291 | 0.7+ | 0.8+ | 2006 08 27 | 691 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2004 02 17 | 291 | 0.2− | 0.7+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.4+ |
| 2004 03 29 | 691 | 0.1+ | 0.2− | 2006 08 27 | 691 | 0.1− | 0.8+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.3+ |
| 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.5+ | 0.2− |
| 2005 06 10 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.7− | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2005 06 10 | 691 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2005 06 16 | 691 | 0.4+ | 0.0 | 2006 09 14 | 703 | 0.8− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.2+ |
| 2005 06 16 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.9− | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.2+ |

**2006 QW$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 336.00090 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23806345 | $\omega$ | 227.37753 | | +0.84315945 | | −0.53296117 | | |
| $a$ | 2.5783443 | $\Omega$ | 164.39251 | | +0.53723719 | | +0.82986747 | | |
| $e$ | 0.1576091 | $i$ | 15.29128 | | +0.02140917 | | +0.16514350 | | |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.9− | 0.0 | 2006 09 12 | 703 | 0.7+ | 0.5− | 2006 09 26 | 704 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.1− | 0.6− | 2006 09 12 | 703 | 0.6− | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.3− |
| 2002 10 06 | 704 | 1.0+ | 0.6− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.3+ |
| 2002 10 06 | 704 | 1.0+ | 0.4− | 2006 09 14 | 644 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.5+ | 1.2+ |
| 2002 10 16 | 644 | 0.0 | 0.4− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 02 | 703 | 0.3+ | 1.2+ |
| 2002 10 16 | 644 | 0.2− | 0.5− | 2006 09 16 | 704 | 0.9+ | 0.4+ | 2006 10 02 | 703 | 1.0+ | 0.0 |
| 2002 10 16 | 644 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.1+ | 0.8+ |
| 2002 10 30 | 644 | 0.2− | 0.7+ | 2006 09 16 | 704 | 0.1− | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.2− |
| 2002 10 30 | 644 | 0.2+ | 0.8+ | 2006 09 16 | 704 | 1.1+ | 0.5− | 2006 10 02 | 703 | 0.5+ | 0.1+ |
| 2002 10 30 | 644 | 0.3− | 0.3− | 2006 09 18 | 703 | (0.3+ | 1.9+) | 2006 10 02 | 703 | 0.8− | 0.7− |
| 2004 03 23 | 291 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.6− | 2006 10 02 | 703 | 1.0− | 0.4− |
| 2004 03 23 | 291 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.1+ | 2006 10 02 | 703 | 0.8− | 0.0 |
| 2004 03 23 | 291 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.4− |
| 2006 08 18 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2006 08 18 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.4+ | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.2− |
| 2006 08 18 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.7− | 2006 10 19 | 703 | 0.7+ | 0.2+ |
| 2006 08 21 | 807 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.2− | 0.3− |
| 2006 08 21 | 807 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.4− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.3+ |
| 2006 08 27 | 691 | 0.4− | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 19 | 703 | 0.9− | 0.4+ |
| 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 09 22 | 704 | 0.9− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2006 08 28 | 699 | (2.0+ | 2.1+) | 2006 09 22 | 704 | 0.1− | 0.6+ | 2006 10 23 | 644 | 0.2− | 0.5− |
| 2006 08 28 | 699 | 1.3− | 1.1+ | 2006 09 22 | 704 | 1.0− | 0.2− | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2006 08 28 | 699 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 1.3− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2006 08 28 | 699 | 0.8− | 1.4+ | 2006 09 25 | 699 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 2006 09 12 | 703 | (0.4+ | 1.8−) | 2006 09 25 | 699 | 0.8− | 0.6− | | | | |
| 2006 09 12 | 703 | 0.8+ | 0.6− | 2006 09 25 | 699 | 0.7− | 0.7+ | | | | |

**2006 QY$_{88}$ = 1998 DY$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 18.22762 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17775036 | $\omega$ | 202.98548 | | +0.91257495 | | +0.40249450 | | |
| $a$ | 3.1327739 | $\Omega$ | 133.07435 | | −0.35815288 | | +0.87189853 | | |
| $e$ | 0.1426301 | $i$ | 5.66821 | | −0.19731566 | | +0.27891060 | | |
| $P$ | 5.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.5+ | 0.3+ | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 1998 02 23 | 691 | 0.1+ | 0.3+ | 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 26 | 704 | 1.5− | 1.1+ |
| 1998 02 23 | 691 | 0.3+ | 0.1+ | 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 26 | 704 | 1.1− | 0.2+ |
| 1998 03 02 | 691 | 0.3− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 1.2− | 0.4+ |
| 1998 03 02 | 691 | 0.1− | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | (1.6+ | 0.4+) |
| 1998 03 02 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.4+ |
| 2003 01 29 | 291 | 0.1+ | 0.0 | 2006 08 28 | 699 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2003 01 29 | 291 | 0.3− | 0.6+ | 2006 08 28 | 699 | 1.3+ | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.1+ |
| 2003 01 29 | 291 | 0.4+ | 0.3+ | 2006 08 28 | 699 | 0.8− | 1.2+ | 2006 10 16 | 703 | 1.2+ | 0.8− |
| 2003 01 30 | 644 | 0.2+ | 0.4+ | 2006 08 28 | 699 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 1.3+ | 0.5− |
| 2003 01 30 | 644 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.2+ |
| 2003 01 30 | 644 | 0.1+ | 0.6+ | 2006 09 12 | 703 | 0.7+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.8− |
| 2005 06 27 | G96 | 0.1+ | 0.6+ | 2006 09 12 | 703 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2005 06 27 | G96 | 0.2+ | 0.8+ | 2006 09 12 | 703 | 1.3− | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.6− |
| 2005 06 27 | G96 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.6+ | 1.2− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2005 06 27 | G96 | 0.4+ | 0.9+ | 2006 09 18 | 703 | 0.4+ | 1.1− | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2005 07 11 | G96 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.1+ | 1.0+ | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2005 07 11 | G96 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.7− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2005 07 11 | G96 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.0 | | | | |
| 2005 07 11 | G96 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.0 | | | | |

**2006 QZ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.82723 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29015487 | $\omega$ | 329.46817 | | +0.92317609 | +0.38409438 | |
| $a$ | 2.2596932 | $\Omega$ | 7.98623 | | −0.32772588 | +0.80657998 | |
| $e$ | 0.1348486 | $i$ | 6.09236 | | −0.20085234 | +0.44933311 | |
| $P$ | 3.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.3− | 0.3+ | 2006 09 28 | 704 | 0.6+ | 0.2+ | |
| 2003 11 19 | 704 | 0.1− | 0.8+ | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 09 28 | 704 | 1.3− | 0.2+ | |
| 2003 11 19 | 704 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.4+ | 0.2+ | |
| 2003 11 19 | 704 | 0.4+ | 0.9− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.1− | 0.7+ | |
| 2003 11 19 | 704 | 0.1− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ | |
| 2003 12 03 | 704 | 0.1+ | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.1+ | |
| 2003 12 03 | 704 | (1.1+ | 1.6+) | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ | |
| 2003 12 03 | 704 | (0.3− | 2.3+) | 2006 09 16 | 704 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.6+ | 0.1+ | |
| 2003 12 03 | 704 | 0.5− | 1.2+ | 2006 09 16 | 704 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.3− | 0.6+ | |
| 2003 12 17 | 704 | 0.1+ | 0.1+ | 2006 09 16 | 704 | 0.1+ | 0.5− | 2006 09 30 | 704 | 1.0+ | 0.2− | |
| 2003 12 17 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 704 | 0.3− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.1− | |
| 2003 12 17 | 704 | 0.5+ | 0.5− | 2006 09 16 | 704 | 0.2− | 0.5− | 2006 10 09 | 644 | 0.1− | 0.1+ | |
| 2003 12 17 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1+ | |
| 2003 12 17 | 704 | 0.0 | 0.4+ | 2006 09 17 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | |
| 2003 12 29 | 704 | 0.4− | 0.2+ | 2006 09 17 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.5+ | |
| 2003 12 29 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 1.2+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1+ | |
| 2003 12 29 | 704 | 0.5− | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.8+ | |
| 2003 12 29 | 704 | 0.7− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.5− | |
| 2003 12 29 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.7+ | 0.5− | 2006 10 16 | G96 | 0.3+ | 0.6− | |
| 2005 03 13 | 703 | (0.1− | 1.6+) | 2006 09 19 | 699 | 0.6+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.5− | |
| 2005 03 13 | 703 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.9+ | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.5− | |
| 2005 03 13 | 703 | 1.1− | 1.0+ | 2006 09 20 | 704 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.3− | |
| 2005 03 13 | 703 | 0.8+ | 1.4+ | 2006 09 20 | 704 | 0.2+ | 0.9+ | 2006 10 27 | G96 | 0.0 | 0.5− | |
| 2005 04 04 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.4− | |
| 2005 04 04 | G96 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− | |
| 2005 04 04 | G96 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 704 | 0.2+ | 0.6+ | |
| 2005 04 04 | 704 | 0.2+ | 0.8− | 2006 09 25 | 699 | 0.3+ | 0.4− | 2006 11 10 | 704 | 0.3+ | 0.3+ | |
| 2005 04 04 | G96 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.4− | 2006 11 10 | 704 | 0.3+ | 1.0+ | |
| 2005 04 04 | 704 | 1.1+ | 0.1− | 2006 09 25 | 699 | 0.3− | 0.1+ | 2006 11 10 | 704 | 0.4+ | 1.0+ | |
| 2005 04 04 | G96 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.2− | 2006 11 10 | 704 | 1.1+ | 0.3+ | |
| 2005 05 08 | G96 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.6− | |
| 2005 05 08 | G96 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.6− | 0.0 | 2006 11 11 | 703 | 1.1+ | 1.5− | |
| 2005 05 08 | G96 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.1− | 0.1+ | |
| 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.7+ | 0.9− | 2006 11 11 | 703 | 0.9− | 0.3+ | |
| 2006 08 16 | 644 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.8− | |
| 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 1.3− | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.8− | |
| 2006 08 16 | 644 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.5− | |
| 2006 08 18 | 691 | (0.6− | 1.9+) | 2006 09 26 | 704 | 0.8+ | 1.5− | 2006 11 13 | G96 | 0.1− | 0.9− | |
| 2006 08 18 | 691 | (0.8+ | 1.8+) | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 18 | 703 | 0.1− | 0.4+ | |
| 2006 08 18 | 691 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 18 | 703 | 0.7+ | 0.0 | |
| 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 18 | 703 | 1.0− | 1.3+ | |
| 2006 08 27 | 691 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.6− | 0.4− | 2006 11 18 | 703 | (0.2− | 2.0+) | |
| 2006 08 27 | 691 | 0.7− | 0.3− | 2006 09 27 | 704 | 0.7− | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.5+ | |
| 2006 08 28 | 699 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.6− | 2006 11 21 | 704 | (0.0 | 2.0+) | |
| 2006 08 28 | 699 | 0.3− | 1.0+ | 2006 09 27 | 704 | 0.2− | 0.8− | 2006 11 21 | 704 | 0.1− | 1.1+ | |
| 2006 08 28 | 699 | 0.2+ | 0.4− | 2006 09 27 | 704 | 0.0 | 0.4− | | | | | |

**2006 QC$_{89}$ = 2004 EE$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.50248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19790584 | $\omega$ | 300.45861 | | +0.98962252 | +0.13875599 | |
| $a$ | 2.9162873 | $\Omega$ | 51.59163 | | −0.10999653 | +0.89872892 | |
| $e$ | 0.0730263 | $i$ | 2.73106 | | −0.09245560 | +0.41597248 | |
| $P$ | 4.98 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.0 | 0.6+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.5− | 0.4+ | |
| 2001 09 12 | 704 | 0.1+ | 0.2+ | 2004 04 13 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | (0.0 | 1.8−) | |
| 2001 09 12 | 704 | 1.1− | 0.5+ | 2006 08 18 | 691 | 0.3− | 0.5− | 2006 09 19 | 703 | 0.9+ | 0.4− | |
| 2001 09 12 | 704 | 0.3− | 0.2− | 2006 08 18 | 691 | 0.5− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.5− | |
| 2001 10 17 | 644 | 0.2+ | 0.6+ | 2006 08 18 | 691 | 0.3− | 0.0 | 2006 09 19 | 703 | 1.2− | 0.6− | |
| 2001 10 17 | 644 | 0.2− | 1.1+ | 2006 08 27 | 691 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.2+ | |
| 2001 10 17 | 644 | 0.3− | 0.7+ | 2006 08 27 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.3+ | |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− | |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 08 28 | 699 | 0.8− | 0.1+ | 2006 10 21 | G96 | 0.7+ | 0.1+ | |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2006 08 28 | 699 | 1.3+ | 1.3+ | 2006 10 23 | 644 | 0.2+ | 0.7+ | |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 08 28 | 699 | 1.2− | 0.6+ | 2006 10 23 | 644 | 0.3+ | 0.5+ | |
| 2004 03 23 | 691 | 0.3+ | 0.1− | 2006 08 28 | 699 | 0.6+ | 1.0+ | 2006 10 23 | 644 | 0.5+ | 0.5+ | |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.2− | 0.3+ | | | | | |
| 2004 04 13 | 691 | 0.2+ | 0.7+ | 2006 09 14 | 644 | 0.2+ | 0.4+ | | | | | |

**2006 QD$_{90}$ = 2005 GK$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.17906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29239090 | $\omega$ | 179.09850 | | +0.99912316 | −0.04164460 | |
| $a$ | 2.2481579 | $\Omega$ | 183.29755 | | +0.03792793 | +0.94394954 | |
| $e$ | 0.2259452 | $i$ | 4.30463 | | +0.01773093 | +0.32745228 | |
| $P$ | 3.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.1+ | 0.3− | 2006 09 17 | 704 | 0.8+ | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.2− | |
| 1995 04 26 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | (2.2+ | 1.0+) | 2006 10 21 | 644 | 0.2+ | 0.1− | |
| 1995 04 26 | 691 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 1999 07 13 | 704 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.9+ | 1.3− | 2006 10 21 | 644 | 0.1+ | 0.3− | |
| 1999 07 13 | 704 | 0.7− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 1999 07 13 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 1.4− | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 1999 07 13 | 704 | 0.5+ | 1.1+ | 2006 09 23 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 1999 07 13 | 704 | 0.4− | 0.2− | 2006 09 23 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 | |
| 2005 04 05 | G96 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1− | |
| 2005 04 05 | G96 | 0.1− | 0.7+ | 2006 09 27 | 704 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.2− | |
| 2005 04 05 | G96 | 0.1+ | 0.5− | 2006 09 27 | 704 | 0.4− | 0.0 | 2006 10 22 | 704 | 0.4+ | 0.4− | |
| 2005 04 05 | G96 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.0 | 0.2− | 2006 10 22 | 704 | 0.4− | 0.2+ | |
| 2005 04 06 | G96 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.6− | 2006 10 22 | 704 | 0.1− | 0.5+ | |
| 2005 04 06 | G96 | 0.3− | 0.4− | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 22 | 704 | 0.2+ | 0.3+ | |
| 2005 04 06 | G96 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 22 | 704 | 0.4+ | 0.4− | |
| 2005 04 06 | G96 | 0.5− | 0.5− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 27 | 704 | 1.3− | 0.3+ | |
| 2005 04 06 | G96 | 0.4+ | 0.5+ | 2006 10 01 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 704 | (1.8− | 0.0 ) | |
| 2005 04 06 | G96 | 0.9− | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.6− | 0.3− | |
| 2005 04 06 | G96 | 0.4− | 0.8− | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 704 | 0.6− | 0.2− | |
| 2005 04 06 | G96 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.8+ | 0.1− | 2006 10 27 | 704 | 0.3+ | 0.1− | |
| 2005 04 07 | G96 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.3− | |
| 2005 04 07 | G96 | 0.0 | 0.0 | 2006 10 15 | 703 | 1.0+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2− | |
| 2005 04 07 | G96 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.2− | |
| 2005 04 07 | G96 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.8− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− | |
| 2005 05 07 | 691 | 0.7+ | 0.1− | 2006 10 19 | 644 | 0.5− | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.1+ | |
| 2005 05 07 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.0 | |
| 2005 05 07 | 691 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.0 | 0.2+ | |
| 2006 08 28 | 703 | 0.8− | 1.3− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.6− | 0.2+ | |
| 2006 08 28 | 703 | 0.8− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.6− | |
| 2006 08 28 | 703 | 0.4+ | 0.3− | 2006 10 21 | 703 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.5− | 0.3+ | |
| 2006 08 29 | 683 | (1.4− | 1.9−) | 2006 10 21 | 703 | 0.5+ | 0.3− | 2006 11 13 | 703 | 0.7− | 0.2− | |
| 2006 08 29 | 683 | 0.4+ | 1.0+ | 2006 10 21 | 703 | 0.1− | 0.0 | 2006 11 14 | 704 | 1.0+ | 1.1+ | |
| 2006 08 29 | 683 | 1.3− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.1− | 2.2+ | |
| 2006 09 17 | 704 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.3+ | 0.3+ | |
| 2006 09 17 | 704 | 1.3+ | 1.4− | 2006 10 21 | 703 | 0.4+ | 0.3− | 2006 11 14 | 704 | 0.8− | 0.8+ | |
| 2006 09 17 | 704 | 1.0+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.1− | | | | | |

**2006 QS$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.29117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35585456 | $\omega$ | 187.28806 | | +0.99269129 | +0.08042604 | |
| $a$ | 1.9722155 | $\Omega$ | 167.02511 | | −0.08019778 | +0.99675997 | |
| $e$ | 0.0765586 | $i$ | 23.62447 | | −0.09017935 | −0.00110571 | |
| $P$ | 2.77 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 03 | 699 | 1.0+ | 0.4+ | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 18 | 704 | 1.1+ | 0.1+ |
| 2000 06 03 | 699 | 0.4+ | 0.2+ | 2006 08 27 | 699 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.3− | 0.6+ |
| 2000 06 03 | 699 | 0.2− | 0.9+ | 2006 08 27 | 699 | 0.1+ | 0.1− | 2006 09 18 | 704 | 0.9+ | 0.4+ |
| 2000 06 03 | 699 | 0.1+ | 0.8+ | 2006 08 27 | 699 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.0 | 0.6− |
| 2002 01 13 | 644 | 0.6− | 0.2+ | 2006 08 27 | 699 | 0.3+ | 0.1+ | 2006 09 18 | 704 | (2.3− | 2.3+) |
| 2002 01 13 | 644 | 0.3− | 0.3+ | 2006 08 29 | 704 | 0.7− | 0.5+ | 2006 09 18 | 704 | 0.2+ | 0.0 |
| 2002 01 13 | 644 | 0.3+ | 0.2+ | 2006 08 29 | 704 | 0.1+ | 0.2− | 2006 09 25 | 704 | 0.3+ | 1.0+ |
| 2003 07 27 | 644 | 0.2+ | 0.5+ | 2006 08 29 | 704 | (1.7+ | 1.1−) | 2006 09 25 | 704 | 0.4+ | 0.4+ |
| 2003 07 27 | 644 | 0.0 | 0.4+ | 2006 08 30 | 704 | 0.5− | 0.1+ | 2006 09 25 | 704 | 0.7+ | 1.5+ |
| 2003 07 27 | 644 | 0.2− | 0.4+ | 2006 08 30 | 704 | 0.1+ | 0.1− | 2006 09 25 | 704 | 1.4+ | 1.2− |
| 2003 08 22 | 645 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.3+ |
| 2003 08 22 | 645 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 09 27 | 704 | 1.1+ | 0.0 |
| 2005 02 05 | 644 | 0.0 | 0.6+ | 2006 08 30 | 704 | 0.4+ | 0.3− | 2006 09 27 | 704 | 0.3− | 0.5− |
| 2005 02 05 | 644 | 0.1− | 0.3+ | 2006 08 31 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.8+ |
| 2005 02 05 | 644 | 0.2− | 0.0 | 2006 08 31 | 704 | 1.3− | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2005 03 13 | 699 | 0.3+ | 0.5+ | 2006 08 31 | 704 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.3− |
| 2005 03 13 | 699 | 0.7+ | 0.0 | 2006 09 01 | 704 | 1.2+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2005 03 13 | 699 | 0.7+ | 0.3+ | 2006 09 01 | 704 | 0.3+ | 0.7+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2005 03 13 | 699 | (2.2+ | 0.1+) | 2006 09 01 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 1.1+ | 1.0+ |
| 2005 03 30 | 703 | 0.5− | 0.8+ | 2006 09 11 | 703 | 0.9− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2005 03 30 | 703 | (2.4− | 0.1−) | 2006 09 11 | 703 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.2+ | 1.3− |
| 2005 03 30 | 703 | 0.5− | 0.8+ | 2006 09 11 | 703 | 0.8− | 0.1− | 2006 09 29 | 704 | 0.4− | 0.2+ |
| 2005 03 30 | 703 | 0.5− | 0.2+ | 2006 09 11 | 703 | 0.2− | 0.3− | 2006 09 29 | 704 | 0.1− | 1.0+ |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.6− | 2006 10 21 | 703 | 0.3− | 0.3− |
| 2006 08 22 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 21 | 703 | (1.0+ | 1.7+) |
| 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.5− | 0.3− | 2006 10 21 | 703 | 0.0 | 0.2+ |
| 2006 08 23 | 644 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.8+ | 1.2+ |
| 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.2− | | | | |

**2006 QF$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.09047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18215714 | $\omega$ | 42.90782 | | +0.49882658 | +0.85076887 | |
| $a$ | 3.0820422 | $\Omega$ | 257.65160 | | −0.83397637 | +0.41921510 | |
| $e$ | 0.1483309 | $i$ | 9.74942 | | −0.23591408 | +0.31694011 | |
| $P$ | 5.41 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 1.0− | 0.1+ | 2001 09 29 | 644 | 0.3− | 0.0 | 2006 07 21 | 703 | 0.1+ | 0.7+ |
| 2001 09 10 | 704 | 0.1− | 0.9− | 2001 10 26 | 644 | 0.1− | 0.8+ | 2006 07 21 | 703 | 0.1− | 0.2+ |
| 2001 09 10 | 704 | 0.6− | 0.3− | 2001 10 26 | 644 | 0.0 | 0.7+ | 2006 08 16 | 644 | 0.1+ | 0.3− |
| 2001 09 10 | 704 | 0.3− | 1.3− | 2001 10 26 | 644 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 0.5+ | 0.5+ | 2002 12 06 | 695 | 0.5+ | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.3− |
| 2001 09 25 | 704 | 0.3+ | 0.2− | 2002 12 06 | 695 | 0.4− | 0.1+ | 2006 08 19 | 699 | 1.1+ | 0.4− |
| 2001 09 25 | 704 | 0.6+ | 0.1+ | 2005 05 12 | 644 | 0.1+ | 0.2+ | 2006 08 19 | 699 | 0.6− | 0.1+ |
| 2001 09 25 | 704 | 0.9+ | 0.7+ | 2005 05 12 | 644 | 0.2+ | 0.3+ | 2006 08 19 | 699 | 0.8− | 0.1− |
| 2001 09 25 | 704 | 0.4+ | 0.0 | 2005 05 12 | 644 | 0.1+ | 0.6+ | 2006 08 19 | 699 | 0.7− | 1.1+ |
| 2001 09 29 | 644 | 0.4− | 0.1− | 2006 07 21 | 703 | 0.6− | 0.2+ | | | | |
| 2001 09 29 | 644 | 0.4− | 0.1+ | 2006 07 21 | 703 | 1.4+ | 0.7− | | | | |

**2006 QN$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.87305 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17769607 | $\omega$ | 176.94647 | | +0.94561575 | +0.31410112 | |
| $a$ | 3.1334119 | $\Omega$ | 163.94672 | | −0.30454924 | +0.94622915 | |
| $e$ | 0.2061089 | $i$ | 17.80682 | | −0.11428305 | +0.07740080 | |
| $P$ | 5.55 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1− | 0.4− | 2006 07 26 | A50 | 0.2+ | 0.8+ | 2006 08 28 | A50 | 0.3− | 0.2+ |
| 1995 09 20 | 691 | 0.1+ | 0.3− | 2006 07 26 | A50 | 0.3− | 1.0+ | 2006 08 30 | 704 | 0.3− | 0.3+ |
| 1995 09 20 | 691 | 0.1+ | 0.3− | 2006 07 26 | A50 | 0.3+ | 0.4− | 2006 08 30 | 704 | 1.1+ | 0.2+ |
| 2001 09 19 | 645 | 0.0 | 0.1+ | 2006 07 26 | A50 | 0.3+ | 0.6+ | 2006 08 30 | 704 | 0.9− | 0.3+ |
| 2001 09 19 | 645 | 0.1+ | 0.0 | 2006 07 26 | A50 | 0.4− | 1.4+ | 2006 08 30 | 704 | 0.2+ | 0.8+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.4− | 0.0 |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 14 | 703 | 1.0+ | 1.0+ |
| 2001 10 22 | 644 | 1.0− | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.7+ |
| 2001 10 22 | 644 | 0.9− | 0.1− | 2006 08 21 | 644 | 0.6− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.4− |
| 2001 10 22 | 644 | 1.0− | 0.2+ | 2006 08 21 | 644 | 0.4− | 0.4− | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 08 21 | 644 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2004 03 18 | 691 | 0.2− | 0.3+ | 2006 08 28 | A50 | 1.0+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 08 28 | A50 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2006 07 26 | A50 | 0.4+ | 0.0 | 2006 08 28 | A50 | 0.6− | 0.3+ | | | | |

**2006 QX$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.96238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18272878 | $\omega$ | 35.06322 | | +0.78499442 | +0.60525157 | |
| $a$ | 3.0756111 | $\Omega$ | 287.14720 | | −0.59528630 | +0.67791303 | |
| $e$ | 0.1334732 | $i$ | 7.94719 | | −0.17151670 | +0.41725827 | |
| $P$ | 5.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.1+ | 0.2− | 2006 08 17 | 644 | 0.3+ | 0.1− |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2006 05 26 | G96 | 0.5+ | 0.1+ | 2006 08 17 | 644 | 0.3+ | 0.1+ |
| 2001 10 15 | 644 | 0.5+ | 0.1+ | 2006 05 26 | G96 | 0.3+ | 0.0 | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2001 10 15 | 644 | 0.4+ | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.2− |
| 2001 10 15 | 644 | 0.4+ | 0.3+ | 2006 08 16 | 644 | 0.5− | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2006 05 26 | G96 | 0.7− | 0.2− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.6− | 0.1− |

**2006 QA$_{92}$ = 1996 TS$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.85755 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28739841 | $\omega$ | 141.33986 | | +0.46402135 | +0.88491509 | |
| $a$ | 2.2741188 | $\Omega$ | 156.22621 | | −0.83545290 | +0.45224078 | |
| $e$ | 0.1747805 | $i$ | 5.71140 | | −0.29445311 | +0.11137131 | |
| $P$ | 3.43 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.2+ | 0.1+ | 2005 03 08 | G96 | 0.0 | 0.5− | 2006 08 18 | 644 | 0.1+ | 0.0 |
| 1996 10 07 | 691 | 0.4+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.5− |
| 1996 10 07 | 691 | 0.1− | 0.7− | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 1996 10 12 | 691 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1996 10 12 | 691 | 0.2− | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 1996 10 12 | 691 | 0.3− | 0.1− | 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1+ |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2006 08 17 | 644 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.5− | 0.1− |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2005 03 08 | G96 | 0.5+ | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.4− |

**2006 QF$_{92}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.38027 | | | (2000.0) | | |
| $n$ | 0.22851895 | $\omega$ | 51.53912 | | +0.98273790 | −0.10932946 |
| $a$ | 2.6496463 | $\Omega$ | 314.17499 | | +0.01557717 | +0.85273610 |
| $e$ | 0.2878730 | $i$ | 12.01021 | | +0.18434634 | +0.51077218 |
| $P$ | 4.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.6− | 0.1− | 2002 11 15 | 704 | 0.4− | 0.6− | 2006 08 17 | 644 | 0.1− | 0.1+ |
| 2002 10 06 | 704 | 0.6− | 0.2− | 2002 11 15 | 704 | 0.3+ | 0.2− | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 2002 10 06 | 704 | 0.6− | 0.1+ | 2002 11 25 | 644 | 0.4− | 0.3+ | 2006 08 29 | 703 | 1.1− | 0.5− |
| 2002 10 06 | 704 | 0.2− | 0.5+ | 2002 11 25 | 644 | 0.5− | 0.3+ | 2006 08 29 | 703 | 1.2− | 0.6− |
| 2002 10 06 | 704 | 0.1− | 0.2+ | 2002 11 25 | 644 | 0.5− | 0.4+ | 2006 08 29 | 703 | 1.0+ | 0.9− |
| 2002 10 15 | 704 | 1.2+ | 0.0 | 2006 07 25 | 644 | 0.1+ | 0.1− | 2006 08 29 | 703 | 1.5+ | 1.5− |
| 2002 10 15 | 704 | 0.1+ | 0.5− | 2006 07 25 | 644 | 0.1− | 0.0 | 2006 09 03 | 941 | 0.7+ | 0.2+ |
| 2002 10 15 | 704 | 0.0 | 0.2+ | 2006 07 25 | 644 | 0.2+ | 0.1+ | 2006 09 03 | 941 | 0.4+ | 0.1+ |
| 2002 10 30 | 704 | 0.5+ | 1.4+ | 2006 08 14 | 644 | 0.2− | 0.2+ | 2006 09 03 | 941 | 0.2+ | 0.2− |
| 2002 10 30 | 704 | 0.3+ | 0.3+ | 2006 08 14 | 644 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.7+ |
| 2002 10 30 | 704 | 0.6+ | 0.0 | 2006 08 14 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2002 10 30 | 704 | 1.2+ | 1.3− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.9− | 0.9+ |
| 2002 11 15 | 704 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.2+ |
| 2002 11 15 | 704 | 0.6− | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.2+ | | | | |
| 2002 11 15 | 704 | 0.0 | 0.4− | 2006 08 17 | 644 | 0.0 | 0.2+ | | | | |

**2006 QG$_{92}$ = 2005 JB$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 317.92391 | | | (2000.0) | | |
| $n$ | 0.27831546 | $\omega$ | 252.48141 | | +0.80920869 | −0.58741193 |
| $a$ | 2.3233314 | $\Omega$ | 143.48985 | | +0.54601007 | +0.74477011 |
| $e$ | 0.2064620 | $i$ | 1.09177 | | +0.21692001 | +0.31664602 |
| $P$ | 3.54 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 691 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.5− | 2006 08 16 | 644 | 0.2− | 0.0 |
| 2001 02 20 | 691 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.2+ | 0.5− | 2006 08 18 | 644 | 0.3− | 0.1+ |
| 2001 02 20 | 691 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.4− | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 2005 05 04 | 568 | 0.0 | 0.2+ | 2006 08 14 | 644 | 0.2− | 0.3+ | 2006 08 18 | 644 | 0.3− | 0.2+ |
| 2005 05 04 | 568 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.4+ |
| 2005 05 04 | 568 | 0.1+ | 0.1+ | 2006 08 14 | 644 | 0.1+ | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.3+ |
| 2005 05 05 | 568 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.2+ | 0.0 |
| 2006 07 21 | G96 | 0.1− | 0.5− | 2006 08 16 | 644 | 0.4+ | 0.1+ | | | | |

**2006 QH$_{92}$ = 2003 WN$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.45013 | | | (2000.0) | | |
| $n$ | 0.27184755 | $\omega$ | 51.10214 | | +0.98161454 | +0.18402781 |
| $a$ | 2.3600386 | $\Omega$ | 298.24003 | | −0.18804413 | +0.88683964 |
| $e$ | 0.0671937 | $i$ | 3.29673 | | −0.03274595 | +0.42385046 |
| $P$ | 3.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 704 | 0.7− | 0.1+ | 2005 03 17 | 691 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.4+ |
| 1999 10 16 | 704 | 0.5+ | 0.1− | 2005 03 17 | 691 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.4+ |
| 1999 10 16 | 704 | 0.3+ | 0.0 | 2006 06 19 | G96 | 0.2+ | 0.3− | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2003 11 20 | 704 | 0.2− | 0.6+ | 2006 06 19 | G96 | 0.2− | 0.2− | 2006 08 28 | 703 | (2.0− | 3.6+) |
| 2003 11 20 | 704 | 0.0 | 0.5− | 2006 06 19 | G96 | 0.0 | 0.1− | 2006 08 28 | 703 | (2.3+ | 4.5+) |
| 2003 11 20 | 704 | 0.0 | 0.7+ | 2006 06 19 | G96 | (0.7+ | 3.8+) | 2006 08 28 | 703 | 0.6− | 0.3+ |
| 2003 11 20 | 704 | 0.2− | 0.3+ | 2006 07 25 | G96 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.1+ | 0.5+ |
| 2003 11 20 | 704 | 0.2+ | 0.0 | 2006 07 25 | G96 | 0.7− | 0.3− | 2006 09 13 | 644 | 0.1− | 0.4+ |
| 2003 11 20 | 691 | 0.1− | 0.2+ | 2006 07 25 | G96 | (1.9+ | 0.1−) | 2006 09 13 | 644 | 0.4+ | 0.2+ |
| 2003 11 20 | 691 | 0.1− | 0.2+ | 2006 07 25 | G96 | 0.2− | 0.2− | 2006 09 13 | 644 | 0.1− | 0.2+ |
| 2003 11 20 | 691 | 0.3− | 0.3+ | 2006 07 25 | 644 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.2− | 0.4+ |
| 2003 11 24 | 704 | 0.0 | 0.0 | 2006 07 25 | 644 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.4+ | 0.3+ |
| 2003 11 24 | 704 | 0.6+ | 0.1+ | 2006 07 25 | 644 | 0.4− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.5+ |
| 2003 11 24 | 704 | 0.0 | 0.7− | 2006 08 14 | 644 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.5− |
| 2003 11 24 | 704 | 0.5+ | 0.8+ | 2006 08 14 | 644 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2005 03 03 | 691 | 0.1+ | 0.4+ | 2006 08 14 | 644 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3+ |
| 2005 03 03 | 691 | 0.5+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2005 03 03 | 691 | 0.7+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.4+ | | | | |
| 2005 03 17 | 691 | 0.3− | 0.5+ | 2006 08 16 | 644 | 0.1− | 0.4+ | | | | |

**2006 QO$_{92}$ = 2003 UZ$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 303.92409 | | | (2000.0) | | |
| $n$ | 0.29176728 | $\omega$ | 238.97724 | | +0.73568140 | −0.67646195 |
| $a$ | 2.2513602 | $\Omega$ | 163.50753 | | +0.65526875 | +0.69801751 |
| $e$ | 0.1223002 | $i$ | 6.92655 | | +0.17145187 | +0.23488462 |
| $P$ | 3.38 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 20 | 691 | 0.2+ | 0.3− | 2003 10 23 | 691 | 0.1+ | 0.1− | 2006 08 16 | 644 | 0.1+ | 0.3+ |
| 1996 09 20 | 691 | 0.1+ | 0.2− | 2003 10 23 | 691 | 0.3+ | 0.1− | 2006 08 17 | 644 | 0.1+ | 0.1+ |
| 1996 09 20 | 691 | 0.1− | 0.2− | 2003 10 23 | 691 | 0.4− | 0.3+ | 2006 08 17 | 644 | 0.2− | 0.1+ |
| 2003 10 20 | 704 | 0.2− | 0.8+ | 2003 11 19 | 644 | 0.6+ | 0.5− | 2006 08 17 | 644 | 0.0 | 0.2+ |
| 2003 10 20 | 704 | 0.5+ | 0.4+ | 2003 11 19 | 644 | 0.7+ | 0.5− | 2006 08 18 | 644 | 0.3+ | 0.0 |
| 2003 10 20 | 704 | 1.3− | 0.8+ | 2003 11 19 | 644 | 0.5+ | 0.9− | 2006 08 18 | 644 | 0.4− | 0.0 |
| 2003 10 20 | 704 | 0.5− | 0.5+ | 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.3+ |
| 2003 10 20 | 704 | 0.9− | 0.6+ | 2006 08 16 | 644 | 0.5− | 0.5+ | | | | |

**2006 QS$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.48715 | | | (2000.0) | | |
| $n$ | 0.18166068 | $\omega$ | 46.57444 | | +0.97886293 | +0.01062725 |
| $a$ | 3.0876549 | $\Omega$ | 311.69486 | | −0.12363164 | +0.82627340 |
| $e$ | 0.2223576 | $i$ | 15.87418 | | +0.16291897 | +0.56316901 |
| $P$ | 5.43 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 19 | 327 | 0.7− | 0.2+ | 2001 12 09 | 704 | 0.2+ | 0.5− | 2006 08 26 | 699 | 0.1+ | 0.0 |
| 1995 07 19 | 327 | 0.2− | 0.1− | 2001 12 09 | 704 | 0.7+ | 1.0− | 2006 08 26 | 699 | 0.8− | 0.6+ |
| 1995 07 19 | 327 | 0.5− | 0.1− | 2001 12 09 | 704 | 0.3− | 0.5+ | 2006 08 26 | 699 | 0.2+ | 0.1− |
| 1995 07 19 | 327 | 0.8+ | 0.0 | 2001 12 09 | 704 | 0.6+ | 1.4− | 2006 08 30 | 704 | 0.8+ | 0.7− |
| 1995 07 19 | 327 | 0.1− | 1.0+ | 2003 01 30 | 644 | 0.1+ | 0.7+ | 2006 08 30 | 704 | 0.4− | 0.3− |
| 2001 08 23 | 704 | 0.1− | 0.2+ | 2003 01 30 | 644 | 0.2+ | 0.6+ | 2006 08 30 | 704 | 0.5+ | 0.6+ |
| 2001 08 23 | 704 | 0.1+ | 0.4+ | 2003 01 30 | 644 | 0.2+ | 0.8+ | 2006 08 30 | 704 | 0.3+ | 0.7+ |
| 2001 08 23 | 704 | 0.1− | 0.3+ | 2003 01 30 | 644 | 0.4+ | 0.2− | 2006 08 30 | 704 | 0.3− | 0.3+ |
| 2001 08 23 | 704 | 0.1+ | 0.4+ | 2003 01 30 | 644 | 0.3+ | 0.7+ | 2006 08 30 | 704 | 0.1+ | 0.6+ |
| 2001 08 23 | 704 | 0.8− | 0.8+ | 2003 01 30 | 644 | 0.9+ | 0.7+ | 2006 08 30 | 704 | 0.3+ | 0.3− |
| 2001 09 22 | 699 | 0.9+ | 0.9+ | 2006 06 19 | 703 | 0.9− | 0.5+ | 2006 08 30 | 704 | 0.8+ | 0.3− |
| 2001 09 22 | 699 | 0.1+ | 0.0 | 2006 06 19 | 703 | 0.7− | 0.4− | 2006 08 30 | 704 | 0.1+ | 0.5− |
| 2001 09 22 | 699 | 0.6+ | 0.3+ | 2006 06 19 | 703 | 1.3+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.9− |
| 2001 09 22 | 699 | 0.4+ | 0.9+ | 2006 06 19 | 703 | 1.1+ | 0.2− | 2006 09 01 | 704 | 0.1+ | 0.9− |
| 2001 09 28 | 704 | 1.6− | 0.8+ | 2006 07 25 | 644 | 0.3− | 0.1+ | 2006 09 01 | 704 | 0.3− | 0.1+ |
| 2001 09 28 | 704 | 0.7− | 0.6+ | 2006 07 25 | 644 | 0.3− | 0.1+ | 2006 09 01 | 704 | 0.1+ | 0.2− |
| 2001 09 28 | 704 | 0.5− | 0.3+ | 2006 07 25 | 644 | 0.4− | 0.0 | 2006 09 01 | 704 | 0.0 | 1.1− |
| 2001 09 28 | 704 | 0.5− | 0.3+ | 2006 08 14 | 644 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.4− |
| 2001 10 08 | 704 | 0.2− | 0.0 | 2006 08 14 | 644 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.7− | 0.4− |
| 2001 10 08 | 704 | 0.2− | 0.3− | 2006 08 14 | 644 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.3+ | 0.3− |
| 2001 10 08 | 704 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.4+ |
| 2001 10 08 | 704 | 0.3+ | 0.7+ | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.6− | 0.0 |
| 2001 10 08 | 704 | 0.2− | 0.6+ | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 09 18 | 704 | 0.1+ | 0.4− |
| 2001 10 25 | 704 | 1.3+ | 1.4− | 2006 08 17 | 644 | 0.0 | 0.3+ | 2006 09 18 | 704 | 0.1− | 1.0+ |
| 2001 10 25 | 704 | 0.9+ | 1.3− | 2006 08 17 | 644 | 0.2− | 0.3+ | | | | |
| 2001 10 25 | 704 | 0.0 | 1.5− | 2006 08 17 | 644 | 0.0 | 0.4+ | | | | |

**2006 QV$_{92}$ = 2004 BE$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.46811 | | (2000.0) | | | |
| $n$ | 0.22018379 | $\omega$ | 12.20417 | | +0.76511644 | +0.62512076 |
| $a$ | 2.7161004 | $\Omega$ | 308.00114 | | −0.60600651 | +0.61809789 |
| $e$ | 0.0022004 | $i$ | 11.29517 | | −0.21760731 | +0.47663302 |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.9+ | 0.9− | 2003 12 27 | 704 | 0.4− | 0.5+ | 2006 06 20 | G96 | 0.6− | 0.2− |
| 2002 10 06 | 704 | 0.8+ | 1.1− | 2004 01 22 | 704 | 0.4+ | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.4+ |
| 2002 10 06 | 704 | 0.9− | 0.9− | 2004 01 22 | 704 | 0.6+ | 0.6+ | 2006 08 16 | 644 | 0.0 | 0.0 |
| 2002 10 06 | 704 | 0.3− | 0.5− | 2004 01 22 | 704 | 0.3+ | 0.6+ | 2006 08 16 | 644 | 0.3+ | 0.2+ |
| 2002 10 06 | 704 | 0.6− | 0.1− | 2004 01 22 | 704 | 1.1+ | 0.9− | 2006 08 17 | 644 | 0.1+ | 0.2+ |
| 2002 10 31 | 644 | 0.2+ | 0.7+ | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 08 17 | 644 | 0.2− | 0.3+ |
| 2002 10 31 | 644 | 0.5+ | 0.7+ | 2004 01 27 | 691 | 0.2+ | 0.1− | 2006 08 17 | 644 | 0.2− | 0.6+ |
| 2002 10 31 | 644 | 0.0 | 1.2+ | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.1+ | 0.2+ |
| 2003 12 27 | 704 | 0.3− | 0.6+ | 2006 06 20 | G96 | 0.1− | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 2003 12 27 | 704 | 0.8− | 0.2+ | 2006 06 20 | G96 | 0.1+ | 0.3− | 2006 08 18 | 644 | 0.5− | 0.3+ |
| 2003 12 27 | 704 | 0.7− | 0.0 | 2006 06 20 | G96 | 0.2− | 0.2− | | | | |

**2006 QE$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.44929 | | (2000.0) | | | |
| $n$ | 0.30491116 | $\omega$ | 163.30783 | | +0.90026705 | +0.43487553 |
| $a$ | 2.1861863 | $\Omega$ | 170.83744 | | −0.41242770 | +0.86673628 |
| $e$ | 0.2225281 | $i$ | 7.23819 | | −0.13936510 | +0.24423655 |
| $P$ | 3.23 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 704 | 0.1+ | 0.3− | 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 12 | 704 | 0.0 | 0.3+ |
| 2003 09 20 | 704 | 0.3− | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2003 09 20 | 704 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1+ |
| 2003 09 28 | 704 | 0.3− | 0.4− | 2006 08 19 | 699 | 0.2+ | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.0 |
| 2003 09 28 | 704 | 0.0 | 0.9− | 2006 08 19 | 699 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.1− | 0.6+ |
| 2003 09 28 | 704 | (1.2− | 1.5−) | 2006 08 19 | 699 | 0.7− | 0.3− | 2006 09 16 | 699 | (1.4− | 2.9−) |
| 2003 09 28 | 704 | 0.4+ | 0.2+ | 2006 08 19 | 699 | 0.4+ | 0.8+ | 2006 09 16 | 699 | 0.8− | 0.7− |
| 2003 09 28 | 704 | 1.1− | 1.0− | 2006 08 29 | 703 | 0.5+ | 0.4− | 2006 09 16 | 699 | 0.3− | 1.1− |
| 2003 10 23 | 691 | 0.4+ | 0.0 | 2006 08 29 | 703 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2003 10 23 | 691 | 0.7− | 0.9+ | 2006 08 29 | 703 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2003 10 23 | 691 | 0.4+ | 0.1− | 2006 08 29 | 703 | (2.6− | 6.1−) | 2006 09 26 | G96 | 0.4+ | 1.4− |
| 2006 05 08 | G96 | 0.4+ | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2006 05 08 | G96 | 0.1+ | 0.4− | 2006 08 30 | 704 | 0.9+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2006 05 08 | G96 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 0.5− | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2006 05 08 | G96 | 1.1− | 0.5+ | 2006 08 30 | 704 | 0.7− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2006 08 14 | 644 | 0.3+ | 0.2+ | 2006 08 30 | 704 | 0.7− | 1.2+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2006 08 14 | 644 | 0.3+ | 0.1+ | 2006 09 12 | 704 | (1.1− | 2.5+) | | | | |
| 2006 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 704 | 0.3− | 0.8+ | | | | |

**2006 QG$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 201.57587 | | (2000.0) | | | |
| $n$ | 0.21728232 | $\omega$ | 152.91051 | | −0.68044487 | −0.73106802 |
| $a$ | 2.7402265 | $\Omega$ | 339.83645 | | +0.64310081 | −0.56280991 |
| $e$ | 0.0915390 | $i$ | 8.39783 | | +0.35130631 | −0.38572601 |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.1− | 0.1− | 2004 01 16 | 703 | 0.3− | 0.5+ | 2006 08 18 | 644 | 0.1− | 0.3+ |
| 2003 12 21 | 645 | 0.1− | 0.2− | 2004 01 31 | 704 | 0.1− | 0.7+ | 2006 08 18 | 644 | 0.1− | 0.0 |
| 2003 12 28 | 704 | 0.7+ | 1.2+ | 2004 01 31 | 704 | 0.6+ | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.2+ |
| 2003 12 28 | 704 | 0.9+ | 0.4+ | 2004 01 31 | 704 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.1− | 0.5+ |
| 2003 12 28 | 704 | 0.6+ | 0.1− | 2004 01 31 | 704 | 0.4+ | 0.3+ | 2006 08 20 | 644 | 0.1− | 0.1− |
| 2003 12 28 | 704 | 1.2+ | 0.7+ | 2004 01 31 | 704 | 0.4− | 0.9− | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2003 12 28 | 704 | 0.9+ | 0.7+ | 2004 02 14 | 704 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.6− | 0.2− |
| 2003 12 28 | 704 | 0.3+ | 0.2+ | 2004 02 14 | 704 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.9− | 0.5− |
| 2003 12 28 | 704 | 0.1+ | 0.9+ | 2004 02 14 | 704 | 0.3− | 0.4+ | 2006 09 30 | G96 | (1.1− | 1.7−) |
| 2003 12 28 | 704 | (0.1+ | 1.6+) | 2004 02 14 | 704 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2003 12 28 | 704 | 0.3+ | 0.0 | 2004 02 14 | 704 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2+ |
| 2003 12 28 | 704 | 0.1− | 0.6+ | 2006 08 16 | 644 | 0.2+ | 0.4+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2004 01 16 | 703 | 0.5− | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2004 01 16 | 703 | 0.4− | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.2+ | | | | |
| 2004 01 16 | 703 | 0.8− | 0.2+ | 2006 08 18 | 644 | 0.1+ | 0.3+ | | | | |

**2006 QS$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.64498 | | (2000.0) | | | |
| $n$ | 0.28260050 | $\omega$ | 172.50778 | | +0.87412816 | −0.48131535 |
| $a$ | 2.2997860 | $\Omega$ | 216.49527 | | +0.43974897 | +0.84118780 |
| $e$ | 0.1747184 | $i$ | 6.28212 | | +0.20620575 | +0.24645206 |
| $P$ | 3.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 704 | 0.5+ | 0.1− | 2005 04 05 | G96 | 0.4− | 0.9+ | 2006 08 27 | 699 | 0.2+ | 0.1− |
| 2003 12 01 | 704 | 0.2+ | 0.7+ | 2005 05 12 | G96 | 0.6+ | 0.5+ | 2006 08 27 | 699 | 0.4+ | 0.1+ |
| 2003 12 01 | 704 | 0.2+ | 0.5+ | 2005 05 12 | G96 | 0.1+ | 0.4+ | 2006 08 30 | 699 | 0.5+ | 0.2− |
| 2003 12 01 | 704 | 0.8+ | 0.3+ | 2005 05 12 | G96 | 1.4+ | 0.2+ | 2006 08 30 | 699 | 0.5− | 0.2− |
| 2003 12 01 | 704 | 0.5− | 0.3− | 2005 05 12 | G96 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 0.1+ | 1.3+ |
| 2003 12 22 | 704 | 0.3− | 0.6− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.6− | 0.8+ |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2006 08 16 | 644 | 0.0 | 0.5− | 2006 09 11 | 703 | 1.1− | 1.3− |
| 2003 12 22 | 704 | 0.4− | 0.1− | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 11 | 703 | 1.6− | 0.7+ |
| 2003 12 22 | 704 | 0.1− | 0.3+ | 2006 08 21 | 644 | 0.1+ | 0.3− | 2006 09 11 | 703 | 1.9− | 0.6+ |
| 2003 12 22 | 704 | 0.4− | 1.5+ | 2006 08 21 | 644 | 0.1− | 0.3− | 2006 09 11 | 703 | 0.9− | 2.3+ |
| 2005 04 05 | G96 | 0.8− | 0.3+ | 2006 08 21 | 644 | 0.5− | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.0 |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.5+ | 0.5+ | 2006 09 15 | 691 | 0.4+ | 0.1− |
| 2005 04 05 | G96 | 0.0 | 0.4+ | 2006 08 27 | 699 | 0.6+ | 0.8− | 2006 09 15 | 691 | 0.4+ | 0.0 |

**2006 QX$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.27544 | | (2000.0) | | | |
| $n$ | 0.20635263 | $\omega$ | 93.50767 | | +0.91498576 | +0.39638491 |
| $a$ | 2.8361512 | $\Omega$ | 243.15213 | | −0.39555672 | +0.84436841 |
| $e$ | 0.0760714 | $i$ | 4.84563 | | −0.07959858 | +0.36044554 |
| $P$ | 4.78 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 13 | 691 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.9− |
| 2001 06 13 | 691 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.3+ |
| 2001 06 13 | 691 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.0 | 0.5− |
| 2002 12 02 | 704 | 0.1− | 0.6− | 2006 08 19 | 699 | 0.3+ | 0.4+ | 2006 09 17 | 691 | 0.3+ | 0.1− |
| 2002 12 02 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 699 | 0.3− | 0.8+ | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2002 12 02 | 704 | 0.9− | 0.1+ | 2006 08 19 | 699 | 0.8+ | 1.3+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2004 02 17 | 691 | 0.2+ | 0.4+ | 2006 08 19 | 699 | 0.6+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2004 02 17 | 691 | 0.3+ | 0.6+ | 2006 08 29 | 703 | 0.3+ | 1.8+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2004 02 17 | 691 | 0.3+ | 0.7+ | 2006 08 29 | 703 | 1.2− | 0.5+ | 2006 09 24 | 699 | 0.1− | 0.2− |
| 2005 05 16 | G96 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.9− | 0.5− | 2006 09 24 | 699 | 0.4+ | 1.2+ |
| 2005 05 16 | G96 | 0.3− | 0.3− | 2006 08 29 | 703 | 0.7− | 0.5+ | 2006 09 24 | 699 | 0.1+ | 0.8− |
| 2005 05 16 | G96 | 0.3− | 0.6− | 2006 09 14 | 703 | 0.1− | 1.1+ | 2006 09 24 | 699 | 0.2+ | 0.8+ |
| 2005 05 16 | G96 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.2− | 0.5− | | | | |

**2006 QD$_{94}$ = 2001 KY$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.72162 | | (2000.0) | | | |
| $n$ | 0.21990258 | $\omega$ | 289.95119 | | −0.42178504 | +0.90645158 |
| $a$ | 2.7184155 | $\Omega$ | 315.08284 | | −0.82033536 | −0.39139480 |
| $e$ | 0.2495821 | $i$ | 1.70801 | | −0.38619590 | −0.15860531 |
| $P$ | 4.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 704 | (2.3+ | 1.4+) | 2001 05 26 | 704 | 0.2+ | 0.8− | 2006 08 28 | 703 | (1.5− | 2.5−) |
| 2001 05 24 | 704 | 0.0 | 0.2− | 2001 05 26 | 704 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.2− |
| 2001 05 24 | 704 | 1.3− | 0.7− | 2001 05 26 | 704 | 0.1+ | 0.3+ | 2006 08 28 | 703 | (1.6+ | 0.3−) |
| 2001 05 24 | 704 | 0.4+ | 0.3+ | 2006 07 18 | G96 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.5+ |
| 2001 05 24 | 704 | 0.2+ | 0.3− | 2006 07 18 | G96 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.4+ | 0.4+ |
| 2001 05 24 | 704 | 0.4+ | 0.0 | 2006 07 18 | G96 | 0.0 | 0.3− | 2006 08 28 | 699 | 0.7− | 0.1+ |
| 2001 05 24 | 704 | 0.6− | 0.4− | 2006 07 18 | G96 | 0.4− | 0.5− | 2006 08 28 | 699 | 1.0− | 0.9− |
| 2001 05 24 | 704 | 0.1+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.6+ | 2006 08 28 | 699 | 0.5+ | 0.3− |
| 2001 05 24 | 704 | 0.8− | 1.0+ | 2006 08 16 | 644 | 0.3− | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2001 05 24 | 704 | 0.4+ | 0.2+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2001 05 24 | 704 | 0.0 | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2001 05 24 | 704 | (0.3+ | 1.8+) | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.8− |
| 2001 05 24 | 704 | 0.7+ | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.0 | | | | |

### 2006 QV$_{94}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.10632 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20510537 | $\omega$ | 243.24010 | | +0.82314035 | | −0.56470189 |
| $a$ | 2.8476375 | $\Omega$ | 151.02654 | | +0.55483627 | | +0.77752052 |
| $e$ | 0.0722483 | $i$ | 7.06703 | | +0.12081670 | | +0.27671941 |
| $P$ | 4.81 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.5− | 0.0 | 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 08 19 | 691 | 0.1− | 0.2+ |
| 1999 02 09 | 691 | 0.5− | 0.3+ | 2004 02 23 | 704 | 0.5+ | 0.6+ | 2006 08 19 | 691 | 0.4− | 0.3+ |
| 1999 02 09 | 691 | 0.2− | 0.3+ | 2004 03 15 | 704 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.3+ |
| 1999 03 09 | 691 | 0.6− | 0.1+ | 2004 03 15 | 704 | 0.0 | 0.6+ | 2006 08 28 | 703 | 0.4− | 0.1− |
| 1999 03 09 | 691 | 0.4− | 0.3− | 2004 03 15 | 704 | 1.1+ | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.0 |
| 1999 03 09 | 691 | 0.4− | 0.1− | 2005 06 04 | 691 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.2− |
| 1999 03 20 | 691 | 1.5+ | 0.8+ | 2005 06 04 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.5− | 1.1− |
| 1999 03 20 | 691 | 0.3+ | 0.2− | 2005 06 04 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.2− |
| 1999 03 20 | 691 | 0.4+ | 0.6+ | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.3− |
| 2000 04 30 | 691 | 0.2+ | 0.3+ | 2005 06 15 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 1.4− | 0.2+ |
| 2000 04 30 | 691 | 0.1+ | 0.3− | 2005 06 15 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 1.2+ |
| 2000 04 30 | 691 | 0.2− | 0.1− | 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | (1.6+ | 0.5+) |
| 2002 12 01 | 704 | 0.6− | 0.4+ | 2005 06 30 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.7− | 1.4+ |
| 2002 12 01 | 704 | 0.2− | 0.6+ | 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.8+ |
| 2002 12 01 | 704 | 0.5+ | 1.5+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.5+ | 0.2− |
| 2002 12 05 | 608 | 0.9+ | 0.4+ | 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2002 12 05 | 608 | 1.5+ | 0.5+ | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2002 12 05 | 608 | 1.3+ | 0.3+ | 2006 08 18 | 644 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2004 02 23 | 704 | 0.8− | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.2+ | | | | |
| 2004 02 23 | 704 | 1.4− | 0.8+ | 2006 08 18 | 644 | 0.3+ | 0.6+ | | | | |

### 2006 QZ$_{94}$ = 1999 TG$_{100}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.06222 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27759642 | $\omega$ | 317.02589 | | +0.96400835 | | −0.25524669 |
| $a$ | 2.3273416 | $\Omega$ | 57.90432 | | +0.26148348 | | +0.85956602 |
| $e$ | 0.1552247 | $i$ | 5.03911 | | +0.04810701 | | +0.44271365 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 1.2− | 0.1− | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.8− | 0.5+ |
| 1999 09 08 | 703 | 0.8− | 0.2− | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 703 | 1.2− | 0.1− |
| 1999 09 08 | 703 | 0.9− | 0.3− | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.7+ | 0.7+ |
| 1999 09 08 | 703 | 1.4+ | 1.5− | 2005 05 04 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.8+ | 0.0 |
| 1999 10 02 | 704 | 0.1+ | 0.5− | 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.6+ |
| 1999 10 02 | 704 | 0.4+ | 0.7− | 2005 05 04 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.6+ | 0.5+ |
| 1999 10 02 | 704 | 0.5+ | 0.3− | 2006 08 16 | 644 | 0.4+ | 0.2+ | 2006 10 12 | 644 | 0.5+ | 0.0 |
| 1999 10 02 | 704 | 0.8+ | 0.1− | 2006 08 16 | 644 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1999 10 08 | 704 | 0.2+ | 0.3− | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 1999 10 08 | 704 | 0.4+ | 1.3+ | 2006 08 19 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.5+ |
| 1999 10 08 | 704 | 0.2+ | 0.3+ | 2006 08 19 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | (1.7− | 1.0+) |
| 2003 12 22 | 704 | 0.3− | 0.5+ | 2006 08 19 | 644 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.9− | 0.9+ |
| 2003 12 22 | 704 | 0.4− | 0.6+ | 2006 09 18 | 699 | 1.1− | 0.4+ | 2006 10 21 | 703 | 0.9− | 1.0+ |
| 2003 12 22 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 699 | 0.9− | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.1+ |
| 2003 12 22 | 704 | 0.3+ | 1.3+ | 2006 09 18 | 699 | 0.7− | 0.8− | 2006 11 27 | G96 | 0.7+ | 0.1− |
| 2005 04 10 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 04 10 | 691 | 0.2− | 0.1+ | 2006 09 20 | 703 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 0.5− | 0.0 |
| 2005 04 10 | 691 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.3− | 0.8+ | | | | |

### 2006 QY$_{95}$ = 2001 FQ$_{9}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.61576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23816342 | $\omega$ | 264.43515 | | +0.38945368 | | +0.91750029 |
| $a$ | 2.5776227 | $\Omega$ | 28.90647 | | −0.76503506 | | +0.37105513 |
| $e$ | 0.1977895 | $i$ | 9.61536 | | −0.51288125 | | +0.14321771 |
| $P$ | 4.14 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 05 | 691 | 0.1+ | 0.0 | 2002 09 05 | 599 | 0.1− | 0.3+ | 2006 08 20 | 644 | 0.2− | 0.3− |
| 1994 11 05 | 691 | 0.2− | 0.1+ | 2002 09 06 | 599 | 0.1+ | 0.2+ | 2006 08 20 | 644 | 0.2− | 0.2+ |
| 2001 03 18 | 691 | 0.1− | 0.5− | 2002 09 06 | 599 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.2− | 1.2− |
| 2001 03 18 | 691 | 0.2− | 0.1+ | 2002 09 06 | 599 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.2+ | 1.7+ |
| 2001 03 18 | 691 | 0.3+ | 0.2+ | 2006 08 16 | 644 | 0.5− | 0.2− | 2006 09 26 | 703 | 1.2+ | 0.4− |
| 2001 03 22 | 691 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.4− | 0.1− | 2006 09 26 | 703 | 1.0+ | 0.0 |
| 2001 03 22 | 691 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.5− | 0.1+ | | | | |
| 2001 03 22 | 691 | 0.0 | 0.1+ | 2006 08 20 | 644 | 0.1− | 0.2− | | | | |

### 2006 QA$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.77143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17874836 | $\omega$ | 38.55770 | | +0.59753888 | | −0.79843896 |
| $a$ | 3.1211023 | $\Omega$ | 15.21825 | | +0.64822188 | | +0.42685730 |
| $e$ | 0.1825086 | $i$ | 16.32259 | | +0.47197000 | | +0.42460344 |
| $P$ | 5.51 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 333 | 0.1− | 1.1− | 2003 02 21 | 644 | 0.2− | 0.1+ | 2006 08 17 | 644 | 0.2+ | 0.0 |
| 2001 10 23 | 333 | 0.2+ | 0.1− | 2003 02 21 | 644 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.1+ |
| 2001 10 23 | 333 | 0.1− | 0.1− | 2003 03 08 | 644 | 0.2− | 0.2+ | 2006 08 18 | 644 | 0.1− | 0.3+ |
| 2001 12 07 | 644 | 0.4− | 0.6+ | 2003 03 08 | 644 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.5+ |
| 2001 12 07 | 644 | 0.3+ | 0.4+ | 2003 03 08 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.9+ |
| 2001 12 07 | 644 | 0.1+ | 0.5+ | 2006 08 16 | 644 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.8− |
| 2003 02 01 | 644 | 0.1+ | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.9− |
| 2003 02 01 | 644 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.9− | 1.0− |
| 2003 02 01 | 644 | 0.4+ | 0.5− | 2006 08 17 | 644 | 0.3+ | 0.4+ | | | | |
| 2003 02 21 | 644 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.1− | 0.1+ | | | | |

### 2006 QC$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.96290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27495247 | $\omega$ | 295.72891 | | +0.98995194 | | −0.06528494 |
| $a$ | 2.3422377 | $\Omega$ | 68.22645 | | +0.11449680 | | +0.89061935 |
| $e$ | 0.1814577 | $i$ | 7.76252 | | −0.08297973 | | +0.45003895 |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | (3.8+ | 5.0−) | 2006 08 16 | 644 | 0.3− | 0.4− | 2006 09 17 | 699 | 0.6− | 0.8− |
| 1992 11 27 | 691 | 1.3− | 1.0+ | 2006 08 16 | 644 | 0.7+ | 0.2− | 2006 09 17 | 699 | 0.5+ | 0.1− |
| 1992 11 27 | 691 | 1.5− | 0.9+ | 2006 08 20 | 644 | 0.4− | 0.2− | 2006 09 17 | 699 | 0.5− | 0.1+ |
| 1999 10 08 | 704 | 0.4+ | 1.3+ | 2006 08 20 | 644 | 0.2− | 0.1− | 2006 09 17 | 699 | 0.8+ | 0.1+ |
| 1999 10 08 | 704 | 1.2− | 1.5+ | 2006 08 20 | 644 | 0.3− | 0.1− | 2006 09 26 | 703 | 1.2− | 0.4− |
| 1999 10 08 | 704 | 0.6− | 1.7+ | 2006 08 28 | E12 | 0.2+ | 0.6− | 2006 09 26 | 703 | 0.4− | 0.5− |
| 1999 10 08 | 704 | (0.4− | 2.1+) | 2006 08 28 | E12 | 0.1− | 0.2− | 2006 09 26 | 703 | 1.5+ | 0.5− |
| 1999 10 08 | 704 | 0.5− | 1.1+ | 2006 08 28 | E12 | 0.4− | 0.3− | 2006 09 26 | 703 | 0.6− | 1.2+ |
| 2003 12 18 | 691 | 0.0 | 0.9+ | 2006 08 28 | E12 | 0.1− | 0.5+ | 2006 10 11 | E12 | 0.7+ | 0.6+ |
| 2003 12 18 | 691 | 0.1+ | 0.9+ | 2006 09 14 | 644 | 0.0 | 0.5+ | 2006 10 11 | E12 | 0.0 | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.0 | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.4+ | 2006 10 11 | E12 | 0.6− | 0.5+ |
| 2006 08 16 | 644 | 0.2− | 0.3− | 2006 09 14 | 644 | 0.5+ | 0.5+ | 2006 10 11 | E12 | 0.2+ | 0.8+ |

**2006 QD$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.42521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21952634 | $\omega$ | 264.88734 | | +0.93303716 | +0.31647387 | |
| $a$ | 2.7215206 | $\Omega$ | 76.58117 | | −0.21858743 | +0.87644220 | |
| $e$ | 0.1352727 | $i$ | 10.13304 | | −0.28576423 | +0.36289580 | |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.6− | 0.2− | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.3+ | 0.5+ |
| 2002 11 07 | 704 | 0.0 | 0.4+ | 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.6+ |
| 2002 11 07 | 704 | 0.2+ | 0.4− | 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.1+ | 0.6+ |
| 2002 11 07 | 704 | 0.2− | 0.4+ | 2005 04 18 | 691 | 0.2+ | 0.0 | 2006 08 28 | E12 | 0.5− | 0.3+ |
| 2002 12 10 | 644 | 0.3− | 1.1+ | 2006 08 16 | 644 | 0.0 | 0.2− | 2006 08 28 | E12 | 0.8− | 0.9+ |
| 2002 12 10 | 644 | 0.2− | 0.3+ | 2006 08 16 | 644 | 0.3− | 0.5+ | 2006 08 28 | E12 | 0.7+ | 0.4+ |
| 2002 12 10 | 644 | 0.2− | 1.0+ | 2006 08 16 | 644 | 0.0 | 0.2+ | 2006 08 28 | E12 | 0.5− | 0.1− |
| 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.8+ |
| 2004 03 17 | 645 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.3+ |
| 2004 03 18 | 645 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.3− | 0.2+ | 2006 09 26 | 703 | 1.4− | 0.7− |
| 2004 03 18 | 645 | 0.1+ | 0.1+ | 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.4− |
| 2005 04 10 | 691 | 0.1− | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.2+ | | | | |
| 2005 04 10 | 691 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.2+ | 0.7+ | | | | |

**2006 QE$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.80729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24245559 | $\omega$ | 83.94230 | | −0.34649878 | −0.93157773 | |
| $a$ | 2.5471113 | $\Omega$ | 27.15063 | | +0.73671071 | −0.34284521 | |
| $e$ | 0.0382748 | $i$ | 13.94959 | | +0.58068574 | −0.12091361 | |
| $P$ | 4.07 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 27 | 704 | 0.2+ | 0.4+ | 2005 02 12 | 809 | 0.1− | 0.0 | 2006 08 17 | 644 | 0.2− | 0.4+ |
| 2000 01 27 | 704 | 0.5+ | 0.5− | 2005 02 12 | 809 | 0.1− | 0.2+ | 2006 08 28 | E12 | 0.5− | 0.2+ |
| 2000 01 27 | 704 | 0.5+ | 0.1+ | 2005 02 12 | 809 | 0.2− | 0.1+ | 2006 08 28 | E12 | 0.2+ | 0.2+ |
| 2000 01 27 | 704 | 0.5− | 0.5+ | 2005 05 19 | 644 | 0.3+ | 0.4+ | 2006 08 28 | E12 | 0.0 | 0.6− |
| 2000 01 27 | 704 | 0.1− | 2.1+ | 2005 05 19 | 644 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 0.7− | 0.3− |
| 2003 12 03 | 704 | 0.4+ | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.2+ | 0.7+ |
| 2003 12 03 | 704 | 0.9− | 0.0 | 2005 06 27 | 644 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.4− | 1.1+ |
| 2003 12 03 | 704 | (1.3+ | 1.7+) | 2005 06 27 | 644 | 0.5+ | 0.4+ | 2006 09 20 | 703 | 0.1+ | 0.8− |
| 2003 12 03 | 704 | 0.9− | 1.2+ | 2005 06 27 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.0 |
| 2003 12 30 | 704 | 0.2+ | 1.0+ | 2006 08 16 | 644 | 0.1− | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 2003 12 30 | 704 | 0.2+ | 0.8− | 2006 08 16 | 644 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2003 12 30 | 704 | 0.3+ | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.5+ | 0.4− |
| 2003 12 30 | 704 | 0.4+ | 0.5− | 2006 08 17 | 644 | 0.3− | 0.6+ | | | | |
| 2003 12 30 | 704 | 0.5+ | 0.0 | 2006 08 17 | 644 | 0.1+ | 0.1+ | | | | |

**2006 QL$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.52356 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21874355 | $\omega$ | 249.10070 | | +0.16588696 | +0.97741374 | |
| $a$ | 2.7280095 | $\Omega$ | 31.35802 | | −0.78519112 | +0.21124249 | |
| $e$ | 0.2600715 | $i$ | 14.57290 | | −0.59662083 | −0.00624439 | |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | 703 | 0.9+ | 0.2+ | 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.5+ | 1.1− |
| 2005 03 16 | 703 | 0.4+ | 0.6− | 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 21 | 699 | 1.0− | 0.8− |
| 2005 03 16 | 703 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.1+ |
| 2005 03 16 | 703 | 0.4− | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.7+ | 0.5+ |
| 2005 04 02 | 703 | 0.3+ | 0.5+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 1.1+ | 0.3+ |
| 2005 04 02 | 703 | 0.6− | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.0 | 1.2+ |
| 2005 04 02 | 703 | 0.5− | 0.3− | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2005 04 02 | 703 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.7− | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 703 | (1.1− | 1.8+) | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.5− | 0.4+ | 2006 10 28 | 703 | (0.5+ | 1.7−) |
| 2006 08 16 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 703 | 1.6− | 0.7− | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.6− | 0.9− | 2006 10 28 | 703 | 0.5+ | 0.5+ |
| 2006 08 17 | 644 | 0.0 | 0.3− | 2006 09 21 | 699 | 0.1− | 0.1+ | 2006 10 28 | 703 | (2.6− | 0.5+) |

**2006 QN$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.78545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27610245 | $\omega$ | 213.46147 | | +0.99874073 | −0.02705770 | |
| $a$ | 2.3357295 | $\Omega$ | 148.00834 | | +0.03965682 | +0.94157537 | |
| $e$ | 0.2533242 | $i$ | 4.57377 | | −0.03072933 | +0.33571374 | |
| $P$ | 3.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 0.4− | 0.9− | 2006 08 27 | 691 | 0.7+ | 0.3+ | 2006 09 28 | 704 | 1.0+ | 0.3+ |
| 1999 10 19 | 704 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.5+ |
| 1999 10 19 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.3+ | 0.1− | 2006 09 28 | 704 | 0.1− | 0.0 |
| 1999 10 19 | 704 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.2− | 1.0+ | 2006 09 30 | 703 | 1.0− | 0.9− |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.9− |
| 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.5− |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.5− | 1.0+ | 2006 09 30 | 703 | 0.6− | 0.3− |
| 2006 07 21 | 703 | 0.7+ | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.4− |
| 2006 07 21 | 703 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2006 07 21 | 703 | 0.8− | 0.3+ | 2006 09 25 | 699 | 0.4+ | 0.1− | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2006 07 21 | 703 | 0.9− | 1.4+ | 2006 09 25 | 699 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.6+ | 0.2− |
| 2006 08 16 | 644 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.4− | 2006 10 03 | G96 | 0.4+ | 0.4− |
| 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 1.4− | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.2− | 0.8+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.5+ | 0.2− |
| 2006 08 17 | 644 | 0.2− | 0.1+ | 2006 09 26 | 704 | (0.1+ | 1.8−) | 2006 10 09 | 644 | 0.1− | 0.3− |
| 2006 08 17 | 644 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.6− | 0.5+ | 2006 10 09 | 644 | 0.4− | 0.4− |
| 2006 08 27 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2006 08 27 | 691 | 0.1+ | 0.3− | 2006 09 28 | 704 | 0.7− | 0.1+ | | | | |

**2006 QO$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.85354 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26064667 | $\omega$ | 223.13501 | | +0.88585740 | +0.46240356 | |
| $a$ | 2.4271760 | $\Omega$ | 109.28670 | | −0.41399258 | +0.82472670 | |
| $e$ | 0.2001477 | $i$ | 2.30381 | | −0.20944405 | +0.32558996 | |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 644 | 0.0 | 0.3− | 2006 09 16 | 704 | (2.0− | 0.2+) | 2006 09 22 | 704 | 0.2+ | 1.1+ |
| 2002 07 09 | 644 | 0.1+ | 0.1− | 2006 09 16 | 704 | 0.9− | 0.8− | 2006 09 25 | 699 | 0.4− | 0.5− |
| 2002 07 09 | 644 | 0.1+ | 0.3− | 2006 09 16 | 704 | 0.0 | 0.7− | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2005 04 10 | G96 | 0.2+ | 1.3+ | 2006 09 16 | 699 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.5− |
| 2005 04 10 | G96 | 0.2+ | 0.4+ | 2006 09 16 | 704 | 0.3− | 0.1− | 2006 09 25 | 699 | 0.9− | 0.3+ |
| 2005 04 10 | G96 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2005 04 10 | G96 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.1+ | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2006 08 16 | 644 | 0.3− | 0.3− | 2006 09 16 | 699 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.7+ | 2006 11 17 | G96 | 0.6+ | 0.0 |
| 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.9+ | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2006 08 22 | 644 | 0.0 | 0.3− | 2006 09 19 | 699 | (1.8+ | 0.5+) | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.8+ | 0.8+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 09 22 | 704 | 0.4+ | 0.4+ | | | | |

**2006 QU$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.91386 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27507246 | $\omega$ | 186.05667 | | +0.46846335 | +0.87211610 | |
| $a$ | 2.3415565 | $\Omega$ | 111.95199 | | −0.80405326 | +0.48712114 | |
| $e$ | 0.1516349 | $i$ | 8.76064 | | −0.36611533 | +0.04611413 | |
| $P$ | 3.58 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.4+ | 1.2+ | 2003 12 14 | 644 | 0.0 | 0.3+ | 2006 09 12 | 704 | 0.4+ | 0.5+ |
| 1998 04 24 | 704 | (0.1− | 2.6+) | 2003 12 14 | 644 | 0.2+ | 0.6+ | 2006 09 12 | 704 | 0.4+ | 0.3+ |
| 1998 04 24 | 704 | (1.0+ | 2.2+) | 2003 12 14 | 644 | 0.5+ | 0.3+ | 2006 09 12 | 704 | 0.4+ | 0.0 |
| 1998 04 24 | 704 | 1.4+ | 1.2+ | 2005 03 16 | 703 | 1.0− | 0.2− | 2006 09 12 | 704 | 0.2+ | 0.9+ |
| 1998 04 24 | 704 | (5.9− | 1.0+) | 2005 03 16 | 703 | 0.4− | 0.6+ | 2006 09 12 | 704 | 1.0− | 0.2+ |
| 1999 10 08 | 704 | 0.7− | 0.3+ | 2005 03 16 | 703 | 0.4− | 0.9+ | 2006 09 12 | 704 | 0.7+ | 0.4+ |
| 1999 10 08 | 704 | 0.0 | 0.1+ | 2005 03 16 | 703 | (1.9− | 0.1+) | 2006 09 12 | 704 | 0.2− | 1.4+ |
| 1999 10 08 | 704 | 0.3− | 1.0+ | 2005 03 16 | 704 | (1.2+ | 1.8−) | 2006 09 12 | 704 | (1.7− | 0.0 ) |
| 1999 10 08 | 704 | 0.3− | 0.0 | 2005 03 16 | 704 | 0.9+ | 1.2− | 2006 09 18 | 703 | 0.0 | 0.3+ |
| 1999 10 08 | 704 | 0.5− | 0.2+ | 2005 03 16 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 0.7− | 0.4− |
| 2001 02 17 | 704 | 0.8− | 0.8+ | 2005 03 16 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.2− | 0.5+ |
| 2001 02 17 | 704 | 0.3+ | 0.7+ | 2005 04 02 | 699 | 0.6− | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.0 |
| 2001 02 17 | 704 | 0.7− | 0.3+ | 2005 04 02 | 699 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.5+ |
| 2002 07 05 | 704 | 0.2+ | 1.0+ | 2005 04 02 | 699 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.3− |
| 2002 07 05 | 704 | (0.4− | 1.9+) | 2005 04 02 | 699 | (1.7− | 0.2+) | 2006 09 18 | 703 | 0.0 | 0.0 |
| 2002 07 05 | 704 | (0.6− | 1.9+) | 2005 04 12 | 704 | 0.7+ | 0.7+ | 2006 09 20 | 703 | 0.3+ | 0.0 |
| 2002 07 05 | 704 | (0.2− | 1.6+) | 2005 04 12 | 704 | (1.6+ | 3.0+) | 2006 09 20 | 703 | 0.6+ | 0.6− |
| 2002 07 14 | 704 | 0.8− | 0.9+ | 2005 04 12 | 704 | 0.0 | 0.7+ | 2006 09 20 | 703 | 0.1− | 0.5− |
| 2002 07 14 | 704 | 0.3+ | 0.1− | 2005 04 12 | 704 | (0.9− | 1.8+) | 2006 09 20 | 703 | 0.3+ | 1.0− |
| 2002 07 14 | 704 | 0.4+ | 0.4− | 2006 07 31 | E12 | 0.4− | 0.4− | 2006 09 20 | 608 | (1.4− | 1.9−) |
| 2002 07 14 | 704 | 0.0 | 0.2− | 2006 07 31 | E12 | 1.0− | 1.2+ | 2006 09 20 | 608 | 0.2− | 0.8− |
| 2002 07 14 | 704 | 0.4+ | 0.9+ | 2006 07 31 | E12 | 0.0 | 0.9+ | 2006 09 20 | 608 | 0.9− | 0.9− |
| 2003 11 19 | 599 | 0.5+ | 0.4+ | 2006 07 31 | E12 | 0.4+ | 0.3+ | 2006 09 21 | 699 | (1.7+ | 0.5+) |
| 2003 11 20 | 599 | 0.5+ | 0.7+ | 2006 08 16 | 644 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.5+ |
| 2003 11 20 | 599 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 21 | 699 | 0.3+ | 1.0+ |
| 2003 12 01 | 704 | 0.1− | 0.6+ | 2006 08 16 | 644 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2003 12 01 | 704 | 0.7+ | 0.3+ | 2006 08 21 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.4+ |
| 2003 12 01 | 704 | 0.3− | 0.2− | 2006 08 21 | 644 | 0.1− | 0.4− | 2006 09 26 | 703 | 1.0− | 0.7− |
| 2003 12 01 | 704 | (2.3+ | 0.3+) | 2006 08 21 | 644 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.1+ |

**2006 QV$_{96}$ = 2001 SQ$_{342}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.18334 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19072761 | $\omega$ | 250.96408 | | +0.94163928 | −0.28030574 | |
| $a$ | 2.9890075 | $\Omega$ | 124.89700 | | +0.32322630 | +0.90755628 | |
| $e$ | 0.1026709 | $i$ | 13.13605 | | −0.09402243 | +0.31268241 | |
| $P$ | 5.17 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 644 | 0.3− | 0.2+ | 2001 09 25 | 704 | 1.4− | 0.2+ | 2006 08 21 | 644 | 0.8+ | 0.3− |
| 2001 09 21 | 644 | 0.5+ | 0.1− | 2003 01 08 | 704 | 0.4+ | 1.7+ | 2006 08 21 | 644 | 0.6+ | 0.4− |
| 2001 09 21 | 644 | 0.2− | 0.2+ | 2003 01 08 | 704 | 0.5− | 0.9+ | 2006 09 14 | 644 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.8− | 1.2+ | 2003 01 08 | 704 | 0.2− | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.1− |
| 2001 09 25 | 704 | 0.2− | 0.4+ | 2003 01 08 | 704 | 0.7+ | 0.3+ | 2006 09 14 | 644 | 0.2− | 0.3+ |
| 2001 09 25 | 704 | 0.0 | 0.9+ | 2003 01 25 | 645 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.8− | 0.0 |
| 2001 09 25 | 704 | 0.6+ | 1.0− | 2003 01 25 | 645 | 0.0 | 0.2− | 2006 09 20 | 703 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.6− | 2006 09 20 | 703 | 0.0 | 0.4− |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2006 08 16 | 644 | 0.6+ | 0.3− | 2006 09 20 | 703 | 0.2− | 0.3− |
| 2001 09 25 | 704 | 0.3− | 0.5− | 2006 08 16 | 644 | 0.2− | 0.5− | | | | |
| 2001 09 25 | 704 | 0.9+ | 0.7+ | 2006 08 21 | 644 | 0.2+ | 0.4− | | | | |

**2006 QZ$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.11880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27152954 | $\omega$ | 145.69558 | | +0.68436045 | +0.72869701 | |
| $a$ | 2.3618809 | $\Omega$ | 167.42331 | | −0.69250304 | +0.66052874 | |
| $e$ | 0.1179140 | $i$ | 6.73150 | | −0.22823305 | +0.18083818 | |
| $P$ | 3.63 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 13 | 691 | 0.5+ | 0.5+ | 2006 09 12 | 703 | 0.9+ | 1.4+ | 2006 09 26 | 691 | 0.3− | 0.3+ |
| 1994 03 13 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.4+ | 1.2+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 1994 03 13 | 691 | 0.3− | 0.3+ | 2006 09 12 | 703 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.4− | 0.2+ |
| 2005 04 04 | 703 | 1.4− | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2005 04 04 | 703 | (1.9− | 3.2+) | 2006 09 17 | 704 | 0.6− | 0.5− | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2005 04 04 | 703 | 1.4+ | 0.1− | 2006 09 17 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.6− | 0.2+ |
| 2005 04 04 | 703 | 0.1− | 0.2− | 2006 09 17 | 704 | 0.7− | 0.9− | 2006 09 30 | G96 | 0.5− | 0.4− |
| 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.6+ | 0.2+ |
| 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.5− | 1.3+ |
| 2006 08 17 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.8+ | 0.2+ |
| 2006 08 23 | 644 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.4− |
| 2006 08 23 | 644 | 0.2+ | 0.3+ | 2006 09 20 | 704 | (0.3+ | 1.8+) | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.6− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2006 08 28 | 703 | 1.0− | 0.8− | 2006 09 20 | 704 | 1.3+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2006 08 28 | 703 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 11 25 | G96 | 0.6+ | 0.1+ |
| 2006 08 28 | 703 | 0.9+ | 0.1− | 2006 09 25 | 699 | (2.2− | 1.1+) | 2006 11 25 | G96 | 0.4− | 0.1− |
| 2006 08 28 | 703 | 0.8+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.1+ |
| 2006 09 12 | 703 | 0.7+ | 0.7+ | 2006 09 25 | 699 | 0.7− | 0.0 | 2006 11 25 | G96 | 0.5+ | 0.2− |

**2006 QA$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.84242 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20629669 | $\omega$ | 19.99940 | | +0.92221871 | −0.38666603 | |
| $a$ | 2.8366639 | $\Omega$ | 2.74904 | | +0.35059504 | +0.83462113 | |
| $e$ | 0.0761624 | $i$ | 1.70336 | | +0.16308208 | +0.39229703 | |
| $P$ | 4.78 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.0 | 0.1+ | 2004 03 14 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 699 | (1.5− | 2.4+) |
| 1992 10 25 | 691 | 0.0 | 0.3+ | 2004 04 12 | 291 | 0.6+ | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.4− |
| 1992 10 25 | 691 | 0.0 | 0.2+ | 2004 04 12 | 291 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.3+ | 0.2− |
| 1999 03 14 | 691 | 0.4− | 0.0 | 2004 04 12 | 291 | 0.3+ | 0.7+ | 2006 09 19 | 699 | 0.4− | 0.6+ |
| 1999 03 14 | 691 | 0.2− | 0.4− | 2006 08 18 | 691 | 0.6− | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.1+ |
| 1999 03 14 | 691 | 0.1− | 0.3− | 2006 08 18 | 691 | 0.3− | 0.7+ | 2006 09 25 | G96 | 1.0+ | 0.1+ |
| 2001 08 22 | 691 | 1.1+ | 0.6− | 2006 08 18 | 691 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.2+ |
| 2001 08 22 | 691 | 0.5− | 0.3+ | 2006 08 23 | 644 | 0.2− | 0.6+ | 2006 09 25 | G96 | 0.4− | 0.1+ |
| 2001 08 22 | 691 | 0.6− | 0.1+ | 2006 08 23 | 644 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.5+ | 0.2+ |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.9+ | 2006 10 20 | G96 | 0.3+ | 0.4+ |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.7+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | (1.2− | 1.7+) | 2006 10 20 | G96 | 0.0 | 0.3+ |
| 2004 01 27 | 691 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.3+ |
| 2004 01 27 | 691 | 0.6+ | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.5+ |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.1− |

**2006 QH$_{97}$ = 2005 ET$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.40124 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26155429 | $\omega$ | 97.41409 | | +0.03366733 | +0.99942339 | |
| $a$ | 2.4215577 | $\Omega$ | 174.50950 | | −0.93416286 | +0.03303480 | |
| $e$ | 0.1736473 | $i$ | 2.63844 | | −0.35525520 | +0.00784798 | |
| $P$ | 3.77 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.0 | 0.1+ | 2005 03 08 | G96 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.2− | 0.1+ |
| 2002 07 22 | 644 | 0.2− | 0.1− | 2005 04 02 | G96 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.4− | 0.1+ |
| 2002 07 22 | 644 | (1.8+ | 1.8+) | 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 12 | 703 | 0.1− | 0.5− |
| 2002 08 07 | 644 | 0.1+ | 0.0 | 2005 04 02 | G96 | 0.2− | 0.1− | 2006 09 12 | 703 | (1.0− | 2.6+) |
| 2002 08 07 | 644 | 0.0 | 0.4− | 2005 04 02 | G96 | 0.4− | 0.6+ | 2006 09 12 | 703 | 0.4− | 0.1+ |
| 2002 08 07 | 644 | 0.3+ | 0.1− | 2005 05 10 | G96 | 0.2+ | 0.0 | 2006 09 12 | 703 | 1.2− | 0.4− |
| 2005 03 04 | 691 | 0.2+ | 0.5+ | 2005 05 10 | G96 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 03 04 | 691 | 0.3+ | 0.4+ | 2005 05 10 | G96 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2005 03 04 | 691 | 0.3+ | 0.4+ | 2005 05 10 | G96 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 03 08 | G96 | 0.4+ | 0.3− | 2006 08 19 | 691 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2006 08 19 | 691 | 0.4+ | 0.7+ | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2005 03 08 | G96 | 0.4− | 0.1− | 2006 08 19 | 691 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2005 03 08 | G96 | 0.2− | 0.2+ | 2006 08 23 | 644 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.6− | 0.3+ |
| 2005 03 08 | G96 | 0.0 | 0.1− | 2006 08 23 | 644 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.5+ | 0.4− |
| 2005 03 08 | G96 | 0.1+ | 0.2+ | 2006 08 23 | 644 | 0.1− | 0.1+ | | | | |
| 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.2+ | | | | |

**2006 QK$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.59419 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27682489 | $\omega$ | 33.41464 | | +0.50310203 | | +0.86344080 |
| $a$ | 2.3316640 | $\Omega$ | 266.81565 | | −0.80077923 | | +0.44970392 |
| $e$ | 0.1885483 | $i$ | 2.11541 | | −0.32502456 | | +0.22855277 |
| $P$ | 3.56 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 291 | 0.1− | 0.2+ | 2006 08 23 | 644 | 0.3− | 0.2− | 2006 09 16 | 699 | 0.1+ | 1.4− |
| 2002 06 18 | 291 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.5+ |
| 2002 06 18 | 291 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.6+ | 0.3+ | 2006 09 19 | 703 | 1.1− | 0.8+ |
| 2003 12 19 | 691 | 0.6+ | 0.2− | 2006 08 27 | 699 | 0.2+ | 0.6− | 2006 09 19 | 699 | (2.6+ | 1.3+) |
| 2003 12 19 | 691 | 0.8− | 0.7+ | 2006 08 27 | 699 | 1.2− | 0.4+ | 2006 09 19 | 703 | 0.9+ | 0.5+ |
| 2003 12 19 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 09 19 | 703 | (1.8− | 0.3+) |
| 2005 03 17 | G96 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.3− | 1.5− | 2006 09 19 | 699 | 0.5+ | 0.2+ |
| 2005 03 17 | G96 | 0.6− | 0.5− | 2006 08 28 | 703 | 0.6+ | 0.2− | 2006 09 19 | 703 | (0.8+ | 1.9+) |
| 2005 03 17 | G96 | 0.4+ | 0.1− | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.0 | 0.3+ |
| 2005 03 17 | G96 | 0.3+ | 0.5+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.2− |
| 2006 08 20 | 691 | 0.4+ | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.6− |
| 2006 08 20 | 691 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2006 08 20 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 1.5− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2006 08 23 | 644 | 0.3+ | 0.4+ | 2006 09 16 | 699 | 0.4− | 0.7− | | | | |
| 2006 08 23 | 644 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.1− | 1.2+ | | | | |

**2006 QZ$_{97}$ = 1997 SZ$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.28196 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21243364 | $\omega$ | 196.95850 | | +0.71148993 | | −0.69603715 |
| $a$ | 2.7817655 | $\Omega$ | 207.92381 | | +0.66625909 | | +0.71185633 |
| $e$ | 0.2809024 | $i$ | 11.89327 | | +0.22334032 | | +0.09377021 |
| $P$ | 4.64 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.5− | 0.2− | 2006 08 22 | 644 | 0.0 | 0.3+ | 2006 10 22 | 703 | 1.2− | 0.0 |
| 1997 09 27 | 691 | 0.5− | 0.2− | 2006 08 23 | 644 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.6+ | 1.0− |
| 1997 09 27 | 691 | 0.6− | 0.1− | 2006 08 23 | 644 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.1+ |
| 1997 09 29 | 691 | 0.1+ | 0.2− | 2006 08 23 | 644 | 0.1− | 0.5+ | 2006 10 22 | 703 | 1.3+ | 0.7− |
| 1997 09 29 | 691 | 0.2+ | 0.1− | 2006 08 27 | 699 | 0.0 | 0.1+ | 2006 10 29 | 703 | 0.6− | 1.1− |
| 1997 09 29 | 691 | 1.0+ | 0.4+ | 2006 08 27 | 699 | 0.1− | 0.8+ | 2006 10 29 | 703 | 0.9− | 1.1− |
| 1997 10 30 | 704 | 0.6+ | 0.9+ | 2006 08 27 | 699 | 0.6+ | 0.3+ | 2006 10 29 | 703 | 0.6+ | 0.5− |
| 1997 10 30 | 704 | 0.4+ | 1.1+ | 2006 08 27 | 699 | 0.4+ | 0.6+ | 2006 10 29 | 703 | 1.2− | 0.4− |
| 1997 10 30 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 1.0− | 0.1+ | 2006 11 10 | 704 | 1.0+ | 0.2− |
| 1997 10 30 | 704 | 0.3− | 0.7+ | 2006 09 18 | 703 | 0.1− | 0.0 | 2006 11 10 | 704 | 0.4+ | 0.5+ |
| 1997 10 30 | 704 | 1.2− | 1.6+ | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 11 10 | 704 | 0.7+ | 1.1+ |
| 2005 06 11 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.2+ | 0.7− | 2006 11 22 | 703 | 0.9− | 0.1+ |
| 2005 06 11 | 691 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.4+ | 1.3− |
| 2005 06 11 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.6− | 2006 11 22 | 703 | 0.6− | 0.2− |
| 2006 08 22 | 644 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.7+ | 0.4− |
| 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.2− | | | | |

**2006 QD$_{98}$ = 2000 CQ$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.41866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22769760 | $\omega$ | 320.20316 | | −0.22459209 | | +0.94933915 |
| $a$ | 2.6560143 | $\Omega$ | 295.79055 | | −0.82032033 | | −0.30594376 |
| $e$ | 0.1787583 | $i$ | 14.12984 | | −0.52595907 | | +0.07178852 |
| $P$ | 4.33 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.0 | 0.2+ | 2005 03 12 | 704 | 0.4+ | 0.9+ | 2006 08 30 | 699 | 0.6+ | 0.1+ |
| 2000 02 02 | 691 | 0.2+ | 0.0 | 2005 03 12 | 704 | 0.0 | 0.8+ | 2006 09 11 | 703 | 0.2+ | 0.0 |
| 2000 02 02 | 691 | 0.0 | 0.1+ | 2006 07 24 | 703 | 0.2− | 0.3− | 2006 09 11 | 703 | 0.2+ | 0.3+ |
| 2000 02 07 | 691 | 0.2+ | 0.0 | 2006 07 24 | 703 | 0.8− | 0.5− | 2006 09 11 | 703 | 0.3− | 0.4− |
| 2000 02 07 | 691 | 0.2− | 0.1+ | 2006 07 24 | 703 | 0.9− | 0.8− | 2006 09 11 | 703 | 0.3− | 0.3+ |
| 2000 02 07 | 691 | 0.4− | 0.5+ | 2006 07 24 | 703 | 1.0− | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.3+ |
| 2001 06 23 | 644 | 0.4+ | 0.5+ | 2006 08 22 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.8+ |
| 2001 06 23 | 644 | 0.3+ | 0.7+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.2+ |
| 2001 06 23 | 644 | 0.1+ | 0.5+ | 2006 08 22 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.1− | 0.0 |
| 2002 09 03 | 644 | 0.3+ | 0.7+ | 2006 08 23 | 644 | 0.1− | 0.6+ | 2006 09 26 | 703 | (1.8+ | 0.1+) |
| 2002 09 03 | 644 | 0.2+ | 0.7+ | 2006 08 23 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.2− |
| 2002 09 03 | 644 | 0.0 | 0.7+ | 2006 08 23 | 644 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2005 03 12 | 704 | 0.5+ | 0.6− | 2006 08 30 | 699 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.8− | 0.8− |
| 2005 03 12 | 704 | 0.2+ | 0.6+ | 2006 08 30 | 699 | 0.9+ | 0.5+ | | | | |
| 2005 03 12 | 704 | 0.8+ | 0.0 | 2006 08 30 | 699 | 1.0+ | 0.5+ | | | | |

**2006 QG$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.65151 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22490840 | $\omega$ | 141.96744 | | +0.99634765 | | +0.00654671 |
| $a$ | 2.6779283 | $\Omega$ | 217.92486 | | −0.03137362 | | +0.95538512 |
| $e$ | 0.2653819 | $i$ | 7.96221 | | +0.07941704 | | +0.29529039 |
| $P$ | 4.38 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 1.0− | 0.3+ | 2006 08 27 | 699 | 0.7+ | 1.3− | 2006 09 13 | 621 | 0.0 | 0.3− |
| 2002 11 07 | 704 | 0.1− | 1.0− | 2006 08 27 | 699 | 0.1− | 0.1+ | 2006 09 13 | 621 | 0.1+ | 0.3− |
| 2002 11 07 | 704 | 0.5− | 0.0 | 2006 08 29 | 703 | 0.7− | 0.0 | 2006 09 22 | 691 | 0.3+ | 0.0 |
| 2002 11 23 | 644 | 0.5+ | 0.4+ | 2006 08 29 | 703 | 0.7− | 0.3− | 2006 09 22 | 691 | 0.1+ | 0.0 |
| 2002 11 23 | 644 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 22 | 691 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 1.0+ | 0.6− | 2006 08 29 | 703 | 0.9− | 0.6− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.9− | 0.9+ | 2006 09 27 | 691 | 0.6− | 0.6− |
| 2006 08 22 | 644 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.5− | 0.6+ | 2006 09 27 | 691 | 0.1− | 1.6+ |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.5+ | 0.5− | 2006 09 30 | 691 | 0.3+ | 0.2− |
| 2006 08 27 | 699 | 0.3− | 0.2− | 2006 09 11 | 703 | 0.8+ | 0.5− | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2006 08 27 | 699 | 1.1+ | 0.6+ | 2006 09 13 | 621 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.0 |

**2006 QH$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.88016 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21018113 | $\omega$ | 167.55254 | | +0.95370042 | | +0.29993819 |
| $a$ | 2.8016050 | $\Omega$ | 174.83066 | | −0.29272642 | | +0.94264106 |
| $e$ | 0.1992574 | $i$ | 14.26056 | | −0.06904165 | | +0.14650907 |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.1+ | 0.9+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 09 11 | 703 | 1.0+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2004 02 18 | 691 | 0.0 | 0.5+ | 2006 09 11 | 703 | 0.8+ | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.4− |
| 2004 02 18 | 691 | 0.2+ | 0.4+ | 2006 09 11 | 703 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.8− |
| 2004 02 18 | 691 | 0.1− | 0.4+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.5− |
| 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 1.0+ | 0.1− |
| 2006 08 22 | 644 | 0.2− | 0.1− | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.3− | 0.6− |
| 2006 08 27 | 699 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.6− | 0.3− |
| 2006 08 27 | 699 | 0.8− | 1.3+ | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2006 08 27 | 699 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2006 08 27 | 699 | 0.2− | 0.6− | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2006 08 29 | 703 | 0.5− | 0.2− | 2006 09 18 | 703 | 1.0+ | 0.8− | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2006 08 29 | 703 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.6+ | 0.8+ | 2006 10 27 | G96 | 0.5− | 0.0 |
| 2006 08 29 | 703 | 0.2− | 0.2− | 2006 09 18 | 704 | 0.3+ | 1.2+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2006 08 29 | 703 | 0.0 | 0.4− | 2006 09 18 | 704 | 1.3+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 08 30 | 704 | 0.2− | 0.5+ | 2006 09 18 | 704 | 1.5+ | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2006 08 30 | 704 | 0.0 | 0.1− | 2006 09 18 | 704 | 1.3+ | 0.4− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2006 08 30 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 704 | 0.5+ | 1.3+ | 2006 11 23 | G96 | 0.8− | 0.5− |
| 2006 08 30 | 704 | 0.6− | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.9+ | 2006 11 23 | G96 | 0.7− | 0.6− |
| 2006 09 01 | 704 | 0.1− | 1.1+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.2− | 0.5− |
| 2006 09 01 | 704 | 0.5+ | 0.4− | 2006 09 19 | 699 | 0.5− | 1.0+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 09 01 | 704 | 0.2− | 0.5+ | 2006 09 19 | 699 | 0.6+ | 0.2− | | | | |
| 2006 09 01 | 704 | (1.6+ | 0.1+) | 2006 09 28 | G96 | 0.1+ | 0.3− | | | | |

### 2006 QP$_{98}$ = 2003 US$_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.17352 | | (2000.0) | | | |
| $n$ | 0.31714697 | $\omega$ | 15.93081 | | +0.88015866 | +0.47075782 |
| $a$ | 2.1295884 | $\Omega$ | 315.81913 | | −0.44449319 | +0.77236154 |
| $e$ | 0.1209325 | $i$ | 5.01244 | | −0.16657293 | +0.42643255 |
| $P$ | 3.11 | $H$ | 18.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 18 | 691 | 0.2− | 0.3+ | 2006 08 22 | 644 | 0.4− | 0.6− | 2006 09 02 | 152 | (2.2− | 0.9+) |
| 2003 10 18 | 691 | 0.1− | 0.3− | 2006 08 22 | 644 | 0.2− | 0.5− | 2006 09 02 | 152 | 0.3+ | 0.7+ |
| 2003 10 18 | 691 | 0.1+ | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.7+ |
| 2003 10 19 | 644 | 0.6+ | 0.8− | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 1.2− | 0.5+ |
| 2003 10 19 | 644 | 0.3+ | 0.1− | 2006 08 29 | 691 | 0.2+ | 0.1− | 2006 09 17 | 703 | 0.5− | 1.0− |
| 2003 10 19 | 644 | 0.2+ | 0.0 | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 17 | 703 | (2.0+ | 0.5−) |

### 2006 QS$_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.09336 | | (2000.0) | | | |
| $n$ | 0.23259892 | $\omega$ | 200.68004 | | +0.56032658 | +0.78670594 |
| $a$ | 2.6185704 | $\Omega$ | 104.26451 | | −0.71741845 | +0.61730794 |
| $e$ | 0.2664311 | $i$ | 15.50561 | | −0.41393828 | −0.00496657 |
| $P$ | 4.24 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 699 | 0.9− | 0.5+ | 2002 11 05 | 644 | 0.4− | 0.0 | 2006 08 28 | E12 | 0.3+ | 0.8− |
| 2002 09 15 | 699 | 0.5+ | 0.3− | 2006 05 29 | E12 | 0.0 | 0.4+ | 2006 09 12 | E12 | 0.2− | 0.2− |
| 2002 09 15 | 699 | 0.5+ | 0.5− | 2006 05 29 | E12 | 0.9− | 0.6+ | 2006 09 12 | E12 | 0.7− | 0.0 |
| 2002 09 15 | 699 | 0.9+ | 0.6− | 2006 05 29 | E12 | 0.9+ | 0.2+ | 2006 09 12 | E12 | 0.6− | 0.0 |
| 2002 10 05 | 704 | 0.3− | 0.1+ | 2006 05 29 | E12 | 0.2+ | 1.4− | 2006 09 12 | E12 | 0.8+ | 0.0 |
| 2002 10 05 | 704 | 0.2+ | 0.9− | 2006 07 28 | E12 | 0.4− | 0.2+ | 2006 09 28 | E12 | 0.0 | 0.0 |
| 2002 10 05 | 704 | 0.1+ | 0.8+ | 2006 07 28 | E12 | 0.2− | 0.2+ | 2006 09 28 | E12 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.2+ | 0.1− | 2006 07 28 | E12 | 0.0 | 0.2+ | 2006 09 28 | E12 | 0.5+ | 0.1+ |
| 2002 10 05 | 704 | 0.3− | 0.1+ | 2006 08 22 | 644 | 0.3+ | 0.1− | 2006 09 28 | E12 | 0.6− | 0.2− |
| 2002 10 16 | 644 | 0.2− | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 10 09 | E12 | 0.0 | 0.4− |
| 2002 10 16 | 644 | 0.4− | 0.1+ | 2006 08 22 | 644 | 0.2− | 0.2+ | 2006 10 09 | E12 | 0.3− | 0.3+ |
| 2002 10 16 | 644 | 0.5+ | 0.1+ | 2006 08 28 | E12 | 0.3− | 0.1− | 2006 10 09 | E12 | 0.8+ | 0.5− |
| 2002 11 05 | 644 | 0.0 | 0.0 | 2006 08 28 | E12 | 0.4+ | 0.2− | 2006 10 09 | E12 | 0.5− | 1.4+ |
| 2002 11 05 | 644 | 0.0 | 0.1− | 2006 08 28 | E12 | 0.6+ | 0.3+ | | | | |

### 2006 QT$_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.31903 | | (2000.0) | | | |
| $n$ | 0.12482322 | $\omega$ | 118.78966 | | +0.95571846 | +0.29173822 |
| $a$ | 3.9652672 | $\Omega$ | 224.27912 | | −0.28559229 | +0.88782494 |
| $e$ | 0.2153832 | $i$ | 3.17057 | | −0.07098778 | +0.35588719 |
| $P$ | 7.90 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 29 | 691 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.3+ | 1.3− |
| 1999 11 29 | 691 | 0.2− | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | (1.7− | 1.4−) |
| 1999 11 29 | 691 | 0.0 | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.3+ |
| 1999 12 13 | 691 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.2− | 0.3+ | 2006 09 25 | 699 | 1.4− | 0.7+ |
| 1999 12 13 | 691 | 0.0 | 0.2+ | 2006 09 16 | 699 | 0.3− | 0.4− | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 1999 12 13 | 691 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.7− | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2004 04 25 | 291 | 0.8+ | 0.7+ | 2006 09 16 | 699 | 0.8+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2004 04 25 | 291 | 0.2− | 0.5+ | 2006 09 16 | 699 | 0.4+ | 0.9+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2004 04 25 | 291 | 0.1− | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2006 08 22 | 644 | 0.3+ | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2006 08 22 | 644 | 0.5+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ |

### 2006 QU$_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.96833 | | (2000.0) | | | |
| $n$ | 0.21608572 | $\omega$ | 81.71813 | | +0.65615864 | −0.75021504 |
| $a$ | 2.7503333 | $\Omega$ | 326.81488 | | +0.62047289 | +0.59778898 |
| $e$ | 0.2253337 | $i$ | 8.55735 | | +0.42949881 | +0.28253448 |
| $P$ | 4.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.8− | 2006 08 27 | 699 | (0.3+ | 2.0+) | 2006 09 20 | 699 | 0.9+ | 0.4+ |
| 2002 12 05 | 704 | 0.8− | 0.5+ | 2006 08 27 | 699 | 0.3− | 0.9+ | 2006 09 20 | 699 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.5− | 0.0 | 2006 09 20 | 699 | 0.1+ | 0.8+ |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.9+ | 0.7− |
| 2002 12 05 | 704 | 0.5+ | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.7+ | 0.0 |
| 2003 01 04 | 704 | (0.4+ | 2.1−) | 2006 09 12 | 703 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.6− | 0.7− |
| 2003 01 04 | 704 | (0.1+ | 2.5−) | 2006 09 12 | 703 | 0.7− | 0.4+ | 2006 09 25 | 704 | 0.4− | 0.7+ |
| 2003 01 04 | 704 | 0.4+ | 1.0− | 2006 09 12 | 703 | 0.6− | 1.4− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2003 01 04 | 704 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.2− | 0.8− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2006 08 22 | 644 | 0.5+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2006 08 22 | 644 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2006 08 22 | 644 | 0.2+ | 0.2− | 2006 09 16 | 699 | 0.2− | 0.9− | 2006 11 11 | G96 | 0.6+ | 0.1− |
| 2006 08 27 | 699 | 0.9− | 0.2− | 2006 09 16 | 699 | 0.6+ | 0.0 | 2006 11 11 | G96 | 0.7+ | 0.1− |
| 2006 08 27 | 699 | 0.6+ | 0.4+ | 2006 09 20 | 699 | (2.0+ | 0.1+) | 2006 11 11 | G96 | 0.2+ | 0.1− |

### 2006 QZ$_{98}$ = 2004 BZ$_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 253.93240 | | (2000.0) | | | |
| $n$ | 0.26333938 | $\omega$ | 130.63452 | | −0.36971574 | −0.92847679 |
| $a$ | 2.4106020 | $\Omega$ | 340.97425 | | +0.81652440 | −0.30657543 |
| $e$ | 0.0989737 | $i$ | 6.20401 | | +0.44339392 | −0.20962434 |
| $P$ | 3.74 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 27 | 608 | 0.1− | 0.1− | 2004 04 13 | 291 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.1− | 0.2+ |
| 2001 04 27 | 608 | 0.1− | 0.3+ | 2004 04 14 | 291 | 1.0+ | 0.1− | 2006 09 16 | 699 | 0.3− | 0.5− |
| 2001 04 27 | 608 | 0.4− | 0.1+ | 2004 04 14 | 291 | 0.9+ | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.9+ |
| 2002 07 23 | 644 | 0.5− | 0.7+ | 2004 04 14 | 291 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.1+ | 0.2+ |
| 2002 07 23 | 644 | 0.1+ | 0.6+ | 2006 08 22 | 644 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.7+ |
| 2002 07 23 | 644 | 0.2+ | 1.0+ | 2006 08 22 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.0 |
| 2003 12 04 | 704 | 0.2+ | 0.3− | 2006 08 22 | 644 | 0.7+ | 0.1− | 2006 09 20 | 704 | (2.0− | 0.3+) |
| 2003 12 04 | 704 | 0.1− | 0.2− | 2006 08 23 | 644 | 0.2− | 0.2+ | 2006 09 20 | 704 | 1.0− | 0.1+ |
| 2003 12 04 | 704 | 0.6− | 0.3− | 2006 08 23 | 644 | 0.5− | 0.0 | 2006 09 20 | 704 | 0.9− | 0.5− |
| 2003 12 04 | 704 | 0.7+ | 0.5− | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 1.0− | 0.2− |
| 2004 01 17 | 644 | 0.8− | 0.0 | 2006 08 27 | 699 | 0.2− | 0.0 | 2006 09 20 | 704 | 1.2− | 0.1− |
| 2004 01 17 | 644 | 0.2− | 0.1− | 2006 08 27 | 699 | 0.6− | 0.6+ | 2006 09 25 | 699 | 1.0+ | 0.1+ |
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.2− | 0.5+ |
| 2004 01 19 | 704 | (3.7+ | 0.3−) | 2006 08 27 | 699 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.8− | 0.3− |
| 2004 01 19 | 704 | (4.0+ | 0.1−) | 2006 09 01 | 704 | 0.9− | 1.0− | 2006 09 25 | 699 | 0.4+ | 0.0 |
| 2004 01 19 | 704 | (3.3+ | 0.3−) | 2006 09 01 | 704 | 0.5+ | 0.0 | 2006 10 01 | 703 | 1.1− | 0.8− |
| 2004 01 19 | 704 | (2.9+ | 0.5−) | 2006 09 01 | 704 | 1.0− | 0.5− | 2006 10 01 | 703 | 0.3− | 0.3− |
| 2004 01 19 | 704 | (4.0+ | 0.5−) | 2006 09 01 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 703 | 0.2+ | 0.5+ |
| 2004 01 31 | 704 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.3− | 0.8− | 2006 10 01 | 703 | 0.4+ | 0.3+ |
| 2004 01 31 | 704 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.0 | 1.1− | 2006 10 21 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 31 | 704 | 0.4− | 0.2− | 2006 09 12 | 703 | 0.2− | 0.8− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2004 01 31 | 704 | 0.9− | 0.9+ | 2006 09 12 | 703 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.4− |
| 2004 02 14 | 704 | (0.6− | 1.6+) | 2006 09 12 | 703 | 1.0− | 0.5+ | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2004 02 14 | 704 | 0.3+ | 0.9+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.7− |
| 2004 02 14 | 704 | 0.3+ | 0.8+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2004 02 14 | 704 | 0.3− | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.2− |
| 2004 04 13 | 291 | 0.1− | 0.2− | 2006 09 16 | 699 | 1.0+ | 0.6+ | | | | |
| 2004 04 13 | 291 | 0.1− | 0.0 | 2006 09 16 | 699 | 0.7+ | 0.2+ | | | | |

**2006 QC$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.27385 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26563779 | $\omega$ | 331.65492 | | +0.98034351 | +0.19428342 | |
| $a$ | 2.3966768 | $\Omega$ | 17.24490 | | −0.15194633 | +0.85454612 | |
| $e$ | 0.1393532 | $i$ | 6.65551 | | −0.12585274 | +0.48166885 | |
| $P$ | 3.71 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 691 | 0.3+ | 0.4+ | 2006 08 23 | 704 | 1.0+ | 0.2− | 2006 09 16 | 704 | 0.0 | 1.1+ |
| 1997 01 10 | 691 | 0.2+ | 0.1− | 2006 08 23 | 704 | 0.0 | 0.4+ | 2006 09 16 | 704 | 0.7− | 0.6+ |
| 1997 01 10 | 691 | 0.2+ | 0.4− | 2006 08 23 | 704 | 0.2− | 0.5− | 2006 09 16 | 704 | 0.1− | 1.1+ |
| 2002 06 18 | 644 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.4+ | 1.1+ | 2006 09 20 | 644 | 0.0 | 0.1+ |
| 2002 06 18 | 644 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.1+ |
| 2002 06 18 | 644 | 0.5− | 0.1− | 2006 08 29 | 703 | 0.5+ | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.0 |
| 2002 07 06 | 644 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.2+ | 1.1+ | 2006 09 25 | 699 | 0.3− | 0.4+ |
| 2002 07 06 | 644 | 0.3− | 0.4− | 2006 08 29 | 703 | 0.5− | 1.1+ | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2002 07 06 | 644 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.7− | 0.9+ | 2006 09 25 | 699 | 0.1+ | 0.2− |
| 2003 12 29 | 704 | (0.7− | 1.7+) | 2006 08 29 | 703 | 0.6− | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.7+ |
| 2003 12 29 | 704 | 0.5− | 0.7+ | 2006 08 29 | 703 | 0.2− | 0.3+ | 2006 09 26 | 704 | 1.0+ | 0.1− |
| 2003 12 29 | 704 | 0.8− | 0.4+ | 2006 08 31 | 704 | 0.5− | 1.0− | 2006 09 26 | 704 | (2.0+ | 0.3−) |
| 2003 12 29 | 704 | 0.6+ | 0.4+ | 2006 08 31 | 704 | 0.6− | 0.4− | 2006 09 26 | 704 | 0.6+ | 0.7− |
| 2003 12 29 | 704 | 1.1− | 0.2− | 2006 08 31 | 704 | 0.6− | 0.2− | 2006 09 26 | 704 | 0.4+ | 0.8+ |
| 2005 03 08 | G96 | 0.2− | 0.4+ | 2006 08 31 | 704 | 0.2− | 0.7− | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 2005 03 08 | G96 | 0.2− | 0.3+ | 2006 09 12 | 704 | 0.0 | 0.9+ | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2005 03 08 | G96 | 0.0 | 0.2+ | 2006 09 12 | 704 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.5− |
| 2005 03 08 | G96 | 0.3− | 0.2+ | 2006 09 12 | 704 | 1.2− | 0.6− | 2006 09 30 | 703 | 0.9+ | 0.3− |
| 2005 04 04 | 691 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.4− |
| 2005 04 04 | 691 | 0.4+ | 0.2− | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2005 04 04 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.2+ | 1.2− | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 2005 05 08 | G96 | 0.0 | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2005 05 08 | G96 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.7+ | 0.9− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2005 05 08 | G96 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2005 05 08 | G96 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 08 23 | 704 | 0.4+ | 0.2− | 2006 09 16 | 704 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.2− |

**2006 QL$_{99}$ = 2005 EY$_{254}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.10963 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26867666 | $\omega$ | 51.35199 | | +0.41556295 | +0.90915071 | |
| $a$ | 2.3785709 | $\Omega$ | 243.22352 | | −0.84376369 | +0.37406258 | |
| $e$ | 0.2078253 | $i$ | 1.76069 | | −0.33966199 | +0.18309062 | |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.2− | 0.1+ |
| 1999 10 30 | 691 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.8+ | 1.5+ |
| 1999 10 30 | 691 | 0.4+ | 0.3− | 2006 09 12 | 703 | 1.3− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.6+ |
| 2005 03 11 | G96 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.1+ | 0.3− | 2006 09 20 | 704 | 0.7− | 0.3+ |
| 2005 03 11 | G96 | 0.1− | 0.4− | 2006 09 12 | 703 | 1.3− | 0.7− | 2006 09 20 | 704 | 0.4− | 0.1+ |
| 2005 03 11 | G96 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.4+ |
| 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2005 03 17 | G96 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2005 03 17 | G96 | 0.3− | 0.3− | 2006 09 17 | 704 | 0.6− | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2005 03 17 | G96 | 0.5− | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.2− | 2006 09 25 | 699 | (1.7+ | 0.3+) |
| 2005 03 17 | G96 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.9− | 1.1+ | 2006 09 25 | 699 | 0.8+ | 1.3+ |
| 2006 08 23 | 644 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.5+ | 0.6− | 2006 09 25 | 699 | 1.1− | 0.9+ |
| 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 1.1+ | 1.5− | 2006 09 25 | 699 | 0.1− | 0.8− |
| 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.4+ | 2006 10 01 | 703 | 0.5+ | 0.7− |
| 2006 08 28 | 703 | 0.7+ | 0.8− | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 10 01 | 703 | (2.0− | 0.8+) |
| 2006 08 28 | 703 | (2.4− | 1.2+) | 2006 09 19 | 703 | 0.4+ | 0.6+ | 2006 10 01 | 703 | 0.1− | 1.4− |
| 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 10 01 | 703 | 1.1− | 0.2− |

**2006 QO$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.61922 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21525629 | $\omega$ | 346.62963 | | +0.93233040 | −0.34767950 | |
| $a$ | 2.7573939 | $\Omega$ | 34.24274 | | +0.34589276 | +0.77731380 | |
| $e$ | 0.1324214 | $i$ | 10.17388 | | +0.10544301 | +0.52431119 | |
| $P$ | 4.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.4− | 0.1+ | 2004 03 23 | 704 | 0.5− | 1.5− | 2006 08 28 | E12 | 0.6+ | 0.3− |
| 2002 10 12 | 704 | 0.0 | 0.6− | 2004 03 23 | 704 | 0.5− | 0.1+ | 2006 08 28 | E12 | 0.1− | 0.2− |
| 2002 10 12 | 704 | 0.2+ | 1.1+ | 2004 03 23 | 704 | 0.5+ | 0.4+ | 2006 08 28 | E12 | 0.5+ | 0.4+ |
| 2002 11 24 | 644 | 0.3− | 0.4− | 2005 02 10 | 809 | (1.7− | 3.4−) | 2006 09 17 | 699 | 0.3− | 0.2+ |
| 2002 11 24 | 644 | 0.3− | 0.2− | 2005 02 10 | 809 | 0.2+ | 0.6+ | 2006 09 17 | 699 | 0.3+ | 0.2− |
| 2002 11 24 | 644 | 0.2− | 0.4− | 2005 02 10 | 809 | 0.4+ | 0.0 | 2006 09 17 | 699 | 1.3+ | 0.7− |
| 2002 12 11 | 704 | 1.2+ | 0.8− | 2005 02 10 | 809 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.6− | 1.1− |
| 2002 12 11 | 704 | 0.4− | 0.4+ | 2006 08 23 | 644 | 0.2+ | 0.0 | 2006 09 20 | 703 | (2.0+ | 0.4+) |
| 2002 12 11 | 704 | (1.6− | 0.4+) | 2006 08 23 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 703 | 0.6− | 0.4− |
| 2002 12 11 | 704 | 0.9+ | 0.5− | 2006 08 23 | 644 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.5− | 0.5− |
| 2002 12 11 | 704 | (2.2+ | 1.4−) | 2006 08 28 | E12 | 0.2+ | 0.2+ | 2006 09 20 | 703 | 0.5− | 0.3+ |

**2006 QQ$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.08972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16925178 | $\omega$ | 51.36784 | | +0.96550627 | +0.12363663 | |
| $a$ | 3.2367853 | $\Omega$ | 300.41117 | | −0.22679916 | +0.83164399 | |
| $e$ | 0.0948395 | $i$ | 15.40927 | | +0.12790536 | +0.54137072 | |
| $P$ | 5.82 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 699 | 0.4− | 0.1+ | 2006 05 26 | G96 | 0.2+ | 0.2− | 2006 08 30 | 699 | 0.2− | 0.9+ |
| 2000 07 29 | 699 | 0.0 | 0.7+ | 2006 05 26 | G96 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.9− | 0.1+ |
| 2000 07 29 | 699 | 0.4− | 1.2+ | 2006 07 21 | 703 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.4− | 0.4+ |
| 2000 07 29 | 699 | 0.4− | 0.1+ | 2006 07 21 | 703 | 1.0− | 0.8− | 2006 08 30 | 699 | 0.1− | 0.9− |
| 2002 12 28 | 291 | 0.4− | 0.1+ | 2006 07 21 | 703 | 0.6− | 0.2− | 2006 08 30 | 704 | 0.2+ | 1.5+ |
| 2002 12 28 | 291 | 0.1+ | 0.3+ | 2006 07 21 | 703 | 1.0+ | 0.3− | 2006 08 30 | 704 | 0.2+ | 0.4+ |
| 2002 12 28 | 291 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 30 | 704 | 1.0+ | 0.8+ |
| 2003 01 08 | 704 | 0.6+ | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.4+ | 0.5+ |
| 2003 01 08 | 704 | 0.4+ | 1.0+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 11 | 703 | 0.3+ | 0.5− |
| 2003 01 08 | 704 | 1.4+ | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 11 | 703 | 0.5+ | 0.1− |
| 2003 01 08 | 704 | 0.5+ | 0.2− | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.6− | 1.1− |
| 2004 03 17 | 704 | 0.2− | 0.5+ | 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 11 | 703 | 0.5+ | 0.8− |
| 2004 03 17 | 704 | 1.1+ | 1.0+ | 2006 08 29 | 703 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2− |
| 2004 03 17 | 704 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 2006 05 26 | G96 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.3− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2006 05 26 | G96 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.6+ | 0.6+ | | | | |

**2006 QS$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.06297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27695905 | $\omega$ | 320.87904 | | −0.39815117 | +0.90343350 | |
| $a$ | 2.3309109 | $\Omega$ | 285.13761 | | −0.79486237 | −0.42630315 | |
| $e$ | 0.1077472 | $i$ | 9.48118 | | −0.45789678 | −0.04553597 | |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 07 | 691 | 0.6+ | 0.5+ | 2005 03 03 | 703 | 0.4+ | 0.1− | 2006 08 24 | 644 | 0.4+ | 0.0 |
| 1994 01 07 | 691 | 0.4− | 0.2+ | 2005 03 03 | 703 | (2.8− | 0.8+) | 2006 08 24 | 644 | 0.0 | 0.2− |
| 1994 01 07 | 691 | 0.1+ | 0.2+ | 2005 03 03 | 703 | 1.3+ | 0.1− | 2006 08 29 | 703 | 0.6− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 03 | 691 | 0.0 | 0.5− | 2005 03 10 | 703 | 0.2− | 0.2+ | 2006 08 29 | 703 | 1.3− | 0.0 |
| 2003 10 03 | 691 | 0.4+ | 0.1− | 2005 03 10 | 703 | 0.6− | 1.1− | 2006 08 29 | 703 | 0.9− | 0.3− |
| 2003 10 03 | 691 | 0.2− | 0.0 | 2005 03 10 | 703 | 1.0+ | 1.1− | 2006 08 29 | 703 | 1.2− | 0.7+ |
| 2005 02 14 | 703 | 0.8− | 0.2− | 2005 03 10 | 703 | 0.1+ | 1.0+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2005 02 14 | 703 | 0.3− | 0.1− | 2006 08 16 | 644 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2005 02 14 | 703 | 0.5− | 0.5− | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.4+ | 0.1+ |
| 2005 02 14 | 703 | (0.7− | 1.9+) | 2006 08 16 | 644 | 0.1+ | 0.0 | | | | |
| 2005 03 03 | 703 | 1.1− | 0.4+ | 2006 08 24 | 644 | 0.0 | 0.1− | | | | |

**2006 QA$_{100}$ = 2001 SZ$_{305}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.63027 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18333269 | $\omega$ | 99.35351 | | +0.36039069 | | +0.93251356 |
| $a$ | 3.0688532 | $\Omega$ | 191.85020 | | −0.89400073 | | +0.33820274 |
| $e$ | 0.1234085 | $i$ | 6.47948 | | −0.26623532 | | +0.12663874 |
| $P$ | 5.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.3− | 2004 02 18 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2005 04 30 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2005 04 30 | 691 | 0.1− | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.4+ | 0.8− | 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2001 09 23 | 704 | 0.4− | 0.6+ | 2006 08 24 | 704 | 0.2− | 1.1− | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 2001 09 23 | 704 | 0.7− | 0.3+ | 2006 08 24 | 704 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2001 09 23 | 704 | 0.5+ | 0.1+ | 2006 08 24 | 704 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.2+ | 1.3+ | 2006 08 29 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2004 02 18 | 691 | 0.1+ | 0.5+ | 2006 08 29 | 691 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2004 02 18 | 691 | 0.1+ | 0.4+ | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.4− |

**2006 QE$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.49676 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18591595 | $\omega$ | 45.89966 | | +0.97859347 | | −0.18232341 |
| $a$ | 3.0403595 | $\Omega$ | 324.28693 | | +0.10834306 | | +0.85076938 |
| $e$ | 0.0989729 | $i$ | 9.41237 | | +0.17497602 | | +0.49289922 |
| $P$ | 5.30 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.5+ | 0.0 | 2006 08 24 | 704 | (1.6+ | 0.8−) | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.2− | 0.6− | 2006 08 29 | 703 | 0.2+ | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.6− |
| 2001 09 25 | 704 | 0.5+ | 0.1+ | 2006 08 29 | 703 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.6− | 0.2− |
| 2001 10 18 | 704 | 0.2+ | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.9+ | 2006 09 19 | 703 | 1.0− | 0.4+ |
| 2001 10 18 | 704 | 0.6+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.5+ | 2006 09 20 | 699 | 0.1+ | 0.3− |
| 2001 10 18 | 704 | 0.7− | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.6− | 2006 09 20 | 699 | 0.3− | 0.2− |
| 2001 10 18 | 704 | 0.9+ | 0.9− | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 09 20 | 699 | 0.2− | 0.1− |
| 2001 10 18 | 704 | 0.3+ | 0.2− | 2006 09 06 | 644 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.4− | 0.4− | 2006 09 15 | 704 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.1+ | 0.2− |
| 2001 11 12 | 704 | 0.0 | 0.6− | 2006 09 15 | 704 | 1.0+ | 0.5+ | 2006 09 25 | 704 | 0.6− | 0.4+ |
| 2001 11 12 | 704 | 1.2− | 0.9+ | 2006 09 15 | 704 | 0.7+ | 0.3+ | 2006 09 25 | 704 | 0.7+ | 0.9+ |
| 2001 11 12 | 704 | 0.1+ | 0.2+ | 2006 09 15 | 704 | 0.8+ | 0.1− | 2006 10 01 | 703 | 1.0+ | 0.6− |
| 2001 11 20 | 699 | 0.5− | 0.4− | 2006 09 16 | 704 | 0.9+ | 1.2− | 2006 10 01 | 703 | 0.6+ | 0.3− |
| 2001 11 20 | 699 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.9+ | 0.2+ | 2006 10 01 | 703 | 1.4− | 0.3− |
| 2001 11 20 | 699 | 0.1− | 0.7+ | 2006 09 16 | 704 | 0.6+ | 0.0 | 2006 10 01 | 703 | 1.3− | 0.6− |
| 2001 11 20 | 699 | 0.2− | 0.1+ | 2006 09 16 | 704 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2006 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 704 | (0.6+ | 1.6−) | 2006 10 11 | 644 | 0.2+ | 0.4− |
| 2006 08 18 | 644 | 0.3+ | 0.2− | 2006 09 18 | 704 | (1.7− | 1.2+) | 2006 10 11 | 644 | 0.4+ | 0.3− |
| 2006 08 18 | 644 | 0.0 | 0.1+ | 2006 09 18 | 704 | 1.2− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2006 08 24 | 704 | 0.7− | 0.8− | 2006 09 18 | 704 | 0.2+ | 1.1+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2006 08 24 | 704 | 0.3− | 0.4− | 2006 09 18 | 704 | 1.4− | 0.8+ | 2006 10 22 | 691 | 0.1+ | 0.1+ |

**2006 QM$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.16011 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21319948 | $\omega$ | 309.72808 | | +0.96703821 | | +0.23283345 |
| $a$ | 2.7750999 | $\Omega$ | 37.14153 | | −0.14793565 | | +0.84322785 |
| $e$ | 0.1655027 | $i$ | 9.82994 | | −0.20724901 | | +0.48451561 |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2005 04 11 | G96 | 0.3+ | 0.0 | 2006 08 28 | E12 | 0.1− | 0.3+ |
| 2000 05 05 | 645 | 0.1+ | 0.1− | 2005 04 11 | G96 | 0.6− | 0.0 | 2006 09 14 | 644 | 0.2− | 0.0 |
| 2002 11 12 | 704 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.3− | 0.1+ |
| 2002 11 12 | 704 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.4− | 0.4+ |
| 2002 11 12 | 704 | 1.0+ | 0.7+ | 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.5− | 0.2+ |
| 2002 11 12 | 704 | 0.0 | 0.3− | 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.0 | 0.8− |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.4− | 0.1− | 2006 09 17 | 699 | 0.4+ | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2006 08 16 | 644 | 0.3− | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.4+ |
| 2002 12 06 | 704 | 0.6− | 0.8− | 2006 08 16 | 644 | 0.2− | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.7− | 0.1+ | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.0 | 0.3− |
| 2004 02 16 | 691 | 0.2+ | 0.5+ | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 20 | 703 | 0.3− | 0.5+ |
| 2004 02 16 | 691 | 0.3+ | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.2− | 2006 09 20 | 703 | 0.5+ | 0.1+ |
| 2004 02 16 | 691 | 0.1+ | 0.1− | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 26 | 703 | 1.2+ | 0.2+ |
| 2005 04 02 | G96 | 0.1+ | 0.2+ | 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2005 04 02 | G96 | 0.6− | 1.0+ | 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.7+ |
| 2005 04 02 | G96 | 0.6− | 0.2− | 2006 08 24 | 644 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.2+ | 0.9+ |
| 2005 04 02 | G96 | 0.0 | 0.5+ | 2006 08 28 | E12 | 0.5+ | 0.0 | | | | |
| 2005 04 11 | G96 | 0.3+ | 0.2+ | 2006 08 28 | E12 | 0.3+ | 0.2+ | | | | |

**2006 QQ$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.59433 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31124574 | $\omega$ | 7.08351 | | +0.73057712 | | +0.68106370 |
| $a$ | 2.1564221 | $\Omega$ | 309.86755 | | −0.62957963 | | +0.64403017 |
| $e$ | 0.1336520 | $i$ | 3.66666 | | −0.26436066 | | +0.34839255 |
| $P$ | 3.17 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 02 | 691 | 0.5+ | 0.8+ | 2006 08 29 | 703 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.8− | 0.2+ |
| 2003 11 02 | 691 | 0.3− | 0.4− | 2006 09 12 | 703 | 0.2− | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.3− |
| 2003 11 02 | 691 | 0.2− | 0.4− | 2006 09 12 | 703 | 0.9− | 0.1− | 2006 09 19 | 703 | 0.7− | 0.4+ |
| 2005 03 17 | G96 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 1.4− | 0.5− | 2006 09 19 | 703 | 1.0+ | 0.0 |
| 2005 03 17 | G96 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.5− | 0.2− | 2006 09 19 | 699 | 0.0 | 1.5− |
| 2005 03 17 | G96 | 0.1− | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.5− | 0.5− |
| 2005 03 17 | G96 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.3− |
| 2006 08 24 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.0 | 0.6+ |
| 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.9+ | 0.6− | 2006 09 25 | 699 | 1.0+ | 0.5+ |
| 2006 08 24 | 644 | 0.3+ | 0.1− | 2006 09 16 | 699 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.3+ | 1.1+ |
| 2006 08 29 | 703 | 0.9− | 0.9− | 2006 09 16 | 699 | (0.8− | 2.3−) | 2006 09 25 | 699 | 0.4+ | 0.0 |
| 2006 08 29 | 703 | 1.6+ | 1.0+ | 2006 09 16 | 699 | 0.8+ | 0.0 | | | | |
| 2006 08 29 | 703 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.1+ | | | | |

**2006 QR$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.43716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26093449 | $\omega$ | 92.85331 | | +0.51568542 | | +0.84782412 |
| $a$ | 2.4253908 | $\Omega$ | 209.25617 | | −0.85160258 | | +0.49138862 |
| $e$ | 0.2776277 | $i$ | 14.64272 | | −0.09402974 | | +0.19932756 |
| $P$ | 3.78 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 07 | 644 | 0.4− | 0.2+ | 2002 06 30 | 644 | 0.4+ | 0.4− | 2006 08 29 | 699 | 0.3− | 0.7− |
| 2002 06 07 | 644 | 0.2− | 0.5+ | 2002 06 30 | 644 | 0.4+ | 0.2− | 2006 08 29 | 699 | 0.2− | 0.2− |
| 2002 06 07 | 644 | 0.1− | 0.3+ | 2002 06 30 | 644 | 0.3+ | 0.4− | 2006 08 29 | 699 | 1.1+ | 0.6− |
| 2002 06 21 | 644 | 0.2+ | 0.2− | 2006 08 25 | 704 | 0.1− | 0.5+ | 2006 08 29 | 699 | 0.0 | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 21 | 644 | 0.1− | 0.0 | 2006 08 25 | 704 | 0.4− | 0.1− | | | | | | |
| 2002 06 21 | 644 | 0.4− | 0.0 | 2006 08 25 | 704 | 0.2− | 0.7+ | | | | | | |

**2006 QU$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.64122 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23404705 | $\omega$ | 195.54924 | | +0.89443492 | | −0.44477111 |
| $a$ | 2.6077579 | $\Omega$ | 191.20825 | | +0.43157488 | | +0.88576305 |
| $e$ | 0.3011966 | $i$ | 13.84941 | | +0.11717212 | | +0.13267432 |
| $P$ | 4.21 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.7+ | 0.6+ | 2006 09 17 | 704 | 0.1+ | 0.8− | 2006 10 16 | 703 | (2.5− | 2.0−) | | |
| 2002 11 30 | 704 | 0.3+ | 0.1− | 2006 09 17 | 704 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.1− | | |
| 2002 11 30 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 704 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.3− | | |
| 2002 11 30 | 704 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.3+ | 0.7− | 2006 10 19 | 644 | 0.3+ | 0.1− | | |
| 2002 11 30 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1− | | |
| 2003 01 02 | 704 | 0.4− | 0.2− | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2− | | |
| 2003 01 02 | 704 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1− | | |
| 2003 01 02 | 704 | 1.1− | 0.4− | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2003 01 02 | 704 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2005 05 14 | G96 | 0.4+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 2005 05 14 | G96 | 0.2+ | 0.5− | 2006 09 18 | 699 | 1.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2005 05 14 | G96 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2005 05 14 | G96 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2006 08 06 | 699 | 1.0− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 22 | 704 | 0.6− | 0.9− | | |
| 2006 08 06 | 699 | (2.7+ | 1.4−) | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 22 | 704 | 0.4− | 0.6− | | |
| 2006 08 06 | 699 | (1.6+ | 1.3−) | 2006 09 20 | 704 | 0.5+ | 0.0 | 2006 10 22 | 704 | 1.1− | 0.0 | | |
| 2006 08 06 | 699 | 0.5− | 0.4− | 2006 09 20 | 704 | 0.3− | 0.8+ | 2006 10 22 | 704 | 1.1− | 0.2− | | |
| 2006 08 25 | 704 | 0.0 | 1.2+ | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 704 | 0.3− | 0.3− | | |
| 2006 08 25 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.1+ | | |
| 2006 08 25 | 704 | 0.1+ | 0.9+ | 2006 09 20 | 704 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 0.7+ | 0.1+ | | |
| 2006 08 25 | 704 | 0.1− | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.6+ | 0.3+ | | |
| 2006 08 25 | 704 | 0.7+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.2+ | | |
| 2006 08 29 | 703 | 0.6− | 0.7− | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2− | | |
| 2006 08 29 | 703 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2− | | |
| 2006 08 29 | 703 | 0.4− | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2006 08 29 | 703 | 0.8− | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.2− | | |
| 2006 08 30 | 704 | 0.3+ | 1.3+ | 2006 09 27 | 704 | 0.1+ | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.1− | | |
| 2006 08 30 | 704 | 0.8+ | 1.1− | 2006 09 27 | 704 | 0.4− | 0.5− | 2006 10 23 | 644 | 0.3+ | 0.2− | | |
| 2006 08 30 | 704 | 0.6+ | 0.2− | 2006 09 27 | 704 | 0.0 | 1.0+ | 2006 11 07 | 644 | 0.1− | 0.2− | | |
| 2006 08 30 | 704 | 0.1+ | 1.0+ | 2006 09 27 | 704 | 0.1+ | 0.5+ | 2006 11 07 | 644 | 0.0 | 0.0 | | |
| 2006 08 30 | 704 | 0.4− | 0.4+ | 2006 09 27 | 704 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.1− | 1.0+ | | |
| 2006 08 30 | 699 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.6− | 0.1+ | | |
| 2006 08 30 | 699 | 1.2− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 11 10 | 704 | 0.3− | 0.6+ | | |
| 2006 08 30 | 699 | 1.3+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 11 10 | 704 | 0.2− | 0.0 | | |
| 2006 08 30 | 699 | 0.5− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.4− | 2006 11 10 | 704 | 0.2+ | 0.4− | | |
| 2006 08 31 | 704 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 11 10 | 704 | 0.4− | 0.3− | | |
| 2006 08 31 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.4− | 2006 11 16 | 703 | 0.8− | 0.0 | | |
| 2006 08 31 | 704 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.4− | 0.5+ | | |
| 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.2+ | 0.0 | | |
| 2006 09 14 | 703 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.3− | 0.1+ | | |
| 2006 09 14 | 703 | 1.4+ | 0.6− | 2006 10 16 | 703 | 0.6− | 0.1− | | | | | | |
| 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.4− | | | | | | |

**2006 QX$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.99072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30089064 | $\omega$ | 69.45653 | | +0.94468593 | | −0.31442915 |
| $a$ | 2.2056178 | $\Omega$ | 308.75126 | | +0.23826234 | | +0.85339876 |
| $e$ | 0.1569192 | $i$ | 6.87022 | | +0.22538755 | | +0.41574615 |
| $P$ | 3.28 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 03 | 704 | 0.7− | 1.3+ | 2006 09 17 | 703 | 0.8− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2003 12 03 | 704 | 0.1+ | 0.7− | 2006 09 17 | 703 | 0.6− | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2003 12 03 | 704 | 0.6+ | 0.1+ | 2006 09 17 | 703 | 0.9− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2003 12 03 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 699 | 0.6− | 0.3− | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2003 12 25 | 691 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.0 |
| 2003 12 25 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 2003 12 25 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.4− |
| 2006 08 25 | D35 | 0.1− | 0.4− | 2006 09 21 | 699 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.9+ | 0.2+ |
| 2006 08 25 | D35 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 10 23 | 703 | 0.8+ | 0.4− |
| 2006 08 25 | D35 | 0.2+ | 0.2− | 2006 09 21 | 699 | 0.0 | 0.5+ | 2006 10 23 | 703 | 0.6+ | 0.1+ |
| 2006 08 29 | 703 | 0.4− | 0.5+ | 2006 09 21 | 699 | 0.5+ | 0.0 | 2006 10 23 | 703 | 0.1− | 0.0 |
| 2006 08 29 | 703 | 0.3− | 0.1− | 2006 09 27 | 703 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.4+ | 0.3+ |
| 2006 08 29 | 703 | 0.1− | 0.1− | 2006 09 27 | 703 | (1.9+ | 0.4+) | 2006 10 24 | 644 | 0.2+ | 0.3+ |
| 2006 08 29 | 703 | 0.8− | 0.6+ | 2006 09 27 | 703 | 0.1+ | 1.0+ | 2006 10 24 | 644 | 0.5+ | 0.2+ |
| 2006 08 31 | 704 | 0.7+ | 0.5− | 2006 09 27 | 703 | 0.5− | 0.1− | 2006 11 14 | 703 | 0.7− | 0.1− |
| 2006 08 31 | 704 | 0.3− | 1.2− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 1.8− | 0.1+ |
| 2006 08 31 | 704 | 0.0 | 1.1− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.8− |
| 2006 08 31 | 704 | 1.4+ | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 1.2+ | 1.8− |
| 2006 08 31 | 704 | 0.9+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1+ | | | | |
| 2006 09 17 | 703 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3+ | | | | |

**2006 QZ$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.75879 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17417086 | $\omega$ | 253.90548 | | +0.32651811 | | −0.94484705 |
| $a$ | 3.1755507 | $\Omega$ | 176.69090 | | +0.94368170 | | +0.32740180 |
| $e$ | 0.2402629 | $i$ | 26.21067 | | −0.05339263 | | +0.00849193 |
| $P$ | 5.66 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 699 | (0.4+ | 1.8+) | 2006 08 30 | 704 | 0.6+ | 0.0 | 2006 09 27 | 704 | 0.6− | 0.9+ |
| 2003 03 10 | 699 | 0.6− | 0.8+ | 2006 08 30 | 704 | 0.4− | 1.0+ | 2006 09 30 | 704 | 0.5− | 0.1− |
| 2003 03 10 | 699 | 0.2+ | 0.8+ | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.1+ |
| 2003 03 10 | 699 | 0.8+ | 1.1+ | 2006 08 30 | 704 | 0.5− | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.9+ |
| 2003 03 26 | 644 | 0.3− | 0.6+ | 2006 09 12 | 703 | 0.3− | 1.2− | 2006 09 30 | 704 | 0.3− | 0.3− |
| 2003 03 26 | 644 | 0.3− | 0.6+ | 2006 09 12 | 703 | 1.1− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2003 03 26 | 644 | 0.1− | 0.7+ | 2006 09 12 | 703 | 0.2+ | 1.1− | 2006 10 10 | 644 | 0.4+ | 0.2+ |
| 2004 05 20 | 691 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.5+ | 0.7− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2004 05 20 | 691 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.7− | 0.9+ | 2006 10 16 | 703 | 0.8+ | 0.1+ |
| 2004 05 20 | 691 | 0.2+ | 0.4− | 2006 09 18 | 704 | 1.2+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.8+ |
| 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.9+ | 2006 10 16 | 703 | (1.7− | 0.3+) |
| 2006 08 18 | 644 | 0.0 | 0.4− | 2006 09 19 | 703 | 0.8+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.5− |
| 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.9+ | 2006 10 16 | G96 | 0.0 | 0.6− |
| 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.5+ | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2006 08 21 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.0 | 1.2− | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2006 08 26 | 704 | 0.2+ | 1.0− | 2006 09 19 | 703 | 0.3+ | 1.0+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2006 08 26 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2006 08 26 | 704 | 0.9− | 0.4− | 2006 09 19 | 699 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2006 08 27 | 699 | 1.2+ | 0.9+ | 2006 09 25 | 699 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.3− | 0.6− |
| 2006 08 27 | 699 | 0.4+ | 0.1− | 2006 09 25 | 699 | 0.9+ | 1.2+ | 2006 10 20 | G96 | 0.5− | 0.1− |
| 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 09 25 | 699 | (1.5+ | 0.2−) | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2006 08 27 | 699 | 0.1− | 0.9+ | 2006 09 25 | 699 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 09 27 | 704 | 0.8− | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2006 08 29 | 703 | 0.3− | 0.5− | 2006 09 27 | 704 | 0.9− | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2006 08 29 | 703 | 0.8− | 0.9− | 2006 09 27 | 704 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2006 08 29 | 703 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.1− | | | | |

**2006 QA$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.97832 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17646347 | $\omega$ | 21.60498 | | +0.97025387 | | −0.23771955 |
| $a$ | 3.1479864 | $\Omega$ | 351.73660 | | +0.14762839 | | +0.73089896 |
| $e$ | 0.2071890 | $i$ | 18.57859 | | +0.19186788 | | +0.63974693 |
| $P$ | 5.59 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 20 | 699 | 0.5+ | 0.5− | 2006 08 27 | 683 | 0.5− | 0.2+ | 2006 09 27 | 699 | 0.5− | 0.3− |
| 2000 08 20 | 699 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.6− | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.2− |
| 2000 08 20 | 699 | 0.2− | 0.5+ | 2006 08 29 | 699 | 0.5− | 0.3+ | 2006 09 27 | 699 | 0.0 | 0.2+ |
| 2000 08 20 | 699 | 0.3− | 0.1+ | 2006 08 29 | 703 | 0.4− | 0.2− | 2006 09 27 | 703 | (1.8+ | 0.1−) |
| 2000 09 24 | 704 | 0.0 | 0.7+ | 2006 08 29 | 703 | 0.0 | 0.6− | 2006 09 27 | 703 | 0.1− | 0.3− |
| 2000 09 24 | 704 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.8− | 0.3+ | 2006 09 27 | 703 | 0.3− | 0.1− |
| 2000 09 24 | 704 | 0.6− | 0.4− | 2006 08 29 | 699 | 0.7− | 0.4− | 2006 09 27 | 703 | 0.5− | 0.1− |
| 2001 12 23 | 704 | 0.7− | 0.5− | 2006 08 29 | 699 | 0.6+ | 0.5+ | 2006 10 03 | 704 | 0.2− | 0.2− |
| 2001 12 23 | 704 | 0.2+ | 0.4− | 2006 08 29 | 699 | 0.6+ | 0.8+ | 2006 10 03 | 704 | 0.1− | 1.0+ |
| 2001 12 23 | 704 | 0.1− | 0.8− | 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 10 03 | 704 | 0.1− | 0.1+ |
| 2001 12 23 | 704 | 0.3+ | 0.4− | 2006 08 30 | 704 | 0.2+ | 0.5+ | 2006 10 03 | 704 | 0.2+ | 0.4− |
| 2001 12 23 | 704 | 0.3+ | 0.3− | 2006 08 30 | 704 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2003 01 28 | 645 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2003 01 28 | 645 | 0.1+ | 0.0 | 2006 08 30 | 704 | 1.2+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2003 02 09 | 291 | 0.2− | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 02 09 | 291 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.2− | 1.4− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2003 02 09 | 291 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.7− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2006 07 22 | G96 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.2+ | 0.2+ |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.5− |
| 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.3− |
| 2006 07 22 | G96 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.2− | 0.1− |
| 2006 08 26 | 704 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.7+ | 0.1+ | 2006 10 22 | G92 | 0.1− | 1.1+ |
| 2006 08 26 | 704 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.4+ | 0.0 | 2006 10 22 | G92 | 0.3+ | 1.1+ |
| 2006 08 26 | 704 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.1− | 0.2+ | 2006 10 22 | G92 | 0.2− | 0.7+ |
| 2006 08 27 | 683 | 0.3− | 0.8+ | 2006 09 22 | 704 | 0.1+ | 0.0 | | | | |
| 2006 08 27 | 683 | 0.5− | 1.4− | 2006 09 27 | 699 | 0.3+ | 0.1− | | | | |

**2006 QD$_{101}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.75070 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27686840 | $\omega$ | 290.83872 | | +0.99121467 | | +0.07580404 |
| $a$ | 2.3314197 | $\Omega$ | 64.94686 | | −0.02033965 | | +0.89707871 |
| $e$ | 0.1430063 | $i$ | 6.87138 | | −0.13068961 | | +0.43532004 |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 704 | 0.4+ | 0.9− | 2003 12 22 | 704 | 0.2− | 0.0 | 2006 08 26 | E12 | 0.3− | 0.0 |
| 2003 11 21 | 704 | 0.3+ | 0.1− | 2003 12 22 | 704 | 0.3+ | 0.8+ | 2006 08 26 | E12 | 0.1− | 1.0+ |
| 2003 11 21 | 704 | 0.3+ | 0.2− | 2003 12 29 | 691 | 0.1− | 0.7− | 2006 08 26 | E12 | 0.1+ | 0.6− |
| 2003 11 21 | 704 | 0.3+ | 0.4− | 2003 12 29 | 691 | 0.2− | 0.4− | 2006 08 28 | E12 | 0.2+ | 0.5− |
| 2003 11 21 | 704 | 0.8+ | 0.3+ | 2003 12 29 | 691 | 0.1− | 0.4− | 2006 08 28 | E12 | 0.1− | 0.4− |
| 2003 12 17 | 644 | 0.2− | 0.2− | 2006 07 18 | E12 | 0.7− | 0.6− | 2006 08 28 | E12 | 0.2− | 0.1+ |
| 2003 12 17 | 644 | 0.2− | 0.1+ | 2006 07 18 | E12 | 0.8+ | 0.2− | 2006 08 28 | E12 | 0.3− | 0.1+ |
| 2003 12 17 | 644 | 0.0 | 0.4− | 2006 07 18 | E12 | 0.3+ | 0.1− | 2006 09 09 | 644 | 0.1+ | 0.6+ |
| 2003 12 22 | 704 | 0.6− | 1.5+ | 2006 07 18 | E12 | 0.4+ | 0.6− | 2006 09 09 | 644 | 0.1− | 0.4+ |
| 2003 12 22 | 704 | 0.8− | 0.5+ | 2006 08 26 | E12 | 0.4+ | 0.0 | 2006 09 09 | 644 | 0.2− | 0.9+ |

**2006 QF$_{103}$ = 1998 RJ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.08214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24492412 | $\omega$ | 185.98203 | | +0.99933154 | | +0.03595791 |
| $a$ | 2.5299679 | $\Omega$ | 171.94843 | | −0.03128536 | | +0.93451142 |
| $e$ | 0.2298263 | $i$ | 2.69918 | | −0.01891305 | | +0.35411217 |
| $P$ | 4.02 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 691 | 0.3+ | 0.5− | 2002 09 12 | 644 | 0.3+ | 1.0− | 2006 08 29 | 691 | 0.5− | 0.0 |
| 1998 08 26 | 691 | 0.1− | 0.5− | 2002 09 12 | 644 | 0.2+ | 0.7− | 2006 08 29 | 691 | 0.2+ | 0.1+ |
| 1998 08 26 | 691 | (0.3− | 5.9−) | 2002 09 12 | 644 | 0.0 | 0.4− | 2006 08 29 | 691 | 0.1− | 0.0 |
| 1998 09 13 | 691 | 0.0 | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 1998 09 13 | 691 | 0.3+ | 0.1+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.5− |
| 1998 09 13 | 691 | 0.3+ | 0.1+ | 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.5− |
| 1998 09 19 | 691 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 1998 09 19 | 691 | 0.7− | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.0 | | | | |
| 1998 09 19 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.1− | | | | |

**2006 QG$_{103}$ = 2005 EH$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.38789 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24441876 | $\omega$ | 26.38984 | | −0.30019819 | | +0.95378418 |
| $a$ | 2.5334540 | $\Omega$ | 226.14392 | | −0.87839272 | | −0.28185004 |
| $e$ | 0.0742287 | $i$ | 1.05656 | | −0.37189687 | | −0.10419356 |
| $P$ | 4.03 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 31 | 691 | 0.2+ | 0.4− | 2005 03 10 | G96 | 0.3− | 0.2+ | 2006 07 25 | G96 | 0.4− | 0.0 |
| 1994 08 31 | 691 | 0.0 | 0.7+ | 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.6+ | 0.1+ |
| 1994 08 31 | 691 | 0.5− | 0.3+ | 2005 03 13 | 691 | 0.5+ | 0.3+ | 2006 08 27 | 691 | 0.5+ | 0.4− |
| 1997 04 15 | 691 | 0.3− | 0.6− | 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.7+ | 0.1− |
| 1997 04 15 | 691 | 0.1− | 0.2− | 2005 04 09 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.1− |
| 1997 04 15 | 691 | 0.0 | 0.4− | 2005 04 09 | 691 | 0.0 | 0.1− | 2006 08 29 | 691 | 1.8− | 1.2+ |
| 2005 03 10 | G96 | 0.4− | 0.3+ | 2005 04 09 | 691 | 0.2+ | 0.4+ | 2006 08 29 | 691 | 0.1+ | 0.0 |
| 2005 03 10 | G96 | 0.3− | 0.3+ | 2005 04 18 | 691 | 0.4− | 0.3− | 2006 09 27 | G96 | 0.4+ | 0.5− |
| 2005 03 10 | G96 | 0.4− | 0.2+ | 2005 04 18 | 691 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.4− |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.7− |
| 2005 03 10 | G96 | 0.0 | 0.7+ | 2006 07 25 | G96 | 0.6− | 0.3− | 2006 09 27 | G96 | 0.0 | 0.6− |
| 2005 03 10 | G96 | 0.0 | 0.3+ | 2006 07 25 | G96 | 0.1+ | 0.2− | | | | |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2006 07 25 | G96 | 0.3− | 0.3− | | | | |

**2006 QS$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.65335 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30484157 | $\omega$ | 204.13999 | | +0.87654397 | | −0.48131610 |
| $a$ | 2.1865190 | $\Omega$ | 184.63343 | | +0.44618829 | | +0.81437768 |
| $e$ | 0.1558137 | $i$ | 1.66203 | | +0.18051783 | | +0.32422803 |
| $P$ | 3.23 | $H$ | 19.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 691 | 0.1− | 0.1+ | 2003 11 21 | 691 | 0.0 | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.1− |
| 2000 12 30 | 691 | 0.2− | 0.1+ | 2003 11 21 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 2000 12 30 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.5− |
| 2003 10 22 | 691 | 0.2+ | 0.2− | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2003 10 22 | 691 | 0.3− | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2003 10 22 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.3+ | | | | |
| 2003 11 21 | 691 | 0.1− | 0.3− | 2006 08 29 | 691 | 0.2− | 0.0 | | | | |

**2006 QL$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.80821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26288437 | $\omega$ | 75.76999 | | +0.93545278 | | +0.35269503 |
| $a$ | 2.4133828 | $\Omega$ | 263.57372 | | −0.33259394 | | +0.85623263 |
| $e$ | 0.2305991 | $i$ | 1.33289 | | −0.11962173 | | +0.37745451 |
| $P$ | 3.75 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 30 | 460 | 0.5− | 0.3− | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2003 12 30 | 460 | 0.4+ | 0.4− | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2005 03 13 | 691 | 0.7− | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 2005 03 13 | 691 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.1− |
| 2005 03 13 | 691 | 1.0+ | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.1+ |
| 2006 05 24 | G96 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2006 05 24 | G96 | 0.3− | 0.4− | 2006 08 28 | 703 | 0.1+ | 0.5− | 2006 10 19 | 703 | 0.3+ | 1.1− |
| 2006 05 24 | G96 | 0.1− | 0.5− | 2006 08 28 | 703 | 0.5− | 0.4− | 2006 10 19 | 703 | 0.2+ | 0.7− |
| 2006 05 24 | G96 | 0.0 | 0.4− | 2006 08 29 | 704 | 0.6+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.6+ |
| 2006 07 25 | G96 | 0.1− | 0.4− | 2006 08 29 | 704 | 0.7+ | 1.1+ | 2006 10 19 | 703 | 1.1+ | 1.3+ |
| 2006 07 25 | G96 | 0.3+ | 0.3− | 2006 08 29 | 704 | 0.0 | 0.9+ | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2006 07 25 | G96 | 0.3− | 0.2− | 2006 08 29 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2006 07 25 | G96 | 0.2+ | 0.1− | 2006 08 29 | 704 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.7− | 0.1+ |
| 2006 08 14 | 644 | 0.0 | 0.1− | 2006 09 27 | G96 | (0.8+ | 2.0−) | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2006 08 14 | 644 | 0.2− | 0.0 | 2006 09 27 | G96 | (0.5+ | 2.2−) | | | | |

**2006 QO$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.57015 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26391284 | $\omega$ | 330.21637 | | +0.58415672 | | +0.81070917 |
| $a$ | 2.4071087 | $\Omega$ | 335.46314 | | −0.72494431 | | +0.49961922 |
| $e$ | 0.1859253 | $i$ | 5.37198 | | −0.36498859 | | +0.30517419 |
| $P$ | 3.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.2+ | 0.1− | 2006 08 28 | 699 | 0.4− | 1.0+ | 2006 09 14 | 703 | 0.6+ | 0.5+ |
| 1995 08 25 | 691 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.3− |
| 1995 08 25 | 691 | 0.0 | 0.3− | 2006 08 28 | 699 | 0.7− | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.1+ |
| 2001 02 02 | 691 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 1.0− | 0.8+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2001 02 02 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.3+ | 1.0+ | 2006 09 14 | 644 | 0.3− | 0.1+ |
| 2001 02 02 | 691 | 0.2+ | 0.5+ | 2006 08 28 | 699 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.6+ | 0.9+ |
| 2005 03 09 | G96 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.2+ |
| 2005 03 09 | G96 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.2+ |
| 2005 03 09 | G96 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.2− |
| 2005 03 09 | G96 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2005 04 12 | G96 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.1− | 1.0− | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 2005 04 12 | G96 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2005 04 12 | G96 | 1.0− | 0.0 | 2006 08 29 | 704 | (1.6+ | 1.0+) | 2006 09 25 | G96 | 0.2+ | 0.5− |
| 2005 04 12 | G96 | 0.1− | 0.5− | 2006 08 29 | 704 | (1.4+ | 1.6+) | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2006 08 13 | 644 | 0.3− | 0.2+ | 2006 08 29 | 704 | 1.1+ | 1.4+ | 2006 09 26 | G96 | 0.2− | 0.3− |
| 2006 08 13 | 644 | 0.1− | 0.1+ | 2006 09 14 | 703 | 1.5+ | 0.2+ | 2006 09 26 | G96 | 0.6− | 0.3− |
| 2006 08 13 | 644 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.5+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− |

**2006 QQ$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.66635 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27818156 | $\omega$ | 43.32406 | | −0.33156370 | | +0.94106016 |
| $a$ | 2.3240769 | $\Omega$ | 207.51482 | | −0.90027731 | | −0.33679259 |
| $e$ | 0.3399078 | $i$ | 8.32235 | | −0.28207495 | | −0.03124935 |
| $P$ | 3.54 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 645 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.4+ | 0.4− | 2006 09 17 | 691 | 0.2− | 0.0 |
| 1999 10 16 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 1.1+ | 0.7+ | 2006 09 17 | 691 | 0.4− | 0.1+ |
| 2003 10 22 | 291 | 0.1− | 0.1+ | 2006 08 29 | 703 | 1.4+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2003 10 22 | 291 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.4+ | 0.9+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2003 10 22 | 291 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.1+ |
| 2003 11 20 | 695 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 22 | 691 | 0.3− | 0.1+ |
| 2003 11 20 | 695 | 0.6+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 22 | 691 | 0.2− | 0.1− |
| 2006 08 28 | 703 | (0.7+ | 1.8−) | 2006 09 15 | 691 | 0.4+ | 0.2− | 2006 09 22 | 691 | 0.1− | 0.2+ |
| 2006 08 28 | 703 | 1.2+ | 0.8− | 2006 09 17 | 691 | 0.3− | 0.0 | | | | |

**2006 QR$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.07612 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22451804 | $\omega$ | 157.66628 | | +0.90926219 | | +0.41607061 |
| $a$ | 2.6810313 | $\Omega$ | 177.65434 | | −0.41126912 | | +0.90228141 |
| $e$ | 0.2731902 | $i$ | 16.01627 | | −0.06403111 | | +0.11301994 |
| $P$ | 4.39 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 644 | 0.2+ | 1.0+ | 2006 08 29 | 703 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.2+ |
| 2002 10 28 | 644 | 0.1− | 0.9+ | 2006 08 29 | 704 | 0.6+ | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.6+ |
| 2002 10 28 | 644 | 0.0 | 0.8+ | 2006 09 11 | 703 | 0.1− | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.2+ |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.0 | 0.1− | 2006 09 29 | 704 | 1.2+ | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.6− | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.1− |
| 2002 11 06 | 644 | 0.3+ | 1.0+ | 2006 09 11 | 703 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.3− | 0.0 |
| 2002 11 06 | 644 | 0.2+ | 1.3+ | 2006 09 18 | 704 | 0.6− | 0.3− | 2006 09 29 | 704 | 0.1+ | 0.0 |
| 2002 11 06 | 644 | 0.2+ | 1.2+ | 2006 09 18 | 704 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.4+ |
| 2006 06 21 | 703 | 0.4− | 0.3− | 2006 09 18 | 704 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.5+ | 0.4+ |
| 2006 06 21 | 703 | 0.8+ | 0.8− | 2006 09 18 | 704 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2006 06 21 | 703 | 0.1− | 1.0+ | 2006 09 18 | 704 | 0.6− | 0.4− | 2006 10 28 | G96 | 0.2− | 0.6− |
| 2006 06 21 | 703 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.5− | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2006 08 28 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2006 08 28 | 704 | 0.9− | 0.7− | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.7− |
| 2006 08 28 | 704 | 0.2+ | 0.1+ | 2006 09 25 | 704 | (0.0 | 1.8+) | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2006 08 28 | 704 | 0.2− | 0.6+ | 2006 09 25 | 704 | (0.3+ | 2.7+) | 2006 11 11 | G96 | 0.1− | 1.1− |
| 2006 08 28 | 704 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.6+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.8− |
| 2006 08 29 | 703 | 0.2− | 0.3− | 2006 09 25 | 704 | 0.4+ | 0.3+ | 2006 11 27 | G96 | 0.3− | 0.1+ |
| 2006 08 29 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.6+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2006 08 29 | 703 | 0.3+ | 0.5− | 2006 09 27 | 691 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.6− | 0.3− |
| 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2006 08 29 | 704 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1+ | | | | |

**2006 QU$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.03015 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12559688 | $\omega$ | 319.09638 | | +0.97673595 | | −0.20007643 |
| $a$ | 3.9489667 | $\Omega$ | 52.61116 | | +0.21319679 | | +0.86720051 |
| $e$ | 0.3051270 | $i$ | 5.57423 | | +0.02310868 | | +0.45599638 |
| $P$ | 7.85 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 12 | 691 | 0.5− | 0.1+ | 2006 08 31 | 704 | 0.3− | 0.6− | 2006 09 22 | 704 | 0.6+ | 0.7+ |
| 1991 11 12 | 691 | 1.2− | 0.1− | 2006 08 31 | 704 | 0.7+ | 0.4+ | 2006 09 22 | 704 | 0.3+ | 0.0 |
| 1991 11 12 | 691 | 0.2− | 0.6− | 2006 08 31 | 704 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.9− | 0.7+ |
| 1991 12 14 | 691 | 0.4+ | 0.1+ | 2006 08 31 | 704 | 0.1+ | 0.0 | 2006 09 22 | 704 | 1.2− | 0.2+ |
| 1991 12 14 | 691 | 1.2+ | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.7− | 2006 09 25 | 699 | 0.2+ | 0.2− |
| 1991 12 14 | 691 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 1999 12 07 | 704 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.5− | 2006 09 25 | 699 | 0.0 | 0.1− |
| 1999 12 07 | 704 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.3− |
| 1999 12 07 | 704 | 0.2+ | 0.5+ | 2006 09 16 | 704 | 0.0 | 0.8− | 2006 09 26 | 704 | 0.4+ | 0.6− |
| 1999 12 07 | 704 | 0.3− | 0.6+ | 2006 09 16 | 704 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.1+ | 0.0 |
| 1999 12 07 | 704 | 0.5− | 0.1+ | 2006 09 16 | 704 | 0.5− | 0.2+ | 2006 09 26 | 704 | 0.1+ | 0.6+ |
| 2006 08 28 | 704 | 0.9+ | 0.7+ | 2006 09 16 | 704 | 0.4− | 0.4− | 2006 09 26 | 704 | 0.5− | 0.6+ |
| 2006 08 28 | 704 | 1.4+ | 0.1− | 2006 09 16 | 704 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.2− | 1.1+ |
| 2006 08 28 | 704 | 0.0 | 1.3+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.6− | 0.2− |
| 2006 08 28 | 704 | 0.8+ | 0.5− | 2006 09 18 | 699 | 0.3− | 0.3− | 2006 09 26 | 703 | 0.4− | 0.2− |
| 2006 08 29 | 703 | 0.3− | 0.9+ | 2006 09 18 | 699 | 0.7− | 0.5− | 2006 09 26 | 703 | 0.7− | 0.4− |
| 2006 08 29 | 703 | 0.8− | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.3− |
| 2006 08 29 | 703 | 0.6− | 0.2− | 2006 09 19 | 291 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.6+ | 0.1+ |
| 2006 08 29 | 703 | 0.6− | 0.2+ | 2006 09 19 | 291 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2006 08 30 | 699 | 0.3− | 0.2− | 2006 09 19 | 291 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.4− |
| 2006 08 30 | 699 | 0.6+ | 0.9− | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2006 08 30 | 699 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.0 | | | | |
| 2006 08 30 | 699 | 0.5+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.9+ | | | | |

**2006 QV$_{104}$ = 2003 YU$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.00555 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29044604 | $\omega$ | 283.87010 | | +0.96984153 | | +0.23921654 |
| $a$ | 2.2581827 | $\Omega$ | 62.30704 | | −0.19825213 | | +0.88573705 |
| $e$ | 0.2024068 | $i$ | 3.02463 | | −0.14178679 | | +0.39780060 |
| $P$ | 3.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 03 | 291 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2002 06 03 | 291 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2002 06 03 | 291 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.7+ | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2003 12 20 | 704 | 0.6+ | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2003 12 20 | 704 | 0.6− | 0.4− | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2003 12 20 | 704 | 0.4− | 0.1+ | 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | 0.7+ | 1.0+ | 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2003 12 21 | 704 | 0.4− | 0.1− | 2006 09 19 | 704 | (2.3+ | 0.7−) | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2003 12 21 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 704 | (1.6+ | 0.6−) | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2005 04 09 | G96 | 0.6+ | 1.2+ | 2006 09 19 | 704 | 0.5+ | 0.8− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2005 04 09 | G96 | 0.1+ | 0.8+ | 2006 09 19 | 704 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 09 | G96 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.4− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2005 04 09 | G96 | 0.1+ | 0.5− | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2006 08 20 | 691 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2006 08 20 | 691 | 0.1− | 0.1+ | 2006 09 22 | 704 | (2.2− | 0.2−) | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 08 20 | 691 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2006 08 28 | 704 | 0.6+ | 1.2+ | 2006 09 22 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2006 08 28 | 704 | 0.7− | 0.4+ | 2006 09 22 | 704 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2006 08 28 | 704 | 0.1− | 0.4− | 2006 09 22 | 704 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 08 28 | 704 | 0.3− | 0.6− | 2006 09 22 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2006 08 28 | 699 | 0.9+ | 0.6+ | 2006 09 22 | 704 | 0.8+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 699 | 0.4+ | 0.9+ | 2006 09 22 | 704 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 08 28 | 699 | 0.3+ | 0.3− | 2006 09 26 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 08 28 | 699 | (2.3− | 0.8+) | 2006 09 26 | 704 | 0.8− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 08 29 | 691 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.7− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 26 | 704 | 1.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 09 14 | 703 | 0.5+ | 0.5+ | 2006 09 28 | 704 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2006 09 14 | 703 | 0.6+ | 0.3+ | 2006 09 28 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2006 09 14 | 703 | 0.9+ | 0.4− | 2006 09 28 | 704 | 0.3+ | 0.8− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2006 09 14 | 703 | 0.1+ | 0.7+ | 2006 09 28 | 704 | 0.1+ | 0.6− | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2006 09 16 | 704 | 0.7+ | 0.4− | 2006 09 28 | 704 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2006 09 16 | 704 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2006 09 16 | 704 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.5+ | 2006 10 24 | 644 | 0.3− | 0.2+ |
| 2006 09 16 | 704 | 1.2+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.5− | 0.2+ |
| 2006 09 16 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.6− | 0.2+ |
| 2006 09 18 | 703 | 0.6− | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.4− | | | | |

### 2006 QY$_{104}$ = 2000 DN$_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 309.44658 | | (2000.0) | | | |
| $n$ | 0.26331535 | $\omega$ | 99.89273 | | +0.27393071 | −0.94875945 |
| $a$ | 2.4107486 | $\Omega$ | 332.57196 | | +0.69245774 | +0.30823974 |
| $e$ | 0.3720007 | $i$ | 19.99861 | | +0.66743108 | +0.06959724 |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.5− | 0.5+ | 2000 03 05 | 704 | 0.4+ | 0.2+ | 2006 08 29 | 704 | 0.0 | 0.5+ |
| 2000 01 03 | 704 | 0.4+ | 0.9+ | 2006 08 28 | 699 | 0.4+ | 0.6+ | 2006 08 29 | 704 | 0.0 | 0.2+ |
| 2000 01 03 | 704 | 0.2+ | 0.8− | 2006 08 28 | 699 | 0.5− | 0.1− | 2006 08 29 | 704 | 0.2+ | 0.1+ |
| 2000 02 11 | 704 | 0.7− | 0.2+ | 2006 08 28 | 699 | 0.1− | 0.6+ | 2006 09 26 | 691 | 0.2+ | 0.1− |
| 2000 02 11 | 704 | 0.7+ | 0.7+ | 2006 08 28 | 703 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2000 02 11 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.2− | 0.1− |
| 2000 02 11 | 704 | 0.2− | 0.4− | 2006 08 28 | 699 | 0.9− | 0.2+ | 2006 09 27 | 291 | 0.0 | 0.2+ |
| 2000 02 11 | 704 | 0.3− | 0.9− | 2006 08 28 | 703 | 0.2+ | 1.0+ | 2006 09 27 | 291 | 0.0 | 0.2+ |
| 2000 02 29 | 704 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 27 | 291 | 0.1− | 0.2+ |
| 2000 02 29 | 704 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.5− |
| 2000 02 29 | 704 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.6− |
| 2000 02 29 | 704 | 0.3− | 0.6− | 2006 08 28 | 703 | 0.4+ | 0.8− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2000 02 29 | 704 | 0.1+ | 0.1− | 2006 08 28 | 703 | 0.4− | 1.0− | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2000 03 05 | 704 | 1.6+ | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.3+ |
| 2000 03 05 | 704 | 0.6− | 0.1− | 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2000 03 05 | 704 | 0.1− | 0.9+ | 2006 08 28 | 703 | 1.3− | 0.0 | 2006 09 28 | G96 | 0.1− | 0.3− |
| 2000 03 05 | 704 | 1.0+ | 1.0+ | 2006 08 28 | 703 | 0.6+ | 0.5− | 2006 09 28 | G96 | 0.1− | 0.1− |

### 2006 QZ$_{104}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.02772 | | (2000.0) | | | |
| $n$ | 0.28206596 | $\omega$ | 335.41291 | | +0.66156089 | +0.74892481 |
| $a$ | 2.3026907 | $\Omega$ | 335.94950 | | −0.67162972 | +0.56917715 |
| $e$ | 0.1998162 | $i$ | 5.35909 | | −0.33354265 | +0.33933612 |
| $P$ | 3.49 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.6− | 0.8+ | 2006 08 29 | 704 | 0.3− | 0.4+ |
| 1999 09 03 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 09 14 | 644 | 0.4− | 0.4+ |
| 1999 09 03 | 691 | 0.1− | 0.1+ | 2006 08 28 | 699 | 0.3+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.1− |
| 1999 09 07 | 568 | 0.2+ | 0.1− | 2006 08 28 | 703 | (0.4+ | 1.9+) | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 1999 09 07 | 568 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.3+ | 1.3− | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 1999 09 07 | 568 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2006 08 13 | 644 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2006 08 13 | 644 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2006 08 13 | 644 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2006 08 28 | 699 | 0.4+ | 0.2− | 2006 08 29 | 704 | 0.9+ | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.2+ |
| 2006 08 28 | 699 | 0.3+ | 0.4− | 2006 08 29 | 704 | (0.2+ | 1.6−) | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2006 08 28 | 699 | 0.5− | 1.2+ | 2006 08 29 | 704 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.0 |

### 2006 QB$_{105}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.58194 | | (2000.0) | | | |
| $n$ | 0.18613197 | $\omega$ | 222.72863 | | +0.93047639 | −0.36470003 |
| $a$ | 3.0380067 | $\Omega$ | 158.58559 | | +0.35654617 | +0.87968938 |
| $e$ | 0.2285568 | $i$ | 5.46150 | | +0.08419327 | +0.30518926 |
| $P$ | 5.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2001 10 16 | 644 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2001 10 16 | 644 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.9+ | 2006 10 28 | G96 | 0.5+ | 1.0− |
| 2001 10 24 | 644 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.8+ | 0.2+ |
| 2001 10 24 | 644 | 0.3− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.3+ |
| 2001 10 24 | 644 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.9− |
| 2006 08 28 | 703 | 0.6− | 0.6− | 2006 09 25 | G96 | 0.6− | 0.4− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2006 08 28 | 703 | 0.5− | 0.5+ | 2006 09 25 | G96 | 0.7− | 0.0 | 2006 11 23 | G96 | 0.3− | 0.6− |
| 2006 08 28 | 703 | 0.5− | 0.5+ | 2006 09 30 | G96 | 0.5+ | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2006 08 28 | 703 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.8− | 1.0− |
| 2006 08 29 | 704 | 1.4+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.5+ | 0.6− |
| 2006 08 29 | 704 | 0.2+ | 1.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− | | | | |
| 2006 08 29 | 704 | (0.6+ | 1.8+) | 2006 10 28 | G96 | 0.0 | 0.4− | | | | |

### 2006 QE$_{105}$ = 1999 TQ$_{58}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.56878 | | (2000.0) | | | |
| $n$ | 0.26992281 | $\omega$ | 183.89670 | | +0.95351042 | −0.30065140 |
| $a$ | 2.3712444 | $\Omega$ | 193.65431 | | +0.27880382 | +0.90608449 |
| $e$ | 0.2092844 | $i$ | 5.01959 | | +0.11439541 | +0.29769048 |
| $P$ | 3.65 | $H$ | 17.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 691 | 0.4+ | 0.2− | 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.2− |
| 1995 09 02 | 691 | 0.2− | 0.1− | 2005 04 02 | G96 | 0.4+ | 0.4− | 2006 08 29 | 691 | 0.0 | 0.3+ |
| 1995 09 02 | 691 | 0.0 | 0.4− | 2005 05 10 | 807 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.1− | 0.1+ |
| 1999 10 06 | 691 | 0.1− | 0.0 | 2005 05 11 | 807 | 0.3+ | 0.1− | 2006 08 30 | 704 | 0.8+ | 0.1+ |
| 1999 10 06 | 691 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.0 | 2006 08 30 | 704 | 0.2+ | 0.3+ |
| 1999 10 06 | 691 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 0.3+ | 0.8+ |
| 1999 10 09 | 691 | 0.2+ | 0.2− | 2006 08 16 | 644 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.7− | 0.6+ |
| 1999 10 09 | 691 | 0.1+ | 0.0 | 2006 08 28 | 703 | (2.9− | 0.9−) | 2006 09 28 | G96 | 0.1− | 0.4− |
| 1999 10 09 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2005 04 02 | G96 | 0.8− | 0.3− | 2006 08 28 | 703 | 0.5+ | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.3− |
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2006 08 28 | 703 | 1.0− | 0.6− | 2006 09 28 | G96 | 0.2+ | 0.4− |

### 2006 QF$_{105}$ = 2001 TP$_{135}$ = 2003 AL$_{45}$ = 2004 EL$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 238.74777 | | (2000.0) | | | |
| $n$ | 0.17643073 | $\omega$ | 159.26672 | | −0.25382725 | −0.95831822 |
| $a$ | 3.1483757 | $\Omega$ | 305.21534 | | +0.86329724 | −0.16330998 |
| $e$ | 0.0597243 | $i$ | 9.23690 | | +0.43622196 | −0.23442703 |
| $P$ | 5.59 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.4+ | 0.2+ | 2003 01 09 | 704 | 0.4− | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.0 |
| 1992 01 31 | 691 | 0.2+ | 0.4+ | 2004 03 15 | 644 | 0.5+ | 0.8+ | 2006 08 29 | 691 | 0.2− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 01 31 | 691 | 0.1+ | 0.4+ | 2004 03 15 | 644 | 0.6+ | 0.9+ | 2006 09 17 | 691 | 0.0 | 0.2+ |
| 2001 10 13 | 644 | 0.1− | 0.4+ | 2004 03 15 | 644 | 0.7+ | 1.2+ | 2006 09 17 | 691 | 0.1+ | 0.1+ |
| 2001 10 13 | 644 | 0.4− | 0.4− | 2004 03 17 | 703 | 1.1− | 0.9+ | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 2001 10 13 | 644 | 0.5− | 0.1+ | 2004 03 17 | 703 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.2+ |
| 2001 10 15 | 608 | 0.6− | 0.3− | 2004 03 17 | 703 | 1.0+ | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2001 10 15 | 608 | 0.6− | 0.0 | 2004 03 17 | 703 | 0.6− | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2001 10 15 | 608 | 0.9− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.4+ |
| 2003 01 05 | 704 | 0.5+ | 0.8− | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2003 01 05 | 704 | 1.5+ | 0.3+ | 2006 08 16 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.3+ |
| 2003 01 05 | 704 | 0.4− | 0.1+ | 2006 08 28 | 703 | 1.1− | 0.8− | 2006 09 27 | 691 | 0.4+ | 0.1+ |
| 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 08 28 | 703 | 0.8− | 0.2+ | 2006 09 27 | 691 | 0.4+ | 0.0 |
| 2003 01 09 | 704 | 0.9− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2003 01 09 | 704 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.0 | 0.0 | | | | |
| 2003 01 09 | 704 | 0.2− | 0.8− | 2006 08 29 | 691 | 0.2− | 0.3+ | | | | |

**2006 QR$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.32711 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24484045 | $\omega$ | 138.95521 | | +0.69620859 | | +0.71771645 |
| $a$ | 2.5305443 | $\Omega$ | 175.11372 | | −0.69262177 | | +0.67650066 |
| $e$ | 0.0650453 | $i$ | 8.97815 | | −0.18859661 | | +0.16501501 |
| $P$ | 4.03 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 0.1+ | 1.0+ | 2006 08 28 | 703 | 0.1− | 0.5− | 2006 09 18 | 291 | 0.1− | 0.3+ |
| 2002 08 12 | 704 | (0.1− | 1.7+) | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1− | 0.5− |
| 2002 08 12 | 704 | 0.2− | 1.2+ | 2006 08 29 | 691 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2002 08 12 | 704 | (0.1− | 2.5+) | 2006 08 29 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.4− | 2006 09 14 | 703 | 1.3+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.3− |
| 2002 08 28 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.8+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2002 08 28 | 644 | 0.2− | 0.6− | 2006 09 14 | 703 | 0.8+ | 1.4+ | 2006 10 19 | G96 | 0.4+ | 0.2− |
| 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 1.2− | 2006 10 19 | G96 | 0.6− | 0.4+ |
| 2006 08 28 | 703 | 0.4− | 0.9− | 2006 09 18 | 291 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2006 08 28 | 703 | 0.0 | 0.9− | 2006 09 18 | 291 | 0.2− | 0.2+ | | | | |

**2006 QS$_{105}$ = 2001 TA$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.37309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18429377 | $\omega$ | 115.20608 | | +0.95984564 | | −0.27256721 |
| $a$ | 3.0581746 | $\Omega$ | 260.66767 | | +0.22705015 | | +0.89374421 |
| $e$ | 0.1999378 | $i$ | 3.85598 | | +0.16475614 | | +0.35627013 |
| $P$ | 5.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1+ |
| 2001 10 14 | 704 | 0.0 | 0.6− | 2006 08 28 | 703 | 0.9− | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2001 10 14 | 704 | 0.3+ | 0.8− | 2006 08 28 | 703 | 0.4+ | 0.2− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 704 | 0.8+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2001 10 19 | 644 | 0.2− | 0.2+ | 2006 08 29 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2001 10 19 | 644 | 0.2− | 0.2+ | 2006 08 29 | 691 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 10 19 | 644 | 0.3− | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.2− | | | | |

**2006 QU$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.11430 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21313423 | $\omega$ | 355.73652 | | −0.95770120 | | −0.27916137 |
| $a$ | 2.7756663 | $\Omega$ | 167.37060 | | +0.27256401 | | −0.95782703 |
| $e$ | 0.2105171 | $i$ | 18.62748 | | +0.09228904 | | −0.06809043 |
| $P$ | 4.62 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 23 | 691 | 0.1− | 0.1− | 2000 04 29 | 699 | 0.5− | 0.4+ | 2006 08 28 | 703 | 0.5− | 0.1+ |
| 1997 09 23 | 691 | 0.2− | 0.6+ | 2005 06 16 | 703 | 0.2− | 0.6− | 2006 08 28 | 703 | 0.1+ | 0.3+ |
| 1997 09 23 | 691 | 0.2+ | 0.5+ | 2005 06 16 | 703 | 2.0− | 1.0− | 2006 08 29 | 691 | 0.2+ | 0.1− |
| 2000 04 07 | 699 | 0.5− | 0.0 | 2005 06 16 | 703 | 0.1+ | 0.9− | 2006 08 29 | 691 | 0.1+ | 0.3+ |
| 2000 04 07 | 699 | 0.0 | 0.0 | 2005 06 16 | 703 | 0.7− | 0.7− | 2006 08 29 | 691 | 0.1+ | 0.1+ |
| 2000 04 07 | 699 | 0.0 | 1.4+ | 2005 06 24 | 644 | 0.5+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2000 04 07 | 699 | 0.2+ | 0.5+ | 2005 06 24 | 644 | 0.6+ | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2000 04 29 | 699 | 1.7+ | 1.1+ | 2005 06 24 | 644 | 0.6+ | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.0 |
| 2000 04 29 | 699 | 0.1− | 0.6+ | 2006 08 28 | 703 | 0.1− | 1.2− | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 2000 04 29 | 699 | 0.2+ | 0.3+ | 2006 08 28 | 703 | (2.2+ | 0.4+) | | | | |

**2006 QN$_{106}$ = 2005 GR$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.05667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22428548 | $\omega$ | 100.55347 | | +0.82189759 | | +0.56901000 |
| $a$ | 2.6828843 | $\Omega$ | 224.77177 | | −0.53632727 | | +0.75720691 |
| $e$ | 0.1276852 | $i$ | 2.17126 | | −0.19193076 | | +0.32072624 |
| $P$ | 4.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 691 | 0.3− | 0.7+ | 2006 08 28 | 703 | 1.1− | 0.6− | 2006 09 27 | G96 | 0.7+ | 0.0 |
| 2005 04 12 | 691 | 0.3+ | 0.2− | 2006 08 29 | 691 | 0.4+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2005 04 12 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.1− |
| 2005 04 15 | 691 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | (8.9+ | 2.0+) |
| 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 11 16 | G96 | (8.5+ | 2.5+) |
| 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.9+ | 2006 11 16 | G96 | (8.6+ | 2.1+) |
| 2006 08 28 | 703 | 0.6− | 1.4− | 2006 09 14 | 703 | 0.2− | 0.4+ | 2006 11 16 | G96 | (8.8+ | 2.1+) |
| 2006 08 28 | 703 | (0.1− | 2.0−) | 2006 09 14 | 703 | 0.5− | 0.5+ | | | | |
| 2006 08 28 | 703 | 1.2− | 0.3− | 2006 09 27 | G96 | 0.1− | 0.3− | | | | |

**2006 QE$_{107}$ = 2005 JD$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.88133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20475992 | $\omega$ | 85.63381 | | +0.99702836 | | +0.06884610 |
| $a$ | 2.8508394 | $\Omega$ | 270.41587 | | −0.07691997 | | +0.91425523 |
| $e$ | 0.1541773 | $i$ | 1.98081 | | +0.00421538 | | +0.39924627 |
| $P$ | 4.81 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.2− | 0.7+ | 2006 08 28 | 703 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.4+ | 0.5+ |
| 2001 08 16 | 704 | 0.0 | 0.2− | 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 09 17 | 703 | 0.7+ | 0.7− |
| 2001 08 16 | 704 | 0.1− | 0.4+ | 2006 08 28 | 699 | 0.2+ | 0.6− | 2006 09 20 | 704 | 0.2+ | 0.1+ |
| 2001 08 16 | 704 | (1.1+ | 2.0+) | 2006 08 28 | 699 | 0.6− | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.1+ |
| 2005 05 12 | G96 | 0.5− | 0.3+ | 2006 08 29 | 704 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.9− | 0.5+ |
| 2005 05 12 | G96 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 1.0− | 0.1+ |
| 2005 05 12 | G96 | 0.3− | 0.1− | 2006 08 29 | 704 | 0.3− | 0.3− | 2006 09 20 | 699 | 1.0+ | 0.7− |
| 2005 05 12 | G96 | 0.4− | 0.1+ | 2006 08 29 | 704 | 1.1+ | 0.8− | 2006 09 20 | 699 | 1.1+ | 0.2+ |
| 2005 05 16 | 691 | 0.3+ | 0.3− | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | (1.6− | 0.5+) |
| 2005 05 16 | 691 | 0.0 | 0.4− | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2005 05 16 | 691 | 0.1− | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2006 08 19 | 691 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 09 30 | 699 | 0.2+ | 0.8− |
| 2006 08 28 | 699 | 1.0− | 1.0+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 699 | 0.4+ | 1.2+ |
| 2006 08 28 | 703 | 0.3+ | 0.3− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 30 | 699 | 0.9− | 0.8+ |
| 2006 08 28 | 699 | 0.4− | 0.9+ | 2006 09 17 | 703 | 0.3− | 0.9− | 2006 09 30 | 699 | 1.2+ | 0.8− |
| 2006 08 28 | 703 | 0.4+ | 0.2− | 2006 09 17 | 703 | 0.0 | 0.5− | | | | |

**2006 QL$_{107}$ = 2005 LE$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.06944 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17357016 | $\omega$ | 111.41815 | | +0.54944091 | | +0.83535756 |
| $a$ | 3.1828732 | $\Omega$ | 191.95567 | | −0.79390575 | | +0.51557841 |
| $e$ | 0.1473014 | $i$ | 4.73519 | | −0.26043875 | | +0.19067421 |
| $P$ | 5.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 691 | 0.2+ | 0.6+ | 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2001 10 11 | 691 | 0.3+ | 0.5+ | 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.5− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2001 10 21 | 691 | 0.2− | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.4− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 691 | 0.3− | 0.3+ | 2006 08 28 | 703 | 0.5+ | 0.6+ | 2006 11 16 | G96 | 1.1+ | 0.6− |
| 2001 10 21 | 691 | 0.4− | 0.2+ | 2006 08 28 | 703 | 0.4− | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.2+ |
| 2001 11 17 | 691 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2001 11 17 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4− | 0.5− |
| 2001 11 17 | 691 | 0.1− | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.7+ | 0.5− |
| 2005 06 12 | 691 | 0.3− | 0.3+ | 2006 09 17 | 703 | (0.4+ | 1.9−) | 2006 11 16 | G96 | 0.0 | 1.1− |
| 2005 06 12 | 691 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2005 06 12 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 703 | (0.1− | 2.3−) | 2006 11 16 | G96 | 0.9− | 1.1− |
| 2005 06 16 | 691 | 0.2− | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.6− | | | | |

**2006 QY$_{107}$ = 2005 JL$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.26246 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29058334 | $\omega$ | 185.11502 | | +0.86211449 | −0.50634689 | |
| $a$ | 2.2574713 | $\Omega$ | 205.33453 | | +0.46648324 | +0.80794508 | |
| $e$ | 0.1689299 | $i$ | 2.58142 | | +0.19786861 | +0.30139273 | |
| $P$ | 3.39 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.1+ | 0.7+ | 2006 08 28 | 703 | 1.4+ | 1.2− | 2006 09 17 | 703 | 0.3+ | 0.6+ |
| 1996 11 07 | 691 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 1996 11 07 | 691 | 0.1+ | 0.3− | 2006 08 28 | 703 | 1.4− | 0.7+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 1.2+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2003 12 25 | 691 | 0.1− | 0.3+ | 2006 08 29 | 691 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2003 12 25 | 691 | 0.0 | 0.1+ | 2006 08 29 | 691 | 0.5− | 0.1+ | 2006 11 21 | G96 | 0.7+ | 0.5− |
| 2005 05 04 | 568 | 0.3+ | 1.0+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2005 05 04 | 568 | 0.2+ | 0.9+ | 2006 09 17 | 703 | (2.5+ | 0.1−) | 2006 11 21 | G96 | 0.2− | 0.8− |
| 2005 05 04 | 568 | 0.4+ | 0.9+ | 2006 09 17 | 703 | (0.9− | 2.4+) | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2005 05 05 | 568 | 0.3+ | 0.8+ | 2006 09 17 | 703 | 1.1+ | 0.7+ | | | | |

**2006 QD$_{108}$ = 1999 TN$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.16969 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27765323 | $\omega$ | 108.70790 | | +0.94955279 | −0.31228872 | |
| $a$ | 2.3270242 | $\Omega$ | 269.49729 | | +0.27582025 | +0.87522052 | |
| $e$ | 0.2216877 | $i$ | 1.64623 | | +0.14924034 | +0.36941142 | |
| $P$ | 3.55 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.6− | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.7− | 1.4+ |
| 1999 10 09 | 704 | 1.0+ | 0.3− | 2006 08 28 | 703 | 0.1− | 0.9+ | 2006 09 17 | 703 | 0.0 | 1.1+ |
| 1999 10 09 | 704 | 0.1− | 0.7+ | 2006 08 28 | 703 | 0.5+ | 0.3− | 2006 09 20 | 699 | 0.5+ | 1.5− |
| 1999 10 09 | 704 | 0.1− | 0.4− | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.5− | 1.4+ |
| 1999 10 09 | 704 | 0.8− | 0.1− | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 09 20 | 699 | 1.1− | 0.2− |
| 1999 10 13 | 704 | 0.7+ | 0.7+ | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.4+ | 1.5− |
| 1999 10 13 | 704 | 0.6− | 0.6− | 2006 09 13 | 644 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.1− |
| 1999 10 13 | 704 | 0.9− | 0.6+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.2− |
| 1999 10 13 | 704 | 1.3+ | 1.0− | 2006 09 13 | 644 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.4+ | 0.1− |
| 1999 10 13 | 704 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2006 08 28 | 703 | 0.6+ | 1.0− | 2006 09 17 | 703 | 0.2+ | 1.1+ | | | | |

**2006 QP$_{108}$ = 1999 TS$_{330}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.98418 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27322315 | $\omega$ | 306.92914 | | +0.05764216 | +0.99687315 | |
| $a$ | 2.3521105 | $\Omega$ | 326.25443 | | −0.88223463 | +0.02552428 | |
| $e$ | 0.1067292 | $i$ | 5.58355 | | −0.46726807 | +0.07478261 | |
| $P$ | 3.61 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.8+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.9+ | 0.7+ | 2006 10 11 | 291 | 0.2+ | 0.3+ |
| 1999 10 14 | 645 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.3+ | 2006 10 11 | 291 | 0.3+ | 0.1+ |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 1.2+ | 0.4− | 2006 10 11 | 291 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 0.7+ | 0.6− | 2006 09 19 | 699 | (0.8− | 1.6−) | 2006 10 12 | 291 | 0.3− | 0.0 |
| 2006 08 28 | 703 | 1.3+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 1.1− | 2006 10 12 | 291 | 0.2− | 0.2− |
| 2006 08 28 | 703 | 0.8+ | 0.2− | 2006 09 19 | 699 | 0.3− | 0.4− | 2006 10 12 | 291 | 0.2− | 0.1− |
| 2006 08 28 | 703 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.5− | 0.5+ | 2006 10 13 | 291 | 0.2− | 0.1− |
| 2006 08 29 | 691 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 10 13 | 291 | 0.1− | 0.2+ |
| 2006 08 29 | 691 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.8− | 0.2− | 2006 10 13 | 291 | 0.1+ | 0.1− |
| 2006 08 29 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.4− | | | | |

**2006 QR$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.17508 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21100732 | $\omega$ | 96.96300 | | +0.16254033 | +0.98668648 | |
| $a$ | 2.7942872 | $\Omega$ | 182.41230 | | −0.94912300 | +0.15481941 | |
| $e$ | 0.1959811 | $i$ | 7.53012 | | −0.26971497 | +0.04980695 | |
| $P$ | 4.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 608 | 0.1+ | 0.6− | 2005 04 19 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.9− |
| 2001 07 17 | 608 | 0.1+ | 0.7− | 2005 04 19 | 691 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.5− | 0.1− |
| 2001 07 17 | 608 | 0.2+ | 1.1− | 2005 04 19 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.4+ | 0.9+ |
| 2005 03 09 | G96 | 0.1− | 0.1+ | 2006 08 28 | 703 | 1.1+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.6− |
| 2005 03 09 | G96 | 0.8− | 0.2− | 2006 08 28 | 703 | (2.7+ | 2.8−) | 2006 09 28 | G96 | 0.2− | 0.1+ |
| 2005 03 09 | G96 | 0.5− | 0.0 | 2006 08 28 | 703 | 1.3− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1+ |
| 2005 03 09 | G96 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.1− | 0.6− | 2006 09 28 | G96 | 0.3+ | 0.4+ |
| 2005 04 02 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2005 04 02 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 691 | 0.1− | 0.5+ | 2006 10 19 | G96 | 0.5+ | 0.1+ |
| 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.0 |
| 2005 04 11 | G96 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.6− | 1.1− | 2006 10 19 | G96 | 0.4+ | 0.5− |
| 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 09 12 | 703 | 0.0 | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2005 04 11 | G96 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.3− | 0.9− | | | | |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.7− | 1.3+ | | | | |

**2006 QP$_{109}$ = 1999 RF$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.90606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28203636 | $\omega$ | 101.20514 | | +0.43877026 | −0.89667974 | |
| $a$ | 2.3028518 | $\Omega$ | 322.59146 | | +0.78214357 | +0.41325462 | |
| $e$ | 0.1463837 | $i$ | 5.54526 | | +0.44241619 | +0.15870116 | |
| $P$ | 3.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.3− | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.2− | 2006 08 30 | 704 | 0.5+ | 0.7− |
| 1999 09 14 | 704 | 0.9− | 0.8− | 2006 08 19 | 691 | 0.4+ | 0.2− | 2006 09 12 | 703 | 0.7+ | 0.7+ |
| 1999 09 14 | 704 | 0.3+ | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.6− | 0.5+ |
| 1999 09 14 | 704 | 0.8+ | 0.3− | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 09 12 | 703 | 0.3− | 0.1+ |
| 2003 12 17 | 704 | 0.3− | 0.9− | 2006 08 28 | 703 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.5+ |
| 2003 12 17 | 704 | 0.4+ | 0.3− | 2006 08 28 | 703 | 1.2− | 0.0 | 2006 09 13 | 644 | 0.3− | 0.0 |
| 2003 12 17 | 704 | 0.8+ | 0.3− | 2006 08 28 | 703 | 0.0 | 0.3+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2003 12 17 | 704 | 0.1− | 0.2− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.1− |
| 2003 12 17 | 704 | 0.7+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.2− | 2006 09 16 | 644 | 0.4− | 0.0 |
| 2003 12 23 | 704 | 1.4− | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.1− | 0.0 |
| 2003 12 23 | 704 | (2.2− | 0.2−) | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.4+ | 0.0 |
| 2003 12 23 | 704 | 0.6− | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2003 12 23 | 704 | 0.8− | 0.6+ | 2006 08 29 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2003 12 28 | 704 | 0.9+ | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2003 12 28 | 704 | 0.4+ | 0.1− | 2006 08 30 | 704 | 0.3+ | 0.7− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2003 12 28 | 704 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.4+ | 0.5+ | | | | |

**2006 QX$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.32057 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18185931 | $\omega$ | 79.29205 | | +0.62510054 | −0.77614051 | |
| $a$ | 3.0854063 | $\Omega$ | 331.49448 | | +0.63103992 | +0.56494883 | |
| $e$ | 0.3603692 | $i$ | 9.99071 | | +0.45938866 | +0.28006915 | |
| $P$ | 5.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 0.5+ | 0.3− | 2006 08 28 | 703 | (5.0+ | 4.1+) | 2006 09 13 | 644 | 0.1+ | 0.1+ |
| 2001 09 28 | 704 | 0.1− | 0.4+ | 2006 08 28 | 691 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.3+ | 0.1+ |
| 2001 09 28 | 704 | 0.6+ | 0.0 | 2006 08 28 | 691 | 0.0 | 0.5+ | 2006 09 13 | 644 | 0.0 | 0.2+ |
| 2001 12 22 | 704 | 0.9− | 0.8+ | 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.1− |
| 2001 12 22 | 704 | 0.9− | 0.4+ | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 09 16 | 644 | 0.2+ | 0.2+ |
| 2001 12 22 | 704 | 1.4+ | 0.4+ | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 16 | 644 | 0.2+ | 0.2+ |
| 2001 12 22 | 704 | 0.6− | 0.4− | 2006 08 29 | 691 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.3+ | 0.1− |
| 2001 12 22 | 704 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.4− | 0.4− | 2006 09 25 | 704 | 0.1− | 0.2+ |
| 2003 03 31 | 691 | 0.3− | 0.3+ | 2006 08 30 | 704 | 1.2− | 0.5+ | 2006 09 25 | 704 | 0.0 | 0.5+ |
| 2003 03 31 | 691 | 0.2− | 0.3+ | 2006 08 30 | 704 | 0.9+ | 0.5− | 2006 09 25 | 704 | 0.2− | 0.2− |
| 2003 03 31 | 691 | 0.9+ | 0.2+ | 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 09 25 | 704 | (0.8− | 1.8+) |
| 2006 07 18 | G96 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.5− | 0.3+ | 2006 09 30 | 699 | 1.1− | 0.8− |
| 2006 07 18 | G96 | 0.6− | 0.4+ | 2006 09 01 | 704 | 0.4+ | 1.4− | 2006 09 30 | 699 | 0.3− | 0.4− |
| 2006 07 18 | G96 | 0.1+ | 0.0 | 2006 09 01 | 704 | 0.5− | 0.4− | 2006 09 30 | 699 | 0.6− | 0.2+ |
| 2006 07 18 | G96 | 0.3+ | 0.2− | 2006 09 01 | 704 | 0.6+ | 1.2− | 2006 09 30 | 699 | 0.7− | 0.5− |
| 2006 07 25 | G96 | 0.1− | 0.1+ | 2006 09 01 | 704 | 0.2+ | 1.3− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2006 07 25 | G96 | 0.0 | 0.6+ | 2006 09 11 | 703 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2006 07 25 | G96 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.7+ | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2006 07 25 | G96 | 0.2− | 0.1− | 2006 09 11 | 703 | 0.5− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2006 08 28 | 703 | 0.3+ | 0.5+ | 2006 09 11 | 703 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 08 28 | 703 | (0.2− | 4.3+) | 2006 09 13 | 644 | 0.2+ | 0.1+ | | | | |

**2006 QN$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.27725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22972408 | $\omega$ | 2.15138 | | +0.62668713 | −0.77590860 | |
| $a$ | 2.6403715 | $\Omega$ | 49.05207 | | +0.71352991 | +0.53403850 | |
| $e$ | 0.0811219 | $i$ | 5.49387 | | +0.31327036 | +0.33581055 | |
| $P$ | 4.29 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 20 | 012 | 0.9+ | 0.3− |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.5− | 0.6+ | 2006 09 20 | 012 | 0.4− | 0.2+ |
| 2002 10 09 | 704 | (2.2+ | 1.2−) | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 09 20 | 012 | 0.3+ | 1.2− |
| 2002 10 09 | 704 | 0.9+ | 0.0 | 2006 09 14 | 703 | 1.2− | 0.6+ | 2006 09 20 | 012 | 0.6− | 0.7+ |
| 2002 10 09 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.9− | 0.2+ | 2006 09 30 | 703 | 1.1− | 0.1− |
| 2002 11 01 | 608 | 0.1− | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 2002 11 01 | 608 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.6+ | 0.7− | 2006 09 30 | 703 | 1.2+ | 1.2+ |
| 2002 11 01 | 608 | 0.4− | 0.1+ | 2006 09 18 | 703 | 1.0+ | 0.9+ | 2006 09 30 | 703 | 0.5+ | 0.5− |
| 2002 11 22 | 644 | 0.4− | 0.3+ | 2006 09 19 | 012 | 0.9− | 0.9− | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 2002 11 22 | 644 | 0.4− | 0.2+ | 2006 09 19 | 012 | 0.3+ | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.2− |
| 2002 11 22 | 644 | 0.4− | 0.3+ | 2006 09 20 | 012 | 0.8+ | 0.2− | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 2006 08 28 | 699 | 0.2− | 0.5− | 2006 09 20 | 012 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.7− |
| 2006 08 28 | 699 | 0.4+ | 0.5+ | 2006 09 20 | 012 | 0.4− | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2006 08 28 | 699 | (0.9+ | 2.4−) | 2006 09 20 | 012 | 0.1− | 1.0− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2006 08 28 | 699 | 0.3− | 0.7+ | 2006 09 20 | 012 | 0.3− | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 09 20 | 012 | 0.0 | 0.5− | 2006 11 23 | G96 | 0.7+ | 0.2− |
| 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 012 | (0.9− | 1.6−) | | | | |

**2006 QQ$_{110}$ = 2002 UA$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.65341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23135427 | $\omega$ | 178.48907 | | +0.80824293 | +0.58335041 | |
| $a$ | 2.6279537 | $\Omega$ | 145.42091 | | −0.54173143 | +0.79006671 | |
| $e$ | 0.2277070 | $i$ | 8.13236 | | −0.23080387 | +0.18840620 | |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.4+ | 0.0 | 2006 09 16 | 704 | 1.0+ | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.6+ |
| 2000 02 27 | 691 | 0.1− | 0.3− | 2006 09 16 | 704 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.8− | 0.0 |
| 2000 02 27 | 691 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.6− | 2006 09 25 | 703 | 0.8− | 0.4− |
| 2002 10 31 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.6− | 2006 09 25 | 703 | 0.7− | 0.4− |
| 2002 10 31 | 704 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.9+ | 0.3− | 2006 09 25 | 703 | 0.1− | 0.8− |
| 2002 10 31 | 704 | 0.5+ | 0.5− | 2006 09 18 | 703 | 0.1− | 0.9− | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.4− | 2006 09 26 | 704 | 0.0 | 0.5− |
| 2002 10 31 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 704 | 0.3− | 0.3− | 2006 09 26 | 704 | 0.5− | 0.2+ |
| 2002 11 06 | 699 | 1.1− | 0.3− | 2006 09 19 | 699 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.3+ |
| 2002 11 06 | 699 | 0.4− | 0.2− | 2006 09 19 | 704 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.7+ | 0.4− |
| 2002 11 06 | 699 | 0.2− | 0.3+ | 2006 09 19 | 704 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.7+ | 0.4+ |
| 2002 11 06 | 699 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.2− | 0.5+ |
| 2002 12 08 | 644 | 0.3− | 0.1+ | 2006 09 19 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 704 | 0.2− | 0.5+ |
| 2002 12 08 | 644 | 0.0 | 0.0 | 2006 09 19 | 704 | 0.6− | 0.3+ | 2006 09 26 | 704 | 0.6+ | 1.2+ |
| 2002 12 08 | 644 | 0.1− | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.0 |
| 2006 08 16 | 644 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.1+ | 0.6− |
| 2006 08 16 | 644 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 02 | 703 | 0.3− | 0.5− |
| 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 0.0 | 0.2+ |
| 2006 08 28 | 704 | 1.2− | 0.4− | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 10 02 | 703 | 0.4+ | 0.3− |
| 2006 08 28 | 704 | 1.4− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.0 |
| 2006 08 28 | 704 | 0.2− | 1.0+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.0 | 0.1− |
| 2006 08 28 | 704 | 0.7− | 1.2− | 2006 09 20 | 704 | 0.1+ | 0.1− | 2006 10 02 | 703 | 1.4− | 1.0+ |
| 2006 08 28 | 699 | 0.1− | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.2− |
| 2006 08 28 | 699 | (0.2− | 2.1+) | 2006 09 22 | 704 | (2.1− | 0.1+) | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 699 | 0.6+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.5− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2006 08 28 | 699 | 0.5− | 1.2+ | 2006 09 22 | 704 | 0.6+ | 1.2+ | 2006 10 19 | 703 | 1.1+ | 0.5− |
| 2006 08 29 | 691 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.6− | 0.8+ | 2006 10 19 | 703 | 0.6− | 0.3− |
| 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.5− | 0.2+ | 2006 10 19 | 703 | 1.3− | 0.2− |
| 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.1− | 2006 10 19 | 703 | (1.5− | 1.7+) |
| 2006 09 14 | 703 | 0.8− | 0.2− | 2006 09 22 | 704 | 0.2− | 1.0+ | 2006 10 24 | 644 | 0.1+ | 0.0 |
| 2006 09 14 | 703 | (0.6+ | 2.4−) | 2006 09 22 | 704 | 0.3+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.3− |
| 2006 09 14 | 703 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.1− | 0.2− | 2006 10 24 | 644 | 0.2− | 0.2− |
| 2006 09 14 | 703 | 0.8+ | 0.7− | 2006 09 25 | 699 | 0.1+ | 0.5− | | | | |
| 2006 09 16 | 704 | (1.6+ | 0.1−) | 2006 09 25 | 699 | 1.4+ | 0.8− | | | | |

**2006 QR$_{110}$ = 2005 KD$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.16165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22082341 | $\omega$ | 153.53591 | | +0.91471990 | +0.40408372 | |
| $a$ | 2.7108530 | $\Omega$ | 182.63273 | | −0.37791139 | +0.85373266 | |
| $e$ | 0.0644815 | $i$ | 2.45074 | | −0.14307512 | +0.32841573 | |
| $P$ | 4.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 08 19 | 691 | 0.5+ | 0.3+ | 2006 08 30 | A55 | 0.9− | 0.4− |
| 2004 01 28 | 691 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.2− | 0.3− | 2006 08 31 | A55 | 1.2− | 0.6− |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.4− | 2006 08 31 | A55 | 0.6− | 0.5− |
| 2005 05 17 | G96 | 0.2+ | 0.0 | 2006 08 27 | 691 | 0.5− | 0.1− | 2006 08 31 | A55 | 0.9− | 0.2− |
| 2005 05 17 | G96 | 0.6+ | 0.4+ | 2006 08 27 | A55 | 0.4− | 0.5− | 2006 09 13 | A55 | (2.0+ | 0.0 ) |
| 2005 05 17 | G96 | 0.4− | 0.2+ | 2006 08 27 | A55 | 0.6− | 0.3+ | 2006 09 13 | A55 | 1.4+ | 0.7+ |
| 2005 05 19 | G96 | 0.2− | 0.3− | 2006 08 27 | A55 | 0.4+ | 0.0 | 2006 09 13 | A55 | 1.3+ | 1.1+ |
| 2005 05 19 | G96 | 0.1− | 0.2− | 2006 08 28 | A55 | 0.3+ | 0.2− | 2006 09 26 | G96 | (3.4− | 3.8−) |
| 2005 05 19 | G96 | 0.1+ | 0.2− | 2006 08 28 | A55 | 0.3− | 0.1+ | 2006 09 26 | G96 | (3.3− | 3.6−) |
| 2005 05 19 | G96 | 0.3− | 0.2− | 2006 08 28 | A55 | 0.4+ | 0.3+ | 2006 09 26 | G96 | (3.8− | 3.6−) |
| 2006 08 19 | 691 | 0.5+ | 0.0 | 2006 08 30 | A55 | (1.5− | 0.8−) | 2006 09 26 | G96 | (4.1− | 4.1−) |
| 2006 08 19 | 691 | 0.4+ | 0.3+ | 2006 08 30 | A55 | (1.7− | 1.0−) | | | | |

**2006 QY$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.03162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36748821 | $\omega$ | 221.04444 | | +0.10669051 | −0.99135335 | |
| $a$ | 1.9303695 | $\Omega$ | 222.99338 | | +0.93900612 | +0.12572276 | |
| $e$ | 0.5753321 | $i$ | 6.43208 | | +0.32693217 | −0.03758103 | |
| $P$ | 2.68 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 07 23 | 608 | 0.4− | 0.3+ | 2006 08 31 | 673 | 0.5− | 0.0 | 2006 09 04 | 673 | 0.9+ | 0.0 |
| 2003 07 23 | 608 | 0.4+ | 0.3− | 2006 09 01 | 649 | 0.1− | 0.3− | 2006 09 04 | 673 | 0.3+ | 0.0 |
| 2003 08 13 | 608 | (5.1− | 1.5+) | 2006 09 01 | 649 | (0.3− | 3.2−) | 2006 09 04 | 673 | 0.0 | 0.0 |
| 2006 08 30 | 704 | 0.2− | 0.8− | 2006 09 01 | 649 | 0.0 | 0.6+ | 2006 09 05 | H36 | 0.6+ | 0.6− |
| 2006 08 30 | 704 | 1.8− | 0.2+ | 2006 09 01 | 649 | 0.1− | 0.0 | 2006 09 05 | H36 | 0.4+ | 0.2+ |
| 2006 08 30 | 704 | 0.3+ | 0.8+ | 2006 09 01 | 649 | 0.3+ | 0.2+ | 2006 09 16 | 448 | 0.5+ | 0.8+ |
| 2006 08 30 | 704 | 0.4+ | 0.1+ | 2006 09 01 | 673 | 0.2+ | 0.0 | 2006 09 16 | 448 | 1.2− | 0.1+ |
| 2006 08 31 | 204 | 0.3+ | 0.3+ | 2006 09 01 | 673 | 0.1+ | 0.1− | 2006 09 16 | 448 | 1.3− | 1.6− |
| 2006 08 31 | 204 | 0.2+ | 0.2+ | 2006 09 01 | 673 | 0.1+ | 0.1− | 2006 09 24 | 291 | 0.5− | 0.2+ |
| 2006 08 31 | 734 | 0.3+ | 0.4− | 2006 09 02 | 147 | 0.2− | 0.4+ | 2006 09 24 | 291 | 0.7+ | 0.1− |
| 2006 08 31 | 734 | 0.6− | 0.1− | 2006 09 02 | 147 | 0.2+ | 0.2− | 2006 09 27 | 448 | 0.4+ | 0.0 |
| 2006 08 31 | 734 | 0.2− | 0.0 | 2006 09 02 | 147 | 0.6− | 0.1− | 2006 09 27 | 448 | 0.0 | 0.0 |
| 2006 08 31 | 673 | 0.3− | 0.2+ | 2006 09 02 | H36 | 0.9+ | 0.4− | 2006 09 27 | 448 | 0.2− | 0.3+ |
| 2006 08 31 | 673 | 0.4− | 0.2+ | 2006 09 02 | H36 | 0.9+ | 0.2+ | | | | |
| 2006 08 31 | 673 | 0.3− | 0.3− | 2006 09 04 | 673 | 0.0 | 0.2+ | | | | |

**2006 QD$_{111}$ = 2004 FM$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.54155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18303621 | $\omega$ | 242.76372 | | +0.58494418 | +0.79825804 | |
| $a$ | 3.0721662 | $\Omega$ | 63.76548 | | −0.67596969 | +0.57765583 | |
| $e$ | 0.0783942 | $i$ | 9.21293 | | −0.44822458 | +0.17058092 | |
| $P$ | 5.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.2+ | 1.2+ | 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 09 19 | 703 | 1.1+ | 0.5− |
| 2001 10 10 | 644 | 0.3− | 0.8+ | 2005 01 20 | 809 | 0.0 | 0.1− | 2006 09 19 | 703 | (1.6− | 0.2+) |
| 2001 10 10 | 644 | 0.8− | 0.1− | 2005 01 20 | 809 | 0.7− | 0.3− | 2006 09 25 | 703 | 0.7− | 1.2+ |
| 2003 03 07 | 644 | 0.3− | 0.5− | 2005 01 20 | 809 | 0.4− | 0.4− | 2006 09 25 | 703 | 0.1− | 0.6+ |
| 2003 03 07 | 644 | 0.4+ | 0.7+ | 2005 01 20 | 809 | 0.4− | 0.2− | 2006 09 25 | 703 | (0.7− | 1.6+) |
| 2003 03 07 | 644 | (0.2− | 3.3−) | 2006 08 27 | D35 | 0.1− | 0.2+ | 2006 09 25 | 703 | (1.9− | 0.1+) |
| 2004 03 20 | 691 | 0.5+ | 0.5+ | 2006 08 27 | D35 | 0.4− | 0.1+ | 2006 10 21 | 703 | 1.3+ | 0.4− |
| 2004 03 20 | 691 | 0.1+ | 0.6+ | 2006 08 27 | D35 | 0.1+ | 0.1+ | 2006 10 21 | 703 | (1.7− | 2.0−) |
| 2004 03 20 | 691 | 0.2+ | 0.4+ | 2006 08 30 | D35 | 0.1− | 0.3+ | 2006 10 21 | 703 | 1.5− | 0.0 |
| 2004 03 23 | 704 | 0.8+ | 0.2+ | 2006 08 30 | D35 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.2− | 1.3+ |
| 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 08 30 | D35 | 0.8− | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 1.0+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2004 03 23 | 704 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.3+ |

**2006 QH$_{111}$ = 2002 RQ$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.06382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24602360 | $\omega$ | 188.76957 | | +0.89272089 | +0.42433665 | |
| $a$ | 2.5224246 | $\Omega$ | 144.84424 | | −0.39581373 | +0.89925162 | |
| $e$ | 0.1052743 | $i$ | 15.26688 | | −0.21536225 | +0.10623056 | |
| $P$ | 4.01 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.4− | 0.9− | 2002 10 23 | 644 | (3.8+ | 0.4−) | 2006 09 19 | 703 | 0.1− | 0.5− |
| 2002 09 14 | 608 | 0.2− | 1.2− | 2002 10 23 | 644 | 0.9+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.5+ |
| 2002 09 14 | 608 | 0.7− | 1.1− | 2006 08 28 | D35 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 1.2+ |
| 2002 09 17 | 644 | 0.2+ | 0.2+ | 2006 08 28 | D35 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.7+ | 0.8+ |
| 2002 09 17 | 644 | 0.1+ | 0.4+ | 2006 08 28 | D35 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 1.1− | 1.2+ |
| 2002 09 17 | 644 | 0.2− | 0.2+ | 2006 08 30 | D35 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2002 10 08 | 644 | 0.2− | 0.2− | 2006 08 30 | D35 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2002 10 08 | 644 | 0.3− | 0.5− | 2006 08 30 | D35 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.6− | 0.1+ |
| 2002 10 08 | 644 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.4+ | 0.3+ | | | | |
| 2002 10 23 | 644 | 1.7+ | 0.3− | 2006 09 19 | 703 | 0.1− | 0.2− | | | | |

**2006 QP$_{111}$ = 2005 GK$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.30777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23147163 | $\omega$ | 140.51779 | | +0.84960860 | +0.52740867 | |
| $a$ | 2.6270653 | $\Omega$ | 187.65271 | | −0.48816501 | +0.78472115 | |
| $e$ | 0.2143818 | $i$ | 0.99176 | | −0.19965007 | +0.32565750 | |
| $P$ | 4.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 291 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.2− | 0.3+ |
| 2001 04 24 | 291 | 0.2− | 0.5− | 2006 09 13 | 644 | 0.2+ | 0.3− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2001 04 24 | 291 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2001 05 14 | 691 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2001 05 14 | 691 | 0.0 | 0.2+ | 2006 09 16 | 699 | (2.0− | 0.9+) | 2006 09 25 | 699 | (0.8− | 1.6−) |
| 2001 05 14 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 699 | 1.3+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 09 | G96 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.7+ | 0.5− | 2006 09 25 | 699 | 0.6+ | 1.1+ |
| 2005 04 09 | G96 | 0.5− | 0.8+ | 2006 09 16 | 699 | 0.8+ | 1.1+ | 2006 09 25 | 699 | 0.3− | 0.4+ |
| 2005 04 09 | G96 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.8+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 1.3+ |
| 2005 04 09 | G96 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.4− | 0.9+ |
| 2005 04 10 | G96 | 0.2+ | 0.0 | 2006 09 17 | 704 | 1.1+ | 0.9− | 2006 09 27 | 704 | 0.3+ | 0.9+ |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.6+ | 0.2+ | 2006 09 27 | 704 | 0.6− | 0.6+ |
| 2005 04 10 | G96 | 0.5+ | 0.1+ | 2006 09 17 | 704 | 0.4+ | 0.1+ | 2006 09 30 | 704 | 0.4+ | 0.7+ |
| 2005 04 10 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.8− | 2006 09 30 | 704 | 1.0+ | 0.8+ |
| 2006 08 15 | 644 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.5+ | 0.7− | 2006 09 30 | 704 | 0.1− | 0.2+ |
| 2006 08 15 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2006 08 15 | 644 | 0.6+ | 0.5− | 2006 09 19 | 699 | 1.3− | 1.1+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2006 08 21 | 704 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.5+ | 0.9− | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2006 08 21 | 704 | (1.6− | 0.5−) | 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.8− |
| 2006 08 21 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.6− | 0.3− |
| 2006 08 21 | 704 | 1.1− | 0.5− | 2006 09 19 | 699 | 0.9+ | 0.7+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2006 08 27 | 699 | (2.0− | 1.7−) | 2006 09 20 | 704 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.6+ | 0.5− |
| 2006 08 27 | 699 | 0.1− | 0.4− | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2006 08 27 | 699 | 0.0 | 0.6− | 2006 09 20 | 704 | 0.2+ | 0.7− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2006 08 28 | 691 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.6− | 0.5− |
| 2006 08 28 | 691 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.4− | 0.2− |
| 2006 08 28 | 691 | 1.4− | 0.4+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2006 09 12 | 703 | 0.6− | 0.4− | 2006 09 20 | 704 | (1.8+ | 1.3+) | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 09 12 | 703 | 0.4− | 0.3− | 2006 09 20 | 704 | 0.6+ | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2006 09 12 | 703 | 0.0 | 0.5− | 2006 09 20 | 644 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.1− | 0.3− |

**2006 QS$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.43061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18431206 | $\omega$ | 354.81767 | | +0.48256218 | +0.86849249 | |
| $a$ | 3.0579723 | $\Omega$ | 303.98919 | | −0.79859449 | +0.38312849 | |
| $e$ | 0.0800245 | $i$ | 7.85931 | | −0.35969513 | +0.31453675 | |
| $P$ | 5.35 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.7− | 0.8+ | 2004 03 18 | 291 | 0.4+ | 0.5+ | 2006 09 20 | 699 | 0.7+ | 0.1− |
| 2000 07 07 | 704 | 0.2− | 0.1+ | 2004 03 18 | 291 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2000 07 07 | 704 | 0.9+ | 0.3+ | 2006 08 21 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2000 07 07 | 704 | 0.1− | 0.2− | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2001 09 25 | 704 | 1.4+ | 0.3− | 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 1.1+ | 0.5− |
| 2001 09 25 | 704 | 0.2− | 1.0− | 2006 08 27 | 699 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2001 09 25 | 704 | 0.8+ | 0.1− | 2006 08 27 | 699 | 0.8+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.8− |
| 2001 09 25 | 704 | 0.0 | 0.7+ | 2006 08 27 | 699 | 1.4+ | 0.5− | 2006 10 17 | 703 | 1.0− | 0.8+ |
| 2001 10 13 | 644 | 0.8− | 0.1+ | 2006 08 27 | 699 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 644 | 1.0− | 0.0 | 2006 09 01 | 704 | 0.3− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2001 10 13 | 644 | 0.2− | 0.1+ | 2006 09 01 | 704 | 0.4+ | 0.6− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2004 02 14 | 644 | 0.2− | 1.0+ | 2006 09 01 | 704 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2004 02 14 | 644 | 0.1+ | 0.8+ | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2004 02 14 | 644 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.5− | 2006 10 20 | 691 | 0.2− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 703 | (1.5− | 2.2+) | 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 11 22 | 291 | 0.1− | 0.1+ | | |
| 2004 03 14 | 703 | (0.3− | 2.8+) | 2006 09 14 | 703 | 1.3− | 0.4− | 2006 11 22 | 291 | 0.1+ | 0.1+ | | |
| 2004 03 14 | 703 | (1.6− | 1.6+) | 2006 09 20 | 699 | 0.1+ | 0.3+ | 2006 11 22 | 291 | 0.1+ | 0.1+ | | |
| 2004 03 14 | 703 | (0.9− | 2.3+) | 2006 09 20 | 699 | 0.3− | 0.1− | | | | | | |
| 2004 03 18 | 291 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.7− | 0.0 | | | | | | |

**2006 QW$_{111}$ = 2001 QV$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.93065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20982790 | $\omega$ | 306.81752 | | −0.21693269 | +0.95457314 | |
| $a$ | 2.8047483 | $\Omega$ | 309.35926 | | −0.79022424 | −0.29458152 | |
| $e$ | 0.1661270 | $i$ | 15.31978 | | −0.57313686 | +0.04485374 | |
| $P$ | 4.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 21 | 644 | 0.2− | 0.4+ | 2003 12 14 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 1.1+ | 0.1+ |
| 2001 06 21 | 644 | 0.2− | 0.6+ | 2005 04 10 | E12 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.7− |
| 2001 06 21 | 644 | 0.0 | 0.5+ | 2005 04 10 | E12 | 0.1+ | 0.8+ | 2006 08 29 | 703 | 0.5+ | 0.3− |
| 2001 07 12 | 644 | 0.5+ | 0.8+ | 2005 04 10 | E12 | 0.9− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2001 07 12 | 644 | 0.3+ | 0.4+ | 2005 04 10 | E12 | 1.6+ | 0.6+ | 2006 09 15 | 691 | 0.2− | 0.1+ |
| 2001 07 12 | 644 | 0.2+ | 0.5+ | 2006 07 21 | 703 | 0.0 | 1.6+ | 2006 09 15 | 691 | 0.2+ | 0.2+ |
| 2001 08 16 | 704 | 0.3− | 0.6− | 2006 07 21 | 703 | 1.5− | 0.5+ | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2001 08 16 | 704 | 0.1− | 0.6− | 2006 07 21 | 703 | 1.3− | 0.8+ | 2006 09 17 | 691 | 0.0 | 0.0 |
| 2001 08 16 | 704 | 0.7+ | 0.4+ | 2006 07 21 | 703 | 0.5− | 0.2− | 2006 09 17 | 691 | 0.2− | 0.2+ |
| 2001 08 23 | 608 | 0.7− | 1.8− | 2006 08 22 | 644 | 0.3− | 0.1+ | 2006 09 20 | 691 | 0.2+ | 0.1− |
| 2001 08 23 | 608 | 0.6− | 1.3− | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.2− |
| 2001 08 23 | 608 | 0.2− | 1.5− | 2006 08 22 | 644 | 0.3− | 0.3+ | 2006 09 20 | 691 | 0.1− | 0.2− |
| 2001 08 24 | 704 | 0.2− | 0.6+ | 2006 08 27 | 699 | 1.1+ | 0.0 | 2006 09 22 | 691 | 0.4+ | 0.0 |
| 2001 08 24 | 704 | 0.2+ | 0.4+ | 2006 08 27 | 699 | 0.5− | 0.1− | 2006 09 22 | 691 | 0.2+ | 0.0 |
| 2001 08 24 | 704 | 0.4+ | 0.9+ | 2006 08 27 | 699 | 0.0 | 0.2+ | 2006 09 22 | 691 | 0.1+ | 0.1− |
| 2003 12 14 | 691 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.2− | 0.1+ | | | | |
| 2003 12 14 | 691 | 0.4+ | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.3+ | | | | |

**2006 QC$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.90279 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28072529 | $\omega$ | 202.08110 | | +0.99399813 | −0.10870904 | |
| $a$ | 2.3100162 | $\Omega$ | 164.14513 | | +0.10587621 | +0.92777554 | |
| $e$ | 0.2631044 | $i$ | 2.56998 | | +0.02753093 | +0.35695223 | |
| $P$ | 3.51 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 29 | 691 | 0.2− | 0.3− | 2006 09 12 | 703 | 0.4− | 1.3− | 2006 09 20 | 644 | 0.1+ | 0.2+ |
| 1992 09 29 | 691 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.6+ | 0.8− | 2006 09 20 | 704 | 0.2+ | 0.3− |
| 1992 09 29 | 691 | 0.0 | 0.4− | 2006 09 12 | 703 | 0.5− | 0.6− | 2006 09 20 | 644 | 0.2+ | 0.2+ |
| 1999 09 09 | 704 | 1.8+ | 1.0− | 2006 09 14 | 644 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.0 | 1.1+ |
| 1999 09 09 | 704 | (2.5+ | 0.5−) | 2006 09 14 | 644 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.9+ | 0.7+ |
| 1999 09 09 | 704 | 0.7+ | 1.1− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.1− | 0.0 |
| 1999 09 09 | 704 | 1.0+ | 0.6− | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.5− |
| 1999 10 07 | 703 | 0.9+ | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 1999 10 07 | 703 | 1.1− | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 1999 10 07 | 703 | 0.5+ | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.5− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 1999 10 07 | 703 | 1.0− | 0.0 | 2006 09 16 | 699 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.6+ | 0.3− |
| 2001 03 26 | 695 | 0.1+ | 0.9+ | 2006 09 16 | 699 | 0.7+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2001 03 26 | 695 | 0.2− | 0.6+ | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2003 12 22 | 691 | 0.3+ | 0.4− | 2006 09 17 | 704 | 0.2+ | 1.1− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.4− | 0.5+ | 2006 09 27 | 704 | 0.6− | 0.3+ |
| 2003 12 22 | 691 | 0.5− | 0.5− | 2006 09 17 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.8− | 1.2− |
| 2004 01 15 | 691 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | (2.3− | 1.3−) |
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.8− | 0.4− |
| 2004 01 15 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.4− | 2006 09 27 | 704 | 1.1− | 1.0− |
| 2006 07 25 | G96 | 0.5+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 1.1+ | 2006 09 28 | 704 | 0.9− | 0.3− |
| 2006 07 25 | G96 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.6− | 0.0 | 2006 09 28 | 704 | 0.3− | 1.1− |
| 2006 07 25 | G96 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.4+ | 2006 09 28 | 704 | 1.3− | 0.2− |
| 2006 07 25 | G96 | 0.2− | 0.1− | 2006 09 19 | 703 | 1.0+ | 0.9+ | 2006 09 30 | 704 | 0.2− | 0.7+ |
| 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.1− | 1.5+ |
| 2006 08 22 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.7+ | 2006 09 30 | 704 | 0.3+ | 0.9+ |
| 2006 08 22 | 644 | 0.6+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.2+ |
| 2006 08 27 | 699 | 0.6+ | 0.6− | 2006 09 20 | 704 | 0.0 | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2006 08 27 | 699 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.2− |
| 2006 08 27 | 699 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2006 08 27 | 699 | 0.6+ | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.0 | | | | |
| 2006 09 12 | 703 | 0.7+ | 0.6− | 2006 09 20 | 704 | 0.8− | 0.6+ | | | | |

**2006 QH$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.83400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37924471 | $\omega$ | 86.93906 | | −0.25743431 | +0.96203699 | |
| $a$ | 1.8902665 | $\Omega$ | 167.01042 | | −0.96608976 | −0.25818167 | |
| $e$ | 0.0486221 | $i$ | 23.77657 | | +0.01995399 | −0.08847059 | |
| $P$ | 2.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 07 | 691 | 0.2− | 0.0 | 2003 04 24 | 704 | 1.5− | 0.0 | 2006 08 27 | 699 | 0.6− | 0.2− |
| 1995 03 07 | 691 | 0.7+ | 0.2+ | 2003 04 24 | 704 | 0.3− | 1.1+ | 2006 08 27 | 699 | (1.9+ | 0.6−) |
| 1995 03 07 | 691 | 0.3− | 0.1+ | 2003 04 24 | 704 | 1.1− | 0.6+ | 2006 08 27 | 699 | 0.4+ | 0.2+ |
| 2001 08 27 | 699 | 0.9+ | 1.4+ | 2003 04 24 | 704 | 0.1− | 0.8+ | 2006 08 27 | 699 | 0.3+ | 0.8− |
| 2001 08 27 | 699 | 0.4− | 0.9+ | 2003 04 24 | 704 | 0.2− | 1.0+ | 2006 08 27 | 699 | (2.4− | 0.4+) |
| 2001 08 27 | 699 | 0.1+ | 0.3− | 2003 07 21 | 644 | 0.5+ | 0.2+ | 2006 08 27 | 699 | 0.4− | 0.3+ |
| 2001 08 27 | 699 | 1.2+ | 1.1+ | 2003 07 21 | 644 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 0.5+ | 0.4− |
| 2001 09 12 | 704 | 0.6− | 0.3+ | 2003 07 21 | 644 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 0.6− | 0.8− |
| 2001 09 12 | 704 | 0.2+ | 0.2+ | 2004 12 21 | E12 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.2− | 1.1+ | 2004 12 21 | E12 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.6+ | 1.0− |
| 2001 09 12 | 704 | 0.5− | 0.0 | 2004 12 21 | E12 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.3− |
| 2001 09 25 | 699 | 0.4− | 2.0+ | 2004 12 21 | E12 | 1.0+ | 0.3+ | 2006 09 14 | 703 | 0.9− | 0.2+ |
| 2001 09 25 | 699 | 0.5− | 0.1− | 2006 08 23 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.9− | 0.8− |
| 2001 09 25 | 699 | 1.4− | 0.2− | 2006 08 23 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.6+ |
| 2001 09 25 | 699 | 0.3+ | 0.2+ | 2006 08 23 | 644 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 2003 04 11 | 699 | 0.8+ | 1.2− | 2006 08 27 | 699 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1− |
| 2003 04 11 | 699 | 0.4− | 0.1+ | 2006 08 27 | 699 | 0.2+ | 0.5− | 2006 09 15 | 691 | 0.0 | 0.0 |
| 2003 04 11 | 699 | 0.7+ | 0.8+ | 2006 08 27 | 699 | 0.7+ | 0.5+ | | | | |
| 2003 04 11 | 699 | 0.7+ | 0.4− | 2006 08 27 | 699 | 0.3+ | 0.1+ | | | | |

**2006 QK$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.78029 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21991690 | $\omega$ | 118.59793 | | +0.97704408 | +0.18674398 | |
| $a$ | 2.7182974 | $\Omega$ | 230.82927 | | −0.21006165 | +0.92464888 | |
| $e$ | 0.2047682 | $i$ | 7.59939 | | +0.03548211 | +0.33189026 | |
| $P$ | 4.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 291 | 0.0 | 0.0 | 2002 11 23 | 644 | 0.2− | 0.2− | 2006 08 30 | 704 | 0.1+ | 0.3+ |
| 2002 11 04 | 291 | 0.1− | 0.1− | 2002 11 23 | 644 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.8+ | 0.2+ |
| 2002 11 04 | 291 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.4− | 0.2+ | 2006 08 30 | 704 | 0.3− | 0.1+ |
| 2002 11 13 | 644 | 0.4+ | 0.0 | 2006 08 23 | 644 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2002 11 13 | 644 | 0.3+ | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 11 13 | 644 | 0.3+ | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.1− |
| 2002 11 23 | 644 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.2− | 0.5− | | | | |

**2006 QO$_{112}$ = 2003 YQ$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.30851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28034109 | $\omega$ | 327.83848 | | +0.86779596 | −0.48762346 | |
| $a$ | 2.3121263 | $\Omega$ | 61.63625 | | +0.47583479 | +0.75993495 | |
| $e$ | 0.1689017 | $i$ | 6.24193 | | +0.14321811 | +0.42979324 | |
| $P$ | 3.52 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.3+ | 0.1− | 2005 04 14 | 691 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.5+ | 0.7− |
| 2003 12 19 | 704 | 0.2+ | 0.5− | 2006 08 23 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.1+ | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.2+ | 0.8+ | 2006 08 23 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 703 | (0.6+ | 1.7−) |
| 2003 12 19 | 704 | 0.5+ | 0.2+ | 2006 08 23 | 644 | 0.6− | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.2+ |
| 2003 12 28 | 704 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 1.0− |
| 2003 12 28 | 704 | 0.5− | 0.0 | 2006 08 30 | 699 | 0.4+ | 0.9− | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2003 12 28 | 704 | 0.5− | 0.1− | 2006 08 30 | 699 | 0.5− | 0.9+ | 2006 09 26 | 703 | 0.2− | 0.1− |
| 2005 04 14 | 691 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.3− | | | | |
| 2005 04 14 | 691 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.0 | 0.4+ | | | | |

**2006 QP$_{112}$ = 2004 CF$_{117}$ = 2006 SD$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.87561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17271682 | $\omega$ | 130.98781 | | +0.19191477 | +0.97581499 | |
| $a$ | 3.1933484 | $\Omega$ | 149.59502 | | −0.95105731 | +0.21123607 | |
| $e$ | 0.1494206 | $i$ | 11.93457 | | −0.24219563 | −0.05625329 | |
| $P$ | 5.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 291 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 25 | 734 | 0.1− | 0.3− |
| 2004 02 11 | 291 | 0.1+ | 0.0 | 2006 08 23 | 644 | 0.5− | 0.0 | 2006 09 25 | 734 | 0.1+ | 0.5− |
| 2004 02 11 | 291 | 0.4− | 0.2− | 2006 08 23 | 644 | 0.4− | 0.2+ | 2006 09 25 | 734 | 0.5+ | 0.7− |
| 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 08 23 | 644 | 0.4− | 0.2− | 2006 09 25 | 734 | 0.0 | 0.1+ |
| 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.1− | 0.0 | 2006 09 26 | 734 | 0.2+ | 0.3+ |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.3− | 1.6+ | 2006 09 26 | 734 | 0.3− | 0.3+ |
| 2006 08 23 | 644 | 0.4+ | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.2− | 2006 09 26 | 734 | 0.1+ | 0.1+ |
| 2006 08 23 | 644 | 0.7− | 0.1− | 2006 08 30 | 699 | 1.1+ | 0.4+ | 2006 09 26 | 734 | 0.0 | 0.1+ |

**2006 QS$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.85918 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28471193 | $\omega$ | 331.90562 | | +0.61372886 | −0.78042951 | |
| $a$ | 2.2884018 | $\Omega$ | 79.98587 | | +0.74519003 | +0.52262543 | |
| $e$ | 0.1387113 | $i$ | 6.96662 | | +0.26082313 | +0.34320903 | |
| $P$ | 3.46 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 704 | (0.8+ | 1.6+) | 2003 12 24 | 704 | 0.3+ | 0.2− | 2006 08 30 | 699 | 0.2+ | 1.0+ |
| 2001 02 16 | 704 | 0.7− | 1.0+ | 2003 12 24 | 704 | 0.2− | 0.3+ | 2006 09 20 | 703 | 0.8− | 1.5+ |
| 2001 02 16 | 704 | 0.9+ | 0.1+ | 2005 04 15 | 691 | 0.3− | 0.1− | 2006 09 20 | 703 | (1.5+ | 2.6+) |
| 2001 02 16 | 704 | 0.1+ | 0.8+ | 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.2− | 0.0 |
| 2003 12 18 | 704 | 0.2+ | 1.1+ | 2005 04 15 | 691 | 0.2+ | 0.0 | 2006 09 21 | 699 | (0.0 | 2.0+) |
| 2003 12 18 | 704 | 0.1− | 0.8+ | 2005 05 11 | 691 | 0.4+ | 0.5+ | 2006 09 21 | 699 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.6+ | 0.8+ | 2005 05 11 | 691 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 1.1− | 0.2− |
| 2003 12 18 | 704 | 0.0 | 0.4+ | 2005 05 11 | 691 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.5− | 0.4− |
| 2003 12 18 | 704 | 0.1− | 0.3+ | 2006 08 23 | 644 | 0.6+ | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 2003 12 24 | 704 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.9− | 0.5− |
| 2003 12 24 | 704 | 0.2− | 0.8+ | 2006 08 23 | 644 | 0.5+ | 0.7+ | 2006 10 21 | 703 | 0.0 | 1.4− |
| 2003 12 24 | 704 | 0.2− | 0.1− | 2006 08 30 | 699 | 0.0 | 0.4+ | 2006 10 21 | 703 | 1.0− | 0.4+ |
| 2003 12 24 | 704 | 0.3− | 0.4+ | 2006 08 30 | 699 | 0.6+ | 1.4+ | | | | |
| 2003 12 24 | 704 | 0.1− | 0.4− | 2006 08 30 | 699 | 0.5− | 0.3+ | | | | |

**2006 QJ$_{113}$ = 1999 VL$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.15816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26858579 | $\omega$ | 98.26531 | | +0.96164495 | −0.27071929 | |
| $a$ | 2.3791073 | $\Omega$ | 277.45019 | | +0.23086191 | +0.88574889 | |
| $e$ | 0.2009678 | $i$ | 2.55253 | | +0.14812753 | +0.37704106 | |
| $P$ | 3.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 09 | 691 | 0.1− | 0.3− | 2006 08 29 | 703 | 0.8+ | 0.8+ | 2006 09 13 | 644 | 0.2+ | 0.0 |
| 1997 03 09 | 691 | 0.2− | 1.0− | 2006 08 29 | 703 | (3.2− | 0.3+) | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 1997 03 09 | 691 | 0.4− | 0.2− | 2006 08 29 | 703 | 0.9− | 0.9+ | 2006 09 17 | 703 | 0.1+ | 0.4− |
| 1999 11 14 | 704 | 0.7− | 0.1− | 2006 08 29 | 691 | 0.2+ | 0.4− | 2006 09 17 | 703 | 0.5− | 0.2− |
| 1999 11 14 | 704 | 0.4− | 0.3− | 2006 08 29 | 691 | 0.1+ | 0.4− | 2006 09 17 | 703 | 0.3− | 0.6− |
| 1999 11 14 | 704 | 0.5− | 0.5+ | 2006 08 29 | 691 | 0.1− | 0.4− | 2006 09 17 | 703 | 0.1+ | 0.3− |
| 1999 11 14 | 704 | 0.3− | 0.3− | 2006 08 30 | 699 | 0.4+ | 1.4− | 2006 09 18 | 704 | (0.6+ | 2.2+) |
| 1999 11 14 | 704 | 0.4− | 0.0 | 2006 08 30 | 699 | 1.0+ | 0.1− | 2006 09 18 | 704 | 0.7+ | 0.1+ |
| 1999 11 16 | 704 | 1.7+ | 0.9+ | 2006 08 30 | 704 | (1.8+ | 0.9−) | 2006 09 18 | 704 | 0.9+ | 0.9+ |
| 1999 11 16 | 704 | 0.3+ | 1.2− | 2006 08 30 | 704 | 1.1+ | 0.7− | 2006 09 18 | 704 | 0.0 | 0.8− |
| 1999 11 16 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.5− | 0.5− |
| 1999 11 16 | 704 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.3− | 0.7− |
| 2004 01 24 | 704 | 0.1− | 0.4− | 2006 08 30 | 704 | 0.3+ | 0.8− | 2006 09 25 | 704 | 0.3− | 0.4− |
| 2004 01 24 | 704 | 0.4+ | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.2+ |
| 2004 01 24 | 704 | 0.3− | 0.8+ | 2006 09 01 | 704 | 0.1− | 0.2+ | 2006 09 30 | 699 | 0.4− | 0.4+ |
| 2004 01 24 | 704 | 0.1+ | 0.5− | 2006 09 01 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 699 | 0.5− | 0.3+ |
| 2006 08 22 | 644 | 0.4− | 0.1− | 2006 09 01 | 704 | 1.0+ | 0.2+ | 2006 09 30 | 699 | 0.2+ | 0.6− |
| 2006 08 22 | 644 | 0.5− | 0.4− | 2006 09 01 | 704 | 1.3+ | 0.7+ | 2006 09 30 | 699 | 0.8+ | 0.3+ |
| 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 11 | 703 | 1.1+ | 0.1− | 2006 11 11 | 291 | 0.1+ | 0.3+ |
| 2006 08 24 | 704 | 0.5− | 0.6+ | 2006 09 11 | 703 | 0.8− | 1.3− | 2006 11 11 | 291 | 0.1− | 0.1+ |
| 2006 08 24 | 704 | 0.2− | 0.4+ | 2006 09 11 | 703 | 1.4− | 0.4− | 2006 11 11 | 291 | 0.3− | 0.2+ |
| 2006 08 24 | 704 | 0.2− | 0.8+ | 2006 09 11 | 703 | 0.6− | 0.3− | | | | |
| 2006 08 29 | 703 | 0.5− | 1.1+ | 2006 09 13 | 644 | 0.2+ | 0.0 | | | | |

**2006 QL$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.78484 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26282650 | $\omega$ | 115.22624 | | +0.85255786 | +0.51987196 | |
| $a$ | 2.4137370 | $\Omega$ | 213.52473 | | −0.50763424 | +0.79930067 | |
| $e$ | 0.1705031 | $i$ | 5.57442 | | −0.12430839 | +0.30141597 | |
| $P$ | 3.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 10 | 644 | 0.4− | 0.4+ | 2006 09 06 | 644 | 0.2+ | 0.2− | 2006 09 25 | 704 | (1.6− | 1.1−) |
| 2002 06 10 | 644 | 0.4− | 0.3+ | 2006 09 12 | 012 | 0.3+ | 0.7− | 2006 09 25 | 704 | 0.1− | 1.0+ |
| 2002 06 10 | 644 | 0.0 | 0.3+ | 2006 09 12 | 012 | 0.1+ | 0.3− | 2006 09 25 | 704 | 0.1− | 0.1− |
| 2002 07 03 | 644 | 0.3+ | 0.3+ | 2006 09 12 | 012 | 0.7− | 0.3− | 2006 09 25 | 704 | 0.4− | 0.5+ |
| 2002 07 03 | 644 | 0.0 | 0.3+ | 2006 09 12 | 012 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.8+ | 1.1− |
| 2002 07 03 | 644 | 0.2+ | 0.3+ | 2006 09 12 | 012 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 1.0+ |
| 2002 07 09 | 704 | (2.8− | 2.3+) | 2006 09 12 | 012 | 0.5− | 0.9− | 2006 09 29 | 704 | 0.6+ | 0.0 |
| 2002 07 09 | 704 | (0.4− | 2.0+) | 2006 09 12 | 012 | 0.4+ | 0.6− | 2006 10 01 | 704 | (1.5− | 0.7+) |
| 2002 07 09 | 704 | (0.0 | 2.6+) | 2006 09 13 | 012 | 0.1− | 0.6− | 2006 10 01 | 704 | 0.8− | 0.6− |
| 2002 07 09 | 704 | (0.1− | 1.8+) | 2006 09 13 | 012 | 0.0 | 0.5− | 2006 10 01 | 704 | 0.6+ | 0.6+ |
| 2002 08 05 | 644 | 0.3− | 0.7− | 2006 09 13 | 012 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2002 08 05 | 644 | 0.1− | 0.6− | 2006 09 13 | 012 | 0.1− | 0.7− | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2002 08 05 | 644 | 0.4− | 0.6− | 2006 09 13 | 012 | 0.4− | 0.8− | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2002 08 16 | 608 | 0.2+ | 0.6+ | 2006 09 13 | 012 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2002 08 16 | 608 | 0.2+ | 0.5− | 2006 09 18 | 704 | 0.7+ | 0.2− | 2006 10 16 | 703 | 0.9− | 0.5− |
| 2002 08 16 | 608 | 0.3− | 0.1− | 2006 09 18 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.6− |
| 2002 08 24 | 644 | 0.4+ | 0.1+ | 2006 09 18 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.7− |
| 2002 08 24 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.3− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 08 24 | 644 | 0.4+ | 0.3+ | 2006 09 18 | 704 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2005 03 14 | G96 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2005 03 14 | G96 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2005 03 14 | G96 | 0.4− | 0.6+ | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2005 03 14 | G96 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.7− |
| 2005 05 12 | G96 | 0.1+ | 0.0 | 2006 09 20 | 699 | 1.1+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2005 05 12 | G96 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.6− | 0.9+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2005 05 12 | G96 | 0.0 | 0.5− | 2006 09 20 | 699 | 0.4+ | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2005 05 12 | G96 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.6− | 0.4+ | 2006 10 24 | 644 | 0.3+ | 0.1− |
| 2006 08 24 | 704 | 0.5− | 0.1− | 2006 09 20 | 704 | 0.6− | 0.4+ | 2006 11 10 | 704 | 0.2− | 0.6− |
| 2006 08 24 | 704 | 0.5− | 0.2− | 2006 09 20 | 699 | 0.6+ | 0.3− | 2006 11 10 | 704 | 0.5− | 0.1+ |
| 2006 08 24 | 704 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 11 10 | 704 | 0.6− | 0.3− |
| 2006 08 24 | 704 | 0.0 | 1.1+ | 2006 09 20 | 704 | 1.0− | 0.7+ | 2006 11 10 | 704 | 1.2− | 0.8+ |
| 2006 08 29 | 703 | 0.2− | 1.0− | 2006 09 20 | 703 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.8+ |
| 2006 08 29 | 703 | 0.8+ | 0.9+ | 2006 09 20 | 699 | 0.9+ | 0.5− | 2006 11 11 | 703 | 0.1− | 1.2+ |
| 2006 08 29 | 703 | 0.7+ | 0.5+ | 2006 09 20 | 703 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2006 08 29 | 703 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.3+ | 1.7+ |
| 2006 08 30 | 704 | 0.3− | 0.3+ | 2006 09 20 | 703 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2006 08 30 | 704 | 0.3+ | 1.2+ | 2006 09 22 | 703 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.2− |
| 2006 08 30 | 704 | 0.5+ | 1.1+ | 2006 09 22 | 703 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2006 08 30 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 703 | 0.8− | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 08 30 | 704 | 0.0 | 1.0+ | 2006 09 22 | 703 | 0.6− | 0.2− | 2006 11 18 | 703 | 0.9− | 2.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 01 | 704 | 0.4− | 0.0 | 2006 09 23 | 106 | 0.2+ | 0.3− | 2006 11 18 | 703 | 1.1− | 0.5+ |
| 2006 09 01 | 704 | 0.1− | 0.2+ | 2006 09 24 | 106 | 0.2+ | 0.8− | 2006 11 18 | 703 | 0.8− | 0.1− |
| 2006 09 01 | 704 | 0.1+ | 0.1+ | 2006 09 24 | 106 | 0.2+ | 0.2− | 2006 11 18 | 703 | 1.6+ | 1.9+ |
| 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 24 | 106 | 0.1− | 0.3− | | | | |
| 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.0 | 0.3− | | | | |

**2006 QM$_{113}$ = 3015 T-3**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.96665 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27138253 | $\omega$ | 124.18173 | | +0.73676232 | +0.67486132 | |
| $a$ | 2.3627338 | $\Omega$ | 193.53842 | | −0.66409937 | +0.71064047 | |
| $e$ | 0.2607978 | $i$ | 10.27463 | | −0.12709572 | +0.19887764 | |
| $P$ | 3.63 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | 0.8+ | 2.4− | 2006 08 30 | 704 | 1.2− | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.5+ |
| 1977 10 16 | 675 | 0.5− | 1.3− | 2006 08 30 | 704 | 0.4− | 1.0+ | 2006 09 25 | 704 | 0.1− | 0.2− |
| 1977 10 17 | 675 | 0.1− | 0.4− | 2006 08 31 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 699 | 0.1− | 0.1− |
| 1977 10 17 | 675 | 0.3− | 1.4− | 2006 08 31 | 704 | 0.6− | 0.5− | 2006 09 27 | 699 | 0.1− | 0.1+ |
| 1977 10 21 | 675 | (0.9+ | 3.3−) | 2006 08 31 | 704 | 0.5+ | 0.9− | 2006 09 27 | 699 | 0.1+ | 0.0 |
| 1977 10 21 | 675 | 2.0+ | 2.6− | 2006 08 31 | 704 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.8+ | 0.0 |
| 1977 10 22 | 675 | (0.2− | 3.1−) | 2006 08 31 | 704 | (1.8+ | 0.1−) | 2006 09 29 | 704 | 0.4+ | 0.3+ |
| 1977 10 22 | 675 | (0.1− | 3.9−) | 2006 09 15 | 704 | (2.0− | 2.4+) | 2006 09 29 | 704 | 0.3− | 0.1− |
| 1999 10 10 | 704 | 0.1+ | 0.5− | 2006 09 15 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 704 | 0.3+ | 0.1− |
| 1999 10 10 | 704 | 0.1+ | 0.6+ | 2006 09 15 | 704 | 0.4+ | 0.6+ | 2006 09 29 | 704 | 0.6− | 0.6+ |
| 1999 10 10 | 704 | 0.2− | 0.3− | 2006 09 16 | 644 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.3+ |
| 1999 10 10 | 704 | 0.3+ | 0.1− | 2006 09 16 | 644 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2006 09 16 | 644 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.2+ |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 16 | 644 | 0.5− | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2002 05 18 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 2002 05 18 | 704 | (0.4− | 1.9+) | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2002 05 18 | 704 | 0.3− | 0.9+ | 2006 09 17 | 703 | 0.4+ | 0.2− | 2006 10 02 | 691 | 0.3− | 0.1+ |
| 2002 06 07 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.1− | 0.2− | 2006 10 02 | 691 | (2.1+ | 0.2−) |
| 2002 06 07 | 644 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.9+ |
| 2002 06 07 | 644 | 0.2− | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.4+ |
| 2002 07 09 | 704 | 0.8+ | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2002 07 09 | 704 | 0.5− | 0.4− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 2002 07 09 | 704 | 0.8− | 1.0− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2002 08 12 | 704 | 0.4− | 0.5+ | 2006 09 18 | 704 | 0.0 | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2002 08 12 | 704 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.6+ | 0.7+ |
| 2002 08 12 | 704 | 0.3− | 0.2+ | 2006 09 18 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2004 01 16 | 691 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 09 18 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2004 01 16 | 691 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 03 08 | 691 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2005 03 08 | 691 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2005 03 08 | 691 | 0.7+ | 0.3+ | 2006 09 21 | 704 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2006 08 24 | 704 | 0.9+ | 0.1+ | 2006 09 21 | 704 | 0.4− | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2006 08 24 | 704 | 0.0 | 0.3− | 2006 09 21 | 704 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.2+ |
| 2006 08 24 | 704 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2006 08 27 | 683 | 0.5+ | 0.7+ | 2006 09 25 | 704 | 0.7+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2006 08 27 | 683 | 1.2+ | 1.2− | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2006 08 27 | 683 | (2.4+ | 1.0−) | 2006 09 25 | 704 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2006 08 30 | 704 | (1.9− | 1.1+) | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2006 08 30 | 704 | 1.1+ | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.0 | | | | |

**2006 QQ$_{113}$ = 2001 NR$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.18035 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21438898 | $\omega$ | 9.12252 | | +0.73203943 | −0.68016918 | |
| $a$ | 2.7648256 | $\Omega$ | 33.83767 | | +0.62059560 | +0.64242217 | |
| $e$ | 0.1457254 | $i$ | 3.97249 | | +0.28103268 | +0.35307738 | |
| $P$ | 4.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 05 | 910 | 0.4− | 0.1+ | 2002 12 14 | 704 | 0.2− | 0.8− | 2006 09 12 | 704 | 0.6+ | 1.2+ |
| 1997 12 05 | 910 | 0.4− | 0.4+ | 2003 01 05 | 704 | 0.3+ | 0.8+ | 2006 09 12 | 704 | 1.1− | 0.5− |
| 1997 12 05 | 910 | 0.2− | 0.1+ | 2003 01 05 | 704 | 0.4+ | 0.8+ | 2006 09 12 | 704 | 0.5− | 1.0+ |
| 2001 07 13 | 644 | 0.3− | 0.1+ | 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.3− |
| 2001 07 13 | 644 | 0.3+ | 0.3+ | 2003 01 05 | 704 | 0.4+ | 0.9+ | 2006 09 14 | 703 | 0.1− | 0.8+ |
| 2001 07 13 | 644 | 0.1− | 0.4+ | 2003 01 05 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.2+ |
| 2001 07 20 | 644 | 0.0 | 0.1+ | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.6+ |
| 2001 07 20 | 644 | 0.0 | 0.0 | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.8− | 1.3+ |
| 2001 07 20 | 644 | 0.4+ | 0.4− | 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 1.4− | 1.0+ |
| 2002 11 06 | 704 | 0.5+ | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.9+ | 0.4− |
| 2002 11 06 | 704 | 0.1+ | 1.0+ | 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | (1.6+ | 0.2−) |
| 2002 11 06 | 704 | 0.2− | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.8+ | 2006 09 22 | 704 | 0.1+ | 0.2+ |
| 2002 11 06 | 704 | 0.9− | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 22 | 704 | 0.4+ | 1.0+ |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 22 | 704 | 1.0+ | 0.6+ |
| 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 09 22 | 704 | 0.8+ | 0.8− |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.4− |
| 2002 12 06 | 704 | 0.3− | 0.1+ | 2006 08 30 | 699 | (1.6+ | 0.2+) | 2006 09 30 | 703 | 1.5+ | 0.7+ |
| 2002 12 06 | 704 | 1.0+ | 0.8+ | 2006 08 30 | 699 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2002 12 14 | 704 | 1.1− | 0.9− | 2006 08 30 | 699 | 1.3− | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.8− |
| 2002 12 14 | 704 | 0.5+ | 1.0− | 2006 09 12 | 704 | 0.1+ | 0.7− | | | | |

**2006 QT$_{113}$ = 2005 GO$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.76108 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22406247 | $\omega$ | 281.49349 | | +0.06603116 | +0.99691974 | |
| $a$ | 2.6846642 | $\Omega$ | 351.92539 | | −0.75704575 | +0.02242421 | |
| $e$ | 0.1795483 | $i$ | 17.53478 | | −0.65001664 | +0.07515440 | |
| $P$ | 4.40 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | 644 | 0.0 | 0.4+ | 2006 09 13 | 644 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.3− | 0.2− |
| 2005 04 05 | 644 | 0.1+ | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.5− | 0.6+ |
| 2005 04 05 | 644 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 2005 04 06 | 699 | 0.3+ | 0.5− | 2006 09 16 | 699 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.5− |
| 2005 04 06 | 699 | 0.1+ | 0.1− | 2006 09 16 | 699 | 1.0− | 0.9− | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2005 04 06 | 699 | 0.2− | 0.7− | 2006 09 16 | 699 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 2005 04 06 | 699 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2006 08 06 | 699 | (0.6+ | 2.6+) | 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.6+ |
| 2006 08 06 | 699 | (0.9− | 2.2+) | 2006 09 17 | 704 | 0.5− | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2006 08 06 | 699 | 0.5+ | 0.4− | 2006 09 17 | 704 | 0.3+ | 0.2− | 2006 09 25 | 699 | 1.4− | 0.7+ |
| 2006 08 06 | 699 | 0.4+ | 0.4+ | 2006 09 17 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 699 | 0.7− | 0.8+ |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 09 30 | 704 | 0.9+ | 0.1− |
| 2006 08 24 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.6− | 2006 09 30 | 704 | 0.6+ | 0.0 |
| 2006 08 24 | 644 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 09 30 | 704 | 0.8+ | 0.5+ |
| 2006 08 27 | 699 | 0.6+ | 0.5+ | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2006 08 27 | 699 | 0.1+ | 0.7− | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2006 08 27 | 699 | 0.6− | 0.7− | 2006 09 19 | 703 | (0.1− | 1.6−) | 2006 10 20 | 695 | 0.1+ | 0.0 |
| 2006 08 27 | 699 | 0.7− | 0.2− | 2006 09 19 | 699 | 0.8− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2006 09 12 | 703 | 0.3− | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2006 09 12 | 703 | 0.4+ | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.4− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2006 09 12 | 703 | 0.6+ | 0.1− | 2006 09 20 | 704 | 0.2− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2006 09 12 | 703 | 0.7+ | 0.4− | 2006 09 20 | 704 | 0.2− | 0.3+ | | | | |
| 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | | | | |

**2006 QU$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.09207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28185367 | $\omega$ | 175.83936 | | +0.94043508 | +0.33819176 | |
| $a$ | 2.3038468 | $\Omega$ | 164.25807 | | −0.31550029 | +0.90625331 | |
| $e$ | 0.2146644 | $i$ | 7.36085 | | −0.12665475 | +0.25363612 | |
| $P$ | 3.50 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.1− | 0.8+ | 2006 09 16 | 699 | 0.2+ | 1.1− | 2006 09 26 | 704 | 0.7+ | 0.3+ |
| 1999 09 09 | 704 | 0.9+ | 0.3− | 2006 09 16 | 699 | 0.8+ | 1.2+ | 2006 09 26 | 704 | 0.5+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.2− |
| 1999 09 09 | 704 | 1.1− | 0.3− | 2006 09 19 | 703 | (0.6+ | 2.1−) | 2006 09 30 | 703 | 0.5− | 0.1− |
| 1999 10 08 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.6− | 2006 09 30 | 703 | 1.1+ | 0.2+ |
| 1999 10 08 | 704 | 0.3− | 0.8+ | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.4− |
| 1999 10 08 | 704 | (0.6+ | 2.1+) | 2006 09 19 | 703 | 0.9− | 0.8− | 2006 09 30 | 703 | 0.2+ | 0.0 |
| 2006 08 24 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.1+ | 1.0− | 2006 10 10 | 644 | 0.5− | 0.1− |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 19 | 699 | 1.0− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2006 08 24 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2006 08 27 | 699 | 0.1+ | 0.5− | 2006 09 20 | 644 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2006 08 27 | 699 | 0.8− | 0.2+ | 2006 09 20 | 644 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2006 08 27 | 699 | 0.5− | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2006 08 27 | 699 | 0.3− | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2006 09 12 | 703 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.3− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 09 12 | 703 | 0.2− | 0.9− | 2006 09 22 | 704 | 0.8− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2006 09 12 | 703 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2006 09 12 | 703 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2006 09 16 | 699 | 0.6+ | 0.2− | 2006 09 25 | 699 | 0.7+ | 0.3+ | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2006 09 16 | 699 | 1.1+ | 0.4+ | 2006 09 26 | 704 | 1.2+ | 0.2+ | | | | |

**2006 QV$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.71093 | | (2000.0) | | | |
| $n$ | 0.23960504 | $\omega$ | 317.98434 | | +0.91933248 | +0.38330392 |
| $a$ | 2.5672732 | $\Omega$ | 20.01764 | | −0.25470273 | +0.75193773 |
| $e$ | 0.2966346 | $i$ | 15.05526 | | −0.29992384 | +0.53634668 |
| $P$ | 4.11 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 699 | 0.2+ | 0.2+ | 2005 03 17 | G96 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.3+ | 0.1− |
| 2001 04 26 | 699 | 0.2+ | 0.1+ | 2005 03 17 | G96 | 0.5+ | 0.3+ | 2006 09 18 | 703 | 0.3+ | 0.4+ |
| 2001 04 26 | 699 | 0.2− | 1.0+ | 2005 03 17 | G96 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.7+ |
| 2001 04 26 | 699 | 0.8+ | 0.6+ | 2005 04 03 | E12 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.2+ | 0.1+ |
| 2002 10 05 | 704 | 0.8+ | 1.0− | 2005 04 03 | E12 | 1.2− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.6+ |
| 2002 10 05 | 704 | 0.4− | 0.2− | 2005 04 03 | E12 | 0.6+ | 1.0− | 2006 09 21 | 704 | 0.2− | 0.2− |
| 2002 10 05 | 704 | 0.0 | 0.5− | 2005 04 03 | E12 | 0.5+ | 0.1− | 2006 09 21 | 704 | 0.4− | 0.3+ |
| 2002 11 07 | 704 | 0.7+ | 0.2+ | 2005 04 14 | 703 | 0.4+ | 0.3+ | 2006 09 21 | 704 | 0.5− | 0.6− |
| 2002 11 07 | 704 | 0.5− | 0.1− | 2005 04 14 | 703 | 1.2− | 0.5+ | 2006 09 21 | 704 | (1.0+ | 2.1−) |
| 2002 11 07 | 704 | 0.1+ | 0.3− | 2005 04 14 | 703 | 0.4− | 0.5+ | 2006 09 21 | 704 | 0.4− | 0.1− |
| 2002 11 07 | 704 | 0.3+ | 0.1− | 2005 04 14 | 703 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.7+ |
| 2002 11 07 | 704 | 0.1− | 0.5− | 2005 05 08 | E12 | 0.4+ | 0.9+ | 2006 09 25 | 704 | 0.1+ | 0.1− |
| 2002 12 07 | 704 | 0.5− | 0.1+ | 2005 05 08 | E12 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.0 |
| 2002 12 07 | 704 | 0.2− | 0.0 | 2005 05 08 | E12 | 0.1− | 0.4− | 2006 09 25 | 704 | 0.1+ | 0.0 |
| 2002 12 07 | 704 | 0.0 | 0.1+ | 2005 05 08 | E12 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.5+ | 0.4− |
| 2002 12 07 | 704 | 0.5+ | 0.1+ | 2005 05 11 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | (2.3+ | 0.2+) |
| 2002 12 07 | 704 | 0.4− | 0.1− | 2005 05 11 | 644 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.9+ | 0.5+ |
| 2002 12 28 | 704 | 0.1+ | 0.2− | 2005 05 11 | 644 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.9+ | 0.3+ |
| 2002 12 28 | 704 | 0.6+ | 0.2+ | 2005 06 02 | 699 | 0.3+ | 1.5− | 2006 10 01 | 704 | (2.0+ | 0.9+) |
| 2002 12 28 | 704 | 0.2− | 0.3+ | 2005 06 02 | 699 | 1.2− | 0.1− | 2006 10 17 | 704 | 1.3− | 0.3− |
| 2002 12 28 | 704 | 0.2− | 0.6− | 2005 06 02 | 699 | 0.2+ | 1.2− | 2006 10 17 | 704 | 0.8− | 0.4+ |
| 2004 01 30 | 704 | 0.5+ | 0.2+ | 2005 06 02 | 699 | 0.7− | 0.6+ | 2006 10 17 | 704 | 0.7− | 0.2+ |
| 2004 01 30 | 704 | 0.3− | 0.4− | 2006 08 24 | 704 | (0.2− | 1.5+) | 2006 10 23 | 703 | 0.4− | 0.3+ |
| 2004 01 30 | 704 | 0.2− | 0.2+ | 2006 08 24 | 704 | 0.9− | 0.0 | 2006 10 23 | 703 | 0.1+ | 0.1− |
| 2004 01 30 | 704 | 0.4+ | 1.0+ | 2006 08 24 | 704 | 0.3− | 0.4+ | 2006 10 23 | 703 | 0.2+ | 0.3+ |
| 2004 02 15 | 704 | (0.3− | 1.8−) | 2006 08 30 | 704 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.3− | 0.1+ |
| 2004 02 15 | 704 | 0.8+ | 0.1+ | 2006 08 30 | 704 | 0.2− | 0.8+ | 2006 10 29 | 703 | 0.4− | 0.2− |
| 2004 02 15 | 704 | 0.2+ | 0.6− | 2006 08 30 | 704 | 0.0 | 1.1+ | 2006 10 29 | 703 | 0.0 | 0.2+ |
| 2004 02 15 | 704 | 0.2+ | 1.1− | 2006 08 30 | 704 | 0.2+ | 0.2− | 2006 10 29 | 703 | 0.1− | 0.2− |
| 2004 03 23 | 704 | (0.4− | 2.8+) | 2006 08 30 | 704 | 0.4+ | 0.5+ | 2006 10 29 | 703 | 0.2+ | 0.2− |
| 2004 03 23 | 704 | 0.2− | 0.8+ | 2006 09 18 | 704 | 0.2− | 0.1− | 2006 11 14 | 704 | 0.2+ | 0.0 |
| 2004 03 23 | 704 | 0.1− | 1.0+ | 2006 09 18 | 704 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.9+ | 0.4+ |
| 2004 03 23 | 704 | (0.2+ | 1.6+) | 2006 09 18 | 704 | 0.0 | 0.8− | 2006 11 14 | 704 | 0.1+ | 0.3− |
| 2005 03 17 | G96 | 0.0 | 0.4− | 2006 09 18 | 704 | 0.3+ | 1.1− | 2006 11 14 | 704 | 0.1+ | 0.4− |

**2006 QX$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.86633 | | (2000.0) | | | |
| $n$ | 0.29151675 | $\omega$ | 48.70381 | | +0.82304888 | −0.56708706 |
| $a$ | 2.2526499 | $\Omega$ | 345.74969 | | +0.47505623 | +0.71789495 |
| $e$ | 0.1829540 | $i$ | 7.39131 | | +0.31130711 | +0.40378100 |
| $P$ | 3.38 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.2− | 0.4+ | 2006 08 31 | 704 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 2001 03 15 | 691 | 0.6+ | 0.3+ | 2006 08 31 | 704 | 0.1− | 0.8+ | 2006 09 27 | 704 | 0.1+ | 0.6− |
| 2001 03 15 | 691 | 0.1+ | 0.6+ | 2006 08 31 | 704 | 0.0 | 0.4− | 2006 09 27 | 704 | 0.4+ | 0.1− |
| 2003 11 19 | 704 | 0.9− | 0.8− | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.4+ | 0.2+ |
| 2003 11 19 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 09 27 | 704 | (1.6+ | 0.3+) |
| 2003 11 19 | 704 | 0.5− | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.3− | 2006 09 27 | 704 | 0.0 | 0.4− |
| 2003 11 19 | 704 | 0.6− | 0.1− | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 09 29 | 704 | 0.4− | 0.2− |
| 2003 12 21 | 704 | 0.9+ | 0.7+ | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.6− | 0.5+ | 2006 09 29 | 704 | 0.6− | 0.8− |
| 2003 12 21 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.0 | 2006 09 29 | 704 | 0.3− | 0.7− |
| 2003 12 21 | 704 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.6− | 0.0 | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2003 12 21 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2006 08 14 | 644 | 0.5− | 0.4+ | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2006 08 14 | 644 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.7+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2006 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2006 08 21 | 691 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.4− |
| 2006 08 21 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.4− |
| 2006 08 22 | 807 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.4− |
| 2006 08 23 | 807 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2006 08 23 | 807 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.6− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2006 08 25 | 704 | 0.1− | 1.5+ | 2006 09 25 | 699 | 1.0− | 0.8+ | 2006 10 21 | G96 | 0.6+ | 0.5− |
| 2006 08 25 | 704 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.5− |
| 2006 08 25 | 704 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.9− | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2006 08 30 | 704 | 0.0 | 0.8+ | 2006 09 25 | 699 | (0.5− | 2.0+) | 2006 11 11 | 703 | (1.2+ | 2.0−) |
| 2006 08 30 | 704 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.6− | 2006 11 11 | 703 | (0.1− | 1.5−) |
| 2006 08 30 | 704 | 1.0− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 2006 08 30 | 704 | 1.0+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.5− | | | | |

**2006 QZ$_{113}$ = 1997 SL$_{22}$ = 2005 JP$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.76255 | | (2000.0) | | | |
| $n$ | 0.22029160 | $\omega$ | 139.17912 | | +0.98139619 | +0.17223945 |
| $a$ | 2.7152142 | $\Omega$ | 211.21036 | | −0.18881924 | +0.94587108 |
| $e$ | 0.2611039 | $i$ | 9.42145 | | +0.03476803 | +0.27506629 |
| $P$ | 4.47 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2− | 0.6− | 2006 09 20 | 699 | 0.8− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 1997 09 28 | 691 | 0.1− | 0.5− | 2006 09 20 | 699 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 1997 09 28 | 691 | 0.1− | 0.5− | 2006 09 20 | 699 | 0.6− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1997 10 04 | 691 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1997 10 04 | 691 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 1997 10 04 | 691 | 0.4+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2005 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2005 05 13 | 691 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.6+ | 1.5+ |
| 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 704 | 1.1+ | 0.5+ |
| 2005 05 14 | G96 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.4− | 0.5+ | 2006 10 28 | 704 | (1.5− | 1.4+) |
| 2005 05 14 | G96 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 10 28 | 704 | 0.6− | 0.2− |
| 2005 05 14 | G96 | 0.7− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 10 28 | 704 | 0.3+ | 0.8+ |
| 2005 05 14 | G96 | 0.6− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2006 08 25 | 704 | 0.5− | 0.7+ | 2006 10 19 | 644 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2006 08 25 | 704 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2006 08 25 | 704 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2006 08 29 | 703 | (1.6− | 0.7+) | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.9+ |
| 2006 08 29 | 703 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.3− |
| 2006 08 29 | 703 | 0.0 | 0.8+ | 2006 10 21 | 703 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 29 | 703 | 0.6− | 0.6+ | 2006 10 21 | 703 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2006 08 30 | 704 | 1.0+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2006 08 30 | 704 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2006 08 30 | 704 | 0.5− | 0.5+ | 2006 10 22 | 683 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 08 30 | 699 | 0.4− | 0.4− | 2006 10 22 | 683 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2006 08 30 | 699 | 0.4− | 0.2+ | 2006 10 22 | 683 | (1.6− | 0.1−) | 2006 11 21 | 704 | 0.4+ | 0.5− |
| 2006 08 30 | 699 | 1.1+ | 0.7− | 2006 10 23 | 683 | 0.9+ | 1.4− | 2006 11 21 | 704 | 0.1− | 0.5− |
| 2006 08 30 | 699 | 0.3− | 1.3− | 2006 10 23 | 683 | 1.3+ | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2006 09 20 | 699 | 0.4+ | 0.8+ | 2006 10 23 | 683 | 0.1+ | 1.1− | 2006 11 21 | 704 | 0.9− | 1.2− |

**2006 QN$_{114}$ = 2001 TB$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.28773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17928629 | $\omega$ | 92.47820 | | +0.97099152 | | −0.20331202 |
| $a$ | 3.1148562 | $\Omega$ | 279.27289 | | +0.13497091 | | +0.90049861 |
| $e$ | 0.1547929 | $i$ | 7.32644 | | +0.19737861 | | +0.38440404 |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.5+ | 0.4− | 2006 08 27 | 699 | 0.6+ | 0.5− | 2006 09 15 | 691 | 0.2− | 0.1− |
| 2001 10 13 | 644 | 0.2+ | 0.3− | 2006 08 27 | 699 | 0.4− | 0.7+ | 2006 09 17 | 691 | 0.3− | 0.2− |
| 2001 10 13 | 644 | 0.2− | 0.0 | 2006 08 27 | 699 | 1.7− | 0.2− | 2006 09 17 | 691 | 0.2− | 0.1− |
| 2001 10 18 | 704 | 0.6+ | 0.4− | 2006 08 29 | 703 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.3− |
| 2001 10 18 | 704 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.0 | 0.7+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2001 10 18 | 704 | 0.3− | 0.8− | 2006 08 29 | 703 | 0.3+ | 0.9+ | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2001 10 18 | 704 | 0.6− | 1.9+ | 2006 08 29 | 703 | (2.6− | 5.2+) | 2006 09 19 | 691 | 0.1− | 0.4− |
| 2006 08 24 | 704 | 0.5+ | 1.3+ | 2006 08 29 | 703 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2006 08 24 | 704 | 1.0+ | 0.2− | 2006 08 29 | 703 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.2+ |
| 2006 08 24 | 704 | 0.1+ | 0.4+ | 2006 08 29 | 703 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.4+ | 0.2+ |
| 2006 08 24 | 704 | 0.2+ | 0.3− | 2006 08 29 | 703 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2006 08 24 | 704 | 1.3+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.1− |
| 2006 08 27 | 699 | 0.4− | 1.7+ | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |

**2006 QO$_{114}$ = 1999 VO$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.57026 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26855711 | $\omega$ | 114.09897 | | +0.89327452 | | +0.44685547 |
| $a$ | 2.3792767 | $\Omega$ | 219.40802 | | −0.43527262 | | +0.83276336 |
| $e$ | 0.1318617 | $i$ | 4.40810 | | −0.11224253 | | +0.32684152 |
| $P$ | 3.67 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.0 | 0.0 | 2006 08 27 | 699 | 0.9+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 1999 11 10 | 691 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.3+ | 0.8− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 1999 11 10 | 691 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.3+ |
| 1999 11 14 | 691 | 0.1− | 0.2− | 2006 08 29 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1999 11 14 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 1999 11 14 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2006 08 27 | 699 | 0.4+ | 0.8− | 2006 09 19 | 691 | 0.1− | 0.0 | | | | |
| 2006 08 27 | 699 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.3− | | | | |

**2006 QP$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.76154 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17356451 | $\omega$ | 188.67872 | | +0.99828387 | | −0.05223586 |
| $a$ | 3.1829423 | $\Omega$ | 174.11829 | | +0.05560176 | | +0.98734503 |
| $e$ | 0.1373497 | $i$ | 14.97040 | | −0.01837828 | | +0.14973711 |
| $P$ | 5.68 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 327 | 0.5+ | 1.1− | 2005 05 13 | 691 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.3+ |
| 1995 10 21 | 327 | 0.2+ | 0.8− | 2006 08 24 | 704 | (0.6+ | 2.0+) | 2006 09 17 | 691 | 0.0 | 0.4+ |
| 1995 10 21 | 327 | 0.3− | 1.0− | 2006 08 24 | 704 | 0.4+ | 0.6+ | 2006 09 18 | 703 | (1.2+ | 2.4+) |
| 1995 10 21 | 327 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.2+ | 0.6− | 2006 09 18 | 703 | 0.1+ | 0.2− |
| 1998 03 02 | 910 | 0.5+ | 0.5− | 2006 08 24 | 704 | 0.4+ | 1.0− | 2006 09 18 | 703 | 0.4− | 0.2− |
| 1998 03 02 | 910 | 0.4+ | 0.7− | 2006 08 27 | 699 | 0.4− | 0.5− | 2006 09 18 | 703 | 1.0− | 0.4− |
| 1998 03 02 | 910 | 0.5+ | 0.6− | 2006 08 27 | 699 | 0.1− | 0.4+ | 2006 09 18 | 704 | 1.1+ | 0.7+ |
| 2001 08 26 | 644 | 0.2+ | 0.9+ | 2006 08 27 | 699 | 0.6− | 0.5+ | 2006 09 18 | 704 | 0.7+ | 0.6− |
| 2001 08 26 | 644 | 0.3+ | 1.1+ | 2006 08 27 | 699 | 0.3− | 0.4+ | 2006 09 18 | 704 | 0.8+ | 0.0 |
| 2001 08 26 | 644 | 0.5+ | 1.3+ | 2006 08 29 | 703 | 0.2+ | 0.8− | 2006 09 18 | 704 | 1.4+ | 0.6+ |
| 2001 10 16 | 704 | 0.7− | 1.1+ | 2006 08 29 | 703 | 0.6− | 0.8− | 2006 09 19 | 699 | 0.1− | 0.1− |
| 2001 10 16 | 704 | 1.1− | 0.9− | 2006 08 29 | 703 | 1.0− | 0.6− | 2006 09 19 | 699 | 0.3− | 0.5+ |
| 2001 10 16 | 704 | 0.0 | 0.9− | 2006 08 29 | 703 | 1.3− | 0.8− | 2006 09 19 | 699 | 0.2− | 0.2+ |
| 2001 10 16 | 704 | 0.9− | 0.2+ | 2006 08 29 | 703 | (1.7− | 0.5−) | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2001 12 07 | 704 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.9− | 0.3− | 2006 09 19 | 699 | 0.2− | 0.0 |
| 2001 12 07 | 704 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.4+ |
| 2001 12 07 | 704 | 0.1+ | 0.6+ | 2006 08 29 | 703 | 0.8− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.2+ |
| 2001 12 07 | 704 | 0.4− | 0.8+ | 2006 08 30 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.7− | 0.6+ |
| 2001 12 07 | 704 | 0.9− | 1.3+ | 2006 08 30 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 704 | 0.5+ | 0.4+ |
| 2002 01 14 | 645 | 0.1+ | 0.1+ | 2006 08 30 | 704 | 1.3+ | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2004 03 20 | 704 | 0.9+ | 0.7+ | 2006 08 30 | 704 | 1.0+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 03 20 | 704 | 0.1+ | 0.5− | 2006 09 01 | 704 | 1.2+ | 1.0− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2004 03 20 | 704 | 0.4− | 0.1− | 2006 09 01 | 704 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2004 03 20 | 704 | (0.2+ | 1.7+) | 2006 09 01 | 704 | 0.3− | 0.3+ | 2006 11 18 | 703 | 0.3− | 0.6− |
| 2004 04 16 | 691 | 0.0 | 0.4+ | 2006 09 11 | 703 | 0.5+ | 0.5− | 2006 11 18 | 703 | 1.0− | 0.9− |
| 2004 04 16 | 691 | 0.4+ | 0.6+ | 2006 09 11 | 703 | 0.0 | 0.5− | 2006 11 18 | 703 | 1.3− | 0.8+ |
| 2004 04 16 | 691 | 0.2− | 0.4+ | 2006 09 11 | 703 | (1.1− | 2.8−) | 2006 11 18 | 703 | 0.4− | 0.5+ |
| 2005 05 13 | 691 | 0.1− | 0.1+ | 2006 09 11 | 703 | 1.0− | 1.0− | | | | |
| 2005 05 13 | 691 | 0.5− | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | | | | |

**2006 QV$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.35951 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24500226 | $\omega$ | 203.81496 | | +0.78746320 | | −0.61290120 |
| $a$ | 2.5294300 | $\Omega$ | 194.55796 | | +0.59894670 | | +0.78589368 |
| $e$ | 0.1246155 | $i$ | 15.03888 | | +0.14548041 | | +0.08199534 |
| $P$ | 4.02 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 645 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.3− | 0.3− | 2006 08 30 | 699 | 0.8− | 0.3− |
| 2001 06 15 | 645 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.5+ | 0.8− |
| 2002 08 13 | 704 | 0.8− | 0.6+ | 2006 08 18 | 644 | 0.2− | 0.4− | 2006 08 30 | 699 | 0.6− | 0.2− |
| 2002 08 13 | 704 | 0.3− | 0.6+ | 2006 08 18 | 644 | 0.1− | 0.2− | 2006 09 14 | 691 | 0.3− | 0.2+ |
| 2002 08 13 | 704 | 0.6− | 0.7− | 2006 08 18 | 644 | 0.2− | 0.5− | 2006 09 14 | 691 | 0.1− | 0.2− |
| 2002 09 04 | 644 | 0.4+ | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.2− | 0.2− |
| 2002 09 04 | 644 | 0.2+ | 0.2+ | 2006 08 27 | 699 | 0.9+ | 0.3− | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 2002 09 04 | 644 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 1.2+ | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.1+ |
| 2002 09 12 | 644 | 0.1+ | 0.6+ | 2006 08 27 | 699 | (1.9+ | 0.4+) | 2006 09 19 | 699 | 0.4+ | 0.5− |
| 2002 09 12 | 644 | 0.0 | 0.8+ | 2006 08 27 | 699 | 0.4+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 2002 09 12 | 644 | 0.0 | 0.7+ | 2006 08 30 | 699 | 0.9+ | 1.3+ | | | | |

**2006 QW$_{114}$ = 2002 TL$_{232}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.36760 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23408802 | $\omega$ | 353.58736 | | +0.27986634 | | +0.94235486 |
| $a$ | 2.6074536 | $\Omega$ | 292.54229 | | −0.87176063 | | +0.16942484 |
| $e$ | 0.1925369 | $i$ | 11.45457 | | −0.40212963 | | +0.28855249 |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 16 | 691 | 0.1+ | 0.0 | 2005 04 05 | 644 | 0.1+ | 0.7+ | 2006 09 15 | 704 | (0.2− | 1.6+) |
| 2000 01 16 | 691 | 0.1− | 0.1− | 2005 04 05 | 644 | 0.1+ | 0.9+ | 2006 09 15 | 704 | 0.5− | 0.5+ |
| 2000 01 16 | 691 | 0.1− | 0.0 | 2006 08 27 | 699 | 0.6+ | 0.0 | 2006 09 16 | 644 | 0.0 | 0.4− |
| 2002 10 06 | 704 | 0.0 | 0.8− | 2006 08 27 | 699 | 0.7− | 0.3+ | 2006 09 16 | 644 | 0.3+ | 0.0 |
| 2002 10 06 | 704 | 0.6+ | 0.6− | 2006 08 27 | 699 | 0.2+ | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.1− |
| 2002 10 06 | 704 | 0.3+ | 1.0− | 2006 08 27 | 699 | 0.1+ | 0.2− | 2006 10 01 | 703 | 0.1+ | 0.7− |
| 2002 10 06 | 704 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.1− | 0.2− | 2006 10 01 | 703 | 0.4− | 0.1+ |
| 2002 10 10 | 704 | 0.4+ | 1.0+ | 2006 08 30 | 699 | 0.6+ | 0.1+ | 2006 10 01 | 703 | 1.3− | 0.3+ |
| 2002 10 10 | 704 | 0.1− | 1.4+ | 2006 08 30 | 699 | 1.3+ | 0.2− | 2006 10 01 | 703 | 0.7− | 0.0 |
| 2002 10 10 | 704 | 0.3− | 0.8+ | 2006 08 30 | 699 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.9− | 0.4+ | 2006 09 15 | 704 | 1.0+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2005 04 05 | 644 | 0.8+ | 0.3− | 2006 09 15 | 704 | 0.2− | 0.7− | 2006 10 11 | 644 | 0.2− | 0.0 | | |

**2006 QY$_{114}$ = 2000 OJ$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.83287 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17682001 | $\omega$ | 14.69610 | | +0.72862670 | +0.64220672 | |
| $a$ | 3.1437531 | $\Omega$ | 302.81082 | | −0.65350919 | +0.54783444 | |
| $e$ | 0.1025743 | $i$ | 16.45433 | | −0.20500945 | +0.53614173 | |
| $P$ | 5.57 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 699 | 1.0− | 0.3− | 2006 08 27 | 699 | 1.4− | 0.2+ | 2006 09 15 | 704 | 0.2+ | 1.2+ | | |
| 2000 07 29 | 699 | 0.2− | 0.4+ | 2006 08 27 | 699 | 0.4+ | 0.0 | 2006 09 21 | 185 | 0.1+ | 0.4− | | |
| 2000 07 29 | 699 | 0.7+ | 0.5− | 2006 08 30 | 699 | 0.5− | 1.1+ | 2006 09 21 | 185 | 0.7+ | 1.0− | | |
| 2000 07 29 | 699 | 0.4− | 0.0 | 2006 08 30 | 699 | 0.1+ | 1.3− | 2006 09 21 | 185 | 0.3− | 0.7− | | |
| 2000 08 01 | 704 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.6+ | 0.2− | 2006 09 21 | 185 | 0.9− | 0.3− | | |
| 2000 08 01 | 704 | 0.5+ | 0.5+ | 2006 08 30 | 699 | 0.0 | 0.6+ | 2006 09 25 | J95 | 0.0 | 0.1− | | |
| 2000 08 01 | 704 | 0.2+ | 0.3− | 2006 09 15 | 704 | 0.8+ | 0.6+ | 2006 09 25 | J95 | 0.1− | 0.3+ | | |
| 2006 08 27 | 699 | 1.0− | 1.3− | 2006 09 15 | 704 | 0.2+ | 0.7+ | 2006 09 25 | J95 | 0.2+ | 0.1− | | |
| 2006 08 27 | 699 | 0.2− | 0.2− | 2006 09 15 | 704 | 0.5+ | 0.4+ | | | | | | |

**2006 QD$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.99738 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23529984 | $\omega$ | 27.94306 | | +0.39563729 | +0.89925335 | |
| $a$ | 2.5984935 | $\Omega$ | 265.87842 | | −0.87364391 | +0.30585172 | |
| $e$ | 0.1630451 | $i$ | 10.78186 | | −0.28322687 | +0.31272695 | |
| $P$ | 4.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.4+ | 0.2+ | 2006 08 27 | 699 | 0.4+ | 0.3+ | 2006 09 18 | G92 | 0.2− | 0.6+ | | |
| 2002 09 03 | 644 | 0.4+ | 0.3+ | 2006 08 27 | 699 | 0.5+ | 0.2+ | 2006 09 18 | G92 | 0.7+ | 0.1− | | |
| 2002 09 03 | 644 | 0.6+ | 0.3+ | 2006 08 27 | 699 | 0.3− | 0.3− | 2006 09 19 | G92 | 0.1− | 0.3+ | | |
| 2002 10 15 | 644 | 0.4− | 0.0 | 2006 08 27 | 699 | 0.0 | 0.2− | 2006 09 19 | G92 | 0.2− | 0.1+ | | |
| 2002 10 15 | 644 | 0.7− | 0.0 | 2006 08 30 | 699 | 0.3+ | 0.3− | 2006 09 19 | G92 | 0.3+ | 0.1+ | | |
| 2002 10 15 | 644 | 0.6− | 0.0 | 2006 08 30 | 699 | 0.7− | 0.7− | 2006 09 20 | 699 | 0.3+ | 0.3+ | | |
| 2006 05 25 | 291 | 0.3− | 0.0 | 2006 08 30 | 699 | 1.1− | 0.8+ | 2006 09 20 | G92 | 0.5+ | 0.2− | | |
| 2006 05 25 | 291 | 0.2− | 0.0 | 2006 08 30 | 699 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.0 | 0.1− | | |
| 2006 05 25 | 291 | 0.1− | 0.0 | 2006 09 11 | 703 | (3.7+ | 1.1+) | 2006 09 20 | 699 | 0.3− | 0.7− | | |
| 2006 05 25 | G96 | 0.3+ | 0.0 | 2006 09 11 | 703 | 0.0 | 0.1− | 2006 09 20 | G92 | 0.6+ | 0.1− | | |
| 2006 05 25 | G96 | 0.6+ | 0.1+ | 2006 09 11 | 703 | 1.4− | 0.5− | 2006 09 20 | 699 | 0.4− | 0.2+ | | |
| 2006 05 25 | G96 | 0.7+ | 0.0 | 2006 09 11 | 703 | 0.9+ | 0.0 | 2006 09 20 | G92 | 0.5+ | 0.4+ | | |
| 2006 05 25 | G96 | 0.2+ | 0.3+ | 2006 09 18 | G92 | 0.2+ | 0.5− | | | | | | |

**2006 QL$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.33671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23146989 | $\omega$ | 43.32910 | | +0.98362345 | +0.06630286 | |
| $a$ | 2.6270785 | $\Omega$ | 312.06826 | | −0.14613702 | +0.83765190 | |
| $e$ | 0.1762319 | $i$ | 13.04796 | | +0.10549347 | +0.54216531 | |
| $P$ | 4.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 704 | 0.5− | 1.1− | 2006 07 21 | 703 | 1.5− | 0.1− | 2006 08 30 | 699 | 1.0− | 0.6+ | | |
| 2002 10 15 | 704 | 1.1− | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.1+ | 2006 09 11 | 703 | 0.2− | 1.3− | | |
| 2002 10 15 | 704 | 0.1− | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.4− | 0.7− | | |
| 2002 11 14 | 644 | 0.7+ | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 11 | 703 | 0.3− | 0.7− | | |
| 2002 11 14 | 644 | 0.7+ | 0.2+ | 2006 08 19 | 644 | 0.2+ | 0.2+ | 2006 09 11 | 703 | 0.3+ | 1.2+ | | |
| 2002 11 14 | 644 | 0.5+ | 0.6+ | 2006 08 19 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 1.4− | 0.2− | | |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2006 08 19 | 644 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.6+ | 0.9− | | |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.9+ | | |
| 2004 02 12 | 691 | 0.0 | 0.0 | 2006 08 27 | 699 | 1.7+ | 1.0− | 2006 09 26 | 703 | 0.5− | 0.2− | | |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 699 | 1.0+ | 0.0 | 2006 09 29 | 699 | 0.9+ | 0.3− | | |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 08 27 | 699 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.3− | 0.4+ | | |
| 2006 07 21 | 703 | 0.3+ | 0.6+ | 2006 08 30 | 699 | 1.5− | 0.2+ | 2006 09 29 | 699 | 0.8+ | 0.4− | | |
| 2006 07 21 | 703 | 0.9− | 0.3− | 2006 08 30 | 699 | 0.2− | 1.0+ | 2006 09 29 | 699 | 0.6+ | 0.3− | | |
| 2006 07 21 | 703 | (0.2+ | 2.5+) | 2006 08 30 | 699 | 0.3+ | 0.8+ | | | | | | |

**2006 QM$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.36542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23707640 | $\omega$ | 127.68567 | | +0.98285645 | −0.17544197 | |
| $a$ | 2.5854958 | $\Omega$ | 242.48323 | | +0.14254751 | +0.91808277 | |
| $e$ | 0.2580256 | $i$ | 3.66465 | | +0.11693332 | +0.35544921 | |
| $P$ | 4.16 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 691 | 0.0 | 0.2− | 2002 10 04 | 644 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.6− | 0.4− | | |
| 1998 11 25 | 691 | 0.1− | 0.4− | 2002 10 30 | 644 | 0.4− | 1.1+ | 2006 08 29 | 703 | 0.1− | 0.2− | | |
| 1998 11 25 | 691 | 0.2+ | 0.0 | 2002 10 30 | 644 | 0.5− | 1.5+ | 2006 08 29 | 703 | 1.0+ | 0.3+ | | |
| 1998 12 14 | 691 | 0.1+ | 0.1+ | 2002 10 30 | 644 | 0.6− | 1.7+ | 2006 08 29 | 703 | 0.6− | 0.4+ | | |
| 1998 12 14 | 691 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.1+ | 1.2− | 2006 09 13 | 644 | 1.4+ | 0.0 | | |
| 1998 12 14 | 691 | 0.3− | 0.4− | 2006 08 27 | 699 | 0.9+ | 0.7+ | 2006 09 13 | 644 | 0.5+ | 0.7− | | |
| 2002 10 04 | 644 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.0 | 0.8− | 2006 09 13 | 644 | 0.8− | 0.6− | | |
| 2002 10 04 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 699 | 0.9− | 0.1+ | | | | | | |

**2006 QU$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.00462 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30938158 | $\omega$ | 353.33157 | | +0.47901138 | +0.87484965 | |
| $a$ | 2.1650757 | $\Omega$ | 305.26517 | | −0.80124478 | +0.40224779 | |
| $e$ | 0.1643543 | $i$ | 5.06012 | | −0.35854553 | +0.26987923 | |
| $P$ | 3.19 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 20 | 644 | 0.1− | 0.3+ | 2006 08 27 | 699 | 0.2− | 0.3− | 2006 09 13 | 644 | 0.0 | 0.1− | | |
| 2003 09 20 | 644 | 0.3− | 0.4+ | 2006 08 27 | 699 | 0.5− | 0.4− | 2006 09 13 | 644 | 0.3− | 0.3− | | |
| 2003 09 20 | 644 | 0.3− | 0.2+ | 2006 08 27 | 699 | 0.0 | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.2− | | |
| 2003 09 20 | 644 | 0.2− | 0.4+ | 2006 08 29 | 703 | (1.6+ | 1.1−) | 2006 09 17 | 703 | 0.2− | 1.0+ | | |
| 2003 09 20 | 644 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 17 | 703 | 1.0− | 1.2− | | |
| 2003 09 20 | 644 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.3+ | 0.0 | 2006 09 17 | 703 | 0.2− | 0.4− | | |
| 2003 10 03 | 691 | 0.1− | 0.2− | 2006 08 29 | 703 | 1.0− | 1.0− | 2006 09 17 | 703 | 1.0− | 0.6+ | | |
| 2003 10 03 | 691 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.4− | 0.5+ | 2006 09 18 | 704 | 0.3− | 0.2+ | | |
| 2003 10 03 | 691 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.4− | 0.1− | | |
| 2003 10 17 | 691 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.3− | 0.4− | 2006 09 18 | 704 | 0.0 | 0.1+ | | |
| 2003 10 17 | 691 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.0 | 0.4+ | 2006 09 18 | 704 | 0.1+ | 0.7− | | |
| 2003 10 17 | 691 | 0.4− | 0.1− | 2006 08 30 | 699 | 0.7+ | 0.5− | 2006 09 20 | 699 | 0.3+ | 0.2− | | |
| 2003 10 26 | 691 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 699 | 0.7+ | 0.2+ | | |
| 2003 10 26 | 691 | 0.8+ | 0.2− | 2006 08 30 | 704 | 0.1− | 0.3− | 2006 09 20 | 699 | 0.0 | 0.3+ | | |
| 2003 10 26 | 691 | 0.9+ | 0.0 | 2006 08 30 | 699 | 0.2+ | 0.3− | 2006 09 20 | 699 | 0.2− | 0.4+ | | |
| 2006 08 06 | 699 | (1.6− | 2.1+) | 2006 09 01 | 704 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 2006 08 06 | 699 | 0.0 | 0.9− | 2006 09 01 | 704 | 0.1− | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.5+ | | |
| 2006 08 06 | 699 | 0.5+ | 1.2+ | 2006 09 01 | 704 | 0.9+ | 0.1+ | 2006 10 10 | 644 | 0.4+ | 0.1− | | |
| 2006 08 06 | 699 | 1.1+ | 0.7− | 2006 09 01 | 704 | 0.7+ | 0.5+ | | | | | | |

**2006 QZ$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.73270 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27013979 | $\omega$ | 33.13769 | | +0.78169983 | +0.61768647 | |
| $a$ | 2.3699745 | $\Omega$ | 288.47576 | | −0.59011258 | +0.68792599 | |
| $e$ | 0.2337496 | $i$ | 5.20687 | | −0.20177341 | +0.38107908 | |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 18 | 691 | 0.2− | 0.8− | 2006 08 27 | 699 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | | |
| 1994 03 18 | 691 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.3+ | 0.5+ | 2006 09 13 | 644 | 0.1− | 0.1+ | | |
| 1994 03 18 | 691 | 0.6− | 0.2− | 2006 08 28 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.2− | | |
| 1995 07 03 | 691 | 0.1+ | 0.2− | 2006 08 28 | 704 | 0.7+ | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.1+ | | |
| 1995 07 03 | 691 | 0.2+ | 0.3− | 2006 08 28 | 704 | 0.5− | 0.8+ | 2006 09 18 | 703 | 0.2+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 03 | 691 | 0.4+ | 0.5− | 2006 08 28 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.4− | 0.2− |
| 1997 01 09 | 691 | 0.5+ | 0.1− | 2006 08 28 | 704 | 0.0 | 0.4+ | 2006 09 20 | 699 | 1.0+ | 0.2− |
| 1997 01 09 | 691 | 0.3− | 0.2+ | 2006 08 29 | 703 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.2+ | 0.1+ |
| 1997 01 09 | 691 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.2+ |
| 1999 11 03 | 704 | 0.8− | 0.4− | 2006 08 29 | 703 | 0.3+ | 0.2− | 2006 09 20 | 699 | 0.1+ | 0.3+ |
| 1999 11 03 | 704 | 0.7+ | 0.8− | 2006 08 29 | 703 | 1.0− | 1.0− | 2006 09 26 | 704 | 1.4− | 1.2+ |
| 1999 11 03 | 704 | 0.6+ | 1.3− | 2006 08 30 | 699 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.6− | 0.5+ |
| 2005 03 08 | 691 | 0.5+ | 0.3+ | 2006 08 30 | 699 | 0.1+ | 0.1+ | 2006 09 26 | 704 | (0.2− | 2.0+) |
| 2005 03 08 | 691 | 0.2+ | 0.4+ | 2006 08 30 | 699 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.0 | 0.2− |
| 2005 03 08 | 691 | 0.3+ | 0.5+ | 2006 08 30 | 699 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.7− | 0.5+ |
| 2006 07 21 | 699 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.5+ | 0.1+ | 2006 10 29 | 703 | 0.1+ | 0.0 |
| 2006 07 21 | 699 | 0.7− | 0.1+ | 2006 09 11 | 703 | 0.0 | 0.5− | 2006 10 29 | 703 | 0.5− | 0.2− |
| 2006 07 21 | 699 | 0.2+ | 0.2− | 2006 09 11 | 703 | 0.1− | 0.1+ | 2006 10 29 | 703 | 0.5− | 0.8− |
| 2006 07 21 | 699 | 0.6− | 0.4+ | 2006 09 11 | 703 | 0.5− | 0.0 | 2006 10 29 | 703 | 0.1− | 0.7− |
| 2006 08 27 | 699 | 0.4+ | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1+ | | | | |

**2006 QA**$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.58596 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18455827 | $\omega$ | 93.42396 | | +0.55145275 | | −0.81764615 |
| $a$ | 3.0552520 | $\Omega$ | 321.55927 | | +0.61992182 | | +0.53433262 |
| $e$ | 0.2063252 | $i$ | 15.42819 | | +0.55820857 | | +0.21434419 |
| $P$ | 5.34 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.8− | 0.7− | 2003 02 09 | 644 | 0.6+ | 0.3+ | 2006 08 29 | 703 | 0.3− | 0.3− |
| 2001 10 15 | 704 | 0.1− | 0.2+ | 2003 02 09 | 644 | 0.8+ | 1.0+ | 2006 08 29 | 703 | 0.1− | 0.6+ |
| 2001 10 15 | 704 | 0.0 | 0.1+ | 2003 02 09 | 644 | 0.7− | 1.0+ | 2006 09 11 | 703 | 0.2+ | 1.2− |
| 2001 10 15 | 704 | 0.1+ | 0.4+ | 2006 08 18 | 644 | 0.2− | 0.3+ | 2006 09 11 | 703 | 0.4+ | 0.4+ |
| 2001 10 15 | 704 | 0.6+ | 0.7− | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 11 | 703 | 0.6− | 0.5− |
| 2001 11 11 | 704 | 0.3+ | 0.4− | 2006 08 18 | 644 | 0.3− | 0.4+ | 2006 09 11 | 703 | 0.9− | 0.3− |
| 2001 11 11 | 704 | 0.4+ | 0.5+ | 2006 08 27 | 699 | 1.6+ | 1.1+ | 2006 09 18 | 703 | 0.8− | 0.3− |
| 2001 11 11 | 704 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.1− | 0.8− | 2006 09 18 | 703 | 0.4− | 0.0 |
| 2001 11 11 | 704 | 0.1+ | 0.6− | 2006 08 27 | 699 | 0.2+ | 1.2+ | 2006 09 18 | 703 | 1.0+ | 1.7+ |
| 2001 11 11 | 704 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.1+ |
| 2002 12 14 | 645 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.7− | 0.9+ | | | | |
| 2002 12 14 | 645 | 0.1+ | 0.0 | 2006 08 29 | 703 | 1.1− | 0.1+ | | | | |

**2006 QD**$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.14457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17430431 | $\omega$ | 95.69704 | | +0.26671027 | | −0.96088174 |
| $a$ | 3.1739297 | $\Omega$ | 338.38185 | | +0.78448919 | | +0.26143437 |
| $e$ | 0.1029677 | $i$ | 11.68961 | | +0.55985922 | | +0.09142403 |
| $P$ | 5.65 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.7− | 0.1− | 2003 02 12 | 608 | 0.3− | 0.4+ | 2006 09 16 | 699 | 0.8+ | 0.4+ |
| 2001 08 27 | 644 | 0.5− | 0.1+ | 2003 02 12 | 608 | 0.3− | 0.0 | 2006 09 16 | 699 | 0.8− | 0.1− |
| 2001 08 27 | 644 | 0.2− | 0.0 | 2003 02 12 | 608 | 0.2− | 0.3+ | 2006 09 16 | 699 | 1.0+ | 1.1+ |
| 2001 09 25 | 704 | (0.9− | 1.6+) | 2003 03 06 | 644 | 0.9+ | 0.1+ | 2006 09 18 | 704 | 0.2+ | 0.3− |
| 2001 09 25 | 704 | 0.9− | 0.1− | 2003 03 06 | 644 | 0.7+ | 0.3+ | 2006 09 18 | 704 | 0.5− | 0.5− |
| 2001 09 25 | 704 | 0.3− | 0.5+ | 2003 03 06 | 644 | 0.6+ | 0.2+ | 2006 09 18 | 704 | 0.6+ | 0.7− |
| 2001 09 25 | 704 | 0.8− | 0.6+ | 2003 03 12 | 644 | 1.0+ | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.2− |
| 2001 11 11 | 704 | 1.2− | 0.2− | 2003 03 12 | 644 | 0.8+ | 1.2+ | 2006 09 19 | 703 | 0.6− | 0.5+ |
| 2001 11 11 | 704 | 0.5+ | 0.2− | 2003 03 12 | 644 | 0.7+ | 0.6+ | 2006 09 19 | 699 | 0.7− | 0.1+ |
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2004 04 25 | 704 | (1.8+ | 1.8+) | 2006 09 19 | 703 | 0.5− | 0.2− |
| 2001 11 11 | 704 | 0.2+ | 0.5− | 2004 04 25 | 704 | (0.6+ | 1.6+) | 2006 09 19 | 703 | 0.2+ | 1.0+ |
| 2001 11 11 | 704 | 0.4+ | 0.0 | 2004 04 25 | 704 | 1.0+ | 1.5+ | 2006 09 19 | 699 | 0.0 | 0.2+ |
| 2001 12 09 | 704 | 0.5+ | 0.6+ | 2004 04 25 | 704 | 0.8+ | 1.4+ | 2006 09 19 | 703 | 0.8− | 0.8− |
| 2001 12 09 | 704 | 0.1+ | 0.6+ | 2006 08 27 | 699 | 0.3− | 1.4− | 2006 09 19 | 699 | 0.7+ | 0.1− |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2006 08 27 | 699 | 0.8− | 0.9+ | 2006 09 25 | 699 | 0.8− | 0.5− |
| 2001 12 09 | 704 | 0.4+ | 0.2− | 2006 08 27 | 699 | 1.0− | 0.8+ | 2006 09 25 | 699 | 0.3+ | 0.2− |
| 2001 12 09 | 704 | 0.6+ | 0.3− | 2006 08 27 | 699 | 0.6− | 0.5− | 2006 09 25 | 699 | 0.4− | 1.0+ |
| 2001 12 22 | 704 | 0.2− | 0.3+ | 2006 08 29 | 703 | (2.0+ | 1.3−) | 2006 09 25 | 699 | 0.3− | 0.2− |
| 2001 12 22 | 704 | 0.4+ | 0.3− | 2006 08 29 | 703 | (1.3+ | 2.7−) | 2006 09 29 | 704 | 0.3+ | 0.0 |
| 2001 12 22 | 704 | 0.8+ | 0.0 | 2006 08 29 | 703 | 0.7+ | 0.8− | 2006 09 29 | 704 | 0.3− | 0.1+ |
| 2001 12 22 | 704 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.5+ | 1.0− | 2006 09 29 | 704 | 0.4− | 1.1+ |
| 2002 01 05 | 644 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.3− | 0.7− | 2006 09 29 | 704 | 0.4+ | 0.0 |
| 2002 01 05 | 644 | 0.3+ | 0.1− | 2006 09 12 | 703 | 0.6+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2002 01 05 | 644 | 0.1− | 0.0 | 2006 09 12 | 703 | 1.4− | 1.1+ | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.6− | 0.7+ | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2003 02 01 | 704 | (0.0 | 2.8+) | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2003 02 01 | 704 | (0.3− | 1.7+) | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4+ | 0.7+ |
| 2003 02 01 | 704 | 0.6− | 1.4+ | 2006 09 16 | 699 | 1.3− | 0.7− | | | | |

**2006 QF**$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.88019 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28605388 | $\omega$ | 38.20634 | | +0.58057773 | | +0.81353920 |
| $a$ | 2.2812392 | $\Omega$ | 267.30846 | | −0.75489133 | | +0.52269596 |
| $e$ | 0.1975724 | $i$ | 1.88838 | | −0.30507142 | | +0.25483899 |
| $P$ | 3.45 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 11 | 704 | 0.8+ | 1.8+ | 2006 08 29 | 703 | 0.6+ | 0.4+ | 2006 09 19 | 699 | 0.6+ | 1.7+ |
| 2002 05 11 | 704 | 0.3+ | 0.8+ | 2006 08 29 | 703 | 0.6+ | 0.4− | 2006 09 19 | 699 | 0.5+ | 1.3+ |
| 2002 05 11 | 704 | 0.5+ | 0.4− | 2006 08 29 | 703 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 1.4+ | 0.3+ |
| 2002 05 11 | 704 | 1.0− | 0.5− | 2006 08 29 | 703 | 0.8− | 0.7− | 2006 09 19 | 699 | 0.9− | 1.6+ |
| 2003 12 01 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | (1.3+ | 2.2−) | 2006 09 20 | 691 | 0.2− | 0.1− |
| 2003 12 01 | 691 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.7+ | 0.5− | 2006 09 20 | 691 | 0.1+ | 0.2− |
| 2003 12 01 | 691 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.1+ | 0.2− | 2006 09 20 | 691 | 0.2− | 0.0 |
| 2006 08 27 | 699 | 0.3+ | 0.6− | 2006 09 12 | 703 | 0.9+ | 0.4− | 2006 09 25 | 699 | 0.3− | 0.1− |
| 2006 08 27 | 699 | 1.0+ | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.5− | 2006 09 25 | 699 | 1.4− | 0.5− |
| 2006 08 27 | 699 | 1.1+ | 1.2+ | 2006 09 12 | 703 | 0.6− | 0.2− | 2006 09 25 | 699 | 0.0 | 1.1− |
| 2006 08 27 | 699 | 1.4− | 0.6− | 2006 09 12 | 703 | 0.8− | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.1+ |

**2006 QG**$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.94444 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27506105 | $\omega$ | 151.40934 | | +0.90611126 | | +0.42297024 |
| $a$ | 2.3416213 | $\Omega$ | 183.59443 | | −0.40764870 | | +0.86816782 |
| $e$ | 0.1458012 | $i$ | 7.01120 | | −0.11307044 | | +0.25957815 |
| $P$ | 3.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 23 | 645 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.7+ | 0.2− |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.3− | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.8+ |
| 2005 04 06 | G96 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.4− | 0.5− |
| 2005 04 06 | G96 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 0.2+ | 0.2+ | 2006 10 01 | 703 | 0.9− | 0.3+ |
| 2005 04 06 | G96 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.4+ | 0.5+ | 2006 10 01 | 703 | 0.4− | 1.2− |
| 2005 04 06 | G96 | 0.5− | 0.5+ | 2006 09 17 | 704 | 0.6− | 0.1+ | 2006 10 01 | 703 | (0.3− | 1.9−) |
| 2005 05 09 | G96 | 0.6− | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.4− | 2006 10 01 | 703 | 1.4+ | 0.2+ |
| 2005 05 09 | G96 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2005 05 09 | G96 | 0.4+ | 1.3+ | 2006 09 17 | 704 | 0.5+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2005 05 09 | G96 | 1.0+ | 0.9+ | 2006 09 17 | 704 | 0.5− | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2006 08 24 | 704 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2006 08 24 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 699 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.8+ |
| 2006 08 24 | 704 | 0.6− | 1.1+ | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.5+ |
| 2006 08 24 | 704 | (1.7+ | 0.0 ) | 2006 09 20 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2006 08 27 | 699 | 1.1+ | 0.1− | 2006 09 20 | 704 | 0.7+ | 1.3+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2006 08 27 | 699 | 0.4− | 0.6+ | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2006 08 27 | 699 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2006 08 27 | 699 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.5− | 0.1− |
| 2006 08 29 | 703 | 0.4+ | 0.5− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.6+ | 0.2− |
| 2006 08 29 | 703 | 0.8− | 1.1− | 2006 09 23 | 691 | 0.7− | 0.3− | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2006 08 29 | 703 | 0.8− | 1.1− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.2+ | 0.5− | 2006 09 24 | 106 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2006 09 12 | 703 | 0.0 | 0.4− | 2006 09 24 | 106 | 0.8− | 0.9− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2006 09 12 | 703 | 0.2− | 0.3− | 2006 09 24 | 106 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2006 09 12 | 703 | 0.1+ | 0.0 | 2006 09 24 | 106 | 0.7− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 12 | 703 | 0.6− | 1.0− | 2006 09 29 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2006 09 15 | 691 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 1.1− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.0 | | |
| 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 09 29 | 704 | 0.3− | 0.9+ | | | | | | |

**2006 QJ$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.57259 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21178863 | $\omega$ | 80.53929 | | +0.97774149 | +0.20310095 | |
| $a$ | 2.7874106 | $\Omega$ | 267.72901 | | −0.20717369 | +0.89487972 | |
| $e$ | 0.2102595 | $i$ | 3.02015 | | −0.03317595 | +0.39741702 | |
| $P$ | 4.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.1− | 0.1+ | 2006 08 30 | 704 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.7− | 0.1− | | |
| 1992 09 30 | 691 | 0.1− | 0.3− | 2006 08 30 | 704 | 0.7− | 0.2− | 2006 09 19 | 699 | 0.4− | 0.2− | | |
| 1992 09 30 | 691 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.3− | 2006 09 20 | 691 | 0.2+ | 0.1− | | |
| 2001 08 10 | 644 | 0.2− | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.3− | 2006 09 20 | 691 | 0.1+ | 0.1− | | |
| 2001 08 10 | 644 | 0.2+ | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 20 | 691 | 0.1+ | 0.2− | | |
| 2001 08 10 | 644 | 0.3+ | 0.3+ | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.6− | 0.5+ | | |
| 2002 12 04 | 695 | 0.1+ | 0.3+ | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.1− | 0.3+ | | |
| 2002 12 04 | 695 | 0.0 | 0.2+ | 2006 09 06 | 644 | 0.1− | 0.5− | 2006 09 27 | 704 | 0.6− | 0.2+ | | |
| 2005 05 16 | G96 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.6− | 2006 09 27 | 704 | 0.0 | 1.2− | | |
| 2005 05 16 | G96 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.9+ | 0.1+ | | |
| 2005 05 16 | G96 | 0.4+ | 0.1+ | 2006 09 12 | 703 | 1.2− | 0.7− | 2006 09 27 | 704 | 0.1− | 0.3+ | | |
| 2005 05 16 | G96 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.7− | 0.8+ | 2006 09 27 | 704 | 0.3− | 0.2− | | |
| 2005 06 02 | G96 | 0.4− | 0.3+ | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.2+ | 1.0− | | |
| 2005 06 02 | G96 | 0.2− | 0.0 | 2006 09 16 | 699 | 0.8− | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.4+ | | |
| 2005 06 02 | G96 | 0.2− | 0.2− | 2006 09 16 | 699 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.4− | 1.0+ | | |
| 2005 06 02 | G96 | 0.4+ | 0.5+ | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.4− | 0.6− | | |
| 2006 08 27 | 699 | 0.4+ | 0.1+ | 2006 09 18 | 704 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.5− | 0.7+ | | |
| 2006 08 27 | 699 | 0.7− | 0.5− | 2006 09 18 | 704 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.4+ | | |
| 2006 08 27 | 699 | 0.5+ | 0.3− | 2006 09 18 | 704 | 0.9+ | 0.5+ | 2006 10 17 | 235 | 0.1+ | 0.2− | | |
| 2006 08 27 | 699 | (1.8+ | 0.0 ) | 2006 09 18 | 704 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ | | |
| 2006 08 29 | 703 | 0.6+ | 0.3− | 2006 09 18 | 704 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.5+ | 0.1+ | | |
| 2006 08 29 | 703 | 0.5− | 0.2− | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.0 | | |
| 2006 08 29 | 703 | 0.5− | 0.5− | 2006 09 19 | 703 | (1.8− | 5.2+) | 2006 10 20 | 691 | 0.2+ | 0.1+ | | |
| 2006 08 29 | 703 | 0.5+ | 0.5− | 2006 09 19 | 703 | 0.3+ | 0.7+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | | |
| 2006 08 30 | 704 | 0.1− | 0.7+ | 2006 09 19 | 703 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.3+ | | |
| 2006 08 30 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.8− | 0.2− | | | | | | |

**2006 QO$_{116}$ = 2000 QS$_{234}$ = 2001 UW$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.11249 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17863450 | $\omega$ | 314.43118 | | +0.00607546 | +0.99519036 | |
| $a$ | 3.1224285 | $\Omega$ | 315.63586 | | −0.87316120 | −0.04237535 | |
| $e$ | 0.0676675 | $i$ | 8.03800 | | −0.48739369 | +0.08832028 | |
| $P$ | 5.52 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.0 | 0.1− | 2003 01 05 | 704 | 1.3− | 0.4+ | 2006 08 29 | 703 | 0.3− | 0.6− | | |
| 1998 03 02 | 691 | 0.0 | 0.3− | 2004 02 14 | 644 | 0.7+ | 0.7+ | 2006 08 29 | 703 | 0.7− | 1.2+ | | |
| 1998 03 02 | 691 | 0.0 | 0.2− | 2004 02 14 | 644 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 1.5+ | 0.8+ | | |
| 2000 08 26 | 807 | 0.2− | 0.1+ | 2004 02 14 | 644 | 0.7+ | 0.8+ | 2006 08 30 | 704 | 0.7+ | 0.8+ | | |
| 2000 08 26 | 807 | 0.4− | 0.0 | 2004 03 19 | 704 | (0.6+ | 2.0+) | 2006 08 30 | 704 | 0.6+ | 0.5− | | |
| 2000 08 26 | 807 | 0.4− | 0.2+ | 2004 03 19 | 704 | 1.0+ | 1.6+ | 2006 08 30 | 704 | 0.3+ | 0.0 | | |
| 2000 08 27 | 807 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.9+ | 1.3+ | 2006 09 13 | 644 | 0.1− | 0.1− | | |
| 2001 10 18 | 704 | 0.2− | 1.0− | 2004 03 19 | 704 | (1.6+ | 2.2+) | 2006 09 13 | 644 | 0.2− | 0.1+ | | |
| 2001 10 18 | 704 | 0.2+ | 0.6+ | 2004 03 19 | 704 | 0.4+ | 0.3+ | 2006 09 13 | 644 | 0.1− | 0.1− | | |
| 2001 10 18 | 704 | 0.4− | 0.4+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 16 | 699 | 1.1− | 0.3+ | | |
| 2001 10 18 | 704 | 0.3+ | 0.6+ | 2006 08 18 | 644 | 0.0 | 0.2− | 2006 09 16 | 699 | 0.3− | 0.0 | | |
| 2001 10 20 | 644 | 0.3+ | 0.9+ | 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.1+ | 0.0 | | |
| 2001 10 20 | 644 | 0.5+ | 0.6+ | 2006 08 27 | 699 | 0.3− | 0.1− | 2006 09 16 | 699 | 0.3+ | 0.0 | | |
| 2001 10 20 | 644 | 0.2− | 0.1+ | 2006 08 27 | 699 | 1.1− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1− | | |
| 2003 01 05 | 704 | 0.4− | 0.6+ | 2006 08 27 | 699 | 0.1+ | 0.8+ | 2006 10 23 | 644 | 0.3− | 0.3+ | | |
| 2003 01 05 | 704 | 0.8− | 0.1− | 2006 08 27 | 699 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2003 01 05 | 704 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.2+ | 0.4− | | | | | | |

**2006 QU$_{116}$ = 1999 VO$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.71711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26845565 | $\omega$ | 218.22686 | | +0.31554723 | −0.94746692 | |
| $a$ | 2.3798761 | $\Omega$ | 213.47216 | | +0.89228597 | +0.31502461 | |
| $e$ | 0.2346582 | $i$ | 5.44245 | | +0.32288650 | +0.05537093 | |
| $P$ | 3.67 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 0.2+ | 0.8+ | 2001 04 27 | 691 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.5+ | 0.7+ | | |
| 1999 11 15 | 704 | 0.2− | 0.2+ | 2001 04 27 | 691 | 0.0 | 0.7+ | 2006 08 29 | 703 | 0.6− | 0.3+ | | |
| 1999 11 15 | 704 | 0.3+ | 0.3+ | 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 08 29 | 703 | 0.3− | 1.0+ | | |
| 1999 11 15 | 704 | 0.7− | 0.3− | 2004 02 12 | 644 | 0.2+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.1+ | | |
| 1999 11 17 | 704 | 0.2+ | 0.7+ | 2004 02 12 | 644 | 0.3+ | 0.6+ | 2006 08 29 | 703 | 0.6− | 0.5− | | |
| 1999 11 17 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.4+ | 0.7+ | 2006 09 13 | 644 | 0.4+ | 0.4+ | | |
| 1999 11 17 | 704 | 0.1− | 0.3+ | 2006 08 27 | 699 | 0.5− | 0.6− | 2006 09 13 | 644 | 0.4+ | 0.1+ | | |
| 2001 04 27 | 691 | 0.3+ | 0.2− | 2006 08 27 | 699 | (1.8− | 1.2−) | 2006 09 13 | 644 | 0.0 | 0.2+ | | |

**2006 QF$_{117}$ = 2002 SZ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.14715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24097330 | $\omega$ | 189.83407 | | +0.99831315 | +0.02509922 | |
| $a$ | 2.5575459 | $\Omega$ | 168.33815 | | −0.01690402 | +0.98831593 | |
| $e$ | 0.1757148 | $i$ | 15.01087 | | −0.05554379 | +0.15033843 | |
| $P$ | 4.09 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.1− | 2004 03 16 | 291 | 0.4+ | 0.5+ | 2006 08 28 | 703 | 0.0 | 0.4− | | |
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2004 03 16 | 291 | 0.1− | 0.9+ | 2006 08 28 | 691 | 0.3− | 0.4+ | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.3+ | 0.0 | 2006 08 28 | 691 | 0.2+ | 0.1+ | | |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.4+ | 0.7+ | 2006 08 28 | 691 | 0.1+ | 0.3+ | | |
| 2002 09 30 | 608 | 0.3− | 0.4+ | 2006 08 19 | 691 | 0.3+ | 0.5+ | 2006 09 17 | 704 | 0.2+ | 0.1+ | | |
| 2002 09 30 | 608 | 0.0 | 0.4− | 2006 08 27 | 699 | 0.9− | 0.7− | 2006 09 17 | 704 | 0.4+ | 0.0 | | |
| 2002 09 30 | 608 | 0.1− | 0.3+ | 2006 08 27 | 699 | 1.0− | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.2+ | | |
| 2002 10 01 | 699 | 1.0− | 0.1− | 2006 08 27 | 699 | 1.2− | 0.8− | 2006 09 17 | 704 | 0.1− | 0.7+ | | |
| 2002 10 01 | 699 | 0.5− | 1.1+ | 2006 08 27 | 699 | (2.3− | 0.5+) | 2006 10 02 | G96 | 0.0 | 0.5− | | |
| 2002 10 01 | 699 | 1.0− | 0.0 | 2006 08 28 | 703 | (1.0+ | 1.9−) | 2006 10 02 | G96 | 0.3− | 0.1− | | |
| 2002 10 01 | 699 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.3− | 1.0+ | 2006 10 02 | G96 | 0.5− | 0.1− | | |
| 2004 03 16 | 291 | 0.3− | 0.5+ | 2006 08 28 | 703 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.3− | | |

**2006 QJ$_{117}$ = 1995 TZ$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.26312 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26271001 | $\omega$ | 42.09757 | | +0.59877176 | +0.80029308 | |
| $a$ | 2.4144505 | $\Omega$ | 264.70858 | | −0.74305204 | +0.54031484 | |
| $e$ | 0.2069152 | $i$ | 1.82298 | | −0.29890808 | +0.25998244 | |
| $P$ | 3.75 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.0 | 0.3− | 2006 08 20 | 691 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.3− | 0.1+ | | |
| 1995 10 15 | 691 | 0.1− | 0.3− | 2006 08 27 | 699 | 0.8+ | 0.2+ | 2006 09 12 | 703 | 0.7− | 0.1− | | |
| 1995 10 15 | 691 | 0.1− | 0.2− | 2006 08 27 | 699 | 0.0 | 0.5− | 2006 09 16 | 699 | 0.0 | 0.3+ | | |
| 1995 10 22 | 691 | 0.3+ | 1.0+ | 2006 08 27 | 699 | (2.2+ | 0.1+) | 2006 09 16 | 699 | 0.1− | 0.0 | | |
| 1995 10 22 | 691 | 0.1− | 0.1+ | 2006 08 27 | 699 | 0.8+ | 0.9+ | 2006 09 16 | 699 | 0.2− | 0.3+ | | |
| 1995 10 22 | 691 | 0.0 | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.2+ | | |
| 2002 06 18 | 704 | 0.3− | 0.8+ | 2006 08 29 | 691 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.8− | | |
| 2002 06 18 | 704 | 0.0 | 0.7− | 2006 08 29 | 691 | 0.5− | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.8− | | |
| 2002 06 18 | 704 | 0.4+ | 0.1− | 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.4+ | 0.2+ | | |
| 2002 06 18 | 704 | 0.1+ | 0.7− | 2006 08 30 | 704 | 0.5− | 0.8+ | 2006 09 19 | 703 | 0.4+ | 0.3+ | | |
| 2005 03 09 | 691 | 0.4+ | 0.4+ | 2006 08 30 | 704 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.4+ | 0.7− | | |
| 2005 03 09 | 691 | 0.2− | 0.8+ | 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.3− | | |
| 2005 03 09 | 691 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 0.9− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.4− | | |
| 2006 08 20 | 691 | 0.5+ | 0.1+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 2006 08 20 | 691 | 0.2+ | 0.5+ | 2006 09 12 | 703 | 0.4− | 0.7+ | | | | | | |

**2006 QM$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.44313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24461041 | $\omega$ | 112.15712 | | +0.27658705 | | +0.96056762 |
| $a$ | 2.5321306 | $\Omega$ | 173.69264 | | −0.94919274 | | +0.27769670 |
| $e$ | 0.1319910 | $i$ | 15.00888 | | −0.15010911 | | +0.01394237 |
| $P$ | 4.03 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 13 | 691 | 0.5+ | 0.5− | 2005 04 04 | 703 | 0.7− | 0.6− | 2006 09 20 | 704 | 0.4+ | 0.8+ |
| 1998 09 13 | 691 | 0.4+ | 0.7− | 2005 04 04 | 703 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.1+ |
| 1998 09 13 | 691 | 0.2+ | 0.6− | 2005 04 04 | 703 | 0.3− | 0.5− | 2006 09 20 | 704 | 1.3+ | 0.4+ |
| 1998 09 29 | 557 | 0.1+ | 0.9− | 2005 04 04 | 703 | (2.5− | 0.2−) | 2006 09 20 | 704 | 0.0 | 0.2+ |
| 1998 09 29 | 557 | 0.5− | 1.4− | 2006 08 27 | 699 | 1.1+ | 1.4+ | 2006 09 20 | 644 | 0.1− | 0.1− |
| 1998 09 29 | 557 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.5+ | 1.4+ |
| 1998 09 30 | 658 | 1.2− | 0.6− | 2006 08 27 | 699 | (2.0− | 0.1+) | 2006 09 20 | 644 | 0.1− | 0.1− |
| 1998 09 30 | 658 | 1.5− | 0.5− | 2006 08 27 | 699 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 1998 09 30 | 658 | 0.6+ | 0.3− | 2006 08 28 | 703 | 1.3+ | 1.1− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2001 04 16 | 645 | 0.0 | 0.1− | 2006 08 28 | 703 | (1.6− | 0.4−) | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 04 16 | 645 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2002 09 04 | 699 | 0.3+ | 0.9+ | 2006 08 28 | 703 | 1.1− | 1.0− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2002 09 04 | 699 | (1.7+ | 0.7+) | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2002 09 04 | 699 | 1.4+ | 0.4− | 2006 09 17 | 704 | 0.1− | 0.6+ | 2006 09 30 | G96 | 0.5− | 0.1− |
| 2002 09 04 | 699 | 0.5+ | 0.2+ | 2006 09 17 | 704 | 0.8− | 0.7+ | 2006 09 30 | G96 | 0.4− | 0.1− |
| 2002 09 14 | 644 | 0.9− | 0.5+ | 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.3+ |
| 2002 09 14 | 644 | 0.9− | 0.7+ | 2006 09 17 | 704 | (2.0− | 1.9+) | 2006 10 16 | 703 | 1.3− | 1.3+ |
| 2002 09 14 | 644 | 1.1− | 0.6+ | 2006 09 19 | 703 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2005 03 11 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 1.0+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.4− |
| 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 1.4+ | | | | |
| 2005 03 11 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.9− | 0.0 | | | | |

**2006 QT$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.84829 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21333164 | $\omega$ | 202.94085 | | +0.94085682 | | −0.33878402 |
| $a$ | 2.7739536 | $\Omega$ | 176.85488 | | +0.32041130 | | +0.88615758 |
| $e$ | 0.1465413 | $i$ | 3.88731 | | +0.11011376 | | +0.31614891 |
| $P$ | 4.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 291 | 0.1− | 0.4+ | 2006 09 12 | 703 | 1.1− | 0.5− | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2004 02 13 | 291 | 0.1− | 0.4+ | 2006 09 12 | 703 | 1.0− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2004 02 13 | 291 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.3− | 0.3+ |
| 2004 03 17 | 291 | 0.1− | 0.8+ | 2006 09 16 | 644 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.1− | 0.5− |
| 2004 03 17 | 291 | 0.7+ | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.1− | 0.1− |
| 2004 03 17 | 291 | 0.6+ | 0.4+ | 2006 09 17 | 704 | (1.4− | 1.8+) | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.5− | 2006 09 30 | 699 | 0.4− | 0.7− |
| 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.1− | 1.1− | 2006 09 30 | 699 | (2.0− | 0.1+) |
| 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.6− | 2006 09 30 | 699 | 0.3− | 0.4+ |
| 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 09 30 | 699 | 0.9+ | 1.0+ |
| 2006 08 27 | 699 | 0.5− | 0.1− | 2006 09 17 | 704 | 1.0+ | 0.0 | 2006 10 09 | 644 | 0.5− | 0.3+ |
| 2006 08 27 | 699 | 0.4− | 1.0+ | 2006 09 17 | 703 | 0.1− | 0.9− | 2006 10 09 | 644 | 0.6− | 0.3+ |
| 2006 08 27 | 699 | 0.8− | 1.3+ | 2006 09 17 | 703 | 0.3+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2006 08 28 | 703 | 0.3+ | 0.2− | 2006 09 20 | 704 | 0.1+ | 1.1+ | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2006 08 28 | 703 | 0.7+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.4+ | 2006 10 16 | G96 | 0.9− | 0.3+ |
| 2006 08 28 | 703 | 0.6− | 0.3+ | 2006 09 20 | 699 | 0.7− | 0.0 | 2006 10 16 | G96 | 0.5− | 0.3− |
| 2006 08 28 | 703 | 0.8− | 0.5+ | 2006 09 20 | 704 | 0.5+ | 1.0+ | 2006 10 16 | G96 | 0.6− | 0.3+ |
| 2006 08 28 | 691 | 0.4+ | 0.2+ | 2006 09 20 | 699 | 0.9+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.8+ |
| 2006 08 28 | 691 | 0.3+ | 1.1+ | 2006 09 20 | 699 | 0.6− | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2006 08 28 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.7+ |
| 2006 09 12 | 703 | 0.4− | 0.3− | 2006 09 25 | G96 | 0.4− | 0.4− | | | | |
| 2006 09 12 | 703 | 0.8− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− | | | | |

**2006 QU$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.98228 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18889848 | $\omega$ | 19.63201 | | +0.99439558 | | +0.07894508 |
| $a$ | 3.0082718 | $\Omega$ | 335.51468 | | −0.10436645 | | +0.83922242 |
| $e$ | 0.1093990 | $i$ | 9.76862 | | +0.01688394 | | +0.53802732 |
| $P$ | 5.22 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.2− | 0.9+ | 2001 10 20 | 704 | 0.1+ | 0.6− | 2006 08 27 | 699 | (0.2− | 1.7+) |
| 2001 09 10 | 704 | 0.5− | 0.0 | 2001 10 20 | 704 | 0.5− | 0.5− | 2006 08 28 | 691 | 0.1+ | 0.3− |
| 2001 09 10 | 704 | 0.7− | 0.3+ | 2001 10 20 | 704 | 0.9+ | 0.2− | 2006 08 28 | 691 | 0.2− | 0.2− |
| 2001 09 10 | 704 | 1.1− | 0.4+ | 2004 03 16 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.3− |
| 2001 09 10 | 704 | 0.8+ | 1.5+ | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 0.1− | 0.2+ |
| 2001 09 28 | 644 | 0.5− | 1.3+ | 2004 03 16 | 691 | 0.0 | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.1+ |
| 2001 09 28 | 644 | 0.0 | 0.9+ | 2006 08 19 | 691 | 0.1− | 0.8+ | 2006 09 12 | 703 | 1.1− | 1.3− |
| 2001 09 28 | 644 | 0.3− | 0.9+ | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.7+ | 0.8+ |
| 2001 10 19 | 557 | 0.1+ | 0.1− | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.4− |
| 2001 10 19 | 557 | 0.1+ | 1.3− | 2006 08 27 | 699 | (1.7+ | 0.7−) | 2006 09 17 | 703 | (2.3− | 1.1+) |
| 2001 10 20 | 704 | 0.5+ | 0.5− | 2006 08 27 | 699 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.4+ | 0.2− |
| 2001 10 20 | 704 | 0.7− | 0.6+ | 2006 08 27 | 699 | 0.1+ | 0.8− | 2006 09 17 | 703 | 1.3+ | 0.2+ |

**2006 QV$_{117}$ = 1998 BE$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.68577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17893810 | $\omega$ | 4.17826 | | +0.93066259 | | +0.36015049 |
| $a$ | 3.1188956 | $\Omega$ | 334.41539 | | −0.33986656 | | +0.78569209 |
| $e$ | 0.0384177 | $i$ | 8.58828 | | −0.13549123 | | +0.50297074 |
| $P$ | 5.51 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.6− | 0.3− | 2006 07 25 | G96 | 0.1− | 0.1− | 2006 09 16 | 644 | 0.1+ | 0.4+ |
| 1995 09 21 | 691 | 0.5− | 0.3− | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.3+ | 0.1− |
| 1995 09 21 | 691 | 0.3− | 0.4− | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.2+ | 0.3+ |
| 1995 10 23 | 691 | 0.9+ | 0.6+ | 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 09 18 | 704 | 1.2+ | 1.0− |
| 1995 10 23 | 691 | 0.3+ | 0.4+ | 2006 08 27 | 699 | (1.7+ | 0.6+) | 2006 09 18 | 704 | 0.5+ | 0.2− |
| 1995 10 23 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 0.6+ | 0.9+ | 2006 09 18 | 704 | 0.9+ | 0.6− |
| 1998 01 23 | 691 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.7+ | 1.4+ |
| 1998 01 23 | 691 | 0.1− | 0.0 | 2006 08 27 | 699 | (1.8+ | 0.5+) | 2006 09 19 | 699 | 1.0− | 0.1+ |
| 1998 01 23 | 691 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.8− | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.6− |
| 1998 01 29 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.9− | 0.3− |
| 1998 01 29 | 691 | 0.7+ | 0.0 | 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.6− |
| 1998 01 29 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.2− | 0.7+ |
| 2001 10 13 | 699 | (0.0 | 1.8+) | 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 1.2− |
| 2001 10 13 | 699 | 0.5+ | 0.6+ | 2006 08 28 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.0 |
| 2001 10 13 | 699 | 0.0 | 0.9+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.5+ |
| 2001 10 13 | 699 | 0.1− | 0.5− | 2006 09 12 | 703 | 0.3− | 1.0− | 2006 09 30 | 699 | 0.4+ | 0.2+ |
| 2001 10 20 | 644 | 0.2+ | 0.9− | 2006 09 12 | 703 | 1.2+ | 0.5− | 2006 09 30 | 699 | 1.0− | 0.4+ |
| 2001 10 20 | 644 | 0.2+ | 0.7− | 2006 09 12 | 703 | 0.2− | 0.1− | 2006 09 30 | 699 | 0.1− | 1.1− |
| 2001 10 20 | 644 | 0.0 | 0.9− | 2006 09 12 | 703 | 0.3− | 0.1+ | 2006 09 30 | 699 | 0.7+ | 0.3− |
| 2006 07 25 | G96 | 0.2− | 0.0 | 2006 09 16 | 699 | 0.3+ | 1.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 07 25 | G96 | 0.0 | 0.2− | 2006 09 16 | 699 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 07 25 | G96 | 0.5− | 0.1− | 2006 09 16 | 699 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.0 |

**2006 QW$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.96294 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18190442 | $\omega$ | 81.02921 | | +0.73560262 | | +0.67726526 |
| $a$ | 3.0848962 | $\Omega$ | 236.33901 | | −0.62800854 | | +0.67396753 |
| $e$ | 0.1675593 | $i$ | 0.97492 | | −0.25395681 | | +0.29509243 |
| $P$ | 5.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.2− | 0.1+ | 2006 08 27 | 699 | (1.0+ | 1.7+) | 2006 10 16 | G96 | 0.1+ | 0.1+ |
| 2001 10 14 | 691 | 0.2− | 0.4+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.2+ | 0.5− | 2006 08 28 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.1− | 0.2+ |
| 2001 11 18 | 691 | 0.3+ | 0.0 | 2006 08 28 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2001 11 18 | 691 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 11 18 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2006 08 27 | 699 | 1.2+ | 1.0+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2006 08 27 | 699 | 1.3+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.7− |
| 2006 08 27 | 699 | 0.0 | 1.0− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.4− |

### 2006 QZ$_{117}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.11620 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21761068 | $\omega$ | 205.95804 | | +0.62497881 | −0.78031765 | |
| $a$ | 2.7374692 | $\Omega$ | 205.38030 | | +0.72505087 | +0.59090974 | |
| $e$ | 0.1938965 | $i$ | 3.00786 | | +0.28931422 | +0.20476828 | |
| $P$ | 4.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 08 | 688 | 0.4+ | 0.1− | 2004 04 11 | 644 | 0.6+ | 1.2+ | 2006 09 20 | 704 | 0.1− | 0.2+ |
| 1997 07 08 | 688 | 0.2− | 0.1+ | 2004 04 19 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.2+ |
| 2000 05 06 | I03 | 0.4− | 0.3+ | 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.3− |
| 2000 05 06 | I03 | 0.0 | 0.6+ | 2004 04 19 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 699 | 0.3− | 0.1+ |
| 2000 05 06 | I03 | 0.4+ | 0.7+ | 2006 08 15 | 644 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.2− | 0.3+ |
| 2002 11 05 | 704 | (1.7− | 0.9+) | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 09 20 | 699 | (1.6− | 0.2+) |
| 2002 11 05 | 704 | 0.5− | 0.7+ | 2006 08 15 | 644 | 0.3− | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.1− |
| 2002 11 05 | 704 | 0.4− | 0.8− | 2006 08 27 | 699 | 0.1+ | 0.6+ | 2006 09 20 | 699 | 0.5− | 0.4+ |
| 2002 11 24 | 644 | 0.8− | 0.3+ | 2006 08 27 | 699 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.8+ | 0.1+ |
| 2002 11 24 | 644 | 0.2− | 0.3− | 2006 08 27 | 699 | 0.4+ | 1.1+ | 2006 09 27 | 704 | 1.0+ | 0.7+ |
| 2002 11 24 | 644 | 0.1− | 0.7− | 2006 08 27 | 699 | 0.1+ | 0.1− | 2006 09 27 | 704 | 1.0+ | 0.7+ |
| 2002 12 05 | 608 | 0.6+ | 0.1+ | 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.3+ | 0.9+ |
| 2002 12 05 | 608 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2002 12 05 | 608 | 0.4+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.3− | 0.4+ | 2006 09 01 | 704 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.4− |
| 2002 12 11 | 704 | 0.2+ | 0.6+ | 2006 09 01 | 704 | 0.1+ | 1.4− | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.1− | 0.7+ | 2006 09 01 | 704 | (0.3+ | 2.1−) | 2006 09 30 | 699 | 0.7− | 0.0 |
| 2002 12 11 | 704 | (1.7+ | 0.2−) | 2006 09 01 | 704 | (1.0− | 1.5−) | 2006 09 30 | 699 | 0.3− | 1.2− |
| 2002 12 31 | 704 | 0.0 | 1.1+ | 2006 09 11 | 703 | 0.2− | 0.8+ | 2006 09 30 | 699 | 0.6+ | 0.1+ |
| 2002 12 31 | 704 | 0.5+ | 0.7+ | 2006 09 11 | 703 | 0.2− | 0.3+ | 2006 09 30 | 699 | 0.9+ | 1.1− |
| 2002 12 31 | 704 | 0.5− | 0.4+ | 2006 09 11 | 703 | 0.3+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 1.2− | 0.9− | 2006 09 11 | 703 | 0.7− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.5− | 0.8− | 2006 09 17 | 703 | 1.0− | 0.2− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2004 03 18 | 704 | (1.8− | 0.6−) | 2006 09 17 | 703 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2004 04 11 | 644 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 1.0− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2004 04 11 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.9− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 |

### 2006 QB$_{118}$ = 1999 UJ$_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.08831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27493233 | $\omega$ | 28.24739 | | +0.84718665 | −0.53126102 | |
| $a$ | 2.3423521 | $\Omega$ | 3.85950 | | +0.46899302 | +0.74244913 | |
| $e$ | 0.2313311 | $i$ | 5.15032 | | +0.24964041 | +0.40808212 | |
| $P$ | 3.58 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.5− | 0.6+ | 2006 09 12 | 703 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.8− | 0.7+ |
| 1999 10 12 | 704 | 0.5− | 0.4− | 2006 09 12 | 703 | 1.3− | 0.1+ | 2006 09 25 | 699 | 0.3− | 1.0− |
| 1999 10 12 | 704 | 0.7− | 0.9+ | 2006 09 12 | 703 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.9+ | 0.7+ |
| 1999 10 12 | 704 | 0.5− | 0.6+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.7+ | 0.2− |
| 1999 10 12 | 704 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 1999 10 29 | 703 | (2.9− | 0.6+) | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 1999 10 29 | 703 | 0.7+ | 0.7+ | 2006 09 16 | 699 | 0.3− | 0.7+ | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 1999 10 29 | 703 | (2.8− | 0.6−) | 2006 09 16 | 699 | 0.6− | 0.3+ | 2006 09 28 | 704 | 0.6+ | 0.8− |
| 1999 10 29 | 703 | 1.6− | 0.2− | 2006 09 16 | 699 | 0.6− | 0.5+ | 2006 09 28 | 704 | 0.1+ | 1.4+ |
| 1999 11 03 | 704 | 0.5+ | 0.3+ | 2006 09 16 | 699 | 0.3− | 0.3+ | 2006 09 28 | 704 | 0.2+ | 0.0 |
| 1999 11 03 | 704 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.1− | 2006 09 30 | 704 | 1.0+ | 0.3+ |
| 1999 11 03 | 704 | 1.6+ | 0.4+ | 2006 09 17 | 704 | 0.2− | 0.9+ | 2006 09 30 | 704 | 0.6+ | 0.5+ |
| 1999 11 03 | 704 | (3.1+ | 0.2−) | 2006 09 17 | 704 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.3+ | 0.9+ |
| 2006 08 27 | 699 | 0.2− | 0.9+ | 2006 09 17 | 704 | 0.3+ | 0.2− | 2006 09 30 | 704 | 0.2− | 0.3+ |
| 2006 08 27 | 699 | 0.9− | 0.8+ | 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.9− |
| 2006 08 27 | 699 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 1.1+ | 1.1− |
| 2006 08 27 | 699 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.9+ | 0.6− |
| 2006 08 28 | 703 | 0.1+ | 0.8− | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.2− |
| 2006 08 28 | 703 | (2.5− | 0.3−) | 2006 09 19 | 699 | 0.6+ | 0.7+ | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 0.0 | 0.7− | 2006 09 19 | 703 | 0.6− | 0.6− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2006 08 30 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.4− |
| 2006 08 30 | 704 | 1.0− | 1.0+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2006 08 30 | 704 | 0.8− | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.9− |
| 2006 08 30 | 704 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 2006 08 30 | 704 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.7+ | 0.5− |
| 2006 09 12 | 703 | 0.1− | 0.8− | 2006 09 25 | 699 | 0.1+ | 0.3− | | | | |

### 2006 QG$_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.29697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22171539 | $\omega$ | 112.84867 | | +0.28547086 | −0.95016106 | |
| $a$ | 2.7035775 | $\Omega$ | 319.88542 | | +0.79250732 | +0.30755363 | |
| $e$ | 0.1853952 | $i$ | 11.21381 | | +0.53892350 | +0.05103654 | |
| $P$ | 4.45 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.5+ | 0.7+ | 2006 08 27 | 699 | 0.0 | 0.3− | 2006 09 20 | 699 | 0.4+ | 0.4+ |
| 2002 10 06 | 704 | 0.2+ | 0.4− | 2006 08 27 | 699 | 0.7− | 1.0− | 2006 09 20 | 699 | 0.4+ | 0.1+ |
| 2002 10 06 | 704 | 1.0− | 0.5− | 2006 08 27 | 699 | 0.5− | 0.8− | 2006 09 20 | 699 | 0.1+ | 0.4+ |
| 2002 11 15 | 704 | 0.3− | 0.2− | 2006 08 29 | 703 | 0.7− | 0.6+ | 2006 09 22 | 703 | 0.7+ | 0.1+ |
| 2002 11 15 | 704 | 0.4− | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.5− | 2006 09 22 | 703 | 0.2− | 0.1+ |
| 2002 11 15 | 704 | 0.2+ | 0.5− | 2006 08 29 | 703 | 0.5− | 0.0 | 2006 09 22 | 703 | 0.1− | 0.6− |
| 2002 11 15 | 704 | 0.6+ | 0.3− | 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 09 22 | 703 | 0.5− | 0.3+ |
| 2002 12 07 | 704 | 0.1− | 0.1− | 2006 09 15 | 704 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.5+ |
| 2002 12 07 | 704 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 2002 12 07 | 704 | 0.1− | 0.8+ | 2006 09 15 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2002 12 07 | 704 | 0.2− | 0.6+ | 2006 09 15 | 704 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2002 12 07 | 704 | 0.2− | 0.5+ | 2006 09 15 | 704 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.4− | 1.0− |
| 2002 12 15 | 704 | 0.7+ | 0.5− | 2006 09 16 | 644 | 0.1+ | 0.2− | 2006 10 17 | 703 | 1.0+ | 0.2− |
| 2002 12 15 | 704 | 0.1− | 0.2− | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2002 12 15 | 704 | (2.2− | 1.6+) | 2006 09 16 | 644 | 0.2+ | 0.1− | | | | |
| 2006 08 27 | 699 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.1+ | 0.2+ | | | | |

### 2006 QO$_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.15065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27541460 | $\omega$ | 354.38893 | | +0.54991440 | +0.83057263 | |
| $a$ | 2.3396168 | $\Omega$ | 308.93873 | | −0.76183310 | +0.45561893 | |
| $e$ | 0.1080777 | $i$ | 6.49587 | | −0.34235139 | +0.32025069 | |
| $P$ | 3.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.3− | 0.8+ | 2006 08 27 | 699 | 0.3− | 1.4− | 2006 09 19 | 703 | 0.2− | 1.0− |
| 2003 11 19 | 704 | 0.4− | 0.1− | 2006 08 27 | 699 | 0.3− | 0.2− | 2006 09 25 | 699 | 1.5+ | 0.2− |
| 2003 11 19 | 704 | 0.7+ | 0.1− | 2006 08 27 | 699 | 0.2− | 0.5− | 2006 09 25 | 699 | 1.2+ | 0.4− |
| 2005 03 03 | 691 | 0.4+ | 0.6+ | 2006 08 27 | 699 | 0.4− | 0.2+ | 2006 09 25 | 699 | 0.7+ | 1.2+ |
| 2005 03 03 | 691 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.5+ | 2006 09 25 | 699 | 0.2− | 0.1− |
| 2005 03 03 | 691 | 0.5+ | 0.2+ | 2006 08 29 | 703 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.7+ | 0.0 |
| 2005 03 13 | 703 | 0.3− | 0.7+ | 2006 08 29 | 703 | 0.1+ | 0.8+ | 2006 10 01 | 704 | 0.1+ | 0.3+ |
| 2005 03 13 | 703 | 1.3− | 0.3+ | 2006 08 29 | 703 | 0.3+ | 1.1+ | 2006 10 01 | 704 | 0.7− | 0.9+ |
| 2005 03 13 | 703 | 0.6− | 1.0− | 2006 09 12 | 703 | 0.3− | 0.4+ | 2006 10 01 | 704 | 0.6+ | 0.4+ |
| 2005 03 13 | 703 | (0.1− | 1.6−) | 2006 09 12 | 703 | 0.5+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2006 08 18 | 644 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.2− | 1.3− | 2006 10 23 | 644 | 0.2− | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 18 | 704 | (1.5+ | 2.0−) | 2006 10 23 | 644 | 0.2− | 0.3− |
| 2006 08 21 | 691 | 0.2− | 0.7+ | 2006 09 18 | 704 | 0.9− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 09 18 | 704 | 0.6+ | 0.3− | 2006 11 22 | 291 | 0.3− | 0.4+ |
| 2006 08 27 | 699 | 0.6+ | 0.3− | 2006 09 18 | 704 | 0.5− | 1.4− | 2006 11 22 | 291 | 0.1− | 0.1+ |
| 2006 08 27 | 699 | 0.6− | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.4+ | 2006 11 22 | 291 | 0.3− | 0.1− |
| 2006 08 27 | 699 | (1.1+ | 1.7+) | 2006 09 19 | 703 | 0.4+ | 0.9+ | | | | |

**2006 QT$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.40889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16808288 | $\omega$ | 347.40094 | | +0.85624927 | +0.50626937 | |
| $a$ | 3.2517743 | $\Omega$ | 341.09591 | | −0.44220034 | +0.61570432 | |
| $e$ | 0.0957023 | $i$ | 18.46395 | | −0.26701320 | +0.60382077 | |
| $P$ | 5.86 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 06 | 809 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.5− | 1.0+ | 2006 09 25 | 704 | 0.4− | 0.6+ |
| 1994 09 06 | 809 | 1.4+ | 0.3+ | 2006 08 29 | 703 | 0.5− | 0.1+ | 2006 09 25 | 704 | 1.0+ | 1.0+ |
| 1994 09 06 | 809 | 1.8+ | 0.6+ | 2006 08 29 | 703 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.6+ | 0.4− |
| 2000 09 24 | 704 | 1.2− | 1.4− | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.1− |
| 2000 09 24 | 704 | 1.5− | 1.8− | 2006 09 06 | 644 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 0.3− | 0.7+ |
| 2000 09 24 | 704 | 0.8− | 1.2− | 2006 09 06 | 644 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.2+ | 0.5+ |
| 2000 09 24 | 704 | 0.4− | 0.1− | 2006 09 12 | 703 | 1.2+ | 0.2+ | 2006 10 01 | 703 | 0.1+ | 0.7− |
| 2004 03 26 | 704 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 0.5+ | 1.0+ | 2006 10 01 | 703 | 0.0 | 0.0 |
| 2004 03 26 | 704 | 0.0 | 0.8+ | 2006 09 12 | 703 | 0.7+ | 1.1− | 2006 10 01 | 703 | 0.5− | 0.0 |
| 2004 03 26 | 704 | 0.5+ | 0.6− | 2006 09 12 | 703 | (1.5+ | 1.8+) | 2006 10 01 | 703 | 0.2+ | 0.3+ |
| 2004 03 26 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 703 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2006 08 18 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2006 08 18 | 644 | 0.0 | 0.5+ | 2006 09 19 | 703 | 1.1− | 0.6+ | 2006 10 23 | 703 | 0.7+ | 0.6− |
| 2006 08 27 | 699 | 0.2+ | 0.6+ | 2006 09 24 | 106 | 0.1+ | 0.3− | 2006 10 23 | 703 | 0.8− | 1.0− |
| 2006 08 27 | 699 | 0.3− | 0.1− | 2006 09 24 | 106 | 0.3+ | 0.1+ | 2006 10 23 | 703 | 0.3− | 0.1+ |
| 2006 08 27 | 699 | 0.6− | 0.0 | 2006 09 24 | 106 | 0.0 | 0.4− | 2006 10 23 | 703 | 0.6− | 0.5− |
| 2006 08 27 | 699 | 0.4+ | 0.3− | 2006 09 24 | 106 | 0.3+ | 0.2− | | | | |
| 2006 08 29 | 703 | 1.1− | 0.7+ | 2006 09 25 | 704 | 1.2− | 0.5+ | | | | |

**2006 QC$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.20405 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17315493 | $\omega$ | 145.10260 | | +0.82164716 | +0.56999577 | |
| $a$ | 3.1879596 | $\Omega$ | 180.15575 | | −0.56817209 | +0.81889366 | |
| $e$ | 0.2560651 | $i$ | 18.78174 | | −0.04556766 | +0.06721604 | |
| $P$ | 5.69 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 28 | 644 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.2− | 1.1− |
| 2001 10 28 | 644 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.1+ | 0.4− | 2006 09 29 | 699 | 1.0− | 0.3+ |
| 2001 10 28 | 644 | 0.0 | 0.4+ | 2006 09 11 | 703 | 0.3− | 0.2+ | 2006 09 29 | 704 | 1.3+ | 0.4+ |
| 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 11 | 703 | 0.1− | 0.7− | 2006 09 29 | 699 | 0.2+ | 0.1+ |
| 2004 03 16 | 691 | 0.1+ | 0.7+ | 2006 09 11 | 703 | 0.6− | 0.4− | 2006 09 29 | 704 | 0.6− | 0.3+ |
| 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 1.4+ | 0.1+ |
| 2006 06 21 | 703 | 0.6+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.6− | 0.1− |
| 2006 06 21 | 703 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.3+ | 2006 09 29 | 704 | (1.7+ | 0.4+) |
| 2006 06 21 | 703 | (0.4+ | 2.2+) | 2006 09 19 | 699 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.1− | 0.3− |
| 2006 06 21 | 703 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 1.1− | 0.1− | 2006 09 29 | 699 | 0.4− | 1.1+ |
| 2006 08 27 | 699 | 0.1− | 1.2+ | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2006 08 27 | 699 | 0.1+ | 0.7+ | 2006 09 19 | 703 | 0.8− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2006 08 27 | 699 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.6− |
| 2006 08 28 | 704 | 0.4+ | 0.4− | 2006 09 25 | 704 | (2.5+ | 0.2+) | 2006 10 21 | 703 | 0.1+ | 0.6− |
| 2006 08 28 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.4+ |
| 2006 08 28 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.4− | 0.8+ | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2006 08 28 | 704 | 0.3+ | 0.1− | 2006 09 25 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.6+ | 0.0 |
| 2006 08 28 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2006 08 30 | 699 | 0.1− | 0.4− | 2006 09 26 | 703 | 0.7− | 0.7− | 2006 11 11 | 703 | 0.2− | 1.1+ |
| 2006 08 30 | 699 | 0.6+ | 0.1− | 2006 09 26 | 703 | 0.9− | 0.3− | 2006 11 11 | 703 | 1.2+ | 0.6+ |
| 2006 08 30 | 699 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 1.0− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.3− |

**2006 QD$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.63288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29929368 | $\omega$ | 313.48823 | | +0.89798436 | +0.43964629 | |
| $a$ | 2.2134567 | $\Omega$ | 20.45152 | | −0.38708544 | +0.80904675 | |
| $e$ | 0.1968494 | $i$ | 3.00366 | | −0.20925810 | +0.39006985 | |
| $P$ | 3.29 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 291 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2002 04 04 | 291 | 0.1− | 0.4+ | 2006 08 30 | 699 | 0.2+ | 1.2+ | 2006 10 20 | G96 | 0.3+ | 1.0− |
| 2002 04 04 | 291 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.6− | 0.2− |
| 2002 04 08 | 691 | 0.0 | 0.5+ | 2006 08 30 | 699 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2002 04 08 | 691 | 0.0 | 0.1+ | 2006 09 12 | 704 | (0.7+ | 1.7−) | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2002 04 08 | 691 | 0.7+ | 0.3− | 2006 09 12 | 704 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.6− | 0.4− |
| 2003 11 18 | 691 | 0.0 | 0.0 | 2006 09 12 | 704 | 0.4− | 0.9+ | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2003 11 18 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2003 11 18 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.3− | 0.8+ | 2006 11 11 | G96 | 0.8+ | 0.2− |
| 2003 11 28 | 691 | 0.5− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 11 28 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2003 11 28 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 1.0− | 1.3+ | 2006 11 15 | G96 | 0.8+ | 0.2+ |
| 2005 03 12 | 695 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.0− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 03 12 | 695 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2006 08 28 | 704 | 0.5− | 1.0+ | 2006 09 25 | 699 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2006 08 28 | 704 | (1.5+ | 1.7+) | 2006 09 30 | 703 | 0.7+ | 1.1− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2006 08 28 | 704 | (1.8+ | 1.0+) | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2006 08 28 | 704 | 0.6+ | 0.7− | 2006 09 30 | 703 | 0.5− | 0.3+ | | | | |

**2006 QL$_{119}$ = 1997 TV$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.47557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21638200 | $\omega$ | 110.23892 | | +0.96710484 | +0.23571937 | |
| $a$ | 2.7478222 | $\Omega$ | 236.23957 | | −0.25427079 | +0.90670871 | |
| $e$ | 0.2260844 | $i$ | 6.60502 | | +0.00738898 | +0.34973660 | |
| $P$ | 4.55 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 07 | 691 | 0.0 | 0.5− | 2006 08 28 | 704 | 0.2− | 0.5− | 2006 09 20 | 699 | 1.4+ | 0.3− |
| 1997 10 07 | 691 | 0.4+ | 0.5+ | 2006 08 28 | 704 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.6+ | 0.2+ |
| 1997 10 07 | 691 | 0.1− | 0.2− | 2006 08 28 | 704 | 0.1− | 0.9+ | 2006 09 20 | 699 | 0.1− | 0.3+ |
| 1997 10 08 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.7+ | 0.5− | 2006 09 20 | 699 | 0.1+ | 0.1+ |
| 1997 10 08 | 691 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.5− | 2006 09 26 | 704 | 0.7− | 1.1+ |
| 1997 10 08 | 691 | 0.0 | 0.2− | 2006 08 30 | 699 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.2− | 1.2+ |
| 2006 06 21 | 703 | 0.5+ | 0.0 | 2006 08 30 | 699 | 0.6+ | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.0 |
| 2006 06 21 | 703 | 0.4− | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.2+ | 2006 09 30 | 699 | 1.0+ | 0.4+ |
| 2006 06 21 | 703 | 0.7− | 0.5− | 2006 09 11 | 703 | 0.5− | 0.6− | 2006 09 30 | 699 | 0.1− | 0.4+ |
| 2006 06 21 | 703 | 0.1+ | 0.4− | 2006 09 11 | 703 | 0.6− | 1.2− | 2006 09 30 | 699 | 0.6− | 0.4+ |
| 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 09 11 | 703 | 0.2− | 0.4+ | 2006 09 30 | 699 | 0.3− | 0.6+ |
| 2006 08 27 | 699 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.1− | 1.0− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2006 08 27 | 699 | 0.6+ | 0.4− | 2006 09 18 | 703 | 0.8− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2006 08 28 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 10 22 | 644 | 0.5− | 0.2+ |
| 2006 08 28 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.9− | | | | |

**2006 QR$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.71718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23131097 | $\omega$ | 72.41910 | | +0.68330993 | −0.72665437 | |
| $a$ | 2.6282816 | $\Omega$ | 334.04114 | | +0.59299601 | +0.60917484 | |
| $e$ | 0.4530429 | $i$ | 9.35337 | | +0.42596159 | +0.31761524 | |
| $P$ | 4.26 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.4− | 2006 09 29 | 699 | 1.4+ | 0.1− |
| 2003 01 29 | 645 | 0.1− | 0.0 | 2006 09 12 | 703 | (0.7+ | 1.6−) | 2006 09 29 | 699 | 0.5+ | 0.2+ |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.6+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 645 | 0.1+ | 0.0 | 2006 09 18 | 704 | (1.9+ | 0.7−) | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 18 | 704 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 18 | 704 | 1.1+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 18 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2006 08 28 | 703 | 0.4− | 0.2− | 2006 09 18 | 704 | 0.4− | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2006 08 28 | 703 | 0.6− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2006 08 28 | 703 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.3− | 2006 11 14 | 703 | 0.4+ | 0.1+ |
| 2006 08 28 | 703 | 0.1− | 0.6− | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 11 14 | 703 | (1.7− | 0.2+) |
| 2006 08 30 | 704 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.1− | 0.6− | 2006 11 14 | 703 | 1.0− | 0.0 |
| 2006 08 30 | 704 | 0.4− | 0.8+ | 2006 09 20 | 699 | 0.4− | 0.3− | 2006 11 14 | 703 | 0.7+ | 0.7+ |
| 2006 08 30 | 704 | 0.9− | 0.6− | 2006 09 20 | 699 | 1.1+ | 0.3− | 2006 11 25 | 703 | 1.1− | 0.9− |
| 2006 08 30 | 704 | 1.2− | 0.8+ | 2006 09 20 | 699 | 0.5+ | 1.2+ | 2006 11 25 | 703 | 0.8+ | 0.1− |
| 2006 08 30 | 704 | 0.1− | 0.8+ | 2006 09 29 | 699 | 0.6+ | 0.2− | 2006 11 25 | 703 | 0.4− | 0.1+ |
| 2006 09 12 | 703 | 0.4− | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.4− | 2006 11 25 | 703 | 0.4− | 1.3+ |

### 2006 QV$_{119}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.57671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29207318 | $\omega$ | 10.11631 | | +0.99828275 | +0.05405548 | |
| $a$ | 2.2497880 | $\Omega$ | 346.72221 | | −0.05822571 | +0.87334184 | |
| $e$ | 0.1872207 | $i$ | 5.64042 | | −0.00642782 | +0.48409920 | |
| $P$ | 3.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 704 | 0.4− | 1.5− | 2006 08 30 | 699 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 1999 09 13 | 704 | 1.0+ | 0.9− | 2006 09 18 | 704 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 1999 09 13 | 704 | 1.0+ | 0.9+ | 2006 09 18 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1999 10 02 | 691 | 0.3− | 0.5+ | 2006 09 18 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− |
| 1999 10 02 | 691 | 0.4− | 0.4+ | 2006 09 18 | 704 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 1999 10 02 | 691 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.5− | 0.8+ | 2006 10 25 | 106 | 0.1− | 0.3− |
| 2003 12 17 | 704 | 0.3− | 0.5− | 2006 09 20 | 699 | 0.6+ | 0.9− | 2006 10 25 | 106 | 0.2− | 0.5− |
| 2003 12 17 | 704 | 0.4− | 0.0 | 2006 09 20 | 699 | 0.2+ | 0.3+ | 2006 10 25 | 106 | 0.1− | 0.6− |
| 2003 12 17 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.4+ | 0.1− | 2006 10 25 | 106 | 0.1+ | 0.4− |
| 2003 12 17 | 704 | 0.5+ | 0.6+ | 2006 09 20 | 699 | 0.3+ | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2005 04 06 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.2− | 0.3+ |
| 2005 04 06 | 691 | 0.5+ | 0.4+ | 2006 09 25 | 704 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2005 04 06 | 691 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.0 | 0.6+ | 2006 10 31 | 703 | 0.2+ | 0.1− |
| 2005 04 15 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 1.1+ | 0.0 | 2006 10 31 | 703 | 0.3− | 0.0 |
| 2005 04 15 | 691 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.2− | 1.0− | 2006 10 31 | 703 | 0.2+ | 0.5− |
| 2005 04 15 | 691 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.3+ | 2006 10 31 | 703 | 0.1+ | 0.3− |
| 2006 07 22 | G96 | 0.5+ | 0.8− | 2006 09 29 | 704 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.4− | 0.3+ |
| 2006 07 22 | G96 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.2− | 0.3+ |
| 2006 07 22 | G96 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.6+ | 0.6− | 2006 11 07 | 644 | 0.2− | 0.0 |
| 2006 07 22 | G96 | 0.3− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.5− |
| 2006 08 12 | 644 | 0.2− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.5+ |
| 2006 08 12 | 644 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.7− |
| 2006 08 12 | 644 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.0 |
| 2006 08 28 | 703 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.1+ | 0.6− |
| 2006 08 28 | 703 | 0.8+ | 0.3+ | 2006 10 19 | 704 | 0.3− | 0.9− | 2006 11 14 | 703 | 0.1+ | 0.4− |
| 2006 08 28 | 703 | 0.7+ | 0.6− | 2006 10 19 | 704 | 0.8− | 0.4− | 2006 11 14 | 703 | 0.9− | 0.0 |
| 2006 08 30 | 704 | 0.4+ | 0.1− | 2006 10 19 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2006 08 30 | 704 | 0.4− | 0.7− | 2006 10 19 | 704 | 0.5+ | 0.7+ | 2006 11 18 | 704 | 0.6− | 0.8+ |
| 2006 08 30 | 704 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2006 08 30 | 699 | 0.7− | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2006 08 30 | 699 | 0.8+ | 1.0− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2006 08 30 | 699 | 0.5+ | 0.2− | 2006 10 21 | 691 | 0.3− | 0.1+ | | | | |

### 2006 QX$_{119}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.07202 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22963364 | $\omega$ | 252.36051 | | +0.14851080 | −0.98838494 | |
| $a$ | 2.6410647 | $\Omega$ | 189.27865 | | +0.96610934 | +0.15197102 | |
| $e$ | 0.2546645 | $i$ | 11.53627 | | +0.21113334 | −0.00016476 | |
| $P$ | 4.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.1− | 0.0 | 2006 09 14 | 703 | 1.0− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2003 01 02 | 704 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2003 01 02 | 704 | 0.0 | 0.3− | 2006 09 14 | 703 | (0.6+ | 1.6−) | 2006 10 22 | 703 | 0.9− | 0.0 |
| 2003 01 02 | 704 | 0.1− | 0.7+ | 2006 09 14 | 703 | 0.2+ | 0.6− | 2006 10 22 | 703 | 0.3+ | 0.4+ |
| 2003 01 02 | 704 | 0.1+ | 0.5− | 2006 09 22 | 699 | 0.3+ | 0.1− | 2006 10 31 | 704 | 0.3− | 0.3+ |
| 2003 01 02 | 704 | 0.6+ | 1.4− | 2006 09 22 | 699 | 0.4+ | 0.5− | 2006 10 31 | 704 | 0.7+ | 0.9+ |
| 2003 01 28 | 704 | 0.2− | 0.2+ | 2006 09 22 | 699 | 0.6+ | 0.6− | 2006 10 31 | 704 | (1.7+ | 0.1+) |
| 2003 01 28 | 704 | 0.6+ | 0.6+ | 2006 09 22 | 699 | 0.2+ | 0.5− | 2006 10 31 | 704 | 0.7+ | 0.7+ |
| 2003 01 28 | 704 | 0.1− | 1.0+ | 2006 09 29 | 699 | 1.1− | 0.1− | 2006 10 31 | 704 | 0.1− | 0.5+ |
| 2003 01 28 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.4− | 0.7+ | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2003 01 28 | 704 | 0.9− | 0.5+ | 2006 09 29 | 699 | 0.2− | 0.5+ | 2006 11 13 | 703 | 0.5− | 0.3− |
| 2004 05 19 | 599 | 0.2+ | 1.2+ | 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.3− |
| 2004 05 19 | 599 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.7− |
| 2004 05 19 | 599 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 11 14 | 644 | 0.2− | 0.1+ |
| 2004 05 19 | 599 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.5− | 2006 11 14 | 644 | 0.0 | 0.0 |
| 2006 08 28 | 703 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 14 | 644 | 0.2− | 0.1+ |
| 2006 08 28 | 703 | 1.1− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2006 08 28 | 703 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 17 | 644 | 0.2+ | 0.0 |
| 2006 08 28 | 703 | 0.4+ | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 17 | 644 | 0.2+ | 0.2+ |
| 2006 08 30 | 699 | 1.2− | 1.1+ | 2006 10 22 | 704 | (1.9− | 0.3−) | 2006 11 19 | 703 | 0.5− | 0.2− |
| 2006 08 30 | 699 | 1.1+ | 0.3+ | 2006 10 22 | 704 | 0.2+ | 0.2− | 2006 11 19 | 703 | 0.3+ | 0.2− |
| 2006 08 30 | 699 | 0.5+ | 1.0+ | 2006 10 22 | 704 | 0.5+ | 0.9+ | 2006 11 19 | 703 | 0.5+ | 0.8− |
| 2006 08 30 | 699 | 0.0 | 0.8− | 2006 10 22 | 704 | 0.5+ | 0.5+ | 2006 11 19 | 703 | 0.3+ | 0.0 |

### 2006 QY$_{119}$ = 1997 WF$_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.02555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21677357 | $\omega$ | 4.90241 | | +0.87070474 | −0.49107827 | |
| $a$ | 2.7445121 | $\Omega$ | 24.56553 | | +0.44900808 | +0.77156824 | |
| $e$ | 0.2014542 | $i$ | 3.68874 | | +0.20066141 | +0.40438172 | |
| $P$ | 4.55 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 327 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 1997 11 22 | 327 | 0.3+ | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 1997 11 22 | 327 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1− | 0.0 |
| 1997 11 28 | 327 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.1− |
| 1997 11 28 | 327 | 0.2+ | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 1997 11 28 | 327 | 0.4− | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2006 08 28 | 703 | 0.6− | 0.4− | 2006 10 16 | 691 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2006 08 28 | 703 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.2− | 1.2− |
| 2006 08 28 | 703 | 0.5+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.0 |
| 2006 08 28 | 703 | 0.0 | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.4− | 0.4+ |
| 2006 08 30 | 699 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.3− | 0.4+ |
| 2006 08 30 | 699 | 0.2− | 1.5+ | 2006 10 19 | 644 | 0.4− | 0.1+ | 2006 11 13 | 691 | 0.5− | 0.3+ |
| 2006 08 30 | 699 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.3− |
| 2006 08 30 | 699 | (1.1+ | 2.0+) | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1+ | 1.1+ |
| 2006 09 20 | 644 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2006 09 20 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.6+ | 0.1− |
| 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.9+ | 0.1+ |
| 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.5− | 1.2+ |
| 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.7− | 0.6+ |
| 2006 09 29 | 704 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 1.5+ | 1.5− |
| 2006 09 29 | 704 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2006 09 29 | 704 | 0.1+ | 0.8− | 2006 10 23 | 704 | 0.8+ | 0.5− | 2006 11 21 | 704 | 0.4+ | 1.0+ |
| 2006 10 03 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 704 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2006 10 03 | 704 | 0.7+ | 0.7− | 2006 10 23 | 704 | 0.4− | 0.7− | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2006 10 03 | 704 | 0.6+ | 0.1− | 2006 10 23 | 704 | 1.2+ | 0.8− | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2006 10 03 | 704 | 0.7− | 0.3+ | 2006 10 23 | 704 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2006 10 03 | 704 | 0.6− | 0.0 | 2006 10 28 | 704 | 0.9− | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2006 10 04 | 703 | 1.1+ | 0.1− | 2006 10 28 | 704 | 1.0− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 28 | 704 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2006 10 04 | 703 | 0.2− | 0.2+ | 2006 10 28 | 704 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.6+ | 0.4− |
| 2006 10 04 | 703 | 0.7− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 04 | 703 | 0.1+ | 0.5− | 2006 10 29 | 691 | 0.3+ | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.6− | | |
| 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2+ | | | | | | |

**2006 QB$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 354.70204 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18578898 | $\omega$ | 27.30538 | | +0.97545863 | | +0.14986299 | | |
| $a$ | 3.0417447 | $\Omega$ | 322.94146 | | −0.21652600 | | +0.78586761 | | |
| $e$ | 0.1731186 | $i$ | 15.52624 | | +0.03996197 | | +0.59996098 | | |
| $P$ | 5.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 644 | 0.0 | 0.1− | 2001 11 12 | 704 | 0.1+ | 0.1− | 2006 08 30 | 704 | 0.3− | 0.5− | | |
| 2001 08 20 | 644 | 0.1+ | 0.0 | 2001 11 12 | 704 | 0.1+ | 0.5− | 2006 08 30 | 704 | 0.7− | 0.1− | | |
| 2001 08 20 | 644 | 0.2+ | 0.2− | 2001 11 12 | 704 | 0.8− | 0.0 | 2006 08 30 | 704 | 0.4− | 0.5+ | | |
| 2001 09 29 | 644 | 0.3+ | 0.1+ | 2006 08 18 | 699 | 0.2+ | 0.2− | 2006 08 30 | 704 | 0.3+ | 0.3− | | |
| 2001 09 29 | 644 | 0.3+ | 0.2+ | 2006 08 18 | 699 | 0.6− | 0.4+ | 2006 08 30 | 704 | 0.3− | 0.4− | | |
| 2001 09 29 | 644 | 0.2+ | 0.1− | 2006 08 18 | 699 | 0.5+ | 0.1+ | 2006 08 30 | 704 | 0.6+ | 0.5+ | | |
| 2001 10 18 | 704 | 0.2− | 0.8− | 2006 08 18 | 699 | 1.0+ | 0.1+ | 2006 09 11 | 703 | 1.4− | 0.1+ | | |
| 2001 10 18 | 704 | 0.3+ | 0.0 | 2006 08 29 | 691 | 0.0 | 0.2+ | 2006 09 11 | 703 | 0.5− | 0.2− | | |
| 2001 10 18 | 704 | 0.3+ | 0.7+ | 2006 08 29 | 691 | 0.1+ | 0.2− | 2006 09 11 | 703 | 0.3+ | 0.0 | | |
| 2001 10 18 | 704 | 0.5− | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 11 | 703 | 0.1+ | 0.7− | | |
| 2001 11 12 | 704 | 0.3− | 0.3+ | 2006 08 30 | 704 | 0.4+ | 0.9+ | | | | | | |

**2006 QE$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 6.31974 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18158016 | $\omega$ | 144.55966 | | +0.78712326 | | +0.61673208 | | |
| $a$ | 3.0885677 | $\Omega$ | 177.31234 | | −0.60048330 | | +0.76950913 | | |
| $e$ | 0.2480041 | $i$ | 10.89240 | | −0.14091410 | | +0.16582290 | | |
| $P$ | 5.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.4− | 0.7+ | 2006 07 21 | 703 | 0.0 | 0.6+ | 2006 08 30 | 699 | 0.4− | 1.1− | | |
| 2001 10 16 | 644 | 0.5− | 0.6+ | 2006 07 21 | 703 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.8+ | 0.0 | | |
| 2001 10 16 | 644 | 0.3− | 0.8+ | 2006 07 21 | 703 | 0.1− | 0.9− | 2006 09 14 | 703 | 0.4− | 0.2− | | |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2006 07 21 | 703 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.1− | 0.8− | | |
| 2001 11 11 | 645 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.2− | 1.0− | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.1+ | 2006 09 24 | 699 | 1.3+ | 0.4− | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.9− | 0.8+ | 2006 09 24 | 699 | 0.4+ | 0.0 | | |
| 2006 05 08 | G96 | 0.7+ | 0.6+ | 2006 08 29 | 703 | 0.2− | 0.9+ | 2006 09 24 | 699 | 0.2− | 0.0 | | |
| 2006 05 08 | G96 | 0.2− | 0.0 | 2006 08 30 | 699 | 1.4− | 0.5+ | 2006 09 24 | 699 | 1.0+ | 0.3+ | | |
| 2006 05 08 | G96 | 0.2+ | 0.1+ | 2006 08 30 | 699 | 0.6− | 0.1− | | | | | | |
| 2006 05 08 | G96 | 0.1− | 0.4+ | 2006 08 30 | 699 | 0.7+ | 0.0 | | | | | | |

**2006 QH$_{120}$ = 2006 QS$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 331.97830 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.26418046 | $\omega$ | 169.78442 | | +0.93458712 | | −0.35348297 | | |
| $a$ | 2.4054828 | $\Omega$ | 211.00966 | | +0.32066399 | | +0.88575153 | | |
| $e$ | 0.1937265 | $i$ | 4.44846 | | +0.15401790 | | +0.30082225 | | |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 11 | 691 | 0.4+ | 0.2+ | 2006 08 19 | 699 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.8+ | 1.0− | | |
| 1994 05 11 | 691 | 0.3− | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 09 15 | 691 | 0.3+ | 0.2+ | | |
| 1994 05 11 | 691 | 0.1− | 0.6− | 2006 08 29 | 703 | 0.4− | 0.6− | 2006 09 15 | 691 | 0.3+ | 0.1− | | |
| 2005 03 11 | G96 | 0.6− | 0.5− | 2006 08 29 | 703 | 0.4− | 0.5− | 2006 09 15 | 691 | 0.3+ | 0.1+ | | |
| 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.9− | 1.2− | 2006 09 17 | 691 | 0.0 | 0.2+ | | |
| 2005 03 11 | G96 | 0.1+ | 0.2− | 2006 08 30 | 704 | (3.0+ | 0.4+) | 2006 09 17 | 691 | 0.0 | 0.1+ | | |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2006 08 30 | 704 | (1.7+ | 0.1+) | 2006 09 17 | 691 | 0.3− | 0.1+ | | |
| 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 08 30 | 704 | (2.0+ | 1.1+) | 2006 09 24 | 699 | 0.1+ | 0.3+ | | |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 08 30 | 704 | 1.0− | 0.2− | 2006 09 24 | 699 | 0.1− | 0.4− | | |
| 2005 04 17 | 691 | 0.0 | 0.4+ | 2006 08 30 | 704 | (1.6+ | 0.0 ) | 2006 09 24 | 699 | 0.6− | 1.1+ | | |
| 2005 05 08 | G96 | 0.4+ | 0.4− | 2006 08 30 | 704 | 0.9+ | 0.4+ | 2006 09 24 | 699 | 0.8+ | 0.3+ | | |
| 2005 05 08 | G96 | 0.1− | 0.5− | 2006 08 30 | 704 | 1.4+ | 0.9− | 2006 09 25 | 704 | 0.4− | 0.2− | | |
| 2005 05 08 | G96 | 0.2− | 0.9− | 2006 08 30 | 704 | 1.3+ | 0.3− | 2006 09 25 | 704 | 0.5+ | 0.2− | | |
| 2005 05 08 | G96 | 0.2− | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 1.1− | 0.4+ | | |
| 2006 08 19 | 699 | 0.0 | 0.0 | 2006 09 14 | 703 | 1.2− | 0.2+ | 2006 11 16 | 291 | (3.3− | 0.2+) | | |
| 2006 08 19 | 699 | 1.2− | 0.6+ | 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 11 16 | 291 | (3.3− | 0.1+) | | |
| 2006 08 19 | 699 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 11 16 | 291 | (3.2− | 0.0 ) | | |

**2006 QJ$_{120}$ = 2002 PL$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 2.62589 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.25690932 | $\omega$ | 46.27718 | | +0.92422650 | | +0.37127415 | | |
| $a$ | 2.4506586 | $\Omega$ | 291.74529 | | −0.37211140 | | +0.82331307 | | |
| $e$ | 0.1340471 | $i$ | 5.51230 | | −0.08566498 | | +0.42931468 | | |
| $P$ | 3.84 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 04 | 291 | 0.2− | 0.0 | 2006 05 26 | G96 | 0.3− | 0.2+ | 2006 08 30 | 704 | 0.7− | 0.4− | | |
| 2002 07 04 | 291 | 0.2− | 0.0 | 2006 05 26 | G96 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.0 | 0.3− | | |
| 2002 07 04 | 291 | 0.0 | 0.3+ | 2006 05 26 | G96 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.2− | 0.2+ | | |
| 2002 08 06 | 644 | 0.5+ | 0.1+ | 2006 08 24 | 704 | 0.1+ | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2002 08 06 | 644 | 0.7+ | 0.2− | 2006 08 24 | 704 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 06 | 644 | 0.4+ | 0.8− | 2006 08 24 | 704 | 1.4+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.0 | | |
| 2002 08 07 | 644 | 0.0 | 0.3− | 2006 08 29 | 703 | 0.3− | 1.1− | 2006 09 30 | 691 | 0.4+ | 0.1+ | | |
| 2002 08 07 | 644 | 0.2+ | 0.3− | 2006 08 29 | 703 | 0.5− | 0.3− | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2002 08 07 | 644 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.7− | 0.3− | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 2006 05 26 | G96 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.2− | 0.2+ | | | | | | |

**2006 QK$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 20.02527 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18446951 | $\omega$ | 37.78815 | | +0.67887434 | | +0.72107033 | | |
| $a$ | 3.0562320 | $\Omega$ | 275.43237 | | −0.70302242 | | +0.58389106 | | |
| $e$ | 0.1216262 | $i$ | 7.99825 | | −0.21187049 | | +0.37299974 | | |
| $P$ | 5.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 644 | 0.0 | 0.2− | 2004 03 21 | 691 | 0.4+ | 0.7+ | 2006 08 30 | 699 | 0.6− | 0.8− | | |
| 2001 09 29 | 644 | 0.1+ | 0.1+ | 2004 03 21 | 691 | 0.1− | 0.7+ | 2006 08 30 | 699 | 0.8− | 0.6+ | | |
| 2001 09 29 | 644 | 0.1+ | 0.4− | 2005 05 12 | 644 | 0.3+ | 0.0 | 2006 08 30 | 699 | 0.6− | 0.4+ | | |
| 2001 10 13 | 644 | 0.0 | 0.6+ | 2005 05 12 | 644 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.4− | 1.1− | | |
| 2001 10 13 | 644 | 0.0 | 0.3+ | 2005 05 12 | 644 | 0.5+ | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.3+ | | |
| 2001 10 13 | 644 | 0.5− | 0.2+ | 2006 08 29 | 703 | 0.5+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2003 01 11 | 344 | 0.2+ | 0.1+ | 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.4+ | 0.4+ | | |
| 2003 01 11 | 344 | 0.2+ | 0.0 | 2006 08 29 | 703 | 1.2− | 0.3+ | | | | | | |
| 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 1.0− | 1.3+ | | | | | | |

**2006 QL$_{120}$ = 2006 QF$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 357.25619 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.17440574 | $\omega$ | 81.86334 | | +0.93973853 | | +0.31597661 | | |
| $a$ | 3.1726990 | $\Omega$ | 259.64246 | | −0.34185753 | | +0.86283286 | | |
| $e$ | 0.0749445 | $i$ | 7.62794 | | −0.00499158 | | +0.39456082 | | |
| $P$ | 5.65 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 05 | 691 | 0.3− | 0.1− | 2006 08 27 | 699 | 0.6+ | 0.3− | 2006 08 30 | 699 | 0.1− | 0.5+ | | |
| 2000 07 05 | 691 | 0.2+ | 0.1− | 2006 08 27 | 699 | 0.6− | 0.5− | 2006 08 30 | 699 | 0.1− | 0.5+ | | |
| 2000 07 05 | 691 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1− | | |
| 2001 10 14 | 704 | 0.5+ | 0.3+ | 2006 08 27 | 699 | 0.3+ | 2.0+ | 2006 09 25 | 691 | 0.1− | 0.2− | | |
| 2001 10 14 | 704 | 0.8− | 0.4− | 2006 08 29 | 703 | 0.5− | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.1− | | |
| 2001 10 14 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 2001 10 14 | 704 | 0.2+ | 0.7− | 2006 08 29 | 703 | 0.8+ | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 08 29 | 703 | 0.8+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1− | | |
| 2006 08 17 | 644 | 0.2+ | 0.2− | 2006 08 30 | 699 | 0.3− | 0.2− | | | | | | |
| 2006 08 17 | 644 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 1.0− | 0.2− | | | | | | |

**2006 QN$_{120}$ = 2005 GB$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.16770 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21620081 | $\omega$ | 42.86256 | | −0.12490378 | | +0.98783365 |
| $a$ | 2.7493572 | $\Omega$ | 220.22460 | | −0.94470259 | | −0.14694571 |
| $e$ | 0.1236407 | $i$ | 8.24847 | | −0.30320959 | | +0.05090814 |
| $P$ | 4.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2005 04 06 | 691 | 0.1+ | 0.3+ | 2006 08 30 | 699 | 0.6− | 1.2− |
| 2000 03 04 | 645 | 0.0 | 0.1+ | 2006 08 17 | 644 | 0.5+ | 0.0 | 2006 08 30 | 699 | 0.9− | 0.4− |
| 2002 10 10 | 644 | 1.0− | 0.4+ | 2006 08 17 | 644 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.8+ | 0.7− |
| 2002 10 10 | 644 | 1.1− | 0.9+ | 2006 08 17 | 644 | 0.4− | 0.1− | 2006 09 26 | 703 | 1.4− | 0.5+ |
| 2002 10 10 | 644 | 0.8+ | 0.7+ | 2006 08 29 | 703 | 0.7− | 0.4+ | 2006 09 26 | 703 | 0.3− | 1.2+ |
| 2005 04 03 | 644 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.1+ | 2006 09 26 | 703 | (1.9− | 2.5−) |
| 2005 04 03 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.8− | 1.1+ | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 2005 04 03 | 644 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.5− | 0.5+ | 2006 09 30 | 691 | 0.6+ | 0.1+ |
| 2005 04 06 | 691 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.3− | 1.0− | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 2005 04 06 | 691 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.3+ | 0.5− | | | | |

**2006 QR$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.10061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17945772 | $\omega$ | 68.56488 | | +0.97769634 | | +0.15094329 |
| $a$ | 3.1128722 | $\Omega$ | 282.52078 | | −0.19964254 | | +0.88383633 |
| $e$ | 0.0471233 | $i$ | 8.60328 | | +0.06521290 | | +0.44277473 |
| $P$ | 5.49 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.0 | 0.7− | 2001 10 26 | 644 | 0.2− | 0.3+ | 2006 08 30 | 699 | 0.9− | 0.1+ |
| 2001 09 25 | 704 | 0.4+ | 0.4− | 2006 08 27 | 699 | 0.2+ | 0.4− | 2006 08 30 | 699 | 0.2− | 0.1− |
| 2001 09 25 | 704 | 0.3+ | 0.1− | 2006 08 27 | 699 | 0.4+ | 0.5− | 2006 09 11 | 703 | 1.4+ | 1.2+ |
| 2001 09 25 | 704 | 0.2+ | 0.3+ | 2006 08 27 | 699 | 0.3+ | 0.5+ | 2006 09 11 | 703 | 1.2+ | 0.9+ |
| 2001 09 25 | 704 | (1.9+ | 1.6−) | 2006 08 27 | 699 | 1.1− | 1.0+ | 2006 09 11 | 703 | 0.7− | 0.1+ |
| 2001 10 20 | 704 | (2.7− | 0.7+) | 2006 08 29 | 703 | 0.0 | 0.8− | 2006 09 11 | 703 | 0.9− | 0.2− |
| 2001 10 20 | 704 | 1.0− | 0.2+ | 2006 08 29 | 703 | 0.4+ | 0.6− | 2006 09 26 | 703 | 0.2+ | 0.4− |
| 2001 10 20 | 704 | 0.7+ | 0.2− | 2006 08 29 | 703 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2001 10 20 | 704 | 0.2− | 0.7+ | 2006 08 29 | 703 | 0.8+ | 0.6− | 2006 09 26 | 703 | 0.0 | 0.0 |
| 2001 10 26 | 644 | 0.1− | 0.1+ | 2006 08 30 | 699 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.4− |
| 2001 10 26 | 644 | 0.2− | 0.2− | 2006 08 30 | 699 | 0.2+ | 0.1+ | | | | |

**2006 QT$_{120}$ = 1999 UN$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.04960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27010572 | $\omega$ | 111.40645 | | +0.99472447 | | +0.03669715 |
| $a$ | 2.3701738 | $\Omega$ | 246.59539 | | −0.06879333 | | +0.93135196 |
| $e$ | 0.1270638 | $i$ | 5.99160 | | +0.07609665 | | +0.36226627 |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.0 | 0.4− | 2005 04 06 | 691 | 0.2+ | 0.2− | 2006 08 30 | 699 | 0.1− | 0.4+ |
| 1999 10 12 | 704 | 0.5+ | 0.2− | 2005 04 06 | 691 | 0.0 | 0.4+ | 2006 09 11 | 703 | 0.2+ | 0.6− |
| 1999 10 12 | 704 | 0.2+ | 0.3− | 2005 04 06 | 691 | 0.1− | 0.0 | 2006 09 11 | 703 | 0.7− | 1.5− |
| 1999 10 12 | 704 | 0.1+ | 0.9− | 2006 08 27 | 699 | 0.2− | 0.1+ | 2006 09 11 | 703 | 0.5− | 0.3− |
| 1999 10 12 | 704 | 0.6+ | 0.4− | 2006 08 27 | 699 | 0.0 | 0.8− | 2006 09 11 | 703 | 0.7− | 0.7− |
| 1999 10 31 | 703 | 0.3+ | 0.7+ | 2006 08 27 | 699 | 0.7+ | 0.0 | 2006 09 11 | 703 | 0.7+ | 0.7+ |
| 1999 10 31 | 703 | 0.2− | 1.3+ | 2006 08 27 | 699 | 0.9− | 0.5+ | 2006 09 11 | 703 | 0.4+ | 0.6+ |
| 1999 10 31 | 703 | 0.1− | 0.6+ | 2006 08 29 | 703 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.8+ | 1.3+ |
| 1999 10 31 | 703 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.5− | 0.7− | 2006 09 11 | 703 | 1.1+ | 0.3− |
| 1999 11 04 | 704 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.5− | 0.6+ |
| 1999 11 04 | 704 | 0.3− | 0.3− | 2006 08 29 | 703 | 0.4− | 0.5+ | 2006 09 26 | 703 | (0.7− | 2.2+) |
| 1999 11 04 | 704 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.3− | 0.1− | 2006 09 26 | 703 | (1.1− | 1.8+) |
| 1999 11 04 | 704 | 1.2− | 0.1− | 2006 08 30 | 699 | 1.2+ | 0.2− | 2006 09 26 | 703 | 0.9− | 1.0+ |
| 1999 11 04 | 704 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.2− | 0.4+ | | | | |

**2006 QU$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.73703 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21245793 | $\omega$ | 96.53706 | | +0.97595518 | | −0.17226180 |
| $a$ | 2.7815535 | $\Omega$ | 273.44173 | | +0.10561683 | | +0.90971782 |
| $e$ | 0.1687849 | $i$ | 7.68911 | | +0.19067400 | | +0.37780863 |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.6+ | 0.4+ | 2006 08 27 | 699 | 0.5− | 0.2+ | 2006 08 30 | 699 | 0.9− | 0.4− |
| 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.3− | 1.1+ |
| 2002 12 10 | 644 | 0.3+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.0 | 2006 09 11 | 703 | 0.3+ | 1.2+ |
| 2002 12 14 | 704 | 0.8+ | 0.5− | 2006 08 29 | 703 | 0.6− | 0.7− | 2006 09 11 | 703 | 1.0+ | 0.0 |
| 2002 12 14 | 704 | 0.8+ | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.6− | 2006 09 11 | 703 | 0.9− | 0.4− |
| 2002 12 14 | 704 | 0.7− | 0.4+ | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 09 26 | 703 | 1.2+ | 0.2− |
| 2002 12 14 | 704 | 1.5− | 0.7− | 2006 08 30 | 699 | 0.7+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.4+ |
| 2006 08 27 | 699 | 0.2+ | 0.0 | 2006 08 30 | 699 | 0.7+ | 0.1− | 2006 09 26 | 703 | 0.3− | 1.1− |
| 2006 08 27 | 699 | 0.1+ | 0.0 | 2006 08 30 | 699 | 1.0+ | 1.2+ | 2006 09 26 | 703 | 0.2− | 0.7− |

**2006 QH$_{121}$ = 2005 GO$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.70845 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27817052 | $\omega$ | 180.74290 | | +0.98203080 | | −0.18772937 |
| $a$ | 2.3241383 | $\Omega$ | 190.13942 | | +0.17370888 | | +0.93917526 |
| $e$ | 0.1246794 | $i$ | 6.29997 | | +0.07376127 | | +0.28758913 |
| $P$ | 3.54 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2+ | 0.3− | 2005 04 11 | 691 | 0.1− | 0.3+ | 2006 09 02 | 152 | 0.1− | 0.7+ |
| 1999 10 06 | 704 | 0.3+ | 0.8− | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 02 | 152 | (3.2+ | 2.0+) |
| 1999 10 06 | 704 | 0.5+ | 0.5− | 2005 05 11 | G96 | 0.6+ | 0.1− | 2006 09 02 | 152 | 1.1+ | 0.0 |
| 1999 10 06 | 704 | 0.1+ | 1.0− | 2005 05 11 | G96 | 0.4− | 0.8− | 2006 09 13 | 644 | 0.1+ | 0.2+ |
| 1999 10 06 | 704 | 0.0 | 0.4+ | 2005 05 11 | G96 | 0.4+ | 0.1− | 2006 09 13 | 644 | 0.1− | 0.1+ |
| 1999 10 16 | 645 | 0.0 | 0.1− | 2005 05 11 | G96 | 0.1− | 0.4− | 2006 09 13 | 644 | 0.2− | 0.2+ |
| 1999 10 16 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 09 30 | 699 | 0.2+ | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 1.1− | 0.9+ | 2006 09 30 | 699 | 0.0 | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.1− | 2006 08 29 | 703 | 1.1− | 0.0 | 2006 09 30 | 699 | 1.0− | 1.1+ |
| 2003 12 21 | 704 | 0.3+ | 1.0+ | 2006 08 29 | 703 | 0.6− | 0.7+ | 2006 09 30 | 699 | 0.2+ | 0.3− |
| 2003 12 21 | 704 | 0.4+ | 0.7+ | 2006 08 30 | 704 | 1.0+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2003 12 21 | 704 | 0.2+ | 1.2+ | 2006 08 30 | 704 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.5− | 0.0 |
| 2003 12 21 | 704 | 0.7− | 0.6+ | 2006 08 30 | 704 | 0.5+ | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2005 04 05 | G96 | 0.2+ | 0.2+ | 2006 08 30 | 704 | 0.3+ | 1.0− | 2006 10 19 | G96 | 0.3− | 0.5− |
| 2005 04 05 | G96 | 0.6− | 0.5− | 2006 09 01 | 704 | (0.1+ | 1.6+) | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2005 04 05 | G96 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.5+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2005 04 05 | G96 | 0.0 | 0.2− | 2006 09 01 | 704 | 0.7+ | 0.6+ | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 09 01 | 704 | 0.3+ | 0.4+ | 2006 11 21 | G96 | 0.4− | 0.2− |

**2006 QJ$_{121}$ = 2002 VM$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.11063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21183318 | $\omega$ | 47.47112 | | +0.14045093 | | +0.98872684 |
| $a$ | 2.7870198 | $\Omega$ | 230.67713 | | −0.92691821 | | +0.11288797 |
| $e$ | 0.0859306 | $i$ | 3.84627 | | −0.34798876 | | +0.09836435 |
| $P$ | 4.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.1− | 0.1+ | 2005 06 01 | G96 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.8+ | 0.1+ |
| 2002 11 04 | 644 | 0.1+ | 0.1− | 2005 06 01 | G96 | 0.1− | 0.2− | 2006 08 30 | 704 | 0.2+ | 0.1− |
| 2002 11 04 | 644 | 0.2− | 0.1+ | 2005 06 01 | G96 | 0.1− | 0.1− | 2006 08 30 | 704 | 0.7+ | 1.0+ |
| 2002 11 05 | 291 | 0.3− | 0.1+ | 2005 06 12 | G96 | 0.1− | 0.2− | 2006 08 30 | 699 | 0.3+ | 0.9− |
| 2002 11 05 | 291 | 0.1+ | 0.1+ | 2005 06 12 | G96 | 0.6+ | 0.2− | 2006 08 30 | 704 | 0.5+ | 0.1+ |
| 2002 11 05 | 291 | 0.1+ | 0.0 | 2005 06 12 | G96 | 0.2− | 0.4− | 2006 08 30 | 699 | 0.4− | 0.3+ |
| 2005 05 04 | E12 | 0.2− | 0.5+ | 2005 06 12 | G96 | 0.6+ | 0.2− | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2005 05 04 | E12 | 0.3− | 1.3+ | 2006 08 29 | 703 | 1.1− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1− |
| 2005 05 04 | E12 | 0.6− | 0.5+ | 2006 08 29 | 703 | 0.5+ | 1.2+ | 2006 09 13 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | E12 | 0.0 | 0.6+ | 2006 08 29 | 703 | 1.3− | 0.7− | 2006 09 17 | 703 | 0.2− | 0.6− |
| 2005 05 07 | G96 | 0.4+ | 0.2− | 2006 08 29 | 703 | 1.3− | 0.6+ | 2006 09 17 | 703 | 0.7− | 1.2− |
| 2005 05 07 | G96 | 0.5+ | 0.0 | 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.9+ |
| 2005 05 07 | G96 | 0.4+ | 0.3− | 2006 08 29 | 691 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.1− | 0.3+ |
| 2005 05 07 | G96 | (1.6− | 2.7−) | 2006 08 29 | 691 | 0.1+ | 0.2− | | | | |
| 2005 06 01 | G96 | 0.3− | 0.3− | 2006 08 30 | 699 | (2.2+ | 2.1−) | | | | |

**2006 QO$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.99602 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29746667 | $\omega$ | 41.11905 | | +0.23149615 | | +0.97013609 |
| $a$ | 2.2225106 | $\Omega$ | 242.38099 | | −0.91257809 | | +0.19076026 |
| $e$ | 0.1325934 | $i$ | 4.68860 | | −0.33706195 | | +0.14982154 |
| $P$ | 3.31 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 10 | 691 | 0.2+ | 0.2+ | 2003 10 25 | 704 | 0.1+ | 0.8+ | 2006 09 13 | 644 | 0.2− | 0.1+ |
| 1993 11 10 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.2+ | 0.2− | 2006 09 13 | 644 | 0.3− | 0.4+ |
| 1993 11 10 | 691 | 0.3− | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.5− | 2006 09 13 | 644 | 0.1+ | 0.4+ |
| 2000 12 25 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.2− | 0.3+ |
| 2000 12 25 | 691 | 0.2− | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.1− |
| 2000 12 25 | 691 | 0.3− | 0.1+ | 2006 08 30 | 699 | 1.5− | 0.0 | 2006 09 18 | 703 | 1.3− | 0.3− |
| 2002 04 04 | 644 | 0.5+ | 0.4+ | 2006 08 30 | 704 | 0.8+ | 0.7+ | 2006 09 18 | 703 | 0.1+ | 0.3+ |
| 2002 04 04 | 644 | 0.0 | 0.7+ | 2006 08 30 | 699 | 0.2− | 0.2− | 2006 09 20 | 699 | (0.5+ | 2.2+) |
| 2002 04 04 | 644 | 0.5+ | 0.5+ | 2006 08 30 | 704 | 1.1+ | 0.4− | 2006 09 20 | 699 | 0.5− | 0.5− |
| 2002 04 10 | 704 | 0.1+ | 1.0+ | 2006 08 30 | 704 | 0.8+ | 1.0+ | 2006 09 20 | 699 | 0.2− | 0.3+ |
| 2002 04 10 | 704 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 1.3− | 0.5− | 2006 09 20 | 699 | 1.1+ | 0.5+ |
| 2002 04 10 | 704 | 0.1+ | 0.8+ | 2006 08 30 | 704 | 0.0 | 0.0 | 2006 09 30 | 699 | 0.7+ | 0.8+ |
| 2002 04 10 | 704 | 0.3+ | 0.6+ | 2006 08 30 | 699 | 0.4− | 0.6− | 2006 09 30 | 699 | 0.1− | 1.0+ |
| 2002 04 10 | 704 | 0.2+ | 1.0+ | 2006 09 13 | 644 | 0.4− | 0.2+ | 2006 09 30 | 699 | 0.2+ | 0.6+ |
| 2003 10 25 | 704 | 0.7+ | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 09 30 | 699 | 0.9+ | 0.8− |
| 2003 10 25 | 704 | 0.3+ | 0.6+ | 2006 09 13 | 644 | 0.2− | 0.0 | | | | |

**2006 QS$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.45688 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28372227 | $\omega$ | 296.30343 | | +0.99782744 | | −0.02371171 |
| $a$ | 2.2937202 | $\Omega$ | 65.10823 | | +0.04756152 | | +0.90486633 |
| $e$ | 0.2244240 | $i$ | 3.88542 | | −0.04558832 | | +0.42503491 |
| $P$ | 3.47 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.4− | 1.0− | 2006 09 20 | 703 | 0.4− | 0.4− |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2006 08 30 | 699 | 0.5+ | 0.2− | 2006 09 22 | 704 | 0.2+ | 0.6+ |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.6+ | 0.3+ | 2006 09 22 | 704 | 0.1− | 0.4+ |
| 2004 02 26 | 695 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.1− | 0.7− | 2006 09 22 | 704 | 0.3− | 0.7− |
| 2004 02 26 | 695 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 1.2− | 0.1− |
| 2006 08 16 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.6+ | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.5+ |
| 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.1+ | 1.2+ |
| 2006 08 16 | 644 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.6+ |
| 2006 08 23 | 704 | 0.9+ | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.0 |
| 2006 08 23 | 704 | 0.2− | 1.0+ | 2006 09 19 | 291 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.5+ | 0.0 |
| 2006 08 23 | 704 | 0.0 | 0.8+ | 2006 09 19 | 291 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.0 | 0.5− |
| 2006 08 23 | 704 | 0.2+ | 0.2− | 2006 09 19 | 291 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.5+ | 0.5− |
| 2006 08 29 | 703 | 0.0 | 0.1− | 2006 09 20 | 703 | (0.3− | 1.9−) | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2006 08 29 | 703 | 0.3− | 0.7− | 2006 09 20 | 703 | (1.9− | 0.2+) | 2006 11 25 | G96 | 0.5+ | 0.2+ |
| 2006 08 29 | 703 | 0.1− | 0.3− | 2006 09 20 | 703 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.3− |

**2006 QY$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.48856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23006558 | $\omega$ | 152.55265 | | +0.99637484 | | +0.07050240 |
| $a$ | 2.6377580 | $\Omega$ | 203.54960 | | −0.08145236 | | +0.95210503 |
| $e$ | 0.1840857 | $i$ | 6.84352 | | +0.02454991 | | +0.29753224 |
| $P$ | 4.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 08 30 | 704 | 1.1+ | 0.7+ |
| 2002 10 15 | 644 | 0.1+ | 0.6+ | 2005 04 30 | 691 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.1− | 0.0 |
| 2002 10 15 | 644 | 0.1− | 0.5+ | 2006 08 18 | 644 | 0.6− | 0.1− | 2006 08 30 | 704 | 0.1− | 0.2+ |
| 2002 10 30 | 644 | 0.6− | 0.9+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 08 30 | 704 | 0.2+ | 1.5+ |
| 2002 10 30 | 644 | 0.4+ | 0.7+ | 2006 08 18 | 644 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 2002 10 30 | 644 | 0.4− | 0.6+ | 2006 08 29 | 703 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2004 02 18 | 691 | 0.5+ | 0.3+ | 2006 08 29 | 703 | 0.7− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2004 02 18 | 691 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.4− | 0.2− |
| 2004 02 18 | 691 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.5+ | 1.3+ | | | | |
| 2005 04 30 | 691 | 0.3+ | 0.5+ | 2006 08 30 | 704 | 0.2+ | 0.4+ | | | | |

**2006 QA$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.64048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31175801 | $\omega$ | 98.23795 | | +0.98572353 | | +0.15933078 |
| $a$ | 2.1540592 | $\Omega$ | 252.60691 | | −0.16799202 | | +0.90898143 |
| $e$ | 0.1594448 | $i$ | 3.26992 | | −0.01130494 | | +0.38518368 |
| $P$ | 3.16 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 17 | 691 | 0.2+ | 0.1+ | 2003 12 01 | 291 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.1+ | 0.0 |
| 2003 10 17 | 691 | 0.2− | 0.4− | 2003 12 01 | 291 | 0.3− | 0.1− | 2006 08 30 | 704 | 0.0 | 0.2− |
| 2003 10 17 | 691 | 0.1+ | 0.1+ | 2006 08 15 | 644 | 0.2+ | 0.1+ | 2006 08 30 | 704 | (2.3+ | 0.3+) |
| 2003 10 25 | 704 | 0.2+ | 0.5+ | 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 08 30 | 704 | 1.3+ | 0.6+ |
| 2003 10 25 | 704 | 0.7− | 0.0 | 2006 08 15 | 644 | 0.1+ | 0.4+ | 2006 08 30 | 704 | (2.1+ | 0.1−) |
| 2003 10 25 | 704 | 0.2− | 1.5+ | 2006 08 27 | 699 | 0.7+ | 0.7− | 2006 09 13 | 644 | 0.3+ | 0.6+ |
| 2003 10 25 | 704 | 0.2− | 0.6− | 2006 08 27 | 699 | 0.2− | 0.6− | 2006 09 13 | 644 | 0.4+ | 0.3+ |
| 2003 10 25 | 704 | (1.9− | 0.6+) | 2006 08 27 | 699 | 0.6− | 0.8+ | 2006 09 13 | 644 | 0.3+ | 0.3+ |
| 2003 11 24 | 691 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.6− | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.1− |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | (0.2+ | 1.6+) | 2006 09 18 | 703 | 0.5− | 0.8− |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 1.1− | 0.4− | 2006 09 18 | 703 | 0.4− | 0.0 |
| 2003 12 01 | 291 | 0.3+ | 0.2− | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.2− |

**2006 QE$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.30013 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30726921 | $\omega$ | 356.94102 | | +0.29554404 | | +0.95160097 |
| $a$ | 2.1749871 | $\Omega$ | 290.23699 | | −0.87457875 | | +0.23399334 |
| $e$ | 0.1247620 | $i$ | 5.15579 | | −0.38440310 | | +0.19925539 |
| $P$ | 3.21 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 07 25 | 691 | 0.3− | 0.3+ | 2003 11 19 | 704 | 0.6+ | 0.3+ | 2006 08 30 | 704 | 1.0+ | 0.6+ |
| 1993 07 25 | 691 | 0.0 | 0.2− | 2005 02 14 | 809 | 0.2− | 0.4+ | 2006 09 12 | 703 | 0.2+ | 0.2− |
| 1993 07 25 | 691 | 0.3+ | 0.2− | 2005 02 14 | 809 | 0.1− | 0.4+ | 2006 09 12 | 703 | 0.6− | 0.1− |
| 2002 04 05 | 644 | 0.7+ | 0.5+ | 2005 02 14 | 809 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.6+ | 0.2+ |
| 2002 04 05 | 644 | 0.5+ | 0.5+ | 2006 07 21 | D35 | 0.8− | 0.0 | 2006 09 12 | 703 | 1.2− | 0.4+ |
| 2002 04 05 | 644 | 0.4+ | 0.5+ | 2006 07 21 | D35 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.5+ |
| 2003 09 30 | 691 | 0.1− | 0.2+ | 2006 07 21 | D35 | 0.7− | 0.8+ | 2006 09 19 | 703 | 1.1− | 0.3− |
| 2003 09 30 | 691 | 0.1− | 0.2− | 2006 08 18 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.9− |
| 2003 09 30 | 691 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.7− | 0.1+ |
| 2003 10 17 | 691 | 0.1− | 0.2− | 2006 08 18 | 644 | 0.7+ | 0.4+ | 2006 09 25 | 699 | 0.2+ | 0.3+ |
| 2003 10 17 | 691 | 0.1− | 0.0 | 2006 08 24 | 704 | 0.6− | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.8− |
| 2003 10 17 | 691 | 0.0 | 0.1− | 2006 08 24 | 704 | 0.8+ | 0.0 | 2006 09 25 | 699 | 0.9+ | 0.5+ |
| 2003 10 24 | 704 | 0.3+ | 0.0 | 2006 08 24 | 704 | (1.2+ | 1.8−) | 2006 09 25 | 699 | 1.0+ | 0.2− |
| 2003 10 24 | 704 | 0.5− | 0.4+ | 2006 08 24 | 704 | (1.9+ | 0.8−) | 2006 09 30 | 699 | 0.8− | 1.0− |
| 2003 10 24 | 704 | 1.0− | 0.0 | 2006 08 29 | 703 | 0.7+ | 1.1− | 2006 09 30 | 699 | 0.4+ | 1.0+ |
| 2003 10 24 | 704 | 0.1− | 0.8+ | 2006 08 29 | 703 | 0.6+ | 0.1+ | 2006 09 30 | 699 | 0.1+ | 0.5+ |
| 2003 10 24 | 704 | 0.4− | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.0 | 2006 09 30 | 699 | 1.3+ | 1.1+ |
| 2003 11 19 | 704 | 0.9+ | 0.8+ | 2006 08 29 | 703 | 0.3+ | 0.5− | 2006 10 01 | 703 | 0.6+ | 1.0+ |
| 2003 11 19 | 704 | 0.5+ | 1.0+ | 2006 08 30 | 704 | 0.2+ | 0.6+ | 2006 10 01 | 703 | 0.2− | 0.6− |
| 2003 11 19 | 704 | 0.1+ | 0.8− | 2006 08 30 | 704 | 0.4− | 0.8+ | 2006 10 01 | 703 | 1.2− | 1.1− |
| 2003 11 19 | 704 | 1.7+ | 0.6− | 2006 08 30 | 704 | 0.1− | 0.2− | 2006 10 01 | 703 | 0.7− | 0.5− |

**2006 QF$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.51480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26797310 | $\omega$ | 95.12181 | | +0.52893042 | +0.84751029 | |
| $a$ | 2.3827323 | $\Omega$ | 206.95715 | | −0.81218794 | +0.49038157 | |
| $e$ | 0.2339766 | $i$ | 5.60291 | | −0.24613688 | +0.20310643 | |
| $P$ | 3.68 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 691 | 0.2+ | 0.2− | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.4− | 0.2+ |
| 1999 10 14 | 691 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 24 | 106 | 0.8+ | 0.7− |
| 1999 10 14 | 691 | 0.0 | 0.2− | 2006 09 12 | 703 | 0.3+ | 0.2− | 2006 09 24 | 106 | 0.3− | 1.4− |
| 1999 10 16 | 691 | (2.6+ | 0.4−) | 2006 09 12 | 703 | 0.4+ | 0.6− | 2006 09 24 | 106 | 0.4− | 0.9− |
| 1999 10 16 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 09 24 | 106 | 0.6+ | 0.8− |
| 1999 10 16 | 691 | 0.1− | 0.3+ | 2006 09 12 | 703 | 1.0− | 0.7− | 2006 09 25 | 699 | 0.9+ | 0.1+ |
| 2006 08 18 | 644 | 0.3− | 0.3− | 2006 09 16 | 699 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.7+ | 0.6− |
| 2006 08 18 | 644 | 0.1− | 0.4− | 2006 09 16 | 699 | 1.0+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.5+ |
| 2006 08 18 | 644 | 0.2+ | 0.5− | 2006 09 16 | 699 | 0.7+ | 0.5+ | 2006 09 25 | 699 | 0.2+ | 0.1+ |
| 2006 08 29 | 703 | 0.4+ | 0.3− | 2006 09 16 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.2+ |
| 2006 08 29 | 703 | 0.6− | 0.1− | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.4+ | 0.6+ |
| 2006 08 29 | 703 | 0.1+ | 0.1+ | 2006 09 16 | 644 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.3− |
| 2006 08 29 | 703 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 704 | (0.6+ | 1.5+) |
| 2006 08 30 | 704 | (1.3− | 3.3+) | 2006 09 18 | 704 | 0.6− | 0.9+ | 2006 11 14 | G96 | 0.5− | 0.2− |
| 2006 08 30 | 704 | 0.1− | 0.9+ | 2006 09 18 | 704 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2006 08 30 | 704 | 0.1− | 0.8+ | 2006 09 18 | 704 | 1.3− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4+ |
| 2006 08 30 | 704 | 1.0− | 1.2+ | 2006 09 19 | 699 | 0.5− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2006 08 30 | 704 | 0.0 | 0.9+ | 2006 09 19 | 699 | 0.9− | 0.4− | | | | |
| 2006 09 06 | 644 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.9+ | 0.2+ | | | | |

**2006 QH$_{122}$ = 1998 HO$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.10826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26689695 | $\omega$ | 73.72095 | | −0.07866196 | +0.99659979 | |
| $a$ | 2.3891329 | $\Omega$ | 191.84844 | | −0.95416820 | −0.08239095 | |
| $e$ | 0.2056607 | $i$ | 6.85822 | | −0.28874788 | +0.00076303 | |
| $P$ | 3.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 28 | 557 | 0.2− | 0.0 | 2002 07 18 | 704 | 0.7+ | 0.9− | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 1995 09 28 | 557 | 0.1− | 0.0 | 2005 03 10 | 703 | 0.5+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 1995 09 28 | 557 | 0.3+ | 0.2+ | 2005 03 10 | 703 | (0.5− | 1.6+) | 2006 09 25 | 699 | 1.3+ | 0.8+ |
| 1998 04 21 | 704 | 0.5− | 1.2− | 2005 03 10 | 703 | 0.5+ | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.1− |
| 1998 04 21 | 704 | 1.1+ | 0.2− | 2005 03 10 | 703 | 1.2− | 0.7− | 2006 09 25 | 699 | 0.0 | 0.7− |
| 1998 04 21 | 704 | 0.8− | 1.5+ | 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | (3.6− | 1.2+) |
| 1998 04 21 | 704 | 1.1+ | 1.2− | 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 10 01 | 291 | 0.0 | 0.3+ |
| 1998 04 21 | 704 | 1.1+ | 1.1+ | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 10 01 | 291 | 0.1+ | 0.2+ |
| 1998 04 22 | 704 | 0.9+ | 1.6+ | 2006 08 29 | 703 | 0.4+ | 0.6− | 2006 10 01 | 291 | 0.1+ | 0.3+ |
| 1998 04 22 | 704 | (2.6− | 0.3−) | 2006 08 29 | 703 | 1.3− | 0.8− | 2006 10 02 | G96 | 0.1− | 0.5− |
| 1998 04 22 | 704 | 0.3+ | 0.4− | 2006 08 29 | 703 | 0.4− | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 1998 04 22 | 704 | 0.3− | 0.9+ | 2006 08 29 | 703 | 0.6− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 1998 04 22 | 704 | 0.1− | 1.0− | 2006 08 30 | 704 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 1998 05 01 | 704 | 1.1− | 0.9+ | 2006 08 30 | 704 | 0.3− | 0.0 | 2006 10 02 | 291 | 0.1+ | 0.4+ |
| 1998 05 01 | 704 | 0.8− | 0.1+ | 2006 08 30 | 704 | 0.9− | 0.6− | 2006 10 02 | 291 | 0.2+ | 0.2+ |
| 1998 05 01 | 704 | 1.1− | 0.9+ | 2006 08 30 | 704 | 0.2− | 0.5− | 2006 10 02 | 291 | 0.2+ | 0.5+ |
| 1998 05 01 | 704 | 0.2− | 1.7+ | 2006 08 30 | 704 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 1998 05 01 | 704 | (3.7− | 0.6+) | 2006 09 12 | 703 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.2− | 0.2− |
| 1998 05 23 | 704 | 0.8+ | 0.0 | 2006 09 12 | 703 | 0.5+ | 1.1− | 2006 10 19 | G96 | 0.0 | 0.0 |
| 1998 05 23 | 704 | 1.2+ | 0.9− | 2006 09 12 | 703 | (1.7− | 0.2+) | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 1998 05 23 | 704 | 0.9− | 0.5+ | 2006 09 12 | 703 | 0.7− | 0.9− | 2006 10 20 | G96 | 0.1− | 0.3− |
| 1998 05 23 | 704 | 0.2+ | 0.5− | 2006 09 14 | 644 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 1998 05 23 | 704 | (3.1− | 0.8+) | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2002 06 10 | 704 | 0.0 | 0.8+ | 2006 09 14 | 644 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2002 06 10 | 704 | 0.3− | 0.3− | 2006 09 19 | 699 | 0.4+ | 1.0+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2002 06 10 | 704 | 0.3+ | 0.4− | 2006 09 19 | 703 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2002 06 10 | 704 | 0.4+ | 0.5− | 2006 09 19 | 699 | (1.7+ | 0.5+) | 2006 11 11 | G96 | 0.3+ | 0.8− |
| 2002 07 09 | 704 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2002 07 09 | 704 | 0.7− | 0.4− | 2006 09 19 | 703 | (3.1− | 3.4+) | 2006 11 21 | G96 | 0.6+ | 0.1+ |
| 2002 07 09 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.7+ | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2002 07 18 | 704 | 0.9+ | 1.0− | 2006 09 19 | 703 | 0.9− | 0.5− | 2006 11 21 | G96 | 0.4− | 0.1+ |
| 2002 07 18 | 704 | 0.0 | 0.5− | 2006 09 19 | 699 | 1.4− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.8− |
| 2002 07 18 | 704 | 0.4− | 0.2− | 2006 09 23 | 691 | 0.0 | 0.3+ | | | | |

**2006 QK$_{122}$ = 1995 OZ$_{6}$ = 2004 FQ$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.80539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18332656 | $\omega$ | 4.78034 | | +0.89989341 | +0.42745434 | |
| $a$ | 3.0689215 | $\Omega$ | 329.44492 | | −0.40554922 | +0.74731974 | |
| $e$ | 0.0992617 | $i$ | 9.79167 | | −0.16037979 | +0.50871996 | |
| $P$ | 5.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.1− | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.1− | 2006 09 18 | 704 | 1.1+ | 0.2− |
| 1995 07 24 | 691 | 0.3− | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.1+ | 0.9+ |
| 1995 07 24 | 691 | 0.3− | 0.1+ | 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.7− |
| 1995 08 01 | 691 | 0.3+ | 0.3− | 2004 03 28 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.8− | 0.5+ |
| 1995 08 01 | 691 | 0.2+ | 0.1− | 2004 03 28 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.4+ | 1.2+ |
| 1995 08 01 | 691 | 0.1+ | 0.1+ | 2004 03 28 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 699 | 0.6− | 0.7+ |
| 2000 08 01 | 807 | 0.4− | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.2+ | 2006 09 20 | 699 | (1.7− | 0.4+) |
| 2000 08 01 | 807 | 0.4− | 0.1− | 2006 08 29 | 703 | 0.9− | 0.1− | 2006 09 20 | 699 | 0.7− | 0.8+ |
| 2001 11 12 | 704 | 0.1− | 0.7+ | 2006 08 29 | 703 | 0.4− | 0.5− | 2006 09 25 | 704 | 0.8+ | 0.0 |
| 2001 11 12 | 704 | 0.2− | 0.8+ | 2006 08 29 | 703 | 0.5+ | 0.3− | 2006 09 25 | 704 | 0.1+ | 0.3− |
| 2001 11 12 | 704 | 0.2− | 0.4+ | 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 704 | (1.8+ | 0.1+) |
| 2001 11 12 | 704 | 0.1− | 1.5+ | 2006 08 30 | 704 | 0.2− | 0.7− | 2006 10 01 | 703 | (0.5− | 1.6+) |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.5− | 0.6+ | 2006 10 01 | 703 | (2.0− | 0.1+) |
| 2002 11 07 | 645 | 0.1− | 0.1− | 2006 09 15 | 704 | 1.1+ | 0.4+ | 2006 10 01 | 703 | 0.6− | 0.7+ |
| 2002 12 06 | 645 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.0 | 2006 10 01 | 703 | 1.5− | 1.0− |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.4+ | 0.7− | | | | |

**2006 QM$_{122}$ = 2002 TO$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.08495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24044437 | $\omega$ | 293.12581 | | −0.07531810 | +0.99011290 | |
| $a$ | 2.5612952 | $\Omega$ | 331.75969 | | −0.79871983 | −0.13094981 | |
| $e$ | 0.0654203 | $i$ | 14.48305 | | −0.59697054 | +0.05028520 | |
| $P$ | 4.10 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 02 | 704 | 0.9− | 0.6− | 2004 01 19 | 704 | 0.7− | 2.8+ | 2006 08 30 | 704 | 0.5+ | 0.3+ |
| 2000 01 02 | 704 | 0.1+ | 0.9− | 2004 01 19 | 704 | 0.9+ | 0.5+ | 2006 08 30 | 704 | 0.3+ | 0.2− |
| 2000 01 02 | 704 | 0.7+ | 1.4− | 2005 05 14 | E12 | 1.4+ | 0.6+ | 2006 09 17 | 703 | 0.3+ | 0.5+ |
| 2000 01 29 | 704 | 0.3− | 2.1+ | 2005 05 14 | E12 | 0.5+ | 0.9+ | 2006 09 17 | 703 | 0.3− | 0.1+ |
| 2000 01 29 | 704 | 1.2− | 0.1− | 2005 05 14 | E12 | 0.7− | 0.5+ | 2006 09 17 | 703 | 0.4− | 0.8− |
| 2000 01 29 | 704 | 0.7+ | 1.7+ | 2005 05 14 | E12 | 0.8− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.2− |
| 2000 01 29 | 704 | 0.7+ | 0.2− | 2005 06 09 | E12 | 0.8+ | 0.7+ | 2006 09 20 | 699 | 0.2− | 1.4+ |
| 2002 10 03 | 644 | 0.2− | 0.1+ | 2005 06 09 | E12 | 0.8+ | 0.5+ | 2006 09 20 | 699 | 0.0 | 1.0+ |
| 2002 10 03 | 644 | 0.2− | 0.4+ | 2005 06 09 | E12 | 0.6+ | 0.8+ | 2006 09 20 | 699 | 0.4+ | 0.2− |
| 2002 10 03 | 644 | 0.1− | 0.2+ | 2005 06 09 | E12 | 0.5+ | 0.8+ | 2006 09 20 | 699 | 0.2+ | 0.0 |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 1.0− | 0.1− | 2006 09 27 | 703 | 0.6− | 0.2− |
| 2002 10 06 | 704 | 0.1+ | 0.9− | 2006 08 29 | 703 | 0.7− | 0.5+ | 2006 09 27 | 703 | 0.4− | 0.1+ |
| 2002 10 06 | 704 | 0.1− | 0.5+ | 2006 08 29 | 703 | 0.8− | 0.1− | 2006 09 27 | 703 | 0.5+ | 0.3− |
| 2002 10 06 | 704 | 0.1− | 1.2+ | 2006 08 29 | 703 | 0.1− | 0.4− | 2006 09 27 | 703 | 0.3+ | 0.1− |
| 2002 10 06 | 704 | 0.4− | 0.1+ | 2006 08 30 | 704 | 0.8+ | 0.5+ | 2006 09 29 | 699 | 1.1− | 0.2+ |
| 2003 12 28 | 704 | 0.6+ | 0.1+ | 2006 08 30 | 704 | 0.2+ | 0.3− | 2006 09 29 | 699 | 0.3− | 0.4− |
| 2003 12 28 | 704 | 0.3+ | 0.2− | 2006 08 30 | 704 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.6− | 0.7+ |
| 2003 12 28 | 704 | 0.2+ | 0.1+ | 2006 08 30 | 704 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.5+ | 0.3+ |
| 2003 12 28 | 704 | 0.1+ | 0.3− | 2006 08 30 | 704 | 0.2+ | 0.4− | 2006 10 03 | 703 | 0.7− | 0.8− |
| 2003 12 28 | 704 | 0.2+ | 0.3− | 2006 08 30 | 704 | 0.7+ | 0.1− | 2006 10 03 | 703 | 1.0− | 0.1− |
| 2004 01 19 | 704 | 0.1+ | 1.5+ | 2006 08 30 | 704 | 0.3+ | 0.3+ | 2006 10 03 | 703 | 0.8+ | 0.6+ |
| 2004 01 19 | 704 | 0.5− | 0.4− | 2006 08 30 | 704 | 0.3+ | 1.1+ | 2006 10 03 | 703 | 0.7− | 0.3− |

**2006 QQ$_{122}$ = 1997 SF$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.72675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22685676 | $\omega$ | 59.28267 | | +0.85410093 | −0.51238120 | |
| $a$ | 2.6625733 | $\Omega$ | 331.25519 | | +0.39063780 | +0.74533714 | |
| $e$ | 0.2032148 | $i$ | 10.70313 | | +0.34338567 | +0.42654197 | |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2− | 0.2+ | 2006 09 16 | 703 | 0.9+ | 1.1− | 2006 10 03 | 703 | 1.1− | 0.5+ | |
| 1997 09 28 | 691 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.9− | 2006 10 03 | 703 | 1.2− | 1.0− | |
| 1997 09 28 | 691 | 0.2− | 0.4+ | 2006 09 16 | 703 | 0.7+ | 0.8− | 2006 10 03 | 703 | 0.6− | 0.2+ | |
| 1997 10 07 | 691 | 0.8− | 0.3+ | 2006 09 16 | 703 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.0 | |
| 1997 10 07 | 691 | 0.4+ | 0.3− | 2006 09 19 | 699 | 1.0+ | 1.1+ | 2006 10 09 | 644 | 0.1+ | 0.1− | |
| 1997 10 07 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.9− | 2006 10 09 | 644 | 0.1+ | 0.0 | |
| 2002 12 07 | 704 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2002 12 07 | 704 | 0.5− | 0.8+ | 2006 09 19 | 699 | 0.1− | 1.2− | 2006 10 11 | 644 | 0.3− | 0.4− | |
| 2002 12 07 | 704 | 0.7+ | 0.1+ | 2006 09 20 | 106 | 0.5− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2006 08 29 | 703 | 0.3+ | 0.5+ | 2006 09 20 | 106 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.4− | |
| 2006 08 29 | 703 | 0.8+ | 1.2+ | 2006 09 20 | 106 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.8− | 0.8+ | |
| 2006 08 29 | 703 | (1.9− | 1.3+) | 2006 09 20 | 106 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.2− | |
| 2006 08 29 | 703 | 0.4− | 1.1+ | 2006 09 21 | 106 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.5+ | 1.0+ | |
| 2006 08 30 | 704 | 0.4− | 0.2− | 2006 09 21 | 106 | 0.1+ | 0.6− | 2006 10 23 | 703 | 1.1+ | 1.4+ | |
| 2006 08 30 | 704 | 1.1− | 0.8− | 2006 09 21 | 106 | 0.3− | 0.1− | 2006 10 23 | 703 | 1.0+ | 0.4+ | |
| 2006 08 30 | 704 | 0.5+ | 0.0 | 2006 09 21 | 106 | 0.2+ | 0.5− | 2006 10 23 | 703 | 1.3+ | 0.3+ | |
| 2006 08 30 | 704 | 0.2+ | 0.8+ | 2006 09 27 | 703 | 0.3− | 0.3− | 2006 10 23 | 703 | 0.1+ | 0.7+ | |
| 2006 08 30 | 704 | 0.1+ | 0.4+ | 2006 09 27 | 703 | 0.6+ | 0.5− | 2006 10 24 | 644 | 0.2− | 0.0 | |
| 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.5− | 0.6− | 2006 10 24 | 644 | 0.2− | 0.1− | |
| 2006 09 13 | 644 | 0.3+ | 0.4− | 2006 09 27 | 703 | 0.4+ | 0.5− | 2006 10 24 | 644 | 0.4− | 0.2− | |
| 2006 09 13 | 644 | 0.2+ | 0.1− | 2006 10 03 | 703 | 1.1− | 0.1+ | | | | | |

**2006 QR$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.54089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18362047 | $\omega$ | 38.82109 | | +0.94929014 | −0.30142365 | |
| $a$ | 3.0656459 | $\Omega$ | 338.21122 | | +0.19296181 | +0.78306243 | |
| $e$ | 0.2128543 | $i$ | 13.93638 | | +0.24822161 | +0.54401931 | |
| $P$ | 5.37 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.6+ | 0.3− | 2006 09 19 | 699 | 0.6− | 0.2− | 2006 10 10 | A24 | 0.2− | 0.2+ | |
| 2001 09 25 | 704 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.4− | 0.2+ | 2006 10 10 | A24 | 0.2− | 0.4+ | |
| 2001 09 25 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.3− | 2006 10 11 | 644 | 0.4− | 0.2− | |
| 2001 09 25 | 704 | 0.5+ | 1.3− | 2006 09 19 | 699 | 0.6− | 0.1− | 2006 10 11 | 644 | 0.4− | 0.2+ | |
| 2001 12 08 | 704 | 1.1− | 0.1+ | 2006 09 22 | 106 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.5− | 0.1+ | |
| 2001 12 08 | 704 | 1.3− | 1.2+ | 2006 09 22 | 106 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.1− | |
| 2001 12 08 | 704 | (1.9− | 0.5−) | 2006 09 22 | 106 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1− | |
| 2001 12 08 | 704 | (2.5− | 0.2+) | 2006 09 22 | 106 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1− | |
| 2001 12 22 | 704 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.4+ | 0.4− | 2006 10 13 | A24 | 1.3+ | 0.7+ | |
| 2001 12 22 | 704 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.8+ | 0.2− | 2006 10 13 | A24 | 0.5+ | 0.2+ | |
| 2001 12 22 | 704 | 0.7+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 10 13 | A24 | 1.4+ | 0.1− | |
| 2001 12 22 | 704 | 0.3+ | 0.5+ | 2006 09 23 | 106 | 0.0 | 0.0 | 2006 10 13 | A24 | 0.2− | 0.6+ | |
| 2001 12 22 | 704 | 0.1− | 0.3− | 2006 09 23 | 106 | 0.2− | 0.0 | 2006 10 13 | A24 | 0.7− | 0.2+ | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 23 | 106 | 0.4− | 0.4− | 2006 10 15 | A24 | 0.1− | 0.2− | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 23 | 106 | 0.2− | 0.7− | 2006 10 15 | A24 | 1.0+ | 1.1+ | |
| 2006 07 21 | 703 | 0.0 | 0.6− | 2006 09 27 | 699 | 0.1+ | 0.3+ | 2006 10 15 | A24 | 0.3+ | 0.5+ | |
| 2006 07 21 | 703 | 0.9+ | 0.2+ | 2006 09 27 | 699 | 0.1+ | 0.2+ | 2006 10 15 | A24 | 0.1− | 0.5+ | |
| 2006 07 21 | 703 | (2.0− | 0.0 ) | 2006 09 27 | 699 | 0.6+ | 0.2+ | 2006 10 15 | A24 | 0.0 | 0.4+ | |
| 2006 07 21 | 703 | 0.5− | 0.4+ | 2006 09 27 | 699 | 0.3+ | 0.0 | 2006 10 15 | A24 | 0.0 | 0.2− | |
| 2006 08 29 | 703 | 0.9− | 0.1+ | 2006 09 27 | 703 | 0.5− | 0.9− | 2006 10 17 | A24 | 0.2+ | 0.4− | |
| 2006 08 29 | 703 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.5+ | 1.3− | 2006 10 17 | A24 | (0.2− | 1.6+) | |
| 2006 08 29 | 703 | 0.4− | 0.2− | 2006 09 27 | 703 | 0.0 | 0.0 | 2006 10 17 | A24 | 0.5+ | 0.6− | |
| 2006 08 29 | 703 | 0.4− | 0.4+ | 2006 09 27 | 703 | 0.5+ | 0.8− | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2006 08 30 | 704 | 0.5− | 0.2+ | 2006 10 03 | 704 | (1.1− | 1.6+) | 2006 10 23 | 644 | 0.0 | 0.2− | |
| 2006 08 30 | 704 | 0.4− | 0.3+ | 2006 10 03 | 704 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− | |
| 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.1+ | | | | | |
| 2006 08 30 | 704 | 0.1+ | 0.4+ | 2006 10 10 | A24 | 0.9+ | 0.8+ | | | | | |

**2006 QV$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.35713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36367094 | $\omega$ | 134.43316 | | +0.72130468 | +0.69250174 | |
| $a$ | 1.9438540 | $\Omega$ | 181.88007 | | −0.69261761 | +0.72120025 | |
| $e$ | 0.0909519 | $i$ | 22.74604 | | +0.00063743 | +0.01765075 | |
| $P$ | 2.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.5− | |
| 1995 09 25 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− | |
| 1995 09 25 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.4− | |
| 2003 11 16 | 691 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ | |
| 2003 11 16 | 691 | 0.7− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.1− | |
| 2003 11 16 | 691 | 0.3+ | 0.6− | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.0 | |
| 2006 08 24 | 704 | 0.2− | 0.8− | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.4− | |
| 2006 08 24 | 704 | (0.0 | 1.5+) | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.5+ | 0.4+ | |
| 2006 08 24 | 704 | 0.5− | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.5+ | 0.5+ | |
| 2006 08 24 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 1.3− | 0.0 | 2006 09 28 | 704 | 0.4− | 0.8+ | |
| 2006 08 27 | 683 | 0.6+ | 0.7− | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.8+ | 0.6− | |
| 2006 08 27 | 683 | (0.5+ | 1.7+) | 2006 09 20 | 704 | 0.8− | 0.3− | 2006 09 30 | 704 | 0.7+ | 0.0 | |
| 2006 08 27 | 683 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.5− | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.3+ | |
| 2006 08 29 | 699 | 0.5+ | 0.8+ | 2006 09 20 | 704 | 0.3− | 0.4− | 2006 09 30 | 704 | 0.0 | 0.6+ | |
| 2006 08 29 | 699 | 0.2− | 0.2− | 2006 09 22 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.2+ | 0.1− | |
| 2006 08 29 | 699 | 0.5− | 0.9− | 2006 09 22 | 704 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.5− | |
| 2006 08 29 | 699 | 0.6− | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.2+ | |
| 2006 08 30 | 704 | 0.3− | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.1+ | 1.0+ | |
| 2006 08 30 | 704 | 0.4− | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.8+ | 2006 10 01 | 704 | 0.4+ | 0.1+ | |
| 2006 08 30 | 704 | 0.6− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 1.0+ | 0.2+ | |
| 2006 08 30 | 704 | 0.5− | 0.3− | 2006 09 26 | 704 | (0.2− | 1.7+) | 2006 10 22 | 644 | 0.2− | 0.3+ | |
| 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 704 | (1.0− | 2.1+) | 2006 10 22 | 644 | 0.3− | 0.1− | |
| 2006 09 06 | 644 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.4− | 0.3+ | |
| 2006 09 06 | 644 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.4− | 0.2+ | |
| 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.4+ | |
| 2006 09 16 | 644 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.1− | 0.3+ | |
| 2006 09 16 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− | | | | | |

**2006 QA$_{123}$ = 2006 QL$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.90754 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23938953 | $\omega$ | 317.03556 | | +0.96342023 | −0.26169461 | |
| $a$ | 2.5688137 | $\Omega$ | 58.22047 | | +0.26060463 | +0.86455059 | |
| $e$ | 0.2634451 | $i$ | 3.89674 | | +0.06250353 | +0.42903171 | |
| $P$ | 4.12 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 21 | 691 | 0.1+ | 0.2− | 2002 10 31 | 699 | 0.5− | 0.6− | 2006 08 29 | 703 | 0.5+ | 0.7+ | |
| 1998 11 21 | 691 | 0.1+ | 0.1− | 2002 10 31 | 699 | 0.7− | 0.7+ | 2006 08 29 | 703 | 0.1− | 0.1+ | |
| 1998 11 21 | 691 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.0 | 0.4− | 2006 08 29 | 703 | 0.9+ | 0.5− | |
| 2002 10 01 | 699 | 1.0− | 0.2− | 2006 08 16 | 644 | 0.5− | 0.0 | 2006 08 30 | 699 | 1.1− | 0.0 | |
| 2002 10 01 | 699 | 0.9+ | 1.2+ | 2006 08 16 | 644 | 0.7− | 0.1+ | 2006 08 30 | 699 | 0.0 | 0.8− | |
| 2002 10 01 | 699 | 0.5− | 0.5+ | 2006 08 23 | 644 | 0.3− | 0.1+ | 2006 08 30 | 699 | (0.5− | 1.6−) | |
| 2002 10 01 | 699 | (2.0− | 2.8+) | 2006 08 23 | 644 | 0.3− | 0.2− | 2006 08 30 | 699 | 1.2+ | 1.0− | |
| 2002 10 31 | 699 | 0.3+ | 1.5− | 2006 08 23 | 644 | 0.2+ | 0.1+ | | | | | |
| 2002 10 31 | 699 | 1.1+ | 0.4+ | 2006 08 29 | 703 | 0.5+ | 1.4+ | | | | | |

**2006 QE$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.38773 | | (2000.0) | | | |
| $n$ | 0.22716908 | $\omega$ | 16.70980 | | +0.75208038 | +0.65400271 |
| $a$ | 2.6601323 | $\Omega$ | 302.15969 | | −0.61517317 | +0.65216864 |
| $e$ | 0.0963328 | $i$ | 5.53003 | | −0.23651019 | +0.38334908 |
| $P$ | 4.34 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.2− | 0.2− | 2006 08 30 | 704 | 1.1+ | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.4− |
| 2004 01 19 | 691 | 0.2+ | 0.0 | 2006 08 30 | 704 | 0.8+ | 1.1+ | 2006 09 18 | 703 | 1.0− | 0.3− |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.6− | 1.5− | 2006 09 18 | 703 | 1.0− | 0.5− |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.2− | 0.0 | 2006 09 30 | 699 | 0.3+ | 1.1− |
| 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 11 | 703 | (0.1+ | 3.4−) | 2006 09 30 | 699 | 0.4− | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 11 | 703 | (0.0 | 1.7−) | 2006 09 30 | 699 | 0.3+ | 0.9+ |
| 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 09 30 | 699 | (1.1− | 2.2+) |
| 2006 08 29 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 19 | 695 | 0.1+ | 0.0 |
| 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 19 | 695 | 0.1+ | 0.1+ |
| 2006 08 30 | 704 | 0.0 | 1.1+ | 2006 09 18 | 703 | 0.3+ | 1.0− | | | | |

**2006 QJ$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.62219 | | (2000.0) | | | |
| $n$ | 0.22420674 | $\omega$ | 44.86510 | | +0.67779041 | −0.73518566 |
| $a$ | 2.6835124 | $\Omega$ | 2.52819 | | +0.59376026 | +0.53919291 |
| $e$ | 0.2112771 | $i$ | 13.24926 | | +0.43364607 | +0.41081997 |
| $P$ | 4.40 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 25 | 688 | 0.5+ | 0.6− | 2006 08 30 | 699 | 0.5+ | 0.6− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 1997 10 25 | 688 | 0.4+ | 0.6− | 2006 09 15 | 703 | 0.7− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2002 12 28 | 704 | 0.3+ | 0.0 | 2006 09 15 | 703 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2002 12 28 | 704 | 0.3+ | 0.5− | 2006 09 15 | 703 | 0.1− | 1.0+ | 2006 10 27 | 703 | 0.4− | 0.2+ |
| 2002 12 28 | 704 | 0.3+ | 0.1+ | 2006 09 15 | 703 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.3+ |
| 2002 12 28 | 704 | 0.9− | 0.4+ | 2006 09 21 | 704 | 0.8− | 0.3− | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2006 07 21 | G96 | 0.1− | 0.4− | 2006 09 21 | 704 | 0.3+ | 0.6+ | 2006 11 15 | 703 | 0.4+ | 0.5+ |
| 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 21 | 704 | 0.8+ | 1.3+ | 2006 11 15 | 703 | 0.2+ | 0.4− |
| 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 0.4− |
| 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.3− | 2006 11 15 | 703 | 0.1− | 0.4− |
| 2006 08 29 | 703 | 1.0− | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.3− | 2006 11 22 | 703 | 0.5+ | 0.0 |
| 2006 08 29 | 703 | 1.3− | 0.5− | 2006 10 19 | 703 | 0.2− | 0.5− | 2006 11 22 | 703 | 0.3− | 0.4− |
| 2006 08 29 | 703 | 0.0 | 0.1− | 2006 10 20 | 704 | 0.2− | 0.5+ | 2006 11 22 | 703 | 0.4+ | 0.0 |
| 2006 08 30 | 699 | (1.6+ | 1.1+) | 2006 10 20 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2006 08 30 | 699 | (2.3+ | 2.0+) | 2006 10 20 | 704 | 0.2+ | 0.5+ | | | | |
| 2006 08 30 | 699 | (2.5+ | 0.9−) | 2006 10 22 | 644 | 0.1+ | 0.1− | | | | |

**2006 QM$_{123}$ = 1997 WV$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.61969 | | (2000.0) | | | |
| $n$ | 0.22349549 | $\omega$ | 67.36739 | | +0.95527592 | +0.27996555 |
| $a$ | 2.6892027 | $\Omega$ | 276.26944 | | −0.29407323 | +0.86547881 |
| $e$ | 0.3599704 | $i$ | 5.49707 | | −0.03112634 | +0.41541031 |
| $P$ | 4.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 046 | 0.4+ | 1.2+ | 2006 10 19 | 704 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.4− |
| 1997 11 22 | 046 | 0.2+ | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.4+ | 1.0+ |
| 1997 11 22 | 046 | 0.1+ | 0.3+ | 2006 10 19 | 704 | 0.7− | 0.0 | 2006 11 15 | 704 | 0.8+ | 0.4+ |
| 1997 11 22 | 046 | 0.5+ | 0.7+ | 2006 10 19 | 703 | 0.0 | 0.5+ | 2006 11 15 | 704 | 0.1− | 0.7+ |
| 1997 11 25 | 046 | 0.9− | 0.1− | 2006 10 20 | 704 | 0.1+ | 1.0+ | 2006 11 16 | 704 | 0.8− | 0.0 |
| 1997 11 25 | 046 | 1.0− | 0.1− | 2006 10 20 | 704 | 0.2+ | 0.9+ | 2006 11 16 | 704 | 0.2− | 0.7− |
| 1997 11 25 | 046 | 0.2− | 0.6− | 2006 10 20 | 704 | 0.2− | 0.6+ | 2006 11 16 | 704 | 0.6− | 0.0 |
| 2006 08 24 | 704 | 0.1− | 1.0− | 2006 10 20 | 704 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.5− | 0.4− |
| 2006 08 24 | 704 | 0.3− | 0.6+ | 2006 10 20 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.0 | 0.2− |
| 2006 08 24 | 704 | 0.9− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.6− | 0.0 |
| 2006 08 24 | 704 | 0.3+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.3− | 0.5− |
| 2006 08 24 | 704 | 1.2− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.2− | 1.2+ |
| 2006 08 24 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.4− |
| 2006 08 24 | 704 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.1− | 0.4− |
| 2006 08 24 | 704 | 0.5+ | 0.2− | 2006 10 27 | 703 | 0.4− | 0.5− | 2006 11 17 | 704 | 0.5− | 0.1− |
| 2006 08 24 | 704 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2006 08 29 | 703 | 0.9+ | 0.7− | 2006 10 29 | 704 | 0.6− | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.7− |
| 2006 08 29 | 703 | 0.1− | 0.6− | 2006 10 29 | 704 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.9+ | 1.1− | 2006 10 29 | 704 | 0.5− | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2006 08 29 | 703 | 0.1− | 0.4− | 2006 10 29 | 704 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.3− |
| 2006 08 30 | 704 | 0.2− | 0.0 | 2006 11 01 | H07 | 0.6+ | 0.2− | 2006 11 17 | 704 | 0.3− | 0.1+ |
| 2006 08 30 | 704 | 0.2+ | 0.4− | 2006 11 01 | H07 | 0.6+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.5− |
| 2006 08 30 | 704 | 0.0 | 0.1+ | 2006 11 01 | H07 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.4− |
| 2006 08 30 | 704 | 0.1+ | 0.2− | 2006 11 01 | H07 | 0.6− | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 11 01 | H07 | 0.0 | 0.6− | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2006 09 18 | 704 | 0.6+ | 0.7+ | 2006 11 01 | H07 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1− | 0.2− |
| 2006 09 18 | 704 | 0.4+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2006 09 18 | 704 | 0.1+ | 1.0+ | 2006 11 02 | 703 | 0.5− | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2006 09 18 | 704 | 0.2− | 0.2− | 2006 11 02 | 703 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2006 09 18 | 704 | (0.2− | 2.1+) | 2006 11 02 | 703 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2006 09 18 | 703 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2006 09 18 | 703 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2006 09 18 | 703 | 1.1+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | (0.5− | 1.5+) |
| 2006 09 21 | 704 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.5− | 1.3+ |
| 2006 09 21 | 704 | (2.2− | 0.9−) | 2006 11 13 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.4− | 1.4+ |
| 2006 09 21 | 704 | 0.5− | 0.5− | 2006 11 14 | 703 | 0.3+ | 0.0 | 2006 11 22 | 704 | (0.8− | 1.5+) |
| 2006 09 21 | 704 | 0.3− | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.9− | 1.3+ |
| 2006 10 17 | A50 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.6+ | 0.0 | 2006 11 28 | 704 | 0.9− | 1.0− |
| 2006 10 17 | A50 | 1.0− | 0.6+ | 2006 11 14 | 703 | 0.5+ | 0.3− | 2006 11 28 | 704 | 0.2− | 0.6− |
| 2006 10 18 | A50 | 0.1− | 0.1+ | 2006 11 15 | 691 | 1.3+ | 1.0− | 2006 11 28 | 704 | 1.1− | 0.3− |
| 2006 10 18 | A50 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.9− | 0.6− |
| 2006 10 19 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3− | 2006 12 01 | 704 | 0.2+ | 0.0 |
| 2006 10 19 | 704 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− | 2006 12 01 | 704 | 0.6− | 0.6+ |
| 2006 10 19 | 703 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.5− | 2006 12 01 | 704 | 0.0 | 1.1+ |
| 2006 10 19 | 704 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.3+ | 2006 12 01 | 704 | 0.1+ | 1.0+ |
| 2006 10 19 | 703 | 0.1+ | 0.7+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | | | | |

**2006 QO$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.59142 | | (2000.0) | | | |
| $n$ | 0.29231403 | $\omega$ | 114.31514 | | +0.83576723 | +0.54600696 |
| $a$ | 2.2485520 | $\Omega$ | 212.67944 | | −0.53466144 | +0.78518336 |
| $e$ | 0.1682675 | $i$ | 6.17168 | | −0.12502112 | +0.29217031 |
| $P$ | 3.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.8− |
| 1996 11 08 | 691 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.4− | 0.1− |
| 1996 11 08 | 691 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 1999 07 13 | 704 | 0.2+ | 0.3− | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.0 |
| 1999 07 13 | 704 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.3− | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.1+ |
| 1999 07 13 | 704 | 0.5− | 0.2− | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 1999 07 13 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.2− | 0.3− |
| 2003 12 17 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2003 12 17 | 691 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2003 12 17 | 691 | 0.1+ | 0.4− | 2006 09 25 | 704 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2006 08 24 | 704 | 0.7+ | 0.5+ | 2006 09 25 | 704 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2006 08 24 | 704 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.6− | 0.8− | 2006 10 17 | 703 | (1.5− | 0.6−) |
| 2006 08 24 | 704 | 1.1− | 0.4+ | 2006 09 27 | 699 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.2− | 1.4− |
| 2006 08 24 | 704 | 0.6+ | 0.2− | 2006 09 27 | 699 | 0.5+ | 0.7− | 2006 10 17 | 703 | 0.6− | 1.1− |
| 2006 08 29 | 699 | 0.1+ | 0.0 | 2006 09 27 | 699 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 08 29 | 699 | 0.4− | 0.4− | 2006 09 29 | 704 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 08 29 | 699 | 0.6− | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2006 08 29 | 699 | 1.4+ | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2006 08 31 | 704 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.6− | 0.2+ |
| 2006 08 31 | 704 | 0.3+ | 0.8− | 2006 09 29 | 704 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.4− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 31 | 704 | 0.9+ | 0.1− | 2006 10 01 | 703 | (0.5+ | 1.7+) | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2006 08 31 | 704 | 0.4− | 0.5− | 2006 10 01 | 703 | 1.2+ | 0.8− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 01 | 703 | 0.0 | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.3− | 2006 10 01 | 703 | 0.3− | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 01 | 703 | 0.5− | 1.4+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2006 09 15 | 704 | 0.0 | 0.6− | 2006 10 01 | 703 | 0.3− | 0.9+ | 2006 10 24 | 644 | 0.2− | 0.0 |
| 2006 09 15 | 704 | 0.0 | 0.7− | 2006 10 01 | 703 | 0.6+ | 0.4+ | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2006 09 15 | 704 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 1.0+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.2+ |
| 2006 09 15 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.4+ | 1.0− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2006 09 18 | 704 | 0.4+ | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.7− | 2006 11 15 | G96 | 0.0 | 0.1+ |

### 2006 QP$_{123}$ = 2004 DY$_5$ = 2005 GS$_{153}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.80458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18234527 | $\omega$ | 176.43149 | | +0.74874975 | +0.66082864 | |
| $a$ | 3.0799220 | $\Omega$ | 142.03897 | | −0.61021995 | +0.71768681 | |
| $e$ | 0.3048737 | $i$ | 4.82709 | | −0.25885406 | +0.21961592 | |
| $P$ | 5.41 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.3− | 0.1+ |
| 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.6+ |
| 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.4− | 0.2+ | 2006 09 30 | 704 | 0.8− | 0.1− |
| 2004 02 16 | 691 | 0.0 | 0.4+ | 2006 09 19 | 704 | 0.7− | 0.6+ | 2006 09 30 | 703 | 0.1+ | 0.1+ |
| 2004 02 18 | 291 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.7− | 1.2− | 2006 09 30 | 704 | 0.0 | 0.3− |
| 2004 02 18 | 291 | 0.3+ | 0.5+ | 2006 09 19 | 704 | (1.8− | 0.8−) | 2006 09 30 | 704 | 0.2− | 0.0 |
| 2004 02 18 | 291 | 0.6+ | 0.2+ | 2006 09 20 | 608 | 0.3+ | 1.4− | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2005 04 14 | 691 | 0.1− | 0.2+ | 2006 09 20 | 608 | 0.1+ | 1.4− | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 2005 04 14 | 691 | 0.3− | 0.4+ | 2006 09 20 | 608 | 0.2+ | 1.3− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.1− | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 0.1− | 1.1+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2005 04 15 | 691 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2006 08 24 | 644 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 0.2+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2006 08 24 | 644 | 0.4+ | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.4− | 1.4+ | 2006 10 16 | 703 | 0.7− | 0.5+ |
| 2006 08 31 | 704 | 0.1− | 1.1+ | 2006 09 26 | 704 | 0.9− | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2006 08 31 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.3− | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2006 08 31 | 704 | 0.2+ | 1.2+ | 2006 09 26 | 704 | 1.1− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2006 08 31 | 704 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2006 09 16 | 704 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 2006 09 16 | 704 | 0.6− | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2006 09 16 | 704 | 0.3− | 0.8+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 16 | 704 | (1.5+ | 1.9−) | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 09 16 | 704 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2006 09 18 | 703 | 0.7+ | 0.1+ | 2006 09 28 | 704 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.8− | 1.3− |
| 2006 09 18 | 703 | 0.0 | 0.4− | 2006 09 28 | 704 | 1.3− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.4− |
| 2006 09 18 | 703 | 0.3− | 0.1− | 2006 09 28 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.0 | 0.6− | 2006 09 28 | 704 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.2− |
| 2006 09 18 | 699 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.7+ | | | | |
| 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.5− | 0.3+ | | | | |

### 2006 QT$_{123}$ = 2005 HJ

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.94583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21753361 | $\omega$ | 97.26389 | | +0.83742652 | +0.53484768 | |
| $a$ | 2.7381157 | $\Omega$ | 230.47322 | | −0.54111084 | +0.78237563 | |
| $e$ | 0.2182731 | $i$ | 8.38616 | | −0.07691479 | +0.31910239 | |
| $P$ | 4.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2005 04 16 | 691 | 0.3− | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2005 04 16 | 691 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2005 04 17 | 691 | 0.1− | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.2− | 0.3− | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 09 21 | 699 | 0.7+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2005 07 05 | 291 | 0.5+ | 0.1− | 2006 09 27 | 703 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.6+ |
| 2005 07 05 | 291 | 0.1− | 0.5− | 2006 09 27 | 703 | (0.8− | 4.7+) | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2005 07 05 | 291 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2006 08 29 | 699 | 1.1− | 0.0 | 2006 09 29 | 699 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.9− |
| 2006 08 29 | 699 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.5+ | 0.7+ |
| 2006 08 29 | 699 | 0.4+ | 0.9− | 2006 09 29 | 699 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2006 08 29 | 699 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2− |
| 2006 08 31 | 704 | 0.8− | 0.1+ | 2006 10 03 | 703 | 1.5− | 1.1+ | 2006 10 21 | 691 | 0.4+ | 0.0 |
| 2006 08 31 | 704 | 0.5+ | 0.9+ | 2006 10 03 | 703 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2− |
| 2006 08 31 | 704 | 0.7+ | 0.1− | 2006 10 03 | 703 | (0.6− | 1.6−) | 2006 10 21 | 691 | 0.1− | 0.3− |
| 2006 08 31 | 704 | 0.3− | 0.2+ | 2006 10 03 | 703 | 0.4− | 0.7− | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2006 08 31 | 704 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2006 09 06 | 644 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2006 09 06 | 644 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.0 |
| 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1+ | | | | |

### 2006 QU$_{123}$ = 2006 SD$_{59}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.75814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22063275 | $\omega$ | 51.31930 | | +0.92126467 | +0.36036042 | |
| $a$ | 2.7124146 | $\Omega$ | 287.12514 | | −0.38711865 | +0.81325886 | |
| $e$ | 0.1203505 | $i$ | 8.80756 | | −0.03755734 | +0.45689211 | |
| $P$ | 4.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 29 | 327 | 0.1− | 0.4− | 2004 02 18 | 691 | 0.4+ | 0.5+ | 2006 09 16 | 703 | 1.3− | 1.2− |
| 1997 09 29 | 327 | 0.0 | 0.1+ | 2004 02 18 | 691 | 0.3+ | 0.8+ | 2006 09 29 | 699 | 0.4+ | 0.7− |
| 1997 09 29 | 327 | 0.1+ | 0.3+ | 2006 08 29 | 699 | 0.8+ | 0.7+ | 2006 09 29 | 699 | 0.1+ | 0.7+ |
| 2001 06 25 | 644 | 0.0 | 0.4+ | 2006 08 29 | 699 | 0.8+ | 1.3+ | 2006 09 29 | 699 | 0.5− | 0.1+ |
| 2001 06 25 | 644 | 0.4− | 0.5+ | 2006 08 29 | 699 | 1.0+ | 0.9+ | 2006 09 29 | 699 | 0.4− | 0.4+ |
| 2001 06 25 | 644 | 0.0 | 0.8+ | 2006 08 29 | 699 | 0.3− | 1.0− | 2006 10 03 | 704 | 0.2+ | 1.0+ |
| 2002 11 16 | 644 | 0.2+ | 0.5+ | 2006 08 31 | 704 | 0.1− | 0.2+ | 2006 10 03 | 704 | 0.2+ | 0.8+ |
| 2002 11 16 | 644 | 0.3+ | 0.4+ | 2006 08 31 | 704 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.1− | 1.1+ |
| 2002 11 16 | 644 | 0.6+ | 0.2+ | 2006 08 31 | 704 | 0.4+ | 0.1− | 2006 10 03 | 704 | 1.4+ | 0.6− |
| 2002 12 05 | 704 | 0.9− | 0.8+ | 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 03 | 703 | 0.9− | 1.6− |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 10 03 | 703 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.4− | 2006 09 16 | 703 | 0.2− | 0.4+ | 2006 10 03 | 703 | 0.6− | 0.8− |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.3− | 0.3+ | 2006 10 03 | 703 | 0.3+ | 0.7− |
| 2004 02 18 | 691 | 0.3+ | 0.9+ | 2006 09 16 | 703 | 0.7− | 0.0 | | | | |

### 2006 QV$_{123}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.55812 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18403817 | $\omega$ | 56.79228 | | +0.93499230 | −0.31840336 | |
| $a$ | 3.0610055 | $\Omega$ | 321.12142 | | +0.18055403 | +0.80646656 | |
| $e$ | 0.2821192 | $i$ | 14.41292 | | +0.30526978 | +0.49822785 | |
| $P$ | 5.36 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 704 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.4− | 0.1+ |
| 2001 12 08 | 704 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.4− | 1.0− | 2006 09 27 | 703 | 0.2− | 0.3+ |
| 2001 12 08 | 704 | 0.6− | 0.6+ | 2006 09 16 | 703 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.0 |
| 2001 12 08 | 704 | 0.5+ | 0.5− | 2006 09 16 | 703 | 0.9− | 0.1− | 2006 09 27 | 703 | 0.9− | 1.6+ |
| 2001 12 23 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.8+ | 0.3− | 2006 09 29 | 699 | 0.2− | 0.5+ |
| 2001 12 23 | 704 | 0.5− | 0.2− | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 09 29 | 699 | 0.1− | 0.0 |
| 2001 12 23 | 704 | 0.8+ | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.6− | 0.3+ |
| 2006 08 29 | 699 | 0.5− | 0.5− | 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.1− | 0.1+ |
| 2006 08 29 | 699 | 0.5− | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 10 03 | 704 | 1.3+ | 0.2+ |
| 2006 08 29 | 699 | 0.7− | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.4− | 2006 10 03 | 704 | 0.3+ | 0.9+ |
| 2006 08 29 | 699 | 0.6− | 0.5+ | 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 10 03 | 704 | 0.1+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 31 | 704 | 0.5+ | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 10 03 | 704 | 0.3− | 0.5+ | | |
| 2006 08 31 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.5− | 0.7− | 2006 10 03 | 703 | 0.1− | 0.9+ | | |
| 2006 08 31 | 704 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 0.2+ | 0.8− | 2006 10 03 | 703 | 0.1+ | 0.1− | | |
| 2006 08 31 | 704 | 0.6+ | 0.2+ | 2006 09 21 | 699 | 0.0 | 0.9+ | 2006 10 03 | 703 | 0.9+ | 0.2+ | | |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 21 | 699 | 0.0 | 0.1− | 2006 10 03 | 703 | (1.0+ | 2.0+) | | |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 21 | 699 | 0.2+ | 0.3− | 2006 10 17 | 703 | 1.3+ | 0.9− | | |
| 2006 09 06 | 644 | 0.2− | 0.2− | 2006 09 21 | 699 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.6+ | | |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 23 | 106 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.3+ | 1.3− | | |
| 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 23 | 106 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.2− | 0.1− | | |
| 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 23 | 106 | 0.4+ | 0.7− | | | | | | |
| 2006 09 16 | 703 | 0.4− | 0.2− | 2006 09 23 | 106 | 0.1+ | 0.3+ | | | | | | |

### 2006 $QY_{123}$ = 2004 $BC_{137}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.53860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23340538 | $\omega$ | 358.95467 | | +0.71321491 | +0.69482909 | |
| $a$ | 2.6125351 | $\Omega$ | 316.53313 | | −0.64212627 | +0.59480902 | |
| $e$ | 0.2071336 | $i$ | 7.71868 | | −0.28106645 | +0.40424592 | |
| $P$ | 4.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.2− | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.5+ | 2006 10 03 | 703 | 1.1− | 0.6− | | |
| 2002 11 14 | 644 | 0.0 | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 03 | 703 | 0.7− | 0.9+ | | |
| 2002 11 14 | 644 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.8− | 0.4+ | 2006 10 03 | 703 | 0.1− | 0.7+ | | |
| 2004 01 19 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | (1.9+ | 0.2−) | 2006 10 03 | 703 | 0.9+ | 0.3+ | | |
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 10 03 | 703 | 0.4− | 0.3+ | | |
| 2004 01 19 | 691 | 0.3+ | 0.3− | 2006 09 19 | 699 | 1.0+ | 0.5+ | 2006 10 03 | 703 | 0.0 | 0.6+ | | |
| 2004 01 28 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.4− | 2006 10 03 | 703 | 0.2− | 0.5+ | | |
| 2004 01 28 | 691 | 0.1− | 0.4+ | 2006 09 19 | 699 | 1.4+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.2+ | | |
| 2004 01 28 | 691 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.3+ | | |
| 2006 08 29 | 703 | 0.7− | 0.5− | 2006 09 20 | 106 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.1− | | |
| 2006 08 29 | 703 | 1.2− | 0.2− | 2006 09 20 | 106 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.2− | | |
| 2006 08 29 | 703 | 0.5+ | 0.3− | 2006 09 20 | 106 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.3− | | |
| 2006 08 29 | 703 | 1.0− | 0.6− | 2006 09 20 | 106 | 0.5+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2006 08 31 | 704 | (1.8− | 1.1+) | 2006 09 27 | 703 | 0.1+ | 0.8+ | 2006 10 23 | 644 | 0.4+ | 0.1− | | |
| 2006 08 31 | 704 | 1.5− | 0.7− | 2006 09 27 | 703 | 1.0+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.4− | | |
| 2006 08 31 | 704 | 0.3+ | 1.2− | 2006 09 27 | 703 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.2+ | | |
| 2006 08 31 | 704 | 0.2− | 0.9+ | 2006 09 27 | 703 | 0.8+ | 0.3− | 2006 10 23 | 703 | 0.3+ | 0.1− | | |
| 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.0 | 0.2− | 2006 10 23 | 703 | 0.1− | 0.7− | | |
| 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 0.7− | 0.5− | 2006 10 23 | 703 | 0.9− | 0.9− | | |
| 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 10 03 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 1.2− | 1.4− | | |
| 2006 09 06 | 644 | 0.2− | 0.4+ | 2006 10 03 | 703 | 0.1− | 0.8+ | | | | | | |

### 2006 $QD_{124}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.13239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27210844 | $\omega$ | 36.78618 | | +0.96595896 | +0.24151985 | |
| $a$ | 2.3585298 | $\Omega$ | 308.97519 | | −0.25653008 | +0.84801757 | |
| $e$ | 0.2716987 | $i$ | 6.84755 | | −0.03340060 | +0.47173548 | |
| $P$ | 3.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.3− | 0.5− | 2006 09 16 | 703 | 1.0+ | 0.1+ | 2006 10 13 | A24 | 0.3− | 0.4+ | | |
| 1999 12 07 | 703 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 13 | A24 | 0.7+ | 0.1+ | | |
| 1999 12 07 | 703 | 0.6− | 0.9+ | 2006 09 19 | 699 | 0.6+ | 0.1− | 2006 10 13 | A24 | 0.2+ | 0.0 | | |
| 1999 12 07 | 703 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.3+ | 2006 10 13 | A24 | 0.0 | 0.1+ | | |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 10 13 | A24 | 0.4+ | 0.3+ | | |
| 2004 01 15 | 691 | 0.2− | 0.0 | 2006 09 27 | 699 | 0.2+ | 0.1− | 2006 10 15 | A24 | 0.5+ | 0.3+ | | |
| 2004 01 15 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.4+ | 0.0 | 2006 10 15 | A24 | 0.6+ | 0.3+ | | |
| 2006 07 21 | 703 | 0.3+ | 0.3− | 2006 09 27 | 699 | 0.9+ | 0.3− | 2006 10 15 | A24 | 0.3+ | 0.0 | | |
| 2006 07 21 | 703 | 0.6− | 0.4− | 2006 09 27 | 699 | 0.3+ | 0.2+ | 2006 10 15 | A24 | 1.1− | 0.1− | | |
| 2006 07 21 | 703 | 0.4− | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.0 | 2006 10 15 | A24 | 0.2+ | 0.0 | | |
| 2006 07 21 | 703 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.4− | 0.1− | 2006 10 15 | A24 | 0.2+ | 0.5− | | |
| 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 09 27 | 703 | 0.6+ | 0.1− | 2006 10 17 | A24 | 0.2− | 0.9+ | | |
| 2006 08 29 | 703 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.5− | 2006 10 17 | A24 | 0.6+ | 0.2− | | |
| 2006 08 29 | 703 | (3.3− | 2.1+) | 2006 09 28 | 704 | 0.1+ | 0.1− | 2006 10 17 | A24 | 0.3+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 29 | 703 | (2.7− | 0.9+) | 2006 09 28 | 704 | 0.1+ | 0.0 | 2006 11 11 | 683 | (1.6+ | 0.5+) | | |
| 2006 08 29 | 699 | 0.6+ | 0.0 | 2006 09 28 | 704 | 0.9+ | 0.1+ | 2006 11 11 | 683 | (0.4− | 1.9−) | | |
| 2006 08 29 | 699 | 0.7− | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.1+ | 2006 11 11 | 683 | 0.2− | 0.3− | | |
| 2006 08 29 | 699 | 0.4− | 0.1+ | 2006 10 03 | 704 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.7− | 1.0− | | |
| 2006 08 31 | 704 | 0.1− | 0.0 | 2006 10 03 | 704 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.7+ | | |
| 2006 08 31 | 704 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.5− | 0.5− | 2006 11 14 | 703 | 0.0 | 0.1− | | |
| 2006 08 31 | 704 | 0.2+ | 0.2− | 2006 10 03 | 704 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 1.5− | 0.1+ | | |
| 2006 08 31 | 704 | 0.4+ | 0.1− | 2006 10 03 | 703 | 0.1− | 0.2+ | 2006 11 25 | 703 | 1.3− | 0.3+ | | |
| 2006 08 31 | 704 | 0.1+ | 0.5+ | 2006 10 03 | 703 | 0.9− | 0.2+ | 2006 11 25 | 703 | 1.0+ | 0.6− | | |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 03 | 703 | 0.6− | 0.0 | 2006 11 25 | 703 | 0.1− | 0.9+ | | |
| 2006 09 06 | 644 | 0.4− | 0.0 | 2006 10 03 | 703 | 0.4− | 0.1+ | 2006 11 25 | 703 | 0.0 | 0.0 | | |
| 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.5+ | 1.0− | | |
| 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.2− | 2006 11 28 | 704 | 1.2+ | 0.1− | | |
| 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.0 | 2006 11 28 | 704 | 1.6− | 0.0 | | |
| 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 10 | A24 | 0.5+ | 0.4+ | 2006 11 28 | 704 | 1.0+ | 0.2− | | |
| 2006 09 16 | 703 | 0.6− | 0.2+ | 2006 10 10 | A24 | 0.3+ | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.8− | | |
| 2006 09 16 | 703 | 0.7− | 0.0 | 2006 10 10 | A24 | 0.3− | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.0 | | |
| 2006 09 16 | 703 | 0.2+ | 0.2+ | 2006 10 13 | A24 | 0.7− | 0.5− | 2006 11 28 | 704 | 0.6+ | 1.3− | | |

### 2006 $QK_{124}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.34005 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26623530 | $\omega$ | 70.81929 | | +0.98005984 | +0.19705761 | |
| $a$ | 2.3930896 | $\Omega$ | 277.80945 | | −0.19061048 | +0.89609276 | |
| $e$ | 0.2097990 | $i$ | 1.47574 | | −0.05612801 | +0.39772612 | |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.1− | 0.3+ | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.4− | 0.2− | | |
| 1995 08 20 | 809 | 0.2− | 0.5+ | 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.1+ | | |
| 1995 08 22 | 809 | 0.3+ | 0.5− | 2006 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.2+ | | |
| 2006 07 25 | G96 | 0.2+ | 0.3− | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.2− | | |
| 2006 07 25 | G96 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.2− | | |
| 2006 07 25 | G96 | 0.1+ | 0.0 | 2006 08 28 | 703 | 0.0 | 0.4− | 2006 09 27 | G96 | 0.3+ | 0.1+ | | |
| 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.8− | 0.1− | | | | | | |

### 2006 $QB_{125}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.16326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17907358 | $\omega$ | 89.11176 | | +0.96339109 | −0.21857639 | |
| $a$ | 3.1173222 | $\Omega$ | 283.50231 | | +0.13411293 | +0.89430979 | |
| $e$ | 0.1006655 | $i$ | 9.18722 | | +0.23214507 | +0.39042843 | |
| $P$ | 5.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.2+ | 0.2+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.0 | 0.3+ | | |
| 2001 10 13 | 644 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 13 | 644 | 0.3− | 0.7− | 2006 08 16 | 644 | 0.4− | 0.7− | 2006 09 18 | 691 | 0.2− | 0.1− | | |
| 2001 10 20 | 704 | 1.4− | 0.5− | 2006 08 16 | 644 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.3− | | |
| 2001 10 20 | 704 | 0.2+ | 0.4+ | 2006 08 27 | 122 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.0 | | |
| 2001 10 20 | 704 | 1.5+ | 0.4+ | 2006 08 27 | 122 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.0 | | |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 08 27 | 122 | 0.2+ | 0.1− | | | | | | |

### 2006 $QD_{125}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.41308 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23209633 | $\omega$ | 61.25735 | | +0.97347749 | −0.16036643 | |
| $a$ | 2.6223492 | $\Omega$ | 307.49771 | | +0.05745369 | +0.86171062 | |
| $e$ | 0.1239633 | $i$ | 11.86837 | | +0.22145123 | +0.48139113 | |
| $P$ | 4.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.4− | 0.3+ | 2002 10 15 | 644 | 0.1+ | 0.3− | 2006 08 16 | 644 | 0.1− | 0.3+ | | |
| 2002 09 03 | 644 | 0.5− | 0.4+ | 2002 10 15 | 644 | 0.0 | 0.4− | 2006 08 16 | 644 | 0.2+ | 0.5+ | | |
| 2002 09 03 | 644 | 0.4− | 0.4+ | 2002 10 15 | 644 | 0.3+ | 0.6− | 2006 08 16 | 644 | 0.4− | 0.4+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 699 | 0.0 | 0.2− | 2004 01 30 | 691 | 0.0 | 0.1− | 2006 08 29 | 703 | 0.6+ | 0.8+ |
| 2002 09 14 | 699 | 0.2− | 1.1+ | 2004 01 30 | 691 | 0.5− | 0.2− | 2006 08 29 | 703 | 0.3− | 0.6− |
| 2002 09 14 | 699 | 1.6+ | 0.2+ | 2004 01 30 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 1.2− | 0.3− |
| 2002 09 14 | 699 | 0.4+ | 1.2− | 2006 07 21 | 703 | 1.3− | 0.7+ | 2006 08 29 | 703 | 0.1+ | 0.6− |
| 2002 10 03 | 644 | 0.7− | 0.6+ | 2006 07 21 | 703 | 0.2+ | 1.4− | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2002 10 03 | 644 | 0.5− | 0.4+ | 2006 07 21 | 703 | 0.0 | 1.1− | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2002 10 03 | 644 | 0.2− | 0.5+ | 2006 07 21 | 703 | 1.4+ | 0.0 | 2006 09 30 | 691 | 0.4+ | 0.0 |

**2006 QV$_{125}$ = 1994 WH$_{7}$ = 2002 SC$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.91882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23797940 | $\omega$ | 248.74316 | | +0.96187242 | +0.22843875 | |
| $a$ | 2.5789513 | $\Omega$ | 97.80658 | | −0.15847998 | +0.91368520 | |
| $e$ | 0.1214410 | $i$ | 8.73108 | | −0.22290257 | +0.33614742 | |
| $P$ | 4.14 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 28 | 691 | 0.0 | 0.1+ | 2002 09 17 | 644 | 0.8− | 0.5+ | 2006 08 16 | 644 | 0.2+ | 0.1+ |
| 1994 11 28 | 691 | 0.1− | 0.1− | 2002 09 17 | 644 | 0.5− | 0.3+ | 2006 08 28 | E12 | 0.8+ | 0.2+ |
| 1994 11 28 | 691 | 0.1− | 0.1− | 2002 09 17 | 644 | 0.6− | 0.3+ | 2006 08 28 | E12 | 0.4− | 0.1+ |
| 1994 12 03 | 691 | 0.2− | 0.2− | 2002 09 19 | 644 | 0.0 | 0.8+ | 2006 08 28 | E12 | 0.8+ | 0.4+ |
| 1994 12 03 | 691 | 0.1+ | 0.3− | 2002 09 19 | 644 | 0.7− | 0.2+ | 2006 08 28 | E12 | 0.6+ | 0.7− |
| 1994 12 03 | 691 | 0.2+ | 0.3− | 2002 09 19 | 644 | 0.6− | 0.4+ | 2006 09 20 | 703 | 1.4− | 0.4− |
| 1997 06 07 | 691 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.7− | 0.2+ |
| 1997 06 07 | 691 | 0.2− | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 20 | 703 | 1.2+ | 1.3− |
| 1997 06 07 | 691 | 0.1+ | 0.4− | 2006 08 16 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 703 | 0.0 | 0.2− |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.6− | 0.1+ | | | | |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2006 08 16 | 644 | 0.0 | 0.1+ | | | | |

**2006 QX$_{125}$ = 2000 JG$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.80093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21615827 | $\omega$ | 351.22936 | | +0.96438321 | −0.25606832 | |
| $a$ | 2.7497179 | $\Omega$ | 23.92724 | | +0.25151589 | +0.81016945 | |
| $e$ | 0.1567836 | $i$ | 9.40666 | | +0.08188276 | +0.52730872 | |
| $P$ | 4.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 691 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.8− |
| 2000 05 01 | 691 | 0.0 | 0.4− | 2006 08 16 | 644 | 0.1+ | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.9− |
| 2000 05 01 | 691 | 0.1+ | 0.1+ | 2006 08 16 | 644 | 0.4+ | 0.2− | 2006 09 20 | 703 | 0.5− | 0.1+ |
| 2000 05 09 | 691 | 0.1+ | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.4− |
| 2000 05 09 | 691 | 0.2− | 0.3− | 2006 08 16 | 644 | 0.7+ | 0.4− | 2006 09 20 | 703 | 1.3− | 0.9− |
| 2000 05 09 | 691 | 0.7− | 0.5− | 2006 08 16 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.3− | 0.6+ |
| 2002 11 15 | 704 | 1.1+ | 0.7+ | 2006 08 30 | 699 | 0.9+ | 0.2+ | 2006 09 26 | 703 | 1.1− | 0.0 |
| 2002 11 15 | 704 | 1.1+ | 0.7− | 2006 08 30 | 699 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.5− | 0.3+ |
| 2002 11 15 | 704 | 0.3− | 0.8− | 2006 08 30 | 699 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.6− |
| 2002 11 15 | 704 | (1.9+ | 0.6−) | 2006 08 30 | 699 | 0.4+ | 0.5− | 2006 09 26 | 703 | 0.9+ | 0.2− |
| 2002 11 15 | 704 | 0.8− | 0.5− | 2006 08 30 | 699 | 1.3+ | 0.3− | 2006 11 27 | G96 | 0.5+ | 0.3+ |
| 2002 12 05 | 704 | 0.7+ | 0.9− | 2006 08 30 | 699 | 1.1− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 1.1− | 0.3− | 2006 08 30 | 699 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.7+ | 0.5+ |
| 2002 12 05 | 704 | 0.1− | 0.6− | 2006 08 30 | 699 | (1.8+ | 0.1−) | 2006 11 27 | G96 | 0.1+ | 0.2+ |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.4− | | | | |
| 2002 12 05 | 704 | 0.9+ | 0.7− | 2006 09 18 | 699 | 0.2+ | 0.1+ | | | | |

**2006 QK$_{126}$ = 2000 EL$_{74}$ = 2005 JH$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.05982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21242416 | $\omega$ | 229.13502 | | +0.94666135 | +0.30984154 | |
| $a$ | 2.7818483 | $\Omega$ | 112.64756 | | −0.25921382 | +0.89538458 | |
| $e$ | 0.0707314 | $i$ | 5.50218 | | −0.19141704 | +0.31981976 | |
| $P$ | 4.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 691 | 0.2− | 0.5− | 2002 11 24 | 644 | 0.2− | 0.5+ | 2006 08 29 | 703 | 0.3+ | 1.1+ |
| 1998 12 16 | 691 | 0.0 | 0.4− | 2002 12 10 | 644 | 0.4− | 0.5+ | 2006 08 29 | 703 | 0.0 | 0.6+ |
| 1998 12 16 | 691 | 0.4− | 0.3− | 2002 12 10 | 644 | 0.3− | 0.5+ | 2006 08 29 | 703 | 0.3− | 0.4+ |
| 2000 03 10 | 691 | 0.0 | 0.1+ | 2002 12 10 | 644 | 0.8+ | 0.5+ | 2006 08 29 | 703 | 0.1− | 0.5+ |
| 2000 03 10 | 691 | 0.1+ | 0.2− | 2004 02 16 | 691 | 0.3+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.1+ |
| 2000 03 10 | 691 | 0.1− | 0.4− | 2004 02 16 | 691 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.3+ | 0.3− |
| 2000 03 12 | 691 | 0.8− | 0.7+ | 2004 02 16 | 691 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.2− | 1.2− |
| 2000 03 12 | 691 | 0.9+ | 0.9− | 2005 05 03 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2+ |
| 2000 03 12 | 691 | 0.1+ | 0.1+ | 2005 05 03 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.3− |
| 2001 07 17 | 644 | 0.1− | 0.2− | 2005 05 03 | 691 | 0.4+ | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.7− |
| 2001 07 17 | 644 | 0.1− | 0.4− | 2005 05 19 | G96 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.3− | 0.8− |
| 2001 07 17 | 644 | 0.2− | 0.5− | 2005 05 19 | G96 | 1.0− | 0.1+ | 2006 09 26 | 703 | 0.4− | 1.0+ |
| 2001 07 17 | 608 | 0.2+ | 0.1+ | 2005 05 19 | G96 | 0.9− | 0.2+ | 2006 09 26 | 703 | 0.3− | 0.8+ |
| 2001 07 17 | 608 | 0.1+ | 0.7− | 2005 05 19 | G96 | 0.8− | 0.1+ | 2006 09 26 | 703 | 0.8+ | 0.5+ |
| 2001 07 17 | 608 | 0.3+ | 0.5− | 2006 08 16 | 644 | 0.4− | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.8+ |
| 2002 11 24 | 644 | 0.1− | 0.6+ | 2006 08 16 | 644 | 0.1+ | 0.1+ | | | | |
| 2002 11 24 | 644 | 0.1− | 0.4+ | 2006 08 16 | 644 | 0.2− | 0.4+ | | | | |

**2006 QU$_{126}$ = 2002 TH$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.49707 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23107062 | $\omega$ | 350.83031 | | +0.99431411 | +0.10535629 | |
| $a$ | 2.6301038 | $\Omega$ | 3.24466 | | −0.07181339 | +0.77074441 | |
| $e$ | 0.1958773 | $i$ | 15.86854 | | −0.07862758 | +0.62837338 | |
| $P$ | 4.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 699 | 1.2− | 0.3− | 2006 08 30 | 699 | 0.5+ | 0.1+ | 2006 09 26 | 704 | 0.5− | 0.4− |
| 2002 10 04 | 699 | 1.2+ | 0.6+ | 2006 08 30 | 699 | 1.0+ | 0.6+ | 2006 09 26 | 704 | 0.9− | 1.1− |
| 2002 10 04 | 699 | 0.5+ | 0.8− | 2006 08 30 | 699 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.2− |
| 2002 10 04 | 699 | (0.6+ | 1.8−) | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.6+ |
| 2002 10 05 | 704 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 09 30 | 703 | 1.0+ | 0.5+ |
| 2002 10 05 | 704 | 0.6+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2002 10 05 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 1.3− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 1.2+ |
| 2002 10 05 | 704 | 0.2− | 0.1− | 2006 09 19 | 704 | 0.5+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2002 10 05 | 704 | 0.2+ | 0.3− | 2006 09 19 | 704 | 0.1+ | 1.0+ | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2002 11 14 | 644 | 0.3− | 0.3+ | 2006 09 19 | 704 | 0.4− | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2002 11 14 | 644 | 0.4− | 0.1− | 2006 09 19 | 704 | 0.5− | 1.1− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2002 11 14 | 644 | 0.2− | 0.1− | 2006 09 21 | 699 | 1.0+ | 1.0− | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.4+ | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 09 21 | 699 | 0.8+ | 1.0− | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.9− | 1.0+ | | | | |
| 2006 08 30 | 699 | 0.4+ | 0.2− | 2006 09 26 | 704 | (1.2− | 2.2+) | | | | |

**2006 QW$_{126}$ = 1995 UT$_{50}$ = 1995 UN$_{83}$ = 2003 YD$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.73097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26200371 | $\omega$ | 248.14776 | | +0.98994544 | +0.12919715 | |
| $a$ | 2.4187877 | $\Omega$ | 104.39219 | | −0.09754631 | +0.91836831 | |
| $e$ | 0.1633508 | $i$ | 3.40833 | | −0.10243408 | +0.37404244 | |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 14 | 691 | 0.7+ | 1.5− | 2003 12 21 | 691 | 0.5+ | 0.2+ | 2006 09 22 | 704 | 0.5+ | 0.5+ |
| 1991 10 14 | 691 | 0.3+ | 0.6− | 2003 12 21 | 291 | 0.6− | 0.4+ | 2006 09 22 | 704 | 0.1+ | 1.1+ |
| 1991 10 14 | 691 | 0.1− | 1.4− | 2003 12 21 | 691 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.9− | 0.5+ |
| 1995 10 17 | 691 | 0.1− | 0.0 | 2003 12 21 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.7− |
| 1995 10 17 | 691 | 0.0 | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.9− | 0.8+ |
| 1995 10 17 | 691 | 0.2+ | 0.1+ | 2006 08 16 | 644 | 0.6− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.3+ |
| 1995 10 28 | 691 | 0.2+ | 0.0 | 2006 08 16 | 644 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 1.0+ | 0.3− |
| 1995 10 28 | 691 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.7+ |
| 1995 10 28 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 699 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.6+ |
| 2001 04 16 | 645 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.1− | 1.1+ | 2006 10 10 | 644 | 0.4− | 0.4+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 08 27 | 699 | 1.4− | 1.2+ | 2006 10 10 | 644 | 0.6− | 0.6+ |
| 2003 12 19 | 691 | 0.6+ | 0.1− | 2006 09 14 | 703 | 0.5− | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.6+ |
| 2003 12 21 | 291 | 1.0− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 1.3+ | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2003 12 21 | 291 | 0.5− | 0.1+ | 2006 09 22 | 704 | 0.6− | 1.0+ | | | | |

**2006 QZ$_{126}$ = 1999 RD$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.59404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28340978 | $\omega$ | 34.51532 | | +0.92094261 | −0.37656846 | |
| $a$ | 2.2954059 | $\Omega$ | 346.46010 | | +0.18313123 | +0.64539621 | |
| $e$ | 0.1756041 | $i$ | 25.36768 | | +0.34398787 | +0.66457500 | |
| $P$ | 3.48 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.2− | 0.2+ | 2006 09 01 | 704 | 0.2+ | 0.1− | 2006 09 22 | 703 | 0.8− | 0.3+ |
| 1999 09 07 | 704 | 0.4− | 0.3+ | 2006 09 01 | 704 | 0.0 | 0.6− | 2006 09 22 | 703 | 0.1− | 0.3− |
| 1999 09 07 | 704 | 0.3+ | 0.7+ | 2006 09 01 | 704 | (0.0 | 3.2−) | 2006 09 22 | 703 | 0.5− | 0.1+ |
| 1999 09 07 | 704 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 1.5+ | 0.5− | 2006 09 22 | 703 | 0.3− | 0.6− |
| 1999 09 09 | 704 | 0.4− | 0.7− | 2006 09 12 | 703 | 0.1+ | 0.5− | 2006 09 29 | 699 | 0.6+ | 0.2+ |
| 1999 09 09 | 704 | 0.7− | 0.2+ | 2006 09 12 | 703 | 0.8− | 0.7− | 2006 09 29 | 699 | (0.4+ | 1.8−) |
| 1999 09 09 | 704 | 0.4− | 0.4− | 2006 09 12 | 703 | 0.7− | 0.1+ | 2006 09 29 | 699 | 0.0 | 0.2− |
| 1999 10 13 | 645 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.9+ | 0.1+ | 2006 09 29 | 699 | 1.4− | 0.1+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.8+ | 1.4+ | 2006 10 11 | 644 | 0.4− | 0.1− |
| 2006 08 16 | 644 | 0.6− | 0.3− | 2006 09 15 | 704 | 0.1− | 1.3+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 15 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 09 20 | 699 | 0.7+ | 1.1+ | 2006 10 17 | 703 | 0.5− | 0.5− |
| 2006 08 22 | 644 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.6− | 0.5− | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2006 08 22 | 644 | 0.3+ | 0.4− | 2006 09 20 | 699 | 0.9+ | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.3+ |
| 2006 08 22 | 644 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.5+ | 0.3+ | 2006 10 17 | 703 | (1.8− | 0.2+) |

**2006 QD$_{128}$ = 2002 XG$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.71119 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19252760 | $\omega$ | 157.22126 | | +0.38193113 | −0.90912441 | |
| $a$ | 2.9703484 | $\Omega$ | 269.99116 | | +0.82027495 | +0.41630666 | |
| $e$ | 0.0479439 | $i$ | 9.56677 | | +0.42576709 | +0.01347447 | |
| $P$ | 5.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.2+ | 0.4+ | 2002 12 10 | 704 | 1.2+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.3− |
| 2001 09 16 | 704 | 0.4− | 0.2− | 2002 12 10 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 691 | 0.1+ | 0.1− |
| 2001 09 16 | 704 | 1.5+ | 0.1+ | 2002 12 10 | 704 | 0.4− | 0.2− | 2006 09 16 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.3+ | 0.5− | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.1− |
| 2001 09 25 | 704 | 0.5+ | 0.5− | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2001 09 25 | 704 | 0.1− | 0.9− | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 09 20 | 691 | 0.1− | 0.2+ |
| 2001 09 25 | 704 | 1.3− | 0.3+ | 2006 08 30 | 699 | 0.4+ | 0.7+ | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.3− | 2006 08 30 | 699 | 0.9+ | 1.1+ | 2006 09 22 | 691 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.2− | 0.1− | 2006 09 22 | 691 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.6+ | 2006 08 30 | 699 | 0.9− | 0.4− | 2006 09 22 | 691 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.5− | 0.4+ | 2006 09 14 | 691 | 0.2− | 0.0 | | | | |
| 2002 12 10 | 704 | 1.1− | 0.2− | 2006 09 14 | 691 | 0.1− | 0.2− | | | | |

**2006 QG$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.98651 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17998673 | $\omega$ | 76.99889 | | +0.83226252 | +0.53744139 | |
| $a$ | 3.1067697 | $\Omega$ | 250.34046 | | −0.54795112 | +0.76021556 | |
| $e$ | 0.1111086 | $i$ | 8.30357 | | −0.08419421 | +0.36500556 | |
| $P$ | 5.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1− | 0.1+ | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.3− |
| 1995 09 18 | 691 | 0.3+ | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.2− |
| 1995 09 18 | 691 | 0.3− | 0.2+ | 2006 08 17 | 644 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 2001 09 28 | 644 | 0.2− | 0.2− | 2006 08 28 | 703 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.1− |
| 2001 09 28 | 644 | 0.1+ | 0.8+ | 2006 08 28 | 703 | 1.2− | 1.0− | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2001 09 28 | 644 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2006 05 25 | G96 | 0.6− | 0.4+ | 2006 08 28 | 703 | 1.2− | 0.9− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2006 05 25 | G96 | 0.2+ | 0.4+ | 2006 09 22 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.4+ | 0.2+ |
| 2006 05 25 | G96 | 0.3− | 0.6+ | 2006 09 22 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2006 05 25 | G96 | 0.4+ | 0.2+ | 2006 09 22 | 691 | 0.1− | 0.3− | | | | |

**2006 QQ$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.93195 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27717564 | $\omega$ | 253.04486 | | +0.58741036 | +0.80387870 | |
| $a$ | 2.3296965 | $\Omega$ | 53.29933 | | −0.69109740 | +0.55833761 | |
| $e$ | 0.1182238 | $i$ | 6.69146 | | −0.42110980 | +0.20503206 | |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 08 | 704 | 0.1+ | 0.6+ | 2003 11 26 | 704 | 0.2− | 0.9+ | 2006 08 28 | E12 | 0.4− | 0.5+ |
| 2002 06 08 | 704 | (0.8+ | 2.0+) | 2003 12 19 | 691 | 0.0 | 0.0 | 2006 08 28 | E12 | 0.0 | 0.6+ |
| 2002 06 08 | 704 | 0.3+ | 0.8+ | 2003 12 19 | 691 | 0.2− | 0.0 | 2006 09 17 | 699 | (0.8− | 1.9+) |
| 2002 06 08 | 704 | 0.2+ | 0.7+ | 2003 12 19 | 691 | 0.0 | 0.1− | 2006 09 17 | 699 | (1.6+ | 1.3−) |
| 2003 10 27 | 691 | 0.1− | 0.2+ | 2005 03 13 | 152 | 1.3+ | 0.2− | 2006 09 17 | 699 | 0.9+ | 1.1+ |
| 2003 10 27 | 691 | 0.3+ | 0.2+ | 2005 03 13 | 152 | (7.1− | 0.3+) | 2006 09 17 | 699 | 1.3− | 1.4− |
| 2003 10 27 | 691 | 0.1− | 0.1− | 2005 04 16 | 691 | 0.0 | 0.5+ | 2006 09 20 | 703 | 0.0 | 0.4+ |
| 2003 11 21 | 704 | 1.2+ | 0.4+ | 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 09 20 | 703 | (0.4+ | 2.0+) |
| 2003 11 21 | 704 | 0.8− | 0.8− | 2005 04 16 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 703 | 0.7+ | 0.2+ |
| 2003 11 21 | 704 | 0.2+ | 0.2+ | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 09 20 | 703 | 0.4− | 0.6− |
| 2003 11 21 | 704 | 0.1− | 0.9+ | 2006 08 17 | 644 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.6− | 0.2− |
| 2003 11 21 | 704 | 0.5− | 0.4+ | 2006 08 17 | 644 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.5+ | 0.1− |
| 2003 11 26 | 704 | 0.1− | 0.7+ | 2006 08 28 | E12 | 0.5+ | 0.0 | 2006 09 26 | 703 | 0.9− | 1.3+ |
| 2003 11 26 | 704 | 0.6− | 0.5+ | 2006 08 28 | E12 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.7+ | 0.7+ |

**2006 QU$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.67681 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26812650 | $\omega$ | 212.42495 | | +0.95224548 | −0.30515250 | |
| $a$ | 2.3818234 | $\Omega$ | 165.33131 | | +0.28824659 | +0.88706786 | |
| $e$ | 0.2428601 | $i$ | 2.37915 | | +0.10070976 | +0.34639943 | |
| $P$ | 3.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.1+ | 2006 09 28 | 704 | 0.7+ | 0.2+ |
| 2004 01 30 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.1+ | 2006 09 28 | 704 | 0.6− | 0.3− |
| 2004 01 30 | 691 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 09 28 | 704 | 0.3+ | 0.1− |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.7− |
| 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.1− | 2006 09 30 | 704 | 0.4+ | 0.5+ |
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2006 09 22 | D35 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.4− | 0.1+ |
| 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 22 | D35 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.2− | 1.0+ |
| 2006 08 17 | 644 | 0.5+ | 0.4+ | 2006 09 22 | D35 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2006 08 17 | 644 | 0.2+ | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2006 08 27 | 699 | 0.8+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2006 08 27 | 699 | 0.3+ | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2006 08 27 | 699 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.8− |
| 2006 08 27 | 699 | 1.0+ | 0.7+ | 2006 09 25 | 699 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.2− | 0.7− |
| 2006 09 12 | 703 | 1.1− | 0.0 | 2006 09 25 | 699 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.5− |
| 2006 09 12 | 703 | 0.5+ | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2006 09 12 | 703 | 0.1− | 0.5− | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 11 10 | 704 | 0.1+ | 0.6− |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.5+ | 0.0 | 2006 11 10 | 704 | 0.8− | 0.4− |
| 2006 09 17 | 704 | (0.1+ | 2.1+) | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 11 10 | 704 | 0.0 | 1.0+ |
| 2006 09 17 | 704 | 0.2+ | 1.0+ | 2006 09 26 | 704 | 0.5− | 0.1− | 2006 11 10 | 704 | 0.6+ | 0.6+ |
| 2006 09 17 | 704 | 0.4− | 1.2+ | 2006 09 26 | G96 | 0.5+ | 0.5− | 2006 11 11 | 703 | (0.1− | 1.6−) |
| 2006 09 17 | 704 | 0.8+ | 1.0+ | 2006 09 26 | 704 | 0.5+ | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.5− |
| 2006 09 17 | 704 | 0.3− | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.7+ | 0.6− |
| 2006 09 19 | 699 | 0.1− | 1.0− | 2006 09 26 | G96 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.7+ | 0.9− |
| 2006 09 19 | 699 | 0.4+ | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 19 | 699 | 1.1+ | 1.0+ | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 09 20 | 704 | 0.6− | 0.3+ | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2006 09 20 | 644 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.0 | 0.3+ | | | | |

**2006 QW$_{128}$ = 1999 TY$_{239}$ = 2003 YD$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.06224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27025595 | $\omega$ | 286.17851 | | +0.45836320 | −0.88664266 | |
| $a$ | 2.3692954 | $\Omega$ | 136.37044 | | +0.84563525 | +0.41382437 | |
| $e$ | 0.1343435 | $i$ | 5.10394 | | +0.27350358 | +0.20643201 | |
| $P$ | 3.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.1+ | 0.3− | 2003 12 19 | 704 | 0.3− | 0.0 | 2006 08 28 | 699 | 0.4+ | 0.6+ |
| 1995 07 24 | 691 | 0.0 | 0.2− | 2003 12 19 | 704 | 0.4+ | 0.9− | 2006 08 28 | 699 | 1.1+ | 0.4+ |
| 1995 07 24 | 691 | 0.0 | 0.1− | 2003 12 19 | 704 | 0.5− | 0.1− | 2006 08 28 | 699 | 0.0 | 0.5+ |
| 1999 10 04 | 703 | 0.6− | 0.3+ | 2003 12 19 | 704 | 0.4+ | 0.5− | 2006 09 14 | 644 | 0.2+ | 0.2+ |
| 1999 10 04 | 703 | 1.3+ | 0.4+ | 2003 12 19 | 704 | 0.3+ | 0.7− | 2006 09 14 | 703 | 0.4+ | 1.2− |
| 1999 10 04 | 703 | 0.4+ | 0.2− | 2003 12 22 | 704 | 0.5+ | 0.3+ | 2006 09 14 | 703 | 0.7− | 0.3− |
| 1999 10 04 | 703 | 1.7− | 0.2+ | 2003 12 22 | 704 | 0.5− | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.2− |
| 1999 10 09 | 704 | 0.2+ | 0.3− | 2003 12 22 | 704 | 0.5− | 0.1+ | 2006 09 14 | 703 | 1.1− | 0.4− |
| 1999 10 09 | 704 | 0.5+ | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.4− |
| 1999 10 09 | 704 | 0.5− | 0.2+ | 2006 08 17 | 644 | 0.2+ | 0.4+ | 2006 09 14 | 644 | 0.2+ | 0.4+ |
| 1999 10 09 | 704 | 0.7− | 0.4+ | 2006 08 17 | 644 | 0.3− | 0.3+ | | | | |
| 1999 10 09 | 704 | 0.8+ | 0.2+ | 2006 08 28 | 699 | 0.0 | 0.4− | | | | |

**2006 QC$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.37110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17546704 | $\omega$ | 106.03997 | | −0.67751673 | +0.68382862 | |
| $a$ | 3.1598927 | $\Omega$ | 118.03452 | | −0.73550301 | −0.63117587 | |
| $e$ | 0.0894095 | $i$ | 17.86851 | | +0.00253082 | −0.36605388 | |
| $P$ | 5.62 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 704 | 1.3− | 1.0− | 2004 02 16 | 704 | 0.0 | 0.9+ | 2006 08 17 | 644 | 0.3− | 0.5+ |
| 1999 05 17 | 704 | (2.5− | 1.5−) | 2004 04 14 | 644 | 0.0 | 0.3+ | 2006 08 17 | 644 | 0.1− | 0.3+ |
| 1999 05 17 | 704 | 1.1+ | 1.1− | 2004 04 14 | 644 | 0.2+ | 0.0 | 2006 08 17 | 644 | 0.6− | 0.2+ |
| 1999 05 17 | 704 | (3.4− | 2.3+) | 2004 04 14 | 644 | 0.1+ | 0.3+ | 2006 08 18 | 644 | 0.3+ | 0.4+ |
| 1999 06 12 | 704 | 0.1− | 0.8+ | 2004 04 14 | 644 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.2+ | 0.4+ |
| 1999 06 12 | 704 | 0.1+ | 0.0 | 2004 04 14 | 644 | 0.0 | 0.3+ | 2006 08 18 | 644 | 0.0 | 0.4+ |
| 1999 06 12 | 704 | 0.1− | 0.7− | 2004 04 14 | 644 | 0.3+ | 0.0 | 2006 08 28 | E12 | 0.2+ | 0.4+ |
| 1999 06 12 | 704 | 0.1− | 0.7+ | 2004 04 14 | 703 | 0.2− | 0.4+ | 2006 08 28 | E12 | 0.1− | 0.2+ |
| 2003 12 25 | 645 | 0.0 | 0.1− | 2004 04 14 | 703 | 0.4− | 0.4+ | 2006 08 28 | E12 | 0.4+ | 0.5+ |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2004 04 14 | 703 | 0.3+ | 1.4+ | 2006 08 28 | E12 | 0.2+ | 1.1+ |
| 2004 02 16 | 704 | 0.4+ | 0.1+ | 2004 04 14 | 703 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.4− | 0.6− |
| 2004 02 16 | 704 | 0.4+ | 0.8+ | 2005 05 14 | 704 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.9− |
| 2004 02 16 | 704 | 0.6+ | 0.9+ | 2005 05 14 | 704 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.8+ | 0.2+ |
| 2004 02 16 | 704 | 0.5+ | 0.3+ | 2005 05 14 | 704 | 0.7− | 0.0 | 2006 09 26 | 703 | 0.9− | 0.2− |

**2006 QD$_{129}$ = 2002 GD$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.75240 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29768645 | $\omega$ | 273.76736 | | −0.06540484 | +0.99764538 | |
| $a$ | 2.2214165 | $\Omega$ | 352.38983 | | −0.84247975 | −0.06629187 | |
| $e$ | 0.1455844 | $i$ | 8.96521 | | −0.53474299 | −0.01758093 | |
| $P$ | 3.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.2− | 0.6− | 2002 04 30 | 644 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.7+ | 1.2+ |
| 2002 04 14 | 704 | 0.5+ | 0.2− | 2002 04 30 | 644 | 0.5+ | 0.1+ | 2006 09 17 | 704 | 0.1+ | 1.1+ |
| 2002 04 14 | 704 | 1.3− | 0.7+ | 2002 04 30 | 644 | 0.6+ | 0.3+ | 2006 09 18 | 699 | (2.1+ | 0.5+) |
| 2002 04 14 | 704 | 0.3+ | 1.2− | 2006 08 17 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.8+ | 0.1+ |
| 2002 04 14 | 704 | 0.3+ | 0.5− | 2006 08 17 | 644 | 0.5− | 0.0 | 2006 09 18 | 699 | 1.0− | 0.3− |
| 2002 04 16 | 704 | 0.7− | 0.3+ | 2006 08 17 | 644 | 0.2+ | 0.2− | 2006 09 18 | 699 | (1.5+ | 0.4+) |
| 2002 04 16 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 1.4+ | 1.3− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2002 04 16 | 704 | 0.7− | 0.7− | 2006 08 28 | 703 | 0.7− | 0.7− | 2006 09 26 | G96 | 0.3− | 0.0 |
| 2002 04 16 | 704 | 0.3+ | 1.4+ | 2006 08 28 | 703 | 0.4+ | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2002 04 16 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.5− | 0.1− |
| 2002 04 17 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2002 04 17 | 704 | 0.8− | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2002 04 17 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | (1.6− | 0.1+) | 2006 10 16 | G96 | 0.1+ | 0.1+ |
| 2002 04 17 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 10 16 | G96 | 0.5+ | 0.0 |
| 2002 04 17 | 704 | 0.4+ | 0.7+ | 2006 09 14 | 703 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2002 04 17 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2002 04 17 | 704 | 0.6+ | 0.5− | 2006 09 14 | 703 | 0.3− | 0.7+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 04 17 | 704 | 0.0 | 1.2− | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 04 17 | 704 | 0.3+ | 0.4− | 2006 09 17 | 704 | 0.6+ | 0.5+ | | | | |
| 2002 04 17 | 704 | 0.3− | 0.3− | 2006 09 17 | 704 | 0.2− | 0.4+ | | | | |

**2006 QE$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.57001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25726418 | $\omega$ | 331.13703 | | +0.99506002 | −0.09363087 | |
| $a$ | 2.4484045 | $\Omega$ | 34.28424 | | +0.09855815 | +0.89183139 | |
| $e$ | 0.1900077 | $i$ | 3.35823 | | +0.01191013 | +0.44257206 | |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.6− | 0.2+ | 2006 08 27 | 699 | 0.3− | 0.2+ | 2006 09 30 | 703 | 1.2+ | 0.4+ |
| 2002 07 15 | 644 | 0.2− | 0.2+ | 2006 08 27 | 699 | 1.1− | 0.7− | 2006 09 30 | 703 | 0.6+ | 1.1− |
| 2002 07 15 | 644 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.6− | 0.2− |
| 2002 08 13 | 644 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.6+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.7− |
| 2002 08 13 | 704 | 1.1+ | 0.6− | 2006 09 14 | 703 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2002 08 13 | 704 | 0.8+ | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2002 08 13 | 704 | 0.2− | 0.5− | 2006 09 19 | 699 | 0.4+ | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2002 08 13 | 704 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2002 08 13 | 644 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 11 15 | G96 | 0.3+ | 0.5+ |
| 2002 08 13 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | (0.5+ | 1.8+) | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2002 08 13 | 644 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.1+ | 1.5+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.3+ | 1.0+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.7+ | 1.5+ | 2006 11 17 | G96 | 0.3− | 0.5− |
| 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.4− | 1.1− | 2006 11 17 | G96 | 0.3+ | 0.6− |
| 2006 08 17 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 1.1− | 1.2+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 08 27 | 699 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.8− | 0.5+ | | | | |
| 2006 08 27 | 699 | (1.6+ | 0.3+) | 2006 09 26 | 704 | 0.9− | 1.2+ | | | | |

**2006 QG$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.47906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17882709 | $\omega$ | 165.69163 | | +0.69996291 | +0.69524440 | |
| $a$ | 3.1201862 | $\Omega$ | 148.21960 | | −0.68195399 | +0.71859434 | |
| $e$ | 0.1831116 | $i$ | 18.07020 | | −0.21211006 | −0.01604349 | |
| $P$ | 5.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 15 | 703 | (2.6+ | 1.0+) | 2006 08 17 | 644 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.7+ | 0.4+ |
| 2005 04 15 | 703 | 1.0+ | 0.4− | 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.5− |
| 2005 04 15 | 703 | 0.8− | 0.2+ | 2006 08 30 | 699 | 0.4+ | 0.5+ | 2006 09 20 | 703 | 0.2+ | 0.9− |
| 2005 04 15 | 703 | 0.3− | 0.7+ | 2006 08 30 | 699 | 0.6+ | 0.0 | 2006 09 20 | 703 | 0.0 | 0.2+ |
| 2005 05 09 | 703 | 0.2− | 0.2+ | 2006 08 30 | 699 | 0.7+ | 0.1− | 2006 09 21 | 699 | 0.0 | 0.2+ |
| 2005 05 09 | 703 | 0.3− | 0.6+ | 2006 08 30 | 699 | 0.3+ | 0.7+ | 2006 09 21 | 699 | 0.6− | 0.4+ |
| 2005 05 09 | 703 | 0.2− | 0.5− | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.4+ |
| 2005 05 09 | 703 | 0.9− | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.2− |
| 2005 06 01 | 704 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2005 06 01 | 704 | 0.8+ | 0.1− | 2006 09 14 | 703 | 0.2− | 0.8− | 2006 09 26 | 703 | 0.0 | 0.7− |
| 2005 06 01 | 704 | 1.0+ | 0.3− | 2006 09 14 | 703 | (1.7− | 1.6−) | 2006 09 26 | 703 | 0.3− | 0.3− |
| 2005 06 07 | 703 | 0.1− | 1.1− | 2006 09 14 | 703 | (0.3− | 1.8−) | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2005 06 07 | 703 | 0.6− | 0.0 | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 07 | 703 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.4+ | 0.0 |
| 2005 06 07 | 703 | 0.1− | 0.5+ | 2006 09 19 | 703 | 1.0− | 0.1+ | | | | |
| 2006 08 17 | 644 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.6− | 0.6+ | | | | |

**2006 QO$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 89.69860 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28012602 | $\omega$ | 234.41650 | | −0.41916340 | | +0.90759576 | | |
| $a$ | 2.3133095 | $\Omega$ | 10.87977 | | −0.78661920 | | −0.34988609 | | |
| $e$ | 0.2426635 | $i$ | 7.27939 | | −0.45335668 | | −0.23205528 | | |
| $P$ | 3.52 | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.2+ | 0.2− | 2005 03 09 | 703 | 1.2− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2003 11 19 | 691 | 0.4− | 0.9+ | 2006 08 18 | 699 | 0.3+ | 1.4+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2003 11 19 | 691 | 0.1+ | 0.5− | 2006 08 18 | 699 | (1.9+ | 0.4−) | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2005 02 01 | 644 | 0.2+ | 0.3− | 2006 08 18 | 699 | 0.6− | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2005 02 01 | 644 | 0.8+ | 0.2− | 2006 08 18 | 699 | (0.6+ | 2.3+) | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2005 02 01 | 644 | 0.5+ | 0.0 | 2006 08 28 | 703 | 0.5− | 1.4− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2005 03 01 | 703 | 0.7− | 0.1− | 2006 08 28 | 703 | 0.2− | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2005 03 01 | 703 | 0.1− | 0.3− | 2006 08 28 | 703 | 0.7− | 0.6− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2005 03 01 | 703 | 0.3− | 0.3− | 2006 08 28 | 703 | 0.8+ | 0.6− | 2006 10 27 | G96 | 0.1− | 0.7− |
| 2005 03 01 | 703 | 0.3+ | 0.2− | 2006 09 18 | 699 | 0.7+ | 1.1+ | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2005 03 09 | 703 | 1.3+ | 0.7+ | 2006 09 18 | 699 | 1.3− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2005 03 09 | 703 | 0.4− | 0.6− | 2006 09 18 | 699 | 0.3− | 0.3− | | | | |
| 2005 03 09 | 703 | 0.7− | 0.1− | 2006 09 18 | 699 | 1.3+ | 0.1+ | | | | |

**2006 QV$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 212.29674 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22024281 | $\omega$ | 334.37830 | | −0.53493350 | | −0.84215001 | | |
| $a$ | 2.7156152 | $\Omega$ | 147.83317 | | +0.79549845 | | −0.52915538 | | |
| $e$ | 0.0114158 | $i$ | 7.34264 | | +0.28465482 | | −0.10381686 | | |
| $P$ | 4.48 | $H$ | 15.8 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.4+ | 1.9+ | 2005 05 14 | 704 | 0.2+ | 1.1+ |
| 2000 03 11 | 699 | 0.7+ | 0.3+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2005 05 14 | 704 | (2.2+ | 0.5+) |
| 2000 03 11 | 699 | 0.7− | 0.2+ | 2004 02 17 | 645 | 0.1− | 0.0 | 2006 08 19 | 699 | 0.2+ | 1.5+ |
| 2000 03 11 | 699 | 0.2+ | 0.5+ | 2005 05 06 | 703 | 0.6− | 0.0 | 2006 08 19 | 699 | 0.4− | 0.5+ |
| 2004 01 17 | 691 | 0.0 | 0.4+ | 2005 05 06 | 703 | 0.5− | 1.0− | 2006 08 19 | 699 | 0.8− | 0.1+ |
| 2004 01 17 | 691 | 0.1+ | 0.4+ | 2005 05 06 | 703 | 0.0 | 1.0+ | 2006 08 19 | 699 | 0.5− | 0.4+ |
| 2004 01 17 | 691 | 0.2+ | 0.6+ | 2005 05 06 | 703 | (2.5− | 2.6−) | 2006 08 27 | 691 | 0.4− | 0.4+ |
| 2004 01 18 | 644 | 0.3+ | 0.8+ | 2005 05 11 | 703 | 1.6+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2004 01 18 | 644 | 0.1+ | 0.8+ | 2005 05 11 | 703 | 0.3+ | 0.0 | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2004 01 18 | 644 | 0.3+ | 0.5+ | 2005 05 11 | 703 | 0.2− | 0.5+ | 2006 08 29 | 704 | 0.0 | 1.8+ |
| 2004 01 30 | 704 | 0.3+ | 0.3+ | 2005 05 11 | 703 | 0.3+ | 0.8+ | 2006 08 29 | 704 | 0.1− | 1.7+ |
| 2004 01 30 | 704 | 0.4+ | 0.4+ | 2005 05 14 | 704 | 0.3+ | 1.8+ | 2006 08 29 | 704 | 0.6+ | 0.4+ |

**2006 QG$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 24.90561 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17700812 | $\omega$ | 198.77842 | | +0.70471006 | | +0.68929932 | | |
| $a$ | 3.1415255 | $\Omega$ | 116.44298 | | −0.62454718 | | +0.71507854 | | |
| $e$ | 0.1468748 | $i$ | 10.81960 | | −0.33663712 | | +0.11631480 | | |
| $P$ | 5.57 | $H$ | 15.4 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 23 | 704 | 0.1− | 0.4+ | 2006 08 19 | 644 | 0.2− | 0.3− | 2006 09 21 | 699 | (1.7− | 0.4+) |
| 2000 07 23 | 704 | 0.1− | 0.0 | 2006 08 19 | 644 | 0.1+ | 0.2+ | 2006 09 21 | 699 | (2.5− | 1.0−) |
| 2000 07 23 | 704 | 0.2+ | 0.9+ | 2006 08 19 | 644 | 0.1− | 0.0 | 2006 09 21 | 699 | (1.7− | 0.4+) |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2006 08 30 | 699 | (2.1− | 1.1+) | 2006 09 26 | 703 | 0.4+ | 0.8− |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.5− | 0.7+ | 2006 09 26 | 703 | 0.6− | 0.8− |
| 2005 05 20 | G96 | 0.1− | 0.0 | 2006 08 30 | 699 | 0.4+ | 1.1+ | 2006 09 26 | 703 | 0.8+ | 0.2− |
| 2005 05 20 | G96 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.6− |
| 2005 05 20 | G96 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.5− | 0.2− |
| 2005 05 20 | G96 | 0.3− | 0.1+ | 2006 09 20 | 703 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2005 06 29 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.6− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2005 06 29 | 644 | 0.0 | 0.3+ | 2006 09 20 | 703 | 1.4+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2005 06 29 | 644 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.1+ | 0.0 | | | | |

**2006 QN$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 87.89290 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28623074 | $\omega$ | 143.70342 | | −0.54555625 | | +0.82906279 | | |
| $a$ | 2.2802993 | $\Omega$ | 92.92781 | | −0.79492258 | | −0.46557776 | | |
| $e$ | 0.0879244 | $i$ | 7.04966 | | −0.26545520 | | −0.30966472 | | |
| $P$ | 3.44 | $H$ | 17.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.5+ | 0.4− | 2002 05 07 | 644 | 0.4− | 0.1+ | 2005 03 09 | 703 | 0.3+ | 0.8+ |
| 1993 12 14 | 691 | 0.4− | 0.2+ | 2002 05 07 | 644 | 0.1− | 0.2+ | 2005 03 09 | 703 | 0.3+ | 1.3+ |
| 1993 12 14 | 691 | 0.1− | 1.3− | 2003 09 27 | 645 | 0.1+ | 0.0 | 2005 03 09 | 703 | 0.8− | 0.2+ |
| 1995 03 07 | 691 | 0.5− | 0.7− | 2003 09 27 | 645 | 0.1+ | 0.1− | 2005 03 09 | 703 | 0.2− | 1.5+ |
| 1995 03 07 | 691 | 0.8− | 1.3− | 2003 09 30 | 645 | 0.1+ | 0.0 | 2006 08 20 | 644 | 0.3+ | 0.3− |
| 1995 03 07 | 691 | 0.2− | 1.2− | 2003 09 30 | 645 | 0.0 | 0.0 | 2006 08 20 | 644 | 0.3+ | 0.4− |
| 2002 05 07 | 699 | 1.2+ | 0.0 | 2003 10 20 | 691 | 0.1− | 0.0 | 2006 08 20 | 644 | 0.6+ | 0.6− |
| 2002 05 07 | 699 | 0.8+ | 0.3− | 2003 10 20 | 691 | 0.2− | 0.4+ | 2006 08 28 | E12 | 1.1− | 1.4− |
| 2002 05 07 | 699 | 0.7− | 1.5+ | 2003 10 20 | 691 | 0.1− | 0.2+ | 2006 08 28 | E12 | 0.3− | 0.1− |
| 2002 05 07 | 699 | 1.6+ | 0.2+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 08 28 | E12 | 0.3− | 1.2− |
| 2002 05 07 | 644 | 0.1− | 0.4+ | 2003 10 23 | 645 | 0.0 | 0.0 | 2006 08 28 | E12 | 0.2− | 1.5− |

**2006 QD$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 23.59211 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26397941 | $\omega$ | 133.02341 | | +0.80206136 | | +0.59630253 | | |
| $a$ | 2.4067040 | $\Omega$ | 190.52164 | | −0.58729728 | | +0.77727965 | | |
| $e$ | 0.2816961 | $i$ | 10.56443 | | −0.10853329 | | +0.20064804 | | |
| $P$ | 3.73 | $H$ | 17.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 22 | 645 | 0.0 | 0.3+ | 2006 08 31 | 704 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.1+ |
| 2001 02 22 | 645 | 0.1+ | 0.3+ | 2006 08 31 | 704 | 1.0− | 0.6− | 2006 09 27 | 704 | 0.4+ | 0.1+ |
| 2002 07 11 | 704 | 0.4− | 0.1− | 2006 09 15 | 704 | 0.4+ | 0.8− | 2006 09 29 | 704 | 0.6+ | 1.2+ |
| 2002 07 11 | 704 | 0.2− | 0.8+ | 2006 09 15 | 704 | 0.4− | 0.1− | 2006 09 29 | 704 | 0.0 | 1.0+ |
| 2002 07 11 | 704 | 0.1− | 1.0+ | 2006 09 15 | 704 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.0 | 1.2− |
| 2002 07 11 | 704 | 0.0 | 0.7+ | 2006 09 15 | 704 | 0.4− | 0.6+ | 2006 09 29 | 704 | 0.5− | 1.1− |
| 2002 07 18 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 0.1− | 0.6− | 2006 09 29 | 704 | (1.7− | 1.2+) |
| 2002 07 18 | 704 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.6+ | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.4− |
| 2002 07 18 | 704 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 0.1+ | 0.8− | 2006 10 01 | 704 | 0.6+ | 0.5− |
| 2002 07 18 | 704 | 0.1+ | 0.4− | 2006 09 17 | 704 | 0.4+ | 0.5− | 2006 10 01 | 704 | 0.6− | 0.7+ |
| 2005 04 12 | G96 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.9+ | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.2+ |
| 2005 04 12 | G96 | 0.9− | 0.7− | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 01 | 704 | 0.2+ | 1.1+ |
| 2005 04 12 | G96 | 0.5+ | 0.1− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 16 | 106 | 0.2− | 0.4− |
| 2005 04 12 | G96 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.4− | 0.4+ | 2006 10 16 | 106 | 0.6− | 0.2+ |
| 2005 04 12 | 695 | 0.5+ | 0.1+ | 2006 09 18 | 704 | 0.0 | 1.3− | 2006 10 16 | 106 | 0.1+ | 0.6+ |
| 2005 04 12 | 695 | 0.6+ | 0.0 | 2006 09 18 | 704 | 1.2+ | 0.4− | 2006 10 16 | 106 | 0.7− | 0.5+ |
| 2006 08 20 | 644 | 0.4− | 0.5+ | 2006 09 18 | 704 | 0.1+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 08 20 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 08 20 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2006 08 29 | 699 | 0.6− | 0.8− | 2006 09 19 | 699 | 0.5− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2006 08 29 | 699 | 0.0 | 1.0+ | 2006 09 19 | 699 | 0.3− | 0.9+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2006 08 29 | 699 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2006 08 29 | 699 | 1.0+ | 0.4+ | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2006 08 31 | 704 | 0.9+ | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.9+ | | | | |

**2006 QG$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.31079 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23726589 | $\omega$ | 73.21273 | | +0.41922174 | | +0.90643844 |
| $a$ | 2.5841190 | $\Omega$ | 221.69208 | | −0.85953815 | | +0.37810461 |
| $e$ | 0.1011430 | $i$ | 4.41576 | | −0.29231369 | | +0.18816552 |
| $P$ | 4.15 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 06 | 704 | 0.7+ | 0.5− | 2005 05 12 | G96 | 0.1+ | 0.4− | 2006 09 14 | 703 | 1.2− | 0.7+ |
| 2002 09 06 | 704 | 1.2− | 0.3+ | 2005 05 12 | G96 | 0.2− | 0.4− | 2006 09 14 | 703 | 1.2− | 0.0 |
| 2002 09 06 | 704 | 0.0 | 0.3+ | 2005 05 12 | G96 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.6+ | 0.2− |
| 2002 09 06 | 704 | 0.2− | 0.1+ | 2005 05 12 | G96 | 0.1− | 0.3− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.2+ | 0.2+ | 2006 08 21 | 644 | 0.4− | 0.4− | 2006 09 17 | 691 | 0.2− | 0.5− |
| 2002 09 13 | 644 | 0.0 | 0.6+ | 2006 08 21 | 644 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.2− | 0.5+ | 2006 08 21 | 644 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2002 10 05 | 645 | 0.1+ | 0.1− | 2006 08 30 | 704 | (1.6+ | 0.3−) | 2006 09 19 | 691 | 0.4− | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 08 30 | 704 | 0.2− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2005 03 14 | G96 | 0.2− | 0.2− | 2006 08 30 | 704 | 1.2+ | 0.8+ | 2006 09 26 | 691 | 0.4− | 0.6− |
| 2005 03 14 | G96 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.3+ | 0.8− | 2006 09 26 | 691 | 0.6+ | 0.9+ |
| 2005 03 14 | G96 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.3+ | | | | |
| 2005 03 14 | G96 | 0.4+ | 0.3− | 2006 09 14 | 703 | 0.8+ | 0.7+ | | | | |

**2006 QH$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.03699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27585684 | $\omega$ | 284.23623 | | +0.67412767 | | +0.73516632 |
| $a$ | 2.3371157 | $\Omega$ | 28.55351 | | −0.60705164 | | +0.60644776 |
| $e$ | 0.2093672 | $i$ | 8.57768 | | −0.42076144 | | +0.30290526 |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 704 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.3+ | 2006 09 27 | 291 | 0.2+ | 0.0 |
| 1999 10 15 | 704 | 0.3− | 0.2+ | 2006 09 21 | 699 | 0.7+ | 0.0 | 2006 09 27 | 291 | 0.1+ | 0.1+ |
| 1999 10 15 | 704 | 0.4− | 0.0 | 2006 09 21 | 699 | 0.9− | 0.0 | 2006 10 02 | 703 | 0.7+ | 0.2+ |
| 1999 10 15 | 704 | 0.2+ | 0.1− | 2006 09 21 | 699 | 0.4+ | 0.0 | 2006 10 02 | 703 | (1.4+ | 1.7+) |
| 1999 10 15 | 704 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.4+ | 0.1+ | 2006 10 02 | 703 | (2.0+ | 1.3+) |
| 1999 11 09 | 704 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.6− | 0.2− | 2006 10 02 | 703 | 0.7+ | 1.2+ |
| 1999 11 09 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1999 11 09 | 704 | 0.1− | 0.7− | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.4− |
| 1999 11 09 | 704 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2006 07 31 | E12 | 0.4− | 0.0 | 2006 09 26 | 704 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2006 07 31 | E12 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2006 07 31 | E12 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2006 07 31 | E12 | 0.2− | 0.7+ | 2006 09 26 | 703 | 0.8− | 0.2− | 2006 10 19 | 703 | 0.0 | 0.6− |
| 2006 08 21 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.2− | 1.3+ | 2006 10 19 | 703 | 0.8− | 0.7− |
| 2006 08 21 | 644 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.9+ |
| 2006 08 21 | 644 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.2− | 0.2− | 2006 10 19 | 703 | (1.6+ | 2.6−) |
| 2006 08 30 | 699 | 0.5+ | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.2− |
| 2006 08 30 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 703 | (1.4+ | 2.2+) | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2006 08 30 | 699 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2006 09 02 | 428 | (1.6− | 1.3−) | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.4+ | 0.3+ |
| 2006 09 02 | 428 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.4− | 0.1+ |
| 2006 09 14 | 644 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2006 09 14 | 644 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.5− | 0.9− | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2006 09 14 | 644 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.6+ | 0.3− |
| 2006 09 14 | 703 | 0.6− | 0.4− | 2006 09 27 | 703 | 0.2+ | 0.6− | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2006 09 14 | 703 | 0.4− | 0.0 | 2006 09 27 | 291 | 0.2+ | 0.1+ | | | | |

**2006 QL$_{131}$ = 2004 BY$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.77516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21206909 | $\omega$ | 78.91867 | | +0.78928985 | | +0.60171136 |
| $a$ | 2.7849525 | $\Omega$ | 243.97333 | | −0.60299906 | | +0.72200391 |
| $e$ | 0.0423654 | $i$ | 7.82438 | | −0.11581740 | | +0.34154619 |
| $P$ | 4.65 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.3+ | 0.7− | 2005 06 02 | G96 | 0.2− | 0.4− | 2005 06 02 | G96 | 0.0 | 0.0 |
| 2002 10 15 | 644 | 0.1+ | 0.7− | 2005 06 02 | G96 | 0.2− | 0.2− | 2005 06 02 | G96 | 0.6− | 0.3− |
| 2002 10 15 | 644 | 0.0 | 0.6− | 2005 06 02 | G96 | 0.0 | 0.2− | 2006 08 22 | 644 | 0.1− | 0.1− |
| 2004 01 29 | 704 | 1.1+ | 0.2− | 2005 06 02 | G96 | 0.0 | 0.3− | 2006 08 22 | 644 | 0.1− | 0.2+ |
| 2004 01 29 | 704 | 0.6+ | 1.3+ | 2005 06 02 | G96 | 0.2− | 0.5− | 2006 08 22 | 644 | 0.1− | 0.3+ |
| 2004 01 29 | 704 | 0.5− | 0.1+ | 2005 06 02 | G96 | 0.1+ | 0.5− | 2006 08 27 | 699 | 0.2− | 0.1+ |
| 2004 02 11 | 644 | 0.1− | 0.5+ | 2005 06 02 | G96 | 0.3+ | 0.2− | 2006 08 27 | 699 | 0.9+ | 0.1+ |
| 2004 02 11 | 644 | 0.3− | 0.5+ | 2005 06 02 | G96 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.5− | 0.2+ |
| 2004 02 11 | 644 | 0.0 | 0.4+ | 2005 06 02 | G96 | 0.1− | 0.2− | 2006 08 27 | 699 | (2.5− | 0.9−) |
| 2005 05 19 | 644 | 0.8+ | 0.6+ | 2005 06 02 | G96 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.2− |
| 2005 05 19 | 644 | 0.8+ | 0.7+ | 2005 06 02 | G96 | 0.5− | 0.1− | 2006 09 17 | 703 | 0.3− | 0.5+ |
| 2005 05 19 | 644 | 0.8+ | 0.1+ | 2005 06 02 | G96 | 0.8− | 0.1+ | 2006 09 17 | 703 | 0.5− | 1.8+ |
| 2005 06 02 | G96 | 0.2+ | 0.2+ | 2005 06 02 | G96 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.6− | 0.2+ |

**2006 QK$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.66490 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23890571 | $\omega$ | 311.54037 | | +0.43522587 | | +0.90017138 |
| $a$ | 2.5722807 | $\Omega$ | 344.23561 | | −0.80697929 | | +0.38194691 |
| $e$ | 0.2054035 | $i$ | 3.46697 | | −0.39920280 | | +0.20930370 |
| $P$ | 4.13 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.5+ | 0.9+ | 2006 09 20 | 704 | 0.1+ | 0.6+ |
| 2005 03 13 | 691 | 0.0 | 0.3+ | 2006 09 12 | 703 | (2.3− | 0.3+) | 2006 09 20 | 704 | 0.2− | 0.1+ |
| 2005 03 13 | 691 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.6− |
| 2005 04 05 | G96 | 0.1+ | 0.2− | 2006 09 12 | 703 | (1.0− | 2.2+) | 2006 09 23 | 691 | 0.0 | 0.1− |
| 2005 04 05 | G96 | 0.4+ | 0.5− | 2006 09 13 | 644 | 0.1− | 0.3− | 2006 09 23 | 691 | 0.3− | 0.1− |
| 2005 04 05 | G96 | 0.3+ | 0.3− | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2005 04 05 | G96 | 0.1+ | 0.1− | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2006 08 22 | 644 | 0.3− | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.6− |
| 2006 08 22 | 644 | 0.6− | 0.3− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2006 08 22 | 644 | 0.4− | 0.7− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2006 08 27 | 699 | 0.7+ | 0.8− | 2006 09 19 | 699 | 1.5+ | 1.3+ | 2006 11 14 | G96 | 0.7− | 0.1− |
| 2006 08 27 | 699 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 1.2− | 1.0+ | 2006 11 14 | G96 | 0.2− | 0.2+ |
| 2006 08 27 | 699 | 0.2− | 0.9− | 2006 09 19 | 699 | 0.2− | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.5+ |
| 2006 08 27 | 699 | 1.0+ | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.1+ |

**2006 QV$_{132}$ = 2001 RK$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.43958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19586334 | $\omega$ | 217.32166 | | +0.78485161 | | +0.61773522 |
| $a$ | 2.9365266 | $\Omega$ | 104.45518 | | −0.55561926 | | +0.73658663 |
| $e$ | 0.1369613 | $i$ | 2.90664 | | −0.27439968 | | +0.27539669 |
| $P$ | 5.03 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.1− | 0.2− | 2001 09 16 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.2− | 0.5− | 2006 08 23 | 704 | 1.1+ | 0.6− | 2006 09 14 | 703 | 0.6− | 0.8+ |
| 2001 09 12 | 704 | 0.7− | 0.1− | 2006 08 23 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 703 | 0.7+ | 0.2− |
| 2001 09 12 | 704 | 0.4− | 0.1− | 2006 08 23 | 704 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.4+ | 1.1− |
| 2001 09 12 | 704 | 0.2+ | 0.7− | 2006 08 30 | 699 | 0.9− | 0.9+ | 2006 09 30 | 291 | 0.3+ | 0.1− |
| 2001 09 16 | 704 | 0.1− | 0.4+ | 2006 08 30 | 699 | 1.1− | 1.3+ | 2006 09 30 | 291 | 0.0 | 0.1− |
| 2001 09 16 | 704 | 0.8+ | 1.4+ | 2006 08 30 | 699 | 0.1+ | 0.4− | 2006 09 30 | 291 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.1− | 1.2+ | 2006 08 30 | 699 | 0.8− | 1.0− | | | | |

**2006 QB$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.41870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28664772 | $\omega$ | 302.81451 | | +0.94299441 | −0.31875105 | |
| $a$ | 2.2780874 | $\Omega$ | 75.92802 | | +0.32870046 | +0.84697139 | |
| $e$ | 0.1686264 | $i$ | 5.66231 | | +0.05213013 | +0.42548469 | |
| $P$ | 3.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 1.2− | 0.1− | 2003 12 22 | 704 | (2.4+ | 0.7+) | 2006 09 21 | 699 | 0.1+ | 0.1− |
| 2003 12 18 | 704 | 0.5− | 0.8− | 2003 12 22 | 704 | 0.0 | 1.1+ | 2006 09 21 | 699 | 0.4− | 0.5+ |
| 2003 12 18 | 704 | 1.0+ | 0.8+ | 2006 08 23 | 644 | 0.4− | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.7− |
| 2003 12 18 | 704 | 0.5− | 0.9− | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 1.0+ | 0.2− |
| 2003 12 18 | 704 | 0.8+ | 0.6+ | 2006 08 23 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.5− | 0.2+ |
| 2003 12 18 | 704 | 0.4+ | 0.3+ | 2006 08 30 | 699 | 0.9+ | 0.6− | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2003 12 18 | 704 | 0.1− | 1.1− | 2006 08 30 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.4+ |
| 2003 12 18 | 704 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.7− | 0.4− | | | | |
| 2003 12 22 | 704 | (3.3+ | 0.4+) | 2006 09 21 | 699 | 0.5− | 0.7+ | | | | |

**2006 QL$_{134}$ = 2001 TG$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.39838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17838965 | $\omega$ | 78.75851 | | +0.92876553 | +0.29288078 | |
| $a$ | 3.1252849 | $\Omega$ | 263.90347 | | −0.36003065 | +0.85857959 | |
| $e$ | 0.1944348 | $i$ | 13.20775 | | +0.08816188 | +0.42078729 | |
| $P$ | 5.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.8+ | 0.1− | 2006 08 25 | 704 | 0.9+ | 0.5− | 2006 09 17 | 703 | 0.7− | 1.1− |
| 2001 10 14 | 704 | 0.5+ | 0.4− | 2006 08 25 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 703 | 0.1+ | 0.0 |
| 2001 10 14 | 704 | 0.5+ | 1.3+ | 2006 08 25 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 703 | 0.1− | 1.2− |
| 2001 10 14 | 704 | 1.2+ | 0.8+ | 2006 08 25 | 704 | 0.3− | 0.1− | 2006 09 21 | 699 | 0.0 | 0.8+ |
| 2001 10 15 | 704 | (0.6− | 1.8−) | 2006 08 29 | 699 | 0.4− | 0.4+ | 2006 09 21 | 699 | 0.2+ | 0.2− |
| 2001 10 15 | 704 | 0.1+ | 0.7− | 2006 08 29 | 699 | 0.2− | 0.5− | 2006 09 21 | 699 | 0.7+ | 0.0 |
| 2001 10 15 | 704 | 0.2+ | 0.8− | 2006 08 29 | 699 | (1.9+ | 0.2−) | 2006 09 21 | 699 | 1.2+ | 0.0 |
| 2001 10 15 | 704 | 0.3− | 1.3− | 2006 08 29 | 699 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.9− | 0.7+ |
| 2001 11 11 | 704 | 0.9− | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.9− | 0.4− |
| 2001 11 11 | 704 | 0.3− | 0.7− | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.0 | 1.0+ |
| 2001 11 11 | 704 | 0.5− | 0.6− | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.4+ | 0.2− |
| 2001 11 11 | 704 | 0.8− | 0.7+ | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.3− | 1.4+ |
| 2001 11 11 | 704 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.7− | 1.3+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.3− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.4− | 2006 11 14 | 703 | 0.5− | 0.6− |

**2006 QX$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.29050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27837555 | $\omega$ | 49.34545 | | +0.94442927 | +0.31067772 | |
| $a$ | 2.3229970 | $\Omega$ | 292.30869 | | −0.32559516 | +0.83923432 | |
| $e$ | 0.3280466 | $i$ | 6.66585 | | −0.04517913 | +0.44627919 | |
| $P$ | 3.54 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 1.2+ | 0.1− | 2006 06 20 | G96 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.8− | 0.2− |
| 1999 09 08 | 704 | 0.7− | 0.4− | 2006 06 20 | G96 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.9− | 0.4− |
| 1999 09 08 | 704 | 0.6− | 0.2− | 2006 08 27 | 699 | 0.4+ | 0.1− | 2006 09 12 | 224 | 0.5+ | 0.2+ |
| 1999 10 03 | 703 | 0.7+ | 1.0− | 2006 08 27 | 699 | 0.2+ | 0.6− | 2006 09 12 | 224 | 1.2+ | 0.1+ |
| 1999 10 03 | 703 | 0.5+ | 0.5− | 2006 08 27 | 699 | 0.1+ | 0.3+ | 2006 09 12 | 224 | 0.2+ | 0.1+ |
| 1999 10 03 | 703 | 0.4− | 0.4− | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1999 10 03 | 703 | 0.9− | 0.7+ | 2006 08 30 | 699 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 1999 10 12 | 704 | 0.5+ | 0.3+ | 2006 08 30 | 699 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1999 10 12 | 704 | 0.6+ | 0.3− | 2006 08 30 | 699 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 1.2− | 0.3− |
| 1999 10 12 | 704 | 0.1− | 0.4− | 2006 08 30 | 699 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.8+ |
| 2006 06 20 | G96 | 0.3− | 0.1+ | 2006 09 11 | 703 | 1.0− | 0.3+ | 2006 10 17 | 703 | 1.0+ | 0.3+ |
| 2006 06 20 | G96 | 0.4+ | 0.4− | 2006 09 11 | 703 | 0.1− | 0.2+ | 2006 10 17 | 703 | 1.0− | 1.3+ |

**2006 QZ$_{134}$ = 1995 UW$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.74472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17621415 | $\omega$ | 114.83820 | | +0.49224696 | +0.87034540 | |
| $a$ | 3.1509549 | $\Omega$ | 184.72032 | | −0.84699080 | +0.47524747 | |
| $e$ | 0.1985496 | $i$ | 9.68897 | | −0.20074737 | +0.12899121 | |
| $P$ | 5.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1− | 0.3− | 2006 08 27 | 699 | (2.8+ | 0.6+) | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 1995 10 20 | 691 | 0.2− | 0.2− | 2006 08 27 | 699 | 0.0 | 1.2− | 2006 09 23 | 691 | 0.2− | 0.1− |
| 1995 10 20 | 691 | 0.3− | 0.2+ | 2006 08 28 | 703 | 0.9+ | 0.4− | 2006 09 25 | 699 | 1.5− | 0.6+ |
| 1995 10 25 | 691 | 0.0 | 1.0+ | 2006 08 28 | 703 | 0.3− | 0.7+ | 2006 09 25 | 699 | (1.7− | 0.3+) |
| 1995 10 25 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.0 |
| 1995 10 25 | 691 | 0.4+ | 0.8+ | 2006 08 28 | 703 | 1.0− | 0.3− | 2006 09 25 | 699 | 1.1− | 1.3− |
| 2005 05 04 | 691 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2005 05 04 | 691 | 1.1+ | 0.2+ | 2006 09 15 | 691 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.6+ | 0.0 |
| 2005 05 04 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 1.1− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2005 05 14 | 691 | 0.0 | 0.3− | 2006 09 16 | 699 | 0.1− | 0.7+ | 2006 10 19 | G96 | 0.1+ | 0.8− |
| 2005 05 14 | 691 | 0.2− | 0.1− | 2006 09 16 | 699 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 1.6+ | 0.9− |
| 2005 05 14 | 691 | 0.8− | 0.7+ | 2006 09 16 | 699 | 0.3+ | 0.6+ | 2006 10 27 | G96 | 2.1+ | 0.5− |
| 2006 08 27 | 699 | 0.4− | 0.2− | 2006 09 16 | 699 | (1.0+ | 1.9−) | 2006 10 27 | G96 | 0.9+ | 0.6+ |
| 2006 08 27 | 699 | 0.2− | 1.3− | 2006 09 23 | 691 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.8+ | 0.9+ |

**2006 QE$_{135}$ = 2003 YF$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.25285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29442266 | $\omega$ | 63.77486 | | +0.88526630 | −0.46455921 | |
| $a$ | 2.2378032 | $\Omega$ | 323.89499 | | +0.41220760 | +0.80573494 | |
| $e$ | 0.1765241 | $i$ | 2.14912 | | +0.21537981 | +0.36739072 | |
| $P$ | 3.35 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 02 | 691 | 0.6+ | 0.0 | 2006 08 27 | 699 | 0.1− | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.4+ |
| 2001 02 02 | 691 | 0.2+ | 0.0 | 2006 08 27 | 699 | 0.8− | 1.0− | 2006 09 17 | 704 | 0.0 | 0.4+ |
| 2001 02 02 | 691 | 0.5+ | 0.4+ | 2006 08 27 | 699 | 0.5+ | 0.9+ | 2006 09 17 | 704 | 0.7+ | 0.1+ |
| 2001 02 13 | 691 | 0.6− | 0.3+ | 2006 08 27 | 699 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.3+ |
| 2001 02 13 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | 1.2− | 0.6− | 2006 09 19 | 703 | 1.2− | 1.0− |
| 2001 02 13 | 691 | 0.3− | 0.0 | 2006 08 28 | 703 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.7− | 0.4+ |
| 2003 11 20 | 704 | 0.7− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.2+ |
| 2003 11 20 | 704 | 0.7+ | 1.3− | 2006 08 28 | 703 | 1.2+ | 0.5− | 2006 09 19 | 703 | 0.8− | 0.9− |
| 2003 11 20 | 704 | 0.3+ | 1.0− | 2006 09 12 | 703 | (0.3− | 2.3+) | 2006 09 19 | 703 | 0.2− | 0.3+ |
| 2003 12 18 | 704 | 0.8+ | 0.4+ | 2006 09 12 | 703 | 0.7+ | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.8+ |
| 2003 12 18 | 704 | 0.0 | 0.8+ | 2006 09 12 | 703 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.5+ |
| 2003 12 18 | 704 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.8+ | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.1− |
| 2003 12 22 | 704 | 0.0 | 0.6− | 2006 09 13 | 644 | 0.3+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− |
| 2003 12 22 | 704 | 0.1− | 0.9− | 2006 09 13 | 644 | 0.4+ | 0.1− | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2003 12 22 | 704 | 0.3− | 0.5+ | 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 2003 12 22 | 704 | 0.9− | 0.7− | 2006 09 16 | 699 | (1.0− | 1.6−) | 2006 09 29 | 704 | 0.9+ | 0.1+ |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.5+ | 0.3+ | 2006 09 29 | 704 | 0.9− | 1.3+ |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.8+ | 0.3+ | 2006 09 29 | 704 | 1.3− | 0.1− |
| 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 16 | 699 | 0.6− | 0.5+ | | | | |

**2006 QH$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.80001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26931363 | $\omega$ | 181.42244 | | +0.19221827 | +0.97999685 | |
| $a$ | 2.3748189 | $\Omega$ | 99.66178 | | −0.89985582 | +0.19697444 | |
| $e$ | 0.1289424 | $i$ | 2.99797 | | −0.39155031 | +0.02841192 | |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 29 | 644 | 0.1+ | 0.2+ | 2005 05 11 | G96 | 0.5− | 0.2− | 2006 09 25 | 699 | 1.0+ | 0.8+ |
| 2002 06 29 | 644 | 0.3− | 0.0 | 2005 05 11 | G96 | 0.7− | 0.0 | 2006 09 25 | 699 | 0.2− | 0.0 |
| 2002 06 29 | 644 | 0.1+ | 0.4+ | 2005 05 11 | G96 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2005 05 11 | G96 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.3+ | 1.3+ |
| 2002 07 14 | 644 | 0.2− | 0.5+ | 2006 08 27 | 699 | (2.4+ | 0.5+) | 2006 09 30 | 703 | 0.0 | 0.5− |
| 2002 07 14 | 644 | 0.1− | 0.4+ | 2006 08 27 | 699 | 0.4− | 0.3− | 2006 09 30 | 703 | 0.9− | 1.1+ |
| 2003 12 22 | 291 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.5− |
| 2003 12 22 | 291 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.5− | 0.9+ | 2006 09 30 | 703 | 1.1− | 0.5+ |
| 2003 12 22 | 291 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.1− | 2006 09 30 | 941 | 0.5− | 0.4− |
| 2005 03 01 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.6+ | 2006 09 30 | 941 | 0.3− | 0.4− |
| 2005 03 01 | 691 | 0.5+ | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 09 30 | 941 | 0.6− | 0.7− |
| 2005 03 01 | 691 | 0.2+ | 0.3− | 2006 08 28 | 703 | 1.2+ | 0.4+ | 2006 09 30 | 941 | 0.0 | 0.7− |
| 2005 03 16 | 704 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.4+ | 0.1+ | 2006 09 30 | 941 | 0.5+ | 0.7− |
| 2005 03 16 | 704 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.5− | 0.2+ | 2006 09 30 | 941 | 0.9+ | 1.1− |
| 2005 03 16 | 704 | 0.6− | 1.7+ | 2006 09 14 | 703 | 0.3+ | 0.3− | | | | |
| 2005 03 16 | 704 | (2.1+ | 1.5+) | 2006 09 14 | 703 | 0.0 | 1.2+ | | | | |

**2006 QL$_{135}$ = 2003 WL$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.06791 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28671679 | $\omega$ | 343.06883 | | +0.17974004 | +0.97563350 | |
| $a$ | 2.2777216 | $\Omega$ | 297.13418 | | −0.88537027 | +0.10469426 | |
| $e$ | 0.2280482 | $i$ | 8.12826 | | −0.42873418 | +0.19281696 | |
| $P$ | 3.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.4− | 0.0 | 2003 11 19 | 691 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.3− | 0.4+ |
| 1999 07 13 | 704 | 0.4− | 0.7− | 2003 11 19 | 691 | 0.1− | 0.5+ | 2006 09 15 | 704 | 0.5− | 1.4+ |
| 1999 07 13 | 704 | 0.5− | 0.3− | 2003 11 19 | 691 | 0.3− | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.3− |
| 1999 07 13 | 704 | 1.2− | 0.2− | 2006 08 27 | 699 | 0.9− | 0.1− | 2006 09 16 | 644 | 0.0 | 0.3− |
| 1999 07 13 | 704 | 1.3− | 0.8+ | 2006 08 27 | 699 | 0.8− | 0.6+ | 2006 09 16 | 644 | 0.7− | 0.1− |
| 1999 07 21 | 699 | 0.3+ | 0.5+ | 2006 08 27 | 699 | 0.4+ | 0.9− | 2006 09 20 | 699 | 0.4− | 0.8+ |
| 1999 07 21 | 699 | 0.6+ | 0.5+ | 2006 08 27 | 699 | 0.2+ | 0.4− | 2006 09 20 | 699 | 0.3+ | 0.8− |
| 1999 07 21 | 699 | 0.6+ | 0.2+ | 2006 08 28 | 704 | 0.4+ | 0.8− | 2006 09 20 | 699 | 0.2+ | 0.5+ |
| 1999 08 12 | 699 | 0.8+ | 0.4− | 2006 08 28 | 704 | 0.0 | 0.7+ | 2006 09 20 | 699 | 0.2+ | 0.4+ |
| 1999 08 12 | 699 | 0.7+ | 0.6+ | 2006 08 28 | 704 | 0.7+ | 1.4− | 2006 10 01 | 703 | (1.4+ | 3.6−) |
| 1999 08 12 | 699 | 0.4+ | 0.5− | 2006 08 28 | 704 | 0.3+ | 1.1− | 2006 10 01 | 703 | 1.0+ | 1.1− |
| 2003 11 16 | 691 | 0.3+ | 0.6− | 2006 09 15 | 704 | (0.6+ | 1.6+) | 2006 10 01 | 703 | 0.7− | 0.2+ |
| 2003 11 16 | 691 | 0.1− | 0.1− | 2006 09 15 | 704 | 0.1− | 0.6− | 2006 10 01 | 703 | 0.2− | 1.0+ |
| 2003 11 16 | 691 | 0.3+ | 0.0 | 2006 09 15 | 704 | 0.8+ | 1.4+ | | | | |

**2006 QM$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.67787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27965761 | $\omega$ | 164.59444 | | +0.86996068 | −0.48723622 | |
| $a$ | 2.3158919 | $\Omega$ | 224.82457 | | +0.44028127 | +0.83684101 | |
| $e$ | 0.1078272 | $i$ | 6.18552 | | +0.22208291 | +0.24959567 | |
| $P$ | 3.52 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 0.2+ | 0.4+ | 2005 05 14 | G96 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.0 | 0.2− |
| 2003 12 22 | 704 | 0.3+ | 0.1− | 2005 05 14 | G96 | 0.2+ | 0.7+ | 2006 09 13 | 644 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.5− | 1.1+ | 2005 05 14 | G96 | 1.2+ | 0.5+ | 2006 09 18 | 703 | 0.6− | 0.3− |
| 2005 04 12 | G96 | 0.1+ | 0.3− | 2006 08 27 | 699 | 1.1− | 1.1+ | 2006 09 18 | 703 | 0.7+ | 0.3+ |
| 2005 04 12 | G96 | 0.1+ | 0.4− | 2006 08 27 | 699 | 0.1+ | 0.5− | 2006 09 18 | 703 | 1.1+ | 0.4− |
| 2005 04 12 | G96 | 0.3+ | 0.2− | 2006 08 27 | 699 | 0.5+ | 0.8+ | 2006 09 18 | 703 | (1.4− | 1.6−) |
| 2005 04 12 | G96 | 0.1+ | 0.3− | 2006 08 27 | 699 | 0.6− | 0.6+ | 2006 09 20 | 699 | 0.4+ | 1.2− |
| 2005 04 12 | G96 | 0.3− | 0.2+ | 2006 08 29 | 703 | 0.5− | 0.5+ | 2006 09 20 | 699 | 0.5− | 0.1− |
| 2005 04 12 | G96 | 0.5− | 0.3+ | 2006 08 29 | 703 | 0.7+ | 0.4− | 2006 09 20 | 699 | (2.5− | 0.6+) |
| 2005 04 12 | G96 | 0.4− | 0.1+ | 2006 08 29 | 703 | 0.7− | 0.7+ | 2006 09 20 | 699 | 0.3+ | 0.5+ |
| 2005 04 12 | G96 | 0.1+ | 0.1+ | 2006 08 29 | 703 | (2.2− | 0.4−) | | | | |
| 2005 05 14 | G96 | 0.4− | 0.7+ | 2006 09 13 | 644 | 0.2− | 0.2− | | | | |

**2006 QN$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.47250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29217928 | $\omega$ | 104.41015 | | +0.55269239 | +0.83262972 | |
| $a$ | 2.2492433 | $\Omega$ | 199.26923 | | −0.80004520 | +0.51817888 | |
| $e$ | 0.1476499 | $i$ | 6.17208 | | −0.23336409 | +0.19549528 | |
| $P$ | 3.37 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 807 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.4− | 2006 09 24 | 291 | 0.3+ | 0.3− |
| 2002 04 09 | 807 | 0.4+ | 0.2− | 2006 09 16 | 699 | 0.9− | 0.7− | 2006 09 24 | 291 | 0.3+ | 0.1+ |
| 2002 04 09 | 807 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.5− | 1.0− | 2006 09 24 | 291 | 0.1+ | 0.1+ |
| 2002 04 13 | 644 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.4+ | 0.7− | 2006 09 25 | 291 | 0.1− | 0.2+ |
| 2002 04 13 | 644 | 0.4+ | 0.2− | 2006 09 16 | 699 | 0.6+ | 1.1− | 2006 09 25 | 291 | 0.0 | 0.5+ |
| 2002 04 13 | 644 | 1.1− | 0.9+ | 2006 09 19 | 699 | 0.8+ | 0.2+ | 2006 09 25 | 291 | 0.1− | 0.3+ |
| 2006 08 27 | 699 | 0.2− | 0.5− | 2006 09 19 | 703 | 0.6− | 0.5− | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2006 08 27 | 699 | (1.6− | 0.0 ) | 2006 09 19 | 699 | 1.1− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2006 08 27 | 699 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.5− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2006 08 27 | 699 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2006 08 29 | 703 | 1.1+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.1+ |
| 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.6− | 0.4− |
| 2006 08 29 | 703 | 0.9− | 0.7+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 1.2− | 1.0− | 2006 09 20 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2006 09 06 | 644 | 0.0 | 0.2− | 2006 09 20 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.2+ |
| 2006 09 06 | 644 | 0.2− | 0.3− | 2006 09 20 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2006 09 06 | 644 | 0.0 | 0.3− | 2006 09 23 | 291 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.4− | 0.0 |
| 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 23 | 291 | 0.1+ | 0.1+ | | | | |
| 2006 09 14 | 644 | 0.2+ | 0.1− | 2006 09 23 | 291 | 0.1− | 0.1− | | | | |

**2006 QC$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.19659 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25557053 | $\omega$ | 38.32899 | | +0.35928927 | +0.92882947 | |
| $a$ | 2.4592095 | $\Omega$ | 252.89110 | | −0.87787687 | +0.30349352 | |
| $e$ | 0.0918354 | $i$ | 5.43243 | | −0.31661242 | +0.21252648 | |
| $P$ | 3.86 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.5+ | 0.1− | 2002 09 06 | 704 | 0.1− | 0.7+ | 2006 09 06 | 644 | 0.3− | 0.0 |
| 1999 12 07 | 704 | 0.4+ | 0.5+ | 2002 09 06 | 704 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.8− |
| 1999 12 07 | 704 | 0.9− | 0.0 | 2002 09 06 | 704 | 0.2+ | 0.5− | 2006 09 14 | 703 | 0.4+ | 0.6− |
| 2001 03 26 | 704 | (1.0− | 1.9+) | 2002 09 08 | 848 | 0.7− | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 2001 03 26 | 704 | (0.7+ | 1.8+) | 2002 09 08 | 848 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.8+ | 0.1+ |
| 2001 03 26 | 704 | 0.7+ | 1.0+ | 2002 09 13 | 644 | 0.1− | 0.1− | 2006 09 15 | 704 | 0.3− | 0.5+ |
| 2001 03 26 | 704 | (1.2+ | 1.9+) | 2002 09 13 | 644 | 0.2− | 0.0 | 2006 09 15 | 704 | 0.3+ | 0.3+ |
| 2002 07 21 | 644 | 0.2+ | 0.4+ | 2002 09 13 | 644 | 0.1− | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.6+ |
| 2002 07 21 | 644 | 0.1− | 0.5+ | 2003 12 23 | 704 | 0.7− | 0.4− | 2006 09 16 | 644 | 0.1− | 0.2− |
| 2002 07 21 | 644 | 0.2− | 0.6+ | 2003 12 23 | 704 | 0.2+ | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.2− |
| 2002 08 08 | 699 | 0.2− | 0.4− | 2003 12 23 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.3− |
| 2002 08 08 | 699 | 0.4− | 0.6− | 2005 04 05 | 699 | 0.3+ | 0.5− | 2006 09 19 | 703 | 0.8− | 0.4+ |
| 2002 08 08 | 699 | 0.1+ | 0.5− | 2005 04 05 | 699 | 1.2− | 0.5+ | 2006 09 19 | 703 | 0.4− | 0.3− |
| 2002 08 08 | 699 | 0.1− | 0.0 | 2005 04 05 | 699 | 0.5+ | 0.7+ | 2006 09 19 | 703 | 0.6− | 0.2− |
| 2002 08 12 | 704 | 0.9+ | 0.1− | 2005 04 05 | 699 | 0.4+ | 0.4− | 2006 09 19 | 703 | 0.9− | 0.0 |
| 2002 08 12 | 704 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.5− | 0.3+ |
| 2002 08 12 | 704 | 0.2+ | 0.4− | 2006 08 21 | 691 | 0.5+ | 0.8+ | 2006 09 20 | 699 | 0.7− | 0.7− |
| 2002 08 12 | 704 | 0.7+ | 0.3− | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 09 20 | 699 | 0.8− | 0.4+ |
| 2002 08 12 | 704 | 0.4+ | 0.5− | 2006 08 28 | 704 | 1.0+ | 0.7− | 2006 09 20 | 699 | 0.2+ | 0.0 |
| 2002 08 16 | 644 | 0.1− | 0.4+ | 2006 08 28 | 704 | 0.2+ | 0.0 | 2006 10 01 | 704 | (0.0 | 1.6−) |
| 2002 08 16 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 704 | 0.8+ | 0.1− | 2006 10 01 | 704 | 0.9− | 0.3+ |
| 2002 08 16 | 644 | 0.0 | 0.3+ | 2006 08 28 | 704 | 1.1+ | 0.2− | 2006 10 01 | 704 | 0.5+ | 0.5− |
| 2002 08 26 | 644 | 0.1+ | 0.4+ | 2006 08 29 | 703 | (0.0 | 1.9+) | 2006 10 01 | 704 | 1.1+ | 0.2+ |
| 2002 08 26 | 644 | 0.3+ | 0.4+ | 2006 08 29 | 703 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.7+ | 0.6+ |
| 2002 08 26 | 644 | 0.2+ | 0.6+ | 2006 08 29 | 703 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.7+ |
| 2002 09 06 | 704 | 0.4− | 0.4− | 2006 09 06 | 644 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.4− | 0.6− |
| 2002 09 06 | 704 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2− | 0.3− |

**2006 QD$_{136}$ = 2002 VW$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.72919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23298700 | $\omega$ | 104.49781 | | +0.81177969 | +0.57755767 | |
| $a$ | 2.6156618 | $\Omega$ | 220.32466 | | −0.57386394 | +0.76163440 | |
| $e$ | 0.2272004 | $i$ | 7.66030 | | −0.10813839 | +0.29383699 | |
| $P$ | 4.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 691 | 0.2+ | 0.4+ | 2006 09 15 | 704 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 05 14 | 691 | 0.1− | 0.4+ | 2006 09 15 | 704 | (1.6+ | 0.3+) | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 05 14 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.9− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 04 | 291 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2002 11 04 | 291 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2002 11 04 | 291 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2002 11 11 | 291 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 11 11 | 291 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 10 14 | 557 | 0.5+ | 1.0− |
| 2002 11 11 | 291 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.3+ | 0.3− | 2006 10 14 | 557 | (1.9− | 0.7+) |
| 2002 11 13 | 291 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.1− | 0.2− | 2006 10 14 | 557 | 0.6+ | 1.1− |
| 2002 11 13 | 291 | 0.3− | 0.2+ | 2006 09 27 | 699 | 1.1− | 0.3+ | 2006 10 14 | 557 | 0.9+ | 0.0 |
| 2002 11 13 | 291 | 0.2− | 0.1+ | 2006 09 27 | 699 | 0.1− | 0.1+ | 2006 10 14 | 557 | 0.4− | 1.0− |
| 2006 08 28 | 683 | (3.5+ | 1.1−) | 2006 09 27 | 703 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.7+ | 0.3+ |
| 2006 08 28 | 683 | (4.1+ | 1.8−) | 2006 09 27 | 703 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.8− | 1.4+ |
| 2006 08 28 | 683 | (2.3+ | 1.5−) | 2006 09 27 | 703 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2006 08 29 | 699 | 0.4− | 0.1− | 2006 09 27 | 699 | 0.8− | 0.3− | 2006 10 17 | 703 | 0.6+ | 1.2− |
| 2006 08 29 | 683 | (2.3+ | 0.5−) | 2006 09 27 | 703 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.8+ |
| 2006 08 29 | 683 | (3.1+ | 0.2−) | 2006 10 01 | 703 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.6+ | 0.2− |
| 2006 08 29 | 699 | 0.2− | 0.6− | 2006 10 01 | 703 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2006 08 29 | 699 | 1.0+ | 0.7+ | 2006 10 01 | 703 | 0.6− | 0.9+ | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2006 08 29 | 699 | 0.6− | 0.6− | 2006 10 01 | 703 | 0.7− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 09 15 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 15 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |

**2006 QE$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.42757 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29178291 | $\omega$ | 115.37857 | | +0.70517879 | +0.70861622 | |
| $a$ | 2.2512798 | $\Omega$ | 199.52952 | | −0.67377016 | +0.65908834 | |
| $e$ | 0.1587428 | $i$ | 4.15241 | | −0.22080908 | +0.25192385 | |
| $P$ | 3.38 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 22 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.2− | 0.1− |
| 2003 10 22 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.7+ | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.4+ |
| 2003 10 22 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 1.7+ | 1.6+ | 2006 09 13 | 644 | 0.0 | 0.0 |
| 2003 11 21 | 691 | 0.3− | 0.2− | 2006 08 29 | 703 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2003 11 21 | 691 | 0.2− | 0.2− | 2006 08 29 | 703 | 0.8− | 0.8− | 2006 09 28 | G96 | 0.1− | 0.2− |
| 2003 11 21 | 691 | 0.0 | 0.0 | 2006 08 30 | 704 | 0.6− | 0.9− | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2006 08 18 | 644 | 0.4− | 0.0 | 2006 08 30 | 704 | 0.3+ | 0.3− | | | | |

**2006 QF$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.89070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22395347 | $\omega$ | 28.09807 | | +0.44058294 | +0.88591995 | |
| $a$ | 2.6855352 | $\Omega$ | 268.36138 | | −0.84842615 | +0.35813226 | |
| $e$ | 0.2493089 | $i$ | 8.34221 | | −0.29335940 | +0.29476621 | |
| $P$ | 4.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.5+ | 0.8+ | 2006 09 27 | 703 | 0.4− | 0.4+ |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.2− | 0.5− |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2006 09 16 | 703 | 1.1+ | 0.3+ | 2006 09 29 | 699 | 0.4+ | 0.1+ |
| 2003 12 22 | 691 | 0.5− | 0.1− | 2006 09 16 | 703 | 0.0 | 0.3− | 2006 09 29 | 699 | 0.9+ | 0.8+ |
| 2003 12 22 | 691 | 0.4+ | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.3− | 0.9+ |
| 2003 12 22 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.7+ |
| 2006 08 29 | 699 | 0.5+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.5− | 0.1+ |
| 2006 08 29 | 699 | 0.4+ | 0.7+ | 2006 09 17 | 703 | 0.1− | 0.5− | 2006 10 03 | 704 | 0.2+ | 0.8+ |
| 2006 08 29 | 699 | 0.5+ | 0.2− | 2006 09 17 | 703 | 0.5− | 0.3− | 2006 10 03 | 704 | 1.1− | 0.4+ |
| 2006 08 29 | 699 | 0.2+ | 0.3+ | 2006 09 25 | 683 | 0.4+ | 0.6− | 2006 10 03 | 704 | 0.0 | 0.1+ |
| 2006 08 31 | 704 | 0.0 | 0.6+ | 2006 09 25 | 683 | 0.6+ | 0.6− | 2006 10 03 | 704 | 0.4− | 0.1+ |
| 2006 08 31 | 704 | 0.4− | 0.9− | 2006 09 25 | 683 | 0.2+ | 0.0 | 2006 10 03 | 703 | 1.1− | 1.4− |
| 2006 08 31 | 704 | 0.6− | 0.7− | 2006 09 26 | 683 | 0.0 | 0.3− | 2006 10 03 | 703 | 0.4+ | 0.2− |
| 2006 08 31 | 704 | 0.2− | 0.3+ | 2006 09 26 | 683 | 0.5+ | 0.7− | 2006 10 03 | 703 | 0.1− | 0.4− |
| 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 09 26 | 683 | 0.1+ | 0.7− | 2006 10 03 | 703 | 0.9+ | 0.0 |
| 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 27 | 683 | 0.2− | 0.6− | 2006 10 23 | 703 | (1.5+ | 0.8+) |
| 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 09 27 | 683 | 0.8+ | 0.4− | 2006 10 23 | 703 | 0.2+ | 0.1+ |
| 2006 09 16 | 703 | 0.5− | 0.6+ | 2006 09 27 | 703 | 0.4− | 0.2+ | 2006 10 23 | 703 | 0.1+ | 0.2− |
| 2006 09 16 | 703 | 0.5− | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.7− | 2006 10 23 | 703 | 0.1+ | 0.5+ |
| 2006 09 16 | 703 | 0.0 | 0.5+ | 2006 09 27 | 683 | 1.0− | 0.2+ | | | | |

**2006 QH$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.92780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26359227 | $\omega$ | 117.73297 | | +0.96029905 | +0.26260187 | |
| $a$ | 2.4090599 | $\Omega$ | 227.21007 | | −0.27895819 | +0.90733656 | |
| $e$ | 0.2793061 | $i$ | 7.37188 | | +0.00284080 | +0.32829961 | |
| $P$ | 3.74 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 13 | 691 | 0.3− | 0.6− | 2006 09 19 | 683 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 1997 03 13 | 691 | 0.3− | 0.5− | 2006 09 20 | 683 | 0.3− | 0.2− | 2006 10 17 | 703 | (2.7+ | 0.7−) |
| 1997 03 13 | 691 | 0.2− | 0.7− | 2006 09 20 | 683 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 1998 05 22 | 704 | 2.0+ | 1.1+ | 2006 09 20 | 683 | 0.6− | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 1998 05 22 | 704 | 0.5+ | 0.8+ | 2006 09 21 | 683 | 0.3+ | 0.7− | 2006 10 17 | A24 | 0.3− | 0.7+ |
| 1998 05 22 | 704 | 1.0− | 0.3+ | 2006 09 21 | 683 | 0.2+ | 0.2+ | 2006 10 17 | A24 | 0.0 | 0.4+ |
| 1998 05 22 | 704 | 1.9+ | 0.4− | 2006 09 21 | 699 | 0.2+ | 0.0 | 2006 10 17 | A24 | 0.0 | 0.2+ |
| 2002 07 09 | 704 | 0.2− | 0.8− | 2006 09 21 | 683 | 0.1− | 0.0 | 2006 10 17 | A24 | 0.3+ | 0.3− |
| 2002 07 09 | 704 | 1.4− | 0.0 | 2006 09 21 | 699 | 0.1+ | 0.2− | 2006 10 17 | A24 | 0.7− | 0.0 |
| 2002 07 09 | 704 | 1.2− | 0.7− | 2006 09 21 | 699 | 0.6+ | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 2002 07 09 | 704 | 0.7− | 0.6− | 2006 09 21 | 699 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 2002 07 09 | 704 | 1.0− | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1− |
| 2002 07 18 | 704 | 0.9+ | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 07 18 | 704 | 0.4+ | 0.3+ | 2006 09 27 | 703 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 07 18 | 704 | 0.6+ | 0.3+ | 2006 09 27 | 703 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 07 18 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 704 | 0.5− | 1.2− | 2006 10 29 | 704 | 0.3+ | 1.3+ |
| 2002 07 18 | 704 | 0.7− | 0.5+ | 2006 09 28 | 704 | 1.4− | 0.8+ | 2006 10 29 | 704 | 0.6+ | 1.1+ |
| 2004 01 17 | 691 | 0.1− | 0.2+ | 2006 09 28 | 704 | (1.5− | 0.0 ) | 2006 10 29 | 704 | (0.4− | 1.6+) |
| 2004 01 17 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.2− | 0.1+ | 2006 10 29 | 704 | 1.0− | 0.5+ |
| 2004 01 17 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.5+ | 2006 10 29 | 704 | 0.3− | 0.8− |
| 2006 05 25 | G96 | 0.3− | 0.2− | 2006 09 29 | 699 | 0.4+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2006 05 25 | G96 | 0.2− | 0.1+ | 2006 10 03 | 703 | 0.1+ | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2006 05 25 | G96 | 0.1− | 0.0 | 2006 10 03 | 703 | 0.4− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2006 05 25 | G96 | 0.0 | 0.0 | 2006 10 03 | 703 | 0.3− | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.6− |
| 2006 08 10 | 644 | 0.2− | 0.1− | 2006 10 03 | 703 | 0.4− | 0.1− | 2006 11 13 | 703 | 0.0 | 0.1− |
| 2006 08 10 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.7− |
| 2006 08 10 | 644 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2006 08 29 | 699 | 0.2+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.0 | 0.1− |
| 2006 08 29 | 699 | 0.3+ | 0.1+ | 2006 10 10 | A24 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.6+ | 0.7− |
| 2006 08 29 | 699 | 0.4+ | 0.3− | 2006 10 10 | A24 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.6+ |
| 2006 08 29 | 699 | 0.8− | 0.7+ | 2006 10 13 | A24 | 1.4− | 0.5− | 2006 11 15 | 704 | 0.3− | 0.9− |
| 2006 08 31 | 704 | 0.1+ | 1.1+ | 2006 10 13 | A24 | 1.1+ | 0.3+ | 2006 11 15 | 704 | 0.5− | 0.6− |
| 2006 08 31 | 704 | 0.5− | 0.2− | 2006 10 13 | A24 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.4+ | 0.9+ |
| 2006 08 31 | 704 | (0.8+ | 1.9−) | 2006 10 13 | A24 | 1.4+ | 0.2+ | 2006 11 16 | 704 | 0.6− | 0.3+ |
| 2006 08 31 | 704 | 1.3− | 1.3− | 2006 10 13 | A24 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.6− | 0.1− |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 13 | A24 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.5+ |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 15 | A24 | 0.4+ | 0.7− | 2006 11 19 | 704 | (2.3− | 0.9+) |
| 2006 09 06 | 644 | 0.1− | 0.0 | 2006 10 15 | A24 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.4− |
| 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 10 15 | A24 | 0.1− | 0.4+ | 2006 11 19 | 704 | (1.9− | 0.2+) |
| 2006 09 16 | 703 | 0.2− | 0.3− | 2006 10 15 | A24 | 0.1+ | 0.5− | 2006 11 19 | 704 | 1.2− | 0.3+ |
| 2006 09 16 | 703 | 0.1− | 0.3− | 2006 10 15 | A24 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.6− |
| 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 683 | 0.8+ | 1.3− | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.7− | 0.2− |
| 2006 09 18 | 683 | 1.1+ | 0.8− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2006 09 18 | 683 | 0.9+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.9− | 0.7+ |
| 2006 09 19 | 683 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2006 09 19 | 683 | 0.2+ | 0.4− | 2006 10 17 | 703 | 1.4+ | 0.3− | | | | |

**2006 QJ$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.23471 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20967884 | $\omega$ | 51.02339 | | +0.55952384 | | +0.82069868 |
| $a$ | 2.8060774 | $\Omega$ | 253.37711 | | −0.79286850 | | +0.48935023 |
| $e$ | 0.2220143 | $i$ | 6.93524 | | −0.24143865 | | +0.29494073 |
| $P$ | 4.70 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 608 | 0.7− | 0.8− | 2006 08 29 | 699 | 0.6+ | 0.1+ | 2006 09 15 | 704 | 0.7− | 0.1− |
| 2001 06 30 | 608 | 0.4− | 0.1− | 2006 08 29 | 699 | 0.3+ | 0.7+ | 2006 09 15 | 704 | 0.6+ | 0.8+ |
| 2001 06 30 | 608 | 0.5− | 1.4− | 2006 08 29 | 699 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.6− |
| 2001 07 17 | 608 | 1.2+ | 0.5+ | 2006 08 31 | 704 | 0.9− | 0.9− | 2006 09 17 | 703 | 0.2− | 0.3+ |
| 2001 07 17 | 608 | 1.1+ | 0.7+ | 2006 08 31 | 704 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.0 |
| 2001 07 17 | 608 | 1.2+ | 0.6+ | 2006 08 31 | 704 | 0.5− | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.9− |
| 2001 08 25 | 704 | 0.5− | 0.6+ | 2006 08 31 | 704 | 0.6+ | 0.5− | 2006 09 27 | 703 | (1.9− | 1.6−) |
| 2001 08 25 | 704 | 0.4− | 0.2− | 2006 08 31 | 704 | 0.9− | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.6− |
| 2001 08 25 | 704 | 0.8− | 0.2+ | 2006 09 15 | 704 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.3− | 0.7+ |
| 2001 08 25 | 704 | 0.8− | 0.3+ | 2006 09 15 | 704 | 0.4+ | 0.3− | 2006 09 27 | 703 | 0.1+ | 0.4+ |
| 2006 08 29 | 699 | 1.0+ | 0.5− | 2006 09 15 | 704 | 0.2+ | 0.2− | | | | |

**2006 QK$_{136}$ = 2005 GU$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.87939 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26273071 | $\omega$ | 156.65060 | | +0.98583475 | | −0.14689327 |
| $a$ | 2.4143237 | $\Omega$ | 212.12601 | | +0.11958280 | | +0.95401576 |
| $e$ | 0.2308405 | $i$ | 8.75536 | | +0.11760021 | | +0.26129732 |
| $P$ | 3.75 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.5− | 0.1+ |
| 2004 01 18 | 644 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 09 15 | 704 | 0.7+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.6+ |
| 2005 04 10 | G96 | 0.7− | 0.2+ | 2006 09 15 | 704 | 0.3+ | 0.1− | 2006 10 01 | 704 | 0.1+ | 0.4+ |
| 2005 04 10 | G96 | 0.2− | 0.2− | 2006 09 15 | 704 | 0.6+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2005 04 10 | G96 | 0.5− | 0.3+ | 2006 09 15 | 704 | 0.2− | 1.2− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2005 04 10 | G96 | 0.3− | 0.2+ | 2006 09 15 | 704 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2005 04 17 | 691 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2005 04 17 | 691 | 0.5+ | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2005 04 17 | 691 | 0.4+ | 0.2+ | 2006 09 16 | 644 | 0.2+ | 0.3− | 2006 10 16 | 703 | 1.0− | 0.3+ |
| 2005 05 14 | G96 | 0.2+ | 0.3+ | 2006 09 20 | 699 | 0.5− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2005 05 14 | G96 | 0.7− | 0.3− | 2006 09 20 | 699 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2005 05 14 | G96 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.1− | 0.0 | 2006 11 10 | 704 | 0.7− | 1.1+ |
| 2006 08 29 | 699 | 0.2− | 0.3+ | 2006 09 22 | 703 | 0.5+ | 0.0 | 2006 11 10 | 704 | 0.2− | 0.6+ |
| 2006 08 29 | 699 | 0.2+ | 0.2+ | 2006 09 22 | 703 | 0.1− | 0.2− | 2006 11 10 | 704 | 0.1+ | 0.1+ |
| 2006 08 29 | 699 | 0.4− | 0.0 | 2006 09 22 | 703 | 0.6− | 0.1+ | 2006 11 10 | 704 | 1.1+ | 1.1+ |
| 2006 08 31 | 704 | 1.1+ | 1.1+ | 2006 09 22 | 703 | 0.2− | 0.3− | 2006 11 10 | 704 | 1.6+ | 1.0+ |
| 2006 08 31 | 704 | (1.7− | 0.7+) | 2006 09 29 | 699 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2006 08 31 | 704 | 0.6− | 0.0 | 2006 09 29 | 699 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.1+ |
| 2006 08 31 | 704 | 0.5− | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.3+ | 2006 11 14 | G96 | 0.6− | 0.3− |
| 2006 09 14 | 703 | 0.6+ | 0.3+ | 2006 09 29 | 699 | 0.3− | 0.4− | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.5+ | | | | |

**2006 QL$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.98821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26219723 | $\omega$ | 80.23945 | | +0.66229793 | | +0.74415731 |
| $a$ | 2.4175974 | $\Omega$ | 231.60309 | | −0.72360687 | | +0.60514114 |
| $e$ | 0.2751171 | $i$ | 6.38287 | | −0.19430533 | | +0.28290297 |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.5+ | 0.4− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 09 29 | 699 | 0.4+ | 0.3+ |
| 2002 07 09 | 704 | (0.2+ | 2.2+) | 2006 09 14 | 703 | 0.7− | 0.1− | 2006 09 29 | 699 | 0.0 | 0.5+ |
| 2002 07 09 | 704 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.7− | 0.8− | 2006 10 01 | 704 | (1.2− | 1.8+) |
| 2002 07 09 | 704 | (0.0 | 1.9+) | 2006 09 14 | 703 | 0.5− | 0.0 | 2006 10 01 | 704 | 0.5+ | 0.1+ |
| 2002 07 09 | 704 | 0.2+ | 1.0+ | 2006 09 15 | 704 | 0.5+ | 0.2− | 2006 10 01 | 704 | 0.6− | 0.2− |
| 2002 07 09 | 704 | 0.3− | 0.2− | 2006 09 15 | 704 | 0.6− | 0.7− | 2006 10 01 | 704 | 0.2+ | 0.4− |
| 2006 07 24 | 704 | 0.9+ | 1.0− | 2006 09 15 | 704 | 0.0 | 0.6− | 2006 10 01 | 704 | 0.0 | 0.4+ |
| 2006 07 24 | 704 | 0.4+ | 0.3− | 2006 09 15 | 704 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2− |
| 2006 07 24 | 704 | 0.7+ | 0.1− | 2006 09 15 | 704 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2006 07 24 | 704 | 1.1+ | 0.3+ | 2006 09 16 | 644 | 0.6− | 0.1− | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2006 08 29 | 699 | 0.2+ | 0.3− | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2006 08 29 | 699 | 0.1− | 0.6+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3+ | 0.1+ |
| 2006 08 29 | 699 | 0.5− | 1.1+ | 2006 09 20 | 699 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2006 08 29 | 699 | 0.6− | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.8− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2006 08 31 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 699 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2006 08 31 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 699 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2006 08 31 | 704 | 0.9− | 0.5+ | 2006 09 22 | 703 | 0.5− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 08 31 | 704 | 0.8+ | 0.5+ | 2006 09 22 | 703 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2006 08 31 | 704 | 0.2− | 0.6+ | 2006 09 22 | 703 | (0.8+ | 1.9+) | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 09 22 | 703 | 0.6− | 0.1− | | | | |
| 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.4− | | | | |

**2006 QM$_{136}$ = 2003 UR$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.13817 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30404303 | $\omega$ | 68.36918 | | +0.78566821 | | +0.61088133 |
| $a$ | 2.1903458 | $\Omega$ | 253.84448 | | −0.59854644 | | +0.71065743 |
| $e$ | 0.1940305 | $i$ | 5.83932 | | −0.15642127 | | +0.34898426 |
| $P$ | 3.24 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 25 | 704 | 0.9− | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.1− | 2006 09 22 | 703 | 0.5+ | 0.5− |
| 2003 10 25 | 704 | 0.4− | 0.4− | 2006 09 14 | 703 | 0.0 | 0.5− | 2006 09 22 | 703 | 1.2− | 0.7− |
| 2003 10 25 | 704 | (0.6− | 1.9+) | 2006 09 14 | 703 | 0.0 | 0.4+ | 2006 09 22 | 703 | 0.4− | 0.3− |
| 2003 10 27 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.2− | 2006 09 22 | 703 | 0.7− | 0.1+ |
| 2003 10 27 | 691 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.3− | 0.2+ | 2006 09 23 | G92 | 0.6− | 0.1+ |
| 2003 10 27 | 691 | 0.1+ | 0.1− | 2006 09 15 | 704 | 0.2+ | 0.2+ | 2006 09 23 | G92 | 0.3+ | 0.3+ |
| 2003 11 14 | 644 | 0.1+ | 0.1− | 2006 09 15 | 704 | 0.3+ | 0.4− | 2006 09 23 | G92 | 0.6− | 0.1+ |
| 2003 11 14 | 644 | 0.3+ | 0.2+ | 2006 09 15 | 704 | 0.7+ | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.0 |
| 2003 11 14 | 644 | 0.6+ | 0.2+ | 2006 09 15 | 704 | 0.3+ | 1.3+ | 2006 09 29 | 699 | 0.5− | 0.1− |
| 2006 08 29 | 699 | 0.4− | 0.3+ | 2006 09 16 | G92 | 0.4− | 0.5− | 2006 09 29 | 699 | 0.5+ | 0.2− |
| 2006 08 29 | 699 | 0.1+ | 0.5+ | 2006 09 16 | G92 | 0.5− | 0.8− | 2006 09 29 | 699 | 0.9+ | 0.1− |
| 2006 08 29 | 699 | 0.4+ | 0.1+ | 2006 09 16 | G92 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2006 08 29 | 699 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.5+ | 0.6− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2006 08 31 | 704 | 0.6+ | 1.0− | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.6+ | 0.3+ |
| 2006 08 31 | 704 | 0.6− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2006 08 31 | 704 | 0.6+ | 0.2+ | 2006 09 20 | 699 | 1.1+ | 1.4+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2006 09 14 | G92 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2006 09 14 | G92 | 0.7− | 0.5− | 2006 09 20 | 699 | 0.4+ | 0.2+ | | | | |
| 2006 09 14 | G92 | 0.3− | 0.1− | 2006 09 20 | 699 | 0.5− | 0.6+ | | | | |

**2006 QS$_{136}$ = 2004 DK$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.37464 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21472243 | $\omega$ | 205.05330 | | +0.97702411 | | +0.16452574 |
| $a$ | 2.7619625 | $\Omega$ | 144.62988 | | −0.13368818 | | +0.96816419 |
| $e$ | 0.1398559 | $i$ | 13.53563 | | −0.16598602 | | +0.18865150 |
| $P$ | 4.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.6+ | 0.4+ | 2006 05 02 | G96 | 1.0+ | 0.4+ | 2006 09 12 | 704 | 1.0− | 0.7+ |
| 2002 10 31 | 704 | 0.5+ | 0.4+ | 2006 05 02 | G96 | 0.2− | 0.7+ | 2006 09 14 | 703 | 1.1− | 0.0 |
| 2002 10 31 | 704 | 0.4+ | 0.3+ | 2006 05 02 | G96 | 0.3− | 1.2+ | 2006 09 14 | 703 | 0.3+ | 0.1+ |
| 2002 12 13 | 644 | 0.5− | 0.0 | 2006 05 02 | G96 | 0.4− | 0.7+ | 2006 09 14 | 703 | 0.0 | 0.1− |
| 2002 12 13 | 644 | 0.3− | 0.3− | 2006 07 21 | 703 | 1.2+ | 0.5+ | 2006 09 14 | 703 | 0.1− | 0.3− |
| 2002 12 13 | 644 | 0.8− | 0.1− | 2006 07 21 | 703 | 0.9− | 1.1+ | 2006 09 20 | 703 | 0.2− | 0.7+ |
| 2004 02 19 | 704 | 1.0− | 0.2+ | 2006 07 21 | 703 | 0.3+ | 0.6+ | 2006 09 20 | 703 | 1.4− | 0.0 |
| 2004 02 19 | 704 | 0.4− | 0.5− | 2006 07 21 | 703 | (2.3+ | 0.3+) | 2006 09 20 | 703 | 0.0 | 0.8− |
| 2004 02 19 | 704 | 0.7+ | 0.5+ | 2006 08 30 | 699 | 0.2+ | 0.5+ | 2006 09 20 | 703 | 0.1− | 0.1+ |
| 2004 02 19 | 704 | 0.7− | 1.2+ | 2006 08 30 | 699 | 0.3− | 0.7+ | 2006 09 26 | 703 | 0.4+ | 0.2+ |
| 2004 02 23 | 704 | 0.9+ | 0.5+ | 2006 08 30 | 699 | 0.3+ | 0.8+ | 2006 09 26 | 703 | 0.2+ | 0.1− |
| 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 08 31 | 704 | 0.8+ | 0.5+ | 2006 09 26 | 703 | 0.5+ | 0.3− |
| 2004 02 23 | 704 | 0.2+ | 0.7+ | 2006 08 31 | 704 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.3+ | 0.4− |
| 2004 02 23 | 704 | 0.7+ | 0.5+ | 2006 08 31 | 704 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.0 |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 08 31 | 704 | 0.0 | 1.4− | 2006 10 12 | 644 | 0.5+ | 0.2− |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 12 | 704 | (2.3− | 0.6−) | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 12 | 704 | 1.2− | 0.5+ | | | | |

**2006 QC$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.27084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29450572 | $\omega$ | 25.67000 | | +0.99761104 | | +0.04073804 |
| $a$ | 2.2373824 | $\Omega$ | 331.82428 | | −0.06292561 | | +0.86913721 |
| $e$ | 0.1717556 | $i$ | 6.78574 | | +0.02850586 | | +0.49289038 |
| $P$ | 3.35 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.9+ | 1.1− | 2006 09 16 | 683 | 1.4+ | 0.5− | 2006 09 25 | 704 | 0.2+ | 0.1+ |
| 2003 11 19 | 704 | 0.4− | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.2− | 2006 09 25 | 704 | 0.0 | 0.6+ |
| 2003 11 19 | 704 | 0.4− | 0.6+ | 2006 09 16 | 703 | 0.3+ | 0.6− | 2006 09 25 | 683 | 0.0 | 0.4+ |
| 2003 11 19 | 704 | 1.0− | 0.5+ | 2006 09 16 | 683 | (4.9+ | 2.3+) | 2006 09 25 | 704 | 0.4+ | 0.7+ |
| 2003 12 17 | 704 | 0.9− | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 09 25 | 683 | (0.3− | 2.2+) |
| 2003 12 17 | 704 | 0.0 | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.2− | 2006 09 27 | 699 | 0.7+ | 0.3+ |
| 2003 12 17 | 704 | 0.8+ | 0.0 | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 09 27 | 699 | 0.3+ | 0.4− |
| 2003 12 17 | 704 | 0.8+ | 0.3− | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 699 | 0.4− | 1.0− |
| 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 09 17 | 683 | (2.0− | 0.7+) | 2006 09 27 | 703 | (0.3− | 4.2−) |
| 2006 07 22 | G96 | 0.4− | 0.3− | 2006 09 17 | 683 | (2.0− | 1.6+) | 2006 09 27 | 703 | 0.5− | 0.4− |
| 2006 07 22 | G96 | 0.3+ | 0.3− | 2006 09 17 | 683 | (2.8− | 0.2+) | 2006 09 27 | 703 | 0.6− | 0.7− |
| 2006 07 22 | G96 | 0.3+ | 0.4− | 2006 09 18 | 704 | 0.9+ | 0.3− | 2006 09 27 | 703 | 0.3− | 0.4− |
| 2006 08 29 | 699 | (1.6+ | 0.6+) | 2006 09 18 | 704 | 0.1− | 0.3+ | 2006 09 28 | 683 | 0.1+ | 1.2− |
| 2006 08 29 | 699 | 0.7− | 0.3− | 2006 09 18 | 683 | 0.1− | 0.8+ | 2006 09 28 | 683 | 0.9− | 1.1+ |
| 2006 08 29 | 699 | 0.2− | 0.6− | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 09 28 | 683 | 1.4− | 0.5− |
| 2006 08 29 | 699 | 0.4+ | 0.3+ | 2006 09 18 | 683 | (1.6+ | 1.7+) | 2006 09 30 | 683 | (2.7+ | 0.6−) |
| 2006 08 30 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.3− | 2006 09 30 | 683 | (2.2+ | 0.8−) |
| 2006 08 30 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 683 | 0.5− | 0.7+ | 2006 09 30 | 683 | 1.3+ | 0.1− |
| 2006 08 30 | 704 | 0.9− | 0.3+ | 2006 09 18 | 704 | 0.8+ | 0.3+ | 2006 10 03 | 704 | 0.5− | 1.3+ |
| 2006 08 30 | 704 | 1.1− | 0.2− | 2006 09 19 | 683 | 0.4+ | 0.5+ | 2006 10 03 | 704 | 0.3− | 0.3− |
| 2006 08 30 | 704 | 0.8− | 0.3+ | 2006 09 19 | 683 | 0.0 | 0.7+ | 2006 10 03 | 704 | 0.2− | 0.9− |
| 2006 08 31 | A13 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.4+ | 2006 10 03 | 704 | 0.2− | 0.2+ |
| 2006 08 31 | A13 | 0.2+ | 0.4− | 2006 09 19 | 683 | 1.0+ | 1.3+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2006 08 31 | A13 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2006 08 31 | 704 | (2.3− | 0.5−) | 2006 09 19 | 699 | 0.7+ | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 2006 08 31 | 704 | (2.1− | 0.1−) | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.8− | 0.2+ |
| 2006 08 31 | 704 | 1.4− | 0.6− | 2006 09 21 | 683 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.7− |
| 2006 09 01 | A13 | 0.1− | 0.1+ | 2006 09 21 | 683 | (0.1+ | 1.7+) | 2006 10 17 | 703 | 0.6+ | 0.3− |
| 2006 09 01 | A13 | 0.0 | 0.4− | 2006 09 21 | 683 | (1.9− | 0.8+) | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2006 09 01 | A13 | 0.1− | 0.4− | 2006 09 22 | 683 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2006 09 06 | 644 | 0.4+ | 0.0 | 2006 09 22 | 683 | 0.1+ | 1.1+ | 2006 10 22 | 644 | 0.4+ | 0.2− |
| 2006 09 06 | 644 | 0.5+ | 0.2+ | 2006 09 22 | 683 | 0.8− | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2006 09 06 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.6+ | 0.3− | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2006 09 15 | 683 | 1.3+ | 1.0+ | 2006 09 25 | 291 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2006 09 15 | 683 | 0.2− | 1.1+ | 2006 09 25 | 291 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2006 09 15 | 683 | (1.3− | 1.7+) | 2006 09 25 | 704 | 0.1+ | 0.4+ | | | | |
| 2006 09 16 | 703 | 0.9− | 0.4− | 2006 09 25 | 291 | 0.3− | 0.3− | | | | |

**2006 QF$_{137}$ = 1996 TA$_{47}$ = 1999 FB$_{86}$ = 2004 DA$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.70902 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19177547 | $\omega$ | 210.17199 | | −0.99540643 | | +0.00035339 |
| $a$ | 2.9781096 | $\Omega$ | 329.39831 | | +0.05156175 | | −0.84060029 |
| $e$ | 0.0241509 | $i$ | 10.84000 | | −0.08066856 | | −0.54165582 |
| $P$ | 5.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 11 | 691 | 0.4− | 0.2+ | 2004 02 17 | 691 | 0.2− | 0.1+ | 2006 08 30 | A55 | 0.5− | 0.8− |
| 1996 10 11 | 691 | 0.3− | 0.7− | 2004 02 26 | 704 | 1.6+ | 1.4+ | 2006 08 31 | A55 | 0.1− | 0.1+ |
| 1996 10 18 | 691 | 0.4+ | 0.0 | 2004 02 26 | 704 | 0.1+ | 1.7+ | 2006 08 31 | A55 | 0.9− | 0.4+ |
| 1996 10 18 | 691 | 0.3+ | 0.3− | 2004 02 26 | 704 | 0.4+ | 1.2+ | 2006 08 31 | A55 | 0.5+ | 0.4+ |
| 1996 10 18 | 691 | 0.2+ | 0.1+ | 2004 02 26 | 704 | 0.6+ | 0.5+ | 2006 09 01 | A55 | 0.4− | 0.6+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.4+ | 0.1+ | 2006 09 01 | A55 | 0.3− | 1.4+ |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 09 01 | A55 | 0.5+ | 0.3+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.4+ | 0.3+ | 2006 09 13 | A55 | 0.1+ | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 09 13 | A55 | (0.0 | 1.7+) |
| 2001 09 20 | 704 | 0.4− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.9− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 1.1+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 27 | G96 | 0.8− | 0.1− |
| 2001 09 20 | 704 | 1.1+ | 1.1+ | 2006 08 30 | A55 | 0.3− | 1.0+ | 2006 09 27 | G96 | 0.8− | 0.1− |
| 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 08 30 | A55 | 0.9+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2004 02 17 | 691 | 0.0 | 0.2− | 2006 08 30 | A55 | 0.6+ | 0.4− | | | | |

**2006 QG$_{137}$ = 2002 TK$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.69119 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22899034 | $\omega$ | 194.87830 | | +0.60178447 | | −0.79853010 |
| $a$ | 2.6460088 | $\Omega$ | 218.12695 | | +0.73510380 | | +0.56081771 |
| $e$ | 0.0924263 | $i$ | 1.32924 | | +0.31221443 | | +0.21870797 |
| $P$ | 4.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 14 | 691 | 0.4− | 0.8+ | 2005 06 14 | 291 | 0.2− | 0.4+ | 2006 08 31 | A55 | 0.7+ | 0.3− |
| 1993 08 14 | 691 | 0.2+ | 0.2− | 2005 06 14 | 291 | 0.2+ | 0.3− | 2006 08 31 | A55 | 0.7+ | 0.3− |
| 1993 08 14 | 691 | 0.1+ | 0.1− | 2005 06 14 | 291 | 0.0 | 0.2+ | 2006 09 01 | A55 | 0.2− | 0.6+ |
| 1998 11 14 | 691 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.2− | 2006 09 01 | A55 | 0.5+ | 0.5− |
| 1998 11 14 | 691 | 0.1− | 0.3− | 2006 08 27 | 691 | 0.1− | 0.1− | 2006 09 01 | A55 | 0.5+ | 0.1− |
| 2002 10 06 | 644 | 1.0− | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.7− | 0.3− |
| 2002 10 06 | 644 | 0.6− | 0.3+ | 2006 08 30 | A55 | 0.8+ | 1.2+ | 2006 09 26 | G96 | 0.7− | 1.0− |
| 2002 10 06 | 644 | 0.5− | 0.4+ | 2006 08 30 | A55 | 0.2− | 0.8− | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2002 10 09 | 291 | 0.4+ | 0.2− | 2006 08 30 | A55 | 0.5+ | 0.5− | 2006 09 26 | G96 | 1.2− | 1.1− |
| 2002 10 09 | 291 | 0.1− | 0.4+ | 2006 08 30 | A55 | 0.4− | 0.7+ | | | | |
| 2002 10 09 | 291 | 0.2+ | 0.6+ | 2006 08 31 | A55 | 0.8+ | 0.6− | | | | |

**2006 QJ$_{137}$ = 2002 TY$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.79412 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23431730 | $\omega$ | 346.33154 | | +0.28611458 | | +0.94981370 |
| $a$ | 2.6057524 | $\Omega$ | 300.16261 | | −0.86480668 | | +0.19913864 |
| $e$ | 0.1174872 | $i$ | 8.41053 | | −0.41261101 | | +0.24124205 |
| $P$ | 4.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.0 | 0.2+ | 2003 12 29 | 691 | 0.2+ | 0.3− | 2006 09 01 | A13 | 0.3− | 0.0 |
| 2000 02 03 | 691 | 0.1− | 0.0 | 2003 12 29 | 691 | 0.2− | 0.0 | 2006 09 02 | A13 | 0.2− | 0.0 |
| 2000 02 03 | 691 | 0.0 | 0.3− | 2003 12 29 | 691 | 0.2− | 0.0 | 2006 09 13 | A13 | 0.3− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.4− | 1.3− | 2006 09 13 | A13 | 0.6+ | 0.0 |
| 2002 10 03 | 644 | 0.3− | 0.3+ | 2006 08 29 | 703 | 1.3+ | 0.5− | 2006 09 13 | A13 | 0.1+ | 0.1− |
| 2002 10 03 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.5+ | 2006 09 20 | 699 | (4.3+ | 0.6−) |
| 2002 10 03 | 644 | 0.5− | 0.5+ | 2006 08 29 | 703 | 0.1+ | 0.6+ | 2006 09 20 | 699 | 1.3+ | 0.9− |
| 2002 10 03 | 644 | 0.1+ | 0.2+ | 2006 08 30 | A13 | 0.2+ | 0.2− | 2006 09 20 | 699 | 0.7− | 0.6− |
| 2002 10 03 | 644 | 0.3− | 0.8+ | 2006 08 30 | A13 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.6− | 0.3− |
| 2002 10 05 | 704 | 0.4+ | 0.3+ | 2006 08 31 | A13 | 0.5+ | 0.3− | 2006 09 30 | 699 | 0.5− | 0.1+ |
| 2002 10 05 | 704 | 0.5+ | 0.3+ | 2006 08 31 | A13 | 0.2+ | 0.5+ | 2006 09 30 | 699 | 0.2− | 0.3+ |
| 2002 10 05 | 704 | 0.3− | 0.3− | 2006 08 31 | A13 | 0.1+ | 0.5− | 2006 09 30 | 699 | 0.4+ | 0.5− |
| 2002 10 05 | 704 | 1.0− | 0.1+ | 2006 08 31 | A13 | 0.1+ | 0.4− | 2006 09 30 | 699 | 0.1+ | 0.5+ |
| 2002 10 05 | 704 | 0.0 | 0.1+ | 2006 09 01 | A13 | 0.5− | 0.1+ | | | | |

**2006 QM$_{137}$ = 2005 JY$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 303.45912 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22276436 | $\omega$ | 245.53038 | | +0.68318089 | −0.72927608 |
| $a$ | 2.6950836 | $\Omega$ | 161.21865 | | +0.70520085 | +0.64546727 |
| $e$ | 0.0411916 | $i$ | 6.72210 | | +0.18961968 | +0.22699867 |
| $P$ | 4.42 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.2+ | 0.1− | 2006 09 01 | 734 | 0.6+ | 0.2+ | 2006 09 26 | 734 | 0.1− | 0.2− |
| 2005 05 08 | 691 | 0.1+ | 0.2− | 2006 09 01 | 734 | 0.6− | 0.7− | 2006 09 26 | 734 | 0.1+ | 0.3+ |
| 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 734 | 1.1+ | 0.9+ | 2006 09 26 | 734 | 0.9+ | 0.6− |
| 2005 05 17 | G96 | 0.4− | 0.1+ | 2006 09 14 | 734 | 0.4+ | 1.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2005 05 17 | G96 | 0.8− | 0.1+ | 2006 09 14 | 734 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2005 05 17 | G96 | 0.5− | 0.2+ | 2006 09 25 | 734 | 0.3+ | 0.8− | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2005 05 17 | G96 | 0.3− | 0.1− | 2006 09 25 | 734 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2006 08 31 | 734 | 0.0 | 0.2− | 2006 09 25 | 734 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2006 08 31 | 734 | 0.9− | 0.4− | 2006 09 25 | 734 | 0.4− | 1.3+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2006 08 31 | 734 | 0.2+ | 0.1+ | 2006 09 26 | 734 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2006 08 31 | 734 | 0.8− | 0.1− | 2006 09 26 | 734 | 0.5+ | 0.2− | 2006 09 30 | G96 | 0.4− | 0.2− |

**2006 QN$_{137}$ = 2005 LT$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 335.23941 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23387325 | $\omega$ | 267.27466 | | +0.87735040 | −0.46152682 |
| $a$ | 2.6090497 | $\Omega$ | 120.18020 | | +0.47802269 | +0.81676900 |
| $e$ | 0.1385495 | $i$ | 8.73884 | | +0.04183996 | +0.34623892 |
| $P$ | 4.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 608 | 0.8− | 0.5+ | 2005 06 13 | G96 | 1.3− | 0.9+ | 2006 09 14 | 703 | 0.1+ | 0.8− |
| 2002 10 08 | 608 | 0.0 | 0.1+ | 2005 06 13 | 291 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.8+ |
| 2002 10 08 | 608 | 0.3+ | 0.4+ | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.2+ | 0.7− |
| 2002 10 15 | 644 | 0.1− | 0.5+ | 2005 06 14 | 291 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.9+ |
| 2002 10 15 | 644 | 0.4− | 0.6+ | 2005 06 14 | 291 | 0.0 | 0.0 | 2006 09 19 | 703 | (0.2+ | 1.7+) |
| 2002 10 15 | 644 | 0.1− | 0.6+ | 2005 06 14 | 291 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.6− | 1.2+ |
| 2004 02 17 | 691 | 0.3+ | 0.6+ | 2006 08 30 | 699 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.3− | 0.7+ |
| 2004 02 17 | 691 | 0.1+ | 0.6+ | 2006 08 30 | 699 | 0.2− | 1.1+ | 2006 09 20 | 703 | 0.6− | 0.8+ |
| 2004 02 17 | 691 | 0.3+ | 0.7+ | 2006 08 30 | 699 | 0.6+ | 0.5+ | 2006 09 20 | 703 | 0.4− | 0.3+ |
| 2005 05 03 | 691 | 0.3− | 0.3+ | 2006 08 30 | 699 | 0.2− | 0.7+ | 2006 09 20 | 703 | 0.4+ | 0.4+ |
| 2005 05 03 | 691 | 0.1+ | 0.4+ | 2006 08 30 | F84 | 0.4− | 0.2− | 2006 09 20 | 703 | 0.6+ | 1.1+ |
| 2005 05 03 | 691 | 0.1− | 0.6+ | 2006 08 30 | F84 | 0.6+ | 1.0− | 2006 09 26 | 703 | 0.1+ | 0.8+ |
| 2005 06 05 | 691 | 0.3+ | 0.0 | 2006 08 30 | F84 | 0.4− | 0.1− | 2006 09 26 | 703 | (1.7+ | 0.3−) |
| 2005 06 05 | 691 | 0.1+ | 0.0 | 2006 09 01 | F84 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.1− |
| 2005 06 05 | 691 | 0.1+ | 0.6− | 2006 09 01 | F84 | 0.7− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2005 06 13 | G96 | 1.1− | 0.2+ | 2006 09 01 | F84 | 1.1+ | 0.5− | 2006 10 02 | 703 | 0.4− | 0.9− |
| 2005 06 13 | 291 | 0.2+ | 0.1− | 2006 09 11 | F84 | 0.6+ | 0.0 | 2006 10 02 | 703 | 0.1+ | 0.7+ |
| 2005 06 13 | G96 | 1.0− | 0.7+ | 2006 09 11 | F84 | (0.4− | 2.0+) | 2006 10 02 | 703 | 1.1+ | 0.8+ |
| 2005 06 13 | 291 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.8− | 1.1− | 2006 10 02 | 703 | 0.4− | 0.2− |

**2006 QO$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 36.25525 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.30205085 | $\omega$ | 318.76397 | | +0.36327509 | +0.93087104 |
| $a$ | 2.1999662 | $\Omega$ | 332.47117 | | −0.83124109 | +0.30499031 |
| $e$ | 0.1623457 | $i$ | 4.82329 | | −0.42079621 | +0.20114674 |
| $P$ | 3.26 | $H$ | 18.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 17 | 691 | 0.1+ | 0.1− | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 08 31 | 947 | 0.3+ | 1.0− |
| 2003 10 17 | 691 | 0.1− | 0.0 | 2006 08 15 | 644 | 0.1− | 0.2− | 2006 08 31 | 947 | 0.3+ | 0.6− |
| 2003 10 17 | 691 | 0.0 | 0.0 | 2006 08 15 | 644 | 0.1− | 0.6+ | 2006 09 17 | 947 | 0.2+ | 0.3− |
| 2003 11 21 | 695 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 17 | 947 | 0.3− | 0.1+ |
| 2003 11 21 | 695 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 2005 03 10 | G96 | 0.1− | 0.4− | 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2005 03 10 | G96 | 0.0 | 0.2+ | 2006 08 30 | 947 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 2005 03 10 | G96 | 0.0 | 0.1+ | 2006 08 30 | 947 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2005 03 10 | G96 | 0.1+ | 0.0 | 2006 08 30 | 947 | 0.1+ | 1.1− | | | | |

**2006 QP$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 0.80062 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.31139669 | $\omega$ | 14.76543 | | +0.97868217 | +0.20478736 |
| $a$ | 2.1557251 | $\Omega$ | 333.40213 | | −0.19178900 | +0.88410385 |
| $e$ | 0.1765093 | $i$ | 1.99666 | | −0.07347233 | +0.42002680 |
| $P$ | 3.17 | $H$ | 19.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 27 | 691 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 01 | 152 | 0.3− | 1.5+ |
| 2003 09 27 | 691 | 0.2+ | 0.1− | 2006 08 27 | 691 | 0.3− | 0.4+ | 2006 09 01 | 152 | (1.6+ | 0.8+) |
| 2003 09 27 | 691 | 0.2− | 0.2− | 2006 08 27 | 691 | 0.8+ | 0.5− | 2006 09 25 | G96 | 0.4− | 0.3− |
| 2003 10 16 | 691 | 0.4+ | 0.1− | 2006 08 30 | 947 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2003 10 16 | 691 | 0.2− | 0.5+ | 2006 08 30 | 947 | 0.2− | 0.6− | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2003 10 16 | 691 | 0.0 | 0.1− | 2006 08 30 | 947 | 0.9+ | 0.8− | 2006 09 25 | G96 | 0.6− | 0.2+ |
| 2005 03 12 | 695 | 0.6− | 0.5+ | 2006 08 31 | 947 | 0.1− | 0.5− | 2006 09 27 | G96 | 0.1− | 0.1− |
| 2005 03 12 | 695 | 0.9+ | 0.3+ | 2006 08 31 | 947 | 0.5− | 0.3− | 2006 09 27 | G96 | 0.5+ | 0.1− |
| 2006 08 19 | 691 | 0.4− | 0.3− | 2006 08 31 | 947 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.3+ |
| 2006 08 19 | 691 | 0.4− | 0.2+ | 2006 09 01 | 152 | 0.2+ | 0.8− | 2006 09 27 | G96 | 0.1+ | 0.1+ |
| 2006 08 19 | 691 | 0.5+ | 0.6+ | 2006 09 01 | 152 | (0.0 | 1.6+) | | | | |

**2006 QQ$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 298.17280 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.17841137 | $\omega$ | 280.81114 | | +0.12354958 | −0.98901772 |
| $a$ | 3.1250313 | $\Omega$ | 161.49374 | | +0.98069144 | +0.10920418 |
| $e$ | 0.3115227 | $i$ | 14.80621 | | +0.15159091 | +0.09959117 |
| $P$ | 5.52 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | (2.3+ | 0.3−) | 2006 08 30 | 947 | 0.1+ | 0.1+ | 2006 09 02 | 152 | 1.1− | 0.4− |
| 2001 09 17 | 699 | 0.5− | 1.2+ | 2006 08 30 | 947 | 0.0 | 0.2− | 2006 09 19 | 947 | 0.9+ | 1.0− |
| 2001 09 17 | 699 | 0.2− | 0.2+ | 2006 08 30 | 947 | 0.7+ | 1.0+ | 2006 09 19 | 947 | 0.3+ | 1.3− |
| 2001 09 17 | 699 | 0.6+ | 0.5+ | 2006 08 31 | 947 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2001 10 14 | 699 | 0.1+ | 1.0+ | 2006 08 31 | 947 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.3− |
| 2001 10 14 | 699 | 0.5− | 1.3+ | 2006 09 01 | 152 | (2.3− | 3.0−) | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 10 14 | 699 | 0.3− | 1.1− | 2006 09 01 | 152 | 0.1− | 1.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2001 10 14 | 699 | 0.3+ | 0.6+ | 2006 09 01 | 152 | 0.5− | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.4− |
| 2003 03 26 | 644 | 0.6+ | 0.6+ | 2006 09 01 | 152 | (3.2+ | 3.4+) | 2006 09 30 | G96 | 0.3− | 0.8− |
| 2003 03 26 | 644 | 0.2+ | 0.9+ | 2006 09 01 | 152 | (1.7− | 0.3−) | 2006 09 30 | G96 | 0.4− | 0.4− |
| 2003 03 26 | 644 | 0.5+ | 0.9+ | 2006 09 01 | 152 | (1.4− | 1.6−) | 2006 09 30 | G96 | 0.3− | 0.3− |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 09 01 | 152 | 0.2− | 0.5− | 2006 09 30 | G96 | 0.2+ | 0.0 |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 09 01 | 152 | 0.5+ | 0.7+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2006 08 19 | 691 | 0.0 | 0.5+ | 2006 09 02 | 152 | (0.2− | 2.1−) | 2006 09 30 | G96 | 0.2− | 0.1− |
| 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 02 | 152 | (1.7+ | 1.5−) | 2006 09 30 | G96 | 0.1− | 0.1+ |
| 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 02 | 152 | 1.4+ | 1.0+ | | | | |

**2006 QS$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.39096 | | (2000.0) | | | |
| $n$ | 0.35938947 | $\omega$ | 235.26755 | | +0.38895939 | −0.91756866 |
| $a$ | 1.9592619 | $\Omega$ | 192.66064 | | +0.91916392 | +0.39254152 |
| $e$ | 0.1056120 | $i$ | 22.06371 | | +0.06203452 | −0.06307860 |
| $P$ | 2.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 0.0 | 0.2+ | 2005 04 15 | 703 | 0.7− | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.2− |
| 1998 10 12 | 699 | 0.6+ | 1.6+ | 2006 08 29 | 699 | 0.2− | 1.4+ | 2006 09 20 | 699 | 0.0 | 0.7− |
| 1998 10 12 | 699 | 0.6+ | 0.9+ | 2006 08 29 | 699 | 0.7+ | 0.3− | 2006 10 01 | 703 | 0.2− | 0.4+ |
| 1998 11 13 | 704 | 0.2+ | 0.7− | 2006 08 29 | 699 | 0.1+ | 0.5+ | 2006 10 01 | 703 | 1.0− | 0.1+ |
| 1998 11 13 | 704 | 1.3− | 0.0 | 2006 08 29 | 699 | 1.2+ | 0.7+ | 2006 10 01 | 703 | 0.0 | 0.3+ |
| 1998 11 13 | 704 | (2.1+ | 1.3+) | 2006 09 01 | 704 | 0.3− | 0.1− | 2006 10 01 | 703 | (0.7− | 1.9+) |
| 1998 11 13 | 704 | (4.0− | 0.4+) | 2006 09 01 | 704 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 03 11 | 699 | 0.7− | 0.2+ | 2006 09 01 | 704 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 03 11 | 699 | 0.2+ | 0.2− | 2006 09 01 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 03 11 | 699 | 1.5+ | 0.6+ | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2005 03 11 | 699 | 0.4+ | 0.2+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7− | 1.2− |
| 2005 04 05 | 703 | 0.3+ | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 1.2− |
| 2005 04 05 | 703 | (2.1+ | 0.7+) | 2006 09 11 | 703 | 0.4− | 0.3− | 2006 11 11 | 703 | 1.2− | 0.3+ |
| 2005 04 05 | 703 | 1.3− | 1.4+ | 2006 09 11 | 703 | 0.4− | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.2+ |
| 2005 04 05 | 703 | 0.9− | 1.0+ | 2006 09 11 | 703 | 0.8+ | 0.2− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2005 04 15 | 703 | 0.7+ | 0.2− | 2006 09 11 | 703 | 0.7+ | 0.2− | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2005 04 15 | 703 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.3− | 0.7+ | 2006 11 13 | G96 | 0.4+ | 0.0 |
| 2005 04 15 | 703 | 0.6+ | 0.4+ | 2006 09 20 | 699 | 0.5− | 1.0+ | | | | |

**2006 QJ$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.96386 | | (2000.0) | | | |
| $n$ | 0.16888738 | $\omega$ | 343.73060 | | +0.68401012 | +0.72433127 |
| $a$ | 3.2414395 | $\Omega$ | 329.26535 | | −0.64901232 | +0.55016733 |
| $e$ | 0.0679604 | $i$ | 9.73933 | | −0.33303629 | +0.41552392 |
| $P$ | 5.84 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2− | 0.4− | 2004 03 16 | 691 | 0.0 | 0.6+ | 2006 08 28 | 699 | 0.7− | 0.6+ |
| 2001 11 11 | 704 | 0.0 | 0.2− | 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.6+ | 1.0+ |
| 2001 11 11 | 704 | 0.1+ | 1.8+ | 2006 08 16 | 644 | 0.2+ | 0.1+ | 2006 08 28 | 699 | 0.2+ | 0.5+ |
| 2001 11 11 | 704 | 0.0 | 0.2+ | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.7+ |
| 2001 11 11 | 704 | 0.4− | 0.3+ | 2006 08 18 | 644 | 0.8− | 0.1+ | 2006 09 14 | 703 | 0.5+ | 0.5− |
| 2002 12 13 | 645 | 0.0 | 0.0 | 2006 08 18 | 644 | 0.3− | 0.4+ | 2006 09 14 | 703 | 0.5− | 1.1+ |
| 2002 12 13 | 645 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.5− | 0.0 | 2006 09 14 | 703 | 0.5− | 0.5− |
| 2004 03 13 | 644 | 0.4+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 1.0+ | 2006 09 27 | G96 | 0.3− | 0.0 |
| 2004 03 13 | 644 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.2+ | 0.5+ | 2006 09 27 | G96 | 0.4− | 0.1− |
| 2004 03 13 | 644 | 0.4+ | 0.8+ | 2006 08 28 | 699 | 0.4+ | 0.5− | 2006 09 27 | G96 | 0.2− | 0.0 |
| 2004 03 16 | 691 | 0.6+ | 0.3+ | 2006 08 28 | 703 | 0.6+ | 0.6+ | 2006 09 27 | G96 | 0.4− | 0.1+ |
| 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 1.0− | 1.2+ | | | | |

**2006 QO$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.54834 | | (2000.0) | | | |
| $n$ | 0.25693749 | $\omega$ | 250.86791 | | +0.60397589 | +0.79078922 |
| $a$ | 2.4504795 | $\Omega$ | 56.69066 | | −0.67927750 | +0.57593649 |
| $e$ | 0.2021981 | $i$ | 6.82576 | | −0.41688753 | +0.20724276 |
| $P$ | 3.84 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 02 | 691 | 0.1− | 0.6+ | 2002 07 16 | 644 | 0.1− | 0.5+ | 2006 09 17 | 699 | 0.2+ | 0.3+ |
| 1991 11 02 | 691 | 0.2+ | 0.3+ | 2002 07 16 | 644 | 0.1− | 0.5+ | 2006 09 17 | 699 | 0.2+ | 0.0 |
| 1991 11 02 | 691 | 0.3− | 0.4+ | 2005 03 13 | 152 | (1.9− | 2.0+) | 2006 09 17 | 699 | 0.0 | 0.2− |
| 1995 11 28 | 691 | 0.1+ | 0.2− | 2005 03 13 | 152 | 0.2+ | 0.5− | 2006 09 20 | 703 | 0.3− | 0.3− |
| 1995 11 28 | 691 | 0.3− | 0.2− | 2005 03 13 | 152 | (2.0− | 1.1−) | 2006 09 20 | 703 | 0.4+ | 0.1+ |
| 1995 11 28 | 691 | 0.1+ | 0.2− | 2005 03 13 | 152 | 0.4+ | 0.9+ | 2006 09 20 | 703 | 0.2+ | 0.1+ |
| 2002 06 06 | 704 | 0.0 | 0.3− | 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 703 | 0.3+ | 0.5+ |
| 2002 06 06 | 704 | 0.1− | 0.6+ | 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.1+ |
| 2002 06 06 | 704 | 0.2− | 1.1+ | 2005 04 16 | 691 | 0.3− | 0.2− | 2006 09 26 | 703 | 0.4− | 0.8+ |
| 2002 06 06 | 704 | 0.1− | 1.1+ | 2006 05 30 | E12 | 0.6− | 0.6− | 2006 09 26 | 703 | 0.0 | 0.3+ |
| 2002 06 13 | 644 | 0.1− | 0.1− | 2006 05 30 | E12 | 0.2+ | 0.4− | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2002 06 13 | 644 | 0.3− | 0.1− | 2006 05 30 | E12 | (2.6+ | 0.5−) | 2006 10 12 | 644 | 0.3+ | 0.6+ |
| 2002 06 13 | 644 | 0.2− | 0.2− | 2006 05 30 | E12 | 0.7− | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2002 06 20 | 644 | 0.1− | 0.3− | 2006 08 16 | 644 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2002 06 20 | 644 | 0.2+ | 0.5− | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 1.4− |
| 2002 06 20 | 644 | 0.1+ | 0.5− | 2006 08 16 | 644 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.9+ | 0.7− |
| 2002 07 06 | 644 | 0.0 | 0.4− | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.5− | 0.4+ |
| 2002 07 06 | 644 | 0.1+ | 0.3− | 2006 08 18 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.2− | 1.0− |
| 2002 07 06 | 644 | 0.1+ | 0.3− | 2006 08 18 | 644 | 0.2+ | 0.0 | | | | |
| 2002 07 16 | 644 | 0.0 | 0.3+ | 2006 09 17 | 699 | 1.0− | 0.3− | | | | |

**2006 QS$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.38875 | | (2000.0) | | | |
| $n$ | 0.24684244 | $\omega$ | 340.41709 | | +0.99463336 | −0.01890886 |
| $a$ | 2.5168432 | $\Omega$ | 21.44585 | | +0.07821803 | +0.78096841 |
| $e$ | 0.2096319 | $i$ | 16.15344 | | −0.06772304 | +0.62428423 |
| $P$ | 3.99 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 704 | 0.5+ | 1.7+ | 2006 07 28 | E12 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.4+ | 0.3− |
| 1998 09 21 | 704 | 1.0+ | 2.1+ | 2006 07 28 | E12 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.3− | 0.3+ |
| 1998 09 21 | 704 | 2.0+ | 1.2− | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 09 21 | 699 | 0.4− | 0.9+ |
| 1998 09 21 | 704 | (5.2− | 0.5−) | 2006 08 14 | 644 | 0.1− | 0.3− | 2006 09 21 | 699 | (1.9+ | 0.5−) |
| 2002 09 10 | 644 | 0.1+ | 0.0 | 2006 08 14 | 644 | 0.4+ | 0.4− | 2006 09 21 | 699 | 0.1+ | 0.8− |
| 2002 09 10 | 644 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.4− |
| 2002 09 10 | 644 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.2+ | 0.6− |
| 2005 03 15 | G96 | 0.4− | 0.2+ | 2006 08 16 | 644 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.7− |
| 2005 03 15 | G96 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.3− | 0.2− |
| 2005 03 15 | G96 | 0.6+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2005 03 15 | G96 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2006 07 28 | E12 | 0.4− | 0.5+ | 2006 09 20 | 703 | 0.8+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2006 07 28 | E12 | 0.2+ | 0.4− | 2006 09 20 | 703 | 0.6− | 0.0 | | | | |

**2006 QC$_{139}$ = 2005 GO$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.88194 | | (2000.0) | | | |
| $n$ | 0.26714636 | $\omega$ | 215.12441 | | +0.90567634 | −0.42394302 |
| $a$ | 2.3876457 | $\Omega$ | 169.95600 | | +0.39496706 | +0.83958479 |
| $e$ | 0.1417225 | $i$ | 1.56478 | | +0.15411485 | +0.33966114 |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1− | 2005 04 09 | 691 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.3+ | 0.1− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2005 04 09 | 691 | 0.1+ | 0.2− | 2006 08 18 | 644 | 0.2+ | 0.1− |
| 2005 04 06 | G96 | 0.6− | 0.1− | 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 08 18 | 644 | 0.4+ | 0.1+ |
| 2005 04 06 | G96 | 0.3− | 0.2− | 2006 08 17 | 644 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.0 |
| 2005 04 06 | G96 | 0.3+ | 0.3− | 2006 08 17 | 644 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.1+ | 0.0 |
| 2005 04 06 | G96 | 0.4− | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.1− | 2006 09 13 | 644 | 0.1− | 0.5− |

**2006 QO$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.70034 | | (2000.0) | | | |
| $n$ | 0.21586047 | $\omega$ | 352.88667 | | +0.98725630 | −0.15664501 |
| $a$ | 2.7522464 | $\Omega$ | 16.20695 | | +0.15051107 | +0.86183966 |
| $e$ | 0.0673627 | $i$ | 5.76985 | | +0.05168566 | +0.48238444 |
| $P$ | 4.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 13 | 691 | 0.3+ | 0.1+ | 2002 10 31 | 644 | 0.1+ | 0.2+ | 2004 02 16 | 691 | 0.3+ | 0.2+ |
| 1993 12 13 | 691 | 0.2− | 0.2− | 2002 10 31 | 644 | 0.2+ | 0.1+ | 2006 08 17 | 644 | 0.3− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 13 | 691 | 0.0 | 0.3− | 2004 01 18 | 644 | 0.3− | 0.0 | 2006 08 17 | 644 | 0.2− | 0.7+ | | |
| 2002 10 16 | 644 | 0.3− | 0.3+ | 2004 01 18 | 644 | 0.2− | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.5+ | | |
| 2002 10 16 | 644 | 0.2− | 0.2+ | 2004 01 18 | 644 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.3− | 0.2+ | | |
| 2002 10 16 | 644 | 0.5− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.0 | | |
| 2002 10 31 | 644 | 0.3+ | 0.3+ | 2004 02 16 | 691 | 0.2+ | 0.2+ | 2006 08 18 | 644 | 0.3− | 0.0 | | |

### 2006 QX$_{139}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.01104 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27002129 | $\omega$ | 135.45157 | | +0.76060460 | | +0.64920207 |
| $a$ | 2.3706679 | $\Omega$ | 184.07351 | | −0.61079534 | | +0.71340564 |
| $e$ | 0.1494791 | $i$ | 3.35828 | | −0.22002203 | | +0.26379740 |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.1+ | 0.1− | 2005 04 02 | G96 | 0.2− | 0.5+ | 2006 07 20 | 644 | 0.3+ | 0.1+ | | |
| 2003 11 19 | 691 | 0.2+ | 0.0 | 2005 04 02 | G96 | 0.5+ | 0.5+ | 2006 07 20 | 644 | 0.4− | 0.2+ | | |
| 2003 11 19 | 691 | 0.3− | 0.2+ | 2005 04 02 | G96 | 0.4+ | 0.1+ | 2006 08 18 | 644 | 0.3− | 0.3+ | | |
| 2003 11 26 | 691 | 0.3+ | 0.1− | 2005 04 02 | G96 | 0.3− | 0.0 | 2006 08 18 | 644 | 0.2− | 0.1+ | | |
| 2003 11 26 | 691 | 0.1+ | 0.2− | 2006 05 30 | G96 | 0.1+ | 0.5− | 2006 08 18 | 644 | 0.2+ | 0.3+ | | |
| 2003 11 26 | 691 | 0.5− | 0.1+ | 2006 05 30 | G96 | 0.0 | 0.0 | 2006 08 19 | 644 | 0.3+ | 0.0 | | |
| 2003 12 19 | 691 | 0.1+ | 0.2+ | 2006 05 30 | G96 | 0.2− | 0.1− | 2006 08 19 | 644 | 0.0 | 0.1+ | | |
| 2003 12 19 | 691 | 0.2+ | 0.0 | 2006 05 30 | G96 | 0.5+ | 0.3− | 2006 08 19 | 644 | 0.1− | 0.1+ | | |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2006 07 20 | 644 | 0.2− | 0.1+ | | | | | | |

### 2006 QA$_{140}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.30885 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18770615 | $\omega$ | 20.31592 | | +0.71913448 | | +0.68433417 |
| $a$ | 3.0209976 | $\Omega$ | 295.89992 | | −0.65460856 | | +0.60899747 |
| $e$ | 0.0659986 | $i$ | 7.70140 | | −0.23309491 | | +0.40100976 |
| $P$ | 5.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 07 25 | 644 | 0.1− | 0.1− | 2006 08 18 | 644 | 0.2+ | 0.0 | | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 07 25 | 644 | 0.4− | 0.1− | 2006 08 18 | 644 | 0.1+ | 0.1− | | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.0 | 0.1− | 2006 08 18 | 644 | 0.1− | 0.0 | | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 08 14 | 644 | 0.4+ | 0.3+ | 2006 08 24 | 644 | 0.3+ | 0.3+ | | |
| 2006 07 25 | 644 | 0.0 | 0.1− | 2006 08 14 | 644 | 0.1− | 0.1+ | 2006 08 24 | 644 | 0.6+ | 0.0 | | |
| 2006 07 25 | 644 | 0.5− | 0.4− | 2006 08 14 | 644 | 0.1− | 0.0 | 2006 08 24 | 644 | 0.2− | 0.1+ | | |
| 2006 07 25 | 644 | 0.4− | 0.2+ | 2006 08 14 | 644 | 0.0 | 0.1+ | | | | | | |
| 2006 07 25 | 644 | 0.2+ | 0.0 | 2006 08 14 | 644 | 0.2+ | 0.2− | | | | | | |

### 2006 QH$_{141}$ = 2005 LN$_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.72594 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19622052 | $\omega$ | 146.93754 | | +0.72651622 | | −0.67002816 |
| $a$ | 2.9329620 | $\Omega$ | 255.91623 | | +0.59141546 | | +0.72266524 |
| $e$ | 0.0647468 | $i$ | 9.04204 | | +0.34985989 | | +0.16975633 |
| $P$ | 5.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 645 | 0.0 | 0.0 | 2005 06 26 | G96 | 0.2− | 0.3+ | 2006 09 11 | 703 | 0.5+ | 1.0+ | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2005 06 26 | G96 | 0.2+ | 0.2− | 2006 09 11 | 703 | 0.6− | 1.1+ | | |
| 2005 06 13 | G96 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.3− | 0.1− | 2006 09 11 | 703 | 1.6+ | 0.2+ | | |
| 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.3− | 2006 09 11 | 703 | 0.5− | 0.1− | | |
| 2005 06 13 | G96 | 0.2+ | 0.1− | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.6+ | 0.3+ | | |
| 2005 06 13 | G96 | 0.0 | 0.1− | 2006 08 19 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.8− | 0.9− | | |
| 2005 06 26 | G96 | 0.2− | 0.1− | 2006 08 19 | 644 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 1.1− | | |
| 2005 06 26 | G96 | 0.0 | 0.0 | 2006 08 19 | 644 | 0.2− | 0.1− | | | | | | |

### 2006 QR$_{141}$ = 2000 GV$_{180}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.13635 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21076956 | $\omega$ | 256.17373 | | +0.37807147 | | +0.92440926 |
| $a$ | 2.7963881 | $\Omega$ | 36.16962 | | −0.81306767 | | +0.35753122 |
| $e$ | 0.0398781 | $i$ | 4.88858 | | −0.44269958 | | +0.13281172 |
| $P$ | 4.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.4− | 0.1− | 2001 08 24 | 644 | 0.3− | 0.2+ | 2005 05 12 | G96 | 0.4− | 0.6+ | | |
| 1995 03 23 | 691 | 0.2− | 0.8− | 2002 11 04 | 644 | 0.1− | 0.2+ | 2005 05 12 | G96 | 0.3− | 0.4+ | | |
| 1995 03 23 | 691 | 0.2− | 0.3+ | 2002 11 04 | 644 | 0.0 | 0.4+ | 2006 08 18 | 644 | 0.5− | 0.2− | | |
| 2000 04 06 | 704 | 0.1+ | 0.6− | 2002 11 04 | 644 | 0.5+ | 0.3+ | 2006 08 18 | 644 | 0.2− | 0.5+ | | |
| 2000 04 06 | 704 | 0.9+ | 1.3− | 2002 11 23 | 644 | 0.4− | 1.0+ | 2006 08 18 | 644 | 0.1− | 0.1+ | | |
| 2000 04 06 | 704 | 0.3− | 0.5+ | 2002 11 23 | 644 | 0.2+ | 0.5+ | 2006 08 20 | 644 | 0.1+ | 0.7+ | | |
| 2000 04 06 | 704 | 0.6+ | 0.5− | 2002 11 23 | 644 | 0.1− | 0.7+ | 2006 08 20 | 644 | 0.1+ | 0.2+ | | |
| 2000 04 13 | 691 | 0.4+ | 0.1+ | 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 08 20 | 644 | 0.2+ | 0.5+ | | |
| 2000 04 13 | 691 | 0.1+ | 0.5+ | 2004 02 16 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.5+ | 0.2− | | |
| 2000 04 13 | 691 | 0.4+ | 0.3+ | 2004 02 16 | 691 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.7− | | |
| 2001 08 24 | 644 | 0.5− | 0.1+ | 2005 05 12 | G96 | 0.0 | 0.6+ | 2006 09 14 | 703 | 1.4− | 0.3+ | | |
| 2001 08 24 | 644 | 0.1− | 0.2− | 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.4− | | |

### 2006 QU$_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.16115 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22815604 | $\omega$ | 95.72671 | | −0.46065592 | | +0.88626555 |
| $a$ | 2.6524553 | $\Omega$ | 146.70721 | | −0.84517281 | | −0.42139079 |
| $e$ | 0.0845301 | $i$ | 5.04437 | | −0.27107019 | | −0.19225807 |
| $P$ | 4.32 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.0 | 2005 05 03 | 704 | 0.9+ | 0.8+ | 2006 08 21 | 691 | 0.1− | 0.1+ | | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2005 05 03 | 704 | 0.3− | 0.8+ | 2006 08 21 | 691 | 0.1− | 0.1− | | |
| 2002 10 15 | 644 | 0.3− | 0.1+ | 2005 05 11 | 699 | 0.4− | 1.0− | 2006 08 21 | 691 | 0.2− | 0.1− | | |
| 2002 10 15 | 644 | 0.3− | 0.1+ | 2005 05 11 | 699 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.2− | 1.2+ | | |
| 2002 10 15 | 644 | 0.3− | 0.2− | 2005 05 11 | 699 | (0.7− | 2.3+) | 2006 08 28 | 703 | 0.8+ | 1.0− | | |
| 2002 10 30 | 645 | 0.1− | 0.1− | 2005 05 11 | 699 | 0.4− | 0.1− | 2006 08 28 | 703 | 0.9− | 0.3+ | | |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2005 05 14 | 704 | 0.2− | 1.3− | 2006 08 28 | 703 | 1.6+ | 0.0 | | |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2005 05 14 | 704 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.3− | 0.4− | | |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2005 05 14 | 704 | 0.1+ | 0.7+ | 2006 09 14 | 703 | 1.7+ | 0.2+ | | |
| 2005 04 02 | 691 | 0.1+ | 0.2+ | 2005 05 14 | 704 | 0.7− | 1.0+ | 2006 09 14 | 703 | 0.0 | 0.0 | | |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2006 07 25 | G96 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.4+ | 1.6+ | | |
| 2005 04 02 | 691 | 0.0 | 0.2+ | 2006 07 25 | G96 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.1− | | |
| 2005 04 15 | 691 | 0.1− | 0.1− | 2006 07 25 | G96 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.2− | | |
| 2005 04 15 | 691 | 0.1− | 0.2− | 2006 07 25 | G96 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.4− | 0.2− | | |
| 2005 04 15 | 691 | 0.1+ | 0.2− | 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.3− | | |
| 2005 05 03 | 704 | 0.0 | 0.9− | 2006 08 18 | 644 | 0.5− | 0.1+ | | | | | | |
| 2005 05 03 | 704 | 0.4+ | 0.0 | 2006 08 18 | 644 | 0.1− | 0.1− | | | | | | |

### 2006 QZ$_{141}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.78961 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29772996 | $\omega$ | 10.23063 | | +0.53220131 | | +0.84058856 |
| $a$ | 2.2212001 | $\Omega$ | 291.98983 | | −0.78423917 | | +0.44459633 |
| $e$ | 0.1979051 | $i$ | 6.24457 | | −0.31895250 | | +0.30942686 |
| $P$ | 3.31 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 691 | 0.1− | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.1− | | |
| 2003 11 21 | 691 | 0.3+ | 0.1− | 2006 08 21 | 691 | 0.1− | 0.1− | 2006 09 16 | 644 | 0.1− | 0.4− | | |
| 2003 11 21 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.6+ | 0.1+ | 2006 09 20 | 699 | 0.7+ | 0.9− | | |
| 2003 12 01 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.8− | 2006 09 20 | 699 | 0.1+ | 0.3+ | | |
| 2003 12 01 | 691 | 0.4− | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.6− | 2006 09 20 | 699 | 0.8+ | 0.3− | | |
| 2003 12 01 | 691 | 0.3+ | 0.5− | 2006 09 14 | 703 | 0.8− | 0.2− | 2006 09 20 | 699 | 0.3− | 0.8− | | |
| 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 15 | 704 | 0.9+ | 0.3+ | 2006 11 17 | 291 | 0.1+ | 0.4+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 18 | 644 | 0.1+ | 0.4+ | 2006 09 15 | 704 | 0.5+ | 0.2− | 2006 11 17 | 291 | 0.2− | 0.2+ | | |
| 2006 08 18 | 644 | 0.3+ | 0.1− | 2006 09 15 | 704 | 0.7− | 0.6+ | 2006 11 17 | 291 | 0.2− | 0.5+ | | |
| 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.4− | | | | | | |

**2006 QA$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.78565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17181474 | $\omega$ | 52.08279 | | +0.98398632 | +0.11613371 | |
| $a$ | 3.2045159 | $\Omega$ | 300.86811 | | −0.16666467 | +0.86842760 | |
| $e$ | 0.1343592 | $i$ | 9.06369 | | +0.06319657 | +0.48202331 | |
| $P$ | 5.74 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | (0.5+ | 2.2+) | 2001 12 23 | 704 | 0.3+ | 0.8+ | 2006 09 16 | 644 | 0.2− | 0.0 | | |
| 2000 08 21 | 699 | 0.3− | 1.2+ | 2001 12 23 | 704 | 0.4− | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.2+ | | |
| 2000 08 21 | 699 | 0.2− | 0.3+ | 2001 12 23 | 704 | 0.6+ | 0.0 | 2006 09 16 | 644 | 0.3− | 0.0 | | |
| 2000 08 21 | 699 | 1.0− | 0.7+ | 2002 01 08 | 704 | (1.9− | 0.6+) | 2006 09 20 | 699 | 0.4+ | 0.3+ | | |
| 2000 09 03 | 704 | 1.3− | 0.2− | 2002 01 08 | 704 | 0.9− | 0.7− | 2006 09 20 | 699 | 0.0 | 0.1− | | |
| 2000 09 03 | 704 | 0.4+ | 0.6− | 2002 01 08 | 704 | 0.3− | 0.9− | 2006 09 20 | 699 | 0.2+ | 0.1+ | | |
| 2000 09 03 | 645 | 0.1+ | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.3− | 2006 09 20 | 699 | 0.2+ | 0.1− | | |
| 2000 09 03 | 704 | 0.9− | 0.0 | 2006 08 18 | 644 | 0.3+ | 0.3− | 2006 10 01 | 703 | 0.8− | 0.2− | | |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.1+ | 0.3− | 2006 10 01 | 703 | 0.0 | 0.4+ | | |
| 2000 09 03 | 704 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.3− | 2006 10 01 | 703 | 1.0− | 0.7+ | | |
| 2001 11 11 | 704 | 0.2+ | 0.6+ | 2006 08 21 | 691 | 0.0 | 0.4− | 2006 10 01 | 703 | 0.5− | 0.4− | | |
| 2001 11 11 | 704 | 0.3+ | 0.8− | 2006 08 21 | 691 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2+ | | |
| 2001 11 11 | 704 | 0.0 | 1.1+ | 2006 09 15 | 704 | 0.9+ | 0.7− | 2006 10 11 | 644 | 0.3+ | 0.0 | | |
| 2001 11 11 | 704 | 0.2− | 0.8+ | 2006 09 15 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2001 12 23 | 704 | 0.2+ | 0.2+ | 2006 09 15 | 704 | (0.3+ | 1.7+) | | | | | | |
| 2001 12 23 | 704 | 0.0 | 0.4− | 2006 09 15 | 704 | 1.2+ | 0.1− | | | | | | |

**2006 QG$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.43941 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21308671 | $\omega$ | 99.93027 | | +0.15384124 | +0.98809237 | |
| $a$ | 2.7760789 | $\Omega$ | 178.90976 | | −0.95051562 | +0.14868640 | |
| $e$ | 0.2507693 | $i$ | 7.61046 | | −0.26991283 | +0.03957059 | |
| $P$ | 4.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 703 | 0.1+ | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.7− | 0.5+ | | |
| 2005 03 13 | 703 | 1.4− | 0.9+ | 2006 08 28 | 691 | 0.4+ | 1.0+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2005 03 13 | 703 | (2.0− | 0.4−) | 2006 08 28 | 691 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.4− | | |
| 2005 03 13 | 703 | 0.2+ | 0.8+ | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.2− | | |
| 2005 04 04 | 703 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 1.0− | 0.2+ | | |
| 2005 04 04 | 703 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.2− | | |
| 2005 04 04 | 703 | 1.2− | 0.5− | 2006 09 17 | 704 | 0.5+ | 1.0− | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2005 04 04 | 703 | 0.4+ | 1.4+ | 2006 09 17 | 704 | (1.6+ | 0.1−) | 2006 09 30 | 691 | 0.0 | 0.4− | | |
| 2005 04 04 | G96 | 0.5+ | 0.2− | 2006 09 17 | 704 | (0.3+ | 1.7−) | 2006 09 30 | 691 | 0.0 | 0.1− | | |
| 2005 04 04 | G96 | 0.0 | 0.4− | 2006 09 17 | 704 | 0.3+ | 0.6+ | 2006 10 01 | 703 | 0.6− | 0.5− | | |
| 2005 04 04 | G96 | 0.1+ | 0.6− | 2006 09 19 | 699 | (1.0− | 1.8+) | 2006 10 01 | 703 | (1.3− | 1.7−) | | |
| 2005 04 04 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 699 | 0.8− | 0.8+ | 2006 10 01 | 703 | 1.2+ | 0.1− | | |
| 2005 04 04 | G96 | 0.1− | 0.5− | 2006 09 19 | 699 | 0.5+ | 0.1+ | 2006 10 01 | 703 | (0.6+ | 2.4−) | | |
| 2005 04 04 | 704 | 0.5+ | 0.3− | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2005 04 04 | 704 | 0.2+ | 0.3− | 2006 09 20 | 704 | 1.3− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− | | |
| 2006 08 18 | 644 | 0.1− | 0.3− | 2006 09 20 | 704 | 0.5− | 0.6+ | 2006 10 20 | G96 | 0.4+ | 0.3− | | |
| 2006 08 18 | 644 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.2− | | |
| 2006 08 18 | 644 | 0.6+ | 0.4− | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.2− | | |
| 2006 08 19 | 691 | 0.3− | 1.3− | 2006 09 20 | 704 | 0.5− | 0.0 | 2006 11 17 | G96 | 0.3− | 0.1+ | | |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | (0.7+ | 1.7+) | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.5− | 1.1+ | 2006 11 17 | G96 | 0.2− | 0.3+ | | |

**2006 QH$_{142}$ = 2001 KD$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.55113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22451147 | $\omega$ | 83.80575 | | +0.44089861 | +0.89661365 | |
| $a$ | 2.6810836 | $\Omega$ | 212.45574 | | −0.85083340 | +0.40291256 | |
| $e$ | 0.2510649 | $i$ | 4.39651 | | −0.28581628 | +0.18369930 | |
| $P$ | 4.39 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 29 | 608 | 0.5+ | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.3+ | | |
| 2001 05 29 | 608 | 0.2+ | 0.1− | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 25 | 704 | 1.1− | 0.7− | | |
| 2001 05 29 | 608 | 0.6+ | 0.3+ | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.8+ | 1.4+ | | |
| 2001 05 31 | 691 | 0.1− | 0.0 | 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 09 25 | 704 | 1.3− | 0.5+ | | |
| 2001 05 31 | 691 | 0.2− | 0.3+ | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.3− | 0.6+ | | |
| 2001 05 31 | 691 | 0.1+ | 0.6+ | 2006 09 13 | 644 | 0.1− | 0.3+ | 2006 10 01 | 703 | 0.9− | 0.2− | | |
| 2004 01 28 | 291 | 0.1+ | 0.5+ | 2006 09 13 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 703 | 0.8+ | 0.1− | | |
| 2004 01 28 | 291 | 0.0 | 0.4+ | 2006 09 15 | 704 | 0.0 | 0.7+ | 2006 10 01 | 703 | 0.9+ | 0.9− | | |
| 2004 01 28 | 291 | 0.1+ | 0.6+ | 2006 09 15 | 704 | 0.4+ | 0.4− | 2006 10 01 | 703 | 0.4− | 0.1+ | | |
| 2005 04 12 | G96 | 0.3+ | 0.0 | 2006 09 15 | 704 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.0 | | |
| 2005 04 12 | G96 | 0.2+ | 0.3+ | 2006 09 15 | 704 | 0.1+ | 1.4+ | 2006 10 23 | G96 | 0.3+ | 0.2− | | |
| 2005 04 12 | G96 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 1.0− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.2− | | |
| 2005 04 12 | G96 | 0.2+ | 0.6+ | 2006 09 18 | 704 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.1+ | | |
| 2005 05 14 | G96 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.1− | 0.2+ | 2006 11 15 | G96 | 1.2− | 0.0 | | |
| 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 09 18 | 704 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.1− | 1.4− | | |
| 2005 05 14 | G96 | 0.4− | 0.0 | 2006 09 18 | 704 | 0.8+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.0 | | |
| 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2− | 0.4− | | |
| 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.2+ | | | | | | |
| 2006 08 18 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.8+ | 0.2+ | | | | | | |

**2006 QJ$_{142}$ = 2001 WA$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.03283 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18368758 | $\omega$ | 112.76065 | | +0.99870428 | −0.01872471 | |
| $a$ | 3.0648992 | $\Omega$ | 248.33899 | | −0.00066327 | +0.92497864 | |
| $e$ | 0.1729509 | $i$ | 2.91848 | | +0.05088545 | +0.37955751 | |
| $P$ | 5.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.4− | 0.4− | 2001 11 21 | 704 | 0.2+ | 1.3+ | 2006 09 19 | 699 | 0.1+ | 0.3+ | | |
| 2001 10 16 | 291 | 0.3− | 0.3− | 2001 11 21 | 704 | 0.1+ | 1.1+ | 2006 09 19 | 699 | (0.3− | 1.7−) | | |
| 2001 10 16 | 291 | 0.2− | 0.3− | 2001 11 21 | 704 | 0.4− | 1.1+ | 2006 09 19 | 699 | 0.7+ | 0.9− | | |
| 2001 10 16 | 291 | 0.3+ | 0.1− | 2001 11 21 | 704 | (0.3− | 2.0+) | 2006 10 01 | 703 | (1.7− | 0.1+) | | |
| 2001 10 16 | 291 | 0.2+ | 0.0 | 2005 06 13 | G96 | 0.0 | 0.5+ | 2006 10 01 | 703 | 0.2− | 0.1+ | | |
| 2001 10 16 | 291 | 0.2− | 0.0 | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 10 01 | 703 | 0.3+ | 0.6+ | | |
| 2001 10 16 | 291 | 0.6+ | 0.2+ | 2005 06 13 | G96 | 0.2+ | 0.5+ | 2006 10 01 | 703 | 0.2+ | 0.4− | | |
| 2001 10 16 | 291 | 0.3+ | 0.1+ | 2005 06 13 | G96 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.0 | | |
| 2001 10 16 | 291 | 0.1− | 0.2− | 2006 08 18 | 644 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1− | | |
| 2001 10 16 | 291 | 0.1+ | 0.2+ | 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.3− | | |
| 2001 10 16 | 291 | 0.1− | 0.0 | 2006 08 18 | 644 | 0.3+ | 0.1+ | 2006 10 14 | 850 | 0.2+ | 0.1− | | |
| 2001 10 16 | 291 | 0.0 | 0.2+ | 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 10 14 | 850 | 0.8− | 0.7− | | |
| 2001 10 19 | 644 | 0.1− | 0.1+ | 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 10 14 | 850 | 0.8+ | 0.5+ | | |
| 2001 10 19 | 644 | 0.3+ | 1.0+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 14 | 850 | 0.5+ | 0.6− | | |
| 2001 10 19 | 644 | 0.4− | 0.4− | 2006 08 29 | 703 | (0.1+ | 2.2+) | 2006 10 17 | 703 | 0.8+ | 0.7− | | |
| 2001 10 26 | 644 | 0.6− | 0.1− | 2006 08 29 | 703 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.2+ | 1.1− | | |
| 2001 10 26 | 644 | 0.2− | 0.4− | 2006 08 29 | 703 | 1.5− | 0.1+ | 2006 10 17 | 703 | (0.7+ | 2.2+) | | |
| 2001 10 26 | 644 | 0.2+ | 0.0 | 2006 08 29 | 703 | (1.7− | 1.0−) | 2006 10 17 | 703 | 0.0 | 0.9+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.6+ | 2006 09 13 | 644 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2001 11 19 | 704 | 0.5− | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.8− | | |
| 2001 11 19 | 704 | 0.0 | 0.1+ | 2006 09 13 | 644 | 1.2− | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.3− | | |
| 2001 11 19 | 704 | 0.3− | 0.7+ | 2006 09 19 | 699 | 0.4− | 0.7− | 2006 10 23 | G96 | 0.4+ | 0.2− | | |

**2006 QK$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.07756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17846604 | $\omega$ | 14.43583 | | +0.98865126 | | +0.13086827 |
| $a$ | 3.1243930 | $\Omega$ | 337.64005 | | −0.14973054 | | +0.81842268 |
| $e$ | 0.1078581 | $i$ | 11.18154 | | −0.01222524 | | +0.55951570 |
| $P$ | 5.52 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 19 | 688 | 0.1− | 0.5+ | 2006 08 30 | 704 | 0.7+ | 1.4− | 2006 09 25 | 704 | 0.3+ | 0.2− |
| 1998 04 19 | 688 | 0.2+ | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.3− |
| 1998 04 19 | 688 | 0.1+ | 0.2− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.1− |
| 2000 08 26 | 704 | 0.4+ | 0.1− | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 25 | 704 | 0.1− | 0.1− |
| 2000 08 26 | 704 | 0.4− | 0.6+ | 2006 09 06 | 644 | 0.0 | 0.3− | 2006 09 27 | 699 | 0.5− | 0.5+ |
| 2000 08 26 | 704 | 0.7+ | 0.9− | 2006 09 06 | 644 | 0.2+ | 0.2− | 2006 09 27 | 699 | 0.4+ | 0.2+ |
| 2000 08 26 | 704 | 0.3− | 0.6− | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 27 | 699 | 0.0 | 1.2− |
| 2001 11 11 | 704 | 0.1− | 0.7+ | 2006 09 15 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 699 | 0.4+ | 0.1+ |
| 2001 11 11 | 704 | 1.0− | 0.3+ | 2006 09 15 | 704 | 0.1− | 0.6− | 2006 10 01 | 703 | 0.5− | 0.3+ |
| 2001 11 11 | 704 | 0.7+ | 0.9− | 2006 09 15 | 704 | 0.6+ | 0.4− | 2006 10 01 | 703 | 0.3− | 0.2− |
| 2001 11 11 | 704 | 0.6+ | 0.3− | 2006 09 15 | 704 | 0.4− | 0.6+ | 2006 10 01 | 703 | 0.2− | 0.1− |
| 2006 07 21 | 703 | 0.8− | 0.8+ | 2006 09 17 | 703 | 0.2− | 0.2+ | 2006 10 01 | 703 | 0.1− | 0.0 |
| 2006 07 21 | 703 | 0.5− | 0.8+ | 2006 09 17 | 703 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2006 07 21 | 703 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2006 07 21 | 703 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.7− | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2006 08 18 | 644 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2006 08 21 | 691 | 0.1+ | 0.1− | 2006 09 18 | 704 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.3+ | 1.1− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2006 08 21 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.2− |
| 2006 08 30 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2006 08 30 | 704 | 0.7+ | 1.1+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2006 08 30 | 704 | 1.1− | 0.5+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2006 08 30 | 704 | (0.0 | 5.0−) | 2006 09 25 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.2+ |

**2006 QM$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.36813 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29540764 | $\omega$ | 240.09341 | | +0.68795911 | | −0.72550598 |
| $a$ | 2.2328261 | $\Omega$ | 166.38635 | | +0.69036284 | | +0.64620663 |
| $e$ | 0.2142712 | $i$ | 4.58059 | | +0.22385578 | | +0.23676583 |
| $P$ | 3.34 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.7− | 0.2− | 2006 10 16 | 703 | 1.0+ | 0.2− |
| 2006 07 22 | G96 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.2− |
| 2006 07 22 | G96 | 0.0 | 0.5− | 2006 09 26 | 704 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.6+ |
| 2006 07 22 | G96 | 0.2− | 0.8− | 2006 09 26 | 704 | 0.6− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2006 07 22 | G96 | 0.4− | 0.6− | 2006 09 26 | 704 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | (2.0+ | 1.3+) | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2006 08 18 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2006 08 18 | 644 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 08 19 | 699 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2006 08 19 | 699 | 0.4+ | 1.3− | 2006 10 01 | 704 | 0.1+ | 0.1− | 2006 10 22 | 704 | 0.8− | 0.3+ |
| 2006 08 19 | 699 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 704 | 0.5− | 0.8+ |
| 2006 08 19 | 699 | 0.6+ | 0.6+ | 2006 10 01 | 704 | 0.9− | 0.3+ | 2006 10 22 | 704 | 0.1− | 0.8+ |
| 2006 09 17 | 704 | 1.1+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.2+ | 2006 10 22 | 704 | 0.9− | 0.0 |
| 2006 09 17 | 704 | 1.3+ | 0.7− | 2006 10 01 | 704 | 0.7+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2006 09 17 | 704 | (0.1− | 1.8−) | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2006 09 18 | 699 | 0.1− | 0.5− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2006 09 18 | 699 | 0.5+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 699 | 0.4+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 09 22 | 704 | (1.8− | 0.2+) | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2006 09 22 | 704 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2006 09 22 | 704 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3− | | | | |

**2006 QP$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.94856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36920021 | $\omega$ | 70.01709 | | +0.96047179 | | −0.10317597 |
| $a$ | 1.9243974 | $\Omega$ | 295.16305 | | −0.03922757 | | +0.86934817 |
| $e$ | 0.1055502 | $i$ | 16.59829 | | +0.27559962 | | +0.48330992 |
| $P$ | 2.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 19 | 704 | 1.3+ | 0.2+ | 2006 08 29 | 699 | 0.7+ | 0.1− | 2006 09 20 | 703 | 0.2− | 0.4− |
| 1998 08 19 | 704 | 1.0− | 0.4+ | 2006 08 29 | 699 | 0.9+ | 0.1− | 2006 09 20 | 703 | 0.6+ | 0.3+ |
| 1998 08 19 | 704 | (1.3− | 2.4−) | 2006 08 29 | 699 | 0.9+ | 0.6+ | 2006 09 20 | 703 | 0.3+ | 0.2+ |
| 1998 08 19 | 704 | 0.6− | 0.6− | 2006 08 29 | 699 | 0.2+ | 0.2− | 2006 09 20 | 703 | 0.0 | 0.1+ |
| 2001 11 08 | 704 | 0.9− | 0.1− | 2006 09 01 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.3+ | 1.0− |
| 2001 11 08 | 704 | 0.9+ | 0.5− | 2006 09 01 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.8− | 0.2− |
| 2001 11 08 | 704 | 0.3+ | 0.2+ | 2006 09 01 | 704 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.6+ |
| 2001 11 08 | 704 | 0.6+ | 0.6+ | 2006 09 01 | 704 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.4− | 0.1− |
| 2005 02 14 | 703 | 1.1− | 0.5− | 2006 09 11 | 703 | 0.9− | 1.3− | 2006 10 20 | 703 | 0.6− | 0.6+ |
| 2005 02 14 | 703 | 0.3+ | 0.4+ | 2006 09 11 | 703 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.1− | 0.2+ |
| 2005 02 14 | 703 | 0.8− | 0.4− | 2006 09 11 | 703 | 0.3+ | 0.2− | 2006 10 20 | 703 | 0.1− | 0.1− |
| 2005 02 14 | 703 | 0.2+ | 0.9− | 2006 09 11 | 703 | 0.2− | 0.1+ | 2006 10 20 | 703 | 0.1− | 0.8− |

**2006 QS$_{142}$ = 2002 NZ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.64158 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27336855 | $\omega$ | 47.21143 | | +0.69115595 | | +0.72041939 |
| $a$ | 2.3512764 | $\Omega$ | 266.60656 | | −0.67873367 | | +0.61974993 |
| $e$ | 0.0588948 | $i$ | 3.29867 | | −0.24824193 | | +0.31129717 |
| $P$ | 3.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 13 | 557 | 0.0 | 0.1+ | 2003 12 17 | 291 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 1997 01 13 | 557 | 0.0 | 0.5− | 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.6− | 0.6+ |
| 1997 01 13 | 557 | 0.6+ | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 704 | 0.6− | 0.4+ |
| 1999 11 04 | 704 | 0.1− | 0.7+ | 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.2+ |
| 1999 11 04 | 704 | 1.0+ | 0.5+ | 2006 08 29 | 703 | 0.5− | 0.9− | 2006 09 29 | 704 | 0.5+ | 0.2+ |
| 1999 11 04 | 704 | 0.7+ | 0.0 | 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.0 |
| 2002 07 05 | 704 | 0.1− | 0.9+ | 2006 08 29 | 703 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.8− | 0.5− |
| 2002 07 05 | 704 | 0.4− | 0.9− | 2006 08 29 | 703 | 0.8− | 0.6− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 07 05 | 704 | (1.1+ | 2.1−) | 2006 09 01 | 704 | 1.1+ | 0.3+ | 2006 10 01 | 691 | 0.3+ | 0.2+ |
| 2002 07 08 | 644 | 0.4− | 0.4+ | 2006 09 01 | 704 | 0.9+ | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2002 07 08 | 644 | 0.6− | 0.5+ | 2006 09 01 | 704 | 0.7+ | 0.9− | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 07 08 | 644 | 0.1− | 0.6+ | 2006 09 01 | 704 | 1.4+ | 0.1− | 2006 10 09 | 644 | 0.4− | 0.3+ |
| 2002 07 14 | 704 | 0.9+ | 0.1− | 2006 09 18 | 704 | 0.6+ | 1.2+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 07 14 | 704 | 0.2− | 0.4+ | 2006 09 18 | 704 | 0.5+ | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 07 14 | 704 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2002 07 14 | 704 | 0.6+ | 0.4− | 2006 09 18 | 704 | 1.1+ | 0.6− | 2006 10 10 | 644 | 0.7+ | 0.2+ |
| 2002 07 14 | 704 | 0.5− | 0.1+ | 2006 09 18 | 704 | 0.1− | 0.0 | 2006 10 17 | 703 | (3.9+ | 1.2+) |
| 2002 07 21 | 644 | 0.3− | 0.1− | 2006 09 19 | 699 | 1.4− | 0.6+ | 2006 10 17 | 703 | 1.2− | 0.8− |
| 2002 07 21 | 644 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2002 07 21 | 644 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.7− | 1.3+ | 2006 10 17 | 703 | (1.9− | 1.6−) |
| 2002 08 06 | 644 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.9+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 08 06 | 644 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 08 06 | 644 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 08 13 | 644 | 0.5− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 08 13 | 644 | 0.7− | 0.4+ | 2006 09 25 | 704 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 13 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 11 24 | 695 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.5− | 2006 10 23 | G96 | 0.1− | 0.5− |
| 2003 11 24 | 695 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 1.1− | 0.5− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2003 12 17 | 291 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.6− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2003 12 17 | 291 | 0.4− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.5− |

### 2006 $QT_{142}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.38367 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26921746 | $\omega$ | 73.37752 | | +0.82020100 | | +0.56899211 |
| $a$ | 2.3753844 | $\Omega$ | 251.90558 | | −0.54577859 | | +0.74720654 |
| $e$ | 0.2501463 | $i$ | 3.57765 | | −0.17145274 | | +0.34340992 |
| $P$ | 3.66 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 09 15 | 704 | 0.1+ | 0.8+ | 2006 09 27 | 699 | 0.5− | 0.5+ |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 699 | 0.3+ | 0.2− |
| 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 09 15 | 704 | 0.5− | 0.4− | 2006 09 27 | 699 | 0.3− | 0.4+ |
| 2005 03 13 | 691 | 0.1+ | 0.4+ | 2006 09 15 | 704 | 0.9− | 0.1+ | 2006 10 01 | 703 | 0.2+ | 0.4− |
| 2005 03 13 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.3+ | 0.3− | 2006 10 01 | 703 | 0.2− | 0.1− |
| 2006 07 21 | 703 | 0.6+ | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.4− | 2006 10 01 | 703 | 0.6− | 0.1− |
| 2006 07 21 | 703 | 0.6+ | 1.4+ | 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 10 01 | 703 | 0.4− | 0.6− |
| 2006 07 21 | 703 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2006 07 21 | 703 | 0.4− | 1.2+ | 2006 09 18 | 704 | 1.0+ | 1.0− | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2006 08 30 | 704 | 0.5− | 0.1+ | 2006 09 18 | 704 | 1.3+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2006 08 30 | 704 | 0.2− | 1.3+ | 2006 09 18 | 704 | 0.0 | 0.9+ | 2006 10 17 | 703 | 0.8+ | 0.8+ |
| 2006 08 30 | 704 | (1.2− | 1.7+) | 2006 09 18 | 704 | 1.1+ | 1.4− | 2006 10 17 | 703 | 1.5+ | 0.6+ |
| 2006 08 30 | 704 | 0.2− | 0.4+ | 2006 09 18 | 704 | 1.4+ | 1.3− | 2006 10 17 | 703 | 0.2+ | 0.8+ |
| 2006 09 01 | 704 | 1.1− | 1.1+ | 2006 09 19 | 699 | 0.8− | 0.8+ | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 2006 09 01 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.4− |
| 2006 09 01 | 704 | 0.9− | 1.1+ | 2006 09 19 | 699 | 0.3− | 0.3− | 2006 10 23 | G96 | 0.4− | 0.5− |
| 2006 09 01 | 704 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.6− | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.6+ | 0.3+ | 2006 10 23 | G96 | 0.9− | 0.2− |
| 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.0 | 0.0 | | | | |
| 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 25 | 704 | 1.1− | 1.3+ | | | | |

### 2006 $QU_{142}$ = 2004 $FZ_{149}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.20218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18441707 | $\omega$ | 11.20216 | | +0.29560048 | | +0.94361622 |
| $a$ | 3.0568114 | $\Omega$ | 276.12230 | | −0.88765638 | | +0.21364245 |
| $e$ | 0.0467310 | $i$ | 8.62003 | | −0.35310975 | | +0.25287415 |
| $P$ | 5.34 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.3+ | 0.1+ | 2001 10 26 | 644 | 1.0− | 0.3− | 2006 08 31 | 185 | 1.0+ | 0.5+ |
| 1995 08 28 | 691 | 0.1+ | 0.1− | 2001 10 26 | 644 | 0.6− | 0.4− | 2006 09 01 | 185 | 0.2+ | 0.6− |
| 1995 08 28 | 691 | 0.3− | 0.3− | 2001 10 26 | 644 | 0.6− | 0.2+ | 2006 09 01 | 185 | 0.7+ | 0.6+ |
| 1996 11 04 | 691 | 0.2+ | 0.1− | 2004 02 14 | 644 | 0.3− | 0.2+ | 2006 09 01 | 185 | 0.0 | 0.4+ |
| 1996 11 04 | 691 | 0.1+ | 0.5− | 2004 02 14 | 644 | 0.4− | 0.0 | 2006 09 01 | 185 | 0.7+ | 0.4+ |
| 1996 11 04 | 691 | 0.5+ | 0.1+ | 2004 02 14 | 644 | 0.8+ | 0.2− | 2006 09 01 | 185 | 0.6− | 0.4− |
| 2001 09 29 | 644 | 0.2+ | 0.4+ | 2004 03 16 | 691 | 0.0 | 0.0 | 2006 09 04 | A13 | 0.4− | 0.3+ |
| 2001 09 29 | 644 | 0.3− | 0.4+ | 2004 03 16 | 691 | 0.1+ | 0.2− | 2006 09 04 | A13 | 0.6− | 0.1− |
| 2001 09 29 | 644 | 0.1− | 0.2+ | 2004 03 16 | 691 | 0.1− | 0.0 | 2006 09 05 | H36 | 0.1− | 0.7− |
| 2001 10 13 | 644 | 1.0− | 0.3− | 2004 03 27 | 691 | 0.0 | 0.2+ | 2006 09 05 | H36 | 0.0 | 0.3+ |
| 2001 10 13 | 644 | 0.6− | 0.5+ | 2004 03 27 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 185 | 0.6+ | 0.3− |
| 2001 10 13 | 644 | 0.7− | 0.8+ | 2004 03 27 | 691 | 0.1− | 0.0 | 2006 09 12 | 185 | 0.3+ | 0.4+ |

### 2006 $QW_{142}$ = 2004 $XG_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.30038 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37363564 | $\omega$ | 68.40250 | | +0.90152096 | | +0.28898124 |
| $a$ | 1.9091374 | $\Omega$ | 273.62023 | | −0.40542174 | | +0.82429352 |
| $e$ | 0.0703902 | $i$ | 18.82908 | | +0.15130485 | | +0.48685730 |
| $P$ | 2.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 22 | 704 | 0.3+ | 0.6− | 2006 06 21 | 703 | 0.9− | 0.6+ | 2006 09 01 | 224 | 0.2+ | 0.2− |
| 2001 12 22 | 704 | 0.7+ | 0.3− | 2006 06 21 | 703 | 1.3− | 0.0 | 2006 09 01 | 224 | 0.5+ | 0.5− |
| 2001 12 22 | 704 | 0.9− | 0.1+ | 2006 06 21 | 703 | 0.4− | 0.3+ | 2006 09 01 | 224 | 0.1+ | 0.1− |
| 2004 12 14 | 599 | 0.1+ | 0.8+ | 2006 08 10 | 644 | 0.6− | 0.1+ | 2006 09 01 | 224 | 0.6− | 0.1− |
| 2004 12 14 | 599 | 0.1+ | 0.3+ | 2006 08 10 | 644 | 0.1− | 0.1+ | 2006 09 03 | 958 | 0.6− | 0.3− |
| 2004 12 14 | 599 | 0.5+ | 0.4+ | 2006 08 10 | 644 | 0.0 | 0.3+ | 2006 09 03 | 958 | 0.8+ | 0.1+ |
| 2004 12 14 | 599 | 0.4+ | 0.4+ | 2006 08 31 | 224 | 1.0+ | 0.4+ | 2006 09 03 | 958 | 0.2− | 0.2+ |
| 2004 12 15 | 599 | 0.2+ | 0.2− | 2006 08 31 | 224 | 0.6+ | 0.5+ | 2006 11 18 | 122 | 1.1+ | 0.4− |
| 2004 12 15 | 599 | 0.0 | 0.5+ | 2006 08 31 | 224 | 0.6+ | 0.3+ | 2006 11 18 | 122 | 2.1− | 0.3+ |

### 2006 $QF_{144}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.20370 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16977696 | $\omega$ | 221.36111 | | +0.86331687 | | +0.36272685 |
| $a$ | 3.2301068 | $\Omega$ | 114.09684 | | −0.29906921 | | +0.92775116 |
| $e$ | 0.2448735 | $i$ | 22.60465 | | −0.40649919 | | +0.08778961 |
| $P$ | 5.81 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 15 | 704 | 0.5+ | 0.4+ | 2006 08 25 | 428 | 0.5+ | 0.2+ | 2006 09 13 | 428 | 0.6+ | 0.3+ |
| 2001 11 15 | 704 | 0.1+ | 0.0 | 2006 08 25 | 428 | 0.1+ | 0.1− | 2006 09 13 | 428 | 0.6+ | 0.2− |
| 2001 11 15 | 704 | 0.6− | 0.4− | 2006 08 25 | E12 | 0.2− | 0.1− | 2006 09 25 | E12 | 0.5− | 0.1− |
| 2005 05 03 | 703 | (2.0− | 0.1−) | 2006 08 25 | E12 | 0.0 | 0.2+ | 2006 09 25 | E12 | 0.2+ | 0.5− |
| 2005 05 03 | 703 | 0.3− | 0.7+ | 2006 08 25 | E12 | 0.2+ | 0.2+ | 2006 09 25 | E12 | 0.0 | 0.1− |
| 2005 05 03 | 703 | 1.0+ | 0.3− | 2006 08 25 | E12 | 0.1− | 0.3+ | 2006 09 25 | E12 | 0.1+ | 0.3+ |
| 2005 05 03 | 703 | 0.8− | 0.4− | 2006 08 25 | E12 | 0.0 | 0.5+ | 2006 10 12 | E12 | 0.2− | 0.1+ |
| 2005 05 11 | G96 | 0.1+ | 0.0 | 2006 08 25 | E12 | 0.1− | 0.2+ | 2006 10 12 | E12 | 0.1− | 0.0 |
| 2005 05 11 | G96 | 0.0 | 0.1+ | 2006 08 25 | E12 | 0.0 | 0.1+ | 2006 10 12 | E12 | 0.1− | 0.2+ |
| 2005 05 11 | G96 | 0.0 | 0.1+ | 2006 09 02 | 428 | 0.6− | 1.3− | 2006 10 12 | E12 | 0.2+ | 0.7− |
| 2005 05 11 | G96 | 0.1− | 0.1+ | 2006 09 02 | 428 | 0.4+ | 0.2− | 2006 10 25 | E12 | 0.9− | 0.3+ |
| 2005 05 11 | G96 | 0.1+ | 0.1+ | 2006 09 12 | E12 | 0.4− | 0.3+ | 2006 10 25 | E12 | 0.2+ | 0.2− |
| 2005 05 11 | G96 | 0.1+ | 0.1+ | 2006 09 12 | E12 | 0.2+ | 0.4+ | 2006 10 25 | E12 | 0.0 | 0.0 |
| 2005 05 11 | G96 | 0.3− | 0.3− | 2006 09 12 | E12 | 0.1− | 0.1+ | 2006 10 25 | E12 | 0.2− | 0.4− |
| 2005 05 11 | G96 | 0.0 | 0.3− | 2006 09 12 | E12 | 0.1+ | 0.0 | | | | |

### 2006 $QH_{144}$ = 2004 $DJ_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.97073 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28827619 | $\omega$ | 245.71359 | | +0.99223036 | | +0.07806923 |
| $a$ | 2.2695001 | $\Omega$ | 109.69069 | | −0.03770358 | | +0.93069044 |
| $e$ | 0.2450222 | $i$ | 5.90549 | | −0.11856368 | | +0.35738006 |
| $P$ | 3.42 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 08 | 691 | 0.0 | 0.6+ | 2006 09 12 | 704 | 0.4+ | 0.8+ | 2006 09 29 | 608 | (0.4+ | 1.7−) |
| 1999 06 08 | 691 | 0.0 | 0.2+ | 2006 09 12 | 704 | 0.7− | 1.4− | 2006 09 29 | 608 | 0.6+ | 1.6− |
| 1999 06 08 | 691 | 0.2− | 0.3+ | 2006 09 12 | 704 | (0.6− | 1.6+) | 2006 10 02 | 703 | 0.8− | 0.2+ |
| 2004 02 26 | 695 | 0.0 | 0.5+ | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 10 02 | 703 | 0.3+ | 0.1+ |
| 2004 02 26 | 695 | 0.3− | 0.7+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.3+ | 0.9− |
| 2004 02 27 | 695 | 0.0 | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.4− |
| 2004 02 27 | 695 | 0.3+ | 0.7+ | 2006 09 18 | 703 | 0.3− | 0.5+ | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 2006 07 31 | E12 | 0.9+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2006 07 31 | E12 | 0.5− | 0.8− | 2006 09 18 | 703 | 0.0 | 1.0− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2006 07 31 | E12 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.1+ | 0.9− | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2006 07 31 | E12 | 1.0+ | 0.6− | 2006 09 21 | 699 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2006 08 21 | 644 | 0.3− | 0.1− | 2006 09 21 | 699 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2006 08 21 | 644 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.5+ | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2006 08 21 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.6+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2006 08 21 | 644 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2006 08 26 | 428 | 0.8+ | 0.5− | 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.7+ |
| 2006 08 26 | 428 | 0.2+ | 0.7− | 2006 09 26 | 703 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2006 09 02 | 428 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.5− | 0.3+ |
| 2006 09 02 | 428 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2006 09 12 | 704 | 0.4+ | 0.5+ | 2006 09 26 | 703 | 0.5− | 0.1+ | | | | |
| 2006 09 12 | 704 | 0.1− | 0.8+ | 2006 09 29 | 608 | (0.9+ | 1.7−) | | | | |

**2006 QL$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.86431 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23383580 | $\omega$ | 152.56134 | | +0.99573731 | −0.07441192 | |
| $a$ | 2.6093282 | $\Omega$ | 211.84999 | | +0.05355958 | +0.94752492 | |
| $e$ | 0.3148033 | $i$ | 5.92784 | | +0.07509044 | +0.31090092 | |
| $P$ | 4.21 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.4+ | 0.2+ | 2006 10 12 | J95 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2000 04 10 | 695 | 0.4+ | 0.3+ | 2006 10 12 | J95 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 05 22 | 691 | 0.1+ | 0.2+ | 2006 10 12 | J95 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 05 22 | 691 | 0.4− | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2001 05 22 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2005 05 10 | G96 | 0.3+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 10 28 | 704 | 1.1− | 0.5+ |
| 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.1− | 1.3+ |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 10 28 | 704 | 0.2− | 0.6+ |
| 2006 08 29 | 703 | (0.3− | 1.6−) | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 10 28 | 704 | 0.3− | 0.8+ |
| 2006 08 29 | 703 | 0.3− | 1.1− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 10 28 | 704 | 0.3− | 0.3+ |
| 2006 08 29 | 703 | 0.5+ | 1.2− | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2006 08 29 | 703 | 0.1− | 1.1− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2006 09 01 | 224 | (0.0 | 1.6+) | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.4− | 0.8− |
| 2006 09 01 | 224 | 0.5+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2006 09 01 | 224 | (0.2+ | 1.5+) | 2006 10 21 | 703 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2006 09 20 | 699 | 0.6− | 0.7+ | 2006 10 21 | 703 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2006 09 20 | 699 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2006 09 20 | 699 | 0.7− | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2006 09 20 | 699 | 0.1− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2006 09 25 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 22 | 683 | 1.0− | 0.6− | 2006 11 17 | 703 | 1.0− | 0.0 |
| 2006 09 29 | 691 | 0.4+ | 0.2− | 2006 10 22 | 683 | 0.0 | 0.8− | 2006 11 17 | 703 | 1.0− | 0.5+ |
| 2006 09 29 | 691 | 0.3− | 0.1+ | 2006 10 22 | 683 | 0.9− | 0.9− | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2006 09 29 | 691 | 0.2+ | 0.0 | 2006 10 23 | 704 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.2+ |
| 2006 10 03 | 704 | 0.1− | 0.1+ | 2006 10 23 | 683 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2006 10 03 | 704 | 0.5+ | 1.3+ | 2006 10 23 | 704 | (1.9+ | 1.4−) | 2006 11 18 | 704 | 0.4+ | 1.1+ |
| 2006 10 03 | 704 | 0.2+ | 1.0+ | 2006 10 23 | 683 | 0.9+ | 0.0 | 2006 11 18 | 704 | (0.1+ | 1.7+) |
| 2006 10 03 | 704 | 0.2− | 0.8+ | 2006 10 23 | 704 | (1.9+ | 1.8−) | 2006 11 21 | 704 | 1.1+ | 0.3+ |
| 2006 10 03 | 704 | 0.5+ | 0.2− | 2006 10 23 | 704 | (1.6+ | 0.6−) | 2006 11 21 | 704 | 0.8+ | 0.6− |
| 2006 10 03 | 691 | 0.0 | 0.4+ | 2006 10 23 | 683 | 0.5+ | 0.5+ | 2006 11 21 | 704 | 1.0+ | 0.9+ |
| 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 10 23 | 704 | 1.0+ | 0.4+ | 2006 11 21 | 704 | (1.8+ | 0.1−) |
| 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.4− | | | | |

**2006 QR$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.00288 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23475336 | $\omega$ | 3.64062 | | +0.69296581 | −0.71754170 | |
| $a$ | 2.6025246 | $\Omega$ | 42.51250 | | +0.65882469 | +0.59065823 | |
| $e$ | 0.2783473 | $i$ | 5.96548 | | +0.29282831 | +0.36912975 | |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 12 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 1.1+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 0.2+ | 0.9+ | 2006 09 25 | H51 | 0.7+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.5− | 0.3+ | 2006 09 25 | H51 | 0.4− | 0.4− | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2002 11 12 | 704 | 0.4+ | 1.2+ | 2006 09 25 | H51 | 1.0+ | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.2+ |
| 2002 11 12 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.0 | 1.1+ | 2006 11 15 | 704 | 0.2+ | 0.2− |
| 2002 11 27 | 699 | 0.9+ | 0.3− | 2006 09 27 | 704 | 0.4− | 0.5+ | 2006 11 15 | 704 | 0.5+ | 0.2+ |
| 2002 11 27 | 699 | 0.4− | 0.2− | 2006 09 27 | G96 | 0.6− | 0.1+ | 2006 11 15 | 704 | 0.7+ | 0.2+ |
| 2002 11 27 | 699 | 0.5+ | 0.3− | 2006 09 27 | 704 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.7+ | 0.3+ |
| 2002 11 27 | 699 | 0.8+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.7− | 0.6− |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 11 16 | 704 | 0.0 | 0.2+ |
| 2002 12 14 | 704 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.2− |
| 2002 12 14 | 704 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.6− |
| 2002 12 14 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.2+ | 1.4+ | 2006 11 16 | 704 | 0.8− | 1.0+ |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2003 01 10 | 704 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.2− | 0.6− |
| 2003 01 10 | 704 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2003 01 10 | 704 | 0.5− | 0.5+ | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2003 01 10 | 704 | 0.4− | 0.5+ | 2006 10 21 | 704 | 0.9+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2003 01 10 | 704 | 0.1− | 0.8+ | 2006 10 21 | 704 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.6− |
| 2003 01 31 | 704 | 0.0 | 0.6− | 2006 10 21 | 704 | 1.3+ | 0.5+ | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2003 01 31 | 704 | 0.2− | 1.0− | 2006 10 23 | 704 | 0.5+ | 0.4− | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2003 01 31 | 704 | 0.3− | 1.1− | 2006 10 23 | 704 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.1− |
| 2003 01 31 | 704 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.1− | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2003 01 31 | 704 | 1.0− | 0.4− | 2006 10 23 | 704 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.3+ |
| 2004 04 12 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.3− |
| 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.8− | 0.9− | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2004 04 12 | 691 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.5− | 0.0 | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2006 08 21 | 704 | 0.9− | 0.7+ | 2006 10 28 | 704 | 0.2+ | 0.3− | 2006 11 19 | 704 | 1.0+ | 0.3− |
| 2006 08 21 | 704 | 1.2− | 0.6+ | 2006 10 28 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2006 08 21 | 704 | 1.0− | 0.2− | 2006 10 28 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.8+ | 0.9− |
| 2006 09 01 | 704 | 1.1+ | 0.7− | 2006 11 01 | G96 | 0.4− | 0.8− | 2006 11 19 | 704 | 0.7+ | 0.5− |
| 2006 09 01 | 704 | 0.4+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2006 09 01 | 704 | 0.8+ | 0.4− | 2006 11 01 | G96 | 0.1− | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2006 09 01 | 704 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4+ | 1.1+ |
| 2006 09 16 | 703 | 1.3+ | 1.3+ | 2006 11 01 | G96 | 0.3− | 1.0− | 2006 11 22 | 704 | 0.9− | 1.3+ |
| 2006 09 16 | 703 | 1.1− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2006 09 16 | 703 | 1.3− | 0.4− | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2006 09 16 | 703 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 27 | 704 | 0.4+ | 0.4+ |
| 2006 09 17 | 704 | 1.0+ | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.8− | 0.4+ |
| 2006 09 17 | 704 | 0.3− | 0.8− | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.2− | 0.1+ |
| 2006 09 17 | 704 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 27 | 704 | 0.4− | 0.1+ |
| 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 11 11 | 703 | (0.3+ | 1.6+) | 2006 11 28 | 704 | 0.4− | 0.1+ |
| 2006 09 17 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | (2.4+ | 0.5+) | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.2− | 0.2− |
| 2006 09 19 | 699 | 1.0− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1− | 2006 11 28 | 704 | 1.0− | 0.1+ |

**2006 QS$_{144}$ = 2005 GZ$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.36411 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21481986 | $\omega$ | 277.23367 | | +0.85519637 | +0.51639199 | |
| $a$ | 2.7611273 | $\Omega$ | 51.68642 | | −0.45035694 | +0.78282123 | |
| $e$ | 0.2359189 | $i$ | 3.24980 | | −0.25654979 | +0.34717465 | |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 291 | 0.0 | 0.3+ | 2006 08 30 | 704 | (0.2+ | 1.9+) | 2006 09 25 | 699 | 0.2− | 0.1− |
| 2002 11 14 | 291 | 0.3− | 0.1+ | 2006 08 30 | 704 | 0.6+ | 1.1− | 2006 09 25 | 699 | 0.2+ | 0.5− |
| 2002 11 14 | 291 | 0.3− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.0 | 0.2+ |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 703 | 0.1− | 1.0− | 2006 09 26 | 704 | (1.1+ | 2.0−) |
| 2002 12 05 | 704 | 0.0 | 1.0+ | 2006 09 14 | 703 | 0.6− | 0.2− | 2006 09 26 | 704 | 0.6− | 0.7+ |
| 2002 12 05 | 704 | 0.9+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.8− | 2006 09 26 | 704 | 0.4− | 0.6− |
| 2002 12 05 | 704 | 0.6+ | 0.3+ | 2006 09 16 | 704 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.4− | 0.3− |
| 2005 04 06 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.6+ | 0.8− | 2006 09 26 | 704 | 0.3− | 0.8+ |
| 2005 04 06 | 691 | 0.0 | 0.2+ | 2006 09 16 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 704 | 0.8− | 0.3+ |
| 2005 04 06 | 691 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.2− | 0.0 | 2006 09 28 | 704 | 1.1− | 1.2+ |
| 2005 04 06 | G96 | 0.4− | 0.4+ | 2006 09 16 | 704 | 0.6+ | 0.3− | 2006 09 28 | 704 | 0.1− | 0.6+ |
| 2005 04 06 | G96 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.4− | 0.2− | 2006 09 28 | 704 | 0.6− | 0.1+ |
| 2005 04 06 | G96 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 0.5− |
| 2005 04 06 | G96 | 0.5− | 0.3− | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.4− |
| 2005 04 07 | G96 | 0.3+ | 0.6+ | 2006 09 19 | 704 | (1.7+ | 0.6−) | 2006 09 30 | 703 | 0.5− | 1.1− |
| 2005 04 07 | G96 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2005 04 07 | G96 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 04 07 | G96 | 0.3− | 0.2+ | 2006 09 19 | 704 | 1.3+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 704 | 1.0− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.8+ | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 08 16 | 644 | 0.3− | 0.4− | 2006 09 19 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 19 | 704 | 0.2− | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.5− | 1.0+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2006 08 28 | 704 | 0.3+ | 0.5+ | 2006 09 22 | 704 | 0.4+ | 0.2+ | 2006 10 24 | 644 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 28 | 704 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2006 08 28 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.5− | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.5+ |
| 2006 08 28 | 704 | 0.6+ | 0.4+ | 2006 09 22 | 704 | 0.0 | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2006 08 28 | 704 | 0.3− | 0.5− | 2006 09 22 | 704 | 0.9+ | 0.6− | 2006 11 17 | G96 | 0.3+ | 0.1+ |
| 2006 08 28 | 699 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.1+ | 0.7+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2006 08 28 | 699 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.1+ | 1.3+ | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2006 08 28 | 699 | 0.4− | 0.5+ | 2006 09 22 | 704 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.7+ | 0.2− |
| 2006 08 28 | 699 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.3− | 0.2− | | | | |
| 2006 08 30 | 704 | 1.0+ | 0.2+ | 2006 09 25 | 699 | 0.5− | 0.8+ | | | | |

### 2006 $QT_{144}$ = 2001 $PE_{49}$ = 2004 $GA_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.87362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21085968 | $\omega$ | 245.07760 | | +0.48770596 | −0.87294988 | |
| $a$ | 2.7955913 | $\Omega$ | 175.69213 | | +0.84152478 | +0.46701680 | |
| $e$ | 0.2166352 | $i$ | 7.70434 | | +0.23233368 | +0.14090356 | |
| $P$ | 4.67 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.4+ | 0.9+ |
| 1999 03 20 | 645 | 0.1− | 0.2+ | 2006 09 01 | 704 | (1.5+ | 0.8+) | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2001 08 14 | 608 | 0.6− | 0.6− | 2006 09 01 | 704 | 0.3+ | 0.5− | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2001 08 14 | 608 | 0.5− | 0.7− | 2006 09 01 | 704 | 0.2− | 1.1− | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2001 08 14 | 608 | 0.6− | 0.9− | 2006 09 01 | 704 | 0.5+ | 0.4− | 2006 09 30 | G96 | 0.2− | 0.3− |
| 2001 09 08 | 704 | 0.3+ | 0.0 | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.8− | 0.8+ |
| 2001 09 08 | 704 | 0.7+ | 0.7+ | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.0 |
| 2001 09 08 | 704 | 0.6+ | 0.4− | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2001 09 08 | 704 | 1.4+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.6+ | 0.6− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.5− |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.5+ |
| 2001 09 20 | 704 | 0.5+ | 0.6− | 2006 09 17 | 704 | 0.4+ | 0.8− | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2001 09 20 | 704 | (2.5+ | 0.8−) | 2006 09 17 | 704 | 1.1− | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.2− |
| 2003 01 05 | 704 | (0.1− | 2.6+) | 2006 09 17 | 704 | 0.2+ | 1.4+ | 2006 09 30 | 704 | 0.4− | 1.0+ |
| 2003 01 05 | 704 | (0.7− | 1.7+) | 2006 09 17 | 704 | 0.5+ | 1.1− | 2006 09 30 | 703 | 0.0 | 0.0 |
| 2003 01 05 | 704 | 0.4+ | 1.3+ | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 09 30 | 704 | 0.4+ | 0.6+ |
| 2003 01 05 | 704 | 0.5− | 0.7+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2003 01 27 | 704 | 0.2+ | 1.0− | 2006 09 18 | 699 | 0.9− | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.2− |
| 2003 01 27 | 704 | 0.8+ | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2003 01 27 | 704 | 1.1+ | 1.1− | 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2003 01 27 | 704 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2004 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2004 04 14 | 691 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2004 04 14 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2004 04 23 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 1.4− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2004 04 23 | 691 | 0.6+ | 0.6+ | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 08 19 | 691 | 0.3− | 0.7+ | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2006 08 19 | 691 | 0.3+ | 0.6− | 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.5− | 0.9+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2006 08 28 | 704 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2006 08 28 | 704 | 0.5− | 0.0 | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 08 28 | 703 | 0.7− | 0.5+ | 2006 09 27 | 704 | 0.7+ | 0.0 | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2006 08 28 | 704 | 0.3− | 1.2− | 2006 09 27 | 704 | (0.1+ | 1.9+) | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2006 08 28 | 703 | (0.9− | 1.7+) | 2006 09 27 | 704 | 1.5+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2006 08 28 | 703 | (0.2− | 1.7+) | 2006 09 27 | 704 | 0.0 | 1.0+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2006 08 28 | 703 | 0.3− | 0.6+ | 2006 09 28 | 704 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.7+ | | | | |
| 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.2+ | 0.7+ | | | | |

### 2006 $QX_{144}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.32239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22461423 | $\omega$ | 166.02192 | | +0.99203510 | −0.12096632 | |
| $a$ | 2.6802659 | $\Omega$ | 201.02249 | | +0.10410570 | +0.94435449 | |
| $e$ | 0.0444917 | $i$ | 5.61846 | | +0.07091097 | +0.30587865 | |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 30 | 910 | 0.1+ | 0.4+ | 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 09 11 | 703 | 0.4− | 0.5+ |
| 1997 08 30 | 910 | 0.4+ | 0.5+ | 2005 06 08 | 691 | 0.2+ | 0.2− | 2006 09 11 | 703 | 0.7− | 0.1+ |
| 1997 08 30 | 910 | 0.1− | 0.2+ | 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 09 11 | 703 | 0.4− | 0.3+ |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.1+ | 0.2− | 2006 09 13 | 644 | 0.2− | 0.0 |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.4− | 2006 09 13 | 644 | 0.3− | 0.2+ |
| 2002 10 31 | 608 | 0.1− | 0.1+ | 2006 08 29 | 703 | 1.0− | 0.2− | 2006 09 13 | 644 | 0.3+ | 0.1+ |
| 2002 10 31 | 608 | 0.5− | 0.0 | 2006 08 29 | 703 | 0.7− | 0.2− | 2006 09 17 | 703 | 1.0− | 0.4− |
| 2002 10 31 | 608 | 0.0 | 0.1+ | 2006 09 01 | 704 | 0.1− | 0.7− | 2006 09 17 | 703 | 0.2+ | 0.7+ |
| 2004 02 13 | 699 | 1.3+ | 0.3+ | 2006 09 01 | 704 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.1+ |
| 2004 02 13 | 699 | 0.4+ | 0.2− | 2006 09 01 | 704 | 0.7+ | 0.5+ | 2006 09 17 | 703 | 0.8+ | 0.1+ |
| 2004 02 13 | 699 | 0.1− | 0.3+ | 2006 09 01 | 704 | 0.7+ | 1.3+ | | | | |
| 2004 02 13 | 699 | 0.1− | 0.9+ | 2006 09 11 | 703 | 0.8+ | 0.8+ | | | | |

### 2006 $QZ_{144}$ = 2002 $XG_{41}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.82827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22792014 | $\omega$ | 63.92240 | | +0.93934591 | −0.31376311 | |
| $a$ | 2.6542852 | $\Omega$ | 314.00707 | | +0.20293031 | +0.83401123 | |
| $e$ | 0.2140395 | $i$ | 11.10218 | | +0.27649332 | +0.45384797 | |
| $P$ | 4.32 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | (3.2+ | 2.0−) | 2006 09 01 | 704 | 0.1− | 0.3− | 2006 09 21 | 106 | 0.1+ | 0.3+ |
| 2002 12 06 | 704 | (3.3+ | 2.1−) | 2006 09 01 | 704 | 0.1+ | 0.2− | 2006 09 21 | 106 | 0.2+ | 0.2− |
| 2002 12 06 | 704 | (3.3+ | 0.9−) | 2006 09 01 | 704 | 1.1+ | 1.4+ | 2006 09 21 | 106 | 0.2+ | 0.2− |
| 2002 12 06 | 704 | (3.1+ | 1.3−) | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 09 28 | 703 | 0.4− | 0.9− |
| 2002 12 10 | 704 | 0.7− | 0.5+ | 2006 09 06 | 644 | 0.6− | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.2− |
| 2002 12 10 | 704 | 1.1− | 0.5− | 2006 09 06 | 644 | 0.7− | 0.0 | 2006 09 28 | 703 | 0.4− | 0.6− |
| 2002 12 10 | 704 | 0.5+ | 0.9+ | 2006 09 16 | 703 | 0.4+ | 1.2− | 2006 09 28 | 703 | 0.0 | 0.2− |
| 2002 12 10 | 704 | 0.6− | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.6− | 2006 10 12 | J95 | 0.3− | 0.4− |
| 2002 12 10 | 704 | 0.1+ | 0.6− | 2006 09 16 | 703 | 1.2− | 0.4− | 2006 10 12 | J95 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.0 | 0.5− | 2006 10 12 | J95 | 0.2+ | 0.2− |
| 2002 12 14 | 704 | 0.0 | 0.2− | 2006 09 20 | 106 | 0.2+ | 0.2+ | 2006 10 20 | 703 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 1.5+ | 0.3+ | 2006 09 20 | 106 | 0.6− | 0.6− | 2006 10 20 | 703 | 0.0 | 0.4+ |
| 2002 12 14 | 704 | 0.4+ | 0.2+ | 2006 09 20 | 106 | 0.3+ | 0.3− | 2006 10 20 | 703 | 0.2+ | 0.9+ |
| 2006 08 29 | 699 | (1.6− | 0.4+) | 2006 09 20 | 106 | 0.5+ | 0.1− | 2006 10 20 | 703 | 0.5− | 0.8+ |
| 2006 08 29 | 699 | 0.3− | 0.2+ | 2006 09 21 | 699 | 0.0 | 1.3+ | 2006 10 21 | J95 | 0.3+ | 0.1+ |
| 2006 08 29 | 699 | 0.8− | 0.4+ | 2006 09 21 | 699 | 1.3+ | 0.1− | 2006 10 21 | J95 | 0.0 | 0.1+ |
| 2006 08 29 | 699 | 0.1+ | 1.1+ | 2006 09 21 | 699 | (2.3+ | 0.6−) | 2006 10 21 | J95 | 0.1+ | 0.4+ |

### 2006 $QA_{145}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.11461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26220806 | $\omega$ | 210.44192 | | +0.44514679 | −0.89521859 | |
| $a$ | 2.4175309 | $\Omega$ | 213.13804 | | +0.82900527 | +0.42073639 | |
| $e$ | 0.1900340 | $i$ | 2.16890 | | +0.33851824 | +0.14684881 | |
| $P$ | 3.76 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.2+ | 0.8+ | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 20 | 699 | 0.2− | 0.5+ |
| 2004 02 11 | 644 | 0.3+ | 0.9+ | 2006 09 01 | 152 | 0.2− | 0.2− | 2006 09 20 | 699 | (1.7− | 1.1+) |
| 2004 02 11 | 644 | 0.4+ | 1.2+ | 2006 09 01 | 152 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.2− |
| 2005 05 07 | G96 | 0.1+ | 0.2+ | 2006 09 01 | 152 | 0.1+ | 0.8+ | 2006 09 28 | G96 | 0.4− | 0.5− |
| 2005 05 07 | G96 | 0.1+ | 0.4+ | 2006 09 01 | 152 | (0.6+ | 1.6+) | 2006 09 28 | G96 | 0.2− | 0.0 |
| 2005 05 07 | G96 | 0.2+ | 0.4+ | 2006 09 02 | 152 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.2− |
| 2005 05 07 | G96 | 0.3− | 0.0 | 2006 09 02 | 152 | 1.0+ | 0.3+ | 2006 11 16 | G96 | 0.7− | 0.4− |
| 2006 08 28 | 703 | 1.0+ | 0.4+ | 2006 09 02 | 152 | 0.4+ | 0.7+ | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2006 08 28 | 703 | 0.3− | 0.5+ | 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2006 08 28 | 703 | 0.7− | 0.4+ | 2006 09 20 | 699 | 0.3+ | 1.1+ | 2006 11 16 | G96 | 0.4+ | 0.3− |

**2006 QM$_{145}$ = 1998 VV$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.73092 | | | (2000.0) | | |
| $n$ | 0.23685248 | $\omega$ | 262.89583 | | +0.87179649 | −0.48962563 |
| $a$ | 2.5871251 | $\Omega$ | 126.41895 | | +0.45666825 | +0.80092211 |
| $e$ | 0.1983943 | $i$ | 1.09765 | | +0.17727095 | +0.34466001 |
| $P$ | 4.16 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.1− | 0.0 | 2006 08 18 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.4+ | 0.1+ |
| 1998 11 15 | 691 | 0.7− | 0.2+ | 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 1998 11 15 | 691 | 0.1+ | 0.1− | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1998 11 21 | 691 | 0.0 | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1998 11 21 | 691 | 0.2+ | 0.2− | 2006 08 27 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 1998 11 21 | 691 | 0.6+ | 0.2− | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1− |
| 2002 10 07 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 1.2− | 2006 09 30 | G96 | 0.0 | 0.0 |
| 2002 10 07 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2002 10 07 | 644 | 0.0 | 0.3+ | 2006 09 14 | 703 | (1.9− | 1.0+) | 2006 09 30 | G96 | 0.3− | 0.4− |

**2006 QU$_{145}$ = 2002 TR$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.68733 | | | (2000.0) | | |
| $n$ | 0.23911440 | $\omega$ | 263.30180 | | +0.48041238 | −0.87664222 |
| $a$ | 2.5707839 | $\Omega$ | 157.92514 | | +0.82996042 | +0.44464723 |
| $e$ | 0.2155534 | $i$ | 4.04378 | | +0.28349540 | +0.18381312 |
| $P$ | 4.12 | $H$ | 17.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 23 | 910 | 0.2− | 1.2+ | 2004 03 17 | 691 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.5+ |
| 1998 10 23 | 910 | 0.1+ | 1.1+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 1998 10 23 | 910 | 0.4+ | 0.4+ | 2004 03 17 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.1− |
| 2002 10 05 | 645 | 0.1− | 0.1− | 2006 08 18 | 691 | 0.4− | 0.4− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.3− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.7+ | 0.3− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.4+ | | | | |

**2006 QV$_{145}$ = 2002 TB$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 123.25980 | | | (2000.0) | | |
| $n$ | 0.22671449 | $\omega$ | 209.23272 | | −0.79955781 | +0.60054924 |
| $a$ | 2.6636870 | $\Omega$ | 7.68773 | | −0.54048975 | −0.71447481 |
| $e$ | 0.1225793 | $i$ | 2.96614 | | −0.26187427 | −0.35897961 |
| $P$ | 4.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.2+ | 0.5+ | 2005 05 04 | E12 | 0.4+ | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.5− |
| 2000 02 03 | 704 | 1.0+ | 0.3+ | 2005 05 04 | E12 | 0.0 | 0.2− | 2006 09 14 | 703 | 1.0− | 0.2+ |
| 2000 02 03 | 704 | 0.1− | 1.3+ | 2005 05 04 | E12 | 0.5+ | 0.1− | 2006 09 16 | 699 | 0.1+ | 0.9− |
| 2000 02 03 | 704 | 0.5+ | 0.7+ | 2005 05 04 | E12 | 0.3− | 0.0 | 2006 09 16 | 699 | 1.3− | 0.7+ |
| 2000 02 03 | 704 | 0.1+ | 0.9+ | 2005 05 11 | 644 | 0.4+ | 0.0 | 2006 09 16 | 699 | 0.9− | 0.7+ |
| 2002 10 05 | 291 | 0.2+ | 0.2− | 2005 05 11 | 644 | 0.5+ | 0.1− | 2006 09 16 | 699 | 0.4− | 0.7− |
| 2002 10 05 | 291 | 0.0 | 0.2− | 2005 05 11 | 644 | 0.5+ | 0.0 | 2006 09 30 | 703 | (0.1+ | 2.1+) |
| 2002 10 05 | 291 | 0.0 | 0.1− | 2005 06 03 | 703 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.1+ | 1.5− |
| 2002 10 08 | 291 | 0.5+ | 0.4− | 2005 06 03 | 703 | 0.8− | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.0 |
| 2002 10 08 | 291 | 0.8− | 0.5+ | 2005 06 03 | 703 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.2+ |
| 2002 10 08 | 291 | 0.1+ | 0.2+ | 2005 06 03 | 703 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2005 03 11 | G96 | 0.3− | 0.5+ | 2006 08 18 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2005 03 11 | G96 | 0.3− | 0.4+ | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2005 03 11 | G96 | 0.2− | 0.2− | 2006 08 18 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.6+ | 2006 08 27 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2005 03 14 | G96 | 0.4− | 0.3+ | 2006 08 27 | 691 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.6− | 0.5− |
| 2005 03 14 | G96 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.1+ | 0.5+ | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2005 03 14 | G96 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.6− | 0.9− |
| 2005 03 14 | G96 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.6− | 0.5+ | | | | |

**2006 QZ$_{145}$ = 1993 VA$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.11743 | | | (2000.0) | | |
| $n$ | 0.22031836 | $\omega$ | 25.49357 | | +0.91446859 | −0.40464662 |
| $a$ | 2.7149943 | $\Omega$ | 358.36714 | | +0.35178147 | +0.79847936 |
| $e$ | 0.1189494 | $i$ | 5.80847 | | +0.19999250 | +0.44574861 |
| $P$ | 4.47 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 09 | 691 | 0.3− | 0.1+ | 2006 08 27 | 691 | 0.9− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 1993 11 09 | 691 | 0.2+ | 0.6− | 2006 08 27 | 691 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1993 11 09 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 1993 11 17 | 691 | 0.0 | 0.2− | 2006 09 14 | 703 | (1.5− | 0.6+) | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1993 11 17 | 691 | 0.2− | 0.4+ | 2006 09 14 | 703 | (0.8+ | 1.6+) | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 1993 11 17 | 691 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2006 08 18 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.2+ | 1.4+ | 2006 10 16 | G96 | 0.7+ | 0.0 |
| 2006 08 18 | 691 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.7+ | 0.9− | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2006 08 18 | 691 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.8+ | 1.1+ | | | | |
| 2006 08 27 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.3+ | | | | |

**2006 QC$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 230.14234 | | | (2000.0) | | |
| $n$ | 0.27582032 | $\omega$ | 139.15201 | | −0.67408926 | −0.73845429 |
| $a$ | 2.3373220 | $\Omega$ | 353.16955 | | +0.63506533 | −0.56765275 |
| $e$ | 0.1493303 | $i$ | 8.21699 | | +0.37722101 | −0.36394453 |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.3− | 1.0+ | 2001 03 29 | 704 | 1.0+ | 1.0+ | 2006 08 18 | 691 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 1.0+ | 0.8+ | 2001 03 29 | 704 | 0.6+ | 0.2+ | 2006 08 18 | 691 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.8− | 0.8− | 2003 11 19 | 704 | 0.4− | 0.2− | 2006 08 18 | 691 | 0.0 | 0.5+ |
| 1999 10 13 | 704 | 0.6− | 0.8+ | 2003 11 19 | 704 | 1.3+ | 0.4− | 2006 08 27 | 691 | 0.2− | 0.5+ |
| 1999 10 13 | 704 | 0.1+ | 0.7− | 2003 11 19 | 704 | 0.9+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.6+ |
| 2001 02 22 | 704 | 0.1− | 0.1+ | 2003 11 19 | 704 | 0.9+ | 0.7− | 2006 08 27 | 691 | 0.0 | 0.3+ |
| 2001 02 22 | 704 | 0.8+ | 0.1− | 2003 12 03 | 704 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.6− | 0.1− |
| 2001 02 22 | 704 | 1.3+ | 1.4− | 2003 12 03 | 704 | (0.7+ | 3.5+) | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2001 03 18 | 699 | 0.8− | 0.5+ | 2003 12 03 | 704 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1− |
| 2001 03 18 | 704 | 0.4+ | 0.9+ | 2003 12 03 | 704 | 0.2− | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.2+ |
| 2001 03 18 | 704 | 0.1− | 1.3+ | 2003 12 03 | 704 | 0.5− | 0.6+ | 2006 10 16 | G96 | 0.4− | 0.3− |
| 2001 03 18 | 704 | (0.4+ | 1.9+) | 2003 12 12 | 644 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.7− | 0.6− |
| 2001 03 18 | 704 | 0.4+ | 0.9+ | 2003 12 12 | 644 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2001 03 18 | 699 | (0.7+ | 2.8+) | 2003 12 12 | 644 | 0.5− | 0.5+ | 2006 10 16 | G96 | 0.4− | 0.5− |
| 2001 03 18 | 704 | 0.0 | 0.9+ | 2003 12 17 | 704 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 03 18 | 699 | 0.1− | 0.8+ | 2003 12 17 | 704 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2001 03 18 | 699 | 0.5− | 1.1+ | 2003 12 17 | 704 | 0.1− | 0.7+ | 2006 10 27 | G96 | 0.5+ | 0.4+ |
| 2001 03 29 | 704 | 1.4+ | 0.3+ | 2003 12 17 | 704 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2001 03 29 | 704 | 0.3+ | 0.6+ | 2003 12 17 | 704 | 1.1− | 0.1− | | | | |

**2006 QM$_{146}$ = 2005 GG$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.86939 | | | (2000.0) | | |
| $n$ | 0.22094338 | $\omega$ | 315.73267 | | +0.73288466 | +0.68034993 |
| $a$ | 2.7098716 | $\Omega$ | 1.40098 | | −0.59914584 | +0.64680510 |
| $e$ | 0.1524141 | $i$ | 4.71835 | | −0.32234195 | +0.34462608 |
| $P$ | 4.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.7− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.4+ |
| 1993 11 20 | 691 | 0.2− | 0.5+ | 2006 08 27 | 699 | 0.2+ | 0.2− | 2006 09 20 | 704 | (2.1− | 0.9+) |
| 1993 11 20 | 691 | 0.6+ | 0.1+ | 2006 08 27 | 691 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.1− | 0.5+ |
| 2005 03 17 | G96 | 0.2− | 0.3− | 2006 08 27 | 699 | 0.9− | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.5− |
| 2005 03 17 | G96 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2005 03 17 | G96 | 0.0 | 0.2− | 2006 08 27 | 699 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2005 03 17 | G96 | 0.3− | 0.3+ | 2006 08 27 | 699 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 703 | 0.2+ | 1.1+ | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 2005 04 15 | 691 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.4− | 2006 10 16 | G96 | 0.1− | 0.3− | | |
| 2005 04 15 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.6− | 1.4+ | 2006 10 16 | G96 | 0.2+ | 0.3− | | |
| 2005 04 16 | 691 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 10 16 | G96 | 0.6+ | 0.0 | | |
| 2005 04 16 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2005 04 16 | 691 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.3− | 0.8− | 2006 11 21 | G96 | 0.3+ | 0.3− | | |
| 2006 08 18 | 691 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.6+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.3− | 2006 11 21 | G96 | 0.4− | 0.2− | | |
| 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.1+ | | | | | | |

**2006 QG$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.32098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18280751 | $\omega$ | 154.85135 | | +0.63665750 | +0.77090630 | |
| $a$ | 3.0747280 | $\Omega$ | 154.67799 | | −0.71490512 | +0.59940067 | |
| $e$ | 0.2356770 | $i$ | 2.58009 | | −0.28909842 | +0.21545835 | |
| $P$ | 5.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.5+ | 0.2− | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1− | | |
| 2005 04 06 | G96 | 0.3− | 0.8− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− | | |
| 2005 04 06 | G96 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 2005 04 06 | G96 | 0.6− | 1.0+ | 2006 09 16 | 699 | 0.2− | 0.7+ | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 2005 05 19 | G96 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.1− | | |
| 2005 05 19 | G96 | 0.0 | 0.1− | 2006 09 16 | 699 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2005 05 19 | G96 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.8+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.0 | | |
| 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.2− | 0.0 | | |
| 2006 07 25 | G96 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.4− | 1.0− | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2006 07 25 | G96 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.8− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.6+ | | |
| 2006 07 25 | G96 | 0.2− | 0.4− | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1− | | |
| 2006 07 25 | G96 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.3− | 1.4− | 2006 10 20 | G96 | 0.4+ | 0.1− | | |
| 2006 08 18 | 691 | 0.0 | 0.2− | 2006 09 20 | 704 | 0.2+ | 1.3− | 2006 10 20 | G96 | 0.1+ | 0.0 | | |
| 2006 08 18 | 691 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.9+ | 1.0+ | 2006 10 20 | G96 | 0.2− | 0.1− | | |
| 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.5− | | |
| 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 1.5− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.5− | | |
| 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.5− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.7− | | |

**2006 QH$_{147}$ = 2005 JY$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.52606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24015284 | $\omega$ | 180.42313 | | +0.66964177 | +0.74246013 | |
| $a$ | 2.5633676 | $\Omega$ | 131.61642 | | −0.68132777 | +0.62391131 | |
| $e$ | 0.0861321 | $i$ | 1.39837 | | −0.29558817 | +0.24390087 | |
| $P$ | 4.10 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.0 | 0.0 | 2005 05 14 | G96 | 0.4+ | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.2− | | |
| 2002 10 30 | 645 | 0.1+ | 0.2− | 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.2− | 0.1+ | | |
| 2005 05 11 | G96 | 0.5− | 0.0 | 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.4+ | | |
| 2005 05 11 | G96 | 0.2+ | 0.1− | 2006 08 18 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2005 05 11 | G96 | 0.5− | 0.4− | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.1− | | |
| 2005 05 11 | G96 | 0.2− | 0.2− | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4− | 0.4− | | |
| 2005 05 14 | G96 | 0.0 | 0.7− | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.2− | | |
| 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.1− | | | | | | |

**2006 QJ$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.62562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25406927 | $\omega$ | 132.23668 | | +0.41222099 | +0.91069927 | |
| $a$ | 2.4688875 | $\Omega$ | 162.05472 | | −0.85916510 | +0.39823389 | |
| $e$ | 0.1282225 | $i$ | 4.92851 | | −0.30316527 | +0.10971144 | |
| $P$ | 3.88 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 15 | 691 | 0.1+ | 0.4+ | 2005 05 03 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.8− | 0.2− | | |
| 2001 03 15 | 691 | 0.0 | 0.6+ | 2005 05 03 | 691 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.2− | 0.1+ | | |
| 2001 03 15 | 691 | 0.4+ | 0.3+ | 2005 05 03 | 691 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.4+ | | |
| 2002 08 12 | 704 | 0.3− | 0.2− | 2005 05 13 | 691 | 0.3− | 0.2+ | 2006 09 25 | 699 | (1.7− | 0.5+) | | |
| 2002 08 12 | 704 | 1.1+ | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.1+ | 0.2− | | |
| 2002 08 12 | 704 | (2.1+ | 0.3+) | 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.2− | | |
| 2002 08 12 | 704 | 1.4+ | 0.0 | 2006 07 21 | G96 | 0.2+ | 0.5− | 2006 09 25 | 699 | (0.9− | 1.8+) | | |
| 2002 08 18 | 608 | 0.0 | 0.5+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 09 26 | 704 | 1.5− | 1.1+ | | |
| 2002 08 18 | 608 | 0.3− | 0.2+ | 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 09 26 | 704 | 0.5− | 0.6+ | | |
| 2002 08 18 | 608 | 0.4− | 0.1+ | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 26 | 704 | 1.2− | 0.7− | | |
| 2002 09 05 | 704 | 0.6+ | 0.1− | 2006 08 18 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.0 | | |
| 2002 09 05 | 704 | 0.8− | 0.0 | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2002 09 05 | 704 | (1.1+ | 1.6+) | 2006 08 18 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− | | |
| 2002 09 05 | 704 | (0.8+ | 1.6−) | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | | |
| 2002 09 14 | 644 | 0.8− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.4+ | | |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.4− | 0.6+ | | |
| 2002 09 14 | 644 | 0.6− | 0.3− | 2006 09 17 | 704 | (0.1− | 2.0+) | 2006 10 09 | 644 | 0.1+ | 0.6+ | | |
| 2005 03 11 | 691 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.0 | 1.1+ | 2006 10 21 | G96 | 0.0 | 0.2+ | | |
| 2005 03 11 | 691 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.1− | | |
| 2005 03 11 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 2005 04 01 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.7− | 2006 10 21 | G96 | 0.5+ | 0.3+ | | |
| 2005 04 01 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.7+ | 0.4+ | | | | | | |
| 2005 04 01 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.0 | | | | | | |

**2006 QK$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.57017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26993688 | $\omega$ | 31.08090 | | +0.90590066 | −0.42346376 | |
| $a$ | 2.3711621 | $\Omega$ | 353.96678 | | +0.37870353 | +0.81505149 | |
| $e$ | 0.1801107 | $i$ | 2.58298 | | +0.18954586 | +0.39543584 | |
| $P$ | 3.65 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 1.2+ | 0.4− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 1995 08 20 | 809 | 0.1+ | 0.5− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 10 01 | 703 | 0.0 | 0.2+ | | |
| 1995 08 22 | 809 | 0.2− | 0.4− | 2006 09 17 | 704 | 0.3− | 0.2− | 2006 10 01 | 703 | 0.3− | 0.7+ | | |
| 1995 09 17 | 809 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.9− | 0.6+ | 2006 10 01 | 703 | 0.1+ | 0.8− | | |
| 1995 09 18 | 809 | (2.9− | 3.2−) | 2006 09 17 | 704 | 0.5− | 0.9+ | 2006 10 01 | 703 | 0.8− | 0.1+ | | |
| 1995 09 20 | 809 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2003 12 29 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.6− | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.4+ | | |
| 2003 12 29 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2004 01 22 | 704 | 0.5+ | 0.3+ | 2006 09 25 | 699 | 1.0+ | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.1− | | |
| 2004 01 22 | 704 | 0.4+ | 0.6− | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2004 01 22 | 704 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.4− | | |
| 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.4− | | |
| 2004 02 11 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.6− | | |
| 2006 08 18 | 691 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.8− | | |
| 2006 08 18 | 691 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.7− | | |
| 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.4− | | |
| 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.5− | | |

**2006 QP$_{147}$ = 2003 YW$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.87573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28452024 | $\omega$ | 67.06772 | | +0.48171160 | −0.87628993 | |
| $a$ | 2.2894295 | $\Omega$ | 354.11447 | | +0.77119376 | +0.42843046 | |
| $e$ | 0.1431661 | $i$ | 4.67634 | | +0.41619001 | +0.22037081 | |
| $P$ | 3.46 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.1+ | 0.3+ | 2006 08 18 | 691 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 | | |
| 2003 12 17 | 704 | 0.3− | 0.5− | 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.3+ | | |
| 2003 12 17 | 704 | 0.4− | 0.8− | 2006 08 28 | 691 | 0.1+ | 0.3− | 2006 09 25 | 699 | 1.5− | 0.2+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 0.0 | 0.2− | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.2− |
| 2003 12 28 | 704 | 0.2+ | 0.7+ | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.4− | 0.0 |
| 2003 12 28 | 704 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 08 18 | 691 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.1− | 0.2+ | | | | |

**2006 QR$_{147}$ = 2004 DP$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.69087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22348226 | $\omega$ | 10.79126 | | +0.87187700 | −0.48941044 | |
| $a$ | 2.6893089 | $\Omega$ | 18.54186 | | +0.44510411 | +0.77698461 | |
| $e$ | 0.0681693 | $i$ | 3.16327 | | +0.20423717 | +0.39594486 | |
| $P$ | 4.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 691 | 0.1+ | 0.0 | 2006 08 21 | 807 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 2000 04 06 | 691 | 0.2− | 0.2− | 2006 08 21 | 807 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.6+ | 0.4− |
| 2000 04 06 | 691 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.5− |
| 2004 02 16 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2004 02 22 | 695 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2004 02 22 | 695 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | (1.7+ | 0.3−) |
| 2006 08 18 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2006 08 18 | 691 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.7+ | 0.1+ |
| 2006 08 18 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.0 |

**2006 QT$_{147}$ = 2005 JV$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.93476 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21053704 | $\omega$ | 63.35766 | | −0.64917275 | +0.75845683 | |
| $a$ | 2.7984467 | $\Omega$ | 165.70287 | | −0.75407925 | −0.63179906 | |
| $e$ | 0.1604006 | $i$ | 13.48864 | | −0.09969565 | −0.15991614 | |
| $P$ | 4.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 691 | 0.2+ | 0.1+ | 2005 06 30 | 644 | 0.1− | 0.4+ | 2006 08 27 | 691 | 0.5− | 0.2+ |
| 2005 05 04 | 691 | 0.0 | 0.1− | 2005 06 30 | 644 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 2005 05 04 | 691 | 0.6− | 0.7+ | 2006 08 18 | 691 | 0.3+ | 0.3− | 2006 08 27 | 691 | 0.6− | 0.3+ |
| 2005 05 13 | 691 | 0.2+ | 0.1− | 2006 08 18 | 691 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.6− |
| 2005 05 13 | 691 | 0.0 | 0.4− | 2006 08 18 | 691 | 0.2+ | 0.3− | 2006 09 19 | 703 | (1.0+ | 3.1−) |
| 2005 05 13 | 691 | 0.2+ | 0.3− | 2006 08 21 | 807 | 0.1− | 0.1+ | 2006 09 19 | 703 | (0.4− | 2.9−) |
| 2005 06 30 | 644 | 0.3− | 0.1− | 2006 08 21 | 807 | 0.0 | 0.0 | 2006 09 19 | 703 | (1.8− | 0.4+) |

**2006 QA$_{148}$ = 2004 DQ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.72071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22059729 | $\omega$ | 185.91497 | | +0.96486806 | +0.25985074 | |
| $a$ | 2.7127052 | $\Omega$ | 158.89988 | | −0.23641817 | +0.92315086 | |
| $e$ | 0.0599194 | $i$ | 6.19091 | | −0.11461270 | +0.28331974 | |
| $P$ | 4.47 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.0 | 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.6− | 1.0− |
| 2000 05 04 | 645 | 0.1+ | 0.0 | 2005 05 08 | 691 | 0.4− | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.1+ |
| 2004 02 22 | 691 | 0.3+ | 0.4+ | 2006 08 18 | 691 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.8+ |
| 2004 02 22 | 691 | 0.1+ | 0.1+ | 2006 08 18 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.1− |
| 2004 02 22 | 691 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.5+ |
| 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.7+ | 1.4− |
| 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.2+ | | | | |
| 2005 05 08 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.0 | | | | |

**2006 QC$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.63711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18146175 | $\omega$ | 46.52806 | | +0.64271303 | −0.76603068 | |
| $a$ | 3.0899111 | $\Omega$ | 3.52946 | | +0.64237762 | +0.53116645 | |
| $e$ | 0.1021314 | $i$ | 10.11774 | | +0.41745772 | +0.36202098 | |
| $P$ | 5.43 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.3− | 0.5− |
| 2001 10 14 | 704 | 1.2+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.6− | 2006 09 30 | 703 | 0.9− | 1.0− |
| 2001 10 14 | 704 | 0.8− | 0.4+ | 2006 09 18 | 699 | 1.0+ | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2001 11 12 | 704 | 0.9− | 0.4− | 2006 09 18 | 699 | (0.1− | 1.8+) | 2006 09 30 | 703 | 0.3+ | 0.4− |
| 2001 11 12 | 704 | 0.3+ | 0.4− | 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2001 11 12 | 704 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 2001 11 12 | 704 | 0.2− | 0.5+ | 2006 09 20 | 704 | 1.0+ | 1.3+ | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2006 08 18 | 691 | 0.1− | 0.3− | 2006 09 20 | 704 | 0.3− | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2006 08 18 | 691 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.2− | 0.6− | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2006 08 18 | 691 | 0.2− | 0.4− | 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 25 | 699 | (0.4− | 1.6+) | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2006 08 27 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.2+ |
| 2006 08 27 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 699 | (2.1+ | 0.6−) | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2006 09 14 | 644 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.5+ | 0.8+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2006 09 14 | 644 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.3+ | | | | |
| 2006 09 15 | 691 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.3− | 0.4+ | | | | |

**2006 QE$_{148}$ = 1995 SZ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.98909 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17823413 | $\omega$ | 213.35135 | | +0.88868532 | +0.45711591 | |
| $a$ | 3.1271026 | $\Omega$ | 119.40782 | | −0.41117662 | +0.82907057 | |
| $e$ | 0.1749399 | $i$ | 2.35692 | | −0.20290933 | +0.32200472 | |
| $P$ | 5.53 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.2+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.2− |
| 1995 09 26 | 691 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 1995 09 26 | 691 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.1− | 0.8+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 1995 09 30 | 691 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 1995 09 30 | 691 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.7+ | 0.4+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 1995 09 30 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2004 02 26 | 695 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2004 02 26 | 695 | 0.3+ | 0.5+ | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.3+ |
| 2006 08 18 | 691 | 0.3+ | 0.1− | 2006 09 30 | 703 | 1.4− | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.3+ |
| 2006 08 18 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | (1.9− | 2.3+) | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2006 08 18 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.2− | 1.3+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− | | | | |
| 2006 08 27 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.7− | 0.3+ | | | | |

**2006 QF$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.82230 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26356607 | $\omega$ | 124.27925 | | −0.36051014 | +0.93227930 | |
| $a$ | 2.4092196 | $\Omega$ | 124.56185 | | −0.86723853 | −0.32325644 | |
| $e$ | 0.1392498 | $i$ | 2.07344 | | −0.34340904 | −0.16235943 | |
| $P$ | 3.74 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 14 | 691 | 0.6+ | 0.4− | 2005 03 10 | G96 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1− |
| 1994 05 14 | 691 | 0.5− | 0.1− | 2005 04 04 | 703 | 0.4+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.1+ |
| 1994 05 14 | 691 | 0.2− | 0.1+ | 2005 04 04 | 703 | 0.7+ | 0.3+ | 2006 09 19 | 703 | (0.4+ | 2.2+) |
| 1999 10 10 | 691 | 0.2+ | 0.3− | 2005 04 04 | 703 | 1.1− | 0.1+ | 2006 09 19 | 703 | 0.3+ | 1.1− |
| 1999 10 10 | 691 | 0.1+ | 0.0 | 2005 04 04 | 703 | 0.4− | 1.1− | 2006 09 19 | 703 | (0.4− | 2.0+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.2− | 0.3− | 2006 08 18 | 691 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.6+ | 1.1+ |
| 2002 08 18 | 644 | 0.3− | 0.2− | 2006 08 18 | 691 | 0.1− | 0.7+ | 2006 10 20 | G96 | 0.7+ | 0.5− |
| 2002 08 18 | 644 | 0.1+ | 0.4− | 2006 08 18 | 691 | 0.1+ | 0.5− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.5− | 2006 08 27 | 691 | 0.4− | 0.4+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2005 03 10 | G96 | 0.2+ | 0.2+ | 2006 08 27 | 691 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ | | | | |
| 2005 03 10 | G96 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | | | | |

**2006 QG$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.91969 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20672155 | $\omega$ | 241.89668 | | −0.19105105 | | +0.98121892 |
| $a$ | 2.8327759 | $\Omega$ | 17.15120 | | −0.86593254 | | −0.15570638 |
| $e$ | 0.0662922 | $i$ | 5.18019 | | −0.46223407 | | −0.11386372 |
| $P$ | 4.77 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 02 16 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 02 16 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2004 03 10 | 644 | 0.1− | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.5− | 2006 10 20 | G96 | 0.8− | 0.0 |
| 2004 03 10 | 644 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2004 03 10 | 644 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 1.0+ | 2006 10 20 | G96 | 0.5− | 0.2− |
| 2006 08 18 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.6+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.9+ |
| 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.1+ | 2006 11 21 | G96 | 0.5+ | 0.1+ |
| 2006 08 27 | 691 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 30 | 703 | 1.3+ | 0.2− | 2006 11 21 | G96 | 0.5− | 0.9+ |
| 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.3+ | | | | |

**2006 QJ$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.05917 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24106316 | $\omega$ | 279.59786 | | +0.17627781 | | +0.98433870 |
| $a$ | 2.5569102 | $\Omega$ | 0.56530 | | −0.81303806 | | +0.14666439 |
| $e$ | 0.2121189 | $i$ | 10.85496 | | −0.55488310 | | +0.09781039 |
| $P$ | 4.09 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | 691 | 0.0 | 0.2+ | 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2005 03 16 | 691 | 0.2+ | 0.4+ | 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2005 03 16 | 691 | 0.3+ | 0.4− | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2005 04 02 | G96 | 0.5− | 0.2− | 2006 08 27 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 08 18 | 691 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2− | | | | |

**2006 QO$_{148}$ = 1997 UK$_{16}$ = 2004 FP$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.64665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21149540 | $\omega$ | 38.35808 | | +0.36459140 | | −0.93019504 |
| $a$ | 2.7899865 | $\Omega$ | 30.32803 | | +0.83218163 | | +0.30499288 |
| $e$ | 0.0793119 | $i$ | 4.83353 | | +0.41778805 | | +0.20424623 |
| $P$ | 4.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 23 | 691 | 0.3− | 0.2− | 2004 03 17 | 691 | 0.3− | 0.1− | 2006 08 27 | 691 | 0.3− | 0.1− |
| 1997 10 23 | 691 | 0.2+ | 0.0 | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 08 27 | 691 | 0.2+ | 0.2+ |
| 1997 10 23 | 691 | 0.1+ | 0.1+ | 2004 03 26 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7− | 0.6− |
| 1997 11 02 | 691 | 0.0 | 0.0 | 2004 03 26 | 691 | 0.8+ | 0.3− | 2006 09 19 | 703 | 2.0− | 2.1+ |
| 1997 11 02 | 691 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.6+ |
| 1997 11 02 | 691 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.6+ | 0.3− |
| 2004 03 17 | 691 | 0.4− | 0.1+ | 2006 08 18 | 691 | 0.1+ | 0.3− | | | | |
| 2004 03 17 | 691 | 0.4− | 0.1+ | 2006 08 27 | 691 | 0.3+ | 0.3+ | | | | |

**2006 QT$_{148}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.11578 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23465929 | $\omega$ | 256.99610 | | +0.80940017 | | −0.58401126 |
| $a$ | 2.6032201 | $\Omega$ | 138.69124 | | +0.56849178 | | +0.75287318 |
| $e$ | 0.2924811 | $i$ | 5.35987 | | +0.14727005 | | +0.30350094 |
| $P$ | 4.20 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.1− | 0.8+ | 2002 11 24 | 644 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.5− | 0.7− |
| 2002 10 31 | 644 | 0.1− | 0.5+ | 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1− | 1.3+ |
| 2002 10 31 | 644 | 0.1− | 0.5+ | 2006 08 18 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.7− | 0.5− |
| 2002 11 16 | 644 | 0.5− | 0.7− | 2006 08 18 | 691 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.3+ |
| 2002 11 16 | 644 | 0.4− | 0.7− | 2006 08 27 | 691 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.3− | 1.0− |
| 2002 11 16 | 644 | 0.2− | 0.6− | 2006 08 27 | 691 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2002 11 24 | 644 | 0.9+ | 0.0 | 2006 08 27 | 691 | 0.0 | 0.5+ | 2006 09 30 | 703 | 1.1+ | 0.1− |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.8+ | 1.4− | | | | |

**2006 QV$_{148}$ = 2003 AX$_{31}$ = 2004 FA$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.68393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19626073 | $\omega$ | 290.84400 | | +0.85199345 | | −0.52044816 |
| $a$ | 2.9325614 | $\Omega$ | 100.55772 | | +0.49930412 | | +0.77500723 |
| $e$ | 0.1083187 | $i$ | 3.31980 | | +0.15748829 | | +0.35846549 |
| $P$ | 5.02 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 06 | 691 | 0.3− | 0.7− | 2006 08 18 | 691 | 0.2− | 0.2− | 2006 09 28 | 699 | (0.9+ | 1.8+) |
| 1998 01 06 | 691 | 0.2− | 0.1− | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.9− |
| 1998 01 06 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 691 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.9− | 0.3− |
| 2001 09 19 | 704 | (0.0 | 1.9+) | 2006 08 27 | 691 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.6+ |
| 2001 09 19 | 704 | 0.5− | 1.0+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2001 10 17 | 644 | 0.1− | 0.9+ | 2006 09 18 | 703 | 0.7− | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 10 17 | 644 | 0.1+ | 0.8+ | 2006 09 18 | 703 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 10 17 | 644 | 0.1− | 1.2+ | 2006 09 18 | 703 | 1.0− | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.6+ |
| 2003 01 05 | 291 | 0.3− | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 1.0+ |
| 2003 01 05 | 291 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.4− |
| 2003 01 05 | 291 | 0.2+ | 0.7+ | 2006 09 18 | 699 | (1.1− | 1.7+) | 2006 10 16 | 703 | 0.0 | 1.4+ |
| 2003 01 08 | 704 | 1.2+ | 0.8+ | 2006 09 18 | 699 | 1.2− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2003 01 08 | 704 | (0.2− | 2.3+) | 2006 09 18 | 699 | 1.2− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2003 01 08 | 704 | (1.1− | 2.2+) | 2006 09 26 | 704 | 0.9− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2004 03 21 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.7+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2004 03 21 | 691 | 0.3+ | 0.7+ | 2006 09 26 | 704 | 0.5+ | 0.5+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2004 03 21 | 691 | 0.2+ | 1.0+ | 2006 09 26 | 704 | 0.8+ | 0.4− | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2004 03 28 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 699 | 0.4− | 1.3+ | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2004 03 28 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 699 | 0.2+ | 1.0+ | | | | |
| 2004 03 28 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 699 | 1.1+ | 0.6+ | | | | |

**2006 QX$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.24435 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26817795 | $\omega$ | 215.46193 | | −0.08014499 | | +0.99554139 |
| $a$ | 2.3815187 | $\Omega$ | 49.99508 | | −0.89889157 | | −0.05061834 |
| $e$ | 0.1837759 | $i$ | 3.72321 | | −0.43077921 | | −0.07959355 |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.2+ | 0.2+ | 2005 03 03 | 703 | 0.7+ | 1.4+ | 2006 09 18 | 703 | 1.1− | 0.1+ |
| 2002 08 11 | 644 | 0.2+ | 0.0 | 2005 03 03 | 703 | 0.6− | 0.8+ | 2006 09 18 | 703 | 0.0 | 0.9− |
| 2002 08 11 | 644 | 0.5− | 0.0 | 2005 03 03 | 703 | 1.4+ | 0.9+ | 2006 09 18 | 703 | 0.1− | 0.9− |
| 2003 11 24 | 691 | 0.2+ | 0.0 | 2005 04 09 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 1.0+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 691 | 0.2− | 0.1− | 2005 04 09 | 691 | 0.2− | 0.8− | 2006 09 18 | 703 | 0.6− | 0.0 |
| 2003 11 24 | 691 | 0.0 | 0.0 | 2005 04 09 | 691 | 0.3+ | 0.5+ | 2006 09 18 | 703 | 1.1− | 0.6− |
| 2003 11 30 | 691 | 0.2+ | 0.1+ | 2006 08 18 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.2+ |
| 2003 11 30 | 691 | 0.1− | 0.0 | 2006 08 18 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.3− | 1.4− |
| 2003 11 30 | 691 | 0.4+ | 0.0 | 2006 08 18 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.8+ |
| 2003 12 14 | 291 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.0 | 1.1+ |
| 2003 12 14 | 291 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.1+ |
| 2003 12 14 | 291 | 0.1− | 0.2− | 2006 08 27 | 691 | 0.0 | 0.0 | | | | |
| 2005 03 03 | 703 | 0.1+ | 1.4+ | 2006 09 18 | 703 | 0.1+ | 0.3− | | | | |

**2006 QA$_{149}$ = 2001 SM$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.62792 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20228514 | $\omega$ | 248.10800 | | +0.78565534 | −0.61610146 | |
| $a$ | 2.8740439 | $\Omega$ | 149.83836 | | +0.60087830 | +0.73826035 | |
| $e$ | 0.0607971 | $i$ | 6.42856 | | +0.14727849 | +0.27457356 | |
| $P$ | 4.87 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.2+ | 0.1+ | 2001 09 20 | 704 | 0.1− | 0.3+ | 2006 09 18 | 703 | (0.1− | 2.3+) |
| 1994 03 05 | 691 | 0.4+ | 0.3+ | 2001 09 20 | 704 | 0.0 | 1.2+ | 2006 09 18 | 699 | 0.4+ | 1.2+ |
| 1994 03 05 | 691 | 0.4− | 0.3+ | 2001 09 21 | 704 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.6− |
| 1996 08 13 | 327 | 0.3− | 0.4− | 2001 09 21 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 699 | 0.3+ | 0.0 |
| 1996 08 13 | 327 | 0.1− | 0.2− | 2001 09 21 | 704 | 0.6+ | 0.7+ | 2006 09 18 | 699 | 0.2+ | 0.1− |
| 1996 08 13 | 327 | 0.0 | 0.1+ | 2001 09 21 | 704 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.0 |
| 1996 08 13 | 327 | 0.2+ | 0.2− | 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.8− |
| 2001 09 19 | 704 | (0.8− | 3.2+) | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.3− | 0.7− |
| 2001 09 19 | 704 | (0.8− | 2.8+) | 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.2+ |
| 2001 09 19 | 704 | (0.6− | 1.7+) | 2006 08 27 | 691 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.5+ | 0.3− |
| 2001 09 19 | 704 | (1.1− | 2.4+) | 2006 08 27 | 691 | 0.4− | 0.0 | 2006 10 03 | G96 | 0.8+ | 0.0 |
| 2001 09 19 | 704 | (0.6− | 1.9+) | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.9− | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.8+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | (2.1− | 1.7+) | 2006 10 23 | 644 | 0.1− | 0.1− |

**2006 QC$_{149}$ = 2000 FV$_{69}$ = 2001 NS$_{16}$ = 2004 FW$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.47646 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21168646 | $\omega$ | 307.66104 | | +0.85210084 | +0.52242146 | |
| $a$ | 2.7883075 | $\Omega$ | 20.90177 | | −0.44794339 | +0.75920405 | |
| $e$ | 0.1583795 | $i$ | 5.08515 | | −0.27068595 | +0.38818169 | |
| $P$ | 4.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 910 | 0.3+ | 0.0 | 2004 03 17 | 291 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.6− | 1.3+ |
| 1997 10 01 | 910 | 0.8+ | 0.0 | 2004 03 18 | 291 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 1997 10 01 | 910 | 0.6+ | 0.2− | 2004 03 18 | 291 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.5− |
| 1997 11 06 | 704 | (3.4− | 1.6−) | 2004 03 18 | 291 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.1+ | 0.5+ |
| 1997 11 06 | 704 | (3.2− | 1.9−) | 2006 08 18 | 691 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.9+ |
| 1997 11 06 | 704 | (2.7− | 0.6−) | 2006 08 18 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.8+ |
| 1997 11 06 | 704 | 0.3− | 1.9− | 2006 08 18 | 691 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.2+ |
| 2000 03 27 | 691 | 0.2− | 0.3+ | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.6− | 0.4+ |
| 2000 03 27 | 691 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.1− | 0.1+ |
| 2000 03 27 | 691 | 0.0 | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.8− | 0.9+ |
| 2000 04 05 | 691 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.3+ | 1.1+ |
| 2000 04 05 | 704 | 0.6+ | 0.7− | 2006 09 12 | 703 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.1+ |
| 2000 04 05 | 691 | 0.0 | 0.2+ | 2006 09 12 | 703 | (1.6− | 0.1−) | 2006 09 30 | 703 | 0.4+ | 0.5− |
| 2000 04 05 | 704 | 1.8+ | 0.5+ | 2006 09 12 | 703 | 0.0 | 0.9+ | 2006 09 30 | 703 | 0.8− | 0.7− |
| 2000 04 05 | 691 | 0.1− | 0.0 | 2006 09 16 | 704 | (0.6+ | 2.2+) | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2000 04 05 | 704 | 0.4+ | 0.3− | 2006 09 16 | 704 | (0.3− | 2.1+) | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2000 04 05 | 704 | 1.2+ | 1.5+ | 2006 09 16 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 07 14 | 644 | 0.2− | 0.2+ | 2006 09 16 | 704 | (1.1− | 1.7+) | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2001 07 14 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.0− |
| 2001 07 14 | 644 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.9+ | 0.6− |
| 2001 07 21 | 644 | (1.9− | 2.0+) | 2006 09 18 | 703 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2001 07 21 | 644 | (1.1− | 1.6+) | 2006 09 18 | 703 | 0.6+ | 1.1+ | 2006 10 16 | 703 | 1.4− | 0.5− |
| 2001 07 21 | 644 | 1.1− | 1.5+ | 2006 09 18 | 699 | 1.0− | 1.1+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 03 16 | 691 | 0.7+ | 0.4+ | 2006 09 18 | 699 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2004 03 16 | 691 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.3+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.5+ | 0.1+ |
| 2004 03 17 | 291 | 0.4+ | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.8+ | | | | |
| 2004 03 17 | 291 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.8+ | 0.7+ | | | | |

**2006 QG$_{149}$ = 1998 EL$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.51718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17918933 | $\omega$ | 322.95631 | | +0.07424348 | −0.99560711 | |
| $a$ | 3.1159797 | $\Omega$ | 122.71891 | | +0.93043043 | +0.04857014 | |
| $e$ | 0.0823388 | $i$ | 3.88798 | | +0.35886922 | +0.08004644 | |
| $P$ | 5.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.8− | 0.0 | 2003 02 21 | 644 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.5− | 1.2− |
| 1998 03 02 | 691 | 0.6− | 0.4+ | 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.5+ |
| 1998 03 02 | 691 | 0.7− | 0.1+ | 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.2+ |
| 1998 03 03 | 691 | 1.2+ | 0.1+ | 2006 08 18 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 1998 03 03 | 691 | 0.7+ | 0.0 | 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 1998 03 03 | 691 | 0.5+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.6+ | 0.0 |
| 2003 02 21 | 644 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.3+ | 2006 11 23 | G96 | 1.0+ | 0.1− |
| 2003 02 21 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | (0.5+ | 1.6−) | | | | |

**2006 QJ$_{149}$ = 2006 RZ$_{36}$ = 2005 LY$_{21}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.20558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21358317 | $\omega$ | 221.20487 | | +0.97501635 | −0.21430642 | |
| $a$ | 2.7717754 | $\Omega$ | 151.01390 | | +0.22192469 | +0.92838444 | |
| $e$ | 0.0960314 | $i$ | 6.92710 | | +0.00962052 | +0.30360351 | |
| $P$ | 4.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 08 | 691 | 0.6− | 0.2− | 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.8+ | 0.4− |
| 1995 04 08 | 691 | 0.2− | 0.5− | 2005 06 11 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | (2.1+ | 0.1+) |
| 1995 04 08 | 691 | 0.4− | 0.4− | 2005 06 11 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.8− | 0.5+ |
| 1997 09 30 | 608 | 0.2+ | 0.2+ | 2005 06 11 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.9− |
| 1997 09 30 | 608 | 0.3+ | 0.2+ | 2006 08 18 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.5+ |
| 2004 02 26 | 695 | 0.3− | 0.3+ | 2006 08 18 | 691 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 1.4+ |
| 2004 02 26 | 695 | 0.3− | 0.3+ | 2006 08 18 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.6− |
| 2004 03 14 | 691 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.6− | 1.3− |
| 2004 03 14 | 691 | 0.1+ | 0.6+ | 2006 08 27 | 691 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.7+ |
| 2004 03 14 | 691 | 0.5+ | 0.7+ | 2006 08 27 | 691 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.4+ | 1.7+ |
| 2004 03 21 | 691 | 0.4+ | 0.0 | 2006 09 12 | 703 | 0.6− | 1.0+ | 2006 09 30 | 703 | 1.0+ | 0.7− |
| 2004 03 21 | 691 | 0.3+ | 0.0 | 2006 09 12 | 703 | 1.4− | 1.0− | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2004 03 21 | 691 | 0.5+ | 0.0 | 2006 09 12 | 703 | (2.2− | 1.9+) | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 2005 06 08 | 691 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.1− |
| 2005 06 08 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 703 | (2.1+ | 0.8−) | 2006 10 03 | G96 | 0.0 | 0.0 |

**2006 QL$_{149}$ = 1999 TJ$_{258}$ = 2004 BC$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.96611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27696512 | $\omega$ | 283.38909 | | +0.45958718 | −0.88739272 | |
| $a$ | 2.3308769 | $\Omega$ | 139.18729 | | +0.83480104 | +0.41770001 | |
| $e$ | 0.2084800 | $i$ | 3.17909 | | +0.30312845 | +0.19509192 | |
| $P$ | 3.56 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.5+ | 0.3− | 2004 01 22 | 704 | 0.0 | 0.3+ | 2006 09 22 | 104 | 1.4− | 0.1+ |
| 1992 11 18 | 691 | 0.1− | 0.3− | 2004 01 24 | 704 | 0.3+ | 1.1+ | 2006 09 25 | 699 | 0.8+ | 0.5+ |
| 1992 11 18 | 691 | 0.5− | 0.5− | 2004 01 24 | 704 | 0.1+ | 0.8+ | 2006 09 25 | 699 | 1.4− | 0.8+ |
| 1999 10 09 | 704 | 1.3+ | 0.7− | 2004 01 24 | 704 | 0.4+ | 1.0+ | 2006 09 25 | 699 | 1.2− | 0.7+ |
| 1999 10 09 | 704 | 0.2+ | 0.7− | 2004 01 24 | 704 | 0.1− | 0.8+ | 2006 09 25 | 699 | 1.0+ | 0.5− |
| 1999 10 09 | 704 | 0.6+ | 0.5+ | 2004 01 24 | 704 | 0.9+ | 0.9+ | 2006 09 26 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2− | 0.2+ | 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.3+ | | |
| 1999 10 15 | 704 | 0.7+ | 0.5− | 2006 08 18 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 1999 10 15 | 704 | 0.6+ | 1.1− | 2006 08 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | (1.9− | 1.2+) | | |
| 1999 10 15 | 704 | 0.4+ | 0.2− | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | (0.0 | 2.2+) | | |
| 1999 10 15 | 704 | 0.4− | 0.4+ | 2006 08 27 | 691 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.7+ | | |
| 1999 10 15 | 704 | 0.0 | 1.3+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.3+ | | |
| 2004 01 17 | 644 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.1− | 1.1+ | 2006 10 16 | 703 | 0.6+ | 0.3− | | |
| 2004 01 17 | 644 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.6− | 0.2+ | | |
| 2004 01 17 | 644 | 0.6+ | 0.1− | 2006 09 19 | 699 | 0.5+ | 1.4− | 2006 10 16 | 703 | 0.1+ | 0.2+ | | |
| 2004 01 17 | 644 | 0.1− | 0.2+ | 2006 09 19 | 703 | (0.8− | 1.5−) | 2006 10 16 | 703 | 1.2+ | 0.3− | | |
| 2004 01 17 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.6− | 2006 11 23 | G96 | 0.4− | 0.6− | | |
| 2004 01 17 | 644 | (1.7− | 0.1+) | 2006 09 19 | 699 | 0.7− | 0.9+ | 2006 11 23 | G96 | 0.7− | 0.2− | | |
| 2004 01 22 | 704 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.6− | | |
| 2004 01 22 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.6− | 1.5+ | 2006 11 23 | G96 | 0.1− | 0.4− | | |
| 2004 01 22 | 704 | 0.0 | 0.6+ | 2006 09 22 | 104 | 0.1+ | 0.9+ | | | | | | |
| 2004 01 22 | 704 | 0.4− | 0.2+ | 2006 09 22 | 104 | 1.2+ | 0.5+ | | | | | | |

**2006 QF$_{150}$ = 2000 GH$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.83431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21403386 | $\omega$ | 321.54395 | | −0.99763904 | | +0.06669302 |
| $a$ | 2.7678830 | $\Omega$ | 222.28908 | | −0.05543499 | | −0.92285618 |
| $e$ | 0.0468384 | $i$ | 1.39513 | | −0.04053773 | | −0.37932640 |
| $P$ | 4.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.0 | 0.1− | 2004 02 19 | 621 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.3− | 0.1+ |
| 2000 04 05 | 691 | 0.2− | 0.1− | 2004 02 19 | 621 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.1− | 0.1− |
| 2000 04 05 | 691 | 0.1− | 0.1− | 2005 05 13 | G96 | 0.4+ | 0.0 | 2006 08 27 | 691 | 0.1− | 0.0 |
| 2000 04 11 | 691 | 0.2− | 0.2− | 2005 05 13 | G96 | 0.4+ | 0.2− | 2006 08 27 | 691 | 0.1+ | 0.4+ |
| 2000 04 11 | 691 | 0.2+ | 0.0 | 2005 05 13 | G96 | 0.4+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.4+ |
| 2000 04 11 | 691 | 0.2+ | 0.0 | 2005 05 13 | G96 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2+ |
| 2004 01 28 | 691 | 0.0 | 0.3+ | 2005 06 14 | 291 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2004 01 28 | 691 | 0.1+ | 0.3+ | 2005 06 14 | 291 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2004 01 28 | 691 | 0.1+ | 0.3+ | 2005 06 14 | 291 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.5+ | 1.2− |
| 2004 02 19 | 621 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.2+ | 0.0 | | | | |

**2006 QW$_{151}$ = 2004 EX$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.29389 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20142236 | $\omega$ | 91.78458 | | +0.31240389 | | −0.94991302 |
| $a$ | 2.8822453 | $\Omega$ | 340.00517 | | +0.86161324 | | +0.28702660 |
| $e$ | 0.0508049 | $i$ | 1.39270 | | +0.40003305 | | +0.12361629 |
| $P$ | 4.89 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.1− | 0.0 | 2004 03 18 | 691 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.3− | 0.0 |
| 2001 08 24 | 691 | 0.2− | 0.0 | 2004 03 20 | 291 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.2− | 0.3− |
| 2001 08 24 | 691 | 0.4+ | 0.2− | 2004 03 20 | 291 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2004 03 15 | 291 | 0.1− | 0.0 | 2004 03 20 | 291 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2004 03 15 | 291 | 0.0 | 0.1+ | 2006 08 19 | 691 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2004 03 15 | 291 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.0 | | | | |
| 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.2− | | | | |

**2006 QA$_{153}$ = 1996 SF$_3$ = 1999 CV$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.37160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19510263 | $\omega$ | 347.97440 | | −0.67373583 | | −0.73844232 |
| $a$ | 2.9441548 | $\Omega$ | 144.37080 | | +0.68191255 | | −0.63585774 |
| $e$ | 0.0490519 | $i$ | 2.75323 | | +0.28473726 | | −0.22447244 |
| $P$ | 5.05 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 20 | 691 | 0.3− | 0.2− | 1999 02 09 | 691 | 0.7− | 0.2+ | 2006 08 19 | 291 | 0.3− | 0.1+ |
| 1996 09 20 | 691 | 0.5− | 0.1− | 2001 09 19 | 645 | 0.2+ | 0.1+ | 2006 08 19 | 291 | 0.2− | 0.0 |
| 1996 09 20 | 691 | 0.3− | 0.3− | 2001 09 19 | 645 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.0 | 0.4+ |
| 1996 09 21 | 691 | 0.1+ | 0.5− | 2005 06 17 | G96 | 0.1+ | 0.6− | 2006 08 28 | 691 | 0.1+ | 0.7+ |
| 1996 09 21 | 691 | 0.6+ | 0.1− | 2005 06 17 | G96 | 0.2− | 0.3− | 2006 08 28 | 691 | 0.1+ | 0.5+ |
| 1996 09 21 | 691 | 0.1+ | 0.0 | 2005 06 17 | G96 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2− | 0.1− |
| 1999 02 08 | 691 | 0.8+ | 0.2+ | 2005 06 17 | G96 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.8− | 0.2− |
| 1999 02 08 | 691 | 0.5+ | 0.5+ | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.6+ |
| 1999 02 08 | 691 | 1.0+ | 0.4+ | 2006 08 19 | 691 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1− |
| 1999 02 09 | 691 | 0.5− | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.1− | | | | |
| 1999 02 09 | 691 | 0.5− | 0.0 | 2006 08 19 | 291 | 0.4− | 0.1+ | | | | |

**2006 QL$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.73915 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29556962 | $\omega$ | 277.70555 | | +0.48854002 | | −0.87232406 |
| $a$ | 2.2320102 | $\Omega$ | 143.02925 | | +0.81276597 | | +0.44683775 |
| $e$ | 0.1802575 | $i$ | 1.85597 | | +0.31739586 | | +0.19846098 |
| $P$ | 3.33 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 699 | (2.3− | 0.4+) | 2003 11 24 | 699 | 0.6+ | 1.1− | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2003 10 29 | 699 | 0.5− | 0.1+ | 2003 12 01 | 704 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.2− |
| 2003 10 29 | 699 | (1.0+ | 2.2+) | 2003 12 01 | 704 | 0.6− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.2− |
| 2003 10 29 | 699 | 0.8− | 0.1− | 2003 12 01 | 704 | 1.2− | 0.5− | 2006 09 30 | G96 | 0.0 | 0.3+ |
| 2003 11 15 | 691 | 0.3+ | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.6+ | 0.5− |
| 2003 11 15 | 691 | 0.3+ | 0.1− | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.0 |
| 2003 11 15 | 691 | 0.2+ | 0.0 | 2006 08 19 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2003 11 24 | 699 | 0.7− | 0.8− | 2006 08 27 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.6− | 0.2− |
| 2003 11 24 | 699 | 0.1− | 0.5+ | 2006 08 27 | 691 | 0.2+ | 0.0 | | | | |
| 2003 11 24 | 699 | 0.4+ | 1.6+ | 2006 08 27 | 691 | 0.0 | 0.3+ | | | | |

**2006 QD$_{154}$ = 2001 TD$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.75162 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17794469 | $\omega$ | 83.75537 | | +0.64467728 | | −0.76324125 |
| $a$ | 3.1304926 | $\Omega$ | 325.97940 | | +0.66742157 | | +0.58941804 |
| $e$ | 0.0709159 | $i$ | 4.41381 | | +0.37274609 | | +0.26466805 |
| $P$ | 5.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2+ | 0.0 | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.2− | 0.4+ |
| 2001 10 14 | 704 | 0.5+ | 1.2− | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 10 14 | 704 | 0.6− | 1.1− | 2006 08 19 | 691 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2001 10 20 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 2001 10 20 | 691 | 0.1− | 0.1+ | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2001 10 20 | 691 | 0.0 | 0.4+ | 2006 08 27 | 691 | 0.0 | 0.1− | | | | |
| 2004 03 29 | 691 | 0.0 | 0.0 | 2006 08 27 | 691 | 0.6+ | 0.5− | | | | |

**2006 QV$_{154}$ = 2004 CR$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.85647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22427901 | $\omega$ | 10.95564 | | +0.99019941 | | −0.13959092 |
| $a$ | 2.6829359 | $\Omega$ | 357.05772 | | +0.12074907 | | +0.87157906 |
| $e$ | 0.0685663 | $i$ | 4.93675 | | +0.07017691 | | +0.46996203 |
| $P$ | 4.39 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 1.4+ | 1.5+ | 2004 02 23 | 704 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.2+ | 0.4+ |
| 2000 03 11 | 704 | 0.3+ | 0.8+ | 2004 02 23 | 704 | 0.2+ | 0.5+ | 2006 09 14 | 703 | (0.2+ | 2.0+) |
| 2000 03 11 | 704 | 0.5− | 0.2+ | 2004 02 23 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 644 | 0.2− | 0.2+ |
| 2000 03 11 | 704 | 0.6+ | 1.1+ | 2004 02 23 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.4+ |
| 2002 10 10 | 644 | 0.2+ | 0.1− | 2006 08 18 | 644 | 0.5− | 0.5+ | 2006 09 18 | 699 | 0.5+ | 0.6+ |
| 2002 10 10 | 644 | 0.0 | 0.2− | 2006 08 18 | 644 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.3+ | 0.5− | 2006 08 18 | 644 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.6+ | | |
| 2004 01 22 | 704 | 0.5+ | 0.7− | 2006 08 18 | 644 | 0.5− | 0.3+ | 2006 09 18 | 699 | (2.1− | 0.1−) | | |
| 2004 01 22 | 704 | 0.4+ | 0.7− | 2006 08 18 | 644 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.5− | | |
| 2004 01 22 | 704 | 1.2+ | 0.1− | 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.4− | | |
| 2004 01 31 | 691 | 0.2− | 0.0 | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.3− | | |
| 2004 01 31 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.5− | | |
| 2004 01 31 | 691 | 0.0 | 0.1+ | 2006 08 28 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | | |
| 2004 02 11 | 691 | 0.0 | 0.5+ | 2006 09 14 | 703 | 0.2+ | 1.3+ | 2006 10 27 | G96 | 0.3+ | 0.4− | | |
| 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.8− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2+ | | |
| 2004 02 11 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.7+ | | |

**2006 QG$_{155}$ = 2001 TJ$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 351.90681 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.18143261 | $\omega$ | 344.50103 | | +0.99578339 | +0.09017864 |
| $a$ | 3.0902419 | $\Omega$ | 10.36881 | | −0.07104370 | +0.87415245 |
| $e$ | 0.1588472 | $i$ | 5.36558 | | −0.05803654 | +0.47720573 |
| $P$ | 5.43 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.4+ | 0.1+ | 2001 10 21 | 704 | 0.6− | 0.4+ | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.2− | 0.1− | 2001 10 21 | 704 | 0.3− | 0.1− | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 1.1+ | 0.3− | 2004 02 26 | 695 | 0.2− | 0.5− | 2006 08 28 | 691 | 0.2+ | 0.3+ |
| 2001 10 14 | 704 | 0.1+ | 0.2− | 2004 02 26 | 695 | 0.3− | 0.4− | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.2− | 0.4− | 2006 08 18 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.6− |
| 2001 10 21 | 704 | 0.2− | 0.1+ | 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 09 14 | 703 | 1.1− | 0.5− |
| 2001 10 21 | 704 | 0.1− | 0.3+ | 2006 08 18 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.1+ | 1.9− |

**2006 QH$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 316.96276 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.29277350 | $\omega$ | 56.39060 | | +0.67081096 | −0.74155440 |
| $a$ | 2.2461989 | $\Omega$ | 351.45591 | | +0.65493576 | +0.59896465 |
| $e$ | 0.1643412 | $i$ | 4.04328 | | +0.34795376 | +0.30222248 |
| $P$ | 3.37 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 704 | 0.8+ | 0.7+ | 2006 08 18 | 644 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.5− |
| 2003 11 24 | 704 | 0.5+ | 0.4+ | 2006 08 18 | 644 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2003 11 24 | 704 | 0.5− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2003 11 24 | 704 | 1.1− | 0.1+ | 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2003 11 24 | 704 | 0.0 | 0.6+ | 2006 08 27 | 691 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2003 12 25 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2003 12 25 | 691 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.9− | 0.5+ | 2006 10 16 | G96 | 0.5+ | 0.0 |
| 2003 12 25 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | 1.2− | 0.9+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2006 08 18 | 644 | 0.2− | 0.6− | 2006 09 14 | 703 | 0.2+ | 0.5− | | | | |

**2006 QM$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 3.29755 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22241491 | $\omega$ | 176.98845 | | +0.99169359 | −0.11425867 |
| $a$ | 2.6979058 | $\Omega$ | 190.15929 | | +0.10990189 | +0.99130264 |
| $e$ | 0.2107567 | $i$ | 19.56456 | | +0.06682368 | +0.06529959 |
| $P$ | 4.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2005 05 06 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2005 05 06 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.8− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 05 06 | 691 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2006 08 18 | 291 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2006 08 18 | 291 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.7+ |
| 2006 08 18 | 291 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2006 08 31 | 704 | 0.4+ | 1.0+ | 2006 10 01 | 704 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.9− | 0.3− |
| 2006 08 31 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.0 | 2006 10 25 | 246 | 0.1+ | 0.1− |
| 2006 08 31 | 704 | 1.0− | 0.5− | 2006 10 01 | 704 | 0.4− | 0.2− | 2006 10 25 | 246 | 0.6+ | 0.0 |
| 2006 08 31 | 704 | 0.1+ | 1.1+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 25 | 246 | 0.2− | 0.4+ |
| 2006 09 14 | 703 | 1.0+ | 0.3− | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 25 | 246 | 0.3+ | 0.3+ |
| 2006 09 14 | 703 | 0.6+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2− | 2006 10 25 | 246 | 0.4+ | 0.4− |
| 2006 09 14 | 703 | 1.1− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 25 | 246 | 0.4+ | 0.5+ |
| 2006 09 14 | 703 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 25 | 246 | 0.2+ | 0.0 |
| 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 26 | 246 | 1.0− | 0.5+ |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 10 26 | 246 | 0.2− | 1.2+ |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 10 26 | 246 | 0.8+ | 0.1+ |
| 2006 09 17 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 10 26 | 246 | 0.2+ | 0.3+ |
| 2006 09 17 | 704 | 0.9− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 10 26 | 246 | 0.4+ | 0.3+ |
| 2006 09 17 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 10 26 | 246 | 0.5− | 0.9+ |
| 2006 09 17 | 704 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 16 | 703 | (1.6+ | 0.1+) |
| 2006 09 17 | 704 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.8− | 2006 11 16 | 703 | 1.5+ | 0.1+ |
| 2006 09 25 | 691 | 0.2− | 0.8− | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.7+ | 0.1− |
| 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 16 | 703 | 1.2+ | 0.6+ |
| 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.0 | | | | |
| 2006 09 27 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3+ | | | | |

**2006 QO$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 14.56810 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23188338 | $\omega$ | 164.06846 | | +0.98495890 | +0.17103064 |
| $a$ | 2.6239545 | $\Omega$ | 186.24126 | | −0.17263915 | +0.96817258 |
| $e$ | 0.1844123 | $i$ | 13.07060 | | −0.00718911 | +0.18273033 |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.6+ |
| 1993 09 15 | 691 | 0.0 | 1.6− | 2006 09 06 | 644 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.1− |
| 1993 09 15 | 691 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.0 |
| 2000 03 03 | 645 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.5+ | 1.4+ | 2006 09 20 | 704 | 0.0 | 0.2+ |
| 2000 03 03 | 645 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 0.4− | 0.5− |
| 2002 10 31 | 704 | 0.5− | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.2− | 0.1+ |
| 2002 10 31 | 704 | (1.8− | 0.2+) | 2006 09 14 | 703 | 0.3+ | 0.9+ | 2006 10 01 | 704 | 0.2+ | 0.4+ |
| 2002 10 31 | 704 | 1.1− | 1.0+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.1− |
| 2004 03 21 | 691 | 0.4+ | 0.2− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2005 05 15 | 644 | 0.2− | 0.7+ | 2006 09 16 | 644 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2005 05 15 | 644 | 0.1− | 0.8+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2005 05 15 | 644 | 0.4− | 0.6+ | 2006 09 17 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2006 08 06 | 699 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2006 08 06 | 699 | 0.4− | 1.2− | 2006 09 17 | 704 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2006 08 06 | 699 | (1.5− | 2.2+) | 2006 09 17 | 704 | (0.6+ | 1.6+) | 2006 10 22 | 703 | 0.4− | 0.4− |
| 2006 08 06 | 699 | 0.7− | 0.6− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2006 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2006 08 18 | 644 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | 291 | 0.2+ | 0.2− |
| 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 1.0+ | 0.1+ | 2006 10 27 | 291 | 0.0 | 0.2− |
| 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.2− | 2006 10 27 | 291 | 0.2+ | 0.0 |
| 2006 08 28 | 703 | (1.8+ | 0.8+) | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.5− | 0.8+ | 2006 11 10 | 644 | 0.2+ | 0.1− |
| 2006 08 28 | 703 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.4− |

**2006 QS$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 359.77591 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.19092552 | $\omega$ | 92.56950 | | +0.94081856 | +0.33868217 |
| $a$ | 2.9869416 | $\Omega$ | 247.63412 | | −0.31604640 | +0.86349940 |
| $e$ | 0.1174550 | $i$ | 0.77092 | | −0.12237280 | +0.37371537 |
| $P$ | 5.16 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.1+ | 0.3− | 2001 10 11 | 644 | 0.5+ | 1.0+ | 2006 08 28 | 703 | 0.8− | 1.0+ |
| 2001 08 25 | 691 | 0.1+ | 0.1− | 2001 10 11 | 644 | 0.7− | 1.0+ | 2006 08 28 | 703 | 1.1− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.0 | 0.1− | 2001 10 11 | 644 | 0.7− | 0.3+ | 2006 08 28 | 703 | 0.2− | 0.2− | | |
| 2001 09 19 | 704 | 0.4− | 0.3+ | 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 08 28 | 699 | 1.2+ | 0.1− | | |
| 2001 09 19 | 704 | 0.5+ | 0.6+ | 2005 05 09 | G96 | 0.1+ | 0.3+ | 2006 08 28 | 699 | 0.4+ | 1.1− | | |
| 2001 09 19 | 704 | 0.2− | 0.1+ | 2005 05 09 | G96 | 0.1− | 0.0 | 2006 08 28 | 699 | 0.4+ | 1.0+ | | |
| 2001 09 19 | 704 | 0.2− | 0.6+ | 2005 05 09 | G96 | 0.2+ | 0.1+ | 2006 08 28 | 699 | (2.2− | 1.4+) | | |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.5− | 0.0 | | |
| 2001 09 23 | 691 | 0.2+ | 0.8− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.2− | | |
| 2001 09 23 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.0 | | |
| 2001 09 23 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.4+ | 0.7+ | 2006 09 25 | G96 | 0.3− | 0.1+ | | |

### 2006 QZ$_{155}$ = 1996 RN$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.86699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28848454 | $\omega$ | 205.75999 | | +0.94338380 | −0.33168441 | |
| $a$ | 2.2684072 | $\Omega$ | 173.60800 | | +0.30954848 | +0.87650212 | |
| $e$ | 0.1582644 | $i$ | 1.81630 | | +0.11919204 | +0.34889753 | |
| $P$ | 3.42 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.0 | 0.6− | 2003 11 24 | 691 | 0.0 | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.1− | | |
| 1996 09 08 | 691 | 0.5+ | 0.3− | 2003 11 24 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.5− | | |
| 1996 09 08 | 691 | 0.2− | 0.6− | 2006 08 19 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.5− | 0.1− | | |
| 1996 09 13 | 691 | 0.4− | 0.3− | 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.1− | | |
| 1996 09 13 | 691 | 0.2+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 1996 09 13 | 691 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.2+ | | | | | | |
| 2003 11 24 | 691 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.2+ | | | | | | |

### 2006 QB$_{156}$ = 2004 ER$_{96}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.95316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18123687 | $\omega$ | 15.28215 | | −0.98012189 | −0.16983297 | |
| $a$ | 3.0924665 | $\Omega$ | 154.25037 | | +0.14809179 | −0.97026483 | |
| $e$ | 0.0671698 | $i$ | 13.65449 | | +0.13202237 | −0.17246134 | |
| $P$ | 5.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.0 | 0.4+ | 2006 08 27 | 691 | 0.1+ | 0.2− | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 06 29 | 644 | 0.1− | 0.0 | 2006 08 27 | 691 | 0.3+ | 0.4+ | | |
| 2004 03 11 | 644 | 0.1− | 0.3+ | 2005 06 29 | 644 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 11 | 644 | 0.2− | 0.3+ | 2005 06 29 | 644 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.2+ | | |
| 2004 03 11 | 644 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.6− | | |
| 2004 03 20 | 704 | 0.1+ | 1.2+ | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.7− | | |
| 2004 03 20 | 704 | 0.6+ | 1.1+ | 2006 08 19 | 691 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.1+ | | |

### 2006 QS$_{156}$ = 2004 ES$_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.00049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19421199 | $\omega$ | 202.05766 | | +0.98458181 | −0.17068955 | |
| $a$ | 2.9531489 | $\Omega$ | 167.58537 | | +0.17489923 | +0.95686998 | |
| $e$ | 0.0892955 | $i$ | 10.25098 | | +0.00298620 | +0.23508493 | |
| $P$ | 5.07 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 20 | 807 | 0.6− | 0.4+ | 2004 03 17 | 291 | 0.4+ | 0.6+ | 2006 08 27 | 691 | 0.2− | 0.1+ | | |
| 2001 08 20 | 807 | 0.4+ | 0.7+ | 2004 03 23 | 691 | 0.1− | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.0 | | |
| 2004 03 15 | 691 | 0.1+ | 0.1− | 2004 03 23 | 691 | 0.3+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 15 | 691 | 0.1+ | 0.4− | 2004 03 23 | 691 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.0 | | |
| 2004 03 15 | 691 | 0.3+ | 0.8− | 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.4− | | |
| 2004 03 17 | 291 | 0.9− | 0.4+ | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.6− | 0.2− | | |
| 2004 03 17 | 291 | 0.2+ | 0.5+ | 2006 08 19 | 691 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.8− | 0.3− | | |

### 2006 QW$_{156}$ = 2005 JQ$_{118}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.47286 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27331649 | $\omega$ | 269.38833 | | +0.23861054 | −0.97083664 | |
| $a$ | 2.3515749 | $\Omega$ | 166.73734 | | +0.92644574 | +0.22038737 | |
| $e$ | 0.1734890 | $i$ | 5.82024 | | +0.29114136 | +0.09436967 | |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 704 | 0.0 | 0.1+ | 2005 05 17 | G96 | 0.2− | 0.5− | 2006 08 27 | 691 | 0.2− | 0.1+ | | |
| 1999 10 07 | 704 | 0.3− | 0.1+ | 2005 06 14 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.3− | | |
| 1999 10 07 | 704 | 0.1+ | 0.7+ | 2005 06 14 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.5− | | |
| 2005 05 10 | 691 | 0.4+ | 0.0 | 2005 06 14 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.0 | 0.4− | | |
| 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.4− | | |
| 2005 05 10 | 691 | 0.2− | 0.1+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 | | |
| 2005 05 17 | G96 | 0.5− | 0.8− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− | | |
| 2005 05 17 | G96 | 1.1− | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.2+ | | |
| 2005 05 17 | G96 | 0.0 | 0.4− | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− | | |

### 2006 QE$_{157}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.15211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17180183 | $\omega$ | 254.89574 | | +0.56665925 | −0.81174093 | |
| $a$ | 3.2046765 | $\Omega$ | 158.64717 | | +0.82231431 | +0.56796136 | |
| $e$ | 0.1074888 | $i$ | 22.83942 | | −0.05192752 | +0.13600204 | |
| $P$ | 5.74 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.6+ | | |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 1.4− | | |
| 2001 10 11 | 704 | 0.4+ | 0.1+ | 2006 08 19 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.1+ | | |
| 2001 10 11 | 704 | 0.4− | 1.0− | 2006 08 28 | 691 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.2− | 0.3− | | |
| 2001 10 11 | 704 | (0.6+ | 2.0−) | 2006 08 28 | 703 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.7− | 0.3− | | |
| 2003 02 11 | 608 | 0.6+ | 0.5− | 2006 08 28 | 703 | 0.2− | 1.2− | 2006 09 14 | 703 | 0.2− | 0.5− | | |
| 2003 02 11 | 608 | 0.3+ | 0.3− | 2006 08 28 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.7+ | 0.1− | | |
| 2003 02 11 | 608 | 0.4+ | 0.1− | 2006 08 28 | 703 | 1.1− | 1.2− | 2006 09 30 | 703 | 0.5+ | 0.7+ | | |
| 2003 03 07 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | (0.4− | 1.7−) | 2006 09 30 | 703 | 0.9− | 0.8− | | |
| 2003 03 07 | 704 | 0.5− | 0.6+ | 2006 08 28 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.3− | | |
| 2003 03 07 | 704 | 0.8− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.4+ | | | | | | |

### 2006 QG$_{157}$ = 2005 EH$_{210}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.25391 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26536031 | $\omega$ | 300.18868 | | +0.26757470 | +0.96344577 | |
| $a$ | 2.3983473 | $\Omega$ | 345.31347 | | −0.86506040 | +0.23414060 | |
| $e$ | 0.1146661 | $i$ | 2.99973 | | −0.42435161 | +0.13019380 | |
| $P$ | 3.71 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.3− | 0.0 | 2005 03 12 | 691 | 1.4− | 0.8+ | 2006 09 14 | 703 | 0.6− | 0.4− | | |
| 1995 10 15 | 691 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 1.0− | 0.9− | | |
| 1995 10 15 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | (1.8+ | 1.2−) | | |
| 2005 03 04 | 691 | 0.1+ | 0.7− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.6− | 0.1− | | |
| 2005 03 04 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.4− | | |
| 2005 03 04 | 691 | 0.7+ | 0.1− | 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.2− | | |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 08 27 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.0 | | |
| 2005 03 12 | 691 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.2+ | | | | | | |

**2006 QS$_{157}$ = 1999 UK$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 32.09754 | | (2000.0) | | | |
| $n$ | 0.26985399 | $\omega$ | 97.42023 | | +0.56248338 | +0.82679257 |
| $a$ | 2.3716476 | $\Omega$ | 206.80951 | | −0.76301232 | +0.51667448 |
| $e$ | 0.1594203 | $i$ | 0.65386 | | −0.31847238 | +0.22239947 |
| $P$ | 3.65 | $H$ | 18.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.3+ | 0.0 | 2005 03 08 | G96 | 0.0 | 0.5− | 2006 08 27 | 691 | 0.2− | 0.2− |
| 1999 10 31 | 691 | 0.4+ | 0.0 | 2005 03 08 | G96 | 0.1− | 0.5+ | 2006 08 27 | 691 | 0.2+ | 0.4+ |
| 1999 10 31 | 691 | 0.0 | 0.3− | 2005 03 08 | G96 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.2− |
| 1999 11 12 | 691 | 0.1− | 0.1− | 2006 08 19 | 691 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1999 11 12 | 691 | 0.5− | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 1999 11 12 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2005 03 08 | G96 | 0.0 | 0.2+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | | | | |

**2006 QC$_{158}$ = 2001 VH$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 301.37579 | | (2000.0) | | | |
| $n$ | 0.17441626 | $\omega$ | 100.54671 | | +0.48975940 | −0.87018640 |
| $a$ | 3.1725714 | $\Omega$ | 319.98190 | | +0.76351126 | +0.45795389 |
| $e$ | 0.1652541 | $i$ | 4.81338 | | +0.42093501 | +0.18180721 |
| $P$ | 5.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | (3.9+ | 0.6+) | 2002 12 07 | 645 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.1+ | 0.1− |
| 2001 11 12 | 704 | (2.7+ | 0.0 ) | 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.4+ | 0.0 |
| 2001 11 12 | 704 | (2.2+ | 0.5−) | 2006 08 19 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.0 | 0.1+ |
| 2001 11 15 | 704 | 0.3+ | 0.3− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.2+ | 0.2+ |
| 2001 11 15 | 704 | 0.1+ | 0.5− | 2006 08 23 | 807 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.1− |
| 2001 11 15 | 704 | 0.0 | 0.5+ | 2006 08 23 | 807 | 0.1+ | 0.3− | 2006 09 27 | G96 | 0.3− | 0.2− |
| 2001 11 15 | 704 | 0.3− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.8− | 0.5− |
| 2002 12 07 | 645 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1+ |

**2006 QE$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.43248 | | (2000.0) | | | |
| $n$ | 0.21767220 | $\omega$ | 57.51492 | | +0.94477619 | −0.32315554 |
| $a$ | 2.7369535 | $\Omega$ | 321.26169 | | +0.26381174 | +0.84859390 |
| $e$ | 0.0700672 | $i$ | 4.99489 | | +0.19442559 | +0.41887814 |
| $P$ | 4.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 910 | 0.2+ | 0.5− | 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.2− | 0.3+ |
| 1997 09 08 | 910 | 0.3+ | 0.9− | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 08 23 | 807 | 0.5− | 0.3+ |
| 1997 09 08 | 910 | 0.4+ | 0.5− | 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 08 23 | 807 | 0.1− | 0.3+ |
| 2001 05 23 | 807 | 0.1− | 0.6+ | 2004 03 20 | 691 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 2001 05 23 | 807 | 0.2− | 0.6+ | 2004 03 20 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.4+ |
| 2004 01 30 | 291 | 0.2− | 0.4+ | 2004 03 20 | 691 | 0.3+ | 0.5+ | 2006 08 29 | 691 | 0.1+ | 0.2+ |
| 2004 01 30 | 291 | 0.0 | 0.5+ | 2006 08 19 | 691 | 0.4− | 0.3+ | | | | |
| 2004 01 30 | 291 | 0.3+ | 0.5+ | 2006 08 19 | 691 | 0.2− | 0.3+ | | | | |

**2006 QB$_{159}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.60976 | | (2000.0) | | | |
| $n$ | 0.17767660 | $\omega$ | 197.36601 | | +0.97453362 | −0.22372910 |
| $a$ | 3.1336408 | $\Omega$ | 175.47969 | | +0.22171165 | +0.95121804 |
| $e$ | 0.0421202 | $i$ | 11.08282 | | +0.03358836 | +0.21243713 |
| $P$ | 5.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.3− | 0.8− | 2006 08 28 | 703 | 1.0− | 0.3− | 2006 09 25 | G96 | 0.6+ | 0.0 |
| 1993 04 19 | 691 | 0.0 | 0.6− | 2006 08 28 | 703 | 1.0− | 0.2− | 2006 09 25 | G96 | 0.6+ | 0.4− |
| 2001 11 18 | 608 | 0.1− | 0.4− | 2006 08 28 | 703 | 1.4− | 0.5− | 2006 09 25 | G96 | 0.9+ | 0.4− |
| 2001 11 18 | 608 | 0.3+ | 0.0 | 2006 08 28 | 691 | 0.3+ | 0.0 | 2006 09 25 | G96 | 1.4+ | 0.5+ |
| 2001 11 18 | 608 | 0.1+ | 0.3− | 2006 08 28 | 691 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2002 12 14 | 645 | 0.1− | 0.2+ | 2006 08 28 | 691 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2002 12 14 | 645 | 0.1− | 0.2+ | 2006 09 19 | 699 | 1.4− | 1.4+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2004 03 28 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.2+ | 2006 10 16 | G96 | 0.5+ | 0.4− |
| 2004 03 28 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.1+ | 1.2− | 2006 10 20 | G96 | 0.7+ | 0.3+ |
| 2006 08 19 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2006 08 19 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 1.1− | 0.3+ | | | | |
| 2006 08 28 | 703 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.4− | 0.2+ | | | | |

**2006 QK$_{159}$ = 2001 HH$_{68}$ 2003 YL$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 268.96761 | | (2000.0) | | | |
| $n$ | 0.28044056 | $\omega$ | 271.06627 | | −0.26061708 | −0.96536224 |
| $a$ | 2.3115795 | $\Omega$ | 194.05929 | | +0.90487959 | −0.23976038 |
| $e$ | 0.1989833 | $i$ | 2.93270 | | +0.33655855 | −0.10291113 |
| $P$ | 3.51 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.5+ | 0.5+ | 2001 04 23 | 691 | 0.3− | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 1994 04 06 | 691 | 0.0 | 0.3+ | 2001 04 23 | 691 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.1− | 0.4+ |
| 1994 04 06 | 691 | 0.1+ | 0.5− | 2005 06 17 | G96 | 0.1+ | 0.6− | 2006 09 12 | 703 | 0.3− | 1.3+ |
| 1994 04 16 | 691 | 0.4− | 0.2− | 2005 06 17 | G96 | 0.1+ | 0.2− | 2006 09 12 | 703 | 1.1− | 0.7− |
| 1994 04 16 | 691 | 0.4− | 0.3− | 2005 06 17 | G96 | 0.0 | 0.5− | 2006 09 12 | 703 | 1.2− | 0.4− |
| 1994 04 16 | 691 | (5.4− | 3.4−) | 2005 06 17 | G96 | 0.2− | 0.1− | 2006 09 12 | 703 | 0.2− | 0.7− |
| 1999 10 08 | 691 | 0.2− | 1.0− | 2006 08 19 | 691 | 0.4+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.0 |
| 1999 10 08 | 691 | 0.7+ | 0.1− | 2006 08 19 | 691 | 0.4+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.3− |
| 1999 10 08 | 691 | 0.0 | 0.1− | 2006 08 19 | 691 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.5+ | 0.0 |
| 2001 04 23 | 691 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.5− | 0.0 |

**2006 QV$_{160}$ = 2003 YE$_{177}$ = 2005 EO$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 87.00267 | | (2000.0) | | | |
| $n$ | 0.26016942 | $\omega$ | 351.05995 | | −0.32505890 | +0.94554875 |
| $a$ | 2.4301433 | $\Omega$ | 259.96960 | | −0.86661415 | −0.30484184 |
| $e$ | 0.1165711 | $i$ | 0.96365 | | −0.37857183 | −0.11405705 |
| $P$ | 3.79 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 16 | 568 | 0.0 | 0.2+ | 2005 03 11 | G96 | 0.6− | 0.1− | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2003 12 16 | 568 | 0.3− | 0.0 | 2005 03 13 | 691 | 0.5+ | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.1+ |
| 2003 12 17 | 568 | 0.2+ | 0.0 | 2005 03 13 | 691 | 0.0 | 0.1− | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2003 12 17 | 568 | 0.1+ | 0.1+ | 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.3− |
| 2005 03 11 | G96 | 0.5− | 0.6− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | (0.4− | 1.6−) |
| 2005 03 11 | G96 | 0.6− | 0.3− | 2006 08 19 | 691 | 0.4− | 0.2− | 2006 09 27 | G96 | 1.4+ | 0.9− |
| 2005 03 11 | G96 | 0.7− | 0.0 | 2006 08 19 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.5− | 0.1− |

**2006 QW$_{160}$ = 2001 SH$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.12543 | | (2000.0) | | | |
| $n$ | 0.18907779 | $\omega$ | 235.80224 | | +0.73283483 | −0.68035860 |
| $a$ | 3.0063696 | $\Omega$ | 167.06302 | | +0.63553312 | +0.68021449 |
| $e$ | 0.1254822 | $i$ | 2.06818 | | +0.24300363 | +0.27280106 |
| $P$ | 5.21 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 16 | 704 | 0.7+ | 0.0 | 2001 09 21 | 704 | 0.7− | 0.9− | 2006 08 28 | 691 | 0.0 | 0.0 |
| 2001 09 16 | 704 | 0.5+ | 1.0+ | 2001 09 21 | 704 | 0.6− | 0.2− | 2006 08 28 | 691 | 0.1+ | 0.2+ |
| 2001 09 16 | 704 | 0.1− | 0.1− | 2001 09 21 | 704 | 0.3− | 1.7− | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2001 09 16 | 704 | 0.2− | 1.2+ | 2001 09 21 | 704 | 0.3− | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.0 | 1.2+ | 2006 08 19 | 691 | 0.2+ | 0.5− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 0.8+ | 0.6+ | 2006 08 19 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1+ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3− | 0.3− | 2006 08 19 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.2+ | 2006 08 28 | 691 | 0.3− | 0.1+ |

**2006 QY$_{160}$ = 1992 SO$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.26693 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28060738 | $\omega$ | 183.09590 | | +0.99865959 | | +0.05162375 |
| $a$ | 2.3106632 | $\Omega$ | 173.94116 | | −0.04669377 | | +0.92976964 |
| $e$ | 0.2321717 | $i$ | 2.03252 | | −0.02233196 | | +0.36450432 |
| $P$ | 3.51 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 28 | 691 | 0.5− | 0.4+ | 2006 08 19 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.6− | 1.5+ |
| 1992 09 28 | 691 | 1.2+ | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.5+ | 0.6− |
| 1992 09 28 | 691 | 0.6− | 0.2+ | 2006 08 28 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.7− | 0.8− |
| 1992 10 02 | 691 | 0.1+ | 0.7− | 2006 08 28 | 691 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.5+ | 0.0 |
| 1992 10 02 | 691 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1992 10 02 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.6− | 2006 09 25 | G96 | 0.8+ | 0.2− |
| 2006 08 19 | 691 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.0 | | | | |

**2006 QG$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.05189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27759448 | $\omega$ | 96.82679 | | −0.08692833 | | +0.99601977 |
| $a$ | 2.3273525 | $\Omega$ | 168.13228 | | −0.94766772 | | −0.07657816 |
| $e$ | 0.2188307 | $i$ | 5.49696 | | −0.30719596 | | −0.04561155 |
| $P$ | 3.55 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 03 | 644 | 0.3+ | 0.5− | 2006 08 19 | 691 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2002 05 03 | 644 | 0.1− | 0.7− | 2006 08 19 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2002 05 03 | 644 | 0.1+ | 0.2− | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4− | 0.1− |
| 2002 05 09 | 644 | 0.3− | 0.4+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.4− | 1.8− |
| 2002 05 09 | 644 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.2+ | 0.2+ | | | | |
| 2002 05 09 | 644 | 0.0 | 0.4+ | 2006 08 28 | 691 | 0.2+ | 0.1+ | | | | |

**2006 QK$_{161}$ = 2005 JG$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.41320 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21411455 | $\omega$ | 336.20735 | | +0.44588053 | | +0.89449514 |
| $a$ | 2.7671875 | $\Omega$ | 320.25074 | | −0.81280775 | | +0.38932279 |
| $e$ | 0.0732038 | $i$ | 2.93095 | | −0.37487880 | | +0.21978673 |
| $P$ | 4.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.3− | 0.1− | 2005 05 11 | 644 | 0.1− | 0.6+ | 2006 08 28 | 691 | 0.1− | 0.2− |
| 2001 07 14 | 644 | 0.6− | 0.1+ | 2005 05 19 | 644 | 0.3+ | 0.6+ | 2006 08 28 | 691 | 0.1− | 0.1+ |
| 2001 07 14 | 644 | 0.4− | 0.2+ | 2005 05 19 | 644 | 0.1+ | 0.5+ | 2006 08 28 | 691 | 0.1+ | 0.1+ |
| 2001 07 27 | 608 | 0.5+ | 1.4− | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.0 |
| 2001 07 27 | 608 | 0.9+ | 1.3− | 2006 08 19 | 691 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2001 07 27 | 608 | 0.9+ | 1.5− | 2006 08 19 | 691 | 0.6− | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.2− |
| 2002 11 23 | 644 | 0.1− | 0.6+ | 2006 08 19 | 691 | 0.3− | 0.6+ | 2006 09 28 | G96 | 0.2+ | 0.1+ |
| 2002 11 23 | 644 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.7+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2002 11 23 | 644 | 0.1− | 0.4+ | 2006 08 28 | 703 | 1.2+ | 0.8+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2005 05 11 | 644 | 0.5+ | 1.4+ | 2006 08 28 | 703 | 0.7+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2005 05 11 | 644 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.3− | 0.5− | 2006 11 16 | G96 | 0.7+ | 0.6− |

**2006 QO$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.31849 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21906694 | $\omega$ | 175.46490 | | +0.97832605 | | +0.20595177 |
| $a$ | 2.7253241 | $\Omega$ | 172.54521 | | −0.19481342 | | +0.95062739 |
| $e$ | 0.1340606 | $i$ | 9.53601 | | −0.07018453 | | +0.23214527 |
| $P$ | 4.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2006 08 28 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.2− |
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.3+ |
| 2000 05 04 | 645 | 0.2− | 0.1+ | 2006 09 19 | 291 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.6+ |
| 2000 05 04 | 645 | 0.2− | 0.0 | 2006 09 19 | 291 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.0+ | 1.0+ |
| 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 291 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.7− |
| 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.8+ |
| 2005 04 30 | 691 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.6− | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2006 08 19 | 691 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.6+ | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.4− |
| 2006 08 19 | 691 | 0.1− | 0.2− | 2006 09 20 | 704 | 1.3− | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.9+ |
| 2006 08 19 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2− | | | | |
| 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1− | | | | |

**2006 QQ$_{161}$ = 1998 SL$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.09805 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24485664 | $\omega$ | 176.99854 | | −0.99695608 | | +0.07769762 |
| $a$ | 2.5304327 | $\Omega$ | 7.46690 | | −0.07252621 | | −0.89384913 |
| $e$ | 0.0966174 | $i$ | 2.84655 | | −0.02860976 | | −0.44158443 |
| $P$ | 4.03 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.1+ | 0.1+ | 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3− |
| 1994 09 28 | 691 | 0.2− | 0.2− | 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2− | 0.6+ |
| 1998 09 28 | 691 | 0.6+ | 0.0 | 2006 08 19 | 691 | 0.4+ | 0.6− | 2006 09 30 | 691 | 0.5− | 0.0 |
| 1998 09 28 | 691 | 1.0+ | 0.2− | 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.7− | 1.2+ |
| 1998 09 28 | 691 | 0.4− | 0.9− | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 10 16 | G96 | 0.4+ | 0.6− |
| 1998 10 01 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.5+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.7− |
| 1998 10 01 | 691 | 0.5− | 0.5+ | 2006 08 28 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 1998 10 01 | 691 | 0.2− | 0.5+ | 2006 08 28 | 691 | 0.4+ | 0.0 | 2006 10 16 | G96 | 0.9+ | 0.2− |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.2− | 0.2− | | | | |
| 2002 10 05 | 645 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.0 | | | | |

**2006 QU$_{161}$ = 2005 JJ$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.56233 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27436551 | $\omega$ | 298.10778 | | +0.02972345 | | +0.99952652 |
| $a$ | 2.3455771 | $\Omega$ | 333.59190 | | −0.91068817 | | +0.02380000 |
| $e$ | 0.1729758 | $i$ | 1.02464 | | −0.41202375 | | +0.01950130 |
| $P$ | 3.59 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 691 | 0.2+ | 0.0 | 2005 04 02 | G96 | 0.2− | 0.6− | 2006 07 21 | G96 | 0.5− | 0.2− |
| 2003 12 01 | 691 | 0.3− | 0.3+ | 2005 04 02 | G96 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.6+ |
| 2003 12 01 | 691 | 0.1+ | 0.1− | 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.2− |
| 2005 02 18 | 809 | 0.1+ | 0.2− | 2005 04 02 | G96 | 0.2− | 0.1− | 2006 08 19 | 691 | 0.3+ | 0.1− |
| 2005 02 18 | 809 | 0.1− | 0.1− | 2005 04 12 | 691 | 0.1− | 0.2+ | 2006 08 19 | 691 | 0.1− | 0.2+ |
| 2005 02 18 | 809 | 0.0 | 0.1− | 2005 04 12 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 691 | 0.3− | 0.5+ |
| 2005 03 03 | 703 | 0.8+ | 0.5+ | 2005 04 12 | 691 | 0.7+ | 0.0 | 2006 08 28 | 691 | 0.2− | 0.6+ |
| 2005 03 03 | 703 | 0.8− | 1.2+ | 2005 05 04 | G96 | 0.5− | 0.0 | 2006 08 28 | 691 | 0.1− | 0.2+ |
| 2005 03 03 | 703 | (4.7− | 1.3+) | 2005 05 04 | G96 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2005 03 03 | 703 | 1.0− | 0.2− | 2005 05 04 | G96 | 0.9− | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.6− |
| 2005 04 02 | 691 | 0.6+ | 0.1+ | 2005 05 04 | G96 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.2+ |
| 2005 04 02 | 691 | 0.5+ | 0.2+ | 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2005 04 02 | 691 | 0.5+ | 0.2+ | 2006 07 21 | G96 | 0.1+ | 0.0 | | | | |

**2006 QV$_{161}$ = 1999 RQ$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.06396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28317597 | $\omega$ | 201.36975 | | +0.99703107 | | −0.07124883 |
| $a$ | 2.2966692 | $\Omega$ | 162.63936 | | +0.07679859 | | +0.94757318 |
| $e$ | 0.1469220 | $i$ | 5.61599 | | −0.00556987 | | +0.31149425 |
| $P$ | 3.48 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 691 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.1− |
| 1999 09 04 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.3+ | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.3− |
| 1999 09 04 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | (2.1− | 1.7+) | 2006 09 19 | 703 | 0.8− | 0.5− |
| 1999 09 08 | 691 | 0.1− | 0.3+ | 2006 08 28 | 703 | (2.5− | 1.1+) | 2006 09 19 | 703 | 0.6− | 0.9+ |
| 1999 09 08 | 691 | 0.0 | 0.3+ | 2006 08 28 | 703 | 0.6− | 1.2+ | 2006 09 30 | 703 | (0.1− | 2.0−) |
| 1999 09 08 | 691 | 0.2− | 0.2− | 2006 08 28 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2001 02 21 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.2+ | 0.1+ |
| 2001 02 21 | 691 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | (0.0 | 2.4−) |
| 2001 02 21 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.3− |
| 2006 08 19 | 691 | 0.3+ | 0.1− | 2006 09 14 | 644 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2006 08 19 | 691 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.3− |

**2006 QY$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.71660 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25847919 | $\omega$ | 122.02126 | | +0.48416357 | −0.87280349 | |
| $a$ | 2.4407258 | $\Omega$ | 298.90035 | | +0.77715913 | +0.46133577 | |
| $e$ | 0.0907094 | $i$ | 4.03757 | | +0.40200663 | +0.15932163 | |
| $P$ | 3.81 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.4− | 0.6+ | 2004 01 24 | 704 | 0.4+ | 0.4− | 2006 09 12 | 703 | 1.3− | 0.1+ |
| 2002 08 16 | 644 | 0.1+ | 0.4+ | 2004 01 24 | 704 | 0.7+ | 0.1+ | 2006 09 16 | 699 | 0.8+ | 1.0+ |
| 2002 08 16 | 644 | 0.3− | 0.5+ | 2005 02 14 | 809 | 0.2+ | 1.1+ | 2006 09 16 | 699 | 1.1+ | 0.1− |
| 2003 12 21 | 291 | 0.7− | 0.2+ | 2005 02 14 | 809 | 0.0 | 1.0+ | 2006 09 16 | 699 | 1.1− | 0.3+ |
| 2003 12 21 | 291 | 0.4− | 0.6+ | 2005 02 14 | 809 | 0.3+ | 1.0+ | 2006 09 16 | 699 | 0.4+ | 1.3+ |
| 2003 12 21 | 291 | 0.1− | 0.1+ | 2006 08 20 | 691 | 0.4+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.7− |
| 2004 01 21 | 704 | (1.8+ | 0.3+) | 2006 08 20 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.7− | 0.5− |
| 2004 01 21 | 704 | 1.2+ | 0.6+ | 2006 08 20 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 1.2− | 0.0 |
| 2004 01 21 | 704 | 0.7+ | 0.4− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | (1.5− | 2.1−) |
| 2004 01 21 | 704 | 0.2+ | 0.9− | 2006 08 29 | 691 | 0.4− | 0.2+ | 2006 09 19 | 699 | 1.0+ | 0.0 |
| 2004 01 21 | 704 | 0.5− | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | (1.1− | 2.0−) |
| 2004 01 24 | 704 | 0.8+ | 0.1+ | 2006 09 12 | 703 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.4− | 0.9− |
| 2004 01 24 | 704 | 1.1+ | 0.1− | 2006 09 12 | 703 | 1.2+ | 0.1+ | 2006 09 19 | 699 | 1.0+ | 0.3− |
| 2004 01 24 | 704 | 0.7+ | 0.1− | 2006 09 12 | 703 | (1.0+ | 2.6−) | | | | |

**2006 QB$_{162}$ = 2004 EM$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.16515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19445959 | $\omega$ | 249.93300 | | +0.97543364 | +0.21361388 | |
| $a$ | 2.9506417 | $\Omega$ | 97.70333 | | −0.17632027 | +0.90355645 | |
| $e$ | 0.1123807 | $i$ | 3.11421 | | −0.13206205 | +0.37142273 | |
| $P$ | 5.07 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 699 | 0.2+ | 1.1+ | 2005 06 27 | G96 | 0.3− | 0.0 | 2006 09 25 | 699 | (0.9− | 2.0+) |
| 2001 08 27 | 699 | 0.5− | 0.9+ | 2006 08 20 | 691 | 0.4− | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.1+ |
| 2001 08 27 | 699 | 0.7− | 1.3− | 2006 08 20 | 691 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2001 08 27 | 699 | 0.5+ | 0.5+ | 2006 08 20 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 08 29 | 691 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.3+ |
| 2004 03 15 | 691 | 0.2+ | 0.5+ | 2006 08 29 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 1.2− | 0.1+ |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 08 29 | 691 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 1.4− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.6− | 0.7− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2005 06 27 | G96 | 0.6+ | 0.1− | 2006 09 19 | 699 | 0.3+ | 1.0+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2005 06 27 | G96 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.6+ | 1.5+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2005 06 27 | G96 | 0.5− | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3− |

**2006 QC$_{162}$ = 2002 UZ$_{15}$ = 2004 DX$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.99742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23009023 | $\omega$ | 277.83249 | | +0.74221283 | −0.66726829 | |
| $a$ | 2.6375696 | $\Omega$ | 124.04863 | | +0.64066067 | +0.67922047 | |
| $e$ | 0.0764505 | $i$ | 4.30763 | | +0.19665710 | +0.30563474 | |
| $P$ | 4.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.0 | 0.9− | 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.1+ | 0.3+ |
| 2002 10 30 | 644 | 0.5+ | 0.6− | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | (0.4− | 2.6+) |
| 2002 10 30 | 644 | 0.1− | 0.3+ | 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2002 10 31 | 704 | 0.3+ | 1.1+ | 2004 02 29 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.9+ | 0.9− |
| 2002 10 31 | 704 | 0.0 | 0.7− | 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.9+ | 0.5+ |
| 2002 10 31 | 704 | 0.4+ | 0.3− | 2006 08 20 | 691 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.6− |
| 2002 10 31 | 704 | 0.8− | 0.3+ | 2006 08 20 | 691 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.5− | 0.5− |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.4− |

**2006 QM$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.24978 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26607643 | $\omega$ | 95.67738 | | −0.00418985 | −0.99993376 | |
| $a$ | 2.3940421 | $\Omega$ | 354.52821 | | +0.86721253 | +0.00170478 | |
| $e$ | 0.1553439 | $i$ | 6.45526 | | +0.49792055 | −0.01138329 | |
| $P$ | 3.70 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.1+ | 0.1− | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2003 12 18 | 691 | 0.1+ | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2004 01 16 | 644 | 0.3− | 0.2+ | 2006 08 28 | 691 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2004 01 16 | 644 | 0.2− | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.4+ | | | | |
| 2004 01 16 | 644 | 0.4− | 0.0 | 2006 08 28 | 691 | 0.2− | 0.2+ | | | | |

**2006 QP$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.01069 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21194073 | $\omega$ | 198.00184 | | +0.70639203 | −0.70499885 | |
| $a$ | 2.7860769 | $\Omega$ | 207.16570 | | +0.66522915 | +0.69171693 | |
| $e$ | 0.2258199 | $i$ | 7.94938 | | +0.24182738 | +0.15653851 | |
| $P$ | 4.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 24 | 691 | 0.5+ | 0.4− | 2006 09 16 | 699 | (2.2+ | 1.5+) | 2006 09 19 | 703 | 0.0 | 0.3+ |
| 1997 10 24 | 691 | 0.2− | 0.5+ | 2006 09 16 | 699 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.0 |
| 1997 11 06 | 704 | (3.3− | 0.1+) | 2006 09 16 | 699 | 0.5− | 0.0 | 2006 09 25 | 699 | (2.1+ | 0.6−) |
| 1997 11 06 | 704 | 1.0− | 0.7− | 2006 09 16 | 699 | 0.2− | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.1+ |
| 1997 11 06 | 704 | 0.3− | 0.3+ | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 1.2− | 1.2+ |
| 2006 08 21 | 691 | 0.6+ | 0.5+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | (1.7+ | 0.3−) |
| 2006 08 21 | 691 | 0.3+ | 0.1− | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2006 08 21 | 691 | 0.0 | 0.3− | 2006 09 16 | 644 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.8+ | 0.2+ |
| 2006 08 29 | 703 | (0.3− | 1.8−) | 2006 09 16 | 644 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.5+ | 0.6− |
| 2006 08 29 | 703 | (0.7+ | 1.8−) | 2006 09 16 | 644 | 0.3+ | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.9− | 0.0 | | | | |
| 2006 08 29 | 703 | 0.3+ | 0.9− | 2006 09 19 | 703 | 0.7− | 0.5− | | | | |

**2006 QQ$_{162}$ = 2000 NG$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.82676 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17718835 | $\omega$ | 28.58581 | | +0.69319240 | | +0.71385282 |
| $a$ | 3.1393949 | $\Omega$ | 285.49373 | | −0.67937239 | | +0.60104062 |
| $e$ | 0.1875722 | $i$ | 5.92594 | | −0.24070199 | | +0.35939439 |
| $P$ | 5.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 06 | 684 | 0.2− | 0.5+ | 2006 08 29 | 703 | 0.7− | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.7+ |
| 2000 07 06 | 684 | 0.2− | 0.5+ | 2006 08 29 | 703 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2000 07 07 | 684 | 0.1− | 0.3+ | 2006 09 12 | 703 | 0.6+ | 1.0+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2000 07 07 | 684 | 0.0 | 0.3+ | 2006 09 12 | 703 | 1.3− | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2− |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.2+ | 0.8− | 2006 10 18 | 691 | 0.2− | 0.1+ |
| 2006 08 21 | 691 | 0.2+ | 0.1− | 2006 09 16 | 644 | 0.0 | 0.3− | 2006 10 18 | 691 | 0.0 | 0.2− |
| 2006 08 21 | 691 | 0.1+ | 0.1− | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 2006 08 21 | 691 | 0.3+ | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | 0.8− | 0.2− | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2006 08 29 | 703 | 0.4− | 0.4− | 2006 09 16 | 644 | 0.4− | 0.4− | | | | |

**2006 QV$_{162}$ = 2006 SB$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.70487 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28210754 | $\omega$ | 264.02012 | | −0.84363465 | | +0.52962540 |
| $a$ | 2.3024644 | $\Omega$ | 307.92524 | | −0.43770297 | | −0.77353090 |
| $e$ | 0.0722296 | $i$ | 6.41916 | | −0.31096091 | | −0.34806161 |
| $P$ | 3.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 31 | 704 | 1.0− | 0.6− | 2003 11 19 | 704 | 0.6− | 0.0 | 2005 05 04 | E12 | 0.2+ | 0.5+ |
| 1998 03 31 | 704 | (1.7− | 3.2−) | 2003 11 19 | 704 | 0.6+ | 0.5+ | 2005 05 04 | E12 | 1.4− | 0.3+ |
| 1998 03 31 | 704 | 1.6+ | 0.4− | 2003 11 19 | 704 | 0.2− | 0.2+ | 2005 05 04 | E12 | 0.5+ | 0.9+ |
| 1998 03 31 | 704 | (5.3− | 0.4−) | 2003 11 19 | 704 | 0.3+ | 1.4− | 2005 05 04 | E12 | 0.1+ | 1.0+ |
| 1998 04 19 | 704 | (0.1+ | 2.1+) | 2003 11 19 | 704 | 1.1− | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.3+ |
| 1998 04 19 | 704 | 1.5+ | 0.4− | 2003 11 19 | 691 | 0.1− | 0.2− | 2006 08 21 | 691 | 0.1+ | 1.5+ |
| 1998 04 19 | 704 | 0.7+ | 0.8− | 2003 11 19 | 691 | 0.3+ | 0.2− | 2006 08 21 | 691 | 0.0 | 0.2+ |
| 1998 04 19 | 704 | (5.2− | 2.1−) | 2003 11 19 | 691 | 0.2+ | 0.0 | 2006 08 29 | 703 | 0.4− | 0.1+ |
| 1999 10 13 | 645 | 0.0 | 0.1− | 2003 12 01 | 691 | 0.3+ | 0.3+ | 2006 08 29 | 703 | 0.6− | 0.7+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 12 01 | 691 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.9− | 0.6− |
| 1999 10 16 | 645 | 0.1− | 0.0 | 2003 12 01 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.4+ | 0.1+ |
| 1999 10 16 | 645 | 0.0 | 0.2− | 2004 12 19 | G96 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.3+ |
| 2001 01 04 | 704 | 2.0− | 0.1+ | 2004 12 19 | G96 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.4− |
| 2001 01 04 | 704 | 0.1+ | 0.5+ | 2004 12 19 | G96 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.6+ | 0.6+ |
| 2001 01 04 | 704 | 0.8− | 1.2+ | 2004 12 19 | G96 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2001 01 04 | 704 | 0.7+ | 1.7+ | 2005 04 06 | 699 | 0.3− | 1.0− | 2006 09 19 | 703 | 2.0− | 0.4+ |
| 2001 01 21 | 704 | 0.3− | 0.7− | 2005 04 06 | 699 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.3− |
| 2001 01 21 | 704 | 0.3+ | 0.0 | 2005 04 06 | 699 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2001 01 21 | 704 | 0.1+ | 0.8+ | 2005 04 06 | 699 | 1.0+ | 0.6+ | 2006 09 19 | 699 | 1.0+ | 0.8+ |
| 2001 01 21 | 704 | 0.8+ | 0.1+ | 2005 04 14 | 703 | 0.4− | 1.2+ | 2006 09 25 | 699 | 0.1+ | 0.5− |
| 2003 11 14 | 644 | 0.1− | 0.2+ | 2005 04 14 | 703 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.6− |
| 2003 11 14 | 644 | 0.3+ | 0.3+ | 2005 04 14 | 703 | 0.1+ | 1.2+ | 2006 09 25 | 699 | (1.8− | 2.3+) |
| 2003 11 14 | 644 | 0.1+ | 0.1+ | 2005 04 14 | 703 | 0.3+ | 0.7+ | 2006 09 25 | 699 | 0.1+ | 1.3+ |

**2006 QW$_{162}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.32046 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24318957 | $\omega$ | 302.67535 | | −0.22545027 | | +0.97216449 |
| $a$ | 2.5419837 | $\Omega$ | 314.15462 | | −0.86145375 | | −0.22949861 |
| $e$ | 0.1073129 | $i$ | 5.10045 | | −0.45504902 | | −0.04718678 |
| $P$ | 4.05 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | E12 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2005 04 02 | E12 | 0.3+ | 0.4− | 2006 08 29 | 703 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.3− |
| 2005 04 02 | E12 | 0.4− | 0.3+ | 2006 09 19 | 703 | 1.3− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.3− |
| 2005 04 02 | E12 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2005 05 04 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.8− | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2005 05 04 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.9− | 0.4− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2005 05 04 | 644 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.5+ | 0.1+ |
| 2005 05 10 | 699 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.8− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2005 05 10 | 699 | 0.2− | 0.4− | 2006 09 19 | 699 | 0.4− | 0.5− | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2005 05 10 | 699 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.5+ | 0.2− |
| 2005 05 10 | 699 | (2.9+ | 0.0 ) | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.1− |
| 2006 08 21 | 691 | 0.7+ | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2006 08 21 | 691 | 0.6+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.6+ | 0.2+ |
| 2006 08 21 | 691 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2006 08 29 | 703 | 0.4− | 0.7− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | 0.8+ | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1+ | | | | |

**2006 QX$_{162}$ = 2000 QD$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.93319 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17559478 | $\omega$ | 304.85071 | | +0.31825230 | | +0.94687966 |
| $a$ | 3.1583602 | $\Omega$ | 343.51884 | | −0.80793490 | | +0.24541290 |
| $e$ | 0.1944710 | $i$ | 9.37210 | | −0.49594019 | | +0.20782544 |
| $P$ | 5.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.3+ | 0.7− | 2006 08 21 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.3+ |
| 2000 08 26 | 704 | 0.0 | 0.5− | 2006 08 29 | 703 | 0.9− | 0.5− | 2006 10 01 | 703 | (1.6− | 0.8+) |
| 2000 08 26 | 704 | 0.2+ | 1.1+ | 2006 08 29 | 703 | 0.3+ | 0.3+ | 2006 10 01 | 703 | (1.5+ | 1.1−) |
| 2000 08 28 | 807 | 0.1− | 0.0 | 2006 08 29 | 703 | (1.7− | 0.2+) | 2006 10 01 | 703 | 0.1− | 0.4+ |
| 2000 08 28 | 807 | 0.3− | 0.0 | 2006 08 29 | 703 | 0.4− | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2006 07 22 | G96 | 0.4+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 01 | 703 | (1.6+ | 1.5+) |
| 2006 07 22 | G96 | 0.1+ | 0.4− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2006 07 22 | G96 | 0.1− | 0.4− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2006 07 22 | G96 | 0.9− | 1.0+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.6+ |
| 2006 08 21 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.5− | 0.9− |
| 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 1.2+ | 1.0− |

**2006 QZ$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.27782 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28142808 | $\omega$ | 344.58160 | | +0.67196828 | | +0.73928893 |
| $a$ | 2.3061688 | $\Omega$ | 327.60084 | | −0.67055033 | | +0.58231331 |
| $e$ | 0.2617913 | $i$ | 4.67913 | | −0.31435790 | | +0.33817613 |
| $P$ | 3.50 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.1− | 0.5+ | 2006 09 18 | 704 | 0.6− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 1999 09 08 | 704 | 0.7+ | 0.1− | 2006 09 18 | 704 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 1999 09 08 | 704 | 0.1− | 0.6− | 2006 09 18 | 704 | 0.7− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 1999 09 08 | 704 | 0.2− | 0.3− | 2006 09 18 | 704 | 0.9− | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2005 03 09 | G96 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 2005 03 09 | G96 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.9+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2− |
| 2005 03 09 | G96 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.5− |
| 2005 03 09 | G96 | 0.0 | 0.0 | 2006 09 19 | 699 | 1.1+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 25 | 704 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.2− |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.9+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.2− |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.8+ | 1.5− | 2006 10 12 | 644 | 0.1+ | 0.4− |
| 2006 08 21 | 691 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.5+ | 0.8− | 2006 10 17 | 691 | 0.3− | 0.3+ |
| 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 27 | 699 | 1.2− | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.0 |
| 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 09 27 | 699 | 0.6− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2006 08 30 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.8− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2006 08 30 | 704 | 0.5+ | 0.6+ | 2006 09 27 | 699 | 0.3− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2006 08 30 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | 1.0+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2006 08 30 | 704 | 0.7+ | 0.5+ | 2006 09 29 | 704 | 0.9− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.8+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 06 | 644 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2006 09 15 | 704 | 0.6+ | 0.6− | 2006 09 29 | 699 | 1.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3− | | |
| 2006 09 15 | 704 | 1.0+ | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.2− | 0.4− | | |
| 2006 09 15 | 704 | 0.2− | 0.6− | 2006 09 29 | 699 | 0.2+ | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.1− | | |
| 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 10 01 | 703 | 1.4− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.0 | | |
| 2006 09 17 | 703 | 0.5+ | 0.1+ | 2006 10 01 | 703 | 1.0+ | 0.0 | 2006 10 24 | 644 | 0.0 | 0.0 | | |
| 2006 09 17 | 703 | 0.0 | 1.3− | 2006 10 01 | 703 | 0.4+ | 0.3+ | | | | | | |
| 2006 09 17 | 703 | 0.5− | 0.1− | 2006 10 01 | 703 | 0.4− | 0.5− | | | | | | |

**2006 QE$_{163}$ = 2005 GQ$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.50832 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22547068 | $\omega$ | 88.24755 | | +0.73954759 | | +0.67186453 |
| $a$ | 2.6734742 | $\Omega$ | 229.53872 | | −0.63693521 | | +0.67890063 |
| $e$ | 0.0703061 | $i$ | 3.07651 | | −0.21767615 | | +0.29612834 |
| $P$ | 4.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 291 | 0.7− | 0.2− | 2005 06 01 | G96 | 0.2− | 0.4− | 2006 09 01 | 152 | (1.2+ | 2.3+) |
| 2002 12 07 | 291 | 0.2+ | 0.1− | 2005 06 01 | G96 | 0.2− | 0.5− | 2006 09 01 | 152 | 0.1+ | 0.1+ |
| 2002 12 07 | 291 | 0.7+ | 0.4− | 2005 06 01 | G96 | 0.2− | 0.1− | 2006 09 02 | 152 | 0.9+ | 0.1+ |
| 2005 04 07 | 691 | 0.1+ | 0.2+ | 2005 06 12 | G96 | 0.3+ | 0.2− | 2006 09 02 | 152 | 1.2− | 0.0 |
| 2005 04 07 | 691 | 0.2+ | 0.1+ | 2005 06 12 | G96 | 0.4− | 0.6− | 2006 09 02 | 152 | (5.4− | 1.8+) |
| 2005 04 07 | 691 | 0.1+ | 0.0 | 2005 06 12 | G96 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.3− | 0.5+ |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2005 06 12 | G96 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.6− | 0.0 |
| 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 08 29 | 703 | 0.8+ | 0.5+ | 2006 09 28 | G96 | 0.6− | 0.5+ |
| 2005 04 11 | G96 | 0.0 | 0.3− | 2006 08 29 | 703 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.2+ | 0.1− |
| 2005 04 11 | G96 | 0.0 | 0.2− | 2006 08 29 | 703 | 0.4+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 05 07 | G96 | 0.1− | 0.2− | 2006 08 29 | 703 | 0.1− | 0.6− | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2005 05 07 | G96 | 0.1− | 0.3− | 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 05 07 | G96 | 0.3− | 0.0 | 2006 08 29 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2005 05 07 | G96 | 0.4− | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.0 | | | | |
| 2005 06 01 | G96 | 0.1− | 0.4− | 2006 09 01 | 152 | 0.1+ | 0.1− | | | | |

**2006 QH$_{163}$ = 1998 VC$_{1}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.23294 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36006675 | $\omega$ | 316.72689 | | +0.93893124 | | −0.13763340 |
| $a$ | 1.9568042 | $\Omega$ | 53.89363 | | +0.30493640 | | +0.75747804 |
| $e$ | 0.1027523 | $i$ | 22.97688 | | −0.15944253 | | +0.63818811 |
| $P$ | 2.74 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 10 | 704 | 1.7+ | 0.2+ | 2006 07 29 | E12 | 0.1− | 0.6− | 2006 09 01 | E12 | 0.5+ | 0.1+ |
| 1998 11 10 | 704 | 0.3− | 1.5− | 2006 07 29 | E12 | 0.7+ | 0.3− | 2006 09 01 | E12 | 0.2− | 0.0 |
| 1998 11 10 | 704 | 0.3+ | 1.0+ | 2006 07 29 | E12 | 1.2+ | 1.5− | 2006 09 18 | E12 | 0.6− | 0.5+ |
| 1998 11 10 | 704 | 1.8+ | 0.9+ | 2006 07 29 | E12 | 0.4− | 0.1− | 2006 09 18 | E12 | 0.5− | 0.6+ |
| 1998 11 11 | 704 | 0.4+ | 1.3− | 2006 08 31 | E12 | 0.1− | 0.9− | 2006 09 18 | E12 | 0.0 | 0.4+ |
| 1998 11 11 | 704 | 1.0− | 1.5− | 2006 08 31 | E12 | 0.2+ | 0.1+ | 2006 09 18 | E12 | 0.0 | 1.0+ |
| 1998 11 11 | 704 | 1.6− | 0.5+ | 2006 08 31 | E12 | 0.1− | 0.8− | 2006 09 29 | E12 | 0.0 | 0.2− |
| 2000 04 13 | 691 | 0.3− | 0.3− | 2006 08 31 | E12 | 0.5+ | 0.1+ | 2006 09 29 | E12 | 0.3+ | 0.1+ |
| 2000 04 13 | 691 | 0.2− | 0.5− | 2006 09 01 | E12 | 0.2− | 0.1+ | 2006 09 29 | E12 | 0.3− | 0.8+ |
| 2000 04 13 | 691 | 0.3− | 0.3− | 2006 09 01 | E12 | 0.2+ | 0.3− | 2006 09 29 | E12 | 0.5− | 1.5+ |

**2006 QO$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.83595 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24463283 | $\omega$ | 103.38467 | | +0.63507558 | | +0.77175728 |
| $a$ | 2.5319759 | $\Omega$ | 206.12874 | | −0.73434150 | | +0.59006794 |
| $e$ | 0.1499803 | $i$ | 4.25912 | | −0.23962799 | | +0.23708761 |
| $P$ | 4.03 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2006 08 16 | D35 | 0.3− | 0.1+ | 2006 09 02 | 152 | 0.5+ | 0.1+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.2− | 0.1− | 2006 09 02 | 152 | 0.0 | 0.3− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.6− | 0.2+ |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2006 08 16 | D35 | 0.4+ | 0.3+ | 2006 09 01 | 152 | 0.7+ | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2006 08 16 | D35 | 0.0 | 0.0 | 2006 09 01 | 152 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− |

**2006 QW$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.13450 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21792397 | $\omega$ | 148.02476 | | +0.61912980 | | +0.78492215 |
| $a$ | 2.7348450 | $\Omega$ | 160.19501 | | −0.73458100 | | +0.58968066 |
| $e$ | 0.0280734 | $i$ | 4.06017 | | −0.27761312 | | +0.19019450 |
| $P$ | 4.52 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.0 | 0.5+ | 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 08 27 | 691 | 0.5− | 0.8+ |
| 1995 02 01 | 691 | 0.0 | 0.3+ | 2005 05 08 | 691 | 0.2− | 0.0 | 2006 09 01 | 947 | 0.0 | 0.4− |
| 1995 02 08 | 691 | 0.7+ | 1.2− | 2006 07 25 | G96 | 0.0 | 0.6− | 2006 09 01 | 947 | 1.0+ | 0.5− |
| 1995 02 08 | 691 | 0.2+ | 0.8− | 2006 07 25 | G96 | 0.1+ | 0.3− | 2006 09 01 | 947 | 0.9+ | 0.7− |
| 1995 02 21 | 691 | 0.2− | 0.1+ | 2006 07 25 | G96 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.6+ | 0.3− |
| 1995 02 21 | 691 | 0.3− | 0.1+ | 2006 07 25 | G96 | 0.5+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 1995 02 21 | 691 | 0.6− | 0.5+ | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2005 05 08 | 691 | 0.0 | 0.1− | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− |

**2006 QY$_{163}$ = 4769 P-L**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.90703 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21390544 | $\omega$ | 255.88872 | | +0.20279994 | | −0.97916674 |
| $a$ | 2.7689907 | $\Omega$ | 182.48016 | | +0.96464884 | | +0.20156706 |
| $e$ | 0.1924095 | $i$ | 13.67640 | | +0.16829976 | | +0.02456046 |
| $P$ | 4.61 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.0 | 0.7+ | 2003 01 28 | 704 | 0.1− | 0.4+ | 2006 09 18 | 704 | 0.3− | 0.1− |
| 1960 09 24 | 675 | 0.1+ | 0.1+ | 2003 01 28 | 704 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.2− |
| 1960 09 26 | 675 | 0.1+ | 0.2− | 2003 01 28 | 704 | 0.1− | 0.5− | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 1960 09 26 | 675 | 0.1− | 0.5− | 2004 04 20 | 704 | (0.0 | 1.6+) | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 1960 09 28 | 675 | 0.4− | 2.2+ | 2004 04 20 | 704 | 0.6+ | 0.3− | 2006 09 25 | 699 | 0.3− | 0.7+ |
| 1960 09 28 | 675 | 0.1− | 0.6+ | 2004 04 20 | 704 | 1.4+ | 1.0+ | 2006 09 25 | 699 | 0.6− | 0.7+ |
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.9+ | 0.9− | 2006 09 25 | 699 | 0.4− | 0.1− |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.6− | 0.9− | 2006 09 25 | 699 | (0.1− | 1.6+) |
| 2002 10 31 | 704 | 0.1+ | 0.8− | 2006 08 29 | 703 | (2.3+ | 0.3−) | 2006 10 01 | 703 | 0.2+ | 0.2− |
| 2002 10 31 | 704 | 0.5− | 0.4− | 2006 08 29 | 703 | 0.2− | 0.4− | 2006 10 01 | 703 | 0.9+ | 0.8− |
| 2002 10 31 | 704 | 0.3+ | 0.4+ | 2006 09 03 | 152 | 0.1+ | 0.3+ | 2006 10 01 | 703 | 0.1− | 1.3+ |
| 2002 10 31 | 704 | 0.8+ | 0.3− | 2006 09 03 | 152 | (1.7− | 0.1+) | 2006 10 01 | 703 | 0.0 | 0.8+ |
| 2002 10 31 | 704 | 0.2− | 0.1− | 2006 09 03 | 152 | (2.1− | 0.0 ) | 2006 10 16 | 703 | 0.7− | 0.4+ |
| 2002 11 30 | 704 | 0.2+ | 0.5− | 2006 09 12 | 703 | 0.1− | 0.0 | 2006 10 16 | 703 | 1.1− | 1.0− |
| 2002 11 30 | 704 | 0.3+ | 0.1− | 2006 09 12 | 703 | 0.5+ | 0.7− | 2006 10 16 | 703 | (2.5− | 1.3+) |
| 2002 11 30 | 704 | 0.3+ | 0.1− | 2006 09 12 | 703 | (0.7+ | 2.1−) | 2006 10 16 | 703 | (3.4− | 2.5+) |
| 2002 11 30 | 704 | 0.2− | 0.2− | 2006 09 12 | 703 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 11 30 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 699 | (1.4− | 2.6+) | 2006 10 21 | 644 | 0.4+ | 0.4+ |
| 2003 01 02 | 704 | 0.5− | 0.1+ | 2006 09 16 | 699 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2003 01 02 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 699 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2003 01 02 | 704 | 0.3− | 0.4+ | 2006 09 16 | 699 | 0.0 | 0.7+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2003 01 02 | 704 | 0.3− | 0.2+ | 2006 09 18 | 704 | 0.4− | 1.0+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2003 01 28 | 704 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.7− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2003 01 28 | 704 | 0.5+ | 0.1− | 2006 09 18 | 704 | 0.6+ | 0.7+ | | | | |

**2006 QZ$_{163}$ = 2001 XU$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.23565 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17082940 | $\omega$ | 115.37692 | | +0.92856078 | | −0.36799250 |
| $a$ | 3.2168265 | $\Omega$ | 266.24615 | | +0.32067176 | | +0.86117991 |
| $e$ | 0.1797376 | $i$ | 2.78838 | | +0.18693451 | | +0.35064325 |
| $P$ | 5.77 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4− | 0.9− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.4− | 0.5− |
| 2001 12 14 | 704 | 0.8− | 0.6− | 2006 09 16 | 699 | 0.6− | 0.9+ | 2006 10 03 | G96 | 0.3− | 0.7− |
| 2001 12 14 | 704 | 0.3− | 0.2− | 2006 09 16 | 699 | 1.2+ | 0.4− | 2006 10 03 | G96 | 0.0 | 0.4− |
| 2001 12 14 | 704 | 0.8− | 0.3− | 2006 09 16 | 699 | 0.6+ | 0.2+ | 2006 10 03 | G96 | 0.5+ | 0.6− |
| 2001 12 17 | 704 | 0.3− | 0.3+ | 2006 09 19 | 699 | 1.1+ | 1.4− | 2006 10 03 | G96 | 0.5− | 0.4− |
| 2001 12 17 | 704 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.2− | 0.5− |
| 2001 12 17 | 704 | 0.2+ | 1.1+ | 2006 09 19 | 699 | 0.9− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.3+ | 1.3+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 09 19 | 699 | 1.0+ | 1.0+ | 2006 10 20 | 691 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.1+ | 0.5− | 2006 09 19 | 703 | 0.7− | 1.2− | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2001 12 19 | 704 | 0.9+ | 0.9− | 2006 09 19 | 699 | 0.4− | 0.9+ | 2006 10 22 | 691 | 0.3+ | 0.2+ |
| 2006 08 29 | 703 | 0.2− | 0.2− | 2006 09 20 | 691 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2006 08 29 | 703 | 0.6− | 0.3− | 2006 09 20 | 691 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.2+ | 0.0 |
| 2006 08 29 | 703 | 0.2+ | 0.2− | 2006 09 20 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2+ |
| 2006 08 29 | 703 | 0.9+ | 1.1+ | 2006 09 25 | 699 | 0.5− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.7− |
| 2006 09 14 | 644 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.8− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.8+ | 2006 11 14 | G96 | 0.1− | 0.5− |

**2006 QA$_{164}$ = 2002 PD$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.59144 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26093326 | $\omega$ | 19.86020 | | +0.55512959 | | +0.83012519 |
| $a$ | 2.4253984 | $\Omega$ | 283.89230 | | −0.77020903 | | +0.48934758 |
| $e$ | 0.1710307 | $i$ | 3.08158 | | −0.31402100 | | +0.26726600 |
| $P$ | 3.78 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 23 | 691 | 0.2− | 0.5+ | 2002 08 06 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.6− | 1.4+ |
| 1993 01 23 | 691 | 0.5+ | 0.3− | 2002 08 07 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.9+ | 0.1− |
| 1993 01 23 | 691 | 0.1− | 0.3+ | 2002 08 07 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | (1.6+ | 0.6−) |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2002 08 07 | 644 | 0.6− | 0.1− | 2006 09 19 | 703 | 0.6+ | 1.3− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.5− | 1.2+ | 2006 09 19 | 703 | 0.7− | 0.8− |
| 2002 07 05 | 644 | 0.2− | 0.6+ | 2006 08 29 | 703 | 0.9− | 0.3+ | 2006 09 19 | 699 | 1.0+ | 0.1− |
| 2002 07 05 | 644 | 0.2− | 0.4+ | 2006 08 29 | 703 | 0.8− | 0.1− | 2006 09 19 | 703 | 0.3− | 0.6− |
| 2002 07 05 | 644 | 0.0 | 0.6+ | 2006 08 29 | 703 | 0.8− | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.7+ |
| 2002 07 12 | 599 | 1.1+ | 1.4− | 2006 09 12 | 703 | 1.1− | 0.5− | 2006 09 20 | 691 | 0.2+ | 0.1+ |
| 2002 07 12 | 599 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.4+ | 0.1− | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2002 07 12 | 599 | 0.0 | 0.4− | 2006 09 12 | 703 | 0.5− | 1.2− | 2006 09 20 | 691 | 0.1+ | 0.3+ |
| 2002 07 18 | 644 | 0.1− | 0.7+ | 2006 09 12 | 703 | (0.3− | 1.8+) | 2006 09 25 | 699 | 0.6+ | 0.1− |
| 2002 07 18 | 644 | 0.1+ | 0.9+ | 2006 09 16 | 699 | (1.8+ | 1.2+) | 2006 09 25 | 699 | 0.2+ | 0.5+ |
| 2002 07 18 | 644 | 0.1− | 1.0+ | 2006 09 16 | 699 | 0.1+ | 1.1+ | 2006 09 25 | 699 | 0.6− | 0.5+ |
| 2002 08 06 | 644 | 0.2− | 0.0 | 2006 09 16 | 699 | 0.1+ | 1.2− | 2006 09 25 | 699 | 0.5− | 0.3+ |
| 2002 08 06 | 644 | 0.4− | 0.0 | 2006 09 16 | 699 | 1.2+ | 0.1+ | | | | |

**2006 QF$_{164}$ = 2001 OM**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.42743 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20520028 | $\omega$ | 104.94639 | | +0.84298570 | | +0.51096533 |
| $a$ | 2.8467593 | $\Omega$ | 224.67577 | | −0.53760615 | | +0.81117699 |
| $e$ | 0.1637202 | $i$ | 13.84057 | | +0.01883442 | | +0.28444037 |
| $P$ | 4.80 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 608 | 0.7− | 0.1− | 2001 07 18 | 644 | 0.3+ | 0.9− | 2006 08 29 | 699 | 0.0 | 0.4+ |
| 2001 07 16 | 608 | 0.2− | 0.1+ | 2005 05 14 | G96 | 0.6− | 0.6− | 2006 08 29 | 699 | 0.4− | 0.9+ |
| 2001 07 16 | 608 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.2− | 0.4− | 2006 09 15 | 704 | 0.6+ | 0.7− |
| 2001 07 18 | 644 | 0.1+ | 1.1+ | 2005 05 14 | G96 | 0.3− | 0.4− | 2006 09 15 | 704 | 0.5+ | 1.3− |
| 2001 07 18 | 644 | 0.5− | 0.3− | 2005 05 14 | G96 | 0.5− | 0.1− | 2006 09 15 | 704 | 0.9+ | 0.2− |
| 2001 07 18 | 644 | 0.6+ | 0.0 | 2005 06 01 | G96 | 0.4+ | 0.3+ | 2006 09 15 | 704 | 1.0− | 0.1+ |
| 2001 07 18 | 644 | 0.2+ | 1.1+ | 2005 06 01 | G96 | 0.2+ | 0.1− | 2006 09 27 | 703 | 0.3− | 0.0 |
| 2001 07 18 | 644 | 0.4− | 0.5− | 2005 06 01 | G96 | 0.4+ | 0.0 | 2006 09 27 | 703 | 0.5+ | 1.1− |
| 2001 07 18 | 644 | 0.3+ | 0.1− | 2005 06 01 | G96 | 0.7+ | 0.2+ | 2006 09 27 | 703 | 1.3+ | 0.4+ |
| 2001 07 18 | 644 | 0.2+ | 1.2+ | 2006 08 29 | 699 | 0.7− | 1.1+ | 2006 09 27 | 703 | 0.1− | 0.4− |
| 2001 07 18 | 644 | 0.1− | 0.6− | 2006 08 29 | 699 | 0.7− | 0.5− | | | | |

**2006 QK$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.03982 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24045201 | $\omega$ | 141.39782 | | +0.72272688 | | −0.66618528 |
| $a$ | 2.5612410 | $\Omega$ | 261.42120 | | +0.57890431 | | +0.72896029 |
| $e$ | 0.1008102 | $i$ | 10.72535 | | +0.37753896 | | +0.15752482 |
| $P$ | 4.10 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 1.5+ | 1.5+ | 2002 10 24 | 608 | 0.1+ | 0.5− | 2006 09 16 | 703 | 0.1+ | 0.1+ |
| 1998 11 14 | 704 | 0.6− | 0.0 | 2002 10 31 | 644 | 0.5+ | 0.1+ | 2006 10 23 | 703 | 1.4− | 0.3− |
| 1998 11 14 | 704 | 0.6− | 1.0+ | 2002 10 31 | 644 | 0.1+ | 0.0 | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 1998 11 14 | 704 | 0.8− | 0.8+ | 2002 10 31 | 644 | 0.4+ | 0.0 | 2006 10 23 | 703 | 0.9+ | 0.8− |
| 2002 10 06 | 699 | 0.2− | 1.4− | 2006 08 29 | 699 | 0.7− | 1.0+ | 2006 10 23 | 703 | 0.0 | 0.1− |
| 2002 10 06 | 699 | 0.1− | 0.6+ | 2006 08 29 | 699 | 0.9− | 0.5+ | 2006 10 26 | 703 | 0.3+ | 0.2− |
| 2002 10 06 | 699 | 0.0 | 0.7− | 2006 08 29 | 699 | (0.5− | 2.6+) | 2006 10 26 | 703 | 0.2− | 0.0 |
| 2002 10 06 | 699 | 0.9− | 0.6− | 2006 08 29 | 699 | 0.4+ | 0.0 | 2006 10 26 | 703 | 0.2− | 0.2+ |
| 2002 10 10 | 704 | 0.3− | 0.0 | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 10 26 | 703 | 0.4+ | 1.0− |
| 2002 10 10 | 704 | (0.6− | 1.8−) | 2006 09 06 | 644 | 0.1+ | 0.5+ | 2006 11 25 | 703 | 1.3+ | 0.2+ |
| 2002 10 10 | 704 | 1.1+ | 0.2− | 2006 09 06 | 644 | 0.2+ | 0.4+ | 2006 11 25 | 703 | 0.5− | 0.5+ |
| 2002 10 10 | 704 | 0.3+ | 0.5− | 2006 09 16 | 703 | 0.0 | 0.4+ | 2006 11 25 | 703 | 0.5+ | 0.6− |
| 2002 10 24 | 608 | 0.2− | 1.2− | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.7− | 0.2− |
| 2002 10 24 | 608 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.5+ | 0.4+ | | | | |

**2006 QN$_{164}$ = 2005 EV$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.61911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35872707 | $\omega$ | 200.39103 | | +0.87143947 | | −0.48657995 |
| $a$ | 1.9616730 | $\Omega$ | 189.47106 | | +0.48580389 | | +0.87361785 |
| $e$ | 0.0802173 | $i$ | 22.10202 | | +0.06773350 | | −0.00563948 |
| $P$ | 2.75 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | 704 | 0.3− | 0.4+ | 2006 08 29 | 699 | 0.2− | 0.2− | 2006 09 30 | 699 | 0.2− | 0.4+ |
| 2005 03 12 | 704 | 0.5+ | 0.2+ | 2006 08 29 | 699 | 1.1+ | 0.9+ | 2006 09 30 | 699 | 0.9+ | 1.2+ |
| 2005 03 12 | 704 | 0.5+ | 1.1− | 2006 09 15 | 704 | 0.3− | 0.2+ | 2006 09 30 | 699 | 0.9+ | 0.6+ |
| 2005 03 12 | 704 | 1.1− | 0.4− | 2006 09 15 | 704 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2005 03 12 | 704 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2005 03 16 | 704 | 0.8+ | 0.6+ | 2006 09 15 | 704 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2005 03 16 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | (2.8− | 1.3−) |
| 2005 03 16 | 704 | 0.4− | 0.1+ | 2006 09 20 | 699 | 0.4− | 0.9− | 2006 10 16 | 703 | (3.0− | 2.2+) |
| 2005 03 16 | 704 | 0.3+ | 0.3− | 2006 09 20 | 699 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2005 03 16 | 704 | 0.3− | 0.0 | 2006 09 20 | 699 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.9+ | 1.1− |
| 2006 08 29 | 699 | 0.1+ | 0.3− | 2006 09 20 | 699 | 1.0− | 0.5− | | | | |
| 2006 08 29 | 699 | 0.5− | 0.6− | 2006 09 30 | 699 | 1.1− | 0.1− | | | | |

**2006 QR$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.83790 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22738170 | $\omega$ | 99.14190 | | +0.50973359 | | +0.85356529 |
| $a$ | 2.6584738 | $\Omega$ | 202.52541 | | −0.85753829 | | +0.49400169 |
| $e$ | 0.2401563 | $i$ | 16.32686 | | −0.06928021 | | +0.16549506 |
| $P$ | 4.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 02 | 644 | 0.2− | 0.3+ | 2006 09 18 | G92 | 0.2+ | 0.8+ | 2006 09 29 | 699 | 0.5+ | 0.8+ |
| 2001 05 02 | 644 | 0.2+ | 0.4+ | 2006 09 18 | G92 | 1.1+ | 1.2+ | 2006 09 29 | 699 | 0.1− | 0.0 |
| 2001 05 02 | 644 | 0.2− | 0.1+ | 2006 09 18 | G92 | 1.1+ | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.4+ |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2006 09 22 | 703 | 1.0+ | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.3− |
| 2001 05 24 | 645 | 0.0 | 0.0 | 2006 09 22 | 703 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2006 08 29 | 699 | 0.3+ | 0.2+ | 2006 09 22 | 703 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2006 08 29 | 699 | 0.2− | 0.5+ | 2006 09 22 | 703 | 0.8− | 1.1− | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2006 08 29 | 699 | 0.2− | 0.7+ | 2006 09 27 | 703 | 1.1− | 1.3− | 2006 11 14 | G96 | 0.2− | 0.6+ |
| 2006 08 29 | 699 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.9− | 2006 11 14 | G96 | 0.2− | 0.2+ |
| 2006 09 17 | G92 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.7− | 1.2− | 2006 11 14 | G96 | 0.4− | 0.1+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 17 | G92 | 0.3− | 0.1− | 2006 09 27 | 703 | (0.2− | 1.8−) | |
| 2006 09 17 | G92 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.1− | 0.2− | |

**2006 QT$_{164}$ = 1999 VR$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.71686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27280378 | $\omega$ | 113.53913 | | +0.93128808 | | +0.34753474 |
| $a$ | 2.3545204 | $\Omega$ | 226.32642 | | −0.36421516 | | +0.88249470 |
| $e$ | 0.1537729 | $i$ | 8.68266 | | −0.00705915 | | +0.31689542 |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.2− | 0.6− | 2006 08 29 | 699 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2− |
| 1999 10 13 | 704 | 0.6+ | 0.2− | 2006 08 29 | 699 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.5− | 0.1− |
| 1999 10 13 | 704 | 0.1+ | 0.4− | 2006 08 29 | 699 | 1.1− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2− |
| 1999 10 13 | 704 | 1.0+ | 0.1+ | 2006 08 29 | 699 | 1.5+ | 0.8+ | 2006 10 11 | 644 | 0.5− | 0.2+ |
| 1999 10 13 | 704 | 0.5− | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.8− | 2006 10 11 | 644 | 0.3− | 0.1− |
| 1999 11 04 | 704 | 0.4+ | 0.2− | 2006 09 16 | 703 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 1999 11 04 | 704 | 0.1− | 0.5− | 2006 09 16 | 703 | 0.0 | 0.9− | 2006 10 23 | 703 | 0.0 | 1.4+ |
| 1999 11 04 | 704 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.5− | 2006 10 23 | 703 | 0.0 | 0.7+ |
| 1999 11 04 | 704 | 0.3+ | 0.3+ | 2006 09 21 | 699 | 0.7+ | 0.8+ | 2006 10 23 | 703 | 0.7+ | 1.3+ |
| 1999 11 12 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.8− | 0.3+ | 2006 10 23 | 703 | 1.3+ | 0.2+ |
| 1999 11 12 | 704 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.1+ | 2006 10 29 | 703 | 0.7+ | 0.7− |
| 1999 11 12 | 704 | 0.5− | 0.3+ | 2006 09 21 | 699 | 0.7+ | 0.4+ | 2006 10 29 | 703 | 0.5− | 0.8+ |
| 1999 11 12 | 704 | 1.0− | 0.0 | 2006 09 27 | 703 | 0.2− | 0.5− | 2006 10 29 | 703 | 0.4+ | 0.6− |
| 1999 11 12 | 704 | 0.3− | 0.2− | 2006 09 27 | 703 | 0.1− | 0.4− | 2006 10 29 | 703 | 0.4+ | 0.3+ |
| 2001 03 19 | 645 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.1− | 0.5− | | | | |
| 2001 03 19 | 645 | 0.0 | 0.1+ | 2006 09 27 | 703 | 1.2− | 0.4− | | | | |

**2006 QV$_{164}$ = 2000 NW$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.15397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17785894 | $\omega$ | 49.42751 | | +0.90365259 | | +0.40964727 |
| $a$ | 3.1314988 | $\Omega$ | 286.05637 | | −0.42161477 | | +0.79973920 |
| $e$ | 0.2142565 | $i$ | 7.46813 | | −0.07518628 | | +0.43886938 |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 684 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 2000 07 07 | 684 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2000 07 09 | 684 | 0.2− | 0.2+ | 2006 09 21 | 699 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2000 07 09 | 684 | 0.6− | 0.3+ | 2006 09 21 | 699 | 0.6− | 0.2− | 2006 10 17 | 691 | 0.2− | 1.2+ |
| 2000 08 01 | 704 | 0.3+ | 0.7− | 2006 09 21 | 699 | 0.7− | 0.1− | 2006 10 17 | 703 | (1.3+ | 2.6+) |
| 2000 08 01 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 699 | 0.3+ | 0.6− | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 2000 08 01 | 704 | 1.2+ | 0.1− | 2006 09 29 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.4− |
| 2000 08 01 | 704 | 0.7− | 0.3− | 2006 09 29 | 699 | (1.8+ | 1.0−) | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2006 08 29 | 699 | 0.3+ | 1.0+ | 2006 09 29 | 699 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2006 08 29 | 699 | 1.1+ | 0.9− | 2006 09 29 | 699 | (1.9+ | 1.1+) | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2006 08 29 | 699 | 0.5− | 0.0 | 2006 10 03 | 703 | 0.8− | 0.8− | 2006 10 19 | 691 | 0.1+ | 0.4− |
| 2006 08 29 | 699 | 0.9+ | 0.2+ | 2006 10 03 | 703 | (1.9− | 0.3+) | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 10 03 | 703 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.1− | 0.3− |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 10 03 | 703 | 0.3+ | 0.7− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2− | | | | |
| 2006 09 17 | 703 | 1.3− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | | | | |

**2006 QN$_{165}$ = 2004 FD$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 246.25735 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21488416 | $\omega$ | 199.60510 | | −0.31303392 | | −0.94768043 |
| $a$ | 2.7605764 | $\Omega$ | 268.67670 | | +0.87950803 | | −0.26440292 |
| $e$ | 0.0480500 | $i$ | 3.58672 | | +0.35843465 | | −0.17886559 |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.7+ | 1.1+ | 2006 08 29 | 703 | 0.1− | 0.4− | 2006 11 10 | 291 | 0.1− | 0.1− |
| 2004 03 16 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 703 | 0.4+ | 1.4− | 2006 11 10 | 291 | 0.0 | 0.1+ |
| 2004 03 16 | 704 | 0.6− | 0.1+ | 2006 08 29 | 703 | 0.2+ | 0.4− | 2006 11 10 | 291 | 0.0 | 0.0 |
| 2004 03 16 | 704 | 0.7− | 1.3− | 2006 09 17 | 703 | 0.3+ | 0.5+ | 2006 11 14 | 291 | 0.2+ | 0.1+ |
| 2004 03 16 | 704 | 0.0 | 0.3− | 2006 09 17 | 703 | (1.7+ | 0.7+) | 2006 11 14 | 291 | 0.5+ | 0.2+ |
| 2004 03 18 | 704 | 0.6− | 0.3+ | 2006 09 17 | 703 | 0.7− | 0.9− | 2006 11 14 | 291 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.9+ | 0.1+ | 2006 09 17 | 703 | (0.7+ | 2.4+) | 2006 11 17 | 291 | 0.3− | 0.2+ |
| 2004 03 18 | 704 | 0.8− | 0.9− | 2006 10 28 | 291 | 0.1− | 0.6+ | 2006 11 17 | 291 | 0.2+ | 0.2− |
| 2004 03 18 | 704 | 0.1− | 1.5− | 2006 10 28 | 291 | 0.6− | 0.1+ | 2006 11 17 | 291 | 0.0 | 0.2− |
| 2006 08 29 | 703 | 0.1+ | 0.8− | 2006 10 28 | 291 | 0.4+ | 0.4− | | | | |

**2006 QO$_{165}$ = 2003 BF$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.60873 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17564604 | $\omega$ | 55.50907 | | +0.93833252 | | −0.33071703 |
| $a$ | 3.1577456 | $\Omega$ | 323.50774 | | +0.23460063 | | +0.82319248 |
| $e$ | 0.0851367 | $i$ | 9.75723 | | +0.25395791 | | +0.46149798 |
| $P$ | 5.61 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.0 | 0.4− | 2003 01 31 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.4− |
| 2001 10 15 | 704 | 2.2− | 0.9− | 2003 01 31 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.5− |
| 2001 10 15 | 704 | 0.5+ | 0.7− | 2003 01 31 | 644 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.2− |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2003 01 31 | 644 | 0.0 | 0.2+ | 2006 09 18 | 704 | 1.3− | 0.6− |
| 2001 11 11 | 704 | 0.8+ | 0.4+ | 2003 02 01 | 608 | 0.4+ | 0.4− | 2006 09 18 | 704 | 1.1+ | 0.5+ |
| 2001 11 11 | 699 | 0.4+ | 0.7− | 2003 02 01 | 608 | 0.3+ | 0.4− | 2006 09 18 | 704 | 0.7+ | 0.6− |
| 2001 11 11 | 704 | 0.2+ | 0.0 | 2003 02 01 | 608 | 0.3− | 0.0 | 2006 09 18 | 704 | 0.3+ | 0.7− |
| 2001 11 11 | 704 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.5+ | 0.6− | 2006 09 18 | 704 | 1.2− | 0.3+ |
| 2001 11 11 | 699 | 0.6− | 0.0 | 2006 08 29 | 703 | 1.0+ | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.1+ |
| 2001 11 11 | 704 | 0.4+ | 0.2+ | 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.5+ | 0.0 |
| 2001 11 11 | 704 | 0.5+ | 1.0+ | 2006 08 29 | 703 | 0.9− | 0.0 | 2006 09 25 | 704 | 0.6− | 0.3− |
| 2001 11 11 | 699 | 0.5+ | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.4+ | 2006 09 30 | 699 | 0.0 | 0.4+ |
| 2001 11 11 | 699 | 0.4− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.3+ | 2006 09 30 | 699 | 0.5− | 0.3− |
| 2003 01 31 | 644 | 0.4− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.5+ | 2006 09 30 | 699 | (2.0+ | 0.7+) |
| 2003 01 31 | 644 | 0.2− | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.7+ | 2006 09 30 | 699 | 0.3+ | 1.0+ |

**2006 QQ$_{165}$ = 2004 EA$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.47305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21902905 | $\omega$ | 185.07619 | | −0.34134078 | | −0.93778654 |
| $a$ | 2.7256384 | $\Omega$ | 284.89369 | | +0.86467684 | | −0.28676635 |
| $e$ | 0.0709858 | $i$ | 3.77245 | | +0.36853823 | | −0.19575871 |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 13 | 691 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.6+ | 1.2+ | 2006 11 10 | 291 | 0.4+ | 0.0 |
| 1993 10 13 | 691 | 0.1+ | 0.2− | 2004 03 18 | 704 | 0.3− | 0.9+ | 2006 11 10 | 291 | 0.4+ | 0.1− |
| 1993 10 13 | 691 | 0.1+ | 0.5+ | 2004 03 18 | 704 | 0.2− | 0.5− | 2006 11 11 | 291 | 0.2− | 0.0 |
| 1993 11 21 | 691 | 0.1− | 0.3+ | 2004 03 18 | 704 | 0.7+ | 0.8+ | 2006 11 11 | 291 | 0.4+ | 0.0 |
| 1993 11 21 | 691 | 0.3+ | 0.6− | 2006 08 29 | 703 | 1.4− | 0.8− | 2006 11 11 | 291 | 0.4+ | 0.1+ |
| 1993 11 21 | 691 | 1.0− | 0.1+ | 2006 08 29 | 703 | 1.5− | 0.0 | 2006 11 14 | 291 | 0.0 | 0.2+ |
| 1995 02 25 | 691 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 11 14 | 291 | 0.0 | 0.2− |
| 1995 02 25 | 691 | 0.0 | 0.4− | 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 11 14 | 291 | 0.3− | 0.3− |
| 1995 02 25 | 691 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.4− | 0.1+ | 2006 11 17 | 291 | 0.1+ | 0.2+ |
| 2001 06 29 | 691 | 0.1− | 0.0 | 2006 08 29 | 691 | 0.5− | 0.0 | 2006 11 17 | 291 | 0.3+ | 0.4+ |
| 2001 06 29 | 691 | 0.2+ | 0.1+ | 2006 08 29 | 691 | 0.2− | 0.1− | 2006 11 17 | 291 | 0.2+ | 0.1+ |
| 2001 06 29 | 691 | 0.6− | 0.1+ | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 11 20 | 291 | 0.3+ | 0.2+ |
| 2002 10 15 | 644 | 0.5− | 0.0 | 2006 09 13 | 644 | 0.3− | 0.1− | 2006 11 20 | 291 | 0.5+ | 0.4+ |
| 2002 10 15 | 644 | 0.6− | 0.3+ | 2006 09 13 | 644 | 0.4− | 0.3− | 2006 11 20 | 291 | 0.4+ | 0.1+ |
| 2002 10 15 | 644 | 0.5− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 22 | 291 | 0.3+ | 0.1+ |
| 2004 03 15 | 704 | 0.4− | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 22 | 291 | 0.6+ | 0.2+ |
| 2004 03 15 | 704 | 0.7− | 0.2+ | 2006 10 02 | G96 | 0.4− | 0.4− | 2006 11 22 | 291 | 0.7+ | 0.3− |
| 2004 03 15 | 704 | 0.3− | 1.0+ | 2006 10 02 | G96 | 0.3− | 0.5− | | | | |
| 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 11 10 | 291 | 0.2+ | 0.1− | | | | |

**2006 QS$_{165}$ = 2004 BW$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 104.22496 | | | (2000.0) | | |
| $n$ | 0.22166623 | $\omega$ | 325.13653 | | −0.45031623 | +0.89051998 |
| $a$ | 2.7039772 | $\Omega$ | 278.02179 | | −0.80361105 | −0.43582659 |
| $e$ | 0.0509490 | $i$ | 3.74785 | | −0.38913310 | −0.13049656 |
| $P$ | 4.45 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 10 | 691 | 0.2+ | 0.3− | 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.4− | 0.5+ |
| 1993 11 10 | 691 | 0.2− | 0.2+ | 2006 08 20 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.0− | 1.1+ |
| 1993 11 10 | 691 | 0.0 | 0.0 | 2006 08 20 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.2− |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2006 08 20 | 691 | 0.1− | 0.8+ | 2006 09 19 | 703 | 0.4+ | 0.9+ |
| 2000 03 03 | 645 | 0.1+ | 0.2+ | 2006 08 29 | 703 | 0.4+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.6− |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2006 08 29 | 703 | 1.4− | 0.6− | 2006 09 19 | 703 | 0.2− | 0.8+ |
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.6− | 0.2+ |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.0− | 0.6− |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.3+ | | | | |
| 2004 01 30 | 691 | 0.3+ | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.3+ | | | | |

**2006 QY$_{165}$ = 2005 LK$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.88703 | | | (2000.0) | | |
| $n$ | 0.21913008 | $\omega$ | 138.79745 | | +0.97594485 | −0.20416168 |
| $a$ | 2.7248005 | $\Omega$ | 233.14437 | | +0.16645766 | +0.92433746 |
| $e$ | 0.0372315 | $i$ | 5.48505 | | +0.14079596 | +0.32236356 |
| $P$ | 4.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | 599 | (1.7+ | 1.3+) | 2006 10 10 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.2− |
| 2005 06 13 | 599 | 0.4+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.2− |
| 2005 06 13 | 599 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.2− | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2005 06 13 | 599 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.2− |
| 2005 06 17 | G96 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 2005 06 17 | G96 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2005 06 17 | G96 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2005 06 17 | G96 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2006 08 29 | 703 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2006 08 29 | 703 | 0.8+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2006 08 29 | 703 | 0.6+ | 0.8− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.6− |
| 2006 09 17 | 703 | 0.6− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2006 09 17 | 703 | 0.9− | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 09 17 | 703 | 0.5− | 0.8− | 2006 10 21 | 691 | 0.0 | 0.0 | | | | |

**2006 QZ$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.10973 | | | (2000.0) | | |
| $n$ | 0.28320532 | $\omega$ | 43.90420 | | +0.83678159 | +0.54242990 |
| $a$ | 2.2965105 | $\Omega$ | 283.10585 | | −0.52111574 | +0.74715800 |
| $e$ | 0.1791052 | $i$ | 4.39336 | | −0.16803260 | +0.38408948 |
| $P$ | 3.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 1.4− | 0.4+ | 2006 09 25 | 704 | (0.7+ | 1.6−) | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 1999 09 04 | 703 | 0.1+ | 0.4− | 2006 09 25 | 704 | 1.3+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 1999 09 04 | 703 | 0.3+ | 0.6− | 2006 09 25 | 704 | 1.3+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 1999 09 04 | 703 | 0.3+ | 0.5− | 2006 09 25 | 704 | 0.3− | 0.8− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 1999 10 09 | 704 | 0.7+ | 0.2+ | 2006 09 25 | 704 | (2.3+ | 0.0 ) | 2006 10 12 | 644 | 0.0 | 0.2− |
| 1999 10 09 | 704 | 0.5+ | 1.1− | 2006 09 29 | 699 | 0.2+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 1999 10 09 | 704 | 0.2+ | 0.7+ | 2006 09 29 | 699 | 0.7− | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2003 11 20 | 695 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.2− |
| 2003 11 20 | 695 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.2− | 0.5+ | 2006 10 01 | 703 | 0.7+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2003 12 22 | 704 | 0.2+ | 1.1− | 2006 10 01 | 703 | 0.3− | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2003 12 22 | 704 | 0.2+ | 1.1− | 2006 10 01 | 703 | 0.8− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2006 08 29 | 703 | 0.2+ | 0.1− | 2006 10 01 | 703 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2006 08 29 | 703 | 0.9− | 0.3− | 2006 10 09 | 644 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2006 08 29 | 703 | 0.2+ | 0.7− | 2006 10 09 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2006 08 29 | 703 | 0.1+ | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 09 17 | 703 | 0.3+ | 1.0− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.4+ |
| 2006 09 17 | 703 | 0.8− | 0.3− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1− | | | | |

**2006 QA$_{166}$ = 1995 SM$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.50503 | | | (2000.0) | | |
| $n$ | 0.17576611 | $\omega$ | 107.31947 | | +0.65804983 | +0.75002714 |
| $a$ | 3.1563073 | $\Omega$ | 204.22772 | | −0.73766656 | +0.62441597 |
| $e$ | 0.0926480 | $i$ | 9.33390 | | −0.15105780 | +0.21809171 |
| $P$ | 5.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3+ | 0.3− | 2006 08 29 | 703 | 0.7− | 0.8− | 2006 10 11 | 691 | 0.1− | 0.2+ |
| 1995 09 26 | 691 | 0.3+ | 0.2− | 2006 09 06 | 644 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.4+ | 0.0 |
| 1995 09 26 | 691 | 0.4+ | 0.2− | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1+ |
| 1995 10 01 | 691 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 1995 10 01 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.3− | 0.6− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 1995 10 01 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 703 | (0.8− | 2.1−) | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2000 08 03 | 704 | 1.0− | 0.3+ | 2006 09 17 | 703 | 1.2− | 0.9− | 2006 10 16 | 703 | 1.1− | 0.5− |
| 2000 08 03 | 704 | 0.3+ | 1.3+ | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.7+ |
| 2000 08 03 | 704 | (0.2+ | 2.0+) | 2006 09 18 | 704 | 0.2+ | 0.8− | 2006 10 16 | 703 | 1.0− | 0.4− |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.1+ | 1.4− | 2006 10 16 | 703 | 1.2− | 0.6+ |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2006 09 18 | 704 | (0.8− | 1.9−) | 2006 10 27 | 691 | 0.6+ | 0.3+ |
| 2001 10 19 | 691 | 0.9− | 1.3+ | 2006 09 18 | 704 | 0.9+ | 0.7− | 2006 10 27 | 691 | 0.1+ | 0.5+ |
| 2001 10 19 | 691 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.8+ | 2006 10 27 | 691 | 0.8+ | 0.3+ |
| 2001 10 19 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.9+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 1.0+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2004 04 25 | 691 | 0.3+ | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2004 04 25 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 703 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2006 08 29 | 703 | 0.8− | 0.7+ | 2006 09 20 | 703 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2006 08 29 | 703 | 0.7− | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2006 08 29 | 703 | 0.5− | 0.3+ | 2006 09 20 | 703 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.2− |

**2006 QD$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.83749 | | | (2000.0) | | |
| $n$ | 0.25279158 | $\omega$ | 43.11721 | | +0.99763272 | +0.00398909 |
| $a$ | 2.4771995 | $\Omega$ | 316.51066 | | −0.03534851 | +0.88607513 |
| $e$ | 0.1324208 | $i$ | 5.72491 | | +0.05898672 | +0.46352449 |
| $P$ | 3.90 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.1+ |
| 2002 09 05 | 645 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 09 27 | 703 | (1.0− | 3.7−) |
| 2004 01 28 | 691 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.5− | 2006 09 27 | 703 | (1.6+ | 4.1−) |
| 2004 01 28 | 691 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.8+ | 0.9− | 2006 09 27 | 703 | 0.2+ | 0.6− |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 09 17 | 703 | (1.7− | 0.0 ) | 2006 09 27 | 703 | (0.1+ | 1.8−) |
| 2006 08 29 | 703 | 0.3− | 0.3+ | 2006 09 20 | 703 | (0.5− | 1.6−) | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.0 | 0.8− | 2006 09 20 | 703 | 0.3− | 0.9− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2006 08 29 | 703 | 0.7+ | 0.8+ | 2006 09 20 | 703 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.5+ | 0.3+ |

**2006 QF$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.58037 | | | (2000.0) | | |
| $n$ | 0.29696894 | $\omega$ | 4.24856 | | +0.33396983 | +0.93953032 |
| $a$ | 2.2249932 | $\Omega$ | 285.27478 | | −0.86710299 | +0.27469535 |
| $e$ | 0.1610889 | $i$ | 4.50722 | | −0.36958971 | +0.20451222 |
| $P$ | 3.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.7− | 2006 10 03 | 703 | (1.3− | 2.4+) |
| 1996 10 05 | 691 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.6− | 0.8+ | 2006 10 03 | 703 | (1.1− | 1.6−) |
| 1996 10 05 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.5− | 0.8− | 2006 10 03 | 703 | 1.1+ | 1.0− |
| 2002 05 17 | 644 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.9+ | 0.5+ | 2006 10 03 | 703 | 0.7+ | 0.0 |
| 2002 05 17 | 644 | 0.6+ | 0.7+ | 2006 09 25 | 704 | 0.5+ | 0.6+ | 2006 10 03 | 703 | 0.3− | 1.0− |
| 2002 05 17 | 644 | 0.0 | 0.7+ | 2006 09 25 | 704 | 1.2+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 1.0+ |
| 2003 10 27 | 691 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.9− | 1.2+ |
| 2003 10 27 | 691 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.2− | 0.5+ | 2006 10 17 | 703 | (0.8+ | 2.1−) |
| 2003 10 27 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.7− | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2006 08 29 | 703 | 1.3− | 0.4+ | 2006 09 27 | 699 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 1.4+ |
| 2006 08 29 | 703 | 1.1− | 1.5+ | 2006 09 27 | 699 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.8− | 1.1+ |
| 2006 08 29 | 703 | 0.8− | 0.8− | 2006 09 27 | 699 | 1.3+ | 1.5− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2006 08 29 | 703 | (2.8− | 1.1−) | 2006 09 27 | 703 | 0.4+ | 0.7− | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2006 09 17 | 703 | 0.3− | 0.4− | 2006 09 27 | 703 | 1.2+ | 1.3− | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2006 09 17 | 703 | 0.5− | 0.1+ | 2006 09 27 | 703 | 0.2− | 1.1− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2006 09 17 | 703 | 0.0 | 0.4− | 2006 09 27 | 699 | 1.4+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 09 17 | 703 | 0.5+ | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.7− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2006 09 19 | 699 | 0.4+ | 0.3− | 2006 10 03 | 703 | 0.3− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 03 | 703 | 0.2− | 1.2− | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2006 09 19 | 699 | 0.9− | 0.2+ | 2006 10 03 | 703 | (1.0− | 2.2+) | 2006 10 23 | G96 | 0.3+ | 0.4− |

**2006 QJ$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.68002 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18109357 | $\omega$ | 321.03739 | | +0.68839158 | | +0.72431366 |
| $a$ | 3.0940977 | $\Omega$ | 352.18879 | | −0.57408077 | | +0.51157604 |
| $e$ | 0.1038599 | $i$ | 16.48152 | | −0.44333767 | | +0.46223335 |
| $P$ | 5.44 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.1− | 0.6+ | 2006 08 29 | 699 | 0.7+ | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.9+ |
| 2004 03 18 | 704 | 0.0 | 0.2+ | 2006 08 29 | 699 | 0.1+ | 1.0− | 2006 09 25 | 704 | 0.6+ | 0.3+ |
| 2004 03 18 | 704 | 1.3+ | 0.4− | 2006 08 29 | 699 | 1.1− | 0.5− | 2006 10 03 | 704 | 1.2− | 0.4− |
| 2004 03 27 | 704 | 0.3+ | 0.1− | 2006 08 29 | 699 | 0.1+ | 0.4+ | 2006 10 03 | 704 | 0.3− | 0.8+ |
| 2004 03 27 | 704 | 0.1+ | 0.5+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 03 | 704 | 1.0+ | 1.2+ |
| 2004 03 27 | 704 | 0.6− | 0.0 | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2004 03 27 | 704 | 0.0 | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1− |
| 2006 07 22 | G96 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1− |
| 2006 07 22 | G96 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.4− | 0.0 |
| 2006 07 22 | G96 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2006 07 22 | G96 | 0.8− | 0.2+ | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2006 08 29 | 703 | 0.4+ | 0.4− | 2006 09 19 | 699 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2006 08 29 | 703 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2006 08 29 | 703 | 0.3− | 0.4− | 2006 09 19 | 699 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.3− | 0.3− |
| 2006 08 29 | 703 | 1.1− | 0.3+ | 2006 09 25 | 704 | 1.1+ | 1.0+ | | | | |

**2006 QN$_{166}$ = 2004 GP$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.54095 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17667351 | $\omega$ | 139.21448 | | +0.99458495 | | +0.03623738 |
| $a$ | 3.1454909 | $\Omega$ | 219.03773 | | −0.06256725 | | +0.95714167 |
| $e$ | 0.1219722 | $i$ | 8.89659 | | +0.08298264 | | +0.28734416 |
| $P$ | 5.58 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 26 | 691 | 0.5− | 0.8− | 2004 05 24 | 691 | 0.0 | 0.3+ | 2006 09 27 | 699 | 0.6− | 1.1+ |
| 1993 04 26 | 691 | 0.2− | 0.1+ | 2004 05 24 | 691 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.0 | 0.6+ |
| 1993 04 26 | 691 | 0.7+ | 0.7− | 2004 05 24 | 691 | 0.1+ | 0.6+ | 2006 09 27 | 699 | 1.2− | 1.3+ |
| 2000 06 04 | 691 | 0.5− | 0.4− | 2006 08 29 | 699 | 0.9+ | 0.6+ | 2006 09 27 | 703 | 0.1+ | 0.1+ |
| 2000 06 04 | 691 | 0.4− | 0.1− | 2006 08 29 | 699 | 0.5+ | 0.1+ | 2006 09 27 | 703 | 0.8− | 0.1− |
| 2000 06 04 | 691 | 0.1− | 0.2− | 2006 08 29 | 699 | 0.1− | 0.7+ | 2006 09 27 | 703 | 0.5+ | 0.2− |
| 2000 09 23 | 704 | 0.3+ | 0.4+ | 2006 08 29 | 699 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.1+ | 0.7− |
| 2000 09 23 | 704 | 0.3+ | 0.4+ | 2006 09 16 | 703 | 0.7− | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 2000 09 23 | 704 | 1.1+ | 0.4+ | 2006 09 16 | 703 | 0.7+ | 0.3+ | 2006 09 29 | 704 | 1.0− | 0.3− |
| 2000 09 23 | 704 | 1.4+ | 0.1− | 2006 09 16 | 703 | 0.7− | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.3+ |
| 2000 09 23 | 704 | 0.5− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 09 29 | 704 | (1.4− | 2.2+) |
| 2001 10 24 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 703 | 0.9− | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 10 24 | 704 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.1+ | 1.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.2+ |
| 2001 11 18 | 704 | 0.1− | 0.8+ | 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 2001 11 18 | 704 | 0.2− | 0.6− | 2006 09 21 | 683 | 0.1− | 0.8− | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2001 11 18 | 704 | 0.4− | 0.4+ | 2006 09 21 | 683 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2001 11 18 | 704 | (0.0 | 1.5+) | 2006 09 25 | 683 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 683 | (1.1− | 1.9+) | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2004 04 13 | 691 | 0.4− | 1.3+ | 2006 09 25 | 683 | (2.2− | 1.6+) | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 683 | 0.8+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 683 | 1.0+ | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 683 | (1.7+ | 1.5+) | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 699 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 |

**2006 QP$_{166}$ = 2004 AH$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.04667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26679736 | $\omega$ | 46.79189 | | +0.99576874 | | −0.06146593 |
| $a$ | 2.3897274 | $\Omega$ | 316.59829 | | +0.02302372 | | +0.88653953 |
| $e$ | 0.1438741 | $i$ | 5.70576 | | +0.08896362 | | +0.45855164 |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 18 | 644 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.3+ |
| 2002 07 18 | 644 | 0.2− | 0.6+ | 2006 09 16 | 703 | 0.1− | 0.7+ | 2006 09 27 | 703 | 0.4+ | 0.7− |
| 2002 07 18 | 644 | 0.0 | 0.5+ | 2006 09 16 | 703 | 0.3+ | 0.4− | 2006 09 27 | 703 | 0.8+ | 0.2+ |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.4− | 0.8+ | 2006 10 09 | 644 | 0.6+ | 0.4+ |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2006 09 18 | 704 | (2.2− | 0.6+) | 2006 10 09 | 644 | 0.4+ | 0.1+ |
| 2003 12 21 | 691 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.4− | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.8+ |
| 2003 12 28 | 691 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.8− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2003 12 28 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2003 12 28 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.5− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2004 01 15 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.0 | 0.7+ | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2004 01 15 | 691 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2004 01 15 | 691 | 0.3− | 0.2− | 2006 09 20 | 185 | 0.7− | 0.6− | 2006 10 17 | 703 | 0.7− | 1.0− |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 09 20 | 185 | (1.9− | 0.2−) | 2006 10 17 | 703 | 1.0− | 0.1+ |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 09 21 | 185 | 1.3− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 09 21 | 185 | 0.8− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2006 08 29 | 699 | 0.2− | 1.3− | 2006 09 22 | 106 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2006 08 29 | 699 | (1.6− | 0.3−) | 2006 09 22 | 106 | 0.2+ | 0.4+ | 2006 10 23 | 703 | 0.4+ | 0.1− |
| 2006 08 29 | 699 | 0.8− | 0.3− | 2006 09 22 | 106 | 0.0 | 0.5− | 2006 10 23 | 703 | 1.0+ | 1.0− |
| 2006 08 29 | 699 | 0.3+ | 0.3− | 2006 09 22 | 106 | 1.2+ | 0.9+ | 2006 10 23 | 703 | 0.5+ | 0.3+ |
| 2006 09 16 | 703 | (1.3+ | 2.0−) | 2006 09 27 | 703 | 0.1− | 0.7− | 2006 10 23 | 703 | 0.4− | 0.3+ |

**2006 QZ$_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.09243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24498920 | $\omega$ | 216.13405 | | +0.50594703 | | −0.86222484 |
| $a$ | 2.5295198 | $\Omega$ | 203.50051 | | +0.80494438 | | +0.48204797 |
| $e$ | 0.2324572 | $i$ | 3.48020 | | +0.30997120 | | +0.15555733 |
| $P$ | 4.02 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.2− | 0.2− | 2006 09 14 | 703 | 0.4− | 0.6− | 2006 09 27 | G96 | 0.4− | 0.3− |
| 2002 08 16 | 644 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.3+ | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2002 08 16 | 644 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2002 09 06 | 704 | 0.3− | 0.2+ | 2006 09 14 | 703 | 0.6− | 1.1− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 09 06 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 291 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2002 09 06 | 704 | 1.0+ | 0.1− | 2006 09 25 | 291 | 0.1+ | 0.3+ | 2006 11 16 | G96 | (1.6+ | 1.0+) |
| 2006 08 30 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 291 | 0.1+ | 0.2+ | 2006 11 16 | G96 | (1.6+ | 0.7+) |
| 2006 08 30 | 704 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 16 | G96 | (1.5+ | 0.6+) |
| 2006 08 30 | 704 | 0.8+ | 0.4+ | 2006 09 27 | G96 | 0.5− | 0.3− | 2006 11 16 | G96 | (1.7+ | 0.7+) |
| 2006 08 30 | 704 | 0.7− | 0.7− | 2006 09 27 | G96 | 0.5− | 0.5− | | | | |

### 2006 QF$_{167}$ = 2004 FE$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 352.61498 | | (2000.0) | | | |
| $n$ | 0.17822808 | $\omega$ | 217.46202 | | +0.99319551 | −0.03637936 |
| $a$ | 3.1271733 | $\Omega$ | 144.14313 | | +0.06325494 | +0.96613178 |
| $e$ | 0.0304679 | $i$ | 10.88665 | | −0.09778291 | +0.25547195 |
| $P$ | 5.53 | $H$ | 15.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.5+ | 0.4+ | 2003 01 07 | 704 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.5− | 0.5− |
| 1993 03 19 | 691 | 0.0 | 0.2− | 2003 01 27 | 704 | 0.2+ | 1.0+ | 2006 09 14 | 703 | 0.3+ | 0.5+ |
| 1993 03 19 | 691 | 0.4− | 0.2− | 2003 01 27 | 704 | (0.3− | 2.1+) | 2006 09 14 | 703 | 0.4− | 0.1− |
| 2001 10 15 | 644 | 0.1+ | 0.5+ | 2003 01 27 | 704 | 1.0+ | 1.2+ | 2006 09 14 | 703 | 0.0 | 0.2− |
| 2001 10 15 | 644 | 0.3+ | 0.3+ | 2003 01 27 | 704 | 0.8+ | 1.1+ | 2006 09 22 | 704 | (1.6+ | 0.7+) |
| 2001 10 15 | 644 | 0.1− | 0.6+ | 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 0.3− | 1.3+ |
| 2001 10 23 | 644 | 0.1+ | 0.1+ | 2004 03 23 | 704 | 0.1− | 1.1+ | 2006 09 22 | 704 | (0.4− | 1.7+) |
| 2001 10 23 | 644 | 0.0 | 0.1+ | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 704 | (1.6+ | 1.3+) |
| 2001 10 23 | 644 | 0.1+ | 0.1− | 2004 03 23 | 704 | 0.0 | 0.5+ | 2006 09 26 | 703 | 1.0− | 0.7+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2004 03 28 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 1.4+ | 1.4+ |
| 2001 11 12 | 645 | 0.1+ | 0.0 | 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | (0.7+ | 1.8+) |
| 2001 12 18 | 645 | 0.1− | 0.1− | 2004 03 28 | 691 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.5− | 1.1+ |
| 2001 12 18 | 645 | 0.1− | 0.1− | 2004 04 12 | 703 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.9− | 1.0+ |
| 2002 01 09 | 645 | 0.1− | 0.1− | 2004 04 12 | 703 | 0.9− | 0.1− | 2006 10 02 | 703 | (2.1− | 1.6+) |
| 2002 01 09 | 645 | 0.1− | 0.0 | 2004 04 12 | 703 | (0.3+ | 1.8+) | 2006 10 02 | 703 | 0.7− | 1.0+ |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2004 04 12 | 703 | 0.0 | 1.3+ | 2006 10 02 | 703 | 0.4− | 0.5− |
| 2002 01 13 | 645 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.4+ | 0.2+ |
| 2003 01 07 | 704 | 0.7− | 0.6+ | 2006 08 30 | 699 | 0.5− | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2003 01 07 | 704 | 0.1+ | 1.1+ | 2006 08 30 | 699 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.6+ |
| 2003 01 07 | 704 | 0.3− | 0.7+ | 2006 08 30 | 699 | 0.5+ | 1.3+ | | | | |

### 2006 QG$_{167}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.06376 | | (2000.0) | | | |
| $n$ | 0.19272737 | $\omega$ | 257.15014 | | +0.78350892 | +0.61755999 |
| $a$ | 2.9682954 | $\Omega$ | 64.66919 | | −0.53650501 | +0.72818808 |
| $e$ | 0.0904832 | $i$ | 4.36550 | | −0.31349028 | +0.29725709 |
| $P$ | 5.11 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.0 | 0.1− | 2001 10 08 | 644 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 1.0+ |
| 2001 09 20 | 704 | 0.4+ | 0.2− | 2005 06 14 | G96 | 0.3+ | 0.2− | 2006 09 14 | 703 | 0.5− | 0.2+ |
| 2001 09 20 | 704 | 0.2− | 0.6− | 2005 06 14 | G96 | 0.0 | 0.2− | 2006 09 14 | 703 | 0.9− | 0.0 |
| 2001 09 20 | 704 | 0.2− | 1.3− | 2005 06 14 | G96 | 0.3− | 0.3− | 2006 09 26 | 704 | 1.3+ | 0.6+ |
| 2001 09 20 | 704 | 0.8+ | 0.4+ | 2005 06 14 | G96 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.0 | 0.4− |
| 2001 09 27 | 644 | 0.0 | 0.1− | 2006 08 30 | 699 | (2.6− | 1.4+) | 2006 09 26 | 704 | 0.6− | 0.2+ |
| 2001 09 27 | 644 | 0.3+ | 0.1− | 2006 08 30 | 699 | 0.7− | 1.2+ | 2006 09 30 | 703 | 0.3+ | 1.1− |
| 2001 09 27 | 644 | 0.1− | 0.5− | 2006 08 30 | 699 | 1.2+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.0 |
| 2001 10 08 | 644 | 0.1+ | 0.0 | 2006 08 30 | 699 | 0.8− | 1.0+ | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 2001 10 08 | 644 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.7− | 0.0 |

### 2006 QN$_{167}$ = 2005 JU$_{170}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.27252 | | (2000.0) | | | |
| $n$ | 0.22290833 | $\omega$ | 263.92945 | | +0.91863994 | +0.39359410 |
| $a$ | 2.6939230 | $\Omega$ | 72.88815 | | −0.34675861 | +0.84493438 |
| $e$ | 0.2152133 | $i$ | 2.06357 | | −0.18936505 | +0.36217341 |
| $P$ | 4.42 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.4− | 0.2− | 2006 08 30 | 699 | (0.8+ | 2.1+) | 2006 09 19 | 699 | 0.3− | 1.1+ |
| 2005 04 04 | G96 | 0.1− | 0.7− | 2006 09 14 | 703 | 0.5+ | 1.3− | 2006 09 19 | 699 | 0.6− | 0.1+ |
| 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.4− | 0.6− | 2006 09 30 | 703 | 0.6+ | 0.1+ |
| 2005 04 04 | G96 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.6− | 0.0 |
| 2005 05 10 | 807 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 2005 05 10 | 807 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.7+ |
| 2005 05 10 | 807 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.6− | 0.5− | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2005 05 11 | 807 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.8− | 1.0− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2006 08 30 | 699 | 0.2+ | 0.4+ | 2006 09 14 | 703 | 0.7− | 0.5− | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2006 08 30 | 699 | 0.4+ | 1.5+ | 2006 09 19 | 699 | 0.5+ | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.2+ |
| 2006 08 30 | 699 | 0.8+ | 0.7+ | 2006 09 19 | 699 | 1.2+ | 0.3− | | | | |

### 2006 QZ$_{167}$ = 2004 CJ$_{128}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.88047 | | (2000.0) | | | |
| $n$ | 0.17875963 | $\omega$ | 166.40013 | | +0.25687655 | +0.95987058 |
| $a$ | 3.1209711 | $\Omega$ | 118.38397 | | −0.89822926 | +0.28009030 |
| $e$ | 0.0579512 | $i$ | 7.34862 | | −0.35664917 | −0.01406723 |
| $P$ | 5.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 645 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 08 30 | 699 | 1.2+ | 0.9+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.2− | 0.1− | 2006 08 30 | 699 | 0.3− | 1.1− |
| 2001 11 11 | 645 | 0.1+ | 0.0 | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 08 30 | 699 | (2.5− | 0.2+) |
| 2001 11 11 | 645 | 0.0 | 0.1+ | 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.4+ |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.6+ | 1.0+ | 2006 09 14 | 644 | 0.3+ | 0.4+ |
| 2001 11 18 | 645 | 0.1− | 0.1− | 2004 03 20 | 704 | 0.6+ | 0.4− | 2006 09 14 | 644 | 0.0 | 0.5+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2004 03 20 | 704 | 0.9+ | 0.3+ | 2006 09 14 | 644 | 0.1+ | 0.4+ |
| 2001 11 21 | 645 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.5− | 0.2+ | 2006 09 20 | 703 | 0.3+ | 0.5− |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2005 07 11 | G96 | 0.6+ | 0.8+ | 2006 09 20 | 703 | 0.3− | 0.5− |
| 2004 02 13 | 691 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.3− | 0.2− | 2006 09 20 | 703 | 1.3− | 0.5+ |
| 2004 02 13 | 691 | 0.1− | 0.4+ | 2005 07 11 | G96 | 0.2+ | 0.3+ | 2006 09 20 | 703 | 0.3− | 0.9+ |

### 2006 QB$_{168}$ = 2001 NJ$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.16099 | | (2000.0) | | | |
| $n$ | 0.21234844 | $\omega$ | 319.77746 | | +0.99849256 | +0.00168335 |
| $a$ | 2.7825096 | $\Omega$ | 40.22821 | | +0.02354586 | +0.88974894 |
| $e$ | 0.0831121 | $i$ | 4.87295 | | −0.04958016 | +0.45644714 |
| $P$ | 4.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.1− | 0.4+ | 2004 03 19 | 644 | 0.3+ | 0.3+ | 2006 09 21 | 699 | (0.3− | 2.8+) |
| 2001 07 13 | 644 | 0.2− | 0.1+ | 2004 03 19 | 644 | 0.5+ | 0.3+ | 2006 09 21 | 699 | 1.4− | 0.8− |
| 2001 07 13 | 644 | 0.1− | 0.3+ | 2006 08 30 | 699 | 0.3− | 0.0 | 2006 09 21 | 699 | 0.3+ | 0.2− |
| 2001 07 20 | 644 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.5+ | 2006 09 21 | 699 | 1.3− | 1.5+ |
| 2001 07 20 | 644 | 0.1− | 0.1− | 2006 08 30 | 699 | 0.4+ | 0.8− | 2006 09 30 | 703 | 0.2− | 0.6+ |
| 2001 07 20 | 644 | 0.4+ | 0.4+ | 2006 08 30 | 699 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.8− | 1.0+ |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | (0.9− | 2.1+) |
| 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.2+ |
| 2004 02 17 | 691 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.4+ | 0.6− | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2004 02 17 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2004 02 17 | 691 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.7+ | 0.0 |
| 2004 02 17 | 691 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.8+ | 0.4+ |
| 2004 03 19 | 644 | 0.7+ | 0.1+ | 2006 09 14 | 703 | 0.5− | 0.2− | | | | |

### 2006 QC$_{168}$ = 2001 QC$_{209}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.69384 | | (2000.0) | | | |
| $n$ | 0.20260358 | $\omega$ | 222.27355 | | +0.97213216 | −0.18186684 |
| $a$ | 2.8710316 | $\Omega$ | 147.31558 | | +0.20626448 | +0.96343457 |
| $e$ | 0.1538511 | $i$ | 15.89886 | | −0.11141825 | +0.19676960 |
| $P$ | 4.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.4− | 0.0 | 2004 03 28 | 291 | 0.2+ | 0.0 | 2006 09 14 | 703 | 1.0− | 0.3+ |
| 2001 08 23 | 699 | 0.8− | 0.7+ | 2004 03 28 | 291 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.1− |
| 2001 08 23 | 699 | 0.6+ | 0.7− | 2006 08 30 | 699 | 0.5− | 0.9+ | 2006 09 20 | 703 | 0.1+ | 1.6+ |
| 2001 08 23 | 699 | 0.2− | 0.7+ | 2006 08 30 | 699 | 0.2− | 0.3− | 2006 09 20 | 703 | 2.6+ | 1.4+ |
| 2001 08 24 | 644 | 0.3+ | 0.6− | 2006 08 30 | 699 | 0.1− | 0.3+ | 2006 09 20 | 703 | 0.2+ | 0.4− |
| 2001 08 24 | 644 | 0.4+ | 0.2− | 2006 08 30 | 699 | 0.9− | 0.3+ | 2006 09 20 | 703 | 0.1+ | 2.4− |

2001 08 24 644 0.2+ 0.5− 2006 09 14 703 0.1+ 0.4−
2004 03 28 291 0.1+ 0.1− 2006 09 14 703 0.2− 0.1−

**2006 QK$_{168}$ = 1998 HA$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.13634 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27005449 | $\omega$ | 216.14013 | | +0.74520132 | | +0.66124162 |
| $a$ | 2.3704736 | $\Omega$ | 102.22974 | | −0.58925076 | | +0.71350021 |
| $e$ | 0.0967131 | $i$ | 5.06155 | | −0.31218350 | | +0.23168290 |
| $P$ | 3.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

1998 04 22 691 0.0 0.1− 2006 08 30 699 0.1+ 0.1+ 2006 09 26 703 0.3− 0.0
1998 04 22 691 0.0 0.2− 2006 09 14 703 0.5− 0.2− 2006 09 26 703 0.0 0.4−
1998 04 22 691 0.0 0.1+ 2006 09 14 703 1.6− 0.3+ 2006 09 26 703 0.4− 0.1−
1998 04 30 691 0.2− 0.1− 2006 09 14 703 0.0 0.7− 2006 10 02 703 0.0 0.2−
1998 04 30 691 0.3+ 0.3+ 2006 09 14 703 0.1− 0.6− 2006 10 02 703 0.4− 1.3+
1998 04 30 691 0.1− 0.0 2006 09 26 704 0.0 0.1+ 2006 10 02 703 0.6+ 0.5+
2006 08 30 699 0.2+ 0.0 2006 09 26 704 0.5+ 0.6− 2006 10 02 703 0.6+ 0.4+
2006 08 30 699 1.0+ 0.6+ 2006 09 26 704 0.2− 0.5−
2006 08 30 699 0.5+ 1.0+ 2006 09 26 703 0.1− 1.0−

**2006 QM$_{168}$ = 2005 JT$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.92094 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23099427 | $\omega$ | 265.71326 | | +0.99658731 | | +0.01217527 |
| $a$ | 2.6306833 | $\Omega$ | 93.57481 | | +0.02085663 | | +0.91982912 |
| $e$ | 0.1027513 | $i$ | 4.69213 | | −0.07986696 | | +0.39213029 |
| $P$ | 4.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

1996 04 13 691 0.3+ 0.2− 2005 04 16 691 0.1+ 0.3+ 2006 09 14 644 0.1+ 0.0
1996 04 13 691 0.3− 0.3− 2005 04 16 691 0.2+ 0.1+ 2006 09 14 703 0.3+ 0.0
1996 04 13 691 0.3+ 0.4+ 2005 05 14 G96 0.2− 0.2+ 2006 09 14 703 0.0 0.3+
2002 09 06 599 0.2− 0.3− 2005 05 14 G96 0.3− 0.1− 2006 09 14 644 0.3+ 0.2+
2002 09 06 599 0.2− 0.2− 2005 05 14 G96 0.3− 0.1− 2006 09 14 703 0.8− 0.3+
2002 09 06 599 0.1− 0.4+ 2005 05 14 G96 0.3− 0.0 2006 09 14 703 0.6− 0.8+
2002 09 06 599 0.3− 0.1− 2005 05 19 G96 0.3− 0.2− 2006 09 26 703 0.6− 0.7−
2002 10 11 644 0.3− 0.0 2005 05 19 G96 0.6− 0.1+ 2006 09 26 703 0.3+ 0.5+
2002 10 11 644 0.4− 0.1+ 2005 05 19 G96 0.4− 0.4+ 2006 09 26 703 0.7− 0.1−
2002 10 11 644 0.7− 0.0 2005 05 19 G96 0.1− 0.4+ 2006 09 26 703 0.8+ 0.6−
2004 02 16 704 0.1− 1.2+ 2006 08 30 699 0.1− 0.6+ 2006 10 02 703 0.2− 0.0
2004 02 16 704 1.0+ 0.7+ 2006 08 30 699 0.0 1.2+ 2006 10 02 703 (0.4+ 2.3+)
2004 02 16 704 0.4+ 0.0 2006 08 30 699 0.1+ 0.2+ 2006 10 02 703 (2.0− 0.0 )
2004 02 16 704 0.3+ 1.3+ 2006 08 30 699 1.2+ 0.2+ 2006 10 02 703 0.2+ 1.0+
2005 04 16 691 0.0 0.1+ 2006 09 14 644 0.3+ 0.1+

**2006 QN$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.64616 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21202627 | $\omega$ | 277.60162 | | +0.93638746 | | +0.33974889 |
| $a$ | 2.7853275 | $\Omega$ | 62.57206 | | −0.27001296 | | +0.85760404 |
| $e$ | 0.0839673 | $i$ | 5.69185 | | −0.22421313 | | +0.38611657 |
| $P$ | 4.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

2002 11 07 291 0.0 0.1+ 2005 05 08 G96 0.0 0.2+ 2006 09 14 703 0.6+ 0.3+
2002 11 07 291 0.2+ 0.0 2005 05 08 G96 0.0 0.1+ 2006 09 14 703 0.8− 1.2−
2002 11 07 291 0.2− 0.1+ 2005 05 08 G96 0.1+ 0.1− 2006 09 14 703 0.1− 0.1−
2002 12 08 291 0.0 0.1− 2006 08 28 D35 0.1− 0.5+ 2006 09 14 703 0.3− 0.0
2002 12 08 291 0.2− 0.0 2006 08 28 D35 0.2+ 0.4+ 2006 09 26 703 (1.7+ 0.1+)
2002 12 08 291 0.1+ 0.0 2006 08 28 D35 0.6− 0.8+ 2006 09 26 703 1.0− 0.0
2004 02 16 691 0.1+ 0.1+ 2006 08 30 699 1.2+ 0.8+ 2006 09 26 703 0.3− 0.6−
2004 02 16 691 0.1− 0.4+ 2006 08 30 699 (1.6− 2.2+) 2006 09 26 703 0.7− 0.3+
2004 02 16 691 0.2+ 0.1+ 2006 08 30 699 0.3− 0.1−
2005 05 08 G96 0.0 0.5+ 2006 08 30 699 1.1+ 1.1+

**2006 QO$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.86699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26196935 | $\omega$ | 221.27944 | | +0.99292044 | | +0.05720740 |
| $a$ | 2.4189992 | $\Omega$ | 135.10805 | | −0.02379252 | | +0.95440722 |
| $e$ | 0.2287870 | $i$ | 8.48177 | | −0.11637403 | | +0.29297469 |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2002 07 03 644 1.0+ 0.6+ 2006 09 14 703 0.4+ 0.2− 2006 09 26 703 0.0 0.4−
2002 07 03 644 0.5− 0.4+ 2006 09 14 703 0.3− 0.4+ 2006 09 26 703 0.0 0.3+
2002 07 03 644 0.5− 0.4+ 2006 09 14 703 0.3+ 0.7+ 2006 10 02 703 0.3+ 0.3−
2004 01 16 691 0.3+ 0.2+ 2006 09 14 703 0.2+ 0.3− 2006 10 02 703 1.0− 1.0−
2004 01 16 691 0.4− 0.3+ 2006 09 20 703 1.0+ 0.4− 2006 10 02 703 0.8− 0.7−
2004 01 16 691 0.1+ 0.1+ 2006 09 20 703 0.2− 0.5+ 2006 10 02 703 0.6− 0.4+
2006 08 30 699 0.8− 0.9+ 2006 09 20 703 0.3− 0.1+ 2006 10 09 644 0.4− 0.0
2006 08 30 699 0.7+ 0.0 2006 09 20 703 0.4− 0.6+ 2006 10 09 644 0.1− 0.1+
2006 08 30 699 0.3+ 0.5+ 2006 09 26 703 1.3+ 0.1− 2006 10 09 644 0.6− 0.3−
2006 08 30 699 0.2− 0.3− 2006 09 26 703 0.8+ 0.2−

**2006 QQ$_{168}$ = 2004 FC$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.91677 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17549587 | $\omega$ | 339.00726 | | +0.99546025 | | −0.00887369 |
| $a$ | 3.1595467 | $\Omega$ | 22.14872 | | +0.06410223 | | +0.79847723 |
| $e$ | 0.1961523 | $i$ | 14.55768 | | −0.07035483 | | +0.60195960 |
| $P$ | 5.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2004 03 18 290 0.5− 0.2+ 2006 09 14 703 0.1− 0.0 2006 10 09 644 0.1− 0.2+
2004 03 18 290 0.2+ 0.2+ 2006 09 14 703 0.2− 0.7− 2006 10 09 644 0.6− 0.1−
2004 03 18 290 0.1− 0.2+ 2006 09 20 703 1.0− 1.0+ 2006 10 09 644 0.5− 0.2−
2004 03 19 290 0.1+ 0.1− 2006 09 20 703 0.7+ 1.0+ 2006 10 12 644 0.3− 0.0
2004 03 19 290 0.3+ 0.2− 2006 09 20 703 0.4+ 0.3− 2006 10 12 644 0.0 0.1+
2004 03 20 290 0.1− 0.0 2006 09 20 703 0.0 0.5+ 2006 10 12 644 0.1+ 0.4+
2004 03 20 290 0.1+ 0.1− 2006 09 21 699 0.5+ 0.7+ 2006 10 23 644 0.0 0.0
2004 03 20 290 0.2+ 0.0 2006 09 21 699 (2.3− 0.8−) 2006 10 23 644 0.1+ 0.0
2006 08 30 699 (2.4− 0.3−) 2006 09 21 699 0.0 0.1+ 2006 10 23 644 0.0 0.1−
2006 08 30 699 0.1− 0.8− 2006 09 21 699 0.5+ 0.2− 2006 11 25 G96 0.1− 0.4−
2006 08 30 699 0.3− 0.3+ 2006 09 26 703 0.2− 0.1+ 2006 11 25 G96 0.1+ 0.2−
2006 08 30 699 0.1− 0.3− 2006 09 26 703 0.1+ 0.3+ 2006 11 25 G96 0.1− 0.3+
2006 09 14 703 0.1− 0.6− 2006 09 26 703 0.4+ 0.6− 2006 11 25 G96 0.2+ 0.1−
2006 09 14 703 0.5+ 0.6− 2006 09 26 703 (0.2+ 2.3+)

**2006 QT$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.13709 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28270770 | $\omega$ | 5.74489 | | +0.61629324 | | −0.78487910 |
| $a$ | 2.2992046 | $\Omega$ | 46.23011 | | +0.71893508 | | +0.52736100 |
| $e$ | 0.2353614 | $i$ | 5.11656 | | +0.32142648 | | +0.32535390 |
| $P$ | 3.49 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2003 12 21 645 0.0 0.1− 2005 05 09 G96 0.2− 0.5+ 2006 09 20 703 0.2+ 0.6+
2003 12 21 645 0.0 0.1− 2005 05 09 G96 0.3+ 0.3+ 2006 09 20 703 0.7− 1.0+
2003 12 23 704 1.0+ 0.8+ 2005 05 09 G96 0.3+ 0.3+ 2006 09 26 704 0.8+ 1.4+
2003 12 23 704 0.0 0.5+ 2005 05 09 G96 0.1− 0.4+ 2006 09 26 704 0.5− 0.7+
2003 12 23 704 0.8− 0.3− 2006 08 30 699 0.4− 0.1+ 2006 09 26 704 0.9− 0.5+
2003 12 23 704 0.5− 0.2+ 2006 08 30 699 0.0 0.6+ 2006 09 26 704 0.1+ 0.3−
2003 12 28 704 0.0 0.2+ 2006 08 30 699 0.2− 1.0− 2006 09 26 703 0.3+ 0.1−
2003 12 28 704 0.8+ 0.2− 2006 08 30 699 (0.9− 2.0+) 2006 09 26 703 0.3− 0.7−
2003 12 28 704 0.4− 0.3+ 2006 09 14 644 0.0 0.2− 2006 09 26 703 0.2− 0.4−

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 0.4+ | 0.0 | 2006 09 14 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 2004 01 31 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.4− |
| 2004 01 31 | 704 | 1.3+ | 1.1+ | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.4+ | 0.4− |
| 2004 01 31 | 704 | (0.8+ | 1.9+) | 2006 09 14 | 703 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.4− |
| 2004 01 31 | 704 | 0.0 | 1.2+ | 2006 09 14 | 703 | 0.0 | 0.7+ | 2006 11 25 | G96 | 0.6+ | 0.3− |
| 2004 02 09 | 644 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2004 02 09 | 644 | 0.0 | 0.5+ | 2006 09 20 | 703 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2004 02 09 | 644 | 0.3− | 1.0+ | 2006 09 20 | 703 | 0.6+ | 1.1+ | 2006 11 25 | G96 | 0.5+ | 0.1− |

**2006 QY$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.68595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23035827 | $\omega$ | 201.88804 | | +0.53383283 | +0.83099075 | |
| $a$ | 2.6355232 | $\Omega$ | 100.69393 | | −0.75029007 | +0.55082126 | |
| $e$ | 0.1157454 | $i$ | 9.16140 | | −0.38998374 | +0.07778381 | |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.6+ | 1.1+ | 2005 05 15 | 644 | 0.2+ | 0.8+ | 2006 09 18 | 703 | 0.2+ | 0.3+ |
| 2001 07 13 | 644 | 0.5+ | 0.9+ | 2005 05 15 | 644 | 0.1− | 0.7+ | 2006 09 19 | 703 | 0.2− | 0.2− |
| 2001 07 13 | 644 | 0.2+ | 0.8+ | 2005 05 15 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.1− |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2006 08 30 | 699 | 0.9− | 0.1− | 2006 09 19 | 703 | 0.8+ | 1.0− |
| 2002 10 04 | 645 | 0.1+ | 0.1− | 2006 08 30 | 699 | 0.1+ | 1.3+ | 2006 09 19 | 703 | 0.0 | 0.3− |
| 2002 10 15 | 644 | 0.3− | 0.6+ | 2006 08 30 | 699 | 1.0− | 0.8+ | 2006 09 20 | 703 | 0.9− | 1.0+ |
| 2002 10 15 | 644 | 0.6− | 0.4+ | 2006 08 30 | 699 | 0.7− | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.6+ |
| 2002 10 15 | 644 | 0.5− | 0.7+ | 2006 09 14 | 703 | 0.6− | 0.5− | 2006 09 20 | 703 | 0.1+ | 0.1+ |
| 2003 12 28 | 691 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 09 20 | 703 | 0.5− | 0.8+ |
| 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 1.3− | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.3+ |
| 2003 12 28 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.6+ | 1.4+ | 2006 09 26 | 703 | 1.0+ | 0.3+ |
| 2004 01 15 | 691 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.5+ | 1.1+ | 2006 09 26 | 703 | 0.2+ | 0.5+ |
| 2004 01 15 | 691 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.5− |
| 2004 01 15 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.6+ | | | | |

**2006 QA$_{169}$ = 1989 SD$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.14878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23544430 | $\omega$ | 111.56131 | | −0.45170836 | −0.89181929 | |
| $a$ | 2.5974305 | $\Omega$ | 5.48851 | | +0.69178663 | −0.36771367 | |
| $e$ | 0.1844011 | $i$ | 15.06385 | | +0.56337449 | −0.26352422 | |
| $P$ | 4.19 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 09 26 | 809 | 2.2− | 0.2− | 2003 01 31 | 644 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.4− |
| 1989 09 26 | 809 | 0.5− | 0.6+ | 2003 01 31 | 644 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 1989 09 26 | 809 | 1.1+ | 1.6+ | 2004 03 16 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.1− | 0.4− |
| 1998 12 12 | 704 | 1.2− | 0.2+ | 2004 03 16 | 644 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.8− |
| 1998 12 12 | 704 | 0.1+ | 0.1− | 2004 03 16 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 704 | 0.6+ | 0.1− |
| 1998 12 12 | 704 | 1.3+ | 0.3− | 2004 03 30 | E12 | 0.3+ | 0.5+ | 2006 10 21 | 704 | 0.1− | 0.8+ |
| 1998 12 12 | 704 | 0.1− | 0.3− | 2004 03 30 | E12 | (3.8− | 2.8+) | 2006 10 21 | 704 | 0.3− | 0.6+ |
| 1998 12 12 | 704 | 0.3− | 0.5− | 2004 03 30 | E12 | 0.0 | 0.5+ | 2006 10 21 | 704 | 0.9+ | 0.2− |
| 2002 10 05 | 704 | (0.8+ | 1.7+) | 2004 03 30 | E12 | 0.6− | 1.0+ | 2006 10 21 | 704 | (1.8+ | 1.1−) |
| 2002 10 05 | 704 | 0.0 | 0.8+ | 2004 04 25 | 704 | 0.6+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2002 10 05 | 704 | 0.1− | 1.0+ | 2004 04 25 | 704 | 0.7+ | 0.9+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | (0.8+ | 1.7+) | 2004 04 25 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2002 10 15 | 704 | 1.5− | 1.1+ | 2004 04 25 | 704 | 0.7+ | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 10 15 | 704 | (1.6− | 1.5+) | 2004 04 25 | 704 | 0.5+ | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2002 10 15 | 704 | (1.4− | 2.6+) | 2006 08 30 | 699 | 0.2+ | 1.0− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 10 30 | 704 | 0.3− | 1.3+ | 2006 08 30 | 699 | 1.1+ | 0.7+ | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2002 10 30 | 704 | (0.4− | 2.1+) | 2006 08 30 | 699 | 0.6+ | 0.7+ | 2006 10 27 | 703 | 0.6+ | 0.4− |
| 2002 10 30 | 704 | 0.3+ | 1.1+ | 2006 08 30 | 699 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2002 10 30 | 704 | (0.8− | 1.7+) | 2006 09 15 | 703 | 0.2− | 0.4− | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2002 11 15 | 704 | (2.8− | 1.6+) | 2006 09 15 | 703 | 0.1− | 1.0− | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2002 11 15 | 704 | (2.4− | 1.2+) | 2006 09 15 | 703 | 0.1− | 0.5− | 2006 11 07 | 644 | 0.1− | 0.4+ |
| 2002 11 15 | 704 | (3.6− | 1.8+) | 2006 09 15 | 703 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 2002 11 15 | 704 | (3.2− | 2.0+) | 2006 09 18 | 704 | 1.2+ | 0.6+ | 2006 11 15 | 703 | 0.7+ | 0.3− |
| 2002 11 15 | 704 | (3.0− | 2.9+) | 2006 09 18 | 704 | (0.8+ | 2.1+) | 2006 11 15 | 703 | 0.2+ | 0.2− |
| 2002 12 15 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.3− | 0.4+ | 2006 11 15 | 703 | 0.4+ | 0.5− |
| 2002 12 15 | 704 | 0.5− | 0.1+ | 2006 09 18 | 704 | 1.0− | 1.3+ | 2006 11 15 | 703 | 0.0 | 0.8− |
| 2002 12 15 | 704 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.5+ | 2006 11 16 | 704 | 1.3− | 0.4− |
| 2002 12 15 | 704 | 0.7− | 0.3+ | 2006 09 28 | 703 | 0.4− | 0.4+ | 2006 11 16 | 704 | (2.5− | 0.1+) |
| 2002 12 15 | 704 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.6+ | 2006 11 16 | 704 | (1.6− | 1.4−) |
| 2003 01 31 | 644 | 0.4− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.9− | 0.7− |

**2006 QH$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.75844 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17030220 | $\omega$ | 359.80659 | | +0.93105317 | −0.34048293 | |
| $a$ | 3.2234619 | $\Omega$ | 21.58100 | | +0.33525121 | +0.65630712 | |
| $e$ | 0.3708659 | $i$ | 20.89634 | | +0.14403686 | +0.67329959 | |
| $P$ | 5.79 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 704 | 0.5+ | 1.0− | 2006 09 20 | 644 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2000 09 20 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2000 09 20 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2000 09 20 | 704 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 24 | 704 | 0.2− | 0.0 |
| 2000 09 20 | 704 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.4− | 0.2+ | 2006 10 24 | 704 | 0.3− | 0.2+ |
| 2000 09 28 | 699 | 0.3− | 0.5+ | 2006 09 22 | 704 | 0.1+ | 0.1− | 2006 10 24 | 704 | (1.6+ | 0.4−) |
| 2000 09 28 | 699 | 0.2− | 0.2+ | 2006 09 22 | 704 | 0.0 | 0.2− | 2006 10 24 | 704 | 0.1+ | 0.0 |
| 2000 09 28 | 699 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.4− | 0.2+ | 2006 10 24 | 704 | 0.1+ | 0.3− |
| 2000 09 28 | 699 | 0.8− | 0.0 | 2006 09 26 | 704 | 0.6− | 0.2+ | 2006 10 24 | A24 | 1.0+ | 1.2+ |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.4− | 0.2− | 2006 10 24 | A24 | 0.3+ | 1.1+ |
| 2003 04 01 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.1− | 2006 10 26 | 704 | 1.2+ | 0.3− |
| 2006 08 31 | 704 | 1.2− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 26 | 704 | 1.4+ | 0.4− |
| 2006 08 31 | 704 | (0.8− | 2.0+) | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 10 26 | 704 | 1.0+ | 0.2+ |
| 2006 08 31 | 704 | 1.2+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 10 27 | 683 | 0.1− | 0.4− |
| 2006 08 31 | 704 | 0.0 | 1.3+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 27 | 683 | 0.3− | 0.3+ |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.0 | 2006 10 27 | 683 | 0.6+ | 0.1− |
| 2006 09 06 | 644 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 10 27 | 232 | 0.4+ | 0.6− |
| 2006 09 06 | 644 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 10 27 | 232 | 0.7+ | 0.4− |
| 2006 09 16 | 704 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 10 27 | 232 | 0.6+ | 0.3− |
| 2006 09 16 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 10 29 | 704 | 0.3− | 0.6+ |
| 2006 09 16 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.9− | 0.0 |
| 2006 09 16 | 704 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.1− | 0.4+ |
| 2006 09 16 | 704 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.0 | 0.0 |
| 2006 09 16 | 699 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.5− | 0.0 | 2006 10 29 | 704 | 0.5− | 0.3+ |
| 2006 09 16 | 699 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.5− |
| 2006 09 16 | 699 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.5− | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.6− |
| 2006 09 16 | 699 | 0.4− | 0.1+ | 2006 10 15 | 127 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.4− |
| 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 10 15 | 127 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.5− |
| 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 10 15 | 127 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.7− | 0.3+ |
| 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 16 | 127 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 16 | 127 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.1− | 1.1+ |
| 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 10 16 | 127 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 19 | 704 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2006 09 18 | 699 | 0.0 | 0.4− | 2006 10 19 | 704 | 0.7+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.3− |
| 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 19 | 704 | 0.1− | 0.6+ | 2006 11 29 | 704 | 0.4+ | 0.3+ |
| 2006 09 19 | 704 | 0.6− | 0.3− | 2006 10 19 | 704 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2006 09 19 | 704 | 1.2+ | 0.3− | 2006 10 21 | 232 | 0.3+ | 0.8− | 2006 11 29 | 704 | 0.8+ | 0.3+ |
| 2006 09 19 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 232 | 0.3+ | 0.8− | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 21 | 232 | 0.3+ | 1.1− | | | | |

**2006 QO$_{169}$ = 2001 TC$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.01247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18243154 | $\omega$ | 75.93365 | | +0.42426724 | +0.89965814 | |
| $a$ | 3.0789509 | $\Omega$ | 219.68510 | | −0.88056154 | +0.38335289 | |
| $e$ | 0.0664212 | $i$ | 9.28383 | | −0.21120768 | +0.20893966 | |
| $P$ | 5.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.2+ | 0.4+ | 2005 05 15 | G96 | 0.2+ | 0.0 | 2006 09 11 | 703 | 0.4− | 0.1− |
| 2001 09 28 | 644 | 0.1− | 0.5+ | 2005 05 15 | G96 | 0.1+ | 0.4+ | 2006 09 11 | 703 | (2.0− | 0.9−) |
| 2001 09 28 | 644 | 0.1+ | 0.5+ | 2005 05 15 | G96 | 0.3− | 0.3+ | 2006 09 11 | 703 | 0.9− | 1.3+ |
| 2001 10 14 | 704 | 0.8− | 0.6− | 2005 05 15 | G96 | 0.0 | 0.3+ | 2006 09 18 | 703 | (0.1− | 2.1−) |
| 2001 10 14 | 704 | 0.4− | 0.6− | 2006 08 27 | 699 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 1.0− |
| 2001 10 14 | 704 | 0.6− | 0.3+ | 2006 08 27 | 699 | 0.3+ | 1.0− | 2006 09 18 | 703 | 0.9+ | 0.5− |
| 2001 10 18 | 644 | 0.4+ | 0.6+ | 2006 08 27 | 699 | (2.2− | 0.6+) | 2006 09 18 | 703 | 0.3− | 0.1− |
| 2001 10 18 | 644 | 0.5+ | 0.3+ | 2006 08 27 | 699 | 1.4+ | 0.7+ | | | | |
| 2001 10 18 | 644 | 0.2+ | 0.3+ | 2006 09 11 | 703 | 1.0− | 0.3− | | | | |

**2006 QY$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.59818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18125699 | $\omega$ | 246.52757 | | +0.67237830 | −0.73360186 | |
| $a$ | 3.0922377 | $\Omega$ | 160.17133 | | +0.73960561 | +0.66046043 | |
| $e$ | 0.1217289 | $i$ | 16.91078 | | +0.02984901 | +0.16006351 | |
| $P$ | 5.44 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 691 | 0.1− | 0.3− | 2006 08 28 | 699 | 0.1− | 0.3+ | 2006 10 04 | 703 | 0.5− | 0.3+ |
| 2000 07 07 | 691 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.3+ | 0.3+ | 2006 10 04 | 703 | 0.7+ | 0.2− |
| 2000 07 07 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.8+ | 0.2− | 2006 10 04 | 703 | 0.8− | 0.6− |
| 2000 09 03 | 704 | 0.4− | 0.1− | 2006 09 12 | 703 | 0.8+ | 0.8+ | 2006 10 21 | 703 | 0.2− | 1.4− |
| 2000 09 03 | 704 | 0.6− | 0.4+ | 2006 09 12 | 703 | 0.9− | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.1− |
| 2000 09 03 | 704 | 0.9+ | 1.1+ | 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.5− |
| 2001 11 17 | 699 | 0.3− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2001 11 17 | 699 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 10 23 | 644 | (1.7− | 0.1−) |
| 2001 11 17 | 699 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2001 11 17 | 699 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.1− | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2001 12 14 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.2− | 0.4− | 2006 10 28 | 703 | (0.1− | 1.7+) |
| 2001 12 14 | 644 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 0.8+ | 0.3− |
| 2001 12 14 | 644 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.6− | 2006 10 28 | 703 | 0.7+ | 0.6− |
| 2006 08 28 | 699 | 0.5+ | 0.1− | 2006 09 26 | 703 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.4+ |
| 2006 08 28 | 699 | 0.2− | 0.0 | 2006 10 04 | 703 | 0.5− | 0.4+ | | | | |

**2006 QO$_{170}$ = 2001 SB$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.96387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19212603 | $\omega$ | 201.99634 | | +0.99723807 | +0.02567017 | |
| $a$ | 2.9744859 | $\Omega$ | 156.21031 | | −0.00770019 | +0.96904958 | |
| $e$ | 0.1331387 | $i$ | 9.94920 | | −0.07387106 | +0.24552791 | |
| $P$ | 5.13 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 704 | (2.0− | 0.4+) | 2001 09 21 | 704 | (1.8− | 2.8−) | 2006 09 26 | G96 | 0.9+ | 0.2− |
| 2001 08 24 | 704 | 0.9− | 0.9+ | 2006 08 18 | 644 | 0.8− | 0.7− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 08 24 | 704 | 0.1+ | 0.0 | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.0 |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2006 08 18 | 644 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.5− | 0.1− |
| 2001 09 19 | 704 | 0.6+ | 0.1− | 2006 08 28 | 703 | 0.2+ | 1.1+ | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2006 08 28 | 703 | 1.4+ | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2001 09 21 | 704 | (0.7− | 1.7−) | 2006 08 28 | 703 | 1.0− | 0.6− | | | | |
| 2001 09 21 | 704 | 0.4− | 1.4− | 2006 09 26 | G96 | 0.9+ | 0.4− | | | | |

**2006 QP$_{170}$ = 2002 XA$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.24713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20298540 | $\omega$ | 77.53881 | | +0.95295288 | −0.30270793 | |
| $a$ | 2.8674301 | $\Omega$ | 300.07964 | | +0.27054737 | +0.87286517 | |
| $e$ | 0.0807532 | $i$ | 1.04427 | | +0.13669280 | +0.38271961 | |
| $P$ | 4.86 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.1+ | 0.2− | 2002 12 10 | 704 | 0.6+ | 0.0 | 2006 06 20 | G96 | 0.0 | 0.0 |
| 1999 02 09 | 691 | 0.1+ | 0.1+ | 2002 12 10 | 704 | 0.4− | 0.2− | 2006 06 20 | G96 | 0.7− | 0.1− |
| 1999 02 09 | 691 | 0.3+ | 0.1− | 2002 12 10 | 704 | 0.5+ | 0.6− | 2006 06 20 | G96 | 0.2− | 0.3− |
| 1999 03 06 | 691 | 0.7− | 0.3− | 2004 02 16 | 691 | 0.4+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.3+ |
| 1999 03 06 | 691 | 0.2− | 1.0+ | 2004 02 16 | 691 | 0.6+ | 0.4+ | 2006 08 19 | 691 | 0.1− | 0.4+ |
| 1999 03 06 | 691 | 0.7− | 0.3− | 2004 02 16 | 691 | 1.7− | 0.5− | 2006 08 19 | 691 | 0.2+ | 0.2+ |
| 1999 03 20 | 691 | 0.2+ | 0.1− | 2004 03 14 | 691 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 0.2− | 0.4+ |
| 1999 03 20 | 691 | 0.1+ | 0.5− | 2004 03 14 | 691 | 0.2+ | 0.4+ | 2006 08 28 | 703 | 0.8− | 0.3+ |
| 1999 03 20 | 691 | 0.3+ | 0.6− | 2004 03 14 | 691 | 0.8+ | 0.6+ | 2006 08 28 | 703 | 0.3+ | 0.1+ |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2005 02 14 | 809 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.7− | 1.1− |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2005 02 14 | 809 | 0.4+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2005 02 14 | 809 | 0.2+ | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 1.1+ | 2005 02 14 | 809 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.5+ | 0.4+ | 2005 05 10 | G96 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 1.0− | 1.2+ | 2005 05 10 | G96 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.6− |
| 2002 12 05 | 704 | 0.5+ | 0.3+ | 2005 05 10 | G96 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.8− | 1.3+ | 2006 06 20 | G96 | 0.5+ | 0.1+ | | | | |

**2006 QS$_{176}$ = 2004 FC$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.06704 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16928413 | $\omega$ | 81.75724 | | −0.27920660 | +0.95613866 | |
| $a$ | 3.2363729 | $\Omega$ | 170.50169 | | −0.94522920 | −0.28991177 | |
| $e$ | 0.0759842 | $i$ | 32.45624 | | +0.16907229 | −0.04183327 | |
| $P$ | 5.82 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.0 | 0.1+ | 2004 03 25 | 704 | 0.9+ | 0.3+ | 2006 08 18 | 691 | 0.1+ | 0.1− |
| 2004 03 23 | 704 | 0.1− | 0.1− | 2004 03 28 | 703 | 0.3− | 0.7+ | 2006 08 21 | 807 | 0.2− | 0.3− |
| 2004 03 23 | 704 | 0.2+ | 0.0 | 2004 03 28 | 703 | 1.2− | 0.8− | 2006 08 21 | 807 | 0.2− | 0.1− |
| 2004 03 23 | 704 | 0.6+ | 0.1− | 2004 03 28 | 703 | 0.7+ | 0.4− | 2006 09 18 | 699 | 0.6+ | 1.3− |
| 2004 03 23 | 704 | 0.3− | 0.1+ | 2004 03 28 | 703 | 0.4− | 0.3+ | 2006 09 18 | 699 | 1.0− | 0.1− |
| 2004 03 25 | 704 | 0.6− | 0.3− | 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.5+ |
| 2004 03 25 | 704 | 0.5+ | 0.3+ | 2006 08 18 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.9+ |

**2006 QZ$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.43427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23366390 | $\omega$ | 357.88366 | | +0.98337016 | +0.18119906 | |
| $a$ | 2.6106078 | $\Omega$ | 351.64662 | | −0.16536329 | +0.86546177 | |
| $e$ | 0.1358932 | $i$ | 4.83655 | | −0.07508739 | +0.46705762 | |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.0 | 0.2+ | 2002 10 26 | 049 | 0.4− | 0.4− | 2006 09 14 | 703 | 1.0− | 0.2− |
| 1996 03 11 | 691 | 0.2− | 0.3− | 2006 08 23 | 807 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.7− | 0.5+ |
| 1996 03 11 | 691 | 0.0 | 0.3− | 2006 08 23 | 807 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2002 10 04 | 644 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2002 10 04 | 644 | 0.1+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2002 10 04 | 644 | 0.2+ | 0.0 | 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 10 26 | 049 | 0.3− | 0.2− | 2006 09 14 | 703 | 0.2− | 0.6− | | | | |
| 2002 10 26 | 049 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 1.3+ | 1.0+ | | | | |

**2006 QN$_{180}$ = 1993 TY$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.61241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21849092 | $\omega$ | 50.98363 | | +0.81369342 | −0.58075816 | |
| $a$ | 2.7301119 | $\Omega$ | 344.46862 | | +0.50036274 | +0.72161475 | |
| $e$ | 0.0318469 | $i$ | 5.34854 | | +0.29587184 | +0.37681841 | |
| $P$ | 4.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 08 | 691 | 0.4+ | 0.5− | 2002 10 16 | 644 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.1− | 0.1+ |
| 1993 10 08 | 691 | 0.5+ | 0.2+ | 2002 10 16 | 644 | 0.2− | 0.7+ | 2006 08 27 | 691 | 0.1− | 0.2+ |
| 1993 10 08 | 691 | 0.1− | 0.6− | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 08 27 | 691 | 0.0 | 0.2+ |
| 1993 10 12 | 691 | 0.2+ | 0.7− | 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 1993 10 12 | 691 | 0.3− | 0.7+ | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 1993 10 12 | 691 | 0.4− | 0.5+ | 2006 08 23 | 807 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2002 10 16 | 644 | 0.2− | 0.3+ | 2006 08 23 | 807 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.8+ |

**2006 RG**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.36031 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18722655 | $\omega$ | 337.99786 | | +0.67407415 | +0.73532492 | |
| $a$ | 3.0261545 | $\Omega$ | 334.21916 | | −0.65140236 | +0.54697707 | |
| $e$ | 0.0706284 | $i$ | 9.28207 | | −0.34828007 | +0.40014165 | |
| $P$ | 5.26 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.1+ | 0.5+ | 2006 09 01 | 224 | 0.5− | 0.2+ | 2006 09 27 | 699 | 0.8− | 0.4+ |
| 2001 10 13 | 644 | 0.1+ | 0.2− | 2006 09 01 | 224 | 0.4− | 0.5+ | 2006 09 27 | 703 | (1.3+ | 2.7−) |
| 2001 10 13 | 644 | 0.3− | 0.1+ | 2006 09 01 | 224 | 0.6− | 0.4+ | 2006 09 27 | 703 | 0.0 | 0.2− |
| 2001 12 10 | 704 | 0.8+ | 0.7− | 2006 09 03 | 224 | 0.1− | 0.8− | 2006 09 27 | 703 | 0.2− | 0.0 |
| 2001 12 10 | 704 | 0.1+ | 0.5− | 2006 09 03 | 224 | 0.5+ | 0.1+ | 2006 09 27 | 703 | 0.4− | 0.4− |
| 2001 12 10 | 704 | (2.4+ | 1.4−) | 2006 09 03 | 224 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 12 10 | 704 | 0.2+ | 0.5− | 2006 09 16 | 703 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.6− | 0.3+ |
| 2003 01 09 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 1.0− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2003 01 09 | 704 | 0.4+ | 0.7+ | 2006 09 16 | 703 | 1.1− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 01 09 | 704 | 0.7− | 0.4− | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2004 03 19 | 704 | 1.2+ | 0.4+ | 2006 09 18 | 699 | 1.1+ | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2004 03 19 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2004 03 19 | 704 | (2.1+ | 0.4+) | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2004 03 19 | 704 | 0.2+ | 1.4+ | 2006 09 18 | 699 | 1.3+ | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2004 04 16 | 644 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.8+ | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2004 04 16 | 644 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.1+ | 1.0− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2004 04 16 | 644 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.4+ | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2006 08 29 | 699 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2006 08 29 | 699 | 1.0+ | 0.9+ | 2006 09 27 | 699 | (0.1− | 1.8+) | 2006 10 23 | 644 | 0.4− | 0.3+ |
| 2006 08 29 | 699 | (1.0+ | 1.8−) | 2006 09 27 | 699 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 08 29 | 699 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.2+ | 0.3+ | | | | |

**2006 RJ = 2001 WX$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.58779 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17991736 | $\omega$ | 209.84611 | | +0.75292976 | +0.65625871 | |
| $a$ | 3.1075683 | $\Omega$ | 109.05426 | | −0.59302196 | +0.70899376 | |
| $e$ | 0.2980798 | $i$ | 2.98411 | | −0.28534495 | +0.25817117 | |
| $P$ | 5.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 10 24 | 261 | 0.1− | 0.1+ | 2006 09 02 | A79 | 0.7− | 0.3+ | 2006 09 22 | 704 | 1.1+ | 0.3+ |
| 1996 10 10 | 261 | 1.1+ | 1.5+ | 2006 09 03 | A79 | 0.1− | 0.5+ | 2006 09 22 | 704 | 0.3+ | 0.6+ |
| 2001 10 25 | 644 | 0.0 | 0.6− | 2006 09 03 | A79 | 0.3− | 0.7+ | 2006 09 22 | 704 | 0.0 | 0.4+ |
| 2001 10 25 | 644 | 0.1− | 0.1− | 2006 09 03 | A79 | 0.2− | 0.8+ | 2006 09 22 | 704 | 1.0+ | 0.2− |
| 2001 10 25 | 644 | 0.0 | 0.4− | 2006 09 03 | A79 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.1+ |
| 2001 11 17 | 704 | 0.6+ | 0.8+ | 2006 09 03 | A79 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.4+ |
| 2001 11 17 | 704 | 0.1− | 0.3+ | 2006 09 03 | A79 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.5+ |
| 2001 11 17 | 704 | 1.2− | 0.7+ | 2006 09 11 | A79 | 0.3+ | 1.3+ | 2006 09 25 | 699 | 0.4+ | 0.1− |
| 2001 11 20 | 704 | 0.4+ | 0.3− | 2006 09 11 | A79 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.1− | 1.0− |
| 2001 11 20 | 704 | 0.5− | 0.4− | 2006 09 11 | A79 | 0.3− | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.8− |
| 2001 11 20 | 704 | (0.7− | 1.6−) | 2006 09 11 | A79 | 0.9− | 0.4+ | 2006 09 26 | 704 | 0.8+ | 1.3− |
| 2005 04 11 | G96 | 0.1+ | 0.6+ | 2006 09 11 | A79 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.1+ |
| 2005 04 11 | G96 | 0.5− | 0.4+ | 2006 09 11 | A79 | 1.0− | 1.4− | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 2005 04 11 | G96 | 0.3+ | 0.6+ | 2006 09 11 | A79 | 1.3− | 0.8− | 2006 09 30 | 703 | 0.2− | 0.7− |
| 2005 04 11 | G96 | 0.4+ | 0.2− | 2006 09 11 | A79 | 0.2− | 1.0− | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 2006 08 27 | 699 | 0.0 | 0.4+ | 2006 09 11 | A79 | 0.5− | 1.1− | 2006 09 30 | 703 | 0.9− | 0.4+ |
| 2006 08 27 | 699 | (1.7− | 1.1+) | 2006 09 14 | 703 | 0.2+ | 0.7− | 2006 09 30 | 703 | 0.2− | 0.0 |
| 2006 08 27 | 699 | 0.5+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.6− | 2006 09 30 | 703 | 0.7+ | 0.7+ |
| 2006 08 27 | 699 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.7− | 2006 09 30 | 703 | 0.3− | 0.4+ |
| 2006 09 01 | A79 | (0.7− | 2.0+) | 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.7− |
| 2006 09 01 | A79 | 0.3+ | 0.4+ | 2006 09 19 | 699 | (2.4+ | 0.0 ) | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2006 09 01 | A79 | 0.2− | 0.6+ | 2006 09 19 | 699 | 0.8+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.1+ |
| 2006 09 02 | A79 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2006 09 02 | A79 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.9+ | 0.3+ | 2006 11 25 | G96 | 0.6+ | 0.4− |
| 2006 09 02 | A79 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.4+ | 0.8+ | | | | |

**2006 RT**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.31038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23029629 | $\omega$ | 287.66913 | | +0.42994725 | +0.90265934 | |
| $a$ | 2.6359961 | $\Omega$ | 7.87306 | | −0.76779074 | +0.37647531 | |
| $e$ | 0.1854095 | $i$ | 7.86666 | | −0.47501867 | +0.20850052 | |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 691 | 0.3+ | 0.0 | 2006 09 04 | A55 | 0.5+ | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.1− |
| 1993 09 14 | 691 | 0.1− | 0.6− | 2006 09 04 | A55 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 1993 09 14 | 691 | 0.7− | 1.4+ | 2006 09 04 | A55 | 0.0 | 0.7− | 2006 10 17 | 703 | 0.4− | 0.3− |
| 2002 11 14 | 644 | 0.4− | 0.4+ | 2006 09 04 | A55 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2002 11 14 | 644 | 0.2− | 0.7+ | 2006 09 05 | A55 | 0.2− | 1.1− | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 11 14 | 644 | 0.5− | 1.0+ | 2006 09 05 | A55 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 1.2− |
| 2005 03 17 | G96 | 0.2+ | 0.3− | 2006 09 05 | A55 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2005 03 17 | G96 | 0.1+ | 0.1+ | 2006 09 05 | A55 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2005 03 17 | G96 | 0.5+ | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.0 |
| 2005 03 17 | G96 | 0.2+ | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2005 04 14 | 703 | (0.5+ | 2.1−) | 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.3+ |
| 2005 04 14 | 703 | 0.6+ | 0.5− | 2006 09 18 | 691 | 0.8+ | 1.3− | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2005 04 14 | 703 | 0.3− | 1.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.5+ |
| 2005 04 14 | 703 | 0.8− | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2006 08 30 | 699 | 0.2− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.5− | 0.2− |
| 2006 08 30 | 699 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2006 08 30 | 699 | 0.2+ | 1.1− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2006 08 30 | 699 | (1.3− | 1.5+) | 2006 09 30 | 691 | 0.1− | 0.1− | | | | |

**2006 RU**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.13114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22897367 | $\omega$ | 3.33389 | | +0.81291155 | +0.57673256 | |
| $a$ | 2.6461372 | $\Omega$ | 321.07747 | | −0.53726641 | +0.68899924 | |
| $e$ | 0.1215371 | $i$ | 7.40374 | | −0.22476568 | +0.43893006 | |
| $P$ | 4.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 31 | 691 | 0.2+ | 0.1− | 2006 09 02 | 620 | 0.3+ | 0.2− | 2006 09 20 | 699 | 0.6− | 0.0 |
| 1997 07 31 | 691 | 0.2− | 0.4+ | 2006 09 02 | 620 | 1.7+ | 0.9+ | 2006 09 28 | 703 | 0.0 | 0.2+ |
| 1997 07 31 | 691 | 0.4− | 0.8+ | 2006 09 05 | 620 | 0.3− | 1.0+ | 2006 09 28 | 703 | 0.9− | 0.1− |
| 2000 02 12 | 645 | 0.0 | 0.4+ | 2006 09 05 | 620 | 0.2− | 0.4+ | 2006 09 28 | 703 | 0.2+ | 0.5+ |
| 2000 02 12 | 645 | 0.0 | 0.3+ | 2006 09 19 | 620 | 0.3− | 0.4− | 2006 09 28 | 703 | 0.4+ | 0.4− |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 620 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2004 02 12 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 699 | 0.8+ | 1.9− | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2004 02 12 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 699 | 0.3− | 1.1− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2006 09 02 | 620 | 0.4+ | 1.0+ | 2006 09 20 | 699 | 0.8− | 0.6+ | | | | |

**2006 RX = 2004 EX$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.99373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22489984 | $\omega$ | 28.43183 | | +0.91149971 | −0.40924835 | |
| $a$ | 2.6779962 | $\Omega$ | 355.14146 | | +0.22065449 | +0.57076208 | |
| $e$ | 0.1254194 | $i$ | 28.98137 | | +0.34710210 | +0.71186125 | |
| $P$ | 4.38 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 05 | A13 | 0.0 | 0.0 | 2006 09 19 | A13 | 0.1+ | 0.2+ |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 09 19 | A13 | 0.1− | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 09 19 | A13 | 0.2− | 0.1− |
| 2004 03 21 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.9− | 0.7+ | 2006 09 21 | 106 | 0.2− | 0.6− |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2006 09 16 | 703 | 1.2+ | 0.5+ | 2006 09 21 | 106 | 0.1+ | 0.2+ |
| 2004 03 21 | 691 | 0.2− | 0.1+ | 2006 09 17 | 683 | 0.5+ | 0.2+ | 2006 09 21 | 106 | 0.2+ | 0.5+ |
| 2006 09 01 | A13 | 0.8− | 0.0 | 2006 09 17 | 683 | 0.1+ | 1.0+ | 2006 09 22 | 106 | 0.5− | 0.8− |
| 2006 09 01 | A13 | 0.2− | 0.1+ | 2006 09 17 | 683 | 0.0 | 1.6+ | 2006 09 27 | 703 | 0.4+ | 0.1− |
| 2006 09 01 | A13 | 0.2− | 0.3− | 2006 09 18 | 683 | 0.5− | 1.5− | 2006 09 27 | 703 | 0.5− | 0.0 |
| 2006 09 04 | A13 | 0.6− | 0.6+ | 2006 09 18 | 683 | 0.7+ | 0.2− | 2006 09 27 | 703 | 0.8+ | 0.1+ |
| 2006 09 04 | A13 | 0.3− | 0.1− | 2006 09 18 | 683 | 0.5+ | 0.9− | 2006 09 27 | 703 | 0.7− | 0.0 |
| 2006 09 04 | A13 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.5+ | 0.6+ |
| 2006 09 05 | A13 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.5− | 2006 09 27 | 703 | 0.5+ | 0.6+ |
| 2006 09 05 | A13 | 0.0 | 0.8− | 2006 09 19 | 699 | 0.4− | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.7+ |

**2006 RA$_1$ = 2002 TU$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.68539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23554951 | $\omega$ | 3.18628 | | +0.86922255 | +0.49150293 | |
| $a$ | 2.5966570 | $\Omega$ | 327.19929 | | −0.45578349 | +0.75452320 | |
| $e$ | 0.1273926 | $i$ | 5.68242 | | −0.19160787 | +0.43487884 | |
| $P$ | 4.18 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 10 | 691 | 0.0 | 0.3− | 2006 08 30 | 704 | 0.3+ | 1.1+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2000 01 10 | 691 | 0.2− | 0.5− | 2006 09 04 | A13 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2000 01 10 | 691 | 0.4− | 0.5− | 2006 09 04 | A13 | 0.2− | 0.3− | 2006 09 26 | 691 | 1.0− | 0.3+ |
| 2002 10 10 | 704 | 0.3− | 0.3− | 2006 09 04 | A13 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 10 10 | 704 | 0.0 | 0.4+ | 2006 09 05 | A13 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.1− | 0.4+ | 2006 09 05 | A13 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.1− | 2006 09 05 | A13 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2002 10 12 | 704 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 0.9+ | 1.1− | 2006 09 17 | 703 | 0.6− | 0.0 | 2006 10 09 | 644 | 0.3− | 0.3+ |
| 2002 11 01 | 644 | 0.4+ | 0.4− | 2006 09 17 | 703 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 11 01 | 644 | 0.2+ | 0.6− | 2006 09 17 | 703 | (1.8− | 0.1−) | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 11 01 | 644 | 0.2+ | 0.4− | 2006 09 18 | 704 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2002 11 13 | 644 | 0.2− | 0.3− | 2006 09 18 | 704 | 0.9+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 11 13 | 644 | 0.1+ | 0.3− | 2006 09 18 | 704 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.1+ | 1.0+ | 2006 09 19 | 699 | (1.2− | 1.6−) | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.9+ | 0.5+ | 2006 10 22 | 644 | 0.5+ | 0.1− |
| 2004 01 22 | 704 | 1.4+ | 0.4+ | 2006 09 19 | 699 | 0.5+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2004 02 11 | 291 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.4− |
| 2004 02 11 | 291 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2004 02 11 | 291 | 0.3− | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.6+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2006 08 30 | 704 | 0.7+ | 0.9+ | 2006 09 25 | 704 | 0.3− | 0.8− | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2006 08 30 | 704 | 0.4− | 0.8+ | 2006 09 25 | 704 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2006 08 30 | 704 | 0.2+ | 0.6− | 2006 09 25 | 704 | 0.1− | 0.5+ | | | | |

**2006 RH$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.89848 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21915286 | $\omega$ | 21.31077 | | +0.94764017 | −0.31925700 | |
| $a$ | 2.7246117 | $\Omega$ | 357.27560 | | +0.26634221 | +0.80274887 | |
| $e$ | 0.1588336 | $i$ | 8.81587 | | +0.17618152 | +0.50365585 | |
| $P$ | 4.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 0.0 | 0.2+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.7+ | 0.0 |
| 2001 06 30 | 644 | 0.4− | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.1− | 0.5− |
| 2001 06 30 | 644 | 0.4− | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.8+ | 0.2− |
| 2001 07 20 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.6− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2001 07 20 | 644 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2001 07 20 | 644 | 0.2+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.8+ |
| 2004 03 15 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.5− | 2006 10 17 | 703 | 0.4+ | 0.6+ |
| 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2004 04 21 | 691 | 0.4+ | 0.3+ | 2006 09 21 | 704 | 0.7+ | 1.3+ | 2006 10 17 | 703 | (1.7+ | 0.3−) |
| 2004 04 21 | 691 | 0.3+ | 0.1+ | 2006 09 21 | 704 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2004 04 21 | 691 | 0.4+ | 0.2+ | 2006 09 21 | 704 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2006 09 04 | 163 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2006 09 04 | 163 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 04 | 163 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2006 09 04 | 163 | 0.4+ | 0.2+ | 2006 09 25 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2006 09 04 | 163 | 0.5+ | 0.3− | 2006 09 25 | 704 | 0.4+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2006 09 12 | 163 | 0.4− | 0.3+ | 2006 09 27 | 699 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2006 09 12 | 163 | 0.6− | 0.1+ | 2006 09 27 | 699 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2006 09 12 | 163 | 0.8− | 0.2+ | 2006 09 27 | 699 | 0.5+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2006 09 12 | 163 | 0.4− | 0.2− | 2006 09 27 | 699 | 1.0− | 0.3− | 2006 10 25 | A24 | 0.2− | 0.4+ |
| 2006 09 16 | 644 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.0 | 2006 10 25 | A24 | 0.6− | 0.1+ |
| 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.4− | | | | |
| 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 09 29 | 704 | 1.2+ | 0.3− | | | | |

**2006 RN$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.20585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20951714 | $\omega$ | 231.16808 | | +0.83005442 | +0.52544757 | |
| $a$ | 2.8075210 | $\Omega$ | 96.38206 | | −0.43544180 | +0.81998321 | |
| $e$ | 0.2008570 | $i$ | 10.83722 | | −0.34842517 | +0.22700747 | |
| $P$ | 4.70 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.0 | 0.1− | 2006 06 18 | E12 | 0.9+ | 0.5+ | 2006 08 25 | E12 | 0.3− | 0.4− |
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2006 06 18 | E12 | 0.3− | 1.4+ | 2006 09 09 | 644 | 0.1− | 0.2+ |
| 2002 11 23 | 644 | 0.2− | 0.2+ | 2006 06 18 | E12 | 0.3− | 0.6+ | 2006 09 09 | 644 | 0.4− | 0.5+ |
| 2002 12 10 | 644 | 0.1− | 0.0 | 2006 06 18 | E12 | 0.3+ | 0.0 | 2006 09 09 | 644 | 0.1− | 0.6+ |
| 2002 12 10 | 644 | 0.2+ | 0.0 | 2006 07 18 | E12 | 0.3+ | 0.2+ | 2006 09 09 | 644 | 0.1+ | 0.1− |
| 2002 12 10 | 644 | 0.1+ | 0.1+ | 2006 07 18 | E12 | 0.1+ | 0.4− | 2006 09 09 | 644 | 0.0 | 0.5+ |
| 2004 02 11 | 691 | 0.3+ | 0.2+ | 2006 07 18 | E12 | 0.0 | 0.1+ | 2006 09 09 | 644 | 0.0 | 0.2+ |
| 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 08 14 | 644 | 0.1+ | 0.1+ | 2006 09 12 | E12 | 0.4− | 0.0 |
| 2004 02 11 | 691 | 0.0 | 0.6+ | 2006 08 14 | 644 | 0.3+ | 0.0 | 2006 09 12 | E12 | 0.1+ | 0.5− |
| 2005 04 04 | 703 | 0.3− | 0.4− | 2006 08 14 | 644 | 0.3− | 0.5+ | 2006 09 12 | E12 | 0.2+ | 0.1− |
| 2005 04 04 | 703 | 2.1− | 1.5+ | 2006 08 25 | E12 | 0.6− | 0.1+ | 2006 09 12 | E12 | 0.2− | 0.2− |
| 2005 04 04 | 703 | 0.1− | 0.3− | 2006 08 25 | E12 | (1.9− | 1.5+) | | | | |
| 2005 04 04 | 703 | 2.0+ | 0.2− | 2006 08 25 | E12 | 0.0 | 0.3+ | | | | |

**2006 RX$_1$ = 1999 RF$_{238}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.74751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28263180 | $\omega$ | 227.20180 | | +0.98471233 | +0.14476281 | |
| $a$ | 2.2996162 | $\Omega$ | 124.25047 | | −0.10477180 | +0.93654797 | |
| $e$ | 0.1916611 | $i$ | 6.73069 | | −0.13915640 | +0.31925168 | |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 0.2+ | 0.1− | 2006 09 14 | 734 | 0.1+ | 0.6− | 2006 09 30 | 704 | 0.5+ | 0.7+ |
| 1999 09 08 | 703 | 0.1+ | 0.0 | 2006 09 14 | 734 | 0.1+ | 0.3− | 2006 09 30 | 704 | 0.3+ | 0.8+ |
| 1999 09 08 | 703 | 0.3− | 0.8+ | 2006 09 14 | 734 | 0.0 | 0.3− | 2006 09 30 | 704 | 0.2+ | 0.5+ |
| 1999 09 08 | 703 | 0.7+ | 1.3+ | 2006 09 15 | H36 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.6− |
| 1999 09 14 | 704 | 0.3− | 1.1− | 2006 09 15 | H36 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 1999 09 14 | 704 | 0.5+ | 1.4− | 2006 09 18 | 703 | 0.6+ | 0.9− | 2006 10 16 | 703 | 1.0+ | 0.0 |
| 1999 09 14 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 1999 09 14 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.5− | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 1999 10 08 | 704 | 0.7− | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 10 17 | 703 | 0.9− | 0.7− |
| 1999 10 08 | 704 | 0.1− | 0.4+ | 2006 09 21 | 699 | (1.8+ | 0.1−) | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 1999 10 08 | 704 | 0.9− | 0.9+ | 2006 09 21 | 699 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.8+ |
| 1999 10 08 | 704 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 1999 10 08 | 704 | 0.6− | 0.4+ | 2006 09 21 | 699 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2003 12 17 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2003 12 17 | 691 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2003 12 17 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2006 08 19 | 699 | 0.8− | 0.8+ | 2006 09 25 | 699 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 19 | 699 | 0.0 | 1.0− | 2006 09 26 | 703 | (2.9− | 2.2−) | 2006 10 22 | 644 | 0.3− | 0.2− | | |
| 2006 08 19 | 699 | (2.5− | 0.6+) | 2006 09 26 | 703 | 0.9− | 0.3− | 2006 10 22 | 644 | 0.3− | 0.4− | | |
| 2006 08 19 | 699 | 0.4− | 1.1+ | 2006 09 26 | 703 | 0.1− | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.2− | | |
| 2006 09 13 | 734 | 0.0 | 0.3− | 2006 09 26 | 703 | 1.0− | 0.1+ | 2006 10 23 | 644 | 0.4+ | 0.4+ | | |
| 2006 09 13 | 734 | 0.1+ | 0.3− | 2006 09 29 | 699 | 0.5− | 0.7− | 2006 10 23 | 644 | 0.4− | 0.1+ | | |
| 2006 09 13 | 734 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.2− | | |
| 2006 09 13 | 734 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.6+ | | |
| 2006 09 13 | 734 | 0.0 | 0.3− | 2006 09 29 | 699 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.4− | | |
| 2006 09 13 | 734 | 0.1+ | 0.2− | 2006 09 30 | 704 | (1.7+ | 0.1−) | 2006 10 28 | 703 | 0.1+ | 0.1+ | | |
| 2006 09 14 | 734 | 0.2+ | 0.3− | 2006 09 30 | 704 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.8+ | | |

### 2006 RY$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.08998 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17657394 | $\omega$ | 216.12185 | | +0.98892653 | | −0.11117387 |
| $a$ | 3.1466733 | $\Omega$ | 149.80946 | | +0.13163023 | | +0.96302433 |
| $e$ | 0.2189476 | $i$ | 11.27355 | | −0.06854056 | | +0.24540682 |
| $P$ | 5.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.7+ | 0.0 | 2006 09 14 | 734 | 0.6− | 1.0+ | 2006 09 26 | 703 | 0.2+ | 0.4+ |
| 2000 08 24 | 704 | 0.0 | 0.7+ | 2006 09 15 | H36 | 0.0 | 0.8− | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 2000 08 24 | 704 | 0.9− | 0.9− | 2006 09 15 | H36 | 1.0+ | 0.0 | 2006 09 26 | 703 | 0.7− | 0.2− |
| 2000 09 03 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.9+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2000 09 03 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | (2.0− | 0.1−) | 2006 10 21 | 644 | 0.7− | 0.2+ |
| 2000 09 03 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 09 13 | 734 | 0.3+ | 0.6− | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 10 28 | 703 | 0.4− | 0.1+ |
| 2006 09 13 | 734 | 0.8+ | 0.1− | 2006 09 25 | 699 | 0.6+ | 0.3+ | 2006 10 28 | 703 | (2.5− | 0.6+) |
| 2006 09 13 | 734 | 0.0 | 0.1+ | 2006 09 25 | 734 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.0 | 1.2− |
| 2006 09 13 | 734 | 0.3+ | 0.4+ | 2006 09 25 | 734 | 0.0 | 0.0 | 2006 10 28 | 703 | 1.1− | 0.9− |
| 2006 09 13 | 734 | 0.6− | 0.4− | 2006 09 25 | 734 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2006 09 13 | 734 | 0.5− | 1.0− | 2006 09 25 | 699 | 1.3− | 1.2+ | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2006 09 14 | 734 | 0.0 | 0.5− | 2006 09 25 | 699 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2006 09 14 | 734 | 0.4+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 1.3+ | 2006 11 11 | G96 | 0.4+ | 0.1+ |
| 2006 09 14 | 734 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.5+ | 0.4+ | | | | |

### 2006 RZ$_1$ = 2002 TQ$_{234}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.25977 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23030141 | $\omega$ | 98.98682 | | +0.90658002 | | −0.38634242 |
| $a$ | 2.6359570 | $\Omega$ | 283.88568 | | +0.28450779 | | +0.85674498 |
| $e$ | 0.2028739 | $i$ | 10.07707 | | +0.31171780 | | +0.34165418 |
| $P$ | 4.28 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.3− | 0.1− | 2002 10 10 | 704 | 0.4+ | 1.0− | 2006 09 11 | 703 | (2.4+ | 1.4−) |
| 2002 10 06 | 704 | 0.4− | 0.1− | 2002 11 01 | 644 | 0.2+ | 0.5+ | 2006 09 11 | 703 | 0.0 | 1.3− |
| 2002 10 06 | 704 | 1.4− | 0.7+ | 2002 11 01 | 644 | 0.1− | 0.3+ | 2006 09 11 | 703 | 0.1+ | 0.3− |
| 2002 10 06 | 704 | 0.3+ | 0.2+ | 2002 11 01 | 644 | 0.0 | 0.3+ | 2006 09 11 | 703 | (1.6+ | 0.3+) |
| 2002 10 06 | 704 | 0.1+ | 0.3+ | 2006 08 30 | 699 | (1.0+ | 1.8+) | 2006 09 14 | 691 | 0.3+ | 0.1+ |
| 2002 10 10 | 704 | 0.2+ | 0.8− | 2006 08 30 | 699 | (2.2− | 0.5−) | 2006 09 14 | 691 | 0.2+ | 0.2+ |
| 2002 10 10 | 704 | 0.2− | 0.3+ | 2006 08 30 | 699 | (0.2− | 2.5−) | 2006 09 14 | 691 | 0.4− | 0.1+ |
| 2002 10 10 | 704 | 1.2+ | 0.6− | 2006 08 30 | 699 | 0.5− | 0.5+ | | | | |

### 2006 RC$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.75574 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36071375 | $\omega$ | 213.85677 | | +0.74843534 | | −0.66106407 |
| $a$ | 1.9544636 | $\Omega$ | 188.18383 | | +0.66056839 | | +0.75020749 |
| $e$ | 0.1098978 | $i$ | 21.98077 | | +0.05910966 | | −0.01352814 |
| $P$ | 2.73 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 703 | 1.4− | 0.3+ | 2006 09 14 | A44 | 0.4+ | 0.3− | 2006 09 22 | 703 | 0.1+ | 0.8− |
| 2005 03 13 | 703 | 0.1+ | 1.4+ | 2006 09 14 | A44 | 0.1− | 0.1− | 2006 09 22 | 703 | 0.4− | 1.2+ |
| 2005 03 13 | 703 | 0.1− | 0.8+ | 2006 09 14 | A44 | 0.1− | 0.2− | 2006 09 22 | 703 | 0.4− | 0.2− |
| 2005 03 13 | 703 | 0.9+ | 1.0− | 2006 09 15 | I77 | 0.4− | 0.4+ | 2006 09 30 | 699 | (3.9+ | 1.5+) |
| 2005 03 13 | 703 | (2.3+ | 0.0 ) | 2006 09 15 | 850 | 0.2+ | 1.0− | 2006 09 30 | 699 | 0.5+ | 0.7+ |
| 2005 03 13 | 703 | 0.7+ | 0.4− | 2006 09 15 | I77 | 0.2+ | 0.4+ | 2006 09 30 | 699 | 0.2+ | 0.2+ |
| 2005 03 13 | 703 | 0.7− | 0.7− | 2006 09 15 | 850 | 0.6+ | 0.1− | 2006 09 30 | 699 | 0.3− | 0.2− |
| 2005 03 13 | 703 | 0.2+ | 0.3− | 2006 09 15 | 850 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2005 05 04 | G96 | 0.0 | 0.1+ | 2006 09 15 | 854 | 0.8− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2005 05 04 | G96 | 0.2+ | 0.0 | 2006 09 15 | 854 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 2005 05 04 | G96 | 0.0 | 0.6+ | 2006 09 15 | 854 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2005 05 04 | G96 | 0.3+ | 0.3+ | 2006 09 16 | 644 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 20 | 699 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2006 09 14 | 703 | 0.2+ | 0.6+ | 2006 09 20 | 699 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2006 09 14 | 703 | 0.3− | 0.4− | 2006 09 20 | 699 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2006 09 14 | 703 | 1.1− | 0.6− | 2006 09 20 | 699 | (0.9− | 2.0+) | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2006 09 14 | 703 | 0.5− | 0.4− | 2006 09 22 | 703 | 0.5+ | 0.2− | | | | |

### 2006 RD$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.53547 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27466951 | $\omega$ | 295.37381 | | −0.19736722 | | −0.97547436 |
| $a$ | 2.3438461 | $\Omega$ | 165.00487 | | +0.97886914 | | −0.20152105 |
| $e$ | 0.2690308 | $i$ | 22.12488 | | +0.05349189 | | +0.08853836 |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 644 | 0.4+ | 0.2− | 2004 02 16 | 703 | 0.2+ | 0.1− | 2006 09 15 | 850 | 0.3− | 0.3+ |
| 2004 02 13 | 644 | 0.1− | 0.1+ | 2004 02 16 | 703 | 0.4+ | 0.1− | 2006 09 15 | 850 | 0.0 | 0.1− |
| 2004 02 13 | 644 | 0.1+ | 0.2+ | 2004 02 16 | 703 | 1.4− | 1.6+ | 2006 09 15 | 850 | 1.4+ | 0.3+ |
| 2004 02 13 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.5+ | 0.3− | 2006 09 15 | 734 | 0.2− | 0.7− |
| 2004 02 13 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.2+ | 0.5− | 2006 09 15 | 734 | 0.2− | 0.1+ |
| 2004 02 13 | 644 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.4+ | 2006 09 15 | 734 | 0.6− | 0.6+ |
| 2004 02 16 | 703 | 0.2+ | 1.1− | 2006 09 14 | 703 | 1.3− | 0.1+ | | | | |

### 2006 RK$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.55644 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27721332 | $\omega$ | 243.60850 | | +0.50682054 | | +0.85628742 |
| $a$ | 2.3294854 | $\Omega$ | 57.19645 | | −0.74271774 | | +0.49234786 |
| $e$ | 0.1421660 | $i$ | 6.80002 | | −0.43761090 | | +0.15609430 |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 26 | 691 | 0.5+ | 0.4− | 2006 09 18 | 703 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2003 11 26 | 691 | 0.9− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 1.5− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2003 11 26 | 691 | 0.2+ | 0.3− | 2006 09 18 | 703 | 1.3+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2006 09 26 | F84 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2003 12 19 | 691 | 0.1− | 0.3+ | 2006 09 26 | F84 | 0.5+ | 1.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2006 09 14 | F84 | 0.2+ | 0.3− | 2006 10 02 | 703 | (1.6− | 0.2+) | 2006 10 19 | 703 | 0.1− | 0.8− |
| 2006 09 14 | F84 | 0.4+ | 0.4+ | 2006 10 02 | 703 | 0.1− | 1.1+ | 2006 10 19 | 703 | 0.7− | 0.9− |
| 2006 09 14 | F84 | 0.3− | 0.3− | 2006 10 02 | 703 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.7− | 0.2− |
| 2006 09 15 | F84 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.2− | 1.3+ |
| 2006 09 15 | F84 | 0.7+ | 0.7− | 2006 10 10 | 644 | 0.1− | 0.0 | | | | |
| 2006 09 18 | 703 | 1.1− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ | | | | |

### 2006 RU$_2$ = 1994 JO$_5$ = 2003 YV$_{127}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.14487 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26449613 | $\omega$ | 308.55850 | | +0.99176877 | | +0.06890458 |
| $a$ | 2.4035685 | $\Omega$ | 47.77342 | | −0.00821588 | | +0.87536367 |
| $e$ | 0.1616030 | $i$ | 8.38023 | | −0.12777793 | | +0.47852964 |
| $P$ | 3.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 04 | 691 | 0.3− | 0.4− | 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 703 | 0.4− | 0.3+ |
| 1994 05 04 | 691 | 0.3− | 0.0 | 2005 05 14 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 703 | 0.3− | 0.3− |
| 1994 05 04 | 691 | 0.1− | 0.5− | 2005 05 14 | 691 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.2− | 0.4− |
| 1994 05 11 | 691 | 0.1− | 0.2+ | 2006 08 16 | 644 | 0.2+ | 0.3− | 2006 09 21 | 699 | 0.1− | 0.1− |
| 1994 05 11 | 691 | 0.1− | 0.1− | 2006 08 16 | 644 | 0.3− | 0.2− | 2006 09 21 | 699 | 0.3+ | 0.8+ |
| 1994 05 11 | 691 | 0.5+ | 0.4+ | 2006 08 16 | 644 | 0.1− | 0.3− | 2006 09 21 | 699 | 1.1− | 0.6+ |
| 1999 12 13 | 704 | 0.7+ | 0.3− | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.5− |
| 1999 12 13 | 704 | 0.3+ | 0.5+ | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 1999 12 13 | 704 | 0.1− | 0.2− | 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.9− |
| 2003 12 27 | 704 | 0.4+ | 1.0+ | 2006 09 12 | 704 | 0.4+ | 0.7+ | 2006 09 26 | 703 | 0.1+ | 0.2+ |
| 2003 12 27 | 704 | (1.4+ | 2.3+) | 2006 09 12 | 704 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2003 12 27 | 704 | (0.5+ | 1.7+) | 2006 09 12 | 704 | 0.1− | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2003 12 27 | 704 | 0.6+ | 1.4+ | 2006 09 12 | 704 | 1.0− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2003 12 29 | 704 | (0.3− | 2.3+) | 2006 09 14 | 703 | 0.6− | 0.5+ | 2006 10 19 | 703 | 1.1− | 0.7− |
| 2003 12 29 | 704 | 0.0 | 0.9+ | 2006 09 14 | 703 | 0.3+ | 0.0 | 2006 10 19 | 703 | (0.4− | 2.0−) |
| 2003 12 29 | 704 | 0.9− | 0.9+ | 2006 09 14 | 703 | 0.7+ | 0.8+ | 2006 10 19 | 703 | (1.0+ | 1.7−) |
| 2003 12 29 | 704 | (1.1− | 1.7+) | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.3+ |
| 2005 04 02 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2005 04 02 | 691 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.8+ | 0.9+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2005 04 18 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.0 | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2005 04 18 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 1.0− | 0.4+ | 2006 10 24 | 644 | 0.1− | 0.2+ |
| 2005 04 18 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 703 | 0.4− | 0.9+ | 2006 10 24 | 644 | 0.2− | 0.6+ |

## 2006 $RW_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.71474 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30288578 | $\omega$ | 268.50983 | | +0.57972238 | | +0.81406074 |
| $a$ | 2.1959214 | $\Omega$ | 36.99295 | | −0.72251887 | | +0.53345540 |
| $e$ | 0.1950786 | $i$ | 3.33742 | | −0.37668082 | | +0.22963113 |
| $P$ | 3.25 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 21 | 691 | 0.2− | 0.0 | 2003 11 30 | 291 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.6− |
| 2003 10 21 | 691 | 0.1+ | 0.1− | 2006 08 21 | 644 | 0.2− | 0.7− | 2006 09 20 | 644 | 0.4+ | 0.0 |
| 2003 10 21 | 691 | 0.1− | 0.3− | 2006 08 21 | 644 | 0.2− | 0.5− | 2006 09 20 | 644 | 0.5+ | 0.4+ |
| 2003 10 22 | 695 | 0.3− | 0.1− | 2006 08 21 | 644 | 0.6− | 0.1− | 2006 09 20 | 644 | 0.5+ | 0.1− |
| 2003 10 22 | 695 | 0.2+ | 0.1− | 2006 09 12 | 704 | 0.4+ | 1.2+ | 2006 09 21 | 699 | 1.1+ | 0.1− |
| 2003 10 28 | 704 | 0.8− | 1.4+ | 2006 09 12 | 704 | 0.0 | 1.5+ | 2006 09 21 | 699 | 0.9− | 1.2− |
| 2003 10 28 | 704 | 0.3− | 1.1+ | 2006 09 12 | 704 | (1.6+ | 0.2−) | 2006 09 21 | 699 | 0.1− | 0.4− |
| 2003 10 28 | 704 | 0.7− | 0.9+ | 2006 09 12 | 704 | 0.9+ | 0.3− | 2006 09 21 | 699 | 1.0− | 0.5+ |
| 2003 10 28 | 704 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.4+ | 2006 11 17 | G96 | (3.1+ | 1.0+) |
| 2003 11 19 | 291 | 0.1+ | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 11 17 | G96 | (2.8+ | 1.5+) |
| 2003 11 19 | 291 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 11 17 | G96 | (3.6+ | 1.0+) |
| 2003 11 19 | 291 | 0.9+ | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.5+ | 2006 11 17 | G96 | (2.9+ | 1.3+) |
| 2003 11 30 | 291 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.0 | 0.5+ | | | | |
| 2003 11 30 | 291 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.6− | 1.2− | | | | |

## 2006 $RX_2$ = 2000 $EG_{176}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.56699 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22643516 | $\omega$ | 163.08508 | | +0.91540886 | | +0.40231110 |
| $a$ | 2.6658772 | $\Omega$ | 173.14877 | | −0.38087747 | | +0.87627020 |
| $e$ | 0.1419437 | $i$ | 6.31911 | | −0.13022661 | | +0.26513452 |
| $P$ | 4.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 691 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.7− |
| 2000 03 03 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 734 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.0 | 0.1+ |
| 2000 03 03 | 691 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2000 03 12 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 734 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.9+ | 0.8+ |
| 2000 03 12 | 691 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2000 03 12 | 691 | 0.4+ | 0.2− | 2006 09 15 | 734 | 0.4+ | 0.4− | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2002 11 14 | 644 | 0.0 | 0.1− | 2006 09 15 | 734 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.6− |
| 2002 11 14 | 644 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.5− |
| 2002 11 14 | 644 | 0.1− | 0.1− | 2006 09 16 | 699 | 0.7− | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.1+ |
| 2002 11 22 | 644 | 0.3− | 0.3+ | 2006 09 16 | 699 | (1.6+ | 0.8+) | 2006 09 25 | 699 | 1.2+ | 0.3− |
| 2002 11 22 | 644 | 0.3− | 0.6+ | 2006 09 16 | 699 | 0.4+ | 0.8+ | 2006 09 27 | 704 | 0.6− | 1.1+ |
| 2002 11 22 | 644 | 0.3− | 0.1+ | 2006 09 17 | 941 | 0.1− | 0.4− | 2006 09 27 | 704 | 0.1− | 0.2− |
| 2005 04 30 | 599 | (2.5+ | 2.6+) | 2006 09 17 | 941 | 0.0 | 0.5− | 2006 09 27 | 704 | 0.6− | 0.7+ |
| 2005 04 30 | 599 | 0.7− | 1.0+ | 2006 09 17 | 941 | 0.2+ | 0.6− | 2006 09 27 | 704 | 0.5− | 0.0 |
| 2005 04 30 | 599 | 0.4+ | 1.0+ | 2006 09 17 | 704 | 0.2+ | 0.8+ | 2006 09 27 | 704 | 1.0− | 1.4+ |
| 2005 04 30 | 599 | 0.1− | 0.7+ | 2006 09 17 | 704 | 0.6+ | 0.6− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 09 17 | 704 | 0.1+ | 0.5− | 2006 10 09 | 644 | 0.4+ | 0.1+ |
| 2006 08 27 | 699 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.4+ | 0.6− | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2006 08 27 | 699 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.5− | 2.6+ |
| 2006 08 27 | 699 | 0.8− | 0.4+ | 2006 09 19 | 699 | 1.4− | 0.3− | 2006 10 16 | 703 | 1.2+ | 1.1+ |
| 2006 09 12 | 703 | 0.8− | 1.0− | 2006 09 19 | 699 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.9+ | 0.1− |
| 2006 09 12 | 703 | 0.6− | 1.0− | 2006 09 19 | 699 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2006 09 12 | 703 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2006 09 12 | 703 | (1.8− | 0.9−) | 2006 09 20 | 644 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2006 09 13 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.6− |
| 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2006 09 13 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.4− | 0.0 | | | | |

## 2006 $RZ_2$ = 2005 $GE_{93}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.68190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21952324 | $\omega$ | 273.77546 | | −0.03151392 | | +0.99940879 |
| $a$ | 2.7215462 | $\Omega$ | 354.36333 | | −0.85248522 | | −0.03405554 |
| $e$ | 0.1742171 | $i$ | 8.04479 | | −0.52180056 | | −0.00472104 |
| $P$ | 4.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 15 | G96 | 0.4− | 0.1+ | 2005 05 01 | 644 | 0.5− | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 2005 03 15 | G96 | 0.8− | 0.1− | 2006 09 13 | 644 | 0.2+ | 0.3+ | 2006 09 23 | 691 | 0.2− | 0.4+ |
| 2005 03 15 | G96 | 0.2+ | 0.4+ | 2006 09 13 | 644 | 0.4+ | 0.4− | 2006 09 23 | 691 | 0.3− | 0.2+ |
| 2005 03 15 | G96 | 0.2+ | 1.3+ | 2006 09 13 | 644 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 2005 04 06 | 691 | 0.2+ | 0.0 | 2006 09 14 | 734 | 0.2+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 06 | 691 | 0.3− | 0.0 | 2006 09 14 | 734 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2005 04 06 | 691 | 0.0 | 0.3− | 2006 09 14 | 734 | 0.3+ | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2005 04 10 | 691 | 0.2− | 0.3+ | 2006 09 14 | 734 | 0.2− | 0.0 | 2006 09 25 | 734 | 0.3+ | 0.1− |
| 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 09 15 | H36 | 1.0+ | 0.4− | 2006 09 25 | 734 | 0.2+ | 0.1− |
| 2005 04 10 | 691 | 0.1+ | 0.0 | 2006 09 15 | H36 | 0.4− | 0.9− | 2006 09 25 | 734 | 0.2+ | 0.2+ |
| 2005 04 15 | 691 | 0.2+ | 0.2− | 2006 09 15 | H36 | 0.2+ | 0.7+ | 2006 09 25 | 734 | 0.0 | 0.1+ |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 734 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.5+ |
| 2005 04 15 | 691 | 0.2+ | 0.1− | 2006 09 15 | 734 | 0.0 | 0.4− | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2005 05 01 | 644 | 0.4− | 0.0 | 2006 09 15 | 734 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2005 05 01 | 644 | 0.6− | 0.0 | 2006 09 15 | 734 | 0.1− | 0.5− | 2006 10 19 | G96 | 0.5− | 0.1+ |

## 2006 $RA_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.61909 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20393891 | $\omega$ | 88.52320 | | +0.93235468 | | +0.28235997 |
| $a$ | 2.8584854 | $\Omega$ | 255.03450 | | −0.34607490 | | +0.87773490 |
| $e$ | 0.1657043 | $i$ | 13.51690 | | +0.10462752 | | +0.38711019 |
| $P$ | 4.83 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 699 | (0.3− | 2.0+) | 2006 08 10 | 644 | 0.1− | 0.4+ | 2006 09 20 | 699 | 0.7+ | 0.3− |
| 2001 07 17 | 699 | 0.1+ | 0.5− | 2006 08 10 | 644 | 0.3+ | 0.1− | 2006 09 27 | 703 | 0.5− | 0.4+ |
| 2001 07 17 | 699 | 0.1− | 0.6− | 2006 08 10 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.1− |
| 2001 07 17 | 699 | 0.1+ | 0.4+ | 2006 09 01 | 704 | 0.6− | 0.5+ | 2006 09 27 | 703 | 0.4+ | 0.6+ |
| 2001 07 19 | 644 | 0.3+ | 0.0 | 2006 09 01 | 704 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.4+ | 0.2− |
| 2001 07 19 | 644 | 0.1+ | 0.3+ | 2006 09 01 | 704 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.2− | 0.6+ |
| 2001 07 19 | 644 | 0.3+ | 0.1+ | 2006 09 01 | 704 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 2001 08 12 | 644 | 0.2− | 0.2+ | 2006 09 01 | 704 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.9− | 0.0 |
| 2001 08 12 | 644 | 0.4− | 0.3+ | 2006 09 11 | 703 | 0.7+ | 0.9− | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2001 08 12 | 644 | 0.4− | 0.3+ | 2006 09 11 | 703 | 0.4− | 0.0 | 2006 10 23 | 703 | 0.2− | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.5+ | 0.8− | 2006 10 23 | 703 | 0.5+ | 0.5− |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 09 11 | 703 | 0.2− | 0.2− | 2006 10 23 | 703 | 0.1+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 06 21 | 703 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.3− | 0.6+ | 2006 10 23 | 703 | 0.2+ | 0.2+ | | |
| 2006 06 21 | 703 | 1.2+ | 0.1+ | 2006 09 20 | 699 | 0.5− | 0.5+ | | | | | | |
| 2006 06 21 | 703 | 1.3− | 0.4+ | 2006 09 20 | 699 | 0.2− | 0.8+ | | | | | | |

**2006 RM$_3$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.75039 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36757564 | $\omega$ | 66.36603 | | +0.49096920 | −0.87038041 | |
| $a$ | 1.9300634 | $\Omega$ | 353.82777 | | +0.61813382 | +0.37816933 | |
| $e$ | 0.0975398 | $i$ | 20.26774 | | +0.61388909 | +0.31531872 | |
| $P$ | 2.68 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.4+ | 0.5+ | 2006 09 15 | 734 | 0.6+ | 1.0− | 2006 09 24 | 106 | 0.1− | 0.4− | | |
| 1997 03 02 | 691 | 0.3+ | 0.2− | 2006 09 16 | 699 | 1.2− | 1.0+ | 2006 09 24 | 106 | 0.8− | 1.2+ | | |
| 1997 03 02 | 691 | 0.1− | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.2− | 0.4+ | | |
| 2005 03 10 | G96 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.7+ | 0.4− | 2006 09 25 | 699 | 0.1− | 1.1− | | |
| 2005 03 10 | G96 | 0.3+ | 0.3+ | 2006 09 16 | 699 | 0.5− | 0.9+ | 2006 09 25 | 699 | 0.4+ | 1.0+ | | |
| 2005 03 10 | G96 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.7− | 1.2+ | 2006 09 25 | 699 | 0.7− | 1.0+ | | |
| 2005 03 10 | G96 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 1.4+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.1+ | | |
| 2006 09 12 | 703 | 0.6− | 0.8+ | 2006 09 20 | 704 | 1.6+ | 1.1− | 2006 09 29 | 704 | 0.7+ | 0.9+ | | |
| 2006 09 12 | 703 | 1.3− | 0.0 | 2006 09 20 | 704 | 1.1+ | 1.1− | 2006 09 29 | 704 | 0.1− | 0.3+ | | |
| 2006 09 12 | 703 | 1.1− | 1.3+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.1+ | | |
| 2006 09 12 | 703 | 0.3− | 1.4− | 2006 09 23 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.9+ | 0.7− | | |
| 2006 09 15 | 734 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.8− | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.3+ | | |
| 2006 09 15 | 734 | 0.1− | 0.9− | 2006 09 24 | 106 | 0.3− | 1.8− | 2006 10 16 | 703 | 0.9+ | 0.8+ | | |
| 2006 09 15 | 734 | 0.3− | 0.3+ | 2006 09 24 | 106 | 0.0 | 0.6− | | | | | | |

**2006 RN$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.97602 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24380753 | $\omega$ | 139.55586 | | +0.86618741 | +0.49896045 | |
| $a$ | 2.5376865 | $\Omega$ | 190.61690 | | −0.48833204 | +0.83347065 | |
| $e$ | 0.2410313 | $i$ | 8.59321 | | −0.10607165 | +0.23741344 | |
| $P$ | 4.04 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 704 | 0.8+ | 0.1+ | 2002 09 12 | 608 | 0.2+ | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.4− | | |
| 2002 08 11 | 704 | 0.5− | 0.4− | 2002 09 12 | 608 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ | | |
| 2002 08 11 | 704 | 0.0 | 0.3+ | 2002 09 13 | 644 | 0.4− | 0.3− | 2006 09 17 | 691 | 0.1− | 0.0 | | |
| 2002 08 11 | 704 | 0.1− | 0.2− | 2002 09 13 | 644 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1− | | |
| 2002 08 18 | 608 | 0.6+ | 0.3+ | 2002 09 13 | 644 | 0.4− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− | | |
| 2002 08 18 | 608 | 0.2+ | 0.7+ | 2006 08 27 | 699 | 0.5− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.2− | | |
| 2002 08 18 | 608 | 0.7+ | 0.8+ | 2006 08 27 | 699 | 0.3− | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 2002 08 28 | 644 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.8− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2002 08 28 | 644 | 0.0 | 0.0 | 2006 08 27 | 699 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.0 | | |
| 2002 08 28 | 644 | 0.2− | 0.2+ | 2006 09 11 | 703 | 1.3+ | 1.2+ | 2006 10 21 | 291 | 0.4− | 0.2+ | | |
| 2002 09 06 | 704 | 1.1− | 0.2+ | 2006 09 11 | 703 | 0.2+ | 0.3− | 2006 10 21 | 291 | 0.1− | 0.3+ | | |
| 2002 09 06 | 704 | 0.3− | 0.3+ | 2006 09 11 | 703 | 0.7+ | 1.3− | 2006 10 21 | 291 | 0.3− | 0.3+ | | |
| 2002 09 06 | 704 | 0.0 | 0.6+ | 2006 09 11 | 703 | 0.3− | 0.5− | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2002 09 06 | 704 | 0.4+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.6+ | 0.2− | | |
| 2002 09 06 | 704 | 0.3− | 1.0+ | 2006 09 15 | 691 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 1.0− | | |
| 2002 09 12 | 608 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.0 | 0.5− | | |

**2006 RO$_3$ = 2005 JB$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.59162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17572956 | $\omega$ | 52.82005 | | +0.33541995 | +0.91321704 | |
| $a$ | 3.1567451 | $\Omega$ | 238.33871 | | −0.92732812 | +0.27678514 | |
| $e$ | 0.1976175 | $i$ | 15.77242 | | −0.16600004 | +0.29903950 | |
| $P$ | 5.61 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1+ | 0.5+ | 2005 05 01 | 644 | 0.5+ | 0.3− | 2006 09 11 | 703 | 0.8+ | 1.0+ | | |
| 2001 09 25 | 704 | 0.6− | 0.0 | 2005 05 04 | 644 | 0.2− | 0.3− | 2006 09 15 | 704 | 0.1+ | 0.4+ | | |
| 2001 09 25 | 704 | 0.4+ | 0.6+ | 2005 05 04 | 644 | 0.3− | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.3− | | |
| 2001 09 25 | 704 | 1.4+ | 0.1+ | 2005 05 04 | 644 | 0.2− | 0.7− | 2006 09 15 | 704 | 0.5− | 0.1− | | |
| 2001 09 25 | 704 | 0.2− | 0.0 | 2006 08 10 | 644 | 0.0 | 0.1− | 2006 09 15 | 704 | 1.5− | 0.1+ | | |
| 2001 10 18 | 704 | 0.5+ | 0.5− | 2006 08 10 | 644 | 0.4− | 0.0 | 2006 09 15 | 704 | 0.0 | 0.3+ | | |
| 2001 10 18 | 704 | 0.3+ | 0.2− | 2006 08 10 | 644 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.1− | 0.3− | | |
| 2001 10 18 | 704 | 0.2− | 0.3− | 2006 08 29 | 699 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.1− | | |
| 2001 10 18 | 704 | 0.1− | 0.1+ | 2006 08 29 | 699 | 0.5+ | 0.1− | 2006 09 27 | 703 | 0.6− | 0.2− | | |
| 2001 10 18 | 704 | 0.6− | 0.6− | 2006 08 29 | 699 | 0.7− | 0.4− | 2006 09 27 | 703 | 0.4− | 0.1− | | |
| 2001 11 11 | 699 | 0.3− | 1.0− | 2006 08 29 | 699 | (2.6+ | 0.6−) | 2006 10 17 | 703 | 1.1+ | 0.4− | | |
| 2001 11 11 | 699 | 0.6− | 0.2+ | 2006 08 29 | 683 | 0.4+ | 0.7− | 2006 10 17 | 703 | 0.0 | 1.5− | | |
| 2001 11 11 | 699 | 0.1− | 0.2− | 2006 08 29 | 683 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.4− | | |
| 2001 11 11 | 699 | 0.3+ | 0.5− | 2006 09 11 | 703 | 0.1+ | 0.2+ | 2006 10 17 | 703 | (1.8− | 0.1−) | | |
| 2005 05 01 | 644 | 0.1− | 0.3− | 2006 09 11 | 703 | 1.4+ | 1.1+ | | | | | | |
| 2005 05 01 | 644 | 0.0 | 0.3− | 2006 09 11 | 703 | 0.6+ | 1.0+ | | | | | | |

**2006 RQ$_3$ = 1999 TS$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.25478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27625988 | $\omega$ | 59.54913 | | +0.81844517 | +0.55017086 | |
| $a$ | 2.3348421 | $\Omega$ | 266.58917 | | −0.56748312 | +0.72878200 | |
| $e$ | 0.2835521 | $i$ | 9.55552 | | −0.09005780 | +0.40766264 | |
| $P$ | 3.57 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.2− | 0.4− | 2006 09 11 | 703 | 0.6+ | 0.4− | 2006 09 20 | 699 | 1.2− | 0.1+ | | |
| 1999 10 12 | 704 | 0.3− | 0.2− | 2006 09 11 | 703 | 0.7− | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.4+ | | |
| 1999 10 12 | 704 | 0.1− | 0.7− | 2006 09 11 | 703 | 1.0− | 0.8+ | 2006 10 17 | 703 | 0.7+ | 0.2− | | |
| 1999 10 12 | 704 | 0.1− | 0.0 | 2006 09 15 | 704 | 1.3+ | 0.7− | 2006 10 17 | 703 | 1.0+ | 0.4+ | | |
| 1999 10 12 | 704 | 0.1+ | 0.1− | 2006 09 15 | 704 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 0.9− | 0.4− | | |
| 1999 10 13 | 704 | 0.2− | 0.2+ | 2006 09 15 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.0− | 0.4− | | |
| 1999 10 13 | 704 | 0.6− | 0.1+ | 2006 09 15 | 704 | 0.6+ | 0.7+ | 2006 10 23 | 703 | (0.5+ | 1.9+) | | |
| 1999 10 13 | 704 | 0.6+ | 0.2− | 2006 09 15 | 704 | 0.3+ | 1.0− | 2006 10 23 | 703 | 0.9+ | 0.8+ | | |
| 1999 10 13 | 704 | 0.8+ | 1.3+ | 2006 09 20 | 699 | 0.7− | 0.0 | 2006 10 23 | 703 | 0.6− | 0.5− | | |
| 2006 09 11 | 703 | 0.2− | 0.4− | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.2− | 0.3+ | | |

**2006 RW$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.89261 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27183357 | $\omega$ | 199.41922 | | +0.90790725 | −0.41915061 | |
| $a$ | 2.3601195 | $\Omega$ | 185.36722 | | +0.39020726 | +0.84874496 | |
| $e$ | 0.1163134 | $i$ | 2.54092 | | +0.15311017 | +0.32240465 | |
| $P$ | 3.63 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 291 | 0.7+ | 0.6+ | 2005 05 14 | G96 | 1.1− | 0.6− | 2006 09 17 | 704 | 0.5+ | 0.1− | | |
| 2001 03 22 | 291 | 1.1+ | 0.2+ | 2005 05 14 | G96 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.4− | 0.5+ | | |
| 2001 03 22 | 291 | 0.9+ | 0.1+ | 2005 05 14 | G96 | 0.2+ | 0.3− | 2006 09 23 | 691 | 0.4− | 0.6+ | | |
| 2001 03 31 | 691 | 0.4− | 1.2+ | 2006 09 12 | 703 | (1.6− | 1.9+) | 2006 09 23 | 691 | 0.2− | 0.5+ | | |
| 2001 03 31 | 691 | 0.5− | 0.5+ | 2006 09 12 | 703 | 0.6− | 0.5+ | 2006 09 25 | G96 | 0.5− | 0.0 | | |
| 2001 03 31 | 691 | 0.5− | 0.9+ | 2006 09 12 | 703 | 1.4− | 1.0+ | 2006 09 25 | G96 | 0.1− | 0.1+ | | |
| 2003 12 17 | 691 | 0.2− | 0.1+ | 2006 09 12 | 703 | 1.0− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.0 | | |
| 2003 12 17 | 691 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.0 | | |
| 2003 12 17 | 691 | 0.5+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2004 01 31 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2004 01 31 | 691 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.6− | 0.1+ | | |
| 2004 01 31 | 691 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.4− | | |
| 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.2+ | | |
| 2005 04 30 | 691 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.1− | | |
| 2005 04 30 | 691 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.6− | 2006 11 15 | G96 | 0.0 | 0.3+ | | |
| 2005 05 14 | G96 | 0.7− | 0.5− | 2006 09 17 | 704 | 0.1− | 0.9+ | | | | | | |

**2006 RC$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 347.87365 | | (2000.0) | | | |
| $n$ | 0.25654083 | $\omega$ | 207.92260 | | +0.96306986 | −0.26900661 |
| $a$ | 2.4530047 | $\Omega$ | 167.66632 | | +0.25596614 | +0.90148350 |
| $e$ | 0.2147440 | $i$ | 3.08204 | | +0.08353314 | +0.33906186 |
| $P$ | 3.84 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.0 | 0.8+ | 2006 09 25 | 699 | 0.6− | 0.3− |
| 2002 08 06 | 644 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.4+ |
| 2002 08 06 | 644 | 0.4− | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.5+ | 0.3+ |
| 2002 08 17 | 644 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2002 08 17 | 644 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2002 08 17 | 644 | 0.6+ | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.5− |
| 2004 02 12 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 699 | (2.0− | 0.0 ) | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.4+ | 0.9+ | 2006 09 28 | 704 | 1.2+ | 0.2− |
| 2004 02 12 | 691 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.6+ | 2006 09 28 | 704 | 1.0− | 0.1+ |
| 2006 09 12 | 703 | 0.7+ | 0.5+ | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 09 28 | 704 | 0.9+ | 0.1− |
| 2006 09 12 | 703 | 0.9+ | 0.4+ | 2006 09 19 | 703 | 0.7− | 0.4− | 2006 09 28 | 704 | 0.8+ | 0.6− |
| 2006 09 12 | 703 | 1.1− | 0.9− | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.4− | 0.4− |
| 2006 09 12 | 703 | 0.2+ | 0.4− | 2006 09 20 | 704 | (0.6− | 1.6+) | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.8− | 0.8− | 2006 11 17 | G96 | 0.5− | 0.3− |
| 2006 09 15 | 691 | 0.4− | 0.0 | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.1− | 0.7− | | | | |
| 2006 09 17 | 704 | (0.1− | 1.6+) | 2006 09 25 | 699 | 0.3+ | 1.0+ | | | | |

**2006 RG$_4$ = 1995 ST$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.92282 | | (2000.0) | | | |
| $n$ | 0.18168820 | $\omega$ | 172.86063 | | +0.99490879 | +0.10069119 |
| $a$ | 3.0873431 | $\Omega$ | 181.38163 | | −0.09893373 | +0.96785938 |
| $e$ | 0.1074105 | $i$ | 10.07343 | | −0.01919947 | +0.23045501 |
| $P$ | 5.42 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.2+ | 0.4− | 2006 09 20 | 704 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.2− | 1.0+ |
| 1995 09 19 | 691 | 0.1+ | 0.4− | 2006 09 20 | 704 | 1.3− | 0.1− | 2006 09 27 | 691 | 0.6+ | 0.1− |
| 1995 09 19 | 691 | 0.1+ | 0.4− | 2006 09 20 | 704 | 0.4− | 1.0+ | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2002 11 13 | 645 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.9− | 0.8+ | 2006 09 28 | 704 | 0.1+ | 0.8+ |
| 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 09 28 | 699 | 0.1− | 0.7+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.2− | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.5− | 0.0 |
| 2006 09 12 | 703 | 0.6− | 1.6− | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 699 | 0.2+ | 0.1− |
| 2006 09 12 | 703 | 2.5− | 0.4− | 2006 09 23 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.4− | 0.4− |
| 2006 09 12 | 703 | 1.0+ | 0.9− | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 09 28 | 704 | 1.0+ | 0.7+ |
| 2006 09 12 | 703 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.7− | 2006 09 28 | 699 | 0.7+ | 0.4− |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.8− | 2006 09 28 | 699 | 0.3− | 0.4− |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2006 09 18 | 699 | 0.2− | 1.0+ | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2006 09 18 | 699 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2006 09 18 | 699 | 0.9− | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.4+ | 0.1+ |

**2006 RH$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.83897 | | (2000.0) | | | |
| $n$ | 0.29325841 | $\omega$ | 168.70162 | | +0.98635064 | +0.16462443 |
| $a$ | 2.2437221 | $\Omega$ | 181.83296 | | −0.15805114 | +0.94087420 |
| $e$ | 0.1327974 | $i$ | 6.00712 | | −0.04617625 | +0.29606508 |
| $P$ | 3.36 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 18 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.3− | 0.6− |
| 2003 11 18 | 691 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.7− | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.3− |
| 2003 11 18 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.7− | 0.9+ |
| 2003 12 17 | 691 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.7+ |
| 2003 12 17 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.4+ | 2006 09 28 | 704 | 1.1+ | 1.1+ |
| 2003 12 17 | 691 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.9+ | 1.0+ | 2006 09 28 | 704 | 0.0 | 0.2+ |
| 2005 04 02 | 691 | 0.2+ | 0.6+ | 2006 09 20 | 704 | 0.8+ | 0.2+ | 2006 10 01 | 704 | (1.8− | 1.8+) |
| 2005 04 02 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.7− | 0.4− | 2006 10 01 | 704 | 0.9− | 0.3+ |
| 2005 04 02 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.8− | 1.1− |
| 2005 04 11 | G96 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 04 11 | G96 | 0.3− | 0.4+ | 2006 09 20 | 644 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2005 04 11 | G96 | 0.6− | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.2− | 0.4+ | 2006 09 24 | 291 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2006 09 12 | 703 | 0.8+ | 0.0 | 2006 09 24 | 291 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 12 | 703 | 0.7− | 1.1− | 2006 09 24 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2006 09 12 | 703 | 1.1− | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2006 09 12 | 703 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 22 | 644 | 0.4+ | 0.2+ |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.9+ | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2006 09 18 | 699 | 0.3− | 0.6− | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2006 09 18 | 699 | 0.6− | 0.3− | 2006 09 27 | 704 | 0.2+ | 0.8+ | 2006 11 23 | G96 | 0.4+ | 0.1− |

**2006 RJ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.45490 | | (2000.0) | | | |
| $n$ | 0.27211049 | $\omega$ | 15.06810 | | +0.97690919 | −0.21364422 |
| $a$ | 2.3585180 | $\Omega$ | 357.26518 | | +0.19109176 | +0.87818043 |
| $e$ | 0.1978761 | $i$ | 2.57197 | | +0.09556348 | +0.42796645 |
| $P$ | 3.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.8+ | 0.2+ |
| 1999 10 06 | 704 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.6+ |
| 1999 10 06 | 704 | 0.6+ | 0.7− | 2006 09 17 | 704 | 0.2− | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1999 10 06 | 704 | 0.4+ | 0.2− | 2006 09 17 | 704 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.1− |
| 1999 10 06 | 704 | 0.4+ | 0.4− | 2006 09 17 | 704 | 0.9− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 1999 12 05 | 703 | 1.4− | 0.7− | 2006 09 17 | 704 | 0.0 | 0.6− | 2006 09 27 | 704 | 0.2+ | 0.3+ |
| 1999 12 05 | 703 | 0.9− | 0.7− | 2006 09 17 | 704 | 0.9− | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.1− |
| 1999 12 05 | 703 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.4+ |
| 1999 12 05 | 703 | 0.9+ | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.2+ | 0.5+ |
| 2003 12 29 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.9+ |
| 2003 12 29 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.8+ | 0.3− | 2006 09 29 | 704 | 0.2+ | 0.5+ |
| 2003 12 29 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.0 |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.6+ |
| 2004 01 28 | 691 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 1.1+ | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.5+ |
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.6+ |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.6+ | 2006 10 01 | 704 | 1.3− | 0.6+ |
| 2004 02 11 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 09 06 | 644 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.8− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2006 09 06 | 644 | 0.6− | 0.2− | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2006 09 06 | 644 | 0.4− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2006 09 12 | 703 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 12 | 703 | 0.3− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2006 09 12 | 703 | 0.4− | 0.6− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 09 12 | 703 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.3− | 0.3− | | | | |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.1− | | | | |

### 2006 $RK_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.76546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22262656 | $\omega$ | 177.90744 | | +0.99999504 | +0.00027649 | |
| $a$ | 2.6961956 | $\Omega$ | 182.08448 | | −0.00125733 | +0.94835141 | |
| $e$ | 0.2597183 | $i$ | 4.94762 | | +0.00288726 | +0.31722157 | |
| $P$ | 4.43 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 16 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.5+ | 0.3+ | |
| 2005 04 16 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.8+ | |
| 2005 04 16 | 691 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.3+ | 0.4+ | |
| 2005 05 04 | 691 | 0.4+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.5− | 2006 09 28 | 704 | 0.3+ | 0.2− | |
| 2005 05 04 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.4− | 2006 09 28 | 704 | 0.3− | 0.5+ | |
| 2005 05 04 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.4+ | 2006 10 01 | 691 | 0.8− | 0.4− | |
| 2006 07 21 | 703 | 0.5+ | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.2+ | |
| 2006 07 21 | 703 | (0.7+ | 1.5−) | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.1− | 0.2− | |
| 2006 07 21 | 703 | 1.1− | 0.2− | 2006 09 21 | H51 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.0 | |
| 2006 07 21 | 703 | 0.1+ | 0.8− | 2006 09 21 | H51 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.3− | 0.3+ | |
| 2006 08 17 | 644 | 0.1+ | 0.4− | 2006 09 21 | H51 | 0.4+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.2− | |
| 2006 08 17 | 644 | 0.2− | 0.3− | 2006 09 21 | A50 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.1− | 0.3+ | |
| 2006 08 17 | 644 | 0.2− | 0.5− | 2006 09 21 | A50 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.1− | |
| 2006 09 06 | 644 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.0 | |
| 2006 09 06 | 644 | 0.1− | 0.4− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4− | 1.2+ | |
| 2006 09 06 | 644 | 0.4− | 0.3− | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 1.1− | 1.4+ | |
| 2006 09 12 | 703 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 10 17 | 703 | 0.8+ | 0.2+ | |
| 2006 09 12 | 703 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 10 19 | 644 | 0.2− | 0.1− | |
| 2006 09 12 | 703 | 0.6− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.1− | 0.0 | |
| 2006 09 12 | 703 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 19 | 644 | 0.2− | 0.1− | |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2− | |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.2− | |
| 2006 09 17 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 704 | 0.7+ | 0.5− | 2006 10 21 | G96 | 0.1− | 0.2− | |
| 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 | |
| 2006 09 17 | 704 | 0.3+ | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− | |
| 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− | |
| 2006 09 17 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2− | |
| 2006 09 18 | 699 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.1− | |
| 2006 09 18 | 699 | 0.7+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5− | 0.1− | |
| 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.0 | |
| 2006 09 18 | 699 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.2+ | | | | | |

### 2006 $RL_4$ = 1999 $PJ_7$ = 2005 $ED_{156}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.37573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29426182 | $\omega$ | 185.88144 | | +0.97721915 | +0.21195414 | |
| $a$ | 2.2386186 | $\Omega$ | 161.87059 | | −0.19326797 | +0.90989358 | |
| $e$ | 0.0965598 | $i$ | 2.00218 | | −0.08769397 | +0.35660779 | |
| $P$ | 3.35 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 03 | 691 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.4+ | 0.1+ | 2006 09 28 | 704 | 0.1− | 0.0 | |
| 1999 08 03 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.0 | 0.4+ | |
| 1999 08 03 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 704 | 0.3− | 1.1+ | 2006 09 28 | 704 | 0.1+ | 0.3− | |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | (1.7+ | 0.1+) | 2006 09 28 | 704 | 0.1− | 1.1+ | |
| 2003 11 24 | 691 | 0.1− | 0.1+ | 2006 09 17 | 704 | 1.0+ | 0.9− | 2006 09 29 | 704 | 1.1− | 1.1+ | |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.1− | 0.9− | 2006 09 29 | 704 | 0.0 | 0.6− | |
| 2003 12 27 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.5− | 0.8− | 2006 09 29 | 704 | 0.6− | 0.3− | |
| 2003 12 27 | 691 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.9− | 0.3+ | 2006 09 29 | 704 | 1.1− | 0.4+ | |
| 2003 12 27 | 691 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 09 29 | 704 | 0.1− | 0.3+ | |
| 2005 03 08 | G96 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.6+ | 2006 09 30 | 704 | (2.0− | 0.9−) | |
| 2005 03 08 | G96 | 0.7− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 30 | 704 | 1.1− | 0.1− | |
| 2005 03 08 | G96 | 0.5− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 30 | 704 | 1.0− | 0.8+ | |
| 2005 03 08 | G96 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 01 | 704 | (1.6− | 0.3−) | |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.8+ | |
| 2005 03 12 | 691 | 0.2+ | 0.7+ | 2006 09 20 | 704 | 0.3− | 0.8+ | 2006 10 01 | 704 | 0.6+ | 0.5+ | |
| 2005 03 12 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.9+ | 2006 10 01 | 704 | 0.9− | 0.9+ | |
| 2005 04 02 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.6+ | 0.5+ | |
| 2005 04 02 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.3− | 0.1− | |
| 2005 04 02 | 691 | 0.5+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.2− | |
| 2005 04 10 | G96 | 0.2+ | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 01 | 704 | (2.0− | 1.6+) | |
| 2005 04 10 | G96 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.1+ | |
| 2005 04 10 | G96 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.7+ | 0.2+ | |
| 2005 04 10 | G96 | 0.0 | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.0 | |
| 2006 07 21 | G96 | 0.3+ | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 10 | 104 | 0.1− | 0.8+ | |
| 2006 07 21 | G96 | 0.4+ | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 10 | 104 | 0.7+ | 0.3− | |
| 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 10 | 104 | 0.2− | 0.2+ | |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 | |
| 2006 08 28 | 703 | 0.5− | 1.0− | 2006 09 26 | G96 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.3+ | 0.2− | |
| 2006 08 28 | 703 | (0.3+ | 1.6−) | 2006 09 27 | 704 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | |
| 2006 08 28 | 703 | 0.9− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.3− | |
| 2006 08 28 | 703 | 0.1− | 0.9− | 2006 09 27 | 704 | 0.8− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2006 09 12 | 703 | (1.9− | 0.7−) | 2006 09 27 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.0 | |
| 2006 09 12 | 703 | (4.6− | 1.8+) | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.3− | |
| 2006 09 12 | 703 | (2.9− | 0.6−) | 2006 09 27 | 704 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.3− | |
| 2006 09 12 | 703 | 1.3− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.0 | |
| 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.8− | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.3− | |

### 2006 $RO_4$ = 1996 $RW_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.66225 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29757365 | $\omega$ | 201.51263 | | +0.94616668 | −0.32363237 | |
| $a$ | 2.2219779 | $\Omega$ | 177.35134 | | +0.31170590 | +0.90641929 | |
| $e$ | 0.1341179 | $i$ | 6.88553 | | +0.08722408 | +0.27141512 | |
| $P$ | 3.31 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 05 | 691 | 0.5+ | 0.3− | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.6− | 0.2+ | |
| 1996 09 05 | 691 | 0.2+ | 0.4− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.3− | 0.6+ | |
| 1996 09 05 | 691 | 0.2− | 0.2− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− | |
| 1996 09 08 | 691 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | |
| 1996 09 08 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3+ | |
| 1996 09 08 | 691 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.2− | 0.1− | |
| 2006 09 06 | 644 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.1− | |
| 2006 09 06 | 644 | 0.4+ | 0.0 | 2006 09 28 | 291 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2+ | |
| 2006 09 06 | 644 | 0.4+ | 0.2− | 2006 09 28 | 291 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.6+ | 1.3+ | |
| 2006 09 12 | 703 | 0.8− | 0.1− | 2006 09 28 | 291 | 0.2+ | 0.2− | 2006 10 17 | 703 | (1.3+ | 2.6+) | |
| 2006 09 12 | 703 | (0.2− | 1.6−) | 2006 09 30 | 291 | 0.2− | 0.1− | 2006 10 17 | 703 | (1.6+ | 1.1+) | |
| 2006 09 12 | 703 | 0.4+ | 0.0 | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 10 17 | 703 | (0.8+ | 1.8+) | |
| 2006 09 12 | 703 | 0.5+ | 0.4+ | 2006 09 30 | 291 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.0 | |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 01 | G92 | 0.2+ | 1.1+ | 2006 10 20 | 644 | 0.3− | 0.3+ | |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 01 | G92 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1− | |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 01 | G92 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.7+ | 0.2− | |
| 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.6+ | 2006 11 23 | G96 | 0.2+ | 0.3− | |
| 2006 09 19 | 703 | 0.6− | 1.1− | 2006 10 01 | 704 | 1.2− | 0.4− | 2006 11 23 | G96 | 0.0 | 0.3− | |
| 2006 09 19 | 703 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.4− | |
| 2006 09 19 | 703 | 1.0+ | 0.5− | 2006 10 09 | 644 | 0.3− | 0.0 | | | | | |

### 2006 $RQ_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.77963 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26497288 | $\omega$ | 8.62915 | | +0.94820858 | −0.31751195 | |
| $a$ | 2.4006846 | $\Omega$ | 9.89844 | | +0.28810960 | +0.84732307 | |
| $e$ | 0.2008591 | $i$ | 3.10405 | | +0.13376599 | +0.42571091 | |
| $P$ | 3.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.7− | 0.2− | 2006 09 28 | 704 | 0.1− | 0.3+ | |
| 2002 07 15 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 09 28 | 704 | 0.7+ | 0.4− | |
| 2002 07 15 | 644 | 0.2+ | 0.3− | 2006 09 19 | 703 | 1.1− | 0.3− | 2006 09 28 | 704 | 0.1− | 0.5+ | |
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.2− | |
| 2002 08 08 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.2− | 2006 10 01 | 704 | 1.0+ | 0.1− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.4− | 0.3+ | 2006 09 19 | 703 | (2.3− | 0.4−) | 2006 10 01 | 704 | 0.0 | 0.9+ | | |
| 2002 08 11 | 644 | 0.2− | 0.4− | 2006 09 19 | 703 | 1.3− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.6+ | | |
| 2002 08 11 | 644 | 0.1+ | 0.6− | 2006 09 20 | 704 | 1.3+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.8+ | | |
| 2002 08 11 | 644 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.5+ | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.6− | | |
| 2004 02 12 | 291 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 12 | 291 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.0 | | |
| 2004 02 12 | 291 | 0.2+ | 0.6− | 2006 09 20 | 704 | 1.1+ | 0.4− | 2006 10 02 | 691 | 0.0 | 0.1+ | | |
| 2005 05 16 | G96 | 0.7− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | (0.1+ | 1.7+) | | |
| 2005 05 16 | G96 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.4+ | 1.5+ | | |
| 2005 05 16 | G96 | 1.0+ | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.8+ | | |
| 2005 05 16 | G96 | 0.0 | 0.0 | 2006 09 21 | A50 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 1.2+ | | |
| 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 21 | A50 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.8− | | |
| 2006 08 17 | 644 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 1.2− | 0.1− | | |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.3+ | 1.3+ | | |
| 2006 09 12 | 703 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | (2.6+ | 1.3+) | | |
| 2006 09 12 | 703 | 0.9− | 1.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2006 09 12 | 703 | 0.8− | 0.6− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2006 09 12 | 703 | 0.7+ | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 2006 09 15 | 691 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2006 09 15 | 691 | 0.2− | 0.3− | 2006 09 27 | 704 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2006 09 15 | 691 | (1.7− | 0.7+) | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 1.2+ | 0.6+ | | |
| 2006 09 19 | 691 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.5− | 0.7+ | 2006 11 15 | G96 | 1.1+ | 0.2− | | |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.6− | | |
| 2006 09 19 | 703 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.0 | 0.8+ | 2006 11 15 | G96 | 0.4− | 1.2− | | |

### 2006 RT$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.04946 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28933569 | $\omega$ | 250.32565 | | +0.97527883 | | +0.21993468 |
| $a$ | 2.2639563 | $\Omega$ | 96.96458 | | −0.19378969 | | +0.89788570 |
| $e$ | 0.2246469 | $i$ | 1.23800 | | −0.10619205 | | +0.38135287 |
| $P$ | 3.41 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 17 | 691 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.6+ | | |
| 1996 12 17 | 691 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.5− | 0.3− | 2006 10 01 | 704 | 0.4− | 0.5+ | | |
| 1996 12 17 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.9− | 2006 10 01 | 704 | 0.3− | 0.2+ | | |
| 2002 05 08 | 291 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.6+ | | |
| 2002 05 08 | 291 | 0.1+ | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.4− | 0.8− | | |
| 2002 05 08 | 291 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.0 | 2006 10 03 | G92 | 0.1− | 0.1− | | |
| 2002 05 17 | 644 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.2+ | 0.2− | 2006 10 03 | G92 | 0.2+ | 0.2− | | |
| 2002 05 17 | 644 | 0.5+ | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.1+ | 2006 10 03 | G92 | 0.3− | 0.1− | | |
| 2002 05 17 | 644 | 1.0+ | 0.7− | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.7+ | | |
| 2005 03 10 | G96 | 0.0 | 0.2− | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.9+ | | |
| 2005 03 10 | G96 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.4+ | 2006 10 17 | 703 | (0.1+ | 1.9+) | | |
| 2005 03 10 | G96 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.4+ | 1.4+ | | |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.3− | 1.1− | 2006 10 17 | 106 | 0.1+ | 0.5+ | | |
| 2005 04 06 | G96 | 0.6+ | 0.2+ | 2006 09 22 | 704 | 0.1+ | 1.2− | 2006 10 17 | 106 | 1.1+ | 1.4+ | | |
| 2005 04 06 | G96 | 0.3− | 0.4− | 2006 09 22 | 704 | 0.4+ | 1.3− | 2006 10 18 | 106 | 0.0 | 0.5− | | |
| 2005 04 06 | G96 | 0.3− | 0.0 | 2006 09 22 | 704 | (0.0 | 2.0−) | 2006 10 18 | 106 | 0.6+ | 1.0+ | | |
| 2005 04 06 | G96 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.1+ | 1.2− | 2006 10 19 | 644 | 0.1− | 0.2+ | | |
| 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.6+ | | |
| 2006 08 17 | 644 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.8− | 0.7+ | | |
| 2006 08 17 | 644 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3− | | |
| 2006 09 12 | 703 | 0.4− | 0.5− | 2006 09 27 | 704 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | |
| 2006 09 12 | 703 | 0.8− | 0.5− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2006 09 12 | 703 | 0.0 | 0.7− | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2006 09 12 | 703 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2006 09 13 | 644 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.3+ | | |
| 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.7− | 0.7+ | 2006 11 14 | G96 | 0.1− | 0.0 | | |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.0 | | |
| 2006 09 17 | 704 | 0.2+ | 0.8+ | 2006 09 28 | 704 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.3+ | | |
| 2006 09 17 | 704 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.5+ | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.0 | | |
| 2006 09 17 | 704 | 0.3+ | 0.6− | 2006 09 28 | 704 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.0 | | |

### 2006 RW$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.63807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20623521 | $\omega$ | 338.96536 | | −0.18117356 | | +0.97383628 |
| $a$ | 2.8372276 | $\Omega$ | 280.39542 | | −0.88121594 | | −0.22268141 |
| $e$ | 0.1706414 | $i$ | 8.01728 | | −0.43661724 | | +0.04534181 |
| $P$ | 4.78 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 29 | 691 | 0.1+ | 0.2+ | 2005 04 06 | 699 | 0.8− | 1.4+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | | |
| 2001 06 29 | 691 | 0.0 | 0.2+ | 2005 04 06 | 699 | 0.6− | 0.8− | 2006 09 14 | 691 | 0.2− | 0.1− | | |
| 2001 06 29 | 691 | 0.0 | 0.0 | 2005 04 14 | 703 | 0.1− | 0.8+ | 2006 09 15 | 691 | 0.1− | 0.1+ | | |
| 2001 07 19 | 691 | 0.2− | 0.3− | 2005 04 14 | 703 | (1.1+ | 2.5+) | 2006 09 15 | 691 | 0.1+ | 0.2− | | |
| 2001 07 19 | 691 | 0.3− | 0.3− | 2005 04 14 | 703 | 0.4− | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.1− | | |
| 2001 07 19 | 691 | 0.3+ | 0.3+ | 2005 04 14 | 703 | (0.5− | 1.7+) | 2006 09 17 | 691 | 0.1− | 0.0 | | |
| 2005 03 13 | 691 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.0 | 1.2− | 2006 09 17 | 691 | 0.1+ | 0.2+ | | |
| 2005 03 13 | 691 | 0.2+ | 0.2− | 2006 08 29 | 703 | 0.8− | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.0 | | |
| 2005 03 13 | 691 | 0.4+ | 0.4− | 2006 08 29 | 703 | 0.5− | 0.8− | 2006 09 19 | 691 | 0.3+ | 0.2+ | | |
| 2005 04 06 | 699 | 0.1+ | 0.4− | 2006 08 29 | 703 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1+ | | |
| 2005 04 06 | 699 | 0.7− | 0.6+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | | |

### 2006 RY$_4$ = 1997 TG$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.79395 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21960603 | $\omega$ | 47.99848 | | +0.77719149 | | +0.61369542 |
| $a$ | 2.7208622 | $\Omega$ | 273.66968 | | −0.61066716 | | +0.68221543 |
| $e$ | 0.0878792 | $i$ | 8.01283 | | −0.15185190 | | +0.39744187 |
| $P$ | 4.49 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 07 | 691 | 0.9− | 0.3− | 2005 05 16 | 644 | 0.2+ | 0.9+ | 2006 09 20 | 699 | 0.7+ | 1.4+ | | |
| 1997 10 07 | 691 | 0.7− | 0.2− | 2006 09 14 | 703 | 1.0− | 0.0 | 2006 09 20 | 699 | 0.0 | 0.4+ | | |
| 1997 10 07 | 691 | 0.2+ | 0.9+ | 2006 09 14 | 703 | 0.6− | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.7− | | |
| 1997 10 11 | 691 | 0.2+ | 0.6− | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.3+ | 0.6+ | | |
| 1997 10 11 | 691 | 1.9+ | 0.8− | 2006 09 14 | 703 | 0.3+ | 0.0 | 2006 09 29 | 699 | 0.0 | 0.4− | | |
| 1997 10 11 | 691 | 0.1+ | 0.5− | 2006 09 15 | 704 | 0.2− | 1.2+ | 2006 09 29 | 699 | 0.9− | 0.4+ | | |
| 2002 11 06 | 704 | 0.0 | 0.4+ | 2006 09 15 | 704 | 0.1+ | 0.7− | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2002 11 06 | 704 | 0.5− | 1.2+ | 2006 09 15 | 704 | 0.4− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2002 11 06 | 704 | 0.6− | 1.1+ | 2006 09 15 | 704 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.4+ | | |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.3+ | | |
| 2002 11 24 | 644 | 0.0 | 0.4+ | 2006 09 16 | 644 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2005 05 16 | 644 | 0.2+ | 0.9+ | 2006 09 20 | 699 | 0.1+ | 1.2+ | | | | | | |
| 2005 05 16 | 644 | 0.2+ | 0.9+ | 2006 09 20 | 699 | 0.0 | 0.9− | | | | | | |

### 2006 RZ$_4$ = 1997 SR$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.16884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21678009 | $\omega$ | 140.61570 | | +0.99678321 | | −0.00320246 |
| $a$ | 2.7444571 | $\Omega$ | 219.79055 | | −0.02156147 | | +0.95164695 |
| $e$ | 0.3097885 | $i$ | 7.18826 | | +0.07719021 | | +0.30717719 |
| $P$ | 4.55 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 09 30 | 699 | 0.8− | 1.5+ | | |
| 1997 09 28 | 691 | 0.5+ | 0.1+ | 2006 09 15 | 704 | 0.8+ | 0.6+ | 2006 09 30 | 699 | 1.1+ | 1.1− | | |
| 1997 09 28 | 691 | 0.4+ | 0.1− | 2006 09 15 | 704 | 0.9+ | 0.6− | 2006 09 30 | 699 | 1.3+ | 1.2− | | |
| 1997 09 30 | 691 | 1.1− | 0.1+ | 2006 09 15 | 704 | 0.2+ | 0.9+ | 2006 09 30 | 699 | 0.7+ | 0.5+ | | |
| 1997 09 30 | 691 | 0.2+ | 0.2− | 2006 09 15 | 704 | 1.0+ | 0.1− | 2006 10 01 | 703 | 0.1− | 0.7+ | | |
| 1997 09 30 | 691 | 0.1− | 0.1− | 2006 09 15 | 704 | 1.1+ | 0.3− | 2006 10 01 | 703 | 0.7− | 0.9− | | |
| 2006 05 25 | G96 | 0.8+ | 0.3− | 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 10 01 | 703 | 0.9− | 0.5+ | | |
| 2006 05 25 | G96 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.6− | 0.4− | 2006 10 01 | 703 | 0.1− | 0.6− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 05 25 | G96 | 0.1+ | 0.5− | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.8− | 1.0− |
| 2006 05 25 | G96 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 10 22 | 703 | (0.6− | 3.2−) |
| 2006 09 14 | 703 | 0.6− | 0.9− | 2006 09 20 | 699 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 1.1+ | 0.4+ |
| 2006 09 14 | 703 | 1.2− | 0.3− | 2006 09 20 | 699 | 0.8− | 0.1− | 2006 10 22 | 703 | (1.8+ | 2.1−) |
| 2006 09 14 | 703 | 0.2− | 1.2+ | 2006 09 20 | 699 | 0.5− | 1.0+ | | | | |

**2006 RB$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.66444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17392216 | $\omega$ | 26.56637 | | +0.76632356 | +0.62516757 | |
| $a$ | 3.1785772 | $\Omega$ | 293.94230 | | −0.61449629 | +0.64601745 | |
| $e$ | 0.1981373 | $i$ | 9.32124 | | −0.18746335 | +0.43798056 | |
| $P$ | 5.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 07 | 704 | 0.7− | 0.4+ | 2004 03 27 | 691 | 0.0 | 1.5+ | 2006 09 15 | 704 | 0.7+ | 0.1− |
| 2000 07 07 | 704 | 0.3+ | 0.7− | 2004 03 27 | 691 | 0.0 | 0.3− | 2006 09 15 | 704 | 0.0 | 0.2+ |
| 2000 07 07 | 704 | 0.0 | 0.8+ | 2004 03 27 | 691 | 0.5+ | 0.4− | 2006 09 22 | 703 | 0.0 | 0.3− |
| 2000 07 07 | 704 | 0.8− | 1.1+ | 2006 08 23 | 621 | 0.1+ | 0.0 | 2006 09 22 | 703 | 0.0 | 0.7+ |
| 2000 08 01 | 704 | 0.3+ | 0.6+ | 2006 08 23 | 621 | 0.1+ | 0.0 | 2006 09 22 | 703 | 0.4+ | 0.4+ |
| 2000 08 01 | 704 | 0.4+ | 0.2+ | 2006 08 23 | 621 | 0.2+ | 0.0 | 2006 09 22 | 703 | 1.3− | 0.5+ |
| 2000 08 01 | 704 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 10 01 | 703 | 1.0+ | 0.3− |
| 2000 08 01 | 704 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.6− | 0.3− | 2006 10 01 | 703 | 0.3− | 0.3− |
| 2000 08 01 | 704 | 0.8− | 0.1− | 2006 09 14 | 703 | 0.9− | 0.4+ | 2006 10 01 | 703 | 0.5− | 0.2− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 1.1− | 0.1+ | 2006 10 01 | 703 | 0.4+ | 0.7+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.6+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 15 | 704 | 0.8+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2003 02 01 | 645 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1+ |

**2006 RC$_5$ = 2001 SV$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.94050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18344926 | $\omega$ | 23.65938 | | +0.72559515 | +0.66926528 | |
| $a$ | 3.0675530 | $\Omega$ | 293.33034 | | −0.65588416 | +0.60232084 | |
| $e$ | 0.0766243 | $i$ | 10.03398 | | −0.20815295 | +0.43507884 | |
| $P$ | 5.37 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 704 | 0.8+ | 1.2+ | 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 09 22 | 703 | 0.6+ | 0.5+ |
| 2001 09 23 | 704 | 0.8+ | 0.7+ | 2006 09 14 | 703 | 0.5− | 0.2− | 2006 09 22 | 703 | 0.7+ | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 10 01 | 703 | 1.0− | 0.9− |
| 2001 09 25 | 704 | 0.9− | 1.0− | 2006 09 15 | 704 | 0.7+ | 0.2+ | 2006 10 01 | 703 | 0.1− | 0.7− |
| 2001 09 25 | 704 | 1.3− | 0.5− | 2006 09 15 | 704 | 0.0 | 0.8+ | 2006 10 01 | 703 | (1.7− | 0.0 ) |
| 2001 09 25 | 704 | 0.5− | 0.6+ | 2006 09 15 | 704 | 1.4− | 1.3− | 2006 10 01 | 703 | 0.7− | 0.2+ |
| 2001 11 12 | 704 | 0.6+ | 0.2− | 2006 09 15 | 704 | 0.9+ | 0.5− | 2006 10 11 | 644 | 0.3+ | 0.4− |
| 2001 11 12 | 704 | 0.1− | 0.2− | 2006 09 16 | 644 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2001 11 12 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.1− | 0.8− | 2006 09 16 | 644 | 0.3+ | 0.2+ | | | | |
| 2006 09 14 | 703 | 0.1− | 0.0 | 2006 09 22 | 703 | 0.6+ | 0.8+ | | | | |

**2006 RE$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.20478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26709641 | $\omega$ | 209.78141 | | +0.50643984 | −0.85937277 | |
| $a$ | 2.3879433 | $\Omega$ | 209.95744 | | +0.81645648 | +0.50428316 | |
| $e$ | 0.2448777 | $i$ | 8.13829 | | +0.27734005 | +0.08471678 | |
| $P$ | 3.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.0 | 0.3− | 2006 08 26 | D35 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.5+ |
| 1995 10 23 | 691 | 0.1+ | 0.5− | 2006 08 26 | D35 | 0.4+ | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.2− |
| 1995 10 23 | 691 | 0.3+ | 0.5− | 2006 08 29 | 703 | 0.4− | 1.0− | 2006 09 23 | 106 | 0.3+ | 0.0 |
| 1999 12 05 | 704 | 0.5− | 0.4+ | 2006 08 29 | 703 | 1.3− | 0.0 | 2006 09 23 | 106 | 0.3− | 1.0− |
| 1999 12 05 | 704 | 0.7− | 0.3− | 2006 08 29 | 703 | 1.0− | 0.5+ | 2006 09 23 | 106 | 0.0 | 0.1− |
| 1999 12 05 | 704 | 0.0 | 0.7+ | 2006 08 29 | 703 | 1.5− | 0.5+ | 2006 09 23 | 106 | 0.1− | 0.5+ |
| 2000 01 07 | 704 | 0.1− | 0.7+ | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.0 |
| 2000 01 07 | 704 | 0.8− | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.7+ | 0.3− |
| 2000 01 07 | 704 | 0.1− | 0.3+ | 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2000 01 07 | 704 | 0.3+ | 0.4− | 2006 09 14 | 703 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.3+ | 1.0+ |
| 2000 01 07 | 704 | 0.1− | 0.9+ | 2006 09 14 | 703 | 0.3− | 0.2+ | 2006 10 01 | 704 | 1.1+ | 0.2+ |
| 2000 01 11 | 704 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2000 01 11 | 704 | 0.8+ | 0.7− | 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2000 01 11 | 704 | 0.7+ | 0.0 | 2006 09 15 | 704 | 0.2− | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2000 01 11 | 704 | 0.6+ | 0.6+ | 2006 09 15 | 704 | 0.4− | 1.3+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2002 08 04 | 644 | 0.3+ | 0.6+ | 2006 09 15 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2002 08 04 | 644 | 0.3+ | 0.9+ | 2006 09 15 | 704 | 0.5− | 1.3+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2002 08 04 | 644 | 0.1− | 0.5+ | 2006 09 15 | 704 | 0.5− | 1.4+ | 2006 10 16 | 703 | 0.2+ | 0.9− |
| 2004 02 19 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 2004 02 19 | 704 | 0.1− | 0.6+ | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2004 02 19 | 704 | 0.6+ | 0.2+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.5− |
| 2004 02 19 | 704 | 1.1+ | 0.8+ | 2006 09 19 | 703 | 0.4+ | 1.3+ | 2006 11 11 | 703 | 1.2− | 0.9− |
| 2004 02 19 | 704 | 0.2− | 0.8+ | 2006 09 19 | 703 | 0.9+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2004 03 21 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 1.2+ | 2006 11 14 | G96 | 0.7+ | 0.2+ |
| 2004 03 21 | 691 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.6+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2004 03 21 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.2+ | 1.1+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2006 08 26 | D35 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.3− | 0.5+ | | | | |

**2006 RG$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.26628 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21255057 | $\omega$ | 63.44292 | | +0.89810562 | −0.41860263 | |
| $a$ | 2.7807452 | $\Omega$ | 320.89296 | | +0.28730963 | +0.79058987 | |
| $e$ | 0.2106761 | $i$ | 12.34211 | | +0.33295566 | +0.44692225 | |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.1+ | 0.5− | 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 15 | 704 | 0.1− | 0.3+ |
| 1994 01 08 | 691 | 0.0 | 0.1+ | 2006 08 18 | 644 | 0.1− | 0.1+ | 2006 09 15 | 704 | 0.8− | 0.5− |
| 1994 01 08 | 691 | 0.2− | 0.1+ | 2006 08 27 | 699 | 0.0 | 0.4+ | 2006 09 22 | 703 | 0.7− | 0.9− |
| 2001 08 11 | 644 | 0.2− | 0.2+ | 2006 08 27 | 699 | 0.9+ | 0.3− | 2006 09 22 | 703 | 0.5− | 0.3+ |
| 2001 08 11 | 644 | 0.2− | 0.0 | 2006 08 27 | 699 | 0.1+ | 0.9− | 2006 09 22 | 703 | 0.4− | 0.5+ |
| 2001 08 11 | 644 | 0.3+ | 0.3− | 2006 08 27 | 699 | 0.7+ | 0.6− | 2006 09 22 | 703 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.2+ | 0.5− |
| 2002 12 05 | 704 | 0.0 | 0.8+ | 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.6+ | 0.2+ | 2006 09 06 | 644 | 0.3+ | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.7− |
| 2003 01 10 | 704 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.6+ | 0.5+ | 2006 09 27 | 703 | 0.0 | 0.1+ |
| 2003 01 10 | 704 | 0.5− | 0.9− | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2003 01 10 | 704 | 0.6+ | 0.1− | 2006 09 14 | 703 | 0.2− | 1.0− | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.5− | 0.6+ | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.2− |
| 2003 01 10 | 704 | 0.3− | 0.6+ | 2006 09 15 | 704 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.5+ | 0.3− |
| 2006 08 18 | 644 | 0.4+ | 0.2+ | 2006 09 15 | 704 | 1.4− | 1.4+ | | | | |

**2006 RJ$_5$ = 2005 LE$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.38365 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21584601 | $\omega$ | 161.02656 | | +0.94745371 | −0.29290507 | |
| $a$ | 2.7523693 | $\Omega$ | 216.79862 | | +0.25865786 | +0.93799728 | |
| $e$ | 0.1461064 | $i$ | 12.39737 | | +0.18822217 | +0.18538532 | |
| $P$ | 4.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 09 | 691 | 0.2− | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 09 29 | 699 | 0.8− | 0.7+ |
| 2005 06 09 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.2− | 2006 09 29 | 699 | (2.0+ | 0.8+) |
| 2005 06 09 | 691 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.6+ | 0.4+ |
| 2005 06 14 | 691 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.4− | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.0 |
| 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 09 15 | 704 | 0.0 | 0.3+ | 2006 10 01 | 703 | 0.7+ | 0.7− |
| 2005 06 14 | 691 | 0.0 | 0.3− | 2006 09 15 | 704 | 0.8+ | 0.1− | 2006 10 01 | 703 | 0.5+ | 0.9− |
| 2006 08 28 | 683 | 0.5− | 0.8− | 2006 09 15 | 704 | 0.2− | 0.6+ | 2006 10 01 | 703 | 0.2+ | 0.0 |
| 2006 08 28 | 683 | (2.4+ | 1.0−) | 2006 09 15 | 704 | 0.3− | 0.8− | 2006 10 01 | 703 | (0.0 | 1.9+) |
| 2006 08 28 | 683 | 0.3+ | 0.4+ | 2006 09 20 | 699 | 1.0− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2006 08 31 | 704 | 0.0 | 0.7+ | 2006 09 20 | 699 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 31 | 704 | 0.7+ | 0.3+ | 2006 09 20 | 699 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2006 08 31 | 704 | 0.7+ | 0.0 | 2006 09 20 | 699 | 0.4− | 0.4+ | | | | | | |

**2006 RM$_5$ = 2001 SP$_{338}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.08818 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38468751 | $\omega$ | 272.62453 | | −0.23271749 | | −0.96941006 |
| $a$ | 1.8723944 | $\Omega$ | 191.74887 | | +0.97253408 | | −0.23159584 |
| $e$ | 0.0757337 | $i$ | 22.52876 | | +0.00447589 | | −0.08128657 |
| $P$ | 2.56 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 07 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.7+ | 0.8+ | 2006 09 16 | 941 | 0.9+ | 0.3− | | |
| 1995 04 07 | 691 | 0.0 | 0.2− | 2006 09 14 | 703 | 1.1− | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.2− | | |
| 1995 04 07 | 691 | 0.3− | 0.3− | 2006 09 14 | 703 | (1.9+ | 0.7−) | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2001 09 20 | 704 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.5− | 0.1− | | |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2006 09 15 | 734 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2006 09 15 | 734 | 0.9+ | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.1− | | |
| 2001 09 20 | 704 | 0.2− | 0.1− | 2006 09 15 | 734 | 0.3− | 0.3− | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2001 09 23 | 333 | 0.2+ | 1.0− | 2006 09 16 | 941 | 0.4− | 0.4− | 2006 11 17 | G96 | 0.3− | 0.1+ | | |
| 2001 09 23 | 333 | 0.6− | 0.1− | 2006 09 16 | 941 | 0.4+ | 0.4− | 2006 11 17 | G96 | 0.3− | 0.4− | | |
| 2001 09 23 | 333 | 0.5+ | 0.1− | 2006 09 16 | 941 | 0.6+ | 0.3− | | | | | | |

**2006 RN$_5$ = 2004 AR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.96756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23252708 | $\omega$ | 221.61628 | | +0.61524671 | | +0.78376638 |
| $a$ | 2.6191097 | $\Omega$ | 86.52774 | | −0.69900129 | | +0.59207189 |
| $e$ | 0.1601631 | $i$ | 4.87034 | | −0.36451157 | | +0.18751302 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 16 | 691 | 0.4− | 0.7+ | 2005 06 13 | G96 | 0.4+ | 0.1+ | 2006 09 15 | 703 | 0.4− | 0.9+ | | |
| 2001 05 16 | 691 | 0.4+ | 0.6+ | 2005 06 13 | G96 | 0.0 | 0.3+ | 2006 09 15 | 703 | 1.5− | 0.8+ | | |
| 2001 05 16 | 691 | 0.6+ | 0.6+ | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.0 | | |
| 2002 10 11 | 644 | 0.0 | 0.5+ | 2006 08 22 | 644 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.6− | | |
| 2002 10 11 | 644 | 0.1− | 0.3+ | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.4+ | | |
| 2002 10 11 | 644 | 0.2− | 0.3+ | 2006 09 14 | 644 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.8+ | 0.4+ | | |
| 2004 01 15 | 691 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.2+ | 0.0 | | |
| 2004 01 15 | 691 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.5− | 0.6− | | |
| 2004 01 15 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | (0.3− | 2.3−) | 2006 09 26 | 703 | 0.3+ | 0.9− | | |
| 2004 01 27 | 691 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 0.1− | 0.0 | 2006 09 26 | 703 | 1.1− | 1.5− | | |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.3− | 2006 10 02 | 703 | 0.8+ | 0.2− | | |
| 2004 01 27 | 691 | 0.2+ | 0.8+ | 2006 09 14 | 703 | 0.1− | 0.2+ | 2006 10 02 | 703 | 1.3+ | 1.7+ | | |
| 2005 06 13 | G96 | 0.5+ | 0.7+ | 2006 09 15 | 703 | 0.1− | 0.0 | 2006 10 02 | 703 | (2.9− | 3.9+) | | |
| 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 09 15 | 703 | 0.5− | 0.3+ | 2006 10 02 | 703 | (0.3− | 4.2+) | | |

**2006 RP$_5$ = 2001 TT$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.55632 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18273029 | $\omega$ | 227.37139 | | +0.98799861 | | −0.08380266 |
| $a$ | 3.0755941 | $\Omega$ | 136.95133 | | +0.11579140 | | +0.95779998 |
| $e$ | 0.1093239 | $i$ | 10.95752 | | −0.10223062 | | +0.27494785 |
| $P$ | 5.39 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 22 | 691 | 0.0 | 0.0 | 2003 02 04 | 644 | 0.2− | 0.4+ | 2006 09 14 | 703 | 0.3− | 0.1+ | | |
| 1998 01 22 | 691 | 0.0 | 0.1− | 2003 02 04 | 644 | 0.2+ | 0.8+ | 2006 09 15 | 703 | 0.3− | 0.1+ | | |
| 1998 01 22 | 691 | 0.3− | 0.5− | 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 09 15 | 703 | 0.1+ | 0.3+ | | |
| 2001 10 15 | 644 | 0.4− | 0.3− | 2004 03 23 | 704 | 0.8+ | 0.5+ | 2006 09 15 | 703 | 0.5− | 0.1− | | |
| 2001 10 15 | 644 | 0.3− | 0.4+ | 2004 03 23 | 704 | 0.4− | 0.8− | 2006 09 15 | 703 | 1.2− | 1.4− | | |
| 2001 10 15 | 644 | 0.3− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.3+ | 0.7− | | |
| 2001 10 19 | 608 | 0.4− | 1.0− | 2006 09 14 | 644 | 0.5+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.2− | | |
| 2001 10 19 | 608 | 0.1− | 0.8− | 2006 09 14 | 644 | 0.8+ | 0.5− | 2006 09 26 | 703 | 0.2− | 1.2+ | | |
| 2001 10 19 | 608 | 0.3− | 0.5− | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.2− | 1.2+ | | |
| 2002 01 14 | 645 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.6+ | | |
| 2002 01 14 | 645 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2003 01 27 | 644 | 0.2− | 0.9+ | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.0 | | |
| 2003 01 27 | 644 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.1+ | | |
| 2003 01 27 | 644 | 0.2− | 0.9+ | 2006 09 14 | 703 | 0.4− | 0.2+ | 2006 10 24 | 644 | 0.2+ | 0.1+ | | |
| 2003 02 04 | 644 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.4− | 0.8+ | 2006 10 24 | 644 | 0.4+ | 0.2− | | |

**2006 RQ$_5$ = 2005 JZ$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.67743 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30123674 | $\omega$ | 327.37113 | | −0.88415985 | | −0.46714650 |
| $a$ | 2.2039281 | $\Omega$ | 184.79125 | | +0.44247817 | | −0.83324179 |
| $e$ | 0.0666709 | $i$ | 4.09069 | | +0.14991472 | | −0.29577400 |
| $P$ | 3.27 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.2− | | |
| 2005 05 08 | 691 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 29 | 291 | 0.1+ | 0.3+ | | |
| 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 29 | 291 | 0.6+ | 0.2+ | | |
| 2005 05 14 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 09 29 | 291 | 0.1+ | 0.2+ | | |
| 2005 05 14 | G96 | 0.6− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.5+ | 0.1− | | |
| 2005 05 14 | G96 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.1− | | |
| 2005 05 14 | G96 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.4− | 0.2− | | |
| 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.5− | 0.0 | | |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1+ | | |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1+ | | |
| 2006 09 15 | 691 | 0.2− | 0.5− | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.3− | 0.0 | | | | | | |

**2006 RT$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.72026 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26187292 | $\omega$ | 10.22282 | | +0.09827694 | | +0.99467234 |
| $a$ | 2.4195930 | $\Omega$ | 265.42210 | | −0.91523060 | | +0.07805953 |
| $e$ | 0.2034935 | $i$ | 1.78915 | | −0.39076156 | | +0.06733233 |
| $P$ | 3.76 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 09 15 | 291 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.1− | | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 09 15 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.0 | | |
| 2005 03 03 | 691 | 0.3+ | 0.3+ | 2006 09 15 | 291 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.2− | | |
| 2005 03 03 | 691 | 0.3+ | 0.4− | 2006 09 15 | 691 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.9− | 0.2+ | | |
| 2005 03 03 | 691 | 0.0 | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.0 | | |
| 2005 05 12 | G96 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.8− | 0.7− | 2006 10 27 | 691 | 0.4− | 0.2− | | |
| 2005 05 12 | G96 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.6− | 0.0 | | |
| 2005 05 12 | G96 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.1+ | | |
| 2005 05 12 | G96 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.3− | | |
| 2006 09 14 | 291 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.2− | | |
| 2006 09 14 | 291 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.5+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− | | |
| 2006 09 14 | 291 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.6− | 0.1− | | |
| 2006 09 14 | 291 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3− | 2006 11 17 | G96 | (1.8− | 0.3+) | | |
| 2006 09 14 | 291 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2− | | | | | | |
| 2006 09 14 | 291 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 | | | | | | |

**2006 RC$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.87508 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26256787 | $\omega$ | 338.42072 | | +0.93951028 | | +0.34251476 |
| $a$ | 2.4153218 | $\Omega$ | 1.55339 | | −0.30235111 | | +0.83208386 |
| $e$ | 0.2464513 | $i$ | 4.27223 | | −0.16094797 | | +0.43625691 |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 704 | 0.1+ | 0.2+ | 2002 08 29 | 644 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.7+ | 0.2− |
| 2002 07 05 | 704 | 0.4+ | 0.6+ | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.2− |
| 2002 07 05 | 704 | 0.6− | 0.4+ | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.8− | 0.4+ |
| 2002 07 05 | 704 | 0.3+ | 0.3+ | 2006 09 06 | 644 | 0.5+ | 0.4− | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2002 07 14 | 644 | 0.3− | 0.3− | 2006 09 14 | 703 | 0.9+ | 0.6+ | 2006 09 26 | 691 | 0.3− | 0.6− |
| 2002 07 14 | 644 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2002 07 14 | 644 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.5+ |
| 2002 08 06 | 644 | 0.3− | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2002 08 06 | 644 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.3− | 0.1− |
| 2002 08 06 | 644 | 0.6− | 0.1− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.2+ |
| 2002 08 13 | 704 | (1.8+ | 0.5+) | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.7+ |
| 2002 08 13 | 704 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.1− | 0.9− | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2002 08 13 | 704 | 0.2+ | 0.8− | 2006 09 17 | 704 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.6+ | 0.4+ |
| 2002 08 13 | 704 | 0.2− | 0.3+ | 2006 09 17 | 704 | (2.1+ | 0.9−) | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2002 08 13 | 704 | 1.4+ | 0.2+ | 2006 09 17 | 704 | 0.6+ | 0.8− | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2006 09 17 | 704 | (0.3− | 1.5−) | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 08 18 | 644 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2002 08 18 | 644 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.8+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2006 09 18 | 699 | (0.3+ | 1.6−) | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2002 08 18 | 644 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 08 29 | 644 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 |

## 2006 $RF_6$ = 1999 $WG_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.67363 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27163713 | $\omega$ | 162.70721 | | +0.84288918 | +0.53803702 | |
| $a$ | 2.3612572 | $\Omega$ | 164.73602 | | −0.49692704 | +0.78357945 | |
| $e$ | 0.2044198 | $i$ | 1.59946 | | −0.20640095 | +0.31067574 | |
| $P$ | 3.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 20 | 809 | 0.2+ | 0.5+ | 2006 07 22 | G96 | 0.6− | 0.8− | 2006 10 15 | 703 | 0.2+ | 0.4+ |
| 1995 08 22 | 809 | 0.5+ | 0.4+ | 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.0 | 0.9+ |
| 1995 08 25 | 809 | 1.4− | 1.3− | 2006 09 14 | 703 | 0.5− | 1.1+ | 2006 10 15 | 703 | 0.2− | 0.5+ |
| 1995 09 17 | 809 | 0.5− | 1.4− | 2006 09 14 | 703 | 0.3− | 0.9+ | 2006 10 15 | 703 | 0.0 | 0.4+ |
| 1995 09 18 | 809 | 0.8+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.6− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 1995 09 18 | 809 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 1995 09 19 | 809 | 1.8+ | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 1995 09 20 | 809 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1995 09 22 | 809 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1999 11 30 | 691 | 0.0 | 0.2− | 2006 09 16 | 644 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 1999 11 30 | 691 | 0.1− | 0.1+ | 2006 09 16 | 644 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.9− | 0.6+ |
| 1999 11 30 | 691 | 0.0 | 0.1− | 2006 09 16 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.0 |
| 1999 12 12 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.5+ |
| 1999 12 12 | 691 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.1+ |
| 1999 12 12 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 04 06 | G96 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 04 06 | G96 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2005 04 06 | G96 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2005 04 06 | G96 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2005 05 06 | G96 | 0.0 | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2005 05 06 | G96 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2005 05 06 | G96 | 0.0 | 0.5− | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 05 06 | G96 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2006 07 22 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.9− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 07 22 | G96 | 1.3− | 0.3− | 2006 09 26 | G96 | 0.5− | 0.6− | 2006 10 31 | G96 | 0.1− | 0.2− |

## 2006 $RG_6$ = 2001 $PK_{66}$ = 2004 $EH_{97}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.59272 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20965092 | $\omega$ | 314.51208 | | +0.93348235 | +0.35752444 | |
| $a$ | 2.8063265 | $\Omega$ | 24.58041 | | −0.30692862 | +0.83693438 | |
| $e$ | 0.0947371 | $i$ | 3.86700 | | −0.18548727 | +0.41438765 | |
| $P$ | 4.70 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.4− | 0.2− | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.2+ |
| 2001 08 14 | 608 | 0.7− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.6− | 0.8− |
| 2001 08 14 | 608 | 1.1− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.5− | 0.5− |
| 2001 09 19 | 704 | 0.6+ | 1.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2001 09 19 | 704 | 1.1+ | 0.4− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.4+ | 0.6− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.6− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 691 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.6− | 0.3− |
| 2004 03 22 | 735 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 29 | 291 | 0.2+ | 0.0 |
| 2004 03 22 | 735 | 0.2− | 0.7+ | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 29 | 291 | 0.1+ | 0.2+ |
| 2004 03 22 | 735 | 0.8+ | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.2− | 2006 10 29 | 291 | 0.1+ | 0.0 |
| 2004 03 22 | 735 | 0.5+ | 0.7− | 2006 09 27 | 704 | 1.0+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2006 09 14 | 703 | 0.8+ | 0.8+ | 2006 09 27 | 704 | 0.9+ | 0.7+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2006 09 14 | 703 | 0.7+ | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2006 09 14 | 703 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.1+ |
| 2006 09 14 | 703 | 0.1− | 1.4+ | 2006 09 29 | 704 | 1.0− | 0.3− | 2006 11 22 | G96 | 0.5+ | 0.2+ |
| 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 09 29 | 704 | 1.3− | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.6+ | 0.2− |
| 2006 09 15 | 691 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.0 | | | | |
| 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.0 | 0.4− | | | | |

## 2006 $RH_6$ = 2002 $NB_{10}$ = 2005 $EP_{179}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.29896 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27317507 | $\omega$ | 116.78829 | | +0.66915623 | +0.74280835 | |
| $a$ | 2.3523865 | $\Omega$ | 195.27465 | | −0.70757868 | +0.62800863 | |
| $e$ | 0.2435689 | $i$ | 4.69859 | | −0.22707347 | +0.23203643 | |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 07 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.3− | 1.0+ | 2006 09 29 | 704 | 0.9− | 0.2+ |
| 1999 10 07 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.9− | 0.6− | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 1999 10 07 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.7+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 07 04 | 644 | 0.2+ | 1.0+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 07 04 | 644 | 0.4+ | 0.8+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 07 04 | 644 | 0.5+ | 0.9+ | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2002 07 05 | 704 | 0.0 | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.4− | 0.3− |
| 2002 07 05 | 704 | 0.0 | 0.5+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2002 07 05 | 704 | 0.7− | 0.6+ | 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2002 07 05 | 704 | 0.6− | 0.4+ | 2006 09 17 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.2+ | 1.0+ |
| 2002 07 05 | 704 | 0.4− | 1.0− | 2006 09 17 | 704 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2002 07 14 | 704 | 0.6+ | 0.6− | 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.5+ |
| 2002 07 14 | 704 | 0.5+ | 0.2− | 2006 09 17 | 704 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2002 07 14 | 704 | (1.6+ | 0.6−) | 2006 09 17 | 704 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 07 14 | 704 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2005 03 09 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2005 03 09 | 691 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2005 03 09 | 691 | 0.4+ | 0.7+ | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 1.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 03 13 | 691 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2005 04 12 | G96 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 04 12 | G96 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2005 04 12 | G96 | 0.9− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | G96 | 0.8− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2006 08 18 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2006 08 18 | 644 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.5− |
| 2006 08 18 | 644 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.9+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2006 09 06 | 644 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 0.5− | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2006 09 06 | 644 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.6− | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2006 09 06 | 644 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.8+ | 0.1− | | | | |

**2006 RK$_6$ = 2005 GE$_{177}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.74671 | | (2000.0) | | | |
| $n$ | 0.23019666 | $\omega$ | 324.64184 | | +0.86643951 | +0.49923493 |
| $a$ | 2.6367565 | $\Omega$ | 5.42221 | | −0.43974590 | +0.76955717 |
| $e$ | 0.2624152 | $i$ | 4.16337 | | −0.23644477 | +0.39817865 |
| $P$ | 4.28 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.2+ | 0.8+ | 2006 09 15 | 691 | 0.6− | 0.1− | 2006 09 29 | 704 | 0.4− | 0.4+ |
| 2000 02 06 | 695 | 0.0 | 1.0+ | 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.3+ |
| 2002 11 07 | 695 | 0.4− | 0.3+ | 2006 09 17 | 704 | 0.4− | 0.7− | 2006 09 29 | 704 | 0.1+ | 0.3+ |
| 2002 11 07 | 695 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.4+ |
| 2002 11 24 | 644 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.3− | 0.1+ | 2006 09 29 | 691 | 0.2+ | 0.4+ |
| 2002 11 24 | 644 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.2− | 0.5− | 2006 09 29 | 691 | 0.2+ | 0.3+ |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.7+ | 2006 09 29 | 691 | 0.7+ | 0.1+ |
| 2002 12 06 | 704 | 0.0 | 0.4− | 2006 09 18 | 699 | 0.1− | 0.5+ | 2006 09 29 | 608 | (0.4− | 2.3−) |
| 2002 12 06 | 704 | 1.3+ | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.9− | 2006 09 29 | 608 | (0.6− | 2.6−) |
| 2002 12 06 | 704 | 0.0 | 1.2+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 29 | 608 | (0.3− | 2.2−) |
| 2002 12 06 | 704 | 0.1− | 0.9+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2005 03 11 | G96 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2005 03 11 | G96 | 0.3− | 0.4− | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2005 03 11 | G96 | 0.9− | 0.3+ | 2006 09 20 | 704 | 0.3− | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.2− |
| 2005 03 11 | G96 | 0.5− | 0.2+ | 2006 09 20 | 704 | 1.4− | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.3− |
| 2005 04 15 | 691 | 0.0 | 0.7+ | 2006 09 20 | 704 | 0.3− | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.2− |
| 2005 04 15 | 691 | 0.4+ | 0.4+ | 2006 09 20 | 704 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.5+ |
| 2005 04 15 | 691 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.6− | 0.2+ | 2006 10 15 | 703 | 0.0 | 0.6+ |
| 2005 04 17 | 691 | 0.5+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.0 | 0.5+ |
| 2005 04 17 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.1− | 0.4+ |
| 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2006 08 18 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2006 08 18 | 644 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.8− |
| 2006 08 18 | 644 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.8+ | 0.3− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2006 09 14 | 703 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2006 09 14 | 703 | 0.3+ | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2006 09 14 | 703 | 0.2+ | 0.5− | 2006 09 27 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2006 09 14 | 703 | 0.4+ | 0.3− | 2006 09 27 | 704 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2006 09 15 | 691 | 0.5− | 0.2− | 2006 09 27 | 704 | 0.6+ | 0.7+ | | | | |
| 2006 09 15 | 691 | 0.8− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.3+ | | | | |

**2006 RL$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.51582 | | (2000.0) | | | |
| $n$ | 0.26786464 | $\omega$ | 351.39383 | | +0.99998412 | +0.00236090 |
| $a$ | 2.3833755 | $\Omega$ | 8.47593 | | +0.00006274 | +0.90328553 |
| $e$ | 0.2114899 | $i$ | 1.98942 | | −0.00563483 | +0.42903342 |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 22 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 09 29 | 691 | 0.4− | 0.3+ |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2002 07 22 | 644 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 03 | 691 | 0.0 | 0.0 |
| 2004 01 19 | 691 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.2− | 1.1− |
| 2004 01 19 | 691 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.1+ | 0.1− |
| 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.1− |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.8+ | 0.0 | 2006 10 15 | 703 | 0.1− | 0.2− |
| 2005 04 17 | 691 | 0.2− | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.8− | 0.3+ |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.6+ |
| 2006 09 06 | 644 | 0.7− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.3+ |
| 2006 09 06 | 644 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.8− |
| 2006 09 14 | 703 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2006 09 14 | 703 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2006 09 14 | 703 | 0.0 | 0.6− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2006 09 14 | 703 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2006 09 15 | 691 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 10 23 | 704 | 1.2+ | 1.1− |
| 2006 09 17 | 704 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.7− | 0.6+ | 2006 10 23 | 704 | 0.8+ | 0.4+ |
| 2006 09 17 | 704 | 0.3+ | 0.0 | 2006 09 29 | 704 | 1.0− | 0.1+ | 2006 10 23 | 704 | 1.2+ | 0.8− |
| 2006 09 17 | 704 | 0.4+ | 0.3− | 2006 09 29 | 704 | 0.5− | 1.0+ | 2006 10 23 | 704 | 0.2+ | 1.0+ |
| 2006 09 17 | 704 | 0.0 | 0.4− | 2006 09 29 | 704 | 1.1− | 1.4+ | 2006 10 23 | 704 | 0.8+ | 0.5− |
| 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.8+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2006 09 18 | 699 | 0.6− | 0.1− | 2006 09 29 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2006 09 18 | 699 | 0.0 | 0.2− | 2006 09 29 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.4− |

**2006 RM$_6$ = 2005 GT$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.19398 | | (2000.0) | | | |
| $n$ | 0.23337905 | $\omega$ | 109.84018 | | +0.58562083 | +0.80755764 |
| $a$ | 2.6127316 | $\Omega$ | 196.58812 | | −0.80469693 | +0.56880661 |
| $e$ | 0.1589494 | $i$ | 14.19159 | | −0.09752480 | +0.15591566 |
| $P$ | 4.22 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2000 03 04 | 645 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2005 04 14 | 691 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2005 04 14 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2+ |
| 2005 04 14 | 691 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2005 04 15 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.3+ |
| 2006 09 14 | 703 | 0.5− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2006 09 14 | 703 | 1.2+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.2+ |
| 2006 09 14 | 703 | 0.3+ | 1.2+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2006 09 14 | 703 | 0.8+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.7+ | | | | |

**2006 RQ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.64381 | | (2000.0) | | | |
| $n$ | 0.22206977 | $\omega$ | 171.95803 | | +0.99628657 | −0.06818781 |
| $a$ | 2.7007005 | $\Omega$ | 192.32579 | | +0.05869108 | +0.98457974 |
| $e$ | 0.1492484 | $i$ | 14.25624 | | +0.06299547 | +0.16109982 |
| $P$ | 4.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.0 | 0.1− | 2006 09 17 | 704 | 0.0 | 0.6− | 2006 09 29 | 704 | 0.2− | 0.5+ |
| 2005 05 07 | 691 | 0.0 | 0.2− | 2006 09 17 | 704 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.2+ | 0.3− |
| 2005 05 07 | 691 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.7− | 0.9− | 2006 09 29 | 704 | 0.5+ | 0.5− |
| 2005 05 15 | 691 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.7− | 0.7− | 2006 09 29 | 704 | 0.2+ | 0.5+ |
| 2005 05 15 | 691 | 0.8+ | 0.9+ | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.7− |
| 2005 05 15 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.3− | 0.4− | 2006 10 15 | 703 | 0.5− | 0.2− |
| 2005 05 21 | 644 | 0.1− | 0.5− | 2006 09 18 | 699 | 0.2+ | 0.4− | 2006 10 15 | 703 | 0.3− | 0.5− |
| 2005 05 21 | 644 | 0.4− | 0.4− | 2006 09 18 | 699 | 0.7+ | 0.1− | 2006 10 15 | 703 | 0.5+ | 0.1+ |
| 2005 05 21 | 644 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2006 08 31 | 704 | 0.6− | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2006 08 31 | 704 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.4− | 1.1− |
| 2006 08 31 | 704 | 0.9+ | 0.7− | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.9+ |
| 2006 08 31 | 704 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.1− | 1.0+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2006 09 14 | 703 | 0.1− | 0.4− | 2006 09 20 | 608 | (0.8+ | 1.7−) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2006 09 14 | 703 | 0.8− | 0.0 | 2006 09 20 | 608 | (0.6+ | 1.6−) | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2006 09 14 | 703 | 0.6+ | 0.4− | 2006 09 20 | 608 | (0.5+ | 1.9−) | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2006 09 14 | 703 | 0.3− | 0.4− | 2006 09 22 | A50 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 1.3+ | 0.9− |
| 2006 09 15 | 704 | 0.5− | 0.4− | 2006 09 22 | A50 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.1− | 0.4+ |
| 2006 09 15 | 704 | 0.7− | 0.6− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2006 09 15 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2006 09 15 | 704 | 0.4+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.2− | 0.5+ |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.8+ | 0.7+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | (0.0 | 1.6+) | | | | |
| 2006 09 17 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.0 | 1.3+ | | | | |

### 2006 $RS_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.50642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18335717 | $\omega$ | 69.50002 | | +0.21395245 | −0.97642204 | |
| $a$ | 3.0685800 | $\Omega$ | 8.30422 | | +0.80573662 | +0.15978216 | |
| $e$ | 0.2187371 | $i$ | 11.46633 | | +0.55227968 | +0.14515390 | |
| $P$ | 5.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.7+ | 0.4+ | 2003 04 07 | 691 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.6+ |
| 2001 10 15 | 704 | 0.2− | 0.2+ | 2003 04 29 | 691 | 0.4+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2001 10 15 | 704 | 0.3− | 0.0 | 2003 04 29 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.5+ |
| 2001 10 15 | 704 | 0.3− | 0.3− | 2003 04 29 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.6+ |
| 2001 10 25 | 704 | 1.0− | 1.3− | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.6+ |
| 2001 10 25 | 704 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 1.0+ |
| 2001 10 25 | 704 | (0.1+ | 1.8−) | 2006 09 14 | 703 | (0.9+ | 1.9−) | 2006 10 17 | 703 | (4.1− | 5.1+) |
| 2001 10 25 | 704 | 0.1+ | 0.7− | 2006 09 14 | 703 | (0.5+ | 1.5−) | 2006 10 17 | 703 | (0.9+ | 4.0+) |
| 2001 12 09 | 704 | 0.4+ | 0.3− | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2001 12 09 | 704 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2001 12 09 | 704 | 0.4+ | 0.6− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2001 12 09 | 704 | 0.7+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2003 03 24 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2003 03 24 | 691 | 0.6+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2003 03 24 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 850 | 0.8+ | 0.9− | 2006 10 21 | 644 | 0.3− | 0.6+ |
| 2003 03 31 | 291 | 0.2+ | 0.2+ | 2006 09 29 | 850 | (1.7+ | 2.1+) | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 03 31 | 291 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 2003 03 31 | 291 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2003 04 07 | 691 | 0.5− | 0.3+ | 2006 09 30 | 691 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.4+ |
| 2003 04 07 | 691 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.4+ | | | | |

### 2006 $RU_6$ = 2004 $HO_{29}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.55608 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21990553 | $\omega$ | 108.26031 | | −0.41061570 | −0.91139694 | |
| $a$ | 2.7183911 | $\Omega$ | 6.19432 | | +0.71089782 | −0.33880754 | |
| $e$ | 0.1048749 | $i$ | 14.70663 | | +0.57098077 | −0.23359167 | |
| $P$ | 4.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.5+ | 0.0 | 2004 04 22 | 704 | 0.1+ | 0.4− | 2006 10 01 | 691 | 0.2− | 0.4+ |
| 2002 12 07 | 704 | 0.4+ | 0.2+ | 2004 04 22 | 704 | 0.4+ | 0.8+ | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 2002 12 07 | 704 | 0.4− | 0.6− | 2004 04 22 | 704 | 0.6− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2002 12 07 | 704 | 0.6− | 0.8+ | 2004 04 22 | 704 | 0.5+ | 1.3+ | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.5+ |
| 2004 03 16 | 691 | 0.4+ | 0.8+ | 2006 09 14 | 703 | 1.3+ | 1.2+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2004 03 16 | 691 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2004 04 19 | 704 | 0.1− | 0.3− | 2006 09 14 | 703 | 0.4− | 1.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2004 04 19 | 704 | 0.8+ | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2004 04 19 | 704 | (2.0+ | 0.9+) | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.5+ | 1.9+ |
| 2004 04 21 | 704 | 1.4+ | 0.6+ | 2006 09 15 | 691 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.3− | 0.7− |
| 2004 04 21 | 704 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2004 04 21 | 704 | 0.3+ | 0.4− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 17 | 703 | 1.0− | 0.3− |
| 2004 04 21 | 704 | 0.8+ | 0.5− | 2006 09 19 | 691 | 0.4− | 0.1+ | | | | |

### 2006 $RV_6$ = 2002 $XS_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.71045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22287289 | $\omega$ | 90.83171 | | −0.07897995 | −0.99680243 | |
| $a$ | 2.6942086 | $\Omega$ | 3.76318 | | +0.82527551 | −0.07220376 | |
| $e$ | 0.1746898 | $i$ | 10.64840 | | +0.55918021 | −0.03422762 | |
| $P$ | 4.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.4− | 0.5+ | 2006 09 14 | 703 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | (2.1− | 0.2−) | 2006 09 28 | 699 | 0.3− | 0.9− |
| 2002 12 06 | 704 | 0.2+ | 0.6+ | 2006 09 14 | 703 | (1.8− | 0.1+) | 2006 09 28 | 699 | 0.7+ | 0.4+ |
| 2002 12 06 | 704 | 0.2+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 699 | (1.6+ | 0.2+) |
| 2002 12 06 | 704 | 0.4− | 1.0− | 2006 09 15 | 691 | 0.5+ | 0.1+ | 2006 09 28 | 699 | 0.3+ | 0.4+ |
| 2002 12 07 | 704 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 12 07 | 704 | 0.4+ | 0.4+ | 2006 09 17 | 691 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 12 07 | 704 | 0.2+ | 0.1− | 2006 09 17 | 691 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 12 07 | 704 | 0.3− | 0.5− | 2006 09 17 | 691 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 12 07 | 704 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2006 09 14 | 703 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− |

### 2006 $RW_6$ = 2002 $LD_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.92498 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27610380 | $\omega$ | 102.35136 | | +0.55723825 | +0.82890314 | |
| $a$ | 2.3357219 | $\Omega$ | 201.73381 | | −0.80399220 | +0.52384264 | |
| $e$ | 0.2639617 | $i$ | 7.61064 | | −0.20756224 | +0.19623577 | |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 18 | 691 | 0.1+ | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1992 11 18 | 691 | 0.5− | 0.3+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 1992 11 18 | 691 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 05 09 | 704 | 0.2+ | 0.2− | 2006 09 17 | 683 | 1.2+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 05 09 | 704 | 1.3+ | 0.2+ | 2006 09 17 | 683 | (0.2+ | 1.5−) | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 05 09 | 704 | 0.2+ | 1.3− | 2006 09 17 | 683 | 0.4+ | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 05 09 | 704 | 0.6+ | 0.2− | 2006 09 18 | 704 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 06 10 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 2002 06 10 | 704 | 0.2− | 0.9+ | 2006 09 18 | 704 | 0.5+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2002 06 10 | 704 | 0.5− | 0.7+ | 2006 09 18 | 699 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 06 10 | 704 | 0.2− | 1.3+ | 2006 09 18 | 699 | 0.9+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 06 10 | 704 | 0.0 | 0.7+ | 2006 09 18 | 699 | (2.1+ | 0.1+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 06 14 | 704 | 0.4+ | 0.7− | 2006 09 18 | 699 | (2.5+ | 1.0+) | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 06 14 | 704 | 1.1+ | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 06 14 | 704 | 0.2+ | 0.5− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2002 06 14 | 704 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 2002 06 14 | 704 | 0.1+ | 0.9− | 2006 09 25 | 704 | 1.3− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2002 06 14 | 704 | 0.1+ | 0.5− | 2006 09 25 | 704 | 1.0− | 1.3− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2002 06 14 | 704 | 0.8− | 0.5− | 2006 09 25 | 704 | 0.3− | 0.9− | 2006 10 29 | 291 | 0.1+ | 0.1− |
| 2002 06 14 | 704 | 1.0− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2002 06 14 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2− | 2006 10 29 | 291 | 0.1− | 0.1− |
| 2002 06 14 | 704 | 1.1− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.5− |
| 2002 06 27 | 644 | 0.1− | 0.9+ | 2006 09 29 | 704 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 06 27 | 644 | 0.1− | 0.9+ | 2006 09 29 | 704 | 0.2− | 0.5− | 2006 10 31 | G96 | 0.5+ | 0.5− |
| 2002 06 27 | 644 | 0.2− | 0.7+ | 2006 09 29 | 704 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2006 08 06 | 699 | 1.0− | 1.2+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 2006 08 06 | 699 | 0.8+ | 0.8− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.3− |
| 2006 08 06 | 699 | 0.3− | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.0+ | 1.4+ |
| 2006 08 06 | 699 | (2.5− | 2.8+) | 2006 10 15 | 703 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2006 09 14 | 703 | 0.3+ | 0.6− | 2006 10 15 | 703 | 0.1+ | 0.9+ | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2006 09 14 | 703 | 0.1+ | 0.8+ | 2006 10 15 | 703 | 0.2+ | 0.8+ | 2006 11 14 | G96 | 0.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 14 | 703 | 1.1− | 0.5+ | 2006 10 15 | 703 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 09 14 | 703 | 0.9− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.5− |

**2006 RY$_6$ = 2004 FO$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.77515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22630197 | $\omega$ | 70.42549 | | +0.10283388 | −0.99004462 | |
| $a$ | 2.6669231 | $\Omega$ | 14.69741 | | +0.70987314 | +0.00536228 | |
| $e$ | 0.0430005 | $i$ | 22.25976 | | +0.69678212 | +0.14065170 | |
| $P$ | 4.36 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 0.7+ | 0.1+ | 2004 03 28 | 703 | (1.5− | 0.8−) | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2004 03 15 | 704 | 0.6+ | 0.2− | 2004 03 28 | 703 | (3.0− | 0.1−) | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2004 03 15 | 704 | 0.3− | 0.6− | 2004 03 28 | 703 | 0.8− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2004 03 15 | 704 | (1.7− | 0.2+) | 2006 09 14 | 703 | (1.8− | 0.6−) | 2006 10 17 | 703 | 0.9− | 0.3+ |
| 2004 03 15 | 704 | 1.1+ | 0.1− | 2006 09 14 | 703 | 0.3− | 1.3− | 2006 10 17 | 703 | 0.3− | 0.8+ |
| 2004 03 20 | 704 | 1.1− | 0.0 | 2006 09 14 | 703 | 0.1+ | 0.8− | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2004 03 20 | 704 | 0.8+ | 1.0+ | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 17 | 703 | (1.0− | 1.6−) |
| 2004 03 20 | 704 | 0.2− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 03 20 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2004 03 20 | 704 | 0.5− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 03 23 | 704 | 0.1− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 1.5+ | 1.3− |
| 2004 03 23 | 704 | 0.1+ | 1.4− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.4+ | 1.1+ |
| 2004 03 23 | 704 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | (1.9+ | 0.8+) |
| 2004 03 23 | 704 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.3− | 0.6− |
| 2004 03 23 | 704 | 0.0 | 0.3− | 2006 09 26 | 691 | 0.2− | 0.2+ | | | | |
| 2004 03 28 | 703 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.3− | 0.1− | | | | |

**2006 RB$_7$ = 2005 JS$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.18847 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30420991 | $\omega$ | 271.43075 | | −0.82866204 | −0.55954584 | |
| $a$ | 2.1895447 | $\Omega$ | 234.54510 | | +0.52064475 | −0.76059244 | |
| $e$ | 0.0591651 | $i$ | 1.06138 | | +0.20554383 | −0.32925307 | |
| $P$ | 3.24 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 03 | 691 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 1999 08 03 | 691 | 0.1− | 0.7+ | 2005 05 10 | G96 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 1999 08 03 | 691 | 0.6− | 0.9+ | 2005 05 10 | G96 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.3+ | 0.2− |
| 2000 12 16 | 691 | 0.1− | 0.4+ | 2005 05 10 | G96 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2000 12 16 | 691 | 0.3+ | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2000 12 16 | 691 | 0.1+ | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2003 11 19 | 699 | 0.4− | 0.8+ | 2005 06 14 | G96 | 0.0 | 0.8− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2003 11 19 | 699 | 0.4+ | 0.7− | 2005 06 14 | G96 | 0.6− | 0.2− | 2006 10 03 | 691 | 0.3+ | 0.3− |
| 2003 11 19 | 699 | 0.9− | 0.0 | 2005 06 14 | G96 | 0.1− | 0.2+ | 2006 10 03 | 691 | 0.4+ | 0.2− |
| 2003 11 19 | 699 | 0.0 | 0.7+ | 2005 06 14 | G96 | 0.6− | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.2− |
| 2003 11 29 | 691 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 1.1+ | 0.4− |
| 2003 11 29 | 691 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.5− |
| 2003 11 29 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 1.1− |
| 2005 05 09 | G96 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.4− | 0.5+ |
| 2005 05 09 | G96 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2005 05 09 | G96 | 0.1+ | 0.3− | 2006 09 15 | 691 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2005 05 09 | G96 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2005 05 10 | G96 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.2− | | | | |

**2006 RC$_7$ = 2002 RJ$_{249}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.63604 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26431819 | $\omega$ | 250.54411 | | +0.15860155 | −0.98733675 | |
| $a$ | 2.4046471 | $\Omega$ | 190.33194 | | +0.91286985 | +0.14795727 | |
| $e$ | 0.1138944 | $i$ | 1.09245 | | +0.37618372 | +0.05722577 | |
| $P$ | 3.73 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.2− | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.3− | 0.2− |
| 2002 09 14 | 644 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.0 | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2002 09 16 | 644 | 0.1+ | 0.7− | 2006 09 26 | G96 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2002 09 16 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.4+ |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 10 15 | 703 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4− | 0.1+ |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 10 15 | 703 | (1.7− | 1.1−) | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.2+ | | | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3− | 0.0 | | | | |

**2006 RD$_7$ = 2004 FF$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.40112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18043111 | $\omega$ | 296.56191 | | +0.63336159 | +0.77117500 | |
| $a$ | 3.1016666 | $\Omega$ | 13.34556 | | −0.57291160 | +0.52318325 | |
| $e$ | 0.1050499 | $i$ | 16.19028 | | −0.52021669 | +0.36272360 | |
| $P$ | 5.46 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.6− | 1.0+ | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2004 03 27 | 704 | 0.6− | 1.1+ | 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 03 27 | 704 | 0.0 | 1.0− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 0.2− | 0.8− | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2004 03 29 | 704 | 0.2+ | 0.7+ | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2004 03 29 | 704 | (2.5+ | 0.3+) | 2006 09 18 | 699 | 0.4+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2004 03 29 | 704 | 0.1− | 1.0+ | 2006 09 18 | 699 | 0.5− | 0.8− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2004 03 29 | 691 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.4+ | 1.4− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2004 03 29 | 704 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 03 29 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.7+ | 0.5− |
| 2004 03 29 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ | | | | |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 | | | | |

**2006 RF$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.11104 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17809888 | $\omega$ | 244.34695 | | +0.25293528 | −0.96699686 | |
| $a$ | 3.1286856 | $\Omega$ | 191.13263 | | +0.93483349 | +0.25244332 | |
| $e$ | 0.0849690 | $i$ | 9.14073 | | +0.24921896 | +0.03448834 | |
| $P$ | 5.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 19 | 691 | 0.2− | 0.4− | 2006 09 18 | 691 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 1993 05 19 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.5− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1993 05 19 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2004 06 16 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2004 06 16 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.7+ | 1.3− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2004 06 16 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2006 09 14 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.6+ | 2006 11 23 | G96 | 0.9+ | 0.7− |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.8+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 21 | 291 | 0.4− | 0.9+ | 2006 11 23 | G96 | 0.6− | 0.4− |
| 2006 09 18 | 691 | 0.2− | 0.4− | 2006 10 21 | 291 | (0.3+ | 1.8+) | | | | |
| 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 21 | 291 | 0.1+ | 0.3+ | | | | |

### 2006 $RK_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.61327 | | | (2000.0) | | |
| $n$ | 0.24716653 | $\omega$ | 107.32860 | | +0.97889524 | +0.18773582 |
| $a$ | 2.5146427 | $\Omega$ | 241.91504 | | −0.20425387 | +0.91166474 |
| $e$ | 0.1809729 | $i$ | 5.25099 | | +0.00666774 | +0.36554434 |
| $P$ | 3.99 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 19 | 704 | (2.3+ | 0.3−) | 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.8+ | 1.1+ |
| 1998 08 19 | 704 | 1.7+ | 0.4− | 2002 10 05 | 645 | 0.1+ | 0.0 | 2006 09 11 | 703 | 0.0 | 0.3+ |
| 1998 08 19 | 704 | 0.8− | 0.3− | 2006 08 18 | 644 | 0.2− | 0.2+ | 2006 09 13 | 644 | 0.1+ | 0.4+ |
| 1998 08 19 | 704 | (2.9+ | 2.4−) | 2006 08 18 | 644 | 0.1− | 0.6+ | 2006 09 13 | 644 | 0.1+ | 0.4+ |
| 1998 08 19 | 704 | (5.6− | 0.1+) | 2006 08 18 | 644 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.5+ |
| 2002 08 18 | 608 | 0.4− | 0.2+ | 2006 08 27 | 699 | 0.3− | 1.4− | 2006 09 18 | 703 | 0.4− | 0.6+ |
| 2002 08 18 | 608 | 0.6− | 0.3+ | 2006 08 27 | 699 | 0.1− | 1.3− | 2006 09 18 | 703 | 0.7− | 0.7− |
| 2002 08 18 | 608 | 0.1− | 0.5+ | 2006 08 27 | 699 | 1.0+ | 0.3− | 2006 09 18 | 703 | 0.3− | 0.1− |
| 2002 08 28 | 644 | 0.4− | 0.5− | 2006 08 27 | 699 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 0.6− | 0.3+ |
| 2002 08 28 | 644 | 0.1− | 0.5− | 2006 09 11 | 703 | 0.3− | 0.7+ | | | | |
| 2002 08 28 | 644 | 0.3− | 0.5− | 2006 09 11 | 703 | 0.1− | 0.7+ | | | | |

### 2006 $RM_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.45695 | | | (2000.0) | | |
| $n$ | 0.17422890 | $\omega$ | 142.42942 | | +0.84571318 | +0.53299049 |
| $a$ | 3.1748454 | $\Omega$ | 185.55759 | | −0.53128644 | +0.83634869 |
| $e$ | 0.1829457 | $i$ | 15.74178 | | −0.05003935 | +0.12822642 |
| $P$ | 5.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 645 | 0.0 | 0.0 | 2006 09 11 | 703 | 0.2+ | 1.0+ | 2006 09 30 | 704 | 0.6+ | 0.4+ |
| 2001 12 18 | 645 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 30 | 699 | 0.1− | 1.3+ |
| 2004 04 24 | 691 | 0.1+ | 0.9+ | 2006 09 13 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.5− | 1.4+ |
| 2004 04 24 | 691 | 0.1+ | 0.8+ | 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 09 30 | 699 | 0.1+ | 0.9+ |
| 2004 04 24 | 691 | 0.3+ | 0.7+ | 2006 09 18 | 703 | (2.0− | 1.5+) | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2005 05 20 | 644 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.2+ | 1.2− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2005 05 20 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | (1.9+ | 0.6+) | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2005 05 20 | 644 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.6− | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2006 08 29 | 703 | 0.4− | 0.6− | 2006 09 29 | 704 | 1.4+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 08 29 | 703 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.2+ | 1.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.6+ | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2006 09 11 | 703 | 0.4+ | 1.0+ | 2006 09 30 | 699 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2006 09 11 | 703 | 1.3− | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 09 11 | 703 | 0.3− | 1.0− | 2006 09 30 | 699 | 0.6+ | 0.7+ | 2006 11 21 | G96 | 0.2− | 0.1+ |

### 2006 $RN_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.13177 | | | (2000.0) | | |
| $n$ | 0.24357722 | $\omega$ | 197.84662 | | +0.89841153 | +0.42357294 |
| $a$ | 2.5392859 | $\Omega$ | 136.49947 | | −0.37959024 | +0.88176595 |
| $e$ | 0.2580568 | $i$ | 9.69671 | | −0.22083473 | +0.20754463 |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 26 | 691 | 0.5− | 0.1− | 2002 10 16 | 644 | 0.2− | 0.6+ | 2006 09 17 | 699 | 0.3− | 0.8+ |
| 1995 12 26 | 691 | 1.2− | 0.3+ | 2002 10 16 | 644 | 0.1− | 0.5+ | 2006 09 17 | 699 | 0.2+ | 0.9+ |
| 1995 12 26 | 691 | 0.8− | 0.1+ | 2002 10 16 | 644 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.4− |
| 1998 10 18 | 699 | 0.2+ | 1.2+ | 2002 11 05 | 644 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.1− |
| 1998 10 18 | 699 | 1.1+ | 1.8+ | 2002 11 05 | 644 | 0.3− | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.0 |
| 1998 10 18 | 699 | 0.4+ | 0.7+ | 2002 11 05 | 644 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.1− |
| 2000 01 26 | 691 | 0.2+ | 0.2− | 2004 02 14 | 691 | 0.7+ | 0.5+ | 2006 09 25 | 703 | 0.4− | 0.0 |
| 2000 01 26 | 691 | 0.5− | 0.0 | 2004 02 14 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.7− |
| 2000 01 26 | 691 | 0.6+ | 0.7− | 2004 02 14 | 691 | 0.6+ | 0.1+ | 2006 09 25 | 703 | 0.3− | 0.9− |
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2006 08 21 | 644 | 0.4− | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.8− |
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2006 08 21 | 644 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2002 08 24 | 644 | 0.0 | 0.2− | 2006 08 21 | 644 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 08 24 | 644 | 0.4+ | 0.2+ | 2006 09 12 | 704 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 08 24 | 644 | 0.5− | 0.7+ | 2006 09 12 | 704 | 0.5+ | 0.8+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 09 28 | 608 | (1.7− | 0.0 ) | 2006 09 12 | 704 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 09 28 | 608 | (2.0− | 0.2−) | 2006 09 12 | 704 | 0.2− | 1.1− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2002 09 28 | 608 | (1.8− | 0.7−) | 2006 09 12 | 704 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.2− | 0.3− |
| 2002 10 05 | 704 | 0.4− | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 11 19 | 703 | 0.3+ | 0.8− |
| 2002 10 05 | 704 | 0.8− | 0.6− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 2.0+ | 0.4− |
| 2002 10 05 | 704 | 0.7− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.1− | 0.5+ |
| 2002 10 05 | 704 | 0.1+ | 0.3− | 2006 09 17 | 699 | 0.1− | 0.3+ | | | | |
| 2002 10 05 | 704 | 0.3+ | 0.8+ | 2006 09 17 | 699 | 0.7− | 0.2+ | | | | |

### 2006 $RO_7$ = 2001 $VW_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.03428 | | | (2000.0) | | |
| $n$ | 0.18380887 | $\omega$ | 168.07398 | | +0.99426145 | +0.10270960 |
| $a$ | 3.0635507 | $\Omega$ | 186.26629 | | −0.10579475 | +0.98550840 |
| $e$ | 0.3035648 | $i$ | 15.90672 | | +0.01586284 | +0.13499602 |
| $P$ | 5.36 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.3+ | 0.3− | 2006 09 30 | 699 | 0.5− | 1.0− |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.4+ | 0.2− | 2006 09 30 | 699 | 0.6+ | 0.2− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.1+ | 0.3− | 2006 09 30 | 699 | 0.5− | 0.5+ |
| 2001 11 12 | 645 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.3− | 0.1− |
| 2001 11 21 | 645 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.5− | 0.8+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | (0.3+ | 1.5−) | 2006 10 02 | G96 | 0.2− | 0.4− |
| 2005 05 07 | G96 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2005 05 07 | G96 | 0.3+ | 1.2− | 2006 09 18 | 703 | 0.8− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2005 05 07 | G96 | 0.3− | 0.4− | 2006 09 18 | 704 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.5− | 0.1+ |
| 2005 05 07 | G96 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2006 08 27 | 699 | 1.3+ | 0.1− | 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2006 08 27 | 699 | 1.0+ | 0.2+ | 2006 09 18 | 704 | 1.0+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2006 08 27 | 699 | 0.4− | 1.0+ | 2006 09 20 | 699 | 0.5+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2006 08 27 | 699 | 0.3+ | 0.7+ | 2006 09 20 | 699 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2006 09 12 | 703 | 0.0 | 0.3− | 2006 09 20 | 699 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2006 09 12 | 703 | 0.2+ | 0.5− | 2006 09 20 | 699 | 0.3− | 0.4+ | | | | |
| 2006 09 12 | 703 | 0.9− | 0.7− | 2006 09 30 | 699 | 0.2− | 0.1− | | | | |

### 2006 $RS_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.07312 | | | (2000.0) | | |
| $n$ | 0.21213765 | $\omega$ | 141.14566 | | +0.72369606 | +0.69010188 |
| $a$ | 2.7843525 | $\Omega$ | 175.20752 | | −0.64674546 | +0.68064205 |
| $e$ | 0.1708677 | $i$ | 3.32005 | | −0.24079935 | +0.24593861 |
| $P$ | 4.65 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.2+ | 2006 08 27 | 699 | 0.3− | 0.1+ | 2006 09 20 | 699 | 0.5+ | 0.3+ |
| 2000 02 12 | 645 | 0.3− | 0.0 | 2006 08 27 | 699 | 0.3+ | 1.3+ | 2006 09 20 | 699 | 1.1+ | 1.0+ |
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2006 08 27 | 699 | 0.7− | 0.7+ | 2006 09 20 | 699 | 0.4− | 0.5+ |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.4− | 0.9+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2004 02 11 | 691 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 0.9− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2004 02 11 | 691 | 0.0 | 0.5+ | 2006 09 12 | 703 | 0.7− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2004 02 11 | 691 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.7− | 0.8− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2005 03 14 | G96 | 0.5− | 0.0 | 2006 09 13 | 644 | 0.6− | 0.3+ | 2006 09 30 | 699 | 0.7− | 0.1− |
| 2005 03 14 | G96 | 0.3− | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 09 30 | 699 | 0.4+ | 0.1+ |
| 2005 03 14 | G96 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 30 | 699 | (1.6− | 1.5+) |
| 2005 03 14 | G96 | 0.8− | 0.4+ | 2006 09 17 | 704 | 0.6+ | 0.6+ | 2006 09 30 | 699 | 0.5+ | 0.1+ |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 09 17 | 704 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2005 04 17 | 691 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2006 08 27 | 699 | 0.4+ | 0.4+ | 2006 09 20 | 699 | (0.2− | 1.6+) | 2006 11 15 | G96 | 0.0 | 0.4− |

**2006 RV$_7$ = 1995 SU$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.47600 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26851404 | $\omega$ | 229.73522 | | +0.72344275 | −0.69037392 | |
| $a$ | 2.3795311 | $\Omega$ | 173.92101 | | +0.64380370 | +0.67263484 | |
| $e$ | 0.1906096 | $i$ | 2.05539 | | +0.24929375 | +0.26635730 | |
| $P$ | 3.67 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.0 | 0.4− | 2004 02 14 | 691 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.4+ | 0.2+ |
| 1995 09 17 | 691 | 0.2+ | 0.1+ | 2004 02 14 | 691 | 0.2− | 0.0 | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 1995 09 17 | 691 | 0.1+ | 0.4− | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 1995 09 18 | 691 | 0.1+ | 0.5+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 1995 09 18 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.3− |
| 1995 09 18 | 691 | 0.4− | 0.0 | 2006 09 12 | 703 | 0.8+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.4− |
| 2000 01 10 | 691 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.3− | 0.6− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2000 01 10 | 691 | 0.2− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2000 01 10 | 691 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.5− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.8− |
| 2004 02 14 | 691 | 0.2+ | 0.1− | 2006 09 13 | 644 | 0.4+ | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.5− |

**2006 RX$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.92479 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28319004 | $\omega$ | 82.08899 | | +0.46049966 | −0.88707112 | |
| $a$ | 2.2965932 | $\Omega$ | 340.39185 | | +0.77174360 | +0.41809158 | |
| $e$ | 0.1452975 | $i$ | 5.52750 | | +0.43857940 | +0.19571473 | |
| $P$ | 3.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.5+ | 0.3− | 2006 09 19 | 703 | 0.0 | 0.7+ |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2006 09 13 | 644 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.2− | 0.4+ |
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.3− | 1.0+ | 2006 09 19 | 699 | 0.3+ | 0.9− |
| 2006 08 28 | 703 | 0.5+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.6− |
| 2006 08 28 | 703 | (1.9− | 0.6+) | 2006 09 16 | 699 | 0.2+ | 0.7+ | 2006 09 28 | G96 | 0.1− | 0.5− |
| 2006 08 28 | 703 | (0.1+ | 1.9−) | 2006 09 16 | 699 | 0.4+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.6− |
| 2006 08 28 | 703 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.6− |
| 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.5+ | 0.3+ | 2006 11 10 | 291 | 0.3− | 0.0 |
| 2006 08 28 | 691 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.3− | 0.6− | 2006 11 10 | 291 | 0.1+ | 0.0 |
| 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 291 | 0.2+ | 0.1+ |
| 2006 09 12 | 703 | 0.3+ | 0.4− | 2006 09 19 | 699 | 0.4+ | 0.4− | 2006 11 11 | 291 | 0.3− | 0.1+ |
| 2006 09 12 | 703 | 0.9− | 0.3+ | 2006 09 19 | 703 | 0.6+ | 0.6− | 2006 11 11 | 291 | 0.1+ | 0.0 |
| 2006 09 12 | 703 | 1.2− | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 11 11 | 291 | 0.2+ | 0.1+ |
| 2006 09 12 | 703 | 0.8− | 0.3− | 2006 09 19 | 699 | 0.2+ | 0.2− | | | | |
| 2006 09 13 | 644 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.6+ | 0.4+ | | | | |

**2006 RZ$_7$ = 2002 PL$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.92883 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25677854 | $\omega$ | 149.26595 | | +0.81492753 | +0.57956039 | |
| $a$ | 2.4514906 | $\Omega$ | 175.31336 | | −0.53587188 | +0.75460549 | |
| $e$ | 0.2038071 | $i$ | 1.19020 | | −0.22075883 | +0.30770166 | |
| $P$ | 3.84 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.7+ | 0.0 | 2006 08 28 | 703 | 0.9+ | 0.9− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2002 08 06 | 644 | 0.6+ | 0.2+ | 2006 08 28 | 703 | 0.2+ | 1.4− | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 2002 08 06 | 644 | 0.0 | 0.1+ | 2006 09 12 | 703 | 0.1− | 1.3+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 2002 08 07 | 644 | 0.5− | 0.1− | 2006 09 12 | 703 | 0.9+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2002 08 07 | 644 | 0.3− | 0.0 | 2006 09 12 | 703 | 1.5− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2002 08 07 | 644 | 0.5− | 0.2− | 2006 09 12 | 703 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3− | 0.3+ |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.0 |
| 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.2+ |
| 2006 08 28 | 703 | 1.4+ | 0.3− | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2006 08 28 | 703 | 0.4− | 0.6− | 2006 09 25 | G96 | 0.3+ | 0.2− | | | | |

**2006 RA$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.48721 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28530383 | $\omega$ | 110.04120 | | +0.01750827 | −0.99931617 | |
| $a$ | 2.2852356 | $\Omega$ | 338.87622 | | +0.88025857 | +0.03085331 | |
| $e$ | 0.1327396 | $i$ | 5.18483 | | +0.47417119 | −0.02037786 | |
| $P$ | 3.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.0 | 0.1− | 2006 08 28 | 703 | 0.0 | 0.9+ | 2006 09 16 | 699 | 0.2− | 0.6+ |
| 1996 12 13 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.1− | 0.1− | 2006 09 16 | 699 | 0.8+ | 1.0+ |
| 1996 12 13 | 691 | 0.2− | 0.1− | 2006 08 28 | 703 | 0.8− | 1.0+ | 2006 09 16 | 699 | (0.5+ | 1.8−) |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 1.0− | 0.5+ | 2006 09 25 | 699 | 0.5+ | 1.1− |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.0 |
| 2001 03 02 | 699 | (1.6+ | 0.0 ) | 2006 08 28 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 1.2− | 0.1+ |
| 2001 03 02 | 699 | 0.4+ | 0.8+ | 2006 08 28 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 699 | (0.9+ | 2.0+) |
| 2001 03 02 | 699 | 0.5+ | 0.6+ | 2006 09 12 | 703 | 1.3− | 0.6− | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2001 03 02 | 699 | 0.3+ | 0.7+ | 2006 09 12 | 703 | 0.2+ | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2005 02 14 | 809 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.1− | 0.8− | 2006 09 28 | G96 | 0.4− | 0.1− |
| 2005 02 14 | 809 | 0.0 | 0.6+ | 2006 09 12 | 703 | 0.8− | 0.8− | 2006 10 16 | 703 | (1.8+ | 0.4+) |
| 2005 02 14 | 809 | 0.1+ | 0.6+ | 2006 09 13 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | (1.3− | 1.7−) |
| 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 09 13 | 644 | 0.4− | 0.1− | 2006 10 16 | 703 | (0.1+ | 2.1+) |
| 2006 08 19 | 691 | 0.2+ | 0.3+ | 2006 09 13 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 1.4− | 0.9− |
| 2006 08 19 | 691 | 0.3− | 0.4+ | 2006 09 16 | 699 | 0.6− | 0.6+ | | | | |

**2006 RB$_8$ = 2005 EW$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.27828 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26888371 | $\omega$ | 318.40152 | | +0.46896293 | +0.88249299 | |
| $a$ | 2.3773496 | $\Omega$ | 339.48665 | | −0.78098569 | +0.39542344 | |
| $e$ | 0.1296565 | $i$ | 5.85966 | | −0.41247440 | +0.25464963 | |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 691 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.6− | 0.4− | 2006 09 16 | 699 | 0.3+ | 0.7+ |
| 2001 03 02 | 691 | 0.1− | 0.9+ | 2006 08 28 | 703 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.8− | 0.6+ |
| 2001 03 02 | 691 | (0.3− | 2.6+) | 2006 08 28 | 691 | 0.1− | 0.5+ | 2006 09 19 | 699 | (1.7+ | 0.1+) |
| 2001 03 15 | 691 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.5− |
| 2001 03 15 | 691 | 0.1+ | 0.0 | 2006 08 28 | 691 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.1+ |
| 2001 03 15 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.5− | 0.8+ | 2006 09 19 | 703 | 0.7+ | 0.0 |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.8− | 0.0 | 2006 09 19 | 699 | 1.2+ | 0.3+ |
| 2005 03 13 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 1.3− | 0.6− | 2006 09 19 | 703 | 0.1+ | 0.7− |
| 2005 03 13 | 691 | 0.3+ | 0.1− | 2006 09 12 | 703 | 0.1+ | 1.1− | 2006 09 19 | 699 | 0.9+ | 0.2+ |
| 2005 03 17 | 691 | 0.5− | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.7+ | 0.4+ |
| 2005 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 13 | 644 | 0.7− | 0.5− | 2006 09 25 | 699 | 0.8+ | 0.4− |
| 2005 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 13 | 644 | 0.5− | 0.2− | 2006 09 25 | 699 | 1.0+ | 0.8+ |
| 2006 08 28 | 703 | 0.6− | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.8+ | 2006 09 25 | 699 | 0.8− | 0.2− |
| 2006 08 28 | 703 | 1.2− | 0.6+ | 2006 09 16 | 699 | 0.3− | 0.9− | 2006 09 25 | 699 | 0.4+ | 0.1+ |

**2006 RF$_8$ = 2004 AZ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.09237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28302695 | $\omega$ | 115.23183 | | +0.67844657 | −0.73183032 | |
| $a$ | 2.2974753 | $\Omega$ | 291.88823 | | +0.64663518 | +0.63641461 | |
| $e$ | 0.2187510 | $i$ | 3.97358 | | +0.34867350 | +0.24372284 | |
| $P$ | 3.48 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 1.1− | 0.5+ | 2004 01 24 | 704 | 0.4+ | 0.3− | 2006 09 13 | 644 | 0.1− | 0.3+ |
| 1999 09 07 | 704 | 0.2− | 1.8+ | 2004 01 24 | 704 | 0.3+ | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.4+ |
| 1999 09 07 | 704 | 0.5+ | 0.9− | 2004 01 24 | 704 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.5− | 1.4+ |
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2004 01 24 | 704 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.1− | 1.1+ |
| 2003 12 21 | 691 | 0.3− | 0.6+ | 2006 08 29 | 703 | 0.6+ | 0.4+ | 2006 09 25 | 704 | (0.2+ | 1.6+) |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.0 | 0.2+ | 2006 09 25 | 704 | 0.6+ | 0.5+ |
| 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.4+ | 2006 09 25 | 704 | 1.3+ | 1.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 691 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.6− | 0.7+ | 2006 09 25 | 704 | 1.1+ | 1.0− |
| 2003 12 27 | 691 | 0.3+ | 0.3− | 2006 09 12 | 703 | 1.1− | 0.7− | 2006 09 30 | 699 | 0.3+ | 0.4− |
| 2003 12 27 | 691 | 0.0 | 0.4− | 2006 09 12 | 703 | 0.5− | 1.3− | 2006 09 30 | 699 | 0.1− | 0.0 |
| 2004 01 15 | 691 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.0 | 1.2− | 2006 09 30 | 699 | 0.3− | 0.3− |
| 2004 01 15 | 691 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.4− | 0.2+ | 2006 09 30 | 699 | 0.9+ | 1.1− |
| 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.3+ | | | | |

**2006 RH$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.00298 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28236748 | $\omega$ | 147.12449 | | −0.59165429 | −0.80496633 | |
| $a$ | 2.3010511 | $\Omega$ | 339.04317 | | +0.71024952 | −0.49437398 | |
| $e$ | 0.0392212 | $i$ | 7.13656 | | +0.38143259 | −0.32806032 | |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.2+ | 0.5− | 2005 04 15 | 703 | 0.9+ | 0.6+ | 2006 09 12 | 703 | 0.3− | 1.3+ |
| 1999 09 03 | 691 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.4+ | 0.8+ | 2006 09 13 | 644 | 0.0 | 0.2+ |
| 1999 09 03 | 691 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.7− | 0.7+ | 2006 09 13 | 644 | 0.2− | 0.2− |
| 2003 11 14 | 644 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.7− | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.1− |
| 2003 11 14 | 644 | 0.0 | 0.5+ | 2006 08 28 | 703 | 0.4+ | 1.3+ | 2006 09 27 | G96 | 0.1+ | 0.2− |
| 2003 11 14 | 644 | 0.4− | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2005 04 15 | 703 | 0.3+ | 0.1+ | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.2− |
| 2005 04 15 | 703 | 0.2− | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.2+ | | | | |
| 2005 04 15 | 703 | 0.1− | 0.5+ | 2006 09 12 | 703 | 1.2− | 0.4− | | | | |

**2006 RK$_8$ = 2005 JG$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.83565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21274439 | $\omega$ | 137.96081 | | +0.73105398 | +0.68231892 | |
| $a$ | 2.7790560 | $\Omega$ | 179.01244 | | −0.64023176 | +0.68645764 | |
| $e$ | 0.0834988 | $i$ | 3.27087 | | −0.23593086 | +0.25142950 | |
| $P$ | 4.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | G96 | 0.0 | 0.1− | 2006 09 12 | 703 | 1.6− | 0.6− | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2005 05 10 | G96 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.4+ | 1.1− | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2005 05 10 | G96 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2005 05 14 | 644 | 0.4+ | 0.1− | 2006 09 14 | 644 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.5− |
| 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 1.6+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2005 05 14 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 1.5+ | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2006 09 12 | 703 | 1.0− | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.5+ | | | | |
| 2006 09 12 | 703 | 1.5− | 0.8− | 2006 09 19 | 703 | 0.8+ | 1.6+ | | | | |

**2006 RL$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.52766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22926871 | $\omega$ | 215.79196 | | +0.93098218 | −0.36331427 | |
| $a$ | 2.6438665 | $\Omega$ | 165.38531 | | +0.35914053 | +0.89393463 | |
| $e$ | 0.1137839 | $i$ | 8.13538 | | +0.06550010 | +0.26245687 | |
| $P$ | 4.30 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.2− | 1.0+ | 2005 05 20 | G96 | 0.5− | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.1+ |
| 2002 10 15 | 644 | 0.0 | 0.7+ | 2005 05 20 | G96 | (0.6− | 1.7−) | 2006 09 19 | 699 | (0.7+ | 1.8+) |
| 2002 10 15 | 644 | 0.0 | 0.8+ | 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.1− |
| 2002 10 31 | 704 | 0.5− | 0.2− | 2005 06 05 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.1+ | 1.2+ |
| 2002 10 31 | 704 | 0.7− | 0.0 | 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 09 19 | 699 | (1.8+ | 0.8+) |
| 2002 10 31 | 704 | 0.3+ | 0.7+ | 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.7+ | 0.1− |
| 2002 10 31 | 704 | 0.2+ | 0.5+ | 2006 08 28 | 703 | 0.2− | 0.9− | 2006 09 30 | G96 | 0.0 | 0.1+ |
| 2004 02 14 | 691 | 0.0 | 0.4− | 2006 08 28 | 703 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.5+ | 0.1− |
| 2004 02 14 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2004 02 14 | 691 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.5− | 0.3− | 2006 10 02 | G96 | 0.9+ | 0.1− |
| 2005 05 09 | 691 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.3+ | 1.2− | 2006 10 02 | G96 | 0.6+ | 0.3− |
| 2005 05 09 | 691 | 0.3+ | 0.5+ | 2006 09 12 | 703 | 1.0− | 0.7− | 2006 10 02 | G96 | 0.5+ | 0.4− |
| 2005 05 09 | 691 | 0.3+ | 0.4+ | 2006 09 12 | 703 | 0.7− | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2005 05 20 | G96 | 0.4− | 0.3− | 2006 09 14 | 644 | 0.7− | 0.8+ | | | | |
| 2005 05 20 | G96 | 0.5− | 0.4− | 2006 09 14 | 644 | 0.1+ | 0.4+ | | | | |

**2006 RN$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.51835 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30296948 | $\omega$ | 172.64068 | | +0.31016776 | +0.95032443 | |
| $a$ | 2.1955170 | $\Omega$ | 115.42575 | | −0.87369748 | +0.29575223 | |
| $e$ | 0.1605890 | $i$ | 1.65387 | | −0.37476482 | +0.09702625 | |
| $P$ | 3.25 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 21 | 691 | 0.6− | 0.4+ | 2005 02 09 | G96 | 0.5− | 0.1− | 2006 09 16 | 704 | 0.5− | 0.6− |
| 1999 04 21 | 691 | 0.1+ | 0.1+ | 2005 02 09 | G96 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.2+ | 0.2− |
| 1999 04 21 | 691 | 0.2− | 0.2− | 2005 02 09 | G96 | 0.1− | 0.1+ | 2006 09 16 | 699 | 1.2+ | 1.0+ |
| 1999 05 08 | 699 | 0.2− | 0.6− | 2005 02 09 | G96 | 0.6− | 0.3+ | 2006 09 17 | 704 | 0.7+ | 0.7+ |
| 1999 05 08 | 699 | 2.0+ | 0.1− | 2006 08 21 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.0 |
| 1999 05 08 | 699 | 0.5+ | 0.5+ | 2006 08 21 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 1.0+ | 1.3+ |
| 2002 03 10 | 691 | 0.3+ | 0.6+ | 2006 08 21 | 704 | 0.7+ | 0.4− | 2006 09 19 | 699 | 0.7+ | 0.3− |
| 2002 03 10 | 691 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.7− | 1.1− |
| 2002 03 10 | 691 | 0.8+ | 0.9+ | 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.3+ | 0.1− |
| 2002 03 16 | 704 | (1.2+ | 1.8+) | 2006 08 28 | 703 | 1.0− | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.1− |
| 2002 03 16 | 704 | 0.4− | 0.4+ | 2006 08 28 | 703 | (2.8− | 2.9+) | 2006 09 20 | 644 | 0.6− | 0.0 |
| 2002 03 16 | 704 | (1.3− | 1.5+) | 2006 08 30 | 704 | 0.0 | 1.0+ | 2006 09 20 | 644 | 0.1− | 0.2+ |
| 2002 03 16 | 704 | 0.7+ | 0.7− | 2006 08 30 | 704 | 0.5− | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.3+ |
| 2003 10 02 | 691 | 0.2− | 0.1− | 2006 08 30 | 704 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.6− | 0.5+ |
| 2003 10 02 | 691 | 0.0 | 0.2+ | 2006 08 30 | 704 | 0.8− | 0.3− | 2006 09 26 | 704 | 0.2− | 0.3− |
| 2003 10 02 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.7− | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.8+ |
| 2003 10 21 | 691 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2003 10 21 | 691 | 0.1− | 0.9+ | 2006 09 12 | 703 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.2+ |
| 2003 10 21 | 691 | 0.1− | 0.3− | 2006 09 12 | 703 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.2+ |
| 2003 10 21 | 644 | 0.3+ | 0.2− | 2006 09 13 | 644 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.0 | 1.0+ |
| 2003 10 21 | 644 | 0.0 | 0.2+ | 2006 09 13 | 644 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2003 10 21 | 644 | 0.2− | 0.4+ | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2003 10 23 | 699 | (2.4− | 0.7−) | 2006 09 16 | 704 | 0.7− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2003 10 23 | 699 | 0.4+ | 0.4+ | 2006 09 16 | 704 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.4− | 0.1− |
| 2003 10 23 | 699 | (1.9− | 0.1+) | 2006 09 16 | 704 | 0.1− | 0.7+ | | | | |
| 2003 10 23 | 699 | (1.6+ | 0.6+) | 2006 09 16 | 699 | 0.6− | 0.7+ | | | | |

**2006 RP$_8$ = 1997 UO$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.70280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21422699 | $\omega$ | 17.20290 | | +0.93909640 | −0.34354886 | |
| $a$ | 2.7662192 | $\Omega$ | 2.93172 | | +0.29252495 | +0.78616358 | |
| $e$ | 0.2317011 | $i$ | 9.55829 | | +0.18035271 | +0.51373243 | |
| $P$ | 4.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 28 | 608 | 0.5− | 0.6− | 2006 09 20 | 704 | 0.6+ | 0.7− | 2006 09 26 | 691 | 0.2− | 0.1− |
| 1997 10 28 | 608 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1997 10 30 | 608 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 1.0+ | 0.6− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 1997 10 30 | 608 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.7− | 0.3− | 2006 09 26 | G96 | 0.5+ | 0.3− |
| 2006 09 12 | 703 | 0.5+ | 0.5− | 2006 09 20 | 704 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2006 09 12 | 703 | 0.0 | 1.2+ | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2006 09 12 | 703 | (1.8+ | 1.0−) | 2006 09 22 | 704 | 0.8− | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2006 09 12 | 703 | 0.2+ | 0.2− | 2006 09 22 | 704 | 0.4− | 1.5− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 09 22 | 704 | 0.4− | 0.5+ | 2006 10 16 | G96 | 0.5− | 0.0 |
| 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 09 22 | 704 | 0.9− | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2006 09 14 | 644 | 0.5+ | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.2+ |
| 2006 09 16 | 699 | 0.2− | 0.1− | 2006 09 25 | 699 | (1.6− | 0.2+) | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2006 09 16 | 699 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.1+ | 1.0− | 2006 10 19 | G96 | 0.5+ | 0.1+ |
| 2006 09 16 | 699 | 0.2− | 0.6− | 2006 09 25 | 699 | 0.4+ | 0.9+ | 2006 10 19 | G96 | 0.1− | 0.3+ |
| 2006 09 16 | 699 | 0.4+ | 1.4+ | 2006 09 26 | 691 | 0.1− | 0.2+ | | | | |

**2006 RT$_8$ = 1995 UF$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.10307 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17413766 | $\omega$ | 128.16083 | +0.73829195 | | +0.67375307 | |
| $a$ | 3.1759544 | $\Omega$ | 189.62355 | −0.66249376 | | +0.71566776 | |
| $e$ | 0.1938444 | $i$ | 10.80293 | −0.12659785 | | +0.18405561 | |
| $P$ | 5.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1− | 0.5+ | 2006 08 29 | 703 | 1.3− | 0.4+ | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 1995 10 21 | 691 | 0.4− | 0.4+ | 2006 08 29 | 703 | 0.9− | 0.7+ | 2006 09 20 | 691 | 0.1− | 0.2+ |
| 1995 10 21 | 691 | 0.7− | 0.3+ | 2006 08 29 | 703 | 0.1− | 0.1− | 2006 10 01 | 703 | 0.4− | 0.9− |
| 1995 10 26 | 691 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.8+ | 0.1− | 2006 10 01 | 703 | (0.8− | 2.0−) |
| 1995 10 26 | 691 | 0.7+ | 0.1+ | 2006 09 12 | 703 | 0.6− | 0.9− | 2006 10 01 | 703 | 0.2− | 1.2− |
| 1995 10 26 | 691 | 0.1+ | 0.1− | 2006 09 12 | 703 | (1.6+ | 0.0 ) | 2006 10 01 | 703 | 0.5+ | 1.4− |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.2+ | 0.5− | 2006 10 16 | 703 | 1.5+ | 0.3+ |
| 2000 09 03 | 645 | 0.0 | 0.2− | 2006 09 13 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2005 05 20 | G96 | 0.4− | 0.7− | 2006 09 13 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2005 05 20 | G96 | 0.5− | 0.6− | 2006 09 13 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2005 05 20 | G96 | 0.2− | 0.6− | 2006 09 16 | 699 | 0.2− | 0.9+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2005 05 20 | G96 | 0.9− | 0.5− | 2006 09 16 | 699 | 0.8+ | 1.5+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2005 06 05 | 691 | 0.2+ | 0.1− | 2006 09 16 | 699 | 0.6− | 0.6− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.3+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2005 06 05 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.8+ | 2006 11 21 | G96 | 0.2+ | 0.4+ |
| 2005 06 13 | 691 | 0.1− | 0.9+ | 2006 09 19 | 703 | 0.6+ | 0.7− | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2005 06 13 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 1.2− | 1.0+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2005 06 13 | 691 | 0.1+ | 0.7+ | 2006 09 19 | 703 | 0.9+ | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2006 08 29 | 703 | 0.1+ | 0.6+ | 2006 09 20 | 691 | 0.0 | 0.6+ | | | | |

**2006 RX$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.08342 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22355221 | $\omega$ | 46.03684 | +0.82555918 | | −0.56244624 | |
| $a$ | 2.6887478 | $\Omega$ | 347.94313 | +0.43409557 | | +0.68491616 | |
| $e$ | 0.2685786 | $i$ | 12.69216 | +0.36057327 | | +0.46318903 | |
| $P$ | 4.41 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.3+ | 0.2+ | 2006 09 24 | 106 | 0.2+ | 0.4− | 2006 10 17 | 691 | 0.0 | 0.2− |
| 2002 12 07 | 704 | 0.6+ | 0.4− | 2006 09 24 | 106 | 0.0 | 0.5− | 2006 10 17 | 703 | 0.9− | 0.1− |
| 2002 12 07 | 704 | 1.0+ | 0.9− | 2006 09 24 | 106 | 0.4+ | 0.7− | 2006 10 17 | 703 | 1.4− | 0.4− |
| 2002 12 31 | 704 | 1.1− | 1.0+ | 2006 09 25 | 106 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.9− | 0.5− |
| 2002 12 31 | 704 | 0.4+ | 0.5− | 2006 09 25 | 704 | 1.0+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2002 12 31 | 704 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2002 12 31 | 704 | 1.1− | 1.2+ | 2006 09 25 | 704 | 0.1− | 1.1+ | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 704 | (1.5+ | 0.7−) | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 2006 08 19 | 691 | 0.6− | 0.2− | 2006 09 25 | 704 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2006 08 19 | 691 | 0.5− | 0.1+ | 2006 09 27 | 699 | 0.2− | 0.7− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2006 08 28 | 703 | 0.1+ | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2006 08 28 | 703 | 0.9− | 0.3+ | 2006 09 27 | 699 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2006 08 28 | 703 | 0.3+ | 0.7− | 2006 09 27 | 699 | 0.5− | 1.0− | 2006 10 21 | 691 | 0.2+ | 0.3+ |
| 2006 08 28 | 703 | 0.0 | 0.7+ | 2006 09 29 | 704 | 0.9− | 1.4+ | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2006 09 12 | 703 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.6− | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.2+ |
| 2006 09 12 | 703 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.1− |
| 2006 09 12 | 703 | 1.1+ | 0.2− | 2006 09 29 | 704 | (0.1− | 1.7−) | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2006 09 12 | 703 | 0.5+ | 0.6− | 2006 09 29 | 704 | 1.2+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2006 09 13 | 644 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2006 09 13 | 644 | 0.6+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.4+ | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2006 09 18 | 704 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 24 | 644 | 0.4+ | 0.3+ |
| 2006 09 18 | 704 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2006 09 18 | 704 | 0.5− | 0.4− | 2006 10 11 | 644 | 0.4+ | 0.3− | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2006 09 18 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.7+ | 0.1− | 2006 11 14 | 703 | 0.2+ | 1.6− |
| 2006 09 19 | 699 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.5+ | 0.2− | 2006 11 14 | 703 | 1.7− | 0.2+ |
| 2006 09 19 | 699 | 0.2− | 0.9+ | 2006 10 12 | 644 | 0.6+ | 0.0 | 2006 11 14 | 703 | 0.7+ | 0.4− |
| 2006 09 19 | 699 | 0.0 | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 09 19 | 699 | 0.6− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.0 | | | | |

**2006 RC$_9$ = 2004 BS$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.13165 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26773809 | $\omega$ | 8.27410 | +0.92895485 | | −0.37014839 | |
| $a$ | 2.3841264 | $\Omega$ | 13.45500 | +0.33821537 | | +0.84229404 | |
| $e$ | 0.1912045 | $i$ | 1.41587 | +0.15050997 | | +0.39183021 | |
| $P$ | 3.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.0 | 0.4− | 2006 09 28 | 704 | 0.1+ | 0.5+ |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.8+ | 0.2+ | 2006 09 28 | 704 | 1.1+ | 0.1− |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 09 28 | 704 | 0.3− | 0.9+ |
| 2004 01 30 | 704 | 0.2− | 0.8+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 09 28 | 704 | 1.2+ | 0.0 |
| 2004 01 30 | 704 | 0.2+ | 0.7− | 2006 09 18 | 699 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.5+ | 0.3− |
| 2004 01 30 | 704 | 1.3+ | 1.1+ | 2006 09 20 | 704 | 0.3− | 0.3− | 2006 09 28 | 704 | 0.5− | 0.1+ |
| 2004 01 30 | 704 | 0.6+ | 0.7− | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 09 28 | 704 | 0.2+ | 0.1+ |
| 2004 02 14 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.5− | 0.5− | 2006 09 28 | 704 | 0.2− | 0.3− |
| 2004 02 14 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.2− | 0.0 |
| 2004 02 14 | 691 | 0.5− | 0.1− | 2006 09 20 | 704 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.9+ |
| 2004 02 23 | 704 | 0.0 | 0.9+ | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 10 01 | 704 | (0.2+ | 1.7+) |
| 2004 02 23 | 704 | 0.7+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.2+ | 1.0+ |
| 2004 02 23 | 704 | 0.6+ | 0.7− | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 01 | 704 | 0.1− | 0.7+ |
| 2004 02 23 | 704 | 0.3+ | 1.4+ | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2004 02 23 | 704 | 0.0 | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 16 | G96 | 0.4− | 0.9− |
| 2006 07 21 | 703 | 0.6− | 1.4+ | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 16 | G96 | 0.1+ | 0.6− |
| 2006 07 21 | 703 | 0.6+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.6− | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 2006 07 21 | 703 | 0.3− | 1.4+ | 2006 09 26 | 704 | 0.9+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.2− |
| 2006 07 21 | 703 | (2.9+ | 2.1+) | 2006 09 26 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.7+ |
| 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 26 | 704 | 1.0− | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.7− |
| 2006 08 22 | 644 | 0.5− | 0.1− | 2006 09 26 | 704 | 0.8− | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2006 08 22 | 644 | 0.7− | 0.0 | 2006 09 26 | 704 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2006 09 12 | 703 | 1.5+ | 0.7+ | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2006 09 12 | 703 | (0.1− | 1.7+) | 2006 09 27 | 704 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.5− |
| 2006 09 12 | 703 | 1.1+ | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2006 09 12 | 703 | 1.2+ | 1.5+ | 2006 09 27 | 704 | 0.0 | 0.3− | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2006 09 13 | 644 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.3− | 0.4− | 2006 11 06 | 644 | 0.8+ | 0.0 |
| 2006 09 13 | 644 | 0.6− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.3− | 2006 11 06 | 644 | 0.0 | 0.1− |
| 2006 09 13 | 644 | 0.7− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.6− |
| 2006 09 16 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.7− | 0.5− |
| 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2006 09 16 | 691 | 0.0 | 0.2− | 2006 09 28 | 704 | (0.8− | 1.9+) | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2006 09 17 | 704 | 0.6− | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2006 09 17 | 704 | 0.4− | 0.4+ | 2006 09 28 | 704 | 1.0+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.2− | 1.5+ | 2006 11 21 | G96 | 0.3+ | 0.3+ |

**2006 RF$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.78943 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29245599 | $\omega$ | 163.61225 | +0.74103733 | | +0.66979745 | |
| $a$ | 2.2478243 | $\Omega$ | 154.14576 | −0.62758325 | | +0.71592621 | |
| $e$ | 0.2040714 | $i$ | 6.22375 | −0.23875289 | | +0.19703054 | |
| $P$ | 3.37 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 691 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.6+ |
| 2003 11 24 | 691 | 0.1− | 0.1+ | 2006 09 13 | 644 | 0.2− | 0.3− | 2006 09 30 | 704 | (1.0− | 1.9+) |
| 2003 11 24 | 691 | 0.2+ | 0.0 | 2006 09 16 | 704 | 0.9+ | 0.1− | 2006 09 30 | 704 | (1.7+ | 0.1+) |
| 2003 12 16 | 691 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 704 | 0.2+ | 0.9+ |
| 2003 12 16 | 691 | 0.1+ | 0.5− | 2006 09 16 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 0.9− | 0.8− |
| 2003 12 16 | 691 | 0.3− | 0.2+ | 2006 09 18 | 703 | (2.0− | 1.1−) | 2006 09 30 | 704 | 0.7+ | 0.5+ |
| 2005 03 10 | 695 | 0.0 | 0.4+ | 2006 09 18 | 703 | (0.2− | 1.6−) | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2005 03 10 | 695 | 0.3+ | 0.5+ | 2006 09 18 | 703 | (1.6− | 1.5−) | 2006 09 30 | 703 | 0.6+ | 0.5+ |
| 2005 04 11 | 695 | 0.1+ | 0.1+ | 2006 09 18 | 703 | (2.6− | 2.3−) | 2006 09 30 | 703 | 0.0 | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 695 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.4+ | 0.5− | 2006 10 09 | 644 | 0.2− | 0.2− | | |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2006 07 21 | G96 | 0.3− | 0.5− | 2006 09 18 | 699 | 1.3− | 0.4− | 2006 10 09 | 644 | 0.2− | 0.6− | | |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.2− | | |
| 2006 08 17 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2006 08 17 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.2− | | |
| 2006 08 17 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.7− | 0.4+ | | |
| 2006 08 28 | 704 | 0.7− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.3+ | | |
| 2006 08 28 | 704 | 0.4+ | 0.3− | 2006 09 26 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.3+ | | |
| 2006 08 28 | 704 | 0.4− | 0.1− | 2006 09 26 | 704 | 1.3+ | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.2+ | | |
| 2006 08 28 | 704 | 0.3+ | 0.7− | 2006 09 26 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 703 | 1.0− | 1.3− | | |
| 2006 09 12 | 703 | 0.5− | 0.3− | 2006 09 26 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.1− | | |
| 2006 09 12 | 703 | 0.4− | 0.1+ | 2006 09 26 | 704 | 1.1+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.1+ | | |
| 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 09 28 | 704 | 0.0 | 1.1+ | 2006 10 16 | 703 | 0.2− | 0.5− | | |
| 2006 09 12 | 703 | 0.4− | 0.7− | 2006 09 28 | 704 | 0.3− | 0.5+ | 2006 10 22 | 703 | 1.1+ | 0.3+ | | |
| 2006 09 13 | 644 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.5+ | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.1+ | | |
| 2006 09 13 | 644 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.7+ | 1.4+ | 2006 10 22 | 703 | 0.3− | 0.5− | | |
| 2006 09 13 | 644 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.8− | 0.4− | 2006 10 22 | 703 | 0.6+ | 0.8− | | |
| 2006 09 13 | 644 | 0.3− | 0.5− | 2006 09 30 | 703 | 0.4− | 0.7− | | | | | | |

### 2006 RK$_9$ = 2005 JM$_{159}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.98686 | | (2000.0) | | | |
| $n$ | 0.20338838 | $\omega$ | 356.23739 | | +0.95400633 | +0.29972660 |
| $a$ | 2.8636414 | $\Omega$ | 346.31688 | | −0.27438343 | +0.86494223 |
| $e$ | 0.0720222 | $i$ | 1.45112 | | −0.12077108 | +0.40254057 |
| $P$ | 4.85 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.3+ | 0.6+ | 2006 08 15 | 644 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.4− | | |
| 2005 05 07 | 691 | 0.2− | 0.0 | 2006 08 15 | 644 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | |
| 2005 05 07 | 691 | 0.1+ | 0.3− | 2006 08 15 | 644 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.5− | | |
| 2005 05 16 | G96 | 0.2− | 0.4− | 2006 09 13 | 644 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.5− | 0.3− | | |
| 2005 05 16 | G96 | 0.4− | 0.1− | 2006 09 13 | 644 | 0.4+ | 0.2+ | 2006 10 22 | G96 | (2.7− | 1.5−) | | |
| 2005 05 16 | G96 | 0.1− | 0.7− | 2006 09 13 | 644 | 0.3− | 0.0 | 2006 10 22 | G96 | (2.3− | 1.3−) | | |
| 2005 05 16 | G96 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.5− | 0.0 | 2006 10 22 | G96 | (2.0− | 1.2−) | | |
| 2006 08 02 | H55 | 0.2+ | 0.8− | 2006 09 14 | 703 | 0.3− | 0.7+ | 2006 10 22 | G96 | (2.2− | 1.5−) | | |
| 2006 08 02 | H55 | 0.5+ | 0.4− | 2006 09 14 | 703 | 0.3+ | 0.8+ | | | | | | |
| 2006 08 02 | H55 | 0.3− | 0.6− | 2006 09 14 | 703 | 0.3+ | 0.5+ | | | | | | |

### 2006 RR$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.64640 | | (2000.0) | | | |
| $n$ | 0.18797933 | $\omega$ | 251.97747 | | +0.37869874 | −0.92542823 |
| $a$ | 3.0180700 | $\Omega$ | 175.70218 | | +0.90126456 | +0.36553481 |
| $e$ | 0.0958541 | $i$ | 10.01506 | | +0.21049812 | +0.09983429 |
| $P$ | 5.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.8+ | 1.3+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.3− | 0.3+ | | |
| 2001 10 16 | 644 | 0.4+ | 1.2+ | 2006 09 14 | 644 | 0.3+ | 0.4+ | 2006 09 25 | 699 | 0.7− | 0.9+ | | |
| 2001 10 16 | 644 | (0.2+ | 1.6+) | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.6− | 0.7+ | | |
| 2001 10 24 | 644 | 0.4− | 0.9− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 25 | 699 | (0.5− | 1.6+) | | |
| 2001 10 24 | 644 | 0.5− | 0.9− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.9+ | | |
| 2001 10 24 | 644 | 0.3− | 1.0− | 2006 09 17 | 704 | 0.0 | 1.3− | 2006 10 16 | 703 | 0.4− | 0.2+ | | |
| 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | (1.7+ | 0.4+) | | |
| 2002 12 14 | 645 | 0.0 | 0.1+ | 2006 09 17 | 704 | 1.4+ | 0.5− | 2006 10 16 | 703 | 0.3+ | 1.1− | | |
| 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 0.6− | 0.2− | 2006 10 16 | 703 | (0.2− | 1.8−) | | |
| 2004 03 16 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.8+ | 0.9− | 2006 11 17 | G96 | 0.9− | 0.5− | | |
| 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.5− | 0.4− | | |
| 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2− | | |
| 2006 09 13 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.4+ | 2006 11 25 | G96 | 0.4+ | 0.3− | | |
| 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2006 09 13 | 644 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.5− | | |
| 2006 09 14 | 644 | 0.4+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.2+ | | | | | | |

### 2006 RS$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.18185 | | (2000.0) | | | |
| $n$ | 0.21440760 | $\omega$ | 72.42713 | | +0.45125475 | −0.89170183 |
| $a$ | 2.7646655 | $\Omega$ | 350.51598 | | +0.71624198 | +0.38540809 |
| $e$ | 0.1677298 | $i$ | 12.32473 | | +0.53232188 | +0.23733617 |
| $P$ | 4.60 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.9+ | 1.3+ | 2006 09 29 | 704 | 0.8− | 0.2+ | | |
| 2001 07 19 | 644 | 0.2+ | 0.6− | 2006 09 20 | 704 | 0.3+ | 0.9+ | 2006 09 29 | 704 | 0.7+ | 0.7− | | |
| 2001 07 19 | 644 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.3− | 2006 09 29 | 704 | 1.0− | 0.2− | | |
| 2004 03 14 | 644 | 0.4+ | 0.5+ | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | 1.1− | 0.7− | | |
| 2004 03 14 | 644 | 0.7+ | 1.0+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.9− | 0.7− | | |
| 2004 03 14 | 644 | 0.3+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.4− | | |
| 2006 09 13 | 644 | 0.1− | 0.0 | 2006 09 24 | 106 | (1.4+ | 1.7−) | 2006 09 30 | 704 | 0.6+ | 0.2+ | | |
| 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 09 24 | 106 | 0.0 | 0.6− | 2006 09 30 | 704 | 0.1+ | 0.9+ | | |
| 2006 09 13 | 644 | 0.4− | 0.1+ | 2006 09 24 | 106 | 0.5+ | 0.1+ | 2006 10 01 | 703 | 0.9− | 1.0+ | | |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 24 | 106 | 0.1− | 0.1− | 2006 10 01 | 703 | 1.2− | 0.6+ | | |
| 2006 09 15 | 691 | 0.4+ | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.8+ | 2006 10 01 | 703 | 0.0 | 0.8− | | |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.2+ | 2006 10 01 | 703 | 0.1+ | 0.2− | | |
| 2006 09 16 | 699 | 0.5+ | 0.1− | 2006 09 25 | 699 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.2+ | | |
| 2006 09 16 | 699 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.6+ | 2006 10 16 | 703 | 1.2− | 1.2− | | |
| 2006 09 16 | 699 | 0.5− | 0.5+ | 2006 09 26 | 704 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.2+ | | |
| 2006 09 16 | 699 | 0.3+ | 0.2− | 2006 09 26 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 703 | 1.2− | 1.2− | | |
| 2006 09 17 | 704 | 0.1− | 0.4− | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.2− | | |
| 2006 09 17 | 704 | 0.8− | 0.2+ | 2006 09 26 | 704 | (1.6− | 1.0+) | 2006 10 17 | 691 | 0.1+ | 0.1− | | |
| 2006 09 17 | 704 | 0.4− | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.2− | | |
| 2006 09 17 | 704 | 0.5− | 0.3− | 2006 09 27 | 704 | 0.6+ | 0.3+ | 2006 11 19 | 704 | (1.5− | 0.2−) | | |
| 2006 09 17 | 704 | 0.9− | 0.1− | 2006 09 27 | 704 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.2+ | | |
| 2006 09 20 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.4+ | 2006 11 19 | 704 | (0.5+ | 1.7+) | | |
| 2006 09 20 | 704 | 0.8+ | 0.9+ | 2006 09 29 | 704 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.3− | | |

### 2006 RT$_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 39.47849 | | (2000.0) | | | |
| $n$ | 0.30911249 | $\omega$ | 98.38633 | | +0.51298942 | +0.85794858 |
| $a$ | 2.1663320 | $\Omega$ | 202.54292 | | −0.81324193 | +0.47543261 |
| $e$ | 0.1953609 | $i$ | 4.14015 | | −0.27473517 | +0.19464859 |
| $P$ | 3.19 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 14 | 691 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 25 | 699 | (2.5− | 1.4+) | | |
| 1999 04 14 | 691 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.3− | | |
| 1999 04 14 | 691 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.3− | | |
| 2000 12 01 | 691 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.7− | 1.4+ | 2006 09 28 | G96 | 0.0 | 0.5− | | |
| 2000 12 01 | 691 | 0.2− | 0.2+ | 2006 09 16 | 699 | 0.0 | 1.2+ | 2006 09 28 | G96 | 0.3+ | 0.4− | | |
| 2000 12 01 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.7+ | 0.6+ | 2006 10 01 | 703 | 0.2+ | 0.6− | | |
| 2003 10 02 | 691 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.8+ | 0.6+ | 2006 10 01 | 703 | 0.6+ | 0.5− | | |
| 2003 10 02 | 691 | 0.3+ | 0.4− | 2006 09 18 | 704 | 0.5+ | 1.1+ | 2006 10 01 | 703 | 0.5− | 0.3− | | |
| 2003 10 02 | 691 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.0 | 0.9− | 2006 10 01 | 703 | (0.0 | 1.6+) | | |
| 2003 10 21 | 691 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.7+ | 1.0− | 2006 10 03 | G96 | 0.0 | 0.9− | | |
| 2003 10 21 | 691 | 0.3− | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.5− | 2006 10 03 | G96 | 0.3− | 0.3− | | |
| 2003 10 21 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.2− | 0.4+ | 2006 10 03 | G96 | 1.2+ | 0.5− | | |
| 2003 10 22 | 695 | 0.1− | 0.1− | 2006 09 19 | 703 | 1.1− | 0.8+ | 2006 10 03 | G96 | 0.1− | 0.5− | | |
| 2003 10 22 | 695 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2005 03 17 | G96 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2005 03 17 | G96 | 0.5+ | 0.5− | 2006 09 19 | 703 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.3− | | |
| 2005 03 17 | G96 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.9+ | 2006 10 23 | G96 | 0.2− | 0.1+ | | |
| 2006 08 28 | 703 | (3.7− | 0.2+) | 2006 09 20 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.5− | 0.3− | | |
| 2006 08 28 | 703 | (1.8− | 1.3+) | 2006 09 20 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.7− | | |
| 2006 08 28 | 703 | 0.4− | 0.4− | 2006 09 20 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.6− | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 28 | 703 | 0.8− | 0.4− | 2006 09 23 | 106 | 0.1− | 0.9+ | 2006 11 11 | G96 | 0.6+ | 0.1+ |
| 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 24 | 106 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3+ | 1.1− |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 24 | 106 | (1.6+ | 0.3+) | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 24 | 106 | 0.6+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.6− | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2006 09 13 | 644 | 0.2− | 0.3− | 2006 09 25 | 699 | (2.1− | 0.9+) | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2006 09 13 | 644 | 0.1− | 0.2− | 2006 09 25 | 699 | 1.0− | 0.5+ | | | | |

**2006 RU$_9$ = 2004 DU$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.98856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22882388 | $\omega$ | 24.39669 | | +0.99634498 | | +0.08525004 |
| $a$ | 2.6472919 | $\Omega$ | 330.71135 | | −0.08007264 | | +0.91009981 |
| $e$ | 0.0227979 | $i$ | 0.63200 | | −0.02974993 | | +0.40552530 |
| $P$ | 4.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 05 | 691 | 0.5− | 0.9+ | 2004 03 01 | 691 | 0.1− | 0.3+ | 2006 09 16 | 699 | (1.9+ | 0.1−) |
| 1997 08 05 | 691 | 0.2− | 0.5+ | 2004 03 01 | 691 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.0 | 0.7− |
| 1997 08 05 | 691 | 0.1− | 0.6+ | 2004 03 01 | 691 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.7− | 0.6+ |
| 2000 03 11 | 704 | 0.1+ | 0.3− | 2005 06 14 | G96 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.2− | 0.6+ |
| 2000 03 11 | 704 | 0.5+ | 0.1+ | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.6− | 0.4+ |
| 2000 03 11 | 704 | 0.8+ | 0.0 | 2005 06 14 | G96 | 0.2− | 0.3− | 2006 09 17 | 704 | 0.5+ | 0.1+ |
| 2002 10 29 | 291 | 0.2+ | 0.1+ | 2005 06 14 | G96 | 0.4+ | 0.0 | 2006 09 17 | 704 | 0.5+ | 0.2− |
| 2002 10 29 | 291 | 0.2+ | 0.2+ | 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2002 10 29 | 291 | 0.2+ | 0.1− | 2006 08 28 | 691 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.4− | 0.2+ | 2006 08 28 | 691 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.2− |
| 2002 10 31 | 644 | 0.7− | 0.6+ | 2006 09 13 | 644 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2002 10 31 | 644 | 1.2− | 0.8+ | 2006 09 13 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2004 02 12 | 691 | 0.1− | 0.5+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.5− |
| 2004 02 26 | 704 | (0.2− | 2.7+) | 2006 09 14 | 644 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2004 02 26 | 704 | (0.1− | 2.1+) | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.6− | 0.2+ |
| 2004 02 26 | 704 | (0.0 | 1.5+) | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2004 02 26 | 704 | (1.2− | 2.8+) | 2006 09 15 | 691 | 0.2− | 0.2+ | | | | |

**2006 RY$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.00528 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28679357 | $\omega$ | 107.99098 | | +0.99697117 | | −0.07127656 |
| $a$ | 2.2773150 | $\Omega$ | 256.10518 | | +0.05351750 | | +0.91904148 |
| $e$ | 0.2344037 | $i$ | 1.83681 | | +0.05643017 | | +0.38766276 |
| $P$ | 3.44 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 12 | 699 | 0.6+ | 0.6+ | 2006 09 25 | 704 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.3+ |
| 1999 08 12 | 699 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.4− | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.9+ |
| 1999 08 12 | 699 | 0.6+ | 0.8− | 2006 09 25 | 704 | 0.4− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 1999 08 21 | 621 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 1999 08 21 | 621 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 1999 08 22 | 621 | 0.6− | 0.1+ | 2006 09 27 | 691 | 0.5+ | 0.8− | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2006 08 24 | 644 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2006 08 24 | 644 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2006 08 24 | 644 | 0.0 | 0.3− | 2006 09 29 | 704 | (1.7− | 0.4−) | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2006 09 06 | 644 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2006 09 13 | 644 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.7− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.1− |
| 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.6− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2006 09 15 | 704 | 0.5− | 0.4+ | 2006 09 29 | 704 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2006 09 15 | 704 | 0.7+ | 1.0+ | 2006 09 29 | 704 | 1.0− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2006 09 15 | 704 | 0.4+ | 0.5− | 2006 09 29 | 704 | 1.1− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2006 09 15 | 704 | 0.4− | 0.9+ | 2006 10 01 | 691 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.7+ | 0.3+ |
| 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 10 01 | 703 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2006 09 18 | 704 | 0.1+ | 0.6+ | 2006 10 01 | 703 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2006 09 18 | 704 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 18 | 704 | 0.1− | 0.9− | 2006 10 01 | 703 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 18 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 703 | 0.6+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.8+ | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.2− |

**2006 RZ$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.00346 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20295215 | $\omega$ | 47.93648 | | +0.91357071 | | +0.39820890 |
| $a$ | 2.8677433 | $\Omega$ | 288.44651 | | −0.39408608 | | +0.81670220 |
| $e$ | 0.0665262 | $i$ | 4.99363 | | −0.10042269 | | +0.41764482 |
| $P$ | 4.86 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.6− | 0.4+ | 2006 09 15 | 704 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.0 |
| 2001 09 08 | 704 | 0.2− | 0.4− | 2006 09 15 | 704 | 0.2− | 0.7− | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2001 09 08 | 704 | 0.2+ | 0.2− | 2006 09 15 | 704 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 09 08 | 704 | 0.7− | 0.6+ | 2006 09 17 | 703 | 0.6+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 1.1− | 2006 09 17 | 703 | 1.0+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 704 | (1.8+ | 0.1+) | 2006 09 17 | 703 | 0.9+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 1.1+ | 0.6− | 2006 09 17 | 703 | 0.7− | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.7+ | 0.0 | 2006 09 18 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2001 12 10 | 645 | 0.2+ | 0.2− | 2006 09 18 | 704 | 0.9+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.1− |
| 2001 12 10 | 645 | 0.0 | 0.2− | 2006 09 18 | 704 | 0.3+ | 1.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.8− | 2006 09 18 | 704 | 0.2− | 0.4+ | 2006 10 21 | 691 | 0.5− | 0.1+ |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2006 10 01 | 703 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.4− | 1.2+ |
| 2002 12 05 | 704 | 0.1− | 0.4− | 2006 10 01 | 703 | 0.6+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.8+ | 2006 10 01 | 703 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2006 08 29 | 703 | 0.4+ | 0.4− | 2006 10 01 | 703 | (1.1− | 1.6−) | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2006 08 29 | 703 | 0.4+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2006 08 29 | 703 | 0.4+ | 1.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1+ | 0.1+ |
| 2006 09 13 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.4− | 0.1− |
| 2006 09 13 | 644 | 0.3− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2006 09 13 | 644 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.2− | 0.1+ |

**2006 RA$_{10}$ = 1996 UR$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.07204 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29221456 | $\omega$ | 166.29754 | | +0.92874278 | | −0.35936749 |
| $a$ | 2.2490623 | $\Omega$ | 215.19622 | | +0.32350956 | | +0.90558475 |
| $e$ | 0.2050185 | $i$ | 9.09001 | | +0.18104810 | | +0.22532480 |
| $P$ | 3.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 17 | 691 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.6+ | 0.3+ | 2006 10 03 | 704 | 0.4+ | 0.3− |
| 1996 10 17 | 691 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.0 | 2006 10 03 | 704 | 0.1− | 0.0 |
| 1996 10 17 | 691 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 10 03 | 704 | 0.5+ | 1.3− |
| 1996 10 18 | 691 | 0.6+ | 0.0 | 2006 09 26 | 683 | 0.5− | 1.0− | 2006 10 03 | 704 | 1.2+ | 0.0 |
| 1996 10 18 | 691 | 0.5+ | 0.2+ | 2006 09 26 | 683 | 0.3− | 1.3− | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 1996 10 18 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 683 | 0.5− | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2001 02 18 | 608 | 0.2+ | 1.3+ | 2006 09 27 | 699 | 0.4+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2001 02 18 | 608 | 0.6+ | 0.7+ | 2006 09 27 | 699 | 0.3+ | 1.0+ | 2006 10 17 | 703 | 0.3− | 0.5+ |
| 2001 02 18 | 608 | (2.0+ | 1.3+) | 2006 09 27 | 699 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 1.3− |
| 2002 07 07 | 291 | 0.1+ | 0.0 | 2006 09 27 | 699 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2002 07 07 | 291 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2002 07 07 | 291 | 0.1+ | 0.0 | 2006 09 27 | 683 | 0.4− | 1.4− | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2005 04 10 | G96 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.6− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2005 04 10 | G96 | 0.2− | 0.3− | 2006 09 27 | 703 | 0.5− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2005 04 10 | G96 | 0.3− | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.0 |
| 2005 04 10 | G96 | 0.3− | 0.1+ | 2006 09 27 | 683 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 13 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 09 13 | 644 | 0.2− | 0.3+ | 2006 09 28 | 704 | (2.0+ | 1.1+) | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 1.2+ | 0.7+ | 2006 11 21 | 704 | (1.0+ | 2.0+) |
| 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 28 | 683 | 0.1+ | 1.4− | 2006 11 21 | 704 | (0.5− | 1.6−) |
| 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.5+ | 0.6+ | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 28 | 683 | 0.2+ | 0.8− | 2006 11 21 | 704 | (1.3+ | 1.5+) |
| 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 09 28 | 704 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.6+ | 1.1+ |
| 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 09 28 | 683 | 0.1− | 0.4− | 2006 11 21 | 704 | 1.0+ | 0.0 |
| 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 09 29 | 683 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.3− | 1.1+ |
| 2006 09 16 | 703 | 0.5+ | 0.1− | 2006 09 29 | 683 | 0.9− | 1.4+ | 2006 11 21 | 704 | (1.4+ | 1.7+) |
| 2006 09 19 | 699 | 0.4+ | 0.6+ | 2006 09 29 | 683 | 0.5− | 0.8+ | | | | |

**2006 RC$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.65347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26920655 | $\omega$ | 24.46526 | | +0.91719586 | | −0.39843236 |
| $a$ | 2.3754486 | $\Omega$ | 359.00935 | | +0.34573593 | | +0.79817126 |
| $e$ | 0.1985814 | $i$ | 6.12235 | | +0.19803640 | | +0.45185649 |
| $P$ | 3.66 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 809 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 1995 09 24 | 691 | 0.0 | 0.6+ | 2006 09 20 | 704 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1− |
| 1995 09 24 | 691 | 0.4− | 0.4+ | 2006 09 20 | 704 | 1.0+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1995 09 24 | 691 | 0.6− | 0.5+ | 2006 09 20 | 704 | 0.2+ | 0.6− | 2006 09 30 | 704 | 0.3+ | 0.1+ |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.4+ | 1.0− | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | (0.7− | 1.7+) | 2006 09 30 | 704 | 0.4+ | 0.5+ |
| 2006 08 21 | 807 | 0.3− | 0.1− | 2006 09 25 | 699 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.0 | 0.4− |
| 2006 08 21 | 807 | 0.4− | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.5+ | 2006 10 01 | 703 | 0.0 | 1.2+ |
| 2006 08 22 | 807 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 10 01 | 703 | 0.8− | 0.2− |
| 2006 08 24 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 01 | 703 | 0.5+ | 0.4+ |
| 2006 08 24 | 644 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 01 | 703 | 0.8+ | 0.0 |
| 2006 08 24 | 644 | 0.2+ | 0.4− | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.5− | 0.1− |
| 2006 09 13 | 644 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2006 09 13 | 644 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.4+ | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.1− |
| 2006 09 13 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 1.1+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.0 | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.5− |
| 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 09 27 | 704 | 0.6− | 0.5+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.7− | 0.9+ | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2006 09 17 | 704 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.5+ | 0.2+ | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.2− | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2006 09 17 | 704 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.7− | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2006 09 17 | 704 | 0.7− | 0.8− | 2006 09 29 | 704 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2006 09 19 | 699 | 0.1− | 1.1+ | 2006 09 29 | 704 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2006 09 19 | 699 | 1.0+ | 0.1− | 2006 09 29 | 704 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.2+ |

**2006 RD$_{10}$ = 2005 GT$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.10463 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21937628 | $\omega$ | 146.30579 | | +0.73828565 | | +0.67419000 |
| $a$ | 2.7227616 | $\Omega$ | 171.21750 | | −0.64419241 | | +0.71362314 |
| $e$ | 0.1427891 | $i$ | 7.54704 | | −0.19987607 | | +0.19028887 |
| $P$ | 4.49 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.8− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 11 16 | 644 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2002 11 16 | 644 | 0.2− | 0.7+ | 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 04 15 | 691 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2005 04 15 | 691 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2005 04 15 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2005 04 18 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2005 04 18 | 691 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.8− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2005 04 18 | 691 | 0.0 | 0.1− | 2006 09 18 | 699 | 1.2− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 08 19 | 691 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 08 19 | 691 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2006 08 19 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 09 13 | 644 | 0.3− | 0.1− | 2006 09 30 | G96 | 1.2+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2006 09 13 | 644 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.3− | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1+ | | | | |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1+ | | | | |

**2006 RE$_{10}$ = 2001 UN$_{199}$ = 2004 FN$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.26037 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19006013 | $\omega$ | 338.81428 | | +0.86919728 | | +0.49445710 |
| $a$ | 2.9960015 | $\Omega$ | 351.55003 | | −0.45080505 | | +0.79004717 |
| $e$ | 0.0521941 | $i$ | 1.12076 | | −0.20315238 | | +0.36240537 |
| $P$ | 5.19 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 691 | 0.1+ | 0.1− | 2004 03 17 | 691 | 0.5+ | 0.5+ | 2006 09 19 | 691 | 0.3− | 0.0 |
| 1996 10 12 | 691 | 0.2+ | 0.2− | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 1996 10 12 | 691 | 0.2+ | 0.7− | 2004 03 29 | 691 | 0.1− | 0.4+ | 2006 09 21 | 184 | 0.2− | 0.7+ |
| 1998 02 03 | 691 | (2.3− | 2.6−) | 2004 03 29 | 691 | 0.3+ | 0.3+ | 2006 09 22 | 184 | 0.4− | 0.3+ |
| 1998 02 03 | 691 | 0.1+ | 0.4− | 2004 04 22 | 691 | 0.1− | 0.5+ | 2006 09 22 | 184 | 0.5− | 0.1+ |
| 1998 02 03 | 691 | 0.0 | 0.1+ | 2004 04 22 | 691 | 0.3− | 0.3+ | 2006 09 22 | 184 | 0.2+ | 0.1− |
| 2001 10 19 | 644 | 0.1+ | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.3+ | 0.8+ |
| 2001 10 19 | 644 | 0.2− | 0.5+ | 2006 07 21 | G96 | (1.6− | 0.1+) | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 2001 10 19 | 644 | 0.4+ | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 0.8− | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.5− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2001 10 21 | 704 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 0.0 | 0.0 | 2006 08 28 | 703 | 1.2− | 0.5− | 2006 09 25 | G96 | 0.5+ | 0.3− |
| 2001 10 21 | 704 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.4− |
| 2001 10 21 | 704 | 0.7+ | 0.7+ | 2006 08 28 | 703 | 0.8− | 0.9− | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | (1.4− | 1.9+) | 2006 08 28 | 703 | 1.2− | 0.4+ | 2006 09 27 | 704 | 0.9− | 0.2+ |
| 2001 10 24 | 704 | 0.0 | 0.7− | 2006 09 13 | 644 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2001 10 24 | 704 | 0.2− | 0.5− | 2006 09 13 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 704 | (1.6− | 0.0 ) |
| 2001 10 24 | 704 | 0.1− | 0.8− | 2006 09 13 | 644 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 1.2− | 0.1− |
| 2001 12 18 | 291 | 0.9− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 291 | 0.3− | 0.8+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.7− | 0.2− |
| 2001 12 18 | 291 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 704 | (1.9− | 0.0 ) |
| 2003 01 09 | 704 | 0.7− | 0.4− | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2003 01 09 | 704 | 0.4+ | 0.0 | 2006 09 18 | 699 | 0.7+ | 1.0+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2003 01 09 | 704 | (0.6+ | 2.0+) | 2006 09 18 | 699 | 1.5+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 699 | (1.6+ | 0.1−) | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 691 | 0.5+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.4+ | | | | |

**2006 RM$_{10}$ = 2002 VK$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.97812 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21907954 | $\omega$ | 110.05367 | | +0.91825215 | | +0.39414542 |
| $a$ | 2.7252196 | $\Omega$ | 226.75511 | | −0.38010747 | | +0.85020896 |
| $e$ | 0.0896551 | $i$ | 3.00929 | | −0.11104640 | | +0.34899012 |
| $P$ | 4.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 408 | 0.4− | 0.1+ | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 09 19 | 699 | (2.2+ | 1.8−) |
| 2002 11 05 | 408 | 0.6− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 1.2− |
| 2002 11 06 | 408 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 09 19 | 699 | 0.6− | 0.1− |
| 2002 11 06 | 408 | 0.4+ | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2006 08 29 | 691 | 0.3− | 0.6+ | 2006 09 19 | 699 | (1.5− | 2.7+) | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.9− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2006 08 29 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.4− | | | | |
| 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.4+ | | | | |

**2006 RQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.97245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18485208 | $\omega$ | 145.58217 | | +0.78946007 | +0.61373498 | |
| $a$ | 3.0520137 | $\Omega$ | 176.51705 | | −0.59135788 | +0.76446701 | |
| $e$ | 0.0800276 | $i$ | 8.58096 | | −0.16446473 | +0.19728040 | |
| $P$ | 5.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.3− |
| 2001 10 16 | 644 | 0.2− | 0.5+ | 2006 09 14 | 644 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.8− |
| 2001 10 16 | 644 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2004 03 12 | 644 | 0.4+ | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1+ |
| 2004 03 12 | 644 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2004 03 12 | 644 | 0.4+ | 0.4+ | 2006 09 16 | 699 | 0.4+ | 0.6− | 2006 09 25 | 699 | 1.2+ | 1.2− |
| 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 09 16 | 699 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.8− | 0.4− | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2006 09 16 | 699 | (1.0+ | 2.5+) | 2006 10 20 | G96 | 0.4− | 0.0 |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.4+ | 0.3+ |
| 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2006 08 28 | 691 | 0.3− | 0.3+ | 2006 09 24 | 291 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2006 08 28 | 691 | 0.1+ | 0.2+ | 2006 09 24 | 291 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 09 24 | 291 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2006 09 14 | 644 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.5− | 1.4+ | | | | |

**2006 RS$_{10}$ = 2004 BV$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.19880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27637100 | $\omega$ | 20.28419 | | +0.79497784 | −0.60648793 | |
| $a$ | 2.3342162 | $\Omega$ | 17.07284 | | +0.55003981 | +0.71123286 | |
| $e$ | 0.2126991 | $i$ | 2.63824 | | +0.25586410 | +0.35541555 | |
| $P$ | 3.57 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 691 | 0.6− | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.7+ | 0.3+ |
| 2004 01 28 | 691 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.7− |
| 2004 01 28 | 691 | 0.1− | 0.7+ | 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2004 02 12 | 691 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.6− | 1.0+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2004 02 12 | 691 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.6− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.6− |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.5− |
| 2004 02 12 | 691 | 0.6+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.7− |
| 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2006 08 27 | 691 | 0.4− | 0.2− | 2006 09 30 | 703 | 1.2+ | 0.5+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2006 09 14 | 644 | 0.0 | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2006 09 14 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 1.4− | | | | |
| 2006 09 14 | 644 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.2− | | | | |

**2006 RW$_{10}$ = 2003 XF$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.19100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28615250 | $\omega$ | 61.10197 | | +0.60688626 | +0.79099127 | |
| $a$ | 2.2807150 | $\Omega$ | 246.47065 | | −0.75550316 | +0.54381529 | |
| $e$ | 0.1852798 | $i$ | 4.85520 | | −0.24678745 | +0.28035288 | |
| $P$ | 3.44 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.0 | 0.2+ | 2003 12 19 | 291 | 0.1+ | 0.1− | 2006 09 16 | 644 | 0.1+ | 0.7− |
| 2003 11 19 | 691 | 0.2+ | 0.2+ | 2003 12 19 | 291 | 0.3− | 0.1− | 2006 09 16 | 644 | 0.2+ | 0.5− |
| 2003 11 19 | 691 | 0.7− | 0.6− | 2006 09 12 | 703 | 0.5− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 1.2+ |
| 2003 12 01 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.3+ |
| 2003 12 01 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 09 19 | 703 | (2.0− | 0.4+) |
| 2003 12 01 | 691 | 0.4+ | 0.0 | 2006 09 12 | 703 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.6+ | 0.7+ |
| 2003 12 19 | 291 | 0.2− | 0.1− | 2006 09 16 | 644 | 0.0 | 0.8− | | | | |

**2006 RX$_{10}$ = 1999 RX$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.21496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28128136 | $\omega$ | 217.42663 | | +0.81302811 | −0.58222236 | |
| $a$ | 2.3069707 | $\Omega$ | 178.17824 | | +0.54530579 | +0.76053590 | |
| $e$ | 0.2261585 | $i$ | 2.80294 | | +0.20402670 | +0.28740610 | |
| $P$ | 3.50 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 23 | 691 | 0.1− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.3+ | 2006 09 20 | 704 | 0.4+ | 0.1+ |
| 1992 09 23 | 691 | 0.2− | 0.0 | 2006 09 12 | 703 | 0.7− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.5− |
| 1992 09 23 | 691 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− |
| 1999 09 11 | 704 | 0.4+ | 0.0 | 2006 09 12 | 703 | 0.8− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1999 09 11 | 704 | 0.6+ | 0.1− | 2006 09 16 | 699 | 0.3− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1999 09 11 | 704 | 1.0+ | 0.6+ | 2006 09 16 | 699 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 1999 09 11 | 704 | 0.6− | 0.2+ | 2006 09 16 | 699 | 0.9+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 1999 09 11 | 704 | 0.5+ | 0.9+ | 2006 09 16 | 699 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.0 |
| 1999 09 11 | 704 | 0.7+ | 0.1+ | 2006 09 17 | 704 | 0.3− | 1.3+ | 2006 09 25 | G96 | 0.1− | 0.0 |
| 1999 09 11 | 704 | 0.4− | 0.5− | 2006 09 17 | 704 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.0 |
| 1999 09 11 | 704 | 0.5+ | 0.6− | 2006 09 17 | 704 | (0.6+ | 1.7−) | 2006 09 27 | 704 | 0.1− | 0.8+ |
| 1999 09 14 | 704 | 1.0− | 0.0 | 2006 09 19 | 699 | 0.9+ | 1.2− | 2006 09 27 | 704 | 0.2− | 0.0 |
| 1999 09 14 | 704 | 0.3+ | 0.9− | 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.7+ | 0.5− |
| 1999 09 14 | 704 | 0.2− | 0.6− | 2006 09 19 | 699 | 0.7+ | 0.3+ | 2006 09 27 | 704 | 0.8− | 1.0− |
| 1999 09 14 | 704 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.6− | 0.5− |
| 2006 08 19 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.5− | 0.7− | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.6− | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.1+ |
| 2006 08 27 | 699 | 0.4− | 1.4+ | 2006 09 19 | 699 | 0.1+ | 0.8+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2006 08 27 | 699 | 0.3+ | 1.2− | 2006 09 20 | 704 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 08 27 | 699 | (2.3− | 0.8−) | 2006 09 20 | 704 | 0.9− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2006 08 27 | 699 | 0.7+ | 0.8− | 2006 09 20 | 704 | 1.0− | 0.1− | | | | |

**2006 RC$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.77340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27314309 | $\omega$ | 198.19702 | | +0.99715597 | +0.06928222 | |
| $a$ | 2.3525701 | $\Omega$ | 157.76668 | | −0.05565800 | +0.94234825 | |
| $e$ | 0.2029615 | $i$ | 4.49644 | | −0.05081492 | +0.32738319 | |
| $P$ | 3.61 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 0.8+ | 0.5+ | 2006 09 26 | 704 | 0.7− | 0.5+ |
| 2001 03 25 | 695 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.5+ |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 09 30 | 703 | 0.2+ | 0.3+ |
| 2003 12 21 | 645 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.4+ | 0.4− |
| 2006 08 27 | 699 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2006 08 27 | 699 | 0.3− | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2006 08 27 | 699 | (1.7− | 1.0−) | 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2006 08 27 | 699 | 0.2+ | 0.2− | 2006 09 22 | 704 | (0.1− | 1.7+) | 2006 10 02 | G96 | 0.3+ | 0.6− |
| 2006 09 12 | 703 | 0.7− | 0.5− | 2006 09 22 | 704 | 0.2+ | 0.6− | 2006 10 02 | G96 | 0.6+ | 0.1− |
| 2006 09 12 | 703 | (0.0 | 2.3+) | 2006 09 22 | 704 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2006 09 12 | 703 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.5+ | 0.1− |
| 2006 09 12 | 703 | 1.0− | 0.8− | 2006 09 25 | 699 | 0.3− | 0.9− | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2006 09 16 | 699 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2006 09 16 | 699 | 0.1− | 0.8+ | 2006 09 25 | 699 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.4+ |
| 2006 09 16 | 699 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.3− |
| 2006 09 16 | 699 | 0.7+ | 0.7− | 2006 09 26 | 704 | 0.5+ | 0.7+ | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 09 26 | 704 | 0.6− | 1.2+ | 2006 11 23 | G96 | 0.2+ | 0.6− |
| 2006 09 19 | 703 | 0.0 | 0.4− | 2006 09 26 | 704 | 0.7− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2006 09 19 | 703 | 0.8− | 0.3− | 2006 09 26 | 704 | 0.1− | 0.7+ | 2006 11 23 | G96 | 0.8− | 0.9− |

**2006 RF$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.28727 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22440001 | $\omega$ | 121.41175 | | +0.53288714 | +0.84618118 | |
| $a$ | 2.6819713 | $\Omega$ | 180.80706 | | −0.82996219 | +0.52198701 | |
| $e$ | 0.1769060 | $i$ | 12.09614 | | −0.16490621 | +0.10727060 | |
| $P$ | 4.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 24 | 644 | 0.3+ | 0.4+ | 2006 09 12 | 703 | 0.8− | 0.9− | 2006 09 25 | 699 | 0.6+ | 1.4+ |
| 2001 07 24 | 644 | 0.2− | 0.2+ | 2006 09 12 | 703 | 0.3− | 0.9− | 2006 09 25 | 699 | 0.8− | 0.2− |
| 2001 07 24 | 644 | 0.1− | 0.1+ | 2006 09 15 | 691 | (1.8− | 0.4+) | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 2004 01 18 | 644 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.6+ |
| 2004 01 18 | 644 | 0.3+ | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 16 | 703 | 1.3− | 1.3− |
| 2004 01 18 | 644 | 0.0 | 0.5+ | 2006 09 16 | 699 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2005 03 09 | G96 | 0.4− | 0.6+ | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.7− | 1.1− |
| 2005 03 09 | G96 | 0.2− | 0.4+ | 2006 09 16 | 699 | 0.3+ | 1.1+ | 2006 10 16 | G96 | (0.9− | 1.6−) |
| 2005 03 09 | G96 | 0.8− | 0.4+ | 2006 09 16 | 699 | 0.6− | 0.4+ | 2006 10 16 | G96 | 0.4+ | 0.9+ |
| 2005 03 09 | G96 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 10 16 | G96 | 0.1− | 0.5− |
| 2005 04 15 | 699 | 0.2+ | 0.5− | 2006 09 17 | 704 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2005 04 15 | 699 | 0.6+ | 0.7− | 2006 09 17 | 704 | 0.5+ | 1.5− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2005 04 15 | 699 | 1.4− | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.7− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2005 04 15 | 699 | 0.6+ | 0.2+ | 2006 09 17 | 704 | 0.5− | 1.3− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2005 05 07 | 691 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.6+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.7+ | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.7+ | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2006 08 29 | 703 | 1.5+ | 0.5− | 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2006 08 29 | 703 | 0.1− | 0.5− | 2006 09 20 | 704 | 0.4+ | 0.4+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2006 08 29 | 703 | 0.5+ | 0.7− | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.5− | 0.3− |
| 2006 08 29 | 703 | 0.4− | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 09 12 | 703 | 0.2+ | 0.8− | 2006 09 23 | 691 | 0.2+ | 0.4+ | | | | |
| 2006 09 12 | 703 | 0.9− | 0.4− | 2006 09 25 | 699 | 0.6+ | 0.5+ | | | | |

**2006 RH$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.69744 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22049557 | $\omega$ | 111.69689 | | +0.50470862 | +0.86276126 | |
| $a$ | 2.7135394 | $\Omega$ | 188.80096 | | −0.84692874 | +0.48806124 | |
| $e$ | 0.0951701 | $i$ | 11.38511 | | −0.16727499 | +0.13205773 | |
| $P$ | 4.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 691 | 0.1+ | 0.1− | 2006 09 16 | 699 | 0.2− | 1.0+ | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2005 04 30 | 691 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.6+ | 1.0− | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2005 04 30 | 691 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.2− | 0.9+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2005 05 07 | 703 | 0.5− | 1.1+ | 2006 09 19 | 703 | 0.6− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.8+ |
| 2005 05 07 | 703 | 0.4− | 0.5− | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1− | 1.1+ |
| 2005 05 07 | 703 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.0 | 1.1+ | 2006 10 27 | G96 | 0.1+ | 0.4+ |
| 2005 05 07 | 703 | 0.5− | 0.4+ | 2006 09 20 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.3+ |
| 2006 08 29 | 703 | 0.4− | 0.3− | 2006 09 20 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2006 08 29 | 703 | 0.3+ | 1.3+ | 2006 09 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.6− |
| 2006 08 29 | 703 | 0.5− | 0.6+ | 2006 09 25 | 699 | 1.0+ | 0.2− | 2006 11 11 | G96 | 0.5− | 0.4− |
| 2006 08 29 | 703 | 0.8− | 0.1+ | 2006 09 25 | 704 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2006 09 12 | 703 | 0.5− | 0.0 | 2006 09 25 | 704 | 0.3+ | 1.0− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2006 09 12 | 703 | 1.5− | 1.4− | 2006 09 25 | 699 | 0.8+ | 0.9− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2006 09 12 | 703 | 0.3− | 0.7− | 2006 09 25 | 704 | 0.5+ | 1.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 09 12 | 703 | 0.9+ | 1.1− | 2006 09 25 | 699 | 0.7+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2006 09 16 | 699 | 0.8+ | 0.7− | 2006 09 25 | 699 | 1.0+ | 1.1+ | | | | |
| 2006 09 16 | 699 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | | | |

**2006 RL$_{11}$ = 1997 ST$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.33872 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21567942 | $\omega$ | 76.69932 | | +0.91346988 | −0.40366130 | |
| $a$ | 2.7537864 | $\Omega$ | 307.08417 | | +0.34400301 | +0.83341912 | |
| $e$ | 0.1328207 | $i$ | 3.68605 | | +0.21733549 | +0.37745215 | |
| $P$ | 4.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.3− | 0.0 | 2006 09 16 | 699 | (1.7+ | 0.2−) | 2006 09 25 | 704 | 0.9− | 0.6− |
| 1997 09 27 | 691 | 0.6− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.5− | 2006 09 25 | 704 | 0.0 | 0.2+ |
| 1997 09 27 | 691 | 0.7− | 0.1− | 2006 09 19 | 703 | (2.4− | 0.8−) | 2006 09 25 | 704 | 0.5+ | 0.5+ |
| 1997 09 29 | 691 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 1997 09 29 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1997 09 29 | 691 | 0.7+ | 0.0 | 2006 09 20 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2004 04 24 | 691 | 0.6− | 0.1+ | 2006 09 20 | 691 | 0.4+ | 0.1+ | 2006 10 11 | 291 | 0.2+ | 0.2+ |
| 2004 04 24 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 703 | 0.8− | 0.1+ | 2006 10 11 | 291 | 0.3+ | 0.1+ |
| 2004 04 24 | 691 | 0.5+ | 0.1− | 2006 09 20 | 703 | 0.4+ | 0.8− | 2006 10 11 | 291 | 0.3+ | 0.1+ |
| 2006 09 12 | 703 | (1.8− | 0.9−) | 2006 09 20 | 703 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2006 09 12 | 703 | 0.6− | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.3− | 0.2− |
| 2006 09 12 | 703 | 0.4− | 0.7− | 2006 09 22 | 703 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2006 09 12 | 703 | 0.7− | 0.2+ | 2006 09 22 | 703 | 0.8− | 1.1− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2006 09 16 | 699 | 0.2+ | 1.0+ | 2006 09 22 | 703 | 0.9+ | 0.5− | 2006 10 23 | G96 | 0.6− | 0.1− |
| 2006 09 16 | 699 | 0.4− | 0.3− | 2006 09 22 | 703 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2006 09 16 | 699 | 0.4− | 1.0+ | 2006 09 25 | 704 | 0.7− | 0.4+ | 2006 10 23 | G96 | 0.6− | 0.4− |

**2006 RN$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.94350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27427559 | $\omega$ | 326.63573 | | +0.88431400 | +0.46687463 | |
| $a$ | 2.3460897 | $\Omega$ | 5.53738 | | −0.41852538 | +0.79656915 | |
| $e$ | 0.2241909 | $i$ | 2.43716 | | −0.20694266 | +0.38406466 | |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.7+ | 1.7− | 2006 09 17 | 704 | 0.2− | 0.8+ | 2006 09 29 | 704 | 0.5− | 1.0+ |
| 1999 10 06 | 704 | 0.0 | 0.6− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.8+ |
| 1999 10 06 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.5− | 2006 09 29 | 704 | (0.9− | 2.1+) |
| 1999 10 06 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.6− | 1.0+ |
| 1999 10 12 | 704 | 0.3+ | 1.7− | 2006 09 18 | 699 | 0.0 | 0.5− | 2006 09 29 | 704 | 0.2− | 0.4+ |
| 1999 10 12 | 704 | 1.2− | 1.2− | 2006 09 20 | 704 | 1.4− | 0.5− | 2006 09 29 | 704 | 0.3− | 0.1+ |
| 1999 10 12 | 704 | 0.0 | 0.7− | 2006 09 20 | 704 | 1.3− | 0.3− | 2006 09 29 | 704 | 0.2+ | 0.5− |
| 1999 10 12 | 704 | 0.2− | 0.8− | 2006 09 20 | 704 | (1.7− | 0.1−) | 2006 09 29 | 704 | 0.4− | 0.2− |
| 1999 10 12 | 704 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 1.2− | 0.2− | 2006 10 01 | 704 | 0.9+ | 1.1+ |
| 1999 11 04 | 704 | 0.4− | 0.7+ | 2006 09 20 | 704 | (1.6− | 0.3−) | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 1999 11 04 | 704 | 0.1+ | 1.6+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.3− | 0.8+ |
| 1999 11 04 | 704 | 0.2+ | 1.7+ | 2006 09 20 | 644 | 0.2− | 0.5− | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 2005 03 13 | 691 | 0.5+ | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.2+ | 0.2+ |
| 2005 03 13 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.7− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2005 03 13 | 691 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2005 04 02 | G96 | 0.3− | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2005 04 02 | G96 | 0.4− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2005 04 02 | G96 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.6− |
| 2005 04 02 | G96 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.3+ | 0.5− | 2006 10 17 | 703 | (2.4− | 1.3+) |
| 2005 04 02 | G96 | 0.1− | 0.4+ | 2006 09 27 | 704 | 0.2− | 0.7− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2005 04 02 | G96 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2006 08 22 | 644 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2006 08 22 | 644 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2006 08 22 | 644 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 09 12 | 703 | 1.0+ | 0.7+ | 2006 09 28 | 704 | 0.1+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2006 09 12 | 703 | 0.4+ | 1.3+ | 2006 09 28 | 704 | 1.3+ | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2006 09 12 | 703 | 0.9+ | 0.3+ | 2006 09 28 | 704 | 0.4+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2006 09 12 | 703 | 0.3+ | 0.7+ | 2006 09 28 | 704 | 0.7− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2006 09 16 | 691 | 0.3+ | 0.0 | 2006 09 28 | 704 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 704 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.0 | |
| 2006 09 16 | 691 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.0 | |
| 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.3+ | |
| 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.7+ | 0.1− | |
| 2006 09 17 | 704 | 0.3− | 0.1+ | 2006 09 28 | 704 | 0.3+ | 0.5+ | | | | | |
| 2006 09 17 | 704 | 0.4+ | 1.1+ | 2006 09 28 | 704 | 0.6− | 0.2− | | | | | |

**2006 RO$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.82665 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29830169 | $\omega$ | 146.23386 | +0.75032456 | | +0.66100268 | |
| $a$ | 2.2183611 | $\Omega$ | 172.36857 | −0.62110514 | | +0.70976601 | |
| $e$ | 0.2111215 | $i$ | 4.06241 | −0.22636577 | | +0.24353164 | |
| $P$ | 3.30 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 19 | 691 | 0.0 | 0.8+ | 2006 09 12 | 703 | 0.7+ | 0.8+ | 2006 09 28 | 704 | 0.0 | 0.4+ | |
| 2002 04 19 | 691 | 0.0 | 1.0+ | 2006 09 16 | 691 | 0.4− | 0.1+ | 2006 09 28 | 704 | 0.9+ | 1.3+ | |
| 2002 04 19 | 691 | 0.8+ | 0.3+ | 2006 09 16 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1+ | |
| 2003 11 19 | 699 | 0.1− | 0.5− | 2006 09 16 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 | |
| 2003 11 19 | 699 | 0.8+ | 1.2+ | 2006 09 20 | 704 | 0.6− | 1.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ | |
| 2003 11 19 | 699 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | |
| 2003 11 19 | 699 | 0.2− | 0.5− | 2006 09 20 | 704 | 0.0 | 0.5− | 2006 09 30 | G96 | 0.3+ | 0.1− | |
| 2003 11 26 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.2− | 2006 09 30 | G96 | 0.0 | 0.2− | |
| 2003 11 26 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1− | |
| 2003 11 26 | 691 | 0.5− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 09 | 644 | 0.0 | 0.2− | |
| 2006 08 24 | 644 | 0.9− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.2− | |
| 2006 08 24 | 644 | 0.8− | 0.1− | 2006 09 26 | G96 | 0.4− | 0.6− | 2006 10 09 | 644 | 0.0 | 0.2− | |
| 2006 08 24 | 644 | 0.5− | 0.5− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.3+ | 0.2− | |
| 2006 08 28 | 703 | 0.6+ | 0.7− | 2006 09 27 | 704 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | |
| 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.2− | |
| 2006 08 28 | 703 | 1.2− | 0.4+ | 2006 09 27 | 704 | 0.7+ | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.1+ | |
| 2006 08 28 | 703 | (1.9− | 0.7−) | 2006 09 27 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.1− | |
| 2006 09 12 | 703 | (0.9+ | 1.8+) | 2006 09 27 | 704 | 0.7+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.8+ | |
| 2006 09 12 | 703 | (0.9+ | 2.1+) | 2006 09 28 | 704 | 0.2+ | 1.1+ | 2006 10 16 | 703 | 0.5+ | 1.6+ | |
| 2006 09 12 | 703 | 1.4+ | 0.4+ | 2006 09 28 | 704 | 0.4+ | 0.0 | | | | | |

**2006 RR$_{11}$ = 2005 MG$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.23126 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23089059 | $\omega$ | 154.60785 | +0.81666053 | | +0.57546404 | |
| $a$ | 2.6314708 | $\Omega$ | 169.90935 | −0.56284874 | | +0.81090618 | |
| $e$ | 0.1064923 | $i$ | 14.43175 | −0.12754165 | | +0.10617115 | |
| $P$ | 4.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | (1.6− | 1.3−) | 2006 09 28 | 699 | 0.4− | 0.7+ | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.8+ | 0.1− | 2006 09 28 | 699 | 0.8− | 0.7+ | |
| 2002 11 06 | 644 | 0.5− | 0.3− | 2006 09 12 | 703 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.5− | 0.5− | |
| 2002 11 06 | 644 | 0.1+ | 0.6− | 2006 09 12 | 703 | 1.1− | 0.8− | 2006 09 30 | 703 | 0.1+ | 0.3− | |
| 2002 11 06 | 644 | 0.2+ | 0.3− | 2006 09 16 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.0 | |
| 2005 04 15 | 703 | (0.8+ | 2.5+) | 2006 09 16 | 704 | 0.4− | 0.8+ | 2006 09 30 | 704 | 1.4+ | 1.3+ | |
| 2005 04 15 | 703 | 0.6− | 0.5+ | 2006 09 16 | 704 | 0.1+ | 0.0 | 2006 09 30 | 704 | (0.6− | 1.9+) | |
| 2005 04 15 | 703 | 1.0− | 0.5+ | 2006 09 16 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 704 | (2.0+ | 0.9+) | |
| 2005 04 15 | 703 | 0.1+ | 1.1− | 2006 09 18 | 703 | 0.5+ | 0.1+ | 2006 09 30 | 704 | 0.0 | 1.2+ | |
| 2005 05 20 | 644 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.6− | 0.4− | 2006 09 30 | 704 | 0.3+ | 1.2+ | |
| 2005 05 20 | 644 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.0 | |
| 2005 05 20 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 1.2+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.1− | |
| 2005 05 20 | 644 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.4− | 0.7+ | 2006 10 09 | 644 | 0.1− | 0.2+ | |
| 2005 05 20 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1+ | |
| 2005 05 20 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | (1.2+ | 1.9−) | 2006 10 10 | 644 | 0.1+ | 0.1− | |
| 2005 06 25 | 644 | 0.4+ | 0.0 | 2006 09 18 | 699 | (2.1− | 0.2+) | 2006 10 10 | 644 | 0.1+ | 0.2+ | |
| 2005 06 25 | 644 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.2− | |
| 2005 06 25 | 644 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.8− | 2006 10 12 | 644 | 0.1− | 0.1− | |
| 2005 07 01 | 644 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1− | |
| 2005 07 01 | 644 | 0.3+ | 0.0 | 2006 09 22 | 704 | 0.6+ | 0.7− | 2006 10 22 | 703 | 0.1− | 0.4− | |
| 2005 07 01 | 644 | 0.3+ | 0.3− | 2006 09 22 | 704 | 0.3− | 0.8− | 2006 10 22 | 703 | 0.7+ | 0.5+ | |
| 2006 08 28 | 703 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.7+ | 0.4− | 2006 10 22 | 703 | 0.9+ | 1.1+ | |
| 2006 08 28 | 703 | 0.4+ | 0.3+ | 2006 09 22 | 704 | 0.9− | 0.6− | 2006 10 22 | 703 | 0.5− | 1.1− | |
| 2006 08 28 | 703 | 1.0− | 0.2− | 2006 09 28 | 699 | 0.0 | 0.2− | | | | | |
| 2006 08 28 | 703 | 0.7− | 1.5− | 2006 09 28 | 699 | 0.3+ | 0.2+ | | | | | |

**2006 RS$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.42062 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26384283 | $\omega$ | 230.27054 | +0.92289749 | | +0.37778114 | |
| $a$ | 2.4075345 | $\Omega$ | 107.41807 | −0.32508912 | | +0.86809508 | |
| $e$ | 0.2025260 | $i$ | 4.47474 | −0.20634264 | | +0.32201294 | |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.4+ | 1.2+ | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 1.0− | 0.5− | |
| 2002 07 05 | 644 | 0.2+ | 1.4+ | 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.0 | |
| 2002 07 05 | 644 | 0.4+ | 1.1+ | 2006 08 23 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.3− | 0.1+ | |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2006 09 12 | 703 | 0.6− | 0.7− | 2006 10 02 | G96 | 0.6+ | 0.3− | |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2006 09 12 | 703 | 0.2− | 0.5− | 2006 10 02 | G96 | 0.6+ | 0.2− | |
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2006 09 12 | 703 | (2.0+ | 0.1−) | 2006 10 02 | G96 | 0.1+ | 0.2− | |
| 2002 07 22 | 644 | 0.3− | 0.1− | 2006 09 12 | 703 | 0.8+ | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.3− | |
| 2002 07 22 | 644 | 0.3− | 0.1+ | 2006 09 16 | 704 | 1.3− | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.1+ | |
| 2002 07 22 | 644 | 0.2− | 0.2− | 2006 09 16 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.4− | |
| 2002 07 28 | 608 | 0.2− | 1.3− | 2006 09 16 | 704 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2− | |
| 2002 07 28 | 608 | 0.1+ | 1.2− | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.2− | |
| 2002 07 28 | 608 | 0.2− | 0.6− | 2006 09 18 | 703 | 0.6+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.4− | |
| 2002 08 13 | 704 | 1.0− | 0.1− | 2006 09 18 | 703 | 0.8+ | 0.2− | 2006 10 17 | 703 | 0.4− | 0.1+ | |
| 2002 08 13 | 704 | 0.7− | 1.1+ | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.4+ | |
| 2002 08 13 | 704 | 0.1+ | 1.2+ | 2006 09 20 | 644 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.9+ | |
| 2002 08 13 | 704 | 0.6− | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | |
| 2002 08 13 | 704 | 0.8+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2002 08 29 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 2002 08 29 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.3− | |
| 2002 08 29 | 644 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.1+ | |
| 2003 12 21 | 291 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.9+ | 0.4− | |
| 2003 12 21 | 291 | 0.0 | 0.4+ | 2006 09 30 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | 1.0− | 0.6− | |
| 2003 12 21 | 291 | 0.1− | 0.5+ | 2006 09 30 | 704 | 0.6− | 1.2+ | | | | | |

**2006 RY$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.86693 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17558368 | $\omega$ | 126.77019 | +0.96934809 | | +0.24568649 | |
| $a$ | 3.1584932 | $\Omega$ | 219.00747 | −0.22619970 | | +0.88994963 | |
| $e$ | 0.1730169 | $i$ | 0.14198 | −0.09590610 | | +0.38422365 | |
| $P$ | 5.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.5− | 0.2− | 2006 08 28 | 691 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.5− | |
| 1995 09 27 | 691 | 0.8+ | 0.3− | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | (1.2− | 1.5−) | |
| 1995 09 27 | 691 | 0.1+ | 0.6− | 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.8− | 0.5+ | |
| 2001 11 15 | 691 | 0.9+ | 0.1− | 2006 09 13 | 644 | 0.4− | 0.4+ | 2006 10 16 | 703 | 1.0− | 1.1+ | |
| 2001 11 15 | 691 | 0.4+ | 0.3+ | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.6− | |
| 2001 11 15 | 691 | 0.9− | 0.4+ | 2006 09 16 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.6− | |
| 2001 12 18 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.4− | 0.6− | |
| 2001 12 18 | 704 | 1.0− | 0.0 | 2006 09 20 | 704 | 0.0 | 1.2+ | 2006 10 16 | G96 | 0.1+ | 0.4− | |
| 2001 12 18 | 704 | 0.6− | 0.9− | 2006 09 20 | 704 | (0.2+ | 1.6+) | 2006 10 27 | G96 | 0.1− | 0.6− | |
| 2005 06 13 | G96 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− | |
| 2005 06 13 | G96 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | |
| 2005 06 13 | G96 | 0.5− | 0.4− | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.4− | |
| 2005 06 13 | G96 | 0.7+ | 0.7− | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.1− | |
| 2006 08 19 | 691 | 0.3− | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.6− | 0.4− | |
| 2006 08 19 | 691 | 0.2+ | 0.1− | 2006 09 30 | 703 | 1.3+ | 0.5+ | 2006 11 21 | G96 | 0.1+ | 0.1− | |
| 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− | |
| 2006 08 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.8+ | 0.5+ | | | | | |
| 2006 08 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.8− | 1.2+ | | | | | |

**2006 RZ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.38154 | | (2000.0) | | | |
| $n$ | 0.17111608 | $\omega$ | 166.89006 | | +0.90359949 | −0.42835533 |
| $a$ | 3.2132326 | $\Omega$ | 218.47415 | | +0.39238336 | +0.83178382 |
| $e$ | 0.1670659 | $i$ | 0.40849 | | +0.17188154 | +0.35305436 |
| $P$ | 5.76 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.5− |
| 2000 09 03 | 645 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.7− |
| 2001 12 17 | 704 | 0.5− | 0.2+ | 2006 09 16 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.6− |
| 2001 12 17 | 704 | 0.1− | 0.8+ | 2006 09 16 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.6− |
| 2001 12 17 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.5− | 0.8− |
| 2001 12 17 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2006 07 22 | G96 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.5+ |
| 2006 07 22 | G96 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.8− |
| 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 09 27 | J75 | 0.7+ | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.8− |
| 2006 07 22 | G96 | 0.4− | 0.3− | 2006 09 27 | J75 | 0.2+ | 0.8+ | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2006 08 28 | 691 | 0.3+ | 0.1+ | 2006 09 27 | J75 | 0.8+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2006 08 28 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2006 08 28 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2006 09 13 | 644 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.4− | | | | |

**2006 RA$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.54907 | | (2000.0) | | | |
| $n$ | 0.25685295 | $\omega$ | 231.49874 | | +0.59905888 | −0.80070421 |
| $a$ | 2.4510171 | $\Omega$ | 181.69989 | | +0.74575595 | +0.55845056 |
| $e$ | 0.1983842 | $i$ | 2.13771 | | +0.29150733 | +0.21680807 |
| $P$ | 3.84 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 1.0− | 1.1+ | 2006 09 20 | 704 | 0.5− | 0.4− | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2002 08 28 | 644 | 0.0 | 1.1+ | 2006 09 20 | 704 | 0.4− | 0.8− | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2002 08 28 | 644 | 0.0 | 0.8+ | 2006 09 20 | 704 | 0.6+ | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.2− |
| 2004 03 23 | 291 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.0 | 0.7− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2004 03 23 | 291 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2004 03 23 | 291 | 0.1+ | 0.4+ | 2006 09 27 | 704 | (0.6+ | 1.5−) | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2006 07 22 | G96 | 0.5+ | 0.6− | 2006 09 27 | 704 | 1.1+ | 1.3− | 2006 10 20 | 644 | 0.5− | 0.4+ |
| 2006 07 22 | G96 | 0.4+ | 0.3− | 2006 09 27 | 704 | 1.0+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2006 07 22 | G96 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2006 07 22 | G96 | 0.4− | 0.2− | 2006 09 27 | 704 | (2.1+ | 1.8−) | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2006 08 28 | 703 | (2.0+ | 0.7−) | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3− |
| 2006 08 28 | 703 | 0.4− | 0.9+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2006 08 28 | 703 | 0.3+ | 0.6− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2006 08 28 | 703 | (1.8+ | 1.4−) | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2006 08 28 | 691 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.2− | 1.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2006 08 28 | 691 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.6+ | 1.2+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2006 09 13 | 644 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2006 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2006 09 13 | 644 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2006 09 16 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2006 09 16 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2006 09 16 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.2− | | | | |

**2006 RD$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 338.86270 | | (2000.0) | | | |
| $n$ | 0.21152303 | $\omega$ | 266.09058 | | +0.67871078 | −0.73065363 |
| $a$ | 2.7897436 | $\Omega$ | 140.82566 | | +0.71176279 | +0.62954944 |
| $e$ | 0.3551551 | $i$ | 6.74042 | | +0.18095693 | +0.26422107 |
| $P$ | 4.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 22 | 699 | 0.8+ | 0.3+ | 2006 09 16 | 704 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.2− | 0.2− |
| 2003 02 22 | 699 | 0.6+ | 0.5+ | 2006 09 16 | 704 | 0.2− | 0.4− | 2006 10 02 | 703 | 0.3− | 0.4− |
| 2003 02 22 | 699 | 0.4+ | 1.2− | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.4− |
| 2003 02 22 | 699 | 0.3− | 0.3− | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 2003 02 26 | 599 | 1.0− | 0.2+ | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2003 02 26 | 599 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2003 02 26 | 599 | 0.3− | 0.2+ | 2006 09 19 | 704 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3− |
| 2003 02 26 | 599 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2006 08 18 | 691 | 0.0 | 0.1− | 2006 09 19 | 704 | 1.0− | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 09 19 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2006 08 18 | 691 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.9+ | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.1− |
| 2006 08 28 | 704 | 0.4+ | 0.9+ | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.1− |
| 2006 08 28 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.8+ | 0.3− |
| 2006 08 28 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 2006 08 28 | 699 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 11 11 | 644 | 0.3+ | 0.2+ |
| 2006 08 28 | 699 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 11 11 | 644 | 0.2+ | 0.4+ |
| 2006 08 28 | 699 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 644 | 0.1+ | 0.3+ |
| 2006 08 28 | 699 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.6+ |
| 2006 09 13 | 644 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.7− | 0.2+ | 2006 11 23 | 703 | 1.6− | 0.3+ |
| 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.6− | 2006 11 23 | 703 | 0.7+ | 0.1+ |
| 2006 09 13 | 644 | 0.0 | 0.7− | 2006 09 26 | 703 | 0.1+ | 0.3− | 2006 11 23 | 703 | 0.2− | 0.1− |
| 2006 09 16 | 704 | 0.6− | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.0 | | | | |
| 2006 09 16 | 704 | 0.9+ | 0.4− | 2006 09 26 | 703 | 0.1− | 0.7− | | | | |

**2006 RE$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.20314 | | (2000.0) | | | |
| $n$ | 0.18080013 | $\omega$ | 19.51121 | | +0.75197125 | +0.64341477 |
| $a$ | 3.0974447 | $\Omega$ | 299.59693 | | −0.62459247 | +0.62589752 |
| $e$ | 0.0893189 | $i$ | 9.49088 | | −0.21076879 | +0.44076039 |
| $P$ | 5.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.1+ | 0.6+ | 2006 09 06 | 644 | 0.1− | 0.4+ | 2006 09 27 | 703 | 0.7− | 0.2+ |
| 2001 10 15 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 621 | 0.2+ | 0.3− | 2006 09 27 | 703 | 0.5− | 0.6− |
| 2001 10 15 | 704 | 0.4− | 1.0+ | 2006 09 14 | 621 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.8− |
| 2001 10 15 | 704 | (0.4− | 1.8+) | 2006 09 14 | 621 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.5+ | 0.3+ |
| 2001 11 11 | 704 | 0.5− | 0.1+ | 2006 09 14 | 621 | 0.3+ | 0.2+ | 2006 09 27 | 621 | 0.1+ | 0.6− |
| 2001 11 11 | 704 | 0.2− | 0.5+ | 2006 09 14 | 621 | 0.1− | 0.2− | 2006 09 27 | 621 | 0.0 | 0.2− |
| 2001 11 11 | 704 | 0.1+ | 0.3+ | 2006 09 14 | 621 | 0.2+ | 0.0 | 2006 09 27 | 621 | 0.0 | 0.4− |
| 2001 11 11 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 703 | 0.3− | 0.2− | 2006 09 28 | 621 | 0.0 | 0.3− |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.9− | 1.0+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2003 02 01 | 645 | 0.1− | 0.0 | 2006 09 20 | 621 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2006 09 20 | 621 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2003 02 04 | 644 | 0.3+ | 0.6+ | 2006 09 20 | 621 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.7− | 0.1− |
| 2003 02 04 | 644 | 0.7+ | 0.7+ | 2006 09 21 | 621 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.8− | 0.3+ |
| 2003 02 04 | 644 | 0.0 | 0.5+ | 2006 09 21 | 621 | 0.0 | 0.3− | 2006 10 23 | 703 | 0.2− | 0.3− |
| 2004 03 14 | 644 | 0.5+ | 0.8+ | 2006 09 21 | 621 | 0.0 | 0.3− | 2006 10 23 | 703 | 0.5+ | 0.2− |
| 2004 03 14 | 644 | 0.6+ | 0.9+ | 2006 09 27 | 699 | 0.1+ | 1.1+ | 2006 10 23 | 703 | 0.2+ | 0.5− |
| 2004 03 14 | 644 | 0.3+ | 0.7+ | 2006 09 27 | 699 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.4+ | 1.2+ |
| 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 09 27 | 699 | 0.9+ | 0.1− | | | | |
| 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.5+ | 0.5+ | | | | |

**2006 RA$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 338.42920 | | (2000.0) | | | |
| $n$ | 0.22457389 | $\omega$ | 172.14596 | | +0.98296703 | −0.17136299 |
| $a$ | 2.6805868 | $\Omega$ | 198.13432 | | +0.15488280 | +0.96694130 |
| $e$ | 0.1873368 | $i$ | 12.32018 | | +0.09892997 | +0.18883658 |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.1+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 20 | 703 | 0.5+ | 0.0 |
| 2002 10 30 | 644 | 0.6− | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 09 20 | 703 | 0.7− | 0.1− |
| 2002 10 30 | 644 | 0.2+ | 0.4− | 2006 09 16 | 691 | 0.1− | 0.3+ | 2006 09 23 | 703 | 0.6+ | 1.3+ |
| 2002 11 13 | 644 | 0.1+ | 0.3− | 2006 09 16 | 691 | 0.0 | 0.1− | 2006 09 23 | 703 | (0.1+ | 2.2−) |
| 2002 11 13 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 691 | (1.7+ | 0.2+) | 2006 09 23 | 703 | 1.2+ | 1.0− |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 23 | 703 | 0.7+ | 0.8− |
| 2002 12 08 | 644 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.3− |
| 2002 12 08 | 644 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.3− |
| 2002 12 08 | 644 | 0.1− | 0.3+ | 2006 09 20 | 703 | 0.8+ | 0.4− | 2006 10 01 | 691 | 0.3− | 0.3− |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.2− | | | | |

### 2006 RS$_{13}$ = 2005 EE$_{171}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.36936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28861133 | $\omega$ | 304.72698 | | −0.99046656 | −0.09268732 | |
| $a$ | 2.2677428 | $\Omega$ | 230.17736 | | +0.12059806 | −0.94096320 | |
| $e$ | 0.1454639 | $i$ | 7.62485 | | −0.06657399 | −0.32557230 | |
| $P$ | 3.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 31 | 691 | 0.5+ | 0.9+ | 2005 03 07 | 704 | 0.2+ | 0.3+ | 2005 04 05 | 703 | 0.7+ | 1.6+ |
| 1995 05 31 | 691 | 1.4+ | 0.4+ | 2005 03 07 | 704 | 0.1+ | 0.5+ | 2005 04 05 | 703 | 0.8− | 0.7− |
| 1995 05 31 | 691 | 1.7− | 0.1− | 2005 03 07 | 704 | 0.7+ | 0.0 | 2006 09 14 | 691 | 0.4+ | 0.1+ |
| 2000 12 06 | 691 | 0.5− | 0.2+ | 2005 03 13 | 699 | 1.5+ | 1.4+ | 2006 09 14 | 691 | 0.1− | 0.0 |
| 2000 12 06 | 691 | 0.7− | 0.1+ | 2005 03 13 | 703 | 0.4− | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2000 12 06 | 691 | 0.4− | 0.4+ | 2005 03 13 | 699 | 0.1+ | 0.1+ | 2006 09 16 | 691 | 0.7− | 0.5+ |
| 2000 12 30 | 691 | 0.4+ | 0.2+ | 2005 03 13 | 703 | 0.9− | 0.1+ | 2006 09 16 | 691 | 0.2+ | 0.1− |
| 2000 12 30 | 691 | 0.4+ | 0.1+ | 2005 03 13 | 703 | 0.7− | 1.0+ | 2006 09 16 | 691 | 0.2+ | 0.2+ |
| 2000 12 30 | 691 | 1.0+ | 0.1+ | 2005 03 13 | 699 | 0.6+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.5+ |
| 2003 10 01 | 691 | 0.3− | 0.3+ | 2005 03 13 | 703 | (1.7− | 2.8+) | 2006 09 18 | 691 | 0.1− | 0.5+ |
| 2003 10 01 | 691 | 0.2− | 0.5+ | 2005 03 13 | 699 | 0.8+ | 1.3+ | 2006 09 18 | 691 | 0.2+ | 0.2− |
| 2003 10 01 | 691 | 0.2− | 0.3+ | 2005 04 05 | 703 | 0.7+ | 0.7+ | | | | |
| 2005 03 07 | 704 | 0.4+ | 0.1+ | 2005 04 05 | 703 | 0.2− | 0.9+ | | | | |

### 2006 RT$_{13}$ = 2000 GP$_{167}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.13931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22613689 | $\omega$ | 304.07708 | | −0.75283511 | −0.65570555 | |
| $a$ | 2.6682208 | $\Omega$ | 195.21887 | | +0.65260697 | −0.73224379 | |
| $e$ | 0.2033202 | $i$ | 12.62020 | | +0.08569382 | −0.18403604 | |
| $P$ | 4.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 704 | 0.1− | 0.6+ | 2000 04 10 | 608 | 0.1− | 0.0 | 2006 09 16 | 691 | 0.0 | 0.3+ |
| 2000 04 04 | 704 | 0.8+ | 0.3+ | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 16 | 691 | 0.1+ | 0.1− |
| 2000 04 04 | 704 | 0.6+ | 0.4− | 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2000 04 04 | 704 | 0.8− | 0.2− | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.0 |
| 2000 04 04 | 704 | 0.5− | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.3+ |
| 2000 04 10 | 608 | 0.1− | 0.3− | 2006 09 14 | 691 | 0.1+ | 0.2− | | | | |
| 2000 04 10 | 608 | 0.1+ | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.1− | | | | |

### 2006 RH$_{14}$ = 2002 TR$_{171}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.46161 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23661330 | $\omega$ | 126.77813 | | +0.54214086 | −0.82162094 | |
| $a$ | 2.5888682 | $\Omega$ | 289.48111 | | +0.69910176 | +0.55732230 | |
| $e$ | 0.1632245 | $i$ | 10.76768 | | +0.46619741 | +0.11971169 | |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.1− | 0.2− | 2006 08 22 | 644 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.4− | 0.2− |
| 2002 09 11 | 644 | 0.1− | 0.4− | 2006 08 22 | 644 | 0.1+ | 0.2− | 2006 09 20 | 691 | 0.4+ | 0.1+ |
| 2002 09 11 | 644 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 644 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 09 20 | 691 | 0.2− | 0.1− |
| 2002 10 04 | 644 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 644 | 0.6− | 0.0 | 2006 09 16 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2002 10 06 | 704 | 0.7+ | 0.9− | 2006 09 16 | 691 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.1− |
| 2002 10 06 | 704 | 0.6+ | 1.1+ | 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.3− |
| 2002 10 06 | 704 | 0.8− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2006 08 22 | 644 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1+ |

### 2006 RE$_{15}$ = 2003 TV$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.46980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29480197 | $\omega$ | 318.90717 | | −0.93641034 | +0.32600148 | |
| $a$ | 2.2358833 | $\Omega$ | 240.56426 | | −0.27016371 | −0.90590529 | |
| $e$ | 0.0963303 | $i$ | 8.57403 | | −0.22393581 | −0.27029361 | |
| $P$ | 3.34 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 704 | 0.2− | 0.4+ | 2003 10 02 | 691 | 0.7+ | 0.0 | 2006 09 14 | 691 | 0.2− | 0.1+ |
| 2002 05 09 | 704 | 0.3+ | 0.3− | 2003 10 02 | 691 | 0.7− | 0.5− | 2006 09 16 | 691 | 0.2+ | 0.2+ |
| 2002 05 09 | 704 | 0.6+ | 0.7− | 2003 10 16 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 691 | 0.1+ | 0.2− |
| 2002 06 16 | 644 | 0.4− | 0.0 | 2003 10 16 | 691 | 0.1− | 0.1+ | 2006 09 16 | 691 | 0.4+ | 0.1− |
| 2002 06 16 | 644 | 0.2− | 0.2+ | 2003 10 16 | 691 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.3+ |
| 2002 06 16 | 644 | 0.3− | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.5− | 0.1+ |
| 2003 10 02 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 |

### 2006 RK$_{15}$ = 2004 ED$_{95}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.43671 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18385129 | $\omega$ | 343.43791 | | +0.60553172 | +0.79034902 | |
| $a$ | 3.0630795 | $\Omega$ | 323.67804 | | −0.71115736 | +0.48484694 | |
| $e$ | 0.0859145 | $i$ | 9.04952 | | −0.35719258 | +0.37452886 | |
| $P$ | 5.36 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1+ | 0.9− | 2004 03 20 | 699 | 1.2− | 1.2+ | 2006 09 16 | 699 | 0.1+ | 0.2+ |
| 2001 09 25 | 704 | 0.1+ | 0.8− | 2004 03 20 | 699 | 0.1+ | 0.7− | 2006 09 16 | 699 | 0.2+ | 0.1− |
| 2001 09 25 | 704 | 0.0 | 0.9+ | 2006 08 20 | 691 | 0.4− | 0.1+ | 2006 09 16 | 699 | 1.0+ | 0.6+ |
| 2001 09 25 | 704 | 0.0 | 0.7+ | 2006 08 20 | 691 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.5+ | 0.3+ |
| 2001 10 13 | 644 | 0.2− | 0.0 | 2006 08 20 | 691 | 0.1− | 0.2+ | 2006 09 17 | J75 | 0.5+ | 0.0 |
| 2001 10 13 | 644 | 0.2− | 0.4+ | 2006 08 29 | 703 | 0.5− | 0.7+ | 2006 09 17 | J75 | 0.6− | 0.6− |
| 2001 10 13 | 644 | 0.1− | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.1− | 2006 09 17 | J75 | (0.9− | 2.3+) |
| 2003 01 05 | 704 | 0.1− | 0.0 | 2006 08 29 | 703 | 0.8− | 0.6− | 2006 09 19 | 703 | 0.1− | 1.0− |
| 2003 01 05 | 704 | 0.5− | 0.3− | 2006 08 29 | 703 | 0.6− | 0.7+ | 2006 09 19 | 703 | 1.3− | 0.5− |
| 2003 01 05 | 704 | 0.7+ | 0.6+ | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.7− |
| 2004 03 13 | 644 | 0.4+ | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.2− |
| 2004 03 13 | 644 | 0.8+ | 0.4+ | 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 10 16 | 703 | 1.3+ | 1.0+ |
| 2004 03 13 | 644 | 0.8+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 1.1+ | 1.2+ |
| 2004 03 20 | 699 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.9+ | 0.4− |
| 2004 03 20 | 699 | 0.6+ | 0.9+ | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.7+ | 0.9− |

### 2006 RL$_{15}$ = 2004 BP$_{154}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.76563 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27413624 | $\omega$ | 106.34934 | | +0.66466605 | −0.74681815 | |
| $a$ | 2.3468847 | $\Omega$ | 301.97305 | | +0.67523420 | +0.61301194 | |
| $e$ | 0.1849897 | $i$ | 1.48255 | | +0.31980903 | +0.25783525 | |
| $P$ | 3.60 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.0 | 1.2− | 2004 02 17 | 645 | 0.0 | 0.1− | 2006 09 24 | 106 | 0.4− | 0.2− |
| 1999 10 13 | 704 | 0.4+ | 0.9− | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 09 24 | 106 | 0.3+ | 0.1− |
| 1999 10 13 | 704 | 0.3+ | 0.9− | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 09 24 | 106 | 0.3+ | 0.5+ |
| 1999 10 13 | 704 | 0.4+ | 1.5− | 2006 09 14 | 644 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 1999 10 13 | 704 | 0.9+ | 1.7− | 2006 09 14 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2003 12 29 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 699 | 0.0 | 1.2+ | 2006 10 20 | G96 | 0.3− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | (1.8− | 0.1−) | 2006 10 20 | G96 | 0.1− | 0.1− | | |
| 2004 01 24 | 704 | 0.2− | 0.9+ | 2006 09 16 | 699 | 0.8+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.3− | | |
| 2004 01 24 | 704 | 0.2+ | 0.9+ | 2006 09 19 | 699 | 0.6+ | 0.9+ | 2006 10 20 | G96 | 0.2+ | 0.1− | | |
| 2004 01 24 | 704 | 0.6− | 0.9+ | 2006 09 19 | 699 | 0.6+ | 0.7− | 2006 10 22 | 691 | 0.2+ | 0.0 | | |
| 2004 01 24 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.5− | 0.7+ | 2006 10 22 | 691 | 0.2+ | 0.0 | | |
| 2004 01 24 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.0 | | |
| 2004 01 28 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 1.4− | 1.0+ | 2006 11 14 | G96 | 0.0 | 0.3+ | | |
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | (0.2− | 1.6+) | 2006 11 14 | G96 | 0.1+ | 0.5− | | |
| 2004 01 28 | 691 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.9− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2004 02 11 | 691 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 1.4− | 0.5+ | 2006 11 14 | G96 | 0.6− | 0.1+ | | |
| 2004 02 11 | 691 | 0.0 | 0.5+ | 2006 09 20 | 704 | 1.5− | 0.1− | | | | | | |
| 2004 02 11 | 691 | 0.4+ | 0.6− | 2006 09 24 | 106 | 0.3+ | 0.0 | | | | | | |

**2006 RQ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.80562 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17569247 | $\omega$ | 32.18134 | | +0.88606665 | +0.44132189 | |
| $a$ | 3.1571892 | $\Omega$ | 300.99004 | | −0.45260476 | +0.75750606 | |
| $e$ | 0.0639582 | $i$ | 9.52439 | | −0.10017393 | +0.48106088 | |
| $P$ | 5.61 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 291 | 0.7− | 0.7+ | 2006 09 14 | 703 | 0.7+ | 0.4− | 2006 09 22 | 703 | (1.9− | 0.5−) | | |
| 2003 01 31 | 291 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.0 | | |
| 2003 01 31 | 291 | 0.2+ | 0.3− | 2006 09 16 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.7− | | |
| 2003 02 04 | 644 | 0.3+ | 0.5− | 2006 09 16 | 644 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.5+ | 0.3− | | |
| 2003 02 04 | 644 | 0.7+ | 0.4− | 2006 09 16 | 644 | 0.8+ | 0.8+ | 2006 10 22 | 691 | 0.1− | 0.1+ | | |
| 2003 02 04 | 644 | 0.4+ | 0.3− | 2006 09 22 | 703 | 1.4− | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.2+ | | |
| 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 09 22 | 703 | 0.9− | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 14 | 703 | 0.6− | 0.2+ | 2006 09 22 | 703 | (0.2+ | 1.8+) | | | | | | |

**2006 RS$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.64297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21295658 | $\omega$ | 106.07695 | | +0.93406025 | +0.34289764 | |
| $a$ | 2.7772097 | $\Omega$ | 233.97383 | | −0.35622169 | +0.87487584 | |
| $e$ | 0.1239136 | $i$ | 7.08576 | | −0.02524996 | +0.34207232 | |
| $P$ | 4.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | (0.8+ | 1.8+) | 2006 08 26 | D35 | 0.3+ | 0.0 | 2006 09 22 | 703 | 0.3+ | 0.6− | | |
| 2002 12 05 | 704 | 1.3+ | 0.1+ | 2006 08 26 | D35 | 0.6+ | 0.2− | 2006 09 22 | 703 | 0.3− | 0.4+ | | |
| 2002 12 05 | 704 | 1.1− | 0.4+ | 2006 08 26 | D35 | 0.2+ | 0.1+ | 2006 09 22 | 703 | 0.2− | 0.4+ | | |
| 2002 12 05 | 704 | 0.2− | 0.4− | 2006 09 14 | 703 | (1.7− | 0.8−) | 2006 09 23 | 958 | 0.5+ | 0.1− | | |
| 2005 02 12 | 809 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.3− | 2006 09 23 | 958 | 0.8− | 0.1+ | | |
| 2005 02 12 | 809 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.4+ | 2006 09 23 | 958 | 0.0 | 0.5+ | | |
| 2005 02 12 | 809 | 0.7− | 0.3− | 2006 09 14 | 703 | 1.1− | 0.8− | 2006 10 11 | 644 | 0.1+ | 0.4+ | | |
| 2005 05 09 | G96 | 0.1+ | 0.0 | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | | |
| 2005 05 09 | G96 | 0.3+ | 0.0 | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ | | |
| 2005 05 09 | G96 | 0.1− | 0.0 | 2006 09 16 | 644 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.4− | | |
| 2005 05 09 | G96 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.1+ | 0.7+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | | |
| 2005 06 12 | G96 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | | |
| 2005 06 12 | G96 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2− | | |
| 2005 06 12 | G96 | 0.2− | 0.0 | 2006 09 20 | 699 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 | | |
| 2005 06 12 | G96 | 0.1+ | 0.1+ | 2006 09 22 | 703 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.0 | 0.1− | | |

**2006 RT$_{15}$ = 2000 QP$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.37535 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17464436 | $\omega$ | 332.26584 | | +0.42176886 | +0.88784762 | |
| $a$ | 3.1698084 | $\Omega$ | 321.85888 | | −0.76697085 | +0.24114387 | |
| $e$ | 0.1236833 | $i$ | 17.32830 | | −0.48359771 | +0.39188804 | |
| $P$ | 5.64 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.2+ | 0.5− | 2006 08 29 | 699 | 0.1+ | 0.9+ | 2006 09 22 | 703 | 0.2+ | 0.9+ | | |
| 2000 08 24 | 704 | 0.5− | 0.4+ | 2006 08 29 | 699 | 0.2+ | 0.3− | 2006 09 22 | 703 | 0.1− | 0.0 | | |
| 2000 08 24 | 704 | 0.6− | 0.3+ | 2006 09 14 | 703 | 0.4+ | 0.4+ | 2006 09 27 | 703 | 0.7+ | 0.3− | | |
| 2000 08 24 | 704 | 0.1+ | 0.5− | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 09 27 | 703 | 0.5− | 0.1+ | | |
| 2000 08 24 | 704 | 0.3+ | 0.6+ | 2006 09 14 | 703 | 0.7− | 1.1− | 2006 09 27 | 703 | 0.0 | 1.1+ | | |
| 2000 08 26 | 704 | 0.1+ | 1.3− | 2006 09 14 | 703 | 0.0 | 1.2− | 2006 09 27 | 703 | 0.6− | 0.5+ | | |
| 2000 08 26 | 704 | 0.4+ | 0.7− | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | (3.4+ | 0.6−) | | |
| 2000 08 26 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.0 | | |
| 2000 08 26 | 704 | 0.0 | 1.2+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.9− | | |
| 2006 08 29 | 699 | 0.1− | 0.4− | 2006 09 22 | 703 | 0.5− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.3+ | | |
| 2006 08 29 | 699 | (1.2+ | 1.9+) | 2006 09 22 | 703 | 0.6+ | 0.3− | | | | | | |

**2006 RB$_{16}$ = 2001 XB$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.90400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17793450 | $\omega$ | 340.03263 | | +0.99978534 | +0.00115975 | |
| $a$ | 3.1306122 | $\Omega$ | 19.93475 | | +0.00826162 | +0.89330518 | |
| $e$ | 0.1699251 | $i$ | 3.47840 | | −0.01900026 | +0.44944913 | |
| $P$ | 5.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.1− | 0.9− | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | (2.3+ | 1.8+) | | |
| 2001 11 19 | 704 | 0.7− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.9− | 0.5− | | |
| 2001 11 19 | 704 | 0.1− | 0.5− | 2006 08 27 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.7− | 0.5− | | |
| 2001 11 19 | 704 | 0.0 | 1.0− | 2006 09 14 | 644 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.1+ | | |
| 2001 12 10 | 704 | 0.0 | 0.6+ | 2006 09 14 | 644 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | | |
| 2001 12 10 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.7+ | | |
| 2001 12 10 | 704 | 0.3+ | 0.2− | 2006 09 16 | 699 | 0.7+ | 1.0− | 2006 09 26 | G96 | 0.3+ | 0.0 | | |
| 2001 12 10 | 704 | 1.2+ | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.0 | | |
| 2001 12 15 | 704 | 0.1− | 0.5+ | 2006 09 16 | 699 | 0.1+ | 0.8− | 2006 10 20 | G96 | 0.0 | 0.1− | | |
| 2001 12 15 | 704 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 1.3− | 0.7+ | 2006 10 20 | G96 | 0.0 | 0.2+ | | |
| 2001 12 15 | 704 | 0.6− | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.1+ | | |

**2006 RF$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.95761 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26480027 | $\omega$ | 118.23497 | | +0.96645933 | +0.23462226 | |
| $a$ | 2.4017277 | $\Omega$ | 228.39998 | | −0.25576694 | +0.91609289 | |
| $e$ | 0.1398425 | $i$ | 8.02876 | | +0.02323012 | +0.32515567 | |
| $P$ | 3.72 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.1+ | 0.8− | 2006 09 19 | 683 | 0.8+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.2− | | |
| 2002 07 09 | 704 | 1.0+ | 0.0 | 2006 09 19 | 699 | 1.0+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.2− | | |
| 2002 07 09 | 704 | 0.9− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.9+ | 2006 10 11 | 691 | 0.1+ | 0.2− | | |
| 2002 07 09 | 704 | (3.6− | 0.5+) | 2006 09 19 | 699 | 1.1+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.9− | | |
| 2002 07 20 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.8− | 0.4− | | |
| 2002 07 20 | 644 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.3− | 0.5− | | |
| 2002 07 20 | 644 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.9+ | 1.2+ | 2006 10 17 | 703 | 0.3− | 1.4+ | | |
| 2006 09 14 | 644 | 0.5+ | 0.0 | 2006 09 27 | 703 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.1− | | |
| 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.0 | | |
| 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 10 03 | 703 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.3+ | | |
| 2006 09 16 | 703 | 1.0− | 0.1− | 2006 10 03 | 703 | 0.7− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.3+ | | |
| 2006 09 16 | 703 | 0.7− | 0.5− | 2006 10 03 | 703 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.3+ | 0.0 | | |
| 2006 09 16 | 703 | 0.8− | 0.3− | 2006 10 03 | 703 | 0.2− | 0.6+ | 2006 10 24 | 644 | 0.2+ | 0.2+ | | |
| 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.1+ | | |
| 2006 09 19 | 683 | 1.0− | 0.9− | 2006 10 10 | 644 | 0.3+ | 0.2− | | | | | | |
| 2006 09 19 | 683 | (2.6+ | 0.0 ) | 2006 10 10 | 644 | 0.3+ | 0.1+ | | | | | | |

**2006 RK$_{16}$ = 2000 CN$_{133}$ = 2004 BL$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.72664 | | (2000.0) | | | |
| $n$ | 0.23694475 | $\omega$ | 0.45575 | | +0.72091490 | +0.67676355 |
| $a$ | 2.5864534 | $\Omega$ | 315.68493 | | −0.63651072 | +0.56141695 |
| $e$ | 0.1946724 | $i$ | 12.33500 | | −0.27410910 | +0.47623745 |
| $P$ | 4.16 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.0 | 0.2− | 2004 01 22 | 704 | 0.5+ | 1.2+ | 2006 09 16 | 703 | 0.5+ | 1.5+ |
| 2000 02 04 | 691 | 0.1− | 0.1+ | 2004 01 22 | 704 | 0.7+ | 1.2+ | 2006 09 16 | 703 | 0.8+ | 1.1+ |
| 2000 02 04 | 691 | 0.1− | 0.0 | 2004 01 28 | 691 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 1.2− | 0.1− |
| 2000 02 10 | 691 | 0.2− | 0.3− | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 21 | 699 | 0.5− | 0.1+ |
| 2000 02 10 | 691 | 0.1− | 0.1− | 2004 01 28 | 691 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 0.3− | 0.1− |
| 2000 02 10 | 691 | 0.2− | 0.4− | 2005 05 11 | 644 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.8− | 0.3+ |
| 2002 10 06 | 704 | (0.1+ | 1.5−) | 2005 05 11 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 703 | 0.4− | 1.5+ |
| 2002 10 06 | 704 | 0.1+ | 1.1− | 2005 05 11 | 644 | 0.5+ | 0.0 | 2006 09 27 | 703 | (0.5+ | 3.8+) |
| 2002 10 06 | 704 | 0.9+ | 1.5− | 2006 08 29 | 699 | 0.9+ | 0.2− | 2006 09 27 | 703 | 0.3+ | 0.9+ |
| 2002 10 06 | 704 | 0.7+ | 1.4− | 2006 08 29 | 699 | 0.1− | 0.3− | 2006 09 27 | 703 | 0.5− | 0.4+ |
| 2002 10 06 | 704 | (0.8+ | 2.1−) | 2006 08 29 | 699 | 0.6+ | 0.6− | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2002 10 10 | 704 | (1.3− | 2.1+) | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.2− |
| 2002 10 10 | 704 | (2.0− | 0.3−) | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2002 10 10 | 704 | 0.5− | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 11 10 | 941 | 0.1+ | 0.4− |
| 2002 10 10 | 704 | 0.9− | 0.4− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 11 10 | 941 | 0.1+ | 0.4− |
| 2002 11 14 | 644 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.2− | 0.1− | 2006 11 10 | 941 | 0.0 | 0.5− |
| 2002 11 14 | 644 | 0.5− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 11 10 | 941 | 0.0 | 0.7− |
| 2002 11 14 | 644 | 0.5− | 0.1− | 2006 09 16 | 703 | 0.4+ | 0.1− | 2006 11 25 | 703 | 0.0 | 0.9+ |
| 2002 12 06 | 291 | 0.5+ | 0.2− | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 11 25 | 703 | 0.2− | 0.8− |
| 2002 12 06 | 291 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.6− | 0.4+ | 2006 11 25 | 703 | 0.4− | 0.8+ |
| 2002 12 06 | 291 | 0.5+ | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.9+ | 2006 11 25 | 703 | 0.6− | 0.1+ |
| 2004 01 22 | 704 | 0.4+ | 1.1+ | 2006 09 16 | 703 | 0.3− | 0.9+ | | | | |

**2006 RL$_{16}$ = 2006 QT$_{166}$ = 1999 RT$_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.17044 | | (2000.0) | | | |
| $n$ | 0.28633088 | $\omega$ | 8.81695 | | +0.44217285 | +0.88761112 |
| $a$ | 2.2797677 | $\Omega$ | 287.51144 | | −0.83094191 | +0.35125890 |
| $e$ | 0.1828892 | $i$ | 7.77150 | | −0.33766656 | +0.29793236 |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 1.4− | 0.0 | 2006 09 14 | 644 | 0.4− | 0.3+ | 2006 10 03 | 703 | 0.7− | 0.7− |
| 1999 09 04 | 703 | 0.9− | 0.2+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 03 | 703 | 1.4− | 0.2− |
| 1999 09 04 | 703 | 1.1+ | 0.5− | 2006 09 16 | 703 | 0.3− | 0.3+ | 2006 10 03 | 703 | 0.3− | 0.0 |
| 1999 09 04 | 703 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.5− | 0.2− | 2006 10 03 | 703 | 0.4− | 0.3− |
| 1999 09 10 | 704 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 1999 09 10 | 704 | 0.2− | 0.0 | 2006 09 16 | 703 | 1.1− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1999 09 10 | 704 | 1.3+ | 1.3+ | 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.6+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2+ |
| 2003 12 18 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 1.0+ | 1.1− | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2003 12 18 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.8− |
| 2006 08 29 | 699 | 0.8+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 1.5+ | 0.9− |
| 2006 08 29 | 699 | 1.0+ | 0.3+ | 2006 09 27 | 703 | 0.3− | 0.7− | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2006 08 29 | 699 | 0.8+ | 0.6+ | 2006 09 27 | 703 | 0.2− | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.5+ |
| 2006 08 29 | 699 | 0.1− | 0.4+ | 2006 09 27 | 703 | 0.9+ | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.5+ |
| 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.4+ |

**2006 RN$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.07134 | | (2000.0) | | | |
| $n$ | 0.10560935 | $\omega$ | 89.65878 | | +0.88779284 | +0.41347458 |
| $a$ | 4.4326945 | $\Omega$ | 245.90943 | | −0.45826176 | +0.83485636 |
| $e$ | 0.4001065 | $i$ | 12.79312 | | +0.04266186 | +0.36339183 |
| $P$ | 9.33 | $H$ | 13.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.8+ | 2006 10 15 | A24 | 0.7+ | 0.4− |
| 1997 11 23 | 691 | 0.2+ | 0.1− | 2006 09 16 | 703 | 0.0 | 0.4+ | 2006 10 15 | A24 | 0.8+ | 0.2− |
| 1997 11 23 | 691 | 0.1+ | 0.4− | 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 10 15 | A24 | 0.5− | 0.2− |
| 1997 11 30 | 691 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.2+ | 2006 10 15 | A24 | 0.4+ | 0.1− |
| 1997 11 30 | 691 | 0.2− | 0.1− | 2006 09 21 | 699 | 0.2+ | 0.6+ | 2006 10 16 | 693 | 0.1+ | 0.2+ |
| 1997 11 30 | 691 | (0.3− | 6.6+) | 2006 09 21 | 699 | 0.3+ | 0.0 | 2006 10 16 | 693 | 0.1+ | 0.3+ |
| 2005 06 17 | G96 | 0.3− | 0.2− | 2006 09 21 | 699 | 0.0 | 0.2+ | 2006 10 16 | 693 | 0.0 | 0.1+ |
| 2005 06 17 | G96 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.1− | 0.1+ | 2006 10 16 | 693 | 0.2+ | 0.3+ |
| 2005 06 17 | G96 | 0.0 | 0.4− | 2006 09 28 | 703 | 0.1+ | 0.2+ | 2006 10 17 | A24 | 0.5+ | 0.8+ |
| 2005 06 17 | G96 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.3− | 0.3− | 2006 10 17 | A24 | 0.7− | 0.1− |
| 2005 07 05 | G96 | 0.8+ | 0.5− | 2006 09 28 | 703 | 0.6− | 0.1− | 2006 10 17 | A24 | 1.2− | 0.1+ |
| 2005 07 05 | G96 | 0.0 | 0.2− | 2006 10 04 | 703 | 0.5− | 0.2+ | 2006 10 17 | A24 | 0.2+ | 1.0− |
| 2005 07 05 | G96 | 0.2− | 0.3− | 2006 10 04 | 703 | 0.5+ | 0.4+ | 2006 10 17 | A24 | 0.9+ | 0.4+ |
| 2005 07 05 | G96 | 0.1+ | 0.1− | 2006 10 04 | 703 | 0.6− | 0.0 | 2006 10 17 | A24 | 0.3+ | 0.0 |
| 2005 07 26 | 644 | 0.3− | 0.4− | 2006 10 04 | 703 | 0.0 | 0.8− | 2006 10 20 | 703 | 0.5− | 0.5− |
| 2005 07 26 | 644 | 0.3− | 0.2− | 2006 10 09 | 160 | 0.2+ | 0.3+ | 2006 10 20 | 703 | 0.6− | 0.4− |
| 2005 07 26 | 644 | 0.1− | 0.0 | 2006 10 09 | 160 | 0.0 | 0.2+ | 2006 10 20 | 703 | 0.7− | 0.4+ |
| 2005 08 05 | 644 | 0.0 | 0.2+ | 2006 10 09 | 160 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.8− | 0.1+ |
| 2005 08 05 | 644 | 0.2+ | 0.0 | 2006 10 09 | 160 | 0.3− | 0.1+ | 2006 11 14 | 683 | 0.2+ | 0.4− |
| 2005 08 05 | 644 | 0.4+ | 0.1− | 2006 10 09 | 160 | 0.2− | 0.1− | 2006 11 14 | 683 | 0.1+ | 0.3− |
| 2006 06 03 | 703 | 0.0 | 0.3− | 2006 10 09 | 160 | 0.3− | 0.2+ | 2006 11 14 | 683 | 0.8− | 0.1+ |
| 2006 06 03 | 703 | 1.1− | 0.9+ | 2006 10 10 | A24 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.9+ | 0.4+ |
| 2006 06 03 | 703 | 0.1− | 0.3− | 2006 10 10 | A24 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2006 06 03 | 703 | 0.4+ | 0.7+ | 2006 10 10 | 143 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2006 08 29 | 699 | 0.5+ | 0.5− | 2006 10 10 | 143 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2006 08 29 | 699 | 0.7+ | 0.1− | 2006 10 10 | 143 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.4− |
| 2006 08 29 | 699 | 0.2+ | 0.5+ | 2006 10 13 | A24 | 0.1− | 0.7− | 2006 11 25 | 703 | 0.3− | 0.6+ |
| 2006 08 29 | 699 | 0.9+ | 0.1+ | 2006 10 13 | A24 | 0.1− | 0.3− | 2006 11 25 | 703 | 0.8− | 0.2− |
| 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 13 | A24 | 0.1− | 0.2+ | 2006 11 25 | 703 | 0.8− | 0.9+ |
| 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 13 | A24 | 0.1+ | 0.3+ | 2006 11 25 | 703 | 0.5− | 0.2− |
| 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 15 | A24 | 0.1+ | 0.7− | | | | |
| 2006 09 16 | 703 | 0.6+ | 0.3+ | 2006 10 15 | A24 | 1.2+ | 1.0− | | | | |

**2006 RP$_{16}$ = 1997 MT$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.99361 | | (2000.0) | | | |
| $n$ | 0.23342899 | $\omega$ | 152.74726 | | +0.55608941 | +0.83030099 |
| $a$ | 2.6123589 | $\Omega$ | 150.99405 | | −0.77574542 | +0.53447841 |
| $e$ | 0.1926861 | $i$ | 4.36949 | | −0.29830121 | +0.15790219 |
| $P$ | 4.22 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 28 | 691 | 0.1− | 0.0 | 2006 08 23 | 644 | 0.3+ | 0.1− | 2006 09 16 | 704 | 0.5− | 0.1− |
| 1997 06 28 | 691 | 0.4− | 0.2+ | 2006 08 27 | 699 | 0.6− | 0.9− | 2006 09 16 | 699 | 0.5− | 0.9+ |
| 1997 06 28 | 691 | 0.2+ | 0.3− | 2006 08 27 | 699 | 1.3− | 0.2+ | 2006 09 16 | 699 | 0.5+ | 0.1+ |
| 1997 07 03 | 691 | 0.0 | 0.2+ | 2006 08 27 | 699 | 0.2+ | 0.4+ | 2006 09 16 | 699 | 0.3+ | 0.2+ |
| 1997 07 03 | 691 | 0.3+ | 0.1− | 2006 08 27 | 699 | (0.2− | 5.4+) | 2006 09 25 | 699 | (2.0− | 0.3+) |
| 1997 07 03 | 691 | 0.1− | 0.1− | 2006 08 28 | 703 | 1.3− | 0.0 | 2006 09 25 | 699 | 0.0 | 1.5+ |
| 2002 10 11 | 649 | 0.1+ | 0.5+ | 2006 08 28 | 703 | 1.1− | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.6+ |
| 2002 10 11 | 649 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.1+ | 0.7+ | 2006 09 25 | 699 | 0.4+ | 1.2+ |
| 2002 10 11 | 649 | 0.3− | 0.5+ | 2006 08 28 | 703 | (2.4+ | 2.4+) | 2006 09 30 | 703 | 1.8− | 0.4+ |
| 2005 03 11 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.5− | 1.3− |
| 2005 03 11 | 691 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.6+ | 2006 09 30 | 703 | 1.5− | 0.9− |
| 2005 03 11 | 691 | 0.2+ | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 1.3+ |
| 2005 04 30 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2005 04 30 | 691 | 0.2+ | 0.4+ | 2006 09 16 | 704 | 0.9+ | 1.3− | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 09 16 | 704 | 0.2− | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 23 | 644 | 0.6+ | 0.2+ | 2006 09 16 | 704 | 0.8+ | 0.5− | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 16 | 699 | 1.9+ | 1.3+ | | | | |

**2006 RQ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.17814 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18790754 | $\omega$ | 168.13286 | | +0.58979849 | | +0.80686097 |
| $a$ | 3.0188387 | $\Omega$ | 137.99771 | | −0.74493178 | | +0.55955144 |
| $e$ | 0.1927139 | $i$ | 2.85788 | | −0.31179221 | | +0.18941374 |
| $P$ | 5.25 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.8+ | 0.0 | 2006 08 28 | 703 | 0.9− | 0.7− | 2006 09 19 | 699 | 1.4− | 0.4+ |
| 2001 09 19 | 704 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.9+ |
| 2001 09 19 | 704 | 0.6+ | 0.7− | 2006 09 14 | 703 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.6− |
| 2001 09 19 | 704 | 0.8− | 0.5− | 2006 09 14 | 703 | 0.4− | 0.7+ | 2006 09 30 | G96 | 0.2+ | 0.5− |
| 2001 10 18 | 644 | 0.1− | 0.5− | 2006 09 14 | 703 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.5− |
| 2001 10 18 | 644 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.4− |
| 2001 10 18 | 644 | 0.3− | 0.2− | 2006 09 16 | 699 | 0.1− | 1.1+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2001 10 25 | 691 | 0.0 | 0.3+ | 2006 09 16 | 699 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.3− | 0.6− |
| 2001 10 25 | 691 | 0.2+ | 0.2− | 2006 09 16 | 699 | 0.6+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 10 25 | 691 | 0.3− | 0.4+ | 2006 09 16 | 699 | 0.5+ | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2006 08 28 | 703 | 0.8− | 0.8+ | 2006 09 19 | 699 | 0.8+ | 0.1+ | | | | |
| 2006 08 28 | 703 | 0.8+ | 0.6− | 2006 09 19 | 699 | 0.7− | 0.1− | | | | |

**2006 RU$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.09669 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22704796 | $\omega$ | 331.95063 | | +0.99278477 | | −0.11443660 |
| $a$ | 2.6610782 | $\Omega$ | 34.67793 | | +0.11838474 | | +0.88793077 |
| $e$ | 0.1224458 | $i$ | 3.60896 | | +0.01906440 | | +0.44551456 |
| $P$ | 4.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 704 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.8− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.3− |
| 2002 10 11 | 704 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.1+ |
| 2002 10 11 | 704 | 1.1+ | 1.1− | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2002 10 11 | 704 | 0.0 | 1.1− | 2006 09 16 | 699 | 0.6− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2002 10 31 | 644 | 0.4+ | 0.6+ | 2006 09 16 | 699 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2002 10 31 | 644 | 0.5+ | 0.6+ | 2006 09 16 | 699 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2002 10 31 | 644 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 1.0+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2002 11 06 | 704 | (0.4− | 1.9−) | 2006 09 19 | 699 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2002 11 06 | 704 | 0.5− | 1.3+ | 2006 09 19 | 699 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.1+ | 0.6− |
| 2002 11 06 | 704 | 1.1− | 0.2+ | 2006 09 22 | 704 | 0.4− | 0.1− | 2006 10 16 | 703 | 1.0− | 0.6− |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.8+ | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.6− |
| 2002 11 06 | 704 | 0.8− | 0.9− | 2006 09 22 | 704 | 0.6− | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2002 11 14 | 704 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.4+ | 0.9+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2002 11 14 | 704 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2002 11 14 | 704 | 0.8− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2006 08 28 | 703 | (1.9+ | 0.3−) | 2006 09 25 | 699 | 0.5− | 1.3+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2006 08 28 | 703 | 0.2+ | 0.7− | 2006 09 25 | 699 | 0.6− | 0.0 | 2006 11 17 | G96 | 0.7+ | 0.3− |
| 2006 08 28 | 703 | 0.7+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2006 08 28 | 703 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.8− | 0.6− | | | | |
| 2006 09 14 | 703 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.2− | | | | |

**2006 RV$_{16}$ = 2005 ET$_{237}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.28134 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26564524 | $\omega$ | 284.62887 | | +0.50995603 | | +0.85971699 |
| $a$ | 2.3966320 | $\Omega$ | 16.12880 | | −0.74386782 | | +0.45757695 |
| $e$ | 0.1674520 | $i$ | 5.95827 | | −0.43197860 | | +0.22695822 |
| $P$ | 3.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.1− | 0.1+ | 2006 08 16 | 644 | 0.4− | 0.5− | 2006 09 25 | 699 | 0.0 | 0.3− |
| 2002 07 06 | 644 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.2− | 0.7− | 2006 09 25 | 699 | (0.1− | 1.9+) |
| 2002 07 06 | 644 | 0.2+ | 0.2− | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 1.0− | 0.2+ |
| 2005 03 01 | 691 | 0.5+ | 0.3+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.9+ | 0.1− |
| 2005 03 01 | 691 | 0.6+ | 0.1− | 2006 08 22 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.7+ |
| 2005 03 01 | 691 | 0.0 | 0.1− | 2006 08 22 | 644 | 1.1− | 0.3+ | 2006 09 30 | 703 | 1.3− | 1.0+ |
| 2005 03 11 | 691 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 1.4− | 0.5+ |
| 2005 03 11 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | (1.9+ | 0.2+) | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2005 03 11 | 691 | 0.5− | 0.3+ | 2006 09 14 | 703 | (0.6+ | 1.7+) | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2005 03 16 | G96 | 1.2+ | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2005 03 16 | G96 | 0.6− | 0.4− | 2006 09 16 | 699 | 1.4+ | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2005 03 16 | G96 | 0.8− | 0.0 | 2006 09 16 | 699 | 0.6+ | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2005 03 16 | G96 | 0.4− | 0.4− | 2006 09 16 | 699 | 0.6− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2005 04 10 | 695 | 0.2− | 0.6+ | 2006 09 16 | 699 | 0.2− | 0.3− | 2006 10 20 | G96 | 0.5+ | 0.4− |
| 2005 04 10 | 695 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.9+ | 1.3+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2005 05 13 | G96 | 0.7− | 0.2+ | 2006 09 19 | 699 | (1.9+ | 0.7+) | 2006 11 15 | G96 | 0.5− | 0.1− |
| 2005 05 13 | G96 | 0.6− | 0.1− | 2006 09 19 | 699 | 0.8− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 05 13 | G96 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.7− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2005 05 13 | G96 | 0.2− | 0.0 | 2006 09 25 | 699 | 1.0− | 1.4+ | 2006 11 15 | G96 | 0.8+ | 0.3− |

**2006 RW$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.02440 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17708293 | $\omega$ | 216.10113 | | +0.93208293 | | +0.35195613 |
| $a$ | 3.1406407 | $\Omega$ | 123.07428 | | −0.30374387 | | +0.88830171 |
| $e$ | 0.2717679 | $i$ | 5.87153 | | −0.19738561 | | +0.29503722 |
| $P$ | 5.57 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 30 | 691 | 0.3+ | 0.3− | 2006 09 14 | 703 | 1.0− | 0.1+ | 2006 09 26 | 704 | 0.4+ | 0.2− |
| 2005 04 30 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.4− | 0.6− | 2006 09 26 | 704 | 0.8+ | 0.5− |
| 2005 04 30 | 691 | 0.2− | 0.1+ | 2006 09 16 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 704 | 0.7+ | 0.2− |
| 2005 05 10 | 691 | 0.4+ | 0.2+ | 2006 09 16 | 704 | 0.6+ | 1.5− | 2006 09 26 | 704 | 0.2− | 0.3− |
| 2005 05 10 | 691 | 0.0 | 0.2− | 2006 09 16 | 704 | 0.2+ | 0.7− | 2006 09 26 | 703 | 0.5− | 0.3− |
| 2005 05 10 | 691 | 0.3− | 0.1+ | 2006 09 16 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 703 | 1.0− | 0.2− |
| 2006 08 30 | 699 | 0.3− | 1.1− | 2006 09 22 | 704 | 0.3− | 1.1+ | 2006 09 26 | 703 | 0.0 | 0.7− |
| 2006 08 30 | 699 | 0.2+ | 0.7+ | 2006 09 22 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 703 | 0.6− | 0.2− |
| 2006 08 30 | 699 | 0.6+ | 0.3+ | 2006 09 22 | 704 | 0.2− | 0.1− | 2006 10 02 | 703 | 0.2+ | 0.2− |
| 2006 08 30 | 699 | 1.2− | 0.0 | 2006 09 22 | 704 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.9+ |
| 2006 09 14 | 703 | 1.2+ | 1.0+ | 2006 09 22 | 704 | 0.3− | 0.9+ | 2006 10 02 | 703 | 0.3− | 0.3+ |
| 2006 09 14 | 703 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.4− | 2006 10 02 | 703 | 0.7− | 0.0 |

**2006 RY$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.23773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23010466 | $\omega$ | 123.25100 | | +0.53124424 | | −0.82905697 |
| $a$ | 2.6374593 | $\Omega$ | 293.70549 | | +0.70004245 | | +0.54554904 |
| $e$ | 0.1585666 | $i$ | 10.98553 | | +0.47720030 | | +0.12264086 |
| $P$ | 4.28 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.5+ | 0.2− | 2006 09 06 | 644 | 0.3+ | 0.4− | 2006 09 28 | 703 | 0.2− | 1.0+ |
| 2002 10 06 | 704 | 0.4+ | 0.2− | 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 09 28 | 703 | 1.1− | 0.1− |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 1.3+ | 0.3− |
| 2002 10 06 | 704 | 0.8− | 1.2+ | 2006 09 14 | 644 | 0.1− | 0.5− | 2006 09 28 | 703 | 0.1− | 0.2+ |
| 2002 10 13 | 644 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.3− | 0.3− | 2006 10 01 | 941 | 0.7+ | 0.0 |
| 2002 10 13 | 644 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.4− | 1.1+ | 2006 10 01 | 941 | 0.3+ | 0.2− |
| 2002 10 13 | 644 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.4− | 0.1+ | 2006 10 01 | 941 | 0.4+ | 0.7− |
| 2002 11 15 | 704 | 0.3+ | 0.3− | 2006 09 16 | 703 | (0.1+ | 1.7+) | 2006 10 01 | 941 | 0.5+ | 0.5− |
| 2002 11 15 | 704 | 0.2− | 0.7− | 2006 09 16 | 703 | 0.7+ | 0.2+ | 2006 10 01 | 941 | 0.1+ | 0.8− |
| 2002 11 15 | 704 | 0.2− | 0.0 | 2006 09 21 | 699 | 0.6− | 0.4+ | 2006 10 20 | 703 | 0.4+ | 0.6+ |
| 2002 11 15 | 704 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.6− | 0.5+ | 2006 10 20 | 703 | 1.3− | 0.6+ |
| 2002 11 15 | 704 | 0.2+ | 0.3− | 2006 09 21 | 699 | 0.5+ | 0.3− | 2006 10 20 | 703 | 1.2+ | 0.4− |
| 2006 09 06 | 644 | 0.2− | 0.3− | 2006 09 21 | 699 | (2.0− | 1.6+) | 2006 10 20 | 703 | 1.0− | 0.2− |

**2006 RA$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.68429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17780284 | $\omega$ | 54.90286 | | +0.78594210 | −0.60059675 | |
| $a$ | 3.1321574 | $\Omega$ | 340.61059 | | +0.31586567 | +0.59425112 | |
| $e$ | 0.1737920 | $i$ | 26.26201 | | +0.53152976 | +0.53492911 | |
| $P$ | 5.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 291 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.2− | 0.4+ |
| 2003 03 07 | 291 | 0.1+ | 0.5− | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.6+ | 0.7+ |
| 2003 03 07 | 291 | 0.3+ | 0.1− | 2006 09 14 | 644 | 0.0 | 0.4− | 2006 09 28 | 703 | 1.3− | 0.3− |
| 2003 03 24 | 691 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.4− | 2006 09 28 | 703 | 0.7+ | 0.2+ |
| 2003 03 24 | 691 | 0.3− | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 09 28 | 703 | 0.3− | 0.7+ |
| 2003 03 24 | 691 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.2+ | 2006 09 28 | 703 | 0.7− | 0.2− |
| 2006 08 29 | 699 | 0.7+ | 1.3− | 2006 09 16 | 703 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.3− | 1.2− |
| 2006 08 29 | 699 | 0.7+ | 0.3+ | 2006 09 16 | 703 | 0.4− | 0.7+ | 2006 10 20 | 703 | 0.4− | 0.9− |
| 2006 08 29 | 699 | 0.3− | 0.7+ | 2006 09 16 | 703 | 0.7− | 0.2− | 2006 10 20 | 703 | 0.3+ | 0.6− |
| 2006 08 29 | 699 | 0.5+ | 0.5+ | 2006 09 21 | 699 | 1.1+ | 0.9+ | 2006 10 20 | 703 | 0.2+ | 0.3+ |
| 2006 09 06 | 644 | 0.5+ | 1.3− | 2006 09 21 | 699 | 0.1+ | 0.9+ | | | | |

**2006 RE$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.45953 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22423528 | $\omega$ | 294.89326 | | +0.65725920 | +0.75237355 | |
| $a$ | 2.6832847 | $\Omega$ | 16.43674 | | −0.62297236 | +0.57528226 | |
| $e$ | 0.1312135 | $i$ | 8.96539 | | −0.42416481 | +0.32091177 | |
| $P$ | 4.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 0.1− | 0.7+ | 2006 08 28 | 699 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 0.6+ | 0.3+ |
| 2002 11 11 | 704 | 0.1+ | 0.9+ | 2006 08 28 | 699 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 1.1− |
| 2002 11 11 | 704 | 0.6− | 0.5+ | 2006 08 28 | 699 | 1.3+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2− |
| 2002 11 11 | 704 | 0.1+ | 1.2+ | 2006 08 29 | 691 | 0.3+ | 0.1− | 2006 09 30 | 703 | 1.1− | 0.1− |
| 2002 11 11 | 704 | (0.5− | 1.8+) | 2006 08 29 | 691 | 0.3+ | 0.3− | 2006 09 30 | 703 | 1.2− | 0.8− |
| 2002 11 24 | 644 | 0.5− | 0.3+ | 2006 08 29 | 691 | 1.1− | 1.2+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2002 11 24 | 644 | 0.2− | 0.5+ | 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.8− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 1.2− | 2006 10 10 | 644 | 0.1+ | 0.3− |
| 2005 03 17 | G96 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.4+ | 0.2− |
| 2005 03 17 | G96 | 0.2+ | 0.5+ | 2006 09 14 | 703 | 0.3− | 1.1− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2005 03 17 | G96 | 0.2+ | 0.3+ | 2006 09 16 | 704 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2005 03 17 | G96 | 0.5+ | 0.1− | 2006 09 16 | 704 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2005 04 14 | 703 | 1.3+ | 0.4+ | 2006 09 16 | 704 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2005 04 14 | 703 | 0.9− | 0.1− | 2006 09 19 | 699 | 0.8− | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.3− |
| 2005 04 14 | 703 | 0.7− | 1.0+ | 2006 09 19 | 699 | (0.1+ | 1.7−) | 2006 10 16 | 703 | 0.7+ | 0.8− |
| 2005 04 14 | 703 | 1.2− | 0.3+ | 2006 09 19 | 699 | 0.8− | 0.9+ | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2005 04 14 | 691 | 0.2+ | 0.0 | 2006 09 22 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2005 04 14 | 691 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.9+ | 0.9+ | 2006 10 16 | 703 | (2.1− | 0.0 ) |
| 2005 04 14 | 691 | 0.3+ | 0.2+ | 2006 09 22 | 704 | 0.7− | 0.9− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2005 05 01 | 644 | 0.3+ | 0.3− | 2006 09 22 | 704 | 0.7− | 1.4+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 09 25 | 699 | (1.8− | 1.0+) | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2005 05 01 | 644 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.5− | 0.7− | | | | |
| 2006 08 28 | 699 | 0.5+ | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.4− | | | | |

**2006 RJ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.15816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29191064 | $\omega$ | 352.35942 | | +0.98996176 | −0.13805341 | |
| $a$ | 2.2506231 | $\Omega$ | 15.67342 | | +0.13487803 | +0.85877137 | |
| $e$ | 0.2005075 | $i$ | 6.43581 | | +0.04223309 | +0.49340956 | |
| $P$ | 3.38 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.2+ |
| 2003 12 17 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.6− | 2006 10 16 | 703 | 0.1− | 0.6+ |
| 2003 12 17 | 704 | 0.9+ | 0.9+ | 2006 09 19 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2003 12 17 | 704 | 0.2− | 0.9+ | 2006 09 19 | 703 | 0.3− | 1.3− | 2006 10 16 | 703 | 0.6+ | 0.6+ |
| 2003 12 17 | 704 | 1.0+ | 0.3+ | 2006 09 19 | 704 | (0.6+ | 1.7+) | 2006 10 16 | 703 | 1.4− | 0.6+ |
| 2003 12 29 | 704 | 0.8− | 0.6− | 2006 09 19 | 703 | 0.2+ | 0.6− | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 2003 12 29 | 704 | 0.1− | 0.8− | 2006 09 19 | 704 | 1.0− | 0.8− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2003 12 29 | 704 | 1.1− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2003 12 29 | 704 | (2.1− | 0.9+) | 2006 09 19 | 704 | 1.0− | 1.0+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2006 08 20 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 704 | 1.1− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 08 20 | 691 | 0.0 | 0.1+ | 2006 09 22 | 704 | 1.4+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 08 20 | 691 | 0.3− | 0.3+ | 2006 09 22 | 704 | 0.6+ | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2006 08 28 | 699 | 0.7+ | 0.2+ | 2006 09 22 | 704 | 1.1+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2006 08 28 | 699 | (1.7+ | 0.8+) | 2006 09 26 | 704 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2006 08 28 | 699 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.7− | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2006 08 28 | 699 | 0.1− | 0.6− | 2006 09 26 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2006 09 14 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2006 09 14 | 644 | 0.3− | 0.3− | 2006 09 26 | 704 | 0.6+ | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2006 09 14 | 644 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2006 09 16 | 704 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2006 09 16 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | 1.1− | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2006 09 16 | 704 | 0.5− | 0.0 | 2006 09 26 | 704 | 0.4− | 1.0+ | 2006 11 10 | 704 | 0.0 | 0.4+ |
| 2006 09 18 | 703 | 0.2− | 0.4− | 2006 09 26 | 704 | 1.2− | 0.2+ | 2006 11 10 | 704 | 0.1+ | 0.1− |
| 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.7+ | 2006 11 10 | 704 | 0.7+ | 0.2− |
| 2006 09 18 | 703 | (3.2− | 4.3−) | 2006 09 28 | 704 | 0.4+ | 0.7+ | 2006 11 10 | 704 | 0.7− | 1.2− |
| 2006 09 18 | 703 | (0.6+ | 4.3−) | 2006 09 28 | 704 | 0.6+ | 0.7+ | 2006 11 11 | 703 | 0.8+ | 0.1+ |
| 2006 09 18 | 703 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.7+ | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 2006 09 18 | 703 | 0.2+ | 0.6− | 2006 09 28 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 703 | (2.1+ | 2.8+) |
| 2006 09 18 | 703 | 0.7− | 1.0− | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2006 09 18 | 703 | 0.4− | 0.8− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.2− | 0.9− |
| 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 2006 09 18 | 699 | 0.2− | 0.7− | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.0 | 0.1− |

**2006 RK$_{17}$ = 1999 TW$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.59496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28002166 | $\omega$ | 18.89254 | | +0.98810517 | −0.15306136 | |
| $a$ | 2.3138843 | $\Omega$ | 349.87738 | | +0.12796170 | +0.87191300 | |
| $e$ | 0.1746597 | $i$ | 4.84531 | | +0.08528756 | +0.46512358 | |
| $P$ | 3.52 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1− | 0.8− | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 09 20 | 704 | (0.2− | 1.9−) |
| 1999 10 09 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.3+ | 0.3− |
| 1999 10 09 | 704 | 0.1− | 0.4+ | 2006 09 16 | 691 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.9− | 1.3+ |
| 1999 10 09 | 704 | 0.6− | 0.9+ | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.7+ | 0.4− |
| 1999 10 13 | 704 | 1.5+ | 0.4+ | 2006 09 16 | 691 | 1.4+ | 0.6− | 2006 09 29 | 704 | 0.0 | 0.4− |
| 1999 10 13 | 704 | 0.4− | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.0 |
| 1999 10 13 | 704 | 0.1− | 0.3− | 2006 09 17 | 704 | 0.1+ | 0.4+ | 2006 10 01 | 704 | 0.6− | 0.9+ |
| 1999 10 13 | 704 | 0.6− | 0.9− | 2006 09 17 | 704 | (0.7− | 2.0+) | 2006 10 01 | 704 | 0.4− | 0.0 |
| 2001 02 20 | 645 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.3− | 1.3+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.7− | 1.0+ | 2006 10 16 | 703 | 0.8− | 1.3− |
| 2003 12 18 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 1.0− | 0.6+ |
| 2003 12 18 | 691 | 0.5− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 2003 12 18 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 08 19 | 691 | 0.2− | 0.5+ | 2006 09 20 | 704 | (0.2− | 1.9−) | 2006 11 15 | G96 | 0.3+ | 0.8− |
| 2006 08 19 | 691 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.7+ | 0.6− | 2006 11 15 | G96 | 0.1+ | 0.7− |
| 2006 08 19 | 691 | 0.7− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.7− | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.9− | 1.5− | | | | |

**2006 RL$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.99311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29720222 | $\omega$ | 20.09984 | | +0.99961856 | +0.02210849 | |
| $a$ | 2.2238288 | $\Omega$ | 338.61311 | | −0.02711501 | +0.89946905 | |
| $e$ | 0.1674433 | $i$ | 2.60144 | | +0.00524501 | +0.43642484 | |
| $P$ | 3.32 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 06 | 691 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.9− | 0.3− | 2006 09 27 | 704 | 0.6+ | 0.7− |
| 1996 09 06 | 691 | (1.6− | 5.3−) | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.7+ |
| 1996 09 06 | 691 | 0.0 | 0.1− | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.0 |
| 2001 02 17 | 691 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.1− |
| 2001 02 17 | 691 | 0.1+ | 1.2− | 2006 09 16 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2001 02 17 | 691 | 0.2− | 0.3+ | 2006 09 16 | 691 | 0.4− | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2003 12 29 | 691 | 0.1− | 0.4+ | 2006 09 16 | 691 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2003 12 29 | 691 | 0.3− | 0.1+ | 2006 09 17 | 703 | 1.1− | 0.2− | 2006 10 23 | G96 | 0.2− | 0.4− |
| 2003 12 29 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.5− | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.9− | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2006 08 28 | 703 | 1.1+ | 0.8− | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 1.2− | 0.0 | 2006 09 25 | 699 | 1.0+ | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2006 08 28 | 691 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.3+ | 0.8+ | | | | |
| 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.9− | | | | |

**2006 RN$_{17}$ = 2001 ON$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.13713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22266924 | $\omega$ | 11.25177 | | +0.80624583 | +0.57458333 | |
| $a$ | 2.6958511 | $\Omega$ | 312.73716 | | −0.55655647 | +0.65604689 | |
| $e$ | 0.0966721 | $i$ | 11.05127 | | −0.20053070 | +0.48934290 | |
| $P$ | 4.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 17 | 644 | 0.1+ | 0.3− | 2004 01 30 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.8− | 0.8+ |
| 2001 07 17 | 644 | 0.5+ | 0.0 | 2004 01 30 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 699 | (1.6+ | 0.2+) |
| 2001 07 17 | 644 | 0.1+ | 0.3− | 2004 01 30 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 699 | 0.3− | 0.1+ |
| 2001 07 23 | 644 | 0.5− | 1.3+ | 2004 03 11 | 644 | 0.3+ | 0.7+ | 2006 09 27 | 699 | 0.4+ | 0.3− |
| 2001 07 23 | 644 | 0.6− | 1.1+ | 2004 03 11 | 644 | 0.5+ | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 2001 07 23 | 644 | 0.5− | 1.2+ | 2004 03 11 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.4− |
| 2002 10 05 | 704 | 0.2− | 0.3+ | 2006 08 29 | 699 | 0.9+ | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.3− |
| 2002 10 05 | 704 | 0.1+ | 0.2+ | 2006 08 29 | 699 | 0.6− | 0.6+ | 2006 09 27 | 703 | 0.2− | 1.1− |
| 2002 10 05 | 704 | 0.2+ | 0.2− | 2006 08 29 | 699 | 0.3+ | 1.0+ | 2006 10 03 | 704 | 0.5+ | 0.2+ |
| 2002 10 31 | 704 | (1.8+ | 0.1+) | 2006 08 29 | 699 | (1.1− | 1.6+) | 2006 10 03 | 704 | 0.3− | 0.8+ |
| 2002 10 31 | 704 | 0.4− | 1.1− | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.7+ | 0.1− |
| 2002 10 31 | 704 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 704 | 0.6− | 1.1+ |
| 2002 10 31 | 704 | 1.2− | 0.6− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2002 11 15 | 704 | 0.1− | 0.3− | 2006 09 15 | H06 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2002 11 15 | 704 | 0.2+ | 0.2− | 2006 09 15 | H06 | 0.2+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2002 11 15 | 704 | 0.7+ | 0.8+ | 2006 09 15 | H06 | 0.8− | 0.0 | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2002 11 15 | 704 | 0.8+ | 0.0 | 2006 09 16 | H06 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2002 11 15 | 704 | 0.0 | 0.3+ | 2006 09 16 | H06 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.2− | 0.3− |
| 2002 12 06 | 704 | 0.6− | 0.2− | 2006 09 16 | H06 | 1.0− | 0.5− | 2006 10 23 | 703 | 0.4+ | 0.1− |
| 2002 12 06 | 704 | 0.4+ | 1.1− | 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 10 23 | 703 | 0.5− | 0.1+ |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.8− | 0.3− | 2006 10 23 | 703 | 0.2+ | 0.8+ |
| 2002 12 06 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.4+ | 2006 10 23 | 703 | 0.1− | 0.5+ |
| 2002 12 06 | 704 | 0.7− | 0.1− | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2002 12 12 | 644 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2002 12 12 | 644 | 0.5+ | 0.3+ | 2006 09 19 | 699 | (0.3− | 1.6+) | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2002 12 12 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.0 | 1.0+ | | | | |

**2006 RP$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.16548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21008654 | $\omega$ | 321.60053 | | +0.94576251 | −0.31571919 | |
| $a$ | 2.8024458 | $\Omega$ | 56.96937 | | +0.31602868 | +0.83962725 | |
| $e$ | 0.2663539 | $i$ | 5.23647 | | +0.07522734 | +0.44198131 | |
| $P$ | 4.69 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2003 01 05 | 704 | 0.5+ | 0.5+ | 2006 09 19 | 704 | 0.0 | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.3− |
| 2003 01 05 | 704 | 0.5− | 0.7+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2003 01 05 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2005 06 14 | G96 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2005 06 14 | G96 | 0.2+ | 0.1+ | 2006 09 20 | 608 | 1.2+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2005 06 14 | G96 | 0.1+ | 0.3+ | 2006 09 20 | 608 | 1.0+ | 0.7− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 09 20 | 608 | 0.8+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2006 07 31 | E12 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2006 07 31 | E12 | 0.9− | 0.7− | 2006 09 21 | 699 | 0.7− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2006 07 31 | E12 | 0.0 | 0.4− | 2006 09 21 | 699 | 0.1− | 1.0+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2006 07 31 | E12 | 0.6− | 0.9− | 2006 09 21 | 699 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.5+ | 0.1− |
| 2006 08 30 | 699 | 0.5+ | 0.1− | 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.3+ |
| 2006 08 30 | 704 | 0.6− | 0.3+ | 2006 09 22 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.6+ | 0.1− |
| 2006 08 30 | 704 | 0.9− | 0.8+ | 2006 09 22 | 704 | 0.7+ | 0.6+ | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 2006 08 30 | 699 | 0.1− | 0.6+ | 2006 09 22 | 704 | 0.3− | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2006 08 30 | 704 | 0.1− | 0.6+ | 2006 09 22 | 704 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2006 08 30 | 704 | 0.6− | 0.9+ | 2006 09 26 | 704 | 1.0+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2006 08 30 | 699 | 0.2− | 0.8+ | 2006 09 26 | 704 | 0.9+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2006 08 30 | 699 | 0.8− | 0.6+ | 2006 09 26 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2006 09 14 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 1.0+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2006 09 14 | 644 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.4− |
| 2006 09 14 | 644 | 0.4− | 0.3− | 2006 09 26 | 703 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2006 09 14 | 703 | 0.5+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2006 09 14 | 703 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.2− | 2006 10 24 | 644 | 0.3− | 0.3+ |
| 2006 09 14 | 703 | 0.2− | 0.5− | 2006 09 26 | 703 | (1.6− | 0.8+) | 2006 10 24 | 644 | 0.4− | 0.1+ |
| 2006 09 14 | 703 | 0.8+ | 0.1− | 2006 09 27 | 703 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2006 09 16 | 704 | 0.1− | 0.5− | 2006 09 27 | 703 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2006 09 16 | 704 | 0.3− | 0.7− | 2006 09 27 | 703 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2006 09 16 | 704 | 0.8− | 0.3− | 2006 09 27 | 703 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2006 09 16 | 704 | 0.7− | 0.9− | 2006 09 30 | 703 | 0.6+ | 0.8− | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2006 09 19 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.6+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2006 09 19 | 704 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2006 09 19 | 704 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.4− | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.3− |

**2006 RS$_{17}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.69292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23886541 | $\omega$ | 147.44760 | | +0.79894895 | −0.58617581 | |
| $a$ | 2.5725701 | $\Omega$ | 249.02075 | | +0.51635285 | +0.78322170 | |
| $e$ | 0.0928312 | $i$ | 8.27950 | | +0.30831850 | +0.20727199 | |
| $P$ | 4.13 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.4− | 0.4+ | 2006 10 09 | 644 | 0.3− | 0.2− |
| 2002 10 31 | 644 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 2002 10 31 | 644 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.8− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2004 02 12 | 644 | 0.5+ | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2004 02 12 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 1.3+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2004 02 12 | 644 | 0.2− | 0.7+ | 2006 09 19 | 699 | 1.9+ | 0.4+ | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2005 06 13 | G96 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.6+ | 0.1− | 2006 10 17 | 703 | (0.9− | 2.6−) |
| 2005 06 13 | G96 | 0.0 | 0.3+ | 2006 09 19 | 699 | 1.2+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.7− |
| 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.0 | 2006 10 17 | 703 | 0.6− | 0.9− |
| 2005 06 13 | G96 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.7− | 0.3− | 2006 10 22 | 644 | 0.6+ | 0.0 |
| 2006 09 14 | 644 | 0.7− | 0.0 | 2006 09 27 | 703 | 0.4− | 0.6− | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2006 09 14 | 644 | 0.6− | 0.1− | 2006 09 27 | 703 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2006 09 14 | 644 | 0.5− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | | | |

**2006 RU$_{17}$ = 2001 XL$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.19106 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18214286 | $\omega$ | 66.00349 | | +0.72736664 | −0.66905665 | |
| $a$ | 3.0822033 | $\Omega$ | 335.09897 | | +0.41969415 | +0.60968431 | |
| $e$ | 0.1818443 | $i$ | 21.25602 | | +0.54294990 | +0.42502734 | |
| $P$ | 5.41 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 704 | 0.4+ | 0.5− | 2001 12 11 | 704 | 0.3+ | 0.5+ | 2006 09 21 | 704 | 0.4+ | 0.3+ |
| 2001 12 08 | 704 | 0.2− | 0.2− | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 21 | 704 | 0.2+ | 0.1+ |
| 2001 12 08 | 704 | 0.4− | 0.5+ | 2006 09 06 | 644 | 0.6− | 0.2+ | 2006 09 22 | 699 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 08 | 704 | (1.7− | 1.8+) | 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 09 22 | 699 | 0.5− | 0.2− |
| 2001 12 10 | 704 | 0.7+ | 0.4− | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 09 22 | 699 | 0.9+ | 0.8+ |
| 2001 12 10 | 704 | 0.6+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.0 |
| 2001 12 10 | 704 | 0.8+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 20 | 703 | (2.7− | 0.9−) |
| 2001 12 10 | 704 | 0.6+ | 0.2+ | 2006 09 16 | 703 | 0.1− | 0.3− | 2006 10 20 | 703 | (2.6+ | 0.1+) |
| 2001 12 11 | 704 | 0.3− | 0.2− | 2006 09 16 | 703 | 1.3− | 0.7− | 2006 10 21 | 704 | 0.5+ | 1.4+ |
| 2001 12 11 | 704 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.0 | 0.9− | 2006 10 21 | 704 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 0.8− | 0.5− | 2006 09 16 | 703 | 0.3+ | 0.9− | 2006 10 21 | 704 | 0.3+ | 0.7+ |
| 2001 12 11 | 704 | 0.1+ | 0.1− | 2006 09 21 | 106 | 0.3− | 0.4− | 2006 10 21 | 704 | 0.5+ | 1.2+ |
| 2001 12 11 | 704 | 0.8− | 0.1− | 2006 09 21 | 106 | 0.1+ | 0.3− | 2006 10 31 | 703 | 0.3− | 0.1− |
| 2001 12 11 | 704 | 0.0 | 0.2− | 2006 09 21 | 106 | 0.1+ | 0.4− | 2006 10 31 | 703 | 0.6+ | 0.5− |
| 2001 12 11 | 704 | 0.5− | 0.1+ | 2006 09 21 | 106 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.1− | 1.2− |
| 2001 12 11 | 704 | 0.0 | 0.6+ | 2006 09 21 | 704 | 0.1+ | 0.6+ | 2006 10 31 | 703 | 0.3+ | 0.1− |
| 2001 12 11 | 704 | 0.4− | 0.2+ | 2006 09 21 | 704 | 0.5− | 0.5− | | | | |

**2006 RV$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.57315 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26771597 | $\omega$ | 86.74090 | | +0.98842806 | | +0.11142021 |
| $a$ | 2.3842577 | $\Omega$ | 266.84447 | | −0.14317572 | | +0.90942208 |
| $e$ | 0.2419901 | $i$ | 5.91718 | | +0.05010672 | | +0.40067071 |
| $P$ | 3.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 691 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2000 01 11 | 691 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2000 01 11 | 691 | 0.2+ | 0.3− | 2006 09 29 | 704 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2004 04 15 | 645 | 0.1+ | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 08 29 | 699 | 1.0+ | 0.3+ | 2006 10 03 | 704 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2006 08 29 | 699 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.3− | 0.1+ | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2006 08 29 | 699 | 0.0 | 0.1− | 2006 10 03 | 704 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.3− | 0.0 |
| 2006 08 29 | 699 | 0.1+ | 0.3− | 2006 10 03 | 704 | 0.3− | 0.2+ | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2006 09 14 | 644 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.1+ | 0.3+ | 2006 10 26 | 704 | 0.4− | 0.1− |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | 2006 10 26 | 704 | 0.7+ | 0.0 |
| 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.0 | 2006 10 26 | 704 | 0.5− | 0.0 |
| 2006 09 15 | H06 | 0.2+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.0 | 2006 10 26 | 704 | 0.2− | 0.4+ |
| 2006 09 15 | H06 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1+ | 2006 10 26 | 704 | 0.4− | 0.4+ |
| 2006 09 15 | H06 | 0.3+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.0 | 2006 10 26 | 704 | 0.4+ | 0.1+ |
| 2006 09 16 | H06 | 0.3+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.0 | 2006 10 26 | 704 | 0.3+ | 0.5− |
| 2006 09 16 | H06 | 0.2+ | 0.1+ | 2006 10 10 | A24 | 0.6+ | 0.3+ | 2006 10 26 | 704 | 0.7+ | 0.8− |
| 2006 09 16 | H06 | 0.1− | 0.2− | 2006 10 10 | A24 | 0.5+ | 0.3+ | 2006 10 26 | 704 | 0.3− | 0.2− |
| 2006 09 16 | 703 | 0.3− | 0.5− | 2006 10 10 | A24 | 1.0+ | 0.2+ | 2006 10 26 | 704 | 0.5+ | 0.6− |
| 2006 09 16 | 703 | 0.3− | 0.2− | 2006 10 13 | A24 | 0.5+ | 0.5+ | 2006 10 27 | 683 | (0.2+ | 1.7−) |
| 2006 09 16 | 703 | 0.1− | 0.0 | 2006 10 13 | A24 | 0.3+ | 0.5+ | 2006 10 27 | 683 | (0.4− | 2.0−) |
| 2006 09 16 | 703 | 0.2− | 0.3− | 2006 10 13 | A24 | 0.4+ | 0.3+ | 2006 10 27 | 683 | 1.1− | 0.9− |
| 2006 09 22 | 106 | 0.1+ | 0.2− | 2006 10 13 | A24 | 0.9+ | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2006 09 22 | 106 | 0.0 | 0.4− | 2006 10 13 | A24 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2006 09 22 | 106 | 0.2+ | 0.0 | 2006 10 13 | A24 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2006 09 22 | 106 | 0.1− | 0.6− | 2006 10 15 | A24 | 0.6+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 15 | A24 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2006 09 22 | 704 | 0.3− | 0.4+ | 2006 10 15 | A24 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2006 09 22 | 704 | 0.5− | 0.1+ | 2006 10 15 | A24 | 0.7+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 09 22 | 704 | 0.7− | 0.1− | 2006 10 15 | A24 | 0.3+ | 0.1+ | 2006 11 19 | 704 | (1.4+ | 2.2+) |
| 2006 09 22 | 699 | 0.0 | 0.1+ | 2006 10 15 | A24 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.0 |
| 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 10 17 | 703 | (1.6+ | 1.2+) | 2006 11 19 | 704 | 0.9− | 0.1− |
| 2006 09 22 | 699 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2006 09 22 | 699 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.3+ | 2006 11 28 | 704 | 2.3+ | 0.9− |
| 2006 09 22 | 699 | 0.1+ | 0.1+ | 2006 10 17 | A24 | 0.7− | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.6− |
| 2006 09 27 | 703 | 0.2+ | 0.0 | 2006 10 17 | A24 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2006 09 27 | 703 | 0.2− | 0.2− | 2006 10 17 | A24 | 0.4+ | 0.5+ | 2006 11 28 | 704 | 0.4− | 0.8+ |
| 2006 09 27 | 703 | 0.0 | 0.2− | 2006 10 17 | A24 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2006 09 27 | 703 | 0.4− | 0.2+ | 2006 10 17 | A24 | 0.1− | 1.1− | | | | |

**2006 RA$_{18}$ = 2005 GG$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.84720 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23438221 | $\omega$ | 92.10994 | | +0.67557912 | | +0.72703017 |
| $a$ | 2.6052713 | $\Omega$ | 221.28732 | | −0.72849335 | | +0.63263713 |
| $e$ | 0.2038364 | $i$ | 10.70412 | | −0.11353537 | | +0.26682841 |
| $P$ | 4.21 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 14 | 691 | 0.1− | 0.2+ | 2004 01 29 | 704 | (6.0− | 6.3+) | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 05 14 | 691 | 0.0 | 0.3+ | 2005 04 06 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 05 14 | 691 | 0.3− | 0.2− | 2005 04 06 | 691 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2001 06 17 | 691 | 0.5− | 1.4− | 2005 04 06 | 691 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2001 06 17 | 691 | 0.6+ | 0.1+ | 2005 04 10 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2001 06 17 | 691 | 0.2+ | 0.2+ | 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2002 10 11 | 291 | (3.4− | 3.2−) | 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.4− | 1.0+ |
| 2002 10 11 | 291 | 0.1− | 0.3− | 2006 09 14 | 644 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2002 10 11 | 291 | (2.6+ | 1.8+) | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | 1.2− | 1.3− |
| 2002 10 30 | 291 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2002 10 30 | 291 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.5+ |
| 2002 10 30 | 291 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.8− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 11 04 | 291 | 0.1− | 0.3− | 2006 09 16 | 703 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2006 09 16 | 703 | 1.0+ | 1.1+ | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2002 11 04 | 291 | (2.5+ | 0.3+) | 2006 09 20 | 644 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2002 11 09 | 695 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2002 11 09 | 695 | 0.3+ | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.3+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2004 01 29 | 704 | (5.1− | 7.3+) | 2006 09 27 | 699 | 1.2− | 0.8− | 2006 11 20 | G96 | 0.3+ | 0.2+ |
| 2004 01 29 | 704 | (5.0− | 6.5+) | 2006 09 27 | 699 | 0.3− | 0.3− | 2006 11 20 | G96 | 0.5− | 0.1+ |
| 2004 01 29 | 704 | (6.1− | 6.3+) | 2006 09 27 | 699 | 0.6− | 0.2− | 2006 11 20 | G96 | 0.2− | 0.0 |
| 2004 01 29 | 704 | (6.2− | 6.5+) | 2006 09 27 | 699 | 0.1+ | 0.8+ | 2006 11 20 | G96 | 0.0 | 0.3− |

**2006 RB$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.74515 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18385949 | $\omega$ | 12.96671 | | +0.88073426 | | +0.46139222 |
| $a$ | 3.0629884 | $\Omega$ | 319.00323 | | −0.44777521 | | +0.73768818 |
| $e$ | 0.1399260 | $i$ | 9.37701 | | −0.15428713 | | +0.49288272 |
| $P$ | 5.36 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.4− | 0.7− | 2004 03 28 | 691 | 0.3+ | 0.0 | 2006 09 27 | 699 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.2+ | 0.6+ | 2004 03 28 | 691 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.5− | 0.4+ |
| 2001 09 25 | 704 | 0.8− | 0.4+ | 2004 03 28 | 691 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.6− | 0.5− |
| 2001 10 15 | 704 | 0.7+ | 0.2+ | 2006 08 29 | 699 | 0.5− | 0.5+ | 2006 09 27 | 703 | 0.7− | 0.5− |
| 2001 10 15 | 704 | 0.0 | 0.6− | 2006 08 29 | 699 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.3− | 0.7− |
| 2001 10 15 | 704 | 0.1− | 0.2+ | 2006 08 29 | 699 | 0.8− | 0.9− | 2006 10 03 | 704 | 0.3− | 1.4+ |
| 2001 10 15 | 704 | 0.6+ | 0.0 | 2006 08 29 | 699 | 0.2+ | 0.8− | 2006 10 03 | 704 | 0.3+ | 0.3+ |
| 2001 10 15 | 704 | 0.2+ | 0.3− | 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.2+ |
| 2001 11 11 | 699 | 0.6− | 0.5+ | 2006 09 14 | 644 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 11 11 | 704 | 0.6+ | 0.5− | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 11 11 | 699 | 0.5+ | 0.5+ | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 11 11 | 704 | 1.0+ | 0.4− | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 0.1− | 1.0− | 2006 09 16 | 703 | 0.0 | 0.9− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 11 11 | 699 | 0.5+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 11 11 | 699 | 0.0 | 1.4+ | 2006 09 19 | 699 | 0.8+ | 1.4+ | 2006 10 19 | 703 | 0.1+ | 0.1− |
| 2001 11 11 | 644 | 0.4+ | 0.5+ | 2006 09 19 | 699 | (0.7− | 1.8+) | 2006 10 19 | 703 | 1.5+ | 0.6− |
| 2001 11 11 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.1− |
| 2001 11 11 | 644 | 0.2− | 1.0+ | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 10 19 | 703 | 0.5− | 0.1+ |
| 2002 01 08 | 704 | 1.1− | 0.6− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 01 08 | 704 | 0.9− | 0.5− | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2002 01 08 | 704 | 1.3− | 0.9− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.4+ | 0.4+ | | | | |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.9− | 1.1+ | | | | |

**2006 RC$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.72223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25760462 | $\omega$ | 75.89004 | | +0.96859877 | −0.22840693 | |
| $a$ | 2.4462468 | $\Omega$ | 297.23521 | | +0.16323565 | +0.88217545 | |
| $e$ | 0.2167510 | $i$ | 6.34208 | | +0.18753814 | +0.41182125 | |
| $P$ | 3.83 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.0 | 0.1− | 2002 09 22 | 644 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1+ | |
| 2002 08 16 | 644 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.0 | |
| 2002 08 16 | 644 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2002 08 18 | 644 | 0.2− | 0.0 | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.3+ | 0.2− | |
| 2002 08 26 | 644 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.0 | |
| 2002 08 26 | 644 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.1+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.5+ | |
| 2002 08 26 | 644 | 0.2+ | 0.0 | 2006 09 22 | 699 | 0.3+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.1+ | |
| 2002 08 27 | 644 | 0.3+ | 0.0 | 2006 09 22 | 699 | 0.6− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | |
| 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 09 22 | 699 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ | |
| 2002 08 27 | 644 | 0.0 | 0.1− | 2006 09 22 | 699 | 0.5− | 0.7+ | 2006 10 19 | 703 | 0.5+ | 1.0− | |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.8− | |
| 2002 08 29 | 644 | 0.3+ | 0.4− | 2006 09 27 | 703 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.2− | |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.2− | |
| 2002 09 13 | 644 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.4+ | 1.1− | 2006 10 23 | 644 | 0.3+ | 0.1+ | |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.1− | |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.5+ | 0.3− | |
| 2002 09 22 | 644 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.0 | 0.0 | | | | | |
| 2002 09 22 | 644 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.2+ | | | | | |

**2006 RH$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.80063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27568127 | $\omega$ | 204.88310 | | +0.94778793 | −0.31882382 | |
| $a$ | 2.3381079 | $\Omega$ | 173.69635 | | +0.30225615 | +0.89107104 | |
| $e$ | 0.2365302 | $i$ | 3.67078 | | +0.10168216 | +0.32302286 | |
| $P$ | 3.58 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 703 | 0.0 | 0.2+ | 2006 09 16 | 644 | 0.5− | 0.2+ | 2006 10 01 | 704 | 0.6− | 0.2− | |
| 1999 12 05 | 703 | 1.0− | 0.9+ | 2006 09 17 | 704 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.4− | 0.1+ | |
| 1999 12 05 | 703 | 0.3+ | 0.3+ | 2006 09 17 | 704 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ | |
| 1999 12 05 | 703 | 0.3+ | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1− | |
| 2001 03 25 | 695 | 0.2− | 0.5+ | 2006 09 17 | 704 | 0.1+ | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ | |
| 2001 03 25 | 695 | 0.4+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1+ | |
| 2003 12 25 | 645 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.2+ | |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.1+ | |
| 2005 04 12 | 695 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.9− | 1.2− | 2006 10 16 | 703 | 0.7− | 0.4+ | |
| 2005 04 12 | 695 | 0.0 | 0.5+ | 2006 09 20 | 704 | 1.1+ | 1.2− | 2006 10 16 | 703 | 0.0 | 0.2− | |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 09 20 | 704 | (3.0+ | 1.4−) | 2006 10 16 | 703 | 0.4− | 0.0 | |
| 2006 07 22 | G96 | 0.5+ | 0.1+ | 2006 09 20 | 704 | (2.2+ | 1.6−) | 2006 10 16 | 703 | 0.2− | 0.2+ | |
| 2006 07 22 | G96 | 0.5+ | 0.4− | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.2+ | |
| 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.0 | |
| 2006 08 19 | 699 | 0.4+ | 0.3− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.6+ | 0.2+ | |
| 2006 08 19 | 699 | 1.4+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.0 | |
| 2006 08 19 | 699 | (1.3+ | 1.6+) | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.0 | |
| 2006 08 19 | 699 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 | |
| 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− | |
| 2006 09 14 | 691 | 0.8− | 0.0 | 2006 09 27 | 704 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2− | |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.4+ | 0.5− | 2006 11 17 | G96 | 0.4+ | 0.3− | |
| 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.0 | |
| 2006 09 16 | 644 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.3+ | | | | | |

**2006 RJ$_{18}$ = 3346 T-2**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.49360 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26933905 | $\omega$ | 158.71399 | | +0.71626752 | +0.69773740 | |
| $a$ | 2.3746694 | $\Omega$ | 157.02847 | | −0.64428215 | +0.66733950 | |
| $e$ | 0.1981936 | $i$ | 1.63085 | | −0.26806968 | +0.26042372 | |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.1+ | 1.4− | 2002 07 14 | 704 | 0.1+ | 0.8− | 2006 09 17 | 704 | (0.7+ | 1.8+) | |
| 1973 09 19 | 675 | 0.3+ | 1.4+ | 2002 07 14 | 704 | 0.1+ | 1.0− | 2006 09 18 | 691 | 0.1+ | 0.1− | |
| 1973 09 19 | 675 | (0.5− | 3.1−) | 2002 07 14 | 704 | 0.9+ | 1.0− | 2006 09 18 | 691 | 0.1+ | 0.1− | |
| 1973 09 19 | 675 | 0.8+ | 0.2+ | 2002 07 14 | 704 | 0.8+ | 0.4− | 2006 09 18 | 691 | 0.2− | 0.1+ | |
| 1973 09 20 | 675 | (2.4+ | 3.2−) | 2002 07 14 | 704 | 0.3+ | 0.5− | 2006 09 25 | 691 | 0.1− | 0.2− | |
| 1973 09 24 | 675 | 0.5− | 0.2+ | 2005 04 04 | G96 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− | |
| 1973 09 24 | 675 | 1.0− | 0.9− | 2005 04 04 | G96 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1− | |
| 1973 09 25 | 675 | 1.2− | 0.1− | 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.5− | |
| 1973 09 25 | 675 | 0.2− | 0.7− | 2005 04 04 | G96 | 0.2+ | 0.4− | 2006 09 28 | 704 | 1.1− | 0.1− | |
| 1995 10 01 | 691 | 0.3+ | 0.4+ | 2005 04 12 | 695 | 0.0 | 0.5+ | 2006 09 28 | 704 | 0.5+ | 0.2+ | |
| 1995 10 01 | 691 | 0.4+ | 0.4+ | 2005 04 12 | 695 | 0.1+ | 0.4+ | 2006 09 28 | 704 | 0.3+ | 0.9+ | |
| 1995 10 01 | 691 | 0.4+ | 0.3+ | 2005 05 09 | G96 | 0.5− | 0.0 | 2006 09 28 | 704 | 0.9− | 1.4+ | |
| 1999 11 30 | 691 | 0.0 | 0.2+ | 2005 05 09 | G96 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.8− | |
| 1999 11 30 | 691 | 0.1+ | 0.2− | 2005 05 09 | G96 | 0.3− | 0.0 | 2006 10 01 | 704 | 1.0− | 0.0 | |
| 1999 11 30 | 691 | 0.1+ | 0.2− | 2005 05 09 | G96 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.3+ | |
| 1999 12 12 | 691 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.6− | |
| 1999 12 12 | 691 | 0.2− | 1.3− | 2006 09 14 | 691 | 1.2− | 0.1+ | 2006 10 10 | 644 | 0.4+ | 0.3+ | |
| 1999 12 12 | 691 | 0.5+ | 0.1− | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.4+ | 0.1+ | |
| 2002 06 11 | 644 | 0.3− | 0.3− | 2006 09 16 | 644 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.4+ | |
| 2002 06 11 | 644 | 0.1+ | 0.2− | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− | |
| 2002 06 11 | 644 | 0.1+ | 0.4− | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− | |
| 2002 07 05 | 704 | 0.4− | 0.2− | 2006 09 17 | 704 | 0.6− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.2− | |
| 2002 07 05 | 704 | 0.4+ | 0.2+ | 2006 09 17 | 704 | 1.1− | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.4− | |
| 2002 07 05 | 704 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.3+ | 1.5+ | | | | | |

**2006 RK$_{18}$ = 1999 VO$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.24439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27504856 | $\omega$ | 280.89374 | | +0.84983282 | +0.52671342 | |
| $a$ | 2.3416921 | $\Omega$ | 47.32569 | | −0.47296585 | +0.77795407 | |
| $e$ | 0.2309888 | $i$ | 1.47291 | | −0.23256715 | +0.34257910 | |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2+ | 0.8− | 2006 09 17 | 704 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ | |
| 1999 11 09 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 1999 11 09 | 704 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.1− | 0.5+ | 2006 10 21 | 703 | 1.4− | 0.0 | |
| 1999 11 09 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2+ | 1.2+ | |
| 1999 11 09 | 704 | 0.3− | 0.8− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.3+ | |
| 1999 11 12 | 704 | 0.7− | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3− | |
| 1999 11 12 | 704 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.4+ | |
| 1999 11 12 | 704 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.7− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.3− | |
| 1999 12 04 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.2− | |
| 1999 12 04 | 691 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.3− | |
| 1999 12 04 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2005 03 11 | G96 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 2005 03 11 | G96 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2005 04 04 | G96 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1− | |
| 2005 04 04 | G96 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.3− | |
| 2005 04 04 | G96 | (0.1− | 1.6+) | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.6+ | 0.5+ | |
| 2005 04 04 | G96 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3− | |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.6− | |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | 1.5− | 0.5− | |
| 2006 09 14 | 703 | 0.1+ | 1.2+ | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 14 | G96 | 0.7+ | 0.2− | |
| 2006 09 14 | 703 | 0.5+ | 0.5− | 2006 09 28 | 704 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.2− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 09 28 | 704 | 0.5+ | 0.8+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 703 | 1.0+ | 0.2+ | 2006 10 15 | 703 | 0.4+ | 0.8+ | 2006 11 22 | G96 | 0.5+ | 0.4− |
| 2006 09 16 | 644 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.6− | 0.4+ | 2006 11 22 | G96 | 0.7+ | 0.5− |
| 2006 09 16 | 644 | 0.3− | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2006 09 16 | 644 | 0.2− | 0.1− | 2006 10 15 | 703 | 1.1− | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2006 09 17 | 704 | 0.2− | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.0 | | | | |

### 2006 RO$_{18}$ = 2002 TJ$_{375}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.47880 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24246579 | $\omega$ | 97.29835 | | +0.99219215 | −0.11857390 | |
| $a$ | 2.5470398 | $\Omega$ | 269.51694 | | +0.09362639 | +0.91295217 | |
| $e$ | 0.1649890 | $i$ | 2.21596 | | +0.08239442 | +0.39045942 | |
| $P$ | 4.06 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.3+ | 1.0− | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 1998 11 17 | 691 | 0.0 | 0.6− | 2006 09 14 | 703 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2002 10 03 | 644 | 0.7− | 0.2+ | 2006 09 16 | 644 | 0.8+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 10 03 | 644 | 0.5− | 0.5+ | 2006 09 16 | 644 | 0.5+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 10 03 | 644 | 0.4− | 0.5+ | 2006 09 16 | 644 | 0.7+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2002 10 12 | 704 | (1.6+ | 1.6+) | 2006 09 18 | 699 | 0.2− | 1.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2002 10 12 | 704 | 0.4+ | 1.1+ | 2006 09 18 | 699 | 0.4+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 10 12 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2002 10 31 | 644 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2002 10 31 | 644 | 0.3− | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.0 |
| 2002 10 31 | 644 | 0.6− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2006 09 14 | 703 | 0.5− | 0.9− | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.6− | 0.4− |

### 2006 RQ$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.19071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17524830 | $\omega$ | 118.60911 | | +0.72565345 | +0.68233610 | |
| $a$ | 3.1625216 | $\Omega$ | 198.82772 | | −0.68715361 | +0.71206178 | |
| $e$ | 0.3018111 | $i$ | 15.92882 | | −0.03531263 | +0.16548556 | |
| $P$ | 5.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 01 | 704 | 0.4− | 0.3− | 2006 09 16 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2000 09 01 | 704 | 0.5− | 0.0 | 2006 09 17 | 691 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2000 09 01 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 1.4− | 0.8− |
| 2000 09 01 | 704 | 1.0+ | 0.8+ | 2006 09 17 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.3+ |
| 2000 09 01 | 704 | 0.2− | 0.5− | 2006 09 18 | 699 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.8− | 0.5+ |
| 2005 04 11 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.7− |
| 2005 04 11 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.0 | 0.7+ |
| 2005 04 11 | 691 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 04 30 | 691 | 0.5− | 0.1− | 2006 09 29 | 704 | 1.5− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2005 04 30 | 691 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.8− | 0.7− | 2006 10 27 | G96 | 0.4+ | 0.5− |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2006 08 30 | 699 | 1.0+ | 0.3+ | 2006 09 29 | 704 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2006 08 30 | 699 | 1.3+ | 0.8− | 2006 10 15 | 703 | (1.8− | 0.2−) | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2006 08 30 | 699 | 0.7+ | 0.9− | 2006 10 15 | 703 | 0.6− | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2006 08 30 | 699 | 0.5+ | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2006 09 14 | 703 | 0.1+ | 1.0+ | 2006 10 15 | 703 | 0.4− | 1.3− | 2006 10 31 | G96 | 0.4− | 0.2− |
| 2006 09 14 | 703 | 0.7− | 0.8− | 2006 10 16 | G96 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 09 14 | 703 | 0.6− | 0.5− | 2006 10 16 | G96 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2006 09 14 | 703 | 0.2+ | 0.7− | 2006 10 16 | G96 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2006 09 16 | 644 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |

### 2006 RR$_{18}$ = 2000 EO$_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.70753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38235232 | $\omega$ | 292.51197 | | +0.41775588 | +0.90845080 | |
| $a$ | 1.8800103 | $\Omega$ | 2.32706 | | −0.65327104 | +0.31107962 | |
| $e$ | 0.0830101 | $i$ | 20.23256 | | −0.63144040 | +0.27918922 | |
| $P$ | 2.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 703 | 0.8− | 0.9− | 2006 09 18 | 704 | 0.7+ | 0.6+ |
| 2000 03 04 | 704 | 0.4+ | 1.0− | 2006 09 14 | 703 | 0.7− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2000 03 04 | 704 | 0.3+ | 0.2− | 2006 09 16 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2000 03 04 | 704 | 1.0+ | 0.3+ | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3− |
| 2000 03 04 | 704 | 0.4+ | 0.2+ | 2006 09 16 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2000 03 09 | 704 | 1.1− | 0.9− | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2000 03 09 | 704 | 0.6− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.0 |
| 2000 03 09 | 704 | 0.5− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2000 03 09 | 704 | 0.5− | 0.6+ | 2006 09 18 | 704 | (0.2− | 1.6+) | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 09 14 | 703 | 0.2− | 0.4− | 2006 09 18 | 704 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 14 | 703 | 0.1+ | 0.4− | 2006 09 18 | 704 | (1.7+ | 0.3+) | 2006 10 21 | 644 | 0.0 | 0.2− |

### 2006 RS$_{18}$ = 1999 TC$_{193}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.90103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27776957 | $\omega$ | 102.59584 | | +0.96136406 | −0.25245381 | |
| $a$ | 2.3263744 | $\Omega$ | 272.10500 | | +0.18999627 | +0.89701891 | |
| $e$ | 0.2361437 | $i$ | 6.30548 | | +0.19919981 | +0.36280042 | |
| $P$ | 3.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.2− | 0.6− | 2006 08 29 | 699 | 0.4+ | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.4− |
| 1999 10 12 | 704 | 0.0 | 0.1− | 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.2− |
| 1999 10 12 | 704 | 0.2+ | 0.6− | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.2+ | 0.5− |
| 1999 10 12 | 704 | 0.8+ | 0.3− | 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.0 |
| 1999 10 12 | 704 | 1.0+ | 0.7− | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.1− |
| 1999 10 13 | 704 | 0.5− | 0.7− | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.3− |
| 1999 10 13 | 704 | 0.4− | 0.6− | 2006 09 14 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.7+ |
| 1999 10 13 | 704 | 0.3− | 0.9− | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 1999 10 13 | 704 | 0.5+ | 0.3− | 2006 09 16 | 703 | (0.4− | 1.7+) | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 0.7− | 0.2− | 2006 09 16 | 703 | 0.4+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.5+ |
| 1999 11 04 | 704 | 0.4+ | 1.2+ | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 1999 11 04 | 704 | 0.2+ | 0.2+ | 2006 09 22 | 699 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 1999 11 04 | 704 | 0.5− | 0.7+ | 2006 09 22 | 699 | 0.9+ | 0.9+ | 2006 11 14 | 703 | 0.7− | 1.0+ |
| 1999 11 04 | 704 | 0.1+ | 0.1− | 2006 09 22 | 699 | 0.6+ | 0.4+ | 2006 11 14 | 703 | 0.8+ | 0.1− |
| 2006 08 29 | 699 | 0.2− | 0.8− | 2006 09 22 | 699 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.3− | 0.3+ |
| 2006 08 29 | 699 | 0.5− | 0.4− | 2006 09 28 | 703 | 0.5− | 0.3− | 2006 11 14 | 703 | 0.3− | 0.1− |
| 2006 08 29 | 699 | 0.2− | 0.6− | 2006 09 28 | 703 | 0.5− | 0.5− | | | | |

### 2006 RT$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.67071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22486088 | $\omega$ | 180.09198 | | +0.71703527 | −0.67754232 | |
| $a$ | 2.6783055 | $\Omega$ | 224.10036 | | +0.63966895 | +0.73291825 | |
| $e$ | 0.2435012 | $i$ | 13.60491 | | +0.27691887 | +0.06137788 | |
| $P$ | 4.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 1.1− | 0.7− | 2006 10 15 | A24 | 0.7+ | 0.1+ |
| 2002 09 07 | 704 | 0.8− | 0.4− | 2006 09 16 | 703 | 0.6− | 0.5− | 2006 10 15 | A24 | 0.0 | 0.2− |
| 2002 09 07 | 704 | 0.5− | 0.7− | 2006 09 21 | 704 | 0.3+ | 0.3+ | 2006 10 15 | A24 | 0.1+ | 0.5− |
| 2002 09 07 | 704 | 0.8+ | 1.1− | 2006 09 21 | 704 | 0.5− | 0.4+ | 2006 10 17 | A24 | 0.7+ | 0.2− |
| 2002 09 07 | 704 | 0.7− | 0.5− | 2006 09 21 | 704 | 0.6− | 0.3+ | 2006 10 17 | A24 | 0.2+ | 0.4+ |
| 2002 10 03 | 704 | 0.4− | 1.4+ | 2006 09 21 | 704 | 0.5+ | 0.5+ | 2006 10 17 | A24 | 0.7+ | 0.1+ |
| 2002 10 03 | 704 | 0.1− | 1.0+ | 2006 09 22 | 699 | 0.0 | 0.3+ | 2006 10 17 | A24 | 1.1+ | 0.7− |
| 2002 10 03 | 704 | 0.9+ | 1.0+ | 2006 09 22 | 699 | 0.4− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.7+ | 0.2+ | 2006 09 22 | 699 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2002 12 01 | 704 | 1.1+ | 1.2− | 2006 09 28 | 703 | 0.1+ | 0.5− | 2006 10 22 | 644 | 0.4+ | 0.5− |
| 2002 12 01 | 704 | 0.3− | 0.6− | 2006 09 28 | 703 | 0.4+ | 0.3− | 2006 10 27 | 683 | 0.1+ | 0.6− |
| 2002 12 01 | 704 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.1− | 2006 10 27 | 683 | 0.1− | 1.0+ |
| 2002 12 14 | 704 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.9− | 1.2+ | 2006 10 27 | 683 | 0.2− | 0.6+ |
| 2002 12 14 | 704 | 0.0 | 0.3− | 2006 10 04 | 703 | 0.2+ | 0.7− | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2002 12 14 | 704 | 0.2− | 0.6+ | 2006 10 04 | 703 | 0.7− | 0.4− | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2002 12 14 | 704 | 0.0 | 0.5+ | 2006 10 04 | 703 | 0.4+ | 0.3− | 2006 11 08 | 644 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.4− | 0.6+ | 2006 10 04 | 703 | 0.5− | 0.8− | 2006 11 13 | 703 | 0.2− | 0.6− |
| 2003 01 01 | 704 | (0.5− | 1.8−) | 2006 10 09 | 644 | 0.3− | 0.2− | 2006 11 13 | 703 | 0.5− | 0.2− |
| 2003 01 01 | 704 | 0.3+ | 0.5− | 2006 10 09 | 644 | 0.2− | 0.2− | 2006 11 13 | 703 | 0.8− | 0.3− |
| 2003 01 01 | 704 | 0.5− | 1.4− | 2006 10 09 | 644 | 0.2− | 0.2− | 2006 11 13 | 703 | 0.1+ | 0.2− |
| 2003 01 01 | 704 | 0.4− | 0.4− | 2006 10 10 | A24 | 0.5+ | 0.4+ | 2006 11 15 | 704 | 0.6+ | 1.2+ |
| 2003 01 28 | 704 | 0.2+ | 0.0 | 2006 10 10 | A24 | 0.3+ | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.3+ |
| 2003 01 28 | 704 | 0.3+ | 0.2+ | 2006 10 10 | A24 | 0.4− | 0.2+ | 2006 11 15 | 704 | 0.6+ | 0.9+ |
| 2003 01 28 | 704 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.0 | 1.0+ |
| 2003 01 28 | 704 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 15 | 704 | 0.2+ | 0.6+ |
| 2003 01 28 | 704 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.4− | 0.1− | 2006 11 16 | 704 | (0.3+ | 2.6+) |
| 2005 07 04 | 599 | (1.0+ | 1.6+) | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.4− | 0.8+ |
| 2005 07 04 | 599 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 16 | 704 | (0.6+ | 1.6+) |
| 2005 07 04 | 599 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.7+ |
| 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 13 | A24 | 0.6+ | 0.2− | 2006 11 16 | 704 | 1.3+ | 0.9− |
| 2006 09 06 | 644 | 0.3− | 0.2− | 2006 10 13 | A24 | 0.5+ | 0.2+ | 2006 11 17 | 704 | (0.8− | 3.1+) |
| 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 13 | A24 | 0.7+ | 0.3+ | 2006 11 17 | 704 | 0.5− | 0.2+ |
| 2006 09 14 | 644 | 0.3− | 0.1− | 2006 10 13 | A24 | 0.5+ | 0.3− | 2006 11 17 | 704 | (2.0− | 1.3−) |
| 2006 09 14 | 644 | 0.2− | 0.1− | 2006 10 13 | A24 | 0.8− | 0.4− | 2006 11 22 | 704 | 0.3+ | 1.5+ |
| 2006 09 14 | 644 | 0.1− | 0.2− | 2006 10 15 | A24 | 0.1+ | 0.4+ | 2006 11 22 | 704 | (0.6+ | 2.1+) |
| 2006 09 16 | 703 | 0.1− | 0.3− | 2006 10 15 | A24 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.5− | 0.5+ |
| 2006 09 16 | 703 | 0.6− | 0.1− | 2006 10 15 | A24 | 0.3+ | 0.2+ | | | | |

### 2006 RV$_{18}$ = 2004 FX$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 319.39295 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22650075 | $\omega$ | 85.60082 | | +0.51124851 | | −0.85172082 | | |
| $a$ | 2.6653625 | $\Omega$ | 332.67621 | | +0.65529120 | | +0.47279813 | | |
| $e$ | 0.1081536 | $i$ | 14.49322 | | +0.55607409 | | +0.22590614 | | |
| $P$ | 4.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | (3.6+ | 1.6+) | 2004 03 17 | 704 | 0.3− | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.4− |
| 2002 10 06 | 704 | (3.6+ | 0.5+) | 2004 03 17 | 704 | 1.1+ | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.3+ |
| 2002 10 06 | 704 | (3.9+ | 0.2+) | 2006 08 29 | 699 | 0.9+ | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.1+ |
| 2002 10 06 | 704 | (4.2+ | 1.6+) | 2006 08 29 | 699 | (2.0+ | 0.4+) | 2006 09 28 | 703 | 0.5+ | 0.1+ |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2006 08 29 | 699 | 0.2− | 0.5+ | 2006 10 04 | 703 | 0.5− | 1.1+ |
| 2002 12 10 | 704 | 0.7+ | 0.3− | 2006 08 29 | 699 | 0.4+ | 1.3+ | 2006 10 04 | 703 | 0.3− | 0.2− |
| 2002 12 10 | 704 | 0.3− | 0.2− | 2006 09 14 | 644 | 0.2+ | 0.7+ | 2006 10 04 | 703 | 0.3− | 0.4− |
| 2004 02 16 | 703 | 0.6+ | 1.2+ | 2006 09 14 | 644 | 0.3+ | 0.2+ | 2006 10 04 | 703 | 1.3+ | 0.4+ |
| 2004 02 16 | 703 | 0.0 | 1.1+ | 2006 09 14 | 644 | 0.1− | 0.4+ | 2006 10 19 | 703 | 0.3− | 0.2− |
| 2004 02 16 | 703 | 0.4+ | 0.7+ | 2006 09 16 | 703 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.4− | 0.1− |
| 2004 02 16 | 703 | 0.7+ | 0.4+ | 2006 09 16 | 703 | 0.1− | 0.6+ | 2006 10 19 | 703 | 1.0− | 0.3− |
| 2004 03 16 | 703 | 1.0+ | 0.8+ | 2006 09 16 | 703 | 0.1+ | 0.7+ | 2006 10 19 | 703 | 0.7− | 0.1+ |
| 2004 03 16 | 703 | 0.3− | 0.8− | 2006 09 16 | 703 | 0.3− | 0.3− | 2006 10 31 | 703 | 0.8− | 0.1+ |
| 2004 03 16 | 703 | 0.3− | 0.2+ | 2006 09 22 | 699 | 0.4+ | 0.5+ | 2006 10 31 | 703 | 0.6− | 1.1− |
| 2004 03 16 | 703 | 0.1− | 0.6+ | 2006 09 22 | 699 | 0.3− | 0.0 | 2006 10 31 | 703 | 0.0 | 1.0− |
| 2004 03 17 | 704 | 0.2+ | 0.6− | 2006 09 22 | 699 | 1.2− | 0.9+ | 2006 10 31 | 703 | 0.6+ | 0.7− |
| 2004 03 17 | 704 | 0.3+ | 0.8+ | 2006 09 22 | 699 | 0.1+ | 0.7+ | | | | |

### 2006 RX$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 330.32870 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.26373124 | $\omega$ | 152.70248 | | +0.67398177 | | −0.73255462 | | |
| $a$ | 2.4082136 | $\Omega$ | 254.75378 | | +0.65845903 | | +0.65427958 | | |
| $e$ | 0.1610535 | $i$ | 5.67817 | | +0.33493323 | | +0.18783492 | | |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.8+ | 1.1+ |
| 2002 08 16 | 644 | 0.2+ | 0.0 | 2006 09 14 | 644 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2002 08 16 | 644 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2002 08 17 | 644 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.2+ | 0.8− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 08 17 | 644 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 08 17 | 644 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 08 26 | 644 | 0.1+ | 0.3− | 2006 09 19 | 699 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 08 26 | 644 | 0.7− | 0.1− | 2006 09 19 | 699 | 0.0 | 0.6− | 2006 10 17 | 703 | (2.6+ | 3.4+) |
| 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.6− | 2006 10 17 | 703 | 0.8+ | 0.7− |
| 2004 02 18 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.3− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2004 02 18 | 691 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 2004 02 18 | 691 | 0.2− | 0.0 | 2006 09 27 | 703 | 0.4+ | 0.3+ | | | | |
| 2006 09 14 | 644 | 0.5− | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.4+ | | | | |

### 2006 RY$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 341.54644 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23526602 | $\omega$ | 39.02253 | | +0.79062832 | | −0.61216802 | | |
| $a$ | 2.5987425 | $\Omega$ | 358.53869 | | +0.36159012 | | +0.48332874 | | |
| $e$ | 0.2121268 | $i$ | 29.44521 | | +0.49412492 | | +0.62581438 | | |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 291 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 09 27 | 703 | 0.5+ | 0.5+ |
| 2004 02 17 | 291 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.1− | 1.0+ | 2006 09 27 | 703 | 0.0 | 0.8+ |
| 2004 02 17 | 291 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.4− | 0.7− | 2006 10 04 | 703 | (1.7+ | 5.1−) |
| 2004 02 26 | 695 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.5− | 0.1− | 2006 10 04 | 703 | 0.3+ | 0.3− |
| 2004 02 26 | 695 | 0.2− | 0.4− | 2006 09 16 | 703 | 0.8− | 0.4− | 2006 10 04 | 703 | 0.7− | 0.5− |
| 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 04 | 703 | 0.3− | 1.3− |
| 2006 08 18 | 644 | 0.0 | 0.4− | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.9+ | 0.8− |
| 2006 08 18 | 644 | 0.1+ | 0.3− | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.0 | 0.4+ |
| 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.8+ | 0.1+ | 2006 10 31 | 703 | 0.1+ | 0.1+ |
| 2006 09 14 | 644 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.3+ | 0.9+ | 2006 10 31 | 703 | 0.3− | 0.4+ |

### 2006 RZ$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 63.72856 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23101668 | $\omega$ | 305.62289 | | +0.28688151 | | +0.95559549 | | |
| $a$ | 2.6305132 | $\Omega$ | 340.71138 | | −0.79973523 | | +0.20019860 | | |
| $e$ | 0.1803895 | $i$ | 11.76478 | | −0.52737326 | | +0.21623547 | | |
| $P$ | 4.27 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 20 | 809 | (1.5− | 2.9+) | 2006 09 16 | 703 | 1.2− | 0.3− | 2006 09 27 | 703 | 0.9+ | 1.1− |
| 1993 08 20 | 809 | (1.9+ | 2.5+) | 2006 09 16 | 703 | 0.5− | 0.8+ | 2006 09 27 | 703 | 1.0− | 0.1+ |
| 1993 08 20 | 809 | (1.1+ | 2.9+) | 2006 09 16 | 703 | 0.4− | 0.5− | 2006 09 27 | 703 | 0.3+ | 0.2+ |
| 1993 08 24 | 809 | 1.3+ | 0.5− | 2006 09 16 | 703 | (1.9− | 0.0 ) | 2006 10 19 | 703 | 0.7+ | 0.7+ |
| 1993 08 24 | 809 | 0.7+ | 0.2− | 2006 09 19 | 699 | 0.9− | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.2− |
| 1993 08 24 | 809 | 1.3+ | 0.6− | 2006 09 19 | 699 | 0.9+ | 0.8+ | 2006 10 19 | 703 | 1.0+ | 0.4+ |
| 1993 09 14 | 691 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.6− | 1.3− | 2006 10 19 | 703 | 0.9+ | 0.5− |
| 1993 09 14 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.2− | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 1993 09 14 | 691 | 0.5− | 0.3+ | 2006 09 25 | 152 | 0.3+ | 0.8− | 2006 10 21 | 644 | 0.5+ | 0.0 |
| 2006 09 14 | 644 | 0.7− | 0.1+ | 2006 09 25 | 152 | (0.4− | 1.9−) | 2006 10 21 | 644 | 0.7+ | 0.0 |
| 2006 09 14 | 644 | 0.6− | 0.1+ | 2006 09 25 | 152 | 0.2− | 0.8+ | | | | |
| 2006 09 14 | 644 | 0.4− | 0.0 | 2006 09 27 | 703 | 0.4− | 0.5− | | | | |

### 2006 RA$_{19}$ = 2005 JG$_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 19.24139 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27047008 | $\omega$ | 79.01626 | | +0.95645746 | | +0.29181607 | | |
| $a$ | 2.3680447 | $\Omega$ | 264.01685 | | −0.26997617 | | +0.87711305 | | |
| $e$ | 0.2000410 | $i$ | 0.32850 | | −0.11091437 | | +0.38146569 | | |
| $P$ | 3.64 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2004 01 27 | 691 | 0.1− | 0.6+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2005 05 04 | G96 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2005 05 04 | G96 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.3− | 1.3+ | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2005 05 04 | G96 | 0.4− | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 05 04 | G96 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.9− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2005 05 08 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2005 05 08 | G96 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2005 05 08 | G96 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2005 05 08 | G96 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2006 07 22 | G96 | 0.5+ | 0.1+ | 2006 09 29 | 704 | 1.0− | 0.2− | 2006 10 27 | G96 | 0.5− | 0.1− |
| 2006 07 22 | G96 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.1− | 1.1+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2006 07 22 | G96 | 0.4− | 0.3+ | 2006 09 29 | 704 | 0.9− | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2006 07 22 | G96 | 0.1+ | 0.2+ | 2006 10 13 | A50 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 13 | A50 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.4− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 13 | A50 | 0.3− | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2006 09 16 | 644 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.4− |
| 2006 09 16 | 644 | 0.2− | 0.0 | 2006 10 16 | 691 | 1.0− | 0.2+ | 2006 11 13 | 691 | 0.8+ | 0.2− |
| 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.2− |

## 2006 RE$_{19}$ = 2002 WV$_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.22367 | | (2000.0) | | +0.89464434 | −0.44621924 |
| $n$ | 0.23223338 | $\omega$ | 200.25454 | | +0.43259762 | +0.87767008 |
| $a$ | 2.6213174 | $\Omega$ | 186.38334 | | +0.11167281 | +0.17488172 |
| $e$ | 0.2428152 | $i$ | 11.60139 | | | |
| $P$ | 4.24 | $H$ | 16.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.7+ | 0.2+ | 2006 09 20 | 699 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 30 | 704 | 0.3− | 0.3− | 2006 09 22 | 704 | (1.6+ | 0.3+) | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 11 30 | 704 | 0.6− | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 01 | 704 | 0.1− | 0.3+ | 2006 09 22 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 704 | 0.1+ | 0.1− |
| 2002 12 01 | 704 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.4− | 0.4− | 2006 10 22 | 704 | 0.4+ | 0.3+ |
| 2002 12 01 | 704 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.7+ | 0.4− | 2006 10 22 | 704 | 0.6− | 1.3− |
| 2003 01 02 | 704 | 0.2+ | 0.7− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 22 | 704 | 0.6+ | 1.0+ |
| 2003 01 02 | 704 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 704 | (1.8+ | 0.5+) |
| 2003 01 02 | 704 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.0 |
| 2003 01 02 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 1.0− | 0.2− | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 10 27 | 704 | 0.0 | 0.4− |
| 2005 07 03 | 291 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 27 | 704 | 0.2− | 0.4+ |
| 2005 07 03 | 291 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.1− | 0.3+ |
| 2005 07 03 | 291 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 704 | 0.2+ | 0.2− |
| 2006 08 28 | 703 | 1.1− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2006 08 28 | 703 | (1.6− | 1.2−) | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.4+ | 0.9− |
| 2006 08 28 | 703 | 0.0 | 1.5− | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.0 | 0.6− |
| 2006 09 14 | 703 | 0.8− | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 10 | 704 | 0.5− | 0.1− |
| 2006 09 14 | 703 | 0.6− | 0.0 | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 11 10 | 704 | 0.1− | 1.1+ |
| 2006 09 14 | 703 | 0.8− | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 10 | 704 | 0.2− | 0.1+ |
| 2006 09 14 | 703 | 0.6− | 0.5− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.5+ | 0.7+ |
| 2006 09 16 | 699 | 1.4+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 10 | 704 | 0.3− | 0.3+ |
| 2006 09 16 | 699 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.6− | 2006 11 16 | 703 | 0.0 | 0.1+ |
| 2006 09 16 | 699 | 0.2+ | 1.1− | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2006 09 16 | 699 | (1.9+ | 1.5−) | 2006 10 16 | 703 | 0.2+ | 0.6− | 2006 11 16 | 703 | 0.2+ | 0.4− |
| 2006 09 20 | 699 | 0.3− | 1.2+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 16 | 703 | 0.7+ | 0.5− |
| 2006 09 20 | 699 | 0.5− | 0.4+ | 2006 10 19 | 644 | 0.4+ | 0.4+ | | | | |
| 2006 09 20 | 699 | 1.4− | 0.4− | 2006 10 19 | 644 | 0.4+ | 0.0 | | | | |

## 2006 RJ$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.24851 | | (2000.0) | | +0.99247277 | −0.06388687 |
| $n$ | 0.26551298 | $\omega$ | 304.47807 | | +0.10457510 | +0.88609885 |
| $a$ | 2.3974278 | $\Omega$ | 59.39177 | | −0.06373267 | +0.45907221 |
| $e$ | 0.1490583 | $i$ | 6.97262 | | | |
| $P$ | 3.71 | $H$ | 16.1 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.1+ | 0.3− | 2005 06 13 | G96 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.7− | 0.0 |
| 1995 10 19 | 691 | 0.2+ | 0.2− | 2006 09 14 | 291 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.2− |
| 1995 10 19 | 691 | 0.1+ | 0.4− | 2006 09 14 | 291 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.1+ | 0.6+ |
| 2000 01 04 | 704 | 0.1− | 1.1+ | 2006 09 14 | 291 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.1− |
| 2000 01 04 | 704 | 0.7+ | 0.8− | 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 1.0+ | 0.2− |
| 2000 01 04 | 704 | 0.4− | 0.6+ | 2006 09 16 | 699 | 0.0 | 0.1− | 2006 10 01 | 704 | 1.0+ | 0.4+ |
| 2002 08 13 | 704 | 0.4− | 0.5+ | 2006 09 16 | 699 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2002 08 13 | 704 | 0.9− | 1.0+ | 2006 09 16 | 699 | 0.8+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.1− |
| 2002 08 13 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 10 01 | 704 | 0.0 | 0.6− |
| 2002 08 13 | 704 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.1− |
| 2002 08 13 | 644 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.6− | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.0 |
| 2002 08 13 | 644 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.9− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.0 |
| 2002 08 13 | 644 | 0.1+ | 0.3− | 2006 09 20 | 644 | 0.1+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.0 |
| 2002 08 31 | 704 | 0.7+ | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2002 08 31 | 699 | 0.7+ | 0.6− | 2006 09 20 | 644 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2002 08 31 | 699 | 0.1+ | 0.2− | 2006 09 21 | 699 | 1.2+ | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2002 08 31 | 704 | 0.2+ | 0.0 | 2006 09 21 | 699 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.2+ |
| 2002 08 31 | 699 | 0.1− | 0.9− | 2006 09 21 | 699 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2002 08 31 | 704 | 0.6− | 0.8− | 2006 09 21 | 699 | 1.2− | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.2+ |
| 2002 08 31 | 699 | 0.2+ | 0.6− | 2006 09 22 | 704 | 0.9+ | 0.8+ | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2004 02 13 | 699 | (1.9+ | 0.0 ) | 2006 09 22 | 704 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2004 02 13 | 699 | 0.3− | 0.8+ | 2006 09 22 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2004 02 13 | 699 | 0.2− | 0.7+ | 2006 09 22 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2004 02 13 | 699 | 0.5+ | 1.1+ | 2006 09 22 | 704 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2005 04 16 | 691 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.1− | 0.6+ |
| 2005 04 16 | 691 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 0.3+ | 0.2− | 2006 11 13 | 703 | 1.0− | 0.8+ |
| 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.8− | 0.1− |
| 2005 05 03 | 691 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.2+ |
| 2005 05 03 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.6− | 0.8+ | 2006 11 17 | 704 | 0.5− | 0.8+ |
| 2005 05 03 | 691 | 0.3+ | 0.0 | 2006 09 26 | 704 | (2.0− | 0.7−) | 2006 11 17 | 704 | 1.3+ | 0.2+ |
| 2005 05 16 | 691 | 0.3+ | 0.0 | 2006 09 26 | 704 | (1.6− | 0.5+) | 2006 11 17 | 704 | 0.5− | 0.5+ |
| 2005 05 16 | 691 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.0 | 1.2− | 2006 11 17 | 704 | 0.0 | 1.6+ |
| 2005 05 16 | 691 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.9+ | 0.2+ |
| 2005 06 13 | G96 | 0.1− | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.2+ | 2006 11 20 | 704 | 1.4− | 0.8+ |
| 2005 06 13 | G96 | 0.2− | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.7− | 0.5+ |
| 2005 06 13 | G96 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.1+ | 0.4+ | | | | |

## 2006 RK$_{19}$ = 1999 VM$_{160}$ = 2005 JQ$_{116}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.02872 | | (2000.0) | | +0.89225955 | −0.45093939 |
| $n$ | 0.27794161 | $\omega$ | 356.09720 | | +0.41547010 | +0.80005488 |
| $a$ | 2.3254143 | $\Omega$ | 30.73978 | | +0.17679787 | +0.39568403 |
| $e$ | 0.2291147 | $i$ | 2.57308 | | | |
| $P$ | 3.55 | $H$ | 17.5 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 703 | 0.3− | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 11 01 | 703 | 1.0− | 0.7− | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.6− | 0.3+ |
| 1999 11 01 | 703 | 0.4− | 0.9+ | 2006 09 28 | 699 | 0.9+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 11 01 | 703 | (0.0 | 2.2+) | 2006 09 28 | 699 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.6− | 0.1− |
| 1999 11 14 | 704 | 0.1+ | 0.1− | 2006 09 28 | 699 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 1999 11 14 | 704 | 0.7+ | 0.3− | 2006 09 28 | 699 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.4− | 0.0 |
| 1999 11 14 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 691 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.2+ | 0.4− |
| 1999 11 16 | 704 | 0.1+ | 0.5+ | 2006 09 29 | 691 | 0.1+ | 0.0 | 2006 10 23 | 704 | 0.3+ | 0.5+ |
| 1999 11 16 | 704 | 0.0 | 0.6+ | 2006 09 29 | 691 | 0.3+ | 0.3− | 2006 10 23 | 704 | 0.2− | 1.0+ |
| 1999 11 16 | 704 | 0.2− | 0.4+ | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 23 | 704 | 0.5− | 0.5− |
| 1999 11 16 | 704 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 23 | 704 | 1.4+ | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 16 | 704 | 0.3− | 0.4− | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 03 24 | 691 | 0.2+ | 0.4− | 2006 10 15 | 703 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2001 03 24 | 691 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 03 24 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2005 05 10 | G96 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.5− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2005 05 10 | G96 | 0.3− | 0.3+ | 2006 10 16 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2005 05 10 | G96 | 0.4− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2005 05 10 | G96 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.7− | 0.8− |
| 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.3− |
| 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.1− | 2006 11 27 | G96 | 0.2− | 0.6− |
| 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.6− | 0.5− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.5− | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.4− |

### 2006 $RL_{19}$ = 2001 $VQ_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.02697 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18773292 | $\omega$ | 39.37466 | | +0.99086272 | −0.12218183 | |
| $a$ | 3.0207104 | $\Omega$ | 327.50750 | | +0.08032443 | +0.87478454 | |
| $e$ | 0.2448438 | $i$ | 6.10386 | | +0.10834696 | +0.46885350 | |
| $P$ | 5.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.4+ | 0.1+ | 2001 12 08 | 699 | (2.2− | 0.6+) | 2006 09 27 | 699 | 1.1+ | 0.2− |
| 2001 10 15 | 704 | 0.1+ | 0.1+ | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 09 28 | 683 | 1.0− | 1.4− |
| 2001 10 15 | 704 | 1.0− | 0.6− | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 28 | 683 | (1.5− | 2.4−) |
| 2001 11 10 | 704 | 1.2− | 0.6+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 28 | 683 | (0.6− | 2.4−) |
| 2001 11 10 | 704 | 1.0+ | 0.4− | 2006 09 16 | 703 | 0.5+ | 0.1− | 2006 10 03 | 704 | 0.5+ | 0.4− |
| 2001 11 10 | 704 | 0.6+ | 0.3+ | 2006 09 16 | 703 | 0.8− | 0.7− | 2006 10 03 | 704 | 0.2+ | 0.4+ |
| 2001 11 11 | 704 | (1.6+ | 1.2−) | 2006 09 16 | 703 | 0.7− | 0.4+ | 2006 10 03 | 704 | 0.8+ | 1.1+ |
| 2001 11 11 | 699 | 0.5+ | 0.6+ | 2006 09 16 | 703 | 0.5+ | 0.1+ | 2006 10 03 | 704 | 0.1+ | 0.1− |
| 2001 11 11 | 704 | 1.0+ | 0.8− | 2006 09 19 | 699 | 0.7+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2001 11 11 | 699 | (0.4+ | 1.9−) | 2006 09 19 | 699 | 0.6− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2001 11 11 | 704 | 0.8− | 0.1− | 2006 09 19 | 699 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.4− |
| 2001 11 11 | 704 | (0.7− | 1.7−) | 2006 09 19 | 699 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2001 11 11 | 699 | 0.4+ | 0.2− | 2006 09 25 | 704 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 1.0+ | 0.6+ |
| 2001 11 11 | 704 | (0.7+ | 2.1−) | 2006 09 25 | 704 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 2001 11 11 | 699 | 0.4+ | 0.1− | 2006 09 25 | 704 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.0 | 1.2− |
| 2001 12 08 | 699 | 1.0− | 0.9+ | 2006 09 27 | 699 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 12 08 | 699 | (1.8− | 0.6+) | 2006 09 27 | 699 | 1.0− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 12 08 | 699 | 0.7− | 0.3− | 2006 09 27 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |

### 2006 $RP_{19}$ = 1993 $TG_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.70050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22876184 | $\omega$ | 220.49843 | | +0.69707922 | −0.71674876 | |
| $a$ | 2.6477704 | $\Omega$ | 185.40622 | | +0.69847296 | +0.68474745 | |
| $e$ | 0.2617467 | $i$ | 11.48277 | | +0.16191383 | +0.13187929 | |
| $P$ | 4.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.8+ | 1.0− | 2006 09 16 | 704 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.2+ |
| 1993 10 09 | 809 | 0.2+ | 0.8− | 2006 09 19 | 704 | 0.1− | 0.8− | 2006 10 22 | 703 | 0.4− | 0.1+ |
| 1993 10 09 | 809 | 0.3+ | 1.1− | 2006 09 19 | 704 | 0.9− | 0.9+ | 2006 10 22 | 703 | 0.9+ | 1.1− |
| 1993 10 11 | 809 | 0.1− | 0.5− | 2006 09 19 | 704 | 0.4− | 0.7+ | 2006 10 22 | 703 | (1.7+ | 0.7−) |
| 1993 10 11 | 809 | 0.2− | 0.4− | 2006 09 19 | 704 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.5+ |
| 1993 10 11 | 809 | 0.1− | 1.1− | 2006 09 19 | 704 | 1.1+ | 0.2− | 2006 10 22 | 703 | 0.5+ | 0.1+ |
| 1993 10 21 | 809 | (4.8− | 1.0+) | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 31 | 704 | 0.5+ | 0.6+ |
| 1993 10 21 | 809 | (5.1− | 1.4+) | 2006 09 20 | 644 | 0.7+ | 0.2+ | 2006 10 31 | 704 | 0.7+ | 1.1+ |
| 1993 10 21 | 809 | (5.2− | 0.5+) | 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 10 31 | 704 | 0.0 | 0.1+ |
| 2002 12 14 | 704 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.3+ | 0.6+ | 2006 10 31 | 704 | 0.6+ | 1.1+ |
| 2002 12 14 | 704 | 0.5− | 0.5− | 2006 09 22 | 704 | 0.6− | 0.6+ | 2006 10 31 | 704 | 0.7+ | 0.8+ |
| 2002 12 14 | 704 | 0.3+ | 0.6− | 2006 09 22 | 704 | 0.6− | 0.6+ | 2006 11 13 | 703 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.4− | 1.1+ | 2006 11 13 | 703 | 0.1− | 0.4− |
| 2004 04 14 | 691 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.6+ | 2006 11 13 | 703 | 0.4+ | 0.6− |
| 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.7− | 0.7+ | 2006 11 13 | 703 | 0.1− | 0.5− |
| 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.8+ | 2006 11 19 | 703 | 0.3− | 0.3− |
| 2006 07 22 | G96 | 0.6− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.5+ | 2006 11 19 | 703 | 0.0 | 0.6− |
| 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 09 30 | 699 | 0.4− | 0.1− | 2006 11 19 | 703 | 0.2+ | 0.2− |
| 2006 07 22 | G96 | 0.2− | 0.0 | 2006 09 30 | 699 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.5− | 1.1+ |
| 2006 08 28 | 703 | 0.9+ | 0.5+ | 2006 09 30 | 699 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2006 08 28 | 703 | 0.6− | 1.3+ | 2006 09 30 | 703 | 0.8− | 0.2− | 2006 11 21 | 704 | 1.0− | 1.3+ |
| 2006 08 28 | 703 | 0.5− | 0.9+ | 2006 09 30 | 703 | 0.8− | 0.3− | 2006 11 21 | 704 | 0.5− | 0.5− |
| 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 09 30 | 699 | 0.4− | 0.7+ | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2006 09 14 | 703 | 0.8+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 11 27 | G92 | 0.0 | 0.2+ |
| 2006 09 14 | 703 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 27 | G92 | 0.4− | 0.2+ |
| 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 27 | G92 | 0.1− | 0.1+ |
| 2006 09 14 | 703 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 28 | G92 | 0.2− | 0.1+ |
| 2006 09 16 | 704 | 0.2− | 1.0− | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 11 28 | G92 | 0.0 | 0.0 |
| 2006 09 16 | 704 | 1.1+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 28 | G92 | 0.4− | 0.3− |
| 2006 09 16 | 704 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.1+ | | | | |

### 2006 $RX_{19}$ = 2004 $FX_{156}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.58463 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21677502 | $\omega$ | 229.77231 | | +0.67048710 | −0.74188418 | |
| $a$ | 2.7445000 | $\Omega$ | 178.07423 | | +0.72991029 | +0.65780986 | |
| $e$ | 0.1546233 | $i$ | 12.73888 | | +0.13295869 | +0.12997712 | |
| $P$ | 4.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 30 | 704 | 0.5− | 0.0 | 2006 09 16 | 699 | 1.2+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.2− |
| 2002 11 30 | 704 | 0.7− | 1.2+ | 2006 09 16 | 699 | 0.0 | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 2002 11 30 | 704 | 1.1+ | 0.1+ | 2006 09 16 | 699 | (0.8+ | 2.2+) | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2002 11 30 | 704 | 0.2− | 0.8+ | 2006 09 16 | 699 | 0.8+ | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.6− |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 704 | 0.0 | 0.6+ | 2006 09 25 | 699 | 0.3− | 0.1− |
| 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 17 | 704 | 0.0 | 0.4+ | 2006 09 25 | 699 | 0.7− | 0.3− |
| 2004 03 17 | 691 | 0.4− | 0.4+ | 2006 09 17 | 704 | 0.9+ | 0.8+ | 2006 10 16 | 703 | 1.2+ | 0.7+ |
| 2004 03 26 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 0.9+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 2004 03 26 | 691 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.1+ | 1.1− |
| 2004 03 26 | 691 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.2+ |
| 2004 04 22 | 691 | 0.6+ | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.6− |
| 2004 04 22 | 691 | 0.3− | 0.5+ | 2006 09 20 | 704 | 1.4+ | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.3− |
| 2004 04 22 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.5− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2006 08 27 | 699 | 0.6+ | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.8+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2006 08 27 | 699 | 0.8− | 0.3+ | 2006 09 20 | 704 | 1.3+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2006 08 27 | 699 | 0.5− | 0.2− | 2006 09 23 | 691 | 0.3− | 0.4+ | 2006 11 25 | G96 | 0.3− | 0.6− |
| 2006 08 27 | 699 | 1.3− | 0.3+ | 2006 09 23 | 691 | 0.3− | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.4+ |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.4− | 0.4+ | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.1− | 0.3+ | | | | |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.2+ | | | | |

### 2006 $RY_{19}$ = 2001 $SJ_{87}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.01458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20279958 | $\omega$ | 12.92336 | | −0.65372363 | +0.75660874 | |
| $a$ | 2.8691815 | $\Omega$ | 216.25640 | | −0.69633892 | −0.60855611 | |
| $e$ | 0.0114396 | $i$ | 1.33070 | | −0.29623897 | −0.23917080 | |
| $P$ | 4.86 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.6+ | 2006 08 28 | 691 | 0.3− | 0.4− | 2006 09 23 | 691 | 0.3− | 0.0 |
| 2001 09 20 | 704 | 0.1− | 0.3+ | 2006 08 28 | 691 | 0.3+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.4+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | (6.7+ | 2.2+) |
| 2001 09 22 | 704 | 0.5+ | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | (7.5+ | 2.4+) |
| 2001 09 22 | 704 | 0.6− | 0.2+ | 2006 09 16 | 699 | (1.0− | 1.6+) | 2006 11 21 | G96 | (7.8+ | 2.2+) |
| 2001 09 22 | 704 | 0.9+ | 0.3+ | 2006 09 16 | 699 | 0.1− | 0.9+ | 2006 11 21 | G96 | (7.5+ | 2.2+) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 704 | 0.4− | 0.4− | 2006 09 16 | 699 | 0.7+ | 0.1+ | |
| 2006 08 28 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | (1.6+ | 1.8+) | |

**2006 RA$_{20}$ = 2005 LO$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.97795 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22358767 | $\omega$ | 241.46595 | | +0.59989517 | | −0.79989738 |
| $a$ | 2.6884635 | $\Omega$ | 171.60892 | | +0.76878554 | | +0.57040697 |
| $e$ | 0.0419414 | $i$ | 6.70111 | | +0.22157296 | | +0.18654777 |
| $P$ | 4.41 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 01 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 22 | D35 | 0.1− | 0.3+ |
| 2005 06 01 | 691 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.9+ | 1.0− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2005 06 01 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2005 06 08 | 691 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.6− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2005 06 08 | 691 | 0.7− | 0.4− | 2006 09 16 | 699 | 0.9− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.7+ | 1.2+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2006 08 28 | 691 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2006 08 28 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | (2.1+ | 1.4+) | 2006 10 20 | G96 | 0.4− | 0.2+ |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 22 | D35 | 0.1− | 0.3+ | | | | |
| 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 22 | D35 | 0.1+ | 0.2+ | | | | |

**2006 RG$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.00519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18056334 | $\omega$ | 44.12318 | | +0.05759772 | | +0.98661223 |
| $a$ | 3.1001521 | $\Omega$ | 229.79409 | | −0.96235099 | | +0.01420497 |
| $e$ | 0.0713073 | $i$ | 11.52380 | | −0.26563712 | | +0.16246394 |
| $P$ | 5.46 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 07 | 644 | 0.0 | 0.0 | 2006 08 29 | 699 | 0.2− | 0.7− | 2006 09 29 | 699 | 0.0 | 0.4+ |
| 2001 10 07 | 644 | 0.3− | 0.1− | 2006 09 15 | 704 | 0.8− | 0.5+ | 2006 09 29 | 699 | 0.8− | 0.5+ |
| 2001 10 07 | 644 | 0.1+ | 0.0 | 2006 09 15 | 704 | (1.6− | 1.2+) | 2006 09 29 | 699 | 1.4− | 0.4− |
| 2001 11 16 | 691 | 0.1− | 0.0 | 2006 09 15 | 704 | 0.6− | 0.5− | 2006 10 01 | 703 | 0.3− | 0.6− |
| 2001 11 16 | 691 | 0.0 | 0.1+ | 2006 09 15 | 704 | 1.1− | 0.4− | 2006 10 01 | 703 | 1.0+ | 1.0+ |
| 2001 11 16 | 691 | 0.1+ | 0.1− | 2006 09 16 | 644 | 0.0 | 0.3− | 2006 10 01 | 703 | 0.6− | 0.9+ |
| 2006 08 29 | 699 | (0.9+ | 1.8−) | 2006 09 16 | 644 | 0.5+ | 0.1− | 2006 10 01 | 703 | 0.5+ | 1.4+ |
| 2006 08 29 | 699 | (2.5+ | 0.1−) | 2006 09 16 | 644 | 0.4− | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2006 08 29 | 699 | (0.9− | 1.7+) | 2006 09 20 | 699 | 0.5+ | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2006 08 29 | 699 | 0.7− | 0.4+ | 2006 09 20 | 699 | (0.0 | 1.8−) | 2006 10 20 | 691 | 0.2+ | 0.0 |
| 2006 08 29 | 699 | 1.0+ | 0.6− | 2006 09 20 | 699 | 1.2+ | 1.3− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2006 08 29 | 699 | 0.2+ | 0.1+ | 2006 09 20 | 699 | (2.1+ | 0.9+) | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2006 08 29 | 699 | 0.8+ | 0.3− | 2006 09 29 | 699 | 0.8− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.2− |

**2006 RH$_{20}$ = 2004 GL$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.43859 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22069348 | $\omega$ | 210.18381 | | +0.75751800 | | −0.65074670 |
| $a$ | 2.7119169 | $\Omega$ | 190.89021 | | +0.64033464 | | +0.75615886 |
| $e$ | 0.1629683 | $i$ | 15.94949 | | +0.12703555 | | +0.06893842 |
| $P$ | 4.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.8+ | 1.1+ | 2006 09 15 | 704 | 0.2− | 0.8+ | 2006 09 30 | 699 | 1.0+ | 0.3+ |
| 2002 10 31 | 704 | 0.4+ | 0.2+ | 2006 09 15 | 704 | 0.1− | 0.2− | 2006 09 30 | 699 | 0.2+ | 0.1+ |
| 2002 10 31 | 704 | 0.4+ | 0.9+ | 2006 09 15 | 704 | 0.5+ | 0.5− | 2006 09 30 | 699 | 0.6+ | 0.1+ |
| 2002 10 31 | 704 | 0.0 | 1.2+ | 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.3− |
| 2002 11 12 | 644 | 0.4+ | 0.6+ | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 1.2− | 0.1− |
| 2002 11 12 | 644 | 0.1+ | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 10 01 | 704 | (2.0− | 0.5−) |
| 2002 11 12 | 644 | 0.6− | 1.2+ | 2006 09 19 | 699 | 0.5+ | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2003 01 28 | 704 | 0.6− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2003 01 28 | 704 | 1.0− | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.9+ | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 2003 01 28 | 704 | 0.7− | 0.1− | 2006 09 19 | 703 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.2− | 0.3− |
| 2004 03 13 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 1.0− | 0.7− | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2004 03 13 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 1.1− | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.3+ |
| 2004 03 13 | 644 | 0.3+ | 0.9+ | 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.6− | 0.3− |
| 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.7+ | 0.8+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.3+ | 1.4+ | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.6+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2004 04 21 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.2+ | 0.5+ | 2006 11 18 | 703 | 0.4− | 0.3+ |
| 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.9+ | 0.5+ | 2006 11 18 | 703 | (1.7− | 1.3+) |
| 2005 05 14 | 691 | 0.2− | 0.1+ | 2006 09 25 | 699 | 1.2+ | 0.1− | 2006 11 18 | 703 | 0.7− | 0.4+ |
| 2005 05 14 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 11 18 | 703 | (1.8+ | 2.2+) |
| 2005 05 14 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.9− | 0.7− | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2005 07 06 | 691 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.8− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2005 07 06 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 704 | (0.4− | 2.5+) | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2005 07 06 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 704 | (1.5+ | 0.3−) | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 09 15 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 699 | 0.0 | 0.0 | | | | |

**2006 RJ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.82279 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18073334 | $\omega$ | 88.49360 | | +0.93953816 | | −0.30473066 |
| $a$ | 3.0982077 | $\Omega$ | 289.22778 | | +0.20931520 | | +0.87210599 |
| $e$ | 0.1867912 | $i$ | 9.52384 | | +0.27102618 | | +0.38284510 |
| $P$ | 5.45 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.0 | 0.2+ | 2006 08 29 | 699 | (1.8+ | 0.3−) | 2006 09 22 | 703 | 0.4− | 0.6− |
| 2001 08 27 | 644 | 0.4− | 0.1+ | 2006 08 29 | 699 | 0.3+ | 1.0+ | 2006 09 22 | 703 | 0.3+ | 0.1+ |
| 2001 08 27 | 644 | 0.2+ | 0.1− | 2006 08 29 | 699 | 0.5− | 0.5+ | 2006 09 22 | 703 | 0.5− | 0.1+ |
| 2001 10 15 | 704 | 0.5− | 0.5− | 2006 09 14 | 703 | (1.8+ | 0.5−) | 2006 09 22 | 703 | 0.2+ | 0.7+ |
| 2001 10 15 | 704 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.5+ | 0.1− | 2006 09 27 | 703 | 0.2+ | 0.3+ |
| 2001 10 15 | 704 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.6− | 0.8− | 2006 09 27 | 703 | 0.1+ | 0.1+ |
| 2001 10 15 | 704 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.3− | 0.0 | 2006 09 27 | 703 | 0.0 | 0.1+ |
| 2001 11 11 | 704 | 0.2− | 0.3− | 2006 09 15 | 704 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.5− | 0.7− |
| 2001 11 11 | 704 | (2.2+ | 0.3−) | 2006 09 15 | 704 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.6− |
| 2001 11 11 | 704 | 0.2+ | 0.4− | 2006 09 15 | 704 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 2001 11 11 | 704 | 1.0+ | 0.5+ | 2006 09 15 | 704 | 0.1− | 0.9+ | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2002 12 07 | 645 | 0.0 | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.5+ | 0.5− |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2006 09 16 | 644 | 0.2− | 0.3− | | | | |
| 2006 08 29 | 699 | (0.2− | 1.7+) | 2006 09 16 | 644 | 0.1+ | 0.3+ | | | | |

**2006 RK$_{20}$ = 2004 FC$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.39760 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21038499 | $\omega$ | 59.87016 | | +0.98583722 | | +0.10917244 |
| $a$ | 2.7997949 | $\Omega$ | 293.60506 | | −0.15513375 | | +0.88201126 |
| $e$ | 0.1739126 | $i$ | 7.98586 | | +0.06370631 | | +0.45840759 |
| $P$ | 4.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 291 | 0.0 | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.3+ | 0.6− |
| 2004 03 17 | 291 | 0.1− | 0.2− | 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.5+ | 0.8+ |
| 2004 03 17 | 291 | 0.2− | 0.1− | 2006 09 16 | 644 | 0.4+ | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.0 |
| 2004 03 18 | 291 | 0.3+ | 0.3+ | 2006 09 17 | 703 | 0.4+ | 0.1+ | 2006 09 29 | 699 | 1.2− | 0.1− |
| 2004 03 18 | 291 | 0.2+ | 0.1− | 2006 09 17 | 703 | 0.8− | 0.1− | 2006 09 29 | 699 | 0.4+ | 0.5− |
| 2004 03 18 | 291 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.3+ | 0.5− | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2006 08 29 | 699 | 0.5− | 0.0 | 2006 09 17 | 703 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2006 08 29 | 699 | 1.3− | 1.1+ | 2006 09 20 | 699 | 0.8+ | 1.1+ | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2006 08 29 | 699 | 0.5+ | 0.0 | 2006 09 20 | 699 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2006 08 29 | 699 | 0.5− | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2006 09 15 | 704 | 0.3+ | 0.7+ | 2006 09 20 | 699 | 0.6+ | 0.1− | 2006 10 18 | 691 | 0.2− | 0.6− |
| 2006 09 15 | 704 | 0.5− | 0.5+ | 2006 09 23 | 106 | 0.2− | 1.4− | 2006 10 18 | 691 | 0.6+ | 0.1+ |
| 2006 09 15 | 704 | 0.0 | 0.4− | 2006 09 23 | 106 | 0.4− | 0.4− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2006 09 15 | 704 | 0.1+ | 0.2− | 2006 09 23 | 106 | 0.6+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2006 09 15 | 704 | 0.9+ | 0.0 | 2006 09 23 | 106 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | G92 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2006 09 16 | G92 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.6− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2006 09 16 | G92 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1− |

**2006 RM$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.03123 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27384831 | $\omega$ | 110.03790 | | +0.84145946 | | −0.53132203 |
| $a$ | 2.3485294 | $\Omega$ | 282.17159 | | +0.45057326 | | +0.79031310 |
| $e$ | 0.1892435 | $i$ | 5.76545 | | +0.29821087 | | +0.30512636 |
| $P$ | 3.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 703 | 0.4− | 1.1− | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.4− |
| 1999 11 13 | 703 | 0.9− | 0.5− | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 09 22 | 703 | 0.4+ | 0.7+ |
| 1999 11 13 | 703 | 0.5− | 0.3+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 22 | 703 | 0.9− | 0.8+ |
| 1999 11 13 | 703 | 0.4+ | 0.9+ | 2006 09 15 | 704 | 0.5+ | 0.1+ | 2006 09 22 | 703 | 1.1+ | 1.1+ |
| 1999 12 08 | 704 | 0.5+ | 0.1+ | 2006 09 15 | 704 | 0.4+ | 0.5+ | 2006 09 22 | 703 | 0.5+ | 1.4+ |
| 1999 12 08 | 704 | 2.0+ | 0.3+ | 2006 09 15 | 704 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.6− | 0.7+ |
| 1999 12 08 | 704 | 0.4− | 0.8− | 2006 09 15 | 704 | (1.8+ | 0.5−) | 2006 09 29 | 699 | 0.8− | 0.9+ |
| 1999 12 08 | 704 | 0.2− | 0.3− | 2006 09 15 | 704 | 0.4+ | 0.2− | 2006 09 29 | 699 | 0.3− | 0.4− |
| 2003 12 27 | 461 | 0.1+ | 0.4− | 2006 09 16 | 644 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 0.0 | 0.0 |
| 2003 12 27 | 461 | 0.4− | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 703 | 0.0 | 0.2+ |
| 2003 12 27 | 461 | 0.2+ | 0.1+ | 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 10 01 | 703 | 0.2− | 0.5− |
| 2003 12 27 | 461 | 0.8− | 0.3− | 2006 09 17 | 703 | 0.3− | 0.7− | 2006 10 01 | 703 | 0.5− | 0.4− |
| 2003 12 27 | 461 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.4+ | 0.6− | 2006 10 01 | 703 | 0.4+ | 0.1+ |
| 2004 01 17 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.9− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 01 17 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.9− | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2004 01 17 | 691 | 0.4− | 0.1− | 2006 09 20 | 699 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3− |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.6+ | | | | |
| 2004 03 18 | 645 | 0.0 | 0.1+ | 2006 09 20 | 699 | 1.3+ | 0.1+ | | | | |

**2006 RR$_{20}$ = 2005 JC$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.07265 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26517419 | $\omega$ | 189.05310 | | +0.93116411 | | +0.36377439 |
| $a$ | 2.3994694 | $\Omega$ | 149.57862 | | −0.33140935 | | +0.87252293 |
| $e$ | 0.2287278 | $i$ | 2.77644 | | −0.15199091 | | +0.32614709 |
| $P$ | 3.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 10 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 704 | 0.9− | 0.4+ | 2006 09 30 | 704 | 0.3− | 0.8− |
| 2002 06 10 | 704 | 0.3− | 0.7− | 2006 09 17 | 704 | 0.5+ | 0.7− | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2002 06 10 | 704 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2002 06 10 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.1− |
| 2005 05 09 | G96 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.3− |
| 2005 05 09 | G96 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.4− | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.7+ |
| 2005 05 09 | G96 | 0.6− | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 1.5− | 0.5− |
| 2005 05 09 | G96 | 0.2− | 0.1− | 2006 09 21 | 608 | (0.3+ | 2.7−) | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2005 05 12 | G96 | 0.1+ | 0.0 | 2006 09 21 | 608 | (0.4+ | 1.7−) | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2005 05 12 | G96 | 0.3+ | 0.3+ | 2006 09 21 | 608 | (0.5+ | 2.0−) | 2006 10 16 | 703 | 0.7− | 0.5− |
| 2005 05 12 | G96 | 0.4+ | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2005 05 12 | G96 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.4− | 0.9+ | 2006 10 19 | 644 | 0.3+ | 0.3+ |
| 2006 07 25 | G96 | 0.4− | 0.3− | 2006 09 26 | 704 | 0.4− | 0.8− | 2006 10 19 | 644 | 0.4+ | 0.2+ |
| 2006 07 25 | G96 | 0.1+ | 0.4− | 2006 09 26 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.7+ | 0.1+ |
| 2006 07 25 | G96 | 0.4+ | 0.2− | 2006 09 26 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2006 07 25 | G96 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 08 17 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2006 08 17 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2006 08 25 | 704 | 0.1− | 1.3+ | 2006 09 28 | 704 | 0.6+ | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2006 08 25 | 704 | 0.3+ | 0.6+ | 2006 09 28 | 704 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2006 08 25 | 704 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.9− | 0.5− |
| 2006 08 25 | 704 | 0.9+ | 0.1+ | 2006 09 28 | 704 | 0.2+ | 1.2− | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2006 08 25 | 704 | (1.2− | 2.3−) | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | (1.7− | 0.4−) |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.9− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.4+ | 0.1+ |
| 2006 09 16 | 291 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2006 09 16 | 291 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2006 09 16 | 291 | 0.0 | 0.1+ | 2006 09 30 | 704 | 1.1− | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2006 09 17 | 704 | 0.4+ | 0.7− | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2006 09 17 | 704 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.2+ |
| 2006 09 17 | 704 | 0.2− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.3− | | | | |

**2006 RX$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.77696 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23885688 | $\omega$ | 113.71779 | | +0.51409408 | | +0.85763085 |
| $a$ | 2.5726313 | $\Omega$ | 187.26198 | | −0.82027133 | | +0.48705259 |
| $e$ | 0.2636801 | $i$ | 6.03469 | | −0.25072341 | | +0.16507300 |
| $P$ | 4.13 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.7− | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2002 10 10 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 1.4+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2002 10 10 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | (1.9− | 0.1+) | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2005 04 06 | G96 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.6− | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2005 04 06 | G96 | 0.2+ | 0.4+ | 2006 09 20 | 704 | (1.8− | 1.1−) | 2006 09 28 | 699 | 0.7− | 0.8+ |
| 2005 04 06 | G96 | 0.2+ | 0.4− | 2006 09 20 | 704 | 1.2− | 0.6− | 2006 09 28 | 699 | (2.2− | 0.4−) |
| 2005 04 06 | G96 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 699 | 0.7− | 0.4+ |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 23 | 291 | 0.2+ | 0.2+ | 2006 09 28 | 699 | 0.2− | 0.3+ |
| 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 09 23 | 291 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 23 | 291 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2006 09 16 | 691 | 0.5− | 0.3− | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.6− |
| 2006 09 16 | 691 | 0.2− | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2006 09 16 | 691 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.5− | | | | |
| 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.5− | | | | |

**2006 RB$_{21}$ = 2004 EO$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.96906 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20140467 | $\omega$ | 354.00797 | | +0.28795845 | | +0.95749508 |
| $a$ | 2.8824140 | $\Omega$ | 292.72685 | | −0.87786097 | | +0.25690679 |
| $e$ | 0.0329899 | $i$ | 1.04524 | | −0.38267485 | | +0.13115666 |
| $P$ | 4.89 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2001 08 25 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 08 25 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2004 03 14 | 691 | 0.3+ | 0.3− | 2006 09 16 | 691 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 2004 03 14 | 691 | 0.6+ | 0.2− | 2006 09 16 | 691 | 0.7− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2004 03 14 | 691 | 0.2+ | 0.5− | 2006 09 16 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2004 03 18 | 691 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2004 03 18 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.4+ | 0.7+ |
| 2004 03 18 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2004 03 28 | 691 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2004 03 28 | 691 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2004 03 28 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.4− | 0.9− |

**2006 RC$_{21}$ = 2004 AC$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.44908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23702893 | $\omega$ | 238.83488 | | −0.77821777 | +0.62793175 | |
| $a$ | 2.5858410 | $\Omega$ | 340.05842 | | −0.56695069 | −0.70858161 | |
| $e$ | 0.0917703 | $i$ | 1.49168 | | −0.27008151 | −0.32189100 | |
| $P$ | 4.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.3+ | 0.5− | 2004 01 31 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.3+ |
| 1998 10 13 | 691 | 0.3+ | 0.9− | 2005 02 10 | 809 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.2+ |
| 1998 10 13 | 691 | 0.1+ | 0.9− | 2005 02 10 | 809 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 2002 11 07 | 695 | 0.5+ | 0.1+ | 2005 02 10 | 809 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2002 11 07 | 695 | 0.4+ | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2004 01 13 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2004 01 13 | 691 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.2+ |
| 2004 01 13 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 691 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2004 01 24 | 704 | 0.9− | 1.2+ | 2006 09 16 | 691 | 0.4− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2004 01 24 | 704 | 0.1+ | 0.8+ | 2006 09 16 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.3− | 0.5− |
| 2004 01 24 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 691 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.6− | 0.9− |
| 2004 01 31 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.5− | 0.3− |
| 2004 01 31 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.5− |

**2006 RK$_{21}$ = 2001 PM$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.76047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21278915 | $\omega$ | 13.76343 | | +0.96767304 | −0.25220171 | |
| $a$ | 2.7786663 | $\Omega$ | 0.85060 | | +0.21853213 | +0.83491306 | |
| $e$ | 0.1872802 | $i$ | 6.90200 | | +0.12590708 | +0.48919779 | |
| $P$ | 4.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.6+ | 0.8− | 2006 10 02 | H55 | 0.8− | 1.2+ |
| 2001 07 19 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.5− | 2006 10 02 | H55 | 1.0− | 1.3+ |
| 2001 07 19 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.4− | 2006 10 02 | H55 | 1.2− | 1.2+ |
| 2001 08 09 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2001 08 09 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.8− | 0.9+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2001 08 09 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.5+ | 0.4− | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2001 08 13 | 608 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.2− | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2001 08 13 | 608 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.6− | 0.0 |
| 2001 08 13 | 608 | 0.2− | 0.8− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.8− | 1.0− |
| 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.3− |
| 2004 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2004 03 17 | 691 | 0.5+ | 0.5+ | 2006 09 27 | 699 | (0.1− | 1.5+) | 2006 10 19 | 644 | 0.3+ | 0.3− |
| 2006 08 24 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.9− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2006 09 15 | 691 | 0.3− | 0.2− | 2006 09 27 | 699 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.7− | 0.8− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2006 09 15 | 691 | 0.4− | 1.0+ | 2006 09 27 | 704 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2006 09 16 | 644 | 0.5+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2006 09 16 | 644 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 1.1+ | 0.5+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2006 09 17 | 704 | 0.2− | 0.6− | 2006 09 29 | 704 | 1.0+ | 0.4− | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2006 09 17 | 704 | 0.6+ | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.4− | 2006 10 31 | G96 | 0.6+ | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.7+ | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 1.2+ | 0.3− | 2006 11 20 | G96 | 0.4+ | 0.0 |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 02 | H55 | 0.9− | 1.2+ | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2006 09 19 | 699 | 0.4− | 0.1+ | 2006 10 02 | H55 | 0.1+ | 1.2+ | 2006 11 20 | G96 | 0.3+ | 0.2− |

**2006 RO$_{21}$ = 2001 XZ$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.59484 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18376721 | $\omega$ | 64.23942 | | +0.38585103 | −0.92252926 | |
| $a$ | 3.0640137 | $\Omega$ | 3.09458 | | +0.78739739 | +0.32497937 | |
| $e$ | 0.2872278 | $i$ | 8.16274 | | +0.48075393 | +0.20815422 | |
| $P$ | 5.36 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.5− | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.5− | 0.3− | 2006 09 16 | 644 | 0.3+ | 0.0 | 2006 10 15 | 106 | 0.4+ | 0.2− |
| 2001 12 09 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 10 15 | 106 | 1.0+ | 0.4− |
| 2001 12 09 | 704 | 0.1+ | 0.2− | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 106 | 1.0+ | 0.2− |
| 2001 12 09 | 704 | 0.5− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 15 | 106 | 0.0 | 0.6+ |
| 2001 12 14 | 704 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2001 12 14 | 704 | 0.5+ | 0.2− | 2006 09 25 | 691 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.5− | 1.2− |
| 2001 12 14 | 704 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.1− | 0.5+ |
| 2001 12 14 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.3+ |

**2006 RT$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.36654 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17633828 | $\omega$ | 203.65772 | | +0.78649137 | −0.61720624 | |
| $a$ | 3.1494761 | $\Omega$ | 194.51973 | | +0.57977010 | +0.75016613 | |
| $e$ | 0.1414020 | $i$ | 5.05383 | | +0.21283317 | +0.23729146 | |
| $P$ | 5.59 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.1+ | 0.4− | 2006 09 20 | 704 | 0.5+ | 0.8− | 2006 10 17 | 703 | 1.1− | 0.1− |
| 2000 07 31 | 807 | 0.2+ | 0.4− | 2006 09 20 | 704 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 09 22 | A50 | 0.2+ | 1.2− | 2006 10 17 | 703 | 0.0 | 1.1+ |
| 2004 05 09 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2004 05 09 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.6+ | 0.2− |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 26 | J75 | (0.2− | 1.6+) | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2006 09 16 | 644 | 0.2+ | 0.5+ | 2006 09 26 | J75 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 09 28 | 699 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2006 09 16 | 644 | 0.0 | 0.2− | 2006 09 28 | 699 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 704 | 0.2+ | 1.3+ | 2006 09 28 | 699 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 704 | 0.5+ | 0.4+ | 2006 09 28 | 699 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2006 09 17 | 704 | 0.9+ | 0.5+ | 2006 09 29 | 704 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2006 09 17 | 704 | 0.6+ | 0.4− | 2006 09 29 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 09 18 | 699 | 0.8+ | 0.3+ | 2006 09 29 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2006 09 18 | 699 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2006 09 18 | 699 | (0.7+ | 1.7+) | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2006 09 18 | 699 | (0.3+ | 1.5−) | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 09 20 | 704 | 1.4+ | 1.1− | 2006 10 16 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.0 |
| 2006 09 20 | 704 | 1.2+ | 0.4− | 2006 10 17 | 703 | 0.6− | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.3− |

**2006 RV$_{21}$ = 2001 QJ$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.40683 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18920733 | $\omega$ | 51.26679 | | +0.92016629 | +0.28730447 | |
| $a$ | 3.0049973 | $\Omega$ | 290.58682 | | −0.38428290 | +0.79281332 | |
| $e$ | 0.2943419 | $i$ | 16.50707 | | +0.07497103 | +0.53749715 | |
| $P$ | 5.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 26 | 691 | 0.4− | 0.1− | 2006 08 24 | 704 | 1.5− | 1.1+ | 2006 09 28 | 703 | 0.4− | 0.0 | |
| 1998 01 26 | 691 | 0.2+ | 0.0 | 2006 09 15 | 703 | 0.4+ | 1.0+ | 2006 09 28 | 703 | 0.5− | 0.1+ | |
| 1998 01 26 | 691 | 0.3+ | 0.3+ | 2006 09 15 | 703 | 0.7+ | 0.3+ | 2006 09 28 | 703 | 0.5− | 0.0 | |
| 2001 08 23 | 704 | 0.4− | 0.3− | 2006 09 15 | 703 | 0.0 | 0.2− | 2006 10 10 | A24 | 0.2+ | 0.1+ | |
| 2001 08 23 | 704 | 0.5− | 0.7+ | 2006 09 15 | 703 | 0.4− | 0.1+ | 2006 10 10 | A24 | (2.0+ | 0.0 | ) |
| 2001 08 23 | 704 | 0.8+ | 0.3− | 2006 09 16 | 703 | 0.8+ | 0.2− | 2006 10 18 | 106 | 0.0 | 0.2+ | |
| 2001 08 24 | 644 | (5.2− | 3.7−) | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 18 | 106 | 0.3− | 0.1+ | |
| 2001 08 24 | 644 | (5.1− | 3.8−) | 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 18 | 106 | 0.0 | 0.0 | |
| 2001 08 24 | 644 | (5.5− | 3.7−) | 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 18 | 106 | 0.6− | 0.5− | |
| 2006 06 21 | 703 | 0.6+ | 0.1+ | 2006 09 21 | 699 | 1.3+ | 0.0 | 2006 10 20 | 703 | 0.6+ | 0.5− | |
| 2006 06 21 | 703 | 0.0 | 0.1− | 2006 09 21 | 699 | 1.1+ | 0.5+ | 2006 10 20 | 703 | 0.1− | 0.5− | |
| 2006 06 21 | 703 | 0.5− | 0.5− | 2006 09 21 | 699 | 0.4− | 0.2+ | 2006 10 20 | 703 | 0.4− | 0.0 | |
| 2006 06 21 | 703 | 0.0 | 0.6+ | 2006 09 22 | 703 | 0.1+ | 0.2− | 2006 10 20 | 703 | 0.1− | 0.2+ | |
| 2006 07 24 | 704 | 1.1+ | 0.9− | 2006 09 22 | 703 | 0.4− | 0.1− | 2006 11 15 | 703 | 0.4− | 0.4+ | |
| 2006 07 24 | 704 | 0.9+ | 0.4+ | 2006 09 22 | 703 | 0.2+ | 0.3− | 2006 11 15 | 703 | 1.0+ | 0.3− | |
| 2006 07 24 | 704 | 0.3+ | 0.8− | 2006 09 22 | 703 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.0 | |
| 2006 08 10 | 644 | 0.1− | 0.2+ | 2006 09 28 | 703 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.5+ | 1.1− | |
| 2006 08 10 | 644 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.6+ | 2006 11 23 | 703 | 0.6+ | 0.8+ | |
| 2006 08 10 | 644 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.1− | 0.6− | |
| 2006 08 24 | 704 | 1.3− | 0.0 | 2006 09 28 | 703 | 0.5+ | 0.0 | 2006 11 23 | 703 | 0.3− | 1.2− | |
| 2006 08 24 | 704 | 1.1− | 0.1− | 2006 09 28 | 703 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.6− | 0.5+ | |

## 2006 $RA_{22}$ = 2003 $AK_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.84068 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23349991 | $\omega$ | 36.32252 | | +0.66867447 | −0.74340921 | |
| $a$ | 2.6118300 | $\Omega$ | 11.73703 | | +0.66399092 | +0.58808469 | |
| $e$ | 0.2811868 | $i$ | 4.15477 | | +0.33464984 | +0.31858931 | |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 05 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.3+ | |
| 1995 03 05 | 691 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.0 | |
| 2002 12 11 | 704 | 0.6− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.4+ | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.2+ | |
| 2002 12 11 | 704 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.4+ | |
| 2002 12 11 | 704 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 17 | 704 | (0.4+ | 1.8−) | |
| 2003 01 07 | 704 | (0.2+ | 2.7+) | 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.5+ | |
| 2003 01 07 | 704 | (0.7− | 2.4+) | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 17 | 704 | (0.0 | 1.7+) | |
| 2003 01 07 | 704 | (0.4+ | 2.6+) | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.2− | |
| 2003 01 07 | 704 | (0.2− | 2.9+) | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.1+ | |
| 2003 01 09 | 704 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.2− | 0.2− | |
| 2003 01 09 | 704 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.5− | 2006 11 18 | G96 | 0.2+ | 0.2− | |
| 2003 01 09 | 704 | 1.3+ | 0.7− | 2006 10 27 | 703 | 0.5+ | 0.6− | 2006 11 18 | G96 | 0.0 | 0.3− | |
| 2006 08 28 | 703 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.6− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2006 08 28 | 703 | 0.6+ | 0.4− | 2006 10 29 | 704 | 0.8− | 0.7+ | 2006 11 19 | 704 | 0.4+ | 1.4+ | |
| 2006 08 28 | 703 | (0.5− | 1.5+) | 2006 10 29 | 704 | 0.0 | 0.2+ | 2006 11 19 | 704 | (0.1− | 1.7+) | |
| 2006 08 28 | 703 | 0.2− | 1.1+ | 2006 10 29 | 704 | 0.1− | 0.2− | 2006 11 19 | 704 | (0.7+ | 1.8+) | |
| 2006 09 15 | 703 | 0.5− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 19 | 704 | (0.1− | 1.8+) | |
| 2006 09 15 | 703 | 0.0 | 0.9− | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.2+ | 1.5+ | |
| 2006 09 15 | 703 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.1− | 0.4− | |
| 2006 09 15 | 703 | 0.4− | 0.7− | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.5+ | |
| 2006 09 16 | 703 | 0.4+ | 0.7− | 2006 11 14 | 703 | 0.6+ | 0.7− | 2006 11 22 | 704 | 0.2+ | 0.4− | |
| 2006 09 16 | 703 | 0.2+ | 0.6+ | 2006 11 14 | 703 | 0.7− | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.3+ | |
| 2006 09 16 | 703 | 0.6+ | 0.3− | 2006 11 14 | 703 | 0.0 | 0.7− | 2006 11 22 | 704 | 0.3+ | 0.8+ | |
| 2006 09 16 | 703 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.7+ | 0.7− | 2006 11 25 | G96 | 0.2− | 0.4− | |
| 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.4− | 0.6− | 2006 11 25 | G96 | 0.9− | 0.3− | |
| 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 14 | 703 | (2.8− | 3.5−) | 2006 11 25 | G96 | 0.6− | 0.1− | |
| 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 14 | 703 | (1.0+ | 2.9−) | 2006 11 25 | G96 | 0.2+ | 0.1− | |
| 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.6− | | | | | |

## 2006 $RC_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.96182 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23569214 | $\omega$ | 332.07104 | | +0.97869679 | −0.12092559 | |
| $a$ | 2.5956092 | $\Omega$ | 36.09237 | | +0.19681300 | +0.78267901 | |
| $e$ | 0.1659582 | $i$ | 16.35907 | | −0.05845712 | +0.61056577 | |
| $P$ | 4.18 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 10 31 | 683 | 1.4+ | 0.7+ | |
| 2002 12 12 | 644 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 10 31 | 683 | 0.6+ | 1.7+ | |
| 2002 12 12 | 644 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 07 | 644 | 0.5− | 0.1− | |
| 2006 09 15 | 703 | 0.2− | 0.8− | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 07 | 644 | 0.3− | 0.2+ | |
| 2006 09 15 | 703 | 1.1− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 07 | 644 | 0.2− | 0.0 | |
| 2006 09 15 | 703 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.3− | |
| 2006 09 15 | 703 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.5+ | 0.1− | |
| 2006 09 16 | 699 | 0.2− | 0.6− | 2006 10 17 | G96 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.5+ | 0.4− | |
| 2006 09 16 | 699 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.5− | |
| 2006 09 16 | 699 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.2− | |
| 2006 09 16 | 699 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2+ | |
| 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.0 | |
| 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.0 | 0.0 | |
| 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1− | |
| 2006 09 20 | 608 | (0.6+ | 2.5−) | 2006 10 23 | 704 | 0.2+ | 1.5+ | 2006 11 17 | 691 | 0.1+ | 0.0 | |
| 2006 09 20 | 608 | (0.6+ | 2.4−) | 2006 10 23 | 704 | 0.5− | 1.0− | 2006 11 17 | 703 | 0.4− | 0.3+ | |
| 2006 09 20 | 608 | 0.6+ | 1.8− | 2006 10 23 | 704 | 1.2− | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.4+ | |
| 2006 09 26 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 704 | 0.3− | 0.4− | 2006 11 17 | 703 | 0.8− | 0.2− | |
| 2006 09 26 | 704 | 1.0+ | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.6− | 2006 11 17 | 703 | 0.4− | 0.1+ | |
| 2006 09 26 | 704 | 0.4− | 0.7− | 2006 10 27 | G96 | 0.0 | 0.6− | 2006 11 19 | 704 | 1.5+ | 0.6− | |
| 2006 09 26 | 704 | 1.3− | 0.7+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.4− | |
| 2006 09 29 | 699 | 0.7+ | 0.2+ | 2006 10 28 | 704 | 0.7+ | 0.8+ | 2006 11 19 | 704 | 0.4+ | 1.5+ | |
| 2006 09 29 | 699 | 0.1− | 0.3+ | 2006 10 28 | 704 | 0.5− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.5+ | |
| 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 10 28 | 704 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.8+ | 0.3− | |
| 2006 09 29 | 699 | 0.2+ | 0.7+ | 2006 10 28 | 704 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.1− | |
| 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.0 | |
| 2006 09 30 | 703 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1− | |
| 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | | | | | |
| 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 10 31 | 683 | 0.3− | 0.3− | | | | | |

## 2006 $RE_{22}$ = 1999 $VA_{180}$ = 2005 $GA_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.20788 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27632348 | $\omega$ | 162.73122 | | +0.90107339 | +0.43264533 | |
| $a$ | 2.3344837 | $\Omega$ | 171.45065 | | −0.41775817 | +0.88438172 | |
| $e$ | 0.1936680 | $i$ | 11.54189 | | −0.11638233 | +0.17517704 | |
| $P$ | 3.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | (1.4+ | 3.1−) | 2006 09 15 | 644 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.0 | |
| 1998 04 21 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 644 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.4− | 0.0 | |
| 1998 04 21 | 704 | 1.1+ | 0.5+ | 2006 09 15 | 644 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.1+ | |
| 1998 04 21 | 704 | (4.3− | 0.1+) | 2006 09 16 | 704 | 0.8− | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.2+ | |
| 1999 10 09 | 704 | 0.1+ | 0.6− | 2006 09 16 | 704 | 0.2− | 1.3+ | 2006 09 29 | 699 | 0.1− | 0.6− | |
| 1999 10 09 | 704 | 1.4+ | 0.1− | 2006 09 16 | 704 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.6+ | 0.2+ | |
| 1999 10 09 | 704 | 0.4+ | 0.4− | 2006 09 16 | 704 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.2+ | |
| 1999 10 09 | 704 | 0.7+ | 1.0− | 2006 09 16 | 704 | 0.8− | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.3+ | |
| 1999 10 09 | 704 | (2.9+ | 0.4−) | 2006 09 16 | 699 | 0.2+ | 0.0 | 2006 10 01 | 704 | 1.1+ | 0.2+ | |
| 1999 11 06 | 704 | 0.4+ | 0.1+ | 2006 09 16 | 699 | 0.7+ | 0.4− | 2006 10 01 | 704 | 0.1− | 0.5+ | |
| 1999 11 06 | 704 | 0.0 | 0.5− | 2006 09 16 | 699 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.1+ | |
| 1999 11 06 | 704 | 1.6+ | 1.5− | 2006 09 16 | 699 | 0.2− | 0.6+ | 2006 10 01 | 704 | 0.3+ | 0.3− | |
| 1999 11 06 | 704 | 0.4− | 0.1− | 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.3− | |
| 1999 11 07 | 704 | 0.7− | 0.5− | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.4− | |
| 1999 11 07 | 704 | 1.5− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.3− | |
| 1999 11 07 | 704 | 1.4− | 0.7+ | 2006 09 18 | 703 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.3− | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.5− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.7+ | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.4+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 704 | 0.1+ | 0.5+ | 2006 09 21 | 699 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2002 07 09 | 704 | 0.2+ | 0.6− | 2006 09 21 | 699 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.0 | 0.6+ |
| 2002 07 09 | 704 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.0 | 0.1+ |
| 2002 07 09 | 704 | (2.2− | 0.0 ) | 2006 09 22 | 704 | 1.0+ | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.1− |
| 2002 07 09 | 704 | 1.0− | 0.8− | 2006 09 22 | 704 | 0.2− | 1.2+ | 2006 10 28 | 703 | 0.2+ | 0.4+ |
| 2005 04 04 | 703 | 0.0 | 1.5− | 2006 09 22 | 704 | 1.4+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.5+ |
| 2005 04 04 | 703 | (2.2− | 0.4−) | 2006 09 22 | 704 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2005 04 04 | 703 | 0.6+ | 0.0 | 2006 09 25 | 699 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.2+ | 0.2− |
| 2005 04 04 | 703 | 1.1− | 0.3+ | 2006 09 25 | 699 | 0.5+ | 0.4− | 2006 11 07 | 644 | 0.3+ | 0.1− |
| 2005 04 05 | 699 | 0.9+ | 0.7+ | 2006 09 25 | 699 | 0.8+ | 0.3− | 2006 11 10 | 704 | 0.6− | 1.2+ |
| 2005 04 05 | 699 | 0.0 | 1.3+ | 2006 09 25 | 699 | 0.4+ | 0.5+ | 2006 11 10 | 704 | 1.1− | 0.4+ |
| 2005 04 05 | 699 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.6− | 2006 11 10 | 704 | 1.3− | 0.7+ |
| 2005 04 05 | 699 | 0.2− | 1.2+ | 2006 09 26 | 704 | 0.5+ | 0.1+ | 2006 11 16 | 703 | 0.3− | 0.5− |
| 2006 07 22 | G96 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 11 16 | 703 | 0.6− | 0.4− |
| 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.0 | 2006 11 16 | 703 | 1.2− | 1.3− |
| 2006 07 22 | G96 | 0.1− | 0.2− | 2006 09 26 | 704 | (1.8+ | 0.1−) | 2006 11 16 | 703 | 0.1+ | 0.3− |
| 2006 07 22 | G96 | 0.6− | 0.1− | 2006 09 26 | 703 | 0.4− | 0.2+ | | | | |

**2006 RF$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.53672 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27120460 | $\omega$ | 264.57728 | | +0.54939519 | +0.83346054 | |
| $a$ | 2.3637671 | $\Omega$ | 38.93942 | | −0.72444529 | +0.51045818 | |
| $e$ | 0.3087794 | $i$ | 5.40780 | | −0.41634594 | +0.21160334 | |
| $P$ | 3.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 09 | 691 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2005 04 09 | 691 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.8+ | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2005 04 09 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | (0.0 | 1.6+) | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2005 04 15 | 691 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.7+ | 1.1+ | 2006 10 28 | 704 | 0.1+ | 0.1+ |
| 2005 04 15 | 691 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.3+ | 1.3+ | 2006 10 28 | 704 | 0.0 | 0.4− |
| 2005 04 15 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.6+ | 0.4− |
| 2006 09 15 | 644 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.4+ | 0.0 |
| 2006 09 15 | 644 | 0.3− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.5− | 0.1− |
| 2006 09 15 | 644 | 0.2− | 0.4− | 2006 09 28 | 704 | 0.6− | 0.4+ | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 2006 09 16 | 699 | 0.2+ | 0.4+ | 2006 09 28 | 704 | 0.6+ | 0.6+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2006 09 16 | 699 | 0.2+ | 0.1− | 2006 09 28 | 704 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2006 09 16 | 699 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.7− | 2006 11 11 | 703 | 0.5− | 1.2+ |
| 2006 09 16 | 699 | 0.4+ | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2006 09 17 | 704 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 2006 09 17 | 704 | 0.1+ | 1.0+ | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2006 09 17 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.2− |
| 2006 09 17 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 17 | 703 | 1.0− | 1.3+ |
| 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.7− | 2006 11 17 | 703 | 0.0 | 1.2+ |
| 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.6− | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.4− | 2006 11 18 | 704 | (0.5+ | 1.5+) |
| 2006 09 20 | 699 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.2+ |
| 2006 09 20 | 704 | 0.4− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2006 09 20 | 704 | 0.5− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2006 09 20 | 699 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2006 09 20 | 699 | (1.8+ | 0.2−) | 2006 10 23 | 691 | 1.2− | 0.9− | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2006 09 20 | 699 | 0.7+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2006 09 20 | 644 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 23 | 704 | 0.5+ | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 23 | 704 | 0.6+ | 0.2− | 2006 11 21 | 704 | (0.3+ | 1.8+) |
| 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.4− | 0.9− | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.1+ | 1.3+ | 2006 11 21 | 704 | 0.4− | 0.8+ |

**2006 RH$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.56328 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22987845 | $\omega$ | 210.17954 | | +0.91765690 | −0.39638637 | |
| $a$ | 2.6391893 | $\Omega$ | 172.99730 | | +0.39477794 | +0.90135879 | |
| $e$ | 0.2738298 | $i$ | 13.27443 | | +0.04534513 | +0.17444248 | |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 25 | 691 | 0.1+ | 0.1− | 2006 09 16 | 704 | (1.7+ | 0.5−) | 2006 10 01 | 704 | 0.3+ | 0.1+ |
| 1995 02 25 | 691 | 0.5+ | 0.6+ | 2006 09 16 | 704 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.4+ |
| 1995 02 25 | 691 | 0.1+ | 0.0 | 2006 09 16 | 704 | 1.0+ | 0.1+ | 2006 10 01 | 704 | 0.3+ | 0.6+ |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2006 09 16 | 704 | 0.4+ | 1.5− | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.0 | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2003 01 02 | 704 | 0.5− | 0.1+ | 2006 09 16 | 699 | 0.1+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2003 01 02 | 704 | 0.7− | 0.1− | 2006 09 16 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2003 01 02 | 704 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2003 01 02 | 704 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2003 01 02 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2004 04 16 | 691 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.1+ |
| 2004 04 16 | 691 | 0.5+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2004 04 16 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.2− | 0.3+ | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.9+ | 0.6− | 2006 10 28 | 703 | 0.2+ | 0.2+ |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 704 | 0.3− | 0.8− | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 09 19 | 704 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.3− | 0.0 |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 29 | 699 | (2.9− | 0.6+) | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2006 08 31 | 704 | 0.2− | 1.0+ | 2006 09 29 | 699 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.4− | 0.5− |
| 2006 08 31 | 704 | 1.0+ | 0.5+ | 2006 09 29 | 699 | 0.3− | 0.5+ | 2006 11 08 | 644 | 0.4− | 0.6− |
| 2006 08 31 | 704 | 0.4+ | 1.1+ | 2006 09 29 | 699 | 0.7− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.1+ |
| 2006 08 31 | 704 | 0.0 | 0.4− | 2006 10 01 | H51 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.4− | 0.1− |
| 2006 09 15 | 644 | 0.2− | 0.1+ | 2006 10 01 | H51 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2006 09 15 | 644 | 0.1+ | 0.2+ | 2006 10 01 | H51 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.5− | 0.1− |
| 2006 09 15 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.5+ | | | | |
| 2006 09 16 | 704 | 1.5+ | 0.5− | 2006 10 01 | 704 | 0.1+ | 0.3+ | | | | |

**2006 RK$_{22}$ = 1995 YJ$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.23561 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26363340 | $\omega$ | 122.11586 | | +0.97199646 | −0.12032146 | |
| $a$ | 2.4088093 | $\Omega$ | 245.49100 | | +0.05474332 | +0.95127979 | |
| $e$ | 0.2778495 | $i$ | 12.81739 | | +0.22853019 | +0.28388293 | |
| $P$ | 3.74 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.3− | 0.3− | 2006 09 14 | H06 | 0.5+ | 0.8+ | 2006 09 21 | 699 | 1.1− | 0.3− |
| 1995 12 18 | 691 | 0.0 | 0.1+ | 2006 09 14 | H06 | 1.1+ | 0.7+ | 2006 09 28 | 703 | 0.5+ | 0.3+ |
| 1995 12 18 | 691 | 0.1− | 0.2+ | 2006 09 16 | H06 | 0.7+ | 0.3− | 2006 09 28 | 703 | 0.0 | 0.5− |
| 1995 12 28 | 691 | 0.2+ | 0.1+ | 2006 09 16 | H06 | 0.1+ | 0.9− | 2006 09 28 | 703 | 0.6− | 0.1− |
| 1995 12 28 | 691 | 0.1+ | 0.0 | 2006 09 16 | H06 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.1+ |
| 1995 12 28 | 691 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.0 | 0.1− | 2006 10 23 | 703 | 0.4+ | 0.6− |
| 2006 08 29 | 699 | 0.5+ | 0.2− | 2006 09 20 | 703 | 0.4+ | 0.6− | 2006 10 23 | 703 | 0.2+ | 0.2+ |
| 2006 08 29 | 699 | 0.4− | 0.1− | 2006 09 20 | 703 | 0.4− | 0.4− | 2006 10 23 | 703 | 0.5− | 0.0 |
| 2006 08 29 | 699 | 0.2− | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.1− | 2006 10 23 | 703 | 0.4+ | 0.1− |
| 2006 08 29 | 699 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 0.0 | 0.3+ | 2006 10 26 | 703 | 0.8− | 0.8− |
| 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 21 | H06 | 0.6+ | 0.0 | 2006 10 26 | 703 | 0.8− | 0.5+ |
| 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 21 | H06 | 0.7− | 0.7+ | 2006 10 26 | 703 | 0.4+ | 0.1− |
| 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.2− | 0.4+ | 2006 10 26 | 703 | 1.0+ | 0.5− |
| 2006 09 14 | H06 | 0.3+ | 0.3+ | 2006 09 21 | 699 | 1.0− | 0.3− | | | | |

**2006 RL$_{22}$ = 2005 EE$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.28841 | | (2000.0) | | +0.91982426 | +0.39192697 |
| $n$ | 0.28743874 | $\omega$ | 357.65599 | | −0.35913468 | +0.82287204 |
| $a$ | 2.2739061 | $\Omega$ | 339.24174 | | −0.15794184 | +0.41143026 |
| $e$ | 0.1688127 | $i$ | 2.87758 | | | |
| $P$ | 3.43 | $H$ | 17.2 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 09 16 | 644 | 0.3− | 0.3+ | 2006 09 29 | 704 | 0.6+ | 0.3+ |
| 2005 03 11 | G96 | (2.1− | 0.7−) | 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 704 | (0.5− | 2.4+) |
| 2005 03 11 | G96 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.5− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.2− |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 09 29 | 704 | 1.3+ | 0.4− |
| 2005 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 09 29 | 704 | 1.3+ | 0.9+ |
| 2005 03 17 | 691 | 0.6+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 29 | A41 | 0.4− | 0.3− |
| 2005 03 17 | 691 | 0.3+ | 0.4+ | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 09 30 | A41 | 0.2+ | 0.4− |
| 2005 05 12 | G96 | 0.2− | 0.2+ | 2006 09 17 | 703 | 0.5− | 0.3− | 2006 10 01 | 704 | 1.3+ | 0.2− |
| 2005 05 12 | G96 | 0.5− | 0.3− | 2006 09 18 | 704 | 0.6+ | 0.6− | 2006 10 01 | 704 | 0.7+ | 1.1+ |
| 2005 05 12 | G96 | 1.0− | 0.3− | 2006 09 18 | 704 | 0.3+ | 0.3− | 2006 10 01 | 704 | 0.4+ | 0.4+ |
| 2005 05 12 | G96 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.5+ | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.3+ |
| 2006 07 21 | G96 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.6− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.0 | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.7− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2006 08 17 | 644 | 0.3+ | 0.2+ | 2006 09 21 | A50 | 0.2− | 0.7− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2006 08 17 | 644 | 0.1− | 0.1− | 2006 09 21 | A50 | 0.0 | 0.5− | 2006 10 17 | 703 | 0.7− | 0.0 |
| 2006 08 17 | 644 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.8+ | 0.7+ |
| 2006 09 06 | 644 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 1.1− | 0.8− |
| 2006 09 06 | 644 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.4+ |
| 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 09 27 | 699 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2006 09 15 | H07 | 0.4− | 0.3− | 2006 09 27 | 699 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2006 09 15 | H07 | 0.1+ | 0.6− | 2006 09 27 | 704 | 0.6+ | 1.3+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2006 09 15 | H07 | 0.3− | 0.2− | 2006 09 27 | 704 | 1.0− | 1.0+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2006 09 15 | H07 | (0.9− | 1.8−) | 2006 09 27 | 704 | 0.4− | 0.5+ | 2006 11 20 | G96 | 0.1− | 0.3+ |
| 2006 09 16 | H07 | 0.0 | 0.3− | 2006 09 27 | 699 | 0.7+ | 0.2− | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2006 09 16 | H07 | 0.7− | 0.1+ | 2006 09 27 | 704 | 0.7− | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2006 09 16 | H07 | 0.2− | 0.4− | 2006 09 27 | 704 | 0.8− | 0.3− | 2006 11 20 | G96 | 0.2− | 0.3− |

**2006 RM$_{22}$ = 2001 VR$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.47717 | | (2000.0) | | +0.94716172 | +0.28003045 |
| $n$ | 0.17877131 | $\omega$ | 98.29270 | | −0.31717521 | +0.89033838 |
| $a$ | 3.1208351 | $\Omega$ | 245.56179 | | +0.04779715 | +0.35899932 |
| $e$ | 0.2511967 | $i$ | 9.89334 | | | |
| $P$ | 5.51 | $H$ | 16.1 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.4− | 0.4+ | 2002 01 13 | 291 | 0.1+ | 0.2+ | 2006 09 17 | G92 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.1− | 0.2− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 17 | G92 | 0.0 | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.7− | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 17 | G92 | 0.2− | 0.5+ |
| 2001 11 19 | 704 | 0.2+ | 0.4+ | 2006 09 11 | 703 | 0.3+ | 1.1− | 2006 09 18 | G92 | 0.5+ | 0.7+ |
| 2001 11 19 | 704 | 0.2− | 0.5− | 2006 09 11 | 703 | 0.6− | 1.4− | 2006 09 18 | G92 | 0.8− | 0.4+ |
| 2001 11 19 | 704 | 0.2− | 0.1− | 2006 09 11 | 703 | (0.7− | 2.3−) | 2006 09 18 | G92 | 0.4− | 0.4− |
| 2001 11 19 | 704 | 0.2− | 0.9− | 2006 09 11 | 703 | (2.0− | 1.7−) | 2006 09 20 | 699 | 0.0 | 0.0 |
| 2001 11 19 | 704 | 0.5− | 0.4− | 2006 09 16 | G92 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.6+ | 0.1− |
| 2002 01 13 | 291 | 0.0 | 0.1+ | 2006 09 16 | G92 | 0.3+ | 0.5+ | 2006 09 20 | 699 | 0.3+ | 0.6− |
| 2002 01 13 | 291 | 0.2+ | 0.2+ | 2006 09 16 | G92 | 0.0 | 1.0+ | 2006 09 20 | 699 | 0.2− | 0.0 |

**2006 RR$_{22}$ = 1991 VB$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.24434 | | (2000.0) | | +0.93763047 | −0.34286233 |
| $n$ | 0.25880493 | $\omega$ | 291.11272 | | +0.33644261 | +0.85343532 |
| $a$ | 2.4386774 | $\Omega$ | 88.97487 | | +0.08749554 | +0.39254756 |
| $e$ | 0.2113560 | $i$ | 3.29100 | | | |
| $P$ | 3.81 | $H$ | 18.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.0 | 0.1+ | 2006 09 15 | 734 | 0.2+ | 0.5+ | 2006 09 18 | 734 | 0.9+ | 0.6− |
| 1991 11 08 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 734 | 0.1− | 0.5+ | 2006 09 19 | 734 | 0.2− | 0.1+ |
| 1991 11 08 | 691 | 0.6− | 0.2− | 2006 09 15 | 734 | 0.3+ | 0.0 | 2006 09 19 | 734 | 0.5+ | 1.4− |
| 1991 11 09 | 691 | 0.2+ | 0.3− | 2006 09 15 | 734 | (1.9− | 1.0−) | 2006 09 19 | 734 | 0.0 | 0.1− |
| 1991 11 09 | 691 | 0.2− | 0.4− | 2006 09 18 | 734 | 0.2− | 0.1− | 2006 09 19 | 734 | 0.1+ | 0.0 |
| 1991 11 09 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 734 | 0.1− | 0.2+ | 2006 09 25 | 734 | 0.2+ | 0.2+ |
| 2000 01 05 | 691 | 0.0 | 0.3+ | 2006 09 18 | 734 | 0.3− | 0.4− | 2006 09 25 | 734 | 0.0 | 0.2+ |
| 2000 01 05 | 691 | 0.0 | 0.5− | 2006 09 18 | 734 | 0.9− | 0.0 | 2006 09 25 | 734 | 0.2− | 0.5+ |
| 2000 01 05 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 734 | 0.3+ | 0.0 | | | | |
| 2006 09 15 | 734 | 0.2− | 0.1+ | 2006 09 18 | 734 | 0.4− | 0.4+ | | | | |

**2006 RU$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.21749 | | (2000.0) | | +0.32373498 | −0.94417903 |
| $n$ | 0.21479913 | $\omega$ | 87.16546 | | +0.75979425 | +0.29785475 |
| $a$ | 2.7613049 | $\Omega$ | 343.54311 | | +0.56383363 | +0.14074269 |
| $e$ | 0.1385629 | $i$ | 12.43559 | | | |
| $P$ | 4.59 | $H$ | 16.3 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.6+ | 0.6+ | 2006 09 16 | 703 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.1− | 0.1+ |
| 2001 07 25 | 608 | 0.1+ | 1.0+ | 2006 09 16 | 644 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.0 | 0.0 |
| 2001 07 25 | 608 | 0.4+ | 0.4+ | 2006 09 16 | 644 | 0.5− | 0.1− | 2006 09 27 | 683 | 0.2− | 0.7+ |
| 2001 08 15 | 608 | 0.7− | 1.2− | 2006 09 16 | 644 | 0.2− | 0.1− | 2006 09 27 | 703 | 0.5− | 0.6− |
| 2001 08 15 | 608 | 0.1− | 0.6− | 2006 09 18 | 683 | 0.8− | 0.1− | 2006 09 27 | 683 | 0.4+ | 0.7− |
| 2001 08 15 | 608 | 0.2− | 0.2− | 2006 09 18 | 683 | (0.1− | 1.8+) | 2006 09 28 | 683 | 0.1+ | 0.3− |
| 2002 12 07 | 704 | 0.3− | 0.2+ | 2006 09 18 | 683 | (2.0− | 2.6+) | 2006 09 28 | 683 | 0.8+ | 0.0 |
| 2002 12 07 | 704 | 0.0 | 0.5+ | 2006 09 19 | 683 | 0.2− | 0.5− | 2006 09 28 | 683 | 0.4− | 0.9+ |
| 2002 12 07 | 704 | 0.2+ | 0.7− | 2006 09 19 | 683 | 0.7− | 0.7+ | 2006 09 30 | 683 | 0.4+ | 0.7− |
| 2002 12 07 | 704 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.8+ | 0.3− | 2006 09 30 | 683 | 0.9− | 0.3− |
| 2002 12 28 | 704 | 0.1+ | 0.5− | 2006 09 19 | 683 | 0.4− | 1.2+ | 2006 09 30 | 683 | 0.7+ | 0.2− |
| 2002 12 28 | 704 | 0.0 | 0.2+ | 2006 09 19 | 699 | 1.2+ | 1.0+ | 2006 10 03 | 704 | (2.2+ | 0.7+) |
| 2002 12 28 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.4+ | 0.6+ |
| 2006 08 29 | 703 | 0.3+ | 0.1+ | 2006 09 21 | 683 | 0.0 | 0.6+ | 2006 10 03 | 704 | (0.0 | 1.7−) |
| 2006 08 29 | 703 | 0.3− | 0.9− | 2006 09 21 | 683 | 1.3− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2006 08 29 | 703 | 0.4− | 0.3− | 2006 09 21 | 683 | (0.4+ | 1.9+) | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2006 08 29 | 703 | (2.1− | 0.5−) | 2006 09 22 | 683 | 0.5− | 1.4− | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2006 08 29 | 699 | 1.0− | 0.2+ | 2006 09 22 | 683 | 1.2+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2006 08 29 | 699 | 0.3− | 0.5− | 2006 09 22 | 683 | (1.7+ | 0.5+) | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2006 08 29 | 699 | 0.5− | 0.5− | 2006 09 25 | 291 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2006 08 29 | 699 | 0.9− | 0.1+ | 2006 09 25 | 291 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2006 09 15 | 683 | 0.4+ | 0.7− | 2006 09 25 | 291 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2006 09 15 | 683 | 0.8+ | 1.0+ | 2006 09 25 | 683 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2006 09 15 | 683 | (0.7− | 2.0+) | 2006 09 25 | 683 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 09 16 | 683 | 0.6+ | 0.6− | 2006 09 25 | 683 | 0.2+ | 1.4+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 09 16 | 703 | (0.3− | 1.6−) | 2006 09 26 | 683 | 0.7− | 0.4− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2006 09 16 | 683 | 0.8+ | 0.3− | 2006 09 26 | 683 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2006 09 16 | 703 | 0.4− | 1.0+ | 2006 09 26 | 683 | (0.3+ | 1.5+) | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2006 09 16 | 703 | 0.5− | 0.5− | 2006 09 27 | 683 | 0.3+ | 0.9− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2006 09 16 | 683 | 0.0 | 0.7+ | 2006 09 27 | 703 | 0.4+ | 0.4− | | | | |

**2006 RV$_{22}$ = 2005 GX$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.02383 | | | (2000.0) | | |
| $n$ | 0.29556379 | $\omega$ | 155.94422 | | +0.94838117 | −0.31133636 |
| $a$ | 2.2320396 | $\Omega$ | 222.34480 | | +0.27449876 | +0.90119180 |
| $e$ | 0.1978607 | $i$ | 5.14078 | | +0.15881937 | +0.30153443 |
| $P$ | 3.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.6− |
| 2005 04 12 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.6+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2005 04 15 | 691 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.2+ | 2006 10 29 | 704 | 0.6− | 0.6+ |
| 2005 04 15 | 691 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.0 | 2006 10 29 | 704 | (1.0− | 2.0+) |
| 2006 09 15 | 683 | 0.3+ | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.2− | 2006 10 29 | 704 | 0.1− | 0.5+ |
| 2006 09 15 | 683 | 0.0 | 1.2+ | 2006 09 29 | 704 | 0.2+ | 0.2− | 2006 10 29 | 704 | 0.6+ | 0.9+ |
| 2006 09 15 | 683 | 0.2− | 1.1+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 29 | 704 | 0.3+ | 0.7+ |
| 2006 09 16 | 683 | 0.7+ | 0.7+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2006 09 16 | 703 | (0.4− | 1.7−) | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2006 09 16 | 683 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2006 09 16 | 703 | (0.5− | 1.6−) | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2006 09 16 | 703 | 0.7− | 0.5− | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2006 09 16 | 683 | 0.6+ | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2006 09 16 | 644 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2006 09 16 | 644 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 09 16 | 644 | 0.3− | 0.3− | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 09 18 | 704 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2006 09 18 | 704 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.8− | 0.3− |
| 2006 09 18 | 704 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.0 |
| 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2006 09 18 | 704 | 0.5+ | 0.6− | 2006 10 17 | 703 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.7+ | 0.2+ |
| 2006 09 19 | 699 | 0.9+ | 1.1− | 2006 10 20 | 644 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.8+ |
| 2006 09 19 | 699 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.0 | 1.2+ |
| 2006 09 19 | 699 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.4+ |
| 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3− |
| 2006 09 21 | 704 | 1.1− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 21 | 704 | (0.8− | 1.7+) |
| 2006 09 21 | 704 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2006 09 21 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.1+ | 2006 11 21 | 704 | (0.0 | 1.9+) |
| 2006 09 25 | 704 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.0 | | | | |
| 2006 09 25 | 704 | 0.6+ | 0.4− | 2006 10 21 | 644 | 0.3− | 0.0 | | | | |

**2006 RW$_{22}$ = 2001 PL$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.17085 | | | (2000.0) | | |
| $n$ | 0.21537846 | $\omega$ | 4.87129 | | +0.76175910 | −0.63446968 |
| $a$ | 2.7563511 | $\Omega$ | 35.62121 | | +0.58654200 | +0.58951186 |
| $e$ | 0.2005407 | $i$ | 13.00227 | | +0.27512100 | +0.49992399 |
| $P$ | 4.58 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 26 | 704 | 0.1+ | 0.3+ | 2006 10 03 | 704 | (1.7+ | 0.2−) | 2006 11 13 | 644 | 0.1− | 0.2− |
| 1997 11 26 | 704 | 0.2+ | 0.3− | 2006 10 03 | 704 | 1.1+ | 1.5+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 1997 11 26 | 704 | 0.2+ | 1.0− | 2006 10 03 | 704 | 0.3− | 0.7+ | 2006 11 15 | 198 | 0.2− | 0.1+ |
| 2001 08 11 | 644 | 0.5− | 0.4+ | 2006 10 03 | 704 | 1.2− | 1.0− | 2006 11 15 | 198 | 0.4− | 0.0 |
| 2001 08 11 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 15 | 198 | 0.1− | 0.0 |
| 2001 08 11 | 644 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 15 | 198 | 0.2− | 0.1− |
| 2001 08 17 | 644 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 15 | 198 | 0.0 | 0.1− |
| 2001 08 17 | 644 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2001 08 17 | 644 | 0.2− | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.8+ |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.1− | 1.2+ |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.6− | 0.3+ |
| 2003 01 05 | 699 | 1.2+ | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.7− | 2006 11 16 | 704 | 1.3+ | 0.8+ |
| 2003 01 05 | 699 | 0.5+ | 1.2+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.4+ |
| 2003 01 05 | 699 | 0.7+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2003 01 05 | 699 | 0.0 | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2003 01 13 | 704 | 0.3+ | 0.7+ | 2006 10 20 | 691 | 0.4+ | 0.1− | 2006 11 18 | 704 | (2.4+ | 1.5+) |
| 2003 01 13 | 704 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 18 | 704 | (0.4+ | 2.0+) |
| 2003 01 13 | 704 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2006 09 15 | 683 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2006 09 15 | 683 | (1.9+ | 0.2+) | 2006 10 26 | 704 | 0.7− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2006 09 15 | 683 | (1.5− | 0.9+) | 2006 10 26 | 704 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2006 09 16 | 683 | 0.6+ | 0.0 | 2006 10 26 | 704 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2006 09 16 | 683 | 0.5+ | 0.3+ | 2006 10 28 | 704 | 0.7− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2006 09 16 | 683 | 0.4+ | 0.5+ | 2006 10 28 | 704 | 0.9− | 0.2− | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2006 09 17 | 683 | 1.0+ | 0.4− | 2006 10 28 | 704 | 1.1− | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2006 09 17 | 683 | (1.9+ | 0.9+) | 2006 10 28 | 704 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2006 09 17 | 683 | 0.6+ | 1.0+ | 2006 10 28 | 704 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 26 | 104 | 0.5− | 0.3− |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 26 | 104 | 0.1− | 0.1+ |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 26 | 104 | 0.1− | 0.0 |
| 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.4+ | 0.4+ |
| 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 11 11 | 703 | (1.7− | 3.1−) | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.4+ | 0.7+ |
| 2006 09 30 | 703 | 0.4− | 1.0− | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.5+ |
| 2006 09 30 | 703 | 1.0+ | 0.5− | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.5+ |

**2006 RA$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.51364 | | | (2000.0) | | |
| $n$ | 0.27740723 | $\omega$ | 242.05505 | | +0.96481043 | +0.23387335 |
| $a$ | 2.3283997 | $\Omega$ | 104.21310 | | −0.17575996 | +0.91355407 |
| $e$ | 0.2485259 | $i$ | 7.12178 | | −0.19557422 | +0.33274948 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 08 | 704 | 0.4− | 0.7− | 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 1999 10 08 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 699 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 1999 10 08 | 704 | 0.4+ | 0.2− | 2006 09 17 | 699 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 1999 10 08 | 704 | 0.3+ | 0.2− | 2006 09 17 | 699 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 1999 10 08 | 704 | 0.3− | 0.4+ | 2006 09 17 | 699 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2003 12 29 | 691 | 0.1+ | 0.1− | 2006 09 20 | 703 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2003 12 29 | 691 | 0.2− | 0.6+ | 2006 09 20 | 703 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.5+ | 0.2+ |
| 2003 12 29 | 691 | 0.0 | 0.2− | 2006 09 20 | 703 | 0.2+ | 0.6+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2006 07 31 | E12 | 0.8− | 0.0 | 2006 09 20 | 703 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2006 07 31 | E12 | 0.9− | 0.1− | 2006 09 26 | 703 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 07 31 | E12 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.5+ |
| 2006 07 31 | E12 | 0.6− | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.0 |
| 2006 09 12 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.1+ | 0.1+ | 2006 11 19 | 703 | 1.4+ | 0.7− |
| 2006 09 12 | 704 | 0.6+ | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 1.3+ | 0.9− |
| 2006 09 12 | 704 | 1.5+ | 0.2+ | 2006 10 09 | 644 | 0.2− | 0.0 | 2006 11 23 | 703 | 1.5− | 1.6+ |
| 2006 09 12 | 704 | 0.7− | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.1− | 2006 11 23 | 703 | 1.4− | 0.0 |
| 2006 09 14 | 644 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.1− | 2006 11 23 | 703 | 0.1− | 0.5+ |
| 2006 09 14 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 23 | 703 | 1.5− | 1.3− |

**2006 RB$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.42576 | | | (2000.0) | | |
| $n$ | 0.23321589 | $\omega$ | 235.99891 | | +0.97678036 | −0.12876004 |
| $a$ | 2.6139501 | $\Omega$ | 130.76587 | | +0.16976953 | +0.95271083 |
| $e$ | 0.2409613 | $i$ | 13.06673 | | −0.13068449 | +0.27525066 |
| $P$ | 4.23 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 704 | 0.1+ | 0.4+ | 2003 01 02 | 704 | (0.4− | 1.8+) | 2006 09 26 | 703 | 0.2+ | 0.1− |
| 2002 10 30 | 704 | 0.2− | 0.1− | 2006 07 31 | E12 | 0.3+ | 0.7− | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2002 10 30 | 704 | 0.1− | 0.7− | 2006 07 31 | E12 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.6+ | 0.5− |
| 2002 10 30 | 704 | 0.4+ | 0.2+ | 2006 07 31 | E12 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2− |
| 2002 10 30 | 704 | 0.4+ | 0.1+ | 2006 07 31 | E12 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2002 11 06 | 644 | 0.3− | 0.2+ | 2006 08 10 | 644 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2002 11 06 | 644 | 0.1− | 0.3+ | 2006 08 10 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 644 | 0.1− | 0.1+ | 2006 08 10 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 11 16 | 699 | 0.6+ | 0.1− | 2006 09 12 | 704 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 11 16 | 644 | 0.1− | 0.7− | 2006 09 12 | 704 | 0.9− | 0.1+ | 2006 10 12 | E12 | 0.2+ | 0.0 |
| 2002 11 16 | 699 | 0.7− | 0.4+ | 2006 09 12 | 704 | 0.4− | 0.0 | 2006 10 12 | E12 | 0.7+ | 0.3+ |
| 2002 11 16 | 699 | 1.2− | 0.3+ | 2006 09 12 | 704 | 0.2+ | 0.5+ | 2006 10 12 | E12 | 0.6+ | 0.1− |
| 2002 11 16 | 644 | 0.1+ | 0.7− | 2006 09 12 | 704 | 0.3+ | 0.1− | 2006 10 12 | E12 | (1.1− | 2.2+) |
| 2002 11 16 | 699 | 0.3+ | 1.3+ | 2006 09 17 | 699 | 0.2+ | 0.1+ | 2006 11 09 | E12 | 0.2− | 0.8− |
| 2002 11 16 | 644 | 0.0 | 0.7− | 2006 09 17 | 699 | 0.1+ | 0.2+ | 2006 11 09 | E12 | 1.0+ | 1.0− |
| 2002 11 30 | 704 | 0.2− | 0.1+ | 2006 09 17 | 699 | 0.0 | 0.6+ | 2006 11 09 | E12 | 0.2+ | 0.3− |
| 2002 11 30 | 704 | 0.3− | 0.4+ | 2006 09 17 | 699 | 0.0 | 0.2− | 2006 11 09 | E12 | 0.8+ | 0.6− |
| 2002 11 30 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 703 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.6− | 0.0 |
| 2002 11 30 | 704 | 0.3− | 0.3+ | 2006 09 20 | 703 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.3+ |
| 2003 01 02 | 704 | 0.6+ | 0.5− | 2006 09 20 | 703 | 0.6− | 0.3+ | 2006 11 27 | 703 | 0.8− | 1.6+ |
| 2003 01 02 | 704 | 0.3+ | 1.1− | 2006 09 20 | 703 | 0.4− | 0.2+ | 2006 11 27 | 703 | 0.3− | 0.0 |
| 2003 01 02 | 704 | 0.6+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.2− | | | | |

**2006 RC$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.11235 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29702891 | $\omega$ | 184.32917 | | +0.99995614 | | +0.00691783 |
| $a$ | 2.2246937 | $\Omega$ | 175.26067 | | −0.00447540 | | +0.94510055 |
| $e$ | 0.1856871 | $i$ | 4.38225 | | −0.00822701 | | +0.32670644 |
| $P$ | 3.32 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 16 | 691 | 0.6− | 0.1+ | 2006 09 12 | 703 | 0.7− | 0.9− | 2006 09 20 | 704 | 0.9− | 0.4+ |
| 2003 12 16 | 691 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.6− | 0.7− | 2006 09 20 | 704 | 0.5− | 0.1− |
| 2003 12 16 | 691 | 0.2+ | 0.0 | 2006 09 12 | 703 | 0.4− | 0.2− | 2006 09 25 | 699 | 0.2− | 0.0 |
| 2003 12 28 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.9− | 0.0 |
| 2003 12 28 | 691 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.0 | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.5− |
| 2003 12 28 | 691 | 0.1+ | 0.0 | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.3− | 0.4− |
| 2005 04 12 | 695 | 0.0 | 0.5+ | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.3− | 0.4− |
| 2005 04 12 | 695 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.5+ | 1.4+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.1+ | 1.1+ | 2006 09 25 | 699 | 0.0 | 1.1+ |
| 2006 08 28 | 703 | 0.4+ | 0.8− | 2006 09 17 | 704 | 1.3+ | 0.1− | 2006 09 25 | 699 | 0.0 | 0.0 |
| 2006 08 28 | 703 | 0.1+ | 0.3− | 2006 09 17 | 704 | (1.7+ | 1.5+) | 2006 09 27 | 704 | 0.1+ | 1.1+ |
| 2006 08 28 | 703 | 0.7+ | 1.0− | 2006 09 17 | 704 | (1.5+ | 1.8+) | 2006 09 27 | 704 | 0.3+ | 1.2+ |
| 2006 09 03 | 152 | 0.2+ | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.3+ | 2006 09 27 | 704 | (0.9− | 1.7+) |
| 2006 09 03 | 152 | 1.2+ | 1.2− | 2006 09 19 | 703 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2006 09 03 | 152 | 0.5− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2006 09 03 | 152 | 0.8− | 0.4− | 2006 09 19 | 703 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2006 09 03 | 152 | 0.9+ | 0.5− | 2006 09 20 | 704 | 1.0+ | 0.1− | 2006 11 17 | G96 | 0.6+ | 0.2− |
| 2006 09 03 | 152 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.7− | 0.1− | | | | |

**2006 RE$_{23}$ = 2004 FG$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.57442 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20564396 | $\omega$ | 40.28297 | | +0.80514360 | | −0.59299812 |
| $a$ | 2.8426632 | $\Omega$ | 356.04869 | | +0.50073262 | | +0.68858205 |
| $e$ | 0.1244256 | $i$ | 8.21765 | | +0.31782170 | | +0.41738230 |
| $P$ | 4.79 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 608 | 0.6− | 0.2+ | 2006 09 12 | 703 | 0.6+ | 0.0 | 2006 09 22 | D35 | 0.0 | 0.3+ |
| 2001 08 24 | 608 | 0.8− | 0.2+ | 2006 09 12 | 703 | 0.8− | 1.3− | 2006 09 22 | D35 | 0.2+ | 0.0 |
| 2001 08 24 | 608 | 0.5− | 0.4− | 2006 09 16 | 699 | 0.5− | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 2001 08 25 | 704 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.3− | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.6+ | 0.1+ | 2006 09 16 | 699 | 0.4− | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 704 | 0.9+ | 0.1+ | 2006 09 16 | 699 | (1.2− | 1.5+) | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2002 12 15 | 704 | (0.8+ | 2.3+) | 2006 09 17 | 704 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2002 12 15 | 704 | (0.1− | 1.9+) | 2006 09 17 | 704 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2002 12 15 | 704 | 0.0 | 1.8+ | 2006 09 17 | 704 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2002 12 15 | 704 | 0.2+ | 1.2+ | 2006 09 17 | 704 | 0.7− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 704 | 0.4+ | 1.0+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 1.1− | 0.8+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2004 03 17 | 691 | 0.4+ | 0.5+ | 2006 09 18 | 704 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2004 03 26 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.9− | 0.0 |
| 2004 03 26 | 691 | 0.3+ | 0.5+ | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2004 03 26 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 1.4+ | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2004 04 22 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.9− | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2004 04 22 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.7− |
| 2004 04 22 | 691 | 0.5− | 0.2+ | 2006 09 19 | 703 | 1.1− | 1.2+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2006 08 22 | 644 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.8+ | 1.3+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2006 08 22 | 644 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.7+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 08 22 | 644 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 12 | 703 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2006 09 12 | 703 | 0.6− | 0.4− | 2006 09 22 | D35 | 0.3+ | 0.3+ | | | | |

**2006 RJ$_{23}$ = 2005 LJ$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.27804 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28426455 | $\omega$ | 256.05308 | | −0.02562971 | | −0.99937025 |
| $a$ | 2.2908022 | $\Omega$ | 195.47845 | | +0.94901726 | | −0.01660861 |
| $e$ | 0.1254068 | $i$ | 5.27599 | | +0.31418045 | | −0.03135688 |
| $P$ | 3.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.0 | 0.3− | 2006 09 19 | 703 | 1.1− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2005 06 08 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2005 06 08 | 691 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2005 06 14 | 691 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.4− | 0.4− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2005 06 14 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.4+ | 0.2+ |
| 2005 06 14 | 691 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.5− |
| 2006 09 12 | 703 | 0.6+ | 1.3− | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.8− | 0.5+ |
| 2006 09 12 | 703 | 1.1+ | 0.7− | 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | (0.5+ | 2.0−) |
| 2006 09 12 | 703 | 0.4− | 0.1− | 2006 10 01 | 703 | (1.0+ | 1.6−) | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2006 09 12 | 703 | 0.1+ | 0.4− | 2006 10 01 | 703 | 0.5− | 0.1− | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2006 09 17 | 704 | 0.3+ | 0.1− | 2006 10 01 | 703 | 0.9+ | 0.6− | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2006 09 17 | 704 | 0.4− | 0.3− | 2006 10 01 | 703 | 0.7+ | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2006 09 17 | 704 | 0.4− | 0.0 | 2006 10 01 | 704 | 0.8− | 0.1− | 2006 10 24 | 644 | 0.2+ | 0.3+ |
| 2006 09 17 | 704 | 0.4− | 0.8− | 2006 10 01 | 704 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.1+ | 0.6+ |
| 2006 09 17 | 703 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.1− | 2006 10 24 | 644 | 0.3+ | 0.2+ |
| 2006 09 17 | 703 | 0.7− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2006 09 17 | 703 | 0.5− | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.6− |
| 2006 09 19 | 703 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.5+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2006 09 19 | 703 | 0.7+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2006 09 19 | 703 | 0.9+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | | | | |

**2006 RL$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.53444 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29043614 | $\omega$ | 46.08457 | | +0.70857124 | | −0.70563427 |
| $a$ | 2.2582340 | $\Omega$ | 358.78684 | | +0.60608831 | | +0.61053175 |
| $e$ | 0.1004757 | $i$ | 7.21372 | | +0.36136375 | | +0.35962655 |
| $P$ | 3.39 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 20 | 809 | 0.2− | 0.2− | 2006 09 22 | 184 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.9− | 0.7− |
| 2005 01 20 | 809 | 0.3− | 0.0 | 2006 09 22 | 184 | 0.2− | 0.3− | 2006 10 01 | 704 | 0.1− | 0.4− |
| 2005 01 20 | 809 | 0.2− | 0.0 | 2006 09 22 | 184 | 0.3+ | 0.2− | 2006 10 01 | 704 | 0.6− | 1.0− |
| 2005 05 16 | 644 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 2005 05 16 | 644 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2005 05 16 | 644 | 0.3+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2006 08 28 | 703 | 1.2− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2006 08 28 | 703 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 1.0− | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2006 08 28 | 703 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2006 09 12 | 703 | 0.4− | 0.6− | 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 10 14 | 958 | 0.3− | 0.3− |
| 2006 09 12 | 703 | 1.4− | 0.5− | 2006 09 27 | 704 | 0.7+ | 1.0+ | 2006 10 14 | 958 | 0.7+ | 0.6− |
| 2006 09 12 | 703 | 0.4+ | 1.1− | 2006 09 27 | 704 | 0.5− | 0.3− | 2006 10 14 | 958 | 0.2− | 0.1− |
| 2006 09 12 | 703 | 0.1− | 0.8− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2006 09 17 | 704 | 0.4+ | 0.4− | 2006 09 27 | 704 | 0.6+ | 0.2+ | 2006 10 17 | 703 | 0.8− | 1.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 17 | 704 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 1.1− | 0.1− |
| 2006 09 17 | 704 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.0 | 1.1+ | 2006 10 17 | 703 | 0.9− | 0.0 |
| 2006 09 17 | 704 | 0.1− | 0.9− | 2006 09 27 | 704 | 0.3+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2006 09 17 | 704 | 0.0 | 0.2− | 2006 09 28 | 699 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.3− |
| 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 09 28 | 699 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.4+ | 0.1− |
| 2006 09 18 | 699 | 0.1+ | 0.6− | 2006 09 28 | 699 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 0.3+ | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2006 09 18 | 699 | 0.2+ | 0.5+ | 2006 09 29 | 704 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.3+ | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 09 29 | 704 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2006 09 20 | 704 | 0.2+ | 1.1+ | 2006 09 30 | 608 | 1.0− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2006 09 20 | 704 | 0.9+ | 1.1+ | 2006 09 30 | 608 | 1.0− | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.3− |
| 2006 09 20 | 704 | 0.7+ | 0.2+ | 2006 09 30 | 608 | 0.7− | 0.3+ | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2006 09 21 | 184 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.9− | 0.3− | | | | |

### 2006 RO$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.56052 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28794132 | $\omega$ | 342.30432 | | +0.91809208 | | +0.39636146 |
| $a$ | 2.2712593 | $\Omega$ | 354.34341 | | −0.36100197 | | +0.83395004 |
| $e$ | 0.2632924 | $i$ | 1.23598 | | −0.16365974 | | +0.38395953 |
| $P$ | 3.42 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.8− | 0.7+ | 2006 09 19 | 699 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.2− | 0.2+ |
| 2005 03 09 | G96 | 0.5− | 0.3+ | 2006 09 20 | H07 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.2+ | 1.1+ |
| 2005 03 09 | G96 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 10 01 | 704 | (2.8− | 0.4+) |
| 2005 03 09 | G96 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.2− |
| 2005 04 02 | G96 | 0.6+ | 0.2+ | 2006 09 20 | 704 | 0.2− | 0.4+ | 2006 10 01 | 704 | 0.7− | 0.2− |
| 2005 04 02 | G96 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.2− | 0.4+ |
| 2005 04 02 | G96 | 0.6+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.1− |
| 2005 04 02 | G96 | 0.8+ | 0.1− | 2006 09 20 | H07 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.2− |
| 2006 08 18 | 699 | 0.4− | 0.8− | 2006 09 20 | H07 | 0.9− | 0.4+ | 2006 10 02 | 691 | 0.4+ | 0.1− |
| 2006 08 18 | 699 | 0.8− | 0.5− | 2006 09 20 | H07 | 0.2+ | 1.3+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2006 08 18 | 699 | 0.2+ | 0.0 | 2006 09 21 | A50 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2006 08 18 | 699 | 0.3− | 0.8+ | 2006 09 21 | A50 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 09 22 | A50 | 0.5+ | 0.3− | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 09 22 | A50 | 0.4+ | 0.8+ | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2006 09 06 | 644 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2006 09 12 | 703 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2006 09 12 | 703 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2006 09 12 | 703 | 0.2− | 0.6− | 2006 09 27 | 699 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2006 09 12 | 703 | 0.4− | 0.2+ | 2006 09 27 | 699 | 0.2− | 0.5− | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2006 09 17 | 704 | 0.8+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2006 09 17 | 704 | (1.7− | 0.5+) | 2006 09 27 | 704 | 0.2− | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2006 09 17 | 704 | 0.8+ | 0.2− | 2006 09 27 | 704 | 0.5+ | 0.7+ | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2006 09 17 | 704 | 0.0 | 0.6+ | 2006 09 27 | 699 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2006 09 17 | 691 | 0.2− | 0.2− | 2006 09 27 | 704 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2006 09 17 | 691 | 0.2− | 0.1− | 2006 09 27 | 704 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2006 09 17 | 691 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.5+ | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2006 09 19 | 699 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2006 09 19 | 699 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.0 | 0.1− | | | | |

### 2006 RP$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.53230 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18293610 | $\omega$ | 85.49604 | | +0.50420052 | | −0.84614844 |
| $a$ | 3.0732869 | $\Omega$ | 332.02219 | | +0.57129485 | | +0.47675292 |
| $e$ | 0.4099236 | $i$ | 21.59620 | | +0.64761410 | | +0.23820049 |
| $P$ | 5.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 691 | 0.3+ | 0.4− | 2001 11 27 | 704 | 0.8− | 0.6− | 2006 09 20 | 699 | 1.3+ | 0.9+ |
| 1997 02 01 | 691 | 0.1+ | 0.3+ | 2006 08 19 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.6− | 0.6+ |
| 1997 02 01 | 691 | 0.2− | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.0 | 1.1+ |
| 1997 02 16 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.6+ | 0.2− |
| 1997 02 16 | 691 | 0.3+ | 0.2+ | 2006 09 13 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.5− |
| 1997 02 16 | 691 | 0.2+ | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.8− |
| 2001 11 27 | 704 | 1.0+ | 0.1+ | 2006 09 13 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | (1.8− | 1.4−) |
| 2001 11 27 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.9− | 0.6+ | 2006 10 16 | 703 | 1.4− | 0.2+ |
| 2001 11 27 | 704 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.7− | 1.2− | | | | |
| 2001 11 27 | 704 | 0.5− | 0.5− | 2006 09 17 | 703 | 0.8− | 0.4+ | | | | |

### 2006 RS$_{23}$ = 2005 JF$_{102}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.75403 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17523965 | $\omega$ | 148.80153 | | +0.85831684 | | +0.51311899 |
| $a$ | 3.1626258 | $\Omega$ | 180.33213 | | −0.50016322 | | +0.83618469 |
| $e$ | 0.1249196 | $i$ | 10.43567 | | −0.11458168 | | +0.19365964 |
| $P$ | 5.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 691 | 0.1− | 0.1− | 2005 06 13 | 691 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.6+ | 0.8+ |
| 2005 05 09 | 691 | 0.0 | 0.0 | 2006 08 16 | D35 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.4+ | 0.8+ |
| 2005 05 09 | 691 | 0.3+ | 0.1+ | 2006 08 16 | D35 | 0.2+ | 0.5− | 2006 09 17 | 703 | 0.2+ | 0.4− |
| 2005 05 13 | 691 | 0.0 | 0.2− | 2006 08 16 | D35 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2− |
| 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− |
| 2005 05 13 | 691 | 0.2− | 0.5+ | 2006 09 13 | 644 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.2− |
| 2005 06 13 | 691 | 0.8+ | 0.3− | 2006 09 13 | 644 | 0.6− | 0.3− | 2006 09 28 | G96 | 0.5− | 0.3− |
| 2005 06 13 | 691 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.0 | 0.4+ | | | | |

### 2006 RV$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.75404 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23912151 | $\omega$ | 113.29091 | | +0.88678807 | | +0.46091862 |
| $a$ | 2.5707329 | $\Omega$ | 219.28610 | | −0.44126724 | | +0.82244190 |
| $e$ | 0.1913010 | $i$ | 3.08464 | | −0.13744145 | | +0.33338168 |
| $P$ | 4.12 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 691 | 0.4− | 0.3− | 2006 09 17 | 703 | 0.9− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.5− |
| 1998 10 14 | 691 | 0.4+ | 0.0 | 2006 09 17 | 703 | 0.1− | 0.3− | 2006 10 16 | 703 | 1.3+ | 0.9− |
| 1998 10 14 | 691 | 0.3+ | 0.1− | 2006 09 18 | 704 | (1.1− | 1.8+) | 2006 10 16 | 703 | 0.8− | 0.6− |
| 2002 10 30 | 291 | 0.3− | 0.5+ | 2006 09 18 | 704 | (0.1+ | 1.7+) | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 10 30 | 291 | 0.2− | 0.2+ | 2006 09 18 | 704 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2002 10 30 | 291 | 0.2− | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.9+ | 0.4− |
| 2006 08 21 | 691 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.8+ | 0.1+ | 2006 10 23 | G96 | 0.5+ | 0.5− |
| 2006 08 21 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.9+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2006 08 21 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.7− | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2006 09 13 | 644 | 0.4+ | 0.0 | 2006 10 01 | 703 | 0.7− | 0.5− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2006 09 13 | 644 | 0.0 | 0.3+ | 2006 10 01 | 703 | 0.0 | 1.1− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 09 13 | 644 | 0.5+ | 0.2+ | 2006 10 01 | 703 | 0.0 | 1.4− | 2006 11 15 | G96 | 0.6+ | 0.6− |
| 2006 09 17 | 703 | 0.4− | 0.3+ | 2006 10 01 | 703 | 0.9− | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.5+ |
| 2006 09 17 | 703 | 0.7− | 0.1+ | 2006 10 16 | 703 | (1.8+ | 0.4+) | 2006 11 15 | G96 | 0.2+ | 0.2+ |

### 2006 RW$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.96604 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24046710 | $\omega$ | 70.00032 | | +0.26398897 | | +0.96332838 |
| $a$ | 2.5611339 | $\Omega$ | 215.41795 | | −0.91303150 | | +0.23352697 |
| $e$ | 0.2407036 | $i$ | 4.75534 | | −0.31093940 | | +0.13214985 |
| $P$ | 4.10 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 15 | 691 | 0.4+ | 0.2− | 2005 03 04 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.8+ |
| 1998 09 15 | 691 | 1.2+ | 0.1− | 2005 03 04 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.2− | 0.4+ |
| 1998 09 26 | 691 | 0.6− | 0.1− | 2006 09 13 | 644 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.2− | 0.4− |
| 1998 09 26 | 691 | 0.3− | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.4− | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 1998 09 26 | 691 | 0.5− | 0.5− | 2006 09 13 | 644 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.5+ | 1.5+ | 2006 09 17 | 703 | 0.3− | 0.5− | 2006 09 25 | 691 | 0.0 | 0.5+ | | |
| 2002 10 03 | 704 | 0.3− | 1.2+ | 2006 09 17 | 703 | 1.2+ | 0.3− | 2006 10 23 | G96 | 0.6− | 0.1− | | |
| 2002 10 03 | 704 | 0.5− | 0.6+ | 2006 09 17 | 703 | 1.0+ | 0.4− | 2006 10 23 | G96 | 0.2− | 0.2− | | |
| 2002 10 03 | 704 | (0.2− | 3.1+) | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 23 | G96 | 0.3− | 0.0 | | |
| 2005 03 04 | 691 | 0.1+ | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.2− | | |

**2006 RS$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.91424 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26676743 | $\omega$ | 341.18625 | | −0.20605891 | | +0.97628522 |
| $a$ | 2.3899062 | $\Omega$ | 276.88029 | | −0.88899691 | | −0.21512233 |
| $e$ | 0.1942230 | $i$ | 3.83400 | | −0.40893058 | | −0.02428086 |
| $P$ | 3.69 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 01 19 | 691 | 1.6− | 0.5+ | 2006 09 14 | 691 | (5.6+ | 2.7+) | 2006 09 18 | 291 | 0.1+ | 0.4+ | | |
| 2005 01 19 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | (5.4+ | 2.4+) | 2006 09 18 | 291 | 0.6− | 0.3− | | |
| 2005 01 19 | 691 | 1.5+ | 0.4− | 2006 09 17 | 691 | 0.8+ | 1.1+ | 2006 09 18 | 291 | 0.7− | 0.1− | | |
| 2005 03 09 | 691 | 0.8− | 0.3+ | 2006 09 17 | 691 | 0.9+ | 1.3+ | 2006 09 18 | 291 | 0.7− | 0.3− | | |
| 2005 03 09 | 691 | 0.9+ | 0.1− | 2006 09 17 | 691 | 0.7+ | 1.5+ | 2006 09 19 | 691 | 0.4− | 1.3− | | |
| 2005 03 09 | 691 | (2.4+ | 1.0−) | 2006 09 18 | 291 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.5− | 1.3− | | |
| 2006 09 14 | 691 | (5.8+ | 2.5+) | 2006 09 18 | 291 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.4− | 1.2− | | |

**2006 RU$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.17585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31742568 | $\omega$ | 130.74672 | | +0.76416119 | | −0.64109683 |
| $a$ | 2.1283417 | $\Omega$ | 269.25031 | | +0.56831012 | | +0.72129951 |
| $e$ | 0.0631439 | $i$ | 4.07644 | | +0.30509226 | | +0.26214859 |
| $P$ | 3.11 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 18 | 691 | 0.6− | 0.5+ | 2003 09 30 | 691 | 0.5+ | 0.2− | 2006 09 14 | 691 | 0.3− | 0.2− | | |
| 2003 09 18 | 691 | 0.4+ | 0.3− | 2003 09 30 | 691 | 0.4− | 0.3+ | 2006 09 14 | 691 | 0.3− | 0.2+ | | |
| 2003 09 18 | 691 | 0.3+ | 0.3− | 2003 09 30 | 691 | 0.1− | 0.3− | 2006 09 14 | 691 | 0.2− | 0.1+ | | |
| 2003 09 21 | 644 | 0.0 | 0.2+ | 2006 08 29 | 691 | 0.0 | 1.1− | 2006 09 17 | 291 | 0.0 | 0.1+ | | |
| 2003 09 21 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 691 | 0.0 | 0.6+ | 2006 09 17 | 291 | 0.4+ | 0.1+ | | |
| 2003 09 21 | 644 | 0.2− | 0.2+ | 2006 08 29 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 291 | 0.1+ | 0.1+ | | |

**2006 RY$_{24}$ = 2003 BD$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.30828 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17611252 | $\omega$ | 256.63452 | | +0.33287031 | | −0.94246863 |
| $a$ | 3.1521671 | $\Omega$ | 173.66258 | | +0.93654560 | | +0.32661468 |
| $e$ | 0.1157763 | $i$ | 16.21615 | | +0.10990770 | | +0.07124413 |
| $P$ | 5.60 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | (2.8+ | 5.2−) | 2003 01 28 | 704 | 0.1− | 0.0 | 2006 09 14 | 691 | (0.8− | 1.6+) | | |
| 1995 09 22 | 691 | 0.1− | 0.0 | 2003 01 28 | 704 | (0.5+ | 2.1+) | 2006 09 14 | 691 | 0.1+ | 0.3+ | | |
| 1995 09 22 | 691 | 0.1+ | 0.1+ | 2003 01 28 | 704 | 0.1− | 1.1− | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 2001 10 15 | 644 | 0.4− | 1.1− | 2003 01 28 | 704 | 0.5− | 1.2+ | 2006 09 17 | 691 | 0.2+ | 0.3+ | | |
| 2001 10 15 | 644 | 0.4− | 0.6− | 2003 01 28 | 704 | 0.7+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.2+ | | |
| 2001 10 15 | 644 | 0.4− | 0.8− | 2003 01 28 | 704 | (0.2+ | 1.6+) | 2006 09 19 | 691 | 0.1− | 0.2+ | | |
| 2001 10 19 | 699 | (2.1− | 0.1−) | 2003 01 28 | 704 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 19 | 699 | 0.4+ | 0.5− | 2003 01 28 | 704 | 0.0 | 1.2+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | | |
| 2001 10 19 | 699 | 0.4+ | 0.4− | 2004 03 17 | 621 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.5− | | |
| 2001 10 19 | 699 | (2.3+ | 0.3+) | 2004 03 17 | 621 | 0.0 | 0.9+ | 2006 09 28 | G96 | 0.3+ | 0.3− | | |
| 2001 10 23 | 644 | 0.0 | 1.0+ | 2004 03 17 | 621 | 0.2+ | 1.0+ | 2006 09 28 | G96 | 0.1+ | 0.3− | | |
| 2001 10 23 | 644 | 0.1+ | 1.1+ | 2006 08 29 | 703 | (1.6− | 5.2+) | 2006 09 28 | G96 | 0.1− | 0.3− | | |
| 2001 10 23 | 644 | 0.3− | 0.8+ | 2006 08 29 | 703 | 0.6− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2003 01 25 | 644 | 0.1+ | 0.5+ | 2006 08 29 | 703 | 0.8− | 0.1+ | 2006 11 16 | G96 | 0.8− | 0.6− | | |
| 2003 01 25 | 644 | 0.3+ | 0.5+ | 2006 08 29 | 703 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.0 | | |
| 2003 01 25 | 644 | 0.3+ | 0.9+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.8+ | 0.4− | | |

**2006 RF$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.44506 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29045803 | $\omega$ | 257.04892 | | +0.94647620 | | +0.30449015 |
| $a$ | 2.2581205 | $\Omega$ | 85.14576 | | −0.23844847 | | +0.88321789 |
| $e$ | 0.1978766 | $i$ | 6.16989 | | −0.21754342 | | +0.35666778 |
| $P$ | 3.39 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2006 09 14 | 644 | 0.0 | 0.1− | 2006 09 20 | 703 | 0.0 | 0.2+ | | |
| 2003 12 19 | 691 | 0.2− | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.4− | 1.0− | | |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.7+ | | |
| 2003 12 28 | 291 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.2+ | | |
| 2003 12 28 | 291 | 0.2+ | 0.0 | 2006 09 17 | 699 | 0.7+ | 0.3− | 2006 09 26 | 703 | 0.5− | 0.2+ | | |
| 2003 12 28 | 291 | 0.1− | 0.0 | 2006 09 17 | 699 | 0.8+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.3− | | |
| 2006 08 28 | E12 | 0.1+ | 0.1− | 2006 09 17 | 699 | 0.7− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.3− | | |
| 2006 08 28 | E12 | 0.2+ | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.6+ | 0.2+ | | |
| 2006 08 28 | E12 | 0.4+ | 0.3− | 2006 09 20 | 703 | 0.6+ | 0.4− | | | | | | |
| 2006 08 28 | E12 | 0.3− | 0.6− | 2006 09 20 | 703 | 0.2− | 0.4+ | | | | | | |

**2006 RG$_{26}$ = 2002 RO$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.78409 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24441327 | $\omega$ | 348.82657 | | +0.90224226 | | +0.42991624 |
| $a$ | 2.5334919 | $\Omega$ | 345.56919 | | −0.38451569 | | +0.76675263 |
| $e$ | 0.2027388 | $i$ | 7.75536 | | −0.19520911 | | +0.47672050 |
| $P$ | 4.03 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 11 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.3+ | 1.4− | 2006 10 19 | G96 | 0.6− | 0.8− | | |
| 1994 09 11 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.5− | | |
| 1994 09 11 | 691 | (0.5− | 3.2−) | 2006 09 17 | 704 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 2002 09 12 | 644 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.1+ | 0.9+ | 2006 11 21 | 291 | 0.2+ | 0.0 | | |
| 2002 09 12 | 644 | 0.5− | 0.4+ | 2006 09 17 | 704 | 0.5− | 1.2+ | 2006 11 21 | 291 | 0.4+ | 0.5+ | | |
| 2002 09 12 | 644 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 21 | 291 | 0.0 | 0.1+ | | |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 22 | 291 | 0.2+ | 0.1− | | |
| 2002 09 14 | 644 | 0.4− | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 11 22 | 291 | 0.1− | 0.5− | | |
| 2002 09 14 | 644 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 22 | 291 | 0.0 | 0.3+ | | |
| 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.7+ | 0.8− | 2006 11 25 | 291 | 0.2− | 0.3− | | |
| 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 25 | 291 | 0.3+ | 0.3+ | | |
| 2006 08 21 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 25 | 291 | 0.3− | 0.1− | | |
| 2006 09 14 | 703 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.6− | 0.4− | | | | | | |
| 2006 09 14 | 703 | 0.9+ | 1.2− | 2006 10 19 | G96 | 0.4− | 0.4− | | | | | | |

**2006 RK$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.00467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21322331 | $\omega$ | 266.12514 | | +0.94913358 | | −0.29844639 |
| $a$ | 2.7748932 | $\Omega$ | 111.21719 | | +0.31428952 | | +0.87853801 |
| $e$ | 0.0375855 | $i$ | 6.18125 | | +0.01917137 | | +0.37296208 |
| $P$ | 4.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 24 | 691 | 0.5− | 0.4− | 2002 12 11 | 704 | (0.7− | 2.3+) | 2006 09 19 | 703 | 1.0− | 0.4+ | | |
| 1998 11 24 | 691 | 0.2− | 0.2− | 2002 12 11 | 704 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.1+ | | |
| 1998 11 24 | 691 | 0.3+ | 0.0 | 2002 12 11 | 704 | 0.2− | 0.8+ | 2006 09 19 | 703 | 0.1− | 0.6− | | |
| 2001 07 27 | 699 | 0.7− | 0.7+ | 2004 02 17 | 704 | 0.6+ | 0.0 | 2006 09 19 | 703 | (1.7− | 1.4−) | | |
| 2001 07 27 | 699 | 0.8+ | 0.9− | 2004 02 17 | 704 | 0.5+ | 0.4− | 2006 09 25 | 699 | 1.2+ | 0.7+ | | |
| 2001 07 27 | 699 | 0.3+ | 0.3+ | 2004 02 17 | 704 | 0.3+ | 0.9+ | 2006 09 25 | 699 | 0.5− | 0.5+ | | |
| 2001 07 27 | 699 | 0.7− | 0.3− | 2004 03 22 | 704 | 1.1− | 1.4+ | 2006 09 25 | 699 | 0.5+ | 0.3+ | | |
| 2001 07 27 | 608 | 0.4+ | 0.8+ | 2004 03 22 | 704 | 0.6+ | 0.0 | 2006 09 25 | 699 | 0.8− | 0.2+ | | |
| 2001 07 27 | 608 | 0.2− | 0.9+ | 2004 03 22 | 704 | 0.1− | 0.4− | 2006 10 02 | 703 | 1.0+ | 0.8+ | | |
| 2001 07 27 | 608 | 0.1+ | 0.8+ | 2004 03 22 | 704 | 0.4+ | 1.2+ | 2006 10 02 | 703 | 0.6+ | 0.3− | | |
| 2001 08 14 | 608 | 0.1+ | 1.1− | 2005 06 17 | G96 | 0.3+ | 0.1− | 2006 10 02 | 703 | 0.6+ | 0.2− | | |
| 2001 08 14 | 608 | 0.3− | 0.9− | 2005 06 17 | G96 | 0.3− | 0.2+ | 2006 10 02 | 703 | 1.0+ | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.2+ | 1.0− | 2005 06 17 | G96 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 08 23 | 699 | 0.2− | 0.7+ | 2006 09 14 | 703 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2001 08 23 | 699 | 0.0 | 0.1+ | 2006 09 14 | 703 | 0.3− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2001 08 23 | 699 | (1.7− | 0.7+) | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.2− | | |
| 2001 08 23 | 699 | 0.6+ | 0.3− | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.4− | 0.0 | | |
| 2002 12 01 | 704 | (0.7− | 2.5+) | 2006 09 17 | 699 | 0.9− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.3− | | |
| 2002 12 01 | 704 | (0.0 | 2.3+) | 2006 09 17 | 699 | 0.4− | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.2+ | | |
| 2002 12 01 | 704 | (0.3− | 2.4+) | 2006 09 17 | 699 | 1.2− | 1.0+ | 2006 10 23 | 644 | 0.3− | 0.0 | | |
| 2002 12 11 | 704 | 0.7+ | 0.3+ | 2006 09 17 | 699 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1+ | | |

**2006 RL$_{26}$ = 2005 LQ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.29030 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21577929 | $\omega$ | 246.71488 | | +0.98802555 | | −0.11359893 |
| $a$ | 2.7529366 | $\Omega$ | 119.66445 | | +0.14282179 | | +0.92939422 |
| $e$ | 0.0992653 | $i$ | 6.90102 | | −0.05837341 | | +0.35117185 |
| $P$ | 4.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 691 | 0.1− | 0.1− | 2006 09 14 | 703 | (1.2+ | 1.7−) | 2006 09 19 | 703 | 0.4− | 0.0 | | |
| 2005 06 04 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | (1.7+ | 0.6+) | 2006 09 19 | 703 | 0.1− | 0.2+ | | |
| 2005 06 04 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.8+ | 0.7− | 2006 09 19 | 703 | 0.4− | 0.2+ | | |
| 2005 06 11 | 691 | 0.2− | 0.2− | 2006 09 14 | 703 | (2.3+ | 0.4−) | 2006 09 25 | 703 | 0.3− | 0.9− | | |
| 2005 06 11 | 691 | 0.3+ | 0.1− | 2006 09 17 | 699 | 1.2+ | 0.5− | 2006 09 25 | 703 | 0.7+ | 0.4+ | | |
| 2005 06 11 | 691 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.3+ | 0.1+ | 2006 09 25 | 703 | 1.0− | 1.0+ | | |
| 2005 06 27 | 691 | 0.2− | 0.1+ | 2006 09 17 | 699 | 0.6− | 0.2+ | 2006 09 25 | 703 | 1.1+ | 0.4− | | |
| 2005 06 27 | 691 | 0.3+ | 0.1− | 2006 09 17 | 699 | (1.6+ | 1.6−) | | | | | | |
| 2005 06 27 | 691 | 0.2− | 0.1+ | 2006 09 19 | 703 | 1.2− | 0.4+ | | | | | | |

**2006 RN$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.88482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22853056 | $\omega$ | 15.65505 | | +0.91785749 | | −0.39676145 |
| $a$ | 2.6495566 | $\Omega$ | 7.74717 | | +0.35496250 | | +0.80830179 |
| $e$ | 0.2958953 | $i$ | 4.62153 | | +0.17759292 | | +0.43500410 |
| $P$ | 4.31 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.4+ | | |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 2002 12 10 | 644 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.4+ | 1.1+ | 2006 10 19 | G96 | 0.1+ | 0.3− | | |
| 2002 12 15 | 704 | 1.3− | 0.2− | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2002 12 15 | 704 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.3− | | |
| 2002 12 15 | 704 | 1.1+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.5+ | 0.3− | | |
| 2006 09 06 | 644 | 0.6− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2006 09 06 | 644 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2006 09 06 | 644 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2006 09 17 | 704 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.5− | 0.3− | 2006 11 06 | 644 | 0.1+ | 0.1+ | | |
| 2006 09 17 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 704 | 0.8+ | 0.7+ | 2006 11 06 | 644 | 0.1+ | 0.1− | | |
| 2006 09 17 | 704 | 0.7+ | 0.9− | 2006 09 29 | 704 | 0.3+ | 0.5+ | 2006 11 06 | 644 | 0.4+ | 0.1− | | |
| 2006 09 17 | 704 | 1.0+ | 0.3+ | 2006 09 29 | 704 | 0.4− | 0.6+ | 2006 11 06 | 644 | 0.2− | 0.1+ | | |
| 2006 09 17 | 704 | 0.0 | 0.9+ | 2006 09 29 | 704 | 1.1− | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.3+ | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.1− | 0.0 | | |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.2− | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− | | |
| 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.8+ | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− | | |

**2006 RP$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.44778 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19807950 | $\omega$ | 294.69885 | | +0.16257859 | | −0.98631017 |
| $a$ | 2.9145826 | $\Omega$ | 145.90874 | | +0.92212576 | | +0.14193593 |
| $e$ | 0.1119255 | $i$ | 2.81998 | | +0.35107305 | | +0.08394306 |
| $P$ | 4.98 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 691 | 0.1+ | 0.5− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.4− | | |
| 2001 09 21 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.2− | | |
| 2001 09 21 | 691 | 0.0 | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2001 11 12 | 645 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.1− | | |
| 2003 03 09 | 291 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2003 03 09 | 291 | 0.1− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2003 03 09 | 291 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | |
| 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.0 | | | | | | |
| 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | | | | | | |

**2006 RT$_{26}$ = 2000 FO$_6$ = 2004 ET$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.37446 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22328089 | $\omega$ | 342.41030 | | +0.99036523 | | −0.13399113 |
| $a$ | 2.6909255 | $\Omega$ | 25.36880 | | +0.13483310 | | +0.87545040 |
| $e$ | 0.1272626 | $i$ | 4.68209 | | +0.03157115 | | +0.46436298 |
| $P$ | 4.41 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.0 | 0.9+ | 2004 03 19 | 291 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | |
| 2000 03 25 | 691 | 0.1+ | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2000 03 25 | 691 | 0.1+ | 0.5+ | 2006 09 06 | 644 | 0.6− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2000 03 30 | 691 | 0.4+ | 0.6+ | 2006 09 06 | 644 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.5+ | 0.0 | | |
| 2000 03 30 | 691 | 0.5+ | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 2000 03 30 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 09 28 | 704 | (0.5− | 1.9+) | | |
| 2002 11 14 | 704 | 0.8− | 0.4+ | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.6− | 1.0+ | | |
| 2002 11 14 | 704 | 0.3− | 0.2− | 2006 09 17 | 704 | 0.6+ | 0.4+ | 2006 09 28 | 704 | (1.7− | 0.4+) | | |
| 2002 11 14 | 704 | 0.8− | 0.6+ | 2006 09 17 | 704 | 0.6+ | 0.0 | 2006 10 01 | 704 | 0.2− | 0.0 | | |
| 2002 12 03 | 644 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.3+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.3− | | |
| 2002 12 03 | 644 | 0.4+ | 0.5− | 2006 09 17 | 704 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.3− | 0.0 | | |
| 2002 12 03 | 644 | (2.3+ | 1.0−) | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.1+ | | |
| 2002 12 06 | 704 | (1.6+ | 0.5−) | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2002 12 06 | 704 | 0.3− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ | | |
| 2002 12 06 | 704 | 0.8+ | 0.3− | 2006 09 18 | 699 | 0.4− | 0.9+ | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.3− | 1.2+ | 2006 10 17 | 703 | 0.6− | 0.7− | | |
| 2002 12 06 | 704 | 0.4+ | 0.8− | 2006 09 18 | 699 | 1.3− | 0.9+ | 2006 10 17 | 703 | 0.9− | 0.1− | | |
| 2003 01 05 | 704 | 0.4+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.5− | | |
| 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 09 20 | 704 | (0.4− | 1.6+) | 2006 10 17 | 703 | 0.0 | 0.1+ | | |
| 2003 01 05 | 704 | 0.8+ | 0.2+ | 2006 09 20 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2004 03 14 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.9− | 1.4+ | 2006 10 20 | 644 | 0.3− | 0.3− | | |
| 2004 03 14 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2004 03 14 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 704 | 0.1+ | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.1− | | |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.3− | | |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 2004 03 18 | 691 | 0.4− | 0.1+ | 2006 09 20 | 644 | 1.0− | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.2− | | |
| 2004 03 19 | 291 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.2+ | | | | | | |
| 2004 03 19 | 291 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | | | | | | |

**2006 RU$_{26}$ = 2001 XJ$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.54783 | | (2000.0) | | | |
| $n$ | 0.17701905 | $\omega$ | 277.52307 | | +0.78838595 | −0.58543576 |
| $a$ | 3.1413962 | $\Omega$ | 118.50117 | | +0.61424368 | +0.73217226 |
| $e$ | 0.2187008 | $i$ | 12.41780 | | +0.03394543 | +0.34812174 |
| $P$ | 5.57 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.1− | 0.1− | 2002 01 14 | 704 | 0.8+ | 0.3− | 2006 09 17 | 699 | 0.2− | 0.8+ |
| 2001 12 11 | 704 | 0.1− | 0.2+ | 2002 01 14 | 704 | 0.7+ | 0.3+ | 2006 09 17 | 699 | 0.5− | 0.8+ |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2002 01 14 | 704 | 1.4− | 0.5+ | 2006 09 17 | 699 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 0.1+ | 0.0 | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.0 | 0.4+ |
| 2001 12 11 | 704 | 0.1− | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.3− | 0.7− |
| 2001 12 15 | 704 | 0.3− | 0.3− | 2003 02 25 | 599 | 0.3+ | 0.2+ | 2006 09 20 | 703 | 0.5+ | 0.1+ |
| 2001 12 15 | 704 | 0.4+ | 0.4− | 2003 02 25 | 599 | 0.1− | 0.4+ | 2006 09 20 | 703 | 0.3+ | 0.2+ |
| 2001 12 15 | 704 | 0.0 | 0.3− | 2003 02 25 | 599 | 0.3− | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.2− |
| 2001 12 15 | 704 | 0.3− | 0.3+ | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.1− | 0.4− |
| 2001 12 15 | 704 | 0.5− | 0.3− | 2006 08 16 | 644 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2001 12 15 | 704 | 0.6+ | 0.3+ | 2006 08 16 | 644 | 0.4− | 0.2+ | 2006 09 26 | 703 | 0.5+ | 0.3+ |
| 2001 12 15 | 704 | 0.4− | 0.8− | 2006 09 14 | 644 | 0.5+ | 0.3− | 2006 09 26 | 703 | (0.5+ | 1.6−) |
| 2001 12 15 | 704 | (1.6+ | 0.5−) | 2006 09 14 | 644 | 0.1− | 0.3− | | | | |
| 2002 01 14 | 704 | 0.7+ | 0.5+ | 2006 09 14 | 644 | 0.1− | 0.5− | | | | |

**2006 RY$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.33655 | | (2000.0) | | | |
| $n$ | 0.27350112 | $\omega$ | 177.88529 | | +0.99993504 | −0.00995616 |
| $a$ | 2.3505165 | $\Omega$ | 182.70391 | | +0.00794317 | +0.95782910 |
| $e$ | 0.1237784 | $i$ | 6.75436 | | +0.00817406 | +0.28716595 |
| $P$ | 3.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.4− | 0.5+ | 2006 09 06 | 644 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.2+ | 1.4+ |
| 1999 10 10 | 704 | 0.0 | 0.7+ | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 1999 10 10 | 704 | 0.3+ | 0.8+ | 2006 09 06 | 644 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 1999 10 10 | 704 | 0.3− | 0.9+ | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 09 28 | 704 | 0.4− | 1.4+ |
| 2002 06 10 | 644 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 09 28 | 704 | (0.3− | 1.5+) |
| 2002 06 10 | 644 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 09 28 | 704 | 0.7− | 0.6+ |
| 2002 06 10 | 644 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 09 28 | 704 | 0.8− | 0.3+ |
| 2002 07 09 | 704 | 0.6+ | 0.7+ | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.0 | 0.1− |
| 2002 07 09 | 704 | 0.1− | 0.8− | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2002 07 09 | 704 | 0.3+ | 0.5− | 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.3− | 0.5+ |
| 2002 07 09 | 704 | 0.3+ | 0.0 | 2006 09 14 | 703 | 0.2− | 0.4− | 2006 10 01 | 704 | 0.1+ | 0.1− |
| 2002 07 18 | 704 | 0.4− | 0.2− | 2006 09 14 | 703 | 0.1− | 0.6− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 07 18 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 07 18 | 704 | 0.1− | 0.4+ | 2006 09 14 | 703 | 0.6+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2002 07 18 | 704 | 0.5− | 0.0 | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2002 07 29 | 644 | 0.2+ | 0.8− | 2006 09 17 | 704 | 1.4− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2002 07 29 | 644 | 0.2+ | 0.8− | 2006 09 17 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2002 07 29 | 644 | 0.2+ | 0.7− | 2006 09 17 | 704 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2005 04 02 | 691 | 0.3− | 0.4+ | 2006 09 17 | 704 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.5+ | 0.0 |
| 2005 04 02 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2005 04 02 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2005 05 02 | 691 | 0.1− | 0.7+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 05 02 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2005 05 02 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 05 14 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.4+ | 1.3+ |
| 2005 05 14 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.6+ | 0.7+ | 2006 10 22 | 703 | (0.9− | 1.9−) |
| 2006 09 06 | 644 | 0.6− | 0.2− | 2006 09 20 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 703 | (0.6− | 6.2−) |
| 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.0 | 0.7− | | | | |

**2006 RZ$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 52.30795 | | (2000.0) | | | |
| $n$ | 0.30344278 | $\omega$ | 130.15999 | | +0.49485406 | +0.86890812 |
| $a$ | 2.1932334 | $\Omega$ | 169.48382 | | −0.81427955 | +0.46803733 |
| $e$ | 0.1851672 | $i$ | 3.41410 | | −0.30342755 | +0.16105818 |
| $P$ | 3.25 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.5− | 0.7− | 2006 09 17 | 704 | (1.9− | 0.1+) | 2006 10 02 | H55 | 1.0− | 1.0− |
| 1993 10 09 | 809 | 0.4+ | 1.3+ | 2006 09 17 | 704 | 1.4− | 0.1− | 2006 10 02 | H55 | 0.1− | 0.7− |
| 2002 04 08 | 644 | 0.3+ | 0.3+ | 2006 09 17 | 704 | (1.8− | 0.2+) | 2006 10 15 | 703 | 0.6− | 0.1− |
| 2002 04 08 | 644 | 0.1+ | 0.6+ | 2006 09 17 | 704 | 1.2− | 1.0+ | 2006 10 15 | 703 | 1.4− | 0.9− |
| 2002 04 08 | 644 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.6− | 0.9− |
| 2002 04 14 | 644 | 0.2+ | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.6+ | 2006 10 15 | 703 | 1.1+ | 0.8+ |
| 2002 04 14 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.3+ |
| 2002 04 14 | 644 | 0.2+ | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.6+ |
| 2002 04 20 | 644 | 0.1+ | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.6+ |
| 2002 04 20 | 644 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.5− |
| 2002 04 20 | 644 | 0.0 | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.8− |
| 2005 04 12 | 691 | 0.0 | 0.0 | 2006 09 27 | 734 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.8− | 0.4− |
| 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 734 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.1− |
| 2005 04 12 | 691 | 0.4+ | 0.4+ | 2006 09 27 | 704 | 0.9+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 27 | 734 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 05 10 | G96 | 0.0 | 0.3− | 2006 09 27 | 734 | 0.0 | 1.3+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2005 05 10 | G96 | 0.4− | 0.0 | 2006 09 27 | 704 | 1.2+ | 0.2+ | 2006 10 22 | 703 | (1.0+ | 1.5+) |
| 2005 05 10 | G96 | 0.4− | 0.2+ | 2006 09 27 | 704 | 1.4+ | 0.3− | 2006 10 22 | 703 | (1.4− | 2.3−) |
| 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 09 27 | 704 | (0.1− | 1.6+) | 2006 10 22 | 703 | (1.6− | 0.1+) |
| 2006 07 22 | G96 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.9+ | 0.7− |
| 2006 07 22 | G96 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2006 09 14 | 703 | 0.0 | 0.7+ | 2006 10 01 | 691 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 09 14 | 703 | 0.4− | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2006 09 14 | 703 | 0.0 | 0.6− | 2006 10 01 | 691 | 0.2+ | 0.0 | | | | |
| 2006 09 14 | 703 | 1.0− | 0.6+ | 2006 10 02 | H55 | 0.4− | 1.0− | | | | |

**2006 RC$_{27}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.37878 | | (2000.0) | | | |
| $n$ | 0.23819103 | $\omega$ | 135.86426 | | +0.47195989 | +0.88135092 |
| $a$ | 2.5774235 | $\Omega$ | 162.26205 | | −0.82738292 | +0.45132150 |
| $e$ | 0.2055179 | $i$ | 4.09969 | | −0.30445258 | +0.13974781 |
| $P$ | 4.14 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 0.3− | 0.2+ | 2005 03 09 | G96 | 0.5− | 0.5+ | 2006 09 17 | 691 | 0.3+ | 0.1+ |
| 1994 12 01 | 691 | 0.2− | 0.2+ | 2005 03 09 | G96 | 0.5− | 0.4− | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 1994 12 01 | 691 | 0.5+ | 0.6− | 2005 04 01 | 691 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.1− |
| 1997 06 11 | 691 | 0.4+ | 0.4− | 2005 04 01 | 691 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.0 |
| 1997 06 11 | 691 | 0.6− | 0.9+ | 2005 04 01 | 691 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.4− | 0.2+ |
| 1997 06 11 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.4− | 0.1− |
| 2002 10 15 | 644 | 0.4− | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.8− | 2006 10 01 | 691 | 0.5− | 0.3+ |
| 2002 10 15 | 644 | 0.2− | 0.9+ | 2006 09 14 | 703 | 0.8+ | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2002 10 15 | 644 | 0.1− | 0.8+ | 2006 09 14 | 703 | (2.2+ | 0.3−) | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2005 03 09 | G96 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2005 03 09 | G96 | 0.2− | 0.2− | 2006 09 17 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1− |

**2006 RF$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.94186 | | (2000.0) | | | |
| $n$ | 0.23253694 | $\omega$ | 139.30794 | | +0.78510591 | +0.61927874 |
| $a$ | 2.6190356 | $\Omega$ | 182.49464 | | −0.61128692 | +0.77213527 |
| $e$ | 0.2283095 | $i$ | 13.45412 | | −0.09968461 | +0.14248145 |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 14 | 691 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.4− | 0.1+ |
| 2001 04 14 | 691 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2001 04 14 | 691 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2001 05 25 | 644 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2001 05 25 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2001 05 25 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 699 | (2.2+ | 0.3+) | 2006 10 04 | G96 | 0.5− | 0.3− |
| 2002 10 10 | 644 | (0.1+ | 1.9+) | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 2002 10 10 | 644 | 0.4+ | 1.3+ | 2006 09 18 | 699 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2002 10 10 | 644 | 0.3− | 1.4+ | 2006 09 22 | 704 | 0.8+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 22 | 704 | 1.2+ | 0.4− | 2006 10 16 | 703 | 0.5− | 1.2− |
| 2005 04 01 | 691 | 0.6+ | 0.1+ | 2006 09 22 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 04 01 | 691 | 0.5+ | 0.7+ | 2006 09 22 | 704 | 0.6+ | 1.0− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2005 05 12 | 691 | 0.7− | 1.2− | 2006 09 22 | 704 | 1.1+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2005 05 12 | 691 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.5− | 1.0+ |
| 2005 05 12 | 691 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2006 08 28 | 703 | (0.9+ | 2.1+) | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.9+ |
| 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.3+ | 2006 10 22 | 703 | 0.7+ | 0.1+ |
| 2006 08 28 | 703 | 0.3+ | 0.0 | 2006 09 29 | 699 | 0.9− | 0.7+ | 2006 10 28 | 703 | 0.2+ | 0.3− |
| 2006 08 28 | 703 | 0.4− | 0.1− | 2006 09 29 | 699 | 0.7+ | 0.0 | 2006 10 28 | 703 | 0.2− | 0.6+ |
| 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 29 | 699 | 1.0+ | 0.3+ | 2006 10 28 | 703 | 0.6− | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 0.7+ | 0.4+ |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.0 | 1.0− | 2006 11 16 | 703 | 0.1− | 1.3+ |
| 2006 09 14 | 703 | 0.1+ | 0.6− | 2006 10 01 | 704 | (1.2+ | 1.9−) | 2006 11 16 | 703 | 0.5− | 0.5+ |
| 2006 09 14 | 703 | (1.3− | 2.0−) | 2006 10 01 | 704 | 0.1− | 0.4+ | 2006 11 16 | 703 | (1.6− | 0.7−) |
| 2006 09 14 | 703 | 0.2+ | 1.0− | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.0 | 0.2− |

**2006 RJ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.96935 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25705090 | $\omega$ | 86.54311 | | +0.25560485 | | +0.96415056 |
| $a$ | 2.4497586 | $\Omega$ | 198.74042 | | −0.95150669 | | +0.23782882 |
| $e$ | 0.2927608 | $i$ | 12.81716 | | −0.17117588 | | +0.11769093 |
| $P$ | 3.83 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 699 | 0.1+ | 0.5+ | 2002 10 10 | 645 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 09 04 | 699 | 0.3+ | 0.7+ | 2002 10 10 | 645 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2002 09 04 | 699 | 0.0 | 0.7+ | 2006 09 14 | 703 | 0.6+ | 1.4− | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2002 09 04 | 699 | 0.7− | 0.1+ | 2006 09 14 | 703 | 1.4− | 1.3− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2002 09 04 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 09 04 | 644 | 0.4+ | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 09 04 | 644 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.4− |
| 2002 09 12 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 09 12 | 644 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 09 12 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 1.1+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1− | | | | |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1− | | | | |

**2006 RQ$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.02379 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17644246 | $\omega$ | 257.42832 | | +0.60393336 | | −0.78411776 |
| $a$ | 3.1482363 | $\Omega$ | 153.73679 | | +0.79703235 | | +0.59369859 |
| $e$ | 0.2287103 | $i$ | 18.84253 | | +0.00197969 | | +0.18077977 |
| $P$ | 5.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 12 | 704 | 0.5+ | 0.6− | 2006 08 30 | D35 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.2− | 0.0 |
| 2002 01 12 | 704 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.4+ |
| 2002 01 12 | 704 | 0.6− | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.3− | 0.4− |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2006 09 14 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 703 | 0.2− | 0.4− |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.9+ | 0.9+ | 2006 09 25 | 703 | 0.6− | 0.1− |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.1− | 0.4− |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 09 17 | 699 | (1.8+ | 0.6+) | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2006 08 30 | D35 | 0.8− | 0.1+ | 2006 09 17 | 699 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2006 08 30 | D35 | 0.3− | 0.6− | 2006 09 19 | 703 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.6+ | 0.4− |

**2006 RT$_{27}$ = 2004 BB$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.96014 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26443364 | $\omega$ | 263.78103 | | +0.97883554 | | +0.15605005 |
| $a$ | 2.4039472 | $\Omega$ | 87.18588 | | −0.09123560 | | +0.91185837 |
| $e$ | 0.1382283 | $i$ | 7.61746 | | −0.18318583 | | +0.37968762 |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 691 | 0.4− | 1.2+ | 2006 08 29 | D35 | 0.4− | 0.0 | 2006 09 25 | 703 | 1.4− | 0.5+ |
| 1999 12 31 | 691 | 0.2+ | 0.0 | 2006 08 29 | D35 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 1999 12 31 | 691 | 0.3+ | 0.2− | 2006 08 29 | D35 | 0.4− | 0.1− | 2006 10 09 | 644 | 0.6+ | 0.2+ |
| 2000 01 13 | 691 | 0.1+ | 0.3− | 2006 09 14 | 644 | 0.0 | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2000 01 13 | 691 | 0.2− | 0.8− | 2006 09 14 | 644 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.5+ | 0.1+ |
| 2000 01 13 | 691 | 0.2+ | 0.7− | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2004 01 17 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2004 01 17 | 691 | 0.3+ | 0.2− | 2006 09 17 | 699 | (1.4− | 1.9−) | 2006 10 21 | 703 | 0.0 | 0.7+ |
| 2004 01 17 | 691 | 0.4− | 0.0 | 2006 09 17 | 699 | 0.7− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 2004 01 21 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2004 01 21 | 691 | 0.3− | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.6+ | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 2004 01 21 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 703 | 0.6+ | 1.3− | | | | |

**2006 RF$_{28}$ = 2002 WU$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.81313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23380931 | $\omega$ | 82.11914 | | +0.99509246 | | +0.08630252 |
| $a$ | 2.6095253 | $\Omega$ | 272.92068 | | −0.09847976 | | +0.91139520 |
| $e$ | 0.2753679 | $i$ | 2.77800 | | +0.00963016 | | +0.40238125 |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.4− | 0.1+ | 2006 09 21 | H55 | 0.0 | 1.5− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 09 21 | H55 | 0.3+ | 1.3− | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2006 09 21 | H55 | 0.1+ | 1.2− | 2006 10 11 | 644 | 0.0 | 0.3− |
| 2002 11 27 | 699 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.7+ | 2006 10 15 | 185 | 0.2− | 0.5− |
| 2002 11 27 | 699 | (1.9− | 0.1+) | 2006 09 25 | 704 | 0.2+ | 0.1+ | 2006 10 15 | 185 | 0.4− | 0.8− |
| 2002 11 27 | 699 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.4− | 0.5+ | 2006 10 17 | 703 | (2.8− | 2.1+) |
| 2002 11 27 | 699 | 0.2+ | 0.6+ | 2006 09 25 | 704 | 0.3− | 0.3+ | 2006 10 17 | 703 | (0.4− | 2.0+) |
| 2006 09 14 | 644 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2006 09 14 | 644 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.4− | 0.7+ |
| 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.4− |
| 2006 09 17 | 691 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.5− | 1.0+ | 2006 10 19 | 644 | 0.2+ | 0.3− |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2006 09 18 | 699 | 0.8− | 0.5− | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 10 03 | 704 | (1.6+ | 0.2−) | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2006 09 19 | H55 | 0.9− | 1.2+ | 2006 10 03 | 704 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.4− |
| 2006 09 19 | H55 | 0.5− | 1.2+ | 2006 10 03 | 704 | 1.1+ | 0.4− | | | | |
| 2006 09 19 | H55 | 0.5− | 1.3+ | 2006 10 03 | 704 | 0.5− | 0.1− | | | | |

**2006 RH$_{28}$ = 2003 WV$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.15983 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28684867 | $\omega$ | 95.88278 | | +0.86999518 | | +0.49018050 |
| $a$ | 2.2770234 | $\Omega$ | 234.77646 | | −0.47422463 | | +0.80232877 |
| $e$ | 0.2019344 | $i$ | 3.73476 | | −0.13497921 | | +0.34057543 |
| $P$ | 3.44 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.2− | 0.2− | 2003 12 01 | 691 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 |
| 2003 11 19 | 691 | 0.4+ | 0.0 | 2003 12 01 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2003 11 19 | 691 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2003 11 30 | 291 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2003 11 30 | 291 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.3− | 0.2+ |
| 2003 11 30 | 291 | 0.6− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.0 |
| 2003 12 01 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1+ |

**2006 RS$_{28}$ = 2001 SB$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.84999 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18241943 | $\omega$ | 253.09467 | | +0.11875252 | | −0.99244532 |
| $a$ | 3.0790872 | $\Omega$ | 190.23395 | | +0.96419842 | | +0.12267453 |
| $e$ | 0.0788822 | $i$ | 9.99096 | | +0.23710597 | | −0.00180174 |
| $P$ | 5.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.8− | 2001 09 22 | 291 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 1.3− | 1.0− | 2001 09 22 | 291 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.1− |
| 2001 09 20 | 704 | 0.4+ | 0.3− | 2001 09 22 | 291 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.7− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.4+ | 0.2+ |
| 2001 09 20 | 704 | 0.9− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.4− | 0.4− |
| 2001 09 22 | 704 | 1.2− | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.3+ | 0.4+ |
| 2001 09 22 | 704 | 0.2+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.3− |
| 2001 09 22 | 704 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.3+ | | | | |

**2006 RT$_{28}$ = 2005 GF$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.05808 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18155471 | $\omega$ | 77.65533 | | +0.41166127 | | +0.90903005 |
| $a$ | 3.0888563 | $\Omega$ | 216.86964 | | −0.87248144 | | +0.37257054 |
| $e$ | 0.1252217 | $i$ | 6.20031 | | −0.26327007 | | +0.18669641 |
| $P$ | 5.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 22 | 691 | 0.6− | 0.7− | 2005 04 07 | 691 | 0.5+ | 0.2+ | 2005 06 13 | G96 | 0.2+ | 0.4+ |
| 1995 06 22 | 691 | 0.5− | 0.0 | 2005 04 07 | 691 | 0.3+ | 0.2+ | 2005 06 13 | G96 | 0.2− | 0.4+ |
| 1995 06 22 | 691 | 0.4− | 0.4− | 2005 04 07 | 691 | 0.2− | 0.7+ | 2005 06 13 | G96 | 0.0 | 0.7+ |
| 1995 08 02 | 691 | 1.1+ | 1.0− | 2005 04 11 | G96 | 0.8− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.1+ |
| 1995 08 02 | 691 | 0.1+ | 0.1− | 2005 04 11 | G96 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1+ |
| 1995 08 02 | 691 | 0.5+ | 0.5+ | 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2001 10 11 | 691 | 0.3− | 0.1+ | 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.5+ |
| 2001 10 11 | 691 | 0.4− | 0.1+ | 2005 05 10 | G96 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2001 10 11 | 691 | 0.1+ | 0.3+ | 2005 05 10 | G96 | 0.1− | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.1+ |
| 2001 10 20 | 691 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.4− |
| 2001 10 20 | 691 | 0.0 | 0.3+ | 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 10 20 | 691 | 0.1+ | 0.3+ | 2005 06 13 | G96 | 0.0 | 0.9+ | 2006 09 19 | 691 | 0.2− | 0.4+ |

**2006 RL$_{29}$ = 1999 TD$_{330}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.14310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27353033 | $\omega$ | 89.00216 | | +0.99023583 | | +0.10958454 |
| $a$ | 2.3503492 | $\Omega$ | 264.70272 | | −0.13469971 | | +0.91135602 |
| $e$ | 0.1533678 | $i$ | 4.96422 | | +0.03590260 | | +0.39676369 |
| $P$ | 3.60 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2006 08 29 | 703 | 0.6+ | 1.0− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2006 08 29 | 703 | 0.1− | 0.5+ | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2006 08 29 | 703 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.5+ | 1.0+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2006 08 29 | 703 | 0.6+ | 1.0− | 2006 09 19 | 691 | 0.1+ | 0.0 | | | | |

**2006 RD$_{30}$ = 2001 UN$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.10054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17731925 | $\omega$ | 143.63693 | | +0.98100233 | | +0.17695047 |
| $a$ | 3.1378497 | $\Omega$ | 206.50548 | | −0.19130476 | | +0.95043045 |
| $e$ | 0.1310756 | $i$ | 10.26354 | | +0.03220105 | | +0.25567652 |
| $P$ | 5.56 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.3+ | 0.4+ | 2005 05 10 | 691 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.2− |
| 2001 10 23 | 704 | 0.3+ | 0.8+ | 2005 05 16 | G96 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 704 | 0.4+ | 0.9− | 2005 05 16 | G96 | 0.2+ | 0.6− | 2006 09 22 | 691 | 0.1− | 0.1+ |
| 2001 10 23 | 704 | 0.5+ | 0.2− | 2005 05 16 | G96 | 0.3+ | 0.3− | 2006 09 22 | 691 | 0.3+ | 0.1− |
| 2001 10 24 | 691 | 0.0 | 0.0 | 2005 05 16 | G96 | 0.5− | 0.2− | 2006 09 22 | 691 | 0.2+ | 0.2+ |
| 2001 10 24 | 691 | 0.5− | 0.1− | 2006 09 15 | 691 | 0.5+ | 0.5− | 2006 09 25 | 691 | 0.2− | 0.3+ |
| 2001 10 24 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.4+ | 0.2+ |
| 2005 05 10 | 691 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.4+ |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.0 | | | | |

**2006 RM$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.92514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26047348 | $\omega$ | 111.10874 | | +0.52630313 | | −0.84982086 |
| $a$ | 2.4282517 | $\Omega$ | 307.10333 | | +0.76629629 | | +0.48854559 |
| $e$ | 0.2117784 | $i$ | 2.04441 | | +0.36850374 | | +0.19780725 |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 704 | 0.2− | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2004 02 14 | 691 | 0.1− | 0.0 | 2006 09 17 | 704 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.1− | 0.4− |
| 2004 02 14 | 691 | 0.2+ | 0.0 | 2006 09 17 | 704 | 1.0− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2004 03 17 | 691 | 0.1− | 0.4+ | 2006 09 17 | 704 | 0.4+ | 0.6− | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.5− | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.9− | 1.1+ | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.8+ | 0.5− | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 09 20 | 704 | 1.1− | 0.8+ | 2006 10 20 | G96 | 0.1+ | 0.6− |
| 2006 08 28 | 703 | 0.4− | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2006 08 28 | 703 | 0.3+ | 0.6− | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.4− | 0.9− |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.5− | 2006 11 14 | G96 | 0.5+ | 0.5− |

**2006 RQ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.43332 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17758643 | $\omega$ | 214.79726 | | +0.69287578 | | −0.71851513 |
| $a$ | 3.1347015 | $\Omega$ | 191.75957 | | +0.71042097 | | +0.69460499 |
| $e$ | 0.2326768 | $i$ | 17.26598 | | +0.12339046 | | +0.03549526 |
| $P$ | 5.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 691 | 0.0 | 0.4− | 2006 09 15 | 704 | 0.0 | 0.2− | 2006 09 25 | 704 | 1.1+ | 0.9+ |
| 1995 08 29 | 691 | 0.0 | 0.4− | 2006 09 15 | 704 | 0.4+ | 0.3− | 2006 09 25 | 704 | 0.5+ | 0.1+ |
| 1995 08 29 | 691 | 0.2+ | 0.3− | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 10 01 | 704 | 0.7− | 1.0− |
| 1995 10 20 | 691 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.7− | 0.6− | 2006 10 01 | 704 | 1.0− | 0.4− |
| 1995 10 20 | 691 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.5− | 1.2− | 2006 10 01 | 704 | (2.1− | 1.3+) |
| 1995 10 20 | 691 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.9+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.3− |
| 2001 09 28 | 704 | 0.3+ | 0.4− | 2006 09 18 | 704 | 0.7+ | 0.3− | 2006 10 01 | 704 | 0.4− | 0.7+ |
| 2001 09 28 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 704 | 0.8+ | 0.8+ | 2006 10 10 | 644 | 0.2+ | 0.4+ |
| 2001 09 28 | 704 | 0.5+ | 0.1− | 2006 09 18 | 704 | 0.6− | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2001 09 28 | 704 | 0.2− | 0.5− | 2006 09 18 | 704 | 0.1+ | 0.7+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2001 09 28 | 704 | 0.3+ | 1.2− | 2006 09 20 | 699 | 0.5− | 0.6− | 2006 10 16 | 703 | 1.1+ | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 608 | 0.0 | 0.3− | 2006 09 20 | 699 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.8− |
| 2001 11 17 | 608 | 0.1+ | 0.5− | 2006 09 20 | 699 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2001 11 17 | 608 | 0.2− | 0.3− | 2006 09 20 | 703 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.3− |
| 2001 12 07 | 704 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.2− | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2001 12 07 | 704 | 0.3− | 0.6− | 2006 09 20 | 703 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.6+ |
| 2001 12 07 | 704 | 0.2− | 0.4+ | 2006 09 20 | 703 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2001 12 07 | 704 | 0.4+ | 0.2− | 2006 09 20 | 703 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.0 | 0.2+ |
| 2001 12 07 | 704 | 0.4+ | 0.0 | 2006 09 22 | 703 | 0.1− | 0.1− | 2006 10 22 | 703 | (1.0− | 2.6+) |
| 2002 01 06 | 608 | 0.3− | 0.4− | 2006 09 22 | 703 | 0.1− | 0.6+ | 2006 10 22 | 703 | 1.0− | 1.0− |
| 2002 01 06 | 608 | 0.4− | 0.1− | 2006 09 22 | 703 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.5− | 0.1− |
| 2002 01 06 | 608 | 0.5+ | 0.0 | 2006 09 22 | 703 | 0.1+ | 0.5+ | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2002 01 12 | 704 | 0.1− | 0.2+ | 2006 09 24 | 106 | 0.1+ | 1.1− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2002 01 12 | 704 | 0.2+ | 0.6+ | 2006 09 24 | 106 | 0.7+ | 1.4− | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2002 01 12 | 704 | 0.4− | 0.2+ | 2006 09 24 | 106 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2002 01 12 | 704 | 0.7− | 0.7+ | 2006 09 24 | 106 | 0.5+ | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2006 09 15 | 704 | 0.3+ | 0.6− | 2006 09 25 | 704 | 1.0− | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.1+ |
| 2006 09 15 | 704 | 0.4+ | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2006 09 15 | 704 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.2− | 0.9+ | 2006 11 21 | G96 | 0.1− | 0.1− |

**2006 RR$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.55878 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27077143 | $\omega$ | 17.68773 | | +0.95713567 | −0.28963889 | |
| $a$ | 2.3662874 | $\Omega$ | 359.14741 | | +0.25889468 | +0.85675812 | |
| $e$ | 0.2502390 | $i$ | 3.05005 | | +0.12986476 | +0.42670228 | |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 25 | 691 | 0.2− | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.8− | 0.7+ |
| 1993 01 25 | 691 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.3− | 0.0 |
| 1993 01 25 | 691 | 0.1− | 0.1+ | 2006 09 22 | A50 | 0.8+ | 0.3− | 2006 09 30 | 703 | 0.1− | 0.4− |
| 1999 12 15 | 704 | 0.3+ | 0.5+ | 2006 09 22 | A50 | 0.5− | 0.2+ | 2006 09 30 | 704 | 0.9− | 0.8+ |
| 1999 12 15 | 704 | 0.1− | 0.5− | 2006 09 24 | 106 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 1999 12 15 | 704 | 0.4+ | 0.2− | 2006 09 24 | 106 | 0.0 | 0.5− | 2006 09 30 | 704 | 0.2− | 0.0 |
| 1999 12 15 | 704 | 0.7+ | 0.2+ | 2006 09 24 | 106 | 0.3+ | 1.1− | 2006 09 30 | 703 | 0.6− | 0.1+ |
| 2004 01 22 | 704 | 0.1+ | 0.6+ | 2006 09 24 | 106 | 0.4+ | 1.0− | 2006 09 30 | 704 | 0.2+ | 0.3+ |
| 2004 01 22 | 704 | 1.2+ | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.5− | 0.9+ | 2006 09 25 | 699 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 0.9− | 0.7+ | 2006 09 25 | 699 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2006 08 28 | 703 | 1.1− | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 16 | 703 | 1.3− | 0.5− |
| 2006 08 28 | 703 | 1.5− | 1.2+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2006 08 28 | 703 | 1.2− | 1.2+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.7− | 0.6+ |
| 2006 08 28 | 691 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2006 08 28 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.3− | 0.1− |
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2006 09 15 | 691 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2006 09 17 | 704 | 0.2+ | 0.4− | 2006 09 26 | 704 | 1.4− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 09 17 | 704 | 0.1+ | 0.6− | 2006 09 26 | 704 | 0.7− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2006 09 17 | 704 | 0.7+ | 0.4− | 2006 09 26 | 704 | 1.0− | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2006 09 17 | 704 | 0.0 | 0.7− | 2006 09 26 | 704 | (1.5− | 0.4+) | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 09 26 | 704 | 1.2− | 0.6+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2006 09 18 | 699 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 09 27 | 704 | 0.9− | 1.4+ | 2006 11 11 | 703 | 0.8+ | 2.0− |
| 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 09 27 | 704 | 1.5− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2006 09 19 | 699 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 1.1− | 0.9+ | 2006 11 11 | 703 | 1.0+ | 0.6+ |
| 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 09 27 | 704 | 0.2− | 1.2+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | 699 | 0.9+ | 0.4+ | 2006 09 29 | 704 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 20 | 704 | 0.5+ | 0.9+ | 2006 09 29 | 704 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.8+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2006 09 20 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 18 | 703 | 0.4− | 0.4− |
| 2006 09 20 | 644 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 18 | 703 | 0.1− | 1.0− |
| 2006 09 20 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 703 | 0.2+ | 0.7− |
| 2006 09 20 | 704 | 0.3+ | 0.7+ | 2006 09 30 | 704 | 0.7+ | 0.8+ | 2006 11 18 | 703 | 1.1− | 0.3+ |

**2006 RU$_{30}$ = 4737 P-L**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.29626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21430697 | $\omega$ | 44.41823 | | +0.62901084 | −0.77695828 | |
| $a$ | 2.7655309 | $\Omega$ | 6.75566 | | +0.63710514 | +0.49596871 | |
| $e$ | 0.1457053 | $i$ | 12.81880 | | +0.44546875 | +0.38775104 | |
| $P$ | 4.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.1− | 1.0+ | 2006 09 17 | 704 | 0.4− | 0.8+ | 2006 10 16 | G96 | 0.0 | 0.2+ |
| 1960 09 24 | 675 | 0.1+ | 0.8− | 2006 09 17 | 704 | 0.9+ | 0.5− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 1960 09 26 | 675 | 0.2+ | 0.7+ | 2006 09 17 | 704 | 0.9− | 0.5− | 2006 10 16 | G96 | 0.0 | 0.2− |
| 1960 09 26 | 675 | 1.3+ | 0.3− | 2006 09 20 | 704 | 0.3− | 0.8+ | 2006 10 17 | 703 | 1.1− | 0.1+ |
| 1960 09 27 | 675 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.4− | 0.9+ | 2006 10 17 | 703 | 0.7− | 0.9− |
| 1960 09 27 | 675 | 0.8+ | 0.8− | 2006 09 20 | 704 | 0.6− | 0.1+ | 2006 10 17 | 703 | (1.0− | 1.9+) |
| 1960 09 28 | 675 | 1.5− | 1.3+ | 2006 09 26 | 704 | 1.2+ | 0.2+ | 2006 10 17 | 703 | 1.4+ | 1.2− |
| 1960 09 28 | 675 | 0.0 | 0.5− | 2006 09 26 | 704 | (2.7+ | 3.0+) | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 08 22 | 644 | 0.6− | 0.6− | 2006 09 26 | 704 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2006 08 22 | 644 | 0.0 | 0.6− | 2006 09 26 | 704 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2006 08 22 | 644 | 0.2+ | 0.9− | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 20 | G96 | 0.5+ | 0.0 |
| 2006 09 15 | 691 | 1.5+ | 0.7+ | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 2006 09 15 | 691 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2006 09 15 | 691 | 0.5− | 0.1− | 2006 09 26 | G96 | 0.9− | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2006 09 17 | 704 | 0.1+ | 0.6+ | 2006 10 16 | G96 | 0.3− | 0.1+ | | | | |

**2006 RV$_{30}$ = 1995 OJ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.00763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18213474 | $\omega$ | 46.32290 | | +0.99164660 | −0.01201365 | |
| $a$ | 3.0822950 | $\Omega$ | 313.90888 | | −0.05494159 | +0.86146940 | |
| $e$ | 0.1562331 | $i$ | 10.26823 | | +0.11669805 | +0.50766736 | |
| $P$ | 5.41 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.4+ | 0.0 | 2001 11 11 | 704 | 0.3− | 0.1+ | 2006 09 21 | 699 | 0.6− | 0.5+ |
| 1995 07 26 | 691 | 0.1+ | 0.3+ | 2001 11 11 | 699 | 0.5+ | 1.4+ | 2006 09 21 | 699 | 0.0 | 0.8+ |
| 1995 07 26 | 691 | 0.5+ | 0.3+ | 2001 11 11 | 699 | 0.1+ | 0.9+ | 2006 09 27 | 703 | 0.1+ | 0.2+ |
| 1995 07 27 | 691 | 0.6− | 0.1− | 2006 07 21 | 703 | 0.3− | 1.0− | 2006 09 27 | 703 | 0.1+ | 0.4− |
| 1995 07 27 | 691 | 0.4− | 0.1− | 2006 07 21 | 703 | 0.5− | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.2− |
| 1995 07 27 | 691 | 0.3− | 0.0 | 2006 07 21 | 703 | 0.2+ | 1.1− | 2006 09 27 | 703 | 0.1− | 0.8− |
| 2001 09 25 | 704 | 0.2+ | 0.2− | 2006 07 21 | 703 | 1.2− | 0.6− | 2006 09 29 | 699 | 0.3+ | 0.6+ |
| 2001 09 25 | 704 | 0.4+ | 0.4− | 2006 08 29 | 699 | 0.3− | 1.0+ | 2006 09 29 | 699 | 0.6− | 0.4− |
| 2001 09 25 | 704 | 0.5+ | 0.5− | 2006 08 29 | 699 | 1.2− | 0.0 | 2006 09 29 | 699 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.3+ | 0.1+ | 2006 08 29 | 699 | 0.1− | 0.6− | 2006 10 03 | 703 | 0.3− | 0.3− |
| 2001 09 25 | 704 | 0.3− | 0.4+ | 2006 08 29 | 699 | 0.2+ | 0.1+ | 2006 10 03 | 703 | 0.6+ | 0.6− |
| 2001 10 15 | 704 | 0.6+ | 1.2− | 2006 09 15 | 704 | 0.0 | 0.5+ | 2006 10 03 | 703 | (2.1+ | 1.4−) |
| 2001 10 15 | 704 | 0.6+ | 0.5− | 2006 09 15 | 704 | 0.3+ | 0.1+ | 2006 10 03 | 703 | 0.7+ | 0.7− |
| 2001 10 15 | 704 | 0.1− | 0.1− | 2006 09 15 | 704 | 0.6− | 0.1+ | 2006 10 17 | 691 | 0.4+ | 0.0 |
| 2001 10 15 | 704 | 0.1+ | 0.2− | 2006 09 15 | 704 | 0.1− | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 10 15 | 704 | 0.2+ | 0.1+ | 2006 09 15 | 704 | 0.3+ | 0.5+ | 2006 10 17 | 691 | 0.4+ | 0.1+ |
| 2001 11 11 | 704 | 0.8− | 0.1− | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 10 20 | 691 | (2.5+ | 3.8−) |
| 2001 11 11 | 699 | (2.1+ | 0.9−) | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 1.1− | 0.0 | 2006 09 17 | 703 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2− |
| 2001 11 11 | 704 | 1.0− | 0.1+ | 2006 09 17 | 703 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2001 11 11 | 699 | 0.2+ | 0.8+ | 2006 09 21 | 699 | 0.9+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.3− | 0.2+ | 2006 09 21 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.1− |

**2006 RW$_{30}$ = 2001 VT$_{69}$ = 2003 BZ$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.85684 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17376983 | $\omega$ | 31.28225 | | +0.90563636 | +0.40693651 | |
| $a$ | 3.1804345 | $\Omega$ | 304.24073 | | −0.41274330 | +0.78136320 | |
| $e$ | 0.0698351 | $i$ | 8.29538 | | −0.09729207 | +0.47315349 | |
| $P$ | 5.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.2+ | 0.2− | 2003 01 28 | 704 | 0.6+ | 0.3− | 2006 09 15 | 704 | 0.0 | 0.2+ |
| 2001 11 11 | 704 | 0.3− | 0.4− | 2003 01 28 | 704 | 0.2− | 1.1− | 2006 09 15 | 704 | 0.3+ | 1.0+ |
| 2001 11 11 | 704 | 0.6+ | 0.3− | 2003 01 30 | 644 | 0.4− | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.8− |
| 2001 11 11 | 704 | 1.0+ | 1.1− | 2003 01 30 | 644 | 0.3− | 0.6+ | 2006 09 17 | 703 | 0.2− | 0.7− |
| 2001 11 11 | 704 | 0.1+ | 0.4− | 2003 01 30 | 644 | 0.3− | 0.3+ | 2006 09 17 | 703 | 0.5+ | 0.5− |
| 2001 11 12 | 704 | 1.0− | 0.6+ | 2006 08 25 | D35 | 0.5+ | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.7− |
| 2001 11 12 | 704 | 0.0 | 0.9− | 2006 08 25 | D35 | 0.5+ | 0.5+ | 2006 09 20 | 699 | 0.9+ | 0.1+ |
| 2001 11 12 | 704 | 0.6− | 0.8+ | 2006 08 25 | D35 | 0.6+ | 0.2+ | 2006 09 20 | 699 | 1.1− | 0.3− |
| 2001 11 12 | 704 | 0.0 | 1.9+ | 2006 09 15 | 704 | 0.6− | 0.6+ | 2006 09 20 | 699 | 1.1+ | 0.5+ |
| 2003 01 28 | 704 | 0.6+ | 0.2+ | 2006 09 15 | 704 | 1.1− | 0.1− | 2006 09 20 | 699 | 0.5− | 0.2− |

## 2006 $RX_{30}$ = 1997 $WB_5$ = 2005 $GK_{117}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 26.99517 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21243759 | $\omega$ | 95.03511 | | | +0.74311193 | | +0.66423263 | |
| $a$ | 2.7817311 | $\Omega$ | 223.37374 | | | −0.65118582 | | +0.68989920 | |
| $e$ | 0.2263939 | $i$ | 6.78326 | | | −0.15408339 | | +0.28780915 | |
| $P$ | 4.64 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 1.7+ | 1.2+ | 2006 09 15 | 704 | 0.2+ | 0.0 | 2006 10 01 | 703 | 0.5− | 0.7− |
| 1997 11 06 | 704 | 0.9− | 0.8+ | 2006 09 15 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 703 | 0.6− | 0.0 |
| 1997 11 06 | 704 | (2.8− | 0.7+) | 2006 09 15 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 703 | 0.9− | 0.3− |
| 1997 11 06 | 704 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 01 | 703 | 0.1− | 0.4− |
| 1997 11 21 | 691 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.5− | 0.4− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 1997 11 21 | 691 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.2− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.4+ |
| 1997 11 21 | 691 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.4+ | 0.0 |
| 1997 11 25 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.3− | 1.0+ | 2006 10 11 | 644 | 0.5− | 0.1+ |
| 1997 11 25 | 691 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.2− | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 1997 11 25 | 691 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.4+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 291 | 0.2+ | 0.6+ | 2006 09 18 | 704 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.0 |
| 2002 11 06 | 291 | 0.1+ | 0.4+ | 2006 09 18 | 704 | 0.5− | 1.0+ | 2006 10 17 | 703 | 0.8− | 1.2− |
| 2002 11 06 | 291 | 0.4− | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2005 04 11 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 704 | 0.3+ | 1.4+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.4+ | 0.1+ |
| 2005 04 12 | 691 | 0.0 | 0.8+ | 2006 09 18 | 704 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 08 29 | 699 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 08 29 | 699 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2006 08 29 | 699 | 1.0− | 0.2− | 2006 09 25 | 704 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2006 09 15 | 704 | 0.6+ | 0.5+ | 2006 09 25 | 704 | 0.3+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2006 09 15 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 704 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2006 09 15 | 704 | 0.2+ | 0.0 | 2006 09 25 | 704 | 0.6− | 0.0 | | | | |
| 2006 09 15 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 704 | 0.2+ | 0.2+ | | | | |

## 2006 $RY_{30}$ = 1999 $UK_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 351.76744 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27386139 | $\omega$ | 142.60068 | | | +0.97538716 | | −0.20526197 | |
| $a$ | 2.3484547 | $\Omega$ | 229.44335 | | | +0.16787426 | | +0.92811573 | |
| $e$ | 0.1172233 | $i$ | 6.08551 | | | +0.14296195 | | +0.31059413 | |
| $P$ | 3.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 1.7+ | 0.7− | 2006 08 29 | 699 | 0.3+ | 0.6+ | 2006 09 27 | 703 | 0.8− | 0.9− |
| 1999 10 13 | 704 | 0.2− | 0.9− | 2006 08 29 | 699 | 0.4− | 0.6− | 2006 09 27 | 703 | 0.7− | 0.4− |
| 1999 10 13 | 704 | 1.0− | 0.2− | 2006 09 06 | 644 | 0.2+ | 0.2− | 2006 09 27 | 703 | 0.4+ | 0.0 |
| 1999 10 13 | 704 | 0.2− | 0.2− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.9+ | 0.7+ |
| 1999 10 30 | 691 | 0.1+ | 0.1− | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.6+ | 0.5− |
| 1999 10 30 | 691 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.7+ | 0.9+ | 2006 10 01 | 703 | 0.2− | 0.1+ |
| 1999 10 30 | 691 | 0.1− | 0.3+ | 2006 09 15 | 704 | 1.2+ | 0.2+ | 2006 10 01 | 703 | 0.4− | 0.7+ |
| 1999 11 04 | 704 | 0.4+ | 0.8+ | 2006 09 15 | 704 | 0.1− | 0.7+ | 2006 10 01 | 703 | 0.2+ | 0.2+ |
| 1999 11 04 | 704 | 0.5+ | 0.1+ | 2006 09 17 | 703 | 1.0− | 0.2+ | 2006 10 01 | 703 | 0.4− | 0.6+ |
| 1999 11 04 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 1999 11 04 | 704 | 1.4− | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.3− |
| 2003 12 22 | 704 | 0.6+ | 0.4+ | 2006 09 17 | 703 | 0.9− | 0.3− | 2006 10 17 | 703 | 0.7+ | 0.2− |
| 2003 12 22 | 704 | 0.1+ | 1.0+ | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.0− | 1.0+ |
| 2003 12 22 | 704 | 0.1− | 0.9+ | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.3− | 1.2+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 2005 04 14 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2005 04 14 | 691 | 0.4+ | 0.5+ | 2006 09 20 | 703 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.7+ | 0.6− |
| 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.1+ | 2006 10 17 | 557 | 0.1− | 0.6− |
| 2005 05 14 | G96 | 0.4− | 0.2+ | 2006 09 20 | 703 | 0.7− | 1.0+ | 2006 10 17 | 557 | 0.6− | 0.0 |
| 2005 05 14 | G96 | 0.1+ | 0.4+ | 2006 09 20 | 703 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2005 05 14 | G96 | 0.2+ | 0.9+ | 2006 09 25 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2005 05 14 | G96 | 0.3− | 0.4+ | 2006 09 25 | 704 | 0.0 | 1.1+ | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2005 06 01 | G96 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2005 06 01 | G96 | 0.2− | 0.1− | 2006 09 25 | 704 | 0.0 | 0.8+ | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 06 01 | G96 | 0.7− | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2005 06 01 | G96 | 0.2+ | 0.0 | 2006 09 27 | 699 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2006 08 29 | 699 | 0.5− | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.4+ | | | | |
| 2006 08 29 | 699 | 0.5+ | 0.8+ | 2006 09 27 | 699 | (1.4+ | 1.7+) | | | | |

## 2006 $RB_{31}$ = 2001 $XF_{257}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 4.83459 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17986467 | $\omega$ | 14.57445 | | | +0.99836093 | | +0.02994115 | |
| $a$ | 3.1081750 | $\Omega$ | 343.47603 | | | −0.05165623 | | +0.83831992 | |
| $e$ | 0.1009827 | $i$ | 9.87449 | | | +0.02463898 | | +0.54435580 | |
| $P$ | 5.48 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.1+ | 0.0 | 2006 09 15 | 704 | 0.5− | 0.2− | 2006 09 29 | 704 | 0.0 | 0.5+ |
| 2001 11 11 | 704 | 1.1− | 0.2+ | 2006 09 15 | 704 | 0.7− | 0.2+ | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2001 11 11 | 704 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.9− | 2006 10 09 | 644 | 0.3− | 0.1+ |
| 2001 11 11 | 704 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.3− | 1.0+ | 2006 10 09 | 644 | 0.2− | 0.0 |
| 2001 11 11 | 704 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.3+ | 0.6− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 12 07 | 644 | 0.1+ | 0.7+ | 2006 09 17 | 703 | 0.1− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2001 12 07 | 644 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 12 07 | 644 | (2.3− | 0.0 ) | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.3− |
| 2001 12 09 | 704 | 0.6+ | 0.4− | 2006 09 19 | 699 | 0.8− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2001 12 09 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 2001 12 09 | 704 | 0.7+ | 0.2− | 2006 09 25 | 704 | 1.0+ | 0.3− | 2006 10 17 | 703 | (2.1− | 0.2−) |
| 2001 12 09 | 704 | 0.1− | 1.1− | 2006 09 25 | 704 | 0.9+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 08 24 | 644 | 0.4+ | 0.2− | 2006 09 25 | 704 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2006 08 24 | 644 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2006 08 24 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | (1.6+ | 0.3−) |
| 2006 08 24 | 644 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.4− |
| 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.7− | 0.6+ | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2006 09 15 | 704 | 0.4+ | 0.1− | 2006 09 29 | 704 | (0.3− | 1.5+) | | | | |
| 2006 09 15 | 704 | 1.0+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.2+ | | | | |

## 2006 $RC_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 322.96469 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21534162 | $\omega$ | 81.98133 | | | +0.48896729 | | −0.87117095 | |
| $a$ | 2.7566654 | $\Omega$ | 338.56960 | | | +0.74479171 | | +0.44345217 | |
| $e$ | 0.2203083 | $i$ | 6.98129 | | | +0.45408842 | | +0.21074002 | |
| $P$ | 4.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.7− | 0.2+ | 2006 09 15 | 704 | 0.5+ | 1.2+ | 2006 09 27 | 699 | 0.2+ | 0.4+ |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2006 09 15 | 704 | 0.2− | 0.1+ | 2006 09 27 | 699 | 0.1+ | 0.4− |
| 2002 12 05 | 704 | 0.3+ | 0.4− | 2006 09 15 | 704 | (0.1− | 1.8+) | 2006 09 27 | 699 | 0.1− | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.1− | 2006 09 15 | 704 | 0.5+ | 0.4+ | 2006 09 29 | 704 | 0.2− | 0.1+ |
| 2002 12 15 | 704 | 0.6+ | 1.4− | 2006 09 17 | 703 | 0.4− | 0.3− | 2006 09 29 | 704 | 0.1+ | 0.4+ |
| 2002 12 15 | 704 | 0.7+ | 0.9− | 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.3+ |
| 2002 12 15 | 704 | (2.1+ | 0.5+) | 2006 09 17 | 703 | 0.9− | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 699 | 0.0 | 0.4+ | 2006 09 17 | 703 | 1.0− | 0.2− | 2006 09 29 | 704 | 0.2− | 0.0 |
| 2002 12 31 | 699 | 0.4+ | 0.6− | 2006 09 18 | 691 | (3.8+ | 0.8−) | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2002 12 31 | 699 | 0.2+ | 0.2− | 2006 09 18 | 704 | (3.8− | 0.1+) | 2006 10 02 | G96 | 0.1+ | 0.6− |
| 2002 12 31 | 699 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.4− |
| 2003 01 09 | 704 | 0.6− | 0.1+ | 2006 09 18 | 704 | (2.9− | 0.6+) | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2003 01 09 | 704 | 0.2− | 0.2+ | 2006 09 18 | 704 | (4.5− | 0.3+) | 2006 10 09 | 644 | 0.4+ | 0.1− |
| 2003 01 09 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2003 01 09 | 704 | 0.1− | 1.0+ | 2006 09 18 | 704 | 0.6− | 0.2− | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2003 01 09 | 704 | 0.5− | 1.3+ | 2006 09 18 | 704 | (4.5− | 0.5+) | 2006 10 17 | 703 | 0.0 | 0.9+ |
| 2006 07 22 | G96 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.2− |
| 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.4− | 1.1+ | 2006 10 17 | 703 | 1.0− | 1.1− |
| 2006 07 22 | G96 | 0.0 | 0.0 | 2006 09 19 | 699 | (1.7+ | 0.7−) | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2006 08 28 | 703 | 0.0 | 0.4+ | 2006 09 25 | 704 | 1.1− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 08 28 | 703 | 0.1− | 0.6− | 2006 09 25 | 704 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.3− | 0.0 |
| 2006 08 28 | 703 | 0.4− | 0.3− | 2006 09 25 | 704 | 0.4+ | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.3− |
| 2006 08 28 | 703 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.5+ | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.3− |
| 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2006 09 06 | 644 | 0.3− | 0.4− | 2006 09 26 | 691 | 0.3+ | 0.1− | | | | |
| 2006 09 06 | 644 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.3+ | 0.1− | | | | |

**2006 RD$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.16310 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21978671 | $\omega$ | 45.79727 | | +0.67198386 | +0.73502435 | |
| $a$ | 2.7193708 | $\Omega$ | 266.65112 | | −0.70266863 | +0.59426518 | |
| $e$ | 0.0539630 | $i$ | 5.19702 | | −0.23386852 | +0.32647832 | |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 28 | 691 | 0.0 | 0.2+ | 2006 08 29 | 703 | 0.0 | 0.7− | 2006 09 19 | 699 | 1.1+ | 0.3+ |
| 2001 06 28 | 691 | 0.2− | 0.1+ | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.0 |
| 2001 06 28 | 691 | 0.0 | 0.3+ | 2006 08 29 | 703 | 0.7− | 0.4+ | 2006 09 19 | 699 | 0.6+ | 0.8+ |
| 2001 07 13 | 644 | 0.0 | 0.6+ | 2006 08 29 | 703 | 0.8− | 0.0 | 2006 09 19 | 699 | (0.1+ | 2.1+) |
| 2001 07 13 | 644 | 0.5+ | 0.5+ | 2006 09 15 | 704 | 0.4− | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 07 13 | 644 | 0.2+ | 0.5+ | 2006 09 15 | 704 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 07 21 | 608 | 0.5− | 0.6− | 2006 09 15 | 704 | (0.9− | 1.6+) | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 2001 07 21 | 608 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2001 07 21 | 608 | 0.3− | 0.7− | 2006 09 17 | 703 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 11 07 | 695 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.9− | 0.6− | 2006 10 12 | 644 | 0.6− | 0.0 |
| 2002 11 07 | 695 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.4− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2004 02 18 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 704 | (0.1− | 2.9+) | 2006 10 24 | 644 | 0.3− | 0.1− |
| 2004 02 18 | 691 | 0.0 | 0.4+ | 2006 09 18 | 704 | (0.6+ | 2.8+) | 2006 10 24 | 644 | 0.1+ | 0.5+ |
| 2004 02 18 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 704 | (0.7+ | 1.7+) | | | | |

**2006 RE$_{31}$ = 2001 OQ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.80560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21179303 | $\omega$ | 142.96483 | | +0.95298605 | −0.30051246 | |
| $a$ | 2.7873720 | $\Omega$ | 234.56802 | | +0.26533290 | +0.88951940 | |
| $e$ | 0.1854154 | $i$ | 2.73338 | | +0.14634219 | +0.34416201 | |
| $P$ | 4.65 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 17 | 910 | 0.5− | 0.5+ | 2006 09 18 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.0 | 0.0 |
| 1998 01 17 | 910 | 0.2− | 0.2+ | 2006 09 18 | 704 | 1.2+ | 0.3+ | 2006 10 09 | 644 | 0.6− | 0.2+ |
| 1998 01 17 | 910 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.4− | 0.0 |
| 2000 05 11 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.5− | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2000 05 11 | 691 | 0.5− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.4− | 0.1+ |
| 2000 05 11 | 691 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2001 07 18 | 691 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2001 07 18 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.8+ | 0.9− |
| 2001 07 18 | 691 | 0.2− | 0.2+ | 2006 09 25 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.4− |
| 2001 07 25 | 608 | 0.4+ | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2001 07 25 | 608 | 0.9+ | 0.2− | 2006 09 25 | 704 | 0.8+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2001 07 25 | 608 | 0.9+ | 0.1+ | 2006 09 27 | 699 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2004 03 17 | 691 | 0.6+ | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 09 27 | 699 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2004 03 17 | 691 | 0.4+ | 0.1− | 2006 09 29 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2004 04 25 | 691 | 0.7+ | 0.6+ | 2006 09 29 | 704 | 0.5− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2004 04 25 | 691 | 0.2− | 0.8+ | 2006 09 29 | 704 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2004 04 25 | 691 | 0.6− | 0.3+ | 2006 09 29 | 704 | 0.7− | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2006 09 15 | 704 | 0.3+ | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.6− | 0.1− |
| 2006 09 15 | 704 | 0.2− | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.1+ |
| 2006 09 15 | 704 | 0.8− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2006 09 17 | 703 | 0.2+ | 0.3− | 2006 10 01 | 704 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 17 | 703 | 0.3+ | 0.8− | 2006 10 01 | 704 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2006 09 18 | 704 | 1.4+ | 0.2+ | 2006 10 01 | 704 | 0.4− | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.8+ | | | | |

**2006 RF$_{31}$ = 2003 AP$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.52366 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21335503 | $\omega$ | 58.57877 | | +0.72037333 | −0.69353838 | |
| $a$ | 2.7737509 | $\Omega$ | 345.32662 | | +0.62490066 | +0.65410188 | |
| $e$ | 0.1910111 | $i$ | 1.84877 | | +0.30093426 | +0.30191928 | |
| $P$ | 4.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 04 | 691 | 0.3− | 0.3+ | 2006 09 17 | 704 | 0.8+ | 0.0 | 2006 09 27 | 704 | 1.0+ | 0.4+ |
| 1992 10 04 | 691 | 0.3− | 0.2+ | 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 1.5− | 0.4+ |
| 1992 10 04 | 691 | 0.4+ | 0.0 | 2006 09 17 | 704 | 0.6− | 1.3− | 2006 09 28 | 699 | 0.3− | 0.2− |
| 1999 02 14 | 691 | 0.7− | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.8− | 2006 09 28 | 699 | 0.4+ | 0.7+ |
| 1999 02 14 | 691 | 0.3− | 0.4+ | 2006 09 21 | 184 | 0.2+ | 0.3− | 2006 09 28 | 699 | 0.3+ | 0.9+ |
| 1999 02 14 | 691 | 0.8− | 0.6+ | 2006 09 22 | 184 | 0.1− | 0.2+ | 2006 09 28 | 699 | 0.4− | 0.0 |
| 1999 03 11 | 691 | 1.2+ | 0.0 | 2006 09 22 | 184 | 0.7+ | 0.4+ | 2006 09 29 | 704 | (3.4− | 0.1+) |
| 1999 03 11 | 691 | 0.7+ | 0.1− | 2006 09 22 | 184 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 1.1+ | 1.1+ |
| 1999 03 11 | 691 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.3+ | 0.2− | 2006 09 29 | 704 | (1.8+ | 0.9+) |
| 2003 01 09 | 704 | 0.0 | 0.7− | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2003 01 09 | 704 | 0.4− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2003 01 09 | 704 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2006 07 21 | G96 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.3− |
| 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 27 | 704 | 0.3+ | 0.7− | 2006 10 28 | G96 | 0.4+ | 0.1+ |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1− |

**2006 RG$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.88239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21690446 | $\omega$ | 25.33365 | | +0.64946178 | +0.75935465 | |
| $a$ | 2.7434080 | $\Omega$ | 285.19380 | | −0.70447103 | +0.58119858 | |
| $e$ | 0.1842471 | $i$ | 2.36056 | | −0.28621666 | +0.29255550 | |
| $P$ | 4.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 910 | 0.0 | 0.5+ | 2005 03 17 | G96 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.7− | 0.0 |
| 1997 10 02 | 910 | 0.1+ | 0.6+ | 2005 03 17 | G96 | 1.3− | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.3+ |
| 1997 10 02 | 910 | 0.1− | 0.3+ | 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 09 25 | 704 | (0.3− | 1.7+) |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.2− | 2006 09 27 | 699 | 0.2+ | 0.1− |
| 2000 02 12 | 645 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.2− | 0.8+ | 2006 09 27 | 699 | 0.1− | 0.4+ |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 09 27 | 699 | 0.3+ | 0.0 |
| 2000 03 03 | 645 | 0.2+ | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.5+ |
| 2002 12 05 | 950 | 0.2+ | 0.4− | 2006 09 06 | 644 | 0.5− | 0.3+ | 2006 09 29 | 704 | (1.5− | 1.7+) |
| 2002 12 05 | 950 | 0.0 | 0.3− | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.6− | 0.2+ |
| 2002 12 05 | 950 | 0.0 | 0.3− | 2006 09 15 | 704 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.3+ |
| 2002 12 06 | 291 | 1.0− | 0.2+ | 2006 09 15 | 704 | 0.3− | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2002 12 06 | 291 | 0.8− | 0.3− | 2006 09 15 | 704 | (1.9− | 1.0+) | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2002 12 06 | 291 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.4+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 291 | (2.0− | 0.6−) | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.6− | 0.3+ | | |
| 2002 12 06 | 291 | 0.1− | 0.3− | 2006 09 17 | 703 | 1.2− | 1.2− | 2006 10 01 | 704 | 0.7+ | 0.7+ | | |
| 2002 12 06 | 291 | 0.7+ | 0.2+ | 2006 09 17 | 703 | 0.1− | 1.0− | 2006 10 01 | 704 | 0.1− | 0.1+ | | |
| 2003 12 25 | 645 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 0.1− | 1.2+ | | |
| 2003 12 25 | 645 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.9+ | 1.4− | | |
| 2004 02 11 | 691 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.2− | | |
| 2004 02 11 | 691 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 1.0+ | | |
| 2004 02 11 | 691 | 0.5+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.0 | | |
| 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2005 03 17 | G96 | 0.7− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |

**2006 RK$_{31}$ = 2001 SB$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.50395 | | (2000.0) | | | |
| $n$ | 0.21035866 | $\omega$ | 23.97066 | | +0.79093693 | −0.61169728 |
| $a$ | 2.8000285 | $\Omega$ | 13.77579 | | +0.55024272 | +0.69981418 |
| $e$ | 0.1235609 | $i$ | 3.77048 | | +0.26767839 | +0.36889911 |
| $P$ | 4.69 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.2− | 0.3+ | 2006 09 17 | 704 | 0.7− | 0.3− | 2006 09 29 | 704 | 0.4− | 0.2+ | | |
| 2001 08 27 | 644 | 0.4− | 0.3+ | 2006 09 17 | 704 | 1.5− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1+ | | |
| 2001 08 27 | 644 | 0.2− | 0.4+ | 2006 09 17 | 704 | 0.7− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1− | | |
| 2001 09 19 | 704 | 0.7− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1− | | |
| 2001 09 19 | 704 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.8− | 0.4+ | | |
| 2001 09 19 | 704 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.1− | 0.3+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.5− | 2006 09 19 | 703 | 0.3+ | 0.5+ | 2006 10 01 | 704 | 0.1+ | 0.2− | | |
| 2001 09 21 | 704 | 0.7+ | 1.2+ | 2006 09 19 | 703 | 0.2+ | 0.9− | 2006 10 01 | 704 | 0.2− | 0.5+ | | |
| 2001 09 21 | 704 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 2002 12 01 | 460 | 0.6− | 0.9− | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.0 | | |
| 2002 12 01 | 460 | (1.2− | 1.7−) | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1− | 1.5+ | | |
| 2002 12 11 | 704 | 0.4+ | 0.7+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.5+ | 1.3+ | | |
| 2002 12 11 | 704 | (2.7+ | 0.7−) | 2006 09 21 | A50 | 0.8− | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.3+ | | |
| 2002 12 11 | 704 | 0.7+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | (0.3− | 1.6+) | | |
| 2002 12 11 | 704 | 0.4+ | 0.5− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.6− | | |
| 2003 01 05 | 704 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.9− | | |
| 2003 01 05 | 704 | 0.5− | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 10 16 | G96 | 0.1− | 0.6− | | |
| 2003 01 05 | 704 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.7− | | |
| 2003 01 05 | 704 | 0.0 | 1.1+ | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.3− | | |
| 2004 03 18 | 704 | 0.1+ | 1.0+ | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.3− | 0.1+ | | |
| 2004 03 18 | 704 | 0.5− | 1.4+ | 2006 09 27 | 704 | 0.9+ | 1.2+ | 2006 10 16 | 703 | 0.3− | 0.2− | | |
| 2004 03 18 | 704 | 0.9− | 0.8+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.2+ | 1.3+ | | |
| 2004 03 18 | 704 | (1.9+ | 0.5+) | 2006 09 27 | 704 | 1.2+ | 1.2− | 2006 10 20 | 644 | 0.2− | 0.4− | | |
| 2004 03 18 | 704 | 1.1+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2004 03 27 | 704 | 0.8+ | 0.2+ | 2006 09 27 | 704 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.6− | | |
| 2004 03 27 | 704 | 1.1+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 2004 03 27 | 704 | 0.9+ | 0.7+ | 2006 09 27 | 704 | 1.0+ | 1.2− | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2004 03 27 | 704 | (0.4− | 1.6+) | 2006 09 29 | 704 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.9+ | 2006 10 21 | 701 | (6.4− | 0.8+) | | |
| 2006 09 15 | 691 | 0.6+ | 0.2+ | 2006 09 29 | 704 | 0.8− | 0.1+ | 2006 10 21 | 701 | (0.8− | 1.6+) | | |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.4− | 1.3+ | 2006 10 21 | 701 | (2.6− | 1.4−) | | |

**2006 RL$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 304.94104 | | (2000.0) | | | |
| $n$ | 0.29095335 | $\omega$ | 263.99226 | | +0.20721301 | −0.97827323 |
| $a$ | 2.2555570 | $\Omega$ | 174.03625 | | +0.92099479 | +0.19277845 |
| $e$ | 0.1746295 | $i$ | 3.67109 | | +0.32989599 | +0.07627554 |
| $P$ | 3.39 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 16 | 691 | (3.6+ | 1.4+) | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.3+ | | |
| 1994 02 16 | 691 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 27 | 704 | 1.0+ | 0.8− | | |
| 1994 02 16 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1+ | | |
| 2001 03 18 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 0.5+ | 0.8− | 2006 09 27 | 704 | 0.6+ | 0.1− | | |
| 2001 03 18 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 704 | 0.4− | 0.1+ | 2006 09 27 | 691 | (2.3− | 0.8−) | | |
| 2001 03 18 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 704 | 1.0+ | 0.4− | 2006 09 27 | 704 | 0.1+ | 0.3− | | |
| 2001 03 18 | 704 | (1.7+ | 0.9+) | 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 09 27 | 704 | 0.3− | 0.6− | | |
| 2001 04 26 | 691 | 0.0 | 0.9+ | 2006 09 19 | 703 | 0.4+ | 0.8+ | 2006 09 28 | 704 | 0.1− | 0.3− | | |
| 2001 04 26 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.9+ | 2006 09 28 | 704 | 0.0 | 0.4+ | | |
| 2001 04 26 | 691 | 0.1− | 1.0+ | 2006 09 19 | 703 | 0.2− | 0.7− | 2006 09 28 | 704 | 0.7+ | 0.1− | | |
| 2003 12 01 | 704 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.1− | 2006 09 28 | 704 | 0.1− | 1.3− | | |
| 2003 12 01 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.2+ | 2006 09 28 | 704 | 0.5+ | 0.1+ | | |
| 2003 12 01 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | | |
| 2003 12 01 | 704 | 0.5+ | 0.5+ | 2006 09 19 | 703 | 1.4− | 1.4− | 2006 10 01 | 691 | 0.1− | 0.2+ | | |
| 2003 12 22 | 704 | 0.5− | 0.5+ | 2006 09 19 | 703 | 0.9− | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.3+ | | |
| 2003 12 22 | 704 | 0.6+ | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 10 01 | 704 | 0.2− | 0.4+ | | |
| 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 09 20 | 704 | (1.5− | 0.0 ) | 2006 10 01 | 704 | 0.3− | 0.1+ | | |
| 2003 12 22 | 704 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.2+ | | |
| 2003 12 22 | 704 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.8− | 0.0 | 2006 10 01 | 704 | 0.2− | 1.1+ | | |
| 2003 12 27 | 704 | 0.4− | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.7+ | 0.2+ | | |
| 2003 12 27 | 704 | 1.2+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 2003 12 27 | 704 | 0.9+ | 1.1+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2003 12 27 | 704 | 0.8− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2005 05 20 | G96 | 1.2+ | 1.0+ | 2006 09 21 | A50 | 0.3+ | 0.0 | 2006 10 17 | 703 | (0.2− | 2.6+) | | |
| 2005 05 20 | G96 | 0.8+ | 1.0+ | 2006 09 21 | A50 | 0.0 | 0.4+ | 2006 10 17 | 703 | (0.6− | 2.2+) | | |
| 2005 05 20 | G96 | 0.7+ | 0.9+ | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | (0.3− | 3.1+) | | |
| 2005 06 27 | 691 | 0.6− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 1.0+ | 1.3+ | | |
| 2005 06 27 | 691 | 0.2+ | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1− | | |
| 2005 06 27 | 691 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2006 07 22 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.6− | 0.6+ | | |
| 2006 07 22 | G96 | 0.1− | 1.0+ | 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2006 07 22 | G96 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2006 07 22 | G96 | 0.5− | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.7− | 2006 10 21 | 644 | 0.3− | 0.0 | | |

**2006 RM$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.98979 | | (2000.0) | | | |
| $n$ | 0.17459636 | $\omega$ | 296.24068 | | +0.94979382 | +0.31226401 |
| $a$ | 3.1703893 | $\Omega$ | 45.57074 | | −0.27639524 | +0.86671366 |
| $e$ | 0.1699465 | $i$ | 1.57017 | | −0.14661982 | +0.38897124 |
| $P$ | 5.65 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.1− | 2006 09 29 | 704 | 0.7− | 0.1+ | | |
| 2001 11 17 | 291 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.2− | | |
| 2001 11 17 | 291 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.2+ | 0.1+ | | |
| 2001 12 17 | 291 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.7+ | 0.9+ | | |
| 2001 12 17 | 291 | 0.4− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.3+ | 0.5+ | | |
| 2001 12 17 | 291 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.7+ | 0.1+ | 2006 09 30 | 704 | 1.0+ | 0.2− | | |
| 2004 03 19 | 291 | 0.4+ | 0.8+ | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.4+ | | |
| 2004 03 19 | 291 | 0.1+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.3− | 1.0+ | | |
| 2004 03 19 | 291 | 0.1+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.1− | 0.6+ | | |
| 2004 04 14 | 691 | 0.6+ | 0.8+ | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.1− | | |
| 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 704 | (2.6− | 2.6+) | 2006 10 01 | 704 | 0.4− | 0.6− | | |
| 2004 04 14 | 691 | 0.4+ | 0.8+ | 2006 09 26 | 704 | 1.0− | 1.1+ | 2006 10 01 | 704 | 1.0+ | 0.6+ | | |
| 2005 06 16 | G96 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.0 | | |
| 2005 06 16 | G96 | 0.2− | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.2− | 0.8+ | | |
| 2005 06 16 | G96 | 0.1+ | 0.5+ | 2006 09 26 | 704 | (2.8− | 1.4−) | 2006 10 09 | 644 | 0.2+ | 0.1+ | | |
| 2005 06 16 | G96 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.1+ | | |
| 2006 08 28 | 703 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.3+ | 0.1+ | | |
| 2006 08 28 | 703 | 0.4− | 0.7+ | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 10 10 | 104 | 0.6+ | 0.5+ | | |
| 2006 08 28 | 703 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.4− | 0.3+ | 2006 10 10 | 104 | 1.0− | 0.1+ | | |
| 2006 08 28 | 703 | 0.6− | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.6− | 2006 10 10 | 104 | 0.4+ | 0.4+ | | |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.8− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.7+ | 1.1− | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2006 09 17 | 704 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.8− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2006 09 17 | 704 | 1.1− | 0.5+ | 2006 09 28 | 704 | 1.5− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.0 | | |
| 2006 09 17 | 704 | 0.1+ | 1.3+ | 2006 09 28 | 704 | 1.1− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2− | | |
| 2006 09 18 | 699 | 0.4− | 0.8− | 2006 09 28 | 704 | (1.6− | 0.4−) | 2006 10 22 | G96 | 0.2+ | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 699 | 0.8− | 0.6+ | 2006 09 29 | 704 | 0.7− | 1.2− | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2006 09 18 | 699 | (1.3− | 1.6−) | 2006 09 29 | 704 | 0.7+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.2− |

**2006 RN$_{31}$ = 1996 JX$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.94312 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22210243 | $\omega$ | 214.50040 | | +0.97333908 | −0.22881093 | |
| $a$ | 2.7004357 | $\Omega$ | 158.70953 | | +0.21913079 | +0.90698091 | |
| $e$ | 0.1799997 | $i$ | 2.52848 | | +0.06776964 | +0.35359751 | |
| $P$ | 4.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 21 | 691 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 1993 11 21 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.6− | 0.3+ |
| 1993 11 21 | 691 | 0.6− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 1.1− | 0.6+ |
| 1996 05 13 | 691 | 0.2+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.9− | 1.1+ |
| 1996 05 13 | 691 | 0.6+ | 0.8+ | 2006 09 20 | 704 | 0.9− | 0.5− | 2006 09 29 | 704 | (1.6− | 0.5+) |
| 1996 05 13 | 691 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.9+ | 2006 09 29 | 704 | 0.8− | 0.0 |
| 1996 05 20 | 691 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.4+ | 2006 09 29 | 704 | 1.0− | 0.4+ |
| 1996 05 20 | 691 | 0.1− | 0.5− | 2006 09 20 | 704 | 0.1+ | 0.8+ | 2006 09 29 | 704 | 1.4− | 0.8+ |
| 1996 05 20 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 09 30 | 704 | 0.1+ | 0.5+ |
| 1997 08 11 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | (2.4− | 0.6+) |
| 1997 08 11 | 691 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 09 30 | 704 | 1.1− | 0.5+ |
| 1997 08 11 | 691 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 09 30 | 704 | (0.9− | 1.8+) |
| 2004 03 14 | 691 | 0.3+ | 0.7+ | 2006 09 26 | 704 | 0.3+ | 0.8− | 2006 09 30 | 704 | (1.5− | 1.7+) |
| 2004 03 14 | 691 | 0.4+ | 0.6+ | 2006 09 26 | 704 | 0.5+ | 0.8+ | 2006 09 30 | 704 | (2.1− | 1.9+) |
| 2004 03 14 | 691 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 09 30 | 704 | (1.6− | 0.8+) |
| 2005 05 15 | G96 | 0.6− | 0.1+ | 2006 09 26 | 704 | 0.7+ | 0.8+ | 2006 09 30 | 704 | (2.2− | 1.2+) |
| 2005 05 15 | G96 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2005 05 15 | G96 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.3− |
| 2005 05 15 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.5− | 0.2− |
| 2006 08 28 | 703 | 0.0 | 0.8− | 2006 09 27 | 704 | 0.4− | 0.6+ | 2006 10 11 | 291 | 0.1+ | 0.1− |
| 2006 08 28 | 703 | 0.5+ | 0.3− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 11 | 291 | 0.1+ | 0.0 |
| 2006 08 28 | 703 | 0.9+ | 1.2− | 2006 09 27 | 704 | 0.3− | 0.7+ | 2006 10 11 | 291 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 0.7− | 0.3− | 2006 09 27 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2006 09 17 | 704 | 0.4+ | 0.0 | 2006 09 27 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 09 17 | 704 | 0.5+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 17 | 704 | 0.9+ | 0.7+ | 2006 09 28 | 704 | 0.4− | 0.8+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2006 09 17 | 704 | 0.1+ | 1.5+ | 2006 09 28 | 704 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2006 09 18 | 699 | (0.7− | 2.2−) | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2006 09 18 | 699 | 0.4+ | 0.4+ | 2006 09 28 | 704 | 0.8− | 0.6+ | 2006 11 17 | G96 | 0.4− | 0.3− |

**2006 RO$_{31}$ = 2002 UA$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.97442 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23090867 | $\omega$ | 64.76726 | | +0.35287787 | −0.93539919 | |
| $a$ | 2.6313335 | $\Omega$ | 4.74184 | | +0.73037768 | +0.26035453 | |
| $e$ | 0.2789697 | $i$ | 15.78307 | | +0.58482959 | +0.23925693 | |
| $P$ | 4.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 04 | 691 | 0.6− | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.8− | 2006 09 28 | 699 | 0.2+ | 0.1+ |
| 1995 04 04 | 691 | 0.2− | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 28 | 699 | 0.6− | 0.3− |
| 1995 04 04 | 691 | 1.2+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.2− |
| 2002 10 29 | 704 | 1.3− | 0.2+ | 2006 09 17 | 704 | 0.9+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.1+ |
| 2002 10 29 | 704 | (1.9− | 0.4−) | 2006 09 17 | 704 | 0.9− | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.3− |
| 2002 10 29 | 704 | 1.1− | 1.3− | 2006 09 17 | 704 | 1.5+ | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.3− |
| 2002 10 29 | 704 | 1.0− | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.6− | 2006 09 29 | 704 | 0.4− | 0.0 |
| 2002 10 31 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.8+ | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.9+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.2− |
| 2002 10 31 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.7− | 0.9+ | 2006 10 17 | 703 | 0.8− | 0.1− |
| 2002 10 31 | 704 | 0.7+ | 0.1− | 2006 09 20 | 704 | 0.8− | 0.9+ | 2006 10 17 | 703 | 0.7− | 0.1+ |
| 2002 12 12 | 704 | 1.0+ | 0.3+ | 2006 09 20 | 704 | 1.0− | 1.4+ | 2006 10 17 | 703 | 0.5− | 0.7+ |
| 2002 12 12 | 704 | 0.2− | 0.7− | 2006 09 20 | 704 | (0.1+ | 2.9+) | 2006 10 17 | 703 | 1.0− | 0.0 |
| 2002 12 12 | 704 | 0.6− | 0.1− | 2006 09 27 | 704 | 0.5+ | 0.2− | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2002 12 12 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.5− | 1.3+ | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2006 08 28 | 703 | (1.2− | 2.0−) | 2006 09 27 | 704 | 0.5+ | 0.4− | 2006 10 23 | G96 | 0.4+ | 0.5− |
| 2006 08 28 | 703 | 0.1+ | 0.9− | 2006 09 27 | 704 | 0.6+ | 1.0+ | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2006 08 28 | 703 | 0.3− | 0.4− | 2006 09 28 | 699 | 0.0 | 0.4+ | | | | |

**2006 RR$_{31}$ = 2004 ES$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.23257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21102527 | $\omega$ | 289.27868 | | +0.27856801 | +0.96040010 | |
| $a$ | 2.7941287 | $\Omega$ | 356.87973 | | −0.83790337 | +0.24017239 | |
| $e$ | 0.0106885 | $i$ | 5.91958 | | −0.46938024 | +0.14124049 | |
| $P$ | 4.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 03 | 691 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 10 02 | 691 | 0.4+ | 0.1+ |
| 1992 10 03 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.4+ |
| 1992 10 03 | 691 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.5+ | 0.0 |
| 2004 03 14 | 691 | 0.1− | 0.2− | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.6− |
| 2004 03 14 | 691 | 0.4− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.4− |
| 2004 03 15 | 704 | (1.6+ | 0.5−) | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2004 03 15 | 704 | (1.9+ | 0.4+) | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.5− |
| 2004 03 15 | 704 | 1.0+ | 0.0 | 2006 09 19 | 691 | (1.1− | 1.6+) | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2004 03 21 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.4− | | | | |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ | | | | |

**2006 RT$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.75037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17463026 | $\omega$ | 27.84564 | | +0.68823025 | −0.72543175 | |
| $a$ | 3.1699790 | $\Omega$ | 18.66924 | | +0.66006645 | +0.62074974 | |
| $e$ | 0.0872725 | $i$ | 1.67824 | | +0.30108371 | +0.29735254 | |
| $P$ | 5.64 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.5− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2000 08 31 | 691 | 1.0− | 0.4− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.3+ |
| 2000 08 31 | 691 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.5+ |
| 2000 09 03 | 645 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.5− |
| 2000 09 03 | 645 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.4+ |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 1.0− | 0.2+ |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.7− |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.3− | 2006 10 27 | G96 | 0.7+ | 0.2+ |
| 2006 09 17 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.2− | | | | |
| 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.4− | | | | |

**2006 RG$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.99837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21692664 | $\omega$ | 166.76041 | | +0.99044195 | −0.13109546 | |
| $a$ | 2.7432210 | $\Omega$ | 200.91791 | | +0.11306518 | +0.94972146 | |
| $e$ | 0.1911216 | $i$ | 6.89803 | | +0.07900001 | +0.28432927 | |
| $P$ | 4.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 15 | G96 | 0.8− | 0.4− | 2006 09 21 | A50 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2005 05 15 | G96 | 0.7− | 0.1− | 2006 09 22 | A50 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2005 05 15 | G96 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.1− | 0.4+ | 2006 10 15 | 106 | 0.1+ | 0.3+ |
| 2005 05 15 | G96 | 0.1− | 0.3− | 2006 09 25 | 704 | 0.4+ | 0.1+ | 2006 10 15 | 106 | 0.2− | 0.0 |
| 2005 06 14 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 106 | 0.3− | 0.7− |
| 2005 06 14 | 691 | 0.1+ | 0.2− | 2006 09 25 | 704 | 0.3− | 0.5− | 2006 10 16 | 106 | 0.7− | 1.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | (0.1+ | 1.8−) |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | (0.7+ | 1.6+) |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.7− |
| 2006 09 17 | 703 | 0.7− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | (0.7+ | 1.7+) |
| 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3− | 0.4− |
| 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.2+ | 0.8+ |
| 2006 09 17 | 703 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 2006 09 19 | 691 | 0.5+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3− |

### 2006 RJ$_{32}$ = 2004 DC$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 191.64321 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23231180 | $\omega$ | 240.45811 | | −0.99918485 | | +0.01876476 | | |
| $a$ | 2.6207275 | $\Omega$ | 300.59612 | | −0.00216035 | | −0.90898429 | | |
| $e$ | 0.0489919 | $i$ | 2.37980 | | −0.04031083 | | −0.41640779 | | |
| $P$ | 4.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.1+ | 0.4− | 2004 02 26 | 704 | (1.7+ | 0.2+) | 2006 09 17 | 703 | 0.6− | 0.2+ |
| 2002 10 31 | 644 | 0.2+ | 0.2− | 2004 02 26 | 704 | 0.5+ | 0.6− | 2006 09 17 | 703 | 1.3+ | 0.7+ |
| 2002 10 31 | 644 | 0.0 | 0.1− | 2004 02 26 | 704 | 0.9+ | 0.3− | 2006 09 17 | 703 | (1.0+ | 1.6−) |
| 2004 01 23 | 699 | 1.2− | 0.6+ | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.7+ |
| 2004 01 23 | 699 | 0.6+ | 0.2+ | 2004 02 29 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2004 01 23 | 699 | 0.7− | 0.3+ | 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2004 01 23 | 699 | (1.7− | 0.6−) | 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2004 02 12 | 691 | 0.2− | 0.3− | 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2004 02 12 | 691 | 0.1+ | 0.2− | 2004 03 18 | 691 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.5− | 0.1− |
| 2004 02 26 | 704 | 0.6+ | 1.0+ | 2006 09 15 | 691 | 0.2+ | 0.0 | | | | |
| 2004 02 26 | 704 | 0.8+ | 0.1− | 2006 09 15 | 691 | 0.4+ | 0.2− | | | | |

### 2006 RK$_{32}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 49.93417 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23102932 | $\omega$ | 70.48664 | | +0.49928565 | | +0.86610016 | | |
| $a$ | 2.6304173 | $\Omega$ | 229.49007 | | −0.80638588 | | +0.45429421 | | |
| $e$ | 0.1885548 | $i$ | 1.82200 | | −0.31694738 | | +0.20853603 | | |
| $P$ | 4.27 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 1.8+ | 0.3+ |
| 2001 05 22 | 807 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2005 04 05 | G96 | (2.5+ | 1.6−) | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.1+ |
| 2005 04 05 | G96 | 0.4− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2005 04 05 | G96 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2005 04 05 | G96 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2005 04 17 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.6− | 0.3− |
| 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.2+ |
| 2005 04 17 | 691 | 0.5+ | 0.4+ | 2006 09 25 | 691 | 0.7− | 0.4+ | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2005 05 12 | G96 | 0.2− | 0.4− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.1+ |
| 2005 05 12 | G96 | 0.2+ | 0.5− | 2006 09 25 | 691 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.1+ |
| 2005 05 12 | G96 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.2+ |
| 2005 05 12 | G96 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2006 09 15 | 691 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.7− | 0.7− | | | | |

### 2006 RL$_{32}$ = 1997 TU$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 355.45237 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22127556 | $\omega$ | 174.91935 | | +0.96756714 | | −0.25043059 | | |
| $a$ | 2.7071589 | $\Omega$ | 199.68003 | | +0.22816421 | | +0.92267285 | | |
| $e$ | 0.0352498 | $i$ | 5.64761 | | +0.10842009 | | +0.29318823 | | |
| $P$ | 4.45 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 1997 10 04 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.5+ | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.3− |
| 1997 10 04 | 691 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1997 10 09 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 1997 10 09 | 691 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 |
| 1997 10 09 | 691 | 0.1− | 0.7− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.6− | 0.1− |

### 2006 RP$_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 359.54923 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23839820 | $\omega$ | 175.76397 | | +0.98723679 | | −0.15539464 | | |
| $a$ | 2.5759300 | $\Omega$ | 193.32918 | | +0.14131331 | | +0.95571042 | | |
| $e$ | 0.1743271 | $i$ | 8.69980 | | +0.07344437 | | +0.24994020 | | |
| $P$ | 4.13 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 10 16 | 644 | 0.3+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2002 10 16 | 644 | 0.4+ | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.7+ |
| 2002 11 06 | 608 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2002 11 06 | 608 | 0.4− | 0.8− | 2006 09 26 | 691 | 0.6− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 11 06 | 608 | 0.4− | 0.8− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2006 09 15 | 691 | 0.1− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 09 17 | 703 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.6− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2006 09 18 | 699 | (2.2+ | 0.1+) | 2006 10 17 | 703 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 09 18 | 699 | 0.9+ | 1.2− | 2006 10 17 | 703 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2006 09 18 | 699 | 1.2+ | 0.1− | 2006 10 17 | 703 | 0.9− | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.4+ |
| 2006 09 18 | 699 | 1.4+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3+ |

### 2006 RY$_{32}$ = 2005 JM$_{104}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 295.56040 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.29922703 | $\omega$ | 208.91412 | | +0.10920033 | | −0.99348620 | | |
| $a$ | 2.2137853 | $\Omega$ | 234.83474 | | +0.91948529 | | +0.11340453 | | |
| $e$ | 0.0674747 | $i$ | 2.28297 | | +0.37765341 | | +0.01116162 | | |
| $P$ | 3.29 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 15 | 291 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.5+ | 0.1+ | 2006 10 17 | 703 | (0.7− | 1.8−) |
| 2003 11 15 | 291 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.9+ |
| 2003 11 15 | 291 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.4− |
| 2003 12 19 | 691 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | (0.8+ | 1.6−) |
| 2003 12 19 | 691 | 0.3+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.7+ | 0.6+ |
| 2003 12 19 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | (0.4− | 2.3+) |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.6− | 1.4+ |
| 2005 05 10 | G96 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.6− |
| 2005 05 10 | G96 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.4+ | 0.8− | 2006 10 19 | G96 | 0.4− | 0.7− |
| 2005 05 10 | G96 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.6− | 0.2− |
| 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2005 05 13 | G96 | 0.5− | 0.3− | 2006 09 30 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2005 05 13 | G96 | 0.8+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2005 05 13 | G96 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.3− | 0.8− |
| 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | (1.2− | 2.3−) | 2006 11 15 | G96 | 0.0 | 0.6− |

**2006 RZ$_{32}$ = 2004 DP$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.45231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22055498 | $\omega$ | 347.04047 | | +0.83429164 | | +0.55089813 |
| $a$ | 2.7130521 | $\Omega$ | 339.48608 | | −0.50015841 | | +0.73976169 |
| $e$ | 0.0983773 | $i$ | 3.54197 | | −0.23194617 | | +0.38634685 |
| $P$ | 4.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.3+ | 0.2− | 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 1.2− | 1.0− |
| 1995 02 02 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2001 07 27 | 699 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.8− |
| 2001 07 27 | 699 | 1.4− | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 1.4+ | 0.7− |
| 2001 07 27 | 699 | 1.2− | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 07 27 | 699 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 08 07 | 608 | 0.5+ | 1.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 08 07 | 608 | 0.8+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 08 07 | 608 | 0.3+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2004 02 17 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 02 17 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 699 | 0.2− | 0.9− | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 09 28 | 699 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 28 | 699 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− |

**2006 RC$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.98476 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26335302 | $\omega$ | 278.91286 | | +0.59256545 | | +0.80234649 |
| $a$ | 2.4105187 | $\Omega$ | 27.81416 | | −0.66571708 | | +0.53773602 |
| $e$ | 0.2547517 | $i$ | 8.80924 | | −0.45352724 | | +0.25899824 |
| $P$ | 3.74 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.2− | 0.1− | 2006 09 20 | 699 | 0.5+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.4− |
| 2002 08 20 | 644 | 0.2+ | 0.3− | 2006 09 20 | 699 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 08 20 | 644 | 0.5− | 0.2− | 2006 09 20 | 699 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 08 20 | 644 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 08 20 | 644 | 0.3− | 0.2− | 2006 09 20 | 644 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2002 08 20 | 644 | 0.2+ | 0.2− | 2006 09 20 | 644 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 09 09 | 644 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 09 09 | 644 | 0.2+ | 0.3+ | 2006 09 24 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2002 09 09 | 644 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 2005 04 04 | 703 | 0.9− | 0.6− | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2005 04 04 | 703 | (0.1+ | 2.0+) | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 28 | 704 | 0.5− | 1.2+ |
| 2005 04 04 | 703 | 0.8− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 28 | 704 | 0.2+ | 1.4+ |
| 2005 04 04 | 703 | 0.9− | 1.2− | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 28 | 704 | 0.9− | 1.1+ |
| 2005 05 10 | G96 | 0.3+ | 0.1− | 2006 09 27 | 704 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.6+ | 0.5− |
| 2005 05 10 | G96 | 0.5+ | 0.1− | 2006 09 27 | 704 | 0.1+ | 0.7− | 2006 10 28 | G96 | 0.3+ | 0.6− |
| 2005 05 10 | G96 | 0.4+ | 0.2− | 2006 09 27 | 704 | 0.6− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.6− |
| 2005 05 10 | G96 | 0.4+ | 0.3− | 2006 09 27 | 704 | 0.7− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.5− |
| 2006 09 15 | 644 | 0.4− | 0.2+ | 2006 09 27 | 704 | 0.8− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.6− |
| 2006 09 15 | 644 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.4− |
| 2006 09 15 | 644 | 0.3− | 0.3− | 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2006 09 17 | 704 | 0.6+ | 1.0+ | 2006 09 28 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.0 |
| 2006 09 17 | 704 | 0.3− | 1.5+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.4+ |
| 2006 09 17 | 704 | 0.7+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2006 09 17 | 704 | 0.1+ | 1.5+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2006 09 19 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.6− | 0.7+ |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2006 09 20 | 704 | 0.0 | 0.9+ | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.1− | 1.2+ |
| 2006 09 20 | 704 | 0.0 | 1.4+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.8+ |
| 2006 09 20 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.5− | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2006 09 20 | 704 | 0.0 | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.1+ | | | | |
| 2006 09 20 | 704 | 1.1− | 1.6+ | 2006 10 21 | 703 | 0.2− | 1.4+ | | | | |

**2006 RE$_{33}$ = 2005 EW$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.55122 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26832356 | $\omega$ | 190.89003 | | +0.74614888 | | +0.66565395 |
| $a$ | 2.3806571 | $\Omega$ | 127.36955 | | −0.60961314 | | +0.69086958 |
| $e$ | 0.2295408 | $i$ | 0.93079 | | −0.26764466 | | +0.28214189 |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 704 | 0.6+ | 0.7− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.0+ | 1.0+ |
| 2002 06 18 | 704 | 0.5+ | 1.0− | 2006 09 20 | 704 | 0.4− | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.2+ |
| 2002 06 18 | 704 | 1.3+ | 0.0 | 2006 09 20 | 704 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2002 07 05 | 704 | 0.7− | 0.5− | 2006 09 20 | 704 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.5− | 0.2+ |
| 2002 07 05 | 704 | 0.7− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2002 07 05 | 704 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 07 05 | 704 | 0.6− | 0.7+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2002 07 05 | 704 | 0.1+ | 1.4+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2005 03 10 | G96 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2005 03 12 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2005 03 12 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 10 15 | 703 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2005 05 06 | G96 | 0.4− | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2005 05 06 | G96 | 0.6+ | 0.2+ | 2006 10 15 | 703 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 05 06 | G96 | 0.4− | 0.1+ | 2006 10 15 | 703 | 1.0+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 05 06 | G96 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2006 09 14 | 703 | (0.2− | 2.5+) | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.4− |
| 2006 09 14 | 703 | 0.3− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2006 09 14 | 703 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.5+ |
| 2006 09 14 | 703 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2006 09 17 | 704 | 0.1+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2006 09 17 | 704 | 0.1− | 1.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2006 09 17 | 704 | 0.4+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ | | | | |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 1.5− | 0.4+ | | | | |

**2006 RJ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.56208 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23714021 | $\omega$ | 225.08484 | | +0.81903956 | | −0.57182314 |
| $a$ | 2.5850320 | $\Omega$ | 169.49171 | | +0.57158492 | | +0.80618311 |
| $e$ | 0.1730347 | $i$ | 14.87683 | | +0.04964756 | | +0.15194434 |
| $P$ | 4.16 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.3+ | 0.3+ | 2006 09 12 | 703 | 1.5− | 0.2+ | 2006 09 19 | 703 | 1.0− | 0.4− |
| 2002 10 04 | 704 | 1.1+ | 0.7− | 2006 09 12 | 703 | 1.2+ | 1.0+ | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2002 10 04 | 704 | 0.1− | 0.1+ | 2006 09 12 | 703 | 1.1− | 0.9+ | 2006 09 20 | 644 | 0.2+ | 0.1− |
| 2002 10 04 | 704 | 0.0 | 1.2+ | 2006 09 16 | 699 | 0.3− | 1.5+ | 2006 09 20 | 644 | 0.0 | 0.4− |
| 2002 10 16 | 644 | 0.4− | 0.3− | 2006 09 16 | 699 | (0.5− | 2.3+) | 2006 09 20 | 644 | 0.1+ | 0.1− |
| 2002 10 16 | 644 | 0.4− | 0.4− | 2006 09 16 | 699 | 0.7+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2002 10 16 | 644 | 0.5− | 0.4− | 2006 09 16 | 699 | 0.9+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.5+ |
| 2006 08 28 | 691 | 0.2+ | 0.1− | 2006 09 17 | 704 | 0.5+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2006 08 28 | 691 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2006 08 28 | 691 | 0.2− | 0.2− | 2006 09 17 | 704 | 0.4+ | 0.7+ | | | | |
| 2006 09 12 | 703 | 0.8− | 1.1− | 2006 09 19 | 703 | 0.5+ | 0.8− | | | | |

**2006 RT$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.01018 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23684048 | $\omega$ | 81.40631 | | +0.92450189 | −0.37965994 | |
| $a$ | 2.5872125 | $\Omega$ | 300.90008 | | +0.33229839 | +0.84641550 | |
| $e$ | 0.2453128 | $i$ | 2.26950 | | +0.18674593 | +0.37341550 | |
| $P$ | 4.16 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 18 | 644 | 0.1− | 0.6+ | 2006 09 12 | 703 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.2+ |
| 2002 10 18 | 644 | 0.4− | 0.5+ | 2006 09 12 | 703 | 1.6+ | 1.4+ | 2006 09 19 | 703 | 0.2− | 0.6− |
| 2002 10 18 | 644 | 0.1− | 0.5+ | 2006 09 12 | 703 | 0.7− | 0.8+ | 2006 09 19 | 703 | 0.7− | 0.0 |
| 2002 11 12 | 704 | 0.6− | 1.3− | 2006 09 12 | 703 | 0.7− | 1.0− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.3+ | 0.3− | 2006 09 16 | 699 | 0.7+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2002 11 12 | 704 | 0.9+ | 0.0 | 2006 09 16 | 699 | 0.3+ | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2006 08 19 | 691 | 0.2+ | 0.2− | 2006 09 16 | 699 | 0.3+ | 0.5− | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2006 08 19 | 691 | 0.1− | 0.1− | 2006 09 16 | 699 | 1.0− | 0.6− | | | | |
| 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7− | 1.1+ | | | | |

**2006 RV$_{33}$ = 2002 SP$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.74496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23637112 | $\omega$ | 213.30890 | | +0.76623666 | −0.64185607 | |
| $a$ | 2.5906363 | $\Omega$ | 186.86151 | | +0.63068505 | +0.76020040 | |
| $e$ | 0.1058063 | $i$ | 14.56111 | | +0.12295425 | +0.10057900 | |
| $P$ | 4.17 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.1+ | 0.0 | 2006 08 29 | 703 | 0.7− | 0.9+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 2002 09 27 | 644 | 0.1+ | 0.2− | 2006 08 29 | 703 | (2.0− | 2.4−) | 2006 09 19 | 703 | 0.6+ | 0.7+ |
| 2002 09 27 | 644 | 0.2+ | 0.1− | 2006 09 12 | 703 | 0.7− | 0.7− | 2006 09 19 | 703 | 0.1+ | 0.6− |
| 2002 09 28 | 644 | 0.3− | 0.2+ | 2006 09 12 | 703 | 0.9+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.1− |
| 2002 09 28 | 644 | 0.2− | 0.6+ | 2006 09 12 | 703 | 1.3− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2002 09 28 | 644 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2006 08 21 | 691 | 0.4+ | 0.2+ | 2006 09 16 | 699 | 0.8− | 0.5− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2006 08 21 | 691 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.4+ | 0.6− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 08 21 | 691 | 0.3+ | 0.2+ | 2006 09 16 | 699 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2006 08 29 | 703 | (0.1+ | 1.5+) | 2006 09 16 | 699 | (1.0− | 1.7+) | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2006 08 29 | 703 | 1.1− | 0.8− | 2006 09 19 | 703 | 0.5− | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.3− |

**2006 RX$_{33}$ = 2003 BH$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.26281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18445065 | $\omega$ | 204.25304 | | +0.99395296 | −0.09386076 | |
| $a$ | 3.0564404 | $\Omega$ | 160.87076 | | +0.10492804 | +0.96484314 | |
| $e$ | 0.0658600 | $i$ | 10.01488 | | −0.03236689 | +0.24549517 | |
| $P$ | 5.34 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2003 01 31 | 291 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 1.0+ | 1.3+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 1.9− | 0.8+ | 2006 09 16 | 699 | 1.1+ | 0.6+ |
| 2002 01 08 | 645 | 0.0 | 0.1− | 2006 08 28 | 703 | 1.1− | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.4− |
| 2002 01 08 | 645 | 0.1− | 0.1− | 2006 08 28 | 703 | 0.1+ | 1.6+ | 2006 09 30 | 703 | 1.2− | 0.9+ |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.7+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.2− |
| 2002 01 13 | 645 | 0.1+ | 0.0 | 2006 09 12 | 703 | 0.0 | 1.1− | 2006 09 30 | 703 | 0.0 | 0.1+ |
| 2003 01 25 | 809 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.3+ | 1.0− | 2006 10 02 | G96 | 0.2+ | 0.2+ |
| 2003 01 25 | 809 | 0.1− | 0.0 | 2006 09 12 | 703 | (0.1+ | 1.6+) | 2006 10 02 | G96 | 0.2+ | 0.3+ |
| 2003 01 25 | 809 | 0.1− | 0.2+ | 2006 09 12 | 703 | 1.4+ | 0.3− | 2006 10 02 | G96 | 0.0 | 0.3+ |
| 2003 01 31 | 291 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.6− | 1.3+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2003 01 31 | 291 | 0.1+ | 0.6+ | 2006 09 16 | 699 | 0.1− | 0.6− | | | | |

**2006 RY$_{33}$ = 2001 TS$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.73047 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18665169 | $\omega$ | 59.92577 | | +0.74264560 | −0.66829986 | |
| $a$ | 3.0323647 | $\Omega$ | 341.89470 | | +0.55682247 | +0.65191997 | |
| $e$ | 0.1630027 | $i$ | 7.96169 | | +0.37205677 | +0.35829549 | |
| $P$ | 5.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.4− | 0.2− | 2006 09 12 | 703 | 0.9+ | 0.5− | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 2001 10 15 | 704 | 0.1− | 0.5− | 2006 09 16 | 699 | (1.9− | 0.0 ) | 2006 09 20 | 704 | 0.1+ | 0.6+ |
| 2001 10 15 | 704 | 0.8− | 0.5− | 2006 09 16 | 699 | 0.8+ | 0.2− | 2006 09 20 | 704 | 0.6+ | 0.1− |
| 2001 10 15 | 704 | 0.5+ | 0.5+ | 2006 09 16 | 699 | 0.4+ | 1.2− | 2006 09 20 | 704 | 0.2+ | 0.9− |
| 2001 10 15 | 704 | 0.5+ | 0.1+ | 2006 09 16 | 699 | 0.4+ | 0.6+ | 2006 09 20 | 704 | 0.5+ | 0.6+ |
| 2001 10 16 | 704 | 0.4− | 0.4+ | 2006 09 19 | 699 | 0.9+ | 0.0 | 2006 09 20 | 704 | 0.3− | 0.3− |
| 2001 10 16 | 704 | 0.0 | 0.8+ | 2006 09 19 | 703 | 0.8− | 0.6− | 2006 09 25 | 699 | 0.8− | 0.8+ |
| 2001 10 16 | 704 | 1.1+ | 0.0 | 2006 09 19 | 699 | 1.1− | 0.3− | 2006 09 25 | 699 | 0.1− | 0.4− |
| 2001 10 16 | 704 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.9− | 0.5− | 2006 09 25 | 699 | 0.6+ | 0.5+ |
| 2001 10 20 | 644 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.6− | 1.0− | 2006 09 25 | 699 | 0.5− | 1.2+ |
| 2001 10 20 | 644 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.3− |
| 2001 10 20 | 644 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.7− | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.3− |
| 2006 09 12 | 703 | 0.8− | 0.7− | 2006 09 19 | 699 | 1.0+ | 0.5− | 2006 10 17 | 691 | 0.0 | 0.3+ |
| 2006 09 12 | 703 | 0.4− | 1.3− | 2006 09 20 | 691 | 0.0 | 0.7+ | | | | |
| 2006 09 12 | 703 | (1.7− | 0.2−) | 2006 09 20 | 691 | 0.1+ | 0.2+ | | | | |

**2006 RZ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.96487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22488843 | $\omega$ | 98.86500 | | +0.38021550 | −0.92238619 | |
| $a$ | 2.6780868 | $\Omega$ | 328.51465 | | +0.78904142 | +0.36190966 | |
| $e$ | 0.1698851 | $i$ | 7.49397 | | +0.48254514 | +0.13500045 | |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.5+ | 1.3+ | 2006 09 12 | 703 | 1.0− | 0.8− | 2006 09 20 | 691 | 0.1+ | 0.1+ |
| 2002 11 07 | 704 | 0.4+ | 0.2− | 2006 09 16 | 699 | (1.7+ | 0.7−) | 2006 09 20 | 691 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.2− | 0.5− | 2006 09 16 | 699 | 0.2− | 0.0 | 2006 10 01 | 703 | 0.3− | 0.5− |
| 2002 11 07 | 704 | 0.3− | 1.3− | 2006 09 16 | 699 | 1.2− | 0.1+ | 2006 10 01 | 703 | 0.0 | 0.1− |
| 2002 11 13 | 644 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.0 | 0.2− | 2006 10 01 | 703 | 0.2+ | 0.3− |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.9+ | 2006 10 01 | 703 | (1.6− | 0.5−) |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2− | 1.3− | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 2006 08 29 | 703 | 1.0− | 1.0+ | 2006 09 19 | 699 | (2.5+ | 2.2+) | 2006 10 18 | 691 | 0.0 | 0.1+ |
| 2006 08 29 | 703 | (0.8− | 1.7−) | 2006 09 19 | 703 | 0.5+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2006 08 29 | 703 | 0.7+ | 0.7+ | 2006 09 19 | 703 | 1.3+ | 1.2− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2006 08 29 | 703 | (0.2+ | 1.8+) | 2006 09 19 | 699 | 0.4+ | 1.0+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2006 09 12 | 703 | 0.1+ | 1.4− | 2006 09 19 | 703 | 0.4+ | 1.3− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2006 09 12 | 703 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.5− | 0.0 | | | | |
| 2006 09 12 | 703 | 0.2− | 0.0 | 2006 09 20 | 691 | 0.4+ | 0.0 | | | | |

**2006 RE$_{34}$ = 2004 BK$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.60431 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26428015 | $\omega$ | 290.48431 | | +0.98584133 | −0.15717623 | |
| $a$ | 2.4048778 | $\Omega$ | 78.59409 | | +0.16727389 | +0.89758065 | |
| $e$ | 0.2267176 | $i$ | 3.41649 | | +0.01167579 | +0.41187936 | |
| $P$ | 3.73 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 12 | 691 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.9+ | 0.8− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1996 01 12 | 691 | 0.0 | 0.3− | 2006 09 18 | 703 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 1996 01 12 | 691 | 0.5+ | 0.6− | 2006 09 18 | 703 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.0 |
| 2002 07 08 | 644 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2002 07 08 | 644 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2002 07 08 | 644 | 0.4− | 0.4+ | 2006 09 18 | 699 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2002 07 14 | 644 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.7− | 0.6+ | 2006 10 16 | 703 | 0.4+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.4+ | | |
| 2002 07 14 | 644 | 0.0 | 0.1− | 2006 09 19 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.2+ | | |
| 2004 01 22 | 704 | 0.2− | 1.0+ | 2006 09 19 | 704 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2004 01 22 | 704 | 0.3− | 0.6+ | 2006 09 19 | 704 | 0.3+ | 0.7− | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2004 01 22 | 704 | (1.1+ | 2.1+) | 2006 09 19 | 704 | 0.5− | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2004 01 22 | 704 | 0.6− | 0.8+ | 2006 09 19 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2004 01 22 | 704 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2004 01 30 | 704 | 1.2+ | 1.3+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2004 01 30 | 704 | 0.0 | 1.0+ | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2004 01 30 | 704 | 0.4+ | 1.4+ | 2006 09 22 | 704 | 0.0 | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2004 02 18 | 691 | 0.1+ | 0.4+ | 2006 09 22 | 704 | (0.4− | 1.7+) | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2004 02 18 | 691 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.9+ | 2006 10 23 | 644 | 0.2− | 0.0 | | |
| 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2005 04 16 | 691 | 0.1− | 0.5+ | 2006 09 22 | 704 | 0.3+ | 1.2+ | 2006 11 11 | 703 | 1.0+ | 0.6− | | |
| 2005 04 16 | 691 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.5− | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.1− | | |
| 2006 08 28 | 699 | 0.5+ | 1.0+ | 2006 09 26 | 704 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.8+ | 0.6+ | | |
| 2006 08 28 | 699 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.5+ | 0.1− | | |
| 2006 08 28 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 704 | 0.6− | 0.4+ | | |
| 2006 08 28 | 699 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.7− | 0.1+ | | |
| 2006 09 12 | 703 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.5+ | 2006 11 20 | 704 | 0.1+ | 0.2+ | | |
| 2006 09 12 | 703 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.8− | | |
| 2006 09 12 | 703 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.1− | 0.2− | 2006 11 20 | 704 | 1.6− | 0.5− | | |
| 2006 09 12 | 703 | 0.0 | 1.3− | 2006 09 30 | 703 | (1.7− | 0.3−) | 2006 11 20 | 704 | 0.7+ | 0.2− | | |
| 2006 09 16 | 704 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.5+ | 1.1+ | 2006 11 20 | 704 | 0.8− | 1.2+ | | |
| 2006 09 16 | 704 | 0.7+ | 0.7+ | 2006 10 01 | 704 | 0.8− | 0.8+ | 2006 11 23 | G96 | 0.2− | 0.3− | | |
| 2006 09 16 | 704 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.2− | 0.7+ | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2006 09 16 | 704 | 0.3− | 1.0+ | 2006 10 01 | 704 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2006 09 18 | 703 | 0.3+ | 1.0− | 2006 10 01 | 704 | 0.0 | 1.0+ | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2006 09 18 | 703 | 0.1+ | 1.0− | 2006 10 12 | 644 | 0.1− | 0.1+ | | | | | | |
| 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ | | | | | | |

**2006 RG$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.79980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21523096 | $\omega$ | 310.75151 | | +0.99093903 | +0.10772764 | |
| $a$ | 2.7576103 | $\Omega$ | 43.24141 | | −0.05724933 | +0.87903902 | |
| $e$ | 0.0473407 | $i$ | 6.72424 | | −0.12150044 | +0.46441915 | |
| $P$ | 4.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.6− | 0.1+ | 2006 09 28 | 699 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.2+ | | |
| 2001 07 19 | 644 | 0.5− | 0.1+ | 2006 09 28 | 699 | (1.0− | 1.7+) | 2006 10 10 | 644 | 0.3+ | 0.0 | | |
| 2001 07 19 | 644 | 0.0 | 0.5− | 2006 09 28 | 699 | 0.7+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2001 08 10 | 644 | 0.6+ | 0.0 | 2006 09 28 | 699 | 0.5− | 1.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2001 08 10 | 644 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.9− | 2006 10 12 | 644 | 0.4− | 0.6+ | | |
| 2001 08 10 | 644 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ | | |
| 2006 08 22 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.5+ | 1.0− | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2006 08 22 | 644 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.8− | 2006 10 16 | 703 | 0.0 | 0.3+ | | |
| 2006 08 22 | 644 | 0.4− | 0.2− | 2006 09 30 | 704 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.3− | | |
| 2006 09 12 | 703 | (1.7− | 1.3−) | 2006 09 30 | 704 | 0.2+ | 0.2− | 2006 10 16 | 703 | 1.2+ | 1.2− | | |
| 2006 09 12 | 703 | 0.0 | 0.2− | 2006 09 30 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 1.2+ | | |
| 2006 09 12 | 703 | 1.4− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.6− | 2006 10 17 | 106 | 0.2+ | 0.2+ | | |
| 2006 09 12 | 703 | 0.3+ | 0.9+ | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 10 17 | 106 | 0.8− | 0.2− | | |
| 2006 09 13 | 644 | 0.3+ | 0.8− | 2006 09 30 | 703 | 0.2+ | 0.4+ | 2006 10 17 | 106 | 0.4− | 0.3− | | |
| 2006 09 13 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 17 | 106 | 1.3+ | 0.4− | | |
| 2006 09 13 | 644 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.2− | | |
| 2006 09 26 | 704 | 0.8+ | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.0 | | |
| 2006 09 26 | 704 | 1.2+ | 0.4+ | 2006 10 09 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.3+ | 1.3− | | |
| 2006 09 26 | 704 | 0.5− | 0.9+ | 2006 10 09 | 644 | 0.4+ | 0.1− | 2006 10 22 | 703 | (0.3+ | 1.6−) | | |
| 2006 09 26 | 704 | 1.0+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.2+ | | | | | | |

**2006 RH$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.08492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17112426 | $\omega$ | 181.90666 | | +0.99183446 | +0.11390196 | |
| $a$ | 3.2131302 | $\Omega$ | 170.92970 | | −0.11166398 | +0.99290712 | |
| $e$ | 0.1877275 | $i$ | 21.33896 | | −0.06160811 | +0.03408520 | |
| $P$ | 5.76 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1− | 2006 09 12 | 703 | (2.0− | 2.2−) | 2006 09 26 | 703 | 1.4− | 0.5+ | | |
| 1999 03 20 | 645 | 0.0 | 0.1− | 2006 09 12 | 703 | 0.8+ | 0.8− | 2006 09 26 | 703 | 1.0− | 0.1− | | |
| 2000 08 31 | 704 | 0.1+ | 0.3+ | 2006 09 12 | 703 | 1.1− | 0.7− | 2006 09 26 | 703 | 1.1− | 0.2+ | | |
| 2000 08 31 | 704 | 0.9− | 0.7+ | 2006 09 16 | 704 | 1.4+ | 0.4− | 2006 09 30 | 703 | 0.6+ | 0.7− | | |
| 2000 08 31 | 704 | 0.0 | 1.4+ | 2006 09 16 | 704 | 1.0+ | 0.0 | 2006 09 30 | 703 | 1.2− | 0.2− | | |
| 2000 08 31 | 704 | 0.9+ | 0.3+ | 2006 09 16 | 704 | 0.6+ | 0.7− | 2006 09 30 | 703 | 0.4− | 0.5− | | |
| 2000 09 23 | 699 | 0.1− | 0.9+ | 2006 09 18 | 703 | 0.0 | 0.7− | 2006 09 30 | 703 | 0.1− | 0.6− | | |
| 2000 09 23 | 699 | 0.5+ | 0.5− | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 10 02 | 703 | (3.3− | 1.3+) | | |
| 2000 09 23 | 699 | 1.0− | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 02 | 703 | (0.7− | 3.6+) | | |
| 2000 09 23 | 699 | 0.5+ | 1.3+ | 2006 09 18 | 703 | 0.7+ | 0.2− | 2006 10 02 | 703 | 0.2+ | 0.2+ | | |
| 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.5− | 0.1− | | |
| 2005 07 29 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 699 | (0.6− | 1.9+) | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2005 07 29 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.1− | | |
| 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 09 18 | 699 | 0.5+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.0 | | |
| 2006 07 22 | G96 | 0.3+ | 0.3− | 2006 09 22 | 704 | 1.0+ | 0.5+ | 2006 10 21 | 703 | 0.1+ | 0.3+ | | |
| 2006 07 22 | G96 | 0.1− | 0.5− | 2006 09 22 | 704 | (1.6+ | 0.0 ) | 2006 10 21 | 703 | 0.9+ | 0.7− | | |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.6− | | |
| 2006 08 28 | 703 | (0.6− | 1.5−) | 2006 09 26 | 704 | 0.8+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.8− | | |
| 2006 08 28 | 703 | 1.2− | 0.2− | 2006 09 26 | 704 | 1.0+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2006 08 28 | 703 | 0.0 | 0.9+ | 2006 09 26 | 704 | 0.9+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2006 08 28 | 703 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.9− | 2006 10 22 | 644 | 0.1− | 0.3+ | | |
| 2006 09 12 | 703 | (2.2− | 0.5−) | 2006 09 26 | 703 | 1.3− | 0.0 | | | | | | |

**2006 RL$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.56601 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22113939 | $\omega$ | 322.00262 | | +0.73742997 | +0.67541269 | |
| $a$ | 2.7082701 | $\Omega$ | 355.50541 | | −0.60707249 | +0.66030135 | |
| $e$ | 0.1684653 | $i$ | 2.80840 | | −0.29607436 | +0.32835929 | |
| $P$ | 4.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.3+ | 0.1− | 2006 09 17 | H07 | 0.3− | 0.5+ | 2006 09 29 | 704 | 0.3+ | 1.2− | | |
| 2002 11 16 | 644 | 0.3+ | 0.1+ | 2006 09 17 | H07 | 0.0 | 0.8+ | 2006 09 29 | 704 | 0.5+ | 0.4+ | | |
| 2002 11 16 | 644 | 0.4+ | 0.4+ | 2006 09 18 | H07 | 0.6+ | 0.9− | 2006 10 02 | 691 | 0.1+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2006 09 18 | H07 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 09 18 | H07 | 0.5− | 0.7+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | | |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− | | |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.9− | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.2− | | |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2006 09 19 | 699 | 1.0− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.1− | | |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.2− | | |
| 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.1− | | |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2004 02 12 | 691 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.5+ | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.3+ | | |
| 2006 09 12 | 703 | 1.1+ | 0.0 | 2006 09 21 | A50 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2006 09 12 | 703 | 0.6− | 0.6− | 2006 09 21 | A50 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2006 09 12 | 703 | (0.4+ | 1.9+) | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2006 09 12 | 703 | 1.0+ | 0.6− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.2− | | |
| 2006 09 17 | H07 | 0.1− | 0.6− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2006 09 17 | 704 | 0.1− | 0.4− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.4+ | 0.2− | | |
| 2006 09 17 | 704 | 0.6+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.2− | | |
| 2006 09 17 | 704 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2006 09 17 | 691 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 2006 09 17 | H07 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.7− | 2006 10 31 | G96 | 0.5+ | 0.3− | | |
| 2006 09 17 | 691 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.9− | | | | | | |

**2006 RM$_{34}$ = 1997 ES$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.13120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17482905 | $\omega$ | 208.45135 | | +0.94377275 | −0.33017663 | |
| $a$ | 3.1675756 | $\Omega$ | 170.78199 | | +0.31957098 | +0.89826940 | |
| $e$ | 0.1322219 | $i$ | 5.95706 | | +0.08466047 | +0.28999219 | |
| $P$ | 5.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.0 | 0.3− | 2006 09 17 | 704 | 0.6− | 0.3− | 2006 09 28 | 704 | 1.1+ | 1.1+ |
| 1997 03 04 | 691 | 0.2+ | 0.4− | 2006 09 17 | 704 | 0.1+ | 0.7− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1997 03 04 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1997 03 10 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1997 03 10 | 691 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.6− | 0.1+ | 2006 10 01 | 704 | 0.0 | 1.3+ |
| 1997 03 10 | 691 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.7+ | 0.4− |
| 2001 11 17 | 704 | 0.7+ | 0.8− | 2006 09 18 | 699 | 0.6− | 0.7+ | 2006 10 01 | 704 | 0.8− | 0.0 |
| 2001 11 17 | 704 | 0.0 | 1.4− | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 16 | 703 | (0.0 | 3.1−) |
| 2001 11 17 | 704 | 0.1+ | 0.1− | 2006 09 18 | 699 | 1.0− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2001 11 17 | 704 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 10 16 | 703 | (1.8− | 0.1+) |
| 2001 11 17 | 704 | 0.6+ | 0.9− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.8− | 0.8+ |
| 2001 12 11 | 704 | 0.0 | 0.6− | 2006 09 20 | 644 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2001 12 11 | 704 | 0.3− | 0.5+ | 2006 09 20 | 644 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.5+ |
| 2001 12 11 | 704 | 0.6− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2003 03 10 | 291 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2003 03 10 | 291 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2003 03 10 | 291 | 0.0 | 0.3+ | 2006 09 27 | 704 | 1.0+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.2+ |
| 2006 09 12 | 703 | 0.3− | 0.6− | 2006 09 27 | 704 | 0.2+ | 0.5− | 2006 10 21 | 703 | (0.1+ | 2.4+) |
| 2006 09 12 | 703 | 0.4− | 0.6− | 2006 09 27 | 704 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2006 09 12 | 703 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.7+ | 0.3− | 2006 10 21 | 703 | (1.4+ | 2.3+) |
| 2006 09 12 | 703 | 0.4− | 0.9− | 2006 09 28 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 703 | (1.1− | 2.0+) |
| 2006 09 17 | 704 | 0.8+ | 0.0 | 2006 09 28 | 704 | 1.4+ | 0.3− | | | | |

**2006 RT$_{34}$ = 1995 SB$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.66370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17786011 | $\omega$ | 186.25378 | | +0.92700395 | −0.37097371 | |
| $a$ | 3.1314851 | $\Omega$ | 195.86708 | | +0.35225330 | +0.91167941 | |
| $e$ | 0.1700023 | $i$ | 11.63851 | | +0.12876838 | +0.17668944 | |
| $P$ | 5.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.2− | 0.6− | 2006 09 17 | 703 | 0.0 | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.1− |
| 1995 09 18 | 691 | 0.3− | 0.6− | 2006 09 18 | 704 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3− |
| 1995 09 18 | 691 | 0.3− | 0.5− | 2006 09 18 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 1995 09 22 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 704 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 1995 09 22 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 703 | (0.2− | 1.6+) |
| 1995 09 22 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.5− | 2006 10 17 | 703 | (1.7− | 1.2−) |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.3+ |
| 2001 11 17 | 608 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.7+ |
| 2001 11 17 | 608 | 0.2− | 0.7− | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2001 11 17 | 608 | 0.2− | 0.5− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2004 04 14 | 691 | 0.4+ | 0.3+ | 2006 09 29 | 704 | 0.9− | 0.9+ | 2006 10 25 | 850 | 0.7+ | 0.2− |
| 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 1.2− | 0.6+ | 2006 10 25 | 850 | 0.6+ | 0.2+ |
| 2004 04 14 | 691 | 0.3− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.5+ | 2006 10 25 | 850 | 0.3+ | 0.5− |
| 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 10 25 | 850 | 0.3+ | 0.1+ |
| 2006 09 06 | 644 | 0.5− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2006 09 06 | 644 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2006 09 13 | 644 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.8− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.6+ | 1.1+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2006 09 17 | 703 | 0.9+ | 0.3− | 2006 10 01 | 704 | 0.3+ | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 09 17 | 703 | 1.1− | 0.2− | 2006 10 09 | 644 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 09 17 | 703 | 0.0 | 0.8− | 2006 10 09 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.3− |

**2006 RU$_{34}$ = 1997 SD$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.55079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21547036 | $\omega$ | 56.51701 | | +0.98798052 | +0.14508098 | |
| $a$ | 2.7555673 | $\Omega$ | 295.09077 | | −0.15401189 | +0.89435809 | |
| $e$ | 0.0895964 | $i$ | 3.37705 | | −0.01322250 | +0.42317268 | |
| $P$ | 4.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 691 | 0.3+ | 0.4− | 2005 02 14 | 809 | 0.3+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.2− |
| 1997 09 30 | 691 | 0.4+ | 0.3− | 2005 02 14 | 809 | 0.4+ | 0.3− | 2006 09 25 | 704 | 0.7+ | 0.1− |
| 1997 09 30 | 691 | 0.4+ | 0.2+ | 2005 02 14 | 809 | 0.4+ | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.8+ |
| 1997 10 05 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | (1.2− | 2.4+) | 2006 09 25 | 704 | 0.4+ | 0.7− |
| 1997 10 05 | 691 | 0.3− | 0.4− | 2006 08 28 | 703 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 1.0− | 0.6− |
| 1997 10 05 | 691 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.3+ | 0.4− | 2006 10 01 | 703 | 0.2+ | 0.7+ |
| 1999 01 08 | 691 | 0.1− | 0.2− | 2006 08 28 | 703 | 0.3+ | 0.8+ | 2006 10 01 | 703 | 0.7+ | 0.5− |
| 1999 01 08 | 691 | 0.1− | 0.1− | 2006 09 13 | 644 | 0.5− | 0.1− | 2006 10 01 | 703 | 0.1+ | 0.1+ |
| 1999 01 08 | 691 | 0.1− | 0.2− | 2006 09 13 | 644 | 0.5− | 0.7+ | 2006 10 01 | 703 | (0.6+ | 2.1+) |
| 2002 12 06 | 704 | 0.5− | 0.9+ | 2006 09 13 | 644 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.5+ |
| 2002 12 06 | 704 | 0.3+ | 0.1+ | 2006 09 17 | 703 | (1.9− | 0.4−) | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2002 12 06 | 704 | 0.2+ | 0.8+ | 2006 09 17 | 703 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.4+ |
| 2002 12 06 | 704 | 0.3+ | 0.8+ | 2006 09 17 | 703 | 0.8− | 0.1− | 2006 10 23 | G96 | 0.6− | 0.0 |
| 2002 12 06 | 704 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.3− | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.0 |
| 2004 02 16 | 691 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.0 | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2004 02 16 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.8+ | 0.4+ | 2006 10 23 | G96 | 0.4− | 0.1− |
| 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.6+ | | | | |

**2006 RW$_{34}$ = 2005 GD$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.03996 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27425109 | $\omega$ | 318.87603 | | +0.97208627 | −0.21816445 | |
| $a$ | 2.3462294 | $\Omega$ | 53.92976 | | +0.23333044 | +0.86033156 | |
| $e$ | 0.1681152 | $i$ | 6.13103 | | +0.02460042 | +0.46068849 | |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.4− | 0.1+ | 2006 08 24 | 644 | 0.0 | 0.1− | 2006 09 17 | 699 | 0.1+ | 1.3+ |
| 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 08 24 | 644 | 0.5− | 0.6+ | 2006 09 17 | 699 | 0.7− | 0.7− |
| 2005 04 10 | 691 | 0.4− | 0.1+ | 2006 09 14 | 644 | 0.5+ | 0.4− | 2006 09 20 | 703 | 0.4+ | 0.0 |
| 2005 04 14 | 691 | 0.7+ | 0.2− | 2006 09 14 | 644 | 0.7+ | 0.1− | 2006 09 20 | 703 | 0.5− | 0.6− |
| 2005 04 14 | 691 | 0.0 | 0.2− | 2006 09 14 | 644 | 0.4+ | 0.3− | 2006 09 20 | 703 | 0.5− | 0.3+ |
| 2005 04 14 | 691 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.4+ | 0.3− | 2006 09 20 | 703 | 0.4− | 0.1+ |
| 2006 08 24 | 644 | 0.2+ | 0.3+ | 2006 09 17 | 699 | 0.2− | 0.1− | | | | |

**2006 RX$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.21786 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26804000 | $\omega$ | 257.93262 | | +0.83617814 | +0.54198328 | |
| $a$ | 2.3823358 | $\Omega$ | 69.19468 | | −0.46173100 | +0.77832426 | |
| $e$ | 0.2038585 | $i$ | 5.15708 | | −0.29599089 | +0.31696288 | |
| $P$ | 3.68 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 29 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.6− | 0.6− | 2006 10 02 | 703 | 0.3+ | 0.2+ |
| 1999 11 29 | 691 | 0.3− | 0.1− | 2006 09 14 | 703 | 0.4+ | 0.8+ | 2006 10 02 | 703 | 0.5+ | 0.6− |
| 1999 11 29 | 691 | 0.1− | 0.2− | 2006 09 14 | 703 | 1.1− | 0.3+ | 2006 10 02 | 703 | 1.1− | 0.3− |
| 1999 12 13 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.1+ | 0.1+ | 2006 10 02 | 703 | (0.1+ | 1.7−) |
| 1999 12 13 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 703 | (1.2+ | 1.6+) | 2006 10 09 | 644 | 0.4− | 0.0 |
| 1999 12 13 | 691 | 0.6+ | 0.1+ | 2006 09 15 | 703 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.5+ |
| 1999 12 13 | 691 | 0.2+ | 0.0 | 2006 09 15 | 703 | 0.3− | 0.7− | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 1999 12 13 | 691 | 0.2− | 0.0 | 2006 09 15 | 703 | 0.4+ | 1.0− | 2006 10 11 | 644 | 0.5+ | 0.1+ |
| 1999 12 13 | 691 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 2006 08 30 | 699 | 0.5+ | 1.3+ | 2006 09 26 | 703 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.5+ | 0.4+ |
| 2006 08 30 | 699 | 0.3+ | 1.0+ | 2006 09 26 | 703 | 0.2− | 0.4− | 2006 10 19 | 703 | 1.0+ | 0.0 |
| 2006 08 30 | 699 | 0.2+ | 1.3− | 2006 09 26 | 703 | 0.8− | 0.3+ | 2006 10 19 | 703 | (1.2+ | 1.6−) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 30 | 699 | 0.4+ | 0.3− | 2006 09 26 | 703 | 0.8+ | 0.2+ | 2006 10 19 | 703 | 0.7− | 0.4− |
| 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.2− | 2006 10 19 | 703 | 0.4− | 0.2+ |
| 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 1.3− | 0.4− | | | | |
| 2006 09 14 | 644 | (1.6+ | 0.2−) | 2006 09 26 | 703 | 0.7+ | 0.3− | | | | |

**2006 RE$_{35}$ = 2002 XW$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.02423 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21937257 | $\omega$ | 63.91361 | | +0.97861763 | | +0.16050985 |
| $a$ | 2.7227922 | $\Omega$ | 286.62847 | | −0.20085519 | | +0.88048548 |
| $e$ | 0.1316636 | $i$ | 7.71454 | | +0.04432517 | | +0.44607389 |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 691 | 1.1− | 0.1+ | 2006 09 19 | 699 | 0.8− | 0.1− | 2006 10 03 | 703 | 0.8− | 0.6− |
| 1998 11 17 | 691 | 0.2− | 0.1− | 2006 09 19 | 699 | 0.6− | 0.6+ | 2006 10 17 | 691 | 0.4+ | 0.1− |
| 1998 11 17 | 691 | 0.6− | 0.8− | 2006 09 19 | 699 | 1.0− | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 1998 12 14 | 691 | 0.5+ | 0.2− | 2006 09 19 | 699 | 1.4− | 0.2− | 2006 10 17 | 691 | 0.4+ | 0.2− |
| 1998 12 14 | 691 | 0.3+ | 0.0 | 2006 09 26 | 683 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 1998 12 14 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 683 | 0.2− | 1.5− | 2006 10 19 | 691 | 0.3+ | 0.1− |
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 09 26 | 683 | (2.1+ | 0.8−) | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 2002 12 06 | 704 | 0.2+ | 1.0+ | 2006 09 27 | 683 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.0 | 0.5− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.2+ | 0.2+ | 2006 09 27 | 683 | 0.6+ | 0.7− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2002 12 11 | 704 | 0.4− | 1.2+ | 2006 09 27 | 703 | 0.1+ | 0.9− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2002 12 11 | 704 | (1.8+ | 0.2−) | 2006 09 27 | 703 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 27 | 683 | 0.3− | 0.1− | 2006 10 23 | 703 | 0.4+ | 0.4+ |
| 2006 09 06 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 683 | 0.0 | 0.2− | 2006 10 23 | 703 | 0.6+ | 0.5− |
| 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 09 30 | 683 | 0.2− | 1.4+ | 2006 10 23 | 703 | 0.3− | 0.3+ |
| 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 683 | (1.9− | 0.9+) | 2006 10 23 | 703 | 0.1− | 0.6− |
| 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 704 | (0.3+ | 1.8+) | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2006 09 14 | 644 | 0.1− | 0.1− | 2006 10 03 | 704 | 1.0+ | 0.7+ | 2006 10 24 | 644 | 0.2+ | 0.1− |
| 2006 09 16 | 703 | 0.1− | 1.3− | 2006 10 03 | 704 | 1.1+ | 0.3+ | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2006 09 16 | 703 | 0.2+ | 0.5+ | 2006 10 03 | 703 | 0.8+ | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.5+ |
| 2006 09 16 | 703 | 0.0 | 0.2− | 2006 10 03 | 703 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.4− | 0.2+ |
| 2006 09 16 | 703 | 0.3− | 0.0 | 2006 10 03 | 703 | 0.8− | 0.2− | 2006 10 28 | 691 | 0.2− | 0.2+ |

**2006 RF$_{35}$ = 2003 AR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.82059 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18760559 | $\omega$ | 295.25326 | | −0.61173266 | | +0.77528563 |
| $a$ | 3.0220771 | $\Omega$ | 296.11759 | | −0.64810651 | | −0.60513740 |
| $e$ | 0.0703620 | $i$ | 10.08384 | | −0.45358693 | | −0.18094450 |
| $P$ | 5.25 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.2+ | 1.6− | 2003 01 07 | 704 | 0.8− | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.6+ |
| 1995 08 28 | 691 | 1.0+ | 0.6− | 2003 01 07 | 704 | (2.5− | 0.3+) | 2006 09 14 | 644 | 0.1+ | 0.8+ |
| 1998 01 08 | 691 | 0.2− | 0.5− | 2004 03 17 | 703 | 0.0 | 0.4+ | 2006 09 14 | 644 | 0.0 | 0.3+ |
| 1998 01 08 | 691 | 0.2+ | 0.4− | 2004 03 17 | 703 | 0.4− | 0.0 | 2006 09 14 | 644 | 0.5− | 0.6+ |
| 1998 01 08 | 691 | 0.1− | 0.5− | 2004 03 17 | 703 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.5− | 0.9+ |
| 2000 08 05 | 608 | 0.6− | 1.2+ | 2004 03 17 | 703 | 1.2+ | 0.4+ | 2006 09 16 | 703 | 0.8+ | 1.1+ |
| 2000 08 05 | 608 | 1.0− | 0.9+ | 2004 04 16 | 644 | 0.1+ | 0.1− | 2006 09 16 | 703 | 1.1− | 0.2+ |
| 2000 08 05 | 608 | 0.4− | 0.6+ | 2004 04 16 | 644 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.9− |
| 2003 01 05 | 704 | 0.0 | 0.4+ | 2004 04 16 | 644 | 0.1+ | 0.0 | 2006 09 16 | 703 | 1.7− | 0.3− |
| 2003 01 05 | 704 | 0.3− | 0.0 | 2006 08 29 | 699 | 0.4+ | 0.5− | 2006 10 03 | 703 | 0.5+ | 1.3+ |
| 2003 01 05 | 704 | 0.4− | 0.1− | 2006 08 29 | 699 | 0.2− | 0.4− | 2006 10 03 | 703 | 1.2− | 0.0 |
| 2003 01 05 | 704 | 0.0 | 0.3+ | 2006 08 29 | 699 | 0.5+ | 0.5+ | 2006 10 03 | 703 | 0.7− | 1.5+ |
| 2003 01 05 | 704 | 0.4+ | 0.6+ | 2006 08 29 | 699 | (3.9+ | 1.3−) | 2006 10 03 | 703 | 1.4− | 1.2+ |
| 2003 01 07 | 704 | 0.5− | 0.2+ | 2006 09 14 | 644 | 0.8− | 0.5+ | | | | |

**2006 RP$_{35}$ = 2004 AT$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.43040 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28404151 | $\omega$ | 297.98208 | | +0.94965884 | | −0.30918884 |
| $a$ | 2.2920012 | $\Omega$ | 80.06489 | | +0.30242653 | | +0.86267811 |
| $e$ | 0.2637897 | $i$ | 2.93884 | | +0.08176971 | | +0.40023587 |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.6− | 0.7+ | 2006 09 19 | 699 | 0.8+ | 0.8+ | 2006 10 03 | G96 | 0.4+ | 0.2− |
| 1999 09 07 | 704 | (0.9− | 2.3+) | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.2− | 0.1+ |
| 1999 09 07 | 704 | 0.3− | 1.7+ | 2006 09 19 | 699 | 0.9+ | 1.2+ | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2004 01 15 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | (1.7+ | 1.0+) | 2006 10 03 | G96 | 0.1+ | 0.1− |
| 2004 01 15 | 691 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.3− | 0.0 |
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2004 01 22 | 704 | 1.2+ | 0.8− | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.1− | 2006 09 22 | 704 | 1.1+ | 0.9− | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2004 01 22 | 704 | 0.1− | 0.2− | 2006 09 22 | 704 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2004 01 22 | 704 | 0.2+ | 0.7+ | 2006 09 22 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2005 05 11 | 807 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2005 05 11 | 807 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2006 08 16 | 644 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 08 16 | 644 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.4+ | 1.0− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2006 08 16 | 644 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2006 09 14 | 703 | 0.6− | 0.5− | 2006 09 28 | 704 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2006 09 14 | 703 | 0.0 | 0.7+ | 2006 09 28 | 704 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2006 09 14 | 703 | 0.4− | 0.3− | 2006 09 28 | 704 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2006 09 14 | 703 | 0.4− | 0.3+ | 2006 09 28 | 704 | 0.5+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2006 09 16 | 704 | (1.7+ | 1.4+) | 2006 10 02 | 703 | (3.1+ | 1.7−) | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2006 09 16 | 704 | 0.2+ | 0.7− | 2006 10 02 | 703 | 0.7− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.6− |
| 2006 09 16 | 704 | 0.2− | 0.5+ | 2006 10 02 | 703 | 0.7− | 0.7+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2006 09 16 | 704 | 0.3+ | 0.3− | 2006 10 02 | 703 | 1.3− | 0.8+ | 2006 11 23 | G96 | 0.1− | 0.1− |

**2006 RS$_{35}$ = 2002 TG$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.81428 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24130375 | $\omega$ | 148.90501 | | +0.15690542 | | −0.97597296 |
| $a$ | 2.5552104 | $\Omega$ | 291.69647 | | +0.86940433 | | +0.20912002 |
| $e$ | 0.0796440 | $i$ | 9.36448 | | +0.46852619 | | −0.06120130 |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.3− | 0.9+ | 2004 03 16 | 704 | 0.5− | 0.5+ | 2006 09 22 | 699 | 0.6+ | 0.6− |
| 2002 10 03 | 644 | 0.2− | 0.7+ | 2004 03 16 | 704 | 0.5+ | 0.8+ | 2006 09 27 | 703 | (0.2− | 2.1−) |
| 2002 10 03 | 644 | 0.0 | 0.9+ | 2004 03 16 | 704 | 0.9+ | 0.0 | 2006 09 27 | 703 | 0.7+ | 1.2− |
| 2002 10 06 | 704 | 0.5+ | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.5+ | 2006 09 27 | 703 | 1.0+ | 1.0− |
| 2002 10 06 | 704 | 0.8− | 0.7− | 2006 09 06 | 644 | 0.1− | 0.6+ | 2006 09 27 | 703 | 0.3+ | 0.2+ |
| 2002 10 06 | 704 | 0.1− | 0.9− | 2006 09 06 | 644 | 0.1− | 0.7+ | 2006 10 09 | 644 | 0.6+ | 0.1− |
| 2002 10 06 | 704 | 0.4+ | 0.2+ | 2006 09 14 | 644 | 0.7− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2002 11 01 | 644 | 0.3+ | 0.4+ | 2006 09 14 | 644 | 0.5− | 0.6+ | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2002 11 01 | 644 | 0.2− | 0.2− | 2006 09 14 | 644 | 0.4+ | 0.6+ | 2006 10 20 | 703 | 0.5+ | 0.5− |
| 2002 11 01 | 644 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.0 | 0.7− | 2006 10 20 | 703 | 0.0 | 0.8− |
| 2004 01 23 | 704 | 1.0− | 0.0 | 2006 09 16 | 703 | 0.8− | 0.6− | 2006 10 20 | 703 | 0.5+ | 0.1+ |
| 2004 01 23 | 704 | 0.5− | 0.4− | 2006 09 16 | 703 | (0.3− | 1.9−) | 2006 10 20 | 703 | 0.0 | 1.3− |
| 2004 01 23 | 704 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.4− | 1.4− | 2006 10 23 | 703 | 0.4+ | 0.3+ |
| 2004 01 23 | 704 | 0.3+ | 0.0 | 2006 09 22 | 699 | 0.6+ | 1.0+ | 2006 10 23 | 703 | 0.2− | 0.8+ |
| 2004 03 16 | 704 | 0.3+ | 1.3− | 2006 09 22 | 699 | 1.1− | 0.2− | 2006 10 23 | 703 | 0.7− | 0.7+ |
| 2004 03 16 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 699 | (1.6+ | 0.5+) | 2006 10 23 | 703 | 1.3− | 1.2+ |

### 2006 RW$_{35}$ = 2000 QR$_{106}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.99217 | | (2000.0) | | | |
| $n$ | 0.17533196 | $\omega$ | 336.46102 | | +0.96523636 | +0.26103122 |
| $a$ | 3.1615155 | $\Omega$ | 8.44143 | | −0.22286295 | +0.84883811 |
| $e$ | 0.1147802 | $i$ | 5.26524 | | −0.13656820 | +0.45971356 |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | 704 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.2− | 0.1− | 2006 09 29 | 704 | 1.2− | 1.2+ |
| 2000 08 29 | 704 | 0.2+ | 0.4− | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2000 08 29 | 704 | 0.4− | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 08 29 | 704 | 0.5+ | 1.7+ | 2006 09 14 | 703 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2000 08 29 | 704 | 0.4− | 0.3+ | 2006 09 14 | 703 | 0.1+ | 0.9+ | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 2000 08 31 | 704 | 0.0 | 0.8+ | 2006 09 14 | 703 | 1.2− | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2000 08 31 | 704 | 0.5+ | 0.6+ | 2006 09 16 | 644 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.6− |
| 2000 08 31 | 704 | 0.6− | 0.5− | 2006 09 16 | 644 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.4− |
| 2000 08 31 | 704 | 1.0− | 0.3− | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2001 11 24 | 704 | 1.0− | 0.5+ | 2006 09 18 | 699 | 0.6+ | 0.4− | 2006 10 17 | 703 | 0.5+ | 0.5− |
| 2001 11 24 | 704 | 1.1+ | 0.3− | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2001 11 24 | 704 | 0.4− | 0.9+ | 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.8− |
| 2001 11 24 | 704 | (2.1− | 0.6+) | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2001 11 24 | 704 | 0.6− | 0.8+ | 2006 09 20 | 704 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2003 01 27 | 704 | 0.2+ | 0.6+ | 2006 09 20 | 704 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2003 01 27 | 704 | 0.1+ | 0.6+ | 2006 09 20 | 704 | 0.0 | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2003 01 27 | 704 | 1.0+ | 0.3− | 2006 09 20 | 704 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2004 03 16 | 691 | (1.2+ | 1.9+) | 2006 09 20 | 704 | 0.7+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2004 03 16 | 691 | 0.1+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2006 08 24 | 644 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 08 24 | 644 | 0.5− | 0.2+ | 2006 09 26 | J75 | 0.6+ | 1.4+ | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 26 | J75 | (1.3− | 2.4+) | 2006 11 15 | G96 | 0.4− | 0.0 |
| 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 26 | J75 | 0.4− | 1.2+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.3+ | 2006 09 29 | 704 | 0.2− | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2006 09 14 | 703 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.1+ | 0.8+ | | | | |
| 2006 09 14 | 703 | 0.3− | 0.0 | 2006 09 29 | 704 | (1.5− | 1.3+) | | | | |

### 2006 RY$_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.97465 | | (2000.0) | | | |
| $n$ | 0.27789845 | $\omega$ | 347.17070 | | +0.99940704 | +0.01685829 |
| $a$ | 2.3256550 | $\Omega$ | 11.98525 | | +0.00134817 | +0.85211474 |
| $e$ | 0.1374564 | $i$ | 8.31279 | | −0.03440577 | +0.52308343 |
| $P$ | 3.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.3+ | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.5− | 0.1− |
| 1999 10 12 | 704 | 0.2+ | 0.6− | 2006 09 18 | 699 | 0.5+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 1999 10 12 | 704 | 0.3− | 0.0 | 2006 09 18 | 699 | 1.1+ | 0.2+ | 2006 10 19 | 644 | 0.8− | 0.1+ |
| 1999 10 12 | 704 | 0.1+ | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.3+ |
| 1999 10 12 | 704 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2− | 0.2− |
| 1999 10 22 | 704 | 0.1− | 0.9− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 1999 10 22 | 704 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.1− | 0.8− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 1999 10 22 | 704 | 0.6+ | 0.8− | 2006 09 20 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 10 22 | 704 | 0.0 | 0.1+ | 2006 09 20 | 704 | (0.2+ | 1.7−) | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1999 11 03 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 03 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.7+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 11 03 | 704 | 0.1+ | 1.1+ | 2006 09 26 | 691 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 1999 11 03 | 704 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 08 19 | 699 | 0.8+ | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 08 19 | 699 | 0.9− | 0.1− | 2006 09 27 | 704 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2006 08 19 | 699 | 0.4− | 0.4− | 2006 09 27 | 704 | 0.4− | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2006 08 19 | 699 | 0.6+ | 0.6+ | 2006 09 27 | 704 | 0.2− | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2006 09 14 | 703 | 1.2− | 0.5+ | 2006 09 27 | 704 | 0.6− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2006 09 14 | 703 | 0.3− | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.2+ | 2006 11 06 | 644 | 0.3+ | 0.1− |
| 2006 09 14 | 703 | 0.2+ | 1.1+ | 2006 09 29 | 704 | 0.2+ | 0.2− | 2006 11 06 | 644 | 0.4+ | 0.2+ |
| 2006 09 14 | 703 | 0.6− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.6− | 2006 11 06 | 644 | 0.1+ | 0.3+ |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 09 29 | 704 | (2.0− | 0.1+) | 2006 11 14 | 703 | 0.0 | 0.9− |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 03 | 704 | 1.2− | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 03 | 704 | 1.4+ | 0.4+ | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2006 09 17 | 704 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.1+ | 0.8− | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2006 09 17 | 704 | 0.0 | 0.8+ | 2006 10 03 | 704 | 0.4+ | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2006 09 17 | 704 | 1.5− | 0.4− | 2006 10 03 | 704 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.5+ | 0.4− |
| 2006 09 17 | 704 | 0.9− | 0.9+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2006 09 17 | 704 | (1.5− | 0.0 ) | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2006 09 18 | 699 | 0.5− | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 1.2− | 0.9+ |
| 2006 09 18 | 699 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2006 09 18 | 699 | 1.1− | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2006 09 18 | 699 | 0.9+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.4− | | | | |
| 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.1− | | | | |

### 2006 RZ$_{35}$ = 2004 FR$_{125}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.58639 | | (2000.0) | | | |
| $n$ | 0.18151252 | $\omega$ | 154.92796 | | +0.95929654 | +0.28102273 |
| $a$ | 3.0893349 | $\Omega$ | 188.88773 | | −0.27982911 | +0.93263798 |
| $e$ | 0.1818773 | $i$ | 10.38998 | | −0.03802387 | +0.22630207 |
| $P$ | 5.43 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.4− | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.0 | 0.1+ |
| 2004 03 27 | 704 | 0.5+ | 0.6− | 2006 09 17 | 704 | 0.0 | 1.5+ | 2006 10 15 | 703 | 0.9− | 0.3− |
| 2004 03 27 | 704 | 1.3+ | 0.6− | 2006 09 17 | 704 | 1.4+ | 0.7+ | 2006 10 15 | 703 | 0.5− | 0.4+ |
| 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 704 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2004 03 29 | 691 | 0.2+ | 0.6+ | 2006 09 17 | 704 | 0.8+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2004 03 29 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2004 03 31 | 291 | 0.0 | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2004 03 31 | 291 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.6+ | 0.6− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2004 03 31 | 291 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2004 04 23 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2004 04 23 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.4+ |
| 2004 04 23 | 691 | 0.4− | 0.1+ | 2006 09 27 | 704 | (2.0− | 0.3+) | 2006 10 21 | 703 | 0.4− | 0.7+ |
| 2005 07 04 | 644 | 0.1+ | 0.7+ | 2006 09 27 | 704 | 1.4− | 0.4− | 2006 10 21 | 703 | 0.6+ | 0.1− |
| 2005 07 04 | 644 | 0.0 | 0.4+ | 2006 09 27 | 704 | 0.7− | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.2+ |
| 2005 07 04 | 644 | 0.1− | 0.4+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.4− |
| 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2006 09 14 | 703 | 0.8− | 0.2+ | 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2006 09 14 | 703 | 1.2+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 703 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.3+ | | | | |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.7+ | | | | |

### 2006 RB$_{36}$ = 2004 FR$_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.83803 | | (2000.0) | | | |
| $n$ | 0.18846169 | $\omega$ | 198.29929 | | +0.83390712 | +0.52896754 |
| $a$ | 3.0129181 | $\Omega$ | 128.72993 | | −0.47780483 | +0.83473015 |
| $e$ | 0.0870455 | $i$ | 11.64454 | | −0.27622719 | +0.15303237 |
| $P$ | 5.23 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 704 | 0.6+ | 0.4− | 2004 03 19 | 644 | 0.5+ | 0.0 | 2006 09 17 | 699 | 1.1− | 0.3+ |
| 2001 10 11 | 704 | 1.1+ | 0.6− | 2004 03 23 | 704 | 0.6− | 0.4− | 2006 09 19 | 703 | 0.3− | 0.0 |
| 2001 10 11 | 704 | 0.1− | 0.6− | 2004 03 23 | 704 | 0.8+ | 0.4− | 2006 09 19 | 703 | 0.1+ | 0.3+ |
| 2001 10 23 | 644 | 0.4− | 0.5+ | 2004 03 23 | 704 | 0.3− | 0.6− | 2006 09 19 | 703 | 0.1− | 0.2− |
| 2001 10 23 | 644 | 0.4− | 0.4+ | 2004 03 23 | 704 | 1.4− | 0.6+ | 2006 09 19 | 703 | 0.1− | 0.8+ |
| 2001 10 23 | 644 | 0.6− | 0.5+ | 2006 09 14 | 644 | 0.2+ | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.7+ | 0.2− | 2006 09 25 | 703 | 0.4+ | 0.7− | | |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.3+ | 0.3− | 2006 09 25 | 703 | 1.2− | 0.4− | | |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.7+ | 0.6− | 2006 09 25 | 703 | 0.0 | 0.0 | | |
| 2004 03 19 | 644 | 0.5+ | 0.0 | 2006 09 17 | 699 | 0.2+ | 0.3+ | | | | | | |
| 2004 03 19 | 644 | 0.5+ | 0.1+ | 2006 09 17 | 699 | 0.4− | 0.5+ | | | | | | |

**2006 RF$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.97050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26717467 | $\omega$ | 94.80531 | | +0.92891826 | +0.36101330 | |
| $a$ | 2.3874770 | $\Omega$ | 244.05169 | | −0.36554998 | +0.85863016 | |
| $e$ | 0.1642723 | $i$ | 5.25416 | | −0.05902602 | +0.36390061 | |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 03 | 644 | 0.5− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2002 07 03 | 644 | 0.4− | 0.1− | 2006 09 16 | 703 | 0.7+ | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.5− | | |
| 2002 07 03 | 644 | 0.3− | 0.7+ | 2006 09 16 | 703 | 0.6− | 0.6− | 2006 10 17 | 703 | (0.5+ | 1.9+) | | |
| 2002 07 12 | 644 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.0 | 0.5+ | 2006 10 17 | 703 | 0.4+ | 1.1+ | | |
| 2002 07 12 | 644 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.7+ | 1.1+ | | |
| 2002 07 12 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 07 21 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2002 07 21 | 644 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ | | |
| 2002 07 21 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 699 | 0.3+ | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2002 08 05 | 644 | 0.1+ | 0.1+ | 2006 09 27 | 699 | (1.6− | 0.6+) | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2002 08 05 | 644 | 0.2+ | 0.0 | 2006 09 27 | 699 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2002 08 05 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.7− | | |
| 2002 08 16 | 644 | 0.3− | 1.0− | 2006 10 03 | 704 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.6− | | |
| 2002 08 16 | 644 | 0.1− | 1.1− | 2006 10 03 | 704 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.3+ | | |
| 2002 08 16 | 644 | 0.1+ | 0.9− | 2006 10 03 | 704 | 0.7− | 0.4+ | 2006 11 11 | 703 | (2.0− | 1.1−) | | |
| 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.4− | 0.4− | | |
| 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.8− | 0.7− | | |
| 2005 04 15 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.0 | 0.6− | | |
| 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.1+ | 1.0− | | |
| 2006 09 14 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.1− | | | | | | |

**2006 RH$_{36}$ = 2005 LU$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.31802 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22657092 | $\omega$ | 165.16973 | | +0.95715988 | −0.26452262 | |
| $a$ | 2.6648122 | $\Omega$ | 210.95529 | | +0.23685317 | +0.94922818 | |
| $e$ | 0.1940385 | $i$ | 13.23731 | | +0.16656993 | +0.17027520 | |
| $P$ | 4.35 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 28 | 599 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.7− | 0.7− | 2006 10 29 | 704 | 0.9− | 0.7+ | | |
| 2005 05 29 | 599 | (1.2− | 2.3+) | 2006 09 30 | 703 | 0.3− | 0.0 | 2006 10 29 | 704 | 0.7− | 0.0 | | |
| 2005 06 11 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.1+ | | |
| 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.6− | | |
| 2005 06 11 | 691 | 0.2− | 0.1+ | 2006 10 03 | 704 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.3− | 0.5− | | |
| 2005 06 15 | 691 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 2005 06 15 | 691 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.5+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.6− | | |
| 2005 06 15 | 691 | 0.2− | 0.2− | 2006 10 03 | 704 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.6+ | | |
| 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 03 | 704 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.6+ | | |
| 2006 09 14 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.0 | | |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.9− | | |
| 2006 09 16 | 703 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.4− | 1.0+ | | |
| 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 1.3+ | | |
| 2006 09 16 | 703 | 1.1+ | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.3+ | | |
| 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.0+ | 0.7+ | | |
| 2006 09 27 | 699 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.6+ | 2006 11 21 | 704 | 0.9+ | 0.0 | | |
| 2006 09 27 | 699 | 0.1+ | 0.1+ | 2006 10 19 | 704 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ | | |
| 2006 09 27 | 699 | 0.0 | 0.1+ | 2006 10 19 | 704 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.1− | 0.0 | | |
| 2006 09 27 | 699 | 0.1+ | 0.7+ | 2006 10 19 | 704 | 0.4− | 0.5+ | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2006 09 27 | 703 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.4− | | |
| 2006 09 27 | 703 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2006 09 27 | 703 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.5+ | 0.3− | | |
| 2006 09 27 | 703 | 0.2− | 0.4− | 2006 10 29 | 704 | 1.2− | 0.5− | | | | | | |

**2006 RM$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.40155 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25433828 | $\omega$ | 188.32015 | | +0.92887511 | −0.36858869 | |
| $a$ | 2.4671463 | $\Omega$ | 193.48402 | | +0.34820652 | +0.90258965 | |
| $e$ | 0.2409471 | $i$ | 9.00983 | | +0.12626661 | +0.22242820 | |
| $P$ | 3.88 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 04 | 644 | 0.1+ | 0.0 | 2006 09 18 | 704 | 0.8+ | 0.3− | 2006 10 01 | 704 | 0.7+ | 0.4+ | | |
| 2002 08 04 | 644 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.6+ | 2006 10 01 | 704 | 0.9+ | 0.6+ | | |
| 2002 08 04 | 644 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.0 | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.1− | | |
| 2002 08 17 | 608 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.1− | | |
| 2002 08 17 | 608 | 0.6+ | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2002 08 17 | 608 | 0.4+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.4− | | |
| 2002 08 18 | 644 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.4− | | |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.3− | | |
| 2002 08 18 | 644 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.3− | 0.6− | | |
| 2002 08 26 | 644 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2002 08 26 | 644 | 0.5− | 0.2− | 2006 09 25 | 704 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.2+ | | |
| 2002 08 26 | 644 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.6− | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2006 09 15 | 704 | 0.5− | 0.9− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2006 09 15 | 704 | 0.9− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2006 09 15 | 704 | 0.4− | 1.3+ | 2006 09 27 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2006 09 17 | 703 | 0.7+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2006 09 17 | 703 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2006 09 17 | 703 | 0.2+ | 0.6− | 2006 09 29 | 704 | 0.3− | 0.5− | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2006 09 17 | 703 | 0.6+ | 0.3− | 2006 09 29 | 704 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 18 | 704 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.1+ | | |
| 2006 09 18 | 704 | 0.8+ | 1.4− | 2006 10 01 | 704 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2006 09 18 | 704 | 0.3− | 0.6− | 2006 10 01 | 704 | 1.0+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2+ | | |
| 2006 09 18 | 704 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.7+ | 0.0 | | | | | | |

**2006 RS$_{36}$ = 2005 LQ$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.05541 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21385132 | $\omega$ | 199.62966 | | +0.72061564 | −0.69011755 | |
| $a$ | 2.7694579 | $\Omega$ | 204.41526 | | +0.65574195 | +0.70963525 | |
| $e$ | 0.1778688 | $i$ | 9.28825 | | +0.22520123 | +0.14197035 | |
| $P$ | 4.61 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 910 | 0.4− | 0.2+ | 2006 09 12 | 703 | 0.6+ | 1.2− | 2006 09 30 | 699 | 1.4− | 0.0 | | |
| 1997 10 02 | 910 | 0.2+ | 0.5+ | 2006 09 12 | 703 | (2.6− | 1.9−) | 2006 09 30 | 699 | 0.0 | 1.0− | | |
| 1997 10 03 | 910 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.9− | 0.6− | 2006 09 30 | 699 | 0.9− | 0.2+ | | |
| 2003 01 11 | 644 | 0.0 | 1.0+ | 2006 09 18 | 703 | 0.9+ | 0.5+ | 2006 10 16 | 703 | 0.2− | 0.6− | | |
| 2003 01 11 | 644 | 0.1− | 0.8+ | 2006 09 18 | 703 | (1.6+ | 0.7−) | 2006 10 16 | 703 | 0.4− | 1.3− | | |
| 2003 01 11 | 644 | 0.1− | 0.9+ | 2006 09 18 | 703 | (0.0 | 1.8+) | 2006 10 16 | 703 | 0.1− | 0.1− | | |
| 2005 06 01 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.0 | 0.7+ | 2006 10 16 | 703 | 0.7− | 0.4+ | | |
| 2005 06 01 | 691 | 0.2− | 0.2− | 2006 09 20 | 699 | 0.0 | 1.0+ | 2006 11 10 | 291 | 0.3+ | 0.0 | | |
| 2005 06 01 | 691 | 0.1− | 0.1+ | 2006 09 20 | 699 | 0.4− | 0.2+ | 2006 11 10 | 291 | 0.3+ | 0.0 | | |
| 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.6− | 1.0+ | 2006 11 10 | 291 | 0.5+ | 0.1+ | | |
| 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.2− | 0.6+ | 2006 11 11 | 291 | 0.2+ | 0.0 | | |
| 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.3+ | 0.4− | 2006 11 11 | 291 | 0.0 | 0.1+ | | |
| 2006 08 29 | 703 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.4+ | 2006 11 11 | 291 | 0.1− | 0.2− | | |
| 2006 08 29 | 703 | 0.6− | 0.3− | 2006 09 25 | 704 | 0.2+ | 0.5+ | 2006 11 14 | 291 | 0.2+ | 0.3− | | |
| 2006 08 29 | 703 | 1.2− | 0.1− | 2006 09 25 | 704 | 0.5− | 0.8+ | 2006 11 14 | 291 | 0.3+ | 0.0 | | |
| 2006 08 29 | 703 | 1.2− | 0.8− | 2006 09 25 | 704 | (1.4− | 2.7+) | 2006 11 14 | 291 | 0.5+ | 0.0 | | |
| 2006 09 12 | 703 | 0.0 | 0.3− | 2006 09 30 | 699 | 0.2+ | 0.5+ | | | | | | |

**2006 RX$_{36}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.61582 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17055232 | $\omega$ | 125.65182 | | +0.25085341 | | +0.96568716 |
| $a$ | 3.2203097 | $\Omega$ | 158.57620 | | −0.93697761 | | +0.25967151 |
| $e$ | 0.1238808 | $i$ | 10.60746 | | −0.24319852 | | −0.00436052 |
| $P$ | 5.78 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 24 | 691 | 0.4+ | 0.1− | 2006 08 18 | 691 | 0.6− | 0.9+ | 2006 09 18 | 703 | 0.8− | 0.2− |
| 1998 03 24 | 691 | 0.4− | 0.2+ | 2006 08 18 | 691 | 0.5− | 1.1+ | 2006 09 25 | 699 | 0.0 | 0.9+ |
| 1998 03 24 | 691 | 0.0 | 0.4− | 2006 08 18 | 691 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.7− | 0.2+ |
| 2004 03 15 | 703 | 1.0− | 0.4+ | 2006 08 27 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 1.3− | 1.9+ |
| 2004 03 15 | 703 | 1.0+ | 1.8+ | 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.3+ | 0.3− |
| 2004 03 15 | 703 | 0.5+ | 1.5+ | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.7+ | 0.1+ |
| 2004 03 15 | 703 | (2.6+ | 3.1−) | 2006 09 12 | 703 | 0.7− | 0.8− | 2006 10 03 | G96 | 0.4+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.2− | 2006 09 12 | 703 | 1.0+ | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.5+ | 0.8− | 2006 10 03 | G96 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 2005 06 29 | 644 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.4− | 2006 10 16 | 703 | 0.6− | 0.2+ |
| 2005 06 29 | 644 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.1− | 1.3− | 2006 10 16 | 703 | 1.0+ | 1.5− |
| 2005 06 29 | 644 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.5+ | 0.8+ |

**2006 RB$_{37}$ = 2002 TL$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.13724 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23260292 | $\omega$ | 299.65147 | | +0.96459101 | | +0.26127352 |
| $a$ | 2.6185404 | $\Omega$ | 45.22980 | | −0.22101423 | | +0.87531738 |
| $e$ | 0.2123242 | $i$ | 2.91151 | | −0.14393366 | | +0.40688529 |
| $P$ | 4.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 291 | 0.0 | 0.1+ | 2006 09 18 | 703 | 1.1− | 0.6− | 2006 09 30 | 703 | 0.5− | 0.1+ |
| 2002 10 05 | 291 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.2+ |
| 2002 10 05 | 291 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.8+ | 0.6− |
| 2002 10 06 | 291 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.9− |
| 2002 10 06 | 291 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2002 10 06 | 291 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.0 | 2006 10 16 | 703 | 1.0+ | 1.0− |
| 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 10 16 | 703 | (2.0+ | 0.5−) |
| 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.8+ |
| 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.2− | 0.4− |
| 2006 09 12 | 703 | 0.3− | 0.7+ | 2006 09 26 | 704 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2006 09 12 | 703 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2006 09 12 | 703 | (0.3− | 1.7−) | 2006 09 26 | 704 | 0.8+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2006 09 12 | 703 | 0.1− | 1.1− | 2006 09 26 | 704 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.7− |
| 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2006 09 18 | 703 | 1.4+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.3+ |
| 2006 09 18 | 703 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.3− | 0.8+ | 2006 11 17 | G96 | 0.5+ | 0.1− |
| 2006 09 18 | 703 | 0.2+ | 0.7− | 2006 09 26 | 704 | (1.6+ | 0.2−) | | | | |
| 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 09 26 | 704 | 0.1+ | 0.4+ | | | | |

**2006 RC$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.83436 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22022073 | $\omega$ | 214.87754 | | +0.96795890 | | −0.24087310 |
| $a$ | 2.7157967 | $\Omega$ | 158.72149 | | +0.25076394 | | +0.94203144 |
| $e$ | 0.1549951 | $i$ | 11.27642 | | −0.01315322 | | +0.23357420 |
| $P$ | 4.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 0.3+ | 0.5+ | 2006 08 18 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.9+ | 0.2+ |
| 1995 03 10 | 691 | 0.4+ | 0.9+ | 2006 08 18 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.5− | 0.4+ |
| 1995 03 10 | 691 | 0.1− | 0.8+ | 2006 08 27 | 691 | 0.5− | 0.2+ | 2006 09 25 | 699 | (0.6+ | 1.9+) |
| 2002 12 14 | 704 | 0.4− | 0.2+ | 2006 08 27 | 691 | 0.5− | 0.2+ | 2006 09 25 | 152 | 0.4+ | 0.2+ |
| 2002 12 14 | 704 | 1.0− | 0.5− | 2006 08 27 | 691 | 0.4− | 0.3+ | 2006 09 25 | 152 | 0.0 | 0.0 |
| 2002 12 14 | 704 | (2.3− | 0.4+) | 2006 09 12 | 703 | (1.8+ | 1.0+) | 2006 09 25 | 152 | 0.3− | 0.9+ |
| 2004 03 14 | 691 | 0.0 | 0.6+ | 2006 09 12 | 703 | 0.6− | 0.1− | 2006 09 28 | H36 | 0.4+ | 0.3+ |
| 2004 03 14 | 691 | 0.2− | 0.7+ | 2006 09 12 | 703 | 0.7− | 0.6+ | 2006 09 28 | H36 | 0.4+ | 0.3+ |
| 2004 03 14 | 691 | 0.9+ | 0.4+ | 2006 09 12 | 703 | 0.2+ | 1.1− | 2006 09 28 | H36 | 0.4+ | 0.1− |
| 2005 05 11 | 691 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.9− | 0.7+ |
| 2005 05 11 | 691 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.2+ |
| 2005 05 11 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.7+ | 2006 09 30 | 703 | 1.2+ | 0.6− |
| 2005 06 05 | 691 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 2005 06 05 | 691 | 0.1− | 0.6+ | 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 10 02 | 703 | 0.1+ | 1.4+ |
| 2005 06 05 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 10 02 | 703 | 0.0 | 1.4+ |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.0 | 0.4+ | 2006 10 02 | 703 | 1.4+ | 1.2+ |
| 2006 07 21 | G96 | 0.5+ | 0.4− | 2006 09 22 | 704 | 0.2+ | 0.4+ | 2006 10 02 | 703 | (2.4+ | 0.5+) |
| 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 22 | 704 | 0.8+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 09 22 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.3+ | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.4+ |

**2006 RE$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.62480 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17365690 | $\omega$ | 158.43612 | | +0.83040169 | | +0.55283757 |
| $a$ | 3.1818132 | $\Omega$ | 167.28307 | | −0.54607229 | | +0.83224606 |
| $e$ | 0.1923881 | $i$ | 18.35149 | | −0.11062588 | | +0.04167869 |
| $P$ | 5.68 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.1− | 0.1− | 2006 07 22 | G96 | 0.7− | 0.5− | 2006 09 18 | 703 | 0.3+ | 0.1− |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2006 07 22 | G96 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.2− |
| 2000 09 07 | 691 | 0.1+ | 0.1+ | 2006 07 22 | G96 | 0.9− | 0.5− | 2006 09 18 | 703 | 0.8− | 0.3− |
| 2000 09 07 | 691 | 0.3+ | 0.3+ | 2006 07 22 | G96 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.0 | 1.2+ |
| 2000 09 07 | 691 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.5− | 0.9− |
| 2004 03 15 | 691 | 0.3+ | 0.2+ | 2006 08 22 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.1+ |
| 2004 03 15 | 691 | 0.3+ | 0.2+ | 2006 08 22 | 644 | 0.0 | 0.4− | 2006 09 26 | 704 | 0.6+ | 0.5+ |
| 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 09 12 | 703 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 2005 07 01 | 644 | 0.4+ | 0.2− | 2006 09 12 | 703 | (0.9+ | 1.7+) | 2006 09 30 | 703 | (1.7− | 0.2+) |
| 2005 07 01 | 644 | 0.4+ | 0.3+ | 2006 09 12 | 703 | 0.9+ | 0.6− | 2006 09 30 | 703 | 0.6+ | 0.4+ |
| 2005 07 01 | 644 | 0.3+ | 0.1− | 2006 09 12 | 703 | 0.1− | 0.9+ | 2006 09 30 | 703 | 1.3− | 0.8− |

**2006 RK$_{37}$ = 1995 UD$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.70672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26629425 | $\omega$ | 283.37746 | | +0.97212207 | | −0.22675923 |
| $a$ | 2.3927364 | $\Omega$ | 89.75313 | | +0.23151894 | | +0.88800231 |
| $e$ | 0.2003875 | $i$ | 3.42015 | | +0.03711701 | | +0.40004019 |
| $P$ | 3.70 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.3+ |
| 1995 10 20 | 691 | 0.1+ | 0.1− | 2006 09 12 | 703 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.1− | 0.3+ |
| 1995 10 20 | 691 | 0.1− | 0.5− | 2006 09 12 | 703 | (0.5− | 1.6−) | 2006 09 30 | 703 | 0.1+ | 1.4+ |
| 1995 10 25 | 691 | 0.3+ | 1.0− | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.3− | 0.2− |
| 1995 10 25 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.6− | 2006 10 09 | 644 | 0.4+ | 0.4+ |
| 1995 10 25 | 691 | 0.4+ | 0.2− | 2006 09 18 | 703 | 0.6− | 0.4+ | 2006 10 09 | 644 | 0.7− | 0.2+ |
| 2002 07 08 | 644 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2002 07 08 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.4− | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 07 08 | 644 | 0.5+ | 0.0 | 2006 09 18 | 699 | (0.7− | 1.6+) | 2006 10 09 | 644 | 0.2+ | 0.5+ |
| 2002 07 19 | 644 | 0.4− | 0.4+ | 2006 09 18 | 699 | 0.0 | 0.6+ | 2006 10 09 | 644 | 0.4− | 0.5+ |
| 2002 07 19 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | (1.6+ | 0.7+) | 2006 10 16 | 703 | (1.6− | 0.6+) |
| 2002 07 19 | 644 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.1− |
| 2004 01 19 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | (0.4− | 1.7+) | 2006 10 16 | 703 | 0.0 | 1.3+ |
| 2004 01 19 | 691 | 0.0 | 0.4+ | 2006 09 22 | 704 | 1.1− | 0.3− | 2006 10 16 | 703 | 0.7− | 1.1+ |
| 2004 01 19 | 691 | 0.3+ | 0.7+ | 2006 09 22 | 704 | 0.3+ | 0.5− | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2006 08 28 | 699 | 0.7+ | 0.2− | 2006 09 26 | 704 | 0.1− | 1.2+ | 2006 10 22 | 644 | 0.5− | 0.1+ |
| 2006 08 28 | 699 | (0.4− | 1.8+) | 2006 09 26 | 704 | 0.2− | 0.7+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2006 08 28 | 699 | 1.4+ | 0.4− | 2006 09 26 | 704 | 0.2+ | 0.8+ | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2006 08 28 | 699 | 0.4− | 0.1+ | 2006 09 26 | 704 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2006 09 12 | 703 | 0.8+ | 0.5− | 2006 09 26 | 704 | 0.5− | 0.7+ | 2006 10 23 | 644 | 0.6− | 0.2+ |

**2006 RO$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.39926 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23197180 | $\omega$ | 202.36132 | | +0.99470070 | +0.09562957 | |
| $a$ | 2.6232877 | $\Omega$ | 152.06999 | | −0.07783670 | +0.94036522 | |
| $e$ | 0.1936619 | $i$ | 4.62346 | | −0.06717114 | +0.32644790 | |
| $P$ | 4.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 11 05 | 704 | 0.6+ | 0.6− | 2006 09 26 | 704 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 11 05 | 704 | 0.3− | 0.5− | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 11 23 | 644 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.6− | 0.9− | 2006 10 20 | 644 | 0.6− | 0.0 |
| 2002 11 23 | 644 | 0.4− | 0.1+ | 2006 09 28 | 704 | 0.5− | 1.1− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 11 23 | 644 | 0.3− | 0.5+ | 2006 09 28 | 704 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 12 01 | 704 | 0.1+ | 0.6− | 2006 09 28 | 704 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 12 01 | 704 | 0.4+ | 0.3− | 2006 09 28 | 704 | 0.5+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2002 12 01 | 704 | 0.3− | 0.9+ | 2006 09 30 | 703 | 1.1+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 09 12 | 703 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.8− | 0.5+ |
| 2006 09 12 | 703 | (1.5+ | 1.6−) | 2006 09 30 | 703 | 0.9+ | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.7+ |
| 2006 09 12 | 703 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 1.0+ |
| 2006 09 12 | 703 | 0.6− | 0.3− | 2006 09 30 | 704 | 0.6− | 1.0+ | 2006 10 22 | 703 | 1.1− | 0.2− |
| 2006 09 18 | 699 | 0.6+ | 0.6− | 2006 09 30 | 704 | 0.2− | 0.6+ | 2006 11 23 | G96 | 0.9+ | 0.4− |
| 2006 09 18 | 699 | (2.4+ | 0.3−) | 2006 09 30 | 704 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2006 09 18 | 699 | 0.6+ | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2006 09 26 | 704 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.4− | 0.7− | | | | |

**2006 RR$_{37}$ = 2004 BB$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.70693 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28287755 | $\omega$ | 253.46417 | | +0.86639789 | −0.49295252 | |
| $a$ | 2.2982842 | $\Omega$ | 135.98473 | | +0.49064248 | +0.81068492 | |
| $e$ | 0.1990276 | $i$ | 6.58659 | | +0.09286896 | +0.31589204 | |
| $P$ | 3.48 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 291 | 0.8+ | 0.1+ | 2006 09 12 | 703 | 0.1+ | 0.0 | 2006 09 26 | 703 | 1.4+ | 0.4+ |
| 2004 01 29 | 291 | 0.5+ | 0.3+ | 2006 09 12 | 703 | 1.1− | 0.6− | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 2004 01 29 | 291 | 0.5+ | 0.0 | 2006 09 12 | 703 | 1.6+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.7+ |
| 2004 01 29 | 291 | 1.0− | 0.1− | 2006 09 12 | 703 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2004 01 29 | 291 | 0.8− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 02 | 703 | 0.9+ | 0.2+ |
| 2004 01 29 | 291 | 1.0− | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.1+ |
| 2004 01 30 | 291 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.9− | 2006 10 02 | 703 | 0.4+ | 1.5− |
| 2004 01 30 | 291 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.5+ | 2006 10 02 | 703 | 0.1+ | 1.3− |
| 2004 01 30 | 291 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.4− | 2006 10 02 | 703 | 0.6+ | 0.1− |
| 2004 02 16 | 691 | 0.6+ | 0.1+ | 2006 09 19 | 703 | 1.6− | 0.6+ | 2006 10 02 | 703 | 1.5− | 0.5+ |
| 2004 02 16 | 691 | 0.0 | 0.8− | 2006 09 19 | 703 | 0.2− | 0.4+ | 2006 10 02 | 703 | 1.1− | 0.2+ |
| 2004 02 16 | 691 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.6− | 0.2− | 2006 10 02 | 703 | 0.0 | 0.2+ |

**2006 RS$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.98737 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27918811 | $\omega$ | 264.61162 | | +0.78928362 | −0.60794354 | |
| $a$ | 2.3184876 | $\Omega$ | 132.79489 | | +0.59957807 | +0.73278196 | |
| $e$ | 0.1231273 | $i$ | 6.74878 | | +0.13242925 | +0.30567180 | |
| $P$ | 3.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 0.1+ | 0.5+ | 2006 09 12 | 703 | (1.7+ | 0.3−) | 2006 10 02 | 703 | 0.5− | 0.5− |
| 2003 12 22 | 704 | 0.4+ | 0.1+ | 2006 09 12 | 703 | 0.4− | 0.5− | 2006 10 02 | 703 | 0.5+ | 1.0+ |
| 2003 12 22 | 704 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.5+ | 0.8− | 2006 10 02 | 703 | 0.8+ | 0.2+ |
| 2003 12 22 | 704 | 0.5− | 0.4− | 2006 09 18 | 703 | 1.0+ | 0.8− | 2006 10 02 | 703 | 0.2+ | 0.4− |
| 2005 04 17 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 1.0− | 0.1− | 2006 10 02 | 703 | (1.6− | 1.3+) |
| 2005 04 17 | 691 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.5− |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.1− | 2006 10 02 | 703 | 0.8− | 0.1+ |
| 2005 05 04 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.3− |
| 2005 05 04 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | 1.1+ | 0.0 | 2006 10 21 | 703 | (0.9− | 1.5+) |
| 2005 05 04 | 691 | 0.1− | 0.5+ | 2006 09 18 | 699 | (0.6+ | 1.6+) | 2006 10 21 | 703 | 0.1+ | 0.8− |
| 2006 08 22 | 644 | 0.9− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.0 | 1.0+ |
| 2006 08 22 | 644 | 1.1− | 0.4+ | 2006 09 26 | 703 | 0.3− | 0.0 | 2006 10 28 | 703 | 0.7+ | 1.5+ |
| 2006 08 22 | 644 | 0.6− | 0.1+ | 2006 09 26 | 703 | 1.4− | 1.1+ | 2006 10 28 | 703 | 1.2+ | 0.1+ |
| 2006 09 12 | 703 | 0.9+ | 1.1− | 2006 09 26 | 703 | 0.4− | 0.2− | 2006 10 28 | 703 | 1.3+ | 0.9+ |
| 2006 09 12 | 703 | 0.5+ | 0.7+ | 2006 10 02 | 703 | 0.4+ | 1.0− | 2006 10 28 | 703 | 0.9− | 0.6+ |

**2006 RY$_{37}$ = 2005 JQ$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.45840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29166184 | $\omega$ | 266.77570 | | +0.93341206 | +0.35638846 | |
| $a$ | 2.2519028 | $\Omega$ | 72.34261 | | −0.30943084 | +0.85821163 | |
| $e$ | 0.1306799 | $i$ | 2.50115 | | −0.18164383 | +0.36940502 | |
| $P$ | 3.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 644 | 0.1+ | 0.2+ | 2006 09 16 | 704 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2002 05 12 | 644 | 0.2− | 0.2+ | 2006 09 16 | 704 | 0.9− | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.6+ |
| 2002 05 12 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 1.4− | 0.1− | 2006 09 28 | 704 | 0.3− | 0.7+ |
| 2003 11 29 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 09 28 | 704 | (0.4+ | 1.6+) |
| 2003 11 29 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.9− | 2006 09 28 | 704 | 0.1− | 0.7+ |
| 2003 11 29 | 691 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.6+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2005 04 01 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2005 04 01 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.7− | 0.6− | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.3− | 0.4+ | 2006 10 01 | 704 | (0.2− | 2.2+) |
| 2005 05 11 | G96 | 0.1+ | 0.6− | 2006 09 18 | 699 | (0.3+ | 2.2−) | 2006 10 01 | 704 | 0.5+ | 1.5+ |
| 2005 05 11 | G96 | 0.3+ | 0.3− | 2006 09 18 | 699 | 1.4+ | 0.8+ | 2006 10 01 | 704 | (0.4+ | 1.6+) |
| 2005 05 11 | G96 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.4− | 2006 10 01 | 704 | (0.0 | 2.1+) |
| 2005 05 11 | G96 | 0.3− | 0.4− | 2006 09 18 | 699 | 0.0 | 0.4− | 2006 10 01 | 704 | 0.3− | 0.3− |
| 2005 05 12 | 691 | 0.0 | 0.7+ | 2006 09 22 | 704 | 1.0− | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 05 12 | 691 | 0.3+ | 0.3+ | 2006 09 22 | 704 | 0.9+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 05 12 | 691 | 0.1+ | 1.1+ | 2006 09 22 | 704 | 1.4+ | 0.7+ | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 2006 09 12 | 703 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.5− | 0.0 | 2006 10 21 | 703 | (1.2− | 2.9+) |
| 2006 09 12 | 703 | 1.4− | 0.7− | 2006 09 26 | 691 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 09 12 | 703 | 0.2− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | (0.4+ | 1.6+) |
| 2006 09 12 | 703 | 0.9+ | 1.3+ | 2006 09 27 | 691 | 0.5− | 0.2− | 2006 10 21 | 703 | (1.8− | 1.6+) |
| 2006 09 16 | 704 | 1.0+ | 0.1− | 2006 09 27 | 691 | 0.7+ | 0.1+ | | | | |

**2006 RD$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.19820 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18166611 | $\omega$ | 287.09426 | | +0.70085231 | +0.69600508 | |
| $a$ | 3.0875934 | $\Omega$ | 29.39355 | | −0.47103138 | +0.61597484 | |
| $e$ | 0.3249095 | $i$ | 18.55116 | | −0.53566359 | +0.36898771 | |
| $P$ | 5.43 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.4+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 0.1− | 2006 10 19 | 644 | 0.2− | 0.4− |
| 2005 03 14 | G96 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2005 03 14 | G96 | 0.0 | 0.3− | 2006 09 21 | 699 | 1.1+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2005 03 14 | G96 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.8− | 0.2+ |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 09 21 | 699 | 1.1+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2005 04 02 | G96 | 0.1− | 0.4− | 2006 09 21 | 699 | 0.9− | 1.1+ | 2006 10 20 | 644 | 0.4− | 0.3− |
| 2005 04 02 | G96 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2005 04 02 | G96 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.7+ | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 699 | 1.3− | 0.5− | 2006 09 26 | 703 | 0.4− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2006 08 28 | 699 | 0.4− | 0.8+ | 2006 09 26 | 703 | 0.4+ | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.8+ |
| 2006 08 28 | 699 | 0.3+ | 0.8− | 2006 09 30 | 704 | 0.3+ | 1.1+ | 2006 10 22 | 703 | (1.5+ | 2.0+) |
| 2006 08 28 | 699 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2006 09 12 | 703 | 1.0+ | 0.3− | 2006 09 30 | 704 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.0 |
| 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 09 30 | 704 | 0.1+ | 0.8− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2006 09 12 | 703 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.6+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2006 09 12 | 703 | 0.6− | 0.9+ | 2006 10 16 | 703 | 0.7− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 703 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.5+ | 0.1+ |
| 2006 09 18 | 703 | 0.9− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.6+ | | | | |

**2006 RJ$_{38}$ = 2002 TP$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.24129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23471758 | $\omega$ | 224.66763 | | +0.58683619 | −0.80899164 | |
| $a$ | 2.6027890 | $\Omega$ | 189.57405 | | +0.78825740 | +0.58038768 | |
| $e$ | 0.2593574 | $i$ | 11.79475 | | +0.18513118 | +0.09318089 | |
| $P$ | 4.20 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 608 | 0.2+ | 0.9− | 2002 10 31 | 704 | 0.7− | 0.6− | 2006 09 18 | 703 | (1.0+ | 3.7−) |
| 2002 10 07 | 608 | 0.7+ | 0.6− | 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 1.1− | 0.2+ |
| 2002 10 07 | 608 | 0.2− | 0.3− | 2002 11 07 | 645 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.6− | 0.5− |
| 2002 10 11 | 644 | 0.5− | 0.9+ | 2006 08 27 | 699 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.8− | 0.4− |
| 2002 10 11 | 644 | 0.3− | 0.7+ | 2006 08 27 | 699 | 0.4+ | 1.3+ | 2006 10 02 | G96 | 0.3− | 0.1− |
| 2002 10 11 | 704 | 0.9+ | 0.3− | 2006 08 27 | 699 | 0.7− | 0.9+ | 2006 10 02 | G96 | 0.3− | 0.5− |
| 2002 10 11 | 704 | 0.1+ | 0.1+ | 2006 08 27 | 699 | 0.7+ | 0.0 | 2006 11 11 | G96 | (2.1− | 0.2−) |
| 2002 10 11 | 704 | 0.5+ | 0.4− | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 11 11 | G96 | (2.8− | 0.4−) |
| 2002 10 11 | 644 | 0.2− | 0.8+ | 2006 09 13 | 644 | 0.0 | 0.5− | 2006 11 11 | G96 | (1.8− | 0.4−) |
| 2002 10 31 | 704 | 0.8− | 0.7+ | 2006 09 13 | 644 | 0.9+ | 0.3− | 2006 11 11 | G96 | (1.5− | 0.4−) |
| 2002 10 31 | 704 | 0.8− | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.4− | | | | |
| 2002 10 31 | 704 | 0.8− | 0.7+ | 2006 09 18 | 703 | 1.3+ | 0.1− | | | | |

**2006 RT$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.87990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29435610 | $\omega$ | 240.36486 | | +0.55200526 | +0.83216079 | |
| $a$ | 2.2381405 | $\Omega$ | 63.23357 | | −0.74308770 | +0.51971884 | |
| $e$ | 0.1891588 | $i$ | 3.39680 | | −0.37829995 | +0.19339273 | |
| $P$ | 3.35 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 08 | 644 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 1.0− | 0.6+ | 2006 09 22 | 704 | 0.5+ | 1.4− |
| 2002 04 08 | 644 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 1.1− | 0.6+ | 2006 09 30 | 703 | 0.9+ | 0.4+ |
| 2002 04 08 | 644 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.6− | 0.6+ | 2006 09 30 | 703 | (0.9+ | 1.6−) |
| 2003 11 18 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.9+ | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.2− |
| 2003 11 18 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.5+ | 1.4+ | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2003 11 18 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.2− | 1.2− | 2006 10 03 | G96 | 0.2+ | 0.2+ |
| 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 09 19 | 699 | 0.3+ | 1.0+ | 2006 10 03 | G96 | 0.5+ | 0.2+ |
| 2006 08 28 | 699 | 0.3− | 0.9− | 2006 09 19 | 699 | 0.2+ | 0.9− | 2006 10 03 | G96 | 0.9+ | 0.2+ |
| 2006 08 28 | 699 | 0.7+ | 0.1+ | 2006 09 20 | 644 | 0.3− | 0.1+ | 2006 10 03 | G96 | 0.5+ | 0.1+ |
| 2006 08 28 | 699 | 0.6− | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 703 | 1.0− | 1.1+ | 2006 09 20 | 644 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2006 09 14 | 703 | 1.1− | 0.4− | 2006 09 22 | 704 | 0.1− | 0.5− | 2006 11 17 | G96 | 0.6+ | 0.2+ |
| 2006 09 14 | 703 | 0.3+ | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2006 09 14 | 703 | 0.5− | 0.2+ | 2006 09 22 | 704 | 0.3− | 1.0− | | | | |

**2006 RY$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.64318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17605759 | $\omega$ | 143.30320 | | +0.17271047 | +0.97654507 | |
| $a$ | 3.1528227 | $\Omega$ | 136.22357 | | −0.94210710 | +0.20187005 | |
| $e$ | 0.1999761 | $i$ | 10.71007 | | −0.28741138 | −0.07488793 | |
| $P$ | 5.60 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 15 | 703 | 0.1− | 0.0 | 2005 05 31 | 703 | 0.5− | 0.6− | 2006 09 14 | 644 | 0.1− | 0.7+ |
| 2005 04 15 | 703 | 0.4− | 0.6− | 2005 06 07 | 703 | 0.3+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.4+ |
| 2005 04 15 | 703 | 0.0 | 1.0+ | 2005 06 07 | 703 | (2.4+ | 0.5+) | 2006 09 18 | 703 | 0.2+ | 1.0− |
| 2005 04 15 | 703 | 0.1+ | 0.6+ | 2005 06 07 | 703 | 1.0− | 0.7− | 2006 09 18 | 703 | 0.2+ | 1.1− |
| 2005 05 14 | 704 | 0.4+ | 0.0 | 2005 06 07 | 703 | 1.2− | 0.9+ | 2006 09 18 | 703 | 0.8+ | 0.4− |
| 2005 05 14 | 704 | 0.9+ | 0.5− | 2006 09 14 | 703 | 1.4− | 0.2− | 2006 09 18 | 703 | (2.7+ | 0.4+) |
| 2005 05 14 | 704 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.5− | 0.5− | 2006 09 25 | 703 | 0.4+ | 0.7+ |
| 2005 05 31 | 703 | 1.0+ | 0.4− | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.1− | 0.3+ |
| 2005 05 31 | 703 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.7+ | 0.2+ | 2006 09 25 | 703 | 0.3+ | 0.3+ |
| 2005 05 31 | 703 | 0.0 | 0.6+ | 2006 09 14 | 644 | 0.6− | 0.9+ | 2006 09 25 | 703 | 0.4+ | 0.2− |

**2006 RA$_{39}$ = 2005 EF$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.61172 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27329840 | $\omega$ | 307.30602 | | +0.55719712 | +0.83037806 | |
| $a$ | 2.3516787 | $\Omega$ | 356.55450 | | −0.75145513 | +0.50325757 | |
| $e$ | 0.2270932 | $i$ | 1.82044 | | −0.35333633 | +0.23917379 | |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2+ | 0.7− | 2006 09 14 | 703 | (1.7− | 0.4+) | 2006 10 15 | 106 | 0.1− | 0.3− |
| 1999 10 06 | 704 | 0.5+ | 0.2− | 2006 09 17 | 704 | (0.4− | 1.6+) | 2006 10 15 | 106 | 0.4+ | 0.3+ |
| 1999 10 06 | 704 | 0.5− | 1.2− | 2006 09 17 | 704 | 1.1+ | 0.6+ | 2006 10 17 | G96 | 0.9+ | 1.2− |
| 1999 10 06 | 704 | 0.5+ | 0.6− | 2006 09 17 | 704 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.1− | 0.2− |
| 1999 10 06 | 704 | 0.2+ | 0.8− | 2006 09 17 | 704 | (2.1+ | 0.1+) | 2006 10 17 | 703 | 0.5− | 0.5+ |
| 2005 03 04 | G96 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.6+ | 0.2− | 2006 10 17 | G96 | 0.5− | 0.6− |
| 2005 03 04 | G96 | 0.4+ | 0.3+ | 2006 09 18 | 699 | (0.8+ | 2.0−) | 2006 10 17 | 703 | 1.0− | 0.2+ |
| 2005 03 04 | G96 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.3− | 1.2+ | 2006 10 17 | G96 | 1.3+ | 0.0 |
| 2005 03 04 | G96 | 0.3− | 0.6+ | 2006 09 18 | 699 | 0.9+ | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.8+ |
| 2005 03 08 | G96 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.6− | 1.3+ |
| 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.5− | 0.1+ |
| 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2005 03 08 | G96 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2005 04 02 | G96 | 0.8+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2005 04 02 | G96 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 04 02 | G96 | 0.9+ | 0.1+ | 2006 09 27 | 699 | (1.7− | 0.5+) | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.0 | 1.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 05 13 | G96 | 0.1+ | 0.8+ | 2006 09 27 | 699 | 0.1+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2005 05 13 | G96 | 0.8− | 0.6+ | 2006 09 27 | 699 | 0.7+ | 1.1+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2005 05 13 | G96 | 0.1− | 0.8+ | 2006 09 29 | 704 | 0.6+ | 1.2+ | 2006 10 31 | G96 | 0.5− | 0.2− |
| 2005 05 13 | G96 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 08 18 | 644 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.2− | 1.3+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 08 18 | 644 | 0.2+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2006 08 18 | 644 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.1+ |
| 2006 09 14 | 703 | 0.4+ | 0.3− | 2006 10 15 | 106 | 0.7− | 0.7− | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2006 09 14 | 703 | 0.2+ | 0.2+ | 2006 10 15 | 106 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.0 |

**2006 RB$_{39}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.07994 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27009700 | $\omega$ | 327.16287 | | +0.92739996 | +0.37337661 | |
| $a$ | 2.3702248 | $\Omega$ | 10.98406 | | −0.31221156 | +0.80615211 | |
| $e$ | 0.1558665 | $i$ | 6.86856 | | −0.20604188 | +0.45903016 | |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 11 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 09 26 | J75 | (3.3− | 0.7−) |
| 1994 04 11 | 691 | 0.5+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 09 26 | J75 | (1.1+ | 5.1+) |
| 1994 04 11 | 691 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 02 20 | 645 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 02 20 | 645 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 03 20 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 699 | (2.5+ | 0.9−) | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 03 20 | 691 | 0.5+ | 1.0+ | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 03 20 | 691 | 0.4+ | 0.8+ | 2006 09 18 | 699 | 0.3+ | 1.9+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 07 16 | 644 | 0.0 | 0.1+ | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.5− | 1.2+ |
| 2002 07 16 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.6− |
| 2002 07 16 | 644 | 0.2− | 0.2+ | 2006 09 20 | 704 | 0.8− | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2006 09 14 | 691 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2006 09 14 | 691 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.6+ | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2006 09 14 | 703 | 0.1− | 1.0− | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 2006 09 14 | 703 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 14 | 703 | 0.3− | 1.9− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2006 09 14 | 703 | 0.2+ | 0.8− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2006 09 14 | 703 | 0.5− | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.0 |
| 2006 09 14 | 703 | 0.4− | 0.0 | 2006 09 26 | J75 | 0.0 | 1.3+ | | | | |

**2006 RC$_{39}$ = 2005 EO$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.84410 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29044907 | $\omega$ | 140.39062 | | +0.78893599 | | +0.61447170 |
| $a$ | 2.2581670 | $\Omega$ | 181.70011 | | −0.58039492 | | +0.74403785 |
| $e$ | 0.1757636 | $i$ | 4.11263 | | −0.20179627 | | +0.26235892 |
| $P$ | 3.39 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 1.2− | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2005 03 09 | G96 | 1.0− | 0.4− | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2005 03 09 | G96 | 0.7− | 0.1+ | 2006 09 18 | 699 | 0.3− | 1.0+ | 2006 10 10 | 644 | 0.2− | 0.1+ |
| 2005 03 09 | G96 | 0.6+ | 0.9+ | 2006 09 18 | 699 | 1.5+ | 0.3− | 2006 10 16 | 703 | (1.6− | 0.6−) |
| 2005 03 12 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2005 03 12 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.8+ | 0.9+ | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2005 03 12 | 691 | 0.1+ | 0.2− | 2006 09 20 | 704 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 09 20 | 704 | 0.8− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2006 09 14 | 703 | 0.7− | 0.3− | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2006 09 14 | 703 | 0.6− | 0.3− | 2006 09 20 | 644 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2006 09 14 | 703 | (1.6+ | 0.4+) | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 14 | 703 | 0.6+ | 0.7− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 09 14 | 703 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.6− | 0.5+ |
| 2006 09 14 | 703 | 0.2− | 1.1− | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2006 09 14 | 703 | 0.6− | 0.5− | 2006 10 01 | 704 | 0.8+ | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2006 09 14 | 703 | 1.5− | 0.2+ | 2006 10 01 | 704 | 0.8+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.5− | 2006 10 22 | G96 | 0.3+ | 0.2− |

**2006 RD$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.82098 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17124216 | $\omega$ | 169.44534 | | +0.99381630 | | −0.06720600 |
| $a$ | 3.2116553 | $\Omega$ | 195.27093 | | +0.06038684 | | +0.99514746 |
| $e$ | 0.0959530 | $i$ | 19.60830 | | +0.09318037 | | +0.07186715 |
| $P$ | 5.76 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 1.4+ | 0.2− | 2006 09 14 | 703 | (0.4+ | 1.9−) | 2006 10 15 | 703 | (1.3+ | 1.7+) |
| 2000 09 23 | 699 | 0.6− | 0.7− | 2006 09 14 | 703 | 0.9− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2000 09 23 | 704 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.4+ | 0.8− | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2000 09 23 | 699 | 0.4− | 0.2− | 2006 09 14 | 703 | 1.0− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2000 09 23 | 704 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6+ |
| 2000 09 23 | 699 | 0.1+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.4− | 1.4− |
| 2000 09 23 | 704 | 0.5+ | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.5− |
| 2000 09 23 | 699 | 0.4− | 1.4− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.7− | 0.1+ |
| 2000 09 23 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2000 10 01 | 699 | (0.4− | 3.2+) | 2006 09 18 | 699 | (0.6− | 2.6+) | 2006 10 22 | 644 | 0.1− | 0.7+ |
| 2000 10 01 | 699 | 0.2+ | 1.8+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2000 10 01 | 699 | 0.8− | 0.2− | 2006 09 18 | 699 | 0.4− | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2000 10 01 | 699 | 0.3− | 0.3− | 2006 09 18 | 699 | 1.5− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2000 10 30 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.2+ | 1.4+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2000 10 30 | 691 | 0.2+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2000 10 30 | 691 | 0.1− | 0.1− | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.7+ |
| 2006 08 30 | 699 | 0.6+ | 1.0− | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2006 08 30 | 699 | 0.6− | 0.0 | 2006 10 15 | 703 | 1.4+ | 0.9+ | 2006 11 13 | 703 | (0.6+ | 2.0−) |
| 2006 08 30 | 699 | 0.6+ | 0.4+ | 2006 10 15 | 703 | (0.5+ | 1.8+) | 2006 11 13 | 703 | 0.4+ | 0.3− |
| 2006 08 30 | 699 | (0.9− | 1.8−) | 2006 10 15 | 703 | (1.1+ | 2.2+) | | | | |

**2006 RG$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.37444 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17407061 | $\omega$ | 82.52860 | | +0.14235391 | | −0.98980966 |
| $a$ | 3.1767699 | $\Omega$ | 359.25968 | | +0.76750923 | | +0.11261071 |
| $e$ | 0.0723466 | $i$ | 15.69129 | | +0.62503195 | | +0.08715317 |
| $P$ | 5.66 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 704 | 0.0 | 0.6− | 2003 04 10 | 691 | 0.5+ | 0.6+ | 2006 09 25 | 704 | 0.2+ | 1.3+ |
| 2001 12 23 | 704 | 0.1+ | 0.4− | 2003 04 10 | 691 | 0.6+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2001 12 23 | 704 | 0.1+ | 0.9− | 2006 07 22 | G96 | 0.6− | 0.1+ | 2006 09 27 | 691 | 0.5− | 0.1+ |
| 2001 12 23 | 704 | 0.3+ | 0.7− | 2006 07 22 | G96 | 0.6− | 0.0 | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2003 02 28 | 704 | 0.0 | 0.8− | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 10 03 | 704 | 0.2+ | 0.6+ |
| 2003 02 28 | 704 | 0.2+ | 0.3+ | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 10 03 | 704 | (0.8+ | 2.8+) |
| 2003 02 28 | 704 | 0.3− | 0.7+ | 2006 09 14 | 703 | 0.1− | 0.1+ | 2006 10 03 | 704 | 0.8+ | 0.8+ |
| 2003 03 10 | 644 | 0.6+ | 0.0 | 2006 09 14 | 703 | 0.7− | 0.1− | 2006 10 03 | 704 | (0.5+ | 2.6+) |
| 2003 03 10 | 644 | 0.5+ | 0.4+ | 2006 09 14 | 703 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.7− | 0.3− |
| 2003 03 10 | 644 | 0.2+ | 0.2− | 2006 09 14 | 703 | 1.3− | 0.1− | 2006 10 17 | 703 | 1.1+ | 0.8+ |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.6− | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.7− |
| 2003 03 23 | 645 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2003 03 25 | 699 | 0.3+ | 0.6− | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2003 03 25 | 699 | (0.5− | 1.9+) | 2006 09 18 | 699 | 1.0+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 03 25 | 699 | 1.1− | 0.6+ | 2006 09 25 | 704 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2003 03 25 | 699 | (1.6− | 1.0+) | 2006 09 25 | 704 | 1.1+ | 0.5+ | | | | |
| 2003 04 10 | 691 | 0.6+ | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.3+ | | | | |

**2006 RH$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.08479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17424904 | $\omega$ | 47.65123 | | +0.37300383 | | −0.92233551 |
| $a$ | 3.1746008 | $\Omega$ | 21.10368 | | +0.74750083 | | +0.23435536 |
| $e$ | 0.2386187 | $i$ | 16.26144 | | +0.54964594 | | +0.30720476 |
| $P$ | 5.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 645 | 0.1+ | 0.1− | 2006 09 14 | 703 | (1.1− | 2.1−) | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 645 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.1− | 0.8− | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 11 06 | 644 | 0.4− | 0.1+ |
| 2001 12 23 | 704 | (0.2− | 2.1+) | 2006 09 18 | 699 | 1.4− | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.4− |
| 2001 12 23 | 704 | 0.0 | 1.4+ | 2006 09 18 | 699 | 1.2+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2001 12 23 | 704 | (0.3+ | 2.4+) | 2006 09 18 | 699 | 1.1+ | 0.7+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2001 12 23 | 704 | (0.1+ | 2.2+) | 2006 09 18 | 699 | 1.2+ | 1.1− | 2006 11 14 | 703 | 0.2+ | 1.1+ |
| 2001 12 23 | 704 | (0.2+ | 3.0+) | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 14 | 703 | 0.5+ | 1.5− |
| 2002 01 06 | 704 | 0.3− | 1.5+ | 2006 09 25 | G96 | 0.4− | 0.8− | 2006 11 14 | 703 | 0.2− | 0.7− |
| 2002 01 06 | 704 | (2.4− | 1.1−) | 2006 09 25 | G96 | 0.7+ | 1.0− | 2006 11 14 | 703 | 0.5− | 0.1− |
| 2002 01 06 | 704 | 0.1− | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 11 19 | 704 | (0.3+ | 2.2+) |
| 2002 01 06 | 704 | 0.7− | 1.0+ | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 1.1+ |
| 2002 01 06 | 704 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.4+ | 2006 11 19 | 704 | 0.1− | 1.4+ |
| 2002 01 19 | 699 | (0.3+ | 2.2+) | 2006 09 27 | 704 | 1.3+ | 0.6− | 2006 11 19 | 704 | 0.5− | 1.2+ |
| 2002 01 19 | 699 | 0.1− | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | (1.6− | 2.3+) |
| 2002 01 19 | 699 | 0.6− | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | (1.0− | 3.0+) |
| 2002 01 19 | 699 | (1.7+ | 0.8+) | 2006 10 11 | 691 | 0.7− | 0.3− | 2006 11 22 | 704 | (0.6− | 2.9+) |
| 2002 01 25 | 704 | 0.9+ | 0.6+ | 2006 10 21 | 703 | 0.5+ | 0.3+ | 2006 11 22 | 704 | (0.7− | 2.4+) |
| 2002 01 25 | 704 | 0.0 | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 22 | 704 | (1.2− | 1.7+) |
| 2002 01 25 | 704 | 0.8+ | 0.8+ | 2006 10 21 | 703 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2006 09 14 | 703 | 0.6− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2006 09 14 | 691 | 0.0 | 0.7+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 703 | 0.5+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.3− | 0.3− |

**2006 RO$_{39}$ = 1999 VQ$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.71227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27159463 | $\omega$ | 200.34512 | | +0.66559074 | −0.74541775 | |
| $a$ | 2.3615035 | $\Omega$ | 207.96544 | | +0.69508007 | +0.63701832 | |
| $e$ | 0.2170471 | $i$ | 4.47938 | | +0.27175847 | +0.19636709 | |
| $P$ | 3.63 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 15 | 704 | 0.5− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.1− | 0.4− |
| 1999 11 15 | 704 | 0.2+ | 0.1− | 2006 09 29 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.5− | 0.7− |
| 1999 11 15 | 704 | 1.0− | 0.5+ | 2006 09 29 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | (1.6− | 0.3−) |
| 1999 11 15 | 704 | 0.7− | 0.0 | 2006 09 29 | 704 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.3− | 0.1− |
| 1999 11 15 | 704 | 0.3− | 0.3− | 2006 09 29 | 704 | 0.6− | 0.5+ | 2006 10 23 | 644 | 0.3+ | 0.4− |
| 1999 11 17 | 704 | 0.9− | 0.5+ | 2006 09 29 | 704 | 0.2+ | 1.1+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 1999 11 17 | 704 | 0.9+ | 0.1− | 2006 09 30 | 291 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 1999 11 17 | 704 | 1.2+ | 0.6+ | 2006 09 30 | 291 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 1999 11 17 | 704 | 0.1+ | 0.0 | 2006 09 30 | 291 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.7− |
| 1999 11 17 | 704 | 0.8+ | 0.5+ | 2006 10 01 | 703 | 0.0 | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2001 03 25 | 695 | 0.3+ | 0.9+ | 2006 10 01 | 703 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 03 25 | 695 | 0.1+ | 0.9+ | 2006 10 01 | 703 | (2.0− | 0.0 ) | 2006 10 23 | G96 | 0.4− | 0.5− |
| 2006 08 21 | 691 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.0 | 0.7− |
| 2006 08 21 | 691 | 0.0 | 0.2− | 2006 10 01 | 704 | 1.5+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2006 08 21 | 691 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.1+ | 0.7− | 2006 10 24 | 644 | 0.1− | 0.1+ |
| 2006 09 12 | 703 | 1.1+ | 0.5+ | 2006 10 01 | 704 | 0.3− | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.1− |
| 2006 09 12 | 703 | (0.2− | 3.3+) | 2006 10 09 | 644 | 0.3− | 0.2+ | 2006 10 24 | 644 | 0.3+ | 0.0 |
| 2006 09 12 | 703 | 1.1+ | 0.8+ | 2006 10 09 | 644 | 0.4− | 0.3− | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2006 09 12 | 703 | 1.4+ | 1.2− | 2006 10 09 | 644 | 0.3− | 0.0 | 2006 10 24 | 644 | 0.5− | 0.2+ |
| 2006 09 18 | 704 | 0.9− | 0.8− | 2006 10 10 | 644 | 0.5+ | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.8− |
| 2006 09 18 | 704 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.6− |
| 2006 09 18 | 704 | 0.1+ | 0.9+ | 2006 10 10 | 644 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.0 | 1.0− |
| 2006 09 18 | 704 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.3− | 1.0− |
| 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2006 09 25 | 699 | 0.1− | 0.8− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.5− |
| 2006 09 25 | 699 | 0.6− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2006 09 25 | 699 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | |
| 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.6− | | | | |

**2006 RP$_{39}$ = 2000 AM$_{13}$ = 2004 FR$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.53760 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26949340 | $\omega$ | 5.28278 | | +0.57556473 | −0.81664165 | |
| $a$ | 2.3737626 | $\Omega$ | 49.58575 | | +0.74820868 | +0.50483422 | |
| $e$ | 0.2321126 | $i$ | 3.21353 | | +0.33001364 | +0.27971203 | |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 01 | 809 | 0.7− | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.9− | 2006 09 30 | 703 | 0.5+ | 0.1+ |
| 1995 09 23 | 809 | (5.0+ | 1.9−) | 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.2+ |
| 2000 01 03 | 704 | 0.1+ | 0.5− | 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 2000 01 03 | 704 | 1.0+ | 0.3− | 2006 09 18 | 703 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2000 01 03 | 704 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.2− | 1.4− | 2006 10 16 | 703 | 0.7− | 0.9+ |
| 2000 01 03 | 704 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2000 01 03 | 704 | 0.9+ | 0.6+ | 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 10 17 | 106 | (1.6+ | 0.0 ) |
| 2000 01 04 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 17 | 106 | 0.2+ | 0.1+ |
| 2000 01 04 | 704 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 106 | 0.1− | 0.2+ |
| 2000 01 04 | 704 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 10 17 | 106 | 0.1− | 0.3− |
| 2000 01 04 | 704 | 0.5− | 0.5− | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 04 26 | I03 | 1.0+ | 0.1+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 04 26 | I03 | 0.2+ | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2001 04 26 | I03 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.9+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.4+ | 1.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2003 12 25 | 645 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 02 16 | 704 | 0.3− | 0.9+ | 2006 09 22 | 704 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.3− |
| 2004 02 16 | 704 | 1.3+ | 0.0 | 2006 09 25 | 699 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2004 02 16 | 704 | 0.7− | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2004 02 16 | 704 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.6+ | 0.5+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2004 03 17 | 291 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2004 03 17 | 291 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.3− | 0.9+ | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2004 03 17 | 291 | 0.5+ | 0.5+ | 2006 09 26 | 704 | 0.2− | 0.7+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2006 08 29 | 691 | 0.4− | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2006 08 29 | 691 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2006 09 12 | 703 | 0.2+ | 0.6− | 2006 09 28 | 704 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2006 09 12 | 703 | 0.2+ | 0.3− | 2006 09 28 | 704 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.5− |
| 2006 09 12 | 703 | 0.7− | 0.4− | 2006 09 28 | 704 | 0.6− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2006 09 12 | 703 | 0.0 | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2006 09 18 | 703 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.7+ | | | | |
| 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.1+ | | | | |

**2006 RQ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.52003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30190665 | $\omega$ | 166.00646 | | +0.46480810 | +0.88446047 | |
| $a$ | 2.2006666 | $\Omega$ | 131.67370 | | −0.81754079 | +0.44650887 | |
| $e$ | 0.2051321 | $i$ | 3.14854 | | −0.33997130 | +0.13549727 | |
| $P$ | 3.26 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 695 | 0.7− | 0.1+ | 2006 09 12 | 703 | (3.0− | 0.2−) | 2006 09 19 | 703 | 0.2− | 0.4− |
| 2003 10 24 | 695 | 0.6− | 0.1+ | 2006 09 12 | 703 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.1− | 0.5+ |
| 2003 10 29 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 1.1+ | 0.4− | 2006 09 19 | 703 | 0.6+ | 0.5− |
| 2003 10 29 | 691 | 0.1− | 0.4− | 2006 09 18 | 703 | (0.4− | 1.7−) | 2006 09 22 | 704 | 0.8+ | 0.3+ |
| 2003 10 29 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.1+ | 0.5+ |
| 2005 03 10 | G96 | 0.4+ | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.1+ | 2006 09 22 | 704 | 0.2− | 0.6− |
| 2005 03 10 | G96 | 0.6− | 0.0 | 2006 09 18 | 703 | 1.0− | 1.1− | 2006 09 30 | 703 | (0.9− | 2.2−) |
| 2005 03 10 | G96 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 1.2− | 0.6+ | 2006 09 30 | 703 | 1.0− | 0.2− |
| 2005 03 10 | G96 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 09 30 | 703 | 0.5+ | 0.1+ |
| 2006 08 18 | 691 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.0 | 0.1− | 2006 09 30 | 703 | (0.6− | 1.7−) |
| 2006 08 18 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.7− | 1.1+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.4− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2006 09 12 | 703 | 0.2+ | 0.8+ | 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2006 09 12 | 703 | 1.0+ | 1.1+ | 2006 09 18 | 699 | 0.2− | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |

**2006 RV$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.08011 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22493544 | $\omega$ | 115.66104 | | +0.31495488 | +0.94862176 | |
| $a$ | 2.6777136 | $\Omega$ | 172.50263 | | −0.93265417 | +0.31526236 | |
| $e$ | 0.2157756 | $i$ | 13.44335 | | −0.17595349 | +0.02695195 | |
| $P$ | 4.38 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 704 | 0.9− | 0.4− | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 09 26 | 704 | 0.8− | 0.7+ |
| 2001 05 23 | 704 | 0.7+ | 0.4+ | 2006 07 22 | G96 | 0.2− | 0.0 | 2006 09 26 | 704 | 1.1− | 1.1+ |
| 2001 05 23 | 704 | 0.5+ | 0.3+ | 2006 08 24 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.1− |
| 2001 05 23 | 704 | 0.3+ | 0.3− | 2006 08 24 | 644 | 0.3+ | 0.4− | 2006 09 26 | 704 | 0.8− | 0.4+ |
| 2001 05 23 | 704 | 0.1+ | 0.6+ | 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.1− |
| 2001 07 11 | 644 | 0.5− | 0.7+ | 2006 09 12 | 703 | 0.3− | 1.1− | 2006 09 30 | 703 | 1.1+ | 0.3− |
| 2001 07 11 | 644 | 0.5− | 0.4+ | 2006 09 12 | 703 | 1.1− | 0.9− | 2006 09 30 | 703 | (1.7− | 1.0+) |
| 2001 07 11 | 644 | 0.4− | 0.3+ | 2006 09 12 | 703 | 0.7− | 0.2+ | 2006 09 30 | 703 | 0.1− | 1.5− |
| 2001 07 19 | 644 | 0.3+ | 0.2+ | 2006 09 12 | 703 | 0.8− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2001 07 19 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | (2.6+ | 0.8−) | 2006 10 16 | 703 | 0.9− | 0.8+ |
| 2001 07 19 | 644 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.5+ | 1.3− | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2002 11 07 | 645 | 0.0 | 0.1+ | 2006 09 18 | 703 | 1.4+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2005 04 14 | 704 | 0.1− | 0.5− | 2006 09 18 | 699 | 0.5+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 04 14 | 704 | 0.4− | 1.5+ | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 04 14 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | (0.4− | 2.3+) |
| 2005 04 14 | 704 | 1.2+ | 1.3+ | 2006 09 18 | 699 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.7+ |
| 2005 04 14 | 704 | 0.2+ | 1.0+ | 2006 09 20 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 1.5+ | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 07 22 | G96 | 0.6− | 0.4− | 2006 09 20 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 703 | (1.5+ | 1.1+) | | |
| 2006 07 22 | G96 | 0.5+ | 0.3− | 2006 09 20 | 691 | (2.2+ | 0.8+) | | | | | | |

**2006 RZ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.06336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12539530 | $\omega$ | 319.57274 | | +0.98893920 | | −0.13002894 |
| $a$ | 3.9531977 | $\Omega$ | 48.04948 | | +0.14827952 | | +0.87816935 |
| $e$ | 0.3204159 | $i$ | 5.50571 | | −0.00352744 | | +0.46033799 |
| $P$ | 7.86 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 30 | 699 | 1.1− | 0.0 | 2006 09 22 | 704 | 0.2− | 0.7+ | 2006 09 30 | 704 | 0.7+ | 0.7− | | |
| 1998 08 30 | 699 | 0.3+ | 0.3− | 2006 09 22 | 704 | 0.2− | 0.1+ | 2006 10 15 | 106 | 0.3+ | 1.1− | | |
| 1998 08 30 | 699 | 0.8+ | 0.2+ | 2006 09 22 | 704 | 0.3− | 0.0 | 2006 10 15 | 106 | 0.0 | 0.1− | | |
| 1998 11 07 | 910 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.2+ | 1.0+ | 2006 10 15 | 106 | 0.1+ | 0.2+ | | |
| 1998 11 07 | 910 | 0.5− | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.3+ | 2006 10 15 | 106 | 0.3− | 1.0− | | |
| 1998 11 07 | 910 | 0.3+ | 0.8+ | 2006 09 26 | 704 | 0.3+ | 0.5− | 2006 10 19 | 644 | 0.2− | 0.2− | | |
| 2006 09 12 | 703 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.6+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2006 09 12 | 703 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2006 09 12 | 703 | 0.6− | 0.3− | 2006 09 26 | 704 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | | |
| 2006 09 12 | 703 | 0.2− | 0.4+ | 2006 09 28 | 704 | 0.7− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2006 09 18 | 703 | 0.6+ | 0.7− | 2006 09 28 | 704 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.2+ | | |
| 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 09 28 | 704 | 0.7− | 0.0 | 2006 10 21 | 703 | (0.1+ | 2.0+) | | |
| 2006 09 18 | 703 | 0.1− | 0.3− | 2006 09 28 | 704 | 0.4− | 0.4− | 2006 10 21 | 703 | 1.0− | 0.8+ | | |
| 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 09 28 | 704 | 0.6− | 0.2− | 2006 10 21 | 703 | 0.4− | 1.3+ | | |
| 2006 09 18 | 699 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 10 21 | 703 | 1.1− | 1.0− | | |
| 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 11 06 | 644 | 0.1+ | 0.2+ | | |
| 2006 09 18 | 699 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.6+ | 2006 11 06 | 644 | 0.2+ | 0.1+ | | |
| 2006 09 18 | 699 | 0.3− | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.0 | | |
| 2006 09 20 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2− | 0.2− | | |
| 2006 09 20 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.0 | | |
| 2006 09 20 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.6+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.1− | | |
| 2006 09 22 | 704 | 0.6+ | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.2− | | |

**2006 RA$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.24758 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26240667 | $\omega$ | 290.07322 | | +0.96160937 | | +0.27061687 |
| $a$ | 2.4163108 | $\Omega$ | 54.25192 | | −0.22612592 | | +0.87541066 |
| $e$ | 0.2282262 | $i$ | 3.21669 | | −0.15548145 | | +0.40052800 |
| $P$ | 3.76 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 1.2+ | 0.4+ | 2006 09 28 | 704 | 0.2+ | 0.4+ | | |
| 2002 07 05 | 644 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.7+ | 0.8+ | 2006 09 28 | 704 | 0.3− | 0.3− | | |
| 2002 07 05 | 644 | 0.2+ | 0.6+ | 2006 09 12 | 703 | 1.0+ | 0.2− | 2006 09 30 | 704 | 0.4− | 0.1+ | | |
| 2002 08 06 | 644 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.1− | 1.5− | 2006 09 30 | 704 | 0.7− | 0.7+ | | |
| 2002 08 06 | 644 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.6− | 0.3+ | 2006 09 30 | 704 | 0.6− | 0.9+ | | |
| 2002 08 06 | 644 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.2− | 0.4− | | |
| 2002 08 11 | 644 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 09 30 | 704 | 0.8− | 0.5+ | | |
| 2002 08 11 | 644 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.7− | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.1+ | | |
| 2002 08 11 | 644 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.4+ | 0.3+ | | |
| 2002 08 29 | 644 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.0 | | |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4− | 0.1+ | | |
| 2002 08 29 | 644 | 0.3− | 0.3− | 2006 09 22 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2003 12 21 | 691 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1− | | |
| 2003 12 21 | 691 | 0.3+ | 0.6− | 2006 09 22 | 704 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.0 | | |
| 2003 12 21 | 691 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.4+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.5− | | |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.3− | | |
| 2004 01 27 | 691 | 0.5− | 0.2+ | 2006 09 26 | 704 | 0.5+ | 0.5− | 2006 10 21 | 703 | 1.3− | 0.6+ | | |
| 2004 01 27 | 691 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.4− | 0.2+ | 2006 10 21 | 703 | 1.4− | 1.0+ | | |
| 2005 04 10 | G96 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.6− | | |
| 2005 04 10 | G96 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2005 04 10 | G96 | 0.2− | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2005 04 10 | G96 | 0.4+ | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2− | | |

**2006 RB$_{40}$ = 2001 QY$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.81993 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21364949 | $\omega$ | 239.23497 | | +0.96031322 | | −0.27029800 |
| $a$ | 2.7712017 | $\Omega$ | 136.34234 | | +0.27761553 | | +0.90237673 |
| $e$ | 0.1734705 | $i$ | 5.72205 | | +0.02698399 | | +0.33564151 |
| $P$ | 4.61 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 10 | 691 | 0.1− | 0.2− | 2006 09 26 | 704 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.0 | | |
| 1994 01 10 | 691 | 0.1− | 0.1− | 2006 09 26 | 704 | (1.0− | 1.8+) | 2006 10 16 | 703 | 0.6+ | 0.0 | | |
| 1994 01 10 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.6− | 0.9+ | 2006 10 16 | 703 | 0.2− | 0.6− | | |
| 2001 08 19 | 704 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.4+ | | |
| 2001 08 19 | 704 | 0.1+ | 0.1+ | 2006 09 26 | 703 | (1.1+ | 1.9+) | 2006 10 19 | 644 | 0.3+ | 0.5− | | |
| 2001 08 19 | 704 | 0.5+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2001 08 21 | 807 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2001 08 21 | 807 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.7+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− | | |
| 2006 09 12 | 703 | 0.5+ | 0.3− | 2006 09 27 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2006 09 12 | 703 | 0.7− | 0.6− | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2006 09 12 | 703 | 0.4− | 1.0− | 2006 09 27 | 704 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2006 09 12 | 703 | 0.6− | 0.4− | 2006 09 30 | 703 | 0.1− | 0.8− | 2006 10 21 | 644 | 0.4− | 0.2− | | |
| 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.2− | | |
| 2006 09 18 | 703 | 0.5+ | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.4− | 0.3+ | | |
| 2006 09 18 | 703 | 1.0+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.5+ | | |
| 2006 09 18 | 703 | 0.2− | 0.5− | 2006 09 30 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.3+ | | |
| 2006 09 18 | 699 | 0.5− | 0.2− | 2006 09 30 | 704 | 0.6+ | 0.1− | 2006 10 28 | 703 | (0.0 | 1.5+) | | |
| 2006 09 18 | 699 | (1.7− | 1.0−) | 2006 09 30 | 704 | 0.4+ | 0.7− | 2006 10 28 | 703 | 0.8+ | 0.5− | | |
| 2006 09 18 | 699 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.6− | 1.2+ | | |
| 2006 09 18 | 699 | 0.6+ | 0.6+ | 2006 09 30 | 704 | (2.2− | 0.2+) | 2006 10 28 | 703 | 0.4− | 0.9+ | | |
| 2006 09 22 | 704 | 1.1− | 1.4− | 2006 10 02 | G96 | 0.9+ | 0.1− | 2006 11 06 | 644 | 0.7− | 0.0 | | |
| 2006 09 22 | 704 | 1.1− | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 06 | 644 | 0.2+ | 0.2− | | |
| 2006 09 22 | 704 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 06 | 644 | 0.1− | 0.4+ | | |
| 2006 09 22 | 704 | (0.0 | 1.6−) | 2006 10 02 | G96 | 0.4+ | 0.3− | | | | | | |
| 2006 09 26 | 704 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.2+ | 1.0+ | | | | | | |

**2006 RC$_{40}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.68585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26098476 | $\omega$ | 223.32131 | | +0.90742278 | | −0.41491975 |
| $a$ | 2.4250794 | $\Omega$ | 160.88058 | | +0.41915760 | | +0.88247293 |
| $e$ | 0.2683965 | $i$ | 11.71856 | | +0.02984645 | | +0.22154711 |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.2− | 1.1+ | 2006 10 02 | 703 | 1.1− | 0.1− | | |
| 2002 08 05 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.3− | 2006 10 02 | 703 | 0.2+ | 0.6− | | |
| 2002 08 05 | 644 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.2+ | 0.4− | | |
| 2002 08 16 | 644 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.9− | 2006 10 02 | 703 | 0.2− | 0.7− | | |
| 2002 08 16 | 644 | 0.1− | 0.7− | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 10 02 | 703 | 0.0 | 0.3+ | | |
| 2002 08 16 | 644 | 0.2− | 0.5+ | 2006 09 18 | 699 | 0.8− | 1.0+ | 2006 10 04 | 703 | 0.1− | 0.3+ | | |
| 2004 02 14 | 691 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 10 04 | 703 | 1.0+ | 1.1− | | |
| 2004 02 14 | 691 | 0.3+ | 0.5+ | 2006 09 18 | 699 | 0.5+ | 0.7+ | 2006 10 04 | 703 | 0.0 | 0.2+ | | |
| 2004 02 14 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.8+ | 0.2− | 2006 10 04 | 703 | 0.6+ | 0.6− | | |
| 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.1− | | |
| 2006 08 28 | 703 | 0.6− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.1− | | |
| 2006 08 28 | 703 | 0.2− | 0.8− | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.2− | | |
| 2006 08 28 | 703 | 0.7+ | 1.2− | 2006 09 26 | 703 | 0.2− | 0.6− | 2006 10 21 | 703 | 0.4− | 0.6+ | | |
| 2006 09 12 | 703 | 1.3+ | 0.8+ | 2006 10 02 | 703 | (2.5− | 1.2−) | 2006 10 21 | 703 | 0.0 | 0.9+ | | |
| 2006 09 12 | 703 | 0.3+ | 0.6+ | 2006 10 02 | 703 | 0.9− | 0.4+ | 2006 10 21 | 703 | 0.5+ | 0.3− | | |
| 2006 09 12 | 703 | 0.2− | 1.7+ | 2006 10 02 | 703 | 1.0− | 0.6− | 2006 10 21 | 703 | 0.2− | 0.2+ | | |

**2006 RE$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.14710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18356266 | $\omega$ | 229.36155 | | +0.80194366 | −0.59534710 | |
| $a$ | 3.0662894 | $\Omega$ | 166.92192 | | +0.59254006 | +0.78214448 | |
| $e$ | 0.1228262 | $i$ | 12.63061 | | +0.07604366 | +0.18387997 | |
| $P$ | 5.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.7− | 0.1− | 2006 09 30 | 704 | 0.6− | 0.7− |
| 2001 11 11 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.8− | 0.6+ | 2006 09 30 | 704 | 0.5− | 1.2− |
| 2001 11 15 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 699 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.7− |
| 2001 11 15 | 704 | 0.5− | 1.1+ | 2006 09 18 | 699 | 0.1− | 0.6− | 2006 09 30 | 704 | 0.1− | 0.7− |
| 2001 11 15 | 704 | (0.8+ | 1.7+) | 2006 09 18 | 699 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2001 11 15 | 704 | 0.9− | 1.2+ | 2006 09 18 | 699 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.5− |
| 2001 11 15 | 704 | 0.3− | 1.0+ | 2006 09 22 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.1− |
| 2001 12 07 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.8− |
| 2001 12 07 | 704 | 0.6+ | 0.1− | 2006 09 22 | 704 | 0.5+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 2001 12 07 | 704 | 0.5− | 0.3− | 2006 09 22 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.6+ |
| 2001 12 07 | 704 | 0.4− | 0.0 | 2006 09 27 | 691 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.8+ |
| 2006 09 12 | 703 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 1.3− | 1.1+ |
| 2006 09 12 | 703 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 1.0− | 0.9− |
| 2006 09 12 | 703 | (2.4+ | 0.0 ) | 2006 09 29 | 704 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.1+ | 0.4− |
| 2006 09 12 | 703 | 0.2+ | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.3− |
| 2006 09 18 | 703 | 0.2− | 0.5− | 2006 09 29 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.5+ | 0.6+ |
| 2006 09 18 | 703 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.1− | 0.3+ | | | | |

**2006 RF$_{40}$ = 2005 ER$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.56326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27485612 | $\omega$ | 207.45122 | | +0.30302465 | +0.95076568 | |
| $a$ | 2.3427850 | $\Omega$ | 80.24756 | | −0.86181210 | +0.30249511 | |
| $e$ | 0.1565516 | $i$ | 3.77964 | | −0.40676278 | +0.06738939 | |
| $P$ | 3.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 12 | 644 | 0.4+ | 0.4+ | 2006 09 12 | 703 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2002 06 12 | 644 | 0.2+ | 0.4+ | 2006 09 12 | 703 | 0.7− | 1.0+ | 2006 10 16 | 703 | 0.4− | 0.6− |
| 2002 06 12 | 644 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.2+ |
| 2002 07 05 | 704 | 0.1− | 0.6− | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 10 16 | 703 | 1.1+ | 0.4− |
| 2002 07 05 | 704 | 0.1+ | 0.4− | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.7− |
| 2002 07 05 | 704 | 0.5− | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 07 05 | 704 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.3− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2005 03 10 | 699 | (0.9+ | 1.6−) | 2006 09 18 | 699 | 0.9− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.5+ |
| 2005 03 10 | 699 | 0.7+ | 0.7+ | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 03 10 | 699 | 0.4+ | 0.8+ | 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2005 03 10 | 699 | 1.4+ | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2005 03 18 | 703 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.2+ |
| 2005 03 18 | 703 | 0.2+ | 0.5− | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.7+ | 0.2+ |
| 2005 03 18 | 703 | 1.0− | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.3+ |
| 2005 03 18 | 703 | 0.9− | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 09 12 | 703 | 0.4+ | 1.2+ | 2006 09 27 | 691 | 0.2− | 0.1− | | | | |

**2006 RK$_{40}$ = 1999 VF$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.82989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27061978 | $\omega$ | 303.69342 | | +0.81138395 | −0.58319409 | |
| $a$ | 2.3671713 | $\Omega$ | 92.01227 | | +0.54844077 | +0.73636567 | |
| $e$ | 0.1882903 | $i$ | 2.25095 | | +0.20216036 | +0.34300181 | |
| $P$ | 3.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.0 | 0.6− | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.6+ |
| 1999 11 09 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 0.8+ |
| 1999 11 09 | 704 | 0.7− | 0.4+ | 2006 09 20 | 691 | 0.1− | 0.4− | 2006 09 30 | 703 | 1.0+ | 0.2+ |
| 1999 11 09 | 704 | 0.4− | 0.9+ | 2006 09 20 | 691 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 0.6+ | 1.4− | 2006 09 20 | 691 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1999 11 12 | 704 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 1999 11 12 | 704 | 0.2+ | 1.3− | 2006 09 26 | 704 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.8+ |
| 1999 11 12 | 704 | 0.0 | 0.7− | 2006 09 26 | 704 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 1999 12 07 | 704 | 0.6+ | 0.4− | 2006 09 26 | 704 | 0.7+ | 1.0− | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 1999 12 07 | 704 | 0.4+ | 1.0+ | 2006 09 28 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 1999 12 07 | 704 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 1999 12 07 | 704 | 1.1− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 1999 12 07 | 704 | 0.5− | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2006 09 13 | 644 | 0.1− | 0.6− | 2006 09 28 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2006 09 13 | 644 | 0.2+ | 0.4− | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2006 09 13 | 644 | 0.1− | 0.3− | 2006 09 28 | 704 | 0.0 | 0.2− | 2006 10 23 | 644 | 1.0− | 0.1− |
| 2006 09 18 | 699 | 0.5+ | 1.1+ | 2006 09 28 | 704 | 0.4− | 1.0+ | | | | |
| 2006 09 18 | 699 | 0.5+ | 0.5+ | 2006 09 30 | 703 | 0.4− | 0.3+ | | | | |

**2006 RL$_{40}$ = 2003 BG$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.68950 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18263757 | $\omega$ | 227.30555 | | +0.53716558 | −0.84288268 | |
| $a$ | 3.0766349 | $\Omega$ | 190.34384 | | +0.81622903 | +0.52890810 | |
| $e$ | 0.0711520 | $i$ | 10.15357 | | +0.21265773 | +0.09902020 | |
| $P$ | 5.40 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.1+ | 2004 04 22 | 599 | 0.2+ | 0.7+ | 2006 10 01 | 704 | (1.6− | 0.7−) |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2004 04 22 | 599 | (2.1− | 1.9+) | 2006 10 01 | 704 | (1.0− | 1.9+) |
| 2001 10 17 | 704 | 0.1+ | 0.0 | 2006 09 13 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.5+ |
| 2001 10 17 | 704 | 0.5+ | 0.5+ | 2006 09 13 | 644 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.7− |
| 2001 10 17 | 704 | 0.6+ | 0.3+ | 2006 09 13 | 644 | 0.6− | 0.0 | 2006 10 01 | 704 | 0.0 | 0.0 |
| 2001 10 17 | 704 | 0.0 | 0.4+ | 2006 09 14 | 703 | 1.4− | 0.9− | 2006 10 17 | 703 | 0.6+ | 0.2− |
| 2001 11 19 | 699 | 0.2− | 0.3+ | 2006 09 14 | 703 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2001 11 19 | 699 | 0.0 | 0.3− | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2001 11 19 | 699 | 1.0− | 0.4+ | 2006 09 14 | 703 | 1.0+ | 0.4− | 2006 10 17 | 703 | 1.1+ | 0.8− |
| 2001 11 19 | 699 | 0.4− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 12 07 | 704 | 0.4+ | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.4− |
| 2001 12 07 | 704 | (1.6− | 0.9−) | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 12 07 | 704 | 0.2+ | 1.0− | 2006 09 20 | 704 | 1.1+ | 1.5+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2001 12 07 | 704 | 0.4− | 0.1− | 2006 09 20 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2003 01 28 | 704 | 0.4+ | 0.5+ | 2006 09 20 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2003 01 28 | 704 | 0.2+ | 0.5+ | 2006 09 20 | 704 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2003 01 28 | 704 | 0.7+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.5+ | 0.7− |
| 2003 01 28 | 704 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.4− | 1.3+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2003 02 02 | 699 | 0.5+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.5− |
| 2003 02 02 | 699 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2003 02 02 | 699 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2003 02 02 | 699 | 1.4− | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2004 04 22 | 599 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.1− | 0.2− |

**2006 RF$_{41}$ = 1999 TM$_{268}$ = 2003 YJ$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.55741 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27849872 | $\omega$ | 138.92288 | | +0.04587149 | −0.98465743 | |
| $a$ | 2.3223121 | $\Omega$ | 307.76426 | | +0.85181492 | +0.12659702 | |
| $e$ | 0.0628956 | $i$ | 12.29651 | | +0.52183057 | −0.12009555 | |
| $P$ | 3.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 704 | 0.8+ | 0.2+ | 2003 12 30 | 704 | 0.6+ | 0.2− | 2006 09 27 | 703 | 0.2+ | 0.2+ |
| 1999 10 03 | 704 | 0.2− | 0.0 | 2003 12 30 | 704 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.0 |
| 1999 10 03 | 704 | 0.5− | 0.6+ | 2003 12 30 | 704 | 0.2− | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.4− |
| 1999 10 10 | 704 | 0.6+ | 0.7− | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 27 | 683 | 0.1− | 0.1− |
| 1999 10 10 | 704 | 0.0 | 0.8− | 2006 09 06 | 644 | 0.3− | 0.4+ | 2006 09 27 | 703 | 0.3− | 0.3− |
| 1999 10 10 | 704 | 0.6+ | 0.4− | 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 27 | 683 | 0.9+ | 1.1− |
| 1999 10 10 | 704 | 0.3− | 0.8− | 2006 09 14 | 703 | 0.1− | 0.4− | 2006 09 27 | 683 | (2.1− | 3.1−) |
| 1999 10 10 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.0 | 0.8+ | 2006 09 29 | 699 | 0.8+ | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 950 | 0.3− | 0.6+ | 2006 09 14 | 703 | 0.5+ | 0.1− | 2006 09 29 | 699 | 0.8+ | 1.0+ |
| 2002 08 08 | 950 | 0.3− | 0.6+ | 2006 09 14 | 703 | 1.1− | 0.1+ | 2006 09 29 | 699 | 0.7+ | 0.4+ |
| 2002 08 08 | 950 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 09 29 | 699 | 0.2− | 0.6− |
| 2003 11 20 | 704 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.4− | 0.4+ |
| 2003 11 20 | 704 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.6− | 0.3+ |
| 2003 11 20 | 704 | (1.4− | 6.2−) | 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2003 11 20 | 704 | (1.4− | 8.0−) | 2006 09 22 | 703 | 0.1− | 0.5− | 2006 10 17 | 703 | 1.3− | 0.8− |
| 2003 12 17 | 704 | 0.5+ | 0.1− | 2006 09 22 | 703 | 0.9+ | 0.7+ | 2006 10 26 | 703 | 1.5+ | 0.2+ |
| 2003 12 17 | 704 | 0.3− | 0.3+ | 2006 09 22 | 703 | 0.5− | 0.2− | 2006 10 26 | 703 | 0.1+ | 1.1+ |
| 2003 12 17 | 704 | 0.1− | 0.1+ | 2006 09 22 | 703 | 0.6+ | 0.3+ | 2006 10 26 | 703 | 0.1− | 0.2− |
| 2003 12 17 | 704 | 0.0 | 0.2+ | 2006 09 25 | 683 | (1.6− | 0.3−) | 2006 10 26 | 703 | 0.7− | 0.7− |
| 2003 12 17 | 704 | 0.5+ | 0.2+ | 2006 09 25 | 683 | (1.2− | 2.4−) | | | | |
| 2003 12 30 | 704 | 0.4− | 0.6+ | 2006 09 25 | 683 | (3.0− | 2.3−) | | | | |

**2006 RG$_{41}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.31894 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17859249 | $\omega$ | 264.49784 | | −0.02686800 | | +0.99911108 |
| $a$ | 3.1229181 | $\Omega$ | 4.37664 | | −0.66215443 | | +0.00655599 |
| $e$ | 0.2496722 | $i$ | 25.19247 | | −0.74888559 | | −0.04164213 |
| $P$ | 5.52 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | E12 | 1.1− | 0.3− | 2006 09 14 | 644 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.3− |
| 2005 04 07 | E12 | 0.8+ | 0.0 | 2006 09 18 | 703 | 0.6+ | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2005 04 07 | E12 | 0.2+ | 1.0− | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2005 04 07 | E12 | 1.1+ | 0.2+ | 2006 09 18 | 703 | 0.3− | 1.3− | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2005 05 09 | E12 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.6− |
| 2005 05 09 | E12 | 1.1− | 1.4+ | 2006 09 25 | 699 | 0.8+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2005 05 09 | E12 | 0.2+ | 0.6+ | 2006 09 25 | 699 | 1.1− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2005 05 09 | E12 | 0.1+ | 0.8− | 2006 09 25 | 699 | (0.5+ | 2.3+) | 2006 10 27 | G96 | 0.5− | 0.0 |
| 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 1.0− | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 1.9− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.3+ | | | | |
| 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 1.1+ | 0.0 | | | | |

**2006 RJ$_{41}$ = 2004 FS$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.19585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21554582 | $\omega$ | 160.98841 | | +0.72219725 | | +0.69009814 |
| $a$ | 2.7549242 | $\Omega$ | 155.17704 | | −0.64819632 | | +0.69887601 |
| $e$ | 0.0564614 | $i$ | 6.40848 | | −0.24139733 | | +0.18798105 |
| $P$ | 4.57 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 0.5+ | 0.0 | 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.7+ | 0.3+ |
| 1995 03 10 | 691 | 0.2− | 0.3− | 2006 08 18 | 691 | 0.3+ | 0.4+ | 2006 09 22 | 704 | (0.6+ | 2.8+) |
| 1995 03 10 | 691 | 0.5− | 0.7− | 2006 08 18 | 691 | 0.1− | 0.6+ | 2006 09 22 | 704 | 0.1+ | 1.5+ |
| 1995 03 10 | 691 | 0.3− | 0.3− | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.7+ |
| 1995 03 10 | 691 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.4+ |
| 1995 03 10 | 691 | 0.2− | 0.8− | 2006 08 27 | 691 | 0.3− | 0.1+ | 2006 09 28 | 704 | (0.1− | 1.5+) |
| 2004 02 12 | 691 | 0.1+ | 0.7+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.3− | 0.6− |
| 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.5+ | 1.1+ |
| 2004 02 12 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.1− |
| 2004 03 18 | 691 | 0.4+ | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.9− | 0.7− |
| 2004 03 18 | 691 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.2− | 1.3+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2004 03 18 | 691 | 0.0 | 0.8+ | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2004 03 27 | 691 | 0.4+ | 0.9+ | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.6+ | 0.2+ |
| 2004 03 27 | 691 | 0.1+ | 0.6+ | 2006 09 18 | 703 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2004 03 27 | 691 | 0.1− | 1.0+ | 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2005 05 04 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 1.2− | 1.0− | 2006 10 23 | 644 | 0.3+ | 0.2+ |
| 2005 05 04 | 691 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2005 05 04 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.5+ | 1.1+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.8+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2005 06 04 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.6− |
| 2005 06 15 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2005 06 15 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.2− |
| 2005 06 28 | 644 | 0.6− | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.5+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2005 06 28 | 644 | 0.1− | 0.0 | 2006 09 22 | 704 | 1.3− | 1.3+ | 2006 11 23 | G96 | 0.2− | 0.4+ |
| 2005 06 28 | 644 | 0.1+ | 0.1− | 2006 09 22 | 704 | (2.1− | 5.2+) | | | | |

**2006 RN$_{41}$ = 2002 TQ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.57398 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24492921 | $\omega$ | 348.72107 | | +0.99510897 | | +0.09498461 |
| $a$ | 2.5299328 | $\Omega$ | 6.02964 | | −0.05779080 | | +0.78252024 |
| $e$ | 0.3038445 | $i$ | 14.96806 | | −0.08011471 | | +0.61533730 |
| $P$ | 4.02 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.1− | 1.3+ | 2006 09 14 | 703 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.3− |
| 2002 10 02 | 704 | 0.4+ | 0.6+ | 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.4− |
| 2002 10 02 | 704 | 0.7− | 0.0 | 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2002 10 02 | 704 | 0.0 | 0.8− | 2006 09 18 | 703 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2002 10 03 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 10 03 | 704 | 1.0+ | 0.5− | 2006 09 18 | 703 | 0.4− | 0.7− | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2002 10 03 | 704 | 0.3− | 1.0− | 2006 09 18 | 703 | 0.8+ | 0.8+ | 2006 10 23 | G96 | 0.5+ | 0.7− |
| 2002 10 12 | 704 | 0.5+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 1.0− | 0.3− | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2002 10 12 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.9+ | 0.4+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2002 10 12 | 704 | 0.6− | 0.3+ | 2006 09 18 | 699 | 0.6− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2006 09 14 | 703 | 0.7− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.2+ | 0.0 |

**2006 RO$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.04046 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23841579 | $\omega$ | 309.56497 | | +0.95082339 | | +0.30481846 |
| $a$ | 2.5758034 | $\Omega$ | 32.79488 | | −0.24384719 | | +0.84609599 |
| $e$ | 0.2907271 | $i$ | 5.82387 | | −0.19098020 | | +0.43727255 |
| $P$ | 4.13 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.4− | 0.8+ | 2006 09 19 | 704 | 0.5+ | 0.2− | 2006 09 28 | 704 | 0.2− | 1.3+ |
| 2002 10 15 | 644 | 0.1− | 0.7+ | 2006 09 19 | 704 | 0.7− | 0.8+ | 2006 09 28 | 704 | 0.3+ | 1.0+ |
| 2002 10 15 | 644 | 0.9− | 0.8+ | 2006 09 19 | 704 | 0.7− | 0.9+ | 2006 09 28 | 704 | 0.3+ | 0.7+ |
| 2002 10 31 | 644 | 0.0 | 0.5− | 2006 09 20 | 644 | 0.2− | 0.5− | 2006 09 28 | 704 | 0.9+ | 0.1+ |
| 2002 10 31 | 644 | 0.3+ | 0.1− | 2006 09 20 | 644 | 0.4+ | 0.9− | 2006 09 30 | 703 | 0.1− | 0.4− |
| 2002 10 31 | 644 | 0.5+ | 0.5− | 2006 09 20 | 644 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2006 08 28 | 699 | 0.3− | 0.5+ | 2006 09 22 | 704 | 1.0+ | 0.9− | 2006 09 30 | 703 | 0.1− | 0.1− |
| 2006 08 28 | 699 | 0.1− | 0.7− | 2006 09 22 | 704 | 1.2− | 0.4+ | 2006 09 30 | 703 | (0.9− | 2.3−) |
| 2006 08 28 | 699 | 0.4− | 0.8+ | 2006 09 22 | 704 | 0.5− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.4− |
| 2006 08 28 | 699 | 0.5− | 0.5− | 2006 09 22 | 704 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.2− | 0.3− |
| 2006 09 14 | 703 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.8− | 2006 10 09 | 644 | 0.4− | 0.5− |
| 2006 09 14 | 703 | 0.3+ | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2006 09 14 | 703 | 0.0 | 0.5− | 2006 09 26 | 704 | 0.6+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2006 09 14 | 703 | 0.5+ | 0.5+ | 2006 09 26 | 704 | 0.6+ | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2006 09 18 | 699 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 09 18 | 699 | 0.4− | 1.1− | 2006 09 26 | 704 | 0.4+ | 0.6+ | | | | |
| 2006 09 18 | 699 | 0.2− | 0.7− | 2006 09 28 | 704 | 0.4− | 0.4+ | | | | |

**2006 RR$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.88447 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26266348 | $\omega$ | 286.59029 | | +0.41419419 | | +0.91016957 |
| $a$ | 2.4147356 | $\Omega$ | 7.88588 | | −0.81790220 | | +0.37502323 |
| $e$ | 0.1779580 | $i$ | 2.45504 | | −0.39934844 | | +0.17592311 |
| $P$ | 3.75 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 699 | 0.1− | 0.6− | 2005 05 08 | G96 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2002 08 12 | 699 | 0.8− | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.8− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2002 08 12 | 699 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2002 08 12 | 699 | 1.4− | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.4− |
| 2002 08 14 | 704 | 0.1− | 0.8+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 2002 08 14 | 704 | 0.7+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.0 | 0.3− |
| 2002 08 14 | 704 | 1.4+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.2− |
| 2002 08 14 | 704 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.5− | 2006 10 17 | 703 | (1.7− | 1.5+) |
| 2005 03 04 | G96 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | (2.7− | 0.8+) |
| 2005 03 04 | G96 | 1.0− | 0.3− | 2006 09 18 | J75 | 0.5+ | 0.3− | 2006 10 17 | 703 | 1.4− | 1.0− |
| 2005 03 04 | G96 | 0.6+ | 1.0− | 2006 09 18 | J75 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 1.3− | 0.4+ |
| 2005 03 04 | G96 | 0.4− | 0.1− | 2006 09 18 | J75 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2005 04 02 | G96 | 0.3+ | 0.0 | 2006 09 20 | J75 | 0.8+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.4+ |
| 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 09 20 | J75 | (0.4− | 2.1−) | 2006 10 28 | G96 | 0.4+ | 0.3+ |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.6+ |
| 2005 04 02 | G96 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |
| 2005 05 08 | G96 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | | | | |

**2006 RX$_{41}$ = 2004 BP$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.95634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20556415 | $\omega$ | 339.95978 | | +0.89294046 | +0.45016381 | |
| $a$ | 2.8433990 | $\Omega$ | 353.28349 | | −0.40927874 | +0.80889481 | |
| $e$ | 0.0731164 | $i$ | 1.53952 | | −0.18747866 | +0.37820857 | |
| $P$ | 4.79 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 691 | 0.1− | 0.0 | 2004 01 21 | 309 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2− |
| 2001 08 27 | 691 | 0.1− | 0.0 | 2004 01 22 | 309 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.5+ | 0.0 |
| 2001 08 27 | 691 | 0.1+ | 0.1− | 2004 01 22 | 309 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 691 | 0.0 | 0.3+ | 2004 01 23 | 309 | 0.2+ | 0.6+ | 2006 09 26 | 691 | 0.4− | 0.0 |
| 2001 09 19 | 691 | 0.2− | 0.3+ | 2004 01 23 | 309 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 691 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.2+ | 0.6− | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2004 01 20 | 309 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2004 01 20 | 309 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.3− | 0.0 |
| 2004 01 21 | 309 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2− | | | | |

**2006 RM$_{42}$ = 2002 QV$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.48932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26516192 | $\omega$ | 38.79855 | | +0.54526310 | −0.83818112 | |
| $a$ | 2.3995434 | $\Omega$ | 18.16846 | | +0.75930551 | +0.48786074 | |
| $e$ | 0.1042024 | $i$ | 2.17908 | | +0.35516657 | +0.24381204 | |
| $P$ | 3.72 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.2− | 0.2+ | 2004 01 22 | 704 | 0.9+ | 0.1− | 2006 09 25 | G96 | (2.1− | 0.1−) |
| 1995 10 22 | 691 | 0.3− | 0.1− | 2004 01 22 | 704 | 0.5− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 1995 10 22 | 691 | 0.3+ | 0.1+ | 2004 01 22 | 704 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.5− |
| 1995 11 16 | 691 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 1995 11 16 | 691 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 13 | 143 | (2.2+ | 0.1−) |
| 1995 11 16 | 691 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 13 | 143 | 1.0+ | 0.5− |
| 2002 08 18 | 644 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 08 28 | 644 | 0.7− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2002 08 28 | 644 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.3+ | | | | |
| 2002 08 28 | 644 | 0.5+ | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.0 | | | | |

**2006 RN$_{42}$ = 2002 VF$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.79692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22819325 | $\omega$ | 21.32081 | | −0.98236274 | −0.18672192 | |
| $a$ | 2.6521669 | $\Omega$ | 147.91262 | | +0.16874217 | −0.90812323 | |
| $e$ | 0.0723197 | $i$ | 1.06980 | | +0.08055758 | −0.37476276 | |
| $P$ | 4.32 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.6+ | 0.3+ | 2002 11 11 | 291 | 0.2− | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.0 |
| 2000 03 30 | 691 | 0.6+ | 0.4+ | 2002 11 11 | 291 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.5− | 0.4+ |
| 2000 03 30 | 691 | 0.5+ | 0.5+ | 2002 11 13 | 291 | 0.6− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.7− |
| 2000 04 13 | 691 | 0.1− | 0.3+ | 2002 11 13 | 291 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.1− |
| 2000 04 13 | 691 | 0.5− | 0.2+ | 2002 11 13 | 291 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2000 04 13 | 691 | 0.2− | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2001 08 21 | 807 | 0.3− | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.3+ |
| 2001 08 21 | 807 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 11 04 | 291 | 0.0 | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.6− |
| 2002 11 04 | 291 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 2002 11 04 | 291 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2+ | | | | |
| 2002 11 11 | 291 | 0.7+ | 0.4− | 2006 09 25 | 691 | 0.3+ | 0.1− | | | | |

**2006 RP$_{42}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.59116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17959681 | $\omega$ | 42.02725 | | +0.35999255 | −0.93291784 | |
| $a$ | 3.1112648 | $\Omega$ | 26.87618 | | +0.85097770 | +0.32468030 | |
| $e$ | 0.1708581 | $i$ | 1.05791 | | +0.38241641 | +0.15571448 | |
| $P$ | 5.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2001 11 17 | 291 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2001 11 17 | 291 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2001 12 18 | 291 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 16 | G96 | 0.5+ | 0.2− |
| 2001 12 18 | 291 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2001 12 18 | 291 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.5− | 0.2− |

**2006 RY$_{42}$ = 2005 JD$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.95556 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26492484 | $\omega$ | 239.30066 | | −0.21296211 | +0.97690021 | |
| $a$ | 2.4009747 | $\Omega$ | 18.42833 | | −0.87620140 | −0.18293357 | |
| $e$ | 0.0520929 | $i$ | 3.20888 | | −0.43234042 | −0.11045943 | |
| $P$ | 3.72 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 644 | 0.5+ | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.1− |
| 2005 05 11 | 644 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2005 05 11 | 644 | 0.0 | 0.5− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2005 05 16 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2005 05 16 | 691 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.4− |
| 2005 05 16 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2006 09 14 | 691 | 0.2+ | 0.5− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2006 09 14 | 691 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.5− | 0.4+ |

**2006 RB$_{43}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.77098 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20239936 | $\omega$ | 4.92497 | | +0.96111284 | | −0.27281813 |
| $a$ | 2.8729625 | $\Omega$ | 11.19086 | | +0.24523970 | | +0.77193332 |
| $e$ | 0.0818688 | $i$ | 12.74204 | | +0.12696295 | | +0.57418570 |
| $P$ | 4.87 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 645 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2001 12 10 | 645 | 0.4− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2004 03 30 | 291 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.3− | 0.0 |
| 2004 03 30 | 291 | 0.5+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2004 03 30 | 291 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 19 | G96 | 0.8+ | 0.0 |
| 2006 09 14 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.6− | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.0 |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | | | |
| 2006 09 18 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.3− | 0.1+ | | | | |

**2006 RJ$_{43}$ = 2001 XY$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.57567 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18020804 | $\omega$ | 319.21445 | | +0.93313092 | | +0.35805465 |
| $a$ | 3.1042255 | $\Omega$ | 19.87759 | | −0.29989867 | | +0.82517068 |
| $e$ | 0.1405940 | $i$ | 5.50398 | | −0.19831156 | | +0.43690985 |
| $P$ | 5.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 06 | 699 | 0.6+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 1.3+ | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2000 07 06 | 699 | 0.8+ | 0.0 | 2006 09 18 | 699 | (0.8− | 2.3+) | 2006 10 17 | 703 | 0.8− | 1.5+ |
| 2000 07 06 | 699 | 0.9− | 0.4− | 2006 09 20 | 704 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.1+ | 1.5+ |
| 2000 07 06 | 699 | 0.7− | 0.2+ | 2006 09 20 | 704 | (0.5− | 1.8+) | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2001 11 19 | 704 | 0.0 | 1.1− | 2006 09 20 | 704 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 11 19 | 704 | 0.5+ | 0.1+ | 2006 09 20 | 704 | 1.0− | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 11 19 | 704 | 0.2+ | 0.4− | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2001 11 19 | 704 | (0.9+ | 1.6−) | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2001 12 15 | 704 | 0.8− | 0.8+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2001 12 15 | 704 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2001 12 15 | 704 | (1.6− | 1.1+) | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2001 12 15 | 704 | 0.7− | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2001 12 19 | 704 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | 0.5+ | 0.3− | 2006 09 28 | 699 | 0.4− | 1.2+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 09 28 | 699 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2001 12 19 | 704 | 0.4+ | 0.5+ | 2006 09 28 | 699 | (0.2+ | 1.6−) | 2006 11 02 | G96 | 0.0 | 0.1− |
| 2004 03 30 | 291 | 0.3+ | 0.5+ | 2006 09 28 | 699 | 1.4− | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.2− |
| 2004 03 30 | 291 | 0.2+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 2004 03 30 | 291 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 11 02 | G96 | 0.4− | 0.2− |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.4+ | 2006 11 02 | G96 | 0.1+ | 0.0 |
| 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 02 | G96 | 0.0 | 0.3− |
| 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 11 02 | G96 | 0.2− | 0.1− |
| 2006 09 18 | 691 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 02 | G96 | 0.3− | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.5− | 0.1− | 2006 11 13 | G96 | 0.7− | 0.5− |
| 2006 09 18 | 699 | 0.1+ | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.2− | 2006 11 13 | G96 | 1.0− | 1.0− |
| 2006 09 18 | 699 | 0.1− | 0.7− | 2006 10 16 | G96 | 0.2− | 0.3− | 2006 11 13 | G96 | 0.7− | 1.1− |

**2006 RK$_{43}$ = 2000 GJ$_{42}$ = 2004 CJ$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.33749 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21662562 | $\omega$ | 231.30410 | | −0.40879868 | | +0.91174697 |
| $a$ | 2.7457617 | $\Omega$ | 14.72174 | | −0.78080724 | | −0.32671801 |
| $e$ | 0.1119273 | $i$ | 9.05933 | | −0.47246555 | | −0.24894339 |
| $P$ | 4.55 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 688 | 0.3+ | 0.5+ | 2005 01 20 | 809 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2000 03 03 | 688 | 0.4+ | 0.1+ | 2005 01 20 | 809 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.5+ |
| 2000 04 05 | 704 | 0.0 | 1.2+ | 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.5− |
| 2000 04 05 | 704 | 0.0 | 0.7+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.9+ | 0.4− |
| 2000 04 05 | 704 | 0.2− | 0.5+ | 2006 09 14 | 691 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.8+ | 0.3− |
| 2000 04 05 | 704 | 1.0+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.4− | 2006 10 17 | G96 | 0.5− | 0.9− |
| 2000 04 05 | 704 | 0.3+ | 0.9+ | 2006 09 14 | 703 | 1.0− | 0.1+ | 2006 10 17 | 703 | (0.7+ | 2.1+) |
| 2000 04 06 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 703 | 0.4+ | 0.5− | 2006 10 17 | 703 | (1.0+ | 2.5−) |
| 2000 04 06 | 704 | 1.0+ | 0.4+ | 2006 09 14 | 703 | (1.8− | 0.1+) | 2006 10 17 | 703 | 0.8− | 0.5− |
| 2000 04 06 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2004 02 13 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 02 13 | 691 | 0.4− | 0.2+ | 2006 09 18 | 691 | 0.6− | 1.1+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2004 02 13 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.1− |
| 2004 02 15 | 704 | 1.0+ | 0.5− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2004 02 15 | 704 | 1.1+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2004 02 15 | 704 | 1.2+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2004 02 15 | 704 | 0.5+ | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2005 01 20 | 809 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.5+ | | | | |

**2006 RT$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.57302 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29711560 | $\omega$ | 355.69112 | | −0.34848485 | | −0.93725718 |
| $a$ | 2.2242610 | $\Omega$ | 114.70328 | | +0.86030954 | | −0.32422202 |
| $e$ | 0.0738146 | $i$ | 0.65326 | | +0.37205618 | | −0.12817589 |
| $P$ | 3.32 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 27 | 691 | 0.3+ | 0.4+ | 2006 09 14 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.7+ |
| 2000 12 27 | 691 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.3− | 1.0+ |
| 2000 12 27 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2003 11 24 | 695 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.4− |
| 2003 11 24 | 695 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2003 11 30 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2003 11 30 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2003 11 30 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2003 12 14 | 691 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2003 12 14 | 691 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2003 12 14 | 691 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2003 12 21 | 704 | 0.1− | 1.2+ | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2003 12 21 | 704 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2003 12 21 | 704 | 1.2+ | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.8− | 0.7− |

**2006 RU$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.75086 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25290377 | $\omega$ | 311.85778 | | +0.97825535 | | +0.20632727 |
| $a$ | 2.4764668 | $\Omega$ | 36.24974 | | −0.17814397 | | +0.88799965 |
| $e$ | 0.1822688 | $i$ | 2.04570 | | −0.10621299 | | +0.41095703 |
| $P$ | 3.90 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 291 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.4+ |
| 2002 08 30 | 291 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 08 30 | 291 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.6− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 09 13 | 644 | 0.4− | 0.2+ | 2006 10 16 | G96 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.1− | 2006 11 02 | G96 | 0.2− | 1.3+ |
| 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− | 2006 11 02 | G96 | (0.2− | 2.5+) |
| 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.3− | 2006 11 02 | G96 | 0.2+ | 1.1+ |
| 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.8+ | 0.9− | 2006 11 02 | G96 | 0.4− | 0.9+ |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | (1.6+ | 0.0 ) | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.9+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 1.1− | 0.7− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.3− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | | | | | | |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.0 | | | | | | |

**2006 RW$_{43}$ = 2001 WJ$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.88362 | | (2000.0) | | | |
| $n$ | 0.18032032 | $\omega$ | 324.76061 | | −0.28054245 | −0.95966914 |
| $a$ | 3.1029368 | $\Omega$ | 141.52281 | | +0.88721323 | −0.26650166 |
| $e$ | 0.1479335 | $i$ | 1.67577 | | +0.36626306 | −0.08950979 |
| $P$ | 5.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 01 | 809 | 0.1+ | 0.4+ | 2001 11 20 | 704 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.1+ | | |
| 2000 08 31 | 691 | 0.1− | 0.7− | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | |
| 2000 08 31 | 691 | 0.5+ | 0.3− | 2001 11 21 | 704 | 0.2− | 0.4− | 2006 09 25 | 691 | 0.2− | 0.4+ | | |
| 2000 08 31 | 691 | 0.5+ | 0.3− | 2001 11 21 | 704 | 0.7− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1+ | | |
| 2000 09 03 | 645 | 0.1− | 0.1+ | 2001 11 21 | 704 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.1+ | 0.5− | | |
| 2000 09 03 | 645 | 0.1− | 0.1+ | 2003 01 31 | 291 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2001 11 09 | 704 | 0.2− | 0.7+ | 2003 01 31 | 291 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.1− | | |
| 2001 11 09 | 704 | 0.4− | 1.1− | 2003 01 31 | 291 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2− | | |
| 2001 11 09 | 704 | (0.5+ | 3.0−) | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.1− | | |
| 2001 11 20 | 704 | 0.9+ | 0.1+ | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.6− | | |
| 2001 11 20 | 704 | 0.2+ | 0.0 | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.6− | | |
| 2001 11 20 | 704 | 0.5+ | 0.5− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2001 11 20 | 704 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1− | | | | | | |

**2006 RA$_{44}$ = 1995 SL$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.94190 | | (2000.0) | | | |
| $n$ | 0.27121032 | $\omega$ | 131.91421 | | +0.58058625 | +0.81413516 |
| $a$ | 2.3637339 | $\Omega$ | 173.55339 | | −0.77127261 | +0.55393814 |
| $e$ | 0.2435718 | $i$ | 5.19988 | | −0.26087960 | +0.17417370 |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.2− | 0.2+ | 2005 04 04 | G96 | 0.9+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.4+ | | |
| 1995 09 18 | 691 | 0.3− | 0.2+ | 2005 04 04 | G96 | 0.7+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.5+ | | |
| 1995 09 18 | 809 | (2.3+ | 0.5+) | 2005 04 04 | G96 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.7− | 0.3− | | |
| 1995 09 18 | 691 | 0.4− | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 10 16 | 703 | (1.5− | 0.1+) | | |
| 1995 09 20 | 809 | 0.9+ | 0.7− | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.3− | 0.4+ | | |
| 1995 09 22 | 691 | 1.0+ | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.6+ | 1.2− | | |
| 1995 09 22 | 691 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 1995 09 22 | 691 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.6+ | 0.3+ | | |
| 2005 03 08 | G96 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.7+ | | |
| 2005 03 08 | G96 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.1− | 0.7− | | |
| 2005 03 08 | G96 | 0.4− | 0.7− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.0 | | |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.2+ | 0.9− | | |
| 2005 03 12 | 695 | 0.7− | 1.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.9− | 0.1− | | |
| 2005 03 12 | 695 | 0.2+ | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | | | | | | |

**2006 RC$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.90780 | | (2000.0) | | | |
| $n$ | 0.22836980 | $\omega$ | 292.59840 | | +0.89165414 | −0.45246332 |
| $a$ | 2.6507998 | $\Omega$ | 94.30628 | | +0.42074345 | +0.81585349 |
| $e$ | 0.2391332 | $i$ | 0.87112 | | +0.16711624 | +0.36008337 |
| $P$ | 4.32 | $H$ | 18.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 01 | 691 | 0.2− | 1.0+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.6− | | |
| 1997 08 01 | 691 | 0.1− | 0.6+ | 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.6− | | |
| 1997 08 01 | 691 | 0.2− | 0.4+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.5− | | |
| 2002 12 09 | 291 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.6− | | |
| 2002 12 09 | 291 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.6− | | |
| 2002 12 09 | 291 | 0.9+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2002 12 28 | 291 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.8− | | |
| 2002 12 28 | 291 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.5− | | |
| 2002 12 28 | 291 | 0.5− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.0 | | | | | | |

**2006 RN$_{44}$ = 2002 UE$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.36307 | | (2000.0) | | | |
| $n$ | 0.23852172 | $\omega$ | 277.48560 | | +0.53897271 | +0.84188390 |
| $a$ | 2.5750407 | $\Omega$ | 25.18684 | | −0.74541775 | +0.49175593 |
| $e$ | 0.1239264 | $i$ | 3.66472 | | −0.39225093 | +0.22227823 |
| $P$ | 4.13 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 291 | 0.3− | 0.2+ | 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.1− | | |
| 2002 10 30 | 291 | 0.4− | 0.1+ | 2005 05 07 | 691 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2002 10 30 | 291 | 0.2+ | 0.4+ | 2005 05 07 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− | | |
| 2002 11 04 | 291 | 0.2+ | 0.0 | 2005 05 07 | 691 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.5− | 0.2− | | |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2+ | | |
| 2002 11 04 | 291 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 2002 11 04 | 649 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2002 11 04 | 649 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.4− | 0.1− | 2006 11 02 | G96 | 0.1+ | 0.4+ | | |
| 2002 11 04 | 649 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.4− | 2006 11 02 | G96 | 0.1− | 0.1− | | |
| 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 02 | G96 | 0.9− | 0.1− | | |
| 2005 04 17 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 11 02 | G96 | 0.1+ | 0.0 | | |

**2006 RO$_{44}$ = 2005 JV$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 160.34037 | | (2000.0) | | | |
| $n$ | 0.28319286 | $\omega$ | 160.82970 | | −0.88950860 | +0.45566208 |
| $a$ | 2.2965779 | $\Omega$ | 46.32607 | | −0.42509210 | −0.79810181 |
| $e$ | 0.1415433 | $i$ | 2.68326 | | −0.16754449 | −0.39421512 |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | G96 | 0.0 | 0.3− | 2005 05 12 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | | |
| 2005 05 10 | G96 | 0.4− | 0.0 | 2005 05 12 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.0 | | |
| 2005 05 10 | G96 | 0.2+ | 0.0 | 2005 05 12 | 644 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.3− | | |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 09 14 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2005 05 10 | G96 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.4− | | |
| 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.4− | 0.4− | 2006 10 22 | G96 | 0.4− | 0.1+ | | |
| 2005 05 10 | G96 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 1.1+ | 0.1− | | |
| 2005 05 10 | G96 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.5− | | |
| 2005 05 11 | 644 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.3− | 0.2− | | |
| 2005 05 11 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ | | | | | | |
| 2005 05 11 | 644 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.3− | 0.0 | | | | | | |

**2006 RP$_{44}$ = 2003 YM$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 161.26616 | | (2000.0) | | | |
| $n$ | 0.28106000 | $\omega$ | 175.55170 | | −0.88485650 | +0.46453133 |
| $a$ | 2.3081819 | $\Omega$ | 32.20333 | | −0.42943396 | −0.78403136 |
| $e$ | 0.0847904 | $i$ | 3.78807 | | −0.18059749 | −0.41171043 |
| $P$ | 3.51 | $H$ | 17.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.2− | 0.2− | 2003 12 29 | 691 | 0.4+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | | |
| 2002 08 13 | 644 | 0.2− | 0.1+ | 2003 12 29 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.0 | | |
| 2002 08 13 | 644 | 0.4+ | 0.1+ | 2003 12 29 | 691 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.1+ | | |
| 2003 12 19 | 691 | 0.4− | 0.0 | 2006 09 14 | 691 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.3− | | |
| 2003 12 19 | 691 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.0 | | |
| 2003 12 19 | 691 | 0.4− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | | |

**2006 RT$_{44}$ = 2006 UA$_{226}$ = 2006 UH$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.56163 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23277157 | $\omega$ | 355.98102 | | +0.37358166 | | −0.92730892 |
| $a$ | 2.6172754 | $\Omega$ | 72.08108 | | +0.85173010 | | +0.33304431 |
| $e$ | 0.0553827 | $i$ | 1.39283 | | +0.36741336 | | +0.17082052 |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2002 11 04 | 644 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2002 11 04 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2004 03 14 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.7+ | 0.3− |
| 2004 03 14 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2004 03 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.8+ | 2006 11 14 | G96 | 0.8+ | 0.2− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2006 09 18 | 691 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.2− | | | | |

**2006 RB$_{45}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.76919 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23952277 | $\omega$ | 269.29313 | | +0.95372829 | | −0.30021305 |
| $a$ | 2.5678610 | $\Omega$ | 108.17716 | | +0.28233062 | | +0.87524616 |
| $e$ | 0.1466573 | $i$ | 0.99914 | | +0.10340100 | | +0.37923118 |
| $P$ | 4.11 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 27 | 691 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.5− | 0.0 |
| 1998 11 27 | 691 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1998 11 27 | 691 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 1998 12 15 | 691 | 0.1+ | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.4+ |
| 1998 12 15 | 691 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 1998 12 15 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.2+ |
| 2006 09 14 | 691 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | | | | |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− | | | | |

**2006 RC$_{45}$ = 1999 GA$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.47728 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18348800 | $\omega$ | 303.53973 | | +0.81140619 | | +0.58095570 |
| $a$ | 3.0671212 | $\Omega$ | 21.16533 | | −0.45990245 | | +0.70230051 |
| $e$ | 0.1656816 | $i$ | 10.22816 | | −0.36070725 | | +0.41141763 |
| $P$ | 5.37 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 691 | 0.8+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 1999 04 11 | 691 | 0.5+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 1999 04 11 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.6− | 0.4− | 2006 10 27 | G96 | 0.6+ | 0.2+ |
| 1999 04 18 | 691 | 0.6− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 31 | G96 | 0.2− | 0.3+ |
| 1999 04 18 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.6− | 2006 10 31 | G96 | 0.7+ | 0.7+ |
| 1999 04 18 | 691 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.6− |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.6+ | 0.4− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.4+ |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.8− | 0.2+ |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 1.1+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.4+ |
| 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.6+ | | | | |

**2006 RF$_{45}$ = 2001 SG$_{257}$ = 2004 FS$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.30836 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19283006 | $\omega$ | 66.40134 | | −0.77664550 | | +0.62947655 |
| $a$ | 2.9672415 | $\Omega$ | 152.59153 | | −0.59536493 | | −0.72098052 |
| $e$ | 0.0229831 | $i$ | 3.00163 | | −0.20582120 | | −0.28973499 |
| $P$ | 5.11 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.2+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.1+ | 1.2− |
| 2001 09 19 | 704 | 0.3− | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.4− | 1.4+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 1.2− | 1.0− | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.6− | 0.9− | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.1+ | 1.1− | 2006 11 16 | G96 | 0.3+ | 0.4+ |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | (1.8− | 0.8+) | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.6+ | 1.1+ | | | | |
| 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.5− | | | | |

**2006 RL$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.50330 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25235726 | $\omega$ | 79.52328 | | −0.35184759 | | +0.93586110 |
| $a$ | 2.4800409 | $\Omega$ | 169.81366 | | −0.89561947 | | −0.33062453 |
| $e$ | 0.0686137 | $i$ | 6.22107 | | −0.27215629 | | −0.12186639 |
| $P$ | 3.91 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 691 | 0.2+ | 0.1− | 2005 05 20 | G96 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 |
| 1998 08 26 | 691 | 1.1+ | 0.4− | 2005 05 20 | G96 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 1998 08 26 | 691 | (1.9+ | 3.3−) | 2005 05 20 | G96 | 0.8− | 0.6− | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 1998 09 12 | 691 | 0.4− | 0.1− | 2005 06 23 | 644 | 0.4+ | 0.3− | 2006 09 30 | 703 | (1.5− | 2.7+) |
| 1998 09 12 | 691 | 0.5− | 0.4+ | 2005 06 23 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | (0.2+ | 1.6+) |
| 1998 09 12 | 691 | 0.6− | 0.0 | 2005 06 23 | 644 | 0.4− | 0.4+ | 2006 09 30 | 703 | (1.0+ | 1.8+) |
| 2001 05 18 | 704 | 0.4+ | 0.7+ | 2005 07 05 | 644 | 0.3− | 0.1+ | 2006 09 30 | 703 | (1.8+ | 0.6−) |
| 2001 05 18 | 704 | 0.0 | 0.5+ | 2005 07 05 | 644 | 0.3− | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2001 05 18 | 704 | 0.0 | 0.5+ | 2005 07 05 | 644 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.2− |
| 2002 10 04 | 644 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2002 10 04 | 644 | 0.6+ | 0.8+ | 2006 07 21 | G96 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.9+ |
| 2002 10 04 | 644 | 0.2+ | 0.7+ | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2003 12 22 | 704 | 0.5+ | 1.2+ | 2006 07 21 | G96 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.3− | 1.1+ |
| 2003 12 22 | 704 | 0.4− | 0.4+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | (1.7− | 0.3+) |
| 2003 12 22 | 704 | 0.5+ | 0.7+ | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | (2.3− | 1.6−) |
| 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | (1.9− | 1.6−) |
| 2005 04 30 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.3− |
| 2005 05 20 | G96 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2− | | | | |

**2006 RQ$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.15333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30070290 | $\omega$ | 351.61856 | | −0.94089607 | | −0.33812178 |
| $a$ | 2.2065358 | $\Omega$ | 168.55985 | | +0.31622290 | | −0.89781773 |
| $e$ | 0.0662273 | $i$ | 5.70138 | | +0.12131642 | | −0.28212939 |
| $P$ | 3.28 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 14 | 644 | 0.1− | 0.0 | 2005 06 01 | 691 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 2003 11 14 | 644 | 0.1+ | 0.2− | 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2003 11 14 | 644 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.1− | 0.6+ |
| 2005 05 14 | 644 | 0.4+ | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 2005 05 14 | 644 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2005 05 14 | 644 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 01 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.1− |
| 2005 06 01 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.3− |

**2006 RA$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.01449 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27064075 | $\omega$ | 46.79772 | | +0.14327369 | −0.98836172 | |
| $a$ | 2.3670490 | $\Omega$ | 35.06115 | | +0.88025799 | +0.10365141 | |
| $e$ | 0.1303156 | $i$ | 5.10598 | | +0.45234778 | +0.11134408 | |
| $P$ | 3.64 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2001 05 23 | 807 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2004 02 15 | 704 | 0.9+ | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2004 02 15 | 704 | 0.5+ | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2004 02 15 | 704 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.5− | 0.6− |
| 2004 03 17 | 645 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.7+ | 0.3− |
| 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.4+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.5+ | 0.3+ |
| 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 691 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.2− | | | | |
| 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.7+ | 0.4− | | | | |

**2006 RD$_{46}$ = 2004 GC$_{83}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.66713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18668785 | $\omega$ | 132.29082 | | +0.40527515 | +0.91367036 | |
| $a$ | 3.0319731 | $\Omega$ | 161.54720 | | −0.86490767 | +0.39417521 | |
| $e$ | 0.0118701 | $i$ | 5.61325 | | −0.29611952 | +0.09915838 | |
| $P$ | 5.28 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 691 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.5+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2004 04 14 | 691 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2004 04 22 | 599 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.4− | 0.1− |
| 2004 04 22 | 599 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.3− |
| 2004 04 22 | 599 | 0.5− | 0.5− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2+ |

**2006 RF$_{46}$ = 2000 PF$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.06609 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17547634 | $\omega$ | 222.89208 | | +0.96998765 | +0.24066040 | |
| $a$ | 3.1597811 | $\Omega$ | 123.15122 | | −0.21034787 | +0.90217067 | |
| $e$ | 0.1763682 | $i$ | 2.37778 | | −0.12197432 | +0.35800929 | |
| $P$ | 5.62 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2000 08 01 | 807 | 0.2+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.3− |
| 2000 08 03 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | (3.7+ | 2.2+) |
| 2000 08 03 | 691 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | (3.6+ | 2.1+) |
| 2000 08 03 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | (3.7+ | 2.3+) |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | (3.5+ | 2.5+) |

**2006 RJ$_{46}$ = 2004 GJ$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.74401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17956119 | $\omega$ | 322.97644 | | +0.95607198 | +0.28908379 | |
| $a$ | 3.1116762 | $\Omega$ | 20.38285 | | −0.22429658 | +0.82808671 | |
| $e$ | 0.0679053 | $i$ | 8.01252 | | −0.18872574 | +0.48031548 | |
| $P$ | 5.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.8− | 0.7+ | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 291 | 0.1− | 0.2− |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 02 | 291 | 0.1+ | 0.2− |
| 2001 10 21 | 704 | 1.0− | 1.2− | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 0.7+ | 0.6+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2001 10 21 | 704 | 0.6+ | 1.0+ | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2004 04 13 | 691 | 0.1− | 0.4− | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2004 04 13 | 691 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2004 04 13 | 691 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2004 04 20 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2004 05 24 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2004 05 24 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2004 05 24 | 691 | 0.1+ | 0.6+ | 2006 10 02 | 291 | 0.0 | 0.1− | | | | |

**2006 RO$_{46}$ = 2004 EY$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.65487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21156394 | $\omega$ | 180.80375 | | +0.99961696 | +0.02730439 | |
| $a$ | 2.7893839 | $\Omega$ | 177.61752 | | −0.02474693 | +0.95492710 | |
| $e$ | 0.0573888 | $i$ | 6.23852 | | −0.01239055 | +0.29558199 | |
| $P$ | 4.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.5− |
| 2004 03 15 | 691 | 0.3+ | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 291 | 0.3− | 0.2+ | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.3− |
| 2004 03 27 | 291 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.2− |
| 2004 03 27 | 291 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2004 07 15 | 807 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.5− |
| 2004 07 16 | 807 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2006 07 21 | G96 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.1+ |
| 2006 07 21 | G96 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1+ | | | | |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.4− | 0.1− | | | | |

**2006 RP$_{46}$ = 2000 FS$_{68}$ = 2004 FZ$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.42862 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23359537 | $\omega$ | 44.77030 | | +0.56646861 | −0.82065871 | |
| $a$ | 2.6111184 | $\Omega$ | 11.44412 | | +0.60952284 | +0.35594852 | |
| $e$ | 0.0495368 | $i$ | 22.22570 | | +0.55461268 | +0.44701222 | |
| $P$ | 4.22 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 26 | 699 | 1.0+ | 1.0+ | 2004 03 14 | 704 | 1.0+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2000 03 26 | 699 | 0.9+ | 0.3+ | 2004 03 23 | 704 | 0.2− | 1.3− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2000 03 26 | 699 | 0.3+ | 0.8+ | 2004 03 23 | 704 | (0.2+ | 1.9−) | 2006 09 25 | G96 | 0.4− | 0.1− |
| 2000 03 26 | 699 | 0.6− | 0.5+ | 2004 03 23 | 704 | (0.1− | 1.8−) | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2000 04 05 | 704 | 0.5+ | 0.5+ | 2004 03 23 | 704 | 0.2+ | 1.1− | 2006 09 26 | J75 | (1.4+ | 2.1−) |
| 2000 04 05 | 704 | 0.6+ | 0.8+ | 2004 03 23 | 704 | (0.7− | 1.6−) | 2006 09 26 | J75 | (4.0− | 0.9+) |
| 2000 04 05 | 704 | 0.7+ | 0.5+ | 2004 03 25 | 704 | 0.5+ | 0.5+ | 2006 09 26 | J75 | (0.0 | 2.1−) |
| 2000 04 05 | 704 | (2.1+ | 0.0 ) | 2004 03 25 | 704 | 0.3− | 0.6+ | 2006 09 27 | 704 | 0.1− | 0.4+ |
| 2000 04 05 | 704 | 0.9+ | 0.7+ | 2004 03 25 | 704 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2002 10 05 | 704 | 0.5+ | 0.6− | 2004 03 25 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 704 | (1.8+ | 0.8+) |
| 2002 10 05 | 704 | 0.3− | 1.1+ | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 1.0+ | 0.8+ |
| 2002 10 05 | 704 | 0.9+ | 0.7− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.7+ |
| 2002 10 05 | 704 | 0.3+ | 0.4− | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.3+ | 0.7+ |
| 2002 10 05 | 704 | 0.2− | 0.8− | 2006 09 17 | 704 | 0.9− | 1.3+ | 2006 10 01 | 704 | 0.6+ | 0.3+ |
| 2002 10 10 | 704 | (2.6− | 1.1−) | 2006 09 17 | 704 | 0.2+ | 0.5− | 2006 10 01 | 704 | 0.5− | 0.1+ |
| 2002 10 10 | 704 | 0.9+ | 0.4− | 2006 09 17 | 704 | 0.2− | 0.5− | 2006 10 15 | 106 | 0.3− | 0.3− |
| 2002 10 10 | 704 | (2.4− | 0.8−) | 2006 09 17 | 704 | 0.6− | 0.7+ | 2006 10 15 | 106 | 0.1+ | 0.6− |
| 2002 10 10 | 704 | (0.9− | 1.6−) | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 15 | 106 | 0.2− | 0.2− |
| 2002 10 10 | 704 | 0.2+ | 1.0− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 15 | 106 | 0.4− | 0.4− |
| 2002 11 08 | 704 | 0.6− | 0.9− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.2+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 704 | 0.5− | 0.3− | 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.1− |
| 2002 11 08 | 704 | 0.4+ | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.3− |
| 2002 11 15 | 704 | 1.2+ | 0.6+ | 2006 09 18 | 699 | 0.8+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2002 11 15 | 704 | 0.4− | 0.3− | 2006 09 18 | 699 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 11 15 | 704 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 1.2− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.4− |
| 2002 11 15 | 704 | 0.4+ | 0.9+ | 2006 09 20 | 704 | 0.7− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 12 07 | 704 | 0.1− | 0.5+ | 2006 09 20 | 704 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 12 07 | 704 | 0.1− | 1.2+ | 2006 09 20 | 704 | 0.4− | 1.0− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 12 07 | 704 | 1.3− | 0.6− | 2006 09 20 | 704 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2004 03 14 | 704 | 0.7− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2004 03 14 | 704 | 0.4− | 0.9+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2004 03 14 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |

**2006 RS$_{46}$ = 2004 EZ$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.63639 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18294367 | $\omega$ | 177.35212 | | +0.49987791 | | +0.86565512 |
| $a$ | 3.0732021 | $\Omega$ | 122.63841 | | −0.79522912 | | +0.47138016 |
| $e$ | 0.1358232 | $i$ | 1.88012 | | −0.34312203 | | +0.16864740 |
| $P$ | 5.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.7+ |
| 2004 03 15 | 691 | 0.5− | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.5− | 1.0+ |
| 2004 03 15 | 691 | 0.1+ | 0.4− | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 20 | 644 | (0.1− | 1.6+) |
| 2004 03 17 | 291 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.4− | 0.0 | 2006 10 20 | 644 | (0.4− | 2.0+) |
| 2004 03 17 | 291 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2004 03 17 | 291 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.5− | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.4− | 0.1− | 2006 10 22 | G96 | 1.3+ | 0.1+ |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.7+ | 0.2− |
| 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 | | | | |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.7− | 0.2+ | | | | |

**2006 RY$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.06963 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21185460 | $\omega$ | 284.94195 | | +0.70851111 | | +0.70418530 |
| $a$ | 2.7868320 | $\Omega$ | 30.33834 | | −0.60721026 | | +0.64168518 |
| $e$ | 0.0650043 | $i$ | 5.24874 | | −0.35959380 | | +0.30391312 |
| $P$ | 4.65 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.5+ | 0.2+ | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 695 | 0.1− | 0.2+ |
| 1992 09 27 | 691 | 0.4− | 0.4+ | 2006 09 28 | 699 | 0.1− | 1.1− | 2006 10 19 | 695 | 0.0 | 0.2+ |
| 1992 09 27 | 691 | 0.5− | 0.3+ | 2006 09 28 | 699 | 1.3− | 1.2+ | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2001 08 13 | 608 | 0.1+ | 0.2+ | 2006 09 28 | 699 | (0.9− | 2.1+) | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2001 08 13 | 608 | 0.0 | 0.3− | 2006 09 28 | 699 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2001 08 13 | 608 | 0.4− | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2001 09 10 | 699 | 0.1− | 0.6− | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.9+ | 0.4− |
| 2001 09 10 | 699 | 0.4+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.4+ | 0.2+ |
| 2001 09 10 | 699 | (1.7+ | 1.9+) | 2006 10 02 | 691 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.2+ |
| 2001 09 10 | 699 | (2.0+ | 1.3−) | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.3+ |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.3− | 0.4+ |
| 2006 09 14 | 691 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2006 09 14 | 691 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.4− | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.5+ | | | | |

**2006 RF$_{47}$ = 2001 XZ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.35357 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18146167 | $\omega$ | 211.22059 | | +0.84003912 | | +0.54148011 |
| $a$ | 3.0899121 | $\Omega$ | 115.95820 | | −0.48971831 | | +0.78351798 |
| $e$ | 0.1668796 | $i$ | 2.14602 | | −0.23347432 | | +0.30479314 |
| $P$ | 5.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 14 | 691 | 0.0 | 0.3+ | 2003 01 27 | 291 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.0 |
| 2001 11 14 | 691 | 0.3+ | 0.0 | 2003 01 27 | 291 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2001 11 14 | 691 | 0.0 | 0.6+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.5− |
| 2001 11 21 | 704 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.4+ |
| 2001 11 21 | 704 | 0.3− | 1.2+ | 2006 09 14 | 691 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.5+ | 0.1+ |
| 2001 11 21 | 704 | 0.0 | 1.1+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 11 21 | 704 | 0.4− | 1.1+ | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.6− | 0.7− |
| 2001 12 10 | 691 | 0.5− | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.6+ | 0.5− |
| 2001 12 10 | 691 | 0.9− | 0.2− | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 12 10 | 691 | 0.2+ | 0.6− | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2001 12 14 | 691 | 0.4+ | 0.4− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 12 14 | 691 | 0.3+ | 0.5− | 2006 09 28 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.4− | 0.4− |
| 2001 12 14 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2003 01 27 | 291 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.6− | 2006 11 16 | G96 | 0.4− | 0.2− |

**2006 RM$_{47}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.51996 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28131210 | $\omega$ | 188.83648 | | −0.88812529 | | +0.45755932 |
| $a$ | 2.3068027 | $\Omega$ | 18.58140 | | −0.41294253 | | −0.75307808 |
| $e$ | 0.0555826 | $i$ | 7.80570 | | −0.20177199 | | −0.47277148 |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.1− | 0.5− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2005 03 14 | G96 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2005 03 14 | G96 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2005 03 14 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.0 | 0.1+ |
| 2005 06 26 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.4− | 1.0+ |
| 2005 06 26 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2005 06 26 | 644 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 02 | 291 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 02 | 291 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 291 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 02 | 291 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 02 | 291 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 291 | 0.2+ | 0.0 | | | | |

**2006 RN$_{47}$ = 1995 UZ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.38869 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17962682 | $\omega$ | 273.05446 | | +0.80509256 | | −0.59209924 |
| $a$ | 3.1109182 | $\Omega$ | 123.25448 | | +0.55958597 | | +0.73846972 |
| $e$ | 0.0458523 | $i$ | 2.41774 | | +0.19669649 | | +0.32261580 |
| $P$ | 5.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.2− | 0.1+ | 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 1995 10 20 | 691 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 1995 10 25 | 691 | 0.0 | 0.1+ | 2006 09 14 | 691 | 0.1− | 0.7− | 2006 09 28 | 691 | 0.3− | 0.5− |
| 1995 10 25 | 691 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.4+ | 0.2− |
| 1995 10 25 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 2001 11 14 | 691 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.5− | 0.1− |
| 2001 11 14 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.5+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2001 11 14 | 691 | 0.4+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.5+ | 2006 10 22 | G96 | 0.7− | 0.7− |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2001 11 21 | 704 | 0.8+ | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.2+ |

### 2006 RR$_{47}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.48911 | | | (2000.0) | | |
| $n$ | 0.21007570 | $\omega$ | 5.51295 | | +0.91779294 | −0.39658682 |
| $a$ | 2.8025423 | $\Omega$ | 17.88999 | | +0.36184339 | +0.81531630 |
| $e$ | 0.1044351 | $i$ | 3.61431 | | +0.16347929 | +0.42187466 |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 16 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.4− |
| 1992 11 16 | 691 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 1992 11 16 | 691 | 0.2− | 0.4+ | 2006 09 30 | 291 | 0.3− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2004 04 12 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 10 16 | 106 | 0.1+ | 0.6+ |
| 2004 04 12 | 691 | 0.2− | 0.7+ | 2006 09 30 | 291 | 0.1+ | 0.2− | 2006 10 16 | 106 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.5+ | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 16 | 106 | 0.1+ | 0.4+ |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 09 30 | 291 | 1.1− | 0.1+ | 2006 10 16 | 106 | 0.1+ | 0.4− |
| 2006 09 14 | 691 | 1.6− | 0.1− | 2006 09 30 | 291 | 0.6− | 0.1+ | 2006 10 16 | 106 | 0.4− | 0.6+ |
| 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 09 30 | 291 | 0.2− | 0.2+ | 2006 10 16 | 106 | 0.5+ | 0.2− |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.6− | 0.1− | 2006 10 16 | 106 | 0.8+ | 0.1− |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.0 | 1.0+ | 2006 10 16 | 106 | 0.4− | 0.7+ |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 09 27 | 699 | 0.7+ | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2006 09 27 | 699 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 09 27 | 699 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2006 09 27 | 699 | (3.4− | 0.6+) | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− | | | | |

### 2006 RS$_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.94885 | | | (2000.0) | | |
| $n$ | 0.21859194 | $\omega$ | 342.29503 | | +0.99942123 | −0.00748899 |
| $a$ | 2.7292707 | $\Omega$ | 18.23040 | | +0.02274014 | +0.87256584 |
| $e$ | 0.0525063 | $i$ | 6.08890 | | −0.02530021 | +0.48843912 |
| $P$ | 4.51 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.0 | 0.2− | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 02 | 291 | 0.2+ | 0.0 |
| 1997 10 21 | 691 | 0.2− | 0.2+ | 2006 09 30 | 291 | 0.2− | 0.0 | 2006 10 02 | 291 | 0.2+ | 0.0 |
| 1997 10 21 | 691 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.3+ | 0.1− |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 09 30 | 291 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ |
| 2004 03 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 291 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 09 30 | 291 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.4− |
| 2006 09 14 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 291 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2006 09 14 | 691 | 1.2− | 0.2+ | 2006 09 30 | 291 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 2006 09 18 | 691 | 0.5+ | 0.1− | 2006 10 01 | 291 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 291 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.5+ | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 291 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 01 | 701 | 0.5+ | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 01 | 701 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 01 | 291 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 01 | 701 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 01 | 291 | 0.1− | 0.1− | 2006 10 27 | G96 | (0.5− | 2.7−) |
| 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 01 | 291 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 01 | 701 | 0.7+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2006 09 30 | 291 | 0.2− | 0.2− | 2006 10 02 | 291 | 1.3− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2006 09 30 | 291 | 0.1− | 0.3− | 2006 10 02 | 291 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.7+ | 0.5− |
| 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 02 | G96 | 1.3+ | 0.1+ | 2006 11 11 | G96 | 1.0+ | 0.1+ |
| 2006 09 30 | G96 | 0.4+ | 0.1+ | 2006 10 02 | 291 | 0.7+ | 0.2+ | 2006 11 11 | G96 | 0.8+ | 0.2− |
| 2006 09 30 | G96 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.5− | 0.1− |
| 2006 09 30 | G96 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.3− | | | | |
| 2006 09 30 | 291 | 1.2− | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.2− | | | | |

### 2006 RV$_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.20989 | | | (2000.0) | | |
| $n$ | 0.28296364 | $\omega$ | 250.70809 | | +0.75015835 | +0.65083231 |
| $a$ | 2.2978180 | $\Omega$ | 68.50326 | | −0.54965227 | +0.71204906 |
| $e$ | 0.1297902 | $i$ | 7.22145 | | −0.36762050 | +0.26344535 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 19 | 644 | 0.6+ | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.1+ |
| 2002 05 19 | 644 | 0.6+ | 0.1+ | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 02 | 703 | (0.2− | 1.7−) |
| 2002 05 19 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 10 02 | 703 | 0.5+ | 0.2+ |
| 2002 06 08 | 704 | 0.7+ | 0.5− | 2006 09 18 | 703 | 1.2+ | 0.2+ | 2006 10 02 | 703 | 0.3− | 1.0+ |
| 2002 06 08 | 704 | 1.0− | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.9− | 2006 10 02 | 703 | 1.2− | 0.6+ |
| 2002 06 08 | 704 | 0.6− | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.3− | 1.4− |
| 2002 06 08 | 704 | 0.6− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.6+ | 0.4+ |
| 2003 12 29 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.8− | 0.7+ |
| 2003 12 29 | 691 | 0.5− | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.5− | 0.3− |
| 2003 12 29 | 691 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.2+ | | | | |

### 2006 RW$_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.91694 | | | (2000.0) | | |
| $n$ | 0.22934035 | $\omega$ | 257.32969 | | +0.81125689 | −0.56662453 |
| $a$ | 2.6433159 | $\Omega$ | 136.95080 | | +0.58399348 | +0.77321982 |
| $e$ | 0.2083009 | $i$ | 12.19677 | | +0.02852843 | +0.28472399 |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 644 | 0.1− | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.5− | 2006 09 26 | 703 | 0.7− | 0.0 |
| 2002 11 06 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.0 |
| 2002 11 06 | 644 | 0.8+ | 0.1− | 2006 09 18 | 703 | 0.5+ | 0.6+ | 2006 09 26 | 703 | (0.3− | 4.2−) |
| 2002 11 30 | 704 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 09 26 | 703 | 1.3+ | 0.7− |
| 2002 11 30 | 704 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.6+ | 0.4− |
| 2002 11 30 | 704 | 0.5− | 0.6− | 2006 09 21 | 699 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.3− |
| 2002 12 13 | 644 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.3− | 0.5+ | 2006 10 02 | 703 | 1.2− | 0.6+ |
| 2002 12 13 | 644 | 0.4− | 0.1− | 2006 09 21 | 699 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.3− | 0.1+ |
| 2002 12 13 | 644 | 0.7+ | 0.7+ | 2006 09 21 | 699 | 1.1− | 0.6+ | 2006 10 02 | 703 | 1.0+ | 0.6+ |
| 2006 09 14 | 644 | 0.0 | 0.3− | 2006 09 26 | 703 | 0.1+ | 0.4− | 2006 10 02 | 703 | 0.4+ | 0.9− |
| 2006 09 14 | 644 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.8− | 0.1− | | | | |

### 2006 RX$_{47}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.32772 | | | (2000.0) | | |
| $n$ | 0.22066245 | $\omega$ | 351.37058 | | +0.83665837 | −0.53443500 |
| $a$ | 2.7121711 | $\Omega$ | 41.66893 | | +0.51268011 | +0.68706397 |
| $e$ | 0.1926953 | $i$ | 10.39223 | | +0.19277416 | +0.49226246 |
| $P$ | 4.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 07 | 704 | 0.5− | 0.1+ | 2004 03 30 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.3− |
| 2002 09 07 | 704 | 0.2− | 0.4− | 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 0.4− | 0.5+ | 2004 03 30 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 703 | 0.8+ | 0.2+ |
| 2002 10 03 | 704 | 0.3− | 0.4− | 2006 07 31 | E12 | 0.1− | 0.3− | 2006 10 02 | 703 | 0.5+ | 0.5+ |
| 2002 10 03 | 704 | 0.5+ | 0.9+ | 2006 07 31 | E12 | 0.1− | 0.4− | 2006 10 02 | 703 | 0.3− | 1.1+ |
| 2002 10 03 | 704 | 0.3+ | 0.1+ | 2006 07 31 | E12 | 0.0 | 0.4− | 2006 10 02 | 703 | 0.4+ | 0.3+ |
| 2002 10 03 | 704 | 0.1− | 0.7+ | 2006 07 31 | E12 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.5+ | 0.4− | 2006 08 16 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.2− | 2006 08 16 | 644 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.5− | 0.1+ |
| 2002 10 12 | 704 | 1.0+ | 0.1+ | 2006 08 16 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2002 10 12 | 704 | 0.6+ | 1.0− | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.9+ | 0.2− | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.5+ | 0.4+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 10 19 | 703 | 1.1− | 1.4− |
| 2002 11 12 | 704 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.8+ | 1.1− |
| 2002 11 12 | 704 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.9+ | 0.4+ |
| 2002 12 05 | 704 | 0.7+ | 0.0 | 2006 09 14 | 644 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.6+ |
| 2002 12 05 | 704 | 1.1+ | 0.0 | 2006 09 18 | 703 | 0.2− | 0.5+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.9+ | 0.2+ | 2006 09 18 | 703 | 1.0− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2002 12 05 | 704 | 0.5+ | 0.7− | 2006 09 18 | 703 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 12 15 | 704 | 0.7− | 0.2− | 2006 09 18 | 703 | 0.7+ | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2002 12 15 | 704 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.5+ | 0.1− | 2006 10 24 | 644 | 0.3− | 0.1+ |
| 2002 12 15 | 704 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.6+ | 2006 10 24 | 644 | 0.2− | 0.1+ |
| 2002 12 15 | 704 | 0.4+ | 0.3+ | 2006 09 20 | 703 | 0.6+ | 0.0 | 2006 11 11 | 644 | 0.4− | 0.4+ |
| 2002 12 15 | 704 | 0.4+ | 0.5− | 2006 09 20 | 703 | 0.3+ | 0.4+ | 2006 11 11 | 644 | 0.0 | 0.3+ |
| 2003 01 04 | 704 | 0.7− | 0.1− | 2006 09 21 | 699 | 0.5+ | 0.4+ | 2006 11 11 | 644 | 0.1+ | 0.4+ |
| 2003 01 04 | 704 | 1.0− | 0.2+ | 2006 09 21 | 699 | 0.7− | 0.1+ | 2006 11 20 | 704 | 1.6− | 0.9− |
| 2003 01 04 | 704 | 0.8− | 0.3− | 2006 09 21 | 699 | 0.5+ | 0.5− | 2006 11 20 | 704 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.8− | 0.3+ | 2006 09 21 | 699 | 0.8+ | 0.3− | 2006 11 20 | 704 | 0.3+ | 1.3+ |
| 2003 01 04 | 704 | 1.1− | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2003 01 04 | 704 | 1.2− | 1.5− | 2006 09 26 | 703 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.5− | 0.6+ |

**2006 RZ$_{47}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.08470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23005369 | $\omega$ | 176.97063 | | +0.99982689 | | −0.01651207 |
| $a$ | 2.6378489 | $\Omega$ | 184.00572 | | +0.01341885 | | +0.95919849 |
| $e$ | 0.1043505 | $i$ | 7.05134 | | +0.01288879 | | +0.28225096 |
| $P$ | 4.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 691 | 0.1− | 0.7− | 2006 09 14 | 703 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.7+ |
| 1993 09 15 | 691 | 0.3+ | 0.1− | 2006 09 14 | 703 | 0.8+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 1993 09 15 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 1.2+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2000 03 03 | 645 | 0.0 | 0.4− | 2006 09 14 | 703 | 1.0+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 03 03 | 645 | 0.1+ | 0.3− | 2006 09 14 | 703 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2000 05 04 | 645 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.1− | 1.3− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2000 05 04 | 645 | 0.1− | 0.0 | 2006 09 18 | 699 | (2.1− | 1.8+) | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2005 05 08 | 691 | 0.3− | 0.1+ | 2006 09 18 | 699 | 1.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.8− |
| 2005 05 08 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | 1.2+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2005 05 08 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 06 11 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2005 06 11 | 691 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2006 09 14 | 691 | 0.5+ | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2006 09 14 | 691 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.4− | 0.0 | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2006 09 14 | 703 | 0.6+ | 0.1− | 2006 10 11 | 644 | 0.4− | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.3+ |
| 2006 09 14 | 703 | 1.3− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.1+ | | | | |
| 2006 09 14 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 1.1− | 0.9− | | | | |

**2006 RB$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.28285 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22968084 | $\omega$ | 222.10789 | | +0.81224711 | | −0.58328917 |
| $a$ | 2.6407029 | $\Omega$ | 173.56769 | | +0.54706325 | | +0.75856845 |
| $e$ | 0.1168606 | $i$ | 2.72570 | | +0.20242637 | | +0.29042667 |
| $P$ | 4.29 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 22 | 809 | 0.5− | 1.5− | 2004 04 13 | 691 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 1993 09 22 | 809 | 1.6+ | 1.3− | 2004 04 13 | 691 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 1993 09 22 | 809 | 1.6+ | 1.4− | 2004 04 13 | 691 | 0.1− | 0.7+ | 2006 09 28 | 699 | (1.6− | 1.9+) |
| 1995 01 31 | 691 | 0.3− | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 28 | 699 | 0.3− | 1.2+ |
| 1995 01 31 | 691 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.9+ | 0.2− | 2006 09 28 | 699 | 1.0− | 1.0+ |
| 1995 01 31 | 691 | 0.0 | 0.4− | 2006 07 21 | G96 | 0.5− | 0.1− | 2006 09 28 | 699 | 0.0 | 0.1+ |
| 2000 04 06 | 691 | 0.5− | 0.1+ | 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 10 21 | 703 | (0.7− | 2.1−) |
| 2000 04 06 | 691 | 0.2− | 0.1− | 2006 09 14 | 703 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.2− |
| 2000 04 06 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.7− | 0.3− | 2006 10 21 | 703 | 0.6+ | 1.4− |
| 2002 12 10 | 644 | 0.0 | 0.4+ | 2006 09 14 | 703 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.7− | 1.2− |
| 2002 12 10 | 644 | 0.2− | 0.6+ | 2006 09 14 | 703 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 12 10 | 644 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2002 12 27 | 644 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 12 27 | 644 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.6− | 0.3− |
| 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | (2.9− | 1.8−) | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 14 | G96 | 2.0− | 0.5+ |

**2006 RC$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.75231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29113630 | $\omega$ | 198.22053 | | +0.99128805 | | −0.13049710 |
| $a$ | 2.2546120 | $\Omega$ | 169.23090 | | +0.12957534 | | +0.94190811 |
| $e$ | 0.1717349 | $i$ | 5.48088 | | +0.02362701 | | +0.30948282 |
| $P$ | 3.39 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.9+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 1996 12 12 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.4− | 0.7− | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 1996 12 12 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 1.3+ | 2006 10 15 | 703 | 0.6− | 0.7− |
| 1999 08 12 | 699 | 0.2− | 0.4− | 2006 09 18 | 699 | 1.4− | 0.7+ | 2006 10 15 | 703 | 0.1+ | 0.4− |
| 1999 08 12 | 699 | 0.1+ | 1.0+ | 2006 09 18 | 699 | 0.5− | 0.3+ | 2006 10 15 | 703 | 0.1+ | 0.5− |
| 1999 08 12 | 699 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 10 15 | 703 | 0.2+ | 0.4− |
| 1999 09 13 | 704 | 0.4− | 1.2− | 2006 09 22 | 704 | 0.5− | 0.8− | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 1999 09 13 | 704 | 0.6− | 0.7− | 2006 09 22 | 704 | 0.4+ | 0.6− | 2006 10 21 | 644 | 0.6− | 0.2+ |
| 1999 09 13 | 704 | 0.2+ | 0.8+ | 2006 09 22 | 704 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.9− | 0.1− |
| 1999 09 13 | 704 | 0.1− | 0.7− | 2006 09 22 | 704 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 04 06 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 04 06 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.1− | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2005 04 06 | 691 | 0.0 | 0.9+ | 2006 09 26 | 704 | (1.7+ | 1.1+) | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 1.3+ | 0.8− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.8+ | 2006 10 22 | 703 | 0.1− | 1.1+ |
| 2006 07 22 | G96 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2006 07 22 | G96 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.9+ |
| 2006 07 22 | G96 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.7− | 2006 10 22 | 703 | 0.6+ | 0.3+ |
| 2006 07 22 | G96 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.3+ | 0.8+ | 2006 10 27 | 704 | 0.6+ | 0.5− |
| 2006 08 19 | 699 | 0.3+ | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.5+ | 2006 10 27 | 704 | (0.7+ | 1.8+) |
| 2006 08 19 | 699 | 0.0 | 0.9+ | 2006 10 01 | 704 | 0.0 | 0.5+ | 2006 10 27 | 704 | (0.7− | 1.9+) |
| 2006 08 19 | 699 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.8+ | 2006 10 27 | 704 | (1.8+ | 1.4+) |
| 2006 08 19 | 699 | 0.9+ | 0.4− | 2006 10 01 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 704 | 0.3− | 0.7+ |
| 2006 09 14 | 703 | 0.2+ | 0.9+ | 2006 10 02 | G96 | 0.1− | 0.1− | | | | |
| 2006 09 14 | 703 | 0.5+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.1− | | | | |

**2006 RG$_{48}$ = 2004 EC$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.08728 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21246418 | $\omega$ | 168.77552 | | +0.99718544 | | +0.07206753 |
| $a$ | 2.7814990 | $\Omega$ | 187.18863 | | −0.07493063 | | +0.96739988 |
| $e$ | 0.1572736 | $i$ | 9.51005 | | +0.00256687 | | +0.24278332 |
| $P$ | 4.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.3− | 0.2− | 2005 06 17 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.7− | 1.2+ |
| 2001 08 25 | 704 | 0.1− | 0.2− | 2005 06 17 | 691 | 0.1− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 0.3− | 2005 07 03 | 691 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2001 08 25 | 704 | 0.1+ | 0.9− | 2005 07 03 | 691 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.5+ |
| 2001 08 25 | 704 | 0.7− | 0.8− | 2005 07 03 | 691 | 0.5+ | 0.4− | 2006 10 15 | 703 | 0.5− | 0.1− |
| 2001 09 09 | 699 | 0.4− | 1.4+ | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.9− | 0.2+ |
| 2001 09 09 | 699 | 0.6+ | 0.1+ | 2006 09 14 | 703 | 0.7+ | 0.4+ | 2006 10 15 | 703 | 0.1+ | 0.2+ |
| 2001 09 09 | 699 | 0.2− | 1.4+ | 2006 09 14 | 703 | 0.5− | 0.1− | 2006 10 15 | 703 | 0.4− | 0.2− |
| 2001 09 09 | 699 | 1.2+ | 0.9+ | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2004 03 15 | 691 | 0.1− | 0.6+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1+ | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.5− | 0.8+ | | |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2004 03 23 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.9+ | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.6+ | | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.6+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2005 06 03 | 691 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.0 | | |
| 2005 06 03 | 691 | 0.2− | 0.2− | 2006 09 27 | 704 | 1.3− | 1.1+ | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2005 06 03 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.2− | 0.9+ | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2005 06 17 | 691 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.7− | 0.6− | | | | | | |

**2006 RJ$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.78897 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17251110 | $\omega$ | 149.20647 | | +0.98604715 | +0.13702359 | |
| $a$ | 3.1958865 | $\Omega$ | 203.48267 | | −0.15276337 | +0.97044846 | |
| $e$ | 0.1989792 | $i$ | 13.72290 | | +0.06613897 | +0.19863112 | |
| $P$ | 5.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 09 22 | 683 | 0.2+ | 1.4− | 2006 10 20 | 644 | 0.0 | 0.7+ | | |
| 2004 04 13 | 691 | 0.0 | 0.2− | 2006 09 22 | 683 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.5+ | | |
| 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 09 22 | 683 | 1.3+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2004 05 09 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ | | |
| 2004 05 09 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2004 05 09 | 691 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2006 09 14 | 703 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− | | |
| 2006 09 14 | 703 | 1.0− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2006 09 14 | 703 | 0.9− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2006 09 14 | 703 | 0.8− | 0.3+ | 2006 09 28 | 699 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.2− | | |
| 2006 09 18 | 703 | 1.2− | 0.8− | 2006 09 28 | 699 | 0.6+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.1+ | | |
| 2006 09 18 | 703 | 0.2− | 0.5+ | 2006 09 28 | 699 | 0.4− | 0.6+ | 2006 11 14 | G96 | 0.2− | 0.0 | | |
| 2006 09 18 | 704 | 0.6+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1− | 0.1+ | | |
| 2006 09 18 | 704 | 1.2+ | 0.5− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.0 | 0.1+ | | |
| 2006 09 18 | 704 | 0.1+ | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.0 | | | | | | |

**2006 RK$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.52050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25667581 | $\omega$ | 168.86205 | | +0.93258618 | −0.35676947 | |
| $a$ | 2.4521446 | $\Omega$ | 212.20969 | | +0.32276783 | +0.89219637 | |
| $e$ | 0.1117081 | $i$ | 5.89662 | | +0.16156716 | +0.27694978 | |
| $P$ | 3.84 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 14 | 691 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.1− | 1.1+ | 2006 10 17 | 703 | 0.8− | 0.1− | | |
| 1997 04 14 | 691 | 0.2+ | 0.0 | 2006 09 14 | 703 | (0.4− | 1.6+) | 2006 10 17 | 703 | 0.4+ | 0.1− | | |
| 1997 04 14 | 691 | 0.4+ | 0.1− | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 1998 09 24 | 691 | 0.0 | 0.3+ | 2006 09 18 | 703 | 0.5+ | 0.7+ | 2006 10 19 | G96 | 0.0 | 0.3− | | |
| 1998 09 24 | 691 | 0.4− | 0.5− | 2006 09 18 | 703 | 0.2+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.0 | | |
| 1998 09 24 | 691 | 0.2− | 0.4− | 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.2− | | |
| 2001 05 14 | 691 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 05 14 | 691 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2001 05 14 | 691 | 0.1+ | 0.9+ | 2006 09 18 | 699 | 0.7+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2002 08 28 | 644 | 0.2− | 0.9+ | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2002 08 28 | 644 | 0.5+ | 0.5+ | 2006 09 19 | 703 | 0.7+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2+ | | |
| 2002 08 28 | 644 | 0.4− | 1.0+ | 2006 09 19 | 703 | 1.0− | 0.3+ | 2006 11 01 | 691 | 0.5− | 0.5+ | | |
| 2002 09 13 | 644 | 0.4− | 0.6+ | 2006 09 19 | 703 | 0.1+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.2− | | |
| 2002 09 13 | 644 | 0.0 | 0.6+ | 2006 09 19 | 703 | 1.1+ | 1.0− | 2006 11 06 | 644 | 0.7− | 0.3+ | | |
| 2002 09 13 | 644 | 0.1+ | 0.7+ | 2006 09 28 | 699 | 0.9− | 1.3− | 2006 11 06 | 644 | 0.4− | 0.5+ | | |
| 2002 12 05 | 291 | 0.4+ | 0.5+ | 2006 09 28 | 699 | 0.7− | 0.1− | 2006 11 06 | 644 | 0.0 | 0.1+ | | |
| 2002 12 05 | 291 | 0.1+ | 0.5+ | 2006 09 28 | 699 | 0.1− | 0.2− | 2006 11 06 | 644 | 0.1+ | 0.1− | | |
| 2002 12 05 | 291 | 0.3− | 0.4+ | 2006 09 28 | 699 | 0.9− | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.4+ | | |
| 2004 01 28 | 291 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.8− | | |
| 2004 01 28 | 291 | 0.2− | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.7+ | | |
| 2004 01 28 | 291 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (1.4+ | 2.7−) | | |
| 2004 02 11 | 644 | 0.5+ | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.3− | | |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.2− | | |
| 2004 02 11 | 644 | 0.8+ | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.3− | | |
| 2006 09 14 | 703 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.6− | | |
| 2006 09 14 | 703 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.4− | 0.5− | | |

**2006 RS$_{48}$ = 2004 CB$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.29896 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22703422 | $\omega$ | 122.22544 | | +0.75925131 | +0.65073072 | |
| $a$ | 2.6611856 | $\Omega$ | 197.18377 | | −0.60721516 | +0.70317704 | |
| $e$ | 0.0757093 | $i$ | 1.80907 | | −0.23415209 | +0.28651628 | |
| $P$ | 4.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.5− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2000 04 05 | 704 | 0.8+ | 0.4+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2000 04 05 | 704 | 0.5+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.3+ | | |
| 2000 04 05 | 704 | 1.3+ | 0.9− | 2006 09 18 | 691 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2000 05 05 | 645 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 13 | 644 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.7+ | 0.2− | | |
| 2002 11 13 | 644 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2002 11 13 | 644 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.6− | | |
| 2003 01 02 | 291 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2003 01 02 | 291 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 29 | 291 | 0.3+ | 0.0 | | |
| 2003 01 02 | 291 | 0.1+ | 0.0 | 2006 09 29 | 691 | 0.3+ | 0.5+ | 2006 10 29 | 291 | 0.3+ | 0.1+ | | |
| 2004 02 12 | 691 | 0.2− | 0.2− | 2006 09 29 | 691 | 0.0 | 0.0 | 2006 10 29 | 291 | 0.2+ | 0.1+ | | |
| 2004 02 12 | 691 | 0.1+ | 0.3− | 2006 09 29 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.1− | | |
| 2004 02 12 | 691 | 0.1+ | 0.3− | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.9− | | |
| 2004 02 29 | 691 | 0.0 | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.6− | | |
| 2004 02 29 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.3+ | | | | | | |
| 2006 09 14 | 691 | 0.2− | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.5+ | | | | | | |

**2006 RD$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.12759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28850975 | $\omega$ | 128.29542 | | +0.90476266 | +0.42591236 | |
| $a$ | 2.2682750 | $\Omega$ | 206.49629 | | −0.39200906 | +0.83108849 | |
| $e$ | 0.1656477 | $i$ | 0.22929 | | −0.16653354 | +0.35761793 | |
| $P$ | 3.42 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 19 | 691 | 0.0 | 0.1− | 2006 09 14 | 703 | 1.5− | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.2+ | | |
| 1994 01 19 | 691 | 0.1− | 0.4− | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.1+ | | |
| 1994 01 19 | 691 | 0.0 | 0.3− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1+ | | |
| 1999 09 04 | 699 | (0.3− | 3.6−) | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.2+ | | |
| 1999 09 04 | 699 | 0.3+ | 0.4− | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ | | |
| 1999 09 04 | 699 | 1.0+ | 1.2+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.5+ | | |
| 2005 04 04 | G96 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3− | 0.4+ | | |
| 2005 04 04 | G96 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2+ | | |
| 2005 04 04 | G96 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.0 | | |
| 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.0 | | |
| 2006 07 21 | G96 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.2− | | |
| 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.4− | | |
| 2006 07 21 | G96 | 0.4+ | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.1+ | | |
| 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.8+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2006 09 14 | 703 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.4− | 0.9+ | 2006 11 11 | G96 | 0.2− | 0.1− | | |
| 2006 09 14 | 703 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.4+ | 1.2+ | | | | | | |
| 2006 09 14 | 703 | 0.4+ | 1.4+ | 2006 09 29 | 704 | (2.0+ | 2.5+) | | | | | | |

**2006 RJ$_{49}$ = 2001 FX$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 185.17721 | | | (2000.0) | | |
| $n$ | 0.27433996 | $\omega$ | 179.27737 | | −0.98691707 | +0.15971215 |
| $a$ | 2.3457227 | $\Omega$ | 9.99454 | | −0.14855486 | −0.84760472 |
| $e$ | 0.0497330 | $i$ | 7.30311 | | −0.06265902 | −0.50602201 |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 704 | 1.0+ | 0.7+ | 2003 11 24 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.7− |
| 2001 03 18 | 704 | 0.1− | 0.4+ | 2003 11 24 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | (0.1− | 1.6−) |
| 2001 03 18 | 704 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2001 03 19 | 691 | 0.2− | 0.2+ | 2006 09 14 | 691 | 0.3− | 0.9+ | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2001 03 19 | 691 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2001 03 19 | 691 | 0.4− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2001 03 22 | 209 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2001 03 22 | 209 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2001 03 22 | 209 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.4− | 0.4− |
| 2001 03 23 | 699 | 1.1+ | 0.4− | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.8− | 0.3− |
| 2001 03 23 | 699 | 0.6+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.8− | 0.3− |
| 2001 03 23 | 699 | 1.0+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.8− | 0.0 |
| 2001 03 23 | 699 | 0.9+ | 0.5− | 2006 10 03 | 691 | 0.0 | 0.0 | | | | |
| 2003 11 24 | 691 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.4+ | | | | |

**2006 RL$_{49}$ = 2000 GJ$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 201.10195 | | | (2000.0) | | |
| $n$ | 0.23042965 | $\omega$ | 338.95719 | | −0.99451321 | −0.08771589 |
| $a$ | 2.6349789 | $\Omega$ | 196.32408 | | +0.09787258 | −0.97258723 |
| $e$ | 0.0330727 | $i$ | 11.70125 | | −0.03693817 | −0.21536017 |
| $P$ | 4.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.2− | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3+ |
| 2000 04 05 | 691 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.1− | 0.4+ |
| 2000 04 05 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | (4.6− | 0.4+) |
| 2000 04 11 | 691 | 0.0 | 1.1− | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | (4.3− | 0.0 ) |
| 2000 04 11 | 691 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.5− | 2006 11 16 | G96 | (4.4− | 0.4−) |
| 2000 04 11 | 691 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.2+ | 2006 11 16 | G96 | (4.2− | 0.1+) |
| 2006 09 14 | 691 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | | | | |

**2006 RP$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.80166 | | | (2000.0) | | |
| $n$ | 0.21089332 | $\omega$ | 103.75301 | | +0.60274807 | +0.79739328 |
| $a$ | 2.7952940 | $\Omega$ | 203.38954 | | −0.75764728 | +0.56041019 |
| $e$ | 0.0258533 | $i$ | 4.23328 | | −0.25033050 | +0.22384007 |
| $P$ | 4.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.3− | 0.3+ |
| 1997 11 22 | 691 | (4.8+ | 3.7−) | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.0 |
| 1997 11 22 | 691 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.6+ |
| 2004 04 13 | 691 | 0.1− | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.1− | 0.8− |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.5+ | 2006 11 13 | G96 | 0.5− | 0.1+ |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.6+ | 2006 11 13 | G96 | 0.1+ | 0.8− |
| 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 09 25 | 152 | (2.2− | 1.5−) | 2006 11 13 | G96 | 0.4− | 0.7+ |
| 2006 09 14 | 691 | 0.3+ | 0.4− | 2006 09 25 | 152 | 0.1− | 0.7− | | | | |
| 2006 09 14 | 691 | 0.5+ | 0.2+ | 2006 09 25 | 152 | 0.1− | 1.0− | | | | |

**2006 RY$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 72.61775 | | | (2000.0) | | |
| $n$ | 0.27470543 | $\omega$ | 93.65611 | | +0.16369164 | +0.98650225 |
| $a$ | 2.3436417 | $\Omega$ | 185.77042 | | −0.92117890 | +0.15129560 |
| $e$ | 0.1878706 | $i$ | 2.44190 | | −0.35303609 | +0.06263340 |
| $P$ | 3.59 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.2− | 0.6− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1995 10 02 | 691 | 0.3+ | 0.8− | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1995 10 02 | 691 | 0.1− | 1.4+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.1+ | 0.0 |
| 2002 07 08 | 644 | 0.1− | 0.5− | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 15 | 703 | (0.9+ | 1.9+) |
| 2002 07 08 | 644 | 0.2− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 1.6− | 0.4+ |
| 2002 07 08 | 644 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.1+ | 1.3− |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.7+ | 0.2+ |
| 2002 08 28 | 644 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.2− | 0.4+ |
| 2002 08 28 | 644 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.7− | 0.3− |
| 2005 03 12 | 695 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.5+ | 0.7− |
| 2005 03 12 | 695 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2005 05 13 | G96 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2005 05 13 | G96 | 0.3− | 0.2+ | 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.5+ |
| 2005 05 13 | G96 | 0.6+ | 0.5− | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2005 05 13 | G96 | 0.0 | 0.2− | 2006 10 03 | 691 | 0.2+ | 0.4+ | | | | |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | | | | |

**2006 RB$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 302.13851 | | | (2000.0) | | |
| $n$ | 0.24188459 | $\omega$ | 240.79675 | | +0.19093033 | −0.98137889 |
| $a$ | 2.5511182 | $\Omega$ | 198.23212 | | +0.92230540 | +0.18667893 |
| $e$ | 0.0612382 | $i$ | 3.84899 | | +0.33600351 | +0.04523764 |
| $P$ | 4.07 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 25 | 691 | 0.2− | 0.4− | 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1992 03 25 | 691 | 0.2− | 0.7− | 2004 03 29 | 691 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1998 10 17 | 691 | 0.1− | 0.5− | 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1998 10 17 | 691 | 0.6− | 0.2− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 29 | 691 | 0.9− | 0.2− |
| 1998 10 17 | 691 | 0.1+ | 0.3− | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 09 29 | 691 | 0.3− | 0.6− |
| 2000 02 11 | 809 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 691 | 0.4− | 0.4− |
| 2000 02 11 | 809 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.5+ |
| 2000 02 11 | 809 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 13 | A50 | 0.4− | 0.4+ |
| 2002 10 11 | 644 | 0.1− | 0.8+ | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 13 | A50 | 0.1− | 0.7+ |
| 2002 10 11 | 644 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2002 10 11 | 644 | 0.0 | 0.7+ | 2006 09 25 | 152 | 0.8+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2002 11 04 | 291 | 0.1+ | 0.6+ | 2006 09 25 | 152 | 0.5− | 1.1− | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2002 11 04 | 291 | 0.6+ | 0.1+ | 2006 09 25 | 152 | 0.0 | 0.7+ | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2002 11 04 | 291 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− | | | | |

**2006 RD$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.37093 | | | (2000.0) | | |
| $n$ | 0.19009454 | $\omega$ | 349.01243 | | +0.98269865 | +0.18521157 |
| $a$ | 2.9956400 | $\Omega$ | 0.31426 | | −0.16740765 | +0.88863931 |
| $e$ | 0.0920107 | $i$ | 1.83553 | | −0.07923405 | +0.41954362 |
| $P$ | 5.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 291 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.5− | 0.1− |
| 2004 03 27 | 291 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2004 03 27 | 291 | 0.7+ | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.3+ |
| 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 691 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 04 20 | 691 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.8+ |
| 2006 07 21 | G96 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 27 | 691 | 0.4+ | 0.2− |
| 2006 07 21 | G96 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2006 07 21 | G96 | 0.6+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.3+ |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2006 09 14 | 691 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.6+ | | | | |

**2006 RK$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 49.50534 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21810205 | $\omega$ | 297.81933 | | +0.80981803 | | +0.58650317 | | |
| $a$ | 2.7333561 | $\Omega$ | 26.27921 | | −0.52613585 | | +0.73692181 | | |
| $e$ | 0.0240694 | $i$ | 1.87028 | | −0.25956855 | | +0.33609564 | | |
| $P$ | 4.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 23 | 691 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.6− | 0.3+ |
| 1999 01 23 | 691 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.7+ |
| 1999 01 23 | 691 | 0.1− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2000 05 11 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.5− | 0.5+ |
| 2000 05 11 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.5− | 0.4+ |
| 2000 05 11 | 691 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 08 24 | 644 | 0.1− | 0.7+ | 2006 09 25 | 152 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.5+ |
| 2001 08 24 | 644 | 0.0 | 0.7+ | 2006 09 25 | 152 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2001 08 24 | 644 | 0.2+ | 0.7+ | 2006 09 25 | 152 | 0.5− | 0.7+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 691 | 0.2+ | 0.7+ | 2006 09 28 | 699 | 0.4− | 0.8− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 03 15 | 691 | 0.3+ | 0.5+ | 2006 09 28 | 699 | 0.3− | 1.3− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.4+ | 0.2+ | 2006 09 28 | 699 | 1.1+ | 0.5+ | 2006 10 28 | 691 | 0.4+ | 0.1− |
| 2004 03 30 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 699 | 1.3+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2004 03 30 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.4− | 0.0 |
| 2004 03 30 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2006 09 14 | 703 | (2.6+ | 2.0+) | 2006 09 29 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2006 09 14 | 703 | 0.2− | 1.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2006 09 14 | 703 | 0.2+ | 1.0− | 2006 10 10 | 644 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2006 09 14 | 703 | 0.0 | 1.0− | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2006 09 14 | 691 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 13 | A50 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.7− |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 13 | A50 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 699 | 0.2− | 0.6+ | 2006 10 15 | 703 | 0.4+ | 0.8+ | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2006 09 18 | 691 | 0.4− | 0.2+ | 2006 10 15 | 703 | 0.1+ | 1.4+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2006 09 18 | 699 | 0.4+ | 0.3− | 2006 10 15 | 703 | 0.4+ | 1.0+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2006 09 18 | 699 | 0.2− | 0.4− | 2006 10 15 | 703 | (1.5− | 0.4+) | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2006 09 18 | 699 | 0.6− | 0.4− | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1+ | | | | |

**2006 RL$_{50}$ = 2004 EN$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 295.55728 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23047548 | $\omega$ | 248.27461 | | +0.09123816 | | −0.99579568 | | |
| $a$ | 2.6346295 | $\Omega$ | 196.49681 | | +0.92394357 | | +0.08770529 | | |
| $e$ | 0.0450349 | $i$ | 1.64634 | | +0.37148873 | | +0.02643371 | | |
| $P$ | 4.28 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 28 | 691 | 0.2− | 0.7− | 2004 03 27 | 291 | 0.1+ | 1.0+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1994 12 28 | 691 | 0.2− | 0.3+ | 2004 03 27 | 291 | 0.6+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 1994 12 28 | 691 | 0.1+ | 1.0− | 2006 09 14 | 691 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2002 11 25 | 291 | 0.6− | 0.7+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.2− |
| 2002 11 25 | 291 | 0.6+ | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.1− |
| 2002 11 25 | 291 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.7− | 0.3− |
| 2004 03 15 | 691 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.9− |
| 2004 03 27 | 291 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.1+ | | | | |

**2006 RM$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 297.96044 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.16873698 | $\omega$ | 68.10960 | | +0.12107640 | | −0.99240091 | | |
| $a$ | 3.2433653 | $\Omega$ | 14.98607 | | +0.87656282 | | +0.09652416 | | |
| $e$ | 0.0332312 | $i$ | 4.86508 | | +0.46580912 | | +0.07631203 | | |
| $P$ | 5.84 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.3+ | 0.0 | 2006 10 11 | 143 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2000 08 31 | 691 | 0.0 | 0.1+ | 2006 10 12 | 143 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2000 08 31 | 691 | 0.3− | 0.1− | 2006 10 13 | 143 | 0.4+ | 0.3− | 2006 10 20 | G96 | 0.6+ | 0.2− |
| 2003 02 09 | 291 | 0.0 | 0.3+ | 2006 10 13 | 143 | 0.5+ | 0.7+ | 2006 10 26 | 143 | 1.0+ | 0.5+ |
| 2003 02 09 | 291 | 0.1+ | 0.2− | 2006 10 13 | 143 | 0.5+ | 0.1− | 2006 10 26 | 143 | 0.6+ | 0.8+ |
| 2003 02 09 | 291 | 0.1− | 0.0 | 2006 10 13 | 143 | 1.4+ | 0.3− | 2006 10 27 | 691 | 0.2− | 0.4+ |
| 2006 09 14 | 691 | 0.5− | 0.5− | 2006 10 13 | 143 | 0.6+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.8− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.5− |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.5− | 0.6− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.4− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.3− |
| 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2006 10 10 | 143 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.0 | 0.5+ | | | | |
| 2006 10 10 | 143 | 0.4− | 0.3− | 2006 10 20 | G96 | 0.1− | 0.3− | | | | |

**2006 RN$_{50}$ = 2004 FP$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 148.14551 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21310670 | $\omega$ | 203.45730 | | −0.75502517 | | +0.65185754 | | |
| $a$ | 2.7759053 | $\Omega$ | 17.80370 | | −0.55892072 | | −0.58332955 | | |
| $e$ | 0.1478744 | $i$ | 13.39704 | | −0.34284782 | | −0.48457031 | | |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 704 | 0.4− | 0.2− | 2004 03 25 | 704 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2004 02 15 | 704 | 0.0 | 0.4+ | 2004 03 25 | 704 | 0.5− | 1.2− | 2006 09 25 | G96 | 0.6− | 0.3+ |
| 2004 02 15 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.4− | 0.2− |
| 2004 03 14 | 704 | 0.5+ | 1.5+ | 2006 09 14 | 691 | 0.2+ | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2004 03 14 | 704 | 0.7+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2004 03 14 | 704 | (1.5+ | 1.6+) | 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.2− |
| 2004 03 14 | 704 | 0.4− | 1.1− | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.8+ | 0.1− |
| 2004 03 23 | 704 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2004 03 23 | 704 | 0.6− | 0.4− | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.6+ |
| 2004 03 23 | 704 | 0.1− | 1.3− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.9+ | 0.1− |
| 2004 03 23 | 704 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.6+ | | | | |
| 2004 03 25 | 704 | 0.3+ | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.1− | | | | |

**2006 RQ$_{50}$ = 2004 ES$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 275.65114 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22748943 | $\omega$ | 87.08283 | | −0.24306311 | | −0.96913571 | | |
| $a$ | 2.6576344 | $\Omega$ | 17.15509 | | +0.82525117 | | −0.22891759 | | |
| $e$ | 0.0363503 | $i$ | 8.02664 | | +0.50978509 | | −0.09150253 | | |
| $P$ | 4.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.2− |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.5− | 0.2+ |
| 2004 03 15 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.4− | 0.2+ |
| 2004 04 13 | 691 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.7− | 0.5− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2004 04 13 | 691 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 10 13 | A50 | 0.7+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.9− |
| 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 13 | A50 | 0.7+ | 0.4− | 2006 11 15 | G96 | 0.6+ | 0.1− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 13 | A50 | 0.4+ | 1.0+ | 2006 11 15 | G96 | 0.9+ | 0.1− |
| 2006 09 18 | 691 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1− | | | | |

**2006 RR$_{50}$ = 2001 UX$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.46453 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19557042 | $\omega$ | 92.60344 | | −0.31251960 | | −0.94986304 |
| $a$ | 2.9394581 | $\Omega$ | 15.61797 | | +0.85678156 | | −0.28621917 |
| $e$ | 0.0756628 | $i$ | 2.03854 | | +0.41019126 | | −0.12585229 |
| $P$ | 5.04 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 19 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 13 | 143 | 0.9− | 1.6− |
| 1996 11 19 | 691 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.4− | 0.3+ | 2006 10 13 | A50 | 0.5− | 0.0 |
| 1996 11 19 | 691 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2001 10 17 | 291 | 0.4+ | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2001 10 17 | 291 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.5+ | 0.5+ |
| 2001 10 17 | 291 | 0.7+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 10 21 | 291 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 291 | 0.2− | 0.4− | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2001 10 21 | 291 | 0.1− | 0.1− | 2006 10 13 | 143 | 0.5− | 0.6+ | | | | |
| 2006 09 14 | 691 | 0.6− | 0.3+ | 2006 10 13 | 143 | 1.0+ | 0.9− | | | | |

**2006 RS$_{50}$ = 1997 NU$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.17012 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22792405 | $\omega$ | 123.27955 | | +0.81857134 | | +0.57433774 |
| $a$ | 2.6542548 | $\Omega$ | 201.67119 | | −0.53459835 | | +0.75616281 |
| $e$ | 0.2057561 | $i$ | 1.36263 | | −0.21010845 | | +0.31361436 |
| $P$ | 4.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 06 | 691 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 1997 07 06 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.6− | 0.6− |
| 1997 07 06 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.8− |
| 1997 07 10 | 691 | 0.2+ | 0.1− | 2006 10 15 | 703 | (0.3+ | 2.1+) | 2006 11 11 | G96 | 0.0 | 0.9− |
| 1997 07 10 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.6+ | 0.9+ | 2006 11 11 | G96 | 0.4− | 0.5− |
| 1997 07 10 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | (0.3+ | 1.6+) | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 15 | 703 | 0.5+ | 1.5+ | 2006 11 22 | G96 | (1.6+ | 0.8−) |
| 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.6+ | 2006 11 22 | G96 | 1.0+ | 0.9− |
| 2006 09 14 | 691 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.4+ | 0.5− | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.8− | 0.5− | | | | |
| 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.7− | 0.4− | | | | |

**2006 RV$_{50}$ = 2004 GP$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.74685 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23234953 | $\omega$ | 276.16071 | | −0.35845062 | | −0.93250518 |
| $a$ | 2.6204438 | $\Omega$ | 195.07465 | | +0.90951607 | | −0.33817627 |
| $e$ | 0.0948379 | $i$ | 9.76868 | | +0.21046062 | | −0.12677103 |
| $P$ | 4.24 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2004 03 26 | 691 | 0.1+ | 0.5− | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.4+ |
| 2004 03 26 | 691 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1+ |
| 2004 04 12 | 691 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 2004 04 12 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.6− |
| 2004 04 12 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.5− | 0.5+ | 2006 10 31 | G96 | 0.5+ | 0.0 |
| 2004 04 22 | 691 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 31 | G96 | 0.7+ | 0.2− |
| 2004 04 22 | 691 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− | | | | |

**2006 RA$_{51}$ = 2004 FS$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.43080 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18252252 | $\omega$ | 277.32634 | | +0.38147057 | | +0.92400538 |
| $a$ | 3.0779277 | $\Omega$ | 15.18019 | | −0.80344674 | | +0.34552464 |
| $e$ | 0.1211180 | $i$ | 5.77504 | | −0.45711436 | | +0.16378882 |
| $P$ | 5.40 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2004 03 17 | 691 | 0.3− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 03 18 | 704 | 1.0+ | 0.1+ | 2006 09 30 | 691 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 03 18 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2004 03 18 | 704 | 0.6− | 0.5− | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2004 03 18 | 704 | 0.6− | 1.1+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.7− | 0.4− |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.5− |
| 2006 09 18 | 691 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.8+ | 0.1+ |
| 2006 09 18 | 691 | 0.1− | 0.4− | 2006 10 20 | G96 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2006 09 18 | 691 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.2− | | | | |

**2006 RH$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.06860 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22164987 | $\omega$ | 60.83922 | | +0.50114276 | | −0.86536462 |
| $a$ | 2.7041102 | $\Omega$ | 359.08512 | | +0.79102866 | | +0.45815638 |
| $e$ | 0.2791551 | $i$ | 0.47830 | | +0.35089827 | | +0.20306848 |
| $P$ | 4.45 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 824 | 0.7+ | 0.4+ | 2006 09 25 | G96 | 0.5+ | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 1997 09 28 | 824 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 1997 09 28 | 824 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2003 01 04 | 291 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2003 01 04 | 291 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2003 01 04 | 291 | 0.6+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2003 01 11 | 291 | 0.2− | 0.2− | 2006 09 28 | 699 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2003 01 11 | 291 | 0.4− | 0.3− | 2006 09 28 | 699 | 0.2− | 0.6− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2003 01 11 | 291 | 0.2− | 0.0 | 2006 09 28 | 699 | 0.3− | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2003 01 30 | 699 | 0.5− | 0.8− | 2006 09 28 | 699 | 0.6− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2003 01 30 | 699 | 0.9− | 0.4− | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2003 01 30 | 699 | (1.7+ | 0.2−) | 2006 09 30 | 691 | 0.5− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2003 01 30 | 699 | 0.4+ | 0.5− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5− | 0.9+ |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.6− | 1.2+ |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.4− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.7+ |
| 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.6− | 1.3− |
| 2006 09 18 | 699 | 0.4+ | 0.7+ | 2006 10 21 | 703 | 0.4+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 699 | 1.0− | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2006 09 18 | 699 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.3+ | 0.5− | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2006 09 25 | G96 | 1.2− | 1.3+ | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.3− |

**2006 RP$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.54571 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18985147 | $\omega$ | 41.68669 | | +0.47631743 | | −0.87733040 |
| $a$ | 2.9981964 | $\Omega$ | 20.08487 | | +0.75500668 | | +0.37404243 |
| $e$ | 0.0783235 | $i$ | 9.79485 | | +0.45065133 | | +0.30063871 |
| $P$ | 5.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 327 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 1996 11 18 | 327 | 0.3− | 0.8− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 1996 11 18 | 327 | 0.7+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2001 11 10 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 10 27 | 691 | 1.1+ | 1.0− |
| 2001 11 10 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2001 11 10 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1+ |
| 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.5− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 21 | 703 | 0.8− | 0.6+ | 2006 11 11 | 703 | 0.6− | 1.4+ |
| 2006 09 25 | 691 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.7+ | 0.2− | 2006 11 11 | 703 | 1.0− | 0.1+ |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.1− |

**2006 RS$_{51}$ = 2004 HF$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.38731 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23010632 | $\omega$ | 95.26185 | | −0.39922900 | | −0.91653061 |
| $a$ | 2.6374466 | $\Omega$ | 18.32641 | | +0.80769617 | | −0.36409005 |
| $e$ | 0.1574762 | $i$ | 4.42245 | | +0.43386991 | | −0.16555991 |
| $P$ | 4.28 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.4+ |
| 2004 04 16 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.5− | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.4+ |
| 2004 04 16 | 691 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2004 04 21 | 291 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2004 04 21 | 291 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.9− | 0.4− |
| 2004 04 21 | 291 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.5− | 2006 10 20 | G96 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.5− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.4− | 0.0 | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | (2.1+ | 2.0+) | 2006 11 27 | G96 | 0.4− | 0.6− |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.5+ | | | | |

**2006 RW$_{51}$ = 2005 JM$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.12193 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21791733 | $\omega$ | 253.48796 | | +0.18819103 | | +0.98200005 |
| $a$ | 2.7349006 | $\Omega$ | 27.37509 | | −0.88718596 | | +0.17701798 |
| $e$ | 0.2003323 | $i$ | 2.00977 | | −0.42128994 | | +0.06588275 |
| $P$ | 4.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.2− | 0.4− | 2005 05 09 | G96 | 0.3− | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.3− |
| 2001 08 14 | 608 | 0.2+ | 0.4− | 2005 05 09 | G96 | 0.4− | 0.6+ | 2006 10 13 | A50 | 0.5− | 0.4+ |
| 2001 08 14 | 608 | 0.2+ | 1.1− | 2005 05 09 | G96 | 0.1− | 0.5+ | 2006 10 13 | A50 | 0.5+ | 0.6+ |
| 2001 08 25 | 704 | 0.1− | 0.2+ | 2006 09 14 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 2001 08 25 | 704 | 0.3+ | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 2001 08 25 | 704 | 0.2− | 0.7+ | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.4− |
| 2002 12 05 | 950 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.8− | 0.7− |
| 2002 12 05 | 950 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.2− | 0.3− |
| 2002 12 05 | 950 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.8− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2005 03 11 | G96 | 0.1− | 0.6− | 2006 09 19 | J75 | (3.3+ | 1.1−) | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2005 03 11 | G96 | 0.3− | 0.0 | 2006 09 19 | J75 | 0.9+ | 1.2− | 2006 10 19 | 695 | 0.0 | 0.2+ |
| 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 19 | 695 | 0.0 | 0.2+ |
| 2005 03 11 | G96 | 0.6− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.5− |
| 2005 05 07 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2005 05 07 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.1+ |
| 2005 05 07 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.6− | 0.9− |
| 2005 05 09 | 704 | 0.2+ | 1.5− | 2006 09 25 | G96 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.3− | 0.0 |
| 2005 05 09 | 704 | 0.2− | 0.9− | 2006 09 25 | 691 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2005 05 09 | 704 | 1.5+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.0 | 1.0− |
| 2005 05 09 | G96 | 0.0 | 0.2+ | 2006 10 03 | 691 | 0.4− | 0.4− | 2006 11 13 | G96 | 0.2− | 0.1− |

**2006 RA$_{52}$ = 2002 XR$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.35637 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21979861 | $\omega$ | 99.85509 | | −0.63190668 | | −0.77442245 |
| $a$ | 2.7192727 | $\Omega$ | 29.40743 | | +0.68400971 | | −0.57607276 |
| $e$ | 0.0469460 | $i$ | 3.62506 | | +0.36445118 | | −0.26155315 |
| $P$ | 4.48 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.3− | 0.1− | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2001 08 23 | 699 | 0.4+ | 0.5+ | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.3+ |
| 2001 08 23 | 699 | 0.7− | 0.8+ | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2001 08 23 | 699 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2002 12 06 | 704 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.7− | 0.5− | 2006 09 19 | J75 | (0.1− | 2.1+) | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2002 12 06 | 704 | 0.6+ | 0.0 | 2006 09 19 | J75 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.6+ |
| 2002 12 10 | 644 | 0.4− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2002 12 10 | 644 | 0.5+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 12 10 | 644 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2004 04 14 | 691 | 0.1+ | 0.6+ | 2006 09 29 | 691 | 0.6− | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 04 14 | 691 | 0.2+ | 0.5+ | 2006 09 29 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 691 | 0.5− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2004 04 15 | 644 | 0.4+ | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2004 04 15 | 644 | 0.3+ | 0.6+ | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2004 04 15 | 644 | 0.6+ | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 10 13 | A50 | 0.0 | 0.5− | 2006 11 13 | G96 | 0.9+ | 0.7− |
| 2004 04 19 | 691 | 0.0 | 0.6+ | 2006 10 13 | A50 | 0.5+ | 0.4− | 2006 11 13 | G96 | 0.4+ | 0.6− |
| 2004 04 19 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1− | | | | |

**2006 RG$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.47828 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21386470 | $\omega$ | 128.60563 | | +0.72467182 | | +0.68900026 |
| $a$ | 2.7693423 | $\Omega$ | 187.86670 | | −0.65525190 | | +0.68387876 |
| $e$ | 0.0378417 | $i$ | 4.76741 | | −0.21329720 | | +0.23997600 |
| $P$ | 4.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 291 | 0.0 | 0.6− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2001 09 20 | 291 | 0.1+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2001 09 20 | 291 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2− |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.5− | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.3+ |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2004 03 31 | 291 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2004 03 31 | 291 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2004 03 31 | 291 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2004 04 24 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 04 24 | 691 | 0.8+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.5− | 0.3− |
| 2004 04 24 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3− | | | | |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 1.0− | 0.5− | | | | |

**2006 RK$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.08035 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21194175 | $\omega$ | 265.09988 | +0.07422776 | | −0.99724123 | |
| $a$ | 2.7860680 | $\Omega$ | 180.64372 | +0.92917916 | | +0.06931517 | |
| $e$ | 0.1082617 | $i$ | 2.15043 | +0.36209989 | | +0.02655833 | |
| $P$ | 4.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.2− |
| 1999 03 20 | 645 | 0.1+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2001 08 27 | 691 | 0.1− | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2001 08 27 | 691 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2001 08 27 | 691 | 0.4− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 09 19 | 704 | 0.8+ | 1.1+ | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | (1.9+ | 1.4+) | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.8+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.6+ | 0.0 |
| 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.4− | 0.3+ |
| 2004 05 21 | 691 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.7+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2004 05 21 | 691 | 0.4+ | 0.3+ | 2006 10 15 | 703 | 0.4− | 1.3+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 15 | 703 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2006 07 21 | G96 | 0.3− | 0.4− | 2006 10 15 | 703 | 0.3− | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 07 21 | G96 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2006 07 21 | G96 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.0 | | | | |

**2006 RN$_{52}$ = 2004 GB$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.22218 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23413217 | $\omega$ | 120.14086 | −0.77568104 | | −0.62501719 | |
| $a$ | 2.6071258 | $\Omega$ | 21.56492 | +0.46532616 | | −0.66013265 | |
| $e$ | 0.2032295 | $i$ | 13.78687 | +0.42636896 | | −0.41662741 | |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.0 | 0.5+ | 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2004 04 12 | 644 | 0.3− | 1.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2004 04 12 | 644 | 0.5− | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 2004 04 20 | 704 | 0.2− | 1.1− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.5− | 0.0 |
| 2004 04 20 | 704 | 1.4+ | 0.3− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2004 04 20 | 704 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.1+ |
| 2004 04 20 | 704 | 0.7+ | 0.3− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 2004 04 20 | 704 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.4− | 0.4− | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2004 04 20 | 704 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3+ |
| 2004 04 20 | 704 | 0.7− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2004 04 20 | 704 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.4− | 0.0 | | | | |

**2006 RO$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.89714 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23015993 | $\omega$ | 116.21891 | +0.53396641 | | +0.84548277 | |
| $a$ | 2.6370371 | $\Omega$ | 186.06609 | −0.79524031 | | +0.49970778 | |
| $e$ | 0.0569578 | $i$ | 3.37702 | −0.28718065 | | +0.18828439 | |
| $P$ | 4.28 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2000 04 02 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2000 04 02 | 691 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2000 04 02 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.4− |
| 2004 02 22 | 691 | 0.2+ | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2004 02 22 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.4− | 0.5− |
| 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.1+ |

**2006 RQ$_{52}$ = 1997 UR$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.62665 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21642368 | $\omega$ | 267.37113 | +0.42360095 | | +0.90525403 | |
| $a$ | 2.7474694 | $\Omega$ | 27.76419 | −0.80058868 | | +0.39108555 | |
| $e$ | 0.0365405 | $i$ | 4.04051 | −0.42381599 | | +0.16603384 | |
| $P$ | 4.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 11 | 691 | 0.4− | 0.6− | 2006 10 03 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1997 10 11 | 691 | 0.8− | 0.7− | 2006 10 03 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.8− | 0.4+ |
| 1997 10 11 | 691 | 0.1− | 0.1− | 2006 10 13 | A50 | 0.7+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 1997 10 23 | 691 | 0.1+ | 0.9+ | 2006 10 13 | A50 | 0.6+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 1997 10 23 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 1997 10 23 | 691 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 1997 11 01 | 691 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 1997 11 01 | 691 | 0.7+ | 0.1+ | 2006 10 20 | 644 | 0.6− | 0.2− | 2006 11 11 | G96 | 0.6− | 0.3− |
| 1997 11 01 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.6− |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.7− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.5− | 0.2− |
| 2006 09 18 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.8− | 0.4− | | | | |

**2006 RT$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.70318 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29480423 | $\omega$ | 52.84604 | +0.34990401 | | −0.93629373 | |
| $a$ | 2.2358718 | $\Omega$ | 16.75062 | +0.82263928 | | +0.29160769 | |
| $e$ | 0.1591214 | $i$ | 6.04517 | +0.44814262 | | +0.19575238 | |
| $P$ | 3.34 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 12 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.6− | 2006 10 21 | 703 | 0.2+ | 0.3+ |
| 1996 09 12 | 691 | 0.5+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.1− | 0.1− |
| 1996 09 12 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.1+ |
| 1996 10 08 | 691 | 0.0 | 0.8− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.6− | 0.5− |
| 1996 10 08 | 691 | 0.1+ | 0.5− | 2006 09 27 | 704 | 0.8− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1996 10 08 | 691 | 0.1+ | 0.5− | 2006 09 27 | 704 | (0.9+ | 1.7+) | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 12 27 | 691 | 0.3− | 0.2− | 2006 09 27 | 704 | 0.6− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2003 12 27 | 691 | 0.2+ | 0.4− | 2006 09 27 | 704 | 0.3− | 1.3+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2003 12 27 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2003 12 29 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2003 12 29 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2003 12 29 | 704 | 0.2− | 1.2+ | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.0 |
| 2003 12 29 | 704 | 1.0+ | 0.8+ | 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.7+ |
| 2003 12 29 | 704 | 0.7− | 0.7+ | 2006 10 15 | 691 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2006 09 14 | 691 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | | | | |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ | | | | |

**2006 RZ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.85870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26663518 | $\omega$ | 240.14865 | | +0.59664266 | −0.80248904 | |
| $a$ | 2.3906963 | $\Omega$ | 173.21395 | | +0.75108602 | +0.55604154 | |
| $e$ | 0.1994527 | $i$ | 2.60664 | | +0.28264344 | +0.21640045 | |
| $P$ | 3.70 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 07 | 691 | 0.4+ | 0.1− | 2006 09 28 | 699 | 0.5− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | |
| 1991 09 07 | 691 | 0.4− | 0.8− | 2006 09 28 | 699 | 1.0+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 1991 09 07 | 691 | 0.5+ | 0.5− | 2006 10 15 | 703 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.0 | |
| 2002 08 12 | 807 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.9+ | 0.7+ | 2006 10 28 | 691 | 0.3+ | 0.3+ | |
| 2002 08 12 | 807 | 0.4− | 0.1+ | 2006 10 15 | 703 | 0.6− | 0.5− | 2006 10 28 | 691 | 0.1− | 0.1+ | |
| 2002 10 07 | 291 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.0 | |
| 2002 10 07 | 291 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 1.1+ | 0.7− | |
| 2002 10 07 | 291 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ | |
| 2006 07 21 | G96 | 0.6+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.3+ | |
| 2006 07 21 | G96 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.0 | |
| 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.7+ | |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.4− | |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− | |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.1− | |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.4− | 0.2− | |
| 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.1− | |
| 2006 09 18 | 691 | 0.5− | 0.3+ | 2006 10 21 | 703 | 1.1− | 1.3− | 2006 11 19 | 691 | 0.2− | 0.0 | |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.4+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.0 | |
| 2006 09 28 | 699 | 0.5+ | 0.4− | 2006 10 21 | 703 | 0.9− | 0.8− | 2006 11 19 | 691 | 0.2+ | 0.1− | |
| 2006 09 28 | 699 | 1.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | | | | | |

**2006 RC$_{53}$ = 2002 XU$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.25512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23224095 | $\omega$ | 25.21951 | | +0.22070189 | −0.97516684 | |
| $a$ | 2.6212605 | $\Omega$ | 52.03563 | | +0.89084564 | +0.19384561 | |
| $e$ | 0.1941411 | $i$ | 1.34076 | | +0.39709536 | +0.10711446 | |
| $P$ | 4.24 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.5− | |
| 2002 12 05 | 704 | 0.7+ | 0.3+ | 2006 09 25 | G96 | 0.5− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.2+ | |
| 2002 12 05 | 704 | 0.5− | 0.9+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.2− | |
| 2002 12 08 | 333 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.7+ | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.7− | |
| 2002 12 08 | 333 | 0.7+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.6− | |
| 2002 12 08 | 333 | 1.1− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.6− | |
| 2002 12 10 | 704 | 0.5− | 1.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 | |
| 2002 12 10 | 704 | 0.6− | 0.6− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.3+ | |
| 2002 12 10 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.3+ | 0.0 | |
| 2002 12 10 | 704 | 1.0+ | 0.1− | 2006 10 21 | 644 | 0.8+ | 0.2− | 2006 11 22 | G96 | 0.0 | 0.6− | |
| 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.6− | |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.8− | |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.6− | |
| 2006 09 18 | 691 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | | | | |
| 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | | | | |

**2006 RD$_{53}$ = 2005 EU$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.40450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26390241 | $\omega$ | 97.71306 | | +0.08885275 | +0.99604433 | |
| $a$ | 2.4071721 | $\Omega$ | 177.38400 | | −0.92173118 | +0.08257898 | |
| $e$ | 0.1703913 | $i$ | 1.17272 | | −0.37751400 | +0.03280847 | |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.2+ | 0.0 | 2005 04 02 | 691 | 0.3+ | 0.1+ | 2006 09 14 | 691 | 0.4− | 0.3+ | |
| 2005 03 08 | G96 | 0.2− | 0.3− | 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.2− | 0.2+ | |
| 2005 03 08 | G96 | 0.1− | 0.3− | 2005 04 10 | G96 | 0.6− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.0 | |
| 2005 03 08 | G96 | 0.1− | 0.2− | 2005 04 10 | G96 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2− | |
| 2005 03 17 | 691 | 0.0 | 0.4+ | 2005 04 10 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.0 | |
| 2005 03 17 | 691 | 0.1− | 0.2+ | 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.0 | |
| 2005 03 17 | 691 | 0.0 | 0.4+ | 2006 09 14 | 691 | 0.5− | 0.5+ | 2006 09 25 | G96 | 0.9+ | 0.5− | |
| 2005 04 02 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.9+ | 0.1− | |

**2006 RE$_{53}$ = 2005 JH$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.33982 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28766468 | $\omega$ | 261.18423 | | +0.18696028 | +0.98188179 | |
| $a$ | 2.2727152 | $\Omega$ | 19.67306 | | −0.86139421 | +0.17897158 | |
| $e$ | 0.1297769 | $i$ | 5.26411 | | −0.47227732 | +0.06226811 | |
| $P$ | 3.43 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.0 | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 1.0− | 0.1− | |
| 2005 04 06 | G96 | 0.4− | 0.5+ | 2006 09 14 | 691 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.3− | |
| 2005 04 06 | G96 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3− | 0.4+ | |
| 2005 04 06 | G96 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.5+ | |
| 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3− | |
| 2005 04 30 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.6+ | 0.1+ | |
| 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3− | |
| 2005 05 12 | 291 | 0.6+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.0 | |
| 2005 05 12 | 291 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.3− | |
| 2005 05 12 | 291 | 0.7+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1+ | |
| 2005 05 13 | G96 | 0.7− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.0 | 0.3− | |
| 2005 05 13 | G96 | 0.8− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 18 | 291 | 0.1+ | 0.4+ | |
| 2005 05 13 | G96 | 0.6− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 18 | 291 | 0.6− | 0.0 | |
| 2005 05 13 | G96 | 0.5− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.4− | 2006 11 18 | 291 | 0.6− | 0.3+ | |
| 2006 09 14 | 691 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.8− | 0.3− | | | | | |

**2006 RH$_{53}$ = 2002 VJ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.65860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24048538 | $\omega$ | 316.76822 | | +0.96922778 | +0.24441322 | |
| $a$ | 2.5610041 | $\Omega$ | 29.12268 | | −0.20624229 | +0.87128385 | |
| $e$ | 0.2725512 | $i$ | 3.45390 | | −0.13439354 | +0.42558974 | |
| $P$ | 4.10 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2002 11 05 | 704 | 0.7− | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2002 11 05 | 704 | 0.3− | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2002 11 05 | 704 | 0.0 | 0.1+ | 2006 10 13 | D35 | 0.5− | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.3− | |
| 2002 11 06 | 735 | 0.5+ | 0.3− | 2006 10 13 | D35 | 0.2− | 0.6− | 2006 10 27 | G96 | 0.5− | 0.3− | |
| 2002 11 06 | 735 | 1.2− | 0.5+ | 2006 10 13 | D35 | 0.2− | 0.7− | 2006 10 27 | G96 | 0.2− | 0.6− | |
| 2002 11 06 | 704 | (0.8+ | 1.8−) | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.5− | 0.6− | |
| 2002 11 06 | 704 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.6− | |
| 2002 11 06 | 704 | 0.7+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.1− | 0.2+ | |
| 2006 09 14 | 691 | 0.3− | 0.1+ | 2006 10 20 | H07 | 0.4− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.4+ | |
| 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 20 | H07 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 | |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 20 | H07 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1+ | |
| 2006 09 18 | 699 | 1.2+ | 1.4+ | 2006 10 21 | 703 | 0.2− | 1.1− | 2006 11 11 | 691 | 0.1− | 0.3+ | |
| 2006 09 18 | 699 | 0.8− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 1.0− | 2006 11 19 | 691 | 0.3+ | 0.1+ | |
| 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.1− | 0.8− | 2006 11 19 | 691 | 0.3+ | 0.1+ | |
| 2006 09 18 | 699 | (2.0+ | 1.8+) | 2006 10 21 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.0 | |

**2006 RJ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.93423 | | (2000.0) | | | |
| $n$ | 0.28820157 | $\omega$ | 196.23385 | | +0.90308426 | +0.42395788 |
| $a$ | 2.2698918 | $\Omega$ | 138.46546 | | −0.38163619 | +0.86542310 |
| $e$ | 0.1721215 | $i$ | 5.93362 | | −0.19695847 | +0.26702541 |
| $P$ | 3.42 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 28 | 950 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 02 28 | 950 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 10 22 | 703 | (0.3− | 1.6−) |
| 2001 02 28 | 950 | 0.1+ | 0.6+ | 2006 10 16 | 703 | (0.2+ | 1.6−) | 2006 10 22 | 703 | (1.8+ | 1.0−) |
| 2002 07 01 | 291 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 1.2− | 0.5− | 2006 10 22 | 703 | 0.5+ | 0.2− |
| 2002 07 01 | 291 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.4− | 2006 10 22 | 703 | 1.1− | 0.6+ |
| 2002 07 01 | 291 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2006 09 14 | 291 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2006 09 14 | 291 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.5− | 0.1+ |
| 2006 09 14 | 291 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.9+ | 0.9− |
| 2006 09 18 | 703 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.2+ | 0.9− |
| 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.8+ |
| 2006 09 18 | 703 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 10 28 | 703 | 1.1+ | 0.6+ |
| 2006 09 18 | 703 | 1.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.4+ | 2006 11 16 | 703 | 0.7+ | 0.1+ |
| 2006 09 26 | 703 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.3+ | 0.1+ |
| 2006 09 26 | 703 | 0.3+ | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.9+ | 0.2− |
| 2006 09 26 | 703 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 16 | 703 | 1.2− | 0.9+ |

**2006 RN$_{53}$ = 1999 TQ$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.96011 | | (2000.0) | | | |
| $n$ | 0.28060956 | $\omega$ | 339.84602 | | +0.99852380 | −0.04367239 |
| $a$ | 2.3106513 | $\Omega$ | 22.72981 | | +0.05370824 | +0.88256440 |
| $e$ | 0.1774600 | $i$ | 4.79444 | | −0.00810207 | +0.46815896 |
| $P$ | 3.51 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 691 | 0.2+ | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1999 10 12 | 691 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 1999 10 12 | 691 | 0.3+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 1999 10 20 | 691 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 1999 10 20 | 691 | 0.1+ | 0.1− | 2006 10 13 | A50 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 1999 10 20 | 691 | 0.0 | 0.3− | 2006 10 13 | A50 | 0.7− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | G96 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.3− | 0.0 |
| 2005 04 12 | G96 | 0.8+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2005 04 12 | G96 | 1.0− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2005 04 12 | G96 | 0.4− | 0.3− | 2006 10 16 | G96 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2006 09 14 | 691 | 0.5− | 0.1− | 2006 10 16 | G96 | 0.5+ | 0.2− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.7− | 0.1− |
| 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 18 | 106 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.7+ | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 18 | 106 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2006 09 18 | 699 | (2.4− | 0.4−) | 2006 10 18 | 106 | 0.6+ | 0.8+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.2− | 0.5+ | 2006 10 18 | 106 | 0.5+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.5+ |
| 2006 09 18 | 699 | 0.7− | 0.9+ | 2006 10 21 | 703 | 0.1+ | 0.5− | 2006 11 27 | G96 | 0.3− | 0.2+ |
| 2006 09 18 | 699 | (3.0+ | 0.0 ) | 2006 10 21 | 703 | 0.4+ | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2006 09 18 | 699 | 1.3+ | 1.1+ | 2006 10 21 | 703 | 0.8+ | 0.1− | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.5− | 0.3+ | | | | |
| 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3− | | | | |

**2006 RT$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.28795 | | (2000.0) | | | |
| $n$ | 0.31834975 | $\omega$ | 233.30467 | | +0.99597380 | +0.08728557 |
| $a$ | 2.1242211 | $\Omega$ | 121.67943 | | −0.07267147 | +0.91959217 |
| $e$ | 0.0834990 | $i$ | 1.37569 | | −0.05248856 | +0.38305544 |
| $P$ | 3.10 | $H$ | 18.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.1− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2000 11 24 | 691 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2000 11 24 | 691 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 04 19 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2002 04 19 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2002 04 19 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2003 10 22 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2003 10 22 | 691 | 0.2+ | 0.2+ | 2006 10 03 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2003 10 22 | 691 | 0.1+ | 0.9+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2003 11 21 | 691 | 0.3+ | 0.0 | 2006 10 03 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2003 11 21 | 691 | 0.2+ | 0.2− | 2006 10 15 | 703 | 0.2− | 1.2− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2003 11 21 | 691 | 0.0 | 0.2+ | 2006 10 15 | 703 | 1.2− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 10 15 | 703 | (0.2− | 1.6−) | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 10 15 | 703 | (2.3− | 0.5−) | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2005 04 11 | G96 | 0.4+ | 0.4− | 2006 10 17 | G96 | 0.3+ | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.5− | | | | |
| 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.6− | | | | |

**2006 RV$_{53}$ = 1995 UL$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.49440 | | (2000.0) | | | |
| $n$ | 0.18102737 | $\omega$ | 317.42937 | | +0.99295150 | +0.10568854 |
| $a$ | 3.0948520 | $\Omega$ | 36.60636 | | −0.06910819 | +0.88396598 |
| $e$ | 0.1552016 | $i$ | 5.16088 | | −0.09628800 | +0.45544932 |
| $P$ | 5.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.0 |
| 1995 10 20 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 1.0+ | 0.8− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 1995 10 20 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 1995 10 26 | 691 | 0.3+ | 0.6− | 2006 10 15 | 703 | (2.0− | 0.2+) | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 1995 10 26 | 691 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.9− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 1995 10 26 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.7− |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2+ |
| 2006 09 14 | 691 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.8− | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 22 | G96 | 0.5+ | 0.0 |
| 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.5+ | | | | |
| 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.0 | | | | |

**2006 RY$_{53}$ = 2004 HK$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.08292 | | (2000.0) | | | |
| $n$ | 0.18333471 | $\omega$ | 224.40293 | | +0.23572705 | +0.97039776 |
| $a$ | 3.0688306 | $\Omega$ | 59.29786 | | −0.87375482 | +0.23529920 |
| $e$ | 0.0297496 | $i$ | 3.50354 | | −0.42542363 | +0.05442854 |
| $P$ | 5.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.5− | 0.2− |
| 2004 04 16 | 691 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2004 04 16 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2004 04 22 | 691 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 04 22 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.7+ | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2006 09 14 | 691 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2006 09 14 | 691 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.7+ |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.2+ |

**2006 RB$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 136.19384 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23917542 | $\omega$ | 54.70827 | | −0.59428704 | | +0.80425115 | | |
| $a$ | 2.5703466 | $\Omega$ | 178.82565 | | −0.76260228 | | −0.56282483 | | |
| $e$ | 0.1094741 | $i$ | 4.84682 | | −0.25546167 | | −0.19080959 | | |
| $P$ | 4.12 | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 15 | 645 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2004 04 15 | 645 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3− | 0.4+ |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2+ |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.3+ |
| 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2+ |
| 2006 09 14 | 691 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.5+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | | | | |

**2006 RH$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 163.97293 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23385123 | $\omega$ | 182.05018 | | −0.86470725 | | +0.49441569 | | |
| $a$ | 2.6092135 | $\Omega$ | 28.13471 | | −0.45811705 | | −0.70408833 | | |
| $e$ | 0.1278630 | $i$ | 10.81901 | | −0.20593721 | | −0.50971830 | | |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.2− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2004 01 17 | 644 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2004 01 17 | 644 | 0.2− | 0.5− | 2006 10 03 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 02 11 | 644 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 02 11 | 644 | 0.3+ | 0.2− | 2006 10 03 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 02 11 | 644 | 0.4+ | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.2+ |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2006 09 14 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.6− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2006 09 14 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− | | | | |

**2006 RQ$_{54}$ = 2001 YZ$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 66.40912 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17380272 | $\omega$ | 271.01703 | | +0.62189233 | | +0.78093245 | | |
| $a$ | 3.1800333 | $\Omega$ | 37.64148 | | −0.67519171 | | +0.57239785 | | |
| $e$ | 0.0370020 | $i$ | 5.47427 | | −0.39669396 | | +0.25001041 | | |
| $P$ | 5.67 | $H$ | 15.6 | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.2+ | 0.7+ | 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2001 12 18 | 704 | (1.7+ | 1.2−) | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 19 | 695 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.1− | 0.6+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 20 | 695 | 0.1+ | 0.1+ |
| 2001 12 19 | 704 | 0.6+ | 0.9− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1− | 0.5+ |
| 2001 12 19 | 704 | 0.3− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2001 12 19 | 704 | 0.8− | 0.3− | 2006 10 15 | 703 | (2.0+ | 0.2+) | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2001 12 19 | 704 | 0.2− | 1.5− | 2006 10 15 | 703 | 0.4− | 0.8− | 2006 11 16 | 691 | 0.2+ | 0.8− |
| 2001 12 19 | 704 | 0.6− | 0.1− | 2006 10 15 | 703 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 12 20 | 644 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.8+ | 1.2+ | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2001 12 20 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | | | | |
| 2001 12 20 | 644 | 0.2+ | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.2− | | | | |

**2006 RV$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 322.50686 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18605044 | $\omega$ | 42.56054 | | +0.40410946 | | −0.91367979 | | |
| $a$ | 3.0388942 | $\Omega$ | 23.70370 | | +0.80749554 | | +0.33404455 | | |
| $e$ | 0.1595383 | $i$ | 6.19967 | | +0.42970513 | | +0.23152426 | | |
| $P$ | 5.30 | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 1.0+ | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2001 10 21 | 704 | 0.3+ | 0.6− | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.6+ | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 11 11 | 699 | 0.9+ | 1.0+ | 2006 09 18 | 691 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2001 11 11 | 699 | 1.0− | 1.4− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2001 11 11 | 699 | 0.8− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.8− | 0.2− |
| 2001 11 11 | 699 | 0.9− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2001 11 24 | 704 | 0.4− | 0.6− | 2006 10 15 | 703 | 0.7+ | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2001 11 24 | 704 | 0.8− | 0.8+ | 2006 10 15 | 703 | 0.7− | 1.3+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 11 24 | 704 | 0.6+ | 0.3+ | 2006 10 15 | 703 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2001 11 24 | 704 | 0.6− | 1.3+ | 2006 10 15 | 703 | (0.3− | 1.6−) | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2003 03 23 | 645 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2003 03 23 | 645 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.7− | 2006 11 27 | G96 | 0.3− | 0.5− |

**2006 RW$_{54}$ = 1997 ST$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 7.07930 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22375304 | $\omega$ | 187.19994 | | +0.99797130 | | −0.06359432 | | |
| $a$ | 2.6871387 | $\Omega$ | 176.44205 | | +0.06056239 | | +0.93369452 | | |
| $e$ | 0.1757847 | $i$ | 2.77902 | | +0.01963386 | | +0.35237808 | | |
| $P$ | 4.40 | $H$ | 17.1 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1+ |
| 1997 09 28 | 691 | 0.3− | 0.0 | 2006 09 18 | 691 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.5+ | 1.1− |
| 1997 09 28 | 691 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− |
| 1997 10 06 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 1.0+ | 0.4− |
| 1997 10 06 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.5− |
| 1997 10 06 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 1.1+ | 0.6+ |
| 1997 11 02 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.9+ | 0.6+ |
| 1997 11 02 | 691 | 0.0 | 0.1− | 2006 09 29 | 691 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.7+ | 1.0+ |
| 1997 11 02 | 691 | 0.1− | 0.1+ | 2006 09 29 | 691 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.3− |
| 2006 07 21 | G96 | 0.0 | 0.6− | 2006 09 29 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2006 07 21 | G96 | 0.5+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 03 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2006 09 14 | 703 | 0.8− | 0.1− | 2006 10 15 | 703 | 0.4+ | 1.0− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2006 09 14 | 703 | (1.5− | 0.2−) | 2006 10 15 | 703 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2006 09 14 | 703 | 0.5+ | 0.6+ | 2006 10 15 | 703 | 0.3− | 0.6− | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2006 09 14 | 703 | 0.8+ | 1.3− | 2006 10 15 | 703 | 1.4− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | | | | |
| 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1+ | | | | |

**2006 RB$_{55}$ = 2001 SD$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 55.91650 | | (2000.0) | | | |
| $n$ | 0.21013127 | $\omega$ | 199.47177 | | +0.69540059 | +0.71812267 |
| $a$ | 2.8020482 | $\Omega$ | 114.59787 | | −0.65535429 | +0.64903284 |
| $e$ | 0.0589124 | $i$ | 1.68857 | | −0.29483686 | +0.25110996 |
| $P$ | 4.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.1− | 0.3− | 2001 09 21 | 704 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.1+ |
| 1999 02 07 | 691 | 0.1+ | 0.2+ | 2001 09 21 | 704 | 0.5− | 1.0− | 2006 09 25 | 691 | 0.2+ | 0.2+ |
| 1999 02 07 | 691 | 0.2− | 0.4− | 2004 03 15 | 691 | 0.1+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.7− | 0.7+ | 2004 03 15 | 691 | 0.3+ | 0.6+ | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.5− | 1.1+ | 2004 03 15 | 691 | 0.4+ | 0.8+ | 2006 10 03 | 691 | 0.4+ | 0.4+ |
| 2001 09 19 | 704 | 0.3− | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.2− | 2006 10 03 | 691 | 0.7− | 0.5− |
| 2001 09 19 | 704 | 0.0 | 0.8+ | 2006 09 14 | 691 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.2+ | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2001 09 21 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2001 09 21 | 704 | 0.7+ | 0.5− | 2006 09 18 | 691 | 0.3− | 0.2+ | | | | |

**2006 RE$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.32962 | | (2000.0) | | | |
| $n$ | 0.21597485 | $\omega$ | 190.37077 | | +0.98145144 | −0.19170890 |
| $a$ | 2.7512746 | $\Omega$ | 180.68362 | | +0.18074170 | +0.92681295 |
| $e$ | 0.1742789 | $i$ | 4.22143 | | +0.06391802 | +0.32290161 |
| $P$ | 4.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.5− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 1995 03 27 | 691 | 0.6+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1+ | 1.3+ |
| 1995 04 01 | 691 | 0.8− | 0.4− | 2006 09 29 | 691 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 1995 04 01 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 691 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1995 04 01 | 691 | 0.1+ | 0.7− | 2006 09 29 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.5− |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2004 03 17 | 691 | 0.1+ | 0.7+ | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.7− | 0.5+ |
| 2004 03 17 | 691 | 0.3+ | 0.4+ | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2006 07 22 | G96 | 0.7+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2006 07 22 | G96 | 0.7− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.4+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2006 07 22 | G96 | 0.3+ | 0.1+ | 2006 10 15 | 703 | (0.9− | 1.8−) | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2006 09 14 | 691 | 0.1− | 0.3+ | 2006 10 15 | 703 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | (2.5+ | 0.9+) | 2006 11 18 | G96 | 0.1+ | 0.6− |
| 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 15 | 703 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.3− | 0.2− |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.6− | 0.4− |
| 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 1.0− | 0.2− | | | | |

**2006 RH$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 325.09351 | | (2000.0) | | | |
| $n$ | 0.21451796 | $\omega$ | 25.08012 | | +0.57373802 | −0.81775632 |
| $a$ | 2.7637172 | $\Omega$ | 29.97099 | | +0.73514197 | +0.48949840 |
| $e$ | 0.0632764 | $i$ | 5.26236 | | +0.36109691 | +0.30276380 |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2+ | 1.2+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 16 | 291 | 0.1− | 0.1+ |
| 2002 12 11 | 704 | 0.3+ | 1.2+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | (1.6− | 2.1+) | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 16 | 291 | 0.0 | 0.0 |
| 2002 12 11 | 704 | (0.4+ | 2.3+) | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2002 12 11 | 704 | 1.1− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2003 01 05 | 704 | 0.1+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2003 01 05 | 704 | 0.1− | 0.3− | 2006 10 03 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2003 01 05 | 704 | 0.1− | 0.3− | 2006 10 03 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.3+ | 1.1− | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.5+ | 0.7− |
| 2003 01 05 | 704 | 0.6+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.6− | 0.8+ |
| 2004 03 29 | 691 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2004 03 29 | 691 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 03 29 | 291 | 0.4+ | 0.0 | 2006 10 15 | 703 | 0.6− | 1.0+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2004 03 29 | 691 | 0.4− | 0.1+ | 2006 10 15 | 703 | 1.0+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.5− |
| 2004 03 29 | 291 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.5+ | 0.6− | 2006 11 22 | G96 | 0.9+ | 0.3− |
| 2004 03 29 | 291 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 1.4+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.6+ |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.3+ |
| 2006 09 14 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1+ | | | | |
| 2006 09 14 | 691 | 0.4− | 0.1− | 2006 10 16 | 291 | 0.1− | 0.2+ | | | | |

**2006 RL$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 95.21989 | | (2000.0) | | | |
| $n$ | 0.23684316 | $\omega$ | 254.23159 | | +0.03817491 | +0.99596975 |
| $a$ | 2.5871929 | $\Omega$ | 18.53757 | | −0.79095119 | +0.07975235 |
| $e$ | 0.0685592 | $i$ | 14.79011 | | −0.61068722 | −0.04103436 |
| $P$ | 4.16 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.2− | 0.4+ | 2006 09 20 | 704 | (1.5+ | 0.7−) | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2002 10 10 | 704 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.5+ |
| 2002 10 10 | 704 | 1.3+ | 0.0 | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 10 16 | 644 | 0.5− | 0.8− | 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 1.0+ | 1.3− |
| 2002 10 16 | 644 | 0.5− | 0.8− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.7+ |
| 2002 10 16 | 644 | 0.3− | 0.9− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | 703 | 1.2− | 1.2− |
| 2002 11 05 | 704 | 1.5+ | 1.2+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.1− | 0.4− |
| 2002 11 05 | 704 | 0.1− | 0.8+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 11 05 | 704 | 0.5− | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 11 13 | 644 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2002 11 13 | 644 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 11 13 | 644 | 0.5− | 0.4− | 2006 09 27 | 704 | 0.1− | 0.8+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 09 27 | 704 | (1.5− | 0.2+) | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2006 08 24 | 644 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.0 | 0.7+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2006 08 24 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | (3.1− | 0.8+) | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2006 09 14 | 703 | 0.0 | 1.0− | 2006 09 29 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2006 09 14 | 703 | 0.3− | 0.2− | 2006 09 29 | 691 | 0.3− | 0.3− | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2006 09 14 | 703 | 1.2− | 0.9+ | 2006 09 29 | 691 | 0.1− | 0.1− | 2006 11 06 | 644 | 0.1+ | 0.0 |
| 2006 09 14 | 703 | (0.5− | 2.9−) | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.7− | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.7− | 0.6− |
| 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 13 | A50 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.5− | 0.1+ |
| 2006 09 18 | 691 | 0.4+ | 0.0 | 2006 10 13 | A50 | 0.4+ | 0.7− | 2006 11 13 | 703 | 0.5− | 1.2− |
| 2006 09 18 | 691 | 0.4+ | 0.4+ | 2006 10 13 | A50 | 0.3− | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2006 09 18 | 691 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2006 09 20 | 704 | 0.4+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2006 09 20 | 704 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.3− |

**2006 RM$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 294.20882 | | (2000.0) | | | |
| $n$ | 0.27147304 | $\omega$ | 265.48095 | | +0.03388522 | −0.99941160 |
| $a$ | 2.3622086 | $\Omega$ | 182.59510 | | +0.95719877 | +0.03398267 |
| $e$ | 0.0709228 | $i$ | 6.74177 | | +0.28744097 | +0.00465177 |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 09 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.6− | 1.2− |
| 1997 04 09 | 691 | 0.2− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.5− |
| 1997 04 09 | 691 | 0.4+ | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2005 06 14 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.9− |
| 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 07 22 | G96 | 0.3− | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.2− | 2006 10 22 | 644 | 0.2− | 0.2− | | |
| 2006 07 22 | G96 | 0.3+ | 0.3− | 2006 10 01 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.1− | | |
| 2006 07 22 | G96 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 2006 07 22 | G96 | 0.1+ | 1.0− | 2006 10 15 | 703 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.2− | | |
| 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.5+ | 2006 10 22 | G96 | 0.5+ | 0.0 | | |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.0 | 0.0 | | | | | | |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 15 | 703 | 1.3− | 1.1+ | | | | | | |

### 2006 RP$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 327.59703 | | (2000.0) | | | |
| $n$ | 0.26261369 | $\omega$ | 35.97659 | | +0.46331341 | −0.88591459 |
| $a$ | 2.4150408 | $\Omega$ | 26.44345 | | +0.80093371 | +0.40784999 |
| $e$ | 0.2142494 | $i$ | 2.86674 | | +0.37927020 | +0.22093829 |
| $P$ | 3.75 | $H$ | 17.3 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 10 18 | 106 | 0.4− | 0.0 | | |
| 1991 10 13 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 18 | 106 | 0.0 | 0.5− | | |
| 1991 10 13 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 18 | 106 | 0.1+ | 0.1− | | |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 10 18 | 106 | (0.4− | 2.1−) | | |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.0 | | |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 10 19 | 695 | 0.1− | 0.0 | | |
| 2002 08 29 | 644 | 0.3− | 0.2− | 2006 10 03 | 691 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.5+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.2− | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.3+ | 0.5+ | 2006 10 13 | A50 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.4+ | | |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 13 | A50 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.0 | | |
| 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 703 | (0.0 | 1.8+) | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 15 | 703 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.0 | | |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.6− | 0.6+ | 2006 11 11 | 703 | 0.6+ | 1.1− | | |
| 2006 09 18 | 699 | 0.3− | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.0 | | |
| 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5+ | | |
| 2006 09 18 | 699 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1+ | | |
| 2006 09 18 | 699 | 0.7+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.3− | 0.3− | | |
| 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 10 16 | G96 | 0.4− | 0.4− | 2006 11 13 | G96 | 0.1− | 0.2− | | |
| 2006 09 25 | G96 | 0.1+ | 0.7− | 2006 10 16 | G96 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3− | 0.4− | | |
| 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.0 | 0.4− | | |

### 2006 RR$_{55}$ = 2001 YC$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 349.93764 | | (2000.0) | | | |
| $n$ | 0.18000339 | $\omega$ | 233.10846 | | +0.85635695 | −0.51629203 |
| $a$ | 3.1065780 | $\Omega$ | 157.97029 | | +0.48166887 | +0.79182778 |
| $e$ | 0.1887745 | $i$ | 1.49152 | | +0.18613941 | +0.32626876 |
| $P$ | 5.48 | $H$ | 16.0 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.3+ | | |
| 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 21 | 703 | 1.1− | 0.0 | | |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.5+ | 0.0 | | |
| 2001 12 20 | 704 | (1.3+ | 1.6+) | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2001 12 20 | 704 | 0.4+ | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2001 12 20 | 704 | (0.9+ | 2.5+) | 2006 10 03 | 691 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2001 12 20 | 704 | (1.1− | 2.4+) | 2006 10 03 | 691 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2001 12 22 | 691 | 0.2− | 0.2− | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2001 12 22 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.4− | | |
| 2001 12 22 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.1+ | | |
| 2002 01 15 | 704 | 0.8+ | 0.7+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2002 01 15 | 704 | 1.2+ | 0.4+ | 2006 10 15 | 703 | 0.1− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2002 01 15 | 704 | 0.3− | 0.3− | 2006 10 15 | 703 | 0.4− | 1.0− | 2006 11 11 | 703 | (2.3− | 0.1−) | | |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.2+ | 0.6− | 2006 11 11 | 703 | 0.3− | 0.7+ | | |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 15 | 703 | 0.7− | 1.0− | 2006 11 11 | 703 | 0.1− | 0.8− | | |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.9− | 0.1− | | |
| 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.5− | | |
| 2006 09 14 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1− | | |
| 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.2− | | |
| 2006 09 14 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3− | | | | | | |
| 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.9+ | 0.0 | | | | | | |

### 2006 RY$_{55}$ = 1997 JP$_{10}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 225.01475 | | (2000.0) | | | |
| $n$ | 0.25937299 | $\omega$ | 124.13588 | | −0.90496828 | −0.42244573 |
| $a$ | 2.4351154 | $\Omega$ | 30.96388 | | +0.35067076 | −0.80804209 |
| $e$ | 0.0567058 | $i$ | 5.65695 | | +0.24096148 | −0.41061854 |
| $P$ | 3.80 | $H$ | 17.3 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 05 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.8+ | 0.1− | | |
| 1997 05 05 | 691 | 0.1− | 0.5+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.3+ | | |
| 1997 05 05 | 691 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.3+ | | |
| 1997 05 14 | 691 | 0.0 | 0.6− | 2006 09 25 | 691 | 0.4+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 1.1− | | |
| 1997 05 14 | 691 | 0.2+ | 0.6− | 2006 10 03 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.1+ | 1.1+ | | |
| 1997 05 14 | 691 | 0.3+ | 0.3+ | 2006 10 03 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.1− | | |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.7− | 0.0 | 2006 11 22 | G96 | 0.7− | 0.3+ | | |
| 2006 09 14 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1− | 0.3− | | |
| 2006 09 14 | 691 | 0.6− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.6− | 0.1− | | |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.5− | 0.1− | | |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.4− | 0.7+ | | | | | | |

### 2006 RJ$_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 161.83836 | | (2000.0) | | | |
| $n$ | 0.19859747 | $\omega$ | 43.91838 | | −0.83801460 | +0.54559830 |
| $a$ | 2.9095126 | $\Omega$ | 169.14011 | | −0.51076919 | −0.77963786 |
| $e$ | 0.0228620 | $i$ | 2.23562 | | −0.19195405 | −0.30738785 |
| $P$ | 4.96 | $H$ | 16.4 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 691 | 0.2− | 0.3− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.4+ | 0.0 | | |
| 2001 09 21 | 704 | 0.6+ | 0.3− | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.2− | | |
| 2001 09 21 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.8+ | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.0 | | |
| 2001 09 21 | 704 | 0.8+ | 1.3+ | 2006 09 18 | 691 | 0.7− | 0.8+ | 2006 10 17 | G96 | 0.2+ | 0.0 | | |
| 2001 09 21 | 691 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.0 | 0.1+ | | |
| 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.5+ | | |
| 2004 03 27 | 704 | 0.1+ | 0.8+ | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.2− | 0.1− | | |
| 2004 03 27 | 704 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 03 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3+ | | |

### 2006 RK$_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.66775 | | (2000.0) | | | |
| $n$ | 0.26286841 | $\omega$ | 39.43602 | | +0.55464410 | −0.83200519 |
| $a$ | 2.4134805 | $\Omega$ | 16.88811 | | +0.75287247 | +0.49579558 |
| $e$ | 0.2093463 | $i$ | 2.31153 | | +0.35433453 | +0.24890583 |
| $P$ | 3.75 | $H$ | 17.7 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 695 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 13 | A50 | 1.0+ | 0.5+ | | |
| 2004 02 26 | 695 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.3+ | 0.7− | | |
| 2005 08 08 | 807 | 0.0 | 0.1+ | 2006 09 28 | 699 | 1.0− | 1.3+ | 2006 10 15 | 703 | 1.1− | 0.5+ | | |
| 2005 08 09 | 807 | 0.1+ | 0.0 | 2006 09 28 | 699 | 0.4+ | 0.5− | 2006 10 15 | 703 | 0.2+ | 1.0+ | | |
| 2005 08 09 | 807 | 0.0 | 0.0 | 2006 09 28 | 699 | 0.6+ | 0.5+ | 2006 10 15 | 703 | (1.8− | 1.3+) | | |
| 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 09 28 | 699 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 29 | 691 | 0.4− | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1+ | | |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 29 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.0 | | |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 09 29 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.3− | | |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 03 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2006 09 25 | 691 | 0.3− | 0.4− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.2− | | |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2006 09 25 | 691 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.0 | | |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 13 | A50 | 1.4+ | 0.4+ | | | | | | |

**2006 RN$_{56}$ = 2000 SH$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.42641 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17150691 | $\omega$ | 142.48309 | | +0.40316097 | | +0.91502609 |
| $a$ | 3.2083492 | $\Omega$ | 151.28536 | | −0.84638506 | | +0.37853859 |
| $e$ | 0.1954566 | $i$ | 1.63750 | | −0.34798501 | | +0.13941232 |
| $P$ | 5.75 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.3− | 0.1− | 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 09 29 | 691 | 0.3− | 0.5− | | |
| 2000 09 24 | 704 | 1.4− | 0.2+ | 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.9− | 0.6− | | |
| 2000 09 24 | 704 | 0.4− | 1.2+ | 2006 09 14 | 691 | (2.3+ | 1.2+) | 2006 10 15 | 703 | 0.2+ | 0.1− | | |
| 2000 09 24 | 704 | 1.1+ | 1.7+ | 2006 09 14 | 691 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.7− | 0.0 | | |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.8− | | |
| 2000 10 01 | 704 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.1+ | | |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.4− | 0.2+ | | |
| 2000 10 01 | 704 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.4− | 0.1+ | | |
| 2000 10 01 | 704 | 0.1− | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.6− | | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.4− | | |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2004 03 23 | 691 | 0.1− | 0.3+ | 2006 09 29 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.5− | | |
| 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 09 29 | 691 | 0.3+ | 0.1+ | | | | | | |

**2006 RP$_{56}$ = 2001 WQ$_{74}$ = 2003 ED$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.49269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18720950 | $\omega$ | 267.61781 | | +0.14344262 | | −0.98965352 |
| $a$ | 3.0263382 | $\Omega$ | 174.13221 | | +0.91991849 | | +0.13214780 |
| $e$ | 0.1359099 | $i$ | 1.78404 | | +0.36493040 | | +0.05588268 |
| $P$ | 5.26 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.8− | 0.4+ | 2003 03 11 | 291 | 0.0 | 0.6− | 2006 09 25 | 691 | 0.3+ | 0.1+ | | |
| 2001 11 20 | 704 | 0.6− | 0.5− | 2006 07 21 | G96 | 1.2+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.4− | | |
| 2001 11 20 | 704 | 1.1− | 0.7+ | 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | | |
| 2001 11 21 | 704 | 0.3+ | 0.7+ | 2006 07 21 | G96 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.4− | | |
| 2001 11 21 | 704 | 0.1− | 1.0+ | 2006 07 21 | G96 | 0.7− | 0.3− | 2006 09 26 | G96 | 0.4− | 0.1− | | |
| 2001 11 21 | 704 | 0.6+ | 1.2+ | 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 10 16 | G96 | 0.4+ | 0.4− | | |
| 2001 11 21 | 704 | 0.3− | 1.2+ | 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.2− | | |
| 2001 11 21 | 704 | 0.6+ | 0.3+ | 2006 09 14 | 691 | 0.3+ | 0.7− | 2006 10 16 | G96 | 0.4+ | 0.4− | | |
| 2003 03 09 | 291 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.4+ | 0.4− | | |
| 2003 03 09 | 291 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 29 | 291 | 0.3+ | 0.3− | | |
| 2003 03 09 | 291 | 1.0− | 0.3+ | 2006 09 18 | 691 | 0.9− | 0.2+ | 2006 10 29 | 291 | 0.4+ | 0.2− | | |
| 2003 03 11 | 291 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 29 | 291 | 0.4− | 0.1− | | |
| 2003 03 11 | 291 | 0.2+ | 0.6− | 2006 09 25 | 691 | 0.0 | 0.3+ | | | | | | |

**2006 RQ$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.22263 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28517750 | $\omega$ | 127.30603 | | +0.69301477 | | +0.72087878 |
| $a$ | 2.2859105 | $\Omega$ | 186.58096 | | −0.68160051 | | +0.65154978 |
| $e$ | 0.0623100 | $i$ | 4.01269 | | −0.23484310 | | +0.23625552 |
| $P$ | 3.46 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 29 | 704 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.9− | 0.3− | | |
| 1998 03 29 | 704 | (2.1+ | 1.5−) | 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.5+ | 0.4− | | |
| 1998 03 29 | 704 | 0.4− | 1.4+ | 2006 09 14 | 691 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.6− | 0.9− | | |
| 1998 03 29 | 704 | (2.2− | 2.1+) | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.1− | 0.0 | | |
| 1999 09 16 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.5− | | |
| 1999 09 16 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 1999 09 16 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.7+ | | |
| 2005 04 10 | G96 | 0.5+ | 0.3− | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2005 04 10 | G96 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2005 04 10 | G96 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.5+ | | |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.1− | | |
| 2005 05 09 | 704 | 1.2− | 0.6− | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 21 | 291 | 0.1+ | 0.1+ | | |
| 2005 05 09 | 704 | 1.3+ | 0.2− | 2006 09 26 | G96 | 0.9+ | 0.3− | 2006 10 21 | 291 | 0.2+ | 0.1+ | | |
| 2005 05 09 | 704 | (2.9+ | 1.8+) | 2006 09 29 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 291 | 0.3+ | 0.3+ | | |
| 2006 07 22 | G96 | 0.7− | 0.7− | 2006 09 29 | 691 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | |
| 2006 07 22 | G96 | 0.5− | 0.3− | 2006 09 29 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.5− | | |
| 2006 07 22 | G96 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.3− | | |
| 2006 07 22 | G96 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.0 | | |
| 2006 09 14 | 703 | 0.3+ | 0.9− | 2006 10 15 | 703 | 0.1+ | 1.0+ | 2006 11 16 | G96 | 0.1− | 0.2− | | |
| 2006 09 14 | 703 | 0.8− | 0.0 | 2006 10 15 | 703 | (1.5− | 0.2−) | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2006 09 14 | 703 | 0.4+ | 0.8+ | 2006 10 15 | 703 | 0.9− | 1.1− | 2006 11 16 | G96 | 0.1− | 0.2− | | |

**2006 RV$_{56}$ = 1997 UN$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.12400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21992421 | $\omega$ | 8.65705 | | +0.88669992 | | −0.46133034 |
| $a$ | 2.7182373 | $\Omega$ | 18.90853 | | +0.41833552 | | +0.77233494 |
| $e$ | 0.1688771 | $i$ | 5.42186 | | +0.19687215 | | +0.43666126 |
| $P$ | 4.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.2+ | 0.0 | 2006 09 29 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 1997 10 21 | 691 | 0.2+ | 0.2− | 2006 09 29 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.4− | 0.7+ | | |
| 1997 10 21 | 691 | 0.1+ | 0.5+ | 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2− | | |
| 1997 11 01 | 691 | 0.4− | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1− | 0.3+ | | |
| 1997 11 01 | 691 | 0.3− | 0.4+ | 2006 10 03 | 691 | 0.7− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 1997 11 01 | 691 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2006 09 14 | 691 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.5− | | |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 703 | 0.2+ | 1.0+ | 2006 11 11 | 703 | 0.1+ | 0.3+ | | |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.7− | 0.8+ | 2006 11 11 | 703 | 0.8− | 0.3− | | |
| 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 15 | 703 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.6+ | 0.7− | | |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.0 | 1.3− | | |
| 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.7+ | 0.2+ | | |
| 2006 09 25 | 691 | 0.8− | 0.8− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.2− | | |
| 2006 09 29 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.3− | | |

**2006 RZ$_{56}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.89774 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23283606 | $\omega$ | 20.97817 | | +0.68618273 | | −0.72694342 |
| $a$ | 2.6167921 | $\Omega$ | 25.71612 | | +0.65837617 | | +0.60509124 |
| $e$ | 0.0896332 | $i$ | 3.51203 | | +0.30934461 | | +0.32468117 |
| $P$ | 4.23 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.1− | 0.2− | 2004 03 15 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.1− | | |
| 2000 04 05 | 691 | 0.0 | 0.0 | 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− | | |
| 2000 04 05 | 691 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2001 05 23 | 807 | 0.0 | 0.2+ | 2006 09 14 | 691 | 0.2− | 0.6+ | 2006 10 16 | G96 | 0.2− | 0.4− | | |
| 2001 05 23 | 807 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.3− | 0.4+ | 2006 10 16 | G96 | 0.4− | 0.3− | | |
| 2002 11 05 | 644 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.4+ | 0.3− | 2006 10 16 | G96 | 0.1− | 0.3− | | |
| 2002 11 05 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.2− | | |
| 2002 11 05 | 644 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1− | | | | | | |
| 2004 03 15 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.0 | | | | | | |

**2006 RA$_{57}$ = 2002 PZ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.07413 | | | (2000.0) | | |
| $n$ | 0.26382588 | $\omega$ | 234.17442 | | +0.83970328 | −0.54283863 |
| $a$ | 2.4076376 | $\Omega$ | 158.69032 | | +0.51059004 | +0.77981905 |
| $e$ | 0.2436538 | $i$ | 2.36360 | | +0.18492217 | +0.31178272 |
| $P$ | 3.74 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.3− | 0.6+ | 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.4− |
| 2002 08 06 | 644 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.4− | 0.3− |
| 2002 08 06 | 644 | 0.5− | 0.8+ | 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.2− | 0.4− |
| 2002 08 07 | 644 | 0.2+ | 0.9+ | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2002 08 07 | 644 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.5− | 0.2− | 2006 10 16 | 703 | 0.8+ | 0.4− |
| 2002 08 07 | 644 | 0.3− | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.0 |
| 2004 02 17 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.9+ |
| 2004 02 17 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.8− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.8− |
| 2004 02 17 | 691 | 0.2+ | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.1− |
| 2004 02 29 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2004 02 29 | 691 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.1− | 1.2+ | 2006 10 22 | 703 | 1.0− | 0.1− |
| 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.7+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 27 | 704 | 1.4+ | 0.6+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 1.0+ | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2006 09 14 | 703 | 0.4− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.2− | | | | |

**2006 RM$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.91195 | | | (2000.0) | | |
| $n$ | 0.24628567 | $\omega$ | 44.31168 | | +0.18465667 | +0.98116336 |
| $a$ | 2.5206350 | $\Omega$ | 236.40826 | | −0.91957652 | +0.15211293 |
| $e$ | 0.0836229 | $i$ | 3.90631 | | −0.34681541 | +0.11908031 |
| $P$ | 4.00 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.4+ | 0.4− | 2002 08 17 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.1+ |
| 2002 08 07 | 644 | 0.0 | 0.7+ | 2002 08 26 | 644 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 2002 08 08 | 644 | 0.1+ | 0.3− | 2002 08 26 | 644 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.1+ |
| 2002 08 08 | 644 | 0.0 | 0.2− | 2002 08 26 | 644 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2002 08 08 | 644 | 0.4− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.4+ |
| 2002 08 17 | 644 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.4− | 2006 09 28 | G96 | 0.4− | 0.3− |
| 2002 08 17 | 644 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.5− |

**2006 RO$_{57}$ = 2004 GN$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 325.01411 | | | (2000.0) | | |
| $n$ | 0.18943685 | $\omega$ | 38.14189 | | +0.75990468 | −0.65003133 |
| $a$ | 3.0025695 | $\Omega$ | 2.40502 | | +0.58382093 | +0.68111680 |
| $e$ | 0.0882549 | $i$ | 2.78531 | | +0.28582862 | +0.33695575 |
| $P$ | 5.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.6+ | 0.2− | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 0.7+ | 0.5− | 2006 08 19 | 691 | 0.2− | 0.9+ | 2006 09 25 | G96 | 0.5− | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2006 08 28 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.6+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.5− |
| 2001 10 21 | 704 | 1.1− | 0.5+ | 2006 08 28 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.4+ |
| 2001 10 21 | 704 | 0.6− | 1.4+ | 2006 09 15 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 703 | (1.7− | 0.7+) |
| 2001 10 21 | 704 | (1.6+ | 0.1+) | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.7+ |
| 2001 10 21 | 704 | (1.7− | 0.1−) | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2003 01 29 | 645 | 0.0 | 0.1+ | 2006 09 18 | 699 | (0.9− | 1.8+) | 2006 10 16 | G96 | 0.3− | 0.3+ |
| 2003 01 29 | 645 | 0.0 | 0.1+ | 2006 09 18 | 699 | 0.5− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2004 04 13 | 691 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.5+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.8+ | 2006 10 23 | G96 | 0.5− | 0.2+ |
| 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.9− | 0.3− | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2004 04 20 | 691 | 0.6+ | 0.7+ | 2006 09 25 | 699 | (1.6+ | 0.7−) | 2006 10 23 | G96 | 1.4− | 0.1+ |
| 2004 04 20 | 691 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.2+ | 1.2− | 2006 10 23 | G96 | 0.6− | 0.6+ |
| 2004 04 20 | 691 | 0.3+ | 0.7+ | 2006 09 25 | 699 | (1.8− | 1.2+) | | | | |
| 2006 08 19 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1+ | | | | |

**2006 RR$_{57}$ = 2005 JF$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.55396 | | | (2000.0) | | |
| $n$ | 0.21960145 | $\omega$ | 122.32688 | | +0.41801943 | +0.90839433 |
| $a$ | 2.7209000 | $\Omega$ | 172.36676 | | −0.85441216 | +0.39647470 |
| $e$ | 0.0611750 | $i$ | 3.84893 | | −0.30860918 | +0.13276882 |
| $P$ | 4.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 08 | 691 | 0.7− | 0.1− | 2005 05 15 | G96 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.4− | 0.6+ |
| 1995 02 08 | 691 | 0.3+ | 0.1− | 2005 05 15 | G96 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.7− |
| 1995 02 08 | 691 | 0.2− | 0.4− | 2005 05 19 | G96 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.4− | 0.6+ |
| 2000 03 03 | 645 | 0.3+ | 0.0 | 2005 05 19 | G96 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.3− | 0.4+ |
| 2000 03 03 | 645 | 0.2+ | 0.0 | 2005 05 19 | G96 | 0.2− | 0.5− | 2006 09 30 | 691 | 0.4− | 0.7+ |
| 2000 04 05 | 704 | 0.6− | 0.7+ | 2005 05 19 | G96 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.5− | 0.3− |
| 2000 04 05 | 704 | 0.8+ | 1.0+ | 2006 07 22 | G96 | 0.5− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.5− |
| 2000 04 05 | 704 | 1.1+ | 1.3+ | 2006 07 22 | G96 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.0 | 0.4+ |
| 2000 04 05 | 704 | 0.3+ | 0.6+ | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2006 07 22 | G96 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.7+ |
| 2000 05 04 | 645 | 0.1− | 0.2+ | 2006 08 28 | 703 | 1.0− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.1− |
| 2001 06 24 | 691 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.3− | 0.9− | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 2001 06 24 | 691 | 0.2− | 0.0 | 2006 08 28 | 703 | 0.9+ | 0.5+ | 2006 09 30 | 703 | (0.8+ | 2.1+) |
| 2001 06 24 | 691 | 0.1− | 0.0 | 2006 08 28 | 703 | (2.1+ | 1.4+) | 2006 10 20 | G96 | 0.3− | 0.4− |
| 2001 07 21 | 608 | 0.3+ | 0.3+ | 2006 08 28 | 691 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2001 07 21 | 608 | 0.9+ | 0.4+ | 2006 08 28 | 691 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.7− | 0.2+ |
| 2001 07 21 | 608 | 0.6+ | 0.0 | 2006 08 28 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.4+ | 0.2+ |
| 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2005 05 15 | G96 | 0.4− | 0.2− | 2006 09 18 | 699 | 0.9+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2005 05 15 | G96 | 0.5− | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.3+ | | | | |

**2006 RW$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.25998 | | | (2000.0) | | |
| $n$ | 0.22299612 | $\omega$ | 266.82428 | | +0.89984804 | −0.43502983 |
| $a$ | 2.6932159 | $\Omega$ | 118.96085 | | +0.41332152 | +0.82691885 |
| $e$ | 0.1396053 | $i$ | 2.09450 | | +0.13942319 | +0.35630642 |
| $P$ | 4.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 10 | 691 | 0.4− | 0.5− | 2006 08 27 | 691 | 0.7− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 1998 12 10 | 691 | 0.2+ | 0.1+ | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1998 12 10 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | (1.9+ | 0.1+) |
| 2002 11 24 | 644 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | (1.6+ | 1.8+) |
| 2002 11 24 | 644 | 0.1− | 0.7+ | 2006 09 18 | 699 | (2.1+ | 0.6+) | 2006 09 30 | 703 | 1.2+ | 1.4+ |
| 2004 03 14 | 691 | 0.5+ | 0.6+ | 2006 09 18 | 699 | 0.6+ | 1.1+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2004 03 14 | 691 | 0.6+ | 1.0+ | 2006 09 18 | 699 | 0.6− | 0.7+ | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2004 03 14 | 691 | 0.1− | 1.1+ | 2006 09 18 | 699 | 0.9+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.5− |
| 2006 08 18 | 691 | 0.4− | 0.0 | 2006 09 19 | 703 | (1.9+ | 0.1−) | 2006 10 20 | G96 | 0.3+ | 0.5− |
| 2006 08 18 | 691 | 0.3− | 0.1+ | 2006 09 19 | 703 | (2.6− | 0.9+) | 2006 10 20 | G96 | 0.1− | 0.5− |
| 2006 08 18 | 691 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.1− | | | | |
| 2006 08 27 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.2+ | 1.5+ | | | | |

**2006 RY$_{57}$ = 2004 FD$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.85554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17522683 | $\omega$ | 297.88310 | | +0.61258707 | | +0.78992431 |
| $a$ | 3.1627799 | $\Omega$ | 10.03384 | | −0.65827768 | | +0.52914022 |
| $e$ | 0.0953154 | $i$ | 9.08395 | | −0.43750151 | | +0.30988744 |
| $P$ | 5.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.8− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2+ |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.1− | 0.5+ | 2006 10 20 | G96 | 0.3+ | 0.7+ |
| 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 09 18 | 699 | 1.0− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.4+ |
| 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 699 | 1.1− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.3+ |
| 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.1+ | 1.4+ | 2006 10 20 | G96 | 0.3− | 0.7+ |
| 2004 03 29 | 691 | 0.2+ | 0.6+ | 2006 09 18 | 699 | (2.5− | 3.2+) | 2006 10 20 | G96 | 0.0 | 0.7+ |
| 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.4+ |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.4+ |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.5+ |
| 2006 09 18 | 703 | 0.8− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.2+ | | | | |
| 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 09 30 | G96 | 0.1− | 0.1+ | | | | |

**2006 RB$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.58614 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23499044 | $\omega$ | 155.84632 | | +0.94362169 | | +0.33094452 |
| $a$ | 2.6007738 | $\Omega$ | 184.84525 | | −0.31609182 | | +0.89424792 |
| $e$ | 0.1489748 | $i$ | 4.98275 | | −0.09830596 | | +0.30132436 |
| $P$ | 4.19 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 695 | 0.5− | 0.0 | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.7− |
| 2005 04 11 | 695 | 0.4− | 0.1− | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2005 04 30 | 691 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2005 04 30 | 691 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2005 05 11 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.1+ |
| 2005 05 11 | 691 | 0.3− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 2005 05 11 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 1.0− | 0.5+ | 2006 10 09 | 644 | 0.4+ | 0.2− |
| 2006 09 15 | 691 | 0.4+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.1+ |
| 2006 09 18 | 699 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.9− | 1.0+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 699 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.8− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2006 09 18 | 699 | 0.3+ | 0.4+ | 2006 09 28 | 704 | 0.4− | 0.7− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2006 09 18 | 699 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 28 | 704 | 1.0− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.9− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2006 09 23 | 691 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.3− |

**2006 RH$_{58}$ = 2002 TR$_{341}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.94054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24539281 | $\omega$ | 173.06400 | | +0.99875726 | | +0.04367464 |
| $a$ | 2.5267454 | $\Omega$ | 184.64032 | | −0.04603169 | | +0.99303456 |
| $e$ | 0.2697481 | $i$ | 17.26421 | | +0.01910532 | | +0.10942985 |
| $P$ | 4.02 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 704 | (0.7+ | 3.0+) |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 10 01 | 704 | 0.3− | 1.7+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.6− | 2006 10 10 | 644 | 0.5+ | 0.2+ |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.4− | 1.4+ | | | | |

**2006 RM$_{58}$ = 2005 GK$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.99676 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23241629 | $\omega$ | 92.62158 | | +0.20235333 | | +0.97923823 |
| $a$ | 2.6199420 | $\Omega$ | 189.08004 | | −0.92614881 | | +0.18734891 |
| $e$ | 0.1959999 | $i$ | 4.38544 | | −0.31827899 | | +0.07741366 |
| $P$ | 4.24 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.5− | 0.2+ | 2005 04 18 | 691 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2− |
| 2005 03 08 | G96 | 0.0 | 0.1− | 2005 05 11 | G96 | 0.1− | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2005 03 08 | G96 | 0.0 | 0.2+ | 2005 05 11 | G96 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 03 08 | G96 | 0.1− | 0.1− | 2005 05 11 | G96 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 05 | G96 | 0.3− | 0.1− | 2005 05 11 | G96 | 0.3− | 0.7− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2005 04 05 | G96 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.0 |
| 2005 04 05 | G96 | 0.2+ | 0.6− | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.2+ |
| 2005 04 05 | G96 | 0.7− | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.4− |
| 2005 04 11 | 691 | 0.3+ | 0.4− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1+ |
| 2005 04 11 | 691 | 0.6− | 1.3+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2005 04 11 | 691 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.5− | 0.1− |
| 2005 04 18 | 691 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2005 04 18 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− |

**2006 RN$_{58}$ = 2001 WS$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.21946 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18083280 | $\omega$ | 178.69533 | | +0.96175856 | | +0.27375079 |
| $a$ | 3.0970716 | $\Omega$ | 165.40751 | | −0.25161949 | | +0.89603045 |
| $e$ | 0.1964773 | $i$ | 2.04690 | | −0.10820401 | | +0.34955678 |
| $P$ | 5.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2− | 0.7− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 11 20 | 704 | 0.7+ | 1.0− | 2006 09 15 | 691 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2001 11 20 | 704 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.4− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.8+ | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.9+ | 0.6− | 2006 09 19 | 691 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.4− |
| 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.0 | 0.6+ | 2006 09 19 | 703 | 1.1+ | 0.9+ | 2006 10 13 | 291 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.7− | 0.6+ | 2006 09 19 | 703 | 0.4+ | 0.9+ | 2006 10 13 | 291 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.6− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.9+ | 2006 10 13 | 291 | 0.0 | 0.2+ |
| 2005 02 16 | 809 | 0.5+ | 0.1− | 2006 09 19 | 703 | (2.6+ | 2.1+) | 2006 10 15 | 291 | 0.3+ | 0.3+ |
| 2005 02 16 | 809 | 0.3− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 15 | 291 | 0.3+ | 0.3+ |
| 2005 02 16 | 809 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.5− | 2006 10 15 | 291 | 0.2+ | 0.4+ |
| 2005 07 05 | G96 | 0.3+ | 0.5+ | 2006 09 20 | 644 | 0.5+ | 0.3+ | 2006 10 16 | 291 | 0.2+ | 0.3+ |
| 2005 07 05 | G96 | 0.3+ | 0.0 | 2006 09 24 | 691 | 0.0 | 0.3− | 2006 10 16 | 291 | 0.3+ | 0.4+ |
| 2005 07 05 | G96 | 0.1− | 0.3− | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 16 | 291 | 0.4+ | 0.4+ |
| 2005 07 05 | G96 | 0.1− | 1.0+ | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2006 07 21 | G96 | 0.6+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | | | | |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− | | | | |

**2006 RO$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 300.89315 | | (2000.0) | | | |
| $n$ | 0.23498007 | $\omega$ | 266.24443 | | +0.15120799 | −0.98848079 |
| $a$ | 2.6008503 | $\Omega$ | 175.04459 | | +0.93406990 | +0.14073636 |
| $e$ | 0.1414318 | $i$ | 4.29610 | | +0.32349586 | +0.05566871 |
| $P$ | 4.19 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | (2.3− | 0.1−) | 2004 04 12 | 691 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.3− | 0.5− | 2004 04 12 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2004 03 18 | 704 | 0.5− | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.2− |
| 2004 03 18 | 704 | 0.3− | 1.5+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.2− |
| 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.0 | | | | |
| 2004 04 12 | 691 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ | | | | |

**2006 RP$_{58}$ = 1992 SD$_4$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 99.37864 | | (2000.0) | | | |
| $n$ | 0.21475145 | $\omega$ | 247.94083 | | −0.07839428 | +0.99667916 |
| $a$ | 2.7617136 | $\Omega$ | 17.60565 | | −0.88571862 | −0.05949384 |
| $e$ | 0.0245117 | $i$ | 4.17541 | | −0.45755531 | −0.05559796 |
| $P$ | 4.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.5− | 0.1− | 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1+ |
| 1992 09 24 | 691 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1+ |
| 1992 09 24 | 691 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 1992 09 25 | 691 | 0.8+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 |
| 1992 09 25 | 691 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 1992 09 25 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.4+ | 0.5+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2006 09 15 | 691 | 0.3− | 0.2− | 2006 09 24 | 691 | 0.0 | 0.1− | | | | |
| 2006 09 15 | 691 | 0.4+ | 0.3− | 2006 09 24 | 691 | 0.2+ | 0.1− | | | | |

**2006 RW$_{58}$ = 2001 JL$_9$ = 2003 YB$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 172.72208 | | (2000.0) | | | |
| $n$ | 0.25704088 | $\omega$ | 30.06254 | | −0.96794377 | +0.25090692 |
| $a$ | 2.4498223 | $\Omega$ | 164.45616 | | −0.23810344 | −0.90216771 |
| $e$ | 0.1503704 | $i$ | 2.44399 | | −0.07994758 | −0.35091188 |
| $P$ | 3.83 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 15 | 608 | 0.2+ | 0.7+ | 2002 09 05 | 645 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.1− | 0.3+ |
| 2001 05 15 | 608 | 0.4+ | 0.4+ | 2002 09 05 | 645 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2001 05 15 | 608 | 0.3+ | 0.5+ | 2002 09 11 | 644 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2001 05 21 | 699 | 0.2− | 0.2+ | 2002 09 11 | 644 | 0.4− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.2+ |
| 2001 05 21 | 699 | 0.4− | 0.7+ | 2002 09 11 | 644 | 0.2+ | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2001 05 21 | 699 | 1.1+ | 0.0 | 2003 12 19 | 704 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 2001 05 21 | 699 | 0.7+ | 0.6+ | 2003 12 19 | 704 | 1.0+ | 0.8+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2001 05 21 | 704 | 0.3+ | 0.5+ | 2003 12 19 | 704 | 0.0 | 0.7+ | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2001 05 21 | 699 | 0.4+ | 0.2− | 2003 12 23 | 704 | 0.3− | 0.6+ | 2006 10 22 | G96 | 0.8+ | 0.2+ |
| 2001 05 21 | 699 | 0.4− | 0.6+ | 2003 12 23 | 704 | 0.8− | 1.2+ | 2006 10 22 | G96 | 0.4− | 0.1− |
| 2001 05 21 | 704 | 0.3− | 0.6+ | 2003 12 23 | 704 | 0.4+ | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2001 05 21 | 699 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 05 21 | 699 | 0.8− | 1.0+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 05 21 | 704 | 0.0 | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.5− |
| 2001 05 21 | 704 | (0.5+ | 1.6+) | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2001 05 21 | 704 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2− | | | | |

**2006 RA$_{59}$ = 2006 RM**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.01569 | | (2000.0) | | | |
| $n$ | 0.23236911 | $\omega$ | 9.05427 | | +0.98760956 | +0.15542154 |
| $a$ | 2.6202966 | $\Omega$ | 341.96082 | | −0.14801442 | +0.87655884 |
| $e$ | 0.1780905 | $i$ | 4.02089 | | −0.05214482 | +0.45550932 |
| $P$ | 4.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1− | 0.0 | 2006 09 03 | 147 | (13.1− | 21.6+) | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 11 24 | 644 | 0.3− | 0.1− | 2006 09 03 | 147 | (13.5− | 22.1+) | 2006 09 29 | 704 | 0.1+ | 0.1− |
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 704 | 0.6+ | 0.5+ |
| 2002 12 11 | 644 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 29 | 704 | 1.0− | 0.4+ |
| 2002 12 11 | 644 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.6− | 0.2+ |
| 2002 12 11 | 644 | 0.2− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.8− |
| 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.7+ | 0.3− |
| 2006 07 22 | G96 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2006 07 22 | G96 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.8− |
| 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 09 01 | 147 | 0.9+ | 1.7− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 09 01 | 147 | 0.8+ | 1.5− | 2006 09 21 | 224 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 09 01 | 147 | 0.4+ | 0.8− | 2006 09 21 | 224 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 09 02 | 204 | 0.2− | 0.2+ | 2006 09 22 | 224 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 09 02 | 204 | 0.2− | 0.7+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 03 | 147 | (13.1− | 21.5+) | 2006 09 27 | 691 | 0.1− | 0.2− | | | | |

**2006 RB$_{59}$ = 2004 FW$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.64052 | | (2000.0) | | | |
| $n$ | 0.18113397 | $\omega$ | 302.04676 | | +0.56669289 | +0.82383887 |
| $a$ | 3.0936377 | $\Omega$ | 2.57272 | | −0.63423071 | +0.44561878 |
| $e$ | 0.2009748 | $i$ | 15.76257 | | −0.52593781 | +0.35030475 |
| $P$ | 5.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 25 | 704 | (0.2− | 2.2+) | 2006 09 18 | 699 | 0.4+ | 0.1− | 2006 10 03 | 704 | 0.1− | 0.4+ |
| 2004 03 25 | 704 | 0.5+ | 0.8+ | 2006 09 18 | 699 | 0.0 | 0.0 | 2006 10 03 | 704 | 1.5− | 0.5− |
| 2004 03 25 | 704 | 0.7+ | 1.3+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 10 03 | 704 | 0.1− | 0.5+ |
| 2004 03 25 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.9+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2004 03 28 | 691 | 0.3− | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2004 03 28 | 691 | 0.3− | 0.4− | 2006 09 25 | 704 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2004 03 28 | 691 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.5− | 1.0+ |
| 2006 08 28 | 703 | 0.3+ | 1.0− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.6− | 1.3− |
| 2006 08 28 | 703 | 0.7− | 1.1− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.6+ |
| 2006 08 28 | 703 | (1.6− | 0.3+) | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2006 08 28 | 703 | 0.2+ | 1.5+ | 2006 09 28 | 699 | 0.1− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2006 09 06 | 644 | 0.4− | 0.1− | 2006 09 28 | 699 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 28 | 699 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 09 28 | 699 | (1.7+ | 0.2−) | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 09 15 | 691 | 0.2− | 0.4− | 2006 09 30 | 703 | 0.6+ | 1.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.7− | 0.8+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.4+ | 1.0+ | 2006 09 30 | 703 | 0.1+ | 1.0− | | | | |
| 2006 09 18 | 699 | 0.7+ | 0.3+ | 2006 10 03 | 704 | 0.6− | 1.5− | | | | |

**2006 RG$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 324.93749 | | (2000.0) | | | |
| $n$ | 0.26416034 | $\omega$ | 114.23613 | | +0.50550251 | −0.86278919 |
| $a$ | 2.4056049 | $\Omega$ | 305.39685 | | +0.78808080 | +0.46540915 |
| $e$ | 0.1695241 | $i$ | 0.55359 | | +0.35127748 | +0.19745669 |
| $P$ | 3.73 | $H$ | 18.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 691 | 0.0 | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.7+ | 0.8− |
| 1999 12 17 | 691 | 0.1+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.7+ | 0.7− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 691 | 0.0 | 0.7− | 2006 09 25 | 691 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.4− | 0.2− |
| 2000 01 10 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.7+ | 1.4− |
| 2000 01 10 | 691 | 0.1− | 1.1+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2000 01 10 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2004 02 17 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.7− |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2004 02 17 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.6− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 03 17 | 691 | 0.4+ | 0.1+ | 2006 09 28 | 699 | (0.1+ | 2.1+) | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2004 03 17 | 691 | 0.1− | 0.3+ | 2006 09 28 | 699 | 0.1+ | 0.9+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2004 03 17 | 691 | 0.1− | 0.3− | 2006 09 28 | 699 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2− | 0.2+ |
| 2006 09 15 | 691 | 0.4− | 0.1+ | 2006 09 28 | 699 | 0.5− | 0.3− | 2006 11 27 | G96 | 0.5− | 0.3− |
| 2006 09 15 | 691 | 0.5− | 0.3− | 2006 09 29 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2006 09 15 | 691 | 0.6− | 0.4+ | 2006 09 29 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 09 29 | 691 | 1.1+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.3− |

**2006 RO$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.60026 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17709718 | $\omega$ | 242.82440 | | +0.27599823 | | −0.96060387 |
| $a$ | 3.1404722 | $\Omega$ | 191.29920 | | +0.93024665 | | +0.27551021 |
| $e$ | 0.0679148 | $i$ | 9.58866 | | +0.24179776 | | +0.03652854 |
| $P$ | 5.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.7+ | 0.0 |
| 1995 10 27 | 691 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 1995 10 27 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.8+ | 0.1+ |
| 2000 09 24 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 10 30 | A44 | 0.1− | 1.0+ |
| 2000 09 24 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.2+ | 2006 10 30 | A44 | 0.0 | 0.5+ |
| 2000 09 24 | 691 | 0.2+ | 0.6− | 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2004 03 15 | 291 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 03 15 | 291 | 0.1− | 0.1+ | 2006 09 25 | G96 | 1.1− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.6− |
| 2004 03 15 | 291 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.8+ | 0.1+ |
| 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 10 15 | 703 | 0.4− | 0.4+ | 2006 11 16 | G96 | 0.6+ | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.7− | 0.8+ | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 15 | 703 | (0.1+ | 2.3+) | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 18 | 691 | 0.4+ | 0.2− | 2006 10 15 | 703 | 0.0 | 0.7+ | | | | |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1+ | | | | |

**2006 RS$_{59}$ = 2004 EZ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.30924 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22960724 | $\omega$ | 253.84218 | | +0.33773484 | | −0.94123730 |
| $a$ | 2.6412672 | $\Omega$ | 176.41537 | | +0.87947572 | | +0.31453204 |
| $e$ | 0.0403631 | $i$ | 2.51577 | | +0.33534705 | | +0.12305262 |
| $P$ | 4.29 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 20 | 691 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.5+ | 0.1− |
| 1996 05 20 | 691 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 1996 05 20 | 691 | 0.1+ | 0.2− | 2006 09 15 | 691 | 1.2− | 0.1− | 2006 10 03 | 691 | 0.4+ | 0.7+ |
| 2000 04 13 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.1+ |
| 2000 04 13 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2000 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2004 02 13 | 291 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.5− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2004 02 13 | 291 | 0.5− | 0.4+ | 2006 09 19 | 691 | 0.6− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2004 02 13 | 291 | 0.6− | 0.2+ | 2006 09 19 | 691 | (1.9− | 0.9+) | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.9+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2004 03 14 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2004 03 14 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2004 03 21 | 691 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.9− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2004 03 21 | 691 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2004 03 21 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 03 28 | 691 | 0.4+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 03 28 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1− | | | | |
| 2004 03 28 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.1+ | | | | |

**2006 RX$_{59}$ = 2004 GL$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.44780 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18141767 | $\omega$ | 268.65769 | | +0.23092814 | | +0.97196121 |
| $a$ | 3.0904116 | $\Omega$ | 14.92031 | | −0.81017450 | | +0.21730986 |
| $e$ | 0.0503164 | $i$ | 9.91018 | | −0.53878518 | | +0.08982112 |
| $P$ | 5.43 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.3− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.2+ | 0.4+ |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.3+ |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 2004 04 19 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 04 19 | 691 | 0.0 | 0.4− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.2− | 0.4+ |
| 2004 04 19 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.7− | 0.2− |
| 2006 09 15 | 691 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.6− | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 11 18 | G96 | 0.6− | 0.3− |
| 2006 09 15 | 691 | 0.6− | 0.0 | 2006 09 26 | G96 | 0.6+ | 0.4− | 2006 11 18 | G96 | 0.5− | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 03 | 691 | 0.6+ | 0.0 | | | | |

**2006 RA$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.45265 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27572497 | $\omega$ | 160.98483 | | +0.98347472 | | −0.05495839 |
| $a$ | 2.3378608 | $\Omega$ | 204.23042 | | +0.05417125 | | +0.99848862 |
| $e$ | 0.1989637 | $i$ | 24.85479 | | +0.17275115 | | −0.00022688 |
| $P$ | 3.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 04 02 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2005 04 02 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.6− |
| 2005 04 15 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.6− |
| 2005 04 15 | 691 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.6− |
| 2005 04 15 | 691 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 704 | 0.3− | 0.7+ |
| 2006 09 15 | 703 | 0.1+ | 0.5− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 22 | 704 | 0.4+ | 0.8+ |
| 2006 09 15 | 703 | 0.8− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 10 22 | 704 | 0.4+ | 0.3+ |
| 2006 09 15 | 703 | 1.1− | 0.3− | 2006 10 16 | 621 | 0.6+ | 0.1+ | 2006 10 22 | 704 | 0.4− | 1.4+ |
| 2006 09 18 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 621 | 0.6+ | 0.4− | 2006 10 27 | 704 | 0.8− | 1.2+ |
| 2006 09 18 | 704 | 1.2− | 0.1− | 2006 10 17 | 621 | 0.5+ | 0.0 | 2006 10 27 | 704 | 0.7− | 0.3+ |
| 2006 09 18 | 704 | 0.0 | 0.5− | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 10 27 | 704 | (1.8− | 1.0+) |
| 2006 09 18 | 704 | 1.2− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 10 27 | 704 | (1.4− | 2.3+) |
| 2006 09 20 | 699 | (1.8− | 0.8+) | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 10 27 | 704 | (2.8− | 0.7+) |
| 2006 09 20 | 699 | 0.2− | 0.5− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 10 31 | 704 | 1.0− | 0.4+ |
| 2006 09 20 | 699 | 0.2− | 0.1+ | 2006 10 18 | 621 | 0.2+ | 0.0 | 2006 10 31 | 704 | 0.1− | 0.5− |
| 2006 09 20 | 699 | 0.5− | 0.5− | 2006 10 18 | 621 | 0.4+ | 0.0 | 2006 10 31 | 704 | 0.7+ | 0.8− |
| 2006 09 25 | 691 | 0.6+ | 0.3+ | 2006 10 18 | 621 | 0.3+ | 0.1+ | 2006 10 31 | 704 | 0.2− | 0.4+ |
| 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 10 | 704 | 1.3− | 1.3+ |
| 2006 09 25 | 691 | (1.2− | 1.6−) | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 704 | 0.0 | 0.2+ |
| 2006 09 29 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 10 | 704 | 1.3− | 0.8+ |
| 2006 09 29 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 704 | 1.1− | 1.4+ |
| 2006 09 29 | 691 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 10 | 704 | 0.4− | 0.7− |
| 2006 10 03 | 704 | 1.0+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.1− | 0.2− |
| 2006 10 03 | 704 | 1.3+ | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 16 | 703 | 0.2− | 0.1− |
| 2006 10 03 | 704 | (1.9+ | 0.9+) | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.7+ | 1.5− |
| 2006 10 03 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.1− | 2006 11 16 | 703 | 1.1+ | 0.6+ |
| 2006 10 03 | 704 | 1.1+ | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.1− | | | | |
| 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | | | |

**2006 RC$_{60}$ = 3141 T-3**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.75815 | | | (2000.0) | | |
| $n$ | 0.27200938 | $\omega$ | 150.35940 | | +0.99950824 | −0.01762551 |
| $a$ | 2.3591024 | $\Omega$ | 210.68337 | | +0.00720309 | +0.93401481 |
| $e$ | 0.1648525 | $i$ | 2.91322 | | +0.03051868 | +0.35679920 |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 16 | 675 | (1.0+ | 3.8−) | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.5− | 0.9+ |
| 1977 10 16 | 675 | 1.7+ | 2.2− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 1.2+ | 1.2+ |
| 1977 10 17 | 675 | 1.0− | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 1977 10 17 | 675 | 1.6− | 0.8− | 2006 09 18 | 699 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.8− | 0.4+ |
| 1977 10 21 | 675 | 0.3+ | 0.7− | 2006 09 18 | 699 | 0.7− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1− |
| 1977 10 21 | 675 | 1.7+ | 0.3+ | 2006 09 18 | 699 | 0.7+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2001 03 27 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2001 03 27 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2001 03 27 | 691 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 06 06 | 291 | 0.4− | 0.0 | 2006 09 26 | 683 | (1.6+ | 1.7−) | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2002 06 06 | 291 | 0.2− | 0.1− | 2006 09 26 | 683 | (1.5+ | 0.1−) | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2002 06 06 | 291 | 0.3− | 0.0 | 2006 09 26 | 683 | 0.2− | 1.0− | 2006 10 28 | G96 | 0.4+ | 0.3− |
| 2002 07 09 | 644 | 0.4− | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2002 07 09 | 644 | 0.4− | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 07 09 | 644 | 0.5− | 0.0 | 2006 09 27 | 704 | 0.6− | 0.6− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 08 15 | 291 | 0.2+ | 0.1+ | 2006 09 30 | 683 | 0.3+ | 1.2− | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2002 08 15 | 291 | 0.3+ | 0.1+ | 2006 09 30 | 683 | (1.0+ | 1.6−) | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 08 15 | 291 | 0.3+ | 0.1+ | 2006 09 30 | 683 | 0.3+ | 0.9− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2005 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2005 04 14 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2005 04 14 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2005 06 13 | G96 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2005 06 13 | G96 | 0.7− | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.3+ |
| 2005 06 13 | G96 | 0.6− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.4+ |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | (1.8− | 0.2+) | 2006 11 11 | 703 | 0.7− | 1.2+ |

**2006 RE$_{60}$ = 2002 PO$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.45181 | | | (2000.0) | | |
| $n$ | 0.27049121 | $\omega$ | 31.81424 | | +0.85654737 | −0.51606837 |
| $a$ | 2.3679213 | $\Omega$ | 359.25455 | | +0.46984369 | +0.78000301 |
| $e$ | 0.1895705 | $i$ | 0.97502 | | +0.21347955 | +0.35393325 |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 18 | 644 | 0.7− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 07 18 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 07 18 | 644 | 0.2+ | 0.4+ | 2006 09 27 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2002 08 08 | 644 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 08 08 | 644 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.5− | 2006 10 23 | 704 | 0.4− | 0.2+ |
| 2002 08 08 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 704 | 0.6− | 0.8− | 2006 10 23 | 704 | 0.0 | 1.0+ |
| 2002 08 10 | 807 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 23 | 704 | 0.9− | 1.0+ |
| 2002 08 10 | 807 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 10 23 | 704 | 0.7− | 1.2+ |
| 2004 02 11 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 23 | 704 | 0.3− | 0.4+ |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 10 03 | 704 | 0.7+ | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2004 02 11 | 644 | 0.2− | 0.6+ | 2006 10 03 | 704 | 0.7+ | 1.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 03 | 704 | 0.4− | 0.9− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 03 | 704 | 0.9+ | 1.3− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 17 | 701 | 0.2+ | 0.5− | 2006 10 31 | 691 | 0.0 | 0.7+ |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 17 | 701 | 0.2+ | 0.6− | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2006 09 18 | 699 | 0.7− | 1.3+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2006 09 18 | 699 | 0.6+ | 1.0+ | 2006 10 19 | 644 | 0.4− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2006 09 18 | 699 | 0.6+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2006 09 19 | 691 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5− | 1.5− |
| 2006 09 19 | 691 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.8− |
| 2006 09 20 | 704 | 0.5− | 0.7+ | 2006 10 21 | 703 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.6− |
| 2006 09 20 | 704 | 1.1− | 0.9+ | 2006 10 21 | 703 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.2+ |
| 2006 09 20 | 704 | (0.4− | 1.8+) | 2006 10 21 | 703 | 0.6− | 0.2− | 2006 11 13 | G96 | (2.8− | 1.6−) |
| 2006 09 20 | 704 | 1.1− | 0.6− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 13 | G96 | (1.7− | 1.4−) |
| 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | | | | |

**2006 RG$_{60}$ = 2003 AQ$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.62722 | | | (2000.0) | | |
| $n$ | 0.21159836 | $\omega$ | 52.75384 | | +0.33945849 | −0.93956980 |
| $a$ | 2.7890814 | $\Omega$ | 17.56188 | | +0.80961204 | +0.26779102 |
| $e$ | 0.0538193 | $i$ | 8.47289 | | +0.47884891 | +0.21329924 |
| $P$ | 4.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.5− | 0.5+ | 2006 09 18 | 699 | 0.9+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.2− |
| 2003 01 04 | 704 | 0.5− | 0.8+ | 2006 09 18 | 699 | 0.5− | 0.3+ | 2006 10 21 | 703 | 0.5+ | 0.1+ |
| 2003 01 04 | 704 | 1.5− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2003 01 04 | 704 | (0.0 | 1.8+) | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.1− |
| 2003 01 10 | 704 | 0.9+ | 1.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2003 01 10 | 704 | 0.5+ | 1.1− | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2003 01 10 | 704 | 1.2+ | 0.5− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2004 03 16 | 691 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.6+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2004 03 27 | 291 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.2+ |
| 2004 03 27 | 291 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.5− |
| 2004 03 27 | 291 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | (2.0− | 0.1+) |
| 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | (1.6+ | 1.3+) | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.6− |
| 2004 03 27 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.8+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2004 03 27 | 704 | 0.7+ | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 699 | 0.7− | 0.4− | 2006 10 21 | 703 | 0.6− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 699 | 0.8+ | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.7− | 2006 11 17 | G96 | 0.1+ | 0.1− |

**2006 RP$_{60}$ = 2002 TC$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.15063 | | | (2000.0) | | |
| $n$ | 0.23803209 | $\omega$ | 330.28892 | | +0.94697687 | +0.32115935 |
| $a$ | 2.5785707 | $\Omega$ | 10.99064 | | −0.28401445 | +0.85062701 |
| $e$ | 0.2460934 | $i$ | 2.87550 | | −0.15023512 | +0.41628159 |
| $P$ | 4.14 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.3+ | 0.6+ | 2006 08 28 | 703 | (2.0+ | 3.0−) | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2000 02 06 | 695 | 0.2+ | 0.7+ | 2006 09 13 | 644 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 2002 10 10 | 644 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.3− |
| 2002 10 10 | 644 | 0.5− | 0.9+ | 2006 09 13 | 644 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2002 10 10 | 644 | 0.7− | 0.0 | 2006 09 19 | 699 | (1.9+ | 1.4+) | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2002 10 10 | 644 | 0.0 | 1.1+ | 2006 09 19 | 703 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2002 10 10 | 644 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.5+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2002 10 10 | 644 | 0.4+ | 1.1+ | 2006 09 19 | 699 | (0.1− | 1.8+) | 2006 10 16 | G96 | 0.6+ | 0.1− |
| 2002 10 11 | 291 | 0.8− | 0.3− | 2006 09 19 | 703 | 0.3+ | 0.7+ | 2006 10 27 | G96 | 0.3− | 0.6− |
| 2002 10 11 | 291 | 0.6+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 10 27 | G96 | 0.6+ | 0.9− |
| 2002 10 11 | 291 | 0.5+ | 0.3− | 2006 09 19 | 699 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2006 08 28 | 703 | 1.1− | 0.2− | 2006 09 19 | 699 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2006 08 28 | 703 | 0.7− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | | | | |
| 2006 08 28 | 703 | 0.4− | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.5+ | | | | |

**2006 RR$_{60}$ = 1999 AP$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.24086 | | | (2000.0) | +0.98344243 | +0.17535135 |
| $n$ | 0.21682387 | $\omega$ | 94.06290 | | −0.17928263 | +0.90459102 |
| $a$ | 2.7440877 | $\Omega$ | 255.84245 | | −0.02643325 | +0.38854470 |
| $e$ | 0.1364644 | $i$ | 2.70428 | | | |
| $P$ | 4.55 | $H$ | 16.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 10 | 691 | 0.6− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 10 21 | 691 | 1.1+ | 0.7− |
| 1999 01 10 | 691 | 0.8+ | 1.2− | 2006 09 19 | 703 | 0.1− | 1.3+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 1999 01 10 | 691 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 1999 01 17 | 691 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1999 01 17 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 1999 01 17 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2006 08 21 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2006 08 21 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 08 21 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.8− |
| 2006 09 13 | 644 | 0.1− | 0.4− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2006 09 13 | 644 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ | | | | |

**2006 RU$_{60}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.52517 | | | (2000.0) | +0.18254333 | +0.98167123 |
| $n$ | 0.17737300 | $\omega$ | 335.88400 | | −0.89090898 | +0.14158963 |
| $a$ | 3.1372157 | $\Omega$ | 304.59052 | | −0.41588354 | +0.12756952 |
| $e$ | 0.1252107 | $i$ | 3.81460 | | | |
| $P$ | 5.56 | $H$ | 15.5 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.3+ |
| 2001 10 23 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 644 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.7+ | 1.3− |
| 2001 10 23 | 691 | 0.3− | 0.2− | 2006 09 14 | 644 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.2− | 0.7− |
| 2004 03 29 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 1.1− | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.5− |
| 2004 03 29 | 691 | 0.6− | 0.7+ | 2006 09 19 | 703 | 0.4+ | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.5− |
| 2004 03 29 | 691 | 0.4+ | 0.4− | 2006 09 19 | 703 | 0.8− | 0.3+ | 2006 10 03 | G96 | 0.7− | 0.4− |
| 2006 08 22 | 644 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.2− |
| 2006 08 22 | 644 | 0.3− | 0.2+ | 2006 09 20 | 691 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2006 08 22 | 644 | 0.3− | 0.5+ | 2006 09 20 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2006 09 03 | 152 | (2.5− | 0.0 ) | 2006 09 20 | 691 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.4+ | 0.1− |
| 2006 09 03 | 152 | 1.1− | 0.7+ | 2006 09 25 | 699 | 1.0+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2006 09 03 | 152 | 0.9+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.4+ |

**2006 RV$_{60}$ = 2004 FH$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.96729 | | | (2000.0) | +0.68307484 | +0.72863041 |
| $n$ | 0.19293831 | $\omega$ | 146.64422 | | −0.70759129 | +0.67721260 |
| $a$ | 2.9661315 | $\Omega$ | 166.21124 | | −0.18089588 | +0.10237581 |
| $e$ | 0.0050840 | $i$ | 12.12548 | | | |
| $P$ | 5.11 | $H$ | 15.7 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 0.2− | 0.8+ | 2004 03 27 | 704 | 0.6− | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.9+ |
| 2004 03 15 | 703 | 1.2− | 1.2+ | 2005 06 26 | G96 | 0.7+ | 0.2− | 2006 09 19 | 703 | 0.0 | 0.2− |
| 2004 03 15 | 703 | 0.4+ | 1.2+ | 2005 06 26 | G96 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2004 03 15 | 703 | (1.7+ | 0.5+) | 2005 06 26 | G96 | 0.3− | 0.3− | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2005 06 26 | G96 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.4+ |
| 2004 03 23 | 691 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 09 14 | 644 | 0.4− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2004 03 27 | 704 | 0.3− | 0.4− | 2006 09 14 | 644 | 0.2− | 0.7+ | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2004 03 27 | 704 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.3− | 1.4+ | 2006 10 02 | G96 | 0.3+ | 0.0 |
| 2004 03 27 | 704 | 1.0+ | 0.4+ | 2006 09 19 | 703 | 1.0+ | 0.4− | | | | |

**2006 RN$_{61}$ = 2006 QL$_{160}$ = 2006 RE$_{103}$ = 2005 JD$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.35641 | | | (2000.0) | +0.99976032 | −0.02174888 |
| $n$ | 0.26285195 | $\omega$ | 172.01179 | | +0.01912321 | +0.92331334 |
| $a$ | 2.4135812 | $\Omega$ | 189.23554 | | +0.01065890 | +0.38343116 |
| $e$ | 0.1957062 | $i$ | 0.89577 | | | |
| $P$ | 3.75 | $H$ | 17.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.3− | 0.4− | 2006 09 19 | 699 | (0.7− | 2.1−) |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.5− | 0.9+ |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.7+ | 0.6− |
| 2005 05 04 | 568 | 0.2+ | 0.2+ | 2006 09 12 | 703 | (1.6− | 1.0+) | 2006 09 20 | 704 | 0.3+ | 0.5+ |
| 2005 05 04 | 568 | 0.2+ | 0.3+ | 2006 09 12 | 703 | 0.7− | 0.7− | 2006 09 20 | 704 | 0.6+ | 1.3+ |
| 2005 05 04 | 568 | 0.1+ | 0.4+ | 2006 09 12 | 703 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.8+ | 1.5+ |
| 2005 05 05 | 568 | 0.0 | 0.2+ | 2006 09 12 | 703 | 0.4− | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2006 08 19 | 691 | 0.1− | 0.5+ | 2006 09 13 | 644 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2006 08 19 | 691 | 0.4− | 0.8+ | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2006 08 19 | 691 | 0.0 | 0.5+ | 2006 09 13 | 644 | 0.4+ | 0.1− | 2006 09 25 | G96 | 0.3− | 0.4− |
| 2006 08 28 | 703 | 0.4− | 0.0 | 2006 09 13 | 644 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.6− |
| 2006 08 28 | 703 | 1.2− | 0.1− | 2006 09 13 | 644 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 1.2+ | 0.1+ | 2006 09 13 | 644 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.8− |
| 2006 08 28 | 703 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 1.1− | 2006 11 21 | G96 | 0.0 | 0.1+ |

**2006 RP$_{61}$ = 2005 JP$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.56401 | | | (2000.0) | +0.92344620 | +0.38355106 |
| $n$ | 0.22928387 | $\omega$ | 168.40930 | | −0.35676900 | +0.86935129 |
| $a$ | 2.6437500 | $\Omega$ | 169.01522 | | −0.14129049 | +0.31163586 |
| $e$ | 0.0652399 | $i$ | 3.50493 | | | |
| $P$ | 4.30 | $H$ | 16.8 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 22 | 691 | 0.1+ | 0.4− | 2006 08 19 | 691 | 0.2+ | 0.3+ | 2006 09 12 | 703 | (0.9− | 2.4−) |
| 1998 12 22 | 691 | 0.2− | 0.2+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.6− | 0.2− |
| 1998 12 22 | 691 | 0.1+ | 0.6+ | 2006 08 19 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2000 01 28 | 691 | 0.6− | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2000 01 28 | 691 | 0.6+ | 0.2− | 2006 08 28 | 703 | 0.6+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2000 01 28 | 691 | 0.2− | 0.3− | 2006 08 28 | 703 | 0.5+ | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2005 05 04 | 691 | 0.2+ | 0.0 | 2006 08 28 | 703 | 1.1− | 0.1− | 2006 10 20 | G96 | 0.7+ | 0.2− |
| 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2005 05 04 | 691 | 0.3+ | 0.1+ | 2006 08 28 | 691 | 0.3− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2005 05 14 | G96 | 0.1− | 0.1− | 2006 08 28 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.6+ | 0.7− |
| 2005 05 14 | G96 | 0.1− | 0.2− | 2006 09 12 | 703 | 0.7+ | 1.3− | 2006 11 15 | G96 | 1.0+ | 0.4− |
| 2005 05 14 | G96 | 0.4− | 0.3− | 2006 09 12 | 703 | 0.5− | 1.3+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2005 05 14 | G96 | 0.5− | 0.1− | 2006 09 12 | 703 | 0.4+ | 1.3− | 2006 11 15 | G96 | 0.2− | 0.1+ |

**2006 RB$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.35621 | | | (2000.0) | −0.98279866 | +0.16949802 |
| $n$ | 0.25756449 | $\omega$ | 240.54756 | | −0.11895456 | −0.88471649 |
| $a$ | 2.4465010 | $\Omega$ | 309.11181 | | −0.14126788 | −0.43422016 |
| $e$ | 0.0734738 | $i$ | 5.42295 | | | |
| $P$ | 3.83 | $H$ | 16.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 25 | 608 | 0.0 | 0.4+ | 2006 08 29 | 703 | 1.1− | 0.3− | 2006 09 20 | 691 | 0.4+ | 0.1+ |
| 2001 04 25 | 608 | 0.2+ | 0.2+ | 2006 08 29 | 703 | 1.1− | 0.4− | 2006 09 20 | 691 | 0.2+ | 0.1− |
| 2001 04 25 | 608 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.6− | 0.1− | 2006 09 20 | 691 | 0.3+ | 0.2+ |
| 2002 08 27 | 644 | 0.4− | 0.9+ | 2006 08 29 | 703 | 0.3+ | 0.4− | 2006 09 25 | 704 | 0.7− | 0.0 |
| 2002 08 27 | 644 | 0.7− | 0.8+ | 2006 09 12 | 703 | 0.2+ | 0.4− | 2006 09 25 | 704 | 0.6− | 0.4+ |
| 2002 08 27 | 644 | 0.1− | 0.5+ | 2006 09 12 | 703 | 0.1+ | 1.1+ | 2006 09 25 | 704 | 0.1− | 0.0 |
| 2003 12 30 | 735 | 0.2− | 1.0+ | 2006 09 12 | 703 | 0.6− | 0.4+ | 2006 09 25 | 704 | (2.6− | 0.1+) |
| 2003 12 30 | 735 | 0.1− | 1.1− | 2006 09 12 | 703 | (0.4+ | 2.1+) | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2003 12 30 | 735 | 0.8+ | 0.0 | 2006 09 19 | 703 | 1.1+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.0 | 1.5− | 2006 10 22 | 691 | 0.0 | 0.1+ | | |
| 2004 01 18 | 691 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.2+ | 1.1− | | | | | | |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.4− | | | | | | |

**2006 RD$_{62}$ = 1999 TD$_{306}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.89238 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28131157 | $\omega$ | 122.95193 | | +0.80208725 | | +0.59670996 |
| $a$ | 2.3068055 | $\Omega$ | 200.44646 | | −0.56856394 | | +0.75050321 |
| $e$ | 0.3099506 | $i$ | 3.99819 | | −0.18273230 | | +0.28404605 |
| $P$ | 3.50 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.8+ | 1.3+ | | |
| 1999 10 06 | 704 | 1.1+ | 0.1− | 2006 09 19 | 699 | 0.1+ | 1.3+ | 2006 09 25 | 699 | 1.3+ | 0.4− | | |
| 1999 10 06 | 704 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.2+ | 1.3− | 2006 09 25 | 699 | 1.4− | 0.7− | | |
| 1999 10 12 | 691 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.0 | 1.0+ | 2006 09 25 | 699 | 1.2− | 0.3+ | | |
| 1999 10 12 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 1999 10 12 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.4− | 1.4− | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2006 09 12 | 703 | (1.5+ | 3.2+) | 2006 09 19 | 699 | 0.9+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1+ | | |
| 2006 09 12 | 703 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.0 | | | | | | |
| 2006 09 12 | 703 | 0.5− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.1− | | | | | | |

**2006 RF$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.32654 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26303187 | $\omega$ | 149.82995 | | +0.99798218 | | +0.04147125 |
| $a$ | 2.4124804 | $\Omega$ | 207.91595 | | −0.05446151 | | +0.94838301 |
| $e$ | 0.1126045 | $i$ | 5.89448 | | +0.03264211 | | +0.31440388 |
| $P$ | 3.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.2− | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.3+ | 0.4+ | | |
| 2002 07 12 | 644 | 0.2− | 0.0 | 2006 09 06 | 644 | 0.2− | 0.3− | 2006 09 20 | 703 | 0.6+ | 0.1− | | |
| 2002 07 12 | 644 | 0.3− | 0.1− | 2006 09 06 | 644 | 0.4+ | 0.3− | 2006 09 20 | 703 | 0.2− | 0.5− | | |
| 2002 07 21 | 644 | 0.0 | 0.4− | 2006 09 12 | 703 | 1.2− | 0.2− | 2006 09 20 | 703 | 0.1+ | 0.5− | | |
| 2002 07 21 | 644 | 0.1+ | 0.6− | 2006 09 12 | 703 | 0.6− | 0.3− | 2006 09 22 | 703 | 0.4− | 0.9− | | |
| 2002 07 21 | 644 | 0.3+ | 0.2− | 2006 09 12 | 703 | (2.3− | 0.1+) | 2006 09 22 | 703 | 0.0 | 0.2+ | | |
| 2002 08 26 | 644 | 0.3+ | 0.2+ | 2006 09 12 | 703 | (2.0+ | 0.9−) | 2006 09 22 | 703 | 0.1− | 0.3− | | |
| 2002 08 26 | 644 | 0.2+ | 0.1− | 2006 09 18 | 704 | 0.2− | 0.3− | 2006 09 22 | 703 | 0.1− | 0.1− | | |
| 2002 08 26 | 644 | 0.1+ | 0.2− | 2006 09 18 | 704 | 0.5+ | 0.7− | 2006 09 25 | 699 | 0.5+ | 0.6+ | | |
| 2005 04 17 | 691 | 0.1+ | 0.6+ | 2006 09 18 | 704 | 0.8+ | 1.4+ | 2006 09 25 | 699 | 0.4+ | 0.9+ | | |
| 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 704 | (2.7+ | 0.8−) | 2006 09 25 | 699 | 0.7− | 0.2+ | | |
| 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.7− | | |
| 2005 05 14 | G96 | 0.5− | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2005 05 14 | G96 | 0.6− | 0.3− | 2006 09 19 | 703 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.4− | 0.2+ | | |
| 2005 05 14 | G96 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.7− | 0.0 | | |
| 2005 05 14 | G96 | 0.6− | 0.3− | 2006 09 20 | 699 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.2− | 0.1− | | |
| 2006 08 18 | 644 | 0.2+ | 0.1− | 2006 09 20 | 699 | 0.5+ | 1.2+ | 2006 10 23 | G96 | 0.1− | 0.2− | | |
| 2006 08 18 | 644 | 0.1+ | 0.2− | 2006 09 20 | 704 | 1.1+ | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− | | |
| 2006 08 18 | 644 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.4− | | |
| 2006 08 29 | 703 | 0.2+ | 1.0− | 2006 09 20 | 699 | 1.2+ | 0.9+ | 2006 10 24 | 644 | 0.2− | 0.4+ | | |
| 2006 08 29 | 703 | 0.9− | 0.0 | 2006 09 20 | 704 | 0.6− | 1.1+ | 2006 10 24 | 644 | 0.2− | 0.2+ | | |
| 2006 08 29 | 703 | 0.1− | 0.6− | 2006 09 20 | 704 | 0.7− | 1.1+ | 2006 10 24 | 644 | 0.1+ | 0.3+ | | |
| 2006 08 29 | 703 | 0.2− | 0.3− | 2006 09 20 | 703 | 0.2− | 0.4− | | | | | | |

**2006 RG$_{62}$ = 2005 JJ$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.00466 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22851840 | $\omega$ | 225.25009 | | +0.95018388 | | +0.30913078 |
| $a$ | 2.6496505 | $\Omega$ | 116.70532 | | −0.27188365 | | +0.88456230 |
| $e$ | 0.1398658 | $i$ | 2.55731 | | −0.15241350 | | +0.34926737 |
| $P$ | 4.31 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 950 | 0.4− | 1.5+ | 2006 09 12 | 703 | 0.5− | 1.4+ | 2006 09 25 | 699 | 0.0 | 0.7+ | | |
| 2002 11 03 | 950 | 0.4− | 1.4+ | 2006 09 12 | 703 | 0.9+ | 0.6− | 2006 09 30 | 703 | 0.9− | 1.3− | | |
| 2002 11 03 | 950 | 0.6− | 1.5+ | 2006 09 12 | 703 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.4− | | |
| 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 1.4− | 1.3− | 2006 09 30 | 703 | 0.4− | 1.1− | | |
| 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | (1.1− | 1.7+) | 2006 09 30 | 703 | 0.9− | 0.9− | | |
| 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.7+ | 0.2+ | 2006 10 16 | 703 | (0.0 | 2.1+) | | |
| 2005 05 17 | G96 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.7− | 0.0 | 2006 10 16 | 703 | (0.4− | 1.9+) | | |
| 2005 05 17 | G96 | 0.0 | 0.1− | 2006 09 19 | 699 | (1.3+ | 3.4+) | 2006 10 16 | 703 | 0.9+ | 1.3− | | |
| 2005 05 17 | G96 | 0.1− | 0.4− | 2006 09 19 | 703 | (1.7+ | 0.6+) | 2006 10 16 | 703 | 1.1+ | 0.1+ | | |
| 2005 05 17 | G96 | 0.1− | 0.4+ | 2006 09 19 | 699 | 1.3+ | 1.1+ | 2006 10 20 | 644 | 0.5+ | 0.2− | | |
| 2006 08 18 | 691 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1− | | |
| 2006 08 18 | 691 | 0.8− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.4+ | 0.2+ | | |
| 2006 08 18 | 691 | 0.2− | 0.1− | 2006 09 20 | 644 | 0.6+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3+ | | |
| 2006 08 27 | 691 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.7+ | 0.4− | 2006 11 17 | G96 | 0.6− | 0.3− | | |
| 2006 08 27 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 1.0+ | 1.0+ | 2006 11 17 | G96 | 0.4− | 0.2− | | |
| 2006 08 27 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 1.1+ | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.2− | | |

**2006 RJ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.98885 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28397067 | $\omega$ | 308.48848 | | +0.99258391 | | +0.11468808 |
| $a$ | 2.2923823 | $\Omega$ | 44.96715 | | −0.08598733 | | +0.89673026 |
| $e$ | 0.2551405 | $i$ | 3.26884 | | −0.08592653 | | +0.42745933 |
| $P$ | 3.47 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 07 | 807 | 0.2+ | 0.0 | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.4+ | | |
| 2002 04 07 | 807 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.7− | 2006 10 09 | 644 | 0.0 | 0.0 | | |
| 2002 04 11 | 695 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.2− | | |
| 2002 04 11 | 695 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.0 | 0.8+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2006 08 16 | 644 | 0.2− | 0.3− | 2006 09 22 | 704 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.7− | 0.2− | | |
| 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 22 | 704 | 0.6+ | 1.0− | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2006 08 16 | 644 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.4+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2− | | |
| 2006 08 29 | 691 | 0.0 | 0.0 | 2006 09 26 | 704 | 1.2+ | 1.1+ | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2006 08 29 | 691 | 0.0 | 0.3− | 2006 09 26 | 704 | (0.1+ | 1.8+) | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2006 08 29 | 691 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 644 | 0.2− | 0.3− | | |
| 2006 09 12 | 703 | (1.5− | 1.6−) | 2006 09 26 | 704 | 0.3+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.0 | | |
| 2006 09 12 | 703 | (2.1− | 1.1−) | 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.0 | | |
| 2006 09 12 | 703 | 0.2+ | 0.5− | 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.2− | | |
| 2006 09 12 | 703 | 0.2− | 0.4− | 2006 09 30 | 704 | 0.6+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.9− | | |
| 2006 09 18 | 699 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.6− | 0.0 | | |
| 2006 09 18 | 699 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.6+ | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.4− | | |
| 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.2− | | |

**2006 RM$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.17863 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24035035 | $\omega$ | 282.58498 | | +0.96339370 | | −0.26184941 |
| $a$ | 2.5619632 | $\Omega$ | 92.61628 | | +0.26285562 | | +0.88040549 |
| $e$ | 0.1618048 | $i$ | 3.30038 | | +0.05272097 | | +0.39537459 |
| $P$ | 4.10 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 608 | 0.2+ | 0.7− | 2006 09 20 | 644 | 0.4− | 0.5− | 2006 10 01 | 691 | 0.1+ | 0.2− | | |
| 2002 10 07 | 608 | 0.2+ | 0.3− | 2006 09 20 | 644 | 0.3− | 0.8− | 2006 10 01 | 691 | 0.3− | 0.1− | | |
| 2002 10 07 | 608 | 0.4+ | 0.1− | 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1− | | |
| 2002 10 31 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.7− | 0.2+ | 2006 10 16 | 703 | 0.1+ | 1.1+ | | |
| 2002 10 31 | 699 | 0.3+ | 1.2− | 2006 09 26 | 704 | 0.2− | 1.0+ | 2006 10 16 | 703 | 0.2− | 0.7+ | | |
| 2002 10 31 | 699 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.2− | | |
| 2002 10 31 | 699 | 0.1− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.4− | 0.9+ | | |
| 2005 05 08 | G96 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.6− | | |
| 2005 05 08 | G96 | 0.1− | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.4− | | |
| 2005 05 08 | G96 | 0.5− | 0.5− | 2006 09 28 | 704 | 0.4− | 0.8+ | 2006 10 20 | 644 | 0.5− | 0.0 | | |
| 2005 05 08 | G96 | 0.0 | 0.0 | 2006 09 28 | 699 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.4− | | |
| 2006 09 12 | 703 | 1.2+ | 1.0+ | 2006 09 28 | 704 | 0.4+ | 0.6− | 2006 10 21 | 644 | 0.5− | 0.2− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 12 | 703 | 0.8− | 0.3+ | 2006 09 28 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.3− | | |
| 2006 09 12 | 703 | 0.2− | 1.2+ | 2006 09 28 | 699 | 1.0− | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.1+ | | |
| 2006 09 12 | 703 | 1.0− | 0.2+ | 2006 09 28 | 699 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 0.3− | 1.4+ | | |
| 2006 09 18 | 703 | 0.8+ | 0.2+ | 2006 09 28 | 699 | 1.5+ | 1.2− | 2006 10 22 | 703 | 0.7− | 0.1+ | | |
| 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.7− | 0.3+ | 2006 10 22 | 703 | 0.5+ | 0.4+ | | |
| 2006 09 18 | 703 | 0.9+ | 0.4− | 2006 09 30 | 704 | 0.7+ | 0.0 | | | | | | |
| 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 09 30 | 704 | 0.6+ | 0.2+ | | | | | | |

**2006 RT$_{62}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.74381 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29911582 | $\omega$ | 300.30201 | | +0.94732917 | | +0.31835878 |
| $a$ | 2.2143340 | $\Omega$ | 41.16246 | | −0.27263540 | | +0.85877076 |
| $e$ | 0.1964266 | $i$ | 3.03587 | | −0.16803984 | | +0.40144797 |
| $P$ | 3.30 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 27 | 691 | 0.2+ | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.3− | 2006 09 30 | 703 | 0.5+ | 1.0− |
| 2003 10 27 | 691 | 0.3− | 0.0 | 2006 09 14 | 703 | 0.7− | 0.7− | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2003 10 27 | 691 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.4+ | 0.3− |
| 2003 11 19 | 691 | 0.1− | 0.1− | 2006 09 19 | 704 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.9− |
| 2003 11 19 | 691 | 0.1+ | 0.1− | 2006 09 19 | 704 | 0.5− | 0.4+ | 2006 10 09 | 644 | 0.4− | 0.3+ |
| 2003 11 19 | 691 | 0.3+ | 0.1− | 2006 09 26 | 704 | 0.4+ | 0.5+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 2006 09 14 | 703 | 0.5+ | 0.3− | 2006 09 26 | 704 | 0.8− | 1.3+ | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 2006 09 14 | 703 | 0.6+ | 0.1− | 2006 09 26 | 704 | 0.0 | 0.3− | | | | |

**2006 RE$_{63}$ = 1993 TM$_{46}$ = 2004 CQ$_{89}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.62928 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22337816 | $\omega$ | 217.79495 | | +0.57377278 | | +0.81600764 |
| $a$ | 2.6901443 | $\Omega$ | 87.32448 | | −0.73328280 | | +0.54995865 |
| $e$ | 0.0592876 | $i$ | 4.02508 | | −0.36480286 | | +0.17798039 |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | (1.7+ | 4.0−) | 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.6− | 0.5− |
| 1993 10 09 | 809 | (0.2− | 4.4−) | 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.5− | 0.1+ |
| 1993 10 09 | 809 | (2.7− | 4.0−) | 2004 02 18 | 691 | 0.0 | 0.3+ | 2006 09 14 | 703 | 0.3− | 0.1− |
| 1993 10 11 | 809 | 0.3+ | 0.3− | 2004 02 18 | 691 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.2− |
| 1993 10 11 | 809 | 0.4+ | 0.7+ | 2004 02 18 | 691 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.7− | 0.5+ |
| 1993 10 11 | 809 | 0.0 | 0.3− | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 09 19 | 699 | 1.0+ | 1.3+ |
| 1996 04 17 | 691 | 0.1− | 0.1− | 2004 04 15 | 645 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.6− | 0.1− |
| 1996 04 17 | 691 | 0.0 | 0.0 | 2005 05 08 | G96 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.3− | 0.7+ |
| 1996 04 17 | 691 | 0.2− | 0.2+ | 2005 05 08 | G96 | 0.1− | 0.0 | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 2000 03 11 | 699 | 0.3− | 0.0 | 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.1+ | 0.3− |
| 2000 03 11 | 699 | 1.0− | 1.0+ | 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.7− | 1.6+ |
| 2000 03 11 | 699 | 0.8+ | 0.1− | 2005 06 04 | 691 | 0.6+ | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.6+ |
| 2000 03 11 | 699 | 0.2− | 1.2+ | 2005 06 04 | 691 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 1.3− | 0.6+ |
| 2004 01 22 | 704 | 1.6+ | 0.6+ | 2005 06 04 | 691 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.4+ | 1.0+ |
| 2004 01 22 | 704 | 0.7+ | 1.7+ | 2005 06 16 | G96 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2004 01 22 | 704 | 0.1− | 1.3+ | 2005 06 16 | G96 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.1− | 0.2+ | 2005 06 16 | G96 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2004 01 22 | 704 | 0.4+ | 0.8+ | 2005 06 16 | G96 | 0.6+ | 0.5+ | | | | |
| 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 09 14 | 703 | 0.6+ | 0.4+ | | | | |

**2006 RF$_{63}$ = 2004 EV$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.02074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19535854 | $\omega$ | 338.47396 | | +0.99870933 | | +0.01222181 |
| $a$ | 2.9415830 | $\Omega$ | 21.00731 | | +0.01475043 | | +0.85898907 |
| $e$ | 0.1146434 | $i$ | 7.90418 | | −0.04860134 | | +0.51184804 |
| $P$ | 5.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.2− | 0.1− | 2004 03 26 | 691 | 0.7+ | 0.5+ | 2006 09 19 | 699 | (1.9+ | 1.3−) |
| 2001 07 20 | 644 | 0.6− | 0.4− | 2006 08 30 | 699 | (1.4+ | 2.3+) | 2006 09 19 | 699 | 1.1+ | 1.1+ |
| 2001 07 20 | 644 | 0.3− | 0.1− | 2006 08 30 | 699 | 0.5+ | 0.6+ | 2006 09 25 | 699 | 0.7− | 0.4+ |
| 2001 09 19 | 704 | 0.9− | 0.9+ | 2006 08 30 | 699 | 0.4− | 0.7− | 2006 09 25 | 699 | (1.9+ | 0.0 ) |
| 2001 09 19 | 704 | 0.6− | 0.4+ | 2006 08 30 | 699 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.1− | 0.2− |
| 2001 09 19 | 704 | 1.1+ | 1.2+ | 2006 09 14 | 703 | 1.2− | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.1+ |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.8+ |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.4− | 1.0+ | 2006 11 17 | G96 | 0.4− | 0.2+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 14 | 703 | (1.7+ | 0.1−) | 2006 11 17 | G96 | 0.5+ | 0.4+ |
| 2004 03 26 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.4+ |
| 2004 03 26 | 691 | (1.9+ | 0.2+) | 2006 09 19 | 699 | 0.5+ | 0.3− | | | | |

**2006 RG$_{63}$ = 2002 UW$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.71043 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23717167 | $\omega$ | 168.52578 | | +0.70673828 | | +0.70412779 |
| $a$ | 2.5848034 | $\Omega$ | 146.37541 | | −0.65852275 | | +0.69023793 |
| $e$ | 0.3189542 | $i$ | 7.13075 | | −0.25859002 | | +0.16666027 |
| $P$ | 4.16 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.4− | 0.5+ | 2006 08 23 | 644 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.5− | 0.0 |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2006 08 23 | 644 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.3+ | 0.5− |
| 2002 10 15 | 644 | 0.1− | 0.3+ | 2006 09 14 | 703 | 0.6+ | 0.2− | 2006 09 22 | 704 | 0.6+ | 0.5− |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.9+ | 0.3− | 2006 09 26 | 703 | 0.1− | 0.3+ |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | (2.3− | 0.3−) | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | (1.0− | 2.0+) | 2006 09 26 | 703 | 0.2+ | 0.6− |
| 2002 10 30 | 645 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.2− |
| 2002 11 07 | 645 | 0.1− | 0.1− | 2006 09 19 | 699 | (1.9+ | 0.9+) | 2006 09 27 | 703 | 0.1+ | 0.5− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.9− | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.5− |
| 2006 07 21 | 703 | 0.7+ | 0.3− | 2006 09 19 | 699 | 0.6− | 0.3− | 2006 09 27 | 703 | 0.2+ | 0.3+ |
| 2006 07 21 | 703 | 0.7+ | 0.4− | 2006 09 20 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.5− |
| 2006 07 21 | 703 | 0.4− | 0.3− | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2006 07 21 | 703 | 0.5− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2006 08 23 | 704 | 0.3− | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.4− | 0.4+ |
| 2006 08 23 | 704 | (0.7− | 2.0+) | 2006 09 21 | 699 | 0.9− | 0.4+ | 2006 10 24 | 644 | 0.4+ | 0.2+ |
| 2006 08 23 | 704 | 0.4− | 0.6+ | 2006 09 21 | 699 | 0.0 | 1.0+ | 2006 10 24 | 644 | 0.0 | 0.0 |
| 2006 08 23 | 704 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.8− | 2006 10 24 | 644 | 0.3+ | 0.6+ |
| 2006 08 23 | 644 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.2+ | 0.8+ | | | | |

**2006 RR$_{63}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.32935 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22309896 | $\omega$ | 152.58607 | | +0.55637058 | | +0.81577289 |
| $a$ | 2.6923882 | $\Omega$ | 150.39904 | | −0.80888063 | | +0.57524116 |
| $e$ | 0.2051369 | $i$ | 18.65576 | | −0.19016809 | | −0.06010153 |
| $P$ | 4.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 12 | 691 | 0.5− | 0.2− | 2002 09 05 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.3+ | 0.3+ |
| 2000 03 12 | 691 | 0.3+ | 0.3+ | 2002 09 05 | 645 | 0.1+ | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.5− |
| 2000 03 12 | 691 | 0.1+ | 0.0 | 2004 01 28 | 645 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.0 |
| 2001 05 14 | 644 | 0.1− | 1.3− | 2004 01 28 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.0 |
| 2001 05 14 | 644 | 0.4− | 1.1− | 2006 08 17 | 644 | 0.2+ | 0.3− | 2006 09 20 | 703 | 0.6− | 0.2− |
| 2001 05 14 | 644 | 0.1+ | 1.4− | 2006 08 17 | 644 | 0.3+ | 0.4− | 2006 09 20 | 703 | 0.5+ | 1.2− |
| 2001 07 17 | 644 | 0.1+ | 0.8+ | 2006 08 17 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.4− |
| 2001 07 17 | 644 | 0.1+ | 0.8+ | 2006 08 17 | 644 | 0.4+ | 0.3− | 2006 09 20 | 703 | 0.5+ | 0.1− |
| 2001 07 17 | 644 | 0.0 | 0.7+ | 2006 08 17 | 644 | 0.8+ | 0.2− | 2006 09 26 | 703 | 0.5− | 0.6+ |
| 2001 07 17 | 644 | 0.3− | 0.6+ | 2006 08 17 | 644 | 0.5+ | 0.1+ | 2006 09 26 | 703 | 1.1− | 0.6+ |
| 2001 07 17 | 644 | 0.2+ | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.6− | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2001 07 17 | 644 | 0.1+ | 0.6+ | 2006 09 14 | 703 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.4+ |

**2006 RW$_{63}$ = 2002 QH$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.96668 | | (2000.0) | | | |
| $n$ | 0.27132657 | $\omega$ | 15.25544 | | +0.85612879 | −0.51560850 |
| $a$ | 2.3630587 | $\Omega$ | 15.92343 | | +0.45997875 | +0.72991253 |
| $e$ | 0.1174837 | $i$ | 7.22752 | | +0.23550592 | +0.44874889 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 704 | 0.4− | 0.5− | 2006 08 30 | 699 | 0.2+ | 0.8− | 2006 10 21 | 644 | 0.5− | 0.4− |
| 1999 12 12 | 704 | 0.1− | 0.3− | 2006 08 30 | 699 | 0.5+ | 0.4− | 2006 10 29 | 704 | 1.4− | 0.8+ |
| 1999 12 12 | 704 | 0.2− | 0.4− | 2006 09 15 | 703 | 0.3− | 0.2− | 2006 10 29 | 704 | 1.4− | 0.8+ |
| 1999 12 12 | 704 | 0.5+ | 0.6− | 2006 09 15 | 703 | 0.8− | 0.6+ | 2006 10 29 | 704 | 0.3− | 1.5+ |
| 2001 03 28 | 691 | 0.0 | 0.4+ | 2006 09 15 | 703 | (1.2− | 2.0+) | 2006 10 29 | 704 | 0.3− | 0.7+ |
| 2001 03 28 | 691 | 0.0 | 0.6+ | 2006 09 15 | 703 | (0.7− | 2.9+) | 2006 10 29 | 704 | (2.9− | 1.4+) |
| 2001 03 28 | 691 | 0.1+ | 0.7+ | 2006 09 17 | 704 | 0.9+ | 0.2+ | 2006 11 14 | 703 | 0.9− | 0.6+ |
| 2002 08 13 | 704 | 0.2− | 0.0 | 2006 09 17 | 704 | 0.3+ | 0.7+ | 2006 11 14 | 703 | 0.1− | 0.6+ |
| 2002 08 13 | 704 | 0.6+ | 0.8+ | 2006 09 17 | 704 | (2.2+ | 0.4+) | 2006 11 14 | 703 | 0.4− | 0.0 |
| 2002 08 13 | 704 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.5+ |
| 2002 08 16 | 608 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.9+ | 0.3+ |
| 2002 08 16 | 608 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.0 |
| 2002 08 16 | 608 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.2− | 0.3+ | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2002 08 19 | 644 | 0.3+ | 0.3+ | 2006 09 20 | 699 | 0.6− | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.0 |
| 2002 08 19 | 644 | 0.4+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2002 08 19 | 644 | 1.2− | 1.3+ | 2006 09 27 | 704 | 0.5+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2004 01 28 | 703 | (0.2+ | 1.5+) | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2004 01 28 | 703 | (1.0− | 3.2+) | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2004 01 28 | 703 | (1.5+ | 0.7+) | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.6− | 0.3+ |
| 2004 01 28 | 703 | 0.9+ | 1.3+ | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2004 02 15 | 704 | 1.0+ | 0.5+ | 2006 09 27 | 704 | 0.5+ | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2004 02 15 | 704 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.9+ | 1.1− | 2006 11 22 | 704 | 0.7− | 0.4+ |
| 2004 02 15 | 704 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2004 02 15 | 704 | 0.5+ | 1.0+ | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 19 | 704 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.4+ | 0.3− |
| 2005 06 26 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 704 | 0.7− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2005 06 26 | 644 | 0.3+ | 0.6+ | 2006 10 19 | 704 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2005 06 26 | 644 | 0.6+ | 0.3+ | 2006 10 19 | 704 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2006 08 30 | 699 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2006 08 30 | 699 | 0.0 | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.3− |

**2006 RC$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.11039 | | (2000.0) | | | |
| $n$ | 0.21226611 | $\omega$ | 152.41483 | | +0.84237765 | −0.53730267 |
| $a$ | 2.7832290 | $\Omega$ | 240.14465 | | +0.48523404 | +0.78961424 |
| $e$ | 0.1046898 | $i$ | 2.72949 | | +0.23440954 | +0.29633628 |
| $P$ | 4.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 09 | 691 | 0.0 | 0.1− | 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 09 20 | 691 | 0.4+ | 0.3+ |
| 1997 10 09 | 691 | 0.0 | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 1997 10 09 | 691 | 0.3+ | 0.5− | 2005 06 27 | G96 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2000 04 24 | 691 | 0.3− | 0.4− | 2005 06 27 | G96 | 0.5+ | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2000 04 24 | 691 | 0.5− | 0.1− | 2005 06 27 | G96 | 0.5+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.4− |
| 2000 04 24 | 691 | 0.0 | 1.2− | 2005 06 27 | G96 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2000 05 24 | 691 | 0.0 | 0.0 | 2006 09 12 | 703 | 0.5+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2000 05 24 | 691 | 0.1+ | 0.3− | 2006 09 12 | 703 | 0.5− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2000 05 24 | 691 | 0.1+ | 0.2+ | 2006 09 12 | 703 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2002 12 10 | 291 | 0.4+ | 0.1+ | 2006 09 12 | 703 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 12 10 | 291 | 0.6+ | 0.7− | 2006 09 19 | 703 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 12 10 | 291 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.4+ | 0.9− | 2006 11 14 | G96 | 0.4− | 0.5− |
| 2003 01 11 | 291 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2003 01 11 | 291 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.4+ |
| 2003 01 11 | 291 | 0.6− | 0.0 | 2006 09 20 | 691 | 0.3+ | 0.3+ | 2006 11 14 | G96 | 0.5+ | 1.1− |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 691 | 0.5+ | 0.2+ | | | | |

**2006 RE$_{64}$ = 2811 P-L = 2000 QQ$_{231}$ = 2001 YY$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.30176 | | (2000.0) | | | |
| $n$ | 0.17211702 | $\omega$ | 205.49460 | | +0.98104398 | −0.19356758 |
| $a$ | 3.2007629 | $\Omega$ | 165.65748 | | +0.18353676 | +0.91291370 |
| $e$ | 0.1753821 | $i$ | 2.12408 | | +0.06218490 | +0.35933294 |
| $P$ | 5.73 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.5+ | 0.0 | 2001 12 12 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.1− |
| 1960 09 24 | 675 | 0.0 | 0.9− | 2001 12 17 | 704 | 0.2− | 0.8− | 2006 09 19 | 699 | 1.2+ | 0.1+ |
| 1960 09 26 | 675 | 0.4+ | 0.4− | 2001 12 17 | 704 | 0.3+ | 0.5− | 2006 09 19 | 699 | 1.4− | 0.1− |
| 1960 09 26 | 675 | 0.3+ | 1.0− | 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.2+ | 1.5+ |
| 1960 09 28 | 675 | 0.3− | 0.8+ | 2001 12 17 | 704 | 0.7− | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.5+ |
| 1960 09 28 | 675 | 0.7− | 0.6− | 2003 01 28 | 645 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.1+ |
| 1997 01 02 | 691 | 0.3+ | 0.5− | 2003 01 28 | 645 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.7− | 1.4+ |
| 1997 01 02 | 691 | 0.2+ | 0.3− | 2006 08 19 | 691 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.4+ | 1.0+ |
| 1997 01 02 | 691 | 0.3+ | 0.4− | 2006 08 19 | 691 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.4− | 1.1+ |
| 2000 08 29 | 704 | (1.5− | 2.2+) | 2006 08 19 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.1− | 0.4+ |
| 2000 08 29 | 704 | 1.2− | 1.2+ | 2006 08 28 | 703 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2000 08 29 | 704 | 0.5− | 1.2+ | 2006 08 28 | 703 | 0.2− | 1.1− | 2006 09 26 | G96 | 0.6+ | 0.1− |
| 2000 09 03 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.7− | 1.0− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2000 09 03 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 0.5− | 1.1− | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 2000 09 03 | 691 | 0.2+ | 0.1+ | 2006 09 12 | 703 | 0.8− | 0.1+ | 2006 09 30 | 704 | 0.3+ | 0.7+ |
| 2001 11 21 | 704 | (0.2+ | 2.6+) | 2006 09 12 | 703 | 1.3− | 0.5+ | 2006 09 30 | 704 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.1− | 0.1+ | 2006 09 12 | 703 | 1.3− | 0.6+ | 2006 09 30 | 704 | 0.9− | 0.4− |
| 2001 11 21 | 704 | (0.2− | 1.8+) | 2006 09 12 | 703 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.7+ | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2001 12 12 | 644 | 0.4− | 1.0+ | 2006 09 19 | 703 | 0.3− | 1.2+ | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2001 12 12 | 644 | 0.5+ | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− |

**2006 RF$_{64}$ = 2005 JP$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.36412 | | (2000.0) | | | |
| $n$ | 0.27507908 | $\omega$ | 245.79880 | | +0.71790445 | −0.69596044 |
| $a$ | 2.3415189 | $\Omega$ | 158.29385 | | +0.65326653 | +0.66563034 |
| $e$ | 0.1621654 | $i$ | 2.46128 | | +0.24053282 | +0.26939805 |
| $P$ | 3.58 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 11 | 691 | 0.2+ | 0.4− | 2005 05 12 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2− |
| 1997 02 11 | 691 | 0.8− | 0.3+ | 2006 09 12 | 703 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.2+ |
| 1997 02 11 | 691 | 0.2+ | 0.2+ | 2006 09 12 | 703 | 1.0+ | 1.4+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 1999 10 19 | 704 | 0.8+ | 0.4− | 2006 09 12 | 703 | 0.8− | 0.8+ | 2006 09 30 | 703 | 0.0 | 1.1+ |
| 1999 10 19 | 704 | 0.2− | 0.0 | 2006 09 12 | 703 | (0.7− | 1.8−) | 2006 09 30 | 703 | (2.3− | 1.0+) |
| 1999 10 19 | 704 | 1.1+ | 0.4− | 2006 09 19 | 703 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 1999 10 19 | 704 | 0.7− | 0.5+ | 2006 09 19 | 703 | 0.1− | 1.3− | 2006 10 16 | 703 | (1.5+ | 1.5−) |
| 2001 03 22 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 16 | 703 | 1.4− | 1.0+ |
| 2001 03 22 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.0 | 2006 10 16 | 703 | (2.7− | 1.3+) |
| 2001 03 22 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.6+ | 0.4− | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2003 12 21 | 691 | 0.1+ | 0.7+ | 2006 09 25 | 699 | 0.7+ | 0.4+ | 2006 10 20 | G96 | 0.4+ | 0.2− |
| 2003 12 21 | 691 | 0.4+ | 0.2− | 2006 09 25 | 699 | 1.0− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2003 12 21 | 691 | 0.2− | 0.4+ | 2006 09 25 | 699 | 0.5+ | 0.4+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 2005 05 11 | G96 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2005 05 11 | G96 | 0.3− | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2005 05 11 | G96 | 0.4− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2005 05 11 | G96 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 17 | G96 | 0.4− | 0.4− |
| 2005 05 12 | 691 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.8− | | | | |
| 2005 05 12 | 691 | 0.2− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.3− | | | | |

**2006 RG$_{64}$ = 2004 FY$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.14630 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17600841 | $\omega$ | 145.00569 | +0.69697925 | | +0.71529069 | |
| $a$ | 3.1534100 | $\Omega$ | 168.86871 | −0.70320340 | | +0.69563531 | |
| $e$ | 0.1260021 | $i$ | 15.25156 | −0.14044533 | | +0.06671389 | |
| $P$ | 5.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.0 | 0.1+ | 2005 05 09 | 691 | 0.2− | 0.1+ | 2006 09 12 | 703 | (1.8+ | 0.9−) |
| 1993 03 19 | 691 | 0.1− | 0.1− | 2005 05 09 | 691 | 0.0 | 0.1+ | 2006 09 12 | 703 | (0.4− | 1.8+) |
| 1993 03 19 | 691 | 0.3− | 0.4− | 2005 05 09 | 691 | 0.1− | 0.2+ | 2006 09 12 | 703 | 0.2− | 0.7+ |
| 2002 01 09 | 645 | 0.1+ | 0.1+ | 2005 07 05 | 691 | 0.6+ | 0.3+ | 2006 09 19 | 699 | 0.6+ | 0.0 |
| 2002 01 09 | 645 | 0.0 | 0.3+ | 2005 07 05 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.9− | 0.7+ |
| 2004 03 23 | 691 | 0.2− | 0.3+ | 2005 07 05 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.8+ |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.7− |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | 0.6− | 1.1+ | 2006 10 02 | G96 | 0.4+ | 0.3+ |
| 2004 03 30 | 691 | 0.2− | 0.5+ | 2006 08 28 | 703 | 1.5− | 0.6− | 2006 10 02 | G96 | 0.6− | 0.0 |
| 2004 03 30 | 691 | 0.4+ | 0.4+ | 2006 08 28 | 703 | 0.3+ | 1.3+ | 2006 10 02 | G96 | 0.0 | 0.3+ |
| 2004 03 30 | 691 | 0.0 | 0.5+ | 2006 09 12 | 703 | 0.0 | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.1+ |

**2006 RH$_{64}$ = 3276 T-3 = 2001 SD$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.95576 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20211914 | $\omega$ | 23.68533 | +0.53390815 | | −0.84520299 | |
| $a$ | 2.8756173 | $\Omega$ | 34.05873 | +0.76877405 | | +0.47344183 | |
| $e$ | 0.0574740 | $i$ | 2.45181 | +0.35203486 | | +0.24796116 | |
| $P$ | 4.88 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 1.9− | 1.3+ | 2001 09 21 | 704 | 0.0 | 0.7+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 1977 10 11 | 675 | 1.1− | 1.4+ | 2006 09 12 | 703 | 0.3− | 1.1− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1977 10 12 | 675 | 1.3+ | 0.6+ | 2006 09 12 | 703 | 0.7− | 0.4− | 2006 09 30 | 703 | (1.7+ | 1.2−) |
| 1977 10 12 | 675 | 1.0+ | 1.6− | 2006 09 12 | 703 | 0.6− | 0.5− | 2006 09 30 | 703 | 0.8+ | 0.1− |
| 1977 10 16 | 675 | 0.2+ | 0.2− | 2006 09 12 | 703 | (1.6− | 1.4−) | 2006 09 30 | 703 | 0.8+ | 0.2− |
| 1977 10 16 | 675 | 0.5+ | 0.4− | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 09 30 | 703 | 1.0+ | 0.8+ |
| 1977 10 17 | 675 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.7+ | 0.7− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 1977 10 17 | 675 | 0.7− | 0.2+ | 2006 09 19 | 703 | 0.0 | 1.1− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | 0.9− | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.9− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.7− | 0.5+ | 2006 09 25 | 699 | 0.6+ | 0.2+ | 2006 10 21 | G96 | 0.5− | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.9+ | 2006 09 25 | 699 | 1.0− | 1.3+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2006 09 25 | 699 | 0.7+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.7− |
| 2001 09 21 | 704 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.8+ | 0.5+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.0 |

**2006 RK$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.84000 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17992758 | $\omega$ | 133.13439 | +0.66532605 | | +0.74653758 | |
| $a$ | 3.1074505 | $\Omega$ | 178.54746 | −0.72797264 | | +0.65017466 | |
| $e$ | 0.2271087 | $i$ | 10.87728 | −0.16552065 | | +0.14126057 | |
| $P$ | 5.48 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.6− |
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2006 08 30 | 704 | 0.5+ | 1.3− | 2006 09 19 | 699 | 1.0− | 0.3− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.0 |
| 1999 03 21 | 645 | 0.2− | 0.1− | 2006 09 13 | 644 | 0.2+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1− |
| 2005 04 15 | 691 | 0.3− | 0.3+ | 2006 09 13 | 644 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.6− | 0.3+ | 2006 09 28 | G96 | 0.3− | 0.5− |
| 2005 04 15 | 691 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.8− | 0.9− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2006 08 29 | 691 | 0.6+ | 0.9+ | 2006 09 19 | 699 | 0.4+ | 0.8+ | 2006 10 16 | G96 | 0.5− | 0.2− |
| 2006 08 29 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.2+ |
| 2006 08 29 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.7− | 2006 10 16 | G96 | 0.0 | 0.3+ |
| 2006 08 30 | 704 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.3− | | | | |

**2006 RC$_{65}$ = 2004 DE$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.94770 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21697589 | $\omega$ | 210.06021 | +0.60515046 | | −0.79605890 | |
| $a$ | 2.7428058 | $\Omega$ | 202.70400 | +0.73504402 | | +0.56309383 | |
| $e$ | 0.0667883 | $i$ | 1.35367 | +0.30578294 | | +0.22184580 | |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.0 | 0.8− | 2004 03 18 | 704 | (2.1+ | 1.4+) | 2006 09 25 | 699 | 0.3+ | 0.1+ |
| 1997 09 28 | 691 | 0.1+ | 0.1+ | 2006 08 23 | 644 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1997 09 28 | 691 | 0.2+ | 0.0 | 2006 08 23 | 644 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1− |
| 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 08 23 | 644 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2002 12 27 | 644 | 0.1− | 0.3− | 2006 09 14 | 644 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.1− |
| 2002 12 27 | 644 | 0.0 | 0.2+ | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 09 25 | 699 | 1.3− | 0.3+ |
| 2004 02 17 | 291 | 0.3− | 0.3+ | 2006 09 14 | 644 | 0.3− | 0.3+ | 2006 09 25 | 699 | 0.0 | 1.1+ |
| 2004 02 17 | 291 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.3+ | 1.1+ | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2004 02 17 | 291 | 0.0 | 0.2+ | 2006 09 19 | 703 | 1.2+ | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2004 02 26 | 704 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.9− | 0.5+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2004 02 26 | 704 | 0.8+ | 0.7− | 2006 09 19 | 703 | 1.0+ | 0.5+ | 2006 10 19 | G96 | 0.5− | 0.1− |
| 2004 02 26 | 704 | 0.4+ | 0.0 | 2006 09 19 | 703 | (0.3− | 1.8+) | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2004 02 26 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2004 03 18 | 704 | (2.6+ | 0.8+) | 2006 09 19 | 703 | 0.0 | 0.8− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 1.4+ | 0.5+ | 2006 09 19 | 699 | 0.3− | 1.0+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2004 03 18 | 704 | (1.8+ | 0.0 ) | 2006 09 25 | 699 | 1.0− | 1.1+ | | | | |

**2006 RE$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.68659 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25667670 | $\omega$ | 68.65330 | +0.84016979 | | −0.53873341 | |
| $a$ | 2.4521390 | $\Omega$ | 323.86251 | +0.45017662 | | +0.75685528 | |
| $e$ | 0.1160126 | $i$ | 6.06399 | +0.30241650 | | +0.37004919 | |
| $P$ | 3.84 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.0 | 0.0 | 2004 02 17 | 645 | 0.1− | 0.1− | 2006 09 14 | 644 | 0.0 | 0.0 |
| 2004 01 19 | 691 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.6− |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.1− | 0.2− |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 08 28 | 703 | 0.9− | 0.7+ | 2006 09 19 | 703 | 0.4+ | 1.3+ |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 08 28 | 703 | 1.7+ | 0.3− | 2006 09 19 | 703 | 0.7− | 1.3− |
| 2004 02 12 | 691 | 0.3+ | 0.2− | 2006 09 14 | 644 | 0.1+ | 0.3+ | | | | |
| 2004 02 17 | 645 | 0.1− | 0.1+ | 2006 09 14 | 644 | 0.5+ | 0.1− | | | | |

**2006 RS$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.12235 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18136203 | $\omega$ | 338.97987 | +0.96200834 | | +0.27237561 | |
| $a$ | 3.0910437 | $\Omega$ | 5.32086 | −0.21264784 | | +0.79058062 | |
| $e$ | 0.0726541 | $i$ | 11.66380 | −0.17123331 | | +0.54844673 | |
| $P$ | 5.43 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 645 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.7+ | 2006 09 22 | 704 | 0.6+ | 1.2+ |
| 2002 12 13 | 645 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.2+ | 0.8+ | 2006 09 22 | 704 | 1.5− | 0.9+ |
| 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.6+ | 0.0 | 2006 09 22 | 704 | 0.9− | 0.1+ |
| 2004 04 12 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 1.4− | 0.3− | 2006 09 22 | 704 | 0.2− | 0.3+ |
| 2004 04 12 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.4− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 1.5− | 0.8+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2004 04 19 | 691 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.6+ | 0.2− | 2006 10 27 | G96 | 0.7− | 0.0 |
| 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.6− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.7− | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.3+ |
| 2006 09 14 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.6− | 2006 10 27 | G96 | 0.0 | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 14 | 644 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.9− | |
| 2006 09 14 | 644 | 0.7− | 0.1+ | 2006 09 22 | 704 | (1.8− | 0.7+) | |

**2006 RU$_{65}$ = 2003 YX$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.87442 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28753832 | $\omega$ | 328.60888 | | +0.38212888 | | −0.92115558 |
| $a$ | 2.2733810 | $\Omega$ | 98.83629 | | +0.86258084 | | +0.32688408 |
| $e$ | 0.1927741 | $i$ | 4.28458 | | +0.33155967 | | +0.21123257 |
| $P$ | 3.43 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.8+ | 0.8− | 2006 09 19 | 699 | 0.7− | 0.8− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 12 19 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.9+ | 0.0 | 2006 10 12 | 644 | 0.5− | 0.1− |
| 2003 12 19 | 704 | 0.6− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.8− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2003 12 19 | 704 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2003 12 21 | 704 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.3+ | 1.1− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2003 12 21 | 704 | 0.2− | 0.3+ | 2006 09 30 | 703 | (1.7− | 1.8−) | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2003 12 21 | 704 | 0.3− | 0.1− | 2006 09 30 | 703 | (1.9− | 0.1−) | 2006 10 19 | 703 | 0.5+ | 0.2− |
| 2003 12 21 | 704 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.5+ |
| 2006 09 14 | 703 | 0.9− | 1.3+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2006 09 14 | 703 | (0.1+ | 2.1−) | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | 1.4+ | 0.8+ |
| 2006 09 14 | 703 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.4− | 0.3− |
| 2006 09 14 | 703 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 24 | 644 | 0.3− | 0.2− |
| 2006 09 19 | 699 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 24 | 644 | 0.4− | 0.3− |

**2006 RA$_{66}$ = 1999 TL$_{333}$ = 2005 JG$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.17357 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27551215 | $\omega$ | 204.25389 | | −0.73512306 | | +0.67756954 |
| $a$ | 2.3390646 | $\Omega$ | 18.45559 | | −0.60996172 | | −0.64675892 |
| $e$ | 0.1465941 | $i$ | 4.02442 | | −0.29587294 | | −0.35014628 |
| $P$ | 3.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.1− | 0.3+ | 2005 05 04 | 644 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 1994 04 03 | 691 | 0.4− | 0.5+ | 2005 05 19 | 644 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.0 |
| 1994 04 03 | 691 | 0.5+ | 0.2− | 2005 05 19 | 644 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2005 05 19 | 644 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.5+ |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.5− | 0.3+ |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2002 08 18 | 644 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.5+ | 0.0 |
| 2005 05 04 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2005 05 04 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 16 | G96 | 0.4− | 1.0− |

**2006 RC$_{66}$ = 2000 JK$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.53294 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22529000 | $\omega$ | 153.16241 | | −0.98859936 | | +0.14807931 |
| $a$ | 2.6749034 | $\Omega$ | 35.38645 | | −0.14521865 | | −0.88983150 |
| $e$ | 0.0174246 | $i$ | 2.69945 | | −0.03978514 | | −0.43159289 |
| $P$ | 4.37 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.3− | 1.1+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2000 05 01 | 691 | 0.5+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2000 05 01 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.6+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2000 05 09 | 691 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.8+ |
| 2000 05 09 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2000 05 09 | 691 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.4− | 0.5+ |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2006 09 14 | 691 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2006 09 19 | 691 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.5− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.6− | 2006 11 14 | G96 | 0.6+ | 0.6− |
| 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1+ | | | | |

**2006 RG$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.43174 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26716876 | $\omega$ | 209.69175 | | +0.75810631 | | +0.63731428 |
| $a$ | 2.3875122 | $\Omega$ | 110.05280 | | −0.56557813 | | +0.74806609 |
| $e$ | 0.1150289 | $i$ | 8.46135 | | −0.32464782 | | +0.18500712 |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 01 | 691 | 0.3− | 0.1− | 2002 07 22 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.1− |
| 1997 02 01 | 691 | 0.1+ | 0.7+ | 2002 08 30 | 644 | 0.4+ | 0.4− | 2006 09 19 | 703 | 0.1+ | 0.5− |
| 1997 02 01 | 691 | 0.3+ | 0.0 | 2002 08 30 | 644 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.1− |
| 2002 07 14 | 644 | 0.1+ | 0.2+ | 2002 08 30 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 1.7+ |
| 2002 07 14 | 644 | 0.2− | 0.4+ | 2006 09 14 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 1.7− | 0.6− |
| 2002 07 14 | 644 | 0.2− | 0.2+ | 2006 09 14 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.3− |
| 2002 07 22 | 644 | 0.2− | 0.6+ | 2006 09 14 | 644 | 0.4− | 0.2+ | | | | |
| 2002 07 22 | 644 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.4+ | 0.2− | | | | |

**2006 RH$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.98350 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26529079 | $\omega$ | 267.10825 | | +0.99255141 | | +0.01752456 |
| $a$ | 2.3987663 | $\Omega$ | 91.86652 | | +0.03128600 | | +0.91974479 |
| $e$ | 0.2021824 | $i$ | 6.92809 | | −0.11774078 | | +0.39212551 |
| $P$ | 3.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 12 | 691 | 0.3− | 0.0 | 2002 07 27 | 644 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.0 | 0.3− |
| 1997 03 12 | 691 | 0.1− | 0.4− | 2002 07 27 | 644 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.2− |
| 1997 03 12 | 691 | 0.0 | 0.1− | 2002 08 11 | 644 | 0.0 | 0.7+ | 2006 09 25 | 703 | 0.0 | 0.1+ |
| 1999 12 27 | 691 | 0.6+ | 0.8− | 2002 08 11 | 644 | 0.3− | 0.8+ | 2006 09 25 | 703 | 0.3− | 0.1− |
| 1999 12 27 | 691 | 0.1− | 0.0 | 2002 08 11 | 644 | 0.3− | 0.6+ | 2006 09 25 | 703 | 0.1− | 0.1+ |
| 1999 12 27 | 691 | 0.3+ | 0.3− | 2003 12 21 | 691 | 0.2+ | 0.4+ | 2006 09 25 | 703 | 0.3− | 1.0− |
| 2000 01 15 | 691 | 0.1− | 0.1− | 2003 12 21 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2000 01 15 | 691 | 0.3− | 0.2− | 2003 12 21 | 691 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2000 01 15 | 691 | 0.3− | 0.1− | 2003 12 27 | 704 | (0.7− | 1.6+) | 2006 10 22 | 644 | 0.1− | 0.5+ |
| 2002 06 12 | 644 | 0.1+ | 0.2− | 2003 12 27 | 704 | 0.6− | 1.0+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 06 12 | 644 | 0.2− | 0.1− | 2003 12 27 | 704 | 0.2+ | 1.1+ | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2002 06 12 | 644 | 0.0 | 0.2− | 2006 08 21 | 644 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 06 17 | 644 | 0.6+ | 0.5− | 2006 08 21 | 644 | 0.6− | 0.4− | 2006 10 23 | 644 | 0.3+ | 1.3+ |
| 2002 06 17 | 644 | 0.4− | 0.1− | 2006 08 21 | 644 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2002 06 17 | 644 | 0.1− | 0.5− | 2006 09 14 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 07 05 | 644 | 0.4+ | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.0 | 2006 11 23 | 703 | 1.1− | 0.0 |
| 2002 07 05 | 644 | 0.1− | 0.4− | 2006 09 14 | 644 | 0.0 | 0.0 | 2006 11 23 | 703 | 1.2+ | 0.0 |
| 2002 07 05 | 644 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.6− | 2006 11 23 | 703 | 1.2− | 0.5− |
| 2002 07 27 | 644 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.7+ | 0.3− | 2006 11 23 | 703 | 0.4− | 0.3− |

**2006 RK$_{66}$ = 1996 EJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.77116 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23385661 | $\omega$ | 324.93779 | | +0.78132717 | | +0.62410672 |
| $a$ | 2.6091734 | $\Omega$ | 356.43653 | | −0.55556552 | | +0.69233241 |
| $e$ | 0.1550345 | $i$ | 3.98542 | | −0.28438497 | | +0.36216936 |
| $P$ | 4.21 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 11 | 691 | 0.5− | 0.2− | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.4− | 0.1− |
| 1996 03 11 | 691 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.5− | 0.1+ |
| 1996 03 11 | 691 | 0.6+ | 0.2− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 1996 03 18 | 691 | 0.2− | 0.0 | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 1996 03 18 | 691 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 1996 03 18 | 691 | 0.3− | 0.5− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.6− |
| 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.6+ | 0.2+ |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.6+ | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.7+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 1.0+ | 0.4− |
| 2005 05 04 | 644 | 0.2− | 0.7+ | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2005 05 04 | 644 | 0.4+ | 0.6+ | 2006 09 26 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2005 05 04 | 644 | 0.5+ | 0.9+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1− | | | | |

**2006 RQ$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.04149 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22832435 | $\omega$ | 54.17841 | | +0.44794464 | −0.89388926 | |
| $a$ | 2.6511516 | $\Omega$ | 9.25950 | | +0.78111226 | +0.38173549 | |
| $e$ | 0.1013999 | $i$ | 6.25750 | | +0.43498188 | +0.23503192 | |
| $P$ | 4.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2004 03 26 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2+ |
| 2004 03 26 | 691 | 0.1− | 0.0 | 2006 09 26 | 152 | 0.3− | 0.8− | 2006 10 15 | 691 | 0.0 | 0.1+ |
| 2004 04 19 | 691 | 0.4+ | 0.0 | 2006 09 26 | 152 | 0.8+ | 1.1− | 2006 10 15 | 691 | 0.1− | 0.4− |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 152 | 0.2+ | 0.6+ | 2006 10 21 | 703 | 1.1− | 0.9+ |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 09 28 | 699 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.3− |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 28 | 699 | (1.3+ | 1.6+) | 2006 10 21 | 703 | 1.1− | 1.5+ |
| 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 09 28 | 699 | 0.6− | 1.2− | 2006 10 21 | 703 | 0.3− | 1.2− |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 28 | 699 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 09 18 | 699 | (1.7− | 1.4−) | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2006 09 18 | 699 | 0.8+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2006 09 18 | 699 | 1.4+ | 0.3− | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.1− | 0.1− |

**2006 RR$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.80152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18869220 | $\omega$ | 37.46347 | | +0.65734309 | −0.75229228 | |
| $a$ | 3.0104639 | $\Omega$ | 11.66506 | | +0.62761449 | +0.51402360 | |
| $e$ | 0.2058730 | $i$ | 12.63617 | | +0.41713321 | +0.41211170 | |
| $P$ | 5.22 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.0 | 1.0− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 26 | 152 | 0.3+ | 0.1− |
| 2001 10 15 | 704 | 0.4− | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 26 | 152 | 0.3− | 0.1+ |
| 2001 10 15 | 704 | (1.8+ | 1.5+) | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 26 | 152 | 0.2+ | 0.2− |
| 2001 10 15 | 704 | 0.8− | 0.5+ | 2006 09 25 | 152 | 0.0 | 1.0+ | 2006 10 17 | 703 | 0.7− | 0.0 |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2006 09 25 | 152 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 1.4− | 0.7− |
| 2001 11 11 | 704 | 0.4− | 0.5+ | 2006 09 25 | 152 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 2001 11 11 | 704 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2001 11 11 | 704 | 0.9+ | 0.7− | 2006 09 26 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 11 11 | 704 | 0.8+ | 0.9− | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | | | | |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 | | | | |

**2006 RV$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.22326 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29991559 | $\omega$ | 289.41102 | | +0.50356351 | +0.86375920 | |
| $a$ | 2.2103957 | $\Omega$ | 10.88214 | | −0.75124796 | +0.44836820 | |
| $e$ | 0.1834117 | $i$ | 5.63662 | | −0.42667352 | +0.22996955 | |
| $P$ | 3.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | 0.4− | 0.6+ | 2005 05 10 | G96 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 2002 04 14 | 704 | 0.1− | 0.2+ | 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.1+ |
| 2002 04 14 | 704 | 0.6+ | 0.5+ | 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.2+ |
| 2002 04 14 | 704 | 0.0 | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 04 14 | 704 | 0.5+ | 0.3− | 2006 09 14 | 691 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 04 11 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.6+ | 0.6− |
| 2005 04 11 | 691 | 0.5+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1− | 0.7− |
| 2005 04 11 | 691 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.2− |
| 2005 04 11 | G96 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 1.1− | 0.8− |
| 2005 04 11 | G96 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.6− | 0.1− |
| 2005 04 11 | G96 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2005 05 10 | G96 | 0.6− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |

**2006 RP$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.19676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23373793 | $\omega$ | 103.90544 | | +0.35152758 | −0.90983919 | |
| $a$ | 2.6100566 | $\Omega$ | 323.00576 | | +0.65302029 | +0.40707683 | |
| $e$ | 0.1144079 | $i$ | 21.49644 | | +0.67081507 | +0.08050526 | |
| $P$ | 4.22 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.1− | 0.1+ | 2004 01 30 | 691 | 0.2− | 0.1+ | 2006 08 29 | 691 | 0.4− | 0.1+ |
| 2002 09 11 | 644 | 0.2+ | 0.0 | 2004 01 30 | 691 | 0.1+ | 0.3− | 2006 08 29 | 691 | 0.3− | 0.0 |
| 2002 09 11 | 644 | 0.3− | 0.1+ | 2004 02 10 | 644 | 0.5+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.0 |
| 2004 01 22 | 704 | 0.7− | 0.1+ | 2004 02 10 | 644 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.1+ |
| 2004 01 22 | 704 | 0.6− | 0.2− | 2004 02 10 | 644 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.1+ | 0.3− |
| 2004 01 22 | 704 | 0.3− | 0.2+ | 2004 02 13 | 691 | 0.6+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2004 01 22 | 704 | 0.3− | 0.3+ | 2004 02 13 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.5− | 0.1+ | 2004 02 13 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 08 29 | 691 | 0.2− | 0.1+ | | | | |

**2006 RY$_{67}$ = 2001 ST$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.46714 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19920562 | $\omega$ | 41.73499 | | +0.94254851 | +0.33344601 | |
| $a$ | 2.9035880 | $\Omega$ | 298.77618 | | −0.31233511 | +0.85791923 | |
| $e$ | 0.0737259 | $i$ | 1.33349 | | −0.11852887 | +0.39088150 | |
| $P$ | 4.95 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 07 | 691 | 0.5+ | 0.2+ | 2001 09 23 | 704 | (2.9− | 0.4−) | 2006 09 23 | 691 | 0.3− | 0.1− |
| 1991 09 07 | 691 | 0.1− | 0.2− | 2001 09 23 | 704 | 0.4− | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.4+ |
| 1991 09 07 | 691 | 0.5− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.4+ | 1.0+ |
| 2001 09 20 | 704 | 1.3+ | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.0 | 1.4+ |
| 2001 09 20 | 704 | 0.3+ | 1.0− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.7− | 0.9− |
| 2001 09 20 | 704 | 0.9+ | 1.1− | 2006 09 19 | 699 | 1.1+ | 0.5+ | 2006 09 25 | 699 | 0.7− | 0.5− |
| 2001 09 20 | 704 | 1.2+ | 0.3− | 2006 09 19 | 699 | 0.7+ | 1.1− | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.5+ | 1.0− | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.6+ | 0.1− |
| 2001 09 23 | 704 | 1.1− | 0.3+ | 2006 09 19 | 699 | 0.0 | 1.1+ | 2006 10 19 | G96 | 0.3− | 0.1− |
| 2001 09 23 | 704 | 1.3− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.1− |

**2006 RZ$_{67}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 282.84607 | | (2000.0) | | | |
| $n$ | 0.18272216 | $\omega$ | 93.81407 | | +0.10266085 | −0.99427138 |
| $a$ | 3.0756853 | $\Omega$ | 350.14376 | | +0.82967314 | +0.10208873 |
| $e$ | 0.0832230 | $i$ | 10.00934 | | +0.54872874 | +0.03165948 |
| $P$ | 5.39 | $H$ | 15.4 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.9+ | 0.1− |
| 1995 09 19 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 20 | 704 | 0.3− | 1.5+ |
| 1995 09 19 | 691 | 0.0 | 0.2− | 2006 09 16 | 699 | 0.9+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.1− |
| 2001 10 20 | 644 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 1.6− | 0.6+ | 2006 09 20 | 704 | 1.0+ | 1.4+ |
| 2001 10 20 | 644 | 0.2+ | 0.4+ | 2006 09 16 | 699 | (2.5− | 0.8+) | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2001 10 20 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 699 | 0.9+ | 1.9− | 2006 09 28 | G96 | 0.4− | 0.5− |
| 2001 11 11 | 699 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.6− | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2001 11 11 | 699 | 0.4+ | 0.0 | 2006 09 19 | 703 | (2.1− | 1.6+) | 2006 09 28 | G96 | 0.3− | 0.3− |
| 2001 11 11 | 699 | 0.8− | 0.8− | 2006 09 19 | 699 | 0.3− | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2001 11 11 | 699 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.7+ | 0.0 | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.7− | 0.5− | 2006 10 23 | G96 | 0.3+ | 0.2− |
| 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 1.4− | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2006 08 28 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.6+ | 0.5− | | | | |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.5+ | | | | |

**2006 RH$_{68}$ = 2004 EA$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.02620 | | (2000.0) | | | |
| $n$ | 0.22763838 | $\omega$ | 226.10139 | | +0.74288205 | −0.66940434 |
| $a$ | 2.6564750 | $\Omega$ | 175.91068 | | +0.63221856 | +0.69916724 |
| $e$ | 0.1564795 | $i$ | 3.94562 | | +0.22005895 | +0.25112347 |
| $P$ | 4.33 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 20 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.7+ |
| 1993 09 20 | 691 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.5+ |
| 1993 09 20 | 691 | 0.3+ | 0.3− | 2006 08 19 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.5− | 0.7+ |
| 2002 11 07 | 704 | 0.4− | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.7+ |
| 2002 11 07 | 704 | 0.2− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.7+ |
| 2002 11 07 | 704 | 1.0− | 0.8+ | 2006 09 15 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 1.4− | 0.8− |
| 2002 11 23 | 644 | 0.6+ | 0.5− | 2006 09 19 | 699 | (1.1+ | 1.9+) | 2006 10 16 | 703 | (0.6− | 1.6+) |
| 2002 11 23 | 644 | 0.5+ | 0.7− | 2006 09 19 | 699 | (0.5+ | 2.1+) | 2006 10 16 | 703 | 1.3− | 1.3+ |
| 2002 11 23 | 644 | 0.5+ | 0.5− | 2006 09 19 | 699 | (2.5+ | 0.8+) | 2006 10 16 | 703 | 1.1+ | 0.1+ |
| 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 1.5+ | 0.9+ | 2006 10 16 | 703 | (1.8− | 0.4−) |
| 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | (2.7+ | 0.3+) | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2004 03 27 | 291 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.1− | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2004 03 27 | 291 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.6− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2004 03 27 | 291 | 0.4+ | 0.4+ | 2006 09 25 | 699 | (1.8− | 0.6+) | 2006 11 17 | G96 | 0.6+ | 0.0 |
| 2004 04 24 | 691 | 0.3+ | 0.6+ | 2006 09 25 | 699 | 0.1− | 0.6+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2004 04 24 | 691 | 0.4− | 0.5+ | 2006 09 25 | 699 | (0.1+ | 1.9+) | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2004 04 24 | 691 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.3− |

**2006 RT$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.04485 | | (2000.0) | | | |
| $n$ | 0.20871484 | $\omega$ | 25.81392 | | +0.77779055 | −0.62804443 |
| $a$ | 2.8147111 | $\Omega$ | 13.17989 | | +0.55641436 | +0.66987556 |
| $e$ | 0.0233441 | $i$ | 6.17772 | | +0.29230963 | +0.39601379 |
| $P$ | 4.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.3− | 0.2+ | 2006 09 19 | 291 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 09 19 | 291 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 09 19 | 291 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.5− | 0.2− |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.1− | 0.2+ |
| 2006 08 27 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.4+ | 0.5+ |
| 2006 08 27 | 691 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2006 08 27 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.2− | | | | |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.1− | | | | |

**2006 RZ$_{68}$ = 2004 EE$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.92433 | | (2000.0) | | | |
| $n$ | 0.21554937 | $\omega$ | 52.01186 | | +0.81995816 | −0.57214224 |
| $a$ | 2.7548939 | $\Omega$ | 342.86438 | | +0.50424927 | +0.73678252 |
| $e$ | 0.0954852 | $i$ | 3.49103 | | +0.27092674 | +0.36028431 |
| $P$ | 4.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.3− | 0.6− | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 699 | 0.0 | 0.3+ |
| 2002 12 11 | 704 | 0.4− | 1.1+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 28 | 699 | 0.3− | 0.7+ |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 0.5− | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 1.1− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 0.1− | 0.3− |
| 2003 01 05 | 704 | 0.5− | 0.6− | 2006 09 20 | 704 | 0.8− | 0.6+ | 2006 10 09 | 644 | 0.7+ | 0.2+ |
| 2003 01 05 | 704 | 1.0+ | 1.0+ | 2006 09 20 | 704 | 1.3− | 0.4+ | 2006 10 09 | 644 | 0.4+ | 0.0 |
| 2003 01 05 | 704 | 0.0 | 0.3+ | 2006 09 20 | 704 | 1.3− | 0.3+ | 2006 10 09 | 644 | 0.7+ | 0.3+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 1.1− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.2− | 0.3− |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 17 | 703 | (1.7+ | 1.3−) |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.3+ |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2006 08 28 | 703 | (2.1+ | 0.5+) | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 703 | 0.7− | 0.6− | 2006 09 26 | G96 | 0.3+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.8− |
| 2006 08 28 | 703 | (0.1+ | 1.6+) | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2006 08 28 | 703 | 1.0+ | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.8− |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.8− |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.7− | | | | |

**2006 RB$_{69}$ = 2004 CV$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 107.14664 | | (2000.0) | | | |
| $n$ | 0.19028182 | $\omega$ | 257.30902 | | −0.50820377 | +0.86118051 |
| $a$ | 2.9936741 | $\Omega$ | 342.13645 | | −0.77718275 | −0.46350380 |
| $e$ | 0.1566494 | $i$ | 1.84052 | | −0.37110093 | −0.20864410 |
| $P$ | 5.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 291 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2004 02 12 | 291 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2004 02 12 | 291 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2004 02 29 | 691 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2004 03 20 | 691 | 0.3+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.5− | 0.3− |
| 2004 03 20 | 691 | 0.2+ | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.6− | 0.2− |
| 2004 03 20 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.2− | | | | |

**2006 RJ$_{69}$ = 1997 UE$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.92675 | | (2000.0) | | | |
| $n$ | 0.21025855 | $\omega$ | 198.09090 | | +0.85480000 | −0.51868621 |
| $a$ | 2.8009172 | $\Omega$ | 193.19262 | | +0.48475517 | +0.80959050 |
| $e$ | 0.0909438 | $i$ | 4.21653 | | +0.18528194 | +0.27482328 |
| $P$ | 4.69 | $H$ | 17.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 28 | 691 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.7− |
| 1997 10 28 | 691 | 0.7− | 0.0 | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 1997 10 28 | 691 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.2− | 0.3− | 2006 09 26 | G96 | 0.5+ | 0.6− |
| 1997 11 02 | 691 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.8− |
| 1997 11 02 | 691 | 0.4+ | 0.2+ | 2006 09 23 | 691 | 0.5− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.6− |
| 1997 11 02 | 691 | 0.4+ | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2006 09 15 | 691 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.4− | | | | |

**2006 RL$_{69}$ = 1999 VD$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 53.28493 | | (2000.0) | | | |
| $n$ | 0.27367495 | $\omega$ | 319.56512 | | +0.28636436 | +0.95808180 |
| $a$ | 2.3495211 | $\Omega$ | 327.07263 | | −0.87490507 | +0.25780450 |
| $e$ | 0.2065504 | $i$ | 0.91117 | | −0.39055931 | +0.12496442 |
| $P$ | 3.60 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1999 11 01 | 691 | 0.0 | 0.1+ | 2006 08 28 | 703 | (2.1+ | 0.5−) | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1999 11 01 | 691 | 0.0 | 0.4+ | 2006 08 28 | 703 | 0.2− | 1.0− | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 1999 11 10 | 691 | 0.4+ | 0.3− | 2006 08 28 | 703 | 0.7+ | 1.3+ | 2006 09 26 | G96 | 0.3+ | 0.5− |
| 1999 11 10 | 691 | 0.9− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.2− | 0.0 |
| 1999 11 10 | 691 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2006 07 21 | G96 | 0.8+ | 0.4+ | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2− |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.5+ | 0.0 |
| 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.1− | | | | |
| 2006 07 21 | G96 | 0.7− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.2+ | | | | |

**2006 RM$_{69}$ = 2004 FX$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.28292 | | (2000.0) | | | |
| $n$ | 0.17565348 | $\omega$ | 267.17597 | | −0.05167056 | +0.99866413 |
| $a$ | 3.1576564 | $\Omega$ | 359.86089 | | −0.85300796 | −0.04430799 |
| $e$ | 0.0913461 | $i$ | 7.89390 | | −0.51933377 | −0.02658496 |
| $P$ | 5.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.8+ | 0.3+ | 2004 04 25 | 691 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.0 |
| 2004 03 17 | 691 | 0.4+ | 0.2+ | 2004 04 25 | 691 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.3− |
| 2004 03 17 | 691 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.7+ | 2006 09 27 | 691 | 0.2+ | 0.5− |
| 2004 03 28 | 291 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.7− | 0.5+ |
| 2004 03 28 | 291 | 0.2− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | (0.0 | 2.5−) |
| 2004 03 28 | 291 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | (0.5+ | 2.4−) |
| 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | (0.2− | 2.6−) |
| 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | (0.3+ | 2.5−) |
| 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.4− | 0.1+ | | | | |
| 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.4+ | | | | |

**2006 RP$_{69}$ = 2004 BB$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 279.05437 | | (2000.0) | | | |
| $n$ | 0.26327361 | $\omega$ | 182.87070 | | −0.17158312 | −0.98504508 |
| $a$ | 2.4110034 | $\Omega$ | 277.00954 | | +0.90418962 | −0.15114565 |
| $e$ | 0.1445383 | $i$ | 0.90438 | | +0.39115260 | −0.08271140 |
| $P$ | 3.74 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.4− | 0.0 | 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1995 10 15 | 691 | 0.4+ | 0.2− | 2004 02 11 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1− | 0.6− |
| 1995 10 15 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 2004 01 22 | 704 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2004 01 22 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.5+ | 0.4+ |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2004 02 11 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | | | | |

**2006 RY$_{69}$ = 2005 JW$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.94574 | | (2000.0) | | | |
| $n$ | 0.28699722 | $\omega$ | 173.18866 | | −0.93818350 | −0.34587792 |
| $a$ | 2.2762376 | $\Omega$ | 346.55243 | | +0.31479053 | −0.83644960 |
| $e$ | 0.1085770 | $i$ | 3.30894 | | +0.14393968 | −0.42511237 |
| $P$ | 3.43 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 22 | 704 | 1.3+ | 1.3+ | 2003 11 20 | 704 | 1.3+ | 0.5− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 1998 04 22 | 704 | 0.9+ | 0.0 | 2003 11 20 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 |
| 1998 04 22 | 704 | 0.2+ | 0.3− | 2003 11 20 | 704 | 1.0+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.2− |
| 1998 04 22 | 704 | 0.4− | 0.5+ | 2003 11 20 | 704 | 0.3+ | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.3+ |
| 1999 09 04 | 691 | 0.4+ | 0.3+ | 2003 11 20 | 704 | 0.7+ | 0.6− | 2006 09 23 | 691 | 0.1− | 0.0 |
| 1999 09 04 | 691 | 0.0 | 0.1+ | 2003 12 01 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 1999 09 04 | 691 | 0.3− | 0.5+ | 2003 12 01 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 1999 09 17 | 691 | 0.6− | 0.2+ | 2003 12 01 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.5− | 0.4− |
| 1999 09 17 | 691 | 0.2− | 0.0 | 2005 05 11 | 644 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 1999 09 17 | 691 | 0.3− | 0.3+ | 2005 05 11 | 644 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2001 01 01 | 691 | 0.3+ | 0.4+ | 2005 05 11 | 644 | 0.1+ | 0.7+ | 2006 09 26 | G96 | 0.5− | 0.2− |
| 2001 01 01 | 691 | 0.2+ | 0.3+ | 2005 05 16 | 644 | 0.4+ | 0.9+ | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2001 01 01 | 691 | 0.6+ | 0.3+ | 2005 05 16 | 644 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.4+ | 0.2− |
| 2001 01 19 | 704 | 1.2− | 0.5+ | 2005 05 16 | 644 | 0.6− | 0.8+ | 2006 09 27 | 691 | 0.3+ | 0.4+ |
| 2001 01 19 | 704 | 1.0− | 1.8+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1− | 0.7+ |
| 2001 01 19 | 704 | 0.6− | 1.3+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2001 03 25 | 695 | 0.0 | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.3− | | | | |
| 2001 03 25 | 695 | 0.0 | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 | | | | |

**2006 RZ$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.27860 | | (2000.0) | | | |
| $n$ | 0.26481220 | $\omega$ | 67.94687 | | +0.69656422 | −0.71747871 |
| $a$ | 2.4016556 | $\Omega$ | 337.89891 | | +0.65354463 | +0.63719905 |
| $e$ | 0.1681483 | $i$ | 0.72362 | | +0.29610421 | +0.28142791 |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 1995 10 15 | 691 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 27 | 704 | 0.7− | 0.3+ |
| 1995 10 15 | 691 | 0.5+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.6− | 1.1+ |
| 1995 10 22 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.2− | 1.4+ |
| 1995 10 22 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.7+ |
| 1995 10 22 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.3− | 0.3− |
| 1995 11 16 | 691 | 0.1− | 0.5− | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 1995 11 16 | 691 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 1995 11 16 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2004 02 12 | 691 | 0.1+ | 0.6+ | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 02 12 | 691 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2004 02 12 | 691 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.2+ | | | | |
| 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.4− | 1.2+ | | | | |

**2006 RD$_{70}$ = 2004 CM$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.64595 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25454459 | $\omega$ | 120.63607 | | −0.15992185 | −0.98711866 | |
| $a$ | 2.4658130 | $\Omega$ | 338.56481 | | +0.90125051 | −0.14408002 | |
| $e$ | 0.1425717 | $i$ | 0.73112 | | +0.40270650 | −0.06955352 | |
| $P$ | 3.87 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.8− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.7− | 0.4+ |
| 2004 02 12 | 691 | 0.7− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2004 02 12 | 691 | 1.4+ | 0.6− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 2004 02 29 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.6+ | 0.4− | 2006 09 27 | 691 | 0.2− | 0.5+ |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1+ |

**2006 RS$_{70}$ = 1996 RN$_{18}$ = 2001 SG$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.01923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19906623 | $\omega$ | 147.05633 | | +0.96052396 | +0.27812390 | |
| $a$ | 2.9049433 | $\Omega$ | 196.79894 | | −0.25978443 | +0.88849788 | |
| $e$ | 0.0672896 | $i$ | 1.26667 | | −0.09952775 | +0.36499126 | |
| $P$ | 4.95 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 05 | 691 | (3.8+ | 6.0−) | 2001 09 21 | 704 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.6− |
| 1996 09 05 | 691 | 0.9+ | 0.4− | 2001 09 21 | 704 | 0.6+ | 0.6+ | 2006 09 26 | G96 | 0.2− | 0.6− |
| 1996 09 05 | 691 | 1.1+ | 0.0 | 2001 09 21 | 704 | 0.4+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 1996 09 15 | 691 | 0.4− | 0.2+ | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.3+ |
| 1996 09 15 | 691 | 0.1− | 0.3− | 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1996 09 15 | 691 | 0.2+ | 0.1− | 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1996 09 19 | 691 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1996 09 19 | 691 | 0.6− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.8+ | 0.5− |
| 1996 09 19 | 691 | 0.6− | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.6+ | 0.4− |
| 2001 09 19 | 704 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.4− |
| 2001 09 19 | 704 | 0.2− | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2001 09 19 | 704 | 0.1+ | 0.9+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2001 09 19 | 704 | 1.3− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.8− |
| 2001 09 19 | 704 | 1.2− | 0.8+ | 2006 09 23 | 691 | 0.3− | 0.4+ | 2006 10 22 | G96 | 0.6− | 0.5− |
| 2001 09 21 | 704 | (1.8+ | 1.0+) | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.7− |

**2006 RJ$_{71}$ = 2001 SG$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.23964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20500444 | $\omega$ | 79.19311 | | −0.09232200 | +0.99572487 | |
| $a$ | 2.8485720 | $\Omega$ | 185.51223 | | −0.92510191 | −0.08686501 | |
| $e$ | 0.0257293 | $i$ | 1.75328 | | −0.36832474 | −0.03140796 | |
| $P$ | 4.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 291 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 09 18 | 291 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2001 09 18 | 291 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 691 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2001 09 21 | 691 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2001 09 21 | 691 | 0.1− | 0.4− | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 2004 03 18 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.8+ | 0.4− | 2006 10 16 | G96 | 0.3− | 0.6− |
| 2004 03 18 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 16 | G96 | 0.0 | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.7− | 2006 10 16 | G96 | 0.2+ | 0.6− |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.6+ | 0.4− | 2006 10 16 | G96 | 0.0 | 0.3− |

**2006 RR$_{71}$ = 1995 SN$_{16}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.59522 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18211353 | $\omega$ | 350.43091 | | −0.98029967 | −0.19749568 | |
| $a$ | 3.0825342 | $\Omega$ | 178.17129 | | +0.18657674 | −0.93061446 | |
| $e$ | 0.0865330 | $i$ | 5.08857 | | +0.06482034 | −0.30814311 | |
| $P$ | 5.41 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 24 | 291 | 0.3− | 0.1+ |
| 1995 09 18 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 24 | 291 | 0.2− | 0.1+ |
| 1995 09 18 | 691 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 24 | 291 | 0.1− | 0.3+ |
| 1995 09 23 | 691 | 0.1+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.2+ | 1.4− |
| 1995 09 23 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2+ |
| 1995 09 23 | 691 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 1995 09 23 | 691 | 0.3+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 1995 09 23 | 691 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.2− | 0.1+ | | | | |
| 1995 09 23 | 691 | 0.6+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.4+ | | | | |

**2006 RT$_{71}$ = 2004 FB$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.94670 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17410048 | $\omega$ | 133.60544 | | +0.48312824 | +0.87554655 | |
| $a$ | 3.1764065 | $\Omega$ | 165.28398 | | −0.80589682 | +0.44572324 | |
| $e$ | 0.1442846 | $i$ | 0.52088 | | −0.34222423 | +0.18641090 | |
| $P$ | 5.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2+ | 0.7− | 2004 03 27 | 291 | 0.1+ | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.4− |
| 2004 03 15 | 691 | 0.3− | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.2− |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 2004 03 23 | 691 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.9+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 2004 03 27 | 291 | 0.6+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.3+ | | | | |
| 2004 03 27 | 291 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.4− | | | | |

**2006 RW$_{71}$ = 1995 UW$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.30929 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17489734 | $\omega$ | 174.65158 | | +0.99718513 | +0.07491593 | |
| $a$ | 3.1667509 | $\Omega$ | 181.06660 | | −0.07344487 | +0.96772692 | |
| $e$ | 0.0765178 | $i$ | 9.49166 | | −0.01508875 | +0.24060799 | |
| $P$ | 5.64 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.5+ | 0.2+ | 2000 09 27 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3− | 0.5− |
| 1995 10 21 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.6− |
| 1995 10 21 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.7− |
| 1995 10 25 | 691 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.1− | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 1995 10 25 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.0 | 0.4− |
| 1995 10 25 | 691 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.2− |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 20 | 695 | 0.0 | 0.2− |

**2006 RB$_{72}$ = 1995 SY$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.47066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27064073 | $\omega$ | 128.27143 | | +0.51019141 | +0.86005211 | |
| $a$ | 2.3670492 | $\Omega$ | 172.40217 | | −0.79798087 | +0.47504518 | |
| $e$ | 0.1889088 | $i$ | 1.68344 | | −0.32082901 | +0.18612481 | |
| $P$ | 3.64 | $H$ | 19.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 24 | 291 | 0.2+ | 0.1+ |
| 1995 09 17 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 24 | 291 | 0.0 | 0.0 |
| 1995 09 17 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.5− |
| 1995 09 18 | 691 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.7+ | 0.1− |
| 1995 09 18 | 691 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 1995 09 18 | 691 | 0.3− | 0.3− | 2006 09 23 | 691 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.8− |
| 2005 03 11 | 695 | 0.0 | 0.7+ | 2006 09 23 | 691 | 0.5− | 0.7+ | 2006 09 27 | 691 | 0.4− | 0.0 |
| 2005 03 11 | 695 | 0.5+ | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.4+ | 0.5+ |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 24 | 291 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.2+ | 0.2− |

**2006 RG$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.25985 | | (2000.0) | | +0.11226008 | +0.99367139 |
| $n$ | 0.30278543 | $\omega$ | 272.20498 | | −0.88974869 | +0.10224446 |
| $a$ | 2.1964066 | $\Omega$ | 4.24642 | | −0.44243073 | +0.04651066 |
| $e$ | 0.1287752 | $i$ | 2.98297 | | | |
| $P$ | 3.26 | $H$ | 17.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 12 | 704 | 1.8+ | 1.3+ | 2005 04 04 | G96 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2002 04 12 | 704 | 0.1+ | 1.0+ | 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 2002 04 12 | 704 | 0.2− | 1.5+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2003 10 22 | 691 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 09 27 | 691 | 0.2− | 0.1− |
| 2003 10 22 | 691 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2003 10 22 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2005 03 10 | G96 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.5− |
| 2005 03 10 | G96 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2005 03 10 | G96 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.3− | 0.7− |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.2− | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.0 | | | | |
| 2005 04 04 | G96 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− | | | | |

**2006 RH$_{72}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 271.99245 | | (2000.0) | | −0.10850891 | −0.99406394 |
| $n$ | 0.20935758 | $\omega$ | 325.24343 | | +0.91442694 | −0.10293405 |
| $a$ | 2.8089473 | $\Omega$ | 130.98457 | | +0.38993486 | −0.03523439 |
| $e$ | 0.0334179 | $i$ | 0.60101 | | | |
| $P$ | 4.71 | $H$ | 16.9 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 18 | 691 | 0.1− | 0.3− | 2004 03 17 | 691 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 1994 01 18 | 691 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.8+ | 1.5+ |
| 1994 01 18 | 691 | 0.2− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1999 03 20 | 691 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 1999 03 20 | 691 | 0.6+ | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 1999 03 20 | 691 | 0.5+ | 0.8− | 2006 09 19 | 691 | 0.4− | 0.3+ | 2006 10 16 | G96 | 1.1+ | 0.3− |
| 2001 05 23 | 807 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2001 05 23 | 807 | 0.2− | 0.1+ | 2006 09 19 | 703 | 1.6− | 0.4− | 2006 10 21 | G96 | 0.6− | 0.8− |
| 2002 12 05 | 291 | 0.5+ | 0.6+ | 2006 09 19 | 703 | 0.8− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 12 05 | 291 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.4+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 12 05 | 291 | 0.6− | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2004 03 17 | 691 | 0.1− | 0.8+ | 2006 09 23 | 691 | 0.1+ | 0.0 | | | | |
| 2004 03 17 | 691 | 0.1+ | 0.8+ | 2006 09 23 | 691 | 0.0 | 0.5+ | | | | |

**2006 RK$_{72}$ = 2002 TU$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.62308 | | (2000.0) | | +0.37290850 | −0.92785777 |
| $n$ | 0.24086236 | $\omega$ | 242.29604 | | +0.86581476 | +0.34966400 |
| $a$ | 2.5583311 | $\Omega$ | 185.81404 | | +0.33362261 | +0.12967286 |
| $e$ | 0.1841047 | $i$ | 2.47990 | | | |
| $P$ | 4.09 | $H$ | 17.9 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 291 | 0.5+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.1− |
| 2002 10 05 | 291 | 0.4− | 0.3+ | 2006 09 23 | 691 | 0.4+ | 0.2+ | 2006 10 01 | 691 | 0.4− | 0.7+ |
| 2002 10 05 | 291 | 0.3− | 0.4+ | 2006 09 23 | 691 | 0.5− | 0.2− | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2002 10 08 | 291 | 0.0 | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 1.0+ | 0.1− |
| 2002 10 08 | 291 | 0.2+ | 0.5− | 2006 09 25 | G96 | 0.0 | 0.6− | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2002 10 08 | 291 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2006 09 15 | 691 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2006 09 15 | 691 | 0.6+ | 0.3− | 2006 09 27 | 691 | 0.3− | 0.4+ | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.3− | | | | |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 | | | | |

**2006 RM$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 16.25632 | | (2000.0) | | +0.96620915 | +0.25768322 |
| $n$ | 0.23511070 | $\omega$ | 296.64616 | | −0.23341252 | +0.88499756 |
| $a$ | 2.5998869 | $\Omega$ | 48.42190 | | −0.10935483 | +0.38778690 |
| $e$ | 0.0734633 | $i$ | 0.47982 | | | |
| $P$ | 4.19 | $H$ | 17.0 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.8+ | 0.2− | 2005 06 01 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 1998 11 16 | 691 | 0.4+ | 0.5− | 2006 07 21 | G96 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.5+ | 0.5− |
| 1998 11 16 | 691 | 0.5+ | 0.3− | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.1− |
| 1998 11 24 | 691 | 0.9− | 0.3− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 1998 11 24 | 691 | 0.7− | 0.3− | 2006 07 21 | G96 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1998 11 24 | 691 | 0.3− | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2000 02 11 | 691 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2000 02 11 | 691 | 0.7+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2000 02 11 | 691 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2002 10 30 | 644 | 0.2− | 1.3+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2002 10 30 | 644 | (0.4− | 1.6+) | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.5− |
| 2002 10 30 | 644 | 0.2− | 1.4+ | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2004 02 12 | 691 | 0.2− | 0.8+ | 2006 09 23 | 691 | 0.2− | 0.5+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2004 02 12 | 691 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.2+ | 2006 10 19 | 695 | 0.0 | 0.1+ |
| 2005 06 01 | 691 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 19 | 695 | 0.1− | 0.1+ |
| 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1+ | | | | |

**2006 RU$_{72}$ = 2005 LC$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.43095 | | (2000.0) | | +0.13614621 | +0.99067737 |
| $n$ | 0.20109505 | $\omega$ | 96.33732 | | −0.96514606 | +0.13155291 |
| $a$ | 2.8853719 | $\Omega$ | 181.51235 | | −0.22351128 | +0.03538609 |
| $e$ | 0.1274976 | $i$ | 10.36656 | | | |
| $P$ | 4.90 | $H$ | 17.6 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 691 | 0.0 | 0.1− | 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2005 05 09 | 691 | 0.0 | 0.0 | 2005 06 14 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2005 05 09 | 691 | 0.1− | 0.0 | 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.6− | 0.4− |
| 2005 06 01 | G96 | 0.4− | 0.2− | 2005 06 14 | 691 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2005 06 01 | G96 | 0.2− | 0.5− | 2006 09 15 | 691 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.8− |
| 2005 06 01 | G96 | 0.6− | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.7− | 2006 09 27 | 691 | 0.2− | 0.4− |
| 2005 06 01 | G96 | 0.6− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2005 06 05 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ | | | | |

**2006 RY$_{72}$ = 1999 VZ$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 337.82316 | | (2000.0) | | | |
| $n$ | 0.27566414 | $\omega$ | 15.36588 | | +0.81140793 | −0.58439334 |
| $a$ | 2.3382047 | $\Omega$ | 20.40418 | | +0.53315686 | +0.73298155 |
| $e$ | 0.1889383 | $i$ | 1.65665 | | +0.23950142 | +0.34817018 |
| $P$ | 3.58 | $H$ | 19.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 1999 11 10 | 691 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.4− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3− |
| 1999 11 10 | 691 | 0.4− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 1999 11 14 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.3− | 2006 10 16 | G96 | 0.3− | 0.1+ |
| 1999 11 14 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.5+ | 0.4− | 2006 10 16 | G96 | 0.7+ | 0.4− |
| 1999 11 14 | 691 | 0.7+ | 0.8− | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 16 | G96 | 1.5+ | 0.4− |
| 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 16 | G96 | 0.5− | 0.0 |
| 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.4− | 0.6− | | | | |

**2006 RA$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 321.51242 | | (2000.0) | | | |
| $n$ | 0.19880993 | $\omega$ | 43.86579 | | +0.66075009 | −0.75060218 |
| $a$ | 2.9074394 | $\Omega$ | 4.77891 | | +0.68053672 | +0.59772553 |
| $e$ | 0.0678406 | $i$ | 1.64028 | | +0.31666873 | +0.28163905 |
| $P$ | 4.96 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 691 | (6.6+ | 3.7+) | 2001 10 14 | 645 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.3+ |
| 1996 09 13 | 691 | 0.3− | 0.3+ | 2001 10 14 | 645 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.5+ |
| 1996 09 13 | 691 | 0.7+ | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | (1.8− | 0.8+) |
| 1996 09 21 | 691 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 1996 09 21 | 691 | 0.2− | 0.5− | 2006 09 15 | 691 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.5− |
| 1996 09 21 | 691 | 0.6− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 2001 09 19 | 691 | 1.4+ | 0.9− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.3− | 1.0− |
| 2001 09 19 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.4+ | 0.3− | 2006 09 27 | 691 | 0.4− | 0.7+ |
| 2001 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2+ |

**2006 RB$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.88462 | | (2000.0) | | | |
| $n$ | 0.21930964 | $\omega$ | 319.91930 | | +0.99950102 | +0.02899697 |
| $a$ | 2.7233131 | $\Omega$ | 38.42460 | | −0.02125994 | +0.91085327 |
| $e$ | 0.0932812 | $i$ | 1.15480 | | −0.02336064 | +0.41171045 |
| $P$ | 4.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.7− | 0.3+ |
| 2000 04 26 | 691 | 0.4+ | 0.3− | 2006 09 19 | 703 | (0.6− | 1.7−) | 2006 09 27 | 704 | 0.6+ | 0.0 |
| 2000 04 26 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.2− | 1.1− | 2006 09 27 | 704 | 0.1+ | 0.4+ |
| 2000 05 02 | 691 | 0.3− | 0.0 | 2006 09 20 | 704 | 1.4− | 0.4+ | 2006 09 28 | 699 | 0.1+ | 0.4− |
| 2000 05 02 | 691 | 0.2− | 0.3− | 2006 09 20 | 704 | 1.3− | 0.4− | 2006 09 28 | 699 | (2.5+ | 1.1+) |
| 2000 05 02 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.7− | 0.5+ | 2006 09 28 | 699 | (1.6+ | 0.7+) |
| 2006 08 28 | 703 | (2.8+ | 0.8−) | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 09 28 | 699 | 0.4+ | 1.3+ |
| 2006 08 28 | 703 | 0.4− | 1.3+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2006 08 28 | 703 | 0.9− | 1.1− | 2006 09 23 | 691 | 0.2+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.4− |
| 2006 08 28 | 703 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.7− |
| 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 16 | G96 | 0.1+ | 1.1− |
| 2006 09 19 | 691 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 1.3+ | 1.1− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.6+ | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2006 09 19 | 703 | 0.4+ | 0.6− | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |

**2006 RH$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.12620 | | (2000.0) | | | |
| $n$ | 0.28025442 | $\omega$ | 305.84502 | | +0.68800889 | +0.72559602 |
| $a$ | 2.3126029 | $\Omega$ | 7.66477 | | −0.63219009 | +0.60766790 |
| $e$ | 0.1832922 | $i$ | 5.34192 | | −0.35634178 | +0.32287792 |
| $P$ | 3.52 | $H$ | 18.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.9− | 0.5− | 2006 09 19 | 703 | 0.1− | 1.1− | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2005 03 10 | G96 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.6− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2005 03 10 | G96 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2005 03 10 | G96 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4+ |
| 2005 04 11 | 695 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.8− |
| 2005 04 11 | 695 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3+ |
| 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.6− | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ | | | | |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.3− | 0.0 | | | | |

**2006 RM$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.26488 | | (2000.0) | | | |
| $n$ | 0.19014475 | $\omega$ | 13.70743 | | +0.96514366 | −0.26171727 |
| $a$ | 2.9951126 | $\Omega$ | 1.46658 | | +0.23492129 | +0.86404851 |
| $e$ | 0.2108321 | $i$ | 2.99994 | | +0.11536773 | +0.43002818 |
| $P$ | 5.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2001 10 26 | 644 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.4− | 0.4− |
| 2001 10 26 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.7+ | 0.6− |
| 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.7+ | 1.2− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.7+ | 0.2− |
| 2006 09 15 | 691 | 0.6+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2006 09 18 | 291 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2006 09 18 | 291 | 0.3− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2006 09 18 | 291 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2006 09 19 | 703 | 1.0− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.4+ |
| 2006 09 19 | 703 | 0.0 | 0.8− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2006 09 19 | 703 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.0 |

**2006 RP$_{73}$ = 2001 YC$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 300.62902 | | (2000.0) | | | |
| $n$ | 0.17482698 | $\omega$ | 253.17422 | | +0.21785223 | −0.97588843 |
| $a$ | 3.1676006 | $\Omega$ | 184.31151 | | +0.94981446 | +0.21517204 |
| $e$ | 0.1187414 | $i$ | 10.34303 | | +0.22448361 | +0.03664388 |
| $P$ | 5.64 | $H$ | 15.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.0 | 0.4− | 2004 06 09 | 691 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 1995 10 21 | 691 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1995 10 25 | 691 | 0.3− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.3− | 0.0 |
| 1995 10 25 | 691 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.8− | 0.2+ |
| 2001 12 19 | 704 | 1.4+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.9− | 0.1− |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 1.0− | 0.8+ |
| 2001 12 19 | 704 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.6− | 0.7+ | 2006 10 01 | 704 | 0.7− | 0.2+ |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.9− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2001 12 20 | 209 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.5− | 2006 10 09 | 644 | 0.1− | 0.4+ |
| 2001 12 20 | 209 | 0.1− | 0.0 | 2006 09 19 | 703 | 1.3− | 0.7+ | 2006 10 09 | 644 | 0.2+ | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 209 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 1.1+ |
| 2003 03 09 | 644 | 0.4+ | 0.5+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2003 03 09 | 644 | 0.3+ | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.3+ | 1.0+ |
| 2003 03 09 | 644 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 16 | 703 | (1.7+ | 1.1+) |
| 2003 03 27 | 691 | 0.1+ | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 10 22 | 291 | 0.1+ | 0.2+ |
| 2003 03 27 | 691 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 22 | 291 | 0.3+ | 0.3+ |
| 2003 03 27 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 22 | 291 | 0.3+ | 0.3+ |
| 2004 06 09 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.6− | 0.3+ | | | | |
| 2004 06 09 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | | | | |

**2006 RV$_{73}$ = 2005 GP$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.75517 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27683574 | $\omega$ | 43.88499 | | −0.76949474 | | +0.63859056 |
| $a$ | 2.3316030 | $\Omega$ | 175.77261 | | −0.61429939 | | −0.73624963 |
| $e$ | 0.0732939 | $i$ | 6.96706 | | −0.17468289 | | −0.22391646 |
| $P$ | 3.56 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 2005 04 02 | 691 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.8+ |
| 2005 04 02 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2005 04 12 | 691 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2005 04 12 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.4− | 0.1+ |
| 2005 04 12 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2005 04 15 | 691 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.6− | | | | |
| 2005 04 15 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.4− | | | | |

**2006 RE$_{74}$ = 2004 FF$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.84909 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19647167 | $\omega$ | 90.91103 | | −0.16629501 | | +0.98605579 |
| $a$ | 2.9304620 | $\Omega$ | 169.51012 | | −0.91795511 | | −0.15246245 |
| $e$ | 0.0327161 | $i$ | 1.98968 | | −0.36014495 | | −0.06670224 |
| $P$ | 5.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.4− | 2006 10 16 | 703 | 1.3+ | 0.3− |
| 2004 03 18 | 704 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.1− | 1.4− |
| 2004 03 18 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 703 | 0.3+ | 1.3+ | 2006 10 16 | 703 | (1.6+ | 0.1+) |
| 2004 03 18 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.6− | 0.6− | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.4− | 2006 10 16 | 703 | 1.0+ | 0.4− |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.9+ | 0.6+ |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.6+ | 2006 10 16 | 703 | 1.1− | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.7+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.7− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.5− | | | | |

**2006 RH$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.99968 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30998839 | $\omega$ | 86.11312 | | −0.07813879 | | −0.99682459 |
| $a$ | 2.1622493 | $\Omega$ | 8.41465 | | +0.86805591 | | −0.07559177 |
| $e$ | 0.0717529 | $i$ | 6.01392 | | +0.49027876 | | −0.02503225 |
| $P$ | 3.18 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 02 | 691 | 0.3− | 0.5− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.7− |
| 2003 10 02 | 691 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 2003 10 02 | 691 | 0.0 | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.5+ | 0.0 |
| 2003 10 22 | 691 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2003 10 22 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2003 10 22 | 691 | 0.0 | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.6+ | 2006 10 03 | 291 | 0.1+ | 0.1− |
| 2003 11 21 | 691 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 03 | 291 | 0.1− | 0.2− |
| 2003 11 21 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.6− | 0.2+ | 2006 10 03 | 291 | 0.4− | 0.1+ |
| 2003 11 21 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.5− | | | | |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.1− | 0.5− | | | | |

**2006 RK$_{74}$ = 2004 FH$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.85907 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18980807 | $\omega$ | 97.71312 | | +0.02998807 | | +0.99954581 |
| $a$ | 2.9986534 | $\Omega$ | 174.00290 | | −0.92795587 | | +0.02894909 |
| $e$ | 0.0577407 | $i$ | 1.63603 | | −0.37148165 | | +0.00837452 |
| $P$ | 5.19 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 291 | 0.2− | 0.3+ | 2006 07 21 | G96 | 0.7− | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.1+ |
| 2001 10 14 | 291 | 0.6+ | 0.4+ | 2006 07 21 | G96 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.9+ | 0.4− |
| 2001 10 14 | 291 | 0.6− | 0.3− | 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2001 10 18 | I03 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2001 10 18 | I03 | 0.2+ | 0.5− | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2001 10 18 | I03 | 0.4+ | 0.4− | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.2− |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 704 | 0.3− | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.5− |
| 2004 03 18 | 704 | 0.0 | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.6+ | 0.2+ |
| 2004 03 18 | 704 | 0.3− | 0.7+ | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.3− |

**2006 RL$_{74}$ = 2004 JG$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.69923 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18782272 | $\omega$ | 359.65363 | | −0.85959471 | | −0.51084114 |
| $a$ | 3.0197475 | $\Omega$ | 149.61739 | | +0.46886761 | | −0.79769564 |
| $e$ | 0.0906447 | $i$ | 1.33217 | | +0.20312580 | | −0.32050430 |
| $P$ | 5.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.0 | 0.3+ | 2005 07 06 | 291 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.1− |
| 2000 07 31 | 807 | 0.0 | 0.3+ | 2005 07 06 | 691 | 0.1+ | 0.4− | 2006 09 19 | 703 | 1.0− | 0.6− |
| 2003 01 10 | 291 | 0.2− | 0.7+ | 2005 07 06 | 291 | 0.0 | 0.4− | 2006 09 19 | 703 | 0.2+ | 0.7− |
| 2003 01 10 | 291 | 0.2+ | 0.4+ | 2005 07 06 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | 1.0− | 0.0 |
| 2003 01 10 | 291 | 0.2+ | 0.5+ | 2005 07 06 | 291 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.4− | 0.7+ | 2006 09 23 | 691 | 0.7+ | 0.4+ |
| 2004 04 24 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.4+ |
| 2004 04 24 | 691 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2004 05 14 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.5+ |
| 2004 05 14 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.4+ |
| 2004 05 14 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2004 05 23 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 21 | G96 | 1.0− | 0.1− |
| 2004 05 23 | 691 | 0.3+ | 0.6+ | 2006 09 19 | 703 | 1.2− | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2004 05 23 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2005 07 06 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 1.4− | 1.0+ | | | | |

**2006 RN$_{74}$ = 2002 TE$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.34820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24122918 | $\omega$ | 161.62917 | | −0.98526943 | | −0.16972347 |
| $a$ | 2.5557369 | $\Omega$ | 8.67955 | | +0.13429767 | | −0.84371076 |
| $e$ | 0.0650487 | $i$ | 7.97244 | | +0.10586915 | | −0.50926034 |
| $P$ | 4.09 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 18 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2− | 0.5− |
| 1996 02 18 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 1996 02 18 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.0 |
| 1998 10 23 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 23 | 691 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.3− | 0.3− |
| 1998 10 23 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.8+ | 0.3− | 2006 10 16 | G96 | 0.3− | 0.2+ |
| 2002 10 05 | 644 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2002 10 05 | 644 | 0.0 | 0.5+ | 2006 09 19 | 703 | (2.7− | 1.7−) | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2002 10 05 | 644 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2002 10 06 | 644 | 0.5− | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.5+ |
| 2002 10 06 | 644 | 0.5− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.5+ | 0.3− |
| 2002 10 06 | 644 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.4− | 0.5− | 2006 10 28 | G96 | 0.4− | 0.3+ |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.4− | | | | |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.5− | | | | |

**2006 RS$_{74}$ = 2005 DY$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.41405 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22938341 | $\omega$ | 12.63173 | | +0.89884581 | −0.43758502 | |
| $a$ | 2.6429851 | $\Omega$ | 13.39833 | | +0.39238338 | +0.77869395 | |
| $e$ | 0.0271723 | $i$ | 6.04547 | | +0.19522167 | +0.44961658 | |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2002 11 05 | 704 | 0.8− | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.1+ | 2006 10 01 | 691 | 0.4+ | 0.2+ |
| 2002 11 05 | 704 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.3− | 0.6− | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 2002 11 05 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.5− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2005 02 17 | 809 | 0.1+ | 0.3+ | 2006 09 19 | 703 | 0.4+ | 1.1− | 2006 10 01 | 704 | 1.2− | 1.1− |
| 2005 02 17 | 809 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 10 01 | 704 | 0.4+ | 0.4− |
| 2005 02 17 | 809 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.1+ | 0.4+ |
| 2005 02 18 | 809 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.7− | 2006 10 16 | G96 | 0.3− | 0.4− |
| 2005 02 18 | 809 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.2− | 0.5− |
| 2005 02 18 | 809 | 0.1− | 0.3− | 2006 09 23 | 691 | 0.5+ | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 1.0+ | 0.2− |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.0 | | | | |

**2006 RV$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.07067 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23602324 | $\omega$ | 319.50169 | | −0.68338705 | −0.72995570 | |
| $a$ | 2.5931813 | $\Omega$ | 173.57369 | | +0.69466610 | −0.65527445 | |
| $e$ | 0.0487302 | $i$ | 6.21485 | | +0.22454654 | −0.19437095 | |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 704 | 0.7− | 0.1− | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 23 | 691 | 0.6+ | 0.5+ |
| 2000 03 11 | 704 | 0.8+ | 0.0 | 2006 09 15 | 691 | 0.3− | 0.3− | 2006 09 26 | G96 | 0.0 | 1.1− |
| 2000 03 11 | 704 | 0.6+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2000 03 11 | 704 | 0.4− | 0.8+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.6− |
| 2002 10 10 | 644 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2002 10 10 | 644 | 0.1− | 0.1− | 2006 09 19 | 703 | (0.0 | 1.8−) | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2002 10 10 | 644 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.6− | 1.1− | 2006 09 27 | 291 | 0.3+ | 0.2− |
| 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.7+ | 2006 09 27 | 291 | 0.5+ | 0.3+ |
| 2004 03 20 | 691 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2004 03 20 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.7− | 1.2− | 2006 09 27 | 291 | 0.1+ | 0.3+ |
| 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2− |
| 2006 07 21 | G96 | 0.7− | 0.4− | 2006 09 19 | 703 | (0.8− | 1.6+) | 2006 09 28 | 291 | 0.1+ | 0.1+ |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 19 | 703 | 1.5− | 0.4− | 2006 09 28 | 291 | 0.1− | 0.1+ |
| 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 291 | 0.1+ | 0.5+ |
| 2006 09 15 | 691 | 0.7− | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.0 | | | | |

**2006 RC$_{75}$ = 2005 GB$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.02135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27261224 | $\omega$ | 54.97203 | | −0.56863505 | +0.82258961 | |
| $a$ | 2.3556231 | $\Omega$ | 180.37509 | | −0.78572983 | −0.54341090 | |
| $e$ | 0.0796123 | $i$ | 6.25058 | | −0.24348061 | −0.16748410 | |
| $P$ | 3.62 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 17 | 691 | 0.3− | 0.3+ | 2005 04 14 | 691 | 0.0 | 0.8+ | 2006 09 23 | 691 | 0.1+ | 0.3+ |
| 1992 11 17 | 691 | 0.7− | 0.1− | 2005 04 14 | 691 | 0.0 | 0.8+ | 2006 09 23 | 691 | 0.1− | 0.3+ |
| 1992 11 17 | 691 | 0.7+ | 1.7+ | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.5− | 0.4+ |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2005 04 18 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2000 12 23 | 645 | 0.1+ | 0.1− | 2005 04 18 | 691 | 0.9+ | 0.6− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 2002 08 05 | 644 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.5− | 2006 10 01 | 691 | 0.2+ | 0.6+ |
| 2002 08 05 | 644 | 0.6− | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 05 | 644 | 0.6− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2003 11 16 | 291 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 15 | 291 | 0.2− | 0.5+ |
| 2003 11 16 | 291 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.1− | 0.5+ | 2006 10 15 | 291 | 0.1− | 0.2+ |
| 2003 11 16 | 291 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.3− | 0.9− | 2006 10 15 | 291 | 0.1− | 0.3+ |
| 2005 03 14 | G96 | 0.7− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.7+ | 2006 10 18 | 291 | 0.3+ | 0.2+ |
| 2005 03 14 | G96 | 0.6− | 0.9+ | 2006 09 19 | 703 | 0.4+ | 0.2+ | 2006 10 18 | 291 | 0.4+ | 0.2+ |
| 2005 03 14 | G96 | 0.5− | 0.5+ | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 10 18 | 291 | 0.3+ | 0.2+ |
| 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.4− | 1.1+ | | | | |
| 2005 04 14 | 691 | 0.1− | 0.8+ | 2006 09 19 | 703 | 1.5− | 0.8+ | | | | |

**2006 RJ$_{75}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.77669 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25849129 | $\omega$ | 239.14771 | | −0.08721595 | +0.99596511 | |
| $a$ | 2.4406497 | $\Omega$ | 25.87413 | | −0.89664692 | −0.06923690 | |
| $e$ | 0.1530595 | $i$ | 2.77659 | | −0.43407105 | −0.05709431 | |
| $P$ | 3.81 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.7+ | 0.2− |
| 2005 04 02 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2005 04 02 | 644 | 0.3+ | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1+ |
| 2005 05 02 | 691 | 0.2+ | 0.1+ | 2006 09 23 | 691 | 0.5− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.4+ |
| 2005 05 02 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.2+ |
| 2005 05 02 | 691 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.4+ |
| 2006 09 15 | 691 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2+ |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.4+ |

**2006 RK$_{75}$ = 2005 ET$_{54}$ = 2005 GO$_{83}$ = 2005 GW$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.95220 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28183851 | $\omega$ | 87.78389 | | −0.23139664 | +0.97281491 | |
| $a$ | 2.3039294 | $\Omega$ | 168.82363 | | −0.91059267 | −0.21320643 | |
| $e$ | 0.1669206 | $i$ | 2.75418 | | −0.34245668 | −0.09041111 | |
| $P$ | 3.50 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.4+ | 0.3− | 2005 04 04 | G96 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.0 |
| 1992 09 27 | 691 | 0.3+ | 0.5+ | 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2− | 1.1− |
| 1992 09 27 | 691 | 0.8− | 0.1+ | 2005 04 04 | G96 | 0.1− | 0.0 | 2006 09 19 | 703 | (1.6− | 1.0−) |
| 1999 09 07 | 691 | 0.2− | 0.0 | 2005 04 04 | G96 | 0.9− | 0.4− | 2006 09 23 | 691 | 0.1− | 0.1+ |
| 1999 09 07 | 691 | 0.1+ | 0.1+ | 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.5− | 0.1+ |
| 1999 09 07 | 691 | 0.0 | 0.2+ | 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 09 23 | 691 | 0.3− | 0.2+ |
| 2005 03 04 | 691 | 0.2+ | 0.1+ | 2005 04 11 | G96 | 0.1+ | 0.3+ | 2006 10 18 | 291 | 0.6+ | 0.1+ |
| 2005 03 04 | 691 | 0.1+ | 0.5− | 2005 04 11 | G96 | 0.1− | 0.5+ | 2006 10 18 | 291 | 1.1+ | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 04 | 691 | 0.2+ | 0.1+ | 2005 05 10 | G96 | 0.0 | 0.0 | 2006 10 18 | 291 | 0.8+ | 0.0 |
| 2005 03 08 | 699 | (1.8+ | 0.1+) | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 10 22 | 291 | 0.2+ | 0.0 |
| 2005 03 08 | 699 | 0.6− | 1.3+ | 2005 05 10 | G96 | 0.4+ | 0.4+ | 2006 10 22 | 291 | 0.1+ | 0.2+ |
| 2005 03 08 | 699 | (1.9− | 0.1−) | 2005 05 10 | G96 | 0.2+ | 0.5+ | 2006 10 22 | 291 | 1.0− | 0.6+ |
| 2005 03 08 | 699 | 0.6+ | 0.5− | 2006 09 15 | 691 | 0.1− | 0.5− | 2006 10 27 | 291 | 0.3− | 0.3− |
| 2005 03 08 | G96 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.3− | 0.6− | 2006 10 27 | 291 | 0.5+ | 0.3+ |
| 2005 03 08 | G96 | 0.5− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.6− | 2006 10 27 | 291 | 0.4+ | 0.2− |
| 2005 03 08 | G96 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.2− | 0.1− | | | | |
| 2005 03 08 | G96 | 0.4− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | | | | |

**2006 RL$_{75}$ = 2004 EM$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.33906 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21049227 | $\omega$ | 345.47344 | | +0.99965529 | | +0.00059731 |
| $a$ | 2.7988435 | $\Omega$ | 14.56850 | | +0.01229893 | | +0.87260811 |
| $e$ | 0.0460015 | $i$ | 5.98969 | | −0.02319569 | | +0.48842064 |
| $P$ | 4.68 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2004 03 15 | 691 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.4− | 0.8− | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.4− | 0.6− | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.3− | 1.2+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | (1.1− | 1.6+) | 2006 09 27 | 691 | 0.4− | 0.2+ |
| 2004 03 23 | 691 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 23 | 691 | 0.4− | 0.3+ | 2006 10 16 | G96 | 0.5+ | 0.3− |
| 2006 09 15 | 691 | 0.5+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.5+ | 2006 10 16 | G96 | 0.4+ | 0.7− |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.4− |

**2006 RN$_{75}$ = 2004 GR$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.86274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17670861 | $\omega$ | 28.76242 | | −0.89120598 | | +0.45356283 |
| $a$ | 3.1450743 | $\Omega$ | 178.18085 | | −0.44296892 | | −0.86753993 |
| $e$ | 0.0512499 | $i$ | 10.37248 | | −0.09762396 | | −0.20409612 |
| $P$ | 5.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 24 | 291 | 0.3+ | 0.3+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.3− | 2006 09 24 | 291 | 0.2+ | 0.4+ |
| 2004 04 14 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 09 25 | 291 | 0.4− | 0.1− |
| 2004 04 14 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.6− | 0.4− | 2006 09 25 | 291 | 0.3− | 0.1+ |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 25 | 291 | 0.0 | 0.1+ |
| 2004 04 23 | 691 | 0.4− | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.6− |
| 2004 04 23 | 691 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 2004 04 23 | 691 | 0.1+ | 0.3− | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.8− |
| 2006 09 15 | 691 | 0.2+ | 0.4− | 2006 09 24 | 291 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.5− |

**2006 RO$_{75}$ = 2005 ES$_{217}$ = 2005 GT$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.18007 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30477053 | $\omega$ | 92.00704 | | −0.00611428 | | +0.99997353 |
| $a$ | 2.1868588 | $\Omega$ | 177.63183 | | −0.95123250 | | −0.00459942 |
| $e$ | 0.0719665 | $i$ | 5.47852 | | −0.30841424 | | −0.00563849 |
| $P$ | 3.23 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 24 | 691 | 0.1+ | 0.3+ | 2005 04 02 | G96 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.0 | 0.2− |
| 2003 10 24 | 691 | 0.2+ | 0.5− | 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.5− |
| 2003 10 24 | 691 | 0.2− | 0.1+ | 2005 04 02 | G96 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.3− |
| 2005 03 09 | G96 | (2.5+ | 2.1−) | 2005 04 02 | G96 | 1.1+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 |
| 2005 03 09 | G96 | 0.5− | 0.2+ | 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.4+ |
| 2005 03 09 | G96 | 0.1− | 0.3+ | 2005 04 02 | G96 | 0.5+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2005 03 09 | G96 | 0.6− | 0.1− | 2005 04 02 | G96 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.4+ |
| 2005 03 12 | 691 | 0.4+ | 0.2+ | 2005 04 02 | G96 | 0.6− | 0.2− | 2006 09 23 | 691 | 0.5+ | 0.4+ |
| 2005 03 12 | 691 | 0.1+ | 0.1+ | 2005 04 02 | G96 | 0.3− | 0.3+ | 2006 09 23 | 691 | 0.4− | 0.3+ |
| 2005 03 12 | 691 | 0.1+ | 0.0 | 2005 04 04 | G96 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4− | 0.0 |
| 2005 04 02 | G96 | 0.4− | 0.3− | 2005 04 04 | G96 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2005 04 02 | G96 | 0.4− | 0.0 | 2005 04 04 | G96 | 0.4+ | 1.1+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.6− | 0.1+ | 2005 04 04 | G96 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.6− | 0.2+ |

**2006 RR$_{75}$ = 2000 DF$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.81307 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23361707 | $\omega$ | 11.83933 | | −0.98964672 | | +0.14339144 |
| $a$ | 2.6109567 | $\Omega$ | 176.38756 | | −0.13838999 | | −0.94193002 |
| $e$ | 0.1328397 | $i$ | 5.63369 | | −0.03804700 | | −0.30365561 |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 06 | 691 | 0.1− | 0.1− | 2000 03 03 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.3− | 0.4+ |
| 1992 05 06 | 691 | 0.4+ | 0.2+ | 2000 03 03 | 704 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.3− |
| 1992 05 06 | 691 | 0.3− | 0.2+ | 2000 03 03 | 704 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.6+ | 0.4+ |
| 2000 02 29 | 704 | 0.3+ | 0.5+ | 2004 01 17 | 644 | 0.3− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2000 02 29 | 704 | 0.2− | 0.2+ | 2004 01 17 | 644 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.2+ |
| 2000 02 29 | 704 | 0.2− | 0.3− | 2004 01 17 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2+ |
| 2000 02 29 | 704 | 0.3+ | 0.6− | 2006 09 15 | 691 | 0.4− | 0.5+ | 2006 09 26 | G96 | 0.4− | 0.2− |
| 2000 02 29 | 704 | 0.5− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.3− | 0.4− |
| 2000 03 03 | 704 | 1.1+ | 0.5− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.6+ | 0.0 |
| 2000 03 03 | 704 | 0.3− | 1.0+ | 2006 09 19 | 691 | 0.0 | 0.2+ | | | | |

**2006 RX$_{75}$ = 1999 FQ$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.42661 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19098427 | $\omega$ | 278.54387 | | +0.28768268 | | +0.95745779 |
| $a$ | 2.9863290 | $\Omega$ | 8.28150 | | −0.80515894 | | +0.25459623 |
| $e$ | 0.0849423 | $i$ | 9.04954 | | −0.51861138 | | +0.13585045 |
| $P$ | 5.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.3− | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.5− |
| 1999 03 21 | 645 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.6+ | 2006 10 02 | 691 | 0.4+ | 0.5+ |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2006 09 19 | 703 | 1.0− | 0.9+ | 2006 10 02 | 691 | 0.4− | 0.4+ |
| 1999 04 12 | 691 | 0.9+ | 0.5− | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 1999 04 12 | 691 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.7− |
| 1999 04 12 | 691 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.0 | 1.1− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 1.4+ | 1.2− |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.3− | | | | |
| 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.4− | | | | |

**2006 RF$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.35360 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21798042 | $\omega$ | 96.41919 | | −0.25747834 | | −0.96600260 |
| $a$ | 2.7343728 | $\Omega$ | 8.60903 | | +0.81351081 | | −0.22973119 |
| $e$ | 0.1813625 | $i$ | 8.96304 | | +0.52144517 | | −0.11858569 |
| $P$ | 4.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 291 | 0.2+ | 0.4− | 2006 09 28 | 699 | 0.0 | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2004 05 13 | 291 | 0.1− | 0.1+ | 2006 09 28 | 699 | 1.2− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2004 05 13 | 291 | 0.1− | 0.3+ | 2006 09 28 | 699 | 0.4+ | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.5− |
| 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 01 | 704 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 01 | 704 | 1.0− | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2006 09 18 | 699 | (1.7− | 1.9+) | 2006 10 01 | 704 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2006 09 18 | 699 | 0.4− | 1.0+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 699 | 0.2− | 1.2+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.5− | | |
| 2006 09 18 | 699 | 0.1+ | 0.8− | 2006 10 02 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2006 09 19 | 703 | 0.5− | 0.4+ | 2006 10 17 | G96 | 0.6+ | 0.6− | 2006 11 15 | G96 | 0.2− | 0.4− | | |
| 2006 09 19 | 703 | 0.8− | 0.2+ | 2006 10 17 | G96 | (0.7+ | 1.8−) | 2006 11 15 | G96 | 0.3− | 0.4− | | |
| 2006 09 19 | 703 | 0.6− | 0.5+ | 2006 10 17 | 703 | (1.4+ | 3.1−) | 2006 11 15 | G96 | 0.3− | 0.1− | | |
| 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.2− | 0.1− | | |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.1− | 1.4− | 2006 11 16 | 291 | 0.0 | 0.0 | | |
| 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 16 | 291 | 0.2+ | 0.3+ | | |
| 2006 09 25 | G96 | 0.7+ | 0.2− | 2006 10 17 | 703 | 0.0 | 0.6+ | 2006 11 16 | 291 | 0.0 | 0.3+ | | |
| 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.1− | | | | | | |
| 2006 09 28 | 699 | 0.2− | 2.0− | 2006 10 20 | 644 | 0.1+ | 0.3+ | | | | | | |

**2006 RD$_{77}$ = 2001 UL$_{223}$ = 2004 FG$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.94346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19816844 | $\omega$ | 196.04662 | | +0.95546861 | +0.29392169 | |
| $a$ | 2.9137105 | $\Omega$ | 146.82416 | | −0.26519131 | +0.89428230 | |
| $e$ | 0.0423073 | $i$ | 2.75098 | | −0.12943454 | +0.33744511 | |
| $P$ | 4.97 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 13 | 691 | 0.0 | 0.5− | 2004 02 26 | 695 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | | |
| 1994 03 13 | 691 | 0.1+ | 0.1− | 2004 03 22 | 704 | 0.0 | 0.6+ | 2006 09 23 | 691 | 0.0 | 0.2+ | | |
| 1994 03 13 | 691 | 0.5− | 0.4− | 2004 03 22 | 704 | 0.4+ | 1.1+ | 2006 09 23 | 691 | 0.3+ | 0.3− | | |
| 2001 09 21 | 704 | 0.3+ | 0.4+ | 2004 03 22 | 704 | 0.3+ | 0.5+ | 2006 09 23 | 691 | 0.1− | 0.1+ | | |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.1− | | |
| 2001 09 21 | 704 | 0.3− | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1− | | |
| 2001 09 21 | 704 | 0.2+ | 0.3− | 2004 03 29 | 691 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.4− | 1.2− | | |
| 2001 09 21 | 704 | 0.8+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.7+ | 1.5+ | | |
| 2001 10 17 | 644 | 0.8− | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.7+ | 1.3+ | | |
| 2001 10 17 | 644 | 0.9− | 0.7+ | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.4− | 1.6+ | | |
| 2001 10 17 | 644 | 0.6− | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.4− | | |
| 2004 02 26 | 695 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | | | | | | |

**2006 RJ$_{77}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.53824 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18010860 | $\omega$ | 210.10046 | | +0.95942516 | +0.28091509 | |
| $a$ | 3.1053680 | $\Omega$ | 133.56368 | | −0.25154840 | +0.89167195 | |
| $e$ | 0.1655293 | $i$ | 1.92112 | | −0.12738432 | +0.35497584 | |
| $P$ | 5.47 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.0 | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.3+ | 0.1+ | | |
| 1995 07 24 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | | |
| 1995 07 24 | 691 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.2− | | |
| 2001 12 10 | 691 | 0.1+ | 0.6− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.0 | | |
| 2001 12 10 | 691 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.6− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.1+ | | |
| 2001 12 10 | 691 | 0.6+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.8− | 2006 10 11 | 291 | 0.3− | 0.0 | | |
| 2003 01 30 | 291 | 0.6− | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 11 | 291 | 0.3− | 0.2+ | | |
| 2003 01 30 | 291 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 10 11 | 291 | 0.1− | 0.3+ | | |
| 2003 01 30 | 291 | 0.6+ | 0.5+ | 2006 09 23 | 461 | 0.0 | 0.3+ | 2006 10 13 | 291 | 0.1+ | 0.4+ | | |
| 2004 07 15 | 807 | 0.2+ | 0.0 | 2006 09 23 | 461 | 0.2− | 0.0 | 2006 10 13 | 291 | 0.0 | 0.4+ | | |
| 2004 07 16 | 807 | 0.3+ | 0.4+ | 2006 09 23 | 461 | 0.3− | 0.1+ | 2006 10 13 | 291 | 0.3− | 0.7+ | | |
| 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 09 23 | 691 | 0.3+ | 0.1+ | | | | | | |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.3+ | 0.1+ | | | | | | |

**2006 RU$_{77}$ = 2002 GA$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.18401 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30469614 | $\omega$ | 265.57547 | | +0.21731059 | +0.97546672 | |
| $a$ | 2.1872147 | $\Omega$ | 17.09960 | | −0.84131558 | +0.20547902 | |
| $e$ | 0.1455645 | $i$ | 6.88045 | | −0.49493858 | +0.07901291 | |
| $P$ | 3.23 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 12 | 704 | 0.0 | 1.4+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 1.4− | 1.4− | | |
| 2002 04 12 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | (2.4− | 0.6−) | | |
| 2002 04 12 | 704 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.4− | 0.8− | | |
| 2002 04 12 | 704 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 16 | 703 | (2.0− | 1.0+) | | |
| 2002 04 14 | 704 | 1.0+ | 0.6+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.0 | | |
| 2002 04 14 | 704 | 0.0 | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.3− | 0.0 | | |
| 2002 04 14 | 704 | 0.1+ | 0.7+ | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.1+ | | |
| 2002 04 14 | 704 | (1.3+ | 1.5+) | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.0 | | |
| 2002 04 14 | 704 | (1.3+ | 1.6+) | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.4+ | | |
| 2003 10 22 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.6+ | 0.0 | | |
| 2003 10 22 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.6+ | | |
| 2003 10 22 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2+ | | |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.0 | 0.2+ | | | | | | |
| 2006 09 15 | 691 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.6− | 1.4+ | | | | | | |

**2006 RV$_{77}$ = 2004 FU$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.90108 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21246117 | $\omega$ | 243.19278 | | +0.70376263 | −0.70998109 | |
| $a$ | 2.7815252 | $\Omega$ | 162.00224 | | +0.67750911 | +0.65995974 | |
| $e$ | 0.0791936 | $i$ | 4.71487 | | +0.21377458 | +0.24572343 | |
| $P$ | 4.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.3+ | 0.5+ | 2004 03 17 | 691 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.0 | | |
| 2001 08 21 | 691 | 0.1− | 0.1+ | 2004 03 17 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | | |
| 2001 08 21 | 691 | 0.2− | 0.0 | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | | |
| 2001 09 12 | 695 | 0.1+ | 0.4− | 2004 03 26 | 691 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.3+ | | |
| 2001 09 12 | 695 | 0.0 | 0.5− | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.1− | | |
| 2001 09 18 | 691 | 0.1− | 0.1− | 2004 03 26 | 691 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.0 | 0.0 | | |
| 2001 09 18 | 691 | 0.2− | 0.5− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.0 | | |
| 2001 09 18 | 691 | 0.2+ | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.0 | | | | | | |

**2006 RG$_{78}$ = 1999 VZ$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.41668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27403831 | $\omega$ | 127.59371 | | −0.81004297 | −0.58546412 | |
| $a$ | 2.3474438 | $\Omega$ | 16.65064 | | +0.49574343 | −0.71347071 | |
| $e$ | 0.0671854 | $i$ | 6.53096 | | +0.31315943 | −0.38495624 | |
| $P$ | 3.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 09 25 | 291 | 0.0 | 0.1+ | | |
| 1999 11 03 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.8+ | 2006 09 25 | 291 | 0.0 | 0.1− | | |
| 1999 11 03 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.9− | 0.7− | 2006 09 25 | 291 | 0.1+ | 0.1+ | | |
| 1999 11 15 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.3− | 1.1− | 2006 09 26 | G96 | 0.5+ | 0.3− | | |
| 1999 11 15 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.3− | | |
| 1999 11 15 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.1− | 0.4− | | |
| 2006 09 15 | 691 | 0.1− | 0.4− | 2006 09 23 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− | | |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | | |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 24 | 291 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.2+ | | |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 24 | 291 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.4− | 0.3− | | |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 24 | 291 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |

**2006 RH$_{78}$ = 2005 JE$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.41838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22820524 | $\omega$ | 126.54342 | | +0.11355326 | +0.99309827 | |
| $a$ | 2.6520740 | $\Omega$ | 149.93690 | | −0.92924807 | +0.11661352 | |
| $e$ | 0.1033533 | $i$ | 3.35889 | | −0.35157315 | +0.01253411 | |
| $P$ | 4.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 22 | 691 | 0.0 | 0.4− | 2005 03 13 | G96 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.0 | 0.0 |
| 1996 03 22 | 691 | 0.2+ | 0.0 | 2005 03 13 | G96 | 0.2− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2000 02 04 | 691 | 0.2− | 0.1+ | 2005 05 14 | 644 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2000 02 04 | 691 | 0.2− | 0.2+ | 2005 05 14 | 644 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1− |
| 2000 02 04 | 691 | 0.4− | 0.2− | 2005 05 14 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.1− |
| 2004 01 19 | 691 | 0.2+ | 0.3+ | 2005 05 17 | G96 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2004 01 19 | 691 | 0.5+ | 0.2+ | 2005 05 17 | G96 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2004 01 19 | 691 | 0.0 | 0.0 | 2005 05 17 | G96 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2005 03 13 | G96 | 0.2+ | 0.1+ | 2005 05 17 | G96 | 0.2+ | 0.5+ | | | | |
| 2005 03 13 | G96 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.0 | 0.3+ | | | | |

## 2006 $RN_{78}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.86370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17603137 | $\omega$ | 321.35305 | | +0.90582718 | +0.42059085 | |
| $a$ | 3.1531358 | $\Omega$ | 14.04003 | | −0.31769147 | +0.75370039 | |
| $e$ | 0.0371971 | $i$ | 12.08668 | | −0.28026639 | +0.50501393 | |
| $P$ | 5.60 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 691 | 0.1− | 0.1− | 2006 09 23 | 291 | 0.1− | 0.6+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2004 04 25 | 691 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2004 04 25 | 691 | 0.2+ | 0.1− | 2006 09 23 | 291 | 0.2+ | 0.3+ | 2006 10 16 | 703 | (3.4+ | 2.7−) |
| 2004 05 24 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.0 |
| 2004 05 24 | 691 | 0.6+ | 0.4+ | 2006 09 24 | 291 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 1.7+ | 1.1+ |
| 2004 05 24 | 691 | 0.6− | 0.0 | 2006 09 24 | 291 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 1.9+ | 0.1− |
| 2006 09 15 | 691 | 0.5+ | 0.2− | 2006 09 24 | 291 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.4− |
| 2006 09 15 | 691 | 0.1− | 0.5− | 2006 09 25 | 291 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 25 | 291 | 0.0 | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 09 25 | 291 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.4− | 0.8− |
| 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.5− | 0.6− | 2006 10 16 | A44 | 0.1− | 0.1+ |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.5− | 2006 10 16 | A44 | 0.0 | 0.2+ |
| 2006 09 19 | 703 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 16 | A44 | 0.1− | 0.0 |
| 2006 09 19 | 703 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.5− | 2006 10 27 | G96 | 0.1− | 0.4+ |
| 2006 09 19 | 703 | 1.3− | 0.4− | 2006 09 27 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.8− | 0.1− |
| 2006 09 19 | 703 | 0.2+ | 1.1− | 2006 09 27 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.5− | 0.5− |
| 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2006 09 23 | 291 | 0.3+ | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | | | | |

## 2006 $RO_{78}$ = 2004 $BY_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.17971 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24333524 | $\omega$ | 158.31555 | | −0.99086091 | +0.12555903 | |
| $a$ | 2.5409691 | $\Omega$ | 29.03219 | | −0.13379864 | −0.86855089 | |
| $e$ | 0.1952003 | $i$ | 5.82944 | | −0.01710488 | −0.47943120 | |
| $P$ | 4.05 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 704 | 0.1+ | 0.6+ | 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.3+ |
| 2000 01 29 | 704 | 0.1− | 0.0 | 2004 01 19 | 704 | 0.2+ | 0.8+ | 2006 09 27 | 691 | 0.4− | 0.3+ |
| 2000 01 29 | 704 | 0.4− | 0.5− | 2004 01 19 | 704 | 0.5+ | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2004 01 19 | 704 | 0.9+ | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2004 01 19 | 704 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2003 12 18 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2003 12 18 | 691 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.7− | 0.7− |
| 2003 12 18 | 691 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2004 01 17 | 644 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.0 | | | | |
| 2004 01 17 | 644 | 0.4− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.0 | | | | |

## 2006 $RS_{78}$ = 2005 $GY_{82}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.41770 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27987994 | $\omega$ | 106.82402 | | −0.00761952 | +0.99981609 | |
| $a$ | 2.3146653 | $\Omega$ | 162.71081 | | −0.93852771 | −0.00107599 | |
| $e$ | 0.1665113 | $i$ | 3.39494 | | −0.34511982 | −0.01914777 | |
| $P$ | 3.52 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.3+ | 0.6− | 2005 04 04 | G96 | 0.4+ | 0.2− | 2006 09 23 | 691 | 0.4− | 0.0 |
| 1999 10 03 | 691 | 0.1+ | 0.3− | 2005 04 04 | G96 | 1.0− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 1999 10 03 | 691 | 0.1− | 0.1+ | 2005 04 04 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 2005 03 04 | 691 | 0.6+ | 0.2− | 2006 09 15 | 691 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.5− |
| 2005 03 04 | 691 | 0.6+ | 0.4+ | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 1.1+ | 1.3− |
| 2005 03 04 | 691 | 0.6+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2005 03 04 | G96 | 0.5− | 0.1− | 2006 09 19 | 691 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.1− |
| 2005 03 04 | G96 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 03 04 | G96 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 13 | 291 | 0.5− | 0.5+ |
| 2005 03 04 | G96 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 13 | 291 | 0.3− | 0.9+ |
| 2005 04 04 | G96 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.7− | 0.0 | 2006 10 13 | 291 | 0.4− | 0.6+ |

## 2006 $RU_{78}$ = 2004 $FE_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.44710 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21047337 | $\omega$ | 275.96472 | | +0.13767251 | −0.99040136 | |
| $a$ | 2.7990110 | $\Omega$ | 166.10394 | | +0.92781345 | +0.12460351 | |
| $e$ | 0.0675056 | $i$ | 2.93708 | | +0.34671095 | +0.05982571 | |
| $P$ | 4.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 29 | 691 | 0.0 | 0.5− | 2004 03 27 | 704 | 1.0− | 0.7+ | 2006 09 23 | 691 | 0.1+ | 0.4+ |
| 1992 09 29 | 691 | 0.5+ | 0.6+ | 2004 03 27 | 704 | 0.4+ | 1.4+ | 2006 09 23 | 691 | 0.2+ | 0.1+ |
| 1992 09 29 | 691 | 0.6− | 0.5+ | 2004 03 27 | 704 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.3− |
| 1997 10 29 | 704 | 1.3+ | 1.1− | 2004 03 27 | 704 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 1997 10 29 | 704 | 1.7− | 0.3+ | 2006 07 21 | G96 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.5− |
| 1997 10 29 | 704 | 0.2+ | 0.8− | 2006 07 21 | G96 | 0.6− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.5− |
| 1997 10 29 | 704 | (5.1− | 0.4+) | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1997 11 02 | 691 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 1997 11 02 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.4− |
| 1997 11 02 | 691 | 0.3+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2001 08 23 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2001 08 23 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.8+ | 0.3− | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2001 08 23 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2004 03 23 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.3− | 1.2− | 2006 10 19 | 695 | 0.1− | 0.0 |
| 2004 03 23 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 699 | 1.2− | 0.5+ | 2006 10 19 | 695 | 0.0 | 0.0 |
| 2004 03 23 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2004 03 23 | 704 | (1.7+ | 0.6+) | 2006 09 19 | 691 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2004 03 23 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.2+ | 0.7+ | 2006 09 23 | 691 | 0.5− | 0.1− | | | | |

## 2006 $RV_{78}$ = 2001 $VS_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.79469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17134248 | $\omega$ | 358.06643 | | −0.99940492 | −0.03449263 | |
| $a$ | 3.2104015 | $\Omega$ | 179.95484 | | +0.03427215 | −0.99374063 | |
| $e$ | 0.0699735 | $i$ | 17.33579 | | +0.00390080 | −0.10625355 | |
| $P$ | 5.75 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 24 | 704 | 0.2+ | 1.0+ | 2004 04 24 | 704 | 0.4+ | 0.4+ | 2006 09 23 | 691 | 0.3− | 0.2+ |
| 1998 04 24 | 704 | 0.1− | 0.4+ | 2004 04 24 | 704 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 1998 04 24 | 704 | 0.5+ | 0.2+ | 2004 04 24 | 704 | 0.3− | 0.7− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1998 04 24 | 704 | 0.6− | 0.8+ | 2004 04 24 | 704 | 0.2− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.3− | 1.0− |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.4− | 0.2+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2001 11 21 | 645 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.2− |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.2− | 0.2+ | | | | |

**2006 RZ$_{78}$ = 2005 ED$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.56741 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.30741460 | $\omega$ | 220.34733 | +0.75233463 | | +0.65858612 | |
| $a$ | 2.1743013 | $\Omega$ | 98.45300 | −0.60016998 | | +0.69522989 | |
| $e$ | 0.1821824 | $i$ | 0.92852 | −0.27164058 | | +0.28795786 | |
| $P$ | 3.21 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 21 | 291 | 0.3+ | 0.8+ | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 09 27 | 704 | 1.0− | 0.6+ |
| 2002 03 21 | 291 | 0.2+ | 0.8+ | 2006 09 23 | 691 | 0.3− | 0.3+ | 2006 09 30 | 704 | (2.3− | 1.0+) |
| 2002 03 21 | 291 | 0.3+ | 0.6+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 09 30 | 704 | (2.5− | 1.7+) |
| 2003 10 22 | 695 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.9− | 0.4− |
| 2003 10 22 | 695 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 09 30 | 704 | (1.8− | 1.7+) |
| 2005 03 04 | G96 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2005 03 04 | G96 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2005 03 04 | G96 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2005 03 04 | G96 | 0.2− | 0.6− | 2006 09 27 | 704 | 0.8+ | 0.9+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.3+ |
| 2006 09 15 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 1.3− | 0.7+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.7− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.4+ |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.1+ | | | | |

**2006 RC$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.89440 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20904997 | $\omega$ | 359.88013 | −0.42455928 | | −0.90504114 | |
| $a$ | 2.8117021 | $\Omega$ | 115.24260 | +0.83071185 | | −0.40058099 | |
| $e$ | 0.0276054 | $i$ | 1.61514 | +0.36009339 | | −0.14295245 | |
| $P$ | 4.71 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.6+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.5+ | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.4− |
| 2002 12 10 | 704 | (3.0+ | 0.6−) | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 12 10 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.6− | 0.8− | 2006 09 19 | 691 | 0.3+ | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 12 10 | 704 | 0.5− | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2003 01 11 | 291 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 2003 01 11 | 291 | 0.1− | 0.3− | 2006 09 23 | 691 | 0.4− | 0.3+ | 2006 09 28 | 691 | 0.3+ | 0.4− |
| 2003 01 11 | 291 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.7− | | | | |

**2006 RG$_{79}$ = 2004 HQ$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.61206 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17545618 | $\omega$ | 325.63313 | −0.43296019 | | −0.90119845 | |
| $a$ | 3.1600232 | $\Omega$ | 150.00855 | +0.83561403 | | −0.40944377 | |
| $e$ | 0.0499694 | $i$ | 2.25495 | +0.33807494 | | −0.14211671 | |
| $P$ | 5.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | I03 | 0.1− | 0.3+ | 2004 05 09 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2000 08 30 | I03 | 0.0 | 0.6− | 2004 05 09 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.7− |
| 2000 08 30 | I03 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.6− |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2006 09 15 | 691 | 0.9− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.6− |
| 2001 11 21 | 704 | 0.3− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 695 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.2+ | 1.0+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 19 | 695 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | (1.4+ | 2.9+) | 2006 09 19 | 691 | 0.0 | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 04 22 | 691 | 0.4+ | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.7+ | 0.1+ |
| 2004 04 22 | 691 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.4− | 0.4− |
| 2004 04 22 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2004 05 09 | 691 | 0.2− | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.1− | | | | |

**2006 RM$_{79}$ = 2001 SX$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.08823 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18707068 | $\omega$ | 215.34681 | +0.99037562 | | +0.13512387 | |
| $a$ | 3.0278352 | $\Omega$ | 136.85644 | −0.11475443 | | +0.92269164 | |
| $e$ | 0.0443790 | $i$ | 2.51116 | −0.07737930 | | +0.36108404 | |
| $P$ | 5.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4+ | 0.4+ | 2001 10 23 | 704 | (0.9− | 2.2+) | 2006 09 15 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.6+ | 0.4− | 2001 10 23 | 704 | 0.8+ | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.0 |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2001 10 23 | 704 | (0.1− | 2.0+) | 2006 09 19 | 691 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.2− | 2001 10 23 | 704 | 0.7− | 1.4+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.2+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.6+ | 0.5+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 1.0− | 0.8+ | 2004 04 20 | 691 | 0.2− | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.9+ | 0.1− | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 10 18 | 644 | 0.2− | 0.2+ | 2004 04 20 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2001 10 18 | 644 | 0.7− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2001 10 18 | 644 | 0.6− | 0.0 | 2006 09 15 | 691 | 0.2− | 0.0 | | | | |

**2006 RT$_{79}$ = 2004 FK$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.68677 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.16888564 | $\omega$ | 215.52006 | −0.51478315 | | +0.85668658 | |
| $a$ | 3.2414617 | $\Omega$ | 23.54984 | −0.76628087 | | −0.44253652 | |
| $e$ | 0.0870085 | $i$ | 4.73204 | −0.38446319 | | −0.26504630 | |
| $P$ | 5.84 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 05 | 691 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2000 10 05 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.2− | 0.1− |
| 2000 10 05 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.5+ | 0.8+ |
| 2004 03 16 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2004 03 16 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2004 03 16 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.4− | 0.4− |
| 2004 03 27 | 704 | 0.1− | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2004 03 27 | 704 | 0.3+ | 0.3+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2004 03 27 | 704 | 0.8+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 22 | 291 | 0.2+ | 0.3+ |
| 2004 04 16 | 644 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 22 | 291 | 0.1+ | 0.6+ |
| 2004 04 16 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 22 | 291 | 0.1− | 0.3+ |
| 2004 04 16 | 644 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.5− | | | | |

**2006 RZ$_{79}$ = 2005 GD$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.07366 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29951932 | $\omega$ | 183.18794 | +0.74191071 | | +0.67016050 | |
| $a$ | 2.2123448 | $\Omega$ | 134.70801 | −0.61450586 | | +0.69231611 | |
| $e$ | 0.2045424 | $i$ | 1.71690 | −0.26823693 | | +0.26755057 | |
| $P$ | 3.29 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.7− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 27 | G92 | 0.7+ | 0.1− |
| 2005 04 04 | G96 | 0.2− | 0.7− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 28 | G92 | 0.0 | 0.2− |
| 2005 04 04 | G96 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 704 | 0.6− | 0.9− |
| 2005 04 04 | G96 | (1.7− | 0.1+) | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.3− | 0.0 |
| 2005 04 04 | G96 | 1.0+ | 1.1− | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.6+ | 1.1− |
| 2005 04 04 | G96 | 0.2− | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G92 | 0.6+ | 0.0 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.4− | 0.5+ | 2006 09 26 | 704 | (1.5+ | 2.0−) | 2006 09 28 | 704 | 0.7+ | 0.8− |
| 2005 04 04 | G96 | 0.2+ | 0.4+ | 2006 09 26 | 704 | (1.6+ | 2.1−) | 2006 09 28 | G92 | 0.1− | 0.8+ |
| 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 09 26 | 704 | (1.5+ | 1.3−) | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 26 | 704 | (1.1+ | 1.9−) | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 09 27 | G92 | (1.5+ | 0.6−) | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2006 07 21 | G96 | 0.6+ | 0.0 | 2006 09 27 | 691 | 0.9− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 27 | G92 | 0.3+ | 0.7− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.4+ |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.3+ |

**2006 RD$_{80}$ = 2002 TJ$_{365}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.25399 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24110017 | $\omega$ | 118.80888 | | +0.45478363 | | +0.89057335 |
| $a$ | 2.5566486 | $\Omega$ | 178.19592 | | −0.87554900 | | +0.44854991 |
| $e$ | 0.1797300 | $i$ | 13.10520 | | −0.16305151 | | +0.07537961 |
| $P$ | 4.09 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 | | | | |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | | | | |

**2006 RG$_{80}$ = 1996 BR$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.78836 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25486340 | $\omega$ | 34.53390 | | +0.57486796 | | −0.81805089 |
| $a$ | 2.4637562 | $\Omega$ | 20.39393 | | +0.73868400 | | +0.50944950 |
| $e$ | 0.1820983 | $i$ | 2.94054 | | +0.35195566 | | +0.26693434 |
| $P$ | 3.87 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 18 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 1996 01 18 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 1996 01 18 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.5− | 0.4+ | 2006 10 01 | 691 | 0.4+ | 0.2− |
| 1996 01 25 | 691 | 0.3+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1− |
| 1996 01 25 | 691 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 1996 01 25 | 691 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 16 | G96 | 0.2+ | 0.5− |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.3− | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.2+ | | | | |

**2006 RA$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.70420 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23538275 | $\omega$ | 331.20848 | | +0.99939711 | | −0.03189328 |
| $a$ | 2.5978832 | $\Omega$ | 30.62847 | | +0.03470726 | | +0.90737167 |
| $e$ | 0.0858091 | $i$ | 1.54318 | | +0.00091065 | | +0.41911750 |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.7+ | 0.3− | 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 28 | 704 | 0.5+ | 0.2− |
| 2002 10 03 | 704 | 0.0 | 1.2− | 2006 08 28 | 703 | 0.8+ | 0.5+ | 2006 09 28 | 704 | 0.1+ | 0.1− |
| 2002 10 03 | 704 | 0.0 | 0.7− | 2006 08 28 | 703 | 1.4− | 0.7− | 2006 09 28 | 704 | 0.0 | 0.5+ |
| 2002 10 04 | 599 | 0.3+ | 0.2− | 2006 08 28 | 703 | 1.4− | 0.3− | 2006 09 29 | 704 | 0.3+ | 1.1+ |
| 2002 10 04 | 599 | 0.2+ | 0.5− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.4+ | 0.1− |
| 2002 10 04 | 599 | 0.6+ | 0.2− | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.7+ | 0.3− |
| 2002 10 11 | 644 | 0.5+ | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.9+ | 1.0− |
| 2002 10 11 | 644 | 0.6+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.1+ |
| 2002 10 11 | 644 | 0.5+ | 0.9+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.2− | 0.1− |
| 2002 10 30 | 644 | 0.4+ | 0.4− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.4− |
| 2002 10 30 | 644 | 0.4+ | 0.3− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.2+ | 0.1− |
| 2002 10 30 | 644 | 0.0 | 0.3− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4− |
| 2002 11 06 | 704 | 0.5− | 0.0 | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.7− | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1− |
| 2002 11 06 | 704 | 1.3− | 0.6+ | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 2002 12 06 | 291 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2002 12 06 | 291 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.3+ | 0.5− |
| 2002 12 06 | 291 | 0.6− | 0.2+ | 2006 09 28 | 704 | (1.8+ | 0.3−) | 2006 11 21 | G96 | 0.5+ | 0.2− |

**2006 RB$_{81}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.83679 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20245436 | $\omega$ | 75.94149 | | −0.35375211 | | +0.93525148 |
| $a$ | 2.8724422 | $\Omega$ | 173.29960 | | −0.89494059 | | −0.33445962 |
| $e$ | 0.0018016 | $i$ | 6.30339 | | −0.27192055 | | −0.11593714 |
| $P$ | 4.87 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 17 | 691 | 0.3− | 0.3+ | 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.4+ | 0.4− |
| 1992 11 17 | 691 | (6.4+ | 1.6−) | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.4− |
| 1992 11 17 | 691 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1999 03 13 | 691 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.6− | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 1999 03 13 | 691 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 1999 03 13 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2001 08 26 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 13 | 291 | 0.1+ | 0.1− |
| 2001 08 26 | 691 | 0.1− | 0.2+ | 2006 09 23 | 691 | 1.1+ | 0.0 | 2006 10 13 | 291 | 0.3+ | 0.1− |
| 2001 08 26 | 691 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.4− | 0.2− | 2006 10 13 | 291 | 0.1+ | 0.2+ |
| 2004 04 13 | 691 | 0.4+ | 0.5+ | 2006 09 23 | 691 | 0.5− | 0.2+ | | | | |
| 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | | | | |

**2006 RL$_{81}$ = 2001 UB$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.98640 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18192747 | $\omega$ | 255.10577 | | +0.26312965 | | −0.96475893 |
| $a$ | 3.0846356 | $\Omega$ | 179.62499 | | +0.95521874 | | +0.26027489 |
| $e$ | 0.2259022 | $i$ | 15.34761 | | +0.13535120 | | +0.03869360 |
| $P$ | 5.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.2− | 2002 01 14 | 645 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.6− | 0.1− |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2001 10 20 | 608 | 0.6− | 1.0− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2001 10 20 | 608 | (0.5− | 1.6−) | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2001 10 20 | 608 | 0.4− | 1.3− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.6− |
| 2001 10 21 | 291 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 2001 10 21 | 291 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3− |
| 2001 10 21 | 291 | 1.0+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2001 12 07 | 704 | 0.9− | 0.4+ | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 1.2− | 0.4+ |
| 2001 12 07 | 704 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 1.4− |
| 2001 12 07 | 704 | (1.9− | 0.5+) | 2006 09 26 | G96 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.3− | 1.4+ |
| 2001 12 07 | 704 | 0.9− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− | | | | |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.4− | | | | |

**2006 RN$_{81}$ = 1991 RG$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.94074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26455703 | $\omega$ | 4.46065 | | +0.98320119 | | −0.18216043 |
| $a$ | 2.4031996 | $\Omega$ | 6.07161 | | +0.16390961 | | +0.85336311 |
| $e$ | 0.1285244 | $i$ | 6.25947 | | +0.08030602 | | +0.48845571 |
| $P$ | 3.73 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 08 | 691 | 0.3+ | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.2+ |
| 1991 09 08 | 691 | 0.2+ | 0.5+ | 2006 09 24 | 291 | 0.0 | 0.1− | 2006 10 01 | 704 | 1.2+ | 0.3+ |
| 1991 09 08 | 691 | 0.4+ | 0.5+ | 2006 09 24 | 291 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.8− |
| 1991 09 12 | 691 | 0.3− | 1.0− | 2006 09 24 | 291 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 12 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.2− |
| 1991 09 12 | 691 | 0.4− | 0.5− | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.6− |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.4+ | 0.9+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.8+ | | | | |
| 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.5+ | | | | |

**2006 RS$_{81}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.72625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17928218 | $\omega$ | 152.25740 | | +0.66658457 | +0.74532952 | |
| $a$ | 3.1149038 | $\Omega$ | 159.53899 | | −0.69021957 | +0.62331453 | |
| $e$ | 0.0615455 | $i$ | 2.00056 | | −0.28153501 | +0.23656479 | |
| $P$ | 5.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.1− | 0.4+ | 2006 07 21 | G96 | 0.7+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2000 08 30 | 691 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 1.3+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2− |
| 2000 08 30 | 691 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 10 13 | 691 | 0.2− | 0.4− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2001 10 13 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 10 13 | 691 | 0.4− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.4− | 0.2+ |
| 2003 01 11 | 291 | 0.2+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2003 01 11 | 291 | 0.7+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2003 01 11 | 291 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2004 04 23 | 691 | 0.2+ | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2004 04 23 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2004 04 23 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− | | | | |
| 2006 07 21 | G96 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.5− | 0.7+ | | | | |

**2006 RZ$_{81}$ = 2001 QM$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 123.32873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21395331 | $\omega$ | 73.83516 | | −0.61459518 | +0.78856149 | |
| $a$ | 2.7685777 | $\Omega$ | 158.20063 | | −0.74368848 | −0.57030545 | |
| $e$ | 0.0944214 | $i$ | 3.25111 | | −0.26305933 | −0.23004886 | |
| $P$ | 4.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.0 | 0.1+ | 2004 02 12 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.4− |
| 2001 08 21 | 691 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 2001 08 21 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.5+ | 1.0− |
| 2001 08 22 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1+ |
| 2001 08 22 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2001 08 22 | 691 | 0.7+ | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 2001 08 24 | 644 | 0.4− | 0.7+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 11 | 291 | 0.1+ | 0.1+ |
| 2001 08 24 | 644 | 0.6− | 0.0 | 2006 09 23 | 691 | 0.3− | 0.1+ | 2006 10 11 | 291 | 0.3+ | 0.0 |
| 2001 08 24 | 644 | 0.3− | 0.3− | 2006 09 23 | 691 | 0.7− | 0.3− | 2006 10 11 | 291 | 0.1+ | 0.3+ |
| 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.7− | 0.3+ | | | | |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.8− | | | | |

**2006 RC$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 113.68074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23285418 | $\omega$ | 80.18704 | | −0.47912865 | +0.87756285 | |
| $a$ | 2.6166564 | $\Omega$ | 161.15264 | | −0.82543816 | −0.44356169 | |
| $e$ | 0.0867742 | $i$ | 3.17029 | | −0.29847543 | −0.18203426 | |
| $P$ | 4.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.9+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2000 02 02 | 691 | 0.1− | 0.3− | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2000 02 02 | 691 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 27 | 691 | 0.8− | 0.1− |
| 2000 02 11 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 |
| 2000 02 11 | 691 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2000 02 11 | 691 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 291 | 0.2+ | 0.1+ |
| 2004 01 15 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 291 | 0.4+ | 0.2+ |
| 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 291 | 0.2+ | 0.2+ |
| 2004 01 15 | 691 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.6+ | 0.6− |
| 2006 07 21 | G96 | 0.3− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.6− |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.5+ | 1.0− |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 22 | G96 | 0.5+ | 0.3− |

**2006 RF$_{82}$ = 2001 SQ$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.90556 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20905710 | $\omega$ | 216.67807 | | +0.44776009 | −0.89391633 | |
| $a$ | 2.8116382 | $\Omega$ | 206.73993 | | +0.83086616 | +0.42447225 | |
| $e$ | 0.1117537 | $i$ | 2.62458 | | +0.33041237 | +0.14400316 | |
| $P$ | 4.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 22 | 691 | 0.4− | 0.2+ | 2004 03 16 | 691 | 0.0 | 0.7+ | 2006 10 01 | 704 | 0.7+ | 0.1+ |
| 1992 10 22 | 691 | 0.2+ | 0.2+ | 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 01 | 704 | 0.4+ | 0.3+ |
| 1992 10 22 | 691 | 0.5− | 0.6+ | 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.3+ | 0.2+ |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2001 05 23 | 807 | 0.0 | 0.1+ | 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2001 05 23 | 807 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.2− |
| 2001 09 12 | 704 | 0.5+ | 0.3− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 2001 09 12 | 704 | 0.5− | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.6− |
| 2001 09 12 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.4− | 0.0 | 2006 10 17 | 703 | (0.2+ | 2.4−) |
| 2001 09 12 | 704 | 0.1+ | 0.7+ | 2006 09 19 | 691 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 2001 09 20 | 704 | 0.9+ | 1.3+ | 2006 09 19 | 699 | 0.5− | 0.9+ | 2006 10 17 | 703 | (1.7− | 1.7−) |
| 2001 09 20 | 704 | 0.8+ | 0.7− | 2006 09 19 | 699 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.4+ |
| 2001 09 20 | 704 | 0.1+ | 1.1+ | 2006 09 19 | 699 | (1.8− | 1.7+) | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 699 | 0.7− | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 09 22 | 704 | 0.2+ | 0.5− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2001 09 22 | 704 | 0.5− | 0.8+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.4+ | 1.3+ | 2006 09 24 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.6− |
| 2003 01 08 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2003 01 08 | 704 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1− |
| 2003 01 08 | 704 | 0.6+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.2+ | | | | |
| 2003 01 08 | 704 | 1.0+ | 0.2+ | 2006 10 01 | 704 | (1.7+ | 0.9+) | | | | |

**2006 RJ$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.21814 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20402807 | $\omega$ | 154.78914 | | +0.91088903 | −0.41233131 | |
| $a$ | 2.8576526 | $\Omega$ | 229.57210 | | +0.37489133 | +0.84335219 | |
| $e$ | 0.1033793 | $i$ | 1.22322 | | +0.17244613 | +0.34458667 | |
| $P$ | 4.83 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.7+ | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.0 | 0.9− | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.2− | 0.2− |
| 2001 09 12 | 704 | 1.0− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.4+ |
| 2001 09 20 | 704 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2001 09 20 | 704 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.8− |
| 2001 09 20 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.3− | 0.8− |
| 2001 09 20 | 704 | 0.7− | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.6− | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.7+ |

**2006 RM$_{82}$ = 1997 SW$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.41072 | | (2000.0) | | | |
| $n$ | 0.22067903 | $\omega$ | 26.80961 | | +0.91003227 | −0.41452246 |
| $a$ | 2.7120353 | $\Omega$ | 357.67104 | | +0.36308663 | +0.80115338 |
| $e$ | 0.1249645 | $i$ | 4.97204 | | +0.20002342 | +0.43165309 |
| $P$ | 4.47 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.3+ | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 25 | 941 | 0.1+ | 0.3− |
| 1997 09 28 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 1997 09 28 | 691 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 1997 10 03 | 691 | 0.5− | 0.1− | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 |
| 1997 10 03 | 691 | 0.3− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.5+ | 0.2+ |
| 1997 10 03 | 691 | 0.3+ | 0.5+ | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.2− | 0.2− |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 25 | 941 | 0.7+ | 1.0− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 25 | 941 | 0.6+ | 1.3− | 2006 10 19 | G96 | 0.5+ | 0.2− |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 25 | 941 | 0.4+ | 0.4− | | | | |

**2006 RP$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.27173 | | (2000.0) | | | |
| $n$ | 0.18449784 | $\omega$ | 46.64155 | | +0.74128060 | −0.67118810 |
| $a$ | 3.0559191 | $\Omega$ | 355.51402 | | +0.60377893 | +0.66883507 |
| $e$ | 0.0919282 | $i$ | 2.27149 | | +0.29317927 | +0.31963445 |
| $P$ | 5.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 691 | 0.1+ | 0.4− | 2006 07 21 | G96 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.1− | 0.4+ |
| 1995 09 22 | 691 | 0.3+ | 0.5− | 2006 07 21 | G96 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 1995 09 22 | 691 | 0.3+ | 0.5− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2001 10 21 | 704 | 0.1− | 0.3− | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 704 | 1.0− | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.8− | 0.1− |
| 2001 10 21 | 704 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.6− |
| 2001 10 21 | 704 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.8− | 1.3− |
| 2001 11 19 | 704 | 0.8+ | 0.2− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2001 11 19 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2001 11 19 | 704 | 0.3+ | 0.3− | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2+ |
| 2004 05 21 | 691 | 0.2+ | 0.5+ | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2004 05 21 | 691 | 0.3+ | 0.5+ | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2004 05 21 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3+ | | | | |
| 2006 07 21 | G96 | 0.6+ | 0.4− | 2006 09 28 | 691 | 0.0 | 0.3+ | | | | |

**2006 RQ$_{82}$ = 1999 TS$_{277}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.43367 | | (2000.0) | | | |
| $n$ | 0.27891228 | $\omega$ | 331.90674 | | +0.77714708 | +0.62927530 |
| $a$ | 2.3200159 | $\Omega$ | 349.08713 | | −0.56980201 | +0.69859744 |
| $e$ | 0.2098808 | $i$ | 2.24532 | | −0.26714806 | +0.34054988 |
| $P$ | 3.53 | $H$ | 18.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.6+ | 0.4− | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.1− |
| 1999 10 06 | 704 | 0.1+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.2− |
| 1999 10 06 | 704 | 0.4+ | 0.4− | 2006 09 15 | 691 | 0.6− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 1999 10 06 | 704 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.2− |
| 1999 10 06 | 704 | 1.4+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.3− | 0.1− |
| 1999 10 13 | 704 | 1.2− | 0.6+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.7− |
| 1999 10 13 | 704 | 1.5− | 0.9+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 1999 10 13 | 704 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.6− |
| 1999 10 13 | 704 | 0.4− | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2006 07 21 | G96 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2006 07 21 | G96 | 0.5+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.6− |

**2006 RS$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 49.30576 | | (2000.0) | | | |
| $n$ | 0.27006756 | $\omega$ | 336.27872 | | +0.47103519 | +0.88209403 |
| $a$ | 2.3703971 | $\Omega$ | 321.82204 | | −0.80776338 | +0.42859058 |
| $e$ | 0.1864178 | $i$ | 0.55601 | | −0.35446321 | +0.19549998 |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 29 | 644 | 0.2− | 0.4− | 2006 07 22 | G96 | 0.1+ | 0.2+ | 2006 09 24 | 691 | 0.1+ | 0.0 |
| 2002 06 29 | 644 | 0.1− | 0.3− | 2006 07 22 | G96 | 0.6+ | 0.3− | 2006 09 24 | 691 | 0.2− | 0.1+ |
| 2002 06 29 | 644 | 0.0 | 0.4− | 2006 07 22 | G96 | 0.0 | 0.4− | 2006 09 24 | 691 | 0.2− | 0.3+ |
| 2002 07 14 | 644 | 0.2+ | 0.5+ | 2006 07 22 | G96 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.1+ |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2002 07 14 | 644 | (0.1− | 2.4−) | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2005 03 09 | G96 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.6+ | 0.4− |
| 2005 03 09 | G96 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.7− |
| 2005 03 09 | G96 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.9+ | 0.6− |
| 2005 03 09 | G96 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.1− |

**2006 RU$_{82}$ = 2005 JK$_{74}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 199.07427 | | (2000.0) | | | |
| $n$ | 0.27316872 | $\omega$ | 326.94393 | | −0.97895035 | −0.20253202 |
| $a$ | 2.3524229 | $\Omega$ | 201.41383 | | +0.19903212 | −0.91994059 |
| $e$ | 0.0084966 | $i$ | 3.96390 | | +0.04519324 | −0.33569346 |
| $P$ | 3.61 | $H$ | 17.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | G96 | 0.1+ | 0.3− | 2005 05 11 | G96 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.3+ | 0.4+ |
| 2005 05 08 | G96 | 0.8− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 24 | 691 | 0.0 | 0.0 |
| 2005 05 08 | G96 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 09 24 | 691 | 0.4− | 0.2+ |
| 2005 05 08 | G96 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.4− |
| 2005 05 11 | G96 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2005 05 11 | G96 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2005 05 11 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.5+ | 0.1− | | | | |

**2006 RD$_{83}$ = 2001 HN$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.35431 | | (2000.0) | | | |
| $n$ | 0.26296270 | $\omega$ | 213.54011 | | +0.73202858 | −0.68113062 |
| $a$ | 2.4129035 | $\Omega$ | 189.43089 | | +0.64230127 | +0.69684465 |
| $e$ | 0.1037066 | $i$ | 4.89169 | | +0.22711943 | +0.22465221 |
| $P$ | 3.75 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 25 | 691 | 0.0 | 0.2+ | 2004 01 28 | 645 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.3+ |
| 1995 10 25 | 691 | 0.1+ | 0.3+ | 2005 06 01 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1− |
| 1995 10 25 | 691 | 0.1− | 0.3+ | 2005 06 01 | 691 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 1995 11 16 | 691 | 0.2− | 0.2− | 2005 06 01 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 1995 11 16 | 691 | 0.0 | 0.4− | 2006 09 15 | 691 | 0.6+ | 0.5− | 2006 09 25 | G96 | 0.1− | 0.1− |
| 1995 11 16 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2001 04 27 | 691 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2001 04 27 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2001 04 27 | 691 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2001 04 29 | 691 | 0.5+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.4+ |
| 2001 04 29 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.2+ |
| 2001 04 29 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.8− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.7+ |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2002 08 27 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 699 | (0.2− | 2.6+) | 2006 10 21 | 644 | 0.5+ | 0.2+ |
| 2002 08 27 | 644 | 0.1− | 0.7+ | 2006 09 24 | 691 | 0.1− | 0.1+ | | | | |
| 2004 01 28 | 645 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.5+ | | | | |

**2006 RH$_{83}$ = 2004 HY$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.12714 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18203189 | $\omega$ | 20.68583 | | −0.83863176 | | +0.54207467 |
| $a$ | 3.0834558 | $\Omega$ | 192.56477 | | −0.52787092 | | −0.83298889 |
| $e$ | 0.0770359 | $i$ | 14.21020 | | −0.13434683 | | −0.11083573 |
| $P$ | 5.41 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 644 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2004 04 16 | 644 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.4− | 0.4+ |
| 2004 04 16 | 644 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2004 04 19 | 704 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.4+ | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.3− |
| 2004 04 19 | 704 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.0 | 0.6− |
| 2004 04 19 | 704 | 0.3− | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.6+ | 0.0 |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.2− | 0.2+ | | | | |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ | | | | |

**2006 RK$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.27923 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17563332 | $\omega$ | 90.63256 | | −0.12246727 | | −0.99121196 |
| $a$ | 3.1578981 | $\Omega$ | 7.01998 | | +0.66685552 | | −0.11949990 |
| $e$ | 0.0703053 | $i$ | 24.15237 | | +0.73505474 | | −0.05673299 |
| $P$ | 5.61 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 704 | 0.8+ | 0.4− | 2003 03 22 | 644 | 0.4− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2001 12 10 | 704 | 0.3− | 1.4− | 2003 03 26 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 1.5+ | 0.4− |
| 2001 12 10 | 704 | 0.5+ | 0.0 | 2003 03 26 | 704 | 0.5+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2001 12 10 | 704 | 0.5+ | 0.0 | 2003 03 26 | 704 | 1.2+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.7+ |
| 2001 12 10 | 704 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.7− | 0.7− |
| 2001 12 23 | 704 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2001 12 23 | 704 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.4− | 0.4+ |
| 2001 12 23 | 704 | 0.5+ | 0.7+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.5− | 0.3+ |
| 2001 12 23 | 704 | 0.4− | 0.5− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.9− | 0.5+ |
| 2001 12 23 | 704 | 0.7− | 0.5− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4− | 0.5+ |
| 2003 03 08 | 644 | 0.3+ | 0.2− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2003 03 08 | 644 | 0.6+ | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2003 03 08 | 644 | 0.6+ | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.2+ |
| 2003 03 22 | 644 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | (1.9− | 0.3+) |
| 2003 03 22 | 644 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.3+ |

**2006 RL$_{83}$ = 1999 FB$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.57027 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19105108 | $\omega$ | 46.17502 | | −0.13476400 | | +0.99073127 |
| $a$ | 2.9856327 | $\Omega$ | 216.09029 | | −0.91721060 | | −0.13123172 |
| $e$ | 0.1247849 | $i$ | 1.65726 | | −0.37491784 | | −0.03506844 |
| $P$ | 5.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.1− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.4+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 09 24 | 691 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.3+ | | | | |

**2006 RS$_{83}$ = 2005 EL$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.75421 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27518737 | $\omega$ | 80.55376 | | +0.17990819 | | +0.98359432 |
| $a$ | 2.3409046 | $\Omega$ | 199.82550 | | −0.91713662 | | +0.16285611 |
| $e$ | 0.1684381 | $i$ | 2.23707 | | −0.35565919 | | +0.07758936 |
| $P$ | 3.58 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.5− | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.4+ | 0.0 |
| 2005 03 11 | G96 | 0.6+ | 0.8+ | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 10 02 | 691 | 0.3− | 0.3+ |
| 2005 03 11 | G96 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2005 03 11 | G96 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.8+ | 0.7− |
| 2005 03 16 | 691 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.6− | 0.2+ |
| 2005 03 16 | 691 | 0.3+ | 0.3− | 2006 09 28 | 691 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.7− |
| 2005 03 16 | 691 | 0.2− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.0 | | | | |

**2006 RZ$_{83}$ = 2004 FY$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.40788 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27711887 | $\omega$ | 272.10258 | | −0.13043501 | | −0.99081162 |
| $a$ | 2.3300146 | $\Omega$ | 185.77196 | | +0.99056153 | | −0.12869976 |
| $e$ | 0.3032312 | $i$ | 20.83100 | | +0.04212566 | | −0.04157776 |
| $P$ | 3.56 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 18 | 691 | 0.2+ | 0.1+ | 2004 03 27 | 704 | 0.6− | 0.2− | 2006 09 19 | 699 | (1.1− | 1.9+) |
| 1999 09 18 | 691 | 0.2− | 0.4− | 2004 03 27 | 704 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.2+ |
| 1999 09 18 | 691 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.2− | 0.9− | 2006 09 24 | 691 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.2− | 0.8+ | 2004 04 25 | 691 | 0.2− | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.1− |
| 2004 03 18 | 704 | 0.6− | 1.0+ | 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.3+ | 1.1+ | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.1− |
| 2004 03 18 | 704 | 0.6− | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2004 03 23 | 704 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.2+ |
| 2004 03 23 | 704 | 0.9+ | 0.7+ | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2004 03 23 | 704 | 0.3+ | 0.5− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 2004 03 23 | 704 | 0.4+ | 0.4− | 2006 09 19 | 691 | 0.1− | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.3+ |
| 2004 03 23 | 704 | 0.8+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2004 03 27 | 704 | 0.1− | 0.0 | 2006 09 19 | 699 | (2.4− | 0.8−) | | | | |
| 2004 03 27 | 704 | 1.1− | 0.0 | 2006 09 19 | 699 | (0.1− | 1.8+) | | | | |

**2006 RJ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.24766 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19706621 | $\omega$ | 294.86516 | | −0.53923955 | | −0.84190486 |
| $a$ | 2.9245649 | $\Omega$ | 187.86138 | | +0.81647771 | | −0.51670497 |
| $e$ | 0.0627752 | $i$ | 8.58533 | | +0.20636097 | | −0.15560264 |
| $P$ | 5.00 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 691 | 0.1− | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2001 10 18 | 691 | 0.2− | 0.4+ | 2006 09 24 | 691 | 0.5+ | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.0 |
| 2001 10 18 | 691 | 0.2− | 0.0 | 2006 09 24 | 691 | 0.6− | 0.5− | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.4− | 0.9+ | 2006 10 02 | G96 | 0.5+ | 0.3+ |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.5+ | 0.3− | 2006 10 02 | G96 | 0.8+ | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 | | | | |

**2006 RP$_{84}$ = 2005 ED$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 102.07640 | | | (2000.0) | | |
| $n$ | 0.27723725 | $\omega$ | 237.73828 | | −0.43100300 | +0.90232880 |
| $a$ | 2.3293513 | $\Omega$ | 6.73945 | | −0.80892210 | −0.38329545 |
| $e$ | 0.2087373 | $i$ | 3.05631 | | −0.39985178 | −0.19719871 |
| $P$ | 3.56 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.2− | 0.7+ | 2005 03 10 | G96 | 0.4− | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2+ |
| 2002 08 06 | 644 | 0.1− | 0.7+ | 2005 04 10 | 691 | 0.3+ | 0.6+ | 2006 09 15 | 691 | 0.3− | 0.3+ |
| 2002 08 06 | 644 | 0.2− | 0.7+ | 2005 04 10 | 691 | 0.3+ | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.1+ |
| 2005 03 04 | 691 | 0.2+ | 0.4+ | 2005 04 10 | 691 | 0.5+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2005 03 04 | 691 | 0.1+ | 0.1+ | 2005 05 04 | G96 | 0.3− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 2005 03 04 | 691 | 0.3+ | 0.0 | 2005 05 04 | G96 | 0.4− | 0.0 | 2006 09 28 | 691 | 0.3− | 0.5+ |
| 2005 03 10 | G96 | 0.4− | 0.1+ | 2005 05 04 | G96 | 0.3+ | 0.3− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2005 03 10 | G96 | 0.6− | 0.2− | 2005 05 04 | G96 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2005 03 10 | G96 | 0.4− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.3+ | | | | |

**2006 RQ$_{84}$ = 2004 FV$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.71039 | | | (2000.0) | | |
| $n$ | 0.22157204 | $\omega$ | 23.92344 | | +0.94395175 | −0.33008128 |
| $a$ | 2.7047434 | $\Omega$ | 355.34978 | | +0.30040963 | +0.86059224 |
| $e$ | 0.1511459 | $i$ | 0.84755 | | +0.13678138 | +0.38784964 |
| $P$ | 4.45 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.1+ | 0.9− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.2− | 0.3+ |
| 1995 03 02 | 691 | 0.2− | 0.5+ | 2006 09 19 | 699 | 1.1+ | 0.3+ | 2006 10 01 | 704 | 0.7− | 0.6+ |
| 1995 03 02 | 691 | 0.1− | 0.3+ | 2006 09 19 | 699 | (2.3+ | 0.2+) | 2006 10 02 | 691 | 0.5− | 0.2+ |
| 1997 09 04 | 910 | 0.2+ | 0.6− | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 1997 09 04 | 910 | 0.2+ | 0.6− | 2006 09 19 | 699 | 0.0 | 0.8+ | 2006 10 02 | 691 | 0.1− | 0.2− |
| 1997 09 05 | 910 | 0.7+ | 0.5− | 2006 09 20 | J75 | 0.6+ | 0.7− | 2006 10 16 | G96 | 0.6+ | 0.4+ |
| 2002 12 06 | 695 | 0.1+ | 0.6− | 2006 09 20 | J75 | 0.0 | 0.8− | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2002 12 06 | 695 | 0.1− | 0.6− | 2006 09 20 | J75 | 0.5+ | 0.5− | 2006 10 16 | G96 | 0.1+ | 0.3+ |
| 2004 03 15 | 691 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.2− | 0.2− | 2006 10 16 | G96 | 0.6+ | 0.3+ |
| 2004 03 15 | 691 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.0 |
| 2004 03 23 | 691 | 0.4− | 0.2+ | 2006 09 20 | 704 | 1.0− | 0.1− | 2006 10 16 | G96 | 0.6+ | 0.4+ |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.8+ | 0.3+ |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2006 07 21 | G96 | 0.7− | 0.3− | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2006 07 21 | G96 | 0.5− | 0.3− | 2006 09 27 | 699 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2006 07 21 | G96 | 0.4− | 0.2− | 2006 09 27 | 699 | 0.4+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 07 21 | G96 | 0.3− | 0.7− | 2006 09 27 | 699 | 0.5+ | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.8+ | 1.3+ | 2006 10 21 | 644 | 0.4− | 0.4− |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.5− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.8− | 1.4+ | 2006 11 21 | G96 | 0.0 | 0.2− |

**2006 RZ$_{84}$ = 2005 GH$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 88.76638 | | | (2000.0) | | |
| $n$ | 0.28021788 | $\omega$ | 55.67945 | | −0.20038216 | +0.97957861 |
| $a$ | 2.3128040 | $\Omega$ | 202.77827 | | −0.91230538 | −0.19271243 |
| $e$ | 0.1875649 | $i$ | 2.44470 | | −0.35713568 | −0.05733814 |
| $P$ | 3.52 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.2− | 0.4− | 2005 05 04 | G96 | 0.1+ | 0.5− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2005 03 09 | G96 | 0.3− | 0.5− | 2005 05 04 | G96 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2005 03 09 | G96 | 0.4− | 0.2+ | 2005 05 04 | G96 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2005 03 09 | G96 | 0.2− | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.6− | 2006 10 16 | G96 | 0.3+ | 0.5− |
| 2005 04 09 | G96 | 0.3− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.9+ | 0.2+ |
| 2005 04 09 | G96 | 0.1− | 0.3− | 2006 09 15 | 691 | 0.6− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2005 04 09 | G96 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2005 04 09 | G96 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.6− |
| 2005 04 10 | 691 | 0.1+ | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.8+ | 0.2− |
| 2005 04 10 | 691 | 0.2+ | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.7+ | 0.1+ |
| 2005 05 04 | G96 | 0.3+ | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.3+ | | | | |

**2006 RA$_{85}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.76578 | | | (2000.0) | | |
| $n$ | 0.26044593 | $\omega$ | 88.81008 | | +0.22020840 | +0.97537169 |
| $a$ | 2.4284230 | $\Omega$ | 193.93052 | | −0.91446106 | +0.20193263 |
| $e$ | 0.1742535 | $i$ | 2.99597 | | −0.33951323 | +0.08873151 |
| $P$ | 3.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.5+ | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2005 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.4− | 0.3+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2005 03 17 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.7+ | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2005 03 17 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | (1.7+ | 3.5−) |
| 2005 04 04 | G96 | (1.5+ | 2.4+) | 2006 09 20 | J75 | 1.1+ | 1.4+ | 2006 10 17 | 703 | 0.9− | 1.5− |
| 2005 04 04 | G96 | 0.4− | 0.2+ | 2006 09 20 | J75 | 0.9+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.1− |
| 2005 04 04 | G96 | 0.4− | 0.0 | 2006 09 20 | J75 | 0.7+ | 0.6− | 2006 10 17 | 703 | (2.8+ | 0.8+) |
| 2005 04 04 | G96 | 0.5− | 0.3− | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2005 05 06 | G96 | 0.3− | 0.4− | 2006 09 24 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2+ |
| 2005 05 06 | G96 | 0.3+ | 0.1− | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2005 05 06 | G96 | 0.1+ | 0.4− | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2005 05 06 | G96 | 0.7+ | 0.2− | 2006 10 02 | 691 | 0.8− | 0.3− | | | | |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.4− | 0.4+ | | | | |

**2006 RE$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 134.41940 | | | (2000.0) | | |
| $n$ | 0.23711495 | $\omega$ | 214.94600 | | −0.70226966 | +0.71190206 |
| $a$ | 2.5852155 | $\Omega$ | 10.44624 | | −0.64858841 | −0.63772505 |
| $e$ | 0.1307885 | $i$ | 1.13038 | | −0.29351388 | −0.29411261 |
| $P$ | 4.16 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 1998 11 16 | 691 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.0 |
| 1998 11 16 | 691 | 0.0 | 0.4− | 2006 09 15 | 691 | 0.7− | 0.1+ | 2006 09 28 | 691 | 0.4− | 0.1− |
| 2002 10 30 | 291 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.1+ |
| 2002 10 30 | 291 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.6+ | 0.0 |
| 2002 10 30 | 291 | 0.5− | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2004 01 13 | 691 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.3+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2004 01 13 | 691 | 0.1− | 0.1+ | 2006 09 24 | 691 | 0.3+ | 0.1− | 2006 10 16 | G96 | 0.8+ | 1.3+ |
| 2004 01 13 | 691 | 0.1− | 0.2+ | 2006 09 24 | 691 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2004 01 31 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2004 01 31 | 691 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.3− |
| 2004 01 31 | 691 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2+ |

**2006 RW$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 349.14356 | | | (2000.0) | | |
| $n$ | 0.25681297 | $\omega$ | 10.77849 | | +0.92588219 | −0.37769608 |
| $a$ | 2.4512715 | $\Omega$ | 11.42604 | | +0.34302148 | +0.82996532 |
| $e$ | 0.2056056 | $i$ | 2.71179 | | +0.15836173 | +0.41049147 |
| $P$ | 3.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.9+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2002 08 18 | 644 | 0.2+ | 0.2− | 2006 09 27 | 704 | 1.0+ | 0.8+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.3+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2002 08 29 | 644 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.5− | 0.5+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2002 08 29 | 644 | 0.2− | 0.4− | 2006 09 28 | 291 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2002 08 29 | 644 | 0.2+ | 0.3− | 2006 09 28 | 291 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.9+ | 1.4− |
| 2002 09 04 | 644 | 0.1− | 0.1− | 2006 09 28 | 291 | 0.2− | 0.2+ | 2006 10 17 | 703 | (0.0 | 1.6−) |
| 2002 09 04 | 644 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 10 17 | 703 | 1.1+ | 0.4+ |
| 2002 09 04 | 644 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.9− | 1.1− |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.8+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.9+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 09 29 | 704 | (2.5+ | 0.2+) | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 1.4+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 01 | 704 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2006 09 19 | 699 | 0.6+ | 0.4+ | 2006 10 01 | 704 | 0.7+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2006 09 19 | 699 | (1.6+ | 0.3+) | 2006 10 01 | 704 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2006 09 19 | 699 | 0.5− | 0.7+ | 2006 10 02 | 691 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2006 09 19 | 699 | (1.9− | 1.4−) | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.2− |

## 2006 RE$_{86}$ = 1999 RX$_{250}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.07930 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28687449 | $\omega$ | 274.22529 | | +0.09285911 | −0.99566189 | |
| $a$ | 2.2768867 | $\Omega$ | 170.44062 | | +0.92699162 | +0.08429579 | |
| $e$ | 0.1518277 | $i$ | 2.02950 | | +0.36340573 | +0.03939063 | |
| $P$ | 3.44 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 04 | 691 | 0.2+ | 0.8− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.6− |
| 1994 03 04 | 691 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.0 | 0.2− |
| 1994 03 04 | 691 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.0 | 0.0 |
| 1999 09 05 | 691 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 1999 09 05 | 691 | 0.7− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.4+ | 0.1− |
| 1999 09 05 | 691 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 1999 09 17 | 691 | 0.4− | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 1999 09 17 | 691 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 1999 09 17 | 691 | 0.5+ | 0.5+ | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2005 02 16 | 809 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.5+ | 0.4− | 2006 10 21 | G96 | 0.5− | 0.2− |
| 2005 02 16 | 809 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2005 02 16 | 809 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.2− | | | | |

## 2006 RL$_{86}$ = 2000 NQ$_{1}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.30914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18044457 | $\omega$ | 120.68968 | | +0.61814943 | +0.78602595 | |
| $a$ | 3.1015123 | $\Omega$ | 187.50453 | | −0.73914846 | +0.57803731 | |
| $e$ | 0.1895406 | $i$ | 3.23976 | | −0.26748986 | +0.21917133 | |
| $P$ | 5.46 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 03 | 691 | 0.1− | 0.2− | 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.1+ |
| 2000 07 03 | 691 | 0.1+ | 0.1− | 2005 06 13 | 691 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.0 | 0.1+ |
| 2000 07 03 | 691 | 0.1+ | 0.3− | 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− |
| 2000 07 05 | 691 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.2− |
| 2000 07 05 | 691 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.4− |
| 2000 07 05 | 691 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 05 15 | G96 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2005 05 15 | G96 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2005 05 15 | G96 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2005 05 15 | G96 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.3+ | 0.0 | | | | |

## 2006 RO$_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.49761 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24002651 | $\omega$ | 42.93339 | | +0.68304269 | −0.73035230 | |
| $a$ | 2.5642670 | $\Omega$ | 3.99940 | | +0.64380818 | +0.59806552 | |
| $e$ | 0.2497510 | $i$ | 5.08374 | | +0.34491116 | +0.33000478 | |
| $P$ | 4.11 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.2− |
| 2002 10 16 | 644 | 0.3− | 0.2+ | 2006 09 19 | 699 | (1.7− | 0.9+) | 2006 10 02 | 691 | 0.3+ | 0.3− |
| 2002 10 16 | 644 | 0.6− | 0.3+ | 2006 09 19 | 699 | 0.8+ | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.2− |
| 2002 10 28 | 644 | 0.4+ | 0.4− | 2006 09 19 | 699 | 0.3+ | 0.7− | 2006 10 19 | G96 | 0.3+ | 0.1− |
| 2002 10 28 | 644 | 0.3+ | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2002 10 28 | 644 | 0.4+ | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.5− | 0.0 |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 24 | 691 | 0.8− | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.2+ |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.6− | 0.5+ | 2006 10 31 | G96 | 0.6+ | 0.4+ |

## 2006 RP$_{86}$ = 2000 GR$_{187}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.29437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22540523 | $\omega$ | 32.60223 | | −0.84883360 | +0.52865984 | |
| $a$ | 2.6739917 | $\Omega$ | 179.31204 | | −0.49409097 | −0.79296770 | |
| $e$ | 0.0346640 | $i$ | 2.55544 | | −0.18803093 | −0.30285475 | |
| $P$ | 4.37 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.2− | 0.3− | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.4− | 0.2− |
| 2000 04 12 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2000 04 12 | 691 | 0.0 | 0.6− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2002 11 05 | 950 | 0.8− | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.6+ |
| 2002 11 05 | 950 | 0.3+ | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.6− | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2002 11 05 | 950 | 0.5+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.4− | 2006 10 02 | 691 | 0.1− | 0.6+ |
| 2004 02 12 | 691 | 0.0 | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.4− | 1.4+ |
| 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.9− |
| 2004 02 12 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.8− |
| 2006 09 15 | 691 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.2− | | | | |

## 2006 RS$_{86}$ = 2004 EP$_{46}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.84936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21189875 | $\omega$ | 126.67003 | | −0.73084350 | −0.68241033 | |
| $a$ | 2.7864449 | $\Omega$ | 10.32175 | | +0.59959221 | −0.65138754 | |
| $e$ | 0.0091867 | $i$ | 4.34079 | | +0.32612415 | −0.33167817 | |
| $P$ | 4.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2004 03 15 | 691 | 0.2− | 0.5− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2004 03 17 | 291 | 0.2− | 0.6+ | 2006 09 19 | 691 | 0.7− | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2004 03 17 | 291 | 0.2− | 0.6+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2004 03 17 | 291 | 0.7+ | 0.7− | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.4+ | 0.2+ | | | | |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.4− | | | | |

**2006 RT$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.05130 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27980022 | $\omega$ | 264.64784 | | +0.00382119 | −0.99998905 | |
| $a$ | 2.3151049 | $\Omega$ | 185.13555 | | +0.92901853 | +0.00455000 | |
| $e$ | 0.2093630 | $i$ | 1.73021 | | +0.37001348 | −0.00109697 | |
| $P$ | 3.52 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1+ | 0.7+ | 2004 02 29 | 691 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | |
| 2001 05 24 | 807 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.4+ | |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.5− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.3+ | |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2− | |
| 2004 02 11 | 703 | 0.5+ | 0.8+ | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.5+ | 0.4− | |
| 2004 02 11 | 699 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.1+ | |
| 2004 02 11 | 703 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.7+ | 0.3− | |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.5− | |
| 2004 02 11 | 703 | (1.6+ | 0.2+) | 2006 09 24 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.6− | |
| 2004 02 11 | 699 | 0.3− | 1.0+ | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.0 | |
| 2004 02 11 | 703 | (0.6+ | 1.6+) | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.2− | |
| 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.6− | |
| 2004 02 11 | 699 | 0.2+ | 1.2− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.3− | |
| 2004 02 11 | 699 | (1.7+ | 0.5−) | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.5− | |
| 2004 02 11 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.4− | |
| 2004 02 29 | 691 | 0.5− | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.1+ | | | | | |
| 2004 02 29 | 691 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1+ | | | | | |

**2006 RV$_{86}$ = 2005 GS$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.34244 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27108145 | $\omega$ | 79.16945 | | −0.12930906 | +0.99160152 | |
| $a$ | 2.3644829 | $\Omega$ | 183.40356 | | −0.92463472 | −0.12143727 | |
| $e$ | 0.1603466 | $i$ | 2.28311 | | −0.35823150 | −0.04449064 | |
| $P$ | 3.64 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.1− | 0.1+ | 2005 04 05 | G96 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.3− | |
| 2005 03 13 | 691 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.4+ | 0.2+ | |
| 2005 03 13 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.0 | |
| 2005 04 04 | G96 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.3− | 0.2− | |
| 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.4− | |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2005 04 04 | G96 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | |
| 2005 04 05 | G96 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.3+ | |
| 2005 04 05 | G96 | 0.2+ | 0.3− | 2006 09 25 | G96 | 0.1+ | 0.1− | | | | | |
| 2005 04 05 | G96 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | | | | |

**2006 RY$_{86}$ = 2003 AG$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 250.79534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20325387 | $\omega$ | 123.74757 | | −0.74392795 | −0.66757061 | |
| $a$ | 2.8649046 | $\Omega$ | 14.45169 | | +0.56584622 | −0.65342392 | |
| $e$ | 0.2094795 | $i$ | 6.98350 | | +0.35551268 | −0.35691267 | |
| $P$ | 4.85 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.3− | 0.0 | 2003 01 10 | 704 | (2.4− | 0.3+) | 2006 09 19 | 691 | 0.3+ | 0.1− | |
| 2002 12 12 | 644 | 0.2+ | 0.2+ | 2003 01 10 | 704 | (2.3− | 0.9+) | 2006 09 28 | 691 | 0.1− | 0.0 | |
| 2002 12 12 | 644 | 0.1− | 0.3− | 2003 01 10 | 704 | (2.6− | 1.4+) | 2006 09 28 | 691 | 0.1− | 0.1+ | |
| 2003 01 04 | 704 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.2+ | |
| 2003 01 04 | 704 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.1− | |
| 2003 01 04 | 704 | 0.1− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.0 | |
| 2003 01 04 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.0 | |
| 2003 01 10 | 704 | (2.9− | 0.2+) | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.1− | |

**2006 RB$_{87}$ = 2005 GF$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.53893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25338032 | $\omega$ | 225.61196 | | +0.76389182 | −0.64533907 | |
| $a$ | 2.4733608 | $\Omega$ | 174.57726 | | +0.59964127 | +0.70829760 | |
| $e$ | 0.1368173 | $i$ | 1.57733 | | +0.23853642 | +0.28609787 | |
| $P$ | 3.89 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.5+ | |
| 1996 01 13 | 691 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.6− | 0.2− | |
| 1996 01 13 | 691 | (5.0+ | 4.3+) | 2006 09 24 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.0 | |
| 2005 04 10 | 695 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.1− | |
| 2005 04 10 | 695 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.4+ | |
| 2005 04 11 | 695 | 0.1− | 0.1+ | 2006 09 25 | G96 | 1.4− | 0.9+ | 2006 10 21 | G96 | 0.4+ | 0.1− | |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− | |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.7− | 0.2+ | |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.4− | 0.5− | 2006 10 27 | G96 | 0.6+ | 0.0 | |

**2006 RD$_{87}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.30829 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18194675 | $\omega$ | 128.41093 | | +0.69695298 | +0.71706110 | |
| $a$ | 3.0844177 | $\Omega$ | 185.79695 | | −0.68244533 | +0.65937542 | |
| $e$ | 0.1484864 | $i$ | 5.07794 | | −0.22028369 | +0.22593682 | |
| $P$ | 5.42 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 691 | 0.0 | 0.5− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 1.1− | |
| 2001 10 26 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.7+ | 0.4− | |
| 2001 10 26 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.3+ | |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.2− | 0.0 | |
| 2004 03 15 | 691 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ | |
| 2004 03 15 | 691 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.1+ | |
| 2004 04 13 | 691 | 0.4+ | 0.3− | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.0 | |
| 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.8− | 0.1+ | |
| 2004 04 13 | 691 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.1+ | |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1+ | | | | | |

**2006 RE$_{87}$ = 2000 BH$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.72557 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25765663 | $\omega$ | 80.71270 | | −0.33092148 | −0.94364114 | |
| $a$ | 2.4459176 | $\Omega$ | 28.61404 | | +0.86105821 | −0.30441709 | |
| $e$ | 0.1694817 | $i$ | 0.68081 | | +0.38609550 | −0.12989089 | |
| $P$ | 3.83 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 31 | 691 | 0.3− | 0.3− | 2004 03 14 | 691 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.4+ | |
| 2000 01 31 | 691 | 0.1+ | 0.0 | 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2+ | |
| 2000 01 31 | 691 | 0.2+ | 0.1− | 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1− | |
| 2000 02 05 | 691 | 0.1− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.3− | 0.3+ | |
| 2000 02 05 | 691 | 0.2− | 0.4− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.1− | |
| 2000 02 05 | 691 | 0.1− | 0.4− | 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 09 28 | 691 | 0.3− | 0.5+ | |
| 2004 02 16 | 691 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.3− | 0.0 | |
| 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.1+ | |
| 2004 02 16 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.3+ | |
| 2004 02 18 | 291 | 0.0 | 0.7+ | 2006 09 24 | 691 | 0.2− | 0.3− | 2006 10 16 | G96 | 0.2− | 0.2+ | |
| 2004 02 18 | 291 | 0.4+ | 0.7+ | 2006 09 24 | 691 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.3+ | 0.0 | |
| 2004 02 18 | 291 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.4+ | 0.1+ | | | | | |

**2006 RH$_{87}$ = 2004 FP$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.00474 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22804857 | $\omega$ | 257.10474 | | +0.47005491 | −0.88262364 | |
| $a$ | 2.6532886 | $\Omega$ | 164.85450 | | +0.81688515 | +0.43293407 | |
| $e$ | 0.1035893 | $i$ | 1.07200 | | +0.33428586 | +0.18314914 | |
| $P$ | 4.32 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 21 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ |
| 1995 02 21 | 691 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 1995 02 21 | 691 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.1− |
| 2000 04 03 | 691 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.6− |
| 2000 04 03 | 691 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.1− |
| 2000 04 03 | 691 | 0.2− | 0.2− | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2004 03 17 | 691 | 0.4+ | 0.2+ | 2006 09 24 | 691 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.3+ |
| 2004 03 17 | 691 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2004 03 23 | 691 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2004 03 23 | 691 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− |

**2006 RK$_{87}$ = 2004 GC$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.78502 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18682394 | $\omega$ | 218.03722 | | +0.95425808 | −0.29887548 | |
| $a$ | 3.0305005 | $\Omega$ | 159.34850 | | +0.27960948 | +0.88254990 | |
| $e$ | 0.0146565 | $i$ | 1.30951 | | +0.10587753 | +0.36301393 | |
| $P$ | 5.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.4+ | 0.2+ |
| 2004 04 13 | 691 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.5− |
| 2004 04 19 | 691 | 0.3− | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.4− |
| 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2004 04 19 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2004 05 09 | 691 | 0.9+ | 0.6− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2+ |
| 2004 05 09 | 691 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.6+ | 0.0 | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2004 05 09 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 1.1− | 0.1− | 2006 10 22 | G96 | 0.6− | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.7+ | 0.8+ | 2006 10 22 | G96 | 0.7− | 0.3+ |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.4− | 0.1+ |
| 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.4− | 0.1− | | | | |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.4− | 0.1− | | | | |

**2006 RR$_{87}$ = 2001 DA$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.54021 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28796567 | $\omega$ | 286.93976 | | −0.09919656 | −0.99503720 | |
| $a$ | 2.2711313 | $\Omega$ | 168.74454 | | +0.92750801 | −0.09530168 | |
| $e$ | 0.0612964 | $i$ | 2.29337 | | +0.36040107 | −0.02861033 | |
| $P$ | 3.42 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 691 | 0.4− | 0.2+ | 2006 07 21 | G96 | 0.4+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 1999 09 08 | 691 | 0.0 | 0.4+ | 2006 07 21 | G96 | 0.5− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.2− |
| 1999 09 08 | 691 | 0.0 | 0.3+ | 2006 07 21 | G96 | 0.2+ | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2001 02 19 | 704 | 0.2+ | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2001 02 19 | 704 | 0.1+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2001 02 19 | 704 | 0.9+ | 0.6+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2− |
| 2001 02 21 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 13 | 291 | 0.3− | 0.2+ |
| 2001 02 21 | 691 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 13 | 291 | 0.4− | 0.1+ |
| 2001 02 21 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.7+ | 0.7− | 2006 10 13 | 291 | 0.3− | 0.3+ |
| 2003 12 19 | 704 | 0.4+ | 0.2− | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 15 | 291 | 0.1+ | 0.5+ |
| 2003 12 19 | 704 | 0.5− | 0.9− | 2006 09 24 | 691 | 0.3− | 0.3− | 2006 10 15 | 291 | 0.0 | 0.4+ |
| 2003 12 19 | 704 | 0.9− | 0.2− | 2006 09 24 | 691 | 0.4− | 0.0 | 2006 10 15 | 291 | 0.0 | 0.5+ |
| 2005 06 14 | 691 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.2+ | 2006 10 16 | 291 | 0.2+ | 0.3+ |
| 2005 06 14 | 691 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 16 | 291 | 0.3+ | 0.4+ |
| 2005 06 14 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 16 | 291 | 0.2+ | 0.1− |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | | | |

**2006 RS$_{87}$ = 2005 GH$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.55627 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23444466 | $\omega$ | 73.32732 | | −0.27620736 | +0.96109697 | |
| $a$ | 2.6048086 | $\Omega$ | 180.64410 | | −0.92373781 | −0.26588814 | |
| $e$ | 0.1633692 | $i$ | 7.43585 | | −0.26536381 | −0.07480722 | |
| $P$ | 4.20 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 691 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.3+ |
| 2005 04 11 | 691 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.3− | 0.2− |
| 2005 04 11 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.4+ | 0.0 |
| 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2005 04 15 | 691 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2005 04 15 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2− |
| 2005 04 30 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2005 04 30 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.7− | 0.7+ | | | | |
| 2005 04 30 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2+ | | | | |

**2006 RU$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.70730 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22383310 | $\omega$ | 202.43029 | | −0.51312264 | +0.85793054 | |
| $a$ | 2.6864979 | $\Omega$ | 36.71173 | | −0.78082069 | −0.45415326 | |
| $e$ | 0.0832273 | $i$ | 2.46374 | | −0.35640456 | −0.24020826 | |
| $P$ | 4.40 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.3+ |
| 2000 04 05 | 704 | 0.5− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2000 04 05 | 704 | 1.1+ | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.6− | 0.1− |
| 2000 04 05 | 704 | 0.9+ | 0.4− | 2006 09 24 | 691 | 0.3+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2000 04 26 | 691 | 0.4− | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2000 04 26 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 1.3+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2000 04 26 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2006 09 15 | 691 | 0.6− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2006 09 15 | 691 | 0.5− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.1+ | | | | |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.0 | | | | |

**2006 RC$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.77132 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26099004 | $\omega$ | 53.13468 | | +0.28654817 | −0.95804087 | |
| $a$ | 2.4250466 | $\Omega$ | 20.21722 | | +0.87251641 | +0.25797256 | |
| $e$ | 0.1675004 | $i$ | 1.14675 | | +0.39573382 | +0.12493136 | |
| $P$ | 3.78 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 29 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2000 01 29 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2000 01 29 | 691 | 0.0 | 0.5− | 2006 09 24 | 691 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.6− | 0.5+ |
| 2004 02 18 | 291 | 0.3+ | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.4− | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2004 02 18 | 291 | 0.1+ | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 1.2+ | 1.0+ |
| 2004 02 18 | 291 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.8+ | 0.2+ |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.4+ | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.1− | 0.2− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.6+ | 0.1+ | |

**2006 RE$_{88}$ = 2001 TU$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.65912 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19349315 | $\omega$ | 350.05976 | | +0.81112301 | | −0.58456458 |
| $a$ | 2.9604586 | $\Omega$ | 45.73014 | | +0.53842510 | | +0.73357192 |
| $e$ | 0.0711227 | $i$ | 1.52619 | | +0.22842477 | | +0.34663597 |
| $P$ | 5.09 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 291 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 09 25 | 691 | 0.3+ | 0.1+ | |
| 2001 10 14 | 291 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.2− | |
| 2001 10 14 | 291 | 1.0+ | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.7+ | 2006 09 28 | 691 | 0.7− | 0.4− | |
| 2001 10 17 | 691 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.0 | |
| 2001 10 17 | 691 | 0.5− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.1+ | |
| 2001 10 17 | 691 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.1+ | |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.2− | |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1+ | |

**2006 RG$_{88}$ = 2005 EN$_{154}$ = 2005 JX$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.66385 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26632010 | $\omega$ | 213.59859 | | −0.30025716 | | +0.95368943 |
| $a$ | 2.3925816 | $\Omega$ | 38.93688 | | −0.86874160 | | −0.26564604 |
| $e$ | 0.1566571 | $i$ | 1.63648 | | −0.39387011 | | −0.14109805 |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.1+ | |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.4− | |
| 2005 03 08 | G96 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.7− | 0.0 | |
| 2005 03 08 | G96 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.0 | |
| 2005 05 04 | G96 | 0.4− | 0.3− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2+ | |
| 2005 05 04 | G96 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.5− | 0.1− | |
| 2005 05 04 | G96 | 0.7− | 0.2− | 2006 09 24 | 691 | 0.7+ | 0.4+ | 2006 10 21 | G96 | 0.5+ | 0.2− | |
| 2005 05 04 | G96 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.1− | |
| 2005 05 12 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 14 | G96 | 1.2+ | 0.4+ | |
| 2005 05 12 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.3− | |
| 2005 05 12 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.7− | |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.3+ | |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 | | | | | |

**2006 RL$_{88}$ = 2004 EV$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.79363 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22475517 | $\omega$ | 222.28469 | | −0.35611204 | | −0.93385602 |
| $a$ | 2.6791452 | $\Omega$ | 248.60124 | | +0.86657479 | | −0.31677776 |
| $e$ | 0.0620932 | $i$ | 2.03877 | | +0.34961745 | | −0.16602648 |
| $P$ | 4.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 21 | 691 | 0.8+ | 0.5− | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.2+ | |
| 1993 10 21 | 691 | 0.9− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.0 | |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1− | |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.4− | 2006 09 30 | 691 | 0.0 | 0.0 | |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.7− | 0.4− | |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.1− | 0.6− | |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.9+ | 2006 11 15 | G96 | 0.1− | 0.5− | |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.8− | |

**2006 RM$_{88}$ = 2004 CB$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.08241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26148474 | $\omega$ | 288.83797 | | −0.75188059 | | −0.65742393 |
| $a$ | 2.4219871 | $\Omega$ | 210.11886 | | +0.63603362 | | −0.70343848 |
| $e$ | 0.1235387 | $i$ | 5.68329 | | +0.17359958 | | −0.27012604 |
| $P$ | 3.77 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 09 | 644 | 0.1− | 0.8− | 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.4− | |
| 2004 02 09 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.4− | |
| 2004 02 09 | 644 | 0.3− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.5− | |
| 2004 02 09 | 644 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2+ | |
| 2004 02 09 | 644 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.2− | |
| 2004 02 09 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.7+ | 0.1− | |
| 2004 02 11 | 644 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.3+ | |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.4− | 2006 11 21 | G96 | 0.2− | 0.3+ | |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.6− | 0.3+ | |
| 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.6− | 0.1+ | |
| 2006 09 15 | 691 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.1− | | | | | |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.4− | | | | | |

**2006 RA$_{89}$ = 1999 RL$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.00133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28926200 | $\omega$ | 192.92233 | | −0.61755428 | | −0.78614125 |
| $a$ | 2.2643408 | $\Omega$ | 295.22091 | | +0.72402972 | | −0.55594948 |
| $e$ | 0.0181958 | $i$ | 1.56267 | | +0.30725833 | | −0.27000392 |
| $P$ | 3.41 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 04 | 691 | 0.8+ | 0.0 | 2003 12 23 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.1+ | |
| 1994 01 04 | 691 | 1.0− | 0.2− | 2003 12 23 | 704 | 0.2− | 0.9+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | |
| 1994 01 04 | 691 | 0.2− | 0.4+ | 2003 12 23 | 704 | 1.4− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2+ | |
| 1999 09 14 | 691 | 0.2− | 0.6+ | 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ | |
| 1999 09 14 | 691 | 0.0 | 0.5− | 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2− | |
| 1999 09 14 | 691 | 0.2+ | 0.3+ | 2003 12 29 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.8− | |
| 1999 09 18 | 691 | 0.0 | 0.1+ | 2005 05 11 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.5− | |
| 1999 09 18 | 691 | 0.1+ | 0.0 | 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.2− | |
| 1999 09 18 | 691 | 0.1+ | 0.0 | 2005 05 11 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.7+ | |
| 2001 01 26 | 691 | 0.2+ | 0.0 | 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.4− | |
| 2001 01 26 | 691 | 0.1+ | 0.5+ | 2005 05 11 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | |
| 2001 01 26 | 691 | 0.4+ | 0.2+ | 2005 05 11 | 644 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− | |
| 2003 12 17 | 691 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.4− | |
| 2003 12 17 | 691 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.4− | |
| 2003 12 17 | 691 | 0.0 | 1.0− | 2006 09 15 | 691 | 0.5− | 0.5− | 2006 10 31 | G96 | 0.3− | 0.3− | |
| 2003 12 21 | 704 | 0.3+ | 1.2+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.5− | 0.2− | |
| 2003 12 21 | 704 | 0.9+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.2− | |
| 2003 12 21 | 704 | 1.1− | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.5− | |
| 2003 12 21 | 704 | 0.1− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.1− | |
| 2003 12 23 | 704 | (1.0+ | 2.2+) | 2006 09 26 | 691 | 0.0 | 0.1+ | | | | | |

**2006 RB$_{89}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.70864 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26944185 | $\omega$ | 39.42877 | | +0.22460363 | | +0.97393096 |
| $a$ | 2.3740654 | $\Omega$ | 243.57191 | | −0.90277437 | | +0.19568489 |
| $e$ | 0.2088483 | $i$ | 2.03552 | | −0.36681283 | | +0.11474278 |
| $P$ | 3.66 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.6− | 0.1− | 2005 04 12 | G96 | 0.7+ | 0.1− | 2006 09 26 | 691 | 0.3− | 0.0 | |
| 1995 08 28 | 691 | 0.3− | 0.0 | 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.6− | 0.2+ | |
| 1995 08 28 | 691 | 0.7− | 0.2+ | 2005 04 12 | G96 | 0.5− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.3− | |
| 1995 10 28 | 691 | 0.3+ | 0.0 | 2006 09 15 | 691 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.2− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.6+ | 0.3+ | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 1995 10 28 | 691 | 0.5+ | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 2002 08 06 | 644 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2002 08 06 | 644 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2+ | | |
| 2002 08 06 | 644 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.6− | | |
| 2005 04 12 | G96 | 0.5− | 0.2− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.7+ | 0.4+ | | |

**2006 RC$_{89}$ = 2001 VQ$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.81740 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18642871 | $\omega$ | 265.73160 | −0.17357070 | | −0.98007481 | |
| $a$ | 3.0347821 | $\Omega$ | 195.32596 | +0.98437531 | | −0.16970461 | |
| $e$ | 0.1182007 | $i$ | 21.43111 | +0.02963901 | | −0.10321678 | |
| $P$ | 5.29 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 04 | 209 | 1.0− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.0 | | |
| 2001 11 04 | 209 | 0.1+ | 0.7+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.3− | | |
| 2001 11 04 | 209 | 0.4− | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.3− | | |
| 2001 11 11 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.5− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1− | | |
| 2001 11 11 | 645 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 02 | 291 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.2+ | | |
| 2001 11 12 | 645 | 0.0 | 0.1+ | 2006 10 02 | 291 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2+ | | |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 02 | 291 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− | | |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.6+ | 0.2+ | | |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.5+ | 0.2− | | | | | | |
| 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.2− | 0.1− | | | | | | |

**2006 RE$_{89}$ = 2004 BH$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.96257 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24633181 | $\omega$ | 319.56972 | −0.86793081 | | +0.49544469 | |
| $a$ | 2.5203201 | $\Omega$ | 250.16222 | −0.44553847 | | −0.80782754 | |
| $e$ | 0.0932956 | $i$ | 2.13728 | −0.21952581 | | −0.31929489 | |
| $P$ | 4.00 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 691 | 0.2− | 0.2− | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.3− | 0.0 | | |
| 2003 12 22 | 691 | 0.0 | 0.0 | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2003 12 22 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.3+ | | |
| 2003 12 27 | 691 | 0.2− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.4− | 0.3+ | | |
| 2003 12 27 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.5− | | |
| 2003 12 27 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.7+ | 0.2− | 2006 10 19 | G96 | 0.3− | 0.3− | | |
| 2004 01 21 | 704 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.4− | | |
| 2004 01 21 | 704 | 0.2+ | 1.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2004 01 21 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.0 | | | | | | |
| 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.2− | | | | | | |

**2006 RO$_{89}$ = 2001 HU$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.60087 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26380363 | $\omega$ | 352.90898 | −0.94125823 | | +0.33517167 | |
| $a$ | 2.4077730 | $\Omega$ | 206.78762 | −0.30516686 | | −0.89644355 | |
| $e$ | 0.1371006 | $i$ | 5.23806 | −0.14458953 | | −0.28991190 | |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 699 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 | | |
| 2001 04 16 | 699 | 0.4− | 0.7− | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− | | |
| 2001 04 16 | 699 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.4+ | | |
| 2001 04 16 | 699 | 1.1− | 0.9− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.3− | 0.8+ | | |
| 2001 04 23 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.4− | | |
| 2001 04 23 | 704 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.3− | | |
| 2001 04 23 | 704 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.9− | 0.3+ | | |
| 2001 04 23 | 704 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.4+ | 0.5− | | |
| 2001 04 23 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 691 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− | | |
| 2006 09 15 | 691 | 0.6− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ | | | | | | |

**2006 RQ$_{89}$ = 2004 FN$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.71848 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22470728 | $\omega$ | 84.07385 | −0.03779209 | | −0.99764816 | |
| $a$ | 2.6795259 | $\Omega$ | 8.72997 | +0.70085412 | | −0.06725214 | |
| $e$ | 0.0451468 | $i$ | 22.13281 | +0.71230279 | | +0.01323977 | |
| $P$ | 4.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 703 | 1.0− | 2.0+ | 2004 03 26 | 691 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | | |
| 2004 03 15 | 703 | 0.2+ | 0.3− | 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 2004 03 15 | 703 | 0.6− | 0.6+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.3+ | 0.1+ | | |
| 2004 03 15 | 703 | 2.2+ | 0.2+ | 2006 09 15 | 691 | 0.5− | 0.3− | 2006 10 01 | 691 | 0.4+ | 0.2+ | | |
| 2004 03 18 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 18 | 691 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.3+ | | |
| 2004 03 18 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.8− | 0.1− | | | | | | |
| 2004 03 26 | 691 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.4− | | | | | | |

**2006 RY$_{89}$ = 2004 BB$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.58911 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23402530 | $\omega$ | 273.01738 | −0.11265665 | | +0.99359850 | |
| $a$ | 2.6079195 | $\Omega$ | 350.50183 | −0.89023562 | | −0.10468349 | |
| $e$ | 0.1153835 | $i$ | 2.91676 | −0.44134908 | | −0.04246641 | |
| $P$ | 4.21 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 14 | 691 | 0.3− | 0.1+ | 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 1996 02 14 | 691 | (0.6− | 2.3+) | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.0 | | |
| 1996 02 14 | 691 | 0.1− | 0.0 | 2005 05 21 | 644 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.5+ | | |
| 2000 03 12 | 691 | 0.0 | 0.6− | 2005 05 21 | 644 | 0.2+ | 0.6+ | 2006 10 17 | 703 | (1.7+ | 0.6+) | | |
| 2000 03 12 | 691 | 0.1+ | 0.3− | 2005 05 21 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.7− | 0.0 | | |
| 2000 03 12 | 691 | 0.1+ | 0.2− | 2005 05 30 | E12 | 0.3+ | 1.0− | 2006 10 17 | 703 | 0.9− | 0.6+ | | |
| 2002 11 07 | 695 | 0.3+ | 0.4+ | 2005 05 30 | E12 | 0.4− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.2− | | |
| 2002 11 07 | 695 | 0.4+ | 0.6+ | 2005 05 30 | E12 | 0.3− | 0.6− | 2006 10 19 | G96 | 0.3+ | 0.1+ | | |
| 2004 01 16 | 691 | 0.3− | 0.1+ | 2005 05 30 | E12 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.2+ | 0.3− | | |
| 2004 01 16 | 691 | 0.4− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− | | |
| 2004 01 16 | 691 | 0.3− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.6− | | |
| 2004 01 22 | 704 | 0.9+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.8+ | | |
| 2004 01 22 | 704 | 0.2− | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.1− | | |
| 2004 01 22 | 704 | 0.6+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2004 01 22 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.0 | | | | | | |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2+ | | | | | | |

**2006 RA$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.50013 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18724742 | $\omega$ | 159.59553 | +0.98997080 | | +0.11518422 | |
| $a$ | 3.0259296 | $\Omega$ | 194.53071 | −0.12218734 | | +0.98872992 | |
| $e$ | 0.1266880 | $i$ | 19.02664 | +0.07090895 | | +0.09563335 | |
| $P$ | 5.26 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 645 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 2001 11 11 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.4+ | | |
| 2002 01 08 | 645 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.1− | 0.3− | | |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.3− | 0.1− | | |
| 2002 01 13 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.3− | 0.3− | | |
| 2002 01 13 | 645 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.5− | 0.6− | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 15 | 691 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.0 | 0.4+ | |
| 2006 09 15 | 691 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 | |

**2006 RN$_{90}$ = 2005 GM$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.93801 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27931258 | $\omega$ | 255.49636 | | −0.02058162 | | +0.99940878 |
| $a$ | 2.3177987 | $\Omega$ | 13.41533 | | −0.86549371 | | −0.00402036 |
| $e$ | 0.1065717 | $i$ | 6.81744 | | −0.50049679 | | −0.03414579 |
| $P$ | 3.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2005 03 13 | 691 | 0.4+ | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3+ |
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.1+ |
| 2005 04 03 | 644 | 0.3− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 04 03 | 644 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2+ |
| 2005 04 03 | 644 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.6− | 0.6− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2005 04 09 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2005 04 09 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3+ |
| 2005 04 09 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.7+ |
| 2006 09 15 | 691 | 0.5− | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | | | |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2+ | | | | |

**2006 RO$_{90}$ = 2003 WU$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.95305 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31121697 | $\omega$ | 218.75955 | | +0.70930149 | | −0.70484204 |
| $a$ | 2.1565550 | $\Omega$ | 186.08376 | | +0.66689057 | | +0.67532751 |
| $e$ | 0.0863420 | $i$ | 5.10964 | | +0.22836018 | | +0.21709549 |
| $P$ | 3.17 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 699 | 0.7+ | 0.0 | 2006 09 15 | 691 | 0.6+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2003 11 19 | 699 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.3− | 0.9− |
| 2003 11 19 | 699 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 1.2+ | 0.8− |
| 2003 11 19 | 699 | 0.1+ | 1.0− | 2006 09 19 | 691 | 0.4− | 0.3+ | 2006 10 15 | 703 | 0.5− | 0.3+ |
| 2003 11 21 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.4+ |
| 2003 11 21 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2003 11 21 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2005 04 11 | G96 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2005 04 11 | G96 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2005 04 11 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− |

**2006 RQ$_{90}$ = 2000 CX$_{90}$ = 2004 AY$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.29015 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23931176 | $\omega$ | 20.67592 | | −0.84472027 | | +0.53413304 |
| $a$ | 2.5693702 | $\Omega$ | 191.78903 | | −0.51139957 | | −0.82420640 |
| $e$ | 0.1126748 | $i$ | 9.55246 | | −0.15785482 | | −0.18811090 |
| $P$ | 4.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 704 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 2000 02 06 | 704 | 0.2− | 0.6+ | 2006 09 15 | 691 | 0.5− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2000 02 06 | 704 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2000 02 11 | 704 | 0.6− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2000 02 11 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 1.0+ |
| 2000 02 11 | 704 | 0.7+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2004 01 12 | 644 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 01 12 | 644 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2004 01 12 | 644 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4− | 0.3− |
| 2004 01 12 | 644 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2004 01 12 | 644 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.6+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 01 12 | 644 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2004 01 18 | 644 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 09 14 | 703 | 1.4− | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.6− | 0.1− |
| 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2006 09 14 | 703 | 0.2− | 1.0− | 2006 09 30 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 09 14 | 703 | 0.9+ | 0.8− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2006 09 15 | 691 | 0.7− | 0.9+ | 2006 10 19 | 644 | 0.4− | 0.5+ | | | | |

**2006 RT$_{90}$ = 2005 MV$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.35684 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17566341 | $\omega$ | 123.18656 | | +0.68781315 | | +0.72525153 |
| $a$ | 3.1575375 | $\Omega$ | 190.44041 | | −0.70924532 | | +0.66254240 |
| $e$ | 0.2202751 | $i$ | 9.65290 | | −0.15454498 | | +0.18721053 |
| $P$ | 5.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 03 | 691 | 0.1− | 0.1+ | 2005 07 01 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.1+ |
| 2005 06 03 | 691 | 0.3+ | 0.3− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 2005 06 03 | 691 | 0.6− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2005 06 28 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2005 06 28 | 691 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2005 06 28 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2005 07 01 | 691 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1− | 0.1+ | | | | |
| 2005 07 01 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.4+ | | | | |

**2006 RV$_{90}$ = 2002 XP$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.06930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23058202 | $\omega$ | 16.75313 | | +0.78314869 | | −0.62168439 |
| $a$ | 2.6338180 | $\Omega$ | 21.70379 | | +0.56620238 | | +0.70382917 |
| $e$ | 0.2197121 | $i$ | 2.11721 | | +0.25708558 | | +0.34370485 |
| $P$ | 4.27 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 291 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 10 30 | 291 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 10 30 | 291 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.8− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− |
| 2002 12 06 | 704 | 0.6+ | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 12 06 | 704 | 0.2− | 0.4− | 2006 09 25 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 12 06 | 704 | 0.1− | 0.8+ | 2006 09 29 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 09 29 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.6− |
| 2002 12 11 | 704 | 0.4− | 0.9+ | 2006 09 29 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2006 09 15 | 691 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | (1.9− | 0.3+) | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 15 | 703 | 0.1− | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.3− | 0.7− |
| 2006 09 19 | 691 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2006 09 19 | 691 | (1.6+ | 0.0 ) | 2006 10 16 | G96 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.3− | | | | |

**2006 RW$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.78918 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18510576 | $\omega$ | 260.48835 | | +0.11580028 | | +0.99303504 |
| $a$ | 3.0492247 | $\Omega$ | 16.20958 | | −0.87806342 | | +0.11256582 |
| $e$ | 0.1549088 | $i$ | 4.46230 | | −0.46432201 | | +0.03479009 |
| $P$ | 5.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 30 | 809 | 0.0 | 0.0 | | 2006 09 19 | 691 | 0.3− | 0.1− | | 2006 10 15 | 703 | (0.3+ | 1.7+) | |
| 2004 02 27 | 695 | 0.3− | 0.2− | | 2006 09 19 | 691 | 0.2− | 0.2+ | | 2006 10 15 | 703 | (2.8+ | 1.5−) | |
| 2004 02 27 | 695 | 0.2− | 0.2− | | 2006 09 19 | 691 | 0.3− | 0.0 | | 2006 10 15 | 703 | 0.1+ | 1.5+ | |
| 2004 03 28 | 691 | 0.2+ | 0.1− | | 2006 09 25 | 691 | 0.1+ | 0.1+ | | 2006 10 15 | 703 | (2.1+ | 0.3+) | |
| 2004 03 28 | 691 | 0.0 | 0.2+ | | 2006 09 25 | 691 | 0.2+ | 0.1+ | | 2006 11 13 | G96 | 0.7− | 0.0 | |
| 2004 03 28 | 691 | 0.0 | 0.0 | | 2006 09 25 | 691 | 0.2− | 0.0 | | 2006 11 13 | G96 | 0.6+ | 0.3− | |
| 2006 09 15 | 691 | 0.1+ | 0.2− | | 2006 10 03 | 691 | 0.3+ | 0.1+ | | 2006 11 13 | G96 | 0.3− | 0.1− | |
| 2006 09 15 | 691 | 0.5− | 0.1− | | 2006 10 03 | 691 | 0.2+ | 0.4+ | | 2006 11 13 | G96 | 0.2+ | 0.3− | |
| 2006 09 15 | 691 | 0.1+ | 0.4− | | 2006 10 03 | 691 | 0.5+ | 0.2− | | | | | | |

**2006 RX$_{90}$ = 1995 UF$_{50}$ = 2004 GM$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.12313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17755825 | $\omega$ | 106.70880 | | +0.56217325 | | +0.82694936 |
| $a$ | 3.1350333 | $\Omega$ | 197.51022 | | −0.77176094 | | +0.51988588 |
| $e$ | 0.0467441 | $i$ | 2.05140 | | −0.29723103 | | +0.21418083 |
| $P$ | 5.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.5+ | 0.1− | | 2006 09 15 | 691 | 0.1− | 0.0 | | 2006 10 15 | 291 | 0.2− | 0.2+ | |
| 1995 10 17 | 691 | 0.3+ | 0.6+ | | 2006 09 19 | 691 | 0.2+ | 0.3+ | | 2006 10 16 | G96 | 0.7+ | 0.3− | |
| 1995 10 17 | 691 | 0.4− | 0.3− | | 2006 09 19 | 691 | 0.1+ | 0.1+ | | 2006 10 16 | G96 | 0.2− | 0.2− | |
| 1995 10 22 | 691 | 0.0 | 0.3− | | 2006 09 19 | 691 | 0.1− | 0.1+ | | 2006 10 16 | G96 | 0.4+ | 0.0 | |
| 1995 10 22 | 691 | 0.3− | 0.1− | | 2006 09 26 | 691 | 0.1+ | 0.1− | | 2006 10 16 | G96 | 0.1+ | 0.3+ | |
| 2004 04 12 | 691 | 0.2+ | 0.0 | | 2006 09 26 | 691 | 0.1+ | 0.0 | | 2006 10 27 | G96 | 0.4− | 0.5− | |
| 2004 04 12 | 691 | 0.1+ | 0.1+ | | 2006 09 26 | 691 | 0.1+ | 0.3− | | 2006 10 27 | G96 | 0.2+ | 0.3− | |
| 2004 04 12 | 691 | 0.2+ | 0.2− | | 2006 09 26 | G96 | 0.3+ | 0.4− | | 2006 10 27 | G96 | 0.0 | 0.1+ | |
| 2004 04 19 | 691 | 0.2− | 0.0 | | 2006 09 26 | G96 | 0.1+ | 0.4− | | 2006 10 27 | G96 | 0.1− | 1.0− | |
| 2004 04 19 | 691 | 0.2− | 0.0 | | 2006 09 26 | G96 | 0.3− | 0.3− | | 2006 11 21 | G96 | 0.4− | 0.1− | |
| 2004 04 19 | 691 | 0.2− | 0.3− | | 2006 09 26 | G96 | 0.1+ | 0.4− | | 2006 11 21 | G96 | 0.0 | 0.1+ | |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | | 2006 10 15 | 291 | 0.0 | 0.1+ | | 2006 11 21 | G96 | 0.0 | 0.1+ | |
| 2006 09 15 | 691 | 0.1+ | 0.0 | | 2006 10 15 | 291 | 0.3− | 0.1+ | | 2006 11 21 | G96 | 0.7− | 0.1+ | |

**2006 RY$_{90}$ = 2004 CY$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.11791 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28335775 | $\omega$ | 57.44317 | | +0.53283717 | | −0.84621778 |
| $a$ | 2.2956869 | $\Omega$ | 0.35958 | | +0.76800673 | | +0.48351433 |
| $e$ | 0.1847149 | $i$ | 1.39379 | | +0.35531706 | | +0.22389588 |
| $P$ | 3.48 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.1− | 0.1+ | | 2004 02 14 | 691 | 0.0 | 0.2+ | | 2006 09 30 | 691 | 0.4− | 0.1− | |
| 1992 09 30 | 691 | 0.0 | 0.1+ | | 2006 09 15 | 691 | 0.0 | 0.2+ | | 2006 09 30 | 691 | 0.2+ | 0.0 | |
| 1992 09 30 | 691 | 0.1− | 0.2+ | | 2006 09 15 | 691 | 0.1− | 0.2+ | | 2006 09 30 | 691 | 0.0 | 0.1− | |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | | 2006 09 15 | 691 | 0.4− | 0.3+ | | 2006 10 17 | 703 | 0.3− | 0.9− | |
| 2004 01 30 | 691 | 0.2+ | 0.5− | | 2006 09 19 | 691 | 0.2+ | 0.0 | | 2006 10 17 | 703 | 0.5− | 0.7+ | |
| 2004 01 30 | 691 | 0.1− | 0.1− | | 2006 09 19 | 691 | 0.1+ | 0.2+ | | 2006 10 17 | 703 | 1.3+ | 0.3+ | |
| 2004 01 30 | 691 | 0.3+ | 0.1− | | 2006 09 19 | 691 | 0.3+ | 0.3− | | 2006 10 17 | 703 | 0.6+ | 0.9− | |
| 2004 01 30 | 691 | 0.3+ | 0.1− | | 2006 09 26 | 691 | 0.2+ | 0.1− | | 2006 10 31 | G96 | 0.1+ | 0.6− | |
| 2004 01 30 | 691 | 0.0 | 0.1+ | | 2006 09 26 | 691 | 0.0 | 0.3+ | | 2006 10 31 | G96 | 0.1+ | 0.6− | |
| 2004 02 12 | 291 | 0.1− | 0.3+ | | 2006 09 26 | 691 | 0.0 | 0.1+ | | 2006 10 31 | G96 | 0.3+ | 0.5− | |
| 2004 02 12 | 291 | 0.3− | 0.2+ | | 2006 09 26 | G96 | 0.1+ | 0.2− | | 2006 10 31 | G96 | 0.3+ | 0.5− | |
| 2004 02 12 | 291 | 0.2+ | 0.2− | | 2006 09 26 | G96 | 0.1− | 0.0 | | 2006 11 23 | 291 | 0.4− | 0.1+ | |
| 2004 02 14 | 691 | 0.2− | 0.2+ | | 2006 09 26 | G96 | 0.1− | 0.2− | | 2006 11 23 | 291 | 0.2+ | 0.1+ | |
| 2004 02 14 | 691 | 0.3− | 0.3+ | | 2006 09 26 | G96 | 0.4− | 0.2− | | 2006 11 23 | 291 | 0.1+ | 0.0 | |

**2006 RB$_{91}$ = 1999 BC$_{28}$ = 2004 FR$_{77}$**

Id. Minor Planet Center; 2000 GJ$_{131}$ = 1999 BC$_{28}$ (MPC 40271) is invalid

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.37249 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22060151 | $\omega$ | 258.20253 | | −0.23395881 | | −0.97217343 |
| $a$ | 2.7126706 | $\Omega$ | 205.33731 | | +0.90251425 | | −0.21260251 |
| $e$ | 0.0546604 | $i$ | 1.59624 | | +0.36156785 | | −0.09838193 |
| $P$ | 4.47 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 691 | 0.8+ | 0.2+ | | 2004 04 22 | 691 | 0.4− | 0.4+ | | 2006 10 27 | G96 | 0.0 | 0.1− | |
| 1999 01 17 | 691 | 0.4+ | 0.1+ | | 2004 04 22 | 691 | 0.5+ | 0.2+ | | 2006 10 27 | G96 | 0.4− | 0.1− | |
| 1999 01 17 | 691 | 0.5+ | 0.2− | | 2006 09 15 | 691 | 0.2+ | 0.2+ | | 2006 10 27 | G96 | 0.3+ | 0.4+ | |
| 1999 01 18 | 691 | 0.5− | 0.1− | | 2006 09 15 | 691 | 0.0 | 0.2+ | | 2006 10 27 | G96 | 0.3− | 0.4+ | |
| 1999 01 18 | 691 | 0.8− | 0.2− | | 2006 09 15 | 691 | 0.2+ | 0.1+ | | 2006 11 11 | G96 | 0.2+ | 0.1+ | |
| 1999 01 18 | 691 | 0.5− | 0.0 | | 2006 09 19 | 691 | 0.1− | 0.1+ | | 2006 11 11 | G96 | 0.2+ | 0.3+ | |
| 2004 03 18 | 704 | 1.1+ | 0.9+ | | 2006 09 19 | 691 | 0.0 | 0.0 | | 2006 11 11 | G96 | 0.3− | 0.2− | |
| 2004 03 18 | 704 | (0.2+ | 1.6+) | | 2006 09 19 | 691 | 0.1+ | 0.1+ | | 2006 11 11 | G96 | 0.9− | 0.2− | |
| 2004 03 18 | 704 | 0.6+ | 0.3+ | | 2006 09 26 | 691 | 0.3+ | 0.3+ | | 2006 11 21 | G96 | 0.4− | 0.3− | |
| 2004 03 18 | 704 | (1.4+ | 2.1+) | | 2006 09 26 | 691 | 0.2+ | 0.1+ | | 2006 11 21 | G96 | 0.6− | 0.2− | |
| 2004 03 23 | 291 | 0.0 | 0.2+ | | 2006 09 26 | 691 | 0.2− | 0.2+ | | 2006 11 21 | G96 | 0.3− | 0.3− | |
| 2004 03 23 | 291 | 0.2+ | 0.2+ | | 2006 09 30 | 691 | 0.2− | 0.2+ | | 2006 11 21 | G96 | 0.5− | 0.4− | |
| 2004 03 23 | 291 | 0.1− | 0.1+ | | 2006 09 30 | 691 | 0.7− | 0.4+ | | | | | | |
| 2004 04 22 | 691 | 0.0 | 0.3+ | | 2006 09 30 | 691 | 0.2+ | 0.1− | | | | | | |

**2006 RC$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.70613 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22407514 | $\omega$ | 148.32531 | | +0.93311191 | | +0.35933824 |
| $a$ | 2.6845630 | $\Omega$ | 190.64037 | | −0.34317037 | | +0.87881164 |
| $e$ | 0.0873312 | $i$ | 4.14577 | | −0.10740697 | | +0.31395244 |
| $P$ | 4.40 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 01 | 691 | 0.1− | 0.1− | | 2006 09 15 | 691 | 0.3+ | 0.5− | | 2006 09 30 | 691 | 0.2− | 0.3− | |
| 2000 04 01 | 691 | 0.1+ | 0.1+ | | 2006 09 19 | 691 | 0.0 | 0.3+ | | 2006 09 30 | 691 | 0.1+ | 0.1+ | |
| 2000 04 01 | 691 | 0.1− | 0.3− | | 2006 09 19 | 691 | 0.2+ | 0.1− | | 2006 10 31 | G96 | 0.0 | 0.1− | |
| 2005 05 20 | G96 | 0.6− | 0.8− | | 2006 09 19 | 691 | 0.1− | 0.1+ | | 2006 10 31 | G96 | 0.4+ | 0.0 | |
| 2005 05 20 | G96 | 0.4− | 0.4− | | 2006 09 25 | G96 | 0.4− | 0.2− | | 2006 10 31 | G96 | 0.5− | 0.2− | |
| 2005 05 20 | G96 | 0.4+ | 0.1− | | 2006 09 25 | G96 | 0.2+ | 0.3− | | 2006 10 31 | G96 | 0.2− | 0.1− | |
| 2005 05 20 | G96 | 0.2+ | 0.0 | | 2006 09 25 | G96 | 0.1+ | 0.3− | | 2006 11 14 | G96 | 0.2− | 0.7− | |
| 2005 06 10 | 691 | 0.3− | 0.1− | | 2006 09 25 | G96 | 0.4− | 0.3− | | 2006 11 14 | G96 | 0.3− | 0.3− | |
| 2005 06 10 | 691 | 0.1− | 0.1+ | | 2006 09 26 | 691 | 0.1− | 0.3+ | | 2006 11 14 | G96 | 0.2− | 0.4− | |
| 2005 06 10 | 691 | 0.5+ | 0.2+ | | 2006 09 26 | 691 | 0.2+ | 0.1+ | | 2006 11 14 | G96 | 0.4+ | 0.1− | |
| 2006 09 15 | 691 | 0.3− | 0.1+ | | 2006 09 26 | 691 | 0.1− | 0.3+ | | | | | | |
| 2006 09 15 | 691 | 0.2+ | 0.2− | | 2006 09 30 | 691 | 0.1+ | 0.1+ | | | | | | |

**2006 RD$_{91}$ = 1997 SS$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.19546 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22441779 | $\omega$ | 346.14086 | | +0.95339363 | | +0.30172348 |
| $a$ | 2.6818297 | $\Omega$ | 356.29640 | | −0.27398728 | | +0.86311153 |
| $e$ | 0.0988643 | $i$ | 1.66605 | | −0.12637862 | | +0.40497089 |
| $P$ | 4.39 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.1− | 0.1+ | | 2006 07 21 | G96 | 0.7− | 0.0 | | 2006 09 30 | 691 | 0.1+ | 0.3+ | |
| 1993 11 20 | 691 | 0.1+ | 0.1+ | | 2006 09 15 | 691 | 0.5− | 0.3+ | | 2006 09 30 | 691 | 0.4+ | 0.0 | |
| 1993 11 20 | 691 | 0.1− | 0.2− | | 2006 09 15 | 691 | 0.3− | 0.3+ | | 2006 10 17 | 703 | 0.7− | 0.4− | |
| 1997 09 23 | 691 | 0.4− | 0.2+ | | 2006 09 15 | 691 | 0.2+ | 0.0 | | 2006 10 17 | 703 | (1.1+ | 3.0−) | |
| 1997 09 23 | 691 | 0.3− | 0.6+ | | 2006 09 19 | 691 | 0.1− | 0.3+ | | 2006 10 17 | 703 | 0.1+ | 0.1− | |
| 1997 09 23 | 691 | 0.2+ | 0.5− | | 2006 09 19 | 691 | 0.1− | 0.1+ | | 2006 10 17 | 703 | 0.1+ | 0.4+ | |
| 1997 09 29 | 691 | 0.0 | 0.1+ | | 2006 09 19 | 691 | 0.1+ | 0.2− | | 2006 10 31 | G96 | 0.1+ | 0.0 | |
| 1997 09 29 | 691 | 0.2+ | 0.2+ | | 2006 09 26 | 691 | 0.1− | 0.1− | | 2006 10 31 | G96 | 0.6+ | 0.7− | |
| 1997 09 29 | 691 | 0.1+ | 0.0 | | 2006 09 26 | 691 | 0.3+ | 0.1− | | 2006 10 31 | G96 | 0.5+ | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 291 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2004 02 18 | 291 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2004 02 18 | 291 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.2+ |
| 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.8− |
| 2006 07 21 | G96 | 0.6− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.1− | | | | |

**2006 RF$_{91}$ = 2005 JC$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.18303 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18350064 | $\omega$ | 295.77176 | | +0.33133496 | | +0.94350721 |
| $a$ | 3.0669803 | $\Omega$ | 353.57530 | | −0.85454611 | | +0.29858096 |
| $e$ | 0.2584300 | $i$ | 1.72049 | | −0.39996010 | | +0.14367866 |
| $P$ | 5.37 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 691 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2005 05 11 | 691 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2005 05 11 | 691 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2005 05 11 | 644 | 0.1− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.5+ | 0.1− |
| 2005 05 11 | 644 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.5− |
| 2005 05 11 | 644 | 0.4+ | 0.1− | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.4− |
| 2005 05 16 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2005 05 16 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.2− | 0.3− |
| 2005 05 16 | 691 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 | | | | |

**2006 RG$_{91}$ = 1995 UC$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.36625 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18059983 | $\omega$ | 71.54501 | | +0.01308076 | | +0.99948198 |
| $a$ | 3.0997344 | $\Omega$ | 199.27581 | | −0.94773231 | | +0.00301682 |
| $e$ | 0.2229474 | $i$ | 5.11042 | | −0.31879830 | | +0.03204172 |
| $P$ | 5.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 1995 10 16 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 1995 10 16 | 691 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 1995 10 21 | 691 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.2− |
| 1995 10 21 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 1995 10 21 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 1.0+ | 0.6+ |
| 2006 09 15 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.1− |

**2006 RJ$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.16404 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16239701 | $\omega$ | 356.87671 | | +0.31688887 | | −0.94841661 |
| $a$ | 3.3272392 | $\Omega$ | 74.64826 | | +0.87040745 | | +0.28688048 |
| $e$ | 0.1307848 | $i$ | 0.55542 | | +0.37679215 | | +0.13492788 |
| $P$ | 6.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 10 | 691 | 0.1− | 0.8− | 2006 09 15 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 703 | (0.7− | 2.1+) |
| 1994 10 10 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 1994 10 10 | 691 | 0.5− | 0.5− | 2006 09 15 | 691 | 1.1− | 0.5− | 2006 10 21 | 703 | 1.0− | 1.4+ |
| 2000 11 16 | 691 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.5− |
| 2000 11 16 | 691 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2000 11 16 | 691 | 0.7+ | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2001 12 23 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 12 23 | 691 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.8− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2001 12 23 | 691 | 0.7− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 291 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 02 06 | 291 | 0.4+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.4− | 0.2− |
| 2002 02 06 | 291 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.7− | 0.6+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 02 06 | 291 | 1.0+ | 1.3+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2002 02 06 | 291 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2002 02 06 | 291 | 0.2+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2003 04 04 | 691 | 0.3+ | 0.9+ | 2006 09 30 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2003 04 04 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.4+ | 2006 11 21 | G96 | 0.5+ | 0.2− |
| 2003 04 04 | 691 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 1.0+ | 2006 11 21 | G96 | 0.5− | 0.4− |

**2006 RP$_{91}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.23815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27890896 | $\omega$ | 209.33428 | | −0.76466410 | | +0.64343987 |
| $a$ | 2.3200343 | $\Omega$ | 10.93594 | | −0.54851002 | | −0.62077712 |
| $e$ | 0.1566422 | $i$ | 10.84425 | | −0.33826849 | | −0.44790725 |
| $P$ | 3.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.4+ | 1.0− | 2005 06 02 | 699 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 2002 08 13 | 644 | 0.4+ | 0.5− | 2005 06 02 | 699 | 0.6+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2002 08 13 | 644 | 0.4+ | 0.6− | 2005 06 02 | 699 | 1.1+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2005 03 11 | 703 | 0.8− | 0.8− | 2005 06 27 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2005 03 11 | 703 | 0.8− | 0.2+ | 2005 06 27 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2005 03 11 | 703 | 1.0− | 0.5+ | 2005 06 27 | 644 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.6+ |
| 2005 03 11 | 703 | 0.3− | 0.8+ | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2005 04 14 | 703 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 1.4+ | 0.8+ |
| 2005 04 14 | 703 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2005 04 14 | 703 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.7+ |
| 2005 04 14 | 703 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 1.0− | 0.5+ |
| 2005 05 12 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.8− | 0.4+ |
| 2005 05 12 | 644 | 0.6+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.5− | 0.1− |
| 2005 05 12 | 644 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2005 06 02 | 699 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.2− |

**2006 RU$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.91493 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25433497 | $\omega$ | 279.62194 | | +0.31350763 | | +0.94948805 |
| $a$ | 2.4671676 | $\Omega$ | 8.68540 | | −0.83203768 | | +0.28158132 |
| $e$ | 0.1941341 | $i$ | 5.17346 | | −0.45763115 | | +0.13850779 |
| $P$ | 3.88 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.3− | 0.3− | 2005 05 12 | G96 | 0.8− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.1− |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2005 05 12 | G96 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 2005 03 08 | G96 | 0.3− | 0.4− | 2005 05 12 | G96 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2005 03 08 | G96 | 0.3− | 0.5− | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2005 03 17 | 691 | 0.4+ | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2005 03 17 | 691 | 0.4+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2005 03 17 | 691 | (3.2+ | 3.7−) | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2005 04 05 | G96 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.7− | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2005 04 05 | G96 | 0.4+ | 0.0 | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.4− |
| 2005 04 05 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2005 05 12 | G96 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.2− | | | | |

**2006 RY$_{91}$ = 2005 NG$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.94431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17330635 | $\omega$ | 253.92567 | | +0.03460356 | | −0.99920699 |
| $a$ | 3.1861024 | $\Omega$ | 194.13513 | | +0.94500056 | | +0.03912753 |
| $e$ | 0.1563952 | $i$ | 4.62636 | | +0.32523306 | | −0.00737755 |
| $P$ | 5.69 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 07 | 691 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 16 | G96 | 0.4− | 0.2+ |
| 2003 04 07 | 691 | 0.3+ | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.6+ | 0.2− |
| 2003 04 07 | 691 | 0.2+ | 0.7+ | 2006 09 25 | G96 | 0.6+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 07 06 | 691 | 0.4− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2005 07 06 | 691 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2005 07 06 | 691 | 0.6+ | 0.6− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 02 | G96 | 0.2+ | 1.2+ |
| 2005 07 12 | G96 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 02 | G96 | (0.1+ | 1.7+) |
| 2005 07 12 | G96 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 11 02 | G96 | 0.1+ | 1.1+ |
| 2005 07 12 | G96 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 11 02 | G96 | 0.1− | 0.9+ |
| 2005 07 12 | G96 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.2+ |
| 2006 09 15 | 691 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 02 | G96 | 0.1+ | 0.4− |
| 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.5− | 2006 11 02 | G96 | 0.5+ | 0.0 |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.0 | 2006 11 02 | G96 | 0.7+ | 0.2+ |
| 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2006 09 19 | 691 | 1.0− | 0.6+ | 2006 10 16 | G96 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.9− |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.5− | 0.3− |

## 2006 RD$_{92}$ = 2005 EH$_{195}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.61504 | | (2000.0) | | +0.60450257 | +0.79653439 |
| $n$ | 0.26955290 | $\omega$ | 116.23802 | | −0.74909004 | +0.56392693 |
| $a$ | 2.3734133 | $\Omega$ | 190.97362 | | −0.27099955 | +0.21798943 |
| $e$ | 0.1961869 | $i$ | 3.15290 | | | |
| $P$ | 3.66 | $H$ | 17.7 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2005 03 11 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2005 03 11 | G96 | 0.8− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.2+ |
| 2005 03 13 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 03 13 | 691 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.5− | | | | |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.5− | | | | |

## 2006 RG$_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.15473 | | (2000.0) | | +0.69123021 | −0.72263426 |
| $n$ | 0.19173569 | $\omega$ | 49.15863 | | +0.65861147 | +0.63040057 |
| $a$ | 2.9785215 | $\Omega$ | 357.11349 | | +0.29737473 | +0.28353987 |
| $e$ | 0.1505170 | $i$ | 0.82217 | | | |
| $P$ | 5.14 | $H$ | 16.5 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 691 | 0.3+ | 0.2− | 2006 09 14 | 703 | (0.0 | 2.4−) | 2006 10 02 | 291 | 0.6+ | 0.2+ |
| 1996 11 09 | 691 | 0.0 | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 10 02 | 291 | 0.6+ | 0.6+ |
| 1996 11 09 | 691 | 0.1+ | 0.8− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 02 | 291 | 0.5+ | 0.4+ |
| 2003 02 01 | 291 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.2− |
| 2003 02 01 | 291 | 0.3+ | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2003 02 01 | 291 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 07 21 | G96 | 0.1− | 0.8+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.2+ |
| 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.6+ |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.5+ |
| 2006 09 14 | 703 | 0.1+ | 0.9+ | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.5− |
| 2006 09 14 | 703 | 1.2− | 0.4− | 2006 09 30 | 691 | 0.1− | 0.1− | | | | |
| 2006 09 14 | 703 | 0.4− | 0.8+ | 2006 09 30 | 691 | 0.5− | 0.1− | | | | |

## 2006 RM$_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 219.69275 | | (2000.0) | | −0.88451534 | −0.46586852 |
| $n$ | 0.31303007 | $\omega$ | 301.09990 | | +0.44251421 | −0.82124953 |
| $a$ | 2.1482196 | $\Omega$ | 211.15304 | | +0.14769492 | −0.32941726 |
| $e$ | 0.0504585 | $i$ | 2.71198 | | | |
| $P$ | 3.15 | $H$ | 18.2 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 06 | 691 | 0.1− | 0.5− | 2003 10 28 | 704 | 0.3− | 0.9− | 2005 05 11 | G96 | 0.4+ | 0.4− |
| 2000 12 06 | 691 | 0.3− | 0.1− | 2003 10 28 | 704 | 1.2− | 0.7− | 2006 09 15 | 691 | 0.1+ | 0.3− |
| 2000 12 06 | 691 | 0.4+ | 0.5− | 2003 11 16 | 291 | 0.2+ | 1.2+ | 2006 09 15 | 691 | 0.4+ | 0.2− |
| 2003 10 02 | 691 | 0.0 | 0.2+ | 2003 11 16 | 291 | 0.2+ | 1.3+ | 2006 09 15 | 691 | 0.0 | 0.2− |
| 2003 10 02 | 691 | 0.3− | 0.1+ | 2003 11 16 | 291 | 0.8+ | 1.1+ | 2006 09 19 | 691 | 0.3+ | 0.0 |
| 2003 10 02 | 691 | 0.2+ | 0.0 | 2005 04 17 | 691 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2003 10 26 | 291 | 0.1− | 0.4− | 2005 04 17 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.3+ | 0.4− |
| 2003 10 26 | 291 | 0.6− | 0.2− | 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2003 10 26 | 291 | 0.0 | 0.2− | 2005 05 11 | G96 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.5− | 0.2+ |
| 2003 10 28 | 704 | 0.1− | 0.2− | 2005 05 11 | G96 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.5− | 0.0 |
| 2003 10 28 | 704 | 0.8− | 0.3+ | 2005 05 11 | G96 | 0.3+ | 0.1+ | | | | |

## 2006 RP$_{92}$ = 2001 WK$_{60}$ = 2004 GY$_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.18378 | | (2000.0) | | +0.99196905 | −0.12530467 |
| $n$ | 0.18147301 | $\omega$ | 66.57478 | | +0.10751759 | +0.90705929 |
| $a$ | 3.0897833 | $\Omega$ | 300.61962 | | +0.06661356 | +0.40192312 |
| $e$ | 0.0641237 | $i$ | 1.14581 | | | |
| $P$ | 5.43 | $H$ | 16.3 | $G$ 0.15 | $U$ 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.0 | 0.1− | 2004 04 12 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.3+ |
| 2000 08 31 | 691 | 0.0 | 0.0 | 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.7+ | 0.2− |
| 2000 08 31 | 691 | 0.0 | 0.3+ | 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 11 19 | 704 | 0.0 | 0.3− | 2004 04 19 | 691 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.7+ | 0.0 |
| 2001 11 19 | 704 | 0.3+ | 0.5+ | 2006 09 15 | 691 | 1.5− | 0.1+ | 2006 10 19 | G96 | 0.7+ | 0.3− |
| 2001 11 19 | 704 | 0.4+ | 0.7+ | 2006 09 15 | 691 | 1.5− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.7− | 0.2− | 2006 09 15 | 691 | 0.8− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.1− | 0.7− | 2006 09 19 | 691 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.7− |
| 2001 11 21 | 704 | 0.3− | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.9+ | 0.4− |
| 2001 11 21 | 704 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 01 28 | 291 | 0.0 | 0.7+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2003 01 28 | 291 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2003 01 28 | 291 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.4+ | 0.3+ | | | | |
| 2004 04 12 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.3+ | | | | |

## 2006 RT$_{92}$ = 1997 RU$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.94861 | | (2000.0) | | +0.71410886 | −0.69959803 |
| $n$ | 0.22456519 | $\omega$ | 199.93997 | | +0.65008220 | +0.67583910 |
| $a$ | 2.6806560 | $\Omega$ | 204.51039 | | +0.25969535 | +0.23195713 |
| $e$ | 0.0910126 | $i$ | 3.41623 | | | |
| $P$ | 4.39 | $H$ | 16.9 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 06 | 910 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 1997 09 06 | 910 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1+ | 1.2− |
| 1997 09 06 | 910 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 1.0− |
| 1997 09 06 | 910 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 1997 09 06 | 910 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.6+ | 2006 10 17 | G96 | (0.3− | 1.6+) |
| 1997 09 06 | 910 | 0.2+ | 0.1− | 2006 09 17 | 703 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.4+ | 0.3+ |
| 2000 04 13 | 691 | 0.3+ | 0.0 | 2006 09 17 | 703 | (3.1− | 0.8−) | 2006 10 27 | G96 | 0.1− | 0.5+ |
| 2000 04 13 | 691 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.5− | 0.5+ |
| 2000 04 13 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.4+ |
| 2002 11 24 | 644 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.7− | 0.2+ | 2006 11 01 | G96 | 0.5+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.6+ | 0.0 |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.1+ |
| 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.0 |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.6− | 0.2+ |
| 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2004 04 13 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 04 13 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− | | | | |

**2006 RW$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.13107 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26216524 | $\omega$ | 348.04993 | | −0.31088508 | | +0.95014518 |
| $a$ | 2.4177941 | $\Omega$ | 263.83388 | | −0.87002070 | | −0.29464109 |
| $e$ | 0.1052761 | $i$ | 1.38156 | | −0.38264142 | | −0.10203316 |
| $P$ | 3.76 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 01 | 644 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2005 05 01 | 644 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2005 05 01 | 644 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2005 05 14 | 644 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.0 | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2005 05 14 | 644 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.4− |
| 2005 05 14 | G96 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 05 14 | G96 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2005 05 14 | G96 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2005 05 14 | G96 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.6− |

**2006 RZ$_{92}$ = 2004 EB$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.19619 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21765430 | $\omega$ | 186.03945 | | +0.93300620 | | −0.35897914 |
| $a$ | 2.7371035 | $\Omega$ | 195.07260 | | +0.33408362 | | +0.89004690 |
| $e$ | 0.0586034 | $i$ | 5.55390 | | +0.13374438 | | +0.28098131 |
| $P$ | 4.53 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.4− | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.6− | 0.3+ | 2006 09 15 | 691 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2004 03 15 | 691 | 0.2+ | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 16 | G96 | 0.6− | 0.4− |
| 2004 03 23 | 691 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.8+ | 0.4− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.1+ | | | | |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | | | | |

**2006 RA$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.18773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28416792 | $\omega$ | 307.16052 | | +0.51813406 | | +0.85523900 |
| $a$ | 2.2913214 | $\Omega$ | 354.02011 | | −0.75053650 | | +0.44893730 |
| $e$ | 0.1330832 | $i$ | 5.60006 | | −0.41016101 | | +0.25888521 |
| $P$ | 3.47 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 03 | 696 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.4− | 0.1+ |
| 1998 05 03 | 696 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 1998 05 03 | 696 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2005 03 14 | G96 | 0.3+ | 0.2+ | 2006 07 21 | G96 | 0.5+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2005 03 14 | G96 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2005 03 14 | G96 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2005 03 14 | G96 | 0.3+ | 0.1− | 2006 09 15 | 691 | 0.4− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2005 04 12 | G96 | 0.4+ | 0.1− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2005 04 12 | G96 | 0.5− | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.8− | 2006 10 17 | 703 | 0.5+ | 1.0− |
| 2005 04 12 | G96 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.3− |

**2006 RC$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.79546 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26547807 | $\omega$ | 326.90278 | | +0.31269178 | | +0.94969514 |
| $a$ | 2.3976380 | $\Omega$ | 321.31076 | | −0.86531448 | | +0.27725573 |
| $e$ | 0.1228465 | $i$ | 1.59566 | | −0.39173294 | | +0.14563101 |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 691 | 0.1− | 0.1+ | 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.8− | 0.3+ |
| 1999 12 15 | 691 | 0.0 | 0.1− | 2006 07 22 | G96 | 0.2+ | 0.9− | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 1999 12 15 | 691 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2002 08 17 | 644 | 0.4+ | 0.3+ | 2006 09 15 | 691 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2002 08 17 | 644 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 16 | 621 | 0.0 | 0.2− |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 16 | 621 | 0.2+ | 0.1− |
| 2002 08 18 | 644 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.3− | 2006 10 16 | 621 | 0.1+ | 0.1− |
| 2002 08 18 | 644 | 0.4− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 1.1+ | 0.4+ |
| 2005 03 11 | G96 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 1.4− | 0.2− |
| 2005 03 11 | G96 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2005 03 11 | G96 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | (1.6− | 2.8+) |
| 2005 03 11 | G96 | 0.6− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2005 04 09 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2005 04 09 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.1+ | | | | |
| 2006 07 22 | G96 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | | | |

**2006 RD$_{93}$ = 1999 VJ$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.31686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28039194 | $\omega$ | 309.87636 | | −0.80961802 | | −0.58673868 |
| $a$ | 2.3118467 | $\Omega$ | 194.22141 | | +0.55645960 | | −0.75858698 |
| $e$ | 0.0887420 | $i$ | 3.73692 | | +0.18673876 | | −0.28334345 |
| $P$ | 3.52 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.1+ | 0.3− | 2005 06 17 | G96 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.3− | 0.5+ |
| 1999 11 09 | 691 | 0.0 | 0.0 | 2005 06 17 | G96 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.2− | 0.3+ |
| 1999 11 09 | 691 | 0.1− | 0.3− | 2005 07 11 | G96 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 1999 11 13 | 691 | 0.1+ | 0.5− | 2005 07 11 | G96 | 0.3− | 0.3+ | 2006 09 27 | J75 | 0.5+ | 1.1− |
| 1999 11 13 | 691 | 0.0 | 0.1+ | 2005 07 11 | G96 | 0.3+ | 0.1− | 2006 09 27 | J75 | 2.3+ | 1.4− |
| 1999 11 13 | 691 | 0.2+ | 0.1− | 2005 07 11 | G96 | 0.1+ | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.1+ |
| 2001 03 31 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2001 03 31 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.0 |
| 2001 03 31 | 691 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.4− | 0.2+ | 2006 10 16 | G96 | 0.8− | 0.2+ |

**2006 RF$_{93}$ = 2005 NW$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.27283 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16112256 | $\omega$ | 353.63829 | | +0.79185974 | | +0.61058096 |
| $a$ | 3.3447614 | $\Omega$ | 328.71986 | | −0.55926763 | | +0.71699204 |
| $e$ | 0.0414968 | $i$ | 1.34728 | | −0.24531178 | | +0.33632320 |
| $P$ | 6.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.3− | 0.0 | 2005 07 07 | 691 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.5+ | 0.4+ | 2005 07 15 | G96 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.2+ | 0.3+ | 2005 07 15 | G96 | 0.0 | 1.4− | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2000 10 01 | 704 | 0.2+ | 1.1+ | 2005 07 15 | G96 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2000 10 01 | 704 | 0.1+ | 0.4+ | 2005 07 15 | G96 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 2000 10 06 | 699 | 1.1− | 0.2+ | 2006 07 22 | G96 | 0.3+ | 0.1− | 2006 10 17 | 703 | (2.2+ | 0.2+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 06 | 699 | 0.7− | 0.1+ | 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.9− | 0.3+ |
| 2000 10 06 | 699 | 0.2− | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.6+ |
| 2000 10 06 | 699 | 0.4− | 0.6+ | 2006 07 22 | G96 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2001 12 24 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.6− |
| 2001 12 24 | 691 | 0.3+ | 0.7− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2001 12 24 | 691 | 0.0 | 0.6− | 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2003 02 22 | 644 | 0.0 | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2003 02 22 | 644 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2003 02 22 | 644 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 07 07 | 691 | 0.2+ | 0.5− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2005 07 07 | 691 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.1− | 0.1− | | | | |

**2006 RG$_{93}$ = 1999 US$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 92.52011 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.27593659 | $\omega$ | 47.11189 | | −0.22465061 | | +0.97427217 | | |
| $a$ | 2.3366654 | $\Omega$ | 209.91985 | | −0.90424709 | | −0.21533600 | | |
| $e$ | 0.1837826 | $i$ | 2.07401 | | −0.36313813 | | −0.06651432 | | |
| $P$ | 3.57 | $H$ | 17.8 | $G$ | 0.15 | | $U$ | 0 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.2+ | 0.1− | 2002 08 06 | 644 | 0.5− | 0.4− | 2006 09 15 | 691 | 0.4+ | 0.4− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2002 08 06 | 644 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.5− |
| 1999 10 19 | 691 | 0.1− | 0.2+ | 2003 11 30 | 291 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1− |
| 1999 10 19 | 691 | 0.1+ | 0.2− | 2003 11 30 | 291 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 1999 10 19 | 691 | 0.1+ | 0.2− | 2003 11 30 | 291 | 0.7− | 0.5+ | 2006 09 19 | 691 | 0.0 | 0.2+ |
| 2002 07 04 | 644 | 0.2+ | 0.9+ | 2005 03 04 | 691 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.4− | 0.1+ |
| 2002 07 04 | 644 | 0.1− | 0.4+ | 2005 03 04 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2002 07 04 | 644 | 0.5− | 0.4+ | 2005 03 04 | 691 | 0.6+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 07 22 | 644 | 0.0 | 0.2+ | 2005 03 17 | 703 | 0.9− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 2002 07 22 | 644 | 0.6− | 0.3+ | 2005 03 17 | 703 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.2+ |
| 2002 07 22 | 644 | 0.6− | 0.2− | 2005 03 17 | 703 | 0.8− | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.3+ |
| 2002 08 06 | 644 | 0.1− | 0.2− | 2005 03 17 | 703 | 0.7− | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.2+ |

**2006 RN$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 62.11998 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21354884 | $\omega$ | 93.63550 | | +0.46026531 | | +0.88403068 | | |
| $a$ | 2.7720724 | $\Omega$ | 204.29536 | | −0.87271757 | | +0.43370015 | | |
| $e$ | 0.1432174 | $i$ | 11.42789 | | −0.16284931 | | +0.17433857 | | |
| $P$ | 4.62 | $H$ | 17.2 | $G$ | 0.15 | | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 645 | 0.1+ | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | (2.1− | 0.2+) |
| 2005 05 08 | 691 | 0.1− | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.5− | 0.4− |
| 2005 05 08 | 691 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2005 05 08 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 2005 06 08 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.6− |
| 2005 06 08 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.6− | 0.4− |
| 2005 06 08 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.7+ | 0.3− |
| 2005 06 17 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2005 06 17 | 691 | 0.1− | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.1+ | | | | |
| 2005 06 17 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.0 | | | | |

**2006 RO$_{93}$ = 2003 WG$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 282.48409 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.30571834 | $\omega$ | 231.95927 | | −0.18408325 | | −0.98177594 | | |
| $a$ | 2.1823365 | $\Omega$ | 228.71659 | | +0.92034344 | | −0.15530155 | | |
| $e$ | 0.0822837 | $i$ | 3.60243 | | +0.34508159 | | −0.10953276 | | |
| $P$ | 3.22 | $H$ | 18.1 | $G$ | 0.15 | | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 27 | 691 | 0.1− | 0.8− | 2003 12 21 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 2003 10 27 | 691 | 0.2− | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.4− | 0.1− |
| 2003 10 27 | 691 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2003 11 21 | 704 | 1.0− | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2003 11 21 | 704 | 0.3+ | 1.4+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2003 11 21 | 704 | (1.8+ | 0.7+) | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2003 11 26 | 704 | 0.7+ | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2003 11 26 | 704 | 0.1+ | 0.1+ | 2006 09 23 | 152 | 0.4− | 0.5+ | 2006 11 15 | G96 | 0.6+ | 0.6− |
| 2003 11 26 | 704 | 0.1− | 0.9+ | 2006 09 23 | 152 | 0.3+ | 1.4+ | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2003 12 21 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.7− |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.5− |

**2006 RR$_{93}$ = 1997 TA$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 100.04419 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21722906 | $\omega$ | 46.26262 | | +0.05214055 | | +0.99661676 | | |
| $a$ | 2.7406744 | $\Omega$ | 226.84109 | | −0.93944450 | | +0.02737262 | | |
| $e$ | 0.0337043 | $i$ | 4.99654 | | −0.33871138 | | +0.07749694 | | |
| $P$ | 4.54 | $H$ | 16.8 | $G$ | 0.15 | | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 691 | 0.0 | 0.4− | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 1997 10 02 | 691 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.9+ | 0.8− |
| 1997 10 02 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.7+ | 0.3− |
| 1997 10 06 | 691 | 0.6+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 1997 10 06 | 691 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 1997 10 06 | 691 | 0.0 | 0.7− | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2006 09 15 | 691 | 0.6− | 0.5− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.7+ | 0.3− |
| 2006 09 15 | 691 | 0.6− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 18 | 291 | 0.7+ | 0.1+ |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.3− | 2006 11 18 | 291 | 0.1+ | 0.7+ |
| 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1+ | 2006 11 18 | 291 | 0.8− | 1.4+ |
| 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1− | | | | |

**2006 RW$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 42.48905 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.28164504 | $\omega$ | 109.97835 | | +0.76657433 | | +0.63973449 | | |
| $a$ | 2.3049843 | $\Omega$ | 210.32809 | | −0.62267979 | | +0.71931862 | | |
| $e$ | 0.1277204 | $i$ | 6.33417 | | −0.15695122 | | +0.27077759 | | |
| $P$ | 3.50 | $H$ | 17.8 | $G$ | 0.15 | | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 30 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 1999 11 30 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.2− |
| 1999 11 30 | 691 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2005 05 08 | G96 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2005 05 08 | G96 | 0.2− | 0.4− | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2005 05 08 | G96 | 0.7+ | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2005 05 08 | G96 | 0.6− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.6− |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.8− | 0.3+ |
| 2006 09 15 | 691 | 0.7− | 0.6− | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.6+ | 0.4− | 2006 11 22 | G96 | 1.1− | 0.8− |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.5− | 0.2− |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.4− | 0.0 |

**2006 RY$_{93}$ = 2004 BV$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.25602 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23718138 | $\omega$ | 306.00618 | | −0.50366779 | | +0.86315352 |
| $a$ | 2.5847328 | $\Omega$ | 293.71320 | | −0.77948017 | | −0.47194805 |
| $e$ | 0.1241384 | $i$ | 2.24364 | | −0.37246398 | | −0.17953006 |
| $P$ | 4.16 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.4− | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 691 | 0.5− | 0.4− |
| 2004 01 16 | 691 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.2− | 2006 11 17 | G96 | (1.8− | 1.9−) |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | (1.0− | 1.7−) |
| 2004 01 27 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | (0.7− | 1.7−) |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | (1.5− | 1.5−) |
| 2006 09 15 | 691 | 0.7+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | | | | |
| 2006 09 15 | 691 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.4+ | 0.2+ | | | | |

**2006 RC$_{94}$ = 1999 VJ$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.19273 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28745716 | $\omega$ | 241.42592 | | +0.00847407 | | −0.99839592 |
| $a$ | 2.2738089 | $\Omega$ | 208.25568 | | +0.95379622 | | +0.02488413 |
| $e$ | 0.0563395 | $i$ | 6.79108 | | +0.30033476 | | −0.05085629 |
| $P$ | 3.43 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 691 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 1999 11 03 | 691 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 1999 11 03 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 1999 11 14 | 691 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 1999 11 14 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.7− | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 1999 11 14 | 691 | 0.0 | 0.4− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.5− | 2006 11 13 | 691 | 0.6− | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.7− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.8− | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2006 09 26 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.6− | 0.4+ | | | | |

**2006 RF$_{94}$ = 2002 XG$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.68906 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23590386 | $\omega$ | 59.63556 | | +0.86265325 | | −0.50544318 |
| $a$ | 2.5940560 | $\Omega$ | 330.71298 | | +0.44980311 | | +0.78369436 |
| $e$ | 0.2911133 | $i$ | 2.21221 | | +0.23131479 | | +0.36104064 |
| $P$ | 4.18 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.6− | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.9− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | 0.3− | 1.0+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 12 11 | 704 | 0.6+ | 1.2− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 10 27 | 683 | 0.5+ | 1.5− |
| 2002 12 11 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 10 27 | 683 | 0.2+ | 1.4− |
| 2002 12 11 | 704 | 0.8+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 10 27 | 683 | (0.1+ | 1.9+) |
| 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.1− | 2006 11 06 | 644 | 0.6− | 0.0 |
| 2006 07 22 | G96 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.4− | 2006 11 06 | 644 | 0.2+ | 0.0 |
| 2006 07 22 | G96 | 0.9− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.0 | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.0 | 0.5− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.4− | 0.3− | | | | |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | | | | |

**2006 RH$_{94}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.07946 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22654216 | $\omega$ | 107.52953 | | +0.97338299 | | +0.22641597 |
| $a$ | 2.6650377 | $\Omega$ | 239.39730 | | −0.22280195 | | +0.89852664 |
| $e$ | 0.0974367 | $i$ | 2.36487 | | −0.05371083 | | +0.37601288 |
| $P$ | 4.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.2+ | 0.5− | 2006 09 19 | 691 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2005 06 13 | G96 | 0.3+ | 0.4− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2005 06 13 | G96 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.8− | 0.0 |
| 2005 06 13 | G96 | 0.3− | 1.1+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.2+ |
| 2005 06 27 | G96 | 0.3− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.5− | 0.5+ |
| 2005 06 27 | G96 | 0.2− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.7+ |
| 2005 06 27 | G96 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 1.7+ |
| 2005 06 27 | G96 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.2− |
| 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.9− | 2006 10 31 | 691 | 0.1− | 0.4− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.7− | 2006 10 31 | 691 | 0.3+ | 0.6− |

**2006 RK$_{94}$ = 2003 YO$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.66316 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30121252 | $\omega$ | 207.75422 | | +0.42869789 | | −0.90238705 |
| $a$ | 2.2040462 | $\Omega$ | 216.90798 | | +0.84181289 | | +0.41656977 |
| $e$ | 0.1096792 | $i$ | 4.17965 | | +0.32797739 | | +0.11030524 |
| $P$ | 3.27 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.5− | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2003 12 19 | 704 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 1.2+ | 0.8− | 2006 10 21 | 703 | 0.4+ | 0.6− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2003 12 22 | 704 | 0.4+ | 0.9+ | 2006 10 21 | 703 | 0.0 | 0.5+ | 2006 11 11 | 703 | (1.6− | 2.1−) |
| 2003 12 22 | 704 | 1.2− | 1.0+ | 2006 10 21 | 703 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2003 12 22 | 704 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2003 12 22 | 704 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.5+ |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.5− | 0.4− |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.5− | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.7− |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.4− | 0.6− |
| 2006 09 30 | 691 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.7− | 0.6− | 2006 11 22 | G96 | 0.0 | 0.4− |

**2006 RR$_{94}$ = 2005 ER$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.25531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30164814 | $\omega$ | 65.46399 | | +0.04734801 | | +0.99782479 |
| $a$ | 2.2019238 | $\Omega$ | 207.36957 | | −0.94876511 | | +0.03056317 |
| $e$ | 0.1761280 | $i$ | 5.72602 | | −0.31241468 | | +0.05840874 |
| $P$ | 3.27 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 644 | 0.1− | 0.6+ | 2005 03 11 | G96 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.4+ |
| 2002 04 09 | 644 | 0.1− | 0.6+ | 2005 03 11 | G96 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.3− | 0.2+ |
| 2002 04 09 | 644 | 0.3− | 0.6+ | 2005 04 12 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.2+ |
| 2002 04 14 | 704 | 1.5+ | 0.8+ | 2005 04 12 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2002 04 14 | 704 | 0.2+ | 0.9+ | 2005 04 12 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 14 | 704 | (0.2+ | 1.6+) | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.2+ |
| 2002 04 14 | 704 | 0.6+ | 1.1+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 05 13 | 704 | 0.2+ | 0.5− | 2006 09 15 | 691 | 0.6+ | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2002 05 13 | 704 | 0.7− | 0.6+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 05 13 | 704 | 0.0 | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2002 05 13 | 704 | (1.9+ | 0.2+) | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2002 05 13 | 704 | (2.1− | 0.6+) | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2005 03 10 | 703 | 1.0− | 0.8− | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2005 03 10 | 703 | 0.8− | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.1+ |
| 2005 03 10 | 703 | 0.3− | 0.8+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.5+ |
| 2005 03 10 | 703 | (2.0+ | 0.7+) | 2006 09 30 | 691 | 0.6− | 0.4− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2005 03 11 | G96 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.7− |
| 2005 03 11 | G96 | 0.5− | 0.1− | 2006 10 15 | 691 | 0.4− | 0.4+ | | | | |

**2006 RU$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.92554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18588809 | $\omega$ | 102.61870 | | +0.99112820 | | +0.12733926 |
| $a$ | 3.0406633 | $\Omega$ | 250.07517 | | −0.13214662 | | +0.91349607 |
| $e$ | 0.0874064 | $i$ | 2.32099 | | −0.01421849 | | +0.38640606 |
| $P$ | 5.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 807 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2000 08 28 | 807 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.1− |
| 2002 01 13 | 291 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2002 01 13 | 291 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2002 01 13 | 291 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.4− | 0.3+ |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.9− | 0.2− | 2006 11 11 | 691 | 0.7− | 0.0 |
| 2006 09 15 | 691 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.8− | 0.5− |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.4+ | 0.3− |
| 2006 09 15 | 691 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.5+ | 0.4− |
| 2006 09 15 | 691 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.8+ | 0.7+ | 2006 11 16 | 691 | 0.3+ | 0.4− |
| 2006 09 19 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.3+ | | | | |

**2006 RB$_{95}$ = 1999 CK$_{64}$ = 2004 JD$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.57665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21935424 | $\omega$ | 304.12510 | | −0.90275980 | | −0.42602030 |
| $a$ | 2.7229439 | $\Omega$ | 210.78257 | | +0.42290568 | | −0.85381574 |
| $e$ | 0.1670941 | $i$ | 6.66799 | | +0.07858449 | | −0.29917451 |
| $P$ | 4.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.4+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1− |
| 1999 02 12 | 704 | 1.0− | 1.0+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 1999 02 12 | 704 | 1.3+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.6− |
| 1999 02 12 | 704 | 0.7+ | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 1999 02 12 | 704 | 1.1+ | 1.9+ | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 1999 02 16 | 704 | 2.0− | 0.8− | 2006 09 26 | 691 | 0.5+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 1999 02 16 | 704 | 0.5− | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 1999 02 16 | 704 | 0.8+ | 0.7− | 2006 09 30 | 691 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.6− | 0.1− |
| 2004 05 09 | 608 | 0.2− | 0.6− | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.6+ | 0.1+ |
| 2004 05 09 | 608 | 0.2+ | 0.4− | 2006 09 30 | 691 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.8− | 0.0 |
| 2004 05 09 | 608 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.5− | 1.5+ | 2006 11 13 | G96 | 0.2− | 0.6− |
| 2004 05 23 | 691 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2004 05 23 | 691 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.3− | 0.8+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2004 05 23 | 691 | 0.3+ | 0.7+ | 2006 10 27 | 691 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.5− |
| 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.5− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | | | |

**2006 RH$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.50554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23752561 | $\omega$ | 227.32146 | | +0.06651117 | | −0.99683612 |
| $a$ | 2.5822349 | $\Omega$ | 218.92861 | | +0.93451186 | | +0.07751912 |
| $e$ | 0.2861308 | $i$ | 3.97153 | | +0.34966249 | | −0.01756493 |
| $P$ | 4.15 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2002 11 13 | 644 | 0.5+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.4+ |
| 2002 11 13 | 644 | 0.5− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2002 11 23 | 644 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.4− | 0.0 |
| 2002 11 23 | 644 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 12 10 | 644 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.3− |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.5− | 0.3− |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.0 |

**2006 RJ$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.03361 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21115510 | $\omega$ | 86.54959 | | −0.04916643 | | −0.99866528 |
| $a$ | 2.7929833 | $\Omega$ | 6.33388 | | +0.84996739 | | −0.05015444 |
| $e$ | 0.1815341 | $i$ | 8.24550 | | +0.52453609 | | −0.01233693 |
| $P$ | 4.67 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2003 01 31 | 699 | 0.0 | 0.6+ | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.8− | 2003 01 31 | 699 | (1.5+ | 0.4+) | 2006 10 17 | 691 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.5− | 0.3− | 2003 03 07 | 644 | (0.6+ | 2.2+) | 2006 10 17 | 703 | 0.4+ | 0.8+ |
| 2001 09 19 | 704 | 0.1+ | 0.6+ | 2003 03 07 | 644 | (0.3+ | 2.4+) | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2003 01 10 | 704 | 0.9+ | 0.2+ | 2003 03 07 | 644 | (0.6+ | 2.2+) | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2003 01 10 | 704 | 0.4+ | 1.2+ | 2006 09 15 | 691 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.8+ |
| 2003 01 10 | 704 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2003 01 10 | 704 | (1.8+ | 1.0−) | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.5− |
| 2003 01 10 | 704 | 0.9− | 0.7+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 01 25 | 645 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2− | 0.4− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2003 01 31 | 699 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.3+ | | | | |
| 2003 01 31 | 699 | 1.0+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1− | | | | |

**2006 RQ$_{95}$ = 1994 TQ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.54232 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24558540 | $\omega$ | 185.94290 | | +0.92096096 | | −0.38912111 |
| $a$ | 2.5254243 | $\Omega$ | 197.00095 | | +0.36031173 | | +0.87036084 |
| $e$ | 0.0261978 | $i$ | 3.99840 | | +0.14834542 | | +0.30175613 |
| $P$ | 4.01 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 10 | 691 | 0.2− | 0.6+ | 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.2− |
| 1994 10 10 | 691 | 0.6− | 0.1− | 2004 02 11 | 644 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.4+ |
| 1994 10 10 | 691 | 0.4+ | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1994 10 12 | 691 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 1994 10 12 | 691 | 0.1− | 0.3+ | 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1994 10 12 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 10 02 | 704 | 0.6+ | 0.8− | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2002 10 02 | 704 | 1.1+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.3− | 0.1+ |
| 2002 10 02 | 704 | 0.7+ | 1.1− | 2006 09 26 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2002 10 10 | 644 | 0.4− | 0.7+ | 2006 09 26 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.2− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2002 10 10 | 644 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.5− | 1.1− | | |
| 2002 10 10 | 291 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.5− | 2006 11 11 | 703 | 1.4− | 0.1+ | | |
| 2002 10 10 | 291 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.5− | 2006 11 11 | 703 | (1.7− | 1.5−) | | |
| 2002 10 10 | 291 | 0.7+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.0 | 1.1− | | |
| 2002 10 30 | 644 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.5− | | |
| 2002 10 30 | 644 | 0.9− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.5− | | |
| 2002 10 30 | 644 | 1.4− | 0.3− | 2006 10 21 | 703 | 0.6− | 0.7− | 2006 11 16 | G96 | 0.1− | 0.5− | | |
| 2004 02 11 | 644 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.8− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.4− | | |

## 2006 RS$_{95}$ = 1999 GZ$_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.50713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20194814 | $\omega$ | 181.00288 | | −0.95787210 | +0.28574771 | |
| $a$ | 2.8772404 | $\Omega$ | 15.69260 | | −0.26274958 | −0.83144143 | |
| $e$ | 0.0056834 | $i$ | 6.11182 | | −0.11594698 | −0.47650121 | |
| $P$ | 4.88 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 691 | 1.0− | 0.0 | 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 1999 04 12 | 691 | 0.4− | 0.2− | 2006 09 19 | 691 | 1.0+ | 0.5− | 2006 10 27 | 691 | 0.7− | 0.4+ | | |
| 1999 04 12 | 691 | 0.6− | 0.5− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | |
| 1999 04 19 | 691 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.0 | | |
| 1999 04 19 | 691 | 0.6+ | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.3+ | | |
| 1999 04 19 | 691 | 0.4+ | 0.3− | 2006 09 26 | 691 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.1+ | | |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2+ | | |
| 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.3− | | |
| 2004 04 13 | 691 | 0.3+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 2004 04 13 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.6+ | 2006 11 11 | 691 | 0.3− | 0.0 | | |
| 2004 04 13 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.2− | | |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.6+ | | | | | | |
| 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.1+ | | | | | | |

## 2006 RU$_{95}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.76496 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17510822 | $\omega$ | 198.56233 | | +0.82160717 | −0.56994852 | |
| $a$ | 3.1642081 | $\Omega$ | 196.19857 | | +0.52786760 | +0.76792882 | |
| $e$ | 0.0789887 | $i$ | 2.25361 | | +0.21521490 | +0.29230808 | |
| $P$ | 5.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 691 | 0.1− | 0.6+ | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2003 04 05 | 691 | 0.0 | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.4+ | | |
| 2003 04 05 | 691 | 0.7+ | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2004 04 25 | 691 | 0.1+ | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.1+ | | |
| 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.6+ | | |
| 2005 06 15 | G96 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.0 | | |
| 2005 06 15 | G96 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.4+ | | |
| 2005 06 15 | G96 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | | |
| 2005 06 15 | G96 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 2005 07 06 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.3+ | | |
| 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.6− | 0.8− | | |
| 2005 07 06 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.7− | | |
| 2006 07 21 | G96 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.9+ | 0.7− | | |
| 2006 07 21 | G96 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.5− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.4− | | |
| 2006 07 21 | G96 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 19 | 691 | 0.3+ | 0.0 | | |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.0 | | | | | | |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.1+ | | | | | | |

## 2006 RX$_{95}$ = 2004 DV$_{57}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.08376 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23473242 | $\omega$ | 292.88194 | | +0.33549770 | +0.94203852 | |
| $a$ | 2.6026794 | $\Omega$ | 356.71855 | | −0.84978973 | +0.30164655 | |
| $e$ | 0.0412151 | $i$ | 2.17674 | | −0.40656944 | +0.14687680 | |
| $P$ | 4.20 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | 0.4+ | 0.5− | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.2− | | |
| 2004 02 23 | 704 | 0.5+ | 1.2− | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.2+ | | |
| 2004 02 23 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.0 | 0.4+ | | |
| 2004 02 29 | 691 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.6− | | |
| 2004 02 29 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.2− | 0.3+ | | |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.4− | | |
| 2006 09 15 | 691 | 0.4+ | 0.3− | 2006 10 11 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2006 09 15 | 691 | 0.4− | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.1− | | | | | | |

## 2006 RZ$_{95}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.86441 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21412649 | $\omega$ | 106.49848 | | −0.47132699 | −0.88176883 | |
| $a$ | 2.7670847 | $\Omega$ | 11.67361 | | +0.77078352 | −0.42190563 | |
| $e$ | 0.1206090 | $i$ | 5.18684 | | +0.42865328 | −0.21090133 | |
| $P$ | 4.60 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 691 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 1999 03 24 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 1999 03 24 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2001 05 24 | 807 | 0.6− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.3− | | |
| 2001 05 24 | 807 | 0.4− | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.2− | | |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.5+ | 2006 10 31 | 691 | 0.3− | 0.1+ | | |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.5− | | |
| 2006 09 19 | 691 | 0.5− | 0.3+ | 2006 10 21 | 703 | 1.1− | 1.4+ | 2006 11 16 | 691 | 0.2+ | 0.0 | | |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.3+ | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.0 | | |
| 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | (0.6− | 1.8+) | 2006 11 19 | 691 | 0.2+ | 0.1+ | | |
| 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2006 10 11 | 691 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.4− | | |
| 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.1+ | | |
| 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.1− | | |
| 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.3− | | |
| 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.2− | | | | | | |

## 2006 RE$_{96}$ = 2002 RV$_{159}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.85778 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25799652 | $\omega$ | 39.04777 | | +0.85735355 | −0.51468700 | |
| $a$ | 2.4437690 | $\Omega$ | 351.92097 | | +0.45991665 | +0.77166252 | |
| $e$ | 0.1732506 | $i$ | 2.64889 | | +0.23113107 | +0.37367665 | |
| $P$ | 3.82 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 09 12 | 644 | 0.6− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.4+ | | |
| 2002 09 12 | 644 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.2− | 0.6+ | | |
| 2002 09 14 | 644 | 0.5+ | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.4+ | 0.4+ | | |
| 2002 09 14 | 644 | 0.2− | 0.8+ | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2− | 0.0 | | |
| 2002 09 14 | 644 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.1− | | |
| 2006 09 15 | 691 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.4− | 0.1+ | | |
| 2006 09 15 | 691 | 0.3− | 0.3− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− | | |
| 2006 09 15 | 691 | 0.7+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3− | | |
| 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.6− | 0.0 | | | | |
| 2006 09 26 | 691 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− | | | | |

**2006 RL$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.87529 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20362591 | $\omega$ | 122.36274 | | +0.99597488 | −0.08817037 | |
| $a$ | 2.8614139 | $\Omega$ | 242.70012 | | +0.07492810 | +0.91772911 | |
| $e$ | 0.0802246 | $i$ | 1.03976 | | +0.04919158 | +0.38729738 | |
| $P$ | 4.84 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2− | 0.3− |
| 1994 03 05 | 691 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 1994 03 05 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | (0.5+ | 2.4+) |
| 1999 03 10 | 691 | 0.7− | 0.8− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 1.1+ | 0.8− |
| 1999 03 10 | 691 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.8− |
| 1999 03 10 | 691 | 0.9− | 0.1+ | 2006 09 26 | 691 | 0.4+ | 0.3− | 2006 10 21 | 703 | 1.5− | 1.1+ |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.5+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1999 03 21 | 645 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.5+ |
| 2001 11 20 | 291 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2001 11 20 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2001 11 20 | 291 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.6− |
| 2002 02 07 | 695 | 0.3+ | 0.7+ | 2006 10 11 | 691 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2002 02 07 | 695 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.4− |

**2006 RP$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.44539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30778351 | $\omega$ | 160.14490 | | −0.95158846 | −0.30735616 | |
| $a$ | 2.1725635 | $\Omega$ | 1.96473 | | +0.26689101 | −0.83169991 | |
| $e$ | 0.0766565 | $i$ | 5.69942 | | +0.15247488 | −0.46239318 | |
| $P$ | 3.20 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 27 | 691 | 0.3− | 0.2− | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.0+ | 0.9− |
| 2003 10 27 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2003 10 27 | 691 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | (0.6+ | 1.8+) |
| 2003 11 19 | 703 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 1.1+ | 0.8+ | 2006 10 17 | 703 | 0.4− | 0.6− |
| 2003 11 19 | 703 | 0.7+ | 0.5− | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2003 11 19 | 703 | (1.5+ | 3.0+) | 2006 09 30 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2003 11 19 | 703 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.1+ |
| 2003 12 01 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2003 12 01 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2003 12 01 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2− | 0.4+ |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.3− | 0.0 |

**2006 RQ$_{96}$ = 1995 UD$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.84531 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26735500 | $\omega$ | 28.57686 | | +0.95249006 | −0.30451441 | |
| $a$ | 2.3864033 | $\Omega$ | 349.14737 | | +0.27324735 | +0.86279316 | |
| $e$ | 0.2185659 | $i$ | 1.76563 | | +0.13453091 | +0.40355784 | |
| $P$ | 3.69 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 1995 10 19 | 691 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 1995 10 19 | 691 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1995 10 24 | 691 | 0.6− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1995 10 24 | 691 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1995 10 24 | 691 | 0.0 | 0.2− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.5− | 0.0 |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |

**2006 RR$_{96}$ = 2003 AE$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.35394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23039201 | $\omega$ | 111.58104 | | −0.51734417 | −0.85557050 | |
| $a$ | 2.6352659 | $\Omega$ | 9.63929 | | +0.73771400 | −0.45700850 | |
| $e$ | 0.4153614 | $i$ | 6.45276 | | +0.43374309 | −0.24319199 | |
| $P$ | 4.28 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2003 01 07 | 704 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2003 01 07 | 704 | 0.3+ | 0.4− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.6+ |
| 2003 01 07 | 704 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.4− | 0.0 |
| 2003 01 07 | 704 | 0.8− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 06 | 644 | 0.2− | 0.5+ |
| 2003 01 10 | 704 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.5− | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2003 01 10 | 704 | 0.4+ | 1.3+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2003 01 10 | 704 | 0.8− | 0.5− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2003 01 10 | 704 | 0.3+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2+ | | | | |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.0 | | | | |

**2006 RU$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.47457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23240528 | $\omega$ | 236.30752 | | −0.38775879 | +0.92168776 | |
| $a$ | 2.6200248 | $\Omega$ | 10.89582 | | −0.82407086 | −0.34099282 | |
| $e$ | 0.1479165 | $i$ | 3.52130 | | −0.41297740 | −0.18497450 | |
| $P$ | 4.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.6+ | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.6− |
| 2001 06 30 | 644 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 06 30 | 644 | 0.3− | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2001 07 11 | 644 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2001 07 11 | 644 | 0.5+ | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.6− |
| 2001 07 11 | 644 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2002 10 31 | 644 | 0.4− | 0.8+ | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2002 10 31 | 644 | 0.2− | 0.7+ | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2002 10 31 | 644 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.7− |
| 2006 07 21 | G96 | 0.6− | 0.1− | 2006 10 11 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 07 21 | G96 | 0.6− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 0.2+ | 0.7− |
| 2006 07 21 | G96 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.5− |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.1+ | | | | |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.2− | 0.0 | | | | |

**2006 RW$_{96}$ = 2000 GD$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.10202 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21678711 | $\omega$ | 298.41914 | | +0.37942313 | +0.92520471 | |
| $a$ | 2.7443979 | $\Omega$ | 353.87005 | | −0.82852265 | +0.33694161 | |
| $e$ | 0.1941386 | $i$ | 3.14568 | | −0.41181100 | +0.17454684 | |
| $P$ | 4.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 21 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.4− | 0.0 |
| 1997 11 21 | 691 | 0.2− | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.4− |
| 1997 11 21 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.2− | 1.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.4+ |
| 2000 04 02 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.5− | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2000 04 02 | 691 | 0.4+ | 0.9− | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2000 04 02 | 691 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 2000 04 10 | 695 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.6+ |
| 2000 04 10 | 695 | 0.1− | 0.8+ | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3+ |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.6+ | 1.1+ |
| 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.8+ | 0.5+ |
| 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.2+ |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.3− | 0.1− | | | | |

**2006 RA$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.50252 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26352122 | $\omega$ | 202.24064 | | −0.94134079 | | +0.33745222 |
| $a$ | 2.4094929 | $\Omega$ | 357.47883 | | −0.30284315 | | −0.84722093 |
| $e$ | 0.1309660 | $i$ | 2.44174 | | −0.14887422 | | −0.41029587 |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 10 | 691 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 1991 10 10 | 691 | 0.2+ | 0.4− | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 1991 10 10 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.9+ | 2006 09 28 | 699 | 0.9− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2002 09 14 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 699 | (0.2− | 2.2+) | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 09 14 | 644 | 0.2− | 0.7+ | 2006 09 28 | 699 | (0.6+ | 2.0+) | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 09 28 | 699 | 0.7− | 0.0 | 2006 11 18 | 291 | 0.3+ | 0.2+ |
| 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 18 | 291 | 0.2− | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 18 | 291 | 0.1+ | 0.3+ |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ | | | | |

**2006 RC$_{97}$ = 2005 JA$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.06096 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28778907 | $\omega$ | 180.42183 | | +0.87298163 | | −0.48665917 |
| $a$ | 2.2720603 | $\Omega$ | 208.77214 | | +0.44770312 | | +0.82606602 |
| $e$ | 0.1344233 | $i$ | 3.88939 | | +0.19355876 | | +0.28421432 |
| $P$ | 3.42 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.2+ | 0.1+ | 2006 09 23 | 152 | 0.7− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 09 23 | 152 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 152 | 0.7− | 0.9− | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2005 05 09 | G96 | 0.5− | 0.5− | 2006 09 23 | 152 | 0.1− | 0.7− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2005 05 09 | G96 | 0.8− | 0.5− | 2006 09 23 | 152 | 0.2− | 0.7− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2005 05 09 | G96 | 0.5− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2005 05 09 | G96 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2005 06 13 | G96 | 0.8+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2005 06 13 | G96 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2005 06 13 | G96 | 0.5− | 0.5+ | 2006 10 10 | 644 | 0.3− | 0.2− | 2006 11 13 | G96 | 0.0 | 0.9− |
| 2005 06 13 | G96 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.2+ |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.5+ | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2006 09 15 | 691 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.5− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2+ | | | | |
| 2006 09 23 | 152 | 0.5− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1+ | | | | |

**2006 RE$_{97}$ = 2002 YR$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.60346 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22981316 | $\omega$ | 113.81106 | | −0.10128717 | | −0.99470299 |
| $a$ | 2.6396891 | $\Omega$ | 341.97608 | | +0.89092189 | | −0.08285549 |
| $e$ | 0.1723008 | $i$ | 3.24562 | | +0.44271784 | | −0.06083531 |
| $P$ | 4.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.0 | 0.8− | 2002 12 27 | 644 | 0.4+ | 0.6+ | 2006 09 23 | 152 | (3.2+ | 0.2−) |
| 2002 11 24 | 644 | 0.2+ | 0.5− | 2002 12 31 | 704 | 0.2+ | 0.4+ | 2006 09 23 | 152 | 0.1− | 0.5+ |
| 2002 11 24 | 644 | 0.4+ | 1.1− | 2002 12 31 | 704 | 0.7− | 0.6+ | 2006 09 23 | 152 | (1.8+ | 0.9+) |
| 2002 12 06 | 704 | 0.4− | 0.1− | 2002 12 31 | 704 | 0.4+ | 0.7− | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.6+ | 0.7− | 2002 12 31 | 704 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.1+ | 0.4− | 2002 12 31 | 704 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.4+ |
| 2002 12 06 | 704 | 0.1− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2002 12 11 | 704 | 1.0− | 0.5+ | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 12 11 | 704 | (1.9+ | 1.2−) | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2002 12 11 | 704 | 0.4− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.7− | 0.6− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 12 27 | 644 | 0.9+ | 0.8+ | 2006 09 21 | 152 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 12 27 | 644 | 0.4+ | 0.3+ | 2006 09 22 | 152 | 0.2− | 0.0 | | | | |

**2006 RK$_{97}$ = 2004 FS$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.33668 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26552248 | $\omega$ | 252.15352 | | −0.08248259 | | −0.99611900 |
| $a$ | 2.3973707 | $\Omega$ | 202.64493 | | +0.94190536 | | −0.06784950 |
| $e$ | 0.2006261 | $i$ | 4.57601 | | +0.32559319 | | −0.05606587 |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 07 | 704 | 0.5− | 1.4− | 2004 04 12 | 691 | 0.3− | 0.2− | 2006 10 13 | A50 | 0.6− | 0.0 |
| 2000 01 07 | 704 | 0.4+ | 0.8− | 2004 04 12 | 691 | 0.5− | 0.5+ | 2006 10 13 | A50 | 0.4− | 0.3+ |
| 2000 01 07 | 704 | 1.4− | 1.0− | 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.2+ | 0.1+ |
| 2000 02 02 | 704 | 0.3+ | 0.4− | 2006 09 15 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | (1.8+ | 0.6+) |
| 2000 02 02 | 704 | 0.3+ | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.2− | 2006 10 15 | 703 | 1.2+ | 1.2+ |
| 2000 02 02 | 704 | 0.2− | 0.9+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | (1.0− | 2.7+) |
| 2000 02 02 | 704 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.5+ |
| 2002 09 14 | 644 | 0.3− | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 09 14 | 644 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2002 09 14 | 644 | 0.4+ | 0.7− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2004 03 30 | 691 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2004 03 30 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2004 03 30 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 03 31 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.5+ | 2006 11 13 | 691 | 0.5+ | 0.4− |
| 2004 03 31 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.3+ |
| 2004 03 31 | 691 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.6− | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2004 04 12 | 691 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3+ | | | | |

**2006 RP$_{97}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.41999 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27474144 | $\omega$ | 74.17905 | | +0.35147398 | | +0.93572788 |
| $a$ | 2.3434369 | $\Omega$ | 216.44207 | | −0.87691895 | | +0.31796190 |
| $e$ | 0.2177223 | $i$ | 2.86151 | | −0.32784020 | | +0.15268779 |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.3+ | 0.3+ | 2005 05 08 | G96 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.9− | 0.4− |
| 2005 03 13 | 691 | 0.3+ | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.8+ | 0.4− |
| 2005 03 13 | 691 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2005 04 09 | G96 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.6− |
| 2005 04 09 | G96 | 0.6− | 0.9− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 09 | G96 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.6+ | | |
| 2005 04 09 | G96 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.4+ | | |
| 2005 05 08 | G96 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1− | | |
| 2005 05 08 | G96 | 0.1− | 0.3+ | 2006 10 17 | 703 | 1.2− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1+ | | |
| 2005 05 08 | G96 | 0.2+ | 0.5− | 2006 10 17 | 703 | 1.5+ | 0.3+ | | | | | | |

**2006 RQ$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 235.41384 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29484720 | $\omega$ | 166.28378 | | −0.82712207 | −0.56186769 | |
| $a$ | 2.2356546 | $\Omega$ | 339.51445 | | +0.51202747 | −0.74366675 | |
| $e$ | 0.0901711 | $i$ | 2.15875 | | +0.23172605 | −0.36230438 | |
| $P$ | 3.34 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 04 | 691 | 0.5− | 0.4− | 2003 12 14 | 691 | 0.3+ | 0.2− | 2006 09 15 | 691 | 0.2− | 0.0 |
| 2001 01 04 | 691 | 0.6− | 0.2− | 2003 12 14 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.3− |
| 2001 01 04 | 691 | 1.3+ | 1.1+ | 2003 12 27 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.2− |
| 2003 11 30 | 691 | 0.3− | 0.0 | 2003 12 27 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 |
| 2003 11 30 | 691 | 0.1− | 0.2+ | 2003 12 27 | 691 | 0.4+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2003 11 30 | 691 | 0.2− | 0.1+ | 2006 09 15 | 691 | 0.2− | 0.5+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2003 12 14 | 691 | 0.1+ | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.0 |

**2006 RS$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.14267 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23071113 | $\omega$ | 36.88781 | | −0.48026987 | +0.87442002 | |
| $a$ | 2.6328353 | $\Omega$ | 204.63297 | | −0.83899470 | −0.48084680 | |
| $e$ | 0.1644455 | $i$ | 9.49806 | | −0.25579043 | −0.06462191 | |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 703 | 0.4+ | 1.0+ | 2005 01 22 | 809 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2000 02 05 | 703 | 0.0 | 0.5+ | 2005 06 03 | E12 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2000 02 05 | 703 | 0.4− | 0.1+ | 2005 06 03 | E12 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2000 02 05 | 703 | 0.4+ | 0.6− | 2005 06 03 | E12 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 06 29 | 608 | 0.1+ | 0.5− | 2005 06 03 | E12 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.2− |
| 2001 06 29 | 608 | 0.3+ | 0.4− | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.2− |
| 2001 06 29 | 608 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2002 10 30 | 644 | 0.1+ | 0.4− | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2002 10 30 | 644 | 0.3+ | 0.3− | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.7− |
| 2002 10 30 | 644 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2003 11 21 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2003 11 21 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.2+ |
| 2003 11 21 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.6− |
| 2005 01 22 | 809 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2005 01 22 | 809 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.1+ | | | | |

**2006 RU$_{97}$ = 2004 FQ$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.47685 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22368558 | $\omega$ | 140.24958 | | +0.06652280 | −0.99764884 | |
| $a$ | 2.6876789 | $\Omega$ | 305.92997 | | +0.91019598 | +0.06744083 | |
| $e$ | 0.0549595 | $i$ | 1.16600 | | +0.40880067 | +0.01218693 | |
| $P$ | 4.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.6− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.6+ | 2006 09 29 | A55 | 0.5− | 0.1+ |
| 2002 11 24 | 644 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 09 29 | A55 | 1.0− | 0.7− |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2002 12 10 | 704 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2002 12 10 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.4− | 1.1− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.2+ | 2.2− |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.0+ | 0.7− |
| 2002 12 10 | 704 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.3− |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2006 09 28 | A55 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.2− |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 28 | A55 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 09 28 | A55 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2004 03 23 | 291 | 0.1+ | 0.2+ | 2006 09 28 | A55 | 0.4− | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2004 03 23 | 291 | 0.3+ | 0.2+ | 2006 09 29 | A55 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2004 03 23 | 291 | 0.3+ | 0.0 | 2006 09 29 | A55 | 0.6+ | 0.3+ | | | | |
| 2006 09 15 | 691 | 0.4+ | 0.4+ | 2006 09 29 | A55 | 0.5− | 0.5− | | | | |

**2006 RA$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.69802 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23246177 | $\omega$ | 147.47376 | | +0.58726335 | −0.80879818 | |
| $a$ | 2.6196002 | $\Omega$ | 266.54474 | | +0.73578321 | +0.54946975 | |
| $e$ | 0.0596382 | $i$ | 1.78548 | | +0.33726076 | +0.20959126 | |
| $P$ | 4.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 291 | 0.3− | 0.1+ | 2006 08 19 | 691 | 0.7+ | 0.6− | 2006 09 19 | 703 | 0.2− | 1.3− |
| 2002 12 06 | 291 | 0.1− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.4+ | 2006 09 20 | 691 | 0.1− | 0.4+ |
| 2002 12 06 | 291 | 0.4+ | 0.2− | 2006 08 19 | 691 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.5+ |
| 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 20 | 691 | 0.1+ | 0.4+ |
| 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 09 13 | 644 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.3− | 0.4− |
| 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 09 13 | 644 | 0.3− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.5− |
| 2004 03 20 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.5+ | 2006 10 03 | G96 | 0.5− | 1.0− |
| 2004 03 20 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.3− | 0.9− | 2006 10 03 | G96 | 0.4+ | 1.2− |
| 2004 03 20 | 691 | 0.2− | 0.4− | 2006 09 19 | 703 | (1.7− | 0.3−) | | | | |

**2006 RE$_{98}$ = 1999 VN$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.06771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27277573 | $\omega$ | 309.27096 | | +0.65437164 | −0.74961793 | |
| $a$ | 2.3546818 | $\Omega$ | 99.56203 | | +0.72110038 | +0.57906107 | |
| $e$ | 0.2232108 | $i$ | 5.78243 | | +0.22762248 | +0.32056394 | |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 0.6− | 1.3− | 2006 09 14 | 644 | 0.6− | 0.4− | 2006 09 21 | 699 | 0.2+ | 0.0 |
| 1999 11 05 | 704 | 0.1+ | 0.7− | 2006 09 14 | 644 | 0.1− | 0.6− | 2006 09 26 | 703 | 0.7− | 0.2+ |
| 1999 11 05 | 704 | 0.2+ | 0.2− | 2006 09 14 | 644 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.4+ | 0.1− |
| 1999 11 05 | 704 | 0.5+ | 1.0− | 2006 09 14 | 703 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.2+ |
| 1999 11 05 | 704 | 1.0+ | 0.5+ | 2006 09 14 | 703 | 1.2− | 0.5− | 2006 09 26 | 703 | 0.3− | 0.1+ |
| 1999 11 16 | 703 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.2− | 1.1− | 2006 10 02 | 703 | 0.1+ | 0.4+ |
| 1999 11 16 | 703 | 0.3+ | 1.1+ | 2006 09 14 | 703 | (0.3− | 1.8−) | 2006 10 02 | 703 | 1.0− | 0.6− |
| 1999 11 16 | 703 | 0.8− | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.8+ | 2006 10 02 | 703 | 0.7− | 0.3+ |
| 1999 11 16 | 703 | 0.5− | 0.7+ | 2006 09 20 | 703 | 0.4+ | 0.2− | 2006 10 02 | 703 | 0.8− | 0.3+ |
| 2004 02 15 | 704 | 0.6+ | 0.3+ | 2006 09 20 | 703 | 0.3− | 1.2+ | 2006 10 12 | 644 | 0.4+ | 0.3+ |
| 2004 02 15 | 704 | 0.4− | 0.0 | 2006 09 20 | 703 | 0.4− | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2004 02 15 | 704 | 0.5+ | 0.4+ | 2006 09 21 | 699 | 1.0+ | 0.1− | 2006 10 12 | 644 | 1.4+ | 0.4+ |
| 2004 02 15 | 704 | 0.3− | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.6+ | | | | |
| 2004 02 15 | 704 | 0.3− | 0.1+ | 2006 09 21 | 699 | 1.2+ | 0.5+ | | | | |

**2006 RO$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.50696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20273469 | $\omega$ | 324.97252 | | +0.98693871 | +0.07666155 | |
| $a$ | 2.8697937 | $\Omega$ | 31.55013 | | +0.02294016 | +0.80367062 | |
| $e$ | 0.1527612 | $i$ | 15.71092 | | −0.15945446 | +0.59011570 | |
| $P$ | 4.86 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.5+ | 0.1− | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.3+ | 1.0+ | 2006 09 30 | 703 | 0.9+ | 1.3+ | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2001 09 12 | 704 | 0.5− | 0.0 | 2006 09 30 | 703 | 1.1+ | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 1.0− | 0.3+ | 2006 09 30 | 703 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2001 09 25 | 704 | 0.1− | 0.7+ | 2006 09 30 | 703 | 0.5+ | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 25 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.1+ | | |
| 2001 10 11 | 704 | 0.0 | 0.9− | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2− | | |
| 2001 10 11 | 704 | 0.5+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 | | |
| 2001 10 11 | 704 | 0.1+ | 0.3+ | 2006 10 13 | D35 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2+ | | |
| 2001 10 24 | 644 | 0.1+ | 0.7− | 2006 10 13 | D35 | 0.6− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.3− | | |
| 2001 10 24 | 644 | 0.1+ | 0.4− | 2006 10 13 | D35 | 0.4− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.3− | | |
| 2001 10 24 | 644 | 0.2+ | 0.3− | 2006 10 15 | 703 | 0.2− | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.1+ | | |
| 2006 09 14 | 703 | (0.1− | 1.6−) | 2006 10 15 | 703 | (2.0− | 1.8+) | 2006 11 13 | G96 | 0.2− | 0.1+ | | |
| 2006 09 14 | 703 | 1.2+ | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2006 09 14 | 703 | 0.0 | 0.9− | 2006 10 15 | 703 | 1.2+ | 0.7+ | 2006 11 13 | G96 | 0.6+ | 0.2− | | |
| 2006 09 14 | 703 | 0.7− | 0.1− | 2006 10 21 | 703 | (1.3− | 1.6−) | 2006 11 13 | G96 | 0.1− | 0.5− | | |
| 2006 09 20 | 699 | 0.1+ | 0.7− | 2006 10 21 | 703 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.1+ | | |
| 2006 09 20 | 699 | 0.7− | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.5− | 2006 11 16 | 691 | 0.2− | 0.2+ | | |
| 2006 09 20 | 699 | (0.5− | 1.9+) | 2006 10 21 | 703 | (1.7+ | 1.0−) | 2006 11 16 | 691 | 0.0 | 0.1+ | | |
| 2006 09 20 | 699 | 0.6− | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.1− | | |
| 2006 09 23 | 691 | 0.8+ | 0.8− | 2006 10 21 | 703 | 0.6− | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.0 | | |
| 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.0 | 0.9+ | 2006 11 18 | 691 | 0.0 | 0.1+ | | |
| 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.3− | | |
| 2006 09 26 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.4− | | |
| 2006 09 26 | 704 | 0.3+ | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4+ | | |
| 2006 09 26 | 704 | (0.3+ | 1.7+) | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.3+ | | |
| 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.1+ | | | | | | |
| 2006 09 27 | 691 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.5− | 0.2+ | | | | | | |

**2006 RU$_{98}$ = 2000 FF$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.11819 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21341525 | $\omega$ | 217.34727 | | +0.52880917 | | +0.84869916 |
| $a$ | 2.7732291 | $\Omega$ | 84.57921 | | −0.77665349 | | +0.48786416 |
| $e$ | 0.0482570 | $i$ | 0.48361 | | −0.34230135 | | +0.20420161 |
| $P$ | 4.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 10 | 691 | 0.4− | 0.2+ | 2004 02 12 | 691 | 0.1− | 0.4+ | 2006 08 27 | 691 | 0.1− | 0.4+ | | |
| 1995 03 10 | 691 | 0.6+ | 0.2− | 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 09 14 | 703 | 1.0+ | 0.8+ | | |
| 1995 03 10 | 691 | 0.0 | 0.3− | 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | (1.5+ | 1.8−) | | |
| 1995 03 10 | 691 | 0.2− | 0.4− | 2005 05 04 | G96 | 0.5− | 1.0+ | 2006 09 14 | 703 | 0.3+ | 1.1− | | |
| 1995 03 10 | 691 | 0.2+ | 0.0 | 2005 05 04 | G96 | 0.2+ | 0.7+ | 2006 09 14 | 703 | 0.7− | 0.7+ | | |
| 1995 03 10 | 691 | 0.1+ | 0.3− | 2005 05 04 | G96 | 0.0 | 0.1+ | 2006 09 20 | 704 | 1.1− | 0.4+ | | |
| 2000 03 27 | 691 | 0.2− | 0.2+ | 2005 05 04 | G96 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 1.2+ | 0.7+ | | |
| 2000 03 27 | 691 | 0.5− | 0.2+ | 2005 06 11 | 691 | 0.0 | 0.4− | 2006 09 20 | 704 | 0.4− | 0.3+ | | |
| 2000 03 27 | 691 | 0.0 | 0.1+ | 2005 06 11 | 691 | 0.6+ | 0.4− | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2000 04 06 | 691 | 0.1− | 0.2− | 2005 06 11 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1− | | |
| 2000 04 06 | 691 | 0.0 | 0.5+ | 2006 08 27 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2000 04 06 | 691 | 0.1− | 0.2+ | 2006 08 27 | 691 | 0.1− | 0.9− | 2006 09 26 | G96 | 0.3+ | 0.1− | | |

**2006 RW$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.97544 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26322699 | $\omega$ | 4.02502 | | +0.92507162 | | −0.37744834 |
| $a$ | 2.4112881 | $\Omega$ | 18.32583 | | +0.34460460 | | +0.78754548 |
| $e$ | 0.1702757 | $i$ | 7.70107 | | +0.15965643 | | +0.48713947 |
| $P$ | 3.74 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 645 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | | |
| 2000 04 04 | 645 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2002 07 30 | 608 | 0.0 | 1.3+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2002 07 30 | 608 | 0.2+ | 1.4+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2002 07 30 | 608 | (0.4+ | 1.6+) | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 704 | 0.6− | 0.1+ | | |
| 2002 08 13 | 644 | 0.3− | 0.7− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 704 | (1.5+ | 0.2+) | | |
| 2002 08 13 | 644 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 23 | 704 | 0.7− | 0.9+ | | |
| 2002 08 13 | 644 | 0.3− | 0.6− | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 23 | 704 | 0.5− | 0.8− | | |
| 2004 02 11 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 29 | 704 | 0.1− | 0.4+ | | |
| 2004 02 11 | 644 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.3− | 0.7− | | |
| 2004 02 11 | 644 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 29 | 704 | 0.1− | 0.9− | | |
| 2004 02 13 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 29 | 704 | 0.9+ | 0.8− | | |
| 2004 02 13 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 29 | 704 | 0.6+ | 0.2− | | |
| 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 06 | 644 | 0.0 | 0.2+ | | |
| 2006 09 14 | 691 | 0.2− | 0.0 | 2006 09 29 | 691 | 0.2+ | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.4+ | | |
| 2006 09 14 | 691 | 0.3− | 0.0 | 2006 09 29 | 691 | 0.2+ | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.1+ | | |
| 2006 09 14 | 703 | 0.7− | 0.1+ | 2006 09 29 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.3+ | | |
| 2006 09 14 | 703 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 1.4+ | 0.3+ | | |
| 2006 09 14 | 691 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.6− | 1.0− | 2006 11 11 | 703 | 0.2− | 0.1+ | | |
| 2006 09 14 | 703 | 1.1− | 0.2− | 2006 10 17 | G96 | 0.2+ | 1.1− | 2006 11 11 | 703 | 0.4+ | 0.4+ | | |
| 2006 09 14 | 703 | 1.0− | 0.5− | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.3− | | |
| 2006 09 20 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.1− | | |
| 2006 09 20 | 704 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.2− | | |
| 2006 09 20 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | | | | | |
| 2006 09 20 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 | | | | | | |

**2006 RC$_{99}$ = 2004 FY$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.04493 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17398417 | $\omega$ | 137.03854 | | +0.75109391 | | +0.66017778 |
| $a$ | 3.1778219 | $\Omega$ | 181.67042 | | −0.64165412 | | +0.72826218 |
| $e$ | 0.0724147 | $i$ | 9.51797 | | −0.15536385 | | +0.18384641 |
| $P$ | 5.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1− | 2004 04 19 | 691 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.5− | 0.2+ | | |
| 2000 09 03 | 645 | 0.0 | 0.2− | 2006 08 28 | 703 | 1.0− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.2+ | | |
| 2004 03 26 | 691 | 0.0 | 0.2+ | 2006 08 28 | 703 | 0.4+ | 0.5− | 2006 09 28 | 291 | 0.2+ | 0.5+ | | |
| 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 09 28 | 291 | 0.2+ | 0.5+ | | |
| 2004 03 26 | 691 | 0.2+ | 0.3+ | 2006 08 28 | 703 | (1.6− | 0.3−) | 2006 09 28 | 291 | 0.1+ | 0.4+ | | |
| 2004 03 29 | 413 | 0.0 | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 2004 03 29 | 413 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.7− | | |
| 2004 03 29 | 413 | 0.3+ | 0.7+ | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.5− | | |
| 2004 04 12 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 1.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.0 | 1.1+ | 2006 11 15 | G96 | 0.3+ | 0.4− | | |
| 2004 04 12 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | (1.6+ | 0.4+) | 2006 11 15 | G96 | 0.4+ | 0.7− | | |
| 2004 04 19 | 691 | 0.1− | 0.6+ | 2006 09 20 | 704 | (1.6− | 1.1+) | 2006 11 15 | G96 | 0.5+ | 0.5− | | |
| 2004 04 19 | 691 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.6+ | 0.1− | | |

**2006 RF$_{99}$ = 1999 RK$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.80734 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28463402 | $\omega$ | 334.39248 | | +0.99944916 | | +0.02597357 |
| $a$ | 2.2888193 | $\Omega$ | 24.14616 | | −0.01425479 | | +0.89810578 |
| $e$ | 0.0726080 | $i$ | 2.89466 | | −0.02996948 | | +0.43901183 |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 1.6+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.6− | 2006 10 20 | G96 | 0.2+ | 0.3− | | |
| 1999 09 07 | 704 | 1.1+ | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.0 | | |
| 1999 09 07 | 704 | 1.2+ | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.3− | 2006 10 20 | G96 | 0.1− | 0.2− | | |
| 1999 09 07 | 704 | 0.2− | 1.1− | 2006 09 27 | 704 | 0.5− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.2− | | |
| 1999 09 09 | 704 | 0.8− | 0.9− | 2006 09 27 | 704 | 0.1− | 0.5− | 2006 10 20 | G96 | 0.1+ | 0.1− | | |
| 1999 09 09 | 704 | 1.1− | 0.5− | 2006 09 27 | 704 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.0 | 0.3− | | |
| 1999 09 09 | 704 | 0.1− | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.1− | | |
| 1999 09 09 | 704 | 1.3− | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.4− | | |
| 2006 09 15 | 691 | 0.6− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.1+ | | |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.3− | 0.6+ | | |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2006 09 20 | 704 | 0.2+ | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.4+ | | |
| 2006 09 20 | 704 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 21 | G96 | 0.4− | 0.2− | | |
| 2006 09 20 | 704 | 0.7+ | 0.0 | 2006 10 20 | G96 | (0.5− | 2.1−) | 2006 11 21 | G96 | 0.0 | 0.0 | | |
| 2006 09 20 | 704 | 0.2+ | 0.5+ | 2006 10 20 | G96 | (2.7+ | 1.8−) | 2006 11 21 | G96 | 0.3− | 0.1+ | | |
| 2006 09 20 | 644 | 0.1− | 0.5− | 2006 10 20 | G96 | 0.4+ | 0.5− | | | | | | |

**2006 RG$_{99}$ = 2003 YA$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.87481 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26738710 | $\omega$ | 43.32170 | | +0.39411905 | −0.91877862 | |
| $a$ | 2.3862123 | $\Omega$ | 23.49496 | | +0.82690668 | +0.34370547 | |
| $e$ | 0.0652221 | $i$ | 3.26650 | | +0.40111784 | +0.19419681 | |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.2+ |
| 2003 12 18 | 691 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2003 12 18 | 691 | 0.2− | 0.1− | 2006 09 20 | 704 | 0.1− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2003 12 27 | 691 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.9− | 0.9− | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2003 12 27 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2003 12 27 | 691 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2006 08 18 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 2006 08 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.3− | | | | |
| 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.4+ | 0.2+ | | | | |

**2006 RL$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.72975 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21975221 | $\omega$ | 43.28484 | | +0.59821565 | −0.80127445 | |
| $a$ | 2.7196554 | $\Omega$ | 9.98671 | | +0.71882702 | +0.53114049 | |
| $e$ | 0.0850287 | $i$ | 3.26070 | | +0.35415498 | +0.27540705 | |
| $P$ | 4.49 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.1− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.4+ |
| 2001 08 19 | 807 | 0.1+ | 0.1+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.4+ |
| 2004 03 18 | 704 | 0.6+ | 0.5+ | 2006 09 21 | 012 | 1.4− | 0.4− | 2006 10 15 | 703 | 1.4+ | 1.0− |
| 2004 03 18 | 704 | 0.2+ | 0.2+ | 2006 09 21 | 012 | 0.7+ | 0.1+ | 2006 10 15 | 703 | 0.0 | 0.4+ |
| 2004 03 18 | 704 | 0.1+ | 0.2+ | 2006 09 21 | 012 | 0.3+ | 0.9− | 2006 10 15 | 703 | 1.1+ | 0.0 |
| 2004 03 27 | 704 | 0.0 | 1.2+ | 2006 09 22 | 012 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.1+ |
| 2004 03 27 | 704 | 0.2+ | 0.6− | 2006 09 22 | 012 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 0.7− | 0.5+ | 2006 09 22 | 012 | (2.3+ | 1.6+) | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2004 03 27 | 704 | 0.9+ | 0.2+ | 2006 09 22 | 012 | 0.8− | 0.7+ | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2004 04 19 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.8+ |
| 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.9+ |
| 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.8+ |
| 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.0 | 0.8− |
| 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.6− | 0.9− |
| 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.4− |

**2006 RR$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.78888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21461597 | $\omega$ | 325.95512 | | +0.94905620 | +0.31470761 | |
| $a$ | 2.7628758 | $\Omega$ | 15.72494 | | −0.27450875 | +0.85044197 | |
| $e$ | 0.0792217 | $i$ | 3.35431 | | −0.15471678 | +0.42155376 | |
| $P$ | 4.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 691 | 1.2− | 0.5− | 2005 02 14 | 809 | 0.4+ | 0.2+ | 2006 09 20 | 704 | 1.4− | 0.2− |
| 2000 05 01 | 691 | 0.5+ | 0.1− | 2005 02 14 | 809 | 0.3+ | 0.3+ | 2006 09 20 | 644 | 0.2+ | 0.8+ |
| 2000 05 01 | 691 | 0.6+ | 0.5+ | 2005 02 14 | 809 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.6+ | 0.1+ |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2005 02 14 | 809 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 2002 11 24 | 644 | 0.3+ | 0.0 | 2006 09 12 | 703 | 0.5− | 0.1+ | 2006 10 20 | G96 | 0.8+ | 0.1+ |
| 2002 11 24 | 644 | 0.3+ | 0.2− | 2006 09 12 | 703 | 0.2− | 1.0+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2004 02 14 | 691 | 0.3− | 0.6+ | 2006 09 12 | 703 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2004 02 14 | 691 | 0.7+ | 0.0 | 2006 09 12 | 703 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.7+ | 0.0 |
| 2004 02 14 | 691 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2006 09 20 | 704 | 1.0− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.0 | 0.5+ | | | | |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 1.3− | 0.3− | | | | |

**2006 RS$_{99}$ = 1995 UD$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.53201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26840908 | $\omega$ | 64.08377 | | +0.64351222 | −0.76539052 | |
| $a$ | 2.3801514 | $\Omega$ | 345.85246 | | +0.68951799 | +0.58437766 | |
| $e$ | 0.2042112 | $i$ | 1.95293 | | +0.33235066 | +0.26959249 | |
| $P$ | 3.67 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | (0.1− | 1.8−) | 2006 10 02 | 691 | 0.2− | 0.1− |
| 1995 10 23 | 691 | 0.7+ | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.4− | 2006 10 02 | 691 | 0.7− | 0.6+ |
| 1995 10 23 | 691 | 0.8+ | 0.0 | 2006 09 20 | 704 | 0.6+ | 0.8− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 1995 10 27 | 691 | 0.9− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 1995 10 27 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 1995 10 27 | 691 | 0.9− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2004 03 20 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2004 03 20 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2004 03 20 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2006 07 21 | G96 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.1− | 0.5+ | 2006 10 22 | G96 | 0.0 | 1.1− |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2006 09 12 | 703 | 1.1− | 0.8+ | 2006 09 27 | 704 | 1.0+ | 0.7+ | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2006 09 12 | 703 | 0.1− | 0.9+ | 2006 09 27 | 704 | 1.1+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2006 09 12 | 703 | 0.2− | 1.0− | 2006 09 27 | 704 | 0.4+ | 0.7+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2006 09 12 | 703 | 0.9− | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.2− | | | | |

**2006 RT$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.94889 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23029732 | $\omega$ | 285.23665 | | +0.90070116 | −0.31473430 | |
| $a$ | 2.6359882 | $\Omega$ | 93.83945 | | +0.41231390 | +0.83646714 | |
| $e$ | 0.2340665 | $i$ | 17.46597 | | −0.13687461 | +0.44862573 | |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 644 | 0.5− | 0.1+ | 2006 09 12 | E12 | 0.0 | 0.1− | 2006 09 19 | E12 | 0.4+ | 0.2− |
| 2002 11 06 | 644 | 0.0 | 0.2+ | 2006 09 12 | E12 | 0.0 | 0.1+ | 2006 09 19 | E12 | 0.6− | 0.0 |
| 2002 11 06 | 644 | 0.1− | 0.1− | 2006 09 12 | E12 | 0.4+ | 1.0+ | 2006 09 25 | E12 | 0.2− | 0.3+ |
| 2002 11 16 | 644 | 0.1+ | 0.2− | 2006 09 12 | E12 | 0.5− | 0.3− | 2006 09 25 | E12 | 0.3− | 0.1− |
| 2002 11 16 | 644 | 0.2+ | 0.2+ | 2006 09 19 | E12 | 0.2+ | 0.0 | 2006 09 25 | E12 | 0.5+ | 0.4− |
| 2002 11 16 | 644 | 0.2+ | 0.2− | 2006 09 19 | E12 | 0.1+ | 0.3− | | | | |

**2006 RV$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.79235 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23249499 | $\omega$ | 264.22496 | | +0.94565772 | −0.28923172 | |
| $a$ | 2.6193507 | $\Omega$ | 112.51458 | | +0.32335769 | +0.88458025 | |
| $e$ | 0.1511984 | $i$ | 9.25569 | | −0.03422398 | +0.36587264 | |
| $P$ | 4.24 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 291 | 0.2+ | 0.3+ | 2002 11 05 | 644 | 0.0 | 1.0+ | 2006 08 15 | 644 | 0.1− | 0.0 |
| 2001 05 23 | 291 | 0.2+ | 0.4+ | 2002 11 05 | 644 | 0.5+ | 1.3+ | 2006 08 28 | E12 | 0.2+ | 0.0 |
| 2001 05 23 | 291 | 0.1− | 0.3+ | 2002 11 05 | 644 | 0.3+ | 1.2+ | 2006 08 28 | E12 | 0.5− | 0.3− |
| 2002 09 16 | 608 | 0.7− | 0.4− | 2003 12 21 | 645 | 0.0 | 0.0 | 2006 08 28 | E12 | 0.0 | 0.0 |
| 2002 09 16 | 608 | 0.3− | 0.5− | 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 08 28 | E12 | 0.0 | 0.1+ |
| 2002 09 16 | 608 | 0.3− | 0.8− | 2003 12 25 | 645 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.0 |
| 2002 09 29 | 608 | 0.3+ | 0.2+ | 2003 12 25 | 645 | 0.1− | 0.0 | 2006 09 14 | 644 | 0.4+ | 0.2+ |
| 2002 09 29 | 608 | 0.5− | 0.9+ | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 09 14 | 644 | 0.6+ | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.0 | 0.3+ | 2004 03 16 | 691 | 0.5+ | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.4+ | | |
| 2002 10 08 | 699 | 0.0 | 1.2+ | 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 09 20 | 703 | (1.6+ | 0.4−) | | |
| 2002 10 08 | 699 | 0.5+ | 0.1− | 2005 06 13 | G96 | 0.3+ | 0.1+ | 2006 09 20 | 703 | 0.6− | 0.6− | | |
| 2002 10 08 | 699 | 1.1− | 1.3+ | 2005 06 13 | G96 | 0.5− | 0.7+ | 2006 09 20 | 703 | (1.7− | 0.9−) | | |
| 2002 10 08 | 699 | 0.3− | 0.5+ | 2005 06 13 | G96 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 1.7+ | 0.3− | | |
| 2002 10 25 | 644 | 0.2− | 0.2− | 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.9+ | 0.7− | | |
| 2002 10 25 | 644 | 0.2− | 0.2− | 2006 08 15 | 644 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.6− | | |
| 2002 10 25 | 644 | 0.2− | 0.6− | 2006 08 15 | 644 | 0.2− | 0.3+ | 2006 09 26 | 703 | 1.0− | 0.4+ | | |

**2006 RW$_{99}$ = 1999 XM$_{114}$ = 2004 BD$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.10227 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26923377 | $\omega$ | 61.85679 | | +0.78249058 | −0.61888746 | |
| $a$ | 2.3752885 | $\Omega$ | 336.17735 | | +0.49513071 | +0.68511992 | |
| $e$ | 0.2246107 | $i$ | 9.75846 | | +0.37756333 | +0.38417315 | |
| $P$ | 3.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 704 | 0.7− | 0.1− | 2004 01 26 | 699 | 0.3+ | 0.4− | 2006 08 28 | 703 | 0.6+ | 0.5− | | |
| 1999 11 01 | 704 | 0.4− | 0.1− | 2004 01 26 | 699 | 1.4+ | 1.2+ | 2006 08 28 | 699 | 1.3− | 0.1− | | |
| 1999 11 01 | 704 | 0.4+ | 0.8+ | 2004 01 26 | 699 | 1.2− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.0 | | |
| 1999 11 01 | 704 | 0.3+ | 1.0− | 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 703 | 0.0 | 1.2+ | | |
| 1999 11 01 | 704 | 0.4+ | 0.1+ | 2004 01 28 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 1.1− | 0.2+ | | |
| 1999 12 11 | 704 | 0.5− | 0.7+ | 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 14 | 703 | 1.3− | 0.6+ | | |
| 1999 12 11 | 704 | 0.1− | 0.1+ | 2006 08 13 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.3− | 1.1+ | | |
| 1999 12 11 | 704 | 1.0+ | 0.4+ | 2006 08 13 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 704 | 1.3+ | 0.3− | | |
| 1999 12 11 | 704 | 1.0+ | 0.2− | 2006 08 13 | 644 | 0.2+ | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.6− | | |
| 1999 12 12 | 704 | 0.7− | 1.5− | 2006 08 28 | 699 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3+ | | |
| 1999 12 12 | 704 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1+ | | |
| 1999 12 12 | 704 | 0.5+ | 0.3+ | 2006 08 28 | 699 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.0 | | |
| 1999 12 12 | 704 | 0.2+ | 0.3− | 2006 08 28 | 703 | 0.7− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.1+ | | |
| 1999 12 12 | 704 | 0.8− | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.2− | | | | | | |
| 2004 01 26 | 699 | 1.0− | 0.0 | 2006 08 28 | 699 | 0.1− | 0.8+ | | | | | | |

**2006 RC$_{100}$ = 2002 RM$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.98355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24172052 | $\omega$ | 13.26748 | | +0.90237768 | +0.40202592 | |
| $a$ | 2.5522724 | $\Omega$ | 321.81592 | | −0.41475501 | +0.71239754 | |
| $e$ | 0.1439178 | $i$ | 14.54080 | | −0.11701628 | +0.57520857 | |
| $P$ | 4.08 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.0 | 0.5− | 2006 09 14 | 703 | 0.5+ | 1.0+ | 2006 09 22 | 703 | 0.2+ | 0.1− | | |
| 2002 09 11 | 644 | 0.2− | 0.4− | 2006 09 14 | 703 | 0.4+ | 0.4− | 2006 09 22 | 703 | 1.7− | 0.6− | | |
| 2002 09 11 | 644 | 0.2− | 0.5− | 2006 09 14 | 703 | 1.2− | 0.1− | 2006 09 22 | 703 | 0.4− | 1.8− | | |
| 2002 09 12 | 644 | 0.2− | 0.6+ | 2006 09 14 | 703 | (0.7− | 2.7+) | 2006 10 01 | 703 | 0.8+ | 1.1+ | | |
| 2002 09 12 | 644 | 0.1+ | 0.5+ | 2006 09 20 | 699 | 0.0 | 0.4− | 2006 10 01 | 703 | 1.1− | 0.1+ | | |
| 2002 09 12 | 644 | 0.5+ | 0.2+ | 2006 09 20 | 699 | 0.1+ | 1.1+ | 2006 10 01 | 703 | 1.0+ | 0.7+ | | |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.3+ | 1.2− | 2006 10 01 | 703 | 0.3− | 1.0+ | | |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 1.6+ | 0.1+ | | | | | | |
| 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 22 | 703 | 0.5− | 0.7− | | | | | | |

**2006 RK$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.29682 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27597357 | $\omega$ | 222.36813 | | +0.62881494 | +0.77010481 | |
| $a$ | 2.3364566 | $\Omega$ | 86.88275 | | −0.68146090 | +0.61232487 | |
| $e$ | 0.0293893 | $i$ | 6.17344 | | −0.37443665 | +0.17887661 | |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 699 | 0.2− | 0.2+ | 2005 04 04 | 703 | 1.1− | 0.2+ | 2006 09 20 | 703 | 0.8+ | 0.2+ | | |
| 2003 11 24 | 699 | 0.4+ | 0.5− | 2005 04 04 | 703 | 0.7+ | 0.5+ | 2006 09 20 | 703 | (1.9− | 0.5+) | | |
| 2003 11 24 | 699 | 0.2− | 0.3− | 2005 04 04 | 703 | 0.6− | 0.0 | 2006 09 20 | 703 | 1.3− | 0.6− | | |
| 2003 11 24 | 699 | 0.7− | 0.5− | 2006 09 14 | 703 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.9+ | | |
| 2003 12 14 | 691 | 0.0 | 0.2+ | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.1− | 0.2− | | |
| 2003 12 14 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | (1.7+ | 0.8−) | 2006 09 26 | 703 | 0.2− | 0.3− | | |
| 2003 12 14 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 0.5+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | | |
| 2005 04 04 | 703 | 1.0+ | 0.6− | 2006 09 20 | 703 | (1.9− | 1.0−) | | | | | | |

**2006 RP$_{100}$ = 1999 FH$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.10935 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18477324 | $\omega$ | 329.81220 | | +0.91904279 | +0.39177420 | |
| $a$ | 3.0528819 | $\Omega$ | 7.51875 | | −0.26169849 | +0.68861562 | |
| $e$ | 0.2247697 | $i$ | 19.31576 | | −0.29474439 | +0.61018153 | |
| $P$ | 5.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2006 08 30 | 699 | 1.1− | 0.1− | 2006 09 20 | 703 | 0.2+ | 0.2+ | | |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 08 30 | 699 | 1.4− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.3+ | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.5+ | 2006 09 26 | 703 | 1.4− | 0.9+ | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 14 | 703 | 0.3− | 0.8− | 2006 09 26 | 703 | 0.0 | 0.4+ | | |
| 2001 10 18 | 704 | 0.2− | 0.6+ | 2006 09 14 | 703 | 1.0+ | 1.1+ | 2006 09 26 | 703 | 1.0+ | 0.3+ | | |
| 2001 10 18 | 704 | 0.2+ | 0.3− | 2006 09 14 | 703 | 0.6− | 0.9− | 2006 11 17 | G96 | (0.8+ | 1.9+) | | |
| 2001 10 18 | 704 | (1.9− | 0.3+) | 2006 09 14 | 703 | 0.2− | 0.4− | 2006 11 17 | G96 | (0.6+ | 1.7+) | | |
| 2001 10 18 | 704 | 0.0 | 0.3− | 2006 09 20 | 703 | 0.0 | 0.6+ | 2006 11 17 | G96 | (0.5+ | 1.7+) | | |
| 2001 10 18 | 704 | 0.6− | 0.8+ | 2006 09 20 | 703 | 0.4+ | 1.0− | 2006 11 17 | G96 | (0.3+ | 1.9+) | | |
| 2006 08 30 | 699 | 1.2+ | 0.6− | 2006 09 20 | 703 | 0.3+ | 0.4+ | | | | | | |

**2006 RD$_{101}$ = 2002 NS$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.79231 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26344027 | $\omega$ | 141.49174 | | +0.85119507 | +0.52476700 | |
| $a$ | 2.4099865 | $\Omega$ | 186.87477 | | −0.49873783 | +0.80319911 | |
| $e$ | 0.2153798 | $i$ | 4.45760 | | −0.16348559 | +0.28194110 | |
| $P$ | 3.74 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 05 | 691 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.7− | 0.1− | 2006 10 01 | 704 | 0.0 | 0.4+ | | |
| 1991 10 05 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.4+ | 2006 10 02 | 291 | 0.1+ | 0.0 | | |
| 1991 10 05 | 691 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.2+ | 1.0− | 2006 10 02 | 291 | 0.0 | 0.0 | | |
| 1991 10 05 | 260 | (3.9+ | 1.8+) | 2006 09 14 | 703 | 0.5− | 0.2− | 2006 10 02 | 291 | 0.2− | 0.1− | | |
| 1991 10 05 | 260 | 0.7+ | 1.1+ | 2006 09 14 | 703 | 1.1− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.2− | | |
| 2002 07 09 | 704 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1− | | |
| 2002 07 09 | 704 | 0.9+ | 0.1+ | 2006 09 20 | 704 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2002 07 09 | 704 | 0.0 | 0.6− | 2006 09 20 | 704 | 0.5+ | 0.6− | 2006 10 17 | 703 | 1.1− | 0.8− | | |
| 2002 07 12 | 644 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.3− | 1.2− | 2006 10 17 | 703 | 0.4+ | 1.2− | | |
| 2002 07 12 | 644 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.1+ | | |
| 2002 07 12 | 644 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 17 | 703 | 1.5− | 1.3+ | | |
| 2002 08 11 | 608 | (0.4+ | 2.8+) | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 19 | 695 | 0.0 | 0.1+ | | |
| 2002 08 11 | 608 | (0.6+ | 2.3+) | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2002 08 11 | 608 | (1.1+ | 2.1+) | 2006 09 28 | 704 | 0.2+ | 0.9− | 2006 10 19 | 644 | 0.2+ | 0.3+ | | |
| 2005 03 08 | G96 | 0.1+ | 0.4− | 2006 09 28 | 704 | 0.9− | 0.8+ | 2006 10 19 | 644 | 0.3− | 0.4− | | |
| 2005 03 08 | G96 | 0.0 | 0.1− | 2006 09 28 | 704 | (2.1+ | 0.3+) | 2006 10 19 | 695 | 0.4+ | 1.5+ | | |
| 2005 03 08 | G96 | 0.3− | 0.4− | 2006 09 28 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.1− | | |
| 2005 03 08 | G96 | 0.1− | 0.2+ | 2006 09 28 | 699 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2006 09 14 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 699 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 28 | 699 | 0.5+ | 0.4+ | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2006 09 14 | 703 | 0.3+ | 0.4− | 2006 09 28 | 699 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 2006 09 14 | 691 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.5+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 2006 09 14 | 703 | 0.5− | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |

**2006 RE$_{101}$ = 2004 DM$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.45705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23158694 | $\omega$ | 46.00864 | | +0.94360312 | +0.30877917 | |
| $a$ | 2.6261932 | $\Omega$ | 295.67272 | | −0.32881709 | +0.83193556 | |
| $e$ | 0.0845295 | $i$ | 7.61608 | | −0.03863257 | +0.46101915 | |
| $P$ | 4.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.0 | 0.6− | 2006 08 29 | 699 | 0.0 | 0.4− | 2006 10 04 | 703 | 0.5− | 1.2+ |
| 2002 11 25 | 644 | 0.4+ | 0.2+ | 2006 08 29 | 699 | 0.6+ | 0.3− | 2006 10 04 | 703 | 0.9− | 0.3+ |
| 2002 11 25 | 644 | 0.4+ | 0.3− | 2006 08 29 | 699 | 0.8+ | 0.3+ | 2006 10 04 | 703 | 0.1+ | 0.2+ |
| 2002 12 12 | 644 | 0.3− | 0.1− | 2006 08 29 | 699 | 1.0+ | 0.9+ | 2006 10 04 | 703 | 1.4− | 0.2− |
| 2002 12 12 | 644 | 0.2− | 0.0 | 2006 09 14 | 644 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2002 12 12 | 644 | 0.2− | 0.1+ | 2006 09 14 | 644 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.5− |
| 2004 02 25 | 704 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2004 02 25 | 704 | 0.0 | 0.5+ | 2006 09 20 | 699 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2004 02 25 | 704 | 0.4+ | 1.2+ | 2006 09 20 | 699 | 0.6− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2004 02 25 | 704 | 0.8− | 0.6− | 2006 09 20 | 699 | 1.1− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2004 02 25 | 704 | 0.1+ | 1.1+ | 2006 09 20 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2004 02 26 | 704 | 0.8+ | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.6− |
| 2004 02 26 | 704 | 0.4+ | 0.3− | 2006 09 28 | 703 | 0.8+ | 0.9+ | 2006 10 23 | 644 | 0.2− | 0.5− |
| 2004 02 26 | 704 | 0.0 | 0.3− | 2006 09 28 | 703 | 1.0+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.5− |
| 2004 02 26 | 704 | 0.4− | 0.9− | 2006 09 28 | 703 | 0.3+ | 0.4+ | | | | |

**2006 RF$_{101}$ = 2004 HX$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.71433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18004047 | $\omega$ | 188.29457 | | +0.62801739 | −0.76695250 | |
| $a$ | 3.1061515 | $\Omega$ | 222.93808 | | +0.72462919 | +0.63809793 | |
| $e$ | 0.2157987 | $i$ | 11.15815 | | +0.28373701 | +0.06793303 | |
| $P$ | 5.47 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.0 | 0.4− | 2006 09 25 | 704 | (0.1− | 1.6+) | 2006 10 27 | 683 | 0.5+ | 1.2− |
| 2001 11 17 | 704 | 0.8+ | 0.5+ | 2006 09 25 | 704 | (0.2+ | 1.5+) | 2006 10 27 | 683 | 1.0+ | 1.2− |
| 2001 11 17 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | (0.2− | 2.9+) | 2006 10 27 | 683 | 0.0 | 0.7− |
| 2001 12 11 | 704 | 0.1− | 0.2+ | 2006 09 25 | 704 | (0.7− | 1.6+) | 2006 10 28 | 683 | 0.1− | 0.5− |
| 2001 12 11 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 703 | 0.1− | 0.4− | 2006 10 28 | 683 | 0.5+ | 0.9+ |
| 2001 12 11 | 704 | 0.0 | 0.7+ | 2006 09 28 | 703 | 0.3+ | 0.1+ | 2006 10 28 | 683 | 0.5− | 0.7+ |
| 2001 12 11 | 704 | 0.3− | 0.6+ | 2006 09 28 | 703 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.5− | 0.3+ |
| 2001 12 11 | 704 | 0.2− | 0.7+ | 2006 09 28 | 703 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.6− | 0.1+ |
| 2004 04 24 | 291 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.5+ | 2006 10 29 | 704 | (0.2− | 1.9+) |
| 2004 04 24 | 291 | 0.7+ | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.3+ | 2006 10 29 | 704 | 0.2+ | 0.2+ |
| 2004 04 24 | 291 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 10 29 | 704 | 0.3− | 1.1+ |
| 2004 05 13 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.9− | 0.9+ | 2006 11 06 | 644 | 0.1+ | 0.2+ |
| 2004 05 13 | 691 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.0 | 0.3+ |
| 2004 05 13 | 691 | 0.4− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.0 |
| 2006 09 14 | 644 | 0.2+ | 0.3− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2006 09 14 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2006 09 14 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2006 09 20 | 699 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2006 09 20 | 699 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 1.0+ |
| 2006 09 20 | 699 | 0.3+ | 0.0 | 2006 10 17 | 703 | 1.2− | 0.2− | 2006 11 19 | 704 | 0.4− | 1.1+ |
| 2006 09 20 | 699 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 1.0− | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2006 09 25 | 704 | (1.7− | 0.6−) | 2006 10 17 | 703 | (0.4− | 3.3−) | 2006 11 19 | 704 | 0.0 | 0.7− |

**2006 RG$_{101}$ = 2005 EQ$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.58419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29733207 | $\omega$ | 35.58457 | | +0.80086156 | +0.59321889 | |
| $a$ | 2.2231813 | $\Omega$ | 287.82497 | | −0.56742908 | +0.70797482 | |
| $e$ | 0.1922337 | $i$ | 4.93690 | | −0.19142883 | +0.38322707 | |
| $P$ | 3.31 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 691 | 0.2− | 0.2− | 2005 03 10 | 691 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.0 | 0.5− |
| 2005 03 08 | 691 | 0.1− | 0.2+ | 2005 03 10 | 691 | 0.0 | 0.2+ | 2006 09 28 | 703 | 1.2+ | 0.7+ |
| 2005 03 08 | 691 | 0.1+ | 0.1− | 2005 03 10 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2005 03 09 | 691 | 0.4+ | 0.3− | 2006 09 14 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.6− | 0.5− |
| 2005 03 09 | 691 | 0.3− | 0.0 | 2006 09 14 | 644 | 0.1− | 0.3+ | 2006 10 17 | 703 | (0.6− | 1.7+) |
| 2005 03 09 | 691 | 0.1+ | 0.1− | 2006 09 14 | 644 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.7− |
| 2005 03 09 | 691 | 0.4− | 0.1+ | 2006 09 20 | 699 | 0.3− | 1.3− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2005 03 09 | 691 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.8+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2005 03 09 | 691 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.4− | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2005 03 10 | 691 | 0.0 | 0.0 | 2006 09 20 | 699 | 0.7+ | 0.4+ | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2005 03 10 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 1.0+ | 2006 10 24 | 644 | 0.4− | 0.0 |
| 2005 03 10 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.1+ |

**2006 RK$_{101}$ = 2000 OY**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.00947 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17811168 | $\omega$ | 35.47807 | | +0.95202517 | +0.23172460 | |
| $a$ | 3.1285357 | $\Omega$ | 309.84993 | | −0.30425849 | +0.78671933 | |
| $e$ | 0.2157329 | $i$ | 15.09099 | | +0.03278474 | +0.57216816 | |
| $P$ | 5.53 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 25 | 684 | 0.2− | 0.1+ | 2006 09 06 | 644 | 0.0 | 0.4− | 2006 09 21 | 699 | 0.3+ | 0.3+ |
| 2000 07 25 | 684 | 0.1+ | 0.3+ | 2006 09 06 | 644 | 0.3+ | 0.6− | 2006 09 22 | 703 | 1.4− | 0.2+ |
| 2000 07 26 | 684 | 0.5+ | 0.2+ | 2006 09 14 | 703 | 0.4+ | 1.6+ | 2006 09 22 | 703 | 1.8− | 0.9+ |
| 2000 07 26 | 684 | 0.5− | 0.6− | 2006 09 14 | 703 | 0.6+ | 1.7+ | 2006 09 22 | 703 | 0.4+ | 0.0 |
| 2006 08 29 | 699 | 0.4+ | 0.2− | 2006 09 14 | 703 | (2.6+ | 0.3−) | 2006 09 22 | 703 | 0.5− | 1.5− |
| 2006 08 29 | 699 | 0.1+ | 1.7− | 2006 09 14 | 703 | 0.8+ | 0.5+ | 2006 09 27 | 703 | 0.2+ | 0.3− |
| 2006 08 29 | 699 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.1− | 0.1− | 2006 09 27 | 703 | 1.0− | 0.9− |
| 2006 08 29 | 699 | 0.8− | 1.1+ | 2006 09 21 | 699 | 0.1− | 0.3− | 2006 09 27 | 703 | 1.0+ | 0.1+ |
| 2006 09 06 | 644 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.1− | 0.1− | 2006 09 27 | 703 | 0.9+ | 0.3− |

**2006 RQ$_{101}$ = 2004 BF$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.08938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26783875 | $\omega$ | 291.20060 | | +0.96838625 | −0.24276120 | |
| $a$ | 2.3835290 | $\Omega$ | 82.88446 | | +0.24491119 | +0.88150813 | |
| $e$ | 0.2117618 | $i$ | 3.31631 | | +0.04739815 | +0.40498201 | |
| $P$ | 3.68 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.1+ | 0.2− | 2004 01 28 | 691 | 0.4+ | 0.0 | 2006 09 21 | 699 | 0.3− | 0.4+ |
| 1999 12 05 | 691 | 0.4+ | 0.5− | 2006 09 14 | 703 | (0.4− | 2.0+) | 2006 09 30 | 703 | 0.6+ | 0.6+ |
| 1999 12 05 | 691 | 0.3+ | 0.3− | 2006 09 14 | 703 | 0.1− | 1.0+ | 2006 09 30 | 703 | 0.0 | 0.1− |
| 1999 12 18 | 691 | 0.3− | 0.0 | 2006 09 14 | 703 | (0.3− | 2.5+) | 2006 09 30 | 703 | 0.4+ | 0.1+ |
| 1999 12 18 | 691 | 0.2− | 0.0 | 2006 09 14 | 703 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 1999 12 18 | 691 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.4− | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.4+ |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.9− | 0.7+ | 2006 11 25 | G96 | 0.3+ | 0.7+ |
| 2004 01 19 | 691 | 0.3− | 0.4+ | 2006 09 20 | 644 | 0.6− | 0.4+ | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2004 01 19 | 691 | 0.2− | 0.1+ | 2006 09 21 | 699 | 0.5+ | 1.3− | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2004 01 28 | 691 | 0.3+ | 0.3+ | 2006 09 21 | 699 | 0.3− | 0.8− | | | | |
| 2004 01 28 | 691 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.8− | 0.6+ | | | | |

**2006 RT$_{101}$ = 2002 LS$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.30946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28338318 | $\omega$ | 177.33130 | | +0.10197440 | +0.98921853 | |
| $a$ | 2.2955495 | $\Omega$ | 98.50655 | | −0.91465631 | +0.13478182 | |
| $e$ | 0.1502383 | $i$ | 6.10082 | | −0.39115860 | −0.05727620 | |
| $P$ | 3.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.8+ | 0.5− | 2005 03 11 | 699 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 1.2− | 0.6− |
| 2002 06 09 | 704 | 0.3− | 0.2+ | 2005 03 11 | 699 | 0.2+ | 0.8− | 2006 09 14 | 703 | 1.2+ | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.3− | 0.1+ | 2005 03 11 | 699 | 1.2− | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.7− |
| 2002 06 12 | 644 | 0.2− | 0.3+ | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.0 | 0.5− |
| 2002 06 12 | 644 | 0.3− | 0.0 | 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.9− | 0.3+ |
| 2002 06 12 | 644 | 0.3+ | 0.0 | 2006 08 23 | 644 | 0.4+ | 0.1− | 2006 09 21 | 699 | 0.6− | 0.0 |
| 2005 03 11 | 699 | 0.5+ | 0.6+ | 2006 09 14 | 703 | 0.4− | 0.2− | 2006 09 21 | 699 | 1.0+ | 1.2+ |

**2006 RZ$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.75732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29132724 | $\omega$ | 220.72225 | | +0.99611404 | −0.06546224 | |
| $a$ | 2.2536268 | $\Omega$ | 142.90561 | | +0.08112204 | +0.94244093 | |
| $e$ | 0.1943170 | $i$ | 5.60615 | | −0.03429339 | +0.32790210 | |
| $P$ | 3.38 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 04 | 691 | 0.3− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.4− |
| 1996 12 04 | 691 | 0.1− | 0.2− | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 10 01 | 704 | 0.2− | 0.7+ |
| 1996 12 04 | 691 | 0.3− | 0.0 | 2006 09 25 | 699 | 1.4+ | 0.8+ | 2006 10 01 | 704 | (0.5− | 1.8+) |
| 1996 12 12 | 691 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.4+ | 1.2+ |
| 1996 12 12 | 691 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 1.3+ | 2006 10 01 | 704 | 0.1+ | 0.4− |
| 1996 12 12 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 1.2− | 1.2+ | 2006 10 16 | 703 | (1.4+ | 1.9−) |
| 1999 08 21 | 691 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.1− | 1.2− | 2006 10 16 | 703 | 0.6+ | 0.0 |
| 1999 08 21 | 691 | (2.1+ | 4.8+) | 2006 09 26 | 703 | 0.7+ | 1.1− | 2006 10 16 | 703 | 0.4+ | 0.9− |
| 1999 08 21 | 691 | 0.2+ | 0.3− | 2006 09 26 | 703 | (0.2+ | 1.6−) | 2006 10 16 | 703 | 0.6+ | 0.8− |
| 2006 09 14 | 291 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.6− | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2006 09 14 | 291 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.3+ |
| 2006 09 14 | 291 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.7+ | 0.7+ | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2006 09 18 | 703 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.8− | 0.4− | 2006 10 22 | 703 | 0.9− | 0.9− |
| 2006 09 18 | 703 | 0.7+ | 0.0 | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.2− |
| 2006 09 18 | 703 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.5+ | 0.4− | 2006 10 28 | 703 | 1.0− | 1.0+ |
| 2006 09 18 | 703 | 1.1− | 0.0 | 2006 09 30 | 703 | 0.2+ | 1.2− | 2006 10 28 | 703 | 0.1− | 0.5+ |
| 2006 09 20 | 644 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.4− | 2006 10 28 | 703 | 0.7− | 0.9− |

**2006 RB$_{102}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.85291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21739022 | $\omega$ | 232.58580 | | +0.26144891 | −0.96517542 | |
| $a$ | 2.7393197 | $\Omega$ | 202.26318 | | +0.89290013 | +0.24538829 | |
| $e$ | 0.0562431 | $i$ | 1.36016 | | +0.36657036 | +0.09066971 | |
| $P$ | 4.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 691 | 0.3− | 0.3− | 2006 07 25 | G96 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.2− | 0.4+ |
| 1998 10 29 | 691 | 0.3+ | 0.4− | 2006 07 25 | G96 | 0.3+ | 0.2− | 2006 09 17 | 704 | 0.0 | 0.5− |
| 1998 10 29 | 691 | 0.4+ | 0.1− | 2006 07 25 | G96 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.0 |
| 1999 01 07 | 691 | 0.1− | 0.0 | 2006 08 28 | 691 | 0.2− | 0.0 | 2006 09 20 | 644 | 0.3− | 0.2+ |
| 1999 01 07 | 691 | 0.0 | 0.3+ | 2006 08 28 | 691 | 0.2− | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.1− |
| 1999 01 07 | 691 | 0.2− | 0.1+ | 2006 08 28 | 691 | 0.9− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.2− |
| 2004 03 18 | 691 | 0.2+ | 0.4+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.2+ |
| 2004 03 18 | 691 | 0.2+ | 0.5+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.0 |
| 2004 03 18 | 691 | 0.1+ | 0.5+ | 2006 09 15 | 691 | 0.2+ | 0.0 | | | | |
| 2006 07 25 | G96 | 0.2+ | 0.0 | 2006 09 17 | 704 | 0.1− | 1.1+ | | | | |

**2006 RC$_{102}$ = 2002 GQ$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.30346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29668845 | $\omega$ | 288.06735 | | +0.57730956 | +0.81641684 | |
| $a$ | 2.2263954 | $\Omega$ | 17.21417 | | −0.73110860 | +0.52410814 | |
| $e$ | 0.1766339 | $i$ | 2.57816 | | −0.36358477 | +0.24243392 | |
| $P$ | 3.32 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 17 | 807 | 0.2+ | 0.6+ | 2003 12 18 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2002 02 17 | 807 | 0.4+ | 0.7+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.2+ |
| 2002 02 17 | 807 | 0.5+ | 0.8+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.3+ |
| 2002 02 17 | 807 | 0.2− | 0.7+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 2002 04 12 | 691 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.3− |
| 2002 04 12 | 691 | 0.1+ | 0.9+ | 2006 09 20 | 644 | 0.6+ | 0.0 | 2006 09 28 | 704 | 1.0+ | 0.4+ |
| 2002 04 12 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 09 28 | 704 | 0.2− | 0.2− |
| 2002 04 14 | 704 | 1.1+ | 0.6+ | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.0 | 0.8+ |
| 2002 04 14 | 704 | 0.8+ | 0.5− | 2006 09 23 | 691 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.8+ |
| 2002 04 14 | 704 | 1.2+ | 0.5− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.9− | 0.3+ |
| 2002 04 14 | 704 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 09 29 | 704 | 0.5− | 1.2+ |
| 2003 12 18 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.4− | | | | |
| 2003 12 18 | 691 | 0.3− | 0.5+ | 2006 09 26 | G96 | 0.2− | 0.4− | | | | |

**2006 RG$_{102}$ = 2006 SK$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.22840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21601085 | $\omega$ | 120.99244 | | +0.98181697 | +0.06798599 | |
| $a$ | 2.7509689 | $\Omega$ | 235.67808 | | −0.11613075 | +0.95368351 | |
| $e$ | 0.2095387 | $i$ | 12.39232 | | +0.15016351 | +0.29302843 | |
| $P$ | 4.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 566 | 0.2− | 0.1− | 2006 09 02 | 106 | 0.7− | 0.4− | 2006 10 17 | 683 | (1.7+ | 1.1−) |
| 1997 10 29 | 566 | 0.2− | 0.7+ | 2006 09 03 | 106 | 0.4+ | 0.1+ | 2006 10 17 | 683 | 0.3+ | 0.1+ |
| 1997 10 29 | 566 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.5− | 0.5+ |
| 2005 05 19 | 644 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.9− |
| 2005 05 19 | 644 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.4− | 2006 10 17 | 703 | 0.8− | 0.1− |
| 2005 05 19 | 644 | 0.4+ | 0.2+ | 2006 09 16 | 703 | 0.6+ | 0.3− | 2006 10 17 | 703 | 1.2− | 0.7+ |
| 2005 06 14 | G96 | 0.5− | 0.1+ | 2006 09 20 | 291 | 0.1− | 0.2+ | 2006 10 19 | 683 | 0.6+ | 0.6− |
| 2005 06 14 | G96 | 0.4+ | 0.6+ | 2006 09 20 | 291 | 0.1− | 0.2+ | 2006 10 19 | 683 | 0.5+ | 0.7+ |
| 2005 06 14 | G96 | 0.3− | 0.4− | 2006 09 20 | 291 | 0.1+ | 0.2+ | 2006 10 19 | 683 | 0.2+ | 0.0 |
| 2005 06 14 | G96 | 0.6− | 0.0 | 2006 10 03 | 704 | 0.5− | 0.3− | 2006 10 20 | 683 | 0.0 | 0.8+ |
| 2006 09 01 | 106 | 0.3− | 0.8+ | 2006 10 03 | 704 | 0.9+ | 0.2− | 2006 10 20 | 683 | 0.8+ | 1.5+ |
| 2006 09 01 | 106 | 0.3− | 0.1− | 2006 10 03 | 704 | 0.0 | 0.2− | 2006 10 23 | 703 | 0.2+ | 0.5− |
| 2006 09 01 | 106 | 0.7+ | 0.3− | 2006 10 03 | 704 | 0.4− | 0.2− | 2006 10 23 | 703 | 0.7− | 0.8− |
| 2006 09 01 | 106 | 0.4+ | 0.3− | 2006 10 03 | 704 | 0.5+ | 0.4+ | 2006 10 23 | 703 | 0.4− | 0.2− |
| 2006 09 02 | 106 | 0.5+ | 0.6− | 2006 10 17 | 683 | 0.4+ | 1.3− | 2006 10 23 | 703 | 0.2− | 1.3− |

**2006 RL$_{102}$ = 2003 WP$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.21649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30265781 | $\omega$ | 288.48908 | | +0.83863031 | +0.54111303 | |
| $a$ | 2.1970239 | $\Omega$ | 38.81876 | | −0.45462327 | +0.75845196 | |
| $e$ | 0.1746562 | $i$ | 5.71448 | | −0.30002814 | +0.36324552 | |
| $P$ | 3.26 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 19 | 691 | 0.3+ | 0.5+ | 2003 11 20 | 704 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.7− |
| 2002 04 19 | 691 | 0.0 | 0.7+ | 2003 11 20 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.3+ | 1.2+ |
| 2002 04 19 | 691 | 0.8+ | 0.8+ | 2003 11 20 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.3+ |
| 2003 09 29 | 333 | 0.5+ | 0.7− | 2003 11 20 | 704 | 1.1− | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.7+ |
| 2003 09 29 | 333 | 0.2− | 0.4− | 2003 11 20 | 704 | 0.5+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2003 09 29 | 333 | 0.6− | 0.1− | 2006 09 14 | 644 | 0.2− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2003 10 20 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 644 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.7+ | 0.4+ |
| 2003 10 20 | 691 | 0.0 | 0.3+ | 2006 09 14 | 644 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.2+ |
| 2003 10 20 | 691 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.5− | 0.2− | 2006 11 17 | G96 | 0.7+ | 0.2+ |
| 2003 11 16 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 1.4− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.4+ |
| 2003 11 16 | 691 | 0.0 | 0.0 | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2003 11 16 | 691 | 0.2− | 0.1+ | 2006 09 26 | 704 | 0.6− | 1.2+ | | | | |

**2006 RN$_{102}$ = 1998 EE$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.90623 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17868879 | $\omega$ | 46.88993 | | +0.58194569 | −0.81291370 | |
| $a$ | 3.1217959 | $\Omega$ | 7.62221 | | +0.68787858 | +0.47723575 | |
| $e$ | 0.1063855 | $i$ | 9.80796 | | +0.43377676 | +0.33379238 | |
| $P$ | 5.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 02 | 691 | 0.3− | 0.5+ | 2006 09 25 | 699 | 0.7− | 1.0+ | 2006 10 02 | G96 | 0.6+ | 0.1+ |
| 1998 03 02 | 691 | 1.1− | 0.3− | 2006 09 25 | 699 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2+ |
| 1998 03 02 | 691 | 0.9− | 0.1− | 2006 09 25 | 699 | (1.7+ | 1.1+) | 2006 10 21 | G96 | 0.0 | 0.4+ |
| 1998 03 03 | 691 | 0.7+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 1.3+ | 2006 10 21 | G96 | 0.6+ | 0.2+ |
| 1998 03 03 | 691 | 1.0+ | 0.4+ | 2006 09 30 | 703 | 1.3+ | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.5+ |
| 1998 03 03 | 691 | 1.1+ | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.3− | 2006 10 21 | G96 | 0.5+ | 0.2+ |
| 2006 09 14 | 703 | 0.4− | 0.7+ | 2006 09 30 | 703 | 0.8− | 1.0− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2006 09 14 | 703 | 0.2+ | 0.9+ | 2006 09 30 | 703 | 0.9− | 0.7− | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2006 09 14 | 703 | 0.7− | 0.7− | 2006 10 02 | G96 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5+ |
| 2006 09 14 | 703 | 0.1+ | 1.3− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1+ |

**2006 RX$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.55818 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19466716 | $\omega$ | 99.33266 | | +0.97153328 | +0.18204762 | |
| $a$ | 2.9485438 | $\Omega$ | 250.29436 | | −0.22441892 | +0.91221974 | |
| $e$ | 0.0495985 | $i$ | 9.26654 | | +0.07588960 | +0.36703380 | |
| $P$ | 5.06 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.7− | 1.0+ | 2004 03 14 | 644 | 0.5− | 0.7+ | 2006 09 27 | 699 | 0.9− | 0.3+ |
| 2001 09 10 | 704 | 0.6− | 0.7+ | 2004 03 14 | 644 | 0.2− | 0.4+ | 2006 09 27 | 699 | 1.2+ | 0.4− |
| 2001 09 10 | 704 | 0.7− | 0.8+ | 2004 03 17 | 704 | (2.5+ | 0.5−) | 2006 09 27 | 699 | 0.2− | 1.0+ |
| 2001 09 25 | 704 | 0.5− | 1.4+ | 2004 03 17 | 704 | 1.4+ | 0.2+ | 2006 09 27 | 699 | 0.3+ | 0.4− |
| 2001 09 25 | 704 | 0.8+ | 0.1− | 2004 03 17 | 704 | 0.5− | 0.9+ | 2006 10 03 | 703 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 0.3+ | 0.5− | 2004 04 20 | 291 | 0.2+ | 0.4+ | 2006 10 03 | 703 | 1.3− | 0.2− |
| 2001 09 25 | 704 | 1.3+ | 0.1− | 2004 04 20 | 291 | 0.3+ | 0.4+ | 2006 10 03 | 703 | 0.1− | 1.1+ |
| 2001 09 25 | 704 | 0.2− | 0.2− | 2004 04 20 | 291 | 0.5+ | 0.3+ | 2006 10 03 | 703 | 0.9− | 0.5+ |
| 2001 09 29 | 644 | 0.3− | 0.4+ | 2006 09 14 | 644 | 0.4− | 0.3+ | 2006 10 23 | 703 | 2.2+ | 0.3+ |
| 2001 09 29 | 644 | 0.1− | 0.4+ | 2006 09 14 | 644 | 0.1+ | 0.6+ | 2006 10 23 | 703 | 0.0 | 0.9+ |
| 2001 09 29 | 644 | 0.4− | 0.3+ | 2006 09 14 | 644 | 0.0 | 0.6+ | 2006 10 23 | 703 | 1.0− | 0.8+ |
| 2003 01 07 | 704 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.8− | 0.8− | 2006 10 23 | 703 | 0.4− | 0.4− |
| 2003 01 07 | 704 | 0.4+ | 0.1− | 2006 09 16 | 703 | 0.6− | 1.3− | 2006 10 24 | 644 | 0.5+ | 0.6+ |
| 2003 01 07 | 704 | 0.7− | 0.1+ | 2006 09 16 | 703 | 1.1+ | 1.3− | 2006 10 24 | 644 | 0.1− | 0.4+ |
| 2004 03 14 | 644 | 0.7− | 0.5+ | 2006 09 16 | 703 | (2.8+ | 0.1+) | 2006 10 24 | 644 | 0.2+ | 0.6+ |

**2006 RJ$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 225.97575 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.00601242 | $\omega$ | 34.82755 | | −0.90618317 | −0.40493115 | |
| $a$ | 29.9527274 | $\Omega$ | 120.83739 | | +0.34853430 | −0.87841578 | |
| $e$ | 0.0296535 | $i$ | 8.16281 | | +0.23949094 | −0.25380401 | |
| $P$ | 163.93 | $H$ | 7.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 13 | 705 | 0.3+ | 0.0 | 2006 09 18 | 705 | 0.2+ | 0.0 | 2006 10 17 | 705 | 0.1+ | 0.3+ |
| 2005 09 25 | 705 | 0.5− | 0.2− | 2006 09 18 | 705 | 0.0 | 0.1− | 2006 10 17 | 705 | 0.2− | 0.2+ |
| 2005 09 27 | 705 | 0.2+ | 0.0 | 2006 09 30 | 705 | 0.0 | 0.0 | 2006 10 21 | 705 | 0.1+ | 0.1− |
| 2005 10 27 | 705 | 0.1+ | 0.0 | 2006 09 30 | 705 | 0.1− | 0.3− | 2006 10 21 | 705 | 0.1− | 0.1+ |
| 2005 10 30 | 705 | 0.1− | 0.0 | 2006 10 02 | 705 | 0.0 | 0.0 | 2006 10 29 | 705 | 0.1+ | 0.0 |
| 2005 10 31 | 705 | 0.0 | 0.1+ | 2006 10 02 | 705 | 0.0 | 0.0 | 2006 10 29 | 705 | 0.1− | 0.1− |
| 2005 11 02 | 705 | 0.0 | 0.1+ | 2006 10 03 | 705 | 0.0 | 0.0 | 2006 11 01 | 705 | 0.0 | 0.0 |
| 2005 11 07 | 705 | 0.0 | 0.1+ | 2006 10 03 | 705 | 0.0 | 0.0 | 2006 11 01 | 705 | 0.0 | 0.1+ |
| 2006 09 12 | 705 | 0.1+ | 0.1+ | 2006 10 13 | 705 | 0.1+ | 0.1+ | | | | |
| 2006 09 12 | 705 | 0.0 | 0.2− | 2006 10 13 | 705 | 0.0 | 0.3− | | | | |

**2006 SH**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.96477 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27057018 | $\omega$ | 301.82161 | | +0.76314965 | +0.64599993 | |
| $a$ | 2.3674606 | $\Omega$ | 17.95611 | | −0.57278517 | +0.68832459 | |
| $e$ | 0.1787017 | $i$ | 3.14849 | | −0.29919855 | +0.32998992 | |
| $P$ | 3.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 809 | 0.3− | 0.0 | 2006 09 12 | 703 | 0.2− | 0.5− | 2006 09 28 | 704 | 0.3+ | 0.8− |
| 1995 08 26 | 809 | 0.5+ | 0.4− | 2006 09 12 | 703 | 0.1− | 0.5− | 2006 09 28 | 704 | 0.2− | 0.0 |
| 1995 08 28 | 809 | 0.1+ | 0.0 | 2006 09 16 | H07 | 0.1− | 0.6− | 2006 09 28 | 704 | 0.2− | 0.2+ |
| 1995 08 29 | 809 | 0.5+ | 0.2+ | 2006 09 16 | H07 | 0.5+ | 0.6− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1995 09 18 | 809 | 0.1− | 0.3+ | 2006 09 16 | H07 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1995 09 19 | 809 | 0.1− | 0.3− | 2006 09 16 | H07 | 0.0 | 0.7− | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 1995 09 19 | 809 | 0.4− | 0.7− | 2006 09 17 | H07 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.4+ |
| 1995 09 20 | 809 | 1.1− | 1.3− | 2006 09 17 | 704 | 0.7+ | 0.3− | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 1995 09 22 | 809 | 1.0+ | 0.5− | 2006 09 17 | 704 | 0.3− | 0.7− | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 1995 09 23 | 809 | 0.9+ | 0.1+ | 2006 09 17 | 704 | 0.1+ | 0.8− | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 1995 09 23 | 809 | (4.8+ | 1.8−) | 2006 09 17 | 704 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.9− | 1.0− |
| 1995 09 24 | 809 | 0.2− | 0.3+ | 2006 09 17 | H07 | 0.0 | 0.1+ | 2006 10 16 | 703 | 1.2+ | 1.4+ |
| 1999 10 13 | 704 | 0.2− | 0.2− | 2006 09 17 | H07 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.5+ | 1.4+ |
| 1999 10 13 | 704 | 0.6+ | 0.8+ | 2006 09 18 | 699 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.9+ | 1.1+ |
| 1999 10 13 | 704 | (2.2− | 1.5+) | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 703 | (0.2+ | 1.9+) |
| 1999 12 07 | 704 | 0.2+ | 1.2− | 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.3− | 0.3− |
| 1999 12 07 | 704 | 0.6+ | 0.7− | 2006 09 18 | 699 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.0 | 0.3− |
| 1999 12 07 | 704 | 0.4− | 0.4+ | 2006 09 20 | 704 | 0.7+ | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2002 06 13 | 644 | 0.3− | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.3− | 2006 10 16 | G96 | 0.3− | 0.1− |
| 2002 06 13 | 644 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.8+ | 1.0+ | 2006 10 16 | 703 | 0.1− | 0.1+ |
| 2002 06 13 | 644 | 0.2+ | 0.2+ | 2006 09 20 | 704 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.9− | 0.0 |
| 2005 04 04 | G96 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6− | 1.4− |
| 2005 04 04 | G96 | 0.2+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2005 05 04 | G96 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2005 05 04 | G96 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2005 05 04 | G96 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2005 05 04 | G96 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | (0.5− | 1.8+) | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2006 09 06 | 644 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.7− | 0.1− | 2006 10 28 | G96 | 0.6− | 0.1− |
| 2006 09 12 | 703 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.2+ | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2006 09 12 | 703 | 0.3− | 0.3+ | 2006 09 28 | 704 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− |

**2006 SL**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.07224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27880909 | $\omega$ | 41.52763 | | +0.93838076 | +0.32872593 | |
| $a$ | 2.3205883 | $\Omega$ | 298.98408 | | −0.34044702 | +0.82611777 | |
| $e$ | 0.2043792 | $i$ | 7.00496 | | −0.05947583 | +0.45767749 | |
| $P$ | 3.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.0 | 0.7− | 2006 09 17 | H06 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.1− | 0.5− |
| 1999 10 12 | 704 | 0.2+ | 0.0 | 2006 09 17 | H06 | 0.4− | 0.1+ | 2006 10 03 | 704 | 0.4+ | 0.5+ |
| 1999 10 12 | 704 | 0.2− | 1.3− | 2006 09 17 | H06 | 0.5− | 0.5− | 2006 10 03 | 704 | 0.5− | 0.4+ |
| 1999 11 03 | 704 | 1.0+ | 1.7+ | 2006 09 18 | H06 | 0.9+ | 0.9− | 2006 10 09 | 644 | 0.3+ | 0.1+ |
| 1999 11 03 | 704 | 1.3− | 1.4+ | 2006 09 18 | H06 | 0.3+ | 0.4− | 2006 10 09 | 644 | 0.4+ | 0.2+ |
| 1999 11 03 | 704 | 1.1− | 1.7+ | 2006 09 18 | H06 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.6+ | 0.0 |
| 2003 12 18 | 691 | 0.2− | 0.1− | 2006 09 20 | 621 | 0.3+ | 0.4− | 2006 10 14 | 621 | 0.3+ | 0.2− |
| 2003 12 18 | 691 | 0.3+ | 0.1− | 2006 09 20 | 621 | 0.6+ | 0.5− | 2006 10 14 | 621 | 0.2+ | 0.3− |
| 2003 12 18 | 691 | 0.3− | 0.1− | 2006 09 20 | 621 | 0.1+ | 0.3− | 2006 10 14 | 621 | 0.1+ | 0.2− |
| 2006 08 29 | 699 | 1.1− | 0.2− | 2006 09 21 | 106 | 0.0 | 0.1− | 2006 10 15 | 621 | 0.2+ | 0.3− |
| 2006 08 29 | 699 | 0.0 | 0.5+ | 2006 09 21 | 106 | 0.2+ | 0.3− | 2006 10 15 | 621 | 0.1+ | 0.4− |
| 2006 08 29 | 699 | 0.5− | 0.2+ | 2006 09 21 | 106 | 0.5− | 0.1− | 2006 10 15 | 621 | 0.2+ | 0.3− |
| 2006 08 29 | 699 | 0.2− | 0.8+ | 2006 09 21 | 106 | 0.1+ | 1.4+ | 2006 10 17 | 703 | 0.7− | 0.9+ |
| 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 22 | 699 | 0.8− | 0.5− | 2006 10 17 | 703 | 0.6− | 0.4− |
| 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 09 22 | 699 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.5+ | 0.9+ |
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 22 | 699 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2006 09 16 | 703 | 0.3− | 0.4− | 2006 09 27 | 703 | 0.1+ | 0.2− | 2006 10 23 | 703 | 0.3− | 0.3+ |
| 2006 09 16 | 703 | 0.9− | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.7− | 2006 10 23 | 703 | 0.7+ | 0.6+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 703 | 0.7+ | 0.4+ | 2006 09 27 | 703 | 0.0 | 0.0 | 2006 10 23 | 703 | 1.0+ | 0.9− |
| 2006 09 16 | 703 | 0.3− | 0.4− | 2006 09 27 | 703 | 0.2− | 0.1− | 2006 10 23 | 703 | 0.1− | 0.2+ |

**2006 SN**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.24705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18134160 | $\omega$ | 106.32094 | | +0.97942668 | −0.07120846 | |
| $a$ | 3.0912757 | $\Omega$ | 258.05942 | | −0.00017569 | +0.93537266 | |
| $e$ | 0.1639590 | $i$ | 11.12763 | | +0.20180025 | +0.34642077 | |
| $P$ | 5.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 0.9+ | 0.5− | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 21 | 699 | 0.3− | 0.1+ |
| 2001 10 15 | 704 | 1.4− | 1.1− | 2006 09 06 | 644 | 0.5− | 0.2+ | 2006 09 21 | 699 | 1.1+ | 0.5− |
| 2001 10 15 | 704 | 0.2− | 0.4− | 2006 09 06 | 644 | 0.5− | 0.1+ | 2006 09 21 | 699 | 1.1+ | 0.2− |
| 2001 10 15 | 704 | 0.6− | 0.2− | 2006 09 16 | 683 | 1.1+ | 0.8− | 2006 09 21 | 699 | 0.4+ | 0.6− |
| 2001 11 10 | 704 | 0.4− | 0.1− | 2006 09 16 | 683 | 0.8− | 0.7− | 2006 09 29 | 699 | 0.0 | 0.9+ |
| 2001 11 10 | 704 | 0.2− | 0.2− | 2006 09 16 | 683 | 0.5+ | 0.5− | 2006 09 29 | 699 | 0.6− | 0.2− |
| 2001 11 10 | 704 | 0.3− | 0.6+ | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.4+ |
| 2001 11 10 | 704 | 0.1+ | 0.8+ | 2006 09 16 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.6− |
| 2001 11 10 | 704 | 0.1− | 0.6+ | 2006 09 16 | 644 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2001 12 10 | 704 | 1.2+ | 0.7+ | 2006 09 17 | 683 | (2.1− | 1.1−) | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 12 10 | 704 | 0.3+ | 0.1− | 2006 09 17 | 683 | 0.2− | 1.2+ | 2006 10 11 | 644 | 0.7+ | 0.3− |
| 2001 12 10 | 704 | 0.8+ | 0.1− | 2006 09 17 | 683 | 1.0− | 0.6+ | | | | |

**2006 SO = 2001 TK$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.55123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18515360 | $\omega$ | 102.02846 | | +0.80367338 | −0.57833250 | |
| $a$ | 3.0486994 | $\Omega$ | 293.46265 | | +0.46903776 | +0.76057723 | |
| $e$ | 0.1071495 | $i$ | 8.78787 | | +0.36621398 | +0.29504880 | |
| $P$ | 5.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 644 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.8+ | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2001 10 13 | 644 | 0.5+ | 0.6+ | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2001 10 13 | 644 | 0.1+ | 0.7+ | 2006 09 17 | 683 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2001 10 18 | 704 | 0.1− | 0.1− | 2006 09 17 | 683 | 0.0 | 0.9+ | 2006 10 23 | 703 | 0.3− | 0.4+ |
| 2001 10 18 | 704 | 0.7+ | 0.1+ | 2006 09 17 | 683 | 1.4− | 0.4+ | 2006 10 23 | 703 | 1.2+ | 0.8+ |
| 2001 10 18 | 704 | 1.0− | 1.4− | 2006 10 09 | 644 | 0.1− | 0.2+ | 2006 10 23 | 703 | (1.5+ | 2.2−) |
| 2006 09 16 | 703 | 0.5+ | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 703 | 1.2− | 1.3− |
| 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.1− | | | | |

**2006 ST = 2004 BY$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.16489 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22972073 | $\omega$ | 357.00458 | | +0.58282854 | +0.81104658 | |
| $a$ | 2.6403972 | $\Omega$ | 308.63922 | | −0.74420073 | +0.50797658 | |
| $e$ | 0.1797478 | $i$ | 3.68069 | | −0.32630685 | +0.29010902 | |
| $P$ | 4.29 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.3+ | 0.5+ | 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 09 23 | 104 | 0.3+ | 0.4+ |
| 2000 03 03 | 704 | 0.1− | 0.5+ | 2006 09 16 | 644 | 0.2+ | 0.0 | 2006 09 28 | 683 | 0.4− | 0.8+ |
| 2000 03 03 | 704 | 0.2+ | 0.1− | 2006 09 16 | 644 | 0.1− | 0.3+ | 2006 09 28 | 683 | 0.6+ | 0.8+ |
| 2002 11 04 | 644 | 0.4− | 0.9+ | 2006 09 17 | 683 | 0.7+ | 1.2− | 2006 09 28 | 683 | (1.7+ | 2.9+) |
| 2002 11 04 | 644 | 0.1− | 1.2+ | 2006 09 17 | 683 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.5− | 0.0 |
| 2002 11 04 | 644 | 0.3− | 1.1+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.1− |
| 2004 01 19 | 691 | 0.3+ | 0.1− | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.4− |
| 2004 01 19 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.7− |
| 2004 01 19 | 691 | 0.1+ | 0.3− | 2006 09 18 | 699 | (0.9− | 2.1+) | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2004 01 30 | 691 | 0.4− | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2004 01 30 | 691 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.4− | 1.2− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2004 01 30 | 691 | 0.3− | 0.2− | 2006 09 18 | 699 | 0.2+ | 1.1+ | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 09 19 | 683 | 1.0+ | 1.0− | 2006 10 17 | 703 | 0.8− | 0.5− |
| 2004 02 14 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 683 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2004 02 14 | 691 | 0.2+ | 0.1− | 2006 09 21 | 683 | 0.7− | 0.5− | 2006 10 17 | 703 | 0.0 | 1.1+ |
| 2006 08 29 | 699 | (0.4− | 1.6+) | 2006 09 21 | 683 | 0.2− | 0.5− | 2006 10 17 | 703 | 1.2− | 0.1− |
| 2006 08 29 | 699 | 0.2− | 0.9− | 2006 09 21 | 683 | 1.2− | 1.3− | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2006 08 29 | 699 | 0.1+ | 0.3+ | 2006 09 22 | 683 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2006 08 29 | 699 | (1.7− | 0.0 ) | 2006 09 22 | 683 | 0.3− | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.4− |
| 2006 09 16 | 683 | 1.4+ | 0.3− | 2006 09 22 | 683 | 0.2− | 0.9− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 09 16 | 683 | 0.2+ | 0.6+ | 2006 09 23 | 104 | 0.7− | 0.7− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 16 | 683 | 0.0 | 1.2− | 2006 09 23 | 104 | 0.4+ | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.1+ |

**2006 SU = 1993 TG$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.89828 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22847162 | $\omega$ | 38.27981 | | +0.60716254 | −0.79250984 | |
| $a$ | 2.6500122 | $\Omega$ | 14.62907 | | +0.66162525 | +0.46432884 | |
| $e$ | 0.1949084 | $i$ | 13.11022 | | +0.44000646 | +0.39538193 | |
| $P$ | 4.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 809 | 0.5− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 1993 10 10 | 809 | 0.5− | 0.7− | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.1− |
| 1993 10 10 | 809 | 1.7− | 0.3+ | 2006 09 18 | 699 | 0.7− | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 1993 10 22 | 809 | (0.8+ | 2.6+) | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1993 10 22 | 809 | (2.6+ | 1.0+) | 2006 09 19 | 683 | 0.6− | 0.6− | 2006 10 17 | 703 | 1.1− | 0.2− |
| 1993 10 22 | 809 | 1.8+ | 1.6+ | 2006 09 19 | 683 | 0.2+ | 1.1− | 2006 10 17 | 703 | (1.9+ | 0.1−) |
| 2006 08 28 | 703 | (1.7− | 0.7+) | 2006 09 19 | 683 | 0.9− | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.2− |
| 2006 08 28 | 703 | 0.8− | 1.2+ | 2006 09 20 | 704 | (1.6− | 0.6+) | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 09 20 | 704 | 1.2+ | 0.0 | 2006 10 19 | 704 | (0.8+ | 1.7+) |
| 2006 08 28 | 703 | (1.9+ | 2.3+) | 2006 09 20 | 704 | 0.3− | 0.9+ | 2006 10 19 | 704 | 0.4+ | 0.3+ |
| 2006 08 30 | 699 | 0.6− | 0.0 | 2006 09 20 | 704 | (1.6− | 2.7+) | 2006 10 19 | 704 | 0.9− | 0.5+ |
| 2006 08 30 | 699 | 0.5− | 0.4− | 2006 09 27 | 704 | 0.2+ | 0.8+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2006 08 30 | 699 | 0.1+ | 0.8+ | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2006 08 30 | 699 | 0.3− | 0.6+ | 2006 09 27 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.0 |
| 2006 09 14 | 703 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 09 14 | 703 | 0.7− | 0.3− | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2006 09 14 | 703 | 0.6+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 09 14 | 703 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 09 16 | 683 | 0.7+ | 1.0− | 2006 09 29 | 704 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 16 | 683 | (1.8− | 1.9−) | 2006 09 29 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 17 | 704 | 0.5+ | 0.5− | 2006 09 29 | 704 | 0.0 | 0.5− | 2006 10 26 | 704 | 1.2+ | 0.4+ |
| 2006 09 17 | 704 | 0.8+ | 0.9− | 2006 09 29 | 704 | 0.2− | 0.9− | 2006 10 26 | 704 | 1.1+ | 0.1− |
| 2006 09 17 | 704 | 1.0+ | 0.2− | 2006 09 29 | 704 | (0.0 | 1.5+) | 2006 10 26 | 704 | 0.5+ | 1.2− |
| 2006 09 17 | 704 | 0.2+ | 0.7− | 2006 10 03 | 704 | 0.5+ | 0.0 | 2006 10 29 | 704 | 0.5+ | 0.2− |
| 2006 09 17 | 683 | 0.4+ | 0.1− | 2006 10 03 | 704 | 0.3− | 0.1+ | 2006 10 29 | 704 | 0.7+ | 0.6+ |
| 2006 09 17 | 683 | 0.2+ | 0.2− | 2006 10 03 | 704 | 0.5+ | 0.9+ | 2006 10 29 | 704 | 0.3− | 0.5+ |
| 2006 09 18 | 683 | 0.9+ | 0.9+ | 2006 10 03 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.3+ |
| 2006 09 18 | 683 | 1.2+ | 1.0− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.1+ |
| 2006 09 18 | 683 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.6− | 0.1− |
| 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 2006 09 18 | 699 | 0.3− | 0.8− | 2006 10 12 | 644 | 0.5− | 0.0 | 2006 11 14 | 703 | 0.4− | 0.6− |
| 2006 09 18 | 699 | 0.2+ | 0.7− | 2006 10 12 | 644 | 0.5− | 0.0 | 2006 11 14 | 703 | 1.1− | 0.9− |

**2006 SJ$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.54441 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18349548 | $\omega$ | 230.43934 | | −0.05228470 | −0.99842113 | |
| $a$ | 3.0670379 | $\Omega$ | 222.57150 | | +0.92528286 | −0.04070007 | |
| $e$ | 0.1797396 | $i$ | 1.73918 | | +0.37565667 | −0.03871371 | |
| $P$ | 5.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.0 | 0.1+ | 2006 09 16 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 0.3+ | 0.3− |
| 2001 10 13 | 691 | 0.2− | 0.1− | 2006 09 16 | 691 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.1− | 0.2− |
| 2001 10 13 | 691 | 0.3+ | 0.0 | 2006 09 16 | 691 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2006 08 21 | 691 | 0.3+ | 0.1− | 2006 09 17 | 703 | 0.3+ | 1.0− | 2006 09 28 | 691 | 0.1− | 0.2+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 08 21 | 691 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.0 | 0.9+ | |
| 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.5− | |

### 2006 SU$_1$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.02753 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26048289 | $\omega$ | 204.23132 | | +0.92406198 | −0.38218795 | |
| $a$ | 2.4281933 | $\Omega$ | 178.19992 | | +0.37563598 | +0.90482847 | |
| $e$ | 0.1622858 | $i$ | 11.88105 | | +0.07076062 | +0.18766410 | |
| $P$ | 3.78 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 12 | 704 | 1.2− | 0.4− | 2006 09 20 | 704 | 0.5+ | 0.3− | 2006 09 30 | 704 | (0.5+ | 3.1+) | |
| 2002 08 12 | 704 | 0.0 | 0.3− | 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 09 30 | 704 | 0.1− | 1.1+ | |
| 2002 08 12 | 704 | 0.3− | 0.3+ | 2006 09 20 | 644 | 0.9+ | 0.0 | 2006 09 30 | 704 | 0.8− | 0.2+ | |
| 2002 08 12 | 704 | (3.5+ | 0.6+) | 2006 09 20 | 644 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2− | |
| 2002 08 25 | 644 | 0.4+ | 0.1+ | 2006 09 26 | 704 | (0.3− | 3.4−) | 2006 09 30 | 704 | 0.0 | 0.3+ | |
| 2002 08 25 | 644 | 0.5+ | 0.2+ | 2006 09 26 | 704 | (2.7+ | 0.1+) | 2006 09 30 | G96 | 0.2− | 0.4− | |
| 2002 08 25 | 644 | 0.6+ | 0.1+ | 2006 09 26 | 704 | (1.9− | 1.2−) | 2006 09 30 | G96 | 0.3+ | 0.2− | |
| 2006 09 06 | 644 | 0.2− | 0.3− | 2006 09 26 | 704 | (1.7+ | 1.6−) | 2006 09 30 | G96 | 1.1− | 0.1− | |
| 2006 09 06 | 644 | 0.2+ | 0.4− | 2006 09 26 | 704 | 0.5+ | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.2+ | |
| 2006 09 06 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 09 | 644 | 0.2− | 0.1− | |
| 2006 09 16 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 09 | 644 | 0.4− | 0.0 | |
| 2006 09 16 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.7− | 2006 10 09 | 644 | 0.2− | 0.3+ | |
| 2006 09 16 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 09 | 644 | 0.2− | 0.2− | |
| 2006 09 17 | 704 | 0.7− | 0.1− | 2006 09 27 | 704 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.4+ | |
| 2006 09 17 | 704 | 0.5− | 0.4+ | 2006 09 27 | 704 | 0.3+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.3+ | |
| 2006 09 17 | 704 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− | |
| 2006 09 17 | 704 | 0.8+ | 0.4+ | 2006 09 27 | 704 | 1.0+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.0 | |
| 2006 09 17 | 704 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.6− | 1.2+ | 2006 10 16 | 703 | 0.8+ | 0.3− | |
| 2006 09 20 | 704 | (0.8+ | 2.4+) | 2006 09 30 | 691 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.1− | 1.1− | |
| 2006 09 20 | 704 | 1.0+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.3− | |
| 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.4+ | |

### 2006 SZ$_1$ = 2001 UN$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.07059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18996743 | $\omega$ | 170.27781 | | +0.52240004 | −0.84098791 | |
| $a$ | 2.9969761 | $\Omega$ | 248.10673 | | +0.77178746 | +0.53656387 | |
| $e$ | 0.1958158 | $i$ | 8.73085 | | +0.36254975 | +0.06955971 | |
| $P$ | 5.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.4− | 1.0+ | 2006 09 17 | 703 | 1.2− | 0.2− | 2006 09 27 | 703 | 0.4− | 0.4− | |
| 2001 10 18 | 704 | 1.3+ | 0.0 | 2006 09 17 | 703 | 0.4+ | 0.9− | 2006 10 18 | 691 | 0.3+ | 0.1− | |
| 2001 10 18 | 704 | (1.9+ | 1.2−) | 2006 09 20 | G92 | 0.7+ | 0.3− | 2006 10 18 | 691 | 0.0 | 0.2− | |
| 2001 10 20 | 644 | 0.5− | 0.1− | 2006 09 20 | G92 | 0.3+ | 0.8+ | 2006 10 18 | 691 | 0.1+ | 0.3− | |
| 2001 10 20 | 644 | 0.6− | 0.3− | 2006 09 20 | G92 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.5− | |
| 2001 10 20 | 644 | 0.1+ | 0.3− | 2006 09 22 | 703 | 0.9− | 1.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | |
| 2006 09 16 | 703 | 0.7− | 0.3− | 2006 09 22 | 703 | (0.9+ | 1.7+) | 2006 10 20 | 691 | 0.0 | 0.4− | |
| 2006 09 16 | 703 | (0.2+ | 1.8−) | 2006 09 22 | 703 | 0.5+ | 1.4+ | 2006 10 28 | 291 | 0.1− | 0.2+ | |
| 2006 09 16 | 703 | (0.0 | 1.6−) | 2006 09 22 | 703 | (2.6− | 0.0 ) | 2006 10 28 | 291 | 0.1− | 0.3+ | |
| 2006 09 16 | 703 | 0.1− | 0.8− | 2006 09 27 | 703 | 0.4+ | 0.9− | 2006 10 28 | 291 | 0.1− | 0.5+ | |
| 2006 09 17 | 703 | 0.4+ | 1.2+ | 2006 09 27 | 703 | 0.5− | 0.0 | | | | | |
| 2006 09 17 | 703 | 0.3− | 0.3+ | 2006 09 27 | 703 | 0.9+ | 0.9+ | | | | | |

### 2006 SE$_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.11427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22896247 | $\omega$ | 206.46084 | | +0.90512066 | −0.42514375 | |
| $a$ | 2.6462235 | $\Omega$ | 178.68726 | | +0.40992762 | +0.87076888 | |
| $e$ | 0.2405282 | $i$ | 7.68672 | | +0.11276500 | +0.24701082 | |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 691 | 0.4+ | 0.5− | 2006 09 17 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.5+ | |
| 1993 09 14 | 691 | 0.0 | 0.4+ | 2006 09 18 | 699 | 0.2− | 1.3+ | 2006 09 30 | 704 | 0.8+ | 0.1+ | |
| 1993 09 14 | 691 | 0.3− | 0.1− | 2006 09 18 | 699 | 0.6+ | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.2− | |
| 2002 08 14 | 291 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.2− | |
| 2002 08 14 | 291 | 0.6− | 0.2− | 2006 09 18 | 699 | 0.9+ | 0.2+ | 2006 09 30 | 704 | 0.4+ | 0.7+ | |
| 2002 08 14 | 291 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.5+ | 0.4− | 2006 09 30 | G96 | 0.2− | 0.2− | |
| 2002 10 31 | 608 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.3− | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.3− | |
| 2002 10 31 | 608 | 0.1+ | 0.7− | 2006 09 20 | 704 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.4− | 0.1− | |
| 2002 10 31 | 608 | 0.2+ | 0.5− | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1+ | |
| 2002 12 14 | 704 | 0.4+ | 0.3− | 2006 09 20 | 704 | 0.7+ | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.0 | |
| 2002 12 14 | 704 | 0.5+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.1− | 1.2+ | |
| 2002 12 14 | 704 | 0.0 | 0.9+ | 2006 09 26 | 704 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.5+ | |
| 2002 12 14 | 704 | 0.3+ | 0.7− | 2006 09 26 | 704 | (0.6+ | 1.8+) | 2006 10 16 | 703 | 1.2− | 0.0 | |
| 2004 03 23 | 691 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.0 | 0.8− | 2006 10 16 | 703 | 1.0− | 0.0 | |
| 2004 03 23 | 691 | 0.0 | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.1+ | |
| 2004 03 23 | 691 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.2+ | |
| 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.1− | 0.1+ | |
| 2006 08 21 | 691 | 0.4− | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.3− | 0.0 | |
| 2006 08 21 | 691 | 0.2− | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.3− | 0.1+ | |
| 2006 08 28 | 703 | 0.9+ | 0.8− | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2+ | |
| 2006 08 28 | 703 | 0.4− | 0.6− | 2006 09 27 | 704 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.0 | |
| 2006 08 28 | 703 | 0.3− | 0.3− | 2006 09 27 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2006 08 28 | 703 | 0.1− | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2006 09 16 | 691 | 0.3+ | 0.1− | 2006 09 28 | 704 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1− | |
| 2006 09 16 | 691 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.3+ | |
| 2006 09 16 | 691 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.3− | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.0 | |
| 2006 09 17 | 704 | 0.0 | 1.4+ | 2006 09 30 | 691 | 0.2− | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.1+ | |
| 2006 09 17 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1+ | |
| 2006 09 17 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.0 | |
| 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 09 30 | 704 | 1.2+ | 0.8− | 2006 11 25 | G96 | 0.2+ | 0.1− | |

### 2006 SD$_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.70014 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27476144 | $\omega$ | 185.68316 | | +0.96991669 | +0.24210048 | |
| $a$ | 2.3433232 | $\Omega$ | 160.24978 | | −0.22027454 | +0.91736346 | |
| $e$ | 0.2625658 | $i$ | 4.32351 | | −0.10363759 | +0.31596146 | |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 10 | 704 | 0.3− | 0.5− | 2006 09 17 | 704 | 1.4+ | 0.5+ | 2006 09 28 | 691 | 0.3− | 0.1− | |
| 2002 06 10 | 704 | 0.2− | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.2+ | 2006 09 28 | 704 | 1.3− | 0.4− | |
| 2002 06 10 | 704 | 0.9− | 0.5− | 2006 09 17 | 608 | (0.7+ | 2.9+) | 2006 09 28 | 704 | 0.1+ | 0.5− | |
| 2002 07 03 | 644 | 0.5+ | 0.2+ | 2006 09 17 | 608 | (0.3+ | 3.2+) | 2006 09 30 | 704 | 1.2+ | 0.0 | |
| 2002 07 03 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 608 | (0.5− | 3.1+) | 2006 09 30 | 704 | 0.5+ | 0.2− | |
| 2002 07 03 | 644 | 0.7+ | 0.2− | 2006 09 18 | 699 | 0.1− | 0.6+ | 2006 09 30 | 704 | 0.3+ | 0.6+ | |
| 2006 08 22 | 644 | 0.6+ | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.2+ | 2006 09 30 | 704 | (1.8+ | 0.0 ) | |
| 2006 08 22 | 644 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.4+ | 0.3− | |
| 2006 08 22 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.5− | |
| 2006 09 13 | 644 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1− | |
| 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.0 | |
| 2006 09 13 | 644 | 0.0 | 0.1+ | 2006 09 22 | 704 | 0.5− | 0.3+ | 2006 10 17 | 106 | 0.3+ | 0.6− | |
| 2006 09 16 | 704 | 0.2+ | 0.9− | 2006 09 22 | 704 | 0.4− | 0.0 | 2006 10 17 | 106 | 0.8− | 1.4− | |
| 2006 09 16 | 704 | 0.1− | 0.5− | 2006 09 22 | 704 | 0.1− | 0.3+ | 2006 10 17 | 106 | 0.4+ | 0.3+ | |
| 2006 09 16 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.0 | 1.2− | 2006 10 17 | 106 | 0.2+ | 0.1− | |
| 2006 09 16 | 704 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.2+ | |
| 2006 09 17 | 704 | 0.6+ | 0.5+ | 2006 09 28 | 691 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.3+ | |
| 2006 09 17 | 704 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.1− | 1.1− | 2006 11 23 | G96 | 0.0 | 0.1+ | |
| 2006 09 17 | 704 | 0.6+ | 0.6+ | 2006 09 28 | 704 | 0.2+ | 0.5− | 2006 11 23 | G96 | 0.1+ | 0.1+ | |

**2006 $SE_3$ = 2004 $BA_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.57496 | | (2000.0) | | | |
| $n$ | 0.21561803 | $\omega$ | 20.29584 | | +0.99139584 | −0.12333940 |
| $a$ | 2.7543091 | $\Omega$ | 346.56314 | | +0.07798444 | +0.82550633 |
| $e$ | 0.2828602 | $i$ | 10.87396 | | +0.10513194 | +0.55075102 |
| $P$ | 4.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 21 | 309 | 0.0 | 0.1+ | 2006 09 17 | 704 | 0.2+ | 0.7+ | 2006 09 25 | 704 | 0.7− | 0.5− |
| 2004 01 21 | 309 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.4− | 2006 09 25 | 699 | 0.3− | 0.1− |
| 2004 01 22 | 309 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.3− | 1.0+ |
| 2004 01 22 | 309 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.9− | 0.8− |
| 2006 08 06 | 699 | 1.0− | 1.3− | 2006 09 19 | 703 | 0.6+ | 0.7− | 2006 09 30 | 704 | 0.1+ | 0.4− |
| 2006 08 06 | 699 | 0.3+ | 0.7+ | 2006 09 20 | 704 | 0.9+ | 0.4+ | 2006 09 30 | 704 | (1.6+ | 0.2+) |
| 2006 08 06 | 699 | 0.4+ | 0.3− | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.1+ |
| 2006 08 06 | 699 | 0.1+ | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2006 08 27 | 699 | 0.4+ | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.6+ | 0.0 |
| 2006 08 27 | 699 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.2− | 2006 10 10 | 644 | 0.4+ | 0.3− |
| 2006 08 27 | 699 | 0.2+ | 1.0− | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.8− |
| 2006 08 27 | 699 | 0.6− | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2006 09 16 | 699 | 0.8− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.2− | 1.0− |
| 2006 09 16 | 699 | 0.2− | 0.6+ | 2006 09 25 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2006 09 16 | 699 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2006 09 17 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 699 | (1.7− | 0.3+) | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 17 | 704 | 0.6+ | 0.6+ | 2006 09 25 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 17 | 704 | 0.2− | 0.8+ | 2006 09 25 | 704 | 0.2+ | 0.5+ | | | | |
| 2006 09 17 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.2− | 0.4+ | | | | |

**2006 $SF_3$ = 2005 $GF_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.07671 | | (2000.0) | | | |
| $n$ | 0.26084987 | $\omega$ | 342.85986 | | +0.89679872 | +0.44213625 |
| $a$ | 2.4259153 | $\Omega$ | 350.84838 | | −0.39291888 | +0.77888397 |
| $e$ | 0.1168138 | $i$ | 5.90332 | | −0.20338831 | +0.44480929 |
| $P$ | 3.78 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.0 | 0.3+ | 2006 09 17 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 1.0− | 0.0 |
| 2003 12 18 | 691 | 0.2+ | 0.2+ | 2006 09 17 | 704 | 0.1− | 0.7+ | 2006 09 25 | 699 | 0.1+ | 0.6+ |
| 2003 12 18 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.2+ | 0.7+ |
| 2005 04 06 | 691 | 0.0 | 0.4+ | 2006 09 17 | 704 | 1.3+ | 0.8− | 2006 09 25 | 699 | 0.1+ | 0.4+ |
| 2005 04 06 | 691 | 0.1− | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.0 | 2006 10 01 | 703 | 0.7− | 0.5− |
| 2005 04 06 | 691 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.7+ | 1.0+ | 2006 10 01 | 703 | 0.4− | 1.2− |
| 2005 04 10 | 691 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 10 01 | 703 | 0.0 | 0.3− |
| 2005 04 10 | 691 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.2− | 0.8− | 2006 10 01 | 703 | 0.2+ | 0.5+ |
| 2005 04 10 | 691 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | (0.1− | 2.1+) | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2005 04 15 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 704 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2005 04 15 | 691 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.5+ | 0.3+ | 2006 11 14 | G96 | (1.9− | 0.8−) |
| 2006 09 16 | 699 | 0.5− | 0.6+ | 2006 09 20 | 704 | (1.7+ | 1.0+) | 2006 11 14 | G96 | 0.6− | 0.4− |
| 2006 09 16 | 699 | 0.6− | 0.6+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.4− | 0.8− |
| 2006 09 16 | 699 | 0.1− | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.5− | 1.0− |
| 2006 09 16 | 699 | 0.0 | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.2+ | | | | |

**2006 $SG_3$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.87239 | | (2000.0) | | | |
| $n$ | 0.22570571 | $\omega$ | 356.88188 | | +0.97423922 | +0.22167785 |
| $a$ | 2.6716180 | $\Omega$ | 350.01558 | | −0.20139294 | +0.77253049 |
| $e$ | 0.0609960 | $i$ | 13.82660 | | −0.10148313 | +0.59502568 |
| $P$ | 4.37 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.2+ | 0.3− | 2006 09 12 | 703 | (2.5+ | 2.2−) | 2006 09 19 | 703 | (0.6+ | 2.2−) |
| 2002 11 25 | 644 | 0.1− | 0.3− | 2006 09 16 | 699 | 0.6+ | 0.5− | 2006 10 01 | 703 | 0.5+ | 0.2+ |
| 2002 11 25 | 644 | 0.2+ | 0.1+ | 2006 09 16 | 699 | 1.1+ | 0.2+ | 2006 10 01 | 703 | 1.3+ | 0.9− |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 09 16 | 699 | 0.7− | 0.7+ | 2006 10 01 | 703 | 1.2− | 0.5+ |
| 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.3+ | 0.9+ | 2006 10 01 | 703 | 0.6− | 0.3+ |
| 2004 02 13 | 691 | 0.5+ | 0.3+ | 2006 09 17 | 704 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 1.5+ |
| 2006 08 28 | 691 | 0.1− | 0.1− | 2006 09 17 | 704 | 0.9− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2006 08 28 | 691 | 0.1+ | 0.2− | 2006 09 17 | 704 | 0.5− | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2006 08 28 | 691 | 0.4− | 0.1− | 2006 09 17 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.8− | 1.0− |
| 2006 09 12 | 703 | 0.5− | 0.8− | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 10 17 | 691 | 0.5+ | 0.2+ |
| 2006 09 12 | 703 | 1.1+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.7− | 2006 10 17 | 691 | 0.1+ | 0.3+ |
| 2006 09 12 | 703 | 0.1− | 0.5− | 2006 09 19 | 703 | 0.0 | 0.9− | 2006 10 17 | 691 | 0.5+ | 0.2+ |

**2006 $SS_3$ = 2005 $MD_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 355.45965 | | (2000.0) | | | |
| $n$ | 0.21719478 | $\omega$ | 200.91735 | | +0.94690406 | −0.32143520 |
| $a$ | 2.7409627 | $\Omega$ | 177.79380 | | +0.31515056 | +0.92347652 |
| $e$ | 0.1724892 | $i$ | 10.80852 | | +0.06366177 | +0.20945291 |
| $P$ | 4.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.1− | 1.0− | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.8+ | 0.0 |
| 2001 08 25 | 704 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 08 25 | 704 | 0.4+ | 1.1− | 2006 09 18 | 699 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 08 25 | 704 | 0.2+ | 0.5− | 2006 09 18 | 699 | 0.3− | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2004 03 17 | 691 | 0.5+ | 0.4+ | 2006 09 18 | 699 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.4− |
| 2004 03 17 | 691 | 0.4+ | 0.6+ | 2006 09 22 | 704 | 0.0 | 1.1+ | 2006 10 16 | 703 | 0.5+ | 0.3− |
| 2004 03 17 | 691 | 0.5+ | 0.3+ | 2006 09 22 | 704 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.2+ | 1.1+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2004 04 22 | 691 | 0.3− | 0.0 | 2006 09 22 | 704 | 0.6− | 1.0+ | 2006 10 16 | 461 | 0.1+ | 0.0 |
| 2004 04 22 | 691 | 0.7− | 0.4+ | 2006 09 25 | 699 | (2.0+ | 1.3+) | 2006 10 16 | 461 | 0.1− | 0.0 |
| 2005 06 15 | 691 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.4− | 0.2+ | 2006 10 16 | 461 | 0.1− | 0.0 |
| 2005 06 15 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.5− | 0.3+ | 2006 10 16 | 461 | 0.0 | 0.0 |
| 2005 06 15 | 691 | 0.4− | 0.3+ | 2006 09 25 | 699 | 1.0+ | 0.5− | 2006 10 16 | 461 | 0.1+ | 0.1− |
| 2005 06 30 | 691 | 0.2− | 0.2+ | 2006 09 29 | H06 | 0.5+ | 1.0+ | 2006 10 16 | 461 | 0.0 | 0.1− |
| 2005 06 30 | 691 | 0.6− | 0.2+ | 2006 09 29 | H06 | 0.1+ | 0.5− | 2006 10 17 | 461 | 0.1− | 0.1+ |
| 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 09 29 | H06 | 1.2− | 1.1− | 2006 10 17 | 461 | 0.1− | 0.1+ |
| 2005 07 04 | 691 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.7− | 0.1+ | 2006 10 17 | 461 | 0.0 | 0.1− |
| 2005 07 04 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.2− | 2006 10 17 | 461 | 0.1+ | 0.0 |
| 2005 07 04 | 691 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.2+ | 2006 10 17 | 461 | 0.1+ | 0.0 |
| 2006 07 22 | G96 | 0.3+ | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 07 22 | G96 | 0.6+ | 0.2− | 2006 10 01 | 704 | 0.6+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2006 07 22 | G96 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2006 07 22 | G96 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.9+ | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.6− | 0.3+ |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 10 01 | 704 | 1.3− | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.7+ |
| 2006 09 16 | 704 | 0.3+ | 1.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2006 09 16 | 704 | 0.6+ | 0.6− | 2006 10 10 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.3− |
| 2006 09 16 | 704 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.3− |
| 2006 09 16 | 704 | (1.7+ | 0.3−) | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2006 09 16 | 704 | 0.2+ | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.2+ |
| 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.3+ | 0.2+ |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.1+ |

**2006 $SV_3$ = 2006 $QO_{166}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.49476 | | (2000.0) | | | |
| $n$ | 0.26389284 | $\omega$ | 10.81402 | | +0.97838199 | +0.20210324 |
| $a$ | 2.4072303 | $\Omega$ | 337.38184 | | −0.19723246 | +0.84810431 |
| $e$ | 0.1232673 | $i$ | 6.54724 | | −0.06219360 | +0.48976869 |
| $P$ | 3.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | (2.1+ | 0.6−) | 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 09 27 | 699 | (1.6− | 0.3−) |
| 2002 08 18 | 644 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.8+ | 0.7+ | 2006 09 27 | 699 | 0.9− | 1.0+ |
| 2002 08 18 | 644 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.8+ | 2006 09 27 | 699 | 0.2− | 0.0 |
| 2002 08 29 | 644 | 0.8+ | 0.8+ | 2006 09 17 | 703 | 0.4+ | 1.1+ | 2006 09 27 | 703 | 0.7− | 0.1− |
| 2002 08 29 | 644 | 0.3+ | 0.9+ | 2006 09 18 | 703 | (1.2− | 2.6−) | 2006 09 27 | 703 | 1.2− | 0.9− |
| 2002 08 29 | 644 | 0.1+ | 0.9+ | 2006 09 18 | 703 | 0.6− | 0.5− | 2006 09 27 | 703 | 0.6− | 0.5− |
| 2002 09 04 | 644 | 0.4− | 1.0− | 2006 09 18 | 703 | 0.6+ | 0.3− | 2006 09 27 | 703 | 0.6+ | 0.4− |
| 2002 09 04 | 644 | 0.7− | 1.0− | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 2002 09 04 | 644 | 0.2− | 0.7− | 2006 09 18 | 704 | 0.6+ | 1.0+ | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2006 07 22 | G96 | 0.1− | 0.2− | 2006 09 18 | 704 | 0.1− | 1.3+ | 2006 10 02 | G96 | 0.4− | 0.5− |
| 2006 07 22 | G96 | 0.0 | 0.4− | 2006 09 18 | 704 | 1.1+ | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2006 07 22 | G96 | 1.0− | 0.2+ | 2006 09 18 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 703 | (2.4− | 1.3+) |
| 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 09 19 | 699 | (1.8− | 0.2−) | 2006 10 17 | 703 | (0.5− | 2.1−) |
| 2006 08 29 | 699 | 0.6− | 0.1− | 2006 09 19 | 699 | 0.2− | 0.2− | 2006 10 17 | 703 | (2.3− | 0.3+) |
| 2006 08 29 | 699 | 0.2+ | 0.4− | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.7− |
| 2006 08 29 | 699 | 0.5+ | 0.9+ | 2006 09 19 | 699 | 0.4+ | 0.5− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2006 08 29 | 699 | 0.7+ | 0.5+ | 2006 09 26 | 683 | (2.7− | 0.6+) | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2006 09 16 | 703 | 0.4+ | 1.0− | 2006 09 26 | 683 | (2.0− | 1.5+) | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2006 09 16 | 703 | 0.1− | 0.8− | 2006 09 26 | 683 | (1.7− | 1.5+) | | | | |
| 2006 09 16 | 703 | 0.5− | 0.5− | 2006 09 27 | 699 | 0.1− | 0.1− | | | | |

### 2006 $SX_3$ = 2004 $CY_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.84271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26148921 | $\omega$ | 90.50339 | | +0.37991198 | −0.92409482 | |
| $a$ | 2.4219594 | $\Omega$ | 337.03177 | | +0.80086528 | +0.35099785 | |
| $e$ | 0.1390848 | $i$ | 6.09319 | | +0.46290571 | +0.15115974 | |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 644 | (0.9− | 1.7+) | 2004 03 18 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 704 | 0.9− | 0.1+ |
| 2002 09 04 | 644 | (0.8− | 1.7+) | 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.2+ | 0.2− |
| 2002 09 04 | 644 | 0.8− | 1.5+ | 2006 09 16 | 703 | 0.8+ | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.4− |
| 2004 01 22 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.4+ | 2006 09 27 | 703 | (1.7− | 0.1−) |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 703 | 0.6− | 0.7+ | 2006 09 27 | 703 | 0.2− | 0.9+ |
| 2004 01 22 | 704 | 0.4+ | 0.7+ | 2006 09 16 | 703 | 0.4+ | 1.0− | 2006 09 27 | 703 | 0.2− | 0.2− |
| 2004 01 22 | 704 | 0.2− | 0.2− | 2006 09 17 | 703 | 0.6− | 1.2+ | 2006 09 27 | 703 | 0.3− | 0.8− |
| 2004 02 11 | 291 | 0.1− | 0.0 | 2006 09 17 | 703 | 1.3+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2004 02 11 | 291 | 0.1− | 0.1+ | 2006 09 17 | 703 | 1.2+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2004 02 11 | 291 | 0.3− | 0.0 | 2006 09 17 | 703 | 1.0− | 1.5+ | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | (6.2+ | 0.2−) | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2004 02 12 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 1.4− | 2006 10 17 | 703 | 1.1+ | 0.7+ |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.9− |
| 2004 02 25 | 704 | 1.2− | 1.2− | 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.5− | 0.8− |
| 2004 02 25 | 704 | 0.0 | 1.3− | 2006 09 19 | 699 | 0.8− | 0.2+ | 2006 10 17 | 703 | 1.4− | 0.2− |
| 2004 02 25 | 704 | 0.0 | 0.5+ | 2006 09 19 | 699 | 1.0+ | 0.1− | 2006 10 20 | 644 | 0.6+ | 0.2+ |
| 2004 02 25 | 704 | (0.2− | 1.6+) | 2006 09 19 | 699 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2004 03 18 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.8+ |

### 2006 $SZ_3$ = 2005 $EV_{262}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.51127 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29934490 | $\omega$ | 302.97662 | | +0.25487056 | +0.96631704 | |
| $a$ | 2.2132041 | $\Omega$ | 341.68834 | | −0.84498368 | +0.20462953 | |
| $e$ | 0.1252479 | $i$ | 6.51898 | | −0.47015272 | +0.15607090 | |
| $P$ | 3.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 691 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.8− | 0.4+ | 2006 09 25 | 291 | 0.3− | 0.3+ |
| 2003 11 20 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.8+ | 0.9+ | 2006 09 26 | 291 | 0.2− | 0.3− |
| 2003 11 20 | 691 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.5− | 0.8+ | 2006 09 26 | 291 | 0.1− | 0.1− |
| 2003 12 17 | 691 | 0.7− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 09 26 | 291 | 0.1− | 0.0 |
| 2003 12 17 | 691 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | (0.4− | 1.9−) |
| 2003 12 17 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.4− |
| 2003 12 29 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.1− | 0.6+ | 2006 09 30 | 703 | 1.3+ | 1.3− |
| 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.0 | 0.7− |
| 2003 12 29 | 691 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.3+ | 1.3+ | 2006 10 03 | G96 | 0.1− | 0.3− |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 703 | (1.7− | 0.4−) | 2006 10 03 | G96 | 0.2+ | 0.4− |
| 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2005 03 13 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | (0.5− | 1.6+) | 2006 10 03 | G96 | 0.2+ | 0.5− |
| 2005 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.5+ | 1.0+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 03 17 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 1.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 03 17 | 691 | 0.2− | 0.2+ | 2006 09 25 | 291 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2006 09 16 | 703 | 1.0+ | 0.2+ | 2006 09 25 | 291 | 0.3− | 0.2+ | | | | |

### 2006 $SB_4$ = 2001 $UG_{27}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.67658 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19204756 | $\omega$ | 129.54806 | | +0.96844801 | −0.20724631 | |
| $a$ | 2.9752960 | $\Omega$ | 242.81729 | | +0.15268545 | +0.93235635 | |
| $e$ | 0.2107869 | $i$ | 8.95131 | | +0.19696598 | +0.29624417 | |
| $P$ | 5.13 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 644 | 0.2− | 0.4− | 2006 09 16 | 703 | 1.2− | 0.8− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2001 10 17 | 644 | 0.3− | 0.4− | 2006 09 17 | 703 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2001 10 17 | 644 | 0.4− | 0.9− | 2006 09 17 | 703 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2001 10 20 | 644 | 0.4+ | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.2+ | 2006 10 18 | 291 | 0.0 | 0.2+ |
| 2001 10 20 | 644 | 0.3+ | 0.7+ | 2006 09 17 | 703 | 0.9− | 0.5− | 2006 10 18 | 291 | 0.0 | 0.1+ |
| 2001 10 20 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 703 | (2.1+ | 0.4−) | 2006 10 18 | 291 | 0.3+ | 0.2+ |
| 2006 09 16 | 703 | (0.5+ | 1.9−) | 2006 09 27 | 703 | 0.9+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2006 09 16 | 703 | 0.0 | 0.5− | 2006 09 27 | 703 | (3.4+ | 0.3+) | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2006 09 16 | 703 | 0.5+ | 0.3+ | 2006 09 27 | 703 | 1.1+ | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.2− |

### 2006 $SD_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.65203 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26833943 | $\omega$ | 73.31846 | | +0.99179713 | −0.10346372 | |
| $a$ | 2.3805632 | $\Omega$ | 292.56968 | | +0.06203330 | +0.90302588 | |
| $e$ | 0.1535349 | $i$ | 4.66233 | | +0.11176012 | +0.41694068 | |
| $P$ | 3.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.3+ | 0.4+ | 2004 02 16 | 691 | 0.2− | 0.2+ | 2006 09 20 | 703 | 0.2+ | 0.6+ |
| 2002 08 06 | 644 | 0.4+ | 0.1− | 2006 08 29 | 699 | 0.5− | 0.8+ | 2006 09 20 | 703 | 0.2+ | 0.4+ |
| 2002 08 06 | 644 | 0.1+ | 0.2+ | 2006 08 29 | 699 | 1.1+ | 0.6− | 2006 09 20 | 703 | 0.3− | 0.1+ |
| 2002 08 13 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 699 | 0.3− | 0.5+ | 2006 09 27 | 703 | 0.1+ | 0.0 |
| 2002 08 13 | 644 | 0.4− | 0.2+ | 2006 08 29 | 699 | 1.4+ | 0.8+ | 2006 09 27 | 703 | 0.1− | 0.2− |
| 2002 08 13 | 644 | 0.6− | 0.2+ | 2006 09 16 | 703 | 0.2+ | 0.9− | 2006 09 27 | 703 | 0.0 | 0.1+ |
| 2003 12 21 | 691 | 0.0 | 0.3+ | 2006 09 16 | 703 | 0.3+ | 0.5+ | 2006 09 27 | 703 | 0.3+ | 0.2− |
| 2003 12 21 | 691 | 0.1+ | 0.2− | 2006 09 16 | 703 | (0.2+ | 2.9−) | 2006 10 03 | 703 | 0.1+ | 0.7+ |
| 2003 12 21 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 1.3− | 1.0− | 2006 10 03 | 703 | 0.0 | 0.5− |
| 2004 01 15 | 691 | 0.3− | 0.2+ | 2006 09 17 | 703 | 0.5+ | 0.2+ | 2006 10 03 | 703 | 1.0+ | 0.5+ |
| 2004 01 15 | 691 | 0.2+ | 0.2− | 2006 09 17 | 703 | 1.0− | 0.2+ | 2006 10 03 | 703 | 1.1− | 1.2− |
| 2004 01 15 | 691 | 0.5− | 0.4− | 2006 09 17 | 703 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2004 02 16 | 691 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.4+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.4− |
| 2004 02 16 | 691 | 0.5+ | 0.2− | 2006 09 20 | 703 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ |

### 2006 $SE_4$ = 2001 $WR_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.80191 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18184044 | $\omega$ | 105.17656 | | +0.78755434 | +0.60848471 | |
| $a$ | 3.0856197 | $\Omega$ | 217.49182 | | −0.60880722 | +0.74374510 | |
| $e$ | 0.1740324 | $i$ | 9.21714 | | −0.09545641 | +0.27674822 | |
| $P$ | 5.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1+ | 1.3+ | 2006 09 17 | 703 | 0.4− | 0.1− | 2006 09 27 | 703 | (0.4− | 2.1−) |
| 2001 11 20 | 704 | 1.0+ | 0.3− | 2006 09 17 | 703 | 0.8+ | 0.6+ | 2006 09 27 | 703 | 0.6− | 0.5− |
| 2001 11 20 | 704 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.8+ | 0.1− | 2006 09 27 | 703 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.1− | 0.8+ | 2006 09 27 | 703 | 0.8− | 1.1− |
| 2001 11 20 | 704 | 0.7+ | 0.0 | 2006 09 20 | 703 | (2.0+ | 0.2−) | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2006 09 20 | 703 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 11 21 | 704 | 1.3− | 0.7− | 2006 09 20 | 703 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.2+ | 0.7− | 2006 09 20 | 703 | 0.5− | 1.3+ | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2006 09 16 | 703 | 0.2+ | 0.4− | 2006 09 27 | 699 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2006 09 16 | 703 | 0.7− | 0.5− | 2006 09 27 | 699 | 0.6+ | 0.4− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2006 09 16 | 703 | 0.2− | 0.4− | 2006 09 27 | 699 | 0.8+ | 1.2+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2006 09 16 | 703 | 0.1− | 0.9− | 2006 09 27 | 699 | (0.2+ | 3.3+) | | | | |

**2006 $SF_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.34140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21410173 | $\omega$ | 349.74989 | | +0.46464725 | | +0.88199608 |
| $a$ | 2.7672981 | $\Omega$ | 307.89227 | | −0.80520926 | | +0.38389267 |
| $e$ | 0.2310333 | $i$ | 5.71972 | | −0.36843042 | | +0.27333010 |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 07 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.1− | 2006 09 24 | 246 | 0.1− | 0.3+ |
| 1995 02 07 | 691 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.7− | 0.8− | 2006 09 24 | 246 | 0.2+ | 0.1− |
| 1995 02 07 | 691 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 09 25 | 704 | 0.2+ | 0.2− |
| 1995 03 01 | 691 | (0.4− | 3.7−) | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.5+ |
| 1995 03 01 | 691 | 0.8− | 0.2− | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 09 25 | 704 | 0.0 | 0.7− |
| 1995 03 01 | 691 | 0.1+ | 0.7− | 2006 09 17 | 703 | 0.4+ | 0.6+ | 2006 09 25 | 704 | 0.8− | 1.0− |
| 2001 07 10 | 644 | 0.3− | 0.0 | 2006 09 18 | 704 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.3− | 0.1+ |
| 2001 07 10 | 644 | 0.4− | 0.0 | 2006 09 18 | 704 | 0.2− | 0.2− | 2006 09 27 | 699 | 0.2+ | 0.3+ |
| 2001 07 10 | 644 | 0.2− | 0.1− | 2006 09 18 | 704 | 0.0 | 0.4+ | 2006 09 27 | 699 | 0.1− | 0.2− |
| 2001 07 31 | 644 | 0.4+ | 0.4+ | 2006 09 18 | 704 | 0.9− | 0.8+ | 2006 09 27 | 699 | 0.1+ | 1.1+ |
| 2001 07 31 | 644 | 0.0 | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.1− | 2006 09 27 | 699 | 0.1− | 1.0+ |
| 2001 07 31 | 644 | 0.4+ | 0.6+ | 2006 09 20 | 703 | 0.1− | 0.7+ | 2006 09 27 | 703 | 0.1+ | 0.5− |
| 2004 01 30 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 703 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.2+ | 0.2+ |
| 2004 01 30 | 691 | 0.3+ | 0.5+ | 2006 09 20 | 703 | 0.2− | 0.5− | 2006 09 27 | 703 | 0.2+ | 0.5+ |
| 2004 01 30 | 691 | 0.3+ | 0.4+ | 2006 09 24 | 246 | 1.0− | 0.5− | 2006 09 27 | 703 | 0.7− | 0.2− |
| 2005 05 01 | 644 | 0.1− | 0.4+ | 2006 09 24 | 246 | 0.7+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2005 05 01 | 644 | 0.2+ | 0.7+ | 2006 09 24 | 246 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2005 05 01 | 644 | 0.5+ | 0.7+ | 2006 09 24 | 246 | 0.6+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2006 08 29 | 703 | 0.4+ | 0.5+ | 2006 09 24 | 246 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 2006 08 29 | 703 | 0.3+ | 0.2+ | 2006 09 24 | 246 | 0.3− | 0.3− | 2006 10 17 | 703 | 1.0− | 0.3− |
| 2006 08 29 | 703 | 0.3− | 0.6− | 2006 09 24 | 246 | 0.7+ | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.1+ |
| 2006 08 29 | 703 | 0.1+ | 0.6+ | 2006 09 24 | 246 | 0.3+ | 0.7− | 2006 10 17 | 703 | 0.2+ | 0.5− |
| 2006 08 29 | 699 | 0.3+ | 1.1+ | 2006 09 24 | 246 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 2006 08 29 | 699 | 0.2− | 0.9+ | 2006 09 24 | 246 | 0.5− | 0.5− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2006 08 29 | 699 | 0.3+ | 0.4− | 2006 09 24 | 246 | 0.2+ | 0.6− | 2006 10 22 | 644 | 0.7+ | 0.2+ |
| 2006 08 29 | 699 | 0.2− | 0.3+ | 2006 09 24 | 246 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2006 09 16 | 703 | 0.5+ | 0.9− | 2006 09 24 | 246 | 0.5+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 09 24 | 246 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.4+ |

**2006 $SH_4$ = 2003 $YP_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.46283 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27279615 | $\omega$ | 68.08139 | | +0.91387917 | | −0.39884010 |
| $a$ | 2.3545643 | $\Omega$ | 315.32865 | | +0.32118417 | | +0.82452083 |
| $e$ | 0.1278968 | $i$ | 6.19266 | | +0.24832558 | | +0.40136264 |
| $P$ | 3.61 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.6− | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.1− | 2006 09 27 | 699 | 0.2+ | 0.1− |
| 2003 12 21 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.7+ | 0.7+ | 2006 10 09 | 644 | 0.3+ | 0.3− |
| 2003 12 21 | 691 | 0.1− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 10 09 | 644 | 0.8+ | 0.1+ |
| 2003 12 22 | 704 | 0.1+ | 0.7− | 2006 09 19 | 699 | 1.2+ | 0.4+ | 2006 10 09 | 644 | 0.3+ | 0.3+ |
| 2003 12 22 | 704 | 1.1+ | 1.1− | 2006 09 19 | 699 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.8− | 1.4− |
| 2003 12 22 | 704 | 0.6+ | 1.3− | 2006 09 20 | 703 | 0.1− | 1.3+ | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.8+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 0.5− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 09 20 | 703 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.9− |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2006 09 16 | 703 | 0.5− | 0.7− | 2006 09 24 | 106 | (1.7+ | 0.1−) | 2006 10 23 | 644 | 0.2+ | 0.4+ |
| 2006 09 16 | 703 | 0.6− | 1.1− | 2006 09 24 | 106 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2006 09 16 | 703 | 0.2− | 0.5− | 2006 09 24 | 106 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2006 09 16 | 703 | 1.0− | 0.3− | 2006 09 24 | 106 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 09 27 | 699 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2006 09 17 | 703 | 1.0− | 0.4− | 2006 09 27 | 699 | (1.9− | 0.3−) | | | | |
| 2006 09 17 | 703 | 0.2− | 0.7+ | 2006 09 27 | 699 | 0.5− | 0.4+ | | | | |

**2006 $SN_4$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.71965 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21878929 | $\omega$ | 56.07543 | | +0.84092448 | | −0.53605075 |
| $a$ | 2.7276293 | $\Omega$ | 336.08124 | | +0.41623489 | | +0.72825445 |
| $e$ | 0.0525330 | $i$ | 10.53546 | | +0.34582443 | | +0.42696025 |
| $P$ | 4.50 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.3+ | 0.2+ | 2006 09 17 | 703 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2001 08 24 | 644 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.7− | 1.2+ | 2006 10 19 | 703 | 0.5+ | 0.1+ |
| 2001 08 24 | 644 | 0.2− | 0.0 | 2006 09 18 | 703 | (1.9+ | 3.2−) | 2006 10 19 | 703 | 0.7+ | 0.2− |
| 2004 03 28 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.6+ | 0.6− | 2006 10 19 | 703 | 1.2− | 0.3− |
| 2004 03 28 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 10 19 | 703 | 0.1+ | 0.6− |
| 2004 03 28 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2006 09 16 | 703 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.3− | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2006 09 16 | 703 | 0.1− | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2006 09 16 | 703 | 0.1+ | 0.6− | 2006 09 28 | 703 | 0.1− | 1.1+ | 2006 10 27 | 703 | 0.8− | 0.2− |
| 2006 09 16 | 703 | 0.4− | 1.6+ | 2006 09 28 | 703 | 1.0+ | 0.3− | 2006 10 27 | 703 | 0.3− | 0.7− |
| 2006 09 17 | 703 | 0.1− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 2006 09 17 | 703 | 0.0 | 1.1+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.8− |

**2006 $SO_4$ = 2003 $AH_{31}$ = 2004 $EK_{108}$ = 2005 $LO_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.76500 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22372211 | $\omega$ | 164.20317 | | +0.94938949 | | −0.31385358 |
| $a$ | 2.6873864 | $\Omega$ | 214.09651 | | +0.28571982 | | +0.87941613 |
| $e$ | 0.2168464 | $i$ | 1.27468 | | +0.13047518 | | +0.35794302 |
| $P$ | 4.41 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 11 | 691 | 0.6− | 0.0 | 2006 08 17 | 644 | 0.3+ | 0.6+ | 2006 09 29 | 704 | 0.0 | 0.1− |
| 1999 01 11 | 691 | (5.6− | 1.8+) | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.8+ |
| 1999 01 11 | 691 | 0.4− | 0.8− | 2006 08 17 | 644 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.8− | 0.2+ |
| 2002 12 31 | 704 | 0.5+ | 0.4+ | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.6+ |
| 2002 12 31 | 704 | 0.2− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.9− |
| 2002 12 31 | 704 | 0.2+ | 0.8+ | 2006 09 16 | 644 | 0.4− | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.6− |
| 2002 12 31 | 704 | 0.7− | 0.6+ | 2006 09 17 | 704 | 1.0+ | 1.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2002 12 31 | 704 | 0.1− | 0.8+ | 2006 09 17 | 704 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 704 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2003 01 05 | 704 | 0.6+ | 0.6+ | 2006 09 17 | 704 | 0.6+ | 0.5− | 2006 10 17 | G96 | 0.6+ | 0.4− |
| 2003 01 05 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.1+ |
| 2003 01 05 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 703 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2003 01 05 | 704 | 0.1+ | 1.2+ | 2006 09 17 | 703 | 0.4− | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.4− |
| 2003 01 08 | 704 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2003 01 08 | 704 | 0.8+ | 0.7+ | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.5− |
| 2003 01 08 | 704 | 0.9+ | 0.4− | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2004 03 15 | 691 | 0.0 | 0.5+ | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 09 20 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2004 03 23 | 691 | 0.2+ | 0.4− | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2005 02 16 | 809 | 0.0 | 0.1− | 2006 09 22 | A50 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 02 16 | 809 | 0.2+ | 0.0 | 2006 09 22 | A50 | 1.0− | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2005 02 16 | 809 | 0.2+ | 0.1− | 2006 09 27 | 699 | 0.6− | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2005 06 06 | 691 | 0.4+ | 0.3− | 2006 09 27 | 699 | 0.7− | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2005 06 06 | 691 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 06 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.0 | 2006 11 21 | G96 | (1.8− | 0.3−) |
| 2005 06 13 | G96 | 0.5+ | 0.3+ | 2006 09 27 | 704 | 0.6− | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2005 06 13 | G96 | 0.4+ | 0.2+ | 2006 09 27 | 699 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2005 06 13 | G96 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2005 06 13 | G96 | 0.5− | 0.3+ | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 11 27 | 701 | 0.7+ | 0.6− |
| 2006 07 22 | G96 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.2+ | 2006 11 27 | 701 | 0.8+ | 0.2− |
| 2006 07 22 | G96 | 0.5− | 0.1− | 2006 09 29 | 704 | 0.1− | 0.5+ | 2006 11 27 | 701 | 0.1− | 0.5+ |
| 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 09 29 | 704 | 0.3− | 0.6+ | | | | |
| 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.3+ | 0.3+ | | | | |

**2006 $SP_4$ = 2000 $GE_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.76111 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23574858 | $\omega$ | 0.57695 | | +0.87375283 | | −0.48017649 |
| $a$ | 2.5951950 | $\Omega$ | 28.53282 | | +0.44558463 | | +0.72652047 |
| $e$ | 0.1924492 | $i$ | 9.32195 | | +0.19496236 | | +0.49152675 |
| $P$ | 4.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 06 | 704 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2000 04 06 | 704 | 0.5+ | 0.3+ | 2006 10 19 | 704 | 0.2− | 1.3+ | 2006 11 13 | 644 | 0.3+ | 0.1− |
| 2000 04 06 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2000 04 06 | 704 | 0.3− | 0.8+ | 2006 10 19 | 703 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.4− | 1.0+ |
| 2000 04 06 | 691 | 0.0 | 0.1+ | 2006 10 19 | 704 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.4+ | 0.4+ |
| 2000 04 06 | 704 | 0.5− | 0.4− | 2006 10 19 | 703 | 0.3+ | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.6− |
| 2000 04 06 | 704 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.3− |
| 2000 04 06 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2000 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2000 04 13 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2000 04 13 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2006 09 16 | 703 | 0.7− | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 15 | 704 | 0.0 | 0.6+ |
| 2006 09 16 | 703 | 0.1− | 0.7− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.1− | 0.1+ |
| 2006 09 16 | 703 | 0.3+ | 0.0 | 2006 10 21 | 704 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.2− | 0.1+ |
| 2006 09 16 | 703 | (0.7− | 1.6−) | 2006 10 21 | 704 | 0.3− | 0.2+ | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 10 21 | 704 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.5+ |
| 2006 09 17 | 704 | 0.0 | 0.6− | 2006 10 21 | 704 | 0.7− | 1.2+ | 2006 11 16 | 704 | 0.5− | 0.1− |
| 2006 09 17 | 704 | 0.0 | 0.1− | 2006 10 21 | 704 | 0.3+ | 1.2+ | 2006 11 16 | 704 | 0.1− | 0.0 |
| 2006 09 17 | 704 | 0.9+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.3− | 0.4− |
| 2006 09 17 | 699 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.1− |
| 2006 09 17 | 699 | 1.4+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.1− | 0.3+ |
| 2006 09 17 | 699 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.6− | 0.3− |
| 2006 09 17 | 699 | 0.7− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2006 09 20 | 704 | 1.1− | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.2− | 0.3− |
| 2006 09 20 | 704 | 0.7− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2006 09 20 | 704 | 0.3− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.4− |
| 2006 09 20 | 704 | 1.1− | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.8− |
| 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 10 29 | 704 | 0.9− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.2− | 1.0− | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.2− |
| 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2006 10 19 | 704 | (0.7+ | 2.2+) | 2006 11 11 | 703 | 0.6+ | 0.2− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2006 10 19 | 704 | 0.3+ | 1.0+ | 2006 11 11 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2006 10 19 | 703 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.9+ | 0.4+ |
| 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.0 | 2006 11 28 | 704 | 1.1+ | 0.1+ |
| 2006 10 19 | 704 | 1.3− | 0.5+ | 2006 11 13 | 644 | 0.2+ | 0.1− | 2006 11 28 | 704 | 1.1+ | 0.8+ |
| 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2006 10 19 | 703 | 0.4− | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.2− | | | | |

**2006 $SQ_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.18568 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23351804 | $\omega$ | 183.30877 | | +0.65372088 | | −0.75437030 |
| $a$ | 2.6116948 | $\Omega$ | 225.87940 | | +0.69618952 | | +0.63050267 |
| $e$ | 0.1792588 | $i$ | 4.77729 | | +0.29659595 | | +0.18273435 |
| $P$ | 4.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 691 | 0.1− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2000 04 24 | 691 | 0.5− | 1.3+ | 2006 10 17 | 691 | 0.7+ | 0.8+ | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2000 04 24 | 691 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.3+ |
| 2000 05 01 | 691 | 0.3− | 1.0− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.1− | 0.4− |
| 2000 05 01 | 691 | 0.3− | 1.1− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.5− |
| 2000 05 01 | 691 | 0.2+ | 1.1− | 2006 10 23 | 704 | 0.6− | 1.1− | 2006 11 16 | 703 | 0.1+ | 0.3− |
| 2001 06 13 | 691 | 0.1− | 0.3+ | 2006 10 23 | 704 | 1.4− | 0.0 | 2006 11 16 | 703 | 0.2− | 0.3− |
| 2001 06 13 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 704 | (2.6− | 2.8+) | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2001 06 13 | 691 | 0.4+ | 0.3+ | 2006 10 23 | 704 | 1.4− | 0.3+ | 2006 11 18 | 704 | 0.2+ | 0.1− |
| 2001 07 27 | 608 | 0.3− | 0.4− | 2006 10 28 | 704 | (1.8+ | 0.1−) | 2006 11 18 | 704 | 0.5+ | 0.6− |
| 2001 07 27 | 608 | 0.2− | 0.5− | 2006 10 28 | 704 | 1.3+ | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.0 |
| 2001 07 27 | 608 | 1.2− | 0.3− | 2006 10 28 | 704 | 1.0+ | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.7− |
| 2004 04 20 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 704 | 1.3+ | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2004 04 20 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 704 | 1.2+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2004 04 20 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.7− | 0.6− |
| 2006 09 16 | 703 | 0.6+ | 0.5− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.3− |
| 2006 09 16 | 703 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 2006 09 16 | 703 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2006 09 17 | 699 | 1.0− | 1.1+ | 2006 11 11 | 703 | 0.7− | 0.5− | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2006 09 17 | 699 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 1.0− | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2006 09 17 | 699 | (2.4− | 1.0+) | 2006 11 11 | 703 | 0.5− | 0.9− | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2006 09 17 | 699 | 1.1− | 0.4+ | 2006 11 11 | 703 | 1.3− | 0.3− | 2006 11 26 | 704 | 0.9+ | 0.3+ |
| 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.5− | 2006 11 26 | 704 | 0.4+ | 0.4+ |
| 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.6− | 0.1+ | 2006 11 26 | 704 | 0.2+ | 0.4+ |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.5+ |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2006 10 17 | G96 | 0.4− | 0.3− | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.6+ | 0.4+ |
| 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 13 | 644 | 0.2− | 0.1+ | | | | |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.2+ | | | | |

**2006 $SR_4$ = 1996 $HN_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.86511 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22829474 | $\omega$ | 149.29941 | | +0.97660451 | | +0.20189593 |
| $a$ | 2.6513808 | $\Omega$ | 199.47127 | | −0.21274376 | | +0.95730757 |
| $e$ | 0.1974285 | $i$ | 12.83325 | | +0.03136441 | | +0.20688221 |
| $P$ | 4.32 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 691 | 0.1− | 0.3+ | 2006 09 17 | 699 | 1.4− | 0.8+ | 2006 10 31 | A50 | 0.7− | 0.0 |
| 1996 04 17 | 691 | 0.4+ | 0.0 | 2006 10 03 | 704 | 0.6− | 1.4+ | 2006 11 09 | 644 | 0.2+ | 0.0 |
| 1996 04 17 | 691 | 0.1+ | 0.4+ | 2006 10 03 | 704 | (0.4− | 1.8+) | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1996 04 21 | 691 | 0.0 | 0.1+ | 2006 10 03 | 704 | (1.5− | 2.5+) | 2006 11 09 | 644 | 0.6+ | 0.3+ |
| 1996 04 21 | 691 | 0.0 | 0.0 | 2006 10 03 | 704 | 0.7− | 0.6+ | 2006 11 11 | 644 | 0.1− | 0.0 |
| 1996 04 21 | 691 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.8+ | 0.9+ | 2006 11 11 | 644 | 0.2+ | 0.2+ |
| 2006 08 28 | 703 | 0.8+ | 0.8+ | 2006 10 03 | G96 | 0.2+ | 0.6− | 2006 11 11 | 644 | 0.3− | 0.1+ |
| 2006 08 28 | 703 | 1.0+ | 0.4− | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 1.2+ | 0.7+ | 2006 11 13 | 703 | 0.2− | 0.7− |
| 2006 08 28 | 703 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 1.0− | 2006 11 13 | 703 | 0.7+ | 0.2− |
| 2006 09 16 | 703 | 0.2− | 1.0− | 2006 10 16 | 703 | 0.8+ | 1.0+ | 2006 11 13 | 703 | 0.8− | 0.0 |
| 2006 09 16 | 703 | 1.2− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.7+ | 2006 11 19 | 703 | 0.3− | 0.4− |
| 2006 09 16 | 703 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.5− | 0.5− |
| 2006 09 16 | 703 | 0.4+ | 0.5− | 2006 10 22 | 703 | 0.2+ | 0.0 | 2006 11 19 | 703 | 1.0+ | 0.6+ |
| 2006 09 17 | 699 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.4− | 0.2− | 2006 11 19 | 703 | 0.3− | 0.3− |

2006 09 17 699 0.2+ 0.5+ 2006 10 22 703 0.6− 0.3+
2006 09 17 699 1.3− 0.1− 2006 10 31 A50 0.4− 0.2+

**2006 ST$_4$ = 1999 XE$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.00860 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27818129 | $\omega$ | 132.54458 | | +0.99741502 | +0.03899580 | |
| $a$ | 2.3240784 | $\Omega$ | 225.32005 | | −0.05734614 | +0.93810044 | |
| $e$ | 0.2345970 | $i$ | 4.86917 | | +0.04329787 | +0.34416113 | |
| $P$ | 3.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

1999 12 08 704 0.3+ 0.5− 2006 09 20 704 1.2− 0.2+ 2006 11 11 703 0.3+ 0.3+
1999 12 08 704 0.3+ 0.0 2006 09 20 704 0.3+ 0.5+ 2006 11 11 703 0.5− 0.2+
1999 12 08 704 0.0 0.2− 2006 09 20 704 0.8+ 0.5+ 2006 11 11 703 0.3− 0.5−
1999 12 08 704 0.5− 0.2− 2006 09 20 704 0.5+ 1.3+ 2006 11 12 G96 0.3+ 0.1−
1999 12 08 704 0.1− 0.1− 2006 09 20 704 1.1+ 0.7+ 2006 11 12 G96 0.1− 0.2−
1999 12 14 704 0.7− 0.1− 2006 09 27 G96 0.0 0.2− 2006 11 12 G96 0.5+ 0.1+
1999 12 14 704 0.1+ 1.1− 2006 09 27 G96 0.3+ 0.3− 2006 11 12 G96 0.5+ 0.1+
1999 12 14 704 0.8+ 0.5− 2006 09 27 G96 (2.7+ 0.0 ) 2006 11 14 691 0.1− 0.2+
1999 12 14 704 0.7+ 0.7− 2006 10 16 703 0.6− 0.4+ 2006 11 14 691 0.0 0.2+
2002 06 23 644 0.3+ 1.3+ 2006 10 16 703 0.3+ 1.3+ 2006 11 14 691 0.0 0.1+
2002 06 23 644 0.0 1.3+ 2006 10 16 703 0.5+ 0.0 2006 11 17 703 0.4− 0.5−
2002 06 23 644 0.4+ 1.4+ 2006 10 16 703 0.1− 0.1+ 2006 11 17 703 0.2− 0.1−
2002 07 14 704 0.1− 0.2+ 2006 10 17 G96 0.1+ 0.1− 2006 11 17 703 0.6− 0.3−
2002 07 14 704 0.8− 0.0 2006 10 17 G96 0.1+ 0.1− 2006 11 17 703 0.4− 0.2−
2002 07 14 704 0.4− 0.1− 2006 10 17 G96 0.0 0.2+ 2006 11 17 703 0.1− 0.1+
2002 07 14 704 0.6− 0.2− 2006 10 17 G96 0.0 0.2− 2006 11 17 703 0.1− 0.3+
2004 01 24 704 1.3+ 0.8+ 2006 10 17 691 0.2+ 0.4− 2006 11 17 703 0.1− 0.3+
2004 01 24 704 0.0 0.6+ 2006 10 17 691 0.2+ 0.1− 2006 11 17 703 0.4− 0.2+
2004 01 24 704 0.4+ 1.0+ 2006 10 17 691 0.2+ 0.3− 2006 11 18 704 0.8− 0.5+
2004 01 24 704 0.2+ 0.7+ 2006 10 23 701 0.3+ 0.1− 2006 11 18 704 0.9− 0.1+
2004 01 24 704 0.2− 0.1+ 2006 10 23 701 0.6+ 0.0 2006 11 18 704 0.0 0.1+
2004 01 28 645 0.1− 0.0 2006 10 23 701 0.6+ 0.0 2006 11 18 704 0.9− 0.1−
2004 01 28 645 0.1− 0.0 2006 10 23 701 0.4+ 0.1− 2006 11 18 704 0.3− 0.1−
2005 04 14 691 0.3+ 0.8+ 2006 10 25 704 1.1− 0.3+ 2006 11 18 704 0.6− 0.4+
2005 04 14 691 0.3+ 0.5+ 2006 10 25 704 0.5− 0.4+ 2006 11 18 704 0.3− 0.3+
2005 04 14 691 0.4+ 0.4+ 2006 10 25 704 0.1− 0.9+ 2006 11 18 704 0.4− 0.2+
2005 06 01 G96 0.2− 0.1− 2006 10 25 704 1.0− 0.9+ 2006 11 18 704 0.3− 0.2+
2005 06 01 G96 0.1− 0.0 2006 10 27 G96 0.0 0.1− 2006 11 18 704 0.8− 1.1−
2005 06 01 G96 0.1− 0.0 2006 10 27 G96 0.1+ 0.1− 2006 11 21 704 (0.6+ 1.6+)
2005 06 01 G96 0.0 0.1− 2006 10 27 G96 0.3+ 0.0 2006 11 21 704 0.7+ 0.9+
2006 08 28 703 0.1− 0.1− 2006 10 27 G96 0.1− 0.1− 2006 11 21 704 0.6+ 0.5+
2006 08 28 703 0.7− 0.4− 2006 10 28 704 1.3+ 1.5+ 2006 11 21 704 (0.5− 1.5+)
2006 08 28 703 0.4− 0.4− 2006 10 28 704 (1.7+ 0.5+) 2006 11 21 704 0.8+ 1.1+
2006 08 28 703 0.5+ 0.0 2006 10 28 704 0.6+ 0.2+ 2006 11 27 G96 0.4+ 0.1−
2006 09 16 703 0.7+ 1.3+ 2006 10 28 704 (1.9+ 0.2−) 2006 11 27 G96 0.4+ 0.1−
2006 09 16 703 0.4− 0.4− 2006 11 09 644 0.1+ 0.1+ 2006 11 27 G96 0.1− 0.1−
2006 09 16 703 0.4− 0.4+ 2006 11 09 644 0.1+ 0.0 2006 11 27 G96 0.0 0.1−
2006 09 16 703 0.0 0.3− 2006 11 09 644 0.2+ 0.0 2006 11 29 704 0.3+ 0.5+
2006 09 17 699 0.9− 0.3− 2006 11 10 644 0.0 0.1+ 2006 11 29 704 0.3+ 0.0
2006 09 17 699 0.7− 0.4− 2006 11 10 644 0.1− 0.1− 2006 11 29 704 0.0 0.0
2006 09 17 699 0.3− 0.2+ 2006 11 10 644 0.2− 0.3+ 2006 11 29 704 0.2+ 0.2+
2006 09 17 699 0.6− 0.1− 2006 11 11 703 0.3− 0.1+ 2006 11 29 704 0.3+ 0.0

**2006 SU$_4$ = 2000 HH$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.00340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21770337 | $\omega$ | 318.66541 | | +0.97607724 | +0.17638146 | |
| $a$ | 2.7366921 | $\Omega$ | 31.85410 | | −0.07267742 | +0.81577000 | |
| $e$ | 0.2826021 | $i$ | 13.93923 | | −0.20491759 | +0.55082565 | |
| $P$ | 4.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

2000 04 28 691 0.6+ 0.5− 2006 09 25 704 0.8− 0.0 2006 10 27 703 0.0 0.7+
2000 04 28 691 0.8+ 0.3+ 2006 09 25 704 1.2+ 0.2− 2006 10 27 703 0.4+ 0.5+
2000 04 28 691 0.6+ 0.1+ 2006 09 29 704 0.8+ 1.3− 2006 10 27 703 0.2− 0.5+
2000 05 04 691 0.5− 1.1+ 2006 09 29 704 0.8+ 0.5− 2006 10 28 D35 0.3− 0.2−
2000 05 04 691 0.3− 0.4+ 2006 09 29 704 0.3− 0.6− 2006 10 28 D35 0.3− 0.1−
2000 05 04 691 0.1− 0.5+ 2006 09 29 704 0.8− 0.1+ 2006 10 28 D35 0.3− 0.1+
2000 05 28 691 0.1− 0.7− 2006 10 04 G96 0.7− 0.0 2006 11 09 644 0.3− 0.1+
2000 05 28 691 0.1− 0.3− 2006 10 04 G96 0.5− 0.1− 2006 11 09 644 0.0 0.0
2000 05 28 691 0.4− 0.4− 2006 10 04 G96 0.4− 0.1+ 2006 11 09 644 0.4− 0.1−
2005 06 26 644 0.5+ 1.0+ 2006 10 19 704 (1.6+ 0.4+) 2006 11 15 703 0.2+ 0.0
2005 06 26 644 0.8+ 0.8+ 2006 10 19 704 0.3+ 1.2+ 2006 11 15 703 0.2− 0.2−
2005 06 26 644 0.4+ 0.8+ 2006 10 19 704 0.1+ 0.4+ 2006 11 15 703 0.5− 0.1+
2006 08 29 703 1.2− 0.2− 2006 10 19 703 0.2− 0.3− 2006 11 15 703 0.4− 0.1+
2006 08 29 703 0.2− 0.0 2006 10 19 703 0.1− 0.4− 2006 11 15 704 0.8+ 0.1+
2006 08 29 703 0.0 0.6+ 2006 10 19 703 0.4+ 0.3+ 2006 11 15 704 0.3− 0.4+
2006 08 29 703 (1.6− 1.4+) 2006 10 19 703 0.6− 0.6+ 2006 11 15 704 0.0 0.0
2006 09 16 703 1.2− 1.1+ 2006 10 20 704 1.1+ 0.1+ 2006 11 15 704 0.3+ 0.1+
2006 09 16 703 0.1+ 0.6+ 2006 10 20 704 0.2− 0.7+ 2006 11 15 704 0.2+ 0.3−
2006 09 16 703 1.1− 0.3+ 2006 10 20 704 0.9+ 0.9+ 2006 11 29 704 0.1− 0.6−
2006 09 16 703 0.2+ 0.6− 2006 10 20 704 0.3− 1.0+ 2006 11 29 704 0.7− 0.3−
2006 09 17 704 0.3+ 0.9+ 2006 10 20 G96 0.3− 0.1− 2006 11 29 704 0.1+ 0.7+
2006 09 17 704 1.2+ 0.2+ 2006 10 20 G96 0.1− 0.1− 2006 11 29 704 0.1− 0.1+
2006 09 17 704 1.2+ 0.6− 2006 10 20 G96 0.3− 0.2− 2006 11 29 704 1.3+ 1.1−
2006 09 17 704 0.4− 0.9+ 2006 10 20 G96 0.2− 0.2−
2006 09 25 704 0.4− 0.6− 2006 10 27 703 (1.5+ 2.2+)

**2006 SV$_4$ = 2005 JP$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.39022 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21566354 | $\omega$ | 151.35698 | | +0.98123023 | +0.18726373 | |
| $a$ | 2.7539216 | $\Omega$ | 198.02612 | | −0.19275151 | +0.94519153 | |
| $e$ | 0.1583598 | $i$ | 8.55591 | | −0.00583875 | +0.26747948 | |
| $P$ | 4.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

2005 05 10 691 0.2+ 0.0 2006 09 25 691 0.1− 0.0 2006 10 17 G96 0.8+ 0.1+
2005 05 10 691 0.2+ 0.1− 2006 09 25 691 0.0 0.1− 2006 10 17 703 0.9+ 0.9+
2005 05 10 691 0.1− 0.0 2006 09 25 691 0.2+ 0.2− 2006 10 17 G96 0.3+ 0.4−
2005 05 17 G96 0.2+ 0.2+ 2006 09 29 704 0.2− 0.1− 2006 10 17 703 0.3− 0.2−
2005 05 17 G96 0.5− 0.1− 2006 09 29 704 0.5+ 0.5− 2006 10 17 703 0.5− 0.9−
2005 05 17 G96 0.4− 0.4− 2006 09 29 704 0.2+ 0.1+ 2006 10 20 644 0.1+ 0.6+
2005 05 17 G96 0.2− 0.4− 2006 09 29 704 0.5− 0.9− 2006 10 20 644 0.0 0.1+
2005 06 12 691 0.1+ 0.3− 2006 09 29 704 0.1+ 1.1+ 2006 10 20 644 0.3+ 0.1+
2005 06 12 691 0.3+ 0.7+ 2006 10 01 704 0.2− 0.6+ 2006 10 21 644 0.3+ 0.3+
2005 06 12 691 0.4− 0.2− 2006 10 01 704 0.5− 0.1+ 2006 10 21 644 0.1− 0.3+
2006 09 16 644 0.0 0.2+ 2006 10 01 704 0.9− 0.5+ 2006 10 21 644 0.2− 0.3+
2006 09 16 644 0.2− 0.4+ 2006 10 01 704 0.4− 0.4− 2006 10 28 G96 0.1− 0.4−
2006 09 16 644 0.3− 0.0 2006 10 02 691 0.2+ 0.1+ 2006 10 28 G96 0.1− 0.3−
2006 09 17 703 1.0− 0.5+ 2006 10 02 691 0.4+ 0.1+ 2006 10 28 G96 0.1+ 0.3−
2006 09 17 703 0.2− 0.6− 2006 10 02 691 0.1+ 0.0 2006 10 28 G96 0.2+ 0.4−
2006 09 17 703 0.0 0.5− 2006 10 09 644 0.0 0.3+ 2006 11 21 G96 0.3− 0.0
2006 09 17 703 0.4− 0.3+ 2006 10 09 644 0.4− 0.1+ 2006 11 21 G96 0.0 0.1−
2006 09 19 699 0.1+ 0.9+ 2006 10 09 644 0.1+ 0.5+ 2006 11 21 G96 0.2− 0.2−
2006 09 19 699 1.0+ 0.2− 2006 10 17 G96 0.3+ 0.0 2006 11 21 G96 0.5− 0.2−
2006 09 19 699 0.7− 0.9− 2006 10 17 G96 0.2+ 0.2−
2006 09 19 699 0.2− 0.2+ 2006 10 17 703 (1.7− 0.9+)

**2006 SY$_4$ = 2002 XB$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.09964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21769154 | $\omega$ | 132.51541 | | +0.99186768 | −0.11159432 | |
| $a$ | 2.7367913 | $\Omega$ | 233.98217 | | +0.08277909 | +0.93088265 | |
| $e$ | 0.0785437 | $i$ | 4.33928 | | +0.09667542 | +0.34785657 | |
| $P$ | 4.53 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

2002 12 05 704 0.2− 0.2+ 2006 09 17 703 0.3− 0.7− 2006 10 10 644 0.3+ 0.3+
2002 12 05 704 0.3− 0.7+ 2006 09 18 691 0.0 0.1+ 2006 10 10 644 0.3+ 0.2−

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 09 19 | 703 | 1.3− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 12 10 | 704 | 0.4+ | 0.0 | 2006 09 19 | 703 | 1.0− | 0.9− | 2006 10 11 | 644 | 0.4+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.2+ | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.8− | 2006 10 12 | 644 | 0.2+ | 0.2+ | | |
| 2002 12 10 | 704 | 0.5− | 0.2− | 2006 09 19 | 703 | 0.6− | 0.9− | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2002 12 10 | 704 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 2004 03 27 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.1− | 0.6− | 2006 10 17 | 703 | 0.2− | 0.2− | | |
| 2004 03 27 | 691 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.4− | 0.5− | 2006 10 17 | 703 | (0.4+ | 1.5+) | | |
| 2004 03 27 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 704 | 0.7− | 0.8− | 2006 10 17 | 703 | 0.8+ | 0.3− | | |
| 2005 07 05 | G96 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.1+ | | |
| 2005 07 05 | G96 | 0.1+ | 0.9+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2005 07 05 | G96 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | | |
| 2005 07 05 | G96 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.1+ | | |
| 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.6+ | 0.2− | | |
| 2006 09 16 | 644 | 0.3− | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.3− | | |
| 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.2+ | | | | | | |

**2006 SZ$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.05047 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30883140 | $\omega$ | 8.38143 | | +0.99640700 | | +0.08045923 |
| $a$ | 2.1676463 | $\Omega$ | 346.91545 | | −0.08289189 | | +0.86236838 |
| $e$ | 0.1596703 | $i$ | 6.70849 | | −0.01737891 | | +0.49984707 |
| $P$ | 3.19 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.5− | 0.5+ | 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.0 | | |
| 2003 11 19 | 704 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2003 11 19 | 704 | 0.0 | 0.5+ | 2006 09 17 | 703 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ | | |
| 2003 11 19 | 704 | 0.3+ | 1.0+ | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 17 | 703 | 1.2+ | 0.2− | | |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 1.3− | 0.4− | | |
| 2003 12 19 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.3− | | |
| 2003 12 19 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.9− | | |
| 2006 08 28 | 703 | 0.4+ | 0.1+ | 2006 09 19 | 699 | 1.1− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2006 08 28 | 703 | 0.2− | 0.3− | 2006 09 19 | 699 | 0.8− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | | |
| 2006 08 28 | 703 | 0.3− | 0.9− | 2006 09 19 | 699 | 0.4+ | 0.9− | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2006 08 28 | 703 | 1.3+ | 1.0+ | 2006 09 19 | 699 | 0.3+ | 0.4− | 2006 10 23 | G96 | 0.2− | 0.2− | | |
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.8− | 2006 10 23 | G96 | 0.1+ | 0.1− | | |
| 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 09 25 | 704 | 1.2+ | 0.4− | 2006 10 23 | G96 | 0.3+ | 0.2− | | |
| 2006 09 06 | 644 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1− | | |
| 2006 09 06 | 644 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.5+ | 0.3+ | | |
| 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 25 | 704 | 0.2+ | 0.4+ | 2006 10 23 | G96 | 0.4+ | 0.1− | | |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.2− | | |
| 2006 09 16 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.2− | | |
| 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | | | | | | |

**2006 SC$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.11508 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21366146 | $\omega$ | 46.19289 | | +0.70918459 | | −0.70501891 |
| $a$ | 2.7710982 | $\Omega$ | 358.63165 | | +0.61518197 | | +0.62044394 |
| $e$ | 0.0569572 | $i$ | 5.66769 | | +0.34439566 | | +0.34350788 |
| $P$ | 4.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 23 | 691 | 0.2− | 0.6+ | 2006 09 16 | 644 | 0.1− | 0.6+ | 2006 10 19 | G96 | 0.4+ | 0.1+ | | |
| 1992 09 23 | 691 | 0.1− | 0.1+ | 2006 09 16 | 644 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 1992 09 23 | 691 | 0.3− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2− | | |
| 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− | | |
| 2004 03 17 | 691 | 0.4+ | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2004 04 15 | 691 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2004 04 15 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2004 04 15 | 691 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.6− | 0.1+ | | |
| 2004 04 25 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.2− | 0.1− | | |
| 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.7− | 0.0 | | |
| 2004 04 25 | 691 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.9− | 0.1+ | | |

**2006 SG$_5$ = 2000 ST$_{23}$ = 2005 JD$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.65596 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17274106 | $\omega$ | 133.50283 | | +0.82045091 | | +0.56201611 |
| $a$ | 3.1930496 | $\Omega$ | 193.48193 | | −0.56051702 | | +0.82686016 |
| $e$ | 0.2710131 | $i$ | 26.73265 | | +0.11260984 | | +0.02098009 |
| $P$ | 5.71 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 699 | 1.3− | 0.5− | 2006 09 27 | 699 | 0.9+ | 0.4+ | | |
| 2000 09 22 | 704 | 0.1+ | 0.5+ | 2006 08 29 | 699 | 0.5− | 0.8+ | 2006 09 27 | 699 | 0.2− | 0.0 | | |
| 2000 09 22 | 704 | 0.6+ | 0.2− | 2006 08 29 | 699 | 0.8+ | 0.4− | 2006 09 29 | 704 | 0.4− | 1.1− | | |
| 2000 09 27 | 704 | 0.3− | 0.0 | 2006 09 16 | 644 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.2− | 1.4− | | |
| 2000 09 27 | 704 | 0.9− | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.6+ | 1.0+ | | |
| 2000 09 27 | 704 | 0.1− | 0.4+ | 2006 09 16 | 644 | 0.1+ | 0.9+ | 2006 09 29 | 704 | 0.2+ | 0.8− | | |
| 2000 09 27 | 704 | 0.3+ | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.3− | 2006 09 29 | 704 | 0.1− | 0.7+ | | |
| 2000 09 27 | 704 | 0.2+ | 0.5− | 2006 09 17 | 703 | 0.6+ | 0.4− | 2006 10 19 | 644 | 0.1− | 0.1+ | | |
| 2005 05 09 | 703 | 0.5− | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.3+ | 0.1− | | |
| 2005 05 09 | 703 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.3− | 0.1− | | |
| 2005 05 09 | 703 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2005 05 09 | 703 | 0.1+ | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.5− | 0.3+ | | |
| 2005 05 13 | 291 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.2− | 0.7− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2005 05 13 | 291 | 0.1+ | 0.2− | 2006 09 25 | 704 | 1.1+ | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2005 05 13 | 291 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.1+ | 1.1+ | 2006 10 22 | G96 | 0.2− | 0.1− | | |
| 2005 05 13 | 291 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.1− | 1.0+ | 2006 10 22 | G96 | 0.3+ | 0.0 | | |
| 2005 05 13 | 291 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2005 05 13 | 291 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.0 | | | | | | |
| 2006 08 29 | 699 | 0.6+ | 1.2+ | 2006 09 27 | 699 | 0.5− | 0.3+ | | | | | | |

**2006 SH$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.02615 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22729958 | $\omega$ | 144.95098 | | +0.94202390 | | +0.33322817 |
| $a$ | 2.6591140 | $\Omega$ | 195.72712 | | −0.33137277 | | +0.90543602 |
| $e$ | 0.2402676 | $i$ | 8.35148 | | −0.05275478 | | +0.26295361 |
| $P$ | 4.34 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 691 | 0.6+ | 0.6+ | 2006 09 18 | 704 | 0.4− | 0.2+ | 2006 10 16 | G96 | 0.1− | 0.4− | | |
| 2001 05 23 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.1− | 0.3− | | |
| 2001 05 23 | 691 | 0.5− | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.4+ | | |
| 2002 11 25 | 644 | 0.3+ | 0.3− | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.4− | | |
| 2002 11 25 | 644 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.1+ | | |
| 2002 11 25 | 644 | 0.5+ | 0.6+ | 2006 09 20 | 704 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.1+ | 0.4− | | |
| 2004 02 18 | 691 | 0.3+ | 0.6+ | 2006 09 20 | 704 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | |
| 2004 02 18 | 691 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.4− | 1.2+ | 2006 10 19 | 644 | 0.2− | 0.3− | | |
| 2004 02 18 | 691 | 0.3− | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.2− | 0.1+ | | |
| 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2005 04 16 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 704 | 1.0+ | 1.0+ | 2006 10 21 | G96 | 0.2− | 0.1− | | |
| 2005 04 16 | 691 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.7+ | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.1− | | |
| 2006 08 29 | 699 | 0.3− | 0.2− | 2006 09 25 | 704 | 0.0 | 0.7+ | 2006 10 21 | G96 | 0.4+ | 0.1+ | | |
| 2006 08 29 | 699 | 0.7− | 0.4− | 2006 09 25 | 704 | 0.6+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.1− | | |
| 2006 08 29 | 699 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.3+ | 1.2+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2006 08 29 | 699 | 0.0 | 0.0 | 2006 09 27 | 699 | 0.5− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 09 27 | 699 | 0.6− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.1+ | | |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.2+ | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.0 | | |
| 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.9+ | 2006 11 06 | 644 | 0.1+ | 0.0 | | |
| 2006 09 16 | 644 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.4− | | |
| 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3− | | |
| 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.1− | 0.6+ | 2006 11 16 | G96 | 0.3− | 0.4− | | |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 1.0+ | 2006 11 16 | G96 | 0.1− | 0.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.5+ |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.5− | 0.5− |
| 2006 09 18 | 704 | 0.9− | 0.9+ | 2006 09 29 | 704 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2006 09 18 | 704 | 0.3− | 0.7− | 2006 09 29 | 704 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2006 09 18 | 704 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.4− | | | | |
| 2006 09 18 | 704 | 0.5− | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.4− | | | | |

**2006 SK$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.10873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12347466 | $\omega$ | 92.23909 | | +0.99202143 | −0.12243661 | |
| $a$ | 3.9940868 | $\Omega$ | 274.79468 | | +0.10033041 | +0.91104718 | |
| $e$ | 0.2477683 | $i$ | 1.72781 | | +0.07633666 | +0.39370334 | |
| $P$ | 7.98 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 699 | 0.1− | 0.6+ | 2006 09 18 | 704 | 0.9− | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 1998 10 14 | 699 | 1.1− | 1.1+ | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 1998 10 14 | 699 | 0.4+ | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2002 02 20 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.6+ | 1.1+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2002 02 20 | 691 | 0.8+ | 0.0 | 2006 09 21 | A50 | 0.6− | 1.0+ | 2006 10 17 | 703 | 0.1+ | 0.6− |
| 2002 02 20 | 691 | 0.3+ | 0.1− | 2006 09 22 | A50 | 0.6− | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2002 04 09 | 291 | 0.2+ | 0.4+ | 2006 09 25 | 704 | 0.7+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2002 04 09 | 291 | 0.7− | 0.9+ | 2006 09 25 | 704 | 0.1+ | 1.1+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2002 04 09 | 291 | 0.1+ | 0.6+ | 2006 09 25 | 704 | 0.5+ | 0.7− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2003 04 29 | 691 | 0.4+ | 1.1+ | 2006 09 25 | 704 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2003 04 29 | 691 | 0.3+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2003 04 29 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 704 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2006 09 06 | 644 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 27 | 699 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2006 09 16 | 644 | 0.2− | 0.3+ | 2006 09 27 | 699 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2006 09 16 | 644 | 0.2− | 0.4+ | 2006 09 27 | 699 | 0.6− | 0.3− | 2006 10 29 | 704 | 0.6− | 0.3− |
| 2006 09 16 | 644 | 0.5+ | 0.4+ | 2006 09 27 | 704 | 0.6− | 0.5+ | 2006 10 29 | 704 | 0.2− | 0.6+ |
| 2006 09 17 | 703 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.4− |
| 2006 09 17 | 703 | 0.4− | 0.3− | 2006 09 27 | 699 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.1− | 2006 10 31 | G96 | (2.5+ | 2.7−) |
| 2006 09 17 | 703 | 0.7+ | 0.0 | 2006 09 27 | 704 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.5− | 0.6− |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.7+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2006 09 17 | 703 | 0.2+ | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.4+ | 0.1+ |
| 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2006 09 18 | 704 | (0.8− | 1.5+) | 2006 09 29 | 704 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2006 09 18 | 704 | 0.5− | 0.7+ | 2006 09 29 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 1.8− | 0.3+ |
| 2006 09 18 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | | | |

**2006 SN$_5$ = 2004 BU$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.24412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28711849 | $\omega$ | 23.99234 | | +0.55233182 | −0.83282283 | |
| $a$ | 2.2755966 | $\Omega$ | 32.51529 | | +0.75341754 | +0.47994598 | |
| $e$ | 0.2133700 | $i$ | 3.89865 | | +0.35677944 | +0.27578614 | |
| $P$ | 3.43 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 20 | 704 | 1.3− | 1.0+ | 2006 09 27 | 704 | 0.4+ | 0.7+ | 2006 10 21 | 703 | 0.9− | 0.2− |
| 2004 01 20 | 704 | 0.7+ | 1.3+ | 2006 09 27 | 704 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.6− |
| 2004 01 20 | 704 | (0.5− | 1.9+) | 2006 09 27 | 704 | (0.7− | 1.6+) | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2004 01 26 | 699 | 0.8− | 0.6+ | 2006 10 01 | 704 | 0.5− | 0.6− | 2006 10 21 | 703 | 0.2− | 0.2− |
| 2004 01 26 | 699 | 0.7+ | 0.3− | 2006 10 01 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2004 01 26 | 699 | 0.4+ | 0.3− | 2006 10 01 | 704 | 0.6− | 1.0+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2004 01 26 | 699 | 0.4− | 0.5+ | 2006 10 01 | 704 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2004 02 10 | 703 | 0.2+ | 0.7+ | 2006 10 11 | 291 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2004 02 10 | 703 | 0.6+ | 0.6− | 2006 10 11 | 291 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2004 02 10 | 703 | 0.5+ | 0.9− | 2006 10 11 | 291 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2004 02 10 | 703 | 0.3+ | 0.1+ | 2006 10 15 | 703 | (1.0− | 2.4−) | 2006 10 27 | G96 | 0.4+ | 1.0− |
| 2006 09 14 | 703 | 1.4+ | 0.5− | 2006 10 15 | 703 | (2.2+ | 1.4−) | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2006 09 14 | 703 | 1.1− | 0.2− | 2006 10 15 | 703 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 10 15 | 703 | 0.5− | 1.1+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2006 09 16 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.3+ |
| 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.7+ | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.6− |
| 2006 09 16 | 644 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1− | 1.2− |
| 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2006 09 17 | 691 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.7+ | 0.1− |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.8+ | 0.3− |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.4+ | | | | |

**2006 SO$_5$ = 2002 VJ$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.07718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22912982 | $\omega$ | 52.68141 | | +0.44158008 | −0.88986103 | |
| $a$ | 2.6449348 | $\Omega$ | 12.73704 | | +0.56589130 | +0.17702772 | |
| $e$ | 0.2519221 | $i$ | 31.34583 | | +0.69625719 | +0.42048608 | |
| $P$ | 4.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 704 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.2− |
| 1999 02 09 | 704 | 0.5+ | 1.8+ | 2006 09 17 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.4− | 0.1− |
| 1999 02 09 | 704 | 1.6− | 0.7+ | 2006 09 17 | 704 | 0.1+ | 0.3− | 2006 10 19 | 704 | 0.4− | 1.1+ |
| 1999 02 09 | 704 | 0.1+ | 0.7− | 2006 09 18 | 699 | 0.4− | 0.5− | 2006 10 19 | 704 | (1.6− | 0.0 ) |
| 1999 02 09 | 704 | 0.9+ | 1.7− | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 10 19 | 704 | 0.3+ | 0.2+ |
| 2002 11 13 | 704 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 10 19 | 704 | (0.1+ | 1.7−) |
| 2002 11 13 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.1− | 2006 10 19 | 704 | 0.1− | 0.5− |
| 2002 11 13 | 704 | 0.1− | 0.2+ | 2006 09 20 | 704 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2002 11 13 | 704 | 0.5− | 0.6+ | 2006 09 20 | 704 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 11 13 | 704 | 0.5− | 0.4+ | 2006 09 20 | 704 | 0.4− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 11 14 | 704 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 11 14 | 704 | 0.3+ | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 12 13 | 704 | 0.5+ | 1.0+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 12 13 | 704 | 0.7+ | 1.4− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2002 12 13 | 704 | (3.1− | 3.0+) | 2006 09 25 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 13 | 704 | (2.5− | 3.6+) | 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.4− |
| 2002 12 14 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.6+ | 1.0+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2002 12 14 | 704 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 0.1− | 0.9− | 2006 09 27 | 704 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2003 01 23 | 704 | (2.2− | 2.2+) | 2006 09 27 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 01 23 | 704 | (1.6− | 1.6+) | 2006 09 29 | 704 | 1.2+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2003 01 23 | 704 | (1.2− | 3.0+) | 2006 09 29 | 704 | 1.0+ | 0.4+ | 2006 10 26 | 704 | 1.0+ | 0.3− |
| 2003 01 23 | 704 | (0.5− | 2.7+) | 2006 09 29 | 704 | 0.2− | 0.0 | 2006 10 26 | 704 | 1.0+ | 1.2− |
| 2006 08 23 | 704 | 0.8− | 0.5+ | 2006 09 29 | 704 | 1.3+ | 0.2+ | 2006 10 26 | 704 | 0.4+ | 0.5− |
| 2006 08 23 | 704 | 0.2− | 1.1+ | 2006 09 29 | 704 | 0.1+ | 0.3+ | 2006 10 26 | 704 | 0.5+ | 0.4+ |
| 2006 08 23 | 704 | 0.5− | 0.4+ | 2006 09 29 | 608 | 1.4+ | 1.4+ | 2006 10 27 | 683 | 0.1− | 1.1− |
| 2006 08 23 | 704 | 0.3+ | 1.1+ | 2006 09 29 | 608 | (1.2+ | 1.6+) | 2006 10 27 | 683 | 0.2− | 1.1+ |
| 2006 08 23 | 704 | 0.1− | 0.5+ | 2006 09 29 | 608 | 1.1+ | 1.1+ | 2006 10 27 | 683 | 1.4+ | 0.4− |
| 2006 09 16 | 704 | 1.2− | 0.6+ | 2006 09 30 | 691 | 0.2− | 0.2− | 2006 11 25 | 703 | 0.5− | 0.6+ |
| 2006 09 16 | 704 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.2− | 2006 11 25 | 703 | 0.2− | 0.2− |
| 2006 09 16 | 704 | 0.8− | 0.6− | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 11 25 | 703 | 0.4− | 0.6+ |
| 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 25 | 703 | 0.2− | 0.0 |
| 2006 09 16 | 644 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.4− | 2006 11 29 | 704 | (0.5+ | 1.9+) |
| 2006 09 16 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.1+ | 0.8+ |
| 2006 09 17 | 704 | 0.6− | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.2− | 1.3+ |
| 2006 09 17 | 704 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.4+ |

### 2006 $SR_5$ = 2004 BQ

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.87649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27200940 | $\omega$ | 309.40417 | | +0.95204979 | +0.30459854 | |
| $a$ | 2.3591023 | $\Omega$ | 32.89070 | | −0.26197717 | +0.86002101 | |
| $e$ | 0.2078003 | $i$ | 3.02445 | | −0.15801633 | +0.40936974 | |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.5− | 0.5− | 2006 09 17 | 704 | 0.5− | 0.2+ | 2006 10 15 | 703 | 0.4− | 0.4− | |
| 1995 08 30 | 809 | 0.7+ | 0.1− | 2006 09 17 | 704 | 0.3− | 0.3+ | 2006 10 15 | 703 | 0.1− | 0.2− | |
| 2001 03 19 | 691 | 0.4+ | 0.3+ | 2006 09 17 | 704 | 0.9+ | 0.3− | 2006 10 15 | 703 | 0.4− | 0.2− | |
| 2001 03 19 | 691 | 0.0 | 0.6+ | 2006 09 17 | 704 | 0.9− | 0.9− | 2006 10 17 | G96 | 0.1+ | 0.1− | |
| 2001 03 19 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 704 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.4− | |
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.5− | |
| 2003 12 21 | 691 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.5− | |
| 2003 12 21 | 691 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | |
| 2004 01 16 | 691 | 0.2− | 0.0 | 2006 09 20 | 704 | 0.5+ | 1.4− | 2006 10 20 | 644 | 0.2− | 0.4+ | |
| 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.4− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.1− | 1.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2004 01 17 | 691 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | |
| 2004 01 17 | 691 | 0.2+ | 0.1− | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | |
| 2004 01 17 | 691 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | |
| 2005 04 02 | G96 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2005 04 02 | G96 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− | |
| 2005 04 02 | G96 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− | |
| 2005 04 02 | G96 | 0.4− | 0.0 | 2006 09 27 | 704 | 0.9+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2005 04 11 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 704 | (1.3+ | 3.3+) | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 704 | (0.9+ | 3.1+) | 2006 10 27 | G96 | 0.1− | 0.3− | |
| 2005 04 11 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 704 | (0.4+ | 2.1+) | 2006 11 06 | 644 | 0.0 | 0.2− | |
| 2005 05 13 | G96 | 0.5− | 0.2− | 2006 09 30 | 608 | 0.1+ | 0.9− | 2006 11 06 | 644 | 0.4− | 0.2+ | |
| 2005 05 13 | G96 | 0.2− | 0.2− | 2006 09 30 | 608 | 0.9+ | 1.1− | 2006 11 06 | 644 | 0.0 | 0.3+ | |
| 2005 05 13 | G96 | 0.5+ | 0.5+ | 2006 09 30 | 608 | 0.4+ | 0.7− | 2006 11 13 | G96 | 0.1− | 0.3− | |
| 2005 05 13 | G96 | 0.5− | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.6− | |
| 2006 09 06 | 644 | 0.0 | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.2− | |
| 2006 09 06 | 644 | 0.4− | 0.7+ | 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.2− | |
| 2006 09 06 | 644 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.1− | |
| 2006 09 16 | 644 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.3− | |
| 2006 09 16 | 644 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | | | | |
| 2006 09 16 | 644 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.3− | 0.1− | | | | | |

### 2006 $SS_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.13851 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29338356 | $\omega$ | 291.19365 | | +0.65108110 | −0.75755964 | |
| $a$ | 2.2430840 | $\Omega$ | 118.09544 | | +0.71459637 | +0.59100128 | |
| $e$ | 0.1025485 | $i$ | 3.04559 | | +0.25582304 | +0.27716580 | |
| $P$ | 3.36 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 17 | 704 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ | |
| 2001 02 17 | 704 | (0.1+ | 2.6+) | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.3+ | |
| 2001 02 17 | 704 | 0.3+ | 1.1+ | 2006 09 22 | 704 | 1.1− | 0.8− | 2006 10 16 | 703 | 0.8− | 0.1+ | |
| 2001 02 17 | 704 | 0.2+ | 0.5+ | 2006 09 22 | 704 | 0.0 | 0.9− | 2006 10 16 | 703 | 0.5− | 0.3+ | |
| 2003 12 19 | 704 | 0.3− | 0.1− | 2006 09 22 | 704 | 0.9+ | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.2+ | |
| 2003 12 19 | 704 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.5+ | |
| 2003 12 19 | 704 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3+ | |
| 2003 12 19 | 704 | 0.8+ | 0.8− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | |
| 2003 12 19 | 704 | 0.8− | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.0 | |
| 2005 05 10 | G96 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.3+ | 1.1+ | 2006 10 19 | 644 | 0.1− | 0.1+ | |
| 2005 05 10 | G96 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 0.9+ | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.0 | |
| 2005 05 10 | G96 | (0.7+ | 1.6+) | 2006 09 29 | 699 | 0.8+ | 1.4− | 2006 10 19 | 644 | 0.2+ | 0.0 | |
| 2005 05 10 | G96 | 0.3+ | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2005 06 16 | G96 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | |
| 2005 06 16 | G96 | 0.8− | 0.5+ | 2006 10 01 | 704 | 0.6+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.2+ | |
| 2005 06 16 | G96 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.5+ | |
| 2005 06 16 | G96 | 0.3+ | 0.2− | 2006 10 01 | 704 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.5− | 0.9+ | |
| 2006 09 16 | 644 | 0.2+ | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.5− | |
| 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.1− | 0.3+ | |
| 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1− | | | | | |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.3+ | | | | | |

### 2006 $ST_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.16458 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18485221 | $\omega$ | 35.48620 | | +0.51874180 | −0.84980510 | |
| $a$ | 3.0520124 | $\Omega$ | 23.69382 | | +0.72082221 | +0.37595449 | |
| $e$ | 0.3215431 | $i$ | 13.45143 | | +0.45969804 | +0.36944487 | |
| $P$ | 5.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.4− | 0.1− | 2006 10 23 | 704 | (1.6+ | 0.3−) | |
| 2001 10 25 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 691 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1− | |
| 2001 10 25 | 704 | 0.4− | 0.6− | 2006 09 27 | 691 | 0.7− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− | |
| 2001 10 25 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.8+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.3− | |
| 2001 12 23 | 644 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.1− | 0.7+ | 2006 10 28 | 704 | 0.4+ | 0.1+ | |
| 2001 12 23 | 644 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.6+ | 2006 10 28 | 704 | 0.6− | 0.3− | |
| 2001 12 23 | 644 | 0.3− | 0.2− | 2006 10 01 | 704 | 0.4− | 0.6+ | 2006 10 28 | 704 | 1.0+ | 0.2+ | |
| 2001 12 23 | 644 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.4+ | 0.7− | 2006 11 01 | 691 | 0.3+ | 0.0 | |
| 2001 12 23 | 644 | 0.0 | 0.3− | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 2001 12 23 | 644 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− | |
| 2001 12 23 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.3− | |
| 2001 12 23 | 704 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.7− | 0.1− | |
| 2001 12 23 | 704 | 0.6+ | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.0 | 0.5+ | |
| 2001 12 23 | 704 | 0.5+ | 0.7+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.2+ | |
| 2001 12 23 | 704 | 0.6+ | 0.9+ | 2006 10 15 | 703 | 0.2− | 0.3− | 2006 11 15 | 704 | 0.5+ | 0.9+ | |
| 2002 01 06 | 704 | 0.2− | 0.3− | 2006 10 15 | 703 | 0.1+ | 0.9− | 2006 11 15 | 704 | 0.4+ | 0.4+ | |
| 2002 01 06 | 704 | 0.6+ | 0.9− | 2006 10 15 | 703 | 0.2− | 0.4− | 2006 11 15 | 704 | 0.0 | 0.2− | |
| 2002 01 06 | 704 | 0.4− | 0.1− | 2006 10 15 | 703 | 0.0 | 0.4− | 2006 11 15 | 704 | 0.0 | 0.5+ | |
| 2002 01 06 | 704 | 0.5− | 0.3− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.3+ | |
| 2002 01 06 | 704 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− | |
| 2003 04 04 | 691 | 0.8+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.0 | 0.4− | |
| 2003 04 04 | 691 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.1− | |
| 2003 04 04 | 691 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− | |
| 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.2+ | |
| 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.9+ | |
| 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.8+ | 1.4+ | |
| 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.5− | 0.6+ | |
| 2006 09 16 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.6− | |
| 2006 09 16 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.7− | |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.5− | |
| 2006 09 17 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2− | 0.5− | |
| 2006 09 17 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.9+ | |
| 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.5+ | 0.9+ | |
| 2006 09 26 | 704 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5− | 0.1+ | |
| 2006 09 26 | 704 | 0.9− | 0.7+ | 2006 10 23 | 704 | (1.8− | 1.1−) | 2006 11 19 | 704 | 0.5+ | 0.6+ | |
| 2006 09 26 | 704 | 0.0 | 0.2− | 2006 10 23 | 704 | 0.5− | 1.1+ | | | | | |
| 2006 09 26 | 704 | 0.0 | 0.0 | 2006 10 23 | 704 | (0.1+ | 1.9−) | | | | | |

### 2006 $SW_5$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.16012 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.39704806 | $\omega$ | 129.20617 | | −0.49776764 | −0.86692908 | |
| $a$ | 1.8333301 | $\Omega$ | 350.54264 | | +0.73968378 | −0.40885091 | |
| $e$ | 0.3947816 | $i$ | 9.00431 | | +0.45287446 | −0.28508753 | |
| $P$ | 2.48 | $H$ | 19.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 11 | 691 | 0.1− | 0.1− | 2006 09 18 | 734 | 0.3+ | 0.2− | 2006 09 30 | 291 | 0.3− | 0.2+ | |
| 1996 09 11 | 691 | 0.0 | 0.1− | 2006 09 18 | 734 | 0.3+ | 0.1+ | 2006 10 11 | 291 | 0.0 | 0.2− | |
| 1996 09 11 | 691 | 0.3+ | 0.1− | 2006 09 19 | 291 | 0.1− | 0.1− | 2006 10 11 | 291 | 0.4+ | 0.0 | |
| 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 19 | 291 | 0.1+ | 0.0 | 2006 10 13 | 291 | 0.3+ | 0.1+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 691 | 0.1− | 0.2+ | 2006 09 19 | 291 | 0.0 | 0.2− | 2006 10 13 | 291 | 0.2− | 0.2− | | |
| 2006 09 16 | 691 | 0.2− | 0.3+ | 2006 09 20 | 291 | 0.6+ | 0.6− | 2006 10 13 | 291 | 0.1+ | 0.2− | | |
| 2006 09 16 | 291 | 0.6− | 0.3− | 2006 09 20 | 291 | 0.8+ | 0.7+ | 2006 10 15 | 291 | 0.1− | 0.1− | | |
| 2006 09 16 | 291 | (1.9− | 1.0−) | 2006 09 20 | 291 | 0.1+ | 0.1− | 2006 10 15 | 291 | 0.2− | 0.1+ | | |
| 2006 09 16 | 291 | 1.2− | 0.3− | 2006 09 22 | 711 | (2.1+ | 0.1+) | 2006 10 15 | 291 | 0.3− | 0.2+ | | |
| 2006 09 17 | 291 | 0.1− | 0.1+ | 2006 09 22 | 711 | 0.3+ | 0.5− | 2006 10 18 | 291 | 0.0 | 0.0 | | |
| 2006 09 17 | 291 | 0.1+ | 0.2+ | 2006 09 22 | 711 | 0.5+ | 0.3+ | 2006 10 18 | 291 | 0.0 | 0.0 | | |
| 2006 09 17 | 291 | 0.2+ | 0.2+ | 2006 09 24 | 291 | 0.4+ | 0.1− | 2006 10 21 | 291 | 0.0 | 0.1+ | | |
| 2006 09 17 | 703 | 0.3− | 0.2− | 2006 09 24 | 291 | 0.0 | 0.2− | 2006 10 21 | 291 | 0.2− | 0.1− | | |
| 2006 09 17 | 703 | (1.8− | 0.4+) | 2006 09 24 | 291 | 0.5+ | 0.0 | 2006 10 21 | 291 | 0.2− | 0.2+ | | |
| 2006 09 17 | 703 | 1.3− | 0.1+ | 2006 09 28 | 691 | 0.4+ | 0.5− | 2006 11 22 | 291 | 0.0 | 0.2+ | | |
| 2006 09 18 | 291 | 0.3− | 0.7+ | 2006 09 28 | 691 | 0.7− | 0.2− | 2006 11 22 | 291 | 0.4+ | 0.7− | | |
| 2006 09 18 | 291 | 0.4+ | 0.8+ | 2006 09 28 | 691 | 0.2− | 0.6− | 2006 11 22 | 291 | 0.2− | 0.6+ | | |
| 2006 09 18 | 291 | 0.0 | 0.2+ | 2006 09 30 | 291 | 0.3+ | 0.0 | | | | | | |
| 2006 09 18 | 734 | 0.3+ | 0.6− | 2006 09 30 | 291 | 0.0 | 0.2+ | | | | | | |

**2006 SC$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.19781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.74711768 | $\omega$ | 355.47334 | | −0.85753670 | −0.46089444 | |
| $a$ | 1.2028460 | $\Omega$ | 153.02910 | | +0.48637771 | −0.87107213 | |
| $e$ | 0.5805756 | $i$ | 30.25120 | | +0.16753369 | +0.16973407 | |
| $P$ | 1.32 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 17 | 644 | 0.0 | 0.4− | 2006 09 17 | E12 | 0.0 | 0.0 | 2006 09 18 | E12 | 0.2− | 0.4− | | |
| 2002 09 17 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 423 | 0.4+ | 0.2− | 2006 09 18 | E12 | 0.3+ | 0.1+ | | |
| 2002 09 17 | 644 | 0.1− | 0.0 | 2006 09 17 | 423 | 0.6+ | 0.2+ | 2006 09 21 | E12 | 0.5+ | 0.6− | | |
| 2006 09 16 | E12 | 0.2+ | 0.3− | 2006 09 17 | E12 | 0.2− | 0.1+ | 2006 09 21 | E12 | 0.1− | 0.2+ | | |
| 2006 09 16 | E12 | (1.6+ | 1.3−) | 2006 09 17 | E12 | 0.3+ | 0.2− | 2006 09 21 | E12 | 0.3+ | 0.3− | | |
| 2006 09 16 | E12 | 0.9− | 0.3+ | 2006 09 18 | 673 | 0.1+ | 0.4+ | 2006 09 21 | E12 | 0.4− | 0.9+ | | |
| 2006 09 16 | E12 | 0.9+ | 0.1+ | 2006 09 18 | 673 | 0.2− | 0.0 | 2006 09 21 | E12 | 0.4− | 0.1− | | |
| 2006 09 17 | 703 | 0.0 | 0.8− | 2006 09 18 | 673 | 0.9− | 0.5− | 2006 09 26 | E12 | 0.2+ | 0.0 | | |
| 2006 09 17 | 651 | 0.6+ | 0.5+ | 2006 09 18 | 673 | 1.0− | 0.6− | 2006 09 26 | E12 | 0.2+ | 0.1− | | |
| 2006 09 17 | 651 | (3.6− | 0.5−) | 2006 09 18 | 423 | 0.3+ | 0.2+ | 2006 09 30 | E12 | 0.1− | 0.1− | | |
| 2006 09 17 | 651 | 0.9− | 0.6− | 2006 09 18 | E12 | 0.3− | 0.2− | 2006 10 09 | E12 | 0.4− | 0.0 | | |
| 2006 09 17 | 651 | 0.0 | 0.3+ | 2006 09 18 | E12 | 0.6+ | 0.1+ | 2006 10 18 | E12 | 0.1+ | 0.3− | | |
| 2006 09 17 | 703 | 0.4− | 0.2− | 2006 09 18 | E12 | 0.0 | 0.3+ | 2006 10 18 | E12 | 0.0 | 0.2− | | |
| 2006 09 17 | 703 | 0.2+ | 0.4+ | 2006 09 18 | E12 | 0.2+ | 0.3+ | 2006 10 22 | E12 | 0.9+ | 0.5+ | | |
| 2006 09 17 | 703 | 0.3+ | 0.0 | 2006 09 18 | 423 | 0.5− | 1.1+ | 2006 10 22 | E12 | 1.7− | 0.3+ | | |
| 2006 09 17 | E12 | 0.3+ | 0.4− | 2006 09 18 | E12 | 0.1− | 0.2+ | 2006 10 22 | E12 | 1.0+ | 0.4− | | |

**2006 SK$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.92044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30702632 | $\omega$ | 189.10069 | | +0.05553221 | +0.99833222 | |
| $a$ | 2.1761341 | $\Omega$ | 84.08384 | | −0.91506538 | +0.05721011 | |
| $e$ | 0.2054649 | $i$ | 0.90890 | | −0.39946406 | +0.00773187 | |
| $P$ | 3.21 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 691 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.7− | 0.7+ | 2006 09 20 | 704 | 0.5+ | 0.2+ | | |
| 2000 11 27 | 691 | 0.1− | 0.2+ | 2006 09 17 | 704 | 0.8− | 0.5− | 2006 09 20 | 644 | 0.4− | 0.0 | | |
| 2000 11 27 | 691 | 0.1+ | 0.0 | 2006 09 17 | 704 | 0.4− | 0.1+ | 2006 09 20 | 704 | 1.2+ | 0.5− | | |
| 2003 10 24 | 704 | 1.0+ | 0.2− | 2006 09 17 | 704 | 1.0− | 0.8− | 2006 09 20 | 644 | 0.1− | 0.0 | | |
| 2003 10 24 | 704 | 0.3+ | 0.0 | 2006 09 17 | 704 | 0.3− | 0.9+ | 2006 09 25 | 699 | 0.7− | 0.7− | | |
| 2003 10 24 | 704 | 0.7+ | 0.4− | 2006 09 17 | 704 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.6− | 0.7− | | |
| 2003 10 25 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.6− | 0.4+ | 2006 09 25 | 699 | (0.7+ | 1.6+) | | |
| 2003 10 25 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.2− | 0.7+ | | |
| 2003 10 25 | 691 | 0.5− | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2006 08 18 | 691 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− | | |
| 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 09 19 | 703 | 1.1+ | 1.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− | | |
| 2006 08 18 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.2− | | |
| 2006 08 27 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | (0.4+ | 1.6+) | 2006 10 20 | G96 | 0.0 | 0.5− | | |
| 2006 08 27 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 1.2+ | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.6− | | |
| 2006 08 27 | 691 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.3− | 0.9− | 2006 10 20 | G96 | 0.2− | 0.6− | | |
| 2006 09 16 | 699 | 1.3+ | 0.4+ | 2006 09 20 | 704 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.4+ | 0.1− | | |
| 2006 09 16 | 699 | 0.5− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.0 | | | | | | |
| 2006 09 16 | 699 | 0.2+ | 0.8− | 2006 09 20 | 704 | 0.2+ | 0.3− | | | | | | |

**2006 SW$_6$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.01751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24068050 | $\omega$ | 132.62258 | | +0.25723567 | −0.96094236 | |
| $a$ | 2.5596197 | $\Omega$ | 302.20155 | | +0.84755068 | +0.27509234 | |
| $e$ | 0.1414857 | $i$ | 6.92859 | | +0.46420647 | +0.03023212 | |
| $P$ | 4.10 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2002 11 06 | 699 | 0.0 | 0.5− | 2006 09 18 | 703 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2002 11 06 | 699 | 0.8+ | 0.2+ | 2006 09 18 | G92 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.4+ | | |
| 2002 11 06 | 699 | 0.0 | 0.3+ | 2006 09 18 | G92 | 0.4+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2002 11 24 | 644 | 0.1− | 0.1− | 2006 09 18 | G92 | 0.9+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 2002 11 24 | 644 | 0.2− | 0.1− | 2006 09 19 | G92 | 1.5+ | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.6+ | | |
| 2002 11 24 | 644 | 0.0 | 0.5− | 2006 09 19 | G92 | 0.4+ | 0.4− | 2006 10 19 | 703 | 0.0 | 0.4− | | |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 09 19 | G92 | 0.0 | 0.5− | 2006 10 19 | 703 | 0.0 | 0.7− | | |
| 2002 11 24 | 644 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.7− | 0.6− | 2006 10 19 | 703 | 0.5− | 0.6− | | |
| 2002 11 24 | 644 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.4+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2006 09 17 | 703 | 0.8− | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2006 09 17 | 703 | 0.5− | 0.6− | 2006 09 28 | 703 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 10 | 644 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | | |
| 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 10 10 | 644 | 0.4− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2006 09 18 | 703 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | | | | | | |

**2006 SD$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.63676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36833543 | $\omega$ | 245.10242 | | +0.84732593 | −0.38435334 | |
| $a$ | 1.9274083 | $\Omega$ | 134.85818 | | +0.41520509 | +0.90970866 | |
| $e$ | 0.1851654 | $i$ | 31.13190 | | −0.33112461 | +0.15717080 | |
| $P$ | 2.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 07 | 644 | 0.2+ | 0.3+ | 2005 03 31 | 703 | 0.6+ | 0.3+ | 2006 09 19 | E12 | 0.2− | 0.6+ | | |
| 2002 02 07 | 644 | 0.1+ | 0.3+ | 2005 03 31 | 703 | 0.1− | 0.4+ | 2006 09 19 | E12 | 0.2− | 0.4+ | | |
| 2002 02 07 | 644 | 0.1+ | 0.4+ | 2005 03 31 | 703 | 1.3− | 0.7− | 2006 09 20 | E12 | 0.2+ | 0.2+ | | |
| 2002 02 20 | 691 | 0.0 | 0.1− | 2006 09 18 | E12 | 0.1+ | 0.3+ | 2006 09 20 | E12 | 0.2− | 0.3− | | |
| 2002 02 20 | 691 | 0.1− | 0.2− | 2006 09 18 | E12 | 0.0 | 0.3+ | 2006 09 21 | E12 | 0.2− | 0.0 | | |
| 2002 02 20 | 691 | 0.0 | 0.1− | 2006 09 18 | E12 | 0.1+ | 0.2− | 2006 09 21 | E12 | 0.4− | 0.1+ | | |
| 2005 03 08 | 703 | 0.5+ | 0.4− | 2006 09 18 | E12 | 0.2− | 0.3+ | 2006 09 21 | E12 | 0.1+ | 0.2+ | | |
| 2005 03 08 | 703 | 0.0 | 0.1+ | 2006 09 18 | E12 | 0.4− | 0.3− | 2006 09 21 | E12 | 0.3+ | 0.2− | | |
| 2005 03 08 | 703 | 0.6− | 1.0+ | 2006 09 18 | E12 | 0.2− | 0.1+ | 2006 10 02 | E12 | 0.1+ | 0.3+ | | |
| 2005 03 08 | 703 | 0.3+ | 0.3+ | 2006 09 19 | 844 | 1.0+ | 0.4− | 2006 10 02 | E12 | 0.6+ | 0.2+ | | |
| 2005 03 08 | 703 | 0.3+ | 0.4+ | 2006 09 19 | 844 | 0.8− | 0.4− | 2006 10 02 | E12 | 0.0 | 0.0 | | |
| 2005 03 08 | 703 | 0.3− | 0.0 | 2006 09 19 | 844 | 1.3− | 0.6+ | 2006 11 13 | E12 | 0.7+ | 0.2− | | |
| 2005 03 08 | 703 | 0.3+ | 0.4+ | 2006 09 19 | 844 | 0.2+ | 0.9− | 2006 11 13 | E12 | 0.6+ | 0.6+ | | |
| 2005 03 08 | 703 | 0.4+ | 0.2− | 2006 09 19 | 844 | 0.5− | 0.8− | 2006 11 13 | E12 | 0.2+ | 0.5+ | | |
| 2005 03 31 | 703 | 0.1− | 0.1− | 2006 09 19 | E12 | 0.3+ | 0.4+ | 2006 11 13 | E12 | 0.6+ | 0.4− | | |

**2006 SH$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.88062 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25230238 | $\omega$ | 344.56487 | | +0.37661407 | −0.92214684 | |
| $a$ | 2.4804005 | $\Omega$ | 83.24617 | | +0.85906988 | +0.31197021 | |
| $e$ | 0.5457528 | $i$ | 5.10464 | | +0.34664215 | +0.22873520 | |
| $P$ | 3.91 | $H$ | 19.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.2− | 0.8+ | 2006 09 22 | 711 | 0.0 | 0.1− | 2006 10 24 | H45 | 0.3+ | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.6+ | 2006 09 22 | 711 | 0.9− | 0.3− | 2006 10 24 | H45 | 0.1+ | 0.3− |
| 2002 09 09 | 644 | 0.2+ | 0.2− | 2006 09 22 | 711 | 0.0 | 0.5− | 2006 10 28 | 703 | 0.5+ | 0.0 |
| 2002 09 09 | 644 | 0.5− | 0.3− | 2006 09 22 | 711 | 0.7− | 0.4+ | 2006 10 28 | 703 | 0.7+ | 0.8− |
| 2002 09 09 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 1.4+ | 2006 10 28 | 703 | 0.8− | 0.9− |
| 2002 09 17 | 644 | 0.2+ | 1.1− | 2006 09 26 | 703 | 0.0 | 0.4− | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2002 09 17 | 644 | 0.5+ | 0.6− | 2006 09 26 | 703 | 0.5+ | 1.4+ | 2006 10 29 | H45 | 0.2+ | 0.1+ |
| 2002 09 17 | 644 | 0.6− | 0.6− | 2006 09 26 | 703 | 0.7− | 0.3+ | 2006 10 29 | H45 | 0.3+ | 0.1− |
| 2002 10 09 | 644 | 0.1− | 1.4+ | 2006 09 30 | 291 | 0.0 | 0.2+ | 2006 10 29 | H45 | 0.2+ | 0.0 |
| 2002 10 09 | 644 | 0.1− | 0.5+ | 2006 09 30 | 291 | 0.1− | 0.2+ | 2006 10 29 | H45 | 0.2+ | 0.0 |
| 2002 10 09 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 291 | 0.2− | 0.3+ | 2006 10 30 | H45 | 0.1− | 0.1− |
| 2006 09 18 | 703 | 0.7+ | 0.4+ | 2006 10 04 | 448 | 0.2− | 0.2+ | 2006 10 30 | H45 | 0.1− | 0.3− |
| 2006 09 18 | 703 | 0.2+ | 0.9+ | 2006 10 04 | 448 | 0.4− | 0.1− | 2006 10 30 | H45 | 0.2+ | 0.1− |
| 2006 09 18 | 703 | 1.0− | 0.6+ | 2006 10 04 | 448 | 0.3+ | 0.4− | 2006 10 30 | H45 | 0.0 | 0.1− |
| 2006 09 18 | 703 | (1.3+ | 1.7+) | 2006 10 13 | 649 | 0.2− | 0.1− | 2006 10 30 | H45 | 0.1− | 0.2− |
| 2006 09 18 | 703 | 0.1+ | 1.1− | 2006 10 13 | 649 | 0.2+ | 0.1− | 2006 10 30 | H45 | 0.4− | 0.2− |
| 2006 09 18 | 703 | 0.6− | 0.0 | 2006 10 13 | 649 | 0.3+ | 0.0 | 2006 10 31 | 704 | 0.6+ | 0.9− |
| 2006 09 18 | 703 | 0.8− | 0.6+ | 2006 10 17 | 046 | 0.6− | 0.5+ | 2006 10 31 | 704 | 0.4+ | 0.5− |
| 2006 09 18 | 703 | 1.1− | 0.5+ | 2006 10 17 | 046 | 0.3− | 0.4+ | 2006 10 31 | 704 | 0.0 | 0.2+ |
| 2006 09 19 | J95 | (1.7− | 0.4+) | 2006 10 17 | 046 | 0.2− | 0.6+ | 2006 11 04 | 130 | 0.1+ | 0.0 |
| 2006 09 19 | J95 | 0.1+ | 0.1+ | 2006 10 17 | 046 | 0.3− | 0.1− | 2006 11 04 | 130 | 0.2− | 0.1− |
| 2006 09 19 | J95 | 0.9+ | 0.3− | 2006 10 17 | 046 | 0.2− | 0.2− | 2006 11 04 | 130 | 0.1+ | 0.2− |
| 2006 09 19 | H55 | (1.5− | 0.8−) | 2006 10 17 | 046 | 0.0 | 0.5+ | 2006 11 04 | 130 | 0.1− | 0.0 |
| 2006 09 19 | H55 | (1.8− | 1.2−) | 2006 10 17 | 448 | 0.1+ | 0.4+ | 2006 11 09 | H45 | 0.3+ | 0.0 |
| 2006 09 19 | H55 | (2.5− | 1.1−) | 2006 10 17 | 448 | 0.3+ | 0.1− | 2006 11 09 | H45 | 0.3+ | 0.1+ |
| 2006 09 19 | 703 | 0.0 | 0.0 | 2006 10 17 | 448 | 0.1− | 0.1− | 2006 11 09 | H45 | 0.2+ | 0.1+ |
| 2006 09 19 | 734 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.1− | 2006 11 09 | H45 | 0.4+ | 0.2+ |
| 2006 09 19 | 734 | 0.2− | 0.9− | 2006 10 17 | 703 | 0.0 | 0.0 | 2006 11 09 | H45 | 0.5+ | 0.2+ |
| 2006 09 19 | 734 | 0.0 | 1.3− | 2006 10 17 | 703 | 0.2− | 0.2− | 2006 11 09 | H45 | 0.2+ | 0.2+ |
| 2006 09 19 | 673 | 0.5+ | 0.1+ | 2006 10 17 | 703 | 1.3− | 1.4− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2006 09 19 | 703 | 0.5− | 0.3− | 2006 10 17 | 046 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 2006 09 19 | 682 | 0.8+ | 0.6+ | 2006 10 17 | 046 | 0.4+ | 0.9− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2006 09 19 | 673 | 0.0 | 0.1+ | 2006 10 17 | 046 | 0.4− | 0.9− | 2006 11 19 | 704 | (0.5− | 1.9+) |
| 2006 09 19 | 703 | 0.4− | 0.5− | 2006 10 17 | 046 | 1.3− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.6+ |
| 2006 09 19 | 673 | 0.1+ | 0.3+ | 2006 10 17 | 046 | 0.6− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.6− |
| 2006 09 19 | 673 | 0.0 | 0.4+ | 2006 10 17 | 046 | 0.4+ | 0.5− | 2006 11 29 | 704 | 0.2+ | 0.3− |
| 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 10 17 | 046 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.2− |
| 2006 09 19 | 682 | 0.9+ | 0.4+ | 2006 10 20 | H45 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.3− | 0.5− |
| 2006 09 19 | 682 | 0.8+ | 0.6+ | 2006 10 20 | H45 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2006 09 21 | J95 | 0.4− | 0.2+ | 2006 10 20 | H45 | 0.0 | 0.0 | 2006 11 30 | A53 | 0.1+ | 0.9+ |
| 2006 09 21 | J95 | 0.3+ | 0.4+ | 2006 10 20 | H45 | 0.4+ | 0.2− | 2006 11 30 | A53 | 0.1+ | 0.6+ |
| 2006 09 21 | J95 | 0.1+ | 0.4− | 2006 10 20 | H45 | 0.3+ | 0.3− | 2006 12 02 | H45 | 0.0 | 0.3+ |
| 2006 09 21 | 682 | (1.8+ | 1.3+) | 2006 10 20 | H45 | 0.1− | 0.2− | 2006 12 02 | H45 | 0.3− | 0.3+ |
| 2006 09 21 | 682 | 0.3+ | 0.6+ | 2006 10 24 | H45 | 0.2+ | 0.3+ | 2006 12 02 | H45 | 0.1− | 0.2+ |
| 2006 09 21 | 682 | 1.0+ | 0.0 | 2006 10 24 | H45 | 0.0 | 0.2+ | 2006 12 02 | H45 | 0.3− | 0.1+ |
| 2006 09 21 | 198 | 0.1− | 0.2+ | 2006 10 24 | H45 | 0.3− | 0.1− | 2006 12 02 | H45 | 0.3− | 0.1+ |
| 2006 09 22 | 198 | 0.3− | 0.1+ | 2006 10 24 | H45 | 0.2− | 0.4− | 2006 12 02 | H45 | 0.2− | 0.2+ |
| 2006 09 22 | 198 | 0.8− | 0.4− | 2006 10 24 | H45 | 0.2+ | 0.2+ | | | | |

**2006 SL$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.33059 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22551616 | $\omega$ | 282.88954 | | +0.90775549 | | +0.40050162 |
| $a$ | 2.6731147 | $\Omega$ | 53.63659 | | −0.29895302 | | +0.82633327 |
| $e$ | 0.2614401 | $i$ | 8.91653 | | −0.29429079 | | +0.39594416 |
| $P$ | 4.37 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.2− | 0.1+ | 2006 08 30 | 699 | 0.1+ | 0.1+ | 2006 09 21 | 699 | 0.3+ | 0.1− |
| 2002 11 01 | 644 | 0.3+ | 0.9− | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 09 21 | 699 | 0.1− | 0.3− |
| 2002 11 13 | 644 | 0.0 | 0.1+ | 2006 08 30 | 699 | 0.4+ | 0.5+ | 2006 09 26 | 703 | (2.1− | 0.8+) |
| 2002 11 13 | 644 | 0.2− | 0.4− | 2006 08 30 | 699 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.2+ |
| 2002 11 13 | 644 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.8− | 2006 09 26 | 703 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.2− |
| 2002 11 24 | 644 | 0.7+ | 0.4+ | 2006 09 18 | 703 | 0.9− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2002 12 07 | 644 | 0.0 | 0.3+ | 2006 09 18 | H06 | 0.7+ | 0.7− | 2006 10 09 | 644 | 0.2− | 0.3− |
| 2002 12 07 | 644 | 0.1− | 0.2− | 2006 09 18 | H06 | 1.4+ | 0.8− | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2002 12 09 | 291 | 0.2− | 0.0 | 2006 09 18 | H06 | 0.9+ | 0.4− | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 12 09 | 291 | 0.1− | 0.1+ | 2006 09 19 | H06 | 0.5− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2002 12 09 | 291 | 0.1+ | 0.0 | 2006 09 19 | H06 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.1− | 0.4− |
| 2002 12 11 | 644 | 0.2− | 0.1− | 2006 09 19 | H06 | 0.4+ | 0.4− | 2006 10 24 | 644 | 0.1− | 0.1− |
| 2002 12 11 | 644 | 0.3− | 0.6− | 2006 09 20 | 703 | 0.2+ | 0.3+ | 2006 10 24 | 644 | 0.5− | 0.3− |
| 2002 12 11 | 644 | 0.5+ | 0.0 | 2006 09 20 | 703 | 1.4− | 1.4+ | 2006 10 28 | 703 | 1.0+ | 1.0+ |
| 2006 07 31 | E12 | 0.5− | 0.8+ | 2006 09 20 | 703 | 0.5− | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.6+ |
| 2006 07 31 | E12 | 0.1− | 0.4− | 2006 09 20 | 703 | 0.1− | 0.4+ | 2006 10 28 | 703 | 0.1+ | 1.0− |
| 2006 07 31 | E12 | 0.4+ | 0.4− | 2006 09 21 | 699 | 1.3+ | 0.8+ | 2006 10 28 | 703 | 1.0− | 1.2+ |
| 2006 07 31 | E12 | 0.2+ | 0.7− | 2006 09 21 | 699 | 0.0 | 0.0 | | | | |

**2006 SN$_7$ = 2004 GY$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.05035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17456470 | $\omega$ | 171.41607 | | +0.93305681 | | −0.32506204 |
| $a$ | 3.1707726 | $\Omega$ | 209.06291 | | +0.30834285 | | +0.94330649 |
| $e$ | 0.0050762 | $i$ | 18.49251 | | +0.18528266 | | +0.06713814 |
| $P$ | 5.65 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 327 | 0.1− | 0.3+ | 2004 04 15 | 699 | 0.3+ | 0.0 | 2006 09 21 | 699 | 0.2+ | 1.0+ |
| 1998 02 23 | 327 | 0.7− | 0.9+ | 2004 04 15 | 699 | 0.6− | 1.0− | 2006 09 22 | 683 | 1.0− | 0.1− |
| 1998 02 23 | 327 | 0.4− | 0.7+ | 2004 04 15 | 699 | 0.9− | 0.0 | 2006 09 22 | 683 | (1.7− | 0.7+) |
| 1999 06 14 | 704 | 0.0 | 0.0 | 2004 04 20 | 691 | 0.1+ | 0.1− | 2006 09 22 | 683 | 1.0− | 1.1+ |
| 1999 06 14 | 704 | 0.5− | 0.6− | 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 09 23 | G92 | 0.1− | 0.1− |
| 1999 06 14 | 704 | 0.6− | 0.8− | 2004 04 20 | 691 | 0.2− | 0.2+ | 2006 09 23 | G92 | 0.8− | 0.2+ |
| 1999 06 14 | 704 | 0.4− | 0.0 | 2005 06 06 | 704 | 0.3+ | 1.2+ | 2006 09 23 | G92 | 0.4− | 0.2− |
| 2000 08 05 | 608 | 0.4− | 0.1− | 2005 06 06 | 704 | 0.5+ | 1.1+ | 2006 09 29 | 699 | 0.9− | 0.6+ |
| 2000 08 05 | 608 | 0.1− | 0.5− | 2005 06 06 | 704 | 0.6+ | 0.8+ | 2006 09 29 | 699 | 0.0 | 1.1+ |
| 2000 08 05 | 608 | 0.5+ | 0.0 | 2005 06 06 | 704 | 0.2+ | 1.0+ | 2006 09 29 | 699 | 0.2+ | 0.4+ |
| 2000 09 01 | 704 | 0.2+ | 0.3+ | 2005 06 06 | 704 | (1.5+ | 1.6+) | 2006 09 29 | 699 | 0.2− | 0.2+ |
| 2000 09 01 | 704 | 0.4+ | 1.1+ | 2006 08 26 | 104 | 1.4+ | 0.5− | 2006 10 03 | 703 | 0.3− | 0.9+ |
| 2000 09 01 | 704 | 0.5+ | 1.0+ | 2006 08 26 | 104 | 0.2− | 0.5+ | 2006 10 03 | 703 | (2.3− | 0.3+) |
| 2000 09 01 | 704 | 0.2+ | 0.3+ | 2006 08 26 | 104 | 0.1+ | 0.0 | 2006 10 03 | 703 | 1.3− | 0.1− |
| 2000 09 01 | 704 | 0.0 | 0.7+ | 2006 08 26 | 104 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 1.3− | 0.0 |
| 2000 09 22 | 704 | 0.2+ | 0.8− | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.1+ | 1.2+ |
| 2000 09 22 | 704 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.1− | 0.6− | 2006 10 17 | 703 | 0.6+ | 0.1+ |
| 2000 09 22 | 704 | 0.1− | 0.3− | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.4+ |
| 2000 09 22 | 704 | 0.1− | 0.7+ | 2006 09 16 | 703 | (1.8− | 0.9+) | 2006 10 17 | 703 | 0.3+ | 0.1+ |
| 2001 09 26 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 1.2− | 2006 10 21 | 291 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | 1.0+ | 1.0+ | 2006 09 16 | 703 | 0.1− | 0.6− | 2006 10 21 | 291 | 0.1− | 0.0 |
| 2001 09 26 | 704 | (2.4+ | 1.2+) | 2006 09 16 | 703 | 0.1+ | 0.8− | 2006 10 21 | 291 | 0.0 | 0.1+ |
| 2001 09 26 | 704 | (0.9+ | 1.9+) | 2006 09 16 | 703 | 0.3+ | 0.7− | 2006 10 21 | 246 | 0.5+ | 0.1+ |
| 2001 09 26 | 704 | 1.5+ | 1.0+ | 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 10 21 | 246 | 0.9+ | 0.2− |
| 2001 10 17 | 704 | 0.6+ | 0.5− | 2006 09 18 | 703 | 0.8+ | 0.0 | 2006 10 21 | 246 | 0.1+ | 0.2+ |
| 2001 10 17 | 704 | 0.0 | 0.1+ | 2006 09 18 | 703 | 1.1+ | 0.9− | 2006 10 21 | 246 | 0.4+ | 0.1+ |
| 2001 10 17 | 704 | 0.1− | 1.5+ | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 10 21 | 246 | 0.5+ | 0.2+ |
| 2001 10 17 | 704 | (0.1− | 2.2+) | 2006 09 19 | G92 | 0.1− | 0.1+ | 2006 10 21 | 246 | 0.4+ | 0.4+ |
| 2001 10 17 | 704 | 0.8− | 1.1+ | 2006 09 19 | G92 | 0.2− | 0.2+ | 2006 10 21 | 246 | 0.1− | 0.4− |
| 2001 11 19 | 608 | 0.5− | 0.3− | 2006 09 19 | G92 | 0.2− | 0.5+ | 2006 10 23 | 291 | 0.4− | 0.8− |
| 2001 11 19 | 608 | 0.4− | 0.4− | 2006 09 20 | G92 | 0.3+ | 0.3− | 2006 10 23 | 291 | 0.3− | 0.7− |
| 2001 11 19 | 608 | 0.8− | 0.5− | 2006 09 20 | G92 | 0.3+ | 0.2+ | 2006 10 23 | 291 | 0.1− | 0.0 |
| 2002 12 06 | 644 | 0.8+ | 0.5+ | 2006 09 20 | G92 | 0.1+ | 0.1− | 2006 10 25 | 246 | 0.0 | 0.5+ |
| 2002 12 06 | 644 | 0.3+ | 0.4+ | 2006 09 20 | 958 | 0.2− | 0.3+ | 2006 10 25 | 246 | 0.2− | 0.7+ |
| 2002 12 06 | 644 | 0.5+ | 0.6+ | 2006 09 20 | 958 | 0.9+ | 0.7− | 2006 10 25 | 246 | 0.2− | 0.8+ |
| 2004 03 15 | 644 | 0.1+ | 0.5+ | 2006 09 21 | 958 | 0.4+ | 0.5+ | 2006 10 25 | 246 | 0.0 | 0.1− |
| 2004 03 15 | 644 | 0.1+ | 0.0 | 2006 09 21 | 699 | 0.5− | 0.6− | 2006 10 25 | 246 | 0.0 | 0.2+ |
| 2004 03 15 | 644 | 0.7+ | 0.6+ | 2006 09 21 | 699 | 0.3− | 1.1+ | 2006 10 25 | 246 | 0.2− | 0.6− |
| 2004 04 15 | 699 | 0.9+ | 0.5+ | 2006 09 21 | 699 | 0.0 | 0.4− | | | | |

**2006 SV$_7$ = 2004 BL$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.62332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26835604 | $\omega$ | 224.96453 | | +0.99345659 | −0.10676096 | |
| $a$ | 2.3804650 | $\Omega$ | 141.11060 | | +0.11421003 | +0.92946135 | |
| $e$ | 0.2034755 | $i$ | 3.70526 | | −0.00025892 | +0.35313411 | |
| $P$ | 3.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 20 | 644 | 0.2+ | 0.0 | 2006 09 22 | 704 | 1.2+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.1+ | |
| 2002 07 20 | 644 | 0.2− | 0.2+ | 2006 09 22 | 704 | 1.2− | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 | |
| 2002 07 20 | 644 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.5− | 1.0+ | 2006 10 16 | 703 | 0.7+ | 0.2− | |
| 2004 01 19 | 691 | 0.4+ | 0.1− | 2006 09 22 | 704 | 0.6− | 1.1+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | |
| 2004 01 19 | 691 | 0.0 | 0.1− | 2006 09 26 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.3− | |
| 2004 01 19 | 691 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.2+ | 0.7+ | |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2− | |
| 2004 01 30 | 691 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− | |
| 2004 01 30 | 691 | 0.0 | 0.0 | 2006 09 28 | 699 | 0.5+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.0 | |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 28 | 704 | 1.5− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.3− | |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 699 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.3− | |
| 2006 08 24 | 644 | 0.3+ | 0.3+ | 2006 09 28 | 704 | (0.2+ | 2.1+) | 2006 10 21 | 644 | 0.3+ | 0.1+ | |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.6+ | 0.8− | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 1.2+ | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.0 | |
| 2006 09 16 | 704 | 0.5+ | 1.5− | 2006 10 01 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.1+ | |
| 2006 09 16 | 704 | 0.5+ | 0.4− | 2006 10 01 | 704 | 0.2− | 0.3− | 2006 10 22 | 703 | 1.0− | 0.4− | |
| 2006 09 16 | 704 | 0.5− | 0.2− | 2006 10 01 | 704 | 0.7− | 0.5+ | 2006 10 22 | 703 | 0.9− | 0.1+ | |
| 2006 09 16 | 704 | 0.7− | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.8+ | 2006 10 22 | 703 | 1.4+ | 1.4− | |
| 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.3− | |
| 2006 09 18 | 703 | 0.4− | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.1− | |
| 2006 09 18 | 703 | 0.3− | 0.7− | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1− | |
| 2006 09 18 | 703 | 0.4− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.0 | |

**2006 SW$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.58395 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28649799 | $\omega$ | 317.65211 | | +0.96866978 | −0.23373986 | |
| $a$ | 2.2788811 | $\Omega$ | 56.05071 | | +0.24622156 | +0.85967960 | |
| $e$ | 0.2104320 | $i$ | 5.80710 | | +0.03246236 | +0.45422095 | |
| $P$ | 3.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 703 | (4.8+ | 1.8−) | 2006 09 20 | 608 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.9− | |
| 2004 01 16 | 703 | 1.2+ | 0.9+ | 2006 09 21 | 699 | 0.6+ | 0.7+ | 2006 10 16 | 703 | (0.8+ | 1.6−) | |
| 2004 01 16 | 703 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.5− | 0.5− | 2006 10 22 | 704 | 0.3− | 0.6+ | |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.7+ | 0.5+ | 2006 10 22 | 704 | 1.0− | 0.1− | |
| 2004 01 16 | 703 | 0.6+ | 0.3+ | 2006 09 21 | 699 | 0.9− | 0.4+ | 2006 10 22 | 704 | 0.3− | 0.8+ | |
| 2004 01 16 | 691 | 0.2− | 0.1− | 2006 09 22 | 704 | 0.4− | 0.7+ | 2006 10 22 | 704 | 0.4+ | 0.4+ | |
| 2004 01 16 | 691 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.7+ | 2006 10 22 | 704 | 0.4+ | 1.1+ | |
| 2005 04 12 | G96 | 0.2− | 0.0 | 2006 09 22 | 704 | 1.5+ | 1.0+ | 2006 10 22 | 703 | 0.4− | 1.0− | |
| 2005 04 12 | G96 | 0.1+ | 0.4+ | 2006 09 22 | 704 | 0.7− | 0.4+ | 2006 10 22 | 703 | 0.4+ | 1.3− | |
| 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 09 22 | 704 | 0.8− | 0.8+ | 2006 10 22 | 703 | 0.0 | 0.5− | |
| 2005 04 12 | G96 | 0.1+ | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.2− | |
| 2005 04 12 | G96 | 0.3− | 0.4+ | 2006 09 26 | 704 | (0.3+ | 1.8+) | 2006 10 27 | 704 | 0.2+ | 0.5+ | |
| 2005 04 12 | G96 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.6+ | 0.0 | 2006 10 27 | 704 | 0.7− | 1.4+ | |
| 2005 04 12 | G96 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.4+ | 1.5+ | 2006 10 27 | 704 | 0.2− | 0.7+ | |
| 2005 04 12 | G96 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.6+ | 2006 11 06 | 644 | 0.1+ | 0.2− | |
| 2005 04 12 | G96 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.3+ | 0.2+ | 2006 11 06 | 644 | 0.3− | 0.3− | |
| 2005 04 12 | G96 | 0.5+ | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.9+ | 2006 11 06 | 644 | 0.0 | 0.2− | |
| 2005 04 12 | G96 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.5+ | 2006 11 10 | 644 | 0.0 | 0.2− | |
| 2005 04 12 | G96 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.2− | 2006 11 10 | 704 | 0.4− | 0.4+ | |
| 2005 04 14 | 691 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.0 | |
| 2005 04 14 | 691 | 0.2− | 0.9+ | 2006 09 29 | 699 | 0.1− | 0.3− | 2006 11 10 | 704 | 0.1+ | 0.5+ | |
| 2005 04 14 | 691 | 0.8+ | 0.2+ | 2006 09 29 | 608 | (0.2− | 1.9−) | 2006 11 10 | 704 | 0.2+ | 0.1+ | |
| 2006 09 16 | 704 | 0.7+ | 1.0+ | 2006 09 29 | 608 | 0.4− | 1.1− | 2006 11 10 | 644 | 0.0 | 0.1− | |
| 2006 09 16 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 608 | 0.6− | 1.3− | 2006 11 10 | 704 | 0.5− | 0.3+ | |
| 2006 09 16 | 704 | 0.6− | 0.5− | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 10 | 704 | 0.9− | 1.2+ | |
| 2006 09 16 | 704 | 0.7− | 0.6− | 2006 09 30 | 704 | 0.2− | 0.3− | 2006 11 17 | 704 | 0.2+ | 1.3+ | |
| 2006 09 16 | 704 | 0.1− | 0.9− | 2006 09 30 | 703 | 0.0 | 0.5− | 2006 11 17 | 704 | 0.8+ | 0.8+ | |
| 2006 09 18 | 703 | 0.8− | 0.2− | 2006 09 30 | 704 | 0.8− | 0.2+ | 2006 11 17 | 704 | 0.5− | 1.3+ | |
| 2006 09 18 | 703 | 0.3− | 0.4− | 2006 09 30 | 703 | 0.4+ | 0.5− | 2006 11 17 | 704 | 0.0 | 1.5+ | |
| 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 09 30 | 704 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.0 | |
| 2006 09 18 | 703 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.3− | |
| 2006 09 19 | 704 | 0.6− | 0.4− | 2006 09 30 | 704 | 0.5− | 0.3− | 2006 11 17 | G96 | 0.0 | 0.2− | |
| 2006 09 19 | 704 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.2− | 0.4+ | |
| 2006 09 19 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | (0.7− | 2.8−) | 2006 11 20 | 704 | 0.7+ | 0.0 | |
| 2006 09 19 | 704 | (0.6− | 1.9−) | 2006 10 16 | 703 | (0.9− | 2.2−) | 2006 11 20 | 704 | 0.2− | 0.7− | |
| 2006 09 19 | 704 | 0.9− | 0.4− | 2006 10 16 | 703 | (1.5+ | 3.6−) | 2006 11 20 | 704 | 0.4+ | 0.0 | |
| 2006 09 20 | 608 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 1.2+ | 1.4− | 2006 11 20 | 704 | 0.7+ | 0.0 | |
| 2006 09 20 | 608 | 0.7+ | 0.8+ | 2006 10 16 | 703 | (0.4+ | 1.7−) | | | | | |

**2006 SY$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.92291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21298807 | $\omega$ | 302.68294 | | +0.99452790 | −0.04876140 | |
| $a$ | 2.7769360 | $\Omega$ | 60.26470 | | +0.08497827 | +0.89201799 | |
| $e$ | 0.1861021 | $i$ | 6.10808 | | −0.06076966 | +0.44936203 | |
| $P$ | 4.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.8− | 1.0− | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− | |
| 1995 03 26 | 691 | 0.2− | 1.4− | 2006 09 25 | 699 | 1.3+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.2− | |
| 1995 03 26 | 691 | 0.5− | 1.3− | 2006 09 25 | 699 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.1− | |
| 2001 08 10 | 644 | 0.4− | 0.4− | 2006 09 25 | 699 | 0.6+ | 0.6+ | 2006 10 10 | 644 | 0.3+ | 0.1− | |
| 2001 08 10 | 644 | 0.3− | 0.5− | 2006 09 26 | 704 | 0.9+ | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.1− | |
| 2001 08 10 | 644 | 0.1− | 0.3− | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 | |
| 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 09 26 | 704 | 0.6+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.1+ | |
| 2004 03 18 | 691 | 0.2+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.4− | |
| 2004 03 18 | 691 | 0.0 | 0.7+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.1− | |
| 2005 06 14 | G96 | 0.5+ | 0.2− | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.5− | |
| 2005 06 14 | G96 | 0.6+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.1− | |
| 2005 06 14 | G96 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.2− | |
| 2006 09 16 | 704 | 0.8− | 0.3− | 2006 09 29 | 699 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2− | |
| 2006 09 16 | 704 | 0.4+ | 0.9− | 2006 09 29 | 699 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ | |
| 2006 09 16 | 704 | 0.2− | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− | |
| 2006 09 16 | 704 | 0.8+ | 0.6+ | 2006 10 01 | 704 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1− | |
| 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.4− | |
| 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 10 01 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2− | |
| 2006 09 18 | 703 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1− | |
| 2006 09 18 | 703 | 1.2− | 0.5− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2006 09 21 | 699 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.0 | |
| 2006 09 21 | 699 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.6− | 2006 10 22 | 703 | 0.8− | 0.0 | |
| 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.7− | 0.5− | |
| 2006 09 22 | 704 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.2− | |
| 2006 09 22 | 704 | 0.5+ | 0.7− | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.6+ | 1.1− | |
| 2006 09 22 | 704 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.8+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.6− | |
| 2006 09 22 | 704 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.5− | |
| 2006 09 22 | 704 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3+ | 1.1− | |

**2006 SA$_8$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.84487 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18731179 | $\omega$ | 83.80828 | | +0.50387986 | −0.86131071 | |
| $a$ | 3.0252363 | $\Omega$ | 335.59292 | | +0.71694303 | +0.45912380 | |
| $e$ | 0.0170720 | $i$ | 9.07619 | | +0.48176528 | +0.21759872 | |
| $P$ | 5.26 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 695 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.1− | 0.4+ | 2006 09 27 | 703 | 0.7− | 0.1+ | |
| 2004 03 15 | 695 | 1.5− | 0.6− | 2006 09 18 | 703 | 0.4+ | 1.0+ | 2006 09 27 | 703 | 0.1+ | 0.4− | |
| 2004 03 15 | 695 | 0.4− | 0.3− | 2006 09 18 | 703 | 0.9+ | 0.3− | 2006 09 27 | 703 | 0.1− | 0.4− | |
| 2004 03 15 | 695 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.8− | 2006 09 28 | 683 | 0.5− | 0.9− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 695 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.5− | 1.0+ | 2006 09 28 | 683 | 0.7− | 0.1− |
| 2004 03 15 | 695 | 0.9− | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 09 28 | 683 | 0.5+ | 1.1+ |
| 2004 04 14 | 699 | 0.3+ | 0.6− | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.0 |
| 2004 04 14 | 699 | 0.6+ | 0.2− | 2006 09 20 | 644 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2004 04 14 | 699 | 0.5+ | 0.9+ | 2006 09 27 | 699 | 0.1+ | 0.9− | 2006 10 04 | G96 | 0.0 | 0.3− |
| 2004 04 14 | 699 | 1.3+ | 0.3+ | 2006 09 27 | 699 | 1.1+ | 0.7+ | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2006 09 16 | 703 | 1.7+ | 1.1+ | 2006 09 27 | 699 | 0.6+ | 0.5− | 2006 10 21 | 644 | 0.8− | 0.2− |
| 2006 09 16 | 703 | 0.2+ | 0.3− | 2006 09 27 | 699 | (2.4+ | 0.4+) | 2006 10 21 | 644 | 0.6− | 0.1− |
| 2006 09 16 | 703 | 0.8+ | 0.4+ | 2006 09 27 | 703 | 0.6− | 0.8− | 2006 10 21 | 644 | 0.8− | 0.4− |

### 2006 $SB_8$ = 2004 $CU_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.95081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23435148 | $\omega$ | 346.39319 | | +0.76512892 | +0.64153467 | |
| $a$ | 2.6054990 | $\Omega$ | 333.45453 | | −0.57866089 | +0.64775673 | |
| $e$ | 0.1728654 | $i$ | 7.05275 | | −0.28236380 | +0.41090691 | |
| $P$ | 4.21 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 27 | 691 | 0.2− | 0.1+ | 2006 08 29 | 699 | 0.4− | 0.8+ | 2006 09 19 | 699 | 0.1+ | 0.6− |
| 2000 02 27 | 691 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 09 25 | 704 | 1.2− | 0.1+ |
| 2000 02 27 | 691 | 0.1− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.4− | 2006 09 25 | 704 | 0.4− | 0.7− |
| 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | 1.0+ | 0.3+ | 2006 09 25 | 704 | 0.5+ | 0.7+ |
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2006 09 16 | 703 | 0.0 | 0.7− | 2006 09 25 | 704 | 0.7− | 0.9+ |
| 2004 02 11 | 691 | 0.4+ | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.5+ | 2006 09 27 | 683 | 0.4− | 1.3− |
| 2004 02 13 | 291 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.0 | 2006 09 27 | 683 | 1.3+ | 1.3− |
| 2004 02 13 | 291 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.8+ | 0.6+ | 2006 09 27 | 683 | 0.8− | 0.5+ |
| 2004 02 13 | 291 | 0.8− | 0.0 | 2006 09 18 | 703 | (0.4+ | 1.9+) | 2006 09 30 | 683 | 0.3− | 0.2+ |
| 2006 08 29 | 699 | (2.5+ | 0.9−) | 2006 09 19 | 699 | 0.1+ | 0.3+ | 2006 09 30 | 683 | 0.0 | 0.4+ |
| 2006 08 29 | 699 | 0.6− | 0.0 | 2006 09 19 | 699 | 0.6− | 0.4+ | 2006 09 30 | 683 | (2.1− | 1.6−) |
| 2006 08 29 | 699 | 0.7+ | 0.7− | 2006 09 19 | 699 | 0.3+ | 0.1+ | | | | |

### 2006 $SD_8$ = 2001 $XL_{261}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.65500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17904004 | $\omega$ | 178.67338 | | +0.83578868 | −0.53484998 | |
| $a$ | 3.1177116 | $\Omega$ | 214.59540 | | +0.50171094 | +0.83576253 | |
| $e$ | 0.0623757 | $i$ | 12.62180 | | +0.22303232 | +0.12424367 | |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 010 | (2.8+ | 1.6+) | 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 1995 10 20 | 010 | 0.0 | 0.4− | 2004 04 24 | 691 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.3+ |
| 1995 10 20 | 010 | (2.4− | 0.7−) | 2004 04 24 | 691 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2001 12 11 | 704 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.6+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 12 11 | 704 | 0.2+ | 0.2+ | 2006 09 16 | 703 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 12 11 | 704 | 0.2+ | 0.7+ | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2001 12 11 | 704 | 0.3+ | 0.6+ | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.8− | 1.0+) |
| 2001 12 11 | 704 | 0.2− | 0.6+ | 2006 09 18 | 699 | (0.6− | 1.6−) | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2001 12 14 | 644 | 0.3− | 0.1− | 2006 09 18 | 699 | (0.2+ | 1.8−) | 2006 11 11 | 703 | 0.4− | 0.9+ |
| 2001 12 14 | 644 | 0.4− | 0.2+ | 2006 09 18 | 699 | 1.0− | 0.4+ | 2006 11 11 | 703 | 0.3− | 1.3+ |
| 2001 12 14 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.2− | | | | |

### 2006 $SE_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.84893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22071792 | $\omega$ | 173.02315 | | +0.81245712 | −0.57086441 | |
| $a$ | 2.7117167 | $\Omega$ | 222.51510 | | +0.52608656 | +0.80538842 | |
| $e$ | 0.2913519 | $i$ | 10.09368 | | +0.25128939 | +0.15957230 | |
| $P$ | 4.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 25 | 910 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 13 | A24 | 0.6− | 1.0+ |
| 1997 10 25 | 910 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 13 | A24 | 0.3+ | 1.0+ |
| 1997 10 25 | 910 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2002 11 13 | 645 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.7− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2002 11 13 | 645 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.0 | 0.4− |
| 2003 01 25 | 644 | 0.6+ | 0.6+ | 2006 10 28 | 704 | 0.6+ | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2003 01 25 | 644 | 0.7+ | 0.6+ | 2006 10 28 | 704 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2003 01 25 | 644 | 0.5+ | 0.2+ | 2006 10 28 | 704 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2006 08 29 | 703 | (0.3+ | 1.5+) | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2006 08 29 | 703 | 0.6+ | 0.9− | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.8− | 0.1− |
| 2006 08 29 | 703 | (0.9+ | 1.6+) | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.3− |
| 2006 08 29 | 703 | 0.2+ | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2006 09 16 | 703 | 0.4+ | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.8− |
| 2006 09 16 | 703 | 0.7− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.4− | 1.0+ |
| 2006 09 16 | 703 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 1.0− | 0.1− |
| 2006 09 16 | 703 | 0.4+ | 1.0− | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2006 09 18 | 704 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2006 09 18 | 704 | 0.8+ | 0.9+ | 2006 11 08 | A24 | 1.0+ | 0.6+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2006 09 18 | 704 | 1.0+ | 1.4+ | 2006 11 08 | A24 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2006 09 18 | 704 | (0.6+ | 1.7+) | 2006 11 08 | A24 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.5− |
| 2006 09 19 | 703 | 0.5+ | 0.5− | 2006 11 09 | A24 | 0.4− | 0.9− | 2006 11 23 | 683 | 0.5+ | 0.7+ |
| 2006 09 19 | 703 | 0.3+ | 0.1− | 2006 11 09 | A24 | 0.2+ | 0.5− | 2006 11 23 | 683 | 0.9− | 0.0 |
| 2006 09 19 | 703 | 0.5+ | 0.5− | 2006 11 09 | A24 | 0.6+ | 0.3+ | 2006 11 26 | 704 | 0.4+ | 0.2+ |
| 2006 09 19 | 703 | 0.3− | 1.1− | 2006 11 09 | A24 | 0.2+ | 0.0 | 2006 11 26 | 704 | 0.2+ | 0.0 |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 26 | 704 | 0.2+ | 0.0 |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.3− |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.3+ | 0.5− |
| 2006 10 19 | 644 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.0 |
| 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 27 | 703 | 0.8+ | 0.4− |
| 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.6+ | 0.2− |
| 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.2− | 2006 11 28 | 704 | 1.3+ | 1.0− |
| 2006 10 20 | 691 | 0.9− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.4− | 2006 11 28 | 704 | 0.6+ | 0.2− |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.5− | 2006 11 28 | 704 | 0.6+ | 0.1+ |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.5− | 2006 11 28 | 704 | 0.5+ | 0.1+ |
| 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.5− | | | | |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.3− | | | | |

### 2006 $SJ_8$ = 1998 $BS_{31}$ = 2002 $AZ_{206}$ = 2004 $EQ_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.04292 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18680893 | $\omega$ | 166.66599 | | +0.92722582 | +0.37245126 | |
| $a$ | 3.0306628 | $\Omega$ | 171.16221 | | −0.36271749 | +0.91914332 | |
| $e$ | 0.1317118 | $i$ | 14.76106 | | −0.09321107 | +0.12827946 | |
| $P$ | 5.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 27 | 691 | 0.2+ | 0.3− | 2004 03 21 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 1998 01 27 | 691 | 0.4− | 0.3− | 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.7− |
| 1998 01 27 | 691 | 0.2− | 0.4− | 2006 09 16 | 699 | 0.1− | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.7− |
| 1998 01 31 | 691 | 0.6+ | 0.2− | 2006 09 16 | 699 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.7− | 0.2+ |
| 1998 01 31 | 691 | 0.0 | 0.2− | 2006 09 16 | 699 | 1.0+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 1.0+ |
| 1998 01 31 | 691 | 0.2+ | 0.3− | 2006 09 18 | 703 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2001 10 28 | 644 | 0.9− | 0.4+ | 2006 09 18 | 703 | 1.0+ | 1.1+ | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2001 10 28 | 644 | 0.8− | 0.3+ | 2006 09 18 | 703 | 1.1+ | 0.8+ | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2001 10 28 | 644 | 0.7− | 0.0 | 2006 09 18 | 703 | 0.5− | 0.3− | 2006 11 07 | 644 | 0.4+ | 0.4− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 2001 11 12 | 645 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2001 11 20 | 699 | 0.1− | 0.6+ | 2006 09 25 | 699 | (0.2+ | 2.4+) | 2006 11 11 | 291 | 0.2− | 0.3+ |
| 2001 11 20 | 699 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.4+ | 0.0 | 2006 11 11 | 291 | 0.1+ | 0.1+ |
| 2001 11 20 | 699 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.1− | 0.6+ | 2006 11 11 | 291 | 0.0 | 0.2+ |
| 2001 11 20 | 699 | 0.4− | 1.0+ | 2006 09 26 | 703 | 0.3− | 0.7+ | 2006 11 11 | G96 | 0.1+ | 1.3+ |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.8− | 0.3− | 2006 11 11 | G96 | (0.4+ | 1.8+) |
| 2002 01 13 | 645 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.2− | 2006 11 11 | G96 | (0.2+ | 5.4+) |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 1.0+ | 0.9− | 2006 11 11 | G96 | (0.1+ | 1.8+) |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.5+ | 0.1− |
| 2004 03 14 | 691 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 1.2− | 0.3+ | 2006 11 16 | 703 | 0.1+ | 0.6− |
| 2004 03 14 | 691 | 0.1− | 0.5+ | 2006 09 29 | 699 | 0.3+ | 0.8+ | 2006 11 16 | 703 | (0.8+ | 1.5+) |
| 2004 03 14 | 691 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.2+ | 1.0+ | 2006 11 16 | 703 | 0.5+ | 0.5+ |
| 2004 03 21 | 691 | 0.0 | 0.4+ | 2006 10 01 | 704 | (0.4− | 1.5+) | | | | |
| 2004 03 21 | 691 | 0.2− | 1.4+ | 2006 10 01 | 704 | 0.5+ | 0.8+ | | | | |

**2006 $SK_8$ = 2001 $VC_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.37230 | | (2000.0) | | | |
| $n$ | 0.18951741 | $\omega$ | 177.97901 | | +0.81743041 | +0.56924831 |
| $a$ | 3.0017186 | $\Omega$ | 146.82434 | | −0.53072789 | +0.80374330 |
| $e$ | 0.1427143 | $i$ | 9.26626 | | −0.22390942 | +0.17306953 |
| $P$ | 5.20 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 13 | 608 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.8+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2001 11 13 | 608 | 0.3− | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 1.3+ |
| 2001 11 13 | 608 | 0.6+ | 0.3− | 2006 09 29 | 699 | 0.7− | 0.5+ | 2006 10 22 | 703 | 1.2− | 1.5− |
| 2005 06 03 | E12 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.2− |
| 2005 06 03 | E12 | 0.2+ | 0.0 | 2006 09 29 | 699 | 1.2+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2006 09 16 | 699 | 0.9− | 0.3− | 2006 09 29 | 699 | 0.7+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 09 16 | 699 | (2.0− | 0.4+) | 2006 09 30 | 704 | 1.6− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2006 09 16 | 699 | (2.3+ | 0.4+) | 2006 09 30 | 704 | 0.1+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2006 09 16 | 699 | 0.9+ | 0.2+ | 2006 09 30 | 704 | 1.2− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 09 18 | 703 | 0.1− | 0.3− | 2006 09 30 | 704 | 1.2− | 0.8+ | 2006 10 28 | 703 | 0.0 | 0.7+ |
| 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.4− | 2006 10 28 | 703 | 0.3+ | 0.3+ |
| 2006 09 18 | 703 | 1.5+ | 0.8− | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 10 28 | 703 | 0.2− | 0.5− |
| 2006 09 18 | 703 | 0.8+ | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.2+ | 2006 10 28 | 703 | 1.3− | 0.7− |
| 2006 09 25 | 699 | 1.8+ | 1.4+ | 2006 10 16 | 703 | 0.1+ | 1.1− | | | | |
| 2006 09 25 | 699 | 0.8− | 0.1− | 2006 10 22 | 703 | 0.1− | 0.5+ | | | | |

**2006 $SL_8$ = 2005 $JA_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.08766 | | (2000.0) | | | |
| $n$ | 0.28745241 | $\omega$ | 274.40557 | | +0.64628750 | −0.75657810 |
| $a$ | 2.2738339 | $\Omega$ | 134.80511 | | +0.74389321 | +0.59557770 |
| $e$ | 0.0227337 | $i$ | 8.06236 | | +0.17010399 | +0.26995699 |
| $P$ | 3.43 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 01 | 644 | 0.5+ | 0.1+ | 2005 05 15 | 644 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.4− |
| 2002 07 01 | 644 | 0.0 | 0.2− | 2005 05 15 | 644 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2002 07 01 | 644 | 0.0 | 0.1+ | 2005 05 20 | G96 | 0.5− | 0.1− | 2006 09 26 | 703 | (1.9− | 0.2−) |
| 2002 07 13 | 644 | 0.0 | 0.2− | 2005 05 20 | G96 | 0.3− | 0.3− | 2006 09 26 | 703 | 0.5− | 0.2+ |
| 2002 07 13 | 644 | 0.4− | 0.1+ | 2005 05 20 | G96 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.6+ | 0.7− |
| 2002 07 13 | 644 | 0.1− | 0.4+ | 2005 05 20 | G96 | 0.5− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2005 04 16 | 691 | 0.1+ | 0.2+ | 2006 09 16 | 699 | 0.4− | 0.4− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.1− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 09 16 | 699 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2005 05 15 | 644 | 0.1− | 0.0 | 2006 09 16 | 699 | (1.7+ | 0.0 ) | 2006 10 23 | 644 | 0.3− | 0.1− |
| 2005 05 15 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 1.3+ | 0.5− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2005 05 15 | 644 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.3+ | | | | |
| 2005 05 15 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | (2.0− | 0.5+) | | | | |

**2006 $SM_8$ = 2003 $YE_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.90211 | | (2000.0) | | | |
| $n$ | 0.29124590 | $\omega$ | 261.81899 | | +0.98978560 | +0.09562251 |
| $a$ | 2.2540463 | $\Omega$ | 92.64789 | | −0.04702321 | +0.91916496 |
| $e$ | 0.1943870 | $i$ | 6.07627 | | −0.13458559 | +0.38208915 |
| $P$ | 3.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 03 | 691 | 0.2+ | 1.6+ | 2006 09 16 | 699 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.2− |
| 1996 12 03 | 691 | 0.9+ | 1.8+ | 2006 09 16 | 699 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.3− |
| 1996 12 03 | 691 | 0.3+ | 2.0+ | 2006 09 16 | 699 | 0.1+ | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.2− |
| 1996 12 09 | 691 | 1.4− | 0.6− | 2006 09 18 | 703 | 1.1+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2− |
| 1996 12 09 | 691 | 0.5− | 0.8− | 2006 09 18 | 703 | 1.4+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 1996 12 09 | 691 | 0.6− | 0.8− | 2006 09 18 | 703 | 0.0 | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.2− |
| 1999 07 14 | 704 | 0.0 | 1.7+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.1+ |
| 1999 07 14 | 704 | 0.3+ | 0.8+ | 2006 09 21 | 699 | (0.1− | 1.5−) | 2006 10 16 | 703 | 0.7+ | 0.1− |
| 1999 07 14 | 704 | 0.2− | 0.9+ | 2006 09 21 | 699 | 0.7+ | 0.6− | 2006 10 16 | 703 | 0.3− | 0.5− |
| 1999 07 14 | 704 | 0.8− | 0.4+ | 2006 09 21 | 699 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 1999 07 14 | 704 | 0.4− | 1.0+ | 2006 09 21 | 699 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.5− |
| 2002 05 21 | 704 | 0.3− | 0.6+ | 2006 09 25 | H51 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.5− |
| 2002 05 21 | 704 | 0.3− | 1.4+ | 2006 09 25 | H51 | 0.4+ | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.5− |
| 2002 05 21 | 704 | 0.0 | 0.8+ | 2006 09 25 | H51 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.0 |
| 2002 06 16 | 644 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 06 16 | 644 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2002 06 16 | 644 | 0.3+ | 0.1− | 2006 09 25 | 699 | 0.5+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.3− |
| 2003 12 18 | 704 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.4− |
| 2003 12 18 | 704 | 0.6− | 0.5+ | 2006 09 26 | 704 | (0.1+ | 1.6+) | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2003 12 18 | 704 | 0.4+ | 0.5− | 2006 09 26 | 704 | 1.4− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2003 12 18 | 704 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.9− | 0.3− | 2006 10 28 | 703 | 0.1+ | 0.5− |
| 2003 12 18 | 704 | 0.3+ | 0.3− | 2006 09 26 | 704 | 0.6− | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.9− |
| 2003 12 21 | 704 | 0.2− | 0.4− | 2006 09 26 | 703 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.0 | 0.3− |
| 2003 12 21 | 704 | 0.2+ | 0.9− | 2006 09 26 | 703 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.4− |
| 2003 12 21 | 704 | 0.6+ | 0.5− | 2006 09 26 | 703 | 0.4− | 0.1− | 2006 11 10 | 704 | 1.0+ | 0.2− |
| 2003 12 21 | 704 | 0.4− | 0.5− | 2006 09 29 | 699 | 0.2− | 0.2− | 2006 11 10 | 704 | 0.0 | 0.9+ |
| 2005 05 08 | 691 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 0.2+ | 0.5+ | 2006 11 10 | 704 | 0.0 | 0.8+ |
| 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.5− | 2006 11 10 | 704 | 1.0− | 1.1+ |
| 2005 05 08 | 691 | 0.3+ | 0.5+ | 2006 09 29 | 699 | 0.3+ | 0.4− | 2006 11 10 | 704 | 0.1− | 0.3+ |
| 2006 08 19 | 699 | 0.0 | 0.1− | 2006 09 30 | 704 | 0.3− | 0.5+ | 2006 11 16 | 703 | 0.5+ | 0.1− |
| 2006 08 19 | 699 | 1.0− | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 703 | 0.3+ | 0.5− |
| 2006 08 19 | 699 | 0.3+ | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.5+ | 2006 11 16 | 703 | 0.3− | 0.2− |
| 2006 08 19 | 699 | 0.4+ | 0.7+ | 2006 09 30 | 704 | 0.6− | 0.7+ | 2006 11 16 | 703 | 0.1− | 0.5− |
| 2006 09 16 | 699 | 0.0 | 0.7+ | 2006 09 30 | 704 | 0.2− | 0.2+ | | | | |

**2006 $SO_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.67067 | | (2000.0) | | | |
| $n$ | 0.27131124 | $\omega$ | 207.67143 | | +0.83069227 | +0.54458791 |
| $a$ | 2.3631476 | $\Omega$ | 118.86681 | | −0.48328851 | +0.80849862 |
| $e$ | 0.1551744 | $i$ | 7.58843 | | −0.27637395 | +0.22305602 |
| $P$ | 3.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 13 | 703 | 0.9− | 0.6− | 2006 09 25 | 699 | 0.1− | 0.0 | 2006 10 22 | 703 | 1.4− | 0.5+ |
| 2005 04 13 | 703 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.1− | 0.9+ |
| 2005 04 13 | 703 | 0.3− | 0.4− | 2006 09 26 | 703 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.2+ | 1.1+ |
| 2005 04 13 | 703 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2005 04 16 | 683 | 0.9− | 0.0 | 2006 09 26 | 703 | 0.0 | 0.7− | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2005 04 16 | 683 | 0.9+ | 0.1− | 2006 09 30 | 704 | 0.6+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2005 04 16 | 683 | (5.6+ | 2.0−) | 2006 09 30 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 644 | 0.2− | 0.3− |
| 2006 09 16 | 699 | 1.2+ | 0.1+ | 2006 09 30 | 704 | 0.6+ | 0.8+ | 2006 10 23 | 644 | 0.4+ | 0.0 |
| 2006 09 16 | 699 | 0.2+ | 0.6+ | 2006 09 30 | 704 | 0.9+ | 0.5− | 2006 10 23 | 644 | 0.0 | 0.5− |
| 2006 09 16 | 699 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.0 |
| 2006 09 18 | 703 | 1.1+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2006 09 18 | 703 | 0.6+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.3− | 2006 11 07 | 644 | 0.0 | 0.3− |
| 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.8− | 0.9− |
| 2006 09 18 | 703 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.1− | 0.4− | 2006 11 16 | 703 | 0.3+ | 0.2− |
| 2006 09 21 | 699 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.3+ |
| 2006 09 21 | 699 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.2− | 2006 11 16 | 703 | 0.9+ | 0.8+ |
| 2006 09 21 | 699 | 0.6− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.6− | 0.6− |
| 2006 09 21 | 699 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.1+ | 0.3− |
| 2006 09 25 | 699 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.5− | 2006 11 16 | 703 | 0.1− | 0.3+ |
| 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.3− |
| 2006 09 25 | 699 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.9− | 0.6+ | | | | |

**2006 $SP_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.64953 | | (2000.0) | | | |
| $n$ | 0.17323523 | $\omega$ | 287.57924 | | +0.95236341 | −0.21399618 |
| $a$ | 3.1869744 | $\Omega$ | 85.20250 | | +0.28742310 | +0.86799403 |
| $e$ | 0.1323135 | $i$ | 12.59403 | | −0.10194061 | +0.44809821 |
| $P$ | 5.69 | $H$ | 14.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 0.3+ | 1.6− | 2006 09 18 | 703 | 0.0 | 0.8− | 2006 10 17 | 703 | 0.7− | 0.3+ |
| 2000 10 02 | 699 | 0.2− | 0.7+ | 2006 09 18 | 703 | 0.5− | 0.7− | 2006 10 28 | 703 | 0.9+ | 0.4+ |
| 2000 10 02 | 699 | 0.0 | 1.3+ | 2006 09 29 | 699 | 0.6− | 0.5+ | 2006 10 28 | 703 | 0.5+ | 0.2+ |
| 2000 10 02 | 699 | 0.6− | 0.8+ | 2006 09 29 | 699 | 0.3+ | 0.8− | 2006 10 28 | 703 | 0.6+ | 0.5+ |
| 2001 11 15 | 691 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.1+ | 2006 10 28 | 703 | 0.8+ | 0.3+ |
| 2001 11 15 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.9− | 2006 11 10 | 704 | 0.2+ | 0.3− |
| 2001 11 15 | 691 | 0.1− | 0.2− | 2006 09 30 | 704 | 0.7+ | 0.0 | 2006 11 10 | 704 | 1.2+ | 0.1− |
| 2001 12 18 | 644 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.0 | 1.1+ | 2006 11 10 | 704 | 0.5− | 0.1+ |
| 2001 12 18 | 644 | 0.2+ | 0.4− | 2006 09 30 | 704 | 1.0+ | 0.4+ | 2006 11 16 | 703 | (2.8+ | 0.4−) |
| 2001 12 18 | 644 | 0.4+ | 0.1+ | 2006 09 30 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 703 | 1.0+ | 0.4− |
| 2006 09 16 | 699 | 0.6+ | 0.7+ | 2006 10 11 | 644 | 0.4− | 0.4− | 2006 11 16 | 703 | (0.3− | 1.7+) |
| 2006 09 16 | 699 | 0.8− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.3− | 2006 11 16 | 703 | (0.4− | 3.6+) |
| 2006 09 16 | 699 | 0.7− | 1.1− | 2006 10 11 | 644 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.0 | 1.2+ |
| 2006 09 16 | 699 | 1.4− | 1.2− | 2006 10 17 | 703 | 0.4− | 0.1+ | 2006 11 16 | 703 | 0.7− | 0.2− |
| 2006 09 18 | 703 | 0.2− | 0.9− | 2006 10 17 | 703 | 0.2− | 0.9+ | 2006 11 16 | 703 | (1.1+ | 1.6+) |
| 2006 09 18 | 703 | 0.1− | 1.1− | 2006 10 17 | 703 | 1.0− | 0.5+ | 2006 11 16 | 703 | 0.3− | 0.8+ |

**2006 SR$_8$ = 2002 BD$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.14468 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17741852 | $\omega$ | 66.85725 | | +0.43786938 | | −0.89884627 |
| $a$ | 3.1366791 | $\Omega$ | 356.97613 | | +0.64044089 | | +0.32637076 |
| $e$ | 0.2278116 | $i$ | 20.64061 | | +0.63095632 | | +0.29250215 |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 19 | 699 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 2002 01 19 | 699 | (1.2− | 1.9−) | 2006 09 17 | 703 | (1.9+ | 0.5+) | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2002 01 19 | 699 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.5+ |
| 2002 01 19 | 699 | 0.0 | 0.6+ | 2006 09 18 | 703 | 1.0+ | 0.5+ | 2006 10 19 | 703 | 0.1− | 1.0+ |
| 2002 01 21 | 699 | 0.6− | 0.1− | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 19 | 703 | (2.5− | 1.8−) |
| 2002 01 21 | 699 | 1.2+ | 0.6− | 2006 09 18 | 703 | 0.6− | 0.8− | 2006 10 19 | 703 | 1.0+ | 1.0− |
| 2002 01 21 | 699 | 0.5− | 0.3+ | 2006 09 28 | 703 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.9− |
| 2002 01 21 | 699 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.5+ | 0.5− | 2006 10 19 | 703 | 0.2− | 0.6+ |
| 2006 09 16 | 703 | 0.2+ | 0.7− | 2006 09 28 | 703 | 0.8− | 0.4− | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2006 09 16 | 703 | 0.9− | 0.5+ | 2006 09 28 | 703 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.0 | 0.6− |
| 2006 09 16 | 703 | 0.5− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.3− | 0.6+ |
| 2006 09 16 | 703 | (2.1− | 0.2−) | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2006 09 17 | 703 | 0.7+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.1− | 0.5− |
| 2006 09 17 | 703 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.3− |

**2006 SS$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.32555 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22311231 | $\omega$ | 89.30440 | | +0.73843145 | | +0.66096441 |
| $a$ | 2.6922809 | $\Omega$ | 229.31114 | | −0.66727269 | | +0.68764081 |
| $e$ | 0.1878203 | $i$ | 10.14694 | | −0.09729409 | | +0.30045991 |
| $P$ | 4.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.6+ | 0.9− | 2006 10 21 | 644 | 0.6+ | 0.1+ |
| 2005 05 07 | 691 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 699 | 0.3− | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 2005 05 19 | 644 | 0.3− | 0.5− | 2006 09 20 | 699 | (1.7− | 0.9+) | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2005 05 19 | 644 | 0.0 | 0.1+ | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2005 05 19 | 644 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2006 09 16 | 703 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2006 09 16 | 703 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 09 16 | 703 | 0.8− | 0.4− | 2006 10 17 | 703 | 0.1− | 1.0+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2006 09 16 | 703 | 0.0 | 0.8− | 2006 10 17 | 703 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2006 09 18 | 703 | 1.1− | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.4− | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 703 | 0.5+ | 0.9− | 2006 10 17 | 703 | 1.0− | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2006 09 18 | 703 | 1.0+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | | | | |

**2006 SU$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.59383 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21666884 | $\omega$ | 321.09387 | | +0.92734241 | | +0.37184192 |
| $a$ | 2.7453965 | $\Omega$ | 17.22107 | | −0.29793207 | | +0.80164913 |
| $e$ | 0.2356018 | $i$ | 8.16879 | | −0.22643438 | | +0.46807292 |
| $P$ | 4.55 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 09 | 691 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 02 | 291 | 0.0 | 0.2− |
| 1997 10 09 | 691 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 02 | 291 | 0.1+ | 0.2− |
| 1997 10 09 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 15 | 106 | 0.1+ | 0.4+ |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 15 | 106 | 0.4+ | 0.0 |
| 2000 03 03 | 645 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 15 | 106 | 0.3+ | 0.1+ |
| 2006 08 18 | 644 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 16 | 106 | 0.1+ | 0.6+ |
| 2006 08 18 | 644 | 0.5− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2006 08 18 | 644 | 0.7− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.2− |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.7+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.3− | 0.9+ | 2006 10 16 | G96 | 0.1− | 0.1− |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.2+ | 0.0 | 2006 10 16 | 106 | 0.4+ | 0.1+ |
| 2006 09 17 | 704 | (1.6+ | 0.4+) | 2006 09 27 | 704 | 0.1+ | 0.9+ | 2006 10 16 | 106 | 0.2+ | 0.1− |
| 2006 09 17 | 704 | 0.1+ | 0.7− | 2006 09 28 | 704 | 0.7− | 0.1+ | 2006 10 16 | 106 | 0.1− | 0.0 |
| 2006 09 17 | 704 | 0.2− | 0.3− | 2006 09 28 | 704 | 0.5− | 0.5+ | 2006 10 16 | 106 | 0.3+ | 0.1− |
| 2006 09 17 | 704 | 0.7− | 0.6− | 2006 09 28 | 704 | 0.2+ | 0.6− | 2006 10 17 | 703 | 0.4+ | 0.4+ |
| 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 09 28 | 704 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.9− | 0.1− |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.5+ | 0.9+ |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 09 28 | 699 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.7+ |
| 2006 09 18 | 699 | 1.0− | 0.0 | 2006 09 28 | 699 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 699 | 1.0− | 0.6− | 2006 09 28 | 699 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2006 09 18 | 699 | 0.5− | 0.3+ | 2006 10 01 | 704 | 0.7+ | 0.2− | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2006 09 20 | 704 | (1.5+ | 1.3+) | 2006 10 01 | 704 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2006 09 20 | 704 | 0.4+ | 0.9+ | 2006 10 01 | 704 | 1.3+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 1.1+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2006 09 20 | 704 | (0.5+ | 3.1+) | 2006 10 02 | 291 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2006 09 20 | 704 | (0.2+ | 1.6+) | 2006 10 02 | 291 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.2+ | 0.2− | | | | |
| 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 02 | 291 | 0.1− | 0.2− | | | | |

**2006 SW$_8$ = 1995 UQ$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.87643 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17795377 | $\omega$ | 161.49808 | | +0.99744822 | | −0.03009355 |
| $a$ | 3.1303862 | $\Omega$ | 200.55374 | | +0.01424695 | | +0.97248273 |
| $e$ | 0.1052497 | $i$ | 10.62633 | | +0.06995768 | | +0.23102320 |
| $P$ | 5.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.5− | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 1995 10 23 | 691 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1995 10 23 | 691 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.3+ |
| 1995 10 28 | 691 | 0.8+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 1.4+ | 1.0+ |
| 1995 10 28 | 691 | 0.3+ | 0.1− | 2006 09 27 | 699 | 1.4− | 0.8− | 2006 10 16 | 703 | 0.3+ | 1.1+ |
| 1995 10 28 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.4− |
| 2001 12 14 | 704 | 0.1− | 1.2+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.9+ | 0.3− | 2006 09 27 | 699 | 0.9− | 0.3− | 2006 10 20 | 644 | 0.4+ | 0.1− |
| 2001 12 14 | 704 | 0.1− | 0.1− | 2006 09 27 | 699 | 1.2− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 12 14 | 704 | 0.7− | 0.5− | 2006 09 27 | 699 | 0.1− | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 09 17 | 703 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2006 09 17 | 703 | (2.4− | 0.4−) | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.8+ |
| 2006 09 17 | 703 | (2.3+ | 0.6+) | 2006 10 10 | 143 | 0.2+ | 0.6− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2006 09 18 | 704 | 1.0+ | 0.1− | 2006 10 10 | 143 | 0.3− | 0.6− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 704 | 0.5+ | 0.3+ | 2006 10 10 | 143 | (0.1− | 1.9−) | 2006 10 23 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 704 | 1.3+ | 0.5− | 2006 10 12 | 644 | 0.2− | 0.2− | | | | |

**2006 SC$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 73.83155 | | | (2000.0) | | |
| $n$ | 0.31185057 | $\omega$ | 24.57828 | | −0.16847651 | +0.97992925 |
| $a$ | 2.1536329 | $\Omega$ | 235.88890 | | −0.92432595 | −0.19461047 |
| $e$ | 0.2218806 | $i$ | 7.39443 | | −0.34239920 | +0.04319066 |
| $P$ | 3.16 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 16 | 644 | 0.3+ | 0.2− | 2006 09 06 | 644 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.6+ |
| 2003 10 16 | 644 | 0.3+ | 0.1− | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.6+ | 0.1− |
| 2003 10 16 | 644 | 0.2+ | 0.5− | 2006 09 06 | 644 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 2003 10 21 | 699 | 0.7− | 1.0+ | 2006 09 16 | 703 | (0.5+ | 1.6−) | 2006 10 17 | 691 | 0.1+ | 0.2+ |
| 2003 10 21 | 699 | 0.1− | 0.0 | 2006 09 16 | 703 | 0.2+ | 0.7− | 2006 10 17 | 691 | 0.2− | 0.2+ |
| 2003 10 21 | 699 | (1.6+ | 1.0−) | 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2003 10 21 | 699 | (1.9+ | 0.1+) | 2006 09 16 | 703 | 0.7− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2003 10 24 | 704 | 0.1+ | 0.9+ | 2006 09 27 | 703 | 1.4− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2003 10 24 | 704 | 1.0− | 0.6+ | 2006 09 27 | 703 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2003 10 24 | 704 | 1.1− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.4− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2003 10 24 | 704 | 0.9− | 0.6+ | 2006 09 27 | 703 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2003 10 24 | 704 | 0.0 | 0.7+ | 2006 10 03 | 703 | 1.0− | 0.4− | 2006 10 23 | 691 | 0.2+ | 0.1− |
| 2003 10 27 | 691 | 0.2+ | 0.5− | 2006 10 03 | 703 | (0.3+ | 1.6−) | 2006 10 23 | 691 | 0.1+ | 0.3+ |
| 2003 10 27 | 691 | 0.4+ | 0.1− | 2006 10 03 | 703 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.1+ | 0.2− |
| 2003 10 27 | 691 | 0.2+ | 0.4− | 2006 10 03 | 703 | 0.4+ | 0.9− | 2006 10 28 | 691 | 0.0 | 0.3− |
| 2006 08 29 | 699 | 0.9+ | 0.7+ | 2006 10 09 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2006 08 29 | 699 | 0.4+ | 0.0 | 2006 10 09 | 644 | 0.6+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2006 08 29 | 699 | 0.2− | 0.4− | 2006 10 09 | 644 | 0.6+ | 0.6+ | | | | |
| 2006 08 29 | 699 | 0.2− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.3+ | | | | |

**2006 SG$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.56612 | | | (2000.0) | | |
| $n$ | 0.25196995 | $\omega$ | 6.00077 | | +0.92782137 | +0.37034121 |
| $a$ | 2.4825817 | $\Omega$ | 332.13131 | | −0.34609418 | +0.80997504 |
| $e$ | 0.1350726 | $i$ | 5.48293 | | −0.13916292 | +0.45473929 |
| $P$ | 3.91 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 08 12 | 809 | 1.5+ | 1.9+ | 2006 09 19 | 703 | 0.5− | 0.6− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 1994 08 12 | 809 | (0.2+ | 2.3+) | 2006 09 19 | 703 | 1.3− | 0.0 | 2006 10 17 | 703 | 0.8− | 1.2+ |
| 1994 08 12 | 809 | 0.4+ | 1.9+ | 2006 09 19 | 703 | 0.5+ | 0.5− | 2006 10 17 | 703 | 1.1+ | 0.0 |
| 1994 09 01 | 691 | 0.3− | 0.6− | 2006 09 19 | 703 | 0.8− | 0.2+ | 2006 10 19 | 644 | 0.4+ | 0.2+ |
| 1994 09 01 | 691 | 0.1+ | 0.4− | 2006 09 28 | 699 | (2.4− | 0.4+) | 2006 10 19 | 644 | 0.1+ | 0.7+ |
| 1994 09 01 | 691 | 0.2− | 0.3− | 2006 09 28 | 699 | 0.7+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2004 01 19 | 691 | 0.3+ | 0.2− | 2006 09 28 | 699 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2004 01 19 | 691 | 0.3− | 0.0 | 2006 09 28 | 699 | (0.5− | 1.8−) | 2006 10 19 | 644 | 0.8+ | 0.3+ |
| 2004 01 19 | 691 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.6− | 0.2− | 2006 10 19 | 644 | 0.6+ | 0.8+ |
| 2006 09 16 | 703 | 0.4+ | 1.3− | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2006 09 16 | 703 | (0.5+ | 1.7−) | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.4+ | 0.5+ |
| 2006 09 16 | 703 | 1.2− | 0.7− | 2006 10 03 | G96 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2006 09 16 | 703 | (0.7− | 1.7−) | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 09 18 | 703 | 0.8− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 18 | 703 | (0.2+ | 2.1−) | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2006 09 18 | 703 | 0.1+ | 1.1− | 2006 10 17 | 703 | 0.6+ | 0.1− | | | | |

**2006 SY$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 320.18149 | | | (2000.0) | | |
| $n$ | 0.25317632 | $\omega$ | 223.32136 | | +0.57909318 | −0.81512489 |
| $a$ | 2.4746892 | $\Omega$ | 191.31922 | | +0.76719681 | +0.55105033 |
| $e$ | 0.1594609 | $i$ | 4.35853 | | +0.27579003 | +0.17864753 |
| $P$ | 3.89 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 29 | 327 | 0.2− | 0.4− | 2006 09 18 | 699 | 0.9− | 0.0 | 2006 09 28 | 699 | 0.2− | 0.3+ |
| 1998 08 29 | 327 | 0.1+ | 0.7+ | 2006 09 18 | 699 | (0.2+ | 1.6+) | 2006 09 28 | 699 | 0.0 | 0.5− |
| 1998 08 29 | 327 | 0.4+ | 0.0 | 2006 09 18 | 699 | 0.9− | 0.4− | 2006 09 28 | 699 | 0.3− | 0.3− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 09 20 | 704 | 0.1− | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2002 09 14 | 644 | 0.3− | 0.3+ | 2006 09 20 | 704 | 1.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.9+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2004 03 17 | 691 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.4+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 704 | 1.4+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2006 08 21 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 704 | (1.7+ | 0.7+) | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2006 08 21 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.9+ | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.9− |
| 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2006 09 12 | 703 | (0.1+ | 1.6−) | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | (0.6− | 1.9+) |
| 2006 09 12 | 703 | 0.5− | 0.7+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 22 | 703 | (2.5− | 3.5+) |
| 2006 09 12 | 703 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2006 09 12 | 703 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.6− |
| 2006 09 16 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.6− |
| 2006 09 16 | 691 | 0.3− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2006 09 16 | 691 | 0.2− | 0.1+ | 2006 09 28 | 699 | 0.3+ | 0.4+ | | | | |

**2006 SA$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.51919 | | | (2000.0) | | |
| $n$ | 0.23459268 | $\omega$ | 92.44297 | | +0.97024867 | +0.18006250 |
| $a$ | 2.6037128 | $\Omega$ | 257.21720 | | −0.22781852 | +0.90527656 |
| $e$ | 0.1570818 | $i$ | 9.55312 | | +0.08195272 | +0.38477505 |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.0 | 0.1+ | 2002 11 13 | 644 | 0.1− | 0.2+ | 2006 09 21 | 699 | 0.0 | 1.1+ |
| 2000 03 04 | 645 | 0.0 | 0.1− | 2002 11 13 | 644 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.6− | 0.1− |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2002 11 13 | 644 | 0.1− | 0.1+ | 2006 09 21 | 699 | 0.2+ | 0.4+ |
| 2002 10 05 | 704 | 0.2+ | 0.5+ | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.1− | 0.0 |
| 2002 10 05 | 704 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.4− |
| 2002 10 05 | 704 | 0.3− | 0.5− | 2006 09 06 | 644 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.2+ |
| 2002 10 10 | 704 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.2+ | 1.1− | 2006 09 27 | 703 | 0.3− | 0.3+ |
| 2002 10 10 | 704 | 0.9+ | 0.8− | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 10 03 | 703 | 0.5− | 0.4+ |
| 2002 10 10 | 704 | 0.3− | 0.8− | 2006 09 16 | 703 | 0.2+ | 0.9− | 2006 10 03 | 703 | 0.4+ | 0.8+ |
| 2002 10 10 | 704 | 0.2+ | 0.4+ | 2006 09 16 | 703 | 0.4+ | 1.0− | 2006 10 03 | 703 | 0.1+ | 0.4− |
| 2002 11 06 | 704 | 0.0 | 0.6+ | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 10 03 | 703 | (1.9+ | 0.3−) |
| 2002 11 06 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2002 11 06 | 704 | 0.6− | 1.1− | 2006 09 18 | 703 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ |
| 2002 11 06 | 704 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2002 11 06 | 704 | 0.6+ | 0.3− | 2006 09 21 | 699 | 0.6− | 0.8+ | | | | |

**2006 SB$_{11}$ = 2002 TT$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 279.43343 | | | (2000.0) | | |
| $n$ | 0.24148776 | $\omega$ | 163.08950 | | −0.26680605 | −0.94575068 |
| $a$ | 2.5539122 | $\Omega$ | 302.03026 | | +0.85699297 | −0.14481969 |
| $e$ | 0.2245869 | $i$ | 12.63166 | | +0.44088274 | −0.29083140 |
| $P$ | 4.08 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.2− | 0.3+ | 2006 09 16 | 703 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.3− | 1.0+ |
| 2002 09 03 | 644 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.8+ | 1.0+ |
| 2002 09 03 | 644 | 0.3− | 0.1− | 2006 09 18 | 703 | (0.8+ | 1.5+) | 2006 09 29 | 699 | 1.0− | 0.7+ |
| 2002 10 03 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.1+ |
| 2002 10 03 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.8+ | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.9+ |
| 2002 10 03 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 1.2− | 0.4− | 2006 10 17 | 703 | 1.0− | 0.2− |
| 2002 10 06 | 704 | 1.0+ | 0.1− | 2006 09 21 | 699 | 0.1+ | 1.3− | 2006 10 17 | 703 | 0.3+ | 0.9+ |
| 2002 10 06 | 704 | (2.1+ | 1.0−) | 2006 09 21 | 699 | 0.5− | 0.4− | 2006 10 17 | 703 | 0.8− | 0.6− |
| 2002 10 06 | 704 | 0.1− | 0.5+ | 2006 09 21 | 699 | (0.9− | 2.0−) | 2006 10 26 | 703 | 0.0 | 0.6+ |
| 2002 10 06 | 704 | 0.8− | 1.1− | 2006 09 27 | 703 | 1.0+ | 0.1+ | 2006 10 26 | 703 | 0.4+ | 0.2+ |
| 2006 09 16 | 703 | 0.6+ | 0.5− | 2006 09 27 | 703 | 0.6+ | 1.1− | 2006 10 26 | 703 | 0.2+ | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 703 | 0.5− | 0.4− | 2006 09 27 | 703 | (0.7+ | 4.6−) | 2006 10 26 | 703 | 0.1+ | 2.4− | | |
| 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 09 27 | 703 | 0.2+ | 0.6− | | | | | | |

**2006 SG$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.66818 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23265863 | $\omega$ | 157.72779 | | +0.82547110 | | +0.56368428 |
| $a$ | 2.6181223 | $\Omega$ | 167.82994 | | −0.53655148 | | +0.79972945 |
| $e$ | 0.1997442 | $i$ | 7.98448 | | −0.17524262 | | +0.20662247 |
| $P$ | 4.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.0 | 0.1+ | 2006 09 16 | 704 | 0.8− | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 10 30 | 644 | 0.4+ | 0.3− | 2006 09 16 | 704 | 0.5+ | 0.0 | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2002 10 30 | 644 | 0.4+ | 0.3+ | 2006 09 16 | 704 | 0.3+ | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.2− |
| 2002 11 06 | 699 | 0.7− | 0.4+ | 2006 09 16 | 704 | 0.9− | 1.4+ | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2002 11 06 | 699 | 0.3+ | 0.4− | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2002 11 06 | 699 | 0.5− | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.3− |
| 2002 11 06 | 699 | 0.3+ | 0.2+ | 2006 09 18 | 699 | 0.8+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 11 13 | 644 | 0.0 | 0.1− | 2006 09 18 | 699 | 1.4+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 11 13 | 644 | 0.3− | 0.4− | 2006 09 20 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2006 09 20 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2006 07 22 | G96 | 0.2− | 0.2− | 2006 09 20 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2006 07 22 | G96 | 0.0 | 0.1− | 2006 09 26 | 704 | 1.5− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2006 07 22 | G96 | 0.2+ | 0.1− | 2006 09 26 | 704 | 0.5− | 0.9+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2006 07 22 | G96 | 0.4+ | 0.0 | 2006 09 26 | 704 | 0.8− | 0.4+ | 2006 10 22 | 703 | (1.8− | 0.9−) |
| 2006 07 22 | G96 | 0.6− | 0.3− | 2006 09 26 | 704 | 1.1− | 0.1− | 2006 10 22 | 703 | 0.7− | 0.5− |
| 2006 07 22 | G96 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.7+ | 0.2− | 2006 10 22 | 703 | 0.1− | 0.9− |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 09 30 | 704 | 1.4− | 0.5− | 2006 10 22 | 703 | (1.7− | 0.3+) |
| 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.1+ | 0.7− | | | | |
| 2006 09 16 | 704 | 0.3+ | 0.1− | 2006 09 30 | 704 | 0.1− | 0.3− | | | | |

**2006 SL$_{11}$ = 2000 KY$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.45287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20508841 | $\omega$ | 273.16668 | | +0.93406313 | | +0.34255535 |
| $a$ | 2.8477944 | $\Omega$ | 66.81940 | | −0.26823174 | | +0.85954232 |
| $e$ | 0.1066139 | $i$ | 6.30189 | | −0.23574943 | | +0.37926618 |
| $P$ | 4.81 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.1− | 0.4− | 2004 03 10 | 644 | 0.2+ | 0.9+ | 2006 09 19 | 703 | 0.4− | 0.0 |
| 2000 04 29 | 704 | 0.2− | 0.1+ | 2004 03 10 | 644 | 0.2+ | 1.2+ | 2006 09 19 | 703 | 0.9− | 1.2− |
| 2000 04 29 | 704 | 0.3− | 1.1+ | 2004 03 10 | 644 | 0.1+ | 1.1+ | 2006 09 26 | 703 | 0.2+ | 0.0 |
| 2000 04 29 | 704 | 0.1− | 0.5− | 2004 03 23 | 704 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.7+ | 0.3+ |
| 2000 05 28 | 704 | 0.9− | 0.4+ | 2004 03 23 | 704 | 0.9+ | 1.0+ | 2006 09 26 | 703 | 0.3− | 0.4+ |
| 2000 05 28 | 704 | 0.5+ | 0.3− | 2004 03 23 | 704 | 0.8+ | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.1+ |
| 2000 05 28 | 704 | 0.2+ | 1.0− | 2004 03 23 | 704 | 0.7+ | 0.6+ | 2006 09 30 | 703 | 0.2+ | 0.4+ |
| 2000 05 29 | 704 | 0.6+ | 0.4− | 2004 03 23 | 704 | 0.9+ | 1.5+ | 2006 09 30 | 703 | 0.4+ | 0.1− |
| 2000 05 29 | 704 | 0.5+ | 0.3− | 2005 05 22 | 644 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.5+ | 0.1− |
| 2000 05 29 | 704 | 0.5+ | 0.0 | 2005 05 22 | 644 | 0.0 | 0.4+ | 2006 10 02 | 703 | 0.0 | 0.8− |
| 2000 05 29 | 704 | 0.9+ | 0.2− | 2005 05 22 | 644 | 0.3− | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.3− |
| 2000 05 29 | 704 | 0.2+ | 0.3+ | 2005 05 29 | E12 | 0.4− | 0.3+ | 2006 10 02 | 703 | 1.3+ | 0.6− |
| 2001 07 31 | 644 | 0.1+ | 0.9+ | 2005 05 29 | E12 | 0.7− | 0.9+ | 2006 10 16 | 703 | 0.9− | 0.4+ |
| 2001 07 31 | 644 | 0.3− | 0.5+ | 2005 05 29 | E12 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 0.4− | 0.6− |
| 2001 07 31 | 644 | 0.5− | 0.5+ | 2005 05 29 | E12 | 0.5− | 0.2− | 2006 10 16 | 703 | 1.2− | 0.1+ |
| 2001 08 25 | 644 | 0.3+ | 0.9+ | 2006 08 22 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.5− |
| 2001 08 25 | 644 | 0.7+ | 1.2+ | 2006 08 22 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2001 08 25 | 644 | 0.0 | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 09 17 | 699 | 0.3+ | 1.0− | 2006 09 16 | 704 | 0.2+ | 1.0+ | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2001 09 17 | 699 | 0.1− | 0.2− | 2006 09 16 | 704 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2001 09 17 | 699 | 0.1+ | 1.0− | 2006 09 16 | 704 | 0.4− | 0.8+ | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2001 09 17 | 699 | 0.8− | 1.4− | 2006 09 16 | 704 | 0.2+ | 1.1+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2001 10 10 | 644 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.8+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 2001 10 10 | 644 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.2+ | 1.4+ | 2006 10 22 | 703 | 1.2− | 0.2− |
| 2001 10 10 | 644 | 0.6− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.7+ |
| 2002 12 05 | 704 | 0.9− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.6+ | 2006 10 22 | 644 | 0.5+ | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.4− | 0.5+ | | | | |

**2006 SN$_{11}$ = 1995 UR$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.87532 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26671714 | $\omega$ | 239.92900 | | +0.88404722 | | +0.46231007 |
| $a$ | 2.3902065 | $\Omega$ | 92.45797 | | −0.40163492 | | +0.82665282 |
| $e$ | 0.2460135 | $i$ | 3.94723 | | −0.23906047 | | +0.32080291 |
| $P$ | 3.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.9+ | 0.2− | 2006 09 22 | 704 | (2.2− | 0.2−) | 2006 10 16 | 703 | 0.4− | 0.1− |
| 1995 10 21 | 691 | 0.2+ | 0.1− | 2006 09 22 | 704 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.2− |
| 1995 10 21 | 691 | 0.0 | 0.2− | 2006 09 22 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 1995 10 25 | 691 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 1995 10 25 | 691 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.0 |
| 1995 10 25 | 691 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.6− | 0.0 |
| 2004 01 13 | 691 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2004 01 13 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.4− | 0.2− |
| 2004 01 13 | 691 | 0.0 | 0.3+ | 2006 09 28 | 699 | 0.7− | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2006 08 23 | 644 | 0.0 | 0.0 | 2006 09 28 | 699 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 28 | 699 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2006 08 23 | 644 | 0.1− | 0.1− | 2006 09 28 | 699 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2006 09 16 | 704 | 0.3+ | 0.8− | 2006 09 29 | 704 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 09 16 | 704 | 0.1− | 0.8− | 2006 09 29 | 704 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 09 16 | 704 | 0.5+ | 0.5− | 2006 09 29 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 16 | 704 | 0.0 | 1.0− | 2006 09 29 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.7− | 1.0+ |
| 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 09 29 | 704 | 1.0+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 09 30 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 09 30 | 704 | 0.3− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.4− |
| 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 09 30 | 704 | 0.5+ | 0.2+ | 2006 11 06 | 644 | 0.4− | 0.6+ |
| 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 09 30 | 704 | 0.2+ | 0.3− | 2006 11 06 | 644 | 0.2− | 0.5+ |
| 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.7− | 0.1− | 2006 11 06 | 644 | 0.4− | 0.4+ |
| 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.6+ | 0.1+ |
| 2006 09 19 | 704 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2006 09 19 | 704 | 0.4− | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.5+ |
| 2006 09 19 | 704 | 0.7+ | 0.5− | 2006 10 16 | 703 | 0.2− | 0.5+ | | | | |

**2006 SO$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.42214 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26968534 | $\omega$ | 256.26309 | | +0.95738726 | | +0.28271001 |
| $a$ | 2.3726362 | $\Omega$ | 87.29014 | | −0.23685292 | | +0.88554178 |
| $e$ | 0.1830285 | $i$ | 3.38800 | | −0.16525837 | | +0.36863370 |
| $P$ | 3.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 12 | 644 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.1+ | 0.7− | 2006 10 01 | 704 | 0.2+ | 0.4+ |
| 2002 06 12 | 644 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.5− | 0.1− | 2006 10 01 | 704 | 1.4− | 0.1− |
| 2002 06 12 | 644 | 0.1− | 0.4− | 2006 09 18 | 699 | 0.7− | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.3− |
| 2005 04 01 | 691 | 0.0 | 0.4+ | 2006 09 22 | 704 | (0.0 | 2.3+) | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2005 04 01 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.4− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2005 04 01 | 691 | 0.0 | 0.2+ | 2006 09 22 | 704 | 0.8− | 0.0 | 2006 10 15 | 106 | 0.6+ | 0.0 |
| 2005 04 12 | 691 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.1− | 1.0+ | 2006 10 15 | 106 | 1.2+ | 0.9− |
| 2005 04 12 | 691 | 0.2− | 0.1− | 2006 09 26 | 704 | (2.2− | 0.4+) | 2006 10 15 | 106 | 0.0 | 1.1− |
| 2005 04 12 | 691 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.8− | 1.3+ | 2006 10 15 | 106 | 0.0 | 0.3+ |
| 2005 05 08 | 691 | 0.2− | 0.2+ | 2006 09 26 | 704 | (1.3− | 2.7+) | 2006 10 16 | 703 | 0.2+ | 1.4+ |
| 2005 05 08 | 691 | 0.3+ | 0.1− | 2006 09 28 | 699 | 1.4+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2005 05 08 | 691 | 0.1+ | 0.1− | 2006 09 28 | 699 | 0.5+ | 0.3+ | 2006 10 16 | 703 | (1.5+ | 3.2+) |
| 2006 09 16 | 704 | 0.6− | 0.2− | 2006 09 28 | 699 | 0.1+ | 0.6− | 2006 10 16 | 703 | 1.1+ | 0.8+ |
| 2006 09 16 | 704 | 0.8− | 0.3− | 2006 09 30 | 704 | 0.5− | 0.0 | 2006 10 22 | 703 | 0.8− | 0.4− |
| 2006 09 16 | 704 | 0.2+ | 0.7− | 2006 09 30 | 704 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.2+ | 1.1+ |
| 2006 09 16 | 704 | 0.2+ | 0.5− | 2006 09 30 | 704 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 703 | 0.1+ | 0.7+ | 2006 09 30 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.9− |
| 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2006 09 18 | 703 | 0.3+ | 0.6+ | 2006 10 01 | 704 | 0.1− | 0.6− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 09 18 | 703 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.2+ |
| 2006 09 18 | 699 | 0.3− | 0.7− | 2006 10 01 | 704 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.3+ |

**2006 SR$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.08807 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18230604 | $\omega$ | 314.15420 | | +0.97840388 | +0.17558659 | |
| $a$ | 3.0803638 | $\Omega$ | 36.14510 | | −0.09265899 | +0.84422755 | |
| $e$ | 0.2583921 | $i$ | 10.65581 | | −0.18477058 | +0.50640814 | |
| $P$ | 5.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.5− | 0.4+ | 2006 09 22 | 704 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2001 11 11 | 704 | 0.6+ | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2001 11 11 | 704 | 0.1+ | 0.3+ | 2006 09 22 | 704 | 0.5+ | 0.9− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 11 11 | 704 | 0.4− | 0.1+ | 2006 09 25 | 699 | 0.7− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 11 11 | 704 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2001 11 24 | 704 | 0.3− | 0.2+ | 2006 09 25 | 699 | 1.0+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2001 11 24 | 704 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.8− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2001 11 24 | 704 | 0.8− | 0.4− | 2006 09 26 | 704 | 0.3+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.8− |
| 2001 11 24 | 704 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.5+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.8− |
| 2001 11 24 | 704 | 0.2− | 0.3− | 2006 09 26 | 704 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.7+ | 0.5− | 2006 11 11 | 703 | 0.5+ | 0.6+ |
| 2001 12 09 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.0 |
| 2001 12 09 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 1.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2001 12 09 | 704 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2001 12 09 | 704 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2001 12 22 | 704 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 12 22 | 704 | 0.6+ | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.5− | 0.2+ |
| 2001 12 22 | 704 | 1.1+ | 0.6− | 2006 09 29 | 699 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 2006 09 16 | 704 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2006 09 16 | 704 | 0.1− | 0.5+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.5− | 0.5+ |
| 2006 09 16 | 704 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.8− | 0.9− |
| 2006 09 16 | 704 | 0.1+ | 0.1− | 2006 10 10 | 644 | 1.1+ | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2006 09 18 | 703 | 0.7− | 0.6− | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.6+ |
| 2006 09 18 | 703 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2006 09 18 | 703 | 0.6− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.5− | 2006 11 18 | 704 | 0.4+ | 0.5+ |
| 2006 09 18 | 703 | 0.5− | 0.7− | 2006 10 16 | 703 | 0.9− | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.2− |
| 2006 09 21 | 699 | 0.9− | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2006 09 21 | 699 | 0.2− | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.4− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2006 09 21 | 699 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.0 |
| 2006 09 21 | 699 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.3− |
| 2006 09 22 | 704 | 0.1− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2006 09 22 | 704 | 0.7− | 0.5+ | 2006 10 19 | 644 | 0.3− | 0.0 | | | | |

**2006 ST$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.50521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23665601 | $\omega$ | 31.12396 | | +0.96901698 | −0.23942553 | |
| $a$ | 2.5885567 | $\Omega$ | 342.41787 | | +0.16432032 | +0.80831821 | |
| $e$ | 0.1503908 | $i$ | 11.58747 | | +0.18440422 | +0.53786345 | |
| $P$ | 4.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.4+ | 0.2− | 2006 09 16 | 703 | 0.1− | 0.5− | 2006 10 03 | 704 | 0.3− | 0.5− |
| 2002 10 06 | 704 | 0.3− | 0.1+ | 2006 09 16 | 703 | 0.4+ | 0.1+ | 2006 10 03 | 704 | 0.7− | 0.0 |
| 2002 10 06 | 704 | 0.9+ | 0.0 | 2006 09 16 | 703 | 0.0 | 0.5+ | 2006 10 03 | 704 | 0.4− | 0.1+ |
| 2002 10 06 | 704 | 0.2− | 0.2− | 2006 09 18 | 704 | 0.6+ | 1.0+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2002 11 25 | 644 | 0.2− | 0.1+ | 2006 09 18 | 704 | 0.7+ | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.1− |
| 2002 11 25 | 644 | 0.0 | 0.3− | 2006 09 18 | 704 | 1.3+ | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.3− |
| 2002 11 25 | 644 | 0.0 | 0.4− | 2006 09 18 | 704 | 0.6− | 1.0+ | 2006 10 17 | 703 | 0.6+ | 1.1+ |
| 2004 02 16 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.1− | 0.8− | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 2004 02 16 | 691 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.9− | 0.6+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2004 02 16 | 691 | 0.1− | 0.5+ | 2006 09 19 | 699 | 0.7− | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2006 08 29 | 703 | 0.4− | 0.1− | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2006 08 29 | 703 | 0.7+ | 0.5− | 2006 09 27 | 699 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 2006 08 29 | 703 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.6+ | 0.3− |
| 2006 08 29 | 703 | 1.0− | 0.0 | 2006 09 27 | 699 | 0.2− | 0.4− | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 09 27 | 703 | (2.2+ | 1.2−) | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 09 06 | 644 | 0.0 | 0.9− | 2006 09 27 | 703 | 0.0 | 0.3+ | | | | |
| 2006 09 16 | 703 | 0.2− | 0.8+ | 2006 09 27 | 703 | 0.1− | 0.3+ | | | | |

**2006 SV$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.25001 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27593392 | $\omega$ | 28.62019 | | +0.73618354 | +0.67294936 | |
| $a$ | 2.3366804 | $\Omega$ | 288.89826 | | −0.63452059 | +0.64933889 | |
| $e$ | 0.0981022 | $i$ | 4.35990 | | −0.23540904 | +0.35425720 | |
| $P$ | 3.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4− | 1.7− | 2002 07 14 | 704 | 0.6+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.0 |
| 1999 10 12 | 704 | 0.8− | 1.2− | 2002 07 14 | 704 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 10 12 | 704 | 0.6+ | 0.3− | 2006 09 16 | 703 | 0.5− | 0.9+ | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 1999 10 12 | 704 | 0.4+ | 0.1− | 2006 09 16 | 703 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.5+ |
| 1999 10 12 | 704 | 0.2− | 0.7− | 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 1999 11 04 | 704 | 0.3+ | 1.0− | 2006 09 16 | 703 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 1999 11 04 | 704 | 0.1− | 0.5+ | 2006 09 18 | 704 | (1.7− | 0.0 ) | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 1999 11 04 | 704 | 0.5+ | 0.3+ | 2006 09 18 | 704 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 1999 11 04 | 703 | 1.6+ | 1.0+ | 2006 09 18 | 704 | 0.9− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.1+ |
| 1999 11 04 | 703 | 0.6− | 0.3+ | 2006 09 18 | 704 | 0.7− | 0.2− | 2006 10 17 | 703 | 0.6+ | 1.1− |
| 1999 11 04 | 703 | 0.2+ | 0.3− | 2006 09 21 | 683 | 0.7+ | 1.2− | 2006 10 17 | 703 | 0.2+ | 0.5− |
| 1999 11 04 | 703 | 0.5− | 0.1+ | 2006 09 21 | 683 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.5+ |
| 2000 02 05 | 695 | 0.3− | 0.0 | 2006 09 21 | 683 | 0.2+ | 1.0− | 2006 10 20 | 644 | 0.4− | 0.6+ |
| 2000 02 05 | 695 | 0.1+ | 0.2+ | 2006 09 22 | 683 | 0.5− | 0.9− | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2002 07 05 | 704 | 0.3+ | 0.4+ | 2006 09 22 | 683 | 0.7+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2002 07 05 | 704 | 0.2+ | 0.6+ | 2006 09 22 | 683 | 1.0− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2002 07 05 | 704 | 0.2− | 0.7+ | 2006 09 26 | 683 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2002 07 05 | 704 | 0.0 | 0.6+ | 2006 09 26 | 683 | (2.4− | 1.0+) | 2006 10 21 | G96 | 0.3− | 0.1− |
| 2002 07 14 | 644 | 0.2+ | 0.9− | 2006 09 26 | 683 | 0.4+ | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2002 07 14 | 704 | 0.2+ | 0.7− | 2006 09 27 | 703 | 0.4+ | 0.1− | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2002 07 14 | 644 | 0.1− | 0.8− | 2006 09 27 | 703 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2002 07 14 | 704 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2002 07 14 | 644 | 0.1− | 0.7− | 2006 10 02 | G96 | 0.1+ | 0.1− | | | | |
| 2002 07 14 | 704 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.0 | | | | |

**2006 SW$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.13353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24166820 | $\omega$ | 129.45727 | | +0.84648869 | −0.52941081 | |
| $a$ | 2.5526408 | $\Omega$ | 262.57731 | | +0.46934054 | +0.79203148 | |
| $e$ | 0.2638426 | $i$ | 3.26062 | | +0.25134909 | +0.30399067 | |
| $P$ | 4.08 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 24 | 691 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.1− |
| 1999 01 24 | 691 | 0.5− | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 1999 01 24 | 691 | 0.6+ | 0.4− | 2006 09 18 | 703 | 1.5− | 0.7− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2002 10 04 | 704 | 1.2− | 0.8+ | 2006 09 18 | 703 | (1.5+ | 0.5+) | 2006 10 17 | 703 | 0.0 | 0.9+ |
| 2002 10 04 | 704 | 1.3− | 0.2− | 2006 09 18 | 703 | 1.0+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.3+ |
| 2002 10 04 | 704 | (0.9− | 1.9+) | 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 10 17 | 703 | 0.2− | 0.6− |
| 2002 10 04 | 704 | 0.3− | 0.5+ | 2006 09 19 | 703 | 0.6− | 0.6− | 2006 10 17 | 703 | 1.2− | 0.1− |
| 2002 10 04 | 704 | 0.7+ | 1.1+ | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.9− | 1.1+ |
| 2002 10 12 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.2+ | 1.0− |
| 2002 10 12 | 704 | 0.8+ | 0.1+ | 2006 09 25 | 704 | 0.6− | 1.3+ | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2002 10 12 | 704 | 0.1− | 0.9+ | 2006 09 25 | 704 | 0.8+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 10 12 | 704 | 0.5− | 0.5+ | 2006 09 25 | 704 | 0.7+ | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2002 10 12 | 704 | 0.2+ | 0.4+ | 2006 09 25 | 704 | (0.2+ | 1.5−) | 2006 10 20 | 644 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.0 | 0.6− | 2006 09 27 | 699 | 0.1+ | 0.7− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2002 10 31 | 644 | 0.1+ | 0.6− | 2006 09 27 | 699 | (1.5− | 0.1−) | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2002 10 31 | 644 | 0.2− | 0.3− | 2006 09 27 | 699 | 0.6+ | 0.8− | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2002 11 12 | 704 | 0.1+ | 0.6+ | 2006 09 27 | 699 | 0.7− | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2002 11 12 | 704 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2002 11 12 | 704 | 0.8+ | 0.3− | 2006 09 29 | 704 | 0.5+ | 1.1+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2006 09 16 | 703 | 0.4+ | 0.5− | 2006 09 29 | 704 | 1.0+ | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.1− |
| 2006 09 16 | 703 | 1.1+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.1− | 0.5− |

**2006 SC$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.81463 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29726637 | $\omega$ | 54.33103 | | +0.98596630 | | −0.15797086 |
| $a$ | 2.2235089 | $\Omega$ | 314.68863 | | +0.11777869 | | +0.88743375 |
| $e$ | 0.1557153 | $i$ | 4.35590 | | +0.11831585 | | +0.43302026 |
| $P$ | 3.32 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 28 | 691 | 0.9− | 0.4− | 2006 09 18 | 704 | 0.4+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.1− |
| 2000 12 28 | 691 | 0.2+ | 0.1− | 2006 09 18 | 704 | (0.5− | 1.6+) | 2006 10 04 | G96 | 0.4− | 0.3− |
| 2000 12 28 | 691 | 0.6− | 0.4+ | 2006 09 18 | 704 | 0.5+ | 0.5+ | 2006 10 04 | G96 | 0.8+ | 0.4− |
| 2001 01 24 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 704 | 0.6− | 0.0 | 2006 10 10 | A24 | 0.2+ | 0.0 |
| 2001 01 24 | 691 | 0.5+ | 0.2+ | 2006 09 25 | 704 | 0.7+ | 0.5+ | 2006 10 10 | A24 | 0.2− | 0.1− |
| 2001 01 24 | 691 | 0.5+ | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.1+ | 2006 10 10 | A24 | 0.7+ | 0.3+ |
| 2005 04 12 | 691 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.4− | 0.7+ | 2006 10 17 | 703 | 0.0 | 0.9− |
| 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 704 | 0.6+ | 0.3− | 2006 10 17 | 703 | 0.9+ | 1.1− |
| 2005 04 12 | 691 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.3− | 0.8− | 2006 10 17 | 703 | 0.8− | 0.4− |
| 2006 08 29 | 699 | 0.8+ | 0.5− | 2006 09 30 | 703 | 0.3− | 0.2− | 2006 10 17 | 703 | 1.4− | 1.4+ |
| 2006 08 29 | 699 | 0.3− | 1.0− | 2006 09 30 | 703 | 0.7− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2006 08 29 | 699 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2006 08 29 | 699 | 0.4− | 0.2− | 2006 10 03 | 704 | 0.3+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.3+ |
| 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 10 03 | 704 | 0.6− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2006 09 16 | 703 | 0.4− | 0.2+ | 2006 10 03 | 704 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 09 16 | 703 | 0.3+ | 0.1+ | 2006 10 03 | 704 | (1.6− | 0.3+) | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 09 16 | 703 | 0.2+ | 1.2+ | 2006 10 04 | G96 | 0.2+ | 0.1− | | | | |

**2006 SF$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.06139 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27711830 | $\omega$ | 148.48107 | | +0.99310116 | | −0.01423335 |
| $a$ | 2.3300178 | $\Omega$ | 212.95000 | | −0.01226314 | | +0.97455633 |
| $e$ | 0.2386092 | $i$ | 12.35661 | | +0.11661779 | | +0.22369035 |
| $P$ | 3.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 21 | 704 | 0.5− | 1.8− | 2006 09 18 | 704 | 0.2− | 0.1− | 2006 11 02 | 704 | 0.8+ | 0.7+ |
| 1999 10 21 | 704 | 1.1+ | 0.7+ | 2006 09 18 | 704 | 0.6+ | 0.7+ | 2006 11 02 | 704 | 0.7+ | 1.3− |
| 1999 10 21 | 704 | 1.3+ | 0.4− | 2006 09 18 | 704 | 0.3− | 1.3− | 2006 11 02 | 704 | 0.9− | 1.1+ |
| 1999 11 04 | 704 | 0.5+ | 0.1− | 2006 09 18 | 704 | 0.5+ | 0.5− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1999 11 04 | 704 | 0.2+ | 0.3+ | 2006 09 22 | 699 | 0.2− | 0.7+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1999 11 04 | 704 | 0.4+ | 0.3− | 2006 09 22 | 699 | 0.9+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.2− |
| 1999 11 04 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 699 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.2− | 0.2− |
| 1999 11 16 | 703 | 0.6+ | 0.4− | 2006 09 22 | 699 | 0.3+ | 0.6− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 1999 11 16 | 703 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1− |
| 1999 11 16 | 703 | 0.7− | 0.4− | 2006 09 27 | 704 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.2− |
| 1999 11 16 | 703 | 1.3− | 0.9+ | 2006 09 27 | 704 | 0.9+ | 0.4− | 2006 11 11 | 703 | 0.4− | 0.1− |
| 1999 12 05 | 704 | (0.4+ | 2.4+) | 2006 09 27 | 704 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 1999 12 05 | 704 | 0.9− | 0.3− | 2006 09 27 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 1999 12 05 | 704 | 1.0+ | 1.3− | 2006 09 29 | 704 | 0.4+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.2− |
| 1999 12 05 | 704 | 1.5− | 1.7− | 2006 09 29 | 704 | 0.3− | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.0 |
| 1999 12 14 | 704 | 0.5− | 0.5− | 2006 09 29 | 704 | 0.7+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 1999 12 14 | 704 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.6− | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 1999 12 14 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2002 07 11 | 704 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.1+ | 0.1+ |
| 2002 07 11 | 704 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.8+ | 0.6+ |
| 2002 07 11 | 704 | 0.3− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.1− | 0.3− |
| 2002 07 11 | 704 | 0.4+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 07 11 | 704 | 0.5− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2002 08 12 | 704 | 0.1− | 0.2− | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2002 08 12 | 704 | 0.4− | 0.2− | 2006 10 04 | 703 | 1.0− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2002 08 12 | 704 | 0.5+ | 0.5− | 2006 10 04 | 703 | 0.1+ | 0.5− | 2006 11 17 | 704 | 0.1− | 0.4− |
| 2002 08 12 | 704 | 0.1+ | 0.2− | 2006 10 04 | 703 | 0.4− | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.5+ |
| 2002 08 12 | 704 | 0.3− | 0.5− | 2006 10 04 | 703 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2005 03 15 | G96 | 0.3+ | 0.4− | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.2+ |
| 2005 03 15 | G96 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.9+ | 0.2+ |
| 2005 03 15 | G96 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.4− | 0.6+ |
| 2005 03 15 | G96 | 0.7− | 0.8− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.1+ |
| 2005 04 17 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.2− | 1.0+ |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.1− | 0.1+ |
| 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 704 | 0.4− | 0.5+ | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2005 05 14 | G96 | 0.5− | 0.4+ | 2006 10 23 | 704 | (1.7− | 1.7+) | 2006 11 20 | 704 | 1.2− | 0.4+ |
| 2005 05 14 | G96 | 0.1+ | 0.3+ | 2006 10 23 | 704 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.7− | 0.7+ |
| 2005 05 14 | G96 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 1.4− | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2005 05 14 | G96 | 0.1− | 0.4+ | 2006 10 28 | 704 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.9− | 0.2+ |
| 2006 08 24 | 704 | 0.7− | 0.1− | 2006 10 28 | 704 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2006 08 24 | 704 | 0.6+ | 0.9+ | 2006 10 28 | 704 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.5+ |
| 2006 08 24 | 704 | 0.9− | 0.4+ | 2006 10 28 | 704 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.8+ |
| 2006 08 24 | 704 | 0.4− | 0.3− | 2006 10 28 | 704 | 0.3+ | 0.0 | 2006 11 20 | 704 | 1.0− | 0.5+ |
| 2006 09 16 | 703 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.3+ |
| 2006 09 16 | 703 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 09 16 | 703 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2006 09 16 | 703 | 0.3+ | 0.3− | 2006 11 02 | 704 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 704 | 0.6+ | 1.1− | 2006 11 02 | 704 | 0.5+ | 0.5− | 2006 11 23 | G96 | 0.2− | 0.3− |

**2006 SG$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.31463 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21976698 | $\omega$ | 340.84285 | | +0.92915191 | | −0.36446410 |
| $a$ | 2.7195336 | $\Omega$ | 40.70348 | | +0.35038978 | | +0.81467782 |
| $e$ | 0.1285086 | $i$ | 5.45444 | | +0.11791407 | | +0.45107201 |
| $P$ | 4.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.5+ | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.3− |
| 2000 04 26 | 691 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.3+ | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.3− |
| 2000 04 26 | 691 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.3+ | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.2− |
| 2000 05 02 | 691 | 0.1+ | 0.2− | 2006 10 15 | 703 | 0.3− | 0.4+ | 2006 10 29 | G96 | 0.3+ | 0.3− |
| 2000 05 02 | 691 | 0.2− | 0.5− | 2006 10 15 | 703 | 0.3− | 0.6− | 2006 10 29 | G96 | 0.0 | 0.1− |
| 2000 05 02 | 691 | 0.4− | 0.5− | 2006 10 15 | 703 | 0.2− | 0.5− | 2006 10 29 | G96 | 0.5+ | 0.1− |
| 2006 09 16 | 699 | 0.3− | 0.2− | 2006 10 15 | 703 | 0.2− | 0.7− | 2006 10 29 | G96 | 0.1− | 0.1− |
| 2006 09 16 | 699 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.4+ | 0.0 |
| 2006 09 16 | 699 | 1.1− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2006 09 16 | 699 | 0.8− | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2006 09 18 | 699 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2006 09 18 | 699 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3− | 2006 11 06 | 644 | 0.3+ | 0.3+ |
| 2006 09 18 | 699 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 06 | 644 | 0.4− | 0.0 |
| 2006 09 18 | 699 | 1.0− | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2006 09 23 | 691 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.2− | 1.3− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4+ | 1.4− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | 699 | 0.7+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.2− | 0.2− |
| 2006 09 28 | 699 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2006 09 28 | 699 | 1.3− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.9+ | 0.1+ |
| 2006 09 28 | 699 | 0.4− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.5− |
| 2006 09 30 | 703 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8− | 0.6− |
| 2006 09 30 | 703 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.8− |
| 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.9+ | 1.2− |
| 2006 09 30 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.1− | 0.7− |
| 2006 09 30 | 703 | 0.0 | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2006 09 30 | 703 | 0.5− | 0.3− | 2006 10 23 | 704 | 0.7+ | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.8− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.6− | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2006 09 30 | 703 | 0.1− | 0.0 | 2006 10 23 | 704 | 0.1− | 0.9+ | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2006 10 01 | 704 | 0.1+ | 0.3+ | 2006 10 23 | 704 | 0.2− | 0.6+ | 2006 11 21 | 704 | 1.0+ | 0.6+ |
| 2006 10 01 | 704 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 1.1+ | 0.8+ |
| 2006 10 01 | 704 | (0.6+ | 2.0−) | 2006 10 28 | 691 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.4+ | 1.4+ |
| 2006 10 01 | 704 | 1.0− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.2− |

**2006 SJ$_{12}$ = 2004 DL$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.52654 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22992797 | $\omega$ | 189.31438 | | +0.93251209 | | +0.35745026 |
| $a$ | 2.6388103 | $\Omega$ | 149.58296 | | −0.32444738 | | +0.89182106 |
| $e$ | 0.2234556 | $i$ | 5.83631 | | −0.15860356 | | +0.27728057 |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 0.2+ | 0.7+ | 2006 09 18 | 703 | 0.7+ | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2001 06 30 | 644 | 0.2+ | 1.0+ | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.4+ | 0.1− |
| 2001 06 30 | 644 | 0.1+ | 0.7+ | 2006 09 18 | 703 | 1.0+ | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2002 12 01 | 704 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.6+ | 1.2+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 12 01 | 704 | 0.3+ | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2002 12 01 | 704 | 0.3− | 0.5+ | 2006 09 20 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2002 12 01 | 704 | 0.5− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.3+ |
| 2002 12 05 | 608 | 0.2− | 0.3+ | 2006 09 22 | 704 | (1.0− | 2.1+) | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2002 12 05 | 608 | 0.1+ | 0.2+ | 2006 09 22 | 704 | (0.4− | 2.3+) | 2006 10 16 | 703 | 0.2− | 0.4+ |
| 2002 12 05 | 608 | 0.4− | 0.5+ | 2006 09 22 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 02 22 | 691 | 0.4+ | 0.2+ | 2006 09 22 | 704 | 0.9− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2004 02 22 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 02 22 | 691 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 0.5− | 2006 10 22 | 704 | 0.3− | 0.1+ |
| 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.5− | 0.2+ | 2006 10 22 | 704 | 0.5+ | 0.3+ |
| 2004 02 29 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.0 | 0.2+ | 2006 10 22 | 704 | 0.7+ | 0.4− |
| 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 704 | 1.0− | 0.6+ | 2006 10 22 | 704 | 0.6− | 0.7+ |
| 2005 04 02 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | (1.8− | 1.1+) | 2006 10 22 | 704 | 1.2− | 0.7+ |
| 2005 04 02 | 691 | 0.2+ | 0.9+ | 2006 09 26 | 704 | 0.9− | 0.7+ | 2006 10 22 | 703 | 0.9− | 0.1+ |
| 2005 04 02 | 691 | 0.3+ | 0.0 | 2006 09 26 | 704 | 1.2− | 1.1+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2005 04 18 | 691 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.7− |
| 2005 04 18 | 691 | 0.4+ | 0.4+ | 2006 09 29 | 699 | 1.2+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2005 04 30 | 691 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2005 04 30 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.8+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2005 04 30 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2006 09 16 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 09 16 | 704 | 1.4− | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2006 09 16 | 704 | 0.8− | 0.4+ | 2006 10 01 | 704 | (2.1+ | 0.4−) | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2006 09 16 | 704 | 0.5− | 0.5− | 2006 10 01 | 704 | 0.8+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2006 09 16 | 704 | 0.6− | 0.5− | 2006 10 01 | 704 | 1.2+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 09 16 | 699 | 0.2− | 0.9+ | 2006 10 01 | 704 | (1.6+ | 0.0 ) | 2006 11 16 | 703 | 0.9− | 0.5+ |
| 2006 09 16 | 699 | 0.6+ | 0.3+ | 2006 10 01 | 704 | 0.5+ | 0.0 | 2006 11 16 | 703 | 0.0 | 0.8+ |
| 2006 09 16 | 699 | 0.2+ | 0.7+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.6− | 0.3+ |
| 2006 09 16 | 699 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.3+ | 0.2+ |

**2006 SK$_{12}$ = 1999 RU$_{236}$ = 2005 JX$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.67333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28619041 | $\omega$ | 265.86601 | | +0.90341871 | | −0.41739972 |
| $a$ | 2.2805136 | $\Omega$ | 118.77952 | | +0.42420692 | | +0.83691180 |
| $e$ | 0.1429401 | $i$ | 6.42244 | | +0.06231472 | | +0.35405665 |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 1.2+ | 0.3+ | 2005 05 14 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.7+ | 0.4+ |
| 1999 09 08 | 703 | 0.2+ | 0.4+ | 2005 05 14 | 691 | 0.5+ | 0.1+ | 2006 10 01 | 704 | 0.8+ | 0.8+ |
| 1999 09 08 | 703 | (0.3+ | 2.0+) | 2006 09 16 | 699 | 0.4+ | 0.9+ | 2006 10 01 | 704 | 0.3− | 0.2+ |
| 1999 09 08 | 703 | 1.0− | 0.5+ | 2006 09 16 | 699 | 0.7− | 1.1+ | 2006 10 01 | 704 | 0.5+ | 0.9− |
| 1999 09 14 | 704 | 0.2− | 0.4+ | 2006 09 16 | 699 | 0.9+ | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 1999 09 14 | 704 | 0.2+ | 1.3− | 2006 09 16 | 699 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.3− |
| 1999 09 14 | 704 | 0.5− | 0.0 | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.7+ |
| 1999 09 14 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2003 12 23 | 704 | (0.3+ | 1.8+) | 2006 09 18 | 703 | 0.7− | 0.2− | 2006 10 28 | 703 | 0.5− | 0.0 |
| 2003 12 23 | 704 | 0.4+ | 0.4− | 2006 09 18 | 703 | 0.6− | 0.5+ | 2006 10 28 | 703 | 1.0− | 1.0+ |
| 2003 12 23 | 704 | (1.2+ | 2.1+) | 2006 09 25 | 699 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.8− | 0.6− |
| 2003 12 23 | 704 | 0.6+ | 0.3− | 2006 09 25 | 699 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 0.1− | 0.6− |
| 2003 12 23 | 704 | 0.5+ | 0.1− | 2006 09 25 | 699 | 1.3+ | 0.3− | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2004 01 21 | 704 | 0.3− | 0.9+ | 2006 09 25 | 699 | (0.1− | 1.7+) | 2006 11 07 | 644 | 0.7− | 0.5+ |
| 2004 01 21 | 704 | 0.6− | 0.6− | 2006 09 26 | 703 | 0.4− | 0.9− | 2006 11 07 | 644 | 0.3− | 0.5+ |
| 2004 01 21 | 704 | 0.2− | 1.0+ | 2006 09 26 | 703 | 0.5+ | 1.0− | 2006 11 07 | 644 | 0.3− | 0.3+ |
| 2004 01 21 | 704 | (0.4+ | 2.3+) | 2006 09 26 | 703 | 0.7− | 0.1− | 2006 11 07 | 644 | 0.1− | 0.4+ |
| 2004 01 21 | 704 | 0.1+ | 0.9+ | 2006 09 26 | 703 | 0.2+ | 0.0 | 2006 11 07 | 644 | 0.0 | 0.4+ |
| 2005 05 04 | 691 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.4+ | 0.4+ |
| 2005 05 04 | 691 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.8+ | 0.3+ | 2006 11 16 | 703 | 0.5− | 0.9− |
| 2005 05 04 | 691 | 0.0 | 0.5+ | 2006 09 29 | 699 | 1.1+ | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.3+ |
| 2005 05 14 | 691 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.0 | 0.6+ | 2006 11 16 | 703 | 0.5− | 0.3− |

**2006 SN$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.92085 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28802075 | $\omega$ | 239.86269 | | +0.99467770 | | +0.00390558 |
| $a$ | 2.2708417 | $\Omega$ | 119.73730 | | +0.03160936 | | +0.93952906 |
| $e$ | 0.2714208 | $i$ | 6.80997 | | −0.09806691 | | +0.34244691 |
| $P$ | 3.42 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 13 | 699 | 0.3− | 1.7+ | 2006 09 29 | 699 | 0.5+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.4− |
| 1999 08 13 | 699 | 0.3− | 1.0+ | 2006 09 29 | 699 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.3+ | 0.3− |
| 1999 08 13 | 699 | 0.3− | 0.4+ | 2006 09 29 | 699 | 1.3+ | 1.1+ | 2006 10 17 | 703 | 0.3− | 0.3+ |
| 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 704 | 0.4+ | 1.0− | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.1− | 0.5− | 2006 10 28 | 703 | 0.2− | 0.8− |
| 2006 09 16 | 699 | 0.5+ | 0.1− | 2006 09 30 | 704 | 0.2− | 0.5− | 2006 10 28 | 703 | 0.4− | 0.2− |
| 2006 09 16 | 699 | 0.7+ | 0.0 | 2006 09 30 | 704 | 0.5− | 0.3− | 2006 10 28 | 703 | 0.7− | 0.3− |
| 2006 09 16 | 699 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.3+ | 0.5+ |
| 2006 09 16 | 699 | 0.9+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.4+ | 0.8+ |
| 2006 09 18 | 703 | 1.0− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.2− | 0.3+ |
| 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 11 16 | 703 | 0.7− | 0.7+ |
| 2006 09 18 | 703 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.8+ | 0.2+ |
| 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1− | 0.3− | | | | |

**2006 ST$_{12}$ = 2005 GD$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.86114 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22670829 | $\omega$ | 53.78104 | | +0.60832258 | | +0.79196457 |
| $a$ | 2.6637356 | $\Omega$ | 253.77035 | | −0.74456086 | | +0.54660166 |
| $e$ | 0.2274015 | $i$ | 3.12276 | | −0.27490501 | | +0.27206386 |
| $P$ | 4.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | G96 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.4+ |
| 2005 03 17 | G96 | 0.8− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 2005 03 17 | G96 | 0.5− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2005 03 17 | G96 | 0.4− | 0.3− | 2006 09 19 | 703 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2005 04 06 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2005 04 06 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2005 04 06 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2005 04 09 | 691 | 0.4+ | 0.0 | 2006 09 27 | 699 | (1.8+ | 0.3+) | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2005 04 09 | 691 | 0.1− | 0.3+ | 2006 09 27 | 699 | 1.2+ | 0.5− | 2006 10 23 | G96 | 0.1− | 0.1+ |
| 2005 04 09 | 691 | 0.4+ | 0.0 | 2006 09 27 | 699 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2006 09 16 | 644 | 0.0 | 0.2+ | 2006 09 27 | 699 | 0.2+ | 0.7− | 2006 10 31 | G96 | 0.5− | 0.3+ |
| 2006 09 16 | 644 | 0.1− | 0.2− | 2006 09 29 | 704 | 1.0− | 0.5+ | 2006 10 31 | G96 | 0.4− | 0.3+ |
| 2006 09 16 | 644 | 0.3+ | 0.1− | 2006 09 29 | 704 | 0.3− | 0.9− | 2006 10 31 | G96 | 0.4− | 0.4+ |
| 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.7− | 0.5− | | | | |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ | | | | |

**2006 SV$_{12}$ = 2005 GZ$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.47623 | | (2000.0) | | | |
| $n$ | 0.27041606 | $\omega$ | 263.55419 | | +0.71867421 | +0.69480769 |
| $a$ | 2.3683600 | $\Omega$ | 52.42968 | | −0.62353652 | +0.66138205 |
| $e$ | 0.1941780 | $i$ | 1.97963 | | −0.30774925 | +0.28251737 |
| $P$ | 3.64 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.3− | 0.3+ | 2006 09 16 | 644 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.5+ | 0.7− |
| 2005 04 06 | G96 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.3− | 0.4+ |
| 2005 04 06 | G96 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.6− | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 2005 04 06 | G96 | 0.3− | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.9+ |
| 2005 04 09 | G96 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2005 04 09 | G96 | 0.4+ | 0.5− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 04 09 | G96 | 0.5+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 04 09 | G96 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2006 09 16 | 644 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2006 09 16 | 644 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2006 09 16 | 644 | 0.1− | 0.2− | 2006 10 15 | 703 | 1.0+ | 0.9− | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2006 09 16 | 644 | 0.0 | 0.4− | 2006 10 15 | 703 | 1.4+ | 0.6− | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2006 09 16 | 644 | 0.2+ | 0.8− | 2006 10 15 | 703 | 0.1+ | 1.1− | | | | |

**2006 SX$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 255.98005 | | (2000.0) | | | |
| $n$ | 0.19054206 | $\omega$ | 235.39433 | | +0.15844075 | −0.98398454 |
| $a$ | 2.9909477 | $\Omega$ | 205.85761 | | +0.95609932 | +0.17355021 |
| $e$ | 0.0258037 | $i$ | 10.79360 | | +0.24651696 | −0.04067870 |
| $P$ | 5.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 10 | 691 | 0.7+ | 0.7− | 2005 05 04 | 691 | 0.2+ | 0.3− | 2005 06 27 | 691 | 0.5− | 0.5+ |
| 1991 10 10 | 691 | 0.1+ | 0.8− | 2005 06 04 | 691 | 0.1− | 0.3− | 2005 06 27 | 691 | 0.2+ | 0.3− |
| 1991 10 10 | 691 | 0.4− | 0.1− | 2005 06 04 | 691 | 0.1+ | 0.2− | 2006 09 17 | 291 | 0.1+ | 0.1− |
| 2002 12 10 | 644 | 0.2− | 1.1+ | 2005 06 04 | 691 | 0.1+ | 0.2− | 2006 09 17 | 291 | 0.2+ | 0.2+ |
| 2002 12 10 | 644 | 0.0 | 1.2+ | 2005 06 15 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 291 | 1.1− | 1.5+ |
| 2002 12 10 | 644 | 0.2+ | 1.2+ | 2005 06 15 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.4+ | 0.0 |
| 2005 05 04 | 691 | 0.1+ | 0.2+ | 2005 06 15 | 691 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1− |
| 2005 05 04 | 691 | 0.0 | 0.0 | 2005 06 27 | 691 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.2− |

**2006 SY$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.11119 | | (2000.0) | | | |
| $n$ | 0.18249419 | $\omega$ | 232.08436 | | +0.69684683 | −0.71661661 |
| $a$ | 3.0782462 | $\Omega$ | 173.49570 | | +0.71210933 | +0.68641234 |
| $e$ | 0.2660325 | $i$ | 15.04954 | | +0.08546811 | +0.12368803 |
| $P$ | 5.40 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.1− | 0.5− | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.2− |
| 2001 10 15 | 644 | 0.4+ | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.3− |
| 2001 10 15 | 644 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.0 |
| 2001 10 23 | 644 | 0.4− | 0.2+ | 2006 09 17 | 691 | 0.4− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.1− |
| 2001 10 23 | 644 | 0.6− | 0.3+ | 2006 09 18 | 291 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.7− | 0.3− |
| 2001 10 23 | 644 | 0.5+ | 0.4+ | 2006 09 18 | 291 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.5− |
| 2006 08 29 | 691 | 0.4+ | 0.1− | 2006 09 18 | 291 | 0.3+ | 0.1+ | | | | |
| 2006 08 29 | 691 | 0.5− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.2+ | | | | |

**2006 SD$_{13}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.80899 | | (2000.0) | | | |
| $n$ | 0.20980066 | $\omega$ | 202.88569 | | +0.72885495 | −0.68288272 |
| $a$ | 2.8049911 | $\Omega$ | 200.43806 | | +0.64802830 | +0.71134442 |
| $e$ | 0.2319285 | $i$ | 8.13497 | | +0.22097460 | +0.16631388 |
| $P$ | 4.70 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 29 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.1− | 0.7+ | 2006 09 20 | 699 | 1.9+ | 1.6− |
| 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 1.4− | 1.1− | 2006 09 20 | 699 | 1.1− | 0.2+ |
| 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.7− | 2006 09 25 | 704 | 0.1− | 0.4+ |
| 2005 06 08 | 691 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.0 | 1.0− | 2006 09 25 | 704 | 0.4− | 0.5+ |
| 2005 06 08 | 691 | 0.0 | 0.0 | 2006 09 18 | 704 | 0.2− | 0.6+ | 2006 09 25 | 704 | 0.2− | 0.0 |
| 2005 06 08 | 691 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.8− | 0.2− | 2006 09 30 | 699 | 0.1+ | 0.3+ |
| 2006 08 30 | 699 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.4− | 0.2− | 2006 09 30 | 699 | (2.1− | 0.7−) |
| 2006 08 30 | 699 | 0.4+ | 0.2+ | 2006 09 18 | 704 | 0.1+ | 0.2− | 2006 09 30 | 699 | 0.0 | 0.0 |
| 2006 08 30 | 699 | 0.6− | 0.3+ | 2006 09 20 | 699 | 1.0+ | 1.0+ | 2006 09 30 | 699 | 0.5+ | 0.5+ |
| 2006 08 30 | 699 | 0.2+ | 0.7+ | 2006 09 20 | 699 | 1.3+ | 0.2+ | | | | |

**2006 SE$_{13}$ = 2003 YH$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 98.90923 | | (2000.0) | | | |
| $n$ | 0.23552901 | $\omega$ | 309.58963 | | −0.26876727 | +0.94696127 |
| $a$ | 2.5968076 | $\Omega$ | 303.95034 | | −0.80578263 | −0.32124249 |
| $e$ | 0.0446294 | $i$ | 12.26011 | | −0.52771063 | +0.00822312 |
| $P$ | 4.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.2− | 0.1+ | 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.6+ | 1.5− |
| 2003 12 19 | 691 | 0.0 | 0.1− | 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.7− | 0.3− |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.5+ | 2006 09 18 | 703 | 0.8− | 0.1+ |
| 2003 12 28 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.6+ | 2006 09 27 | 703 | 0.1+ | 1.1+ |
| 2003 12 28 | 691 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.3− | 0.1− | 2006 09 27 | 703 | 0.4+ | 0.1+ |
| 2003 12 28 | 691 | 0.3+ | 0.2− | 2006 09 17 | 703 | 0.1− | 0.7+ | 2006 09 27 | 703 | 0.7+ | 0.9− |
| 2004 02 16 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.3− | 0.2− | 2006 09 27 | 703 | 1.2+ | 0.0 |

**2006 SG$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 324.65945 | | (2000.0) | | | |
| $n$ | 0.26253434 | $\omega$ | 239.51550 | | +0.59592066 | −0.80286411 |
| $a$ | 2.4155274 | $\Omega$ | 173.82342 | | +0.78020278 | +0.57383953 |
| $e$ | 0.2243823 | $i$ | 9.07171 | | +0.19016360 | +0.16160881 |
| $P$ | 3.75 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.2− | 0.2− | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.7+ |
| 2002 08 05 | 644 | 0.1− | 0.3− | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.8− | 0.5+ |
| 2002 08 05 | 644 | 0.1− | 0.4− | 2006 09 20 | 704 | 0.6+ | 1.0+ | 2006 09 30 | 703 | 1.1− | 0.5+ |
| 2002 08 16 | 644 | 0.3+ | 0.2+ | 2006 09 20 | 704 | 0.4+ | 0.8+ | 2006 09 30 | 704 | 0.6− | 0.5− |
| 2002 08 16 | 644 | 0.2+ | 0.3− | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.8− | 0.6+ |
| 2002 08 16 | 644 | 0.1+ | 0.4− | 2006 09 20 | 704 | 0.4− | 0.5− | 2006 09 30 | 704 | 1.1− | 0.2− |
| 2005 05 09 | 691 | 0.1− | 0.1− | 2006 09 22 | D35 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 1.0+ |
| 2005 05 09 | 691 | 0.2+ | 0.5+ | 2006 09 22 | D35 | 0.2− | 0.1+ | 2006 10 16 | 703 | (0.3+ | 2.2+) |
| 2005 05 09 | 691 | 0.1− | 0.2+ | 2006 09 22 | D35 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.9+ |
| 2006 08 19 | 691 | (1.7+ | 1.1+) | 2006 09 25 | 699 | 1.0+ | 0.7+ | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2006 08 19 | 691 | 0.6− | 0.5− | 2006 09 25 | 699 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2006 08 19 | 691 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 1.0+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2006 08 28 | 691 | 0.0 | 0.1+ | 2006 09 27 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | 1.0+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2006 09 17 | 704 | 0.5− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2006 09 17 | 704 | 0.1− | 0.8− | 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 09 17 | 704 | 0.1− | 1.5− | 2006 09 27 | 704 | 1.1+ | 1.5+ | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2006 09 17 | 704 | 0.8− | 0.6− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.6+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 699 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2006 09 18 | 699 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.3− |

**2006 SH$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.49343 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22001040 | $\omega$ | 53.64820 | | +0.92995770 | | +0.36740523 |
| $a$ | 2.7175273 | $\Omega$ | 284.79249 | | −0.34175330 | | +0.84989895 |
| $e$ | 0.0798615 | $i$ | 0.82132 | | −0.13558523 | | +0.37773692 |
| $P$ | 4.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 950 | 0.1− | 0.5− | 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 09 29 | 704 | (0.3− | 1.5−) |
| 1998 11 17 | 950 | 0.1− | 0.6− | 2006 07 22 | G96 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.9+ |
| 1998 11 17 | 950 | 0.0 | 0.1+ | 2006 08 24 | 644 | 0.2− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.1+ |
| 2002 11 06 | 704 | (0.5− | 1.7−) | 2006 08 24 | 644 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.0 | 0.0 |
| 2002 11 06 | 704 | 0.2− | 0.4− | 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 01 | 704 | (3.0− | 0.0 ) |
| 2002 11 06 | 704 | 0.4− | 0.3+ | 2006 09 17 | 704 | 0.8− | 0.0 | 2006 10 01 | 704 | (1.7− | 0.1−) |
| 2002 11 16 | 644 | 0.1+ | 0.5+ | 2006 09 17 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 704 | (1.6− | 0.3−) |
| 2002 11 16 | 644 | 0.1− | 0.7+ | 2006 09 17 | 704 | 0.8+ | 0.0 | 2006 10 01 | 704 | 0.8− | 0.8− |
| 2002 11 16 | 644 | 0.2− | 0.7+ | 2006 09 17 | 704 | 0.5+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.2+ | 0.9− | 2006 09 17 | 704 | 0.6− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.4+ |
| 2002 11 24 | 644 | 0.4+ | 0.7− | 2006 09 18 | 699 | 0.2+ | 1.0+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2002 11 24 | 644 | 0.2+ | 1.1− | 2006 09 18 | 699 | 1.1+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2002 12 05 | 704 | 0.4− | 0.2− | 2006 09 18 | 699 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 09 18 | 699 | 0.1− | 1.4+ | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.9+ | 0.3+ | 2006 09 26 | 291 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 09 26 | 291 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 12 05 | 704 | 0.9− | 1.0− | 2006 09 26 | 291 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2004 02 14 | 691 | 0.1− | 0.4+ | 2006 09 26 | 701 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 02 14 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 14 | 691 | 0.5− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 02 26 | 704 | 1.1+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2004 02 26 | 704 | 0.8− | 0.9+ | 2006 09 26 | 701 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2004 02 26 | 704 | (1.6+ | 0.4−) | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.3− |
| 2004 02 26 | 704 | 0.8+ | 1.0+ | 2006 09 26 | 701 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2004 03 17 | 691 | 0.4+ | 0.2− | 2006 09 26 | 701 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2004 03 17 | 691 | 0.3+ | 0.3− | 2006 09 27 | 704 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.5− |
| 2004 03 17 | 691 | 0.3+ | 0.2− | 2006 09 27 | 704 | 1.0+ | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.1− | | | | |
| 2006 07 22 | G96 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | | | | |

**2006 SJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.17148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26959994 | $\omega$ | 200.89489 | | +0.98307723 | | −0.18237207 |
| $a$ | 2.3731373 | $\Omega$ | 169.56793 | | +0.17870009 | | +0.93389010 |
| $e$ | 0.1739027 | $i$ | 5.48533 | | +0.04031672 | | +0.30755441 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 04 | 691 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 28 | 704 | (0.6− | 1.8+) |
| 1997 03 04 | 691 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 0.5+ | 1.3+ |
| 1997 03 04 | 691 | 0.3− | 0.5− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.9+ | 1.1+ |
| 2001 03 18 | 691 | 0.1− | 0.9+ | 2006 09 18 | 703 | 0.9− | 0.2− | 2006 10 01 | 704 | 0.5+ | 1.1+ |
| 2001 03 18 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.6+ | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.8+ |
| 2001 03 18 | 691 | 0.0 | 0.7+ | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 10 15 | 106 | 0.2− | 0.2− |
| 2001 04 23 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 0.9− | 2006 10 15 | 106 | 0.4+ | 0.6− |
| 2001 04 23 | 691 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 0.2− | 0.1+ | 2006 10 15 | 106 | 0.0 | 0.7− |
| 2001 04 23 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.2− | 0.4− | 2006 10 15 | 106 | 0.2+ | 0.6− |
| 2002 07 21 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 07 21 | 644 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.4+ |
| 2002 07 21 | 644 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.6− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2006 07 22 | G96 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2006 07 22 | G96 | 0.4− | 0.4− | 2006 09 20 | 704 | 0.9+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2006 07 22 | G96 | 0.1− | 0.3− | 2006 09 20 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 07 22 | G96 | 0.2− | 0.3− | 2006 09 20 | 704 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2006 08 28 | 703 | 0.1+ | 1.1+ | 2006 09 20 | 704 | 0.1− | 0.8− | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2006 08 28 | 703 | 0.6+ | 0.2− | 2006 09 26 | 704 | 0.0 | 0.0 | 2006 10 21 | 703 | (2.2− | 1.4+) |
| 2006 08 28 | 703 | 1.1− | 0.2− | 2006 09 26 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 644 | 0.8− | 0.2+ |
| 2006 08 28 | 703 | 1.3− | 0.9− | 2006 09 26 | 704 | 0.8+ | 0.7+ | 2006 10 21 | 703 | 1.2− | 1.1+ |
| 2006 09 06 | 644 | 0.3− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.9+ | 2006 10 21 | 703 | 1.3− | 1.4+ |
| 2006 09 06 | 644 | 0.2+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.5− | 0.8− |
| 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 09 17 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 09 17 | 704 | 0.8+ | 0.4+ | 2006 09 28 | 704 | (0.1+ | 2.0+) | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2006 09 17 | 704 | 0.2− | 0.5+ | 2006 09 28 | 704 | (0.1− | 2.2+) | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2006 09 17 | 704 | 0.3+ | 0.2− | 2006 09 28 | 704 | (0.1+ | 2.2+) | | | | |
| 2006 09 18 | 703 | 1.0− | 0.1+ | 2006 09 28 | 704 | (0.1− | 2.3+) | | | | |

**2006 SK$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.08545 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23169849 | $\omega$ | 19.88507 | | +0.87966468 | | −0.47450622 |
| $a$ | 2.6253503 | $\Omega$ | 8.65507 | | +0.40231531 | | +0.70636782 |
| $e$ | 0.2005893 | $i$ | 12.33756 | | +0.25363842 | | +0.52525075 |
| $P$ | 4.25 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.0 | 0.9− | 2006 09 17 | 704 | 0.2− | 0.4− | 2006 10 01 | 704 | 0.4− | 0.1− |
| 2002 10 31 | 704 | 0.2+ | 1.3+ | 2006 09 18 | 699 | 0.6− | 1.1− | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 2002 10 31 | 704 | 1.1+ | 0.0 | 2006 09 18 | 699 | 0.9− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2002 10 31 | 704 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2002 11 07 | 704 | 0.9− | 0.2− | 2006 09 20 | 704 | 0.9− | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2002 11 07 | 704 | 0.7− | 0.1− | 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 11 07 | 704 | (1.8− | 0.1−) | 2006 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 11 07 | 704 | 0.9− | 0.7− | 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 11 15 | 704 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.8+ | 0.0 | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 2002 11 15 | 704 | 0.2+ | 0.5− | 2006 09 24 | 691 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.1+ |
| 2002 11 15 | 704 | 0.3+ | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 2002 11 15 | 704 | 0.3+ | 0.5− | 2006 09 24 | 691 | 0.5− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.2+ |
| 2002 11 15 | 704 | 0.6+ | 0.5− | 2006 09 27 | 704 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.1− |
| 2002 12 03 | 644 | (2.2+ | 0.6+) | 2006 09 27 | 704 | 0.8+ | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2002 12 03 | 644 | (1.8+ | 0.8+) | 2006 09 27 | 704 | 0.7+ | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2002 12 03 | 644 | 1.4+ | 0.9+ | 2006 09 27 | 704 | 0.1+ | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2002 12 07 | 704 | 1.2− | 1.1− | 2006 09 27 | 704 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2002 12 07 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 12 07 | 704 | 0.1− | 0.1+ | 2006 09 28 | 291 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 12 07 | 704 | 0.0 | 0.5− | 2006 09 28 | 291 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 12 07 | 704 | (0.4− | 1.8+) | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2004 03 15 | 691 | 0.3+ | 0.2− | 2006 09 28 | 704 | 0.1− | 0.9+ | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2004 04 13 | 691 | 0.5+ | 0.8+ | 2006 09 28 | 704 | 0.4+ | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2004 04 13 | 691 | 0.5+ | 0.7+ | 2006 09 28 | 704 | 0.3− | 1.3+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2004 04 13 | 691 | 0.3+ | 0.8+ | 2006 09 29 | 704 | 1.0+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2006 09 12 | 703 | (2.0− | 0.1−) | 2006 09 29 | 704 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2006 09 12 | 703 | 1.1− | 0.4− | 2006 09 29 | 704 | 0.4+ | 0.4+ | 2006 10 31 | G96 | 0.5− | 0.1+ |
| 2006 09 12 | 703 | 0.2+ | 1.2− | 2006 09 29 | 704 | 0.5+ | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2006 09 12 | 703 | 0.7+ | 0.4− | 2006 09 29 | 704 | 0.8+ | 0.3+ | 2006 11 06 | 644 | 0.4− | 0.2+ |
| 2006 09 17 | 704 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.2+ | 0.3+ | 2006 11 06 | 644 | 0.1− | 0.4+ |
| 2006 09 17 | 704 | 0.2− | 0.7+ | 2006 10 01 | 704 | 0.1− | 0.2+ | 2006 11 06 | 644 | 0.2− | 0.4+ |
| 2006 09 17 | 704 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.0 | 0.1+ | | | | |

**2006 SQ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.95562 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30380161 | $\omega$ | 356.55770 | | +0.96695046 | | +0.25374515 |
| $a$ | 2.1915060 | $\Omega$ | 348.64950 | | −0.23079909 | | +0.82961174 |
| $e$ | 0.1558603 | $i$ | 7.26959 | | −0.10834476 | | +0.49735074 |
| $P$ | 3.24 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 1.2+ | 0.3− | 2006 09 17 | 703 | 0.2− | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 2003 11 20 | 704 | 0.5− | 0.7+ | 2006 09 18 | 704 | 0.0 | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2003 11 20 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 704 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1+ |
| 2003 11 20 | 691 | 0.5+ | 0.0 | 2006 09 18 | 704 | 0.3+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2003 11 20 | 691 | 0.5+ | 0.2− | 2006 09 19 | 699 | 0.2+ | 0.3− | 2006 10 09 | 644 | 0.3− | 0.1− |
| 2003 11 20 | 691 | 1.3− | 0.3− | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 1.2+ | 0.3+ |
| 2003 12 28 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.2− |
| 2003 12 28 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.3− | 0.4− | 2006 10 17 | 703 | (1.9+ | 1.1−) |
| 2003 12 28 | 691 | 0.6− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | (1.6− | 0.9−) |
| 2005 04 12 | G96 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2005 04 12 | G96 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2005 04 12 | G96 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 04 12 | G96 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2006 08 28 | 703 | 0.3+ | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.3− |
| 2006 08 28 | 703 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2006 08 28 | 703 | 0.6− | 0.6− | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2006 08 28 | 703 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2006 09 17 | 691 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.2+ | 0.2− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2006 09 17 | 691 | 0.5− | 0.3+ | 2006 09 29 | 704 | 0.7+ | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.5− |
| 2006 09 17 | 703 | 0.3− | 0.8− | 2006 09 29 | 704 | 0.7+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 17 | 703 | 0.4− | 0.6− | 2006 09 29 | 704 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.6+ | 0.7− |
| 2006 09 17 | 703 | 0.5− | 0.6− | 2006 10 01 | 691 | 0.1+ | 0.1+ | | | | |

**2006 SR$_{13}$ = 1999 TM$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.90624 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28018590 | $\omega$ | 61.35336 | | +0.77380491 | | +0.63296374 |
| $a$ | 2.3129799 | $\Omega$ | 259.36700 | | −0.58939352 | | +0.70553109 |
| $e$ | 0.2298275 | $i$ | 1.40757 | | −0.23203714 | | +0.31872054 |
| $P$ | 3.52 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.2+ | 0.3− | 2006 09 18 | 704 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 1999 10 09 | 704 | 0.4+ | 0.2− | 2006 09 18 | 704 | 0.7− | 1.1− | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 1999 10 09 | 704 | 0.8− | 0.5− | 2006 09 18 | 704 | 0.3+ | 0.9+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 1999 10 13 | 704 | 0.1− | 0.7− | 2006 09 21 | A50 | 0.3− | 1.0+ | 2006 10 02 | G96 | 0.1+ | 0.4− |
| 1999 10 13 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.4− |
| 1999 10 13 | 704 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− |
| 1999 10 13 | 704 | 0.8+ | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 1999 10 13 | 704 | 0.3− | 0.4− | 2006 09 25 | 704 | 1.2+ | 1.1− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 691 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2006 09 17 | 691 | 0.0 | 0.2− | 2006 09 25 | 704 | 0.8− | 1.4+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2006 09 17 | 691 | 0.5− | 0.3+ | 2006 09 25 | 704 | 0.2− | 0.6+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2006 09 17 | 703 | 0.0 | 0.3− | 2006 09 25 | 704 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.5+ |
| 2006 09 17 | 703 | 0.7+ | 0.3− | 2006 09 29 | 704 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.7− | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.3+ |
| 2006 09 17 | 703 | 0.6+ | 0.3− | 2006 09 29 | 704 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.4+ |
| 2006 09 18 | 704 | 0.5− | 0.4− | 2006 09 29 | 704 | 0.7+ | 0.1− | | | | |

**2006 SU$_{13}$ = 1999 RL$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.49704 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28659430 | $\omega$ | 340.18739 | | +0.99935097 | | +0.02156217 |
| $a$ | 2.2783705 | $\Omega$ | 18.64744 | | −0.00528637 | | +0.88018067 |
| $e$ | 0.1856138 | $i$ | 5.17796 | | −0.03563273 | | +0.47414878 |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 1999 09 07 | 704 | 0.1− | 1.4+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1999 09 07 | 704 | 0.0 | 0.5− | 2006 09 22 | 185 | 0.5+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1999 09 09 | 704 | 0.3− | 0.1− | 2006 09 22 | 185 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1999 09 09 | 704 | 0.5− | 0.6− | 2006 09 22 | 185 | 0.3+ | 0.7− | 2006 10 21 | 703 | 0.1− | 0.4+ |
| 1999 09 09 | 704 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.0− | 0.7− |
| 1999 09 09 | 704 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 1.1− |
| 2003 12 18 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.1− |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 2003 12 27 | 691 | 0.5+ | 0.1− | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.9+ |
| 2003 12 27 | 691 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2003 12 27 | 691 | 0.4− | 0.1− | 2006 09 27 | 704 | 0.3+ | 1.2+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2005 04 05 | G96 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2005 04 05 | G96 | 0.4− | 0.0 | 2006 09 27 | 704 | 1.1+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2005 04 05 | G96 | 1.0− | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.7− | 0.3+ |
| 2005 04 05 | G96 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.8+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2005 04 17 | 691 | 0.7+ | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.9− | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2005 04 17 | 691 | 0.6+ | 0.7+ | 2006 09 29 | 704 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.1− | 1.4− |
| 2005 04 17 | 691 | 0.0 | 0.6+ | 2006 09 29 | 704 | 0.2+ | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2006 09 17 | 704 | 0.6+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 09 17 | 704 | 0.9− | 0.3− | 2006 10 15 | 691 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 09 17 | 704 | 0.6− | 0.1− | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2006 09 17 | 704 | 1.1− | 0.9+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | | | | |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.1+ | | | | |

**2006 SB$_{14}$ = 2004 FD$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.79085 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22173808 | $\omega$ | 43.22037 | | +0.70049440 | | −0.71363262 |
| $a$ | 2.7033930 | $\Omega$ | 2.33740 | | +0.60807052 | | +0.59242701 |
| $e$ | 0.1038937 | $i$ | 8.47043 | | +0.37357442 | | +0.37384318 |
| $P$ | 4.44 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.3− |
| 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.8− | 0.7− | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2004 03 23 | 691 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.1− |
| 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.1+ |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 22 | G96 | 0.3− | 0.0 |
| 2006 09 18 | 291 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 2006 09 18 | 291 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 291 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2006 09 19 | 703 | 0.9− | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.5− | | | | |

**2006 SD$_{14}$ = 1995 KG**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.87832 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37753848 | $\omega$ | 196.12984 | | +0.91444084 | | −0.40131832 |
| $a$ | 1.8959574 | $\Omega$ | 188.13567 | | +0.40003454 | | +0.91588734 |
| $e$ | 0.1046444 | $i$ | 21.71494 | | +0.06140297 | | +0.00969486 |
| $P$ | 2.61 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 26 | 691 | 0.1+ | 0.3− | 2006 09 20 | 704 | 1.2+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 1995 05 26 | 691 | 0.0 | 0.3− | 2006 09 20 | 704 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 |
| 1995 05 27 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 1995 05 27 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 1995 05 27 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.6− |
| 2005 05 04 | G96 | 0.3+ | 0.1+ | 2006 10 01 | 704 | (1.3− | 1.9+) | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2005 05 04 | G96 | 0.5− | 0.8+ | 2006 10 01 | 704 | (0.1+ | 2.0+) | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2005 05 04 | G96 | 0.3+ | 0.0 | 2006 10 01 | 704 | (0.8+ | 3.9+) | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2005 05 04 | G96 | 0.0 | 0.5+ | 2006 10 01 | 704 | (0.7+ | 2.2+) | 2006 10 22 | 644 | 0.5− | 0.3− |
| 2006 08 29 | 703 | 0.6− | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.5− | 0.0 |
| 2006 08 29 | 703 | 0.1+ | 1.2+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2006 08 29 | 703 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 0.9− | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2006 09 17 | 704 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 17 | 704 | 0.5+ | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.3− | 0.1− | | |
| 2006 09 17 | 704 | 0.9+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.2+ | | |
| 2006 09 17 | 704 | 0.5− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.8− | 0.0 | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 1.4+ | 0.9+ | | |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.0 | | |
| 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.6+ | 0.6+ | | |
| 2006 09 20 | 704 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.2+ | | |
| 2006 09 20 | 704 | 1.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | | | | | | |
| 2006 09 20 | 704 | 0.7+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.2− | | | | | | |

**2006 SF$_{14}$ = 1999 VE$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.19451 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26891589 | $\omega$ | 93.58530 | | +0.75571087 | +0.65198146 | |
| $a$ | 2.3771600 | $\Omega$ | 225.73616 | | −0.62991120 | +0.69779648 | |
| $e$ | 0.2043642 | $i$ | 4.95191 | | −0.17920092 | +0.29664836 | |
| $P$ | 3.67 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.2+ | 1.0− | 2006 09 17 | 703 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.4+ | | |
| 1999 11 12 | 704 | 0.7− | 0.4− | 2006 09 18 | 704 | 0.4− | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1− | | |
| 1999 11 12 | 704 | 0.7+ | 0.8+ | 2006 09 18 | 704 | (0.8− | 2.3+) | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 1999 11 17 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.5− | 0.3− | 2006 10 19 | 691 | 0.2− | 0.4+ | | |
| 1999 11 17 | 691 | 0.2+ | 0.0 | 2006 09 18 | 704 | 0.6− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | | |
| 1999 11 17 | 691 | 0.1+ | 0.1− | 2006 09 20 | 699 | 0.6+ | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.0 | | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 20 | 699 | (1.7+ | 0.2+) | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2001 02 20 | 645 | 0.2− | 0.1+ | 2006 09 20 | 699 | 0.5+ | 0.5+ | 2006 10 21 | 691 | 0.2+ | 0.1− | | |
| 2005 03 08 | 691 | 0.8+ | 0.7+ | 2006 09 25 | 704 | 0.8+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.1− | | |
| 2005 03 08 | 691 | 0.2+ | 0.1− | 2006 09 25 | 704 | 0.5+ | 0.7+ | 2006 10 23 | 644 | 0.3− | 0.3+ | | |
| 2005 03 08 | 691 | 0.5+ | 0.6+ | 2006 09 25 | 704 | 0.6+ | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.2+ | | |
| 2006 08 30 | 704 | 1.4− | 0.2+ | 2006 09 25 | 704 | 0.4+ | 0.6+ | 2006 10 23 | 691 | 0.0 | 0.4− | | |
| 2006 08 30 | 704 | 0.1+ | 1.0+ | 2006 09 29 | 704 | 0.8− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1− | | |
| 2006 08 30 | 704 | (0.0 | 1.6+) | 2006 09 29 | 704 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.4+ | | |
| 2006 08 30 | 704 | 0.2− | 1.2+ | 2006 09 29 | 699 | 0.2+ | 0.9+ | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2006 08 30 | 704 | (0.5− | 1.6+) | 2006 09 29 | 704 | 0.6+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 | | |
| 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 09 29 | 699 | 1.3− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.3− | | |
| 2006 09 06 | 644 | 0.5− | 0.6+ | 2006 09 29 | 699 | 0.3+ | 1.2+ | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2006 09 06 | 644 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.6− | 0.7+ | 2006 11 15 | G96 | 0.1− | 0.9− | | |
| 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.5− | | |
| 2006 09 17 | 703 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.7− | | |
| 2006 09 17 | 703 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.3− | 0.5− | | |

**2006 SK$_{14}$ = 2002 LD$_{15}$ = 2003 XH$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.92652 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28344841 | $\omega$ | 27.97841 | | +0.44586336 | +0.89245986 | |
| $a$ | 2.2951973 | $\Omega$ | 268.57120 | | −0.83353251 | +0.38599209 | |
| $e$ | 0.1360565 | $i$ | 3.94121 | | −0.32623522 | +0.23350697 | |
| $P$ | 3.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 0.4+ | 1.1+ | 2003 11 30 | 691 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.9− | 0.5− | | |
| 1999 09 04 | 703 | 0.3+ | 1.0+ | 2003 12 14 | 291 | 0.2+ | 0.1+ | 2006 09 18 | 704 | 0.7− | 0.2− | | |
| 1999 09 04 | 703 | 1.7− | 0.5− | 2003 12 14 | 291 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.4+ | | |
| 1999 09 04 | 703 | 1.3+ | 1.2− | 2003 12 14 | 291 | 0.4+ | 0.1− | 2006 09 19 | 699 | 0.5+ | 0.7+ | | |
| 2002 06 06 | 704 | (0.2− | 2.2+) | 2005 03 08 | 691 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 0.3− | 0.2− | | |
| 2002 06 06 | 704 | (0.2− | 1.7+) | 2005 03 08 | 691 | 0.5+ | 0.5+ | 2006 09 19 | 699 | 1.0− | 0.6+ | | |
| 2002 06 06 | 704 | (1.2+ | 2.2+) | 2005 03 08 | 691 | 0.5+ | 1.2+ | 2006 10 11 | 691 | 0.0 | 0.3+ | | |
| 2002 06 06 | 704 | 0.3− | 1.5+ | 2006 08 29 | 703 | 0.1− | 1.1− | 2006 10 11 | 691 | 0.1− | 0.1+ | | |
| 2002 06 06 | 704 | 0.2− | 0.8+ | 2006 08 29 | 703 | 0.0 | 1.4+ | 2006 10 11 | 691 | 0.2− | 0.1+ | | |
| 2002 06 08 | 704 | 0.3− | 0.3− | 2006 08 29 | 703 | 0.3+ | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | | |
| 2002 06 08 | 704 | 0.5− | 0.4− | 2006 08 29 | 703 | (1.7− | 0.2+) | 2006 10 12 | 644 | 0.1+ | 0.3+ | | |
| 2002 06 08 | 704 | 0.0 | 0.1− | 2006 09 17 | 703 | 0.6− | 0.6+ | 2006 10 12 | 644 | 0.5+ | 0.4+ | | |
| 2002 06 08 | 704 | 1.2+ | 0.6+ | 2006 09 17 | 703 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.3+ | | |
| 2002 06 08 | 704 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.9− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2+ | | |
| 2003 11 30 | 691 | 0.5− | 0.1− | 2006 09 17 | 703 | 1.1+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | | |
| 2003 11 30 | 691 | 0.2− | 0.0 | 2006 09 18 | 704 | 0.4− | 0.8+ | | | | | | |

**2006 SO$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.38492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30810594 | $\omega$ | 45.76581 | | +0.41638840 | +0.90748355 | |
| $a$ | 2.1710475 | $\Omega$ | 248.91593 | | −0.85023282 | +0.36698630 | |
| $e$ | 0.2589567 | $i$ | 3.41787 | | −0.32206342 | +0.20443743 | |
| $P$ | 3.20 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 22 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.2+ | 0.8− | 2006 09 27 | 699 | 0.2+ | 0.1+ | | |
| 2003 10 22 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.2− | 2006 09 27 | 699 | 0.6− | 0.0 | | |
| 2003 10 22 | 691 | 0.1− | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.6− | 2006 09 29 | 704 | 0.1− | 0.1+ | | |
| 2003 10 29 | 704 | 1.2− | 0.9+ | 2006 09 18 | 704 | 0.8+ | 0.4+ | 2006 09 29 | 704 | 0.3− | 0.8+ | | |
| 2003 10 29 | 704 | 0.2+ | 0.3− | 2006 09 18 | 704 | (1.9− | 1.8+) | 2006 09 29 | 704 | 0.3− | 0.7− | | |
| 2003 10 29 | 704 | 0.2+ | 0.9− | 2006 09 18 | 704 | 0.7+ | 1.1+ | 2006 09 29 | 704 | 0.2+ | 0.1− | | |
| 2003 11 21 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.6− | 0.2− | | |
| 2003 11 21 | 691 | 1.3+ | 0.6+ | 2006 09 19 | 699 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2003 11 21 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.4− | 2006 10 11 | 644 | 0.4− | 0.1− | | |
| 2003 11 30 | 691 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2003 11 30 | 691 | 0.8− | 0.7− | 2006 09 25 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2003 11 30 | 691 | 0.3− | 0.0 | 2006 09 25 | 704 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.4− | | |
| 2006 09 06 | 644 | 0.4− | 0.1− | 2006 09 25 | 704 | 0.6+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.2+ | 0.8+ | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.3+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.5− | | |
| 2006 09 17 | 703 | 0.6− | 0.7− | 2006 09 27 | 699 | 0.3+ | 1.4+ | 2006 10 23 | G96 | 0.1+ | 0.5− | | |
| 2006 09 17 | 703 | 0.1+ | 0.8− | 2006 09 27 | 699 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.5+ | 0.5− | | |

**2006 SS$_{14}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.22027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30096724 | $\omega$ | 21.97497 | | +0.07142314 | +0.99485303 | |
| $a$ | 2.2052436 | $\Omega$ | 252.17917 | | −0.92600965 | +0.03935568 | |
| $e$ | 0.1360053 | $i$ | 4.32988 | | −0.37068161 | +0.09337337 | |
| $P$ | 3.27 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 1.0− | 0.8+ | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 2002 04 04 | 644 | 0.2+ | 0.9+ | 2006 09 17 | 703 | 0.6− | 0.5+ | 2006 10 09 | 644 | 0.4+ | 0.1+ | | |
| 2002 04 04 | 644 | 0.2+ | 0.5+ | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.5+ | 0.2+ | | |
| 2002 04 18 | 644 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.9− | | |
| 2002 04 18 | 644 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 1.1− | 0.6+ | | |
| 2002 04 18 | 644 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.4+ | | |
| 2003 10 19 | 691 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.2+ | | |
| 2003 10 19 | 691 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.4− | 0.3− | 2006 10 23 | G96 | 0.8+ | 0.3+ | | |
| 2003 10 19 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.3− | 0.3− | | |
| 2005 03 10 | 703 | 0.3+ | 1.6+ | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.3+ | 0.5− | | |
| 2005 03 10 | 703 | 0.3− | 0.4− | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.8+ | 0.1− | | |
| 2005 03 10 | 703 | 0.9+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.4+ | | | | | | |
| 2005 03 10 | 703 | 0.5− | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.4+ | | | | | | |

**2006 SX$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.36217 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21313351 | $\omega$ | 109.19288 | | +0.94934174 | −0.30509045 | |
| $a$ | 2.7756725 | $\Omega$ | 268.62690 | | +0.25253472 | +0.88329392 | |
| $e$ | 0.0891905 | $i$ | 4.31970 | | +0.18701999 | +0.35596581 | |
| $P$ | 4.62 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 1.0+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.0 | 0.0 | | |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.4− | 1.0− | 2006 09 19 | 699 | 1.4− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.1− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.2− | 0.4− | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.2− | | |
| 2003 01 04 | 704 | 0.1− | 0.6− | 2006 09 19 | 699 | 0.9− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.1− | | |
| 2003 01 04 | 704 | 0.1− | 0.8+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.7+ | | |
| 2006 09 17 | 703 | 0.6+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.4+ | | |
| 2006 09 17 | 703 | 0.6− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.5+ | | |
| 2006 09 17 | 703 | 0.8− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.6− | 0.5+ | | |
| 2006 09 17 | 703 | 0.3− | 0.5− | 2006 09 29 | 704 | 0.8+ | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.1− | | |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.0 | | |

**2006 SY$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.57387 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17925733 | $\omega$ | 54.71565 | | +0.51669574 | | +0.85380261 |
| $a$ | 3.1151916 | $\Omega$ | 246.51595 | | −0.80632115 | | +0.46028548 |
| $e$ | 0.1284161 | $i$ | 3.97710 | | −0.28787449 | | +0.24322495 |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.4+ | 0.5+ | 2001 12 18 | 704 | 1.2− | 0.4+ | 2006 09 25 | 704 | 0.4+ | 0.3− | | |
| 2000 07 31 | 807 | 0.6+ | 0.6+ | 2001 12 18 | 704 | 0.6− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.3+ | | |
| 2001 10 16 | 291 | 0.2− | 0.0 | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ | | |
| 2001 10 16 | 291 | 0.3− | 0.1− | 2003 01 25 | 645 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | | |
| 2001 10 16 | 291 | 0.4− | 0.0 | 2003 01 26 | 291 | 0.4+ | 0.5− | 2006 09 27 | 699 | 0.3− | 0.5+ | | |
| 2001 10 16 | 291 | 0.5− | 0.2+ | 2003 01 26 | 291 | 0.7+ | 0.1+ | 2006 09 27 | 699 | 0.2+ | 0.6+ | | |
| 2001 10 16 | 291 | 1.1− | 0.4+ | 2003 01 26 | 291 | 0.1+ | 0.9+ | 2006 09 27 | 699 | 0.1+ | 0.4− | | |
| 2001 10 16 | 291 | 0.7− | 0.1+ | 2004 04 12 | 691 | 0.2+ | 0.9+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2001 10 26 | 644 | 1.0+ | 0.2+ | 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2001 10 26 | 644 | 0.3+ | 0.3+ | 2004 04 12 | 691 | 0.3− | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2001 10 26 | 644 | 0.9+ | 0.1− | 2006 09 17 | 703 | 0.1− | 1.1− | 2006 10 17 | 703 | 0.5− | 0.3− | | |
| 2001 11 09 | 704 | 0.7+ | 0.5− | 2006 09 17 | 703 | 0.8+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 1.0− | | |
| 2001 11 09 | 704 | 1.4+ | 1.0− | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 17 | 703 | (0.6+ | 1.9−) | | |
| 2001 11 09 | 704 | 0.1− | 0.9+ | 2006 09 17 | 703 | 0.6− | 0.6− | 2006 10 17 | 703 | 0.1+ | 0.0 | | |
| 2001 11 09 | 704 | 0.6+ | 0.7− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.5− | | |
| 2001 11 21 | 704 | 0.9+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | (1.6+ | 1.3+) | | |
| 2001 11 21 | 704 | 0.4+ | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.4− | | |
| 2001 11 21 | 704 | 0.5− | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.5− | | |
| 2001 12 08 | 691 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.6− | | |
| 2001 12 08 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2001 12 08 | 691 | 0.5+ | 0.1− | 2006 09 19 | 699 | 0.9− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.4− | | |
| 2001 12 18 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.6− | 0.6+ | 2006 10 31 | G96 | 0.2− | 0.4− | | |
| 2001 12 18 | 704 | 0.9− | 0.0 | 2006 09 25 | 704 | 0.0 | 0.1− | | | | | | |

**2006 SA$_{15}$ = 1999 TX$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.47979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28218326 | $\omega$ | 90.82173 | | +0.99408856 | | −0.09915015 |
| $a$ | 2.3020525 | $\Omega$ | 274.86932 | | +0.07324497 | | +0.91321426 |
| $e$ | 0.0957578 | $i$ | 2.54479 | | +0.08014436 | | +0.39523280 |
| $P$ | 3.49 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.4− | 1.0− | 2006 09 17 | 703 | 1.2− | 0.0 | 2006 09 25 | 704 | 1.3+ | 0.6− | | |
| 1999 10 13 | 704 | 0.8− | 0.0 | 2006 09 17 | 703 | 1.1− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.0 | | |
| 1999 10 13 | 704 | 0.2− | 0.6+ | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 1999 10 13 | 704 | 0.2− | 0.9+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ | | |
| 1999 10 16 | 704 | 0.1+ | 0.6+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.3+ | | |
| 1999 10 16 | 704 | 0.9+ | 0.0 | 2006 09 19 | 699 | 0.2− | 0.7+ | 2006 09 30 | 691 | 0.3+ | 0.1+ | | |
| 1999 10 16 | 704 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.1+ | | |
| 2005 04 13 | 691 | 0.1+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.1+ | | |
| 2005 04 13 | 691 | 0.0 | 0.4− | 2006 09 19 | 699 | 0.6+ | 0.2+ | 2006 10 17 | 703 | (2.2− | 1.6+) | | |
| 2005 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 10 17 | 703 | 1.1− | 0.2− | | |
| 2005 05 11 | 291 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.0 | 0.3+ | | |
| 2005 05 11 | 291 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.3− | 0.1− | | |
| 2005 05 11 | 291 | 0.1+ | 0.0 | 2006 09 25 | 704 | (0.5+ | 1.7−) | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2006 09 17 | 703 | 0.3− | 0.9− | 2006 09 25 | 704 | 0.6− | 0.4− | 2006 10 22 | 644 | 0.5− | 0.3+ | | |
| 2006 09 17 | 703 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.4+ | 0.5− | | | | | | |

**2006 SD$_{15}$ = 2000 KJ$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.89932 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21630342 | $\omega$ | 219.17786 | | +0.07837212 | | −0.99562270 |
| $a$ | 2.7484876 | $\Omega$ | 226.39223 | | +0.93142416 | | +0.09133735 |
| $e$ | 0.0600108 | $i$ | 4.03290 | | +0.35539676 | | −0.01982224 |
| $P$ | 4.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 26 | 691 | 0.3+ | 0.0 | 2006 09 17 | 703 | 1.4+ | 0.7+ | 2006 09 19 | 699 | 0.3+ | 0.2+ | | |
| 2000 05 26 | 691 | 0.4+ | 0.1− | 2006 09 17 | 703 | 1.0+ | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.4+ | | |
| 2000 05 26 | 691 | 0.3− | 0.1− | 2006 09 17 | 703 | (0.5+ | 1.6+) | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 2000 06 01 | 691 | 0.1− | 0.2+ | 2006 09 17 | 703 | 1.2+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.2+ | | |
| 2000 06 01 | 691 | 0.3− | 0.3+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.9− | 0.1− | | |
| 2000 06 01 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− | | |
| 2002 12 05 | 704 | 0.3− | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.6− | | |
| 2002 12 05 | 704 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.3− | | |
| 2002 12 05 | 704 | 0.0 | 0.6+ | 2006 09 19 | 699 | 1.0− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.8− | | |

**2006 SF$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.48217 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29206044 | $\omega$ | 11.16620 | | +0.96692578 | | +0.25353182 |
| $a$ | 2.2498534 | $\Omega$ | 334.09551 | | −0.23864895 | | +0.86076078 |
| $e$ | 0.1149132 | $i$ | 3.65626 | | −0.09000675 | | +0.44137568 |
| $P$ | 3.37 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 07 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.1− | 1.3− | | |
| 1999 08 07 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.3− | | |
| 1999 08 07 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 1.4+ | 0.9+ | | |
| 2000 12 30 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− | | |
| 2000 12 30 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.4− | | |
| 2000 12 30 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.7− | | |
| 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.5− | 1.0+ | 2006 10 23 | 644 | 0.0 | 0.4− | | |
| 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1+ | | |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.7+ | 0.4− | | |
| 2006 09 17 | 703 | 0.5− | 0.6+ | 2006 09 30 | 291 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.4− | 0.7− | | |
| 2006 09 17 | 703 | 0.1− | 0.4+ | 2006 09 30 | 291 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.5− | | |
| 2006 09 17 | 703 | 0.2+ | 0.8− | 2006 10 17 | 703 | 1.0− | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.5− | | |
| 2006 09 17 | 703 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 1.3+ | 1.1+ | | | | | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | (1.8− | 1.3−) | | | | | | |

**2006 SM$_{15}$ = 2002 NZ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.26810 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26607124 | $\omega$ | 346.19058 | | +0.76305900 | | +0.64518275 |
| $a$ | 2.3940732 | $\Omega$ | 333.50888 | | −0.58450491 | | +0.66344006 |
| $e$ | 0.2024227 | $i$ | 4.94800 | | −0.27585319 | | +0.37892810 |
| $P$ | 3.70 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 644 | 0.6+ | 0.3+ | 2006 09 01 | A13 | 0.4− | 0.5− | 2006 09 19 | 699 | 0.5+ | 0.4− | | |
| 2002 06 18 | 644 | 0.3+ | 0.5+ | 2006 09 01 | A13 | 0.0 | 0.2− | 2006 09 25 | 704 | (2.1+ | 0.5+) | | |
| 2002 06 18 | 644 | 0.2+ | 0.3+ | 2006 09 01 | A13 | 0.1+ | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.9+ | | |
| 2002 06 18 | 644 | 0.2+ | 0.2− | 2006 09 05 | A13 | (0.6+ | 1.7−) | 2006 09 25 | 704 | 0.7+ | 0.1+ | | |
| 2002 06 18 | 644 | 0.2− | 0.3− | 2006 09 05 | A13 | 0.5+ | 0.4− | 2006 09 25 | 704 | 0.3+ | 0.1+ | | |
| 2002 06 18 | 644 | 0.5+ | 0.4− | 2006 09 05 | A13 | 0.5− | 1.2− | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2002 07 05 | 704 | (1.7− | 0.5+) | 2006 09 06 | 644 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1− | | |
| 2002 07 05 | 704 | 1.3− | 0.4− | 2006 09 06 | 644 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2002 07 05 | 704 | 1.4− | 0.3− | 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.0 | 0.1+ | | |
| 2002 07 12 | 644 | 0.0 | 0.1+ | 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.4− | 0.1− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.1+ | 0.2+ | 2006 09 06 | 644 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2002 07 12 | 644 | 0.1− | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 2002 07 15 | 644 | 0.4+ | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.8− | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2002 07 15 | 644 | 0.4+ | 0.3+ | 2006 09 17 | 703 | 0.5− | 0.6− | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2002 07 27 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2002 07 27 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2002 07 27 | 644 | 0.2+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 12 28 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2003 12 28 | 691 | 0.3+ | 0.0 | 2006 09 18 | 704 | 0.7+ | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2003 12 28 | 691 | 0.3− | 0.4+ | 2006 09 18 | 704 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2006 07 22 | G96 | 0.2− | 0.9− | 2006 09 18 | 704 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2006 07 22 | G96 | 0.7+ | 0.7− | 2006 09 19 | 699 | 0.6+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2006 07 22 | G96 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2006 07 22 | G96 | 0.1− | 0.3− | 2006 09 19 | 699 | 1.0− | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.1− |

**2006 SU$_{15}$ = 2001 WG$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.97051 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17703800 | $\omega$ | 7.94728 | | +0.88300079 | | +0.46735641 |
| $a$ | 3.1411721 | $\Omega$ | 324.08641 | | −0.43461104 | | +0.77914012 |
| $e$ | 0.1072372 | $i$ | 4.24775 | | −0.17726491 | | +0.41775431 |
| $P$ | 5.57 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.9− | 0.3+ | 2006 09 17 | 703 | 0.2+ | 0.1− | 2006 09 27 | 699 | 0.2− | 1.0+ |
| 2000 08 24 | 704 | 0.2− | 0.7− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 27 | 699 | 0.2− | 0.7− |
| 2000 08 24 | 704 | 0.1− | 0.6− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2000 09 05 | 704 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.0 |
| 2000 09 05 | 704 | 0.4+ | 0.8+ | 2006 09 21 | 185 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2000 09 05 | 704 | 0.5+ | 1.0+ | 2006 09 22 | 185 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.8− |
| 2001 11 19 | 704 | 0.1+ | 0.1− | 2006 09 22 | 185 | 0.8+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2001 11 19 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 185 | 0.5− | 0.5− | 2006 10 17 | 703 | 0.7− | 0.4− |
| 2001 11 19 | 704 | 0.3− | 0.5+ | 2006 09 25 | 704 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.9− |
| 2001 11 19 | 704 | 0.5+ | 0.1− | 2006 09 25 | 704 | 1.4+ | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.3− |
| 2001 11 24 | 704 | 0.2− | 0.9− | 2006 09 25 | 704 | 0.5− | 0.5− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2001 11 24 | 704 | 0.2− | 0.1+ | 2006 09 25 | 704 | 0.4+ | 0.7+ | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2001 11 24 | 704 | 0.4− | 1.1+ | 2006 09 25 | 704 | 1.0+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.4− |
| 2006 09 17 | 703 | 0.1+ | 0.6− | 2006 09 27 | 699 | 0.1− | 0.3+ | | | | |
| 2006 09 17 | 703 | 0.1− | 0.3− | 2006 09 27 | 699 | 0.7+ | 1.0+ | | | | |

**2006 SD$_{16}$ = 1999 VL$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.08088 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27358360 | $\omega$ | 161.63197 | | +0.91859978 | | −0.39247321 |
| $a$ | 2.3500441 | $\Omega$ | 221.57196 | | +0.35328145 | | +0.86799454 |
| $e$ | 0.1236810 | $i$ | 3.99690 | | +0.17710637 | | +0.30422075 |
| $P$ | 3.60 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.7− | 1.4+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 1.0− |
| 1999 11 09 | 704 | 1.2− | 1.4+ | 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 1999 11 09 | 704 | 0.5− | 0.7− | 2006 09 19 | 703 | 1.2+ | 1.3− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 1999 11 09 | 704 | 1.7+ | 0.7− | 2006 09 19 | 703 | 0.5+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 1999 11 09 | 704 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.7− | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 1999 11 12 | 704 | 1.6+ | 1.0− | 2006 09 19 | 703 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.5− |
| 1999 11 12 | 704 | 0.7− | 0.8+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.6− | 0.3− |
| 1999 11 12 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.6− |
| 1999 11 12 | 704 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 1999 11 12 | 704 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 17 | 703 | 0.6+ | 0.6− | 2006 09 26 | 691 | 0.5− | 1.0+ | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2006 09 17 | 703 | 0.3− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2+ |
| 2006 09 17 | 703 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 1.5− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 703 | 1.4− | 0.3− | 2006 10 17 | 703 | 0.5− | 0.2− | | | | |
| 2006 09 18 | 691 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.5+ | 0.1− | | | | |

**2006 SF$_{16}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.92020 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18404941 | $\omega$ | 25.72319 | | +0.91228835 | | −0.40952680 |
| $a$ | 3.0608809 | $\Omega$ | 358.43344 | | +0.34408821 | | +0.77201310 |
| $e$ | 0.1453015 | $i$ | 8.86852 | | +0.22211093 | | +0.48609009 |
| $P$ | 5.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 23 | 941 | 0.8+ | 0.5− | 2006 09 17 | 703 | 0.2+ | 0.4− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2001 11 23 | 941 | 0.4− | 0.3− | 2006 09 17 | 703 | 0.4− | 1.0− | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2001 11 23 | 941 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2001 11 23 | 941 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2001 11 23 | 941 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.6− | 1.2+ | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 2003 02 23 | 599 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.6− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2003 02 23 | 599 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 2003 02 23 | 599 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 02 23 | 599 | 0.0 | 0.8− | 2006 09 19 | 691 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2006 07 21 | G96 | 0.6+ | 0.4− | 2006 09 29 | 704 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.1− | 1.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 09 17 | 703 | 0.4+ | 0.1+ | 2006 09 29 | 704 | 0.3− | 0.2− | | | | |

**2006 SK$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.64369 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17511197 | $\omega$ | 217.14473 | | +0.40343238 | | −0.91182383 |
| $a$ | 3.1641629 | $\Omega$ | 209.28842 | | +0.87250287 | | +0.40846761 |
| $e$ | 0.0868113 | $i$ | 8.97127 | | +0.27564661 | | +0.04161161 |
| $P$ | 5.63 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.2+ | 0.5− | 2006 09 17 | 703 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.5− | 0.4− |
| 1995 10 02 | 691 | 0.2+ | 0.4− | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.7+ |
| 1995 10 02 | 691 | 0.0 | 0.4− | 2006 09 17 | 703 | 1.3− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 10 21 | 333 | 0.5+ | 0.2− | 2006 09 17 | 291 | 0.6+ | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2001 10 21 | 333 | 0.5+ | 0.3− | 2006 09 17 | 291 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2001 10 21 | 333 | 1.1− | 0.1+ | 2006 09 17 | 291 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 01 09 | 209 | 0.5− | 0.4− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2002 01 09 | 209 | 0.7− | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2002 01 09 | 209 | 0.7− | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2− |
| 2003 04 01 | 691 | 0.3+ | 1.5+ | 2006 09 19 | 703 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2003 04 01 | 691 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2003 04 01 | 691 | 0.8+ | 0.7+ | 2006 09 19 | 703 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.2+ |
| 2005 06 06 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 1.0+ | 1.2− | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2005 06 06 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2006 09 17 | 703 | 0.2− | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2006 09 17 | 703 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.8− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |

**2006 SL$_{16}$ = 2001 WG$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.14316 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18493236 | $\omega$ | 113.79346 | | +0.98612208 | | +0.15666725 |
| $a$ | 3.0511305 | $\Omega$ | 237.23509 | | −0.16588421 | | +0.91631499 |
| $e$ | 0.2398459 | $i$ | 3.74622 | | −0.00675868 | | +0.36854066 |
| $P$ | 5.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 1.3− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− |
| 2001 11 17 | 291 | 0.8− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2− |
| 2001 11 17 | 291 | 1.2− | 0.0 | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.7+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 691 | 0.6+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.7− |
| 2001 11 17 | 691 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.9+ | 1.3− | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2001 11 17 | 691 | 0.7+ | 0.0 | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 2001 11 21 | 704 | 1.2+ | 0.5− | 2006 09 19 | 699 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.6− |
| 2001 11 21 | 704 | 1.6+ | 1.0− | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 11 21 | 704 | 1.2+ | 0.7− | 2006 09 19 | 699 | 0.9+ | 1.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 2.0+ | 0.3− | 2006 09 19 | 699 | 0.5+ | 0.3+ | | | | |
| 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.0 | | | | |

**2006 SU$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.40324 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26470445 | $\omega$ | 169.91648 | | +0.99697774 | | −0.07463419 |
| $a$ | 2.4023073 | $\Omega$ | 194.41667 | | +0.06387289 | | +0.94549542 |
| $e$ | 0.2292441 | $i$ | 4.96935 | | +0.04422258 | | +0.31696710 |
| $P$ | 3.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.2+ | 0.1+ | 2006 09 17 | 704 | 0.8+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 1995 11 16 | 691 | 1.0+ | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 1995 11 16 | 691 | 0.2− | 0.2− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 1995 11 21 | 691 | 0.4− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.2− | 0.3− |
| 1995 11 21 | 691 | 1.1− | 0.7+ | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 1995 11 21 | 691 | 0.3+ | 0.3− | 2006 09 18 | 699 | 0.9− | 0.3− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2002 07 21 | 644 | 0.6− | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2002 07 21 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2002 07 21 | 644 | 0.0 | 0.3+ | 2006 09 18 | 699 | 0.9− | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2002 07 29 | 644 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 0.7− | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2002 07 29 | 644 | 0.4+ | 0.5− | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2002 07 29 | 644 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2002 08 05 | 644 | 0.2− | 0.5+ | 2006 09 20 | 704 | (0.3+ | 1.5+) | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2002 08 05 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 1.2− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 08 05 | 644 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2002 08 09 | 608 | 0.1+ | 1.1+ | 2006 09 20 | 704 | 0.2+ | 0.6− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 08 09 | 608 | (0.0 | 1.6+) | 2006 09 20 | 704 | 0.0 | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.4− |
| 2002 08 09 | 608 | 0.4+ | 1.1+ | 2006 09 22 | A50 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2004 01 28 | 645 | 0.1+ | 0.2+ | 2006 09 22 | A50 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 01 28 | 645 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.0 | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2005 04 10 | G96 | 0.2+ | 0.8+ | 2006 09 27 | 699 | 0.3− | 0.4− | 2006 11 06 | 644 | 0.3+ | 0.5+ |
| 2005 04 10 | G96 | 0.0 | 0.8+ | 2006 09 27 | 699 | 0.1− | 0.5+ | 2006 11 06 | 644 | 0.2+ | 0.3+ |
| 2005 04 10 | G96 | 0.8− | 0.5+ | 2006 09 27 | 704 | 0.1+ | 0.0 | 2006 11 06 | 644 | 0.3+ | 0.5+ |
| 2005 04 10 | G96 | 0.2− | 0.4+ | 2006 09 27 | 704 | 1.2+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2006 08 24 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 699 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.5+ | 0.5− |
| 2006 08 24 | 644 | 0.3− | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2006 08 24 | 644 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2006 09 06 | 644 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.7+ | 0.5− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2006 09 06 | 644 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.0 | 1.2− | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2006 09 17 | 704 | 0.3+ | 0.4− | 2006 09 29 | 704 | 0.8− | 0.9+ | 2006 11 16 | G96 | 0.6+ | 0.0 |
| 2006 09 17 | 704 | 0.9+ | 0.2+ | 2006 09 29 | 704 | 0.2+ | 0.1+ | | | | |

**2006 SV$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.43996 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17604123 | $\omega$ | 195.03944 | | +0.89234333 | | −0.44474250 |
| $a$ | 3.1530180 | $\Omega$ | 192.26331 | | +0.44243426 | | +0.89563292 |
| $e$ | 0.0801167 | $i$ | 21.25192 | | +0.08930455 | | +0.00676695 |
| $P$ | 5.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.4− | 0.3+ |
| 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 29 | 704 | 1.2− | 0.7+ |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1+ | 0.5+ |
| 2004 05 09 | 608 | 0.1+ | 0.8− | 2006 09 20 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 0.8+ |
| 2004 05 09 | 608 | 0.1− | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 0.5+ |
| 2004 05 09 | 608 | 0.2+ | 0.3+ | 2006 09 20 | 704 | 0.7+ | 1.1+ | 2006 10 01 | 704 | 0.4+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 29 | 699 | 0.5− | 0.6+ | 2006 09 20 | 704 | 0.2− | 0.6− | 2006 10 01 | 704 | 0.6+ | 0.2+ |
| 2006 08 29 | 699 | 0.0 | 0.3+ | 2006 09 20 | 704 | 0.9+ | 1.3− | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2006 08 29 | 699 | 0.1− | 0.9− | 2006 09 22 | A50 | 1.2+ | 0.9− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2006 08 29 | 699 | 0.0 | 0.7− | 2006 09 22 | A50 | 0.1− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2006 09 17 | 704 | 0.0 | 0.2+ | 2006 09 27 | 699 | 1.3− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 09 17 | 704 | 1.1− | 0.1+ | 2006 09 27 | 699 | 0.8+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2006 09 17 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 699 | 0.5− | 0.7+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2006 09 17 | 704 | 0.6− | 0.3− | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 09 17 | 691 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.5+ | 0.5− | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2006 09 17 | 691 | 0.2− | 0.1− | 2006 09 27 | 699 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.9+ | 0.8+ | 2006 11 10 | 644 | 0.2− | 0.0 |
| 2006 09 18 | 699 | 0.2+ | 0.7− | 2006 09 27 | 704 | 0.5− | 0.4− | 2006 11 17 | G96 | 0.1− | 0.2+ |
| 2006 09 18 | 699 | 0.1− | 0.1− | 2006 09 29 | 704 | 0.5+ | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 699 | 0.1− | 0.5− | 2006 09 29 | 704 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2006 09 18 | 699 | 0.5− | 0.8+ | 2006 09 29 | 704 | 0.9+ | 0.0 | 2006 11 17 | G96 | 0.3− | 0.2− |

**2006 SY$_{16}$ = 2002 RJ$_{174}$ = 2002 TG$_{352}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.01762 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25776388 | $\omega$ | 184.43517 | | +0.25943281 | | −0.96366477 |
| $a$ | 2.4452392 | $\Omega$ | 250.53827 | | +0.88813050 | | +0.26392937 |
| $e$ | 0.1769011 | $i$ | 3.86771 | | +0.37936635 | | +0.04112788 |
| $P$ | 3.82 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2002 09 13 | 644 | 0.4− | 0.2+ | 2006 09 18 | 699 | (1.6− | 0.7+) | 2006 10 17 | 703 | 0.9+ | 0.8− |
| 2002 09 13 | 644 | 0.4− | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.9− | 0.4− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.8− | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2002 10 11 | 645 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2006 09 17 | 691 | 0.2− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 09 18 | 699 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ |

**2006 SA$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.50336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26076907 | $\omega$ | 92.05551 | | +0.74052655 | | +0.66874933 |
| $a$ | 2.4264164 | $\Omega$ | 225.98235 | | −0.64739746 | | +0.68344535 |
| $e$ | 0.1252426 | $i$ | 5.28935 | | −0.18026912 | | +0.29270596 |
| $P$ | 3.78 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 27 | 910 | 0.3− | 0.1− | 2002 09 13 | 644 | 0.4− | 0.0 | 2006 09 18 | 699 | 1.5− | 0.5+ |
| 1998 06 27 | 910 | 0.2+ | 0.1− | 2002 10 09 | 699 | 0.4+ | 1.2− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 1998 06 27 | 910 | 0.0 | 0.5− | 2002 10 09 | 699 | 0.2− | 1.6+ | 2006 09 27 | 691 | 0.2− | 0.2− |
| 2002 08 14 | 699 | 0.5− | 0.8− | 2002 10 09 | 699 | 0.7− | 1.3+ | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2002 08 14 | 699 | 0.0 | 1.0− | 2002 10 09 | 699 | 1.4+ | 1.4+ | 2006 09 28 | 683 | 1.0+ | 0.6− |
| 2002 08 14 | 699 | 0.6− | 0.1− | 2005 03 17 | G96 | 0.3− | 0.1+ | 2006 09 28 | 683 | 0.6+ | 0.2+ |
| 2002 08 14 | 699 | 0.4− | 0.0 | 2005 03 17 | G96 | 0.3+ | 0.2+ | 2006 09 28 | 683 | 0.5+ | 1.2− |
| 2002 08 18 | 608 | 0.2− | 0.5− | 2005 03 17 | G96 | 0.2+ | 0.2− | 2006 09 28 | 699 | 1.6+ | 0.1− |
| 2002 08 18 | 608 | 1.0+ | 0.2+ | 2005 03 17 | G96 | 0.2− | 0.3− | 2006 09 28 | 699 | 0.2− | 0.1− |
| 2002 08 18 | 608 | 0.6+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 09 28 | 699 | 0.1+ | 0.5+ |
| 2002 08 28 | 644 | 0.1+ | 0.4+ | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 09 28 | 699 | 0.3+ | 0.5+ |
| 2002 08 28 | 644 | 0.1− | 0.6+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 08 28 | 644 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.9− | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.5− | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2002 09 13 | 644 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.2− | | | | |

**2006 SD$_{17}$ = 1997 WR$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.61417 | | (2000.0) | | | |
| $n$ | 0.21457585 | $\omega$ | 126.05234 | | +0.52448263 | −0.84943580 |
| $a$ | 2.7632201 | $\Omega$ | 292.21486 | | +0.75958854 | +0.49765450 |
| $e$ | 0.1088892 | $i$ | 3.59878 | | +0.38463387 | +0.17549590 |
| $P$ | 4.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 09 21 | H55 | 1.5+ | 0.3+ |
| 1997 11 23 | 691 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.9− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 1997 11 23 | 691 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1997 11 30 | 691 | 0.3− | 0.4+ | 2006 09 18 | 703 | 1.3− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 1997 11 30 | 691 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.9− | 1.3+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 1997 11 30 | 691 | (0.1− | 2.4−) | 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.1+ | 0.9+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 09 21 | H55 | (0.5− | 1.6+) | | | | |
| 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 09 21 | H55 | 0.5− | 1.1+ | | | | |

**2006 SJ$_{17}$ = 2005 EE$_{265}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.62358 | | (2000.0) | | | |
| $n$ | 0.28200338 | $\omega$ | 306.58303 | | +0.26887098 | +0.96260735 |
| $a$ | 2.3030313 | $\Omega$ | 338.94110 | | −0.85166602 | +0.22155277 |
| $e$ | 0.1564972 | $i$ | 5.28506 | | −0.44985930 | +0.15588924 |
| $P$ | 3.50 | $H$ | 17.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 18 | 291 | 0.1− | 0.1+ |
| 2005 03 13 | 691 | 0.0 | 0.5− | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 291 | 0.6+ | 0.3+ |
| 2005 03 13 | 691 | 0.5+ | 0.3− | 2006 09 17 | 291 | 0.2− | 0.2− | 2006 09 19 | 291 | 0.0 | 0.1+ |
| 2005 03 17 | 691 | 0.3− | 0.4+ | 2006 09 17 | 291 | 0.3+ | 0.1− | 2006 09 19 | 291 | 0.1+ | 0.0 |
| 2005 03 17 | 691 | 0.1− | 0.3+ | 2006 09 17 | 291 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2005 03 17 | 691 | 0.0 | 0.5+ | 2006 09 18 | 291 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.3− |
| 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 09 18 | 291 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.4− | 0.3− |

**2006 SQ$_{17}$ = 2005 GC$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.87966 | | (2000.0) | | | |
| $n$ | 0.25871896 | $\omega$ | 22.20575 | | +0.87927077 | +0.47569586 |
| $a$ | 2.4392176 | $\Omega$ | 309.36631 | | −0.44162852 | +0.79494719 |
| $e$ | 0.1810936 | $i$ | 1.81013 | | −0.17845772 | +0.37652677 |
| $P$ | 3.81 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 21 | 807 | 0.1− | 0.6+ | 2006 09 18 | 699 | 0.1− | 0.9+ | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2001 05 22 | 807 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2002 09 14 | 644 | 0.2+ | 0.2− | 2006 09 18 | 699 | (1.6− | 0.0 ) | 2006 10 17 | 703 | 0.2+ | 1.4+ |
| 2002 09 14 | 644 | 0.2+ | 0.7− | 2006 09 18 | 699 | 0.2+ | 0.7− | 2006 10 17 | 703 | 0.7+ | 1.4+ |
| 2002 09 14 | 644 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.7− |
| 2005 04 11 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.4− | 1.3− |
| 2005 04 11 | 691 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.0 |
| 2005 04 11 | 691 | 0.0 | 0.9+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.1+ |
| 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.3+ |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.7+ |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.7+ |
| 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.3− | 0.1+ | | | | |

**2006 SY$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.29459 | | (2000.0) | | | |
| $n$ | 0.17431666 | $\omega$ | 27.21783 | | +0.58076534 | −0.81067703 |
| $a$ | 3.1737798 | $\Omega$ | 27.47121 | | +0.71454762 | +0.46393374 |
| $e$ | 0.0960952 | $i$ | 9.26357 | | +0.39004272 | +0.35716695 |
| $P$ | 5.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.2+ | 0.1− | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 1995 11 18 | 691 | 0.1− | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.8− |
| 1995 11 18 | 691 | 0.3− | 0.6+ | 2006 10 03 | 691 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2000 09 05 | 645 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.8+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1− |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.4+ | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 15 | 703 | 1.7− | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.5− |
| 2003 03 31 | 645 | 0.1+ | 0.0 | 2006 10 15 | 703 | (2.1− | 1.2−) | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2006 09 17 | 691 | 0.2− | 0.3− | 2006 10 16 | 291 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 16 | 291 | 0.1− | 0.0 | | | | |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 291 | 0.2− | 0.1+ | | | | |

**2006 SZ$_{17}$ = 1993 VS$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 107.40930 | | (2000.0) | | | |
| $n$ | 0.22446235 | $\omega$ | 230.83009 | | −0.27681553 | +0.95689317 |
| $a$ | 2.6814748 | $\Omega$ | 23.55176 | | −0.79977939 | −0.17871476 |
| $e$ | 0.1398950 | $i$ | 12.70985 | | −0.53265946 | −0.22894648 |
| $P$ | 4.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 08 | 691 | 1.2+ | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.2− |
| 1993 11 08 | 691 | 0.6+ | 0.8− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.7+ | 0.0 |
| 1993 11 08 | 691 | 0.5+ | 0.9+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 1993 11 09 | 691 | 0.4− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− |
| 1993 11 09 | 691 | 0.5− | 0.2− | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 1993 11 09 | 691 | 0.9− | 0.4+ | 2006 10 11 | 644 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.5− |
| 1993 11 09 | 691 | 0.3+ | 0.8− | 2006 10 11 | 644 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 1993 11 09 | 691 | 0.5− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.2+ |
| 1993 11 09 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.1− |

**2006 SJ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 25.96067 | | (2000.0) | | | |
| $n$ | 0.23794452 | $\omega$ | 290.53758 | | +0.83878885 | +0.54196655 |
| $a$ | 2.5792033 | $\Omega$ | 36.69904 | | −0.46147924 | +0.75839687 |
| $e$ | 0.2869060 | $i$ | 4.99321 | | −0.28891206 | +0.36208625 |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 699 | 0.9− | 0.0 | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2002 10 16 | 699 | 1.6− | 0.9+ | 2006 09 20 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.0 |
| 2002 10 16 | 699 | 0.4− | 0.5− | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.2+ |
| 2002 10 16 | 699 | 1.1+ | 0.2− | 2006 09 27 | 704 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.8− | 0.8− |
| 2002 11 23 | 644 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 23 | 644 | 0.2+ | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 23 | 644 | 0.4+ | 0.7+ | 2006 09 27 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2005 04 11 | G96 | 0.3+ | 0.1− | 2006 09 30 | 703 | 1.0− | 0.5− | 2006 10 23 | 704 | 0.3+ | 0.6+ |
| 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 10 23 | 704 | 0.7+ | 0.1+ |
| 2005 04 11 | G96 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 10 23 | 704 | 0.4+ | 0.6+ |
| 2005 04 11 | G96 | 0.0 | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 10 23 | 704 | 0.4+ | 0.2+ |
| 2006 09 17 | 704 | 0.6+ | 1.1+ | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.6+ | 0.1− |
| 2006 09 17 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.8− | 2006 10 28 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 17 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2006 09 17 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 1.2+ | 0.5− | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2006 09 17 | 704 | 0.5− | 0.4+ | 2006 10 15 | 703 | 0.2− | 0.8− | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.0 | | |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2006 09 18 | 699 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.5− | | |
| 2006 09 18 | 699 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.6− | | |
| 2006 09 18 | 699 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− | | |
| 2006 09 18 | 699 | 0.1− | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.7+ | 0.0 | | |
| 2006 09 20 | 704 | 0.7− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.2− | | |
| 2006 09 20 | 704 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.5+ | 0.3− | | |
| 2006 09 20 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1− | | |
| 2006 09 20 | 704 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.0 | | | | | | |
| 2006 09 20 | 704 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1+ | | | | | | |

**2006 SK$_{18}$ = 1999 CB$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 303.68429 | | (2000.0) | | +0.03332003 | −0.99939385 |
| $n$ | 0.22264404 | $\omega$ | 271.67838 | | +0.96855285 | +0.02979898 |
| $a$ | 2.6960545 | $\Omega$ | 176.36589 | | +0.24656672 | +0.01799895 |
| $e$ | 0.1612373 | $i$ | 9.15558 | | | |
| $P$ | 4.43 | $H$ | 15.8 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.4+ | 0.4− | 2006 09 18 | 699 | 0.6− | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.2− | | |
| 1999 02 12 | 704 | 1.1+ | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.6− | 2006 10 01 | 691 | 0.0 | 0.0 | | |
| 1999 02 12 | 704 | 1.6− | 0.8− | 2006 09 18 | 699 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.4+ | | |
| 1999 02 12 | 704 | 1.7− | 1.3− | 2006 09 29 | 699 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.3+ | | |
| 1999 02 16 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 699 | (0.4− | 1.9−) | 2006 10 16 | 703 | 0.5+ | 0.1+ | | |
| 1999 02 16 | 704 | 1.3− | 1.3+ | 2006 09 29 | 699 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.1− | 1.2+ | | |
| 1999 02 16 | 704 | 1.1+ | 0.2− | 2006 09 29 | 699 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.8+ | 0.4+ | | |
| 1999 02 16 | 704 | 1.6+ | 0.6+ | 2006 10 01 | 704 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.4− | | |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.5− | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.5− | | |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.3− | | |
| 2006 09 17 | 691 | 0.3− | 0.2− | 2006 10 01 | 704 | 1.1+ | 0.2+ | | | | | | |
| 2006 09 18 | 699 | 0.8+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.2− | | | | | | |

**2006 SL$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.34203 | | (2000.0) | | +0.74105173 | −0.67055798 |
| $n$ | 0.21514963 | $\omega$ | 238.62697 | | +0.64979131 | +0.70323307 |
| $a$ | 2.7583052 | $\Omega$ | 163.39888 | | +0.16915551 | +0.23625250 |
| $e$ | 0.0912687 | $i$ | 6.94750 | | | |
| $P$ | 4.58 | $H$ | 15.8 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1+ | | |
| 2004 03 14 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.3+ | | |
| 2004 03 14 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.6− | | |
| 2004 03 28 | 704 | 0.5− | 0.2− | 2006 09 29 | 699 | 0.4+ | 0.8− | 2006 10 16 | 703 | 0.5− | 0.2+ | | |
| 2004 03 28 | 704 | 0.5+ | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.5+ | 0.1+ | | |
| 2004 03 28 | 704 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 1.1− | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.2− | | |
| 2004 03 28 | 704 | 0.1− | 0.4+ | 2006 09 29 | 699 | 0.7+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− | | |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.2− | | |
| 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.3− | | |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.2− | | |
| 2006 09 18 | 699 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.7+ | 0.3− | | |
| 2006 09 18 | 699 | 1.1+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 704 | 0.1− | 0.4+ | | |
| 2006 09 18 | 699 | 0.2− | 0.8− | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 11 10 | 704 | 0.3− | 0.6+ | | |
| 2006 09 18 | 699 | 0.6− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 11 10 | 704 | (0.1+ | 1.8+) | | |

**2006 SN$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 47.99551 | | (2000.0) | | +0.72982939 | +0.68220008 |
| $n$ | 0.22902559 | $\omega$ | 178.79481 | | −0.62776959 | +0.69438102 |
| $a$ | 2.6457373 | $\Omega$ | 138.07470 | | −0.27065551 | +0.22899357 |
| $e$ | 0.1059199 | $i$ | 3.79151 | | | |
| $P$ | 4.30 | $H$ | 16.3 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 246 | 0.2− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2002 12 01 | 246 | 0.5− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | (1.8+ | 1.4+) | | |
| 2002 12 01 | 246 | 0.3+ | 0.7+ | 2006 09 17 | 691 | 0.1− | 1.1− | 2006 10 16 | 703 | 0.7+ | 0.2+ | | |
| 2002 12 01 | 246 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.5+ | | |
| 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 09 18 | 699 | 0.6+ | 0.4− | 2006 10 16 | 703 | 0.1− | 0.6+ | | |
| 2004 01 30 | 691 | 0.2− | 0.4+ | 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.4+ | | |
| 2004 01 30 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.5− | 2006 10 19 | 644 | 0.2+ | 0.2+ | | |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.4+ | | |
| 2004 02 12 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.6+ | 0.1+ | | |
| 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.5+ | | |
| 2005 06 01 | 691 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.9+ | 0.5+ | 2006 10 21 | 644 | 0.4+ | 0.3+ | | |
| 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.8+ | 0.2− | 2006 10 22 | 703 | 0.8+ | 0.2+ | | |
| 2005 06 01 | 691 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.4− | 2006 10 22 | 703 | 1.4+ | 1.0− | | |
| 2005 06 08 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 1.2− | 0.9+ | 2006 10 22 | 703 | 0.7− | 1.0+ | | |
| 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.3− | | |
| 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.3− | 0.0 | | | | | | |

**2006 SP$_{18}$ = 2004 HE$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 333.32603 | | (2000.0) | | +0.66220685 | −0.74061133 |
| $n$ | 0.23096063 | $\omega$ | 24.70341 | | +0.63332136 | +0.47193538 |
| $a$ | 2.6309388 | $\Omega$ | 24.33927 | | +0.40048240 | +0.47830101 |
| $e$ | 0.1429775 | $i$ | 16.04564 | | | |
| $P$ | 4.27 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2000 04 03 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.5+ | | |
| 2000 04 03 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ | | |
| 2002 11 07 | 704 | 0.5+ | 0.7− | 2006 10 01 | 704 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.5+ | | |
| 2002 11 07 | 704 | 0.7− | 1.1− | 2006 10 01 | 704 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.2+ | | |
| 2002 11 07 | 704 | 0.6+ | 1.2− | 2006 10 01 | 704 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.4− | 1.0+ | | |
| 2002 11 07 | 704 | 0.0 | 1.3− | 2006 10 01 | 704 | 1.0− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1− | | |
| 2002 11 15 | 704 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.2− | 0.9+ | 2006 11 01 | 691 | 0.2+ | 0.3+ | | |
| 2002 11 15 | 704 | 1.0+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.2− | | |
| 2002 11 15 | 704 | 0.3− | 0.9− | 2006 10 01 | 691 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.4+ | | |
| 2002 11 15 | 704 | 0.7+ | 0.6− | 2006 10 01 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.3+ | | |
| 2004 04 16 | 691 | 0.6+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.0− | 0.6+ | | |
| 2004 04 16 | 691 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.3+ | | |
| 2004 04 16 | 691 | 0.7+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.3+ | | |
| 2004 04 21 | 691 | 0.4+ | 0.7+ | 2006 10 15 | 703 | (0.9+ | 1.8−) | 2006 11 17 | 703 | 0.5− | 0.1− | | |
| 2004 04 21 | 691 | 0.3+ | 0.8+ | 2006 10 15 | 703 | 0.7+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 1.6+ | | |
| 2004 04 21 | 691 | 0.1+ | 0.7+ | 2006 10 15 | 703 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.9− | 0.0 | | |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 1.1+ | | |
| 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 11 18 | G96 | 0.3+ | 0.0 | | |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.4+ | 0.0 | | |
| 2006 09 18 | 699 | 0.9+ | 0.9− | 2006 10 17 | G96 | 0.9+ | 0.9− | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 2006 09 18 | 699 | 0.5− | 0.4− | 2006 10 17 | G96 | 0.6+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.1− | | |
| 2006 09 18 | 699 | (0.1− | 1.7−) | 2006 10 19 | 644 | 0.3− | 0.3+ | | | | | | |
| 2006 09 18 | 699 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.4− | 0.7+ | | | | | | |

**2006 SR$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.32092 | | | (2000.0) | | |
| $n$ | 0.26895623 | $\omega$ | 189.21855 | | +0.71069139 | +0.70227563 |
| $a$ | 2.3769222 | $\Omega$ | 126.08660 | | −0.64213131 | +0.67168736 |
| $e$ | 0.2282617 | $i$ | 2.94741 | | −0.28737628 | +0.23589199 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 691 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 1997 02 10 | 691 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 1997 02 10 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.4+ | 0.6+ |
| 2002 06 16 | 644 | 0.0 | 0.5− | 2006 09 28 | 699 | 0.8− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 06 16 | 644 | 0.1− | 0.9− | 2006 09 28 | 699 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2002 06 16 | 644 | 0.4+ | 0.6− | 2006 09 28 | 699 | 0.5− | 0.8− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 09 28 | 699 | 0.4− | 0.1+ | 2006 10 22 | 703 | 0.7+ | 0.6+ |
| 2005 04 11 | G96 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | (1.8+ | 1.1+) |
| 2005 04 11 | G96 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.6+ | 0.6+ |
| 2005 04 11 | G96 | 0.4+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.4+ | 0.4+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2006 09 17 | 691 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.4+ | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.3− |
| 2006 09 18 | 699 | 0.9− | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 699 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.8− | 2006 11 15 | A44 | 0.4− | 0.4+ |
| 2006 09 18 | 699 | 0.8− | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 15 | A44 | 0.5− | 0.2+ |
| 2006 09 18 | 699 | 1.0+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.4− | 2006 11 15 | A44 | 0.3− | 0.3+ |

**2006 SS$_{18}$ = 2005 GC$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.87517 | | | (2000.0) | | |
| $n$ | 0.24340973 | $\omega$ | 293.49116 | | +0.90560954 | +0.41758693 |
| $a$ | 2.5404506 | $\Omega$ | 41.93009 | | −0.33729838 | +0.81508553 |
| $e$ | 0.2035863 | $i$ | 6.36768 | | −0.25710148 | +0.40156784 |
| $P$ | 4.05 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 27 | 691 | 0.5− | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.2− |
| 1998 10 27 | 691 | 0.6− | 0.1+ | 2006 09 18 | 699 | (1.7− | 0.7−) | 2006 10 21 | 703 | 0.6+ | 0.5− |
| 1998 10 27 | 691 | 0.3− | 0.4− | 2006 09 18 | 699 | (3.1− | 0.6−) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1998 11 14 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.5− | 1.0+ | 2006 10 21 | 644 | 0.9− | 0.3+ |
| 1998 11 14 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1998 11 14 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 11 04 | 291 | 0.2+ | 0.2+ | 2006 09 28 | 699 | 1.3+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2002 11 04 | 291 | 0.3+ | 0.1− | 2006 09 28 | 699 | 0.0 | 1.0+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 12 06 | 291 | 0.2− | 0.0 | 2006 09 28 | 699 | 0.1− | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 291 | 0.2+ | 0.1− | 2006 09 28 | 699 | 1.3− | 0.5− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2002 12 06 | 291 | 0.8+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2005 04 10 | G96 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2005 04 10 | G96 | 0.4+ | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.7− |
| 2005 04 10 | G96 | 0.3− | 0.1+ | 2006 10 15 | 703 | 0.1+ | 1.0− | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2005 04 10 | G96 | 0.0 | 0.3− | 2006 10 15 | 703 | 0.4− | 0.4+ | 2006 11 11 | 703 | (1.6− | 0.1−) |
| 2005 05 08 | G96 | 0.2+ | 0.5− | 2006 10 15 | 703 | 0.6− | 0.4− | 2006 11 11 | 703 | (0.1+ | 2.4−) |
| 2005 05 08 | G96 | 0.3− | 0.1− | 2006 10 15 | 703 | (1.6− | 0.5+) | 2006 11 16 | G96 | 0.5− | 0.5− |
| 2005 05 08 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.5− | 0.5− |
| 2005 05 08 | G96 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 1.4− | | | | |
| 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.7+ | | | | |

**2006 SV$_{18}$ = 2004 GU$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.01997 | | | (2000.0) | | |
| $n$ | 0.22615550 | $\omega$ | 314.71218 | | +0.18152225 | −0.98237352 |
| $a$ | 2.6680745 | $\Omega$ | 124.77913 | | +0.91690430 | +0.15267176 |
| $e$ | 0.1842401 | $i$ | 3.11490 | | +0.35543801 | +0.10785922 |
| $P$ | 4.36 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.7− | 0.7− | 2006 09 27 | 691 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.9− |
| 2002 12 11 | 704 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.2− | 0.3+ | 2006 09 29 | 699 | (3.0− | 0.4+) | 2006 10 19 | 644 | 0.3+ | 0.3− |
| 2002 12 11 | 704 | 0.8+ | 1.0+ | 2006 09 29 | 699 | 0.2+ | 1.0+ | 2006 10 19 | 644 | 0.4− | 0.2− |
| 2004 04 14 | 691 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.4+ | 0.3− |
| 2004 04 14 | 691 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.6− | 0.7+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 291 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2004 04 23 | 691 | 0.2− | 0.1− | 2006 10 01 | 291 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2004 04 23 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 291 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2004 04 23 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2006 09 17 | 691 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2006 09 17 | 691 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.2− |
| 2006 09 18 | 699 | 1.4− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 22 | 703 | 1.0− | 0.2− |
| 2006 09 18 | 699 | 0.2+ | 0.4− | 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.8− | 0.2+ |
| 2006 09 18 | 699 | 1.0− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.4+ |
| 2006 09 18 | 699 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.9+ | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.7− |
| 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | (1.9+ | 0.6+) | | | | |

**2006 SJ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.64596 | | | (2000.0) | | |
| $n$ | 0.17621753 | $\omega$ | 121.90524 | | +0.93166375 | +0.03547266 |
| $a$ | 3.1509146 | $\Omega$ | 238.49905 | | −0.09832288 | +0.98270271 |
| $e$ | 0.2923250 | $i$ | 25.09259 | | +0.34976458 | +0.18176101 |
| $P$ | 5.59 | $H$ | 14.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 704 | 0.6+ | 1.0+ | 2006 09 19 | 704 | 0.2+ | 0.0 | 2006 10 15 | A24 | 0.1+ | 0.2+ |
| 2000 09 27 | 704 | 0.3− | 0.6− | 2006 09 19 | 704 | 0.0 | 0.4+ | 2006 10 15 | A24 | 0.4+ | 0.0 |
| 2000 09 27 | 704 | 0.7+ | 0.8− | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 10 15 | A24 | 0.2+ | 0.6+ |
| 2000 09 27 | 704 | 0.7− | 0.2− | 2006 09 20 | 704 | 0.0 | 0.3− | 2006 10 15 | A24 | 0.0 | 0.3+ |
| 2000 09 27 | 704 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.3− | 0.6+ | 2006 10 15 | A24 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 15 | A24 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.2+ | 0.0 | 2006 09 20 | 704 | 0.5− | 0.3+ | 2006 10 17 | A24 | 0.1− | 0.1+ |
| 2001 12 19 | 704 | 0.4+ | 0.8+ | 2006 09 20 | 704 | 0.2− | 0.0 | 2006 10 17 | A24 | 0.6+ | 0.5+ |
| 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 17 | A24 | 0.3+ | 0.5+ |
| 2005 02 14 | 809 | 0.2− | 0.3+ | 2006 09 20 | 704 | 0.3+ | 0.1+ | 2006 10 17 | A24 | 0.6+ | 0.0 |
| 2005 02 14 | 809 | 0.3− | 0.4+ | 2006 09 22 | 704 | 0.3+ | 0.5+ | 2006 10 17 | A24 | 0.0 | 0.8+ |
| 2005 02 14 | 809 | 0.1− | 0.4+ | 2006 09 22 | 704 | 0.6+ | 0.1+ | 2006 10 17 | A24 | 0.5+ | 0.8+ |
| 2005 05 07 | G96 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.8+ | 0.4− | 2006 10 20 | 704 | 0.5− | 0.6+ |
| 2005 05 07 | G96 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.4+ | 0.3+ | 2006 10 20 | 704 | 0.7− | 0.6+ |
| 2005 05 07 | G96 | 0.2− | 0.1+ | 2006 09 22 | 704 | 0.3+ | 0.0 | 2006 10 20 | 704 | 0.1− | 0.1− |
| 2005 05 07 | G96 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.3+ | 0.1− |
| 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 09 25 | 703 | 0.1− | 0.1− | 2006 10 20 | 704 | 1.4− | 0.8+ |
| 2005 06 08 | 691 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.4+ | 0.0 | 2006 10 20 | 703 | 0.0 | 0.3− |
| 2005 06 08 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.0 | 0.2+ | 2006 10 20 | 704 | 1.3− | 0.2+ |
| 2006 05 31 | 703 | 0.8− | 0.2+ | 2006 09 29 | H51 | 0.1+ | 0.0 | 2006 10 20 | 703 | 0.3− | 0.5− |
| 2006 05 31 | 703 | 0.3− | 0.7− | 2006 09 29 | H51 | 0.5+ | 0.1− | 2006 10 20 | 232 | 0.1− | 0.4− |
| 2006 05 31 | 703 | 1.1− | 0.9− | 2006 09 29 | H51 | 0.0 | 0.0 | 2006 10 20 | 232 | 0.1− | 0.3− |
| 2006 05 31 | 703 | 0.9− | 0.9− | 2006 10 02 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 232 | 0.1+ | 0.5− |
| 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 10 02 | 703 | 1.1− | 0.2− | 2006 10 29 | J97 | 0.3+ | 0.4− |
| 2006 09 18 | 703 | 0.5+ | 0.1− | 2006 10 02 | 704 | 0.3+ | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2006 09 18 | 703 | 0.5+ | 0.3− | 2006 10 02 | 703 | 0.7− | 0.2− | 2006 11 15 | 703 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 10 02 | 703 | 0.2− | 0.6− | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2006 09 18 | 704 | 0.6+ | 0.2− | 2006 10 02 | 703 | 0.1− | 0.6− | 2006 11 15 | 703 | 0.3− | 0.3− |
| 2006 09 18 | 704 | 0.7+ | 0.1+ | 2006 10 02 | 704 | 0.2+ | 0.6− | 2006 11 17 | 704 | 1.0− | 1.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 704 | 0.6+ | 0.1+ | 2006 10 02 | 704 | 0.9+ | 0.5− | 2006 11 17 | 704 | 2.3− | 0.6− |
| 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 07 | 628 | 0.9+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 1.1+ |
| 2006 09 18 | 704 | 0.3+ | 0.3+ | 2006 10 07 | 628 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.7− | 0.1+ |
| 2006 09 19 | 704 | 0.3+ | 0.0 | 2006 10 07 | 628 | 1.1+ | 0.1− | 2006 11 17 | 704 | 0.9+ | 1.2− |
| 2006 09 19 | 704 | 0.1+ | 0.1− | 2006 10 13 | A24 | 0.5+ | 0.4+ | 2006 11 23 | 703 | 1.1− | 0.2− |
| 2006 09 19 | 704 | 0.3+ | 0.4+ | 2006 10 13 | A24 | 0.6+ | 0.0 | 2006 11 23 | 703 | 0.1− | 2.1− |
| 2006 09 19 | 704 | 0.1+ | 0.4+ | 2006 10 13 | A24 | 0.2+ | 0.1− | 2006 11 23 | 703 | 1.2− | 0.2− |
| 2006 09 19 | 704 | 0.6+ | 0.3+ | 2006 10 13 | A24 | 0.2− | 0.0 | 2006 11 23 | 703 | 2.7− | 0.9+ |
| 2006 09 19 | 704 | 0.1− | 0.3− | 2006 10 13 | A24 | 0.9− | 0.8+ | | | | |

**2006 SL$_{19}$ = 2000 KY$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.72840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36325260 | $\omega$ | 178.03945 | | +0.52673717 | −0.79170178 | |
| $a$ | 1.9453462 | $\Omega$ | 240.04342 | | +0.77494463 | +0.59685291 | |
| $e$ | 0.0945085 | $i$ | 20.92590 | | +0.34929754 | −0.13028776 | |
| $P$ | 2.71 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 1.3− | 0.7+ | 2006 09 20 | 704 | 0.3− | 0.3+ | 2006 10 20 | 703 | 0.9− | 0.4− |
| 2000 05 27 | 704 | 0.4+ | 0.4− | 2006 09 20 | 704 | 1.4+ | 0.3− | 2006 10 20 | 704 | 0.9− | 0.5+ |
| 2000 05 27 | 704 | 1.6+ | 0.3− | 2006 09 20 | 704 | 1.1− | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.2− |
| 2000 05 29 | 704 | 0.4+ | 0.4− | 2006 09 20 | 704 | 0.1+ | 0.3− | 2006 10 20 | 704 | 0.2− | 0.2+ |
| 2000 05 29 | 704 | 0.7− | 0.0 | 2006 09 22 | 699 | 0.2+ | 0.1− | 2006 10 20 | 704 | 0.3− | 0.4− |
| 2000 05 29 | 704 | 1.0− | 0.5+ | 2006 09 22 | 699 | (0.4+ | 1.7+) | 2006 10 20 | 703 | 0.2+ | 0.6− |
| 2000 05 29 | 704 | 0.4+ | 0.1+ | 2006 09 22 | 699 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.5− | 0.8− |
| 2000 05 30 | 704 | 0.3− | 0.0 | 2006 09 25 | 703 | 0.8− | 0.4− | 2006 10 27 | 703 | 0.8− | 0.1+ |
| 2000 05 30 | 704 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.3− | 0.4− | 2006 10 27 | 703 | 0.5− | 0.2− |
| 2000 05 30 | 704 | 0.4+ | 1.3+ | 2006 09 25 | 703 | 0.2− | 0.5− | 2006 10 27 | 703 | 0.7− | 0.2+ |
| 2000 05 30 | 704 | 0.6+ | 0.4+ | 2006 10 02 | 703 | 0.2+ | 0.1− | 2006 11 25 | 703 | 0.0 | 0.5− |
| 2000 05 30 | 704 | 0.6− | 1.1− | 2006 10 02 | 703 | 0.1+ | 0.4+ | 2006 11 25 | 703 | 0.6− | 0.0 |
| 2006 09 18 | 704 | (3.1+ | 0.4−) | 2006 10 02 | 703 | 0.1+ | 0.8− | 2006 11 25 | 703 | 0.3+ | 0.2+ |
| 2006 09 18 | 704 | (2.6+ | 0.1−) | 2006 10 02 | 703 | 0.4− | 0.2− | 2006 11 25 | 703 | 0.7+ | 0.1− |
| 2006 09 18 | 704 | 1.4+ | 0.6+ | 2006 10 02 | 704 | 0.5+ | 1.4+ | 2006 11 28 | 704 | 0.5− | 1.1+ |
| 2006 09 18 | 704 | (2.9+ | 0.8+) | 2006 10 02 | 704 | 0.9+ | 0.5− | 2006 11 28 | 704 | 1.5+ | 0.2+ |
| 2006 09 19 | 704 | 0.5− | 0.3+ | 2006 10 02 | 704 | 1.5+ | 1.0− | 2006 11 28 | 704 | 1.0+ | 0.4+ |
| 2006 09 19 | 704 | 0.3+ | 0.2− | 2006 10 20 | 704 | 0.9− | 1.0+ | 2006 11 28 | 704 | 0.2+ | 0.5+ |
| 2006 09 19 | 704 | 0.0 | 0.0 | 2006 10 20 | 704 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.5+ | 0.5+ |

**2006 SO$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.72443 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.71175277 | $\omega$ | 169.65516 | | −0.02874893 | +0.96949964 | |
| $a$ | 1.2423671 | $\Omega$ | 98.38439 | | −0.93378049 | +0.06084242 | |
| $e$ | 0.2720604 | $i$ | 14.24273 | | −0.35668963 | −0.23742082 | |
| $P$ | 1.38 | $H$ | 19.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 08 | 644 | 0.2− | 0.3− | 2006 09 19 | E12 | 0.1− | 0.5− | 2006 09 26 | E12 | 0.1− | 0.2− |
| 2002 12 08 | 644 | 0.3+ | 0.3− | 2006 09 19 | E12 | 0.6+ | 0.3+ | 2006 10 04 | E12 | 0.1− | 0.0 |
| 2002 12 08 | 644 | 0.1− | 0.2+ | 2006 09 19 | E12 | 0.3+ | 0.7− | 2006 10 04 | E12 | 0.3+ | 0.2+ |
| 2002 12 09 | 644 | 0.1+ | 0.0 | 2006 09 20 | E12 | 0.1+ | 0.2+ | 2006 10 07 | E12 | 0.6+ | 0.1− |
| 2006 09 18 | E12 | 0.6− | 0.2− | 2006 09 20 | E12 | 0.3− | 0.0 | 2006 10 07 | E12 | 0.3+ | 0.3− |
| 2006 09 18 | E12 | 0.4− | 0.1+ | 2006 09 20 | E12 | 0.6+ | 0.7+ | 2006 10 15 | F84 | 0.8− | 0.3+ |
| 2006 09 18 | E12 | 0.4− | 0.3+ | 2006 09 20 | E12 | 0.4+ | 0.3− | 2006 10 15 | F84 | 1.5− | 0.4− |
| 2006 09 18 | E12 | 0.4− | 0.3+ | 2006 09 20 | E12 | 0.2+ | 0.3+ | 2006 10 16 | F84 | 0.1− | 0.4− |
| 2006 09 18 | E12 | 0.6+ | 0.4− | 2006 09 20 | E12 | 0.3− | 0.9− | 2006 10 16 | F84 | 0.1+ | 0.1− |
| 2006 09 18 | E12 | 0.5− | 0.0 | 2006 09 20 | E12 | 0.1− | 0.3+ | 2006 10 29 | E12 | 0.2+ | 0.1+ |
| 2006 09 18 | E12 | 0.1+ | 0.4+ | 2006 09 21 | E12 | 0.3− | 0.2+ | 2006 11 19 | 696 | 0.4+ | 0.0 |
| 2006 09 19 | E12 | 0.1+ | 0.3+ | 2006 09 21 | E12 | 0.8+ | 0.9− | 2006 11 19 | 696 | 0.3− | 0.9+ |
| 2006 09 19 | E12 | 0.1− | 0.2− | 2006 09 21 | E12 | 0.2+ | 0.3+ | | | | |
| 2006 09 19 | E12 | 0.5+ | 0.5+ | 2006 09 21 | E12 | 0.4− | 0.2+ | | | | |

**2006 SV$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.43587 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31659881 | $\omega$ | 182.16603 | | +0.47646333 | +0.87168777 | |
| $a$ | 2.1320458 | $\Omega$ | 116.30677 | | −0.80471016 | +0.48490008 | |
| $e$ | 0.5143707 | $i$ | 7.34758 | | −0.35415286 | +0.07093895 | |
| $P$ | 3.11 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.1− | 0.1− | 2006 09 24 | 113 | 0.1− | 0.8+ | 2006 10 09 | 118 | 0.2+ | 0.3− |
| 2003 12 21 | 691 | 0.2− | 0.5+ | 2006 09 24 | 291 | 0.1+ | 0.1− | 2006 10 09 | 118 | 0.0 | 0.3− |
| 2003 12 21 | 691 | 0.2+ | 0.2− | 2006 09 24 | 291 | 0.0 | 0.0 | 2006 10 09 | 118 | 0.0 | 0.6− |
| 2006 09 19 | 703 | 0.3− | 0.2− | 2006 09 24 | 291 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2006 09 19 | 703 | 0.3− | 0.1− | 2006 09 25 | 198 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2006 09 19 | 703 | 0.1+ | 0.8− | 2006 09 25 | 198 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.7− | 0.6− |
| 2006 09 19 | 703 | 0.9− | 0.3− | 2006 09 25 | 198 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.6− | 0.8− |
| 2006 09 20 | J95 | 0.7+ | 0.0 | 2006 09 25 | 113 | 0.4+ | 0.2− | 2006 10 16 | 046 | 0.7+ | 1.0− |
| 2006 09 20 | J95 | 0.4− | 0.3+ | 2006 09 25 | 113 | 0.9+ | 0.4− | 2006 10 16 | 046 | (2.5+ | 0.2+) |
| 2006 09 20 | 649 | 0.2− | 0.2− | 2006 09 25 | 113 | 0.4+ | 0.4− | 2006 10 16 | 046 | 0.3+ | 0.1+ |
| 2006 09 20 | 649 | 0.1+ | 0.0 | 2006 09 26 | J95 | 0.1− | 0.0 | 2006 10 16 | 046 | 0.3− | 0.5− |
| 2006 09 20 | 649 | 0.3+ | 0.1− | 2006 09 26 | J95 | 0.1− | 0.1+ | 2006 10 16 | 046 | 0.5+ | 0.1+ |
| 2006 09 20 | 703 | 0.1+ | 0.3− | 2006 09 26 | J95 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2006 09 20 | 703 | 0.6− | 0.4− | 2006 09 27 | 291 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.8− | 0.1+ |
| 2006 09 20 | 703 | 0.4+ | 0.5− | 2006 09 27 | 291 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.4− |
| 2006 09 20 | 703 | 0.6− | 0.2− | 2006 09 27 | 291 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2006 09 21 | J95 | 0.0 | 0.1− | 2006 09 28 | 291 | 0.2− | 0.4+ | 2006 10 26 | 151 | 0.9+ | 0.1+ |
| 2006 09 21 | J95 | 0.3+ | 0.1− | 2006 09 28 | 291 | 0.1− | 0.5+ | 2006 10 26 | 151 | 0.4+ | 0.1− |
| 2006 09 21 | J95 | 0.1+ | 0.3− | 2006 09 28 | 291 | 0.2− | 0.6+ | 2006 10 26 | 151 | 0.4− | 0.2− |
| 2006 09 21 | 673 | 0.1− | 0.0 | 2006 09 30 | 699 | 0.7− | 1.3+ | 2006 11 03 | 448 | 0.2+ | 0.1+ |
| 2006 09 21 | 673 | 0.1+ | 0.0 | 2006 09 30 | 699 | 0.5+ | 0.4− | 2006 11 03 | 448 | 0.8+ | 0.8− |
| 2006 09 21 | 673 | 0.2− | 0.1− | 2006 09 30 | 699 | 0.8− | 0.2+ | 2006 11 03 | 448 | 1.3+ | 1.0− |
| 2006 09 21 | 673 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.0 | 0.8− | 2006 11 16 | 703 | 0.3− | 0.2− |
| 2006 09 22 | 198 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.2− | 1.0− | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2006 09 22 | 198 | 0.5− | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 16 | 703 | 0.4− | 0.4− |
| 2006 09 22 | 198 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.2− | 2006 11 16 | 703 | 0.4− | 0.8+ |
| 2006 09 22 | 198 | 0.2− | 0.3+ | 2006 10 01 | 448 | 0.2+ | 0.3− | 2006 11 17 | 711 | 0.3+ | 0.3+ |
| 2006 09 22 | 711 | 0.0 | 0.2− | 2006 10 01 | 448 | 0.5+ | 0.2− | 2006 11 17 | 711 | 0.0 | 0.7+ |
| 2006 09 22 | 711 | 0.3+ | 0.3− | 2006 10 01 | 448 | 0.0 | 0.4− | 2006 11 17 | 711 | 0.0 | 0.4+ |
| 2006 09 22 | 711 | 0.4+ | 0.2− | 2006 10 01 | 704 | 0.1− | 0.8− | 2006 11 19 | 703 | 0.3+ | 0.4+ |
| 2006 09 23 | 113 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.4− | 1.0+ | 2006 11 19 | 703 | 0.6− | 0.2− |
| 2006 09 23 | 113 | 0.1− | 0.5− | 2006 10 01 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2006 09 24 | 113 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.4+ | 0.8+ |
| 2006 09 24 | 113 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.7+ | | | | |

**2006 SW$_{19}$ = 2005 LM$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.53426 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21135699 | $\omega$ | 154.70652 | | +0.94898141 | +0.31516724 | |
| $a$ | 2.7912044 | $\Omega$ | 186.94606 | | −0.30174252 | +0.89822314 | |
| $e$ | 0.1670129 | $i$ | 4.83463 | | −0.09157362 | +0.30637363 | |
| $P$ | 4.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 699 | 1.1+ | 0.3− | 2006 09 18 | H07 | 0.1+ | 0.7− | 2006 09 29 | 704 | 0.4− | 0.6+ |
| 2001 07 20 | 699 | (1.6− | 0.7−) | 2006 09 18 | H07 | 0.8− | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.6+ |
| 2001 07 20 | 699 | 0.2− | 0.4− | 2006 09 18 | H07 | 0.4− | 0.5− | 2006 10 01 | 704 | 0.1+ | 0.3− |
| 2001 07 20 | 699 | 0.7− | 0.5+ | 2006 09 18 | H07 | 0.3− | 0.7− | 2006 10 01 | 704 | 0.4− | 0.1− |
| 2001 08 08 | 608 | 0.1− | 0.5+ | 2006 09 18 | H07 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.7− | 0.1+ |
| 2001 08 08 | 608 | 0.2− | 0.6− | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 10 09 | 644 | 0.2+ | 0.0 |
| 2001 08 08 | 608 | 0.3− | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2001 09 10 | 704 | (0.5− | 2.4+) | 2006 09 19 | 703 | 0.4+ | 1.2+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2001 09 10 | 704 | (1.8+ | 1.1+) | 2006 09 20 | H07 | 0.7+ | 1.1− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2001 09 10 | 704 | (2.6+ | 0.5−) | 2006 09 20 | H07 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2006 09 20 | 704 | (2.0+ | 0.1−) | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.7− | 1.1+ |
| 2001 09 20 | 704 | 1.0+ | 0.9− | 2006 09 20 | 704 | (2.3+ | 0.5−) | 2006 10 16 | 703 | 0.7+ | 1.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | (1.8+ | 0.7−) | 2006 09 20 | H07 | 0.4+ | 0.6− | 2006 10 16 | 703 | 0.4− | 0.7+ | | |
| 2005 05 14 | G96 | 0.3− | 0.3− | 2006 09 20 | 704 | 1.1+ | 0.9− | 2006 10 16 | 703 | (0.5+ | 2.2+) | | |
| 2005 05 14 | G96 | 0.2− | 0.5− | 2006 09 20 | H07 | 0.3+ | 0.4+ | 2006 10 16 | G96 | 0.3− | 1.2− | | |
| 2005 05 14 | G96 | 0.1− | 0.5− | 2006 09 20 | H07 | 0.1− | 0.7− | 2006 10 16 | G96 | 0.1− | 0.8− | | |
| 2005 05 14 | G96 | 0.5− | 0.4− | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.7− | 0.9− | | |
| 2005 06 08 | 691 | 0.3+ | 0.1− | 2006 09 20 | H07 | 0.2− | 0.3− | 2006 10 16 | G96 | 0.1− | 0.9− | | |
| 2005 06 08 | 691 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.5− | | |
| 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.2− | | |
| 2005 06 12 | 691 | 0.4− | 0.5+ | 2006 09 20 | H07 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.3+ | | |
| 2005 06 12 | 691 | 0.1+ | 0.2+ | 2006 09 20 | H07 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.2− | 0.1+ | | |
| 2005 06 12 | 691 | 0.2− | 0.2− | 2006 09 21 | A50 | 0.4+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 09 21 | A50 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ | | |
| 2006 08 28 | 703 | 0.5− | 0.6− | 2006 09 25 | 691 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2006 08 28 | 703 | 0.2− | 1.3− | 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2006 08 28 | 703 | 0.9− | 1.0− | 2006 09 25 | 691 | 0.5− | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 2006 09 06 | 644 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2006 09 06 | 644 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2006 09 12 | 703 | (0.1+ | 1.6−) | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 2006 09 12 | 703 | 0.7− | 1.5+ | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.4− | 0.2− | | |
| 2006 09 12 | 703 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2006 09 12 | 703 | 0.3+ | 0.8+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.8− | | |
| 2006 09 17 | 691 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 10 27 | G96 | 1.0+ | 0.1+ | | |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.7+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.2+ | 1.0+ | | | | | | |
| 2006 09 18 | H07 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.2+ | | | | | | |

**2006 SX$_{19}$ = 2001 QO$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.78908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22297782 | $\omega$ | 321.31920 | | +0.88435351 | +0.46680349 | |
| $a$ | 2.6933633 | $\Omega$ | 10.85560 | | −0.42332500 | +0.80523671 | |
| $e$ | 0.0884122 | $i$ | 1.11261 | | −0.19676083 | +0.36563415 | |
| $P$ | 4.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 704 | 0.7+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.5− | | |
| 2001 08 19 | 704 | 0.7− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1− | | |
| 2001 08 19 | 704 | 0.3+ | 1.0+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.3− | | |
| 2001 08 25 | 608 | 0.2+ | 0.5− | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2− | | |
| 2001 08 25 | 608 | 0.6− | 0.5− | 2006 10 11 | 691 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.3− | | |
| 2001 08 25 | 608 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.1+ | | |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.1− | | |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.1− | | |
| 2006 09 19 | J75 | 0.7+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | (1.9− | 0.6−) | | |
| 2006 09 19 | J75 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.1+ | | |
| 2006 09 19 | J75 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.1+ | | |
| 2006 09 20 | J75 | (0.3+ | 1.6−) | 2006 10 21 | 703 | 0.6+ | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.3+ | | |
| 2006 09 20 | J75 | 1.0− | 0.3+ | 2006 10 21 | 703 | 0.2+ | 1.0+ | 2006 11 18 | 691 | 0.3− | 0.2+ | | |
| 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.2− | 2006 11 18 | 691 | 0.4− | 0.0 | | |
| 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.0 | | |
| 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.2+ | | |
| 2006 09 26 | 152 | 0.3+ | 0.8− | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.2− | | |
| 2006 09 26 | 152 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2− | | |
| 2006 09 26 | 152 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.5+ | 0.2− | | |
| 2006 09 27 | 152 | 1.1+ | 1.1− | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.1− | | |
| 2006 09 27 | 152 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 20 | G96 | (0.3+ | 1.6+) | | |
| 2006 09 27 | 152 | 0.9− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1− | | | | | | |

**2006 SY$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.36181 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17726748 | $\omega$ | 309.63201 | | +0.88434679 | +0.46543149 | |
| $a$ | 3.1384606 | $\Omega$ | 22.69975 | | −0.39450291 | +0.78645466 | |
| $e$ | 0.1686370 | $i$ | 5.36993 | | −0.24959610 | +0.40603275 | |
| $P$ | 5.56 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 23 | 683 | 0.3− | 0.2+ | | |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 23 | 683 | 0.4− | 1.9+ | | |
| 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 23 | 683 | 0.5+ | 0.6+ | | |
| 2006 09 19 | J75 | 0.1+ | 0.5− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 2006 09 19 | J75 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | |
| 2006 09 19 | J75 | 0.5+ | 0.7− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.4− | | |
| 2006 09 20 | J75 | 0.0 | 0.3− | 2006 10 16 | 683 | 1.0+ | 1.0− | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 2006 09 20 | J75 | 1.3+ | 0.6+ | 2006 10 16 | 683 | 1.1+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 2006 09 20 | 699 | 0.9− | 0.9+ | 2006 10 16 | 683 | 0.3− | 1.2− | 2006 11 10 | 691 | 0.2+ | 0.1− | | |
| 2006 09 20 | 699 | 0.7− | 0.7− | 2006 10 17 | 683 | 0.1− | 0.7− | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2006 09 20 | 699 | 0.8− | 0.0 | 2006 10 17 | 683 | 0.2+ | 1.4− | 2006 11 11 | 703 | 1.0− | 0.4− | | |
| 2006 09 20 | 699 | 0.3+ | 0.4− | 2006 10 17 | 683 | 0.2− | 1.7− | 2006 11 11 | 703 | 0.4− | 0.1− | | |
| 2006 09 21 | J75 | 1.0+ | 0.1+ | 2006 10 20 | 683 | 0.8− | 0.1− | 2006 11 11 | 703 | 0.7− | 0.8+ | | |
| 2006 09 21 | J75 | 0.5− | 0.1− | 2006 10 20 | 683 | 1.4− | 0.2+ | 2006 11 11 | 703 | (1.7− | 3.1+) | | |
| 2006 09 24 | J75 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.6− | 0.4+ | | |
| 2006 09 24 | J75 | 0.5+ | 0.8− | 2006 10 20 | 683 | 1.9− | 1.0+ | 2006 11 17 | 703 | 0.7+ | 1.1+ | | |
| 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.4+ | 1.3+ | | |
| 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.9+ | | |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.5− | | |
| 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.4+ | 1.1+ | 2006 11 19 | 704 | 0.6− | 0.1− | | |
| 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.8+ | | |
| 2006 10 01 | 461 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.2− | | |
| 2006 10 01 | 461 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.3− | | |
| 2006 10 01 | 461 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1− | 0.3− | | |

**2006 SZ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.94932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17983012 | $\omega$ | 232.56259 | | +0.27694465 | −0.95871183 | |
| $a$ | 3.1085731 | $\Omega$ | 201.62941 | | +0.92765562 | +0.28428988 | |
| $e$ | 0.0939196 | $i$ | 10.09376 | | +0.25051291 | +0.00713342 | |
| $P$ | 5.48 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 23 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 1993 05 23 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 1993 05 23 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 1995 10 21 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.6− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 | | |
| 1995 10 21 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.2− | | |
| 1995 10 21 | 691 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2006 09 19 | J75 | 0.4+ | 0.4− | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− | | |
| 2006 09 19 | J75 | 0.4+ | 1.3− | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2006 09 19 | J75 | (1.7− | 1.2−) | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2006 09 20 | J75 | 0.7+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.2+ | | |
| 2006 09 20 | J75 | 0.5+ | 1.0− | 2006 10 19 | 691 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.3+ | | |
| 2006 09 21 | J75 | 0.5+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.1+ | | |
| 2006 09 21 | J75 | 0.7+ | 0.9− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.5+ | 0.2+ | | |
| 2006 09 21 | 950 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.5− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.2− | | |
| 2006 09 21 | 950 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.5+ | 0.2+ | | |
| 2006 09 21 | 950 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.4+ | 2006 11 07 | 644 | 0.5− | 0.4+ | | |
| 2006 09 21 | 950 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.4+ | | |
| 2006 09 21 | 950 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.7+ | | |
| 2006 09 24 | J75 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2006 09 24 | J75 | 0.3+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− | | |
| 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.8+ | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.3− | | |
| 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 24 | 691 | 1.0− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.6− | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 21 | 703 | 1.0+ | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.8+ | 1.3− | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.4− | 0.2− | 2006 11 17 | 703 | 1.3− | 0.0 |

**2006 SB$_{20}$ = 1999 TW$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.93627 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27847812 | $\omega$ | 76.60071 | | +0.82621218 | | −0.56282756 |
| $a$ | 2.3224266 | $\Omega$ | 317.64372 | | +0.50180342 | | +0.75498052 |
| $e$ | 0.1469985 | $i$ | 2.08104 | | +0.25606005 | | +0.33649600 |
| $P$ | 3.54 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 11 | 704 | 0.5+ | 0.5− | 2006 09 18 | G98 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 1999 10 11 | 704 | 1.4+ | 0.1− | 2006 09 18 | G98 | 0.2+ | 0.8+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 1999 10 11 | 704 | 0.8− | 0.4+ | 2006 09 19 | G98 | 1.3+ | 0.7+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 1999 10 13 | 704 | 0.2+ | 0.6+ | 2006 09 19 | G98 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 1999 10 13 | 704 | 0.5− | 0.2− | 2006 09 19 | G98 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.1− |
| 1999 10 13 | 704 | 0.5+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 12 | G98 | 0.4+ | 0.2+ |
| 1999 10 13 | 704 | 0.5+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 12 | G98 | 0.0 | 0.2− |
| 1999 11 13 | 691 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 12 | G98 | 0.3+ | 0.6+ |
| 1999 11 13 | 691 | 0.2+ | 0.3− | 2006 09 20 | G98 | 0.2− | 0.2− | 2006 10 12 | G98 | 0.4+ | 0.3+ |
| 1999 11 13 | 691 | 0.3− | 0.3+ | 2006 09 20 | G98 | 0.2+ | 0.2− | 2006 10 12 | G98 | 0.8+ | 0.3+ |
| 2004 01 27 | 691 | 0.0 | 0.3− | 2006 09 20 | G98 | 0.2− | 0.1− | 2006 10 17 | 703 | (1.9+ | 0.2−) |
| 2004 01 27 | 691 | 0.0 | 0.5+ | 2006 09 20 | G98 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5− | 1.4− |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 09 20 | G98 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 24 | G98 | 0.2− | 0.2− | 2006 10 17 | 703 | (2.3− | 0.6+) |
| 2006 09 15 | 691 | 0.5− | 0.1+ | 2006 09 24 | G98 | 0.1+ | 0.3+ | 2006 10 29 | G98 | 0.1+ | 0.0 |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 24 | G98 | 0.1+ | 0.0 | 2006 10 29 | G98 | 0.1− | 0.0 |
| 2006 09 18 | G98 | 1.1+ | 0.3+ | 2006 09 24 | G98 | 0.2+ | 0.3− | 2006 10 29 | G98 | 0.1− | 0.5+ |
| 2006 09 18 | G98 | 0.2− | 0.1− | 2006 09 24 | G98 | 0.0 | 0.1+ | 2006 10 29 | G98 | 1.0+ | 0.3+ |
| 2006 09 18 | G98 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 29 | G98 | 0.1− | 0.1+ |

**2006 SL$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.88218 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20004506 | $\omega$ | 98.67374 | | +0.92130971 | | +0.38847043 |
| $a$ | 2.8954595 | $\Omega$ | 238.46844 | | −0.36400872 | | +0.84659562 |
| $e$ | 0.0604876 | $i$ | 1.12316 | | −0.13669696 | | +0.36382219 |
| $P$ | 4.93 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 13 | A55 | 0.3− | 0.8− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 19 | A55 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.4+ | 0.2− |
| 2001 09 23 | 291 | 0.3+ | 0.5+ | 2006 09 19 | A55 | 0.6− | 1.1+ | 2006 10 16 | 691 | 0.6+ | 0.1− |
| 2001 09 23 | 291 | 0.4− | 0.0 | 2006 09 19 | A55 | 0.8− | 0.6− | 2006 10 16 | 691 | 0.4+ | 0.3− |
| 2001 09 23 | 291 | 0.0 | 0.3− | 2006 09 20 | A55 | 0.7− | 0.4+ | 2006 10 17 | G96 | (1.0+ | 3.2−) |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 20 | A55 | 0.4− | 0.3− | 2006 10 17 | G96 | (2.9+ | 1.5−) |
| 2004 03 26 | 691 | 0.0 | 0.2+ | 2006 09 20 | A55 | 0.2− | 0.9+ | 2006 10 17 | G96 | 0.3− | 0.1− |
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 09 20 | A55 | 0.1+ | 1.0+ | 2006 10 17 | G96 | 0.2+ | 0.6− |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 09 21 | A55 | 0.5+ | 0.3− | 2006 10 28 | 691 | 0.3− | 0.1− |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 09 21 | A55 | 1.1+ | 0.5+ | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2006 09 14 | 691 | 0.4− | 0.1+ | 2006 09 21 | A55 | 0.1− | 0.6− | 2006 10 28 | 691 | 0.4− | 0.1− |
| 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2006 09 18 | 691 | 0.6+ | 0.9− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.7+ | 0.6− |
| 2006 09 18 | 691 | 0.6− | 0.5+ | 2006 10 03 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.7+ | 0.3+ |
| 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 10 13 | A55 | 1.2+ | 0.2− | 2006 11 13 | G96 | 1.3+ | 0.3+ |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 13 | A55 | 0.1+ | 0.1− | | | | |

**2006 SP$_{20}$ = 2001 PJ$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.16540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21595507 | $\omega$ | 42.17227 | | +0.79665430 | | −0.60435649 |
| $a$ | 2.7514426 | $\Omega$ | 354.98121 | | +0.52051243 | | +0.69415718 |
| $e$ | 0.1288425 | $i$ | 6.40186 | | +0.30726003 | | +0.39102306 |
| $P$ | 4.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | (1.8+ | 1.1−) | 2006 09 16 | 644 | 0.4+ | 0.1+ | 2006 09 29 | 704 | (2.1+ | 0.2+) |
| 2001 07 27 | 699 | 0.1− | 0.3+ | 2006 09 16 | 644 | 0.0 | 0.3+ | 2006 09 30 | 683 | 0.2+ | 0.3− |
| 2001 07 27 | 699 | 0.2− | 0.1+ | 2006 09 19 | 683 | (1.0− | 2.0−) | 2006 09 30 | 683 | 0.3+ | 0.3+ |
| 2001 07 27 | 699 | 0.4− | 0.6+ | 2006 09 19 | 683 | 1.0− | 0.6− | 2006 09 30 | 683 | 0.4+ | 0.1+ |
| 2001 08 15 | 608 | 0.0 | 0.5+ | 2006 09 19 | 683 | (1.2− | 2.0−) | 2006 10 01 | 691 | 0.9− | 0.4− |
| 2001 08 15 | 608 | 0.3+ | 1.2+ | 2006 09 21 | 683 | 0.8+ | 0.8+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2001 08 15 | 608 | 0.1− | 0.5+ | 2006 09 21 | 683 | 0.3+ | 0.7− | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2001 08 22 | 608 | 0.2+ | 0.7− | 2006 09 21 | 683 | 0.5+ | 0.3− | 2006 10 03 | 683 | 0.2+ | 1.0− |
| 2001 08 22 | 608 | 0.0 | 1.1− | 2006 09 25 | 704 | 0.5+ | 0.1− | 2006 10 03 | 683 | 0.2+ | 1.1+ |
| 2001 08 22 | 608 | 0.1+ | 1.0− | 2006 09 25 | 704 | 0.1+ | 0.3+ | 2006 10 03 | 683 | 1.0− | 0.8− |
| 2002 12 05 | 704 | 0.8− | 0.3− | 2006 09 25 | 704 | 0.2+ | 1.1+ | 2006 10 04 | 683 | 1.5+ | 0.2+ |
| 2002 12 05 | 704 | 0.3− | 0.5+ | 2006 09 25 | 683 | 0.9+ | 0.5− | 2006 10 04 | 683 | (0.8− | 1.9+) |
| 2002 12 05 | 704 | 0.5− | 0.6+ | 2006 09 25 | 704 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 12 05 | 704 | 0.5+ | 0.1− | 2006 09 25 | 683 | 0.1+ | 0.6− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2003 01 04 | 704 | 0.2+ | 0.9− | 2006 09 25 | 704 | 0.7+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.3+ | 0.0 | 2006 09 25 | 683 | 0.6+ | 0.7− | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2003 01 04 | 704 | 0.6+ | 0.5+ | 2006 09 27 | 683 | 1.2+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.0 |
| 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 09 27 | 683 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 04 23 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 27 | 683 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 29 | 704 | (0.0 | 2.5+) | 2006 11 06 | 644 | 0.1+ | 0.1+ |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 29 | 704 | (2.5+ | 0.5+) | 2006 11 06 | 644 | 0.0 | 0.2+ |
| 2006 09 16 | 644 | 0.1− | 0.3− | 2006 09 29 | 704 | 0.9+ | 1.3+ | | | | |

**2006 SS$_{20}$ = 2004 EW$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.51037 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22537033 | $\omega$ | 219.59281 | | +0.82994836 | | −0.55776133 |
| $a$ | 2.6742677 | $\Omega$ | 174.28476 | | +0.53271834 | | +0.78747008 |
| $e$ | 0.1239002 | $i$ | 5.40575 | | +0.16552005 | | +0.26228452 |
| $P$ | 4.37 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 03 | 910 | 0.4+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.7+ |
| 1997 09 03 | 910 | 0.5− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 09 20 | 734 | 0.1+ | 0.1+ |
| 1997 09 03 | 910 | 0.2− | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 20 | 734 | 0.0 | 0.2+ |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 09 18 | 291 | 0.1− | 0.1− | 2006 09 20 | 734 | 0.0 | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 18 | 291 | 0.1+ | 0.0 | 2006 09 20 | 734 | 0.1+ | 0.0 |
| 2004 03 15 | 691 | 0.4− | 0.2− | 2006 09 18 | 291 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1− |
| 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2004 03 23 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.8+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− |

**2006 SV$_{20}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.03447 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31289582 | $\omega$ | 107.81999 | | +0.29524508 | | −0.95446165 |
| $a$ | 2.1488340 | $\Omega$ | 324.91657 | | +0.84595322 | | +0.28198372 |
| $e$ | 0.0833353 | $i$ | 4.27219 | | +0.44406474 | | +0.09740711 |
| $P$ | 3.15 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 691 | 0.1+ | 0.1+ | 2006 07 25 | G96 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.2− |
| 2003 10 01 | 691 | 0.1+ | 0.3+ | 2006 08 29 | 703 | 0.4− | 1.0+ | 2006 09 20 | 691 | 0.5− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 691 | 0.8− | 0.0 | 2006 08 29 | 703 | 0.4− | 1.8− | 2006 09 20 | 691 | 0.5− | 0.2+ |
| 2003 10 15 | 644 | 0.0 | 0.2− | 2006 08 29 | 703 | 0.5− | 0.2− | 2006 09 20 | 691 | 1.5+ | 0.2− |
| 2003 10 15 | 644 | 0.1+ | 0.1+ | 2006 08 29 | 703 | 0.5− | 0.4− | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2003 10 15 | 644 | 0.3+ | 0.1+ | 2006 09 16 | 699 | (1.7− | 2.7+) | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 2005 04 12 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.9+ | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2005 04 12 | 691 | 0.1+ | 0.4+ | 2006 09 16 | 699 | 0.3+ | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2005 04 12 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.4+ | 0.4+ |
| 2006 07 25 | G96 | 0.5+ | 0.1+ | 2006 09 19 | 703 | 1.4− | 0.7− | 2006 10 20 | 691 | 0.1+ | 0.5+ |
| 2006 07 25 | G96 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.5− | | | | |
| 2006 07 25 | G96 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.0 | | | | |

**2006 SA$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.54542 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29508303 | $\omega$ | 256.02359 | | +0.59825036 | | −0.80115099 |
| $a$ | 2.2344633 | $\Omega$ | 157.20899 | | +0.75014377 | | +0.55295237 |
| $e$ | 0.1302459 | $i$ | 2.35610 | | +0.28174604 | | +0.22891215 |
| $P$ | 3.34 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2003 12 14 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2003 12 14 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.6− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2003 12 27 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 1.4− | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2003 12 27 | 691 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2003 12 27 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | (1.1− | 2.5+) | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2006 09 16 | 699 | 1.1− | 1.2− | 2006 09 25 | 699 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2006 09 16 | 699 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.6− |
| 2006 09 16 | 699 | 1.4+ | 1.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.6− |
| 2006 09 16 | 699 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2006 09 19 | 703 | 0.0 | 1.4+ | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− |

**2006 SD$_{21}$ = 2005 GT$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.56796 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28750035 | $\omega$ | 286.59034 | | +0.23228869 | | +0.97263809 |
| $a$ | 2.2735812 | $\Omega$ | 356.83276 | | −0.86141524 | | +0.20374756 |
| $e$ | 0.0552873 | $i$ | 4.29343 | | −0.45166996 | | +0.11163367 |
| $P$ | 3.43 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 05 | G96 | 0.4+ | 0.1− | 2005 04 07 | G96 | 1.2− | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 2005 04 05 | G96 | 0.0 | 0.1+ | 2006 09 16 | 699 | 0.6+ | 0.4− | 2006 09 25 | G96 | 0.5+ | 0.3− |
| 2005 04 05 | G96 | 0.1+ | 0.2− | 2006 09 16 | 699 | 0.8− | 0.5+ | 2006 10 16 | G96 | 0.2+ | 0.7− |
| 2005 04 05 | G96 | 0.3+ | 0.2− | 2006 09 16 | 699 | 0.5− | 0.7+ | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2005 04 06 | G96 | 0.0 | 0.0 | 2006 09 16 | 699 | 0.1+ | 0.7+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2005 04 06 | G96 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.9− | 0.5+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2005 04 06 | G96 | 0.4− | 0.2− | 2006 09 19 | 703 | 0.5+ | 0.8− | 2006 10 27 | G96 | 0.0 | 0.8+ |
| 2005 04 06 | G96 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.0 |
| 2005 04 07 | G96 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.8+ |
| 2005 04 07 | G96 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2005 04 07 | G96 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− | | | | |

**2006 SJ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.81317 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29050757 | $\omega$ | 36.54581 | | +0.56789153 | | −0.82260317 |
| $a$ | 2.2578638 | $\Omega$ | 18.90362 | | +0.73265406 | | +0.48929333 |
| $e$ | 0.1736237 | $i$ | 5.08088 | | +0.37512296 | | +0.28968268 |
| $P$ | 3.39 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 691 | 0.2+ | 0.3− | 2006 08 29 | 691 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.2+ |
| 1996 10 10 | 691 | 0.2+ | 0.3− | 2006 09 16 | 699 | (0.3− | 2.6+) | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1996 10 10 | 691 | 0.1+ | 0.6− | 2006 09 16 | 699 | (1.2+ | 1.8+) | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2003 11 24 | 691 | 0.1− | 0.5+ | 2006 09 16 | 699 | 0.7+ | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2003 11 24 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 699 | 0.6− | 0.5+ | 2006 10 20 | G96 | 0.5+ | 0.5− |
| 2003 11 24 | 691 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.4− |
| 2003 12 03 | 704 | 0.4− | 0.4+ | 2006 09 19 | 703 | 0.5+ | 0.0 | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2003 12 03 | 704 | 0.3− | 0.6+ | 2006 09 19 | 703 | 0.6+ | 0.9− | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2003 12 03 | 704 | 0.3+ | 0.6− | 2006 09 19 | 703 | (0.2− | 1.6−) | 2006 10 23 | 644 | 0.4+ | 0.4− |
| 2003 12 17 | 704 | 0.3− | 0.6+ | 2006 09 22 | 704 | 0.1− | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 12 17 | 704 | 1.0− | 0.3+ | 2006 09 22 | 704 | 1.3− | 0.2− | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2003 12 17 | 704 | 0.2− | 0.1− | 2006 09 22 | 704 | (1.9− | 0.7−) | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2003 12 17 | 704 | 0.8− | 0.3− | 2006 09 25 | 699 | 0.2− | 0.7− | 2006 11 11 | G96 | 0.5+ | 0.5− |
| 2003 12 17 | 704 | 1.2+ | 0.9− | 2006 09 25 | 699 | 1.4− | 0.7+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2003 12 29 | 704 | 0.5− | 0.6+ | 2006 09 25 | 699 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2003 12 29 | 704 | 0.6+ | 0.4+ | 2006 09 25 | 699 | 0.8+ | 1.0+ | 2006 11 21 | G96 | 0.7+ | 0.0 |
| 2003 12 29 | 704 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2003 12 29 | 704 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2003 12 29 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.1− | 0.3+ | | | | |
| 2006 08 29 | 691 | 0.2− | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.9+ | | | | |

**2006 SM$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.78986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17487983 | $\omega$ | 102.47276 | | +0.87351056 | | −0.48608480 |
| $a$ | 3.1669623 | $\Omega$ | 286.61599 | | +0.43521860 | | +0.80415304 |
| $e$ | 0.2321425 | $i$ | 1.58314 | | +0.21809189 | | +0.34213952 |
| $P$ | 5.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.2+ | 0.2− | 2006 09 16 | 644 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.1+ |
| 2001 11 21 | 704 | 0.4− | 0.5+ | 2006 09 19 | 699 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.9+ | 0.2+ |
| 2001 11 21 | 704 | 0.5− | 0.4+ | 2006 09 19 | 699 | 1.2− | 0.3− | 2006 10 17 | 703 | 1.1− | 0.8− |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.4+ | 0.7− | 2006 10 17 | 703 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.5− | 0.6+ | 2006 09 19 | 699 | (1.6− | 1.4+) | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2001 12 19 | 704 | 0.5− | 0.1− | 2006 09 25 | 704 | 0.8− | 0.1+ | 2006 10 17 | 703 | (1.5+ | 0.6+) |
| 2001 12 19 | 704 | 0.4− | 0.2+ | 2006 09 25 | 704 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.5+ |
| 2001 12 19 | 704 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2002 01 08 | 704 | 1.2+ | 0.1+ | 2006 09 25 | 704 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 01 08 | 704 | 0.6+ | 0.1− | 2006 09 25 | 704 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2002 01 08 | 704 | 0.3+ | 0.1− | 2006 09 27 | 699 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2002 01 08 | 704 | 0.3+ | 0.7− | 2006 09 27 | 699 | 0.9− | 1.1+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 27 | 699 | 0.4+ | 1.0+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 27 | 699 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.8+ | 0.7− |
| 2006 09 06 | 644 | 0.3− | 0.3− | 2006 09 29 | 704 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2006 09 16 | 644 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2006 09 16 | 644 | 0.2− | 0.1+ | 2006 09 29 | 704 | 0.1− | 0.1− | 2006 10 31 | G96 | (1.7− | 0.1−) |

**2006 SN$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.47534 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30269017 | $\omega$ | 358.82769 | | +0.03127543 | | +0.99656630 |
| $a$ | 2.1968674 | $\Omega$ | 272.96110 | | −0.91640735 | | −0.00203031 |
| $e$ | 0.1508138 | $i$ | 4.40276 | | −0.39902307 | | +0.08277372 |
| $P$ | 3.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 05 | 644 | (0.1+ | 2.0+) | 2005 02 14 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.4+ |
| 2002 04 05 | 644 | (0.1+ | 2.0+) | 2005 02 14 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.6+ | 0.3+ |
| 2002 04 05 | 644 | (0.0 | 1.9+) | 2005 02 14 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.8− |
| 2002 04 18 | 644 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.5+ | 1.1+ |
| 2002 04 18 | 644 | 0.1+ | 0.8+ | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.1− | 0.5+ |
| 2002 04 18 | 644 | 0.0 | 0.9+ | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 20 | 699 | 0.2+ | 1.1+ |
| 2002 04 30 | 644 | 0.6+ | 0.6+ | 2006 09 17 | 703 | 1.0− | 0.3− | 2006 09 25 | 704 | 0.2− | 0.3+ |
| 2002 04 30 | 644 | 0.5+ | 0.6+ | 2006 09 17 | 703 | 1.1− | 0.0 | 2006 09 25 | 704 | 0.6+ | 1.0+ |
| 2002 04 30 | 644 | 1.0+ | 0.9+ | 2006 09 17 | 703 | 0.6− | 0.0 | 2006 09 25 | 704 | 0.1− | 0.8+ |
| 2003 10 27 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | (3.4− | 0.9−) | 2006 09 25 | 704 | 1.0− | 0.2+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 10 27 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.3+ | |
| 2003 10 27 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.6− | 0.2− | |

**2006 $SO_{21}$ = 2005 $JO_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.50299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28944296 | $\omega$ | 194.70634 | | +0.58599127 | −0.80719628 | |
| $a$ | 2.2633970 | $\Omega$ | 219.49205 | | +0.75427800 | +0.57540632 | |
| $e$ | 0.1370905 | $i$ | 6.41460 | | +0.29610629 | +0.13168799 | |
| $P$ | 3.41 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | G96 | 0.1− | 0.1+ | 2006 09 19 | 699 | 0.1− | 0.8− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2005 05 07 | G96 | 0.1− | 0.3− | 2006 09 19 | 699 | 0.3− | 0.8− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2005 05 07 | G96 | 0.0 | 0.5− | 2006 09 19 | 699 | 1.1− | 1.3+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2005 05 07 | G96 | 0.2− | 0.7− | 2006 09 19 | 699 | 1.2− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2006 08 25 | D35 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2006 08 25 | D35 | 0.7+ | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 448 | 1.5+ | 0.6− |
| 2006 08 25 | D35 | 0.7+ | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 448 | 0.6− | 0.2+ |
| 2006 09 17 | 703 | 0.9− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2006 09 17 | 703 | 0.0 | 1.0− | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2006 09 17 | 703 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.5− |
| 2006 09 17 | 703 | 0.5+ | 0.7+ | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.5− |

**2006 $SL_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.79958 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25881864 | $\omega$ | 229.56403 | | +0.78974841 | +0.59798597 | |
| $a$ | 2.4385913 | $\Omega$ | 93.27242 | | −0.51313899 | +0.76618214 | |
| $e$ | 0.1507634 | $i$ | 7.87479 | | −0.33613363 | +0.23532469 | |
| $P$ | 3.81 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.1− | 0.1− | 2002 09 09 | 644 | 0.2− | 0.3− | 2006 09 17 | 699 | 0.1+ | 1.3− |
| 2002 08 13 | 644 | 0.3− | 0.2− | 2002 09 09 | 644 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2002 08 13 | 644 | 0.2− | 0.1− | 2002 09 09 | 644 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.5+ | 0.3− |
| 2002 08 17 | 608 | 1.1+ | 0.8+ | 2005 05 04 | 691 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.9+ | 0.0 |
| 2002 08 17 | 608 | 0.1− | 0.2+ | 2005 05 04 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.7+ | 0.8+ |
| 2002 08 17 | 608 | 0.1− | 1.1+ | 2005 05 04 | 691 | 0.2− | 0.2+ | 2006 09 25 | 703 | 2.4− | 0.3+ |
| 2002 08 20 | 644 | 0.2− | 0.3− | 2006 09 17 | 699 | 0.6− | 0.5− | 2006 09 25 | 703 | 0.9− | 0.5− |
| 2002 08 20 | 644 | 0.3+ | 0.8− | 2006 09 17 | 699 | 0.3+ | 0.5+ | 2006 09 25 | 703 | 0.0 | 0.0 |
| 2002 08 20 | 644 | 0.3− | 0.5− | 2006 09 17 | 699 | 1.4+ | 0.3+ | 2006 09 25 | 703 | 0.5+ | 0.5+ |

**2006 $SO_{22}$ = 2002 $KX_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.38440 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28421818 | $\omega$ | 255.45390 | | +0.80113570 | +0.58835156 | |
| $a$ | 2.2910513 | $\Omega$ | 68.39042 | | −0.49360300 | +0.75316602 | |
| $e$ | 0.2112500 | $i$ | 6.77345 | | −0.33843414 | +0.29425054 | |
| $P$ | 3.47 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 17 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.7− | 0.6− | 2006 09 25 | 703 | 1.3+ | 0.8+ |
| 2002 05 17 | 644 | 0.0 | 0.8+ | 2006 09 17 | 699 | 0.6+ | 0.1− | 2006 09 25 | 703 | 0.3+ | 0.7− |
| 2002 05 17 | 644 | 0.1− | 0.6+ | 2006 09 17 | 699 | 0.2− | 0.2− | 2006 09 25 | 703 | (0.6− | 2.1+) |
| 2002 05 19 | 291 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.2− | 1.3− | 2006 11 25 | G96 | 0.4− | 0.3+ |
| 2002 05 19 | 291 | 0.2+ | 0.0 | 2006 09 19 | 703 | 1.4− | 0.7+ | 2006 11 25 | G96 | 0.3− | 0.3+ |
| 2002 05 19 | 291 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.5+ | 1.3+ | 2006 11 25 | G96 | 0.0 | 0.4+ |
| 2006 08 28 | D35 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.8+ | 0.6− | 2006 11 25 | G96 | 1.1− | 0.7+ |
| 2006 08 28 | D35 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.0 | | | | |
| 2006 08 28 | D35 | 0.2− | 0.0 | 2006 09 25 | 703 | 0.4+ | 0.1+ | | | | |

**2006 $SP_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.01570 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29967738 | $\omega$ | 219.61662 | | +0.98154234 | +0.16682171 | |
| $a$ | 2.2115669 | $\Omega$ | 130.52173 | | −0.12882096 | +0.93813335 | |
| $e$ | 0.2037603 | $i$ | 7.06648 | | −0.14134992 | +0.30344082 | |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 09 | 566 | 0.3+ | 0.3− | 2006 08 28 | 699 | 0.6+ | 0.3+ | 2006 09 25 | 703 | 0.1+ | 0.4− |
| 1996 08 09 | 566 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.4− | 0.1− | 2006 10 04 | 703 | 0.5+ | 0.8+ |
| 1996 08 09 | 566 | 0.1+ | 0.2− | 2006 08 28 | 699 | 0.4− | 0.7+ | 2006 10 04 | 703 | 0.5+ | 0.5+ |
| 2001 01 15 | 691 | 0.0 | 0.3+ | 2006 09 17 | 699 | 0.5+ | 0.2+ | 2006 10 04 | 703 | 0.4+ | 1.0− |
| 2001 01 15 | 691 | 0.0 | 0.3+ | 2006 09 17 | 699 | 1.1− | 0.6+ | 2006 10 04 | 703 | 0.8− | 0.7+ |
| 2001 01 15 | 691 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.7− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.5− |
| 2003 12 14 | 644 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2003 12 14 | 644 | 0.6− | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2003 12 14 | 644 | 0.3− | 0.0 | 2006 09 19 | 703 | 1.0+ | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2003 12 28 | 691 | 0.3+ | 0.4− | 2006 09 19 | 703 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.1+ |
| 2003 12 28 | 691 | 0.1+ | 0.3− | 2006 09 25 | 703 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.3− |
| 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 09 25 | 703 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.3− | 0.6− |
| 2006 08 28 | 699 | 1.0− | 0.7+ | 2006 09 25 | 703 | 0.1− | 0.2− | | | | |

**2006 $SS_{22}$ = 2004 $ES_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.12790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18603999 | $\omega$ | 183.37402 | | +0.78951374 | +0.60077776 | |
| $a$ | 3.0390080 | $\Omega$ | 138.83239 | | −0.55853386 | +0.78804964 | |
| $e$ | 0.0771075 | $i$ | 10.98520 | | −0.25437763 | +0.13432740 | |
| $P$ | 5.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 645 | 0.0 | 0.1− | 2002 01 14 | 645 | 0.0 | 0.0 | 2006 09 17 | 699 | 0.3− | 0.1− |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2004 03 15 | 704 | 0.5+ | 1.5+ | 2006 09 17 | 699 | (1.8+ | 2.1+) |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.5− | 0.8+ | 2006 09 19 | 703 | 0.1+ | 1.2+ |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2004 03 15 | 704 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.5+ | 0.3+ |
| 2001 10 15 | 644 | 0.5− | 0.8+ | 2004 03 23 | 704 | 0.6+ | 0.6+ | 2006 09 19 | 703 | 0.4+ | 0.9+ |
| 2001 10 15 | 644 | 0.8− | 1.0+ | 2004 03 23 | 704 | 0.3+ | 0.8+ | 2006 09 25 | 703 | 0.5+ | 0.4+ |
| 2001 10 15 | 644 | 0.6− | 0.7+ | 2004 03 23 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 703 | 0.6+ | 0.3+ |
| 2001 10 23 | 644 | 0.6− | 0.4+ | 2006 08 28 | 699 | 1.3− | 0.5+ | 2006 09 25 | 703 | 0.0 | 0.3+ |
| 2001 10 23 | 644 | 0.4− | 0.4+ | 2006 08 28 | 699 | 0.5− | 0.5+ | 2006 09 25 | 703 | 0.5− | 0.3+ |
| 2001 10 23 | 644 | 0.5− | 0.1− | 2006 08 28 | 699 | 1.1− | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.1+ |
| 2002 01 13 | 645 | 0.1+ | 0.1+ | 2006 08 28 | 699 | 0.8+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.8+ |
| 2002 01 13 | 645 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.3− | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.8− |
| 2002 01 14 | 645 | 0.0 | 0.1+ | 2006 09 17 | 699 | 1.0− | 1.3+ | 2006 10 21 | 703 | 0.1+ | 1.7− |

**2006 $SY_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.74416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18392064 | $\omega$ | 205.15741 | | +0.78069241 | +0.60845006 | |
| $a$ | 3.0623094 | $\Omega$ | 116.61431 | | −0.54301502 | +0.77336241 | |
| $e$ | 0.1135922 | $i$ | 9.17177 | | −0.30927989 | +0.17804241 | |
| $P$ | 5.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.5− | 0.6+ | 2006 09 17 | 699 | 1.0+ | 1.0+ | 2006 09 25 | 703 | 0.7− | 0.2+ |
| 2001 10 23 | 644 | 0.3− | 0.3+ | 2006 09 17 | 699 | 0.3− | 0.6+ | 2006 09 25 | 703 | 0.4+ | 0.0 |
| 2001 10 23 | 644 | 0.6− | 0.5+ | 2006 09 17 | 699 | 1.2− | 1.1+ | 2006 09 25 | 703 | 0.5− | 0.5− |
| 2001 11 04 | 209 | 0.3+ | 0.5− | 2006 09 17 | 699 | (1.8− | 0.9−) | 2006 09 25 | 703 | 0.2− | 0.6+ |
| 2001 11 04 | 209 | 0.5+ | 0.7− | 2006 09 19 | 703 | 0.8− | 0.7− | 2006 10 12 | 644 | 0.4+ | 0.4− |
| 2001 11 04 | 209 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.8+ | 0.5− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.7− | 2006 10 12 | 644 | 0.6+ | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.1− | 0.7− | | | | |

**2006 SD$_{23}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.50099 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21706573 | $\omega$ | 228.38683 | | +0.93137324 | | +0.32403328 |
| $a$ | 2.7420490 | $\Omega$ | 112.10229 | | −0.25732696 | | +0.90841094 |
| $e$ | 0.1693186 | $i$ | 10.31937 | | −0.25753977 | | +0.26418174 |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 06 15 | 691 | 0.2− | 0.3+ | 2006 09 17 | 699 | 0.3+ | 0.1− | 2006 09 25 | 703 | 0.5+ | 0.1− |
| 1996 06 15 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 0.0 | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 1996 06 15 | 691 | 0.2+ | 0.0 | 2006 09 17 | 699 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 1999 01 10 | 691 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 0.8− | 0.8− | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 1999 01 10 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.4− | 2006 10 28 | 703 | 0.9+ | 0.4+ |
| 1999 01 10 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.3− | 2006 10 28 | 703 | 0.5+ | 0.6+ |
| 2005 04 16 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.6+ | 0.3− | 2006 10 28 | 703 | 1.0− | 0.4− |
| 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 09 25 | 703 | 0.1− | 1.1+ | 2006 10 28 | 703 | 0.3− | 0.9− |
| 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 703 | 0.2+ | 1.0− | | | | |
| 2006 09 17 | 699 | 0.2− | 1.3+ | 2006 09 25 | 703 | 0.5− | 0.2− | | | | |

**2006 SE$_{23}$ = 1993 BK$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.14133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19078710 | $\omega$ | 227.45201 | | +0.94015283 | | +0.28569583 |
| $a$ | 2.9883861 | $\Omega$ | 115.16731 | | −0.22005383 | | +0.92517017 |
| $e$ | 0.0984789 | $i$ | 11.84095 | | −0.26017102 | | +0.24987606 |
| $P$ | 5.17 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.2− | 0.1+ | 2003 02 07 | 291 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.2+ | 0.5− |
| 1993 01 22 | 691 | 0.9+ | 0.7+ | 2005 07 12 | G96 | 0.1− | 0.4+ | 2006 09 25 | 703 | 1.3− | 1.6− |
| 1993 01 22 | 691 | 0.2− | 0.0 | 2005 07 12 | G96 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.6− | 1.2− |
| 1993 01 26 | 691 | 0.3− | 0.0 | 2005 07 12 | G96 | 0.1+ | 0.4+ | 2006 09 27 | 703 | 1.1+ | 0.4+ |
| 1993 01 26 | 691 | 0.1+ | 0.2+ | 2005 07 12 | G96 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.2+ | 1.1+ |
| 1993 01 26 | 691 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.4+ | 0.8+ |
| 2001 10 15 | 644 | 1.2− | 1.1+ | 2006 09 17 | 699 | 0.1− | 0.8+ | 2006 09 27 | 703 | 0.0 | 0.8+ |
| 2001 10 15 | 644 | 0.8− | 1.3+ | 2006 09 17 | 699 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.5− | 0.5− |
| 2001 10 15 | 644 | 1.3− | 1.0+ | 2006 09 17 | 699 | 0.7+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 10 23 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.9− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2001 10 23 | 644 | 0.5+ | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2001 10 23 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.7+ | 0.6− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2003 02 07 | 291 | 0.2+ | 0.6− | 2006 09 19 | 703 | 0.3+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2003 02 07 | 291 | 0.1− | 0.4− | 2006 09 25 | 703 | (0.1+ | 1.8−) | | | | |

**2006 SH$_{23}$ = 1997 QX$_4$ = 2005 JX$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.90731 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22322567 | $\omega$ | 208.36015 | | +0.96516297 | | +0.20494147 |
| $a$ | 2.6913693 | $\Omega$ | 138.76163 | | −0.16799708 | | +0.96200469 |
| $e$ | 0.1825241 | $i$ | 14.28596 | | −0.20059270 | | +0.18040505 |
| $P$ | 4.42 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 06 | 691 | 1.1− | 1.2+ | 2005 05 04 | 703 | 0.5− | 0.8− | 2006 09 17 | 699 | 0.6− | 0.9− |
| 1995 02 06 | 691 | (3.2+ | 3.7−) | 2005 05 04 | 703 | 0.7− | 0.8− | 2006 09 17 | 699 | 0.4− | 0.4+ |
| 1995 02 06 | 691 | 0.9− | 0.8+ | 2005 05 04 | 703 | 0.5− | 0.4− | 2006 09 19 | 703 | 0.3− | 0.8− |
| 1997 08 28 | 608 | 0.6− | 1.2+ | 2005 05 04 | 703 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.8− |
| 1997 08 28 | 608 | 0.7− | 0.9+ | 2005 05 11 | 703 | 1.3+ | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.5− |
| 1997 08 30 | 608 | 0.7− | 0.9+ | 2005 05 11 | 703 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 1997 08 30 | 608 | 0.5− | 0.9+ | 2005 05 11 | 703 | 0.2+ | 0.5− | 2006 09 19 | 608 | (0.8+ | 2.0−) |
| 2002 10 07 | 608 | 0.5− | 0.4− | 2005 05 11 | 703 | (2.0+ | 0.4−) | 2006 09 19 | 608 | (0.7+ | 2.1−) |
| 2002 10 07 | 608 | 0.3− | 0.1+ | 2006 08 10 | 644 | 0.5+ | 0.2+ | 2006 09 19 | 608 | (0.3− | 1.9−) |
| 2002 10 07 | 608 | 0.2− | 0.1+ | 2006 08 10 | 644 | 0.1+ | 0.4− | 2006 09 27 | 703 | 0.3+ | 0.3+ |
| 2004 02 17 | 691 | 0.2− | 1.0+ | 2006 08 10 | 644 | 0.4+ | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.0 |
| 2004 02 17 | 691 | 0.5− | 0.9+ | 2006 09 17 | 699 | 0.9+ | 0.3+ | 2006 09 27 | 703 | 1.1+ | 0.3+ |
| 2004 02 17 | 691 | 0.2− | 0.9+ | 2006 09 17 | 699 | 0.6+ | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.3+ |

**2006 SJ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.49634 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23489859 | $\omega$ | 300.06557 | | +0.96129976 | | +0.19240697 |
| $a$ | 2.6014518 | $\Omega$ | 49.59988 | | −0.05790173 | | +0.84083721 |
| $e$ | 0.1078662 | $i$ | 15.00668 | | −0.26935136 | | +0.50593709 |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.3+ | 0.0 | 2005 05 10 | G96 | 0.4+ | 0.3+ | 2006 09 25 | 703 | 0.4− | 0.0 |
| 2002 10 15 | 644 | 0.3+ | 0.2+ | 2005 05 10 | G96 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.8+ | 0.0 |
| 2002 10 15 | 644 | 0.4+ | 0.2+ | 2006 09 17 | 699 | 1.7+ | 1.2+ | 2006 09 25 | 703 | 0.1− | 0.6− |
| 2002 10 31 | 608 | 0.8− | 0.6+ | 2006 09 17 | 699 | 1.1− | 0.4+ | 2006 09 25 | 703 | 1.0− | 0.5− |
| 2002 10 31 | 608 | 0.7− | 0.3+ | 2006 09 17 | 699 | 1.5+ | 0.3+ | 2006 10 09 | 644 | 0.2+ | 0.3− |
| 2002 10 31 | 608 | 0.7− | 0.4+ | 2006 09 17 | 699 | 0.7+ | 0.2− | 2006 10 09 | 644 | 0.3+ | 0.2− |
| 2004 01 31 | 645 | 0.0 | 0.0 | 2006 09 17 | 699 | 1.6− | 2.7+ | 2006 10 09 | 644 | 0.1+ | 0.3− |
| 2004 01 31 | 645 | 0.1+ | 0.0 | 2006 09 17 | 699 | 0.7− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2005 04 07 | G96 | 0.1+ | 0.1+ | 2006 09 17 | 699 | (3.4− | 0.1−) | 2006 10 10 | 644 | 0.6+ | 0.1+ |
| 2005 04 07 | G96 | 0.1− | 0.7+ | 2006 09 17 | 699 | (2.1+ | 1.4−) | 2006 10 10 | 644 | 0.3+ | 0.2− |
| 2005 04 07 | G96 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.8+ | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 2005 04 07 | G96 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2005 05 10 | G96 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.9+ | 1.0− | | | | |

**2006 SL$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.01268 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22939011 | $\omega$ | 32.73214 | | +0.80773441 | | −0.58940581 |
| $a$ | 2.6429336 | $\Omega$ | 3.46558 | | +0.48463766 | | +0.65140007 |
| $e$ | 0.2981719 | $i$ | 12.30311 | | +0.33569548 | | +0.47778525 |
| $P$ | 4.30 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.0 | 0.1+ | 2006 09 18 | 699 | 1.4− | 1.7+ | 2006 09 25 | 699 | 0.5− | 0.5− |
| 2002 11 15 | 644 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.9+ | 0.3+ | 2006 09 25 | 699 | 1.1− | 1.1− |
| 2002 11 15 | 644 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.4− | 1.1+ | 2006 09 25 | 699 | 1.2+ | 0.2− |
| 2006 08 16 | 644 | 0.0 | 0.2− | 2006 09 18 | 699 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.2− |
| 2006 08 16 | 644 | 0.0 | 0.3+ | 2006 09 19 | 704 | 0.2+ | 1.9− | 2006 09 26 | 704 | 1.4+ | 0.3+ |
| 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 19 | 704 | 0.4+ | 0.9− | 2006 09 26 | 704 | 0.7− | 0.6+ |
| 2006 08 16 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 704 | 0.7− | 1.3− | 2006 09 26 | 704 | 0.2+ | 0.7+ |
| 2006 08 16 | 644 | 0.1+ | 0.0 | 2006 09 19 | 704 | (1.7− | 3.1−) | 2006 09 26 | 704 | 0.2+ | 1.2+ |
| 2006 08 16 | 644 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.3− | 0.1− | | | | |

**2006 SO$_{23}$ = 1999 TZ$_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.09702 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27754566 | $\omega$ | 317.18696 | | +0.86040478 | | +0.50830200 |
| $a$ | 2.3276254 | $\Omega$ | 12.41451 | | −0.40950777 | | +0.73225638 |
| $e$ | 0.1872179 | $i$ | 9.77673 | | −0.30332656 | | +0.45324350 |
| $P$ | 3.55 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.3− | 0.9+ | 2005 03 12 | 695 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.2− |
| 1999 10 06 | 704 | 0.2− | 0.6+ | 2005 03 12 | 695 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 1999 10 06 | 704 | 0.4− | 0.2− | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 1999 10 06 | 704 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.7− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.2+ |
| 1999 10 06 | 704 | 0.1− | 0.0 | 2006 09 18 | 703 | (1.9+ | 1.0−) | 2006 10 20 | G96 | 0.1− | 0.3+ |
| 1999 10 13 | 704 | 0.3+ | 0.4− | 2006 09 18 | 703 | (1.7+ | 1.1−) | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 1999 10 13 | 704 | 0.3+ | 0.5− | 2006 09 19 | 703 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 1999 10 13 | 704 | 0.2+ | 0.6− | 2006 09 19 | 703 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 1999 10 13 | 704 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3+ |

**2006 SU$_{23}$ = 2001 OK$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.83375 | | (2000.0) | | +0.99742349 | −0.00071950 |
| $n$ | 0.21874776 | $\omega$ | 319.15016 | | +0.03450629 | +0.88148676 |
| $a$ | 2.7279745 | $\Omega$ | 41.06134 | | −0.06289426 | +0.47220820 |
| $e$ | 0.0298048 | $i$ | 6.26962 | | | |
| $P$ | 4.51 | $H$ | 16.3 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 691 | 0.2− | 0.2− | 2006 09 18 | 703 | 1.2+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.3+ |
| 2000 04 29 | 691 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 09 30 | 703 | 0.7− | 0.3− |
| 2000 04 29 | 691 | 0.1− | 0.3+ | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.8+ | 0.8+ |
| 2001 07 18 | 644 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.5− | 2006 09 30 | 703 | 0.3− | 0.6− |
| 2001 07 18 | 644 | 0.2+ | 0.6− | 2006 09 18 | 699 | (0.1+ | 2.8−) | 2006 10 02 | G96 | 0.5+ | 0.2+ |
| 2001 07 18 | 644 | 0.2+ | 0.1− | 2006 09 18 | 699 | 0.8+ | 1.5− | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2001 07 22 | 644 | 0.2− | 0.8+ | 2006 09 18 | 699 | 1.3− | 0.7+ | 2006 10 02 | G96 | 0.3+ | 0.3+ |
| 2001 07 22 | 644 | 0.4− | 0.8+ | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.3+ |
| 2001 07 22 | 644 | 0.4− | 0.6+ | 2006 09 19 | 703 | 0.5− | 0.8+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 11 24 | 644 | 0.4− | 0.3+ | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.1+ | 0.7− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 11 24 | 644 | 0.2+ | 1.0+ | 2006 09 19 | 703 | 0.5+ | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.1− |

**2006 SV$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.37334 | | (2000.0) | | +0.99618283 | −0.02188143 |
| $n$ | 0.21412853 | $\omega$ | 339.67145 | | +0.06693330 | +0.81289046 |
| $a$ | 2.7670671 | $\Omega$ | 22.09905 | | −0.05603304 | +0.58200542 |
| $e$ | 0.1519170 | $i$ | 12.98057 | | | |
| $P$ | 4.60 | $H$ | 15.4 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 01 | 691 | 0.4− | 0.5− | 2006 09 26 | 704 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1995 03 01 | 691 | 0.3+ | 0.2− | 2006 09 26 | 704 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1995 03 01 | 691 | 0.2− | 0.1+ | 2006 09 28 | 699 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 07 20 | 644 | 0.1− | 0.1+ | 2006 09 28 | 704 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.5− |
| 2001 07 20 | 644 | 0.4− | 0.0 | 2006 09 28 | 704 | 0.2− | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2001 07 20 | 644 | 0.2− | 0.0 | 2006 09 28 | 699 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2004 03 27 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 704 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.5− |
| 2004 03 27 | 691 | 0.5+ | 0.5+ | 2006 09 28 | 704 | 0.4− | 0.2− | 2006 10 28 | 704 | 0.3+ | 1.1− |
| 2004 03 27 | 691 | 0.1+ | 0.5+ | 2006 09 28 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 704 | 0.3+ | 0.5+ |
| 2006 09 18 | 703 | 0.5+ | 0.3− | 2006 09 28 | 699 | 0.0 | 0.4+ | 2006 10 28 | 704 | 0.9− | 1.2+ |
| 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.9+ | 2006 10 28 | 704 | 0.3+ | 0.2− |
| 2006 09 18 | 703 | 0.8− | 0.3− | 2006 10 01 | 704 | 0.1− | 1.2+ | 2006 11 06 | 644 | 0.1+ | 0.1− |
| 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.8+ | 2006 11 06 | 644 | 0.1− | 0.0 |
| 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 10 01 | 704 | 0.2+ | 0.7+ | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2006 09 18 | 699 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.8+ | 1.1+ | 2006 11 11 | 703 | (2.2+ | 0.6+) |
| 2006 09 18 | 699 | 0.3− | 0.7− | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | (0.6+ | 2.0+) |
| 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2006 09 19 | 704 | 0.9− | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2006 09 19 | 704 | 0.6− | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2006 09 19 | 704 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.7+ | 1.0+ |
| 2006 09 19 | 704 | 1.3− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 09 19 | 704 | 0.7− | 0.9− | 2006 10 15 | 106 | 0.1+ | 0.7− | 2006 11 11 | 703 | 1.2+ | 0.4+ |
| 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 15 | 106 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.3− | 0.7− |
| 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 15 | 106 | 0.1− | 0.5− | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 15 | 106 | 0.6− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.9− |
| 2006 09 26 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2006 09 26 | 704 | 0.6− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.1− | | | | |
| 2006 09 26 | 704 | 0.1− | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | | | | |

**2006 SW$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.25882 | | (2000.0) | | +0.92160806 | +0.38703502 |
| $n$ | 0.23079055 | $\omega$ | 179.11907 | | −0.35656786 | +0.87384758 |
| $a$ | 2.6322312 | $\Omega$ | 158.04068 | | −0.15329041 | +0.29426910 |
| $e$ | 0.1330016 | $i$ | 4.45173 | | | |
| $P$ | 4.27 | $H$ | 16.5 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 691 | 0.3− | 0.7+ | 2006 09 18 | 699 | 0.3− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.0 |
| 2000 03 04 | 691 | 0.0 | 0.7− | 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 10 10 | 644 | 0.5− | 0.2− |
| 2000 03 04 | 691 | 0.5+ | 0.3− | 2006 09 19 | 704 | 0.4− | 0.7− | 2006 10 10 | 644 | 0.4+ | 0.4− |
| 2002 10 30 | 644 | 0.4− | 1.2+ | 2006 09 19 | 704 | (1.8− | 0.1−) | 2006 10 10 | 104 | 1.3+ | 0.9− |
| 2002 10 30 | 644 | 0.4− | 1.1+ | 2006 09 19 | 704 | 1.1− | 0.2− | 2006 10 10 | 104 | (1.4− | 2.3−) |
| 2002 10 30 | 644 | 0.0 | 0.7+ | 2006 09 26 | 704 | 0.0 | 0.1+ | 2006 10 10 | 104 | 0.1+ | 1.5− |
| 2002 11 13 | 644 | 0.8− | 1.1+ | 2006 09 26 | 704 | 0.1− | 0.5− | 2006 10 11 | 104 | 0.4− | 0.4+ |
| 2002 11 13 | 644 | 0.2− | 0.7+ | 2006 09 26 | 704 | 0.7− | 0.1− | 2006 10 11 | 104 | 0.1− | 0.6+ |
| 2002 11 13 | 644 | 0.3− | 0.8+ | 2006 09 26 | 704 | 1.4+ | 0.1+ | 2006 10 11 | 104 | 0.6+ | 0.3+ |
| 2005 04 11 | 691 | 0.2− | 0.7+ | 2006 09 26 | 704 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.5+ | 0.2+ |
| 2005 04 11 | 691 | 0.1+ | 0.0 | 2006 09 28 | 699 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.6+ | 0.1− |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 699 | 0.7− | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 699 | 0.8− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.7− |
| 2005 05 11 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 699 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2005 05 11 | 691 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.4− |
| 2006 09 18 | 699 | 0.4+ | 1.1+ | 2006 10 09 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.6+ |
| 2006 09 18 | 699 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.2+ | | | | |

**2006 SY$_{23}$ = 2004 FN$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.12203 | | (2000.0) | | +0.89082388 | −0.43679284 |
| $n$ | 0.22381335 | $\omega$ | 270.68260 | | +0.45208332 | +0.82467553 |
| $a$ | 2.6866560 | $\Omega$ | 115.22343 | | +0.04531539 | +0.35933590 |
| $e$ | 0.1044084 | $i$ | 7.94730 | | | |
| $P$ | 4.40 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | (0.5− | 4.5−) | 2004 03 23 | 704 | 0.8+ | 0.2− | 2006 09 19 | 703 | 0.6− | 0.8− |
| 1998 12 14 | 691 | 0.2− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.5+ | 0.0 |
| 1998 12 14 | 691 | 0.3+ | 0.2− | 2005 07 11 | G96 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2000 03 25 | 691 | 0.3− | 0.6− | 2005 07 11 | G96 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2000 03 25 | 691 | 0.2− | 0.1− | 2005 07 11 | G96 | 0.9+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2000 03 25 | 691 | 0.3− | 0.6− | 2005 07 11 | G96 | (1.9+ | 0.3+) | 2006 10 21 | 703 | 0.1+ | 1.1+ |
| 2000 05 04 | 645 | 0.1+ | 0.1+ | 2006 09 18 | 699 | 0.9− | 0.6− | 2006 10 21 | 703 | 0.7− | 0.5+ |
| 2000 05 04 | 645 | 0.1+ | 0.2+ | 2006 09 18 | 699 | (1.6− | 0.8+) | 2006 10 21 | 703 | 0.6+ | 0.6− |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.1+ | 0.9+ | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2004 03 17 | 691 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.9− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.6+ | 2006 10 23 | 644 | 0.1− | 0.3+ |
| 2004 03 23 | 704 | 0.6+ | 0.5− | 2006 09 19 | 703 | 1.3+ | 0.2− | 2006 10 23 | 644 | 0.2− | 0.2+ |

**2006 SZ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.70601 | | (2000.0) | | +0.98848459 | +0.08917791 |
| $n$ | 0.18057303 | $\omega$ | 209.73518 | | −0.05895540 | +0.97101676 |
| $a$ | 3.1000412 | $\Omega$ | 144.49812 | | −0.13936454 | +0.22175158 |
| $e$ | 0.0634818 | $i$ | 12.15249 | | | |
| $P$ | 5.46 | $H$ | 15.1 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 291 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2003 01 05 | 291 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2003 01 05 | 291 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.1− | 0.2− | 2006 10 17 | 703 | 1.4+ | 0.5+ |
| 2003 02 23 | 291 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.8− | 1.0+ | 2006 10 17 | 703 | 0.6+ | 1.0+ |
| 2003 02 23 | 291 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.3− |
| 2003 02 23 | 291 | 0.7+ | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.9+ | 2006 10 17 | 703 | 0.4− | 1.3− |
| 2005 05 13 | G96 | 0.1+ | 0.1− | 2006 10 01 | 704 | 1.2− | 0.0 | 2006 10 28 | 703 | 1.2− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | G96 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.4+ | 1.2+ | 2006 10 28 | 703 | 0.8− | 0.1+ | | |
| 2005 05 13 | G96 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.4− | 2006 10 28 | 703 | 0.9− | 0.0 | | |
| 2005 05 13 | G96 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.9+ | 0.5+ | 2006 10 28 | 703 | 0.0 | 0.5+ | | |
| 2005 06 11 | 691 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.3− | | |
| 2005 06 11 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1− | | |
| 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.4− | | |
| 2006 09 18 | 703 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.2− | 0.3− | 2006 11 17 | 644 | 0.3− | 0.6− | | |
| 2006 09 18 | 703 | 0.6+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.4− | | |
| 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 17 | 644 | 0.5− | 0.3− | | |
| 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 10 11 | 644 | 0.2+ | 0.5− | | | | | | |

**2006 SA$_{24}$ = 2004 JX$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.41174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17577220 | $\omega$ | 243.62574 | | +0.84601691 | −0.52120823 | |
| $a$ | 3.1562345 | $\Omega$ | 147.43537 | | +0.53246031 | +0.81522749 | |
| $e$ | 0.0995996 | $i$ | 12.03585 | | +0.02722868 | +0.25247995 | |
| $P$ | 5.61 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 691 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1− | 0.1− | 2006 09 29 | 699 | 1.6+ | 1.0+ |
| 2003 03 26 | 691 | 0.2− | 0.3+ | 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 09 29 | 699 | 1.6− | 1.2− |
| 2003 03 26 | 691 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.4+ | 0.6+ | 2006 09 29 | 699 | 0.5− | 0.1+ |
| 2004 05 14 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | (1.6− | 0.6−) | 2006 10 28 | 703 | 0.3− | 1.1+ |
| 2004 05 14 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.7+ | 0.1+ | 2006 10 28 | 703 | 0.5− | 1.5+ |
| 2004 05 14 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.4+ | 1.0+ | 2006 10 28 | 703 | 1.3− | 0.4− |
| 2004 05 19 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 703 | 0.4− | 0.1− | 2006 10 28 | 703 | 0.1+ | 0.0 |
| 2004 05 19 | 691 | 0.0 | 0.4+ | 2006 09 18 | 703 | 1.0+ | 0.3+ | 2006 11 16 | 703 | 0.2+ | 0.3+ |
| 2004 05 19 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3+ | 1.2+ | 2006 11 16 | 703 | 0.5− | 0.9− |
| 2005 05 13 | G96 | 0.6− | 0.0 | 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 11 16 | 703 | 0.2+ | 0.7+ |
| 2005 05 13 | G96 | 0.1+ | 0.7− | 2006 09 19 | 703 | 0.6− | 0.1+ | 2006 11 16 | 703 | 0.0 | 0.3− |
| 2005 05 13 | G96 | 0.5− | 0.4− | 2006 09 19 | 703 | 0.0 | 0.4+ | | | | |
| 2005 05 13 | G96 | 0.2+ | 0.2− | 2006 09 29 | 699 | 0.2+ | 0.8+ | | | | |

**2006 SF$_{24}$ = 2001 YP$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.60719 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17711347 | $\omega$ | 123.33131 | | +0.87460788 | −0.46142791 | |
| $a$ | 3.1402796 | $\Omega$ | 264.54565 | | +0.38012746 | +0.84314733 | |
| $e$ | 0.2335898 | $i$ | 8.59737 | | +0.30093882 | +0.27601966 | |
| $P$ | 5.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.0+ | 0.2− | 2001 12 19 | 704 | 1.0+ | 1.4− | 2006 09 19 | 699 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.1+ | 0.1− | 2001 12 19 | 704 | 1.0+ | 0.0 | 2006 09 19 | 699 | 0.0 | 1.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.3+ | 2002 01 13 | 691 | 0.4− | 0.8− | 2006 09 29 | 699 | 0.4− | 1.1− |
| 2001 12 18 | 704 | 0.4+ | 0.2+ | 2002 01 13 | 691 | 0.6− | 0.1+ | 2006 09 29 | 699 | 1.0− | 1.3+ |
| 2001 12 18 | 704 | 0.2+ | 0.2+ | 2002 01 13 | 691 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.8+ | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 09 29 | 699 | (2.1+ | 1.0+) |
| 2001 12 19 | 704 | 0.0 | 0.5+ | 2006 09 16 | 703 | 0.5+ | 1.2− | 2006 10 03 | 703 | 0.9+ | 0.4− |
| 2001 12 19 | 704 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 10 03 | 703 | 0.5− | 0.9+ |
| 2001 12 19 | 704 | 0.3− | 1.0+ | 2006 09 16 | 703 | 0.4− | 0.1− | 2006 10 03 | 703 | (1.7+ | 1.8−) |
| 2001 12 19 | 704 | 0.9+ | 1.4+ | 2006 09 19 | 699 | 1.0+ | 0.9− | 2006 10 03 | 703 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | (2.4+ | 0.4+) | 2006 09 19 | 699 | 0.4− | 0.1+ | | | | |

**2006 SS$_{24}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.41675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29865733 | $\omega$ | 335.50999 | | +0.42474849 | +0.90233585 | |
| $a$ | 2.2165997 | $\Omega$ | 319.51578 | | −0.81086839 | +0.34316237 | |
| $e$ | 0.1450121 | $i$ | 6.48614 | | −0.40259307 | +0.26082484 | |
| $P$ | 3.30 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 691 | 0.1+ | 0.1− | 2006 08 29 | 699 | 0.2+ | 0.2+ | 2006 09 22 | 104 | 0.3+ | 0.4− |
| 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 08 29 | 699 | 1.0+ | 0.5− | 2006 09 22 | 104 | 0.2+ | 1.1− |
| 2003 11 20 | 691 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.4− | 0.0 |
| 2003 12 01 | 691 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.2− | 0.8− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2003 12 01 | 691 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.1+ | 1.3− | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2003 12 17 | 691 | 0.4− | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.0 | 1.0+ |
| 2003 12 17 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2003 12 17 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.9+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2006 08 29 | 699 | 0.1− | 0.3+ | 2006 09 19 | 699 | (4.8+ | 0.6−) | | | | |
| 2006 08 29 | 699 | 0.9− | 1.1+ | 2006 09 22 | 104 | 0.4+ | 0.1+ | | | | |

**2006 SV$_{24}$ = 2002 XY$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.68380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22907250 | $\omega$ | 108.62386 | | +0.94897514 | −0.30453036 | |
| $a$ | 2.6453760 | $\Omega$ | 269.17061 | | +0.24955298 | +0.88397934 | |
| $e$ | 0.2341621 | $i$ | 4.69822 | | +0.19279391 | +0.35474186 | |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 03 | 704 | 0.1− | 1.0+ |
| 2002 12 10 | 704 | 0.5+ | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 12 10 | 704 | 0.1− | 0.7+ | 2006 09 19 | 699 | 0.2+ | 0.9+ | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.4− | 0.5+ | 2006 09 27 | 699 | 0.5− | 0.2− | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.3+ | 0.4− | 2006 09 27 | 699 | 0.7+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.2+ | 0.7− | 2006 09 27 | 699 | 1.1− | 1.0− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.8− | 0.6− | 2006 09 27 | 699 | 0.9+ | 0.8+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2002 12 11 | 704 | 0.3− | 0.8− | 2006 09 27 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2006 09 16 | 703 | 0.2+ | 1.1− | 2006 09 27 | 703 | 0.0 | 0.7− | 2006 10 17 | 703 | 0.6− | 0.2+ |
| 2006 09 16 | 703 | 0.1+ | 0.8− | 2006 09 27 | 703 | 0.0 | 0.8− | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2006 09 16 | 703 | 0.8− | 1.0+ | 2006 09 27 | 703 | 0.1− | 0.3− | 2006 10 17 | 703 | (1.9+ | 3.3−) |
| 2006 09 16 | 703 | 0.2− | 0.4+ | 2006 10 03 | 704 | 0.1− | 0.1+ | | | | |
| 2006 09 19 | 699 | 1.0+ | 1.1+ | 2006 10 03 | 704 | 0.1− | 0.5+ | | | | |

**2006 SM$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.11667 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25661380 | $\omega$ | 191.72357 | | +0.91833025 | −0.39546370 | |
| $a$ | 2.4525397 | $\Omega$ | 191.61358 | | +0.36951910 | +0.87165789 | |
| $e$ | 0.1168109 | $i$ | 4.75098 | | +0.14186324 | +0.28951855 | |
| $P$ | 3.84 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.0 | 0.1+ | 2006 09 20 | 691 | 0.2− | 0.1+ | 2006 09 29 | 291 | 0.4+ | 0.2+ |
| 2002 08 16 | 644 | 0.2+ | 0.0 | 2006 09 20 | 691 | 0.0 | 0.1+ | 2006 09 29 | 291 | 0.4+ | 0.4+ |
| 2002 08 16 | 644 | 0.1− | 0.2− | 2006 09 20 | 691 | 0.0 | 0.0 | 2006 09 29 | 291 | 0.5+ | 0.1+ |
| 2002 08 19 | 644 | 0.6− | 0.1+ | 2006 09 20 | 704 | 1.0− | 0.5− | 2006 09 30 | 704 | (1.8+ | 0.6+) |
| 2002 08 19 | 644 | 0.1− | 0.0 | 2006 09 20 | 704 | 0.3− | 0.4− | 2006 09 30 | 704 | 1.1+ | 0.7+ |
| 2002 08 19 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.1+ | 0.4− | 2006 09 30 | 704 | 0.1+ | 0.6− |
| 2002 08 27 | 644 | 0.0 | 0.2+ | 2006 09 20 | 704 | 0.4− | 0.1− | 2006 10 01 | 703 | 1.4− | 1.0− |
| 2002 08 27 | 644 | 0.2+ | 0.1+ | 2006 09 20 | 704 | 0.3− | 0.6− | 2006 10 01 | 703 | 1.3− | 0.9+ |
| 2002 08 27 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.2+ | 2006 10 01 | 703 | 1.2− | 0.4+ |
| 2006 08 21 | 691 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.2+ | 0.7+ | 2006 10 01 | 703 | (1.6+ | 0.9−) |
| 2006 08 21 | 691 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.9+ | 0.9+ | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2006 08 21 | 691 | 0.4+ | 0.2− | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2006 09 16 | 699 | 1.2+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2006 09 16 | 699 | 0.6− | 0.5+ | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2006 09 16 | 699 | 0.5− | 0.1− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2006 09 16 | 699 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2006 09 19 | 699 | 1.4− | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.5− |
| 2006 09 19 | 699 | (0.2− | 1.6+) | 2006 09 29 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.0 | 1.1− |
| 2006 09 19 | 699 | 0.8− | 0.4− | 2006 09 29 | 704 | 0.0 | 0.6+ | 2006 10 16 | 703 | (0.6+ | 2.0−) |
| 2006 09 19 | 699 | 1.0− | 1.0+ | 2006 09 29 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.4− |

**2006 SR$_{25}$ = 2004 GR$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.44485 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17240862 | $\omega$ | 140.50546 | | +0.87888490 | +0.47669090 | |
| $a$ | 3.1971528 | $\Omega$ | 191.06798 | | −0.45803832 | +0.83268823 | |
| $e$ | 0.1129013 | $i$ | 5.40601 | | −0.13327501 | +0.28177312 | |
| $P$ | 5.72 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 08 18 | 644 | 0.2− | 0.5− | 2006 09 25 | 699 | 0.6+ | 0.1− |
| 2004 04 12 | 691 | 0.3− | 0.1+ | 2006 09 16 | 699 | 1.3− | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.2+ |
| 2004 04 12 | 691 | 0.0 | 0.4+ | 2006 09 16 | 699 | 1.0+ | 0.8+ | 2006 09 25 | 699 | 0.1− | 0.2− |
| 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.9+ |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 699 | (1.0− | 1.7+) | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2004 04 19 | 691 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 1.3+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.7+ |
| 2005 06 27 | G96 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.7− | 0.7− | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2005 06 27 | G96 | 0.1+ | 0.2− | 2006 09 19 | 699 | 1.2+ | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2005 06 27 | G96 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 10 19 | G96 | 0.6+ | 0.2+ |
| 2005 06 27 | G96 | 0.3− | 0.1− | 2006 09 19 | 703 | 1.3− | 0.2+ | 2006 10 19 | G96 | 0.5− | 0.1− |
| 2005 07 12 | G96 | 0.2− | 0.5− | 2006 09 19 | 699 | (3.0+ | 1.2+) | 2006 10 19 | G96 | 0.1+ | 0.1+ |
| 2005 07 12 | G96 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.5+ |
| 2005 07 12 | G96 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.6+ |
| 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2006 08 18 | 644 | 0.4− | 0.2− | 2006 09 20 | 704 | 0.2+ | 0.9+ | | | | |
| 2006 08 18 | 644 | 0.8− | 0.1+ | 2006 09 20 | 704 | (1.1+ | 1.7+) | | | | |

**2006 SW$_{25}$ = 2004 BP$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.74837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22809097 | $\omega$ | 301.91989 | | −0.24122747 | +0.96158001 | |
| $a$ | 2.6529597 | $\Omega$ | 313.52198 | | −0.81817566 | −0.27413096 | |
| $e$ | 0.1138344 | $i$ | 10.41207 | | −0.52191752 | −0.01470008 | |
| $P$ | 4.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 07 16 | 910 | 0.0 | 0.3− | 2005 05 02 | E12 | 0.3− | 0.7+ | 2006 09 27 | 703 | (2.2+ | 1.0+) |
| 1997 07 16 | 910 | 0.4+ | 0.1− | 2005 06 27 | 644 | 0.5+ | 0.5+ | 2006 09 27 | 703 | (3.9+ | 1.6+) |
| 1997 07 16 | 910 | 0.0 | 0.2− | 2005 06 27 | 644 | 0.2+ | 0.4+ | 2006 09 27 | 703 | 0.3+ | 0.4− |
| 2002 10 05 | 704 | (0.9− | 1.7+) | 2005 06 27 | 644 | 0.6+ | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | 0.0 | 0.4+ | 2006 09 06 | 644 | 0.3− | 0.2+ | 2006 09 29 | 699 | 0.5− | 0.7+ |
| 2002 10 05 | 704 | 0.3− | 0.7− | 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.8+ |
| 2004 01 18 | 691 | 0.1− | 0.1+ | 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.6− | 0.3+ |
| 2004 01 18 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 10 03 | 703 | (0.2+ | 2.6+) |
| 2004 01 18 | 691 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.1− | 1.0− | 2006 10 03 | 703 | 1.0+ | 1.0+ |
| 2004 01 22 | 704 | 0.6+ | 1.4+ | 2006 09 16 | 703 | 0.5− | 0.1− | 2006 10 03 | 703 | (1.3− | 2.6+) |
| 2004 01 22 | 704 | 0.3+ | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 10 03 | 703 | (0.1+ | 4.0+) |
| 2004 01 22 | 704 | 0.2− | 0.9+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2004 01 22 | 704 | 0.0 | 0.8+ | 2006 09 19 | 699 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2005 05 02 | E12 | 0.2+ | 0.9+ | 2006 09 19 | 699 | 0.7− | 0.5− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2005 05 02 | E12 | 0.1− | 0.8+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | | | | |
| 2005 05 02 | E12 | 0.5+ | 0.9+ | 2006 09 27 | 703 | 1.1− | 0.2+ | | | | |

**2006 SY$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.64428 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18622808 | $\omega$ | 344.54810 | | +0.63485568 | +0.76354087 | |
| $a$ | 3.0369614 | $\Omega$ | 324.62081 | | −0.68548725 | +0.48606340 | |
| $e$ | 0.1048817 | $i$ | 11.77650 | | −0.35646248 | +0.42514433 | |
| $P$ | 5.29 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 704 | 0.8+ | 0.7− | 2006 09 19 | 699 | 0.8+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2001 08 25 | 704 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.8+ | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 2001 08 25 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 699 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2001 10 18 | 704 | 0.2+ | 0.4− | 2006 09 24 | 106 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2001 10 18 | 704 | 0.6− | 0.3− | 2006 09 24 | 106 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2001 10 18 | 704 | 0.8− | 1.1− | 2006 09 24 | 106 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.2− |
| 2001 10 18 | 704 | 0.8− | 0.3+ | 2006 09 24 | 106 | 1.0+ | 0.4+ | 2006 10 17 | 691 | 0.3+ | 0.2+ |
| 2001 11 12 | 704 | 0.6− | 0.2− | 2006 09 27 | 703 | 0.5+ | 0.5+ | 2006 10 17 | 691 | 0.4+ | 0.0 |
| 2001 11 12 | 704 | 0.7+ | 0.6+ | 2006 09 27 | 703 | 0.9− | 0.9+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2001 11 12 | 704 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.6+ | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.3+ | 0.9+ | 2006 09 29 | 699 | 1.1− | 0.9+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2006 08 29 | 703 | 0.7− | 0.5− | 2006 09 29 | 699 | 0.3+ | 0.8− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2006 08 29 | 703 | 1.4− | 0.5− | 2006 09 29 | 699 | 0.9+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.2− |
| 2006 08 29 | 703 | 1.1− | 0.6− | 2006 10 03 | 703 | 1.2− | 0.9− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2006 08 29 | 703 | 1.2− | 1.1− | 2006 10 03 | 703 | 1.0− | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2006 08 29 | 699 | 0.4+ | 0.0 | 2006 10 03 | 703 | 0.3+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2006 08 29 | 699 | 0.5+ | 0.0 | 2006 10 03 | 703 | 0.7− | 1.0+ | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2006 08 29 | 699 | (1.6− | 0.7+) | 2006 10 09 | 644 | 0.3+ | 0.4+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 2006 08 29 | 699 | 0.8+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 10 09 | 644 | 0.3+ | 0.3+ | 2006 10 24 | 644 | 0.5+ | 0.2− |
| 2006 09 16 | 703 | 0.5+ | 0.5− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.3+ | 0.1+ |
| 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.6− |
| 2006 09 16 | 703 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.0 | | | | |
| 2006 09 19 | 699 | 0.6− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1− | | | | |

**2006 SD$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.98545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21604206 | $\omega$ | 93.68137 | | +0.99001219 | +0.09819184 | |
| $a$ | 2.7507039 | $\Omega$ | 260.70279 | | −0.12969613 | +0.91564653 | |
| $e$ | 0.1510306 | $i$ | 5.88378 | | +0.05527010 | +0.38980737 | |
| $P$ | 4.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 1.3− | 0.2− | 2006 09 19 | 699 | 0.1+ | 0.2− | 2006 10 03 | 703 | 0.2− | 1.0+ |
| 2002 12 06 | 704 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.4+ | 2006 10 03 | 703 | 0.2− | 0.3+ |
| 2002 12 06 | 704 | 0.7− | 0.6− | 2006 09 19 | 699 | 0.4− | 0.8− | 2006 10 03 | 703 | 0.2− | 0.0 |
| 2002 12 06 | 704 | 0.4− | 0.7+ | 2006 09 19 | 699 | 1.2+ | 0.3+ | 2006 10 03 | 703 | 0.2− | 0.2− |
| 2002 12 06 | 704 | 0.7+ | 0.3− | 2006 09 21 | 106 | 0.4− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.0 | 0.6+ | 2006 09 21 | 106 | 0.7− | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2003 01 01 | 291 | 0.6+ | 0.3− | 2006 09 21 | 106 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.2+ |
| 2003 01 01 | 291 | 0.3+ | 0.2+ | 2006 09 21 | 106 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2003 01 01 | 291 | 0.4− | 0.1+ | 2006 09 27 | 699 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2006 09 06 | 644 | 0.4− | 0.1− | 2006 09 27 | 699 | 0.9− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2006 09 06 | 644 | 0.1− | 0.5+ | 2006 09 27 | 699 | 0.3+ | 1.2+ | 2006 10 17 | 703 | (3.6+ | 0.3−) |
| 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.6− |
| 2006 09 16 | 703 | 0.2− | 0.3+ | 2006 09 27 | 703 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.7+ | 1.3− |
| 2006 09 16 | 703 | 0.6+ | 1.0− | 2006 09 27 | 703 | 1.1− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2006 09 16 | 703 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.2+ | | | | |
| 2006 09 16 | 703 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.4+ | | | | |

**2006 SO$_{26}$ = 2000 KV$_{45}$ = 2005 GY$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.62316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18809021 | $\omega$ | 139.87069 | | +0.43795161 | +0.89861486 | |
| $a$ | 3.0168839 | $\Omega$ | 156.06762 | | −0.84052391 | +0.41965443 | |
| $e$ | 0.2115655 | $i$ | 3.71197 | | −0.31893251 | +0.12799022 | |
| $P$ | 5.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 691 | 0.0 | 0.1+ | 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 1.0− | 0.7+ |
| 2000 05 30 | 691 | 0.5− | 0.2− | 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.1+ | 0.8− |
| 2000 05 30 | 691 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.2− | 1.1+ | 2006 09 19 | 699 | 0.6− | 0.2− |
| 2000 06 03 | 691 | 0.3+ | 0.1− | 2006 08 28 | 703 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.6− |
| 2000 06 03 | 691 | 0.0 | 0.3− | 2006 08 28 | 703 | 0.5− | 1.0+ | 2006 09 30 | 703 | 0.4+ | 0.4− |
| 2000 06 03 | 691 | 0.1+ | 0.2− | 2006 08 28 | 703 | 0.5+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2005 04 12 | G96 | 0.9− | 1.4+ | 2006 09 16 | 699 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.3+ | 0.2− |
| 2005 04 12 | G96 | 0.1− | 0.1+ | 2006 09 16 | 699 | 0.7+ | 0.7− | 2006 09 30 | G96 | 0.0 | 0.4− |
| 2005 04 12 | G96 | 0.1− | 0.5− | 2006 09 16 | 699 | 0.9− | 0.6− | 2006 09 30 | 703 | 0.3− | 0.4+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 09 16 | 699 | 0.8+ | 0.6− | 2006 09 30 | 703 | 0.2− | 0.5+ | |
| 2005 04 14 | 691 | 0.0 | 0.2− | 2006 09 19 | 699 | 0.4+ | 0.0 | | | | | |

**2006 SR$_{26}$ = 2002 TV$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.33690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24288591 | $\omega$ | 186.27585 | | +0.98889215 | +0.13679873 | |
| $a$ | 2.5441019 | $\Omega$ | 165.46891 | | −0.12430274 | +0.97555651 | |
| $e$ | 0.1811183 | $i$ | 13.39470 | | −0.08149320 | +0.17197558 | |
| $P$ | 4.06 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.2− | 0.0 | 2006 08 27 | 699 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.1+ | |
| 2002 09 05 | 704 | 0.6+ | 0.4− | 2006 09 16 | 704 | 0.2+ | 1.0+ | 2006 09 30 | 703 | 0.4− | 0.7+ | |
| 2002 09 05 | 704 | 0.4− | 0.5− | 2006 09 16 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.1− | |
| 2002 09 05 | 704 | 0.1− | 0.4− | 2006 09 16 | 704 | 0.2− | 0.7− | 2006 09 30 | 703 | 0.6− | 0.0 | |
| 2002 09 14 | 608 | 0.2− | 1.2− | 2006 09 16 | 699 | 0.1+ | 1.0− | 2006 10 11 | 644 | 0.0 | 0.7− | |
| 2002 09 14 | 608 | 0.2− | 1.0− | 2006 09 16 | 699 | 0.6− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | |
| 2002 09 14 | 608 | 0.1+ | 1.3− | 2006 09 16 | 699 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.4− | |
| 2002 10 01 | 608 | 0.3+ | 1.1+ | 2006 09 16 | 699 | 0.8− | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.6− | |
| 2002 10 01 | 608 | (0.2− | 1.7+) | 2006 09 19 | 699 | 0.7− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.5− | |
| 2002 10 01 | 608 | 0.5+ | 1.3+ | 2006 09 19 | 699 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.4− | |
| 2002 10 04 | 704 | 1.4− | 1.0+ | 2006 09 19 | 699 | 0.1+ | 0.5− | 2006 10 19 | 703 | 0.6− | 0.2+ | |
| 2002 10 04 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.1− | 2006 10 19 | 703 | 1.1− | 0.8+ | |
| 2002 10 04 | 704 | 0.0 | 0.4+ | 2006 09 22 | 704 | (1.9+ | 0.1−) | 2006 10 19 | 703 | 0.6+ | 0.0 | |
| 2002 10 04 | 704 | 0.1− | 0.8+ | 2006 09 22 | 704 | 1.0+ | 0.3+ | 2006 10 19 | 703 | (0.4− | 1.9−) | |
| 2002 10 04 | 704 | 0.6+ | 0.4+ | 2006 09 22 | 704 | 0.8+ | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.4− | |
| 2006 08 18 | 699 | 0.4− | 0.2+ | 2006 09 22 | 704 | 0.9+ | 0.8− | 2006 10 23 | 644 | 0.1− | 0.2− | |
| 2006 08 18 | 699 | 0.2+ | 0.1+ | 2006 09 22 | 704 | 0.1+ | 0.9+ | 2006 10 23 | 644 | 0.3− | 0.2+ | |
| 2006 08 18 | 699 | 1.3− | 0.6+ | 2006 09 26 | 704 | 0.4+ | 0.5+ | 2006 10 24 | 644 | 0.2+ | 0.5− | |
| 2006 08 18 | 699 | (2.0− | 0.9−) | 2006 09 26 | 704 | 0.0 | 0.9− | 2006 10 24 | 644 | 0.0 | 0.2− | |
| 2006 08 27 | 699 | 0.4− | 0.7+ | 2006 09 26 | 704 | 0.2+ | 0.5− | 2006 10 24 | 644 | 0.3− | 0.0 | |
| 2006 08 27 | 699 | 0.8+ | 0.5+ | 2006 09 26 | 704 | 1.0+ | 0.2− | | | | | |

**2006 SS$_{26}$ = 2006 QR$_{96}$ = 2000 FC$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.17211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21826883 | $\omega$ | 336.52725 | | +0.99338471 | +0.11171632 | |
| $a$ | 2.7319636 | $\Omega$ | 17.12205 | | −0.08575811 | +0.87563267 | |
| $e$ | 0.0825191 | $i$ | 5.17910 | | −0.07636994 | +0.46987966 | |
| $P$ | 4.52 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.0 | 0.2+ | 2002 12 11 | 644 | 0.3− | 0.8+ | 2006 09 19 | 703 | 0.3− | 0.5− | |
| 2000 03 25 | 691 | 0.1+ | 0.5+ | 2005 02 10 | 809 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.3− | 0.9− | |
| 2000 03 25 | 691 | 0.0 | 0.2− | 2005 02 10 | 809 | 0.4− | 0.4− | 2006 09 19 | 699 | 0.1+ | 0.2+ | |
| 2000 04 05 | 704 | 0.4+ | 1.1+ | 2005 02 10 | 809 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.0 | 0.8+ | |
| 2000 04 05 | 704 | 1.0+ | 0.7+ | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 22 | 704 | (0.2+ | 1.6+) | |
| 2000 04 05 | 704 | 0.8+ | 0.9+ | 2006 08 16 | 644 | 0.2− | 0.3+ | 2006 09 22 | 704 | 0.2+ | 0.2+ | |
| 2000 04 05 | 704 | 0.7+ | 0.1− | 2006 08 16 | 644 | 0.3− | 0.1− | 2006 09 22 | 704 | 0.6+ | 0.1+ | |
| 2000 04 05 | 691 | 0.1+ | 0.0 | 2006 08 22 | 644 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.6+ | 0.9+ | |
| 2000 04 05 | 691 | 0.0 | 0.1+ | 2006 08 22 | 644 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.7+ | 0.8+ | |
| 2000 04 05 | 691 | 0.3− | 0.1+ | 2006 08 22 | 644 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.4− | 0.6+ | |
| 2002 11 12 | 704 | 0.2− | 0.1− | 2006 09 16 | 699 | 0.8+ | 1.1+ | 2006 09 25 | 699 | 0.9+ | 0.5− | |
| 2002 11 12 | 704 | 0.2+ | 0.4− | 2006 09 16 | 699 | (2.5− | 0.8+) | 2006 09 26 | 691 | 0.2− | 0.2+ | |
| 2002 11 12 | 704 | 1.4+ | 0.6+ | 2006 09 16 | 699 | 0.2− | 0.8− | 2006 09 26 | 691 | 0.4− | 0.3+ | |
| 2002 12 06 | 704 | 0.4− | 0.1+ | 2006 09 16 | 699 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.4+ | |
| 2002 12 06 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | (0.5− | 1.9+) | 2006 11 15 | G96 | 0.2+ | 0.2− | |
| 2002 12 06 | 704 | 0.5− | 0.8− | 2006 09 19 | 703 | 1.1− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.2− | |
| 2002 12 11 | 644 | 0.6− | 0.4+ | 2006 09 19 | 699 | 0.6+ | 0.1− | 2006 11 15 | G96 | 0.5− | 0.1− | |
| 2002 12 11 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.6+ | 0.9− | 2006 11 15 | G96 | 0.8− | 0.3− | |

**2006 SV$_{26}$ = 2000 ED$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.01947 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22401975 | $\omega$ | 230.13439 | | −0.63139486 | +0.77545506 | |
| $a$ | 2.6850055 | $\Omega$ | 0.73491 | | −0.61479818 | −0.49809266 | |
| $e$ | 0.0666049 | $i$ | 14.25978 | | −0.47261373 | −0.38803756 | |
| $P$ | 4.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 11 | 699 | 0.5+ | 0.4+ | 2006 09 16 | 699 | (2.9+ | 0.7+) | 2006 10 11 | 644 | 0.1+ | 0.6+ | |
| 2000 03 11 | 699 | 0.0 | 0.4+ | 2006 09 16 | 699 | (2.0+ | 0.4−) | 2006 10 11 | 644 | 0.0 | 0.4+ | |
| 2000 03 11 | 699 | 0.5+ | 0.7+ | 2006 09 16 | 699 | 0.7+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2+ | |
| 2000 03 11 | 699 | 0.3+ | 0.7+ | 2006 09 19 | 699 | 0.8+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2+ | |
| 2000 03 12 | 704 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.2+ | |
| 2000 03 12 | 704 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.5− | 0.4− | 2006 10 19 | G96 | (2.7− | 1.7+) | |
| 2000 03 12 | 704 | 1.0+ | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.1− | |
| 2000 03 12 | 704 | 0.7+ | 0.4+ | 2006 09 25 | 699 | 0.0 | 1.2+ | 2006 10 22 | 703 | 0.3+ | 0.6− | |
| 2000 03 12 | 704 | 0.7− | 1.3− | 2006 09 25 | 699 | 0.2+ | 1.1+ | 2006 10 22 | 703 | 0.0 | 0.1+ | |
| 2002 10 30 | 608 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.6+ | 0.5− | 2006 10 22 | 703 | 0.8− | 0.1+ | |
| 2002 10 30 | 608 | 0.2− | 0.6− | 2006 09 25 | 699 | 0.2+ | 0.7+ | 2006 11 14 | G96 | 0.0 | 0.7+ | |
| 2002 10 30 | 608 | 0.2+ | 0.2− | 2006 10 01 | 703 | 0.8− | 0.7− | 2006 11 14 | G96 | 0.4+ | 0.3+ | |
| 2006 08 18 | 691 | 0.4− | 0.1+ | 2006 10 01 | 703 | 0.3+ | 1.0− | 2006 11 14 | G96 | 0.3+ | 0.5+ | |
| 2006 08 18 | 691 | 0.3− | 0.0 | 2006 10 01 | 703 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2+ | |
| 2006 08 18 | 691 | 0.4− | 0.2− | 2006 10 01 | 703 | 0.5− | 0.2− | | | | | |
| 2006 09 16 | 699 | 0.9+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | | | | | |

**2006 SW$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.81290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30064938 | $\omega$ | 333.70857 | | +0.85990964 | +0.51039733 | |
| $a$ | 2.2067976 | $\Omega$ | 355.58172 | | −0.45067033 | +0.75263372 | |
| $e$ | 0.1807659 | $i$ | 5.26509 | | −0.23969077 | +0.41597722 | |
| $P$ | 3.28 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 691 | 0.3+ | 0.5+ | 2006 09 16 | 699 | 0.0 | 0.1+ | 2006 09 24 | 106 | 0.9+ | 0.4− | |
| 1993 10 09 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 699 | 0.5− | 0.8+ | 2006 09 24 | 106 | 0.4+ | 1.0− | |
| 1993 10 09 | 691 | 0.6− | 0.3− | 2006 09 16 | 699 | 0.3− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.0 | |
| 2003 11 20 | 691 | 0.3+ | 0.0 | 2006 09 16 | 699 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | |
| 2003 11 20 | 691 | 0.3+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.2− | |
| 2003 11 20 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.3− | |
| 2003 12 01 | 691 | 0.3− | 0.2− | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.3− | |
| 2003 12 01 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.9− | 0.6+ | 2006 10 23 | G96 | 0.3− | 0.0 | |
| 2003 12 01 | 691 | 0.3− | 0.2− | 2006 09 20 | 704 | 0.6− | 0.4− | 2006 10 23 | G96 | 0.0 | 0.0 | |
| 2006 08 18 | 691 | 0.2− | 0.1+ | 2006 09 20 | 704 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.7− | |
| 2006 08 18 | 691 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.4− | 0.2− | |
| 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.1− | |
| 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 20 | 704 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.0 | |
| 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 24 | 106 | 0.9+ | 0.5− | | | | | |
| 2006 08 27 | 691 | 0.0 | 0.1− | 2006 09 24 | 106 | 0.7+ | 0.7− | | | | | |

**2006 SX$_{26}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.75445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27765396 | $\omega$ | 15.05175 | | +0.73804935 | +0.66826208 | |
| $a$ | 2.3270201 | $\Omega$ | 302.62825 | | −0.62995129 | +0.63287577 | |
| $e$ | 0.1334471 | $i$ | 6.36195 | | −0.24175306 | +0.39101669 | |
| $P$ | 3.55 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 09 | 691 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.4− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.0 | |
| 1994 03 09 | 691 | 1.5− | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.4+ | 0.0 | |
| 1994 03 09 | 691 | 0.8+ | 0.4− | 2006 09 27 | 703 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.3− | |
| 2004 01 18 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.4− | |
| 2004 01 18 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 703 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.1− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.6− | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2006 08 29 | 699 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2006 08 29 | 699 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2006 08 29 | 699 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 08 29 | 699 | 0.1+ | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 23 | 703 | 0.2− | 0.5+ |
| 2006 09 16 | 703 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 16 | 703 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 10 23 | 703 | 0.2+ | 0.5+ |
| 2006 09 16 | 703 | 0.1− | 0.3+ | 2006 10 17 | 703 | 1.8+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 09 16 | 703 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8− | 0.2+ | 2006 10 23 | 703 | 0.2+ | 0.7+ |
| 2006 09 19 | 699 | 0.5+ | 0.2− | 2006 10 17 | 703 | 0.7− | 0.6+ | 2006 10 23 | 703 | 0.8− | 1.5− |
| 2006 09 19 | 699 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.3+ | 0.2− |

**2006 SA$_{27}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.91765 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17845508 | $\omega$ | 51.76584 | | +0.54593741 | +0.82975254 | |
| $a$ | 3.1245210 | $\Omega$ | 251.70602 | | −0.80181182 | +0.47726806 | |
| $e$ | 0.1875282 | $i$ | 7.01949 | | −0.24300236 | +0.28935432 | |
| $P$ | 5.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 16 | 703 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2004 03 16 | 691 | 0.3+ | 0.0 | 2006 09 16 | 703 | 1.5− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2004 03 27 | 691 | 0.0 | 0.7+ | 2006 09 19 | 699 | 1.6+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.4+ |
| 2004 03 27 | 691 | 0.4+ | 0.3− | 2006 09 19 | 699 | 0.4− | 0.8− | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2004 03 27 | 691 | 0.6− | 0.2+ | 2006 09 19 | 699 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2005 05 22 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 703 | 0.4− | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2005 05 22 | 644 | 0.1− | 0.1− | 2006 09 27 | 703 | 1.0− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.5+ |
| 2005 05 22 | 644 | 0.0 | 0.3+ | 2006 09 27 | 703 | 1.0+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2006 09 16 | 703 | 1.0− | 0.3+ | 2006 09 27 | 703 | 0.6− | 0.9− | 2006 10 20 | 644 | 0.5+ | 0.4− |
| 2006 09 16 | 703 | 0.9+ | 0.9− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.2+ |

**2006 SK$_{27}$ = 2001 QO$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.79291 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21093085 | $\omega$ | 44.14283 | | +0.94941904 | −0.30763129 | |
| $a$ | 2.7949625 | $\Omega$ | 333.58023 | | +0.23432259 | +0.82759712 | |
| $e$ | 0.1702187 | $i$ | 8.13730 | | +0.20903685 | +0.46951677 | |
| $P$ | 4.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.3+ | 0.4− |
| 2001 08 16 | 704 | 0.1+ | 1.0+ | 2006 09 19 | 699 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.0 |
| 2001 08 16 | 704 | 0.4− | 0.6− | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2001 08 20 | 807 | 0.4− | 0.2− | 2006 09 27 | 699 | 0.5− | 0.7− | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 2001 08 20 | 807 | 0.4− | 0.1− | 2006 09 27 | 699 | 1.2+ | 0.1− | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2001 09 21 | 691 | 0.0 | 0.1+ | 2006 09 27 | 699 | 0.5− | 0.8+ | 2006 10 17 | 703 | 0.6+ | 0.2+ |
| 2001 09 21 | 691 | 0.2+ | 0.1− | 2006 09 27 | 699 | (1.8+ | 0.7+) | 2006 10 17 | 703 | 0.3+ | 0.9− |
| 2001 09 21 | 691 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.6+ |
| 2006 09 16 | 703 | 0.9− | 0.1− | 2006 09 27 | 703 | 0.3− | 0.8− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 09 16 | 703 | 1.4+ | 0.1− | 2006 09 27 | 703 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2006 09 16 | 703 | 0.9− | 0.4+ | 2006 09 27 | 703 | 0.6− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 16 | 703 | (0.8+ | 2.0+) | 2006 10 10 | 644 | 0.2+ | 0.0 | | | | |
| 2006 09 19 | 699 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.0 | | | | |

**2006 SL$_{27}$ = 2004 GG$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.92501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22465581 | $\omega$ | 257.20790 | | −0.14865578 | −0.97858050 | |
| $a$ | 2.6799351 | $\Omega$ | 202.87169 | | +0.98812177 | −0.14132017 | |
| $e$ | 0.0522155 | $i$ | 21.49463 | | +0.03894639 | −0.14969571 | |
| $P$ | 4.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2004 04 12 | 644 | 0.8− | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2004 04 12 | 644 | 1.0− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 04 19 | 704 | 0.5+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2004 04 19 | 704 | 1.0+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2004 04 19 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 04 19 | 704 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.6+ |
| 2006 09 16 | 703 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2006 09 16 | 703 | 0.2− | 0.4− | 2006 10 19 | 695 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2006 09 16 | 703 | 0.4− | 0.6− | 2006 10 19 | 695 | 0.2− | 0.1+ | 2006 11 11 | 703 | (3.2+ | 1.2−) |
| 2006 09 16 | 703 | 0.4+ | 0.2− | 2006 10 20 | 695 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | 695 | 0.1− | 0.0 | 2006 11 11 | 703 | (2.0− | 2.1−) |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.6− | 0.9+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.7− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.9− | 0.7− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2006 09 30 | 691 | 0.9− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.7+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 10 11 | 691 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | | | | |

**2006 SN$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.97206 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28482849 | $\omega$ | 173.09587 | | +0.84757155 | +0.53015254 | |
| $a$ | 2.2877774 | $\Omega$ | 154.84408 | | −0.48951535 | +0.79827701 | |
| $e$ | 0.2321262 | $i$ | 3.19344 | | −0.20493214 | +0.28581829 | |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1999 09 07 | 704 | 0.4− | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.5+ |
| 1999 09 07 | 704 | 0.2+ | 0.1+ | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.2− |
| 1999 09 07 | 704 | 1.3+ | 1.2− | 2006 09 16 | 699 | 0.7− | 0.6− | 2006 09 30 | 703 | 0.4+ | 0.4+ |
| 1999 09 07 | 704 | 0.0 | 0.4+ | 2006 09 16 | 699 | 0.9− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.0 |
| 1999 09 14 | 704 | 0.1− | 0.4− | 2006 09 16 | 699 | 0.7+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.0 |
| 1999 09 14 | 704 | 0.2+ | 0.4− | 2006 09 16 | 699 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 1999 09 14 | 704 | 0.7− | 0.9− | 2006 09 19 | 691 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1999 09 14 | 704 | 0.4− | 0.4− | 2006 09 19 | 691 | 0.7− | 0.5+ | 2006 10 15 | 703 | 0.7− | 0.7− |
| 1999 09 14 | 704 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.0 | 0.1+ |
| 1999 10 02 | 704 | 1.4+ | 0.5+ | 2006 09 20 | 699 | 0.6+ | 0.2+ | 2006 10 15 | 703 | 0.3− | 0.5− |
| 1999 10 02 | 704 | 0.9+ | 0.4+ | 2006 09 20 | 699 | 0.4− | 0.4− | 2006 10 15 | 703 | 0.1− | 0.0 |
| 1999 10 02 | 704 | 0.4+ | 0.7− | 2006 09 20 | 699 | 0.7+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 1999 10 02 | 704 | 0.4− | 0.8− | 2006 09 20 | 699 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 1999 10 15 | 704 | 0.2+ | 0.5− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 1999 10 15 | 704 | 0.7− | 0.4− | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1999 10 15 | 704 | 0.5+ | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 1999 10 15 | 704 | 0.4− | 1.0− | 2006 09 26 | 704 | 0.6− | 0.6− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2002 06 03 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.7− | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2002 06 03 | 644 | 0.3+ | 0.7+ | 2006 09 26 | 704 | 1.0− | 0.8+ | 2006 11 07 | 644 | 0.2+ | 0.3+ |
| 2002 06 03 | 644 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.3+ |

**2006 SO$_{27}$ = 2006 LP$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.68165 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24307826 | $\omega$ | 2.24311 | | +0.37327312 | +0.87294854 | |
| $a$ | 2.5427596 | $\Omega$ | 289.80501 | | −0.85628022 | +0.19391950 | |
| $e$ | 0.2415896 | $i$ | 19.49925 | | −0.35700330 | +0.44761152 | |
| $P$ | 4.05 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 608 | 0.6+ | 0.2+ | 2002 10 10 | 704 | 0.6− | 0.0 | 2006 07 24 | 704 | 0.8+ | 0.3− |
| 2001 03 04 | 608 | 0.5+ | 0.4+ | 2002 10 10 | 704 | 0.8− | 0.7+ | 2006 07 24 | 704 | 1.2− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 04 | 608 | 0.7+ | 0.6+ | 2002 10 10 | 704 | 0.3− | 0.2+ | 2006 07 24 | 704 | 0.9+ | 0.0 |
| 2002 08 01 | 704 | 0.2+ | 0.1− | 2002 10 10 | 644 | 0.3+ | 0.6+ | 2006 07 24 | 704 | 0.0 | 0.5+ |
| 2002 08 01 | 704 | 0.3− | 0.1+ | 2002 10 10 | 644 | 0.2+ | 0.5+ | 2006 09 16 | 703 | 0.2+ | 0.5− |
| 2002 08 01 | 704 | 0.4− | 0.1+ | 2002 10 10 | 644 | 0.3+ | 0.3+ | 2006 09 16 | 703 | 0.6− | 0.0 |
| 2002 08 01 | 704 | 0.1− | 0.2+ | 2004 01 16 | 691 | 0.0 | 0.3− | 2006 09 16 | 703 | 0.5− | 0.1+ |
| 2002 08 01 | 704 | 0.1− | 0.6+ | 2004 01 16 | 691 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.3− | 0.2+ |
| 2002 08 01 | 704 | 0.7− | 0.4− | 2004 01 16 | 691 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.2+ |
| 2002 08 01 | 704 | 1.0+ | 0.5− | 2006 06 03 | 703 | 0.2− | 0.7− | 2006 09 19 | 703 | 0.4+ | 0.4+ |
| 2002 08 01 | 704 | 0.6− | 0.4+ | 2006 06 03 | 703 | 0.4− | 1.4− | 2006 09 19 | 703 | 0.1+ | 0.3− |
| 2002 09 15 | 699 | 0.2+ | 0.2+ | 2006 06 03 | 703 | 0.0 | 0.5+ | 2006 09 19 | 703 | 0.0 | 0.0 |
| 2002 09 15 | 699 | 0.2+ | 0.6− | 2006 06 03 | 703 | 0.2− | 0.3− | 2006 09 21 | 699 | 1.4+ | 0.0 |
| 2002 09 15 | 699 | 0.7+ | 0.2− | 2006 06 21 | 703 | 1.3+ | 0.8− | 2006 09 21 | 699 | 0.1− | 0.2− |
| 2002 09 15 | 699 | 0.1+ | 0.1+ | 2006 06 21 | 703 | 0.6− | 1.0− | 2006 09 21 | 699 | 0.4+ | 0.1+ |
| 2002 10 10 | 704 | 0.8− | 1.0+ | 2006 06 21 | 703 | 0.6+ | 0.4− | 2006 09 21 | 699 | 0.2+ | 0.2+ |
| 2002 10 10 | 704 | 1.1− | 0.0 | 2006 06 21 | 703 | 0.1− | 0.3− | | | | |

**2006 SW$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.31631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27163440 | $\omega$ | 174.51214 | | +0.69484655 | −0.71612807 | |
| $a$ | 2.3612730 | $\Omega$ | 231.45165 | | +0.65656543 | +0.66911396 | |
| $e$ | 0.2270371 | $i$ | 4.83698 | | +0.29344525 | +0.19861293 | |
| $P$ | 3.63 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 1.0− | 0.4+ | 1999 10 15 | 704 | 0.3+ | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.3+ |
| 1995 07 26 | 691 | 2.4− | 0.7− | 1999 10 15 | 704 | 1.6+ | 0.4+ | 2006 09 17 | 691 | 0.1− | 0.2− |
| 1995 07 26 | 691 | (3.7+ | 0.5−) | 1999 10 15 | 704 | 1.0+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ |
| 1997 03 10 | 691 | 0.1+ | 0.6− | 1999 10 15 | 704 | 0.1− | 0.7+ | 2006 09 19 | 691 | 0.2+ | 0.1− |
| 1997 03 10 | 691 | 0.4− | 0.3− | 1999 11 03 | 691 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.5+ |
| 1997 03 10 | 691 | 0.1− | 0.1+ | 1999 11 03 | 691 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.4− |
| 1999 10 11 | 704 | 0.5+ | 0.1+ | 1999 11 03 | 691 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.0 | 0.3+ |
| 1999 10 11 | 704 | 0.1− | 0.1− | 1999 12 05 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.5− |
| 1999 10 11 | 704 | 0.1− | 0.0 | 1999 12 05 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.3− | 0.4− |
| 1999 10 11 | 704 | 1.2− | 0.2− | 1999 12 05 | 691 | 0.5+ | 0.2− | 2006 09 28 | 691 | 0.0 | 0.3+ |
| 1999 10 11 | 704 | 0.6− | 0.7− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.3− |

**2006 SZ$_{27}$ = 2002 TL$_{104}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.82915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23227950 | $\omega$ | 140.21066 | | +0.94163779 | −0.33004171 | |
| $a$ | 2.6209704 | $\Omega$ | 239.18009 | | +0.28586721 | +0.88794606 | |
| $e$ | 0.1657115 | $i$ | 4.42527 | | +0.17775884 | +0.32035023 | |
| $P$ | 4.24 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.5− | 0.7+ | 2002 10 05 | 644 | 0.1− | 0.6+ | 2006 09 23 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 704 | 0.9+ | 1.4− | 2002 10 05 | 644 | 0.0 | 0.5+ | 2006 09 23 | 691 | 0.3− | 0.3+ |
| 2002 10 04 | 644 | 0.2+ | 0.7− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.7− |
| 2002 10 04 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.6− | 2006 09 17 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 2002 10 04 | 644 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 0.5− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | | | | |
| 2002 10 05 | 644 | 0.1+ | 0.5+ | 2006 09 19 | 691 | 0.1− | 0.0 | | | | |

**2006 SE$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.35632 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26527228 | $\omega$ | 272.76039 | | −0.96385833 | +0.25495923 | |
| $a$ | 2.3988778 | $\Omega$ | 282.01951 | | −0.20206430 | −0.88866776 | |
| $e$ | 0.1779422 | $i$ | 4.53206 | | −0.17362930 | −0.38113698 | |
| $P$ | 3.72 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.1+ | 0.3− | 2005 03 31 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2− |
| 2002 08 07 | 644 | 0.0 | 0.4− | 2005 03 31 | 644 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2002 08 07 | 644 | 0.1+ | 0.2− | 2005 03 31 | 644 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2005 03 03 | 703 | 0.6+ | 0.2+ | 2005 03 31 | 644 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ |
| 2005 03 03 | 703 | 0.5− | 0.3− | 2006 08 19 | 691 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3− |
| 2005 03 03 | 703 | 0.5− | 0.2− | 2006 08 19 | 691 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.2− | 0.1− |
| 2005 03 03 | 703 | 0.5− | 0.3− | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.5− |
| 2005 03 31 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.7− | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.0 |
| 2005 03 31 | 644 | 0.5+ | 0.0 | 2006 09 17 | 691 | 0.9+ | 0.0 | | | | |

**2006 SY$_{28}$ = 1996 CO$_3$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.06838 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24123710 | $\omega$ | 61.11560 | | +0.96935548 | −0.22040846 | |
| $a$ | 2.5556810 | $\Omega$ | 311.39376 | | +0.14277229 | +0.86483354 | |
| $e$ | 0.0976965 | $i$ | 8.31516 | | +0.19991506 | +0.45109096 | |
| $P$ | 4.09 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 10 | 691 | 0.4+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1996 02 10 | 691 | 0.5+ | 0.3+ | 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2− |
| 1996 02 10 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2− |
| 1996 02 16 | 691 | 0.2− | 0.5− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.6+ | 0.1− |
| 1996 02 16 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 1996 02 16 | 691 | 0.6− | 0.4+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |

**2006 SB$_{29}$ = 2003 AJ$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 227.01762 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17295653 | $\omega$ | 206.87928 | | −0.47710893 | −0.87588415 | |
| $a$ | 3.1903971 | $\Omega$ | 271.69418 | | +0.81873556 | −0.41317344 | |
| $e$ | 0.1384643 | $i$ | 4.13468 | | +0.31943568 | −0.24922815 | |
| $P$ | 5.70 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.1− | 0.0 | 2003 01 08 | 704 | 0.0 | 0.6− | 2006 09 19 | 691 | 0.0 | 0.1− |
| 2001 09 28 | 644 | 0.3− | 0.1− | 2003 01 08 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2001 09 28 | 644 | 0.4+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2003 01 04 | 704 | 0.5− | 0.5− | 2006 09 15 | 691 | 0.1− | 0.4+ | 2006 09 28 | G96 | 1.0− | 0.9− |
| 2003 01 04 | 704 | 0.1− | 0.2− | 2006 09 15 | 691 | 0.4+ | 0.1− | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2003 01 04 | 704 | 0.2+ | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.6− |
| 2003 01 04 | 704 | 0.0 | 0.9+ | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2003 01 08 | 704 | 0.0 | 0.5− | 2006 09 17 | 691 | 0.5− | 0.2− | | | | |

**2006 ST$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.66636 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28321686 | $\omega$ | 194.77942 | | +0.37643489 | −0.92358831 | |
| $a$ | 2.2964482 | $\Omega$ | 233.15971 | | +0.85894350 | +0.37732650 | |
| $e$ | 0.0552983 | $i$ | 5.21000 | | +0.34714960 | +0.06789211 | |
| $P$ | 3.48 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.2+ | 0.3− | 2005 04 06 | 691 | 0.2− | 0.2− | 2006 09 17 | 691 | 0.1− | 0.1− |
| 2003 10 23 | 691 | 0.1+ | 0.1− | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2− |
| 2003 10 23 | 691 | 0.1+ | 0.1− | 2005 04 15 | 691 | 0.2+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2003 11 30 | 691 | 0.2− | 0.0 | 2005 04 15 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2003 11 30 | 691 | 0.1− | 0.4+ | 2006 08 17 | 644 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.3+ |
| 2003 11 30 | 691 | 0.2− | 0.4+ | 2006 08 17 | 644 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.6+ | 0.1+ |
| 2005 04 06 | 691 | 0.3− | 0.2+ | 2006 08 17 | 644 | 0.2− | 0.5+ | 2006 09 25 | 691 | 0.3+ | 0.0 |
| 2005 04 06 | 691 | 0.0 | 0.2+ | 2006 09 17 | 691 | 1.1− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.2+ |

**2006 SU$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.61857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22207667 | $\omega$ | 104.71594 | | +0.97372565 | +0.21299870 | |
| $a$ | 2.7006446 | $\Omega$ | 243.04025 | | −0.22769831 | +0.90531337 | |
| $e$ | 0.0394141 | $i$ | 5.18560 | | −0.00343961 | +0.36747689 | |
| $P$ | 4.44 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.3− | 1.2+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2006 08 29 | 703 | 1.0− | 0.7− | 2006 09 22 | 691 | 0.4+ | 0.4+ |
| 2002 10 31 | 644 | 0.6− | 0.2− | 2006 08 29 | 703 | 0.0 | 0.1− | 2006 09 22 | 691 | 0.4− | 0.3− |
| 2002 10 31 | 644 | 0.7− | 0.3+ | 2006 08 29 | 703 | 0.7− | 0.6− | 2006 09 22 | 691 | 0.3− | 0.2− |
| 2002 10 31 | 644 | 0.4+ | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.5+ | 0.2+ |
| 2005 05 16 | G96 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 2005 05 16 | G96 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.4+ | 0.0 |
| 2005 05 16 | G96 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ | | | | |
| 2005 05 16 | G96 | 0.2− | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1+ | | | | |

**2006 SW$_{29}$ = 2003 TX$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 114.91774 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29942291 | $\omega$ | 297.45665 | | −0.76708292 | +0.63451923 | |
| $a$ | 2.2128197 | $\Omega$ | 282.08499 | | −0.54911739 | −0.72570702 | |
| $e$ | 0.0703233 | $i$ | 5.55792 | | −0.33174371 | −0.26595990 | |
| $P$ | 3.29 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 01 | 691 | 0.3+ | 0.0 | 2005 03 17 | 703 | 0.2− | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2003 10 01 | 691 | 0.3+ | 0.0 | 2005 03 17 | 703 | 1.1+ | 0.0 | 2006 09 22 | 691 | 0.1+ | 0.1+ |
| 2003 10 01 | 691 | 0.3+ | 0.1− | 2005 03 17 | 703 | 0.9− | 0.7− | 2006 09 22 | 691 | 0.0 | 0.1− |
| 2003 10 16 | 691 | 0.3− | 0.1− | 2005 03 17 | 703 | (0.2+ | 2.2−) | 2006 09 22 | 691 | 0.1+ | 0.1− |
| 2003 10 16 | 691 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 2003 10 16 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.9+ | 0.2− |
| 2003 10 26 | 691 | 0.2− | 0.7+ | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2003 10 26 | 691 | 0.3+ | 1.0− | 2006 09 19 | 691 | 0.1− | 0.1− | | | | |
| 2003 10 26 | 691 | 0.4− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.1− | | | | |

**2006 SZ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.48613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30448095 | $\omega$ | 178.71904 | | +0.68354563 | −0.72866919 | |
| $a$ | 2.1882451 | $\Omega$ | 228.15749 | | +0.66916894 | +0.64885805 | |
| $e$ | 0.0882385 | $i$ | 3.27072 | | +0.29151039 | +0.21914479 | |
| $P$ | 3.24 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 24 | 691 | 0.0 | 0.1− | 2006 08 29 | 691 | 0.5− | 0.5− | 2006 09 17 | 291 | 0.1+ | 0.1− |
| 2000 11 24 | 691 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.5− | 0.4− | 2006 09 17 | 291 | 0.2+ | 0.0 |
| 2000 11 24 | 691 | 0.1− | 0.1+ | 2006 08 29 | 691 | 0.3− | 0.4− | 2006 09 17 | 291 | 0.1− | 0.0 |
| 2003 10 24 | 704 | 0.5+ | 0.3− | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.5− | 0.2− |
| 2003 10 24 | 704 | 0.2− | 0.8− | 2006 09 17 | 691 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.4− | 0.0 |
| 2003 10 24 | 704 | 0.6+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2003 10 24 | 704 | 0.2− | 0.4+ | 2006 09 17 | 291 | 0.2+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.3− |
| 2003 10 29 | 291 | 0.1+ | 0.1+ | 2006 09 17 | 291 | 0.9+ | 1.1+ | 2006 09 28 | G96 | 0.4− | 0.8− |
| 2003 10 29 | 291 | 0.3− | 0.0 | 2006 09 17 | 291 | 0.3+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.7− |
| 2003 10 29 | 291 | 0.1− | 0.1+ | 2006 09 17 | 291 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.0 |
| 2003 11 21 | 695 | 0.1+ | 0.2+ | 2006 09 17 | 291 | 0.4+ | 0.2− | | | | |
| 2003 11 21 | 695 | 0.1+ | 0.2+ | 2006 09 17 | 291 | 1.0+ | 0.0 | | | | |

**2006 SD$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.87184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30195258 | $\omega$ | 69.62224 | | +0.22545061 | +0.97362136 | |
| $a$ | 2.2004435 | $\Omega$ | 213.46886 | | −0.91592817 | +0.19952981 | |
| $e$ | 0.1518885 | $i$ | 3.65130 | | −0.33203556 | +0.11067656 | |
| $P$ | 3.26 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 28 | 691 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.2− | 0.7− | 2006 09 17 | 291 | 0.4+ | 0.3+ |
| 2003 09 28 | 691 | 0.2+ | 0.0 | 2006 08 30 | 704 | 1.0+ | 0.6− | 2006 09 17 | 291 | 0.2+ | 0.3+ |
| 2003 09 28 | 691 | 0.0 | 0.1+ | 2006 09 12 | 699 | 0.7− | 2.0+ | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2003 10 16 | 691 | 0.1− | 0.0 | 2006 09 12 | 699 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2003 10 16 | 691 | 0.0 | 0.1− | 2006 09 12 | 699 | 0.2− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.2+ |
| 2003 10 16 | 691 | 0.0 | 0.1− | 2006 09 12 | 699 | 0.2− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.3− |
| 2006 08 29 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.3− |
| 2006 08 29 | 691 | 0.2− | 0.2− | 2006 09 17 | 691 | 0.8+ | 0.7− | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2006 08 29 | 691 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.5− | 0.2− |
| 2006 08 30 | 704 | 1.1− | 0.5+ | 2006 09 17 | 291 | 0.4+ | 0.2+ | | | | |

**2006 SS$_{31}$ = 2005 LY$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.81906 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22178222 | $\omega$ | 108.37114 | | +0.58803123 | +0.80852686 | |
| $a$ | 2.7030344 | $\Omega$ | 197.70205 | | −0.76716736 | +0.54873119 | |
| $e$ | 0.0923737 | $i$ | 4.23235 | | −0.25626844 | +0.21255208 | |
| $P$ | 4.44 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.7− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.5− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.5− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2005 05 14 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.5− |
| 2005 05 14 | G96 | 0.5− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.4− |
| 2005 05 14 | G96 | 0.7− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.3− |
| 2005 05 14 | G96 | 0.4− | 0.1− | 2006 09 24 | 691 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.6− |
| 2005 06 08 | 691 | 0.3+ | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.3− | 0.8− |
| 2005 06 08 | 691 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2005 06 08 | 691 | 0.6− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2005 06 13 | 691 | 0.3+ | 0.3− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2005 06 13 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.7+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2005 06 13 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.1− |

**2006 SW$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.98479 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19659600 | $\omega$ | 248.24136 | | +0.13518230 | −0.99031511 | |
| $a$ | 2.9292264 | $\Omega$ | 194.10035 | | +0.95029020 | +0.13862916 | |
| $e$ | 0.1793039 | $i$ | 7.46473 | | +0.28048935 | +0.00761219 | |
| $P$ | 5.01 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 691 | 0.4− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2001 09 22 | 691 | 0.3− | 0.0 | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 2001 09 22 | 691 | 0.4− | 0.0 | 2006 09 24 | 691 | 0.5+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2001 10 14 | 691 | 0.4+ | 0.2+ | 2006 09 24 | 691 | 0.3+ | 0.1− | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2001 10 14 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2001 10 14 | 691 | 0.5+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.0 |
| 2006 09 17 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 1.1− | 0.1+ |
| 2006 09 17 | 691 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.2− |
| 2006 09 19 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.6− | 0.2− |
| 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.3− | | | | |

**2006 SZ$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.25065 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19189444 | $\omega$ | 57.57610 | | +0.96238422 | −0.27138871 | |
| $a$ | 2.9768786 | $\Omega$ | 318.16688 | | +0.24236441 | +0.87889322 | |
| $e$ | 0.1203158 | $i$ | 1.10279 | | +0.12278478 | +0.39229438 | |
| $P$ | 5.14 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 291 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.1+ | |
| 2001 09 22 | 291 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.6− | 0.0 | |
| 2001 09 22 | 291 | 0.3+ | 0.1− | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 | |
| 2001 10 21 | 704 | 0.7− | 0.0 | 2006 09 24 | 691 | 0.5+ | 0.2+ | 2006 10 02 | 691 | 0.6+ | 0.0 | |
| 2001 10 21 | 704 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.3+ | |
| 2001 10 21 | 704 | (3.5+ | 2.2−) | 2006 09 24 | 691 | 0.4+ | 0.0 | 2006 10 02 | 691 | (1.1− | 1.8+) | |
| 2001 11 15 | 691 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− | |
| 2001 11 15 | 691 | 0.3− | 0.1+ | 2006 09 25 | 691 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.3− | |
| 2001 11 15 | 691 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.3− | 0.3+ | |
| 2006 09 17 | 691 | 0.4− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3+ | |
| 2006 09 17 | 691 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1− | | | | | |
| 2006 09 17 | 691 | 1.0− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 | | | | | |

**2006 SD$_{32}$ = 2004 EY$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.33619 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18115369 | $\omega$ | 334.51142 | | +0.45205938 | +0.89193772 | |
| $a$ | 3.0934131 | $\Omega$ | 322.36245 | | −0.81570922 | +0.40908848 | |
| $e$ | 0.1383642 | $i$ | 0.88730 | | −0.36091658 | +0.19259731 | |
| $P$ | 5.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.5+ | 0.6− | 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 09 19 | 699 | 0.2− | 1.2+ | |
| 2001 11 19 | 704 | 0.5+ | 0.6− | 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 09 24 | 691 | 0.2+ | 0.3+ | |
| 2001 11 19 | 704 | 0.6− | 0.1− | 2006 09 17 | 691 | 0.4− | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.5+ | |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.4− | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | |
| 2004 03 15 | 691 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.1− | |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1− | |
| 2004 03 21 | 691 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.0 | |
| 2004 03 21 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1− | |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | (1.5+ | 0.7−) | 2006 10 28 | G96 | 0.5+ | 0.4− | |
| 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 09 19 | 699 | (1.9+ | 0.8−) | 2006 10 28 | G96 | 0.4+ | 0.3+ | |
| 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 09 19 | 699 | (2.0− | 0.1+) | 2006 10 28 | G96 | 0.2+ | 0.3− | |

**2006 SE$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.95555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12415988 | $\omega$ | 159.32591 | | +0.98225708 | +0.18738379 | |
| $a$ | 3.9793779 | $\Omega$ | 189.88323 | | −0.17770882 | +0.91698244 | |
| $e$ | 0.2570579 | $i$ | 2.55061 | | −0.05992165 | +0.35217967 | |
| $P$ | 7.94 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 691 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.9+ | 0.3+ | 2006 10 01 | 704 | 0.3− | 0.6+ | |
| 1998 09 25 | 691 | 0.5+ | 0.0 | 2006 09 20 | 704 | 0.6− | 0.0 | 2006 10 01 | 704 | 0.0 | 0.2+ | |
| 1998 09 25 | 691 | 0.4+ | 0.0 | 2006 09 20 | 704 | 0.6− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.4+ | |
| 1998 09 25 | 645 | 0.4+ | 0.1− | 2006 09 20 | 704 | 0.4− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.4+ | |
| 1998 09 25 | 645 | 0.3+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 1.0+ | 2006 10 02 | 691 | 0.1+ | 0.4+ | |
| 1998 10 12 | 691 | 0.7− | 0.2− | 2006 09 20 | 704 | 0.3− | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.3+ | |
| 1998 10 20 | 691 | 0.9− | 0.8− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | |
| 1998 10 20 | 691 | 1.2− | 0.6− | 2006 09 20 | 644 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ | |
| 1998 10 20 | 691 | 1.0− | 0.6− | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 16 | G96 | 1.4− | 0.1+ | |
| 2004 05 16 | 691 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.1+ | |
| 2004 05 16 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.7+ | 0.2− | |
| 2004 05 16 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.3− | |
| 2006 07 22 | G96 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.3+ | |
| 2006 07 22 | G96 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.1− | 0.1+ | |
| 2006 07 22 | G96 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2+ | |
| 2006 07 22 | G96 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | |
| 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 09 27 | 704 | 1.5− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ | |
| 2006 09 17 | 691 | 0.4− | 0.5+ | 2006 09 27 | 704 | 0.7+ | 0.6− | 2006 10 27 | G96 | 0.4+ | 0.2− | |
| 2006 09 19 | 703 | 0.4− | 0.3− | 2006 09 27 | 704 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.1− | 0.2− | |
| 2006 09 19 | 703 | 0.1+ | 0.3− | 2006 10 01 | 704 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− | |
| 2006 09 19 | 703 | 1.4+ | 0.7+ | 2006 10 01 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.4− | |

**2006 SF$_{32}$ = 2004 HV$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.07867 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17522407 | $\omega$ | 214.27837 | | +0.72755951 | −0.68555960 | |
| $a$ | 3.1628131 | $\Omega$ | 189.13852 | | +0.66019604 | +0.70987411 | |
| $e$ | 0.0882727 | $i$ | 9.34571 | | +0.18654316 | +0.16151404 | |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 704 | 0.2− | 0.7− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 01 | 704 | 0.6− | 0.4+ | |
| 2004 04 20 | 704 | 0.2+ | 0.8− | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.8− | |
| 2004 04 20 | 704 | 0.6− | 0.4+ | 2006 09 19 | 699 | 0.0 | 0.6− | 2006 10 17 | G96 | 0.2+ | 0.2− | |
| 2004 04 22 | 599 | 0.1− | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.8+ | 2006 10 17 | G96 | 1.0+ | 0.8+ | |
| 2004 04 22 | 599 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.7+ | 0.0 | |
| 2004 04 22 | 599 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.3+ | 0.4+ | |
| 2004 04 22 | 599 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ | |
| 2006 08 28 | 703 | 0.4+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3+ | |
| 2006 08 28 | 703 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.1− | |
| 2006 08 28 | 703 | 0.2+ | 0.5− | 2006 10 01 | 704 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.4− | 0.4− | |
| 2006 08 28 | 703 | 0.4− | 0.3− | 2006 10 01 | 704 | 1.3− | 0.4+ | 2006 11 14 | G96 | 0.6− | 0.7− | |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.7− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.3− | |

**2006 SH$_{32}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.39717 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22743196 | $\omega$ | 324.49423 | | +0.86548723 | +0.50062596 | |
| $a$ | 2.6580821 | $\Omega$ | 5.55011 | | −0.40764196 | +0.72415677 | |
| $e$ | 0.0734341 | $i$ | 10.41185 | | −0.29113552 | +0.47431068 | |
| $P$ | 4.33 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 18 | 691 | 0.5+ | 0.4− | 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.0 | |
| 1993 09 18 | 691 | 0.1+ | 0.2− | 2006 09 17 | 691 | 0.4− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− | |
| 1993 09 18 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 19 | G96 | 0.2− | 0.2+ | |
| 2000 04 10 | 695 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.3− | |
| 2000 04 10 | 695 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 1.3+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.2− | |
| 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.3+ | 0.6− | 2006 10 22 | G96 | 0.1− | 0.0 | |
| 2004 02 16 | 691 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.4− | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.1+ | |
| 2004 02 16 | 691 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.2− | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.3− | |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.5− | |
| 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.1− | |
| 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.6+ | 0.3− | |
| 2006 09 17 | 691 | 0.4− | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.0 | |

**2006 SJ$_{32}$ = 1992 SJ$_3$ = 1997 WD$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.63012 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21467146 | $\omega$ | 69.81097 | | +0.28020857 | −0.95992150 | |
| $a$ | 2.7623996 | $\Omega$ | 3.93024 | | +0.84598682 | +0.24407599 | |
| $e$ | 0.1052303 | $i$ | 4.87082 | | +0.45364024 | +0.13775929 | |
| $P$ | 4.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.1+ | 0.7− | 2004 03 27 | 291 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.9+ | 1.4+ | |
| 1992 09 24 | 691 | 0.1+ | 0.4− | 2004 03 27 | 704 | 0.7+ | 1.1+ | 2006 09 29 | 704 | 0.1− | 0.4+ | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.2+ | 0.4− | 2004 03 27 | 704 | 0.8+ | 1.2+ | 2006 09 29 | 704 | 0.2+ | 1.1+ |
| 1997 11 22 | 691 | 0.9− | 0.0 | 2004 03 27 | 704 | 0.5+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 1997 11 22 | 691 | 0.3− | 0.1− | 2004 03 27 | 704 | 0.8+ | 0.4− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 1997 11 29 | 691 | 1.1+ | 0.3− | 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 1997 11 29 | 691 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.0 |
| 1997 11 29 | 691 | 0.4+ | 0.2+ | 2006 09 17 | 691 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2001 08 19 | 704 | (1.7+ | 0.5+) | 2006 09 19 | 699 | 0.5+ | 0.9+ | 2006 10 19 | G96 | 0.5+ | 0.2− |
| 2001 08 19 | 704 | 0.3+ | 1.1+ | 2006 09 19 | 699 | 1.0− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2001 08 19 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 699 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 2001 08 23 | 608 | 0.9+ | 0.1− | 2006 09 19 | 699 | 0.8− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 08 23 | 608 | 0.1+ | 0.4− | 2006 09 20 | 704 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 08 23 | 608 | 0.1+ | 0.5− | 2006 09 20 | 704 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2002 12 11 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2002 12 11 | 704 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 09 25 | 691 | 0.6− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2004 03 27 | 291 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.3+ | | | | |
| 2004 03 27 | 291 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.6+ | 1.0+ | | | | |

**2006 SM$_{32}$ = 1997 TD$_7$ = 2004 FR$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.02468 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21814452 | $\omega$ | 15.56326 | | +0.93941357 | | −0.34230215 |
| $a$ | 2.7330014 | $\Omega$ | 4.57757 | | +0.28510405 | | +0.75074907 |
| $e$ | 0.1647394 | $i$ | 13.18485 | | +0.19030982 | | +0.56498236 |
| $P$ | 4.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 910 | 0.5+ | 0.7− | 2006 09 17 | 691 | 0.3− | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 1997 10 02 | 910 | 0.4+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 1997 10 02 | 910 | 0.9+ | 0.8− | 2006 09 17 | 691 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 1997 10 03 | 910 | 0.1+ | 0.5− | 2006 09 19 | 699 | 0.4− | 0.1+ | 2006 10 12 | 644 | 1.1− | 0.8− |
| 1997 10 03 | 910 | 0.3+ | 0.5− | 2006 09 19 | 699 | 0.7− | 0.7− | 2006 10 22 | G96 | 0.2+ | 0.2+ |
| 1997 10 03 | 910 | 0.3+ | 0.9− | 2006 09 19 | 699 | 0.7− | 1.1− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.7+ | 0.5+ | 2006 10 22 | G96 | 0.9− | 0.4− |
| 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2+ |
| 2004 03 23 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2004 03 23 | 691 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.5+ |
| 2004 03 23 | 691 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.3+ |

**2006 SU$_{32}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.37415 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17632825 | $\omega$ | 298.13278 | | +0.53458598 | | +0.84495292 |
| $a$ | 3.1495955 | $\Omega$ | 4.29325 | | −0.67724289 | | +0.43999764 |
| $e$ | 0.0728200 | $i$ | 12.73659 | | −0.50552933 | | +0.30406684 |
| $P$ | 5.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 09 | 644 | 0.5− | 0.8+ |
| 2002 12 31 | 645 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 09 | 644 | 0.2− | 0.1+ |
| 2004 04 14 | 691 | 0.7+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.5+ |
| 2004 04 14 | 691 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.2+ | 1.3− |
| 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.0 |
| 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.1− |
| 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 10 17 | 703 | (1.1+ | 2.8+) |
| 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2006 09 19 | 703 | 0.5− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 2006 09 19 | 703 | 0.4+ | 0.4+ | 2006 10 02 | 691 | 0.5+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2006 09 19 | 703 | 1.0− | 0.8− | 2006 10 02 | 691 | 0.5+ | 0.5+ | 2006 10 22 | G96 | 0.7− | 0.1+ |
| 2006 09 19 | 703 | 0.4+ | 0.8+ | 2006 10 02 | G96 | 0.5− | 0.7− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2006 09 25 | 691 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.4− | 0.4− | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2006 09 25 | 691 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2+ |

**2006 SV$_{32}$ = 2005 JG$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.07931 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29201249 | $\omega$ | 109.53451 | | +0.54212229 | | −0.84022213 |
| $a$ | 2.2500997 | $\Omega$ | 307.63197 | | +0.76545781 | | +0.49939438 |
| $e$ | 0.0603823 | $i$ | 0.82555 | | +0.34666663 | | +0.21126295 |
| $P$ | 3.38 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 691 | 0.1− | 0.6− | 2005 05 07 | G96 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.6+ |
| 1996 10 08 | 691 | 0.2+ | 0.2− | 2005 05 16 | G96 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.0 |
| 1996 10 08 | 691 | 0.3− | 0.2− | 2005 05 16 | G96 | 0.1+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 1999 08 03 | 691 | 0.4+ | 0.0 | 2005 05 16 | G96 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.1− |
| 1999 08 03 | 691 | (1.1+ | 3.5+) | 2005 05 16 | G96 | 0.2+ | 1.2+ | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 1999 08 03 | 691 | 0.1+ | 0.4+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− |
| 2003 12 14 | 291 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.4− |
| 2003 12 14 | 291 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2003 12 14 | 291 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.6− | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2003 12 19 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 699 | (1.5− | 0.9−) | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2003 12 19 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 699 | (0.5− | 1.5+) | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2003 12 19 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2005 05 07 | G96 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2005 05 07 | G96 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.6− |
| 2005 05 07 | G96 | 0.5− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.6− | 0.2− |

**2006 SD$_{33}$ = 2004 DX$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.88747 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26547829 | $\omega$ | 251.32985 | | +0.22367954 | | −0.97446231 |
| $a$ | 2.3976367 | $\Omega$ | 185.85259 | | +0.95126648 | | +0.22268195 |
| $e$ | 0.1836878 | $i$ | 11.17675 | | +0.21227235 | | +0.02891288 |
| $P$ | 3.71 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 703 | 0.7− | 0.3+ | 2006 09 23 | 691 | 0.4+ | 0.2+ | 2006 09 29 | 704 | 1.2− | 0.1+ |
| 2004 02 17 | 703 | 1.0− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.5+ | 0.1+ |
| 2004 02 17 | 703 | 1.3+ | 0.8− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2004 02 17 | 703 | 0.6− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2004 02 19 | 704 | 0.8+ | 0.4− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2004 02 19 | 704 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2004 02 19 | 704 | 0.5+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.5+ |
| 2004 02 19 | 704 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.5− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2004 02 19 | 704 | 0.6− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2006 09 17 | 691 | 0.8− | 0.7− | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 09 27 | 704 | 0.6− | 0.5− | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.5+ |

**2006 SE$_{33}$ = 2001 SD$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.06241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18437681 | $\omega$ | 229.77172 | | +0.47202640 | | −0.87936800 |
| $a$ | 3.0572563 | $\Omega$ | 192.51785 | | +0.87076894 | | +0.47612967 |
| $e$ | 0.2296204 | $i$ | 16.75255 | | +0.13766820 | | +0.00353010 |
| $P$ | 5.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 704 | 0.9+ | 0.5+ | 2006 09 17 | 703 | (1.4− | 2.1−) | 2006 10 18 | 691 | 0.2+ | 0.2+ |
| 2001 09 17 | 704 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2001 09 17 | 704 | 0.8− | 0.2− | 2006 09 17 | 703 | (2.9− | 2.8−) | 2006 10 20 | 691 | 0.0 | 0.4+ |
| 2001 09 17 | 704 | 0.6− | 0.4+ | 2006 09 17 | 703 | (4.4− | 1.2−) | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.2− | 0.8+ | 2006 09 19 | 703 | 0.6+ | 0.7− | 2006 10 20 | 691 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 704 | 0.8+ | 0.5− | 2006 09 19 | 703 | 0.8+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.2+ | 0.9− | 2006 09 19 | 703 | 1.3− | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.4− |
| 2001 09 19 | 704 | 0.8− | 0.5− | 2006 10 18 | 691 | 0.1− | 0.2+ | | | | |

**2006 SF$_{33}$ = 2003 UD$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.32359 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30938037 | $\omega$ | 142.89841 | | +0.97394611 | | +0.22210149 |
| $a$ | 2.1650813 | $\Omega$ | 204.38861 | | −0.22542303 | | +0.92608073 |
| $e$ | 0.2149595 | $i$ | 6.37160 | | −0.02476766 | | +0.30503345 |
| $P$ | 3.19 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 19 | 291 | 0.2+ | 0.2+ | 2006 09 17 | 703 | 0.2+ | 0.6− | 2006 09 20 | 703 | 0.7+ | 0.3+ |
| 2003 10 19 | 291 | 0.5+ | 0.0 | 2006 09 19 | 699 | 0.1− | 1.1− | 2006 09 24 | 106 | 0.7+ | 0.2+ |
| 2003 10 19 | 291 | 0.4+ | 0.2+ | 2006 09 19 | 699 | 0.1− | 0.1− | 2006 09 24 | 106 | 0.1− | 0.5− |
| 2003 10 21 | 291 | 0.2− | 0.2− | 2006 09 19 | 699 | 0.3− | 0.8− | 2006 09 24 | 106 | (1.2+ | 1.6−) |
| 2003 10 21 | 291 | 0.4− | 0.2− | 2006 09 19 | 699 | 0.8− | 1.1+ | 2006 09 24 | 106 | 0.3+ | 1.2− |
| 2003 10 21 | 291 | 0.5− | 0.1+ | 2006 09 20 | 699 | (1.8+ | 0.7−) | 2006 10 01 | 703 | (0.8+ | 1.8−) |
| 2003 11 21 | 691 | 0.2+ | 0.1− | 2006 09 20 | 699 | (2.1+ | 0.2−) | 2006 10 01 | 703 | (1.3− | 1.6−) |
| 2003 11 21 | 691 | 0.0 | 0.2− | 2006 09 20 | 699 | 0.2− | 0.4+ | 2006 10 01 | 703 | 0.2− | 1.0− |
| 2003 11 21 | 691 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.4+ | 1.3+ | 2006 10 01 | 703 | 0.6− | 0.3+ |
| 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 09 20 | 699 | 0.3− | 0.9+ | 2006 10 11 | 691 | 0.0 | 0.2+ |
| 2006 09 17 | 703 | 0.5− | 1.1− | 2006 09 20 | 703 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ |
| 2006 09 17 | 703 | 0.7+ | 0.1− | 2006 09 20 | 703 | 0.1+ | 0.7+ | 2006 10 11 | 691 | 0.1− | 0.2+ |

**2006 SN$_{33}$ = 2002 TA$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.52603 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24468828 | $\omega$ | 97.13590 | | +0.71578525 | | +0.69372799 |
| $a$ | 2.5315933 | $\Omega$ | 218.98855 | | −0.68032342 | | +0.66692542 |
| $e$ | 0.2814862 | $i$ | 7.30104 | | −0.15751674 | | +0.27194110 |
| $P$ | 4.03 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 704 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.1+ | 1.0− | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 1.2− | 1.3+ | 2006 09 17 | 703 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 704 | 1.5+ | 0.4− | 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2002 10 04 | 704 | 1.0+ | 0.0 | 2006 09 17 | 703 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.2− | 0.6− |
| 2002 10 07 | 699 | 0.4− | 0.5− | 2006 09 19 | 699 | 0.9+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2002 10 07 | 699 | 0.7+ | 0.9+ | 2006 09 19 | 699 | 0.9− | 0.5− | 2006 10 22 | 644 | 0.4− | 0.2+ |
| 2002 10 07 | 699 | 0.5− | 0.9+ | 2006 09 19 | 699 | 0.2+ | 1.0+ | | | | |
| 2002 10 07 | 699 | 1.2− | 1.5− | 2006 09 19 | 699 | 0.6− | 1.2+ | | | | |

**2006 SO$_{33}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.82989 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22699744 | $\omega$ | 91.70677 | | +0.99126708 | | +0.09959808 |
| $a$ | 2.6614731 | $\Omega$ | 262.58368 | | −0.12547960 | | +0.91394960 |
| $e$ | 0.1050632 | $i$ | 5.00008 | | +0.04055178 | | +0.39341625 |
| $P$ | 4.34 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2+ | 0.0 | 2006 08 25 | D35 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.6− | 0.4− |
| 2002 11 04 | 644 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.3− | 2006 09 29 | 699 | 0.6− | 0.6+ |
| 2002 11 04 | 644 | 0.4+ | 0.2+ | 2006 09 17 | 703 | 0.2+ | 0.8− | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2002 11 05 | 699 | (0.1− | 3.6+) | 2006 09 17 | 703 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.4+ | 0.2+ |
| 2002 11 05 | 699 | 0.3+ | 1.1+ | 2006 09 17 | 703 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.3+ | 0.2+ |
| 2002 11 05 | 699 | 0.1+ | 0.5+ | 2006 09 19 | 699 | 1.1+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.3− |
| 2002 11 05 | 699 | 0.2+ | 0.7− | 2006 09 19 | 699 | 1.3+ | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.4+ |
| 2002 12 05 | 695 | 0.5− | 0.7− | 2006 09 19 | 699 | 0.6− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2002 12 05 | 695 | 1.0− | 0.3− | 2006 09 19 | 699 | 0.4− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2006 08 25 | D35 | 0.2− | 0.2+ | 2006 09 29 | 699 | (1.5+ | 2.2+) | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2006 08 25 | D35 | 0.2− | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1− |

**2006 SY$_{33}$ = 2001 TC$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.40744 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18828213 | $\omega$ | 331.44362 | | +0.59860426 | | +0.79854233 |
| $a$ | 3.0148333 | $\Omega$ | 335.16270 | | −0.70332798 | | +0.48613567 |
| $e$ | 0.0897743 | $i$ | 8.66328 | | −0.38340931 | | +0.35496796 |
| $P$ | 5.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.2+ | 0.5− | 2006 09 19 | 699 | 0.1+ | 1.1− | 2006 10 01 | 703 | 0.2+ | 0.2+ |
| 1993 01 22 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 1.5+ | 0.3+ | 2006 10 01 | 703 | 0.3− | 1.0− |
| 1993 01 22 | 691 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.9− | 0.6− | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2001 10 15 | 704 | 1.5+ | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 01 | 703 | 0.2− | 0.5+ |
| 2001 10 15 | 704 | 0.7− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2001 10 15 | 704 | 0.5− | 0.5− | 2006 09 25 | 691 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2001 10 20 | 644 | 0.3− | 0.1− | 2006 09 25 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2001 10 20 | 644 | 0.2− | 0.0 | 2006 09 25 | 704 | 0.3− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.4− |
| 2001 10 20 | 644 | 0.1− | 0.1− | 2006 09 25 | 704 | 1.4+ | 0.7− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2004 03 12 | 644 | 0.6+ | 0.5+ | 2006 09 25 | 704 | 0.7+ | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.2− |
| 2004 03 12 | 644 | 0.6+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | (2.2+ | 0.4−) |
| 2004 03 12 | 644 | 0.1+ | 1.0+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | (2.3+ | 0.7+) |
| 2004 04 12 | 691 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.6− | 0.1+ | 2006 10 17 | 703 | 0.8+ | 0.2+ |
| 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.0 |
| 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 09 29 | 704 | (1.8− | 0.3−) | 2006 10 17 | 703 | (0.4+ | 1.5−) |
| 2006 08 18 | 644 | 0.1− | 0.2+ | 2006 09 29 | 704 | 1.2+ | 0.6+ | 2006 10 17 | 703 | 0.6− | 1.0+ |
| 2006 08 18 | 644 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.5− | 1.0− |
| 2006 08 18 | 644 | 0.4− | 0.2+ | 2006 09 30 | 557 | 0.8− | 1.0+ | 2006 10 17 | 703 | 1.2+ | 0.2+ |
| 2006 08 29 | 703 | 0.4+ | 0.2+ | 2006 09 30 | 557 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2006 08 29 | 703 | 0.9+ | 0.4+ | 2006 09 30 | 557 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2006 08 29 | 703 | 0.0 | 0.5+ | 2006 09 30 | 557 | 0.7− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 08 29 | 703 | 0.5+ | 0.8+ | 2006 09 30 | 557 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2006 09 17 | 703 | 0.2+ | 0.7− | 2006 09 30 | 557 | 0.0 | 0.8− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2006 09 17 | 703 | 0.6− | 0.0 | 2006 09 30 | 557 | 0.4+ | 0.6+ | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2006 09 17 | 703 | (1.5− | 1.4−) | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.6− |
| 2006 09 17 | 703 | 0.4+ | 1.0− | 2006 10 01 | 691 | 0.0 | 0.2− | | | | |
| 2006 09 19 | 699 | 0.9− | 0.9+ | 2006 10 01 | 703 | 0.8+ | 0.8− | | | | |

**2006 SA$_{34}$ = 2002 RC$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 180.94445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25283060 | $\omega$ | 202.15686 | | −0.99911166 | | −0.01196523 |
| $a$ | 2.4769446 | $\Omega$ | 337.04618 | | +0.03001980 | | −0.87501173 |
| $e$ | 0.0620207 | $i$ | 5.94711 | | −0.02957530 | | −0.48395383 |
| $P$ | 3.90 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.1+ | 0.3− | 2006 09 19 | 703 | 0.8+ | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2002 09 12 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 703 | (1.5+ | 0.6+) | 2006 10 21 | 691 | 0.2+ | 0.4+ |
| 2002 09 12 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 703 | (0.4− | 1.7−) | 2006 10 21 | 691 | 0.1+ | 0.5− |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.4+ | 1.3− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2002 09 14 | 644 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2002 09 14 | 644 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2006 09 17 | 703 | 1.1− | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2006 09 17 | 703 | 0.7− | 1.0+ | 2006 10 19 | 691 | 0.4− | 0.2− | 2006 10 28 | G96 | 0.1− | 0.4+ |
| 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2006 09 17 | 703 | 1.1− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.0 |

**2006 SB$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.89120 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29313482 | $\omega$ | 173.11928 | | +0.99980350 | | −0.01463606 |
| $a$ | 2.2443527 | $\Omega$ | 187.75710 | | +0.00984821 | | +0.95205322 |
| $e$ | 0.1575956 | $i$ | 5.68460 | | +0.01720375 | | +0.30558215 |
| $P$ | 3.36 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.1+ | 0.0 | 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.5+ |
| 2005 03 08 | G96 | 0.0 | 0.5+ | 2006 09 20 | 704 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2005 03 08 | G96 | 0.5− | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.7− | 1.1− |
| 2005 03 08 | G96 | 0.2+ | 0.2− | 2006 09 24 | 106 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.4− |
| 2005 04 10 | G96 | 0.1− | 0.1+ | 2006 09 24 | 106 | 0.7+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 04 10 | G96 | 0.1+ | 0.2− | 2006 09 24 | 106 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2005 04 10 | G96 | 0.0 | 0.1+ | 2006 09 24 | 106 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.6+ | 0.3+ |
| 2005 04 10 | G96 | 0.3+ | 0.1− | 2006 09 27 | 704 | (1.5− | 2.5+) | 2006 10 20 | G96 | 0.0 | 0.4− |
| 2006 09 17 | 704 | (2.1− | 0.3−) | 2006 09 27 | 704 | 0.9− | 0.9+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2006 09 17 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 704 | 0.9− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2+ |
| 2006 09 17 | 704 | 0.1+ | 0.9− | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2006 09 17 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.7+ |
| 2006 09 17 | 703 | 0.1− | 0.9− | 2006 09 28 | 691 | 1.0− | 0.8− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2006 09 17 | 703 | 0.2− | 0.4− | 2006 09 28 | G96 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2006 09 17 | 703 | 0.1− | 0.7− | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | 699 | 0.8+ | 0.0 | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2006 09 19 | 699 | 0.4+ | 0.4− | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2006 09 19 | 699 | 0.8+ | 1.0+ | 2006 10 09 | 644 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2006 09 20 | 704 | 1.1+ | 0.9+ | 2006 10 09 | 644 | 0.2+ | 0.3+ | | | | |
| 2006 09 20 | 704 | 0.5+ | 0.6+ | 2006 10 09 | 644 | 0.1− | 0.2+ | | | | |

**2006 SD$_{34}$ = 1995 TX$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.52329 | | (2000.0) | | | |
| $n$ | 0.18353173 | $\omega$ | 0.60368 | | +0.97351608 | +0.22405667 |
| $a$ | 3.0666340 | $\Omega$ | 346.19210 | | −0.21054334 | +0.80119371 |
| $e$ | 0.0471331 | $i$ | 10.97629 | | −0.08909520 | +0.55487588 |
| $P$ | 5.37 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.2+ | 0.2− | 2006 09 17 | 703 | 0.7− | 0.3+ | 2006 09 29 | 704 | 0.9− | 0.7− |
| 1995 09 26 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 0.1+ | 0.6+ |
| 1995 09 26 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 1.3+ | 0.2+ | 2006 10 01 | 704 | 0.3− | 1.3+ |
| 1995 10 02 | 691 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.6+ | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 1995 10 02 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.6+ | 1.0+ | 2006 10 09 | 644 | 0.0 | 0.2+ |
| 1995 10 02 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.4+ | 0.3+ |
| 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 09 25 | 704 | 0.8+ | 1.1− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2006 07 22 | G96 | 0.2+ | 0.5− | 2006 09 25 | 704 | 0.7+ | 1.4+ | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2006 08 28 | 703 | 0.4− | 0.5+ | 2006 09 25 | 704 | (1.0− | 2.0−) | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2006 08 28 | 703 | 1.1− | 0.1− | 2006 09 25 | 704 | 1.0− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 08 28 | 703 | 0.7− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 08 28 | 703 | 1.2− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.0 | 0.7− |
| 2006 09 17 | 703 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.2− | 0.5− |
| 2006 09 17 | 703 | 0.7− | 1.0− | 2006 09 29 | 704 | (0.5+ | 2.0+) | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2006 09 17 | 703 | 0.1+ | 0.4− | 2006 09 29 | 704 | 0.0 | 0.2− | 2006 10 23 | G96 | 0.0 | 0.5− |

**2006 SF$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.27602 | | (2000.0) | | | |
| $n$ | 0.28236941 | $\omega$ | 354.10254 | | +0.41365609 | +0.90958220 |
| $a$ | 2.3010406 | $\Omega$ | 300.32637 | | −0.83343159 | +0.36091771 |
| $e$ | 0.2388245 | $i$ | 2.61328 | | −0.36644293 | +0.20590926 |
| $P$ | 3.49 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.1+ | 0.4− | 2006 07 21 | 703 | 1.9+ | 1.3− | 2006 09 19 | 699 | 0.9− | 0.2+ |
| 1999 09 07 | 704 | 0.3+ | 0.9− | 2006 08 28 | 703 | 0.5+ | 1.6+ | 2006 09 19 | 699 | 0.5− | 0.5+ |
| 1999 09 07 | 704 | 0.6+ | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.4+ | 2006 09 19 | 699 | 1.4− | 1.1− |
| 1999 10 09 | 704 | 0.7− | 0.8+ | 2006 08 28 | 703 | 1.7+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 1999 10 09 | 704 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1999 10 09 | 704 | 0.1+ | 0.9− | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.2− |
| 2005 03 13 | G96 | 0.3− | 0.8− | 2006 09 06 | 644 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2005 03 13 | G96 | 0.2− | 0.2− | 2006 09 06 | 644 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2005 03 13 | G96 | 0.3− | 0.5− | 2006 09 17 | 703 | 0.4− | 1.1− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2005 03 13 | G96 | 0.1− | 0.8− | 2006 09 17 | 703 | 0.5+ | 0.3+ | 2006 10 01 | 704 | 0.1+ | 0.4− |
| 2006 07 21 | 703 | 0.6+ | 0.3+ | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.2+ |
| 2006 07 21 | 703 | 1.3− | 0.3− | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 01 | 704 | 0.5− | 0.6+ |
| 2006 07 21 | 703 | 1.0− | 0.9− | 2006 09 19 | 699 | 1.0+ | 0.6+ | | | | |

**2006 SH$_{34}$ = 2004 BF$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 57.97418 | | (2000.0) | | | |
| $n$ | 0.21932397 | $\omega$ | 328.62772 | | +0.33528903 | +0.93920770 |
| $a$ | 2.7231944 | $\Omega$ | 320.82490 | | −0.83831718 | +0.26160559 |
| $e$ | 0.1466839 | $i$ | 6.72379 | | −0.42989019 | +0.22237674 |
| $P$ | 4.49 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 10 | 644 | 0.2− | 0.7+ | 2004 01 30 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.7− | 0.1− |
| 2001 07 10 | 644 | 0.5− | 0.3+ | 2004 01 30 | 691 | 0.1− | 0.2− | 2006 09 19 | 699 | 0.0 | 0.5+ |
| 2001 07 10 | 644 | 0.2+ | 0.6+ | 2004 01 30 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 1.0+ | 0.1+ |
| 2002 11 25 | 644 | 0.1− | 0.1− | 2004 02 12 | 291 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.1+ |
| 2002 11 25 | 644 | 0.4− | 0.2+ | 2004 02 12 | 291 | 0.2+ | 0.2+ | 2006 09 19 | 699 | 1.2+ | 0.7+ |
| 2002 11 25 | 644 | 0.4+ | 0.1+ | 2004 02 12 | 291 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.4− |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.6− | 0.6− | 2006 09 20 | 703 | 0.4− | 0.5− |
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 09 17 | 703 | 1.4− | 0.6+ | 2006 09 20 | 703 | 0.7+ | 0.1+ |
| 2004 01 19 | 691 | 0.1− | 0.0 | 2006 09 17 | 703 | 0.0 | 0.3+ | 2006 09 20 | 703 | 0.0 | 0.4− |

**2006 SJ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.03338 | | (2000.0) | | | |
| $n$ | 0.27647610 | $\omega$ | 90.60160 | | +0.49121204 | −0.86913707 |
| $a$ | 2.3336245 | $\Omega$ | 329.76093 | | +0.74680820 | +0.45423617 |
| $e$ | 0.0919917 | $i$ | 6.56129 | | +0.44831713 | +0.19562782 |
| $P$ | 3.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 1.1+ | 0.6+ | 2003 12 28 | 704 | 0.3− | 0.9− | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 03 19 | 699 | (2.0+ | 0.9+) | 2003 12 28 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2001 03 19 | 699 | (0.3+ | 1.7+) | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2001 03 19 | 699 | 0.0 | 1.3+ | 2003 12 28 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2003 12 17 | 699 | 0.3+ | 1.1− | 2003 12 28 | 691 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 2003 12 17 | 699 | 1.1− | 0.0 | 2003 12 28 | 691 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2003 12 17 | 704 | 0.1+ | 0.2+ | 2003 12 28 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2003 12 17 | 699 | 0.9− | 0.3− | 2006 08 24 | 644 | 0.7− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2003 12 17 | 704 | 0.4+ | 0.1+ | 2006 08 24 | 644 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2003 12 17 | 699 | 0.6+ | 0.6+ | 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2003 12 17 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 703 | 0.2− | 0.8− | 2006 10 17 | 703 | 1.3+ | 0.0 |
| 2003 12 17 | 704 | 0.4+ | 0.5+ | 2006 09 17 | 703 | 0.7− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2003 12 23 | 704 | 0.5+ | 0.4+ | 2006 09 19 | 699 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.9− | 1.0+ |
| 2003 12 23 | 704 | 0.4+ | 1.0+ | 2006 09 19 | 699 | 0.0 | 0.8+ | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 2003 12 23 | 704 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.4− | 0.3+ |
| 2003 12 23 | 704 | 0.1− | 0.1+ | 2006 09 19 | 699 | (1.6− | 1.0+) | 2006 10 17 | 703 | 0.9− | 0.5− |
| 2003 12 23 | 704 | 0.1+ | 0.4+ | 2006 09 24 | 106 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.3+ | 0.2+ |
| 2003 12 28 | 704 | (1.4+ | 2.1+) | 2006 09 24 | 106 | 0.8+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.2+ |
| 2003 12 28 | 704 | 0.3− | 0.1+ | 2006 09 24 | 106 | 0.3− | 0.1+ | | | | |
| 2003 12 28 | 704 | 0.3+ | 0.0 | 2006 09 24 | 106 | 0.7+ | 0.1+ | | | | |

**2006 SK$_{34}$ = 2002 TD$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 210.58760 | | (2000.0) | | | |
| $n$ | 0.23643683 | $\omega$ | 319.94023 | | −0.92517731 | −0.37317254 |
| $a$ | 2.5901562 | $\Omega$ | 198.50880 | | +0.37935932 | −0.90369597 |
| $e$ | 0.0945830 | $i$ | 12.59157 | | +0.01155209 | −0.20994248 |
| $P$ | 4.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.0 | 0.0 | 2004 02 12 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 1.2+ | 0.0 |
| 2002 10 03 | 704 | 1.0+ | 0.2+ | 2004 02 12 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.6− |
| 2002 10 03 | 704 | 0.2+ | 0.7− | 2004 02 12 | 644 | 0.2+ | 0.8+ | 2006 09 19 | 699 | 1.0+ | 0.9− |
| 2002 10 07 | 644 | 0.5− | 0.3+ | 2005 06 27 | G96 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 1.1+ | 0.6− |
| 2002 10 07 | 644 | 0.3− | 0.4+ | 2005 06 27 | G96 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2002 10 07 | 644 | 0.5− | 0.4+ | 2005 06 27 | G96 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.6+ | 0.2+ |
| 2002 10 11 | 704 | 0.8− | 0.9+ | 2005 06 27 | G96 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.6− | 0.1− |
| 2002 10 11 | 704 | 0.3− | 0.6+ | 2006 09 17 | 703 | 1.2− | 0.3+ | 2006 10 01 | 691 | 0.4− | 0.3+ |
| 2002 10 11 | 704 | 1.4+ | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 704 | 0.5− | 0.4− | 2006 09 17 | 703 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1− |

**2006 SS$_{34}$ = 2005 EY$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.90789 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27541833 | $\omega$ | 358.29123 | | +0.47146040 | | +0.88139109 |
| $a$ | 2.3395957 | $\Omega$ | 299.83693 | | −0.80871073 | | +0.41872019 |
| $e$ | 0.1752241 | $i$ | 1.95402 | | −0.35172722 | | +0.21868506 |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.7+ | 0.6− |
| 2005 03 13 | 691 | 0.0 | 0.1− | 2006 09 19 | 699 | 0.1− | 1.0+ | 2006 10 17 | 703 | 0.7+ | 0.4− |
| 2005 03 13 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.2− | 1.1+ | 2006 10 17 | 703 | 1.3+ | 0.6− |
| 2005 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.6+ | 0.2+ |
| 2005 03 17 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.7− | 0.4+ |
| 2005 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.6− | 0.5− |
| 2006 09 17 | 703 | 0.8− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.6− | 0.1+ |
| 2006 09 17 | 703 | (1.7− | 0.0 ) | 2006 09 29 | 704 | (1.8− | 0.8+) | 2006 10 31 | G96 | 0.4− | 0.0 |
| 2006 09 17 | 703 | 0.0 | 0.3− | 2006 09 29 | 704 | 0.6− | 0.2+ | | | | |
| 2006 09 17 | 703 | 0.2+ | 0.2+ | 2006 09 29 | 704 | 0.3− | 0.4+ | | | | |

**2006 ST$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.05736 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24096435 | $\omega$ | 79.11864 | | +0.86007879 | | +0.50716241 |
| $a$ | 2.5576092 | $\Omega$ | 250.38601 | | −0.48797750 | | +0.78626413 |
| $e$ | 0.2350218 | $i$ | 3.36153 | | −0.14880337 | | +0.35295186 |
| $P$ | 4.09 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 18 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 703 | 0.5− | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2002 10 18 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 699 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.1+ | 0.8+ |
| 2002 10 18 | 644 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.5− | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.7+ | 2006 10 10 | 644 | 0.3− | 0.2+ |
| 2002 10 31 | 644 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 11 22 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2002 11 22 | 644 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.2− | 2006 10 22 | G96 | 0.3− | 0.4− |
| 2002 11 22 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.9− | 0.8− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2005 03 17 | G96 | 0.1− | 0.6+ | 2006 09 29 | 704 | (0.6− | 1.6+) | 2006 11 20 | G96 | 0.2+ | 0.5− |
| 2005 03 17 | G96 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 20 | G96 | 0.7− | 0.3− |
| 2005 03 17 | G96 | 0.4+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.5+ | 0.3+ |
| 2005 03 17 | G96 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.3− | 0.8− |
| 2006 09 17 | 703 | 0.6− | 0.4+ | 2006 10 02 | G96 | 0.5+ | 0.3− | | | | |
| 2006 09 17 | 703 | 0.1− | 0.6− | 2006 10 09 | 644 | 0.4+ | 0.2+ | | | | |

**2006 SV$_{34}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.55856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20997038 | $\omega$ | 60.09202 | | +0.85372103 | | +0.51759341 |
| $a$ | 2.8034794 | $\Omega$ | 268.68256 | | −0.49528335 | | +0.77326481 |
| $e$ | 0.0733857 | $i$ | 3.27275 | | −0.16079428 | | +0.36627666 |
| $P$ | 4.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.2− | 0.3+ | 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 10 13 | 461 | 0.3− | 0.3+ |
| 2001 08 21 | 807 | 0.5− | 0.2+ | 2006 09 17 | 691 | 0.6+ | 0.1+ | 2006 10 13 | 461 | 0.0 | 0.3− |
| 2001 08 22 | 691 | 0.1− | 0.5+ | 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.4+ | 0.7+ |
| 2001 08 22 | 691 | 0.0 | 0.6+ | 2006 09 17 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 1.0− | 0.6+ |
| 2001 08 22 | 691 | 0.2− | 0.6+ | 2006 09 19 | 703 | 0.2+ | 1.2− | 2006 10 17 | 703 | 0.6− | 0.7+ |
| 2003 01 05 | 926 | 0.6+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.3− |
| 2003 01 05 | 926 | 0.7− | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2004 03 13 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.7− | 0.3− | 2006 10 23 | G96 | 0.2− | 0.3− |
| 2004 03 13 | 644 | 0.0 | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.3+ | 0.3− |
| 2004 03 13 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2004 03 16 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.5− | | | | |
| 2004 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 13 | 461 | 0.3+ | 1.2+ | | | | |

**2006 SM$_{35}$ = 1996 BL$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.64917 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23826691 | $\omega$ | 300.19809 | | +0.47204112 | | +0.88156342 |
| $a$ | 2.5768763 | $\Omega$ | 357.95055 | | −0.75555929 | | +0.40174938 |
| $e$ | 0.1144630 | $i$ | 7.72561 | | −0.45421067 | | +0.24787772 |
| $P$ | 4.14 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 24 | 691 | 0.2− | 0.1− | 2006 07 21 | G96 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.6− | 1.3− |
| 1996 01 24 | 691 | 0.0 | 0.4− | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 27 | 699 | (0.3− | 1.7−) |
| 1996 01 24 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 09 27 | 699 | 1.3+ | 0.1− |
| 1996 01 29 | 691 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.4− | 0.2− |
| 1996 01 29 | 691 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 09 27 | 699 | 1.0+ | 1.1+ |
| 1996 01 29 | 691 | 0.2+ | 0.3− | 2006 09 19 | 699 | 0.6+ | 0.7+ | 2006 10 17 | 703 | (0.3− | 3.3+) |
| 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 1.5+ | 0.5− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2004 01 28 | 691 | 0.0 | 0.6+ | 2006 09 19 | 699 | 1.3+ | 0.0 | 2006 10 17 | 703 | 0.2+ | 1.5− |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.6− | 0.0 |
| 2006 07 21 | G96 | 0.2− | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.1+ | | | | |
| 2006 07 21 | G96 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.1+ | | | | |

**2006 SN$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.07423 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24242106 | $\omega$ | 201.46028 | | +0.77027827 | | −0.63732209 |
| $a$ | 2.5473531 | $\Omega$ | 198.18677 | | +0.59494084 | | +0.73070815 |
| $e$ | 0.1399839 | $i$ | 4.07503 | | +0.22960138 | | +0.24471647 |
| $P$ | 4.07 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 691 | 0.1+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 1998 10 12 | 691 | 0.3+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 1998 10 12 | 691 | 0.2− | 0.2− | 2006 09 19 | 699 | (1.1+ | 2.0+) | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 2002 10 30 | 644 | 0.1− | 0.8+ | 2006 09 19 | 699 | 0.3− | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 10 30 | 644 | 0.0 | 0.5+ | 2006 09 19 | 699 | 1.0+ | 1.1− | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 10 30 | 644 | 0.1+ | 0.3+ | 2006 09 19 | 699 | 0.5− | 0.7+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2002 11 07 | 695 | 0.7+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2002 11 07 | 695 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2002 11 07 | 695 | 0.5− | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 11 07 | 695 | 0.5− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2005 02 16 | 809 | 0.3+ | 0.3− | 2006 10 02 | 691 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.5+ | 0.8− |
| 2005 02 16 | 809 | 0.6− | 1.3− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2005 02 16 | 809 | 0.1+ | 0.4− | 2006 10 16 | G96 | 0.4+ | 0.2− | 2006 11 14 | G96 | 1.1− | 0.5− |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.2− | 0.1− | | | | |

**2006 SP$_{35}$ = 2004 FG$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.33842 | | (2000.0) | | | |
| $n$ | 0.17717170 | $\omega$ | 316.35899 | | +0.75058590 | +0.66067878 |
| $a$ | 3.1395915 | $\Omega$ | 2.37377 | | −0.50787407 | +0.58761876 |
| $e$ | 0.0993625 | $i$ | 15.61875 | | −0.42271117 | +0.46712712 |
| $P$ | 5.56 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.3+ |
| 2004 03 27 | 704 | 0.1− | 1.0+ | 2006 09 17 | 703 | 0.8− | 1.2− | 2006 10 17 | 703 | 0.5− | 0.1+ |
| 2004 03 27 | 704 | 0.5+ | 1.1+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.6+ | 0.7− |
| 2004 03 29 | 691 | 0.3+ | 0.1+ | 2006 09 17 | 703 | (0.1+ | 1.7−) | 2006 10 17 | 703 | 0.4− | 0.5+ |
| 2004 03 29 | 691 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 1.2+ | 0.2− |
| 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.9− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2004 04 19 | 704 | 0.9+ | 0.0 | 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2004 04 19 | 704 | 0.5− | 0.8− | 2006 09 19 | 699 | (1.8+ | 0.3+) | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 04 19 | 704 | 0.9− | 0.5+ | 2006 09 19 | 699 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2006 09 17 | 703 | 1.2+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2006 09 17 | 703 | 0.6− | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.1− |

**2006 ST$_{35}$ = 2002 XF$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.04489 | | (2000.0) | | | |
| $n$ | 0.23030256 | $\omega$ | 332.79144 | | +0.96894524 | −0.22418688 |
| $a$ | 2.6359482 | $\Omega$ | 40.60412 | | +0.24583071 | +0.82779807 |
| $e$ | 0.2829151 | $i$ | 9.22477 | | +0.02669062 | +0.51428650 |
| $P$ | 4.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 704 | 0.2− | 0.8− | 2006 09 19 | 703 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.5+ | 1.1+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 10 10 | 704 | 0.1− | 0.8− | 2006 09 24 | 608 | (1.9+ | 1.2+) | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 0.4− | 0.1+ | 2006 09 24 | 608 | (1.9+ | 2.3+) | 2006 10 22 | 703 | 0.5+ | 1.2+ |
| 2002 12 05 | 704 | 0.5− | 0.6+ | 2006 09 24 | 608 | (1.9+ | 2.7+) | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.5− | 2006 11 10 | 704 | 0.4− | 1.2+ |
| 2002 12 10 | 704 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.2− | 2006 11 10 | 704 | 0.4+ | 1.0+ |
| 2002 12 10 | 704 | 0.8+ | 0.2− | 2006 09 26 | 703 | 0.5+ | 0.3+ | 2006 11 10 | 704 | (0.7− | 1.8+) |
| 2002 12 10 | 704 | 0.7− | 0.2− | 2006 10 02 | 703 | 0.5− | 0.8− | 2006 11 10 | 704 | 0.1+ | 0.7+ |
| 2002 12 10 | 704 | 0.4+ | 0.2− | 2006 10 02 | 703 | 0.0 | 0.4− | 2006 11 17 | 704 | 0.4+ | 0.0 |
| 2002 12 10 | 704 | (0.4+ | 2.1−) | 2006 10 02 | 703 | 0.5− | 0.6− | 2006 11 17 | 704 | 0.3− | 0.8− |
| 2006 08 19 | 644 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.5− | 0.1− | 2006 11 17 | 704 | 1.0− | 0.8− |
| 2006 08 19 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2006 08 19 | 644 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.8+ |
| 2006 09 17 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2006 09 17 | 699 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2006 09 17 | 699 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.6− |
| 2006 09 17 | 699 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.5− |
| 2006 09 19 | 703 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.1+ | | | | |

**2006 SU$_{35}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.96081 | | (2000.0) | | | |
| $n$ | 0.22427704 | $\omega$ | 262.46634 | | +0.34372018 | +0.92680994 |
| $a$ | 2.6829516 | $\Omega$ | 29.10320 | | −0.69118785 | +0.35872461 |
| $e$ | 0.1330909 | $i$ | 18.11890 | | −0.63570102 | +0.11108553 |
| $P$ | 4.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.4+ | 0.3+ | 2005 05 16 | 644 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.0 | 0.1− |
| 1996 04 18 | 691 | 0.3− | 0.2− | 2006 09 17 | 699 | 0.0 | 0.8− | 2006 09 25 | 703 | 0.7+ | 1.1+ |
| 1996 04 18 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.2− | 0.9+ | 2006 09 25 | 703 | 0.8− | 0.3− |
| 2005 03 10 | G96 | 0.1+ | 0.3− | 2006 09 17 | 699 | 0.5+ | 0.5+ | 2006 09 25 | 703 | 0.9+ | 1.1− |
| 2005 03 10 | G96 | 0.0 | 0.2− | 2006 09 17 | 699 | 0.6+ | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2005 03 10 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.7− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2005 03 10 | G96 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2005 05 16 | 644 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.9− | 0.4− | | | | |
| 2005 05 16 | 644 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.6− | 0.2− | | | | |

**2006 SW$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.01929 | | (2000.0) | | | |
| $n$ | 0.21621137 | $\omega$ | 271.06742 | | +0.99189174 | +0.00499760 |
| $a$ | 2.7492677 | $\Omega$ | 88.65488 | | +0.04624546 | +0.91652678 |
| $e$ | 0.0497387 | $i$ | 7.29756 | | −0.11837283 | +0.39994210 |
| $P$ | 4.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 24 | 644 | 0.1+ | 0.0 | 2002 12 10 | 644 | 0.1− | 0.3− | 2006 09 17 | 699 | 0.3+ | 1.2+ |
| 2001 07 24 | 644 | 0.1− | 0.0 | 2002 12 10 | 644 | 0.2− | 0.1− | 2006 09 17 | 699 | 0.3+ | 0.1+ |
| 2001 07 24 | 644 | 0.0 | 0.0 | 2003 01 27 | 291 | 0.1− | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.9− |
| 2002 11 24 | 644 | 0.3+ | 0.2− | 2003 01 27 | 291 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.6+ | 0.1+ |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2003 01 27 | 291 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.3− |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2006 08 27 | D35 | 0.0 | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.5− |
| 2002 11 24 | 644 | 0.2+ | 0.4+ | 2006 08 27 | D35 | 0.0 | 0.1− | 2006 09 25 | 703 | 1.0− | 0.5− |
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 08 27 | D35 | 0.2+ | 0.5− | 2006 09 25 | 703 | (2.0− | 0.4+) |
| 2002 11 24 | 644 | 0.4− | 0.5+ | 2006 09 17 | 699 | 0.9+ | 1.1+ | 2006 09 25 | 703 | 0.3− | 0.9− |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.4− | 0.5+ | 2006 09 25 | 703 | 0.7− | 0.9+ |

**2006 SZ$_{35}$ = 1999 VP$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.09040 | | (2000.0) | | | |
| $n$ | 0.27565785 | $\omega$ | 286.32758 | | +0.87555513 | +0.47668060 |
| $a$ | 2.3382403 | $\Omega$ | 45.28347 | | −0.39019191 | +0.79366199 |
| $e$ | 0.2684910 | $i$ | 6.35101 | | −0.28487453 | +0.37798975 |
| $P$ | 3.58 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.0 | 0.3+ | 2006 09 19 | 703 | 0.1− | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.3+ |
| 1999 11 09 | 704 | 0.5− | 0.7+ | 2006 09 19 | 703 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.8+ |
| 1999 11 09 | 704 | 0.1+ | 0.8− | 2006 09 25 | 703 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 1999 11 12 | 704 | 0.2− | 0.4+ | 2006 09 25 | 703 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 1999 11 12 | 704 | 0.6+ | 0.0 | 2006 09 25 | 703 | 0.5+ | 0.7+ | 2006 10 23 | 644 | 0.1− | 0.0 |
| 1999 11 12 | 704 | 0.1+ | 0.8− | 2006 09 25 | 703 | 1.0+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2006 09 17 | 699 | 0.5− | 0.1− | 2006 10 09 | 644 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.3− |
| 2006 09 17 | 699 | 0.3+ | 0.4+ | 2006 10 09 | 644 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.5+ | 0.1− |
| 2006 09 17 | 699 | 0.1+ | 0.9− | 2006 10 09 | 644 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2006 09 17 | 699 | 0.3− | 0.5− | 2006 10 10 | 644 | 0.5− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.4− | | | | |
| 2006 09 19 | 703 | 0.1+ | 1.0− | 2006 10 10 | 644 | 0.2+ | 0.1− | | | | |

**2006 SA$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.98438 | | (2000.0) | | | |
| $n$ | 0.29148037 | $\omega$ | 230.76080 | | +0.71701140 | +0.68983956 |
| $a$ | 2.2528374 | $\Omega$ | 85.36909 | | −0.60461486 | +0.68692570 |
| $e$ | 0.1867325 | $i$ | 5.76266 | | −0.34689410 | +0.22859234 |
| $P$ | 3.38 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 24 | 691 | 0.3+ | 0.1− | 2006 09 17 | 699 | 0.1− | 1.0+ | 2006 10 02 | F84 | (1.7+ | 0.5+) |
| 2003 11 24 | 691 | 0.0 | 0.1+ | 2006 09 17 | 699 | 0.4− | 1.2+ | 2006 10 09 | 644 | 0.0 | 0.1+ |
| 2003 11 24 | 691 | 0.2+ | 0.2− | 2006 09 17 | 699 | 0.5+ | 0.5+ | 2006 10 09 | 644 | 0.6− | 0.4+ |
| 2003 11 30 | 691 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2003 11 30 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.0 | 0.9− | 2006 10 21 | 703 | 0.9+ | 0.3− |
| 2003 11 30 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.4− | 2006 10 21 | 703 | 0.7+ | 1.3− |
| 2003 12 14 | 691 | 0.1− | 0.0 | 2006 09 25 | 703 | 1.0− | 0.5− | 2006 10 21 | 703 | 0.0 | 0.2+ |
| 2003 12 14 | 691 | 0.1+ | 0.1− | 2006 09 25 | 703 | 0.6− | 0.7− | 2006 10 21 | 703 | 0.7− | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.1− | 0.2+ | 2006 10 01 | F84 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.3− | 0.4+ | | |
| 2006 08 30 | D35 | 0.1+ | 0.0 | 2006 10 01 | F84 | 1.4+ | 0.6− | 2006 10 23 | 644 | 0.4− | 0.3+ | | |
| 2006 08 30 | D35 | 0.2+ | 0.1+ | 2006 10 01 | F84 | 0.5+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.2+ | | |
| 2006 08 30 | D35 | 0.2+ | 0.1− | 2006 10 02 | F84 | 0.4− | 0.9− | | | | | | |
| 2006 09 17 | 699 | 0.3− | 0.1+ | 2006 10 02 | F84 | 0.2− | 0.6+ | | | | | | |

**2006 SC$_{36}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.68904 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29395917 | $\omega$ | 274.24266 | | +0.98120651 | | +0.17063993 |
| $a$ | 2.2401549 | $\Omega$ | 75.95034 | | −0.11847604 | | +0.90127095 |
| $e$ | 0.1688603 | $i$ | 5.32849 | | −0.15230629 | | +0.39823697 |
| $P$ | 3.35 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 04 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.4− | 1.5− | 2006 10 12 | 644 | 0.1+ | 0.3− | | |
| 1995 04 04 | 691 | 0.4− | 0.7− | 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.4− | | |
| 1995 04 04 | 691 | (3.1+ | 1.2−) | 2006 09 19 | 703 | 0.9− | 0.8− | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2003 12 29 | 291 | 0.4− | 0.0 | 2006 09 21 | 699 | 1.5+ | 1.4− | 2006 10 19 | 703 | 0.2+ | 0.5+ | | |
| 2003 12 29 | 291 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.7+ | 0.6+ | 2006 10 19 | 703 | 0.3− | 0.3+ | | |
| 2003 12 29 | 691 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.8− | 0.6+ | | |
| 2003 12 29 | 691 | 0.2− | 0.4− | 2006 09 21 | 699 | 0.5+ | 0.4+ | 2006 10 19 | 703 | 1.8− | 0.3− | | |
| 2003 12 29 | 291 | 0.3+ | 0.2+ | 2006 09 25 | 703 | 0.7+ | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.1− | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 2006 09 17 | 699 | 0.6+ | 0.2+ | 2006 09 25 | 703 | 0.3− | 1.2+ | 2006 10 21 | 644 | 0.2+ | 0.2− | | |
| 2006 09 17 | 699 | 0.8+ | 0.8− | 2006 09 25 | 703 | 0.6− | 0.4− | 2006 10 24 | 644 | 0.3+ | 0.1+ | | |
| 2006 09 17 | 699 | 0.7− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.3− | 2006 10 24 | 644 | 0.1+ | 0.1+ | | |
| 2006 09 17 | 699 | 0.4+ | 1.3+ | 2006 10 09 | 644 | 0.1− | 0.0 | 2006 10 24 | 644 | 0.6+ | 0.1− | | |
| 2006 09 19 | 703 | 0.2+ | 1.3− | 2006 10 09 | 644 | 0.1− | 0.0 | | | | | | |

**2006 SD$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.11009 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29885738 | $\omega$ | 252.77577 | | +0.69101454 | | +0.71706078 |
| $a$ | 2.2156104 | $\Omega$ | 61.29596 | | −0.61738241 | | +0.65112121 |
| $e$ | 0.1993281 | $i$ | 5.97017 | | −0.37594928 | | +0.24872677 |
| $P$ | 3.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 26 | 691 | 0.1+ | 0.2− | 2006 09 17 | 699 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.1− | | |
| 2003 10 26 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2003 10 26 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 10 22 | 644 | 0.2− | 0.1+ | | |
| 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2003 12 18 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.4− | | |
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.0 | 0.6− | 2006 10 24 | 644 | 0.0 | 0.1+ | | |
| 2006 07 31 | E12 | 0.2+ | 0.5+ | 2006 09 25 | 703 | 0.7− | 0.2− | 2006 10 24 | 644 | 0.0 | 0.2− | | |
| 2006 07 31 | E12 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.1+ | | |
| 2006 07 31 | E12 | 0.6+ | 0.8− | 2006 10 10 | 644 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.7− | 0.2+ | | |
| 2006 07 31 | E12 | 0.6− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.2+ | | |
| 2006 08 19 | 644 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.6− | 2006 10 28 | 703 | 0.9+ | 0.5+ | | |
| 2006 08 19 | 644 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.2− | 0.0 | | |
| 2006 08 19 | 644 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.1+ | | |
| 2006 09 17 | 699 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.6− | 0.6+ | 2006 11 25 | G96 | 0.3+ | 0.2+ | | |
| 2006 09 17 | 699 | 0.2+ | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.1− | 0.2− | | |
| 2006 09 17 | 699 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1− | | | | | | |

**2006 SF$_{36}$ = 2002 XP$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.72401 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21958243 | $\omega$ | 302.96014 | | +0.99150708 | | −0.06177381 |
| $a$ | 2.7210571 | $\Omega$ | 60.81680 | | +0.10742575 | | +0.88502080 |
| $e$ | 0.2151176 | $i$ | 7.53226 | | −0.07330364 | | +0.46143492 |
| $P$ | 4.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 695 | 0.2− | 0.3− | 2005 05 08 | G96 | 0.3− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.1+ | | |
| 2002 12 06 | 695 | 0.4− | 0.2− | 2005 05 08 | G96 | 0.2+ | 0.3− | 2006 10 09 | 644 | 0.2+ | 0.2+ | | |
| 2002 12 13 | 704 | 0.0 | 0.7+ | 2006 09 17 | 699 | 1.1− | 0.5+ | 2006 10 09 | 644 | 0.1+ | 0.2+ | | |
| 2002 12 13 | 704 | 0.3+ | 0.4+ | 2006 09 17 | 699 | 1.1+ | 0.7+ | 2006 10 09 | 644 | 0.3+ | 0.1− | | |
| 2002 12 13 | 704 | 0.1+ | 0.2+ | 2006 09 17 | 699 | 0.5+ | 0.1− | 2006 10 09 | 644 | 0.4+ | 0.1− | | |
| 2005 04 11 | G96 | 0.0 | 0.3− | 2006 09 17 | 699 | 1.0− | 0.4− | 2006 10 09 | 644 | 0.0 | 0.2+ | | |
| 2005 04 11 | G96 | 0.7− | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.2+ | 2006 10 09 | 644 | 0.0 | 0.2+ | | |
| 2005 04 11 | G96 | 0.3− | 0.1+ | 2006 09 19 | 703 | (1.7− | 0.2+) | 2006 10 09 | 644 | 0.3+ | 0.4+ | | |
| 2005 04 11 | G96 | 0.7− | 0.1+ | 2006 09 19 | 703 | 0.4− | 0.5− | 2006 10 19 | 703 | (2.7+ | 2.2+) | | |
| 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.2+ | 2006 10 19 | 703 | (0.6+ | 3.4+) | | |
| 2005 05 08 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 703 | 0.7− | 1.1− | 2006 10 19 | 703 | (1.8+ | 1.4+) | | |
| 2005 05 08 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.2− | 0.5− | 2006 10 19 | 703 | 0.3+ | 0.3+ | | |
| 2005 05 08 | G96 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.2+ | 0.3− | | | | | | |
| 2005 05 08 | G96 | 0.1− | 0.2− | 2006 10 09 | 644 | 0.2+ | 0.4+ | | | | | | |

**2006 SG$_{36}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.09333 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19256016 | $\omega$ | 256.27136 | | +0.43830644 | | +0.88971055 |
| $a$ | 2.9700135 | $\Omega$ | 40.51186 | | −0.72988426 | | +0.43521630 |
| $e$ | 0.0745589 | $i$ | 11.33544 | | −0.52455356 | | +0.13784738 |
| $P$ | 5.12 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.0 | 0.3− | 2006 08 29 | D35 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.5− | 0.2+ | | |
| 2001 10 16 | 644 | 0.1+ | 0.4− | 2006 09 17 | 699 | 0.3+ | 0.8+ | 2006 10 19 | 703 | 0.5− | 0.1+ | | |
| 2001 10 16 | 644 | 0.3− | 0.5− | 2006 09 17 | 699 | 0.9− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2001 12 10 | 645 | 0.5+ | 0.1+ | 2006 09 17 | 699 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.5+ | | |
| 2001 12 10 | 645 | 0.6+ | 0.1+ | 2006 09 17 | 699 | 0.5− | 0.1+ | 2006 10 22 | 644 | 0.4− | 0.3+ | | |
| 2004 01 28 | 645 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.4− | 0.7− | 2006 10 23 | 644 | 0.2+ | 0.3+ | | |
| 2004 01 28 | 645 | 0.0 | 0.2+ | 2006 09 19 | 703 | 1.4+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.4+ | | |
| 2004 03 19 | 644 | 0.5+ | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.6+ | | |
| 2004 03 19 | 644 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.4+ | 0.7− | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2004 03 19 | 644 | 0.3+ | 0.7+ | 2006 09 25 | 703 | 0.3− | 0.7− | 2006 10 23 | 644 | 0.2+ | 0.4+ | | |
| 2005 02 14 | 809 | 0.2+ | 0.4+ | 2006 09 25 | 703 | 0.9− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.6+ | | |
| 2005 02 14 | 809 | 0.0 | 0.4+ | 2006 09 25 | 703 | 1.0− | 0.0 | 2006 10 24 | 644 | 0.4+ | 0.4+ | | |
| 2005 02 14 | 809 | 0.2+ | 0.5+ | 2006 09 25 | 703 | 0.7− | 0.4+ | 2006 10 24 | 644 | 0.2+ | 0.0 | | |
| 2006 08 29 | D35 | 0.6− | 0.7− | 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.4+ | | |
| 2006 08 29 | D35 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.4+ | | | | | | |

**2006 SJ$_{36}$ = 1995 WK$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.34504 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26353381 | $\omega$ | 246.08229 | | +0.82743882 | | +0.54813080 |
| $a$ | 2.4094162 | $\Omega$ | 80.46800 | | −0.45964951 | | +0.78595239 |
| $e$ | 0.1356750 | $i$ | 7.10942 | | −0.32259467 | | +0.28606200 |
| $P$ | 3.74 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.1+ | 0.1− | 2006 09 17 | 699 | 0.6+ | 0.1+ | 2006 09 25 | 703 | 0.6+ | 0.4+ | | |
| 1995 11 19 | 691 | 0.0 | 0.1− | 2006 09 17 | 699 | 0.1+ | 0.2− | 2006 09 25 | 703 | (0.9+ | 2.1+) | | |
| 1995 11 19 | 691 | 0.2+ | 0.1− | 2006 09 17 | 699 | 0.4− | 0.1+ | 2006 09 25 | 703 | 0.5+ | 0.3+ | | |
| 1995 11 25 | 691 | 0.0 | 0.4+ | 2006 09 19 | 703 | 0.4− | 0.6− | 2006 09 25 | 703 | 0.8− | 0.1− | | |
| 1995 11 25 | 691 | 0.1+ | 0.3− | 2006 09 19 | 703 | 1.0− | 0.6− | 2006 10 23 | 644 | 0.3+ | 0.1− | | |
| 1995 11 25 | 691 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.9+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.3+ | | |
| 2006 09 17 | 699 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 23 | 644 | 0.8− | 0.2+ | | |

**2006 SN$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.69933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28236299 | $\omega$ | 264.82551 | | +0.61303962 | +0.78050946 | |
| $a$ | 2.3010755 | $\Omega$ | 43.77691 | | −0.63649606 | +0.57971956 | |
| $e$ | 0.0836661 | $i$ | 10.19214 | | −0.46803332 | +0.23394490 | |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 0.0 | 0.3− | 2005 04 04 | 703 | 0.0 | 1.3+ | 2006 09 25 | 703 | 0.4+ | 0.4− |
| 2003 11 20 | 704 | 1.1+ | 0.3− | 2005 04 04 | 703 | 0.5− | 1.4+ | 2006 09 25 | 703 | 0.5− | 0.1− |
| 2003 11 20 | 704 | 0.1+ | 0.0 | 2005 04 04 | 703 | 0.0 | 0.9+ | 2006 09 25 | 703 | 0.3− | 0.9+ |
| 2003 11 20 | 704 | 0.6+ | 0.7+ | 2005 04 09 | 699 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.6+ |
| 2003 12 18 | 691 | 0.2− | 0.4− | 2005 04 09 | 699 | 0.7+ | 1.2− | 2006 10 09 | 644 | 0.6+ | 0.5+ |
| 2003 12 18 | 691 | 0.1− | 0.3− | 2005 04 09 | 699 | 1.3+ | 0.9− | 2006 10 09 | 644 | 0.2+ | 0.4+ |
| 2003 12 18 | 691 | 0.2− | 0.7+ | 2005 04 09 | 699 | (2.0+ | 2.5−) | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2005 03 18 | 703 | 0.2− | 0.1− | 2006 09 17 | 699 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2005 03 18 | 703 | 0.5− | 1.4− | 2006 09 17 | 699 | 1.1+ | 0.7+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2005 03 18 | 703 | 0.7− | 0.0 | 2006 09 17 | 699 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.6− | 0.6− |
| 2005 03 18 | 703 | 0.4− | 0.6+ | 2006 09 17 | 699 | 1.2− | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.5+ |
| 2005 03 18 | 703 | (2.0− | 0.3+) | 2006 09 19 | 703 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.2+ |
| 2005 03 18 | 703 | 1.1+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.8− | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 2005 03 18 | 703 | 0.7− | 0.7− | 2006 09 19 | 703 | 0.9− | 0.9− | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2005 03 18 | 703 | 0.4− | 0.7+ | 2006 09 19 | 703 | 0.5− | 0.5− | 2006 10 23 | 644 | 0.4+ | 0.4+ |
| 2005 04 04 | 703 | 1.1+ | 0.8+ | 2006 09 25 | 703 | 0.7− | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.5+ |

**2006 SR$_{36}$ = 1997 AJ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.63772 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27855402 | $\omega$ | 246.56815 | | +0.96106635 | +0.24326587 | |
| $a$ | 2.3220047 | $\Omega$ | 99.14718 | | −0.17911880 | +0.90959779 | |
| $e$ | 0.1331160 | $i$ | 7.62764 | | −0.21039947 | +0.33682870 | |
| $P$ | 3.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 10 | 684 | 0.8+ | 0.5− | 2004 01 21 | 704 | 0.2− | 1.0+ | 2006 09 19 | 703 | 0.1− | 0.4+ |
| 1997 01 10 | 684 | 0.5+ | 0.4− | 2004 01 21 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.6− | 0.7+ |
| 1997 01 11 | 684 | 0.5− | 1.0− | 2005 03 18 | 703 | 1.5− | 0.9+ | 2006 09 24 | 608 | 0.8+ | 0.7− |
| 1997 01 11 | 684 | 1.4− | 0.8+ | 2005 03 18 | 703 | (2.1− | 0.1+) | 2006 09 24 | 608 | 0.6+ | 1.3− |
| 1998 04 23 | 704 | 0.2− | 1.5− | 2005 03 18 | 703 | 0.4+ | 0.7− | 2006 09 24 | 608 | 0.3+ | 1.2− |
| 1998 04 23 | 704 | 0.5− | 1.5− | 2005 03 18 | 703 | 0.3+ | 0.1+ | 2006 09 25 | 703 | 0.3− | 0.1− |
| 1998 04 23 | 704 | 1.2+ | 0.5+ | 2005 04 13 | 703 | (1.1− | 1.8+) | 2006 09 25 | 703 | 0.4+ | 0.3+ |
| 1998 04 23 | 704 | 1.7− | 1.7− | 2005 04 13 | 703 | 1.5− | 0.2+ | 2006 09 25 | 703 | 0.4+ | 0.3− |
| 1999 09 14 | 704 | 0.5− | 0.2+ | 2005 04 13 | 703 | (1.8− | 0.2+) | 2006 09 25 | 703 | 0.5+ | 0.2+ |
| 1999 09 14 | 704 | 0.8− | 0.0 | 2005 04 13 | 703 | 0.1+ | 0.1− | 2006 10 04 | 703 | 0.3− | 0.2+ |
| 1999 09 14 | 704 | 0.2− | 0.4+ | 2005 04 14 | 704 | (3.8− | 1.6−) | 2006 10 04 | 703 | 0.8− | 0.5+ |
| 1999 09 14 | 704 | 0.4− | 0.3+ | 2005 04 14 | 704 | 0.5+ | 0.7+ | 2006 10 04 | 703 | 0.1− | 0.1+ |
| 1999 09 14 | 704 | 0.1− | 0.1− | 2005 04 14 | 704 | 0.7+ | 0.5− | 2006 10 04 | 703 | 0.5− | 0.4+ |
| 1999 10 08 | 704 | 1.1+ | 0.6− | 2005 04 14 | 704 | 1.0+ | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.3+ |
| 1999 10 08 | 704 | 0.9+ | 0.5− | 2006 08 19 | 644 | 0.3− | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 1999 10 08 | 704 | 0.4+ | 0.8− | 2006 08 19 | 644 | 0.4− | 0.0 | 2006 10 09 | 644 | 0.0 | 0.3+ |
| 1999 10 08 | 704 | 0.9+ | 0.8− | 2006 08 19 | 644 | 0.6− | 0.4+ | 2006 11 23 | 703 | 0.9− | 1.3− |
| 1999 10 08 | 704 | 0.1+ | 0.8− | 2006 09 17 | 699 | 0.2− | 0.7+ | 2006 11 23 | 703 | 0.5− | 1.1− |
| 2003 12 14 | 926 | 0.0 | 0.3+ | 2006 09 17 | 699 | 0.4+ | 1.2+ | 2006 11 23 | 703 | 0.4+ | 0.0 |
| 2003 12 14 | 926 | 0.1− | 0.5+ | 2006 09 17 | 699 | 0.0 | 0.3− | 2006 11 23 | 703 | 2.7+ | 1.4− |
| 2004 01 21 | 704 | (0.3− | 2.0−) | 2006 09 19 | 703 | 0.4− | 0.5+ | | | | |
| 2004 01 21 | 704 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.3− | 0.3+ | | | | |

**2006 SU$_{36}$ = 2004 JW$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.61245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17386166 | $\omega$ | 349.14363 | | −0.95322552 | +0.26689858 | |
| $a$ | 3.1793145 | $\Omega$ | 207.63809 | | −0.24932354 | −0.95963501 | |
| $e$ | 0.0864252 | $i$ | 17.80772 | | −0.17087677 | −0.08868927 | |
| $P$ | 5.67 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.2− | 0.3+ | 2005 08 25 | 644 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2001 08 21 | 691 | 0.3+ | 0.2+ | 2005 08 25 | 644 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.3− |
| 2001 08 21 | 691 | 0.0 | 0.2− | 2005 08 25 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2004 05 13 | 699 | 1.0+ | 0.5+ | 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 703 | (0.8+ | 1.8+) |
| 2004 05 13 | 699 | 0.4+ | 1.4+ | 2006 09 17 | 691 | 0.5+ | 0.2+ | 2006 10 17 | 703 | 0.9− | 1.0− |
| 2004 05 13 | 699 | 0.2+ | 1.0+ | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.4+ |
| 2004 05 13 | 699 | 0.4− | 0.8+ | 2006 09 19 | 703 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2004 05 23 | 704 | 0.6− | 0.6− | 2006 09 19 | 703 | (2.0− | 1.1+) | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2004 05 23 | 704 | 0.1− | 0.3− | 2006 09 19 | 703 | 0.8− | 0.8+ | 2006 11 15 | G96 | 0.3− | 0.7− |
| 2004 05 23 | 704 | 0.8− | 0.1+ | 2006 09 19 | 703 | 0.8+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2004 05 23 | 704 | 0.2+ | 0.5− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2005 06 30 | 644 | 0.2+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2005 06 30 | 644 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2005 06 30 | 644 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.0 |

**2006 SX$_{36}$ = 2004 HE$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.26606 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17163244 | $\omega$ | 125.35232 | | +0.94266453 | +0.32048444 | |
| $a$ | 3.2067846 | $\Omega$ | 216.21377 | | −0.33371079 | +0.90133070 | |
| $e$ | 0.0960521 | $i$ | 9.06964 | | −0.00454941 | +0.29136351 | |
| $P$ | 5.74 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 09 17 | 291 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2004 04 16 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.8− | 0.1− | 2006 10 27 | 691 | 0.3− | 0.4− |
| 2004 04 21 | 291 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.9+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2004 04 21 | 291 | 0.0 | 0.1− | 2006 09 19 | 703 | (2.0− | 0.6−) | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 04 21 | 291 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2006 09 17 | 691 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2006 09 17 | 691 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2006 09 17 | 691 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2− | 0.4+ |
| 2006 09 17 | 291 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.9+ |
| 2006 09 17 | 291 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.4+ | | | | |

**2006 SZ$_{36}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.50185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28275791 | $\omega$ | 281.01153 | | −0.00884351 | +0.99973046 | |
| $a$ | 2.2989325 | $\Omega$ | 348.41704 | | −0.87063605 | −0.01825700 | |
| $e$ | 0.0604687 | $i$ | 6.13729 | | −0.49184820 | +0.01434199 | |
| $P$ | 3.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.0 | 0.6− | 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 09 30 | 682 | 0.4− | 0.0 |
| 2002 07 06 | 644 | 0.2+ | 0.7− | 2006 07 22 | G96 | 0.2− | 0.9+ | 2006 09 30 | 682 | 0.2+ | 0.1− |
| 2002 07 06 | 644 | 0.1− | 0.9− | 2006 07 22 | G96 | 0.0 | 0.3+ | 2006 09 30 | 682 | 0.6+ | 0.5− |
| 2002 07 16 | 644 | 0.5− | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.8+ | 2006 10 01 | 691 | 0.2− | 0.6+ |
| 2002 07 16 | 644 | 0.1+ | 0.8+ | 2006 09 17 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.6+ |
| 2002 07 16 | 644 | 0.6+ | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.4− | 0.5+ |
| 2005 05 16 | 644 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.2− | 0.6− | 2006 10 12 | 644 | 0.1− | 0.6+ |
| 2005 05 16 | 644 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2005 05 16 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 703 | 0.4+ | 0.6− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2005 05 16 | 644 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.9+ | 0.8− | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2005 05 16 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 16 | 644 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.4− |
| 2006 07 22 | G96 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.1− | 1.2− |

**2006 SB$_{37}$ = 6206 P-L = 2003 AM$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.15156 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23586936 | $\omega$ | 76.76871 | | +0.45082350 | | −0.89241412 |
| $a$ | 2.5943090 | $\Omega$ | 346.38752 | | +0.78481927 | | +0.40635129 |
| $e$ | 0.3333992 | $i$ | 4.59314 | | +0.42522569 | | +0.19615215 |
| $P$ | 4.18 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.7+ | 1.2+ | 2003 01 05 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 0.4− |
| 1960 09 24 | 675 | 0.2+ | 0.5− | 2003 01 05 | 704 | 0.0 | 0.3+ | 2006 09 29 | 704 | (0.2− | 2.5+) |
| 1960 09 25 | 675 | 0.5+ | 0.3+ | 2003 01 07 | 704 | 0.4+ | 0.4− | 2006 09 29 | 704 | 0.2− | 0.3+ |
| 1960 09 25 | 675 | 0.5+ | 0.5− | 2003 01 07 | 704 | 0.7+ | 0.5− | 2006 10 03 | 704 | 0.3+ | 0.0 |
| 1960 09 26 | 675 | 0.4− | 0.5− | 2003 01 07 | 704 | 0.5− | 1.1+ | 2006 10 03 | 704 | 0.4− | 0.0 |
| 1960 09 26 | 675 | 0.7+ | 1.0− | 2003 01 07 | 704 | 0.0 | 0.4− | 2006 10 03 | 704 | 0.6+ | 0.3+ |
| 1960 09 28 | 675 | 1.1− | 0.5− | 2003 01 07 | 704 | 0.4− | 0.3− | 2006 10 03 | 704 | 0.3+ | 0.2− |
| 1960 09 28 | 675 | 0.1+ | 0.8− | 2006 07 22 | G96 | 0.1− | 0.6− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2002 11 12 | 704 | 1.0− | 0.2− | 2006 07 22 | G96 | 0.9+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 2002 11 12 | 704 | 0.0 | 0.7− | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2− |
| 2002 11 12 | 704 | 0.7− | 0.6− | 2006 07 22 | G96 | 0.7− | 0.1− | 2006 10 11 | 644 | 0.4− | 1.1+ |
| 2002 11 12 | 704 | 0.3+ | 0.5− | 2006 09 17 | 691 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 11 12 | 704 | 0.1− | 1.1− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 09 17 | 691 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.2− |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.3− | 0.8+ | 2006 09 25 | 704 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 12 15 | 704 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.1− | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 12 15 | 704 | 0.3− | 0.3+ | 2006 09 25 | 704 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 12 15 | 704 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.6− | 1.1+ | 2006 10 26 | 704 | 0.8+ | 0.8+ |
| 2002 12 15 | 704 | 0.3− | 0.9− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 26 | 704 | 0.4+ | 0.1+ |
| 2003 01 05 | 704 | 0.3+ | 0.6− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 26 | 704 | (2.1+ | 0.1−) |
| 2003 01 05 | 704 | 0.5+ | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1+ | | | | |
| 2003 01 05 | 704 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.5− | | | | |

**2006 SD$_{37}$ = 2005 GQ$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.65138 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30448692 | $\omega$ | 232.78222 | | −0.80692289 | | +0.59031255 |
| $a$ | 2.1882165 | $\Omega$ | 343.36645 | | −0.51715564 | | −0.72258928 |
| $e$ | 0.1032086 | $i$ | 4.03910 | | −0.28535152 | | −0.35971630 |
| $P$ | 3.24 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 29 | 691 | 0.2− | 0.0 | 2005 04 12 | 691 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 1995 01 29 | 691 | 0.2+ | 0.0 | 2005 04 16 | 691 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.1+ |
| 1995 01 29 | 691 | 0.1+ | 0.1− | 2005 04 16 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.3+ | 0.1+ |
| 2003 10 25 | 691 | 0.4− | 0.4+ | 2005 04 16 | 691 | 0.5+ | 1.4+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2003 10 25 | 691 | 0.1− | 0.3+ | 2005 05 06 | 703 | 0.7− | 1.0+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2003 10 25 | 691 | 0.1− | 0.2+ | 2005 05 06 | 703 | 0.6− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2003 11 21 | 691 | 0.2+ | 0.0 | 2005 05 06 | 703 | 0.5− | 0.9− | 2006 10 01 | 691 | 0.3+ | 0.3− |
| 2003 11 21 | 691 | 0.1− | 0.3+ | 2005 05 06 | 703 | (2.1− | 2.1−) | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2003 11 21 | 691 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2003 12 01 | 691 | 0.2+ | 0.3+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2003 12 01 | 691 | 0.4− | 0.2− | 2006 09 17 | 691 | 0.3− | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2003 12 01 | 691 | 0.5− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2005 04 12 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2005 04 12 | 691 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.3+ | | | | |

**2006 SF$_{37}$ = 2002 UY$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.09716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25964864 | $\omega$ | 295.27972 | | −0.97486636 | | −0.21794369 |
| $a$ | 2.4333917 | $\Omega$ | 232.16593 | | +0.21960564 | | −0.90507394 |
| $e$ | 0.0901438 | $i$ | 3.35485 | | +0.03753598 | | −0.36515983 |
| $P$ | 3.80 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 645 | 0.0 | 0.1− | 2006 09 23 | 152 | 0.6+ | 1.0+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 09 23 | 152 | 0.9+ | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.6− |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2006 09 17 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2006 09 19 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2006 09 19 | 691 | 0.3− | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2006 09 23 | 152 | (0.0 | 1.8+) | 2006 10 11 | 691 | 0.0 | 0.3− | | | | |

**2006 SM$_{37}$ = 1999 TM$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.10929 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28900657 | $\omega$ | 223.71961 | | −0.90703525 | | +0.42072643 |
| $a$ | 2.2656748 | $\Omega$ | 341.14133 | | −0.37079330 | | −0.81684500 |
| $e$ | 0.0928233 | $i$ | 2.94784 | | −0.19949782 | | −0.39465620 |
| $P$ | 3.41 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 03 | 691 | 0.4− | 0.8+ | 2003 11 20 | 704 | (3.4− | 1.3−) | 2006 09 27 | 691 | 0.5− | 0.2+ |
| 1999 10 03 | 691 | 0.1− | 0.2− | 2005 05 19 | 644 | 0.1+ | 1.0+ | 2006 09 27 | 691 | 0.1− | 0.3− |
| 1999 10 03 | 691 | 0.3+ | 0.1− | 2005 05 19 | 644 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 1999 10 09 | 691 | 0.1+ | 0.5− | 2005 05 19 | 644 | 0.4+ | 1.0+ | 2006 10 01 | 691 | 0.5+ | 0.3− |
| 1999 10 09 | 691 | 0.1+ | 0.3+ | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 1999 10 09 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2001 02 17 | 691 | 0.3+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.8+ | 0.4− |
| 2001 02 17 | 691 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 02 17 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2003 11 19 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2003 11 19 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.7− |
| 2003 11 19 | 691 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.7− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2003 11 20 | 704 | (2.6+ | 0.0 ) | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 1.0− |
| 2003 11 20 | 704 | (1.8− | 0.0 ) | 2006 09 27 | 691 | 0.2− | 0.1+ | | | | |

**2006 SA$_{38}$ = 2002 CL$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.74704 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35177165 | $\omega$ | 114.71095 | | −0.32484614 | | −0.94512779 |
| $a$ | 1.9874467 | $\Omega$ | 353.92258 | | +0.70479122 | | −0.21740353 |
| $e$ | 0.0730392 | $i$ | 19.16838 | | +0.63066974 | | −0.24386300 |
| $P$ | 2.80 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 06 | 704 | 0.9− | 0.8− | 2006 08 28 | 703 | 0.3+ | 0.5− | 2006 10 17 | 683 | 0.3+ | 0.8+ |
| 2002 02 06 | 704 | 0.2− | 0.3− | 2006 08 28 | 703 | 1.3− | 0.2+ | 2006 10 17 | 683 | 0.3− | 1.4− |
| 2002 02 06 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | (0.5+ | 2.5+) | 2006 10 17 | 703 | 0.1+ | 0.2+ |
| 2002 02 06 | 704 | 0.2+ | 0.5− | 2006 09 18 | 691 | 0.0 | 0.3− | 2006 10 17 | 703 | 1.0− | 0.4− |
| 2002 02 06 | 704 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2002 02 07 | 704 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2002 02 07 | 704 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.3+ | 0.2− | 2006 10 19 | 683 | 0.8+ | 0.6+ |
| 2002 02 07 | 704 | 0.0 | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.1+ | 2006 10 19 | 683 | 0.4− | 1.2+ |
| 2002 02 07 | 704 | 0.8+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.4+ | 2006 10 19 | 683 | 1.2+ | 0.5+ |
| 2002 02 07 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.1+ | | | | |
| 2006 08 28 | 703 | 0.2+ | 1.2+ | 2006 10 17 | 683 | 0.6+ | 0.3− | | | | |

**2006 SD$_{38}$ = 2005 JG$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.07725 | | | (2000.0) | | |
| $n$ | 0.18602485 | $\omega$ | 113.70616 | | +0.79329221 | +0.60363270 |
| $a$ | 3.0391729 | $\Omega$ | 209.35046 | | −0.60079159 | +0.75495356 |
| $e$ | 0.2364629 | $i$ | 9.33045 | | −0.09867592 | +0.25626684 |
| $P$ | 5.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.0 | 0.2− | 2006 09 19 | 703 | 1.3− | 0.4− | 2006 10 13 | 291 | 0.2− | 0.3+ |
| 2001 10 14 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.8− | 0.8− | 2006 10 13 | 291 | 0.1− | 0.3+ |
| 2001 10 14 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.5− | 1.2+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2005 05 13 | 691 | 0.2+ | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2005 05 13 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.5+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2005 05 14 | G96 | 0.3− | 0.1− | 2006 09 19 | 699 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2005 05 14 | G96 | 0.2+ | 0.5− | 2006 09 26 | 691 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2005 05 14 | G96 | 0.1− | 0.6− | 2006 09 26 | 691 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2005 05 14 | G96 | 0.8− | 0.7− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2006 09 18 | 691 | 0.5+ | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2006 09 19 | 699 | 0.5− | 0.8+ | 2006 10 13 | 291 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.2− |

**2006 SQ$_{38}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 112.07026 | | | (2000.0) | | |
| $n$ | 0.29298924 | $\omega$ | 284.84390 | | −0.36522913 | +0.92981106 |
| $a$ | 2.2450961 | $\Omega$ | 323.63094 | | −0.82197644 | −0.34498625 |
| $e$ | 0.0638698 | $i$ | 4.38874 | | −0.43699246 | −0.12820248 |
| $P$ | 3.36 | $H$ | 17.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 21 | 691 | (1.3+ | 4.0−) | 2006 09 17 | 703 | 0.6+ | 1.2+ | 2006 09 26 | 691 | 0.3− | 0.1− |
| 1999 08 21 | 691 | 0.1+ | 0.1− | 2006 09 17 | 703 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.2+ |
| 1999 08 21 | 691 | 0.1− | 0.2+ | 2006 09 17 | 703 | 0.8− | 1.4− | 2006 09 26 | 691 | 0.4− | 0.0 |
| 2003 11 20 | 691 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2003 11 20 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2003 11 20 | 691 | 0.0 | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2005 04 06 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2005 04 06 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.8+ | 0.7− | 2006 10 23 | G96 | 0.0 | 0.4− |
| 2005 04 06 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.6+ | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 2006 09 17 | 703 | 0.6− | 1.0+ | 2006 09 19 | 703 | 0.8− | 1.0+ | 2006 10 23 | G96 | 0.1− | 0.2− |

**2006 SD$_{39}$ = 2004 FQ$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.44282 | | | (2000.0) | | |
| $n$ | 0.19927535 | $\omega$ | 338.65559 | | +0.98323778 | +0.17835321 |
| $a$ | 2.9029106 | $\Omega$ | 11.27129 | | −0.12622186 | +0.81569322 |
| $e$ | 0.0862453 | $i$ | 11.16980 | | −0.13157322 | +0.55030419 |
| $P$ | 4.95 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.4− | 0.7+ | 2006 09 18 | 703 | 1.4− | 0.3− | 2006 09 25 | 699 | 1.1+ | 0.1+ |
| 2001 09 12 | 704 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.1− | 0.1− |
| 2001 09 12 | 704 | 0.8− | 0.3+ | 2006 09 18 | 703 | 0.7+ | 0.3− | 2006 09 25 | 699 | 1.3+ | 0.9+ |
| 2001 09 12 | 704 | 0.6+ | 0.1− | 2006 09 18 | 703 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.0 | 0.5+ |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 1.2+ | 1.3+ | 2006 09 30 | 703 | 1.2− | 0.3− |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.2− | 1.3+ | 2006 09 30 | 703 | 0.8+ | 0.7− |
| 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.3− | 0.3− |
| 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 09 18 | 699 | 0.8− | 1.2+ | 2006 09 30 | 703 | 0.8− | 0.4− |
| 2004 03 27 | 691 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.5− | 2006 10 20 | G96 | 0.4+ | 0.1+ |
| 2004 03 27 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | 1.1− | 1.2− | 2006 10 20 | G96 | 0.0 | 0.3+ |
| 2006 08 20 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.8− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.2+ |
| 2006 08 20 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | (1.7− | 0.1+) | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2006 08 20 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 0.2+ | 0.9− | 2006 11 21 | G96 | 0.6+ | 0.4+ |
| 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.2+ |
| 2006 08 29 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.7− | 2006 11 21 | G96 | 0.6+ | 0.2+ |
| 2006 08 29 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.9+ | 0.3+ |

**2006 SL$_{39}$ = 2006 RS$_{102}$ = 2001 ON$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.67456 | | | (2000.0) | | |
| $n$ | 0.21670203 | $\omega$ | 38.53868 | | +0.99729131 | −0.05763047 |
| $a$ | 2.7451162 | $\Omega$ | 324.68391 | | +0.03052301 | +0.88960016 |
| $e$ | 0.2344417 | $i$ | 4.53449 | | +0.06692072 | +0.45308971 |
| $P$ | 4.55 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 06 | 704 | 0.7− | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.5− | 2006 09 30 | 703 | 0.2− | 0.0 |
| 1997 11 06 | 704 | (1.4+ | 2.1+) | 2006 09 18 | 704 | (1.8− | 0.3+) | 2006 10 03 | 704 | 0.7− | 0.4+ |
| 1997 11 06 | 704 | 1.0− | 1.6− | 2006 09 18 | 704 | 0.9+ | 0.5− | 2006 10 03 | 704 | (2.4− | 0.6−) |
| 1997 11 06 | 704 | 1.1− | 1.0− | 2006 09 18 | 704 | 1.4− | 0.4− | 2006 10 03 | 704 | 1.1− | 1.1+ |
| 1997 11 06 | 704 | 1.3− | 0.3− | 2006 09 18 | 704 | 1.1− | 0.2+ | 2006 10 03 | 704 | 0.7− | 1.0+ |
| 1997 12 01 | 691 | 0.4+ | 1.0− | 2006 09 18 | 699 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.0 | 0.2− |
| 1997 12 01 | 691 | 0.8+ | 0.0 | 2006 09 18 | 699 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.1− | 0.2− |
| 1997 12 01 | 691 | 0.8+ | 0.6− | 2006 09 18 | 699 | 0.0 | 0.9+ | 2006 10 03 | 704 | (1.9− | 0.4−) |
| 2001 07 21 | 608 | 0.1− | 0.7− | 2006 09 19 | 703 | 0.1− | 0.9+ | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 2001 07 21 | 608 | 0.3− | 0.7− | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.3− |
| 2001 07 21 | 608 | 0.1− | 0.4− | 2006 09 19 | 703 | 0.1+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2001 07 27 | 608 | 0.6+ | 0.6− | 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2001 07 27 | 608 | 0.8+ | 0.5− | 2006 09 22 | 224 | 0.2+ | 0.8+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2001 07 27 | 608 | 0.3+ | 0.9− | 2006 09 22 | 224 | 0.0 | 1.1+ | 2006 10 17 | 703 | 0.5− | 0.0 |
| 2004 03 23 | 691 | 0.3+ | 0.5+ | 2006 09 22 | 224 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2004 03 23 | 691 | 0.3+ | 0.5+ | 2006 09 28 | 699 | 0.1− | 0.5+ | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 699 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2006 08 30 | 699 | 0.2+ | 0.3− | 2006 09 28 | 699 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.4+ |
| 2006 08 30 | 699 | 0.2− | 0.0 | 2006 09 28 | 699 | 0.3+ | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2006 08 30 | 699 | 0.4− | 0.7+ | 2006 09 29 | 704 | 0.3− | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2006 08 30 | 699 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.5− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 14 | 644 | 0.1+ | 0.7+ | 2006 09 29 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 09 29 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.2− | 0.5+ | 2006 11 06 | 644 | 0.2+ | 0.1+ |
| 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 06 | 644 | 0.5+ | 0.0 |
| 2006 09 18 | 703 | 0.6− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.2+ | 2006 11 06 | 644 | 0.1− | 0.1− |
| 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.3− | | | | |

**2006 SP$_{39}$ = 2005 EX$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.63514 | | | (2000.0) | | |
| $n$ | 0.28237794 | $\omega$ | 110.54832 | | +0.70788537 | +0.70475608 |
| $a$ | 2.3009943 | $\Omega$ | 204.71718 | | −0.68272448 | +0.66561888 |
| $e$ | 0.1364018 | $i$ | 6.46581 | | −0.18106791 | +0.24550026 |
| $P$ | 3.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.0 | 0.7− | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2005 03 08 | 691 | 0.2− | 0.3+ | 2006 09 18 | 704 | 1.1− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2005 03 08 | 691 | 0.0 | 0.4+ | 2006 09 18 | 704 | 0.5− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.1+ |
| 2005 03 13 | 691 | 0.0 | 0.2+ | 2006 09 18 | 704 | 0.3− | 0.7+ | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 2005 03 13 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.4− |
| 2005 03 13 | 691 | 0.4+ | 0.5+ | 2006 09 19 | 699 | 0.7+ | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2006 08 21 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 699 | (1.2+ | 1.9+) | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2006 08 21 | 691 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.2− | 0.6− | 2006 11 14 | G96 | 0.7− | 0.4+ |
| 2006 08 21 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.7+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.1+ |
| 2006 08 29 | 703 | 0.4− | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.4+ |
| 2006 08 29 | 703 | 0.5+ | 1.0− | 2006 10 20 | 691 | 0.8− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2006 08 29 | 703 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.7+ | | | | |

**2006 SA$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.38692 | | (2000.0) | | | |
| $n$ | 0.28057713 | $\omega$ | 16.86076 | | +0.67198305 | −0.74005297 |
| $a$ | 2.3108293 | $\Omega$ | 30.93554 | | +0.67311784 | +0.59483148 |
| $e$ | 0.1481740 | $i$ | 3.07484 | | +0.30878981 | +0.31384250 |
| $P$ | 3.51 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 1.2+ | 2006 10 20 | G96 | 0.4+ | 0.3− |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 2003 12 18 | 691 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.2− | 1.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2003 12 28 | 691 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 1.0+ | 1.1− | 2006 10 20 | G96 | 0.2+ | 0.3+ |
| 2003 12 28 | 691 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2006 08 27 | 691 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2006 08 27 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 1.0+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 08 27 | 691 | 0.5− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.5+ |
| 2006 09 15 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 1.1− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.2− | | | | |

**2006 SF$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.34728 | | (2000.0) | | | |
| $n$ | 0.19717317 | $\omega$ | 313.76003 | | +0.98102251 | −0.18920739 |
| $a$ | 2.9235072 | $\Omega$ | 57.18964 | | +0.18921293 | +0.88647149 |
| $e$ | 0.1314830 | $i$ | 2.88978 | | +0.04234727 | +0.42233738 |
| $P$ | 5.00 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.0 | 0.1− |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.4− | 2006 09 30 | G96 | 0.5− | 0.2− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.5+ | 2006 09 30 | G96 | 0.3− | 0.1+ |
| 1999 03 21 | 645 | 0.2− | 0.0 | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.2− |
| 2002 12 13 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.7− | 0.9+ | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 12 13 | 645 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.0 |
| 2006 08 18 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | (0.5− | 2.6+) | 2006 10 20 | G96 | 0.3+ | 0.2+ |
| 2006 08 18 | 691 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.6+ | 0.7− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2006 08 18 | 691 | 0.1− | 0.2− | 2006 09 19 | 703 | 1.1+ | 0.9+ | 2006 11 17 | G96 | 0.3− | 0.7+ |
| 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2006 08 27 | 691 | 0.2− | 0.2− | 2006 09 19 | 703 | 0.4+ | 0.3+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2006 08 27 | 691 | 0.4− | 0.1+ | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.4− |

**2006 SN$_{40}$ = 2004 DO$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.19203 | | (2000.0) | | | |
| $n$ | 0.25962487 | $\omega$ | 314.05090 | | +0.43092371 | −0.90037775 |
| $a$ | 2.4335402 | $\Omega$ | 110.33458 | | +0.84519797 | +0.37934018 |
| $e$ | 0.1716556 | $i$ | 3.68130 | | +0.31614103 | +0.21312190 |
| $P$ | 3.80 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 07 | 691 | 0.1+ | 0.0 | 2004 03 26 | 691 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.1+ |
| 2000 02 07 | 691 | 0.0 | 0.2− | 2004 03 26 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.4+ |
| 2000 02 07 | 691 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.2− | 1.1+ | 2006 09 30 | 703 | 0.2+ | 0.2+ |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2006 09 18 | 703 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2002 08 29 | 644 | 0.3− | 0.6+ | 2006 09 18 | 703 | (0.0 | 1.9+) | 2006 10 02 | G96 | 0.2− | 0.0 |
| 2004 02 23 | 704 | (0.5− | 1.7+) | 2006 09 19 | 703 | 0.9+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | 0.1+ | 0.2− | 2006 09 19 | 703 | 0.9+ | 0.3− | 2006 10 16 | 703 | 1.0+ | 0.5− |
| 2004 02 23 | 704 | 0.9+ | 0.0 | 2006 09 19 | 703 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.9− | 1.1− |
| 2004 02 23 | 704 | 0.8+ | 0.6+ | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2− | 1.0+ |
| 2004 03 01 | 291 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.0 | 0.9− | 2006 10 16 | 703 | 1.0− | 0.2+ |
| 2004 03 01 | 291 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.4− | 1.4+ | 2006 10 18 | 682 | 0.0 | 0.4− |
| 2004 03 01 | 291 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.3− | 0.5− | 2006 10 18 | 682 | 0.1− | 0.5− |
| 2004 03 26 | 691 | 0.5− | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.7+ | 2006 10 18 | 682 | 0.2− | 0.0 |

**2006 SY$_{40}$ = 2004 EX$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.99669 | | (2000.0) | | | |
| $n$ | 0.18015440 | $\omega$ | 261.14188 | | +0.60365991 | +0.79682632 |
| $a$ | 3.1048417 | $\Omega$ | 46.02330 | | −0.71667816 | +0.55651824 |
| $e$ | 0.1496067 | $i$ | 2.04979 | | −0.34923791 | +0.23527697 |
| $P$ | 5.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.5− | 0.2− | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.7+ |
| 1995 07 25 | 691 | 0.1+ | 0.0 | 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 1995 07 25 | 691 | 0.3− | 0.2− | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1999 04 12 | 691 | 0.7+ | 1.5+ | 2006 09 18 | 691 | 0.1− | 0.6+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 1999 04 12 | 691 | 0.8+ | 0.8+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.0 |
| 1999 04 12 | 691 | 0.7+ | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.3+ |
| 2001 11 14 | 291 | 0.0 | 0.7+ | 2006 09 18 | 291 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2001 11 14 | 291 | 0.1− | 0.6+ | 2006 09 18 | 291 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 2001 11 14 | 291 | 0.5+ | 0.1− | 2006 09 18 | 291 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.5+ |
| 2004 03 15 | 691 | 0.1− | 0.5+ | 2006 09 19 | 703 | 0.7+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 2004 03 15 | 691 | 0.3− | 0.3+ | 2006 09 19 | 703 | 0.2+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.7+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.7− | 0.8− | | | | |

**2006 SB$_{41}$ = 2000 KS$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 78.99521 | | (2000.0) | | | |
| $n$ | 0.21017613 | $\omega$ | 207.04302 | | +0.24788928 | +0.96841080 |
| $a$ | 2.8016494 | $\Omega$ | 77.31970 | | −0.88375728 | +0.23748050 |
| $e$ | 0.0341619 | $i$ | 1.58850 | | −0.39689290 | +0.07604956 |
| $P$ | 4.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 691 | 0.0 | 0.5− | 2003 01 04 | 291 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2000 05 28 | 691 | 0.2− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2000 05 28 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.2− |
| 2000 06 02 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.5+ |
| 2000 06 02 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2000 06 02 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.7+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2003 01 04 | 291 | 0.1+ | 0.0 | 2006 09 19 | 703 | 1.0− | 1.3− | | | | |
| 2003 01 04 | 291 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.0 | 0.1− | | | | |

**2006 SN$_{41}$ = 2004 FO$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 106.45196 | | (2000.0) | | | |
| $n$ | 0.18479566 | $\omega$ | 223.16738 | | −0.38835687 | +0.91972504 |
| $a$ | 3.0526350 | $\Omega$ | 24.15181 | | −0.80276452 | −0.30711897 |
| $e$ | 0.1311241 | $i$ | 8.05229 | | −0.45249096 | −0.24450725 |
| $P$ | 5.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 691 | 0.1− | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.4− |
| 2001 11 20 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | (1.7− | 0.6+) | 2006 09 27 | G96 | 0.1+ | 0.2+ |
| 2001 11 20 | 691 | 0.3+ | 0.2− | 2006 09 18 | 703 | 1.1+ | 1.0− | 2006 09 27 | G96 | 0.2− | 0.3+ |
| 2004 03 20 | 704 | 0.5+ | 0.4− | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.2− |
| 2004 03 20 | 704 | 0.3− | 0.2+ | 2006 09 19 | 703 | 0.6− | 1.2− | 2006 09 28 | 291 | 0.1+ | 0.1+ |
| 2004 03 20 | 704 | 0.4+ | 0.6− | 2006 09 19 | 703 | (2.1+ | 1.6−) | 2006 09 28 | 291 | 0.1− | 0.3+ |
| 2004 03 20 | 704 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.5− | 0.1+ | 2006 09 28 | 291 | 0.1+ | 0.1+ |
| 2004 03 20 | 704 | 0.5− | 0.3− | 2006 09 19 | 703 | 0.6+ | 0.9− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2004 03 22 | 704 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2004 03 22 | 704 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2004 03 22 | 704 | 0.4− | 0.8+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.6− | 0.1+ |
| 2006 09 18 | 703 | (0.4+ | 1.7+) | 2006 09 27 | 291 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 1.0− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 291 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.1+ | | |
| 2006 09 18 | 703 | 0.1− | 0.6+ | 2006 09 27 | 291 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.7− | 0.1− | | |

**2006 SO$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.08480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24307355 | $\omega$ | 252.49831 | | +0.61396576 | +0.78848848 | |
| $a$ | 2.5427924 | $\Omega$ | 55.43453 | | −0.70634636 | +0.56946610 | |
| $e$ | 0.1633554 | $i$ | 2.54014 | | −0.35230791 | +0.23236669 | |
| $P$ | 4.05 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 14 | G96 | 0.5− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.1+ | | |
| 2005 03 14 | G96 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.3+ | | |
| 2005 03 14 | G96 | 0.6+ | 0.3− | 2006 09 19 | 703 | 0.7+ | 0.7− | 2006 09 28 | G96 | 0.0 | 0.0 | | |
| 2005 03 14 | G96 | 0.4− | 0.5− | 2006 09 19 | 703 | 0.7+ | 1.8− | 2006 09 28 | G96 | 0.1+ | 0.1− | | |
| 2005 04 07 | G96 | 0.2− | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 09 28 | G96 | 0.4− | 0.1− | | |
| 2005 04 07 | G96 | 0.5+ | 0.2− | 2006 09 19 | 703 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.3− | 0.3− | | |
| 2005 04 07 | G96 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1− | | |
| 2005 04 07 | G96 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | | |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.4− | | |

**2006 SR$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.03192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27286921 | $\omega$ | 216.82085 | | +0.88218664 | −0.47072540 | |
| $a$ | 2.3541440 | $\Omega$ | 171.23248 | | +0.44960956 | +0.83389592 | |
| $e$ | 0.1694069 | $i$ | 4.82438 | | +0.13999280 | +0.28815827 | |
| $P$ | 3.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.0 | 0.7− | 2006 09 20 | 704 | 0.6+ | 0.6− | 2006 10 01 | G92 | 0.6− | 0.2− | | |
| 1999 11 04 | 704 | 0.5− | 0.8+ | 2006 09 20 | 704 | 0.2− | 0.1+ | 2006 10 01 | G92 | 1.1− | 0.3− | | |
| 1999 11 04 | 704 | 0.3− | 0.5+ | 2006 09 20 | 704 | 0.2+ | 0.2+ | 2006 10 01 | G92 | 0.8− | 0.1− | | |
| 1999 11 04 | 704 | 0.8+ | 0.5− | 2006 09 20 | 644 | 0.0 | 0.3+ | 2006 10 01 | G92 | 0.5− | 0.3− | | |
| 2001 03 24 | 691 | 0.4+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.6+ | | |
| 2001 03 24 | 691 | 0.1− | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 01 | G92 | 0.4− | 0.1− | | |
| 2001 03 24 | 691 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.3+ | 0.3+ | | |
| 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 10 01 | 704 | 0.0 | 0.2+ | | |
| 2006 07 22 | G96 | 0.4− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.0 | | |
| 2006 07 22 | G96 | 0.8− | 0.3− | 2006 09 27 | 704 | 0.5+ | 0.7+ | 2006 10 01 | 704 | (0.9− | 2.3+) | | |
| 2006 07 22 | G96 | 0.1− | 0.3− | 2006 09 27 | 704 | 0.0 | 1.0+ | 2006 10 03 | G92 | 0.1− | 0.3− | | |
| 2006 09 18 | 699 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.7+ | 2006 10 03 | G92 | 0.7− | 0.6− | | |
| 2006 09 18 | 699 | 0.5+ | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.6+ | 2006 10 03 | G92 | 0.3− | 0.2− | | |
| 2006 09 18 | 699 | 0.2+ | 0.6+ | 2006 09 27 | 704 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2006 09 18 | 699 | 0.3− | 0.0 | 2006 09 28 | 704 | 0.2− | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.0 | | |
| 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.0 | | |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 0.2− | 0.8+ | 2006 10 17 | 703 | (2.8+ | 1.0+) | | |
| 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 704 | 0.0 | 0.8+ | 2006 10 17 | 703 | (0.1− | 2.5+) | | |
| 2006 09 19 | 703 | 1.0+ | 0.4− | 2006 09 28 | 704 | 0.8− | 1.3+ | 2006 10 17 | 703 | (0.7+ | 1.7+) | | |
| 2006 09 19 | 703 | 0.3− | 0.3− | 2006 09 29 | G92 | 0.1+ | 0.5+ | 2006 10 17 | 703 | (2.1+ | 0.7+) | | |
| 2006 09 19 | 703 | 0.4− | 0.6− | 2006 09 29 | G92 | 1.0+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2006 09 19 | 703 | 0.2+ | 0.8− | 2006 09 29 | G92 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2006 09 19 | 703 | 1.1− | 0.6− | 2006 09 30 | G92 | 1.1+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2006 09 19 | 703 | 0.9− | 0.1+ | 2006 09 30 | G92 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2006 09 20 | 704 | 0.2− | 0.2− | 2006 09 30 | G92 | 0.3+ | 0.8− | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2006 09 20 | 704 | 0.7+ | 0.7+ | 2006 10 01 | G92 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |

**2006 SS$_{41}$ = 2005 GV$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.95806 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26044064 | $\omega$ | 275.57611 | | +0.38192642 | +0.92357830 | |
| $a$ | 2.4284559 | $\Omega$ | 16.99723 | | −0.79573983 | +0.34716645 | |
| $e$ | 0.0997391 | $i$ | 6.61888 | | −0.47003227 | +0.16272241 | |
| $P$ | 3.78 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.2+ | | |
| 2001 04 16 | 645 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 09 27 | 291 | 0.4− | 0.3+ | | |
| 2002 08 11 | 608 | 0.5− | 0.6− | 2006 09 19 | 691 | 0.5− | 0.2+ | 2006 09 27 | 291 | 0.3− | 0.3+ | | |
| 2002 08 11 | 608 | 0.2− | 0.8− | 2006 09 19 | 703 | 0.6− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 11 | 608 | 0.1+ | 0.8− | 2006 09 19 | 703 | 0.8− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | | |
| 2002 08 19 | 644 | 0.7+ | 0.1− | 2006 09 19 | 703 | 1.1− | 0.8− | 2006 10 01 | 691 | 0.0 | 0.2+ | | |
| 2002 08 19 | 644 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.3− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.2− | | |
| 2002 08 19 | 644 | 0.6+ | 0.0 | 2006 09 23 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.4− | | |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.2+ | | |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 1.3− | 0.8− | | |
| 2005 03 10 | G96 | 0.7− | 0.0 | 2006 09 24 | 291 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.9+ | | |
| 2005 03 10 | G96 | (1.7− | 1.6+) | 2006 09 24 | 291 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2005 04 11 | 691 | 0.2− | 0.3+ | 2006 09 24 | 291 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.6− | 0.5+ | | |
| 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 291 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 291 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | | |
| 2005 04 15 | 691 | 0.4+ | 0.3+ | 2006 09 25 | 291 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.6+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2006 09 18 | 699 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 2006 09 18 | 699 | 0.2+ | 0.9+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.1− | 0.2− | | |
| 2006 09 18 | 699 | 0.4+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.4− | | |
| 2006 09 18 | 699 | 0.1− | 0.1− | 2006 09 27 | 291 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1+ | | |

**2006 SB$_{42}$ = 2006 QN$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.43714 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21658393 | $\omega$ | 288.00968 | | +0.99474670 | −0.01206464 | |
| $a$ | 2.7461140 | $\Omega$ | 72.77769 | | +0.05433449 | +0.90382984 | |
| $e$ | 0.1757140 | $i$ | 6.10930 | | −0.08675699 | +0.42772195 | |
| $P$ | 4.55 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.1− | 0.0 | 2006 09 18 | 699 | 0.0 | 0.8+ | 2006 10 02 | 703 | 0.3+ | 0.6− | | |
| 2005 05 20 | G96 | 0.2+ | 0.2− | 2006 09 18 | 699 | 0.0 | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | | |
| 2005 05 20 | G96 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2+ | | |
| 2005 05 20 | G96 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2005 06 01 | 691 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.1− | | |
| 2005 06 01 | 691 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.1+ | 0.2− | | |
| 2005 06 01 | 691 | 0.3− | 0.4− | 2006 09 19 | 703 | 0.3− | 0.9− | 2006 10 16 | 703 | 0.2− | 0.3− | | |
| 2005 06 16 | G96 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.6− | | |
| 2005 06 16 | G96 | 0.5− | 0.3− | 2006 09 26 | 703 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.5− | | |
| 2005 06 16 | G96 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.6+ | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.4+ | | |
| 2005 06 16 | G96 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.8+ | 0.2+ | | |
| 2006 08 28 | 699 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.4− | 0.3− | 2006 10 22 | 703 | 0.0 | 0.0 | | |
| 2006 08 28 | 699 | 0.5+ | 0.7+ | 2006 10 02 | 703 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.2− | 0.1+ | | |
| 2006 08 28 | 699 | 0.4+ | 0.0 | 2006 10 02 | 703 | 0.6− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.3+ | | |
| 2006 08 28 | 699 | 0.6− | 0.2+ | 2006 10 02 | 703 | 0.3− | 0.8− | 2006 10 22 | 644 | 0.0 | 0.3+ | | |

**2006 SN$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.34214 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18266388 | $\omega$ | 195.35167 | | +0.83047898 | −0.55553110 | |
| $a$ | 3.0763395 | $\Omega$ | 198.57282 | | +0.52371245 | +0.80379476 | |
| $e$ | 0.0985229 | $i$ | 7.41545 | | +0.18981551 | +0.21283602 | |
| $P$ | 5.40 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 21 | 703 | 0.1− | 0.3+ | | |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.5− | | |
| 2000 09 07 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 1.0− | 0.1− | | |
| 2000 09 07 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2000 09 07 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.7− | 0.9− | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2006 09 27 | 704 | 1.0− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 | | |
| 2003 03 06 | 699 | 1.3+ | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.7+ | 2006 10 28 | 691 | 0.1− | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 06 | 699 | 0.3− | 0.2− | 2006 09 28 | 699 | 0.8+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2003 03 06 | 699 | 0.2− | 0.4− | 2006 09 28 | 699 | 0.8+ | 0.2+ | 2006 10 29 | G96 | 0.0 | 0.1− | | |
| 2003 03 06 | 699 | 0.5− | 1.4+ | 2006 09 28 | 699 | 1.1+ | 0.1+ | 2006 10 29 | G96 | 0.4+ | 0.2− | | |
| 2004 04 22 | 599 | 1.5+ | 0.7− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.3− | | |
| 2004 04 22 | 599 | 0.5− | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.2− | | |
| 2004 04 22 | 599 | 0.1− | 1.3+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2004 04 22 | 599 | 0.6− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2006 09 18 | 699 | (2.0− | 0.2+) | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ | | |
| 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.4+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2006 09 18 | 699 | (0.2+ | 1.8−) | 2006 10 18 | H07 | 0.1+ | 1.2+ | 2006 11 19 | 691 | 0.1− | 0.1+ | | |
| 2006 09 18 | 699 | 1.0− | 0.5− | 2006 10 18 | H07 | 0.6− | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 18 | H07 | 0.1+ | 0.4− | 2006 11 20 | G96 | 0.1− | 2.0− | | |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.3+ | 2006 11 20 | G96 | 0.4+ | 0.3− | | |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.2− | | |
| 2006 09 25 | G96 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 20 | G96 | 0.3− | 0.6− | | |
| 2006 09 25 | G96 | 0.9− | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.1+ | | | | | | |

**2006 SP$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.76164 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26722203 | $\omega$ | 238.56784 | | +0.33106723 | | −0.94353124 |
| $a$ | 2.3871949 | $\Omega$ | 192.11629 | | +0.88394653 | | +0.31454925 |
| $e$ | 0.2264106 | $i$ | 3.26925 | | +0.33020148 | | +0.10395945 |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 25 | 691 | 0.4− | 0.5− | 2006 09 28 | 699 | 0.9+ | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 1993 03 25 | 691 | 0.2− | 1.0− | 2006 09 28 | 699 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 1993 03 25 | 691 | 0.5− | 0.6− | 2006 09 28 | 699 | 0.4+ | 1.0+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 1995 09 27 | 691 | 0.1+ | 0.3− | 2006 09 29 | 704 | 0.6− | 0.6− | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 1995 09 27 | 691 | 0.5+ | 0.4− | 2006 09 29 | 704 | 0.8− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 1995 09 27 | 691 | 0.1− | 0.4− | 2006 09 29 | 704 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2004 03 21 | 691 | 0.3+ | 0.6+ | 2006 10 15 | 703 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2004 03 21 | 691 | 0.5+ | 0.4+ | 2006 10 15 | 703 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 2004 03 21 | 691 | 0.2+ | 0.7+ | 2006 10 15 | 703 | (0.1+ | 4.0−) | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 2006 09 18 | 699 | 1.4+ | 0.2− | 2006 10 15 | 703 | (2.4+ | 2.0−) | 2006 10 27 | G96 | 0.0 | 0.1− | | |
| 2006 09 18 | 699 | 0.9+ | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1+ | | |
| 2006 09 18 | 699 | (1.8− | 0.1+) | 2006 10 16 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2006 09 18 | 699 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.3− | 0.0 | | |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.1− | | |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.2+ | | |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.9− | 0.1− | | |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.5− | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.6− | | |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | 703 | 1.3− | 1.3− | 2006 11 11 | 703 | 0.2+ | 0.4− | | |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.3− | 0.2− | | |
| 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.0 | 0.0 | | |
| 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.1− | | |
| 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.4− | 0.2− | | |
| 2006 09 28 | 699 | 0.6+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.2− | | | | | | |

**2006 SV$_{42}$ = 2000 AY$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.08145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27106750 | $\omega$ | 299.02213 | | +0.65707830 | | −0.74682228 |
| $a$ | 2.3645640 | $\Omega$ | 109.52790 | | +0.72391899 | | +0.58723812 |
| $e$ | 0.2174911 | $i$ | 6.24310 | | +0.21021274 | | +0.31210234 |
| $P$ | 3.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.6+ | 0.3− | 2004 02 13 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.2+ | | |
| 2000 01 04 | 704 | 0.6+ | 0.4+ | 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | |
| 2000 01 04 | 704 | 0.9− | 0.3+ | 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 2000 01 04 | 704 | 0.0 | 0.6− | 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3+ | | |
| 2000 01 04 | 704 | 0.0 | 0.4− | 2004 02 29 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.9− | 0.1+ | | |
| 2000 01 10 | 691 | 0.0 | 0.0 | 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.1− | 0.2+ | | |
| 2000 01 10 | 691 | 0.1− | 0.3− | 2006 09 18 | 703 | 1.0+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.0 | | |
| 2000 01 10 | 691 | 0.0 | 0.4− | 2006 09 18 | 703 | 1.0− | 0.1− | 2006 11 13 | 703 | 0.7− | 0.8+ | | |
| 2001 05 12 | 621 | 0.8+ | 0.5+ | 2006 09 18 | 703 | 0.8− | 1.5− | 2006 11 19 | 703 | 0.4− | 0.4+ | | |
| 2001 05 12 | 621 | 0.7+ | 0.7+ | 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 11 19 | 703 | 0.3+ | 0.5+ | | |
| 2001 05 12 | 621 | 0.4− | 0.6+ | 2006 09 19 | 699 | 0.5− | 0.6− | 2006 11 19 | 703 | 0.3+ | 0.3+ | | |
| 2002 08 28 | 644 | 0.1− | 0.2+ | 2006 09 19 | 699 | 1.5+ | 0.6+ | 2006 11 19 | 703 | 0.1− | 0.6+ | | |
| 2002 08 28 | 644 | 0.4− | 0.4+ | 2006 09 19 | 699 | 0.8− | 0.8+ | 2006 11 25 | G96 | 0.1+ | 0.1− | | |
| 2002 08 28 | 644 | 0.4− | 0.5+ | 2006 09 19 | 699 | 1.2+ | 1.1+ | 2006 11 25 | G96 | 0.2− | 0.2− | | |
| 2003 12 22 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2− | | |
| 2003 12 22 | 691 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.6+ | 0.3+ | 2006 11 25 | G96 | 0.1+ | 0.2− | | |
| 2003 12 22 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.2+ | | | | | | |

**2006 SY$_{42}$ = 2005 GS$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.54315 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22948932 | $\omega$ | 265.81923 | | +0.95890554 | | +0.18994887 |
| $a$ | 2.6421719 | $\Omega$ | 83.13468 | | −0.08907920 | | +0.90682247 |
| $e$ | 0.3234793 | $i$ | 12.25609 | | −0.26937901 | | +0.37628769 |
| $P$ | 4.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 29 | 460 | 0.2+ | 0.8− | 2006 09 19 | 699 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.0 | | |
| 2002 12 29 | 460 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.6− | 0.6− | 2006 11 19 | 704 | 0.2− | 0.2+ | | |
| 2005 04 14 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.9− | 0.2− | 2006 11 19 | 704 | 0.0 | 0.5+ | | |
| 2005 04 14 | 691 | 0.1− | 0.6+ | 2006 09 19 | 699 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.1− | 0.1+ | | |
| 2005 04 14 | 691 | 0.3− | 0.6+ | 2006 10 30 | 703 | 0.6+ | 0.1− | 2006 11 19 | 703 | 0.0 | 0.4− | | |
| 2005 04 18 | 691 | 0.5+ | 0.1− | 2006 10 30 | 703 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.1+ | | |
| 2005 04 18 | 691 | 0.2+ | 0.1− | 2006 10 30 | 703 | 0.1− | 0.4− | 2006 11 19 | 703 | 0.1+ | 0.3− | | |
| 2005 04 18 | 691 | 0.3− | 0.7− | 2006 10 30 | 703 | 0.2− | 0.5− | 2006 11 25 | 704 | 0.2− | 0.6+ | | |
| 2006 09 18 | 703 | 0.2− | 0.7+ | 2006 11 13 | 703 | 0.1+ | 0.4+ | 2006 11 25 | 704 | 0.1+ | 0.5+ | | |
| 2006 09 18 | 703 | 0.1+ | 0.8− | 2006 11 13 | 703 | 1.0+ | 0.1+ | 2006 11 25 | 704 | 0.1+ | 0.3+ | | |
| 2006 09 18 | 703 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.2− | 2006 11 25 | 704 | 1.0− | 1.2+ | | |
| 2006 09 18 | 703 | 0.3− | 0.6+ | 2006 11 13 | 703 | 0.9+ | 0.5− | | | | | | |

**2006 SZ$_{42}$ = 2002 TR$_{242}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.85455 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24074152 | $\omega$ | 32.01026 | | +0.65157928 | | +0.75756722 |
| $a$ | 2.5591872 | $\Omega$ | 278.68165 | | −0.70407718 | | +0.58472403 |
| $e$ | 0.1538946 | $i$ | 2.27240 | | −0.28234689 | | +0.29015463 |
| $P$ | 4.09 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.1− | 0.3+ | 2005 04 13 | 691 | 0.4+ | 0.6+ | 2006 09 29 | 704 | (1.9+ | 0.9+) | | |
| 2002 10 09 | 704 | 0.9+ | 0.2+ | 2005 04 13 | 691 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.7− | 0.4+ | | |
| 2002 10 09 | 704 | 0.5− | 0.6+ | 2005 04 13 | 691 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.2+ | | |
| 2002 10 09 | 704 | 0.8− | 0.1+ | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.1+ | | |
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.4− | 2006 10 17 | 703 | 0.7− | 0.2+ | | |
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.0 | 1.0+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2002 10 10 | 644 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2− | | |
| 2003 12 17 | 291 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.6+ | | |
| 2003 12 17 | 291 | 0.8− | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2003 12 17 | 291 | 0.7− | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.5+ | | |
| 2004 02 17 | 645 | 0.2+ | 0.1− | 2006 09 21 | 224 | 0.8− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2004 02 17 | 645 | 0.1+ | 0.0 | 2006 09 21 | 224 | 1.4− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2005 03 17 | G96 | 0.5− | 0.5+ | 2006 09 21 | 224 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2005 03 17 | G96 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 2005 03 17 | G96 | 0.5− | 0.0 | 2006 09 29 | 704 | 0.2+ | 0.0 | | | | | | |
| 2005 03 17 | G96 | 0.8− | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.9+ | | | | | | |

**2006 SG$_{43}$ = 2004 GR$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.42671 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18670031 | $\omega$ | 246.32842 | +0.15684841 | | −0.98676598 | |
| $a$ | 3.0318383 | $\Omega$ | 194.82430 | +0.95456316 | | +0.16215086 | |
| $e$ | 0.0094824 | $i$ | 9.25015 | +0.25339246 | | −0.00004168 | |
| $P$ | 5.28 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.2− | 1.3− | 2004 04 22 | 599 | 0.4+ | 1.0+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 1993 04 17 | 691 | 0.0 | 0.4− | 2004 04 22 | 599 | 0.6+ | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1993 04 17 | 691 | 0.3− | 0.0 | 2004 04 23 | 599 | 1.1+ | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 1999 06 09 | 691 | 0.2− | 0.0 | 2004 04 23 | 599 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 1999 06 09 | 691 | 0.1− | 0.5− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 1999 06 09 | 691 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2000 09 27 | 645 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2004 03 16 | 291 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2+ |
| 2004 03 16 | 291 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2004 03 16 | 291 | 0.1+ | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2004 04 01 | 291 | 0.4+ | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2004 04 01 | 291 | 0.2− | 0.7+ | 2006 09 23 | 691 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2004 04 01 | 291 | 0.0 | 0.8+ | 2006 10 01 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.3− |

**2006 SO$_{43}$ = 2005 JE$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.86868 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29148579 | $\omega$ | 200.37031 | +0.30769352 | | −0.94726752 | |
| $a$ | 2.2528094 | $\Omega$ | 231.81651 | +0.88797756 | | +0.31966967 | |
| $e$ | 0.0966804 | $i$ | 6.53749 | +0.34179022 | | +0.02226097 | |
| $P$ | 3.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | G96 | 0.1+ | 0.0 | 2006 09 16 | 703 | 0.4− | 1.1− | 2006 09 27 | 699 | 0.6− | 0.4− |
| 2005 05 09 | G96 | 0.1− | 0.3− | 2006 09 16 | 703 | 1.1+ | 0.4+ | 2006 09 27 | 699 | 0.6− | 0.5+ |
| 2005 05 09 | G96 | 0.0 | 0.0 | 2006 09 16 | 703 | 0.6− | 0.2− | 2006 09 27 | 703 | 0.3+ | 0.2+ |
| 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.2− | 2006 09 27 | 703 | 0.6− | 0.3+ |
| 2005 05 13 | G96 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.7− | 0.5− | 2006 09 27 | 703 | 0.2+ | 0.7+ |
| 2005 05 13 | G96 | 0.2+ | 0.3+ | 2006 09 20 | 703 | 0.1− | 1.3+ | 2006 09 27 | 703 | 0.4+ | 0.5− |
| 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 09 20 | 703 | 0.3+ | 0.7+ | 2006 10 23 | G96 | 0.3− | 0.1− |
| 2005 05 13 | G96 | 0.1+ | 0.3− | 2006 09 20 | 703 | 0.3− | 1.1+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2006 09 16 | 703 | 0.3+ | 1.6− | 2006 09 20 | 703 | 0.7+ | 1.6+ | 2006 10 23 | G96 | 0.2− | 0.0 |
| 2006 09 16 | 703 | 0.4− | 0.6− | 2006 09 27 | 699 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2006 09 16 | 703 | 0.1− | 1.2− | 2006 09 27 | 699 | 1.3+ | 0.4− | | | | |

**2006 SK$_{44}$ = 2002 PK$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.29585 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26778621 | $\omega$ | 86.67810 | +0.94599826 | | −0.31527679 | |
| $a$ | 2.3838408 | $\Omega$ | 291.68870 | +0.25575024 | | +0.86880879 | |
| $e$ | 0.0664098 | $i$ | 4.65546 | +0.19919614 | | +0.38180078 | |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.0 | 0.1− | 2006 09 20 | 699 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2002 08 06 | 644 | 0.3− | 0.2+ | 2006 09 20 | 699 | 1.0− | 1.0+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2002 08 06 | 644 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.3+ | 0.8− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 08 07 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2002 08 07 | 644 | 0.3+ | 0.2− | 2006 09 29 | 699 | 1.2+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.0 |
| 2002 08 07 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.9+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2006 09 17 | 703 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2006 09 17 | 703 | 0.4+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 2006 09 17 | 703 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.0 |
| 2006 09 17 | 703 | 0.0 | 1.0− | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.1+ |
| 2006 09 20 | 699 | 0.7− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.2− | 2006 10 24 | 644 | 0.0 | 0.2+ |
| 2006 09 20 | 699 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.4+ | 0.0 | 2006 10 24 | 644 | 0.0 | 0.0 |

**2006 SN$_{44}$ = 2001 UH$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.68615 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19552242 | $\omega$ | 230.23228 | +0.26919822 | | +0.94239532 | |
| $a$ | 2.9399391 | $\Omega$ | 56.48421 | −0.79469152 | | +0.33382168 | |
| $e$ | 0.0904310 | $i$ | 13.77734 | −0.54405671 | | −0.02131050 | |
| $P$ | 5.04 | $H$ | 14.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 0.1+ | 0.5+ | 2001 10 19 | 699 | (0.4+ | 1.8+) | 2006 09 20 | 703 | 0.1+ | 0.3− |
| 2001 09 18 | 699 | 0.7− | 0.5+ | 2001 10 23 | 644 | 0.5− | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.6+ |
| 2001 09 18 | 699 | 0.8+ | 0.1+ | 2001 10 23 | 644 | 0.0 | 0.0 | 2006 09 26 | 703 | (2.0+ | 3.0−) |
| 2001 09 18 | 699 | 0.2+ | 0.0 | 2001 10 23 | 644 | 0.4− | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.6− |
| 2001 09 27 | 644 | 0.6− | 0.3− | 2006 09 17 | 699 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.2+ |
| 2001 09 27 | 644 | 0.5− | 0.6− | 2006 09 17 | 699 | 0.8− | 0.9− | 2006 09 26 | 703 | 0.1− | 0.3− |
| 2001 09 27 | 644 | 0.1− | 0.6− | 2006 09 17 | 699 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 10 19 | 699 | 0.3+ | 0.0 | 2006 09 17 | 699 | 0.6+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 10 19 | 699 | 0.7+ | 0.5+ | 2006 09 20 | 703 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2001 10 19 | 699 | 0.7+ | 0.1− | 2006 09 20 | 703 | 0.5− | 0.3+ | | | | |

**2006 ST$_{44}$ = 2005 GK$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.42608 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17804561 | $\omega$ | 270.05099 | +0.41512829 | | +0.88783585 | |
| $a$ | 3.1293096 | $\Omega$ | 27.35146 | −0.56264114 | | +0.42203572 | |
| $e$ | 0.2545087 | $i$ | 25.60193 | −0.71491500 | | +0.18339399 | |
| $P$ | 5.54 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 31 | 645 | 0.0 | 0.0 | 2006 05 27 | E12 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.6+ |
| 2004 01 31 | 645 | 0.0 | 0.0 | 2006 05 27 | E12 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2005 03 11 | G96 | 0.6+ | 0.3+ | 2006 09 17 | 699 | 1.0− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 03 11 | G96 | 0.3+ | 0.2+ | 2006 09 17 | 699 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2005 03 11 | G96 | 0.2− | 0.4+ | 2006 09 17 | 699 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 09 17 | 699 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2005 04 03 | E12 | 1.4− | 1.3− | 2006 09 20 | 703 | 0.6− | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2005 04 03 | E12 | 0.5− | 0.4− | 2006 09 20 | 703 | 0.4+ | 1.0− | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2005 04 03 | E12 | 1.3+ | 0.2+ | 2006 09 20 | 703 | 0.4+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2005 04 03 | E12 | 0.5+ | 0.6− | 2006 09 20 | 703 | 0.1− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2005 04 14 | 703 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.4− | 0.3+ | 2006 10 28 | 703 | 1.4− | 0.3− |
| 2005 04 14 | 703 | 0.6− | 0.4+ | 2006 09 27 | 703 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2005 04 14 | 703 | 0.2+ | 1.3+ | 2006 09 27 | 703 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.6+ | 0.4+ |
| 2005 04 14 | 703 | 0.5− | 0.1+ | 2006 09 27 | 703 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.3− | 0.2+ |
| 2005 05 11 | 644 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.5+ |
| 2005 05 11 | 644 | 0.4+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 2.0+ | 0.5+ |
| 2005 05 11 | 644 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.3+ |
| 2006 05 27 | E12 | 0.5− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 1.1+ | 0.7− |
| 2006 05 27 | E12 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.3− | 0.0 | | | | |

**2006 SB$_{45}$ = 2004 FR$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.53422 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18118743 | $\omega$ | 224.18579 | −0.67164463 | | −0.71505538 | |
| $a$ | 3.0930291 | $\Omega$ | 269.03972 | +0.72209232 | | −0.57325684 | |
| $e$ | 0.1146983 | $i$ | 11.18087 | +0.16575936 | | −0.40009049 | |
| $P$ | 5.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.3+ | 2004 03 16 | E12 | 1.0− | 0.6+ | 2006 09 20 | 691 | 0.0 | 0.0 |
| 2002 12 05 | 704 | 0.4− | 0.3− | 2004 03 16 | E12 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.4− |
| 2002 12 05 | 704 | 0.6− | 0.9+ | 2004 03 23 | 704 | 0.6+ | 0.6− | 2006 09 23 | 691 | 0.2+ | 0.1+ |
| 2002 12 05 | 704 | 0.8− | 0.2+ | 2004 03 23 | 704 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.5− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 1.1+ | 0.7+ | 2004 03 23 | 704 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2003 01 04 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.4+ | 0.1+ |
| 2003 01 04 | 704 | 0.6+ | 1.3− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1+ |
| 2003 01 04 | 704 | 0.2+ | 0.8− | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2004 03 16 | E12 | 0.4+ | 0.8− | 2006 09 20 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2004 03 16 | E12 | 0.0 | 0.0 | 2006 09 20 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 |

**2006 SN$_{45}$ = 1999 XY$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.72519 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26827689 | $\omega$ | 289.50210 | | +0.97852032 | | −0.15375432 |
| $a$ | 2.3809332 | $\Omega$ | 79.52903 | | +0.19792041 | | +0.88701821 |
| $e$ | 0.2236351 | $i$ | 8.02751 | | −0.05766713 | | +0.43538294 |
| $P$ | 3.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.9− | 0.8+ | 2006 09 18 | 703 | 0.9+ | 0.5− | 2006 09 26 | 703 | 0.5− | 0.2− |
| 1999 12 07 | 704 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 0.6− | 0.0 | 2006 09 26 | 703 | 0.4− | 0.2+ |
| 1999 12 07 | 704 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.6+ | 0.3− | 2006 09 26 | 703 | (0.0 | 1.7+) |
| 1999 12 07 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.7+ | 0.0 | 2006 10 28 | 703 | 0.3− | 0.6− |
| 1999 12 08 | 704 | 0.3− | 0.3+ | 2006 09 20 | 703 | 0.3− | 0.6− | 2006 10 28 | 703 | 0.0 | 0.0 |
| 1999 12 08 | 704 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.6− | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 1999 12 08 | 704 | 0.0 | 0.5− | 2006 09 20 | 703 | 0.7− | 0.0 | 2006 10 28 | 703 | 0.5− | 0.8+ |
| 1999 12 08 | 704 | 0.9+ | 0.2− | 2006 09 20 | 703 | 0.3− | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.8− |
| 1999 12 08 | 704 | 0.1− | 0.7− | 2006 09 21 | 699 | 0.4+ | 0.3− | 2006 11 19 | 703 | 0.8+ | 0.4+ |
| 2006 07 31 | E12 | 0.2− | 1.4+ | 2006 09 21 | 699 | 0.4− | 0.2− | 2006 11 19 | 703 | 0.9+ | 0.3+ |
| 2006 07 31 | E12 | 0.8+ | 0.1+ | 2006 09 21 | 699 | (2.9+ | 2.0−) | 2006 11 19 | 703 | (1.8− | 1.0−) |
| 2006 07 31 | E12 | 0.4+ | 0.3− | 2006 09 21 | 699 | 1.1+ | 0.3− | | | | |
| 2006 07 31 | E12 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.2+ | | | | |

**2006 ST$_{45}$ = 2003 AD$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.65396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20897797 | $\omega$ | 46.78094 | | +0.32780562 | | −0.94246529 |
| $a$ | 2.8123480 | $\Omega$ | 24.31565 | | +0.81404015 | | +0.24653589 |
| $e$ | 0.1475247 | $i$ | 9.16636 | | +0.47946023 | | +0.22578580 |
| $P$ | 4.72 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.8+ | 0.4− | 2006 09 18 | 703 | 0.7+ | 0.5− | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 2003 01 10 | 704 | 1.1+ | 0.7− | 2006 09 18 | 699 | 0.9+ | 0.7− | 2006 10 17 | 703 | (0.9+ | 2.6+) |
| 2003 01 10 | 704 | 1.1− | 0.1+ | 2006 09 18 | 699 | 0.4+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.7+ |
| 2003 01 10 | 704 | 0.5− | 1.3+ | 2006 09 18 | 699 | 1.1+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2003 01 10 | 704 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2003 01 13 | 704 | 1.0− | 0.0 | 2006 09 20 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2003 01 13 | 704 | 0.0 | 0.3− | 2006 09 20 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 01 13 | 704 | 0.2+ | 0.7− | 2006 09 20 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 01 13 | 704 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2003 01 13 | 704 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 1.1− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 703 | 0.5− | 0.2− | 2006 09 30 | 703 | (1.4− | 1.7−) | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 09 30 | 703 | 1.1− | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2006 09 18 | 703 | 0.6+ | 0.1− | 2006 10 17 | 703 | 1.1+ | 1.1+ | 2006 11 14 | G96 | 0.0 | 0.2− |

**2006 SA$_{46}$ = 2005 MM$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.21178 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22008237 | $\omega$ | 142.17215 | | +0.99221229 | | −0.01557646 |
| $a$ | 2.7169347 | $\Omega$ | 219.27171 | | −0.01612683 | | +0.96773427 |
| $e$ | 0.1585920 | $i$ | 11.25818 | | +0.12350992 | | +0.25149108 |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.8+ | 0.2+ | 2006 10 23 | 683 | (2.2+ | 1.4−) |
| 2005 06 27 | 691 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 10 23 | 683 | (1.7+ | 0.2+) |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 11 06 | 644 | 0.2− | 0.3+ |
| 2005 06 30 | 691 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.1− | 2006 11 06 | 644 | 0.2+ | 0.1− |
| 2005 06 30 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.8+ | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2005 06 30 | 691 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 11 13 | 703 | 1.4+ | 0.1− |
| 2006 08 12 | 644 | 0.1− | 0.4− | 2006 10 04 | G96 | 0.4− | 0.3− | 2006 11 13 | 703 | 0.4− | 0.1− |
| 2006 08 12 | 644 | 0.6− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 13 | 703 | 1.3− | 0.1+ |
| 2006 08 12 | 644 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 13 | 703 | 1.0− | 0.4+ |
| 2006 09 18 | 704 | 0.8+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.1+ | 2006 11 15 | 704 | 0.8+ | 0.1+ |
| 2006 09 18 | 704 | 0.3− | 0.7− | 2006 10 17 | 703 | 0.9+ | 0.5− | 2006 11 15 | 704 | 0.3+ | 0.8− |
| 2006 09 18 | 704 | 1.2+ | 0.3+ | 2006 10 17 | 703 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.5+ | 0.1+ |
| 2006 09 18 | 704 | 0.1+ | 0.0 | 2006 10 17 | 703 | 1.1− | 0.2+ | 2006 11 15 | 704 | 0.8− | 1.2+ |
| 2006 09 20 | 699 | 0.3− | 0.7− | 2006 10 19 | 644 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.8− | 0.7+ |
| 2006 09 20 | 699 | 0.4− | 0.9− | 2006 10 19 | 644 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2006 09 20 | 699 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.6− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.2+ |
| 2006 09 20 | 699 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2006 09 30 | 703 | 0.5+ | 1.1+ | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2006 09 30 | 703 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.6+ | 0.5− |
| 2006 09 30 | 703 | 0.6− | 0.4+ | 2006 10 23 | 683 | (2.2+ | 0.8−) | 2006 11 27 | G96 | 0.2+ | 0.3− |

**2006 SB$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.89647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26410838 | $\omega$ | 296.16267 | | +0.79876837 | | +0.60090346 |
| $a$ | 2.4059204 | $\Omega$ | 26.93357 | | −0.52590269 | | +0.72136896 |
| $e$ | 0.1377435 | $i$ | 3.76387 | | −0.29222500 | | +0.34429908 |
| $P$ | 3.73 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 15 | 644 | 0.1− | 0.1+ | 2002 08 29 | 644 | 0.3+ | 0.2− | 2006 09 20 | 691 | 0.6+ | 0.3− |
| 2002 07 15 | 644 | 0.2− | 0.1+ | 2005 05 04 | G96 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.8+ |
| 2002 07 15 | 644 | 0.0 | 0.1+ | 2005 05 04 | G96 | 0.5− | 0.1− | 2006 09 27 | 704 | 0.3− | 0.3− |
| 2002 08 11 | 644 | 0.2+ | 0.1− | 2005 05 04 | G96 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.1+ | 0.1− |
| 2002 08 11 | 644 | 0.1+ | 0.1− | 2005 05 04 | G96 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.5+ | 0.3− |
| 2002 08 11 | 644 | 0.4− | 0.2− | 2006 09 18 | 699 | 0.1+ | 0.3− | 2006 09 28 | 699 | 1.0− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.2− | 2006 09 18 | 699 | 0.9− | 1.0+ | 2006 09 28 | 699 | 0.8− | 0.0 |
| 2002 08 18 | 644 | 0.1− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.3+ | 2006 09 28 | 699 | 1.3− | 0.3− |
| 2002 08 18 | 644 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.0 | 0.2− | 2006 09 28 | 699 | 0.0 | 0.3+ |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 09 20 | 691 | 0.4+ | 0.0 | | | | |
| 2002 08 29 | 644 | 0.6+ | 0.2+ | 2006 09 20 | 691 | 0.3− | 0.3+ | | | | |

**2006 SM$_{46}$ = 2002 TG$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.60193 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23320705 | $\omega$ | 32.02529 | | +0.93029499 | | −0.36378371 |
| $a$ | 2.6140161 | $\Omega$ | 349.00065 | | +0.26243817 | | +0.74968344 |
| $e$ | 0.0985109 | $i$ | 14.27266 | | +0.25627608 | | +0.55284370 |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.4+ | 1.0+ | 2006 08 28 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 691 | 0.3+ | 0.2+ |
| 2002 10 05 | 704 | 0.2+ | 0.3− | 2006 09 19 | 699 | 0.8− | 0.1− | 2006 09 20 | 691 | 0.2+ | 0.3+ |
| 2002 10 05 | 704 | 0.5+ | 0.6− | 2006 09 19 | 699 | 0.4− | 1.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2002 10 05 | 704 | 0.3− | 0.7− | 2006 09 19 | 703 | 1.0− | 1.4− | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2002 10 05 | 704 | 0.5+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 1.2− | 2006 10 11 | 644 | 0.3− | 0.1− |
| 2002 10 09 | 704 | 1.1− | 0.6+ | 2006 09 19 | 699 | 0.4− | 0.0 | 2006 10 17 | 703 | (0.3− | 2.1−) |
| 2002 10 09 | 704 | 0.2− | 0.4− | 2006 09 19 | 703 | 0.3− | 0.7− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2002 10 09 | 704 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.6− | 2006 10 17 | 703 | 0.3+ | 0.1− |
| 2006 08 28 | 691 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.3− | 0.7+ | 2006 10 17 | 703 | 0.5− | 0.7− |
| 2006 08 28 | 691 | 0.0 | 0.1− | 2006 09 20 | 691 | 0.3+ | 0.5+ | | | | |

**2006 SQ$_{46}$ = 2004 CN$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 75.30642 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22513384 | | $\omega$ | 299.32974 | | +0.10699074 | | +0.98973726 | | | |
| $a$ | 2.6761402 | | $\Omega$ | 336.24491 | | −0.81106455 | | +0.03177332 | | | |
| $e$ | 0.0510164 | | $i$ | 13.60070 | | −0.57508892 | | +0.13932194 | | | |
| $P$ | 4.38 | | $H$ | 16.1 | $G$ | 0.15 | | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | (1.7− | 0.2+) | 2006 09 19 | 703 | 0.9− | 0.1− |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.8− | 0.6+ | 2006 09 19 | 703 | 0.2− | 0.7+ |
| 2004 02 02 | 704 | 0.7+ | 0.7− | 2004 02 15 | 704 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.6+ | 0.6− |
| 2004 02 02 | 704 | 0.2+ | 1.0− | 2004 02 15 | 704 | 0.9− | 0.3− | 2006 09 20 | 699 | 1.2+ | 0.5+ |
| 2004 02 02 | 704 | 1.1+ | 0.3+ | 2006 09 19 | 703 | 0.5− | 0.9− | 2006 09 20 | 699 | 0.4− | 0.4+ |
| 2004 02 15 | 704 | 0.5− | 0.9+ | 2006 09 19 | 703 | 0.5− | 0.7+ | 2006 09 20 | 699 | 0.7+ | 0.7− |

**2006 SZ$_{46}$ = 2004 FC$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 267.77949 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23412186 | | $\omega$ | 279.66260 | | −0.39123098 | | −0.91913126 | | | |
| $a$ | 2.6072023 | | $\Omega$ | 193.64931 | | +0.90236162 | | −0.37325902 | | | |
| $e$ | 0.2122711 | | $i$ | 11.29461 | | +0.18078113 | | −0.12599770 | | | |
| $P$ | 4.21 | | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 704 | 0.4+ | 1.0− | 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 20 | 691 | 0.2+ | 0.5+ |
| 2004 03 27 | 704 | 0.7+ | 0.5+ | 2006 08 21 | 691 | 0.0 | 0.3− | 2006 09 20 | 703 | 0.8− | 0.9− |
| 2004 03 27 | 704 | 0.9+ | 0.4+ | 2006 08 21 | 691 | 0.0 | 0.2− | 2006 09 20 | 703 | 0.1− | 1.0+ |
| 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.2− | 2006 09 20 | 703 | 0.3− | 0.0 |
| 2004 03 29 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.9+ | 2006 09 20 | 703 | 0.1− | 0.4− |
| 2004 03 29 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 09 22 | 703 | 0.2− | 0.6+ |
| 2004 04 20 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.7− | 0.2+ | 2006 09 22 | 703 | (0.8− | 1.5+) |
| 2004 04 20 | 691 | 0.2− | 0.1+ | 2006 09 20 | 691 | 0.2+ | 0.2+ | 2006 09 22 | 703 | (1.5− | 1.7−) |
| 2004 04 20 | 691 | 0.2− | 0.1+ | 2006 09 20 | 691 | 0.2+ | 0.1− | 2006 09 22 | 703 | 0.0 | 1.1− |

**2006 SU$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 260.43669 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.29034003 | | $\omega$ | 127.09003 | | −0.22937721 | | −0.97199748 | | | |
| $a$ | 2.2587323 | | $\Omega$ | 336.01923 | | +0.84841221 | | −0.17395128 | | | |
| $e$ | 0.0418522 | | $i$ | 7.21700 | | +0.47705640 | | −0.15799323 | | | |
| $P$ | 3.39 | | $H$ | 16.9 | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 04 | 691 | 0.1+ | 0.3− | 2003 12 03 | 704 | 0.2− | 0.6+ | 2006 09 19 | 699 | 0.5+ | 0.4− |
| 1996 11 04 | 691 | 0.2+ | 0.4− | 2003 12 03 | 704 | 0.4+ | 0.1− | 2006 09 19 | 703 | 0.9− | 0.9+ |
| 1996 11 04 | 691 | 0.2+ | 0.2− | 2003 12 29 | 691 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.5− | 0.3− |
| 2003 11 19 | 704 | 1.2− | 0.7+ | 2003 12 29 | 691 | 0.3− | 0.0 | 2006 09 19 | 699 | 0.2− | 1.2+ |
| 2003 11 19 | 704 | 0.3+ | 0.2+ | 2003 12 29 | 691 | 0.2+ | 0.2− | 2006 09 20 | 691 | 0.1− | 0.3+ |
| 2003 11 19 | 704 | 1.1+ | 0.7+ | 2006 07 22 | G96 | 0.2− | 0.4− | 2006 09 20 | 691 | 0.0 | 0.1+ |
| 2003 11 19 | 704 | (1.7+ | 0.2+) | 2006 07 22 | G96 | 0.3− | 0.2− | 2006 09 20 | 691 | 0.1+ | 0.2+ |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2006 07 22 | G96 | 0.4− | 0.9− | 2006 10 01 | 703 | (1.6− | 0.2+) |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2006 07 22 | G96 | 0.2+ | 0.7− | 2006 10 01 | 703 | (1.7− | 2.2+) |
| 2003 11 20 | 704 | (1.7+ | 0.9+) | 2006 08 21 | 691 | 0.2− | 0.2− | 2006 10 01 | 703 | 0.5− | 1.0− |
| 2003 11 20 | 704 | 0.6+ | 0.5+ | 2006 08 21 | 691 | 0.3+ | 0.4+ | 2006 10 01 | 703 | 0.6− | 1.4− |
| 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 08 21 | 691 | 0.9+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2003 11 20 | 704 | 0.2+ | 0.7+ | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2003 11 20 | 704 | (1.7+ | 0.5+) | 2006 09 19 | 699 | 0.6− | 0.6+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2003 12 03 | 704 | 0.8− | 0.7− | 2006 09 19 | 703 | 0.1− | 0.8− | | | | |
| 2003 12 03 | 704 | 0.1− | 0.9+ | 2006 09 19 | 703 | 0.9− | 0.8− | | | | |

**2006 SZ$_{47}$ = 2001 RA$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 5.94463 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.20561558 | | $\omega$ | 265.25314 | | +0.99615698 | | +0.06816882 | | | |
| $a$ | 2.8429248 | | $\Omega$ | 90.83085 | | −0.04087626 | | +0.91714873 | | | |
| $e$ | 0.0754568 | | $i$ | 3.15281 | | −0.07746221 | | +0.39267190 | | | |
| $P$ | 4.79 | | $H$ | 15.9 | $G$ | 0.15 | | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.5− | 2006 10 02 | G96 | 0.4− | 0.5− |
| 2001 09 12 | 704 | 0.2− | 0.2+ | 2006 09 20 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.4− |
| 2001 09 12 | 704 | (1.6+ | 0.0 ) | 2006 09 20 | 691 | 0.3− | 0.3+ | 2006 10 16 | 703 | (3.2+ | 0.8+) |
| 2001 09 16 | 704 | 0.5+ | 0.3+ | 2006 09 20 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | (1.7+ | 0.9+) |
| 2001 09 16 | 704 | 0.5+ | 0.5− | 2006 09 30 | 703 | (2.1+ | 1.1+) | 2006 10 16 | 703 | 0.3+ | 1.3− |
| 2001 09 16 | 704 | 0.5− | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.9+ | 1.1+ |
| 2001 09 16 | 704 | 0.1− | 0.4− | 2006 09 30 | 703 | 0.7− | 1.0+ | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2006 09 19 | 703 | 0.3+ | 0.6− | 2006 09 30 | 703 | 0.7+ | 1.0− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 703 | 0.1+ | 0.5− | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 23 | G96 | 0.0 | 0.5+ |
| 2006 09 19 | 703 | 0.9− | 0.4− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.2+ |

**2006 SC$_{48}$ = 2006 SS$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 192.40630 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.24757978 | | $\omega$ | 27.45962 | | −0.99675156 | | −0.07861155 | | | |
| $a$ | 2.5118436 | | $\Omega$ | 148.01685 | | +0.06649326 | | −0.92591410 | | | |
| $e$ | 0.0623834 | | $i$ | 1.89428 | | +0.04544193 | | −0.36946352 | | | |
| $P$ | 3.98 | | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 5 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 05 | 691 | 0.2− | 0.7− | 2006 09 19 | 703 | 0.7− | 0.9+ | 2006 09 20 | 291 | 0.3− | 0.1+ |
| 1994 09 05 | 691 | 0.2+ | 0.0 | 2006 09 19 | 291 | 0.0 | 0.0 | 2006 09 20 | 291 | 0.0 | 0.2+ |
| 1994 09 05 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 291 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2006 09 19 | 291 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.5− |
| 1998 09 19 | 645 | 0.0 | 0.1+ | 2006 09 19 | 703 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.2− | 0.1− |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2006 09 19 | 291 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.2− |
| 1998 09 25 | 645 | 0.1− | 0.1− | 2006 09 19 | 291 | 0.3+ | 0.2− | | | | |
| 2006 09 19 | 291 | 0.0 | 0.1+ | 2006 09 20 | 291 | 0.3− | 0.1− | | | | |

**2006 SK$_{48}$ = 2004 BM$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 320.75913 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26636282 | | $\omega$ | 40.54653 | | +0.46257976 | | −0.86952282 | | | |
| $a$ | 2.3923257 | | $\Omega$ | 23.54438 | | +0.65925996 | | +0.20684182 | | | |
| $e$ | 0.0915509 | | $i$ | 25.67321 | | +0.59278687 | | +0.44849361 | | | |
| $P$ | 3.70 | | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 28 | 704 | 0.0 | 0.5+ | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 12 28 | 704 | 0.6+ | 1.0− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1999 12 28 | 704 | 0.8− | 0.0 | 2006 09 23 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 12 28 | 704 | (1.0− | 2.4−) | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 22 | 683 | 0.5− | 1.4− |
| 1999 12 31 | 704 | 0.0 | 0.7+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 22 | 683 | 0.0 | 0.7+ |
| 1999 12 31 | 704 | 0.2− | 0.5− | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 22 | 683 | 1.0− | 0.1+ |
| 1999 12 31 | 704 | 0.9+ | 1.8− | 2006 09 27 | 691 | 0.2− | 0.3− | 2006 10 23 | 683 | 0.3− | 0.5− |
| 2004 01 31 | 703 | 1.1− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 683 | 1.3+ | 0.2− |
| 2004 01 31 | 703 | 0.5+ | 1.0− | 2006 10 01 | 691 | 0.2− | 0.6+ | 2006 10 23 | 683 | 0.2+ | 1.0+ |
| 2004 01 31 | 703 | 0.2− | 0.0 | 2006 10 01 | 691 | (2.9− | 1.0−) | 2006 10 29 | 704 | 0.4− | 0.5+ |
| 2004 01 31 | 703 | (1.7− | 0.7−) | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.5− | 0.4− |
| 2004 02 10 | 704 | 0.2− | 1.4+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.1− | 0.0 |
| 2004 02 10 | 704 | 0.9+ | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.2− | 0.4+ |
| 2004 02 10 | 704 | 1.0+ | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.7− | 0.9− |
| 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.8− | 0.6+ |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.6− | 2006 11 14 | 703 | 1.1− | 1.1− |
| 2006 09 20 | 699 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.8− | 2006 11 25 | 703 | 0.3− | 1.0+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 20 | 699 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.2− | 0.3+ | 2006 11 25 | 703 | 0.6− | 0.6+ |
| 2006 09 20 | 699 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.7− | 2006 11 25 | 703 | 0.8− | 0.4+ |
| 2006 09 20 | 699 | 0.0 | 0.7+ | 2006 10 20 | H07 | 0.0 | 0.2+ | 2006 11 25 | 703 | 0.5− | 0.4+ |
| 2006 09 20 | 644 | 0.5+ | 0.2− | 2006 10 20 | H07 | 0.2− | 0.9+ | | | | |
| 2006 09 20 | 644 | 0.5+ | 0.1− | 2006 10 20 | H07 | 0.5+ | 0.5− | | | | |

**2006 SP$_{48}$ = 1984 UO$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.56429 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27095433 | $\omega$ | 201.08973 | | +0.75245322 | −0.65825147 | |
| $a$ | 2.3652224 | $\Omega$ | 200.13057 | | +0.61337626 | +0.71292054 | |
| $e$ | 0.2392783 | $i$ | 3.79604 | | +0.23996609 | +0.24176291 | |
| $P$ | 3.64 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1984 10 19 | 801 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.5+ |
| 1995 10 14 | 327 | 0.3+ | 0.2− | 2006 09 27 | 704 | 0.6+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.3− |
| 1995 10 14 | 327 | 0.3− | 0.5− | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 1995 10 14 | 327 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.4− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2002 07 22 | 644 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2002 07 22 | 644 | 0.0 | 0.8+ | 2006 10 22 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.6− | 1.1+ |
| 2002 07 22 | 644 | 0.2− | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.3− | 0.3+ |
| 2002 08 06 | 644 | 0.5− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.3− | 0.1+ |
| 2002 08 06 | 644 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2002 08 06 | 644 | 0.2− | 0.1+ | 2006 10 27 | 704 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2002 08 26 | 644 | 0.2− | 0.2+ | 2006 10 27 | 704 | 0.2+ | 0.6+ | 2006 11 20 | 291 | 0.2− | 0.4+ |
| 2002 08 26 | 644 | 0.3+ | 0.6+ | 2006 10 27 | 704 | 1.1+ | 0.2− | 2006 11 20 | 291 | 0.1− | 0.3+ |
| 2002 08 26 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 704 | 0.4+ | 0.0 | 2006 11 20 | 291 | 0.2− | 0.0 |
| 2004 03 28 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 704 | 0.2+ | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2004 03 28 | 691 | 0.2− | 0.5+ | 2006 11 02 | 703 | 0.4− | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2004 03 28 | 691 | 0.4+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.8− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2006 08 28 | 703 | 0.2+ | 0.4− | 2006 11 02 | 703 | 0.2− | 0.3− | 2006 11 25 | 704 | 0.8+ | 0.4+ |
| 2006 08 28 | 703 | 0.8− | 0.8+ | 2006 11 02 | 703 | 0.1+ | 0.3− | 2006 11 25 | 704 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 1.0− | 0.9+ | 2006 11 05 | 644 | 0.1− | 0.0 | 2006 11 25 | 704 | 0.4− | 0.5+ |
| 2006 08 28 | 703 | 0.5− | 0.5+ | 2006 11 05 | 644 | 0.4− | 0.0 | 2006 11 25 | 704 | 0.3+ | 0.2+ |
| 2006 09 16 | 703 | 0.4− | 0.9+ | 2006 11 05 | 644 | 0.3− | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.4− |
| 2006 09 16 | 703 | 1.1+ | 1.3+ | 2006 11 14 | 704 | 0.4+ | 0.5+ | 2006 11 29 | 704 | 0.1+ | 0.5− |
| 2006 09 16 | 703 | 0.5+ | 0.2+ | 2006 11 14 | 704 | 0.0 | 1.0+ | 2006 11 29 | 704 | 0.5+ | 0.1− |
| 2006 09 16 | 703 | 0.4+ | 1.3+ | 2006 11 14 | 704 | 0.8+ | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.6− |
| 2006 09 20 | 704 | 0.1− | 1.2− | 2006 11 17 | 644 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.3− | 0.6− |
| 2006 09 20 | 704 | 0.5− | 0.2− | 2006 11 17 | 644 | 0.2− | 0.1− | 2006 11 30 | A24 | 0.6− | 0.2− |
| 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.1− | 2006 11 30 | A24 | 0.3− | 0.3+ |
| 2006 09 20 | 704 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.2− | 2006 11 30 | A24 | 0.0 | 0.0 |
| 2006 09 27 | 704 | 0.7+ | 1.2− | 2006 11 18 | 704 | 0.7+ | 0.1+ | | | | |
| 2006 09 27 | 704 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.3− | | | | |

**2006 SQ$_{48}$ = 2004 BT$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.22113 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27197145 | $\omega$ | 218.45891 | | +0.85810310 | −0.51327170 | |
| $a$ | 2.3593218 | $\Omega$ | 172.38133 | | +0.49405582 | +0.81760455 | |
| $e$ | 0.1661648 | $i$ | 6.29371 | | +0.13988540 | +0.26091178 | |
| $P$ | 3.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 0.9− | 1.0+ | 2006 08 19 | 699 | (1.8− | 1.1+) | 2006 10 01 | 704 | 1.2+ | 1.0+ |
| 1995 08 20 | 809 | 0.7− | 0.5+ | 2006 08 19 | 699 | 1.1+ | 0.2+ | 2006 10 01 | 704 | 0.2+ | 1.1+ |
| 1995 08 22 | 809 | 1.2− | 0.3+ | 2006 08 19 | 699 | 0.2+ | 1.4− | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 1995 09 17 | 809 | 0.1+ | 0.5− | 2006 08 19 | 699 | (2.6+ | 0.4+) | 2006 10 01 | 691 | 0.0 | 0.1− |
| 1995 09 18 | 809 | 0.3+ | 0.6+ | 2006 09 17 | 704 | 0.1+ | 0.8− | 2006 10 01 | 691 | 0.0 | 0.2− |
| 1995 09 20 | 809 | 0.7+ | 0.9+ | 2006 09 17 | 704 | 0.2− | 0.6− | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 1995 09 22 | 809 | 0.8+ | 0.4+ | 2006 09 17 | 704 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.4+ |
| 2002 07 21 | 644 | 0.0 | 0.4− | 2006 09 17 | 704 | 0.9+ | 0.2− | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2002 07 21 | 644 | 0.3− | 0.1− | 2006 09 17 | 704 | 0.6− | 0.2− | 2006 10 16 | 703 | 0.4− | 0.6− |
| 2002 07 21 | 644 | 0.4− | 0.3+ | 2006 09 20 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.6+ | 0.3− |
| 2004 01 23 | 704 | 0.4+ | 1.0+ | 2006 09 20 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.4− |
| 2004 01 23 | 704 | 0.4+ | 0.2− | 2006 09 20 | 704 | 0.5− | 0.5− | 2006 10 16 | 703 | 0.1− | 0.8− |
| 2004 01 23 | 704 | 0.5− | 0.1− | 2006 09 20 | 704 | 0.5− | 0.5− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2004 01 23 | 704 | 0.5− | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 2004 01 30 | 704 | (0.0 | 1.6+) | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2004 01 30 | 704 | 0.0 | 0.7+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2004 01 30 | 704 | 0.4+ | 0.6+ | 2006 09 26 | 704 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2005 05 08 | 691 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.2− | 1.3+ | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2005 05 08 | 691 | 0.5+ | 0.2− | 2006 09 26 | 704 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 05 08 | 691 | 0.3+ | 0.0 | 2006 09 26 | 704 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 06 13 | 691 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 06 13 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.3− | 0.6+ |
| 2005 06 13 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.4− | 0.6+ |
| 2006 07 22 | G96 | 0.1− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.8− | 0.3+ |
| 2006 07 22 | G96 | 0.1+ | 0.2− | 2006 09 29 | 699 | 0.7+ | 1.3− | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2006 07 22 | G96 | 0.0 | 0.4− | 2006 09 29 | 699 | 0.0 | 0.7− | 2006 11 10 | 644 | 0.5+ | 0.0 |
| 2006 07 22 | G96 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.9− | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.3+ |
| 2006 08 18 | 644 | 0.1+ | 0.1− | 2006 09 29 | 699 | 1.0+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.2− |
| 2006 08 18 | 644 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 1.0+ | 0.2+ | | | | |
| 2006 08 18 | 644 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.7+ | 0.5+ | | | | |

**2006 SU$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.10128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23168480 | $\omega$ | 11.32550 | | +0.73578892 | −0.67312650 | |
| $a$ | 2.6254537 | $\Omega$ | 31.38893 | | +0.60965914 | +0.61065416 | |
| $e$ | 0.1856388 | $i$ | 8.19756 | | +0.29483960 | +0.41713572 | |
| $P$ | 4.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2000 04 05 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.2− |
| 2000 04 05 | 691 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2004 03 16 | 691 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2004 03 16 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2004 03 16 | 691 | 0.5− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 15 | 704 | (1.8+ | 0.9+) |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.8+ |
| 2006 09 17 | 699 | 0.1− | 1.0+ | 2006 10 23 | 644 | 0.5− | 0.3− | 2006 11 15 | 704 | 0.5− | 0.1+ |
| 2006 09 17 | 699 | 0.3− | 1.0+ | 2006 10 23 | 644 | 0.2− | 0.0 | 2006 11 15 | 704 | 1.0− | 1.0− |
| 2006 09 17 | 699 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.6+ |
| 2006 09 17 | 699 | 0.4− | 0.0 | 2006 10 29 | 704 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2006 09 20 | 704 | 0.5+ | 0.7− | 2006 10 29 | 704 | 0.9+ | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.1+ |
| 2006 09 20 | 704 | 0.8+ | 0.9+ | 2006 10 29 | 704 | 0.3− | 0.8+ | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.4+ | 0.8+ |
| 2006 09 20 | 704 | 1.0+ | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.1− | 0.6− | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.0 | 0.6− |
| 2006 09 25 | G96 | 0.0 | 0.6− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2006 09 25 | G96 | 0.3− | 0.7− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2006 09 27 | 704 | 0.8+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.1+ |
| 2006 09 27 | 704 | 0.3+ | 0.9− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.6− | 0.1+ |
| 2006 09 27 | 704 | 0.7− | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.8+ |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2006 10 13 | 691 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.1− | 0.4− | | | | |

**2006 SV$_{48}$ = 2005 JC$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.69578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22818399 | $\omega$ | 306.37653 | | +0.95574223 | +0.24863372 | |
| $a$ | 2.6522387 | $\Omega$ | 39.91256 | | −0.12166844 | +0.82077116 | |
| $e$ | 0.2295274 | $i$ | 14.18985 | | −0.26786857 | +0.51431116 | |
| $P$ | 4.32 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 09 26 | H07 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2002 12 06 | 704 | 1.2+ | 0.0 | 2006 09 27 | 704 | 1.2− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.1− | 0.8+ | 2006 09 27 | 704 | 0.6+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2002 12 06 | 704 | (0.2− | 1.7+) | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2003 01 07 | 704 | (1.7− | 0.8+) | 2006 09 27 | 704 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2003 01 07 | 704 | 0.3− | 0.4− | 2006 09 27 | 704 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2003 01 07 | 704 | 0.0 | 0.5− | 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2003 01 07 | 704 | 0.6− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2003 12 25 | 645 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2003 12 25 | 645 | 0.3− | 0.0 | 2006 09 29 | 704 | 0.3− | 1.3− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2005 02 10 | 809 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2005 02 10 | 809 | 0.1+ | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.6+ | 2006 11 15 | 704 | 0.5+ | 0.3+ |
| 2005 02 10 | 809 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.0 | 1.3+ | 2006 11 15 | 704 | 0.5+ | 0.1− |
| 2005 05 12 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 704 | 1.3− | 0.7− | 2006 11 15 | 704 | 0.4+ | 0.3+ |
| 2005 05 12 | 644 | 0.4+ | 0.8+ | 2006 10 21 | 704 | 1.3− | 0.9+ | 2006 11 15 | 704 | 0.3+ | 0.5+ |
| 2005 05 12 | 644 | 0.4+ | 0.6+ | 2006 10 21 | 704 | 0.7− | 1.1− | 2006 11 16 | 704 | (2.8+ | 2.0+) |
| 2005 05 16 | 644 | 0.4+ | 0.7+ | 2006 10 21 | 704 | 1.2− | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 2005 05 16 | 644 | 0.3+ | 0.6+ | 2006 10 21 | 704 | (1.6− | 0.9+) | 2006 11 16 | 704 | 0.2+ | 0.5+ |
| 2005 05 16 | 644 | 0.2+ | 0.6+ | 2006 10 29 | 704 | 0.3− | 0.3− | 2006 11 16 | 704 | 0.8+ | 0.5+ |
| 2006 08 28 | 703 | 0.0 | 0.2− | 2006 10 29 | 704 | 0.2+ | 0.3− | 2006 11 16 | 704 | (3.3+ | 1.1+) |
| 2006 08 28 | 703 | 0.2+ | 0.4− | 2006 10 29 | 704 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2006 08 28 | 703 | 0.3− | 0.9− | 2006 10 29 | 704 | 1.3− | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2006 08 28 | 703 | 0.2− | 0.3− | 2006 10 29 | 704 | 0.6− | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2006 09 17 | 704 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2006 09 17 | 704 | 1.2+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2006 09 17 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.4− | 0.1− |
| 2006 09 17 | 704 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2006 09 17 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2006 09 17 | 699 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.7+ | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2006 09 17 | 699 | 0.1− | 0.2+ | 2006 11 11 | 703 | (1.9+ | 0.6+) | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2006 09 17 | 699 | 0.9+ | 0.7+ | 2006 11 14 | 703 | 0.1+ | 0.7− | 2006 11 28 | 704 | 1.0− | 0.2+ |
| 2006 09 17 | 699 | 1.1+ | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.7− | 2006 11 28 | 704 | 0.1− | 0.7+ |
| 2006 09 20 | 704 | 0.9− | 0.7+ | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.8− | 0.6+ |
| 2006 09 20 | 704 | 0.1+ | 0.4− | 2006 11 14 | 703 | 0.2− | 0.9− | 2006 11 28 | 704 | 0.7− | 0.7+ |
| 2006 09 20 | 704 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.2− | 0.8+ |
| 2006 09 20 | 704 | 0.3+ | 0.5+ | 2006 11 14 | 703 | 0.3+ | 0.6− | 2006 12 01 | 704 | 0.0 | 0.6+ |
| 2006 09 26 | H07 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.3− | 2006 12 01 | 704 | 0.1+ | 0.4+ |
| 2006 09 26 | H07 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.3− | 2006 12 01 | 704 | 0.4+ | 0.4+ |

**2006 SW$_{48}$ = 2004 CF$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.81088 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27807242 | $\omega$ | 234.07270 | | +0.85497381 | | −0.51846044 |
| $a$ | 2.3246850 | $\Omega$ | 157.14527 | | +0.48729082 | | +0.79315664 |
| $e$ | 0.2266546 | $i$ | 2.18138 | | +0.17767227 | | +0.31953297 |
| $P$ | 3.54 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 704 | 1.0+ | 0.2+ | 2006 09 18 | 699 | 0.8+ | 1.0− | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 1999 11 05 | 704 | 0.1+ | 0.5− | 2006 09 18 | 699 | 1.0− | 0.2− | 2006 09 30 | 691 | 0.2− | 0.1− |
| 1999 11 05 | 704 | 0.8− | 0.2− | 2006 09 18 | 699 | 0.7+ | 0.1+ | 2006 10 01 | 704 | 0.8+ | 0.1− |
| 1999 11 05 | 704 | 0.4− | 1.1+ | 2006 09 20 | 704 | 0.1+ | 1.1+ | 2006 10 01 | 704 | 0.5+ | 0.4+ |
| 2004 02 11 | 691 | 0.1− | 0.2− | 2006 09 20 | 704 | 0.7+ | 0.1− | 2006 10 01 | 704 | 0.7+ | 0.5− |
| 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 09 20 | 704 | 1.3+ | 0.7+ | 2006 10 01 | 704 | 0.3− | 0.4+ |
| 2004 02 11 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 02 17 | 291 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2004 02 17 | 291 | 0.3− | 0.3− | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 1.5+ | 0.8+ |
| 2004 02 17 | 291 | 0.1− | 0.0 | 2006 09 27 | 704 | 0.3− | 1.4+ | 2006 10 21 | 703 | 0.2− | 1.4+ |
| 2006 07 21 | G96 | 0.3− | 0.3+ | 2006 09 27 | 704 | 0.6− | 1.2+ | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 09 27 | 704 | (1.7+ | 0.5−) | 2006 10 21 | 703 | (0.1+ | 3.8+) |
| 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 09 27 | 704 | 1.1+ | 0.5− | 2006 10 21 | 703 | 1.0+ | 1.5+ |
| 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 09 28 | 704 | 1.1+ | 0.7− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2006 09 18 | 691 | 0.4− | 0.0 | 2006 09 28 | 704 | 0.6+ | 1.1− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 09 28 | 704 | 0.9+ | 0.9− | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2006 09 18 | 691 | 0.6− | 0.0 | 2006 09 28 | 704 | (1.6− | 1.1−) | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 699 | 0.0 | 1.0− | 2006 09 30 | 691 | 0.2− | 0.1− | | | | |

**2006 SY$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.45397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23549640 | $\omega$ | 294.47012 | | +0.46034262 | | +0.88773337 |
| $a$ | 2.5970473 | $\Omega$ | 2.94719 | | −0.78571001 | | +0.40940207 |
| $e$ | 0.1527906 | $i$ | 4.19480 | | −0.41321236 | | +0.21052178 |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 09 | 695 | 0.4− | 0.7+ | 2006 09 20 | 704 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.6− |
| 2002 11 09 | 695 | 0.3− | 1.0+ | 2006 09 20 | 704 | 0.7+ | 0.6− | 2006 10 17 | 703 | 0.3+ | 0.9− |
| 2005 03 15 | G96 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.7− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 2005 03 15 | G96 | 0.3− | 0.6+ | 2006 09 27 | 699 | 0.0 | 0.9+ | 2006 10 19 | 644 | 0.3− | 0.3+ |
| 2005 03 15 | G96 | 0.0 | 0.1+ | 2006 09 27 | 699 | 0.4− | 0.2+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 2005 03 15 | G96 | 0.6− | 0.1+ | 2006 09 27 | 699 | 0.7− | 1.5+ | 2006 10 19 | 644 | 0.6− | 0.2− |
| 2005 04 14 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 704 | 0.3+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 0.6+ | 1.4+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2005 05 01 | 644 | 0.1− | 0.1− | 2006 09 27 | 704 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 05 01 | 644 | 0.2− | 0.1+ | 2006 09 27 | 704 | 0.8+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 05 01 | 644 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.6− | 0.5− |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 10 02 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 14 | 122 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 14 | 122 | 0.3+ | 0.4− | 2006 10 23 | 291 | 0.1+ | 0.4+ |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 14 | 122 | 0.2− | 0.2− | 2006 10 23 | 291 | 0.3+ | 0.5+ |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 15 | 106 | 0.4+ | 1.3− | 2006 10 23 | 291 | 0.5+ | 0.5+ |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 15 | 106 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.6− | 0.6− |
| 2006 09 18 | J75 | 0.1− | 0.5− | 2006 10 15 | 106 | 0.7− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2006 09 18 | J75 | 0.4+ | 0.4− | 2006 10 15 | 106 | 0.1+ | 1.0+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2006 09 18 | J75 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 10 31 | G96 | 0.7− | 0.5− |
| 2006 09 18 | J75 | 1.0− | 0.7− | 2006 10 17 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.7− |
| 2006 09 19 | J75 | 0.7+ | 0.9− | 2006 10 17 | 703 | 0.7+ | 1.0− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | J75 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2− | 1.0− | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2006 09 20 | 704 | 1.5+ | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 |

**2006 SB$_{49}$ = 2000 GH$_{179}$ = 2005 LK$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.92463 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21910142 | $\omega$ | 131.23551 | | +0.87539330 | | +0.48269958 |
| $a$ | 2.7250382 | $\Omega$ | 199.94614 | | −0.46333337 | | +0.82232750 |
| $e$ | 0.1148481 | $i$ | 4.40878 | | −0.13787228 | | +0.30129485 |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 27 | 691 | 0.7+ | 0.4− | 2006 09 20 | 704 | 1.1− | 0.7− | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 1995 02 27 | 691 | 0.1+ | 0.9− | 2006 09 20 | 704 | 0.8− | 0.5− | 2006 10 17 | G96 | 0.7+ | 0.2− |
| 1995 02 27 | 691 | 0.2+ | 0.4− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.7+ | 0.5− |
| 2000 04 05 | 704 | 0.8+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.6− |
| 2000 04 05 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 1.3+ | 1.4+ | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 2000 04 05 | 704 | 0.9+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2000 04 13 | 691 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2000 04 13 | 691 | 0.6− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2000 04 13 | 691 | 1.7− | 0.7+ | 2006 09 29 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 07 28 | 608 | (0.2− | 1.9−) | 2006 09 29 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2001 07 28 | 608 | 0.0 | 1.4− | 2006 09 29 | 691 | (1.6− | 0.0 ) | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2001 07 28 | 608 | 0.3− | 1.1− | 2006 10 03 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2005 06 06 | 691 | 0.2+ | 0.2− | 2006 10 03 | 691 | 0.4− | 0.7+ | 2006 10 27 | G96 | 0.2− | 1.0− |
| 2005 06 06 | 691 | 0.5+ | 0.0 | 2006 10 03 | 691 | 0.5+ | 0.3+ | 2006 10 29 | 291 | 0.1+ | 0.2+ |
| 2005 06 06 | 691 | 0.3+ | 0.2− | 2006 10 15 | 703 | 0.2− | 0.8+ | 2006 10 29 | 291 | 0.1+ | 0.0 |
| 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | (3.0− | 0.5+) | 2006 10 29 | 291 | 0.1+ | 0.1+ |
| 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 703 | (2.1− | 0.8+) | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2005 06 10 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.3+ | 1.4+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2006 09 18 | 691 | 0.6− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.4− |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.0 |
| 2006 09 20 | 704 | (2.3− | 1.0+) | 2006 10 16 | G96 | 0.3− | 0.2− |

**2006 SD$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.03076 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27131661 | $\omega$ | 322.20255 | | +0.92817498 | | +0.37194368 |
| $a$ | 2.3631165 | $\Omega$ | 15.97513 | | −0.32970688 | | +0.83710480 |
| $e$ | 0.2245153 | $i$ | 2.54286 | | −0.17258208 | | +0.40114020 |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.3− | 0.6+ | 2006 09 26 | 683 | 0.7+ | 1.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 12 07 | 704 | 0.0 | 0.6− | 2006 09 26 | 683 | (0.9− | 1.8−) | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 12 07 | 704 | 1.1+ | 0.0 | 2006 09 26 | 683 | (0.1+ | 1.6+) | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 06 17 | 644 | 0.2− | 0.1− | 2006 09 28 | 683 | (3.4− | 1.6−) | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2002 06 17 | 644 | 0.1− | 0.2− | 2006 09 28 | 683 | (1.3− | 2.7−) | 2006 10 23 | 691 | 0.2− | 0.4− |
| 2002 06 17 | 644 | 0.4− | 0.1− | 2006 09 28 | 683 | (2.2− | 1.5−) | 2006 10 23 | 691 | 0.1− | 0.3− |
| 2003 12 19 | 691 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 23 | 704 | 1.0− | 0.8+ |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.2+ | 2006 10 23 | 704 | 0.8− | 0.4− |
| 2003 12 19 | 691 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 23 | 704 | (1.8− | 1.3+) |
| 2005 03 17 | 691 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.7+ | 2006 10 23 | 704 | 0.6− | 0.3+ |
| 2005 03 17 | 691 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.3− | 0.3+ | 2006 10 25 | 106 | 0.0 | 0.7− |
| 2005 03 17 | 691 | 0.4− | 0.4+ | 2006 09 29 | 704 | 0.5− | 0.3− | 2006 10 25 | 106 | 0.4− | 0.0 |
| 2005 04 04 | 691 | 0.7+ | 0.3+ | 2006 09 29 | 704 | 1.3+ | 0.1− | 2006 10 25 | 106 | 0.4+ | 0.3+ |
| 2005 04 04 | 691 | 0.2+ | 0.1− | 2006 09 30 | 683 | 0.9+ | 1.4− | 2006 10 25 | 106 | 0.0 | 0.4+ |
| 2005 04 04 | 691 | 0.7+ | 0.5+ | 2006 09 30 | 683 | 0.3+ | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 09 30 | 683 | 0.1− | 1.0− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2006 07 21 | G96 | 0.4+ | 0.4− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2006 07 21 | G96 | 0.1+ | 0.4− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | 1.4+ | 0.6+ |
| 2006 08 30 | 699 | 0.6+ | 0.8+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 28 | 704 | (2.1− | 0.4+) |
| 2006 08 30 | 699 | 0.8+ | 0.2− | 2006 10 03 | 704 | 0.1+ | 0.3− | 2006 10 28 | 704 | 0.3− | 1.2− |
| 2006 08 30 | 699 | 0.4+ | 0.0 | 2006 10 03 | 704 | 0.4+ | 0.8+ | 2006 10 28 | 704 | (0.0 | 1.7+) |
| 2006 08 30 | 699 | 0.3+ | 0.7+ | 2006 10 03 | 704 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.1− | 0.4+ |
| 2006 09 18 | 699 | 1.3+ | 0.9+ | 2006 10 03 | 704 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 699 | 0.9+ | 0.5+ | 2006 10 03 | 704 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 04 | 683 | 1.2+ | 0.9− | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 699 | 1.2+ | 0.0 | 2006 10 04 | 683 | (2.9+ | 1.4−) | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2006 09 18 | 699 | 0.5− | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.5− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2006 09 20 | 704 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2006 09 20 | 704 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2006 09 20 | 704 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2006 09 20 | 704 | 1.4− | 0.7− | 2006 10 16 | 683 | 0.4+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2006 09 20 | 704 | (0.2+ | 1.8−) | 2006 10 16 | 683 | 0.3+ | 1.4+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 16 | 683 | (0.8+ | 1.6+) | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.7− |
| 2006 09 24 | 691 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | (2.3− | 2.6+) |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | | | | |
| 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | | | |

**2006 SG$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.21091 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23601376 | $\omega$ | 284.52143 | | +0.41201947 | | +0.91046023 |
| $a$ | 2.5932507 | $\Omega$ | 10.04035 | | −0.73582264 | | +0.35582424 |
| $e$ | 0.1041377 | $i$ | 11.94537 | | −0.53740581 | | +0.21083473 |
| $P$ | 4.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.3− | 0.5− | 2006 09 20 | 704 | (1.6+ | 0.4+) | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 2002 10 10 | 644 | 0.3− | 0.6− | 2006 09 20 | 704 | 0.7+ | 0.9− | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 10 10 | 644 | 0.4+ | 0.3− | 2006 09 20 | 704 | 0.0 | 1.2+ | 2006 10 12 | 644 | 0.1− | 0.3+ |
| 2002 10 18 | 644 | 0.8− | 0.1− | 2006 09 20 | 704 | 0.1− | 1.4+ | 2006 10 16 | 703 | (1.9− | 3.2+) |
| 2002 10 18 | 644 | 0.4− | 0.2+ | 2006 09 23 | 691 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 1.0+ |
| 2002 10 18 | 644 | 0.4− | 0.4+ | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | (0.6+ | 1.8+) |
| 2002 11 01 | 950 | 0.1+ | 0.9+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | (0.5+ | 1.8+) |
| 2002 11 01 | 950 | 0.2+ | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 17 | G96 | 0.6+ | 0.6− |
| 2002 11 01 | 950 | 0.0 | 1.0+ | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 17 | G96 | 0.2+ | 0.7− |
| 2005 05 16 | 644 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.9+ | 0.6− |
| 2005 05 16 | 644 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.4− | 0.6− |
| 2005 05 16 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.8− |
| 2006 09 19 | 691 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2006 09 19 | 691 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2006 09 19 | 703 | 0.6− | 0.4− | 2006 09 28 | 704 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2006 09 19 | 703 | (2.6− | 0.3+) | 2006 09 28 | 704 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2006 09 19 | 291 | 0.4+ | 0.1+ | 2006 09 28 | 704 | 0.3− | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2006 09 19 | 291 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.6− | 0.6− |
| 2006 09 19 | 291 | 0.0 | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.3+ | | | | |
| 2006 09 19 | 703 | 0.3− | 0.5− | 2006 10 01 | 691 | 0.3+ | 0.5+ | | | | |

**2006 SN$_{49}$ = 2005 MB$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.49840 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21513890 | $\omega$ | 193.34153 | | +0.94751049 | | −0.31931536 |
| $a$ | 2.7583969 | $\Omega$ | 185.36297 | | +0.30692837 | | +0.92259168 |
| $e$ | 0.2282447 | $i$ | 9.96475 | | +0.08954806 | | +0.21647701 |
| $P$ | 4.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.7− | 0.8+ | 2006 09 20 | 704 | 1.0+ | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.4+ |
| 2001 08 17 | 644 | 0.8− | 1.0+ | 2006 09 20 | 704 | 0.9+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2001 08 17 | 644 | 0.1− | 1.2+ | 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 09 10 | 704 | 0.7+ | 1.2+ | 2006 09 23 | 691 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2001 09 10 | 704 | 0.5+ | 1.2− | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 09 10 | 704 | 0.3+ | 0.7− | 2006 09 30 | 703 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.2− |
| 2001 09 10 | 704 | 0.0 | 1.2− | 2006 09 30 | 703 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 06 11 | 691 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.6+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2005 06 11 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | (1.7− | 0.1−) | 2006 10 21 | 644 | 0.2+ | 0.5− |
| 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 06 27 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2005 06 27 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2005 06 27 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.9− | 0.2+ |
| 2005 07 04 | 691 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2005 07 04 | 691 | 0.0 | 0.4− | 2006 10 10 | 644 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.3− | 1.1− |
| 2005 07 04 | 691 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.3+ | 1.4− |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.5+ | 2006 11 13 | 703 | 0.2− | 0.7− |
| 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.9+ | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.8+ | 2006 11 19 | 703 | 0.1− | 0.5− |
| 2006 09 20 | 704 | 0.2+ | 1.2+ | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 19 | 703 | 0.1− | 0.8− |
| 2006 09 20 | 704 | 0.6− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.4− |
| 2006 09 20 | 704 | 0.2− | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.4+ | 2006 11 19 | 703 | 0.5− | 0.3− |

**2006 SU$_{49}$ = 2001 UV$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.31395 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.58693580 | $\omega$ | 198.85047 | | −0.78866144 | | −0.61372735 |
| $a$ | 1.4127836 | $\Omega$ | 303.23448 | | +0.56959240 | | −0.70681485 |
| $e$ | 0.3120904 | $i$ | 2.51941 | | +0.23146841 | | −0.35178333 |
| $P$ | 1.68 | $H$ | 19.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.2− | 0.3+ | 2006 09 24 | 246 | 0.4− | 1.1− | 2006 10 14 | 734 | 0.1+ | 0.4− |
| 2001 10 19 | 644 | 0.6− | 0.1− | 2006 09 24 | 246 | 0.0 | 0.4− | 2006 10 14 | 734 | 0.5− | 0.2+ |
| 2001 10 19 | 644 | 0.7− | 0.4+ | 2006 09 24 | 246 | (0.0 | 1.9−) | 2006 10 15 | 291 | 0.1+ | 0.1+ |
| 2001 10 19 | 046 | 0.3− | 1.0+ | 2006 09 25 | 291 | 0.1− | 0.5+ | 2006 10 15 | 291 | 0.0 | 0.2+ |
| 2001 10 19 | 046 | (1.6− | 0.1−) | 2006 09 25 | 291 | 0.9+ | 0.8+ | 2006 10 15 | 291 | 0.2+ | 0.1+ |
| 2001 10 19 | 046 | 0.5+ | 0.5+ | 2006 09 26 | 715 | 0.4+ | 0.0 | 2006 10 16 | 291 | 0.8− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 644 | 0.6+ | 0.8+ | 2006 09 26 | 715 | 0.3+ | 0.1− | 2006 10 16 | 291 | 0.5+ | 0.7+ | | |
| 2001 10 21 | 644 | 0.3+ | 0.4+ | 2006 09 26 | 715 | 0.3+ | 0.2− | 2006 10 16 | 291 | 0.0 | 0.2− | | |
| 2001 10 21 | 644 | 0.5+ | 0.5+ | 2006 09 26 | 715 | 0.0 | 0.2− | 2006 10 19 | 291 | (3.1− | 1.0+) | | |
| 2001 10 23 | 644 | 0.4+ | 0.8+ | 2006 09 26 | 291 | 0.1+ | 0.3+ | 2006 10 19 | 291 | 0.1− | 0.2− | | |
| 2001 10 23 | 644 | 0.2+ | 0.1+ | 2006 09 26 | 291 | 0.1− | 0.3+ | 2006 10 19 | 291 | 0.1+ | 0.3+ | | |
| 2001 10 23 | 644 | 0.6+ | 0.5+ | 2006 09 26 | 291 | 0.2− | 0.3+ | 2006 10 20 | 291 | 0.1+ | 0.2− | | |
| 2001 10 24 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 649 | 0.3− | 1.1− | 2006 10 20 | 291 | 0.0 | 0.1− | | |
| 2001 10 24 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 649 | 0.4− | 0.1+ | 2006 10 20 | 291 | 0.2+ | 0.2+ | | |
| 2001 10 24 | 644 | 0.3+ | 0.6+ | 2006 09 26 | 649 | 0.1− | 1.3− | 2006 10 21 | 291 | 0.0 | 0.2− | | |
| 2001 10 25 | 644 | 0.0 | 0.7+ | 2006 09 27 | 291 | 0.2+ | 0.4+ | 2006 10 21 | 291 | 0.1− | 0.0 | | |
| 2001 10 25 | 644 | 0.0 | 1.1+ | 2006 09 27 | 291 | 0.1+ | 0.4+ | 2006 10 21 | 291 | 0.9+ | 0.1+ | | |
| 2001 10 25 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 291 | 0.1+ | 0.3+ | 2006 10 23 | 291 | 0.2+ | 0.3− | | |
| 2001 10 25 | 644 | 0.4+ | 0.3+ | 2006 09 27 | 291 | 0.2− | 0.3+ | 2006 10 23 | 291 | 0.2+ | 0.3− | | |
| 2001 10 25 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 291 | 0.0 | 0.2+ | 2006 10 23 | 291 | 0.1+ | 0.0 | | |
| 2001 10 25 | 644 | 0.1− | 0.9+ | 2006 09 27 | 291 | 0.2− | 0.2+ | 2006 10 27 | 291 | 0.1+ | 0.5− | | |
| 2001 11 18 | 645 | 0.1− | 0.2− | 2006 09 28 | 291 | 0.4+ | 0.2+ | 2006 10 27 | 291 | 0.1+ | 0.1− | | |
| 2001 11 18 | 645 | 0.3− | 0.1− | 2006 09 28 | 291 | 0.1− | 0.2+ | 2006 10 27 | 291 | 0.1+ | 0.0 | | |
| 2006 09 20 | 691 | 0.1+ | 0.2− | 2006 09 28 | 291 | 0.3+ | 0.1+ | 2006 10 28 | 291 | 0.9+ | 0.3− | | |
| 2006 09 20 | 691 | 0.0 | 0.0 | 2006 09 28 | 291 | 0.1+ | 0.1+ | 2006 10 28 | 291 | 0.8− | 0.1− | | |
| 2006 09 20 | 691 | 0.1− | 0.2− | 2006 09 28 | 291 | 0.0 | 0.2+ | 2006 10 28 | 291 | 0.2+ | 0.0 | | |
| 2006 09 20 | J95 | 0.6− | 0.0 | 2006 09 28 | 291 | 0.1− | 0.1+ | 2006 10 29 | 291 | 0.1+ | 0.0 | | |
| 2006 09 20 | J95 | 0.2+ | 0.7− | 2006 09 29 | 291 | 0.4− | 0.2− | 2006 10 29 | 291 | 0.0 | 0.2+ | | |
| 2006 09 21 | 673 | 0.4− | 0.3+ | 2006 09 29 | 291 | 0.1− | 0.2+ | 2006 10 29 | 291 | 0.0 | 0.2+ | | |
| 2006 09 21 | 673 | 0.3+ | 0.5+ | 2006 09 29 | 291 | 0.8+ | 0.3+ | 2006 11 11 | 291 | 0.3− | 0.3− | | |
| 2006 09 21 | 673 | 0.1+ | 0.2+ | 2006 09 30 | 291 | 0.0 | 0.3+ | 2006 11 11 | 291 | 0.1+ | 0.4− | | |
| 2006 09 21 | 673 | 1.1+ | 0.4+ | 2006 09 30 | 291 | 0.1+ | 0.1+ | 2006 11 11 | 291 | 0.2− | 0.0 | | |
| 2006 09 22 | 711 | 0.2+ | 0.1+ | 2006 09 30 | 291 | 0.1− | 0.3+ | 2006 11 14 | 291 | 0.1− | 0.0 | | |
| 2006 09 22 | 711 | 0.3+ | 0.3+ | 2006 10 01 | 715 | 0.5+ | 0.0 | 2006 11 14 | 291 | 0.0 | 0.8+ | | |
| 2006 09 22 | 711 | 0.1+ | 0.8− | 2006 10 01 | 291 | 0.8− | 0.4+ | 2006 11 14 | 291 | 0.2+ | 0.2− | | |
| 2006 09 22 | J95 | 0.3− | 0.5− | 2006 10 01 | 291 | 1.2− | 1.2− | 2006 11 17 | 291 | 0.4+ | 0.4− | | |
| 2006 09 22 | J95 | 1.3+ | 0.0 | 2006 10 01 | 291 | 0.6− | 0.4+ | 2006 11 17 | 291 | 0.0 | 0.2+ | | |
| 2006 09 22 | J95 | 0.0 | 1.0− | 2006 10 01 | 715 | 0.4− | 0.8− | 2006 11 17 | 291 | 0.1− | 0.1+ | | |
| 2006 09 22 | 246 | 0.6− | 0.5− | 2006 10 01 | 715 | 0.1+ | 0.5− | 2006 11 20 | 291 | 0.1− | 0.1+ | | |
| 2006 09 22 | 246 | 0.9− | 0.0 | 2006 10 01 | 715 | 0.4+ | 0.6− | 2006 11 20 | 291 | 0.1− | 0.2− | | |
| 2006 09 22 | 246 | 0.1+ | 0.6− | 2006 10 02 | 291 | 0.2+ | 0.2+ | 2006 11 20 | 291 | 0.4+ | 0.2+ | | |
| 2006 09 22 | 246 | 0.6− | 0.2+ | 2006 10 02 | 291 | 0.3+ | 0.1+ | 2006 11 21 | 291 | 0.1− | 0.1+ | | |
| 2006 09 23 | J95 | 0.9− | 1.3− | 2006 10 02 | 291 | 1.3− | 0.2+ | 2006 11 21 | 291 | 0.3+ | 0.3− | | |
| 2006 09 23 | J95 | 0.3− | 1.1− | 2006 10 03 | 291 | 0.2− | 0.5+ | 2006 11 21 | 291 | 0.0 | 0.1− | | |
| 2006 09 23 | J95 | 0.7+ | 0.6− | 2006 10 03 | 291 | 0.9+ | 0.4+ | 2006 11 22 | 291 | 0.5+ | 0.5− | | |
| 2006 09 23 | 291 | 0.3+ | 0.4+ | 2006 10 03 | 291 | 0.1− | 0.2+ | 2006 11 22 | 291 | 0.8+ | 0.1+ | | |
| 2006 09 23 | 291 | 0.2+ | 0.5+ | 2006 10 11 | 291 | 0.1− | 0.4− | 2006 11 22 | 291 | 0.6− | 0.2− | | |
| 2006 09 23 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 291 | 0.2− | 0.6− | 2006 11 24 | 291 | 0.2+ | 0.1+ | | |
| 2006 09 24 | 682 | 0.6− | 0.9− | 2006 10 11 | 291 | 1.1− | 1.2+ | 2006 11 24 | 291 | 0.1+ | 0.3+ | | |
| 2006 09 24 | 682 | 0.7− | 1.1− | 2006 10 12 | 291 | 0.3+ | 0.4− | 2006 11 24 | 291 | 0.2+ | 0.1− | | |
| 2006 09 24 | 291 | 0.2− | 0.2+ | 2006 10 12 | 291 | 0.2+ | 0.0 | 2006 11 25 | 291 | 0.1− | 0.2− | | |
| 2006 09 24 | 291 | 0.1− | 0.1+ | 2006 10 13 | 291 | 0.0 | 0.3− | 2006 11 25 | 291 | 0.1− | 0.2− | | |
| 2006 09 24 | 682 | 0.5− | 0.0 | 2006 10 13 | 291 | 0.1− | 0.2+ | 2006 11 25 | 291 | 0.4+ | 0.1+ | | |
| 2006 09 24 | 291 | 0.2+ | 0.1− | 2006 10 13 | 291 | 0.1+ | 0.1+ | | | | | | |
| 2006 09 24 | 246 | 0.7− | 0.2− | 2006 10 14 | 734 | 0.1− | 0.5− | | | | | | |

### 2006 $SV_{49}$ = 2005 $LB_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.70770 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22339196 | $\omega$ | 114.21367 | | +0.59925227 | | +0.79921382 |
| $a$ | 2.6900335 | $\Omega$ | 192.92120 | | −0.78896830 | | +0.57975210 |
| $e$ | 0.1235784 | $i$ | 11.97901 | | −0.13574145 | | +0.15857105 |
| $P$ | 4.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.1+ | 0.3− | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.1+ | 1.1+ | | |
| 1997 10 04 | 691 | 0.2+ | 0.1− | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.2− | 0.3+ | | |
| 1997 10 04 | 691 | 0.1− | 0.2− | 2006 09 18 | 699 | (2.2− | 1.7+) | 2006 10 15 | 703 | 0.2+ | 0.3− | | |
| 1997 10 04 | 691 | 0.3− | 0.0 | 2006 09 18 | 699 | 0.3+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.3+ | | |
| 1997 10 04 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 699 | (2.3− | 0.2−) | 2006 10 17 | G96 | 0.2+ | 0.3− | | |
| 1997 10 04 | 691 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.9− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.2− | | |
| 2000 05 05 | 645 | 0.0 | 0.2+ | 2006 09 19 | J75 | 0.7+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.0 | | |
| 2000 05 05 | 645 | 0.1+ | 0.2+ | 2006 09 19 | J75 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.1− | 1.2+ | | |
| 2005 05 14 | G96 | 0.3− | 0.2− | 2006 09 21 | J75 | (0.0 | 1.7+) | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2005 05 14 | G96 | 0.3− | 0.2− | 2006 09 21 | J75 | (1.6+ | 1.5+) | 2006 10 21 | 703 | 0.5− | 0.3+ | | |
| 2005 05 14 | G96 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.0 | | |
| 2005 05 14 | G96 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2005 06 03 | E12 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 1.4− | 0.5+ | | |
| 2005 06 03 | E12 | 0.3+ | 0.5− | 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.2− | | |
| 2005 06 03 | E12 | 0.5− | 0.2− | 2006 10 03 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.3+ | | |
| 2005 06 03 | E12 | 0.3− | 1.0+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.1− | | |
| 2005 06 05 | 691 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.2− | | |
| 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.0 | | |
| 2005 06 05 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.2− | | |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.2− | 0.5+ | | | | | | |

### 2006 $SX_{49}$ = 2004 $BO_{126}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.69553 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28658389 | $\omega$ | 4.95442 | | +0.87193273 | | −0.48961242 |
| $a$ | 2.2784257 | $\Omega$ | 24.36173 | | +0.44892210 | | +0.79648710 |
| $e$ | 0.2251182 | $i$ | 0.50062 | | +0.19545400 | | +0.35480697 |
| $P$ | 3.44 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 16 | 106 | 0.0 | 0.3− | | |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 16 | 106 | 0.2− | 0.4+ | | |
| 2004 01 16 | 691 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 16 | 106 | 0.4+ | 0.1+ | | |
| 2004 01 27 | 691 | 0.1+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 16 | 106 | 0.0 | 0.0 | | |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 10 17 | 703 | (1.6− | 1.0+) | | |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.6− | | |
| 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 10 17 | 703 | (0.4− | 3.0+) | | |
| 2006 07 21 | G96 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.3+ | | |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.3− | 0.4+ | | |
| 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.4+ | | |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 15 | 106 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.5− | | |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 106 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2006 09 18 | 699 | 0.5− | 0.4+ | 2006 10 15 | 106 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.9− | 0.2+ | | |
| 2006 09 18 | 699 | 1.1− | 0.9+ | 2006 10 15 | 106 | 0.2− | 0.9− | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2006 09 18 | 699 | 1.2− | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2006 09 18 | 699 | 0.1− | 0.5− | 2006 10 16 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2006 09 20 | J75 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.0 | | |
| 2006 09 20 | J75 | 0.4+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.6+ | 0.3− | | |
| 2006 09 20 | J75 | 1.4+ | 0.0 | 2006 10 16 | 106 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.0 | | |
| 2006 09 20 | J75 | (0.9+ | 1.6−) | 2006 10 16 | 106 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2006 09 20 | J75 | 0.3− | 1.3− | 2006 10 16 | 106 | 0.0 | 0.7− | | | | | | |
| 2006 09 21 | J75 | (1.0+ | 2.1−) | 2006 10 16 | 106 | 0.6+ | 0.5− | | | | | | |

### 2006 $SY_{49}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.48525 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28934138 | $\omega$ | 151.86157 | | +0.90192138 | | +0.43189405 |
| $a$ | 2.2639266 | $\Omega$ | 182.55398 | | −0.40537140 | | +0.84465973 |
| $e$ | 0.2550758 | $i$ | 2.97900 | | −0.14903644 | | +0.31625540 |
| $P$ | 3.41 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1− | 0.5− | 2006 09 28 | 291 | 0.2− | 0.0 | 2006 10 01 | 291 | 0.1− | 0.0 | | |
| 1999 10 06 | 704 | 0.5− | 0.3+ | 2006 09 28 | 291 | 0.2− | 0.0 | 2006 10 01 | 291 | 0.1− | 0.0 | | |
| 1999 10 06 | 704 | 0.6+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 10 01 | 291 | 0.2− | 0.1− | | |
| 2005 03 12 | 695 | 0.3+ | 0.3+ | 2006 09 29 | 291 | 0.7− | 0.3+ | 2006 10 01 | 704 | 0.1− | 0.2− | | |
| 2005 03 12 | 695 | 0.0 | 0.6+ | 2006 09 29 | 291 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.1− | | |
| 2006 08 19 | 699 | 0.7+ | 0.4+ | 2006 09 29 | 291 | 0.5− | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.6− | | |
| 2006 08 19 | 699 | 0.3− | 0.3− | 2006 09 29 | 291 | 0.0 | 0.1− | 2006 10 01 | 291 | 0.0 | 0.0 | | |
| 2006 08 19 | 699 | 1.3+ | 0.8+ | 2006 09 29 | 291 | 0.0 | 0.1+ | 2006 10 01 | 291 | 0.1+ | 0.0 | | |
| 2006 08 19 | 699 | 0.4− | 1.1− | 2006 09 29 | 291 | 0.2− | 0.2+ | 2006 10 01 | 291 | 0.1− | 0.1− | | |
| 2006 09 06 | 644 | 0.6+ | 0.5+ | 2006 09 30 | 291 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.4− | | |
| 2006 09 06 | 644 | 0.5+ | 0.0 | 2006 09 30 | 291 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.4− |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 09 30 | 291 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 291 | 0.1− | 0.2− | 2006 10 02 | 291 | 0.2+ | 0.1− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 291 | 0.1− | 0.1− | 2006 10 02 | 291 | 0.2+ | 0.1− |
| 2006 09 20 | J75 | 0.5+ | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.3+ | 2006 10 02 | 291 | 0.3+ | 0.2− |
| 2006 09 20 | J75 | 0.2+ | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2006 09 20 | J75 | (3.3+ | 0.2+) | 2006 09 30 | 701 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2006 09 21 | J75 | (2.9+ | 0.4−) | 2006 09 30 | G96 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.4+ |
| 2006 09 25 | 691 | 0.5− | 0.1− | 2006 09 30 | 291 | 0.5+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2006 09 25 | 691 | 0.3− | 0.0 | 2006 09 30 | 291 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2006 09 25 | 691 | 0.6− | 0.1− | 2006 09 30 | 291 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2006 09 26 | G96 | 0.1− | 0.3− | 2006 09 30 | 291 | 0.0 | 0.0 | 2006 10 15 | 106 | 0.6− | 0.1− |
| 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 09 30 | 701 | 0.1− | 0.1− | 2006 10 15 | 106 | 0.5+ | 0.7+ |
| 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 09 30 | 291 | 0.2+ | 0.1− | 2006 10 15 | 106 | 1.4+ | 0.4− |
| 2006 09 26 | G96 | 0.1− | 0.3− | 2006 09 30 | 291 | 0.3+ | 0.2− | 2006 10 15 | 106 | 1.0+ | 0.3− |
| 2006 09 27 | 704 | 0.8+ | 0.5+ | 2006 09 30 | 701 | 0.5+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 09 27 | 704 | (2.0− | 2.2+) | 2006 10 01 | 291 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.0 | 0.4+ |
| 2006 09 27 | 704 | 0.2− | 1.4+ | 2006 10 01 | 291 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2006 09 27 | 704 | 0.6− | 1.2+ | 2006 10 01 | 291 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2− | 0.4− |
| 2006 09 28 | G96 | 0.0 | 0.0 | 2006 10 01 | 291 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 10 01 | 291 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 10 01 | 291 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2006 09 28 | 291 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.2+ |

**2006 SA$_{50}$ = 2000 KK$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.16252 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21938728 | $\omega$ | 200.08694 | | +0.69795191 | | −0.71605739 |
| $a$ | 2.7226705 | $\Omega$ | 205.65411 | | +0.66052666 | | +0.64969924 |
| $e$ | 0.0809310 | $i$ | 1.47945 | | +0.27670862 | | +0.25525029 |
| $P$ | 4.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 26 | 691 | 0.2+ | 0.3− | 2006 10 01 | 461 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2000 05 26 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2000 05 26 | 691 | 0.4+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2000 06 01 | 691 | 1.0− | 0.7− | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2000 06 01 | 691 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2000 06 01 | 691 | 0.0 | 0.3− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2− |
| 2006 09 19 | J75 | 1.0+ | 0.7− | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | (1.6− | 0.2−) |
| 2006 09 19 | J75 | 0.2+ | 0.5− | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2006 09 19 | J75 | 0.5+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2006 09 21 | J75 | 0.1+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2006 09 21 | J75 | (0.3+ | 1.5+) | 2006 10 19 | 644 | 0.1− | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2006 09 24 | J75 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.8+ |
| 2006 09 24 | J75 | 0.5+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2006 09 24 | 691 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.9+ | 0.9+ | 2006 11 11 | 703 | 0.5− | 0.8− |
| 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.8+ | 1.1+ | 2006 11 19 | 691 | 0.4− | 0.3+ |
| 2006 09 24 | 691 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2006 09 26 | 152 | 0.8− | 0.6− | 2006 10 21 | 703 | 0.4+ | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2006 09 26 | 152 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2006 09 26 | 152 | (0.5+ | 2.0+) | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.3− |
| 2006 09 28 | 691 | 1.4+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.4+ | 0.5− |
| 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.8+ | 0.4− |
| 2006 10 01 | 461 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.1+ | 2006 11 27 | 703 | 0.7+ | 0.2− |
| 2006 10 01 | 461 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 27 | 703 | (1.1− | 1.5+) |

**2006 SB$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.66157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29349148 | $\omega$ | 111.13722 | | +0.62328994 | | +0.78160271 |
| $a$ | 2.2425341 | $\Omega$ | 197.48871 | | −0.74443808 | | +0.58341899 |
| $e$ | 0.1377739 | $i$ | 4.70197 | | −0.23941928 | | +0.22072491 |
| $P$ | 3.36 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 13 | 291 | 0.6+ | 0.0 | 2006 09 21 | J75 | (0.1− | 1.8−) | 2006 10 15 | 691 | 0.2− | 0.0 |
| 2002 06 13 | 291 | 0.0 | 0.2+ | 2006 09 24 | J75 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2002 06 13 | 291 | 0.5− | 0.1+ | 2006 09 24 | J75 | 0.7+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2− |
| 2005 03 11 | G96 | 0.5+ | 0.6+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2− |
| 2005 03 11 | G96 | 0.0 | 0.8+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2005 03 11 | G96 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2005 03 11 | G96 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2005 04 05 | G96 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2005 04 05 | G96 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.6+ | 0.6+ |
| 2005 04 05 | G96 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.4+ |
| 2005 04 05 | G96 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.6+ | 2006 10 31 | 691 | 0.4− | 0.0 |
| 2006 09 18 | 691 | 0.3+ | 0.3− | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.6+ | 0.3− |
| 2006 09 19 | J75 | 0.6+ | 1.0− | 2006 10 02 | 691 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2006 09 19 | J75 | 1.0+ | 1.0− | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2006 09 19 | J75 | 0.6+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2006 09 21 | J75 | (1.0+ | 2.4−) | 2006 10 15 | 691 | 0.2− | 0.1+ | | | | |

**2006 SM$_{50}$ = 2003 BU$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.62339 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17873654 | $\omega$ | 109.79064 | | −0.01832228 | | −0.99861824 |
| $a$ | 3.1212399 | $\Omega$ | 341.05658 | | +0.85114307 | | +0.01026915 |
| $e$ | 0.0413646 | $i$ | 8.72660 | | +0.52461392 | | −0.05153787 |
| $P$ | 5.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 23 | 691 | 0.5+ | 0.6+ | 2003 01 27 | 704 | 1.0− | 0.3+ | 2006 09 19 | 699 | 0.5+ | 0.0 |
| 1998 03 23 | 691 | 0.2+ | 0.3+ | 2003 01 27 | 704 | 0.4+ | 0.3+ | 2006 09 24 | 104 | 0.7− | 0.5− |
| 1998 03 23 | 691 | 0.4+ | 0.7+ | 2003 01 27 | 704 | 0.8+ | 0.5+ | 2006 09 24 | 104 | 0.4− | 0.3+ |
| 2001 10 15 | 704 | 0.3− | 1.3− | 2003 01 27 | 704 | 0.3− | 0.8− | 2006 09 24 | 104 | 0.3+ | 0.3+ |
| 2001 10 15 | 704 | 0.8− | 0.0 | 2003 01 27 | 704 | 0.1− | 0.1− | 2006 09 26 | 461 | 0.5− | 0.4+ |
| 2001 10 15 | 704 | 0.5− | 0.7− | 2004 05 12 | E12 | 0.1− | 0.8+ | 2006 09 26 | 461 | 0.2− | 0.5+ |
| 2001 10 15 | 704 | 0.5− | 0.3+ | 2004 05 12 | E12 | 0.2+ | 0.2+ | 2006 09 26 | 461 | 0.0 | 0.5+ |
| 2001 10 15 | 704 | 1.5− | 0.4− | 2004 05 12 | E12 | 0.4− | 0.3− | 2006 09 26 | 461 | 0.0 | 0.3+ |
| 2001 11 11 | 704 | 1.1+ | 0.4− | 2004 05 12 | E12 | 0.3+ | 0.0 | 2006 09 26 | 461 | 0.2− | 0.4+ |
| 2001 11 11 | 704 | 1.4+ | 0.5+ | 2006 09 16 | 703 | 1.0− | 0.9+ | 2006 09 26 | 461 | 0.3− | 0.7+ |
| 2001 11 11 | 704 | 0.6+ | 0.2− | 2006 09 16 | 703 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2001 11 11 | 704 | 0.3− | 0.3+ | 2006 09 16 | 703 | 0.4+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.2+ | 0.2− | 2006 09 16 | 703 | (1.8− | 1.6−) | 2006 10 02 | G96 | 0.0 | 0.2− |
| 2001 12 09 | 704 | 0.2+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.2− |
| 2001 12 09 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.7+ | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2001 12 09 | 704 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.2− | 1.4+ |
| 2003 01 26 | 608 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.6− | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2003 01 26 | 608 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.7+ | 0.8+ | 2006 10 17 | 703 | 0.8− | 1.4+ |
| 2003 01 26 | 608 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.6− | 0.4− | | | | |

**2006 SS$_{50}$ = 1993 TP$_{16}$ = 2003 CU$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.13577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23033718 | $\omega$ | 354.36587 | | +0.82563497 | | −0.56142383 |
| $a$ | 2.6356841 | $\Omega$ | 39.95686 | | +0.52099030 | | +0.72057819 |
| $e$ | 0.3151016 | $i$ | 4.99782 | | +0.21655484 | | +0.40690337 |
| $P$ | 4.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.2+ | 1.0+ | 2006 10 21 | 704 | (1.6+ | 0.9+) | 2006 11 16 | 704 | 0.2− | 0.4+ | | |
| 1993 10 09 | 809 | 0.8− | 0.8+ | 2006 10 21 | 704 | (1.8+ | 0.5+) | 2006 11 17 | 691 | 0.3− | 0.1+ | | |
| 1993 10 09 | 809 | 1.1− | 1.0+ | 2006 10 23 | 704 | 0.8+ | 0.6− | 2006 11 17 | 691 | 0.4− | 0.1+ | | |
| 1993 10 11 | 809 | 1.0+ | 1.3− | 2006 10 23 | 704 | 1.2+ | 1.0+ | 2006 11 17 | 691 | 0.3− | 0.1+ | | |
| 1993 10 11 | 809 | 0.4− | 1.3− | 2006 10 23 | 704 | 1.3+ | 0.2+ | 2006 11 17 | 644 | 0.5− | 0.2+ | | |
| 1993 10 11 | 809 | 0.3− | 1.1− | 2006 10 23 | 704 | 0.4− | 1.1+ | 2006 11 17 | 644 | 0.1− | 0.1− | | |
| 1993 10 20 | 809 | 1.7+ | 1.2− | 2006 10 28 | 704 | 0.7+ | 1.3+ | 2006 11 17 | 644 | 0.5− | 0.3− | | |
| 1993 10 20 | 809 | 1.0+ | 0.7− | 2006 10 28 | 704 | 1.1+ | 1.1+ | 2006 11 18 | 691 | 0.3− | 0.1− | | |
| 1993 10 20 | 809 | 0.4+ | 0.7− | 2006 10 28 | 704 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.3− | 0.0 | | |
| 2003 02 01 | 704 | 0.1− | 1.2− | 2006 10 28 | 704 | 0.3+ | 1.1+ | 2006 11 18 | 691 | 0.3− | 0.0 | | |
| 2003 02 01 | 704 | 0.1+ | 0.5− | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.1+ | 1.2− | | |
| 2003 02 01 | 704 | 0.0 | 0.4− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.8− | | |
| 2003 02 01 | 704 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2− | | |
| 2003 02 01 | 704 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.1+ | | |
| 2003 02 04 | 704 | 0.7+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2003 02 04 | 704 | 0.5− | 0.0 | 2006 11 10 | 644 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.4− | | |
| 2003 02 04 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.5− | | |
| 2003 02 04 | 704 | (1.9+ | 1.1−) | 2006 11 11 | 703 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.5− | | |
| 2006 09 16 | 703 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.5− | | |
| 2006 09 16 | 703 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.7− | 0.2+ | 2006 11 22 | 691 | 0.4+ | 0.1− | | |
| 2006 09 16 | 703 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.1− | | |
| 2006 09 16 | 703 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.3+ | 2006 11 22 | 691 | 0.4+ | 0.2− | | |
| 2006 09 20 | 704 | 1.0− | 0.5+ | 2006 11 13 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.2− | | |
| 2006 09 20 | 704 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.5+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.3− | | |
| 2006 09 20 | 704 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.0 | | |
| 2006 09 20 | 704 | 0.7+ | 0.6+ | 2006 11 15 | 704 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2− | | |
| 2006 09 20 | 704 | 0.0 | 0.7+ | 2006 11 15 | 704 | 0.1− | 0.2+ | 2006 11 22 | 704 | 1.2− | 0.2+ | | |
| 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.4− | 0.1− | 2006 11 25 | 691 | 0.2+ | 0.2− | | |
| 2006 09 27 | G96 | 0.4− | 0.3+ | 2006 11 15 | 703 | 0.5− | 0.2− | 2006 11 25 | 691 | 0.3+ | 0.3+ | | |
| 2006 09 27 | G96 | 0.3− | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.1− | 2006 11 25 | 691 | 0.2+ | 0.1− | | |
| 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.6− | 2006 11 27 | 704 | 0.4+ | 0.1− | | |
| 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.3+ | 2006 11 27 | 704 | 0.5+ | 0.0 | | |
| 2006 10 16 | 703 | 0.1− | 0.9+ | 2006 11 16 | 704 | 0.3− | 0.3− | 2006 11 27 | 704 | 0.4+ | 0.1+ | | |
| 2006 10 16 | 703 | 0.1− | 0.8+ | 2006 11 16 | 704 | 0.1+ | 0.5− | 2006 11 27 | 704 | 0.2+ | 0.2− | | |
| 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.0 | 0.6+ | | |
| 2006 10 17 | G96 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.0 | 0.3+ | | |
| 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.3+ | 0.4+ | | |
| 2006 10 17 | G96 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.5− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.7+ | | |
| 2006 10 21 | 704 | 1.1+ | 0.4− | 2006 11 16 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.0 | 0.5+ | | |
| 2006 10 21 | 704 | 1.0+ | 0.9− | 2006 11 16 | 704 | 0.5+ | 0.4− | | | | | | |

**2006 SV$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.39617 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22038476 | $\omega$ | 233.37889 | | +0.74304787 | +0.65698649 | |
| $a$ | 2.7144489 | $\Omega$ | 85.17846 | | −0.56590544 | +0.71849333 | |
| $e$ | 0.1044470 | $i$ | 7.34957 | | −0.35725466 | +0.22833329 | |
| $P$ | 4.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.2− | 0.3− | 2004 01 26 | 699 | 0.2− | 1.0+ | 2006 09 17 | 699 | (0.4+ | 2.0−) | | |
| 2002 10 15 | 644 | 0.1+ | 0.2− | 2004 01 26 | 699 | 0.6+ | 0.3− | 2006 09 17 | 699 | 0.7+ | 0.3+ | | |
| 2002 10 15 | 644 | 0.1+ | 0.1+ | 2005 05 08 | 703 | 0.3+ | 0.3+ | 2006 09 17 | 699 | 0.4− | 0.3− | | |
| 2002 10 26 | 608 | 0.5− | 0.3+ | 2005 05 08 | 703 | 0.1+ | 0.1+ | 2006 09 20 | 703 | 0.9− | 1.3+ | | |
| 2002 10 26 | 608 | 0.3+ | 0.8+ | 2005 05 08 | 703 | 0.7− | 0.0 | 2006 09 20 | 703 | 0.2− | 0.3+ | | |
| 2002 10 26 | 608 | 0.3− | 0.1− | 2005 05 08 | 703 | 0.8+ | 1.1+ | 2006 09 20 | 703 | 0.6− | 0.2+ | | |
| 2004 01 17 | 644 | 0.6+ | 0.3+ | 2006 08 28 | E12 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.3− | 1.1− | | |
| 2004 01 17 | 644 | 0.1+ | 0.1+ | 2006 08 28 | E12 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.6− | 0.0 | | |
| 2004 01 17 | 644 | 0.1+ | 0.3+ | 2006 08 28 | E12 | 0.5+ | 0.2− | 2006 09 26 | 703 | (0.0 | 1.6+) | | |
| 2004 01 26 | 699 | 1.8− | 1.1− | 2006 08 28 | E12 | 0.4+ | 0.6+ | 2006 09 26 | 703 | 0.9+ | 0.0 | | |
| 2004 01 26 | 699 | 1.0+ | 0.7+ | 2006 09 17 | 699 | 0.7+ | 0.7+ | 2006 09 26 | 703 | 1.0− | 0.3− | | |

**2006 SY$_{50}$ = 2001 VQ$_{50}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.55434 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18383333 | $\omega$ | 81.92267 | | +0.93194021 | −0.34279196 | |
| $a$ | 3.0632790 | $\Omega$ | 298.05622 | | +0.25685900 | +0.85423123 | |
| $e$ | 0.1543996 | $i$ | 7.70005 | | +0.25595096 | +0.39087425 | |
| $P$ | 5.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.4− | 0.7+ | 2006 08 25 | D35 | 0.2+ | 0.2+ | 2006 09 20 | 699 | 0.7+ | 0.4+ | | |
| 2001 11 10 | 704 | 0.5− | 0.9+ | 2006 08 25 | D35 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.2+ | 0.3− | | |
| 2001 11 10 | 704 | 0.6− | 1.3+ | 2006 08 25 | D35 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.6− | | |
| 2001 11 12 | 704 | 0.6+ | 0.8− | 2006 09 17 | 703 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.7− | 0.2− | | |
| 2001 11 12 | 704 | 0.1+ | 0.5− | 2006 09 17 | 703 | 0.2− | 0.4− | 2006 09 27 | 703 | 0.4− | 0.4+ | | |
| 2001 11 12 | 704 | 1.0+ | 0.4− | 2006 09 17 | 703 | 0.2+ | 0.3+ | 2006 10 03 | 703 | 1.2− | 0.5− | | |
| 2001 11 12 | 704 | 0.0 | 0.4− | 2006 09 17 | 703 | 0.4− | 0.2− | 2006 10 03 | 703 | 1.0+ | 0.4− | | |
| 2001 11 12 | 704 | 0.2− | 0.9− | 2006 09 20 | 699 | 0.2+ | 0.2− | 2006 10 03 | 703 | 0.9− | 1.2+ | | |
| 2003 01 28 | 645 | 0.1+ | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 10 03 | 703 | 0.6− | 1.2− | | |
| 2003 01 28 | 645 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 1.7+ | 1.0+ | | | | | | |

**2006 SD$_{51}$ = 2002 XG$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.70337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21111265 | $\omega$ | 158.30403 | | −0.47902267 | −0.87290975 | |
| $a$ | 2.7933576 | $\Omega$ | 320.15553 | | +0.78263444 | −0.37696097 | |
| $e$ | 0.1155063 | $i$ | 8.30561 | | +0.39751808 | −0.30972408 | |
| $P$ | 4.67 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 21 | 691 | 0.6− | 0.4− | 2004 03 15 | 644 | 0.2+ | 0.6+ | 2006 09 20 | 703 | (3.1− | 2.0−) | | |
| 1994 01 21 | 691 | 0.2+ | 0.6− | 2004 03 15 | 644 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 0.4+ | 0.8+ | | |
| 1999 02 21 | 699 | 1.2+ | 1.3+ | 2004 03 15 | 644 | 1.0− | 1.2+ | 2006 09 27 | 703 | 1.4− | 0.1+ | | |
| 1999 02 21 | 699 | 0.6+ | 0.8+ | 2004 03 26 | 704 | 1.4+ | 0.6− | 2006 09 27 | 703 | 0.5− | 0.5+ | | |
| 1999 02 21 | 699 | 0.7+ | 1.0+ | 2004 03 26 | 704 | 0.8+ | 0.5+ | 2006 09 27 | 703 | 1.0+ | 0.0 | | |
| 2002 12 05 | 704 | 0.1− | 0.8+ | 2004 03 26 | 704 | 0.5− | 0.4− | 2006 10 03 | 703 | 0.2+ | 0.7+ | | |
| 2002 12 05 | 704 | 0.7− | 0.4+ | 2004 04 17 | 704 | 1.1+ | 0.8+ | 2006 10 03 | 703 | 0.0 | 0.7− | | |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2004 04 17 | 704 | 0.6− | 0.3+ | 2006 10 03 | 703 | (0.2− | 1.9−) | | |
| 2002 12 05 | 704 | 0.3+ | 1.1+ | 2004 04 17 | 704 | 0.2− | 0.2+ | 2006 10 03 | 703 | 0.4− | 0.2− | | |
| 2002 12 05 | 704 | 0.2− | 0.4+ | 2004 04 17 | 704 | 0.3+ | 1.2+ | 2006 10 03 | 703 | 0.4+ | 0.7− | | |
| 2002 12 10 | 704 | 0.1+ | 0.8+ | 2006 09 17 | 703 | 0.2+ | 0.7+ | 2006 10 03 | 703 | 0.2− | 0.4+ | | |
| 2002 12 10 | 704 | 0.8+ | 0.3+ | 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 10 03 | 703 | 0.0 | 0.9+ | | |
| 2002 12 10 | 704 | 0.6− | 0.0 | 2006 09 17 | 703 | 0.6− | 0.4− | 2006 10 03 | 703 | 0.1+ | 0.3+ | | |
| 2003 02 01 | 704 | 0.4− | 0.5− | 2006 09 17 | 703 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.4+ | 0.6+ | | |
| 2003 02 01 | 704 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.8− | 0.3+ | 2006 10 17 | 703 | 0.3+ | 0.6− | | |
| 2003 02 01 | 704 | 0.3+ | 0.8− | 2006 09 20 | 703 | 0.5+ | 0.1− | 2006 10 17 | 703 | 0.8+ | 0.1+ | | |
| 2003 02 01 | 704 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.8− | 0.9+ | | |

**2006 SL$_{51}$ = 2003 AB$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.11387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22538750 | $\omega$ | 281.10930 | | +0.63175177 | −0.75555412 | |
| $a$ | 2.6741319 | $\Omega$ | 128.29200 | | +0.76904137 | +0.58283943 | |
| $e$ | 0.2487586 | $i$ | 12.75507 | | +0.09728862 | +0.29905880 | |
| $P$ | 4.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.5+ | 0.2+ | 2006 09 20 | 703 | 0.5+ | 0.3+ | | |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.2+ | 0.6− | 2006 09 20 | 703 | 0.1+ | 0.1+ | | |
| 2000 05 10 | 645 | 0.0 | 0.1− | 2003 01 05 | 704 | 0.3+ | 0.4− | 2006 09 27 | 703 | 0.6− | 0.3− | | |
| 2000 05 10 | 645 | 0.0 | 0.1+ | 2003 01 05 | 704 | 0.2+ | 0.2− | 2006 09 27 | 703 | 0.2+ | 0.8− | | |
| 2003 01 01 | 704 | 0.3− | 0.3+ | 2006 09 17 | 699 | 0.5− | 0.5+ | 2006 09 27 | 703 | 0.4− | 0.1− | | |
| 2003 01 01 | 704 | 0.2− | 0.1+ | 2006 09 17 | 699 | 0.2+ | 0.5+ | 2006 09 27 | 703 | 0.1+ | 0.1− | | |
| 2003 01 01 | 704 | 1.0− | 0.1− | 2006 09 17 | 699 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.5− | | |
| 2003 01 01 | 704 | 0.3+ | 1.2+ | 2006 09 20 | 703 | 0.3+ | 1.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2003 01 05 | 704 | 0.1− | 0.2− | 2006 09 20 | 703 | 0.6− | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.2− | | |

**2006 SS$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.62846 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23615366 | $\omega$ | 358.12133 | | +0.44256168 | −0.87234975 | |
| $a$ | 2.5922264 | $\Omega$ | 65.56092 | | +0.82568771 | +0.30605165 | |
| $e$ | 0.1530905 | $i$ | 13.18855 | | +0.34982706 | +0.38123262 | |
| $P$ | 4.17 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 566 | 0.9− | 0.1+ | 2002 10 15 | 644 | 0.0 | 0.3+ | 2006 08 19 | 644 | 0.1− | 0.0 |
| 1998 11 16 | 566 | 0.2+ | 0.5− | 2002 10 15 | 644 | 0.1+ | 0.5+ | 2006 09 17 | 699 | 0.4− | 0.4+ |
| 1998 11 16 | 566 | 0.9− | 0.4+ | 2002 10 30 | 291 | 0.1+ | 0.1+ | 2006 09 17 | 699 | 0.9− | 0.2− |
| 1998 11 23 | 699 | 1.3+ | 1.2+ | 2002 10 30 | 291 | 0.2+ | 0.2+ | 2006 09 17 | 699 | 0.3+ | 1.1− |
| 1998 11 23 | 699 | 0.5+ | 0.7+ | 2002 10 30 | 291 | 0.2+ | 0.2+ | 2006 09 17 | 699 | (0.7+ | 1.8−) |
| 1998 11 23 | 699 | 1.2+ | 0.4+ | 2004 03 19 | 644 | 0.5+ | 0.2+ | 2006 09 20 | 703 | 0.5+ | 0.0 |
| 1998 12 10 | 691 | 0.2− | 0.5− | 2004 03 19 | 644 | 0.1− | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.1+ |
| 1998 12 10 | 691 | 0.2− | 0.2− | 2004 03 19 | 644 | 0.3+ | 0.1+ | 2006 09 20 | 703 | 0.2+ | 0.1+ |
| 1998 12 10 | 691 | 0.3− | 0.2− | 2006 08 19 | 644 | 0.1− | 0.2− | 2006 09 20 | 703 | 0.7− | 0.9− |
| 2002 10 15 | 644 | 0.0 | 0.4+ | 2006 08 19 | 644 | 0.1+ | 0.4+ | | | | |

**2006 SY$_{51}$ = 2002 TZ$_{316}$ = 2004 BO$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.46524 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22180965 | $\omega$ | 149.27012 | | +0.39668725 | +0.90585766 | |
| $a$ | 2.7028115 | $\Omega$ | 143.50147 | | −0.88478648 | +0.42041749 | |
| $e$ | 0.1896949 | $i$ | 14.46054 | | −0.24452427 | −0.05168212 | |
| $P$ | 4.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.0 | 0.7+ | 2004 01 18 | 691 | 0.0 | 0.2+ | 2006 09 20 | 703 | 0.4+ | 0.9+ |
| 2000 02 05 | 695 | 0.1+ | 0.8+ | 2004 01 19 | 691 | 0.1− | 0.1− | 2006 09 20 | 703 | 0.3− | 0.6+ |
| 2002 10 04 | 645 | 0.1+ | 0.1− | 2004 01 19 | 691 | 0.1− | 0.0 | 2006 09 20 | 703 | 1.1+ | 1.3+ |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2004 01 19 | 691 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.6+ | 1.4+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.1− | 0.7+ | 2006 09 26 | 703 | 1.2− | 1.0− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.7− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.3− |
| 2004 01 18 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2+ | 1.9+ | 2006 09 26 | 703 | 0.3+ | 0.5− |
| 2004 01 18 | 691 | 0.3+ | 0.3+ | 2006 09 18 | 703 | 0.9− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.8− |

**2006 SC$_{52}$ = 2004 FY$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.61379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21944166 | $\omega$ | 18.89080 | | +0.91033887 | −0.41320695 | |
| $a$ | 2.7222207 | $\Omega$ | 5.68139 | | +0.34289888 | +0.72151559 | |
| $e$ | 0.1016361 | $i$ | 13.61624 | | +0.23174014 | +0.55558551 | |
| $P$ | 4.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.8+ | 0.2+ | 2006 09 27 | 704 | 0.3+ | 0.4− |
| 2004 02 29 | 691 | 0.2− | 0.3− | 2006 09 20 | 704 | 0.8− | 0.1− | 2006 09 27 | 704 | 0.8− | 0.4+ |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 09 20 | 704 | 0.4+ | 0.4+ | 2006 09 27 | 704 | (1.5− | 0.1−) |
| 2004 03 17 | 691 | 0.1− | 0.3+ | 2006 09 20 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 1.2− | 0.2+ |
| 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 09 27 | 704 | (1.8− | 0.5−) |
| 2004 03 17 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.3+ | 0.1+ |
| 2004 03 21 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.6+ | 0.6+ | 2006 09 28 | 691 | 0.3+ | 0.2+ |
| 2004 03 21 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2004 03 21 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 09 28 | 699 | 0.6− | 1.5− |
| 2006 09 18 | 699 | 0.7+ | 0.8− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 09 28 | 699 | 0.3− | 1.6− |
| 2006 09 18 | 699 | 0.8+ | 1.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 09 28 | 699 | 0.2− | 0.9+ |
| 2006 09 18 | 699 | 0.8− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 09 28 | 699 | 0.2− | 0.1− |

**2006 SE$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.57383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29163309 | $\omega$ | 183.87501 | | +0.94076456 | +0.33561850 | |
| $a$ | 2.2520508 | $\Omega$ | 156.33853 | | −0.30776502 | +0.90490233 | |
| $e$ | 0.1437086 | $i$ | 6.89643 | | −0.14227698 | +0.26174795 | |
| $P$ | 3.38 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 01 | 644 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.7− |
| 2002 06 01 | 644 | 0.2+ | 0.1− | 2006 09 25 | 699 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.7+ | 0.4+ |
| 2002 06 01 | 644 | 0.2+ | 0.2− | 2006 09 25 | 699 | 1.2+ | 0.9− | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 2002 07 07 | 644 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.6− | 1.4+ |
| 2002 07 07 | 644 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.5+ | 0.8+ | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2002 07 07 | 644 | 0.3− | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.7+ |
| 2005 05 15 | 644 | 0.5− | 0.0 | 2006 09 29 | 699 | 0.5+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2005 05 15 | 644 | 0.2+ | 0.2− | 2006 09 30 | 703 | 1.4+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2005 05 15 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.7− | 0.8− | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2006 09 18 | 703 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 10 28 | 703 | 0.2− | 0.2+ |
| 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 09 30 | 703 | (1.7+ | 1.2−) | 2006 10 28 | 703 | 0.2+ | 0.4+ |
| 2006 09 18 | 703 | 1.1+ | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 28 | 703 | 0.4+ | 0.0 |
| 2006 09 18 | 703 | 0.1− | 0.1− | 2006 09 30 | 703 | 1.4− | 0.2− | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2006 09 20 | 699 | 1.3+ | 0.8− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 10 | 704 | (0.5− | 1.6−) |
| 2006 09 20 | 699 | 0.9+ | 0.6+ | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 10 | 704 | 0.3+ | 0.4− |
| 2006 09 20 | 699 | 0.9− | 0.5− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 10 | 704 | 0.8− | 0.6+ |
| 2006 09 20 | 699 | 0.9− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 10 | 704 | 0.4− | 0.5− |
| 2006 09 20 | 644 | 0.6− | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.1− | 0.8− |
| 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 11 16 | 703 | 0.8+ | 0.3− |
| 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 1.2− | 0.9+ | 2006 11 16 | 703 | 0.2+ | 0.0 |
| 2006 09 25 | 699 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.2+ | 2006 11 16 | 703 | 1.1+ | 0.7− |

**2006 SU$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.79923 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29284631 | $\omega$ | 343.34991 | | +0.47967421 | +0.87456914 | |
| $a$ | 2.2458266 | $\Omega$ | 315.24708 | | −0.79311073 | +0.39753260 | |
| $e$ | 0.1243811 | $i$ | 5.78810 | | −0.37535054 | +0.27766282 | |
| $P$ | 3.37 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 09 27 | 703 | 0.6− | 0.6+ |
| 2003 11 20 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.6− | 1.0+ | 2006 09 27 | 703 | 1.3+ | 0.3− |
| 2003 11 20 | 691 | 0.2+ | 0.0 | 2006 09 20 | 703 | 0.9+ | 0.1− | 2006 10 03 | 703 | 0.4− | 0.5− |
| 2003 12 01 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 703 | 0.8− | 1.3− | 2006 10 03 | 703 | 0.4− | 0.2− |
| 2003 12 01 | 691 | 0.0 | 0.1+ | 2006 09 20 | 703 | (0.4− | 1.8−) | 2006 10 03 | 703 | 0.1+ | 0.1+ |
| 2003 12 01 | 691 | 0.1− | 0.1− | 2006 09 20 | 703 | (1.4+ | 1.7−) | 2006 10 03 | 703 | 0.1+ | 0.4+ |
| 2003 12 29 | 691 | 0.1− | 0.4− | 2006 09 23 | 461 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 1.0− |
| 2003 12 29 | 691 | 0.2− | 0.2− | 2006 09 23 | 461 | 0.5+ | 0.2− | 2006 10 17 | 703 | (0.1+ | 2.3+) |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 09 23 | 461 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.6+ | 1.1+ |
| 2006 09 19 | 699 | 1.0− | 0.4+ | 2006 09 27 | 703 | 0.1− | 0.1− | 2006 10 17 | 703 | (2.1+ | 0.5+) |
| 2006 09 19 | 699 | (2.0+ | 1.5+) | 2006 09 27 | 703 | (1.7+ | 0.2−) | | | | |

**2006 SY$_{52}$ = 2004 EQ$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 226.76073 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21433468 | $\omega$ | 54.52009 | | −0.74891989 | −0.65816108 | |
| $a$ | 2.7652926 | $\Omega$ | 84.18787 | | +0.58011638 | −0.70740805 | |
| $e$ | 0.0167600 | $i$ | 4.44425 | | +0.32028734 | −0.25767778 | |
| $P$ | 4.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 11 | 644 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.8+ | 1.3+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2004 03 11 | 644 | 0.5− | 0.3− | 2006 09 18 | 703 | 0.8− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.2− |
| 2004 03 11 | 644 | 0.5− | 0.3− | 2006 09 19 | 703 | (2.0+ | 0.8−) | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2004 03 20 | 704 | 0.1− | 0.7+ | 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.5− | 0.9+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.4− | 1.0+ |
| 2004 03 20 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.5− | 0.9− | 2006 10 12 | 644 | 0.1− | 0.7+ |
| 2004 03 20 | 704 | 0.4+ | 0.2− | 2006 09 30 | 703 | (1.6− | 1.5+) | 2006 10 13 | 682 | 1.5+ | 0.3+ |
| 2006 09 18 | 703 | 0.4+ | 0.9+ | 2006 09 30 | 703 | 0.1− | 1.5− | 2006 10 13 | 682 | 0.5− | 0.2− |
| 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 13 | 682 | 0.3− | 0.8− |

**2006 SB$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 346.55138 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.20935239 | $\omega$ | 197.94780 | +0.90637748 | −0.42244777 |
| $a$ | 2.8089937 | $\Omega$ | 187.04578 | +0.39169451 | +0.84404680 |
| $e$ | 0.0979635 | $i$ | 1.96761 | +0.15828856 | +0.33033754 |
| $P$ | 4.71 | $H$ | 16.9 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 09 20 | J75 | 0.0 | 0.4− | 2006 10 17 | 703 | (6.6− | 3.8+) |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 09 21 | J75 | 1.2− | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2004 03 26 | 691 | 0.3+ | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2004 03 26 | 691 | 0.1− | 0.5+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2006 07 22 | G96 | 0.6+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4+ |
| 2006 07 22 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.7+ | 0.2+ |
| 2006 07 22 | G96 | 0.3+ | 0.4− | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.6+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2006 09 20 | J75 | 0.7+ | 0.5− | 2006 10 17 | 703 | 0.7− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2006 09 20 | J75 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.6− | | | | |
| 2006 09 20 | J75 | 0.5+ | 1.2+ | 2006 10 17 | 703 | 0.9− | 1.4− | | | | |

**2006 SM$_{53}$ = 1999 XP$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 339.27465 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27613063 | $\omega$ | 217.85544 | +0.66480993 | −0.74699105 |
| $a$ | 2.3355705 | $\Omega$ | 190.48098 | +0.69275168 | +0.61934115 |
| $e$ | 0.2011450 | $i$ | 1.78546 | +0.27950467 | +0.24170417 |
| $P$ | 3.57 | $H$ | 17.5 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.6− | 0.6− | 2006 09 24 | J75 | 0.5+ | 0.8+ | 2006 10 21 | 703 | 0.5− | 0.7− |
| 1999 12 07 | 704 | 0.6+ | 0.7+ | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 1999 12 07 | 704 | 0.1− | 0.6− | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1999 12 07 | 704 | 0.4+ | 0.7− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 12 08 | 704 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 1999 12 08 | 704 | 0.8− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.6− | 2006 11 07 | 644 | 0.2+ | 0.5+ |
| 1999 12 08 | 704 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.9− | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 1999 12 08 | 704 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.8+ | 0.5− | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2006 09 19 | J75 | 0.6− | 0.6− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.3− |
| 2006 09 19 | J75 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (1.3+ | 1.5−) |
| 2006 09 19 | J75 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.5− | 0.8− |
| 2006 09 21 | 620 | 0.4− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.1− |
| 2006 09 21 | 620 | 0.3+ | 0.5− | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2006 09 21 | 950 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2006 09 21 | 950 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 21 | 691 | 0.0 | 0.4+ |
| 2006 09 21 | 950 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2006 09 21 | 950 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.8+ | 2006 11 21 | 704 | 0.5− | 0.6+ |
| 2006 09 21 | 950 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2006 09 24 | J75 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4− | 0.2+ |

**2006 SU$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 352.17097 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23300039 | $\omega$ | 138.55920 | +0.97964492 | −0.08192222 |
| $a$ | 2.6155616 | $\Omega$ | 227.14377 | +0.03847053 | +0.97263252 |
| $e$ | 0.1513800 | $i$ | 14.47713 | +0.19701737 | +0.21742752 |
| $P$ | 4.23 | $H$ | 16.4 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.2− | 0.4+ | 2006 08 29 | 699 | 2.7+ | 2.9− | 2006 09 21 | 699 | 0.2− | 1.3+ |
| 2002 10 31 | 644 | 0.3− | 0.2+ | 2006 08 29 | 699 | 0.8− | 0.0 | 2006 09 21 | 699 | 0.5− | 0.7+ |
| 2002 10 31 | 644 | 0.2− | 0.3+ | 2006 08 29 | 699 | 0.7+ | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.9− |
| 2002 11 22 | 644 | 0.3+ | 0.2+ | 2006 08 29 | 699 | 1.2+ | 0.3+ | 2006 09 27 | 703 | 0.3− | 0.3+ |
| 2002 11 22 | 644 | 0.0 | 0.2+ | 2006 09 16 | 703 | 0.2+ | 1.5+ | 2006 09 27 | 703 | 0.5+ | 1.3− |
| 2002 11 22 | 644 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 1.3− | 0.2− | 2006 09 27 | 703 | 0.1− | 1.1− |
| 2005 04 11 | G96 | 0.2+ | 0.3+ | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2005 04 11 | G96 | 0.6− | 0.8+ | 2006 09 16 | 703 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.5− |
| 2005 04 11 | G96 | 0.2− | 0.2+ | 2006 09 21 | 699 | 0.7− | 1.0+ | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 2005 04 11 | G96 | 0.6+ | 0.7+ | 2006 09 21 | 699 | 0.9− | 1.2+ | 2006 10 17 | 703 | 0.5− | 0.1− |

**2006 SE$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 271.60902 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.36943467 | $\omega$ | 260.13515 | −0.10448565 | −0.98882845 |
| $a$ | 1.9235831 | $\Omega$ | 196.99951 | +0.99370666 | −0.09946233 |
| $e$ | 0.0854630 | $i$ | 21.32208 | +0.04037100 | −0.11102044 |
| $P$ | 2.67 | $H$ | 17.1 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 26 | 699 | 0.4− | 0.2+ | 2005 04 09 | 699 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.4− | 0.5+ |
| 2000 05 26 | 699 | 1.0+ | 1.0− | 2005 04 09 | 699 | 0.6− | 0.5+ | 2006 09 29 | 699 | 1.1− | 0.7− |
| 2000 05 26 | 699 | 0.4+ | 0.1− | 2005 05 08 | G96 | 0.5− | 0.1− | 2006 09 29 | 699 | 1.3− | 0.2+ |
| 2000 05 26 | 699 | 0.5− | 0.5− | 2005 05 08 | G96 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.4+ |
| 2001 10 21 | 704 | (0.2− | 1.9+) | 2005 05 08 | G96 | 0.4− | 0.6− | 2006 10 12 | 644 | 0.5+ | 0.5+ |
| 2001 10 21 | 704 | 0.1− | 1.3+ | 2005 05 08 | G96 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2001 10 21 | 704 | 0.2+ | 1.5+ | 2006 09 16 | 703 | 0.6− | 0.6+ | 2006 10 22 | 703 | 1.1+ | 0.4+ |
| 2001 11 18 | 608 | 0.1− | 0.5− | 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 1.0− |
| 2001 11 18 | 608 | 0.0 | 1.0− | 2006 09 16 | 703 | 0.3− | 0.9− | 2006 10 22 | 703 | 0.8− | 0.6− |
| 2001 11 18 | 608 | 0.3+ | 0.7− | 2006 09 16 | 703 | 0.2+ | 1.2− | 2006 10 22 | 703 | 0.4+ | 0.4+ |
| 2002 01 08 | 608 | 0.4− | 0.3− | 2006 09 16 | 703 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2002 01 08 | 608 | 0.2− | 0.6− | 2006 09 16 | 703 | 0.5+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2002 01 08 | 608 | 0.2− | 0.4− | 2006 09 16 | 703 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2005 03 17 | 704 | 0.9+ | 0.2+ | 2006 09 16 | 703 | 0.2+ | 0.6− | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2005 03 17 | 704 | 0.7+ | 0.5− | 2006 09 21 | 699 | 0.8− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2005 03 17 | 704 | 0.9+ | 0.9− | 2006 09 21 | 699 | 0.9+ | 1.2+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2005 03 17 | 704 | 0.4+ | 0.0 | 2006 09 21 | 699 | 0.8+ | 0.7+ | 2006 11 11 | G96 | 0.6+ | 0.0 |
| 2005 04 01 | 699 | 0.2− | 1.0+ | 2006 09 21 | 699 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2005 04 01 | 699 | 0.2− | 0.6− | 2006 09 27 | 703 | 0.8− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 04 01 | 699 | (1.7− | 1.0+) | 2006 09 27 | 703 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2005 04 01 | 699 | 0.5+ | 1.0+ | 2006 09 27 | 703 | 0.4− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2005 04 09 | 699 | 0.3− | 0.8+ | 2006 09 27 | 703 | 0.2− | 1.0+ | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2005 04 09 | 699 | 1.3− | 1.1+ | 2006 09 29 | 699 | 0.6+ | 0.0 | | | | |

**2006 SJ$_{54}$ = 1999 JB$_{103}$ = 2002 AC$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 23.17373 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.17892301 | $\omega$ | 133.57596 | +0.94208946 | +0.20162173 |
| $a$ | 3.1190710 | $\Omega$ | 217.30088 | −0.21840111 | +0.97526568 |
| $e$ | 0.2108083 | $i$ | 26.24558 | +0.25449635 | +0.09058442 |
| $P$ | 5.51 | $H$ | 13.8 | $G$ 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 13 | 704 | 0.9− | 0.9+ | 2006 09 17 | 703 | 0.6+ | 0.1− | 2006 10 28 | 704 | 0.3+ | 0.6− |
| 1999 05 13 | 704 | 0.1+ | 0.5− | 2006 09 21 | 704 | 0.3− | 0.5− | 2006 10 28 | 704 | 0.1+ | 0.1− |
| 1999 05 13 | 704 | 0.4+ | 0.8− | 2006 09 21 | 704 | 0.8+ | 0.4− | 2006 10 28 | 704 | 0.3+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 704 | 1.8− | 0.3+ | 2006 09 21 | 704 | (0.2+ | 1.5−) | 2006 10 29 | 691 | 0.1− | 0.2− | | |
| 1999 05 17 | 704 | (2.5− | 2.7+) | 2006 09 21 | 704 | 0.7− | 0.3− | 2006 10 29 | 691 | 0.0 | 0.2− | | |
| 1999 05 17 | 704 | 0.4+ | 0.5− | 2006 09 21 | 704 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.1− | 0.2− | | |
| 1999 05 18 | 704 | 0.1+ | 2.0− | 2006 09 21 | 704 | 0.6+ | 0.6− | 2006 11 02 | 704 | (1.7− | 0.8−) | | |
| 1999 05 18 | 704 | 0.4+ | 0.2− | 2006 09 21 | 704 | 0.2+ | 0.1+ | 2006 11 02 | 704 | 0.0 | 0.5+ | | |
| 1999 05 18 | 704 | 0.3− | 1.1− | 2006 09 21 | 704 | 1.1− | 0.4− | 2006 11 02 | 704 | 0.2+ | 0.4+ | | |
| 1999 05 18 | 704 | 0.1− | 0.6+ | 2006 09 25 | 704 | 0.4+ | 0.2+ | 2006 11 02 | 704 | 1.4+ | 0.4− | | |
| 2000 08 08 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.1− | | |
| 2000 08 08 | 704 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.5+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1− | | |
| 2000 08 08 | 704 | 0.2− | 0.4+ | 2006 09 25 | 704 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.2− | | |
| 2000 08 08 | 704 | 0.5− | 0.3+ | 2006 09 25 | 704 | 0.3+ | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2000 08 08 | 704 | 1.1− | 0.6− | 2006 09 29 | 704 | 0.7− | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2000 09 06 | 704 | 0.4+ | 0.4+ | 2006 09 29 | 704 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2000 09 06 | 704 | 0.1+ | 0.1− | 2006 09 29 | 704 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.7− | | |
| 2000 09 06 | 704 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2− | 0.9− | | |
| 2000 09 06 | 704 | 0.6− | 0.6+ | 2006 09 29 | 704 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.7− | | |
| 2000 09 06 | 704 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.9− | | |
| 2000 09 30 | 704 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.1− | 0.0 | 2006 11 17 | G92 | (2.2+ | 1.4+) | | |
| 2000 09 30 | 704 | 0.4+ | 0.5+ | 2006 09 30 | 704 | 0.5− | 0.1+ | 2006 11 17 | G92 | 0.4+ | 0.0 | | |
| 2000 09 30 | 704 | 0.1− | 0.6+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 17 | G92 | 0.5+ | 0.3+ | | |
| 2000 09 30 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.3− | | |
| 2000 10 31 | 704 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.2− | | |
| 2000 10 31 | 704 | 0.2− | 0.2+ | 2006 10 19 | 704 | (1.1− | 1.7+) | 2006 11 17 | 703 | 0.3+ | 0.1+ | | |
| 2000 10 31 | 704 | 0.6+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | (1.0− | 1.8−) | | |
| 2000 10 31 | 704 | 0.0 | 0.6+ | 2006 10 19 | 704 | 0.4+ | 0.6+ | 2006 11 18 | G92 | 0.2+ | 0.1− | | |
| 2001 12 13 | 644 | 0.6+ | 0.8+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 18 | G92 | 0.6+ | 0.2− | | |
| 2001 12 13 | 644 | 0.4+ | 0.9+ | 2006 10 19 | 704 | 0.8− | 1.3+ | 2006 11 18 | G92 | 0.3+ | 0.1− | | |
| 2001 12 13 | 644 | 0.3+ | 0.8+ | 2006 10 19 | 704 | 0.5− | 0.9+ | 2006 11 18 | G92 | 0.2+ | 0.0 | | |
| 2002 01 08 | 608 | 0.6− | 0.9− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.3+ | | |
| 2002 01 08 | 608 | 0.5− | 1.1− | 2006 10 19 | 704 | 0.7− | 1.2+ | 2006 11 18 | G92 | 0.1− | 0.0 | | |
| 2002 01 08 | 608 | 0.6− | 0.8− | 2006 10 19 | 644 | 0.3+ | 0.1− | 2006 11 18 | 704 | (0.6− | 2.5+) | | |
| 2002 01 12 | 644 | 0.2+ | 1.2+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 18 | G92 | 0.2− | 0.1+ | | |
| 2002 01 12 | 704 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | (0.5− | 2.3+) | | |
| 2002 01 12 | 644 | 0.7+ | 1.0+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | (1.0− | 2.8+) | | |
| 2002 01 12 | 704 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2002 01 12 | 644 | 0.6+ | 0.9+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 19 | G92 | 0.0 | 0.1+ | | |
| 2002 01 12 | 704 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 19 | G92 | 0.3− | 0.2+ | | |
| 2002 01 12 | 704 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 19 | G92 | 0.0 | 0.0 | | |
| 2002 02 09 | 644 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 19 | G92 | 0.3+ | 0.0 | | |
| 2002 02 09 | 644 | 0.3− | 0.3+ | 2006 10 23 | 704 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.5+ | | |
| 2002 02 09 | 644 | 0.5+ | 0.1+ | 2006 10 23 | 704 | (0.2+ | 1.8+) | 2006 11 19 | G92 | 0.1+ | 0.2+ | | |
| 2003 01 12 | 644 | 0.6+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.4− | 0.3+ | | |
| 2003 01 12 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 704 | 0.2− | 0.4+ | 2006 11 19 | G92 | 0.0 | 0.3+ | | |
| 2003 01 12 | 644 | 0.7+ | 0.2+ | 2006 10 23 | 704 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.1+ | | |
| 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.0 | 0.1+ | | |
| 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 10 23 | 704 | 0.3− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.2+ | | |
| 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.4+ | | |
| 2005 09 09 | 704 | 0.6+ | 0.2− | 2006 10 26 | 704 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.1− | 0.6+ | | |
| 2005 09 09 | 704 | 1.1+ | 1.1+ | 2006 10 26 | 704 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.4+ | | |
| 2005 09 09 | 704 | 0.2+ | 0.2+ | 2006 10 26 | 704 | 0.4− | 0.5− | 2006 11 21 | 704 | 0.2− | 0.6+ | | |
| 2006 09 17 | 703 | 0.9+ | 0.2+ | 2006 10 28 | 704 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.6− | 0.5+ | | |
| 2006 09 17 | 703 | 0.8+ | 0.5− | 2006 10 28 | 704 | 0.3+ | 0.4− | | | | | | |

**2006 SP$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.60566 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28280632 | $\omega$ | 6.33197 | | +0.55413501 | | −0.82644240 |
| $a$ | 2.2986701 | $\Omega$ | 50.06621 | | +0.75792296 | | +0.45141679 |
| $e$ | 0.2161919 | $i$ | 7.46611 | | +0.34421965 | | +0.33647562 |
| $P$ | 3.49 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.2+ | 2004 01 27 | 703 | 1.3− | 0.2− | 2006 09 26 | 703 | 0.2− | 0.3+ |
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2004 01 27 | 703 | 0.2− | 0.2− | 2006 09 26 | 703 | 0.2+ | 1.3+ |
| 2003 11 20 | 704 | 0.6+ | 0.1− | 2004 02 14 | 704 | 0.2+ | 1.0+ | 2006 10 02 | 703 | 0.1− | 0.0 |
| 2003 11 20 | 704 | 0.4+ | 0.5+ | 2004 02 14 | 704 | 0.3− | 0.6+ | 2006 10 02 | 703 | 0.1− | 0.2+ |
| 2003 11 20 | 704 | 0.1− | 0.2+ | 2004 02 14 | 704 | 1.1− | 1.2+ | 2006 10 02 | 703 | 0.4− | 0.5− |
| 2003 11 20 | 704 | 0.3+ | 0.0 | 2005 05 10 | G96 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.0 | 0.4− |
| 2003 12 18 | 704 | 0.0 | 0.2+ | 2005 05 10 | G96 | 0.4+ | 0.3+ | 2006 10 02 | 703 | 0.9− | 0.6+ |
| 2003 12 18 | 704 | 0.4+ | 0.4+ | 2005 05 10 | G96 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.1+ |
| 2003 12 18 | 704 | 0.5+ | 0.7+ | 2005 05 10 | G96 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.4− | 0.8+ |
| 2003 12 30 | 704 | (2.4+ | 0.2−) | 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 10 02 | 703 | 0.4− | 0.1− |
| 2003 12 30 | 704 | (1.7+ | 1.3+) | 2006 09 18 | 703 | 1.0− | 0.4+ | 2006 10 19 | 703 | 0.5+ | 0.1+ |
| 2003 12 30 | 704 | (1.5− | 2.0+) | 2006 09 18 | 703 | 0.8− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.7− |
| 2003 12 30 | 704 | 0.8+ | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.5+ | 0.2− |
| 2004 01 19 | 704 | 1.4+ | 0.0 | 2006 09 21 | 699 | (1.3+ | 2.5+) | 2006 10 19 | 703 | 0.5+ | 0.2− |
| 2004 01 19 | 704 | 0.0 | 0.2− | 2006 09 21 | 699 | 0.6+ | 0.6+ | 2006 10 28 | 703 | 0.9− | 0.2− |
| 2004 01 19 | 704 | 0.4− | 0.4− | 2006 09 21 | 699 | 0.4− | 0.8+ | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2004 01 19 | 704 | (1.6− | 1.1−) | 2006 09 21 | 699 | (2.0+ | 0.8+) | 2006 10 28 | 703 | 0.8− | 1.1+ |
| 2004 01 27 | 703 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.8+ | 1.1+ |
| 2004 01 27 | 703 | 0.3− | 0.7− | 2006 09 26 | 703 | 0.2− | 0.8+ | | | | |

**2006 SR$_{54}$ = 2003 UL$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.41928 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30961420 | $\omega$ | 222.69119 | | +0.15603825 | | +0.98495176 |
| $a$ | 2.1639911 | $\Omega$ | 56.41647 | | −0.88048505 | | +0.17279496 |
| $e$ | 0.2342675 | $i$ | 5.11759 | | −0.44765851 | | +0.00345526 |
| $P$ | 3.18 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 691 | 0.0 | 0.4− | 2005 01 19 | 691 | 0.2− | 0.8+ | 2006 09 30 | 703 | 0.4+ | 1.2+ |
| 2000 11 27 | 691 | 0.2+ | 0.6− | 2005 01 19 | 691 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.3− | 1.2+ |
| 2000 11 27 | 691 | 0.0 | 0.2− | 2006 09 18 | 703 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 2000 12 16 | 691 | 0.2+ | 0.6− | 2006 09 18 | 703 | 0.0 | 0.4− | 2006 09 30 | 704 | 0.6− | 0.9+ |
| 2000 12 16 | 691 | 0.2− | 0.5− | 2006 09 18 | 703 | (1.9+ | 0.3−) | 2006 09 30 | 703 | 0.6+ | 0.3− |
| 2000 12 16 | 691 | 0.3+ | 0.8− | 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 09 30 | 704 | 0.4− | 0.3+ |
| 2002 03 11 | 644 | 0.1+ | 0.9+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.2− | 0.4+ |
| 2002 03 11 | 644 | 0.4+ | 0.6+ | 2006 09 20 | 644 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.7− | 0.7+ |
| 2002 03 11 | 644 | 0.2+ | 0.7+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.7− | 0.4+ |
| 2003 10 22 | 691 | 0.0 | 0.3+ | 2006 09 21 | 699 | (1.9− | 0.2−) | 2006 10 16 | 703 | 1.2− | 0.7+ |
| 2003 10 22 | 691 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.2+ | 1.1− | 2006 10 16 | 703 | 0.7+ | 0.1+ |
| 2003 10 22 | 691 | 0.1− | 0.5+ | 2006 09 21 | 699 | 0.9− | 0.4− | 2006 10 16 | 703 | 0.8+ | 0.2− |
| 2003 10 24 | 704 | 1.1+ | 1.2+ | 2006 09 24 | H55 | 0.5+ | 1.5− | 2006 10 16 | 703 | (1.1− | 1.7+) |
| 2003 10 24 | 704 | 0.6+ | 0.9+ | 2006 09 24 | H55 | (0.3+ | 1.6−) | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 10 24 | 704 | 1.5+ | 0.3− | 2006 09 24 | H55 | (0.4+ | 1.7−) | 2006 10 21 | 644 | 0.5+ | 0.2− |
| 2003 10 24 | 704 | 1.2− | 0.7+ | 2006 09 24 | H55 | (0.3+ | 1.7−) | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2003 11 19 | 691 | 0.2− | 0.3+ | 2006 09 28 | 699 | (1.7+ | 1.5+) | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2003 11 19 | 691 | 0.3− | 0.4+ | 2006 09 28 | 699 | (1.6− | 0.6+) | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2003 11 19 | 691 | 0.1− | 0.1+ | 2006 09 28 | 699 | 0.2+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2005 01 19 | 691 | 0.5+ | 0.5+ | 2006 09 28 | 699 | 0.3− | 0.6+ | 2006 11 17 | G96 | 0.5− | 0.1− |

**2006 SV$_{54}$ = 1995 WK$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.76934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17632253 | $\omega$ | 240.99988 | | +0.98920332 | | +0.12382930 |
| $a$ | 3.1496637 | $\Omega$ | 111.79419 | | −0.08678153 | | +0.92592460 |
| $e$ | 0.1822579 | $i$ | 4.84218 | | −0.11809217 | | +0.35683320 |
| $P$ | 5.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 26 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | (0.8− | 1.5+) | 2006 09 30 | 703 | 1.2− | 0.2− |
| 1995 11 26 | 691 | 0.3+ | 0.1− | 2006 09 18 | 703 | 0.2− | 1.0+ | 2006 09 30 | 703 | 0.3− | 0.4− |
| 1995 11 26 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.0 | 0.4− |
| 1995 11 27 | 691 | 0.3+ | 0.4− | 2006 09 21 | 699 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 1995 11 27 | 691 | 0.4− | 0.0 | 2006 09 21 | 699 | 0.5+ | 0.5+ | 2006 10 16 | 703 | (0.4+ | 1.9−) |
| 1995 11 27 | 691 | 0.0 | 0.4+ | 2006 09 21 | 699 | 1.4− | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2001 12 17 | 704 | 0.3+ | 0.6+ | 2006 09 21 | 699 | 0.4− | 0.1− | 2006 10 16 | 703 | (1.2− | 1.9−) |
| 2001 12 17 | 704 | 0.0 | 0.2− | 2006 09 26 | 704 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.1− | 0.4− |
| 2001 12 17 | 704 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.1+ | 0.3− | 2006 10 22 | 703 | (0.5− | 1.7−) |
| 2001 12 17 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2001 12 17 | 704 | 0.4− | 0.4− | 2006 09 26 | 704 | (0.8− | 1.6−) | 2006 10 22 | 703 | 1.1+ | 0.6+ |
| 2006 09 18 | 703 | 0.7+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.6− | | | | |

**2006 SZ$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.27246 | | (2000.0) | | | |
| $n$ | 0.24017044 | $\omega$ | 316.07912 | | +0.82745414 | −0.55376160 |
| $a$ | 2.5632424 | $\Omega$ | 77.76692 | | +0.53790249 | +0.73407137 |
| $e$ | 0.1242384 | $i$ | 5.46650 | | +0.16118487 | +0.39304874 |
| $P$ | 4.10 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.5+ | 0.2− | 2002 10 31 | 608 | 0.5+ | 1.0− | 2006 09 26 | 704 | 0.2− | 0.0 |
| 2002 10 03 | 704 | (1.6+ | 1.5−) | 2002 11 07 | 704 | 0.4− | 0.4+ | 2006 09 26 | 704 | 0.5− | 0.1− |
| 2002 10 03 | 704 | 0.5+ | 1.2− | 2002 11 07 | 704 | 0.5− | 0.7+ | 2006 09 30 | 703 | 0.4+ | 0.7− |
| 2002 10 03 | 704 | 0.3− | 0.3− | 2002 11 07 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.1+ |
| 2002 10 03 | 704 | 0.1+ | 0.0 | 2002 11 07 | 704 | 1.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.6− |
| 2002 10 09 | 699 | 0.3+ | 0.6− | 2002 11 07 | 704 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.8+ | 0.3− |
| 2002 10 09 | 699 | 0.3− | 0.0 | 2006 09 18 | 703 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2002 10 09 | 699 | 1.2− | 0.6+ | 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.1− |
| 2002 10 09 | 699 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.6+ | 1.4+ | 2006 10 16 | 703 | 0.9+ | 0.2+ |
| 2002 10 11 | 704 | (1.7− | 0.0 ) | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2002 10 11 | 704 | 1.0− | 0.7+ | 2006 09 21 | 699 | (2.5+ | 0.1+) | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2002 10 11 | 704 | 0.9+ | 0.2− | 2006 09 21 | 699 | 0.8− | 0.7− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 10 11 | 704 | 1.4+ | 1.1+ | 2006 09 21 | 699 | 0.9− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.2− | 0.4+ | 2006 09 21 | 699 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.2− | 2006 09 25 | 699 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 31 | 704 | 0.5− | 0.1− | 2006 09 25 | 699 | 0.9+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 10 31 | 704 | 0.7− | 0.0 | 2006 09 25 | 699 | 0.2− | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.4+ |
| 2002 10 31 | 704 | 0.3− | 0.2+ | 2006 09 25 | 699 | 1.0+ | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.6+ |
| 2002 10 31 | 608 | 1.1− | 0.8− | 2006 09 26 | 704 | 0.7+ | 0.1− | 2006 10 22 | 703 | 0.4− | 0.8− |
| 2002 10 31 | 608 | 0.7+ | 1.1− | 2006 09 26 | 704 | 0.5+ | 0.2− | 2006 10 22 | 703 | (2.4− | 0.3−) |

**2006 SG$_{55}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.55087 | | (2000.0) | | | |
| $n$ | 0.18668815 | $\omega$ | 207.68373 | | +0.99311609 | −0.01186490 |
| $a$ | 3.0319699 | $\Omega$ | 152.24439 | | +0.03309184 | +0.98274943 |
| $e$ | 0.1408811 | $i$ | 14.49104 | | −0.11236260 | +0.18456107 |
| $P$ | 5.28 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.3+ | 0.2− | 2006 09 18 | 703 | 1.1+ | 0.9− | 2006 10 02 | 703 | 0.4− | 0.7− |
| 1999 03 21 | 645 | 0.3+ | 0.2− | 2006 09 21 | 699 | 0.4+ | 0.5+ | 2006 10 02 | 703 | 0.1− | 0.6− |
| 2001 10 28 | 644 | 0.5− | 0.5− | 2006 09 21 | 699 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.1− | 0.2+ |
| 2001 10 28 | 644 | 0.2− | 0.6− | 2006 09 21 | 699 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.2+ |
| 2001 10 28 | 644 | 0.2− | 0.8− | 2006 09 21 | 699 | 0.2+ | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2002 01 14 | 645 | 0.6+ | 0.4+ | 2006 09 25 | 699 | 0.7− | 0.9− | 2006 10 21 | 703 | 0.2+ | 0.5+ |
| 2002 01 14 | 645 | 0.5+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2002 11 13 | 645 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.8− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.5+ |
| 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.3− | 0.8− | 2006 10 21 | 703 | (3.0− | 0.4+) |
| 2003 01 28 | 645 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.5− | 0.3+ |
| 2003 01 28 | 645 | 0.1− | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2005 06 27 | G96 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.2+ |
| 2005 06 27 | G96 | 1.3− | 0.6+ | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.3− | 1.3+ |
| 2005 06 27 | G96 | 0.6+ | 0.0 | 2006 09 29 | 699 | 1.1+ | 0.4+ | 2006 10 28 | 703 | 0.7+ | 0.5+ |
| 2005 06 27 | G96 | 0.1+ | 0.0 | 2006 09 29 | 699 | 1.0− | 0.0 | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 09 29 | 699 | 0.1− | 0.8+ | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2006 09 18 | 703 | 0.2− | 1.0− | 2006 10 02 | 703 | 0.2− | 0.2+ | | | | |
| 2006 09 18 | 703 | 0.7+ | 0.5− | 2006 10 02 | 703 | 0.5+ | 0.2− | | | | |

**2006 SM$_{55}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.50466 | | (2000.0) | | | |
| $n$ | 0.26939223 | $\omega$ | 116.87802 | | +0.29778903 | +0.95390795 |
| $a$ | 2.3743569 | $\Omega$ | 170.22648 | | −0.93501618 | +0.29930073 |
| $e$ | 0.2568790 | $i$ | 12.64681 | | −0.19252644 | +0.02187905 |
| $P$ | 3.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 07 22 | G96 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.5− | 0.6+ |
| 2005 03 11 | G96 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 09 30 | 703 | 0.7+ | 0.6− |
| 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.5− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.6− |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.8− | 0.4− | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2005 04 02 | G96 | 0.2− | 0.2− | 2006 09 21 | 699 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.7− |
| 2005 04 02 | G96 | 0.5− | 0.5− | 2006 09 21 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.9− |
| 2005 04 02 | G96 | 0.4+ | 0.2− | 2006 09 21 | 699 | 0.6− | 0.5− | 2006 10 16 | 703 | 1.5+ | 0.4+ |
| 2005 04 02 | G96 | 0.9+ | 1.9+ | 2006 09 21 | 699 | 1.1+ | 0.9+ | 2006 10 16 | 703 | 1.1− | 0.2+ |
| 2006 07 22 | G96 | 0.5+ | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.7+ |
| 2006 07 22 | G96 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.4− | 0.8+ | | | | |
| 2006 07 22 | G96 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.1+ | | | | |

**2006 SP$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.92702 | | (2000.0) | | | |
| $n$ | 0.27629506 | $\omega$ | 247.73970 | | +0.93733732 | +0.32921552 |
| $a$ | 2.3346438 | $\Omega$ | 92.88879 | | −0.26254909 | +0.88263962 |
| $e$ | 0.2391705 | $i$ | 6.55935 | | −0.22905615 | +0.33550624 |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.2− | 0.3+ | 2006 09 21 | 699 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 1999 10 10 | 704 | 0.8+ | 0.7− | 2006 09 21 | 699 | 0.9− | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.1+ |
| 1999 10 10 | 704 | 0.2− | 0.8+ | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.5+ |
| 1999 10 10 | 704 | 0.6− | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 1999 10 10 | 704 | 0.7− | 0.7− | 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.0 |
| 1999 11 05 | 704 | 0.6− | 0.3− | 2006 09 25 | 699 | 0.6− | 0.8− | 2006 10 22 | 703 | 0.3− | 0.1− |
| 1999 11 05 | 704 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.7+ | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 1999 11 05 | 704 | 0.3+ | 0.6+ | 2006 09 26 | 703 | 0.6+ | 0.2− | 2006 10 22 | 703 | 0.8+ | 0.2− |
| 1999 11 05 | 704 | 0.6+ | 0.2− | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.1− |
| 1999 11 05 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.7− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2003 12 27 | 691 | 0.4+ | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2003 12 27 | 691 | 0.3− | 0.2− | 2006 09 29 | 699 | 0.8+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 12 27 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2006 08 19 | 699 | 0.4− | 0.8+ | 2006 09 29 | 699 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2006 08 19 | 699 | 0.6− | 0.6+ | 2006 09 30 | 704 | 0.8− | 0.3+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2006 08 19 | 699 | 1.0+ | 0.3+ | 2006 09 30 | 704 | 0.6− | 0.7− | 2006 10 28 | 703 | 0.3+ | 0.0 |
| 2006 08 19 | 699 | 0.6+ | 1.2+ | 2006 09 30 | 704 | 0.0 | 0.5− | 2006 10 28 | 703 | 0.6+ | 0.3+ |
| 2006 09 18 | 703 | 0.2+ | 0.4− | 2006 09 30 | 704 | 0.6− | 0.5+ | 2006 10 28 | 703 | 0.8+ | 0.0 |
| 2006 09 18 | 703 | 0.4− | 0.7− | 2006 09 30 | 704 | 0.7− | 0.2+ | 2006 11 10 | 704 | 0.1− | 1.1+ |
| 2006 09 18 | 703 | 0.3− | 0.7− | 2006 10 01 | 704 | 0.6− | 0.7− | 2006 11 10 | 704 | 0.7+ | 0.6+ |
| 2006 09 18 | 703 | 0.8+ | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.5− | 2006 11 10 | 704 | 0.1− | 0.8− |
| 2006 09 21 | 699 | 0.4+ | 0.5+ | 2006 10 01 | 704 | 0.8− | 0.1− | 2006 11 10 | 704 | (0.7+ | 2.0+) |
| 2006 09 21 | 699 | 0.5+ | 0.2− | 2006 10 01 | 704 | 0.7− | 0.6− | | | | |

**2006 SW$_{55}$ = 2003 EL$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 338.46984 | | (2000.0) | | | |
| $n$ | 0.18237420 | $\omega$ | 243.41314 | | +0.70357309 | −0.70490288 |
| $a$ | 3.0795963 | $\Omega$ | 160.95301 | | +0.70955838 | +0.68993603 |
| $e$ | 0.0709829 | $i$ | 16.00546 | | +0.03888200 | +0.16462138 |
| $P$ | 5.40 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 13 | 608 | 0.5− | 0.1− | 2003 03 30 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.8− | 0.1− |
| 2001 11 13 | 608 | 1.2− | 0.0 | 2004 04 23 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 13 | 608 | 0.4− | 0.1− | 2004 04 23 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 2001 12 07 | 704 | 0.3+ | 0.8+ | 2004 04 23 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.4+ |
| 2001 12 07 | 704 | 0.7− | 0.8+ | 2006 08 29 | D35 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2001 12 07 | 704 | 0.1+ | 0.0 | 2006 08 29 | D35 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2001 12 07 | 704 | 0.2− | 1.0+ | 2006 08 29 | D35 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 12 07 | 704 | 0.5− | 0.8+ | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 01 09 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2002 01 09 | 645 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.5+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2002 01 12 | 704 | 0.5− | 0.4− | 2006 09 18 | 703 | 1.0− | 0.2− | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2002 01 12 | 704 | 0.1+ | 0.4+ | 2006 09 21 | 699 | 1.0+ | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.6+ |
| 2002 01 12 | 704 | 0.6+ | 0.4+ | 2006 09 21 | 699 | 0.3− | 1.2+ | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2003 03 05 | 704 | 0.1+ | 0.0 | 2006 09 21 | 699 | 0.6+ | 0.4− | 2006 10 17 | 703 | 0.0 | 0.7− |
| 2003 03 05 | 704 | (1.9+ | 0.7−) | 2006 09 21 | 699 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2003 03 05 | 704 | 0.5− | 0.0 | 2006 09 25 | 699 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.1+ |
| 2003 03 05 | 704 | 0.6+ | 1.1+ | 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2003 03 06 | 699 | 0.5+ | 0.3+ | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2003 03 06 | 699 | 0.7+ | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.6− | 0.6− |
| 2003 03 06 | 699 | 0.4+ | 0.8+ | 2006 09 26 | 703 | 0.9+ | 0.3− | 2006 10 28 | 703 | 0.3+ | 0.3− |
| 2003 03 06 | 699 | 0.7− | 0.6+ | 2006 09 26 | 703 | 0.7− | 0.4− | 2006 10 28 | 703 | (2.0− | 0.4−) |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.8+ | 0.2+ | 2006 10 28 | 703 | 1.2− | 0.5+ |

## 2006 SY$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.75078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22956622 | $\omega$ | 146.98481 | | +0.98786170 | −0.06931598 | |
| $a$ | 2.6415818 | $\Omega$ | 217.76023 | | +0.03701297 | +0.97417723 | |
| $e$ | 0.2757054 | $i$ | 13.12123 | | +0.15086187 | +0.21488140 | |
| $P$ | 4.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.0 | 0.4− | 2006 11 02 | 704 | 0.6+ | 0.3+ |
| 2005 04 11 | G96 | 0.4− | 0.1− | 2006 09 29 | 704 | 0.2− | 0.2+ | 2006 11 02 | 704 | 0.5+ | 0.9+ |
| 2005 04 11 | G96 | 0.4− | 0.2− | 2006 09 29 | 704 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2005 04 11 | G96 | 0.8− | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2005 06 08 | 691 | 0.4− | 0.0 | 2006 09 29 | 704 | 0.7+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2005 06 08 | 691 | 0.1− | 0.2− | 2006 09 30 | 704 | 0.3− | 0.3+ | 2006 11 10 | 683 | 0.3− | 0.1+ |
| 2005 06 08 | 691 | 0.9+ | 1.0+ | 2006 09 30 | 704 | 0.3− | 0.3+ | 2006 11 10 | 683 | 0.4− | 0.4+ |
| 2005 06 12 | 691 | 0.2+ | 0.4− | 2006 09 30 | 704 | 0.3− | 0.1− | 2006 11 11 | 683 | 0.5+ | 0.1− |
| 2005 06 12 | 691 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 11 | 683 | 0.2+ | 1.1+ |
| 2005 06 12 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | 683 | 0.7+ | 0.6+ |
| 2006 08 24 | 704 | 0.0 | 1.2− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2006 08 24 | 704 | 0.0 | 0.7− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2006 08 24 | 704 | 0.2+ | 0.9− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2006 08 24 | 704 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2006 09 18 | 704 | 0.8− | 0.1+ | 2006 10 23 | 704 | 0.2+ | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2006 09 18 | 704 | 0.0 | 0.4+ | 2006 10 23 | 704 | 0.2− | 0.9+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 704 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.5− | 0.6+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2006 09 18 | 704 | 0.1− | 0.3− | 2006 10 23 | 704 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 704 | 0.2− | 0.1− | 2006 10 23 | 704 | 0.6+ | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.1+ |
| 2006 09 21 | 704 | 0.2+ | 0.4+ | 2006 10 26 | 704 | 0.6+ | 0.7+ | 2006 11 17 | 704 | 0.6− | 0.1− |
| 2006 09 21 | 704 | 0.5+ | 0.7+ | 2006 10 26 | 704 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.0 |
| 2006 09 21 | 704 | 0.0 | 0.3+ | 2006 10 26 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.3− | 0.1− |
| 2006 09 21 | 704 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.1− | 0.4− |
| 2006 09 21 | 704 | 0.2+ | 0.7− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2006 09 21 | 704 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2006 09 21 | 704 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2006 09 21 | 704 | 0.3+ | 0.5+ | 2006 10 28 | 704 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2006 09 21 | 704 | 0.0 | 0.3− | 2006 10 28 | 704 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2006 09 22 | 699 | (1.7− | 0.6+) | 2006 10 28 | 704 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.4− |
| 2006 09 22 | 699 | 1.1− | 0.7− | 2006 10 28 | 704 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.5− | 0.3− |
| 2006 09 22 | 699 | 0.1+ | 0.2+ | 2006 10 28 | 704 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2006 09 25 | 704 | 0.5− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2006 09 25 | 704 | 0.7+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2006 09 25 | 704 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.2− | | | | |
| 2006 09 25 | 704 | 0.6+ | 0.2− | 2006 11 02 | 704 | 0.7+ | 0.4− | | | | |

## 2006 SB$_{56}$ = 2003 YZ$_{114}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.05340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29641467 | $\omega$ | 264.47000 | | +0.96855803 | −0.24399122 | |
| $a$ | 2.2277661 | $\Omega$ | 109.64507 | | +0.24377561 | +0.89172049 | |
| $e$ | 0.2128000 | $i$ | 2.95903 | | +0.04968689 | +0.38118610 | |
| $P$ | 3.33 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 291 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 2003 12 27 | 291 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2003 12 27 | 291 | 0.4− | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2003 12 28 | 291 | 0.4+ | 0.4+ | 2006 09 26 | 704 | (0.0 | 1.7+) | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2003 12 28 | 291 | 0.2+ | 0.2+ | 2006 09 26 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.9− |
| 2003 12 28 | 291 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2004 01 30 | 691 | 0.2+ | 0.2− | 2006 09 26 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.2+ | 0.8− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.1− |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2006 09 29 | 699 | 1.5− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2004 01 30 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 18 | 291 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2006 09 18 | 291 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2006 09 18 | 291 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.4− |
| 2006 09 21 | 699 | 0.8− | 0.5− | 2006 10 01 | 704 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2006 09 21 | 699 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2006 09 21 | 699 | 0.9− | 0.2+ | 2006 10 01 | 704 | 0.4+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2006 09 21 | 699 | 0.1− | 0.7+ | 2006 10 01 | 704 | 0.5+ | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2006 09 25 | 699 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.3− |

## 2006 SC$_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.17169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21327737 | $\omega$ | 346.29570 | | +0.95010874 | −0.30149695 | |
| $a$ | 2.7744242 | $\Omega$ | 31.61033 | | +0.29862832 | +0.80520417 | |
| $e$ | 0.2327771 | $i$ | 8.77458 | | +0.09008062 | +0.51063278 | |
| $P$ | 4.62 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.9+ | 0.8− | 2006 09 27 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2001 07 19 | 644 | 1.0+ | 0.6− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2001 07 19 | 644 | 0.6+ | 0.5− | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 23 | 704 | (2.0− | 0.1−) |
| 2001 08 21 | 644 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.2− | 0.2+ | 2006 10 23 | 704 | 0.7− | 0.2+ |
| 2001 08 21 | 644 | 0.3− | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.0 | 2006 10 23 | 704 | 1.4− | 0.7+ |
| 2001 08 21 | 644 | 0.4− | 0.9+ | 2006 09 29 | 699 | 0.1− | 0.8− | 2006 10 28 | 704 | (1.5− | 0.5−) |
| 2001 08 21 | 644 | 0.3− | 0.4+ | 2006 09 29 | 699 | 0.0 | 0.1+ | 2006 10 28 | 704 | 0.6− | 0.4+ |
| 2001 08 21 | 644 | 0.4− | 0.0 | 2006 09 30 | 608 | 0.3+ | 0.5− | 2006 10 28 | 704 | 0.8− | 0.4− |
| 2001 08 21 | 644 | 0.5− | 0.1+ | 2006 09 30 | 608 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 08 19 | 699 | 0.2− | 1.0− | 2006 09 30 | 608 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 08 19 | 699 | 0.5− | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2006 08 19 | 699 | (1.7− | 0.1−) | 2006 10 01 | 704 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.3− |
| 2006 09 19 | 704 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 0.2− | 1.0+ | 2006 11 11 | 703 | 0.5+ | 0.6+ |
| 2006 09 19 | 704 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.5+ | 0.7+ |
| 2006 09 19 | 704 | 0.4+ | 0.5+ | 2006 10 01 | 704 | 0.8− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2006 09 19 | 704 | 0.3+ | 0.8+ | 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.7− |
| 2006 09 19 | 704 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2006 09 21 | 699 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.6+ |
| 2006 09 21 | 699 | 0.2− | 0.4− | 2006 10 15 | 703 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2006 09 21 | 699 | 0.1+ | 0.3− | 2006 10 15 | 703 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2006 09 21 | 699 | 0.3− | 0.0 | 2006 10 15 | 703 | 0.6+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.2− |
| 2006 09 22 | 704 | 0.6+ | 0.2− | 2006 10 15 | 703 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.1+ |
| 2006 09 22 | 704 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2006 09 22 | 704 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.6+ |
| 2006 09 22 | 704 | 0.2− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.7− | 1.0+ |
| 2006 09 22 | 704 | 0.9+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.3− |
| 2006 09 25 | 699 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 25 | 699 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2006 09 25 | 699 | 0.0 | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 2006 09 25 | 699 | 0.8− | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2006 09 26 | 704 | 1.2+ | 1.4− | 2006 10 21 | 703 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2006 09 26 | 704 | 0.6+ | 0.6− | 2006 10 21 | 703 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2006 09 26 | 704 | (1.0+ | 1.6−) | 2006 10 22 | G96 | 0.5+ | 0.5− | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.3− | | | | |

**2006 SE$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.58478 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18710557 | $\omega$ | 267.16023 | | +0.98379955 | | +0.07199752 |
| $a$ | 3.0274588 | $\Omega$ | 88.67241 | | −0.00114110 | | +0.91830694 |
| $e$ | 0.1060928 | $i$ | 9.45212 | | −0.17926837 | | +0.38926691 |
| $P$ | 5.27 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.7− | 0.8− | 2006 09 21 | 699 | 0.1− | 0.5− | 2006 10 22 | 703 | (1.6+ | 0.9−) |
| 2001 11 19 | 699 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.2− | 0.7+ | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2001 11 19 | 699 | (2.2+ | 0.0 ) | 2006 09 26 | 703 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2001 11 19 | 699 | 0.9+ | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2003 04 26 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.0 | 1.2+ | 2006 10 28 | 703 | 0.5+ | 0.5+ |
| 2003 04 26 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.4− | 0.3+ | 2006 10 28 | 703 | 0.4− | 1.1− |
| 2006 09 19 | 703 | 0.4− | 0.6− | 2006 09 29 | 699 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 0.4+ | 0.0 |
| 2006 09 19 | 703 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.5− | 0.7− | 2006 10 28 | 703 | 0.2+ | 0.2− |
| 2006 09 19 | 703 | 0.4− | 0.1− | 2006 09 29 | 699 | 0.7− | 1.0+ | 2006 11 16 | 703 | 0.1+ | 1.1+ |
| 2006 09 19 | 703 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 16 | 703 | 0.3+ | 0.8+ |
| 2006 09 21 | 699 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.9− | 2006 11 16 | 703 | 0.2+ | 0.1− |
| 2006 09 21 | 699 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.6− | 2006 11 16 | 703 | 0.7− | 0.4+ |
| 2006 09 21 | 699 | (1.3+ | 1.7−) | 2006 10 16 | 703 | 0.7+ | 1.0− | | | | |

**2006 SZ$_{56}$ = 1995 SE$_{27}$ = 2000 QH$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.66124 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18056808 | $\omega$ | 291.11106 | | +0.66332794 | | +0.74829458 |
| $a$ | 3.1000978 | $\Omega$ | 20.44836 | | −0.67874928 | | +0.60565308 |
| $e$ | 0.1992132 | $i$ | 1.17430 | | −0.31511183 | | +0.27062808 |
| $P$ | 5.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.3+ | 0.2− | 2006 09 19 | G98 | 0.3− | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.0 |
| 1995 09 19 | 691 | 0.1+ | 0.2− | 2006 09 19 | G98 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.2+ |
| 1995 09 19 | 691 | 0.5+ | 0.5− | 2006 09 20 | G98 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1995 09 24 | 691 | 0.3+ | 0.9− | 2006 09 20 | G98 | 0.1− | 1.2+ | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 1995 09 24 | 691 | 0.4+ | 0.7− | 2006 09 20 | G98 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.4+ |
| 1995 09 24 | 691 | 0.2+ | 0.7− | 2006 09 20 | G98 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.9+ |
| 1995 09 30 | 691 | 0.2+ | 0.7− | 2006 09 20 | G98 | 0.3− | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.3− |
| 1995 09 30 | 691 | 0.0 | 0.2− | 2006 09 24 | G98 | 0.6+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 1995 09 30 | 691 | 0.1− | 0.6− | 2006 09 24 | G98 | 0.7+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2000 08 24 | 704 | 0.2+ | 0.4− | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2000 08 24 | 704 | 0.1+ | 0.9+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2000 08 24 | 704 | 0.6+ | 1.0+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2000 08 26 | 704 | 0.1+ | 0.5− | 2006 09 24 | G98 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2000 08 26 | 704 | 1.1− | 0.0 | 2006 09 24 | G98 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.6+ | 0.3− |
| 2000 08 26 | 704 | 1.1− | 0.6+ | 2006 09 26 | J75 | (0.0 | 1.6−) | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2000 08 26 | 704 | 0.3+ | 0.6+ | 2006 09 27 | J75 | 0.7+ | 1.2+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2006 09 18 | G98 | 0.4− | 0.7+ | 2006 09 28 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | G98 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2006 09 18 | G98 | 0.4− | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2006 09 18 | G98 | 0.2− | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.5− | 0.2− |
| 2006 09 18 | G98 | 0.1− | 0.6+ | 2006 10 02 | 691 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2006 09 18 | 691 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.1+ |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2006 09 19 | G98 | 0.4− | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | (2.4− | 1.9−) |
| 2006 09 19 | G98 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | (1.0− | 3.9−) |
| 2006 09 19 | G98 | 0.0 | 0.6+ | 2006 10 19 | 691 | 0.3− | 0.0 | | | | |

**2006 SA$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.98681 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20228799 | $\omega$ | 288.22679 | | +0.62559964 | | +0.77747643 |
| $a$ | 2.8740169 | $\Omega$ | 20.91008 | | −0.63000656 | | +0.55221099 |
| $e$ | 0.0962848 | $i$ | 10.40578 | | −0.46012695 | | +0.30098742 |
| $P$ | 4.87 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 691 | 0.4+ | 0.1+ | 2006 09 19 | G98 | 0.2− | 0.7+ | 2006 10 19 | G98 | 0.4+ | 0.1− |
| 2001 09 11 | 691 | 0.1− | 0.0 | 2006 09 20 | G98 | 0.5+ | 0.1− | 2006 10 19 | G98 | 0.3− | 0.2+ |
| 2001 09 11 | 691 | 0.4+ | 0.1+ | 2006 09 20 | G98 | 0.5+ | 0.4+ | 2006 10 20 | G98 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 1.4− | 0.4− | 2006 09 24 | G98 | 0.4− | 0.0 | 2006 10 20 | G98 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.5− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 1.1− | 0.1− | 2006 09 24 | G98 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 09 18 | G98 | 0.1− | 0.3− | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.7− | 0.3+ |
| 2006 09 18 | G98 | 0.5+ | 0.0 | 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2006 09 18 | G98 | 0.7+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.1− |
| 2006 09 18 | G98 | 0.4+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.3− |
| 2006 09 18 | 691 | 0.2+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2006 09 18 | 691 | 0.2− | 0.4− | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 1.0+ | 0.3+ |
| 2006 09 19 | G98 | 0.4+ | 0.5+ | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.3− |
| 2006 09 19 | G98 | 0.1− | 0.4+ | 2006 10 19 | G98 | 0.4+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2006 09 19 | G98 | 0.0 | 0.5+ | 2006 10 19 | G98 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2006 09 19 | G98 | 0.0 | 0.1+ | 2006 10 19 | G98 | 0.0 | 0.2− | | | | |

**2006 SC$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.05492 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21140572 | $\omega$ | 341.66822 | | +0.99957185 | | +0.01747085 |
| $a$ | 2.7907754 | $\Omega$ | 17.38096 | | −0.00454373 | | +0.88511882 |
| $e$ | 0.0827331 | $i$ | 4.50640 | | −0.02890443 | | +0.46503703 |
| $P$ | 4.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 09 24 | G98 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2− |
| 2004 03 26 | 691 | 0.6− | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.1+ | 0.4− |
| 2004 03 26 | 691 | 0.3+ | 0.2− | 2006 09 24 | G98 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.7− | 0.4− |
| 2004 03 26 | 691 | 0.5+ | 0.3+ | 2006 09 24 | 691 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.3− |
| 2006 09 18 | G98 | 0.1+ | 0.4− | 2006 09 24 | G98 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2006 09 18 | G98 | 1.0− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | G98 | 0.3+ | 0.7− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.6− |
| 2006 09 18 | G98 | 0.5− | 0.2+ | 2006 09 28 | 691 | 0.6− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | G98 | 0.4− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.2+ |
| 2006 09 19 | G98 | 0.2+ | 1.0+ | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2006 09 19 | G98 | 0.7− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2006 09 19 | G98 | 0.3− | 0.8+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2006 09 20 | G98 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.6+ | 0.1− |
| 2006 09 20 | G98 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.5+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2006 09 20 | G98 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1− | | | | |

**2006 SE$_{57}$ = 2004 AE$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.61911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26669957 | $\omega$ | 102.24038 | | +0.93782621 | | +0.34528188 |
| $a$ | 2.3903115 | $\Omega$ | 237.57030 | | −0.33258212 | | +0.86456717 |
| $e$ | 0.2090774 | $i$ | 2.41260 | | −0.09935359 | | +0.36510826 |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.1− | 0.3+ | 2006 09 22 | 224 | 0.2− | 0.0 | 2006 10 16 | G98 | 0.6− | 0.2− |
| 2002 07 12 | 644 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.9+ |
| 2002 07 12 | 644 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.8+ | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2004 01 15 | 691 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2004 01 15 | 691 | 0.1− | 0.4+ | 2006 09 25 | 704 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.1+ | 1.2+ |
| 2004 01 15 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.5− | 0.1− |
| 2004 01 27 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 12 | G98 | 0.5+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2006 09 17 | 703 | 0.1+ | 1.2− | 2006 10 12 | G98 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2006 09 17 | 703 | 1.1− | 0.9+ | 2006 10 13 | G98 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2006 09 17 | 703 | 0.5+ | 1.0+ | 2006 10 13 | G98 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2006 09 17 | 703 | (2.4+ | 0.1+) | 2006 10 13 | G98 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2006 09 21 | 224 | 0.4− | 0.5+ | 2006 10 13 | G98 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.4− | 0.2+ |
| 2006 09 21 | 224 | 0.5− | 0.5+ | 2006 10 13 | G98 | 0.3− | 0.3− | 2006 10 27 | G98 | 0.3+ | 0.2+ |
| 2006 09 21 | 224 | 0.9+ | 0.8+ | 2006 10 16 | G98 | 0.5− | 0.0 | 2006 10 27 | G98 | 0.1− | 0.3+ |
| 2006 09 21 | 224 | 0.3+ | 0.0 | 2006 10 16 | G98 | 0.6− | 0.1− | 2006 10 27 | G98 | 0.1− | 0.3+ |
| 2006 09 21 | 224 | 0.1− | 0.1+ | 2006 10 16 | G98 | 0.7− | 0.1− | 2006 10 27 | G98 | 0.4+ | 0.3+ |

**2006 SF$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.78876 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17405063 | $\omega$ | 132.60754 | | +0.98783778 | +0.04699441 | |
| $a$ | 3.1770130 | $\Omega$ | 225.30541 | | −0.08401685 | +0.96341861 | |
| $e$ | 0.1394828 | $i$ | 12.03452 | | +0.13083462 | +0.26384866 | |
| $P$ | 5.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 10 | 699 | 0.6+ | 0.9− | 2006 09 16 | 703 | 0.8− | 0.3+ | 2006 10 03 | 703 | 0.5− | 0.7+ |
| 2000 07 10 | 699 | 0.3− | 0.4+ | 2006 09 16 | 703 | 0.5+ | 0.1+ | 2006 10 03 | 703 | (3.0− | 1.1+) |
| 2000 07 10 | 699 | 0.6− | 0.3+ | 2006 09 21 | 683 | 0.5+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2000 07 10 | 699 | 0.3− | 0.1+ | 2006 09 21 | 683 | 0.2+ | 1.4− | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2000 08 03 | 704 | 0.7+ | 0.7+ | 2006 09 21 | 683 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2000 08 03 | 704 | 0.6− | 0.3− | 2006 09 21 | 699 | 0.9− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2000 08 03 | 704 | 0.4− | 0.2− | 2006 09 21 | 699 | 0.3− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2000 08 31 | 704 | 0.2+ | 0.4− | 2006 09 21 | 699 | 1.0+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2000 08 31 | 704 | 0.0 | 0.1− | 2006 09 22 | 683 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.0 |
| 2000 08 31 | 704 | 0.2− | 0.1− | 2006 09 22 | 683 | 0.8+ | 1.0− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2000 08 31 | 704 | 0.1+ | 0.9− | 2006 09 22 | 683 | 0.4+ | 0.4− | 2006 10 21 | 691 | 0.1+ | 1.5− |
| 2000 08 31 | 704 | 0.9+ | 0.2+ | 2006 09 25 | 683 | 1.0− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 10 24 | 704 | 1.2+ | 0.2+ | 2006 09 25 | 683 | 0.6− | 1.2+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.4− | 0.1− | 2006 09 25 | 683 | 1.2− | 1.4+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.9− | 0.9− | 2006 09 27 | 703 | 0.2+ | 0.9− | 2006 10 23 | 703 | (0.1+ | 1.6+) |
| 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 27 | 703 | 0.5+ | 0.4− | 2006 10 23 | 703 | 0.5+ | 1.1+ |
| 2006 09 06 | 644 | 0.0 | 0.2− | 2006 09 27 | 703 | 0.2+ | 0.6+ | 2006 10 23 | 703 | 0.4+ | 0.7+ |
| 2006 09 06 | 644 | 0.3+ | 0.3− | 2006 09 27 | 703 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2006 09 16 | 703 | 0.1− | 0.6+ | 2006 10 03 | 703 | 0.8+ | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2006 09 16 | 703 | 0.9− | 0.3− | 2006 10 03 | 703 | 0.7− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.4+ |

**2006 SG$_{57}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.76300 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18659378 | $\omega$ | 204.96387 | | −0.99436361 | +0.07948436 | |
| $a$ | 3.0329920 | $\Omega$ | 339.22983 | | −0.02671906 | −0.82829828 | |
| $e$ | 0.0174573 | $i$ | 11.41196 | | −0.10260164 | −0.55462076 | |
| $P$ | 5.28 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 01 | 691 | 0.3+ | 0.1+ | 2006 09 21 | A13 | 0.2+ | 0.5− | 2006 10 04 | G96 | 0.4− | 0.3− |
| 1995 08 01 | 691 | 0.6− | 0.1− | 2006 09 21 | A13 | 0.5− | 0.4− | 2006 10 04 | G96 | 0.2− | 0.2− |
| 1995 08 01 | 691 | 0.2+ | 0.1+ | 2006 09 21 | A13 | 0.0 | 0.5− | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2002 12 06 | 645 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.8+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2002 12 13 | 645 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.6+ | 1.0+ | 2006 10 12 | 644 | 0.1− | 0.9+ |
| 2002 12 13 | 645 | 0.1− | 0.0 | 2006 09 25 | 704 | 0.1+ | 1.0+ | 2006 10 17 | 703 | 0.2+ | 1.0+ |
| 2006 09 16 | 703 | (2.7− | 0.4+) | 2006 09 27 | 703 | 1.2− | 0.8− | 2006 10 17 | 703 | 1.7+ | 1.6− |
| 2006 09 16 | 703 | 0.3− | 0.5+ | 2006 09 27 | 703 | 0.3− | 0.6− | 2006 10 17 | 703 | 0.5+ | 1.2+ |
| 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.4+ | 1.8+ |
| 2006 09 16 | 703 | 0.1− | 0.9− | 2006 09 27 | 703 | 1.0− | 0.7− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2006 09 19 | A13 | 0.6− | 0.0 | 2006 09 27 | A13 | 0.4− | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.0 |
| 2006 09 20 | A13 | 0.7− | 0.3− | 2006 09 27 | A13 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2006 09 20 | A13 | 0.2+ | 1.0− | 2006 10 04 | G96 | 0.1− | 0.4− | | | | |

**2006 SJ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.98135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28750517 | $\omega$ | 162.31318 | | +0.96404475 | −0.26068737 | |
| $a$ | 2.2735557 | $\Omega$ | 212.93633 | | +0.23091047 | +0.91781695 | |
| $e$ | 0.1462069 | $i$ | 5.44298 | | +0.13152212 | +0.29942300 | |
| $P$ | 3.43 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.3− | 0.7+ | 2006 09 28 | 699 | 1.0+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.7− |
| 2005 04 02 | G96 | 0.3− | 0.0 | 2006 09 28 | 699 | 0.5+ | 1.4+ | 2006 10 17 | 703 | 0.1− | 0.3− |
| 2005 04 02 | G96 | 0.4+ | 0.2+ | 2006 09 28 | 699 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2005 04 02 | G96 | 0.1+ | 0.2− | 2006 09 28 | 699 | 1.1+ | 0.7+ | 2006 10 19 | 644 | 0.4+ | 0.5− |
| 2005 04 12 | G96 | 0.6+ | 0.0 | 2006 09 29 | 704 | 0.1+ | 0.5− | 2006 10 19 | G96 | 0.3− | 0.3− |
| 2005 04 12 | G96 | 0.3+ | 0.2+ | 2006 09 29 | 704 | 0.1+ | 1.2− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2005 04 12 | G96 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.5− | 0.8− | 2006 10 19 | G96 | 0.0 | 0.1− |
| 2005 04 12 | G96 | 0.5+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2005 04 12 | G96 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.3− | 2006 10 19 | 644 | 0.3+ | 0.1− |
| 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.6+ |
| 2005 04 12 | G96 | 1.0− | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2005 04 12 | G96 | (1.4+ | 2.5−) | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.7+ | 0.6+ |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 691 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 09 21 | 683 | (0.3+ | 1.8−) | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2006 09 21 | 683 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.7+ |
| 2006 09 21 | 683 | (1.6+ | 0.3−) | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.7+ |
| 2006 09 22 | 683 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.3− |
| 2006 09 22 | 683 | 0.9+ | 0.1+ | 2006 10 17 | 703 | 0.6+ | 1.3+ | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 2006 09 22 | 683 | 0.8+ | 0.8− | 2006 10 17 | 703 | 1.2− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2006 09 25 | 704 | (1.0+ | 2.1−) | 2006 10 17 | 703 | 0.2+ | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.7− |
| 2006 09 25 | 704 | 0.1− | 0.3+ | 2006 10 17 | 703 | 1.2− | 0.5+ | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2006 09 25 | 704 | 0.6+ | 0.7− | 2006 10 17 | 703 | (1.8− | 0.8−) | 2006 11 13 | G96 | 0.5− | 0.7− |
| 2006 09 25 | 704 | 0.4− | 0.8− | 2006 10 17 | 703 | 0.1− | 0.7+ | | | | |

**2006 SK$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.91991 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18356189 | $\omega$ | 167.83213 | | +0.95127514 | −0.28813688 | |
| $a$ | 3.0662980 | $\Omega$ | 209.63750 | | +0.26100921 | +0.94203655 | |
| $e$ | 0.1693665 | $i$ | 12.82696 | | +0.16416392 | +0.17188448 | |
| $P$ | 5.37 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 704 | 0.8+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2004 04 16 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 1.4− | 0.1− |
| 2004 04 16 | 691 | 0.2+ | 0.6+ | 2006 09 29 | 704 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2005 06 26 | 644 | 0.1− | 0.2+ | 2006 09 29 | 704 | 0.1+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2005 06 26 | 644 | 0.1− | 0.1+ | 2006 09 29 | 704 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2005 06 26 | 644 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 10 01 | 691 | 0.6+ | 0.2− | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2006 09 18 | 703 | 0.9+ | 0.5− | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2006 09 18 | 703 | 0.5+ | 0.3− | 2006 10 03 | 704 | 0.4+ | 0.7+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.7− | 0.0 | 2006 10 03 | 704 | (0.4+ | 2.0+) | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2006 09 18 | 699 | 0.1− | 0.4− | 2006 10 03 | 704 | 0.5− | 0.5+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2006 09 18 | 699 | 0.5− | 0.4− | 2006 10 03 | 704 | 0.3− | 0.7+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2006 09 18 | 699 | 0.3− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.1− |
| 2006 09 18 | 699 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 22 | 224 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.8− | | |
| 2006 09 22 | 224 | 0.2+ | 0.6− | 2006 10 19 | 704 | 1.4− | 1.0+ | 2006 11 17 | 703 | 0.1− | 1.3− | | |
| 2006 09 22 | 224 | 0.1+ | 0.5− | 2006 10 19 | 704 | (0.9− | 1.6+) | 2006 11 17 | 703 | 1.1− | 0.2− | | |
| 2006 09 25 | 704 | 0.9+ | 0.3+ | 2006 10 19 | 704 | (1.9− | 0.9+) | 2006 11 18 | 704 | 0.5+ | 0.2+ | | |
| 2006 09 25 | 704 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 1.0− | 0.6+ | | |
| 2006 09 25 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.2+ | | |
| 2006 09 25 | 704 | 0.6+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 1.3+ | 0.1+ | | |
| 2006 09 25 | 704 | 0.5+ | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 1.4+ | | |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.0 | | |
| 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.5+ | | |
| 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 10 24 | A24 | (0.0 | 2.2+) | 2006 11 22 | G96 | 0.2− | 0.0 | | |
| 2006 09 28 | 699 | 0.4+ | 0.3− | 2006 10 24 | A24 | 0.1+ | 0.7+ | 2006 11 22 | G96 | 0.2+ | 0.1− | | |
| 2006 09 28 | 699 | 0.0 | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.1− | 0.0 | | |
| 2006 09 28 | 699 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.2− | | |
| 2006 09 28 | 699 | 0.5+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.0 | | | | | | |

### 2006 SM$_{57}$ = 2004 FU$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.53524 | | (2000.0) | | | |
| $n$ | 0.24256484 | $\omega$ | 113.40234 | | −0.34538024 | −0.93836462 |
| $a$ | 2.5463464 | $\Omega$ | 356.71138 | | +0.75124857 | −0.26778102 |
| $e$ | 0.1695570 | $i$ | 13.68992 | | +0.56243939 | −0.21855242 |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.4+ | 0.6− | 2006 09 19 | H55 | 0.9− | 0.9+ | 2006 09 25 | 621 | 0.6+ | 0.5− | | |
| 2004 03 19 | 704 | 0.3+ | 1.0+ | 2006 09 19 | H55 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.3+ | 0.3+ | | |
| 2004 03 19 | 704 | (1.0+ | 2.1−) | 2006 09 19 | H55 | 0.6− | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.2− | | |
| 2004 03 19 | 704 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.2− | 2006 09 30 | 703 | 1.4− | 0.4− | | |
| 2004 03 20 | 704 | 0.5− | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.8− | 2006 09 30 | 703 | (7.2− | 1.3−) | | |
| 2004 03 20 | 704 | 1.3− | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.8− | 2006 10 04 | G96 | 0.1+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.2− | 0.5+ | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.3− | 0.1+ | 2006 09 21 | H55 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.4− | 0.1− | | |
| 2004 03 20 | 704 | 0.0 | 0.4− | 2006 09 21 | H55 | 0.6+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.4+ | | |
| 2004 03 31 | 704 | 1.0+ | 0.5+ | 2006 09 21 | H55 | 0.6+ | 0.2+ | 2006 10 21 | 644 | (2.0− | 0.7+) | | |
| 2004 03 31 | 704 | 0.1− | 0.8− | 2006 09 25 | 621 | 0.3+ | 0.2− | 2006 10 21 | 644 | (1.7− | 0.7+) | | |
| 2004 03 31 | 704 | 0.2+ | 0.4− | 2006 09 25 | 621 | 0.2+ | 0.1+ | 2006 10 21 | 644 | (1.8− | 0.9+) | | |

### 2006 SN$_{57}$ = 2002 UZ$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.95562 | | (2000.0) | | | |
| $n$ | 0.23938922 | $\omega$ | 122.98340 | | +0.72762734 | +0.67322563 |
| $a$ | 2.5688160 | $\Omega$ | 196.08780 | | −0.67080616 | +0.73844406 |
| $e$ | 0.2055130 | $i$ | 28.35932 | | +0.14344877 | +0.03830954 |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 699 | 0.5+ | 0.9+ | 2006 09 21 | 683 | 0.8+ | 0.7− | 2006 09 29 | 704 | 0.5+ | 0.5+ | | |
| 2002 10 09 | 699 | 0.8+ | 0.4− | 2006 09 21 | 683 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 2002 10 09 | 699 | 0.4+ | 0.5+ | 2006 09 21 | 683 | 1.1− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2002 10 09 | 699 | (0.2− | 1.6+) | 2006 09 21 | 152 | 0.7+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 2002 10 28 | 644 | 0.2− | 0.2+ | 2006 09 22 | 152 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 10 28 | 644 | 0.2− | 0.4+ | 2006 09 22 | 152 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1+ | | |
| 2002 10 28 | 644 | 0.2+ | 0.4+ | 2006 09 22 | 152 | 1.2− | 0.7− | 2006 10 11 | 644 | 0.1− | 0.0 | | |
| 2002 10 31 | 704 | 0.6− | 0.1+ | 2006 09 23 | 152 | 0.4+ | 0.0 | 2006 10 15 | 703 | 0.3+ | 1.1− | | |
| 2002 10 31 | 704 | 0.5+ | 0.2+ | 2006 09 23 | 152 | 0.3+ | 0.0 | 2006 10 15 | 703 | 0.2− | 0.2− | | |
| 2002 10 31 | 704 | 1.1− | 0.6+ | 2006 09 23 | 152 | 0.7+ | 0.8+ | 2006 10 15 | 703 | 0.5− | 0.4− | | |
| 2005 04 02 | 691 | 0.3− | 0.2+ | 2006 09 25 | 152 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.5− | 0.2− | | |
| 2005 04 02 | 691 | (0.6− | 1.7+) | 2006 09 25 | 152 | 0.1− | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 2005 04 02 | 691 | 0.1− | 0.3+ | 2006 09 25 | 152 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2005 04 02 | 644 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 2005 04 02 | 644 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 2005 04 02 | 644 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ | | |
| 2005 05 13 | 704 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2005 05 13 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2005 05 13 | 704 | (1.5+ | 0.8+) | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | | |
| 2005 05 13 | 704 | (2.3− | 1.0+) | 2006 09 26 | 691 | 0.3+ | 0.9− | 2006 10 21 | 644 | 0.3− | 0.1− | | |
| 2006 09 18 | 699 | 0.1− | 0.2− | 2006 09 26 | 152 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2006 09 18 | 699 | 0.8+ | 0.3− | 2006 09 26 | 152 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2− | | |
| 2006 09 18 | 699 | 0.8+ | 0.1+ | 2006 09 27 | 152 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2006 09 18 | 699 | 0.7+ | 0.2− | 2006 09 27 | 704 | 0.4− | 1.3+ | 2006 10 22 | 703 | 0.7− | 0.5− | | |
| 2006 09 18 | 699 | 0.9+ | 0.4+ | 2006 09 27 | 704 | 1.1− | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.1− | | |
| 2006 09 18 | 699 | 0.5− | 0.3− | 2006 09 27 | 704 | (1.8− | 0.7+) | 2006 10 22 | 703 | 0.5− | 0.0 | | |
| 2006 09 18 | 699 | 0.7+ | 0.6+ | 2006 09 27 | 704 | 1.3− | 0.9+ | 2006 10 22 | 703 | 0.7− | 0.3− | | |
| 2006 09 18 | 699 | 0.7− | 0.1+ | 2006 09 29 | 704 | 0.1− | 1.2+ | 2006 10 27 | 704 | 0.2− | 0.1+ | | |
| 2006 09 19 | 691 | 0.2+ | 0.4− | 2006 09 29 | 704 | 0.3+ | 1.3+ | 2006 10 27 | 704 | 0.4− | 0.1− | | |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.3+ | 0.1− | 2006 10 27 | 704 | 0.3− | 0.1+ | | |
| 2006 09 19 | 691 | 0.2+ | 0.9+ | 2006 09 29 | 704 | 0.6+ | 0.3− | | | | | | |

### 2006 SP$_{57}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.01147 | | (2000.0) | | | |
| $n$ | 0.27334127 | $\omega$ | 347.79362 | | +0.64930624 | +0.75773757 |
| $a$ | 2.3514328 | $\Omega$ | 322.63997 | | −0.68844010 | +0.54924221 |
| $e$ | 0.1287520 | $i$ | 6.15650 | | −0.32318979 | +0.35237307 |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | (3.2+ | 2.7+) | 2006 09 17 | 703 | 0.2− | 0.1+ | 2006 09 27 | 699 | 0.5− | 0.2− | | |
| 1995 07 22 | 691 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.6− | 0.8+ | 2006 09 27 | 699 | 0.3− | 0.9− | | |
| 1995 07 22 | 691 | 0.4+ | 0.1+ | 2006 09 17 | 703 | 1.1− | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | | |
| 1995 07 27 | 691 | 0.0 | 0.2− | 2006 09 22 | 106 | 0.6− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 | | |
| 1995 07 27 | 691 | 1.1− | 0.3+ | 2006 09 22 | 106 | 0.1+ | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 1995 07 27 | 691 | 0.4+ | 0.3+ | 2006 09 22 | 106 | 0.4+ | 0.0 | 2006 10 17 | 703 | (1.0− | 2.0−) | | |
| 2001 02 03 | 691 | 0.6+ | 0.8+ | 2006 09 22 | 106 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.1− | 0.1+ | | |
| 2001 02 03 | 691 | 0.2+ | 0.7+ | 2006 09 23 | 106 | 0.1+ | 0.6− | 2006 10 17 | 703 | 0.5+ | 1.2− | | |
| 2001 02 03 | 691 | 0.6+ | 0.8+ | 2006 09 23 | 106 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 1.3− | 1.2− | | |
| 2002 06 13 | 644 | 0.1− | 0.0 | 2006 09 23 | 106 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.1− | | |
| 2002 06 13 | 644 | 0.3− | 0.5+ | 2006 09 23 | 106 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.1+ | | |
| 2002 06 13 | 644 | 0.1− | 0.3+ | 2006 09 25 | 704 | 0.3− | 0.8+ | 2006 10 23 | 703 | 1.2+ | 0.5+ | | |
| 2006 07 21 | 703 | 0.9+ | 0.7+ | 2006 09 25 | 704 | 1.5− | 1.2+ | 2006 10 23 | 703 | 0.2− | 0.4− | | |
| 2006 07 21 | 703 | 1.3+ | 0.1− | 2006 09 25 | 704 | 0.2+ | 1.2+ | 2006 10 23 | 644 | 0.0 | 0.2+ | | |
| 2006 07 21 | 703 | 1.2+ | 0.2+ | 2006 09 25 | 704 | 0.8− | 1.1+ | 2006 10 23 | 703 | 0.1+ | 1.0− | | |
| 2006 07 21 | 703 | 0.5+ | 0.3+ | 2006 09 27 | 699 | 0.1− | 0.9+ | 2006 10 23 | 703 | (0.2+ | 2.3−) | | |
| 2006 09 17 | 703 | 0.2− | 0.2− | 2006 09 27 | 699 | 1.4+ | 0.4− | | | | | | |

### 2006 SQ$_{57}$ = 2000 OJ$_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.79686 | | (2000.0) | | | |
| $n$ | 0.17254480 | $\omega$ | 68.13694 | | +0.98876081 | −0.09127518 |
| $a$ | 3.1954704 | $\Omega$ | 296.93083 | | +0.02859817 | +0.89285138 |
| $e$ | 0.2452933 | $i$ | 7.63217 | | +0.14674534 | +0.44100482 |
| $P$ | 5.71 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.2− | 0.1− | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 09 27 | 703 | 0.2− | 0.4+ | | |
| 2000 07 31 | 807 | 0.0 | 0.3− | 2006 09 19 | 699 | 0.9− | 0.6− | 2006 09 27 | 703 | 0.5− | 0.1− | | |
| 2000 08 01 | 807 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 03 | 704 | 0.3− | 0.1− | | |
| 2000 08 01 | 807 | 0.4+ | 0.1− | 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 03 | 704 | 0.5− | 0.3− | | |
| 2000 08 21 | 699 | 0.3− | 0.4+ | 2006 09 19 | 699 | 0.4− | 0.5− | 2006 10 03 | 704 | 0.8+ | 0.1+ | | |
| 2000 08 21 | 699 | 0.5− | 0.1+ | 2006 09 20 | 106 | 0.1+ | 0.7− | 2006 10 17 | 703 | (2.2− | 0.1+) | | |
| 2000 08 21 | 699 | 0.2+ | 0.4+ | 2006 09 20 | 106 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.7− | 0.8+ | | |
| 2000 08 21 | 699 | 0.1− | 0.1− | 2006 09 20 | 106 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.9+ | 0.7− | | |
| 2006 08 22 | 807 | 0.1− | 0.2+ | 2006 09 20 | 106 | 0.6+ | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.6− | | |
| 2006 08 23 | 807 | 0.1+ | 0.3+ | 2006 09 21 | 106 | 0.2+ | 0.7− | 2006 10 23 | 644 | 0.2− | 0.1+ | | |
| 2006 08 23 | 807 | 0.2+ | 0.2+ | 2006 09 21 | 106 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2006 08 29 | 699 | 0.1− | 0.5− | 2006 09 21 | 106 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.0 | 0.6+ | | |
| 2006 08 29 | 699 | 0.5+ | 0.6− | 2006 09 27 | 699 | 0.9+ | 0.0 | 2006 10 23 | 703 | 0.1− | 0.4− | | |
| 2006 08 29 | 699 | (2.4+ | 0.7−) | 2006 09 27 | 699 | 1.3+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.1− | | |
| 2006 08 29 | 699 | 0.2− | 0.3− | 2006 09 27 | 699 | 0.3− | 0.9+ | 2006 10 23 | 703 | 0.2− | 0.7+ | | |
| 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 27 | 703 | 0.6− | 0.3− | 2006 10 23 | 703 | (2.0− | 0.5+) | | |
| 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.1+ | 0.6+ | | | | | | |

**2006 SD$_{58}$ = 2005 JU$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.17009 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18399828 | $\omega$ | 189.36015 | | +0.92894048 | | +0.34914085 |
| $a$ | 3.0614479 | $\Omega$ | 149.29278 | | −0.32216233 | | +0.92622166 |
| $e$ | 0.3375651 | $i$ | 13.95720 | | −0.18243084 | | +0.14217631 |
| $P$ | 5.36 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | 699 | 0.1+ | 0.1− | 2006 09 22 | 703 | 0.1− | 0.4+ | 2006 10 20 | 703 | 0.2− | 0.2− |
| 2005 05 13 | 699 | (3.0+ | 0.3+) | 2006 09 26 | 703 | (0.6− | 1.5−) | 2006 10 20 | 703 | 0.9− | 0.3− |
| 2005 05 13 | 699 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.2+ | 0.0 | 2006 10 20 | 703 | 0.3− | 0.8− |
| 2005 05 13 | 699 | 0.9+ | 0.1+ | 2006 09 26 | 703 | 0.6+ | 0.6+ | 2006 10 20 | 703 | 0.4− | 0.1− |
| 2005 05 20 | 644 | 0.7− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 10 20 | 703 | 0.6− | 0.9− |
| 2005 05 20 | 644 | 0.5− | 0.1+ | 2006 09 29 | 699 | 0.7− | 0.1− | 2006 10 20 | 703 | 0.2+ | 0.3− |
| 2005 05 20 | 644 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.6− | 0.1+ | 2006 10 20 | 703 | 0.6− | 0.6− |
| 2005 06 25 | 644 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.6− | 0.1+ | 2006 10 20 | 703 | 0.1+ | 0.1− |
| 2005 06 25 | 644 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.4− | 0.7+ | 2006 10 31 | 703 | 1.1+ | 0.0 |
| 2005 06 25 | 644 | 0.1− | 0.2− | 2006 09 30 | 704 | 0.2− | 0.1+ | 2006 10 31 | 703 | 0.4+ | 0.7+ |
| 2006 09 18 | 703 | 0.8+ | 0.1− | 2006 09 30 | 704 | 0.2− | 0.9+ | 2006 10 31 | 703 | 0.7+ | 0.5+ |
| 2006 09 18 | 703 | 0.7+ | 0.2+ | 2006 09 30 | 704 | 0.6+ | 0.3− | 2006 10 31 | 703 | 0.1+ | 0.1+ |
| 2006 09 18 | 703 | 0.0 | 0.7− | 2006 09 30 | 704 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.4+ |
| 2006 09 18 | 703 | 0.1− | 0.3− | 2006 09 30 | 704 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2006 09 22 | 703 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.1− | 0.7− |
| 2006 09 22 | 703 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.6+ | 0.7+ |
| 2006 09 22 | 703 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.3− | | | | |

**2006 SE$_{58}$ = 1994 GK$_{7}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.07644 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18354969 | $\omega$ | 113.12391 | | +0.67355632 | | +0.73657321 |
| $a$ | 3.0664340 | $\Omega$ | 199.62434 | | −0.72729342 | | +0.64563288 |
| $e$ | 0.1326116 | $i$ | 10.55069 | | −0.13178072 | | +0.20153931 |
| $P$ | 5.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 11 | 691 | 0.4− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.3− | 0.0 |
| 1994 04 11 | 691 | 0.6− | 0.4− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 1994 04 11 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.2− |
| 1994 04 16 | 691 | 0.2− | 0.3+ | 2006 09 22 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1994 04 16 | 691 | 1.0+ | 0.8− | 2006 09 22 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 1994 04 16 | 691 | 0.4+ | 0.9+ | 2006 09 22 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.3− |

**2006 SX$_{58}$ = 2005 GU$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.39671 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21262601 | $\omega$ | 92.23846 | | +0.99241929 | | +0.11030607 |
| $a$ | 2.7800875 | $\Omega$ | 261.43193 | | −0.12272742 | | +0.91273259 |
| $e$ | 0.1549737 | $i$ | 3.14146 | | +0.00647570 | | +0.39338504 |
| $P$ | 4.64 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 695 | 0.3− | 0.0 | 2006 09 22 | 703 | 0.3− | 0.0 | 2006 09 25 | 699 | 1.1− | 0.8+ |
| 2005 04 10 | 695 | 0.3− | 0.0 | 2006 09 22 | 703 | 0.1+ | 0.1− | 2006 10 23 | G96 | (9.2− | 4.0−) |
| 2005 04 11 | 695 | 0.5+ | 0.0 | 2006 09 22 | 703 | 0.4+ | 1.2− | 2006 10 23 | G96 | (8.7− | 4.3−) |
| 2006 09 20 | 703 | 0.1+ | 0.1− | 2006 09 22 | 703 | 0.2− | 0.5− | 2006 10 23 | G96 | (9.4− | 4.4−) |
| 2006 09 20 | 703 | 0.4+ | 0.6+ | 2006 09 25 | 699 | 1.1+ | 1.2+ | 2006 10 23 | G96 | (8.9− | 4.3−) |
| 2006 09 20 | 703 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.5− | | | | |
| 2006 09 20 | 703 | 0.3− | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.2− | | | | |

**2006 SA$_{59}$ = 2003 YN$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.71660 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22823713 | $\omega$ | 304.31672 | | −0.73126562 | | +0.65316994 |
| $a$ | 2.6518270 | $\Omega$ | 277.30849 | | −0.54243861 | | −0.73155865 |
| $e$ | 0.1135848 | $i$ | 11.42754 | | −0.41353469 | | −0.19542510 |
| $P$ | 4.32 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.5− | 0.4− | 2005 07 11 | E12 | 0.0 | 0.1+ | 2006 09 29 | 699 | (1.0− | 1.7−) |
| 2003 12 19 | 704 | (0.5− | 2.5+) | 2005 07 11 | E12 | 0.8− | 0.0 | 2006 09 29 | 699 | (0.3+ | 1.9+) |
| 2003 12 19 | 704 | 0.9− | 1.2+ | 2005 07 11 | E12 | 0.1+ | 0.2− | 2006 09 29 | 699 | 0.2+ | 0.5+ |
| 2003 12 19 | 704 | (2.4− | 2.1+) | 2005 07 11 | E12 | 0.4+ | 0.2+ | 2006 10 03 | 703 | 0.1+ | 1.2+ |
| 2003 12 19 | 704 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 10 03 | 703 | 0.1− | 0.6− |
| 2003 12 23 | 704 | 0.7+ | 0.3+ | 2006 09 16 | 703 | 0.8− | 0.8− | 2006 10 03 | 703 | 0.8− | 0.7+ |
| 2003 12 23 | 704 | 0.2+ | 0.7− | 2006 09 16 | 703 | 0.6− | 0.8− | 2006 10 03 | 703 | 1.2+ | 0.9− |
| 2003 12 23 | 704 | 0.5− | 0.1− | 2006 09 16 | 703 | 0.6− | 0.3+ | 2006 10 26 | 703 | 0.2− | 0.8+ |
| 2003 12 23 | 704 | 0.9+ | 0.0 | 2006 09 21 | 699 | 0.8+ | 0.3− | 2006 10 26 | 703 | 1.7+ | 0.2− |
| 2005 05 18 | E12 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 0.5− | 0.1+ | 2006 10 26 | 703 | 0.9− | 0.1− |
| 2005 05 18 | E12 | 0.2+ | 0.1+ | 2006 09 21 | 699 | 0.8+ | 0.4+ | 2006 10 26 | 703 | 0.6− | 0.8− |
| 2005 05 18 | E12 | 0.2− | 0.2− | 2006 09 21 | 699 | 0.6+ | 0.3+ | | | | |
| 2005 05 18 | E12 | 0.2− | 0.2− | 2006 09 29 | 699 | (1.8+ | 1.6−) | | | | |

**2006 SM$_{59}$ = 2000 EC$_{74}$ = 2001 OG$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.18981 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22758061 | $\omega$ | 163.94716 | | +0.88531894 | | +0.46237896 |
| $a$ | 2.6569245 | $\Omega$ | 168.14107 | | −0.44858618 | | +0.87713757 |
| $e$ | 0.2408972 | $i$ | 13.83859 | | −0.12239618 | | +0.12975124 |
| $P$ | 4.33 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 691 | 0.8+ | 0.2+ | 2006 09 16 | 699 | 0.5− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 03 03 | 691 | 0.2+ | 0.4− | 2006 09 16 | 699 | 0.9+ | 1.2− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2000 03 03 | 691 | 0.1+ | 0.5− | 2006 09 16 | 699 | (2.0+ | 0.0 ) | 2006 10 16 | 703 | 0.5− | 0.9− |
| 2000 03 10 | 691 | 0.2− | 0.1+ | 2006 09 16 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.9− |
| 2000 03 10 | 691 | 0.5− | 0.1− | 2006 09 16 | 699 | 1.0− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.3− |
| 2000 03 10 | 691 | 0.1− | 0.2− | 2006 09 16 | 699 | 0.6− | 0.3− | 2006 10 16 | 703 | 0.6− | 0.1− |
| 2000 03 12 | 691 | 0.1− | 0.2+ | 2006 09 21 | 699 | 1.4+ | 0.7− | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2000 03 12 | 691 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 0.1+ | 0.8− |
| 2000 03 12 | 691 | 0.1− | 0.6+ | 2006 09 21 | 699 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.1− | 0.4− |
| 2001 07 17 | 644 | 0.3− | 0.1− | 2006 09 21 | 699 | 0.5+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.3− |
| 2001 07 17 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2001 07 17 | 644 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2001 07 24 | 644 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 07 24 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.3− | 0.7+ |
| 2001 07 24 | 644 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 28 | 703 | 0.9− | 0.4+ |
| 2006 09 16 | 699 | 0.1+ | 0.9+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.2+ | 0.3+ |
| 2006 09 16 | 699 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.4− | 1.1+ |

**2006 SQ$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.61370 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18333070 | $\omega$ | 106.71831 | | +0.60310800 | | −0.77086254 |
| $a$ | 3.0688753 | $\Omega$ | 304.38733 | | +0.60387841 | | +0.60917519 |
| $e$ | 0.2025742 | $i$ | 14.38479 | | +0.52114452 | | +0.18621633 |
| $P$ | 5.38 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 704 | 0.1− | 1.0− | 2002 01 23 | 704 | 0.4− | 0.2− | 2006 09 06 | 644 | 0.0 | 0.3+ |
| 2001 09 28 | 704 | 0.2− | 0.1− | 2002 01 23 | 704 | (1.7− | 0.2+) | 2006 09 16 | 703 | 0.2− | 0.1− |
| 2001 09 28 | 704 | (2.5+ | 2.3−) | 2002 01 23 | 704 | 0.9− | 0.8− | 2006 09 16 | 703 | 0.1− | 0.2+ |
| 2001 09 28 | 704 | 0.5− | 0.1+ | 2002 01 23 | 704 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.0 | 0.1+ |
| 2001 09 28 | 704 | 0.9+ | 0.3− | 2002 01 23 | 704 | 0.9− | 0.3− | 2006 09 16 | 703 | 0.2+ | 0.5− |
| 2001 10 25 | 704 | 0.8− | 1.0+ | 2002 02 08 | 704 | 0.4+ | 0.2− | 2006 09 21 | 699 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.2+ | 0.1+ | 2002 02 08 | 704 | 0.1− | 0.2− | 2006 09 21 | 699 | 0.1− | 0.3− | 2003 12 19 | 704 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.1+ | 2006 11 15 | 683 | 0.7− | 0.1− |
| 2001 10 25 | 704 | 0.6− | 0.0 | 2002 02 08 | 704 | 0.1− | 0.0 | 2006 09 21 | 699 | 0.1− | 0.4− | 2003 12 19 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.5− | 1.0+ |
| 2001 10 25 | 704 | 0.1− | 0.0 | 2002 02 08 | 704 | 0.4+ | 0.3+ | 2006 09 21 | 699 | 1.2+ | 1.3− | 2003 12 21 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 2001 12 09 | 704 | 0.2− | 0.3+ | 2002 02 08 | 704 | 1.0+ | 0.5+ | 2006 09 28 | 703 | 0.2− | 0.3+ | 2003 12 21 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.3+ | 1.0+ | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2001 12 09 | 704 | 0.3+ | 0.4+ | 2003 01 03 | 291 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.2− | 0.2− | 2003 12 21 | 704 | 0.2− | 0.5+ | 2006 09 30 | 704 | 1.2− | 0.3− | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2001 12 09 | 704 | 0.2+ | 0.1− | 2003 01 03 | 291 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.4+ | 0.3+ | 2006 07 24 | 704 | 0.8− | 0.8+ | 2006 09 30 | 704 | 0.6+ | 0.5− | 2006 11 19 | 704 | 0.2+ | 0.4− |
| 2001 12 09 | 704 | 0.8+ | 0.3+ | 2003 01 03 | 291 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.1− | 0.3− | 2006 07 24 | 704 | 0.2− | 0.8+ | 2006 09 30 | 704 | 0.1− | 0.1− | 2006 11 22 | 704 | (0.3− | 1.7+) |
| 2001 12 09 | 704 | 0.4+ | 0.2+ | 2003 03 08 | 699 | 0.3+ | 0.5− | 2006 10 20 | 703 | 0.5− | 0.2− | 2006 07 24 | 704 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.6+ |
| 2001 12 22 | 704 | (0.8− | 1.8−) | 2003 03 08 | 699 | 0.7− | 1.0+ | 2006 10 20 | 703 | 0.5− | 0.4+ | 2006 07 24 | 704 | 0.4+ | 1.2+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.9− | 1.1+ |
| 2001 12 22 | 704 | (1.1− | 1.8−) | 2003 03 08 | 699 | 0.3+ | 0.4− | 2006 10 20 | 703 | 0.6− | 0.4+ | 2006 08 24 | 704 | 0.5− | 0.9− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 28 | 704 | 1.1+ | 0.6+ |
| 2001 12 22 | 704 | 0.1− | 1.4− | 2003 03 08 | 699 | 0.6+ | 1.1+ | 2006 10 20 | 703 | 0.2− | 0.3+ | 2006 08 24 | 704 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.7+ | 0.1+ |
| 2001 12 22 | 704 | (0.1− | 1.7−) | 2006 08 29 | 699 | 0.9+ | 1.3+ | 2006 11 25 | 703 | 1.0− | 1.3− | 2006 08 24 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.9+ | 0.2− |
| 2002 01 07 | 704 | 0.1− | 0.0 | 2006 08 29 | 699 | 0.3+ | 0.9+ | 2006 11 25 | 703 | 0.9− | 0.5+ | 2006 08 24 | 704 | 0.4− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.6− |
| 2002 01 07 | 704 | 0.8+ | 0.3+ | 2006 08 29 | 699 | 0.5+ | 0.7+ | 2006 11 25 | 703 | 1.3− | 0.5− | 2006 08 24 | 704 | 0.8+ | 0.1− | 2006 10 17 | 703 | 0.8− | 0.8− | 2006 11 28 | 704 | 0.2+ | 0.5− |
| 2002 01 07 | 704 | 0.1− | 0.3+ | 2006 08 29 | 699 | 0.5+ | 0.4+ | 2006 11 25 | 703 | 0.9+ | 0.3+ | 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 10 17 | 703 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2002 01 07 | 704 | 0.1− | 0.2− | 2006 09 06 | 644 | 0.2− | 0.3+ | | | | | 2006 09 17 | 703 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.9+ | 2006 11 28 | 704 | 0.4+ | 0.0 |
| 2002 01 07 | 704 | 0.3+ | 0.5− | 2006 09 06 | 644 | 0.1− | 0.4+ | | | | | 2006 09 17 | 703 | 0.2− | 0.0 | 2006 10 24 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.4+ | 0.0 |
| | | | | | | | | | | | | 2006 09 17 | 703 | 0.2− | 0.1− | 2006 10 24 | 644 | 0.1− | 0.0 | | | | |

**2006 SR$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.29257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22978798 | $\omega$ | 137.63286 | | +0.51383183 | −0.84765423 | |
| $a$ | 2.6398820 | $\Omega$ | 281.04475 | | +0.74659891 | +0.51770400 | |
| $e$ | 0.1560602 | $i$ | 7.73703 | | +0.42257179 | +0.11603823 | |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.0 | 0.3+ | 2002 12 05 | 704 | 0.1+ | 0.5− | 2006 09 27 | 703 | 0.1+ | 0.7− | 2003 11 26 | 704 | 0.1+ | 0.6+ | 2006 08 25 | 704 | 0.8+ | 0.8− | 2006 10 10 | A24 | 0.4+ | 0.2− |
| 2002 10 05 | 704 | 0.0 | 0.7− | 2002 12 05 | 704 | 0.9+ | 0.2+ | 2006 09 27 | 703 | 0.1+ | 0.1− | 2003 11 26 | 704 | 0.4− | 0.5+ | 2006 08 25 | 704 | 1.1− | 1.0− | 2006 10 10 | A24 | 0.3+ | 0.1− |
| 2002 10 05 | 704 | 0.1+ | 0.5+ | 2002 12 05 | 704 | 0.0 | 0.3− | 2006 09 29 | 699 | 0.5− | 1.2− | 2003 11 26 | 704 | 0.8+ | 0.1− | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2002 10 05 | 704 | 0.8− | 0.4+ | 2002 12 11 | 644 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.8+ | 0.9− | 2003 11 26 | 704 | 0.8+ | 0.3− | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.7− |
| 2002 11 06 | 704 | (0.0 | 2.0+) | 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.4− | 1.3+ | 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 09 21 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.6+ | 0.5− |
| 2002 11 06 | 704 | (0.2− | 1.9+) | 2002 12 11 | 644 | 0.6− | 0.3+ | 2006 09 29 | 699 | 0.3− | 0.6+ | 2003 12 25 | 691 | 0.3− | 0.1− | 2006 09 21 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.9− |
| 2002 11 06 | 704 | 0.2+ | 1.3+ | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.3− | 0.7− | 2003 12 25 | 691 | 0.2− | 0.1− | 2006 09 21 | 704 | 0.2− | 0.7+ | 2006 10 21 | 704 | 0.0 | 1.1+ |
| 2002 11 06 | 704 | (0.1− | 1.9+) | 2006 09 17 | 703 | 0.1− | 0.5− | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 08 06 | 699 | 0.2− | 0.5− | 2006 09 28 | 703 | (1.0+ | 1.7−) | 2006 10 21 | 704 | 1.0+ | 1.0− |
| 2002 11 14 | 644 | 0.3− | 0.0 | 2006 09 17 | 703 | 0.5− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 08 06 | 699 | 0.5− | 0.5− | 2006 09 28 | 703 | 0.1− | 0.3− | 2006 10 21 | 704 | 0.0 | 0.7− |
| 2002 11 14 | 704 | 0.9+ | 0.4− | 2006 09 21 | 699 | 0.5+ | 1.0+ | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 08 06 | 699 | 0.8− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.3+ | 2006 10 21 | 704 | 0.1− | 0.4+ |
| 2002 11 14 | 644 | 0.1− | 0.0 | 2006 09 21 | 699 | 0.6+ | 0.9+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 08 06 | 699 | 1.1+ | 0.7+ | 2006 09 28 | 703 | 1.1− | 0.2− | 2006 10 21 | 704 | 0.6− | 0.1− |
| 2002 11 14 | 644 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 1.0+ | 0.9− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 08 20 | 644 | 0.4− | 0.4+ | 2006 09 30 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.5− | 0.5+ |
| 2002 11 14 | 704 | 0.7+ | 0.2− | 2006 09 21 | 699 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 08 20 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.8+ | 0.0 | 2006 10 27 | 703 | 0.6− | 0.2+ |
| 2002 11 14 | 704 | (1.9+ | 0.7−) | 2006 09 22 | 703 | 1.1− | 0.3− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 08 20 | 644 | 0.0 | 0.4+ | 2006 09 30 | 704 | 1.2+ | 0.8+ | 2006 10 27 | 703 | 0.3− | 0.7+ |
| 2002 11 14 | 704 | 0.5+ | 0.8− | 2006 09 22 | 703 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 08 25 | 704 | (1.1+ | 1.8−) | 2006 10 10 | A24 | 0.5− | 0.0 | 2006 10 27 | 703 | 1.0− | 0.5− |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 09 22 | 703 | 0.1− | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | | | | | | | | | | | | |
| 2002 11 24 | 644 | 0.4− | 0.1+ | 2006 09 22 | 703 | 0.9− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1− | | | | | | | | | | | | |
| 2002 11 24 | 644 | 0.6− | 0.2+ | 2006 09 27 | 703 | (2.6+ | 1.7−) | 2006 10 20 | 691 | 0.0 | 0.1− | | | | | | | | | | | | |
| 2002 12 05 | 704 | 0.6− | 0.3− | 2006 09 27 | 703 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.0 | | | | | | | | | | | | |

**2006 ST$_{59}$ = 2003 YQ$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.68512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29706272 | $\omega$ | 92.38412 | | +0.90960738 | +0.39777309 | |
| $a$ | 2.2245249 | $\Omega$ | 244.19769 | | −0.41404202 | +0.84396443 | |
| $e$ | 0.2715372 | $i$ | 7.65726 | | −0.03440377 | +0.35986192 | |
| $P$ | 3.32 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 704 | 0.1− | 0.6+ | 2006 09 21 | 704 | 0.7+ | 0.5+ | 2006 10 24 | 644 | 0.2− | 0.1+ | 2002 05 12 | 644 | 0.2+ | 0.4− | 2002 06 11 | 644 | 0.1− | 0.7+ | 2006 09 21 | 699 | 0.5+ | 1.3− |
| 1999 06 15 | 704 | 0.2+ | 0.6+ | 2006 09 21 | 704 | 0.2+ | 1.0+ | 2006 11 14 | 683 | 0.3− | 0.6− | 2002 05 12 | 644 | 0.0 | 0.3− | 2002 06 11 | 644 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.8+ | 0.1+ |
| 1999 06 15 | 704 | 0.0 | 0.1+ | 2006 09 21 | 704 | 0.1+ | 0.1− | 2006 11 14 | 683 | 0.1+ | 0.3− | 2002 05 12 | 644 | 0.4+ | 0.0 | 2002 06 11 | 644 | 0.1− | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.7− |
| 1999 06 15 | 704 | 0.1+ | 0.1− | 2006 09 21 | 704 | 0.3+ | 0.7− | 2006 11 14 | 683 | 0.5− | 0.6− | 2002 05 23 | 644 | 0.0 | 0.0 | 2003 12 19 | 291 | 0.2− | 0.1+ | 2006 09 21 | 699 | (3.3− | 2.1+) |
| 1999 06 15 | 704 | 0.3− | 0.4+ | 2006 09 22 | 699 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.2+ | 2002 05 23 | 644 | 0.5+ | 0.3+ | 2003 12 19 | 291 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.1+ | 1.3+ |
| 2002 05 17 | 644 | 0.3+ | 0.4+ | 2006 09 22 | 699 | 0.8+ | 0.2− | 2006 11 14 | 703 | 0.6− | 0.2+ | 2002 05 23 | 644 | 0.6+ | 0.2+ | 2003 12 19 | 291 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 1.0+ |
| 2002 05 17 | 644 | 0.1− | 0.5+ | 2006 09 22 | 699 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.2+ | 2002 06 02 | 644 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.7− |
| 2002 05 17 | 644 | 0.5+ | 0.6+ | 2006 09 22 | 699 | 0.3+ | 0.8− | 2006 11 14 | 703 | 0.0 | 0.7− | 2002 06 02 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.9− | 0.4+ |
| 2003 12 19 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.2+ | 0.0 | 2006 11 15 | 683 | 0.7− | 0.6+ | 2002 06 02 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | | | | |
| 2003 12 19 | 704 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.1− | 2006 11 15 | 683 | 0.9+ | 0.3− | | | | | | | | | | | | |

**2006 SU$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.61053 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30573811 | $\omega$ | 5.63271 | | +0.84398293 | +0.52927987 | |
| $a$ | 2.1822425 | $\Omega$ | 321.99513 | | −0.49745730 | +0.71180581 | |
| $e$ | 0.2856509 | $i$ | 8.11563 | | −0.20057181 | +0.46173078 | |
| $P$ | 3.22 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 26 | 704 | 0.1+ | 0.6+ | 2006 08 25 | 704 | 0.8+ | 0.8− | 2006 10 10 | A24 | 0.4+ | 0.2− | 2002 05 12 | 644 | 0.2+ | 0.4− | 2002 06 11 | 644 | 0.1− | 0.7+ | 2006 09 21 | 699 | 0.5+ | 1.3− |
| 2003 11 26 | 704 | 0.4− | 0.5+ | 2006 08 25 | 704 | 1.1− | 1.0− | 2006 10 10 | A24 | 0.3+ | 0.1− | 2002 05 12 | 644 | 0.0 | 0.3− | 2002 06 11 | 644 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.8+ | 0.1+ |
| 2003 11 26 | 704 | 0.8+ | 0.1− | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.1− | 0.4− | 2002 05 12 | 644 | 0.4+ | 0.0 | 2002 06 11 | 644 | 0.1− | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.7− |
| 2003 11 26 | 704 | 0.8+ | 0.3− | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.7− | 2002 05 23 | 644 | 0.0 | 0.0 | 2003 12 19 | 291 | 0.2− | 0.1+ | 2006 09 21 | 699 | (3.3− | 2.1+) |
| 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 09 21 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.6+ | 0.5− | 2002 05 23 | 644 | 0.5+ | 0.3+ | 2003 12 19 | 291 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.1+ | 1.3+ |
| 2003 12 25 | 691 | 0.3− | 0.1− | 2006 09 21 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.9− | 2002 05 23 | 644 | 0.6+ | 0.2+ | 2003 12 19 | 291 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 1.0+ |
| 2003 12 25 | 691 | 0.2− | 0.1− | 2006 09 21 | 704 | 0.2− | 0.7+ | 2006 10 21 | 704 | 0.0 | 1.1+ | 2002 06 02 | 644 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.7− |
| 2006 08 06 | 699 | 0.2− | 0.5− | 2006 09 28 | 703 | (1.0+ | 1.7−) | 2006 10 21 | 704 | 1.0+ | 1.0− | 2002 06 02 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.9− | 0.4+ |
| 2006 08 06 | 699 | 0.5− | 0.5− | 2006 09 28 | 703 | 0.1− | 0.3− | 2006 10 21 | 704 | 0.0 | 0.7− | 2002 06 02 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | | | | |
| 2006 08 06 | 699 | 0.8− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.3+ | 2006 10 21 | 704 | 0.1− | 0.4+ | | | | | | | | | | | | |
| 2006 08 06 | 699 | 1.1+ | 0.7+ | 2006 09 28 | 703 | 1.1− | 0.2− | 2006 10 21 | 704 | 0.6− | 0.1− | | | | | | | | | | | | |
| 2006 08 20 | 644 | 0.4− | 0.4+ | 2006 09 30 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.5− | 0.5+ | | | | | | | | | | | | |
| 2006 08 20 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.8+ | 0.0 | 2006 10 27 | 703 | 0.6− | 0.2+ | | | | | | | | | | | | |
| 2006 08 20 | 644 | 0.0 | 0.4+ | 2006 09 30 | 704 | 1.2+ | 0.8+ | 2006 10 27 | 703 | 0.3− | 0.7+ | | | | | | | | | | | | |
| 2006 08 25 | 704 | (1.1+ | 1.8−) | 2006 10 10 | A24 | 0.5− | 0.0 | 2006 10 27 | 703 | 1.0− | 0.5− | | | | | | | | | | | | |

**2006 SW$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.18131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27351731 | $\omega$ | 225.03862 | | +0.66547659 | +0.73390098 | |
| $a$ | 2.3504238 | $\Omega$ | 87.18850 | | −0.64072582 | +0.65521848 | |
| $e$ | 0.2312736 | $i$ | 7.83322 | | −0.38289858 | +0.17910362 | |
| $P$ | 3.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 12 | 644 | 0.2+ | 0.4− | 2002 06 11 | 644 | 0.1− | 0.7+ | 2006 09 21 | 699 | 0.5+ | 1.3− | 2003 11 26 | 704 | 0.1+ | 0.6+ | 2006 08 25 | 704 | 0.8+ | 0.8− | 2006 10 10 | A24 | 0.4+ | 0.2− |
| 2002 05 12 | 644 | 0.0 | 0.3− | 2002 06 11 | 644 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.8+ | 0.1+ | 2003 11 26 | 704 | 0.4− | 0.5+ | 2006 08 25 | 704 | 1.1− | 1.0− | 2006 10 10 | A24 | 0.3+ | 0.1− |
| 2002 05 12 | 644 | 0.4+ | 0.0 | 2002 06 11 | 644 | 0.1− | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.7− | 2003 11 26 | 704 | 0.8+ | 0.1− | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.1− | 0.4− |
| 2002 05 23 | 644 | 0.0 | 0.0 | 2003 12 19 | 291 | 0.2− | 0.1+ | 2006 09 21 | 699 | (3.3− | 2.1+) | 2003 11 26 | 704 | 0.8+ | 0.3− | 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.7− |
| 2002 05 23 | 644 | 0.5+ | 0.3+ | 2003 12 19 | 291 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.1+ | 1.3+ | 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 09 21 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 703 | 0.6+ | 0.5− |
| 2002 05 23 | 644 | 0.6+ | 0.2+ | 2003 12 19 | 291 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.1+ | 1.0+ | 2003 12 25 | 691 | 0.3− | 0.1− | 2006 09 21 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.9− |
| 2002 06 02 | 644 | 0.4− | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.4− | 0.7− | 2003 12 25 | 691 | 0.2− | 0.1− | 2006 09 21 | 704 | 0.2− | 0.7+ | 2006 10 21 | 704 | 0.0 | 1.1+ |
| 2002 06 02 | 644 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.9− | 0.4+ | 2006 08 06 | 699 | 0.2− | 0.5− | 2006 09 28 | 703 | (1.0+ | 1.7−) | 2006 10 21 | 704 | 1.0+ | 1.0− |
| 2002 06 02 | 644 | 0.3− | 0.3+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | | | | | 2006 08 06 | 699 | 0.5− | 0.5− | 2006 09 28 | 703 | 0.1− | 0.3− | 2006 10 21 | 704 | 0.0 | 0.7− |
| | | | | | | | | | | | | 2006 08 06 | 699 | 0.8− | 0.4+ | 2006 09 28 | 703 | 0.4− | 0.3+ | 2006 10 21 | 704 | 0.1− | 0.4+ |
| | | | | | | | | | | | | 2006 08 06 | 699 | 1.1+ | 0.7+ | 2006 09 28 | 703 | 1.1− | 0.2− | 2006 10 21 | 704 | 0.6− | 0.1− |
| | | | | | | | | | | | | 2006 08 20 | 644 | 0.4− | 0.4+ | 2006 09 30 | 704 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.5− | 0.5+ |
| | | | | | | | | | | | | 2006 08 20 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 704 | 0.8+ | 0.0 | 2006 10 27 | 703 | 0.6− | 0.2+ |
| | | | | | | | | | | | | 2006 08 20 | 644 | 0.0 | 0.4+ | 2006 09 30 | 704 | 1.2+ | 0.8+ | 2006 10 27 | 703 | 0.3− | 0.7+ |
| | | | | | | | | | | | | 2006 08 25 | 704 | (1.1+ | 1.8−) | 2006 10 10 | A24 | 0.5− | 0.0 | 2006 10 27 | 703 | 1.0− | 0.5− |

**2006 SX$_{59}$ = 2004 FB$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.13792 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18438719 | $\omega$ | 144.18895 | | +0.73376679 | | +0.67892534 |
| $a$ | 3.0571416 | $\Omega$ | 172.88413 | | −0.66129873 | | +0.72229788 |
| $e$ | 0.1017289 | $i$ | 11.84624 | | −0.15578927 | | +0.13170479 |
| $P$ | 5.35 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2004 03 26 | 691 | 0.1− | 0.1− | 2006 09 21 | 699 | (3.4− | 1.0−) | 2006 10 16 | 703 | 0.3− | 0.9+ |
| 2004 03 26 | 691 | 0.1+ | 0.1− | 2006 09 21 | 699 | (0.6+ | 1.7+) | 2006 10 16 | 703 | 0.1− | 1.3+ |
| 2004 03 28 | 704 | 0.0 | 0.0 | 2006 09 21 | 699 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.0 |
| 2004 03 28 | 704 | 0.3− | 0.1− | 2006 09 21 | 699 | 0.6+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2004 03 28 | 704 | 1.4+ | 1.0+ | 2006 09 30 | 703 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 03 28 | 704 | 1.2− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 06 | 644 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.7− | 2006 10 22 | 703 | 1.3− | 0.8− |
| 2006 09 06 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 1.2+ | 0.7− | 2006 10 22 | 703 | 0.3+ | 0.2− |
| 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.8+ | 0.4− |
| 2006 09 18 | 703 | (0.9+ | 1.8+) | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2006 09 18 | 703 | 0.9− | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.1− | | | | |
| 2006 09 18 | 703 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.0 | | | | |

**2006 SG$_{60}$ = 1999 RF$_{217}$ = 2005 GX$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.83759 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29234401 | $\omega$ | 232.48387 | | +0.90052309 | | −0.43107938 |
| $a$ | 2.2483983 | $\Omega$ | 152.91464 | | +0.42782808 | | +0.85514593 |
| $e$ | 0.1233553 | $i$ | 7.16900 | | +0.07759708 | | +0.28791667 |
| $P$ | 3.37 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 691 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.9− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.5+ |
| 1999 09 13 | 691 | 0.2− | 0.3+ | 2006 09 18 | 703 | 1.1− | 0.9− | 2006 09 30 | 704 | 0.2− | 0.9+ |
| 1999 09 13 | 691 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 09 30 | 703 | 0.1− | 0.1+ |
| 1999 09 19 | 691 | 0.2− | 0.8+ | 2006 09 21 | 699 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.5+ | 0.1− |
| 1999 09 19 | 691 | 0.1+ | 0.3+ | 2006 09 21 | 699 | 0.4+ | 1.3+ | 2006 09 30 | 703 | 0.8+ | 0.5− |
| 1999 09 19 | 691 | 0.2+ | 0.4+ | 2006 09 21 | 699 | 0.5− | 0.1− | 2006 09 30 | 704 | 1.2+ | 1.1+ |
| 2001 02 03 | 691 | 0.4+ | 0.7+ | 2006 09 21 | 699 | 0.0 | 0.8+ | 2006 10 16 | 703 | (0.0 | 2.1−) |
| 2001 02 03 | 691 | 0.2− | 0.7+ | 2006 09 25 | 699 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.2+ | 1.2− |
| 2001 02 03 | 691 | 0.3+ | 0.8+ | 2006 09 25 | 699 | 0.1+ | 0.9− | 2006 10 16 | 703 | 0.7− | 1.1− |
| 2005 04 10 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 1.0− | 0.4+ |
| 2005 04 10 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.9+ | 0.9− |
| 2005 04 10 | 691 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.8+ | 0.0 | 2006 10 28 | 703 | 0.1− | 1.1+ |
| 2005 04 15 | 691 | 1.0− | 0.3+ | 2006 09 29 | 699 | (0.9− | 1.6+) | 2006 10 28 | 703 | 0.7− | 1.0+ |
| 2005 04 15 | 691 | 0.4+ | 0.0 | 2006 09 29 | 699 | 0.7+ | 0.7+ | 2006 10 28 | 703 | 0.3− | 0.3+ |
| 2005 04 15 | 691 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.3+ | | | | |
| 2006 09 18 | 703 | (1.9− | 2.3−) | 2006 09 30 | 703 | 0.5− | 0.0 | | | | |

**2006 SL$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.85423 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26427861 | $\omega$ | 250.34180 | | +0.89747172 | | −0.43679753 |
| $a$ | 2.4048871 | $\Omega$ | 135.50048 | | +0.43030645 | | +0.83658420 |
| $e$ | 0.1874789 | $i$ | 5.01389 | | +0.09685487 | | +0.33065812 |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 29 | 691 | 0.2+ | 0.8− | 2006 09 21 | 699 | 0.6+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.5+ |
| 1991 09 29 | 691 | 0.4+ | 1.0− | 2006 09 26 | 704 | 0.9+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 1991 09 29 | 691 | 0.6+ | 1.7− | 2006 09 26 | 704 | 0.6+ | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2002 08 18 | 644 | 0.1− | 0.5+ | 2006 09 26 | 704 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.3+ |
| 2002 08 18 | 644 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 1.5− | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 09 29 | 699 | 1.1− | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2002 08 29 | 291 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.2+ |
| 2002 08 29 | 291 | 0.2− | 0.5+ | 2006 09 29 | 699 | 0.9− | 0.8+ | 2006 10 16 | 703 | 0.1− | 0.7+ |
| 2002 08 29 | 291 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.5− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 02 13 | 691 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2004 02 13 | 691 | 0.2− | 0.5+ | 2006 09 30 | 703 | 1.0− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 09 14 | 291 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.7− | 1.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 09 14 | 291 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 1.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 14 | 291 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.6− |
| 2006 09 18 | 703 | 0.1+ | 1.0+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 22 | 703 | (1.5− | 0.4−) |
| 2006 09 18 | 703 | 1.4− | 0.5− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.5− | 0.6+ |
| 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.1+ |
| 2006 09 18 | 703 | 0.4+ | 0.8− | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.4− | 0.4+ |
| 2006 09 21 | 699 | 0.2+ | 0.6− | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.5− | 0.3+ |
| 2006 09 21 | 699 | (2.4+ | 0.5+) | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.4+ |
| 2006 09 21 | 699 | 1.1− | 0.7+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | | | | |

**2006 SM$_{60}$ = 2002 XQ$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.38090 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21739882 | $\omega$ | 296.52277 | | +0.88940992 | | −0.44134564 |
| $a$ | 2.7392474 | $\Omega$ | 89.86982 | | +0.45021022 | | +0.80070544 |
| $e$ | 0.0822502 | $i$ | 6.83514 | | +0.07912489 | | +0.40507385 |
| $P$ | 4.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5− | 0.8+ | 2006 09 21 | 699 | (2.3+ | 0.9+) | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2002 12 05 | 704 | 0.3+ | 0.1+ | 2006 09 21 | 699 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 0.4+ | 0.3− | 2006 09 21 | 699 | (2.4+ | 1.2+) | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2002 12 11 | 704 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.9+ | 0.9− |
| 2002 12 11 | 704 | 0.1+ | 1.0− | 2006 09 25 | 699 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.8− |
| 2002 12 11 | 704 | (1.9+ | 0.2+) | 2006 09 25 | 699 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2002 12 11 | 704 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.3+ | 0.1+ |
| 2006 09 18 | 703 | 1.3− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 10 28 | 703 | 0.7− | 0.1− |
| 2006 09 18 | 703 | 0.5+ | 0.5− | 2006 10 16 | 703 | 0.8− | 0.2− | 2006 10 28 | 703 | 0.1− | 0.3− |
| 2006 09 18 | 703 | 0.8+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.9+ | 2006 10 28 | 703 | (0.6− | 1.7−) |
| 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.5+ |
| 2006 09 21 | 699 | 0.2− | 0.8+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | | | |

**2006 ST$_{60}$ = 2001 QC$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.51400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21350875 | $\omega$ | 293.67788 | | +0.53811526 | | −0.83045654 |
| $a$ | 2.7724195 | $\Omega$ | 122.98660 | | +0.82231822 | | +0.47972848 |
| $e$ | 0.1664820 | $i$ | 9.89430 | | +0.18499923 | | +0.28320051 |
| $P$ | 4.62 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 608 | 0.2+ | 0.0 | 2006 09 18 | 703 | 1.2+ | 0.7− | 2006 09 29 | 699 | 0.3+ | 0.8+ |
| 2001 08 24 | 608 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 09 29 | 699 | 1.0+ | 0.6− |
| 2001 08 24 | 608 | 0.4+ | 0.2+ | 2006 09 21 | 699 | 0.3+ | 0.5+ | 2006 10 02 | 703 | 0.3+ | 0.3+ |
| 2001 08 27 | 644 | 0.0 | 0.5+ | 2006 09 21 | 699 | 0.3− | 0.3− | 2006 10 02 | 703 | 0.3− | 0.2+ |
| 2001 08 27 | 644 | 0.3− | 0.6+ | 2006 09 21 | 699 | 1.3− | 1.0− | 2006 10 02 | 703 | 0.5− | 0.4− |
| 2001 08 27 | 644 | 0.5− | 0.2+ | 2006 09 21 | 699 | 1.0+ | 0.7+ | 2006 10 02 | 703 | 1.4+ | 0.2+ |
| 2003 01 07 | 704 | 1.4+ | 0.8+ | 2006 09 25 | 699 | 1.0− | 0.2− | 2006 10 10 | 644 | 0.3− | 0.2− |
| 2003 01 07 | 704 | 0.2− | 0.5− | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.0 |
| 2003 01 07 | 704 | 0.4+ | 0.4− | 2006 09 25 | 699 | 1.0− | 1.2+ | 2006 10 10 | 644 | 0.2− | 0.3− |
| 2003 01 07 | 704 | 0.5+ | 0.3− | 2006 09 25 | 699 | 0.7− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2003 01 31 | 704 | 0.3− | 0.3− | 2006 09 26 | 703 | 0.8− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2003 01 31 | 704 | 0.5− | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2003 01 31 | 704 | 0.0 | 1.2+ | 2006 09 26 | 703 | 1.1− | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.2− |
| 2003 01 31 | 704 | 1.4− | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.6+ | 0.4+ |
| 2006 09 18 | 703 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.6− | 2006 10 21 | 703 | 0.4+ | 0.2+ |
| 2006 09 18 | 703 | 0.5− | 0.3− | 2006 09 29 | 699 | 0.8+ | 0.0 | 2006 10 21 | 703 | 1.1+ | 0.7+ |

**2006 SU$_{60}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.64571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17316465 | $\omega$ | 261.77086 | | +0.86658341 | +0.47929507 | |
| $a$ | 3.1878403 | $\Omega$ | 69.49287 | | −0.37917880 | +0.81344276 | |
| $e$ | 0.2106394 | $i$ | 8.53191 | | −0.32443278 | +0.32952559 | |
| $P$ | 5.69 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 23 | 691 | 0.1− | 1.0+ | 2006 09 25 | 699 | 1.0+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.2− |
| 1999 05 23 | 691 | 0.5− | 0.3− | 2006 09 25 | 699 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 1999 05 23 | 691 | 0.4+ | 1.2− | 2006 09 25 | 699 | 0.8− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 07 03 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 07 03 | 644 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.8− |
| 2005 07 03 | 644 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2006 09 18 | 703 | 0.4+ | 0.1+ | 2006 09 29 | 699 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2006 09 18 | 703 | 0.8+ | 0.3+ | 2006 09 29 | 699 | 0.5+ | 0.5− | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2006 09 18 | 703 | 0.9− | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.4− | 1.4+ |
| 2006 09 18 | 703 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.7− | 0.1− |
| 2006 09 21 | 699 | 0.6+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.5− | 2006 10 28 | 703 | 1.0+ | 0.2− |
| 2006 09 21 | 699 | 0.3− | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.5− | 0.6− |
| 2006 09 21 | 699 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.0 | | | | |
| 2006 09 21 | 699 | 0.8− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.2− | | | | |

**2006 SW$_{60}$ = 2004 FB$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.99174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21690605 | $\omega$ | 353.43851 | | −0.07702722 | −0.99076190 | |
| $a$ | 2.7433946 | $\Omega$ | 100.93741 | | +0.91984571 | −0.11380542 | |
| $e$ | 0.1093201 | $i$ | 6.52743 | | +0.38464358 | +0.07375085 | |
| $P$ | 4.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 27 | 699 | 0.5+ | 0.4− | 2006 09 21 | 699 | 0.0 | 0.9+ | 2006 10 22 | 703 | 0.9+ | 0.8+ |
| 2004 03 27 | 699 | 0.3+ | 0.2− | 2006 09 25 | 699 | (2.3− | 0.6+) | 2006 10 22 | 703 | 0.0 | 0.9+ |
| 2004 03 27 | 699 | (1.7− | 0.3−) | 2006 09 25 | 699 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2004 03 27 | 699 | 0.3− | 0.3+ | 2006 09 25 | 699 | 1.2+ | 1.3+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2004 03 31 | 704 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.3− | 0.4− |
| 2004 03 31 | 704 | 0.9− | 0.3+ | 2006 09 29 | 699 | 0.2+ | 1.1+ | 2006 10 22 | 644 | 0.0 | 0.7− |
| 2004 03 31 | 704 | 0.2+ | 0.0 | 2006 09 29 | 699 | 1.1− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2004 04 14 | 691 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.5+ | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.6− |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.5− | 2006 10 23 | 644 | 0.3+ | 0.6− |
| 2004 04 14 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.4− | 1.1− | 2006 10 28 | 703 | 0.3− | 0.4+ |
| 2006 09 18 | 703 | 0.7+ | 1.2− | 2006 10 16 | 703 | (0.6+ | 1.7−) | 2006 10 28 | 703 | 0.4− | 1.0− |
| 2006 09 18 | 703 | (1.7− | 0.1−) | 2006 10 16 | 703 | 0.5+ | 0.5− | 2006 10 28 | 703 | 0.1− | 0.2− |
| 2006 09 18 | 703 | (2.5− | 0.1+) | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 10 28 | 703 | 0.8− | 0.2+ |
| 2006 09 18 | 703 | 0.9− | 1.3− | 2006 10 21 | 644 | 0.4− | 0.4− | 2006 11 16 | 703 | 0.2+ | 0.5+ |
| 2006 09 21 | 699 | 0.7+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.4+ |
| 2006 09 21 | 699 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.4− | 0.5− | 2006 11 16 | 703 | 0.5+ | 0.4+ |
| 2006 09 21 | 699 | (1.8− | 0.1−) | 2006 10 22 | 703 | 0.1+ | 1.3+ | 2006 11 16 | 703 | 0.4+ | 0.5+ |

**2006 SX$_{60}$ = 2003 YN$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.43168 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29451794 | $\omega$ | 244.19402 | | +0.86515247 | +0.48792531 | |
| $a$ | 2.2373205 | $\Omega$ | 86.40843 | | −0.40841318 | +0.81962618 | |
| $e$ | 0.2093668 | $i$ | 6.67051 | | −0.29104962 | +0.30023627 | |
| $P$ | 3.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 29 | 691 | 0.0 | 0.3− | 2006 09 18 | 703 | 1.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2+ |
| 1992 04 29 | 691 | 0.5− | 0.5− | 2006 09 18 | 703 | 0.1− | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.3− |
| 1992 04 29 | 691 | 0.2− | 1.0− | 2006 09 18 | 703 | 1.0− | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.3− |
| 2002 05 04 | 644 | 0.1+ | 0.7+ | 2006 09 21 | 699 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2002 05 04 | 644 | 0.6+ | 0.6+ | 2006 09 21 | 699 | 1.2− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2002 05 04 | 644 | 0.6+ | 0.7+ | 2006 09 21 | 699 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 05 07 | 644 | 0.1+ | 0.8+ | 2006 09 25 | 699 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 05 07 | 644 | 0.2+ | 0.8+ | 2006 09 25 | 699 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 05 07 | 644 | 0.1+ | 0.9+ | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.0 |
| 2003 12 19 | 291 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2003 12 19 | 291 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 1.0− | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2003 12 19 | 291 | 0.2− | 0.1+ | 2006 09 26 | 703 | (2.5+ | 2.7−) | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 2003 12 19 | 704 | 0.6− | 1.2− | 2006 09 26 | 703 | 0.7+ | 0.0 | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2003 12 19 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.2− |
| 2003 12 19 | 704 | 0.1+ | 0.4− | 2006 09 29 | 699 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2003 12 19 | 704 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2003 12 19 | 704 | 0.3+ | 0.2− | 2006 09 29 | 699 | 0.2+ | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2003 12 19 | 704 | 1.2+ | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2003 12 19 | 704 | 1.1+ | 0.1− | 2006 09 30 | 704 | 0.4− | 0.2− | 2006 10 28 | 703 | 0.6+ | 0.2+ |
| 2003 12 19 | 704 | 0.5− | 1.0− | 2006 09 30 | 704 | 0.2− | 0.3+ | 2006 10 28 | 703 | 1.0+ | 0.6− |
| 2003 12 21 | 704 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.2+ | 0.2− |
| 2003 12 21 | 704 | 0.8− | 0.0 | 2006 09 30 | 704 | 0.6− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.1+ |
| 2003 12 21 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.9− | 0.6− | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2003 12 21 | 704 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 1.0+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.4+ | | | | |

**2006 SY$_{60}$ = 2004 GC$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.63955 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19313352 | $\omega$ | 340.82728 | | +0.59086961 | −0.79030290 | |
| $a$ | 2.9641325 | $\Omega$ | 72.62966 | | +0.76061748 | +0.47869658 | |
| $e$ | 0.0663476 | $i$ | 9.78224 | | +0.26895010 | +0.38245380 | |
| $P$ | 5.10 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 15 | 691 | 0.0 | 0.4+ | 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 699 | 0.4− | 1.1+ |
| 1994 05 15 | 691 | 0.1− | 0.0 | 2004 04 20 | 704 | 1.1+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.2+ |
| 2001 10 20 | 704 | 0.1− | 1.0+ | 2004 04 20 | 704 | 1.1+ | 1.4+ | 2006 09 26 | 703 | 0.4− | 0.4+ |
| 2001 10 20 | 704 | 0.2− | 0.2+ | 2004 04 20 | 704 | 1.1− | 0.4+ | 2006 09 26 | 703 | 0.1− | 0.0 |
| 2001 10 20 | 704 | 0.2+ | 0.5+ | 2004 04 20 | 704 | 0.6+ | 0.8+ | 2006 09 26 | 703 | 0.3+ | 0.3− |
| 2001 10 20 | 704 | 0.2− | 0.6+ | 2004 05 10 | 599 | 0.6+ | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.4− |
| 2001 10 24 | 644 | 0.1− | 0.5+ | 2004 05 10 | 599 | 0.3− | 0.0 | 2006 10 16 | 703 | 1.1+ | 0.7− |
| 2001 10 24 | 644 | 0.4− | 0.3+ | 2004 05 10 | 599 | 0.6+ | 1.1+ | 2006 10 16 | 703 | 0.4+ | 1.3− |
| 2001 10 24 | 644 | 0.6− | 0.3+ | 2004 05 10 | 599 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.1− | 0.5− |
| 2001 11 18 | 704 | 0.2− | 0.1+ | 2006 08 29 | D35 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.0 |
| 2001 11 18 | 704 | 0.6+ | 0.0 | 2006 08 29 | D35 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.2+ |
| 2001 11 18 | 704 | 0.1− | 0.3− | 2006 08 29 | D35 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 1.0− |
| 2001 11 18 | 704 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 1.2− | 0.6+ | 2006 10 22 | 703 | 0.3− | 0.5− |
| 2001 11 18 | 704 | 0.9+ | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.9+ | 2006 10 22 | 703 | 0.5− | 0.2− |
| 2003 01 10 | 704 | 1.0− | 0.2+ | 2006 09 18 | 703 | 0.4+ | 1.4+ | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2003 01 10 | 704 | 0.3+ | 0.5− | 2006 09 18 | 703 | (1.9+ | 0.2+) | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2003 01 10 | 704 | 0.9− | 0.3+ | 2006 09 21 | 699 | 0.8− | 0.7+ | 2006 10 22 | 644 | 0.5− | 0.6+ |
| 2003 01 10 | 644 | 0.8+ | 0.8+ | 2006 09 21 | 699 | 0.7− | 0.8+ | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2003 01 10 | 644 | 0.9+ | 1.0+ | 2006 09 21 | 699 | 0.9− | 1.3+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2003 01 10 | 644 | 0.8+ | 1.0+ | 2006 09 21 | 699 | 0.0 | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 699 | 0.9− | 0.6+ | | | | |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 09 25 | 699 | (0.9+ | 2.5+) | | | | |

**2006 SE$_{61}$ = 1999 XU$_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.37712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26762138 | $\omega$ | 318.36352 | | +0.97695882 | −0.19567626 | |
| $a$ | 2.3848195 | $\Omega$ | 53.11956 | | +0.21288960 | +0.86510251 | |
| $e$ | 0.2455623 | $i$ | 6.11580 | | +0.01514836 | +0.46185328 | |
| $P$ | 3.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 15 | 704 | 0.3− | 0.7+ | 2006 09 22 | 704 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.1− |
| 1999 12 15 | 704 | 0.4+ | 0.8− | 2006 09 22 | 704 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.6+ |
| 1999 12 15 | 704 | 0.1+ | 1.1− | 2006 09 22 | 704 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.4− |
| 2002 06 13 | 644 | 0.0 | 0.3+ | 2006 09 22 | 704 | 1.1− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 13 | 644 | 0.1− | 0.6+ | 2006 09 22 | 704 | 0.9− | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.3− | | |
| 2002 06 13 | 644 | 0.2− | 0.5+ | 2006 09 25 | 699 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 2002 07 21 | 644 | 0.6− | 0.3+ | 2006 09 25 | 699 | 0.3+ | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.3− | | |
| 2002 07 21 | 644 | 0.1− | 0.5+ | 2006 09 25 | 699 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.5+ | 0.3− | | |
| 2002 07 21 | 644 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2002 07 27 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2002 07 27 | 644 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2002 07 27 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 0.4− | 0.5+ | 2006 10 22 | 704 | 0.8− | 0.3+ | | |
| 2004 02 16 | 691 | 0.0 | 0.5+ | 2006 09 26 | 704 | 0.7− | 0.2+ | 2006 10 22 | 704 | 0.3− | 0.6− | | |
| 2004 02 16 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.8− | 0.1+ | 2006 10 22 | 704 | 0.1+ | 0.3− | | |
| 2004 02 16 | 691 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.3+ | 0.6+ | 2006 10 22 | 704 | 0.3− | 0.7− | | |
| 2004 03 17 | 645 | 0.0 | 0.1+ | 2006 09 26 | 704 | (1.6+ | 0.1+) | 2006 10 22 | 704 | 0.1+ | 0.2+ | | |
| 2004 03 17 | 645 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.6+ | 1.4+ | 2006 10 27 | 704 | 0.6− | 0.9+ | | |
| 2004 04 16 | 645 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.0 | 2006 10 27 | 704 | 0.9− | 0.1+ | | |
| 2004 04 16 | 645 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.3+ | 2006 10 27 | 704 | 0.1− | 0.3+ | | |
| 2005 04 06 | G96 | 0.6+ | 0.9− | 2006 09 26 | 703 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 0.6− | 0.1+ | | |
| 2005 04 06 | G96 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.0 | 2006 10 27 | 704 | 0.2− | 0.4+ | | |
| 2005 04 06 | G96 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 1.0+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.4− | | |
| 2005 04 06 | G96 | 0.7+ | 0.7+ | 2006 09 29 | 699 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.4+ | | |
| 2005 05 11 | G96 | 0.0 | 0.1+ | 2006 09 29 | 699 | 1.2+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.7+ | | |
| 2005 05 11 | G96 | 0.0 | 0.5+ | 2006 09 30 | 704 | 0.8− | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.1+ | | |
| 2005 05 11 | G96 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 0.6− | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.7+ | | |
| 2005 05 11 | G96 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.5− | 1.0+ | | |
| 2005 06 12 | G96 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 14 | 704 | 1.2− | 0.7+ | | |
| 2005 06 12 | G96 | 0.3− | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 14 | 704 | 1.3+ | 0.7+ | | |
| 2005 06 12 | G96 | 0.7+ | 0.9+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 14 | 704 | 0.8+ | 0.7+ | | |
| 2005 06 12 | G96 | 0.4+ | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.9+ | 0.3− | | |
| 2006 09 19 | 704 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.6+ | 1.3− | | |
| 2006 09 19 | 704 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 1.1+ | 0.5+ | | |
| 2006 09 19 | 704 | 0.9− | 0.4− | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.1+ | | |
| 2006 09 19 | 704 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 17 | 704 | 0.8− | 0.5+ | | |
| 2006 09 19 | 704 | 1.2− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.3− | 1.1− | | |
| 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.3− | | |
| 2006 09 20 | 644 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 11 20 | 704 | 1.0− | 0.1− | | |
| 2006 09 20 | 644 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.1− | 0.2+ | | |
| 2006 09 21 | 699 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.4− | 0.8+ | | |
| 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.4− | | |
| 2006 09 21 | 699 | (0.2− | 1.7−) | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 11 21 | 704 | 1.1+ | 0.0 | | |
| 2006 09 21 | 699 | 1.1− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.9+ | | |
| 2006 09 21 | 608 | (0.0 | 2.4−) | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.3− | | |
| 2006 09 21 | 608 | (0.2+ | 2.1−) | 2006 10 16 | 703 | 1.1+ | 1.1− | | | | | | |
| 2006 09 21 | 608 | (0.2− | 2.5−) | 2006 10 16 | 703 | 0.4− | 0.0 | | | | | | |

**2006 SJ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 305.08442 | | (2000.0) | | | |
| $n$ | 0.24189669 | $\omega$ | 104.40084 | | −0.10696738 | −0.99374887 |
| $a$ | 2.5510331 | $\Omega$ | 351.54359 | | +0.80782297 | −0.06812732 |
| $e$ | 0.2144558 | $i$ | 12.55059 | | +0.57963785 | −0.08844125 |
| $P$ | 4.07 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 704 | 0.1+ | 0.6− | 2002 11 14 | 644 | 0.3− | 0.5+ | 2006 09 30 | 704 | 0.7− | 0.2+ | | |
| 1998 11 14 | 704 | 0.3− | 0.7− | 2002 11 14 | 644 | 0.3− | 0.4+ | 2006 09 30 | 704 | 0.3+ | 0.3+ | | |
| 1998 11 14 | 704 | 0.6+ | 0.7− | 2002 12 02 | 704 | 0.2+ | 1.4+ | 2006 09 30 | 704 | 0.1+ | 0.8+ | | |
| 1998 11 14 | 704 | 0.4− | 0.6− | 2002 12 02 | 704 | (0.1+ | 1.7+) | 2006 10 19 | 703 | 0.1+ | 0.3− | | |
| 2002 09 07 | 704 | 0.5− | 1.5− | 2002 12 02 | 704 | 0.3+ | 1.1+ | 2006 10 19 | 703 | 0.2− | 0.4− | | |
| 2002 09 07 | 704 | 0.1− | 0.2− | 2004 04 16 | E12 | (0.7+ | 1.8+) | 2006 10 19 | 703 | 0.6− | 0.1− | | |
| 2002 09 07 | 704 | 0.3+ | 0.6+ | 2004 04 16 | E12 | 0.4− | 1.3+ | 2006 10 19 | 703 | 0.6+ | 0.2− | | |
| 2002 10 05 | 704 | 0.9− | 0.1+ | 2004 04 16 | E12 | (0.5+ | 2.3+) | 2006 10 21 | 704 | (0.9− | 1.8+) | | |
| 2002 10 05 | 704 | 0.2− | 0.3− | 2004 04 16 | E12 | 0.1+ | 1.2+ | 2006 10 21 | 704 | 0.1+ | 0.1+ | | |
| 2002 10 05 | 704 | 0.2− | 0.0 | 2004 05 13 | 703 | 0.4+ | 0.2+ | 2006 10 21 | 704 | 0.1+ | 0.9+ | | |
| 2002 10 05 | 704 | 0.2− | 0.2− | 2004 05 13 | 703 | (2.0+ | 1.2+) | 2006 10 21 | 704 | 1.0− | 1.1− | | |
| 2002 10 05 | 704 | 0.3− | 0.6− | 2004 05 13 | 703 | 0.1− | 0.8− | 2006 10 21 | 704 | 0.0 | 0.7− | | |
| 2002 10 10 | 704 | 0.1+ | 0.7− | 2004 05 13 | 703 | 0.5+ | 1.0− | 2006 10 22 | 644 | 0.1+ | 0.1+ | | |
| 2002 10 10 | 704 | 0.0 | 0.2+ | 2006 08 30 | 699 | 0.4+ | 1.3+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2002 10 10 | 704 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.0 | | |
| 2002 10 10 | 704 | 0.7+ | 0.4− | 2006 08 30 | 699 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.2− | | |
| 2002 10 10 | 704 | 0.9+ | 0.1− | 2006 08 30 | 699 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.2− | 0.3− | | |
| 2002 10 15 | 704 | 0.5+ | 1.0− | 2006 09 20 | 699 | 0.5− | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.0 | | |
| 2002 10 15 | 704 | 0.3+ | 0.0 | 2006 09 20 | 699 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.3− | | |
| 2002 10 15 | 704 | 0.6+ | 0.6− | 2006 09 20 | 699 | 0.2+ | 0.2− | 2006 11 17 | 704 | 1.0− | 1.0− | | |
| 2002 10 15 | 704 | 0.6+ | 0.3− | 2006 09 20 | 699 | 0.8+ | 0.3+ | 2006 11 17 | 704 | 0.8− | 0.8+ | | |
| 2002 10 15 | 704 | 0.8+ | 0.2− | 2006 09 21 | 704 | (1.6+ | 0.1−) | 2006 11 17 | 704 | 1.0− | 0.3+ | | |
| 2002 11 07 | 704 | 0.1− | 0.8+ | 2006 09 21 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 704 | 0.9− | 0.5+ | | |
| 2002 11 07 | 704 | 0.5− | 0.6+ | 2006 09 21 | 704 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.3− | | |
| 2002 11 07 | 704 | 0.5− | 0.5+ | 2006 09 28 | 703 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.5+ | 1.1− | | |
| 2002 11 07 | 704 | 0.1− | 0.8+ | 2006 09 28 | 703 | 0.0 | 0.5− | 2006 11 23 | 703 | 0.3+ | 0.0 | | |
| 2002 11 07 | 704 | 0.4− | 0.9+ | 2006 09 28 | 703 | 0.1+ | 0.3− | 2006 11 23 | 703 | 0.6+ | 0.7− | | |
| 2002 11 14 | 644 | 0.3− | 0.5+ | 2006 09 28 | 703 | 0.1+ | 0.4+ | 2006 11 23 | 703 | 0.2− | 0.2− | | |

**2006 SM$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.63187 | | (2000.0) | | | |
| $n$ | 0.21350214 | $\omega$ | 135.54086 | | +0.88616869 | −0.44475880 |
| $a$ | 2.7724766 | $\Omega$ | 251.27697 | | +0.37764257 | +0.85577858 |
| $e$ | 0.1721549 | $i$ | 7.88829 | | +0.26849795 | +0.26425865 |
| $P$ | 4.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.3− | 2006 09 27 | 703 | 0.0 | 0.2+ | | |
| 1999 03 22 | 645 | 0.1+ | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 09 27 | 703 | 0.1+ | 0.4+ | | |
| 2001 08 17 | 644 | 0.3− | 0.6+ | 2006 09 16 | 703 | 0.8− | 0.7− | 2006 10 11 | 644 | 0.2− | 0.3+ | | |
| 2001 08 17 | 644 | 0.2− | 0.8+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ | | |
| 2001 08 17 | 644 | 0.1− | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ | | |
| 2005 07 05 | G96 | 0.2+ | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.7− | | |
| 2005 07 05 | G96 | 0.4+ | 0.2+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.3− | | |
| 2005 07 05 | G96 | 0.0 | 0.6+ | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.4+ | | |
| 2005 07 05 | G96 | 0.3− | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.7+ | | |
| 2006 08 29 | 699 | 0.8+ | 0.0 | 2006 09 22 | 699 | 1.1− | 0.2+ | 2006 10 26 | 104 | 0.6+ | 0.1− | | |
| 2006 08 29 | 699 | 0.7+ | 0.8+ | 2006 09 22 | 699 | 0.1+ | 0.7+ | 2006 10 26 | 104 | 0.1− | 0.2+ | | |
| 2006 08 29 | 699 | 0.9+ | 0.5+ | 2006 09 22 | 699 | 0.2− | 0.0 | 2006 10 26 | 104 | 0.6− | 0.4+ | | |
| 2006 08 29 | 699 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.6− | 1.2+ | 2006 10 26 | 104 | 0.3+ | 0.5+ | | |
| 2006 09 16 | 703 | 0.3+ | 0.2− | 2006 09 27 | 703 | 0.5− | 0.7+ | | | | | | |

**2006 SP$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.67578 | | (2000.0) | | | |
| $n$ | 0.20216075 | $\omega$ | 105.99389 | | +0.95969195 | +0.26869035 |
| $a$ | 2.8752227 | $\Omega$ | 238.48524 | | −0.28032633 | +0.89400413 |
| $e$ | 0.3275952 | $i$ | 5.54957 | | −0.02021184 | +0.35855560 |
| $P$ | 4.88 | $H$ | 18.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.6− | 0.9− | 2006 09 16 | 703 | 0.2+ | 0.2− | 2006 09 27 | 703 | 0.7− | 0.1− | | |
| 2001 09 11 | 699 | 0.5− | 0.0 | 2006 09 16 | 703 | 0.9− | 0.4− | 2006 09 27 | 703 | 0.1− | 1.4+ | | |
| 2001 09 11 | 699 | 0.1− | 0.8+ | 2006 09 16 | 703 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.0 | 0.1− | | |
| 2001 09 11 | 699 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.5+ | 0.1− | 2006 10 04 | G96 | 0.1− | 0.1− | | |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.5+ | 0.1− | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.2− | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1+ | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.9+ | | | | | | |

**2006 SR$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 83.15237 | | (2000.0) | | | |
| $n$ | 0.23264216 | $\omega$ | 349.18250 | | −0.03935188 | +0.99286855 |
| $a$ | 2.6182459 | $\Omega$ | 278.49309 | | −0.90806775 | −0.08252971 |
| $e$ | 0.1642731 | $i$ | 6.53325 | | −0.41697050 | +0.08602844 |
| $P$ | 4.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 19 | 703 | 0.9+ | 0.2− | 2006 08 28 | J75 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2005 04 19 | 703 | (1.8− | 0.3−) | 2006 09 16 | 703 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2005 04 19 | 703 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2005 04 19 | 703 | 0.3− | 0.3− | 2006 09 16 | 703 | 0.8− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2005 04 28 | E12 | 0.8+ | 0.2− | 2006 09 16 | 703 | 1.4− | 0.0 | 2006 10 17 | 703 | 0.9+ | 1.1+ |
| 2005 04 28 | E12 | 0.7− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.6− |
| 2005 04 28 | E12 | 1.2− | 0.2+ | 2006 09 20 | 644 | 0.4+ | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2005 04 28 | E12 | 0.3+ | 0.2− | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.9+ |
| 2005 05 16 | 644 | 0.1− | 0.1− | 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 19 | 695 | 0.1− | 0.0 |
| 2005 05 16 | 644 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 695 | 0.1− | 0.0 |
| 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2005 06 02 | 699 | (0.9+ | 1.9−) | 2006 09 27 | 703 | 1.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2005 06 02 | 699 | (2.0+ | 0.1+) | 2006 09 27 | 703 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 06 02 | 699 | 0.2+ | 1.3+ | 2006 09 27 | 703 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2005 06 02 | 699 | 0.2+ | 0.2− | 2006 09 27 | 703 | 0.1− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2006 08 28 | J75 | 0.4− | 1.1− | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 08 28 | J75 | (2.2+ | 0.6+) | 2006 10 11 | 644 | 0.1− | 0.1− | | | | |

**2006 SS$_{61}$ = 2003 YR$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.65406 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29297683 | $\omega$ | 316.18151 | | +0.87190403 | | −0.48620680 |
| $a$ | 2.2451595 | $\Omega$ | 72.99394 | | +0.46436311 | | +0.78325785 |
| $e$ | 0.1569313 | $i$ | 3.48877 | | +0.15540355 | | +0.38744044 |
| $P$ | 3.36 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 21 | 691 | 0.4− | 0.2+ | 2006 09 20 | 644 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.1− |
| 1994 01 21 | 691 | 0.6+ | 0.1+ | 2006 09 20 | 644 | 0.8− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1994 01 21 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.5+ | 0.4− | 2006 10 15 | 703 | 0.5+ | 0.8− |
| 2003 12 18 | 704 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 1.0+ | 0.8+ | 2006 10 15 | 703 | 0.2− | 0.7− |
| 2003 12 18 | 704 | 0.5− | 0.2+ | 2006 09 25 | 699 | 1.5− | 0.4+ | 2006 10 15 | 703 | 1.2+ | 0.6− |
| 2003 12 18 | 704 | 0.1+ | 1.0− | 2006 09 25 | 699 | 0.7+ | 0.4+ | 2006 10 15 | 703 | 0.5+ | 0.0 |
| 2003 12 22 | 704 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 22 | 703 | 1.3− | 0.3+ |
| 2003 12 22 | 704 | 0.1− | 0.8+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 1.0− | 0.1− |
| 2003 12 22 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 691 | 0.8− | 0.6+ | 2006 10 22 | 703 | 0.4+ | 1.4+ |
| 2003 12 22 | 704 | 0.1− | 0.2− | 2006 09 29 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.7+ |
| 2005 05 10 | 691 | 0.2+ | 0.6+ | 2006 09 29 | 699 | 0.0 | 0.6+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2005 05 10 | 691 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2005 05 10 | 691 | 0.0 | 0.1− | 2006 09 29 | 699 | 1.3+ | 1.0− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2006 08 24 | D35 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 08 24 | D35 | 0.5+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2006 08 24 | D35 | 0.1− | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.4− |
| 2006 09 17 | 691 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.2+ |
| 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.6− | 0.2+ | 2006 11 18 | G96 | 0.6+ | 0.0 |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1− | | | | |
| 2006 09 20 | 644 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.0 | | | | |

**2006 SA$_{62}$ = 2001 VK$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.42434 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18420761 | $\omega$ | 9.97077 | | +0.91415830 | | −0.40123351 |
| $a$ | 3.0591282 | $\Omega$ | 14.11154 | | +0.35371262 | | +0.72007879 |
| $e$ | 0.1852672 | $i$ | 13.68313 | | +0.19799491 | | +0.56612561 |
| $P$ | 5.35 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 704 | 0.5− | 0.5+ | 2006 09 18 | 699 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.5+ |
| 2001 11 11 | 704 | 0.4− | 0.4+ | 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.8− | 0.8+ |
| 2001 11 11 | 704 | 0.7+ | 0.7− | 2006 09 20 | 644 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.2− | 0.7+ |
| 2001 11 11 | 704 | 0.2− | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 11 12 | 704 | 0.4− | 0.4+ | 2006 10 01 | 704 | 0.5+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.2− |
| 2001 11 12 | 704 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.1+ | 1.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2006 10 01 | 704 | 0.2+ | 1.1+ | 2006 10 20 | 644 | 0.5− | 0.2+ |
| 2001 11 12 | 704 | 0.4− | 0.6+ | 2006 10 01 | 704 | 0.2− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2004 04 12 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 703 | (2.1+ | 0.7+) | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 1.4+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 1.2+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.7− |
| 2006 08 24 | 644 | 0.0 | 0.2+ | 2006 10 16 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.1− | 0.6− |
| 2006 09 18 | 703 | 0.2+ | 0.7− | 2006 10 16 | G96 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2006 09 18 | 703 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2006 09 18 | 703 | 0.7− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2006 09 18 | 699 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 16 | 703 | 1.0− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2006 09 18 | 699 | 0.5− | 0.7− | 2006 10 17 | G96 | 0.2+ | 0.5− | | | | |

**2006 SE$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.96099 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19143913 | $\omega$ | 240.85519 | | +0.97277802 | | −0.22098588 |
| $a$ | 2.9815967 | $\Omega$ | 131.81812 | | +0.23146657 | | +0.91195742 |
| $e$ | 0.2516044 | $i$ | 5.37193 | | +0.01123143 | | +0.34568615 |
| $P$ | 5.15 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.2+ |
| 2001 10 10 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.6− |
| 2001 10 10 | 644 | 0.2− | 0.1− | 2006 09 26 | 704 | (0.4− | 1.6+) | 2006 09 30 | 704 | 0.1+ | 0.1+ |
| 2005 07 11 | G96 | 0.6+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.2− | 1.0+ |
| 2005 07 11 | G96 | 0.6− | 0.2− | 2006 09 26 | 704 | 0.6− | 0.6+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2005 07 11 | G96 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2006 09 18 | 703 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.1+ |
| 2006 09 18 | 703 | 0.2− | 0.2− | 2006 09 28 | 699 | 0.7− | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 09 28 | 699 | 0.2− | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.1− |
| 2006 09 18 | 703 | 0.4− | 0.6− | 2006 09 28 | 699 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.1− | 1.0− |
| 2006 09 18 | 699 | 0.8+ | 0.2+ | 2006 09 28 | 699 | 0.3+ | 0.6− | 2006 10 19 | 644 | 0.0 | 0.9− |
| 2006 09 18 | 699 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.2− |
| 2006 09 18 | 699 | 0.6+ | 0.7+ | 2006 09 30 | 704 | 1.1+ | 1.2+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2006 09 18 | 699 | 0.9+ | 0.1− | 2006 09 30 | 703 | 1.2− | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 09 20 | 644 | 0.2+ | 0.2− | 2006 09 30 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2006 09 20 | 644 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.5− | 0.7− | 2006 10 21 | 644 | 0.2+ | 0.4− |

**2006 SG$_{62}$ = 2005 GK$_{172}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.29054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27700268 | $\omega$ | 301.69902 | | +0.97678427 | | +0.19223798 |
| $a$ | 2.3306661 | $\Omega$ | 47.40450 | | −0.12559990 | | +0.87139690 |
| $e$ | 0.1329039 | $i$ | 7.37826 | | −0.17354294 | | +0.45134467 |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 704 | 1.0− | 0.2− | 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 09 26 | 704 | 0.5− | 0.8+ |
| 1999 10 19 | 704 | 0.4− | 0.9− | 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.2− | 0.5+ |
| 1999 10 19 | 704 | 1.3+ | 0.8− | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.3− |
| 1999 10 19 | 704 | 0.8− | 0.5+ | 2005 04 18 | 691 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.0 | 0.4+ |
| 1999 10 19 | 704 | 0.4+ | 1.2− | 2005 04 18 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.3+ |
| 1999 11 03 | 703 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 09 30 | 704 | 1.5+ | 0.3+ |
| 1999 11 03 | 703 | 0.0 | 1.0+ | 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.7− | 0.9+ |
| 1999 11 03 | 703 | 0.3− | 0.2− | 2006 09 18 | 703 | 0.2− | 1.0− | 2006 09 30 | 704 | 0.3− | 0.2+ |
| 1999 11 03 | 703 | 1.4+ | 0.3− | 2006 09 18 | 703 | 1.0− | 0.2+ | 2006 09 30 | 704 | 0.2+ | 0.6+ |
| 2003 12 23 | 704 | 0.1− | 0.5+ | 2006 09 18 | 699 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2003 12 23 | 704 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.5− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.6− |
| 2003 12 23 | 704 | 0.2− | 1.0− | 2006 09 18 | 699 | 0.7+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2003 12 23 | 704 | 0.0 | 0.5+ | 2006 09 18 | 699 | 0.6− | 0.5+ | 2006 10 16 | 703 | 0.5− | 0.8+ |
| 2003 12 28 | 704 | 0.1+ | 0.7+ | 2006 09 20 | 644 | 0.5− | 0.4+ | 2006 10 19 | 644 | 0.8− | 0.2+ |
| 2003 12 28 | 704 | 0.8+ | 1.1+ | 2006 09 20 | 644 | 0.7− | 0.6+ | 2006 10 19 | 644 | 0.6− | 0.8+ |
| 2003 12 28 | 704 | 0.1− | 1.3+ | 2006 09 20 | 644 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.6+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.0 | 0.1+ | 2006 09 26 | 704 | 0.1− | 0.8+ | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2005 04 01 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 704 | 0.5+ | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2005 04 01 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.4+ | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.2− |
| 2005 04 14 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.4− | 1.5+ | | | | |

**2006 SJ$_{62}$ = 2005 JQ$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.89387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27216008 | $\omega$ | 148.81621 | | +0.72338447 | +0.69005050 | |
| $a$ | 2.3582315 | $\Omega$ | 167.46432 | | −0.65356375 | +0.69525673 | |
| $e$ | 0.1259715 | $i$ | 6.17579 | | −0.22264172 | +0.20111784 | |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.1+ | 0.4+ | 2006 07 22 | G96 | 0.1− | 0.8− | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2005 04 01 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.5+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 2005 04 01 | 691 | 0.2+ | 0.0 | 2006 09 18 | 699 | 1.2+ | 0.8+ | 2006 09 28 | 691 | 0.5− | 0.5+ |
| 2005 05 03 | 691 | 0.3− | 0.3+ | 2006 09 18 | 699 | 0.0 | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.8+ |
| 2005 05 03 | 691 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2005 05 03 | 691 | 0.1− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.9− | 0.8+ |
| 2005 05 12 | 691 | 0.4+ | 0.0 | 2006 09 20 | 644 | 0.6+ | 0.1− | 2006 10 16 | 703 | 1.0+ | 0.1− |
| 2005 05 12 | 691 | 0.2+ | 0.0 | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.3+ |
| 2005 05 12 | 691 | 0.1− | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.8+ |
| 2006 07 22 | G96 | 0.2− | 0.7− | 2006 09 26 | 704 | 1.1− | 0.5− | 2006 11 25 | G96 | 0.4+ | 0.5+ |
| 2006 07 22 | G96 | 0.0 | 0.9− | 2006 09 26 | 704 | 0.6− | 1.2− | 2006 11 25 | G96 | 0.8+ | 0.3+ |
| 2006 07 22 | G96 | 0.4− | 0.8− | 2006 09 26 | 704 | 1.2− | 1.2+ | | | | |

**2006 SO$_{62}$ = 2004 HW$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.31648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23317151 | $\omega$ | 20.29001 | | +0.27611791 | −0.95495305 | |
| $a$ | 2.6142818 | $\Omega$ | 53.83336 | | +0.86219301 | +0.19611279 | |
| $e$ | 0.1227710 | $i$ | 7.74073 | | +0.42471415 | +0.22272054 | |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.4− | 0.5− | 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2004 04 16 | 691 | 0.0 | 0.1− | 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2004 04 16 | 691 | 0.2− | 0.3− | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2004 04 21 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 703 | 1.3+ | 0.4+ | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2004 04 21 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 703 | (0.8− | 2.3+) | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2006 09 18 | 703 | (1.4− | 2.1−) | 2006 09 26 | 703 | 0.4+ | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2006 09 18 | 703 | (0.4− | 1.7−) | 2006 10 16 | 703 | 0.9− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2006 09 18 | 703 | (0.1+ | 2.1−) | 2006 10 16 | 703 | (1.4+ | 1.6+) | | | | |
| 2006 09 18 | 703 | 0.5− | 1.1− | 2006 10 16 | 703 | 1.3− | 0.2+ | | | | |

**2006 SQ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.43613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26933730 | $\omega$ | 210.81790 | | +0.01887227 | +0.99414970 | |
| $a$ | 2.3746797 | $\Omega$ | 60.45503 | | −0.89060549 | +0.06505618 | |
| $e$ | 0.0739205 | $i$ | 7.02169 | | −0.45438497 | −0.08622100 | |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.4+ | 0.1− | 2005 04 30 | 691 | 0.3+ | 0.4+ | 2006 09 20 | 644 | 0.1− | 0.7+ |
| 1999 11 12 | 704 | 0.3− | 0.1− | 2005 04 30 | 691 | 0.2− | 0.4+ | 2006 09 20 | 644 | 0.0 | 0.0 |
| 1999 11 12 | 704 | 1.5− | 1.2+ | 2005 04 30 | 691 | 0.2+ | 0.5+ | 2006 09 20 | 644 | 0.1+ | 0.4+ |
| 1999 11 12 | 704 | 0.2− | 0.7+ | 2005 05 14 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.7+ | 0.3+ |
| 1999 12 05 | 691 | 0.2− | 0.0 | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.9+ | 0.4+ |
| 1999 12 05 | 691 | 0.1− | 0.3− | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 1.0− | 1.0+ |
| 1999 12 05 | 691 | 0.0 | 0.2+ | 2005 06 13 | G96 | 0.2− | 0.0 | 2006 09 26 | 703 | 0.2− | 0.8+ |
| 2001 03 18 | 608 | 1.1+ | 0.4+ | 2005 06 13 | G96 | 0.0 | 0.3− | 2006 10 16 | 703 | (0.0 | 1.8−) |
| 2001 03 18 | 608 | 1.1+ | 0.1− | 2005 06 13 | G96 | 0.3− | 0.1− | 2006 10 16 | 703 | 1.2− | 0.0 |
| 2001 03 18 | 608 | 1.4+ | 0.4+ | 2005 06 13 | G96 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2002 08 13 | 644 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.2− | 2006 10 16 | 703 | (0.5+ | 2.2+) |
| 2002 08 13 | 644 | 0.2+ | 0.1+ | 2006 09 18 | 703 | (0.0 | 1.6+) | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2002 08 13 | 644 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.5+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2005 04 18 | 703 | 0.6+ | 0.5+ | 2006 09 18 | 703 | 0.7+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2005 04 18 | 703 | 0.5− | 0.3− | 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2005 04 18 | 703 | 0.4− | 0.1− | 2006 09 20 | 644 | 0.1− | 0.3+ | | | | |
| 2005 04 18 | 703 | 1.2− | 0.5− | 2006 09 20 | 644 | 0.3− | 0.3+ | | | | |

**2006 SW$_{62}$ = 2003 YG$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.99497 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28738123 | $\omega$ | 265.91894 | | +0.79113155 | +0.60323499 | |
| $a$ | 2.2742094 | $\Omega$ | 56.94784 | | −0.50236218 | +0.73512197 | |
| $e$ | 0.1661060 | $i$ | 6.92689 | | −0.34891704 | +0.30935939 | |
| $P$ | 3.43 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 699 | 0.3− | 0.9+ | 2006 09 25 | 699 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.6− |
| 1999 09 07 | 699 | 0.8− | 0.2− | 2006 09 25 | 699 | 0.1− | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.5− |
| 1999 09 07 | 699 | 0.4+ | 0.5+ | 2006 09 25 | 699 | 0.6+ | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.1− |
| 2003 12 22 | 704 | 0.6− | 0.6+ | 2006 09 25 | 699 | 1.0+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2003 12 22 | 704 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.4+ | 0.8− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 2003 12 22 | 704 | 0.6+ | 0.6− | 2006 09 26 | 703 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2003 12 22 | 704 | 0.9+ | 0.8+ | 2006 09 26 | 703 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2003 12 24 | 735 | 0.8+ | 1.4− | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2003 12 24 | 735 | 0.4− | 1.0+ | 2006 09 29 | 699 | (0.8+ | 1.7+) | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2004 01 18 | 691 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.7+ | 0.9− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2004 01 18 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.8+ | 2006 10 22 | 703 | 1.4− | 0.1+ |
| 2004 01 18 | 691 | 0.1− | 0.2− | 2006 09 29 | 699 | (1.0+ | 1.7+) | 2006 10 22 | 703 | 1.1+ | 0.1+ |
| 2006 09 18 | 703 | 1.3+ | 0.5− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2006 09 18 | 703 | 0.3+ | 0.7− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.1+ |
| 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2006 09 18 | 703 | 0.2+ | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2006 09 20 | 644 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2006 09 20 | 644 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ | | | | |

**2006 SY$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.88711 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26998733 | $\omega$ | 345.85273 | | +0.93207726 | −0.35486165 | |
| $a$ | 2.3708667 | $\Omega$ | 35.20700 | | +0.34343975 | +0.80164627 | |
| $e$ | 0.1344339 | $i$ | 7.25791 | | +0.11524374 | +0.48107844 | |
| $P$ | 3.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.8+ | 0.5− | 2006 09 30 | 704 | (1.3− | 1.7+) |
| 2004 01 18 | 691 | 0.0 | 0.0 | 2006 09 22 | 704 | 0.6+ | 0.8− | 2006 09 30 | 704 | 1.3− | 0.6+ |
| 2004 01 18 | 691 | 0.1+ | 0.0 | 2006 09 26 | 704 | 1.1+ | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.0 |
| 2005 05 16 | G96 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1− | 0.8− | 2006 10 09 | 644 | 0.1− | 0.1− |
| 2005 05 16 | G96 | 0.2+ | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.0 | 0.0 |
| 2005 05 16 | G96 | 0.1+ | 0.3− | 2006 09 26 | 704 | 0.1+ | 1.1− | 2006 10 09 | 644 | 0.7− | 0.1+ |
| 2005 05 16 | G96 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.2− | 0.5+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.3− | 0.4− | 2006 09 28 | 704 | 0.3+ | 0.4+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.6+ | 0.7− | 2006 09 28 | 699 | (2.0− | 0.5+) | 2006 10 16 | 703 | 1.0− | 0.1− |
| 2006 09 18 | 703 | 0.5+ | 0.5− | 2006 09 28 | 704 | 0.6− | 0.3+ | 2006 10 16 | 703 | (1.6− | 0.5−) |
| 2006 09 18 | 703 | 0.3− | 0.6+ | 2006 09 28 | 699 | 0.2+ | 0.7− | 2006 10 16 | 703 | 0.6− | 0.5+ |
| 2006 09 18 | 699 | 0.3+ | 0.1− | 2006 09 28 | 704 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.8+ | 0.4+ |
| 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 09 28 | 699 | 0.3− | 0.9+ | 2006 10 22 | 644 | 0.4+ | 0.3− |
| 2006 09 18 | 699 | 1.2+ | 1.0− | 2006 09 28 | 699 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 09 18 | 699 | 0.6+ | 0.6− | 2006 09 30 | 703 | 0.7− | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 09 30 | 703 | 1.0− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 09 20 | 644 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.7+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2006 09 20 | 644 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2006 09 22 | 704 | 0.5+ | 0.4+ | 2006 09 30 | 704 | 0.1+ | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.4− |

**2006 SD$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.80319 | | (2000.0) | | | |
| $n$ | 0.17408205 | $\omega$ | 203.21042 | | +0.99019804 | −0.13760374 |
| $a$ | 3.1766307 | $\Omega$ | 164.64116 | | +0.13807660 | +0.93859459 |
| $e$ | 0.1117427 | $i$ | 5.18549 | | +0.02104019 | +0.31639439 |
| $P$ | 5.66 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 691 | 0.2+ | 0.3+ | 2006 09 20 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.2− | 0.3+ |
| 1997 03 10 | 691 | 0.0 | 0.1+ | 2006 09 20 | 644 | 0.1− | 0.7− | 2006 10 15 | 703 | 0.3− | 0.9− |
| 1997 03 10 | 691 | 0.1− | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.5+ |
| 2000 08 31 | 704 | 0.4− | 0.6+ | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.5+ |
| 2000 08 31 | 704 | 0.1− | 1.1+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | (1.8− | 0.1+) |
| 2000 08 31 | 704 | 0.7− | 0.4− | 2006 09 30 | 703 | 0.3+ | 0.7− | 2006 10 21 | 703 | 0.2+ | 0.5− |
| 2000 08 31 | 704 | 0.7− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.6− | 2006 10 21 | 703 | 0.5− | 0.0 |
| 2000 08 31 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 1.3− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2000 09 23 | 621 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.4+ | 0.0 |
| 2000 09 23 | 621 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.8− | 0.6− | 2006 10 22 | G96 | 0.5+ | 0.0 |
| 2004 04 20 | 691 | 0.0 | 0.6+ | 2006 10 01 | 704 | 0.6− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 704 | 0.9− | 0.6+ | 2006 11 09 | 644 | 0.6− | 0.7− |
| 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2006 09 18 | 699 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2006 09 18 | 699 | 0.2+ | 1.1+ | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2006 09 18 | 699 | 0.1− | 1.0+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2006 09 18 | 699 | 0.9+ | 0.7+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2006 09 20 | 644 | 0.6+ | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.3− |

**2006 SE$_{63}$ = 1995 SA$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.49632 | | (2000.0) | | | |
| $n$ | 0.17710606 | $\omega$ | 315.82018 | | +0.90713939 | +0.41677011 |
| $a$ | 3.1403673 | $\Omega$ | 19.77764 | | −0.32226773 | +0.77709226 |
| $e$ | 0.0713339 | $i$ | 9.92417 | | −0.27063193 | +0.47162517 |
| $P$ | 5.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.2− | 0.1+ | 2004 04 14 | 691 | 0.1− | 0.4+ | 2006 09 25 | 699 | (0.4+ | 3.5+) |
| 1995 09 26 | 691 | 0.0 | 0.2+ | 2006 09 19 | 699 | 0.8+ | 0.5− | 2006 10 03 | G96 | 0.2+ | 0.0 |
| 1995 09 26 | 691 | 0.0 | 0.0 | 2006 09 19 | 699 | 0.8+ | 0.9+ | 2006 10 03 | G96 | 0.4− | 0.4− |
| 1995 10 01 | 691 | 0.1− | 0.0 | 2006 09 19 | 699 | 0.5+ | 1.4+ | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1995 10 01 | 691 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.1+ | 0.7− | 2006 10 03 | G96 | 0.0 | 0.1− |
| 1995 10 01 | 691 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.9− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2001 10 17 | 691 | 0.0 | 0.2+ | 2006 09 20 | 644 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.1− |
| 2001 10 17 | 691 | 0.1− | 0.3− | 2006 09 20 | 644 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.3− | 0.6− |
| 2001 10 17 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 699 | 0.1+ | 0.6− | 2006 11 17 | G96 | 0.6+ | 0.1− |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 1.3− | 0.7+ | | | | |
| 2004 04 14 | 691 | 0.4+ | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.0 | | | | |

**2006 SK$_{63}$ = 2001 RE$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 86.55606 | | (2000.0) | | | |
| $n$ | 0.21427826 | $\omega$ | 150.45846 | | +0.25327091 | +0.96320333 |
| $a$ | 2.7657779 | $\Omega$ | 134.04770 | | −0.91030780 | +0.26876510 |
| $e$ | 0.0171678 | $i$ | 7.19016 | | −0.32740426 | −0.00216121 |
| $P$ | 4.60 | $H$ | 15.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 699 | 0.5+ | 0.4+ | 2006 09 21 | 699 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2− |
| 2001 09 10 | 699 | (0.5+ | 2.1+) | 2006 09 21 | 699 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.4− |
| 2001 09 10 | 699 | 1.0− | 1.2− | 2006 09 21 | 699 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2001 09 10 | 699 | 0.2− | 0.7+ | 2006 09 21 | 699 | 1.4+ | 0.9+ | 2006 10 22 | 644 | 0.6+ | 0.1− |
| 2001 09 12 | 704 | 0.0 | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.4+ | 0.3− |
| 2001 09 12 | 704 | 0.7+ | 0.3− | 2006 09 26 | 703 | 1.5− | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2001 09 12 | 704 | 0.2+ | 0.6− | 2006 09 26 | 703 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2002 12 10 | 644 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.6− | 0.9− | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 12 10 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 0.3− | 0.5+ |
| 2002 12 10 | 644 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 10 28 | 703 | 0.7+ | 0.3− |
| 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.3− | 0.6+ | 2006 10 28 | 703 | 0.6− | 0.3− |
| 2006 09 20 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 1.4− | 1.2+ | 2006 10 28 | 703 | 1.4+ | 0.4+ |
| 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3− | | | | |

**2006 SN$_{63}$ = 2001 TX$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.24436 | | (2000.0) | | | |
| $n$ | 0.19635660 | $\omega$ | 106.04192 | | +0.88835000 | −0.45886706 |
| $a$ | 2.9316067 | $\Omega$ | 281.27460 | | +0.41454549 | +0.81703577 |
| $e$ | 0.0928493 | $i$ | 0.96940 | | +0.19744953 | +0.34913260 |
| $P$ | 5.02 | $H$ | 17.2 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 09 22 | A55 | 0.8+ | 0.5− |
| 2001 09 20 | 704 | 0.5− | 1.3+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 22 | A55 | 0.1+ | 0.7− |
| 2001 09 20 | 704 | 0.2− | 0.3+ | 2006 09 21 | A55 | 0.2+ | 0.7+ | 2006 09 22 | A55 | 0.5+ | 0.9− |
| 2001 10 14 | 645 | 0.1− | 0.1− | 2006 09 21 | A55 | 0.5− | 0.3− | 2006 09 23 | A55 | 1.0+ | 0.1− |
| 2001 10 14 | 645 | 0.1− | 0.1− | 2006 09 21 | A55 | 0.1+ | 0.6− | 2006 09 23 | A55 | 0.5− | 0.1+ |
| 2001 10 15 | 645 | 0.1+ | 0.1+ | 2006 09 21 | A55 | 0.4+ | 0.3− | 2006 09 23 | A55 | 0.3− | 0.2+ |
| 2001 10 15 | 645 | 0.1+ | 0.1+ | 2006 09 22 | A55 | 0.4+ | 0.0 | | | | |
| 2006 09 15 | 691 | 0.4− | 0.2− | 2006 09 22 | A55 | 0.0 | 0.5− | | | | |

**2006 SS$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.30233 | | (2000.0) | | | |
| $n$ | 0.30125472 | $\omega$ | 232.65835 | | +0.49587544 | +0.86504603 |
| $a$ | 2.2038404 | $\Omega$ | 67.23462 | | −0.76832759 | +0.47792471 |
| $e$ | 0.1885119 | $i$ | 4.73876 | | −0.40469774 | +0.15258879 |
| $P$ | 3.27 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 28 | 691 | 0.5− | 0.1+ | 2006 09 18 | 699 | 0.6− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.0 |
| 2003 11 28 | 691 | 0.4− | 0.1− | 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2003 11 28 | 691 | 0.6− | 0.2− | 2006 09 22 | 704 | (0.8− | 2.1+) | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2003 12 21 | 291 | 0.6+ | 0.1− | 2006 09 22 | 704 | 1.0+ | 0.2− | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2003 12 21 | 291 | 1.0+ | 0.1+ | 2006 09 22 | 704 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.1− | 1.0+ |
| 2003 12 21 | 291 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.4− | 1.2+ | 2006 10 16 | 703 | 0.8− | 0.2+ |
| 2005 02 09 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 699 | (1.8− | 0.3+) | 2006 10 16 | 703 | 0.9− | 0.9− |
| 2005 02 09 | 691 | 0.1− | 0.1− | 2006 09 28 | 699 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.2− |
| 2005 02 09 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 0.3+ | 0.3+ | 2006 10 16 | 106 | 0.5+ | 0.0 |
| 2006 09 18 | 703 | 0.8− | 0.3+ | 2006 09 28 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 106 | 0.5+ | 0.9− |
| 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 09 30 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 106 | 0.6+ | 0.1+ |
| 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 09 30 | 704 | 0.8− | 0.4− | 2006 10 16 | 106 | 0.3+ | 0.5− |
| 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 09 30 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 18 | 699 | 1.2− | 0.0 | 2006 09 30 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 09 18 | 699 | 0.5+ | 1.3− | 2006 09 30 | 704 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |

**2006 SV$_{63}$ = 1989 QW**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.46680 | | (2000.0) | | | |
| $n$ | 0.18144237 | $\omega$ | 334.26576 | | +0.93477533 | −0.26224971 |
| $a$ | 3.0901312 | $\Omega$ | 43.26479 | | +0.35505239 | +0.71160745 |
| $e$ | 0.2215642 | $i$ | 20.46458 | | −0.01152716 | +0.65179746 |
| $P$ | 5.43 | $H$ | 14.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 08 26 | 413 | 0.9+ | 0.3+ | 2006 10 03 | 704 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.6− |
| 1989 08 26 | 413 | 0.8+ | 1.6− | 2006 10 03 | 704 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.5− |
| 1989 09 03 | 413 | 0.7− | 0.5+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.5− |
| 1989 09 03 | 413 | 0.9− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2001 10 25 | 704 | 0.9+ | 0.3− | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2001 10 25 | 704 | 0.8+ | 0.4− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.2− | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 704 | 0.3+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2001 11 19 | 644 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2001 11 19 | 644 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.3− |
| 2001 11 19 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2001 12 23 | 704 | 0.5− | 0.8− | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.2− |
| 2001 12 23 | 704 | 0.1− | 0.7− | 2006 10 22 | 644 | 0.2− | 0.2− | 2006 11 13 | 104 | 0.0 | 0.0 |
| 2001 12 23 | 704 | 0.0 | 0.3− | 2006 10 23 | 704 | 0.5+ | 0.1+ | 2006 11 13 | 104 | 0.2− | 0.0 |
| 2001 12 23 | 704 | 0.2+ | 0.1− | 2006 10 23 | 704 | (0.3− | 1.5+) | 2006 11 13 | 104 | 1.1+ | 0.7+ |
| 2003 03 09 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.6+ | 0.5+ | 2006 11 16 | 704 | 0.9− | 1.4+ |
| 2003 03 09 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 1.5− | 0.8+ |
| 2003 03 09 | 644 | 0.1− | 0.2+ | 2006 10 23 | 704 | 0.0 | 0.6+ | 2006 11 16 | 704 | 1.5− | 0.5+ |
| 2003 03 22 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.6− | 0.6+ |
| 2003 03 22 | 644 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.9− | 0.4+ |
| 2003 03 22 | 644 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.8− | 0.2+ |
| 2004 05 14 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.3− | 1.2+ |
| 2004 05 14 | 691 | 0.4+ | 0.4+ | 2006 10 28 | 704 | 0.4− | 0.8+ | 2006 11 17 | 704 | 0.3− | 0.2+ |
| 2004 05 14 | 691 | 0.7+ | 0.6+ | 2006 10 28 | 704 | 0.5− | 0.6− | 2006 11 17 | 704 | 0.2− | 0.1+ |
| 2004 05 27 | 691 | 0.5+ | 0.6+ | 2006 10 28 | 704 | 0.1+ | 1.0+ | 2006 11 17 | 704 | 0.7− | 0.6+ |
| 2004 05 27 | 691 | 0.4+ | 0.6+ | 2006 10 28 | 704 | 0.3− | 0.4+ | 2006 11 18 | 185 | 0.4+ | 0.4− |
| 2004 05 27 | 691 | 0.8+ | 0.8+ | 2006 10 28 | 704 | 0.2− | 1.1+ | 2006 11 18 | 185 | 0.1+ | 0.3− |
| 2006 09 18 | 703 | 1.0− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 18 | 185 | 0.0 | 0.5− |
| 2006 09 18 | 703 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2006 09 22 | 704 | 0.1+ | 0.2+ | 2006 11 02 | 704 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2006 09 22 | 704 | 0.8+ | 0.0 | 2006 11 02 | 704 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2006 09 22 | 704 | 0.7+ | 1.1+ | 2006 11 02 | 704 | 0.3+ | 1.1+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2006 09 22 | 704 | 0.0 | 0.7+ | 2006 11 02 | 704 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.9+ |
| 2006 09 22 | 704 | 0.7− | 0.9+ | 2006 11 10 | 644 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.0 | 0.9+ |
| 2006 09 26 | 704 | 0.4+ | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.1− | 1.2+ |
| 2006 09 26 | 704 | 0.7− | 0.7− | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2006 09 26 | 704 | 0.6− | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 1.2+ |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.2+ | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.0 | 0.1+ |
| 2006 10 03 | 704 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.4− | 2006 12 01 | 704 | 0.1+ | 0.6+ |
| 2006 10 03 | 704 | 0.7− | 0.3− | 2006 11 10 | 644 | 0.3− | 0.2− | | | | |
| 2006 10 03 | 704 | 0.4+ | 0.1− | 2006 11 10 | 644 | 0.2− | 0.1− | | | | |

**2006 SW$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.35217 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29556675 | $\omega$ | 212.62821 | | +0.99373625 | | +0.10137551 |
| $a$ | 2.2320247 | $\Omega$ | 141.46720 | | −0.07929796 | | +0.93617753 |
| $e$ | 0.1573844 | $i$ | 4.32908 | | −0.07874072 | | +0.33659269 |
| $P$ | 3.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 02 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2002 06 02 | 644 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 22 | 704 | 0.6− | 0.3+ |
| 2002 06 02 | 644 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 10 22 | 704 | 1.4− | 0.9+ |
| 2005 04 01 | 691 | 0.4+ | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.0 | 2006 10 22 | 704 | 0.3+ | 1.2+ |
| 2005 04 01 | 691 | 0.3− | 0.3+ | 2006 10 01 | 704 | 0.4− | 0.7− | 2006 10 22 | 704 | (1.6+ | 0.7+) |
| 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 704 | 0.0 | 0.6− | 2006 10 22 | 703 | 0.1+ | 1.0+ |
| 2006 09 06 | 644 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.4+ |
| 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.3− | 0.9+ |
| 2006 09 16 | 699 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2006 09 16 | 699 | 0.4+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2006 09 16 | 699 | 0.8+ | 0.0 | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2006 09 16 | 699 | 0.4− | 0.5− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.4− | 1.2− |
| 2006 09 20 | 644 | 0.9− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.1− |
| 2006 09 20 | 644 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 1.2− | 0.4+ |
| 2006 09 20 | 644 | 0.5− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.7+ | 0.4− |
| 2006 09 22 | 704 | 0.2+ | 0.7+ | 2006 10 16 | 703 | 0.9− | 0.9− | 2006 11 14 | 704 | 1.1+ | 1.3− |
| 2006 09 22 | 704 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.7− | 0.1+ | 2006 11 14 | 704 | 0.1− | 0.3+ |
| 2006 09 22 | 704 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.2− | 2006 11 14 | 704 | 0.2− | 0.3+ |
| 2006 09 22 | 704 | 0.5+ | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.8− | 2006 11 24 | G96 | 1.0+ | 0.0 |
| 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.5+ | 0.0 |
| 2006 09 30 | 703 | 0.8− | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.5+ | 0.1+ |
| 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 24 | G96 | 1.2+ | 0.3+ |
| 2006 09 30 | 703 | 0.7− | 0.6+ | 2006 10 20 | 644 | 0.4+ | 0.1− | | | | |
| 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.1+ | | | | |

**2006 SX$_{63}$ = 1993 TG$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.94264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22816682 | $\omega$ | 219.52150 | | +0.99583089 | | −0.07647568 |
| $a$ | 2.6523717 | $\Omega$ | 144.76936 | | +0.08868914 | | +0.93920654 |
| $e$ | 0.2932543 | $i$ | 4.94465 | | −0.02133250 | | +0.33472756 |
| $P$ | 4.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.3+ | 0.5− | 2006 09 22 | 704 | 0.8− | 0.2+ | 2006 10 24 | 644 | 0.1− | 0.0 |
| 1993 10 09 | 809 | 0.3− | 0.2+ | 2006 09 22 | 704 | 1.3+ | 0.0 | 2006 10 24 | 644 | 0.0 | 0.0 |
| 1993 10 09 | 809 | 0.6− | 1.2+ | 2006 09 22 | 704 | 1.3+ | 0.3− | 2006 10 31 | 704 | 0.7+ | 0.7+ |
| 1993 10 11 | 809 | (0.5+ | 2.2+) | 2006 09 26 | 704 | 0.1+ | 1.4+ | 2006 10 31 | 704 | 0.0 | 0.0 |
| 1993 10 11 | 809 | (0.9− | 2.6+) | 2006 09 26 | 704 | 0.5+ | 0.6+ | 2006 10 31 | 704 | 0.4+ | 0.6+ |
| 1993 10 11 | 809 | (1.5− | 2.1+) | 2006 09 26 | 704 | 0.5− | 0.7+ | 2006 10 31 | 704 | 0.7+ | 0.1+ |
| 1993 10 11 | 809 | (4.1+ | 2.8+) | 2006 09 26 | 704 | 1.0+ | 0.0 | 2006 10 31 | 704 | 0.1+ | 0.5+ |
| 1993 10 11 | 809 | (2.4+ | 2.3+) | 2006 09 26 | 704 | 0.3+ | 0.4− | 2006 11 13 | 703 | 0.4+ | 0.1− |
| 1993 10 11 | 809 | (2.8+ | 2.4+) | 2006 09 29 | 699 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.0 | 0.3− |
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.6− | 2006 11 13 | 703 | 0.3+ | 0.3− |
| 2000 03 03 | 645 | 0.1+ | 0.2− | 2006 09 29 | 699 | 1.1+ | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.0 |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.6+ | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.2+ | 0.6− | 2006 11 17 | 644 | 0.3− | 0.0 |
| 2003 01 07 | 704 | 0.6+ | 0.3− | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2003 01 07 | 704 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 11 19 | 703 | 0.6+ | 0.3− |
| 2003 01 07 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.5− | 2006 11 19 | 703 | 0.2− | 0.7− |
| 2003 01 07 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.4− | 2006 11 19 | 703 | 0.0 | 0.1− |
| 2003 01 07 | 704 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.4− | 0.0 | 2006 11 19 | 703 | 0.3− | 0.2− |
| 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 11 20 | 704 | 1.1+ | 0.8+ |
| 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2004 03 15 | 691 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.8+ | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2005 05 13 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.9− | 0.4+ | 2006 11 20 | 704 | 0.8− | 0.0 |
| 2005 05 13 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.8− | 0.0 | 2006 11 20 | 704 | 0.5− | 0.4+ |
| 2005 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 2006 08 28 | 703 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.6+ | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2006 08 28 | 703 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.5− | 0.2+ | 2006 11 21 | 704 | 1.1− | 0.4+ |
| 2006 08 28 | 703 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2006 08 28 | 703 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.3+ |
| 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2006 09 22 | 704 | (0.3− | 2.0+) | 2006 10 24 | 644 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.1+ |

**2006 SF$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.17671 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23387240 | $\omega$ | 25.67111 | | +0.90009984 | | −0.43568356 |
| $a$ | 2.6090560 | $\Omega$ | 0.15896 | | +0.37491474 | | +0.77414602 |
| $e$ | 0.2133810 | $i$ | 7.22698 | | +0.22194418 | | +0.45921430 |
| $P$ | 4.21 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 12 | 704 | 0.2+ | 0.2− | 2006 09 23 | H06 | 0.6+ | 0.5− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.2− | 0.4− | 2006 09 23 | H06 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.6+ | 0.2− | 2006 09 23 | H06 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2002 10 31 | 704 | 0.1− | 0.1+ | 2006 09 23 | H06 | 0.4− | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2002 10 31 | 704 | 0.2+ | 0.2− | 2006 09 25 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 10 31 | 704 | 0.9− | 0.6− | 2006 09 25 | 704 | 0.9− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 10 31 | 704 | 0.1− | 0.5+ | 2006 09 25 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 704 | 0.3− | 0.2+ | 2006 09 25 | 704 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 11 15 | 704 | 0.1− | 0.2− | 2006 09 25 | 704 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 11 15 | 704 | 0.8− | 0.9− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 704 | 0.5− | 0.8− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 25 | 106 | 0.7+ | 0.1− |
| 2002 11 15 | 704 | 0.6− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 25 | 106 | 0.9+ | 0.6− |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 09 27 | 291 | 0.2+ | 0.1+ | 2006 10 25 | 106 | 0.5− | 0.5− |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 09 27 | 291 | 0.3+ | 0.1+ | 2006 10 25 | 106 | 0.1+ | 0.4− |
| 2002 12 05 | 704 | 1.1+ | 0.6+ | 2006 09 27 | 291 | 0.4+ | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 1.1+ | 0.1+ | 2006 09 29 | 704 | 0.9− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2002 12 05 | 704 | 0.9+ | 0.7+ | 2006 09 29 | 704 | 1.1− | 1.0+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2002 12 15 | 704 | 0.2− | 0.5+ | 2006 09 29 | 704 | 0.8− | 0.4+ | 2006 10 29 | 704 | 0.4+ | 1.2+ |
| 2002 12 15 | 704 | 0.3− | 0.1− | 2006 09 29 | 704 | 0.1+ | 0.8+ | 2006 10 29 | 704 | (1.6− | 0.5−) |
| 2002 12 15 | 704 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.7− | 1.4+ | 2006 10 29 | 704 | 0.5− | 0.3+ |
| 2002 12 15 | 704 | 0.1− | 0.6− | 2006 09 29 | 691 | 0.4+ | 0.1+ | 2006 10 29 | 704 | 0.5− | 0.2+ |
| 2004 02 26 | 695 | 0.1− | 0.2+ | 2006 09 29 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.1− | 0.7− |
| 2004 02 26 | 695 | 0.1+ | 0.0 | 2006 09 29 | 691 | 0.0 | 0.2+ | 2006 10 31 | 703 | 1.2+ | 0.6− |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 31 | 703 | 0.8+ | 0.8− |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 10 31 | 703 | 0.3− | 0.8− |
| 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2006 07 21 | G96 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.3+ | 0.2− | 2006 11 07 | 644 | 0.2+ | 0.1+ |
| 2006 08 06 | 699 | 0.5− | 1.0− | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.2− |
| 2006 08 06 | 699 | 0.4+ | 1.3+ | 2006 10 17 | 703 | 0.1− | 0.5− | 2006 11 14 | 703 | 0.2− | 0.3+ |
| 2006 08 06 | 699 | 0.9+ | 0.7+ | 2006 10 19 | 704 | 0.5+ | 0.0 | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2006 08 06 | 699 | 0.4− | 0.9− | 2006 10 19 | 704 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.4+ |
| 2006 08 28 | 703 | 0.7− | 0.8− | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.3− | 0.2− |
| 2006 08 28 | 703 | 0.1− | 0.5− | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.3− | 0.8− |
| 2006 08 28 | 703 | 0.2− | 1.2− | 2006 10 19 | 704 | 0.5+ | 0.4+ | 2006 11 14 | 703 | 0.6− | 0.9− |
| 2006 08 28 | 703 | 0.2− | 0.7− | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.8− | 0.0 |
| 2006 09 20 | 699 | 0.6− | 0.5+ | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 14 | 703 | 0.6− | 0.5− |
| 2006 09 20 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 704 | 0.6− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2006 09 20 | 699 | 0.9+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2006 09 22 | H06 | 0.0 | 1.0− | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.2− |
| 2006 09 22 | H06 | 0.7− | 1.2− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.8− | 0.2+ |
| 2006 09 22 | H06 | 1.1− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.1+ | | | | |

**2006 SN$_{64}$ = 2001 OP$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.16335 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21181143 | $\omega$ | 351.41520 | | +0.93735997 | | +0.34724649 |
| $a$ | 2.7872106 | $\Omega$ | 348.15105 | | −0.31101914 | | +0.79817432 |
| $e$ | 0.2229208 | $i$ | 7.79799 | | −0.15691838 | | +0.49227800 |
| $P$ | 4.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 18 | 644 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.0 |
| 2001 07 18 | 644 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− |
| 2001 07 18 | 644 | 0.4− | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.3− |
| 2001 07 24 | 644 | 0.3+ | 0.5− | 2006 09 23 | 104 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.9− |
| 2001 07 24 | 644 | 0.3+ | 0.0 | 2006 09 23 | 104 | 0.0 | 0.8− | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2001 07 24 | 644 | 0.1+ | 0.1+ | 2006 09 23 | 104 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.6− | 0.1− |
| 2006 07 22 | G96 | 0.0 | 0.0 | 2006 09 24 | 104 | 0.2+ | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 09 24 | 104 | (3.8− | 0.7−) | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2006 07 22 | G96 | 0.1− | 0.1+ | 2006 09 24 | 104 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.3+ | 0.7+ |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.4+ |

**2006 SJ$_{65}$ = 2003 YT$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.21041 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27336592 | $\omega$ | 98.79296 | | +0.91250070 | | −0.39656236 |
| $a$ | 2.3512914 | $\Omega$ | 284.62033 | | +0.32254660 | | +0.84843935 |
| $e$ | 0.1158185 | $i$ | 5.95590 | | +0.25160716 | | +0.35055523 |
| $P$ | 3.61 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 704 | 1.2+ | 0.6+ | 2003 12 22 | 704 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2003 12 21 | 704 | 0.5− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2003 12 21 | 704 | 0.5+ | 1.7− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2003 12 21 | 704 | 0.2− | 0.3− | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.5− |
| 2003 12 22 | 704 | 0.8+ | 0.9+ | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2003 12 22 | 704 | 0.9− | 0.3− | 2006 09 23 | 691 | 0.2+ | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2003 12 22 | 704 | 0.7− | 0.5+ | 2006 09 23 | 691 | 0.4− | 0.3+ | | | | |

**2006 SO$_{65}$ = 1992 SP$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.72304 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28287267 | $\omega$ | 316.45701 | | +0.99885704 | | +0.04438972 |
| $a$ | 2.2983106 | $\Omega$ | 41.00877 | | −0.03299139 | | +0.90861315 |
| $e$ | 0.2208576 | $i$ | 1.54787 | | −0.03458585 | | +0.41527304 |
| $P$ | 3.48 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.4+ | 0.1− | 2006 09 27 | 704 | (1.2− | 2.5+) | 2006 10 10 | 104 | 1.1− | 0.7− |
| 1992 09 24 | 691 | 0.1+ | 0.3− | 2006 09 27 | 704 | 0.6− | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 1992 09 24 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 1992 09 25 | 691 | 0.0 | 0.5+ | 2006 09 27 | 704 | 1.0− | 0.7+ | 2006 10 22 | G96 | 0.3+ | 0.5− |
| 1992 09 25 | 691 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 1992 09 25 | 691 | 0.3− | 0.3− | 2006 09 27 | 704 | 1.3− | 0.8+ | 2006 11 14 | G96 | 0.5− | 0.1− |
| 2006 09 18 | 699 | 0.0 | 0.7− | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2006 09 18 | 699 | 0.4− | 1.0+ | 2006 09 28 | 704 | 0.7− | 1.1+ | 2006 11 14 | G96 | 0.3− | 0.1+ |
| 2006 09 18 | 699 | 1.3+ | 0.6− | 2006 09 28 | 704 | (0.3− | 1.9+) | 2006 11 14 | G96 | 0.7+ | 1.0− |
| 2006 09 18 | 699 | 0.1+ | 1.3− | 2006 09 28 | 691 | 0.4− | 0.6+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2006 09 23 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.4+ |
| 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 09 28 | 704 | (1.3− | 1.8+) | 2006 11 21 | G96 | 0.2+ | 0.2+ |
| 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 10 | 104 | 1.0+ | 0.8− | 2006 11 21 | G96 | 0.1+ | 0.7+ |
| 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 10 | 104 | (3.9− | 1.2−) | | | | |

**2006 SS$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.85343 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26552317 | $\omega$ | 266.87768 | | −0.99266214 | | −0.07448623 |
| $a$ | 2.3973665 | $\Omega$ | 268.83639 | | +0.10632459 | | −0.91285670 |
| $e$ | 0.0615929 | $i$ | 5.46718 | | −0.05759302 | | −0.40142801 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.0 | 0.0 | 2003 11 24 | 699 | 1.6+ | 0.3− | 2006 09 19 | 691 | 0.2− | 0.3− |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2003 11 24 | 699 | 0.7− | 1.4+ | 2006 09 23 | 691 | 0.2+ | 0.1− |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 11 24 | 699 | 0.7+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2003 11 24 | 699 | 1.2− | 2.1+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2003 10 27 | 691 | 0.1+ | 0.1− | 2005 03 13 | 691 | 0.5+ | 0.5+ | 2006 09 23 | 691 | 0.1+ | 0.1+ |
| 2003 10 27 | 691 | 0.1− | 0.2+ | 2005 03 13 | 691 | 0.4+ | 0.7+ | 2006 09 23 | 691 | 0.3+ | 0.0 |
| 2003 10 27 | 691 | 0.0 | 0.0 | 2005 03 13 | 691 | 0.2+ | 0.5+ | 2006 09 23 | 691 | 0.7− | 0.5+ |
| 2003 10 27 | 691 | 0.2− | 0.2+ | 2005 04 14 | 703 | 0.3+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 1.1+ |
| 2003 10 27 | 691 | 0.5− | 0.1+ | 2005 04 14 | 703 | 1.9− | 0.6− | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2003 10 27 | 691 | 0.1+ | 0.2+ | 2005 04 14 | 703 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2003 11 16 | 691 | 0.0 | 0.1+ | 2005 04 14 | 703 | 0.0 | 1.3+ | 2006 09 28 | 691 | 0.3+ | 0.2− |
| 2003 11 16 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.0 | 0.5+ | 2006 09 28 | 691 | 0.3− | 0.3+ |
| 2003 11 16 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.2+ |

**2006 SF$_{66}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.15568 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21545389 | $\omega$ | 253.34616 | | −0.31575195 | | +0.94882966 |
| $a$ | 2.7557078 | $\Omega$ | 358.22602 | | −0.80081345 | | −0.26919844 |
| $e$ | 0.1048732 | $i$ | 8.90956 | | −0.50891898 | | −0.16508930 |
| $P$ | 4.57 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.2+ | 0.1+ | 2004 02 18 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.1− |
| 2001 07 20 | 644 | 0.4− | 0.0 | 2006 08 28 | 703 | 1.0+ | 0.6− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 07 20 | 644 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2001 08 10 | 644 | 0.1+ | 0.1+ | 2006 08 28 | 703 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− |
| 2001 08 10 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | (2.5+ | 1.1−) | 2006 09 27 | 691 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ | | |
| 2004 01 17 | 644 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.1− | | |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.6− | 0.5+ | | |
| 2004 01 17 | 644 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.2+ | | |
| 2004 02 18 | 691 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.4− | 0.0 | | |
| 2004 02 18 | 691 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.3+ | | | | | | |

**2006 SP$_{66}$ = 1995 UQ$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.21317 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26435609 | $\omega$ | 200.50307 | | +0.89212401 | | −0.45174422 |
| $a$ | 2.4044173 | $\Omega$ | 186.36396 | | +0.42222189 | | +0.83874958 |
| $e$ | 0.1709923 | $i$ | 3.34827 | | +0.16075889 | | +0.30401694 |
| $P$ | 3.73 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.1+ | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 19 | 695 | 0.0 | 0.3+ | | |
| 1995 10 18 | 691 | 0.5+ | 0.3− | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.5+ | 0.6− | | |
| 1995 10 18 | 691 | 0.4+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.5− | | |
| 1995 10 20 | 691 | 0.5− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.6− | | |
| 1995 10 20 | 691 | 0.4− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.2− | | |
| 1995 10 20 | 691 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2+ | | |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5− | | |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.3− | | |
| 2006 09 19 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.8− | | |
| 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 19 | 695 | 0.2+ | 0.2+ | | | | | | |

**2006 SA$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.78908 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17198578 | $\omega$ | 317.47019 | | −0.59555431 | | −0.80330709 |
| $a$ | 3.2023910 | $\Omega$ | 169.08034 | | +0.74200903 | | −0.55180365 |
| $e$ | 0.1595604 | $i$ | 1.08144 | | +0.30779485 | | −0.22407689 |
| $P$ | 5.73 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 26 | 599 | 0.6− | 1.0− | 2003 04 07 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.4− | | |
| 2003 02 26 | 599 | (1.4− | 3.3−) | 2003 04 07 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.3− | | |
| 2003 02 26 | 599 | 0.9− | 1.1− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 03 | 291 | 0.0 | 0.1+ | | |
| 2003 02 26 | 599 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 03 | 291 | 0.1+ | 0.1− | | |
| 2003 03 24 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.7+ | 2006 10 03 | 291 | 0.5− | 0.1+ | | |
| 2003 03 24 | 691 | 0.6+ | 0.6+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.2− | | |
| 2003 03 24 | 691 | 0.6+ | 0.0 | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | (2.2+ | 0.8−) | | |
| 2003 03 30 | 695 | 0.1+ | 0.5− | 2006 09 23 | 691 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.1− | | |
| 2003 03 30 | 695 | 0.3+ | 0.6− | 2006 09 25 | G96 | 0.4+ | 0.7− | 2006 10 27 | G96 | 0.2+ | 0.7− | | |
| 2003 04 07 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3− | 1.0− | | | | | | |

**2006 SB$_{68}$ = 1997 ER$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.58591 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27082161 | $\omega$ | 331.72676 | | −0.80695138 | | −0.59042788 |
| $a$ | 2.3659951 | $\Omega$ | 172.03508 | | +0.56020983 | | −0.77319245 |
| $e$ | 0.1514864 | $i$ | 6.20613 | | +0.18706795 | | −0.23144839 |
| $P$ | 3.64 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 11 | 704 | 0.3− | 0.1+ | 2006 09 23 | 461 | 0.0 | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.6− | | |
| 1997 03 11 | 704 | 0.2− | 0.5+ | 2006 09 23 | 461 | 0.4+ | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.2− | | |
| 1997 03 12 | 704 | 0.6+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.0 | 0.2− | | |
| 1997 03 12 | 704 | 0.0 | 0.9− | 2006 09 23 | 691 | 0.4− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2− | | |
| 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.4+ | | |
| 2006 09 19 | 691 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.5− | 1.6+ | | |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.9+ | | |
| 2006 09 23 | 461 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 17 | 703 | 0.5+ | 1.7− | | |

**2006 SE$_{68}$ = 1996 TK$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.50829 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29656318 | $\omega$ | 161.16632 | | +0.75811572 | | +0.65170661 |
| $a$ | 2.2270223 | $\Omega$ | 158.11152 | | −0.60602124 | | +0.71722556 |
| $e$ | 0.1943901 | $i$ | 3.57058 | | −0.24082943 | | +0.24671033 |
| $P$ | 3.32 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 684 | 0.5+ | 0.4− | 2006 07 21 | G96 | 0.8+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1− | | |
| 1996 10 06 | 684 | 0.5− | 0.3− | 2006 07 21 | G96 | 0.1− | 0.4+ | 2006 09 30 | 703 | (1.8− | 0.9+) | | |
| 1996 10 07 | 684 | 0.0 | 0.6− | 2006 09 19 | 691 | 0.8− | 1.3− | 2006 09 30 | 703 | 0.7− | 0.0 | | |
| 1996 10 07 | 684 | 1.0+ | 1.4− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 1.4− | 0.7− | | |
| 2005 03 10 | G96 | 0.0 | 0.1+ | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.2+ | | |
| 2005 03 10 | G96 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 2.2+ | 0.3+ | | |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.2− | 0.5+ | 2006 10 17 | 703 | 2.1+ | 1.5+ | | |
| 2005 03 10 | G96 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.9+ | 0.9+ | | |
| 2006 07 21 | G96 | 0.3− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.7− | 0.8+ | | |
| 2006 07 21 | G96 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | | | | | | |

**2006 SK$_{68}$ = 1999 FF$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.47565 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18500293 | $\omega$ | 271.39233 | | −0.08476178 | | +0.99632596 |
| $a$ | 3.0503545 | $\Omega$ | 353.70588 | | −0.86399079 | | −0.07961554 |
| $e$ | 0.1268423 | $i$ | 6.41468 | | −0.49632182 | | −0.03155870 |
| $P$ | 5.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | (2.0− | 0.4−) | 2006 09 25 | G96 | 0.3+ | 0.2− | | |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.0 | 0.7− | 2006 09 25 | G96 | 0.2+ | 0.2− | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.5− | | |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.2− | | |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.5− | | |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.5− | | |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− | | | | | | |
| 2006 09 19 | 703 | 0.9+ | 1.2+ | 2006 09 25 | G96 | 0.4+ | 0.1+ | | | | | | |

**2006 SO$_{68}$ = 2002 XZ$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.53979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21463194 | $\omega$ | 54.30715 | | +0.31005560 | | −0.95022641 |
| $a$ | 2.7627387 | $\Omega$ | 17.70570 | | +0.83655681 | | +0.25739957 |
| $e$ | 0.0646028 | $i$ | 5.77131 | | +0.45170590 | | +0.17554267 |
| $P$ | 4.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.0 | 0.6− | 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2002 12 06 | 704 | 0.8− | 0.4+ | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 09 27 | G92 | 0.4− | 0.3+ | | |
| 2002 12 06 | 704 | 0.3+ | 1.5+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.2+ | | |
| 2002 12 06 | 704 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 09 28 | G92 | 0.0 | 0.5+ | | |
| 2002 12 11 | 704 | 0.7+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 09 28 | G92 | 0.7− | 0.2− | | |
| 2002 12 11 | 704 | 0.7− | 1.2− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 09 28 | G92 | 0.5+ | 0.1− | | |
| 2002 12 11 | 704 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.4− | | |
| 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.5+ | 0.1− | | |
| 2002 12 11 | 704 | 0.1+ | 0.4− | 2006 09 27 | G92 | 0.2+ | 0.6− | 2006 10 21 | G96 | 0.1− | 0.0 | | |
| 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.2− | | |
| 2006 09 19 | 691 | 0.1− | 0.4− | 2006 09 27 | G92 | 0.4− | 0.2− | | | | | | |

**2006 SB$_{69}$ = 1995 TY$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 296.22028 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.27266906 | | $\omega$ | 274.47546 | | | +0.28885360 | | | −0.95734962 | | | |
| $a$ | 2.3552959 | | $\Omega$ | 158.73148 | | | +0.88556755 | | | +0.26451064 | | | |
| $e$ | 0.0639692 | | $i$ | 1.06325 | | | +0.36377702 | | | +0.11625761 | | | |
| $P$ | 3.61 | | $H$ | 17.3 | $G$ | 0.15 | | $U$ | 5 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.3− | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 1995 09 26 | 691 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.8− | 0.1+ |
| 1995 09 26 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.1− | 0.7− | 2006 09 27 | 704 | 0.0 | 0.8+ |
| 1995 10 01 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 1995 10 01 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 09 27 | 704 | 0.0 | 0.0 |
| 1995 10 01 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.6− | 0.3− | 2006 10 20 | G96 | 0.1− | 0.4− |

**2006 SL$_{69}$ = 2001 SW$_{328}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 17.85902 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.20656865 | | $\omega$ | 181.83171 | | | +0.96331646 | | | +0.26790378 | | | |
| $a$ | 2.8341735 | | $\Omega$ | 162.60396 | | | −0.24554697 | | | +0.90360069 | | | |
| $e$ | 0.0322096 | | $i$ | 3.02526 | | | −0.10829629 | | | +0.33426540 | | | |
| $P$ | 4.77 | | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 0.2+ | 0.6− | 2004 04 24 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.6− |
| 1994 01 11 | 691 | 0.4− | 0.3− | 2004 04 24 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.5− |
| 1994 01 11 | 691 | 0.2+ | 0.9+ | 2006 07 21 | G96 | 0.9− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.6− |
| 2001 09 19 | 691 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.4− |
| 2001 09 19 | 691 | 0.2+ | 0.1− | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 691 | 0.2+ | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.3− | 0.3+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.4− | 0.1+ |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 699 | 0.0 | 1.6− |
| 2001 09 21 | 704 | 1.4− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 28 | 699 | 0.7+ | 0.7+ |
| 2001 09 21 | 704 | 0.2+ | 1.3+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 699 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.4+ | 0.8+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 699 | 1.5− | 0.7+ |
| 2004 04 24 | 691 | 0.5+ | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.1− | | | | |

**2006 SW$_{69}$ = 2004 FL$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 348.02873 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.22507568 | | $\omega$ | 199.26461 | | | +0.84386093 | | | −0.53272041 | | | |
| $a$ | 2.6766012 | | $\Omega$ | 193.49997 | | | +0.52125151 | | | +0.84224338 | | | |
| $e$ | 0.1138600 | | $i$ | 15.93497 | | | +0.12726194 | | | +0.08267439 | | | |
| $P$ | 4.38 | | $H$ | 16.3 | $G$ | 0.15 | | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.1− | 0.4− | 2006 08 30 | 699 | 0.6− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2004 03 20 | 704 | 0.1+ | 0.8− | 2006 08 30 | 699 | (1.9− | 2.4+) | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 2004 03 20 | 704 | 0.7+ | 0.6− | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.3− |
| 2004 03 20 | 704 | 0.2− | 1.0− | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.1− |
| 2004 03 26 | 704 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2004 03 26 | 704 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.2− |
| 2004 03 26 | 704 | 0.2− | 0.9+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2004 03 26 | 704 | 1.2+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2004 03 26 | 704 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 03 26 | 704 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2004 03 26 | 704 | 0.0 | 0.7+ | 2006 09 27 | 691 | 0.3− | 0.2− | 2006 10 27 | 704 | 1.4− | 0.8− |
| 2004 03 29 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.6+ | 2006 10 27 | 704 | 0.2− | 0.3− |
| 2004 03 29 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.1− | 0.9− | 2006 10 27 | 704 | 0.9− | 0.2+ |
| 2004 03 29 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 1.1− | 0.7+ | 2006 10 27 | 704 | (0.2− | 1.8−) |
| 2004 04 15 | 691 | 0.4+ | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.5+ | 2006 11 16 | 703 | 0.0 | 0.9+ |
| 2004 04 15 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.3− | 2006 11 16 | 703 | 0.8+ | 0.0 |
| 2004 04 15 | 691 | 0.2− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.2− | 0.5+ |
| 2006 08 30 | 699 | 0.2− | 0.8+ | 2006 10 01 | 691 | 1.5+ | 0.7− | 2006 11 16 | 703 | 0.4− | 0.2+ |
| 2006 08 30 | 699 | (1.2− | 2.2+) | 2006 10 20 | 644 | 0.1− | 0.3+ | | | | |

**2006 SX$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 51.63432 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.27367732 | | $\omega$ | 277.49149 | | | +0.59532443 | | | +0.80313047 | | | |
| $a$ | 2.3495075 | | $\Omega$ | 29.08578 | | | −0.71645417 | | | +0.54405949 | | | |
| $e$ | 0.1753248 | | $i$ | 2.81574 | | | −0.36370626 | | | +0.24285945 | | | |
| $P$ | 3.60 | | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2005 04 30 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 704 | 0.4+ | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.4+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 704 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2005 05 04 | G96 | 0.4− | 0.1− | 2006 10 18 | H07 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 10 18 | H07 | 0.5− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2005 05 04 | G96 | (1.2+ | 2.2+) | 2006 10 18 | H07 | 0.3− | 0.8− | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2005 05 04 | G96 | 0.2− | 0.1− | 2006 10 20 | H07 | (1.3+ | 1.8+) | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 20 | H07 | 0.6+ | 0.6− | 2006 11 13 | G96 | 0.6+ | 0.6− |
| 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.7+ |
| 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.5− |
| 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.0 |

**2006 SE$_{70}$ = 2001 DA$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 107.70980 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.27121918 | | $\omega$ | 113.54119 | | | −0.25318601 | | | +0.96722744 | | | |
| $a$ | 2.3636824 | | $\Omega$ | 141.77653 | | | −0.89851045 | | | −0.22775681 | | | |
| $e$ | 0.1501363 | | $i$ | 1.77652 | | | −0.35857470 | | | −0.11224044 | | | |
| $P$ | 3.63 | | $H$ | 17.5 | $G$ | 0.15 | | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 17 | 691 | 0.6− | 0.2− | 2005 05 11 | 807 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 1999 10 17 | 691 | 0.4+ | 0.8− | 2005 05 11 | 807 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.3+ | 0.3+ |
| 1999 10 17 | 691 | 0.6+ | 0.9− | 2006 09 19 | 691 | 0.6− | 0.7+ | 2006 10 16 | 691 | 0.1− | 0.2− |
| 2001 02 16 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 691 | 0.5− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2001 02 16 | 691 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.5− |
| 2001 02 16 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.5+ | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2001 02 22 | 691 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.6− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 02 22 | 691 | 0.2+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 02 22 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2002 09 04 | 644 | 0.4− | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2002 09 04 | 644 | 0.2− | 0.6+ | 2006 09 27 | 691 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2002 09 04 | 644 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | | | | |

**2006 SO$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 346.77936 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.24299632 | | $\omega$ | 359.68588 | | | +0.79960468 | | | −0.59941253 | | | |
| $a$ | 2.5433312 | | $\Omega$ | 37.22118 | | | +0.55110425 | | | +0.70824798 | | | |
| $e$ | 0.2258771 | | $i$ | 3.46554 | | | +0.23857172 | | | +0.37294693 | | | |
| $P$ | 4.06 | | $H$ | 17.4 | $G$ | 0.15 | | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.2+ | 0.6− | 2006 10 12 | A13 | 0.3− | 0.6− | 2006 10 27 | 691 | 0.5+ | 0.2+ |
| 2002 10 15 | 644 | 0.1− | 0.2− | 2006 10 12 | A13 | 0.4− | 0.3− | 2006 10 27 | 691 | 0.7+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 10 27 | 691 | 0.5+ | 0.2+ | | |
| 2002 10 30 | 291 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.2− | | |
| 2002 10 30 | 291 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2002 10 30 | 291 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 10 27 | G96 | 0.1− | 0.0 | | |
| 2002 11 06 | 704 | 1.2− | 0.7− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 11 06 | 704 | 0.4− | 0.7+ | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.1− | | |
| 2002 11 06 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.3− | | |
| 2002 11 06 | 704 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.6+ | 0.1− | 2006 10 31 | 691 | 0.3− | 0.1− | | |
| 2002 11 06 | 608 | 0.2− | 0.7− | 2006 10 19 | 644 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2002 11 06 | 608 | 0.5+ | 0.6− | 2006 10 19 | 644 | 0.3+ | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2002 11 06 | 608 | 0.6+ | 0.1− | 2006 10 20 | 703 | 0.3+ | 0.6− | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | 703 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.3− | | |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 703 | 0.4+ | 0.4+ | 2006 11 11 | 703 | (0.8+ | 1.8+) | | |
| 2006 09 19 | 691 | 0.3+ | 0.4− | 2006 10 20 | 703 | 0.0 | 0.7− | 2006 11 11 | G96 | 0.0 | 0.0 | | |
| 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.7− | 2006 11 11 | G96 | 0.1− | 0.0 | | |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.5− | | |
| 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.0 | | |
| 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.7− | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.4− | | |
| 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.2− | | |
| 2006 10 01 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 20 | G96 | 0.5+ | 0.4− | | |
| 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.2− | | |
| 2006 10 01 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.2− | | |
| 2006 10 12 | A13 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1+ | | | | | | |

**2006 SQ$_{70}$ = 2004 CU$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.62365 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26878404 | $\omega$ | 317.35717 | | −0.65495686 | −0.75562978 | |
| $a$ | 2.3779373 | $\Omega$ | 173.54659 | | +0.70989708 | −0.61862590 | |
| $e$ | 0.1166927 | $i$ | 3.78841 | | +0.25899352 | −0.21523390 | |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.6+ | 0.5− | 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 1.1+ | 0.9− | | |
| 2004 02 11 | 644 | 0.4+ | 0.3− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.8− | 0.4− | | |
| 2004 02 11 | 644 | 0.4+ | 0.6− | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2− | | |
| 2004 02 17 | 704 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.5− | 0.4− | | |
| 2004 02 17 | 704 | 0.1− | 0.8+ | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.1− | | |
| 2004 02 17 | 704 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.7− | 2006 11 19 | 691 | 0.2− | 0.1+ | | |
| 2004 02 17 | 704 | 1.1− | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.2+ | | |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.1+ | | |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.9− | 1.0+ | | | | | | |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.6+ | | | | | | |

**2006 SS$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.97194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30396024 | $\omega$ | 219.92000 | | +0.17502324 | +0.98421839 | |
| $a$ | 2.1907435 | $\Omega$ | 60.17467 | | −0.89546805 | +0.17014695 | |
| $e$ | 0.1654980 | $i$ | 1.72375 | | −0.40927232 | +0.04862273 | |
| $P$ | 3.24 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 04 | 691 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.4− | 0.3− | 2006 10 28 | 691 | 0.4+ | 1.0+ | | |
| 2002 04 04 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1+ | | |
| 2002 04 04 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.4+ | | |
| 2002 04 08 | 807 | 0.1+ | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.3+ | 2006 10 29 | G96 | 0.7+ | 0.4− | | |
| 2002 04 08 | 807 | 0.2− | 0.9+ | 2006 09 23 | 691 | 0.2− | 0.4− | 2006 10 29 | G96 | 0.1− | 0.2− | | |
| 2002 04 09 | 644 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.7+ | 2006 10 29 | G96 | 0.2+ | 0.4− | | |
| 2002 04 09 | 644 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.0 | 0.5− | | |
| 2002 04 09 | 644 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.4+ | 0.3− | | |
| 2005 04 11 | G96 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.5− | 1.1− | | |
| 2005 04 11 | G96 | 0.2+ | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 29 | G96 | 0.2− | 0.4− | | |
| 2005 04 11 | G96 | 0.4− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.1− | 0.2− | | |
| 2005 04 11 | G96 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.2− | 0.0 | | | | | | |

**2006 SY$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.25831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26785206 | $\omega$ | 313.98015 | | +0.99018989 | +0.13798778 | |
| $a$ | 2.3834501 | $\Omega$ | 38.10416 | | −0.11582425 | +0.89858089 | |
| $e$ | 0.2056554 | $i$ | 2.04172 | | −0.07815831 | +0.41654742 | |
| $P$ | 3.68 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 21 | 691 | 1.0− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− | | |
| 1993 01 21 | 691 | 0.5+ | 0.7− | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.0 | | |
| 1993 01 21 | 691 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 1.3+ | 0.2+ | | |
| 2002 08 13 | 704 | 0.7+ | 0.6− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.4− | | |
| 2002 08 13 | 704 | 0.1− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.7+ | 1.1− | | |
| 2002 08 13 | 704 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2002 08 13 | 704 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ | | |
| 2002 08 29 | 644 | 0.2+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.0 | | |
| 2002 08 29 | 644 | 0.1+ | 0.7− | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.1+ | | |
| 2002 08 29 | 644 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.3− | | |
| 2005 04 02 | G96 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1+ | | |
| 2005 04 02 | G96 | 0.1− | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | | |
| 2005 04 02 | G96 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3+ | | |
| 2005 04 02 | G96 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | 703 | 0.4+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 20 | 703 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.5− | 0.2− | | |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | (1.7− | 0.5−) | | |
| 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 20 | 703 | 0.9− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 20 | 703 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.3− | 0.4− | | |
| 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.6− | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.0− | 0.9+ | | |
| 2006 10 02 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.2+ | 0.2− | 2006 11 20 | G96 | 0.0 | 0.3− | | |
| 2006 10 02 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.3− | 0.2− | | |
| 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.0 | | |
| 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.1− | | |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1− | | | | | | |

**2006 SZ$_{70}$ = 2004 AW$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.98721 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27560501 | $\omega$ | 237.78966 | | +0.43110727 | −0.90220464 | |
| $a$ | 2.3385392 | $\Omega$ | 186.71244 | | +0.86112035 | +0.41574544 | |
| $e$ | 0.0854242 | $i$ | 6.46675 | | +0.26947775 | +0.11481512 | |
| $P$ | 3.58 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 14 | 691 | 0.0 | 0.0 | 2005 06 28 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.1+ | | |
| 2001 04 14 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.3+ | | |
| 2001 04 14 | 691 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1− | | |
| 2002 08 16 | 644 | 0.1− | 0.5+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.6+ | | |
| 2002 08 16 | 644 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.2− | | |
| 2002 08 16 | 644 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.3− | | |
| 2004 01 13 | 644 | 0.1+ | 0.9+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 2004 01 13 | 644 | 0.0 | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.1− | | |
| 2004 01 13 | 644 | 0.4+ | 0.6+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.7− | 0.3− | | |
| 2004 01 16 | 644 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.1− | | |
| 2004 01 16 | 644 | 0.3+ | 0.8+ | 2006 10 01 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2004 01 16 | 644 | 0.3+ | 0.9+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.7+ | 0.1− | | |
| 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.0 | 0.2+ | | |
| 2005 06 08 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.8+ | 0.5− | 2006 11 13 | 703 | 0.2+ | 0.0 | | |
| 2005 06 08 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.6− | | |
| 2005 06 28 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.1− | 0.3+ | | | | | | |
| 2005 06 28 | 691 | 0.0 | 0.2+ | 2006 10 15 | 703 | 1.0− | 0.5− | | | | | | |

**2006 SA$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.25267 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21566815 | $\omega$ | 191.52591 | | +0.98173831 | | −0.19023488 |
| $a$ | 2.7538823 | $\Omega$ | 179.43890 | | +0.18012415 | | +0.92826069 |
| $e$ | 0.1211487 | $i$ | 4.44948 | | +0.06119785 | | +0.31959784 |
| $P$ | 4.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 644 | 0.6− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 21 | 703 | 1.3− | 0.0 |
| 2001 08 16 | 644 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.9+ |
| 2001 08 16 | 644 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 1.3− | 0.1+ |
| 2001 08 16 | 704 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.3− |
| 2001 08 16 | 704 | 0.3− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 08 16 | 704 | 0.5+ | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 0.4− | 2006 10 01 | 691 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 09 20 | 704 | 0.7+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2006 10 13 | D35 | 0.1+ | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.2+ | 0.7+ | 2006 10 13 | D35 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2004 03 29 | 691 | 0.4+ | 0.2+ | 2006 10 13 | D35 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2004 03 29 | 691 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.8− | 1.2− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2004 03 29 | 691 | 0.2+ | 0.6+ | 2006 10 15 | 703 | 0.6+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2006 07 21 | G96 | 0.3− | 0.2− | 2006 10 15 | 703 | 1.1− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.9+ | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.6− |
| 2006 07 21 | G96 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2006 07 21 | G96 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 21 | 691 | 0.3+ | 0.2+ |

**2006 SE$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.02686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25504320 | $\omega$ | 240.40649 | | −0.02344159 | | +0.99703116 |
| $a$ | 2.4625982 | $\Omega$ | 28.53256 | | −0.85590199 | | +0.01789573 |
| $e$ | 0.1044719 | $i$ | 8.83267 | | −0.51660649 | | −0.07489062 |
| $P$ | 3.86 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.5− | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2002 10 31 | 645 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.8− |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.2+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.6+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.7+ | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.5− | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.5− | 2006 10 31 | 691 | 0.2− | 0.3− |
| 2006 09 23 | 691 | 0.4− | 0.6+ | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2006 09 23 | 691 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.4+ | 0.2+ |
| 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.3+ | 2006 11 10 | 691 | 0.4+ | 0.2+ |
| 2006 09 27 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.3+ | | | | |
| 2006 09 27 | 691 | 0.8+ | 0.1− | 2006 10 23 | 691 | 0.8− | 0.2+ | | | | |

**2006 SJ$_{71}$ = 2005 JT$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.59306 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23819699 | $\omega$ | 261.82093 | | +0.54755240 | | +0.83563887 |
| $a$ | 2.5773805 | $\Omega$ | 41.47540 | | −0.73952728 | | +0.50759950 |
| $e$ | 0.1426117 | $i$ | 3.76770 | | −0.39151726 | | +0.20988192 |
| $P$ | 4.14 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 0.1− | 0.7− | 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2005 04 11 | G96 | 0.5− | 0.2− | 2006 09 19 | 691 | 0.4+ | 0.4− | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 2005 04 11 | G96 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.6+ | 0.6− |
| 2005 05 10 | G96 | 0.3− | 0.1+ | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.4− |
| 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.0 |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 09 23 | 691 | 0.6− | 0.3− | 2006 10 17 | G96 | 0.4− | 0.1+ |
| 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2005 05 11 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2005 05 11 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1− |

**2006 SN$_{71}$ = 2002 RK$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.91081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26224326 | $\omega$ | 118.42795 | | +0.07806713 | | +0.99682258 |
| $a$ | 2.4173145 | $\Omega$ | 156.03394 | | −0.92776585 | | +0.07844869 |
| $e$ | 0.2262412 | $i$ | 2.23201 | | −0.36490554 | | +0.01380377 |
| $P$ | 3.76 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.7− | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 09 13 | 644 | 0.1+ | 0.4− | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.5+ |
| 2002 09 13 | 644 | 0.1− | 0.2− | 2006 09 23 | 691 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.3+ | 1.0− |
| 2002 09 15 | 644 | 0.1+ | 0.7+ | 2006 09 23 | 691 | 0.3− | 0.4− | 2006 10 17 | G96 | 0.0 | 0.5− |
| 2002 09 15 | 644 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.6− |
| 2002 09 15 | 644 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.5− |
| 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 | | | | |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.4− | 0.6+ | | | | |

**2006 SO$_{71}$ = 2000 AG$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.83206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27051751 | $\omega$ | 30.21298 | | +0.24605162 | | −0.96862332 |
| $a$ | 2.3677679 | $\Omega$ | 45.56861 | | +0.87916633 | | +0.20781745 |
| $e$ | 0.1940666 | $i$ | 2.81222 | | +0.40807496 | | +0.13631131 |
| $P$ | 3.64 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 704 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2000 01 03 | 704 | 0.7+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2000 01 03 | 704 | 1.5− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 13 | 291 | 0.1+ | 0.2+ |
| 2000 01 04 | 704 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 13 | 291 | 0.0 | 0.1+ |
| 2000 01 04 | 704 | 0.8− | 0.6− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 13 | 291 | 0.1+ | 0.1+ |
| 2000 01 04 | 704 | 1.0+ | 0.9− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 13 | 291 | 0.2+ | 0.2+ |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 23 | 704 | 0.4+ | 1.0+ | 2006 11 13 | 291 | 0.2+ | 0.2+ |
| 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 10 23 | 704 | 1.1+ | 1.4− | 2006 11 13 | 291 | 0.1− | 0.1+ |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 23 | 704 | 0.6− | 1.1+ | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 23 | 704 | 1.0+ | 0.9− | 2006 11 17 | 703 | 0.7− | 0.9+ |
| 2006 09 23 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2006 09 27 | 704 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2− |
| 2006 09 27 | 704 | 0.1− | 0.7− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2006 09 27 | 704 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2006 09 27 | 691 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 1.1− | 0.5− |
| 2006 09 27 | 691 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.3− | 0.4− | 2006 11 20 | G96 | 0.6+ | 0.2− |
| 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 20 | G96 | 0.4− | 0.4− |
| 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | (2.0+ | 0.1−) | 2006 11 20 | G96 | 0.3+ | 0.6− |
| 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.5+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.0 |
| 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.5− | 0.5+ | 2006 11 21 | 704 | 1.0− | 0.6+ |
| 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.9− | 1.4− |

**2006 SP$_{71}$ = 2004 GX$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.92084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22800996 | $\omega$ | 245.22928 | | +0.21541429 | | −0.97536278 |
| $a$ | 2.6535881 | $\Omega$ | 192.61034 | | +0.95607047 | | +0.22057247 |
| $e$ | 0.1435233 | $i$ | 12.58868 | | +0.19881133 | | −0.00390191 |
| $P$ | 4.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 691 | 0.1− | 0.0 | 2006 09 23 | 691 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2004 04 14 | 691 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2004 04 14 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2004 04 19 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2004 04 19 | 691 | 0.2+ | 0.0 | 2006 10 15 | 703 | 0.3− | 0.8− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2006 09 19 | 691 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.8− | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.5− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.3+ | | | | |

**2006 SU$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.79447 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18050317 | $\omega$ | 291.36385 | | −0.55778112 | | −0.82833452 |
| $a$ | 3.1008410 | $\Omega$ | 192.93877 | | +0.82144852 | | −0.54191526 |
| $e$ | 0.1506285 | $i$ | 13.52495 | | +0.11875420 | | −0.14209068 |
| $P$ | 5.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.3+ | 0.3− | 2003 04 24 | 691 | 0.0 | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.3+ |
| 1995 09 17 | 691 | 0.1− | 0.5− | 2003 04 24 | 691 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.0 |
| 1995 09 17 | 691 | 0.1− | 0.3− | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2006 07 21 | G96 | 1.1+ | 0.0 | 2006 10 21 | 703 | 0.7− | 1.3+ |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.8− |
| 2001 12 18 | 209 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.7− | 1.1− |
| 2001 12 18 | 209 | 0.3+ | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2001 12 18 | 209 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2003 04 01 | 644 | 0.3+ | 0.7− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2003 04 01 | 644 | 0.7+ | 0.7− | 2006 09 23 | 691 | 0.4− | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2003 04 01 | 644 | 0.5+ | 0.6− | 2006 09 23 | 691 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2003 04 07 | 691 | 0.1+ | 0.6+ | 2006 09 23 | 691 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2003 04 07 | 691 | 0.4+ | 0.6+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.5+ | 0.4− |
| 2003 04 07 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.4+ | 0.5− |
| 2003 04 24 | 691 | 0.4− | 0.6+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.6− |

**2006 SV$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.39884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24050911 | $\omega$ | 338.21261 | | +0.99273711 | | −0.10449467 |
| $a$ | 2.5608356 | $\Omega$ | 27.98886 | | +0.12030143 | | +0.85909915 |
| $e$ | 0.2251970 | $i$ | 7.29792 | | +0.00076817 | | +0.50102846 |
| $P$ | 4.10 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 704 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 1.4− |
| 2002 11 08 | 704 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.4+ |
| 2002 11 08 | 704 | (3.7− | 0.9−) | 2006 10 02 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.8+ | 0.7+ |
| 2002 11 12 | 704 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 11 12 | 704 | 0.0 | 0.3− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 11 12 | 704 | 0.4− | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 11 12 | 704 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2006 09 23 | 691 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2006 09 27 | 691 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2006 09 27 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.4− |

**2006 SX$_{71}$ = 2004 ES$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.47731 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22609655 | $\omega$ | 30.65363 | | −0.99861000 | | −0.04691161 |
| $a$ | 2.6685382 | $\Omega$ | 146.63163 | | +0.03496815 | | −0.93077229 |
| $e$ | 0.0625447 | $i$ | 2.50384 | | +0.03943716 | | −0.36257723 |
| $P$ | 4.36 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2001 08 24 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 08 24 | 691 | 0.1− | 0.1− | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2004 02 26 | 695 | 0.1− | 0.5+ | 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 02 26 | 695 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.7− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.0 | | | | |

**2006 SM$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.33426 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20937323 | $\omega$ | 283.42930 | | +0.88838974 | | +0.45548228 |
| $a$ | 2.8088073 | $\Omega$ | 49.50719 | | −0.38655480 | | +0.80964723 |
| $e$ | 0.0991568 | $i$ | 4.33184 | | −0.24766722 | | +0.37014492 |
| $P$ | 4.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 807 | 0.3+ | 0.8− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 05 22 | 807 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2004 07 15 | 807 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 07 16 | 807 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | (3.9− | 1.5+) |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | (1.4+ | 2.7+) |
| 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.4− |
| 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.8+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2006 09 23 | 691 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.6+ | 0.3− |
| 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.7+ | 0.1+ |
| 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2006 09 27 | 691 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2006 10 01 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.5− | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1− | | | | |

**2006 ST$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.18526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35328654 | $\omega$ | 90.67862 | | −0.35243276 | | −0.92624821 |
| $a$ | 1.9817612 | $\Omega$ | 21.50940 | | +0.64588507 | | −0.34407230 |
| $e$ | 0.0550373 | $i$ | 21.37326 | | +0.67721757 | | −0.15387824 |
| $P$ | 2.79 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 21 | 704 | (0.4+ | 1.8+) | 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.3+ | 2002 09 13 | 644 | 0.4− | 0.3+ |
| 2002 02 21 | 704 | 1.2+ | 0.3+ | 2005 05 01 | 644 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.5− | 0.1+ | 2002 09 13 | 644 | 0.2+ | 0.4+ |
| 2002 02 21 | 704 | 0.7+ | 0.4+ | 2005 05 09 | 703 | (0.4− | 2.2−) | 2006 10 17 | 691 | 0.2− | 0.2+ | 2002 09 13 | 644 | 0.2− | 0.1− |
| 2002 02 21 | 704 | (1.8+ | 0.7−) | 2005 05 09 | 703 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.3+ | 2002 09 15 | 644 | (0.1− | 1.6+) |
| 2002 02 21 | 704 | 0.2+ | 0.7+ | 2005 05 09 | 703 | 0.9− | 0.6+ | 2006 10 17 | 703 | 0.3+ | 0.2− | 2002 09 15 | 644 | 0.5− | 1.0+ |
| 2003 09 27 | 699 | 0.9− | 0.2+ | 2005 05 09 | 703 | 1.0− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.1+ | 2002 09 15 | 644 | 0.6− | 1.4+ |
| 2003 09 27 | 699 | 0.1+ | 0.2− | 2005 05 14 | 644 | 0.5+ | 0.5+ | 2006 10 17 | 703 | (0.1− | 2.7−) | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 2003 09 27 | 699 | 0.5+ | 0.6− | 2005 05 14 | 644 | 0.1+ | 0.7+ | 2006 10 17 | 703 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.1− | 0.1+ |
| 2003 09 27 | 699 | 1.0− | 1.1+ | 2005 05 14 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.3+ |
| 2005 03 13 | 703 | 0.0 | 1.2+ | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2005 03 13 | 703 | 0.9− | 0.4− | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.3+ | 2006 09 23 | 691 | 0.2+ | 0.2+ |
| 2005 03 13 | 703 | 0.9+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.8− | 0.1+ | | | | |
| 2005 03 13 | 703 | (0.2− | 2.0+) | 2006 09 23 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ | | | | |
| 2005 04 09 | 691 | 0.2+ | 0.6+ | 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.4+ | | | | |
| 2005 04 09 | 691 | 0.0 | 0.5+ | 2006 09 23 | 691 | 0.4− | 0.0 | 2006 10 29 | 704 | (1.5+ | 1.3+) | | | | |
| 2005 04 09 | 691 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 29 | 704 | (1.5+ | 2.3+) | | | | |
| 2005 04 09 | G96 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 29 | 704 | 0.1+ | 0.4+ | | | | |
| 2005 04 09 | G96 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 29 | 704 | 0.1+ | 0.7+ | | | | |
| 2005 04 09 | G96 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.4− | 0.3+ | | | | |
| 2005 04 09 | G96 | 0.2− | 0.0 | 2006 09 27 | 704 | 0.8− | 0.7+ | 2006 11 14 | 703 | 1.4+ | 0.9+ | | | | |
| 2005 04 17 | 691 | 0.7+ | 0.3+ | 2006 09 27 | 704 | 0.8− | 0.4+ | 2006 11 14 | 703 | 1.1+ | 1.0− | | | | |
| 2005 04 17 | 691 | 0.8+ | 0.2+ | 2006 09 27 | 704 | 0.1− | 1.4+ | 2006 11 14 | 703 | 0.3− | 0.8+ | | | | |
| 2005 04 17 | 691 | 0.9+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.1+ | | | | | | | | |
| 2005 05 01 | 644 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.1+ | | | | | | | | |

**2006 SA$_{73}$ = 1995 UE$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.03797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26855451 | $\omega$ | 247.77836 | | +0.41245752 | −0.91096814 | |
| $a$ | 2.3792920 | $\Omega$ | 177.85000 | | +0.87000787 | +0.39260864 | |
| $e$ | 0.1195240 | $i$ | 6.09172 | | +0.27012052 | +0.12647337 | |
| $P$ | 3.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.5+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.7+ | 1.2− | 2006 07 21 | G96 | 0.5− | 0.3− |
| 1995 10 21 | 691 | 0.3+ | 0.6+ | 2006 09 23 | 691 | 0.3− | 0.1+ | 2006 10 21 | 703 | 1.5− | 1.0− | 2006 07 21 | G96 | 0.2+ | 0.5− |
| 1995 10 21 | 691 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.5− | 0.2− | 2006 07 21 | G96 | 0.3− | 0.7− |
| 1995 10 26 | 691 | 1.4− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.5+ | | | | |
| 1995 10 26 | 691 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | | | | |
| 1995 10 26 | 691 | 0.2+ | 0.3− | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.4− | 0.2− | | | | |
| 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | | | | |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 01 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | | | |
| 2006 07 21 | G96 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | | | |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | | | | |
| 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.1+ | | | | |
| 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.0 | | | | |
| 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.0 | | | | |
| 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.0 | | | | |

**2006 SC$_{73}$ = 2002 RN$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.45771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25810179 | $\omega$ | 270.67953 | | +0.43726942 | −0.89899521 | |
| $a$ | 2.4431045 | $\Omega$ | 153.34782 | | +0.84536454 | +0.40156032 | |
| $e$ | 0.2039316 | $i$ | 3.13824 | | +0.30684563 | +0.17480537 | |
| $P$ | 3.82 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 26 | 691 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.3− | 2002 09 13 | 644 | 0.4− | 0.3+ |
| 1995 12 26 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.8− | 2002 09 13 | 644 | 0.2+ | 0.4+ |
| 1995 12 26 | 691 | 0.2− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.2+ | 2002 09 13 | 644 | 0.2− | 0.1+ |
| 2000 02 05 | 695 | 0.4+ | 0.8+ | 2006 10 01 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− | 2002 09 15 | 644 | (0.1− | 1.6+) |
| 2000 02 05 | 695 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.3− | 2006 10 16 | 703 | 0.4+ | 0.1+ |
| 2002 08 12 | 807 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.5− |
| 2002 08 12 | 807 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.3+ |
| | | | | | | | | | | | | 2006 10 16 | 703 | 0.1+ | 0.7+ |
| | | | | | | | | | | | | 2006 10 20 | 644 | 0.0 | 0.2+ |
| | | | | | | | | | | | | 2006 10 20 | 644 | 0.0 | 0.0 |
| | | | | | | | | | | | | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| | | | | | | | | | | | | 2006 10 21 | 703 | 0.0 | 0.9+ |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.1+ | 0.4+ | 2006 07 21 | G96 | 0.2+ | 0.8− |
| 2006 10 12 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.5− |
| 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 1.4+ | 0.9+ | 2006 09 19 | 691 | 0.3+ | 0.3− |
| 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.8− | 0.7− | 2006 11 14 | 703 | 1.1+ | 1.0− | 2006 09 19 | 691 | 0.6+ | 0.7+ |
| 2006 10 16 | 703 | 0.4− | 0.5− | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 14 | 703 | 0.3− | 0.8+ | 2006 09 23 | 691 | 0.2+ | 0.3+ |
| 2006 10 16 | 703 | 0.6− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.2− | | | | | 2006 09 23 | 691 | 0.1− | 0.6+ |
| 2006 10 16 | 703 | 0.1+ | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | | | | 2006 09 23 | 691 | 0.0 | 0.0 |
| 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.3− | | | | | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 2006 10 20 | 644 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.3− | | | | | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− | | | | | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2006 10 21 | 703 | 0.0 | 0.9+ | | | | | | | | | 2006 10 01 | 691 | 0.1− | 0.1+ |

**2006 SE$_{73}$ = 1995 VC$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.93931 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17809477 | $\omega$ | 123.27273 | | +0.67332126 | +0.73884540 | |
| $a$ | 3.1287338 | $\Omega$ | 189.20359 | | −0.72236348 | +0.64952971 | |
| $e$ | 0.0572158 | $i$ | 9.83212 | | −0.15757373 | +0.17949548 | |
| $P$ | 5.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.7− | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.8− | 2006 10 22 | 691 | 0.1− | 0.4− | 2004 05 10 | 599 | 0.1+ | 0.9− |
| 1995 11 14 | 691 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.5− | 2006 10 22 | 691 | 0.6− | 0.1+ | 2004 05 10 | 599 | 0.2− | 0.4+ |
| 1995 11 14 | 691 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.0 | 2004 05 10 | 599 | 0.1− | 1.4+ |
| 1995 11 19 | 691 | 0.3− | 0.5− | 2006 09 19 | 691 | 0.6+ | 0.7+ | 2006 10 31 | G96 | 0.4+ | 0.2+ | 2004 05 10 | 599 | 0.4+ | 0.4+ |
| 1995 11 19 | 691 | 1.3+ | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 07 21 | G96 | 0.5− | 0.3− |
| 1995 11 19 | 691 | 0.3+ | 0.3+ | 2006 09 23 | 691 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.5+ | 2006 07 21 | G96 | 0.2+ | 0.5− |
| 2004 05 10 | 599 | 0.1+ | 0.9− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.3− | 2006 07 21 | G96 | 0.3− | 0.7− |
| 2004 05 10 | 599 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.3− | 0.1+ | | | | |
| 2004 05 10 | 599 | 0.1− | 1.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 11 20 | G96 | 1.1+ | 0.2− | | | | |
| 2004 05 10 | 599 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 11 20 | G96 | 0.7− | 0.3− | | | | |
| 2006 07 21 | G96 | 0.5− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.4− | 2006 11 20 | G96 | 0.4− | 0.6+ | | | | |
| 2006 07 21 | G96 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.3− | 0.3+ | | | | | | | | |
| 2006 07 21 | G96 | 0.3− | 0.7− | 2006 10 01 | 691 | 0.1+ | 0.2+ | | | | | | | | |

**2006 SG$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.78403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20227555 | $\omega$ | 275.88551 | | +0.76451300 | −0.64388140 | |
| $a$ | 2.8741347 | $\Omega$ | 124.20070 | | +0.60509293 | +0.70047083 | |
| $e$ | 0.0510530 | $i$ | 2.12059 | | +0.22222154 | +0.30782684 | |
| $P$ | 4.87 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.5− | 0.8− | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.0 | 2003 01 10 | 291 | 0.1− | 0.4+ |
| 1994 04 03 | 691 | 0.3− | 1.2− | 2005 06 13 | G96 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.3− | 0.1+ | 2003 01 10 | 291 | 0.2− | 0.3+ |
| 1994 04 03 | 691 | 0.5− | 1.3− | 2005 06 13 | G96 | 0.1− | 0.4+ | 2006 10 17 | G96 | 0.5+ | 0.4− | 2003 01 10 | 291 | 0.2+ | 0.6+ |
| 2003 01 10 | 291 | 0.1− | 0.4+ | 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2003 01 29 | 645 | 0.0 | 0.2− |
| 2003 01 10 | 291 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2003 01 29 | 645 | 0.0 | 0.1− |
| 2003 01 10 | 291 | 0.2+ | 0.6+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.4− | 2003 01 31 | 291 | 0.5+ | 0.7+ |
| 2003 01 29 | 645 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.6− | 2003 01 31 | 291 | 0.3+ | 0.5+ |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.5− | 2003 01 31 | 291 | 0.7− | 0.6+ |
| 2003 01 31 | 291 | 0.5+ | 0.7+ | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.5− | 2004 04 19 | 691 | 0.0 | 0.5+ |
| 2003 01 31 | 291 | 0.3+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.5− | 2004 04 19 | 691 | 0.1+ | 0.8+ |
| 2003 01 31 | 291 | 0.7− | 0.6+ | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.4− | 2004 04 19 | 691 | 0.8+ | 0.7+ |
| 2004 04 19 | 691 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.7+ | 0.4− | | | | |
| 2004 04 19 | 691 | 0.1+ | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.8− | | | | |
| 2004 04 19 | 691 | 0.8+ | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | | | | | | | |

**2006 $SO_{73}$ = 1999 $UR_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.24124 | | (2000.0) | | | |
| $n$ | 0.28063484 | $\omega$ | 12.63469 | | +0.61611651 | −0.78402667 |
| $a$ | 2.3105125 | $\Omega$ | 39.40390 | | +0.71191423 | +0.51328388 |
| $e$ | 0.1044784 | $i$ | 6.83226 | | +0.33701422 | +0.34905850 |
| $P$ | 3.51 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.7+ | 2006 11 01 | 691 | 0.3+ | 0.2− |
| 1999 10 31 | 691 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 1999 10 31 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 1999 11 05 | 691 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 1999 11 05 | 691 | 0.5− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 1999 11 05 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2006 09 23 | 691 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2006 09 23 | 691 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2006 09 23 | 691 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.8+ | 0.3− |
| 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | (2.2+ | 0.1+) |
| 2006 09 27 | 691 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.7+ | 0.4− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.3− | 0.3− |
| 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.5− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.1+ |

**2006 $SP_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 129.72643 | | (2000.0) | | | |
| $n$ | 0.16998823 | $\omega$ | 58.33166 | | −0.33495500 | +0.94140481 |
| $a$ | 3.2274299 | $\Omega$ | 192.29000 | | −0.91509875 | −0.33501664 |
| $e$ | 0.0730383 | $i$ | 10.70077 | | −0.22449816 | −0.03899782 |
| $P$ | 5.80 | $H$ | 14.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.0 | 0.2+ | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.5− |
| 2000 09 27 | 691 | 0.1− | 0.0 | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2000 09 27 | 691 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2004 05 13 | 699 | 0.8+ | 0.8+ | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2004 05 13 | 699 | 0.9− | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 1.0+ |
| 2004 05 13 | 699 | (1.9+ | 0.2−) | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2004 05 13 | 699 | 0.1− | 0.6+ | 2006 09 23 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2004 06 09 | 699 | 0.5+ | 0.6− | 2006 09 23 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.1+ |
| 2004 06 09 | 699 | 1.2− | 0.1− | 2006 09 23 | 691 | 0.2− | 0.5+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 2004 06 09 | 699 | 1.4+ | 1.3+ | 2006 09 30 | 703 | 1.5− | 0.9− | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2004 06 09 | 699 | (0.2− | 1.7+) | 2006 09 30 | 703 | (1.7− | 0.0 ) | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2005 07 30 | 644 | 0.1+ | 0.6− | 2006 09 30 | 703 | 0.2+ | 1.3+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2005 07 30 | 644 | 0.1+ | 0.3− | 2006 09 30 | 703 | (0.7− | 2.1+) | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2005 07 30 | 644 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.4− | | | | |
| 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− | | | | |

**2006 $ST_{73}$ = 1999 $US_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 94.70712 | | (2000.0) | | | |
| $n$ | 0.28476598 | $\omega$ | 192.98323 | | +0.09683392 | +0.99384853 |
| $a$ | 2.2881122 | $\Omega$ | 82.59251 | | −0.90825882 | +0.11031965 |
| $e$ | 0.0969776 | $i$ | 3.10667 | | −0.40704926 | −0.00972989 |
| $P$ | 3.46 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 30 | 691 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 1999 10 30 | 691 | 0.7− | 0.0 | 2006 09 23 | 691 | 0.6− | 0.2− | 2006 10 31 | G96 | 1.1+ | 0.9− |
| 1999 10 30 | 691 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.5− | 0.4− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 1999 11 04 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 1999 11 04 | 691 | 0.6+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 1999 11 04 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2+ |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.1+ |

**2006 $SE_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.47443 | | (2000.0) | | | |
| $n$ | 0.26453821 | $\omega$ | 136.00473 | | +0.55271299 | +0.83308803 |
| $a$ | 2.4033136 | $\Omega$ | 167.49636 | | −0.78966672 | +0.53188612 |
| $e$ | 0.1303579 | $i$ | 5.76347 | | −0.26633593 | +0.15186012 |
| $P$ | 3.73 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 704 | 0.0 | 1.2− | 2005 04 18 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 09 05 | 704 | 0.4+ | 0.2+ | 2005 04 18 | 691 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2002 09 05 | 704 | 0.3+ | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1+ |
| 2002 10 09 | 291 | 0.2− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.5− | 0.0 |
| 2002 10 09 | 291 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.8− |
| 2002 10 09 | 291 | 0.2+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.7− |
| 2005 04 07 | 691 | 0.3+ | 0.1+ | 2006 09 23 | 691 | 0.5+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 2005 04 07 | 691 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.7− |
| 2005 04 07 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.2− | 0.2− | | | | |
| 2005 04 18 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | | | |

**2006 $SF_{74}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.03572 | | (2000.0) | | | |
| $n$ | 0.12380264 | $\omega$ | 180.24490 | | +0.86991648 | +0.49225292 |
| $a$ | 3.9870296 | $\Omega$ | 150.20451 | | −0.45239675 | +0.82107495 |
| $e$ | 0.2225081 | $i$ | 3.52304 | | −0.19642427 | +0.28900344 |
| $P$ | 7.96 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 691 | 0.2− | 0.0 | 2005 09 30 | G96 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2002 02 13 | 691 | 0.2− | 0.3+ | 2005 09 30 | G96 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.8− |
| 2002 02 13 | 691 | 0.7+ | 0.4+ | 2006 09 19 | 691 | 0.3+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2005 06 18 | G96 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.5− | 0.6− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2005 06 18 | G96 | 0.5+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 06 18 | G96 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2005 06 18 | G96 | 0.7+ | 0.4+ | 2006 09 23 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2005 06 29 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2005 06 29 | 691 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2005 06 29 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2005 07 30 | E12 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2005 07 30 | E12 | 0.9− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 07 30 | E12 | 0.2− | 0.5− | 2006 10 01 | 691 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2005 07 30 | E12 | 1.1− | 0.4− | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2005 09 30 | G96 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.7− | 1.1− | | | | |
| 2005 09 30 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.1− | | | | |

**2006 $SH_{74}$ = 2005 $KC_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 174.66879 | | (2000.0) | | | |
| $n$ | 0.29614229 | $\omega$ | 73.74224 | | −0.91016014 | +0.41152546 |
| $a$ | 2.2291319 | $\Omega$ | 130.53232 | | −0.39992801 | −0.84299580 |
| $e$ | 0.0912355 | $i$ | 3.58239 | | −0.10800976 | −0.34641720 |
| $P$ | 3.33 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 16 | G96 | 0.0 | 0.3+ | 2005 05 19 | G96 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.5− |
| 2005 05 16 | G96 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.3− | 0.3− |
| 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2005 05 16 | G96 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 19 | G96 | 0.1+ | 0.3− | 2006 09 23 | 691 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.2− | 0.1− | | |
| 2005 05 19 | G96 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2+ | | |
| 2005 05 19 | G96 | 0.1+ | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | | |

**2006 SX$_{74}$ = 2002 RY$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.97157 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25661318 | $\omega$ | 268.35475 | | +0.92293609 | | +0.38327759 |
| $a$ | 2.4525436 | $\Omega$ | 69.10717 | | −0.33615749 | | +0.84785488 |
| $e$ | 0.1979868 | $i$ | 2.20090 | | −0.18758227 | | +0.36638831 |
| $P$ | 3.84 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.2− | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.9− | 0.7+ | | |
| 2002 09 13 | 644 | 0.4− | 0.0 | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 1.2+ | | |
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2002 09 15 | 644 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.2− | 0.1− | | |
| 2002 09 15 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.4+ | 0.3+ | | |
| 2002 09 15 | 644 | 0.4+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− | | |
| 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3− | | |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 1.1+ | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.4− | | |
| 2006 09 23 | 691 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.0 | | | | | | |

**2006 SY$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.64197 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20307789 | $\omega$ | 214.97113 | | +0.47586436 | | +0.87776813 |
| $a$ | 2.8665594 | $\Omega$ | 83.50238 | | −0.79368151 | | +0.45573991 |
| $e$ | 0.0378351 | $i$ | 3.20004 | | −0.37897595 | | +0.14773030 |
| $P$ | 4.85 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.3− | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.3− | | |
| 2001 10 25 | 645 | 0.1+ | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2001 10 25 | 645 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− | | |
| 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.7+ | 0.1+ | | |
| 2006 09 19 | 691 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.3− | | |
| 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 18 | G96 | 0.8− | 0.0 | | |

**2006 SZ$_{74}$ = 2005 JX$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.72775 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29056414 | $\omega$ | 211.91254 | | +0.87498777 | | −0.48410947 |
| $a$ | 2.2575708 | $\Omega$ | 177.02312 | | +0.46455916 | | +0.83611657 |
| $e$ | 0.1037450 | $i$ | 6.48740 | | +0.13631283 | | +0.25796724 |
| $P$ | 3.39 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.3+ | 0.9+ | 2006 09 22 | 704 | 1.0+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 1999 09 09 | 704 | 0.3− | 0.8− | 2006 09 22 | 704 | 1.1− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 1999 09 09 | 704 | 0.1+ | 0.9− | 2006 09 22 | 704 | 0.7+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 2001 02 20 | 645 | 0.0 | 0.1+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.4+ | | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 09 23 | 691 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.3− | | |
| 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.6− | 0.2+ | | |
| 2005 05 10 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.3− | | |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.2− | 0.1− | | |
| 2005 05 14 | 691 | 0.1− | 0.4+ | 2006 09 27 | 691 | 0.5+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.4− | | |
| 2005 05 14 | 691 | (0.7− | 1.7+) | 2006 09 30 | 703 | 0.5− | 0.8− | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2005 05 14 | 691 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.1− | 0.6− | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2006 09 19 | 691 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 11 16 | 703 | 0.1+ | 0.4− | | |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.1+ | 2006 11 16 | 703 | 1.0− | 0.3+ | | |
| 2006 09 19 | 691 | 0.2− | 0.3− | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.1− | 0.7− | | |
| 2006 09 22 | 704 | (1.7+ | 0.3−) | 2006 10 01 | 691 | 0.5+ | 0.2+ | 2006 11 16 | 703 | 1.3− | 0.8+ | | |
| 2006 09 22 | 704 | 0.6+ | 0.6+ | 2006 10 01 | 691 | 0.4− | 0.0 | | | | | | |

**2006 SB$_{75}$ = 1991 VR$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.60266 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26175612 | $\omega$ | 312.17501 | | +0.85540903 | | −0.51626691 |
| $a$ | 2.4203128 | $\Omega$ | 78.94709 | | +0.48687423 | | +0.77395646 |
| $e$ | 0.1882732 | $i$ | 2.43861 | | +0.17671692 | | +0.36668771 |
| $P$ | 3.77 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 04 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.6− | | |
| 1991 11 04 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.2+ | 1.0− | 2006 10 21 | 644 | 0.4+ | 0.1+ | | |
| 1991 11 04 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.0 | | |
| 1991 11 05 | 691 | 0.1− | 0.4+ | 2006 10 15 | 703 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.5+ | 0.0 | | |
| 1991 11 05 | 691 | 0.1+ | 0.2− | 2006 10 15 | 703 | 0.9+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 1991 11 05 | 691 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.8− | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.2+ | | |
| 2002 08 29 | 644 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.5− | 0.7+ | | |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.3− | | |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | |
| 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2− | | |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.0 | | |
| 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.4− | 0.0 | | |
| 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2+ | | |
| 2006 09 23 | 691 | 0.9− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.1+ | | |
| 2006 09 27 | 691 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.7− | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.1+ | | |
| 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.1− | | |
| 2006 09 30 | 703 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.3− | | | | | | |

**2006 SC$_{75}$ = 2001 UJ$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.72000 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18958152 | $\omega$ | 255.25234 | | +0.65284286 | | +0.75455477 |
| $a$ | 3.0010419 | $\Omega$ | 55.70128 | | −0.66025044 | | +0.60996125 |
| $e$ | 0.1237745 | $i$ | 4.62817 | | −0.37130251 | | +0.24206276 |
| $P$ | 5.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.5− | 0.2− | | |
| 2001 10 20 | 704 | 0.3+ | 0.2− | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.7− | | |
| 2001 10 20 | 704 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1− | | |
| 2001 10 23 | 291 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.4− | | |
| 2001 10 23 | 291 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.5− | | |
| 2001 10 23 | 291 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.5− | 0.2− | | |
| 2006 09 19 | 691 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.1+ | | |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.4+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 15 | 703 | 0.1− | 1.1+ | 2006 11 16 | G96 | 0.2− | 0.1− | | |
| 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 15 | 703 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.1− | | |

**2006 SK$_{75}$ = 2004 FP$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 105.61800 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18801904 | $\omega$ | 86.04780 | | −0.01406623 | | +0.99985139 |
| $a$ | 3.0176451 | $\Omega$ | 183.19755 | | −0.97360092 | | −0.01596660 |
| $e$ | 0.0639730 | $i$ | 10.29273 | | −0.22782316 | | +0.00650045 |
| $P$ | 5.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.3+ | | |
| 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1− | | |
| 2004 03 16 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 | | |
| 2004 03 22 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 704 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2004 03 22 | 704 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2004 03 22 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.6− | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.1+ | | | | |
| 2006 09 23 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.4+ | | | | |

**2006 SM$_{75}$ = 2003 FG$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.02244 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18432936 | $\omega$ | 94.39162 | | −0.61460015 | −0.77659805 | |
| $a$ | 3.0577809 | $\Omega$ | 34.77684 | | +0.59259866 | −0.57036669 | |
| $e$ | 0.2107744 | $i$ | 14.04550 | | +0.52066639 | −0.26753935 | |
| $P$ | 5.35 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 644 | 0.0 | 0.0 | 2003 03 27 | 691 | 0.0 | 0.5+ | 2006 09 23 | 691 | 0.2− | 0.1− |
| 2003 03 26 | 644 | 0.5− | 0.2− | 2003 04 09 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.6+ | 0.0 |
| 2003 03 26 | 644 | 0.2− | 0.0 | 2003 04 09 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2003 03 27 | 699 | 1.1− | 0.6+ | 2003 04 09 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2003 03 27 | 699 | 0.1+ | 0.3− | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2003 03 27 | 699 | 0.4− | 0.6− | 2006 09 19 | 691 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2003 03 27 | 699 | 0.9− | 0.2− | 2006 09 19 | 691 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2003 03 27 | 691 | 0.1+ | 0.2+ | 2006 09 23 | 691 | 0.1+ | 0.6+ | | | | |
| 2003 03 27 | 691 | 0.3+ | 0.4− | 2006 09 23 | 691 | 0.3− | 0.2− | | | | |

**2006 SN$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.55123 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22454767 | $\omega$ | 156.55300 | | +0.97109177 | +0.23472219 | |
| $a$ | 2.6807955 | $\Omega$ | 190.16507 | | −0.23868441 | +0.95726755 | |
| $e$ | 0.1047073 | $i$ | 14.24626 | | +0.00324382 | +0.16895069 | |
| $P$ | 4.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 16 | 691 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.7− | 0.6− |
| 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.6− | 0.6− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2005 06 16 | 691 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.6− | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2005 07 03 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | (0.0 | 1.5+) | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2005 07 03 | 691 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.7+ | 1.0− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2005 07 03 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 10 23 | 460 | 0.1+ | 1.0+ |
| 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 23 | 460 | 0.2− | 0.5− |
| 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 23 | 460 | 0.1− | 1.0− |
| 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 24 | 460 | 0.2+ | 0.5− |
| 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | (1.7− | 1.1+) | 2006 10 24 | 460 | 0.2+ | 0.7− |
| 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.1+ | 1.0+ | 2006 10 24 | 460 | 0.8+ | 0.2+ |
| 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.3− | 0.5− | | | | |

**2006 SS$_{75}$ = 2005 JK$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.91084 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26494935 | $\omega$ | 226.06268 | | +0.99225396 | +0.12022712 | |
| $a$ | 2.4008267 | $\Omega$ | 127.00759 | | −0.09978614 | +0.92129224 | |
| $e$ | 0.2003089 | $i$ | 2.24385 | | −0.07399199 | +0.36981893 | |
| $P$ | 3.72 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 807 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2005 05 10 | 807 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2005 05 10 | 807 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2005 05 10 | 807 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.6− | 0.2− | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.1− | 0.6− | 2006 11 21 | 691 | 0.2+ | 0.4+ |
| 2006 09 23 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.8− | 0.1− | 2006 11 21 | 691 | 0.3− | 0.1+ |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− | | | | |
| 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.1− | | | | |

**2006 SB$_{76}$ = 2002 PZ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.28997 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26299275 | $\omega$ | 215.19644 | | +0.94544037 | −0.32536119 | |
| $a$ | 2.4127197 | $\Omega$ | 163.76597 | | +0.31100170 | +0.88593598 | |
| $e$ | 0.1358779 | $i$ | 3.44744 | | +0.09705902 | +0.33054128 | |
| $P$ | 3.75 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 291 | 0.4− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 15 | 703 | 0.8− | 1.0+ |
| 2002 08 15 | 291 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 1.1+ | 2006 10 15 | 703 | 0.6− | 0.4− |
| 2002 08 15 | 291 | 0.3− | 0.1− | 2006 09 30 | 703 | 1.3+ | 0.1+ | 2006 10 15 | 703 | 1.4+ | 0.0 |
| 2002 08 16 | 291 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.2− |
| 2002 08 16 | 291 | 0.5+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.2− |
| 2002 08 16 | 291 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2002 09 04 | 644 | 0.4+ | 0.5− | 2006 10 01 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 2002 09 04 | 644 | 0.7+ | 0.7− | 2006 10 02 | 291 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.8− | 0.3− |
| 2002 09 04 | 644 | 1.4− | 1.3− | 2006 10 02 | 291 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3− | 0.3− |
| 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 02 | 291 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.3− |
| 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.2+ |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2006 09 23 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.6+ |
| 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2006 09 23 | 691 | 0.4− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.4− |
| 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.0 |

**2006 SJ$_{76}$ = 2005 JS$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.77141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26337939 | $\omega$ | 270.36940 | | +0.54681658 | +0.83378586 | |
| $a$ | 2.4103578 | $\Omega$ | 33.14454 | | −0.70210171 | +0.50617316 | |
| $e$ | 0.0994240 | $i$ | 8.00180 | | −0.45611930 | +0.22043112 | |
| $P$ | 3.74 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.0 | 0.1− | 2005 05 16 | G96 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.0 | 0.5− |
| 1995 11 24 | 691 | 0.1+ | 0.2− | 2005 05 16 | G96 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 1995 11 24 | 691 | 0.1+ | 0.2− | 2005 05 16 | G96 | 0.3− | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2001 03 22 | 691 | 0.4+ | 0.6+ | 2006 09 19 | 691 | 0.5− | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2001 03 22 | 691 | 0.7+ | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2001 03 22 | 691 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2005 05 10 | 807 | 0.3+ | 0.5+ | 2006 09 23 | 691 | 0.5− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2005 05 10 | 807 | 0.3+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.8+ |
| 2005 05 16 | G96 | 0.1+ | 0.6+ | 2006 09 23 | 691 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.9+ |

**2006 SR$_{76}$ = 2001 RT$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.83269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19174890 | $\omega$ | 202.99148 | | +0.17924498 | −0.97226799 | |
| $a$ | 2.9783847 | $\Omega$ | 236.99115 | | +0.92816940 | +0.21774602 | |
| $e$ | 0.1776744 | $i$ | 10.31940 | | +0.32614843 | −0.08533244 | |
| $P$ | 5.14 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.6+ | 0.6+ | 2002 12 14 | 704 | 0.7+ | 0.4+ | 2006 09 23 | 691 | 0.7− | 0.2− |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2002 12 14 | 704 | 0.2+ | 0.9− | 2006 09 23 | 691 | 0.4+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.9− | 0.1+ | 2002 12 14 | 704 | 0.3− | 0.4− | 2006 09 28 | 691 | 0.3+ | 1.1+ |
| 2001 09 12 | 704 | 0.2+ | 0.5+ | 2002 12 14 | 704 | 0.7− | 0.8+ | 2006 09 28 | 691 | 0.1+ | 0.1− |
| 2001 09 12 | 704 | 0.5− | 0.4+ | 2006 09 20 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.0 |
| 2001 09 16 | 704 | 0.5+ | 0.6− | 2006 09 20 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2001 09 16 | 704 | 0.1+ | 0.7− | 2006 09 20 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | (1.9+ | 0.8+) | 2006 09 23 | 691 | 0.0 | 0.7− | 2006 09 30 | 691 | 0.1+ | 0.2− |

**2006 SY$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.01296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21551118 | $\omega$ | 342.02573 | | +0.99619614 | −0.08063135 | |
| $a$ | 2.7552193 | $\Omega$ | 22.67670 | | +0.08669775 | +0.87900203 | |
| $e$ | 0.1295429 | $i$ | 4.91672 | | +0.00876077 | +0.46995109 | |
| $P$ | 4.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.7− | 0.1+ | 2006 09 20 | 704 | 0.9− | 0.4− | 2006 10 01 | 704 | 0.9+ | 0.0 |
| 2001 07 14 | 644 | 0.4− | 0.6+ | 2006 09 20 | 704 | 0.1+ | 0.7− | 2006 10 01 | 704 | 0.0 | 0.3+ |
| 2001 07 14 | 644 | 0.6− | 0.1+ | 2006 09 20 | 704 | (1.9− | 1.3+) | 2006 10 01 | 704 | 0.4+ | 0.6+ |
| 2001 07 25 | 608 | 0.6+ | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1− |
| 2001 07 25 | 608 | 0.1+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2001 07 25 | 608 | 0.5+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | (0.4+ | 2.0+) |
| 2004 02 29 | 691 | 0.3− | 0.5+ | 2006 09 27 | 704 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2004 02 29 | 691 | 0.1− | 0.5+ | 2006 09 27 | 704 | 0.5− | 1.0+ | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 2004 03 21 | 691 | 0.6+ | 0.2− | 2006 09 27 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 1.0+ | 0.9+ |
| 2004 03 21 | 691 | 0.3+ | 0.2− | 2006 09 28 | 704 | 0.5− | 1.3+ | 2006 10 16 | 703 | (1.6− | 0.4+) |
| 2004 03 21 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 704 | 0.2− | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.0 |
| 2006 09 12 | 703 | (2.2+ | 1.2+) | 2006 09 28 | 704 | 0.5− | 1.0+ | 2006 10 16 | 703 | 1.2+ | 0.2+ |
| 2006 09 12 | 703 | (0.1− | 2.0+) | 2006 09 28 | 704 | 0.3− | 1.1+ | 2006 10 16 | 703 | 0.4− | 1.1− |
| 2006 09 12 | 703 | (0.2+ | 1.9+) | 2006 09 28 | 704 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2006 09 12 | 703 | (0.5− | 2.4+) | 2006 09 30 | 291 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 09 15 | 691 | 0.7− | 0.3− | 2006 09 30 | 291 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.7+ | 0.0 |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 30 | 291 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.5+ | 0.2− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.5+ | 0.6+ | | | | |
| 2006 09 20 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.5− | 0.2− | | | | |

**2006 SZ$_{76}$ = 2005 LT$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.09049 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21995984 | $\omega$ | 178.35830 | | +0.98034136 | −0.19127266 | |
| $a$ | 2.7179437 | $\Omega$ | 192.97729 | | +0.17848089 | +0.96430571 | |
| $e$ | 0.1811084 | $i$ | 12.45467 | | +0.08411534 | +0.18310998 | |
| $P$ | 4.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 28 | 691 | 0.1+ | 0.7+ | 2006 09 27 | 704 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2004 03 28 | 691 | 0.2+ | 0.7+ | 2006 09 27 | 704 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2004 03 28 | 691 | 0.1+ | 0.6+ | 2006 09 27 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2005 06 13 | 691 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.3+ | 2006 10 21 | 703 | 0.6+ | 0.2+ |
| 2005 06 13 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | (0.0 | 1.7−) |
| 2005 06 13 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1− | 0.1+ |
| 2005 06 17 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 2005 06 17 | 691 | 0.5+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2005 06 17 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.7+ | 2006 11 13 | 703 | 1.0− | 1.4+ |
| 2005 06 30 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 13 | 703 | 1.0− | 1.1+ |
| 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.4− | 0.1− |
| 2005 06 30 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 14 | 704 | 1.3+ | 0.1+ |
| 2006 08 28 | 703 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.8+ |
| 2006 08 28 | 703 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.7+ | 0.1+ |
| 2006 09 20 | 699 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.5+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 2006 09 20 | 699 | 0.3− | 1.2+ | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.7+ | 0.2+ |
| 2006 09 20 | 699 | 0.8− | 0.8+ | 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.1− | 0.3− |
| 2006 09 20 | 699 | 1.0− | 0.7− | 2006 10 16 | 703 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.5− |
| 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 11 19 | 703 | 0.5− | 0.7− |
| 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.8− | 0.0 |
| 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.6− | 0.6+ |
| 2006 09 27 | 704 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 0.1+ | 0.4− |

**2006 SB$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.84925 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29228271 | $\omega$ | 182.01362 | | +0.84449800 | −0.53548142 | |
| $a$ | 2.2487127 | $\Omega$ | 210.36849 | | +0.49161671 | +0.78183528 | |
| $e$ | 0.2198686 | $i$ | 1.03119 | | +0.21245270 | +0.31936380 | |
| $P$ | 3.37 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 27 | 691 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2004 01 27 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2004 01 27 | 691 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2004 02 13 | 291 | 0.0 | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.4− | 0.4− |
| 2004 02 13 | 291 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2004 02 13 | 291 | 0.0 | 0.4− | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.2− |
| 2004 02 17 | 645 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2006 09 18 | G98 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2006 09 18 | G98 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.7+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2006 09 18 | G98 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2006 09 18 | G98 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2006 09 18 | G98 | 0.3− | 0.9+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.1+ | 0.2+ |
| 2006 09 19 | G98 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2006 09 19 | G98 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.3+ | 0.3− |
| 2006 09 19 | G98 | 0.5− | 0.3+ | 2006 10 19 | 644 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2006 09 19 | G98 | 0.3− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2006 09 19 | G98 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 2006 09 20 | G98 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2006 09 20 | G98 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2006 09 20 | G98 | 0.7− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2006 09 20 | G98 | 0.3− | 0.6+ | 2006 10 21 | 703 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2006 09 20 | G98 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.1+ | 2006 11 11 | 703 | (0.7− | 1.6−) |
| 2006 09 25 | G98 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2006 09 25 | G98 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.8− | 0.9+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2006 09 25 | G98 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.0 | 0.3− |
| 2006 09 25 | G98 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.5− |
| 2006 09 25 | G98 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.1− | 0.4− |
| 2006 09 25 | G98 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.1− | 0.1− |

**2006 SH$_{77}$ = 2003 AP$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.85380 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23110880 | $\omega$ | 280.23148 | | +0.86946562 | −0.48346159 | |
| $a$ | 2.6298142 | $\Omega$ | 108.74364 | | +0.48472717 | +0.79537210 | |
| $e$ | 0.3725843 | $i$ | 6.15069 | | +0.09523183 | +0.36557914 | |
| $P$ | 4.26 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 1.0+ | 2006 10 17 | 703 | 0.7+ | 0.3+ |
| 2002 12 31 | 704 | 0.7− | 0.5+ | 2006 09 29 | 699 | (0.6− | 1.6−) | 2006 10 17 | 703 | 0.2− | 0.7− |
| 2002 12 31 | 704 | 0.0 | 0.6+ | 2006 09 29 | 699 | 0.5+ | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.1+ |
| 2002 12 31 | 704 | (0.8− | 1.6+) | 2006 09 30 | 704 | (1.8+ | 1.7+) | 2006 10 22 | 703 | 0.4− | 0.0 |
| 2003 01 08 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 704 | (1.6− | 1.8+) | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2003 01 08 | 704 | 0.8+ | 0.7+ | 2006 09 30 | 704 | 0.5+ | 0.8+ | 2006 10 22 | 703 | 0.6− | 0.1− |
| 2003 01 08 | 704 | 0.1− | 0.1− | 2006 09 30 | 704 | 0.2− | 0.9+ | 2006 10 22 | 703 | 0.3− | 0.1− |
| 2003 01 08 | 704 | 0.8− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.9− | 1.1− |
| 2003 01 09 | 735 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.8− | 0.8− |
| 2003 01 09 | 735 | 0.3+ | 0.8− | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 10 28 | 703 | 1.1− | 0.3− |
| 2003 01 09 | 735 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.1+ |
| 2006 09 19 | 703 | 0.4− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.6− | 0.1+ |
| 2006 09 19 | 703 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.0 | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 19 | 703 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 11 10 | 704 | 0.8+ | 0.1− |
| 2006 09 25 | 699 | 1.0− | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 10 | 704 | 0.1− | 0.3− |
| 2006 09 25 | 699 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 704 | 0.6− | 0.5+ |
| 2006 09 25 | 699 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 10 | 704 | 1.4+ | 0.3− |
| 2006 09 25 | 699 | 0.6+ | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.4+ | 1.2+ |
| 2006 09 26 | 703 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.8+ | 0.1+ | 2006 11 16 | 703 | (0.4− | 2.4+) |
| 2006 09 26 | 703 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.4+ | 2006 11 16 | 703 | 0.3− | 0.6+ |
| 2006 09 26 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.5− | 2006 11 16 | 703 | (0.0 | 1.6+) |
| 2006 09 26 | 703 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.3− | | | | |
| 2006 09 29 | 699 | 0.7− | 0.0 | 2006 10 17 | 703 | 0.9+ | 1.5− | | | | |

**2006 SU$_{77}$ = 2001 WO$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.33213 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18331956 | $\omega$ | 150.86854 | | +0.97508520 | −0.21663884 | |
| $a$ | 3.0689997 | $\Omega$ | 221.73095 | | +0.18711152 | +0.91875532 | |
| $e$ | 0.0590437 | $i$ | 4.11047 | | +0.11915595 | +0.33008526 | |
| $P$ | 5.38 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.0− | 0.6− | 2006 09 21 | 152 | 0.1+ | 0.9− | 2006 10 11 | 691 | 0.7− | 0.3+ |
| 2001 11 20 | 704 | 0.9− | 0.2+ | 2006 09 22 | 152 | 1.0− | 0.4− | 2006 10 11 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 704 | (0.1+ | 1.5+) | 2006 09 22 | 152 | 1.2− | 0.8+ | 2006 10 11 | 691 | 0.7− | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 0.3− | 2006 09 22 | 152 | (1.6+ | 0.5−) | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 1.2+ | 2006 09 23 | 152 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 1.3− | 0.2− | 2006 09 23 | 152 | 1.4+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2006 09 23 | 152 | 0.2− | 0.3− | 2006 10 15 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2006 09 23 | 152 | 0.6+ | 0.7+ | 2006 10 15 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 691 | 0.2+ | 0.0 | 2006 09 23 | 152 | 1.2− | 0.6+ | 2006 10 15 | 691 | 0.1+ | 0.2+ |
| 2001 12 14 | 691 | 0.3+ | 0.0 | 2006 09 23 | 152 | 0.6− | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.1+ |
| 2001 12 14 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 1.3− |
| 2002 12 07 | 645 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | (1.5− | 0.2+) |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.1+ |
| 2004 04 22 | 691 | 0.3+ | 0.8+ | 2006 09 27 | 152 | 0.6+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 152 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 152 | 0.5− | 1.3+ | 2006 10 21 | 644 | 0.7+ | 0.7+ |
| 2004 05 13 | 691 | 0.1+ | 0.5+ | 2006 09 27 | 152 | 0.8+ | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2004 05 13 | 691 | 0.1− | 0.6+ | 2006 09 27 | 152 | 1.0+ | 0.2+ | 2006 10 27 | 691 | 0.7− | 0.3− |
| 2004 05 13 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 152 | (1.4− | 1.7−) | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2006 09 15 | 691 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2006 09 15 | 691 | 0.8+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.3+ |

**2006 SW$_{77}$ = 2006 SW$_{371}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.13037 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18609302 | $\omega$ | 66.11304 | | −0.78474069 | −0.60786631 | |
| $a$ | 3.0384306 | $\Omega$ | 76.22956 | | +0.51359332 | −0.74713492 | |
| $e$ | 0.0110806 | $i$ | 7.16627 | | +0.34699273 | −0.26886421 | |
| $P$ | 5.30 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 24 | 461 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.2+ |
| 2003 01 29 | 645 | 0.1+ | 0.0 | 2006 09 24 | 461 | 0.2− | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 2003 02 01 | 645 | 0.0 | 0.0 | 2006 09 24 | 461 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1+ |
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2006 09 29 | 461 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.7+ |
| 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 09 29 | 461 | 0.1+ | 0.0 | 2006 10 22 | 703 | (0.8+ | 2.2−) |
| 2006 09 20 | 644 | 0.2− | 0.4+ | 2006 09 29 | 461 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.2− | 0.1− |
| 2006 09 20 | 644 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 10 22 | 703 | (0.1− | 2.0+) |

**2006 SY$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.21708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21078227 | $\omega$ | 269.87203 | | +0.17432804 | −0.98379872 | |
| $a$ | 2.7962757 | $\Omega$ | 169.79677 | | +0.97100217 | +0.16469207 | |
| $e$ | 0.0860269 | $i$ | 13.65908 | | +0.16359863 | +0.07082789 | |
| $P$ | 4.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.1+ | 0.1+ | 2006 09 23 | 461 | 0.0 | 0.3+ | 2006 10 16 | 461 | 0.2− | 0.1+ |
| 1999 03 10 | 691 | 0.0 | 0.1+ | 2006 09 24 | 461 | 0.1− | 0.2− | 2006 10 16 | 461 | 0.2− | 0.2− |
| 1999 03 10 | 691 | 0.0 | 0.1+ | 2006 09 24 | 461 | 0.4− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.5+ |
| 2001 10 11 | 644 | 0.4+ | 0.2+ | 2006 09 24 | 461 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.5+ |
| 2001 10 11 | 644 | 0.2− | 0.1− | 2006 09 29 | 461 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.5+ | 0.4+ |
| 2001 10 11 | 644 | 0.4+ | 0.1− | 2006 09 29 | 461 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.6− | 1.4− |
| 2001 10 17 | 644 | 0.2− | 0.3+ | 2006 09 29 | 461 | 0.0 | 0.1+ | 2006 10 28 | 703 | 1.1+ | 0.1+ |
| 2001 10 17 | 644 | 0.4− | 0.1+ | 2006 10 01 | 461 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.9− |
| 2001 10 17 | 644 | 0.1− | 0.6+ | 2006 10 01 | 461 | 0.2+ | 0.3+ | 2006 10 28 | 703 | (2.0+ | 0.8−) |
| 2006 09 23 | 461 | 0.5− | 0.1+ | 2006 10 01 | 461 | 0.2− | 0.0 | | | | |
| 2006 09 23 | 461 | 0.3+ | 0.2− | 2006 10 16 | 461 | 0.4− | 0.0 | | | | |

**2006 SC$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.48147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21401166 | $\omega$ | 326.35984 | | +0.92881454 | −0.36339685 | |
| $a$ | 2.7680744 | $\Omega$ | 55.11327 | | +0.35645072 | +0.82285099 | |
| $e$ | 0.1103536 | $i$ | 5.06583 | | +0.10122469 | +0.43687410 | |
| $P$ | 4.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2001 08 27 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2001 08 27 | 644 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.1− | 1.0− |
| 2002 12 07 | 695 | 0.1− | 0.2+ | 2006 09 29 | 461 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.7− | 1.2− |
| 2002 12 07 | 695 | 0.2+ | 0.3+ | 2006 09 29 | 461 | 0.3+ | 0.2+ | 2006 10 15 | 703 | 0.8− | 0.9− |
| 2004 07 16 | 807 | 0.1+ | 0.7+ | 2006 09 29 | 461 | 0.4+ | 0.2+ | 2006 10 15 | 703 | (0.5− | 1.8+) |
| 2004 07 16 | 807 | 0.5+ | 0.4+ | 2006 10 01 | 461 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 01 | 461 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 01 | 461 | 0.6+ | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2006 09 23 | 461 | 0.6− | 0.5− | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 23 | 461 | 0.5− | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 09 23 | 461 | 0.1− | 1.1− | 2006 10 02 | 461 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2006 09 24 | 461 | 0.1− | 0.3+ | 2006 10 02 | 461 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2006 09 24 | 461 | 0.1− | 0.1+ | 2006 10 02 | 461 | 0.4+ | 0.0 | | | | |
| 2006 09 24 | 461 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | | | | |

**2006 SF$_{78}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.06379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23150973 | $\omega$ | 50.04601 | | +0.67334293 | +0.73458945 | |
| $a$ | 2.6267771 | $\Omega$ | 262.48966 | | −0.70143479 | +0.59899953 | |
| $e$ | 0.1217703 | $i$ | 4.83666 | | −0.23366328 | +0.31871289 | |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 18 | 644 | 0.3+ | 0.4− | 2006 09 23 | 104 | 0.2+ | 0.4− | 2006 10 03 | 704 | 0.4+ | 1.4+ |
| 2002 10 18 | 644 | 0.3+ | 0.6− | 2006 09 25 | 704 | 0.3− | 0.9− | 2006 10 04 | G96 | 0.6+ | 0.1− |
| 2002 10 18 | 644 | 0.9+ | 0.1+ | 2006 09 25 | 704 | 1.0− | 0.0 | 2006 10 04 | G96 | 0.4+ | 0.1+ |
| 2002 11 11 | 049 | 1.1− | 0.6+ | 2006 09 25 | 704 | 0.9− | 0.4− | 2006 10 04 | G96 | 0.6+ | 0.3− |
| 2002 11 11 | 049 | 0.4− | 0.1+ | 2006 09 25 | 704 | 0.2− | 1.0− | 2006 10 04 | G96 | 0.4+ | 0.1− |
| 2002 11 11 | 049 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.4+ | 0.5+ |
| 2006 09 16 | 703 | 0.6− | 0.5+ | 2006 09 27 | 703 | 1.2+ | 0.7− | 2006 10 10 | 644 | 0.1+ | 0.5+ |
| 2006 09 16 | 703 | 0.4− | 0.4− | 2006 09 27 | 703 | 0.5− | 0.5+ | 2006 10 10 | 644 | 0.3+ | 0.5+ |
| 2006 09 16 | 703 | 0.7+ | 0.8+ | 2006 09 27 | 703 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 703 | 1.3− | 1.6+ | 2006 09 30 | 683 | 1.2+ | 1.1− | 2006 10 17 | 703 | 0.5− | 1.8− |
| 2006 09 22 | 104 | 0.0 | 0.7− | 2006 09 30 | 683 | 1.6+ | 1.2− | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2006 09 22 | 104 | 1.0− | 0.2+ | 2006 09 30 | 683 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.3− | 0.7+ |
| 2006 09 22 | 104 | 0.2− | 0.1+ | 2006 10 03 | 704 | 0.3+ | 0.7+ | | | | |
| 2006 09 23 | 104 | 0.5+ | 0.4− | 2006 10 03 | 704 | 0.0 | 0.6+ | | | | |

**2006 SS$_{78}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.81097 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22232301 | $\omega$ | 217.91528 | | −0.64839531 | −0.73957837 | |
| $a$ | 2.6986493 | $\Omega$ | 273.27134 | | +0.73520941 | −0.54673365 | |
| $e$ | 0.0010005 | $i$ | 10.42043 | | +0.19761238 | −0.39256356 | |
| $P$ | 4.43 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.3− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 10 18 | 106 | 0.3+ | 1.2− |
| 2002 12 12 | 644 | 0.2− | 0.1+ | 2006 09 22 | 699 | 0.1+ | 0.4− | 2006 10 18 | 106 | 0.4+ | 0.4− |
| 2002 12 12 | 644 | 0.6+ | 0.1− | 2006 09 22 | 699 | 0.5+ | 0.6− | 2006 10 18 | 106 | 0.2− | 0.4− |
| 2004 02 14 | 644 | 0.2+ | 0.3+ | 2006 09 22 | 699 | 0.9+ | 1.0+ | 2006 10 18 | 106 | 0.9− | 0.2+ |
| 2004 02 14 | 644 | 0.1− | 0.2− | 2006 09 22 | 699 | 0.6− | 0.2+ | 2006 10 20 | 703 | 0.3− | 0.6− |
| 2004 02 14 | 644 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.1− | 1.2+ | 2006 10 20 | 703 | 0.0 | 1.5+ |
| 2006 09 16 | 703 | 0.7+ | 0.2+ | 2006 09 28 | 703 | 1.8+ | 1.0+ | 2006 10 20 | 703 | 1.0− | 0.1+ |
| 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.0 | 1.3− | 2006 10 20 | 703 | 1.0− | 0.1+ |
| 2006 09 16 | 703 | 0.3− | 0.8+ | 2006 09 28 | 703 | 0.3− | 1.5− | | | | |

**2006 SU$_{78}$ = 2001 MZ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.21303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21371274 | $\omega$ | 26.54891 | | +0.95963408 | +0.25115358 | |
| $a$ | 2.7706549 | $\Omega$ | 318.26122 | | −0.27978642 | +0.80659431 | |
| $e$ | 0.2095639 | $i$ | 10.96132 | | −0.02867038 | +0.53509578 | |
| $P$ | 4.61 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.1+ | 0.4− | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.3− | 1.2+ |
| 2001 06 27 | 644 | 0.2− | 0.0 | 2006 09 06 | 644 | 0.1+ | 0.1+ | 2006 09 22 | 699 | 0.4− | 0.0 |
| 2001 06 27 | 644 | 0.2+ | 0.1− | 2006 09 06 | 644 | 0.1− | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.4+ |
| 2001 06 28 | 644 | 1.1− | 0.2+ | 2006 09 16 | 703 | 0.3− | 0.6+ | 2006 09 22 | 699 | 0.0 | 0.3− |
| 2001 06 28 | 644 | 0.4− | 0.7+ | 2006 09 16 | 703 | 0.4− | 0.9− | 2006 09 22 | 699 | 0.7+ | 0.3− |
| 2001 06 28 | 644 | 0.1− | 0.5+ | 2006 09 16 | 703 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.7+ | 0.9− |
| 2001 07 20 | 644 | 0.3+ | 0.3− | 2006 09 16 | 703 | 0.7+ | 0.0 | 2006 09 28 | 703 | 0.0 | 0.3− |
| 2001 07 20 | 644 | 0.6+ | 0.5− | 2006 09 22 | 704 | 0.3− | 1.0+ | 2006 09 28 | 703 | 0.0 | 0.0 |
| 2001 07 20 | 644 | 0.6+ | 0.2− | 2006 09 22 | 704 | 0.6− | 0.2− | 2006 09 28 | 703 | 0.4+ | 0.4− |

**2006 SY$_{78}$ = 2002 XW$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.52543 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23316756 | $\omega$ | 59.67022 | | +0.98295855 | −0.07816400 | |
| $a$ | 2.6143113 | $\Omega$ | 304.32155 | | −0.01445351 | +0.86943378 | |
| $e$ | 0.3091820 | $i$ | 11.62226 | | +0.18325826 | +0.48782711 | |
| $P$ | 4.23 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 0.3− | 2006 09 06 | 644 | 0.0 | 0.2− | 2006 09 28 | 703 | 0.6− | 0.4+ |
| 2002 12 06 | 704 | 0.5− | 0.4+ | 2006 09 06 | 644 | 0.2+ | 0.3− | 2006 09 28 | 703 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.8− | 0.4− | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.7− | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 1.0− | 2006 09 16 | 703 | 0.8− | 0.1− | 2006 09 28 | 703 | 0.3+ | 0.2+ |
| 2002 12 06 | 704 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.0 | 0.0 | 2006 11 15 | 703 | (0.6− | 1.9−) |
| 2002 12 10 | 704 | 0.6+ | 0.3+ | 2006 09 16 | 703 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.8− | 1.1− |
| 2002 12 10 | 704 | 0.6+ | 0.3+ | 2006 09 22 | 699 | 0.3− | 0.6+ | 2006 11 15 | 703 | 1.1− | 0.4− |
| 2002 12 10 | 704 | 0.6+ | 0.4+ | 2006 09 22 | 699 | 0.6− | 0.6+ | 2006 11 15 | 703 | 0.2− | 0.4− |
| 2002 12 10 | 704 | (0.9− | 1.8+) | 2006 09 22 | 699 | 0.4+ | 0.3+ | 2006 11 23 | 703 | 1.0+ | 0.7+ |
| 2006 08 29 | 699 | 0.7+ | 0.2− | 2006 09 28 | 703 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.8+ | 0.3+ |
| 2006 08 29 | 699 | 0.8+ | 0.0 | 2006 09 28 | 703 | 0.4+ | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.4− |
| 2006 08 29 | 699 | 0.1− | 0.8− | 2006 09 28 | 703 | 0.5+ | 0.2− | 2006 11 23 | 703 | 0.5− | 0.8+ |
| 2006 09 06 | 644 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.5+ | 0.0 | | | | |

**2006 SB$_{79}$ = 2002 SZ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.48469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24239884 | $\omega$ | 65.21455 | | +0.97079648 | +0.07686397 | |
| $a$ | 2.5475088 | $\Omega$ | 289.70609 | | −0.17671247 | +0.86978936 | |
| $e$ | 0.1555318 | $i$ | 13.96890 | | +0.16225567 | +0.48739963 | |
| $P$ | 4.07 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 0.2− | 0.8− | 2002 09 28 | 644 | 0.3+ | 0.2− | 2006 09 28 | 703 | 0.1− | 0.4− |
| 2002 09 27 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.2+ | 2006 09 28 | 703 | 0.6+ | 1.0+ |
| 2002 09 27 | 644 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.7− |
| 2002 09 28 | 644 | 0.2− | 0.9+ | 2006 09 17 | 703 | 0.3− | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.9− |
| 2002 09 28 | 644 | 0.1− | 0.7− | 2006 09 22 | 699 | 0.1− | 0.7+ | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2002 09 28 | 644 | 0.2− | 0.8+ | 2006 09 22 | 699 | 0.3+ | 0.4− | 2006 11 15 | 703 | 0.2+ | 0.8+ |
| 2002 09 28 | 644 | 0.2+ | 0.4− | 2006 09 22 | 699 | 0.5+ | 0.4− | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 2002 09 28 | 644 | 0.1− | 0.7+ | 2006 09 22 | 699 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.5− |

**2006 SK$_{79}$ = 2005 GK$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.78668 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23595818 | $\omega$ | 92.37977 | | +0.29147117 | +0.95571552 | |
| $a$ | 2.5936579 | $\Omega$ | 194.76169 | | −0.92877939 | +0.27257437 | |
| $e$ | 0.1253056 | $i$ | 9.18001 | | −0.22893972 | +0.11095524 | |
| $P$ | 4.18 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 691 | 0.3+ | 0.1− | 2005 04 15 | 691 | 0.2− | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.1− |
| 2001 05 25 | 691 | 0.2− | 0.1− | 2005 04 15 | 691 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 2001 05 25 | 691 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2005 04 11 | 691 | 0.2+ | 0.5− | 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 2005 04 11 | 691 | 0.0 | 0.5− | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2005 04 11 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.5− |
| 2005 04 15 | 691 | 0.1− | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.1+ |

**2006 SL$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.32580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23202729 | $\omega$ | 157.92773 | | +0.09798451 | −0.97274647 | |
| $a$ | 2.6228694 | $\Omega$ | 285.94600 | | +0.87728309 | +0.18412779 | |
| $e$ | 0.0499580 | $i$ | 12.62451 | | +0.46986531 | −0.14092998 | |
| $P$ | 4.25 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.5+ | 0.1+ | 2002 12 05 | 699 | 0.2+ | 0.4− | 2006 09 22 | 699 | 1.0− | 0.4+ |
| 2002 10 06 | 704 | 0.2+ | 0.4− | 2002 12 05 | 699 | 0.6− | 0.1+ | 2006 09 22 | 699 | 0.3− | 0.6+ |
| 2002 10 06 | 704 | 0.6+ | 0.2+ | 2002 12 05 | 699 | (0.9− | 1.7+) | 2006 09 28 | 703 | 0.4− | 0.1+ |
| 2002 10 15 | 704 | 0.1− | 0.2− | 2004 03 16 | 704 | 0.0 | 0.6+ | 2006 09 28 | 703 | 0.1− | 1.4− |
| 2002 10 15 | 704 | 0.1− | 0.0 | 2004 03 16 | 704 | 0.2+ | 0.4− | 2006 09 28 | 703 | 0.3− | 0.5− |
| 2002 10 15 | 704 | 1.1− | 0.3+ | 2004 03 16 | 704 | 0.2+ | 0.4− | 2006 09 28 | 703 | 0.2+ | 0.4+ |
| 2002 10 31 | 704 | 0.3+ | 0.6− | 2004 03 16 | 704 | 0.5− | 0.3− | 2006 10 16 | 291 | 0.7+ | 0.0 |
| 2002 10 31 | 704 | 0.1+ | 0.7− | 2004 03 16 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 291 | 0.3+ | 0.0 |
| 2002 10 31 | 704 | 0.1− | 0.9− | 2006 09 17 | 703 | 0.5− | 0.4+ | 2006 10 16 | 291 | 0.4+ | 0.1+ |
| 2002 11 15 | 704 | 0.3+ | 1.3+ | 2006 09 17 | 703 | 0.2+ | 0.5− | 2006 10 20 | 703 | 0.2+ | 0.5− |
| 2002 11 15 | 704 | 0.3− | 0.1− | 2006 09 17 | 703 | 0.2+ | 0.2+ | 2006 10 20 | 703 | (3.6− | 0.5−) |
| 2002 11 15 | 704 | 0.5+ | 0.5+ | 2006 09 17 | 703 | 0.6− | 0.4− | 2006 10 20 | 703 | 0.9+ | 1.0+ |
| 2002 11 15 | 704 | 0.0 | 0.9+ | 2006 09 22 | 699 | 0.9− | 0.6+ | 2006 10 20 | 703 | 0.7+ | 0.0 |
| 2002 12 05 | 699 | 0.4− | 0.3− | 2006 09 22 | 699 | 0.5− | 0.2+ | | | | |

**2006 $SN_{79}$ = 2003 $AO_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.39105 | | (2000.0) | | | |
| $n$ | 0.22960845 | $\omega$ | 137.95870 | | +0.94887885 | −0.26883631 |
| $a$ | 2.6412579 | $\Omega$ | 238.35424 | | +0.21209481 | +0.93112844 |
| $e$ | 0.3096100 | $i$ | 11.20296 | | +0.23376211 | +0.24642822 |
| $P$ | 4.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2003 01 02 | 704 | 1.3− | 0.5− | 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.0 |
| 2003 01 02 | 704 | 0.3− | 0.6+ | 2006 09 17 | 703 | 0.1+ | 0.5− | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2003 01 02 | 704 | 0.3− | 0.2+ | 2006 09 22 | 699 | 0.3+ | 0.6+ | 2006 10 19 | 703 | 0.6− | 0.3− |
| 2003 01 05 | 704 | 0.4+ | 0.7+ | 2006 09 22 | 699 | 0.8+ | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.2+ |
| 2003 01 05 | 704 | 0.6+ | 0.3− | 2006 09 22 | 699 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.5− | 0.4+ |
| 2003 01 05 | 704 | 0.0 | 0.1− | 2006 09 22 | 699 | 0.6+ | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.3+ |
| 2003 01 05 | 704 | 1.0+ | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 683 | 1.3+ | 1.4− |
| 2003 01 05 | 704 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.2− | 0.1+ | 2006 11 13 | 683 | 0.1− | 0.3− |
| 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 09 | 644 | 0.1− | 0.1+ | 2006 11 13 | 683 | (2.0+ | 0.3+) |

**2006 $SW_{79}$ = 2000 $SS_{308}$ = 2004 $HF_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.30043 | | (2000.0) | | | |
| $n$ | 0.16060443 | $\omega$ | 79.75989 | | +0.70477214 | +0.67236426 |
| $a$ | 3.3519514 | $\Omega$ | 237.56350 | | −0.70915644 | +0.65876630 |
| $e$ | 0.0934159 | $i$ | 15.55484 | | −0.01983365 | +0.33756963 |
| $P$ | 6.14 | $H$ | 14.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 704 | 0.8+ | 0.1− | 2006 09 17 | 703 | 0.7+ | 0.5− | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 2000 09 30 | 704 | 0.1− | 1.2− | 2006 09 17 | 703 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2000 09 30 | 704 | 0.1− | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2000 09 30 | 704 | 0.6+ | 0.1− | 2006 09 22 | 699 | 0.3+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2000 10 03 | 704 | 0.8− | 0.4+ | 2006 09 22 | 699 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2− |
| 2000 10 03 | 704 | 0.2+ | 0.0 | 2006 09 22 | 699 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2000 10 03 | 704 | 0.3+ | 0.1+ | 2006 09 22 | 699 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2000 10 03 | 704 | 0.5− | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2000 10 03 | 704 | 0.4− | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2004 04 28 | 608 | 0.4− | 0.7− | 2006 09 28 | 703 | (0.5− | 2.6−) | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2004 04 28 | 608 | 0.1+ | 0.6− | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2004 04 28 | 608 | 0.4− | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.0 |
| 2004 05 13 | 644 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.7+ | 0.3− |
| 2004 05 13 | 644 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.6+ | 0.1− | 2006 11 14 | 703 | 0.8− | 0.7− |
| 2004 05 13 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 703 | (0.4− | 2.8+) | | | | |
| 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 17 | 703 | 1.0− | 0.8+ | | | | |

**2006 $SF_{80}$ = 2002 $TG_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 311.26751 | | (2000.0) | | | |
| $n$ | 0.24058519 | $\omega$ | 93.92833 | | +0.56800747 | −0.82194183 |
| $a$ | 2.5602957 | $\Omega$ | 321.36115 | | +0.72576614 | +0.52439518 |
| $e$ | 0.0179332 | $i$ | 3.87336 | | +0.38811213 | +0.22230905 |
| $P$ | 4.10 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.4+ | 0.6+ | 2004 02 16 | 704 | 0.4− | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.3+ | 0.5+ | 2004 02 16 | 704 | (1.1− | 1.9+) | 2006 09 30 | 691 | 0.3− | 0.2+ |
| 2000 03 03 | 704 | 0.6+ | 0.8+ | 2004 02 29 | 691 | 0.1− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2000 03 03 | 704 | 0.5+ | 1.1+ | 2004 02 29 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2000 03 03 | 704 | 0.0 | 1.2+ | 2004 02 29 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2002 10 04 | 704 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.6− |
| 2002 10 04 | 704 | 0.2+ | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.4+ | 0.1+ |
| 2002 10 04 | 704 | 0.7+ | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.7− |
| 2002 10 04 | 704 | 0.3− | 0.5− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 22 | G96 | (0.1− | 1.6−) |
| 2002 10 06 | 644 | 0.3− | 0.4− | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.2− | 1.3+ |
| 2002 10 06 | 644 | 0.2− | 0.5− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2002 10 06 | 644 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.1− | 0.0 | | | | |
| 2004 02 16 | 704 | 1.4− | 0.9− | 2006 09 27 | 691 | 0.1− | 0.3− | | | | |

**2006 $SJ_{80}$ = 2004 $CC_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.69745 | | (2000.0) | | | |
| $n$ | 0.26842265 | $\omega$ | 87.15482 | | +0.27287161 | −0.96151152 |
| $a$ | 2.3800712 | $\Omega$ | 346.87347 | | +0.81672547 | +0.24920960 |
| $e$ | 0.1461769 | $i$ | 8.15057 | | +0.50842954 | +0.11571586 |
| $P$ | 3.67 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2004 02 11 | 691 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2004 02 11 | 691 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2004 02 15 | 704 | 0.9+ | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2004 02 15 | 704 | 1.0− | 0.3− | 2006 09 25 | 691 | 0.1− | 1.2+ | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2004 02 15 | 704 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.2− | 0.4− | | | | |
| 2004 02 15 | 704 | 0.5− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.2− | | | | |

**2006 $SM_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.91174 | | (2000.0) | | | |
| $n$ | 0.20937830 | $\omega$ | 298.07183 | | +0.94696553 | +0.31539768 |
| $a$ | 2.8087620 | $\Omega$ | 43.62133 | | −0.25457286 | +0.85311976 |
| $e$ | 0.1194739 | $i$ | 5.11328 | | −0.19608400 | +0.41558510 |
| $P$ | 4.71 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.3− | 0.3− | 2006 09 18 | 703 | 0.4− | 1.0+ | 2006 10 03 | G96 | 0.5+ | 0.2− |
| 2001 08 14 | 608 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.5+ | 2006 10 03 | G96 | 0.6+ | 0.1− |
| 2001 08 14 | 608 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2002 12 06 | 695 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.1− |
| 2002 12 06 | 695 | 0.0 | 0.5+ | 2006 09 25 | 699 | 0.7+ | 0.6− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2005 05 21 | 644 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2005 05 21 | 644 | 0.3+ | 0.2+ | 2006 09 25 | 699 | 0.8− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2005 05 21 | 644 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.1− | 0.8− | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2006 08 28 | 699 | 0.1− | 0.7− | 2006 09 26 | 704 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.1− | 1.2− |
| 2006 08 28 | 699 | 0.4+ | 0.1− | 2006 09 26 | 704 | 0.6+ | 1.4+ | 2006 10 16 | 703 | 0.3+ | 0.8− |
| 2006 08 28 | 699 | 0.1− | 0.7+ | 2006 09 26 | 704 | 1.0− | 0.9+ | 2006 10 16 | 703 | 1.2+ | 0.8− |
| 2006 08 28 | 699 | (0.8− | 2.0+) | 2006 09 26 | 704 | 0.5− | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.9+ |
| 2006 08 29 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.5+ | 1.0− | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2006 08 29 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.3− | 0.6− | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2006 08 29 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 703 | 0.3− | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.5− | | | | |

**2006 $SC_{81}$ = 2000 $EP_{161}$ = 2006 $RP_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.82194 | | (2000.0) | | | |
| $n$ | 0.24063804 | $\omega$ | 225.21338 | | +0.45700640 | −0.88941454 |
| $a$ | 2.5599208 | $\Omega$ | 197.59908 | | +0.82452471 | +0.42754905 |
| $e$ | 0.0681531 | $i$ | 1.76695 | | +0.33362278 | +0.16168977 |
| $P$ | 4.10 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.5− | 0.0 | 2006 10 17 | G96 | (2.1+ | 0.0 ) |
| 2000 03 03 | 704 | 0.4+ | 0.6− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 1.0+ | 0.3− |
| 2000 03 03 | 704 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.0 |
| 2000 03 03 | 704 | 0.1− | 0.4+ | 2006 09 26 | J75 | 0.2+ | 1.4+ | 2006 10 17 | 703 | 0.8+ | 0.1+ |
| 2000 03 03 | 704 | 0.0 | 0.0 | 2006 09 26 | J75 | 0.4+ | 1.5+ | 2006 10 17 | G96 | (0.7+ | 1.6+) |
| 2000 03 11 | 704 | 0.5− | 0.1+ | 2006 09 26 | J75 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.0 | 0.9− |
| 2000 03 11 | 704 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.6− | 1.4+ |
| 2000 03 11 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2000 03 11 | 704 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 05 | 163 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 09 05 | 163 | 0.4+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2006 09 05 | 163 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.9+ |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 13 | 143 | 0.4+ | 0.7− | 2006 11 11 | G96 | 0.0 | 0.5+ |
| 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 10 13 | 143 | 0.8+ | 0.5− | 2006 11 11 | G96 | 0.3− | 0.6− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.8− | 2006 11 11 | G96 | 0.3− | 0.5− |

**2006 SJ$_{81}$ = 1997 SO$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.39209 | | (2000.0) | | −0.44262019 | +0.89670801 |
| $n$ | 0.22342887 | $\omega$ | 65.62874 | | −0.83773215 | −0.41293167 |
| $a$ | 2.6897372 | $\Omega$ | 178.09824 | | −0.31983153 | −0.15938060 |
| $e$ | 0.1270895 | $i$ | 2.50368 | | | |
| $P$ | 4.41 | $H$ | 16.5 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 696 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.4+ | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.3+ |
| 1997 09 27 | 696 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 1997 09 30 | 709 | 0.4+ | 0.3− | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.2+ |
| 1997 09 30 | 709 | (2.9+ | 1.6+) | 2006 09 26 | G96 | 0.0 | 0.7− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 1997 09 30 | 709 | (3.7− | 0.9−) | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 1997 09 30 | 709 | (2.0+ | 0.2+) | 2006 09 26 | G96 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.3− | 0.4+ |
| 1997 09 30 | 709 | (2.1− | 0.1+) | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 01 | 291 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 291 | 0.1+ | 0.3+ | | | | |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 01 | 291 | 0.0 | 0.3+ | | | | |

**2006 SC$_{82}$ = 2004 FE$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.13296 | | (2000.0) | | −0.01485712 | +0.99983725 |
| $n$ | 0.17790614 | $\omega$ | 110.76261 | | −0.92740174 | −0.00995328 |
| $a$ | 3.1309449 | $\Omega$ | 158.37850 | | −0.37377169 | −0.01504665 |
| $e$ | 0.1238840 | $i$ | 1.59155 | | | |
| $P$ | 5.54 | $H$ | 16.1 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.6+ | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.7− |
| 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.5− | 0.6− |
| 2004 03 26 | 691 | 0.5+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.5− |
| 2004 03 29 | 691 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.5− | 0.4− |
| 2004 03 29 | 691 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.4− |
| 2004 03 29 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | (0.6− | 1.8−) | 2006 10 31 | G96 | 0.2+ | 0.3+ |
| 2006 09 14 | 691 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2006 09 14 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.9+ | 0.3+ |

**2006 SL$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.56962 | | (2000.0) | | +0.99986715 | +0.01274571 |
| $n$ | 0.22437702 | $\omega$ | 173.70507 | | −0.01520984 | +0.95367408 |
| $a$ | 2.6821546 | $\Omega$ | 185.59487 | | +0.00585954 | +0.30057161 |
| $e$ | 0.0826028 | $i$ | 5.98160 | | | |
| $P$ | 4.39 | $H$ | 16.8 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 910 | 0.6+ | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3+ |
| 1997 09 08 | 910 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 1997 09 08 | 910 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 1997 10 09 | 691 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.4− | 0.5− |
| 1997 10 09 | 691 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.2− | 0.4+ |
| 1997 10 09 | 691 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.3− | 0.4− | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.7− | | | | |
| 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.2− | | | | |

**2006 SE$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.65444 | | (2000.0) | | +0.46285036 | −0.88642657 |
| $n$ | 0.19546163 | $\omega$ | 241.05585 | | +0.86132542 | +0.45084805 |
| $a$ | 2.9405486 | $\Omega$ | 181.39343 | | +0.20949480 | +0.10480442 |
| $e$ | 0.1133997 | $i$ | 9.89695 | | | |
| $P$ | 5.04 | $H$ | 16.8 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.0 |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.3+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.4− | 0.5− | 2006 09 28 | 691 | 0.0 | 0.4+ |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.3− |
| 2001 11 21 | 645 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.1− |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.5− | 0.2− |

**2006 ST$_{83}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.75798 | | (2000.0) | | +0.98199057 | +0.18892643 |
| $n$ | 0.18438981 | $\omega$ | 169.52893 | | −0.18265025 | +0.95089552 |
| $a$ | 3.0571127 | $\Omega$ | 179.57574 | | −0.04830542 | +0.24516223 |
| $e$ | 0.0898944 | $i$ | 8.96952 | | | |
| $P$ | 5.35 | $H$ | 15.6 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 699 | 0.6+ | 1.2+ | 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 09 27 | 704 | 1.4− | 0.1− |
| 2001 11 20 | 699 | (0.1− | 3.2+) | 2006 07 22 | G96 | 0.2+ | 0.4− | 2006 09 27 | 704 | 0.2− | 0.6+ |
| 2001 11 20 | 699 | 0.6+ | 0.8− | 2006 07 22 | G96 | 0.9+ | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.1− |
| 2001 11 20 | 699 | 1.5− | 0.6+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.1+ | 0.0 |
| 2003 01 28 | 645 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.9+ | 0.2+ |
| 2003 01 28 | 645 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.2+ | 0.9− |
| 2004 04 26 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.5− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2004 04 26 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.0 |
| 2004 04 26 | 691 | 0.4− | 0.3+ | 2006 09 25 | 691 | 0.5− | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1− |
| 2006 07 22 | G96 | 0.9+ | 0.4+ | 2006 09 27 | 704 | 0.4− | 0.1+ | | | | |

**2006 SW$_{83}$ = 2000 GB$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.47984 | | (2000.0) | | +0.82820014 | +0.55913394 |
| $n$ | 0.21387888 | $\omega$ | 302.84761 | | −0.47644724 | +0.73827980 |
| $a$ | 2.7692199 | $\Omega$ | 23.22569 | | −0.29509753 | +0.37724286 |
| $e$ | 0.1651043 | $i$ | 5.54833 | | | |
| $P$ | 4.61 | $H$ | 16.4 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.7+ | 1.0+ | 2006 09 18 | 699 | 0.9+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2000 04 05 | 704 | 0.8+ | 1.0+ | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2000 04 05 | 704 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2000 04 11 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2000 04 11 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 17 | 703 | (0.3− | 1.6−) |
| 2000 04 11 | 691 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2001 07 24 | 644 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.5− |
| 2001 07 24 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2001 07 24 | 644 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.8+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.7+ | 1.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.3− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.8+ | 0.3− |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2006 09 18 | 699 | (0.2+ | 1.8+) | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2006 09 18 | 699 | 0.8+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2006 09 18 | 699 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.1+ | | | | |

**2006 ST$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.39830 | | | (2000.0) | | |
| $n$ | 0.21369305 | $\omega$ | 313.92981 | | +0.96838170 | +0.24860486 |
| $a$ | 2.7708251 | $\Omega$ | 31.69212 | | −0.21604734 | +0.87739597 |
| $e$ | 0.0929879 | $i$ | 2.26869 | | −0.12474143 | +0.41033150 |
| $P$ | 4.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 23 | 691 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 01 | 291 | 0.3− | 0.1+ |
| 1997 10 23 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.2− | 0.2+ |
| 1997 10 23 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 01 | 704 | 0.4+ | 0.1+ |
| 1997 11 22 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 01 | 704 | 0.7+ | 0.5+ |
| 1997 11 22 | 691 | 0.7+ | 0.5− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.1− | 1.1− |
| 1997 11 22 | 691 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 17 | 703 | (0.6+ | 2.0+) |
| 1997 11 28 | 691 | 0.0 | 0.1+ | 2006 09 29 | 291 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.9+ | 1.0− |
| 1997 11 28 | 691 | 0.5− | 0.1− | 2006 09 29 | 291 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 1997 11 28 | 691 | 0.1− | 0.2+ | 2006 09 29 | 291 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2001 08 15 | 608 | 0.4+ | 0.7− | 2006 09 30 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2001 08 15 | 608 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 08 15 | 608 | 0.1+ | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 08 22 | 608 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.7+ | 0.4− |
| 2001 08 22 | 608 | 0.3− | 0.2+ | 2006 10 01 | 291 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2001 08 22 | 608 | 0.0 | 0.3+ | 2006 10 01 | 291 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 01 | 291 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.3+ |
| 2006 09 18 | 691 | 0.2− | 0.4− | 2006 10 01 | 704 | (2.1+ | 0.5−) | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 01 | 291 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.7+ | 0.1+ |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 01 | 291 | 0.1+ | 0.1+ | | | | |

**2006 SM$_{85}$ = 2004 FM$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.46794 | | | (2000.0) | | |
| $n$ | 0.20822416 | $\omega$ | 318.98547 | | +0.95414326 | −0.29844543 |
| $a$ | 2.8191313 | $\Omega$ | 58.39317 | | +0.28128492 | +0.86726849 |
| $e$ | 0.0832144 | $i$ | 1.56493 | | +0.10241797 | +0.39846667 |
| $P$ | 4.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2004 03 17 | 691 | 0.4− | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2004 03 26 | 691 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2004 03 26 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2004 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.4− | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.6− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.2+ |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.3+ |

**2006 ST$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.23676 | | | (2000.0) | | |
| $n$ | 0.23982361 | $\omega$ | 95.47947 | | −0.03707760 | −0.99931142 |
| $a$ | 2.5657131 | $\Omega$ | 356.64446 | | +0.90718252 | −0.03307539 |
| $e$ | 0.1498257 | $i$ | 1.36200 | | +0.41910038 | −0.01681377 |
| $P$ | 4.11 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.4+ | 0.3− | 2006 07 21 | G96 | 0.4− | 0.0 | 2006 10 03 | 691 | 0.2− | 0.1− |
| 2000 04 26 | 691 | 0.0 | 1.3− | 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.9+ |
| 2000 04 26 | 691 | 0.2− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | (0.5+ | 1.6−) |
| 2000 05 01 | 691 | 0.5− | 0.3− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.1+ |
| 2000 05 01 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | (1.6+ | 1.1−) |
| 2000 05 01 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.8− |
| 2002 10 31 | 644 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 10 31 | 644 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.8− |
| 2002 10 31 | 644 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.8− |
| 2004 04 19 | 691 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.6+ | 0.1+ |
| 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2006 07 21 | G96 | 1.2− | 1.2+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.7− |
| 2006 07 21 | G96 | 0.0 | 0.1− | 2006 10 03 | 691 | 0.1− | 0.0 | | | | |

**2006 SU$_{85}$ = 2004 HO$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 187.73559 | | | (2000.0) | | |
| $n$ | 0.19220350 | $\omega$ | 328.95201 | | −0.98807409 | +0.15354098 |
| $a$ | 2.9736866 | $\Omega$ | 219.88540 | | −0.13729933 | −0.91266034 |
| $e$ | 0.0844356 | $i$ | 1.03726 | | −0.06970282 | −0.37878261 |
| $P$ | 5.13 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 691 | 0.2− | 0.1− | 2004 04 22 | 691 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.4+ |
| 1999 05 17 | 691 | 0.0 | 0.2+ | 2004 04 22 | 691 | 0.4+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 1999 05 17 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.5− | 0.4− | 2006 09 26 | G96 | 0.6− | 0.3− |
| 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.1− | 0.4− |
| 2004 04 16 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 2004 04 16 | 691 | 0.2− | 0.5− | 2006 09 25 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 04 22 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1+ | | | | |

**2006 SJ$_{86}$ = 1995 QF$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 255.74590 | | | (2000.0) | | |
| $n$ | 0.27841731 | $\omega$ | 123.96260 | | −0.72201514 | −0.69166219 |
| $a$ | 2.3227648 | $\Omega$ | 12.30654 | | +0.60509039 | −0.64334118 |
| $e$ | 0.1718007 | $i$ | 4.64202 | | +0.33549927 | −0.32820046 |
| $P$ | 3.54 | $H$ | 17.0 | $G$ | 0.15 | $U$ 7 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 23 | 033 | 0.2+ | 0.8− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3− | 1.1− |
| 1995 08 24 | 033 | 0.2− | 0.8+ | 2006 09 25 | 691 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 1.2− |
| 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.2− | 1.0− |
| 2006 09 18 | 691 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.7− | 1.3− |

**2006 SC$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 231.25572 | | | (2000.0) | | |
| $n$ | 0.27626588 | $\omega$ | 312.49318 | | −0.85570319 | −0.51655636 |
| $a$ | 2.3348082 | $\Omega$ | 196.48048 | | +0.50081871 | −0.81179529 |
| $e$ | 0.0562167 | $i$ | 6.20951 | | +0.13020240 | −0.27231954 |
| $P$ | 3.57 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 26 | 691 | 0.0 | 0.3+ | 2005 06 10 | 691 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 04 26 | 691 | 0.2+ | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2001 04 26 | 691 | 0.4+ | 0.8+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 29 | 291 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.0 | 0.5− | 2006 10 29 | 291 | 0.1− | 0.0 |
| 2002 08 17 | 644 | 0.5− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 29 | 291 | 0.1+ | 0.0 |
| 2002 08 17 | 644 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2002 08 27 | 644 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 08 27 | 644 | 0.0 | 0.4+ | 2006 10 15 | 703 | (2.3− | 0.9−) | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2002 08 27 | 644 | 0.3+ | 0.1+ | 2006 10 15 | 703 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2005 02 11 | 809 | 0.3− | 0.3− | 2006 10 15 | 703 | 1.4− | 0.1+ | 2006 11 01 | 691 | 0.6− | 0.2+ |
| 2005 02 11 | 809 | 1.1+ | 0.2− | 2006 10 15 | 703 | 1.4− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2005 02 11 | 809 | 0.7+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2005 05 20 | G96 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2005 05 20 | G96 | 0.0 | 0.4− | 2006 10 16 | 291 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.4+ |
| 2005 05 20 | G96 | 0.0 | 0.2− | 2006 10 16 | 291 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2005 05 20 | G96 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2005 06 10 | 691 | 1.1− | 0.1+ | 2006 10 16 | 291 | 0.0 | 0.1+ | |
| 2005 06 10 | 691 | 0.6+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ | |

**2006 SH$_{87}$ = 1998 SD$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.68943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12459079 | $\omega$ | 349.23557 | | +0.99450390 | −0.10377417 | |
| $a$ | 3.9701973 | $\Omega$ | 16.73994 | | +0.09928639 | +0.89264894 | |
| $e$ | 0.2191254 | $i$ | 2.76396 | | +0.03322950 | +0.43864427 | |
| $P$ | 7.91 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 691 | 0.5− | 0.1− | 2006 10 27 | 691 | 0.3− | 0.1+ | |
| 1998 09 19 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.1− | |
| 1998 09 19 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.3− | |
| 1998 09 26 | 691 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.5− | 2006 10 28 | G96 | 0.2− | 0.1+ | |
| 1998 09 26 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.5+ | 0.0 | |
| 1998 09 26 | 691 | 0.3+ | 0.5− | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.5− | 0.1+ | |
| 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.5− | 0.0 | 2006 10 28 | G96 | 0.4− | 0.3+ | |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.4+ | 0.2− | |
| 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.2− | |
| 2006 09 18 | 691 | 0.4− | 0.3− | 2006 09 30 | 691 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.5+ | 0.6+ | |
| 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.2+ | | | | | |

**2006 SO$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.82185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30353738 | $\omega$ | 283.22341 | | +0.56411584 | +0.82533903 | |
| $a$ | 2.1927776 | $\Omega$ | 21.17265 | | −0.72916519 | +0.51173974 | |
| $e$ | 0.1225315 | $i$ | 3.85224 | | −0.38741637 | +0.23861670 | |
| $P$ | 3.25 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ | |
| 2003 11 19 | 691 | 0.2+ | 0.1− | 2006 09 14 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | |
| 2003 11 19 | 691 | 0.3− | 0.0 | 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.4− | |
| 2003 12 21 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.7− | 0.2− | |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 16 | G96 | (2.7+ | 1.1+) | |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2005 03 12 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1+ | |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.2+ | |
| 2005 03 12 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.1+ | |
| 2005 04 04 | G96 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.0 | 0.2+ | |
| 2005 04 04 | G96 | 0.5− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.3+ | |
| 2005 04 04 | G96 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.0 | |
| 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.6− | |
| 2005 05 04 | G96 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2+ | |
| 2005 05 04 | G96 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.6− | |
| 2005 05 04 | G96 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | | | | |
| 2005 05 04 | G96 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | | | | | |

**2006 SP$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.27913 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17970660 | $\omega$ | 234.40670 | | +0.85664708 | −0.51585880 | |
| $a$ | 3.1099975 | $\Omega$ | 156.64595 | | +0.47866403 | +0.78986867 | |
| $e$ | 0.1838712 | $i$ | 0.97474 | | +0.19244876 | +0.33165822 | |
| $P$ | 5.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 1995 09 18 | 691 | 0.6+ | 0.6− | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 1995 09 18 | 691 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1− | |
| 1995 09 22 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.5+ | |
| 1995 09 22 | 691 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 | |
| 1995 09 22 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 | |
| 2000 07 31 | 807 | 0.7− | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.4+ | |
| 2000 07 31 | 807 | 0.6− | 0.3+ | 2006 09 25 | 691 | 0.4− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.3+ | |
| 2001 12 19 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | |
| 2001 12 19 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 | |
| 2001 12 19 | 691 | 0.1+ | 0.3− | 2006 10 03 | 691 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.1+ | |
| 2002 01 14 | 291 | 0.5− | 0.0 | 2006 10 03 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.4+ | 0.1+ | |
| 2002 01 14 | 291 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.4− | |
| 2002 01 14 | 291 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.4− | 0.4− | |
| 2003 03 30 | 695 | 0.7+ | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.3− | 0.2− | |
| 2003 03 30 | 695 | 0.6+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.4− | |

**2006 SX$_{87}$ = 1999 RJ$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.69089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28943159 | $\omega$ | 310.20859 | | +0.27747941 | −0.96072390 | |
| $a$ | 2.2634562 | $\Omega$ | 123.68118 | | +0.88285111 | +0.25340607 | |
| $e$ | 0.1104629 | $i$ | 0.26463 | | +0.37891833 | +0.11311479 | |
| $P$ | 3.41 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 691 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1+ | |
| 1999 09 04 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.3+ | |
| 1999 09 04 | 691 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.4+ | |
| 1999 09 13 | 691 | 0.5+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.5+ | |
| 1999 09 13 | 691 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.5+ | |
| 1999 09 13 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.3− | |
| 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.4− | 1.0+ | 2006 11 11 | G96 | 0.2+ | 0.4− | |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | (0.6− | 2.4+) | 2006 11 11 | G96 | 0.1+ | 0.2− | |
| 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.4− | |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.6− | |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.5− | |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 22 | G96 | 0.3− | 0.6− | |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.4− | 0.4− | |
| 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | | | | | |

**2006 SY$_{87}$ = 2001 UO$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.96679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19831781 | $\omega$ | 244.59746 | | +0.59825328 | −0.80129789 | |
| $a$ | 2.9122472 | $\Omega$ | 168.65523 | | +0.74201217 | +0.55217083 | |
| $e$ | 0.0370269 | $i$ | 1.11704 | | +0.30250777 | +0.23028039 | |
| $P$ | 4.97 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.2− | |
| 2001 10 17 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1+ | |
| 2001 10 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ | |
| 2001 10 20 | 704 | (2.3+ | 0.1−) | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1− | |
| 2001 10 20 | 704 | (2.2+ | 0.6−) | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.1− | |
| 2001 10 20 | 704 | (3.0+ | 1.2+) | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.4− | |
| 2001 10 20 | 704 | (1.8+ | 0.6+) | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1+ | |
| 2006 09 18 | 691 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 16 | 691 | 0.6− | 0.1+ | |
| 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.0 | |
| 2006 09 18 | 691 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 16 | 691 | 0.5+ | 0.2+ | |

**2006 SC$_{88}$ = 1998 HJ$_{154}$ = 2005 NV$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.21675 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16930735 | $\omega$ | 203.43817 | | −0.16270249 | +0.98574278 | |
| $a$ | 3.2360770 | $\Omega$ | 57.22331 | | −0.89699540 | −0.12966948 | |
| $e$ | 0.1142106 | $i$ | 2.92364 | | −0.41100748 | −0.10722403 | |
| $P$ | 5.82 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1− |
| 1998 04 17 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2− |
| 1998 04 17 | 691 | 0.1− | 0.5− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2005 07 07 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2005 07 07 | 691 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.8+ | 0.2− |
| 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2005 07 11 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.7+ | 0.4− |
| 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− | | | | |
| 2005 07 11 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1− | | | | |

**2006 SD$_{88}$ = 1995 UU$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.84315 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27020520 | $\omega$ | 3.23747 | | −0.11961383 | −0.99229749 | |
| $a$ | 2.3695920 | $\Omega$ | 93.63404 | | +0.91016817 | −0.12256251 | |
| $e$ | 0.1788799 | $i$ | 1.85019 | | +0.39659354 | −0.01800334 | |
| $P$ | 3.65 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.6+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.7+ | 0.0 |
| 1995 10 20 | 691 | 0.4+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 1995 10 20 | 691 | 0.0 | 1.0+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.2+ |
| 1995 10 24 | 691 | 0.8− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 1995 10 24 | 691 | 0.4− | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 1995 10 24 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.4− | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.2+ |

**2006 SY$_{88}$ = 2002 RK$_{252}$ = 2002 RZ$_{163}$ = 2004 EW$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.35952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25742304 | $\omega$ | 257.71505 | | +0.26641927 | −0.96385491 | |
| $a$ | 2.4473971 | $\Omega$ | 176.83130 | | +0.89853130 | +0.24756768 | |
| $e$ | 0.1751121 | $i$ | 2.19340 | | +0.34880119 | +0.09845786 | |
| $P$ | 3.83 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 18 | 691 | 0.1− | 0.2− | 2004 03 16 | 291 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.5+ | 1.2− |
| 1995 12 18 | 691 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.6+ |
| 1995 12 18 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2002 08 16 | 291 | 0.4− | 0.9+ | 2006 09 18 | 691 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.3− | 0.5− |
| 2002 08 16 | 291 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 08 16 | 291 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2002 09 12 | 644 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2002 09 12 | 644 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2002 09 12 | 644 | 0.2− | 0.2− | 2006 09 29 | 691 | 0.5+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 09 29 | 691 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2002 09 14 | 644 | 0.1− | 0.2+ | 2006 09 29 | 691 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.7+ | 0.3− |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.7+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 10 15 | 703 | (1.6− | 1.1+) | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2004 03 14 | 691 | 0.1− | 0.4+ | 2006 10 15 | 703 | 1.1− | 0.8− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 03 14 | 691 | 0.2− | 0.3+ | 2006 10 15 | 703 | 0.2− | 0.7+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2004 03 16 | 291 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.7+ | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2004 03 16 | 291 | 0.4+ | 0.3+ | 2006 10 21 | 703 | (0.2− | 2.1+) | 2006 11 16 | G96 | 0.1+ | 0.7− |

**2006 SN$_{89}$ = 2003 BM$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.06882 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17324167 | $\omega$ | 169.43516 | | −0.99106349 | +0.11973970 | |
| $a$ | 3.1868953 | $\Omega$ | 17.76631 | | −0.13206540 | −0.81882272 | |
| $e$ | 0.1083714 | $i$ | 11.10742 | | −0.01875868 | −0.56141941 | |
| $P$ | 5.69 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 699 | 0.5− | 0.1− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.4+ |
| 2003 01 26 | 699 | 0.9+ | 0.5− | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 01 26 | 699 | 0.3− | 0.4+ | 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2003 01 26 | 699 | 0.2+ | 0.7+ | 2006 09 28 | 691 | 0.5− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2003 01 27 | 608 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2003 01 27 | 608 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2003 01 27 | 608 | 0.1+ | 0.4− | 2006 10 02 | 691 | (1.3− | 2.8−) | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 1.4− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.0 | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | (2.2− | 0.9+) | 2006 11 18 | 691 | 0.7− | 0.0 |
| 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | | | | |

**2006 SO$_{89}$ = 1999 FC$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.23301 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19837135 | $\omega$ | 37.16984 | | +0.66211604 | +0.74900847 | |
| $a$ | 2.9117232 | $\Omega$ | 274.30526 | | −0.69327746 | +0.59991479 | |
| $e$ | 0.1031138 | $i$ | 1.39421 | | −0.28455004 | +0.28122688 | |
| $P$ | 4.97 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 10 | 691 | 0.3+ | 0.2− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 1996 10 10 | 691 | 0.1+ | 0.1− | 2006 09 24 | 691 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.2− |
| 1996 10 10 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2001 10 19 | 644 | 0.7− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.5− |
| 2001 10 19 | 644 | 0.8− | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 10 19 | 644 | 0.7− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2002 12 06 | 645 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.7− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.4− | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1− | | | | |
| 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2− | | | | |

**2006 SQ$_{89}$ = 1995 WF$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.74004 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17416999 | $\omega$ | 139.42884 | | +0.96221385 | +0.26349745 | |
| $a$ | 3.1755612 | $\Omega$ | 205.54151 | | −0.27224608 | +0.92618607 | |
| $e$ | 0.0811116 | $i$ | 9.16237 | | −0.00515486 | +0.26971922 | |
| $P$ | 5.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 1995 11 16 | 691 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 1995 11 16 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 1995 11 21 | 691 | 0.7+ | 0.2− | 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 1995 11 21 | 691 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 1995 11 21 | 691 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.4− | 0.6− |
| 2006 09 18 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.0 |
| 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 13 | 291 | 0.1+ | 0.5+ |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.4− | 2006 11 13 | 291 | 0.2+ | 0.1− |
| 2006 09 24 | 691 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.5− | 2006 11 13 | 291 | 0.1− | 0.9+ |
| 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.4− | | | | |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.0 | | | | |

**2006 SA$_{90}$ = 2005 JP$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.30649 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26209372 | $\omega$ | 68.05649 | | +0.11098844 | +0.99271193 | |
| $a$ | 2.4182339 | $\Omega$ | 208.43989 | | −0.94432144 | +0.09061798 | |
| $e$ | 0.1087483 | $i$ | 5.65808 | | −0.30973956 | +0.07944429 | |
| $P$ | 3.76 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.4− | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1− |
| 2005 04 16 | 691 | 0.1+ | 0.5+ | 2006 09 24 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 24 | 691 | 0.5+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.5− |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.4− | 0.6− |
| 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.0 |
| 2005 05 14 | G96 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.4− |
| 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.8+ |
| 2005 05 14 | G96 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.4− | 0.3+ |
| 2005 05 14 | G96 | 0.6− | 0.3− | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.4+ |

**2006 SD$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.73063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28243437 | $\omega$ | 69.54930 | | +0.28905212 | +0.95691399 | |
| $a$ | 2.3006878 | $\Omega$ | 217.28732 | | −0.89445150 | +0.25966534 | |
| $e$ | 0.1781736 | $i$ | 2.61590 | | −0.34118233 | +0.12995972 | |
| $P$ | 3.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 691 | 0.2+ | 0.3− | 2006 10 02 | 691 | 1.1− | 0.5− | 2006 10 20 | 703 | 0.3− | 0.4− |
| 2005 03 17 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.3+ |
| 2005 03 17 | 691 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2005 04 04 | 703 | 1.3− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2005 04 04 | 703 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.4− | 0.4− |
| 2005 04 04 | 703 | 0.4+ | 1.0− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2005 04 04 | 703 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.5− | 0.1+ |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.3− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.4+ | 0.4− | 2006 10 31 | 691 | 1.0− | 0.6− |
| 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.5+ |
| 2006 09 28 | 691 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 703 | 0.4+ | 0.4+ | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 703 | 0.5+ | 0.6+ | 2006 11 19 | 691 | 0.4+ | 0.1+ |
| 2006 10 02 | 691 | 0.3+ | 0.2− | 2006 10 20 | 703 | 0.1+ | 0.1+ | | | | |

**2006 SH$_{90}$ = 2005 JJ$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.68552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26184732 | $\omega$ | 55.62238 | | −0.14502348 | +0.98818404 | |
| $a$ | 2.4197507 | $\Omega$ | 206.17269 | | −0.94069988 | −0.15324696 | |
| $e$ | 0.1061986 | $i$ | 6.45711 | | −0.30667887 | +0.00277003 | |
| $P$ | 3.76 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 12 | G96 | 0.6− | 0.6− | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2005 05 12 | G96 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2005 05 12 | G96 | 0.1− | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.7− | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2005 05 12 | G96 | 0.5− | 0.1− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2005 05 17 | G96 | 0.4+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2005 05 17 | G96 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.4+ | 0.1− | 2006 10 27 | G96 | 1.2+ | 0.1+ |
| 2005 05 17 | G96 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.6+ |
| 2005 05 17 | G96 | 0.7+ | 0.3+ | 2006 10 02 | 691 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− |

**2006 SJ$_{90}$ = 2001 SW$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.41332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21183390 | $\omega$ | 21.24470 | | +0.85519648 | −0.51799729 | |
| $a$ | 2.7870135 | $\Omega$ | 10.01055 | | +0.45952936 | +0.74186189 | |
| $e$ | 0.0629343 | $i$ | 5.88618 | | +0.23973267 | +0.42581656 | |
| $P$ | 4.65 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.8− | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | (0.2+ | 2.1−) | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2001 09 19 | 704 | 0.9− | 0.2− | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.4− |
| 2001 09 21 | 704 | (0.4− | 2.5+) | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.9− | 0.5+ | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2001 09 21 | 704 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.1− |
| 2001 09 21 | 704 | 0.7+ | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.9+ | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.4+ |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.4− | 0.7− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.4+ |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.3− | 0.1+ | | | | |
| 2006 07 21 | G96 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.0 | | | | |

**2006 SK$_{90}$ = 2000 AU$_{224}$ = 2004 CB$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 215.19383 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25472373 | $\omega$ | 180.65538 | | −0.99086061 | −0.13486346 | |
| $a$ | 2.4646568 | $\Omega$ | 351.59249 | | +0.12384179 | −0.90169377 | |
| $e$ | 0.1171131 | $i$ | 1.04477 | | +0.05346467 | −0.41080432 | |
| $P$ | 3.87 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 691 | 0.3− | 0.0 | 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.0 |
| 1998 09 25 | 691 | 0.1+ | 0.0 | 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.5+ | 0.3+ |
| 1998 09 25 | 691 | 0.0 | 0.4+ | 2004 02 11 | 691 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 1999 12 13 | 691 | 0.1− | 0.1− | 2004 02 23 | 704 | 0.1+ | 1.3+ | 2006 10 23 | 691 | 0.1+ | 0.2− |
| 1999 12 13 | 691 | 0.3− | 0.4+ | 2004 02 23 | 704 | 0.8+ | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.3+ |
| 1999 12 13 | 691 | 0.2+ | 0.2+ | 2004 02 23 | 704 | 1.3+ | 1.2+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2000 01 11 | 691 | 0.3+ | 0.1− | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.8+ | 0.1− |
| 2000 01 11 | 691 | 0.4+ | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2000 01 11 | 691 | 0.2+ | 0.3− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2000 01 13 | 691 | 0.3− | 0.3− | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2000 01 13 | 691 | 0.1− | 0.5− | 2006 09 24 | 691 | 0.0 | 0.2+ | | | | |
| 2000 01 13 | 691 | 0.5− | 0.5− | 2006 09 24 | 691 | 0.0 | 0.1− | | | | |

**2006 SN$_{90}$ = 2002 RN$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.85005 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25720396 | $\omega$ | 287.45363 | | +0.17031356 | +0.98537744 | |
| $a$ | 2.4487866 | $\Omega$ | 352.34730 | | −0.88935647 | +0.15154593 | |
| $e$ | 0.1818305 | $i$ | 2.13449 | | −0.42430927 | +0.07787903 | |
| $P$ | 3.83 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.8− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3− |
| 2002 09 14 | 644 | 0.3− | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.5− | 0.2− |
| 2002 09 14 | 644 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.5+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2002 09 15 | 291 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | (3.2+ | 2.2+) |
| 2002 09 15 | 291 | 0.2+ | 0.3− | 2006 09 28 | 691 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.8− |
| 2002 09 15 | 291 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2002 09 16 | 291 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2002 09 16 | 291 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.6− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 291 | 0.6− | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.9− | 1.0+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2006 09 18 | 691 | 0.7− | 0.5+ | 2006 10 15 | 691 | 0.3+ | 1.1+ | 2006 11 18 | 691 | 0.3+ | 0.2− |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.4− | | | | |
| 2006 09 24 | 691 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | |

**2006 $SO_{90}$ = 2005 $LC_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.32283 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22540564 | $\omega$ | 326.34275 | | −0.68350884 | +0.72975236 | |
| $a$ | 2.6739885 | $\Omega$ | 260.53269 | | −0.66593304 | −0.63274889 | |
| $e$ | 0.1692528 | $i$ | 0.96708 | | −0.29891277 | −0.25901803 | |
| $P$ | 4.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.3− |
| 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2005 06 13 | G96 | 0.4− | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 09 24 | 691 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.5+ |
| 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.4− | 0.9− |
| 2005 06 13 | G96 | 0.4− | 0.3+ | 2006 10 19 | 691 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.0 | | | | |

**2006 $SQ_{90}$ = 1994 $GM_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.61852 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19942107 | $\omega$ | 162.44044 | | +0.15082567 | −0.98842633 | |
| $a$ | 2.9014963 | $\Omega$ | 278.88244 | | +0.90499759 | +0.14468403 | |
| $e$ | 0.0334584 | $i$ | 0.94410 | | +0.39778259 | +0.04560623 | |
| $P$ | 4.94 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 12 | 691 | 0.4+ | 0.3− | 2001 12 20 | 291 | 0.6+ | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.2+ |
| 1994 04 12 | 691 | 0.2− | 0.2+ | 2001 12 20 | 291 | 0.7+ | 0.9+ | 2006 09 18 | 691 | 0.1− | 0.1+ |
| 1994 04 12 | 691 | 0.1+ | 0.4+ | 2001 12 20 | 291 | (1.2+ | 2.3+) | 2006 09 24 | 691 | 0.3− | 0.1− |
| 1994 04 15 | 691 | 0.1+ | 0.4− | 2003 01 04 | 291 | 0.6+ | 0.4+ | 2006 09 24 | 691 | 0.3− | 0.2+ |
| 1994 04 15 | 691 | (2.9+ | 1.4+) | 2003 01 04 | 291 | 0.1+ | 0.9+ | 2006 09 24 | 691 | 0.3− | 0.2− |
| 1994 04 15 | 691 | 0.0 | 0.2+ | 2003 01 04 | 291 | 0.4+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1998 01 01 | 691 | 0.5− | 0.0 | 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1998 01 01 | 691 | 0.1− | 0.7− | 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.9− | 0.2− |
| 1998 01 01 | 691 | 0.6− | 0.5− | 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 1998 01 22 | 691 | 0.1− | 0.2+ | 2004 04 22 | 691 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 1998 01 22 | 691 | 0.2+ | 0.2− | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 1998 01 22 | 691 | 0.9− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2− |

**2006 $SU_{90}$ = 1999 $VV_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.17645 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28009103 | $\omega$ | 13.92780 | | +0.97951093 | −0.20138517 | |
| $a$ | 2.3135022 | $\Omega$ | 357.68852 | | +0.18094633 | +0.88338692 | |
| $e$ | 0.2196609 | $i$ | 2.17632 | | +0.08841243 | +0.42316848 | |
| $P$ | 3.52 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 704 | 0.5+ | 0.0 | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 10 13 | 704 | 0.6− | 0.6− | 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.6− |
| 1999 10 13 | 704 | 0.4+ | 0.2− | 2006 10 01 | 291 | 0.3− | 0.7− | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 1999 10 13 | 704 | 0.1− | 1.0− | 2006 10 01 | 291 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.8− | 0.0 |
| 1999 10 13 | 704 | 0.1+ | 0.4− | 2006 10 01 | 291 | 0.2− | 0.4− | 2006 10 21 | 703 | 0.3− | 0.4+ |
| 1999 11 04 | 704 | 0.9+ | 0.2− | 2006 10 15 | 104 | 0.6+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1999 11 04 | 704 | 0.6+ | 0.0 | 2006 10 15 | 104 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1999 11 04 | 704 | 0.9+ | 0.2+ | 2006 10 15 | 104 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 11 05 | 704 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.8+ | 0.7− |
| 1999 11 05 | 704 | 0.6− | 0.3− | 2006 10 16 | 691 | 0.5+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 1999 11 05 | 704 | 0.7− | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 1999 11 05 | 704 | 0.8− | 0.4− | 2006 10 17 | 104 | 0.0 | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 01 19 | 691 | 0.2− | 0.0 | 2006 10 17 | 104 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2004 01 19 | 691 | 0.2− | 0.2+ | 2006 10 17 | 104 | 0.3+ | 1.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2004 01 19 | 691 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2004 02 16 | 291 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2004 02 16 | 291 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.5− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2004 02 16 | 291 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.2− | 0.4+ |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 1.0− |
| 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.0 | 0.1− |
| 2006 09 24 | 691 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.0 | | | | |

**2006 $SW_{90}$ = 2004 $FS_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.69745 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17849963 | $\omega$ | 284.86875 | | +0.54464945 | +0.83616316 | |
| $a$ | 3.1240011 | $\Omega$ | 18.57178 | | −0.66994498 | +0.48020186 | |
| $e$ | 0.2008251 | $i$ | 11.72380 | | −0.50451035 | +0.26502328 | |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.7− | 0.4+ |
| 2000 08 26 | 704 | 0.0 | 0.6+ | 2006 09 24 | 691 | 0.4− | 0.1− | 2006 10 21 | 703 | 1.0− | 0.0 |
| 2000 08 26 | 704 | 0.2− | 0.4− | 2006 09 24 | 691 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2000 08 26 | 704 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2000 08 26 | 704 | 0.4− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.6− | 0.1+ |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2004 03 18 | 691 | 0.2− | 0.4+ | 2006 10 17 | 703 | 1.2+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2004 03 26 | 691 | 0.2+ | 0.4− | 2006 10 17 | 703 | 0.3− | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 03 26 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2004 03 26 | 691 | 0.0 | 0.4− | 2006 10 17 | 703 | 0.6+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.4+ | | | | |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.7+ | | | | |

**2006 $SX_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.09070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22349558 | $\omega$ | 68.55253 | | +0.77677220 | −0.62972013 | |
| $a$ | 2.6892020 | $\Omega$ | 330.47483 | | +0.57099744 | +0.71009662 | |
| $e$ | 0.0852602 | $i$ | 1.02369 | | +0.26568191 | +0.31498469 | |
| $P$ | 4.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1− |
| 1999 01 17 | 691 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 1999 01 17 | 691 | 0.1− | 0.4+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.0 |
| 1999 02 12 | 691 | 0.2− | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1− |
| 1999 02 12 | 691 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.1− |
| 1999 02 12 | 691 | 0.0 | 0.7− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2004 03 26 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2004 03 26 | 691 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2004 03 26 | 691 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.5− |
| 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2004 04 22 | 691 | 0.0 | 1.0+ | 2006 10 11 | 691 | 0.4+ | 0.1+ | | | | |
| 2006 09 18 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1− | | | | |

**2006 SZ$_{90}$ = 2005 JT$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.47085 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23220145 | $\omega$ | 9.22083 | | +0.98073519 | | −0.19533706 |
| $a$ | 2.6215577 | $\Omega$ | 2.04513 | | +0.17665555 | | +0.88386652 |
| $e$ | 0.1906168 | $i$ | 2.22640 | | +0.08337448 | | +0.42499812 |
| $P$ | 4.24 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 807 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 22 | 683 | (2.7− | 0.9−) |
| 2005 05 10 | 807 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 22 | 683 | 0.2− | 0.9− |
| 2005 05 11 | 807 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.3− | 0.6− | 2006 10 25 | 106 | 0.3+ | 0.5+ |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 10 25 | 106 | 0.8+ | 0.3+ |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.3− | 2006 10 25 | 106 | 0.3− | 1.3− |
| 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 10 25 | 106 | 0.7− | 1.0− |
| 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2006 09 28 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | | | | |
| 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | | | |

**2006 SJ$_{91}$ = 1999 TP$_{289}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.15353 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28105267 | $\omega$ | 140.77605 | | +0.91832328 | | +0.39280164 |
| $a$ | 2.3082220 | $\Omega$ | 196.30184 | | −0.39263407 | | +0.88827085 |
| $e$ | 0.2314995 | $i$ | 10.02843 | | −0.05020799 | | +0.23807936 |
| $P$ | 3.51 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.8+ | 1.0− | 2006 09 18 | 699 | 0.8+ | 0.5+ | 2006 10 02 | 691 | 0.2− | 0.0 |
| 1999 10 10 | 704 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.7− | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.0 |
| 1999 10 10 | 704 | 0.3− | 1.4− | 2006 09 18 | 699 | 0.2+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.7− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.3− | 0.2+ |
| 1999 10 19 | 704 | 0.7+ | 1.0− | 2006 09 18 | 699 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 1999 10 19 | 704 | 0.4+ | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 10 19 | 704 | 0.1+ | 0.7− | 2006 09 25 | 683 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 1999 10 19 | 704 | 0.1− | 0.2− | 2006 09 25 | 683 | (0.5+ | 2.3−) | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2002 06 14 | 644 | 0.4+ | 0.1+ | 2006 09 25 | 683 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 06 14 | 644 | 0.5+ | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 06 14 | 644 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 06 19 | 291 | 0.4− | 0.2− | 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2002 06 19 | 291 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2002 06 19 | 291 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.1− | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2006 08 28 | 703 | 0.5+ | 0.4− | 2006 09 27 | 704 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2006 08 28 | 703 | 0.6+ | 0.2− | 2006 09 27 | 704 | 1.2+ | 0.8+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 08 28 | 703 | 0.7− | 0.5+ | 2006 09 27 | 704 | 1.3+ | 1.2+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2006 08 28 | 703 | 0.1− | 0.8− | 2006 09 27 | 704 | 1.1+ | 0.3− | 2006 11 24 | G96 | 0.5− | 0.2− |
| 2006 09 18 | 699 | (2.1− | 0.8−) | 2006 10 02 | 691 | 0.1+ | 0.0 | | | | |

**2006 SP$_{91}$ = 1995 UB$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.08841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17539184 | $\omega$ | 169.13325 | | +0.97865865 | | −0.19613857 |
| $a$ | 3.1607960 | $\Omega$ | 202.46210 | | +0.17445230 | | +0.95064186 |
| $e$ | 0.0855519 | $i$ | 9.23151 | | +0.10859852 | | +0.24043649 |
| $P$ | 5.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 21 | 703 | (2.1− | 1.1−) |
| 1995 10 17 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 1995 10 17 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.1− |
| 1995 10 23 | 691 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 1995 10 23 | 691 | 0.7− | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.6+ |
| 1995 10 23 | 691 | 0.6+ | 0.2− | 2006 10 15 | 691 | 0.4+ | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2000 10 19 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2000 10 19 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2000 10 19 | 691 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.5+ |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 21 | 703 | (3.7+ | 6.9+) | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2006 09 25 | G96 | 0.5+ | 0.3+ | 2006 10 21 | 703 | 0.9+ | 1.0− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 1.1− | 2006 11 16 | G96 | 0.2+ | 0.4− |

**2006 SX$_{91}$ = 2002 RG$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.13421 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25746405 | $\omega$ | 72.43569 | | +0.71602568 | | +0.69805005 |
| $a$ | 2.4471372 | $\Omega$ | 243.29309 | | −0.64289668 | | +0.65618372 |
| $e$ | 0.1967157 | $i$ | 0.37036 | | −0.27201301 | | +0.28661655 |
| $P$ | 3.83 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.3+ | 0.4+ | 2002 10 08 | 291 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.3+ | 0.1− |
| 2001 03 25 | 695 | 0.1+ | 0.6+ | 2002 10 08 | 291 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.2− | 0.2− |
| 2002 09 05 | 645 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.6+ | 1.3+ | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.0 |
| 2002 09 13 | 644 | 0.7+ | 1.4+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.8− | 0.1− |
| 2002 09 13 | 644 | 0.7+ | 1.4+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2002 09 14 | 644 | 0.1− | 0.6+ | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.2− |
| 2002 09 14 | 644 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2002 09 14 | 644 | 0.1+ | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2002 10 08 | 291 | 1.0− | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.3− | | | | |

**2006 SC$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.55997 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22862391 | $\omega$ | 96.17161 | | +0.82378830 | | +0.56669662 |
| $a$ | 2.6488353 | $\Omega$ | 229.30932 | | −0.52767288 | | +0.75678645 |
| $e$ | 0.1197164 | $i$ | 1.14050 | | −0.20720560 | | +0.32577479 |
| $P$ | 4.31 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2002 11 07 | 291 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2002 11 07 | 291 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2002 11 07 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.4+ | 0.2+ | 2006 10 27 | 691 | 0.5+ | 0.3− |
| 2004 02 22 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.7− | 0.9− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2004 02 22 | 691 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 2004 02 22 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2004 03 18 | 691 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.2− | 0.5− | 2006 10 28 | G96 | 0.1+ | 0.5− |
| 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2004 03 18 | 691 | 0.4− | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.6+ | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2006 09 18 | 691 | 0.5− | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.5− | 0.4− | 2006 11 13 | G96 | 0.7+ | 0.4− |
| 2006 09 27 | 152 | 0.2− | 0.8+ | 2006 10 21 | 703 | 0.6+ | 0.6+ | 2006 11 13 | G96 | 0.5+ | 0.0 |
| 2006 09 28 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.5− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2006 09 28 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.8+ | 2006 11 13 | G96 | 0.4− | 0.5− |

**2006 SL$_{92}$ = 2000 QF$_{249}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.17361 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17551977 | $\omega$ | 158.85566 | | +0.99347035 | | −0.10866979 |
| $a$ | 3.1592599 | $\Omega$ | 207.45348 | | +0.09084513 | | +0.93772880 |
| $e$ | 0.1382956 | $i$ | 4.32273 | | +0.06902050 | | +0.32993267 |
| $P$ | 5.62 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 807 | 0.6+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2000 08 28 | 807 | 0.6+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.2+ |
| 2000 09 02 | 699 | 0.6− | 1.1− | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.3− |
| 2000 09 02 | 699 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.8+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2000 09 02 | 699 | 0.6− | 0.7+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2000 09 02 | 699 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2000 09 24 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2000 09 24 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.0 |
| 2000 09 24 | 704 | 0.3− | 1.0− | 2006 10 21 | 703 | 0.6+ | 0.8− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2004 04 24 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | (0.7+ | 1.7+) | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.8− | 1.2+ | 2006 11 11 | 703 | 1.3− | 0.7+ |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.4+ |
| 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 21 | 691 | 0.4+ | 0.0 |
| 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2006 09 28 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.6− | 0.5+ |
| 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | (1.2+ | 2.3+) |
| 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.5− | | | | |
| 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4− | 0.2− | | | | |

**2006 SV$_{92}$ = 1995 TM$_{5}$ = 2004 EH$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.53706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18049993 | $\omega$ | 263.10731 | | +0.25607469 | | +0.96009586 |
| $a$ | 3.1008780 | $\Omega$ | 22.71673 | | −0.73133719 | | +0.26848155 |
| $e$ | 0.1913003 | $i$ | 16.92687 | | −0.63211681 | | +0.07831735 |
| $P$ | 5.46 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.6+ | 1.2− | 2004 03 18 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.4− | 0.3+ |
| 1995 10 15 | 691 | 0.7+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 1995 10 15 | 691 | 0.8+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 1995 10 22 | 691 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.4+ | 0.4− |
| 1995 10 22 | 691 | 1.0− | 0.5− | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 1995 10 22 | 691 | 0.2− | 0.5+ | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 1995 10 28 | 691 | 0.2− | 0.4− | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 1995 10 28 | 691 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 1995 10 28 | 691 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.4− | 0.4− | 2006 11 25 | G96 | 0.4− | 0.5− |
| 2004 03 12 | 644 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.4− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2004 03 12 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2004 03 12 | 644 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.5+ | 0.4− |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.3+ | | | | |
| 2004 03 18 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.3+ | | | | |

**2006 SY$_{92}$ = 2004 AS$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.82937 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25196800 | $\omega$ | 53.67175 | | −0.32433800 | | +0.94586170 |
| $a$ | 2.4825945 | $\Omega$ | 197.41505 | | −0.88049080 | | −0.30661160 |
| $e$ | 0.1038411 | $i$ | 2.34919 | | −0.34574676 | | −0.10646579 |
| $P$ | 3.91 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 291 | 0.3+ | 0.2− | 2005 07 05 | G96 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.3− |
| 2002 10 08 | 291 | 0.2− | 0.3+ | 2005 07 05 | G96 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.4− |
| 2002 10 08 | 291 | 0.2− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2004 01 15 | 691 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2004 01 15 | 691 | 0.4− | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.9− | 0.7− |
| 2004 01 15 | 691 | 0.1− | 0.2+ | 2006 09 24 | 691 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2004 01 27 | 691 | 0.6+ | 0.2+ | 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2004 01 27 | 691 | 0.3+ | 0.3+ | 2006 09 24 | 691 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 10 18 | 461 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.3− |
| 2005 06 17 | G96 | 0.4+ | 0.2+ | 2006 10 19 | 461 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2005 06 17 | G96 | 0.4+ | 0.3+ | 2006 10 19 | 461 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 06 17 | G96 | 0.3+ | 1.1+ | 2006 10 19 | 461 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2005 06 17 | G96 | 0.1+ | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 07 05 | G96 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.7− |
| 2005 07 05 | G96 | 0.6− | 0.8+ | 2006 10 19 | 691 | 0.4+ | 0.2− | | | | |

**2006 SZ$_{92}$ = 1998 SO$_{31}$ = 2005 GS$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.82549 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25773615 | $\omega$ | 17.05357 | | +0.12782662 | | +0.99176221 |
| $a$ | 2.4454146 | $\Omega$ | 260.29104 | | −0.91092921 | | +0.11410985 |
| $e$ | 0.1711110 | $i$ | 0.47961 | | −0.39226054 | | +0.05819503 |
| $P$ | 3.82 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 20 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1998 09 20 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 1998 09 20 | 691 | 0.5+ | 0.3+ | 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 1998 09 29 | 691 | 0.2− | 0.1− | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 1998 09 29 | 691 | 0.3− | 0.1− | 2006 09 24 | 691 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 1998 09 29 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.8+ | 0.1− | 2006 10 28 | 691 | 0.4− | 0.3+ |
| 2001 03 27 | 691 | 0.0 | 0.7+ | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 03 27 | 691 | 0.4+ | 0.5+ | 2006 09 28 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2001 03 27 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2005 04 12 | 691 | 0.4+ | 0.6+ | 2006 10 02 | 691 | 0.6− | 0.8+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2005 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.5− | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | 691 | 0.5+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.4+ | 0.6− |
| 2005 04 17 | 691 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2005 04 17 | 691 | 0.0 | 0.6+ | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.3− |
| 2005 04 17 | 691 | 0.1− | 0.7+ | 2006 10 19 | 691 | 0.2+ | 0.5+ | | | | |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.3+ | | | | |

**2006 SA$_{93}$ = 2005 ND$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.78668 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17642287 | $\omega$ | 227.00521 | | −0.36894569 | | +0.92944558 |
| $a$ | 3.1484693 | $\Omega$ | 21.34480 | | −0.85020843 | | −0.33611454 |
| $e$ | 0.1242654 | $i$ | 0.49751 | | −0.37553256 | | −0.15217727 |
| $P$ | 5.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 11 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.5− | 0.2+ |
| 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 2005 07 11 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2005 07 12 | G96 | 0.1− | 0.5− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.5− |
| 2005 07 12 | G96 | 0.5− | 0.4− | 2006 09 24 | 691 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.1− |
| 2005 07 12 | G96 | 0.8− | 0.4− | 2006 09 24 | 691 | 0.0 | 0.1− | | | | |
| 2005 07 12 | G96 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | | | | |

**2006 SB$_{93}$ = 2005 NN$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 196.94908 | | (2000.0) | | | |
| $n$ | 0.18815989 | $\omega$ | 183.23594 | | −0.98900104 | +0.14790030 |
| $a$ | 3.0161390 | $\Omega$ | 5.27010 | | −0.13531865 | −0.90050257 |
| $e$ | 0.0253476 | $i$ | 0.97466 | | −0.05971436 | −0.40892617 |
| $P$ | 5.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2005 07 05 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2005 07 05 | 691 | 0.2− | 0.1− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2005 07 12 | G96 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.3− |
| 2005 07 12 | G96 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2005 07 12 | G96 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.4− | 0.1+ | | | | |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.5− | 0.1− | | | | |

**2006 SG$_{93}$ = 1997 WA$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.69756 | | (2000.0) | | | |
| $n$ | 0.21663736 | $\omega$ | 217.34424 | | +0.40099654 | −0.91599383 |
| $a$ | 2.7456624 | $\Omega$ | 209.02141 | | +0.84659719 | +0.37577382 |
| $e$ | 0.0872222 | $i$ | 1.48036 | | +0.34996425 | +0.14053234 |
| $P$ | 4.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 28 | 691 | 0.8− | 0.4− | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 1997 11 28 | 691 | 0.4− | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1997 12 04 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1− |
| 1997 12 04 | 691 | 0.7+ | 0.2+ | 2006 10 15 | 691 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 1997 12 04 | 691 | 0.4+ | 0.0 | 2006 10 21 | 703 | (1.9− | 0.1−) | 2006 11 01 | 691 | 0.7+ | 0.0 |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | (1.5+ | 0.4+) | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 1.2− | 0.8− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.9− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.4− | 0.0 |
| 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 15 | 691 | (0.6− | 1.7+) |

**2006 SL$_{93}$ = 2000 QU$_{239}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.78206 | | (2000.0) | | | |
| $n$ | 0.17404310 | $\omega$ | 51.35948 | | +0.80796676 | −0.58922417 |
| $a$ | 3.1771045 | $\Omega$ | 344.74210 | | +0.53804305 | +0.73925904 |
| $e$ | 0.1597729 | $i$ | 0.46686 | | +0.24020699 | +0.32605361 |
| $P$ | 5.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 807 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 07 | 644 | 0.4+ | 0.3+ |
| 2000 08 25 | 807 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2000 08 27 | 807 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.6+ | 2006 11 07 | 644 | 0.6+ | 0.0 |
| 2000 08 27 | 807 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 1.0+ |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 27 | 683 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 27 | 683 | (0.6− | 1.9+) | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.2− | 0.4− |
| 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |

**2006 SV$_{93}$ = 2000 JK$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.34195 | | (2000.0) | | | |
| $n$ | 0.21854898 | $\omega$ | 141.47903 | | +0.92233632 | +0.38294337 |
| $a$ | 2.7296284 | $\Omega$ | 196.23661 | | −0.38414552 | +0.89447508 |
| $e$ | 0.0942085 | $i$ | 10.60945 | | −0.04156835 | +0.23080013 |
| $P$ | 4.51 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.7− | 1.4+ |
| 2000 04 10 | 695 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 1.0+ |
| 2000 05 05 | 691 | 0.0 | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 2000 05 05 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2000 05 05 | 691 | 0.6+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2000 05 07 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2000 05 07 | 691 | 0.4− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2000 05 07 | 691 | 0.4− | 0.2− | 2006 09 28 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.3− |
| 2001 08 25 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2001 08 25 | 704 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.4− |
| 2001 08 25 | 704 | 0.1+ | 1.6− | 2006 10 02 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.6+ | 0.5− |
| 2006 09 18 | 691 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.5− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.5− |

**2006 SX$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 61.12191 | | (2000.0) | | | |
| $n$ | 0.26342124 | $\omega$ | 243.26223 | | +0.47134678 | +0.88146573 |
| $a$ | 2.4101025 | $\Omega$ | 54.88969 | | −0.79598056 | +0.43940868 |
| $e$ | 0.1903084 | $i$ | 2.04287 | | −0.37979883 | +0.17302652 |
| $P$ | 3.74 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2001 03 19 | 691 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2001 03 19 | 691 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.6+ | 0.6+ |
| 2002 08 20 | 644 | 0.5− | 0.8+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.3− |
| 2002 08 20 | 644 | 0.4− | 1.0+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2002 08 20 | 644 | 0.4− | 0.8+ | 2006 09 28 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2005 03 09 | G96 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.5+ | 0.4− |
| 2005 03 09 | G96 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 2005 03 09 | G96 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2005 03 09 | G96 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 691 | 0.5+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2006 09 18 | 691 | 0.4+ | 0.7+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 691 | 0.8− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.6+ | 0.2− |
| 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2006 09 24 | 691 | 0.5− | 0.0 | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |

**2006 SY$_{93}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.13236 | | (2000.0) | | | |
| $n$ | 0.19381402 | $\omega$ | 259.29925 | | +0.70324630 | +0.71045427 |
| $a$ | 2.9571902 | $\Omega$ | 55.42244 | | −0.63908340 | +0.64802101 |
| $e$ | 0.0040961 | $i$ | 1.84060 | | −0.31147559 | +0.27445126 |
| $P$ | 5.09 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 03 | 691 | (0.9− | 2.2+) | 2005 07 02 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 1994 05 03 | 691 | 0.5− | 0.5− | 2005 07 02 | 691 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 1994 05 03 | 691 | 1.2− | 1.0− | 2005 07 02 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.3− |
| 1996 11 06 | 691 | 0.1+ | 0.9+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.4− |
| 1996 11 06 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 |
| 1996 11 06 | 691 | 0.2+ | 0.7+ | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 15 | 691 | 0.4+ | 0.5+ | 2006 09 24 | 691 | 0.1+ | 0.5− | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 1999 04 15 | 691 | 0.3+ | 0.7+ | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− | | |
| 2004 05 13 | 691 | 0.2+ | 1.0+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.2+ | | |
| 2004 05 13 | 691 | 0.5+ | 0.9+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2004 05 13 | 691 | 0.7+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.4− | 0.3+ | | |
| 2004 05 21 | 691 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ | | |
| 2004 05 21 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.2− | | |
| 2004 05 21 | 691 | 0.6+ | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.9− | 0.7+ | | |

**2006 SA$_{94}$ = 2005 ES$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.62903 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27339419 | $\omega$ | 119.76648 | | +0.36605630 | | +0.93056846 |
| $a$ | 2.3511294 | $\Omega$ | 171.69777 | | −0.86906049 | | +0.34442430 |
| $e$ | 0.2215581 | $i$ | 2.66629 | | −0.33277115 | | +0.12415409 |
| $P$ | 3.61 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.2− | 0.3+ | 2005 04 04 | G96 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.0 | | |
| 1999 11 01 | 691 | 0.0 | 0.2+ | 2005 04 04 | G96 | 1.2− | 0.8− | 2006 10 17 | G96 | 0.6− | 0.3− | | |
| 1999 11 01 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.6+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.1− | | |
| 2002 07 14 | 704 | 0.9− | 0.2− | 2006 09 18 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.3− | | |
| 2002 07 14 | 704 | 0.3+ | 0.7+ | 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.6+ | 0.1− | | |
| 2002 07 14 | 704 | 0.2+ | 1.0+ | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1+ | | |
| 2002 07 14 | 704 | 0.3− | 0.7+ | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2002 07 22 | 644 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.6− | 0.3+ | | |
| 2002 07 22 | 644 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1− | | |
| 2002 07 22 | 644 | 0.1+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ | | |
| 2005 03 09 | G96 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2005 03 09 | G96 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− | | |
| 2005 03 09 | G96 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− | | |
| 2005 03 09 | G96 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2005 03 12 | 691 | 0.2+ | 0.6+ | 2006 09 28 | 691 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1+ | | |
| 2005 03 12 | 691 | 0.4+ | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.1+ | | |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.7+ | 0.1− | | |
| 2005 04 04 | G96 | 0.6+ | 0.7+ | 2006 10 15 | 691 | 0.6− | 0.5+ | 2006 11 16 | G96 | 0.1− | 0.3+ | | |
| 2005 04 04 | G96 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.5− | | | | | | |

**2006 SB$_{94}$ = 2005 GV$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.03189 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27177573 | $\omega$ | 258.83389 | | +0.36554618 | | +0.93035719 |
| $a$ | 2.3604543 | $\Omega$ | 32.65276 | | −0.83205866 | | +0.34033513 |
| $e$ | 0.2199491 | $i$ | 3.02648 | | −0.41719824 | | +0.13640932 |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.1− | 2006 10 19 | 461 | 0.4+ | 0.3+ | | |
| 2005 04 04 | G96 | 0.6− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.4+ | | |
| 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.1+ | | |
| 2005 04 04 | G96 | 0.1+ | 0.7− | 2006 10 16 | 461 | 0.6+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | | |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 10 16 | 461 | 0.4− | 0.4− | 2006 10 23 | 691 | 0.5− | 0.5− | | |
| 2005 04 11 | G96 | 0.6+ | 0.3− | 2006 10 16 | 461 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.3− | | |
| 2005 04 11 | G96 | 0.3− | 0.3+ | 2006 10 16 | 461 | 0.0 | 1.0+ | 2006 10 23 | 691 | 0.4− | 0.3− | | |
| 2005 04 11 | G96 | 0.4+ | 0.0 | 2006 10 17 | 461 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.9+ | 0.0 | | |
| 2006 09 18 | 691 | 0.3− | 0.3− | 2006 10 17 | 461 | 0.2− | 0.1+ | 2006 10 27 | G96 | 1.4+ | 0.3− | | |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 461 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 19 | 461 | 0.0 | 0.5+ | 2006 10 27 | G96 | (0.6+ | 1.6−) | | |
| 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 19 | 461 | 0.3+ | 0.2+ | | | | | | |

**2006 SC$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.42507 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22907587 | $\omega$ | 191.63669 | | +0.99991355 | | +0.01080188 |
| $a$ | 2.6453501 | $\Omega$ | 167.73697 | | −0.00731000 | | +0.93063256 |
| $e$ | 0.2227365 | $i$ | 2.02291 | | −0.01092965 | | +0.36579552 |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 1997 10 01 | 691 | 0.2− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.3− | | |
| 1997 10 01 | 691 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1− | | |
| 1997 10 07 | 691 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2− | | |
| 2004 03 21 | 291 | 0.4+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2004 03 21 | 291 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 2004 03 21 | 291 | 0.1− | 1.0+ | 2006 10 12 | 644 | 0.2+ | 0.4+ | 2006 10 28 | 704 | 0.8+ | 0.2− | | |
| 2006 08 30 | 699 | 0.3+ | 1.4+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | | |
| 2006 08 30 | 699 | 0.2+ | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.5+ | 2006 10 28 | 704 | 0.1− | 0.8+ | | |
| 2006 08 30 | 699 | 0.4+ | 0.2− | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 10 28 | 704 | 0.2− | 0.3− | | |
| 2006 08 30 | 699 | 0.1− | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 28 | 704 | 0.4− | 0.2+ | | |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2006 09 18 | 691 | 0.3− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | | |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2006 09 20 | 699 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.6+ | | |
| 2006 09 20 | 699 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.3+ | | |
| 2006 09 20 | 699 | 0.3− | 1.1− | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.6+ | | |
| 2006 09 20 | 699 | (1.3− | 1.7+) | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.0 | | |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | | |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.4+ | | |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.3− | | |
| 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.3− | | |

**2006 SE$_{94}$ = 2005 EW$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.23681 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23938135 | $\omega$ | 211.00782 | | −0.39332146 | | +0.91729101 |
| $a$ | 2.5688723 | $\Omega$ | 35.93710 | | −0.82030694 | | −0.31954521 |
| $e$ | 0.2347012 | $i$ | 6.08891 | | −0.41520447 | | −0.23763011 |
| $P$ | 4.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 2005 03 10 | G96 | 0.2− | 0.4− | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.1+ | | |
| 2005 03 10 | G96 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1+ | | |
| 2005 03 10 | G96 | 0.3− | 0.5− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2005 03 11 | G96 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2005 03 11 | G96 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.0 | | |
| 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2005 03 11 | G96 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.6+ | 0.3− | 2006 10 28 | 691 | 0.4+ | 0.4− | | |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.2− | | |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.3+ | | |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.5+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.4− | | |
| 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.0 | | |
| 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.0+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.5− | | |
| 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 21 | 703 | 0.5− | 0.9+ | 2006 11 21 | 691 | 0.0 | 0.2− | | |
| 2006 09 26 | G96 | 0.3− | 0.5− | 2006 10 21 | 703 | 1.0− | 0.4− | 2006 11 21 | 691 | 0.2− | 0.3+ | | |
| 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.6+ | 0.5+ | 2006 11 21 | 691 | 0.1+ | 0.2− | | |

**2006 SF$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.15206 | | | (2000.0) | | |
| $n$ | 0.22591406 | $\omega$ | 187.33046 | | +0.98871488 | +0.14955468 |
| $a$ | 2.6699751 | $\Omega$ | 164.06043 | | −0.13578290 | +0.91924970 |
| $e$ | 0.1296891 | $i$ | 1.82260 | | −0.06329215 | +0.36416122 |
| $P$ | 4.36 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 01 | 691 | 0.1− | 0.2− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.0 |
| 1995 03 01 | 691 | 0.4+ | 0.7− | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1995 03 01 | 691 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2000 04 06 | 691 | 0.1+ | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2000 04 06 | 691 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2000 04 06 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2001 06 15 | 691 | 0.3+ | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2001 06 15 | 691 | 0.3+ | 0.6− | 2006 10 11 | 644 | 0.4− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2001 06 15 | 691 | 0.5− | 0.6+ | 2006 10 15 | 691 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2005 06 16 | G96 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2005 06 16 | G96 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2005 06 16 | G96 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2005 06 16 | G96 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.0 |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.2− |

**2006 SK$_{94}$ = 2002 TY$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.59250 | | | (2000.0) | | |
| $n$ | 0.25445357 | $\omega$ | 191.92995 | | +0.95809261 | −0.28641425 |
| $a$ | 2.4664010 | $\Omega$ | 184.72249 | | +0.26759993 | +0.90116018 |
| $e$ | 0.1809125 | $i$ | 3.51135 | | +0.10221950 | +0.32538777 |
| $P$ | 3.87 | $H$ | 18.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 910 | 0.2+ | 0.5+ | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.9− | 1.4− |
| 1998 08 24 | 910 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.3+ | 2006 10 21 | 703 | 1.2− | 0.5− |
| 1998 08 24 | 910 | 0.2− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 21 | 703 | (1.2+ | 2.1+) |
| 2002 10 04 | 644 | 0.5− | 1.0+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 21 | 703 | (5.8+ | 8.1+) |
| 2002 10 04 | 644 | 0.2− | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2002 10 04 | 644 | 0.1− | 1.3+ | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2002 10 10 | 645 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 10 30 | 621 | 0.3− | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 10 30 | 621 | 0.2+ | 0.9+ |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.6− | 0.1− | 2006 10 31 | 621 | 0.4+ | 0.1− |
| 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.7− | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.2− |

**2006 SE$_{95}$ = 2004 HQ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 125.61117 | | | (2000.0) | | |
| $n$ | 0.18333487 | $\omega$ | 51.88516 | | −0.30740152 | +0.94959072 |
| $a$ | 3.0688289 | $\Omega$ | 200.47010 | | −0.91881331 | −0.31300881 |
| $e$ | 0.0731216 | $i$ | 10.12782 | | −0.24756090 | −0.01740570 |
| $P$ | 5.38 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.3− | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.7+ | 0.5− | 2006 10 22 | 691 | 0.2+ | 0.4+ |
| 2004 04 16 | 691 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.2+ | 2006 10 22 | 691 | 0.9− | 0.1+ |
| 2004 04 22 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.0 | 0.6− |
| 2004 04 22 | 691 | 0.5+ | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.7− | 2006 10 23 | 691 | 0.0 | 0.5− |
| 2004 04 22 | 691 | 0.2+ | 0.3− | 2006 10 02 | 691 | 0.7+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.2− |
| 2006 09 18 | 691 | 0.5− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2006 09 18 | 691 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2006 09 18 | 691 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.0 | | | | |
| 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.2− | 0.1+ | | | | |

**2006 SH$_{95}$ = 2000 GD$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 237.88733 | | | (2000.0) | | |
| $n$ | 0.23611069 | $\omega$ | 124.67186 | | −0.91110921 | −0.40861848 |
| $a$ | 2.5925409 | $\Omega$ | 31.31031 | | +0.33598625 | −0.81214231 |
| $e$ | 0.1266458 | $i$ | 5.95927 | | +0.23873259 | −0.41648026 |
| $P$ | 4.17 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 691 | 0.1− | 0.1+ | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2000 04 07 | 691 | 0.1+ | 0.1− | 2006 09 24 | 691 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 2000 04 07 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.8+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2000 04 13 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.8− | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2000 04 13 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.0 | 0.7− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2000 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.6+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.9− |
| 2006 09 18 | 691 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.9+ |
| 2006 09 18 | 691 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.2− |
| 2006 09 24 | 691 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.3+ | 0.6− | | | | |

**2006 SJ$_{95}$ = 2004 FE$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 308.82379 | | | (2000.0) | | |
| $n$ | 0.22927383 | $\omega$ | 243.83980 | | +0.20865892 | −0.97784006 |
| $a$ | 2.6438271 | $\Omega$ | 194.14769 | | +0.92033544 | +0.20222143 |
| $e$ | 0.0544722 | $i$ | 3.99699 | | +0.33082341 | +0.05417848 |
| $P$ | 4.30 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 291 | 0.1− | 0.1− | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2004 03 23 | 291 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.4+ | 0.6− | 2006 10 28 | 691 | 0.5+ | 0.0 |
| 2004 03 23 | 291 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2004 03 26 | 691 | 0.4+ | 0.6+ | 2006 09 25 | G96 | 0.5+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 03 26 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.7− | 2006 11 01 | 691 | 0.8+ | 0.4+ |
| 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.6− | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.7− |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.4− | 1.0− |
| 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.7− |
| 2006 09 24 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1− | | | | |

**2006 SN$_{95}$ = 2001 UV$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 97.70289 | | | (2000.0) | | |
| $n$ | 0.20230091 | $\omega$ | 103.44616 | | +0.21255824 | +0.97714816 |
| $a$ | 2.8738945 | $\Omega$ | 178.82551 | | −0.90889914 | +0.19796831 |
| $e$ | 0.0287954 | $i$ | 1.90713 | | −0.35877758 | +0.07739522 |
| $P$ | 4.87 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 691 | 0.7− | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 10 16 | 691 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2001 10 16 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.3− |
| 2001 10 16 | 691 | 0.3+ | 0.5− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2001 10 16 | 691 | 0.4+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.6− | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 691 | 0.4+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.6+ | 0.9+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | (0.0 | 1.9+) | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 10 20 | 704 | 0.2− | 0.6+ | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.5+ | 0.3+ |
| 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.5− | 0.6− |
| 2006 09 26 | G96 | 0.3− | 0.8− | 2006 10 20 | 644 | 0.0 | 0.0 | | | | |

**2006 SU$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.08403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31750460 | $\omega$ | 157.65201 | | +0.82010252 | +0.57215662 | |
| $a$ | 2.1279890 | $\Omega$ | 167.43704 | | −0.53059156 | +0.76578720 | |
| $e$ | 0.1188948 | $i$ | 2.18303 | | −0.21425322 | +0.29360988 | |
| $P$ | 3.10 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 23 | 691 | 0.2− | 0.0 | 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2003 10 23 | 691 | 0.1− | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2003 10 23 | 691 | 0.4− | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2003 11 16 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2003 11 16 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2003 11 16 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2005 04 04 | G96 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2005 04 04 | G96 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.6+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2005 04 04 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2005 04 04 | G96 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 21 | 691 | 0.1− | 0.3− |
| 2006 09 18 | 691 | 0.6− | 0.2− | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.4− |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ | | | | |

**2006 SW$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.88573 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21467587 | $\omega$ | 46.39839 | | −0.57175004 | −0.82021852 | |
| $a$ | 2.7623618 | $\Omega$ | 78.48282 | | +0.74717486 | −0.52989790 | |
| $e$ | 0.0167437 | $i$ | 1.08374 | | +0.33886814 | −0.21552213 | |
| $P$ | 4.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 10 23 | 691 | 0.5− | 0.2− |
| 2004 03 29 | 691 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.7+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2004 04 20 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2004 04 20 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.4− |
| 2004 04 20 | 691 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.6− |
| 2006 09 18 | 691 | 0.6− | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2006 09 18 | 691 | 0.3− | 0.7− | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.8− |
| 2006 09 24 | 691 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.9+ | 2006 11 11 | G96 | 0.3+ | 0.9− |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.7+ | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.6− | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.2− |
| 2006 09 25 | G96 | 0.4− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.3+ | | | | |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.1+ | | | | |

**2006 SA$_{96}$ = 1997 SZ$_{26}$ = 2004 FU$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.53045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22715593 | $\omega$ | 257.22717 | | +0.47903099 | −0.87776169 | |
| $a$ | 2.6602350 | $\Omega$ | 164.14328 | | +0.81627373 | +0.44209284 | |
| $e$ | 0.0935138 | $i$ | 1.67425 | | +0.32284130 | +0.18463028 | |
| $P$ | 4.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 29 | 691 | 0.2− | 0.1− | 2004 03 30 | 291 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 1997 09 29 | 691 | 0.0 | 0.2+ | 2004 03 30 | 291 | 0.6+ | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.4+ |
| 1997 09 29 | 691 | 0.2− | 0.1+ | 2004 03 30 | 291 | 0.5+ | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 1997 10 05 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1997 10 05 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.1− |
| 1997 10 05 | 691 | 0.1+ | 0.2− | 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.2− |
| 1998 12 13 | 691 | 0.2− | 0.6− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 1.0− | 0.0 |
| 1998 12 13 | 691 | 0.8− | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 1.0− | 0.1− |
| 1998 12 13 | 691 | 1.4− | 0.4+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 1999 01 13 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1999 01 13 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 1999 01 13 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 1999 01 22 | 691 | 0.7+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1999 01 22 | 691 | (2.3+ | 0.6−) | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 1999 01 22 | 691 | 0.7+ | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2000 04 10 | 695 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2000 04 10 | 695 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2002 12 10 | 704 | 0.1+ | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2002 12 10 | 704 | 0.5+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 12 10 | 704 | 0.0 | 0.9+ | 2006 10 15 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2002 12 10 | 704 | 0.3+ | 0.6+ | 2006 10 15 | 691 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 03 29 | 691 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.9− | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 1.4− | 3.0− |
| 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.9+ | 1.9− |

**2006 SH$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.27743 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24389364 | $\omega$ | 283.18136 | | −0.47280230 | −0.87979005 | |
| $a$ | 2.5370891 | $\Omega$ | 195.32863 | | +0.86330986 | −0.45129543 | |
| $e$ | 0.2000407 | $i$ | 10.74131 | | +0.17650518 | −0.14933822 | |
| $P$ | 4.04 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.3− | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.4+ | 0.8+ |
| 2002 10 15 | 644 | 0.5− | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2002 10 15 | 644 | 0.0 | 1.0+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2002 10 30 | 644 | 0.3+ | 1.2+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 10 30 | 644 | 0.3− | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2002 10 30 | 644 | 0.1− | 0.8+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2004 04 25 | 703 | 1.1+ | 1.1+ | 2006 10 21 | 703 | 0.3− | 1.0− | 2006 10 31 | G96 | 0.2− | 0.5− |
| 2004 04 25 | 703 | 1.1− | 0.2− | 2006 10 21 | 703 | 0.5+ | 0.7− | 2006 11 13 | 703 | (1.3+ | 1.5−) |
| 2004 04 25 | 703 | 0.7+ | 1.4+ | 2006 10 21 | 703 | 0.8− | 0.2− | 2006 11 13 | 703 | 0.3+ | 0.6− |
| 2004 04 25 | 703 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.8+ | 0.5+ |
| 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.8+ | 0.9− |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 1.0− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 691 | 0.4+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.5+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | | | |
| 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.7+ | 0.3+ | | | | |

**2006 SL$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 326.10480 | | | (2000.0) | | |
| $n$ | 0.20928851 | $\omega$ | 40.36667 | | +0.42832791 | −0.89871447 |
| $a$ | 2.8095652 | $\Omega$ | 24.71126 | | +0.76023844 | +0.30213820 |
| $e$ | 0.1263166 | $i$ | 13.00300 | | +0.48843905 | +0.31784398 |
| $P$ | 4.71 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 10 10 | 644 | 0.1+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 10 10 | 644 | 0.4− | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2001 10 24 | 644 | 0.3− | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2001 10 24 | 644 | 0.4− | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2001 10 24 | 644 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 12 13 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2002 12 13 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.0 |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7+ | 1.1+ |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2006 09 25 | G96 | 0.1+ | 0.8− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2006 09 25 | G96 | 0.1+ | 0.8− | 2006 10 20 | 644 | 0.5− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.1− | 0.5+ | 2006 11 22 | 704 | 1.1+ | 0.3− |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.2− |
| 2006 10 12 | 691 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.7+ | 0.3+ | 2006 11 22 | 704 | 1.4+ | 0.7+ |
| 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.4+ | 0.0 | 2006 11 22 | 704 | 1.0− | 0.7+ |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 104 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2006 10 16 | 104 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 104 | 0.1+ | 0.7− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 | | | | |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 | | | | |

**2006 SP$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.61077 | | | (2000.0) | | |
| $n$ | 0.26300576 | $\omega$ | 115.09634 | | −0.95416535 | −0.29602284 |
| $a$ | 2.4126401 | $\Omega$ | 47.71815 | | +0.24865456 | −0.86601376 |
| $e$ | 0.1182013 | $i$ | 3.41212 | | +0.16655150 | −0.40297723 |
| $P$ | 3.75 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.5− | 0.2+ |
| 1995 11 21 | 691 | 0.3+ | 0.7− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 1995 11 21 | 691 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.5− | 0.7+ | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2004 02 10 | 644 | 0.2+ | 0.4+ | 2006 09 24 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2004 02 10 | 644 | 0.3+ | 0.5+ | 2006 09 24 | 691 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2004 02 10 | 644 | 0.2− | 0.5+ | 2006 09 24 | 691 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2004 03 18 | 645 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.7− | 0.3− | 2006 11 16 | G96 | 0.9+ | 0.0 |
| 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.2+ |
| 2004 04 15 | 645 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2004 04 16 | 645 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2004 04 16 | 645 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.4+ | | | | |

**2006 SY$_{96}$ = 1995 SL$_{70}$ = 2001 XL$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 337.80356 | | | (2000.0) | | |
| $n$ | 0.18358221 | $\omega$ | 33.56794 | | +0.59460983 | −0.80395186 |
| $a$ | 3.0660718 | $\Omega$ | 19.95305 | | +0.73105474 | +0.53541872 |
| $e$ | 0.2012491 | $i$ | 1.68399 | | +0.33466121 | +0.25882080 |
| $P$ | 5.37 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 23 | 691 | 0.4+ | 0.4− | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 1995 09 23 | 691 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.3− |
| 1995 09 23 | 691 | 0.4+ | 0.2− | 2006 09 24 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 1995 09 27 | 691 | 0.8− | 0.1− | 2006 09 24 | 691 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.6+ | 0.2− |
| 1995 09 27 | 691 | 0.2− | 0.3+ | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 1995 09 27 | 691 | 0.0 | 0.5+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.9− |
| 2001 12 15 | 704 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2001 12 15 | 704 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2001 12 15 | 704 | 0.2+ | 1.0+ | 2006 10 19 | 691 | 0.3+ | 0.1− | | | | |
| 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1+ | | | | |

**2006 SA$_{97}$ = 1999 HK$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.38860 | | | (2000.0) | | |
| $n$ | 0.18901998 | $\omega$ | 301.94713 | | +0.80225703 | +0.59223048 |
| $a$ | 3.0069826 | $\Omega$ | 22.02309 | | −0.45738878 | +0.69066990 |
| $e$ | 0.1179499 | $i$ | 11.56012 | | −0.38363936 | +0.41501584 |
| $P$ | 5.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 1.2+ | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1999 04 17 | 691 | 1.0+ | 0.6+ | 2006 10 11 | 691 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 1999 04 17 | 691 | 0.6+ | 0.6+ | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 1999 04 18 | 691 | 0.8− | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.6− |
| 1999 04 18 | 691 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.2− |
| 1999 04 18 | 691 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.9+ | 0.4− |
| 2004 04 14 | 691 | 0.1+ | 0.1− | 2006 10 12 | A13 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.3+ | 0.6− |
| 2004 04 14 | 691 | 0.0 | 0.0 | 2006 10 12 | A13 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2004 04 14 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | (0.3− | 1.7−) | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 1.2+ | 2006 11 13 | G98 | 0.1+ | 0.2− |
| 2006 09 18 | 691 | 0.7− | 0.1− | 2006 10 17 | 703 | 0.5− | 1.0− | 2006 11 13 | G98 | 0.2+ | 0.1+ |
| 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 13 | G98 | 0.1− | 0.3+ |
| 2006 09 24 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 13 | G98 | 0.1− | 0.3+ |
| 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.6− | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | | | |

**2006 SB$_{97}$ = 1995 UO$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.19215 | | | (2000.0) | | |
| $n$ | 0.18281689 | $\omega$ | 234.09130 | | +0.30059599 | −0.95247652 |
| $a$ | 3.0746228 | $\Omega$ | 198.60169 | | +0.91727397 | +0.30287177 |
| $e$ | 0.0838112 | $i$ | 8.89085 | | +0.26124798 | +0.03251408 |
| $P$ | 5.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 1995 10 16 | 691 | 0.6+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 1.2+ | 0.4+ |
| 1995 10 16 | 691 | 0.4− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 1995 10 21 | 691 | 0.2+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 1995 10 21 | 691 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 1995 10 21 | 691 | 0.4+ | 0.5− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4+ |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.4− | 0.5− |
| 2006 10 11 | 691 | 0.5− | 0.1+ | 2006 10 21 | G96 | 0.7− | 0.7− | | | | |

**2006 SE$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 159.83641 | | | (2000.0) | | |
| $n$ | 0.22013419 | $\omega$ | 21.31801 | | −0.76277559 | +0.64648212 |
| $a$ | 2.7165084 | $\Omega$ | 198.98409 | | −0.59989816 | −0.71625233 |
| $e$ | 0.0354904 | $i$ | 2.69673 | | −0.24144479 | −0.26276122 |
| $P$ | 4.48 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.7+ | 0.1+ | |
| 2004 03 23 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.5+ | |
| 2004 03 23 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1+ | |
| 2004 04 13 | 691 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− | |
| 2004 04 13 | 691 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− | |
| 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1+ | |
| 2006 09 18 | 691 | 0.7− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.4− | |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− | |
| 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.0 | |
| 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3+ | |
| 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.8− | 0.1− | | | | | |

**2006 SH$_{97}$ = 2000 FR$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.29362 | | | (2000.0) | | |
| $n$ | 0.22023812 | $\omega$ | 121.60275 | | +0.71689282 | +0.69689927 |
| $a$ | 2.7156537 | $\Omega$ | 194.25222 | | −0.66391390 | +0.67369152 |
| $e$ | 0.1119711 | $i$ | 4.63684 | | −0.21279809 | +0.24590880 |
| $P$ | 4.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.0 | |
| 2000 03 25 | 691 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.1+ | 0.1− | |
| 2000 03 25 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.1− | |
| 2000 04 05 | 704 | 1.0+ | 1.0− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.3+ | |
| 2000 04 05 | 704 | 0.1− | 0.6+ | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.4+ | 0.1+ | |
| 2000 04 05 | 704 | 0.2+ | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.3+ | |
| 2000 04 05 | 704 | 1.6+ | 0.0 | 2006 10 11 | 691 | 1.3− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− | |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− | |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.5+ | 2006 11 16 | G96 | 0.3− | 0.7− | |
| 2006 09 18 | 691 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.5− | |
| 2006 09 24 | 691 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.3+ | |
| 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.0 | 1.0− | 2006 11 20 | 691 | 0.3− | 0.2− | |
| 2006 09 24 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.3− | |
| 2006 09 25 | G96 | 0.5+ | 0.5− | 2006 10 21 | 703 | 0.2− | 0.0 | | | | | |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 21 | 703 | (1.0− | 2.6−) | | | | | |

**2006 SJ$_{97}$ = 2004 CZ$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 292.09649 | | | (2000.0) | | |
| $n$ | 0.26820350 | $\omega$ | 80.74518 | | −0.21603308 | −0.97632855 |
| $a$ | 2.3813675 | $\Omega$ | 21.73974 | | +0.88421081 | −0.20022993 |
| $e$ | 0.1390719 | $i$ | 1.63931 | | +0.41412674 | −0.08179571 |
| $P$ | 3.67 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.2− | |
| 2004 02 14 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− | |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.0 | |
| 2004 02 23 | 704 | 0.0 | 1.1+ | 2006 10 15 | 691 | 0.8+ | 0.5+ | 2006 10 31 | 691 | 0.3− | 0.5+ | |
| 2004 02 23 | 704 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.6− | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.2+ | |
| 2004 02 23 | 704 | 0.6+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.4− | 0.4+ | |
| 2004 02 23 | 704 | 0.6+ | 0.6− | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1+ | |
| 2004 02 23 | 704 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.4− | 0.2− | |
| 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.5− | 0.5− | |
| 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.0 | 0.1+ | |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.5+ | 0.9− | |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 1.3+ | 0.2− | |
| 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.4+ | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.6− | |
| 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | | | | |
| 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | | | | |

**2006 SS$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.57866 | | | (2000.0) | | |
| $n$ | 0.23134512 | $\omega$ | 54.38044 | | +0.28135504 | −0.95032020 |
| $a$ | 2.6280230 | $\Omega$ | 20.54800 | | +0.71104223 | +0.11327637 |
| $e$ | 0.0807968 | $i$ | 22.29492 | | +0.64440538 | +0.28993100 |
| $P$ | 4.26 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.0 | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1− | |
| 2004 03 14 | 691 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1− | |
| 2004 03 14 | 691 | 0.1− | 0.1− | 2006 09 24 | G98 | 0.2− | 0.3− | 2006 10 17 | 691 | 0.2+ | 0.1− | |
| 2004 03 23 | 704 | 0.4+ | 0.8+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.0 | |
| 2004 03 23 | 704 | 0.4+ | 0.3+ | 2006 09 24 | G98 | 0.2+ | 0.6− | 2006 10 17 | 691 | 0.3+ | 0.6+ | |
| 2004 03 23 | 704 | 0.6− | 0.3− | 2006 09 25 | G98 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.2+ | |
| 2004 03 23 | 704 | 0.4− | 0.3+ | 2006 09 25 | G98 | 0.2− | 0.2+ | 2006 10 17 | 703 | (0.2− | 2.3+) | |
| 2004 03 23 | 704 | 0.0 | 0.8+ | 2006 09 26 | G98 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.9− | 0.1+ | |
| 2004 04 21 | 691 | 0.1− | 0.0 | 2006 09 26 | G98 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.4+ | |
| 2004 04 21 | 691 | 0.1− | 0.1− | 2006 09 26 | G98 | 0.6+ | 0.2+ | 2006 10 21 | 703 | 1.0− | 1.1− | |
| 2004 04 21 | 691 | 0.2+ | 0.0 | 2006 09 26 | G98 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.9− | |
| 2006 09 18 | 691 | 0.2+ | 0.7− | 2006 09 26 | G98 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.4− | 1.2− | |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | (0.6+ | 1.9−) | |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | |
| 2006 09 24 | G98 | 0.2− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2− | |
| 2006 09 24 | G98 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− | |

**2006 SW$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 186.37877 | | | (2000.0) | | |
| $n$ | 0.29887028 | $\omega$ | 173.74523 | | −0.96486876 | +0.25995252 |
| $a$ | 2.2155466 | $\Omega$ | 21.43960 | | −0.24534613 | −0.83958556 |
| $e$ | 0.1181493 | $i$ | 5.98591 | | −0.09398701 | −0.47699138 |
| $P$ | 3.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | 0.1− | 0.0 | 2006 09 26 | G98 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.4− | 0.4+ | |
| 1998 04 27 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G98 | 0.7+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− | |
| 2002 07 06 | 644 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2002 07 06 | 644 | 0.3+ | 0.3− | 2006 09 28 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.4+ | 0.0 | |
| 2002 07 06 | 644 | 0.3− | 0.0 | 2006 09 28 | G98 | 0.5− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.4− | |
| 2003 11 20 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2− | |
| 2003 11 20 | 691 | 0.0 | 0.1− | 2006 09 28 | G98 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.4− | |
| 2003 11 20 | 691 | 0.2− | 0.1+ | 2006 09 28 | G98 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2− | |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 09 28 | G98 | 0.4− | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.2− | |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.2− | |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.1+ | |
| 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2+ | |
| 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.3+ | |
| 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.5− | |
| 2006 09 25 | G96 | 0.7+ | 0.3− | 2006 10 15 | 691 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.4− | |
| 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.1− | |
| 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.7+ | 0.1− | |
| 2006 09 25 | G96 | 0.6+ | 0.1+ | 2006 10 19 | 691 | 0.5+ | 0.2− | 2006 11 16 | 691 | 0.3− | 0.3+ | |
| 2006 09 26 | G98 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.0 | |
| 2006 09 26 | G98 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.3− | |

**2006 SX$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.57486 | | | (2000.0) | | |
| $n$ | 0.23917319 | $\omega$ | 311.16885 | | +0.99664586 | −0.08012239 |
| $a$ | 2.5703626 | $\Omega$ | 53.43329 | | +0.07991346 | +0.90901631 |
| $e$ | 0.1657432 | $i$ | 1.18830 | | +0.01763142 | +0.40898624 |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.5+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2002 10 31 | 644 | 1.3+ | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 24 | 850 | 0.4− | 0.0 |
| 2002 10 31 | 644 | 0.1+ | 0.3+ | 2006 10 03 | 291 | 0.1+ | 1.0+ | 2006 10 24 | 850 | 0.0 | 0.1+ |
| 2002 11 05 | 644 | 0.2− | 0.5+ | 2006 10 03 | 291 | 0.3− | 0.1+ | 2006 10 24 | 850 | 0.4+ | 0.4− |
| 2002 11 05 | 644 | 0.3− | 0.6+ | 2006 10 03 | 291 | 0.4− | 0.2+ | 2006 10 24 | 711 | 0.1− | 0.4− |
| 2002 11 05 | 291 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 24 | 711 | 0.2− | 0.6− |
| 2002 11 05 | 291 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 24 | 711 | 0.1+ | 0.2− |
| 2002 11 05 | 291 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.7− |
| 2002 11 05 | 644 | 0.1− | 0.7+ | 2006 10 15 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2002 11 25 | 291 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.7− |
| 2002 11 25 | 291 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2002 11 25 | 291 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2004 02 18 | 291 | 0.5+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2004 02 18 | 291 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2004 02 18 | 291 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.5− |
| 2005 06 06 | 691 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.1− |
| 2005 06 06 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.2+ |
| 2005 06 06 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.4− | 1.0+ | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2005 06 13 | G96 | 0.1− | 0.8+ | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 17 | 703 | 1.0+ | 1.8+ |
| 2005 06 13 | G96 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.8− | 0.5+ | 2006 11 17 | 703 | 1.0+ | 0.7+ |
| 2005 06 13 | G96 | 0.5− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.3+ | 1.0− |
| 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.4− | 0.4+ |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.7+ | 0.2+ |
| 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.1− |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.3+ | 0.1− |
| 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.3− | | | | |

**2006 SE$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.59235 | | | (2000.0) | | |
| $n$ | 0.21446492 | $\omega$ | 244.22353 | | +0.17739122 | −0.98406532 |
| $a$ | 2.7641729 | $\Omega$ | 195.57307 | | +0.91837681 | +0.16996481 |
| $e$ | 0.1861550 | $i$ | 2.59555 | | +0.35371795 | +0.05222469 |
| $P$ | 4.60 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 08 24 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 08 24 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.6− | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2001 09 12 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2001 09 12 | 691 | 0.1− | 0.3− | 2006 10 21 | 703 | (0.4+ | 1.7+) | 2006 11 01 | 691 | 0.4+ | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.7+ | 1.0− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.6+ | 0.8+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2006 09 25 | G96 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.3+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.3− | 0.1+ |

**2006 SH$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.87411 | | | (2000.0) | | |
| $n$ | 0.21233202 | $\omega$ | 78.57524 | | −0.08734713 | +0.99614517 |
| $a$ | 2.7826530 | $\Omega$ | 186.43020 | | −0.93979758 | −0.08509064 |
| $e$ | 0.0209498 | $i$ | 4.13701 | | −0.33038008 | −0.02131619 |
| $P$ | 4.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.5− | 0.3+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2001 08 25 | 691 | 0.3+ | 0.6+ | 2006 09 18 | 691 | 0.6− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 2001 08 25 | 691 | 0.3− | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.5− | 0.1+ |
| 2004 03 21 | 291 | 0.6+ | 0.5+ | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2004 03 21 | 291 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2004 03 21 | 291 | 0.3− | 0.6+ | 2006 09 24 | 691 | 0.1+ | 0.6+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2004 04 15 | 691 | 0.2+ | 0.5+ | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.4− | 0.5− |
| 2004 04 15 | 691 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.7+ | 0.1− |
| 2004 04 15 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2006 07 21 | G96 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.7− | 0.4− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | | | |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.1− | | | | |

**2006 SK$_{98}$ = 2000 GU$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 283.80742 | | | (2000.0) | | |
| $n$ | 0.24430062 | $\omega$ | 89.30537 | | −0.40756180 | −0.90949602 |
| $a$ | 2.5342707 | $\Omega$ | 25.24556 | | +0.74269040 | −0.38232913 |
| $e$ | 0.1558018 | $i$ | 11.07352 | | +0.53132321 | −0.16322203 |
| $P$ | 4.03 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.6+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2000 04 05 | 704 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2− | 0.2− |
| 2000 04 05 | 704 | 1.3+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2000 04 05 | 704 | 1.8+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2000 04 13 | 691 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2000 04 13 | 691 | 0.3− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2000 04 13 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.6− |
| 2006 09 18 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.4+ | 0.2+ |
| 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2006 09 24 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.4− |
| 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.7+ | | | | |

**2006 SQ$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 86.49320 | | | (2000.0) | | |
| $n$ | 0.12485674 | $\omega$ | 72.19256 | | +0.25709343 | +0.96589083 |
| $a$ | 3.9645576 | $\Omega$ | 212.75512 | | −0.90689693 | +0.23008029 |
| $e$ | 0.1045732 | $i$ | 3.27925 | | −0.33382770 | +0.11881901 |
| $P$ | 7.89 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 31 | 644 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.4+ |
| 2005 07 31 | 644 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.6+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2005 07 31 | 644 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.9+ | 0.5− |
| 2005 08 06 | 644 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2005 08 06 | 644 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2005 08 06 | 644 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.4− | 0.2+ | 2006 10 31 | 691 | 0.4− | 0.2− |
| 2005 08 24 | 644 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.6+ |
| 2005 08 24 | 644 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.3− | 0.4+ |
| 2005 08 24 | 644 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 1.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.3+ |
| 2006 09 18 | 691 | 0.2+ | 0.7− | 2006 10 19 | 691 | 0.5− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2006 09 24 | 691 | 0.5− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.4− | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2006 09 24 | 691 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 21 | 691 | 0.7+ | 0.3− |
| 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.5− | 0.2− |
| 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2+ | | | | |

## 2006 SD$_{99}$ = 2001 WW$_{73}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.49782 | | | (2000.0) | | |
| $n$ | 0.19284141 | $\omega$ | 144.92653 | | +0.95819985 | +0.28527985 |
| $a$ | 2.9671250 | $\Omega$ | 198.53399 | | −0.27558880 | +0.90003456 |
| $e$ | 0.1853231 | $i$ | 3.90434 | | −0.07683656 | +0.32947414 |
| $P$ | 5.11 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.4+ | 0.7+ |
| 2001 11 20 | 704 | 0.5− | 0.9+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 0.3+ | 0.8− | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.7+ |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.9− |
| 2001 11 21 | 704 | 0.1− | 1.1− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.7+ |
| 2001 11 21 | 704 | 0.0 | 1.1+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.5+ | 0.3+ |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.3− |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2006 09 25 | G96 | 0.2− | 0.6− | 2006 10 20 | 703 | 0.8− | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.5− | 0.9− | 2006 10 31 | 691 | 0.4− | 0.0 |
| 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.2− | 1.2− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2006 10 11 | 691 | 0.2+ | 0.3− | 2006 10 20 | 703 | 0.7+ | 1.3− | | | | |

## 2006 SF$_{99}$ = 1997 SY$_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 277.58665 | | | (2000.0) | | |
| $n$ | 0.21793215 | $\omega$ | 88.08156 | | −0.31512223 | −0.94881394 |
| $a$ | 2.7347765 | $\Omega$ | 20.32577 | | +0.84465308 | −0.29058072 |
| $e$ | 0.0503724 | $i$ | 3.50162 | | +0.43273451 | −0.12375361 |
| $P$ | 4.52 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1− |
| 1997 09 28 | 691 | 0.5+ | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 1997 09 28 | 691 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.4− | 0.0 |
| 1997 10 03 | 691 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 1997 10 03 | 691 | 0.3− | 0.4− | 2006 10 20 | 703 | 0.3+ | 1.1+ | 2006 10 31 | 691 | 0.4− | 0.3− |
| 1997 10 03 | 691 | 0.3− | 0.5− | 2006 10 20 | 703 | 0.4− | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.4− | 0.2+ |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 703 | (0.1− | 2.1+) | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.4− | 1.0+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2006 09 24 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2006 09 24 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 1.0+ | 0.7− |
| 2006 09 24 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.7− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2006 10 10 | 644 | 0.9− | 0.8− | 2006 10 21 | 703 | 0.6− | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.8− | 2006 11 18 | 691 | 0.2+ | 0.4+ |
| 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 20 | G96 | 0.8− | 0.0 |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 20 | G96 | 0.5+ | 0.3− |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.3− | 0.3− |
| 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.0 | | | | |
| 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.6− | 0.1+ | | | | |

## 2006 SG$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.09504 | | | (2000.0) | | |
| $n$ | 0.23337670 | $\omega$ | 267.36988 | | +0.23559496 | +0.97119979 |
| $a$ | 2.6127492 | $\Omega$ | 16.38950 | | −0.83402828 | +0.22084256 |
| $e$ | 0.1976815 | $i$ | 7.24420 | | −0.49889061 | +0.08944011 |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3+ |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2005 03 17 | G96 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2005 03 17 | G96 | 0.0 | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.4− | 0.2− |
| 2005 03 17 | G96 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2005 03 17 | G96 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2005 04 14 | 703 | (2.9− | 3.5+) | 2006 09 28 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2005 04 14 | 703 | (0.1+ | 3.2+) | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2005 04 14 | 703 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.2− |
| 2005 04 14 | 703 | (0.2− | 1.6−) | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2005 05 19 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.6+ |
| 2005 05 19 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 2005 05 19 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3+ | | | | |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 | | | | |

## 2006 SJ$_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 332.98111 | | | (2000.0) | | |
| $n$ | 0.29225126 | $\omega$ | 34.03489 | | +0.62649922 | −0.77911625 |
| $a$ | 2.2488740 | $\Omega$ | 17.20598 | | +0.69766982 | +0.54807892 |
| $e$ | 0.1357911 | $i$ | 4.23241 | | +0.34749899 | +0.30428172 |
| $P$ | 3.37 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 16 | 691 | 0.6+ | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.4− |
| 2001 03 16 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.1+ |
| 2001 03 16 | 691 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 703 | (0.7− | 3.5+) |
| 2003 12 18 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.2+ |
| 2003 12 18 | 691 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.2+ |
| 2003 12 18 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2003 12 28 | 691 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2003 12 28 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2003 12 28 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.4− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 2006 09 18 | 691 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.5− |
| 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2006 10 10 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2006 10 10 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2006 10 11 | 691 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1+ | | | | |

## 2006 SB$_{100}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 262.58246 | | | (2000.0) | | |
| $n$ | 0.18040293 | $\omega$ | 100.06168 | | −0.94140178 | +0.14696143 |
| $a$ | 3.1019895 | $\Omega$ | 88.86722 | | −0.26217035 | −0.88511224 |
| $e$ | 0.0321088 | $i$ | 17.67674 | | +0.21220131 | −0.44156387 |
| $P$ | 5.46 | $H$ | 14.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 704 | 0.5+ | 0.7− | 2003 05 28 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2000 11 27 | 704 | 0.6+ | 0.2+ | 2005 11 03 | 703 | 0.7− | 0.7+ | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2000 11 27 | 704 | 0.2− | 0.6+ | 2005 11 03 | 703 | 1.2− | 0.5− | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2000 11 27 | 704 | 0.1+ | 0.2+ | 2005 11 03 | 703 | 0.2− | 0.7+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2000 11 27 | 704 | 1.3− | 0.0 | 2005 11 03 | 703 | 0.1− | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2000 11 27 | 704 | 0.5− | 0.5− | 2005 11 25 | 644 | 0.5+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2000 11 27 | 704 | 0.6+ | 0.6+ | 2005 11 25 | 644 | 0.4+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2003 04 25 | 699 | 1.1− | 0.3− | 2005 11 25 | 644 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.2− |
| 2003 04 25 | 699 | 0.5− | 1.0+ | 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 29 | G96 | 0.2+ | 0.1+ |
| 2003 04 25 | 699 | (0.8+ | 2.0+) | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 29 | G96 | 0.4+ | 0.5− |
| 2003 04 25 | 699 | 0.9− | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 29 | G96 | 0.3− | 0.1− |
| 2003 05 09 | 704 | 0.4− | 0.2− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2003 05 09 | 704 | 0.2− | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2003 05 09 | 704 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2003 05 09 | 704 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2003 05 28 | 691 | 0.6+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | | | | |
| 2003 05 28 | 691 | 0.4+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 | | | | |

**2006 SQ$_{101}$ = 2002 QB$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 318.01409 | | (2000.0) | | | |
| $n$ | 0.25708693 | $\omega$ | 37.72457 | | +0.55946952 | −0.82871694 |
| $a$ | 2.4495297 | $\Omega$ | 18.27130 | | +0.74841834 | +0.49736982 |
| $e$ | 0.1916206 | $i$ | 2.72454 | | +0.35617952 | +0.25661547 |
| $P$ | 3.83 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 27 | 644 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.4+ | 0.4− |
| 2002 08 27 | 644 | 0.2+ | 0.1− | 2006 09 19 | 699 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2002 08 27 | 644 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.8− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2002 08 30 | 644 | 0.1+ | 0.3− | 2006 09 25 | 699 | 1.2+ | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2002 08 30 | 644 | 0.2− | 0.2− | 2006 09 25 | 699 | 0.4+ | 0.8+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2002 08 30 | 644 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2006 09 19 | 699 | 1.3− | 0.9+ | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.2− |
| 2006 09 19 | 699 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.6− | 0.2− | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2006 09 19 | 703 | 0.8+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.4+ |
| 2006 09 19 | 703 | 0.7− | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.0 | | | | |
| 2006 09 19 | 699 | 0.5+ | 0.5− | 2006 10 20 | G96 | 0.2− | 0.7− | | | | |

**2006 ST$_{101}$ = 2004 EA$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.95891 | | (2000.0) | | | |
| $n$ | 0.19275625 | $\omega$ | 136.05849 | | +0.45429730 | +0.88919144 |
| $a$ | 2.9679989 | $\Omega$ | 160.76010 | | −0.85608456 | +0.45262881 |
| $e$ | 0.0501605 | $i$ | 9.49123 | | −0.24644107 | +0.06682624 |
| $P$ | 5.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 07 25 | G96 | 0.4− | 0.2+ | 2006 09 19 | 699 | 1.1− | 0.4− |
| 2004 03 14 | 691 | 0.1− | 0.2+ | 2006 07 25 | G96 | 0.4+ | 0.3+ | 2006 09 19 | 703 | 0.4+ | 0.9− |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 07 25 | G96 | 0.4− | 0.0 | 2006 09 19 | 699 | 0.1+ | 0.7+ |
| 2004 03 19 | 704 | 1.2+ | 1.2− | 2006 08 27 | 691 | 0.1− | 0.1+ | 2006 09 25 | 699 | 1.1+ | 1.2+ |
| 2004 03 19 | 704 | 0.7+ | 0.4− | 2006 08 27 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | (0.5+ | 1.7+) |
| 2004 03 19 | 704 | 0.2− | 0.1+ | 2006 08 27 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | (1.9+ | 0.5+) |
| 2004 03 19 | 704 | 0.6+ | 0.1− | 2006 09 19 | 699 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.8− | 0.3+ |
| 2004 03 28 | 691 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.4− | 1.0− | 2006 10 11 | 644 | 0.8+ | 0.3− |
| 2004 03 28 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 699 | 1.2− | 1.2+ | 2006 10 11 | 644 | 0.9+ | 0.0 |
| 2004 03 28 | 691 | 0.3− | 0.0 | 2006 09 19 | 703 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.7+ | 0.4+ |
| 2006 07 25 | G96 | 0.1− | 0.2+ | 2006 09 19 | 703 | 1.1− | 0.7− | | | | |

**2006 SW$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 214.24584 | | (2000.0) | | | |
| $n$ | 0.17148797 | $\omega$ | 22.61514 | | −0.91446880 | −0.40461644 |
| $a$ | 3.2085855 | $\Omega$ | 133.51647 | | +0.37005497 | −0.84187864 |
| $e$ | 0.1187389 | $i$ | 0.44939 | | +0.16372578 | −0.35710769 |
| $P$ | 5.75 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 26 | 807 | 0.3− | 0.6+ | 2003 02 01 | 291 | 0.3− | 0.2+ | 2003 02 21 | 644 | 0.2+ | 0.2+ |
| 2000 08 26 | 807 | 0.1− | 0.2+ | 2003 02 01 | 291 | 0.8+ | 0.6− | 2006 09 19 | 691 | 0.0 | 0.1+ |
| 2001 10 21 | 291 | 0.3− | 0.3− | 2003 02 01 | 291 | 0.6+ | 0.7− | 2006 09 19 | 691 | 0.2− | 0.0 |
| 2001 10 21 | 291 | 0.0 | 0.4+ | 2003 02 06 | 291 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.4+ | 0.4− |
| 2001 10 21 | 291 | 0.2+ | 0.4+ | 2003 02 06 | 291 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.4+ | 0.5− |
| 2003 01 28 | 291 | 0.3− | 0.2− | 2003 02 06 | 291 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.6− |
| 2003 01 28 | 291 | 0.0 | 0.1− | 2003 02 21 | 644 | 0.4+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2003 01 28 | 291 | 0.5− | 0.0 | 2003 02 21 | 644 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.5− |

**2006 SC$_{102}$ = 2006 SO$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.68150 | | (2000.0) | | | |
| $n$ | 0.19667012 | $\omega$ | 57.08069 | | +0.62037570 | +0.78410734 |
| $a$ | 2.9284903 | $\Omega$ | 251.27292 | | −0.72564760 | +0.56532040 |
| $e$ | 0.0994860 | $i$ | 1.06467 | | −0.29760637 | +0.25610255 |
| $P$ | 5.01 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.1+ |
| 2001 09 12 | 695 | 0.2− | 0.1+ | 2006 09 24 | 691 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.6+ |
| 2004 03 18 | 691 | 0.4+ | 0.4+ | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 1.2− |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.6− |
| 2005 06 13 | G96 | 0.7− | 1.2+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.5+ | 1.1− |
| 2005 06 13 | G96 | 0.9+ | 0.3− | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2− | 1.0− |
| 2005 06 13 | G96 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.6− |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.4− | 0.9− |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.3+ | | | | |
| 2006 09 19 | 691 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.0 | | | | |

**2006 SH$_{102}$ = 1997 SJ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.40713 | | (2000.0) | | | |
| $n$ | 0.22078680 | $\omega$ | 199.56016 | | +0.87390488 | −0.48577537 |
| $a$ | 2.7111527 | $\Omega$ | 189.56142 | | +0.45895943 | +0.83655301 |
| $e$ | 0.0490844 | $i$ | 6.10970 | | +0.16014525 | +0.25337983 |
| $P$ | 4.46 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.9+ | 0.1− |
| 1997 09 28 | 691 | 0.4+ | 0.1− | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.3+ | 0.4+ |
| 1997 09 28 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.4− | 0.3− | 2006 10 16 | G96 | 0.1− | 0.2− |
| 1997 10 03 | 691 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− |
| 1997 10 03 | 691 | 0.3+ | 0.8− | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 1997 10 03 | 691 | 0.8− | 0.7+ | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.5+ |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2006 09 19 | 691 | 0.6− | 0.6− | 2006 10 02 | 691 | 0.7− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.2+ |
| 2006 09 19 | 691 | 1.0+ | 0.9+ | 2006 10 02 | 691 | 0.4− | 0.3− | 2006 11 14 | G96 | 0.3− | 0.1+ |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.2− | 0.2− | | | | |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.6+ | 0.3− | | | | |

**2006 SW$_{102}$ = 1996 XQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 214.92441 | | | (2000.0) | | |
| $n$ | 0.28652221 | $\omega$ | 151.78643 | | −0.93629929 | −0.35087573 |
| $a$ | 2.2787526 | $\Omega$ | 7.71896 | | +0.29725357 | −0.81472316 |
| $e$ | 0.0997840 | $i$ | 6.48137 | | +0.18704000 | −0.46164097 |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 02 | 691 | 0.8− | 0.3− | 2001 02 17 | 704 | 0.2+ | 0.4− | 2006 10 02 | 691 | 0.5− | 0.1+ |
| 1996 12 02 | 691 | 0.1− | 0.3− | 2001 02 17 | 704 | 0.1+ | 0.5+ | 2006 10 02 | 691 | 0.4− | 0.3− |
| 1996 12 02 | 691 | 0.5− | 0.1+ | 2006 09 19 | 691 | 0.4+ | 0.0 | 2006 10 02 | 691 | 0.4− | 0.7+ |
| 1996 12 09 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.0 | 0.2− |
| 1996 12 09 | 691 | 0.7+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.4+ | 0.0 |
| 1996 12 09 | 691 | 0.6+ | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 1996 12 15 | 691 | 0.4+ | 0.3+ | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 1996 12 15 | 691 | 0.3− | 0.7− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 1996 12 15 | 691 | (3.7+ | 5.4−) | 2006 09 28 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.7+ |
| 2001 02 17 | 704 | 0.1− | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.2+ |
| 2001 02 17 | 704 | 0.4+ | 0.8+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |

**2006 SY$_{102}$ = 2006 RG$_{85}$ = 1997 ST$_{5}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.05465 | | | (2000.0) | | |
| $n$ | 0.22317245 | $\omega$ | 279.94508 | | +0.19597116 | +0.98060961 |
| $a$ | 2.6917972 | $\Omega$ | 1.35649 | | −0.89455560 | +0.17890130 |
| $e$ | 0.2787165 | $i$ | 0.74005 | | −0.40170335 | +0.07999446 |
| $P$ | 4.42 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.0 | 0.0 | 2005 04 02 | G96 | 0.3− | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.0 |
| 1997 08 11 | 691 | 0.0 | 0.2+ | 2005 04 02 | G96 | 0.5+ | 0.7+ | 2006 09 25 | G96 | 0.1− | 0.2− |
| 1997 08 11 | 691 | 0.1− | 0.1− | 2005 04 02 | G96 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1997 09 23 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.4− | 0.0 |
| 1997 09 23 | 691 | 0.3− | 0.6+ | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 1997 09 23 | 691 | 0.5+ | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.4− | 0.4+ |
| 1997 09 29 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.5− | 0.7+ |
| 1997 09 29 | 691 | 0.2− | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.5+ | 2006 10 02 | 691 | 0.3+ | 0.2− |
| 1997 09 29 | 691 | 0.4− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.1+ |
| 2005 03 12 | 691 | 0.7+ | 0.5+ | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2005 03 12 | 691 | 0.2+ | 0.4+ | 2006 09 24 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.3− |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.2+ | 0.8+ |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.4− |

**2006 SA$_{103}$ = 2006 UH$_{292}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.24521 | | | (2000.0) | | |
| $n$ | 0.28187195 | $\omega$ | 157.73957 | | +0.98269675 | +0.18475068 |
| $a$ | 2.3037472 | $\Omega$ | 191.63717 | | −0.17827011 | +0.92406660 |
| $e$ | 0.1714026 | $i$ | 3.75244 | | −0.05026785 | +0.33461636 |
| $P$ | 3.50 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.7+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.6+ |
| 2005 04 02 | G96 | 0.3− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.5− | 0.6+ |
| 2005 04 02 | G96 | 0.6+ | 0.9+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.7+ |
| 2005 04 10 | G96 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2005 04 10 | G96 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.3− | 0.1+ |
| 2005 04 10 | G96 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2005 04 10 | G96 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2006 09 19 | 691 | 0.8+ | 0.2− | 2006 10 16 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.6+ | 0.2− |

**2006 SC$_{103}$ = 1995 UC$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.55156 | | | (2000.0) | | |
| $n$ | 0.26757309 | $\omega$ | 17.89201 | | +0.92360070 | −0.38332713 |
| $a$ | 2.3851064 | $\Omega$ | 4.65594 | | +0.34427368 | +0.82399088 |
| $e$ | 0.1346226 | $i$ | 3.31668 | | +0.16863384 | +0.41725213 |
| $P$ | 3.68 | $H$ | 19.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.2− | 0.3− | 2006 09 24 | 691 | 0.4+ | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.2− |
| 1995 10 19 | 691 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 1995 10 19 | 691 | 0.2− | 0.5− | 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 09 28 | 691 | 0.3− | 0.0 |
| 1995 10 24 | 691 | 0.4− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.6− | 2006 09 28 | 691 | 0.4− | 0.1− |
| 1995 10 24 | 691 | 1.2+ | 1.0+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.0 | 0.5− |
| 1995 10 24 | 691 | 0.4− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.5− | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ |
| 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.4− | | | | |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.0 | | | | |

**2006 SJ$_{103}$ = 2005 JM$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 80.06351 | | | (2000.0) | | |
| $n$ | 0.22468250 | $\omega$ | 279.00946 | | +0.04095987 | +0.99915739 |
| $a$ | 2.6797229 | $\Omega$ | 353.33636 | | −0.90765892 | +0.03611781 |
| $e$ | 0.1295923 | $i$ | 1.28744 | | −0.41770512 | +0.01949390 |
| $P$ | 4.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.2− | 0.6+ | 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 24 | 691 | 0.1+ | 0.3− |
| 2005 03 11 | G96 | 0.2+ | 0.9+ | 2006 07 21 | G96 | 0.3+ | 0.9− | 2006 09 24 | 691 | 0.2+ | 0.2+ |
| 2005 03 11 | G96 | 0.2+ | 0.3+ | 2006 07 21 | G96 | 0.8− | 1.0− | 2006 09 24 | 691 | 0.7+ | 0.1− |
| 2005 03 11 | G96 | 0.0 | 0.6+ | 2006 07 21 | G96 | 0.8+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.3+ |
| 2005 05 11 | 644 | 0.2− | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.0 | 0.2+ |
| 2005 05 11 | 644 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 2005 05 11 | 644 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.9− |
| 2005 05 12 | 644 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.7− | 0.0 | 2006 10 28 | G96 | 0.7+ | 0.6− |
| 2005 05 12 | 644 | 0.3+ | 0.4− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.6− |
| 2005 05 12 | 644 | 0.2+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.2+ |

**2006 SP$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.22684 | | | (2000.0) | | |
| $n$ | 0.27464542 | $\omega$ | 303.14756 | | −0.56286874 | −0.82654527 |
| $a$ | 2.3439831 | $\Omega$ | 181.10941 | | +0.77896360 | −0.52993840 |
| $e$ | 0.1555777 | $i$ | 3.85330 | | +0.27639553 | −0.18970558 |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 14 | 644 | 0.3− | 0.0 | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 2004 01 14 | 644 | 0.1+ | 0.5− | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.4+ |
| 2004 01 14 | 644 | 0.2+ | 0.5+ | 2006 09 24 | 691 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.4+ |
| 2006 09 15 | 691 | 0.1− | 0.6− | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.3+ |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.6− | 2006 10 21 | G96 | 0.5+ | 0.5− |
| 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.3− | 0.6− |
| 2006 09 19 | 691 | 0.9+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.6− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.3+ | | | | |

**2006 SC$_{104}$ = 2000 SR$_{347}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.19233 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17290309 | $\omega$ | 32.06369 | | +0.61928040 | +0.73407829 | |
| $a$ | 3.1910544 | $\Omega$ | 277.76558 | | −0.76661750 | +0.48862352 | |
| $e$ | 0.0969600 | $i$ | 16.33087 | | −0.16967437 | +0.47156773 | |
| $P$ | 5.70 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.3− | 0.1− | 2000 09 30 | 704 | 0.1− | 0.1+ | 2006 09 25 | 703 | 0.3+ | 0.4+ |
| 2000 09 22 | 704 | 0.0 | 0.8− | 2006 09 19 | 703 | 0.5− | 0.6− | 2006 10 19 | 703 | 0.5− | 1.0− |
| 2000 09 22 | 704 | 0.4− | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.7− | 1.4+ |
| 2000 09 22 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 0.3+ | 0.1− | 2006 10 19 | 703 | 0.4− | 1.0+ |
| 2000 09 30 | 704 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.2+ |
| 2000 09 30 | 704 | 0.4+ | 0.2− | 2006 09 25 | 703 | 0.4− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.4− |
| 2000 09 30 | 704 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.4+ | 0.4− | 2006 10 23 | 644 | 0.5+ | 0.4− |
| 2000 09 30 | 704 | 0.2− | 0.5+ | 2006 09 25 | 703 | 0.4− | 0.4− | 2006 10 23 | 644 | 0.4+ | 0.1+ |

**2006 SE$_{104}$ = 1995 SD$_{7}$ = 2005 GO$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.17088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27184475 | $\omega$ | 254.79731 | | −0.10082238 | +0.99487459 | |
| $a$ | 2.3600548 | $\Omega$ | 9.42624 | | −0.89379327 | −0.08717081 | |
| $e$ | 0.1484136 | $i$ | 2.69706 | | −0.43699935 | −0.05124250 | |
| $P$ | 3.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.3− | 0.4+ | 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 1995 09 17 | 691 | 0.0 | 0.2+ | 2005 04 02 | G96 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.7+ | 0.3− |
| 1995 09 17 | 691 | 0.0 | 0.2+ | 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.2− |
| 1995 09 22 | 691 | 0.5− | 0.7− | 2005 04 02 | G96 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.1− |
| 1995 09 22 | 691 | 0.5+ | 0.4+ | 2005 04 02 | G96 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 1995 09 22 | 691 | 0.2− | 0.3+ | 2005 04 02 | G96 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.0 |
| 1999 10 10 | 691 | 0.1+ | 0.4+ | 2005 04 02 | G96 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.6− | 0.2+ |
| 1999 10 10 | 691 | 0.1− | 0.0 | 2005 04 04 | 703 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 1999 10 10 | 691 | 0.1− | 0.0 | 2005 04 04 | 703 | 1.2+ | 1.1+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2005 03 12 | G96 | 0.3− | 0.2+ | 2005 04 04 | 703 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.2− |
| 2005 03 12 | G96 | 0.2+ | 0.4+ | 2005 04 04 | 703 | 0.9− | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.1+ |
| 2005 03 12 | G96 | 0.3+ | 0.2+ | 2006 09 19 | 691 | 0.3+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.0 |
| 2005 03 12 | G96 | 0.4+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.1− |
| 2005 03 12 | G96 | 0.6+ | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2005 03 12 | G96 | 0.3− | 0.1+ | 2006 09 24 | 691 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.8+ | 0.5+ |
| 2005 03 12 | G96 | 0.4− | 0.2+ | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.6+ | 0.1+ |
| 2005 03 12 | G96 | 0.3− | 0.5+ | 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 2005 04 02 | G96 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | | | | |

**2006 SG$_{104}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.87437 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23859325 | $\omega$ | 125.17040 | | +0.64046681 | +0.76795969 | |
| $a$ | 2.5745260 | $\Omega$ | 184.67130 | | −0.72749946 | +0.60403777 | |
| $e$ | 0.0135545 | $i$ | 4.46406 | | −0.24606258 | +0.21301710 | |
| $P$ | 4.13 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.2− | 0.5+ | 2006 07 22 | G96 | 0.6+ | 0.2− | 2006 09 28 | 691 | 0.4− | 0.1− |
| 2002 10 10 | 644 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 09 28 | 691 | 0.6− | 0.5− |
| 2002 10 10 | 644 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.4− | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.3− |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.2− |
| 2004 02 11 | 644 | 0.0 | 0.3+ | 2006 09 19 | 699 | 0.4− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2− |
| 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 06 24 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2005 06 24 | 644 | 0.5+ | 0.1+ | 2006 09 19 | 699 | 0.5− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2005 06 24 | 644 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2005 07 11 | G96 | 0.3− | 0.1− | 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2005 07 11 | G96 | 0.3+ | 0.1+ | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2005 07 11 | G96 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2005 07 11 | G96 | 1.0− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.7+ | 0.3− |
| 2006 07 22 | G96 | 1.0+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2006 07 22 | G96 | 1.2+ | 0.3+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2006 07 22 | G96 | 0.9+ | 0.2+ | 2006 09 28 | 691 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.2− |

**2006 SA$_{105}$ = 2005 MK$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.96404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22728978 | $\omega$ | 127.30132 | | +0.92609434 | +0.16491884 | |
| $a$ | 2.6591904 | $\Omega$ | 226.17916 | | −0.19361055 | +0.97968572 | |
| $e$ | 0.1297442 | $i$ | 28.05501 | | +0.32382746 | +0.11409495 | |
| $P$ | 4.34 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 24 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.1− | 2006 11 16 | 704 | 0.8− | 0.1+ |
| 2005 06 24 | 644 | 0.1− | 0.0 | 2006 10 21 | 704 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.0 | 0.5+ |
| 2005 06 24 | 644 | 0.7+ | 0.2+ | 2006 10 21 | 704 | 1.0− | 0.8+ | 2006 11 16 | 704 | (2.3− | 1.2+) |
| 2005 06 30 | 644 | 0.4− | 0.2− | 2006 10 21 | 704 | 1.2− | 1.1+ | 2006 11 18 | 704 | (2.7− | 1.0+) |
| 2005 06 30 | 644 | 0.1+ | 0.1− | 2006 10 21 | 704 | (0.2− | 4.3+) | 2006 11 18 | 704 | (2.6− | 0.1+) |
| 2005 06 30 | 644 | 0.2− | 0.1− | 2006 10 21 | 704 | 0.4+ | 1.3− | 2006 11 18 | 704 | (3.6− | 1.0−) |
| 2006 09 19 | 703 | 0.7+ | 0.7+ | 2006 10 22 | 644 | 0.3+ | 0.4+ | 2006 11 18 | 704 | (2.0− | 0.4−) |
| 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.3− |
| 2006 09 19 | 703 | 0.7− | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2006 09 19 | 703 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.3− | 2006 11 19 | 704 | 0.6− | 0.6+ |
| 2006 09 25 | 703 | 0.6− | 0.3− | 2006 10 27 | 703 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2006 09 25 | 703 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2006 09 25 | 703 | 0.3− | 1.4− | 2006 10 27 | 703 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.5− |
| 2006 09 25 | 703 | 0.4+ | 0.6− | 2006 11 07 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.5− |
| 2006 09 28 | 703 | 0.7− | 0.4+ | 2006 11 07 | 644 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.8− |
| 2006 09 28 | 703 | 0.3+ | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.0 |
| 2006 09 28 | 703 | 0.7+ | 1.4+ | 2006 11 14 | 703 | 0.8− | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.6− |
| 2006 09 28 | 703 | 0.2+ | 0.6+ | 2006 11 14 | 703 | 0.0 | 0.9− | 2006 11 28 | 704 | 0.0 | 1.9+ |
| 2006 10 19 | 703 | 0.4+ | 0.1− | 2006 11 14 | 703 | 0.7− | 0.2− | 2006 11 28 | 704 | 0.7− | 1.2+ |
| 2006 10 19 | 703 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.9− | 2006 11 28 | 704 | 0.3− | 0.1+ |
| 2006 10 19 | 703 | 0.1+ | 0.3− | 2006 11 16 | 704 | 1.0+ | 0.4+ | 2006 11 28 | 704 | 0.5+ | 0.0 |

**2006 SH$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.50944 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22291888 | $\omega$ | 63.59736 | | −0.06616129 | +0.99743960 | |
| $a$ | 2.6938381 | $\Omega$ | 202.65836 | | −0.93874477 | −0.07144322 | |
| $e$ | 0.0339667 | $i$ | 4.04080 | | −0.33820251 | +0.00317874 | |
| $P$ | 4.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 0.2+ | 0.6− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.2− |
| 1997 10 05 | 691 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 1997 10 05 | 691 | 0.5+ | 0.5− | 2006 09 26 | G96 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.6− |
| 2000 05 04 | 691 | (0.5− | 2.3−) | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3− | 0.4+ |
| 2000 05 04 | 691 | 0.0 | 0.7− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2000 05 04 | 691 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2001 08 18 | 644 | 0.3+ | 0.5+ | 2006 10 03 | 691 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.2+ |
| 2001 08 18 | 644 | 0.3− | 0.8+ | 2006 10 03 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3+ |
| 2001 08 18 | 644 | 0.4− | 0.2+ | 2006 10 03 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 10 15 | 703 | 0.5+ | 0.8− | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 1.7− | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 1.3− | 1.5− | | | | |

**2006 SP$_{106}$ = 2003 DU$_{23}$ = 2004 KY$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.48495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17868138 | $\omega$ | 339.93368 | | −0.99235054 | −0.11276315 | |
| $a$ | 3.1218823 | $\Omega$ | 193.87985 | | +0.12068051 | −0.97184233 | |
| $e$ | 0.0823985 | $i$ | 12.09109 | | −0.02601206 | −0.20689844 | |
| $P$ | 5.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.6+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 1995 09 17 | 691 | 0.2− | 0.3− | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 1995 09 17 | 691 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.1− | 1.0− | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2003 02 22 | 644 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2003 02 22 | 644 | 0.6− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.6− | 0.0 |
| 2003 02 22 | 644 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.4− | 0.3− |
| 2004 05 18 | 621 | 0.6+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2004 05 18 | 621 | 0.5+ | 0.7+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2004 05 18 | 621 | 0.1− | 0.7− | 2006 09 25 | G96 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.6− | 0.5− |
| 2004 05 21 | 621 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.8− | 0.3− |
| 2004 05 21 | 621 | 0.5− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2004 05 21 | 621 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2+ | | | | |

**2006 SF$_{107}$ = 1995 WE$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.05415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17668847 | $\omega$ | 318.43878 | | +0.80430889 | +0.59417678 | |
| $a$ | 3.1453133 | $\Omega$ | 5.11956 | | −0.52444313 | +0.71490781 | |
| $e$ | 0.2682450 | $i$ | 4.12347 | | −0.27936824 | +0.36859298 | |
| $P$ | 5.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.1− | 0.2+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.4+ |
| 1995 11 17 | 691 | 0.5− | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 1995 11 17 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.0 |
| 1995 11 23 | 691 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 17 | G96 | 1.4+ | 0.8− |
| 1995 11 23 | 691 | 0.4+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.6− |
| 1995 11 23 | 691 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.5− |
| 2006 09 18 | 699 | 0.5− | 0.9+ | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.4− | 0.1− |
| 2006 09 18 | 699 | 1.0− | 0.8− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.2+ |
| 2006 09 18 | 699 | (0.9− | 2.0−) | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.1+ |
| 2006 09 18 | 699 | 0.6− | 1.3− | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.4+ | | | | |
| 2006 09 19 | 691 | 0.6+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.3+ | | | | |

**2006 SL$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.06009 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17516103 | $\omega$ | 181.75027 | | +0.99138277 | −0.13096092 | |
| $a$ | 3.1635719 | $\Omega$ | 185.77757 | | +0.12055538 | +0.92129122 | |
| $e$ | 0.0936729 | $i$ | 1.75005 | | +0.05125049 | +0.36615806 | |
| $P$ | 5.63 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 29 | 691 | 0.5+ | 0.0 | 2006 09 19 | 703 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 1995 09 29 | 691 | 0.2− | 0.3− | 2006 09 19 | 703 | 0.2+ | 1.5+ | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 1995 09 29 | 691 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.4+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.5− |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.5+ | 0.5− |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 16 | G96 | 0.7+ | 0.3− |
| 2006 07 22 | G96 | 0.7+ | 0.6− | 2006 09 25 | 691 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.1− | 0.4− |
| 2006 07 22 | G96 | 0.5+ | 0.6− | 2006 09 28 | 699 | (1.9+ | 0.6+) | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2006 07 22 | G96 | 0.3− | 0.2+ | 2006 09 28 | 699 | 0.5+ | 0.1+ | 2006 10 16 | 703 | (1.9− | 0.1+) |
| 2006 07 22 | G96 | 0.6+ | 1.1− | 2006 09 28 | 699 | 0.4+ | 1.4− | 2006 10 16 | 703 | 1.5− | 1.0+ |
| 2006 09 19 | 703 | 0.2− | 0.6+ | 2006 09 28 | 699 | (2.2− | 0.9+) | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 2006 09 19 | 703 | 1.0− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.6− | 0.7− |
| 2006 09 19 | 703 | 0.1− | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | (1.9+ | 0.6+) |
| 2006 09 19 | 703 | (1.9− | 0.6+) | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2006 09 19 | 703 | 0.6− | 0.8+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− |

**2006 SN$_{107}$ = 2005 JM$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.15472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26528220 | $\omega$ | 214.08988 | | −0.71797195 | +0.69572019 | |
| $a$ | 2.3988180 | $\Omega$ | 10.08754 | | −0.60715245 | −0.61039074 | |
| $e$ | 0.0520813 | $i$ | 7.25818 | | −0.34041471 | −0.37867737 | |
| $P$ | 3.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 691 | 0.1+ | 0.3+ | 2005 05 12 | 644 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2001 03 26 | 691 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 1.2− | 1.1− | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 2001 03 26 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 703 | 0.5− | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.0 |
| 2005 05 11 | 644 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 10 02 | 691 | 0.1+ | 0.6+ |
| 2005 05 11 | 644 | 0.1− | 0.1+ | 2006 09 19 | 703 | 0.8− | 0.3+ | 2006 10 28 | G96 | 0.6− | 0.2− |
| 2005 05 11 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3+ |
| 2005 05 12 | 644 | 0.1+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.7− | 0.3+ |
| 2005 05 12 | 644 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.8− | 0.3− |

**2006 SV$_{107}$ = 2004 BO$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.13254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28573525 | $\omega$ | 43.20054 | | +0.62906143 | −0.77733940 | |
| $a$ | 2.2829348 | $\Omega$ | 7.82322 | | +0.70279755 | +0.56595671 | |
| $e$ | 0.1936361 | $i$ | 2.11230 | | +0.33220073 | +0.27465698 | |
| $P$ | 3.45 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.3+ | 0.9+ | 2004 02 13 | 691 | 0.6+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.1+ |
| 2001 03 25 | 695 | 0.3+ | 0.5+ | 2004 02 13 | 691 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.2− |
| 2003 12 21 | 691 | 0.2− | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.8− |
| 2003 12 21 | 691 | 0.0 | 0.5− | 2006 07 21 | G96 | 1.0− | 0.4− | 2006 10 17 | G96 | 0.4+ | 0.9− |
| 2003 12 21 | 691 | 0.1+ | 0.3− | 2006 07 21 | G96 | 0.7+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.2+ | 0.1− | 2006 10 17 | G96 | (0.4+ | 1.7−) |
| 2004 01 16 | 691 | 0.2+ | 0.2− | 2006 09 15 | 691 | 0.2+ | 1.0+ | 2006 10 17 | 703 | 0.8− | 0.1− |
| 2004 01 16 | 691 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.2+ |
| 2004 01 22 | 704 | 0.3+ | 0.4+ | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.6− |
| 2004 01 22 | 704 | 0.5+ | 0.9+ | 2006 09 19 | 699 | 0.7− | 1.0+ | 2006 10 17 | 703 | 0.5− | 0.4− |
| 2004 01 22 | 704 | 0.9+ | 1.0+ | 2006 09 19 | 699 | 1.3− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.5− |
| 2004 01 27 | 691 | 0.2− | 0.0 | 2006 09 19 | 699 | 0.7− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 09 19 | 699 | 1.1− | 1.0+ | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2004 02 13 | 691 | 0.3− | 0.2+ | 2006 09 25 | G96 | 0.5+ | 0.1− | | | | |

**2006 SX$_{107}$ = 2005 MH$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.82894 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17779670 | $\omega$ | 180.48373 | | +0.93538650 | +0.32988590 | |
| $a$ | 3.1322295 | $\Omega$ | 158.83873 | | −0.32324990 | +0.94370172 | |
| $e$ | 0.1042301 | $i$ | 20.66342 | | −0.14339316 | +0.02454319 | |
| $P$ | 5.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 699 | 0.4− | 1.1− | 2005 07 05 | 644 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.5− | 0.4− |
| 2000 09 02 | 699 | 1.2+ | 1.1− | 2006 08 28 | 699 | 0.1+ | 0.7+ | 2006 09 25 | 703 | 0.4− | 1.1− |
| 2000 09 02 | 699 | 1.0− | 0.1− | 2006 08 28 | 699 | 1.1+ | 0.8+ | 2006 09 25 | 703 | 0.2+ | 0.7− |
| 2000 09 02 | 699 | 0.1+ | 0.6+ | 2006 08 28 | 699 | 0.2+ | 1.4+ | 2006 09 25 | 703 | 0.7− | 0.6− |
| 2005 06 30 | 644 | 0.1− | 0.7+ | 2006 08 28 | 699 | (0.6− | 2.9+) | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2005 06 30 | 644 | 0.3+ | 0.0 | 2006 09 19 | 703 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2005 06 30 | 644 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2005 07 05 | 644 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.1− | 0.7+ | | | | |
| 2005 07 05 | 644 | 0.2− | 0.3+ | 2006 09 19 | 703 | 0.8− | 0.7+ | | | | |

**2006 SC$_{108}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.53474 | | | (2000.0) | | |
| $n$ | 0.26443922 | $\omega$ | 86.90691 | | +0.40030696 | −0.91537859 |
| $a$ | 2.4039133 | $\Omega$ | 339.33259 | | +0.78514637 | +0.36671798 |
| $e$ | 0.1068303 | $i$ | 6.97382 | | +0.47254578 | +0.16613233 |
| $P$ | 3.73 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 291 | 0.3+ | 0.1+ | 2006 09 19 | 699 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 2002 07 06 | 291 | 0.4− | 0.3+ | 2006 09 19 | 699 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.3+ | 0.0 |
| 2002 07 06 | 291 | 0.2− | 0.1+ | 2006 09 19 | 699 | 0.7− | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.2− |
| 2004 04 14 | 645 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.5− | 0.5− | 2006 10 11 | 691 | 0.3+ | 0.1+ |
| 2004 04 14 | 645 | 0.0 | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2006 07 22 | G96 | 0.1− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.3− |
| 2006 07 22 | G96 | 0.7+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 09 27 | 691 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.2+ |
| 2006 07 22 | G96 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.1+ |
| 2006 08 21 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.1+ |
| 2006 08 21 | 691 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.2− | 0.0 | | | | |
| 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.4+ | | | | |

**2006 SD$_{108}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.94466 | | | (2000.0) | | |
| $n$ | 0.21141848 | $\omega$ | 161.74176 | | +0.98269908 | −0.17881119 |
| $a$ | 2.7906632 | $\Omega$ | 208.69327 | | +0.15492494 | +0.93640742 |
| $e$ | 0.0319577 | $i$ | 5.76898 | | +0.10149281 | +0.30193990 |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.1− | 0.6− | 2005 06 27 | G96 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.7− | 0.1− |
| 2002 12 03 | 644 | 0.0 | 1.0+ | 2006 09 19 | 699 | 0.7+ | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 2002 12 03 | 644 | 0.2− | 0.6− | 2006 09 19 | 699 | 1.2− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2002 12 03 | 644 | 0.1+ | 0.6+ | 2006 09 19 | 699 | 0.1+ | 0.4− | 2006 10 12 | 644 | 0.3− | 0.1+ |
| 2002 12 03 | 644 | 0.4− | 0.3− | 2006 09 19 | 699 | 0.0 | 0.8+ | 2006 10 12 | 644 | 0.5+ | 0.5+ |
| 2002 12 03 | 644 | 0.5+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 2004 03 27 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 03 27 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.7+ |
| 2004 03 27 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.4− |
| 2005 06 27 | G96 | 0.2− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2005 06 27 | G96 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.3− | 0.5− |
| 2005 06 27 | G96 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.3− |

**2006 SN$_{108}$ = 2002 XZ$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 333.24699 | | | (2000.0) | | |
| $n$ | 0.23076313 | $\omega$ | 220.97256 | | +0.55911464 | −0.82818143 |
| $a$ | 2.6324397 | $\Omega$ | 195.16395 | | +0.79411916 | +0.54839639 |
| $e$ | 0.2054293 | $i$ | 8.53263 | | +0.23825527 | +0.11565865 |
| $P$ | 4.27 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 644 | 0.2− | 0.5+ | 2006 09 27 | 704 | 0.6+ | 0.6− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 12 11 | 644 | 0.1− | 0.1+ | 2006 09 27 | 704 | 0.5+ | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 10 13 | D35 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 12 13 | 644 | 0.2+ | 0.1− | 2006 10 13 | D35 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 12 13 | 644 | 0.4+ | 0.1+ | 2006 10 13 | D35 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.6− |
| 2002 12 13 | 644 | 0.2− | 0.4− | 2006 10 15 | 703 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.6+ | 2006 10 21 | 703 | 0.3+ | 0.9− |
| 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.7− | 0.1− | 2006 10 21 | 703 | 0.3− | 0.3+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2006 09 27 | 704 | (2.2+ | 0.8+) | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.0 |

**2006 SS$_{108}$ = 2002 UZ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.42543 | | | (2000.0) | | |
| $n$ | 0.24458575 | $\omega$ | 240.25348 | | +0.99252268 | −0.01281821 |
| $a$ | 2.5323008 | $\Omega$ | 120.23733 | | +0.05240379 | +0.94290409 |
| $e$ | 0.2513263 | $i$ | 8.07684 | | −0.11023872 | +0.33281761 |
| $P$ | 4.03 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 699 | 0.2− | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.2− | 0.1− |
| 1998 10 29 | 699 | 0.6+ | 0.4− | 2006 09 25 | 699 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.1− |
| 1998 10 29 | 699 | 0.8− | 0.5+ | 2006 09 25 | 699 | 0.5+ | 0.6− | 2006 10 12 | 644 | 0.3− | 0.2− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 1.0+ | 0.4+ | 2006 10 17 | 703 | 1.2− | 1.2− |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.2− |
| 2002 10 30 | 704 | 1.0+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2002 10 30 | 704 | 0.3− | 0.6− | 2006 09 26 | 703 | 0.4+ | 0.3− | 2006 10 17 | 703 | 0.1+ | 0.6− |
| 2002 10 30 | 704 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.1− | 0.0 |
| 2002 10 30 | 704 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2002 10 31 | 704 | 0.9+ | 0.2+ | 2006 09 29 | 699 | 0.4+ | 0.1+ | 2006 10 19 | 644 | 0.5− | 0.1− |
| 2002 10 31 | 704 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.4− | 2006 10 28 | 703 | 0.0 | 0.4− |
| 2002 10 31 | 704 | 0.7− | 0.8+ | 2006 09 29 | 699 | 0.2+ | 0.6+ | 2006 10 28 | 703 | 0.0 | 1.3− |
| 2002 10 31 | 704 | 0.2− | 0.3+ | 2006 09 29 | 699 | 1.5+ | 0.4− | 2006 10 28 | 703 | 0.5− | 1.0− |
| 2006 09 19 | 703 | 0.2− | 0.3− | 2006 10 02 | 703 | 0.3+ | 1.1+ | 2006 10 28 | 703 | 0.5− | 0.9+ |
| 2006 09 19 | 703 | 0.1− | 0.4+ | 2006 10 02 | 703 | 0.2+ | 1.2+ | | | | |
| 2006 09 19 | 703 | 0.4+ | 0.5+ | 2006 10 02 | 703 | 0.5− | 0.6+ | | | | |

**2006 SV$_{108}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 264.26742 | | | (2000.0) | | |
| $n$ | 0.18977383 | $\omega$ | 91.78518 | | −0.56783848 | −0.82272700 |
| $a$ | 2.9990141 | $\Omega$ | 32.85808 | | +0.73482410 | −0.52093321 |
| $e$ | 0.0752554 | $i$ | 2.75433 | | +0.37093530 | −0.22748380 |
| $P$ | 5.19 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.2+ |
| 1993 03 19 | 691 | 0.1+ | 0.6+ | 2006 09 25 | G96 | 0.6+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 1993 03 19 | 691 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.3+ | 0.1+ |
| 2001 10 21 | 691 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.6+ |
| 2001 10 21 | 691 | 0.7+ | 0.4− | 2006 09 28 | 691 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2001 10 21 | 691 | 0.6+ | 1.0− | 2006 09 28 | 691 | 0.6− | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.3+ |
| 2001 11 11 | 691 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.4− | 0.1+ |
| 2001 11 11 | 691 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.4+ | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2001 11 11 | 691 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2006 09 19 | 691 | 0.6+ | 0.1+ | 2006 10 11 | 691 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2006 09 25 | G96 | 0.3+ | 0.8− | 2006 10 19 | 691 | 0.2− | 0.5+ | | | | |

**2006 SX$_{108}$ = 1997 UT$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.31566 | | | (2000.0) | | |
| $n$ | 0.21755610 | $\omega$ | 333.28616 | | +0.99825460 | +0.03143486 |
| $a$ | 2.7379271 | $\Omega$ | 25.06405 | | −0.00270036 | +0.86997960 |
| $e$ | 0.0876642 | $i$ | 6.77772 | | −0.05899541 | +0.49208470 |
| $P$ | 4.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 25 | 691 | 0.3+ | 0.6+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 21 | 703 | (1.6− | 0.0 | ) |
| 1997 10 25 | 691 | 0.4− | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.5+ | |
| 1997 10 25 | 691 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 1997 11 02 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.0 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 1997 11 02 | 691 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2006 09 19 | 691 | 0.3− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2006 09 24 | 691 | 0.4− | 0.5+ | 2006 10 20 | 703 | 0.8− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.0 |
| 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 20 | 703 | 0.6− | 0.5− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 21 | 703 | (1.6+ | 0.2+) | 2006 10 31 | 691 | 0.6+ | 0.0 |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 21 | 703 | 0.5− | 0.9− | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.4+ | 1.0+ | | | | |

**2006 SC$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.14680 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23443139 | $\omega$ | 286.20532 | | +0.56272674 | | +0.81307551 |
| $a$ | 2.6049069 | $\Omega$ | 20.31201 | | −0.49307676 | | +0.47496720 |
| $e$ | 0.2489469 | $i$ | 25.44687 | | −0.66348619 | | +0.33662200 |
| $P$ | 4.20 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2005 04 02 | 691 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.4− | 0.2+ |
| 2005 04 02 | G96 | 0.4− | 0.3− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.4− | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2005 04 09 | G96 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2005 04 09 | G96 | 0.9− | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2005 04 09 | G96 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | (0.8+ | 1.7+) |
| 2005 04 09 | G96 | 0.5+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 | | | | |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.6− | 0.2− | | | | |

**2006 SH$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.42360 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26477486 | $\omega$ | 285.46868 | | +0.88595034 | | +0.46198125 |
| $a$ | 2.4018814 | $\Omega$ | 47.03591 | | −0.40126418 | | +0.80767465 |
| $e$ | 0.1982450 | $i$ | 3.19681 | | −0.23254905 | | +0.36638094 |
| $P$ | 3.72 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.3− |
| 2002 08 11 | 644 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | (1.9− | 1.7−) |
| 2002 08 11 | 644 | 0.0 | 0.5− | 2006 10 02 | 691 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.3− |
| 2002 08 19 | 644 | 0.4+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2002 08 19 | 644 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 08 19 | 644 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 08 29 | 644 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2002 08 29 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2002 08 29 | 644 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.3− |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2006 09 24 | 691 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2006 09 24 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.7− |
| 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.0 | | | | |

**2006 ST$_{109}$ = 2002 XG$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.07224 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21319116 | $\omega$ | 226.51445 | | +0.41544219 | | −0.90805330 |
| $a$ | 2.7751721 | $\Omega$ | 199.13799 | | +0.87446872 | | +0.41484949 |
| $e$ | 0.1316869 | $i$ | 9.36664 | | +0.25042413 | | +0.05778496 |
| $P$ | 4.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 644 | 0.4+ | 0.2− | 2006 09 20 | 703 | 0.5− | 0.7− | 2006 10 22 | 703 | (2.1+ | 0.9+) |
| 2002 12 11 | 644 | 0.1− | 0.4− | 2006 09 20 | 703 | 0.4+ | 1.0− | 2006 10 22 | 703 | 1.1+ | 0.3− |
| 2002 12 11 | 644 | 0.1+ | 0.6− | 2006 09 25 | 699 | 0.0 | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2002 12 14 | 704 | 0.8+ | 0.8+ | 2006 09 25 | 699 | (1.7+ | 0.3+) | 2006 10 23 | G96 | 0.4− | 0.2+ |
| 2002 12 14 | 704 | 0.8− | 0.0 | 2006 09 25 | 699 | 0.5− | 0.4+ | 2006 10 23 | G96 | 0.4− | 0.0 |
| 2002 12 14 | 704 | 0.4− | 0.5+ | 2006 09 25 | 699 | (1.6+ | 1.0+) | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2006 09 20 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.4+ | 0.2− | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2006 09 20 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2006 09 20 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.4+ |
| 2006 09 20 | 703 | 0.4+ | 0.2+ | 2006 10 22 | 703 | (0.1− | 2.6+) | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2006 09 20 | 703 | 0.3− | 0.9− | 2006 10 22 | 703 | 1.0+ | 1.1+ | | | | |

**2006 SM$_{110}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.04246 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26566575 | $\omega$ | 262.67348 | | +0.84508943 | | +0.51620964 |
| $a$ | 2.3965087 | $\Omega$ | 66.15736 | | −0.41057526 | | +0.79330212 |
| $e$ | 0.2443890 | $i$ | 8.74800 | | −0.34242051 | | +0.32279925 |
| $P$ | 3.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 13 | 644 | 0.0 | 0.5+ | 2006 08 10 | 644 | 1.0+ | 0.4+ | 2006 10 04 | 703 | 0.7− | 0.1+ |
| 2002 06 13 | 644 | 0.0 | 0.5+ | 2006 09 20 | 703 | 0.1− | 0.0 | 2006 10 04 | 703 | 0.6+ | 0.7− |
| 2002 06 13 | 644 | 0.2− | 0.5+ | 2006 09 20 | 703 | 0.6+ | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.4+ |
| 2002 06 18 | 644 | 0.0 | 0.5− | 2006 09 20 | 703 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.0 |
| 2002 06 18 | 644 | 0.0 | 0.6− | 2006 09 20 | 703 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.2− | 0.3+ |
| 2002 06 18 | 644 | 0.1+ | 0.3− | 2006 09 25 | 703 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.3+ |
| 2003 12 28 | 691 | 0.1+ | 0.3− | 2006 09 25 | 703 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.4− | 0.4+ |
| 2003 12 28 | 691 | 0.2+ | 0.2− | 2006 09 25 | 703 | 0.4− | 0.5− | 2006 10 28 | 703 | 0.0 | 0.1+ |
| 2003 12 28 | 691 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.5− | 0.3− | 2006 10 28 | 703 | 0.6− | 0.4+ |
| 2006 08 10 | 644 | 1.0+ | 0.1+ | 2006 10 04 | 703 | 0.1− | 0.5− | 2006 10 28 | 703 | 0.2− | 0.0 |
| 2006 08 10 | 644 | 1.0+ | 0.2+ | 2006 10 04 | 703 | 0.4− | 1.4− | | | | |

**2006 SN$_{110}$ = 2002 RG$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.80313 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25136489 | $\omega$ | 331.90627 | | +0.45199012 | | −0.88262759 |
| $a$ | 2.4865640 | $\Omega$ | 90.96874 | | +0.84070198 | | +0.37310695 |
| $e$ | 0.4182717 | $i$ | 7.42015 | | +0.29820313 | | +0.28593660 |
| $P$ | 3.92 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | (0.3+ | 1.9−) | 2006 10 04 | 703 | 0.9− | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2002 09 14 | 608 | (0.5− | 1.8−) | 2006 10 04 | 703 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2002 09 14 | 608 | 0.5+ | 1.1− | 2006 10 04 | 703 | (1.6− | 1.7−) | 2006 10 23 | 644 | 0.1− | 0.0 |
| 2002 09 17 | 644 | 0.3+ | 0.4− | 2006 10 09 | 644 | 0.2− | 0.2+ | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2002 09 17 | 644 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 24 | 644 | 0.2+ | 0.0 |
| 2002 09 17 | 644 | 0.1− | 0.3− | 2006 10 09 | 644 | 0.0 | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.2− |
| 2006 09 20 | 703 | 0.2+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.3− | 0.2− |
| 2006 09 20 | 703 | 0.7+ | 0.3+ | 2006 10 09 | 644 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.0 | 0.0 |
| 2006 09 20 | 703 | 0.3− | 0.3+ | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.9+ | 0.0 |
| 2006 09 20 | 703 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 10 28 | 703 | 0.3− | 0.5− |
| 2006 09 24 | 699 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.3− |
| 2006 09 24 | 699 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.7− |
| 2006 09 24 | 699 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2006 09 24 | 699 | 0.3− | 0.4+ | 2006 10 21 | 703 | 0.2− | 1.0− | 2006 11 17 | 703 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 25 | 703 | 0.3− | 0.6− | 2006 10 21 | 703 | 0.4+ | 0.1+ | 2006 11 23 | 703 | 0.4− | 0.4+ | | |
| 2006 09 25 | 703 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.7− | 2006 11 23 | 703 | 0.8+ | 0.8+ | | |
| 2006 09 25 | 703 | 0.1− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.7− | 0.8− | | |
| 2006 09 25 | 703 | 0.6− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.1+ | 0.5+ | | |
| 2006 10 04 | 703 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | | | | | |

**2006 SV$_{110}$ = 2003 YA$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.60219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26942812 | $\omega$ | 216.82599 | | +0.83341472 | +0.53748993 | |
| $a$ | 2.3741460 | $\Omega$ | 110.17877 | | −0.46876722 | +0.81072634 | |
| $e$ | 0.2225013 | $i$ | 7.87161 | | −0.29270669 | +0.23200729 | |
| $P$ | 3.66 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.7+ | 0.5− | 2006 09 20 | 703 | (2.8+ | 0.3−) | 2006 10 04 | 703 | 0.1+ | 0.8− | | |
| 2003 12 27 | 704 | (1.5+ | 0.0 ) | 2006 09 20 | 703 | 0.2− | 0.2+ | 2006 10 04 | 703 | 0.3− | 0.4+ | | |
| 2003 12 27 | 704 | 0.4+ | 0.4− | 2006 09 20 | 703 | 0.3− | 0.3− | 2006 10 04 | 703 | 1.4+ | 1.0+ | | |
| 2003 12 27 | 704 | 0.4+ | 1.3+ | 2006 09 20 | 608 | 0.8+ | 1.4− | 2006 10 21 | 703 | 0.4− | 0.3+ | | |
| 2003 12 28 | 704 | 0.6− | 0.4+ | 2006 09 20 | 608 | (0.8+ | 1.7−) | 2006 10 21 | 703 | 0.3− | 0.2− | | |
| 2003 12 28 | 704 | (1.5− | 0.1+) | 2006 09 20 | 608 | (0.8+ | 1.7−) | 2006 10 21 | 703 | 0.4− | 0.2+ | | |
| 2003 12 28 | 704 | 0.8− | 0.7− | 2006 09 24 | 699 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.4− | 0.5+ | | |
| 2006 08 10 | 644 | 0.1− | 0.0 | 2006 09 24 | 699 | 0.3− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− | | |
| 2006 08 10 | 644 | 0.1− | 0.3+ | 2006 09 24 | 699 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1− | | |
| 2006 08 10 | 644 | 0.0 | 0.2+ | 2006 09 24 | 699 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 2006 08 28 | 699 | 0.3− | 0.5+ | 2006 09 25 | 703 | 0.2− | 0.9− | 2006 10 24 | 644 | 0.4− | 0.1− | | |
| 2006 08 28 | 699 | 0.1− | 0.3+ | 2006 09 25 | 703 | 0.1− | 0.2− | 2006 10 24 | 644 | 0.4− | 0.1− | | |
| 2006 08 28 | 699 | 0.1+ | 0.0 | 2006 09 25 | 703 | 0.4− | 0.1− | 2006 10 24 | 644 | 0.2− | 0.2− | | |
| 2006 08 28 | 699 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.2+ | 0.2− | | | | | | |
| 2006 09 20 | 703 | 0.8+ | 0.5+ | 2006 10 04 | 703 | 0.6+ | 0.1+ | | | | | | |

**2006 SY$_{110}$ = 2003 YB$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.92571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29585168 | $\omega$ | 16.99683 | | +0.82835925 | −0.55952949 | |
| $a$ | 2.2305914 | $\Omega$ | 17.11067 | | +0.50255954 | +0.72067994 | |
| $e$ | 0.1617135 | $i$ | 5.33265 | | +0.24749719 | +0.40932527 | |
| $P$ | 3.33 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 327 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 1996 10 05 | 327 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.5− | 0.1− | | |
| 1996 10 05 | 327 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 25 | 106 | 0.3+ | 1.5− | | |
| 2003 12 14 | 691 | 0.1− | 0.2+ | 2006 09 27 | 704 | 0.9+ | 0.2− | 2006 10 25 | 106 | 0.7+ | 0.4− | | |
| 2003 12 14 | 691 | 0.2+ | 0.0 | 2006 09 27 | 704 | 0.4− | 0.9+ | 2006 10 25 | 106 | 0.3+ | 0.8− | | |
| 2003 12 14 | 691 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.1− | 0.9+ | 2006 10 25 | 106 | 0.5+ | 0.2− | | |
| 2003 12 27 | 704 | 0.4+ | 0.0 | 2006 09 27 | 704 | 1.2− | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.1− | | |
| 2003 12 27 | 704 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 2003 12 27 | 704 | 0.5+ | 0.3− | 2006 09 28 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1− | | |
| 2003 12 29 | 704 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.3+ | | |
| 2003 12 29 | 704 | 0.7− | 0.7− | 2006 09 29 | 704 | 1.0+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2003 12 29 | 704 | 0.1+ | 0.6+ | 2006 09 29 | 704 | 0.4+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.3− | | |
| 2003 12 29 | 704 | 1.1− | 0.3+ | 2006 09 29 | 704 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1+ | | |
| 2006 08 28 | 703 | 0.7+ | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.0 | | |
| 2006 08 28 | 703 | 1.4+ | 0.6+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.0 | | |
| 2006 08 28 | 703 | 0.6− | 0.8+ | 2006 10 02 | 691 | (1.6+ | 0.6−) | 2006 11 14 | 683 | 0.2+ | 1.3− | | |
| 2006 08 28 | 703 | (1.6+ | 0.1−) | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 14 | 683 | 0.5+ | 1.0− | | |
| 2006 09 21 | 683 | 0.0 | 0.8− | 2006 10 19 | 644 | 0.3− | 0.1− | 2006 11 14 | 683 | 0.8− | 0.0 | | |
| 2006 09 21 | 683 | (0.2− | 1.6−) | 2006 10 19 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.7+ | | |
| 2006 09 21 | 683 | (1.5− | 0.4+) | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.8+ | | |
| 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | (0.3− | 1.8+) | | |
| 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 19 | 704 | 1.1− | 0.6+ | | |
| 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.9+ | | |
| 2006 09 25 | 683 | 0.7+ | 0.7+ | 2006 10 21 | 703 | 0.2+ | 0.5− | 2006 11 19 | 704 | (0.1− | 2.1+) | | |
| 2006 09 25 | 683 | 0.7+ | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 1.2− | 0.1+ | | |
| 2006 09 25 | 683 | (1.6+ | 0.3+) | 2006 10 21 | 703 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.1− | 1.4+ | | |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.1+ | | |

**2006 SZ$_{110}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.40318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18561392 | $\omega$ | 197.71679 | | +0.69671965 | +0.71489795 | |
| $a$ | 3.0436568 | $\Omega$ | 116.49526 | | −0.64988603 | +0.66397817 | |
| $e$ | 0.2042759 | $i$ | 3.79166 | | −0.30369373 | +0.21921202 | |
| $P$ | 5.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 09 28 | 675 | 0.1+ | 0.5− | 2005 06 06 | 691 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 2001 10 26 | 691 | 0.1− | 0.2+ | 2006 09 21 | 699 | (3.3+ | 0.7−) | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2001 10 26 | 691 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | | |
| 2001 10 26 | 691 | 0.3− | 0.1+ | 2006 09 21 | 699 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2001 12 20 | 691 | 0.2+ | 0.4+ | 2006 09 21 | 699 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.0 | | |
| 2001 12 20 | 691 | 0.2+ | 0.4+ | 2006 09 25 | 699 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.3+ | | |
| 2001 12 20 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2004 02 27 | 695 | 0.0 | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.7− | 2006 10 19 | 644 | 0.1− | 0.4+ | | |
| 2004 02 27 | 695 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2004 03 19 | 291 | 0.5+ | 0.6+ | 2006 09 29 | 699 | 0.5+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2004 03 19 | 291 | 0.2− | 0.5+ | 2006 09 29 | 699 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.6− | 0.3+ | | |
| 2004 03 19 | 291 | 0.1+ | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2005 06 03 | 703 | 0.7+ | 1.0+ | 2006 09 29 | 699 | 1.0− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2005 06 03 | 703 | 0.8− | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2005 06 03 | 703 | 0.4+ | 0.5− | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.1+ | | |
| 2005 06 03 | 703 | 0.4+ | 0.5− | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.7− | 0.6− | | |
| 2005 06 06 | 691 | 0.1− | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.4− | 0.6− | | |
| 2005 06 06 | 691 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.7+ | | |

**2006 SA$_{111}$ = 2003 YC$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.05060 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30226881 | $\omega$ | 300.02742 | | +0.90255535 | −0.41548837 | |
| $a$ | 2.1989085 | $\Omega$ | 84.72548 | | +0.42369930 | +0.81032947 | |
| $e$ | 0.1751322 | $i$ | 6.51452 | | +0.07663383 | +0.41320161 | |
| $P$ | 3.26 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 20 | 809 | 0.0 | 0.4− | 2006 09 21 | 699 | 0.5+ | 0.1+ | 2006 09 30 | 704 | (0.7+ | 1.5+) | | |
| 1993 10 20 | 809 | 0.8+ | 0.3+ | 2006 09 21 | 699 | 0.4+ | 0.5+ | 2006 09 30 | 704 | 0.7+ | 1.1− | | |
| 1993 10 20 | 809 | 1.4− | 0.0 | 2006 09 21 | 699 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.0 | | |
| 1993 10 21 | 809 | (2.7+ | 0.2−) | 2006 09 21 | 699 | 0.5− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2− | | |
| 1993 10 21 | 809 | 1.5+ | 0.8− | 2006 09 25 | 699 | 0.2− | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.3− | | |
| 1993 10 21 | 809 | 0.6− | 0.1+ | 2006 09 25 | 699 | 0.9+ | 0.7− | 2006 10 16 | 703 | 0.7− | 0.1+ | | |
| 2003 12 18 | 704 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.1+ | | |
| 2003 12 18 | 704 | 1.1+ | 0.5− | 2006 09 26 | 703 | 0.8+ | 0.8− | 2006 10 16 | 703 | 1.1− | 1.0+ | | |
| 2003 12 18 | 704 | 1.3− | 0.6+ | 2006 09 26 | 703 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | | |
| 2003 12 18 | 704 | 0.2− | 0.2+ | 2006 09 26 | 703 | 1.1+ | 0.1− | 2006 10 22 | 703 | 0.2− | 0.0 | | |
| 2003 12 18 | 704 | 0.4− | 0.5− | 2006 09 26 | 703 | 0.4+ | 1.0+ | 2006 10 22 | 703 | 0.1− | 0.5+ | | |
| 2003 12 21 | 704 | (1.8+ | 1.4+) | 2006 09 29 | 699 | 0.7− | 0.1− | 2006 10 22 | 703 | 0.6− | 0.5+ | | |
| 2003 12 21 | 704 | 0.8+ | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.7− | 2006 10 22 | 703 | 0.7− | 0.6+ | | |
| 2003 12 21 | 704 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.3+ | 0.6− | 2006 10 28 | 703 | 0.5+ | 0.4− | | |
| 2004 01 28 | 691 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.5− | 0.1− | 2006 10 28 | 703 | 1.0− | 0.1+ | | |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.9+ | 1.2− | 2006 10 28 | 703 | 0.4+ | 0.5+ | | |
| 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | (1.2+ | 1.9−) | 2006 10 28 | 703 | 0.1− | 0.1− | | |

**2006 SD$_{111}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.85666 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23568971 | $\omega$ | 191.78809 | | +0.87568744 | +0.46369279 | |
| $a$ | 2.5956271 | $\Omega$ | 139.68421 | | −0.42438286 | +0.87217180 | |
| $e$ | 0.1682858 | $i$ | 12.02191 | | −0.23037077 | +0.15590169 | |
| $P$ | 4.18 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.1− | 0.3− | 2005 04 13 | 703 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.8− | 0.1− |
| 2002 10 10 | 644 | 0.1− | 0.4− | 2005 04 13 | 703 | 0.1− | 0.6+ | 2006 09 26 | 703 | 0.4+ | 1.8+ |
| 2002 10 10 | 644 | 0.1− | 0.1− | 2006 09 21 | 699 | 0.6+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.4− |
| 2002 11 06 | 644 | 0.2+ | 0.2+ | 2006 09 21 | 699 | 0.1+ | 0.6+ | 2006 10 02 | 703 | 0.2− | 0.6− |
| 2002 11 06 | 644 | 0.1+ | 0.6+ | 2006 09 21 | 699 | 1.2+ | 1.0+ | 2006 10 02 | 703 | 0.6− | 0.3− |
| 2002 11 06 | 644 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.6+ | 0.1+ | 2006 10 02 | 703 | 0.7+ | 0.5− |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.9− | 1.2− | 2006 10 02 | 703 | 1.1− | 0.7− |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.5+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ |
| 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.2+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.4+ |
| 2005 04 13 | 703 | 0.8+ | 1.1− | 2006 09 25 | 699 | 0.2− | 1.0− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2005 04 13 | 703 | 0.7− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.2− | | | | |

**2006 SG$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.64800 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27775954 | $\omega$ | 266.18053 | | −0.99509816 | | +0.00491579 |
| $a$ | 2.3264304 | $\Omega$ | 274.08242 | | +0.03541062 | | −0.91482724 |
| $e$ | 0.0633840 | $i$ | 5.68281 | | −0.09233496 | | −0.40381550 |
| $P$ | 3.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.1− | 2003 11 24 | 691 | 0.6+ | 0.1+ | 2006 08 29 | 703 | (1.1+ | 1.6+) |
| 1999 10 13 | 645 | 0.1− | 0.2− | 2003 11 24 | 691 | 0.4− | 0.2− | 2006 09 22 | 691 | 0.1− | 0.1+ |
| 1999 10 16 | 645 | 0.1+ | 0.0 | 2003 11 24 | 691 | 0.2− | 0.0 | 2006 09 22 | 691 | 0.2− | 0.4+ |
| 1999 10 16 | 645 | 0.2+ | 0.1− | 2006 08 29 | 703 | 1.1− | 0.9+ | 2006 09 22 | 691 | 0.3− | 0.5+ |
| 2000 12 26 | 691 | 0.2+ | 0.3+ | 2006 08 29 | 703 | (1.8− | 1.4−) | 2006 09 25 | 691 | 0.3− | 0.3+ |
| 2000 12 26 | 691 | 0.1− | 0.3+ | 2006 08 29 | 703 | (0.7− | 1.8−) | 2006 09 25 | 691 | 0.4+ | 0.2+ |
| 2000 12 26 | 691 | 0.2+ | 0.3+ | 2006 08 29 | 703 | 0.2− | 0.8+ | 2006 09 25 | 691 | 0.3+ | 0.3+ |
| 2001 01 15 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 1.0− | 0.7− | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2001 01 15 | 691 | 0.2− | 0.1− | 2006 08 29 | 703 | 0.7− | 0.3− | 2006 09 30 | 691 | 0.3+ | 0.2− |
| 2001 01 15 | 691 | 0.1+ | 0.1− | 2006 08 29 | 703 | 0.9− | 0.8+ | 2006 09 30 | 691 | 0.2− | 0.3+ |

**2006 SK$_{111}$ = 2004 DF$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.20632 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18446524 | $\omega$ | 189.39311 | | +0.53382996 | | +0.84368886 |
| $a$ | 3.0562791 | $\Omega$ | 112.89080 | | −0.77176511 | | +0.51352636 |
| $e$ | 0.1813186 | $i$ | 3.52849 | | −0.34554910 | | +0.15646016 |
| $P$ | 5.34 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.7− | 0.2− | 2005 05 12 | G96 | 0.4+ | 0.5+ | 2006 09 22 | 704 | 1.3− | 0.9+ |
| 2001 09 19 | 704 | 1.1− | 0.4+ | 2005 05 12 | G96 | 0.3+ | 0.4+ | 2006 09 22 | 704 | 0.3− | 1.0+ |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2005 05 12 | G96 | 0.2+ | 0.6+ | 2006 09 22 | 704 | 0.5− | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.2− | 2005 06 16 | G96 | 0.3− | 0.8+ | 2006 09 25 | 699 | 1.0+ | 0.3− |
| 2001 10 23 | 704 | 0.1+ | 0.3+ | 2005 06 16 | G96 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.4+ | 0.9+ |
| 2001 10 23 | 704 | 0.1+ | 0.2+ | 2005 06 16 | G96 | 0.0 | 0.9+ | 2006 09 25 | 699 | 0.3− | 0.1− |
| 2001 10 23 | 704 | 0.1− | 0.2+ | 2005 06 16 | G96 | 0.4+ | 0.6+ | 2006 09 26 | 704 | 0.0 | 1.5+ |
| 2001 10 23 | 704 | 0.0 | 0.2− | 2006 08 18 | 691 | 0.3− | 0.3+ | 2006 09 26 | 704 | 0.2+ | 0.8+ |
| 2001 10 23 | 704 | 0.3− | 0.5+ | 2006 08 18 | 691 | 0.2− | 0.3+ | 2006 09 26 | 704 | 0.7+ | 0.8+ |
| 2001 10 24 | 704 | 0.6+ | 0.1+ | 2006 08 18 | 691 | 0.3− | 0.3+ | 2006 09 26 | 704 | 1.1+ | 0.8+ |
| 2001 10 24 | 704 | (3.4+ | 0.9−) | 2006 09 18 | 703 | 0.3− | 0.4− | 2006 09 26 | 704 | 0.8+ | 1.2+ |
| 2001 10 24 | 704 | 0.4+ | 1.3+ | 2006 09 18 | 703 | 0.2+ | 0.8− | 2006 09 30 | 703 | 0.5− | 0.6− |
| 2001 10 24 | 704 | 0.4+ | 0.7+ | 2006 09 18 | 703 | 0.2+ | 1.3− | 2006 09 30 | 703 | 0.2+ | 0.6+ |
| 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.0 |
| 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 09 18 | 699 | 0.7+ | 1.5+ | 2006 09 30 | 703 | 0.8− | 0.7+ |
| 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.7− | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2004 02 29 | 691 | 0.7+ | 0.4+ | 2006 09 18 | 699 | 0.3+ | 0.4− | 2006 11 23 | G96 | 0.3− | 0.2+ |
| 2004 02 29 | 691 | 0.3+ | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2004 02 29 | 691 | 0.1− | 0.6+ | 2006 09 22 | 704 | 0.5− | 1.2− | 2006 11 23 | G96 | 0.2− | 1.2− |
| 2005 05 12 | G96 | 0.1+ | 0.7+ | 2006 09 22 | 704 | 0.6+ | 0.2+ | | | | |

**2006 SL$_{111}$ = 1995 WU$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.11905 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17426242 | $\omega$ | 290.84075 | | +0.79313411 | | +0.60334227 |
| $a$ | 3.1744383 | $\Omega$ | 32.21625 | | −0.48455165 | | +0.70782532 |
| $e$ | 0.2706513 | $i$ | 8.97466 | | −0.36898236 | | +0.36737096 |
| $P$ | 5.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.3+ | 0.0 | 2006 09 20 | 644 | 0.1− | 0.1− | 2006 10 02 | 703 | 0.4− | 1.3+ |
| 1995 10 22 | 691 | 0.8+ | 0.1+ | 2006 09 22 | 704 | 0.4− | 0.3− | 2006 10 02 | 703 | (0.3+ | 1.9+) |
| 1995 11 17 | 691 | 0.7− | 0.1+ | 2006 09 22 | 704 | (0.8− | 2.0+) | 2006 10 02 | 703 | (0.2+ | 1.8+) |
| 1995 11 17 | 691 | 0.3− | 0.1− | 2006 09 22 | 704 | 0.2− | 1.3+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 1995 11 17 | 691 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.7+ | 1.2+ | 2006 10 03 | G96 | 0.2+ | 0.3− |
| 1995 11 30 | 691 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.3− |
| 1995 11 30 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.4− |
| 1995 11 30 | 691 | 0.2− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.5− | 1.3− |
| 2005 05 16 | G96 | 0.1+ | 0.4+ | 2006 09 25 | 699 | 1.4− | 0.8− | 2006 10 16 | 703 | 0.4+ | 0.5+ |
| 2005 05 16 | G96 | 0.1+ | 0.3+ | 2006 09 25 | 152 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.0+ |
| 2005 05 16 | G96 | 0.2+ | 0.5+ | 2006 09 25 | 152 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 1.0− |
| 2005 05 16 | G96 | 0.4+ | 0.3+ | 2006 09 25 | 152 | 0.7− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2006 09 14 | 703 | 0.2− | 0.6− | 2006 09 25 | 152 | (1.7− | 0.3−) | 2006 10 20 | 644 | 0.5+ | 0.3− |
| 2006 09 14 | 703 | 0.6+ | 0.6+ | 2006 09 30 | 703 | (1.2− | 1.5−) | 2006 10 20 | 644 | 0.5+ | 0.3− |
| 2006 09 14 | 703 | 0.3− | 0.6− | 2006 09 30 | 703 | (1.7− | 1.2−) | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2006 09 14 | 703 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2006 09 20 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | (2.2− | 0.8−) | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2006 09 20 | 644 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.3− | 1.0+ | 2006 11 23 | G96 | 0.4+ | 0.5− |

**2006 SM$_{111}$ = 1993 VX$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.68985 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22680674 | $\omega$ | 326.17797 | | +0.97716118 | | +0.19261990 |
| $a$ | 2.6629647 | $\Omega$ | 23.21796 | | −0.10611329 | | +0.80819709 |
| $e$ | 0.2383077 | $i$ | 13.15807 | | −0.18410865 | | +0.55652048 |
| $P$ | 4.35 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 08 | 691 | 0.2+ | 0.2− | 2006 09 29 | 699 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 1993 11 08 | 691 | 0.3− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1993 11 08 | 691 | 0.1− | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 1993 11 09 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 1993 11 09 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.1− | 1.0+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 1993 11 09 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.5+ | 0.3+ | 2006 10 23 | 704 | (1.9− | 1.1+) |
| 2006 09 22 | 704 | 0.2− | 0.7− | 2006 10 01 | 704 | 0.2− | 0.7+ | 2006 10 23 | 704 | 1.3− | 1.3+ |
| 2006 09 22 | 704 | 0.0 | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.3− | 2006 10 23 | 704 | (1.8+ | 0.5+) |
| 2006 09 22 | 704 | 0.2+ | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2006 09 25 | 699 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2006 09 25 | 699 | 0.9+ | 0.3− | 2006 10 15 | 703 | 0.1+ | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2006 09 25 | 699 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 10 15 | 703 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 09 26 | 704 | 1.3− | 0.6+ | 2006 10 15 | 703 | 1.3− | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2006 09 26 | 704 | 1.2− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2006 09 26 | 704 | 0.6− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 09 26 | 704 | 1.1− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 2006 09 26 | 704 | 0.5− | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2006 09 28 | 691 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 09 28 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2006 09 29 | 699 | 0.2− | 0.8− | 2006 10 21 | 703 | 0.4+ | 0.4+ | | | | |
| 2006 09 29 | 699 | 0.7+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.4− | | | | |

**2006 SO$_{111}$ = 2000 QW$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.49481 | | (2000.0) | | | |
| $n$ | 0.17857919 | $\omega$ | 54.56484 | | +0.96227616 | +0.22099096 |
| $a$ | 3.1230731 | $\Omega$ | 292.20072 | | −0.26978010 | +0.85060817 |
| $e$ | 0.0789108 | $i$ | 9.87002 | | +0.03526024 | +0.47710454 |
| $P$ | 5.52 | $H$ | 14.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.1+ | 0.1+ | 2006 09 22 | 699 | 0.5− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2000 08 21 | 699 | 1.0+ | 0.1− | 2006 09 25 | 703 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.1+ |
| 2000 08 21 | 699 | 0.3− | 0.5− | 2006 09 25 | 703 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.2− |
| 2000 08 21 | 699 | 0.8− | 0.2+ | 2006 09 25 | 703 | 0.4− | 0.7+ | 2006 10 19 | 703 | 0.1+ | 0.5− |
| 2000 08 25 | 704 | 0.6− | 0.2+ | 2006 09 25 | 703 | 0.9− | 0.7+ | 2006 10 19 | 703 | 0.8+ | 0.3− |
| 2000 08 25 | 704 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2000 08 25 | 704 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2006 09 22 | 699 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2006 09 22 | 699 | 0.4− | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.1− | | | | |
| 2006 09 22 | 699 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.1− | | | | |

**2006 SW$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.75234 | | (2000.0) | | | |
| $n$ | 0.23430516 | $\omega$ | 237.96273 | | +0.96422749 | −0.17121860 |
| $a$ | 2.6058424 | $\Omega$ | 131.04390 | | +0.21537757 | +0.95106710 |
| $e$ | 0.2336707 | $i$ | 15.56363 | | −0.15452458 | +0.25720723 |
| $P$ | 4.21 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 608 | 0.0 | 0.0 | 2002 11 23 | 644 | 0.2− | 0.2+ | 2006 09 22 | 703 | 0.0 | 0.4− |
| 2002 10 07 | 608 | 0.0 | 0.3− | 2002 11 23 | 644 | 0.3− | 0.0 | 2006 09 24 | 699 | 0.2− | 0.5+ |
| 2002 10 07 | 608 | 0.1+ | 0.4− | 2002 11 23 | 644 | 0.1− | 0.3+ | 2006 09 24 | 699 | 0.1+ | 0.3− |
| 2002 11 06 | 644 | 0.2+ | 0.0 | 2006 09 22 | 703 | 0.2− | 0.1+ | 2006 09 24 | 699 | 0.1+ | 0.5+ |
| 2002 11 06 | 644 | 0.0 | 0.0 | 2006 09 22 | 703 | 0.0 | 0.1+ | 2006 09 24 | 699 | 0.3+ | 0.0 |
| 2002 11 06 | 644 | 0.5+ | 0.0 | 2006 09 22 | 703 | 0.2− | 0.3− | | | | |

**2006 SE$_{112}$ = 1997 SF$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.78463 | | (2000.0) | | | |
| $n$ | 0.22738775 | $\omega$ | 242.62150 | | +0.73508191 | −0.65348470 |
| $a$ | 2.6584266 | $\Omega$ | 156.68260 | | +0.65991411 | +0.75072442 |
| $e$ | 0.1541405 | $i$ | 27.14440 | | −0.15546045 | +0.09680181 |
| $P$ | 4.33 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 684 | 0.4+ | 0.5+ | 2004 03 24 | 703 | (3.3+ | 1.5−) | 2006 09 27 | 703 | 0.9− | 0.5+ |
| 1997 09 28 | 684 | 1.2+ | 0.7+ | 2004 03 25 | 704 | 0.6− | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.5− |
| 1997 09 28 | 684 | 0.1+ | 0.6+ | 2004 03 25 | 704 | 0.0 | 0.0 | 2006 09 27 | 703 | 0.3+ | 0.1+ |
| 1997 09 29 | 684 | 0.2− | 0.1− | 2004 03 25 | 704 | 0.2+ | 0.3− | 2006 09 27 | 703 | 0.7− | 0.3− |
| 1997 09 29 | 684 | 0.6− | 0.3+ | 2004 03 25 | 704 | 0.3+ | 0.3+ | 2006 10 03 | E12 | 0.2+ | 0.1+ |
| 1997 09 29 | 684 | 0.1− | 0.3− | 2005 07 17 | 644 | 0.7− | 0.7+ | 2006 10 03 | E12 | 0.2+ | 0.6− |
| 2003 01 04 | 699 | 0.1− | 0.2+ | 2005 07 17 | 644 | 0.4− | 0.5+ | 2006 10 03 | E12 | 0.3− | 0.2− |
| 2003 01 04 | 699 | 0.8− | 0.7+ | 2005 07 17 | 644 | 0.6− | 0.5+ | 2006 10 03 | E12 | 0.0 | 0.5+ |
| 2003 01 04 | 699 | 0.2+ | 0.0 | 2006 09 12 | 704 | (0.2+ | 1.6+) | 2006 10 11 | E12 | 0.7+ | 0.1− |
| 2003 01 04 | 699 | 0.6− | 0.1+ | 2006 09 12 | 704 | 0.3+ | 0.8+ | 2006 10 11 | E12 | 0.1− | 0.4+ |
| 2004 03 15 | 704 | 0.0 | 1.4+ | 2006 09 12 | 704 | 0.7− | 1.0+ | 2006 10 11 | E12 | 0.4+ | 0.1+ |
| 2004 03 15 | 704 | 0.6− | 0.7+ | 2006 09 22 | 703 | 0.3− | 0.2+ | 2006 10 11 | E12 | 0.1− | 0.7− |
| 2004 03 15 | 704 | 0.2− | 0.5+ | 2006 09 22 | 703 | 0.1− | 0.1+ | 2006 10 29 | E12 | 0.2+ | 0.1− |
| 2004 03 15 | 704 | 0.8− | 0.7+ | 2006 09 22 | 703 | 0.2− | 0.3+ | 2006 10 29 | E12 | 0.5+ | 0.7− |
| 2004 03 24 | 703 | 1.2+ | 0.4+ | 2006 09 24 | 699 | 0.2+ | 0.0 | 2006 10 29 | E12 | 0.4+ | 0.8+ |
| 2004 03 24 | 703 | 1.5+ | 0.8+ | 2006 09 24 | 699 | 0.6− | 0.0 | 2006 10 29 | E12 | 2.2+ | 1.6+ |
| 2004 03 24 | 703 | 0.7+ | 0.4+ | 2006 09 24 | 699 | 0.1− | 0.2− | | | | |

**2006 SE$_{114}$ = 2001 YR$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 309.83889 | | (2000.0) | | | |
| $n$ | 0.18011073 | $\omega$ | 79.20838 | | +0.10630101 | −0.99410797 |
| $a$ | 3.1053436 | $\Omega$ | 4.84259 | | +0.78563608 | +0.07090196 |
| $e$ | 0.2851957 | $i$ | 14.54426 | | +0.60948834 | +0.08198934 |
| $P$ | 5.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.1− | 0.7− | 2001 12 23 | 704 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 2001 12 18 | 704 | 0.3− | 0.6− | 2001 12 23 | 704 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.5− |
| 2001 12 18 | 704 | 0.3− | 0.1+ | 2001 12 23 | 704 | 1.0+ | 0.6+ | 2006 09 27 | 704 | 0.5+ | 0.4+ |
| 2001 12 18 | 704 | 0.4− | 0.3− | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 27 | 704 | 0.1+ | 0.2+ |
| 2001 12 18 | 704 | 0.7− | 0.5+ | 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 09 27 | 704 | 0.1+ | 0.5+ |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.7− | 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.2− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.3+ |
| 2001 12 23 | 704 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.5− | | | | |
| 2001 12 23 | 704 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.4− | | | | |

**2006 SR$_{114}$ = 1995 FF$_{12}$ = 2004 EV$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.84307 | | (2000.0) | | | |
| $n$ | 0.21435620 | $\omega$ | 234.45399 | | +0.47327693 | +0.88077390 |
| $a$ | 2.7651075 | $\Omega$ | 63.80049 | | −0.80245631 | +0.43840620 |
| $e$ | 0.0464454 | $i$ | 1.00217 | | −0.36341824 | +0.17898977 |
| $P$ | 4.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.3− | 1.2− | 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.4+ | 0.3− |
| 1995 03 27 | 691 | 1.1− | 0.2− | 2006 09 23 | 691 | 0.4+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1995 03 27 | 691 | 0.0 | 0.9− | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1995 04 01 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 1995 04 01 | 691 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.3− | 0.7− |
| 1995 04 01 | 691 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.3− | 1.0− |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.3− | 1.0− |
| 2004 03 15 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.2− | 0.2− |
| 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.8+ | 0.2+ | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2004 03 21 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.4− | | | | |

**2006 SF$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 46.68472 | | (2000.0) | | | |
| $n$ | 0.21928517 | $\omega$ | 124.38861 | | +0.65967093 | +0.75152108 |
| $a$ | 2.7235156 | $\Omega$ | 186.89936 | | −0.70747297 | +0.61776560 |
| $e$ | 0.1068033 | $i$ | 3.38581 | | −0.25360651 | +0.23147726 |
| $P$ | 4.49 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 608 | 0.1+ | 0.5− | 2006 09 19 | 699 | 0.2+ | 0.4− | 2006 10 02 | 691 | 0.3+ | 0.1− |
| 2001 07 13 | 608 | (0.1− | 1.7−) | 2006 09 19 | 699 | 0.6− | 1.2− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2001 07 13 | 608 | 0.3+ | 1.2− | 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2001 07 23 | 608 | 0.1+ | 1.0+ | 2006 09 24 | 691 | 0.2+ | 0.6− | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2001 07 23 | 608 | 0.6− | 0.9+ | 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2001 07 23 | 608 | 0.1− | 0.6+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2004 02 12 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.7+ | 0.3− |
| 2006 09 15 | 691 | 0.7− | 0.6+ | 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.8− |
| 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 19 | 699 | 0.6+ | 0.2− | 2006 10 02 | 691 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.7− | 0.9− | | |
| 2006 09 19 | 699 | 1.0− | 0.9+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 1.3− | 0.1− | | |

**2006 SH$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.06843 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17561822 | $\omega$ | 6.16668 | | +0.81055300 | −0.58557508 | |
| $a$ | 3.1580791 | $\Omega$ | 29.68445 | | +0.53644661 | +0.73527811 | |
| $e$ | 0.0830362 | $i$ | 1.18932 | | +0.23500824 | +0.34127398 | |
| $P$ | 5.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 03 | 691 | 0.2− | 0.7− | 2006 07 21 | G96 | 0.1+ | 0.4+ | 2006 09 29 | 291 | 1.3− | 0.0 | | |
| 1995 10 03 | 691 | 0.2+ | 0.4− | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 29 | 291 | 0.1+ | 0.2+ | | |
| 1995 10 03 | 691 | 0.6+ | 0.6− | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 29 | 291 | 0.2− | 0.3+ | | |
| 2001 11 17 | 291 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.4− | 0.3− | | |
| 2001 11 17 | 291 | 0.5+ | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.2+ | | |
| 2001 11 17 | 291 | 0.2− | 0.1+ | 2006 09 24 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.2+ | | |
| 2001 12 19 | 704 | 0.7− | 0.1− | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.1+ | | |
| 2001 12 19 | 704 | 1.0− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.5+ | 0.1− | | |
| 2001 12 19 | 704 | (0.5− | 1.7+) | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.3− | | |
| 2003 02 05 | I03 | 1.0+ | 0.5+ | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2003 02 05 | I03 | 0.5− | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2006 07 21 | G96 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2006 07 21 | G96 | 0.4+ | 0.6− | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.8+ | 0.1− | | |

**2006 SL$_{115}$ = 2005 EJ$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.05265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31432281 | $\omega$ | 339.71083 | | −0.15708035 | +0.98641813 | |
| $a$ | 2.1423255 | $\Omega$ | 281.22805 | | −0.89920697 | −0.16295553 | |
| $e$ | 0.1277113 | $i$ | 2.80562 | | −0.40835350 | −0.02060998 | |
| $P$ | 3.14 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | 691 | 0.2+ | 0.0 | 2006 09 20 | 691 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.3+ | | |
| 2005 03 09 | 691 | 0.3+ | 0.1+ | 2006 09 20 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.4− | | |
| 2005 03 09 | 691 | 0.1− | 0.1+ | 2006 09 24 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.1− | | |
| 2005 03 13 | G96 | 0.3− | 0.1− | 2006 09 24 | 291 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− | | |
| 2005 03 13 | G96 | 0.6− | 0.1− | 2006 09 24 | 291 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 | | |
| 2005 03 13 | G96 | 0.2− | 0.2− | 2006 09 25 | 291 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.3− | | |
| 2005 03 13 | G96 | 0.1+ | 0.2+ | 2006 09 25 | 291 | 0.3+ | 0.2+ | | | | | | |
| 2006 09 20 | 691 | 0.1− | 0.3− | 2006 09 25 | 291 | 1.2− | 0.6+ | | | | | | |

**2006 SV$_{115}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.05083 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17374716 | $\omega$ | 294.28285 | | +0.28673358 | −0.94303002 | |
| $a$ | 3.1807113 | $\Omega$ | 137.87472 | | +0.94462454 | +0.24896239 | |
| $e$ | 0.1430973 | $i$ | 14.57162 | | +0.15958802 | +0.22070821 | |
| $P$ | 5.67 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 12 | 644 | 0.0 | 0.9+ | 2005 07 12 | G96 | 0.2− | 0.3− | 2006 09 25 | 703 | 0.1+ | 0.1− | | |
| 2003 03 12 | 644 | 0.5+ | 0.5+ | 2006 08 28 | 699 | (0.4− | 2.9+) | 2006 10 09 | 644 | 0.5+ | 0.2+ | | |
| 2003 03 12 | 644 | 0.1+ | 0.9+ | 2006 08 28 | 699 | 1.1− | 0.7+ | 2006 10 09 | 644 | 0.2+ | 0.0 | | |
| 2004 06 14 | 691 | 0.1− | 0.2+ | 2006 08 28 | 699 | 0.7+ | 0.6+ | 2006 10 09 | 644 | 0.3+ | 0.1+ | | |
| 2004 06 14 | 691 | 0.1+ | 0.2+ | 2006 08 28 | 699 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | |
| 2004 06 14 | 691 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | | |
| 2005 06 11 | 691 | 0.2+ | 0.1+ | 2006 09 24 | 699 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | | |
| 2005 06 11 | 691 | 0.1+ | 0.0 | 2006 09 24 | 699 | 0.3+ | 0.3+ | 2006 10 31 | 703 | 0.1+ | 0.3+ | | |
| 2005 06 11 | 691 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.3+ | 0.5− | 2006 10 31 | 703 | 0.7− | 0.5+ | | |
| 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 09 25 | 703 | 0.4− | 0.3− | 2006 10 31 | 703 | 1.0+ | 0.2− | | |
| 2005 07 12 | G96 | 0.0 | 0.3+ | 2006 09 25 | 703 | 1.4− | 0.5+ | 2006 10 31 | 703 | 0.7+ | 1.5− | | |
| 2005 07 12 | G96 | 0.1− | 0.0 | 2006 09 25 | 703 | 1.4− | 0.5+ | | | | | | |

**2006 SK$_{116}$ = 1995 SA$_{11}$ = 2005 NT$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.70666 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18140904 | $\omega$ | 129.17377 | | +0.69316273 | +0.72078053 | |
| $a$ | 3.0905097 | $\Omega$ | 184.70754 | | −0.66472346 | +0.63875740 | |
| $e$ | 0.0379892 | $i$ | 0.64439 | | −0.27869005 | +0.26919214 | |
| $P$ | 5.43 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1+ | 0.9− | 2006 09 21 | 950 | 0.1+ | 0.0 | 2006 10 18 | 461 | 0.3+ | 0.2+ | | |
| 1995 09 17 | 691 | 0.0 | 0.0 | 2006 09 21 | 950 | 0.0 | 0.0 | 2006 10 19 | 461 | 0.2− | 0.3+ | | |
| 1995 09 17 | 691 | 0.3+ | 0.0 | 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 19 | 461 | 0.7− | 0.0 | | |
| 1995 09 22 | 691 | 0.1− | 0.1− | 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 19 | 461 | 0.2− | 0.4+ | | |
| 1995 09 22 | 691 | 0.1+ | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 461 | 0.3+ | 0.8+ | | |
| 2005 07 07 | 568 | 0.4+ | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.8− | 0.7+ | | |
| 2005 07 07 | 568 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.5− | 0.4− | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2005 07 07 | 568 | 0.3+ | 0.8+ | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.2− | 0.3+ | | |
| 2005 07 07 | 568 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1− | | |
| 2005 07 07 | 568 | 0.4+ | 0.8+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.9+ | 0.2− | | |
| 2005 07 07 | 568 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.8+ | 2006 10 27 | G96 | 0.6+ | 0.4− | | |
| 2005 07 09 | 691 | 0.2− | 0.5− | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | | |
| 2005 07 09 | 691 | 0.0 | 0.3− | 2006 10 14 | 461 | 0.5− | 0.9− | 2006 10 28 | 691 | 0.3+ | 0.7− | | |
| 2005 07 09 | 691 | 0.5+ | 0.2+ | 2006 10 14 | 461 | 0.7− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.4− | | |
| 2005 07 15 | G96 | 0.7− | 0.2− | 2006 10 15 | 461 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.3− | | |
| 2005 07 15 | G96 | 0.9− | 0.1− | 2006 10 16 | 461 | 0.1+ | 0.7+ | 2006 11 11 | G96 | 0.2+ | 1.3− | | |
| 2005 07 15 | G96 | 0.6− | 0.3+ | 2006 10 16 | 461 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.1− | | |
| 2005 07 15 | G96 | 0.2− | 0.2+ | 2006 10 16 | 461 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.6− | | |
| 2006 09 21 | 950 | 0.0 | 0.1− | 2006 10 17 | 461 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− | | |
| 2006 09 21 | 950 | 0.1+ | 0.0 | 2006 10 17 | 461 | 0.2− | 0.2+ | | | | | | |
| 2006 09 21 | 950 | 0.0 | 0.0 | 2006 10 17 | 461 | 0.1− | 0.1− | | | | | | |

**2006 ST$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.64159 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17284163 | $\omega$ | 105.99135 | | −0.68249816 | −0.72771252 | |
| $a$ | 3.1918109 | $\Omega$ | 27.42987 | | +0.60131119 | −0.61198805 | |
| $e$ | 0.1879039 | $i$ | 8.49489 | | +0.41547698 | −0.30968549 | |
| $P$ | 5.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 691 | 0.2+ | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2000 09 30 | 691 | 0.1− | 0.2− | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2000 09 30 | 691 | 0.2− | 0.2+ | 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1+ | | |
| 2001 12 19 | 644 | 0.0 | 0.2+ | 2006 09 24 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.3− | 0.0 | | |
| 2001 12 19 | 644 | 0.0 | 0.8+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1− | 0.2− | | |
| 2001 12 19 | 644 | 0.3− | 0.8+ | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 1.0− | | |
| 2003 03 07 | 291 | 0.7+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.0 | | |
| 2003 03 07 | 291 | 0.7+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.5+ | 0.2+ | | |
| 2003 03 07 | 291 | 0.5+ | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.2+ | | |
| 2003 04 02 | 807 | 0.5+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.2+ | 2006 11 11 | 691 | 1.0− | 0.4+ | | |
| 2003 04 02 | 807 | 0.7+ | 0.3+ | 2006 10 02 | 691 | 0.7− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.4+ | | |
| 2003 04 02 | 807 | 0.5+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.1+ | | |
| 2003 04 02 | 807 | 1.0− | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.7+ | 2006 11 13 | G96 | 0.1− | 0.2− | | |
| 2003 04 02 | 807 | 0.7+ | 0.1+ | 2006 10 11 | 691 | 0.6+ | 0.3+ | 2006 11 13 | G96 | 0.6− | 0.0 | | |
| 2003 04 25 | 691 | 0.1− | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.5− | 0.4+ | | |
| 2003 04 25 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 18 | 691 | 0.7− | 0.7+ | | |
| 2003 04 25 | 691 | 0.2+ | 0.9+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.4− | 0.6+ | | |
| 2003 05 29 | 691 | 0.5+ | 1.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.0 | | |
| 2003 05 29 | 691 | 0.7+ | 1.2+ | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2003 05 29 | 691 | 0.8+ | 1.4+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.4− | 0.3+ | | |
| 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2− | | |
| 2006 09 18 | 691 | 0.4− | 0.5+ | 2006 10 23 | 691 | 0.1+ | 0.3+ | | | | | | |

**2006 SV$_{116}$ = 2002 UR$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.09313 | | (2000.0) | | | |
| $n$ | 0.24196235 | $\omega$ | 352.66519 | | +0.96748786 | −0.25098557 |
| $a$ | 2.5505716 | $\Omega$ | 21.94725 | | +0.23608048 | +0.85192488 |
| $e$ | 0.1957093 | $i$ | 4.78861 | | +0.09073726 | +0.45959791 |
| $P$ | 4.07 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2002 10 31 | 699 | 1.2− | 0.9− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 2002 10 31 | 699 | 0.8− | 1.1+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.1− | 0.7− |
| 2002 10 31 | 699 | 0.5− | 0.5− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.2− |
| 2002 11 05 | 704 | 1.0+ | 0.5− | 2006 10 15 | 691 | 0.5+ | 0.2− | 2006 10 21 | 703 | 0.7− | 0.8− |
| 2002 11 05 | 704 | 1.4+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | (1.6− | 0.7−) |
| 2002 11 05 | 704 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2002 11 05 | 704 | 0.3− | 0.4+ | 2006 10 16 | 683 | 0.1− | 0.9− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2006 09 24 | 691 | 0.2+ | 0.2− | 2006 10 16 | 683 | 0.0 | 0.9− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 16 | 683 | 1.4− | 1.1− | 2006 10 22 | 683 | 0.9− | 0.3− |
| 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 683 | 0.3+ | 0.6− | 2006 10 22 | 683 | 1.2− | 1.2+ |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 19 | 683 | 0.0 | 1.1+ | 2006 10 22 | 683 | 0.1+ | 0.2+ |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 19 | 683 | 0.5− | 0.2+ | 2006 10 23 | 683 | 0.6+ | 0.5− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 20 | 683 | (1.2+ | 1.5−) | 2006 10 23 | 683 | 0.0 | 0.9+ |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 20 | 683 | 1.3− | 0.9+ | 2006 10 23 | 683 | 0.7− | 0.9− |
| 2006 09 26 | 152 | 0.8− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2006 09 26 | 152 | 0.7+ | 0.8− | 2006 10 20 | 683 | (1.7− | 0.5−) | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2006 09 26 | 152 | 0.7+ | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.0 | | | | |
| 2006 09 28 | 691 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.2− | | | | |

**2006 SZ$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.12746 | | (2000.0) | | | |
| $n$ | 0.26804508 | $\omega$ | 1.90659 | | +0.91325770 | −0.40586084 |
| $a$ | 2.3823057 | $\Omega$ | 22.14161 | | +0.37251998 | +0.79703596 |
| $e$ | 0.2415734 | $i$ | 5.35523 | | +0.16489157 | +0.44722552 |
| $P$ | 3.68 | $H$ | 17.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.6+ | 1.1− | 2006 10 23 | 704 | (2.0− | 0.1+) |
| 1995 10 24 | 691 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 10 23 | 704 | 0.3+ | 0.1− |
| 1995 10 24 | 691 | 0.3+ | 0.5− | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 23 | 704 | 0.5− | 0.5+ |
| 2001 05 22 | 807 | 0.4+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 23 | 704 | 0.4+ | 0.7+ |
| 2001 05 22 | 807 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2004 02 16 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2004 02 16 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 0.5− | 0.8+ | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2006 08 28 | 703 | 0.9− | 0.4− | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.2− | 0.1+ |
| 2006 08 28 | 703 | 1.3− | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2006 08 28 | 703 | 0.5− | 1.2− | 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2006 09 24 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.0 |
| 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.4+ |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.2− |
| 2006 09 27 | 683 | (1.8+ | 0.2−) | 2006 10 21 | 703 | 0.7+ | 0.1+ | 2006 11 19 | 704 | 0.9− | 1.2− |
| 2006 09 27 | 683 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2006 09 27 | 683 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2006 10 01 | 704 | (1.8− | 0.5+) | 2006 10 21 | 703 | 0.4+ | 0.7− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2006 10 01 | 704 | 0.4− | 0.2+ | 2006 10 23 | 704 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1+ |

**2006 SC$_{117}$ = 2004 FP$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.04479 | | (2000.0) | | | |
| $n$ | 0.22492477 | $\omega$ | 238.60849 | | +0.23043158 | −0.97273511 |
| $a$ | 2.6777983 | $\Omega$ | 198.12467 | | +0.91897037 | +0.22639907 |
| $e$ | 0.1511942 | $i$ | 4.83563 | | +0.31999179 | +0.05029771 |
| $P$ | 4.38 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 695 | 0.3+ | 0.7+ | 2006 09 26 | J75 | 0.2+ | 0.5− | 2006 10 20 | 703 | 0.2− | 0.4− |
| 2004 03 26 | 695 | 0.4− | 0.6+ | 2006 09 27 | J75 | 0.9+ | 1.2− | 2006 10 20 | 703 | 0.1+ | 0.1− |
| 2004 03 26 | 695 | 1.4+ | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2004 03 26 | 695 | 0.8+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 1.3+ | 0.4− |
| 2004 03 28 | 695 | 0.1+ | 0.9+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.2− | 0.8− |
| 2004 03 28 | 695 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | (1.6− | 1.4+) |
| 2004 03 28 | 695 | 0.1+ | 0.7+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2004 03 28 | 695 | 0.8− | 1.3+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 03 28 | 695 | 0.3+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.4+ |
| 2006 09 24 | 691 | 0.0 | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2006 09 25 | G96 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.7− |
| 2006 09 25 | G96 | 0.9+ | 0.5+ | 2006 10 17 | G96 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.8− | 0.9+ |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.5+ |
| 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2006 09 25 | G96 | 0.7− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2006 09 25 | G96 | 0.4− | 0.7− | 2006 10 20 | 703 | 0.6+ | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.0 |

**2006 SF$_{117}$ = 2003 YC$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.59966 | | (2000.0) | | | |
| $n$ | 0.30488776 | $\omega$ | 296.62506 | | +0.94698186 | −0.32112143 |
| $a$ | 2.1862982 | $\Omega$ | 82.10715 | | +0.29835413 | +0.86702361 |
| $e$ | 0.1120069 | $i$ | 0.59663 | | +0.11920642 | +0.38098699 |
| $P$ | 3.23 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 644 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.3− |
| 2003 12 17 | 644 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2003 12 17 | 644 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 10 27 | 691 | 0.2+ | 0.1+ |
| 2003 12 19 | 704 | 0.7+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2003 12 19 | 704 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2003 12 19 | 704 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 20 | 703 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 20 | 703 | 0.4+ | 0.3− | 2006 11 11 | 691 | (2.3+ | 1.0−) |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.5− |
| 2006 09 27 | 704 | 0.5− | 0.4+ | 2006 10 20 | 703 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.5+ | 0.6+ |
| 2006 09 27 | 704 | 0.1+ | 0.9+ | 2006 10 20 | 703 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2006 09 27 | 704 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.3+ |
| 2006 09 27 | 704 | 1.3+ | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.4− |
| 2006 09 27 | 704 | 0.4− | 1.1+ | 2006 10 21 | 703 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.1+ |
| 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 13 | 704 | 1.3− | 0.2− |
| 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 13 | 704 | 0.2− | 0.4+ |
| 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 13 | 704 | 0.3− | 0.2+ |
| 2006 10 12 | A13 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2006 10 12 | A13 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2006 10 12 | A13 | 0.5− | 0.3− | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.1+ |

**2006 SP$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.99580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26013011 | $\omega$ | 39.85360 | | +0.60836328 | −0.79360516 | |
| $a$ | 2.4303881 | $\Omega$ | 12.68411 | | +0.71704761 | +0.54462279 | |
| $e$ | 0.2008566 | $i$ | 2.40611 | | +0.34020119 | +0.27125057 | |
| $P$ | 3.79 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.2− | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.4− | |
| 2002 08 20 | 644 | 0.7− | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.3− | |
| 2002 08 20 | 644 | 0.7− | 1.2+ | 2006 10 20 | 703 | 0.3+ | 0.7+ | 2006 10 31 | 691 | 0.7− | 0.2+ | |
| 2004 03 14 | 691 | 0.4+ | 0.8+ | 2006 10 20 | 703 | 0.8− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1− | |
| 2004 03 14 | 691 | 0.4+ | 0.8+ | 2006 10 20 | 703 | 1.1− | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.1− | |
| 2004 03 14 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 1.0+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.1+ | |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.1+ | |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.6− | 1.3+ | 2006 11 10 | 691 | 0.0 | 0.2+ | |
| 2006 09 15 | 691 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.2− | |
| 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.0 | |
| 2006 09 24 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.2− | |
| 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.7+ | 0.2+ | |
| 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.3− | |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.3+ | 0.5− | |
| 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.4− | |
| 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.7− | 0.6− | |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 1.2+ | 0.5+ | 2006 11 20 | G96 | 0.1− | 0.8− | |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.6+ | 1.0+ | 2006 11 20 | G96 | 0.4− | 0.4− | |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.0 | 0.7− | |
| 2006 10 15 | 691 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.4− | 0.4− | 2006 11 20 | G96 | 0.1+ | 0.3− | |
| 2006 10 15 | 691 | 0.5− | 0.5− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.3− | 0.1+ | |
| 2006 10 15 | 691 | 0.2− | 0.5− | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 20 | G96 | 0.4+ | 0.3− | |
| 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.0 | | | | | |

**2006 SV$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.93548 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17619322 | $\omega$ | 214.18459 | | +0.62822207 | −0.77787458 | |
| $a$ | 3.1512045 | $\Omega$ | 196.91400 | | +0.72538833 | +0.59291495 | |
| $e$ | 0.0932707 | $i$ | 3.10401 | | +0.28133397 | +0.20823785 | |
| $P$ | 5.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 691 | 0.2+ | 0.3− | 2006 09 28 | 699 | 1.0+ | 1.1− | 2006 10 23 | 691 | 0.1− | 0.2+ | |
| 2002 01 13 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.0 | |
| 2002 01 13 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.3− | |
| 2003 02 23 | 599 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− | |
| 2003 02 23 | 599 | 0.2+ | 1.2+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.1− | |
| 2003 02 24 | 599 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1− | |
| 2003 02 24 | 599 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.0 | |
| 2003 04 01 | 695 | 0.4+ | 0.5+ | 2006 10 15 | 691 | 0.4+ | 0.4− | 2006 10 31 | 691 | 0.0 | 0.1+ | |
| 2003 04 01 | 695 | 0.3+ | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.0 | |
| 2003 04 09 | 691 | (0.5+ | 1.6+) | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− | |
| 2003 04 09 | 691 | 0.2+ | 1.1+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 | |
| 2003 04 09 | 691 | 0.1+ | 1.2+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ | |
| 2004 06 13 | 691 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ | |
| 2004 06 13 | 691 | 0.7+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.6− | 0.3+ | |
| 2004 06 13 | 691 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | |
| 2005 07 05 | G96 | 0.8− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.1+ | |
| 2005 07 05 | G96 | 0.5− | 0.3+ | 2006 10 20 | 703 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.2+ | |
| 2005 07 05 | G96 | 0.5− | 0.2+ | 2006 10 20 | 703 | 1.2− | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.6+ | |
| 2005 07 05 | G96 | 0.8− | 0.3+ | 2006 10 20 | 703 | 0.6− | 1.3− | 2006 11 11 | 691 | 0.3− | 0.0 | |
| 2006 09 15 | 691 | 0.5+ | 0.6+ | 2006 10 20 | 703 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.9− | 0.9+ | |
| 2006 09 15 | 691 | 0.1− | 0.7+ | 2006 10 21 | 703 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.8− | 0.1− | |
| 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.8+ | 2006 11 11 | G96 | 0.3− | 0.4− | |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.6− | |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.5− | 0.2− | 2006 11 11 | 703 | (2.4− | 0.9+) | |
| 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.7− | |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− | |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | (0.7− | 2.4+) | |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.4+ | |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.4+ | |
| 2006 09 28 | 699 | (1.9+ | 0.9+) | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.2+ | |
| 2006 09 28 | 699 | 1.3− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.1+ | | | | | |
| 2006 09 28 | 699 | 0.9+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.2+ | | | | | |

**2006 SE$_{118}$ = 2001 XG$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.82016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17783865 | $\omega$ | 80.54897 | | −0.19019094 | −0.97986381 | |
| $a$ | 3.1317369 | $\Omega$ | 20.71795 | | +0.81979800 | −0.19257514 | |
| $e$ | 0.2160900 | $i$ | 9.89309 | | +0.54014688 | −0.05274214 | |
| $P$ | 5.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 1.1+ | 1.2+ | |
| 2001 12 09 | 704 | 0.5− | 0.9+ | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 1.4− | 0.6− | |
| 2001 12 09 | 704 | 1.0− | 0.8+ | 2006 10 11 | 691 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.6− | 0.6− | |
| 2001 12 14 | 704 | 0.2− | 1.1− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | (0.9− | 2.0−) | |
| 2001 12 14 | 704 | 0.6+ | 0.9− | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− | |
| 2001 12 14 | 704 | 1.4+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2001 12 14 | 704 | (1.9+ | 0.9−) | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.2+ | 0.1+ | |
| 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.0 | |
| 2006 09 24 | 691 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.2− | 0.0 | |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 | |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 17 | 703 | 1.1+ | 0.5− | 2006 11 10 | 691 | 0.0 | 0.3+ | |
| 2006 09 25 | G96 | 0.6+ | 0.3− | 2006 10 17 | 703 | 0.6+ | 0.8− | 2006 11 10 | 691 | 0.1− | 0.1+ | |
| 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.4− | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.1+ | |
| 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.3− | |
| 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.0 | |
| 2006 09 28 | 691 | 0.3+ | 1.1+ | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.1+ | |
| 2006 10 02 | 691 | 0.5+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.2− | | | | | |

**2006 SR$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.84224 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22904437 | $\omega$ | 94.94031 | | −0.58744399 | −0.80574821 | |
| $a$ | 2.6455926 | $\Omega$ | 31.42270 | | +0.67334879 | −0.53831455 | |
| $e$ | 0.0968455 | $i$ | 8.31132 | | +0.44889972 | −0.24695603 | |
| $P$ | 4.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 699 | 0.3− | 0.5− | 2006 09 25 | 701 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.6− | |
| 2004 04 12 | 699 | 1.1− | 0.0 | 2006 09 25 | 701 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2− | 0.3− | |
| 2004 04 12 | 699 | 0.6+ | 0.8+ | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.1− | |
| 2004 04 12 | 699 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.3− | |
| 2004 04 25 | 703 | 0.5− | 1.3+ | 2006 09 25 | G96 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.3− | 0.2− | |
| 2004 04 25 | 703 | 0.5+ | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.2− | |
| 2004 04 25 | 703 | 0.7− | 1.1− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.5− | 0.1− | |
| 2004 04 25 | 703 | 0.0 | 0.5− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.7− | 0.2− | |
| 2004 05 13 | 691 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.5+ | |
| 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.0 | |
| 2004 05 13 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4− | 0.0 | |
| 2006 09 24 | 701 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1+ | 0.1− | |
| 2006 09 24 | 701 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.3+ | |
| 2006 09 24 | 701 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.4+ | |
| 2006 09 25 | 701 | 0.4− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.5− | |

**2006 SS$_{118}$ = 2002 RS$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.74090 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26670100 | $\omega$ | 58.79410 | +0.12850195 | | −0.99133255 | |
| $a$ | 2.3903030 | $\Omega$ | 23.86853 | +0.88534950 | | +0.10225939 | |
| $e$ | 0.2412993 | $i$ | 3.87305 | +0.44681486 | | +0.08247904 | |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 1.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2002 09 12 | 644 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 09 12 | 644 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 09 15 | 644 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.6+ | 0.4− |
| 2002 09 15 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.8− |
| 2002 09 15 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.5− | 1.1− |
| 2006 09 24 | 701 | 1.0+ | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 09 24 | 701 | 0.7+ | 0.2+ | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 18 | 291 | 0.1− | 0.3+ |
| 2006 09 24 | 701 | 0.4+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 18 | 291 | 0.2− | 0.2+ |
| 2006 09 25 | 701 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.8− | 2006 11 18 | 291 | 0.0 | 0.3+ |
| 2006 09 25 | 701 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.5+ | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2006 09 25 | 701 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.5− | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.4+ | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.6− | 1.2+ |
| 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.4− |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.9− | 0.7+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.6− |
| 2006 10 16 | 691 | 0.2+ | 0.5− | 2006 11 16 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.6− | 0.2+ |
| 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 16 | A89 | (1.2− | 3.9−) | 2006 11 22 | 704 | 0.3+ | 1.2+ |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 16 | A89 | (3.4+ | 1.1−) | 2006 11 22 | 704 | 0.7+ | 0.8+ |
| 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.4− | | | | |

**2006 SU$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.15364 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.29299569 | $\omega$ | 157.83752 | +0.64118380 | | −0.76657316 | |
| $a$ | 2.2450632 | $\Omega$ | 252.26386 | +0.69837940 | | +0.60199194 | |
| $e$ | 0.1603688 | $i$ | 2.12637 | +0.31804016 | | +0.22354258 | |
| $P$ | 3.36 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 06 | 691 | 1.7− | 0.5− | 2006 10 11 | 644 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.7+ |
| 1996 11 06 | 691 | 1.1− | 0.8− | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.8− | 0.1− |
| 1996 11 08 | 691 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.4− | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 1996 11 08 | 691 | 1.2+ | 0.2− | 2006 10 11 | 644 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.5− | 0.2+ |
| 1996 11 08 | 691 | 1.4+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2003 12 21 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2003 12 21 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2003 12 21 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2004 01 31 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2004 01 31 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 01 31 | 691 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2006 09 24 | 291 | 0.3+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2006 09 24 | 291 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2006 09 24 | 291 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.5− | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.4− |
| 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.8+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2006 09 28 | 691 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.3− |
| 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.5− | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2006 10 03 | 691 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.3+ | | | | |
| 2006 10 03 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.1− | | | | |

**2006 SX$_{118}$ = 2005 EL$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.54913 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.36720020 | $\omega$ | 218.44926 | +0.78512754 | | −0.61933278 | |
| $a$ | 1.9313787 | $\Omega$ | 179.80375 | +0.61919406 | | +0.78490398 | |
| $e$ | 0.1021083 | $i$ | 22.12717 | +0.01317063 | | +0.01877897 | |
| $P$ | 2.68 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.9+ | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1− |
| 1998 09 25 | 645 | 0.0 | 0.1− | 2006 09 18 | 699 | 0.5+ | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2005 03 13 | 703 | 0.0 | 0.9+ | 2006 09 18 | 699 | 0.3− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.1− |
| 2005 03 13 | 703 | 0.1+ | 0.8+ | 2006 09 26 | 704 | 0.5+ | 1.0+ | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2005 03 13 | 703 | 0.6− | 0.8− | 2006 09 26 | 704 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.3− |
| 2005 03 13 | 703 | 0.7− | 0.0 | 2006 09 26 | 704 | 1.0− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.3− |
| 2005 03 17 | 703 | (2.3− | 1.1+) | 2006 09 26 | 704 | 0.3− | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.1− |
| 2005 03 17 | 703 | 1.2+ | 0.5+ | 2006 09 26 | 704 | 0.4− | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.3+ |
| 2005 03 17 | 703 | 0.3+ | 0.8+ | 2006 09 27 | 691 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.5− |
| 2005 03 17 | 703 | 0.2− | 0.6+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2006 09 18 | 703 | 0.2− | 0.6− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2006 09 18 | 703 | 0.1+ | 0.2− | 2006 09 30 | 704 | 0.3− | 1.2+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2006 09 18 | 703 | 0.5+ | 0.4− | 2006 09 30 | 704 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.8− | 0.0 |
| 2006 09 18 | 703 | 0.2+ | 0.8+ | 2006 09 30 | 704 | 0.1+ | 1.0+ | | | | |
| 2006 09 18 | 699 | 0.3− | 0.3− | 2006 09 30 | 704 | 0.2+ | 0.5+ | | | | |

**2006 SD$_{119}$ = 2002 VX$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.85871 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23229773 | $\omega$ | 65.68295 | +0.21578220 | | −0.97414603 | |
| $a$ | 2.6208334 | $\Omega$ | 12.42552 | +0.74457880 | | +0.11982249 | |
| $e$ | 0.2405632 | $i$ | 18.11854 | +0.63169649 | | +0.19152567 | |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | I03 | 0.0 | 0.4+ | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2000 03 03 | I03 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 1.4− | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.2− |
| 2000 03 03 | I03 | 0.2+ | 0.3+ | 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 10 16 | 703 | 1.4+ | 0.6− |
| 2000 03 03 | I03 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.3− | 0.9+ |
| 2000 03 03 | I03 | 0.1+ | 0.0 | 2006 09 25 | 699 | 1.1+ | 0.8− | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2002 11 11 | 699 | 0.8+ | 0.8− | 2006 09 25 | 699 | 0.2+ | 0.1+ | 2006 10 16 | 703 | (0.7+ | 2.9−) |
| 2002 11 11 | 699 | 0.7− | 1.2+ | 2006 09 25 | 699 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 11 11 | 699 | 0.1+ | 1.0+ | 2006 09 25 | 699 | 0.8+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2002 11 11 | 699 | 0.4− | 1.2− | 2006 09 26 | 704 | 1.0+ | 0.5− | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2002 11 14 | 644 | 0.1− | 0.2+ | 2006 09 26 | 704 | 0.3+ | 0.7+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2002 11 14 | 644 | 0.2− | 0.2+ | 2006 09 26 | 704 | 0.3− | 0.1− | | | | |
| 2002 11 14 | 644 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2− | | | | |

**2006 SK$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.44100 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23388952 | $\omega$ | 260.97087 | +0.67630031 | | +0.73386040 | |
| $a$ | 2.6089287 | $\Omega$ | 51.78380 | −0.63994111 | | +0.62820320 | |
| $e$ | 0.2696967 | $i$ | 4.65566 | −0.36481952 | | +0.25847565 | |
| $P$ | 4.21 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 704 | 0.9− | 1.2+ | 2006 10 15 | 106 | 0.4+ | 0.9− |
| 2001 04 15 | 691 | 0.1− | 0.2+ | 2006 09 28 | 699 | 0.0 | 0.0 | 2006 10 15 | 106 | 0.3+ | 0.3+ |
| 2001 04 15 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 106 | 0.2− | 0.7+ |
| 2002 10 04 | 599 | 0.1− | 0.2+ | 2006 09 28 | 704 | 0.1− | 1.1− | 2006 10 16 | 703 | (2.0− | 0.5+) |
| 2002 10 04 | 599 | 0.1− | 0.2+ | 2006 09 28 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | (2.6− | 0.9+) |
| 2002 10 04 | 599 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 09 | 291 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.6+ | 1.4+ |
| 2002 12 09 | 291 | 0.2+ | 0.1+ | 2006 09 30 | 703 | (1.6− | 0.4−) | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2002 12 09 | 291 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.2+ | 1.2− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1+ |
| 2005 04 30 | 691 | 0.2+ | 0.8+ | 2006 10 01 | 704 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2005 04 30 | 691 | 0.6+ | 0.7+ | 2006 10 01 | 704 | 1.1− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 09 18 | 703 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 1.0− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2006 09 18 | 703 | 0.5− | 0.6+ | 2006 10 01 | 704 | 0.6− | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.3+ |
| 2006 09 18 | 703 | 0.8+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 22 | 703 | (0.6+ | 1.8+) |
| 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.5+ |
| 2006 09 22 | 704 | 0.8+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.3+ |
| 2006 09 22 | 704 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2006 09 22 | 704 | (1.3− | 2.5+) | 2006 10 12 | 644 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.0 |
| 2006 09 22 | 704 | 1.0− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2006 09 28 | 704 | 0.1− | 0.9+ | 2006 10 15 | 106 | 0.2+ | 0.8− | | | | |

**2006 SL$_{119}$ = 1995 HN$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.71466 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28478057 | $\omega$ | 229.24551 | | +0.59903482 | | +0.79822925 |
| $a$ | 2.2880340 | $\Omega$ | 77.66611 | | −0.71379753 | | +0.56807589 |
| $e$ | 0.2164060 | $i$ | 3.70603 | | −0.36283657 | | +0.20029940 |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.5− | 0.5+ | 2006 09 22 | 704 | (1.1− | 1.9−) | 2006 09 30 | 703 | 0.8+ | 1.1+ |
| 1995 04 26 | 691 | 0.6− | 0.4− | 2006 09 22 | 704 | 0.4− | 1.3− | 2006 09 30 | 704 | 1.0− | 0.8− |
| 1995 04 26 | 691 | 0.0 | 0.3+ | 2006 09 22 | 704 | 0.3− | 0.7− | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 1995 05 08 | 691 | 0.2− | 0.4− | 2006 09 22 | 704 | (0.2+ | 1.7−) | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 1995 05 08 | 691 | 0.1− | 0.1+ | 2006 09 26 | 704 | 0.6− | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 1995 05 08 | 691 | 1.3+ | 0.4− | 2006 09 26 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.1− |
| 2002 05 10 | 704 | 0.7− | 0.2− | 2006 09 26 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.1− |
| 2002 05 10 | 704 | 0.9+ | 0.3− | 2006 09 28 | 704 | 0.8+ | 0.7− | 2006 10 16 | 703 | 0.8− | 0.0 |
| 2002 05 10 | 704 | 0.4+ | 0.5− | 2006 09 28 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.6− |
| 2002 05 19 | 644 | 0.2− | 0.8+ | 2006 09 28 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 05 19 | 644 | 0.0 | 0.7+ | 2006 09 28 | 704 | 0.8− | 0.5− | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 2002 05 19 | 644 | 0.1− | 0.3+ | 2006 09 30 | 703 | 1.1− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 09 18 | 703 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.5− | 1.3+ | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2006 09 18 | 703 | 1.4+ | 0.3− | 2006 09 30 | 704 | 0.6+ | 0.9+ | 2006 10 22 | 703 | 1.3+ | 0.3+ |
| 2006 09 18 | 703 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | (0.6− | 1.7−) |

**2006 SO$_{119}$ = 2005 JD$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.37609 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21771101 | $\omega$ | 286.62399 | | +0.99532776 | | −0.06083534 |
| $a$ | 2.7366281 | $\Omega$ | 76.91123 | | +0.08650491 | | +0.90679971 |
| $e$ | 0.2104636 | $i$ | 4.41488 | | −0.04289001 | | +0.41714908 |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | G96 | 0.4− | 0.1− | 2006 09 26 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.0 |
| 2005 05 08 | G96 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.6− | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.7− |
| 2005 05 08 | G96 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1− | 1.1− |
| 2005 05 08 | G96 | 0.5− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.3− |
| 2005 05 20 | G96 | 0.4+ | 0.1− | 2006 09 28 | 704 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2005 05 20 | G96 | 0.7+ | 0.1− | 2006 09 28 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2005 05 20 | G96 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.5− |
| 2006 09 18 | 703 | 0.4+ | 1.3− | 2006 09 28 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.5− |
| 2006 09 18 | 703 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2006 09 18 | 703 | 0.8− | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.0 | 0.4− |
| 2006 09 18 | 703 | 0.8− | 0.3− | 2006 09 30 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3− |
| 2006 09 22 | 704 | 0.7+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.3+ | 0.5+ |
| 2006 09 22 | 704 | 0.1+ | 0.2− | 2006 09 30 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.6+ |
| 2006 09 22 | 704 | 0.5+ | 0.7+ | 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2006 09 26 | 704 | 0.1− | 1.3+ | 2006 09 30 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.6+ |
| 2006 09 26 | 704 | 0.1− | 0.5+ | 2006 09 30 | 704 | 0.2+ | 0.3− | | | | |
| 2006 09 26 | 704 | 0.1+ | 1.1+ | 2006 10 16 | 703 | 0.8− | 0.2+ | | | | |

**2006 SS$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.14308 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29911108 | $\omega$ | 311.05571 | | +0.52457952 | | −0.84440357 |
| $a$ | 2.2143574 | $\Omega$ | 106.98975 | | +0.81121478 | | +0.45703982 |
| $e$ | 0.0551150 | $i$ | 6.52172 | | +0.25835422 | | +0.27945879 |
| $P$ | 3.30 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 704 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.4+ | 2006 10 02 | 703 | 0.3− | 0.3+ |
| 2003 12 01 | 704 | 0.2+ | 0.3− | 2006 09 18 | 703 | 1.0− | 0.9− | 2006 10 02 | 703 | 0.6− | 0.6+ |
| 2003 12 01 | 704 | 0.3− | 0.4− | 2006 09 25 | 699 | 0.4+ | 0.5+ | 2006 10 02 | 703 | 0.1+ | 1.1+ |
| 2003 12 01 | 704 | 0.7+ | 0.1− | 2006 09 25 | 699 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2003 12 01 | 704 | 0.0 | 0.0 | 2006 09 25 | 699 | (1.7− | 0.6+) | 2006 10 10 | 644 | 0.2− | 0.3+ |
| 2003 12 17 | 699 | 1.3− | 0.1− | 2006 09 25 | 699 | 1.0+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.4+ |
| 2003 12 17 | 699 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.4− | 1.1− | 2006 10 17 | 703 | (1.9+ | 3.6+) |
| 2003 12 17 | 699 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.1− | 1.0− | 2006 10 17 | 703 | 0.1+ | 0.1− |
| 2003 12 17 | 699 | 0.6+ | 0.5+ | 2006 09 26 | 703 | 0.8− | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.5+ |
| 2006 09 18 | 703 | 0.9+ | 0.0 | 2006 09 26 | 703 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2006 09 18 | 703 | 0.3− | 0.3− | 2006 10 02 | 703 | 0.5+ | 0.3+ | | | | |

**2006 SX$_{119}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.37571 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25544047 | $\omega$ | 329.38603 | | +0.80522767 | | −0.57988092 |
| $a$ | 2.4600442 | $\Omega$ | 66.56626 | | +0.56771584 | | +0.69361102 |
| $e$ | 0.1177498 | $i$ | 7.75961 | | +0.17119324 | | +0.42736620 |
| $P$ | 3.86 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 691 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.5− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.8− |
| 2001 05 26 | 691 | 0.6− | 0.6+ | 2006 09 18 | 703 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3+ |
| 2001 05 26 | 691 | 0.5− | 0.4+ | 2006 09 18 | 703 | 1.5+ | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 2002 10 09 | 699 | 0.9+ | 0.1+ | 2006 09 25 | 699 | 0.8+ | 0.9− | 2006 10 16 | 703 | 0.6− | 0.2− |
| 2002 10 09 | 699 | 1.4+ | 1.4− | 2006 09 25 | 699 | 1.1− | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 10 09 | 699 | 1.2− | 0.3+ | 2006 09 25 | 699 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.6+ |
| 2002 10 09 | 699 | 0.0 | 0.6+ | 2006 09 25 | 699 | 0.8− | 0.9− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 02 13 | 691 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 02 13 | 691 | 0.5+ | 0.3+ | 2006 09 26 | 703 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 02 13 | 691 | 0.2+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 09 26 | 703 | 0.1+ | 0.9− | 2006 10 22 | 703 | 1.6− | 0.6− |
| 2005 06 13 | G96 | 0.8+ | 0.4+ | 2006 09 29 | 699 | 0.4− | 0.9+ | 2006 10 22 | 703 | 0.0 | 1.2− |
| 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.8− | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2005 06 13 | G96 | 0.3+ | 0.1− | 2006 09 29 | 699 | 0.6− | 1.4+ | 2006 10 22 | 703 | 0.2− | 1.3+ |
| 2006 09 18 | 703 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 1.0+ | 0.5+ | | | | |

**2006 SA$_{120}$ = 2004 BR$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.74004 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27912718 | $\omega$ | 289.42313 | | +0.79925642 | | −0.59644081 |
| $a$ | 2.3188249 | $\Omega$ | 107.26012 | | +0.57632101 | | +0.72582238 |
| $e$ | 0.1622193 | $i$ | 4.43269 | | +0.17042086 | | +0.34269553 |
| $P$ | 3.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.3− | 0.2− | 2004 01 28 | 691 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 0.9− | 0.7− |
| 1999 10 09 | 704 | 0.3− | 0.0 | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.6+ |
| 1999 10 09 | 704 | 0.3+ | 0.5+ | 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.4+ |
| 1999 10 09 | 704 | 1.2+ | 0.9+ | 2005 05 13 | 691 | 0.1+ | 0.9+ | 2006 09 30 | 704 | 0.4− | 0.7− |
| 1999 10 09 | 704 | 1.7− | 0.5+ | 2005 05 13 | 691 | 0.2+ | 0.8+ | 2006 09 30 | 703 | 0.1+ | 0.8+ |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2005 05 13 | 691 | 0.5+ | 0.9+ | 2006 09 30 | 704 | 0.9− | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 691 | 0.1− | 0.2+ | 2006 09 18 | 703 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.0 |
| 2003 12 29 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 0.1+ | 0.6+ | 2006 09 30 | 704 | 0.1+ | 1.1+ |
| 2004 01 16 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 10 16 | 703 | (3.9+ | 5.3+) |
| 2004 01 16 | 691 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 1.3− | 0.2− |
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.1− | 1.0+ |
| 2004 01 22 | 704 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.5+ |
| 2004 01 22 | 704 | 0.6+ | 0.9+ | 2006 09 25 | 699 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.5+ |
| 2004 01 22 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.4− | 1.0+ |
| 2004 01 22 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.1+ |
| 2004 01 22 | 704 | 0.4+ | 0.8+ | 2006 09 29 | 699 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.8+ | 0.1− |

**2006 SD$_{120}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.35257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21797048 | $\omega$ | 217.21012 | | +0.99377642 | −0.08053685 | |
| $a$ | 2.7344559 | $\Omega$ | 147.15811 | | +0.09929851 | +0.95355865 | |
| $e$ | 0.2087081 | $i$ | 8.15786 | | −0.05047993 | +0.29024079 | |
| $P$ | 4.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.5− | 1.0− | 2006 09 29 | 699 | 0.4− | 0.6+ |
| 2000 05 05 | 645 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.1− | 1.3− | 2006 09 29 | 699 | 0.4− | 0.3− |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2004 03 17 | 691 | 0.4+ | 0.4+ | 2006 09 25 | 699 | 1.9+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.1− |
| 2004 03 17 | 691 | 0.0 | 0.6+ | 2006 09 25 | 699 | 0.9− | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.1+ |
| 2005 06 05 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.9+ | 0.0 | 2006 10 22 | 644 | 0.6+ | 0.3+ |
| 2005 06 05 | 691 | 0.1− | 0.8+ | 2006 09 26 | 703 | 0.7− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2005 06 05 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.9+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.6+ |
| 2006 09 18 | 703 | 1.0− | 0.5+ | 2006 09 26 | 703 | 0.5− | 0.3− | 2006 10 28 | 703 | 0.6− | 0.6+ |
| 2006 09 18 | 703 | 0.6− | 0.4− | 2006 09 26 | 703 | 0.3− | 1.4− | 2006 10 28 | 703 | 0.1+ | 1.0+ |
| 2006 09 18 | 703 | 0.1− | 0.2+ | 2006 09 29 | 699 | 1.2+ | 0.4− | 2006 10 28 | 703 | 0.2− | 0.6+ |
| 2006 09 18 | 703 | 0.5+ | 0.5+ | 2006 09 29 | 699 | 0.3− | 0.2+ | 2006 10 28 | 703 | 0.5+ | 0.6− |

**2006 SF$_{120}$ = 2003 WF$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.52679 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30130917 | $\omega$ | 172.63184 | | +0.66258742 | +0.74536033 | |
| $a$ | 2.2035749 | $\Omega$ | 138.82520 | | −0.69275636 | +0.64723144 | |
| $e$ | 0.2131697 | $i$ | 6.41806 | | −0.28472186 | +0.15977936 | |
| $P$ | 3.27 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 20 | 809 | 1.2+ | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.3− |
| 1993 10 20 | 809 | 0.9− | 0.1+ | 2006 09 25 | 699 | 0.4+ | 1.1− | 2006 10 16 | 703 | 0.1+ | 0.8− |
| 1993 10 20 | 809 | 0.7− | 0.9+ | 2006 09 25 | 699 | 0.3− | 1.2− | 2006 10 16 | 703 | 0.2− | 0.4− |
| 2003 11 26 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.7+ |
| 2003 11 26 | 691 | 0.2+ | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.5− | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2003 11 26 | 691 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2003 11 30 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 11 30 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 703 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 11 30 | 704 | (1.0+ | 1.6−) | 2006 09 29 | 699 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 11 30 | 704 | 0.9+ | 0.2+ | 2006 09 29 | 699 | 0.2− | 0.9+ | 2006 10 22 | 703 | 0.8− | 0.6− |
| 2005 03 11 | G96 | 0.6+ | 1.1− | 2006 09 29 | 699 | 0.6− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.2+ |
| 2005 03 11 | G96 | 0.3− | 0.1+ | 2006 09 29 | 699 | 0.6+ | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.4− |
| 2005 03 11 | G96 | 0.5− | 0.4− | 2006 09 30 | 704 | (0.3+ | 2.2+) | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2006 09 30 | 704 | 0.7+ | 0.3+ | 2006 10 28 | 703 | 0.3+ | 0.2+ |
| 2006 09 18 | 703 | 1.0+ | 0.5+ | 2006 09 30 | 704 | 0.5+ | 0.1− | 2006 10 28 | 703 | 0.0 | 1.3+ |
| 2006 09 18 | 703 | 0.3− | 1.4− | 2006 09 30 | 704 | 0.6− | 0.6+ | 2006 10 28 | 703 | 0.2− | 0.8− |
| 2006 09 18 | 703 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.5+ | 0.7+ | 2006 10 28 | 703 | 0.1− | 1.2+ |
| 2006 09 18 | 703 | 1.4+ | 0.2− | 2006 10 16 | 703 | 0.2+ | 1.0− | | | | |

**2006 SJ$_{120}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.77257 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24047695 | $\omega$ | 242.59303 | | +0.71727498 | +0.69030310 | |
| $a$ | 2.5610639 | $\Omega$ | 73.58122 | | −0.59927629 | +0.68060883 | |
| $e$ | 0.1481388 | $i$ | 5.67535 | | −0.35550602 | +0.24546536 | |
| $P$ | 4.10 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.9− |
| 2001 05 18 | 691 | 0.2− | 0.1+ | 2006 09 18 | 703 | 0.5+ | 1.4− | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2001 05 18 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.8− |
| 2002 09 06 | 599 | 0.1+ | 0.6+ | 2006 09 25 | 699 | 0.1− | 0.4− | 2006 10 19 | 644 | 0.5+ | 0.2− |
| 2002 09 06 | 599 | 0.4+ | 0.3+ | 2006 09 25 | 699 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2002 09 06 | 599 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 1.1− | 0.9+ | 2006 10 19 | 644 | 0.0 | 0.2− |
| 2002 09 06 | 599 | 0.3+ | 0.2− | 2006 09 26 | 703 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2002 10 31 | 608 | 0.4− | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 31 | 608 | 0.7− | 0.8+ | 2006 09 26 | 703 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.6− | 0.1+ |
| 2002 10 31 | 608 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2005 04 02 | 691 | 0.4+ | 0.5+ | 2006 09 29 | 699 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.4− | 0.0 |
| 2005 04 02 | 691 | 0.3+ | 0.4+ | 2006 09 29 | 699 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 04 02 | 691 | 0.4+ | 0.3+ | 2006 09 29 | 699 | 0.4− | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.8+ |
| 2005 05 14 | 644 | 0.0 | 0.3+ | 2006 09 29 | 699 | 0.9+ | 0.8+ | 2006 10 22 | 703 | 0.1+ | 0.7+ |
| 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 09 30 | 704 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.9− |
| 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.3+ | 1.0− | 2006 10 22 | 703 | (0.5− | 2.1+) |
| 2006 09 18 | 703 | 0.6− | 0.6− | 2006 09 30 | 704 | 1.0+ | 0.6+ | | | | |
| 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | | | | |

**2006 SN$_{120}$ = 2001 YH$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.77716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17440540 | $\omega$ | 324.62835 | | +0.77802062 | −0.60476094 | |
| $a$ | 3.1727031 | $\Omega$ | 73.48141 | | +0.60950333 | +0.66096431 | |
| $e$ | 0.0892895 | $i$ | 10.22219 | | +0.15228134 | +0.44428639 | |
| $P$ | 5.65 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.6− | 0.8+ | 2006 09 25 | 699 | 1.3− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2006 09 25 | 699 | 1.0+ | 1.0− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2001 12 18 | 704 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 12 18 | 704 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 12 19 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 1.1− | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.6+ | 0.3− | 2006 10 16 | 703 | 0.9− | 0.8− | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2001 12 19 | 704 | 0.8+ | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 1.4+ | 1.3− |
| 2001 12 19 | 704 | 0.1− | 1.0− | 2006 10 16 | 703 | 0.8− | 0.7− | 2006 10 28 | 703 | 0.3+ | 0.1+ |
| 2006 09 18 | 703 | 0.5+ | 1.1+ | 2006 10 17 | 703 | (0.3− | 2.5+) | 2006 10 28 | 703 | 0.8− | 0.5+ |
| 2006 09 18 | 703 | 0.6+ | 0.4− | 2006 10 17 | 703 | 1.2+ | 0.9− | 2006 10 28 | 703 | 0.6− | 0.3− |
| 2006 09 18 | 703 | 1.2+ | 0.4− | 2006 10 17 | 703 | 0.4+ | 1.5+ | | | | |
| 2006 09 18 | 703 | 0.7+ | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.0 | | | | |

**2006 SP$_{120}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.44306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18127326 | $\omega$ | 264.77191 | | +0.78812782 | −0.60118024 | |
| $a$ | 3.0920527 | $\Omega$ | 132.10521 | | +0.61130382 | +0.73947241 | |
| $e$ | 0.1229199 | $i$ | 10.25233 | | +0.07184831 | +0.30292388 | |
| $P$ | 5.44 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 608 | 0.4− | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.3+ | 2006 09 30 | 704 | 1.4− | 0.6+ |
| 2001 11 21 | 608 | 0.1+ | 0.5− | 2006 09 25 | 699 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.5− | 1.1− |
| 2001 11 21 | 608 | 0.3+ | 0.3− | 2006 09 25 | 699 | 0.3+ | 0.2− | 2006 10 17 | 703 | 1.1+ | 0.1− |
| 2003 03 25 | 413 | 0.0 | 0.2+ | 2006 09 25 | 699 | 1.9+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 1.1− |
| 2003 03 25 | 413 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.2− | 0.7+ | 2006 10 17 | 703 | 0.5+ | 0.3+ |
| 2003 03 25 | 413 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.1− | 0.8− | 2006 10 28 | 703 | 0.3+ | 0.8− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 25 | 413 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.0 | 0.2+ |
| 2003 03 25 | 413 | 0.2+ | 0.1− | 2006 09 29 | 699 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 1.3− | 0.5+ |
| 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.0 | 0.4− |
| 2006 09 18 | 703 | 0.7− | 1.0+ | 2006 09 30 | 704 | 0.2− | 0.2+ | | | | |
| 2006 09 18 | 703 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.6− | 0.3+ | | | | |

**2006 ST$_{120}$ = 2004 EV$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.55197 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25495096 | $\omega$ | 326.76160 | | +0.40543777 | −0.90898032 | |
| $a$ | 2.4631921 | $\Omega$ | 99.15622 | | +0.85862290 | +0.34233482 | |
| $e$ | 0.1887727 | $i$ | 5.62828 | | +0.31366691 | +0.23782693 | |
| $P$ | 3.87 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 599 | 0.4− | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2002 09 03 | 599 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.3− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 09 03 | 599 | 0.2− | 0.3− | 2006 09 25 | 699 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 09 03 | 599 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.5− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 09 28 | 608 | (2.4− | 1.4−) | 2006 09 25 | 699 | 0.7− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.4− |
| 2002 09 28 | 608 | (2.3− | 1.7−) | 2006 09 26 | 703 | 0.8+ | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.4− |
| 2002 09 28 | 608 | (2.2− | 1.8−) | 2006 09 26 | 703 | 0.6+ | 0.6− | 2006 10 22 | 703 | 0.7− | 0.4− |
| 2002 10 10 | 699 | 0.3+ | 1.0+ | 2006 09 26 | 703 | 0.2− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 10 | 699 | 0.4+ | 1.0+ | 2006 09 26 | 703 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.8− |
| 2002 10 10 | 699 | 0.4− | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2002 10 10 | 699 | (2.2+ | 1.3−) | 2006 09 29 | 699 | 1.2+ | 0.7− | 2006 10 22 | 644 | 0.4− | 0.1+ |
| 2004 03 15 | 691 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.4+ | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.7− | 0.8− | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 09 30 | 704 | 0.4− | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 704 | 0.1+ | 1.0+ | 2006 10 28 | 703 | 0.4+ | 1.1+ |
| 2004 03 26 | 691 | 0.2+ | 0.0 | 2006 09 30 | 704 | 0.1− | 1.4+ | 2006 10 28 | 703 | 0.0 | 0.5+ |
| 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 704 | 0.7+ | 1.1+ | 2006 10 28 | 703 | 0.7+ | 1.1+ |
| 2006 09 18 | 703 | 0.0 | 1.4− | 2006 10 16 | 703 | 0.6+ | 0.2− | 2006 10 28 | 703 | (1.0+ | 1.7+) |
| 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.8− | | | | |
| 2006 09 18 | 703 | 1.0− | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.1+ | | | | |

**2006 SU$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.69932 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18937955 | $\omega$ | 166.90181 | | +0.88708376 | +0.45613059 | |
| $a$ | 3.0031751 | $\Omega$ | 165.32382 | | −0.44472877 | +0.88566084 | |
| $e$ | 0.1127282 | $i$ | 16.25168 | | −0.12368803 | +0.08688942 | |
| $P$ | 5.20 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 644 | 0.1+ | 0.5+ | 2006 09 18 | 703 | 0.0 | 0.3+ | 2006 09 30 | 704 | 0.0 | 0.3+ |
| 2001 09 12 | 644 | 0.0 | 1.2+ | 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.2− | 0.6+ |
| 2001 09 12 | 644 | 0.2+ | 0.5+ | 2006 09 18 | 703 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.3− | 0.6− |
| 2001 10 28 | 644 | 0.1− | 0.8− | 2006 09 25 | 699 | 0.2− | 0.3+ | 2006 09 30 | 704 | (0.2+ | 1.8−) |
| 2001 10 28 | 644 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 1.0+ | 0.3+ |
| 2001 10 28 | 644 | 0.0 | 0.2− | 2006 09 25 | 699 | 0.7+ | 0.1− | 2006 10 17 | 703 | 0.8− | 0.2− |
| 2006 08 19 | 699 | (2.3+ | 0.8+) | 2006 09 29 | 699 | 0.8+ | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.5− |
| 2006 08 19 | 699 | 0.5− | 0.1− | 2006 09 29 | 699 | 0.6− | 0.9− | 2006 10 17 | 703 | 0.9− | 0.2− |
| 2006 08 19 | 699 | 0.4− | 0.7− | 2006 09 29 | 699 | 0.2+ | 0.5− | | | | |
| 2006 08 19 | 699 | 1.4+ | 0.4− | 2006 09 29 | 699 | 0.5+ | 1.1+ | | | | |

**2006 SZ$_{120}$ = 1995 QH$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.77776 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18656987 | $\omega$ | 232.80593 | | +0.71462327 | −0.69905916 | |
| $a$ | 3.0332511 | $\Omega$ | 171.44247 | | +0.68328133 | +0.68991165 | |
| $e$ | 0.2863017 | $i$ | 9.71000 | | +0.14980053 | +0.18798458 | |
| $P$ | 5.28 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.2− | 0.4− | 2006 09 25 | 699 | (0.4+ | 1.8−) | 2006 10 16 | 703 | 0.2− | 0.1− |
| 1995 08 22 | 691 | 0.3+ | 0.3− | 2006 09 25 | 699 | (0.8− | 2.5−) | 2006 10 16 | 703 | 0.1+ | 0.9− |
| 1995 08 22 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.6+ | 0.3− |
| 1995 08 27 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.3+ | 0.3+ |
| 1995 08 27 | 691 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 10 22 | 703 | 0.7− | 1.0+ |
| 1995 08 27 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.3+ |
| 2006 09 18 | 703 | 0.9− | 0.8+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 10 22 | 703 | (1.9− | 0.3+) |
| 2006 09 18 | 703 | 0.7+ | 1.3+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.1+ |
| 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.3− | 2006 10 28 | 703 | 0.4+ | 0.0 |
| 2006 09 18 | 703 | (2.3− | 0.5−) | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.6− | 0.8+ |
| 2006 09 25 | 699 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 10 28 | 703 | (2.1+ | 0.2+) |

**2006 SA$_{121}$ = 1999 TM$_{292}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.33647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27999016 | $\omega$ | 233.65877 | | +0.42415482 | +0.89953744 | |
| $a$ | 2.3140578 | $\Omega$ | 61.75595 | | −0.78820580 | +0.42353879 | |
| $e$ | 0.1132589 | $i$ | 6.81417 | | −0.44589719 | +0.10699197 | |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 691 | 0.1+ | 0.3− | 2002 06 18 | 644 | 0.0 | 0.2− | 2006 09 25 | 699 | 1.1+ | 0.9− |
| 1998 05 01 | 691 | 0.0 | 0.7+ | 2002 06 18 | 644 | 0.3+ | 0.2− | 2006 09 25 | 699 | 0.8+ | 0.3+ |
| 1998 05 01 | 691 | 0.6+ | 0.0 | 2005 04 04 | 703 | (2.2− | 0.4−) | 2006 10 04 | G96 | 0.8+ | 0.2+ |
| 1999 10 11 | 704 | 0.3− | 0.4− | 2005 04 04 | 703 | 0.9− | 0.5− | 2006 10 04 | G96 | 0.4− | 0.1+ |
| 1999 10 11 | 704 | 0.6− | 0.1+ | 2005 04 04 | 703 | (3.0− | 0.7−) | 2006 10 04 | G96 | 0.1+ | 0.3+ |
| 1999 10 11 | 704 | 0.2+ | 0.8− | 2005 04 04 | 703 | (1.2− | 3.2+) | 2006 10 04 | G96 | 0.0 | 0.2+ |
| 1999 10 11 | 704 | 0.1+ | 0.5− | 2005 05 15 | 644 | 0.3− | 0.7+ | 2006 10 16 | 703 | 1.3− | 1.0+ |
| 1999 10 19 | 704 | 1.2+ | 0.0 | 2005 05 15 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.4+ | 1.2+ |
| 1999 10 19 | 704 | 1.2− | 1.6+ | 2005 05 15 | 644 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 1999 10 19 | 704 | 0.7− | 0.2− | 2006 09 18 | 703 | 0.3− | 0.5− | 2006 10 16 | 703 | 1.1− | 0.1+ |
| 1999 10 19 | 704 | 0.1− | 0.7− | 2006 09 18 | 703 | 0.8+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2002 06 13 | 644 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.8+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2002 06 13 | 644 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.3+ |
| 2002 06 13 | 644 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.4− | 1.1+ | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2002 06 18 | 644 | 0.1− | 0.2− | 2006 09 25 | 699 | (1.4− | 2.4+) | | | | |

**2006 SF$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.99631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26632792 | $\omega$ | 265.44615 | | +0.92904187 | −0.35283965 | |
| $a$ | 2.3925348 | $\Omega$ | 115.18155 | | +0.36903283 | +0.86231021 | |
| $e$ | 0.1408996 | $i$ | 7.06394 | | +0.02638114 | +0.36321521 | |
| $P$ | 3.70 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 644 | 0.6+ | 0.2+ | 2006 09 25 | 699 | 0.8+ | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2002 08 11 | 644 | 0.5+ | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.8− |
| 2002 08 11 | 644 | 0.7+ | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.4− |
| 2002 08 16 | 608 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2002 08 16 | 608 | 0.0 | 0.6− | 2006 09 26 | 703 | 1.0+ | 1.2− | 2006 10 16 | 703 | 0.9− | 0.5− |
| 2002 08 16 | 608 | 0.3− | 0.6− | 2006 09 26 | 703 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.3+ | 0.1− |
| 2002 08 19 | 644 | 0.6− | 0.4+ | 2006 09 29 | 699 | 0.6− | 0.5+ | 2006 10 28 | 703 | 0.2− | 0.8+ |
| 2002 08 19 | 644 | 0.6− | 0.5+ | 2006 09 29 | 699 | 0.6− | 0.8+ | 2006 10 28 | 703 | 0.4+ | 1.2+ |
| 2002 08 19 | 644 | 0.5− | 0.9+ | 2006 09 29 | 699 | 0.7+ | 0.3+ | 2006 10 28 | 703 | 0.4+ | 0.9+ |
| 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.3− | 2006 11 16 | 703 | (3.0− | 1.8−) |
| 2006 09 18 | 703 | 1.1− | 0.6− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 16 | 703 | (1.4− | 1.9−) |
| 2006 09 18 | 703 | (2.1+ | 0.0 ) | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 16 | 703 | (1.8− | 2.5−) |
| 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 16 | 703 | (3.4− | 3.3−) |
| 2006 09 25 | 699 | 1.1+ | 0.8+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | | | |
| 2006 09 25 | 699 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.1+ | | | | |

**2006 SG$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.93911 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18179371 | $\omega$ | 259.01875 | | +0.23893867 | −0.97094671 | |
| $a$ | 3.0861484 | $\Omega$ | 177.05928 | | +0.96033113 | +0.23429063 | |
| $e$ | 0.1454649 | $i$ | 14.75863 | | +0.14377911 | +0.04868669 | |
| $P$ | 5.42 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 19 | 691 | 0.3− | 0.1+ | 2006 09 18 | 703 | 0.6− | 0.1+ | 2006 10 22 | 703 | 1.0+ | 0.8+ |
| 1996 01 19 | 691 | 0.3+ | 0.6− | 2006 09 18 | 703 | 0.4+ | 1.0+ | 2006 10 22 | 703 | 1.0+ | 0.9+ |
| 1996 01 19 | 691 | 0.1− | 0.3− | 2006 09 18 | 703 | 1.2− | 0.7+ | 2006 10 28 | 703 | 0.8− | 0.7− |
| 2002 01 07 | 608 | 0.7+ | 0.6+ | 2006 09 25 | 699 | 1.4+ | 0.3+ | 2006 10 28 | 703 | 0.9− | 0.1+ |
| 2002 01 07 | 608 | 0.1− | 0.3+ | 2006 09 25 | 699 | (2.7+ | 0.5−) | 2006 10 28 | 703 | 0.4− | 0.1− |
| 2002 01 07 | 608 | 0.7+ | 0.4− | 2006 09 25 | 699 | 0.1− | 0.5+ | 2006 10 28 | 703 | 0.5− | 0.6+ |
| 2003 03 23 | 691 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.7+ | 0.3+ | 2006 11 10 | 704 | 1.2− | 0.8+ |
| 2003 03 23 | 691 | 0.5− | 0.4+ | 2006 09 29 | 699 | 0.9+ | 0.5+ | 2006 11 10 | 704 | 0.0 | 0.9+ |
| 2003 03 23 | 691 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.3+ | 2006 11 10 | 704 | 0.2− | 0.4− |
| 2003 03 29 | 291 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.4+ | 2006 11 10 | 704 | 0.4− | 0.3+ |
| 2003 03 29 | 291 | 0.8+ | 0.3+ | 2006 09 29 | 699 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.7− | 1.0+ |
| 2003 03 29 | 291 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.1+ | 0.2+ |
| 2004 06 13 | 691 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 16 | 703 | 0.4+ | 0.6+ |
| 2004 06 13 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.5− | 0.1+ |
| 2004 06 13 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 703 | (0.0 | 2.2+) | | | | |
| 2006 09 18 | 703 | 0.5− | 0.7− | 2006 10 22 | 703 | (1.6+ | 1.5+) | | | | |

**2006 SN$_{121}$ = 2001 PB$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.87498 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21169478 | $\omega$ | 74.77876 | | +0.96689782 | −0.24892763 | |
| $a$ | 2.7882344 | $\Omega$ | 299.60720 | | +0.20228819 | +0.88173101 | |
| $e$ | 0.1723172 | $i$ | 3.69747 | | +0.15552523 | +0.40073116 | |
| $P$ | 4.66 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 608 | 0.1− | 0.2+ | 2006 09 25 | 704 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.6− | 0.0 |
| 2001 08 14 | 608 | 0.0 | 0.8− | 2006 09 25 | 704 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2001 08 14 | 608 | 0.2+ | 0.6− | 2006 09 30 | 703 | 0.7+ | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 2001 08 16 | 704 | 0.8− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.3+ |
| 2001 08 16 | 704 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.5− | 2006 10 17 | 703 | 0.7+ | 0.1− |
| 2001 08 16 | 704 | 0.5+ | 1.2+ | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2006 09 18 | 699 | 1.3− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2006 09 18 | 699 | 1.1+ | 0.1− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 21 | 460 | 0.6− | 0.3− |
| 2006 09 18 | 699 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 10 21 | 460 | 0.2− | 0.3− |
| 2006 09 25 | 704 | (0.9− | 2.2+) | 2006 10 10 | 644 | 0.4− | 0.3+ | 2006 10 21 | 460 | 0.2− | 0.1− |
| 2006 09 25 | 704 | 0.8+ | 0.3+ | 2006 10 10 | 644 | 0.4− | 0.3+ | | | | |

**2006 SR$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.89840 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17756111 | $\omega$ | 252.27612 | | +0.76096713 | −0.64106320 | |
| $a$ | 3.1349995 | $\Omega$ | 147.38339 | | +0.64300077 | +0.72468258 | |
| $e$ | 0.2405163 | $i$ | 10.67380 | | +0.08648142 | +0.25273135 | |
| $P$ | 5.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 691 | 0.3+ | 0.0 | 2005 06 11 | 691 | 0.4− | 0.7+ | 2006 09 23 | G92 | 0.9− | 0.8+ |
| 2000 09 05 | 691 | 0.3+ | 0.1− | 2005 06 11 | 691 | 0.2+ | 0.4+ | 2006 10 28 | 703 | 0.6+ | 0.8+ |
| 2000 09 05 | 691 | 0.1+ | 0.1− | 2005 06 11 | 691 | 0.0 | 0.8+ | 2006 10 28 | 703 | (0.4+ | 2.0+) |
| 2000 10 02 | 699 | 0.5− | 0.7− | 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.4− | 0.4− |
| 2000 10 02 | 699 | 0.2− | 0.9+ | 2005 07 12 | G96 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.4+ | 0.1+ |
| 2000 10 02 | 699 | 0.7− | 0.5+ | 2005 07 12 | G96 | 0.5− | 0.2− | 2006 10 30 | 703 | 0.5− | 0.4+ |
| 2000 10 02 | 699 | 0.8− | 0.2+ | 2005 07 12 | G96 | 0.2+ | 0.2+ | 2006 10 30 | 703 | 0.5+ | 0.2− |
| 2002 02 16 | 644 | 0.0 | 1.4+ | 2006 09 18 | 703 | 0.5+ | 1.0+ | 2006 10 30 | 703 | 0.7− | 0.7+ |
| 2002 02 16 | 644 | 0.0 | 1.2+ | 2006 09 18 | 703 | 0.1+ | 1.0+ | 2006 10 30 | 703 | 0.0 | 0.7− |
| 2002 02 16 | 644 | 0.2+ | 1.1+ | 2006 09 18 | 703 | 0.4− | 0.9+ | 2006 11 19 | 703 | 0.0 | 0.3− |
| 2003 03 27 | 691 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.7− | 2006 11 19 | 703 | 0.5− | 0.1+ |
| 2003 03 27 | 691 | 0.1+ | 1.1+ | 2006 09 23 | G92 | 1.2+ | 0.9+ | 2006 11 19 | 703 | 0.4− | 0.8+ |
| 2003 03 27 | 691 | 0.1+ | 0.2− | 2006 09 23 | G92 | 0.5− | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.0 |

**2006 SS$_{121}$ = 2006 RD$_{103}$ = 2005 GJ$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.50448 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22890539 | $\omega$ | 211.49750 | | +0.37227369 | +0.92571427 | |
| $a$ | 2.6466634 | $\Omega$ | 80.43154 | | −0.83683296 | +0.36592428 | |
| $e$ | 0.1074729 | $i$ | 3.88571 | | −0.40140117 | +0.09566880 | |
| $P$ | 4.31 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.2+ | 0.1+ | 2005 04 14 | 691 | 0.1− | 0.1− | 2006 09 25 | 734 | 1.0− | 0.3+ |
| 1998 11 14 | 691 | 0.3+ | 0.3+ | 2006 09 15 | 734 | 0.3+ | 0.3− | 2006 09 25 | 734 | 0.7+ | 0.2+ |
| 1998 11 14 | 691 | 0.3+ | 0.2− | 2006 09 15 | 734 | 0.1+ | 0.0 | 2006 09 25 | 734 | 0.3− | 0.9+ |
| 2002 07 06 | 291 | 0.8− | 0.3− | 2006 09 15 | 734 | 0.1+ | 0.0 | 2006 09 25 | 734 | 0.4− | 1.0+ |
| 2002 07 06 | 291 | 0.8− | 0.1+ | 2006 09 15 | 734 | 0.3− | 0.1+ | 2006 09 25 | 734 | 0.1− | 0.4+ |
| 2002 07 06 | 291 | 0.6− | 0.2+ | 2006 09 15 | 734 | 0.3− | 0.7+ | 2006 09 26 | 734 | 0.2+ | 0.6+ |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 09 18 | 734 | 0.6− | 0.4+ | 2006 09 26 | 734 | 0.2+ | 0.6+ |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 09 18 | 734 | 0.1− | 0.7− | 2006 09 26 | 734 | 0.2− | 0.2+ |
| 2004 01 27 | 691 | 0.2− | 0.7+ | 2006 09 18 | 734 | 0.0 | 0.6− | 2006 09 26 | 734 | 0.2− | 0.2+ |
| 2005 04 02 | 691 | 0.3+ | 0.8+ | 2006 09 18 | 734 | 0.1+ | 0.4− | 2006 09 26 | 734 | 0.2− | 0.1+ |
| 2005 04 02 | 691 | 0.3+ | 0.0 | 2006 09 18 | 734 | 0.2− | 0.3− | 2006 09 27 | 734 | 0.2− | 0.1+ |
| 2005 04 02 | 691 | 0.1− | 0.2+ | 2006 09 18 | 734 | 0.1+ | 0.3+ | 2006 09 27 | 734 | 0.9+ | 0.1+ |
| 2005 04 10 | 691 | 0.0 | 0.1+ | 2006 09 18 | 734 | (3.3+ | 1.4−) | 2006 09 27 | 734 | 0.2+ | 0.1− |
| 2005 04 10 | 691 | 0.2− | 0.1− | 2006 09 19 | 734 | 0.3+ | 0.4+ | 2006 09 27 | 734 | 0.3− | 0.1+ |
| 2005 04 10 | 691 | 0.2− | 0.1+ | 2006 09 19 | 734 | 1.1− | 0.8+ | 2006 10 24 | 734 | 0.0 | 0.7+ |
| 2005 04 14 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 734 | 0.4+ | 0.0 | 2006 10 24 | 734 | 0.4− | 0.4+ |
| 2005 04 14 | 691 | 0.2+ | 0.2+ | 2006 09 19 | 734 | 0.0 | 0.3− | | | | |

**2006 SV$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.87190 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23186957 | $\omega$ | 58.85460 | | +0.71977529 | −0.69219978 | |
| $a$ | 2.6240587 | $\Omega$ | 344.73111 | | +0.54899638 | +0.61408065 | |
| $e$ | 0.2028688 | $i$ | 11.55567 | | +0.42488411 | +0.37916278 | |
| $P$ | 4.25 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 20 | 644 | 0.2+ | 0.4− | 2006 09 19 | 703 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 2002 10 20 | 644 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 1.3− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 2002 10 20 | 644 | 0.2+ | 0.5− | 2006 09 19 | 703 | 0.9− | 0.6+ | 2006 10 20 | 691 | 0.3+ | 0.3+ |
| 2002 11 25 | 644 | 0.0 | 0.4+ | 2006 09 24 | 106 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2002 11 25 | 644 | 0.4− | 0.1+ | 2006 09 24 | 106 | 1.0+ | 1.1− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2002 11 25 | 644 | 0.4− | 0.3+ | 2006 09 24 | 106 | 0.5+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2006 09 19 | 703 | 0.5− | 1.2+ | 2006 09 24 | 106 | 0.4+ | 1.0− | | | | |

**2006 SW$_{121}$ = 1998 YT$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.09044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23483858 | $\omega$ | 266.58911 | | +0.60096701 | −0.79882294 | |
| $a$ | 2.6018949 | $\Omega$ | 146.42504 | | +0.75124404 | +0.55306857 | |
| $e$ | 0.1950036 | $i$ | 2.78214 | | +0.27289384 | +0.23663699 | |
| $P$ | 4.20 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 17 | 910 | 0.3+ | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.7+ | 0.3− |
| 1998 12 17 | 910 | 0.4+ | 0.1+ | 2006 07 25 | G96 | 0.2− | 0.1− | 2006 09 19 | 703 | 0.3+ | 0.1+ |
| 1998 12 17 | 910 | 0.3+ | 0.2− | 2006 07 25 | G96 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.7+ | 0.5+ |
| 1998 12 25 | 910 | 0.6− | 0.3− | 2006 07 25 | G96 | 0.2− | 0.0 | 2006 09 25 | 699 | 0.1− | 0.0 |
| 1998 12 25 | 910 | 0.1− | 0.0 | 2006 07 25 | G96 | 0.6− | 0.4− | 2006 09 25 | 699 | 0.8− | 0.2+ |
| 1998 12 26 | 910 | 0.2− | 0.3− | 2006 09 16 | 699 | (1.3− | 3.4+) | 2006 09 25 | 699 | 0.2− | 0.4+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 644 | 0.2+ | 0.6+ | 2006 09 16 | 699 | 1.1− | 2.9+ | 2006 10 02 | G96 | 0.4+ | 0.4− |
| 2002 10 11 | 644 | 0.2− | 0.5+ | 2006 09 16 | 699 | 2.1+ | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.4− |
| 2002 10 11 | 644 | 0.4− | 0.6+ | 2006 09 16 | 699 | 0.5+ | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2004 03 23 | 691 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 1.3− | 1.2− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 09 19 | 703 | 0.0 | 1.7− | | | | |

**2006 SF$_{122}$ = 2000 JC$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.84441 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.36491020 | $\omega$ | 75.07002 | | +0.51706042 | | +0.82057430 |
| $a$ | 1.9394506 | $\Omega$ | 228.72619 | | −0.85543598 | | +0.48554624 |
| $e$ | 0.0808157 | $i$ | 18.90674 | | −0.02962768 | | +0.30150070 |
| $P$ | 2.70 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.2+ | 0.2− | 2006 09 25 | 703 | 0.7− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.7− |
| 2000 05 07 | 704 | 0.4+ | 0.9− | 2006 09 25 | 703 | 1.0− | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.6+ |
| 2000 05 07 | 704 | 0.6+ | 0.2− | 2006 09 25 | 703 | 0.0 | 1.4− | 2006 10 22 | 644 | 0.4+ | 0.5+ |
| 2000 05 07 | 704 | 0.1+ | 0.3− | 2006 09 28 | 703 | 0.8− | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2000 05 11 | 699 | 0.9− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.5+ |
| 2000 05 11 | 699 | 0.6− | 1.1+ | 2006 09 28 | 703 | 0.5− | 0.1+ | 2006 10 27 | 703 | 1.2+ | 0.5+ |
| 2000 05 11 | 699 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.9− | 0.1+ | 2006 10 27 | 703 | 0.4− | 1.2+ |
| 2000 05 11 | 699 | 0.1+ | 1.6+ | 2006 10 19 | 703 | 0.9− | 0.4− | 2006 10 27 | 703 | 0.4+ | 0.9+ |
| 2006 09 19 | 703 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.0 | 0.4+ |
| 2006 09 19 | 703 | 0.9+ | 0.0 | 2006 10 19 | 703 | 0.5+ | 0.5− | 2006 11 25 | G96 | 0.6+ | 0.5+ |
| 2006 09 19 | 703 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.8− | 2006 11 25 | G96 | 0.1+ | 0.4+ |
| 2006 09 19 | 703 | 0.1− | 1.2− | 2006 10 19 | 703 | 0.2+ | 0.4− | | | | |
| 2006 09 25 | 703 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.6+ | 0.7− | | | | |

**2006 SJ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.14092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19051315 | $\omega$ | 99.06852 | | +0.75259574 | | −0.62345848 |
| $a$ | 2.9912502 | $\Omega$ | 299.80467 | | +0.46625640 | | +0.73177960 |
| $e$ | 0.0669913 | $i$ | 14.13428 | | +0.46497809 | | +0.27531463 |
| $P$ | 5.17 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.6− | 0.2+ | 2006 10 23 | 703 | 0.7− | 0.5− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.3+ | 0.5+ | 2006 10 31 | 703 | 0.1+ | 0.3− |
| 2005 07 07 | 691 | 0.5+ | 0.1− | 2006 09 25 | 703 | 0.1− | 0.8+ | 2006 10 31 | 703 | 0.1+ | 0.1+ |
| 2005 07 07 | 691 | 0.5− | 0.4− | 2006 10 17 | 106 | 1.1+ | 0.2+ | 2006 10 31 | 703 | 0.3+ | 0.4+ |
| 2005 07 07 | 691 | 0.0 | 0.5+ | 2006 10 17 | 106 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.4+ | 0.3− |
| 2006 09 19 | 703 | 0.6− | 0.2− | 2006 10 17 | 106 | 0.0 | 1.0− | 2006 11 22 | 703 | 1.5− | 0.7+ |
| 2006 09 19 | 703 | 1.3+ | 0.4+ | 2006 10 17 | 106 | 0.1− | 0.5+ | 2006 11 22 | 703 | 0.9+ | 0.6− |
| 2006 09 19 | 703 | 0.5+ | 0.0 | 2006 10 23 | 703 | 0.0 | 0.7− | 2006 11 22 | 703 | 1.4− | 0.1− |
| 2006 09 19 | 703 | 1.1+ | 0.1− | 2006 10 23 | 703 | 0.2− | 0.3+ | 2006 11 22 | 703 | 0.5− | 0.7− |
| 2006 09 25 | 703 | 0.1− | 0.4− | 2006 10 23 | 703 | 0.4− | 0.4+ | | | | |

**2006 SK$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.46756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24080293 | $\omega$ | 11.20235 | | +0.70744907 | | +0.68180236 |
| $a$ | 2.5587520 | $\Omega$ | 304.16051 | | −0.66458939 | | +0.55210357 |
| $e$ | 0.1734957 | $i$ | 13.00255 | | −0.24049273 | | +0.47992415 |
| $P$ | 4.09 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.0 | 1.1+ | 2006 09 19 | 703 | 0.8+ | 0.4+ | 2006 10 17 | 106 | 0.2+ | 0.2+ |
| 2001 06 27 | 644 | 0.5+ | 0.4+ | 2006 09 19 | 703 | 0.1+ | 0.3+ | 2006 10 23 | 703 | 0.4− | 0.2+ |
| 2001 06 27 | 644 | 0.5+ | 1.1+ | 2006 09 25 | 703 | 0.7− | 0.9+ | 2006 10 23 | 703 | 0.1+ | 0.1− |
| 2002 10 13 | 644 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.8− | 0.3+ | 2006 10 23 | 703 | 0.5− | 0.0 |
| 2002 10 13 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 703 | 0.1− | 0.5+ | 2006 10 23 | 703 | (0.6+ | 2.4−) |
| 2002 10 13 | 644 | 0.3+ | 0.3+ | 2006 09 25 | 703 | 0.3− | 1.0+ | 2006 10 27 | 106 | 0.3− | 0.1− |
| 2002 10 20 | 644 | 0.1+ | 0.2− | 2006 10 02 | 703 | 0.1+ | 0.3+ | 2006 10 27 | 106 | 0.2+ | 1.0− |
| 2002 10 20 | 644 | 0.3+ | 0.3+ | 2006 10 02 | 703 | (0.5+ | 1.7+) | 2006 10 27 | 106 | 0.8− | 0.4+ |
| 2002 10 20 | 644 | 0.2+ | 0.0 | 2006 10 02 | 703 | (0.4− | 1.6+) | 2006 10 27 | 106 | 0.5+ | 0.1− |
| 2002 11 25 | 644 | 0.1− | 0.0 | 2006 10 02 | 703 | 1.2− | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.3+ |
| 2002 11 25 | 644 | 0.7− | 0.7− | 2006 10 17 | 106 | 0.6+ | 0.1− | 2006 11 16 | 703 | 0.0 | 0.5+ |
| 2002 11 25 | 644 | 0.2− | 0.2+ | 2006 10 17 | 106 | 0.5+ | 0.4+ | 2006 11 16 | 703 | 0.2− | 0.2− |
| 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 106 | 0.4+ | 0.3+ | 2006 11 16 | 703 | 0.4− | 0.6− |
| 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 106 | 0.6− | 0.7− | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 10 17 | 106 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.6− |
| 2006 09 19 | 703 | 1.1+ | 0.8− | 2006 10 17 | 106 | 0.7− | 0.4+ | 2006 11 22 | 703 | 0.6+ | 0.0 |
| 2006 09 19 | 703 | 0.5− | 0.2+ | 2006 10 17 | 106 | 0.9+ | 0.4− | 2006 11 22 | 703 | 1.2+ | 0.7+ |

**2006 SQ$_{122}$ = 2001 OW$_{33}$ = 2004 DV$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.62957 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21856687 | $\omega$ | 338.39961 | | +0.82509037 | | +0.56261541 |
| $a$ | 2.7294794 | $\Omega$ | 346.97293 | | −0.47882823 | | +0.64757153 |
| $e$ | 0.0760167 | $i$ | 13.30190 | | −0.29991568 | | +0.51392120 |
| $P$ | 4.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.4− | 0.4+ | 2006 08 29 | 699 | 0.4+ | 0.6− | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2001 07 19 | 644 | 0.4− | 0.2− | 2006 09 19 | 699 | 0.5+ | 0.6+ | 2006 10 11 | 104 | 0.2+ | 0.1− |
| 2001 07 19 | 644 | 0.2− | 0.2+ | 2006 09 19 | 699 | 0.5− | 0.3− | 2006 10 11 | 104 | 0.2+ | 0.3− |
| 2001 07 25 | 644 | 0.6− | 0.4+ | 2006 09 19 | 699 | 0.3+ | 0.7− | 2006 10 11 | 104 | 0.2+ | 0.1− |
| 2001 07 25 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 1.5− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ |
| 2001 07 25 | 644 | 0.2+ | 1.1+ | 2006 09 24 | 104 | 0.3+ | 0.9− | 2006 10 12 | 644 | 0.2− | 0.2− |
| 2004 02 23 | 704 | 0.2− | 0.2+ | 2006 09 24 | 104 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2004 02 23 | 704 | 0.5+ | 1.1+ | 2006 09 24 | 104 | 0.4− | 0.4+ | 2006 10 16 | 104 | (0.0 | 1.8−) |
| 2004 02 23 | 704 | 0.3− | 0.2+ | 2006 09 27 | 699 | 0.0 | 0.8+ | 2006 10 16 | 104 | 0.9+ | 0.3− |
| 2004 02 23 | 704 | 0.6+ | 0.3− | 2006 09 27 | 699 | 0.0 | 0.1+ | 2006 10 16 | 104 | 0.1+ | 0.6+ |
| 2004 02 23 | 704 | 0.1+ | 0.2+ | 2006 09 27 | 699 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2004 02 26 | 704 | 1.1+ | 1.4+ | 2006 09 27 | 699 | 0.9+ | 0.6+ | 2006 10 17 | 703 | 0.3+ | 1.1+ |
| 2004 02 26 | 704 | (2.1+ | 0.3+) | 2006 09 27 | 703 | 0.8− | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.1+ |
| 2004 02 26 | 704 | (0.4− | 2.9+) | 2006 09 27 | 703 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.8+ |
| 2004 02 26 | 704 | (0.5− | 2.1+) | 2006 09 27 | 703 | 0.7− | 1.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2006 08 29 | 699 | 0.8+ | 1.1− | 2006 09 27 | 703 | 0.5− | 1.1+ | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 2006 08 29 | 699 | 1.4− | 1.9− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 08 29 | 699 | 0.6− | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.2+ | | | | |

**2006 SS$_{122}$ = 2000 EE$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.21403 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23029447 | $\omega$ | 8.33151 | | −0.84079412 | | +0.53487603 |
| $a$ | 2.6360099 | $\Omega$ | 204.57408 | | −0.50753899 | | −0.83250160 |
| $e$ | 0.1254859 | $i$ | 11.58335 | | −0.18833327 | | −0.14439087 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 645 | 0.1+ | 0.0 | 2005 06 03 | E12 | 0.3− | 0.1+ | 2006 09 19 | 699 | 0.3+ | 0.0 |
| 2000 03 04 | 645 | 0.0 | 0.0 | 2005 07 02 | 703 | 0.7+ | 0.4+ | 2006 09 19 | 699 | 0.6+ | 1.2+ |
| 2000 03 08 | 704 | 0.7− | 0.2− | 2005 07 02 | 703 | 0.4+ | 0.5− | 2006 09 19 | 699 | 0.8+ | 0.0 |
| 2000 03 08 | 704 | 0.2+ | 0.2+ | 2005 07 02 | 703 | 0.3+ | 0.5+ | 2006 09 25 | 704 | 0.2− | 0.3− |
| 2000 03 08 | 704 | 0.6− | 0.3− | 2005 07 02 | 703 | 1.0− | 0.6+ | 2006 09 25 | 704 | 0.5+ | 0.1− |
| 2000 03 08 | 704 | (0.0 | 2.1+) | 2006 08 29 | 699 | 1.7− | 0.4+ | 2006 09 25 | 704 | 0.5− | 1.1+ |
| 2000 03 08 | 704 | 0.0 | 0.1− | 2006 08 29 | 699 | 2.6− | 1.2− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2005 06 03 | E12 | 0.5− | 0.2+ | 2006 08 29 | 699 | 0.2− | 0.6− | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 2005 06 03 | E12 | 0.4+ | 0.5− | 2006 08 29 | 699 | 0.1− | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 2005 06 03 | E12 | 0.1+ | 0.2− | 2006 09 19 | 699 | 0.7+ | 0.0 | | | | |

**2006 SD$_{123}$ = 2005 ME$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.29875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21648611 | $\omega$ | 239.50576 | | +0.96791452 | −0.21317116 | |
| $a$ | 2.7469412 | $\Omega$ | 132.44291 | | +0.24300241 | +0.92884577 | |
| $e$ | 0.0926271 | $i$ | 10.38622 | | −0.06396328 | +0.30299109 | |
| $P$ | 4.55 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 28 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.2+ | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3− |
| 2005 06 28 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 703 | 1.4+ | 1.3− | 2006 10 12 | 644 | 0.0 | 0.7+ |
| 2005 06 28 | 691 | 0.1− | 0.0 | 2006 09 25 | 703 | 1.0+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2005 07 01 | 691 | 0.1+ | 0.0 | 2006 09 25 | 703 | 1.3− | 1.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 2005 07 01 | 691 | 0.1− | 0.1+ | 2006 09 25 | 703 | 0.6− | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2005 07 01 | 691 | 0.1− | 0.1− | 2006 09 25 | 703 | 0.8+ | 0.4− | 2006 10 21 | 703 | (0.0 | 1.8−) |
| 2006 09 19 | 703 | 0.7− | 0.5− | 2006 10 10 | 644 | 0.4+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.0 |
| 2006 09 19 | 703 | 1.0− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.6− |

**2006 SJ$_{123}$ = 2002 UX$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.48100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24085351 | $\omega$ | 351.90062 | | +0.89080443 | −0.43346903 | |
| $a$ | 2.5583938 | $\Omega$ | 34.83031 | | +0.42912154 | +0.70392861 | |
| $e$ | 0.2324012 | $i$ | 13.80429 | | +0.14940609 | +0.56266252 | |
| $P$ | 4.09 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.4− | 0.5− | 2006 09 25 | 703 | 0.9− | 0.6+ | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 2002 10 31 | 704 | 0.5+ | 0.0 | 2006 09 25 | 703 | 0.4+ | 0.6+ | 2006 10 21 | 703 | 0.2− | 0.2− |
| 2002 10 31 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 703 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.6− |
| 2002 10 31 | 704 | 0.0 | 0.4+ | 2006 09 25 | 703 | 0.4+ | 1.4− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2002 10 31 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 11 07 | 695 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2002 11 07 | 695 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.3− | 0.3+ |
| 2006 09 19 | 703 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 19 | 703 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 19 | 703 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.7+ | 0.7− | | | | |
| 2006 09 19 | 703 | 0.5− | 0.4− | 2006 10 21 | 703 | 0.2− | 0.1− | | | | |

**2006 SY$_{123}$ = 2005 FM**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.18148 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37138032 | $\omega$ | 61.09128 | | +0.12285581 | −0.98234888 | |
| $a$ | 1.9168588 | $\Omega$ | 23.17170 | | +0.73898698 | −0.00431846 | |
| $e$ | 0.0997841 | $i$ | 21.00682 | | +0.66242335 | +0.18700812 | |
| $P$ | 2.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | 704 | 0.1− | 1.0− | 2006 09 19 | 703 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.0 | 0.0 |
| 2005 03 16 | 704 | 0.2− | 0.9+ | 2006 09 19 | 703 | 0.6− | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.3+ |
| 2005 03 16 | 704 | 0.5+ | 0.8+ | 2006 09 19 | 703 | 0.1− | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.5+ |
| 2005 03 16 | 704 | 1.4+ | 0.3− | 2006 09 19 | 703 | 0.5+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.1+ |
| 2005 03 17 | 704 | 0.2− | 0.5− | 2006 09 25 | 703 | 1.1− | 0.1+ | 2006 10 22 | 703 | 0.7− | 0.4+ |
| 2005 03 17 | 704 | 0.8− | 0.0 | 2006 09 25 | 703 | 0.3+ | 1.1− | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2005 03 17 | 704 | 0.2− | 0.1+ | 2006 09 25 | 703 | (1.6− | 0.7−) | 2006 10 22 | 703 | 0.6+ | 0.7+ |
| 2005 03 17 | 704 | 1.2+ | 0.2− | 2006 09 25 | 703 | 0.9+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.4+ |
| 2005 03 17 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | (2.2+ | 1.2−) | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2005 03 17 | 704 | 0.6− | 0.8+ | 2006 10 16 | 703 | 0.7+ | 0.8+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2005 03 17 | 704 | 0.7− | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.8+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2005 05 09 | G96 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.9− | 2006 11 11 | G96 | 0.5+ | 0.0 |
| 2005 05 09 | G96 | 0.3+ | 0.0 | 2006 10 16 | 703 | 1.1− | 1.1− | 2006 11 11 | G96 | 0.9+ | 0.0 |
| 2005 05 09 | G96 | 0.4+ | 0.2+ | 2006 10 16 | 703 | (3.2− | 0.8+) | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2005 05 09 | G96 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.2− | | | | |

**2006 SE$_{124}$ = 2005 MJ$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.28355 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22048102 | $\omega$ | 279.24709 | | +0.99101180 | +0.04392478 | |
| $a$ | 2.7136588 | $\Omega$ | 78.31084 | | +0.01310006 | +0.90815132 | |
| $e$ | 0.0589457 | $i$ | 7.41375 | | −0.13313149 | +0.41633135 | |
| $P$ | 4.47 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | G96 | 0.1− | 0.3+ | 2006 09 19 | 703 | 0.0 | 0.1− | 2006 10 10 | G92 | 0.2+ | 0.1+ |
| 2005 06 27 | G96 | 0.0 | 0.2− | 2006 09 19 | 703 | 0.1+ | 1.4− | 2006 10 10 | G92 | 0.1− | 0.8− |
| 2005 06 27 | G96 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.2− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.6+ |
| 2005 06 27 | G96 | 0.1+ | 0.2− | 2006 09 25 | 703 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2005 06 28 | G96 | 0.1− | 0.0 | 2006 09 25 | 703 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2005 06 28 | G96 | 0.1− | 0.3− | 2006 09 25 | 703 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2005 06 28 | G96 | 0.4+ | 0.2− | 2006 09 25 | 703 | 0.9+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.3− |
| 2005 06 28 | G96 | 0.0 | 0.4+ | 2006 10 10 | G92 | 0.2− | 0.9+ | 2006 10 12 | 644 | 0.3− | 0.7− |

**2006 SG$_{124}$ = 2000 QJ$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.22252 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17917229 | $\omega$ | 231.09977 | | +0.97491255 | −0.16782596 | |
| $a$ | 3.1161773 | $\Omega$ | 137.97229 | | +0.19947131 | +0.95022831 | |
| $e$ | 0.1592350 | $i$ | 12.61527 | | −0.09877605 | +0.26248925 | |
| $P$ | 5.50 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.7− | 0.3− | 2006 09 25 | 699 | 0.3− | 0.4− | 2006 10 21 | 703 | 1.0+ | 0.1− |
| 2000 08 24 | 704 | 0.5+ | 0.2+ | 2006 09 26 | 703 | (0.9− | 1.9+) | 2006 10 21 | 703 | 0.6− | 0.3+ |
| 2000 08 24 | 704 | 0.4+ | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.7+ | 2006 10 21 | 703 | 0.5+ | 0.2+ |
| 2000 08 24 | 704 | 0.6− | 0.7+ | 2006 09 26 | 703 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2000 08 27 | 807 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2000 08 27 | 807 | 0.2+ | 0.1− | 2006 10 02 | 703 | 0.4− | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2006 09 19 | 703 | 0.4− | 1.3− | 2006 10 02 | 703 | 0.3− | 0.4− | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2006 09 19 | 703 | 1.0− | 0.8− | 2006 10 02 | 703 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.3+ |
| 2006 09 19 | 703 | 0.1+ | 0.6− | 2006 10 02 | 703 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2006 09 19 | 703 | 0.5− | 1.0− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 14 | 291 | 0.1− | 0.1+ |
| 2006 09 25 | 699 | 1.0− | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 14 | 291 | 0.1− | 0.1+ |
| 2006 09 25 | 699 | 0.7+ | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.2− | 2006 11 14 | 291 | 0.1− | 0.2+ |
| 2006 09 25 | 699 | 0.8+ | 0.4+ | 2006 10 21 | 703 | 0.5+ | 0.5− | | | | |

**2006 SH$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.14361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23129082 | $\omega$ | 322.47607 | | +0.97322774 | +0.06629374 | |
| $a$ | 2.6284343 | $\Omega$ | 35.68415 | | +0.09549800 | +0.75430717 | |
| $e$ | 0.0860219 | $i$ | 22.16542 | | −0.20906436 | +0.65316601 | |
| $P$ | 4.26 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1− | 0.3+ | 2006 09 25 | 699 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2002 11 13 | 644 | 0.3− | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.8− | 2006 10 22 | 703 | 0.7+ | 0.6− |
| 2002 11 13 | 644 | 0.1− | 0.0 | 2006 09 25 | 699 | 0.2+ | 0.7− | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 11 25 | 644 | 0.1− | 0.5− | 2006 09 25 | 699 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.5+ | 1.4+ |
| 2002 11 25 | 644 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.1− | 0.8+ | 2006 10 22 | 703 | 0.6+ | 0.5+ |
| 2002 11 25 | 644 | 0.3+ | 0.1− | 2006 09 26 | 703 | 1.0− | 0.7+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2002 12 05 | 699 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.0 | 0.6+ | 2006 10 22 | 703 | 0.7+ | 0.1+ |
| 2002 12 05 | 699 | 1.0− | 0.0 | 2006 09 26 | 703 | 0.4− | 0.6+ | 2006 10 22 | 703 | 0.5+ | 0.1+ |
| 2002 12 05 | 699 | 0.4+ | 0.8+ | 2006 09 29 | 699 | 0.5− | 1.1− | 2006 10 22 | 703 | (0.5+ | 1.8−) |
| 2002 12 05 | 699 | 0.2+ | 1.1− | 2006 09 29 | 699 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.7− | 0.5+ |
| 2006 09 19 | 703 | 0.5− | 1.4− | 2006 09 29 | 699 | 0.3+ | 0.6+ | 2006 11 13 | 703 | (2.7− | 1.3+) |
| 2006 09 19 | 703 | 0.2+ | 0.5+ | 2006 09 29 | 699 | 0.2+ | 0.9− | 2006 11 13 | 703 | 0.9+ | 0.2− |
| 2006 09 19 | 703 | 0.6+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.8+ | 2006 11 13 | 703 | 0.0 | 1.2− |
| 2006 09 19 | 703 | 1.0− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.2+ | | | | |

**2006 SL$_{124}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.19393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19249460 | $\omega$ | 243.16549 | | +0.98679780 | | +0.00480155 |
| $a$ | 2.9706878 | $\Omega$ | 116.17861 | | +0.04760016 | | +0.94681575 |
| $e$ | 0.1290200 | $i$ | 10.39246 | | −0.15480414 | | +0.32174039 |
| $P$ | 5.12 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 644 | 0.1+ | 0.1+ | 2006 09 29 | 699 | 0.9+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.4− |
| 2001 10 23 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.8+ | 0.8− | 2006 10 17 | 703 | 0.2+ | 0.6− |
| 2001 10 23 | 644 | 0.2+ | 0.0 | 2006 09 30 | 704 | 1.2− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 11 12 | 608 | 0.3− | 0.2− | 2006 09 30 | 704 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2001 11 12 | 608 | 0.1− | 0.5− | 2006 09 30 | 704 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 11 12 | 608 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2006 09 19 | 703 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2006 09 19 | 703 | 0.7− | 1.8− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2− |
| 2006 09 25 | 699 | 0.8− | 1.4+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.6+ | 1.0+ |
| 2006 09 25 | 699 | 0.3+ | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 10 28 | 703 | 0.4+ | 1.5− |
| 2006 09 25 | 699 | 0.6− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 1.0− | 0.3− |
| 2006 09 25 | 699 | 0.7+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.2− | 0.0 |
| 2006 09 29 | 699 | 0.7+ | 0.3− | 2006 10 17 | 703 | 0.8− | 0.1− | | | | |
| 2006 09 29 | 699 | 1.5+ | 0.6− | 2006 10 17 | 703 | 0.1+ | 0.5+ | | | | |

**2006 SO$_{124}$ = 2002 RH$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.90774 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25517962 | $\omega$ | 234.82350 | | +0.98248100 | | +0.09482723 |
| $a$ | 2.4617204 | $\Omega$ | 119.24167 | | −0.04132977 | | +0.95029656 |
| $e$ | 0.0808250 | $i$ | 10.59489 | | −0.18172212 | | +0.29655393 |
| $P$ | 3.86 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 608 | 0.1+ | 0.6− | 2006 09 25 | 699 | 0.7− | 0.7− | 2006 10 17 | 703 | 0.6+ | 0.4+ |
| 2002 09 14 | 608 | 0.0 | 0.2− | 2006 09 25 | 699 | (1.8+ | 0.5+) | 2006 10 17 | 703 | 0.5− | 1.3− |
| 2002 09 14 | 608 | 0.3− | 0.9− | 2006 10 02 | 703 | 1.1− | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 2002 09 17 | 644 | 0.1+ | 0.8+ | 2006 10 02 | 703 | 0.7+ | 0.3+ | 2006 10 17 | 703 | 1.1+ | 1.0− |
| 2002 09 17 | 644 | 0.1− | 0.9+ | 2006 10 02 | 703 | 0.4− | 0.6− | 2006 10 31 | 703 | 0.2− | 0.2− |
| 2002 09 17 | 644 | 0.1− | 0.8+ | 2006 10 02 | 703 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.9− | 1.1+ |
| 2006 09 19 | 703 | 0.5+ | 0.2+ | 2006 10 10 | 644 | 0.3+ | 0.5− | 2006 10 31 | 703 | 0.5+ | 1.3− |
| 2006 09 19 | 703 | 0.3+ | 1.3− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 31 | 703 | 0.2+ | 0.7− |
| 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.7− |
| 2006 09 19 | 703 | 1.0+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.6+ |
| 2006 09 25 | 699 | 0.3− | 1.3+ | 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.9+ |
| 2006 09 25 | 699 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 1.0− | 1.1+ |

**2006 SQ$_{124}$ = 1994 RK$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.90353 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17178856 | $\omega$ | 263.72446 | | +0.40806182 | | −0.90372741 |
| $a$ | 3.2048415 | $\Omega$ | 160.54739 | | +0.91259720 | | +0.40774576 |
| $e$ | 0.1631008 | $i$ | 22.87770 | | −0.02553231 | | +0.13046139 |
| $P$ | 5.74 | $H$ | 14.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 05 | 809 | 0.6+ | 1.2+ | 2006 10 04 | 703 | 0.9+ | 0.4+ | 2006 10 25 | E12 | 0.6+ | 0.3+ |
| 1994 09 05 | 809 | 1.3+ | 0.0 | 2006 10 04 | 703 | (1.6− | 1.0+) | 2006 10 31 | 703 | 0.1− | 0.1− |
| 1994 09 05 | 809 | 0.2− | 0.7− | 2006 10 04 | 703 | 0.3− | 0.3− | 2006 10 31 | 703 | 0.4+ | 0.8+ |
| 1994 09 06 | 809 | 1.3− | 0.8+ | 2006 10 21 | 703 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.2+ | 0.2+ |
| 1994 09 06 | 809 | 0.6+ | 0.4− | 2006 10 21 | 703 | 0.4− | 0.2− | 2006 10 31 | 703 | 0.3− | 0.2+ |
| 1994 09 06 | 809 | 0.9− | 0.8− | 2006 10 21 | 703 | 0.2+ | 0.4− | 2006 11 18 | 703 | 0.5− | 0.1+ |
| 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.1+ | 2006 11 18 | 703 | 0.2+ | 0.0 |
| 2006 09 19 | 703 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.9− | 2006 11 18 | 703 | 0.6+ | 0.6− |
| 2006 09 19 | 703 | 0.2+ | 0.4− | 2006 10 21 | 703 | (0.6− | 1.7−) | 2006 11 18 | 703 | 0.2− | 0.2− |
| 2006 09 19 | 703 | 0.7− | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.1− | 2006 11 24 | 703 | 0.7+ | 0.3+ |
| 2006 09 25 | 703 | 0.5− | 0.5+ | 2006 10 21 | 703 | 0.7− | 0.2− | 2006 11 24 | 703 | 0.1− | 0.3− |
| 2006 09 25 | 703 | 0.5− | 0.4+ | 2006 10 25 | E12 | 0.7+ | 0.0 | 2006 11 24 | 703 | 1.2− | 0.6+ |
| 2006 09 25 | 703 | 0.2− | 0.1− | 2006 10 25 | E12 | 0.2− | 0.1+ | 2006 11 24 | 703 | (2.0− | 0.3−) |
| 2006 10 04 | 703 | 0.8+ | 0.5− | 2006 10 25 | E12 | (2.1+ | 0.5+) | | | | |

**2006 SU$_{125}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.35457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17421181 | $\omega$ | 173.94287 | | +0.84076109 | | +0.53509732 |
| $a$ | 3.1750531 | $\Omega$ | 153.19301 | | −0.50408550 | | +0.82921911 |
| $e$ | 0.1060702 | $i$ | 10.52916 | | −0.19753126 | | +0.16145128 |
| $P$ | 5.66 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.4+ | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.6− |
| 2000 09 03 | 645 | 0.0 | 0.2+ | 2006 09 25 | 699 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.8− | 0.3− |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 25 | 699 | 1.1+ | 1.3− | 2006 10 16 | 703 | 1.1− | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 09 26 | 703 | 1.3− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 2006 09 20 | 644 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.8− | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2006 09 20 | 644 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 09 29 | 699 | (0.9− | 3.0−) | 2006 10 28 | 703 | 1.1− | 1.2+ |
| 2006 09 20 | 644 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.3− | 1.1− |
| 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 09 29 | 699 | 1.3+ | 0.9− | 2006 10 28 | 703 | 0.6− | 0.1+ |
| 2006 09 25 | 699 | 1.2+ | 0.3− | 2006 09 29 | 699 | 0.0 | 1.3+ | 2006 10 28 | 703 | 1.5+ | 0.1+ |

**2006 SW$_{125}$ = 2005 LP$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.73871 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22485074 | $\omega$ | 243.90721 | | +0.65038567 | | +0.74969192 |
| $a$ | 2.6783860 | $\Omega$ | 67.21782 | | −0.64090505 | | +0.62802288 |
| $e$ | 0.1083010 | $i$ | 7.62351 | | −0.40772442 | | +0.20868469 |
| $P$ | 4.38 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 10 | 691 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.4− | 0.4− | 2006 09 29 | 699 | 0.1− | 0.2− |
| 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2005 06 10 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.3− |
| 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 09 25 | 699 | 0.5− | 1.6+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 09 25 | 699 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2005 06 13 | G96 | 0.5− | 0.1− | 2006 09 26 | 703 | 1.0− | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2005 06 13 | G96 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.6+ | 1.0+ | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2006 09 20 | 644 | 0.2− | 0.5− | 2006 09 26 | 703 | 1.0+ | 0.6+ | 2006 10 16 | 703 | 1.3+ | 1.3− |
| 2006 09 20 | 644 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.0 | 0.3− |
| 2006 09 20 | 644 | 0.3− | 0.3− | 2006 09 29 | 699 | 0.7+ | 1.4+ | 2006 10 16 | 703 | 1.3− | 0.3− |
| 2006 09 20 | 644 | 0.0 | 0.5− | 2006 09 29 | 699 | (2.3+ | 0.7−) | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2006 09 20 | 644 | 0.4− | 1.0− | 2006 09 29 | 699 | 1.1+ | 0.5− | | | | |

**2006 SD$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.04899 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24185876 | $\omega$ | 57.23792 | | +0.91947113 | | −0.38503559 |
| $a$ | 2.5512999 | $\Omega$ | 325.22112 | | +0.29769273 | | +0.81391181 |
| $e$ | 0.2075316 | $i$ | 8.01169 | | +0.25681098 | | +0.43508064 |
| $P$ | 4.08 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 19 | 644 | 0.0 | 0.2− | 2006 10 15 | H51 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.8+ | 0.4+ |
| 2003 02 19 | 644 | 0.0 | 0.4− | 2006 10 15 | H51 | 0.0 | 0.1− | 2006 11 15 | 704 | (1.0− | 2.5−) |
| 2003 02 19 | 644 | 0.1+ | 0.3− | 2006 10 17 | 704 | 1.0+ | 0.3− | 2006 11 15 | 704 | 1.1− | 0.8+ |
| 2004 03 16 | 703 | 0.7+ | 0.6+ | 2006 10 17 | 704 | 0.8+ | 0.4+ | 2006 11 15 | 704 | 0.0 | 0.4+ |
| 2004 03 16 | 703 | 0.3+ | 0.5− | 2006 10 17 | 704 | 0.5+ | 0.1− | 2006 11 15 | 704 | 0.7− | 0.3− |
| 2004 03 16 | 703 | 0.3+ | 0.0 | 2006 10 17 | 704 | 0.8+ | 0.5+ | 2006 11 17 | 644 | 0.2− | 0.3+ |
| 2004 03 16 | 703 | 0.0 | 0.7− | 2006 10 23 | 703 | 0.8− | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 10 23 | 703 | 0.6− | 0.1− | 2006 11 17 | 644 | 0.0 | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1− | 0.2+ | 2006 10 23 | 703 | 0.5− | 0.3+ | 2006 11 21 | 703 | 0.0 | 0.3− |
| 2004 03 16 | 691 | 0.1− | 0.0 | 2006 10 23 | 703 | 0.1− | 0.1− | 2006 11 21 | 703 | 0.2− | 0.4− |
| 2006 09 20 | 704 | 1.3+ | 0.5+ | 2006 10 25 | A24 | 0.5+ | 1.0+ | 2006 11 21 | 703 | 0.4− | 1.3− |
| 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 25 | A24 | (0.5+ | 1.9+) | 2006 11 21 | 703 | 0.3+ | 1.2− |
| 2006 09 20 | 704 | (2.2+ | 0.0 ) | 2006 10 26 | A24 | 0.0 | 0.2− | 2006 11 21 | 703 | 0.1− | 0.1− |
| 2006 09 25 | 703 | 0.4− | 0.1− | 2006 10 26 | A24 | 0.0 | 0.0 | 2006 11 21 | 703 | 0.2− | 0.5+ |
| 2006 09 25 | 703 | 0.7− | 0.5− | 2006 11 08 | A24 | 0.5+ | 0.0 | 2006 11 21 | 703 | 0.1+ | 0.4− |
| 2006 09 25 | 703 | 0.1− | 0.2− | 2006 11 08 | A24 | 0.1+ | 0.3− | 2006 11 24 | 644 | 0.2− | 0.1+ |
| 2006 09 25 | 703 | 0.7− | 0.7− | 2006 11 09 | A24 | 0.0 | 0.0 | 2006 11 24 | 644 | 0.1+ | 0.0 |
| 2006 10 02 | 704 | 0.1− | 0.9+ | 2006 11 09 | A24 | 0.6+ | 0.2+ | 2006 11 24 | 644 | 0.3+ | 0.0 |
| 2006 10 02 | 704 | 0.4+ | 0.3+ | 2006 11 09 | A24 | 0.3+ | 0.7+ | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 2006 10 02 | 704 | (1.6+ | 0.2+) | 2006 11 09 | A24 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2006 10 02 | 704 | 0.1− | 0.8+ | 2006 11 15 | 703 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.7− | 0.4− |
| 2006 10 02 | 704 | 0.0 | 0.4+ | 2006 11 15 | 703 | 0.7− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2006 10 15 | H51 | 0.1− | 0.3− | 2006 11 15 | 703 | 0.5− | 0.0 | | | | |

**2006 SE$_{126}$ = 2001 OT$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.94837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21472376 | $\omega$ | 262.89883 | | +0.99776148 | +0.00410105 | |
| $a$ | 2.7619511 | $\Omega$ | 96.85028 | | +0.02227329 | +0.92074849 | |
| $e$ | 0.2108154 | $i$ | 3.85475 | | −0.06305502 | +0.39013510 | |
| $P$ | 4.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 26 | 644 | 1.2+ | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.2− | 2006 09 30 | 704 | 1.0+ | 0.0 |
| 2001 07 26 | 644 | 1.0+ | 0.5− | 2006 09 26 | 704 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2001 07 26 | 644 | 1.3+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2001 07 28 | 699 | 1.3− | 0.8+ | 2006 09 26 | 704 | 0.6− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 07 28 | 699 | 0.8− | 0.5+ | 2006 09 29 | 699 | 0.8− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2001 07 28 | 699 | (2.5− | 0.3−) | 2006 09 29 | 699 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.8− | 0.3− |
| 2001 07 28 | 699 | 1.3− | 0.9− | 2006 09 29 | 699 | 0.4+ | 0.9+ | 2006 10 22 | 703 | 0.3− | 0.9− |
| 2006 09 20 | 644 | 0.4+ | 0.2+ | 2006 09 29 | 699 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.8+ | 0.1+ |
| 2006 09 20 | 644 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.1+ |
| 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.6+ | 0.0 |
| 2006 09 25 | 699 | 0.0 | 0.3− | 2006 09 30 | 704 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 09 25 | 699 | 0.6− | 0.6+ | 2006 09 30 | 703 | 0.6− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2006 09 25 | 699 | 0.6+ | 0.9+ | 2006 09 30 | 704 | (1.8+ | 0.5+) | | | | |
| 2006 09 26 | 704 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.8− | 0.0 | | | | |

**2006 SH$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.90747 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18748018 | $\omega$ | 199.11548 | | +0.99568449 | −0.08743329 | |
| $a$ | 3.0234246 | $\Omega$ | 165.79291 | | +0.09266452 | +0.95497979 | |
| $e$ | 0.0950695 | $i$ | 7.28226 | | −0.00506808 | +0.28349429 | |
| $P$ | 5.26 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 08 | 691 | 0.1− | 0.0 | 2006 09 28 | 699 | 0.2− | 2.3− | 2006 10 12 | 644 | 0.5+ | 0.1− |
| 1994 05 08 | 691 | 0.2− | 0.6− | 2006 09 28 | 699 | 0.6− | 0.6+ | 2006 10 16 | 703 | 0.7+ | 0.5+ |
| 1994 05 08 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 699 | 0.2− | 1.6+ | 2006 10 16 | 703 | (1.6+ | 0.5+) |
| 2003 01 27 | 644 | 0.2+ | 0.3− | 2006 09 28 | 291 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.0 |
| 2003 01 27 | 644 | 0.2− | 0.0 | 2006 09 28 | 291 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2003 01 27 | 644 | 0.2− | 0.2− | 2006 09 28 | 291 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2006 09 21 | 699 | 0.1+ | 0.6+ | 2006 10 01 | 704 | 1.5− | 0.1+ | 2006 10 20 | 644 | 0.5+ | 0.1+ |
| 2006 09 21 | 699 | (1.3+ | 1.7−) | 2006 10 01 | 704 | 1.5− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2006 09 21 | 699 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2006 09 21 | 699 | 0.3+ | 0.6+ | 2006 10 01 | 704 | 0.9− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2006 09 25 | 699 | 0.2− | 0.8+ | 2006 10 02 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2006 09 25 | 699 | 0.4− | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.4− | 2006 10 22 | 703 | 1.9− | 0.3+ |
| 2006 09 25 | 699 | 0.3+ | 1.0+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.3− | 0.9− |
| 2006 09 25 | 699 | 0.6+ | 0.2− | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.7− | 0.1+ |
| 2006 09 28 | 699 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.0 | 0.6+ |

**2006 SK$_{126}$ = 2004 GO$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.97951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22693639 | $\omega$ | 76.57079 | | −0.05710700 | −0.99186057 | |
| $a$ | 2.6619504 | $\Omega$ | 17.92169 | | +0.71137118 | −0.12040532 | |
| $e$ | 0.1649451 | $i$ | 21.70540 | | +0.70049257 | +0.04141471 | |
| $P$ | 4.34 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.6− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2004 04 12 | 644 | 0.1− | 0.1+ | 2006 09 29 | 699 | 1.0− | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.1+ |
| 2004 04 12 | 644 | 0.3+ | 0.1+ | 2006 09 29 | 699 | 0.8+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.6+ |
| 2004 04 21 | 704 | 1.1− | 0.2+ | 2006 09 29 | 699 | 1.0− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2004 04 21 | 704 | 0.0 | 0.1− | 2006 10 01 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2004 04 21 | 704 | 1.2+ | 0.3− | 2006 10 01 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2004 04 21 | 704 | 0.2− | 0.1− | 2006 10 01 | 704 | 0.8+ | 1.3+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 09 21 | 699 | 0.7− | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2006 09 21 | 699 | 0.3+ | 0.5− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 09 21 | 699 | 1.3+ | 1.0+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2006 09 21 | 699 | 0.6+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2006 09 25 | 691 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2006 09 25 | 699 | 0.6+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | (0.1− | 2.5−) |
| 2006 09 25 | 691 | 0.6− | 0.6− | 2006 10 16 | G96 | 0.3+ | 0.7− | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2006 09 25 | 699 | 1.2+ | 0.5− | 2006 10 16 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.6− | 1.3+ |
| 2006 09 25 | 699 | 1.0+ | 1.3+ | 2006 10 16 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2006 09 25 | 699 | (1.0− | 1.5+) | 2006 10 17 | 703 | 0.6− | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2006 09 28 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.0 | 0.7+ | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.6− | 0.9+ | 2006 11 20 | G96 | 0.7+ | 0.0 |
| 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.5− | 2006 11 20 | G96 | 0.4− | 0.3− |

**2006 SL$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.90517 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28314125 | $\omega$ | 236.19094 | | +0.38238696 | +0.92169897 | |
| $a$ | 2.2968570 | $\Omega$ | 56.42239 | | −0.81978777 | +0.37096870 | |
| $e$ | 0.1401726 | $i$ | 4.48856 | | −0.42629595 | +0.11337208 | |
| $P$ | 3.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 29 | 691 | 0.0 | 0.1+ | 2006 09 21 | 699 | 0.1− | 0.7− | 2006 10 19 | 644 | 0.6+ | 0.1− |
| 2003 11 29 | 691 | 0.1+ | 0.2− | 2006 09 25 | 699 | 0.6+ | 1.3− | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2003 11 29 | 691 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.7− | 0.5+ | 2006 10 22 | 703 | 0.2+ | 0.1− |
| 2003 12 29 | 691 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.8− | 0.6+ | 2006 10 22 | 703 | 1.1+ | 0.1− |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2006 09 25 | 699 | 1.1− | 0.8− | 2006 10 22 | 703 | 0.3− | 0.8− |
| 2003 12 29 | 691 | 0.0 | 0.2+ | 2006 10 01 | 704 | 0.7− | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.6+ |
| 2005 03 11 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2005 03 11 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2005 03 11 | 691 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2005 04 04 | 703 | 0.2+ | 1.2− | 2006 10 10 | 644 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 2005 04 04 | 703 | 1.4− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 04 04 | 703 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2005 04 04 | 703 | 0.7− | 0.7− | 2006 10 16 | 703 | 0.6− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2006 09 21 | 699 | 0.2− | 1.0+ | 2006 10 16 | 703 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2006 09 21 | 699 | 1.0+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.0 | | | | |
| 2006 09 21 | 699 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.0 | | | | |

**2006 SM$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.05777 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18749757 | $\omega$ | 151.21798 | | +0.81492969 | +0.57915054 | |
| $a$ | 3.0232376 | $\Omega$ | 173.26545 | | −0.56093580 | +0.79763421 | |
| $e$ | 0.1113783 | $i$ | 10.70213 | | −0.14574163 | +0.16841710 | |
| $P$ | 5.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.1− | 1.0+ | 2006 09 25 | 699 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2004 03 23 | 704 | (0.3+ | 2.5+) | 2006 09 25 | 699 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2004 03 23 | 704 | (0.1+ | 1.7+) | 2006 09 25 | 699 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2004 03 23 | 704 | (0.6− | 2.2+) | 2006 09 25 | 699 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2004 03 23 | 704 | 0.4− | 0.1− | 2006 09 29 | 699 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2004 04 21 | 691 | 0.3+ | 0.3+ | 2006 09 29 | 699 | 0.6+ | 0.4− | 2006 10 11 | 644 | 0.3− | 0.0 |
| 2004 04 21 | 691 | 0.2− | 0.5− | 2006 09 29 | 699 | 0.6− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2004 04 21 | 691 | 0.2+ | 0.5+ | 2006 09 29 | 699 | 0.4− | 0.7− | 2006 10 16 | 703 | 1.0+ | 0.6− |
| 2005 06 26 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.9+ | 2006 10 16 | 703 | 0.4+ | 0.7− |
| 2005 06 26 | 644 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.2+ |
| 2005 06 26 | 644 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.3− | 1.1+ | 2006 10 16 | 703 | 0.2− | 1.3− |
| 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.7+ | 2006 10 19 | 644 | 0.2+ | 0.2+ |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2006 09 17 | 691 | (0.6+ | 2.9−) | 2006 10 04 | G96 | 0.5+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1− |
| 2006 09 21 | 699 | 0.4+ | 1.1+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2006 09 21 | 699 | 0.6+ | 0.8− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.9− | 0.4+ |
| 2006 09 21 | 699 | (0.2+ | 1.7−) | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.4− | 0.7+ |
| 2006 09 21 | 699 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 1.1− | 0.3+ |

**2006 SO$_{126}$ = 2003 YY$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.96174 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29051452 | $\omega$ | 259.90625 | | +0.94101202 | −0.32576663 | |
| $a$ | 2.2578278 | $\Omega$ | 119.05478 | | +0.33669548 | +0.87456755 | |
| $e$ | 0.2214346 | $i$ | 6.00838 | | +0.03365302 | +0.35917642 | |
| $P$ | 3.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.7+ | 0.9+ | 2006 09 25 | 699 | 0.1+ | 0.6− | 2006 09 30 | 704 | 0.5− | 0.2− |
| 2003 12 19 | 704 | 0.1− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.0 | 0.1− |
| 2003 12 19 | 704 | 0.5− | 0.1+ | 2006 09 25 | 699 | 0.6− | 0.0 | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2003 12 19 | 704 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.4+ | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2003 12 23 | 704 | 0.2+ | 1.0− | 2006 09 26 | 703 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1− | 0.2+ |
| 2003 12 23 | 704 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.2− | 0.9− | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 2003 12 23 | 704 | (0.7+ | 2.3−) | 2006 09 26 | 703 | 0.1+ | 0.2+ | 2006 10 25 | D35 | 0.4+ | 0.1+ |
| 2003 12 23 | 704 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.3+ | 0.1− | 2006 10 25 | D35 | 0.2+ | 0.2+ |
| 2006 09 21 | 699 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.3+ | 0.5− | 2006 10 25 | D35 | 0.0 | 0.2+ |
| 2006 09 21 | 699 | 0.7+ | 1.0+ | 2006 09 29 | 699 | 0.0 | 0.8+ | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2006 09 21 | 699 | 0.1− | 0.8+ | 2006 09 30 | 704 | 0.7− | 0.2+ | 2006 10 28 | 703 | 0.8− | 0.5− |
| 2006 09 21 | 699 | 0.1+ | 0.4+ | 2006 09 30 | 704 | 0.6− | 0.2− | 2006 10 28 | 703 | 0.8+ | 0.3− |
| 2006 09 25 | 699 | 0.2− | 0.2− | 2006 09 30 | 704 | 0.4+ | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.2− |

**2006 SP$_{126}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.47321 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17782502 | $\omega$ | 242.49498 | | +0.77989947 | −0.61825947 | |
| $a$ | 3.1318970 | $\Omega$ | 155.30655 | | +0.62428731 | +0.75718716 | |
| $e$ | 0.1545322 | $i$ | 13.50068 | | +0.04496855 | +0.21076725 | |
| $P$ | 5.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.3+ | 0.0 | 2006 09 25 | 699 | 0.8− | 1.1+ | 2006 10 11 | 644 | 0.8+ | 0.3− |
| 2000 08 31 | 691 | 0.1− | 0.3− | 2006 09 25 | 699 | 0.7− | 0.7− | 2006 10 17 | 703 | 0.1+ | 0.5− |
| 2000 08 31 | 691 | 0.3− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.6+ | 0.8− |
| 2003 03 23 | 645 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.8− | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.4+ |
| 2004 04 23 | 691 | 0.5+ | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2004 04 23 | 691 | 0.2− | 0.6+ | 2006 09 26 | 703 | 0.2+ | 0.6− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2004 04 23 | 691 | 0.1− | 0.5+ | 2006 10 02 | 703 | 0.6+ | 1.2+ | 2006 10 22 | 644 | 0.6+ | 0.1− |
| 2006 09 21 | 699 | 1.1− | 1.3− | 2006 10 02 | 703 | 1.4− | 0.7+ | 2006 10 28 | 703 | 0.8+ | 0.2+ |
| 2006 09 21 | 699 | 0.3+ | 0.3− | 2006 10 02 | 703 | 1.3− | 0.1+ | 2006 10 28 | 703 | 0.5− | 0.8+ |
| 2006 09 21 | 699 | 0.1+ | 1.3− | 2006 10 02 | 703 | 0.1− | 0.3− | 2006 10 28 | 703 | (2.0+ | 0.4+) |
| 2006 09 21 | 699 | 0.0 | 1.2+ | 2006 10 11 | 644 | 0.2+ | 0.4− | 2006 10 28 | 703 | 0.4− | 1.4+ |
| 2006 09 25 | 699 | 0.9+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1− | | | | |

**2006 SQ$_{126}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.85241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23046811 | $\omega$ | 222.02819 | | +0.81615629 | +0.54930795 | |
| $a$ | 2.6346857 | $\Omega$ | 103.79767 | | −0.46870826 | +0.81082378 | |
| $e$ | 0.1919485 | $i$ | 10.63962 | | −0.33793710 | +0.20205338 | |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 645 | 0.0 | 0.3− | 2006 09 25 | 699 | (2.7+ | 0.6−) | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2004 04 16 | 645 | 0.1− | 0.4− | 2006 09 25 | 699 | 0.7+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2005 04 04 | 703 | (1.0+ | 3.3−) | 2006 09 25 | 699 | 0.9+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2005 04 04 | 703 | (1.3+ | 2.7−) | 2006 09 25 | 699 | 0.1+ | 0.8− | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2005 04 04 | 703 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.7− | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2005 04 04 | 703 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.7+ | 0.3+ | 2006 10 19 | 644 | 0.3− | 0.1+ |
| 2005 05 04 | 703 | 0.2+ | 0.8+ | 2006 09 26 | 703 | 0.5+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.4− |
| 2005 05 04 | 703 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.4− | 2006 10 21 | 703 | 0.5− | 0.8+ |
| 2005 05 04 | 703 | 0.4+ | 0.8− | 2006 10 02 | 703 | 0.4+ | 0.4− | 2006 10 21 | 703 | 0.3− | 0.4− |
| 2005 05 04 | 703 | 0.5− | 0.3− | 2006 10 02 | 703 | 0.3− | 0.8− | 2006 10 21 | 703 | 0.4+ | 0.3+ |
| 2006 09 19 | 703 | 0.3+ | 0.4+ | 2006 10 02 | 703 | 0.8− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.6+ |
| 2006 09 19 | 703 | 0.3+ | 0.4− | 2006 10 02 | 703 | 0.4+ | 0.4+ | 2006 10 31 | 703 | 1.2− | 0.9+ |
| 2006 09 19 | 703 | (0.6− | 3.3−) | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 31 | 703 | 0.6− | 0.3+ |
| 2006 09 21 | 699 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 10 31 | 703 | 0.6− | 0.8+ |
| 2006 09 21 | 699 | 0.1− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 10 31 | 703 | 0.1− | 0.6− |
| 2006 09 21 | 699 | 0.8− | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.2− | | | | |
| 2006 09 21 | 699 | 0.4− | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.1− | | | | |

**2006 SR$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.91117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25755876 | $\omega$ | 200.98522 | | +0.21642925 | +0.95876151 | |
| $a$ | 2.4465372 | $\Omega$ | 81.87783 | | −0.86713900 | +0.27547404 | |
| $e$ | 0.2337889 | $i$ | 10.72413 | | −0.44858482 | −0.06993159 | |
| $P$ | 3.83 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 11 | 608 | 0.6− | 0.0 | 2005 04 02 | 703 | 0.6+ | 0.7+ | 2006 09 26 | 703 | 0.6− | 0.2− |
| 2002 08 11 | 608 | 0.6− | 0.1+ | 2005 04 02 | 703 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.1+ | 0.5− |
| 2002 08 11 | 608 | 0.2− | 0.0 | 2005 04 02 | 703 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.2+ | 1.1− |
| 2002 08 14 | 704 | 0.9+ | 0.0 | 2005 04 02 | 703 | 0.1− | 0.2+ | 2006 10 02 | 703 | 0.1+ | 0.6− |
| 2002 08 14 | 704 | 0.2+ | 0.1− | 2005 04 09 | 703 | 0.4+ | 1.4− | 2006 10 02 | 703 | 0.0 | 0.2− |
| 2002 08 14 | 704 | 0.3+ | 0.5− | 2005 04 09 | 703 | 0.0 | 0.9+ | 2006 10 02 | 703 | 0.4+ | 0.8− |
| 2002 08 14 | 704 | 0.2+ | 0.6− | 2005 04 09 | 703 | 1.1+ | 0.3+ | 2006 10 02 | 703 | 0.0 | 1.0− |
| 2002 09 01 | 644 | 0.0 | 0.1− | 2005 04 09 | 703 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 09 01 | 644 | 0.3+ | 0.1− | 2005 04 17 | 703 | 0.7− | 1.5+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 09 01 | 644 | 0.0 | 0.1+ | 2005 04 17 | 703 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2002 10 07 | 644 | 0.2− | 1.1+ | 2005 04 17 | 703 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.6− |
| 2002 10 07 | 644 | 0.6− | 1.1+ | 2005 04 17 | 703 | 0.4− | 0.6+ | 2006 10 21 | 703 | 0.8− | 0.4− |
| 2002 10 07 | 644 | 0.5− | 1.2+ | 2006 09 21 | 699 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.0 | 0.3− |
| 2005 03 04 | 703 | 0.1+ | 0.0 | 2006 09 21 | 699 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.5+ | 1.0+ |
| 2005 03 04 | 703 | 0.7− | 0.2− | 2006 09 21 | 699 | 0.6+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2005 03 04 | 703 | 0.5− | 0.4+ | 2006 09 21 | 699 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2005 03 04 | 703 | 0.5+ | 1.1− | 2006 09 25 | 699 | (3.0+ | 0.5+) | 2006 10 23 | 644 | 0.2+ | 0.3− |
| 2005 03 16 | 703 | (1.3+ | 1.8−) | 2006 09 25 | 699 | 0.4+ | 0.3− | 2006 10 28 | 703 | 0.2+ | 0.9+ |
| 2005 03 16 | 703 | (2.3+ | 1.2−) | 2006 09 25 | 699 | 1.0+ | 0.7+ | 2006 10 28 | 703 | 1.2+ | 0.6+ |
| 2005 03 16 | 703 | 0.3+ | 0.9− | 2006 09 25 | 699 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.3− | 1.0+ |
| 2005 03 16 | 703 | 0.2− | 0.3− | 2006 09 26 | 703 | 0.3− | 0.3− | 2006 10 28 | 703 | 1.0− | 0.8+ |

**2006 SX$_{126}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 15.48784 | | (2000.0) | | | |
| $n$ | 0.18983778 | $\omega$ | 225.43745 | | +0.98025663 | +0.18551023 |
| $a$ | 2.9983405 | $\Omega$ | 123.75622 | | −0.14992396 | +0.92297161 |
| $e$ | 0.1512318 | $i$ | 4.72125 | | −0.12891761 | +0.33720819 |
| $P$ | 5.19 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 644 | 0.6+ | 0.6+ | 2006 09 22 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.2− |
| 2001 10 24 | 644 | 0.5+ | 0.6+ | 2006 09 22 | 704 | 0.8− | 1.5+ | 2006 09 30 | 703 | 0.4− | 0.6+ |
| 2001 10 24 | 644 | 0.3+ | 1.3+ | 2006 09 22 | 704 | 0.6− | 1.2+ | 2006 09 30 | 703 | 0.1+ | 1.0+ |
| 2001 11 20 | 699 | 0.4− | 0.2− | 2006 09 22 | 704 | 1.0− | 0.7+ | 2006 09 30 | 703 | 0.1+ | 0.5− |
| 2001 11 20 | 699 | 0.8− | 0.9+ | 2006 09 22 | 704 | 1.7+ | 0.3− | 2006 10 16 | 703 | 0.7− | 0.2− |
| 2001 11 20 | 699 | 0.5− | 1.5− | 2006 09 25 | 699 | 0.4− | 1.2+ | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2001 11 20 | 699 | 0.4− | 0.2− | 2006 09 25 | 699 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.7− |
| 2003 01 30 | 644 | 0.4+ | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.7+ | 0.6+ |
| 2003 01 30 | 644 | 0.5− | 0.2+ | 2006 09 25 | 699 | 0.3− | 0.2− | 2006 10 22 | 703 | (0.2+ | 2.1−) |
| 2003 01 30 | 644 | 0.1+ | 0.6− | 2006 09 26 | 704 | 0.5− | 0.7− | 2006 10 22 | 703 | 1.6+ | 1.2− |
| 2004 04 21 | 691 | 0.1− | 0.4+ | 2006 09 26 | 704 | 0.2− | 0.9− | 2006 10 22 | 703 | 0.3− | 0.1+ |
| 2004 04 21 | 691 | 0.4+ | 0.7+ | 2006 09 26 | 704 | 0.4+ | 0.7− | 2006 10 22 | 703 | 0.7+ | 0.5+ |
| 2004 04 21 | 691 | 0.3+ | 0.6+ | 2006 09 26 | 704 | 0.4− | 1.6− | | | | |

**2006 SC$_{127}$ = 2002 YZ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.59040 | | (2000.0) | | | |
| $n$ | 0.23401921 | $\omega$ | 129.16163 | | +0.86180512 | −0.44988030 |
| $a$ | 2.6079647 | $\Omega$ | 258.73097 | | +0.35955185 | +0.86763072 |
| $e$ | 0.3323376 | $i$ | 13.82239 | | +0.35779100 | +0.21171831 |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.6− | 0.9− | 2006 10 02 | 704 | 0.7+ | 0.8− | 2006 10 20 | 704 | 0.2+ | 0.7+ |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 10 02 | 704 | 0.6+ | 0.2− | 2006 10 24 | A24 | 0.5+ | 0.1+ |
| 2002 12 31 | 704 | 0.0 | 0.3− | 2006 10 02 | 704 | 0.1− | 0.0 | 2006 10 24 | A24 | (0.2− | 1.6+) |
| 2003 01 02 | 704 | 0.2+ | 0.4− | 2006 10 02 | 704 | 0.6− | 1.0− | 2006 10 25 | A24 | 1.2+ | 0.1− |
| 2003 01 02 | 704 | 0.3+ | 0.9+ | 2006 10 02 | 703 | 0.0 | 0.6− | 2006 10 25 | A24 | 1.0− | 0.1− |
| 2003 01 02 | 704 | 0.1+ | 0.5− | 2006 10 02 | 703 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2003 01 02 | 704 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.4+ | 0.1+ |
| 2003 01 02 | 704 | 0.1+ | 0.8+ | 2006 10 02 | 703 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.2+ |
| 2006 09 24 | 699 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.6− | 0.1+ | 2006 11 15 | 703 | 0.8+ | 0.2− |
| 2006 09 24 | 699 | 0.1+ | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.4− | 0.3− |
| 2006 09 24 | 699 | 0.5+ | 0.7− | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.6− |
| 2006 09 25 | 703 | 1.0− | 0.6− | 2006 10 19 | 703 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.1− |
| 2006 09 25 | 703 | 1.2− | 0.7+ | 2006 10 20 | 704 | 0.2+ | 0.6+ | 2006 11 23 | 703 | 0.4− | 0.5− |
| 2006 09 25 | 703 | 0.0 | 1.0+ | 2006 10 20 | 704 | 0.2− | 0.7+ | 2006 11 23 | 703 | 0.0 | 0.1− |
| 2006 09 25 | 703 | 0.2− | 0.3+ | 2006 10 20 | 704 | 0.8− | 0.4+ | 2006 11 23 | 703 | 0.2− | 0.3+ |
| 2006 10 02 | 704 | 0.1+ | 1.0+ | 2006 10 20 | 704 | 0.8+ | 0.2− | 2006 11 23 | 703 | 0.9− | 0.1+ |

**2006 SS$_{127}$ = 2004 EO$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.24977 | | (2000.0) | | | |
| $n$ | 0.23100677 | $\omega$ | 27.33880 | | +0.88584597 | −0.46397938 |
| $a$ | 2.6305885 | $\Omega$ | 0.30567 | | +0.41753916 | +0.79696702 |
| $e$ | 0.0935932 | $i$ | 2.43951 | | +0.20233134 | +0.38673855 |
| $P$ | 4.27 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 09 26 | 701 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.5− |
| 2004 03 15 | 691 | 0.3+ | 0.1− | 2006 09 26 | 701 | 0.8+ | 0.9− | 2006 10 21 | 703 | 0.6+ | 0.8− |
| 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 09 26 | 701 | 0.4+ | 0.4+ | 2006 10 21 | 703 | (1.6− | 0.2−) |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.6− | 0.1+ |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 02 | J95 | 0.5+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 02 | J95 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2006 09 26 | J95 | 0.2− | 0.6− | 2006 10 03 | J95 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2006 09 26 | J95 | 0.0 | 0.4+ | 2006 10 03 | J95 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2006 09 26 | J95 | 0.2+ | 0.2− | 2006 10 03 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | (0.1− | 1.6−) |
| 2006 09 26 | H55 | (1.7+ | 1.5+) | 2006 10 03 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2006 09 26 | H55 | (2.0+ | 1.9+) | 2006 10 03 | 691 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.4+ | 0.3+ |
| 2006 09 26 | H55 | (1.8+ | 2.0+) | 2006 10 04 | J95 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2006 09 26 | 291 | 0.3− | 0.3+ | 2006 10 04 | J95 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2006 09 26 | 291 | 0.5− | 0.3+ | 2006 10 04 | J95 | 0.0 | 0.6− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2006 09 26 | 291 | 0.3− | 0.2+ | 2006 10 04 | J95 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.4− |
| 2006 09 26 | 701 | 0.5+ | 0.4+ | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.2− |

**2006 ST$_{127}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.45937 | | (2000.0) | | | |
| $n$ | 0.18896901 | $\omega$ | 293.19364 | | +0.47466523 | −0.86389307 |
| $a$ | 3.0075232 | $\Omega$ | 127.38229 | | +0.86501299 | +0.42250387 |
| $e$ | 0.2126764 | $i$ | 12.24054 | | +0.16262056 | +0.27418834 |
| $P$ | 5.22 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.4− | 0.1+ | 2004 05 19 | 691 | 0.4+ | 0.2+ | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2000 07 31 | 807 | 0.4− | 0.5+ | 2004 05 19 | 691 | 0.4+ | 0.3+ | 2006 10 09 | 644 | 0.1− | 0.0 |
| 2001 09 17 | 699 | 0.0 | 0.6+ | 2004 05 19 | 691 | 0.6+ | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.3− |
| 2001 09 17 | 699 | 0.1+ | 0.4+ | 2006 09 24 | 699 | 0.5+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2001 09 17 | 699 | 0.2− | 0.2+ | 2006 09 24 | 699 | 0.4− | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2001 09 17 | 699 | 0.2− | 0.8+ | 2006 09 24 | 699 | 0.0 | 1.2− | 2006 10 10 | 644 | 0.4− | 0.1− |
| 2001 12 18 | 645 | 0.2+ | 0.2− | 2006 09 24 | 699 | 0.6+ | 0.4+ | 2006 10 21 | 703 | 0.5+ | 0.0 |
| 2001 12 18 | 645 | 0.2+ | 0.2− | 2006 09 25 | 703 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 2003 04 08 | 691 | 0.2− | 0.7+ | 2006 09 25 | 703 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.7+ |
| 2003 04 08 | 691 | 0.1− | 1.1+ | 2006 09 25 | 703 | 0.9− | 0.4− | 2006 10 21 | 703 | 0.0 | 0.0 |
| 2003 04 08 | 691 | 0.0 | 0.8+ | 2006 09 25 | 703 | 0.2+ | 1.9+ | | | | |

**2006 SB$_{128}$ = 1999 TA$_{319}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.92084 | | (2000.0) | | | |
| $n$ | 0.27458777 | $\omega$ | 117.47241 | | +0.75409738 | +0.65614493 |
| $a$ | 2.3443112 | $\Omega$ | 201.55976 | | −0.62660664 | +0.70580733 |
| $e$ | 0.1401507 | $i$ | 4.44464 | | −0.19672635 | +0.26703903 |
| $P$ | 3.59 | $H$ | 18.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 691 | 0.4+ | 0.1− | 2005 04 07 | G96 | 0.1+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.4+ |
| 1999 10 12 | 691 | 0.1+ | 0.1− | 2005 04 07 | G96 | 0.0 | 0.2− | 2006 09 25 | 699 | 1.3− | 0.2− |
| 1999 10 12 | 691 | 0.3+ | 0.2− | 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.4+ |
| 1999 10 14 | 645 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.3+ |
| 1999 10 14 | 645 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.0 |
| 1999 10 19 | 691 | 0.4− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.0 | 2006 09 28 | 691 | 0.3+ | 0.2+ |
| 1999 10 19 | 691 | 0.4− | 0.2− | 2006 09 17 | 703 | 0.8− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 1999 10 19 | 691 | 0.3− | 0.2− | 2006 09 17 | 703 | 0.5− | 0.7− | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2005 04 07 | G96 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.5− |
| 2005 04 07 | G96 | 0.3+ | 0.4− | 2006 09 25 | 699 | 0.9− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.3− |

**2006 SD$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.48328 | | (2000.0) | | | |
| $n$ | 0.21335222 | $\omega$ | 107.88595 | | +0.90677396 | +0.42082847 |
| $a$ | 2.7737753 | $\Omega$ | 227.23593 | | −0.39890027 | +0.83651528 |
| $e$ | 0.1182566 | $i$ | 2.01203 | | −0.13652679 | +0.35092104 |
| $P$ | 4.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 01 | 691 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3− |
| 1997 11 01 | 691 | 0.1− | 0.4+ | 2006 10 13 | 122 | (2.8− | 0.1+) | 2006 10 20 | 644 | 0.2+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 01 | 691 | 0.4− | 0.4+ | 2006 10 13 | 122 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 1997 11 22 | 691 | 0.2+ | 0.1− | 2006 10 13 | 122 | (2.2− | 0.0 ) | 2006 10 20 | 644 | 0.1+ | 0.2− | | |
| 1997 11 22 | 691 | 0.4+ | 0.5− | 2006 10 13 | 122 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 1997 11 22 | 691 | 0.1+ | 0.4− | 2006 10 13 | 122 | (1.9− | 0.4−) | 2006 10 21 | 644 | 0.3− | 0.2+ | | |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 14 | 122 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.6− | 0.4− | | |
| 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 14 | 122 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 14 | 122 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4− | | |
| 2006 09 19 | 699 | (1.6− | 0.7+) | 2006 10 17 | 703 | 0.1− | 1.2− | 2006 10 21 | 644 | 0.3− | 0.4− | | |
| 2006 09 19 | 699 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.0 | | |
| 2006 09 19 | 699 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.1− | | |
| 2006 09 19 | 699 | 0.2+ | 0.3− | 2006 10 17 | 703 | (0.3+ | 1.8+) | 2006 10 31 | G96 | 0.1+ | 0.0 | | |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.5− | | | | | | |

**2006 SF$_{128}$ = 2002 XC$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.99177 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21730507 | $\omega$ | 295.27639 | | +0.97108552 | −0.21835445 | |
| $a$ | 2.7400352 | $\Omega$ | 77.45593 | | +0.23865585 | +0.87771195 | |
| $e$ | 0.1374537 | $i$ | 5.67413 | | +0.00602454 | +0.42654784 | |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.2− | 0.3+ | 2002 12 10 | 704 | 0.8+ | 0.1+ | 2006 08 28 | 699 | 0.6+ | 0.1+ | | |
| 2001 07 19 | 644 | 0.2+ | 0.1− | 2002 12 10 | 704 | 0.2− | 0.3+ | 2006 08 28 | 699 | 1.1− | 0.4− | | |
| 2001 07 19 | 644 | 0.1− | 0.2+ | 2002 12 10 | 704 | 0.7− | 0.1+ | 2006 08 28 | 699 | 0.2− | 0.5+ | | |
| 2002 12 06 | 704 | (1.2− | 3.0+) | 2002 12 10 | 704 | 0.4− | 0.4+ | 2006 09 17 | 699 | 0.8− | 1.1+ | | |
| 2002 12 06 | 704 | 0.1+ | 0.1− | 2002 12 10 | 704 | 0.2+ | 0.4− | 2006 09 17 | 699 | 0.9+ | 0.3+ | | |
| 2002 12 06 | 704 | (0.8− | 2.1+) | 2002 12 10 | 704 | 0.3− | 0.3+ | 2006 09 17 | 699 | (0.4+ | 2.1+) | | |
| 2002 12 06 | 704 | 0.3+ | 0.7+ | 2002 12 10 | 704 | 0.4+ | 0.5− | 2006 09 17 | 699 | 0.6+ | 0.9+ | | |
| 2002 12 06 | 704 | (2.2− | 2.1+) | 2002 12 10 | 704 | 0.4− | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.2− | | |
| 2002 12 06 | 704 | 0.1+ | 1.1+ | 2002 12 10 | 704 | 0.6+ | 0.3− | 2006 09 20 | 644 | 0.1− | 0.1− | | |
| 2002 12 06 | 704 | (2.1− | 1.8+) | 2005 05 19 | G96 | 0.1+ | 0.6+ | 2006 09 20 | 644 | 0.0 | 0.0 | | |
| 2002 12 06 | 704 | 0.1− | 0.8+ | 2005 05 19 | G96 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.4− | | |
| 2002 12 06 | 704 | (1.8− | 1.8+) | 2005 05 19 | G96 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.7− | | |
| 2002 12 06 | 704 | 0.4− | 0.3+ | 2005 05 19 | G96 | 0.2+ | 0.6+ | 2006 09 30 | 703 | 0.7+ | 0.2− | | |
| 2002 12 10 | 704 | 0.4− | 0.7− | 2006 08 28 | 699 | 1.0− | 0.6− | 2006 09 30 | 703 | 0.4− | 0.3− | | |

**2006 SN$_{128}$ = 2000 KJ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.81676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18230583 | $\omega$ | 210.01790 | | +0.85651451 | +0.47784538 | |
| $a$ | 3.0803661 | $\Omega$ | 120.17067 | | −0.41717388 | +0.86348227 | |
| $e$ | 0.3247638 | $i$ | 13.03933 | | −0.30388953 | +0.16143780 | |
| $P$ | 5.41 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 27 | 704 | 0.4− | 0.8− | 2006 09 17 | 699 | 0.9+ | 0.2− | 2006 09 27 | 703 | 0.1+ | 0.2− | | |
| 2000 05 27 | 704 | 0.3+ | 0.2− | 2006 09 17 | 699 | 0.4+ | 0.0 | 2006 09 27 | 703 | 0.2− | 0.4− | | |
| 2000 05 27 | 704 | 0.1+ | 0.5− | 2006 09 17 | 699 | 1.4+ | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.1− | | |
| 2000 06 04 | 704 | 0.0 | 0.9+ | 2006 09 22 | 703 | 0.2+ | 0.8− | 2006 09 27 | 703 | 0.0 | 0.3+ | | |
| 2000 06 04 | 704 | 0.3+ | 0.3+ | 2006 09 22 | 703 | 0.2− | 0.5− | 2006 09 27 | 703 | 1.2− | 1.4+ | | |
| 2000 06 04 | 704 | 0.5− | 0.0 | 2006 09 22 | 703 | 0.5+ | 0.0 | 2006 09 27 | 703 | 0.7− | 0.2+ | | |
| 2000 06 04 | 704 | 0.1+ | 0.2+ | 2006 09 22 | 703 | 0.2+ | 0.4− | 2006 09 27 | 703 | 0.3− | 0.0 | | |
| 2006 07 31 | E12 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.2− | 0.1− | 2006 09 28 | 703 | 0.2− | 0.0 | | |
| 2006 07 31 | E12 | 0.4+ | 0.7+ | 2006 09 27 | 703 | 0.2+ | 0.4− | 2006 09 28 | 703 | 0.8− | 0.4− | | |
| 2006 07 31 | E12 | 0.1+ | 0.4− | 2006 09 27 | 703 | 0.5+ | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.0 | | |
| 2006 07 31 | E12 | 0.7− | 0.2+ | 2006 09 27 | 703 | 0.3− | 0.5+ | 2006 09 28 | 703 | 0.2+ | 0.1+ | | |
| 2006 09 17 | 699 | 0.5− | 0.4+ | 2006 09 27 | 703 | 0.1+ | 0.5− | | | | | | |

**2006 SV$_{128}$ = 2002 YR$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.58265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21699627 | $\omega$ | 129.07751 | | +0.84248515 | −0.50183295 | |
| $a$ | 2.7426341 | $\Omega$ | 261.86486 | | +0.41262858 | +0.83491616 | |
| $e$ | 0.1614001 | $i$ | 11.41453 | | +0.34634726 | +0.22600594 | |
| $P$ | 4.54 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.4− | 0.6+ | 2006 09 22 | 699 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.2− | | |
| 2001 08 26 | 644 | 0.4− | 0.6+ | 2006 09 22 | 699 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.2− | | |
| 2001 08 26 | 644 | 0.1− | 0.8+ | 2006 09 22 | 699 | 1.0+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.3− | | |
| 2002 12 05 | 704 | 0.5+ | 0.6+ | 2006 09 22 | 699 | 0.0 | 0.4+ | 2006 10 21 | 704 | 0.0 | 0.0 | | |
| 2002 12 05 | 704 | 0.9− | 0.7+ | 2006 09 25 | H06 | 0.4− | 0.5+ | 2006 10 21 | 704 | 0.1+ | 0.5− | | |
| 2002 12 05 | 704 | 0.2− | 0.9+ | 2006 09 25 | H06 | 0.5− | 0.6+ | 2006 10 21 | 704 | 0.9− | 0.6+ | | |
| 2002 12 31 | 704 | 0.6+ | 0.0 | 2006 09 25 | H06 | (1.5− | 0.5−) | 2006 10 21 | 704 | 0.7− | 1.1− | | |
| 2002 12 31 | 704 | 0.9+ | 0.0 | 2006 09 26 | H06 | 0.3− | 0.3− | 2006 10 21 | 704 | 0.0 | 0.9− | | |
| 2002 12 31 | 704 | 0.2+ | 0.5+ | 2006 09 26 | H06 | 0.2− | 0.4− | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2003 01 07 | 704 | 0.9− | 0.0 | 2006 09 26 | H06 | 0.7+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1+ | | |
| 2003 01 07 | 704 | (2.0− | 0.4−) | 2006 09 28 | 703 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2003 01 07 | 704 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2003 01 07 | 704 | 0.0 | 0.5− | 2006 09 28 | 703 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.2+ | | |
| 2003 01 07 | 704 | 0.4+ | 0.2− | 2006 09 28 | 703 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.3− | 0.2+ | | |
| 2006 09 17 | 703 | 0.0 | 0.6− | 2006 09 30 | 704 | 1.4+ | 0.1− | 2006 10 31 | 703 | 0.0 | 0.7+ | | |
| 2006 09 17 | 703 | 0.1− | 0.4− | 2006 09 30 | 704 | (1.9+ | 0.1+) | 2006 10 31 | 703 | 0.1+ | 0.1+ | | |
| 2006 09 17 | 703 | 0.1− | 0.6+ | 2006 09 30 | 704 | (1.8+ | 0.7−) | 2006 10 31 | 703 | 0.2+ | 0.2+ | | |
| 2006 09 17 | 703 | 0.6− | 0.4− | 2006 09 30 | 704 | (2.0+ | 0.7−) | 2006 10 31 | 703 | 0.1+ | 0.3+ | | |
| 2006 09 22 | 699 | (0.1+ | 1.9+) | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 25 | 703 | 0.6− | 0.4− | | |
| 2006 09 22 | 699 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 25 | 703 | 0.3− | 0.3+ | | |
| 2006 09 22 | 699 | 1.1+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 25 | 703 | 0.5− | 0.3− | | |
| 2006 09 22 | 699 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 11 25 | 703 | 0.7− | 0.9− | | |

**2006 SD$_{129}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.45228 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18795929 | $\omega$ | 240.79981 | | +0.63421591 | −0.77264803 | |
| $a$ | 3.0182846 | $\Omega$ | 169.69533 | | +0.75256673 | +0.60861272 | |
| $e$ | 0.1118679 | $i$ | 9.01235 | | +0.17723854 | +0.18057014 | |
| $P$ | 5.24 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.5− | 0.1− | 2006 09 25 | 699 | (2.6+ | 0.0 ) | 2006 10 19 | 644 | 0.2+ | 0.1+ | | |
| 1993 03 23 | 691 | 0.3− | 0.5− | 2006 09 25 | 699 | 0.7− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 1993 03 23 | 691 | 0.6+ | 0.5− | 2006 09 25 | 699 | 1.2+ | 1.2+ | 2006 10 21 | 644 | 0.3− | 0.3− | | |
| 2001 11 20 | 699 | 0.5− | 0.6+ | 2006 09 25 | 699 | 1.3− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2001 11 20 | 699 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.4+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 20 | 699 | 0.7+ | 0.4− | 2006 10 04 | G96 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.1− | 0.5− | | |
| 2001 11 20 | 699 | 0.6− | 1.0+ | 2006 10 04 | G96 | 0.3+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.3− | | |
| 2003 02 09 | 644 | 1.0− | 1.6− | 2006 10 16 | 703 | 1.1+ | 0.3− | 2006 10 28 | 703 | 0.3− | 0.3− | | |
| 2003 02 09 | 644 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 10 28 | 703 | 1.1− | 0.2− | | |
| 2003 02 09 | 644 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.9− | 2006 10 28 | 703 | 0.4− | 0.7+ | | |
| 2006 09 17 | 691 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.2+ | | |
| 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.0 | 0.1− | | | | | | |
| 2006 09 17 | 691 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.0 | | | | | | |

**2006 SH$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.55399 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17655466 | $\omega$ | 242.11137 | | +0.53081185 | −0.84740479 | |
| $a$ | 3.1469023 | $\Omega$ | 175.76961 | | +0.82346622 | +0.51236711 | |
| $e$ | 0.0896624 | $i$ | 9.35906 | | +0.20035508 | +0.13923028 | |
| $P$ | 5.58 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.5− | 1.1− | 2006 07 21 | G96 | 0.0 | 0.3+ | 2006 09 29 | 699 | 1.4− | 1.1+ |
| 2001 12 11 | 704 | 0.1+ | 0.7− | 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 1.0+ | 0.6− |
| 2001 12 11 | 704 | 0.6− | 0.3− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.6+ |
| 2001 12 11 | 704 | 0.6+ | 0.7− | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.6+ |
| 2001 12 23 | 209 | 0.1+ | 0.5− | 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2001 12 23 | 209 | 0.9+ | 1.3− | 2006 09 25 | 699 | 0.2+ | 0.6+ | 2006 10 02 | 691 | 0.3− | 0.1+ |
| 2001 12 23 | 209 | 0.2+ | 0.6− | 2006 09 25 | 699 | 0.1− | 0.5+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2003 03 24 | 691 | 0.1+ | 1.1+ | 2006 09 25 | 699 | (1.8− | 1.2−) | 2006 10 22 | 703 | 0.9− | 1.4− |
| 2003 03 24 | 691 | 0.2+ | 0.9+ | 2006 09 25 | 699 | 0.7+ | 0.2− | 2006 10 22 | 703 | (2.4− | 0.8−) |
| 2003 03 24 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | (1.7− | 2.5−) |
| 2006 07 21 | G96 | 0.6+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.5+ | 2006 10 22 | 703 | (1.7− | 1.6−) |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | | | | |

**2006 SN$_{129}$ = 1999 TM$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.35939 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28212700 | $\omega$ | 0.10111 | | +0.99753134 | | −0.06958335 |
| $a$ | 2.3023585 | $\Omega$ | 3.92661 | | +0.06433075 | | +0.85153394 |
| $e$ | 0.1775794 | $i$ | 7.93558 | | +0.02815633 | | +0.51966153 |
| $P$ | 3.49 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 1.3− | 0.1− | 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1999 10 06 | 704 | 0.1+ | 0.4− | 2006 09 14 | 691 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 1999 10 06 | 704 | 0.3− | 0.0 | 2006 09 14 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 |
| 1999 10 06 | 704 | 0.4+ | 0.2− | 2006 09 18 | 699 | 1.2− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2− |
| 1999 10 06 | 704 | 0.1− | 0.5− | 2006 09 18 | 699 | (1.9+ | 0.7+) | 2006 09 30 | 691 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.1− | 0.2− | 2006 09 18 | 699 | (1.8− | 0.0 ) | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 1999 10 13 | 704 | 0.3+ | 0.1− | 2006 09 18 | 699 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.1+ |
| 1999 10 13 | 704 | 0.4+ | 0.3+ | 2006 09 19 | 691 | (0.6− | 2.3+) | 2006 10 17 | 703 | 0.9− | 0.1− |
| 1999 10 13 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.9− |
| 1999 10 13 | 704 | 0.9+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.0 | 1.4+ |

**2006 SQ$_{129}$ = 2002 TN$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.85542 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23921779 | $\omega$ | 4.15176 | | +0.99966521 | | −0.02473089 |
| $a$ | 2.5700431 | $\Omega$ | 357.23092 | | +0.01677716 | | +0.84335211 |
| $e$ | 0.1772111 | $i$ | 9.05856 | | +0.01969769 | | +0.53679195 |
| $P$ | 4.12 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.3+ | 0.5+ | 2006 09 19 | 703 | 0.8+ | 0.3− | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2002 10 04 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 699 | 1.2− | 0.4+ | 2006 10 19 | G96 | 0.5− | 0.1− |
| 2002 10 04 | 644 | 0.4+ | 0.7+ | 2006 09 19 | 703 | 0.2+ | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.5+ |
| 2002 10 05 | 644 | 0.3+ | 0.3− | 2006 09 19 | 703 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.5− | 0.2+ |
| 2002 10 05 | 644 | 0.1− | 0.4− | 2006 09 19 | 699 | 0.4+ | 1.6− | 2006 10 20 | G96 | 1.2+ | 0.2− |
| 2002 10 05 | 644 | 0.4− | 0.1− | 2006 09 19 | 703 | 0.5+ | 0.8+ | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2002 10 06 | 644 | 0.3− | 0.5− | 2006 09 19 | 699 | 0.4− | 0.9+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2002 10 06 | 644 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 20 | G96 | 0.2+ | 0.2+ |
| 2002 10 06 | 644 | 0.3− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.3− | | | | |
| 2006 09 19 | 699 | 0.0 | 0.6− | 2006 09 25 | G96 | 0.0 | 0.2− | | | | |

**2006 SU$_{129}$ = 6361 P-L = 2001 YA$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.89507 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17194389 | $\omega$ | 115.94516 | | +0.95292670 | | +0.29781339 |
| $a$ | 3.2029111 | $\Omega$ | 226.78693 | | −0.29854763 | | +0.88887723 |
| $e$ | 0.1505116 | $i$ | 4.47796 | | −0.05291526 | | +0.34814429 |
| $P$ | 5.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.3− | 0.3+ | 2001 12 20 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.7+ | 0.6− |
| 1960 09 26 | 675 | 0.3− | 0.5+ | 2001 12 20 | 691 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1960 09 26 | 675 | 0.8+ | 0.3− | 2001 12 20 | 691 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 1960 09 28 | 675 | 0.1− | 0.7+ | 2006 09 19 | 699 | (2.4− | 0.0 ) | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 1960 09 28 | 675 | 0.3− | 0.9− | 2006 09 19 | 699 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.5− | 0.1+ | 2006 09 19 | 699 | 1.0− | 0.5+ | 2006 10 01 | 691 | 0.3+ | 0.2+ |
| 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 09 19 | 699 | 0.7− | 0.5− | 2006 10 22 | G96 | 0.4− | 0.1− |
| 2001 12 19 | 704 | 0.6+ | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.5− | 1.4− |
| 2001 12 19 | 704 | 0.1+ | 1.4+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.6− | 0.4+ |
| 2001 12 19 | 704 | 0.6+ | 1.4+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2− | 0.4− |

**2006 SB$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.25489 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21964632 | $\omega$ | 344.61873 | | +0.23456375 | | +0.97027050 |
| $a$ | 2.7205295 | $\Omega$ | 298.91540 | | −0.88454428 | | +0.18759553 |
| $e$ | 0.0830498 | $i$ | 3.90576 | | −0.40318886 | | +0.15291527 |
| $P$ | 4.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.3− | 0.7+ | 2006 08 21 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2001 07 13 | 644 | 0.2− | 0.7+ | 2006 09 19 | 699 | 1.3− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2001 07 13 | 644 | 0.5− | 0.6+ | 2006 09 19 | 699 | (1.6+ | 0.2−) | 2006 10 01 | 691 | 0.1− | 0.5− |
| 2001 07 21 | 608 | 0.4+ | 0.7− | 2006 09 19 | 699 | (2.1− | 0.3−) | 2006 10 11 | 691 | 0.2+ | 0.0 |
| 2001 07 21 | 608 | 0.3+ | 0.5− | 2006 09 19 | 699 | 0.5+ | 1.5+ | 2006 10 11 | 691 | 0.0 | 0.0 |
| 2001 07 21 | 608 | 0.3+ | 0.8− | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.0 |
| 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 08 21 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3− | | | | |

**2006 SC$_{130}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.40048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21377218 | $\omega$ | 49.29936 | | +0.54647254 | | +0.83603093 |
| $a$ | 2.7701413 | $\Omega$ | 253.89139 | | −0.78298570 | | +0.48919110 |
| $e$ | 0.0802956 | $i$ | 2.93507 | | −0.29715510 | | +0.24848410 |
| $P$ | 4.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 291 | 0.0 | 0.1− | 2006 08 21 | 691 | 0.1− | 0.0 | 2006 09 27 | 699 | 0.0 | 0.7+ |
| 2002 10 31 | 291 | 0.2+ | 0.2− | 2006 08 21 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.1+ |
| 2002 10 31 | 291 | 0.1− | 0.1− | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2002 11 24 | 644 | 0.2− | 0.2+ | 2006 09 19 | 699 | 1.2+ | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.1− |
| 2002 11 24 | 644 | 0.2− | 0.4+ | 2006 09 19 | 699 | 0.8− | 0.2+ | 2006 10 10 | 143 | 0.9+ | 0.1− |
| 2002 11 24 | 644 | 0.3+ | 0.3+ | 2006 09 19 | 699 | 0.4− | 1.3− | 2006 10 10 | 143 | 0.8+ | 1.0+ |
| 2002 12 08 | 291 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.6− | 1.1− | 2006 10 10 | 143 | 0.7+ | 0.6+ |
| 2002 12 08 | 291 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.4− | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.6− |
| 2002 12 08 | 291 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.5+ | 0.4− |
| 2005 02 09 | 809 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.2− | 2006 10 23 | G96 | 0.2+ | 0.2− |
| 2005 02 09 | 809 | 0.1+ | 0.0 | 2006 09 27 | 699 | (1.1+ | 2.9+) | 2006 10 23 | G96 | 0.1+ | 0.5− |
| 2005 02 09 | 809 | 0.0 | 0.0 | 2006 09 27 | 699 | 1.8− | 1.2+ | | | | |
| 2005 02 09 | 809 | 0.0 | 0.1+ | 2006 09 27 | 699 | 0.8+ | 0.4+ | | | | |

**2006 SG$_{130}$ = 1997 SR$_{6}$ = 2004 GP$_{80}$ = 2005 LM$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.80633 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22547178 | $\omega$ | 198.36663 | | +0.98468915 | | −0.17345421 |
| $a$ | 2.6734655 | $\Omega$ | 171.56525 | | +0.17106061 | | +0.94233285 |
| $e$ | 0.1536256 | $i$ | 6.79170 | | +0.03354908 | | +0.28622097 |
| $P$ | 4.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 23 | 691 | 0.1+ | 0.1+ | 2006 09 20 | 699 | (2.4− | 1.1+) | 2006 10 19 | 644 | 0.5− | 0.2+ |
| 1997 09 23 | 691 | 0.0 | 0.4+ | 2006 09 20 | 699 | (2.2− | 1.0+) | 2006 10 19 | 644 | 0.4− | 0.1+ |
| 1997 09 23 | 691 | 0.1+ | 0.4+ | 2006 09 20 | 699 | 0.1− | 0.9+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 1997 09 29 | 691 | (2.4+ | 1.2−) | 2006 09 20 | 699 | 1.4+ | 0.5− | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 1997 09 29 | 691 | 0.3− | 0.2+ | 2006 09 26 | 704 | 0.6− | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1997 09 29 | 691 | 0.3− | 0.1+ | 2006 09 26 | 704 | 0.4− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 704 | 0.1− | 0.3+ | 2006 10 22 | 704 | (1.8+ | 2.1+) |
| 2004 03 23 | 691 | 0.0 | 0.6+ | 2006 09 26 | 704 | 0.6− | 0.3+ | 2006 10 22 | 704 | 0.1− | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.4− | 2006 10 22 | 704 | 0.1− | 0.3+ |
| 2004 04 13 | 691 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 1.2+ | 0.2− | 2006 10 27 | 704 | 0.2− | 0.7+ |
| 2004 04 13 | 691 | 0.0 | 0.7+ | 2006 09 30 | 703 | 1.0+ | 0.9− | 2006 10 27 | 704 | 0.6− | 1.5+ |
| 2004 04 13 | 691 | 0.5+ | 0.4+ | 2006 09 30 | 703 | 0.7+ | 0.1− | 2006 10 27 | 704 | 1.0− | 0.8− |
| 2004 04 24 | 691 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.5+ | 1.4+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2004 04 24 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.7+ | 2006 11 07 | 644 | 0.4− | 0.1− |
| 2004 04 24 | 691 | 0.2− | 0.4+ | 2006 09 30 | 703 | 0.6+ | 1.2+ | 2006 11 07 | 644 | 0.5− | 0.0 |
| 2005 06 08 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.9+ | 2006 11 13 | 703 | 0.9+ | 0.6+ |
| 2005 06 08 | 691 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.4− | 0.5− |
| 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.5+ | 0.4− |
| 2005 06 10 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1+ | 2006 11 13 | 703 | 1.3+ | 0.7+ |
| 2005 06 10 | 691 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 06 10 | 691 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2006 09 19 | 691 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.6+ | | | | |

**2006 SK$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.40138 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29931993 | $\omega$ | 250.39345 | | +0.76225954 | −0.64652484 | |
| $a$ | 2.2133272 | $\Omega$ | 149.86239 | | +0.61464143 | +0.70794396 | |
| $e$ | 0.1739607 | $i$ | 3.54914 | | +0.20291947 | +0.28429031 | |
| $P$ | 3.29 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 809 | 0.8− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 1996 10 07 | 809 | 0.4− | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 1996 10 07 | 809 | 1.3+ | 0.1− | 2006 09 30 | 703 | 0.3− | 1.1+ | 2006 10 21 | 644 | 0.3− | 0.3+ | | |
| 2001 02 16 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2001 02 16 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2001 02 16 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2004 01 30 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 27 | 704 | 0.4− | 0.6+ | | |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 10 27 | 704 | 0.7+ | 0.8− | | |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 27 | 704 | 0.4− | 1.4− | | |
| 2005 05 08 | 691 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 27 | 704 | 1.2+ | 1.0− | | |
| 2005 05 08 | 691 | 0.1+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 07 | 644 | 0.2− | 0.0 | | |
| 2005 05 08 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.1+ | | |
| 2006 09 20 | 699 | 0.7− | 1.4+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.4+ | 0.3+ | | |
| 2006 09 20 | 699 | 0.4− | 0.9+ | 2006 10 16 | 703 | 0.5− | 0.9+ | 2006 11 13 | 703 | 0.6+ | 0.0 | | |
| 2006 09 20 | 699 | 0.1− | 0.5− | 2006 10 21 | 703 | 0.5− | 0.6− | 2006 11 13 | 703 | (2.4+ | 0.3+) | | |
| 2006 09 20 | 699 | 0.8+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.6− | 2006 11 13 | 703 | 0.7− | 0.1− | | |
| 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 1.4+ | 0.4+ | 2006 11 13 | 703 | 1.0− | 0.3− | | |
| 2006 09 23 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.3− | | |
| 2006 09 23 | 691 | 0.2+ | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1− | | |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.2− | | |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− | | | | | | |

**2006 SM$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.45642 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23493416 | $\omega$ | 270.21960 | | +0.50518588 | +0.86001606 | |
| $a$ | 2.6011891 | $\Omega$ | 30.46422 | | −0.72469874 | +0.46794453 | |
| $e$ | 0.1054472 | $i$ | 8.14491 | | −0.46861388 | +0.20347063 | |
| $P$ | 4.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 10 28 | 704 | (0.2+ | 2.4+) | | |
| 2004 01 18 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.2− | 0.1+ | | |
| 2004 01 18 | 644 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.9+ | 0.1+ | | |
| 2004 02 11 | 644 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.6− | 1.3− | | |
| 2004 02 11 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.3+ | | |
| 2004 02 11 | 644 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 20 | 699 | 0.3+ | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.0 | | |
| 2006 09 20 | 699 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.1− | | |
| 2006 09 20 | 699 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1− | | |
| 2006 09 20 | 699 | 0.5− | 0.6− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.2− | | |
| 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.1+ | | |
| 2006 09 24 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.8+ | | |
| 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.8− | | |
| 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 11 | 703 | 1.0+ | 0.8+ | | |
| 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1− | | |
| 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 24 | A44 | 0.9+ | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.3− | | |
| 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.1− | | |
| 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.8− | 0.4+ | | |
| 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.6− | | |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.2+ | 1.2+ | | |
| 2006 10 11 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.2− | 0.6+ | | |
| 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.2− | | | | | | |
| 2006 10 15 | 691 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− | | | | | | |

**2006 SN$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.55341 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27247018 | $\omega$ | 116.12339 | | +0.88603399 | +0.46063487 | |
| $a$ | 2.3564419 | $\Omega$ | 216.51454 | | −0.45062940 | +0.82902801 | |
| $e$ | 0.2036099 | $i$ | 5.06465 | | −0.10898122 | +0.31706161 | |
| $P$ | 3.62 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 01 | 644 | 0.6− | 0.3+ | 2006 10 03 | 691 | 0.2− | 0.2+ | 2006 10 22 | 683 | 1.4+ | 1.1− | | |
| 2002 07 01 | 644 | 0.9− | 0.4+ | 2006 10 03 | 691 | 0.2− | 0.2+ | 2006 10 22 | 683 | (2.0+ | 0.1−) | | |
| 2002 07 01 | 644 | 0.8− | 0.6+ | 2006 10 03 | 691 | 0.1− | 0.3+ | 2006 10 23 | 683 | (1.6− | 0.5−) | | |
| 2002 07 09 | 704 | 0.7+ | 0.5− | 2006 10 16 | 104 | 0.4− | 0.2+ | 2006 10 23 | 683 | (0.5− | 1.6−) | | |
| 2002 07 09 | 704 | 0.6+ | 0.5− | 2006 10 16 | 104 | 0.2− | 0.4+ | 2006 10 23 | 683 | 0.2+ | 1.1− | | |
| 2002 07 09 | 704 | 0.6+ | 0.3+ | 2006 10 16 | 104 | 0.2− | 0.4− | 2006 10 27 | 683 | (2.2+ | 0.2+) | | |
| 2002 07 09 | 704 | 0.5+ | 1.2− | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.5− | 0.3+ | | |
| 2005 03 17 | G96 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 27 | 683 | (3.2+ | 0.2−) | | |
| 2005 03 17 | G96 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.8− | 0.2+ | | |
| 2005 03 17 | G96 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2+ | | |
| 2005 03 17 | G96 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 27 | 683 | 0.9+ | 0.4− | | |
| 2005 05 08 | G96 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5− | 0.1+ | | |
| 2005 05 08 | G96 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2005 05 08 | G96 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.4− | | |
| 2005 05 08 | G96 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.5− | | |
| 2006 08 30 | 699 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2006 08 30 | 699 | (3.5+ | 1.8+) | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ | | |
| 2006 08 30 | 699 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− | | |
| 2006 08 30 | 699 | 0.3+ | 1.3+ | 2006 10 21 | 703 | 0.3− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.2− | | |
| 2006 09 20 | 699 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1− | 1.1+ | 2006 11 11 | 703 | 1.3− | 0.8− | | |
| 2006 09 20 | 699 | 0.2− | 0.7− | 2006 10 21 | 703 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 2006 09 20 | 699 | 0.1− | 1.2+ | 2006 10 21 | 703 | 0.0 | 0.5− | 2006 11 11 | 703 | 1.0+ | 1.0+ | | |
| 2006 09 20 | 699 | 0.6+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.4+ | | |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 22 | 683 | (0.6+ | 1.9−) | 2006 11 19 | 691 | 0.1+ | 0.2− | | |

**2006 SO$_{130}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.31002 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21881807 | $\omega$ | 23.86163 | | +0.92027465 | −0.39127003 | |
| $a$ | 2.7273901 | $\Omega$ | 359.16734 | | +0.33994694 | +0.80148242 | |
| $e$ | 0.0421958 | $i$ | 6.03337 | | +0.19372829 | +0.45225402 | |
| $P$ | 4.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.5− | 0.3− | 2006 09 20 | 699 | 1.6+ | 1.5+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 1995 03 27 | 691 | 0.0 | 0.7− | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1+ | | |
| 2004 04 22 | 691 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.4+ | 0.3− | 2006 10 21 | 691 | 0.4− | 0.4− | | |
| 2004 04 22 | 691 | 0.1− | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1− | | |
| 2004 04 22 | 691 | 0.4+ | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1− | | |
| 2006 07 22 | G96 | 1.6− | 1.4− | 2006 10 03 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 2006 07 22 | G96 | 0.8+ | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3− | | |
| 2006 07 22 | G96 | 0.7+ | 0.4− | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2006 07 22 | G96 | 0.6+ | 0.3− | 2006 10 17 | 691 | 0.4− | 0.3+ | 2006 10 29 | 691 | 0.3+ | 0.1+ | | |
| 2006 09 20 | 699 | 0.2+ | 0.9+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.3− | | |
| 2006 09 20 | 699 | (2.3− | 0.9+) | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.2− | | |
| 2006 09 20 | 699 | (2.2− | 0.8+) | 2006 10 20 | 644 | 0.4− | 0.1− | | | | | | |

**2006 SS$_{130}$ = 2002 TV$_{356}$ = 2004 CY$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 298.70305 | | (2000.0) | | | |
| $n$ | 0.25933040 | $\omega$ | 254.42393 | | −0.00835440 | −0.99993057 |
| $a$ | 2.4353820 | $\Omega$ | 196.06164 | | +0.92857518 | −0.00467390 |
| $e$ | 0.0935451 | $i$ | 1.72126 | | +0.37105032 | −0.01081728 |
| $P$ | 3.80 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.5− | | |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 09 25 | G98 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.3− | | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 25 | G98 | 0.5− | 0.9+ | 2006 10 19 | 691 | 0.2+ | 0.3− | | |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 26 | G98 | 0.6+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− | | |
| 2004 02 12 | 291 | 0.4− | 0.1+ | 2006 09 26 | G98 | 0.5− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.4− | | |
| 2004 02 12 | 291 | 0.0 | 0.0 | 2006 09 26 | G98 | 0.6+ | 1.0+ | 2006 10 23 | 691 | 0.3− | 0.3− | | |
| 2004 02 12 | 291 | 0.3+ | 0.1+ | 2006 09 26 | G98 | 0.6+ | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.4− | | |
| 2004 02 14 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G98 | 0.8+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 09 26 | G98 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G98 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.2− | | |
| 2006 09 18 | G98 | 0.0 | 0.5− | 2006 09 26 | G98 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2006 09 18 | G98 | 1.0− | 1.0− | 2006 09 26 | G98 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.4− | | |
| 2006 09 18 | 691 | 0.0 | 0.2− | 2006 09 28 | G98 | 0.2+ | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.8− | | |
| 2006 09 18 | G98 | 0.7− | 0.2+ | 2006 09 28 | G98 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.6+ | 1.0− | | |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 09 28 | G98 | 0.4− | 0.6+ | 2006 11 13 | 291 | 0.0 | 0.0 | | |
| 2006 09 18 | 691 | 0.5− | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.2+ | 2006 11 13 | 291 | 0.2+ | 0.2+ | | |
| 2006 09 24 | G98 | 0.7+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 11 13 | 291 | 0.5+ | 0.3+ | | |
| 2006 09 24 | G98 | 0.6+ | 0.5− | 2006 10 02 | 691 | 0.2− | 0.3+ | 2006 11 13 | 291 | 0.3+ | 0.2+ | | |
| 2006 09 24 | 691 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 291 | 1.2− | 0.6− | | |
| 2006 09 24 | 691 | 0.5+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 13 | 291 | 0.4− | 0.1+ | | |
| 2006 09 24 | G98 | 0.0 | 0.6+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | | | | | | |

**2006 SA$_{131}$ = 2002 TG$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.39831 | | (2000.0) | | | |
| $n$ | 0.24731046 | $\omega$ | 172.52732 | | +0.93129828 | +0.36425658 |
| $a$ | 2.5136669 | $\Omega$ | 166.11076 | | −0.33437483 | +0.85578112 |
| $e$ | 0.1542742 | $i$ | 0.19422 | | −0.14448874 | +0.36736332 |
| $P$ | 3.99 | $H$ | 18.4 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 291 | 0.0 | 0.2− | 2006 10 13 | G98 | 0.9+ | 0.4+ | 2006 10 21 | 703 | 0.5+ | 0.3− | | |
| 2002 10 09 | 291 | 0.1− | 0.2− | 2006 10 13 | G98 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.1− | | |
| 2002 10 09 | 291 | 0.4+ | 0.3− | 2006 10 13 | G98 | 0.8+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.2− | | |
| 2002 10 10 | 644 | 0.0 | 0.1+ | 2006 10 13 | G98 | 0.1− | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.1− | | |
| 2002 10 10 | 644 | 0.4− | 0.1+ | 2006 10 13 | G98 | 0.6+ | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.5− | | |
| 2002 10 10 | 644 | 0.2− | 0.4+ | 2006 10 15 | 691 | 1.2− | 0.7+ | 2006 10 27 | 691 | 0.6+ | 0.4+ | | |
| 2006 09 24 | G98 | 0.6+ | 1.0− | 2006 10 15 | 691 | 0.1+ | 0.7+ | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 2006 09 24 | G98 | 0.1− | 0.8+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.4− | | |
| 2006 09 24 | G98 | 0.9+ | 0.7− | 2006 10 19 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2006 09 26 | G98 | 0.7− | 1.0− | 2006 10 19 | 691 | 0.1+ | 0.9− | 2006 10 27 | G96 | 0.3− | 0.4− | | |
| 2006 09 26 | G98 | 0.6− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.5− | | |
| 2006 09 26 | G98 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | (4.3− | 2.7−) | | |
| 2006 09 26 | G98 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | (5.3− | 2.6−) | | |
| 2006 09 30 | G98 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | (4.6− | 2.0−) | | |
| 2006 09 30 | G98 | 0.9− | 0.4− | 2006 10 21 | 703 | 0.0 | 0.4+ | 2006 11 13 | G96 | (4.4− | 2.4−) | | |
| 2006 09 30 | G98 | 0.2+ | 0.7+ | 2006 10 21 | 703 | 1.3− | 0.6+ | | | | | | |
| 2006 09 30 | G98 | 0.1− | 0.6+ | 2006 10 21 | 703 | 0.4− | 0.5+ | | | | | | |

**2006 SB$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 34.64846 | | (2000.0) | | | |
| $n$ | 0.27855327 | $\omega$ | 319.05234 | | +0.94018133 | +0.34021488 |
| $a$ | 2.3220089 | $\Omega$ | 21.07773 | | −0.29833782 | +0.84730078 |
| $e$ | 0.1645974 | $i$ | 2.81932 | | −0.16447983 | +0.40784216 |
| $P$ | 3.54 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 09 | 644 | 0.0 | 0.1− | 2006 09 24 | 701 | 0.6− | 0.4− | 2006 10 20 | 691 | 0.3− | 0.0 | | |
| 2002 07 09 | 644 | 0.0 | 0.1+ | 2006 09 24 | 701 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.6− | | |
| 2002 07 09 | 644 | 0.0 | 0.1+ | 2006 09 25 | 701 | 0.5+ | 0.5− | 2006 10 28 | 691 | 0.8− | 0.3+ | | |
| 2003 12 21 | 645 | 0.0 | 0.1− | 2006 09 25 | 701 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.4+ | | |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 09 25 | 701 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.4− | 0.8− | | |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.9+ | 0.2− | 2006 11 11 | 703 | 0.7− | 0.5+ | | |
| 2004 01 18 | 691 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.0 | | |
| 2004 01 18 | 691 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.6+ | | |
| 2005 04 10 | G96 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.5+ | | |
| 2005 04 10 | G96 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2005 04 10 | G96 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.1− | | |
| 2005 04 10 | G96 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.3− | | |
| 2006 09 24 | 701 | 0.8+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ | | | | | | |
| 2006 09 24 | 701 | 0.9+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 | | | | | | |

**2006 SE$_{131}$ = 2006 QQ$_{86}$ = 2006 RM1031999 UU30**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.10682 | | (2000.0) | | | |
| $n$ | 0.27465723 | $\omega$ | 169.61785 | | +0.68438487 | +0.72886521 |
| $a$ | 2.3439159 | $\Omega$ | 143.56495 | | −0.67126446 | +0.64019620 |
| $e$ | 0.1927443 | $i$ | 1.86318 | | −0.28464255 | +0.24270216 |
| $P$ | 3.59 | $H$ | 18.4 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.3− | 0.2− | 2006 08 28 | 691 | 0.1− | 0.2+ | 2006 09 26 | 734 | 0.2+ | 0.0 | | |
| 1999 10 31 | 691 | 0.0 | 0.2− | 2006 08 28 | 699 | 0.5+ | 1.5− | 2006 09 26 | 734 | 0.5+ | 0.3+ | | |
| 1999 10 31 | 691 | 0.1+ | 0.3− | 2006 09 13 | 734 | 0.3+ | 0.2+ | 2006 09 26 | 734 | 0.8− | 0.1+ | | |
| 1999 11 05 | 691 | 0.1+ | 0.1+ | 2006 09 13 | 734 | 0.2+ | 0.1− | 2006 09 26 | 734 | 0.0 | 0.2+ | | |
| 1999 11 05 | 691 | 0.2− | 0.5+ | 2006 09 13 | 734 | 0.8− | 0.7+ | 2006 09 27 | 734 | 0.1− | 0.2− | | |
| 1999 11 05 | 691 | 0.2+ | 0.1+ | 2006 09 13 | 734 | 0.1− | 0.5+ | 2006 09 27 | 734 | 0.2− | 0.2− | | |
| 2006 08 27 | 291 | 0.1− | 0.2+ | 2006 09 13 | 734 | 0.2− | 0.9− | 2006 09 27 | 734 | 0.5− | 0.1− | | |
| 2006 08 27 | 291 | 0.1+ | 0.1+ | 2006 09 13 | 734 | 0.3− | 0.4− | 2006 09 27 | 734 | 0.1− | 0.1+ | | |
| 2006 08 27 | 291 | 0.0 | 0.1+ | 2006 09 13 | 734 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.4+ | | |
| 2006 08 28 | 699 | 0.5− | 1.6+ | 2006 09 13 | 734 | 1.0− | 0.1− | 2006 09 30 | G96 | 0.3− | 0.1− | | |
| 2006 08 28 | 691 | 0.2− | 0.3− | 2006 09 25 | 734 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.3− | | |
| 2006 08 28 | 699 | 0.4− | 0.3+ | 2006 09 25 | 734 | 0.5+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.1− | | |
| 2006 08 28 | 691 | 0.0 | 0.3− | 2006 09 25 | 734 | 0.2+ | 0.4+ | | | | | | |
| 2006 08 28 | 699 | 1.2+ | 0.5− | 2006 09 25 | 734 | 1.8+ | 0.2− | | | | | | |

**2006 SF$_{131}$ = 1999 CW$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 350.50242 | | (2000.0) | | | |
| $n$ | 0.21915985 | $\omega$ | 59.23861 | | +0.89384866 | −0.43182862 |
| $a$ | 2.7245538 | $\Omega$ | 325.91875 | | +0.30111071 | +0.77752959 |
| $e$ | 0.2061257 | $i$ | 12.43437 | | +0.33221517 | +0.45713430 |
| $P$ | 4.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.1+ | 0.5+ | 2006 08 29 | 699 | 0.8− | 0.3− | 2006 09 27 | H06 | 0.4+ | 0.5− | | |
| 1999 02 09 | 691 | 0.2− | 0.0 | 2006 08 29 | 699 | 0.6+ | 0.3+ | 2006 09 28 | 703 | 0.3− | 0.4+ | | |
| 1999 02 09 | 691 | 0.2− | 0.3− | 2006 09 22 | 699 | 0.7− | 0.4− | 2006 09 28 | 703 | 0.8+ | 0.3− | | |
| 1999 02 14 | 691 | 0.3+ | 0.1+ | 2006 09 22 | 699 | 0.4+ | 0.2− | 2006 09 28 | 703 | 0.5+ | 0.0 | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 14 | 691 | 0.1+ | 0.1+ | 2006 09 22 | 699 | 0.8− | 0.2− | 2006 09 28 | 703 | 0.0 | 0.1− |
| 1999 02 14 | 691 | 0.2+ | 0.0 | 2006 09 22 | 699 | (0.7+ | 1.7−) | 2006 10 19 | 703 | 0.2+ | 1.0+ |
| 2002 12 12 | 644 | 0.1+ | 0.4− | 2006 09 25 | H06 | 0.0 | 0.7− | 2006 10 19 | 703 | 0.4− | 0.2+ |
| 2002 12 12 | 644 | 0.4− | 0.4− | 2006 09 25 | H06 | 0.2+ | 0.3− | 2006 10 19 | 703 | 0.1+ | 0.8+ |
| 2003 01 08 | 644 | 0.1+ | 0.4− | 2006 09 25 | H06 | 1.1+ | 0.1+ | 2006 10 19 | 703 | 0.6− | 0.8+ |
| 2003 01 08 | 644 | 0.0 | 0.1+ | 2006 09 26 | H06 | 0.6− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2003 01 11 | 644 | 0.4− | 0.2− | 2006 09 26 | H06 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2003 01 11 | 644 | 0.1− | 0.1− | 2006 09 26 | H06 | 1.1− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2006 08 29 | 699 | 0.4+ | 0.8− | 2006 09 27 | H06 | 0.6+ | 0.2+ | | | | |
| 2006 08 29 | 699 | 0.2+ | 1.0+ | 2006 09 27 | H06 | 0.3− | 0.8− | | | | |

**2006 SJ$_{131}$ = 2003 FX$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.72974 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18024236 | $\omega$ | 58.72007 | +0.71720199 | | −0.69478371 | |
| $a$ | 3.1038316 | $\Omega$ | 345.05547 | +0.54710989 | | +0.60923148 | |
| $e$ | 0.1307679 | $i$ | 12.04675 | +0.43161566 | | +0.38224677 | |
| $P$ | 5.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 23 | 691 | 0.1+ | 0.4+ | 2006 10 04 | 448 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.1+ |
| 2003 03 23 | 691 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2003 03 23 | 691 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.2− |
| 2003 03 25 | 644 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2003 03 25 | 644 | 0.1− | 0.1− | 2006 10 16 | 448 | 0.2+ | 0.1− | 2006 11 17 | 644 | 0.2+ | 0.2+ |
| 2003 03 25 | 644 | 0.0 | 0.1− | 2006 10 16 | 448 | 0.4+ | 0.2− | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2006 09 25 | 448 | 0.2+ | 0.0 | 2006 10 16 | 448 | 0.1− | 0.1+ | 2006 11 21 | 703 | 0.5+ | 0.2− |
| 2006 09 25 | 448 | 0.7+ | 0.3− | 2006 10 23 | 703 | 0.8− | 0.2− | 2006 11 21 | 703 | 0.6− | 0.0 |
| 2006 09 25 | 448 | 0.2− | 0.1− | 2006 10 23 | 703 | 0.0 | 0.7+ | 2006 11 21 | 703 | 0.0 | 0.7− |
| 2006 09 26 | 448 | 0.6− | 0.2+ | 2006 10 23 | 703 | 0.5− | 0.8+ | 2006 11 21 | 703 | 0.6+ | 0.1− |
| 2006 09 26 | 448 | 0.4− | 0.0 | 2006 10 23 | 703 | 0.7− | 0.2+ | 2006 11 28 | J95 | 0.1− | 0.2+ |
| 2006 09 29 | 448 | 0.2− | 0.5− | 2006 10 29 | 703 | 0.1− | 0.4+ | 2006 11 28 | J95 | 0.3− | 0.4− |
| 2006 09 29 | 448 | 0.1− | 0.2− | 2006 10 29 | 703 | 0.3+ | 0.5+ | 2006 11 28 | J95 | 0.3+ | 0.2+ |
| 2006 09 29 | 448 | 0.1+ | 0.3+ | 2006 10 29 | 703 | 0.1+ | 0.3+ | 2006 11 29 | J95 | 0.0 | 0.0 |
| 2006 10 04 | 448 | 0.9+ | 0.3− | 2006 10 29 | 703 | 0.4− | 0.8− | | | | |
| 2006 10 04 | 448 | 0.6+ | 0.1+ | 2006 11 15 | 703 | 1.0+ | 0.0 | | | | |

**2006 SM$_{131}$ = 1995 QH$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.74339 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17878634 | $\omega$ | 109.58701 | +0.51535269 | | +0.85525259 | |
| $a$ | 3.1206603 | $\Omega$ | 191.89475 | −0.85132306 | | +0.50364639 | |
| $e$ | 0.2676313 | $i$ | 15.29087 | −0.09828859 | | +0.12199725 | |
| $P$ | 5.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.9+ | 0.0 | 2006 09 26 | 850 | 0.1+ | 0.6− |
| 1995 08 25 | 691 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.1− | 0.1− | 2006 09 26 | 850 | 0.9+ | 0.2− |
| 1995 08 25 | 691 | 0.1− | 0.6+ | 2006 08 27 | 699 | 0.2+ | 0.3− | 2006 09 26 | 850 | 0.2+ | 0.8+ |
| 1995 08 31 | 691 | 0.1+ | 0.1− | 2006 08 27 | 699 | 0.9+ | 0.2+ | 2006 09 27 | 850 | 0.1+ | 0.4+ |
| 1995 08 31 | 691 | 0.1− | 0.1+ | 2006 09 18 | 703 | (0.6− | 1.9+) | 2006 09 27 | 850 | 0.2− | 0.3+ |
| 1995 08 31 | 691 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.2− | 1.0− | 2006 09 27 | 850 | 0.3+ | 0.4− |
| 2005 04 12 | 691 | 0.1+ | 0.1+ | 2006 09 18 | 703 | (0.3+ | 1.9+) | 2006 09 27 | 850 | 0.1− | 0.3− |
| 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 1.3− | 0.4− | 2006 09 28 | 850 | 0.8− | 0.4− |
| 2005 04 12 | 691 | 0.1− | 0.2− | 2006 09 26 | 850 | 0.3− | 0.5− | 2006 09 28 | 850 | 0.7− | 1.2+ |

**2006 SY$_{131}$ = 2005 JJ$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.00299 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22771349 | $\omega$ | 152.69551 | +0.99497694 | | +0.05427558 | |
| $a$ | 2.6558907 | $\Omega$ | 204.63040 | −0.07175882 | | +0.97256929 | |
| $e$ | 0.2023528 | $i$ | 11.64371 | +0.06979657 | | +0.22619268 | |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 09 25 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 703 | (2.5− | 0.2+) |
| 2002 12 05 | 704 | 0.2− | 0.6+ | 2006 09 25 | 704 | (0.1+ | 1.6−) | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 2002 12 05 | 704 | 0.5+ | 1.0+ | 2006 09 25 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.3+ |
| 2002 12 05 | 704 | 0.4− | 0.0 | 2006 09 25 | 704 | 0.1+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.5+ |
| 2002 12 05 | 704 | (0.1+ | 1.9+) | 2006 09 25 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.4+ |
| 2005 05 04 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2005 05 04 | 691 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2005 05 04 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2005 05 14 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.9+ | 0.7− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2005 05 14 | 691 | 0.3+ | 0.0 | 2006 09 29 | 704 | 1.0+ | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 05 14 | 691 | 0.0 | 0.0 | 2006 09 29 | 704 | 0.9+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2006 08 29 | 699 | 0.5+ | 0.7+ | 2006 09 29 | 704 | 0.8+ | 0.7− | 2006 10 23 | 644 | 0.3− | 0.1+ |
| 2006 08 29 | 699 | 0.8− | 0.0 | 2006 09 29 | 704 | 0.5+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2006 08 29 | 699 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.4− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2006 08 29 | 699 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2006 09 16 | 703 | 0.4+ | 0.8− | 2006 09 30 | 691 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2006 09 16 | 703 | 0.9+ | 0.6+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2006 09 16 | 703 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 09 16 | 703 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 09 16 | 703 | 0.1− | 0.8− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2006 09 16 | 703 | 0.0 | 0.6− | 2006 10 09 | 644 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 09 16 | 703 | 0.4− | 0.3− | 2006 10 09 | 644 | 0.0 | 0.0 | | | | |
| 2006 09 16 | 703 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.1− | 0.1+ | | | | |

**2006 SE$_{132}$ = 2005 DV$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.88278 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21055943 | $\omega$ | 80.32564 | +0.99002028 | | +0.05172451 | |
| $a$ | 2.7982483 | $\Omega$ | 276.62568 | −0.10145699 | | +0.90720627 | |
| $e$ | 0.1120850 | $i$ | 7.58349 | +0.09780761 | | +0.41749415 | |
| $P$ | 4.68 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 0.6− | 0.0 | 2005 02 18 | 809 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 1994 01 11 | 691 | 0.4− | 0.6+ | 2005 02 18 | 809 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 1994 01 11 | 691 | 1.1+ | 0.5− | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.2+ |
| 1998 01 01 | 691 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 1998 01 01 | 691 | 0.2+ | 0.1+ | 2006 09 16 | 703 | 0.0 | 0.7− | 2006 10 12 | 644 | 0.0 | 0.5+ |
| 1998 01 01 | 691 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 1.3− | 0.5− | 2006 09 25 | 703 | 0.1− | 0.7− | 2006 10 19 | 703 | 0.7− | 1.0− |
| 2001 08 25 | 704 | 0.4+ | 0.9+ | 2006 09 25 | 703 | 0.2+ | 1.0− | 2006 10 19 | 703 | 0.2+ | 0.1+ |
| 2001 08 25 | 704 | 0.2− | 0.5+ | 2006 09 25 | 703 | 0.8+ | 1.4− | 2006 10 19 | 703 | 0.5− | 0.7− |
| 2001 08 25 | 704 | 0.1+ | 1.2+ | 2006 09 25 | 703 | 0.5+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2001 08 25 | 704 | 0.2− | 0.5+ | 2006 09 28 | 703 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 01 04 | 704 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 01 04 | 704 | (1.0− | 1.8+) | 2006 09 28 | 703 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2003 01 04 | 704 | 0.2− | 1.1+ | 2006 09 28 | 703 | 0.3+ | 1.3− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2003 01 04 | 704 | 0.4+ | 0.1+ | 2006 10 04 | 703 | 0.6− | 1.1− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2005 02 17 | 809 | 0.1+ | 0.0 | 2006 10 04 | 703 | 0.5+ | 0.9+ | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2005 02 17 | 809 | 0.1− | 0.1+ | 2006 10 04 | 703 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2005 02 17 | 809 | 0.1− | 0.0 | 2006 10 04 | 703 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2005 02 18 | 809 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | | | |

**2006 SG$_{132}$ = 1996 VP$_{35}$ = 2001 UF$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.48322 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19317478 | $\omega$ | 188.39518 | +0.02319935 | | −0.99030833 | |
| $a$ | 2.9637104 | $\Omega$ | 260.35543 | +0.92511298 | | +0.07318940 | |
| $e$ | 0.0754610 | $i$ | 7.98410 | +0.37898254 | | −0.11803699 | |
| $P$ | 5.10 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 691 | 0.1+ | 0.2+ | 2001 10 20 | 644 | 0.0 | 0.6− | 2006 09 27 | 703 | 0.1− | 0.9− |
| 1996 11 09 | 691 | 0.1− | 0.2− | 2001 10 20 | 644 | 0.1− | 0.6− | 2006 09 27 | 703 | (1.2− | 2.3−) |
| 1996 11 09 | 691 | 0.2+ | 0.2− | 2006 09 16 | 703 | (1.7− | 0.2−) | 2006 09 27 | 703 | 0.5+ | 0.4− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.5− | 0.1− | 2006 09 16 | 703 | 0.2− | 0.2+ | 2006 09 27 | 703 | 0.0 | 0.3− |
| 1996 11 17 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.7+ | 0.4− | 2006 10 11 | 644 | 0.2− | 0.9+ |
| 2001 10 17 | 644 | 0.1− | 1.0+ | 2006 09 16 | 703 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2001 10 17 | 644 | 0.1− | 1.0+ | 2006 09 20 | 644 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.2− |
| 2001 10 17 | 644 | 0.3+ | 1.3+ | 2006 09 20 | 644 | 0.2+ | 0.1+ | | | | |
| 2001 10 20 | 644 | 0.3− | 0.7− | 2006 09 20 | 644 | 0.1− | 0.2+ | | | | |

**2006 SJ$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.74959 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26994765 | $\omega$ | 87.91771 | | +0.98840429 | −0.11477827 | |
| $a$ | 2.3710990 | $\Omega$ | 278.66263 | | +0.06446589 | +0.90995897 | |
| $e$ | 0.1359826 | $i$ | 5.77142 | | +0.13748133 | +0.39849796 | |
| $P$ | 3.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.2+ | 0.1+ | 2006 09 22 | 699 | 0.3− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 01 15 | 691 | 0.1− | 0.2+ | 2006 09 22 | 699 | 1.0− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 01 15 | 691 | 0.0 | 0.0 | 2006 09 28 | 703 | 1.0− | 1.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 02 16 | 691 | 0.5+ | 0.2+ | 2006 09 28 | 703 | 0.4− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 16 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 16 | 691 | 0.4+ | 0.4+ | 2006 09 28 | 703 | 0.6+ | 0.4− | 2006 10 21 | 701 | 0.6+ | 0.2− |
| 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.5+ | 0.0 | 2006 10 21 | 701 | 0.4+ | 0.2− |
| 2004 02 17 | 645 | 0.3− | 0.3− | 2006 10 10 | 644 | 0.3+ | 0.2+ | 2006 10 21 | 701 | 0.5+ | 0.3− |
| 2006 09 14 | 644 | 0.1− | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 21 | 701 | 0.7+ | 0.5− |
| 2006 09 14 | 644 | 0.1− | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 14 | 644 | 0.2+ | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2006 09 16 | 703 | 1.1+ | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2006 09 16 | 703 | 0.5+ | 0.1− | 2006 10 17 | 703 | 0.6+ | 0.9+ | 2006 10 25 | H55 | 0.7− | 0.1+ |
| 2006 09 16 | 703 | 1.2− | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.8− | 2006 10 25 | H55 | 0.6− | 0.1+ |
| 2006 09 16 | 703 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.6+ | 0.3− | 2006 10 25 | H55 | 0.7− | 0.0 |
| 2006 09 22 | 699 | 1.1− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.2+ | | | | |
| 2006 09 22 | 699 | 0.9+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2+ | | | | |

**2006 SO$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.73091 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27164632 | $\omega$ | 27.94018 | | +0.97171671 | −0.23522986 | |
| $a$ | 2.3612040 | $\Omega$ | 345.61946 | | +0.19801893 | +0.85968290 | |
| $e$ | 0.2288812 | $i$ | 4.80919 | | +0.12866681 | +0.45344484 | |
| $P$ | 3.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.3− | 0.1+ | 2006 10 04 | G96 | 0.6+ | 0.0 | 2006 10 27 | 703 | 0.3− | 0.6− |
| 1995 07 24 | 691 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.6− | 0.2− |
| 1995 07 24 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2002 07 14 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2002 08 11 | 644 | 0.2− | 0.5− | 2006 10 19 | 703 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2002 08 11 | 644 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2002 08 11 | 644 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.2− | 0.0 | 2006 11 08 | A24 | 1.0+ | 0.2− |
| 2006 08 28 | 703 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 08 | A24 | 0.4− | 0.4+ |
| 2006 08 28 | 703 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 08 | A24 | 0.5+ | 0.5− |
| 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 09 | A24 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 0.7− | 0.0 | 2006 10 21 | 704 | 0.6+ | 0.7+ | 2006 11 09 | A24 | 0.2− | 0.6+ |
| 2006 09 16 | 703 | 0.3− | 0.5− | 2006 10 21 | 704 | 0.9+ | 0.4+ | 2006 11 15 | 703 | 0.1+ | 0.5− |
| 2006 09 16 | 703 | 0.5− | 0.1− | 2006 10 21 | 704 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.6− | 0.7− |
| 2006 09 16 | 703 | 0.0 | 0.0 | 2006 10 21 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.2− |
| 2006 09 16 | 703 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.6− | 0.1− |
| 2006 09 25 | 704 | 0.8+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.1− | 2006 11 23 | 703 | 0.4+ | 0.4+ |
| 2006 09 25 | 704 | 0.4+ | 0.9+ | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.1+ | 0.1− |
| 2006 09 25 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.2− | 0.2+ |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.1+ | 0.2+ |
| 2006 10 04 | G96 | 0.2− | 0.0 | 2006 10 23 | 644 | 0.3− | 0.3+ | | | | |

**2006 SX$_{132}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.22358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23845499 | $\omega$ | 174.35863 | | +0.72472140 | −0.66263054 | |
| $a$ | 2.5755211 | $\Omega$ | 228.99888 | | +0.62199083 | +0.74711383 | |
| $e$ | 0.1216533 | $i$ | 14.49863 | | +0.29648995 | +0.05236124 | |
| $P$ | 4.13 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.3− | 0.2− | 2006 09 16 | 703 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 1998 11 15 | 691 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 1998 11 15 | 691 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.3+ | 0.6− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.0 | 0.5− | 2006 09 22 | 699 | 1.1− | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.2− |
| 2002 10 31 | 644 | 0.5+ | 0.4− | 2006 09 22 | 699 | 1.4+ | 0.2+ | 2006 10 19 | 703 | 0.7− | 0.8+ |
| 2002 10 31 | 644 | 0.3+ | 0.1+ | 2006 09 22 | 699 | 0.3+ | 0.9+ | 2006 10 19 | 703 | 1.1− | 0.5+ |
| 2002 11 22 | 644 | 0.9+ | 0.2+ | 2006 09 22 | 699 | 0.7+ | 0.4− | 2006 10 19 | 703 | 0.4− | 0.4− |
| 2002 11 22 | 644 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.3− | 1.2− |
| 2002 11 22 | 644 | 0.1− | 0.4+ | 2006 09 28 | 703 | 0.5+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 2005 06 10 | 691 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.7− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2005 06 10 | 691 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.5− | 0.6− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2005 06 10 | 691 | 0.3+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | |
| 2006 09 16 | 703 | 0.3− | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.3+ | | | | |

**2006 SZ$_{132}$ = 2003 AP$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.53216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21478097 | $\omega$ | 158.03323 | | +0.13639351 | −0.97976005 | |
| $a$ | 2.7614606 | $\Omega$ | 283.88690 | | +0.88497330 | +0.18697156 | |
| $e$ | 0.1418094 | $i$ | 8.68070 | | +0.44521801 | −0.07149738 | |
| $P$ | 4.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.0 | 0.2− | 2006 09 22 | 699 | 1.1− | 1.0+ | 2006 10 17 | 703 | 0.4− | 0.0 |
| 2003 01 04 | 704 | 0.1+ | 0.6− | 2006 09 22 | 699 | (0.2+ | 2.2+) | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2003 01 04 | 704 | 0.2+ | 0.1− | 2006 09 22 | 699 | 0.4− | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.4− |
| 2003 01 04 | 704 | 0.4− | 0.4+ | 2006 09 22 | 699 | 0.5− | 0.2− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 2003 01 08 | 704 | 0.3+ | 0.7− | 2006 09 28 | 703 | 0.1+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2003 01 08 | 704 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1− |
| 2003 01 08 | 704 | 0.0 | 0.8+ | 2006 09 28 | 703 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2006 09 16 | 703 | 1.0+ | 0.3− | 2006 09 28 | 703 | 0.9− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2006 09 16 | 703 | 0.5− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2006 09 16 | 703 | 0.6+ | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2006 09 16 | 703 | 1.2+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1− | | | | |

**2006 SG$_{133}$ = 1993 TV$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.58745 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29932044 | $\omega$ | 76.81641 | | +0.92386900 | +0.37618036 | |
| $a$ | 2.2133247 | $\Omega$ | 261.05089 | | −0.37290748 | +0.84349461 | |
| $e$ | 0.1969318 | $i$ | 4.08607 | | −0.08605853 | +0.38341254 | |
| $P$ | 3.29 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 08 | 691 | 0.3− | 0.5+ | 2006 08 29 | 703 | 0.7− | 0.0 | 2006 09 25 | 704 | 0.4− | 0.0 |
| 1993 10 08 | 691 | 0.0 | 0.5+ | 2006 08 29 | 703 | 0.0 | 0.0 | 2006 09 25 | 704 | 0.7+ | 0.2− |
| 1993 10 08 | 691 | 0.5− | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 09 25 | 704 | 0.4− | 1.0+ |
| 1993 10 09 | 691 | 0.1+ | 0.1+ | 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 10 01 | 703 | (2.2+ | 0.7−) |
| 1993 10 09 | 691 | 0.1+ | 0.6− | 2006 09 06 | 644 | 0.4+ | 0.2− | 2006 10 01 | 703 | 1.1− | 0.6− |
| 1993 10 09 | 691 | 0.7+ | 0.6− | 2006 09 17 | 703 | 0.2− | 0.3− | 2006 10 01 | 703 | 1.0− | 0.5− |
| 1993 10 16 | 691 | 0.4+ | 0.5− | 2006 09 17 | 703 | 0.4− | 0.4+ | 2006 10 01 | 703 | 0.6− | 0.3− |
| 1993 10 16 | 691 | 0.5− | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.3− | 2006 10 01 | 704 | 0.9+ | 0.4+ |
| 1993 10 16 | 691 | (0.8+ | 2.3+) | 2006 09 17 | 703 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.1+ | 0.4− |
| 2006 08 29 | 703 | 0.4+ | 0.8+ | 2006 09 25 | 704 | 0.7+ | 0.3− | 2006 10 01 | 704 | 0.9+ | 0.0 |
| 2006 08 29 | 703 | 0.2− | 0.2+ | 2006 09 25 | 704 | (2.2+ | 0.3+) | 2006 10 01 | 704 | 0.8+ | 0.7+ |

**2006 SQ$_{133}$ = 2001 SJ$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.87579 | | (2000.0) | | | |
| $n$ | 0.19992778 | $\omega$ | 260.76680 | | −0.05866793 | −0.99734803 |
| $a$ | 2.8965917 | $\Omega$ | 192.83537 | | +0.97503628 | −0.04799328 |
| $e$ | 0.2398547 | $i$ | 11.17906 | | +0.21415492 | −0.05471345 |
| $P$ | 4.93 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 691 | 0.5− | 0.1+ | 2003 03 09 | 704 | 1.0+ | 0.5+ | 2006 09 28 | 691 | 0.1− | 0.0 | |
| 2001 09 11 | 691 | 0.1+ | 0.0 | 2003 03 09 | 704 | 0.3− | 0.4+ | 2006 10 11 | 691 | 0.4+ | 0.1+ | |
| 2001 09 11 | 691 | 0.1+ | 0.1− | 2003 03 09 | 704 | 0.7− | 1.1+ | 2006 10 11 | 691 | 0.2+ | 0.1− | |
| 2001 09 20 | 704 | 0.5− | 0.7+ | 2006 08 21 | 691 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.3+ | 0.2+ | |
| 2001 09 20 | 704 | 0.2− | 0.4+ | 2006 08 21 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.2+ | |
| 2001 09 20 | 704 | 0.7− | 1.0+ | 2006 08 21 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | |
| 2001 09 20 | 704 | 0.1+ | 0.5+ | 2006 09 17 | 703 | 0.6− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.0 | |
| 2001 09 20 | 704 | 0.0 | 0.9+ | 2006 09 17 | 703 | 1.0− | 0.8− | 2006 10 20 | G96 | 0.2+ | 0.4− | |
| 2001 09 22 | 704 | 0.1− | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.4− | 0.1− | |
| 2001 09 22 | 704 | 0.8+ | 0.1− | 2006 09 17 | 703 | 0.4− | 0.6− | 2006 10 20 | G96 | 0.3− | 0.5− | |
| 2001 09 22 | 704 | 0.9+ | 0.4+ | 2006 09 25 | 699 | 0.7+ | 1.1+ | 2006 10 20 | G96 | 0.3− | 0.3− | |
| 2003 01 28 | 704 | 0.4+ | 0.3− | 2006 09 25 | 699 | (0.1+ | 1.8−) | 2006 11 21 | G96 | 0.6+ | 0.3− | |
| 2003 01 28 | 704 | 0.3− | 0.1+ | 2006 09 25 | 699 | 0.1+ | 1.3+ | 2006 11 21 | G96 | 0.1− | 0.3+ | |
| 2003 01 28 | 704 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.0 | 1.4− | 2006 11 21 | G96 | 0.7− | 0.1− | |
| 2003 01 28 | 704 | 0.2− | 0.8− | 2006 09 28 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.6− | |
| 2003 03 09 | 704 | 0.3+ | 0.6+ | 2006 09 28 | 691 | 0.3− | 0.0 | | | | | |

**2006 ST$_{133}$ = 2002 UQ$_{10}$ = 2005 NS$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 108.79902 | | (2000.0) | | | |
| $n$ | 0.23129278 | $\omega$ | 37.59872 | | −0.32598523 | +0.94444634 |
| $a$ | 2.6284194 | $\Omega$ | 213.43496 | | −0.88477093 | −0.32039766 |
| $e$ | 0.0446764 | $i$ | 4.36019 | | −0.33303759 | −0.07325604 |
| $P$ | 4.26 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 08 | 691 | 1.8+ | 1.9− | 2005 06 23 | 644 | 0.6− | 0.0 | 2006 09 25 | 704 | 0.9+ | 0.9− | |
| 1998 12 08 | 691 | 0.3+ | 1.1+ | 2005 06 23 | 644 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.3+ | 0.3+ | |
| 1998 12 08 | 691 | 0.8− | 0.2+ | 2005 07 01 | 691 | 0.0 | 0.4+ | 2006 09 25 | 704 | 0.8− | 0.4− | |
| 2002 10 29 | 291 | 0.9− | 0.1+ | 2005 07 01 | 691 | 0.0 | 0.3+ | 2006 09 25 | 704 | 0.6− | 0.6+ | |
| 2002 10 29 | 291 | 0.7− | 0.3+ | 2005 07 01 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 704 | 0.5− | 1.2+ | |
| 2002 10 29 | 291 | 0.9− | 0.3+ | 2005 07 04 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.5+ | 0.2+ | |
| 2002 10 30 | 644 | 0.1+ | 1.5+ | 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.6+ | |
| 2002 10 30 | 644 | 0.3− | 1.4+ | 2005 07 04 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.0 | |
| 2002 10 30 | 644 | 0.4− | 0.9+ | 2005 07 05 | 644 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.0 | 0.3− | |
| 2004 01 23 | 704 | (1.7+ | 0.9+) | 2005 07 05 | 644 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− | |
| 2004 01 23 | 704 | 0.2+ | 1.4+ | 2005 07 05 | 644 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.4− | |
| 2004 01 23 | 704 | 0.0 | 0.9+ | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.2− | 0.5− | |
| 2004 01 23 | 704 | 1.4+ | 0.9+ | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2+ | |
| 2004 02 17 | 704 | 0.6− | 0.5+ | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1− | 0.0 | |
| 2004 02 17 | 704 | 0.7+ | 0.7+ | 2006 09 17 | 703 | 1.1− | 0.9− | 2006 10 22 | 644 | 0.5+ | 0.3+ | |
| 2004 02 17 | 704 | 0.2− | 1.3+ | 2006 09 17 | 703 | 0.5− | 0.8− | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2005 02 16 | 809 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 10 22 | G96 | 0.1+ | 0.3− | |
| 2005 02 16 | 809 | 0.1+ | 0.4+ | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 10 22 | G96 | 0.0 | 0.3− | |
| 2005 02 16 | 809 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.4− | |
| 2005 06 23 | 644 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ | | | | | |

**2006 SV$_{133}$ = 2003 CR$_{10}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 232.56674 | | (2000.0) | | | |
| $n$ | 0.17594243 | $\omega$ | 164.95276 | | −0.77976783 | −0.62329406 |
| $a$ | 3.1541983 | $\Omega$ | 336.18414 | | +0.55829818 | −0.64972046 |
| $e$ | 0.0399282 | $i$ | 8.38424 | | +0.28331126 | −0.43516415 |
| $P$ | 5.60 | $H$ | 15.2 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 03 | 644 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.7− | 0.2+ | 2006 09 27 | 703 | 1.0+ | 2.0− | |
| 2003 02 03 | 644 | 0.3+ | 0.5+ | 2006 09 17 | 703 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.6+ | 0.7− | |
| 2003 02 03 | 644 | 0.8+ | 0.5+ | 2006 09 17 | 703 | 0.5+ | 0.1− | 2006 09 27 | 703 | (2.3+ | 0.5−) | |
| 2003 02 04 | 704 | 0.0 | 1.4− | 2006 09 17 | 703 | 0.7− | 0.2− | 2006 09 27 | 703 | 0.2+ | 1.0+ | |
| 2003 02 04 | 704 | 0.1+ | 0.0 | 2006 09 22 | 104 | 0.2− | 0.5− | 2006 10 02 | G96 | 1.2− | 1.6+ | |
| 2003 02 04 | 704 | 0.9+ | 0.0 | 2006 09 22 | 104 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.1− | |
| 2003 02 04 | 704 | 1.6− | 0.4+ | 2006 09 22 | 104 | 0.1+ | 0.8+ | 2006 10 02 | G96 | 0.0 | 0.4− | |

**2006 SA$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.42851 | | (2000.0) | | | |
| $n$ | 0.24151157 | $\omega$ | 33.46597 | | +0.96110948 | +0.21032436 |
| $a$ | 2.5537444 | $\Omega$ | 313.29768 | | −0.27467033 | +0.79538832 |
| $e$ | 0.1520385 | $i$ | 14.23579 | | +0.02871880 | +0.56843741 |
| $P$ | 4.08 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 13 | 691 | 0.5− | 0.2− | 2006 09 24 | 699 | (0.6+ | 1.8−) | 2006 10 23 | 644 | 0.3+ | 0.0 | |
| 1996 03 13 | 691 | 0.6− | 0.8− | 2006 09 24 | 699 | (1.3+ | 1.8+) | 2006 10 23 | 644 | 0.0 | 0.3− | |
| 1996 03 13 | 691 | 0.0 | 0.4− | 2006 09 24 | 699 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.1− | |
| 2002 10 20 | 644 | 0.1+ | 0.0 | 2006 09 24 | 699 | 0.8− | 0.7+ | 2006 10 23 | 644 | 0.2+ | 0.2− | |
| 2002 10 20 | 644 | 0.5+ | 0.0 | 2006 09 28 | 703 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.4+ | 0.1− | |
| 2002 10 20 | 644 | 0.3+ | 0.2− | 2006 09 28 | 703 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1− | |
| 2004 02 18 | 691 | 0.3+ | 0.6+ | 2006 09 28 | 703 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.7+ | 0.4− | |
| 2004 02 18 | 691 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.1+ | |
| 2004 02 18 | 691 | 0.5+ | 0.3+ | 2006 10 19 | 703 | 1.1− | 0.4+ | 2006 11 15 | 703 | 0.4− | 1.0− | |
| 2006 09 17 | 703 | 0.7+ | 0.3− | 2006 10 19 | 703 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.6− | 0.8− | |
| 2006 09 17 | 703 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.5− | 0.1+ | | | | | |
| 2006 09 17 | 703 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.2− | | | | | |

**2006 SD$_{134}$ = 2001 XN$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.37528 | | (2000.0) | | | |
| $n$ | 0.17167087 | $\omega$ | 38.32967 | | +0.63443222 | −0.77173861 |
| $a$ | 3.2063060 | $\Omega$ | 12.49770 | | +0.64990515 | +0.50191135 |
| $e$ | 0.0800162 | $i$ | 11.66771 | | +0.41847229 | +0.39051826 |
| $P$ | 5.74 | $H$ | 15.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 704 | 0.2− | 0.2− | 2006 09 20 | 691 | 0.3− | 0.0 | 2006 09 28 | G92 | 0.6− | 0.8+ | |
| 2001 12 09 | 704 | 0.2− | 0.1+ | 2006 09 20 | 691 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.1− | 0.1+ | |
| 2001 12 09 | 704 | 1.1+ | 1.2− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 09 28 | 699 | 1.0+ | 0.0 | |
| 2001 12 09 | 704 | 0.8− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 09 28 | G92 | 0.5− | 0.2+ | |
| 2001 12 14 | 704 | 0.6+ | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 09 28 | 691 | 0.2− | 0.3− | |
| 2001 12 14 | 704 | 0.5+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 09 28 | 699 | 0.5− | 0.3− | |
| 2001 12 14 | 704 | 0.9− | 0.1+ | 2006 09 27 | G92 | 0.4+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.0 | |
| 2006 08 28 | 703 | (0.5− | 2.1−) | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G92 | 0.1− | 0.0 | |
| 2006 08 28 | 703 | 1.0+ | 0.4− | 2006 09 27 | G92 | 0.1− | 0.5− | 2006 09 28 | 699 | 0.5− | 0.5+ | |
| 2006 08 28 | 703 | 0.4− | 1.0+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 699 | 0.6− | 0.6+ | |
| 2006 08 28 | 703 | 0.5+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.1+ | | | | | |
| 2006 09 20 | 691 | 0.3+ | 0.2− | 2006 09 27 | G92 | 0.1+ | 0.4+ | | | | | |

**2006 SC$_{135}$ = 2004 HU$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 238.93624 | | (2000.0) | | | |
| $n$ | 0.17907321 | $\omega$ | 199.07793 | | −0.70346461 | −0.69980372 |
| $a$ | 3.1173265 | $\Omega$ | 295.85487 | | +0.66870489 | −0.59251952 |
| $e$ | 0.0319762 | $i$ | 7.92955 | | +0.24077232 | −0.39899295 |
| $P$ | 5.50 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | E12 | 0.3+ | 0.8− | 2005 06 17 | G96 | (10.2+ | 4.3+) | 2006 09 27 | 703 | 0.2− | 0.3+ | |
| 2004 04 20 | E12 | 0.5− | 0.6− | 2005 06 17 | G96 | (10.3+ | 3.9+) | 2006 09 27 | 703 | 0.2− | 0.3− | |
| 2004 04 20 | E12 | 0.3+ | 0.6− | 2005 07 07 | 691 | (11.2+ | 4.3+) | 2006 10 19 | 703 | 1.0+ | 0.0 | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | E12 | 0.3+ | 0.2+ | 2005 07 07 | 691 | (11.3+ | 4.1+) | 2006 10 19 | 703 | 0.2− | 0.4+ | | |
| 2004 04 22 | E12 | 0.6− | 0.6+ | 2005 07 07 | 691 | (11.0+ | 4.2+) | 2006 10 19 | 703 | 0.4− | 0.1− | | |
| 2004 04 22 | E12 | 0.2+ | 0.7+ | 2006 09 20 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.4− | | |
| 2004 04 22 | E12 | (1.8+ | 1.7+) | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2− | | |
| 2004 04 22 | E12 | 0.1− | 0.5+ | 2006 09 20 | 644 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ | | |
| 2005 06 17 | G96 | (10.4+ | 4.3+) | 2006 09 27 | 703 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 2005 06 17 | G96 | (10.0+ | 4.4+) | 2006 09 27 | 703 | 0.3− | 0.9− | | | | | | |

**2006 SM$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.71501 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21904553 | $\omega$ | 217.48709 | | +0.03123058 | | −0.99276382 |
| $a$ | 2.7255016 | $\Omega$ | 231.02657 | | +0.94935053 | | +0.06575198 |
| $e$ | 0.0959454 | $i$ | 8.57739 | | +0.31266310 | | −0.10048224 |
| $P$ | 4.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 608 | 0.1+ | 0.2− | 2006 09 20 | 644 | 0.2− | 0.0 | 2006 10 17 | 703 | 1.2− | 0.0 |
| 2002 11 28 | 608 | 0.2− | 0.4− | 2006 09 20 | 644 | 0.1+ | 0.1− | 2006 10 17 | 703 | (0.6− | 1.8+) |
| 2002 11 28 | 608 | 0.3+ | 0.1− | 2006 09 27 | 703 | 1.1+ | 0.6+ | 2006 10 17 | 703 | 0.9− | 0.6+ |
| 2002 12 03 | 644 | 0.3− | 0.5+ | 2006 09 27 | 703 | 0.3− | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 12 03 | 644 | 0.0 | 0.6+ | 2006 09 27 | 703 | (1.3− | 1.8−) | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2002 12 03 | 644 | 0.1− | 0.6+ | 2006 09 27 | 703 | 1.2− | 0.4− | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2002 12 10 | 644 | 0.1− | 0.5− | 2006 10 04 | G96 | 0.4− | 0.4− | 2006 10 21 | G96 | 0.7+ | 0.3− |
| 2002 12 10 | 644 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.6+ | 0.1+ |
| 2002 12 10 | 644 | 0.4+ | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.5− | | | | |
| 2006 09 20 | 644 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1− | | | | |

**2006 SP$_{135}$ = 2000 SR$_{302}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.69947 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16132081 | $\omega$ | 87.16820 | | +0.98789478 | | −0.08887213 |
| $a$ | 3.3420205 | $\Omega$ | 277.90723 | | +0.02912604 | | +0.91131050 |
| $e$ | 0.0901037 | $i$ | 7.37511 | | +0.15236661 | | +0.40201357 |
| $P$ | 6.11 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.6− | 0.3+ | 2006 08 29 | 699 | 0.9− | 0.6+ | 2006 09 29 | 699 | 0.3− | 0.8+ |
| 2000 09 28 | 704 | 0.1+ | 0.1− | 2006 08 29 | 699 | 1.3+ | 0.5− | 2006 09 29 | 699 | 0.4+ | 0.5+ |
| 2000 09 28 | 704 | 0.0 | 0.5+ | 2006 08 29 | 699 | 1.2− | 1.3− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2000 10 03 | 704 | 0.4− | 0.0 | 2006 08 29 | 699 | 0.4− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2000 10 03 | 704 | 0.4+ | 0.4+ | 2006 09 20 | 699 | 1.0− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.0 |
| 2000 10 03 | 704 | 0.2− | 0.4+ | 2006 09 20 | 699 | 1.2+ | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 2001 12 24 | 691 | 0.2− | 0.1− | 2006 09 20 | 699 | (2.3− | 1.1+) | 2006 10 17 | 691 | 0.5+ | 0.1+ |
| 2001 12 24 | 691 | 0.0 | 0.4+ | 2006 09 27 | 703 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2001 12 24 | 691 | 0.3− | 0.0 | 2006 09 27 | 703 | 0.9− | 0.2− | 2006 10 23 | 703 | 0.2+ | 0.3+ |
| 2002 01 13 | 704 | 0.3+ | 1.2− | 2006 09 27 | 703 | 0.3− | 0.1− | 2006 10 23 | 703 | 0.8− | 0.2− |
| 2002 01 13 | 704 | 0.7+ | 0.5− | 2006 09 27 | 703 | 0.2+ | 0.2− | 2006 10 23 | 703 | 0.4+ | 0.8− |
| 2002 01 13 | 704 | 0.7+ | 0.1− | 2006 09 29 | 699 | 0.8− | 0.0 | 2006 10 23 | 703 | 0.3+ | 1.2− |
| 2002 01 13 | 704 | 0.5+ | 0.2+ | 2006 09 29 | 699 | 0.3+ | 1.0+ | | | | |

**2006 SA$_{136}$ = 2002 NS$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.27058 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26303212 | $\omega$ | 283.13285 | | +0.99278441 | | −0.00202436 |
| $a$ | 2.4124789 | $\Omega$ | 77.07950 | | +0.05256862 | | +0.90600424 |
| $e$ | 0.1703827 | $i$ | 7.06587 | | −0.10777593 | | +0.42326377 |
| $P$ | 3.75 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.0 | 0.5+ | 2006 08 15 | 644 | 0.0 | 0.2− | 2006 09 20 | 703 | (1.9− | 1.4+) |
| 2002 07 06 | 644 | 0.0 | 0.6+ | 2006 08 15 | 644 | 0.0 | 0.1+ | 2006 09 20 | 703 | 0.1− | 0.9− |
| 2002 07 06 | 644 | 0.1− | 0.2+ | 2006 08 15 | 644 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.2− | 0.2− |
| 2002 07 08 | 644 | 0.5− | 0.1− | 2006 08 30 | 699 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.0 | 1.0− |
| 2002 07 08 | 644 | 0.1+ | 0.3− | 2006 08 30 | 699 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.3− | 0.5+ |
| 2002 07 08 | 644 | 0.4+ | 0.3− | 2006 08 30 | 699 | (1.5+ | 2.0+) | 2006 09 26 | 703 | 0.9− | 0.3− |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 1.0+ | 0.2+ | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 2004 01 18 | 691 | 0.2− | 0.0 | 2006 09 20 | 703 | 0.8− | 0.3+ | 2006 10 12 | 644 | 0.9+ | 0.4+ |
| 2004 01 18 | 691 | 0.1+ | 0.0 | 2006 09 20 | 703 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.5+ | 0.5+ |

**2006 SD$_{136}$ = 1999 FR$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.83561 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17850837 | $\omega$ | 187.66422 | | +0.72068330 | | +0.67091751 |
| $a$ | 3.1238991 | $\Omega$ | 128.66507 | | −0.62360606 | | +0.73740191 |
| $e$ | 0.0422842 | $i$ | 12.92139 | | −0.30287137 | | +0.07815444 |
| $P$ | 5.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 10 22 | 644 | 0.5+ | 0.2+ | 2006 09 20 | 703 | 0.1− | 0.9+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.3− | 0.4− | 2006 09 20 | 703 | 0.2− | 0.4− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.1− | 0.2− | 2006 09 26 | 703 | (2.3− | 0.6−) |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 08 16 | 644 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.3− | 0.9− |
| 2001 10 22 | 644 | 0.2− | 0.4− | 2006 09 20 | 703 | 0.4+ | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.3+ |
| 2001 10 22 | 644 | 0.3− | 0.2+ | 2006 09 20 | 703 | 0.5+ | 1.3+ | 2006 09 26 | 703 | 0.1− | 0.9− |

**2006 SE$_{136}$ = 2003 YU$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.66011 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29739522 | $\omega$ | 271.79267 | | +0.92114146 | | −0.37331083 |
| $a$ | 2.2228666 | $\Omega$ | 110.13981 | | +0.38716508 | | +0.84968705 |
| $e$ | 0.2490975 | $i$ | 6.73890 | | +0.04002016 | | +0.37238548 |
| $P$ | 3.31 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | (1.8− | 0.8−) | 2003 12 21 | 704 | 0.9+ | 0.6− | 2006 08 30 | 699 | 0.9− | 0.1− |
| 2003 12 19 | 704 | 0.1+ | 1.1+ | 2006 08 23 | 644 | 0.4+ | 0.3− | 2006 09 20 | 703 | 0.4+ | 0.8− |
| 2003 12 19 | 704 | 0.8− | 0.3− | 2006 08 23 | 644 | 0.2+ | 0.2− | 2006 09 20 | 703 | (1.8+ | 0.9−) |
| 2003 12 19 | 704 | 0.1− | 0.7+ | 2006 08 23 | 644 | 0.4+ | 0.1− | 2006 09 20 | 703 | 0.1+ | 0.1− |
| 2003 12 19 | 704 | 0.5− | 0.5+ | 2006 08 23 | 644 | 0.1+ | 0.2− | 2006 09 20 | 703 | 0.5− | 0.1+ |
| 2003 12 21 | 704 | 0.2+ | 0.2+ | 2006 08 23 | 644 | 0.4+ | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.5+ |
| 2003 12 21 | 704 | 0.1+ | 0.7− | 2006 08 23 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.5− |
| 2003 12 21 | 704 | 0.1− | 0.2+ | 2006 08 30 | 699 | 0.1− | 0.9+ | 2006 09 26 | 703 | 0.3− | 0.1− |
| 2003 12 21 | 704 | 0.0 | 0.8− | 2006 08 30 | 699 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.2− | 0.0 |
| 2003 12 21 | 704 | 0.2+ | 0.1− | 2006 08 30 | 699 | 0.5− | 0.7+ | | | | |

**2006 SU$_{136}$ = 2002 TX$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.30906 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23452135 | $\omega$ | 291.64998 | | +0.47400166 | | +0.87797497 |
| $a$ | 2.6042407 | $\Omega$ | 7.72943 | | −0.50330790 | | +0.33254428 |
| $e$ | 0.2904018 | $i$ | 29.85399 | | −0.72249815 | | +0.34434612 |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.0 | 0.0 | 2006 09 20 | 703 | 0.4− | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.1− |
| 2002 10 03 | 644 | 0.2− | 0.2+ | 2006 09 20 | 703 | 0.3− | 1.0− | 2006 09 26 | 703 | 0.6+ | 0.1+ |
| 2002 10 03 | 644 | 0.3− | 0.0 | 2006 09 20 | 703 | 0.3+ | 0.5− | 2006 10 02 | 703 | 0.0 | 0.8− |
| 2002 10 04 | 699 | 0.3+ | 0.0 | 2006 09 26 | 703 | 0.1− | 1.0+ | 2006 10 02 | 703 | 0.9− | 0.6− |
| 2002 10 04 | 699 | 1.3− | 1.3+ | 2006 09 26 | 703 | 0.3− | 0.6+ | 2006 10 02 | 703 | 0.2+ | 0.3+ |
| 2002 10 04 | 699 | 0.0 | 0.2− | 2006 09 26 | 703 | 0.1+ | 0.6+ | 2006 10 02 | 703 | 0.8− | 1.1− |
| 2002 10 04 | 699 | 0.1+ | 0.5− | 2006 09 26 | 703 | 0.3+ | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.0 |
| 2002 10 05 | 704 | 0.3− | 0.1− | 2006 09 26 | 703 | 1.3+ | 0.7+ | 2006 10 09 | 644 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.1− | 0.2− | 2006 09 26 | 703 | 1.0− | 0.2+ | 2006 10 09 | 644 | 0.4+ | 0.0 |
| 2002 10 05 | 704 | 0.0 | 0.7+ | 2006 09 26 | 703 | 0.1− | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2002 10 05 | 704 | 1.4+ | 0.7− | 2006 09 26 | 703 | 0.2+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2006 07 30 | E12 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.5− | 0.2− |
| 2006 07 30 | E12 | 0.1+ | 0.4− | 2006 09 26 | 703 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.8− | 0.6+ |
| 2006 07 30 | E12 | 0.6− | 0.3+ | 2006 09 26 | 703 | 1.0− | 0.9− | 2006 10 19 | 703 | 0.6+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 07 30 | E12 | 0.2+ | 0.4+ | 2006 09 26 | 703 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.2− |
| 2006 09 20 | 703 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.4− | 0.0 | | | | |

**2006 SH$_{138}$ = 1999 CC$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.67353 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23092018 | $\omega$ | 68.53404 | | −0.05756100 | −0.98968728 | |
| $a$ | 2.6312460 | $\Omega$ | 25.84543 | | +0.76780867 | −0.12786234 | |
| $e$ | 0.2358251 | $i$ | 17.51100 | | +0.63808822 | +0.06457794 | |
| $P$ | 4.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 11 | 704 | 0.6+ | 1.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 1999 02 11 | 704 | (4.0− | 0.2+) | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.3− | 0.3− |
| 1999 02 11 | 704 | 1.0+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.0 |
| 1999 02 11 | 704 | (5.2− | 1.3−) | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 14 | 703 | (3.0+ | 0.8−) |
| 1999 02 18 | 704 | 0.1+ | 0.9− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.3− |
| 1999 02 18 | 704 | 0.8− | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.2− |
| 1999 02 18 | 704 | 0.2+ | 0.6− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.0 | 0.6− |
| 1999 02 18 | 704 | 0.6+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 1999 02 18 | 704 | 1.3− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2006 08 28 | 703 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2006 08 28 | 703 | 1.3− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.8+ | 0.4+ |
| 2006 08 28 | 703 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 2006 08 28 | 703 | (1.3− | 2.7+) | 2006 10 28 | 704 | (0.5− | 1.8+) | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 2006 09 20 | 699 | 1.0− | 0.2− | 2006 10 28 | 704 | (0.3+ | 1.9+) | 2006 11 22 | 704 | 1.3+ | 0.2− |
| 2006 09 20 | 699 | 1.2+ | 0.4− | 2006 10 28 | 704 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.4+ |
| 2006 09 20 | 699 | 0.9− | 0.8− | 2006 10 28 | 704 | 0.7− | 0.1− | 2006 11 22 | 704 | 0.1+ | 1.4− |
| 2006 09 20 | 699 | (1.9+ | 0.2−) | 2006 10 29 | 704 | 1.0+ | 0.7+ | 2006 11 22 | 704 | 1.3− | 1.4− |
| 2006 09 27 | 704 | 0.5+ | 0.2+ | 2006 10 29 | 704 | (1.8+ | 0.5+) | 2006 11 29 | 704 | 0.4+ | 0.6+ |
| 2006 09 27 | 704 | 0.7− | 0.4+ | 2006 10 29 | 704 | 0.2+ | 0.7+ | 2006 11 29 | 704 | 0.3+ | 0.5− |
| 2006 09 27 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 1.0+ | 1.3+ | 2006 11 29 | 704 | 0.5+ | 0.3− |
| 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 07 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 07 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.5+ |
| 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 07 | 644 | 0.2+ | 0.1− | | | | |
| 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 14 | 703 | 0.9− | 0.2− | | | | |

**2006 SJ$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.98559 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21854484 | $\omega$ | 229.79044 | | +0.50853633 | −0.86064178 | |
| $a$ | 2.7296629 | $\Omega$ | 189.74678 | | +0.82952645 | +0.49785437 | |
| $e$ | 0.1738980 | $i$ | 8.90344 | | +0.23081739 | +0.10694275 | |
| $P$ | 4.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 704 | 1.0+ | 0.2− | 2006 09 17 | 704 | 0.9− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1997 10 30 | 704 | 0.9+ | 1.2− | 2006 09 20 | 699 | 0.6− | 0.8− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 1997 10 30 | 704 | 0.6+ | 0.8− | 2006 09 20 | 699 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1997 10 30 | 704 | (4.1− | 1.3−) | 2006 09 20 | 699 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.0 |
| 1997 11 06 | 704 | 0.7+ | 1.8+ | 2006 09 20 | 699 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 1997 11 06 | 704 | 0.1− | 1.2+ | 2006 09 26 | 704 | 0.2− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 1997 11 06 | 704 | 0.7− | 0.5− | 2006 09 26 | 704 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.2+ | 0.6− |
| 1997 11 06 | 704 | 0.0 | 0.5− | 2006 09 26 | 704 | 0.4+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 1997 11 06 | 704 | 1.0− | 0.2+ | 2006 09 26 | 704 | 1.1+ | 0.2− | 2006 10 22 | 704 | 0.1+ | 0.7+ |
| 1999 03 20 | 645 | 0.2− | 0.0 | 2006 09 30 | 703 | 0.8− | 0.3− | 2006 10 22 | 704 | 0.4+ | 0.9+ |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2006 09 30 | 703 | (0.1+ | 2.2+) | 2006 10 22 | 704 | 0.0 | 0.2+ |
| 2001 08 25 | 704 | 0.4− | 0.8+ | 2006 09 30 | 703 | 0.5+ | 0.1+ | 2006 10 22 | 704 | 0.8+ | 0.2− |
| 2001 08 25 | 704 | 1.1+ | 0.7+ | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.3− | 0.9− |
| 2001 08 25 | 704 | 0.6− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.6− | 0.3+ |
| 2001 08 25 | 704 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.6− |
| 2001 08 25 | 704 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.6+ |
| 2003 01 05 | 704 | (1.7+ | 0.6−) | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.4+ | 1.2+ |
| 2003 01 05 | 704 | 0.8+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.9+ |
| 2003 01 05 | 704 | 0.9+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.3+ | 1.1+ |
| 2003 01 05 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.1− | 2006 11 20 | 704 | (0.9− | 3.2+) |
| 2003 01 05 | 704 | 0.9+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2004 04 23 | 691 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2004 04 23 | 691 | 0.5+ | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2004 04 23 | 691 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2006 09 17 | 704 | (1.2+ | 2.5+) | 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 09 17 | 704 | 0.8− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.0 | | | | |

**2006 SK$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.20135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27259812 | $\omega$ | 196.75460 | | +0.99806937 | +0.05369857 | |
| $a$ | 2.3557045 | $\Omega$ | 160.08848 | | −0.04106472 | +0.94751831 | |
| $e$ | 0.1458829 | $i$ | 5.25786 | | −0.04659647 | +0.31515950 | |
| $P$ | 3.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2001 04 16 | 645 | 0.1+ | 0.2+ | 2006 09 20 | 699 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2002 07 22 | 644 | 0.1+ | 0.0 | 2006 09 20 | 699 | 0.1− | 0.5+ | 2006 10 27 | 704 | 0.9− | 0.1+ |
| 2002 07 22 | 644 | 0.3− | 0.1+ | 2006 09 20 | 699 | 0.2+ | 0.7+ | 2006 10 27 | 704 | 1.3− | 0.6+ |
| 2002 07 22 | 644 | 0.2+ | 0.4+ | 2006 09 20 | 699 | 0.4− | 0.4− | 2006 10 27 | 704 | 0.4− | 0.3+ |
| 2002 08 06 | 644 | 0.4− | 0.9+ | 2006 09 26 | 704 | 0.5+ | 0.9− | 2006 11 13 | 703 | 0.6− | 0.5− |
| 2002 08 06 | 644 | 0.2− | 1.1+ | 2006 09 26 | 704 | 1.0+ | 0.3+ | 2006 11 13 | 703 | 0.9− | 0.4− |
| 2002 08 06 | 644 | 0.1− | 0.9+ | 2006 09 26 | 704 | 0.2− | 1.3+ | 2006 11 13 | 703 | 0.4+ | 0.3+ |
| 2004 01 18 | 644 | 0.2+ | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.4+ |
| 2004 01 18 | 644 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.8+ |
| 2004 01 18 | 644 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.5− | 0.1− |
| 2005 04 02 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 1.0+ |
| 2005 04 02 | 691 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 20 | 704 | (0.5+ | 1.8+) |
| 2005 04 02 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 1.2+ | 2006 11 20 | 704 | (0.5− | 1.6+) |
| 2005 04 11 | 691 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2005 04 11 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 1.0+ | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2005 04 11 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.5+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2006 08 28 | 703 | 0.4− | 0.3− | 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 0.8− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ | | | | |
| 2006 08 28 | 703 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.2+ | 0.3+ | | | | |

**2006 SD$_{139}$ = 2005 JN$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.26175 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35104823 | $\omega$ | 227.93816 | | +0.50500941 | −0.85883797 | |
| $a$ | 1.9901762 | $\Omega$ | 192.59324 | | +0.86136099 | +0.50781975 | |
| $e$ | 0.0746017 | $i$ | 23.17614 | | +0.05497952 | −0.06720444 | |
| $P$ | 2.81 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.1− | 0.3+ | 2006 09 21 | 699 | 0.3− | 0.7+ | 2006 10 17 | 691 | 0.2− | 0.3+ |
| 2005 05 04 | G96 | 0.3+ | 0.2+ | 2006 09 21 | 699 | 1.3+ | 0.7− | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 2005 05 04 | G96 | 0.3+ | 0.1− | 2006 09 21 | 699 | 0.3+ | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.0 |
| 2005 05 04 | G96 | 0.1+ | 0.1− | 2006 09 21 | 699 | 0.5+ | 1.3+ | 2006 10 20 | 691 | 0.0 | 0.3− |
| 2005 05 06 | G96 | 0.1+ | 0.2− | 2006 09 27 | 703 | 0.0 | 0.5− | 2006 10 20 | 691 | 0.2+ | 0.1+ |
| 2005 05 06 | G96 | 0.4− | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.6− | 2006 10 20 | 691 | 0.0 | 0.2− |
| 2005 05 06 | G96 | 0.6− | 0.3− | 2006 09 27 | 703 | 0.1− | 0.3+ | | | | |
| 2005 05 06 | G96 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 1.3− | 0.5− | | | | |

**2006 SG$_{139}$ = 2001 YD$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.38139 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17871304 | $\omega$ | 321.63967 | | +0.81980559 | −0.55380025 | |
| $a$ | 3.1215136 | $\Omega$ | 72.59419 | | +0.55583664 | +0.70838308 | |
| $e$ | 0.2018454 | $i$ | 8.78203 | | +0.13771135 | +0.43760565 | |
| $P$ | 5.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.1− | 0.2− | 2006 09 26 | 703 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 0.3+ | 2006 09 26 | 703 | 0.2− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2006 10 01 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2001 12 20 | 704 | 0.2− | 0.0 | 2006 10 01 | 704 | 1.1+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2001 12 20 | 704 | 0.6− | 0.1+ | 2006 10 01 | 704 | 0.4− | 0.5+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2001 12 20 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.2− | 0.4− | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2001 12 20 | 704 | 0.1+ | 0.3− | 2006 10 16 | 703 | 1.3− | 0.9− | 2006 10 28 | 703 | 0.3+ | 1.0− |
| 2006 09 21 | 699 | 0.5− | 0.6− | 2006 10 16 | 703 | 0.7− | 0.7− | 2006 10 28 | 703 | 1.5+ | 0.0 |
| 2006 09 21 | 699 | 0.1− | 0.7− | 2006 10 16 | 703 | 0.1− | 0.7− | 2006 11 13 | 703 | 0.6− | 0.7− |
| 2006 09 21 | 699 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.1+ | 1.0+ | 2006 11 13 | 703 | 0.5− | 0.6− |
| 2006 09 21 | 699 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.3+ | 2006 11 13 | 703 | 1.0− | 0.9− |
| 2006 09 25 | 699 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.1− | 1.5+ | 2006 11 13 | 703 | 0.2− | 0.8− |
| 2006 09 25 | 699 | 0.4− | 1.0+ | 2006 10 22 | 703 | 0.8+ | 0.4+ | 2006 11 20 | 704 | 0.6+ | 1.3+ |
| 2006 09 25 | 699 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2006 09 25 | 699 | 1.2+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.0 | | | | |
| 2006 09 26 | 703 | 1.0+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3− | | | | |

**2006 SK$_{139}$ = 2000 YX$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.50969 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30896343 | $\omega$ | 274.31516 | | +0.93885643 | | −0.32760662 |
| $a$ | 2.1670287 | $\Omega$ | 104.83498 | | +0.34303280 | | +0.86353710 |
| $e$ | 0.1585600 | $i$ | 6.29164 | | +0.02961587 | | +0.38337655 |
| $P$ | 3.19 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 28 | 691 | 0.1+ | 0.2− | 2006 09 26 | 703 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.6− | 0.3+ |
| 2000 12 28 | 691 | 0.2− | 0.9+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.8− | 0.4− |
| 2000 12 28 | 691 | 0.5− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2000 12 30 | 691 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2000 12 30 | 691 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.6+ | 0.1− | 2006 10 22 | 644 | 0.4+ | 0.4− |
| 2000 12 30 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2006 09 21 | 699 | 0.5+ | 0.0 | 2006 10 16 | 703 | (0.1− | 1.6+) | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2006 09 21 | 699 | 0.4− | 0.5+ | 2006 10 16 | 703 | 0.4+ | 1.0+ | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2006 09 21 | 699 | 0.1+ | 0.6− | 2006 10 18 | 291 | 0.3− | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.3− |
| 2006 09 21 | 699 | (1.5− | 2.2+) | 2006 10 18 | 291 | 0.1− | 0.3+ | 2006 10 28 | 703 | 1.4+ | 0.4− |
| 2006 09 26 | 703 | 0.4+ | 0.6+ | 2006 10 18 | 291 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.7+ |
| 2006 09 26 | 703 | 0.8− | 0.5− | 2006 10 22 | 703 | 1.0− | 1.0− | 2006 10 28 | 703 | 1.1+ | 1.1− |
| 2006 09 26 | 703 | 0.1+ | 0.4− | 2006 10 22 | 703 | (0.6− | 3.0−) | | | | |

**2006 SP$_{139}$ = 2002 JW$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.40163 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29552235 | $\omega$ | 235.08507 | | +0.89931833 | | +0.41853496 |
| $a$ | 2.2322483 | $\Omega$ | 99.87700 | | −0.34741554 | | +0.85979806 |
| $e$ | 0.1846733 | $i$ | 7.38955 | | −0.26557296 | | +0.29253340 |
| $P$ | 3.34 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 07 | 644 | 0.8+ | 0.1+ | 2006 09 25 | 699 | 1.1− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 05 07 | 644 | 0.7− | 0.3− | 2006 09 26 | 703 | 0.4+ | 0.7− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2002 05 07 | 644 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2002 05 09 | 644 | 0.3− | 0.1+ | 2006 09 26 | 703 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2002 05 09 | 644 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 0.9+ | 0.2− |
| 2002 05 09 | 644 | 0.0 | 0.3+ | 2006 09 29 | 699 | (2.6− | 0.4+) | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2006 09 21 | 699 | 0.6− | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.2+ |
| 2006 09 21 | 699 | 0.7− | 0.5+ | 2006 09 29 | 699 | 0.1− | 1.2+ | 2006 10 28 | 703 | 0.0 | 0.9+ |
| 2006 09 21 | 699 | 0.1+ | 0.9+ | 2006 09 29 | 699 | (1.7− | 0.4−) | 2006 10 28 | 703 | 0.1− | 0.4+ |
| 2006 09 21 | 699 | 0.3+ | 0.2− | 2006 10 02 | 703 | 0.0 | 0.6− | 2006 10 28 | 703 | 0.1+ | 0.2− |
| 2006 09 25 | 699 | 0.3+ | 0.5− | 2006 10 02 | 703 | 0.5+ | 0.3− | 2006 10 28 | 703 | 1.2− | 0.2− |
| 2006 09 25 | 699 | 0.0 | 0.7− | 2006 10 02 | 703 | 0.2− | 0.2− | | | | |
| 2006 09 25 | 699 | 0.4+ | 0.2− | 2006 10 02 | 703 | 0.1− | 0.6− | | | | |

**2006 SR$_{139}$ = 2004 AK$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.48431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25254157 | $\omega$ | 254.62598 | | +0.95457732 | | +0.28837953 |
| $a$ | 2.4788341 | $\Omega$ | 88.56840 | | −0.23644512 | | +0.88622244 |
| $e$ | 0.1889166 | $i$ | 4.30041 | | −0.18131696 | | +0.36255625 |
| $P$ | 3.90 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.3+ | 0.1− | 2006 08 23 | 644 | 0.1+ | 0.6− | 2006 09 22 | 704 | 0.4− | 0.8+ |
| 2004 01 15 | 691 | 0.0 | 0.3− | 2006 08 23 | 644 | 0.1+ | 0.3− | 2006 09 22 | 704 | 0.2− | 0.9+ |
| 2004 01 15 | 691 | 0.2− | 0.2+ | 2006 09 14 | 703 | 1.1− | 0.5+ | 2006 09 22 | 704 | 0.8+ | 0.3+ |
| 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 09 14 | 703 | 0.5− | 0.5+ | 2006 09 26 | 703 | 0.2+ | 0.9− |
| 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 0.3+ | 0.1− | 2006 09 26 | 703 | 0.5+ | 0.5− |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 09 14 | 703 | (0.5− | 1.7−) | 2006 09 26 | 703 | 0.6− | 0.8− |
| 2006 08 23 | 644 | 0.0 | 0.1− | 2006 09 22 | 704 | 0.7+ | 0.2+ | 2006 09 26 | 703 | (1.9− | 0.9−) |

**2006 SS$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.76921 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23597073 | $\omega$ | 226.86216 | | −0.10990183 | | +0.97479691 |
| $a$ | 2.5935659 | $\Omega$ | 38.14354 | | −0.79606872 | | +0.03063019 |
| $e$ | 0.1865072 | $i$ | 18.32085 | | −0.59514383 | | −0.22098138 |
| $P$ | 4.18 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 644 | 0.1+ | 0.3− | 2006 10 03 | G96 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 12 11 | 644 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2002 12 11 | 644 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.5+ |
| 2004 02 10 | 644 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.4+ | 0.2− |
| 2004 02 10 | 644 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2004 02 10 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2006 09 22 | 704 | 0.7+ | 1.0+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2006 09 22 | 704 | 0.2− | 1.2+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 09 22 | 704 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.9− |
| 2006 09 22 | 699 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2006 09 22 | 699 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2006 09 22 | 699 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.2− | 1.0− |
| 2006 09 22 | 699 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | (1.5− | 0.4+) |
| 2006 09 26 | 704 | 0.3+ | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.3− | 2006 11 21 | 704 | (1.7− | 0.1−) |
| 2006 09 26 | 704 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 21 | 704 | (1.6− | 0.4+) |
| 2006 09 26 | 704 | 1.4− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | (1.8− | 0.4+) |
| 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 10 28 | 704 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.1+ |
| 2006 09 30 | 703 | 0.2+ | 0.7− | 2006 10 28 | 704 | 0.5− | 0.8+ | 2006 11 25 | 703 | 0.3− | 0.8+ |
| 2006 09 30 | 703 | 0.2− | 0.2− | 2006 10 28 | 704 | 0.0 | 1.0+ | 2006 11 25 | 703 | 0.4− | 0.6− |
| 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 10 28 | 704 | 0.8− | 0.5+ | 2006 11 25 | 703 | 0.6+ | 0.1− |
| 2006 10 03 | G96 | 0.0 | 0.6− | 2006 11 11 | 703 | 0.9+ | 0.3− | 2006 11 25 | 703 | 1.7− | 0.6− |
| 2006 10 03 | G96 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.6− | 0.4− | | | | |
| 2006 10 03 | G96 | 0.2− | 0.8− | 2006 11 11 | 703 | 0.1+ | 0.4+ | | | | |

**2006 SB$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.07206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30538010 | $\omega$ | 100.84065 | | +0.96532981 | | +0.24374968 |
| $a$ | 2.1839477 | $\Omega$ | 245.10497 | | −0.26101679 | | +0.89733544 |
| $e$ | 0.1773464 | $i$ | 5.91040 | | −0.00293317 | | +0.36793369 |
| $P$ | 3.23 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 15 | 691 | 0.0 | 0.0 | 2003 12 22 | 291 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.0 |
| 1999 06 15 | 691 | 0.1+ | 0.8+ | 2003 12 22 | 291 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.1− |
| 1999 06 15 | 691 | 0.0 | 0.0 | 2003 12 22 | 291 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.2+ |
| 2003 11 19 | 691 | 0.1+ | 0.2+ | 2006 09 22 | 699 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.4+ | 0.0 |
| 2003 11 19 | 691 | 0.3+ | 0.0 | 2006 09 22 | 699 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2003 11 19 | 691 | 0.0 | 0.3+ | 2006 09 22 | 699 | 0.1+ | 0.5− | 2006 10 17 | 703 | 0.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 291 | 0.3− | 0.1+ | 2006 09 22 | 699 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.4+ | 0.8+ |
| 2003 12 01 | 291 | 0.0 | 0.4− | 2006 09 27 | 703 | 1.0− | 0.4+ | 2006 10 17 | 703 | (0.1+ | 2.4+) |
| 2003 12 01 | 291 | 0.1− | 0.0 | 2006 09 27 | 703 | 1.3− | 0.6+ | 2006 10 17 | 703 | 0.7+ | 0.3− |
| 2003 12 01 | 691 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.5− | 0.6− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2003 12 01 | 691 | 0.1− | 0.3+ | 2006 09 27 | 703 | 1.1− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2003 12 01 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1− |

**2006 SW$_{140}$ = 2001 XU$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.10489 | | (2000.0) | | | |
| $n$ | 0.18501261 | $\omega$ | 271.93797 | | +0.94080295 | −0.29070278 |
| $a$ | 3.0502481 | $\Omega$ | 104.99418 | | +0.33504901 | +0.87541394 |
| $e$ | 0.2108590 | $i$ | 10.39582 | | −0.05130265 | +0.38618950 |
| $P$ | 5.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 1.0− | 0.4+ | 2006 09 26 | 703 | 0.7− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2001 12 11 | 704 | 0.4+ | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.8− | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2001 12 11 | 704 | 0.0 | 0.9− | 2006 09 26 | 703 | 0.4− | 0.8− | 2006 10 12 | 644 | 0.3+ | 0.2− |
| 2001 12 11 | 704 | 0.0 | 0.3+ | 2006 09 26 | 703 | (0.6− | 1.9−) | 2006 10 21 | 703 | 1.3− | 0.4+ |
| 2001 12 14 | 644 | 0.0 | 0.2− | 2006 10 02 | 703 | 0.8− | 0.6− | 2006 10 21 | 703 | 1.3+ | 0.2− |
| 2001 12 14 | 644 | 0.4+ | 0.1− | 2006 10 02 | 703 | 0.9+ | 1.1+ | 2006 10 21 | 703 | 0.2+ | 0.7− |
| 2001 12 14 | 644 | 0.3+ | 0.0 | 2006 10 02 | 703 | 0.3+ | 1.3+ | 2006 10 21 | 703 | (0.3− | 2.7+) |
| 2006 09 24 | 699 | 0.4− | 0.0 | 2006 10 02 | 703 | (0.2− | 2.0−) | 2006 10 23 | 644 | 0.0 | 0.0 |
| 2006 09 24 | 699 | 0.0 | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.3− | 0.2− |
| 2006 09 24 | 699 | 0.5+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2006 09 24 | 699 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 | | | | |

**2006 SY$_{140}$ = 2003 AN$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 330.97092 | | (2000.0) | | | |
| $n$ | 0.22383516 | $\omega$ | 304.34370 | | +0.54606331 | −0.82236094 |
| $a$ | 2.6864814 | $\Omega$ | 111.77313 | | +0.81399676 | +0.47574511 |
| $e$ | 0.2092104 | $i$ | 9.90880 | | +0.19805081 | +0.31207224 |
| $P$ | 4.40 | $H$ | 16.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 1.0− | 0.7+ | 2006 09 24 | 699 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.9− | 1.1− |
| 2003 01 07 | 704 | 0.9+ | 0.1− | 2006 09 24 | 699 | 0.3+ | 1.2+ | 2006 10 02 | 703 | 0.2+ | 0.2− |
| 2003 01 07 | 704 | 0.6+ | 0.2− | 2006 09 24 | 699 | 1.3+ | 0.1+ | 2006 10 02 | 703 | 0.6− | 0.2− |
| 2003 01 07 | 704 | 0.1+ | 0.8+ | 2006 09 26 | 703 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 2003 01 08 | 704 | 0.4+ | 1.1− | 2006 09 26 | 703 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 2003 01 08 | 704 | 0.4− | 0.2− | 2006 09 26 | 703 | 0.8+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.1+ |
| 2003 01 08 | 704 | 0.6− | 0.4+ | 2006 09 26 | 703 | 0.6− | 0.4− | | | | |
| 2006 09 24 | 699 | 1.4− | 0.8+ | 2006 10 02 | 703 | 0.4− | 0.8− | | | | |

**2006 SD$_{141}$ = 2005 GP$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.36826 | | (2000.0) | | | |
| $n$ | 0.24055299 | $\omega$ | 193.13994 | | +0.89724886 | +0.43743548 |
| $a$ | 2.5605242 | $\Omega$ | 140.74293 | | −0.39604152 | +0.85739251 |
| $e$ | 0.1784809 | $i$ | 5.43673 | | −0.19518093 | +0.27116100 |
| $P$ | 4.10 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 15 | 691 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.7+ | 1.5− |
| 2005 04 15 | 691 | 0.2+ | 0.2− | 2006 09 26 | 703 | (0.8+ | 2.1+) | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.6+ | 1.2+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2005 04 18 | 691 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2005 04 18 | 691 | 0.4− | 0.2+ | 2006 09 29 | 699 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 04 18 | 691 | 0.1+ | 0.1− | 2006 09 29 | 699 | 1.1+ | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.2+ |
| 2006 09 25 | 699 | 1.0− | 0.0 | 2006 10 04 | G96 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.4− | 0.7+ |
| 2006 09 25 | 699 | 0.5− | 0.7− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.9+ |
| 2006 09 25 | 699 | 1.0− | 1.2− | 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.9+ | 1.1+ |
| 2006 09 25 | 699 | 0.4− | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 28 | 715 | 0.3− | 0.2− |
| 2006 09 26 | 703 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.9− | 2006 10 28 | 715 | 0.2+ | 0.1+ |
| 2006 09 26 | 703 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.7− | 2006 10 28 | 715 | 0.4− | 0.2− |

**2006 SF$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.70699 | | (2000.0) | | | |
| $n$ | 0.19698077 | $\omega$ | 174.92951 | | +0.96840818 | +0.24690221 |
| $a$ | 2.9254106 | $\Omega$ | 170.55377 | | −0.23563539 | +0.95194779 |
| $e$ | 0.0657324 | $i$ | 12.31268 | | −0.08161835 | +0.18120351 |
| $P$ | 5.00 | $H$ | 16.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.2− | 0.8− | 2006 10 04 | G96 | 0.2+ | 0.1− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 09 25 | 699 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.6+ |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2006 09 25 | 699 | 0.2− | 0.8+ | 2006 10 22 | 703 | 1.3− | 0.2− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | (2.9+ | 0.2+) | 2006 10 22 | 703 | 0.4+ | 0.3− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.8+ | 0.2− | 2006 10 22 | 703 | (0.0 | 1.6+) |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.2− | 1.1+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2004 03 14 | 691 | 0.0 | 0.5+ | 2006 09 26 | 703 | (2.5+ | 1.8+) | 2006 10 23 | 644 | 0.6+ | 0.1+ |
| 2004 03 14 | 691 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2004 03 14 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.2− | 0.1+ | | | | |
| 2006 09 25 | 699 | 1.1− | 0.0 | 2006 10 04 | G96 | 0.5+ | 0.1+ | | | | |

**2006 SG$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.15812 | | (2000.0) | | | |
| $n$ | 0.17724823 | $\omega$ | 238.93564 | | +0.23614140 | +0.95124239 |
| $a$ | 3.1386878 | $\Omega$ | 46.13402 | | −0.77111626 | +0.30770193 |
| $e$ | 0.1993775 | $i$ | 15.97582 | | −0.59128415 | −0.02138777 |
| $P$ | 5.56 | $H$ | 14.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 09 | 699 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 1999 05 09 | 699 | 0.3+ | 0.0 | 2006 09 29 | 699 | 0.0 | 0.9+ | 2006 10 16 | 703 | 0.1− | 0.8+ |
| 1999 05 09 | 699 | 0.9+ | 1.5+ | 2006 09 29 | 699 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 2004 04 08 | 644 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.6− | 1.3+ |
| 2004 04 08 | 644 | 0.3+ | 0.5+ | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 10 22 | 703 | 0.5− | 0.8+ |
| 2004 04 08 | 644 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 22 | 703 | 1.1− | 0.4+ |
| 2006 09 18 | 703 | 0.7+ | 1.3− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 2006 09 18 | 703 | 0.7− | 0.8− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.8+ |
| 2006 09 18 | 703 | 0.7+ | 1.0− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2006 09 18 | 703 | 0.4+ | 1.3+ | 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2006 09 25 | 699 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2006 09 25 | 699 | 1.8− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 07 | 644 | 0.9+ | 0.3+ |
| 2006 09 25 | 699 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.5+ | 0.2+ |
| 2006 09 25 | 699 | 0.4− | 0.6− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.3− | 0.3− |
| 2006 09 26 | 703 | 1.0− | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.5+ | 1.0− |
| 2006 09 26 | 703 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.9− | 0.1− |
| 2006 09 26 | 703 | 0.5− | 0.7− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.4+ |
| 2006 09 26 | 703 | 0.2− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.3+ | 0.7+ |
| 2006 09 29 | 699 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.1− | | | | |

**2006 SK$_{141}$ = 2004 FM$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 269.31766 | | (2000.0) | | | |
| $n$ | 0.23453668 | $\omega$ | 34.64368 | | −0.39794406 | −0.91151089 |
| $a$ | 2.6041272 | $\Omega$ | 79.00183 | | +0.81596937 | −0.40341589 |
| $e$ | 0.0888623 | $i$ | 6.07388 | | +0.41932626 | −0.08002203 |
| $P$ | 4.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.1− | 0.8+ | 2006 09 25 | 699 | 0.3+ | 0.7− | 2006 10 04 | G96 | 0.2− | 0.8− |
| 2004 03 23 | 704 | 0.3+ | 0.5+ | 2006 09 25 | 699 | (0.5− | 1.7−) | 2006 10 04 | G96 | 0.4− | 0.8− |
| 2004 03 23 | 704 | 0.9+ | 1.0+ | 2006 09 26 | 703 | 0.7+ | 0.8+ | 2006 10 04 | G96 | 0.3− | 0.5− |
| 2004 03 23 | 704 | 1.2+ | 0.4+ | 2006 09 26 | 703 | 0.4+ | 1.1+ | 2006 10 04 | G96 | 0.6− | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 703 | 1.1+ | 1.0+ | 2006 10 12 | 644 | 0.3− | 0.1− |
| 2004 03 26 | 691 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.2+ | 0.7+ | 2006 10 12 | 644 | 0.3− | 0.0 |
| 2004 03 26 | 691 | 0.2− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.1− | 0.1− |
| 2004 03 26 | 691 | 0.3− | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.8+ | 0.4+ |
| 2006 09 25 | 699 | 1.0− | 1.5+ | 2006 10 04 | G96 | 0.3− | 0.4− | 2006 10 19 | 644 | 0.1+ | 0.9+ |
| 2006 09 25 | 699 | 0.7− | 0.9− | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 10 19 | 644 | 0.3+ | 0.2+ |

**2006 SL$_{141}$ = 2005 JG$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.17605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28966280 | $\omega$ | 287.37127 | | +0.79180467 | −0.59950340 | |
| $a$ | 2.2622516 | $\Omega$ | 109.61859 | | +0.59682795 | +0.71881570 | |
| $e$ | 0.0945557 | $i$ | 7.12260 | | +0.12977581 | +0.35199385 | |
| $P$ | 3.40 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 691 | 0.2+ | 0.2− | 2006 09 25 | 699 | 0.9− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 09 25 | 699 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | (1.1− | 1.8−) | 2006 10 22 | 644 | 0.6+ | 0.5− |
| 2005 05 14 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.4+ | 2006 10 23 | 644 | 0.2+ | 0.2− |
| 2005 05 14 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.1+ | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.0 |
| 2005 05 14 | 691 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.3− | 2.1+ | 2006 10 28 | 703 | 0.9− | 0.9+ |
| 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 10 28 | 703 | 0.9+ | 0.4− |
| 2006 09 18 | 703 | 0.5− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 2.0− | 0.1− |
| 2006 09 18 | 703 | 0.6+ | 0.4− | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.3+ |
| 2006 09 25 | 699 | 1.1− | 0.7− | 2006 10 21 | 644 | 0.3+ | 0.1− | | | | |

**2006 SM$_{141}$ = 2000 TB$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.40433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16913382 | $\omega$ | 173.28228 | | +0.96351592 | +0.26152291 | |
| $a$ | 3.2382901 | $\Omega$ | 170.92885 | | −0.25929272 | +0.96481053 | |
| $e$ | 0.0305574 | $i$ | 21.17349 | | −0.06636541 | +0.02732056 | |
| $P$ | 5.83 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 699 | 0.3+ | 0.5+ | 2003 03 06 | 699 | 0.7+ | 0.7− | 2006 09 25 | 699 | 0.8− | 0.6+ |
| 2000 10 01 | 699 | 0.7− | 0.1+ | 2003 03 06 | 699 | (2.5− | 0.9−) | 2006 09 26 | 703 | 0.7+ | 0.8+ |
| 2000 10 01 | 699 | 0.5− | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.7+ | 2006 09 26 | 703 | 0.4− | 0.4− |
| 2000 10 01 | 699 | 0.7+ | 0.5− | 2006 09 18 | 703 | 1.1+ | 0.2− | 2006 09 26 | 703 | 0.6+ | 0.1+ |
| 2000 10 02 | 704 | 0.4− | 0.0 | 2006 09 18 | 703 | (0.3− | 2.0+) | 2006 09 26 | 703 | 0.1− | 1.0− |
| 2000 10 02 | 704 | 0.5+ | 0.3− | 2006 09 18 | 703 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.0 | 0.0 |
| 2000 10 02 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 699 | 0.7− | 0.2+ | 2006 09 29 | 699 | (1.5+ | 1.6−) |
| 2003 03 06 | 699 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.1− | 0.6− | 2006 09 29 | 699 | 1.0+ | 0.2+ |
| 2003 03 06 | 699 | 1.0− | 0.2+ | 2006 09 25 | 699 | 0.7− | 0.1− | 2006 09 29 | 699 | 0.6− | 0.4− |

**2006 SL$_{142}$ = 2004 FF$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.54059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21618335 | $\omega$ | 67.75661 | | +0.12421061 | −0.99199548 | |
| $a$ | 2.7495053 | $\Omega$ | 15.16111 | | +0.87538056 | +0.09876500 | |
| $e$ | 0.1022354 | $i$ | 4.98608 | | +0.46720509 | +0.07867938 | |
| $P$ | 4.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 22 | 704 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.9− | 1.1− | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 09 19 | 699 | 0.8+ | 1.2+ | 2006 10 20 | G96 | 0.5− | 0.2− |
| 2004 03 22 | 704 | 0.2+ | 0.8+ | 2006 09 19 | 703 | 0.4− | 0.7− | 2006 10 20 | G96 | 0.2+ | 0.0 |
| 2004 03 29 | 691 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 1.0− | 0.6− | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2004 03 29 | 691 | 0.3+ | 0.1− | 2006 09 19 | 703 | (0.4− | 1.6−) | 2006 10 21 | G96 | 0.8+ | 0.3− |
| 2004 03 29 | 691 | 0.3− | 0.2+ | 2006 09 19 | 699 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.6+ |
| 2006 08 28 | 703 | 0.4+ | 1.3− | 2006 09 19 | 699 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.5+ |
| 2006 08 28 | 703 | 0.5+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3+ |
| 2006 08 28 | 703 | 0.1+ | 1.1− | 2006 09 26 | 691 | 0.2+ | 0.6+ | 2006 11 15 | G96 | 0.5− | 0.1− |
| 2006 08 28 | 703 | (1.9− | 0.1+) | 2006 09 26 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.5− | 0.2− |
| 2006 09 19 | 699 | (1.6− | 1.7+) | 2006 10 20 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.2+ |

**2006 SM$_{142}$ = 2004 FZ$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.66534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17995280 | $\omega$ | 271.85154 | | +0.12667603 | +0.99175615 | |
| $a$ | 3.1071601 | $\Omega$ | 5.53869 | | −0.81186119 | +0.11484457 | |
| $e$ | 0.0400468 | $i$ | 11.54145 | | −0.56994262 | +0.05683708 | |
| $P$ | 5.48 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.0 | 0.1− | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 1993 03 19 | 691 | 0.0 | 0.3− | 2004 04 25 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 1993 03 19 | 691 | 0.3− | 0.0 | 2004 04 25 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.4+ |
| 2004 02 17 | 291 | 0.0 | 0.3+ | 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.3− | 0.8+ |
| 2004 02 17 | 291 | 0.1+ | 0.3+ | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.8− | 0.3+ |
| 2004 02 17 | 291 | 0.5+ | 0.5+ | 2004 04 25 | 691 | 0.1+ | 0.3− | 2006 10 20 | G96 | 0.3− | 0.3+ |
| 2004 03 17 | 691 | 0.1+ | 0.1+ | 2004 04 25 | 691 | 0.7+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.4+ |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.5+ |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.4− | 2006 10 27 | G96 | 0.5− | 0.3+ |
| 2004 03 29 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 1.5+ | 0.7− | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2004 03 29 | 691 | 0.3− | 0.1− | 2006 09 19 | 703 | 0.5− | 1.1− | 2006 10 27 | G96 | 0.2+ | 0.6+ |

**2006 SQ$_{142}$ = 1999 UD$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.93870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27018874 | $\omega$ | 221.73757 | | +0.06188333 | +0.99771652 | |
| $a$ | 2.3696883 | $\Omega$ | 51.82816 | | −0.90636778 | +0.06752844 | |
| $e$ | 0.1744277 | $i$ | 1.97246 | | −0.41793289 | +0.00128352 | |
| $P$ | 3.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.3+ | 0.0 | 2005 05 13 | G96 | 0.1+ | 0.1+ | 2006 09 19 | 703 | 1.3− | 0.7− |
| 1999 10 31 | 691 | 0.3+ | 0.0 | 2005 05 13 | G96 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.2+ |
| 1999 10 31 | 691 | 0.3+ | 0.1+ | 2005 05 13 | G96 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 1999 11 05 | 691 | 0.1− | 0.2− | 2005 05 13 | G96 | 0.3+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.3+ |
| 1999 11 05 | 691 | 0.4− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1999 11 05 | 691 | 0.6− | 0.0 | 2006 08 27 | 691 | 0.4− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1+ |
| 2005 04 11 | G96 | 0.1+ | 0.1− | 2006 08 27 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.5− |
| 2005 04 11 | G96 | 0.6+ | 0.2+ | 2006 09 19 | 703 | 0.5− | 0.6+ | 2006 10 21 | G96 | 1.0+ | 0.1− |
| 2005 04 11 | G96 | 0.9− | 0.3+ | 2006 09 19 | 703 | 0.6+ | 0.8+ | | | | |
| 2005 04 11 | G96 | 0.2+ | 0.6+ | 2006 09 19 | 703 | (2.2− | 0.3+) | | | | |

**2006 SR$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.94059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26812791 | $\omega$ | 169.83350 | | +0.20440617 | +0.97818598 | |
| $a$ | 2.3818150 | $\Omega$ | 111.95361 | | −0.90088949 | +0.20277701 | |
| $e$ | 0.1720661 | $i$ | 2.28738 | | −0.38290500 | +0.04509623 | |
| $P$ | 3.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 688 | 0.6+ | 0.6+ | 2002 07 14 | 704 | 1.5− | 1.4− | 2006 09 19 | 699 | 0.1− | 0.7+ |
| 1998 04 21 | 688 | 0.0 | 0.1+ | 2002 07 14 | 704 | 1.2− | 0.5− | 2006 09 19 | 703 | 0.6+ | 0.7− |
| 1998 04 21 | 688 | 0.1− | 0.1+ | 2005 03 03 | 691 | 0.4+ | 0.4+ | 2006 09 19 | 699 | 0.1+ | 0.3− |
| 2002 07 05 | 704 | 0.8+ | 0.4− | 2005 03 03 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 703 | 0.4− | 0.6− |
| 2002 07 05 | 704 | 1.2+ | 0.6− | 2005 03 03 | 691 | 0.4+ | 0.5+ | 2006 09 19 | 703 | 0.5− | 0.6− |
| 2002 07 05 | 704 | 2.1+ | 0.5− | 2005 03 16 | G96 | 0.4− | 0.8+ | 2006 09 19 | 699 | 1.5− | 1.5+ |
| 2002 07 05 | 704 | 1.5+ | 1.0+ | 2005 03 16 | G96 | 0.3− | 0.1+ | 2006 09 19 | 703 | 0.3− | 0.2− |
| 2002 07 05 | 704 | 0.5+ | 0.5+ | 2005 03 16 | G96 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.7− | 1.5+ |
| 2002 07 14 | 644 | 0.7− | 0.8+ | 2005 03 16 | G96 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1+ | 0.4− | 2006 08 18 | 691 | 0.5+ | 0.8− | 2006 09 26 | 691 | 0.4+ | 0.0 |
| 2002 07 14 | 644 | 0.4− | 1.1+ | 2006 08 18 | 691 | 0.4− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2002 07 14 | 644 | 0.3− | 0.4− | 2006 08 18 | 691 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.3+ |
| 2002 07 14 | 704 | 1.3− | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.3− | 1.3+ |
| 2002 07 14 | 644 | 0.6− | 0.8+ | 2006 08 27 | 691 | 0.1− | 0.3+ | 2006 09 30 | 703 | 1.2+ | 0.2− |
| 2002 07 14 | 644 | 0.4− | 0.0 | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3+ | 1.1+ |

**2006 SK$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.31974 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24369896 | $\omega$ | 117.32567 | | +0.80992326 | +0.58552124 | |
| $a$ | 2.5384402 | $\Omega$ | 206.87724 | | −0.56148872 | +0.75699775 | |
| $e$ | 0.2512084 | $i$ | 4.37476 | | −0.16957220 | +0.29003326 | |
| $P$ | 4.04 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.2− | 0.7+ | 2006 09 28 | 699 | 0.9+ | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1994 11 01 | 691 | 0.0 | 0.1− | 2006 09 28 | 699 | 1.1− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 1994 11 01 | 691 | 0.1− | 0.0 | 2006 09 28 | 699 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1998 09 27 | 691 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1998 09 27 | 691 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 1998 09 27 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1998 10 12 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 1998 10 12 | 691 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.2− |
| 1998 10 12 | 691 | 0.4+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 1.1+ | 2006 11 21 | G96 | 0.3− | 0.5− |
| 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.8− | 0.6− | 2006 11 21 | G96 | 0.5+ | 0.5− |
| 2006 09 28 | 699 | 1.0− | 0.3− | 2006 10 17 | 703 | (1.8+ | 1.2+) | | | | |

**2006 SO$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.43888 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25654779 | $\omega$ | 120.86725 | | +0.82168651 | +0.56826754 | |
| $a$ | 2.4529604 | $\Omega$ | 204.58515 | | −0.55215056 | +0.77472904 | |
| $e$ | 0.1256837 | $i$ | 6.01912 | | −0.14128354 | +0.27724884 | |
| $P$ | 3.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2005 04 02 | G96 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2005 04 02 | G96 | 0.1− | 0.7− | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 04 02 | G96 | 0.2− | 0.8− | 2006 09 30 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.5+ |
| 2005 04 17 | 691 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 02 | G96 | 0.2+ | 0.8+ |
| 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 11 02 | G96 | 0.0 | 0.4+ |
| 2005 05 11 | 807 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 02 | G96 | 0.2+ | 0.2− |
| 2005 05 11 | 807 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.6+ | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | (1.5− | 1.8−) | 2006 11 11 | G96 | 0.5+ | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.7− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.9− | | | | |
| 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.2− | 0.6+ | | | | |

**2006 SW$_{143}$ = 2002 UQ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.27940 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23830118 | $\omega$ | 222.44227 | | −0.12261924 | −0.99210323 | |
| $a$ | 2.5766292 | $\Omega$ | 234.61765 | | +0.91902258 | −0.10347387 | |
| $e$ | 0.1379451 | $i$ | 1.85393 | | +0.37464918 | −0.07088264 | |
| $P$ | 4.14 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 644 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.3− |
| 2002 10 28 | 644 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2002 10 28 | 644 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2002 10 31 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 10 31 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.2+ | 0.2− | 2006 10 17 | 703 | (0.9+ | 1.7+) | 2006 11 15 | G96 | 0.2− | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.1− |

**2006 SX$_{143}$ = 2004 EM$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.77946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24359308 | $\omega$ | 126.74553 | | −0.24171792 | −0.97025452 | |
| $a$ | 2.5391757 | $\Omega$ | 337.23150 | | +0.87890646 | −0.21308228 | |
| $e$ | 0.0866467 | $i$ | 1.97899 | | +0.41121270 | −0.11490043 | |
| $P$ | 4.05 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.1+ | 0.1− | 2004 03 16 | 184 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 1994 10 28 | 691 | 0.3− | 0.5+ | 2006 09 19 | 691 | 0.6− | 0.5+ | 2006 09 30 | 691 | 0.3− | 0.3− |
| 1994 10 28 | 691 | 0.1+ | 0.2− | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.5+ | 0.1+ |
| 2004 03 15 | 184 | 0.8− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.4− |
| 2004 03 15 | 184 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.2− |
| 2004 03 15 | 184 | 0.2− | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 2004 03 16 | 184 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | | | |
| 2004 03 16 | 184 | 0.7+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ | | | | |

**2006 SG$_{144}$ = 1996 RJ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.47956 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20275380 | $\omega$ | 68.88541 | | +0.83973162 | −0.54286226 | |
| $a$ | 2.8696133 | $\Omega$ | 323.99012 | | +0.49010678 | +0.76749164 | |
| $e$ | 0.0774951 | $i$ | 1.19912 | | +0.23376517 | +0.34096503 | |
| $P$ | 4.86 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 1996 09 08 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− |
| 1996 09 08 | 691 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.0 | 0.0 |
| 1996 09 11 | 691 | 0.0 | 0.3− | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.8− | 0.3+ |
| 1996 09 11 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.3+ |
| 1996 09 11 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.5− | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | (2.1+ | 1.0−) | 2006 11 15 | G96 | 0.4− | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 1.1+ | 2006 11 15 | G96 | 0.5+ | 0.2+ |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.9− | 2006 11 15 | G96 | 0.2− | 0.4+ |
| 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.6+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2006 09 19 | 691 | 0.8− | 0.3− | 2006 10 19 | G96 | 0.4− | 0.2− | | | | |

**2006 SH$_{144}$ = 1995 UG$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.13510 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17814072 | $\omega$ | 231.29208 | | +0.22070788 | −0.97457521 | |
| $a$ | 3.1281957 | $\Omega$ | 206.03531 | | +0.91994606 | +0.22116260 | |
| $e$ | 0.1332795 | $i$ | 5.04731 | | +0.32401740 | +0.03592019 | |
| $P$ | 5.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.7+ | 1.0− | 2000 08 27 | 807 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 |
| 1995 10 17 | 691 | 0.4+ | 0.1+ | 2000 08 27 | 807 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 |
| 1995 10 17 | 691 | 0.2− | 0.7− | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 1995 10 22 | 691 | 0.7− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 1995 10 22 | 691 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1995 10 22 | 691 | 0.4− | 0.8+ | 2006 09 26 | 691 | 0.5+ | 0.2+ | | | | |

**2006 SQ$_{144}$ = 2004 CG$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 239.22208 | | $(2000.0)$ | | | |
| $n$ | 0.26130743 | $\omega$ | 166.55859 | | −0.81358563 | −0.58132385 |
| $a$ | 2.4230825 | $\Omega$ | 337.88487 | | +0.53050663 | −0.73379626 |
| $e$ | 0.1184412 | $i$ | 1.80748 | | +0.23799397 | −0.35157593 |
| $P$ | 3.77 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1− | 0.1+ | 2004 02 14 | 691 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.7+ |
| 2004 01 19 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.3+ | 0.1+ |
| 2004 01 19 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.1− | 0.2− |
| 2004 02 12 | 691 | 0.4+ | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.2+ | 0.5− |
| 2004 02 12 | 691 | 0.2+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.2− | 0.4+ |
| 2004 02 12 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2004 02 14 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.5− | 0.4+ | | | | |
| 2004 02 14 | 691 | 1.2− | 0.6+ | 2006 09 30 | 691 | 0.7+ | 0.1+ | | | | |

**2006 SR$_{144}$ = 2004 GP$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 257.72757 | | $(2000.0)$ | | | |
| $n$ | 0.19950450 | $\omega$ | 257.23566 | | −0.47728225 | −0.87808172 |
| $a$ | 2.9006874 | $\Omega$ | 221.32898 | | +0.82502919 | −0.43433877 |
| $e$ | 0.0207756 | $i$ | 2.97430 | | +0.30253677 | −0.20080421 |
| $P$ | 4.94 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2− |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.5+ |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.3− | 0.2+ |
| 2004 04 20 | 691 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.6+ | 0.1+ |
| 2004 04 20 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.6− | 0.2− |
| 2004 04 20 | 691 | 0.3− | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.3− | | | | |
| 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.0 | | | | |

**2006 SS$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 116.52446 | | $(2000.0)$ | | | |
| $n$ | 0.17132249 | $\omega$ | 284.26905 | | −0.28111442 | +0.95952218 |
| $a$ | 3.2106512 | $\Omega$ | 329.38764 | | −0.86704490 | −0.26157117 |
| $e$ | 0.0472725 | $i$ | 1.92261 | | −0.41134879 | −0.10439212 |
| $P$ | 5.75 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 07 | 691 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2005 07 07 | 691 | 0.5− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2005 07 07 | 691 | 1.0+ | 0.4− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2005 08 08 | 807 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.2− | 0.1+ |
| 2005 08 08 | 807 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.2− |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.2+ |
| 2006 09 15 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3+ |
| 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.0 | 0.1+ |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.6+ |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | (0.1+ | 2.1+) | | | | |

**2006 SD$_{145}$ = 2004 EG$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 99.11861 | | $(2000.0)$ | | | |
| $n$ | 0.20850639 | $\omega$ | 161.48056 | | +0.02866015 | +0.99956744 |
| $a$ | 2.8165868 | $\Omega$ | 110.16135 | | −0.91799088 | +0.02893195 |
| $e$ | 0.0256063 | $i$ | 0.40270 | | −0.39556459 | +0.00527975 |
| $P$ | 4.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.5− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 03 27 | 291 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.7− | 2006 10 16 | G96 | 0.2+ | 0.7− |
| 2004 03 27 | 291 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 2004 03 27 | 291 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.6− |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.4− | 0.5− |
| 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.3− | | | | |

**2006 SF$_{145}$ = 2004 DK$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.13555 | | $(2000.0)$ | | | |
| $n$ | 0.25871348 | $\omega$ | 83.24778 | | −0.32215756 | −0.94659597 |
| $a$ | 2.4392520 | $\Omega$ | 25.55756 | | +0.85617081 | −0.29721442 |
| $e$ | 0.1272085 | $i$ | 1.73481 | | +0.40396294 | −0.12497865 |
| $P$ | 3.81 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.4− | 0.3− | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2004 02 17 | 704 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 15 | 291 | 0.2− | 0.1+ |
| 2004 02 17 | 704 | 0.6− | 0.6− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 15 | 291 | 0.2+ | 0.3+ |
| 2004 02 23 | 704 | 0.0 | 1.0+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 15 | 291 | 0.2− | 0.1− |
| 2004 02 23 | 704 | 0.2− | 0.3− | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2004 02 23 | 704 | 1.1+ | 0.6− | 2006 09 26 | G96 | 0.1− | 0.6− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2006 09 19 | 691 | 0.4+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.6− |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.2+ | | | | |

**2006 SG$_{145}$ = 2004 JY$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 134.31273 | | $(2000.0)$ | | | |
| $n$ | 0.17248237 | $\omega$ | 213.17238 | | −0.59468257 | +0.80341518 |
| $a$ | 3.1962414 | $\Omega$ | 20.38676 | | −0.71788512 | −0.51407339 |
| $e$ | 0.0956408 | $i$ | 4.87579 | | −0.36193037 | −0.30042069 |
| $P$ | 5.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 291 | 0.3+ | 0.1+ | 2004 05 13 | 691 | 0.4+ | 0.1− | 2006 09 19 | 691 | 0.1− | 0.5+ |
| 2004 03 23 | 291 | 0.1− | 0.5+ | 2004 05 13 | 691 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 2004 03 23 | 291 | 0.4− | 0.2− | 2004 05 23 | 691 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 2004 04 22 | 691 | 0.1+ | 0.2− | 2004 05 23 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1− |
| 2004 04 22 | 691 | 0.0 | 0.2− | 2004 05 23 | 691 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2004 04 22 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.4+ | 0.8− |
| 2004 05 13 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.2+ |

**2006 SV$_{145}$ = 1995 FO$_{11}$ = 2004 FM$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 341.38432 | | $(2000.0)$ | | | |
| $n$ | 0.21626596 | $\omega$ | 21.79443 | | +0.84728543 | −0.53077782 |
| $a$ | 2.7488050 | $\Omega$ | 10.33073 | | +0.46978968 | +0.73173846 |
| $e$ | 0.0415581 | $i$ | 6.25947 | | +0.24780042 | +0.42759062 |
| $P$ | 4.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.3− | 0.1− | 2004 03 23 | 691 | 0.3+ | 0.6+ | 2006 10 17 | 703 | 1.1− | 0.5− |
| 1995 03 27 | 691 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.6− |
| 1995 03 27 | 691 | 0.4− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.0 |
| 1995 04 07 | 691 | 0.2+ | 0.6− | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.6− | 0.5+ |
| 1995 04 07 | 691 | 0.2+ | 0.6− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 1995 04 07 | 691 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.1+ |
| 1997 09 30 | 691 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 1997 09 30 | 691 | 0.5+ | 0.5− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 1997 09 30 | 691 | 0.3+ | 0.6− | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 1997 11 21 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 21 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.0 |
| 1997 11 21 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 26 | 695 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2004 02 26 | 695 | 0.1+ | 0.3+ | 2006 10 02 | 291 | 0.9− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 03 22 | 704 | 0.6+ | 0.1− | 2006 10 02 | 291 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.7− |
| 2004 03 22 | 704 | 0.6+ | 0.1− | 2006 10 02 | 291 | 0.7− | 0.4+ | 2006 10 31 | G96 | 0.6+ | 0.7− |
| 2004 03 22 | 704 | (2.3+ | 0.9+) | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.5− |
| 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.2− | 0.6− |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.4+ | | | | |

**2006 SW$_{145}$ = 2004 FU$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.41933 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23722364 | $\omega$ | 312.84726 | | −0.82971634 | | −0.55559779 |
| $a$ | 2.5844258 | $\Omega$ | 193.68945 | | +0.55501973 | | −0.81095853 |
| $e$ | 0.1905789 | $i$ | 13.11096 | | +0.05936233 | | −0.18345943 |
| $P$ | 4.15 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.3+ | 1.2− | 2004 04 12 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | 0.0 | 0.5+ | 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.2+ |
| 2004 03 20 | 704 | 0.5− | 0.0 | 2004 04 12 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2004 03 27 | 704 | 0.8− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.4− | 2006 09 30 | 691 | 0.3− | 0.5− |
| 2004 03 27 | 704 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 0.4+ | 0.4+ | 2006 09 19 | 691 | 0.4+ | 0.1+ | | | | |
| 2004 03 27 | 704 | 0.5+ | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.4+ | | | | |

**2006 SQ$_{146}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.29894 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21156976 | $\omega$ | 335.32574 | | +0.56776170 | | +0.82316163 |
| $a$ | 2.7893327 | $\Omega$ | 329.26708 | | −0.75291182 | | +0.51574107 |
| $e$ | 0.0498630 | $i$ | 0.80527 | | −0.33282194 | | +0.23752071 |
| $P$ | 4.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.8− | 0.1+ |
| 2001 09 19 | 645 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2002 12 06 | 695 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.6− | 0.1− |
| 2002 12 06 | 695 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.3− | 0.1+ |
| 2004 03 21 | 291 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2004 03 21 | 291 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2004 03 21 | 291 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 2006 09 19 | 691 | 0.7+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.6+ | 0.0 |

**2006 SD$_{147}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.42185 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17799395 | $\omega$ | 49.20216 | | −0.46553233 | | +0.88465927 |
| $a$ | 3.1299151 | $\Omega$ | 193.12433 | | −0.84221061 | | −0.45172632 |
| $e$ | 0.1039797 | $i$ | 6.48468 | | −0.27195758 | | −0.11541798 |
| $P$ | 5.54 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.3+ | 0.1− | 2006 07 22 | G96 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1995 09 27 | 691 | 0.5+ | 0.0 | 2006 07 22 | G96 | 0.1− | 0.9+ | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 1995 09 27 | 691 | 0.6+ | 0.3− | 2006 07 22 | G96 | 1.3+ | 0.3− | 2006 10 16 | G96 | 0.8− | 0.6− |
| 2000 09 07 | 691 | 0.4− | 0.0 | 2006 07 22 | G96 | 0.6+ | 0.3+ | 2006 10 16 | G96 | 0.3+ | 0.6− |
| 2000 09 07 | 691 | 0.5− | 0.1− | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2000 09 07 | 691 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 2001 10 21 | 691 | 0.5− | 0.2+ | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2+ |
| 2001 10 21 | 691 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2001 10 21 | 691 | 0.5− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.6− | 0.3+ |
| 2004 07 16 | 807 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2004 07 17 | 807 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2+ | | | | |

**2006 SZ$_{147}$ = 2003 FH$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.62089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17836218 | $\omega$ | 307.58449 | | −0.79402359 | | −0.60277856 |
| $a$ | 3.1256058 | $\Omega$ | 195.85124 | | +0.60770697 | | −0.78397007 |
| $e$ | 0.1688536 | $i$ | 16.73330 | | +0.01479117 | | −0.14848887 |
| $P$ | 5.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.4+ | 0.7− | 2003 04 01 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.6+ | 0.7− |
| 1995 09 18 | 691 | 0.5+ | 0.0 | 2003 04 01 | 691 | 0.2+ | 0.3− | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 1995 09 18 | 691 | 0.9− | 0.0 | 2003 04 01 | 691 | 0.2+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.6− |
| 2003 02 28 | 608 | 0.0 | 0.2− | 2006 09 19 | 691 | 0.4− | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2003 02 28 | 608 | 0.9− | 0.2− | 2006 09 19 | 691 | 0.5− | 0.1+ | 2006 10 16 | G96 | 0.2− | 0.2− |
| 2003 02 28 | 608 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.4− | 0.5+ | 2006 10 16 | G96 | 0.5− | 0.1− |
| 2003 03 28 | 699 | 0.6− | 1.2+ | 2006 09 26 | 691 | 0.2+ | 0.4+ | 2006 10 16 | G96 | 0.2+ | 0.2+ |
| 2003 03 28 | 699 | 0.2+ | 0.7+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.4− |
| 2003 03 28 | 699 | (2.6− | 0.2+) | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2003 03 28 | 699 | 0.8− | 1.7+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 16 | G96 | 0.3− | 0.0 |

**2006 SF$_{148}$ = 2002 US$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.07311 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23698237 | $\omega$ | 293.64495 | | +0.83003996 | | +0.55685411 |
| $a$ | 2.5861796 | $\Omega$ | 32.54090 | | −0.48857058 | | +0.75265135 |
| $e$ | 0.1823349 | $i$ | 3.27997 | | −0.26894692 | | +0.35132528 |
| $P$ | 4.16 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 291 | 0.2− | 0.2− | 2006 09 19 | 703 | 1.0− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2002 10 30 | 291 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2+ |
| 2002 10 30 | 291 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.4− | 0.0 |
| 2002 10 31 | 291 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2002 10 31 | 291 | 0.7+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2002 10 31 | 291 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2006 09 19 | 703 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 09 19 | 703 | 0.1+ | 0.8− | 2006 10 16 | 703 | 0.6− | 1.0+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2006 09 19 | 703 | 0.6+ | 0.4− | 2006 10 16 | 703 | (2.2− | 0.3+) | | | | |

**2006 SQ$_{148}$ = 2005 EX$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.31309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30889579 | $\omega$ | 274.09838 | | −0.27724786 | | +0.96054362 |
| $a$ | 2.1673451 | $\Omega$ | 339.76346 | | −0.85418945 | | −0.25696278 |
| $e$ | 0.1334470 | $i$ | 3.66761 | | −0.43987954 | | −0.10642407 |
| $P$ | 3.19 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.1− | 0.0 | 2005 04 12 | G96 | 0.3− | 0.3− | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 2005 03 11 | G96 | 0.2+ | 0.3− | 2005 04 12 | G96 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.3− |
| 2005 03 11 | G96 | 0.0 | 0.4− | 2005 04 12 | G96 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2005 03 11 | G96 | 0.0 | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2005 03 13 | 691 | 0.0 | 0.2+ | 2006 09 19 | 691 | 0.4− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2005 03 13 | 691 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2005 03 13 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.3+ | 0.2− |
| 2005 04 12 | G96 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | | | | |

**2006 SX$_{148}$ = 2000 EP$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 142.16499 | | | (2000.0) | | |
| $n$ | 0.22956988 | $\omega$ | 318.73361 | | −0.67944346 | +0.73259134 |
| $a$ | 2.6415537 | $\Omega$ | 268.42325 | | −0.66201413 | −0.63607623 |
| $e$ | 0.1253470 | $i$ | 2.34051 | | −0.31637616 | −0.24231582 |
| $P$ | 4.29 | $H$ | 15.5 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.7+ | 0.9+ | 2001 08 16 | 704 | 0.1+ | 0.3+ | 2004 01 30 | 704 | 0.2+ | 0.5− |
| 2000 03 03 | 704 | 0.7+ | 0.2+ | 2001 08 16 | 704 | 1.2− | 0.8+ | 2004 02 22 | 704 | 0.7+ | 0.9+ |
| 2000 03 03 | 704 | 0.1− | 0.2+ | 2001 08 16 | 704 | 0.8− | 0.5+ | 2004 02 22 | 704 | 0.5− | 0.3+ |
| 2000 03 03 | 704 | 0.6− | 0.6+ | 2001 08 27 | 644 | 0.1+ | 0.9+ | 2004 02 22 | 704 | 2.0+ | 0.8+ |
| 2000 03 03 | 704 | 0.5− | 0.2+ | 2001 08 27 | 644 | 0.2+ | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.1+ |
| 2000 03 09 | 704 | 0.1+ | 0.2+ | 2001 08 27 | 644 | 0.2− | 1.0+ | 2006 09 19 | 691 | 0.2+ | 0.0 |
| 2000 03 09 | 704 | 0.4+ | 0.3− | 2003 12 28 | 291 | 0.2+ | 0.4+ | 2006 09 19 | 691 | 0.6+ | 0.1+ |
| 2000 03 09 | 704 | 0.2− | 0.4+ | 2003 12 28 | 291 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 2000 03 09 | 704 | 0.2+ | 0.1− | 2003 12 28 | 291 | 1.0− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.2+ |
| 2001 07 25 | 608 | 0.4+ | 0.2+ | 2004 01 30 | 704 | 2.1+ | 0.7− | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 07 25 | 608 | 0.3+ | 0.9+ | 2004 01 30 | 704 | 0.7+ | 1.2+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2001 07 25 | 608 | 0.3+ | 1.0+ | 2004 01 30 | 704 | 1.1+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2001 08 16 | 704 | 1.1− | 0.2+ | 2004 01 30 | 704 | 0.1+ | 0.7+ | 2006 09 30 | 691 | 1.0− | 0.2+ |

**2006 SY$_{148}$ = 1999 CU$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 254.81542 | | | (2000.0) | | |
| $n$ | 0.22207104 | $\omega$ | 147.31278 | | −0.83969731 | −0.54305452 |
| $a$ | 2.7006902 | $\Omega$ | 359.79372 | | +0.46680996 | −0.72137158 |
| $e$ | 0.2445524 | $i$ | 7.32972 | | +0.27748311 | −0.42978464 |
| $P$ | 4.44 | $H$ | 16.5 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.3+ | 1.0− | 1999 02 13 | 704 | 1.3− | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 1999 02 10 | 704 | 1.0+ | 1.2+ | 1999 02 13 | 704 | 1.4+ | 0.5+ | 2006 09 30 | 691 | 0.2− | 0.1− |
| 1999 02 10 | 704 | 1.3+ | 0.5− | 2006 09 19 | 691 | 0.4+ | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1999 02 10 | 704 | 0.1+ | 0.5− | 2006 09 19 | 691 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 1999 02 12 | 699 | 1.1− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 1999 02 12 | 699 | 0.4− | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 1999 02 12 | 699 | 1.0− | 1.2− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.3− | 0.1+ |
| 1999 02 13 | 704 | 0.4− | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.0 | | | | |

**2006 SO$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 117.66803 | | | (2000.0) | | |
| $n$ | 0.23221925 | $\omega$ | 3.41470 | | −0.40991957 | +0.91169939 |
| $a$ | 2.6214238 | $\Omega$ | 242.38714 | | −0.83759556 | −0.38829777 |
| $e$ | 0.1600244 | $i$ | 1.79475 | | −0.36110889 | −0.13427234 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 608 | 0.1− | 1.2− | 2006 09 15 | 691 | 0.9− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2001 07 27 | 608 | 0.1+ | 0.8− | 2006 09 15 | 691 | 0.7+ | 0.1+ | 2006 10 28 | G96 | 0.7− | 0.5− |
| 2001 07 27 | 608 | 0.2+ | 0.9− | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.5− |
| 2001 08 15 | 608 | 0.9+ | 1.2− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2001 08 15 | 608 | 0.1− | 0.8− | 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.5− |
| 2001 08 15 | 608 | 0.3+ | 0.6− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.4− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.9− | 0.1− |
| 2004 01 27 | 691 | 0.5+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.6+ | 0.8+ | 2006 11 15 | G96 | 0.8− | 0.3− |
| 2004 02 17 | 645 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2004 02 17 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2005 07 04 | 644 | 0.0 | 0.5+ | 2006 10 27 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2005 07 04 | 644 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2005 07 04 | 644 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.7− | 0.5+ |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | | | |

**2006 SW$_{149}$ = 2004 GZ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 290.70008 | | | (2000.0) | | |
| $n$ | 0.22704489 | $\omega$ | 257.29096 | | −0.17821329 | −0.97882726 |
| $a$ | 2.6611023 | $\Omega$ | 203.70337 | | +0.97170834 | −0.15894770 |
| $e$ | 0.1234501 | $i$ | 14.50450 | | +0.15499328 | −0.12896831 |
| $P$ | 4.34 | $H$ | 17.4 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.6+ |
| 2004 04 13 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2004 04 19 | 691 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 04 19 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.6− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.3+ |
| 2004 04 19 | 691 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.2+ |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 19 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | | | | |

**2006 SY$_{149}$ = 2002 XR$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.59371 | | | (2000.0) | | |
| $n$ | 0.22505853 | $\omega$ | 87.31621 | | +0.33757648 | −0.94123946 |
| $a$ | 2.6767372 | $\Omega$ | 342.94305 | | +0.84876649 | +0.30919934 |
| $e$ | 0.1070774 | $i$ | 2.05287 | | +0.40698595 | +0.13588248 |
| $P$ | 4.38 | $H$ | 16.4 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2002 12 06 | 704 | 0.7+ | 0.0 | 2006 09 26 | 691 | 1.2− | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2002 12 06 | 704 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 704 | 0.6− | 1.2− | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.2+ |
| 2002 12 11 | 704 | 0.6+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.4− | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.4− | 0.4− |
| 2002 12 11 | 704 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.1− |
| 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2002 12 31 | 704 | (2.8− | 2.5−) | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2002 12 31 | 704 | (1.8− | 3.1−) | 2006 10 15 | 691 | 0.3+ | 0.5+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2002 12 31 | 704 | (1.6− | 1.6−) | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2004 03 27 | 704 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2004 03 27 | 704 | 0.3+ | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.6− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2004 03 27 | 704 | (1.9+ | 0.8+) | 2006 10 17 | 703 | 0.4+ | 0.4− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.4+ | 0.6− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | | | | |

**2006 SA$_{150}$ = 2001 YP$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 301.14929 | | | (2000.0) | | |
| $n$ | 0.17885628 | $\omega$ | 130.48079 | | −0.25362510 | −0.96723317 |
| $a$ | 3.1198467 | $\Omega$ | 334.20439 | | +0.87923056 | −0.22552140 |
| $e$ | 0.2381385 | $i$ | 1.52605 | | +0.40327154 | −0.11661946 |
| $P$ | 5.51 | $H$ | 16.6 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5− | 0.4+ | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.6− | 0.2+ | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.2− | 0.9− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.6− | 0.1+ |
| 2001 12 18 | 704 | 0.4− | 0.5− | 2006 09 26 | 691 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.6+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.6+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.6− | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.0 |

**2006 SM$_{150}$ = 2002 UM$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 300.17888 | | (2000.0) | | | |
| $n$ | 0.23816051 | $\omega$ | 263.85890 | | −0.24504336 | −0.96895589 |
| $a$ | 2.5776437 | $\Omega$ | 200.41652 | | +0.92258374 | −0.22263870 |
| $e$ | 0.2453656 | $i$ | 5.40126 | | +0.29798155 | −0.10750115 |
| $P$ | 4.14 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 950 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.4+ | 0.3+ |
| 2002 10 31 | 950 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.5+ | 0.3− |
| 2002 10 31 | 950 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.4− |
| 2002 11 04 | 950 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2002 11 04 | 950 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2002 11 04 | 950 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.7− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.4+ | | | | |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2+ | | | | |

**2006 SR$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.16571 | | (2000.0) | | | |
| $n$ | 0.23938647 | $\omega$ | 42.97595 | | +0.97254620 | −0.23245357 |
| $a$ | 2.5688356 | $\Omega$ | 330.46040 | | +0.20705174 | +0.88578045 |
| $e$ | 0.1117251 | $i$ | 1.26907 | | +0.10622368 | +0.40169433 |
| $P$ | 4.12 | $H$ | 18.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 291 | 0.3− | 0.3+ | 2002 12 05 | 695 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.1+ |
| 2002 10 11 | 291 | 0.1+ | 0.1+ | 2002 12 05 | 695 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2002 10 11 | 291 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.6− | 0.1− |
| 2002 10 31 | 291 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2002 10 31 | 291 | 0.0 | 0.5− | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2002 10 31 | 291 | 0.1− | 0.5− | 2006 09 26 | 691 | 0.2+ | 0.1+ | | | | |

**2006 ST$_{150}$ = 1999 XD$_{238}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 326.52499 | | (2000.0) | | | |
| $n$ | 0.27326168 | $\omega$ | 196.44878 | | +0.45537361 | −0.89017171 |
| $a$ | 2.3518894 | $\Omega$ | 226.46512 | | +0.81916886 | +0.42559090 |
| $e$ | 0.2058845 | $i$ | 1.19663 | | +0.34870797 | +0.16268596 |
| $P$ | 3.61 | $H$ | 18.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.9− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 1999 12 05 | 691 | 0.0 | 0.4− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 1999 12 05 | 691 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 1999 12 07 | 704 | 0.5+ | 0.1− | 2006 10 20 | G96 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.3− | 0.2− |
| 1999 12 07 | 704 | 0.2+ | 1.0+ | 2006 10 20 | G96 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 1999 12 07 | 704 | 0.4− | 0.6+ | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.0 |
| 1999 12 07 | 704 | 0.4− | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.4− | 0.2− |
| 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.3− | 0.3− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2006 09 26 | 691 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.1+ | 1.0+ | 2006 11 01 | 691 | 0.5+ | 0.3+ |
| 2006 09 26 | 691 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.4+ | 2006 11 13 | 691 | 0.6− | 0.2− |
| 2006 09 30 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.5+ | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2006 10 15 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 1.1+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.2− |

**2006 SU$_{150}$ = 2000 FD$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 68.17042 | | (2000.0) | | | |
| $n$ | 0.21026212 | $\omega$ | 274.81453 | | +0.26868399 | +0.96293169 |
| $a$ | 2.8008855 | $\Omega$ | 10.86171 | | −0.82581652 | +0.24305832 |
| $e$ | 0.2004478 | $i$ | 7.28825 | | −0.49581851 | +0.11698385 |
| $P$ | 4.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.1− | 0.1+ | 2000 04 05 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2000 03 29 | 691 | 0.1− | 0.4− | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2000 03 29 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2000 04 05 | 691 | 0.3+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2000 04 05 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.1+ |

**2006 SH$_{151}$ = 2005 GF$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.69168 | | (2000.0) | | | |
| $n$ | 0.25572654 | $\omega$ | 264.33105 | | −0.08959966 | +0.99597764 |
| $a$ | 2.4582092 | $\Omega$ | 0.52971 | | −0.88330315 | −0.07915799 |
| $e$ | 0.1650561 | $i$ | 4.08171 | | −0.46016024 | −0.04198266 |
| $P$ | 3.85 | $H$ | 17.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 691 | 0.1+ | 0.3+ | 2005 03 15 | G96 | 0.9− | 0.3− | 2006 09 19 | 691 | 0.0 | 0.2− |
| 2001 03 26 | 691 | 0.1+ | 0.4+ | 2005 03 15 | G96 | 0.4− | 0.2− | 2006 09 19 | 691 | 0.1− | 0.3+ |
| 2001 03 26 | 691 | 0.3+ | 0.3+ | 2005 03 15 | G96 | 0.6− | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.2+ |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2005 03 15 | G96 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.5− | 0.0 |
| 2002 10 05 | 645 | 0.1+ | 0.0 | 2005 04 11 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 691 | 0.4− | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2005 04 11 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.4+ |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2002 10 30 | 645 | 0.1− | 0.1+ | 2005 04 15 | 691 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2002 10 30 | 645 | 0.2− | 0.0 | 2005 04 15 | 691 | 0.5+ | 0.5+ | 2006 10 27 | 691 | 0.2− | 0.8+ |
| 2002 11 08 | 645 | 0.1+ | 0.1+ | 2005 04 15 | 691 | 0.1− | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2002 11 08 | 645 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.5+ |

**2006 SN$_{151}$ = 2000 JE$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 252.93429 | | (2000.0) | | | |
| $n$ | 0.23580709 | $\omega$ | 287.88479 | | −0.70426636 | −0.70889668 |
| $a$ | 2.5947656 | $\Omega$ | 207.01055 | | +0.67916249 | −0.65700107 |
| $e$ | 0.1154950 | $i$ | 4.85003 | | +0.20675396 | −0.25654452 |
| $P$ | 4.18 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 26 | 691 | 0.0 | 0.1+ | 2004 03 31 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.2+ |
| 1998 12 26 | 691 | 0.1+ | 0.0 | 2004 04 25 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.6+ |
| 1998 12 26 | 691 | 0.2− | 0.1− | 2004 04 25 | 691 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.5+ | 0.2− |
| 2000 05 07 | 691 | 0.2+ | 0.1+ | 2004 04 25 | 691 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2000 05 07 | 691 | 0.5+ | 1.3+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2000 05 07 | 691 | 0.5+ | 0.9+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.3− |
| 2000 05 09 | 691 | 0.3− | 0.5− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2000 05 09 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2000 05 09 | 691 | 0.6− | 1.3− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2004 03 31 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.6+ | | | | |
| 2004 03 31 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.6+ | | | | |

**2006 SP$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 238.93814 | | | (2000.0) | | |
| $n$ | 0.25919539 | $\omega$ | 283.71902 | | −0.84333133 | −0.53639493 |
| $a$ | 2.4362276 | $\Omega$ | 223.85489 | | +0.50951343 | −0.77871600 |
| $e$ | 0.1201499 | $i$ | 2.70958 | | +0.17084590 | −0.32539495 |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 26 | 699 | 1.3− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2004 01 26 | 699 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.4− | 0.4− | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2004 01 26 | 699 | 0.0 | 0.6− | 2006 10 11 | 691 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2004 01 26 | 699 | 1.1+ | 0.6+ | 2006 10 11 | 691 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.4+ |
| 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2006 09 26 | 691 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 15 | G96 | 0.6+ | 0.3− |
| 2006 09 26 | 691 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2006 09 30 | 691 | 0.0 | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.0 |

**2006 SU$_{151}$ = 1995 CZ$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 131.81637 | | | (2000.0) | | |
| $n$ | 0.22288891 | $\omega$ | 274.50318 | | −0.58069999 | +0.81398897 |
| $a$ | 2.6940795 | $\Omega$ | 319.98560 | | −0.73772844 | −0.53364781 |
| $e$ | 0.1408948 | $i$ | 1.28980 | | −0.34430259 | −0.22943838 |
| $P$ | 4.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.5+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.0 |
| 1995 02 02 | 691 | 0.3− | 0.6− | 2006 09 26 | 691 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.4+ | 0.1− |
| 1995 02 06 | 691 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.5+ | 0.4− |
| 1995 02 06 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.9− | 2006 10 27 | 691 | 0.1− | 0.2− |
| 1995 02 06 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.4+ |
| 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.3+ |
| 2006 09 19 | 691 | 0.0 | 0.5− | 2006 09 30 | 691 | 0.5− | 0.3+ | | | | |

**2006 SA$_{152}$ = 2004 HE$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.63998 | | | (2000.0) | | |
| $n$ | 0.17020114 | $\omega$ | 136.30118 | | +0.99588834 | +0.07039538 |
| $a$ | 3.2247378 | $\Omega$ | 219.76784 | | −0.08545320 | +0.93892762 |
| $e$ | 0.0303977 | $i$ | 5.11375 | | +0.03006920 | +0.33683738 |
| $P$ | 5.79 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2004 04 22 | 691 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 2004 04 22 | 691 | 0.3+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.0 |
| 2004 04 28 | 291 | 0.5− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2004 04 28 | 291 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2004 04 28 | 291 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 19 | 691 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.1− | | | | |

**2006 SL$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 182.75314 | | | (2000.0) | | |
| $n$ | 0.27505894 | $\omega$ | 228.52332 | | −0.97543684 | +0.21951764 |
| $a$ | 2.3416333 | $\Omega$ | 324.14626 | | −0.19164511 | −0.88666964 |
| $e$ | 0.1342052 | $i$ | 1.79064 | | −0.10860533 | −0.40697537 |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 02 | 691 | 0.7+ | 0.5− | 2001 03 18 | 699 | 0.7+ | 0.6− | 2006 09 19 | 691 | 0.0 | 0.3− |
| 1994 05 02 | 691 | 0.1+ | 0.3+ | 2001 03 18 | 699 | 0.6+ | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.4+ |
| 1994 05 02 | 691 | 0.1− | 0.6+ | 2002 08 16 | 291 | 0.5− | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.1+ |
| 1995 09 29 | 691 | 0.5− | 0.5+ | 2002 08 16 | 291 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 1995 09 29 | 691 | 0.2− | 0.3+ | 2002 08 16 | 291 | 0.6− | 0.3+ | 2006 09 30 | 691 | 0.7+ | 0.1− |
| 1995 09 29 | 691 | 0.1− | 0.5+ | 2003 12 19 | 291 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2000 12 23 | 645 | 0.2− | 0.1+ | 2003 12 19 | 291 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.1− |
| 2000 12 23 | 645 | 0.2− | 0.1+ | 2003 12 19 | 291 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2001 01 23 | 691 | 0.0 | 0.2+ | 2003 12 25 | 291 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 01 23 | 691 | 0.3+ | 0.6+ | 2003 12 25 | 291 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.6− |
| 2001 01 23 | 691 | 0.1+ | 0.4+ | 2003 12 25 | 291 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.1− |
| 2001 03 18 | 699 | 2.0+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1+ | | | | |
| 2001 03 18 | 699 | 0.1− | 1.5+ | 2006 09 19 | 691 | 0.1− | 0.1− | | | | |

**2006 SS$_{152}$ = 2001 YN$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.09958 | | | (2000.0) | | |
| $n$ | 0.18303734 | $\omega$ | 309.08753 | | +0.94770744 | −0.31772006 |
| $a$ | 3.0721536 | $\Omega$ | 69.45598 | | +0.30182750 | +0.86168845 |
| $e$ | 0.2295729 | $i$ | 1.84059 | | +0.10368593 | +0.39566018 |
| $P$ | 5.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.4− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 12 18 | 704 | 0.6− | 0.8+ | 2006 10 11 | 691 | 1.0− | 1.5− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.4+ | 0.1− | 2006 10 15 | 691 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.5+ |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.5+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4− | 0.1− | 2006 11 11 | 703 | (1.7+ | 0.1−) |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 1.3− |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.1+ |
| 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2006 09 26 | G96 | 0.5+ | 0.3− | 2006 10 21 | 703 | 1.1− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.9+ | 0.6− | 2006 11 14 | G96 | 0.5− | 0.5− |
| 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.7− | 0.4+ | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2006 09 28 | 691 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | | | | |

**2006 SU$_{152}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 148.33374 | | | (2000.0) | | |
| $n$ | 0.23515999 | $\omega$ | 198.57928 | | −0.65704408 | +0.74416649 |
| $a$ | 2.5995236 | $\Omega$ | 30.69407 | | −0.65829014 | −0.48851886 |
| $e$ | 0.1006795 | $i$ | 13.64913 | | −0.36735157 | −0.45559362 |
| $P$ | 4.19 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 703 | 0.7+ | 0.6− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.3− | 1.3+ |
| 2004 02 16 | 703 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.8− | 0.2− |
| 2004 02 16 | 703 | 1.0− | 0.9+ | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 703 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2+ |
| 2004 03 17 | 644 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2004 03 17 | 644 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.4− |
| 2004 03 17 | 644 | 0.4+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.5− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.6− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2006 09 26 | G96 | 0.7+ | 0.4− | 2006 10 21 | 703 | 0.1+ | 1.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 21 | 703 | 0.6+ | 0.4− | | | | |
| 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 21 | 703 | 1.2+ | 0.7+ | | | | |

**2006 SS$_{153}$ = 2003 AJ$_{49}$ = 2004 FY$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.37703 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17402316 | $\omega$ | 177.89844 | | −0.04770466 | | +0.98234408 |
| $a$ | 3.1773473 | $\Omega$ | 89.33254 | | −0.91905620 | | +0.02776684 |
| $e$ | 0.0368271 | $i$ | 10.42283 | | −0.39122878 | | −0.18501112 |
| $P$ | 5.66 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 608 | 0.4− | 0.7+ | 2003 01 09 | 704 | 0.7− | 0.7+ | 2006 09 20 | 703 | 0.2− | 0.7+ |
| 2001 11 18 | 608 | 0.2+ | 0.2+ | 2004 03 23 | 704 | 0.3− | 0.4+ | 2006 09 20 | 703 | 0.0 | 0.4+ |
| 2001 11 18 | 608 | 0.5− | 0.1− | 2004 03 23 | 704 | 0.2+ | 0.8+ | 2006 09 26 | 703 | 0.6+ | 0.4+ |
| 2003 01 05 | 704 | (2.7+ | 0.5+) | 2004 03 23 | 704 | 0.4+ | 1.0+ | 2006 09 26 | 703 | 0.4+ | 0.9+ |
| 2003 01 05 | 704 | 0.3+ | 0.3+ | 2004 03 23 | 704 | 0.5− | 0.6+ | 2006 09 26 | 703 | 1.0− | 1.1+ |
| 2003 01 05 | 704 | (2.3+ | 0.2+) | 2004 03 23 | 704 | 0.1+ | 1.0+ | 2006 09 26 | 703 | 0.2− | 0.8− |
| 2003 01 05 | 704 | 0.2+ | 0.2− | 2004 03 25 | 704 | 0.8+ | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.1+ |
| 2003 01 05 | 704 | (2.0+ | 0.1+) | 2004 03 25 | 704 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.4− |
| 2003 01 05 | 704 | 0.4− | 0.0 | 2004 03 25 | 704 | 1.1+ | 0.3+ | 2006 09 26 | 703 | 0.5− | 1.2+ |
| 2003 01 05 | 704 | 0.6+ | 0.4+ | 2006 08 20 | 644 | 0.2+ | 0.8+ | 2006 09 26 | 703 | 0.1+ | 0.3+ |
| 2003 01 09 | 704 | 0.0 | 0.1− | 2006 08 20 | 644 | 0.3+ | 0.7+ | 2006 09 26 | 703 | 0.6+ | 0.3− |
| 2003 01 09 | 704 | 0.2+ | 0.2− | 2006 08 20 | 644 | 0.8+ | 0.5+ | 2006 09 26 | 703 | 0.8− | 1.1− |
| 2003 01 09 | 704 | 0.1− | 0.1+ | 2006 09 20 | 703 | 0.4− | 0.9+ | 2006 09 26 | 703 | 0.3+ | 1.1− |
| 2003 01 09 | 704 | 0.2+ | 0.4− | 2006 09 20 | 703 | 1.6− | 0.3+ | 2006 09 26 | 703 | 0.5− | 0.4− |

**2006 SD$_{154}$ = 2005 HW$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.52447 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23710983 | $\omega$ | 144.89863 | | +0.94375986 | | +0.32990503 |
| $a$ | 2.5852527 | $\Omega$ | 195.88197 | | −0.31870597 | | +0.89008303 |
| $e$ | 0.2691824 | $i$ | 4.59201 | | −0.08799906 | | +0.31450736 |
| $P$ | 4.16 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 704 | 0.2+ | 0.5− | 2006 10 28 | 704 | 1.0− | 1.2+ |
| 2001 05 17 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | (0.7− | 1.8+) | 2006 10 28 | 704 | 1.0+ | 1.3− |
| 2001 05 17 | 691 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.4+ | 0.5+ | 2006 10 28 | 704 | 1.1+ | 1.4+ |
| 2001 05 30 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.5− | 2006 10 28 | 704 | 1.1− | 0.4+ |
| 2001 05 30 | 691 | 0.1− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 05 30 | 691 | 0.0 | 0.8+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2005 04 04 | G96 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.5+ | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2005 04 04 | G96 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2005 04 04 | G96 | 0.1− | 0.9+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2005 04 04 | G96 | 0.2+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2005 04 16 | 691 | 0.2+ | 0.6+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.4+ |
| 2005 04 16 | 691 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 13 | 703 | 1.0+ | 0.1+ |
| 2005 04 16 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 13 | 703 | (1.7− | 0.6+) |
| 2006 08 28 | 703 | 1.3− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.6− | 0.9− |
| 2006 08 28 | 703 | 0.3− | 1.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2006 08 28 | 703 | 1.3− | 0.7− | 2006 10 21 | 644 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2006 08 28 | 703 | (2.2− | 0.7+) | 2006 10 23 | 704 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2006 09 20 | 699 | 0.2− | 1.4− | 2006 10 23 | 704 | 0.2− | 0.9+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2006 09 20 | 699 | 0.3− | 0.5− | 2006 10 23 | 704 | 0.6+ | 0.7+ | 2006 11 17 | 703 | 1.0+ | 0.4− |
| 2006 09 20 | 699 | (1.5+ | 0.1−) | 2006 10 23 | 704 | 1.0− | 0.1− | 2006 11 17 | 703 | 0.3+ | 1.5+ |
| 2006 09 20 | 699 | 1.0+ | 0.4+ | 2006 10 23 | 704 | 0.3− | 0.5+ | 2006 11 17 | 703 | 0.4+ | 1.0+ |
| 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.1− | 1.1+ |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 1.3− | 1.6+ |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.9+ |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2006 09 27 | 704 | 0.1+ | 0.1+ | 2006 10 28 | 704 | 0.5+ | 1.1+ | | | | |

**2006 SE$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 112.37286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18340832 | $\omega$ | 118.38208 | | −0.17492701 | | +0.97750688 |
| $a$ | 3.0680094 | $\Omega$ | 140.97366 | | −0.95610095 | | −0.14007349 |
| $e$ | 0.0111431 | $i$ | 10.78399 | | −0.23509894 | | −0.15766964 |
| $P$ | 5.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.2+ | 0.5− | 2003 01 11 | 291 | 0.3− | 0.5+ | 2006 09 26 | 703 | 0.5+ | 0.3+ |
| 1993 02 26 | 691 | 0.1− | 0.3− | 2003 01 11 | 291 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.5+ | 0.4− |
| 1993 02 26 | 691 | 0.2+ | 0.3− | 2003 02 04 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.0 | 0.2+ |
| 2000 08 07 | 608 | 0.5− | 1.1− | 2003 02 04 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 1.2+ | 1.2− |
| 2000 08 07 | 608 | 0.3− | 1.4− | 2003 02 04 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.6− | 1.0+ |
| 2000 08 07 | 608 | 0.1− | 1.0− | 2005 06 17 | 691 | 0.2+ | 0.4+ | 2006 09 29 | 699 | 0.5+ | 0.4− |
| 2000 09 05 | 691 | 0.1− | 0.1− | 2005 06 17 | 691 | 0.1+ | 0.5+ | 2006 09 29 | 699 | (0.1+ | 2.1+) |
| 2000 09 05 | 691 | 0.2− | 0.1+ | 2005 06 17 | 691 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.6− | 0.4+ |
| 2000 09 05 | 691 | 0.6− | 0.3− | 2006 09 20 | 644 | 0.4− | 0.2+ | 2006 10 17 | 703 | 0.6+ | 0.5+ |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.1− | 0.9+ |
| 2001 11 21 | 645 | 0.1+ | 0.0 | 2006 09 20 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.1+ |
| 2003 01 11 | 291 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.6+ | 0.3+ | | | | |

**2006 SF$_{154}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.50108 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25149889 | $\omega$ | 245.98184 | | +0.75811569 | | +0.64020663 |
| $a$ | 2.4856807 | $\Omega$ | 73.96632 | | −0.54153684 | | +0.72406387 |
| $e$ | 0.1741902 | $i$ | 7.41776 | | −0.36331591 | | +0.25664563 |
| $P$ | 3.92 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.1+ | 0.1+ | 2006 09 20 | 644 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.5+ | 1.0+ |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 09 10 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.2+ | 0.3− | 2006 10 22 | 703 | 1.0− | 0.4− |
| 2002 09 10 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.2− | 0.4+ |
| 2002 09 10 | 644 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 1.5+ |
| 2005 05 14 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 10 22 | 703 | 1.6− | 1.7− |
| 2005 05 14 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.5+ | 0.6+ |
| 2005 05 14 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 10 23 | 644 | 0.3+ | 0.7+ |
| 2006 09 20 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2006 09 20 | 644 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.8+ | | | | |

**2006 SK$_{154}$ = 2003 XN$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.20427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31514939 | $\omega$ | 13.74426 | | +0.79243870 | | −0.60910053 |
| $a$ | 2.1385779 | $\Omega$ | 23.87038 | | +0.55182832 | | +0.69342842 |
| $e$ | 0.1407884 | $i$ | 4.56526 | | +0.25985845 | | +0.38490722 |
| $P$ | 3.13 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 04 | 704 | 0.5− | 0.1− | 2006 10 21 | 704 | 0.2+ | 0.5+ | 2006 11 15 | 704 | 0.3− | 0.2+ |
| 2003 12 04 | 704 | 0.0 | 0.9+ | 2006 10 21 | 704 | 0.1+ | 1.0− | 2006 11 15 | 704 | 0.5+ | 0.0 |
| 2003 12 04 | 704 | 0.3− | 0.9− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2003 12 04 | 704 | 0.8− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.3− |
| 2003 12 04 | 704 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2003 12 17 | 704 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.6− | 1.0− | 2006 11 16 | 704 | 0.0 | 0.0 |
| 2003 12 17 | 704 | 0.1+ | 0.9− | 2006 10 29 | 704 | 0.5− | 0.1− | 2006 11 17 | 704 | (0.4+ | 2.3−) |
| 2003 12 17 | 704 | 0.7+ | 0.3+ | 2006 10 29 | 704 | 0.7− | 0.4− | 2006 11 17 | 704 | 0.3− | 0.2− |
| 2003 12 17 | 704 | 0.8+ | 0.2− | 2006 10 29 | 704 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 20 | 704 | (0.1− | 1.9+) | 2006 10 29 | 704 | 1.4− | 0.4+ | 2006 11 17 | 704 | 1.0− | 0.2+ | | |
| 2006 09 20 | 704 | 0.8+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.5− | 0.9+ | | |
| 2006 09 20 | 704 | 0.6+ | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | (1.3+ | 4.5−) | | |
| 2006 09 20 | 704 | 1.1− | 1.1+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.1+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.5+ | | |
| 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.0 | 1.0+ | | |
| 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.1− | 0.6+ | 2006 11 22 | 704 | 0.1+ | 0.6+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.0 | 0.3+ | | |
| 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.5+ | | |
| 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.0 | | |
| 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.2+ | | |
| 2006 10 21 | 704 | 0.6+ | 0.6− | 2006 11 15 | 704 | 0.4+ | 0.0 | | | | | | |
| 2006 10 21 | 704 | 0.2+ | 0.9+ | 2006 11 15 | 704 | 0.1+ | 0.5+ | | | | | | |

**2006 SL$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.64195 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27203163 | $\omega$ | 286.32617 | | +0.13197761 | −0.99022589 | |
| $a$ | 2.3589738 | $\Omega$ | 155.95102 | | +0.94647281 | +0.11236241 | |
| $e$ | 0.0889587 | $i$ | 6.35488 | | +0.29456941 | +0.08262798 | |
| $P$ | 3.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 10 | 691 | 0.3− | 0.5+ | 2005 06 29 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.1− | | |
| 1994 06 10 | 691 | 0.4− | 0.5+ | 2005 06 29 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 1994 06 10 | 691 | 0.1+ | 0.5− | 2005 06 29 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3− | | |
| 1995 08 27 | 809 | (0.6− | 3.2−) | 2006 08 24 | 644 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.0 | 1.4+ | | |
| 1995 08 29 | 809 | 1.6+ | 1.2− | 2006 08 24 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.3+ | | |
| 1995 09 23 | 809 | 1.3+ | 0.1− | 2006 08 24 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.1+ | | |
| 1995 09 23 | 809 | (5.5+ | 1.3−) | 2006 09 20 | 644 | 0.7+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.2− | | |
| 1999 10 10 | 704 | 1.2− | 1.7+ | 2006 09 20 | 644 | 0.4+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | | |
| 1999 10 10 | 704 | 0.6− | 0.4+ | 2006 09 20 | 644 | 0.2+ | 0.4− | 2006 10 15 | 106 | 0.6+ | 0.8+ | | |
| 1999 10 10 | 704 | 1.2− | 0.2− | 2006 09 22 | 704 | (1.5− | 1.5−) | 2006 10 15 | 106 | 0.7+ | 0.2− | | |
| 1999 12 05 | 704 | 0.6+ | 0.3+ | 2006 09 22 | 704 | 1.1− | 0.6− | 2006 10 15 | 106 | 1.0+ | 0.1− | | |
| 1999 12 05 | 704 | 0.1+ | 0.5+ | 2006 09 22 | 704 | 1.2− | 0.3+ | 2006 10 15 | 106 | 0.6− | 0.3+ | | |
| 1999 12 05 | 704 | 0.2+ | 1.0+ | 2006 09 22 | 704 | 0.5+ | 1.0+ | 2006 10 16 | 703 | 1.0− | 0.3− | | |
| 1999 12 05 | 704 | 0.2− | 0.9+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2− | 1.5− | | |
| 1999 12 05 | 704 | 0.6− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.3− | 1.1− | | |
| 2002 07 22 | 644 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.5+ | | |
| 2002 07 22 | 644 | 0.2+ | 0.0 | 2006 09 28 | 704 | 0.4+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2002 07 22 | 644 | 0.1− | 0.2+ | 2006 09 28 | 704 | 1.0− | 0.6− | 2006 10 19 | 644 | 0.1− | 0.1− | | |
| 2002 08 07 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 704 | 1.0− | 0.9− | 2006 10 19 | 644 | 0.1− | 0.0 | | |
| 2002 08 07 | 644 | 0.2− | 0.1− | 2006 09 28 | 704 | 1.0+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1+ | | |
| 2002 08 07 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.6+ | | |
| 2002 08 17 | 644 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 2002 08 17 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.3− | 1.0+ | | |
| 2002 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.2+ | | |
| 2004 01 23 | 704 | 1.2+ | 0.8+ | 2006 09 30 | 704 | 0.2− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.7+ | | |
| 2004 01 23 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.5− | 1.3+ | 2006 10 22 | 703 | 0.1− | 0.1+ | | |
| 2004 01 23 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 704 | (1.6− | 0.7−) | 2006 11 25 | G96 | 0.1+ | 0.3− | | |
| 2004 01 23 | 704 | 0.6+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.2− | | |
| 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.0 | 0.0 | | |
| 2005 06 08 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.2− | 0.2− | | |
| 2005 06 08 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1− | | | | | | |

**2006 SC$_{155}$ = 1993 TQ$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.41038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22650306 | $\omega$ | 234.99864 | | +0.66688350 | +0.74357342 | |
| $a$ | 2.6653444 | $\Omega$ | 76.90490 | | −0.66637349 | +0.62430740 | |
| $e$ | 0.2737790 | $i$ | 2.86193 | | −0.33348579 | +0.23945530 | |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.5+ | 1.2− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 11 | 644 | 0.4+ | 0.7+ | | |
| 1993 10 09 | 809 | (1.1− | 2.9−) | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.5+ | 0.6+ | | |
| 1993 10 09 | 809 | 0.1+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 16 | 703 | (0.0 | 1.8+) | | |
| 1993 10 11 | 809 | 0.3+ | 1.4− | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.6+ | | |
| 1993 10 11 | 809 | (0.2+ | 2.4−) | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 16 | 703 | (0.1− | 3.1+) | | |
| 1993 10 11 | 809 | 1.4+ | 1.8− | 2006 09 28 | 704 | 0.7+ | 0.1+ | 2006 10 16 | 703 | (0.2− | 2.4+) | | |
| 2006 09 22 | 704 | 0.1− | 0.3+ | 2006 09 28 | 704 | 0.3− | 1.3+ | 2006 10 20 | 644 | 0.5− | 0.4+ | | |
| 2006 09 22 | 704 | 0.0 | 0.1+ | 2006 09 28 | 704 | 0.6+ | 0.8+ | 2006 10 20 | 644 | 0.3− | 0.5+ | | |
| 2006 09 22 | 704 | 0.4− | 1.0− | 2006 09 28 | 704 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2006 09 22 | 704 | 0.3− | 0.3− | 2006 10 01 | 704 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2006 09 26 | 704 | 0.3+ | 0.3− | 2006 10 01 | 704 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.6− | 0.0 | | |
| 2006 09 26 | 704 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.0 | 1.3+ | 2006 10 21 | 644 | 0.4− | 0.2+ | | |
| 2006 09 26 | 704 | 0.4− | 0.3− | 2006 10 01 | 704 | 0.1− | 0.8+ | 2006 10 22 | 703 | 0.5− | 0.1+ | | |
| 2006 09 26 | 704 | (0.7+ | 1.6+) | 2006 10 01 | 704 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.2− | 0.6− | | |
| 2006 09 26 | 704 | 0.4− | 0.6− | 2006 10 10 | 644 | 0.5+ | 0.4+ | 2006 10 22 | 703 | 1.1− | 0.3+ | | |
| 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 10 10 | 644 | 0.4+ | 0.7+ | 2006 10 22 | 703 | 1.4− | 1.0+ | | |
| 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 10 | 644 | 0.2+ | 0.5+ | | | | | | |
| 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.3+ | 0.5+ | | | | | | |

**2006 SD$_{155}$ = 2005 EW$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.23098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27547468 | $\omega$ | 200.69732 | | +0.28009408 | +0.95807646 | |
| $a$ | 2.3392767 | $\Omega$ | 85.60701 | | −0.87203599 | +0.28019986 | |
| $e$ | 0.2053609 | $i$ | 3.46758 | | −0.40137332 | +0.05981260 | |
| $P$ | 3.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 30 | 691 | 0.4− | 0.0 | 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 09 30 | 704 | 0.0 | 0.1− | | |
| 2000 12 30 | 691 | 0.2+ | 0.0 | 2005 04 10 | 691 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | |
| 2000 12 30 | 691 | 0.0 | 0.2− | 2005 04 10 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− | | |
| 2003 11 29 | 691 | 0.2+ | 0.1− | 2006 08 24 | 644 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2003 11 29 | 691 | 0.0 | 0.1− | 2006 08 24 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1+ | | |
| 2003 11 29 | 691 | 0.0 | 0.2− | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2003 11 29 | 691 | 0.1+ | 0.1+ | 2006 09 22 | 704 | 0.7− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ | | |
| 2003 11 29 | 691 | 0.1− | 0.1− | 2006 09 22 | 704 | 1.2− | 0.4+ | 2006 10 16 | 703 | (0.9+ | 2.3+) | | |
| 2003 11 29 | 691 | 0.1+ | 0.0 | 2006 09 22 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.8+ | | |
| 2005 03 09 | 704 | 0.6+ | 0.9+ | 2006 09 26 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.8+ | | |
| 2005 03 09 | 704 | 0.3+ | 0.5+ | 2006 09 26 | 704 | 0.4− | 0.9+ | 2006 10 16 | 703 | 1.0− | 0.2+ | | |
| 2005 03 09 | 704 | 0.1− | 1.2+ | 2006 09 26 | 704 | 1.0+ | 1.0+ | 2006 10 20 | 644 | 0.2− | 0.3+ | | |
| 2005 03 09 | 704 | 0.1− | 0.6+ | 2006 09 26 | 704 | 0.6+ | 1.3− | 2006 10 20 | 644 | 0.0 | 0.4− | | |
| 2005 03 09 | 704 | (0.1+ | 1.8+) | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1− | | |
| 2005 03 12 | 704 | 1.1+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2005 03 12 | 704 | 0.5+ | 0.5− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.0 | | |
| 2005 03 12 | 704 | 0.9+ | 1.0+ | 2006 09 30 | 704 | 0.3+ | 0.6− | 2006 11 17 | G96 | 0.1+ | 0.1− | | |
| 2005 03 12 | 704 | 0.4− | 0.2+ | 2006 09 30 | 704 | 0.8− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.3− | | |
| 2005 03 12 | 704 | (1.9+ | 1.3+) | 2006 09 30 | 704 | (1.9− | 0.3−) | | | | | | |

**2006 SE$_{155}$ = 2005 JL$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.75163 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27925121 | $\omega$ | 144.68799 | | +0.73973369 | +0.67263957 | |
| $a$ | 2.3181383 | $\Omega$ | 172.95019 | | −0.64710890 | +0.71873054 | |
| $e$ | 0.0733816 | $i$ | 8.76889 | | −0.18451057 | +0.17601822 | |
| $P$ | 3.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 09 22 | 704 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.2− | 0.9+ | | |
| 2005 05 15 | 644 | 0.4− | 0.6+ | 2006 09 22 | 704 | 0.6+ | 1.4+ | 2006 10 16 | 703 | 1.0+ | 0.0 | | |
| 2005 05 15 | 644 | 0.1+ | 0.2+ | 2006 09 22 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.1− | | |
| 2005 05 16 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.8+ | 0.0 | | |
| 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.7− | | |
| 2005 05 16 | 644 | 0.1+ | 0.1− | 2006 09 26 | 704 | 0.1− | 0.9− | 2006 10 19 | 644 | 0.3+ | 0.0 | | |
| 2006 07 22 | G96 | 0.2− | 0.2− | 2006 09 26 | 704 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 2006 07 22 | G96 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.0 | | |
| 2006 07 22 | G96 | 0.7− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.2+ | | |
| 2006 07 22 | G96 | 0.1− | 0.5− | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 2006 08 18 | 644 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.9+ | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 18 | 644 | 0.0 | 0.2− | 2006 09 29 | 699 | (1.3− | 2.0−) | 2006 10 21 | 644 | 0.1− | 0.6+ | | |
| 2006 08 18 | 644 | 0.1− | 0.4− | 2006 09 29 | 699 | 1.2+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2006 09 06 | 644 | 1.0− | 0.4− | 2006 09 29 | 699 | (2.5− | 1.8+) | 2006 10 22 | 703 | 0.6− | 0.9− | | |
| 2006 09 06 | 644 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | (2.2− | 0.8−) | | |
| 2006 09 06 | 644 | 0.4+ | 0.3− | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.9− | 0.4+ | | |
| 2006 09 22 | 704 | (0.6− | 1.6+) | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | (0.3+ | 1.9+) | | |

**2006 SG$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.37393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21669080 | $\omega$ | 95.00469 | | +0.66765070 | | −0.71315759 |
| $a$ | 2.7452110 | $\Omega$ | 310.70728 | | +0.52091715 | | +0.65254305 |
| $e$ | 0.0531766 | $i$ | 16.37057 | | +0.53187204 | | +0.25611291 |
| $P$ | 4.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 644 | 0.2+ | 0.1− | 2004 03 13 | 644 | 0.2+ | 0.1− | 2006 09 22 | 703 | 0.5− | 0.4+ | | |
| 2004 02 14 | 644 | 0.0 | 0.0 | 2004 03 13 | 644 | 0.3− | 0.1+ | 2006 09 22 | 703 | 0.5+ | 1.3+ | | |
| 2004 02 14 | 644 | 0.0 | 0.1+ | 2004 03 13 | 644 | 0.3+ | 0.1− | 2006 09 22 | 703 | 0.1− | 0.2− | | |
| 2004 02 17 | 703 | (0.4− | 2.2+) | 2004 03 13 | 644 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.1− | 0.0 | | |
| 2004 02 17 | 703 | 0.0 | 0.6+ | 2004 03 13 | 644 | 0.3+ | 0.1− | 2006 09 27 | 703 | 1.0− | 0.9− | | |
| 2004 02 17 | 703 | (0.2+ | 1.8+) | 2004 03 13 | 644 | 0.3+ | 0.1− | 2006 09 27 | 703 | 0.4+ | 1.4− | | |
| 2004 02 17 | 703 | 0.7+ | 0.5− | 2006 09 14 | 703 | 1.0+ | 1.2+ | 2006 09 27 | 703 | 0.5− | 0.1− | | |
| 2004 03 01 | 703 | (1.8− | 1.1+) | 2006 09 14 | 703 | 0.6− | 0.5− | 2006 09 29 | 699 | 1.2+ | 0.8− | | |
| 2004 03 01 | 703 | 0.7− | 0.3+ | 2006 09 14 | 703 | 0.5− | 0.1+ | 2006 09 29 | 699 | 0.2+ | 0.5+ | | |
| 2004 03 01 | 703 | 1.0− | 0.6− | 2006 09 14 | 703 | 0.1+ | 0.2− | 2006 09 29 | 699 | 1.2− | 1.2− | | |
| 2004 03 01 | 703 | 0.1− | 0.7+ | 2006 09 22 | 703 | 0.1+ | 0.5+ | 2006 09 29 | 699 | 0.9+ | 1.4+ | | |

**2006 SK$_{155}$ = 1997 MU$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.20629 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22779401 | $\omega$ | 196.52438 | | +0.51339722 | | +0.82117520 |
| $a$ | 2.6552649 | $\Omega$ | 104.98890 | | −0.75526979 | | +0.57023934 |
| $e$ | 0.3102605 | $i$ | 14.94934 | | −0.40741974 | | −0.02232459 |
| $P$ | 4.33 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 28 | 704 | 0.4− | 0.2+ | 1997 07 02 | 704 | 0.5+ | 0.8+ | 2006 09 22 | 703 | 0.7− | 0.4− | | |
| 1997 06 28 | 704 | 0.5+ | 0.2+ | 1997 07 02 | 704 | 0.0 | 0.1− | 2006 09 22 | 703 | 0.6− | 0.1+ | | |
| 1997 06 28 | 704 | 0.5− | 0.1− | 1997 07 02 | 704 | 1.0+ | 0.6− | 2006 09 24 | 699 | (1.8− | 0.0 ) | | |
| 1997 06 29 | 704 | 0.0 | 0.2− | 2004 01 15 | 691 | 0.4+ | 0.4+ | 2006 09 24 | 699 | 0.2+ | 1.0+ | | |
| 1997 06 29 | 704 | 0.2+ | 0.2− | 2004 01 15 | 691 | 0.1− | 0.2+ | 2006 09 24 | 699 | 0.6+ | 0.8− | | |
| 1997 06 29 | 704 | 0.1− | 0.3+ | 2004 01 15 | 691 | 0.3− | 0.5− | 2006 09 24 | 699 | 0.8+ | 0.2− | | |
| 1997 06 29 | 704 | 0.8+ | 0.1+ | 2006 09 22 | 703 | 0.8+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.4− | | |
| 1997 06 29 | 704 | 1.6− | 0.3− | 2006 09 22 | 703 | 0.0 | 0.8+ | 2006 09 27 | 703 | 0.2+ | 0.2− | | |
| 1997 07 02 | 704 | 0.2+ | 0.0 | 2006 09 22 | 703 | 0.4+ | 0.2+ | 2006 09 27 | 703 | 0.9− | 0.7− | | |
| 1997 07 02 | 704 | 0.4− | 0.1+ | 2006 09 22 | 703 | 0.3− | 0.0 | 2006 09 27 | 703 | 0.4− | 0.5+ | | |

**2006 SQ$_{155}$ = 2000 QK$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.17670 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17084903 | $\omega$ | 202.05788 | | +0.98464683 | | +0.12851870 |
| $a$ | 3.2165801 | $\Omega$ | 149.80415 | | −0.10312193 | | +0.97427019 |
| $e$ | 0.0697657 | $i$ | 13.58344 | | −0.14084204 | | +0.18515007 |
| $P$ | 5.77 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.2+ | 0.1− | 2000 08 26 | 704 | 0.5− | 0.8+ | 2006 09 22 | 104 | 0.6− | 0.2+ | | |
| 2000 08 24 | 704 | 0.2− | 1.1− | 2000 08 26 | 704 | 0.6+ | 0.5+ | 2006 09 26 | 703 | 0.1− | 0.2− | | |
| 2000 08 24 | 704 | 0.2− | 0.3− | 2006 09 14 | 703 | 0.3+ | 0.3+ | 2006 09 26 | 703 | 0.1− | 0.1− | | |
| 2000 08 24 | 704 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.1− | 0.4− | 2006 09 26 | 703 | 1.1+ | 1.1+ | | |
| 2000 08 24 | 704 | 0.3+ | 0.4+ | 2006 09 14 | 703 | 0.1− | 0.5− | 2006 09 26 | 703 | 0.2+ | 0.0 | | |
| 2000 08 26 | 704 | 0.7− | 0.2− | 2006 09 14 | 703 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− | | |
| 2000 08 26 | 704 | 0.0 | 0.1+ | 2006 09 22 | 104 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.4− | | |
| 2000 08 26 | 704 | 0.2+ | 0.1− | 2006 09 22 | 104 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.2+ | | |

**2006 SV$_{155}$ = 2002 RA$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.71273 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23783340 | $\omega$ | 336.60477 | | −0.39301809 | | +0.90274195 |
| $a$ | 2.5800066 | $\Omega$ | 269.87085 | | −0.81361658 | | −0.43002950 |
| $e$ | 0.1550030 | $i$ | 10.07349 | | −0.42844467 | | −0.01147122 |
| $P$ | 4.14 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.3− | 0.1+ | 2006 08 28 | 703 | 0.9− | 0.3+ | 2006 09 23 | 691 | 0.3+ | 0.1− | | |
| 2002 09 11 | 644 | 0.3− | 0.1− | 2006 08 28 | 703 | 0.6+ | 0.7+ | 2006 09 26 | 691 | 0.1+ | 0.2− | | |
| 2002 09 11 | 644 | 0.3− | 0.1− | 2006 09 19 | 703 | (1.7+ | 0.2+) | 2006 09 26 | 691 | 0.2+ | 0.0 | | |
| 2002 09 13 | 644 | 0.3+ | 0.2+ | 2006 09 19 | 703 | 0.6− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.2− | | |
| 2002 09 13 | 644 | 0.2+ | 0.2+ | 2006 09 19 | 703 | 1.2− | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.1− | | |
| 2002 09 13 | 644 | 0.1+ | 0.2+ | 2006 09 19 | 703 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.1− | 0.1− | | |
| 2006 08 28 | 703 | 0.5− | 0.2− | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.2− | | |
| 2006 08 28 | 703 | 1.0+ | 0.1− | 2006 09 23 | 691 | 0.1− | 0.2+ | | | | | | |

**2006 SW$_{155}$ = 2005 JR$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.71292 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23946058 | $\omega$ | 187.27373 | | +0.71212692 | | −0.69219884 |
| $a$ | 2.5683056 | $\Omega$ | 217.43577 | | +0.65343961 | | +0.71455602 |
| $e$ | 0.0482466 | $i$ | 11.11653 | | +0.25669421 | | +0.10134324 |
| $P$ | 4.12 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 04 | 644 | 0.2− | 0.1+ | 2005 05 10 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.2− | | |
| 2002 09 04 | 644 | 0.1− | 0.3+ | 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1− | | |
| 2002 09 04 | 644 | 0.1+ | 0.2+ | 2005 05 10 | G96 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2+ | | |
| 2005 04 17 | 691 | 0.1− | 0.1− | 2005 05 10 | G96 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.0 | | |
| 2005 04 17 | 691 | 0.0 | 0.2− | 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 09 28 | 691 | 0.3+ | 0.1− | | |
| 2005 04 17 | 691 | 0.1− | 0.0 | 2005 05 10 | G96 | 0.4− | 0.2− | 2006 10 01 | 691 | 0.0 | 0.3− | | |
| 2005 05 03 | 691 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.0 | | |
| 2005 05 03 | 691 | 0.1+ | 0.1− | 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.0 | 0.1+ | | |
| 2005 05 03 | 691 | 0.2+ | 0.2+ | 2006 09 23 | 691 | 0.2− | 0.4+ | | | | | | |
| 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− | | | | | | |

**2006 SB$_{156}$ = 2001 SG$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.38448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17912902 | $\omega$ | 136.48984 | | +0.82854361 | | +0.55892989 |
| $a$ | 3.1166791 | $\Omega$ | 189.69540 | | −0.55249793 | | +0.80643039 |
| $e$ | 0.1820211 | $i$ | 11.42501 | | −0.09089295 | | +0.19304768 |
| $P$ | 5.50 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.8− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | | |
| 2001 09 19 | 704 | 0.5+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.0 | | |
| 2001 09 19 | 704 | 0.3− | 0.4− | 2006 09 15 | 691 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.1+ | | |
| 2001 09 19 | 704 | 0.3+ | 0.2+ | 2006 09 23 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.4− | 0.5+ | 2006 09 23 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.2− | | |
| 2001 09 21 | 704 | 0.4+ | 0.2− | 2006 09 23 | 691 | 0.3− | 0.2− | | | | | | |
| 2001 09 21 | 704 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.1− | 0.0 | | | | | | |

**2006 SG$_{157}$ = 1997 TO$_{22}$ = 2004 ES$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.10581 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21947755 | $\omega$ | 81.83726 | | +0.28015534 | | −0.95992886 |
| $a$ | 2.7219239 | $\Omega$ | 351.88289 | | +0.85994465 | | +0.25422064 |
| $e$ | 0.0504379 | $i$ | 2.85788 | | +0.42662417 | | +0.11793406 |
| $P$ | 4.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 0.3− | 0.1− | 2004 03 16 | 291 | 0.6+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.2− |
| 1997 10 05 | 691 | 0.2+ | 0.3− | 2004 03 16 | 291 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.5− |
| 1997 10 05 | 691 | 0.0 | 0.2+ | 2004 03 16 | 291 | 1.1− | 0.8+ | 2006 09 26 | G96 | 0.1+ | 0.3− |
| 1997 10 10 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.3+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.4− |
| 1997 10 10 | 691 | 0.0 | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.4− | 2006 09 27 | 691 | 0.1− | 0.2− |
| 1997 10 10 | 691 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.5− | 2006 09 23 | 691 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2006 09 23 | 691 | 0.6− | 0.1+ | | | | |
| 2004 03 15 | 691 | 0.4+ | 0.3− | 2006 09 23 | 691 | 0.0 | 0.4+ | | | | |

**2006 SS$_{157}$ = 2004 FS$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.52672 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24096442 | $\omega$ | 44.42126 | | +0.40053668 | −0.91601651 | |
| $a$ | 2.5576087 | $\Omega$ | 21.99531 | | +0.82346803 | +0.34933047 | |
| $e$ | 0.1672589 | $i$ | 3.36792 | | +0.40183426 | +0.19718513 | |
| $P$ | 4.09 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 20 | 691 | 0.7− | 0.2− | 2006 09 15 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | (1.4+ | 1.7+) |
| 1998 10 20 | 691 | 0.4− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 1998 10 20 | 691 | 0.2− | 0.1− | 2006 09 23 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.2− |
| 1998 10 29 | 691 | 0.6+ | 0.1− | 2006 09 23 | 691 | 0.1+ | 0.6+ | 2006 10 21 | G96 | 0.9− | 0.2− |
| 1998 10 29 | 691 | 0.4+ | 0.0 | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 1998 10 29 | 691 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4− | 0.2− |
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 27 | G96 | 1.0− | 0.4− |
| 2004 03 17 | 691 | 0.5+ | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.6+ | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2004 03 17 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 03 23 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | (1.9+ | 0.2+) | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 703 | (1.4+ | 1.6+) | | | | |
| 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.2+ | | | | |

**2006 SE$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.61866 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19991005 | $\omega$ | 333.92539 | | −0.98063297 | −0.18691011 | |
| $a$ | 2.8967630 | $\Omega$ | 195.63859 | | +0.19488191 | −0.96093730 | |
| $e$ | 0.1322182 | $i$ | 12.53616 | | −0.01949401 | −0.20411792 | |
| $P$ | 4.93 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 15 | 691 | 0.4+ | 0.4− | 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.4+ | 0.0 |
| 1994 03 15 | 691 | 0.1− | 0.2+ | 2006 09 23 | 691 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.5− | 0.1− |
| 1994 03 15 | 691 | 0.3− | 0.6+ | 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.4− |
| 1999 05 18 | 703 | (1.1+ | 3.1−) | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.0 |
| 1999 05 18 | 703 | 0.6− | 0.6− | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 1999 05 18 | 703 | 0.1+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 1999 05 18 | 703 | 0.7+ | 0.5− | 2006 10 01 | 691 | 0.3+ | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2001 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2001 10 16 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2001 10 16 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.2+ | | | | |

**2006 SL$_{159}$ = 2004 GX$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.99893 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19983331 | $\omega$ | 303.82052 | | −0.69985619 | −0.71360864 | |
| $a$ | 2.8975046 | $\Omega$ | 190.76833 | | +0.69790150 | −0.67390228 | |
| $e$ | 0.0394249 | $i$ | 9.56573 | | +0.15210129 | −0.19135942 | |
| $P$ | 4.93 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 621 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.3− |
| 2004 04 12 | 621 | 0.3− | 0.3− | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.3+ |
| 2004 04 12 | 621 | 0.1− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2004 04 12 | 644 | 0.3+ | 0.0 | 2006 09 23 | 691 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.5− |
| 2004 04 12 | 644 | 0.5+ | 0.3− | 2006 09 23 | 691 | 1.1− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3+ |
| 2004 04 12 | 644 | 0.3+ | 0.5+ | 2006 09 23 | 691 | 0.4+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.5+ |
| 2004 04 15 | 621 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2004 04 15 | 621 | 0.6− | 0.0 | 2006 09 27 | 691 | 1.0+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2004 04 15 | 621 | (2.3− | 1.2−) | 2006 09 27 | 691 | 0.1− | 0.3− | | | | |

**2006 SN$_{159}$ = 1997 ED$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.06147 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26738610 | $\omega$ | 134.18112 | | −0.97244237 | −0.22980042 | |
| $a$ | 2.3862183 | $\Omega$ | 32.59257 | | +0.18760433 | −0.87146008 | |
| $e$ | 0.1489918 | $i$ | 4.18817 | | +0.13842131 | −0.43330023 | |
| $P$ | 3.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 10 | 809 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1997 03 10 | 809 | 1.6− | 0.5+ | 2006 09 27 | 691 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.7− | 0.1− |
| 1997 03 10 | 809 | 1.1− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.4+ | 0.7− |
| 1997 03 11 | 809 | 1.0+ | 0.8− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.4+ | 0.9+ |
| 1997 03 11 | 809 | 1.7+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 22 | 291 | 0.3+ | 0.2+ |
| 1997 03 11 | 809 | 0.2+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.4+ | 2006 11 22 | 291 | 0.1− | 0.0 |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3+ | 2006 11 22 | 291 | 0.2+ | 0.1+ |
| 2006 09 19 | 691 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2006 09 19 | 691 | 0.6+ | 0.3− | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.6− |
| 2006 09 23 | 691 | 0.9+ | 0.5− | 2006 10 27 | 691 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2006 09 23 | 691 | 0.5− | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2006 09 23 | 691 | 0.5+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.8− | | | | |

**2006 SU$_{159}$ = 2004 HL$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.11161 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18571001 | $\omega$ | 151.84974 | | −0.95938776 | +0.27721726 | |
| $a$ | 3.0426069 | $\Omega$ | 44.34714 | | −0.27080259 | −0.85325476 | |
| $e$ | 0.0346788 | $i$ | 4.28339 | | −0.07900052 | −0.44170907 | |
| $P$ | 5.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 28 | 291 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2004 04 28 | 291 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2004 04 28 | 291 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.3− | 1.2− | 2006 10 23 | 691 | 0.4− | 0.3+ |
| 2004 05 09 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.6− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2004 05 09 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.4+ |
| 2004 05 09 | 691 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.6+ | 0.5− | 2006 11 16 | G96 | 0.7+ | 0.1− |
| 2006 09 23 | 691 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.2+ |
| 2006 09 23 | 691 | (1.8+ | 0.2−) | 2006 10 19 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2006 09 23 | 691 | 0.0 | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 09 27 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2+ | | | | |

**2006 SW$_{159}$ = 2005 GS$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.19613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27193305 | $\omega$ | 287.66090 | | +0.94541089 | +0.32437878 | |
| $a$ | 2.3595439 | $\Omega$ | 53.42233 | | −0.28229742 | +0.86310736 | |
| $e$ | 0.2053702 | $i$ | 2.23029 | | −0.16280792 | +0.38707117 | |
| $P$ | 3.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.8− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 04 04 | G96 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.3− | 0.5+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2005 04 04 | G96 | 0.0 | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2005 04 09 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2005 04 09 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 10 23 | 691 | (1.7− | 0.6+) |
| 2005 04 09 | 691 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2005 04 10 | 695 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2005 04 10 | 695 | 0.1+ | 0.4+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2006 08 30 | 699 | (2.4− | 0.0 ) | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2006 08 30 | 699 | (3.2− | 1.2+) | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2006 08 30 | 699 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.6+ | 0.6+ |
| 2006 08 30 | 699 | 1.2− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 2006 09 23 | 691 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.1− | 0.4− |
| 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.8− | 2006 11 07 | 644 | 0.2− | 0.2− |
| 2006 09 27 | 704 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.4− | 0.2− | 2006 11 13 | 704 | 0.4− | 0.7+ |
| 2006 09 27 | 704 | 0.2− | 0.9+ | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 13 | 704 | 0.3+ | 0.9+ |
| 2006 09 27 | 704 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.8− | 2006 11 13 | 704 | 0.7+ | 1.4+ |
| 2006 09 27 | 704 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 13 | 704 | 0.1+ | 0.6+ |
| 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 13 | 704 | 0.6− | 0.3− |

**2006 SF$_{160}$ = 2002 TA$_{334}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.20465 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25310722 | $\omega$ | 9.66419 | | +0.22816730 | | −0.97194143 |
| $a$ | 2.4751396 | $\Omega$ | 67.16416 | | +0.88908657 | | +0.18406073 |
| $e$ | 0.1689964 | $i$ | 3.55708 | | +0.39681828 | | +0.14646333 |
| $P$ | 3.89 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2006 09 23 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2006 09 23 | 691 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2006 09 23 | 691 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2006 09 27 | 691 | 1.2+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1+ | | | | |
| 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− | | | | |

**2006 SJ$_{160}$ = 1998 HV$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 204.21930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29052873 | $\omega$ | 132.46853 | | −0.99420075 | | −0.06460462 |
| $a$ | 2.2577542 | $\Omega$ | 44.03419 | | +0.01593994 | | −0.87913549 |
| $e$ | 0.0445644 | $i$ | 7.10479 | | +0.10635217 | | −0.47217268 |
| $P$ | 3.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.6+ | 0.6− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 1998 04 21 | 704 | (1.7− | 2.2−) | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 1998 04 21 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.3+ |
| 1998 04 21 | 704 | 0.8− | 0.8− | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 1998 04 21 | 704 | 0.1− | 1.5+ | 2006 10 15 | 703 | 0.7+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 1998 04 22 | 704 | (0.8− | 2.6−) | 2006 10 15 | 703 | 1.1− | 1.0+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 1998 04 22 | 704 | 0.9− | 0.5+ | 2006 10 15 | 703 | 0.5+ | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 1998 04 22 | 704 | 0.8+ | 0.7− | 2006 10 15 | 703 | 0.8− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 1998 04 22 | 704 | (1.8+ | 2.1+) | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 1998 04 22 | 704 | 0.8+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2006 09 23 | 691 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.5+ | 2006 11 20 | G96 | 0.1+ | 0.2+ |
| 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 1.4− | 0.7− | 2006 11 20 | G96 | 0.1+ | 0.3+ |
| 2006 09 23 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.0 | 2006 11 20 | G96 | 0.4− | 0.5− |
| 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.0 | | | | |

**2006 SA$_{161}$ = 2003 WY$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.10778 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31303821 | $\omega$ | 191.90696 | | +0.17214551 | | +0.98415939 |
| $a$ | 2.1481824 | $\Omega$ | 88.01642 | | −0.90026942 | | +0.17464423 |
| $e$ | 0.1707898 | $i$ | 2.43048 | | −0.39985108 | | +0.03049075 |
| $P$ | 3.15 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 16 | 691 | 0.6+ | 0.1+ | 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2003 11 16 | 691 | 0.3+ | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2003 11 16 | 691 | 0.5− | 0.1− | 2006 09 23 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2003 11 20 | 691 | 0.4− | 0.2− | 2006 09 23 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2003 11 20 | 691 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2003 11 20 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2005 03 04 | G96 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.8− | 0.3− |
| 2005 03 04 | G96 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 18 | G96 | 0.3− | 0.5− |
| 2005 03 04 | G96 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.4− | 0.4− |
| 2005 03 04 | G96 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.6+ | 0.2− |
| 2006 09 19 | 691 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.4+ | 0.1− |
| 2006 09 19 | 691 | 0.6− | 1.3− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.3+ | 0.2+ |

**2006 SK$_{161}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.78702 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29146201 | $\omega$ | 239.72241 | | +0.55100954 | | +0.83368189 |
| $a$ | 2.2529320 | $\Omega$ | 63.75897 | | −0.75080354 | | +0.51457193 |
| $e$ | 0.1875236 | $i$ | 2.35899 | | −0.36425613 | | +0.20047501 |
| $P$ | 3.38 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.8− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 1996 11 07 | 691 | 0.1− | 0.3+ | 2006 09 30 | 703 | 1.0− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 1996 11 07 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2002 04 22 | 691 | (1.0− | 1.8+) | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 29 | 291 | 0.2− | 0.3+ |
| 2002 04 22 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.2− | 2006 10 29 | 291 | 0.0 | 0.3+ |
| 2002 04 22 | 691 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 29 | 291 | 0.1− | 0.2+ |
| 2002 05 08 | 291 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 05 08 | 291 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 05 08 | 291 | 0.1− | 0.1+ | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 05 17 | 644 | 0.6+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2002 05 17 | 644 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.6+ |
| 2002 05 17 | 644 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.0 | 1.2− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2006 09 23 | 691 | 0.1+ | 0.2− | 2006 10 15 | 703 | (0.2+ | 1.6−) | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2006 09 23 | 691 | 0.2− | 0.2− | 2006 10 15 | 703 | 0.6+ | 0.6− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.8− | 0.4+ | 2006 11 16 | G96 | 0.6+ | 0.5+ |
| 2006 09 27 | 691 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.2+ |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1− | | | | |
| 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 10 20 | 644 | 0.3+ | 0.4+ | | | | |

**2006 SN$_{161}$ = 2001 RN$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.40190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21270606 | $\omega$ | 325.26971 | | +0.45594636 | | −0.88948609 |
| $a$ | 2.7793899 | $\Omega$ | 97.58729 | | +0.82337004 | | +0.40857073 |
| $e$ | 0.0600537 | $i$ | 1.76054 | | +0.33789745 | | +0.20465689 |
| $P$ | 4.63 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 1992 09 30 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 29 | G96 | 0.5+ | 0.0 |
| 1992 09 30 | 691 | 0.1− | 0.6+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 29 | G96 | 0.3+ | 0.1− |
| 2001 09 12 | 704 | 0.4− | 0.6+ | 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.5+ | 0.3+ |
| 2001 09 12 | 704 | 0.0 | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.2− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.0 | | |
| 2001 09 19 | 645 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.2+ | | |
| 2001 09 19 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.6− | | |
| 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.4+ | 0.1+ | | |
| 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.8− | 2006 11 20 | G96 | 0.0 | 0.4− | | |
| 2004 04 13 | 691 | 0.0 | 0.6+ | 2006 10 21 | 703 | (0.2− | 2.0+) | 2006 11 20 | G96 | 0.2+ | 0.3− | | |
| 2006 09 23 | 691 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.5− | 0.6− | 2006 11 20 | G96 | 0.5+ | 0.1+ | | |
| 2006 09 23 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.6+ | 2006 11 20 | G96 | 0.3+ | 0.0 | | |
| 2006 09 23 | 691 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.2+ | 0.3− | | | | | | |

**2006 SP$_{161}$ = 2004 FB$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.93589 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23817572 | $\omega$ | 176.26414 | | +0.64266687 | −0.76588185 | |
| $a$ | 2.5775339 | $\Omega$ | 233.74367 | | +0.70227714 | +0.59937928 | |
| $e$ | 0.1498506 | $i$ | 1.42879 | | +0.30624518 | +0.23274334 | |
| $P$ | 4.14 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 27 | 152 | (0.1− | 2.9−) | 2006 10 16 | 691 | 0.2+ | 0.1+ | | |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2006 09 27 | 152 | (3.4− | 1.1−) | 2006 10 16 | 691 | 0.2+ | 0.3− | | |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.1− | | |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.1− | | |
| 2004 03 23 | 691 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.4− | | |
| 2006 09 23 | 152 | 0.8+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.3− | | |
| 2006 09 23 | 152 | 0.9− | 1.1+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1− | | |
| 2006 09 23 | 152 | 0.1+ | 0.7− | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.0 | | |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.7+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ | | |
| 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.0 | | |
| 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.5+ | | |

**2006 SQ$_{161}$ = 3278 T-1 = 2005 JE$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.04678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23364780 | $\omega$ | 265.24258 | | −0.09715561 | +0.99526755 | |
| $a$ | 2.6107278 | $\Omega$ | 359.17543 | | −0.85585952 | −0.08447713 | |
| $e$ | 0.1635848 | $i$ | 7.24284 | | −0.50800124 | −0.04802207 | |
| $P$ | 4.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971 03 25 | 675 | 1.3+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | | |
| 1971 03 26 | 675 | 1.4− | 0.1+ | 2006 09 15 | 691 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.0 | | |
| 1971 03 26 | 675 | 0.1− | 0.7− | 2006 09 23 | 152 | 0.6− | 0.8− | 2006 10 17 | 703 | (1.1+ | 1.5+) | | |
| 1971 03 27 | 675 | (5.0− | 2.7+) | 2006 09 23 | 152 | 0.8+ | 0.4+ | 2006 10 17 | 703 | 0.2− | 0.0 | | |
| 2002 10 16 | 644 | 1.0− | 1.1+ | 2006 09 23 | 152 | (2.0− | 1.4−) | 2006 10 17 | 703 | 0.1+ | 0.9− | | |
| 2002 10 16 | 644 | 0.6− | 0.9+ | 2006 09 23 | 152 | 0.6+ | 0.8− | 2006 10 20 | 644 | 0.2+ | 0.7+ | | |
| 2002 10 16 | 644 | 0.6− | 1.1+ | 2006 09 23 | 152 | (0.9− | 2.0+) | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 2005 05 13 | E12 | 0.2− | 0.4+ | 2006 09 23 | 152 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.7− | 0.0 | | |
| 2005 05 13 | E12 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.4− | 0.0 | | |
| 2005 05 13 | E12 | 0.0 | 0.6+ | 2006 09 26 | 691 | 0.4− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.4+ | | |
| 2005 05 13 | E12 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | |
| 2005 05 19 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2005 05 19 | 644 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ | | |
| 2005 05 19 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.0 | | |
| 2006 07 22 | G96 | 0.8+ | 1.0− | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2006 07 22 | G96 | 0.0 | 0.6− | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.0 | | |
| 2006 07 22 | G96 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.2+ | 0.5− | | |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− | | | | | | |

**2006 SX$_{161}$ = 2005 GP$_{215}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.14805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25617480 | $\omega$ | 252.98041 | | +0.18159391 | +0.98314234 | |
| $a$ | 2.4553408 | $\Omega$ | 27.50965 | | −0.88375688 | +0.17267081 | |
| $e$ | 0.1831354 | $i$ | 2.64629 | | −0.43127419 | +0.06013261 | |
| $P$ | 3.85 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 | | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 | | |
| 2005 03 11 | G96 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.2− | 0.6− | | |
| 2005 03 11 | G96 | 0.1− | 0.3+ | 2006 09 24 | 691 | 0.4− | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.4− | | |
| 2005 03 11 | G96 | 0.1− | 0.2− | 2006 09 24 | 691 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.1− | 0.6+ | | |
| 2005 03 11 | G96 | 0.3+ | 0.1− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.4+ | 0.0 | | |
| 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2+ | | |
| 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2005 04 04 | G96 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− | | |
| 2005 04 04 | G96 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.6+ | | |

**2006 SA$_{162}$ = 1999 RC$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.17275 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28496390 | $\omega$ | 173.01210 | | +0.83922546 | +0.54372688 | |
| $a$ | 2.2870526 | $\Omega$ | 154.04542 | | −0.49977624 | +0.77692069 | |
| $e$ | 0.2163229 | $i$ | 1.02838 | | −0.21429963 | +0.31741980 | |
| $P$ | 3.46 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.2− | | |
| 1999 09 03 | 691 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.1− | 0.3− | | |
| 1999 09 03 | 691 | 0.2+ | 0.9− | 2006 09 24 | 691 | 0.1− | 1.2+ | 2006 09 28 | 691 | 0.1+ | 0.1− | | |
| 1999 09 08 | 691 | 0.2− | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.1− | | |
| 1999 09 08 | 691 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 02 | 691 | 0.1− | 0.3− | | |
| 1999 09 08 | 691 | 0.1− | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.0 | | |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.2− | | | | | | |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.1− | 0.2− | | | | | | |

**2006 SE$_{162}$ = 2004 HL$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.47169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21775787 | $\omega$ | 295.96984 | | +0.03293891 | −0.99267819 | |
| $a$ | 2.7362355 | $\Omega$ | 151.40423 | | +0.98167552 | +0.01029785 | |
| $e$ | 0.1512125 | $i$ | 14.05193 | | +0.18769179 | +0.12034938 | |
| $P$ | 4.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 04 | 644 | 0.1+ | 0.1+ | 2004 04 25 | 704 | 0.1− | 0.7− | 2006 10 21 | 703 | 1.0+ | 0.7+ | | |
| 2003 02 04 | 644 | 0.0 | 0.2+ | 2006 09 24 | 699 | 1.2+ | 0.5− | 2006 10 22 | 644 | 0.0 | 0.5− | | |
| 2003 02 04 | 644 | 0.0 | 0.0 | 2006 09 24 | 699 | 0.7− | 0.8+ | 2006 10 22 | 644 | 0.0 | 0.4− | | |
| 2004 03 30 | 691 | 0.2+ | 0.2− | 2006 09 24 | 699 | 0.2− | 1.0+ | 2006 10 22 | 644 | 0.0 | 0.0 | | |
| 2004 03 30 | 691 | 0.2+ | 0.2− | 2006 09 24 | 699 | 0.2+ | 0.6− | 2006 10 23 | 644 | 0.1− | 0.7− | | |
| 2004 03 30 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.5− | | |
| 2004 04 24 | 704 | 0.3− | 1.1+ | 2006 09 26 | 703 | 0.4− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.3− | | |
| 2004 04 24 | 704 | 0.3+ | 0.4− | 2006 09 26 | 703 | 0.8+ | 1.0+ | 2006 10 28 | 703 | 0.0 | 0.6− | | |
| 2004 04 24 | 704 | 0.7− | 0.7− | 2006 09 26 | 703 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.0 | 0.8− | | |
| 2004 04 25 | 704 | 0.4+ | 0.8+ | 2006 10 21 | 703 | 0.9− | 0.4+ | 2006 10 28 | 703 | 1.2− | 0.4+ | | |
| 2004 04 25 | 704 | 0.7− | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.6− | 0.2− | | |
| 2004 04 25 | 704 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.6+ | 1.5+ | | | | | | |

**2006 SU$_{162}$ = 1999 JJ$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.76728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29729616 | $\omega$ | 92.98469 | | +0.19658239 | +0.98037361 | |
| $a$ | 2.2233603 | $\Omega$ | 188.39716 | | −0.93530475 | +0.18293213 | |
| $e$ | 0.3532764 | $i$ | 5.86862 | | −0.29421147 | +0.07350801 | |
| $P$ | 3.32 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 12 | 704 | 0.1− | 0.4+ | 1999 06 08 | 699 | 0.2+ | 0.2+ | 2006 09 28 | 691 | 0.3+ | 0.0 |
| 1999 05 12 | 704 | 0.9− | 0.2+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.0 |
| 1999 05 12 | 704 | 0.6+ | 0.5+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 |
| 1999 05 12 | 704 | 0.6− | 0.8+ | 2006 09 18 | 691 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.0 | 0.1− |
| 1999 05 17 | 699 | 1.2+ | 1.1+ | 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.3− | 0.3− |
| 1999 05 17 | 704 | 0.1+ | 1.1+ | 2006 09 24 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1999 05 17 | 704 | 0.7− | 1.3− | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 1999 05 17 | 699 | 0.3+ | 0.6+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 1999 05 17 | 704 | 0.6− | 1.2− | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 1999 05 17 | 704 | 1.2+ | 1.4− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 1999 05 17 | 699 | 1.0− | 1.0− | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 1999 06 08 | 699 | 0.5+ | 0.8+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 1999 06 08 | 699 | 0.1− | 0.9− | 2006 09 28 | 691 | 0.0 | 0.2+ | | | | |

**2006 SA$_{163}$ = 1997 UP$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.41555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21841689 | $\omega$ | 354.48706 | | +0.87499906 | −0.48230942 | |
| $a$ | 2.7307288 | $\Omega$ | 34.45041 | | +0.44695712 | +0.77155058 | |
| $e$ | 0.1180288 | $i$ | 4.24607 | | +0.18602681 | +0.41483409 | |
| $P$ | 4.51 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 28 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.1− |
| 1997 10 28 | 691 | 0.3+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 1997 10 28 | 691 | 0.1+ | 0.4− | 2006 10 15 | 691 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 1997 11 01 | 691 | 0.2− | 0.3− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 1997 11 01 | 691 | 0.4+ | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 1997 11 01 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2006 09 24 | 691 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2006 09 24 | 691 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.9− | 0.7− |
| 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 13 | G96 | 0.7− | 0.1− |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.5+ | 2006 11 13 | G96 | 0.5− | 0.2− |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.4− | 0.4+ | 2006 11 13 | G96 | 0.3− | 0.2− |

**2006 SC$_{163}$ = 2004 GS$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.22249 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17514771 | $\omega$ | 272.35864 | | +0.49622041 | +0.85640118 | |
| $a$ | 3.1637324 | $\Omega$ | 28.82489 | | −0.63140031 | +0.46873163 | |
| $e$ | 0.1308402 | $i$ | 17.20691 | | −0.59590180 | +0.21648944 | |
| $P$ | 5.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 07 | 644 | 0.4− | 0.2+ |
| 2000 09 26 | 645 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 07 | 644 | 0.4+ | 0.4+ |
| 2004 04 11 | 644 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.6+ | 0.5+ |
| 2004 04 11 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.9+ |
| 2004 04 11 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | (2.1− | 0.1+) |
| 2004 04 13 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.6+ |
| 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 1.1− | 1.2+ |
| 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.5− | 0.3− | 2006 11 15 | 691 | 1.1+ | 0.1+ |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.4− | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2006 09 24 | 691 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.5+ | 0.1+ |
| 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.7+ | 0.1− | 2006 11 20 | 691 | 0.3− | 0.0 |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.7+ | 0.6− | 2006 11 20 | 691 | 0.3− | 0.1+ |
| 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.5− | 0.1− |

**2006 SL$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.73370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24726834 | $\omega$ | 55.24110 | | −0.01774410 | −0.99932475 | |
| $a$ | 2.5139523 | $\Omega$ | 35.81728 | | +0.89843374 | −0.03005713 | |
| $e$ | 0.0459092 | $i$ | 3.15171 | | +0.43875045 | +0.02113324 | |
| $P$ | 3.99 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 26 | 691 | 0.9− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 1994 10 26 | 691 | 0.8+ | 0.4− | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2002 10 10 | 291 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.1− |
| 2002 10 10 | 291 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2002 10 10 | 291 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2002 11 04 | 291 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.4− | 0.2− |
| 2002 11 04 | 291 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2002 11 04 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.3+ | 0.6+ | 2006 11 19 | 691 | 0.2+ | 0.2+ |
| 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.1− | | | | |

**2006 SQ$_{163}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.81927 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29606696 | $\omega$ | 147.39997 | | +0.83740083 | +0.54658912 | |
| $a$ | 2.2295100 | $\Omega$ | 179.46611 | | −0.51104405 | +0.78322855 | |
| $e$ | 0.2135122 | $i$ | 2.70109 | | −0.19389130 | +0.29629948 | |
| $P$ | 3.33 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 14 | 327 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 1996 10 14 | 327 | 0.0 | 0.7− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.5− | 0.1− |
| 1996 10 14 | 327 | 0.3+ | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2003 12 25 | 691 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2003 12 25 | 691 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2003 12 25 | 691 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2005 03 12 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2005 03 12 | 691 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.6− |
| 2005 03 12 | 691 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2006 07 22 | G96 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2006 07 22 | G96 | 0.1+ | 1.0+ | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 07 22 | G96 | 0.3− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2006 07 22 | G96 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2006 09 24 | 691 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.0+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2006 09 24 | 691 | 0.3− | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.5+ | | | | |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− | | | | |

**2006 SG$_{164}$ = 2004 FC$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.21125 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17833969 | $\omega$ | 186.23717 | | +0.96771997 | −0.25089136 | |
| $a$ | 3.1258685 | $\Omega$ | 188.40889 | | +0.23772136 | +0.94017660 | |
| $e$ | 0.1017646 | $i$ | 9.40931 | | +0.08370547 | +0.23048100 | |
| $P$ | 5.53 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.7+ | 1.3+ | 2004 03 26 | 691 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.1+ | 1.1+ | 2004 03 26 | 691 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 0.3+ | 0.2+ | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.3− | 0.2+ |
| 2001 10 24 | 691 | 0.0 | 0.2+ | 2004 03 29 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2001 10 24 | 691 | 0.4− | 0.2+ | 2004 03 29 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2001 10 24 | 691 | 0.1− | 0.1+ | 2004 03 29 | 691 | 0.6+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 03 23 | 291 | 0.0 | 0.3+ | 2006 08 16 | 644 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2004 03 23 | 291 | 0.2− | 0.1+ | 2006 08 16 | 644 | 0.5− | 0.5− | 2006 09 30 | 691 | 0.2− | 0.1− |
| 2004 03 23 | 291 | 0.6− | 0.2+ | 2006 08 16 | 644 | 0.5− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 |

**2006 SL$_{164}$ = 2002 TP$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.96861 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22522257 | $\omega$ | 149.72420 | | +0.11631419 | | −0.97327573 |
| $a$ | 2.6754373 | $\Omega$ | 292.96940 | | +0.86268084 | | +0.19779207 |
| $e$ | 0.1476486 | $i$ | 12.41872 | | +0.49219182 | | −0.11667331 |
| $P$ | 4.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 704 | 0.0 | 0.0 | 2002 10 10 | 704 | 0.5+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ |
| 2002 10 06 | 704 | 0.6+ | 0.5− | 2002 10 10 | 704 | 1.3− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.2− |
| 2002 10 06 | 704 | 0.5− | 1.0− | 2002 11 14 | 644 | 0.5− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2002 10 06 | 699 | (2.7+ | 0.8+) | 2002 11 14 | 644 | 0.4− | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2002 10 06 | 699 | 1.0+ | 0.1+ | 2002 11 14 | 644 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2002 10 06 | 699 | 0.1+ | 0.2− | 2006 08 30 | 699 | 0.4+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2002 10 06 | 699 | (1.9+ | 0.1+) | 2006 08 30 | 699 | 0.5− | 0.2− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2002 10 10 | 704 | 0.0 | 0.3+ | 2006 08 30 | 699 | (0.5− | 2.1−) | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2002 10 10 | 704 | 0.3+ | 0.2+ | 2006 08 30 | 699 | 0.1+ | 0.5− | | | | |
| 2002 10 10 | 704 | 0.2+ | 1.5+ | 2006 09 25 | 691 | 0.3− | 0.0 | | | | |

**2006 SG$_{165}$ = 1996 AC$_{12}$ = 2005 JB$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.42920 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23309777 | $\omega$ | 277.66570 | | −0.16486352 | | +0.98419649 |
| $a$ | 2.6148331 | $\Omega$ | 342.44148 | | −0.79925254 | | −0.17170560 |
| $e$ | 0.1546237 | $i$ | 12.37097 | | −0.57794066 | | −0.04329503 |
| $P$ | 4.23 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 14 | 691 | 0.3− | 0.1+ | 2006 09 06 | 644 | 0.7− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 1996 01 14 | 691 | 0.1+ | 0.0 | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.6− |
| 1996 01 14 | 691 | 0.1+ | 0.2− | 2006 09 06 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 1.1+ | 0.5+ |
| 1996 01 21 | 691 | 0.0 | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.7+ |
| 1996 01 21 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.7− | 1.1− |
| 1996 01 21 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.6− |
| 2005 05 09 | E12 | 0.8− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2005 05 09 | E12 | (0.7− | 3.3+) | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2005 05 09 | E12 | (3.8+ | 1.4+) | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2005 05 09 | E12 | 0.2− | 0.2− | 2006 10 09 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.2+ |
| 2005 05 11 | 644 | 0.5+ | 0.2+ | 2006 10 09 | 644 | 0.4+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2005 05 11 | 644 | 0.5+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.5− |
| 2005 05 11 | 644 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.5− | | | | |

**2006 SV$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.31584 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26116604 | $\omega$ | 226.47961 | | −0.17793523 | | −0.98211604 |
| $a$ | 2.4239570 | $\Omega$ | 233.86905 | | +0.92339425 | | −0.14502672 |
| $e$ | 0.0702293 | $i$ | 4.36983 | | +0.34012073 | | −0.12006386 |
| $P$ | 3.77 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 23 | 704 | 0.0 | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.2− |
| 2003 12 23 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.3+ | 0.7− | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2003 12 23 | 704 | 0.0 | 0.5− | 2006 09 17 | 703 | 1.3+ | 0.2+ | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 2003 12 23 | 704 | 1.0− | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2003 12 23 | 704 | 0.1− | 0.5− | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.0 |
| 2004 01 23 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2004 01 23 | 704 | 0.1+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.6− |
| 2004 01 23 | 704 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2004 01 23 | 704 | 0.7+ | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.0 | | | | |

**2006 SY$_{165}$ = 2003 YZ$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.24249 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27611617 | $\omega$ | 77.07332 | | +0.58360730 | | −0.81085953 |
| $a$ | 2.3356521 | $\Omega$ | 337.05291 | | +0.69480562 | | +0.52648206 |
| $e$ | 0.0869856 | $i$ | 6.43497 | | +0.42029474 | | +0.25558456 |
| $P$ | 3.57 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 691 | 0.2− | 0.1+ | 2003 12 29 | 704 | 0.5+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ |
| 2003 12 28 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.5+ | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 |
| 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2003 12 29 | 704 | 0.5− | 0.9− | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2003 12 29 | 704 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2003 12 29 | 704 | 0.9+ | 0.7− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.1+ |
| 2003 12 29 | 704 | 0.6+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.1− |

**2006 SG$_{166}$ = 2002 LN$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.29817 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28412578 | $\omega$ | 24.44753 | | +0.15713171 | | +0.98667381 |
| $a$ | 2.2915480 | $\Omega$ | 254.61515 | | −0.91314460 | | +0.12886485 |
| $e$ | 0.1842414 | $i$ | 2.51106 | | −0.37613370 | | +0.09934101 |
| $P$ | 3.47 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.1− | 0.1− | 2002 06 12 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.4+ |
| 1999 10 13 | 645 | 0.1+ | 0.1− | 2002 06 12 | 644 | 0.3− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 1999 10 16 | 645 | 0.0 | 0.1− | 2002 06 12 | 644 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 1999 10 16 | 645 | 0.1+ | 0.1− | 2003 11 19 | 691 | 0.6+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.4+ |
| 2000 12 25 | 691 | 0.2− | 0.9+ | 2003 11 19 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2000 12 25 | 691 | 0.1− | 0.1− | 2003 11 19 | 691 | 0.4+ | 0.5+ | 2006 10 01 | 691 | 0.2− | 0.1− |
| 2000 12 25 | 691 | 0.3− | 0.2+ | 2006 09 17 | 703 | 1.0− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 05 18 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.5+ | 0.0 |
| 2002 05 18 | 644 | 0.2+ | 0.1+ | 2006 09 17 | 703 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2002 05 18 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.4− | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.1− |
| 2002 06 08 | 291 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.4+ | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2002 06 08 | 291 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.5− | 0.0 |
| 2002 06 08 | 291 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.3− | 0.1+ |

**2006 SN$_{166}$ = 1999 CN$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.34018 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21186752 | $\omega$ | 74.57028 | | +0.88476448 | | −0.46408221 |
| $a$ | 2.7867186 | $\Omega$ | 313.05912 | | +0.40206755 | | +0.80639496 |
| $e$ | 0.0687148 | $i$ | 3.34686 | | +0.23565546 | | +0.36654450 |
| $P$ | 4.65 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.2+ | 0.1− | 2001 08 28 | 691 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.2− | 0.1− |
| 1997 11 23 | 691 | 0.4− | 0.2− | 2001 08 28 | 691 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1− |
| 1997 11 23 | 691 | 0.3+ | 0.0 | 2001 08 28 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1− |
| 1999 02 12 | 691 | 0.5− | 0.2+ | 2006 08 28 | 703 | (1.0+ | 2.3−) | 2006 09 27 | 691 | 0.1− | 0.3+ |
| 1999 02 12 | 691 | 0.7− | 0.1+ | 2006 08 28 | 703 | 0.5− | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 1999 02 12 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 0.4− | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 1999 02 16 | 691 | 1.2+ | 0.3− | 2006 08 28 | 703 | 0.2− | 0.3− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1999 02 16 | 691 | 0.1+ | 0.3− | 2006 09 17 | 703 | 0.6− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 16 | 691 | 0.2− | 0.2− | 2006 09 17 | 703 | 1.3− | 1.0+ | 2006 10 01 | 691 | 0.1− | 0.1+ | | |
| 2001 08 21 | 807 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.1− | 0.5+ | | | | | | |
| 2001 08 21 | 807 | 0.1− | 0.2− | 2006 09 17 | 703 | 0.3+ | 0.6− | | | | | | |

**2006 SR$_{166}$ = 2001 SB$_{303}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.17272 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19824280 | $\omega$ | 206.00834 | | +0.59619844 | −0.80132610 | |
| $a$ | 2.9129818 | $\Omega$ | 207.47594 | | +0.75394936 | +0.57991245 | |
| $e$ | 0.2148136 | $i$ | 6.12565 | | +0.27587640 | +0.14689461 | |
| $P$ | 4.97 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3+ | 0.7− | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.2− | 0.3− | | |
| 2001 09 20 | 704 | 0.3− | 0.4+ | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1− | | |
| 2001 09 20 | 704 | 0.7− | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.1− | 0.1− | | |
| 2001 09 23 | 704 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.5+ | 0.4− | 2006 10 22 | G96 | 0.1+ | 0.3− | | |
| 2001 09 23 | 704 | 0.4− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1− | 0.1− | | |
| 2001 09 23 | 704 | 0.6+ | 0.1− | 2006 09 27 | 691 | 0.3− | 1.0+ | 2006 10 22 | G96 | 0.2− | 0.4− | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.7− | | |

**2006 SW$_{166}$ = 2000 EV$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.96503 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22628645 | $\omega$ | 353.36176 | | +0.40800883 | +0.91205629 | |
| $a$ | 2.6670451 | $\Omega$ | 300.71095 | | −0.83543207 | +0.35485879 | |
| $e$ | 0.0779471 | $i$ | 2.73427 | | −0.36821468 | +0.20549590 | |
| $P$ | 4.36 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.7+ | 0.0 | 2005 02 14 | 809 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 | | |
| 2000 03 03 | 704 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | | |
| 2000 03 03 | 704 | 0.6− | 0.7− | 2006 09 17 | 691 | 1.3− | 1.0− | 2006 09 27 | 691 | 0.2+ | 0.1− | | |
| 2000 03 03 | 704 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 09 29 | 704 | 0.6+ | 0.7+ | | |
| 2000 03 11 | 704 | 0.4− | 1.2+ | 2006 09 17 | 703 | 1.5− | 0.1− | 2006 09 29 | 704 | 0.9+ | 0.6+ | | |
| 2000 03 11 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 703 | 0.2+ | 0.0 | 2006 09 29 | 704 | 0.6+ | 0.0 | | |
| 2000 03 11 | 704 | 0.1+ | 1.0+ | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 09 29 | 704 | (0.3+ | 1.7+) | | |
| 2002 11 05 | 704 | 0.1− | 0.3− | 2006 09 17 | 703 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.4+ | | |
| 2002 11 05 | 704 | 0.6+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.6− | 0.8− | | |
| 2002 11 05 | 704 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.2+ | 0.2+ | | |
| 2002 11 05 | 704 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1+ | | |
| 2005 02 14 | 809 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.4+ | 0.3+ | | |
| 2005 02 14 | 809 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.4+ | 0.1− | | |
| 2005 02 14 | 809 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.1− | | | | | | |

**2006 SH$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.79855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28303459 | $\omega$ | 205.86687 | | +0.63045160 | −0.77501429 | |
| $a$ | 2.2974340 | $\Omega$ | 205.12127 | | +0.72874066 | +0.61021245 | |
| $e$ | 0.2302999 | $i$ | 5.86767 | | +0.26733468 | +0.16429732 | |
| $P$ | 3.48 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 16 | 645 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2+ | | |
| 1999 10 16 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.2− | 0.0 | | |
| 1999 10 30 | 691 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.3− | 0.4+ | | |
| 1999 10 30 | 691 | 0.5+ | 0.4− | 2006 10 02 | 691 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.3+ | 0.0 | | |
| 1999 10 30 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.2− | | |
| 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.2+ | | |
| 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.5− | 0.2+ | | |
| 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1+ | | |
| 2006 09 27 | 691 | 0.3− | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.4+ | | |
| 2006 09 27 | 691 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.5− | 0.1+ | | |

**2006 SJ$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.26556 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22178827 | $\omega$ | 38.06620 | | +0.04615882 | +0.99820963 | |
| $a$ | 2.7029852 | $\Omega$ | 234.61084 | | −0.92756746 | +0.02869562 | |
| $e$ | 0.0963224 | $i$ | 2.67433 | | −0.37079371 | +0.05247948 | |
| $P$ | 4.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 30 | 644 | 0.1+ | 0.2− | 2006 09 17 | 703 | 0.3+ | 0.3− | 2006 10 01 | 691 | 0.2− | 0.2+ | | |
| 2001 06 30 | 644 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.1+ | | |
| 2001 06 30 | 644 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 2001 07 13 | 644 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.0 | | |
| 2001 07 13 | 644 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.5− | | |
| 2001 07 13 | 644 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.5− | | |
| 2002 11 04 | 644 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 02 | 291 | 0.2− | 0.2+ | | |
| 2002 11 04 | 644 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.4− | | |
| 2002 11 04 | 644 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 02 | 291 | 0.0 | 0.1+ | | |
| 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.3− | | |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 09 29 | 704 | 0.7+ | 0.3− | 2006 10 02 | 291 | 0.1− | 0.0 | | |
| 2006 09 17 | 691 | 0.0 | 0.2− | 2006 09 29 | 704 | 0.3+ | 0.9− | 2006 10 22 | G96 | 0.0 | 0.3− | | |
| 2006 09 17 | 703 | 0.6− | 0.4− | 2006 09 29 | 704 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.7− | | |
| 2006 09 17 | 703 | 0.6− | 1.1− | 2006 10 01 | 691 | 0.0 | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.5− | | |
| 2006 09 17 | 703 | (2.6− | 1.3−) | 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.7− | | |

**2006 ST$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.68551 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20633324 | $\omega$ | 195.98385 | | +0.39043155 | −0.91993952 | |
| $a$ | 2.8363289 | $\Omega$ | 231.04885 | | +0.84961191 | +0.37497646 | |
| $e$ | 0.1530959 | $i$ | 2.63111 | | +0.35457413 | +0.11447241 | |
| $P$ | 4.78 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.2− | 0.1+ | 2003 01 07 | 704 | (2.3+ | 1.1+) | 2006 09 27 | 691 | 0.3+ | 0.0 | | |
| 1992 11 26 | 691 | 0.2+ | 0.1+ | 2003 01 07 | 704 | 1.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.3+ | | |
| 1992 11 26 | 691 | 0.1+ | 0.2+ | 2003 01 26 | 291 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.0 | | |
| 2001 09 12 | 704 | 0.3− | 1.0+ | 2003 01 26 | 291 | 0.3− | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.1− | | |
| 2001 09 12 | 704 | 0.2− | 0.1− | 2003 01 26 | 291 | 0.4− | 0.3+ | 2006 10 01 | 691 | 0.3+ | 0.2− | | |
| 2001 09 12 | 704 | 0.7− | 1.2+ | 2004 04 12 | 691 | 0.5+ | 0.7+ | 2006 10 01 | 691 | 0.2+ | 0.1− | | |
| 2001 09 12 | 704 | 0.6− | 0.5+ | 2004 04 12 | 691 | 0.1+ | 0.6+ | 2006 10 02 | 691 | 0.3+ | 0.0 | | |
| 2001 09 12 | 704 | (0.5− | 1.8+) | 2004 04 12 | 691 | 0.3+ | 0.6+ | 2006 10 02 | 691 | 0.0 | 0.1+ | | |
| 2001 09 20 | 704 | 0.4+ | 1.1+ | 2006 08 28 | 703 | 1.2− | 0.9+ | 2006 10 02 | 691 | 0.2+ | 0.3− | | |
| 2001 09 20 | 704 | 0.3− | 0.6+ | 2006 08 28 | 703 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.8− | | |
| 2001 09 20 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.8+ | 0.1− | 2006 10 11 | 644 | 0.5− | 0.1− | | |
| 2001 09 20 | 704 | 0.9− | 0.8+ | 2006 08 28 | 703 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.0 | | |
| 2001 09 22 | 704 | 1.0− | 0.6− | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.6+ | | |
| 2001 09 22 | 704 | (1.6− | 0.3+) | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.0 | | |
| 2001 09 22 | 704 | 0.8− | 1.4+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | |
| 2001 09 22 | 704 | (0.8− | 2.8+) | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.3− | | |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.4− | | |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.2− | 0.4− | | |
| 2003 01 07 | 704 | (0.9+ | 1.7+) | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.2− | | |
| 2003 01 07 | 704 | (3.8+ | 2.0+) | 2006 09 25 | 691 | 0.6− | 0.3− | | | | | | |
| 2003 01 07 | 704 | (3.6+ | 0.1+) | 2006 09 25 | 691 | 0.2+ | 0.2+ | | | | | | |

**2006 SC$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.29102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18078168 | $\omega$ | 172.44021 | | −0.80134000 | −0.59697603 | |
| $a$ | 3.0976554 | $\Omega$ | 330.79899 | | +0.54464605 | −0.70154206 | |
| $e$ | 0.1008574 | $i$ | 4.51321 | | +0.24741644 | −0.38917651 | |
| $P$ | 5.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 02 | 691 | 0.0 | 0.3− | 2003 01 27 | 608 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1− |
| 2000 08 02 | 691 | 0.4− | 0.7+ | 2003 01 27 | 608 | 0.2− | 0.8− | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2000 08 02 | 691 | 0.4+ | 0.4− | 2003 02 21 | 699 | 1.1+ | 0.4− | 2006 09 27 | 691 | 0.2− | 0.0 |
| 2003 01 27 | 699 | 0.6− | 0.5− | 2003 02 21 | 699 | 0.2− | 0.6− | 2006 09 27 | 691 | 0.3− | 0.0 |
| 2003 01 27 | 699 | 0.3− | 1.1+ | 2003 02 21 | 699 | 1.7− | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.5− |
| 2003 01 27 | 699 | 1.1+ | 0.2+ | 2003 02 21 | 699 | 0.1− | 0.9+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2003 01 27 | 699 | 0.5+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.5+ | 0.1+ |
| 2003 01 27 | 608 | 0.3+ | 0.5− | 2006 09 25 | 691 | 0.2+ | 0.2− | | | | |

**2006 SF$_{168}$ = 2001 SF$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.54313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19896363 | $\omega$ | 197.06825 | | +0.82932741 | −0.55736398 | |
| $a$ | 2.9059419 | $\Omega$ | 196.98278 | | +0.52715379 | +0.80390183 | |
| $e$ | 0.2235751 | $i$ | 7.77518 | | +0.18526986 | +0.20757468 | |
| $P$ | 4.95 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2001 09 22 | 704 | 0.3− | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.6+ | 0.6+ | 2001 09 22 | 704 | 1.0+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.0 | 1.3− | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.3− | 0.9− | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.6− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.4− | 0.1+ |
| 2001 09 21 | 704 | 0.3− | 0.3+ | 2006 09 25 | 691 | 0.6+ | 0.6+ | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 1.1− | 0.1− | 2006 09 25 | 691 | 0.5− | 0.1− | 2006 10 02 | 691 | 0.1− | 0.1− |
| 2001 09 22 | 704 | 0.9+ | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1+ | | | | |
| 2001 09 22 | 704 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.3− | | | | |

**2006 SK$_{168}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.23080 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23332624 | $\omega$ | 55.16826 | | +0.94591561 | +0.32059391 | |
| $a$ | 2.6131258 | $\Omega$ | 286.08857 | | −0.31195532 | +0.85689710 | |
| $e$ | 0.0325001 | $i$ | 2.96086 | | −0.08903673 | +0.40366683 | |
| $P$ | 4.22 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.5− | 0.5+ | 2003 12 25 | 645 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.3− |
| 2002 10 03 | 644 | 0.4− | 0.5+ | 2005 06 06 | G92 | 0.6+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2002 10 03 | 644 | 0.3− | 0.4+ | 2005 06 06 | G92 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2002 10 18 | 644 | 0.6− | 0.7+ | 2005 06 06 | G92 | 0.1− | 1.0+ | 2006 10 23 | G96 | 0.0 | 0.6− |
| 2002 10 18 | 644 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.3− | 2006 10 23 | G96 | 0.5+ | 0.2− |
| 2002 10 18 | 644 | 0.6+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2003 12 25 | 645 | 0.2+ | 0.1+ | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.3− |

**2006 SM$_{168}$ = 2004 FX$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.76542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17339760 | $\omega$ | 229.53621 | | −0.74583177 | +0.66507728 | |
| $a$ | 3.1849845 | $\Omega$ | 351.89936 | | −0.50166691 | −0.59784471 | |
| $e$ | 0.2237967 | $i$ | 15.43889 | | −0.43825253 | −0.44749738 | |
| $P$ | 5.68 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.5+ | 1.1− | 2004 03 22 | 704 | 0.3+ | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 0.3+ | 0.4− | 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2004 03 19 | 704 | 0.0 | 0.2− | 2004 03 29 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.3− |
| 2004 03 19 | 704 | 0.5+ | 0.4+ | 2004 03 29 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.5− | 0.2− |
| 2004 03 19 | 704 | 0.1+ | 0.3+ | 2006 08 21 | 691 | 0.3+ | 0.4− | 2006 10 01 | 691 | 0.3+ | 0.0 |
| 2004 03 22 | 704 | 0.4− | 0.0 | 2006 08 21 | 691 | 0.6− | 0.3+ | 2006 10 01 | 691 | 0.3− | 0.6+ |
| 2004 03 22 | 704 | 0.1− | 0.1+ | 2006 08 21 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.3+ | 0.1+ |
| 2004 03 22 | 704 | 0.3+ | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1+ | | | | |
| 2004 03 22 | 704 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.3− | | | | |

**2006 SU$_{169}$ = 2004 CH$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.98532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20899102 | $\omega$ | 311.80166 | | −0.53738276 | +0.84167308 | |
| $a$ | 2.8122308 | $\Omega$ | 285.61882 | | −0.75652251 | −0.50886945 | |
| $e$ | 0.0506977 | $i$ | 3.15313 | | −0.37268414 | −0.18066077 | |
| $P$ | 4.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.4+ |
| 2004 02 14 | 691 | 0.2+ | 0.5− | 2006 09 25 | 691 | 0.3− | 0.5− | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.8+ | 0.6− | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2004 02 25 | 333 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.1− | 0.0 |
| 2004 02 25 | 333 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.0 |
| 2004 02 25 | 333 | 0.5− | 0.6+ | 2006 10 01 | 691 | 0.0 | 0.4+ | | | | |
| 2006 09 25 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.1− | 0.2+ | | | | |

**2006 SP$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.71528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26216978 | $\omega$ | 237.51763 | | −0.67606444 | +0.73680751 | |
| $a$ | 2.4177662 | $\Omega$ | 349.93582 | | −0.66150160 | −0.61120245 | |
| $e$ | 0.1299075 | $i$ | 2.35527 | | −0.32458051 | −0.28904371 | |
| $P$ | 3.76 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 910 | 0.3+ | 0.5+ | 2005 04 14 | 703 | 0.6− | 0.5+ | 2006 09 17 | 291 | 0.2− | 0.2+ |
| 1997 02 06 | 910 | 0.4+ | 0.1+ | 2005 04 14 | 703 | 1.0− | 0.1− | 2006 09 17 | 291 | 0.4− | 0.1+ |
| 1997 02 07 | 910 | 0.5+ | 0.7+ | 2005 04 14 | 703 | (2.0− | 0.2+) | 2006 09 25 | 691 | 0.3+ | 0.1− |
| 2001 03 18 | 699 | 1.0+ | 0.2+ | 2005 04 14 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.3+ | 0.5+ |
| 2001 03 18 | 699 | 0.6− | 0.3− | 2005 04 14 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.2+ |
| 2001 03 18 | 699 | 0.8+ | 0.9− | 2005 04 14 | 691 | 0.4+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2001 03 18 | 699 | 0.5+ | 0.2− | 2005 05 01 | 644 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− |
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.0 |
| 2001 04 16 | 645 | 0.1− | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.2− | 0.1+ |
| 2001 04 23 | 691 | 0.4+ | 0.1+ | 2005 05 19 | 644 | 0.3− | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.7+ |
| 2001 04 23 | 691 | 0.1− | 0.2+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.2+ |
| 2001 04 23 | 691 | 0.2+ | 0.5+ | 2005 05 19 | 644 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.6− | 0.2− |
| 2005 04 14 | 703 | 0.1+ | 0.4− | 2006 09 17 | 291 | 0.1+ | 0.3+ | | | | |

**2006 SY$_{170}$ = 1995 SQ$_{75}$ = 1999 VM$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.11068 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27412794 | $\omega$ | 129.53893 | | −0.54329784 | −0.83951718 | |
| $a$ | 2.3469320 | $\Omega$ | 353.36075 | | +0.75289493 | −0.48394890 | |
| $e$ | 0.0849240 | $i$ | 3.07106 | | +0.37145212 | −0.24699064 | |
| $P$ | 3.60 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.4− | 0.1− | 1999 11 13 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.1− |
| 1995 09 20 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3− |
| 1995 09 20 | 691 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 1995 09 25 | 691 | (5.5+ | 0.2−) | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.3+ |
| 1995 09 25 | 691 | (5.0+ | 0.2−) | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 1995 09 25 | 691 | (5.6+ | 0.5+) | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 1995 10 01 | 691 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.9− | 0.4− |
| 1995 10 01 | 691 | 0.6+ | 0.4− | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 1995 10 01 | 691 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.5− |
| 1999 11 11 | 691 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.4− |
| 1999 11 11 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.6− | 0.4− |
| 1999 11 11 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 1999 11 13 | 691 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.5+ | | | | |
| 1999 11 13 | 691 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.1+ | | | | |

**2006 SG$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.70684 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26547627 | $\omega$ | 334.29251 | | +0.68482936 | | +0.72860997 |
| $a$ | 2.3976488 | $\Omega$ | 338.92322 | | −0.66284688 | | +0.61620335 |
| $e$ | 0.2160036 | $i$ | 1.86008 | | −0.30272555 | | +0.29903334 |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 01 | 704 | 0.6+ | 0.4+ |
| 2002 07 14 | 644 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 01 | 704 | 0.4− | 0.2+ |
| 2002 07 14 | 644 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 2005 03 12 | 691 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 02 | 691 | 0.3− | 0.0 |
| 2005 03 12 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 704 | (1.5− | 2.3+) | 2006 10 02 | 691 | 0.0 | 0.2+ |
| 2005 03 12 | 691 | 0.0 | 0.3+ | 2006 09 27 | 704 | 0.3+ | 1.1+ | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2005 04 06 | G96 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.5− | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.2+ |
| 2005 04 06 | G96 | 0.1− | 0.1− | 2006 09 28 | 699 | 0.2+ | 0.5+ | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 2005 04 06 | G96 | 0.4+ | 0.3+ | 2006 09 28 | 699 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2005 04 06 | G96 | 0.8− | 1.1− | 2006 09 28 | 699 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 09 28 | 699 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 07 21 | G96 | 0.1+ | 0.6− | 2006 09 29 | 704 | 0.6+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 09 29 | 704 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.6− |
| 2006 07 21 | G96 | 0.3+ | 0.4− | 2006 09 29 | 704 | 1.0− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 09 29 | 704 | 1.1− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2006 09 25 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 704 | 0.5− | 0.8− | | | | |
| 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 0.0 | 0.1− | | | | |

**2006 SU$_{171}$ = 2006 QJ$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.87846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20361250 | $\omega$ | 148.81862 | | +0.99053587 | | −0.13654773 |
| $a$ | 2.8615396 | $\Omega$ | 219.03711 | | +0.12094300 | | +0.91623765 |
| $e$ | 0.0800547 | $i$ | 1.26526 | | +0.06489593 | | +0.37664744 |
| $P$ | 4.84 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.8+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1− |
| 2004 03 18 | 704 | (2.4+ | 0.0 ) | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.3− |
| 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 09 | 644 | 0.4− | 0.4+ |
| 2004 03 18 | 704 | 0.8+ | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 09 | 644 | 0.1+ | 0.3+ |
| 2004 03 28 | 291 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 2004 03 28 | 291 | 0.2+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 2004 03 28 | 291 | 0.3+ | 0.7+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2004 04 25 | 691 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2004 04 25 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.0 |
| 2004 04 25 | 691 | 0.0 | 0.0 | 2006 09 27 | 704 | 0.8+ | 0.4+ | 2006 10 17 | G96 | 0.2+ | 0.3− |
| 2006 07 22 | G96 | 0.6+ | 0.4+ | 2006 09 27 | 704 | 0.5+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2006 07 22 | G96 | 0.0 | 0.1+ | 2006 09 29 | 704 | 0.7− | 0.3+ | 2006 10 17 | G96 | 0.2− | 1.0− |
| 2006 07 22 | G96 | 0.0 | 0.5+ | 2006 09 29 | 704 | 0.4− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2006 07 22 | G96 | 0.1− | 0.5+ | 2006 09 29 | 704 | 0.4− | 1.2− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2006 08 24 | 644 | 0.4− | 0.4+ | 2006 09 29 | 704 | 1.4+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2006 08 24 | 644 | 0.4− | 0.2+ | 2006 10 01 | 704 | (1.2− | 1.9−) | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2006 08 28 | 703 | 0.7+ | 0.3+ | 2006 10 01 | 704 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2006 08 28 | 703 | 0.2− | 0.9− | 2006 10 01 | 704 | 0.7+ | 1.0+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2006 08 28 | 703 | 0.0 | 0.6+ | 2006 10 02 | 691 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.5− |
| 2006 08 28 | 703 | 0.4− | 0.3− | 2006 10 02 | 691 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.5− |
| 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.8+ | 0.0 |
| 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.3− | | | | |

**2006 SD$_{172}$ = 1995 UR$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.59345 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17818011 | $\omega$ | 269.80915 | | −0.13890658 | | −0.98966473 |
| $a$ | 3.1277346 | $\Omega$ | 188.42967 | | +0.97746446 | | −0.13124340 |
| $e$ | 0.1125324 | $i$ | 14.06200 | | +0.15895973 | | −0.05778309 |
| $P$ | 5.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.2− |
| 1995 10 20 | 691 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.1+ |
| 1995 10 20 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.2− | 0.1− |
| 1995 10 25 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.7− | 0.3− |
| 1995 10 25 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 16 | G96 | 0.8− | 0.3− |
| 1995 10 25 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 16 | G96 | 0.4− | 0.5+ |
| 2006 09 17 | 691 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.5+ | 0.3− | 2006 10 16 | G96 | 0.6+ | 0.0 |
| 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.4+ | 0.4+ |

**2006 SA$_{173}$ = 2002 TA$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.82828 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24455479 | $\omega$ | 60.23082 | | +0.97223600 | | −0.23318177 |
| $a$ | 2.5325144 | $\Omega$ | 313.24594 | | +0.20434107 | | +0.88679677 |
| $e$ | 0.2764581 | $i$ | 1.54041 | | +0.11402585 | | +0.39902099 |
| $P$ | 4.03 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.3+ | 0.6+ | 2002 10 04 | 644 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.2+ |
| 1994 10 28 | 691 | 0.2− | 0.3+ | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 10 01 | 691 | 0.2− | 0.3+ |
| 1994 10 28 | 691 | 0.2− | 0.4+ | 2006 07 22 | G96 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 1994 11 05 | 691 | (2.4+ | 6.2−) | 2006 07 22 | G96 | 0.2+ | 1.2− | 2006 10 02 | 691 | 0.2− | 0.1− |
| 1994 11 05 | 691 | 0.2− | 0.2+ | 2006 07 22 | G96 | 0.2− | 0.6− | 2006 10 02 | 691 | 0.3+ | 0.3+ |
| 1994 11 05 | 691 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 1994 11 10 | 691 | 0.1+ | 1.0− | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 1994 11 10 | 691 | 0.2+ | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.6− |
| 1994 11 10 | 691 | 0.1+ | 0.5− | 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2002 10 03 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2002 10 04 | 644 | 0.5− | 0.1− | 2006 09 27 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2002 10 04 | 644 | 0.5− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.4− |

**2006 SM$_{173}$ = 2004 EL$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.99842 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20523061 | $\omega$ | 210.67324 | | −0.86755319 | | +0.49732859 |
| $a$ | 2.8464789 | $\Omega$ | 359.12057 | | −0.38754159 | | −0.68099322 |
| $e$ | 0.0850362 | $i$ | 14.97659 | | −0.31170976 | | −0.53750582 |
| $P$ | 4.80 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 24 | 691 | 0.2+ | 0.1+ | 2004 03 10 | 644 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.2− | 0.2+ |
| 1992 09 24 | 691 | 0.2− | 0.2− | 2004 03 20 | 704 | 0.9+ | 1.1+ | 2006 09 25 | 691 | 0.6− | 0.1+ |
| 1992 09 24 | 691 | 0.2+ | 0.3− | 2004 03 20 | 704 | 0.7+ | 1.0+ | 2006 09 26 | G96 | 0.2+ | 0.0 |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2004 03 20 | 704 | 1.3+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2004 03 20 | 704 | 0.6+ | 1.0+ | 2006 09 26 | G96 | 0.0 | 0.0 |
| 2003 12 25 | 645 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.5+ | 0.3+ |
| 2003 12 25 | 645 | 0.0 | 0.1+ | 2006 09 17 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2004 03 10 | 644 | 0.0 | 0.6+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 691 | 0.5− | 0.6+ |
| 2004 03 10 | 644 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.6− | 0.0 | 2006 10 01 | 691 | 0.5− | 0.3+ |

**2006 SO$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 263.48020 | | | (2000.0) | | |
| $n$ | 0.31561139 | $\omega$ | 135.38149 | | −0.25215686 | −0.96624311 |
| $a$ | 2.1364904 | $\Omega$ | 329.11036 | | +0.85660303 | −0.19748044 |
| $e$ | 0.0276513 | $i$ | 5.90665 | | +0.45016459 | −0.16545613 |
| $P$ | 3.12 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.6− | 0.5− | 2003 10 17 | 644 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.2− | 0.2− |
| 2000 10 25 | 704 | 1.0+ | 0.1+ | 2003 10 22 | 704 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.0 |
| 2000 10 25 | 704 | 0.3+ | 0.7+ | 2003 10 22 | 704 | 0.5+ | 0.9+ | 2006 09 25 | 704 | 0.9+ | 0.5− |
| 2000 10 25 | 704 | 0.9+ | 0.8+ | 2003 10 22 | 704 | 0.1− | 0.7+ | 2006 09 25 | 704 | 0.4+ | 0.1+ |
| 2000 11 05 | 704 | 0.5+ | 0.6− | 2003 10 22 | 704 | 0.7− | 0.8+ | 2006 09 25 | 704 | 0.7+ | 0.7− |
| 2000 11 05 | 704 | 0.4+ | 0.3− | 2003 10 29 | 699 | 0.5+ | 0.3− | 2006 09 25 | 704 | 0.6− | 0.5+ |
| 2000 11 05 | 704 | 0.0 | 0.5− | 2003 10 29 | 699 | 0.4− | 0.1− | 2006 09 25 | 704 | 0.4− | 0.9+ |
| 2000 11 05 | 704 | 0.4− | 1.3− | 2003 10 29 | 699 | 0.8− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.2− |
| 2000 11 19 | 704 | 0.4− | 0.4− | 2003 10 29 | 699 | 1.3− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.3− |
| 2000 11 19 | 704 | 0.1− | 0.3− | 2003 11 02 | 691 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.1+ | 0.0 |
| 2000 11 19 | 704 | 0.4− | 0.5+ | 2003 11 02 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2000 11 19 | 704 | 0.6− | 0.4+ | 2003 11 02 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2000 11 19 | 704 | 0.0 | 0.5+ | 2003 11 19 | 704 | 0.0 | 1.4+ | 2006 09 30 | 691 | 0.0 | 0.7+ |
| 2003 09 20 | 644 | 0.3+ | 0.1+ | 2003 11 19 | 704 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.6+ |
| 2003 09 20 | 644 | 0.3+ | 0.0 | 2003 11 19 | 704 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2003 09 20 | 644 | 0.4+ | 0.2+ | 2003 11 19 | 704 | 0.6− | 0.9+ | 2006 10 17 | 703 | 0.1− | 0.1− |
| 2003 09 30 | 691 | 0.2+ | 0.2− | 2005 05 01 | 644 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 1.1+ | 1.5+ |
| 2003 09 30 | 691 | 0.2− | 0.2− | 2005 05 01 | 644 | 0.0 | 0.7+ | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 09 30 | 691 | 0.0 | 0.1− | 2005 05 01 | 644 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2003 10 17 | 691 | 0.2+ | 0.0 | 2005 05 09 | 703 | 0.2+ | 0.8− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2003 10 17 | 691 | 0.0 | 0.3− | 2005 05 09 | 703 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2003 10 17 | 691 | 0.0 | 0.2− | 2005 05 09 | 703 | (1.2− | 2.2−) | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2003 10 17 | 644 | 0.1− | 0.3− | 2005 05 09 | 703 | 0.5− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2003 10 17 | 644 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.1− | 0.1− | | | | |

**2006 SQ$_{173}$ = 2001 WD$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.59843 | | | (2000.0) | | |
| $n$ | 0.17741574 | $\omega$ | 160.38465 | | +0.99536369 | −0.07810455 |
| $a$ | 3.1367118 | $\Omega$ | 204.30320 | | +0.05939379 | +0.95815594 |
| $e$ | 0.0791147 | $i$ | 7.83881 | | +0.07565382 | +0.27538496 |
| $P$ | 5.56 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.3− | 0.8− | 2006 09 25 | 704 | 0.3+ | 1.1+ | 2006 10 12 | 644 | 0.3+ | 0.3− |
| 2001 11 17 | 704 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.2+ |
| 2001 11 17 | 704 | 0.5+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.2− | 0.6+ |
| 2001 11 18 | 704 | 0.2− | 0.4− | 2006 09 27 | 691 | 0.2− | 0.2− | 2006 10 17 | 703 | 1.3− | 0.2− |
| 2001 11 18 | 704 | 0.4+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 17 | 703 | (1.8+ | 0.2−) |
| 2001 11 18 | 704 | 0.7− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2006 09 25 | 704 | 0.5+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2006 09 25 | 704 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.5− | 0.3+ | 2006 10 23 | G96 | 0.2+ | 0.1− |
| 2006 09 25 | 704 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.3+ | 0.0 |

**2006 SZ$_{173}$ = 2005 JF$_{181}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.47644 | | | (2000.0) | | |
| $n$ | 0.22257770 | $\omega$ | 132.74710 | | +0.96258207 | +0.27083237 |
| $a$ | 2.6965902 | $\Omega$ | 211.54240 | | −0.25350879 | +0.88789853 |
| $e$ | 0.0799205 | $i$ | 1.01327 | | −0.09575514 | +0.37186829 |
| $P$ | 4.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 28 | 691 | 0.2− | 0.1− | 2005 04 18 | 691 | 0.6+ | 0.3+ | 2006 09 14 | 703 | 0.4− | 0.1+ |
| 1994 12 28 | 691 | 0.4− | 0.4− | 2005 05 10 | 701 | 0.3− | 0.7+ | 2006 09 14 | 703 | 0.7− | 1.0− |
| 1994 12 28 | 691 | 0.1+ | 0.2+ | 2005 05 10 | 701 | 0.1− | 0.1− | 2006 09 14 | 703 | 0.9− | 0.3− |
| 2000 03 25 | 691 | 0.3+ | 0.4− | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 09 14 | 703 | 2.0+ | 0.2+ |
| 2000 03 25 | 691 | 0.2− | 0.1− | 2005 05 13 | G96 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.5− | 0.3− |
| 2000 03 25 | 691 | 0.0 | 0.4− | 2005 05 13 | G96 | 0.5− | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.4− |
| 2002 10 15 | 644 | 0.2+ | 0.8+ | 2005 05 13 | G96 | 0.5− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2002 10 15 | 644 | 0.0 | 1.4+ | 2006 07 25 | G96 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.3− |
| 2002 10 15 | 644 | 0.6+ | 1.7+ | 2006 07 25 | G96 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.5− | 0.1− |
| 2004 02 29 | 691 | 0.5+ | 0.7+ | 2006 07 25 | G96 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.2− |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 07 25 | G96 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.0 |
| 2004 02 29 | 691 | 0.3− | 0.2+ | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.2− |
| 2005 04 02 | G96 | 0.2− | 0.0 | 2006 08 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.6− |
| 2005 04 02 | G96 | 0.4− | 0.2− | 2006 08 19 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2005 04 02 | G96 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2005 04 02 | G96 | 0.4− | 0.3+ | 2006 08 28 | 703 | 1.1− | 0.2+ | 2006 11 11 | G96 | 0.6− | 0.5− |
| 2005 04 18 | 691 | 0.5+ | 0.1+ | 2006 08 28 | 703 | 0.4− | 0.0 | | | | |
| 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 08 28 | 703 | 1.0+ | 0.3+ | | | | |

**2006 SC$_{175}$ = 2004 CP$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.84552 | | | (2000.0) | | |
| $n$ | 0.21470823 | $\omega$ | 309.37895 | | +0.42309731 | +0.90590427 |
| $a$ | 2.7620842 | $\Omega$ | 345.61921 | | −0.80735877 | +0.36787541 |
| $e$ | 0.0687205 | $i$ | 4.16973 | | −0.41129123 | +0.20977403 |
| $P$ | 4.59 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.4− | 0.6− | 2005 01 17 | 809 | 0.5− | 0.3+ | 2006 09 17 | 703 | 0.1+ | 0.4− |
| 1997 11 23 | 691 | 0.3+ | 0.3− | 2005 01 17 | 809 | 0.6− | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 1997 11 23 | 691 | 0.5+ | 0.3− | 2005 01 17 | 809 | 0.0 | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2001 08 24 | 644 | 0.2+ | 0.6+ | 2005 02 14 | 809 | 0.3+ | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.1+ |
| 2001 08 24 | 644 | 0.2− | 0.6+ | 2005 02 14 | 809 | 0.1+ | 0.6+ | 2006 09 25 | 691 | 0.2− | 0.4+ |
| 2001 08 24 | 644 | 0.1+ | 0.6+ | 2005 02 14 | 809 | 0.1− | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2004 02 11 | 291 | 0.4− | 0.4+ | 2005 02 14 | 809 | 0.0 | 0.7+ | 2006 09 26 | 691 | 0.2− | 0.3+ |
| 2004 02 11 | 291 | 0.1+ | 0.3+ | 2006 09 17 | 703 | (1.7− | 1.0+) | 2006 09 26 | 691 | 0.3− | 0.1+ |
| 2004 02 11 | 291 | 0.5+ | 0.5+ | 2006 09 17 | 703 | 0.5− | 0.5− | 2006 09 30 | 691 | 0.3+ | 0.5+ |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2004 02 17 | 691 | 0.3+ | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.8+ | 2006 09 30 | 691 | 0.2+ | 0.1+ |
| 2004 02 17 | 691 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.1+ | | | | |

**2006 SM$_{175}$ = 1999 TC$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.44171 | | | (2000.0) | | |
| $n$ | 0.28077032 | $\omega$ | 40.41610 | | +0.99769233 | −0.06628612 |
| $a$ | 2.3097692 | $\Omega$ | 323.37668 | | +0.05418860 | +0.90783814 |
| $e$ | 0.1349227 | $i$ | 1.41228 | | +0.04090989 | +0.41404839 |
| $P$ | 3.51 | $H$ | 18.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.0 | 0.2− | 2006 07 25 | G96 | 0.3− | 0.5− | 2006 08 28 | 691 | 0.0 | 0.2+ |
| 1992 10 01 | 691 | 0.2− | 0.0 | 2006 07 25 | G96 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 1992 10 01 | 691 | 0.1+ | 0.1+ | 2006 07 25 | G96 | 0.7+ | 0.6− | 2006 09 25 | G96 | 0.3− | 0.3− |
| 1999 10 09 | 691 | 0.2− | 0.1− | 2006 07 25 | G96 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.4− |
| 1999 10 09 | 691 | 0.2+ | 0.1− | 2006 08 19 | 691 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.3− |
| 1999 10 09 | 691 | 0.0 | 0.2+ | 2006 08 19 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3− | 0.0 |
| 1999 10 15 | 691 | 0.1+ | 0.0 | 2006 08 19 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.5− |
| 1999 10 15 | 691 | 0.0 | 0.2+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.0 |
| 1999 10 15 | 691 | 0.1+ | 0.1+ | 2006 08 28 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.3− |

**2006 ST$_{176}$ = 2004 BD$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 172.43211 | | | (2000.0) | | |
| $n$ | 0.24680004 | $\omega$ | 74.41323 | | −0.96051732 | +0.27816454 |
| $a$ | 2.5171315 | $\Omega$ | 121.73717 | | −0.25770360 | −0.88197008 |
| $e$ | 0.0605027 | $i$ | 0.37491 | | −0.10485864 | −0.38046453 |
| $P$ | 3.99 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 18 | 691 | 0.3− | 0.3− | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.2− | 0.0 | |
| 1998 09 18 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.6− | 0.1− | 2006 09 30 | 291 | 0.1− | 0.0 | |
| 1998 09 18 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 1.1+ | 0.2− | 2006 09 30 | 291 | 0.0 | 0.2+ | |
| 2000 02 12 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.1− | 0.1+ | |
| 2000 02 12 | 691 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 09 30 | 291 | 0.3− | 0.1+ | |
| 2000 02 12 | 691 | 0.0 | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 09 30 | 291 | 0.2− | 0.1+ | |
| 2003 12 22 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 09 30 | 291 | 0.0 | 0.1+ | |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 10 02 | 291 | 0.0 | 0.6+ | |
| 2003 12 22 | 691 | 0.3− | 0.0 | 2006 09 28 | G96 | 1.3+ | 0.5− | 2006 10 02 | 291 | 0.0 | 0.2− | |
| 2004 01 16 | 691 | 0.0 | 0.3− | 2006 09 28 | 291 | 0.2+ | 0.2− | 2006 10 02 | 291 | 0.2− | 0.1+ | |
| 2004 01 16 | 691 | 0.1+ | 0.3− | 2006 09 28 | 291 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1− | |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2006 09 28 | 291 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2− | |
| 2004 02 13 | 691 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− | |
| 2004 02 13 | 691 | 0.1− | 0.1− | 2006 09 30 | 291 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.3− | |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 09 30 | 291 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2+ | |
| 2006 09 14 | 691 | 0.3+ | 0.3− | 2006 09 30 | 291 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.3− | |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.4+ | |
| 2006 09 14 | 691 | 0.5+ | 0.1− | 2006 09 30 | G96 | 0.6− | 0.4+ | 2006 10 27 | G96 | 0.9+ | 0.5+ | |
| 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 09 30 | 291 | 0.1− | 0.4+ | | | | | |

**2006 SA$_{177}$ = 2001 WP$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.94967 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18631447 | $\omega$ | 355.08497 | | +0.95039730 | −0.31019303 | |
| $a$ | 3.0360226 | $\Omega$ | 23.02625 | | +0.28733198 | +0.84735908 | |
| $e$ | 0.1330585 | $i$ | 3.35901 | | +0.11910208 | +0.43100218 | |
| $P$ | 5.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 16 | 106 | 0.2+ | 0.8− | |
| 2001 11 19 | 704 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 10 17 | 703 | (2.4− | 0.5−) | |
| 2001 11 19 | 704 | 0.6+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 1.1+ | 0.6− | |
| 2001 11 19 | 704 | 0.7+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 17 | 703 | (2.1− | 1.1+) | |
| 2001 11 19 | 704 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.8− | 1.0+ | |
| 2001 11 21 | 704 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | |
| 2001 11 21 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.9− | 0.3− | 2006 10 20 | 644 | 0.3+ | 0.3+ | |
| 2001 11 21 | 704 | 0.5− | 0.4− | 2006 10 12 | 644 | 0.6− | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.0 | |
| 2001 11 21 | 704 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− | |
| 2001 11 21 | 704 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2006 09 14 | 703 | 0.0 | 0.8− | 2006 10 15 | 106 | 0.5− | 1.0− | 2006 10 21 | 644 | 0.1− | 0.2+ | |
| 2006 09 14 | 703 | (0.2+ | 2.0−) | 2006 10 15 | 106 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.3− | |
| 2006 09 14 | 703 | 0.9− | 1.0− | 2006 10 15 | 106 | 0.7− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.3− | |
| 2006 09 14 | 703 | 0.4+ | 0.1+ | 2006 10 16 | 106 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.4− | |
| 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 16 | 106 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− | |
| 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 106 | 0.3+ | 0.1+ | | | | | |
| 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 106 | 0.1− | 0.1− | | | | | |

**2006 SD$_{178}$ = 2005 NS$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.08580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17611347 | $\omega$ | 322.82016 | | −0.33279579 | −0.94290683 | |
| $a$ | 3.1521558 | $\Omega$ | 146.61260 | | +0.87083948 | −0.31266144 | |
| $e$ | 0.1543481 | $i$ | 1.37227 | | +0.36178109 | −0.11475861 | |
| $P$ | 5.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 07 | 568 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.0 | |
| 2005 07 07 | 568 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.0 | |
| 2005 07 07 | 568 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.1+ | 2006 10 20 | G96 | 0.7− | 0.4− | |
| 2005 07 08 | 568 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.5+ | 0.4+ | |
| 2006 09 25 | G96 | 0.5− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.3+ | | | | | |
| 2006 09 25 | G96 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1+ | | | | | |

**2006 SG$_{178}$ = 2002 VM$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.55539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23254223 | $\omega$ | 231.11846 | | +0.51149851 | −0.85926867 | |
| $a$ | 2.6189959 | $\Omega$ | 188.12274 | | +0.79925585 | +0.47796274 | |
| $e$ | 0.2068944 | $i$ | 2.09316 | | +0.31553030 | +0.18223330 | |
| $P$ | 4.24 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 950 | 0.1− | 0.5− | 2006 09 16 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.0 | |
| 2002 11 05 | 950 | 0.1− | 0.6− | 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.1− | |
| 2002 11 05 | 950 | 0.2− | 0.4− | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1− | 0.3− | |
| 2002 11 05 | 950 | 0.3+ | 0.7+ | 2006 09 25 | G96 | 0.4− | 0.2− | 2006 10 16 | G96 | 0.6− | 0.2+ | |
| 2002 11 05 | 950 | 0.3− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.0 | 0.1+ | |
| 2002 11 05 | 950 | 0.3+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.8+ | 0.2+ | |
| 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.2− | 0.3− | |

**2006 SW$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.17381 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22309710 | $\omega$ | 198.31478 | | −0.91117394 | +0.41183025 | |
| $a$ | 2.6924032 | $\Omega$ | 6.04996 | | −0.36155400 | −0.78456834 | |
| $e$ | 0.1527557 | $i$ | 6.84737 | | −0.19758735 | −0.46351738 | |
| $P$ | 4.42 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 02 | 691 | 0.4− | 0.2+ | 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.3− | |
| 2000 03 02 | 691 | 0.2− | 0.2+ | 2004 02 17 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.9+ | 0.1− | |
| 2000 03 02 | 691 | 0.4− | 0.0 | 2004 02 17 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.4+ | 0.2− | |
| 2000 03 14 | 691 | 0.4+ | 0.3− | 2004 02 17 | 691 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.4− | |
| 2000 03 14 | 691 | 0.2+ | 0.3− | 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− | |
| 2000 03 14 | 691 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.2+ | 0.7− | |
| 2004 02 17 | 691 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.1+ | | | | | |

**2006 SK$_{181}$ = 1995 SX$_{18}$ = 1999 VQ$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.73658 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26653358 | $\omega$ | 307.36655 | | −0.94703091 | −0.32104855 | |
| $a$ | 2.3913038 | $\Omega$ | 213.90908 | | +0.29886724 | −0.87223823 | |
| $e$ | 0.1208313 | $i$ | 0.79739 | | +0.11751945 | −0.36895568 | |
| $P$ | 3.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1− | 0.9− | 2001 04 15 | 701 | 0.7− | 1.4+ | 2006 09 25 | G96 | 0.5+ | 0.6− | |
| 1995 09 18 | 691 | 0.1− | 0.1− | 2001 04 15 | 701 | 1.2− | 0.7+ | 2006 09 25 | G96 | 0.3+ | 0.2− | |
| 1995 09 18 | 691 | 1.1− | 0.1− | 2001 04 27 | 704 | 0.8− | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.5− | |
| 1995 09 22 | 691 | 0.5− | 0.0 | 2001 04 27 | 704 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.4− | 0.3− | |
| 1995 09 22 | 691 | 0.0 | 0.1− | 2001 04 27 | 704 | 0.6+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.4− | |
| 1995 09 22 | 691 | 0.2+ | 0.2− | 2002 08 15 | 291 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.4− | |
| 1998 07 02 | 691 | 0.9+ | 0.4+ | 2002 08 15 | 291 | 0.5+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.0 | |
| 1998 07 02 | 691 | 0.1+ | 0.3+ | 2002 08 15 | 291 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.5+ | |
| 1998 07 02 | 691 | 0.3+ | 0.1+ | 2002 09 04 | 644 | 0.0 | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.5+ | |
| 1998 07 15 | 691 | 1.0+ | 0.6+ | 2002 09 04 | 644 | 0.1− | 1.0+ | 2006 10 16 | G96 | 0.1− | 0.4− | |
| 1998 07 15 | 691 | 0.3− | 0.1− | 2002 09 04 | 644 | 0.0 | 0.9+ | 2006 10 16 | G96 | 0.3− | 0.2− | |
| 1998 07 15 | 691 | 1.0− | 0.3− | 2004 01 21 | 704 | 0.1+ | 1.0+ | 2006 10 16 | G96 | 0.3+ | 0.5− | |
| 1999 11 09 | 704 | 0.4+ | 0.0 | 2004 01 21 | 704 | 0.5+ | 0.9+ | 2006 10 16 | G96 | 0.1− | 0.4− | |
| 1999 11 09 | 704 | 0.1+ | 0.2+ | 2004 01 21 | 704 | 0.1− | 1.0+ | 2006 10 28 | G96 | 0.2+ | 0.0 | |
| 1999 11 09 | 704 | 1.2+ | 0.7+ | 2004 01 21 | 704 | 1.4+ | 1.3+ | 2006 10 28 | G96 | 0.5− | 0.1− | |
| 1999 11 09 | 704 | 0.3− | 0.3+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.2− | |
| 1999 11 09 | 704 | 1.4+ | 0.5+ | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.5− | 0.4− | |
| 1999 11 12 | 704 | 0.5+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.8− | |
| 1999 11 12 | 704 | 0.5+ | 0.4+ | 2006 09 25 | 691 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.4− | |
| 1999 11 12 | 704 | 0.3+ | 0.6+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− | |
| 1999 11 12 | 704 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3− | 0.7− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.7+ | 0.8+ | 2006 09 25 | G96 | 0.4+ | 0.1− | | | | | | |
| 2001 04 15 | 701 | (2.0− | 1.0+) | 2006 09 25 | G96 | 0.1+ | 0.3− | | | | | | |

**2006 SU$_{182}$ = 2004 EC$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.56467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21351597 | $\omega$ | 165.39524 | | +0.99670854 | | −0.07883518 |
| $a$ | 2.7723569 | $\Omega$ | 199.15667 | | +0.06740007 | | +0.93536300 |
| $e$ | 0.1081130 | $i$ | 3.30131 | | +0.04504800 | | +0.34479135 |
| $P$ | 4.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | (25.8+ | 10.1+) | 2006 09 20 | 012 | 1.0+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2001 08 24 | 644 | (25.1+ | 10.0+) | 2006 09 20 | 012 | 0.5+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2001 08 24 | 644 | (25.5+ | 10.5+) | 2006 09 20 | 012 | (2.0− | 0.1+) | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 03 15 | 691 | 0.3− | 0.1+ | 2006 09 20 | 012 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2004 03 15 | 691 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2004 03 23 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.9− | 0.8− |
| 2006 07 22 | G96 | 0.4− | 1.0− | 2006 09 26 | G96 | 0.1+ | 0.7− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2006 07 22 | G96 | 0.6− | 0.3− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.1− | 0.2− |
| 2006 07 22 | G96 | 0.4+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.8− |
| 2006 07 22 | G96 | 0.8+ | 0.4+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2006 09 14 | 691 | 0.5+ | 0.1− | 2006 10 16 | G96 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 16 | G96 | 0.0 | 0.2− | | | | |

**2006 SD$_{183}$ = 1995 VL$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.93259 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17296616 | $\omega$ | 140.66106 | | +0.85197834 | | +0.52357643 |
| $a$ | 3.1902787 | $\Omega$ | 187.76660 | | −0.48185033 | | +0.78348194 |
| $e$ | 0.1666002 | $i$ | 0.33859 | | −0.20482474 | | +0.33469952 |
| $P$ | 5.70 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.1− | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 10 15 | 291 | 0.0 | 0.0 |
| 1995 11 14 | 691 | 0.3− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.7− | 2006 10 15 | 291 | 0.3− | 0.2+ |
| 1995 11 14 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 1995 11 16 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.1− |
| 1995 11 16 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.4− |
| 1995 11 16 | 691 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2006 09 15 | 691 | 0.8− | 0.2+ | 2006 09 30 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 15 | 291 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.7− |

**2006 SL$_{183}$ = 2004 FB$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.00913 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21533513 | $\omega$ | 15.77682 | | +0.68138827 | | −0.73190724 |
| $a$ | 2.7567209 | $\Omega$ | 31.27140 | | +0.67054826 | | +0.62168036 |
| $e$ | 0.0693954 | $i$ | 0.51570 | | +0.29338551 | | +0.27897190 |
| $P$ | 4.58 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 291 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2004 03 19 | 291 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.3− |
| 2004 03 19 | 291 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.6− | 2006 10 27 | G96 | 0.5− | 0.0 |
| 2004 03 23 | 291 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2004 03 23 | 291 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.1− |
| 2004 03 23 | 291 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2006 09 25 | G96 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 | | | | |

**2006 SU$_{183}$ = 2001 YS$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.37416 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18105006 | $\omega$ | 202.33305 | | +0.91373502 | | −0.40631042 |
| $a$ | 3.0945934 | $\Omega$ | 181.64037 | | +0.37479633 | | +0.84323130 |
| $e$ | 0.1719376 | $i$ | 0.77462 | | +0.15689492 | | +0.35195570 |
| $P$ | 5.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.8− | 0.6− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2001 12 17 | 704 | 0.5− | 1.1− | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 1.0− | 0.9− | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.4− |
| 2001 12 18 | 691 | 0.3+ | 0.4+ | 2006 10 03 | 691 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 691 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2001 12 18 | 691 | 0.2+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.6+ | 0.0 |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.6+ | 0.1− |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.2− | 0.6− | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 15 | 703 | (2.1− | 1.6+) | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 15 | 703 | 0.8− | 0.9− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 15 | 703 | 0.6− | 1.1+ | 2006 11 11 | G96 | 0.2+ | 0.1− |

**2006 SH$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.03895 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27427080 | $\omega$ | 263.94237 | | +0.27806621 | | +0.95938636 |
| $a$ | 2.3461170 | $\Omega$ | 22.37904 | | −0.82455662 | | +0.26377325 |
| $e$ | 0.1016689 | $i$ | 7.16807 | | −0.49273274 | | +0.10000746 |
| $P$ | 3.59 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.2− | 0.3− | 2005 05 01 | 644 | 0.3+ | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2002 07 16 | 644 | 0.3+ | 0.0 | 2005 05 01 | 644 | 0.1+ | 0.1− | 2006 09 29 | 691 | 0.2− | 0.1+ |
| 2002 07 16 | 644 | 0.0 | 0.1+ | 2005 05 01 | 644 | 0.1+ | 0.3+ | 2006 09 29 | 691 | 0.2− | 0.3+ |
| 2005 04 02 | G96 | 0.2+ | 0.5− | 2006 09 14 | 703 | 1.0+ | 1.2− | 2006 09 29 | 691 | 0.0 | 0.2+ |
| 2005 04 02 | G96 | 0.7− | 0.2− | 2006 09 14 | 703 | 0.1+ | 0.5+ | 2006 10 15 | 703 | 0.3+ | 0.5− |
| 2005 04 02 | G96 | 0.4+ | 0.2− | 2006 09 14 | 703 | 0.3− | 0.2+ | 2006 10 15 | 703 | 0.1− | 0.6− |
| 2005 04 02 | G96 | 0.1− | 0.0 | 2006 09 14 | 703 | 0.6− | 0.1− | 2006 10 15 | 703 | (1.9+ | 0.6−) |
| 2005 04 04 | 691 | 0.3− | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | (3.2− | 2.1+) |
| 2005 04 04 | 691 | 0.1+ | 0.5+ | 2006 09 25 | 691 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.7− | 1.0+ |
| 2005 04 04 | 691 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.5+ |
| 2005 04 17 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2005 04 17 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.7− | 0.7+ |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2− | | | | |

**2006 SJ$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.12960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27466318 | $\omega$ | 140.58815 | | +0.18637634 | | +0.98239842 |
| $a$ | 2.3438820 | $\Omega$ | 140.14870 | | −0.90627579 | | +0.17683467 |
| $e$ | 0.1932626 | $i$ | 1.12117 | | −0.37937851 | | +0.06019014 |
| $P$ | 3.59 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.2+ | 0.2− | 2002 07 21 | 644 | 0.2− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.1− |
| 1995 09 19 | 691 | 0.3− | 0.3+ | 2002 08 07 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ |
| 1995 09 19 | 691 | 0.2+ | 0.4− | 2002 08 07 | 644 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.1+ | 0.1+ |
| 2002 07 13 | 644 | 0.3+ | 0.4− | 2002 08 07 | 644 | 0.5− | 0.2+ | 2006 09 26 | G96 | 0.5− | 0.4− |
| 2002 07 13 | 644 | 0.5+ | 0.2− | 2005 03 04 | G96 | 0.2− | 0.4− | 2006 09 26 | G96 | 0.2− | 0.4− |
| 2002 07 13 | 644 | 0.1+ | 0.3+ | 2005 03 04 | G96 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.1− |
| 2002 07 21 | 644 | 0.0 | 0.2− | 2005 03 04 | G96 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2002 07 21 | 644 | 0.3− | 0.1+ | 2005 03 04 | G96 | 0.2− | 0.3− | | | | |

**2006 ST$_{184}$ = 2006 UV$_{243}$ = 2000 QU$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.60884 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18409436 | $\omega$ | 301.99092 | | +0.76751061 | | +0.64103538 |
| $a$ | 3.0603826 | $\Omega$ | 18.14008 | | −0.58699554 | | +0.70346521 |
| $e$ | 0.0733235 | $i$ | 0.19324 | | −0.25761151 | | +0.30693703 |
| $P$ | 5.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 807 | 0.6+ | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 28 | 691 | 0.3− | 0.1− |
| 2000 08 25 | 807 | 0.6+ | 0.7+ | 2006 09 25 | G96 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.9+ |
| 2000 08 30 | 691 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.2− | 0.6+ |
| 2000 08 30 | 691 | 0.4− | 0.4+ | 2006 09 26 | 691 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2000 08 30 | 691 | 0.3− | 0.6+ | 2006 09 26 | 691 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.3− |
| 2001 11 11 | 691 | 0.5+ | 0.3− | 2006 09 30 | 691 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 11 11 | 691 | 0.5− | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2+ | 1.0− |
| 2001 11 11 | 691 | 0.6− | 0.1− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2− | 1.1− |
| 2001 11 20 | 691 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2001 11 20 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.5− | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2001 11 20 | 691 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.5− | 0.2− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2003 01 29 | 291 | 0.6+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 2003 01 29 | 291 | 0.2+ | 0.8+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2003 01 29 | 291 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2006 09 25 | G96 | 1.0+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.5− |

**2006 SU$_{184}$ = 2001 TV$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.16026 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20522104 | $\omega$ | 239.37799 | | +0.30151593 | | −0.95344205 |
| $a$ | 2.8465674 | $\Omega$ | 193.07749 | | +0.88365798 | | +0.28181300 |
| $e$ | 0.0580443 | $i$ | 1.52802 | | +0.35810154 | | +0.10737641 |
| $P$ | 4.80 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.6− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.6+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.7− | 0.3+ |
| 2006 09 25 | G96 | 0.7+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.3+ | 0.8− |
| 2006 09 25 | G96 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.6− |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.4− | | | | |
| 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.4− | | | | |

**2006 SH$_{185}$ = 2002 TD$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.68892 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25153984 | $\omega$ | 94.49785 | | +0.29983075 | | −0.95372469 |
| $a$ | 2.4854109 | $\Omega$ | 338.01383 | | +0.84958996 | | +0.27771850 |
| $e$ | 0.2126181 | $i$ | 3.46075 | | +0.43393365 | | +0.11524604 |
| $P$ | 3.92 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.1− | 0.2− | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 291 | 0.1+ | 0.1+ |
| 2002 10 05 | 644 | 0.3+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 10 29 | 291 | 0.4+ | 0.1+ |
| 2002 10 05 | 644 | 0.2+ | 0.0 | 2006 10 03 | 291 | 0.5− | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 2002 10 06 | 644 | 0.2− | 0.0 | 2006 10 03 | 291 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2002 10 06 | 644 | 0.1+ | 0.1+ | 2006 10 03 | 291 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.5+ | 0.0 |
| 2002 10 06 | 644 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 10 29 | G96 | 0.0 | 0.3− |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 10 29 | G96 | 0.3+ | 0.1− |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.4− |
| 2006 09 25 | 691 | 0.1+ | 0.3− | 2006 10 21 | 703 | 1.4− | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.2+ |
| 2006 09 26 | 291 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2006 09 26 | 291 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3− | 0.7− | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2006 09 26 | 291 | 0.0 | 0.4− | 2006 10 21 | 703 | (0.6− | 1.7+) | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 10 29 | 291 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.4− | 0.1− |

**2006 SK$_{185}$ = 2005 ML**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.60697 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23777249 | $\omega$ | 185.71847 | | +0.86189032 | | −0.44226787 |
| $a$ | 2.5804472 | $\Omega$ | 205.62168 | | +0.48502306 | | +0.86175056 |
| $e$ | 0.0249111 | $i$ | 35.00827 | | +0.14797875 | | −0.24856610 |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 17 | G96 | 0.3− | 0.1+ | 2006 09 26 | 291 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.3− |
| 2005 06 17 | G96 | 0.0 | 0.1− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.2+ |
| 2005 06 17 | G96 | 0.2+ | 0.1− | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.5+ |
| 2005 06 17 | G96 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.5+ |
| 2005 06 18 | G96 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.4+ |
| 2005 06 18 | G96 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 1.4− | 0.5− |
| 2005 06 18 | G96 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.8− | 2006 10 21 | 703 | 0.8− | 0.3− |
| 2005 06 18 | G96 | 0.1+ | 0.1− | 2006 10 13 | G98 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.5− | 0.4− |
| 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 13 | G98 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.2− | 0.5− |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 13 | G98 | 0.6+ | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 13 | G98 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2006 09 26 | 291 | 0.1− | 0.1+ | 2006 10 13 | G98 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2006 09 26 | 291 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.1+ | | | | |

**2006 ST$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.06393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37653557 | $\omega$ | 41.58473 | | +0.48279779 | | −0.86567608 |
| $a$ | 1.8993225 | $\Omega$ | 20.65958 | | +0.67129676 | | +0.26880324 |
| $e$ | 0.1004692 | $i$ | 22.02859 | | +0.56237617 | | +0.42231475 |
| $P$ | 2.62 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 31 | 621 | (2.5+ | 1.2+) | 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2005 04 01 | 621 | 1.4+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 2005 04 01 | 621 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2005 04 30 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1− | 0.4+ |
| 2005 04 30 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2005 04 30 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2005 05 14 | G96 | 0.5− | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 2005 05 14 | G96 | 0.7− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.5− |
| 2005 05 14 | G96 | 0.7− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.6− | 1.2− |
| 2005 05 14 | G96 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.2− | 0.2− |
| 2006 09 14 | 703 | 0.1− | 0.5+ | 2006 10 19 | 703 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.6+ | 0.4+ |
| 2006 09 14 | 703 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 1.2+ | 0.1+ |
| 2006 09 14 | 703 | 0.6− | 0.9+ | 2006 10 19 | 703 | 0.8− | 0.5+ | 2006 11 15 | 703 | 0.6+ | 1.1+ |
| 2006 09 14 | 703 | 1.3− | 0.8+ | 2006 10 19 | A50 | 0.5− | 0.4− | 2006 11 15 | 703 | 0.0 | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.3+ | | | | |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1− | | | | |

**2006 SX$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.04761 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28212182 | $\omega$ | 331.84093 | | +0.99751088 | | +0.06432055 |
| $a$ | 2.3023867 | $\Omega$ | 24.52221 | | −0.04417376 | | +0.88943367 |
| $e$ | 0.1685506 | $i$ | 3.99209 | | −0.05496119 | | +0.45251586 |
| $P$ | 3.49 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 1992 10 25 | 691 | 0.5− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 25 | 691 | 0.7+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.0 | | |
| 1999 11 15 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2− | 0.1+ | | |
| 1999 11 15 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 1999 11 15 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.2− | | |
| 2004 01 18 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.1− | | |
| 2004 01 18 | 691 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.9+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 1.1− | | |
| 2004 01 18 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.9− | | |
| 2006 09 25 | G96 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.6+ | | |
| 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.7+ | | |
| 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.1− | | |
| 2006 09 25 | G96 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.2− | 0.1+ | | |
| 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 10 28 | 691 | (1.3− | 1.7+) | 2006 11 13 | 691 | 0.2− | 0.1+ | | |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3− | | |
| 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.2+ | 0.0 | | |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.0 | | |

### 2006 SA$_{186}$ = 2002 VJ$_{133}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.28571 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24302318 | $\omega$ | 37.89287 | | +0.45586310 | | −0.88841652 |
| $a$ | 2.5431438 | $\Omega$ | 25.12238 | | +0.78245002 | | +0.37115539 |
| $e$ | 0.1010689 | $i$ | 7.29343 | | +0.42421786 | | +0.27011066 |
| $P$ | 4.06 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 704 | 0.7− | 0.7− | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 09 | 691 | 0.5+ | 0.3− | | |
| 2002 11 05 | 704 | 1.1+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.1+ | | |
| 2002 11 05 | 704 | 1.4+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5− | 2006 11 11 | 691 | 0.4+ | 0.2− | | |
| 2002 11 05 | 704 | 1.0+ | 0.4+ | 2006 10 20 | 644 | 0.7+ | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.1+ | | |
| 2002 11 11 | 049 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.7+ | | |
| 2002 11 11 | 049 | 0.9− | 0.8− | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.4− | | |
| 2002 11 11 | 049 | 0.8− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.3+ | | |
| 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.0 | | |
| 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 10 26 | 104 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.7+ | | |
| 2006 09 25 | G96 | 0.7+ | 0.5− | 2006 10 26 | 104 | 0.8− | 0.1+ | 2006 11 19 | 704 | (0.4+ | 2.5+) | | |
| 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 10 26 | 104 | 0.6− | 0.1− | 2006 11 19 | 704 | (1.3+ | 1.5+) | | |
| 2006 09 27 | G96 | 0.0 | 0.7− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | (0.3+ | 2.1+) | | |
| 2006 09 27 | G96 | 0.2+ | 0.7− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.2− | | |
| 2006 09 27 | G96 | 0.4+ | 0.6− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.2− | | |
| 2006 09 27 | G96 | 0.0 | 0.8− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.2− | 0.4+ | | |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.4− | | |
| 2006 10 12 | 691 | 0.3− | 0.2− | 2006 10 31 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.2− | | |
| 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1− | | |
| 2006 10 15 | 691 | 0.5− | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.0 | | |
| 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2006 10 19 | 691 | 0.2+ | 0.9+ | 2006 11 09 | 691 | 0.3+ | 0.1− | | | | | | |

### 2006 SC$_{186}$ = 2005 MJ$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.40553 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18484005 | $\omega$ | 271.54302 | | +0.47132103 | | +0.88183028 |
| $a$ | 3.0521462 | $\Omega$ | 26.59388 | | −0.79505802 | | +0.43228905 |
| $e$ | 0.2708522 | $i$ | 1.94916 | | −0.38175809 | | +0.18841849 |
| $P$ | 5.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 701 | 0.1+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 10 17 | 104 | 0.1− | 0.5− | | |
| 2005 06 30 | 701 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 104 | 0.3+ | 0.2+ | | |
| 2005 06 30 | 701 | 0.5+ | 0.7− | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 10 29 | G96 | 0.4+ | 0.0 | | |
| 2005 07 05 | 701 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.3− | | |
| 2005 07 05 | 701 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.4+ | 0.1+ | | |
| 2005 07 05 | 701 | 0.6− | 0.1− | 2006 10 16 | 104 | 1.2+ | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.1+ | | |
| 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 16 | 104 | 0.2− | 0.8+ | 2006 10 29 | 691 | 0.1− | 0.1+ | | |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 16 | 104 | (2.3− | 0.3+) | 2006 10 29 | 691 | 0.1− | 0.1+ | | |
| 2006 09 25 | G96 | 0.2+ | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.5− | 0.0 | | |
| 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.1+ | | |
| 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.2− | 0.3+ | | |
| 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 10 16 | 947 | 0.3+ | 0.3− | 2006 11 09 | 691 | 0.1− | 0.2+ | | |
| 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 10 16 | 947 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.6− | 0.3− | | |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 10 16 | 947 | 0.1+ | 0.4− | 2006 11 11 | 691 | 1.0+ | 0.6− | | |
| 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 10 17 | 104 | 0.5− | 0.5− | 2006 11 11 | 691 | 0.2+ | 0.1− | | |

### 2006 SL$_{186}$ = 1991 VT$_{8}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.91862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26233987 | $\omega$ | 197.13629 | | +0.73576983 | | −0.67611170 |
| $a$ | 2.4167210 | $\Omega$ | 205.53530 | | +0.63145340 | | +0.70567706 |
| $e$ | 0.2526887 | $i$ | 5.18180 | | +0.24476389 | | +0.21187934 |
| $P$ | 3.76 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 04 | 691 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 10 21 | 703 | 1.2+ | 0.2− | | |
| 1991 11 04 | 691 | 0.7+ | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 1991 11 04 | 691 | 0.3+ | 0.3− | 2006 10 15 | 691 | 0.4+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 1991 11 08 | 691 | 0.5− | 0.0 | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 1991 11 08 | 691 | 0.5− | 0.4− | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2− | | |
| 1991 11 08 | 691 | 0.5− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− | | |
| 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.2− | | |
| 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− | | |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 2006 09 26 | G96 | 0.5+ | 1.0− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.5− | 2006 10 28 | 691 | 0.3+ | 0.0 | | |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.5+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 10 21 | 703 | 1.3+ | 0.3− | 2006 10 28 | 691 | 0.4− | 0.4− | | |

### 2006 SM$_{186}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 243.07676 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21041736 | $\omega$ | 299.83371 | | −0.84198820 | | −0.52709944 |
| $a$ | 2.7995078 | $\Omega$ | 208.82214 | | +0.53943122 | | −0.81924121 |
| $e$ | 0.0744172 | $i$ | 13.79903 | | +0.00835594 | | −0.22585400 |
| $P$ | 4.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 15 | 699 | 0.3− | 0.1− | 2006 09 26 | 291 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.4− | | |
| 2004 04 15 | 699 | 0.2− | 0.7− | 2006 09 26 | 291 | 0.2− | 0.1+ | 2006 10 21 | 703 | 1.1+ | 0.0 | | |
| 2004 04 15 | 699 | 0.2− | 0.9+ | 2006 09 26 | 291 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2004 04 15 | 699 | 1.0+ | 1.3+ | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2004 04 25 | 703 | 0.2+ | 0.7+ | 2006 09 26 | G96 | 0.7+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3− | | |
| 2004 04 25 | 703 | 0.6− | 0.7− | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.1− | 0.1− | | |
| 2004 04 25 | 703 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− | | |
| 2004 04 25 | 703 | (1.6+ | 1.3+) | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 691 | (1.8+ | 0.0 ) | | |
| 2004 05 12 | 699 | 1.0+ | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1− | | |
| 2004 05 12 | 699 | (1.9− | 0.0 ) | 2006 10 15 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.4+ | | |
| 2004 05 12 | 699 | 0.2− | 1.1− | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2004 05 12 | 699 | 0.6− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.3− | | |
| 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.0 | 0.2− | | | | | | |

**2006 SU$_{186}$ = 2005 JJ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.17058 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36271624 | $\omega$ | 12.53556 | | +0.81355996 | −0.55758425 | |
| $a$ | 1.9472635 | $\Omega$ | 23.76770 | | +0.49189108 | +0.50861653 | |
| $e$ | 0.0927195 | $i$ | 24.16475 | | +0.31010217 | +0.65605566 | |
| $P$ | 2.72 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.1+ |
| 2005 05 08 | G96 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.1− | 0.2+ |
| 2005 05 08 | G96 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.9− |
| 2005 05 08 | G96 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.1− | 0.0 |
| 2005 05 12 | G96 | 0.3+ | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.1+ |
| 2005 05 12 | G96 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.5− |
| 2005 05 12 | G96 | 0.0 | 0.3− | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.4+ | 0.2− |
| 2005 05 12 | G96 | 0.5+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.3+ |
| 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.3+ |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1− |

**2006 SW$_{186}$ = 2001 SD$_{301}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.88100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21502362 | $\omega$ | 335.28042 | | +0.98396689 | −0.16590153 | |
| $a$ | 2.7593827 | $\Omega$ | 34.46975 | | +0.17674182 | +0.85782264 | |
| $e$ | 0.0491836 | $i$ | 6.64231 | | +0.02390562 | +0.48643294 | |
| $P$ | 4.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.1− |
| 2001 09 20 | 704 | 1.4− | 0.1+ | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.1− | 1.4+ | 2006 09 27 | G96 | 0.7+ | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 09 23 | 704 | 0.3+ | 0.5− | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2001 09 23 | 704 | 0.0 | 0.7− | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2001 09 23 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 704 | 0.7+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 291 | 0.1+ | 0.1− |
| 2001 09 23 | 704 | 1.1+ | 0.8− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 21 | 291 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 21 | 291 | 0.0 | 0.1− |
| 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.2− | | | | |

**2006 SX$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.36875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17799695 | $\omega$ | 327.77573 | | +0.99400001 | −0.04312629 | |
| $a$ | 3.1298800 | $\Omega$ | 35.12536 | | +0.08964563 | +0.84775417 | |
| $e$ | 0.1156669 | $i$ | 10.06145 | | −0.06267091 | +0.52863314 | |
| $P$ | 5.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.4− | 0.4+ |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.2+ |
| 2004 05 19 | 691 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.2− | 0.4+ |
| 2004 05 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.7+ | 1.1− |
| 2004 05 19 | 691 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 1.0− |
| 2005 08 08 | E12 | 0.6− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2005 08 08 | E12 | 0.3+ | 1.2+ | 2006 10 27 | 703 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2005 08 08 | E12 | 0.0 | 0.8+ | 2006 10 27 | 703 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2005 08 08 | E12 | 0.3+ | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.3− | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2005 08 25 | E12 | 0.7− | 0.6+ | 2006 10 27 | 703 | 0.1− | 0.7− | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2005 08 25 | E12 | 0.8− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2005 08 25 | E12 | 0.8+ | 0.9− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2005 08 25 | E12 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 16 | 704 | (0.1− | 2.2+) |
| 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 1.1− | 0.7− |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.9+ |
| 2006 09 27 | G96 | 0.2+ | 0.7− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.6+ | 1.0+ |
| 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2006 09 27 | G96 | 0.1+ | 0.6− | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.5− |
| 2006 09 27 | G96 | 0.2− | 0.6− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | (0.4− | 2.2+) |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.5− | 1.2+ |
| 2006 09 27 | G96 | 0.3+ | 0.7− | 2006 11 09 | 644 | 0.6− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 1.3− |
| 2006 09 27 | G96 | 0.0 | 0.6− | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.2+ |
| 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.7+ | 0.4− |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.6+ | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.3+ | | | | |

**2006 SZ$_{186}$ = 1999 VO$_{141}$ = 2005 JS$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.09409 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28249566 | $\omega$ | 320.66629 | | +0.99482856 | +0.09485891 | |
| $a$ | 2.3003550 | $\Omega$ | 33.94310 | | −0.06877996 | +0.89217536 | |
| $e$ | 0.1315927 | $i$ | 3.72779 | | −0.07473584 | +0.44161626 | |
| $P$ | 3.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.2− |
| 1999 11 10 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.3− | 0.2+ |
| 1999 11 10 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.2− | 0.2− |
| 1999 11 14 | 704 | 1.3− | 0.6− | 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1− |
| 1999 11 14 | 704 | 0.8+ | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 1.0+ |
| 1999 11 14 | 704 | 1.0+ | 0.5− | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 1999 11 15 | 691 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.4+ |
| 1999 11 15 | 691 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.7+ |
| 1999 11 15 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.0 |
| 2005 05 07 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (1.7+ | 0.9+) |
| 2005 05 07 | 691 | 0.2+ | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 1.3+ | 0.5+ |
| 2005 05 07 | 691 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.7+ |
| 2005 05 10 | G96 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.7+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.6+ |
| 2005 05 10 | G96 | 0.2− | 0.7+ | 2006 11 01 | G96 | 0.4+ | 0.5− | 2006 11 21 | 704 | 1.1+ | 0.7+ |
| 2005 05 10 | G96 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.2+ | 0.7− |
| 2005 05 10 | G96 | 0.3− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 1.5− | 0.1− |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.2− | 2006 11 29 | 704 | 0.6− | 0.7− |
| 2006 09 25 | G96 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.2− | 1.1+ |
| 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.1− | | | | |

**2006 SW$_{187}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.42708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26067115 | $\omega$ | 10.01950 | | +0.87889928 | −0.47537059 | |
| $a$ | 2.4270240 | $\Omega$ | 18.52207 | | +0.42859430 | +0.75065383 | |
| $e$ | 0.1320044 | $i$ | 7.13962 | | +0.20938718 | +0.45884815 | |
| $P$ | 3.78 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 07 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 1991 11 07 | 691 | 0.3− | 0.4− | 2006 09 20 | 704 | 1.2− | 0.6− | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 1991 11 07 | 691 | 0.1+ | 0.8+ | 2006 09 20 | 704 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.7+ | 0.5− |
| 2002 08 30 | 644 | 0.1− | 0.4+ | 2006 09 20 | 704 | 0.4+ | 0.4+ | 2006 10 01 | 704 | 0.4+ | 0.4+ |
| 2002 08 30 | 644 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.5+ | 0.1+ |
| 2002 08 30 | 644 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.5− | 0.1+ | 2006 10 01 | 704 | 0.3− | 0.4− |
| 2002 08 30 | 644 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2002 08 30 | 644 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.8+ | 2006 10 02 | 691 | 0.0 | 0.2− |
| 2002 08 30 | 644 | 0.0 | 0.5+ | 2006 09 27 | 704 | 0.8+ | 0.4+ | 2006 10 02 | 691 | 0.2+ | 0.4− |
| 2004 03 18 | 645 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.4− | 0.7− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2004 03 18 | 645 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.9+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 04 13 | 291 | 0.9− | 1.0+ | 2006 09 28 | 699 | 1.4+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 291 | 0.0 | 0.2+ | 2006 09 28 | 699 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2004 04 13 | 291 | 0.3− | 0.7+ | 2006 09 28 | 699 | 0.9+ | 0.8− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 09 28 | 699 | 0.1− | 1.5+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− |

**2006 SZ$_{187}$ = 1997 UH$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.15898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21432287 | $\omega$ | 46.74742 | | +0.21839772 | −0.97505791 | |
| $a$ | 2.7653941 | $\Omega$ | 30.70324 | | +0.87139271 | +0.17661171 | |
| $e$ | 0.1884610 | $i$ | 4.44297 | | +0.43929169 | +0.13442610 | |
| $P$ | 4.60 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 25 | 691 | 0.6+ | 0.8− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 01 | 291 | 0.0 | 0.1− |
| 1997 10 25 | 691 | 0.4+ | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 01 | 291 | 0.1+ | 0.1+ |
| 1997 10 25 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 1.1− | 0.1− | 2006 10 01 | 291 | 0.1+ | 0.0 |
| 1997 11 03 | 691 | 0.4− | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 02 | 291 | 0.0 | 0.1+ |
| 1997 11 03 | 691 | 0.5− | 0.5− | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 02 | 291 | 0.2− | 0.0 |
| 1997 11 03 | 691 | 0.2− | 0.5− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 10 02 | 291 | 0.1+ | 0.2+ |
| 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.9− | 0.7− | 2006 10 03 | 291 | 0.1− | 0.2+ |
| 2006 09 18 | 691 | 0.1+ | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 10 03 | 291 | 0.1− | 0.2+ |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 10 03 | 291 | 0.3+ | 0.1+ |
| 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.2− | | | | |

**2006 SJ$_{188}$ = 2002 VE$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.80061 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23774821 | $\omega$ | 54.91070 | | +0.30118830 | −0.95219296 | |
| $a$ | 2.5806229 | $\Omega$ | 17.77223 | | +0.81127247 | +0.22769802 | |
| $e$ | 0.1875999 | $i$ | 9.64293 | | +0.50112133 | +0.20367173 | |
| $P$ | 4.15 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 704 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.1− | 0.2+ | 2006 10 01 | 291 | 0.1+ | 0.2− |
| 2002 11 08 | 704 | 0.3+ | 1.1+ | 2006 09 28 | 291 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.1+ | 0.0 |
| 2002 11 08 | 704 | 1.0+ | 0.2− | 2006 09 28 | 291 | 0.0 | 0.2+ | 2006 10 02 | 291 | 0.2+ | 0.0 |
| 2002 11 12 | 704 | 1.1− | 0.1+ | 2006 09 28 | 291 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.4− | 0.8− | 2006 09 28 | G96 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.6− | 0.6+ |
| 2002 11 12 | 704 | 0.1− | 0.7− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.1− |
| 2006 09 18 | 703 | 0.7− | 0.4− | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2006 09 18 | 691 | 0.2− | 0.2− | 2006 09 30 | 291 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.7− |
| 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 09 30 | 291 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2006 09 18 | 691 | 0.2− | 0.0 | 2006 09 30 | 291 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 09 18 | 703 | 0.5+ | 1.4− | 2006 09 30 | 691 | 0.2− | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2006 09 18 | 703 | (0.2− | 2.2−) | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.6+ |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.3+ | 0.7− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | (0.0 | 1.7−) | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 1.0+ | 1.4− | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 10 01 | 704 | 0.8+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 01 | 291 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2006 09 27 | G96 | 0.1− | 0.2+ | 2006 10 01 | 291 | 0.0 | 0.2− | | | | |

**2006 SL$_{188}$ = 2004 DA$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.27327 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21083123 | $\omega$ | 98.72638 | | −0.17050808 | +0.98505442 | |
| $a$ | 2.7958428 | $\Omega$ | 161.40258 | | −0.93144947 | −0.15305631 | |
| $e$ | 0.0604799 | $i$ | 4.38579 | | −0.32144810 | −0.07900348 | |
| $P$ | 4.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 291 | 0.0 | 0.3+ |
| 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 09 28 | 291 | 0.1+ | 0.3+ |
| 2004 02 17 | 691 | 0.2− | 0.5− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 09 28 | 291 | 0.2+ | 0.1+ |
| 2004 02 29 | 691 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.4− |
| 2004 02 29 | 691 | 0.2− | 0.5+ | 2006 09 27 | 291 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.4− |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 09 27 | 291 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.4− |
| 2004 03 17 | 691 | 0.1− | 0.0 | 2006 09 27 | 291 | 0.5− | 0.3+ | 2006 09 28 | G96 | 0.5− | 0.5− |
| 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.6− | 0.6− | 2006 09 30 | 691 | 0.3− | 0.2− |
| 2004 03 17 | 691 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.2− |
| 2006 09 18 | 691 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2− |
| 2006 09 18 | 691 | 0.3+ | 0.5− | 2006 09 27 | G96 | 0.2+ | 0.0 | | | | |

**2006 SP$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.81693 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21667946 | $\omega$ | 204.56209 | | +0.99412815 | −0.10588014 | |
| $a$ | 2.7453068 | $\Omega$ | 161.47462 | | +0.10721406 | +0.93586415 | |
| $e$ | 0.0501300 | $i$ | 4.03009 | | +0.01464138 | +0.33607691 | |
| $P$ | 4.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | (2.4− | 5.7+) | 2006 09 26 | 691 | 0.2− | 1.0− | 2006 09 27 | G96 | 0.2− | 0.4− |
| 2002 12 01 | 704 | (1.6− | 4.6+) | 2006 09 26 | 691 | 0.5− | 1.2− | 2006 09 28 | G96 | 0.5+ | 0.4− |
| 2002 12 01 | 704 | 0.1− | 0.6+ | 2006 09 26 | 691 | 0.3− | 0.7− | 2006 09 28 | G96 | 0.3− | 0.6− |
| 2004 03 21 | 291 | 0.2+ | 0.2− | 2006 09 27 | 291 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.1− |
| 2004 03 21 | 291 | 0.2− | 0.2− | 2006 09 27 | 291 | 0.3− | 0.8− | 2006 09 28 | G96 | 0.3− | 0.4− |
| 2004 03 21 | 291 | 0.2− | 0.3− | 2006 09 27 | 291 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.4+ | 1.1+ |
| 2006 09 18 | 691 | (0.4− | 4.7−) | 2006 09 27 | G96 | 0.6− | 0.6− | 2006 09 30 | 691 | 0.9+ | 1.5+ |
| 2006 09 18 | 691 | (0.0 | 5.2−) | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 09 30 | 691 | 0.6+ | 1.5+ |
| 2006 09 18 | 691 | (0.0 | 4.8−) | 2006 09 27 | G96 | 0.4− | 0.5− | | | | |

**2006 SY$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.21620 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17231122 | $\omega$ | 175.36311 | | −0.07465197 | +0.99576602 | |
| $a$ | 3.1983575 | $\Omega$ | 90.34898 | | −0.91663818 | −0.04733982 | |
| $e$ | 0.1747446 | $i$ | 3.07481 | | −0.39268502 | −0.07879703 | |
| $P$ | 5.72 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 291 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.1− |
| 2004 03 19 | 291 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.4+ | 0.1− |
| 2004 03 19 | 291 | 0.4+ | 0.1− | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.3− | 0.1− |
| 2004 03 28 | 691 | 0.4− | 0.0 | 2006 09 26 | 691 | 0.3− | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2004 03 28 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.5− | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2004 03 28 | 691 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3− |

**2006 SC$_{189}$ = 2005 NJ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.50763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17377458 | $\omega$ | 70.42314 | | −0.98343011 | +0.17394102 | |
| $a$ | 3.1803766 | $\Omega$ | 119.56462 | | −0.18040187 | −0.91114370 | |
| $e$ | 0.0546182 | $i$ | 3.36707 | | −0.01789929 | −0.37357956 | |
| $P$ | 5.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.0 | 0.4− | 2003 02 09 | 291 | 0.2− | 0.6+ | 2006 09 18 | 691 | 0.4+ | 0.2+ |
| 1995 11 15 | 691 | 0.1+ | 0.5− | 2003 02 09 | 291 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 1995 11 15 | 691 | 0.1+ | 0.6− | 2005 07 06 | 291 | (1.5− | 2.0+) | 2006 09 26 | 691 | 0.1+ | 0.1+ |
| 1998 03 25 | 691 | 0.9+ | 0.3− | 2005 07 06 | 291 | 0.4− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 1998 03 25 | 691 | 0.6+ | 0.4− | 2005 07 06 | 291 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2− |
| 1998 03 25 | 691 | 0.4+ | 0.8+ | 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.2− | 0.0 |
| 1998 04 04 | 691 | 0.6− | 0.6− | 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1− |
| 1998 04 04 | 691 | 0.7− | 0.6− | 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.5+ |
| 1998 04 04 | 691 | 0.6− | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 2003 02 09 | 291 | 0.1+ | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2− |

**2006 SE$_{189}$ = 2003 AQ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 295.40888 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.22272418 | | $\omega$ | 283.25288 | | | −0.17443084 | | | −0.98459041 | | | |
| $a$ | 2.6954077 | | $\Omega$ | 176.71483 | | | +0.96653630 | | | −0.17362498 | | | |
| $e$ | 0.2416053 | | $i$ | 12.57313 | | | +0.18809958 | | | −0.02088300 | | | |
| $P$ | 4.43 | | $H$ | 16.5 | $G$ | 0.15 | | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.0 | 0.6+ | 2003 01 26 | 644 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.1− |
| 2003 01 02 | 704 | 0.1− | 0.7− | 2003 01 26 | 644 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.3+ | 0.1+ |
| 2003 01 02 | 704 | 0.2+ | 0.0 | 2003 01 26 | 644 | 0.5+ | 0.6− | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2003 01 02 | 704 | 0.3+ | 0.3− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1− |
| 2003 01 02 | 704 | 0.4+ | 0.4− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.3− |
| 2003 01 08 | 699 | (0.5− | 1.6+) | 2006 09 18 | 691 | (1.9− | 0.5−) | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 2003 01 08 | 699 | 1.0− | 0.4− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | (0.1− | 2.4+) |
| 2003 01 08 | 699 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | (0.7+ | 2.4−) |
| 2003 01 08 | 699 | 0.1− | 1.2+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.7+ |

**2006 SM$_{189}$ = 2005 JW$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 70.11871 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.23017577 | | $\omega$ | 166.92074 | | | +0.27138460 | | | +0.96129252 | | | |
| $a$ | 2.6369161 | | $\Omega$ | 118.80849 | | | −0.88786923 | | | +0.26913965 | | | |
| $e$ | 0.1054818 | | $i$ | 3.11495 | | | −0.37153551 | | | +0.05899616 | | | |
| $P$ | 4.28 | | $H$ | 17.4 | $G$ | 0.15 | | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 12 | G96 | 0.4− | 0.4− | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.2+ |
| 2005 05 12 | G96 | 0.4− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 05 12 | G96 | 0.8− | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.3− |
| 2005 05 12 | G96 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.2− |
| 2005 05 13 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.0 | | | | |
| 2005 05 13 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.1+ | | | | |

**2006 ST$_{189}$ = 2001 TJ$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 330.67002 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.19612730 | | $\omega$ | 305.56879 | | | +0.72012229 | | | −0.69147666 | | | |
| $a$ | 2.9338913 | | $\Omega$ | 98.25498 | | | +0.65385966 | | | +0.64866901 | | | |
| $e$ | 0.1019727 | | $i$ | 3.31959 | | | +0.23214530 | | | +0.31794423 | | | |
| $P$ | 5.03 | | $H$ | 17.8 | $G$ | 0.15 | | $U$ | 6 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2− | 0.5+ | 2006 09 30 | 691 | 0.8− | 0.1− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.4+ | 0.2− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.3+ | 0.0 | | | | |
| 2006 09 26 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.3− | | | | |

**2006 SU$_{189}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 22.20326 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.21805660 | | $\omega$ | 166.89940 | | | +0.92114920 | | | +0.38892427 | | | |
| $a$ | 2.7337359 | | $\Omega$ | 170.17353 | | | −0.36450343 | | | +0.87546794 | | | |
| $e$ | 0.0378755 | | $i$ | 5.00925 | | | −0.13646025 | | | +0.28686897 | | | |
| $P$ | 4.52 | | $H$ | 16.6 | $G$ | 0.15 | | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 691 | 0.1+ | 0.4+ | 2006 07 22 | G96 | 0.8+ | 0.4− | 2006 09 27 | 704 | 1.1− | 0.5+ |
| 2004 02 14 | 691 | 0.1+ | 0.4+ | 2006 08 19 | 691 | 0.8+ | 0.4− | 2006 09 27 | 704 | 0.0 | 0.2− |
| 2004 02 14 | 691 | 0.2+ | 0.2+ | 2006 08 19 | 691 | 0.4+ | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2004 03 17 | 691 | 0.0 | 0.0 | 2006 08 19 | 691 | 0.4+ | 0.7+ | 2006 09 30 | 691 | 0.4+ | 0.3− |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.3− |
| 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 2005 06 29 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2005 06 29 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2006 07 22 | G96 | 0.9− | 0.5+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 26 | 291 | 0.0 | 0.0 |
| 2006 07 22 | G96 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 26 | 291 | 0.1+ | 0.0 |
| 2006 07 22 | G96 | 0.1+ | 0.3+ | 2006 09 27 | 704 | 0.9− | 1.5+ | 2006 10 26 | 291 | 0.4+ | 0.0 |

**2006 SE$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 340.86643 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.20013479 | | $\omega$ | 9.74716 | | | +0.89194763 | | | −0.45020776 | | | |
| $a$ | 2.8945940 | | $\Omega$ | 17.19730 | | | +0.40474139 | | | +0.75388559 | | | |
| $e$ | 0.0854282 | | $i$ | 8.11623 | | | +0.20152876 | | | +0.47850757 | | | |
| $P$ | 4.92 | | $H$ | 16.7 | $G$ | 0.15 | | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1999 03 22 | 645 | 0.1− | 0.0 | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 2004 03 29 | 291 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.5− | 0.1− |
| 2004 03 29 | 291 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.4− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.4+ |
| 2004 03 29 | 291 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.2− | 0.3+ |

**2006 SX$_{191}$ = 1995 UW$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 78.73667 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.26269357 | | $\omega$ | 255.71134 | | | +0.07704394 | | | +0.99634123 | | | |
| $a$ | 2.4145512 | | $\Omega$ | 18.82581 | | | −0.86487102 | | | +0.08524482 | | | |
| $e$ | 0.1025497 | | $i$ | 6.58253 | | | −0.49604672 | | | +0.00612096 | | | |
| $P$ | 3.75 | | $H$ | 17.4 | $G$ | 0.15 | | $U$ | 0 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 05 | 691 | 0.2− | 0.2+ | 2002 08 30 | 644 | 0.6− | 0.4+ | 2006 09 23 | 461 | 0.1+ | 0.2− |
| 1991 10 05 | 691 | 0.3+ | 0.1+ | 2004 01 19 | 691 | 0.1+ | 0.4+ | 2006 09 23 | 461 | 0.0 | 0.2+ |
| 1991 10 05 | 691 | 0.1− | 1.2+ | 2004 01 19 | 691 | 0.1− | 0.3+ | 2006 09 23 | 461 | 0.1+ | 0.2− |
| 1995 10 19 | 691 | 0.2+ | 0.3− | 2004 01 19 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1995 10 19 | 691 | 0.3+ | 0.2+ | 2005 03 08 | G96 | 0.6− | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− |
| 1995 10 19 | 691 | 0.3+ | 0.2− | 2005 03 08 | G96 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1995 10 24 | 691 | 0.3− | 0.2− | 2005 03 08 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− |
| 1995 10 24 | 691 | 0.4− | 0.3− | 2005 03 08 | G96 | 0.5− | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 1995 10 24 | 691 | 0.5− | 0.2− | 2005 04 09 | 691 | 0.4+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2002 08 19 | 644 | 0.3− | 0.0 | 2005 04 09 | 691 | 0.3+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2002 08 19 | 644 | 0.2− | 0.1− | 2005 04 09 | 691 | 0.3+ | 0.6+ | 2006 09 28 | 291 | 0.1− | 0.2+ |
| 2002 08 19 | 644 | 0.4− | 0.4+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 291 | 0.1+ | 0.2+ |
| 2002 08 30 | 644 | 0.5− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 09 28 | 291 | 0.1− | 0.2+ |
| 2002 08 30 | 644 | 0.3− | 0.4− | 2006 09 15 | 691 | 0.2+ | 0.0 | | | | |

**2006 SK$_{192}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 0.91454 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.24144537 | | $\omega$ | 212.78149 | | | +0.99352679 | | | −0.10810783 | | | |
| $a$ | 2.5542111 | | $\Omega$ | 153.35890 | | | +0.11354976 | | | +0.93614894 | | | |
| $e$ | 0.1061726 | | $i$ | 4.46253 | | | +0.00331331 | | | +0.33457115 | | | |
| $P$ | 4.08 | | $H$ | 17.0 | $G$ | 0.15 | | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.1− | 1.1− | 2006 09 27 | 691 | 0.1+ | 0.3+ |
| 2000 02 04 | 691 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2000 02 04 | 691 | 0.2− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2004 02 12 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.5+ | 0.4− | 2006 09 30 | 691 | 0.0 | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 16 | G96 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2005 05 16 | G96 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 11 | 644 | 0.4+ | 0.4+ |
| 2005 05 16 | G96 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.4− |
| 2005 05 16 | G96 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.0 | 1.7+ |
| 2006 09 18 | 691 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.2+ | 0.2− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.6− | 1.0+ |
| 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.8− | 0.9+ |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2006 09 18 | 699 | 0.5+ | 0.7− | 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 09 18 | 699 | 0.8+ | 1.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 |

### 2006 SR$_{192}$ = 2004 FL$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.25414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20809505 | $\omega$ | 252.29655 | | +0.68570925 | −0.72655532 | |
| $a$ | 2.8202972 | $\Omega$ | 154.24569 | | +0.70018558 | +0.64197969 | |
| $e$ | 0.0175345 | $i$ | 5.78804 | | +0.19885419 | +0.24490700 | |
| $P$ | 4.74 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.8− | 0.5− | 2006 09 18 | 691 | 0.5+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− |
| 2004 03 19 | 704 | 0.7+ | 0.2− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.1− |
| 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.4− | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2004 03 22 | 704 | (3.5− | 0.6+) | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.3+ |
| 2004 03 22 | 704 | (1.9− | 0.7+) | 2006 09 26 | G96 | 0.9− | 0.4+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2004 03 22 | 704 | (2.8− | 0.3+) | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.2− | 0.3− |
| 2004 04 10 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.5+ |
| 2004 04 10 | 644 | 0.1− | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− | | | | |
| 2004 04 10 | 644 | 0.1+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− | | | | |

### 2006 SZ$_{192}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.25050 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22929355 | $\omega$ | 51.92637 | | +0.34385925 | −0.93877840 | |
| $a$ | 2.6436755 | $\Omega$ | 17.99693 | | +0.83844721 | +0.29671218 | |
| $e$ | 0.0706268 | $i$ | 3.96283 | | +0.42280857 | +0.17509137 | |
| $P$ | 4.30 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 691 | 0.1+ | 0.1− | 2006 09 27 | 699 | (2.1− | 1.7+) | 2006 10 11 | 644 | 0.0 | 0.1− |
| 2000 05 07 | 691 | 0.8− | 1.3− | 2006 09 30 | 291 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2000 05 07 | 691 | 0.1− | 0.1− | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 16 | 106 | 0.5+ | 0.0 |
| 2002 12 01 | 608 | 0.9+ | 1.1− | 2006 09 30 | 291 | 0.2+ | 0.1+ | 2006 10 16 | 106 | 0.8− | 0.1− |
| 2002 12 01 | 608 | (0.7+ | 1.8−) | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 10 16 | 106 | 0.9+ | 1.0+ |
| 2002 12 01 | 608 | 0.2+ | 1.4− | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 10 16 | 106 | 0.2− | 0.3− |
| 2004 04 12 | 691 | 0.2+ | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.0 |
| 2004 04 12 | 691 | 0.6− | 0.4+ | 2006 09 30 | 291 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.7+ |
| 2004 04 12 | 691 | 0.4+ | 0.3+ | 2006 09 30 | 291 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2004 04 24 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 291 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.6− | 0.2− |
| 2004 04 24 | 691 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2004 04 24 | 691 | 0.4+ | 0.1− | 2006 09 30 | 291 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.0 |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 291 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.5− |
| 2006 09 18 | 691 | 0.2− | 0.5+ | 2006 09 30 | 291 | 0.4− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.7+ | 0.5− |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.5− |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.8− |
| 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 10 | 644 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2006 09 27 | 699 | 1.2+ | 0.3− | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.6− |
| 2006 09 27 | 699 | 1.1+ | 0.9+ | 2006 10 10 | 644 | 0.6+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.9− |
| 2006 09 27 | 699 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.1− | | | | |

### 2006 SA$_{193}$ = 2002 TE$_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.95331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24522968 | $\omega$ | 333.23071 | | +0.94100514 | −0.33726313 | |
| $a$ | 2.5278659 | $\Omega$ | 46.50809 | | +0.31689099 | +0.84964256 | |
| $e$ | 0.1060755 | $i$ | 2.18193 | | +0.11869888 | +0.40541473 | |
| $P$ | 4.02 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.6+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 10 21 | 703 | (1.7− | 0.1−) |
| 2002 10 02 | 704 | 1.0− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.5− | 0.4+ |
| 2002 10 02 | 704 | 1.1+ | 1.0− | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1+ |
| 2002 10 02 | 704 | 0.0 | 1.1+ | 2006 09 26 | G96 | 0.6− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 10 03 | 704 | 0.1− | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.4− | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2002 10 03 | 704 | (0.5+ | 1.9+) | 2006 09 27 | G96 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2002 10 03 | 704 | 1.0− | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | 0.4+ | 0.1− | 2006 10 15 | 703 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 2006 09 14 | 691 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 1.2+ | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.5− |
| 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.4− | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.0 | 0.6+ | | | | |
| 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | 703 | (0.2− | 2.0+) | | | | |

### 2006 SO$_{193}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.12616 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21955274 | $\omega$ | 348.34145 | | +0.38765709 | −0.91536506 | |
| $a$ | 2.7213024 | $\Omega$ | 78.77377 | | +0.85440137 | +0.31251480 | |
| $e$ | 0.0409144 | $i$ | 6.36615 | | +0.34600619 | +0.25385292 | |
| $P$ | 4.49 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.0 | 0.3+ | 2005 06 26 | G96 | 0.2− | 0.4+ | 2006 09 27 | 703 | 0.2− | 0.1− |
| 2002 10 31 | 644 | 0.0 | 0.4+ | 2005 06 26 | G96 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.4+ | 0.1+ |
| 2002 10 31 | 644 | 0.5− | 0.3+ | 2006 09 14 | 703 | (1.8− | 0.5+) | 2006 09 27 | 703 | (0.7− | 1.6−) |
| 2004 02 18 | 691 | 0.3+ | 0.2+ | 2006 09 14 | 703 | 0.2− | 0.0 | 2006 10 02 | 703 | 0.9− | 1.2+ |
| 2004 02 18 | 691 | 0.1− | 0.6+ | 2006 09 14 | 703 | 0.0 | 1.4+ | 2006 10 02 | 703 | (2.6− | 0.3−) |
| 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.6+ | 2006 10 02 | 703 | 0.1− | 0.5− |
| 2005 06 13 | G96 | 0.2+ | 0.4− | 2006 09 26 | 703 | 0.6+ | 0.7+ | 2006 10 02 | 703 | 0.3+ | 0.1− |
| 2005 06 13 | G96 | 0.1− | 0.3+ | 2006 09 26 | 703 | 0.0 | 1.0− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.6− | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.5+ |
| 2005 06 26 | G96 | 0.5+ | 1.3+ | 2006 09 26 | 703 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.5+ |
| 2005 06 26 | G96 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.3− | | | | |

### 2006 SH$_{194}$ = 1995 UK$_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.76059 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18138651 | $\omega$ | 305.57153 | | +0.63707683 | +0.77070081 | |
| $a$ | 3.0907655 | $\Omega$ | 4.06854 | | −0.63862056 | +0.53675714 | |
| $e$ | 0.0413968 | $i$ | 10.05239 | | −0.43162123 | +0.34338322 | |
| $P$ | 5.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.8− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1995 10 18 | 691 | 0.6− | 0.1− | 2006 09 15 | 691 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 1995 10 18 | 691 | 0.4− | 0.3− | 2006 09 15 | 691 | 0.4− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1995 10 28 | 691 | 0.7+ | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 1995 10 28 | 691 | 0.8+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1− |
| 1995 10 28 | 691 | 1.0+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.8− | 0.5+ |
| 2004 04 19 | 704 | 0.8+ | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.7− | 1.0− |
| 2004 04 19 | 704 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.5+ | 0.3− |
| 2004 04 19 | 704 | 0.4− | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 07 21 | G96 | 0.5+ | 0.7− | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.3+ | 0.3− | | |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.3− | | |
| 2006 07 21 | G96 | 0.2− | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.0 | | |
| 2006 07 21 | G96 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.1− | | |

**2006 SO$_{194}$ = 2005 JB$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.59202 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22766678 | $\omega$ | 231.61997 | | −0.62998798 | | +0.77660092 |
| $a$ | 2.6562541 | $\Omega$ | 359.31573 | | −0.63189861 | | −0.51445567 |
| $e$ | 0.2556755 | $i$ | 11.99035 | | −0.45146351 | | −0.36362945 |
| $P$ | 4.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | 644 | 0.1+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.3− |
| 2005 05 11 | 644 | 0.2+ | 0.0 | 2006 09 15 | 691 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 2005 05 11 | 644 | 0.1+ | 0.0 | 2006 09 19 | 691 | 0.2− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 05 12 | 644 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.2+ |
| 2005 05 12 | 644 | 0.1− | 0.1− | 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.1− | 0.1+ |
| 2005 05 12 | 644 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− | | | | |
| 2006 09 15 | 691 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.4− | | | | |

**2006 SH$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.47358 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17383656 | $\omega$ | 308.90111 | | −0.88205667 | | −0.46032233 |
| $a$ | 3.1796206 | $\Omega$ | 204.19590 | | +0.47113021 | | −0.86336413 |
| $e$ | 0.1842274 | $i$ | 14.17909 | | −0.00351574 | | −0.20665365 |
| $P$ | 5.67 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 699 | 0.8− | 0.3+ | 2003 04 04 | 699 | 0.0 | 0.8− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2003 03 10 | 699 | 0.5+ | 0.1− | 2003 04 04 | 699 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.4+ | 0.0 |
| 2003 03 10 | 699 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2003 03 10 | 699 | 0.2+ | 0.8− | 2006 09 26 | 691 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.0 | 0.1− |
| 2003 03 28 | 699 | 0.7− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.2+ |
| 2003 03 28 | 699 | (0.5− | 2.3−) | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.7+ | 0.4− |
| 2003 03 28 | 699 | 0.9− | 0.4− | 2006 09 27 | 691 | 0.1− | 0.5+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2003 03 28 | 699 | 0.4− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.3− |
| 2003 04 04 | 699 | 0.7+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.0 | | | | |
| 2003 04 04 | 699 | 1.1+ | 0.6+ | 2006 09 30 | 691 | 0.2− | 0.0 | | | | |

**2006 SJ$_{195}$ = 2002 RD$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.82452 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26530791 | $\omega$ | 219.69199 | | −0.99974584 | | +0.00788853 |
| $a$ | 2.3986631 | $\Omega$ | 320.74445 | | +0.00174301 | | −0.90693507 |
| $e$ | 0.1628533 | $i$ | 1.91264 | | −0.02247720 | | −0.42119658 |
| $P$ | 3.71 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | (0.2+ | 1.9+) |
| 2002 09 11 | 644 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2002 09 11 | 644 | 0.3− | 0.6− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2002 09 12 | 644 | 0.5+ | 0.5+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.3+ | 0.0 |
| 2002 09 12 | 644 | 0.1+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.1+ |
| 2002 09 12 | 644 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.8− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.7+ | 0.1− |
| 2006 09 17 | 691 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.7− | 0.5− | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.1+ |

**2006 SM$_{195}$ = 2004 HX$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.91918 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18454016 | $\omega$ | 196.35271 | | +0.72988719 | | −0.68041384 |
| $a$ | 3.0554519 | $\Omega$ | 206.88309 | | +0.64228548 | | +0.71548229 |
| $e$ | 0.0719922 | $i$ | 8.34016 | | +0.23395312 | | +0.15849952 |
| $P$ | 5.34 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.1− | 0.4+ | 2004 04 24 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 2001 10 13 | 691 | 0.5− | 0.3+ | 2004 05 14 | 691 | 0.2− | 0.7+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2001 10 13 | 691 | 0.5− | 0.3+ | 2004 05 14 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2001 10 24 | 704 | (1.8+ | 0.8+) | 2004 05 14 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.3+ |
| 2001 10 24 | 704 | 1.0+ | 0.3+ | 2006 09 14 | 703 | 0.7− | 1.1+ | 2006 10 19 | G96 | 0.6+ | 0.1− |
| 2001 10 24 | 704 | 1.0+ | 1.1+ | 2006 09 14 | 703 | 0.9+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2001 10 24 | 704 | 0.1− | 0.8+ | 2006 09 14 | 703 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.4− |
| 2001 10 24 | 704 | 0.5+ | 0.6+ | 2006 09 14 | 703 | 0.5− | 1.4− | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2001 12 11 | 704 | 0.5+ | 0.6+ | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2001 12 11 | 704 | 0.1+ | 1.5+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2001 12 11 | 704 | (2.1− | 1.5+) | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.2− | 0.1− |
| 2004 04 20 | 291 | 0.0 | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2004 04 20 | 291 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 1.1− | 0.4+ |
| 2004 04 20 | 291 | 0.1− | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2004 04 24 | 691 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.4− |

**2006 SQ$_{196}$ = 2000 HR$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.12617 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.37161839 | $\omega$ | 69.58523 | | +0.11031125 | | +0.97822354 |
| $a$ | 1.9160400 | $\Omega$ | 208.56140 | | −0.99239491 | | +0.09868569 |
| $e$ | 0.0787981 | $i$ | 21.57582 | | −0.05462387 | | +0.18259201 |
| $P$ | 2.65 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.5+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2000 04 26 | 691 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2000 04 26 | 691 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2000 04 28 | 691 | 0.5− | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2000 04 28 | 691 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2000 04 28 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2006 09 26 | 691 | 0.1− | 1.2+ | 2006 10 17 | 703 | 0.6− | 0.6− | 2006 10 23 | 691 | 0.1− | 0.3− |
| 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.1− | 0.4− |
| 2006 09 26 | 691 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.5− |
| 2006 09 27 | G96 | 0.0 | 0.6− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1− |
| 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2006 09 27 | 291 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.6+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.8+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2006 09 27 | 291 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− |
| 2006 09 27 | G96 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.7− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2006 09 27 | 291 | 0.5− | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.8+ | 2006 10 27 | G96 | 0.6+ | 0.2+ |
| 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 1.0+ | | | | |
| 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2− | 0.1+ | | | | |

**2006 SW$_{196}$ = 2004 HC$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.68160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24125194 | $\omega$ | 170.50776 | | −0.83865111 | | −0.54290340 |
| $a$ | 2.5555762 | $\Omega$ | 336.44841 | | +0.49225441 | | −0.72105345 |
| $e$ | 0.2387078 | $i$ | 6.29612 | | +0.23313067 | | −0.43050880 |
| $P$ | 4.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | E12 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.5− | 0.2− |
| 2004 04 22 | E12 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | E12 | 0.2+ | 1.0+ | 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.3− | 0.2+ | | |
| 2004 04 22 | E12 | 0.6+ | 1.0− | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.1− | 0.5+ | | |
| 2004 04 25 | 704 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 10 19 | G96 | 0.5− | 0.4+ | | |
| 2004 04 25 | 704 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.5− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.3+ | | |
| 2004 04 25 | 704 | 0.8− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.9+ | 1.0− | | |

**2006 SZ$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.50220 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22368871 | $\omega$ | 175.99353 | | +0.93292562 | | −0.34589305 |
| $a$ | 2.6876538 | $\Omega$ | 204.97685 | | +0.32342320 | | +0.92710303 |
| $e$ | 0.2552317 | $i$ | 13.70468 | | +0.15826314 | | +0.14435363 |
| $P$ | 4.41 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 11 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.3+ | 0.8+ | 2006 10 19 | 683 | 1.3+ | 0.5− |
| 2005 06 11 | 691 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.8− | 0.3− | 2006 10 22 | 703 | 0.0 | 0.7+ |
| 2005 06 11 | 691 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.6− | 2006 10 22 | 703 | (1.6− | 1.9−) |
| 2005 06 27 | 691 | 0.2− | 0.1− | 2006 09 30 | 703 | 1.3− | 0.5− | 2006 10 22 | 703 | 0.7+ | 1.3+ |
| 2005 06 27 | 691 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.4− |
| 2005 06 27 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 01 | 703 | 0.8− | 0.2− |
| 2006 08 29 | 703 | 0.7+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 01 | 703 | 0.3− | 0.1− |
| 2006 08 29 | 703 | 0.4− | 1.1+ | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 01 | 703 | 0.8− | 0.0 |
| 2006 08 29 | 703 | 1.0− | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2006 08 29 | 703 | 0.5− | 0.8+ | 2006 10 03 | 704 | (1.9+ | 0.3+) | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2006 09 16 | 703 | 0.1+ | 1.1− | 2006 10 03 | 704 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2006 09 16 | 703 | 0.5− | 1.0+ | 2006 10 03 | 704 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2006 09 16 | 703 | 0.5− | 1.0− | 2006 10 03 | 704 | 0.7+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2006 09 16 | 703 | 0.5+ | 0.6− | 2006 10 03 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.7− | 0.4− | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.2+ | 0.2+ |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.5+ | 2006 11 19 | 703 | 0.1+ | 0.3− |
| 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 17 | 683 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.5− | 0.2+ |
| 2006 09 27 | 704 | 0.7+ | 0.6+ | 2006 10 17 | 683 | 0.4+ | 0.4− | 2006 11 19 | 703 | 0.4− | 0.4+ |
| 2006 09 27 | 704 | 1.2+ | 0.4− | 2006 10 17 | 683 | 0.7+ | 0.6+ | | | | |
| 2006 09 27 | 704 | 0.1− | 0.2+ | 2006 10 19 | 683 | 0.6+ | 0.3+ | | | | |

**2006 SB$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.11260 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23974443 | $\omega$ | 358.08359 | | +0.79471642 | | −0.58252558 |
| $a$ | 2.5662780 | $\Omega$ | 39.21388 | | +0.56042121 | | +0.59626469 |
| $e$ | 0.1006046 | $i$ | 15.65096 | | +0.23313919 | | +0.55238788 |
| $P$ | 4.11 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 14 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 1996 04 14 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.3− |
| 1996 04 14 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.8+ | 0.8− |
| 2004 07 15 | 807 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 1.4+ |
| 2004 07 16 | 807 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2006 09 26 | G96 | 0.3− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2006 09 26 | G96 | 0.7− | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2006 09 26 | G96 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2006 09 26 | G96 | 0.5− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.7+ | 0.1− |
| 2006 09 27 | 291 | 1.0− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 1.0+ |
| 2006 09 27 | 291 | 1.0− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2006 09 27 | 291 | 0.9− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 1.4+ | 0.4+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.2− | 0.8− |
| 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.2− |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.4− | 0.3+ | 2006 11 22 | 704 | (2.0− | 1.5−) |
| 2006 10 16 | 691 | 0.6+ | 0.0 | 2006 11 10 | 644 | 0.5− | 0.4+ | 2006 11 22 | 704 | 0.3+ | 0.9+ |
| 2006 10 16 | 691 | 0.2+ | 0.4− | 2006 11 10 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.8+ | 0.2− |

**2006 SD$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.32548 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17218508 | $\omega$ | 134.74876 | | +0.87648250 | | +0.45791782 |
| $a$ | 3.1999194 | $\Omega$ | 199.56595 | | −0.45926057 | | +0.88788470 |
| $e$ | 0.1909749 | $i$ | 26.34680 | | +0.14442356 | | +0.04440739 |
| $P$ | 5.72 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.1− | 0.0 | 2006 09 26 | 683 | 0.7− | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.2− |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2006 09 27 | 703 | 0.2+ | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.2− |
| 2000 09 30 | 645 | 0.0 | 0.1+ | 2006 09 27 | 703 | 0.0 | 0.5− | 2006 10 17 | 703 | 0.8+ | 0.2+ |
| 2000 09 30 | 645 | 0.1+ | 0.0 | 2006 09 27 | 683 | 0.7− | 0.4+ | 2006 10 17 | 703 | 0.6+ | 0.8− |
| 2006 09 16 | 703 | 0.1− | 0.4− | 2006 09 27 | 703 | 0.6− | 1.1− | 2006 10 17 | 703 | 0.2− | 0.7+ |
| 2006 09 16 | 703 | 0.0 | 1.1− | 2006 09 27 | 703 | 0.8+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.6+ |
| 2006 09 16 | 703 | 0.4+ | 1.1+ | 2006 09 27 | 683 | 0.4+ | 1.3+ | 2006 10 31 | G96 | 0.8− | 0.3− |
| 2006 09 16 | 703 | 1.3+ | 1.0− | 2006 09 27 | 683 | (1.9− | 0.6+) | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2006 09 26 | 683 | 0.8− | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2006 09 26 | 683 | 0.9+ | 1.2+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− |

**2006 SO$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.11996 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27332221 | $\omega$ | 7.82632 | | +0.90971551 | | −0.41516572 |
| $a$ | 2.3515421 | $\Omega$ | 16.70942 | | +0.37955569 | | +0.82416974 |
| $e$ | 0.2011265 | $i$ | 1.47965 | | +0.16838995 | | +0.38520340 |
| $P$ | 3.61 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.5+ | 1.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2004 01 30 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2004 01 30 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2004 01 30 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 10 24 | 224 | (2.3− | 0.6−) | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2005 05 10 | G96 | 0.1− | 1.4− | 2006 10 24 | 224 | 0.7− | 0.4− | 2006 11 17 | 703 | 0.0 | 0.6+ |
| 2005 05 10 | G96 | 0.1− | 0.2+ | 2006 10 24 | 224 | 0.7− | 0.3+ | 2006 11 17 | 703 | 1.2− | 0.7− |
| 2006 07 21 | G96 | 0.6− | 0.3+ | 2006 10 25 | 224 | 0.1− | 0.6+ | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2006 07 21 | G96 | 0.5− | 0.7+ | 2006 10 25 | 224 | 0.6+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.8+ |
| 2006 07 21 | G96 | 0.5− | 0.3+ | 2006 10 25 | 224 | (1.6+ | 0.0 ) | 2006 11 21 | 704 | 1.0− | 0.3+ |
| 2006 07 21 | G96 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.5− | 0.6+ |
| 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.9+ | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2006 09 26 | 701 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.8− | 2006 11 27 | 691 | 0.3+ | 0.2− |
| 2006 09 26 | 701 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 09 26 | 701 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.9− | 0.9− | | | | |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.3− | | | | |

**2006 SW$_{197}$ = 1993 SD$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.57642 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23196356 | $\omega$ | 177.99794 | | +0.79065877 | | −0.61161932 |
| $a$ | 2.6233498 | $\Omega$ | 219.75294 | | +0.56112601 | | +0.74212936 |
| $e$ | 0.2282104 | $i$ | 2.50395 | | +0.24494144 | | +0.27416386 |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 809 | (2.1+ | 2.3+) | 2006 10 23 | 400 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.6− |
| 1993 09 16 | 809 | 0.4+ | 0.7+ | 2006 10 23 | 400 | 1.1+ | 0.2− | 2006 11 17 | 704 | 0.2+ | 1.0− |
| 1993 09 16 | 809 | 1.1+ | 0.8+ | 2006 10 23 | 400 | 0.4+ | 1.0− | 2006 11 17 | 704 | 0.1+ | 0.6+ |
| 1993 09 23 | 809 | (2.6− | 0.2−) | 2006 10 23 | 400 | 0.4− | 1.0− | 2006 11 17 | 704 | 0.8+ | 0.5+ |
| 1993 09 23 | 809 | 1.8− | 0.9− | 2006 10 26 | 400 | 0.3+ | 1.1− | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 1993 09 23 | 809 | (3.0− | 1.6−) | 2006 10 26 | 400 | 0.6− | 1.3− | 2006 11 18 | 704 | 0.2− | 0.8+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.4+ | | |
| 2001 06 15 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.7+ | | |
| 2001 06 15 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.1− | | |
| 2006 09 27 | J75 | 0.1− | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2006 09 27 | J75 | (0.8− | 2.4+) | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.1− | 0.2+ | | |
| 2006 09 27 | J75 | (0.2− | 1.8+) | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.0 | | |
| 2006 09 27 | J75 | 0.8− | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.3− | | |
| 2006 09 27 | J75 | 0.4− | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2− | | |
| 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.0 | | |
| 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.3+ | | |
| 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3− | 0.6− | | |
| 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.1− | 0.0 | | |
| 2006 09 28 | J75 | 0.8− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.1− | 0.1+ | | |
| 2006 09 28 | J75 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 27 | 703 | 1.0− | 1.1− | | |
| 2006 10 17 | G96 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.4+ | 2006 11 29 | 704 | 0.6− | 0.2− | | |
| 2006 10 17 | G96 | 0.5+ | 0.6+ | 2006 11 11 | 703 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.9− | 0.3− | | |
| 2006 10 17 | G96 | 0.1+ | 1.0+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.1− | | |
| 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.3− | 0.3− | | |
| 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.5− | 0.1− | | |
| 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 1.0− | 0.2+ | | | | | | |

**2006 SX$_{197}$ = 2002 XJ$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.65397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22802488 | $\omega$ | 20.60946 | | +0.42440427 | | −0.88517286 |
| $a$ | 2.6534723 | $\Omega$ | 44.86097 | | +0.78831213 | | +0.25761532 |
| $e$ | 0.1715359 | $i$ | 15.68129 | | +0.44547166 | | +0.38743173 |
| $P$ | 4.32 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1+ | 0.3+ | 2006 09 28 | G92 | 0.1+ | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.1+ |
| 2002 12 06 | 704 | 0.8+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 14 | 704 | (0.2+ | 2.0+) |
| 2002 12 06 | 704 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.1− | 0.5− | 2006 11 14 | 704 | (0.4+ | 1.9+) |
| 2002 12 06 | 704 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.5+ | 0.2− | 2006 11 14 | 704 | 0.0 | 0.5+ |
| 2002 12 10 | 704 | 0.6− | 0.5+ | 2006 09 30 | 703 | 0.6+ | 0.4+ | 2006 11 14 | 704 | 0.5+ | 1.1+ |
| 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 1.4+ | 1.0− |
| 2002 12 10 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 0.1− | 0.3− |
| 2002 12 10 | 704 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 1.1+ |
| 2006 09 18 | 703 | 1.0− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.3+ | 0.7+ |
| 2006 09 18 | 703 | 0.9− | 0.4− | 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2006 09 18 | 703 | 1.5− | 1.2− | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2006 09 18 | 703 | 0.8− | 0.2+ | 2006 11 07 | 644 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.6− |
| 2006 09 27 | G92 | 0.2− | 0.2+ | 2006 11 07 | 644 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2006 09 27 | G92 | 0.4+ | 0.1− | 2006 11 07 | 644 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.2− | 0.4− |
| 2006 09 27 | G92 | 0.3− | 0.1+ | 2006 11 13 | 703 | (0.2+ | 2.2−) | 2006 11 27 | 703 | 0.1+ | 0.8− |
| 2006 09 28 | G92 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.0 | 2006 11 27 | 703 | 1.5+ | 1.0+ |
| 2006 09 28 | G92 | 0.0 | 0.2+ | 2006 11 13 | 703 | 1.1− | 0.4− | 2006 11 27 | 703 | 0.4− | 0.8− |

**2006 SA$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.75040 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29645788 | $\omega$ | 335.24973 | | +0.93945746 | | −0.34057196 |
| $a$ | 2.2275496 | $\Omega$ | 44.71830 | | +0.32266235 | | +0.84205299 |
| $e$ | 0.1780019 | $i$ | 3.08124 | | +0.11536330 | | +0.41827922 |
| $P$ | 3.32 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 14 | 327 | 0.8− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.4− |
| 1996 10 14 | 327 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.9+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.8+ |
| 1996 10 14 | 327 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 1996 11 09 | 327 | 0.4+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 11 11 | 703 | 1.0+ | 0.6+ |
| 1996 11 09 | 327 | 0.8+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 1996 11 09 | 327 | 0.5− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2003 12 27 | 691 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2003 12 27 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2003 12 27 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 13 | 644 | 0.5− | 0.2− |
| 2005 05 10 | G96 | 1.1+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2005 05 10 | G96 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2005 05 10 | G96 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2005 05 10 | G96 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.7− | 0.6− |
| 2005 06 01 | G96 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2005 06 01 | G96 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.5+ |
| 2005 06 01 | G96 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.6− | 0.6+ |
| 2005 06 01 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.6− |
| 2006 09 27 | 683 | (2.9+ | 0.0 ) | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.7− | 1.0+ |
| 2006 09 27 | 683 | 1.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2006 09 27 | 683 | 0.9+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.7− | 0.4− |
| 2006 09 28 | 683 | 1.2− | 0.6+ | 2006 10 27 | G96 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.6+ | 1.0+ |
| 2006 09 28 | 683 | (1.5− | 2.2+) | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | (1.9− | 0.1+) |
| 2006 09 28 | 683 | (1.8− | 1.9+) | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.6− | 0.5+ |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.4− |
| 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 30 | 703 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.7+ | 0.6+ | | | | |

**2006 SC$_{198}$ = 2003 XK$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.48906 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29620356 | $\omega$ | 13.58349 | | +0.68574426 | | −0.72334231 |
| $a$ | 2.2288245 | $\Omega$ | 33.23301 | | +0.65325035 | | +0.56269847 |
| $e$ | 0.1017804 | $i$ | 8.47956 | | +0.32096541 | | +0.40018288 |
| $P$ | 3.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 03 | 704 | 0.1+ | 0.4− | 2006 09 29 | H06 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2003 12 03 | 704 | 0.5+ | 0.1+ | 2006 09 29 | H06 | 0.2+ | 1.0− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 12 03 | 704 | 0.1+ | 0.0 | 2006 09 29 | 699 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2003 12 03 | 704 | 0.6− | 0.9− | 2006 09 29 | 699 | 0.4+ | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2003 12 03 | 704 | 0.1− | 0.1− | 2006 09 29 | 699 | 0.1− | 0.6− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2003 12 17 | 704 | 0.1+ | 0.4− | 2006 09 29 | 699 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2003 12 17 | 704 | 0.4− | 0.7+ | 2006 10 15 | 703 | (0.1− | 2.1−) | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2003 12 17 | 704 | 0.3+ | 0.6+ | 2006 10 15 | 703 | 1.0− | 1.3− | 2006 11 11 | 703 | 0.0 | 1.3− |
| 2005 03 10 | G96 | 0.1− | 0.2− | 2006 10 15 | 703 | 0.7− | 0.9− | 2006 11 11 | 703 | 0.9− | 0.5+ |
| 2005 03 10 | G96 | 0.3+ | 0.1− | 2006 10 15 | 703 | 1.1− | 0.9− | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2005 03 10 | G96 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 2005 03 10 | G96 | 0.6− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 291 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2006 09 18 | 291 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.5− | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2006 09 18 | 291 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3+ |
| 2006 09 25 | 699 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.5+ | 1.1+ |
| 2006 09 25 | 699 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.7− | 0.8− |
| 2006 09 25 | 699 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.9+ | 0.7− |
| 2006 09 25 | 699 | 1.2− | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.2− | 0.2+ |
| 2006 09 28 | H06 | 0.9+ | 0.0 | 2006 10 21 | 703 | 0.8− | 0.4− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 09 28 | H06 | 0.9+ | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.7+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 09 28 | H06 | 0.6+ | 0.2+ | 2006 10 21 | 703 | 0.4+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 09 29 | H06 | 0.5+ | 0.5− | 2006 10 21 | 703 | 0.6+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.0 |

**2006 SF$_{198}$ = 2005 GE$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.34975 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24279546 | $\omega$ | 21.62659 | | −0.21997688 | | +0.96109030 |
| $a$ | 2.5447337 | $\Omega$ | 236.03355 | | −0.92194619 | | −0.26079858 |
| $e$ | 0.2235485 | $i$ | 11.62205 | | −0.31878737 | | +0.09104693 |
| $P$ | 4.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 06 20 | 691 | 0.2− | 0.1− | 2005 04 14 | 703 | 0.5− | 0.3− | 2006 09 24 | 152 | 0.7− | 1.2− |
| 1993 06 20 | 691 | 0.2− | 0.2− | 2005 04 18 | E12 | 0.9− | 0.1+ | 2006 09 24 | 152 | (2.5+ | 1.9−) |
| 1993 06 20 | 691 | 0.3+ | 0.3+ | 2005 04 18 | E12 | 0.6− | 0.2+ | 2006 09 25 | 703 | 1.3− | 0.4+ |
| 2001 03 29 | 608 | 0.2+ | 1.1− | 2005 04 18 | E12 | 0.4− | 0.5+ | 2006 09 25 | 703 | 0.8+ | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 29 | 608 | 0.6+ | 1.2− | 2005 04 18 | E12 | 0.4+ | 0.7+ | 2006 09 25 | 703 | 0.4+ | 1.1− | | |
| 2001 03 29 | 608 | 0.7+ | 0.9− | 2005 05 08 | 699 | 0.7− | 0.1+ | 2006 09 25 | 703 | 0.6− | 1.0− | | |
| 2005 04 06 | 699 | 0.8− | 0.3+ | 2005 05 08 | 699 | 0.0 | 0.1− | 2006 09 25 | 152 | 1.1+ | 0.1− | | |
| 2005 04 06 | 699 | 1.2+ | 0.6− | 2005 05 08 | 699 | (1.8+ | 0.6+) | 2006 09 25 | 152 | (2.4+ | 0.5+) | | |
| 2005 04 06 | 699 | 0.8+ | 0.3− | 2005 05 08 | 699 | 0.0 | 1.0+ | 2006 09 25 | 152 | 0.7+ | 0.9+ | | |
| 2005 04 06 | 699 | (1.3+ | 1.8+) | 2005 05 23 | 644 | 0.4− | 0.0 | 2006 09 26 | 152 | (1.6+ | 0.2−) | | |
| 2005 04 14 | 703 | 0.2+ | 0.1− | 2005 05 23 | 644 | 0.1− | 0.1+ | 2006 09 26 | 152 | (0.6− | 1.7+) | | |
| 2005 04 14 | 703 | 0.8+ | 0.0 | 2005 05 23 | 644 | 0.3− | 0.0 | | | | | | |
| 2005 04 14 | 703 | 0.0 | 0.0 | 2006 09 24 | 152 | 0.0 | 0.5− | | | | | | |

**2006 SG**$_{198}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.13658 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17806724 | $\omega$ | 232.97607 | | +0.13110250 | −0.97000743 | |
| $a$ | 3.1290562 | $\Omega$ | 211.41859 | | +0.98758950 | +0.14580007 | |
| $e$ | 0.1075862 | $i$ | 23.12023 | | +0.08648191 | −0.19449401 | |
| $P$ | 5.54 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 24 | 691 | 0.2+ | 0.0 | 2006 09 24 | 152 | 0.1+ | 0.7+ | 2006 09 28 | 703 | 0.5− | 0.0 | | |
| 1993 05 24 | 691 | 0.1+ | 0.4− | 2006 09 24 | 152 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.8+ | 0.5− | | |
| 1993 05 24 | 691 | 0.2− | 0.6− | 2006 09 25 | 152 | 0.5+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.3+ | | |
| 2000 09 27 | 645 | 0.0 | 0.3+ | 2006 09 25 | 152 | 1.6− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− | | |
| 2000 09 27 | 645 | 0.0 | 0.4+ | 2006 09 25 | 152 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.2+ | 0.1+ | | |
| 2001 12 18 | 645 | 0.0 | 0.3− | 2006 09 25 | 152 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.1− | | |
| 2001 12 18 | 645 | 0.1− | 0.3− | 2006 09 25 | 152 | 0.0 | 0.5+ | 2006 10 17 | 703 | (2.2− | 0.3+) | | |
| 2006 09 16 | 703 | 0.2− | 0.1+ | 2006 09 25 | 152 | 0.3+ | 0.3− | 2006 10 17 | 703 | (1.2− | 2.2+) | | |
| 2006 09 16 | 703 | 0.1− | 1.3− | 2006 09 26 | 152 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.6+ | | |
| 2006 09 16 | 703 | 0.5− | 0.2− | 2006 09 26 | 152 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.1+ | | |
| 2006 09 16 | 703 | 1.8− | 0.4− | 2006 09 26 | 152 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.1− | | |
| 2006 09 24 | 152 | 0.4+ | 0.5+ | 2006 09 26 | 152 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2006 09 24 | 152 | 0.1− | 0.9+ | 2006 09 26 | 152 | 0.6+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.2− | | |
| 2006 09 24 | 152 | 0.4+ | 1.3+ | 2006 09 26 | 152 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.4+ | 0.0 | | |
| 2006 09 24 | 152 | (2.1− | 1.6+) | 2006 09 28 | 703 | 0.5+ | 0.5− | 2006 10 22 | 644 | 0.1− | 0.0 | | |
| 2006 09 24 | 152 | (2.5+ | 0.5+) | 2006 09 28 | 703 | 0.2− | 1.0− | | | | | | |

**2006 SK**$_{198}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.47251 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.32254882 | $\omega$ | 352.29689 | | −0.29146914 | +0.94334237 | |
| $a$ | 2.1057449 | $\Omega$ | 260.65416 | | −0.86885312 | −0.33043110 | |
| $e$ | 0.4684547 | $i$ | 9.24891 | | −0.40017496 | +0.03033899 | |
| $P$ | 3.06 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 16 | 644 | 0.3+ | 0.1+ | 2006 09 30 | J95 | 0.7+ | 0.3− | 2006 10 03 | 291 | 0.2− | 0.1+ | | |
| 2001 12 16 | 644 | 0.3+ | 0.5+ | 2006 09 30 | J95 | 0.1+ | 0.1+ | 2006 10 03 | 291 | 0.3− | 0.1+ | | |
| 2001 12 16 | 644 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 11 | 673 | 0.7+ | 0.4+ | | |
| 2002 01 08 | 644 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 11 | 673 | 0.3+ | 0.5− | | |
| 2002 01 08 | 644 | 0.4− | 0.7− | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 11 | 673 | 0.3+ | 0.2− | | |
| 2002 01 08 | 644 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.3+ | 2006 10 11 | 673 | 0.6+ | 0.1+ | | |
| 2003 10 25 | 691 | 0.2− | 0.1+ | 2006 09 30 | 854 | 0.9− | 0.1+ | 2006 10 12 | 291 | 0.1− | 0.0 | | |
| 2003 10 25 | 691 | 0.0 | 0.1− | 2006 09 30 | 854 | 0.1+ | 0.1− | 2006 10 12 | 291 | 0.1+ | 0.1− | | |
| 2003 10 25 | 691 | 0.3+ | 0.0 | 2006 09 30 | 701 | 0.3− | 0.1+ | 2006 10 12 | 291 | 0.4− | 0.0 | | |
| 2004 12 03 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 854 | 0.1− | 0.4+ | 2006 10 13 | 147 | 0.2− | 0.6+ | | |
| 2004 12 03 | 691 | 0.1+ | 0.0 | 2006 09 30 | 701 | 0.2+ | 0.0 | 2006 10 13 | 147 | 0.8+ | 0.4+ | | |
| 2004 12 03 | 691 | 0.1− | 0.0 | 2006 09 30 | 701 | 1.5− | 0.7− | 2006 10 13 | 147 | 0.1+ | 0.1+ | | |
| 2006 09 28 | 703 | 0.1+ | 1.2+ | 2006 09 30 | 701 | 0.3+ | 0.3− | 2006 10 16 | 673 | 0.0 | 0.0 | | |
| 2006 09 28 | 703 | 0.1− | 0.2− | 2006 09 30 | 673 | 0.2+ | 0.3+ | 2006 10 16 | 673 | 0.3+ | 0.1+ | | |
| 2006 09 28 | 703 | 0.3+ | 0.5− | 2006 09 30 | 673 | 0.1+ | 0.3+ | 2006 10 16 | 673 | 0.1+ | 0.2− | | |
| 2006 09 28 | 703 | 0.8− | 0.0 | 2006 09 30 | 673 | 0.0 | 0.4+ | 2006 10 16 | 673 | 0.2+ | 0.1− | | |
| 2006 09 28 | 703 | (0.5+ | 1.8+) | 2006 09 30 | 673 | 0.2+ | 0.4+ | 2006 10 18 | 118 | 0.4+ | 0.2+ | | |
| 2006 09 28 | 703 | (1.6− | 0.5−) | 2006 10 01 | 291 | 0.2− | 0.2+ | 2006 10 18 | 118 | 0.6− | 0.6+ | | |
| 2006 09 28 | 703 | 0.8+ | 0.6+ | 2006 10 01 | 291 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.6− | | |
| 2006 09 28 | 703 | 1.2+ | 0.5− | 2006 10 01 | 291 | 0.2− | 0.3+ | 2006 11 15 | 703 | 1.1− | 0.5+ | | |
| 2006 09 28 | 703 | 0.7+ | 0.7− | 2006 10 02 | 461 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.0 | | |
| 2006 09 28 | 703 | 1.3− | 0.3− | 2006 10 02 | 461 | 0.2+ | 0.0 | 2006 11 15 | 703 | (1.8+ | 1.5−) | | |
| 2006 09 28 | 703 | (0.6+ | 1.7+) | 2006 10 02 | 461 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− | | |
| 2006 09 28 | 703 | (1.6+ | 0.0 ) | 2006 10 02 | 291 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.5− | | |
| 2006 09 29 | 734 | 0.0 | 0.6− | 2006 10 02 | 291 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.1− | 0.2− | | |
| 2006 09 29 | 734 | 0.6+ | 0.9− | 2006 10 02 | 291 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 | | |
| 2006 09 29 | 734 | 0.1+ | 0.9− | 2006 10 03 | 291 | 0.2− | 0.0 | | | | | | |

**2006 ST**$_{198}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.93763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23255662 | $\omega$ | 31.12124 | | +0.95094156 | +0.26015835 | |
| $a$ | 2.6188879 | $\Omega$ | 312.81355 | | −0.30932093 | +0.78984988 | |
| $e$ | 0.1178899 | $i$ | 13.19229 | | −0.00554259 | +0.55538707 | |
| $P$ | 4.24 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 644 | 0.3+ | 0.1− | 2004 02 29 | 691 | 0.4− | 0.2+ | 2006 09 22 | 703 | 0.1+ | 0.5+ | | |
| 2002 10 11 | 644 | 0.3+ | 0.3− | 2004 02 29 | 691 | 0.3− | 0.1− | 2006 09 27 | 703 | (2.3− | 0.5+) | | |
| 2002 10 11 | 644 | 0.3+ | 0.1+ | 2004 02 29 | 691 | 0.2+ | 0.0 | 2006 09 27 | 703 | 0.3− | 0.7− | | |
| 2002 11 14 | 644 | 0.4− | 0.2+ | 2006 09 14 | 703 | 0.5+ | 0.5− | 2006 09 27 | 703 | 0.5− | 0.5− | | |
| 2002 11 14 | 644 | 0.0 | 0.1− | 2006 09 14 | 703 | 0.4− | 0.1+ | 2006 09 27 | 703 | 0.3+ | 0.2+ | | |
| 2002 11 14 | 644 | 0.4− | 0.1− | 2006 09 14 | 703 | 0.6− | 0.3+ | 2006 09 29 | 699 | 1.2+ | 1.3+ | | |
| 2004 02 11 | 691 | 0.2+ | 0.2+ | 2006 09 22 | 703 | 0.1+ | 0.6− | 2006 09 29 | 699 | 0.6− | 1.0− | | |
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2006 09 22 | 703 | 0.1+ | 0.9+ | 2006 09 29 | 699 | 0.4+ | 0.2− | | |
| 2004 02 11 | 691 | 0.0 | 0.2− | 2006 09 22 | 703 | 0.4− | 0.3− | 2006 09 29 | 699 | 0.1− | 0.7+ | | |

**2006 SB**$_{199}$ **= 1997 SO**$_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.26531 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21520962 | $\omega$ | 109.14471 | | +0.88361940 | +0.46759471 | |
| $a$ | 2.7577926 | $\Omega$ | 222.98593 | | −0.44167406 | +0.81550889 | |
| $e$ | 0.1002753 | $i$ | 2.01011 | | −0.15537306 | +0.34102849 | |
| $P$ | 4.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 29 | 691 | 0.5− | 0.0 | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.0 | | |
| 1997 09 29 | 691 | 0.1− | 0.1− | 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.2− | | |
| 1997 09 29 | 691 | 0.9− | 0.6+ | 2006 09 15 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.1− | 0.0 | | |
| 1997 10 03 | 691 | 0.7+ | 0.1+ | 2006 09 24 | 691 | 0.4− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.0 | | |
| 1997 10 03 | 691 | 0.2+ | 0.0 | 2006 09 24 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | | |
| 1997 10 03 | 691 | 0.5+ | 0.4− | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.3− | | |

**2006 SQ**$_{199}$ **= 2006 SR**$_{368}$ **= 2003 WO**$_{175}$ **= 2005 FP**$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.42264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28938030 | $\omega$ | 262.44772 | | −0.09078419 | +0.99587043 | |
| $a$ | 2.2637236 | $\Omega$ | 2.34377 | | −0.90823092 | −0.08256515 | |
| $e$ | 0.1386644 | $i$ | 0.78149 | | −0.40850316 | −0.03775020 | |
| $P$ | 3.41 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.0 | 0.4− | 2006 09 19 | 691 | 0.3− | 0.8− | 2006 10 16 | G96 | 0.3+ | 0.1+ | | |
| 2003 11 19 | 691 | 0.3+ | 0.0 | 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.0 | | |
| 2003 11 19 | 691 | 0.3− | 0.1− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.0 | | |
| 2003 11 20 | 695 | 0.0 | 0.0 | 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.5+ | 0.1− | | |
| 2003 11 20 | 695 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.0 | | |
| 2005 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | | |
| 2005 03 16 | 691 | 0.2+ | 0.5+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.3+ | | |
| 2005 03 16 | 691 | 0.2+ | 0.5+ | 2006 10 02 | 691 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 02 | 691 | 0.4− | 0.3+ | | | | | | |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.6− | 0.4+ | | | | | | |

**2006 SS$_{199}$ = 1995 BY$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 343.05407 | | (2000.0) | | | |
| $n$ | 0.23194168 | $\omega$ | 26.97175 | | +0.81691273 | −0.57568251 |
| $a$ | 2.6235148 | $\Omega$ | 8.44442 | | +0.47633197 | +0.63893432 |
| $e$ | 0.2628387 | $i$ | 13.89278 | | +0.32520984 | +0.51024758 |
| $P$ | 4.25 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 01 28 | 695 | 0.1+ | 0.8− | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | (0.0 | 1.8−) |
| 1995 01 28 | 695 | 0.4+ | 0.6− | 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 1.0+ | 0.8− |
| 1995 01 28 | 695 | 0.4− | 0.0 | 2006 09 24 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3− | 1.3− |
| 1995 01 29 | 695 | 0.4+ | 0.9+ | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.7+ |
| 1995 01 29 | 695 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1995 01 29 | 695 | 0.4− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2006 09 20 | 704 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2006 09 20 | 704 | 1.2+ | 0.9+ | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.0 |
| 2006 09 20 | 704 | 1.1− | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.1− | 0.2+ |
| 2006 09 20 | 704 | 0.4+ | 0.2− | 2006 10 17 | 703 | (1.8− | 3.3−) | 2006 10 23 | G96 | 0.0 | 0.2+ |

**2006 SY$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 92.15535 | | (2000.0) | | | |
| $n$ | 0.27561138 | $\omega$ | 266.21964 | | +0.08509225 | +0.99621433 |
| $a$ | 2.3385031 | $\Omega$ | 8.72175 | | −0.86127273 | +0.08251754 |
| $e$ | 0.0957006 | $i$ | 6.73569 | | −0.50096766 | +0.02734711 |
| $P$ | 3.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.2+ | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.1− |
| 2002 08 17 | 644 | 0.1− | 0.1+ | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1− | 1.4− |
| 2005 04 14 | 703 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.5− |
| 2005 04 14 | 703 | 0.1+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.4− |
| 2005 04 14 | 703 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 04 14 | 703 | 0.4+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.0 |
| 2005 05 01 | 644 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2005 05 01 | 644 | 0.3+ | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2005 05 01 | 644 | 0.6+ | 0.3+ | 2006 10 11 | 644 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2005 06 26 | E12 | 0.8− | 0.5+ | 2006 10 11 | 644 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2005 06 26 | E12 | 1.1− | 0.0 | 2006 10 11 | 644 | 0.6− | 0.1+ | 2006 11 17 | G96 | 0.5− | 0.3− |
| 2005 06 26 | E12 | 0.1− | 1.3− | 2006 10 12 | 644 | 0.3− | 0.1− | | | | |
| 2005 06 26 | E12 | 0.4+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2− | | | | |

**2006 SA$_{200}$ = 2003 FJ$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 292.07527 | | (2000.0) | | | |
| $n$ | 0.17374551 | $\omega$ | 101.42252 | | −0.28342164 | −0.95896192 |
| $a$ | 3.1807314 | $\Omega$ | 5.06335 | | +0.84066697 | −0.25246268 |
| $e$ | 0.1552569 | $i$ | 5.20890 | | +0.46146637 | −0.12905279 |
| $P$ | 5.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 291 | 0.1+ | 0.0 | 2003 04 08 | 691 | 0.3+ | 0.3+ | 2006 10 02 | 691 | 0.2− | 0.3+ |
| 2003 03 24 | 291 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2003 03 24 | 291 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2003 03 27 | 691 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2003 03 27 | 691 | 0.3− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2003 03 27 | 691 | 0.7− | 0.4− | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.6− |
| 2003 04 08 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2003 04 08 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1− | 0.0 |

**2006 SE$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 144.86682 | | (2000.0) | | | |
| $n$ | 0.22477385 | $\omega$ | 24.85157 | | −0.63116689 | +0.77013089 |
| $a$ | 2.6789968 | $\Omega$ | 206.31341 | | −0.74191887 | −0.63415215 |
| $e$ | 0.0732709 | $i$ | 12.02342 | | −0.22624045 | −0.06891637 |
| $P$ | 4.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 26 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.5− | 0.1− |
| 2000 04 26 | 691 | 0.5+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.1− |
| 2000 04 26 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2000 05 02 | 691 | 0.4− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2000 05 02 | 691 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2000 05 02 | 691 | 0.1− | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.3− |
| 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2006 09 24 | 691 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2006 09 24 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.4− | | | | |
| 2006 09 28 | 691 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.1− | | | | |

**2006 SN$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.29261 | | (2000.0) | | | |
| $n$ | 0.19448708 | $\omega$ | 69.01068 | | +0.81205583 | +0.58337538 |
| $a$ | 2.9503636 | $\Omega$ | 255.29791 | | −0.54117866 | +0.74288808 |
| $e$ | 0.0656278 | $i$ | 0.91481 | | −0.21838265 | +0.32831457 |
| $P$ | 5.07 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 691 | 0.1− | 0.2− | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 1996 10 12 | 691 | 0.1+ | 0.6− | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 10 28 | G96 | (2.4+ | 0.6−) |
| 1996 10 12 | 691 | 0.3+ | 0.2− | 2006 10 11 | 691 | 0.6+ | 0.1− | 2006 10 31 | 691 | 0.4− | 0.6+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.4− | 0.3+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2004 03 29 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2004 03 29 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 703 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2006 09 18 | 691 | 0.2− | 0.8+ | 2006 10 20 | 703 | 0.5− | 0.5+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | 703 | (2.5− | 0.9+) | 2006 11 13 | G96 | 0.5+ | 0.2+ |
| 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 20 | 703 | (0.3− | 1.8+) | 2006 11 13 | G96 | 0.7+ | 0.3− |
| 2006 09 24 | 691 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.5− | 0.0 |
| 2006 09 24 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2006 09 28 | 691 | 0.7+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.5− | 0.3− |
| 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.4− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.0 | 0.4+ |
| 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.1− | | | | |

**2006 SO$_{200}$ = 1995 UV$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.13140 | | (2000.0) | | | |
| $n$ | 0.17572058 | $\omega$ | 212.88333 | | +0.50409286 | −0.86020394 |
| $a$ | 3.1568526 | $\Omega$ | 207.08190 | | +0.82444253 | +0.50587052 |
| $e$ | 0.1048381 | $i$ | 9.74616 | | +0.25726428 | +0.06437542 |
| $P$ | 5.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 1995 10 18 | 691 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− |
| 1995 10 18 | 691 | 0.5− | 0.2− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.0 |
| 1995 10 28 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 291 | 0.1+ | 0.0 |
| 1995 10 28 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 13 | 291 | 0.0 | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.5+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 13 | 291 | 0.0 | 0.3+ | | |
| 2006 09 24 | 691 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 11 13 | 291 | 0.0 | 0.3+ | | |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.3− | 2006 11 13 | 291 | 0.1− | 0.0 | | |
| 2006 09 24 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 13 | 291 | 0.2+ | 0.4− | | |
| 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.4− | 0.3+ | | | | | | |
| 2006 09 28 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− | | | | | | |

**2006 SS$_{200}$ = 1995 SR$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.72618 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18226017 | $\omega$ | 280.60946 | +0.50067191 | | +0.86175935 | |
| $a$ | 3.0808806 | $\Omega$ | 20.08102 | −0.67136487 | | +0.44625224 | |
| $e$ | 0.1970247 | $i$ | 13.79038 | −0.54644016 | | +0.24130845 | |
| $P$ | 5.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.4+ | 0.1− | 2006 09 24 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.6+ | | |
| 1995 09 25 | 691 | 0.5− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.7− | 0.2+ | | |
| 1995 09 25 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | | |
| 1995 09 30 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.0 | | |
| 1995 09 30 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 1995 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.4− | 0.1+ | | |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.7+ | 0.4− | | |

**2006 ST$_{200}$ = 2004 FA$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.94212 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23107100 | $\omega$ | 76.61221 | +0.13407506 | | −0.99095564 | |
| $a$ | 2.6301010 | $\Omega$ | 5.69139 | +0.88617403 | | +0.11738837 | |
| $e$ | 0.0229504 | $i$ | 3.20750 | +0.44353069 | | +0.06501446 | |
| $P$ | 4.27 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 291 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ | | |
| 2004 03 17 | 291 | 0.3+ | 0.1− | 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2− | | |
| 2004 03 17 | 291 | 0.2+ | 0.1− | 2006 09 24 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.3+ | | |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.6+ | 0.1+ | | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− | | |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | | |
| 2006 09 18 | 691 | 0.1+ | 0.6− | 2006 09 28 | 691 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.3− | | |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.2− | | |

**2006 SC$_{201}$ = 2006 SM$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.93168 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22489623 | $\omega$ | 238.97237 | +0.09462974 | | −0.99513356 | |
| $a$ | 2.6780248 | $\Omega$ | 205.64065 | +0.93363636 | | +0.09828962 | |
| $e$ | 0.0786741 | $i$ | 3.63921 | +0.34549726 | | +0.00695364 | |
| $P$ | 4.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.1+ | 0.6− | 2006 10 02 | 691 | 0.4− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | | |
| 1997 10 04 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 1997 10 04 | 691 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 | | |
| 2002 11 04 | 291 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | | |
| 2002 11 04 | 291 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.2− | | |
| 2002 11 04 | 291 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.5− | | |
| 2002 12 12 | 644 | 0.4− | 0.9− | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.5− | | |
| 2002 12 12 | 644 | 0.7− | 0.9− | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.2− | | |
| 2002 12 12 | 644 | 1.1− | 1.0− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2− | | |
| 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 461 | 0.0 | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.1− | | |
| 2004 04 20 | 691 | 0.1− | 0.5+ | 2006 10 16 | 461 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2004 04 20 | 691 | 0.5+ | 0.6+ | 2006 10 16 | 461 | 0.1− | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.0 | | |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 16 | 461 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | | |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 16 | 461 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.6− | | |
| 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 16 | 461 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.2− | | |
| 2006 09 24 | 691 | 0.1− | 0.3+ | 2006 10 17 | 461 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.3− | | |
| 2006 09 24 | 691 | 0.1+ | 0.1− | 2006 10 17 | 461 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 2006 09 24 | 691 | 0.0 | 0.0 | 2006 10 17 | 461 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.3− | 0.1− | | |
| 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 461 | 0.1− | 0.3+ | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 461 | 0.0 | 0.3+ | 2006 11 21 | 691 | 0.5− | 0.3− | | |
| 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 19 | 461 | 0.1− | 0.1+ | | | | | | |

**2006 SS$_{201}$ = 2005 GF$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.38851 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22629306 | $\omega$ | 291.51666 | +0.69350007 | | +0.72031402 | |
| $a$ | 2.6669931 | $\Omega$ | 22.41109 | −0.64631747 | | +0.63080024 | |
| $e$ | 0.2730782 | $i$ | 2.15411 | −0.31832589 | | +0.28851128 | |
| $P$ | 4.36 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.3+ | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.1− | | |
| 2005 04 10 | G96 | 0.1− | 0.4+ | 2006 09 24 | 691 | 0.9− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.4+ | | |
| 2005 04 10 | G96 | 0.2+ | 0.6+ | 2006 09 24 | 691 | 0.1− | 0.6+ | 2006 10 27 | 691 | 0.1− | 0.5− | | |
| 2005 04 10 | G96 | 0.0 | 0.3+ | 2006 09 28 | 691 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.6+ | | |
| 2005 04 11 | G96 | 0.7+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2005 04 11 | G96 | 0.1− | 0.6+ | 2006 09 28 | 691 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.4+ | 0.2+ | | |
| 2005 04 11 | G96 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.4− | 0.2− | | |
| 2005 04 11 | G96 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |

**2006 SY$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.21829 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21157066 | $\omega$ | 277.74255 | +0.43407122 | | +0.90054134 | |
| $a$ | 2.7893248 | $\Omega$ | 18.04557 | −0.79200832 | | +0.39450898 | |
| $e$ | 0.0462330 | $i$ | 4.56354 | −0.42930758 | | +0.18272374 | |
| $P$ | 4.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 16 | 691 | 0.3− | 0.8− | 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.5− | | |
| 1992 11 16 | 691 | 0.4− | 0.4− | 2006 09 28 | 691 | 0.6+ | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 1992 11 16 | 691 | 1.3+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 | | |
| 2001 05 24 | 807 | 0.6− | 0.7+ | 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.4+ | | |
| 2001 05 24 | 807 | 0.1− | 0.7+ | 2006 10 02 | 691 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1+ | | |
| 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.2+ | | |
| 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.5− | | |
| 2004 04 13 | 691 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.5+ | 0.3− | | |
| 2006 07 21 | G96 | 0.3− | 1.0+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.8− | 0.3+ | | |
| 2006 07 21 | G96 | 0.8− | 0.0 | 2006 10 11 | 691 | 0.4− | 0.7+ | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 2006 07 21 | G96 | 0.8− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.0 | | |
| 2006 07 21 | G96 | 0.4+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.3− | 0.2+ | | |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.3+ | | |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.6+ | 1.1− | 2006 11 16 | 691 | 0.2+ | 0.1− | | |
| 2006 09 18 | 691 | 0.1− | 0.5+ | 2006 10 21 | 703 | 0.2+ | 1.2+ | 2006 11 16 | 691 | 0.1+ | 0.2− | | |
| 2006 09 24 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 | | |
| 2006 09 24 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 1.8− | 1.5− | | | | | | |

**2006 SZ$_{201}$ = 2004 CO$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.82701 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27740759 | $\omega$ | 95.80957 | −0.43653681 | | −0.89910738 | |
| $a$ | 2.3283977 | $\Omega$ | 20.16949 | +0.78397282 | | −0.39774497 | |
| $e$ | 0.1820713 | $i$ | 5.37067 | +0.44138672 | | −0.18276995 | |
| $P$ | 3.55 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 703 | 0.1+ | 0.4+ | 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.3− | | |
| 2004 01 28 | 703 | (2.1+ | 1.5+) | 2006 09 24 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.3− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 703 | 0.3− | 0.4− | 2006 09 24 | 691 | 1.0+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 2004 01 28 | 703 | 0.5− | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.7− |
| 2004 02 13 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 02 13 | 691 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.2− | 0.6+ |
| 2004 02 15 | 704 | 0.1− | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2004 02 15 | 704 | 0.9+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2004 02 15 | 704 | 0.6+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2004 02 15 | 704 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2004 02 15 | 704 | 0.8+ | 0.1+ | 2006 10 27 | 691 | 0.7− | 0.1− | | | | |

**2006 SF$_{202}$ = 2001 SH$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.46557 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21346859 | $\omega$ | 274.05554 | | +0.17520740 | | +0.98440386 |
| $a$ | 2.7727671 | $\Omega$ | 6.10420 | | −0.83375906 | | +0.15692155 |
| $e$ | 0.1463052 | $i$ | 8.57529 | | −0.52359163 | | +0.07952778 |
| $P$ | 4.62 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.1− | 0.2+ | 2001 09 19 | 645 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.0 | 0.1+ |
| 1995 03 23 | 691 | 0.3− | 0.2− | 2001 09 21 | 704 | 0.2+ | 1.2+ | 2006 09 28 | 691 | 0.1+ | 0.2+ |
| 1995 03 23 | 691 | 0.2+ | 0.2− | 2001 09 21 | 704 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.5+ |
| 2001 09 19 | 704 | 0.4− | 0.3− | 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 10 03 | 691 | 0.1− | 0.9− |
| 2001 09 19 | 704 | 0.5+ | 0.8+ | 2001 09 21 | 704 | 0.3− | 0.6+ | 2006 10 03 | 691 | 0.2+ | 0.5− |
| 2001 09 19 | 704 | 0.2+ | 0.0 | 2006 09 24 | 291 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.2− | 0.3− |
| 2001 09 19 | 704 | 0.3− | 0.1− | 2006 09 24 | 291 | 0.2− | 0.2+ | | | | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 09 24 | 291 | 0.2+ | 0.7+ | | | | |

**2006 SU$_{202}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.68243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27001859 | $\omega$ | 252.52277 | | −0.76013037 | | +0.64899732 |
| $a$ | 2.3706836 | $\Omega$ | 327.92187 | | −0.57122045 | | −0.69068941 |
| $e$ | 0.0401411 | $i$ | 3.42104 | | −0.30969182 | | −0.31898373 |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.3+ | 0.6− | 2006 09 16 | 691 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.4− | 0.8− |
| 1995 10 19 | 691 | 0.1+ | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.4− | 0.5− |
| 1995 10 19 | 691 | 0.1+ | 0.1− | 2006 09 25 | 699 | 1.0− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.6+ |
| 2001 02 01 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 1.4− | 0.6+ | 2006 10 21 | 691 | 0.2+ | 0.5+ |
| 2001 02 01 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 699 | 0.3− | 0.4− | 2006 10 21 | 691 | 0.4+ | 0.5+ |
| 2001 02 01 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 691 | 0.3+ | 0.4+ | 2006 10 23 | G96 | 0.4+ | 0.1− |
| 2005 05 01 | 644 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.2+ | 0.1+ |
| 2005 05 01 | 644 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.0 | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.2− |
| 2005 05 19 | 644 | 0.2+ | 0.0 | 2006 10 01 | 703 | 0.4+ | 0.5− | 2006 10 27 | 691 | 0.4+ | 0.2+ |
| 2005 05 19 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 703 | 1.3− | 0.3+ | 2006 10 27 | 691 | 0.4+ | 0.0 |
| 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 10 01 | 703 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.3− |
| 2006 09 16 | 691 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.1− | | | | |
| 2006 09 16 | 691 | 0.1+ | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.0 | | | | |

**2006 SB$_{203}$ = 2005 LW$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.85541 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22151084 | $\omega$ | 195.75595 | | +0.95127291 | | −0.30832181 |
| $a$ | 2.7052416 | $\Omega$ | 182.21535 | | +0.29331184 | | +0.90898275 |
| $e$ | 0.0592854 | $i$ | 6.21585 | | +0.09512109 | | +0.28051384 |
| $P$ | 4.45 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 16 | G96 | 0.7+ | 0.2+ |
| 2005 06 08 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 10 16 | G96 | 0.5+ | 0.1+ |
| 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.7+ | 0.3− |
| 2005 06 14 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.1+ |
| 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.6− | 0.2+ |
| 2005 06 14 | 691 | 0.1− | 0.1− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2006 09 16 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.2− | 0.1− |
| 2006 09 16 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.5− | 0.2+ |
| 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.5− | | | | |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 09 28 | G96 | 0.0 | 0.2− | | | | |

**2006 SH$_{205}$ = 2003 BZ$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.08086 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18361209 | $\omega$ | 307.92083 | | −0.71170592 | | −0.70246495 |
| $a$ | 3.0657391 | $\Omega$ | 187.45743 | | +0.65424883 | | −0.66065237 |
| $e$ | 0.0655974 | $i$ | 1.85635 | | +0.25579905 | | −0.26472898 |
| $P$ | 5.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 704 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.6+ | 0.4− | 2006 10 02 | 691 | 0.5− | 0.2+ |
| 2003 01 27 | 704 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.0 |
| 2003 01 27 | 704 | 0.9− | 0.4− | 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2003 01 31 | 644 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2003 01 31 | 644 | 0.0 | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2003 01 31 | 644 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.5+ |
| 2006 09 25 | G96 | 0.6+ | 0.4− | 2006 09 28 | 691 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.4+ |
| 2006 09 25 | G96 | 0.4+ | 0.6− | 2006 10 02 | 691 | 0.8− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 10 02 | 691 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− |

**2006 SA$_{206}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.32148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23539909 | $\omega$ | 244.16834 | | +0.95737318 | | −0.28192749 |
| $a$ | 2.5977630 | $\Omega$ | 132.13746 | | +0.28595879 | | +0.89430861 |
| $e$ | 0.2150639 | $i$ | 4.86409 | | +0.04079428 | | +0.34746079 |
| $P$ | 4.19 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.0 | 0.1+ | 2006 09 25 | 699 | 0.3− | 0.9− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2002 11 16 | 644 | 0.1+ | 0.2− | 2006 09 29 | 699 | 1.2+ | 1.1− | 2006 10 16 | 703 | 0.5− | 0.7− |
| 2002 11 16 | 644 | 0.0 | 0.2− | 2006 09 29 | 699 | 0.6− | 0.6+ | 2006 10 16 | 703 | (2.1− | 1.6−) |
| 2005 05 16 | G96 | 0.6− | 0.1− | 2006 09 29 | 699 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.8− |
| 2005 05 16 | G96 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.8− | 0.1− | 2006 10 16 | 703 | 0.9+ | 0.1− |
| 2005 05 16 | G96 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2005 05 16 | G96 | 0.6+ | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2006 09 18 | 703 | (3.1+ | 2.2+) | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 10 04 | G96 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 1.0+ |
| 2006 09 18 | 703 | 0.4+ | 0.7− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.6− | 0.7+ |
| 2006 09 18 | 703 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.5+ | 0.2+ |
| 2006 09 25 | 699 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.8− |
| 2006 09 25 | 699 | (2.3− | 0.1−) | 2006 10 12 | 644 | 0.4+ | 0.2+ | | | | |
| 2006 09 25 | 699 | 0.2− | 1.7+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | | | | |

**2006 SC$_{206}$ = 1993 FC$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.02499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18977015 | $\omega$ | 102.80648 | | −0.31530070 | | −0.94895108 |
| $a$ | 2.9990528 | $\Omega$ | 5.59588 | | +0.83195879 | | −0.28086251 |
| $e$ | 0.1347909 | $i$ | 5.17382 | | +0.45654138 | | −0.14355522 |
| $P$ | 5.19 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.6− | 0.3+ | 2006 07 21 | G96 | 0.5+ | 0.0 | 2006 10 03 | 691 | 0.2+ | 0.1+ |
| 2000 07 31 | 807 | 0.3+ | 0.3+ | 2006 09 14 | 691 | 0.2− | 0.3+ | 2006 10 03 | 691 | 0.2+ | 0.2+ |
| 2000 07 31 | 807 | 0.1+ | 0.3+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2− | 0.2+ |
| 2001 10 26 | 644 | 0.3− | 0.6+ | 2006 09 14 | 691 | 0.1− | 0.4+ | 2006 10 19 | G96 | 0.5− | 0.5+ |
| 2001 10 26 | 644 | 0.0 | 0.9+ | 2006 09 25 | 691 | 0.1+ | 0.4− | 2006 10 19 | G96 | 0.2− | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.0 | 0.8+ | 2006 09 25 | 691 | 0.4+ | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.3+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 29 | 691 | 0.1+ | 0.6− | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 29 | 691 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2006 07 21 | G96 | 0.7+ | 0.0 | 2006 09 29 | 691 | 1.0− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.1+ | | | | |

**2006 SF$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 331.39873 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.18751133 | $\omega$ | 29.42973 | +0.67024703 | −0.74199614 |
| $a$ | 3.0230897 | $\Omega$ | 18.49674 | +0.67164437 | +0.59814692 |
| $e$ | 0.0527503 | $i$ | 2.62212 | +0.31569409 | +0.30275732 |
| $P$ | 5.26 | $H$ | 16.4 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.5− | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2001 10 26 | 644 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 10 26 | 644 | 0.8− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2001 12 18 | 691 | 0.5+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2001 12 18 | 691 | 0.1+ | 0.1+ | 2006 09 29 | 691 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2001 12 18 | 691 | 0.1− | 0.3+ | 2006 09 29 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 09 14 | 691 | 0.4− | 0.1− | 2006 09 29 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.5− |
| 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1− | 0.1+ |
| 2006 09 14 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.5+ | 0.3− |
| 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2006 09 25 | G96 | 0.7− | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.1− | | | | |
| 2006 09 25 | G96 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.2− | | | | |

**2006 SN$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 318.51232 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27799135 | $\omega$ | 227.37278 | +0.43135118 | −0.90161831 |
| $a$ | 2.3251369 | $\Omega$ | 197.15493 | +0.85620165 | +0.42026997 |
| $e$ | 0.0814913 | $i$ | 6.21787 | +0.28434996 | +0.10226230 |
| $P$ | 3.55 | $H$ | 17.5 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.1− | 0.5+ | 2006 09 28 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2002 08 05 | 644 | 0.4− | 0.9+ | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 05 | 644 | 0.2− | 1.1+ | 2006 09 28 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 04 14 | 645 | 0.1+ | 0.2+ | 2006 10 13 | D35 | 0.5− | 0.6+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2004 04 14 | 645 | 0.0 | 0.2+ | 2006 10 13 | D35 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2005 06 06 | 691 | 0.1− | 0.1− | 2006 10 13 | D35 | 0.7− | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2005 06 06 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.2− |
| 2005 06 06 | 691 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.1+ |
| 2005 06 28 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 2005 06 28 | 691 | 0.1+ | 0.3+ | 2006 10 18 | H07 | 0.7− | 0.5− | 2006 10 29 | G96 | 0.2− | 0.0 |
| 2005 06 28 | 691 | 0.2+ | 0.0 | 2006 10 18 | H07 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2005 06 28 | 644 | 0.2+ | 0.2+ | 2006 10 18 | H07 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2005 06 28 | 644 | 0.2+ | 0.2+ | 2006 10 18 | H07 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 06 28 | 644 | 0.1+ | 0.2+ | 2006 10 20 | H07 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.4+ | 0.3− |
| 2005 06 28 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2005 06 28 | 644 | 0.2− | 0.2+ | 2006 10 20 | H07 | 0.2+ | 0.8+ | 2006 11 11 | 691 | 0.2− | 0.4− |
| 2005 06 28 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.7+ |
| 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 20 | H07 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.1− | 0.9+ |
| 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 20 | H07 | 1.6− | 0.3− | 2006 11 11 | 703 | 0.1+ | 1.7+ |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.9+ | 0.9− |
| 2006 09 25 | G96 | 0.8+ | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.1+ |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.6− | 0.7− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.8+ | 0.3− | 2006 10 21 | 703 | 0.6− | 1.0− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 21 | 703 | 1.0− | 0.7+ | 2006 11 18 | G96 | 0.3− | 0.1− |

**2006 SU$_{206}$ = 1997 TS$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 356.04900 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.21768895 | $\omega$ | 6.99391 | +0.91852906 | −0.39510294 |
| $a$ | 2.7368130 | $\Omega$ | 16.30034 | +0.36025802 | +0.82179970 |
| $e$ | 0.1107208 | $i$ | 2.87392 | +0.16284509 | +0.41053492 |
| $P$ | 4.53 | $H$ | 17.3 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 09 | 691 | 0.7− | 0.1− | 2006 09 28 | 691 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 1997 10 09 | 691 | 0.5− | 0.5− | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 1997 10 09 | 691 | 0.9− | 0.4− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 1997 10 11 | 691 | 1.3+ | 0.4− | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.3− |
| 1997 10 11 | 691 | 0.9+ | 0.6− | 2006 10 20 | 703 | (1.9− | 0.5+) | 2006 10 31 | 691 | 0.1− | 0.0 |
| 1997 10 11 | 691 | 0.8+ | 0.2− | 2006 10 20 | 703 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2006 09 25 | G96 | 0.6+ | 0.3+ | 2006 10 20 | 703 | 0.6− | 0.5− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2006 09 25 | G96 | 0.6+ | 0.1− | 2006 10 20 | 703 | (1.0− | 1.5+) | 2006 11 10 | 691 | 0.4− | 0.2+ |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.3− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2006 09 25 | G96 | 0.5+ | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2006 09 28 | 691 | 0.6+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.6+ | 2006 11 11 | 691 | 0.4− | 0.4+ |
| 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.2− |

**2006 SF$_{207}$ = 2003 YG$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 313.06286 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.30436290 | $\omega$ | 136.21738 | +0.26273640 | −0.96411567 |
| $a$ | 2.1888109 | $\Omega$ | 298.51620 | +0.87289119 | +0.25432523 |
| $e$ | 0.1167896 | $i$ | 2.48424 | +0.41113325 | +0.07615542 |
| $P$ | 3.24 | $H$ | 18.1 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.2+ | 0.1+ | 2003 12 25 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 2003 12 18 | 704 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.8+ |
| 2003 12 18 | 704 | 0.4− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.4+ | 2006 10 17 | 703 | 0.0 | 1.1+ |
| 2003 12 19 | 704 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | (1.0− | 1.7−) |
| 2003 12 19 | 704 | 0.2+ | 0.6− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2003 12 19 | 704 | (2.5+ | 0.1+) | 2006 09 28 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1+ | 1.2+ |
| 2003 12 19 | 704 | 0.6− | 1.0− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.1− | 0.1− |
| 2003 12 22 | 704 | (0.8+ | 2.8+) | 2006 10 02 | 691 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.4− |
| 2003 12 22 | 704 | (0.2+ | 2.6+) | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.4− |
| 2003 12 22 | 704 | (0.2− | 3.0+) | 2006 10 02 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2003 12 25 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 12 25 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.4− |

**2006 SQ$_{207}$ = 2000 GB$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 89.76848 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.21544488 | $\omega$ | 265.79411 | +0.08274165 | +0.99611319 |
| $a$ | 2.7557846 | $\Omega$ | 9.11865 | −0.82194165 | +0.08535017 |
| $e$ | 0.1694248 | $i$ | 10.98734 | −0.56352971 | +0.02176849 |
| $P$ | 4.57 | $H$ | 16.0 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.4+ | 0.4+ | 2000 04 06 | 704 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 2000 04 05 | 704 | 0.2− | 0.0 | 2000 04 06 | 704 | 0.2+ | 0.4− | 2006 10 17 | 691 | 0.3+ | 0.1− |
| 2000 04 05 | 699 | 0.6+ | 0.1− | 2000 04 06 | 704 | 0.5− | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.2− |
| 2000 04 05 | 699 | 1.2+ | 0.5− | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.4+ | 0.4− |
| 2000 04 05 | 704 | 0.4− | 0.7+ | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.3+ | 0.3− |
| 2000 04 05 | 704 | 0.4− | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.4− | 0.2− |
| 2000 04 05 | 699 | 0.4− | 0.6+ | 2006 09 28 | 291 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.5− | 0.2− |
| 2000 04 05 | 704 | 0.1− | 0.1+ | 2006 09 28 | 291 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2000 04 05 | 704 | 0.1+ | 0.1+ | 2006 09 28 | 291 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.4+ |
| 2000 04 06 | 704 | 0.2+ | 1.3− | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2000 04 06 | 704 | 0.9− | 0.2− | 2006 10 03 | 691 | 0.2− | 0.0 | | | | |

**2006 ST$_{207}$ = 2004 BT$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.64488 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27790227 | $\omega$ | 122.39505 | | +0.94790594 | −0.31769280 | |
| $a$ | 2.3256337 | $\Omega$ | 256.13750 | | +0.28358847 | +0.87499760 | |
| $e$ | 0.2076401 | $i$ | 1.37863 | | +0.14509278 | +0.36530875 | |
| $P$ | 3.55 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 29 | 691 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2004 01 28 | 691 | 0.4− | 0.3+ | 2006 09 29 | 691 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2004 01 28 | 691 | 0.4+ | 0.1− | 2006 10 16 | 104 | 0.1− | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.1− | |
| 2004 02 17 | 291 | 0.2+ | 0.1+ | 2006 10 16 | 104 | 0.6− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1− | |
| 2004 02 17 | 291 | 0.1+ | 0.0 | 2006 10 16 | 104 | 0.5+ | 0.7− | 2006 10 29 | 691 | 0.1+ | 0.1− | |
| 2004 02 17 | 291 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.0 | 0.1+ | |
| 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.0 | 0.1− | |
| 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 07 | 644 | 0.3+ | 0.2+ | |
| 2006 09 25 | 691 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.0 | |
| 2006 09 26 | 152 | 0.5− | 0.7− | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.6− | |
| 2006 09 26 | 152 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.3− | |
| 2006 09 26 | 152 | (2.3− | 0.1−) | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.2− | |
| 2006 09 26 | 152 | (1.8− | 0.1−) | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1− | |
| 2006 09 26 | 152 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.3− | |
| 2006 09 26 | 152 | 0.2− | 1.3− | 2006 10 20 | 644 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.2− | |
| 2006 09 27 | 152 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.2− | 0.2− | |
| 2006 09 27 | 152 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.1− | |
| 2006 09 27 | 152 | 0.1− | 0.6− | 2006 10 21 | 703 | 0.1− | 0.6+ | 2006 11 18 | 691 | 0.0 | 0.1− | |
| 2006 09 28 | 291 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.2+ | |
| 2006 09 28 | 291 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.9+ | 2006 11 20 | 691 | 0.0 | 0.1− | |
| 2006 09 28 | 291 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.7+ | 0.4+ | 2006 11 20 | 691 | 0.3− | 0.1− | |
| 2006 09 29 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− | | | | | |

**2006 SU$_{207}$ = 2004 GK$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.31131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18483276 | $\omega$ | 304.00393 | | +0.76306243 | +0.64421195 | |
| $a$ | 3.0522265 | $\Omega$ | 16.09700 | | −0.51332659 | +0.65315236 | |
| $e$ | 0.0784344 | $i$ | 10.85545 | | −0.39272323 | +0.39797357 | |
| $P$ | 5.33 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.0 | |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 | |
| 2004 04 16 | 644 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.0 | |
| 2004 04 16 | 644 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.2+ | |
| 2004 04 16 | 644 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.1+ | |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.1+ | |
| 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 25 | G96 | 0.5+ | 0.3− | |
| 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.3− | |
| 2006 09 28 | 291 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.6− | |
| 2006 09 28 | 291 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.4− | |
| 2006 09 28 | 291 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | | | | |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | | | | |

**2006 SH$_{208}$ = 2002 US$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.49661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24291064 | $\omega$ | 81.77190 | | +0.93665309 | −0.34687596 | |
| $a$ | 2.5439292 | $\Omega$ | 298.51271 | | +0.29565784 | +0.85733997 | |
| $e$ | 0.3287324 | $i$ | 3.16793 | | +0.18779626 | +0.38032256 | |
| $P$ | 4.06 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.0 | 0.5+ | 2006 09 06 | 644 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.2+ | |
| 2002 10 03 | 644 | 0.1− | 0.6+ | 2006 09 17 | 703 | 0.0 | 1.3− | 2006 09 29 | 704 | 0.4+ | 0.3+ | |
| 2002 10 03 | 644 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.2− | 0.2− | 2006 09 29 | 704 | 0.9+ | 0.1− | |
| 2002 10 30 | 608 | 0.5− | 0.1+ | 2006 09 17 | 703 | 1.3− | 1.1− | 2006 09 29 | 704 | 0.4+ | 0.2+ | |
| 2002 10 30 | 608 | 0.4− | 0.0 | 2006 09 17 | 703 | 0.4− | 0.9− | 2006 09 29 | 704 | 0.7− | 0.3+ | |
| 2002 10 30 | 608 | 0.0 | 0.1+ | 2006 09 25 | 704 | 1.2+ | 1.3− | 2006 11 20 | G96 | 0.6+ | 0.5− | |
| 2002 10 31 | 644 | 0.1+ | 0.1+ | 2006 09 25 | 704 | (1.7+ | 0.9−) | 2006 11 20 | G96 | 0.3− | 1.0− | |
| 2002 10 31 | 644 | 0.1+ | 0.0 | 2006 09 25 | 704 | 0.4+ | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.4− | |
| 2002 10 31 | 644 | 0.3+ | 0.1+ | 2006 09 25 | 704 | 0.4− | 0.4+ | 2006 11 20 | G96 | 0.1− | 0.0 | |
| 2006 09 06 | 644 | 0.5+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.3+ | | | | | |
| 2006 09 06 | 644 | 0.3+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.4+ | | | | | |

**2006 SL$_{208}$ = 1999 XJ$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.73897 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27233946 | $\omega$ | 297.86344 | | +0.99826541 | −0.04786314 | |
| $a$ | 2.3571959 | $\Omega$ | 64.89736 | | +0.05775183 | +0.90924864 | |
| $e$ | 0.2018989 | $i$ | 2.16963 | | −0.01144072 | +0.41349248 | |
| $P$ | 3.62 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 691 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.4− | |
| 1999 12 08 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 704 | 0.5+ | 1.1+ | 2006 09 30 | 703 | (0.5+ | 1.6+) | |
| 1999 12 08 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | (0.3+ | 1.7−) | |
| 1999 12 13 | 691 | 0.0 | 0.1− | 2006 09 28 | 704 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1+ | |
| 1999 12 13 | 691 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.3− | |
| 1999 12 13 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.7+ | 0.5+ | 2006 10 22 | 644 | 0.0 | 0.1+ | |
| 2006 09 26 | 704 | 0.1− | 0.6+ | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.1− | |
| 2006 09 26 | 704 | 0.8− | 0.2+ | 2006 09 30 | 703 | 1.0− | 0.3− | 2006 11 17 | G96 | 0.5+ | 0.0 | |
| 2006 09 26 | 704 | 0.2− | 0.5− | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.2− | 0.3− | |
| 2006 09 26 | 704 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.2− | |
| 2006 09 26 | 704 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.6− | | | | | |
| 2006 09 28 | 704 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.3− | | | | | |

**2006 SZ$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.76057 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23051437 | $\omega$ | 286.61637 | | +0.79873992 | +0.60094318 | |
| $a$ | 2.6343333 | $\Omega$ | 36.46137 | | −0.53122998 | +0.72753470 | |
| $e$ | 0.0999422 | $i$ | 2.86421 | | −0.28250530 | +0.33099933 | |
| $P$ | 4.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.2+ | 0.2− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 16 | 291 | 0.1+ | 0.2+ | |
| 2004 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.4+ | 2006 10 16 | 291 | 0.1− | 0.5+ | |
| 2004 02 12 | 691 | 0.4+ | 0.0 | 2006 09 28 | 699 | 0.6+ | 0.6+ | 2006 10 16 | 291 | 0.1+ | 0.3+ | |
| 2004 03 01 | 691 | 0.5− | 0.1+ | 2006 09 28 | 704 | 1.2+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− | |
| 2004 03 01 | 691 | 0.3− | 0.4+ | 2006 09 28 | 704 | (1.5+ | 0.8−) | 2006 10 21 | G96 | 0.1+ | 0.0 | |
| 2004 03 01 | 691 | 0.4+ | 0.1+ | 2006 09 28 | 699 | 0.5− | 0.2− | 2006 10 21 | G96 | 0.3− | 0.1− | |
| 2005 05 11 | 644 | 0.2+ | 0.7+ | 2006 09 28 | 704 | (0.0 | 1.5+) | 2006 10 21 | G96 | 0.4+ | 0.1+ | |
| 2005 05 11 | 644 | 0.1+ | 0.7+ | 2006 09 28 | 704 | 0.7+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.4− | |
| 2005 05 11 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 699 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.4− | |
| 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 09 28 | 699 | 1.1− | 1.0− | 2006 11 14 | G96 | 0.2− | 0.1+ | |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.5− | 0.7− | |
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1− | | | | | |
| 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.4− | | | | | |

**2006 SX$_{209}$ = 1995 OC$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 57.78291 | | (2000.0) | | | |
| $n$ | 0.18445213 | $\omega$ | 137.59481 | | +0.21921580 | +0.97557288 |
| $a$ | 3.0564239 | $\Omega$ | 145.06118 | | −0.90169088 | +0.20813540 |
| $e$ | 0.2493894 | $i$ | 1.42202 | | −0.37269021 | +0.07026533 |
| $P$ | 5.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.5− | 0.4− | 2005 05 09 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− |
| 1995 07 22 | 691 | 0.8− | 0.3− | 2005 05 09 | G96 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 1995 07 22 | 691 | 0.5− | 0.5− | 2005 05 09 | G96 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1− |
| 1995 07 27 | 691 | 0.3+ | 0.1− | 2005 05 09 | G96 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.2− | 0.2+ |
| 1995 07 27 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 1995 07 27 | 691 | 1.2+ | 0.4+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.4− | 0.0 |
| 2005 04 16 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.3+ | 0.6+ |
| 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 09 26 | G96 | 0.1+ | 0.0 | | | | |
| 2005 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3+ | 0.3+ | | | | |

**2006 SL$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.39825 | | (2000.0) | | | |
| $n$ | 0.25863236 | $\omega$ | 172.06770 | | +0.91450493 | +0.40453896 |
| $a$ | 2.4397621 | $\Omega$ | 164.06679 | | −0.37225784 | +0.84659006 |
| $e$ | 0.0448241 | $i$ | 1.12320 | | −0.15844504 | +0.34588076 |
| $P$ | 3.81 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | G96 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 02 | 291 | 0.3− | 0.2+ |
| 2005 05 07 | G96 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 02 | 291 | 0.1+ | 0.1+ |
| 2005 05 07 | G96 | 1.4− | 0.9− | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2005 05 07 | G96 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 2005 06 12 | G96 | 1.0+ | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.1− |
| 2005 06 12 | G96 | 0.0 | 0.3− | 2006 09 28 | G96 | 0.7+ | 0.1− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2005 06 12 | G96 | 0.2− | 0.6+ | 2006 09 29 | 291 | 0.1+ | 0.2+ | 2006 10 02 | 291 | 0.3+ | 0.0 |
| 2005 06 12 | G96 | 0.2+ | 0.3+ | 2006 09 29 | 291 | 0.2+ | 0.1+ | 2006 10 02 | 291 | 0.1+ | 0.2− |
| 2006 09 15 | 691 | 0.2− | 0.5+ | 2006 09 29 | 291 | 0.0 | 0.2+ | 2006 10 02 | 291 | 0.0 | 0.1− |
| 2006 09 15 | 691 | 0.4− | 0.1+ | 2006 09 30 | 291 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 09 30 | 291 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2006 09 26 | G96 | 0.5+ | 0.1− | 2006 09 30 | 291 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.5− | 0.4− |
| 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 02 | 291 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3− |

**2006 SD$_{211}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.96152 | | (2000.0) | | | |
| $n$ | 0.20375186 | $\omega$ | 261.49217 | | +0.84935494 | +0.49286819 |
| $a$ | 2.8602347 | $\Omega$ | 68.79001 | | −0.36830749 | +0.80975425 |
| $e$ | 0.1428493 | $i$ | 11.68954 | | −0.37808171 | +0.31840070 |
| $P$ | 4.84 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.8+ | 0.7− | 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2001 10 15 | 644 | 0.8+ | 0.8− | 2006 09 19 | 703 | 0.9+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.7+ |
| 2001 10 15 | 644 | 0.6+ | 0.5− | 2006 09 26 | 703 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.4+ |
| 2001 10 23 | 644 | 0.8− | 0.4+ | 2006 09 26 | 703 | 0.3− | 1.3+ | 2006 10 22 | 703 | 0.2+ | 0.9− |
| 2001 10 23 | 644 | 0.8− | 0.7+ | 2006 09 26 | 703 | 0.5− | 0.4− | 2006 10 22 | 703 | 1.0− | 0.3+ |
| 2001 10 23 | 644 | 0.6− | 0.7+ | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2004 03 19 | 644 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.9− | 0.5− |
| 2004 03 19 | 644 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.1− | 0.8+ | 2006 10 28 | 703 | 0.7+ | 1.0+ |
| 2004 03 19 | 644 | 0.3+ | 0.1− | 2006 09 29 | 699 | 1.3+ | 0.7− | 2006 10 28 | 703 | 0.2− | 0.2− |
| 2006 09 19 | 703 | 0.3− | 0.7− | 2006 09 29 | 699 | 0.6+ | 0.6+ | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 2006 09 19 | 703 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 10 28 | 703 | 0.3+ | 1.4− |

**2006 SH$_{211}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.49693 | | (2000.0) | | | |
| $n$ | 0.19436591 | $\omega$ | 231.36699 | | +0.86694542 | −0.49157564 |
| $a$ | 2.9515897 | $\Omega$ | 157.70752 | | +0.49742970 | +0.84309519 |
| $e$ | 0.0733302 | $i$ | 12.51705 | | +0.03113417 | +0.21804561 |
| $P$ | 5.07 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.0 | 0.4− | 2006 09 26 | 703 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.6+ |
| 1993 02 26 | 691 | 0.1+ | 0.5− | 2006 09 26 | 703 | 1.4+ | 0.5+ | 2006 10 16 | 703 | 1.3− | 1.1− |
| 1993 02 26 | 691 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.6+ | 0.5+ | 2006 10 22 | 703 | 0.8− | 1.0− |
| 2001 10 15 | 644 | 0.1+ | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.7− | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2001 10 15 | 644 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.5− | 1.8+ | 2006 10 22 | 703 | 1.0+ | 0.3+ |
| 2001 10 15 | 644 | 0.2+ | 0.1+ | 2006 09 29 | 699 | 1.6− | 0.0 | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2001 10 23 | 644 | 0.4− | 0.0 | 2006 09 29 | 699 | 0.3+ | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.4− |
| 2001 10 23 | 644 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.4− | 0.5+ | 2006 10 22 | 644 | 0.2+ | 0.1− |
| 2001 10 23 | 644 | 0.5− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.5− | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 2003 01 27 | 644 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.3− |
| 2003 01 27 | 644 | 0.1− | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.4− |
| 2003 01 27 | 644 | 0.0 | 0.4+ | 2006 10 12 | 644 | 0.5+ | 0.3− | 2006 10 23 | 644 | 0.5− | 0.3− |
| 2006 09 18 | 703 | 0.6+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.4− | 2006 10 28 | 703 | 0.1+ | 0.3− |
| 2006 09 18 | 703 | 0.5+ | 0.5− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.5− |
| 2006 09 18 | 703 | 0.3+ | 1.3+ | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.6− | 0.2− |
| 2006 09 18 | 703 | 0.7+ | 1.2+ | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 10 28 | 703 | 0.1− | 1.0− |

**2006 SX$_{211}$ = 2005 EJ$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 112.61446 | | (2000.0) | | | |
| $n$ | 0.37200758 | $\omega$ | 239.99957 | | −0.16306015 | +0.97659738 |
| $a$ | 1.9147034 | $\Omega$ | 21.98443 | | −0.72580423 | −0.02245112 |
| $e$ | 0.0245924 | $i$ | 22.00170 | | −0.66829605 | −0.21390070 |
| $P$ | 2.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 703 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.7− | 0.9− | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2005 03 08 | 703 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2005 03 08 | 703 | 0.7− | 0.4− | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 1.1+ | 1.0+ |
| 2005 03 08 | 703 | (2.2− | 0.2−) | 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.9+ | 0.9+ |
| 2005 03 14 | 703 | (3.0− | 0.6−) | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 2005 03 14 | 703 | 0.1+ | 0.2+ | 2006 10 02 | 691 | 0.5− | 0.3+ | 2006 10 17 | 703 | 0.7+ | 0.1− |
| 2005 03 14 | 703 | (1.9+ | 0.4−) | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2005 03 14 | 703 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.6− | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2006 09 26 | G96 | 0.5− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.0 |

**2006 SA$_{212}$ = 2004 EW$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 126.08575 | | (2000.0) | | | |
| $n$ | 0.21394183 | $\omega$ | 210.42150 | | −0.29009143 | +0.95548832 |
| $a$ | 2.7686767 | $\Omega$ | 42.77964 | | −0.86131926 | −0.23619702 |
| $e$ | 0.0473276 | $i$ | 4.53909 | | −0.41710441 | −0.17678529 |
| $P$ | 4.61 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2004 03 15 | 704 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.5+ | 0.5− | 2006 10 23 | 691 | 0.6− | 0.0 |
| 2004 03 15 | 704 | 0.2+ | 1.2− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2004 03 19 | 704 | 0.2+ | 0.4− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2004 03 19 | 704 | 0.7− | 0.7− | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.8− |
| 2004 03 19 | 704 | 0.2+ | 0.3− | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2004 03 19 | 704 | 0.4− | 1.4+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.5+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.3+ | 0.3+ |
| 2006 09 18 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.2+ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.3+ | 0.0 |
| 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.1+ |

**2006 SC$_{212}$ = 2004 HS$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 331.28767 | | (2000.0) | | | |
| $n$ | 0.21593696 | $\omega$ | 235.89118 | | +0.49645313 | −0.86803927 |
| $a$ | 2.7515963 | $\Omega$ | 184.35837 | | +0.82191147 | +0.47245044 |
| $e$ | 0.1543464 | $i$ | 4.89880 | | +0.27927734 | +0.15263817 |
| $P$ | 4.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.6+ |
| 2001 09 20 | 704 | 0.5− | 1.3+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 21 | 703 | 0.2+ | 0.9+ |
| 2001 09 20 | 704 | 0.7− | 1.1+ | 2006 09 28 | 691 | 0.4− | 0.7+ | 2006 10 21 | 703 | 1.2+ | 1.0+ |
| 2001 09 20 | 704 | 0.5+ | 0.1− | 2006 09 28 | 691 | 0.5− | 0.6+ | 2006 10 21 | 703 | 1.0− | 1.3− |
| 2003 01 24 | 644 | 0.2+ | 0.0 | 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2003 01 24 | 644 | 0.2+ | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2003 01 24 | 644 | 0.2− | 0.4+ | 2006 10 02 | 691 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2004 04 16 | 691 | 0.6− | 0.4+ | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2004 04 16 | 691 | 0.7+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 04 16 | 691 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2004 04 22 | 691 | 0.2+ | 1.1+ | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2004 04 22 | 691 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | (2.5− | 0.2+) |
| 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.9− |
| 2006 09 18 | 691 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.6+ |
| 2006 09 18 | 691 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 1.4+ | 0.6− |
| 2006 09 18 | 691 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.0 | | | | |
| 2006 09 26 | G96 | 0.4− | 0.4− | 2006 10 17 | G96 | 0.1− | 0.3− | | | | |

**2006 SK$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 42.67932 | | (2000.0) | | | |
| $n$ | 0.24299134 | $\omega$ | 338.33095 | | +0.74941577 | +0.66082524 |
| $a$ | 2.5433659 | $\Omega$ | 340.12936 | | −0.58834109 | +0.63620226 |
| $e$ | 0.2076412 | $i$ | 6.93851 | | −0.30369520 | +0.39819176 |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.1− | 0.8+ | 2006 09 25 | 152 | 0.6− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2002 11 01 | 644 | 0.2− | 1.0+ | 2006 09 25 | 152 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 01 | 644 | 0.3− | 1.0+ | 2006 09 25 | 152 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 24 | 644 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 25 | 106 | 0.3− | 0.3− |
| 2002 11 24 | 644 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.2+ | 0.2− | 2006 10 25 | 106 | 0.2− | 0.0 |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.9− | 0.3− | 2006 10 25 | 106 | 0.4− | 0.1+ |
| 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.1− | 2006 10 25 | 106 | 0.2+ | 0.1− |
| 2004 02 13 | 691 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.2− | 0.2− | 2006 10 27 | 703 | 0.3− | 0.0 |
| 2004 02 13 | 691 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.4− | 0.6− | 2006 10 27 | 703 | 0.0 | 0.4− |
| 2004 02 13 | 691 | 0.7− | 0.1− | 2006 10 19 | 703 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.8− | 0.4− |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 10 27 | 703 | 0.4+ | 1.0− |
| 2004 03 17 | 645 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.5+ | 0.6− | 2006 11 07 | 644 | 0.8− | 0.3+ |
| 2004 03 17 | 645 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.5− | 2006 11 07 | 644 | 0.0 | 0.1+ |
| 2006 09 23 | 152 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.9+ | 0.2+ |
| 2006 09 23 | 152 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 2006 09 23 | 152 | 0.6− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.4− | 0.0 |
| 2006 09 24 | 152 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.3+ |
| 2006 09 24 | 152 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 2.0+ | 1.2+ |

**2006 SM$_{212}$ = 1998 HW$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 162.30312 | | (2000.0) | | | |
| $n$ | 0.18317350 | $\omega$ | 221.19545 | | −0.74898627 | +0.66258450 |
| $a$ | 3.0706310 | $\Omega$ | 0.30908 | | −0.53761495 | −0.60669651 |
| $e$ | 0.0840260 | $i$ | 12.40402 | | −0.38728507 | −0.43920511 |
| $P$ | 5.38 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.3− | 0.3− | 2006 09 28 | 703 | (1.2+ | 1.9−) | 2006 10 12 | 644 | 0.2+ | 0.0 |
| 1998 04 17 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.2− | 0.1− |
| 1998 04 17 | 691 | 0.5− | 0.3− | 2006 09 28 | 703 | 0.3− | 0.3− | 2006 10 19 | 703 | 0.2− | 0.4− |
| 1998 04 23 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 703 | 1.0+ | 0.5− | 2006 10 19 | 703 | (1.7− | 0.2+) |
| 1998 04 23 | 691 | 0.5+ | 0.0 | 2006 09 30 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.8+ | 0.2− |
| 1998 04 23 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.9− | 0.8+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2006 09 26 | 691 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.3− | 0.0 |

**2006 SP$_{212}$ = 1979 OV$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.02329 | | (2000.0) | | | |
| $n$ | 0.22355827 | $\omega$ | 39.62878 | | +0.96812175 | +0.24342634 |
| $a$ | 2.6886993 | $\Omega$ | 306.18402 | | −0.24434488 | +0.86597763 |
| $e$ | 0.1803697 | $i$ | 4.19375 | | −0.05509869 | +0.43683676 |
| $P$ | 4.41 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 07 24 | 675 | 1.7+ | 1.9+ | 2006 10 17 | 691 | 0.1+ | 0.4− | 2006 11 14 | 703 | 0.2− | 0.1+ |
| 1979 07 24 | 413 | 2.0− | 1.7− | 2006 10 17 | 691 | 0.1− | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 1979 07 25 | 675 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.2− | 0.0 |
| 2006 09 20 | 699 | (0.3− | 1.8−) | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.8+ |
| 2006 09 20 | 699 | 0.6− | 0.7− | 2006 10 17 | 691 | 1.3+ | 0.5− | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2006 09 20 | 699 | 1.3− | 1.3− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2006 09 20 | 699 | 0.3− | 0.6− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.0 | 1.2+ |
| 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.4+ | 0.1+ |
| 2006 09 26 | 691 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.9+ |
| 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.2+ |
| 2006 09 28 | 703 | 0.5+ | 0.8− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2006 09 28 | 703 | 0.8+ | 1.1− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.4− |
| 2006 09 28 | 703 | 0.4− | 0.5− | 2006 11 14 | 703 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2006 09 28 | 703 | 0.1− | 1.1− | 2006 11 14 | 703 | 0.3− | 0.5− | 2006 11 25 | G96 | 0.7+ | 0.4− |
| 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.3− | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 09 30 | 691 | 0.1+ | 0.9+ | 2006 11 14 | 703 | 0.5+ | 0.8− | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2006 09 30 | 691 | 0.1+ | 0.6+ | 2006 11 14 | 703 | 0.6− | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.3− |

**2006 SR$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 50.09764 | | (2000.0) | | | |
| $n$ | 0.22439451 | $\omega$ | 250.92855 | | +0.73970727 | +0.62634454 |
| $a$ | 2.6820152 | $\Omega$ | 69.49626 | | −0.47510951 | +0.74501061 |
| $e$ | 0.0761927 | $i$ | 15.22791 | | −0.47655441 | +0.22945960 |
| $P$ | 4.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.5+ | 0.3− | 2006 09 29 | 699 | 0.9+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 2002 11 07 | 695 | 0.6+ | 0.2+ | 2006 09 29 | 699 | 0.1− | 0.6+ | 2006 10 17 | 703 | 0.7+ | 0.4+ |
| 2002 11 24 | 644 | 0.4− | 0.1+ | 2006 09 29 | 699 | 1.2+ | 1.1− | 2006 10 17 | 703 | 0.3− | 1.4+ |
| 2002 11 24 | 644 | 0.2− | 0.2− | 2006 09 29 | 699 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.3+ | 0.3+ |
| 2002 11 24 | 644 | 0.5− | 0.2+ | 2006 10 10 | 644 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.2+ |
| 2006 09 26 | 703 | 1.1− | 0.4− | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 11 16 | 703 | 0.8+ | 0.8− |
| 2006 09 26 | 703 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.9− | 0.9− |
| 2006 09 26 | 703 | (1.9− | 0.2−) | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.1+ | 0.7+ |
| 2006 09 26 | 703 | 0.6− | 1.0− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 16 | 703 | 1.1+ | 0.5+ |

**2006 SY$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.45439 | | | (2000.0) | | |
| $n$ | 0.27657809 | $\omega$ | 323.73405 | | +0.56672335 | +0.82339603 |
| $a$ | 2.3330508 | $\Omega$ | 340.73532 | | −0.73369527 | +0.48831781 |
| $e$ | 0.1923306 | $i$ | 5.05051 | | −0.37485450 | +0.28907558 |
| $P$ | 3.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 691 | 0.6+ | 0.6+ | 2006 09 20 | 699 | 0.6− | 1.5− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 03 19 | 691 | 0.2+ | 0.2+ | 2006 09 20 | 699 | 0.6+ | 1.1+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2001 03 19 | 691 | 0.1− | 0.9+ | 2006 09 20 | 699 | 1.0− | 0.8− | 2006 10 29 | 691 | 0.1+ | 0.5− |
| 2002 06 18 | 644 | 0.2+ | 0.9+ | 2006 09 20 | 699 | 0.1+ | 1.2+ | 2006 10 29 | 691 | 0.2− | 0.3+ |
| 2002 06 18 | 644 | 0.1− | 0.8+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 703 | 0.4+ | 0.5+ |
| 2002 06 18 | 644 | 0.0 | 0.9+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 1.2+ | 0.0 |
| 2002 07 06 | 644 | 0.4− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 0.4+ | 0.2+ |
| 2002 07 06 | 644 | 0.3− | 0.3− | 2006 09 28 | 703 | 0.5− | 1.0− | 2006 10 31 | 703 | 0.2− | 0.0 |
| 2002 07 06 | 644 | 0.3− | 0.4− | 2006 09 28 | 703 | 0.8− | 0.3− | 2006 11 14 | 703 | 0.2− | 0.3+ |
| 2002 07 21 | 644 | 0.2+ | 0.6+ | 2006 09 28 | 703 | 0.6− | 0.5− | 2006 11 14 | 703 | 0.2− | 0.8+ |
| 2002 07 21 | 644 | 0.2− | 0.8+ | 2006 09 28 | 703 | 0.4− | 0.3+ | 2006 11 14 | 703 | 1.1+ | 0.2− |
| 2002 07 21 | 644 | 0.1− | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.9− | 0.3− |
| 2005 03 14 | G96 | 0.2− | 0.6− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.9+ | 0.4− |
| 2005 03 14 | G96 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.7+ |
| 2005 03 14 | G96 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.3− |
| 2005 03 14 | G96 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.8+ | 1.3− |

**2006 SK$_{213}$ = 2005 JH$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.56248 | | | (2000.0) | | |
| $n$ | 0.18130388 | $\omega$ | 119.10999 | | +0.90640331 | +0.38639812 |
| $a$ | 3.0917046 | $\Omega$ | 218.87243 | | −0.41494716 | +0.89009851 |
| $e$ | 0.2256338 | $i$ | 15.78044 | | +0.07906887 | +0.24170465 |
| $P$ | 5.44 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 14 | 691 | 0.6+ | 1.7+ | 2005 05 14 | G96 | 0.3+ | 0.5− | 2006 09 16 | 703 | 0.4+ | 0.1− |
| 1994 05 14 | 691 | 0.2− | 0.0 | 2005 05 14 | G96 | 0.1+ | 0.9− | 2006 09 27 | 703 | 0.5− | 0.2+ |
| 1994 05 14 | 691 | 0.3− | 0.7− | 2006 08 29 | 699 | 0.6+ | 0.7+ | 2006 09 27 | 703 | 0.4+ | 0.6− |
| 2005 05 12 | G96 | 0.5− | 0.4− | 2006 08 29 | 699 | 0.9+ | 0.6+ | 2006 09 27 | 703 | 0.3+ | 0.2− |
| 2005 05 12 | G96 | 0.1+ | 0.4− | 2006 08 29 | 699 | 0.4+ | 0.0 | 2006 09 27 | 703 | 1.1+ | 0.1− |
| 2005 05 12 | G96 | 0.0 | 0.1− | 2006 08 29 | 699 | 1.0− | 0.9+ | 2006 09 29 | 699 | 0.9− | 0.0 |
| 2005 05 12 | G96 | 0.0 | 0.5− | 2006 09 16 | 703 | 0.1− | 0.4+ | 2006 09 29 | 699 | 0.1+ | 1.1+ |
| 2005 05 14 | G96 | (1.1+ | 1.6−) | 2006 09 16 | 703 | 0.5+ | 0.6− | 2006 09 29 | 699 | 1.3− | 0.3+ |
| 2005 05 14 | G96 | 0.0 | 1.0− | 2006 09 16 | 703 | 0.2− | 1.1− | 2006 09 29 | 699 | 0.7− | 1.0− |

**2006 SQ$_{213}$ = 2005 GO$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 52.18392 | | | (2000.0) | | |
| $n$ | 0.22405396 | $\omega$ | 277.73403 | | +0.36089345 | +0.93088221 |
| $a$ | 2.6847322 | $\Omega$ | 13.83664 | | −0.73462342 | +0.32120354 |
| $e$ | 0.2016947 | $i$ | 13.71312 | | −0.57452968 | +0.17403044 |
| $P$ | 4.40 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 691 | 0.3+ | 0.3− | 2006 09 28 | 704 | 0.1− | 0.5+ | 2006 10 16 | 703 | 0.8− | 0.2− |
| 2005 04 04 | 691 | 0.1− | 0.4− | 2006 09 28 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 1.3− | 1.0+ |
| 2005 04 04 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G92 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.3− | 0.6− |
| 2005 04 05 | 699 | 1.0− | 0.7+ | 2006 09 30 | G92 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.5− |
| 2005 04 05 | 699 | (1.7− | 1.3−) | 2006 09 30 | G92 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.7+ | 0.1+ |
| 2005 04 05 | 699 | 0.5− | 0.1− | 2006 10 01 | 704 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2005 04 05 | 699 | 0.3− | 1.0+ | 2006 10 01 | 704 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.4− |
| 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 01 | 704 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.6− |
| 2006 09 27 | 691 | 0.4− | 0.1+ | 2006 10 16 | 703 | 1.2+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2006 09 27 | 691 | 0.6+ | 0.2− | 2006 10 16 | 703 | 1.0− | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2006 09 28 | 704 | 0.3+ | 0.5− | 2006 10 16 | 703 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2006 09 28 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.5+ | 1.4+ | | | | |

**2006 SS$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 7.41711 | | | (2000.0) | | |
| $n$ | 0.29477831 | $\omega$ | 154.32800 | | +0.99466048 | +0.10041706 |
| $a$ | 2.2360029 | $\Omega$ | 199.95198 | | −0.10255692 | +0.93603555 |
| $e$ | 0.1894485 | $i$ | 4.00126 | | −0.01151571 | +0.33727416 |
| $P$ | 3.34 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.4+ | 0.7+ | 2006 09 19 | 699 | 0.6− | 0.4− | 2006 10 17 | G96 | 0.0 | 0.6− |
| 1996 10 07 | 691 | 0.8− | 0.3+ | 2006 09 27 | 704 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.5− | 0.8− |
| 1996 10 07 | 691 | 0.1+ | 0.0 | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.7− |
| 2005 03 10 | G96 | 0.8− | 0.2+ | 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2005 03 10 | G96 | 0.1+ | 0.6− | 2006 09 27 | 704 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.5− |
| 2005 03 10 | G96 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.3− |
| 2005 03 10 | G96 | 1.1− | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.4− |
| 2005 04 09 | G96 | 0.5+ | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 |
| 2005 04 09 | G96 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.4+ | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2005 04 09 | G96 | 0.1+ | 0.2− | 2006 09 29 | 704 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2005 04 09 | G96 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.3− | 0.5− |
| 2006 08 24 | 644 | 0.2− | 0.0 | 2006 09 29 | 704 | 0.6− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2006 08 24 | 644 | 0.1+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2006 08 24 | 644 | 0.2− | 0.1− | 2006 10 01 | 704 | 1.2+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2006 09 06 | 644 | 0.2+ | 0.2+ | 2006 10 01 | 704 | 0.5− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 09 06 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2006 09 06 | 644 | 0.6+ | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2006 09 19 | 699 | 1.4+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.0 |
| 2006 09 19 | 699 | 0.5− | 0.7− | 2006 10 02 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 09 19 | 699 | 0.8− | 1.2− | 2006 10 17 | G96 | 0.3+ | 0.1+ | | | | |

**2006 ST$_{213}$ = 2005 EJ$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.83324 | | | (2000.0) | | |
| $n$ | 0.31532692 | $\omega$ | 146.09496 | | +0.96982065 | +0.24333607 |
| $a$ | 2.1377751 | $\Omega$ | 199.83854 | | −0.23253242 | +0.90416534 |
| $e$ | 0.1827579 | $i$ | 2.59150 | | −0.07332512 | +0.35110196 |
| $P$ | 3.13 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.3− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.0 | 0.3− |
| 2005 03 11 | G96 | 0.1+ | 0.1− | 2006 09 27 | 704 | 0.4+ | 0.2+ | 2006 10 16 | G96 | 0.4+ | 0.2− |
| 2005 03 11 | G96 | 0.6+ | 0.2+ | 2006 09 27 | 704 | 0.5+ | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 09 27 | 704 | 0.3− | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2005 03 17 | G96 | 0.0 | 0.2− | 2006 09 27 | 704 | 0.0 | 0.6+ | 2006 10 17 | 703 | (0.7− | 1.7−) |
| 2005 03 17 | G96 | 0.2− | 0.3+ | 2006 09 29 | 704 | (0.2− | 2.4+) | 2006 10 17 | 703 | 0.2− | 0.2− |
| 2005 03 17 | G96 | 0.2− | 0.4− | 2006 09 29 | 704 | 0.8− | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2005 03 17 | G96 | 0.1+ | 0.8+ | 2006 09 29 | 704 | (0.5− | 1.6+) | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2006 09 06 | 644 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 02 | 691 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2006 09 06 | 644 | 0.5+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.6− |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 16 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1− |

**2006 SX$_{213}$ = 2001 KG$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.75236 | | | (2000.0) | | |
| $n$ | 0.23459212 | $\omega$ | 78.13371 | | +0.56431375 | +0.81378786 |
| $a$ | 2.6037169 | $\Omega$ | 227.12834 | | −0.81185710 | +0.51650052 |
| $e$ | 0.1936510 | $i$ | 10.92689 | | −0.14979331 | +0.26641422 |
| $P$ | 4.20 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 291 | 0.1+ | 0.1− | 2006 09 16 | 703 | 0.0 | 0.4+ | 2006 09 29 | 699 | 0.1+ | 0.5− |
| 2001 05 23 | 291 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.3+ | 0.6− | 2006 09 29 | 699 | 0.3+ | 1.0+ |
| 2001 05 23 | 291 | 0.1+ | 0.2+ | 2006 09 27 | 703 | 0.6− | 0.2− | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2001 05 30 | 691 | 0.4− | 0.3+ | 2006 09 27 | 703 | 1.1− | 0.5− | 2006 10 17 | 691 | 0.3+ | 0.0 |
| 2001 05 30 | 691 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.5+ | 0.9− | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 2001 05 30 | 691 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 2006 09 16 | 703 | 0.2+ | 1.2+ | 2006 09 29 | 699 | 0.6+ | 1.1+ | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2006 09 16 | 703 | 0.9+ | 0.8+ | 2006 09 29 | 699 | 0.5− | 1.4− | 2006 10 20 | 691 | 0.2− | 0.0 |

**2006 SL$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.63554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19474439 | $\omega$ | 189.32363 | | +0.92222031 | | +0.38596488 |
| $a$ | 2.9477642 | $\Omega$ | 147.94148 | | −0.35187478 | | +0.86265712 |
| $e$ | 0.1271667 | $i$ | 2.51110 | | −0.16029297 | | +0.32688501 |
| $P$ | 5.06 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 691 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.6− | 0.1− | 2006 09 30 | 291 | 0.1− | 0.1+ |
| 2001 10 25 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 09 30 | 291 | 0.2+ | 0.1+ |
| 2001 10 25 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 10 01 | 291 | 0.3+ | 0.2− |
| 2004 03 23 | 691 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 10 01 | 291 | 0.3+ | 0.0 |
| 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 10 01 | 291 | 0.3+ | 0.1− |
| 2004 03 23 | 691 | 0.3+ | 0.0 | 2006 09 28 | 291 | 0.1− | 0.1+ | 2006 10 03 | 291 | 0.0 | 0.1+ |
| 2006 09 18 | 703 | (1.6− | 0.2+) | 2006 09 28 | 291 | 0.1− | 0.1+ | 2006 10 03 | 291 | 0.2− | 0.0 |
| 2006 09 18 | 703 | (4.2− | 0.4+) | 2006 09 28 | 291 | 0.2− | 0.1− | 2006 10 03 | 291 | 0.1− | 0.1+ |
| 2006 09 18 | 703 | 0.8− | 0.1+ | 2006 09 30 | 291 | 0.0 | 0.1+ | | | | |

**2006 SP$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.05232 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21380856 | $\omega$ | 279.91618 | | +0.65526959 | | −0.75377078 |
| $a$ | 2.7698271 | $\Omega$ | 129.02561 | | +0.71563629 | | +0.59846204 |
| $e$ | 0.0968448 | $i$ | 3.65407 | | +0.24183975 | | +0.27142731 |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.1− | 0.1+ | 2006 09 30 | 704 | 0.3− | 0.2− |
| 2001 08 16 | 704 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 09 30 | 704 | 0.9+ | 0.2− |
| 2001 08 16 | 704 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 09 30 | 704 | 0.1− | 0.1+ |
| 2001 08 16 | 704 | 0.2− | 0.2+ | 2006 09 18 | 699 | 0.2+ | 0.3+ | 2006 09 30 | 704 | 1.3+ | 0.7+ |
| 2002 12 11 | 704 | 0.0 | 0.0 | 2006 09 18 | 699 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.7− | 0.4− |
| 2002 12 11 | 704 | 0.4− | 0.5− | 2006 09 18 | 699 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.6− | 0.1− |
| 2002 12 11 | 704 | 0.1− | 0.8+ | 2006 09 27 | 691 | 0.1+ | 0.3− | 2006 10 21 | 703 | (0.0 | 1.6+) |
| 2002 12 31 | 704 | 0.6+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1+ | 1.1+ |
| 2002 12 31 | 704 | 0.2+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.5− | 0.4− |
| 2002 12 31 | 704 | 0.3− | 0.7− | 2006 09 28 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.7+ |
| 2006 09 18 | 703 | 0.3− | 0.1− | 2006 09 28 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 703 | (2.1+ | 0.1−) |
| 2006 09 18 | 703 | 0.6− | 0.3− | 2006 09 28 | 704 | 0.4− | 0.4+ | | | | |

**2006 SY$_{214}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.47365 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24435545 | $\omega$ | 94.21860 | | +0.98483244 | | −0.16809919 |
| $a$ | 2.5338916 | $\Omega$ | 275.46269 | | +0.13707936 | | +0.90568522 |
| $e$ | 0.1073478 | $i$ | 2.47488 | | +0.10636881 | | +0.38920039 |
| $P$ | 4.03 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 05 | 691 | 0.7− | 0.0 | 2006 09 19 | 703 | 0.0 | 1.5− | 2006 10 01 | 691 | 0.4− | 0.1− |
| 1994 11 05 | 691 | 0.3− | 0.3− | 2006 09 19 | 703 | 0.4− | 1.7− | 2006 10 01 | 691 | 0.3− | 0.2− |
| 1994 11 05 | 691 | 0.2− | 0.4+ | 2006 09 19 | 703 | 0.5− | 1.1− | 2006 10 12 | 644 | 0.2− | 0.1− |
| 2002 10 30 | 644 | 0.7+ | 1.3+ | 2006 09 27 | 691 | 0.4− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 10 30 | 644 | 0.2+ | 1.2+ | 2006 09 27 | 691 | 0.5− | 0.0 | 2006 10 12 | 644 | 0.5− | 0.2− |
| 2002 10 30 | 644 | 0.9+ | 0.9+ | 2006 09 27 | 691 | 0.5− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.6+ |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.6− |
| 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 09 29 | 704 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.3− | 0.1− |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 09 29 | 704 | 1.0+ | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.6+ |
| 2005 06 14 | G96 | 0.2+ | 0.2− | 2006 09 29 | 704 | 0.7+ | 0.3+ | 2006 10 19 | 644 | 0.5− | 0.0 |
| 2005 06 14 | G96 | 0.5+ | 0.7+ | 2006 09 30 | 683 | 0.7− | 1.6− | 2006 10 19 | 644 | 0.1− | 0.2− |
| 2005 06 14 | G96 | 0.3+ | 0.5+ | 2006 09 30 | 683 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2+ |
| 2005 06 14 | G96 | 0.5− | 0.9+ | 2006 09 30 | 683 | 1.4+ | 0.6+ | | | | |
| 2006 09 19 | 703 | 0.5+ | 1.8+ | 2006 10 01 | 691 | 0.7− | 0.1− | | | | |

**2006 SA$_{215}$ = 1997 TX$_2$ = 2005 NL$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.06970 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21874600 | $\omega$ | 145.00294 | | +0.99712554 | | +0.06134100 |
| $a$ | 2.7279891 | $\Omega$ | 211.56926 | | −0.07261679 | | +0.94120713 |
| $e$ | 0.1344895 | $i$ | 4.87318 | | +0.02162087 | | +0.33221442 |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 910 | 0.3+ | 0.1+ | 2006 09 14 | 703 | 0.9− | 0.2− | 2006 10 15 | 703 | 0.4− | 1.2+ |
| 1997 10 03 | 910 | 0.4+ | 0.1+ | 2006 09 14 | 703 | 0.2− | 0.6− | 2006 10 15 | 703 | (1.7− | 0.7−) |
| 1997 10 03 | 910 | 0.4− | 0.3− | 2006 09 14 | 703 | 0.5− | 0.6− | 2006 10 17 | 703 | (1.7− | 0.6+) |
| 1997 10 04 | 910 | 0.0 | 0.1+ | 2006 09 14 | 703 | 1.1− | 0.6− | 2006 10 17 | 703 | 0.1− | 0.7+ |
| 1997 10 04 | 910 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.5+ | 0.2+ |
| 1997 10 04 | 910 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.2− |
| 2005 07 04 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.5+ |
| 2005 07 04 | 691 | 0.2− | 0.2+ | 2006 09 29 | 704 | 1.1+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2005 07 04 | 691 | 0.1− | 0.0 | 2006 09 29 | 704 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2005 07 12 | G96 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.8+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2005 07 12 | G96 | 0.6− | 0.4− | 2006 09 29 | 704 | 0.5+ | 0.5+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2005 07 12 | G96 | 0.3+ | 0.4− | 2006 10 15 | 703 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.1− | 0.3+ |
| 2005 07 12 | G96 | 0.1+ | 0.5− | 2006 10 15 | 703 | 0.6− | 0.5+ | 2006 11 13 | G96 | 0.1− | 0.0 |

**2006 SC$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.52381 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17296847 | $\omega$ | 55.22173 | | +0.20649603 | | −0.97227398 |
| $a$ | 3.1902502 | $\Omega$ | 23.59779 | | +0.78404999 | | +0.09732953 |
| $e$ | 0.2455919 | $i$ | 15.91035 | | +0.58534178 | | +0.21262705 |
| $P$ | 5.70 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 25 | 691 | 0.2− | 0.1+ | 2006 09 28 | 699 | (1.6+ | 0.5+) | 2006 10 16 | G96 | 0.1− | 0.3− |
| 2003 04 25 | 691 | 0.1− | 0.3+ | 2006 09 28 | 699 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.4+ |
| 2003 04 25 | 691 | 0.1− | 0.2+ | 2006 09 29 | 691 | 0.3− | 0.3− | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2003 05 05 | 691 | 0.0 | 0.2+ | 2006 09 29 | 691 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.4+ | 0.5+ |
| 2003 05 05 | 691 | 0.1+ | 0.5− | 2006 09 29 | 691 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2003 05 05 | 691 | 0.4+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.5+ |
| 2006 09 14 | 703 | 0.3+ | 1.0+ | 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2006 09 14 | 703 | 1.2+ | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 10 23 | 704 | 1.1− | 0.1− |
| 2006 09 14 | 703 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 23 | 704 | 1.1+ | 0.9− |
| 2006 09 14 | 703 | (0.3+ | 1.6−) | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 23 | 704 | (1.0− | 2.3+) |
| 2006 09 20 | 704 | 0.7+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 23 | 704 | 1.4+ | 0.5+ |
| 2006 09 20 | 704 | 0.7+ | 0.8+ | 2006 10 15 | 703 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2006 09 20 | 704 | (0.7− | 1.8+) | 2006 10 15 | 703 | 0.6+ | 0.3− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | (1.6− | 0.2+) | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | (1.8− | 0.1+) | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2006 09 27 | 691 | 0.3− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2006 09 28 | 699 | 0.5+ | 0.0 | 2006 10 16 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2006 09 28 | 699 | 0.5− | 0.3+ | 2006 10 16 | G96 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.2− | 0.0 |

**2006 SL$_{215}$ = 2001 YW$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 43.17122 | | (2000.0) | | +0.75992183 | +0.64477827 |
| $n$ | 0.17677775 | $\omega$ | 259.16357 | | −0.55335581 | +0.70817179 |
| $a$ | 3.1442542 | $\Omega$ | 60.63242 | | −0.34105155 | +0.28766943 |
| $e$ | 0.1381156 | $i$ | 5.42146 | | | |
| $P$ | 5.58 | $H$ | 15.3 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3+ | 0.2− | 2006 09 28 | 291 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.5+ |
| 2001 12 18 | 704 | 0.7− | 0.3− | 2006 09 29 | 699 | 0.9− | 0.8+ | 2006 10 16 | 703 | 1.1+ | 0.2+ |
| 2001 12 18 | 704 | 1.0− | 0.3− | 2006 09 29 | 699 | 0.2− | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.2+ | 1.1− | 2006 09 29 | 699 | 0.0 | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.3+ | 1.1− | 2006 10 20 | 644 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 1.3+ | 2006 10 01 | 691 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2001 12 19 | 704 | 0.9+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.6− | 1.3+ |
| 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2006 09 27 | 691 | 0.4− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2006 09 28 | 291 | 0.5+ | 0.0 | 2006 10 16 | 703 | (1.7− | 0.1−) | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2006 09 28 | 291 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.5+ | 2006 11 23 | G96 | 0.2− | 0.3+ |

**2006 SD$_{216}$ = 2005 GM$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.45250 | | (2000.0) | | +0.72072670 | +0.69315146 |
| $n$ | 0.21835693 | $\omega$ | 139.55813 | | −0.67005556 | +0.70016229 |
| $a$ | 2.7312287 | $\Omega$ | 176.51465 | | −0.17770360 | +0.17121281 |
| $e$ | 0.2229990 | $i$ | 9.18048 | | | |
| $P$ | 4.51 | $H$ | 17.3 | $G$ 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 10 | 695 | 0.1+ | 0.4+ | 2005 04 11 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.2− |
| 2000 04 10 | 695 | 0.1− | 0.4− | 2005 04 11 | 691 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.1+ | 1.1+ |
| 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1− |
| 2005 04 07 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2005 04 07 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.0 |
| 2005 04 11 | 691 | 0.2− | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.2− | | | | |

**2006 SG$_{216}$ = 2005 MM$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 138.88824 | | (2000.0) | | −0.64928722 | +0.75920648 |
| $n$ | 0.25437966 | $\omega$ | 126.11322 | | −0.71182516 | −0.58575748 |
| $a$ | 2.4668787 | $\Omega$ | 103.33529 | | −0.26782651 | −0.28371410 |
| $e$ | 0.0624052 | $i$ | 2.65503 | | | |
| $P$ | 3.87 | $H$ | 17.2 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 291 | 0.2+ | 0.1+ | 2005 06 28 | G96 | 0.1+ | 0.4+ | 2006 09 28 | 691 | 0.0 | 0.2− |
| 2003 12 25 | 291 | 0.2+ | 0.4+ | 2005 06 28 | G96 | 1.0+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.0 |
| 2003 12 25 | 291 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.4− | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ |
| 2005 06 27 | G96 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2005 06 27 | G96 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.4+ |
| 2005 06 27 | G96 | 0.1+ | 0.6+ | 2006 09 27 | 691 | 0.2+ | 0.4− | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2005 06 27 | G96 | 0.5− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.6− | 0.8− |
| 2005 06 28 | G96 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2005 06 28 | G96 | 0.5− | 0.3+ | 2006 09 28 | 691 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.4− | 0.6− |

**2006 SR$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 133.98678 | | (2000.0) | | −0.61440949 | +0.78585439 |
| $n$ | 0.23660511 | $\omega$ | 190.57456 | | −0.71593408 | −0.51789317 |
| $a$ | 2.5889280 | $\Omega$ | 41.56609 | | −0.33157107 | −0.33796382 |
| $e$ | 0.0985117 | $i$ | 6.07716 | | | |
| $P$ | 4.17 | $H$ | 16.3 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.2− |
| 2004 01 17 | 644 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.4− |
| 2004 01 17 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2005 02 09 | 809 | 0.0 | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2005 02 09 | 809 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.7− | 0.3− |
| 2005 02 09 | 809 | 0.1+ | 0.4+ | 2006 10 01 | 691 | 0.3+ | 0.3− | | | | |
| 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.1+ | | | | |

**2006 ST$_{216}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.63663 | | (2000.0) | | +0.98106685 | −0.17876835 |
| $n$ | 0.21747921 | $\omega$ | 333.02494 | | +0.19231188 | +0.85377132 |
| $a$ | 2.7385723 | $\Omega$ | 37.51057 | | +0.02289048 | +0.48899531 |
| $e$ | 0.0169222 | $i$ | 7.02742 | | | |
| $P$ | 4.53 | $H$ | 17.0 | $G$ 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.3+ |
| 2000 04 24 | 691 | 0.4+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1+ |
| 2000 04 24 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2004 03 27 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.0 |
| 2004 03 27 | 691 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2004 03 27 | 691 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2004 07 15 | 807 | 0.3− | 0.5+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 07 16 | 807 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.1− |

**2006 SY$_{216}$ = 2002 XB$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.59963 | | (2000.0) | | −0.23141947 | −0.96724632 |
| $n$ | 0.22681361 | $\omega$ | 73.52001 | | +0.79559157 | −0.24986616 |
| $a$ | 2.6629109 | $\Omega$ | 30.47375 | | +0.55989202 | −0.04473759 |
| $e$ | 0.2826118 | $i$ | 11.86884 | | | |
| $P$ | 4.35 | $H$ | 17.3 | $G$ 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 704 | 0.6+ | 0.7+ | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2002 12 07 | 704 | 0.4+ | 0.6− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2002 12 07 | 704 | (1.8− | 1.0−) | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2002 12 07 | 704 | 0.1− | 0.8− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2002 12 07 | 704 | 0.7− | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.7− |
| 2002 12 09 | 699 | 0.7− | 0.0 | 2006 10 11 | 691 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2002 12 09 | 699 | 1.0+ | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.6− |
| 2002 12 09 | 699 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 12 09 | 699 | 0.9− | 0.9+ | 2006 10 15 | 691 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2006 09 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.4− |
| 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.5+ | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.4− |
| 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2006 09 28 | 691 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2006 09 28 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2− | | | | |

**2006 SD$_{217}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.25822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19076254 | $\omega$ | 207.76011 | | +0.85537716 | +0.51566464 | |
| $a$ | 2.9886426 | $\Omega$ | 121.11426 | | −0.46398075 | +0.80492960 | |
| $e$ | 0.1636675 | $i$ | 3.29394 | | −0.23032971 | +0.29356144 | |
| $P$ | 5.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.8− |
| 1999 03 20 | 645 | 0.2− | 0.4− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2004 03 15 | 691 | 0.1+ | 0.6+ | 2006 09 29 | 699 | 0.4− | 0.1+ | 2006 10 16 | 703 | 1.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.4+ | 0.3+ | 2006 09 29 | 699 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.5+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 09 29 | 699 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 09 25 | 699 | 0.0 | 0.5+ | 2006 09 29 | 699 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.7+ | 0.2+ |
| 2006 09 25 | 699 | 0.6+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.2+ | 0.2− |
| 2006 09 25 | 699 | 0.9− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.6− |
| 2006 09 25 | 699 | 0.5+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 1.6− | 1.0+ |
| 2006 09 28 | 691 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 10 22 | 703 | 1.0+ | 1.0− |

**2006 SF$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.78195 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23400155 | $\omega$ | 338.81822 | | +0.74944362 | −0.65723876 | |
| $a$ | 2.6080959 | $\Omega$ | 62.52694 | | +0.61963383 | +0.65382424 | |
| $e$ | 0.1954576 | $i$ | 5.16172 | | +0.23321271 | +0.37490142 | |
| $P$ | 4.21 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.2+ | 0.2− | 2006 09 29 | 699 | 1.3− | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.8− |
| 2002 11 13 | 644 | 0.2+ | 0.3− | 2006 09 29 | 699 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.1+ | 1.1− |
| 2002 11 13 | 644 | 0.1− | 0.2− | 2006 09 29 | 699 | 1.2− | 0.1− | 2006 10 16 | 703 | 0.7− | 1.1− |
| 2002 11 23 | 644 | 0.4+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.8+ | 0.3− |
| 2002 11 23 | 644 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.3+ |
| 2002 11 23 | 644 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.0 |
| 2002 11 28 | 699 | 1.5+ | 0.5− | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2002 11 28 | 699 | 1.3− | 1.1+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2002 11 28 | 699 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2002 11 28 | 699 | 1.9− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 09 14 | 291 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 09 14 | 291 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2− |
| 2006 09 14 | 291 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.9+ | 0.5− |
| 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 10 22 | 703 | 1.2+ | 1.3+ |
| 2006 09 28 | 691 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.5+ | 0.0 |
| 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.4− | 2006 10 22 | 703 | 1.4+ | 0.9− |
| 2006 09 29 | 699 | (0.5+ | 2.5+) | 2006 10 16 | 703 | 0.5+ | 0.7− | | | | |

**2006 SL$_{217}$ = 2001 YZ$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.38552 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17314258 | $\omega$ | 165.70373 | | +0.93059660 | +0.36517815 | |
| $a$ | 3.1881112 | $\Omega$ | 172.72659 | | −0.35234932 | +0.91230387 | |
| $e$ | 0.0698368 | $i$ | 11.47975 | | −0.09919640 | +0.18532827 | |
| $P$ | 5.69 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.4− | 0.4+ | 2006 09 25 | 699 | 0.9+ | 0.6− | 2006 10 02 | G96 | 0.4+ | 0.3− |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2001 12 19 | 209 | 0.2− | 0.4− | 2006 09 29 | 699 | 0.3+ | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2001 12 19 | 209 | 0.2+ | 0.5− | 2006 09 29 | 699 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2001 12 19 | 209 | 0.1+ | 0.2+ | 2006 09 29 | 699 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2001 12 20 | 209 | 0.1− | 0.6− | 2006 09 29 | 699 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.4− | 0.3+ |
| 2001 12 20 | 209 | 0.3+ | 0.5+ | 2006 10 02 | 691 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2001 12 20 | 209 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.6− |
| 2006 09 25 | 699 | 0.5− | 0.6+ | 2006 10 02 | G96 | 0.5+ | 0.3− | 2006 10 22 | 703 | (2.2− | 0.4+) |
| 2006 09 25 | 699 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.7− | 2006 10 22 | 703 | 0.5+ | 0.4+ |
| 2006 09 25 | 699 | 0.4− | 0.8− | 2006 10 02 | 691 | 0.4− | 0.1− | | | | |

**2006 SM$_{217}$ = 2004 BM$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.77031 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27390260 | $\omega$ | 295.54510 | | +0.57489084 | −0.81667777 | |
| $a$ | 2.3482191 | $\Omega$ | 119.27088 | | +0.76991444 | +0.51907393 | |
| $e$ | 0.1503339 | $i$ | 3.31078 | | +0.27700593 | +0.25218977 | |
| $P$ | 3.60 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 644 | 0.4+ | 0.2+ | 2006 09 29 | 699 | (1.8+ | 0.6−) | 2006 10 16 | 703 | 0.4+ | 0.3+ |
| 2004 01 18 | 644 | 0.4+ | 0.2+ | 2006 09 29 | 699 | (0.4+ | 1.9+) | 2006 10 16 | 703 | 0.5− | 0.6+ |
| 2004 01 18 | 644 | 0.4+ | 0.0 | 2006 09 29 | 699 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.3+ |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.3− | | | | |
| 2006 09 29 | 699 | 0.6− | 0.4− | 2006 10 02 | G96 | 0.5+ | 0.4− | | | | |

**2006 SX$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 172.85339 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.58783395 | $\omega$ | 176.16407 | | −0.87334380 | +0.44679514 | |
| $a$ | 1.4113442 | $\Omega$ | 32.70148 | | −0.45592230 | −0.60956770 | |
| $e$ | 0.3099424 | $i$ | 21.04656 | | −0.17148022 | −0.65482923 | |
| $P$ | 1.68 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.2− | 0.5− | 2006 10 02 | 461 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.4− |
| 2001 10 19 | 644 | 0.6+ | 0.5− | 2006 10 02 | 461 | 0.1− | 0.3+ | 2006 10 19 | 291 | 0.2− | 0.2+ |
| 2001 10 19 | 644 | 0.2+ | 0.2+ | 2006 10 02 | J95 | (0.8+ | 1.7−) | 2006 10 19 | 291 | 0.5− | 0.0 |
| 2001 10 26 | 644 | 0.3− | 0.1+ | 2006 10 02 | J95 | 1.0+ | 0.1+ | 2006 10 19 | 291 | 0.3− | 0.4+ |
| 2001 10 26 | 644 | 0.3+ | 0.1− | 2006 10 02 | J95 | 0.4− | 0.7− | 2006 10 19 | 691 | 0.7− | 0.6+ |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 02 | 291 | 0.4+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2006 09 30 | G96 | 0.1− | 0.8− | 2006 10 02 | 291 | 1.1− | 0.1+ | 2006 10 19 | 691 | 0.6− | 0.4+ |
| 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 10 02 | 291 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.2− |
| 2006 09 30 | G96 | 0.5− | 0.2− | 2006 10 02 | G96 | 0.5+ | 0.6− | 2006 10 23 | 691 | 0.8− | 0.1− |
| 2006 09 30 | G96 | 0.4− | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.7− | 0.4− |
| 2006 09 30 | G96 | 0.5+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 26 | A13 | 0.8− | 0.3− |
| 2006 09 30 | G96 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 26 | A13 | 0.3+ | 0.0 |
| 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 03 | 291 | 1.0+ | 0.1− | 2006 10 26 | A13 | 0.1− | 0.2− |
| 2006 10 01 | 291 | 0.7− | 0.7+ | 2006 10 03 | 291 | 0.3− | 0.3+ | 2006 10 26 | A13 | 0.2− | 0.6− |
| 2006 10 01 | 291 | 0.0 | 0.0 | 2006 10 03 | 291 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.2+ |
| 2006 10 01 | 291 | 0.5− | 0.2+ | 2006 10 11 | 691 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.5+ | 0.1+ |
| 2006 10 01 | G96 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.5+ | 0.5− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2006 10 01 | G96 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.5+ | 0.5− |
| 2006 10 01 | 701 | 1.1+ | 0.2− | 2006 10 12 | 291 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.3− |
| 2006 10 01 | G96 | 0.3+ | 0.2− | 2006 10 12 | 291 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2006 10 01 | G96 | 1.1− | 0.3− | 2006 10 12 | 291 | 0.3− | 0.1− | 2006 11 21 | 711 | 0.9− | 0.5+ |
| 2006 10 01 | 701 | 0.4− | 0.2− | 2006 10 15 | 691 | 1.3+ | 0.2− | 2006 11 21 | 711 | 0.3− | 0.5+ |
| 2006 10 01 | 701 | (2.4+ | 3.2−) | 2006 10 15 | 691 | 0.5+ | 0.2− | 2006 11 21 | 711 | 0.1+ | 0.3+ |

**2006 SA$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.40655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.54869599 | $\omega$ | 277.90454 | | +0.43402507 | −0.88178449 | |
| $a$ | 1.4776838 | $\Omega$ | 144.46078 | | +0.89966424 | +0.41349999 | |
| $e$ | 0.2418069 | $i$ | 18.51733 | | +0.04718567 | +0.22687855 | |
| $P$ | 1.80 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1980 01 17 | 260 | 0.0 | 0.0 | 2006 10 01 | G96 | 0.1− | 0.1− | 2006 10 02 | E12 | 0.7− | 0.4+ |
| 1980 01 17 | 260 | 0.2− | 0.6− | 2006 10 01 | G96 | 0.4− | 0.1+ | 2006 10 02 | E12 | 1.2− | 0.4+ |
| 1998 02 27 | 566 | 0.2+ | 0.1+ | 2006 10 01 | G96 | 0.1− | 0.8+ | 2006 10 02 | E12 | 0.3− | 0.3− |
| 1998 02 27 | 566 | 0.6− | 0.1− | 2006 10 01 | E12 | 0.1+ | 0.3+ | 2006 10 02 | E12 | 0.3− | 0.3+ |
| 1998 02 27 | 566 | 0.8+ | 0.1+ | 2006 10 01 | E12 | 0.6− | 0.1+ | 2006 10 11 | 673 | 1.2− | 0.7+ |
| 2002 06 14 | 644 | 0.0 | 0.0 | 2006 10 01 | E12 | 0.0 | 0.4+ | 2006 10 11 | 673 | 0.1+ | 0.5− |
| 2002 06 14 | 644 | 0.4− | 0.1− | 2006 10 01 | E12 | 0.5− | 0.6− | 2006 10 11 | 673 | 0.5− | 0.1− |
| 2006 09 30 | E12 | 0.3+ | 0.2+ | 2006 10 01 | E12 | 0.6+ | 0.2− | 2006 10 11 | 673 | 0.4− | 0.0 |
| 2006 09 30 | E12 | 0.3+ | 0.4+ | 2006 10 02 | 461 | 0.1− | 0.1+ | 2006 10 11 | E12 | 0.3+ | 0.5+ |
| 2006 09 30 | E12 | (0.4+ | 2.4+) | 2006 10 02 | 461 | 0.2− | 0.2− | 2006 10 11 | E12 | 0.1− | 0.2+ |
| 2006 09 30 | E12 | 0.2+ | 0.3− | 2006 10 02 | 461 | 0.7− | 0.0 | 2006 10 19 | F84 | 0.2+ | 0.4+ |
| 2006 09 30 | E12 | 0.6− | 0.8+ | 2006 10 02 | 461 | 0.3− | 0.2− | 2006 10 19 | F84 | 0.7− | 0.4+ |
| 2006 09 30 | E12 | 0.2+ | 0.2+ | 2006 10 02 | J95 | 0.5+ | 0.2− | 2006 10 22 | 474 | 0.1− | 0.2+ |
| 2006 09 30 | E12 | 0.3+ | 0.1+ | 2006 10 02 | J95 | 1.0+ | 0.9− | 2006 10 22 | 474 | 0.7− | 0.1+ |
| 2006 10 01 | 734 | 0.3− | 0.0 | 2006 10 02 | J95 | 0.3+ | 0.1+ | 2006 10 22 | 474 | 0.1− | 0.1+ |
| 2006 10 01 | 734 | 0.4− | 0.1− | 2006 10 02 | 854 | 0.6− | 0.1+ | 2006 11 07 | F84 | 0.4− | 0.1+ |
| 2006 10 01 | 734 | 0.2+ | 0.6− | 2006 10 02 | 854 | 0.6− | 0.5+ | 2006 11 07 | F84 | 0.2+ | 0.1+ |
| 2006 10 01 | 734 | 0.3− | 0.4+ | 2006 10 02 | 854 | 0.8− | 0.3− | | | | |

### 2006 $SF_{218}$ = 2005 $GT_{164}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.62074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23619620 | $\omega$ | 293.93835 | | +0.79485207 | | +0.60601984 |
| $a$ | 2.5919151 | $\Omega$ | 28.78824 | | −0.53086703 | | +0.71909080 |
| $e$ | 0.2443092 | $i$ | 3.66987 | | −0.29392242 | | +0.34007113 |
| $P$ | 4.17 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2005 04 10 | G96 | 0.2− | 0.0 | 2006 10 12 | 691 | (1.2− | 1.6+) | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2005 04 10 | G96 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 |
| 2005 04 17 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 2005 04 17 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.4+ |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 09 27 | J75 | 0.3+ | 1.2− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2006 09 27 | J75 | 0.2− | 1.0− | 2006 11 01 | 691 | 0.8− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 27 | J75 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.6+ | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.1− |
| 2006 09 27 | J75 | 0.6− | 0.7+ | 2006 11 08 | 644 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.8− |
| 2006 09 28 | J75 | 0.9− | 1.2+ | 2006 11 08 | 644 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2006 09 28 | J75 | 1.1− | 1.3+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 1.1+ | 0.5− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.3+ | | | | |

### 2006 $SG_{218}$ = 2002 $YU_{35}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.72120 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24270019 | $\omega$ | 148.78026 | | +0.93759554 | | −0.34152378 |
| $a$ | 2.5453996 | $\Omega$ | 231.33256 | | +0.29927055 | | +0.88829934 |
| $e$ | 0.2614452 | $i$ | 4.80424 | | +0.17706426 | | +0.30705993 |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.4− | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 1.0− | 0.3− |
| 2002 12 31 | 704 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.1− | 0.8− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.3+ | 0.4+ | 2006 11 11 | 291 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2003 01 07 | 704 | 0.9+ | 0.4+ | 2006 11 11 | 291 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2003 01 07 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 291 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2003 01 07 | 704 | 0.1+ | 0.9+ | 2006 11 11 | 291 | 0.2− | 0.1− | 2006 11 21 | 704 | (0.1+ | 1.9+) |
| 2003 01 07 | 704 | 0.6− | 0.7− | 2006 11 11 | 291 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1+ | 1.1+ |
| 2005 07 05 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 291 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1− | 1.2+ |
| 2005 07 05 | G96 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 07 05 | G96 | 0.2− | 0.2+ | 2006 11 15 | 691 | 1.1+ | 0.1− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2005 07 05 | G96 | 0.2+ | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2006 09 27 | J75 | 0.6− | 0.6+ | 2006 11 18 | 704 | 1.0+ | 0.3− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2006 09 27 | J75 | 0.8− | 0.1+ | 2006 11 18 | 704 | (0.5+ | 1.6−) | 2006 11 27 | 704 | 0.5− | 0.2+ |
| 2006 09 28 | J75 | 0.6+ | 0.9− | 2006 11 18 | 704 | 0.3− | 1.3− | 2006 11 27 | 704 | 0.1+ | 0.3+ |
| 2006 09 28 | J75 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.2− | 2006 11 27 | 704 | 0.9− | 1.2+ |

### 2006 $SL_{218}$ = 2001 $RO_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.94745 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21396980 | $\omega$ | 130.53708 | | +0.89023008 | | +0.45447046 |
| $a$ | 2.7684354 | $\Omega$ | 202.48388 | | −0.43846590 | | +0.83665189 |
| $e$ | 0.1682041 | $i$ | 4.61554 | | −0.12344252 | | +0.30572898 |
| $P$ | 4.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 08 | 704 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2001 09 08 | 704 | 0.1+ | 1.1− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 24 | 850 | 1.0+ | 0.4− |
| 2001 09 08 | 704 | 1.4+ | 1.1+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 24 | 850 | 0.7+ | 0.6− |
| 2001 09 12 | 704 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 24 | 850 | 0.7+ | 1.3− |
| 2001 09 12 | 704 | 0.7− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 25 | 850 | 0.6+ | 0.2+ |
| 2001 09 12 | 704 | 0.8− | 0.1− | 2006 10 11 | 691 | 0.7− | 0.2+ | 2006 10 25 | 850 | 0.5+ | 0.3+ |
| 2006 09 18 | 691 | 0.6− | 1.2+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 25 | 850 | 0.5+ | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.3− | 0.1− | 2006 10 25 | 850 | 0.4+ | 0.2+ |
| 2006 09 18 | 691 | 0.3+ | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.7− |
| 2006 09 27 | J75 | 0.1+ | 0.4− | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2006 09 28 | J75 | 0.4+ | 0.4+ | 2006 10 19 | 691 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.7+ | 0.2− |
| 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2006 09 28 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2006 09 29 | J75 | 0.4+ | 0.7− | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2006 09 30 | J75 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2006 09 30 | J75 | 0.3+ | 0.5− | 2006 10 21 | 703 | 0.2+ | 0.5− | 2006 11 20 | 691 | 0.4− | 0.3+ |
| 2006 09 30 | J75 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2006 09 30 | J75 | (1.9+ | 0.6+) | 2006 10 21 | 703 | 0.1− | 0.6− | 2006 11 20 | G96 | 0.6+ | 0.7− |
| 2006 09 30 | J75 | 1.2+ | 1.1− | 2006 10 21 | 703 | (0.1− | 1.6+) | 2006 11 20 | G96 | 0.0 | 0.7+ |
| 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 20 | G96 | 0.6+ | 0.4− |

### 2006 $SN_{218}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.95203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22199355 | $\omega$ | 338.76148 | | +0.91680984 | | −0.38130868 |
| $a$ | 2.7013186 | $\Omega$ | 44.24104 | | +0.38648380 | | +0.77259493 |
| $e$ | 0.2280763 | $i$ | 9.78648 | | +0.10044893 | | +0.50764236 |
| $P$ | 4.44 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 07 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.6− | 0.3− | 2006 11 16 | 704 | 0.9+ | 0.0 |
| 1995 04 07 | 691 | 0.6− | 0.6− | 2006 09 30 | J75 | 0.8− | 0.4− | 2006 11 16 | 704 | 0.5+ | 0.3+ |
| 2001 07 22 | 644 | 0.0 | 0.1+ | 2006 09 30 | J75 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.3− | 0.5+ |
| 2001 07 22 | 644 | 0.4+ | 0.8− | 2006 09 30 | J75 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.2− | 0.6− |
| 2001 07 22 | 644 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.4− | 1.0− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 08 14 | 644 | 0.9− | 0.4+ | 2006 10 27 | 703 | 0.2− | 1.0− | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 08 14 | 644 | 1.0− | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.8− | 2006 11 22 | 704 | 0.8− | 0.9+ |
| 2001 08 14 | 644 | 0.8− | 0.3+ | 2006 10 27 | 703 | 0.8− | 0.0 | 2006 11 22 | 704 | (1.7− | 0.6+) |
| 2001 08 25 | 644 | 1.0+ | 0.9− | 2006 11 15 | 704 | 0.4+ | 0.2+ | 2006 11 22 | 704 | 0.1− | 1.1+ |
| 2001 08 25 | 644 | 0.8+ | 0.6− | 2006 11 15 | 704 | 1.5+ | 0.1− | 2006 11 22 | 704 | (1.6− | 0.1−) |
| 2001 08 25 | 644 | 0.8+ | 0.4− | 2006 11 15 | 704 | 1.4− | 0.6+ | 2006 11 22 | 704 | 1.4− | 0.1+ |
| 2001 09 10 | 699 | 0.4− | 0.8+ | 2006 11 15 | 704 | 0.3+ | 0.3− | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2001 09 10 | 699 | (1.0− | 3.3+) | 2006 11 15 | 704 | 0.6− | 0.5− | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2001 09 10 | 699 | 1.2+ | 0.3− | 2006 11 15 | 704 | 0.3− | 0.6− | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2001 09 10 | 699 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 1.4+ | 1.0+ |
| 2006 09 28 | J75 | 0.6− | 0.2+ | 2006 11 15 | 704 | 0.3+ | 0.1− | 2006 11 29 | 704 | (1.7+ | 0.5+) |
| 2006 09 28 | J75 | 1.2− | 0.1− | 2006 11 15 | 704 | 0.5− | 0.1− | 2006 11 29 | 704 | 1.4+ | 0.5+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 28 | G96 | 0.7+ | 1.1− | 2006 11 15 | 704 | 1.2+ | 0.6+ | 2006 11 29 | 704 | 1.4+ | 0.0 | |
| 2006 09 28 | G96 | 0.3− | 0.6− | 2006 11 16 | 704 | 0.4− | 0.6+ | 2006 11 29 | 704 | 1.1+ | 0.2+ | |
| 2006 09 28 | G96 | 0.7− | 0.5− | 2006 11 16 | 704 | 0.1+ | 0.2+ | | | | | |

**2006 SO$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.08429 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18250408 | $\omega$ | 47.12808 | | +0.79683568 | | −0.60347480 |
| $a$ | 3.0781350 | $\Omega$ | 349.86928 | | +0.49382100 | | +0.67863711 |
| $e$ | 0.1159700 | $i$ | 9.65951 | | +0.34812888 | | +0.41865241 |
| $P$ | 5.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 704 | 1.0− | 0.4+ | 2003 03 07 | 644 | 0.7+ | 0.6+ | 2006 09 29 | H06 | 0.3+ | 0.4− | |
| 2001 10 15 | 704 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.1− | 0.6− | 2006 09 29 | 704 | 0.2+ | 0.2− | |
| 2001 10 15 | 704 | 0.3+ | 0.2+ | 2006 07 21 | G96 | 0.2− | 0.9− | 2006 09 29 | 704 | (0.2− | 1.6−) | |
| 2001 10 15 | 704 | 0.6− | 0.5− | 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 09 30 | H06 | 0.7+ | 0.2+ | |
| 2001 11 11 | 704 | 0.2+ | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 30 | H06 | 0.3− | 0.2+ | |
| 2001 11 11 | 704 | 0.2− | 0.1− | 2006 08 21 | 691 | 0.0 | 0.2+ | 2006 09 30 | H06 | 0.2+ | 0.4− | |
| 2001 11 11 | 704 | 0.5− | 0.1− | 2006 08 21 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.4+ | |
| 2001 11 11 | 704 | 0.2+ | 0.3− | 2006 08 21 | 691 | 0.2− | 0.4+ | 2006 10 09 | 644 | 0.2− | 0.4+ | |
| 2001 11 11 | 704 | 0.0 | 0.3− | 2006 08 28 | 703 | 1.0− | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.2+ | |
| 2001 12 10 | 704 | 0.7+ | 0.9− | 2006 08 28 | 703 | 0.3− | 1.0− | 2006 10 12 | 644 | 0.3− | 0.4+ | |
| 2001 12 10 | 704 | 1.1+ | 0.1− | 2006 08 28 | 703 | (1.6− | 1.4+) | 2006 10 12 | 644 | 0.4− | 0.3+ | |
| 2001 12 10 | 704 | 1.3+ | 0.2+ | 2006 08 28 | 703 | 0.3− | 0.8+ | 2006 10 12 | 644 | 0.4− | 0.4+ | |
| 2002 01 08 | 704 | 0.2− | 0.5+ | 2006 09 12 | 703 | (1.0+ | 1.5+) | 2006 10 23 | G96 | 0.2− | 0.0 | |
| 2002 01 08 | 704 | 0.2− | 0.3− | 2006 09 12 | 703 | 0.7− | 0.9+ | 2006 10 23 | G96 | 0.2+ | 0.1+ | |
| 2002 01 08 | 704 | 0.5+ | 0.7− | 2006 09 12 | 703 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1− | |
| 2002 01 08 | 704 | 0.4− | 0.4− | 2006 09 12 | 703 | 1.2− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.3− | |
| 2003 02 19 | 644 | 0.4+ | 0.7+ | 2006 09 29 | H06 | 0.1+ | 0.0 | 2006 10 26 | 198 | 0.1+ | 0.3+ | |
| 2003 02 19 | 644 | 0.7+ | 0.8+ | 2006 09 29 | 704 | 0.0 | 0.0 | 2006 10 26 | 198 | 0.1+ | 0.2+ | |
| 2003 02 19 | 644 | 0.2− | 0.3+ | 2006 09 29 | H06 | 0.5+ | 0.2− | 2006 10 26 | 198 | 0.1− | 0.1+ | |
| 2003 03 07 | 644 | 0.1− | 0.6+ | 2006 09 29 | 704 | 0.8+ | 0.2− | 2006 10 26 | 198 | 0.1− | 0.1+ | |

**2006 SP$_{218}$ = 2004 FF$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.20415 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21963737 | $\omega$ | 9.23561 | | +0.60931315 | | −0.78436982 |
| $a$ | 2.7206034 | $\Omega$ | 43.33935 | | +0.71626299 | | +0.48159497 |
| $e$ | 0.1431859 | $i$ | 9.74731 | | +0.34015412 | | +0.39093512 |
| $P$ | 4.49 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 08 | 691 | 1.0+ | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.4+ | |
| 1995 04 08 | 691 | 1.8− | 0.1− | 2006 09 26 | 703 | 1.2− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1− | |
| 1995 04 08 | 691 | 0.8+ | 0.3− | 2006 09 29 | H06 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.0 | |
| 2002 12 05 | 704 | 0.4+ | 0.2+ | 2006 09 29 | H06 | 0.7+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ | |
| 2002 12 05 | 704 | 0.3+ | 0.2+ | 2006 09 29 | H06 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ | |
| 2002 12 05 | 704 | 0.3− | 0.0 | 2006 09 30 | H06 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.3− | 0.0 | |
| 2002 12 05 | 704 | 0.1− | 0.6− | 2006 09 30 | H06 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.4+ | |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2006 09 30 | H06 | 1.5+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2+ | |
| 2004 03 22 | 704 | 0.9+ | 1.3+ | 2006 09 30 | 704 | 0.2− | 1.0+ | 2006 10 22 | 703 | 0.8− | 0.6− | |
| 2004 03 22 | 704 | 1.0− | 1.4+ | 2006 09 30 | 704 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.4− | |
| 2004 03 22 | 704 | 0.4− | 1.3+ | 2006 09 30 | 704 | 0.9+ | 0.8+ | 2006 10 22 | 703 | 0.0 | 0.3+ | |
| 2004 03 28 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.5− | 0.0 | |
| 2004 03 28 | 691 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.0 | 0.0 | |
| 2004 03 28 | 691 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 | |
| 2006 09 18 | 699 | 0.5− | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2+ | |
| 2006 09 18 | 699 | 0.9− | 0.4+ | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.1− | |
| 2006 09 18 | 699 | 1.5+ | 0.5− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 20 | 704 | 1.5+ | 0.3+ | |
| 2006 09 18 | 699 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.6− | 2006 11 20 | 704 | 0.1+ | 0.4+ | |
| 2006 09 26 | 703 | 0.7− | 0.5+ | 2006 10 16 | 703 | 1.0− | 0.4− | 2006 11 20 | 704 | 0.6+ | 0.7+ | |
| 2006 09 26 | 703 | 0.4− | 0.0 | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.7+ | |

**2006 ST$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.17164 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29811800 | $\omega$ | 311.34002 | | +0.42166106 | | +0.90619877 |
| $a$ | 2.2192723 | $\Omega$ | 343.51518 | | −0.79498281 | | +0.35263714 |
| $e$ | 0.1081866 | $i$ | 6.41681 | | −0.43612415 | | +0.23334702 |
| $P$ | 3.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 699 | 1.2+ | 0.5− | 2006 09 30 | 400 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.4+ | 0.3+ | |
| 2005 04 06 | 699 | 1.0+ | 0.0 | 2006 09 30 | 400 | 0.8+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2− | |
| 2005 04 06 | 699 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | |
| 2005 04 06 | 699 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.1+ | |
| 2005 05 01 | 644 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.4+ | 0.0 | |
| 2005 05 01 | 644 | 0.5− | 0.2+ | 2006 10 16 | 400 | 0.8− | 1.1− | 2006 10 23 | 644 | 0.1− | 0.1+ | |
| 2005 05 01 | 644 | 0.2− | 0.1+ | 2006 10 16 | 400 | 0.9+ | 1.1− | 2006 10 23 | 644 | 0.1− | 0.1− | |
| 2005 05 14 | 644 | 0.4− | 0.2− | 2006 10 16 | 400 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.0 | |
| 2005 05 14 | 644 | 0.3− | 0.1+ | 2006 10 17 | 400 | 0.9− | 0.4+ | 2006 10 27 | 703 | 0.5− | 0.8+ | |
| 2005 05 14 | 644 | 0.1− | 0.1+ | 2006 10 17 | 400 | (2.1− | 0.4−) | 2006 10 27 | 703 | 0.7− | 0.1+ | |
| 2006 09 28 | 703 | 0.5+ | 0.4− | 2006 10 17 | 400 | 0.4+ | 0.1− | 2006 10 27 | 703 | 1.2+ | 1.1+ | |
| 2006 09 28 | 703 | 0.6− | 0.6+ | 2006 10 19 | 703 | 0.3− | 0.6− | 2006 10 27 | 703 | 0.0 | 1.1+ | |
| 2006 09 28 | 703 | 1.0+ | 0.3+ | 2006 10 19 | 703 | 0.4− | 0.1+ | 2006 11 23 | 703 | 0.1− | 0.9− | |
| 2006 09 28 | 703 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.0 | 1.1− | 2006 11 23 | 703 | 0.3+ | 0.2+ | |
| 2006 09 29 | 400 | 0.5+ | 1.1− | 2006 10 19 | 703 | 1.0− | 0.4− | 2006 11 23 | 703 | 0.7+ | 0.8− | |
| 2006 09 29 | 400 | 0.1− | 0.2+ | 2006 10 19 | A50 | 0.1− | 0.6− | 2006 11 23 | 703 | 0.3− | 0.4+ | |
| 2006 09 29 | 400 | 0.4− | 0.0 | 2006 10 19 | A50 | 0.0 | 0.2+ | | | | | |
| 2006 09 30 | 400 | 0.3− | 1.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 | | | | | |

**2006 SV$_{218}$ = 2005 EQ$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.16377 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29826442 | $\omega$ | 347.84681 | | +0.00397652 | | +0.99307951 |
| $a$ | 2.2185459 | $\Omega$ | 282.29568 | | −0.90712116 | | −0.04581654 |
| $e$ | 0.2104529 | $i$ | 6.89973 | | −0.42085080 | | +0.10813845 |
| $P$ | 3.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G92 | 0.0 | 0.3− | 2006 09 26 | 683 | 0.3+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2+ | |
| 2005 03 08 | G92 | 0.1− | 0.0 | 2006 09 27 | 683 | 1.3− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.6− | |
| 2005 03 08 | G92 | 1.3+ | 0.6+ | 2006 09 27 | 683 | 0.2− | 0.9− | 2006 10 19 | 691 | 0.5+ | 0.1+ | |
| 2005 03 09 | G92 | 0.5− | 0.1+ | 2006 09 27 | 683 | 0.4+ | 0.7− | 2006 10 21 | 691 | 0.3+ | 0.8− | |
| 2005 03 09 | G92 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ | |
| 2005 03 09 | G92 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1− | |
| 2006 09 06 | 644 | 0.1+ | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.4− | 0.2+ | |
| 2006 09 06 | 644 | 0.2+ | 0.8+ | 2006 10 17 | 703 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.2− | |
| 2006 09 06 | 644 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.2+ | |
| 2006 09 26 | 683 | 0.8+ | 0.9+ | 2006 10 17 | 703 | 0.4+ | 0.7+ | | | | | |
| 2006 09 26 | 683 | 0.1+ | 1.2− | 2006 10 17 | 703 | 0.1+ | 0.6+ | | | | | |

**2006 SE$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.29477 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21970307 | $\omega$ | 333.63947 | | +0.87102130 | | −0.48742196 |
| $a$ | 2.7200609 | $\Omega$ | 55.66529 | | +0.46278081 | | +0.77239451 |
| $e$ | 0.1071781 | $i$ | 4.24820 | | +0.16479022 | | +0.40721807 |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 21 | 691 | 0.0 | 0.3+ | 2006 10 01 | 941 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.0 | 0.3− | |
| 2004 04 21 | 691 | 0.1− | 0.1− | 2006 10 01 | 734 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.0 | |
| 2004 04 21 | 691 | 0.2+ | 0.2− | 2006 10 01 | 734 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.2− | |
| 2004 07 15 | 807 | 0.0 | 0.3+ | 2006 10 01 | 734 | 0.3− | 0.1− | 2006 10 21 | 703 | (0.1+ | 1.9+) | |
| 2004 07 16 | 807 | 0.0 | 0.2+ | 2006 10 01 | 734 | 0.8+ | 0.5− | 2006 10 21 | 703 | 0.3− | 0.4− | |
| 2006 09 28 | 699 | 0.5+ | 1.4+ | 2006 10 01 | 734 | 0.4− | 0.4− | 2006 10 21 | 703 | 0.2− | 0.4− | |
| 2006 09 28 | 699 | 0.2− | 1.2+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.9− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 28 | 699 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 2006 09 28 | 699 | 0.3− | 1.2+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2− | | |
| 2006 09 30 | 703 | 0.7− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.3− | 0.1+ | | |
| 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.8+ | | |
| 2006 09 30 | 703 | 0.5+ | 1.1+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.4+ | | |
| 2006 09 30 | 703 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.4+ | | |
| 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.5− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2006 09 30 | 703 | 0.5− | 0.0 | 2006 10 15 | 703 | 0.6− | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.3+ | | |
| 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 0.2− | 0.9− | 2006 11 11 | 691 | 0.2− | 0.3+ | | |
| 2006 09 30 | 703 | 0.1− | 0.3− | 2006 10 15 | 703 | 0.2+ | 1.3− | 2006 11 20 | G96 | 0.1− | 0.6− | | |
| 2006 10 01 | 941 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 20 | G96 | 0.1+ | 0.0 | | |
| 2006 10 01 | 941 | 0.1+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.3− | 0.0 | | |
| 2006 10 01 | 941 | 0.7+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.4+ | 0.6− | | |
| 2006 10 01 | 941 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.0 | | | | | | |

**2006 SU$_{219}$ = 2006 SU$_{368}$ = 2004 FU$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.01281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18330446 | $\omega$ | 73.55877 | | −0.58039214 | +0.81236975 | |
| $a$ | 3.0691683 | $\Omega$ | 160.63438 | | −0.79698922 | −0.55239286 | |
| $e$ | 0.0361109 | $i$ | 9.82296 | | −0.16719195 | −0.18686230 | |
| $P$ | 5.38 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 25 | 682 | 0.5− | 0.7+ | 2006 10 02 | G96 | 0.3+ | 0.1+ | | |
| 2004 03 18 | 691 | 0.1− | 0.2− | 2006 09 25 | 682 | 0.6+ | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.0 | | |
| 2004 03 18 | 691 | 0.3+ | 0.2− | 2006 09 25 | 682 | 0.2+ | 1.0+ | 2006 10 18 | 682 | 0.5− | 0.1− | | |
| 2004 03 20 | 704 | 0.0 | 0.6− | 2006 09 30 | 703 | 0.5− | 0.5+ | 2006 10 18 | 682 | 0.2− | 0.1+ | | |
| 2004 03 20 | 704 | 1.0− | 0.7+ | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 10 18 | 682 | 0.4− | 0.2+ | | |
| 2004 03 20 | 704 | 0.3+ | 0.8+ | 2006 09 30 | 703 | 0.7+ | 0.8+ | 2006 11 15 | 682 | 0.0 | 0.1+ | | |
| 2006 09 24 | 682 | 0.3− | 1.1− | 2006 09 30 | 703 | 1.1− | 0.2− | 2006 11 15 | 682 | 0.6+ | 0.3− | | |
| 2006 09 24 | 682 | 0.2+ | 0.9− | 2006 10 02 | G96 | 0.5+ | 0.1+ | | | | | | |
| 2006 09 24 | 682 | 0.2+ | 0.8− | 2006 10 02 | G96 | 0.1+ | 0.1+ | | | | | | |

**2006 SB$_{220}$ = 2003 DK$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.68763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18238911 | $\omega$ | 78.18846 | | +0.41748315 | −0.90809029 | |
| $a$ | 3.0794285 | $\Omega$ | 346.98688 | | +0.76651515 | +0.37135681 | |
| $e$ | 0.0813922 | $i$ | 8.39150 | | +0.48801879 | +0.19356174 | |
| $P$ | 5.40 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.0 | 0.1+ | 2006 09 25 | 704 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.1+ | | |
| 1995 08 22 | 691 | 0.1− | 0.1+ | 2006 09 25 | 704 | 0.7+ | 0.6+ | 2006 10 19 | 644 | 0.0 | 0.0 | | |
| 1995 08 22 | 691 | 0.0 | 0.1− | 2006 09 25 | 704 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3+ | | |
| 2003 02 23 | 699 | (0.3− | 3.2+) | 2006 09 30 | 703 | 0.1− | 1.1− | 2006 10 20 | 644 | 0.0 | 0.3+ | | |
| 2003 02 23 | 699 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2003 02 23 | 699 | 0.6+ | 0.2− | 2006 09 30 | 703 | 0.7− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2003 02 23 | 699 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.5− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ | | |
| 2003 02 26 | 599 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2003 02 26 | 599 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2003 02 26 | 599 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− | | | | | | |
| 2003 02 26 | 599 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− | | | | | | |

**2006 SM$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.81613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18370897 | $\omega$ | 59.81178 | | +0.17370775 | +0.98422430 | |
| $a$ | 3.0646612 | $\Omega$ | 220.23563 | | −0.92047111 | +0.15014241 | |
| $e$ | 0.1186801 | $i$ | 2.98067 | | −0.35008365 | +0.09359374 | |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 0.1− | 0.4+ | 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 699 | 0.6− | 0.8− | | |
| 1999 04 17 | 691 | 0.1− | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 1999 04 17 | 691 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.2+ | | |
| 2000 07 29 | 807 | 0.8+ | 0.3+ | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1+ | | |
| 2000 07 29 | 807 | 0.6+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.8− | | |
| 2001 11 12 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.7− | | |
| 2001 11 12 | 691 | 0.1+ | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.4− | | |
| 2001 11 12 | 691 | 0.1− | 0.2+ | 2006 09 27 | 699 | 0.2+ | 0.3+ | 2006 11 13 | G96 | (0.8− | 1.9−) | | |
| 2004 04 12 | 691 | 0.4+ | 0.0 | 2006 09 27 | 699 | (0.9+ | 2.2+) | | | | | | |
| 2004 04 12 | 691 | 0.2+ | 0.0 | 2006 09 27 | 699 | (2.5− | 0.8+) | | | | | | |

**2006 SD$_{221}$ = 1996 RO$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.85541 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29583073 | $\omega$ | 124.88193 | | +0.09456610 | +0.99551642 | |
| $a$ | 2.2306967 | $\Omega$ | 150.54421 | | −0.91474252 | +0.08771572 | |
| $e$ | 0.1090149 | $i$ | 0.24189 | | −0.39281469 | +0.03539790 | |
| $P$ | 3.33 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 02 | 691 | 0.6+ | 0.1+ | 2005 04 02 | G96 | 0.2− | 0.2+ | 2006 09 15 | 691 | 0.2− | 0.1+ | | |
| 1995 03 02 | 691 | 0.3+ | 0.0 | 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.4+ | | |
| 1995 03 02 | 691 | 0.2+ | 0.6+ | 2005 04 02 | G96 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.2− | 0.3+ | | |
| 1996 09 15 | 691 | 0.2+ | 0.3− | 2005 04 02 | G96 | 0.4− | 0.1+ | 2006 09 25 | G96 | 0.5+ | 0.1− | | |
| 1996 09 15 | 691 | 0.6+ | 0.5+ | 2005 05 10 | G96 | 0.5− | 0.3+ | 2006 09 25 | G96 | 0.4+ | 0.2+ | | |
| 1996 09 15 | 691 | 0.3+ | 0.1− | 2005 05 10 | G96 | 0.3− | 0.5− | 2006 09 25 | G96 | 0.2− | 0.2+ | | |
| 1996 09 22 | 691 | 1.1− | 0.2− | 2005 05 10 | G96 | 0.2− | 0.5− | 2006 09 25 | G96 | 0.4+ | 0.0 | | |
| 1996 09 22 | 691 | 0.5− | 0.2− | 2005 05 10 | G96 | 0.7− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2− | | |
| 1996 09 22 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.6+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.6+ | | |
| 2002 06 04 | 291 | 0.2+ | 1.1+ | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.3+ | | |
| 2002 06 04 | 291 | 0.5+ | 0.9+ | 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.1− | | |
| 2002 06 04 | 291 | 0.0 | 0.8+ | 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 16 | G96 | 1.3− | 0.8+ | | |
| 2003 11 24 | 291 | 0.2− | 0.9+ | 2006 08 28 | 691 | 0.3− | 0.2+ | 2006 10 16 | G96 | 0.5− | 0.4− | | |
| 2003 11 24 | 291 | 0.5− | 0.7+ | 2006 08 28 | 691 | 0.0 | 0.4+ | 2006 10 16 | G96 | 0.1− | 0.0 | | |
| 2003 11 24 | 291 | 0.6− | 0.8+ | 2006 08 28 | 691 | 0.6+ | 0.7− | | | | | | |

**2006 SJ$_{221}$ = 2000 EM$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 208.81095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23362407 | $\omega$ | 332.25391 | | −0.88661854 | −0.46250133 | |
| $a$ | 2.6109045 | $\Omega$ | 180.19822 | | +0.43888175 | −0.84113293 | |
| $e$ | 0.0564540 | $i$ | 5.01600 | | +0.14591224 | −0.28033537 | |
| $P$ | 4.22 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.2− | 0.2− | 2000 03 11 | 704 | 0.4+ | 1.3+ | 2006 09 15 | 691 | 0.1+ | 0.2+ | | |
| 2000 03 03 | 704 | 0.3− | 0.7+ | 2000 03 11 | 704 | 0.2− | 1.2+ | 2006 09 25 | G96 | 0.4− | 0.1− | | |
| 2000 03 03 | 704 | 0.5+ | 0.6+ | 2005 07 11 | G96 | 0.6− | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1+ | | |
| 2000 03 03 | 704 | 0.4+ | 0.6+ | 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.0 | | |
| 2000 03 03 | 704 | 0.4+ | 0.2− | 2005 07 11 | G96 | 1.0+ | 0.5+ | 2006 09 25 | G96 | 0.5− | 0.0 | | |
| 2000 03 11 | 704 | 0.4+ | 0.0 | 2005 07 11 | G96 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | |
| 2000 03 11 | 704 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.2− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | | |
| 2000 03 11 | 704 | 0.2+ | 0.9+ | 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.0 | | |

**2006 SO$_{221}$ = 2005 FS$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.11358 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27832654 | $\omega$ | 268.58138 | | −0.01183747 | +0.99992908 | |
| $a$ | 2.3232697 | $\Omega$ | 0.74414 | | −0.87275894 | −0.00969426 | |
| $e$ | 0.1523282 | $i$ | 5.77405 | | −0.48800790 | −0.00691768 | |
| $P$ | 3.54 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.1− | 0.0 | 2005 04 04 | G96 | 0.3+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.1+ |
| 2005 03 10 | G96 | 0.3+ | 0.0 | 2005 04 04 | G96 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1+ |
| 2005 03 10 | G96 | 0.1+ | 0.1− | 2006 08 18 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2005 03 10 | G96 | 0.1− | 0.4+ | 2006 08 18 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2005 03 16 | G96 | 0.0 | 0.3+ | 2006 08 18 | 691 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2005 03 16 | G96 | 0.1+ | 0.3+ | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.5+ |
| 2005 03 16 | G96 | 0.1− | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3− | 2006 10 23 | G96 | 0.2− | 0.1+ |
| 2005 03 16 | G96 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.1− | 0.9− |
| 2005 04 04 | G96 | 0.5− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.1+ | | | | |

**2006 SN$_{223}$ = 1993 FW$_{43}$ = 2004 BZ$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.80893 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26027869 | $\omega$ | 142.93588 | | −0.96453382 | | −0.26153918 |
| $a$ | 2.4294631 | $\Omega$ | 21.98334 | | +0.21353931 | | −0.85255761 |
| $e$ | 0.1020370 | $i$ | 5.46666 | | +0.15516271 | | −0.45248512 |
| $P$ | 3.79 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 809 | 0.1− | 0.1+ | 2006 09 14 | 691 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 1993 03 20 | 809 | 1.3+ | 0.4− | 2006 09 25 | G96 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.0 | 0.4− |
| 1993 03 24 | 809 | (3.6− | 1.0−) | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2002 09 05 | 645 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 2004 01 26 | 699 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2004 01 26 | 699 | 0.8− | 0.2− | 2006 09 30 | 691 | 0.6+ | 1.0+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2004 01 26 | 699 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2004 01 26 | 699 | 0.9− | 1.0− | 2006 10 27 | 691 | (1.7− | 4.1−) | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2004 01 31 | 704 | 0.4− | 1.5+ | 2006 10 27 | 691 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2004 01 31 | 704 | (1.7+ | 1.2+) | 2006 10 27 | 691 | 0.4+ | 1.2+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2004 01 31 | 704 | 0.8+ | 1.3+ | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2006 09 14 | 691 | 0.1− | 1.1− | 2006 10 28 | G96 | 0.3− | 0.4− | | | | |
| 2006 09 14 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.1− | | | | |

**2006 SP$_{223}$ = 1993 RZ$_{2}$ = 1997 GM$_{31}$ = 2004 GZ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.98051 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15565002 | $\omega$ | 323.45548 | | +0.88509228 | | +0.46390482 |
| $a$ | 3.4227086 | $\Omega$ | 9.13788 | | −0.35120826 | | +0.71856038 |
| $e$ | 0.1448720 | $i$ | 13.64699 | | −0.30539224 | | +0.51813444 |
| $P$ | 6.33 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 07 | 664 | (3.7− | 1.0−) | 2006 07 22 | G96 | 0.3− | 0.3− | 2006 10 25 | 106 | 0.6− | 0.4− |
| 1993 09 07 | 664 | 0.1+ | 1.0− | 2006 08 30 | 699 | 0.2− | 0.2+ | 2006 10 25 | 106 | 0.0 | 0.8+ |
| 1993 09 07 | 664 | 0.7− | 1.3− | 2006 08 30 | 699 | 0.2+ | 0.1+ | 2006 10 25 | 106 | 0.2+ | 0.3− |
| 1993 09 07 | 664 | 0.6− | 1.3− | 2006 08 30 | 699 | 0.7− | 1.1− | 2006 10 29 | 704 | 0.2+ | 0.8+ |
| 1993 09 07 | 664 | 0.5+ | 0.9− | 2006 08 30 | 699 | 0.8+ | 0.3+ | 2006 10 29 | 704 | (0.0 | 1.5+) |
| 1993 09 08 | 664 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 29 | 704 | 0.6− | 0.4+ |
| 1993 09 08 | 664 | 0.7+ | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 704 | (1.6− | 2.1+) |
| 1993 09 08 | 664 | 0.7+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 29 | 704 | (0.3+ | 2.0+) |
| 1993 09 08 | 664 | 0.9+ | 0.2+ | 2006 09 30 | 703 | 0.4+ | 0.8− | 2006 10 31 | 703 | 0.1+ | 0.7+ |
| 1993 09 09 | 664 | 0.5+ | 0.1+ | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 10 31 | 703 | 0.8− | 0.0 |
| 1993 09 09 | 664 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 10 31 | 703 | 0.3+ | 0.1− |
| 1993 09 09 | 664 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.0 | 1.3− | 2006 10 31 | 703 | 0.5+ | 0.8− |
| 1997 04 13 | 691 | 0.5− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.4− | 0.2+ |
| 1997 04 13 | 691 | 0.2− | 0.5− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 1997 04 13 | 691 | 0.2+ | 0.5− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.4+ |
| 1997 04 16 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.1− | 0.9+ |
| 1997 04 16 | 691 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.4+ |
| 1997 04 16 | 691 | 0.8− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 2004 04 15 | E12 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.1− | 0.5− | 2006 11 14 | 703 | 0.2+ | 0.1+ |
| 2004 04 15 | E12 | 0.7+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2004 04 15 | E12 | 0.8+ | 0.7− | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.0+ | 0.7+ |
| 2004 04 15 | E12 | 0.8− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2004 04 16 | E12 | 0.8+ | 1.2+ | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2004 04 16 | E12 | 0.1+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.8+ |
| 2004 04 16 | E12 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.7− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2004 04 16 | E12 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.6− |
| 2006 07 22 | G96 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.5− |
| 2006 07 22 | G96 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | (0.3+ | 1.8−) |
| 2006 07 22 | G96 | 0.1− | 0.2− | 2006 10 25 | 106 | 0.5+ | 0.8− | | | | |

**2006 SW$_{223}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.60632 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19745057 | $\omega$ | 320.20449 | | +0.99093095 | | +0.08557731 |
| $a$ | 2.9207684 | $\Omega$ | 35.29983 | | −0.01850712 | | +0.85054577 |
| $e$ | 0.0924556 | $i$ | 10.32776 | | −0.13309150 | | +0.51889154 |
| $P$ | 4.99 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.2+ | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.7− | 0.3+ |
| 2001 10 14 | 691 | 0.5+ | 0.2− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 10 14 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 11 12 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 11 12 | 691 | 0.4− | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 11 12 | 691 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | | | | |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− | | | | |

**2006 SX$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.49429 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20396357 | $\omega$ | 196.87745 | | +0.92787902 | | −0.37287181 |
| $a$ | 2.8582551 | $\Omega$ | 185.01780 | | +0.34554460 | | +0.86252628 |
| $e$ | 0.0785504 | $i$ | 1.75137 | | +0.14014086 | | +0.34207459 |
| $P$ | 4.83 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 11 | 691 | 0.5− | 0.1+ | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1999 04 11 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 1999 04 11 | 691 | 0.5+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.5+ |
| 2001 09 12 | 691 | 0.1+ | 0.2− | 2006 09 25 | G96 | 0.7+ | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2001 09 12 | 691 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.6+ | 0.4− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 09 12 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2004 04 12 | 691 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.4− | 0.7− |
| 2004 04 12 | 691 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2004 04 12 | 691 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2006 07 21 | G96 | 0.7− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.6− | 2006 11 13 | G96 | 0.3+ | 0.7− |
| 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | | | | |
| 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.3− | | | | |

**2006 SY$_{223}$ = 1998 HU$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.18667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17628332 | $\omega$ | 302.08412 | | +0.93709075 | | +0.33832943 |
| $a$ | 3.1501306 | $\Omega$ | 38.33434 | | −0.25488022 | | +0.83143676 |
| $e$ | 0.0897528 | $i$ | 7.96895 | | −0.23853092 | | +0.44073360 |
| $P$ | 5.59 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.5+ | 0.1+ | 2006 10 04 | G96 | (2.5+ | 0.6−) | 2006 10 29 | 691 | 0.1− | 0.2− |
| 1998 04 17 | 691 | 0.3+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.1− |
| 1998 04 17 | 691 | 0.9+ | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.8− |
| 1998 04 24 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 1998 04 24 | 691 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | (1.6− | 2.2+) |
| 1998 04 24 | 691 | 1.1− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2006 09 25 | G96 | 0.6+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.1+ |
| 2006 09 25 | G96 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | (1.9+ | 0.5−) |
| 2006 09 28 | G96 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.9− | 1.4+ |
| 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 11 21 | 704 | 0.4− | 0.6− |
| 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.2+ | | | | |
| 2006 10 04 | G96 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.2+ | | | | |

**2006 SA$_{224}$ = 1994 GS$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.30343 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28149455 | $\omega$ | 338.72928 | | −0.97583070 | | −0.21846892 |
| $a$ | 2.3058058 | $\Omega$ | 188.65628 | | +0.20504797 | | −0.90735707 |
| $e$ | 0.0884590 | $i$ | 1.93284 | | +0.07556299 | | −0.35913017 |
| $P$ | 3.50 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.4+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 1994 04 06 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.5− | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 1994 04 06 | 691 | 0.3+ | 0.4− | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 1994 04 11 | 691 | 0.0 | 0.9− | 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 1994 04 11 | 691 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.9− |
| 1994 04 11 | 691 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.6− | 0.7− | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 04 | G96 | 0.5− | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.3− | 0.4+ | | | | |
| 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.3+ | 0.5+ | | | | |

**2006 SB$_{224}$ = 2000 UF$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.29657 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16468185 | $\omega$ | 164.55779 | | +0.97758340 | | −0.17502184 |
| $a$ | 3.2963922 | $\Omega$ | 206.40284 | | +0.15428329 | | +0.97373159 |
| $e$ | 0.2633113 | $i$ | 15.25989 | | +0.14327374 | | +0.14565078 |
| $P$ | 5.98 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 31 | 704 | 0.0 | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 13 | 703 | 1.4− | 0.9− |
| 2000 10 31 | 704 | 0.2− | 0.2− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 13 | 703 | 1.3− | 0.4− |
| 2000 10 31 | 704 | 0.3+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.4+ |
| 2000 11 02 | 704 | 0.2+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 1.3+ | 1.0+ |
| 2000 11 02 | 704 | 0.3− | 0.9− | 2006 10 16 | 703 | 0.1+ | 0.6− | 2006 11 14 | 704 | 0.4+ | 1.0+ |
| 2000 11 02 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | 1.2− | 0.5+ | 2006 11 14 | 704 | 0.9+ | 0.6+ |
| 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.7− | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2006 09 30 | G96 | 0.3− | 0.3− | 2006 10 18 | 691 | 0.3+ | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1+ | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 13 | 703 | 1.5− | 0.3+ | | | | |

**2006 SC$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.69610 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23889846 | $\omega$ | 309.34627 | | +0.94270594 | | +0.33062028 |
| $a$ | 2.5723328 | $\Omega$ | 31.42109 | | −0.27363534 | | +0.84283932 |
| $e$ | 0.2969463 | $i$ | 4.91587 | | −0.19086438 | | +0.42463174 |
| $P$ | 4.13 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.8− | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.3− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.5+ |
| 2005 04 02 | G96 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2005 04 02 | G96 | 0.9− | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.1− |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.6− |
| 2005 04 17 | 691 | 0.4+ | 0.7+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2005 04 17 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2006 08 28 | 703 | 0.2− | 1.3− | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.8− |
| 2006 08 28 | 703 | (1.7− | 0.6−) | 2006 10 21 | 644 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.9− |
| 2006 08 28 | 703 | (1.2+ | 1.9+) | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.7− |
| 2006 08 28 | 703 | 0.3− | 0.8− | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.9− |
| 2006 09 25 | G96 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.8+ | 0.3+ |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 17 | 703 | 1.3+ | 0.4+ |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.7− | 0.7− |
| 2006 09 30 | 703 | 0.3− | 0.8+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.8− | 0.4− |
| 2006 09 30 | 703 | 1.2− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.4− |
| 2006 09 30 | 703 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2006 09 30 | 703 | 0.4− | 1.5+ | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.1+ | | | | |

**2006 SF$_{224}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.93410 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25593939 | $\omega$ | 141.46499 | | +0.96786063 | | +0.24833108 |
| $a$ | 2.4568462 | $\Omega$ | 204.24529 | | −0.24798256 | | +0.91612188 |
| $e$ | 0.0736996 | $i$ | 5.55032 | | −0.04183840 | | +0.31472587 |
| $P$ | 3.85 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2004 02 17 | 691 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.2− | 0.4− |
| 2004 02 17 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.9− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2005 02 18 | 809 | 0.2+ | 0.5+ | 2006 09 30 | G96 | 0.7+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2005 02 18 | 809 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2005 02 18 | 809 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2005 07 11 | G96 | 1.0+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.4+ | 0.2− |
| 2005 07 11 | G96 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2005 07 11 | G96 | 0.2− | 0.1+ | 2006 10 16 | 291 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2005 07 11 | G96 | 0.7− | 0.6+ | 2006 10 16 | 291 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2006 09 25 | G96 | 0.3− | 0.4− | 2006 10 16 | 291 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.0 | 0.1+ | | | | |
| 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 10 19 | 691 | 0.1− | 0.0 | | | | |

**2006 SJ$_{224}$ = 1993 SM$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.89831 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30731058 | $\omega$ | 208.91777 | | +0.68506936 | | −0.72782517 |
| $a$ | 2.1747919 | $\Omega$ | 197.90010 | | +0.68617597 | | +0.65892181 |
| $e$ | 0.1339769 | $i$ | 5.75686 | | +0.24462731 | | +0.18998045 |
| $P$ | 3.21 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 21 | 589 | 0.5− | 0.3− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2− |
| 1993 09 21 | 589 | 0.1− | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 1993 09 21 | 589 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.1− |
| 1993 09 21 | 589 | 0.4− | 0.8− | 2006 10 16 | 703 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.2− |
| 1993 09 22 | 589 | 0.4+ | 1.4+ | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 11 11 | 703 | 1.1− | 0.3+ |
| 1993 09 22 | 589 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.8− | 2006 11 11 | 703 | 0.4− | 0.7− |
| 2006 09 25 | G96 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.5− | 0.2+ |
| 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.4+ | 1.0+ |
| 2006 09 28 | G96 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2006 09 28 | G96 | 0.5+ | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 20 | 704 | 1.2+ | 1.0+ |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.4− |
| 2006 09 28 | G96 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.9+ |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2006 09 30 | 703 | 1.2− | 0.0 | 2006 10 22 | 683 | 0.6− | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 22 | 683 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | 703 | (1.5− | 0.4+) | 2006 10 22 | 683 | (0.4− | 2.0+) | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2006 09 30 | 703 | 0.8− | 0.3− | 2006 10 31 | G96 | 0.7+ | 0.2− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2006 09 30 | 703 | 0.2− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.8− | 0.4− |
| 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1− | | | | |

**2006 SV$_{224}$ = 2004 FN$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.23596 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17142092 | $\omega$ | 262.08008 | | +0.14200596 | | +0.98954695 |
| $a$ | 3.2094220 | $\Omega$ | 16.14904 | | −0.86888129 | | +0.13676800 |
| $e$ | 0.1188090 | $i$ | 5.18224 | | −0.47421473 | | +0.04573120 |
| $P$ | 5.75 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 704 | 0.5+ | 0.3+ | 2006 08 27 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2004 03 18 | 704 | 0.9+ | 0.4+ | 2006 08 27 | 691 | 0.5+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2004 03 18 | 704 | 0.1− | 0.1− | 2006 09 19 | 699 | (1.8+ | 0.1+) | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 2004 03 23 | 691 | 0.2− | 0.0 | 2006 09 19 | 703 | (1.6− | 0.7+) | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 2004 03 23 | 691 | 0.1− | 0.1− | 2006 09 19 | 699 | 0.5− | 0.5− | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 19 | 703 | (1.6+ | 0.0 ) | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2006 08 18 | 691 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.0 | 0.6+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2006 08 18 | 691 | 1.2− | 0.6+ | 2006 09 19 | 699 | 0.0 | 0.9− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 19 | 703 | (0.0 | 1.6−) | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2006 08 27 | 691 | 0.2+ | 0.4− | 2006 09 19 | 699 | 0.6− | 1.0− | 2006 10 20 | G96 | 0.5− | 0.1− |

**2006 SP$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.49970 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18734364 | $\omega$ | 74.17249 | | −0.79952116 | | +0.59999188 |
| $a$ | 3.0248935 | $\Omega$ | 142.68433 | | −0.56716247 | | −0.73888556 |
| $e$ | 0.0362761 | $i$ | 2.63326 | | −0.19771863 | | −0.30668856 |
| $P$ | 5.26 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.1− | 0.2+ | 2005 07 05 | G96 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.2+ |
| 2004 02 16 | 691 | 0.0 | 0.3+ | 2005 07 05 | G96 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.1− | 0.4+ |
| 2004 02 16 | 691 | 0.1+ | 0.2+ | 2005 07 05 | G96 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.9− | 0.3+ |
| 2004 03 14 | 691 | 0.0 | 0.3+ | 2006 08 19 | 691 | 0.4− | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.2− |
| 2004 03 14 | 691 | 0.1+ | 0.2− | 2006 08 19 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3+ |
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 08 19 | 691 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2005 07 05 | G96 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 |

**2006 SW$_{225}$ = 2004 JQ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.06862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17357378 | $\omega$ | 65.47639 | | +0.14818539 | | +0.98413592 |
| $a$ | 3.1828290 | $\Omega$ | 213.50369 | | −0.95923979 | | +0.11902922 |
| $e$ | 0.0327031 | $i$ | 10.17985 | | −0.24062443 | | +0.13156190 |
| $P$ | 5.68 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2004 05 24 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.6+ |
| 2000 10 02 | 645 | 0.0 | 0.2− | 2004 05 24 | 691 | 0.3− | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.5+ |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2004 05 24 | 691 | 0.6+ | 0.3+ | 2006 09 30 | 691 | 0.4+ | 0.6+ |
| 2004 04 19 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 2004 04 19 | 691 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.4− | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.2− |
| 2004 05 09 | 691 | 0.3− | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.3− | 0.0 |
| 2004 05 09 | 691 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2004 05 09 | 691 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1− |

**2006 SE$_{227}$ = 1998 DH$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.92958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18831845 | $\omega$ | 88.52430 | | +0.31557749 | | −0.94758194 |
| $a$ | 3.0144457 | $\Omega$ | 342.82256 | | +0.78933015 | | +0.29138596 |
| $e$ | 0.0871266 | $i$ | 9.74584 | | +0.52665811 | | +0.13108277 |
| $P$ | 5.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 22 | 691 | 0.2− | 0.2− | 2001 10 20 | 644 | 0.1− | 0.7+ | 2006 09 26 | 691 | 0.0 | 0.3+ |
| 1998 02 22 | 691 | 0.0 | 0.4− | 2001 10 20 | 644 | 0.4− | 0.6+ | 2006 09 26 | 691 | 0.0 | 0.2− |
| 1998 02 22 | 691 | 0.5− | 0.2− | 2001 10 20 | 644 | 0.5− | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 1998 03 01 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.6+ | 0.8− |
| 1998 03 01 | 691 | 0.4+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1− |
| 1998 03 01 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2− |

**2006 SY$_{227}$ = 1995 QL$_{11}$ = 2001 VK$_{70}$ = 2003 FZ$_{13}$**

Id. Minor Planet Center; 2000 QB$_{235}$ = 2001 VK$_{70}$ (*MPO* 46451) is invalid.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.71604 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17922969 | $\omega$ | 126.80457 | | −0.38699341 | | −0.92110150 |
| $a$ | 3.1155119 | $\Omega$ | 345.77862 | | +0.78125706 | | −0.30304646 |
| $e$ | 0.1907548 | $i$ | 9.96735 | | +0.48976883 | | −0.24440719 |
| $P$ | 5.50 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 20 | 691 | 0.0 | 0.5− | 2001 11 12 | 704 | 0.0 | 0.6− | 2006 09 18 | 691 | 0.0 | 0.4+ |
| 1995 08 20 | 691 | 0.4+ | 0.5− | 2001 11 12 | 704 | 0.3− | 0.5− | 2006 09 18 | 691 | 0.0 | 0.0 |
| 1995 08 20 | 691 | 0.3+ | 0.7− | 2001 11 12 | 704 | 0.4+ | 0.2− | 2006 09 18 | 691 | 0.2− | 0.1+ |
| 1995 08 27 | 691 | 0.2+ | 0.2+ | 2001 11 12 | 704 | 1.0+ | 0.5− | 2006 09 26 | 691 | 0.3− | 0.5+ |
| 1995 08 27 | 691 | 0.2− | 0.1− | 2003 03 23 | 691 | 0.1+ | 0.7+ | 2006 09 26 | 691 | 0.4− | 0.3+ |
| 1995 08 27 | 691 | 0.0 | 0.3+ | 2003 03 23 | 691 | 0.4+ | 0.4+ | 2006 09 26 | 691 | 0.3− | 0.4+ |
| 2001 11 11 | 704 | 0.4+ | 0.1+ | 2003 03 23 | 691 | 0.6+ | 0.6+ | 2006 09 30 | 691 | 0.2− | 0.6+ |
| 2001 11 11 | 704 | 0.8− | 0.0 | 2003 03 25 | 644 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.4− | 0.5+ |
| 2001 11 11 | 704 | 0.0 | 0.1+ | 2003 03 25 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.7+ |
| 2001 11 12 | 704 | 0.1− | 1.4− | 2003 03 25 | 644 | 0.3+ | 0.4+ | | | | |

**2006 SE$_{228}$ = 2004 EO$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.44437 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17641234 | $\omega$ | 312.37360 | | +0.53853494 | | +0.84186520 |
| $a$ | 3.1485945 | $\Omega$ | 350.02832 | | −0.70082094 | | +0.42429446 |
| $e$ | 0.1470300 | $i$ | 11.74821 | | −0.46779281 | | +0.33352241 |
| $P$ | 5.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.4− |
| 2004 03 23 | 691 | 0.3+ | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.2− | 2006 10 23 | G96 | 0.4− | 0.7− |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | | | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.3+ | | | | |

**2006 SM$_{228}$ = 2004 ET$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.35376 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21272885 | $\omega$ | 29.31906 | | +0.82972294 | | +0.55451274 |
| $a$ | 2.7791914 | $\Omega$ | 296.86637 | | −0.52504494 | | +0.73653655 |
| $e$ | 0.0219916 | $i$ | 4.10380 | | −0.18944035 | | +0.38733645 |
| $P$ | 4.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 13 | 644 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.2− |
| 2004 03 13 | 644 | 0.0 | 0.4+ | 2006 09 18 | 691 | 0.9− | 0.7− | 2006 10 12 | 644 | 0.3− | 0.3+ |
| 2004 03 13 | 644 | 0.3− | 0.2+ | 2006 09 26 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.3+ |
| 2004 03 18 | 704 | 0.7− | 0.6+ | 2006 09 26 | 691 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.0 | 0.3− |
| 2004 03 18 | 704 | 0.8+ | 0.7− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 23 | G96 | 0.3− | 0.0 |
| 2004 03 18 | 704 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 23 | G96 | 0.4− | 0.2− |
| 2004 03 18 | 704 | 0.4+ | 0.6− | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.9− |
| 2006 09 18 | 691 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.0 | 0.2+ | | | | |

**2006 SO$_{229}$ = 2004 BZ$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.39863 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22361537 | $\omega$ | 315.08678 | | +0.01056019 | | +0.99871981 |
| $a$ | 2.6882415 | $\Omega$ | 315.44764 | | −0.89648978 | | −0.01245836 |
| $e$ | 0.1133545 | $i$ | 4.04348 | | −0.44293855 | | +0.04902591 |
| $P$ | 4.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.0 | 0.2+ | 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 07 19 | 644 | 0.0 | 0.0 | 2005 02 14 | 809 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.2− | 0.0 |
| 2001 07 19 | 644 | 0.1− | 0.3+ | 2005 02 14 | 809 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.0 |
| 2004 01 28 | 691 | 0.2+ | 0.1+ | 2005 05 16 | 644 | 0.0 | 1.1+ | 2006 09 30 | 691 | 0.4− | 0.3+ |
| 2004 01 28 | 691 | 0.1− | 0.4+ | 2005 05 16 | 644 | 0.4+ | 0.8+ | 2006 10 15 | 291 | 0.3+ | 0.2+ |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2005 05 16 | 644 | 0.3+ | 1.1+ | 2006 10 15 | 291 | 0.2+ | 0.3+ |
| 2004 02 14 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.0 | 2006 10 15 | 291 | 0.1− | 0.3+ |
| 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2− | | | | |

**2006 SJ$_{230}$ = 2002 WU$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.77044 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23418899 | $\omega$ | 351.35237 | | +0.96834118 | | −0.23122230 |
| $a$ | 2.6067041 | $\Omega$ | 22.69573 | | +0.24113160 | | +0.76889139 |
| $e$ | 0.1910882 | $i$ | 14.11336 | | +0.06458259 | | +0.59610593 |
| $P$ | 4.21 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.5+ | 0.3− | 2006 09 26 | 704 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.2− |
| 2002 11 06 | 699 | 0.6− | 0.5+ | 2006 09 26 | 704 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.3− | 0.2+ |
| 2002 11 06 | 699 | (0.3− | 1.6+) | 2006 09 26 | 704 | (2.6− | 0.4+) | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2002 11 06 | 699 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.4− |
| 2002 11 25 | 644 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 11 25 | 644 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.4− |
| 2002 11 25 | 644 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 11 27 | 699 | 0.3− | 0.0 | 2006 09 30 | 704 | 0.3− | 0.7+ | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2002 11 27 | 699 | (0.4+ | 1.9+) | 2006 09 30 | 704 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2002 11 27 | 699 | 1.0+ | 0.9+ | 2006 09 30 | 704 | 0.3+ | 0.1+ | 2006 10 22 | 703 | (1.4− | 1.7+) |
| 2002 11 27 | 699 | 1.2− | 0.4− | 2006 09 30 | 704 | 0.5− | 0.3− | 2006 10 22 | 703 | 0.8− | 0.2− |
| 2006 09 26 | 704 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.1+ | 1.3+ | 2006 10 22 | 703 | (1.7− | 0.0 ) |
| 2006 09 26 | 704 | 1.2+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.7+ | | | | |

**2006 SN$_{230}$ = 2004 CP$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.00899 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26794404 | $\omega$ | 182.76973 | | +0.27439140 | | −0.96088712 |
| $a$ | 2.3829046 | $\Omega$ | 251.30666 | | +0.88302630 | | +0.26720986 |
| $e$ | 0.1602383 | $i$ | 2.26808 | | +0.38075441 | | +0.07276562 |
| $P$ | 3.68 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2004 02 13 | 691 | 0.2+ | 0.2− | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.4− |
| 2004 02 13 | 691 | 0.1− | 0.3+ | 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2− |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.2− | 2006 10 11 | 291 | 0.2− | 0.1+ |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 11 | 291 | 0.1+ | 0.1+ |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 11 | 291 | 0.0 | 0.1+ |

**2006 SN$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.06371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18591681 | $\omega$ | 185.80538 | | +0.90775162 | | −0.41563807 |
| $a$ | 3.0403502 | $\Omega$ | 199.06693 | | +0.39155420 | | +0.88808872 |
| $e$ | 0.1090600 | $i$ | 10.02219 | | +0.15057328 | | +0.19632476 |
| $P$ | 5.30 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.3+ | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.6+ | 0.1+ |
| 2004 04 12 | 691 | 0.2− | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2+ |
| 2004 04 12 | 691 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2004 04 26 | 568 | 0.1− | 0.6+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2004 04 26 | 568 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2004 04 26 | 568 | 0.2− | 0.5+ | 2006 10 17 | 703 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2006 09 18 | 691 | 0.4− | 0.0 | 2006 10 17 | 703 | 1.2− | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.1− | | | | |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.1+ | | | | |

**2006 SV$_{231}$ = 1997 SU$_{14}$ = 2004 FN$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 249.40720 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21544723 | $\omega$ | 192.16238 | | −0.53540747 | | −0.84287415 |
| $a$ | 2.7557646 | $\Omega$ | 290.23129 | | +0.77963170 | | −0.46868964 |
| $e$ | 0.0529170 | $i$ | 3.29129 | | +0.32482803 | | −0.26437318 |
| $P$ | 4.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.3+ | 0.4− | 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.4+ |
| 1997 09 28 | 691 | 0.5− | 0.9+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 1997 09 28 | 691 | 0.4+ | 0.2− | 2004 03 28 | 691 | 0.3+ | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.1− |
| 1997 09 30 | 691 | 0.7− | 0.2− | 2004 03 28 | 691 | 0.6− | 0.2− | 2006 09 26 | 691 | 0.5+ | 0.2− |
| 1997 09 30 | 691 | 0.2+ | 0.0 | 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.3− |
| 1997 09 30 | 691 | 0.4+ | 0.2− | 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ |
| 2004 03 16 | 691 | 0.0 | 0.3+ | 2006 09 18 | 691 | 0.2− | 0.5− | 2006 09 30 | 691 | 0.2+ | 0.3+ |

**2006 SZ$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.74378 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17113884 | $\omega$ | 200.53250 | | +0.66791922 | | −0.74126386 |
| $a$ | 3.2129478 | $\Omega$ | 207.68954 | | +0.70121248 | | +0.65670228 |
| $e$ | 0.1243241 | $i$ | 8.21801 | | +0.24936913 | | +0.13881648 |
| $P$ | 5.76 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 29 | 691 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 1995 11 29 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 1995 11 29 | 691 | 0.1+ | 0.5− | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 09 30 | 291 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2006 08 29 | 699 | (1.5+ | 2.5−) | 2006 09 30 | 291 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2006 08 29 | 699 | 0.6+ | 0.3+ | 2006 09 30 | 291 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.7+ | 0.4− |
| 2006 08 29 | 699 | 0.9− | 0.8− | 2006 10 17 | 703 | (2.0− | 0.8−) | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2006 08 29 | 699 | (2.2− | 1.1+) | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2006 09 17 | 703 | 1.2− | 1.0− | 2006 10 17 | 703 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 09 17 | 703 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 | | | | |

**2006 SD$_{234}$ = 2001 SZ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 86.30594 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20163834 | $\omega$ | 283.52479 | −0.00214461 | | +0.99909063 | |
| $a$ | 2.8801867 | $\Omega$ | 346.13980 | −0.83492553 | | −0.02522496 | |
| $e$ | 0.0864537 | $i$ | 10.23928 | −0.55035875 | | +0.03437449 | |
| $P$ | 4.89 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.1+ | 0.7+ | 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.6− | 0.3+ | 2004 02 23 | 704 | 0.9+ | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.2+ | 2004 02 23 | 704 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2004 02 23 | 704 | 0.6− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2001 09 22 | 704 | 0.1+ | 0.9+ | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.4− | 0.0 |
| 2001 09 22 | 704 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.1− |
| 2001 09 22 | 704 | 0.6− | 0.1− | 2006 09 18 | 691 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.1− | 0.5− |
| 2001 09 22 | 704 | 0.1− | 0.7+ | 2006 09 18 | 691 | 0.7+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.5− |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.4− |

**2006 SK$_{234}$ = 2005 JL$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.84579 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21757035 | $\omega$ | 54.27961 | +0.58068260 | | +0.81164172 | |
| $a$ | 2.7378075 | $\Omega$ | 251.34117 | −0.76695405 | | +0.51915413 | |
| $e$ | 0.1472318 | $i$ | 3.84929 | −0.27311025 | | +0.26779976 | |
| $P$ | 4.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.8+ | 0.1− | 2006 09 18 | 691 | 0.4+ | 0.9− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2005 05 07 | 691 | 0.6− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2005 05 07 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 05 16 | G96 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.1− | 1.3− |
| 2005 05 16 | G96 | 0.6+ | 0.4− | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2005 05 16 | G96 | 0.2− | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.1− |
| 2005 05 16 | G96 | 0.4− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4+ |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3+ |
| 2006 09 18 | 691 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.3− | 0.1− |

**2006 SY$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.34140 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21307170 | $\omega$ | 105.91554 | +0.94004501 | | −0.33804297 | |
| $a$ | 2.7762093 | $\Omega$ | 273.85924 | +0.29301842 | | +0.86833601 | |
| $e$ | 0.1105674 | $i$ | 2.59610 | +0.17451531 | | +0.36293184 | |
| $P$ | 4.63 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 926 | 0.0 | 0.2+ | 2004 03 26 | 291 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2002 12 13 | 926 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2002 12 13 | 926 | 0.3+ | 0.0 | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.6− | 0.6− |
| 2004 03 26 | 291 | 0.3+ | 0.3+ | 2006 09 18 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2004 03 26 | 291 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2004 03 26 | 291 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.7− | 0.4− |
| 2004 03 26 | 291 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.1− | | | | |
| 2004 03 26 | 291 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | | | | |

**2006 SZ$_{235}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.43457 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18312786 | $\omega$ | 228.30675 | +0.62893864 | | −0.77741124 | |
| $a$ | 3.0711411 | $\Omega$ | 182.76049 | +0.75443599 | | +0.61284366 | |
| $e$ | 0.1187058 | $i$ | 9.85540 | +0.18778319 | | +0.14161361 | |
| $P$ | 5.38 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 699 | 0.3+ | 0.7+ | 2006 09 26 | 704 | 0.1− | 1.1+ | 2006 10 15 | 703 | 0.7− | 1.2+ |
| 2001 11 12 | 699 | 0.4+ | 0.9− | 2006 09 26 | 704 | 0.3− | 1.4+ | 2006 10 15 | 703 | 0.2− | 0.9+ |
| 2001 11 12 | 699 | 0.4+ | 1.3− | 2006 09 28 | 699 | 0.8+ | 0.2− | 2006 10 15 | 703 | 0.0 | 0.7− |
| 2001 11 12 | 699 | 1.0− | 0.3− | 2006 09 28 | 699 | 1.4+ | 0.3− | 2006 10 15 | 703 | 0.5+ | 0.1− |
| 2003 03 06 | 699 | 0.5+ | 1.1− | 2006 09 28 | 699 | (1.2+ | 1.6+) | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 03 06 | 699 | 1.2− | 1.1− | 2006 09 28 | 699 | 0.2+ | 1.3+ | 2006 10 20 | 644 | 0.3− | 0.2+ |
| 2003 03 06 | 699 | 0.9− | 1.1+ | 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2003 03 06 | 699 | 1.5+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.5− |
| 2003 03 24 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.7− | 2006 10 21 | 703 | 0.5− | 0.4+ |
| 2003 03 24 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.6− | 2006 10 21 | 703 | 0.7− | 0.4+ |
| 2003 03 24 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 2006 09 16 | 699 | (2.2+ | 2.1−) | 2006 09 30 | 703 | (0.2− | 1.9+) | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2006 09 16 | 699 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 1.0+ | 0.4− | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2006 09 16 | 699 | 1.0− | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2006 09 16 | 699 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2006 09 18 | 699 | 1.3− | 0.9− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2006 09 18 | 699 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.4− | 0.3+ |
| 2006 09 18 | 699 | 1.2− | 0.4+ | 2006 10 10 | 644 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.4+ |
| 2006 09 18 | 699 | 0.6+ | 0.4− | 2006 10 10 | 644 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2006 09 26 | 704 | 1.0− | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.4+ | | | | |

**2006 SJ$_{236}$ = 2004 CW$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.95763 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24177876 | $\omega$ | 320.40866 | +0.80989486 | | −0.58646689 | |
| $a$ | 2.5518626 | $\Omega$ | 75.50160 | +0.54107875 | | +0.73952373 | |
| $e$ | 0.0989621 | $i$ | 0.66668 | +0.22650408 | | +0.33039557 | |
| $P$ | 4.08 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.3− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 08 18 | 691 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.0 |
| 2004 02 10 | 926 | 0.5− | 0.3+ | 2006 08 18 | 691 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.2− |
| 2004 02 10 | 926 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2004 02 10 | 926 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.1− |
| 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2004 02 12 | 691 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.1+ | | | | |

**2006 SM$_{236}$ = 1999 TC$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.00403 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27750940 | $\omega$ | 231.59982 | +0.81765663 | | −0.57550286 | |
| $a$ | 2.3278281 | $\Omega$ | 163.51707 | +0.54358528 | | +0.76301067 | |
| $e$ | 0.1400313 | $i$ | 3.09115 | +0.18961192 | | +0.29429776 | |
| $P$ | 3.55 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.1− |
| 1999 10 04 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.7+ |
| 1999 10 04 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 19 | 695 | 0.0 | 0.1+ |
| 1999 10 06 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.2− |
| 1999 10 06 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 20 | 695 | 0.0 | 0.0 |
| 1999 10 06 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.1− | 0.3− | | | | |

**2006 SK$_{237}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.12224 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28974314 | $\omega$ | 119.38610 | −0.55614927 | | −0.83105043 | |
| $a$ | 2.2618334 | $\Omega$ | 4.42456 | +0.72599167 | | −0.49007563 | |
| $e$ | 0.1534530 | $i$ | 5.42342 | +0.40451709 | | −0.26302292 | |
| $P$ | 3.40 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.0 | 0.2+ | 2003 11 19 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− |
| 1996 10 06 | 691 | 0.1+ | 0.0 | 2003 12 01 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.5− |
| 1996 10 06 | 691 | 0.1− | 0.3− | 2003 12 01 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.7− |
| 2003 11 14 | 644 | 0.3− | 0.2+ | 2003 12 01 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.5− |
| 2003 11 14 | 644 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.3− | 0.2+ | 2006 09 30 | G96 | 1.0− | 1.0− |
| 2003 11 14 | 644 | 0.5− | 0.1+ | 2006 09 26 | 691 | 0.4− | 0.3+ | 2006 09 30 | G96 | 1.1+ | 0.0 |
| 2003 11 19 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.4+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 2003 11 19 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.3− | | | | |

**2006 SE$_{238}$ = 2005 NS$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.55904 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17904177 | $\omega$ | 301.36390 | | +0.01981774 | −0.99957727 | |
| $a$ | 3.1176915 | $\Omega$ | 147.47995 | | +0.93021831 | +0.01063521 | |
| $e$ | 0.1016044 | $i$ | 2.26784 | | +0.36647123 | +0.02705886 | |
| $P$ | 5.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.4+ | 0.0 | 2005 07 07 | 568 | 0.3− | 0.4− | 2006 09 26 | 691 | 0.0 | 0.1+ |
| 1995 10 20 | 691 | 0.0 | 0.2− | 2005 07 07 | 568 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.3+ | 0.0 |
| 1995 10 20 | 691 | 0.3− | 0.0 | 2005 07 08 | 568 | 0.6+ | 0.9+ | 2006 09 26 | 691 | 0.1− | 0.3− |
| 2000 07 29 | 807 | 0.2+ | 0.1− | 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 09 30 | 691 | 0.1+ | 0.2− |
| 2000 07 29 | 807 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2005 07 07 | 568 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.2− |

**2006 SV$_{238}$ = 2003 XS$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.14629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28998355 | $\omega$ | 4.35784 | | −0.97144347 | −0.23674965 | |
| $a$ | 2.2605831 | $\Omega$ | 161.92394 | | +0.21613178 | −0.91029032 | |
| $e$ | 0.0917377 | $i$ | 2.90452 | | +0.09790120 | −0.33958966 | |
| $P$ | 3.40 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.1− | 0.4+ | 2003 12 01 | 704 | 0.7+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.0 |
| 1999 09 03 | 691 | 0.2− | 0.4+ | 2003 12 21 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.2+ | 0.0 |
| 1999 09 03 | 691 | 0.0 | 0.2+ | 2003 12 21 | 691 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2001 02 01 | 699 | 0.9+ | 0.9− | 2003 12 21 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.0 |
| 2001 02 01 | 699 | 0.3− | 0.8+ | 2005 06 08 | 691 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2− |
| 2001 02 01 | 699 | 0.0 | 0.1− | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− |
| 2001 02 01 | 699 | 0.5− | 0.5+ | 2005 06 08 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2003 12 01 | 704 | 0.5− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1− |
| 2003 12 01 | 704 | 0.9+ | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.3− | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2003 12 01 | 704 | 0.3− | 0.5+ | 2006 09 18 | 691 | 0.2+ | 0.1− | | | | |

**2006 SJ$_{240}$ = 1999 UZ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.99919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27434537 | $\omega$ | 270.65683 | | +0.78560176 | +0.61815109 | |
| $a$ | 2.3456919 | $\Omega$ | 51.16232 | | −0.55310318 | +0.72103824 | |
| $e$ | 0.2002418 | $i$ | 1.97292 | | −0.27732065 | +0.31303849 | |
| $P$ | 3.59 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 19 | 691 | 0.3− | 0.2+ | 2005 03 10 | 695 | (44.0− | 20.6+) | 2006 10 01 | 704 | 0.7− | 0.1− |
| 1999 10 19 | 691 | 0.1− | 0.2+ | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | 0.2− | 0.5+ |
| 1999 10 19 | 691 | 0.2+ | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 01 | 704 | 0.4− | 0.6− |
| 1999 10 29 | 691 | 0.0 | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 16 | 106 | 0.7− | 0.1+ |
| 1999 10 29 | 691 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 16 | 106 | 0.2− | 0.6− |
| 1999 10 29 | 691 | 0.1− | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 16 | 106 | 0.1+ | 0.5− |
| 1999 11 17 | 691 | 0.6+ | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 16 | 106 | 0.8+ | 0.1− |
| 1999 11 17 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.8+ | 0.1+ |
| 1999 11 17 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.7+ |
| 2005 03 10 | 695 | (43.8− | 20.7+) | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ |

**2006 SZ$_{240}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.52857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21538971 | $\omega$ | 219.82914 | | +0.98451180 | +0.17342713 | |
| $a$ | 2.7562551 | $\Omega$ | 130.16444 | | −0.15107242 | +0.91353480 | |
| $e$ | 0.1094936 | $i$ | 1.92586 | | −0.08895869 | +0.36793640 | |
| $P$ | 4.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 291 | 0.3− | 0.1+ | 2006 09 18 | 691 | 0.4− | 0.2− | 2006 09 28 | 699 | 0.4− | 1.1− |
| 2003 01 11 | 291 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2003 01 11 | 291 | 0.2+ | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2004 02 22 | 695 | 0.1+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2004 02 22 | 695 | 0.2+ | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2005 06 27 | G96 | 0.6+ | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2005 06 27 | G96 | 0.1− | 0.8+ | 2006 09 28 | 699 | 0.5+ | 1.4+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2005 06 27 | G96 | 0.2+ | 0.6+ | 2006 09 28 | 699 | 0.2− | 1.0+ | | | | |
| 2005 06 27 | G96 | 0.1− | 0.8+ | 2006 09 28 | 699 | 0.1− | 0.0 | | | | |

**2006 SD$_{241}$ = 1999 TU$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.98103 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28138231 | $\omega$ | 238.63397 | | +0.78149045 | −0.62377819 | |
| $a$ | 2.3064189 | $\Omega$ | 159.94894 | | +0.58468773 | +0.72482354 | |
| $e$ | 0.1849123 | $i$ | 2.20137 | | +0.21774512 | +0.29245786 | |
| $P$ | 3.50 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.1+ | 0.2− | 1999 10 17 | 691 | 0.2+ | 0.1− | 2006 09 15 | 691 | 0.2+ | 0.0 |
| 1992 10 01 | 691 | 0.0 | 0.1− | 1999 10 17 | 691 | 0.3− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.2+ |
| 1992 10 01 | 691 | 0.2− | 0.3+ | 2004 01 28 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 1999 10 11 | 691 | 0.1+ | 0.0 | 2004 01 28 | 691 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.6− | 0.2− |
| 1999 10 11 | 691 | 0.9+ | 1.1− | 2004 01 28 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 1999 10 11 | 691 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.4+ |
| 1999 10 17 | 691 | 0.2− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.3− | 0.4+ |

**2006 SN$_{241}$ = 2001 UF$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.08285 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18882454 | $\omega$ | 281.67632 | | +0.45266821 | −0.89142028 | |
| $a$ | 3.0090571 | $\Omega$ | 141.38541 | | +0.83092231 | +0.41296237 | |
| $e$ | 0.0879654 | $i$ | 1.97241 | | +0.32351138 | +0.18663324 | |
| $P$ | 5.22 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.8+ | 0.3− | 2004 04 12 | 691 | 0.3+ | 0.2+ | 2006 09 15 | 691 | 0.0 | 0.4+ |
| 2001 10 20 | 704 | 0.4− | 0.6− | 2004 04 12 | 691 | 0.2+ | 1.1+ | 2006 09 15 | 691 | 0.1+ | 0.5+ |
| 2001 10 20 | 704 | 0.8+ | 0.4− | 2004 04 12 | 691 | 0.2+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 0.1+ | 0.0 | 2006 08 18 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.7− | 0.0 |
| 2001 10 23 | 291 | 0.8+ | 0.2+ | 2006 08 18 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.4+ |
| 2001 10 23 | 291 | 0.6− | 0.3+ | 2006 08 18 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.3− | 0.2− |
| 2001 10 23 | 291 | 0.6− | 0.1+ | 2006 08 27 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 691 | 0.5− | 0.1− |
| 2002 12 28 | 291 | 0.5+ | 0.4+ | 2006 08 27 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.4− | 0.0 |
| 2002 12 28 | 291 | 0.1+ | 0.3+ | 2006 08 27 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 2002 12 28 | 291 | 0.4− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 | | | | |

**2006 SN$_{243}$ = 2004 CT$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.22952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26156474 | $\omega$ | 262.17219 | | +0.82213130 | −0.56862779 | |
| $a$ | 2.4214932 | $\Omega$ | 132.47750 | | +0.53596530 | +0.75673001 | |
| $e$ | 0.1881309 | $i$ | 2.14573 | | +0.19194093 | +0.32252461 | |
| $P$ | 3.77 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 16 | 691 | 0.1− | 0.3− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 09 28 | 699 | (1.2+ | 1.7−) |
| 2000 01 16 | 691 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ |
| 2000 01 16 | 691 | 0.1− | 0.2− | 2006 09 18 | 691 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.3− |
| 2004 02 11 | 291 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2004 02 11 | 291 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.8+ | 0.1+ |
| 2004 02 11 | 291 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2004 02 29 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 699 | (1.1− | 2.4+) | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 02 29 | 691 | 0.0 | 0.0 | 2006 09 28 | 699 | 0.5+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 09 28 | 699 | 0.3− | 0.1+ | | | | |

**2006 ST$_{245}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.92086 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28094929 | $\omega$ | 273.51513 | | +0.91541140 | | +0.39924951 |
| $a$ | 2.3087882 | $\Omega$ | 62.95924 | | −0.34270857 | | +0.83977812 |
| $e$ | 0.2456731 | $i$ | 3.29563 | | −0.21112271 | | +0.36793008 |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2005 04 01 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2005 04 01 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.4+ | 0.2− |
| 2005 05 12 | G96 | 0.8− | 0.1− | 2006 10 19 | 644 | 0.3− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2005 05 12 | G96 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2005 05 12 | G96 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.1− |
| 2005 05 12 | G96 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.4− | 2006 11 11 | 703 | 1.0− | 1.5− |
| 2006 09 26 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.4− | 0.1− |
| 2006 09 26 | 704 | 0.8− | 0.7+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.7− |
| 2006 09 26 | 704 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.4+ | 1.3+ |
| 2006 09 26 | 704 | 0.7− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.8− | 0.2− |
| 2006 09 26 | 704 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.1− |
| 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 23 | 704 | (1.5− | 0.5+) | 2006 11 25 | 703 | (1.9+ | 1.8−) |
| 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 10 23 | 704 | 0.7+ | 0.7− | 2006 11 25 | 703 | 0.3+ | 0.9− |
| 2006 09 30 | 703 | 0.5− | 0.3− | 2006 10 23 | 704 | 0.6− | 1.0+ | 2006 11 25 | 703 | 0.7+ | 0.6− |
| 2006 09 30 | 703 | 0.1− | 0.6− | 2006 10 23 | 704 | 1.3+ | 0.8+ | 2006 11 25 | 703 | 0.1+ | 0.1+ |
| 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2006 10 03 | G96 | 0.0 | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2006 10 03 | G96 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2006 10 03 | G96 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.0 | | | | |

**2006 SB$_{246}$ = 2002 QF$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.29310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25890224 | $\omega$ | 36.81397 | | −0.98902824 | | +0.14708245 |
| $a$ | 2.4380663 | $\Omega$ | 151.63465 | | −0.14150869 | | −0.91649045 |
| $e$ | 0.1230246 | $i$ | 1.66211 | | −0.04240790 | | −0.37203764 |
| $P$ | 3.81 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 291 | 0.5− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.3+ | 0.4+ |
| 2002 08 29 | 291 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 20 | G96 | 0.1+ | 0.1+ |
| 2002 08 29 | 291 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 20 | G96 | 0.2− | 0.5− |
| 2002 08 30 | 291 | 0.6+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.4+ |
| 2002 08 30 | 291 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.7+ | 0.4− |
| 2002 08 30 | 291 | 0.3+ | 0.3− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.4− | 0.1+ |
| 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.4− | 0.3+ |
| 2006 09 15 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.2− | | | | |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.0 | 0.2− | | | | |

**2006 SO$_{246}$ = 1999 VM$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.69290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12553788 | $\omega$ | 342.38577 | | +0.95632030 | | −0.29178953 |
| $a$ | 3.9502040 | $\Omega$ | 34.59496 | | +0.27179559 | | +0.86537246 |
| $e$ | 0.2463380 | $i$ | 1.77806 | | +0.10760407 | | +0.40741793 |
| $P$ | 7.85 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 734 | 0.6− | 1.6+ | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 20 | G96 | 0.1− | 0.1− |
| 1999 11 13 | 734 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.8− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1999 11 13 | 734 | 0.3− | 1.2− | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 1999 11 14 | 734 | (0.6+ | 2.6−) | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1999 11 14 | 734 | 0.9+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2006 09 15 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.5+ | 0.1− |
| 2006 09 26 | G96 | 0.5− | 0.3− | 2006 10 20 | G96 | 0.1− | 0.2− | | | | |

**2006 SP$_{246}$ = 2003 YO$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.68113 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26711994 | $\omega$ | 343.40761 | | −0.77511761 | | −0.63159579 |
| $a$ | 2.3878031 | $\Omega$ | 157.39867 | | +0.58450959 | | −0.72687480 |
| $e$ | 0.1621369 | $i$ | 2.49302 | | +0.23987754 | | −0.26970316 |
| $P$ | 3.69 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.2− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.6− |
| 2003 12 19 | 704 | 0.3− | 0.0 | 2006 10 15 | 291 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.7+ | 0.4− |
| 2003 12 19 | 704 | 0.5+ | 0.3− | 2006 10 15 | 291 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2003 12 23 | 704 | 0.1− | 0.5+ | 2006 10 15 | 291 | 0.5− | 0.0 | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2003 12 23 | 704 | 0.4− | 0.2+ | 2006 10 20 | G96 | 0.5− | 0.4− | 2006 10 21 | 291 | 0.0 | 0.2+ |
| 2003 12 23 | 704 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.1+ | 2006 10 21 | 291 | 0.1− | 0.0 |
| 2003 12 23 | 704 | 0.2+ | 0.1− | 2006 10 20 | G96 | 1.1+ | 0.3− | 2006 10 21 | 291 | 0.4+ | 0.1+ |
| 2006 09 26 | G96 | 0.1+ | 0.7− | 2006 10 20 | G96 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2006 09 26 | G96 | 0.1+ | 0.7− | 2006 10 20 | G96 | 0.0 | 1.3+ | 2006 10 21 | G96 | 0.6− | 0.7− |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.6− | 1.2− | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.2+ | | | | |

**2006 SM$_{247}$ = 2005 EM$_{247}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.18087 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28278613 | $\omega$ | 161.08312 | | +0.78023726 | | +0.62539441 |
| $a$ | 2.2987795 | $\Omega$ | 160.19429 | | −0.57781674 | | +0.72714253 |
| $e$ | 0.1623293 | $i$ | 1.78711 | | −0.23949454 | | +0.28309994 |
| $P$ | 3.49 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | 691 | 0.1− | 0.1+ | 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.2+ |
| 2005 03 12 | 691 | 0.0 | 0.2− | 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.3+ |
| 2005 03 12 | 691 | 0.1+ | 0.4+ | 2006 09 13 | 644 | 0.1+ | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.2+ |
| 2005 03 16 | 691 | 0.3+ | 0.1− | 2006 09 13 | 644 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.4+ |
| 2005 03 16 | 691 | 0.2+ | 0.3+ | 2006 09 13 | 644 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.2+ |
| 2005 03 16 | 691 | 0.0 | 1.0+ | 2006 09 26 | G96 | 0.6− | 0.0 | 2006 11 15 | G96 | 0.5− | 0.5− |
| 2006 07 21 | G96 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2− |

**2006 SN$_{247}$ = 2005 GT$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.73102 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26851129 | $\omega$ | 270.16640 | | +0.31017897 | +0.95038880 | |
| $a$ | 2.3795473 | $\Omega$ | 17.95748 | | −0.83917220 | +0.28530815 | |
| $e$ | 0.1766372 | $i$ | 4.36300 | | −0.44674269 | +0.12393702 | |
| $P$ | 3.67 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 18 | 644 | 0.0 | 0.8+ | 2006 09 15 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.5+ |
| 2002 06 18 | 644 | 0.5+ | 0.7+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2002 06 18 | 644 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.4+ |
| 2002 07 12 | 644 | 0.3+ | 1.3− | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.5+ | 0.1− |
| 2002 07 12 | 644 | 0.3− | 0.5− | 2006 09 26 | G96 | 0.5− | 0.4− | 2006 10 20 | G96 | 0.2− | 0.3− |
| 2002 07 12 | 644 | 0.4− | 0.3− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.5+ | 0.3− |
| 2005 04 10 | 695 | 0.2+ | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2+ |
| 2005 04 10 | 695 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.0 |
| 2005 04 11 | 695 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1+ |

**2006 SY$_{247}$ = 1998 VO$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.46855 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23896516 | $\omega$ | 27.03225 | | +0.28371821 | −0.95853845 | |
| $a$ | 2.5718541 | $\Omega$ | 46.49876 | | +0.87301577 | +0.24672648 | |
| $e$ | 0.1244868 | $i$ | 2.10227 | | +0.39667046 | +0.14258361 | |
| $P$ | 4.12 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.2− | 0.5+ | 2004 02 26 | 695 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.1+ |
| 1998 11 15 | 691 | 0.5− | 0.2+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.1+ |
| 1998 11 15 | 691 | 0.8− | 0.4− | 2006 09 15 | 691 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.4− | 0.4− |
| 1998 11 19 | 691 | 0.5+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.3− |
| 1998 11 19 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.1+ |
| 1998 11 19 | 691 | 1.0+ | 0.2− | 2006 09 26 | G96 | 0.6− | 0.2− | | | | |
| 2004 02 26 | 695 | 0.0 | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.2+ | | | | |

**2006 SK$_{250}$ = 2001 VO$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.04114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18253513 | $\omega$ | 271.58744 | | −0.42330363 | −0.90304969 | |
| $a$ | 3.0777859 | $\Omega$ | 203.87513 | | +0.88626938 | −0.39604999 | |
| $e$ | 0.0220177 | $i$ | 10.37724 | | +0.18799099 | −0.16626987 | |
| $P$ | 5.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.5+ | 0.9− | 2006 09 30 | 691 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2001 11 10 | 704 | 0.1− | 0.6− | 2006 09 30 | 691 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2001 11 10 | 704 | 0.1− | 1.0− | 2006 09 30 | 691 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2001 11 10 | 704 | 0.7− | 0.3− | 2006 10 15 | 703 | 0.7− | 0.0 | 2006 11 11 | G96 | 0.6+ | 0.6− |
| 2001 11 10 | 704 | (1.9− | 1.0+) | 2006 10 15 | 703 | 1.0− | 1.0+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.7− | 0.4+ | 2006 10 15 | 703 | 1.2− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2001 11 12 | 704 | 0.3+ | 0.9+ | 2006 10 15 | 703 | 1.5− | 1.1+ | 2006 11 11 | G96 | 0.2+ | 0.2+ |
| 2001 11 12 | 704 | 0.8+ | 1.4+ | 2006 10 19 | 644 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1+ |

**2006 SM$_{250}$ = 2001 ST$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.14241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21031095 | $\omega$ | 136.80718 | | +0.95502215 | +0.29445760 | |
| $a$ | 2.8004520 | $\Omega$ | 206.12880 | | −0.28909829 | +0.89825941 | |
| $e$ | 0.0839884 | $i$ | 4.56289 | | −0.06599147 | +0.32622806 | |
| $P$ | 4.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 1.1+ | 0.3− |
| 2001 09 20 | 704 | 0.5− | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.0 | 0.9+ |
| 2001 09 20 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 2001 09 20 | 704 | 0.6+ | 0.6− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2001 09 22 | 704 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2001 09 22 | 704 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.6− | 0.3− |
| 2001 09 22 | 704 | 0.6− | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.8− | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2001 09 22 | 704 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.5− | 0.6− | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.8− | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.5− | 0.4− |
| 2006 09 15 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.6− | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 |

**2006 ST$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.17898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17775486 | $\omega$ | 205.24878 | | +0.68456288 | −0.72690330 | |
| $a$ | 3.1327211 | $\Omega$ | 201.68600 | | +0.69138185 | +0.67120554 | |
| $e$ | 0.0536877 | $i$ | 8.50298 | | +0.23100822 | +0.14524024 | |
| $P$ | 5.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2004 04 22 | 691 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2004 04 22 | 691 | 0.4+ | 0.4− | 2006 09 30 | 691 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.6+ | 0.2+ |
| 2004 05 18 | 599 | 0.1− | 0.2− | 2006 10 17 | G96 | 1.1+ | 0.7− | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2004 05 18 | 599 | (2.2− | 1.5+) | 2006 10 17 | G96 | 0.6+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2004 05 18 | 599 | 0.0 | 1.1+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2006 09 15 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.8− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2+ |
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2− | 0.4+ |
| 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.0 | | | | |

**2006 SN$_{251}$ = 2004 GO$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.26708 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20156691 | $\omega$ | 245.78741 | | +0.14692100 | −0.98759241 | |
| $a$ | 2.8808671 | $\Omega$ | 196.06059 | | +0.96461216 | +0.15546116 | |
| $e$ | 0.0497836 | $i$ | 11.56358 | | +0.21894657 | −0.02220476 | |
| $P$ | 4.89 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 291 | 0.1+ | 0.2− | 2004 04 25 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 2001 11 12 | 291 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2001 11 12 | 291 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.4+ | 2006 09 30 | 691 | 0.3− | 0.5− |
| 2004 04 13 | 691 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2004 04 13 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 16 | G96 | 0.3+ | 0.3− |
| 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.0 |
| 2004 04 25 | 691 | 0.4− | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 2004 04 25 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.1− | | | | |

**2006 SP$_{251}$ = 2004 CG$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 47.66065 | | | (2000.0) | | |
| $n$ | 0.23346422 | $\omega$ | 126.50946 | | +0.77626931 | +0.63022066 |
| $a$ | 2.6120962 | $\Omega$ | 194.44420 | | −0.59600644 | +0.72590373 |
| $e$ | 0.0401784 | $i$ | 3.46958 | | −0.20538324 | +0.27547358 |
| $P$ | 4.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 16 | 691 | 0.4− | 0.7− | 2005 07 05 | G96 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.5− |
| 1996 03 16 | 691 | 0.6+ | 0.1− | 2005 07 05 | G96 | (1.8+ | 0.5+) | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 1996 03 16 | 691 | 0.5− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2004 02 12 | 691 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2+ |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2004 02 18 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 02 | G96 | 0.2+ | 0.0 |
| 2004 02 18 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 11 02 | G96 | 0.5− | 0.4− |
| 2004 02 18 | 691 | 0.1− | 0.3+ | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 11 02 | G96 | 0.0 | 0.7− |
| 2005 02 16 | 809 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.1+ | 2006 11 02 | G96 | 0.2− | 0.1− |
| 2005 02 16 | 809 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2005 02 16 | 809 | 0.6+ | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2005 06 17 | G96 | 0.7+ | 0.3+ | 2006 10 16 | G96 | 0.4+ | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2005 06 17 | G96 | 0.4− | 0.3+ | 2006 10 16 | G96 | 0.6− | 0.7− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2005 06 17 | G96 | 0.0 | 0.4− | 2006 10 16 | G96 | 0.2− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2005 06 17 | G96 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 2.1+ | 0.7+ |
| 2005 07 05 | G96 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2005 07 05 | G96 | 0.5− | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.5− | 2006 11 14 | G96 | 0.4− | 0.3− |

**2006 SQ$_{252}$ = 2003 YE$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.21373 | | | (2000.0) | | |
| $n$ | 0.30274531 | $\omega$ | 192.36859 | | +0.83821768 | −0.54520971 |
| $a$ | 2.1966006 | $\Omega$ | 200.68340 | | +0.50312190 | +0.78144834 |
| $e$ | 0.1562180 | $i$ | 1.90248 | | +0.21037937 | +0.30345486 |
| $P$ | 3.26 | $H$ | 18.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 1.4+ | 0.0 | 2006 10 17 | G96 | 1.0+ | 1.3− |
| 2003 12 25 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2003 12 25 | 691 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 29 | 691 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.2+ |
| 2003 12 29 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.6+ | 0.1+ |
| 2005 05 10 | 807 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.5− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2005 05 10 | 807 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 09 15 | 691 | 0.5− | 0.1− | 2006 10 17 | G96 | 0.2− | 1.2− | | | | |
| 2006 09 15 | 691 | 0.0 | 0.4+ | 2006 10 17 | G96 | 1.1+ | 1.0− | | | | |

**2006 ST$_{252}$ = 2005 JO$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.80434 | | | (2000.0) | | |
| $n$ | 0.17397108 | $\omega$ | 114.01761 | | +0.60824236 | +0.79095668 |
| $a$ | 3.1779814 | $\Omega$ | 194.06016 | | −0.79065242 | +0.59633311 |
| $e$ | 0.2181007 | $i$ | 15.89833 | | −0.07007132 | +0.13701954 |
| $P$ | 5.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.1+ | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2005 05 07 | 691 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3− | 0.4− |
| 2005 05 07 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2005 05 11 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.6+ |
| 2005 05 11 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 2006 09 15 | 691 | 0.5− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.3+ |
| 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2− | | | | |

**2006 SR$_{253}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 252.85619 | | | (2000.0) | | |
| $n$ | 0.23582120 | $\omega$ | 92.81546 | | −0.54455447 | −0.83843055 |
| $a$ | 2.5946622 | $\Omega$ | 30.21233 | | +0.75088917 | −0.49916795 |
| $e$ | 0.0790711 | $i$ | 2.53319 | | +0.37366548 | −0.21878203 |
| $P$ | 4.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 09 30 | 691 | 0.4− | 0.1+ |
| 2000 05 04 | 645 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1+ |
| 2002 10 11 | 644 | 0.7− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 16 | 291 | 0.1− | 0.5+ |
| 2002 10 11 | 644 | 0.3− | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 16 | 291 | 0.1+ | 0.4+ |
| 2002 10 11 | 644 | 0.6− | 0.4+ | 2006 09 26 | 691 | 0.2+ | 0.5− | 2006 10 16 | 291 | 0.0 | 0.4+ |
| 2002 10 11 | 291 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.9− | 1.2− |
| 2002 10 11 | 291 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 1.0+ | 0.1+ |
| 2002 10 11 | 291 | 0.6+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4+ |
| 2002 12 07 | 291 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2002 12 07 | 291 | 0.2+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.0 | | | | |
| 2002 12 07 | 291 | 0.5+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.3+ | | | | |

**2006 SS$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.43150 | | | (2000.0) | | |
| $n$ | 0.27573543 | $\omega$ | 287.60518 | | +0.68880781 | +0.72470304 |
| $a$ | 2.3378017 | $\Omega$ | 25.96071 | | −0.64788686 | +0.62695379 |
| $e$ | 0.1926533 | $i$ | 2.44696 | | −0.32524825 | +0.28589236 |
| $P$ | 3.57 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | 691 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2005 03 12 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2005 03 12 | 691 | 0.3+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2005 04 04 | G96 | 0.3− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2005 04 04 | G96 | 0.1− | 0.6− | 2006 09 26 | G96 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2005 04 04 | G96 | 0.2− | 0.5− | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.2− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 | | | | |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2+ | | | | |

**2006 ST$_{253}$ = 1998 TZ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 130.67713 | | | (2000.0) | | |
| $n$ | 0.24410676 | $\omega$ | 189.43736 | | −0.65285921 | +0.75700829 |
| $a$ | 2.5356123 | $\Omega$ | 39.81203 | | −0.69222466 | −0.58192983 |
| $e$ | 0.1044054 | $i$ | 2.39067 | | −0.30757090 | −0.29714664 |
| $P$ | 4.04 | $H$ | 17.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 13 | 691 | 0.5+ | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1− | 0.2− |
| 1998 10 13 | 691 | 0.3− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.3− |
| 1998 10 13 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 1998 10 22 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 1998 10 22 | 691 | 0.4− | 0.0 | 2006 09 26 | G96 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.7− | 0.1− |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.5+ | 0.2+ | 2006 10 21 | G96 | 0.4− | 0.1− |
| 2006 09 18 | 691 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.5− | 0.2+ | | | | |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.4+ | 0.1+ | | | | |

**2006 SC$_{254}$ = 2004 FX$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 129.53817 | | (2000.0) | | | |
| $n$ | 0.19864226 | $\omega$ | 206.64037 | | −0.54185701 | +0.84021587 |
| $a$ | 2.9090752 | $\Omega$ | 30.56237 | | −0.76367577 | −0.48191481 |
| $e$ | 0.0388323 | $i$ | 2.33258 | | −0.35098476 | −0.24858684 |
| $P$ | 4.96 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.3− | 0.3+ | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 02 | 291 | 0.6− | 0.6+ |
| 2001 10 16 | 291 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 02 | 291 | 0.1− | 0.2− |
| 2001 10 16 | 291 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 10 02 | 291 | 0.3+ | 0.1+ |
| 2004 03 17 | 691 | 0.2− | 0.3− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 10 02 | 291 | 0.1− | 0.2− |
| 2004 03 17 | 691 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 10 16 | G96 | 1.2+ | 0.5− |
| 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.8+ | 0.3− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2004 03 29 | 691 | 0.3+ | 0.0 | 2006 09 30 | 291 | 0.5+ | 0.4+ | 2006 10 16 | G96 | 0.5+ | 0.3− |
| 2004 03 29 | 691 | 0.1− | 0.2− | 2006 09 30 | 291 | 0.3− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.6+ |
| 2004 03 29 | 691 | 0.0 | 0.2− | 2006 09 30 | 291 | 0.3+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.3+ |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 01 | 291 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 01 | 291 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 2006 09 18 | 691 | 0.3− | 0.2− | 2006 10 01 | 291 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.1− | 0.8− |
| 2006 09 26 | G96 | 0.5+ | 0.1− | 2006 10 02 | 291 | 0.6− | 0.4− | | | | |
| 2006 09 26 | G96 | 0.5+ | 0.3− | 2006 10 02 | 291 | 0.3− | 0.2− | | | | |

**2006 SE$_{254}$ = 2004 DD$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 284.66622 | | (2000.0) | | | |
| $n$ | 0.24396020 | $\omega$ | 72.07506 | | −0.13126564 | −0.99097311 |
| $a$ | 2.5366277 | $\Omega$ | 25.51506 | | +0.88393969 | −0.12943584 |
| $e$ | 0.1164809 | $i$ | 3.62478 | | +0.44879834 | −0.03490932 |
| $P$ | 4.04 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 10 | 691 | 0.0 | 0.5− | 2006 09 18 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3+ |
| 1994 10 10 | 691 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.4− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 1994 10 10 | 691 | 0.2− | 0.0 | 2006 09 18 | 691 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− |
| 2004 02 23 | 704 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 21 | G96 | 0.1− | 0.0 |
| 2004 02 23 | 704 | 0.4+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2004 02 23 | 704 | (2.5+ | 0.3+) | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2004 02 23 | 704 | 0.5+ | 0.9+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 02 27 | 695 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 1.2+ | 0.1+ |
| 2004 02 27 | 695 | 0.6− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.3+ |
| 2006 09 14 | 691 | (7.9− | 0.8−) | 2006 09 30 | G96 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.7+ | 0.3+ |
| 2006 09 14 | 691 | (3.2− | 0.3+) | 2006 09 30 | G96 | 0.3+ | 0.1+ | | | | |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | | | |

**2006 SY$_{254}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.85569 | | (2000.0) | | | |
| $n$ | 0.12450595 | $\omega$ | 160.77119 | | +0.94784782 | +0.31872259 |
| $a$ | 3.9720006 | $\Omega$ | 180.64421 | | −0.29952676 | +0.89005496 |
| $e$ | 0.1225829 | $i$ | 3.34093 | | −0.10894145 | +0.32591114 |
| $P$ | 7.92 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 12 | 691 | 0.3+ | 0.2− | 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.3− | 0.3+ |
| 1998 09 12 | 691 | 0.4+ | 0.3− | 2006 09 26 | 691 | 0.4+ | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.3+ |
| 1998 09 12 | 691 | 0.7+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.4+ |
| 1998 09 18 | 691 | 1.0− | 0.3− | 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.7+ | 0.2+ |
| 1998 09 18 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 1.0− | 0.1− |
| 1998 09 18 | 691 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2005 07 11 | G96 | 0.2− | 0.7+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.4− | 0.2+ |
| 2005 07 11 | G96 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 07 11 | G96 | 0.3− | 0.4− | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2005 07 11 | G96 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.2− | | | | |

**2006 SG$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.12283 | | (2000.0) | | | |
| $n$ | 0.17896392 | $\omega$ | 312.07234 | | +0.95301250 | +0.28123327 |
| $a$ | 3.1185956 | $\Omega$ | 32.07618 | | −0.17488972 | +0.81424493 |
| $e$ | 0.1060250 | $i$ | 12.23976 | | −0.24734746 | +0.50785140 |
| $P$ | 5.51 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.6− | 0.3+ | 2006 10 16 | 703 | (1.1+ | 2.0−) |
| 2004 03 18 | 691 | 0.0 | 0.5+ | 2006 09 26 | 703 | 0.9− | 0.8− | 2006 10 16 | 703 | 0.2− | 0.3+ |
| 2004 03 18 | 691 | 0.4− | 0.4− | 2006 09 26 | 703 | 0.4+ | 0.5− | 2006 10 16 | 703 | 1.3− | 0.9− |
| 2004 03 28 | 691 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.9+ | 0.8− | 2006 10 16 | 703 | 0.3− | 0.8+ |
| 2004 03 28 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 03 28 | 691 | 0.5+ | 0.2+ | 2006 09 30 | 703 | (0.5+ | 1.8−) | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2006 09 18 | 703 | 0.4+ | 0.8+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.5+ |
| 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2006 09 18 | 703 | 0.4− | 0.9+ | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.4+ |
| 2006 09 26 | 703 | 0.3− | 0.5− | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− |

**2006 SW$_{256}$ = 1991 VS$_{8}$ = 2001 LH$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 198.08246 | | (2000.0) | | | |
| $n$ | 0.25868655 | $\omega$ | 333.54523 | | −0.99344490 | +0.07641363 |
| $a$ | 2.4394213 | $\Omega$ | 211.19870 | | −0.05153499 | −0.96326052 |
| $e$ | 0.1799842 | $i$ | 9.44649 | | −0.10203611 | −0.25746870 |
| $P$ | 3.81 | $H$ | 15.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 04 | 691 | 0.1− | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.5+ |
| 1991 11 04 | 691 | 0.5− | 0.3− | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.4− |
| 1991 11 04 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.2− | 0.0 |
| 1991 11 05 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.4− |
| 1991 11 05 | 691 | 0.5+ | 0.6+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.3− |
| 1991 11 05 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2001 06 15 | 704 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2001 06 15 | 704 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2001 06 15 | 704 | 0.6+ | 0.6− | 2006 10 20 | 644 | 0.4− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 2001 06 15 | 704 | 0.4− | 0.3− | 2006 10 21 | 703 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2001 06 21 | 704 | 0.7+ | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.4+ | 2006 11 13 | G96 | 0.7+ | 0.2− |
| 2001 06 21 | 704 | 0.4+ | 0.4− | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2001 06 21 | 704 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2001 06 21 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 15 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.1− |
| 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2006 09 26 | 691 | 0.8− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.7+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2006 09 26 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.5+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.2− |

**2006 SA$_{257}$ = 1999 TC$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 98.41279 | | (2000.0) | | | |
| $n$ | 0.28251467 | $\omega$ | 65.87561 | | +0.05959266 | +0.99553531 |
| $a$ | 2.3002518 | $\Omega$ | 207.84322 | | −0.96329735 | +0.03812545 |
| $e$ | 0.0301053 | $i$ | 9.01690 | | −0.26173830 | +0.08634749 |
| $P$ | 3.49 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.5− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 1999 10 06 | 704 | 0.7− | 0.5− | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.6+ | | |
| 1999 10 06 | 704 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 1999 10 06 | 704 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.0 | | |
| 1999 10 10 | 704 | 0.3− | 0.7+ | 2006 10 15 | 691 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.5+ | 0.5− | | |
| 1999 10 10 | 704 | 0.9+ | 1.5+ | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1− | | |
| 1999 10 10 | 704 | 1.0− | 1.0+ | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.4+ | | |
| 1999 10 10 | 704 | 0.5+ | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.3− | 0.4+ | | |
| 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.6− | | |
| 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2006 09 26 | 691 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.3− | 1.4− | 2006 11 11 | G96 | 0.3− | 0.6− | | |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.7− | 0.4+ | 2006 11 13 | 691 | 0.3− | 0.4+ | | |
| 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.5− | 1.2+ | 2006 11 13 | 691 | 0.5+ | 0.3+ | | |
| 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.3− | 1.2− | 2006 11 13 | 691 | 0.1− | 0.5− | | |

**2006 SJ$_{257}$ = 1999 WW$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.72023 | | (2000.0) | | | |
| $n$ | 0.27393467 | $\omega$ | 101.18533 | | +0.82976330 | +0.55773321 |
| $a$ | 2.3480358 | $\Omega$ | 224.91953 | | −0.52279710 | +0.76376779 |
| $e$ | 0.2105523 | $i$ | 1.67604 | | −0.19538693 | +0.32494989 |
| $P$ | 3.60 | $H$ | 18.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.4− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | | |
| 1999 11 17 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.8− | | |
| 1999 11 17 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.3− | | |
| 1999 11 28 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.8− | | |
| 1999 11 28 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.4− | 2006 10 28 | G96 | 0.1− | 0.3− | | |
| 1999 11 28 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.2− | 0.4+ | | |
| 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.1+ | | |
| 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2006 09 26 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1+ | | | | | | |

**2006 SL$_{257}$ = 2005 NY$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.84715 | | (2000.0) | | | |
| $n$ | 0.12728286 | $\omega$ | 122.83445 | | +0.95851931 | +0.28183244 |
| $a$ | 3.9140175 | $\Omega$ | 220.84083 | | −0.27840112 | +0.89373114 |
| $e$ | 0.1563133 | $i$ | 3.73132 | | −0.06110273 | +0.34902024 |
| $P$ | 7.74 | $H$ | 15.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 15 | 691 | 0.1− | 0.3− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.4− | 0.2+ | | |
| 2005 07 15 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.4− | | |
| 2005 07 18 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | | |
| 2005 07 18 | 644 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.3− | | |
| 2005 07 18 | 644 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.7− | 2006 10 28 | G96 | 0.2+ | 0.4− | | |
| 2006 09 15 | 691 | 0.4− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.3− | | |
| 2006 09 15 | 691 | 0.6+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.0 | | |
| 2006 09 15 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 1.1− | 1.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 | | |
| 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.2+ | | |
| 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1− | 0.6− | 2006 11 11 | 691 | 0.0 | 0.1− | | |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.0− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.4+ | | |
| 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.7− | | |
| 2006 09 30 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.9− | | |
| 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.6+ | 2006 11 13 | G96 | 0.1+ | 0.4− | | |
| 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.1− | | |

**2006 ST$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 35.66947 | | (2000.0) | | | |
| $n$ | 0.27103529 | $\omega$ | 322.26532 | | +0.79327671 | +0.60886125 |
| $a$ | 2.3647514 | $\Omega$ | 0.22769 | | −0.54722738 | +0.71310208 |
| $e$ | 0.1998555 | $i$ | 2.55043 | | −0.26693492 | +0.34752467 |
| $P$ | 3.64 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 17 | 644 | 0.1+ | 0.3+ | 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.5− | | |
| 2002 06 17 | 644 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 21 | 703 | 1.4− | 1.1+ | | |
| 2002 06 17 | 644 | 0.0 | 0.2− | 2006 09 15 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.0 | | |
| 2003 12 29 | 691 | 0.2+ | 0.3− | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2003 12 29 | 691 | 0.1− | 0.4+ | 2006 09 15 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2003 12 29 | 691 | 0.1− | 0.2− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.2+ | | |
| 2005 03 10 | G96 | 0.0 | 0.6− | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 2005 03 10 | G96 | 0.1− | 0.1+ | 2006 09 26 | 691 | 0.5+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.1+ | | |
| 2005 03 10 | G96 | 0.2+ | 0.8+ | 2006 09 30 | 691 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.3− | 0.0 | | |
| 2005 03 10 | G96 | 0.3− | 1.0+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1+ | | |
| 2005 04 12 | 695 | 0.4+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 2005 04 12 | 695 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.3− | 0.1− | | |
| 2005 05 12 | G96 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− | | |
| 2005 05 12 | G96 | 0.3+ | 0.4+ | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.3− | | |
| 2005 05 12 | G96 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.2− | | |
| 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.0 | | |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.4− | | | | | | |
| 2006 07 21 | G96 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.3− | | | | | | |

**2006 SU$_{257}$ = 1995 SE$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 27.98003 | | (2000.0) | | | |
| $n$ | 0.18234711 | $\omega$ | 332.26659 | | +0.97335020 | +0.22495514 |
| $a$ | 3.0799012 | $\Omega$ | 14.93500 | | −0.16503524 | +0.82201774 |
| $e$ | 0.0683978 | $i$ | 9.95383 | | −0.15922550 | +0.52314627 |
| $P$ | 5.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 25 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.2− | 0.1− | | |
| 1995 09 25 | 691 | 0.2+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.0 | | |
| 1995 09 25 | 691 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.0 | | |
| 1995 09 30 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.4− | 0.2+ | | |
| 1995 09 30 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.4+ | 0.5− | | |
| 1995 09 30 | 691 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.4+ | | | | | | |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.0 | | | | | | |

**2006 SD$_{258}$ = 1995 SD$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.83601 | | (2000.0) | | | |
| $n$ | 0.18472776 | $\omega$ | 109.43666 | | +0.99168542 | +0.12794895 |
| $a$ | 3.0533829 | $\Omega$ | 243.21429 | | −0.12309042 | +0.91196786 |
| $e$ | 0.0635239 | $i$ | 0.88262 | | −0.03753365 | +0.38979954 |
| $P$ | 5.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.3− | 0.0 | 2004 04 14 | 291 | (85.9+ | 30.9−) | 2006 10 27 | 691 | 0.1− | 0.5+ | | |
| 1995 09 24 | 691 | 0.2− | 0.6+ | 2006 09 26 | 691 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.3− | 0.2+ | | |
| 1995 09 24 | 691 | 0.0 | 0.5+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− | | |
| 1995 09 29 | 691 | 0.1+ | 0.2− | 2006 09 26 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.4− | | |
| 1995 09 29 | 691 | 0.2+ | 0.6− | 2006 09 30 | 691 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.4− | | |
| 1995 09 29 | 691 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.5− | 0.2+ | | |
| 2004 04 14 | 291 | (85.5+ | 31.0−) | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1− | | |
| 2004 04 14 | 291 | (85.5+ | 31.0−) | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.7− | | |

**2006 SH$_{258}$ = 1995 SB$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 345.79487 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.18128924 | $\omega$ | 23.00752 | | | +0.78031446 | | −0.62167557 | | | |
| $a$ | 3.0918709 | $\Omega$ | 16.00735 | | | +0.52856168 | | +0.59744113 | | | |
| $e$ | 0.2063827 | $i$ | 14.28346 | | | +0.33426321 | | +0.50654080 | | | |
| $P$ | 5.44 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1− |
| 1995 09 19 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.2+ |
| 1995 09 19 | 691 | 0.4− | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.2− | 0.3− |
| 1995 09 30 | 691 | 0.1+ | 0.5− | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.3+ |
| 1995 09 30 | 691 | 0.3− | 0.5+ | 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.1− | 0.1− |
| 1995 09 30 | 691 | 0.2− | 0.0 | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.1− |

**2006 SK$_{258}$ = 2001 SH$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 304.42546 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.21168057 | $\omega$ | 237.79021 | | | +0.19959602 | | −0.97968787 | | | |
| $a$ | 2.7883592 | $\Omega$ | 200.72255 | | | +0.91639402 | | +0.19360838 | | | |
| $e$ | 0.0509145 | $i$ | 3.12929 | | | +0.34696314 | | +0.05222526 | | | |
| $P$ | 4.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.3− | 0.6− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2001 09 20 | 704 | 0.9− | 0.8− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2001 09 20 | 704 | 0.4+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 09 23 | 704 | 0.5− | 0.6− | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.7+ | 0.6− | 2006 10 11 | 691 | 0.3+ | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2001 09 23 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2001 09 23 | 704 | 0.1+ | 1.1+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.2− | 0.6− |
| 2001 09 23 | 704 | 0.0 | 1.1+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2006 09 15 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− | | | | |

**2006 SQ$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 353.28869 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.25952719 | $\omega$ | 168.24630 | | | +0.91305638 | | −0.40779785 | | | |
| $a$ | 2.4341507 | $\Omega$ | 215.82179 | | | +0.37343083 | | +0.84126731 | | | |
| $e$ | 0.1959303 | $i$ | 0.52681 | | | +0.16394347 | | +0.35492284 | | | |
| $P$ | 3.80 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 691 | 0.4+ | 0.4+ | 2006 09 28 | 699 | 0.9− | 0.5− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2004 02 14 | 691 | 0.3− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2004 02 22 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ |
| 2004 02 22 | 691 | 0.1− | 0.2− | 2006 10 16 | 701 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2004 02 22 | 691 | 0.2+ | 0.6− | 2006 10 16 | 701 | (1.6+ | 1.1−) | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 07 22 | G96 | 0.0 | 0.2− | 2006 10 16 | 701 | 1.0+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 07 22 | G96 | 0.3+ | 0.3+ | 2006 10 16 | 701 | 0.9+ | 0.8− | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2006 07 22 | G96 | 0.5− | 1.1+ | 2006 10 16 | 701 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1+ |
| 2006 07 22 | G96 | 0.1+ | 0.7+ | 2006 10 16 | 701 | 1.4+ | 1.0− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 2006 09 15 | 691 | 0.7− | 0.0 | 2006 10 16 | 701 | 0.8+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 19 | 701 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2006 09 15 | 691 | 0.0 | 0.5+ | 2006 10 19 | 701 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 19 | 701 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 19 | 701 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 19 | 701 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2006 09 28 | 699 | (1.7+ | 0.6+) | 2006 10 19 | 701 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2006 09 28 | 699 | 0.4− | 0.7− | 2006 10 19 | 644 | 0.1− | 0.2+ | | | | |
| 2006 09 28 | 699 | 0.0 | 1.2− | 2006 10 19 | 644 | 0.1− | 0.2− | | | | |

**2006 SW$_{258}$ = 1996 RZ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 51.64950 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.20361919 | $\omega$ | 324.79234 | | | +0.76275509 | | +0.64668276 | | | |
| $a$ | 2.8614769 | $\Omega$ | 354.91360 | | | −0.58676429 | | +0.69046911 | | | |
| $e$ | 0.0550779 | $i$ | 1.59352 | | | −0.27186825 | | +0.32412007 | | | |
| $P$ | 4.84 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.1− | 0.4+ | 2006 09 19 | 691 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.2− | 1.0+ |
| 1996 09 08 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.7+ | 0.1+ |
| 1996 09 08 | 691 | 0.4− | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.9+ | 0.4− |
| 1996 09 11 | 691 | 0.3+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.3− |
| 1996 09 11 | 691 | 0.1+ | 0.3− | 2006 09 30 | 691 | 0.4+ | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.6− |
| 1996 09 11 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.4− |
| 2006 09 14 | 691 | 0.3− | 0.2+ | 2006 09 30 | 691 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2006 09 14 | 691 | 0.1+ | 0.2− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2− | | | | |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.7− | 0.5− | | | | |

**2006 SX$_{258}$ = 2004 GA$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 258.22429 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.20331265 | $\omega$ | 212.35708 | | | −0.52468247 | | −0.85115605 | | | |
| $a$ | 2.8643524 | $\Omega$ | 269.29414 | | | +0.78432315 | | −0.47622319 | | | |
| $e$ | 0.0259947 | $i$ | 0.89082 | | | +0.33097658 | | −0.22078237 | | | |
| $P$ | 4.85 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2004 04 13 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.4+ | 0.0 |
| 2004 04 13 | 691 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.0 | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.3− |
| 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 2004 04 20 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2004 04 20 | 691 | 0.5− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.4− |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.9− | 0.7− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.8+ | | | | |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.4+ | | | | |

**2006 SE$_{259}$ = 2001 UX$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 329.65899 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.19153649 | $\omega$ | 196.83917 | | | +0.49702703 | | −0.86745160 | | | |
| $a$ | 2.9805862 | $\Omega$ | 223.36417 | | | +0.79980693 | | +0.46788208 | | | |
| $e$ | 0.1915043 | $i$ | 1.85093 | | | +0.33656056 | | +0.16915696 | | | |
| $P$ | 5.15 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 691 | 0.3− | 0.0 | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.3− | 0.2− |
| 2001 10 17 | 691 | 0.5− | 0.2+ | 2006 09 26 | 691 | 0.3− | 0.4− | 2006 10 11 | 691 | 0.2− | 0.2+ |
| 2001 10 17 | 691 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.1− | 0.4+ | 2006 10 20 | G96 | 1.0+ | 0.4+ |
| 2001 10 21 | 691 | 0.0 | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.7+ | 0.1+ |
| 2001 10 21 | 691 | 0.2+ | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2001 10 21 | 691 | 0.7+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.0 |
| 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.1− | | | | |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 11 | 691 | 0.2− | 0.1+ | | | | |

**2006 SK$_{259}$ = 1994 NH$_5$ = 2004 DY$_{66}$ = 2005 ER$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.67039 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25779918 | $\omega$ | 312.03342 | | +0.18661840 | | +0.98240763 |
| $a$ | 2.4450160 | $\Omega$ | 328.72005 | | −0.89734171 | | +0.16755541 |
| $e$ | 0.1770514 | $i$ | 0.77104 | | −0.39993928 | | +0.08246471 |
| $P$ | 3.82 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 07 11 | 809 | 0.0 | 0.5+ | 2004 02 26 | 695 | 0.3+ | 0.4− | 2006 09 26 | 691 | 0.0 | 0.2+ |
| 1994 07 11 | 809 | 1.3− | 0.7+ | 2004 02 27 | 695 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.3+ |
| 1994 07 11 | 809 | 0.7+ | 0.4+ | 2004 02 27 | 695 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1− |
| 1994 07 12 | 809 | 0.3− | 0.1+ | 2005 03 10 | G96 | 0.5− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 1994 07 12 | 809 | 0.6− | 0.6− | 2005 03 10 | G96 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.1+ |
| 1994 07 12 | 809 | 1.5+ | 0.0 | 2005 03 10 | G96 | 0.5− | 0.6− | 2006 10 11 | 691 | 0.2− | 0.1− |
| 2001 02 21 | 691 | 0.1+ | 0.3− | 2005 03 10 | G96 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.3− | 0.1+ |
| 2001 02 21 | 691 | 0.1+ | 0.4+ | 2005 04 04 | 691 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.3− | 0.0 |
| 2001 02 21 | 691 | 0.0 | 0.3+ | 2005 04 04 | 691 | 0.6+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2001 03 20 | 701 | 1.2− | 1.0+ | 2005 04 04 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.5+ | 0.5+ |
| 2001 03 20 | 701 | 0.2− | 0.6− | 2005 05 08 | G96 | 0.4− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.3− |
| 2001 03 20 | 701 | 0.6+ | 0.4− | 2005 05 08 | G96 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2001 03 26 | 695 | 0.1+ | 0.3+ | 2005 05 08 | G96 | 1.1− | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.3+ |
| 2001 03 26 | 695 | 0.0 | 0.5+ | 2005 05 08 | G96 | 0.6− | 0.0 | 2006 10 27 | 691 | 0.4− | 0.4− |
| 2001 04 23 | 691 | 0.4− | 0.5+ | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.0 |
| 2001 04 23 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 1.2+ | 0.5− | 2006 10 31 | 691 | 0.2− | 0.4+ |
| 2001 04 23 | 691 | 0.5+ | 0.1− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.4+ |
| 2004 02 26 | 695 | 0.1− | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.6− | 0.2− |

**2006 SV$_{259}$ = 2006 SY$_{371}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 213.75075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27477658 | $\omega$ | 315.32885 | | −0.97711157 | | −0.21214565 |
| $a$ | 2.3432371 | $\Omega$ | 212.43264 | | +0.20245386 | | −0.90468742 |
| $e$ | 0.1524625 | $i$ | 1.67996 | | +0.06531014 | | −0.36950629 |
| $P$ | 3.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 05 | 691 | 0.1+ | 0.2− | 2001 03 27 | 691 | 0.1+ | 0.6+ | 2006 09 26 | 691 | 0.1+ | 0.3+ |
| 1999 11 05 | 691 | 0.0 | 0.1− | 2004 01 28 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.1− |
| 1999 11 05 | 691 | 0.0 | 0.3− | 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.5− | 0.3− |
| 2001 03 20 | 699 | 0.2− | 0.7+ | 2004 01 28 | 691 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 2001 03 20 | 699 | 0.2+ | 0.6+ | 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.1+ |
| 2001 03 20 | 699 | 0.5+ | 0.1+ | 2006 09 15 | 691 | 0.5− | 0.3+ | 2006 09 30 | 691 | 0.3+ | 0.4+ |
| 2001 03 20 | 699 | 0.7+ | 0.2+ | 2006 09 15 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.3+ |
| 2001 03 27 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ |
| 2001 03 27 | 691 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.2− | 0.4+ | | | | |

**2006 SX$_{259}$ = 1995 SF$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.45690 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17958415 | $\omega$ | 60.48362 | | +0.69491485 | | −0.71899235 |
| $a$ | 3.1114110 | $\Omega$ | 345.47612 | | +0.64212601 | | +0.62794508 |
| $e$ | 0.1814607 | $i$ | 2.73646 | | +0.32367813 | | +0.29788417 |
| $P$ | 5.49 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 1995 09 26 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.6+ | 0.0 |
| 1995 10 02 | 691 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 1995 10 02 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 1995 10 02 | 691 | 0.4− | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 11 18 | 291 | 0.1− | 0.2+ |
| 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 291 | 0.4− | 0.1+ |
| 2006 09 26 | 691 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 18 | 291 | 0.1+ | 0.1− |
| 2006 09 26 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1− | | | | |

**2006 SD$_{260}$ = 1995 UK$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.74744 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17874648 | $\omega$ | 301.92690 | | +0.55224222 | | +0.83368248 |
| $a$ | 3.1211243 | $\Omega$ | 1.59622 | | −0.74649615 | | +0.49525175 |
| $e$ | 0.1033655 | $i$ | 2.94524 | | −0.37117654 | | +0.24433424 |
| $P$ | 5.51 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.1+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.3+ | 0.8− |
| 1995 10 19 | 691 | 0.2+ | 0.4− | 2006 09 26 | 691 | 0.7− | 0.4+ | 2006 10 16 | 691 | 0.4− | 0.5+ |
| 1995 10 19 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.5− |
| 1995 10 28 | 691 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 19 | G96 | 1.2− | 0.6− |
| 1995 10 28 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.4− |
| 1995 10 28 | 691 | 0.2− | 0.2+ | 2006 09 30 | 691 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.1− |
| 2006 09 18 | 691 | 0.4− | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.3− |
| 2006 09 18 | 691 | 0.5+ | 0.3− | 2006 10 11 | 691 | 0.5+ | 0.2+ | | | | |
| 2006 09 18 | 691 | 0.5+ | 0.4− | 2006 10 11 | 691 | 0.0 | 0.2− | | | | |

**2006 SL$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.83272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17268078 | $\omega$ | 248.61204 | | −0.27471064 | | −0.96031973 |
| $a$ | 3.1937926 | $\Omega$ | 217.43881 | | +0.90892989 | | −0.24301628 |
| $e$ | 0.1560556 | $i$ | 4.54453 | | +0.31365668 | | −0.13685434 |
| $P$ | 5.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.2− | 0.7+ |
| 1995 12 16 | 691 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.4+ |
| 1995 12 16 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3− | 0.1+ |
| 2000 09 04 | 691 | 0.2+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.5+ |
| 2000 09 04 | 691 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2000 09 04 | 691 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.6− | 0.8+ |
| 2003 04 25 | 691 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2003 04 25 | 691 | 0.4+ | 0.6+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2003 04 25 | 691 | 0.2+ | 0.8+ | 2006 10 19 | G96 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2006 09 26 | 691 | 0.5+ | 0.1− | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.5− |
| 2006 09 26 | 691 | 0.3− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.3− | | | | |

**2006 SN$_{261}$ = 2003 YU$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.67721 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28792031 | $\omega$ | 32.07412 | | −0.05114908 | | −0.99331538 |
| $a$ | 2.2713698 | $\Omega$ | 61.04487 | | +0.88948726 | | −0.09242368 |
| $e$ | 0.1024455 | $i$ | 6.79193 | | +0.45408831 | | +0.06915507 |
| $P$ | 3.42 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 704 | 0.2+ | 0.3− | 2003 12 29 | 704 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 0.2− |
| 2003 12 28 | 704 | 0.0 | 0.3+ | 2003 12 29 | 704 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.2− | 0.3− |
| 2003 12 28 | 704 | 0.2− | 0.7− | 2006 09 14 | 291 | 0.4− | 0.2+ | 2006 10 04 | G96 | 0.1− | 0.2− |
| 2003 12 28 | 704 | 0.5+ | 0.1+ | 2006 09 14 | 291 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.6− | 0.4− |
| 2003 12 28 | 704 | 0.1− | 0.5− | 2006 09 14 | 291 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.5− |
| 2003 12 28 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.2+ |
| 2003 12 28 | 704 | 0.2+ | 0.7− | 2006 09 26 | 703 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.3+ |
| 2003 12 28 | 704 | 0.3− | 1.1+ | 2006 09 26 | 703 | 1.0+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2003 12 28 | 704 | 0.2− | 0.2− | 2006 09 26 | 703 | (1.7− | 1.2−) | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2003 12 29 | 704 | 0.9+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.7− | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2003 12 29 | 704 | 0.3− | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.2− | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2003 12 29 | 704 | 1.0− | 0.7+ | 2006 09 30 | 703 | 0.9+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.1− |

**2006 SQ$_{261}$ = 2003 BA$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 343.78660 | | (2000.0) | | | |
| $n$ | 0.21026713 | $\omega$ | 22.95724 | | +0.68358080 | −0.72649477 |
| $a$ | 2.8008411 | $\Omega$ | 24.10429 | | +0.64016460 | +0.55061081 |
| $e$ | 0.2172129 | $i$ | 9.89230 | | +0.35058034 | +0.41113635 |
| $P$ | 4.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 644 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 11 14 | 703 | (0.8− | 1.7−) |
| 2003 01 29 | 644 | 0.5− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.0 | 0.3+ |
| 2003 01 29 | 644 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 1.2− | 0.1+ |
| 2003 01 29 | 644 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2003 01 29 | 644 | 0.7+ | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.7+ |
| 2003 01 29 | 644 | 0.1+ | 0.5+ | 2006 10 17 | A44 | 0.2− | 0.4− | 2006 11 16 | 704 | 0.0 | 1.1+ |
| 2003 02 01 | 644 | 0.2− | 0.1− | 2006 10 17 | A44 | 0.2+ | 0.2− | 2006 11 16 | 704 | 1.0+ | 0.0 |
| 2003 02 01 | 644 | 0.1+ | 0.2− | 2006 10 17 | A44 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2003 02 01 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.8+ | 0.2+ |
| 2006 09 26 | G96 | 0.5− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2006 09 26 | G96 | 0.8− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2006 09 26 | G96 | 0.7− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2006 09 26 | G96 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.6− | 0.1+ | 2006 11 21 | 691 | 0.0 | 0.3− |
| 2006 09 30 | 703 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2006 09 30 | 703 | 1.3− | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.2− | 1.0− |
| 2006 09 30 | 703 | 1.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.7− |
| 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2006 10 11 | 644 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3− |
| 2006 10 11 | 644 | 0.2− | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.0+ | 0.5− |
| 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.1− | 0.2+ | | | | |

**2006 SV$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 76.43963 | | (2000.0) | | | |
| $n$ | 0.20972182 | $\omega$ | 260.64760 | | +0.49947093 | +0.86498802 |
| $a$ | 2.8056940 | $\Omega$ | 39.43704 | | −0.76207791 | +0.46515273 |
| $e$ | 0.0800342 | $i$ | 4.35287 | | −0.41202676 | +0.18822504 |
| $P$ | 4.70 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.4− | 1.1+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 10 16 | 644 | 0.2− | 0.6+ | 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2001 10 16 | 644 | 0.5− | 0.6+ | 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1+ |
| 2004 03 26 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.1+ |
| 2004 03 26 | 691 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2004 03 26 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.5+ | 0.2− | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2006 09 26 | G96 | 0.0 | 0.7− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.1− |
| 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 23 | 691 | 0.4− | 0.1+ | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.3+ | | | | |

**2006 SH$_{262}$ = 2005 MO$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 28.68428 | | (2000.0) | | | |
| $n$ | 0.21965124 | $\omega$ | 162.14662 | | +0.97417907 | +0.22568924 |
| $a$ | 2.7204888 | $\Omega$ | 184.82314 | | −0.21519256 | +0.91972687 |
| $e$ | 0.1497693 | $i$ | 4.28713 | | −0.06831765 | +0.32119596 |
| $P$ | 4.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | G96 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2005 06 27 | G96 | 0.2− | 0.8+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2005 06 27 | G96 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2005 06 27 | G96 | 0.0 | 0.6+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2005 07 11 | G96 | 0.0 | 0.4− | 2006 09 30 | 703 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2005 07 11 | G96 | 0.2+ | 0.6− | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2005 07 11 | G96 | 0.1− | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.7− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2005 07 11 | G96 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.0 |
| 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 13 | D35 | 0.3+ | 0.8+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2006 09 26 | G96 | 0.2− | 0.2+ | 2006 10 13 | D35 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 13 | D35 | 0.8− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.5+ | 0.0 |
| 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2+ | | | | |
| 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1− | | | | |

**2006 SJ$_{262}$ = 2001 SH$_{102}$ = 2004 FB$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 133.54725 | | (2000.0) | | | |
| $n$ | 0.21427831 | $\omega$ | 49.86689 | | −0.39052827 | +0.91972458 |
| $a$ | 2.7657775 | $\Omega$ | 197.27400 | | −0.88023694 | −0.38575913 |
| $e$ | 0.1127124 | $i$ | 7.72791 | | −0.26957486 | −0.07277762 |
| $P$ | 4.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.0− | 0.0 | 2004 03 27 | 704 | 0.8− | 0.4+ | 2006 10 13 | D35 | 0.4− | 0.1+ |
| 2001 09 20 | 704 | 0.0 | 0.4+ | 2004 03 27 | 704 | 0.0 | 0.2+ | 2006 10 13 | D35 | 0.1− | 0.4+ |
| 2001 09 20 | 704 | 0.1− | 0.8+ | 2005 06 06 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2001 09 20 | 704 | 0.3− | 0.1+ | 2005 06 06 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.7− | 0.7+ | 2005 06 06 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2001 09 22 | 704 | 0.5+ | 0.7− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.3+ |
| 2001 09 22 | 704 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.2+ |
| 2001 09 22 | 704 | 0.7+ | 0.8+ | 2006 09 26 | G96 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 699 | 0.3+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2004 03 20 | 699 | 0.7− | 0.3− | 2006 09 26 | G96 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 03 20 | 699 | 1.3+ | 1.3+ | 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.3− |
| 2004 03 20 | 699 | 0.5+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 1.3− |
| 2004 03 23 | 704 | 1.1+ | 0.1+ | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2004 03 23 | 704 | 0.6+ | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 03 23 | 704 | 0.8− | 0.6+ | 2006 09 30 | G96 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2004 03 27 | 704 | 0.3− | 0.4− | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.1− | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 2004 03 27 | 704 | 0.4− | 0.4− | 2006 10 13 | D35 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.1− |

**2006 SM$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.16754 | | (2000.0) | | | |
| $n$ | 0.24148619 | $\omega$ | 249.95003 | | +0.85254286 | +0.52171367 |
| $a$ | 2.5539233 | $\Omega$ | 78.59112 | | −0.46676656 | +0.78702555 |
| $e$ | 0.0915003 | $i$ | 1.83526 | | −0.23515879 | +0.32925009 |
| $P$ | 4.08 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 27 | 691 | 0.2+ | 0.6− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 1998 11 27 | 691 | 0.1+ | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.3+ | 0.1+ |
| 1998 11 27 | 691 | 0.2− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2002 11 04 | 644 | 0.4+ | 0.7+ | 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2002 11 04 | 644 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 2002 11 04 | 644 | 0.4+ | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2004 02 29 | 691 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.7+ |
| 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 1.3− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2004 02 29 | 691 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.1− | 0.6+ |
| 2005 06 05 | 701 | 0.6+ | 0.9+ | 2006 10 17 | G96 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.2+ |
| 2005 06 05 | 701 | 0.9+ | 1.2+ | 2006 10 17 | G96 | 0.5+ | 0.6− | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2005 06 13 | G96 | 0.4− | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2005 06 13 | G96 | 0.0 | 0.7+ | 2006 10 18 | 691 | 0.2− | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2005 06 13 | G96 | 0.1− | 0.7+ | 2006 10 18 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.9− | 1.0+ |
| 2005 06 13 | G96 | 0.2− | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.3− | 1.5+ |
| 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.2− | 2006 11 17 | 703 | 0.6+ | 1.2+ |
| 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 1.4− | 0.1+ |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4− |

**2006 SU$_{262}$ = 2004 FM$_{165}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.25834 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22630728 | $\omega$ | 148.33634 | | +0.84207019 | | +0.53936768 |
| $a$ | 2.6668814 | $\Omega$ | 179.02256 | | −0.50124079 | | +0.78291509 |
| $e$ | 0.0833612 | $i$ | 1.81563 | | −0.19918700 | | +0.31004267 |
| $P$ | 4.36 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 691 | 0.5− | 0.0 | 2004 03 18 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.1+ |
| 2000 04 13 | 691 | 0.0 | 0.4− | 2004 03 18 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.3− |
| 2000 04 13 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 1.0− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2001 08 27 | 691 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 08 27 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2001 08 27 | 691 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 291 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2004 03 15 | 291 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.8− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 03 15 | 291 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1− |

**2006 SX$_{262}$ = 1995 UG$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.32243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18488185 | $\omega$ | 106.24854 | | +0.65813100 | | +0.75032574 |
| $a$ | 3.0516862 | $\Omega$ | 205.24350 | | −0.73444675 | | +0.62160538 |
| $e$ | 0.1210097 | $i$ | 8.39306 | | −0.16568512 | | +0.22498450 |
| $P$ | 5.33 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 1995 10 18 | 691 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.9− | 0.7− | 2006 10 20 | 691 | 0.2+ | 0.1− |
| 1995 10 18 | 691 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.7+ | 0.3+ | 2006 10 31 | G96 | 0.6+ | 0.4− |
| 1995 10 23 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.5− |
| 1995 10 23 | 691 | 0.3+ | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 1995 10 23 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 09 26 | G96 | 0.6+ | 0.6− | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.5− |
| 2006 09 26 | G96 | 0.6+ | 0.8− | 2006 10 18 | 291 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2006 09 26 | G96 | 0.2+ | 0.7− | 2006 10 18 | 291 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2006 09 28 | G96 | 0.1− | 0.3− | 2006 10 18 | 291 | 0.2− | 0.2+ | | | | |
| 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.4− | 0.1+ | | | | |

**2006 SA$_{263}$ = 2002 FD$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.30422 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30917458 | $\omega$ | 119.51647 | | +0.44935794 | | +0.89334853 |
| $a$ | 2.1660420 | $\Omega$ | 177.18270 | | −0.83573322 | | +0.42133117 |
| $e$ | 0.2339590 | $i$ | 2.82198 | | −0.31563813 | | +0.15623205 |
| $P$ | 3.19 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 03 20 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2002 03 20 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 03 21 | 644 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2002 03 21 | 644 | 0.3− | 0.9+ | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2002 03 21 | 644 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.7+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.5+ | 0.3+ | | | | |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1+ | | | | |

**2006 SG$_{263}$ = 1996 TQ$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.60730 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29960289 | $\omega$ | 338.75088 | | +0.71753064 | | +0.69503281 |
| $a$ | 2.2119334 | $\Omega$ | 337.02050 | | −0.62103177 | | +0.60874414 |
| $e$ | 0.1402126 | $i$ | 6.70731 | | −0.31538755 | | +0.38257021 |
| $P$ | 3.29 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 691 | 0.1+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.0 | 0.1− |
| 1996 10 12 | 691 | 0.0 | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 1.1+ | 0.9− |
| 1996 10 18 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 19 | 703 | 1.0− | 0.6+ |
| 1996 10 18 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.9− | 0.1+ |
| 1996 10 18 | 691 | 0.1− | 0.3+ | 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.7+ | 0.4+ |

**2006 SD$_{264}$ = 2004 FU$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.55506 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21699847 | $\omega$ | 311.41104 | | −0.98167372 | | +0.11547180 |
| $a$ | 2.7426155 | $\Omega$ | 235.75503 | | −0.06630779 | | −0.95277662 |
| $e$ | 0.1070085 | $i$ | 10.56756 | | −0.17866167 | | −0.28086115 |
| $P$ | 4.54 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 704 | 0.8− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2004 03 17 | 704 | 0.6− | 0.3− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2004 03 17 | 704 | 0.5− | 0.4− | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.5+ | 0.7− |
| 2004 03 17 | 704 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 1.3− | 0.4− |
| 2004 03 17 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.4+ | 2006 11 14 | 703 | 1.0+ | 0.5− |
| 2004 03 26 | 704 | 0.6+ | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.8+ | 1.1+ |
| 2004 03 26 | 704 | 1.1+ | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.3− | 0.1− |
| 2004 03 26 | 704 | 0.6+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.4+ | 0.1+ |
| 2004 03 26 | 704 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2006 09 26 | 691 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.0 | | | | |

**2006 SG$_{264}$ = 2003 FB$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.72850 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19144423 | $\omega$ | 120.88220 | | −0.58287470 | | −0.81227556 |
| $a$ | 2.9815439 | $\Omega$ | 4.93727 | | +0.63332326 | | −0.47077657 |
| $e$ | 0.1448977 | $i$ | 14.51825 | | +0.50907635 | | −0.34435132 |
| $P$ | 5.15 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 25 | 644 | 0.5+ | 0.2+ | 2006 09 24 | 152 | 0.5− | 1.3+ | 2006 10 19 | 703 | 0.1− | 1.1− |
| 2003 03 25 | 644 | 0.6+ | 0.4+ | 2006 09 26 | 691 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.7+ | 0.2+ |
| 2003 03 25 | 644 | 0.7+ | 0.4+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1− | 0.3+ |
| 2003 03 28 | 691 | 0.0 | 0.0 | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 11 15 | 703 | (1.7− | 0.1−) |
| 2003 03 28 | 691 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.5− | 0.7+ |
| 2003 03 28 | 691 | 0.4− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.5+ | 0.1+ |
| 2006 09 23 | 152 | (0.6+ | 1.8−) | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 11 15 | 703 | (2.1+ | 0.4+) |
| 2006 09 24 | 152 | 0.3+ | 0.8− | 2006 10 19 | 703 | 0.2+ | 0.4− | | | | |

**2006 SJ$_{264}$ = 2004 DO$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.59452 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21817491 | $\omega$ | 322.76986 | | +0.56495395 | | +0.82398831 |
| $a$ | 2.7327476 | $\Omega$ | 341.50490 | | −0.72043372 | | +0.46704532 |
| $e$ | 0.1042765 | $i$ | 7.83552 | | −0.40224654 | | +0.32079890 |
| $P$ | 4.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.2+ | 0.3− | 2006 09 25 | 152 | (2.3− | 0.4+) | 2006 09 30 | 691 | 0.1− | 0.4− |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 09 25 | 152 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.6− | 0.1− |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 09 25 | 152 | 1.1+ | 0.9+ | 2006 10 19 | 703 | 0.6+ | 1.0− |
| 2004 02 29 | 291 | 0.1+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.8− | 1.0− |
| 2004 02 29 | 291 | 0.2− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.3+ | 0.6+ |
| 2004 02 29 | 291 | 0.1− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.8+ |
| 2006 09 23 | 152 | 0.4+ | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.5+ | 0.5+ |
| 2006 09 24 | 152 | 0.8− | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.3+ |

**2006 SD$_{265}$ = 2005 NM$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.47569 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17806113 | $\omega$ | 54.40719 | | +0.45743854 | | +0.87899602 |
| $a$ | 3.1291278 | $\Omega$ | 243.35009 | | −0.85680109 | | +0.39516298 |
| $e$ | 0.0656763 | $i$ | 8.66136 | | −0.23799555 | | +0.26685618 |
| $P$ | 5.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 691 | 0.5+ | 0.1+ | 2006 09 26 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.6+ | 0.3+ |
| 2005 07 05 | 691 | 0.2− | 0.3+ | 2006 09 26 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.4− |
| 2005 07 05 | 691 | 0.1− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ |
| 2005 07 09 | 691 | 0.5+ | 0.2− | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2005 07 09 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2005 07 09 | 691 | 1.0− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ |

**2006 SG$_{265}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.52612 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27675066 | $\omega$ | 29.65682 | | +0.50652172 | | +0.85912375 |
| $a$ | 2.3320809 | $\Omega$ | 270.86359 | | −0.80476897 | | +0.44063893 |
| $e$ | 0.2162976 | $i$ | 4.19196 | | −0.30948773 | | +0.26027624 |
| $P$ | 3.56 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 04 | 691 | 0.1− | 0.5− | 2002 06 22 | 644 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.0 |
| 1995 06 04 | 691 | 0.2− | 0.1+ | 2002 06 22 | 644 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.5− | 0.1+ |
| 1995 06 04 | 691 | 0.1+ | 0.9+ | 2002 06 22 | 644 | 0.0 | 0.9+ | 2006 10 21 | 691 | 0.5− | 0.1− |
| 1995 07 03 | 691 | 0.3− | 0.0 | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 1995 07 03 | 691 | 0.0 | 0.4− | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 1995 07 03 | 691 | 0.0 | 0.3− | 2006 09 26 | 691 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− |
| 1995 08 28 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 1995 08 28 | 691 | 0.3+ | 0.0 | 2006 09 30 | 691 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 1995 08 28 | 691 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 1995 09 03 | 691 | 0.3− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 1995 09 03 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.5− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 1995 09 03 | 691 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 | | | | |

**2006 SS$_{265}$ = 2001 YN$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.60744 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17776872 | $\omega$ | 191.65169 | | +0.85645978 | | +0.49232415 |
| $a$ | 3.1325582 | $\Omega$ | 137.67868 | | −0.45316566 | | +0.86106470 |
| $e$ | 0.1273590 | $i$ | 13.32898 | | −0.24721960 | | +0.12721840 |
| $P$ | 5.54 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.7+ | 0.6+ | 2006 09 19 | 703 | 0.0 | 0.4− | 2006 09 30 | 704 | 0.4− | 0.2− |
| 2001 12 19 | 704 | 0.6+ | 1.4− | 2006 09 19 | 703 | 0.5− | 0.4+ | 2006 09 30 | 704 | 0.0 | 0.5+ |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2006 09 19 | 703 | 0.6− | 0.5− | 2006 10 11 | 644 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.4+ | 0.9− | 2006 09 26 | 703 | 0.4− | 0.7− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 2001 12 20 | 209 | 0.8− | 0.1− | 2006 09 26 | 703 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2001 12 20 | 209 | 1.1− | 1.2+ | 2006 09 26 | 703 | 1.4+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.0 |
| 2001 12 20 | 209 | 0.1− | 0.7+ | 2006 09 26 | 703 | (0.2− | 1.9−) | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2006 09 19 | 703 | 1.2+ | 0.3+ | 2006 09 30 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.2− |

**2006 ST$_{265}$ = 2002 VD$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.10005 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24076331 | $\omega$ | 150.94919 | | +0.74718067 | | −0.66215567 |
| $a$ | 2.5590328 | $\Omega$ | 250.63138 | | +0.59746979 | | +0.70688926 |
| $e$ | 0.2608373 | $i$ | 3.47557 | | +0.29112009 | | +0.24871158 |
| $P$ | 4.09 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1− | 0.8− | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2002 11 13 | 644 | 0.1− | 0.9− | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2002 11 13 | 644 | 0.5− | 0.8− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 10 | 644 | 0.3+ | 0.0 |
| 2002 11 14 | 704 | 0.8+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.2− | 0.2− |
| 2002 11 14 | 704 | 0.7+ | 0.1− | 2006 10 19 | 644 | 0.6− | 0.1− | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 2002 11 14 | 704 | 0.4− | 0.7− | 2006 10 19 | 644 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.4− | 1.2+ |
| 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.7− | 0.7+ |
| 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.4− | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.5+ |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.6− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.6− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.5− | 0.1− | | | | |

**2006 SW$_{265}$ = 1995 SA$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.97033 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18219165 | $\omega$ | 90.49316 | | −0.18266788 | | −0.98263274 |
| $a$ | 3.0816530 | $\Omega$ | 10.20874 | | +0.81282815 | | −0.16961221 |
| $e$ | 0.0433789 | $i$ | 10.61222 | | +0.55312101 | | −0.07526357 |
| $P$ | 5.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.2− | 0.3− | 2006 09 30 | 691 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 1995 09 19 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.0 | 0.2+ |
| 1995 09 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1− |
| 1995 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 1995 09 25 | 691 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.6− |
| 1995 09 25 | 691 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.4+ | 0.2− | 2006 11 25 | G96 | 0.5− | 0.3− |
| 2006 09 26 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.6− |
| 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.5− | 0.4+ | 2006 11 25 | G96 | 0.1− | 0.6− |
| 2006 09 26 | 691 | 0.1+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.2+ | | | | |
| 2006 09 30 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.0 | | | | |

**2006 SS$_{266}$ = 2003 GB$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.10343 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17769361 | $\omega$ | 80.51733 | | +0.50907748 | | −0.86022956 |
| $a$ | 3.1334410 | $\Omega$ | 338.80337 | | +0.75478956 | | +0.46240326 |
| $e$ | 0.1558179 | $i$ | 4.61193 | | +0.41368205 | | +0.21491469 |
| $P$ | 5.55 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 644 | 0.3− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 10 23 | 950 | 0.2− | 0.4+ |
| 2003 04 01 | 644 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 950 | 0.1− | 0.2− |
| 2003 04 01 | 644 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.4+ |
| 2003 04 05 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.2+ |
| 2003 04 05 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 1.2+ | 1.1− |
| 2003 04 05 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.4− | 1.0+ |
| 2006 09 26 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | (1.9+ | 0.6+) |
| 2006 09 26 | 691 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.0 |
| 2006 09 26 | 691 | 0.5+ | 0.1+ | 2006 10 22 | 950 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2006 09 30 | 291 | 0.7− | 0.1− | 2006 10 22 | 950 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2006 09 30 | 691 | 0.4+ | 0.1− | 2006 10 23 | 950 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2006 09 30 | 291 | 0.6− | 0.0 | 2006 10 23 | 950 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.6− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | 291 | 0.6− | 0.0 | 2006 10 23 | 950 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5− | 0.1− |
| 2006 09 30 | 691 | 0.3+ | 0.1− | 2006 10 23 | 950 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2006 09 30 | 691 | 0.4+ | 0.0 | 2006 10 23 | 950 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2006 10 19 | 644 | 0.0 | 0.2− | 2006 10 23 | 950 | 0.2+ | 0.2− | | | | |

**2006 SZ$_{266}$ = 2005 NR$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 282.29581 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.20921023 | $\omega$ | 191.03510 | | −0.34328638 | | −0.93738799 | |
| $a$ | 2.8102661 | $\Omega$ | 279.06259 | | +0.86619800 | | −0.29176547 | |
| $e$ | 0.0693924 | $i$ | 3.41399 | | +0.36311912 | | −0.19020166 | |
| $P$ | 4.71 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | G96 | 0.1+ | 0.0 | 2005 07 15 | G96 | 0.2− | 0.0 | 2006 09 30 | 291 | 0.0 | 0.0 |
| 2005 07 04 | G96 | 0.5− | 0.3− | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 |
| 2005 07 04 | G96 | 1.0+ | 0.3+ | 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.1− |
| 2005 07 04 | G96 | 0.4+ | 0.0 | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.2+ |
| 2005 07 15 | G96 | 0.5− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.3− |
| 2005 07 15 | G96 | 0.3− | 0.2− | 2006 09 30 | 291 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1− |
| 2005 07 15 | G96 | 0.0 | 0.0 | 2006 09 30 | 291 | 0.3− | 0.1+ | | | | |

**2006 SB$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 209.25997 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21536642 | $\omega$ | 290.24742 | | −0.99338158 | | −0.07335185 | |
| $a$ | 2.7564538 | $\Omega$ | 245.63151 | | +0.10047072 | | −0.92784927 | |
| $e$ | 0.0083555 | $i$ | 5.56835 | | −0.05566564 | | −0.36567093 | |
| $P$ | 4.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2006 10 01 | 291 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 01 | 291 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 11 18 | 645 | 0.0 | 0.2− | 2006 10 01 | 291 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.5− |
| 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.6− | 2006 11 20 | 691 | 0.4+ | 0.2+ |
| 2006 09 26 | 691 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.5− | 0.1+ | 2006 11 20 | 691 | 0.1− | 1.0+ |
| 2006 09 26 | 691 | 0.0 | 0.2− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.5+ | 0.3− |
| 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | | | | |
| 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ | | | | |

**2006 SF$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 187.53646 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23628219 | $\omega$ | 334.04185 | | −0.92579696 | | +0.34620725 | |
| $a$ | 2.5912863 | $\Omega$ | 227.08935 | | −0.30060877 | | −0.91771519 | |
| $e$ | 0.2059249 | $i$ | 11.96107 | | −0.22920374 | | −0.19478033 | |
| $P$ | 4.17 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 10 | 691 | 0.2+ | 0.6− | 2005 06 30 | 703 | 1.5− | 1.1+ | 2006 10 17 | 691 | 0.4− | 0.3+ |
| 1997 10 10 | 691 | 0.1− | 0.6− | 2005 06 30 | 703 | 1.4− | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 1997 10 10 | 691 | 0.1− | 0.1− | 2005 06 30 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 1998 11 15 | 691 | 0.0 | 0.1− | 2005 06 30 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 1998 11 15 | 691 | 0.1+ | 0.2− | 2005 06 30 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.2+ |
| 1998 11 15 | 691 | 0.2+ | 0.1− | 2005 06 30 | 644 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2000 03 12 | 699 | 0.0 | 1.1+ | 2005 06 30 | 644 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.4− | 0.1− |
| 2000 03 12 | 699 | 0.3+ | 0.9+ | 2005 06 30 | 644 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2000 03 12 | 699 | 0.5+ | 0.8+ | 2005 07 08 | 703 | 0.4+ | 1.1+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2000 03 12 | 699 | 0.1+ | 0.8+ | 2005 07 08 | 703 | 0.1+ | 1.0+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 08 14 | 644 | 0.2− | 1.0+ | 2005 07 08 | 703 | 1.3+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2001 08 14 | 644 | 0.2+ | 0.9+ | 2005 07 08 | 703 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.9+ | 0.2− |
| 2001 08 14 | 644 | 0.2+ | 0.9+ | 2005 08 26 | 644 | 0.4+ | 0.1+ | 2006 11 15 | 691 | 0.4+ | 0.0 |
| 2004 01 16 | 644 | 0.3+ | 0.4+ | 2005 08 26 | 644 | 0.5+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2004 01 16 | 644 | 0.1+ | 0.3+ | 2005 08 26 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 2004 01 16 | 644 | 0.5+ | 0.4+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2004 03 26 | 699 | 0.2− | 0.1+ | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2004 03 26 | 699 | 0.4+ | 0.3+ | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2004 03 26 | 699 | 0.3− | 0.6+ | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 03 26 | 699 | 0.2− | 0.4− | 2006 09 30 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.5+ | 0.3+ |
| 2005 06 30 | 703 | 0.7− | 1.3− | 2006 09 30 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 06 30 | 703 | 1.1− | 0.2− | 2006 10 17 | 691 | 0.8− | 0.0 | | | | |

**2006 SK$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 330.42210 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17589703 | $\omega$ | 117.47912 | | +0.42235176 | | −0.90487200 | |
| $a$ | 3.1547410 | $\Omega$ | 307.43779 | | +0.80622225 | | +0.40181527 | |
| $e$ | 0.1515630 | $i$ | 3.83866 | | +0.41427608 | | +0.14053881 | |
| $P$ | 5.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 15 | 691 | 0.3− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1997 03 15 | 691 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.4− |
| 1997 03 15 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2006 09 26 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.3− |
| 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2006 09 30 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2006 09 30 | 691 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.2+ | | | | |

**2006 SO$_{267}$ = 2001 TG$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 128.27873 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21543233 | $\omega$ | 330.09846 | | −0.31461065 | | +0.94692852 | |
| $a$ | 2.7558916 | $\Omega$ | 281.49740 | | −0.85700825 | | −0.31322362 | |
| $e$ | 0.0706578 | $i$ | 3.85767 | | −0.40811395 | | −0.07223121 | |
| $P$ | 4.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.1+ |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.4− |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.2− |
| 2006 09 26 | 691 | 0.3− | 0.3− | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.3− | | | | |
| 2006 09 30 | 691 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.6+ | | | | |

**2006 SW$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 22.69005 | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21115295 | $\omega$ | 110.95193 | | +0.98383684 | | +0.15268586 | |
| $a$ | 2.7930022 | $\Omega$ | 240.37012 | | −0.17595009 | | +0.92134523 | |
| $e$ | 0.1441654 | $i$ | 6.17849 | | +0.03326608 | | +0.35750524 | |
| $P$ | 4.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.6− | 0.3+ |
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2001 12 10 | 645 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2001 12 10 | 645 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.4+ | 0.1− |
| 2004 03 16 | 691 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.4+ | 0.2− |
| 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2004 03 16 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.7+ | 0.3+ |
| 2006 09 26 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.6− | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.2+ | |
| 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.2− | | | | | |
| 2006 09 30 | 691 | 0.1− | 0.4+ | 2006 11 07 | 644 | 0.3− | 0.1+ | | | | | |

**2006 SE$_{268}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 194.97593 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.17876321 | $\omega$ | 192.52655 | | −0.97464307 | | +0.22376236 | | |
| $a$ | 3.1209295 | $\Omega$ | 0.40883 | | −0.18903723 | | −0.82064279 | | |
| $e$ | 0.0570715 | $i$ | 9.19481 | | −0.11973229 | | −0.52580968 | | |
| $P$ | 5.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 02 24 | 691 | 0.0 | 0.1+ | 2000 09 27 | 691 | 0.1+ | 0.6− | 2006 10 17 | 691 | 0.1− | 0.1− | |
| 1992 02 24 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.4+ | 0.2+ | 2006 10 17 | 691 | 0.4− | 0.4+ | |
| 1992 02 24 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.4− | |
| 1997 01 01 | 691 | 0.2− | 0.5− | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 1.0− | 0.2+ | |
| 1997 01 01 | 691 | 0.4− | 0.5− | 2006 09 30 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.5+ | 0.1+ | |
| 1997 01 01 | 691 | 0.3+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.4+ | |
| 2000 09 27 | 691 | 0.4+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.4− | 0.1− | |
| 2000 09 27 | 691 | 0.3+ | 0.5− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.0 | |

**2006 SF$_{268}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 6.36834 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.22161284 | $\omega$ | 38.85863 | | +0.97552206 | | −0.21681909 | | |
| $a$ | 2.7044115 | $\Omega$ | 333.59436 | | +0.17549718 | | +0.86816045 | | |
| $e$ | 0.1555588 | $i$ | 4.73239 | | +0.13250454 | | +0.44641563 | | |
| $P$ | 4.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 28 | 699 | 0.7− | 0.2− | 2006 09 20 | 699 | 1.2+ | 0.4− | 2006 10 21 | 691 | 0.0 | 0.1+ | |
| 2001 07 28 | 699 | (1.6+ | 1.5+) | 2006 09 26 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− | |
| 2001 07 28 | 699 | (1.7− | 1.2+) | 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.0 | |
| 2001 07 28 | 699 | 0.1+ | 0.5+ | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2001 08 12 | 644 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3− | |
| 2001 08 12 | 644 | 0.0 | 0.2− | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 703 | (0.9− | 1.6−) | |
| 2001 08 12 | 644 | 0.4+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.0 | 2006 10 31 | 703 | 0.4− | 0.4+ | |
| 2004 04 11 | 621 | 0.2− | 0.1+ | 2006 10 18 | 291 | 0.2+ | 0.2− | 2006 10 31 | 703 | 0.5+ | 0.6− | |
| 2004 04 11 | 621 | 0.2− | 0.1+ | 2006 10 18 | 291 | 0.2+ | 0.1− | 2006 10 31 | 703 | 0.5− | 0.4− | |
| 2004 04 11 | 621 | 0.1− | 0.9− | 2006 10 18 | 291 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.1+ | 1.3− | |
| 2006 08 30 | 699 | 1.0− | 0.7− | 2006 10 20 | 644 | 0.5− | 0.2− | 2006 11 14 | 703 | 0.4− | 1.0− | |
| 2006 08 30 | 699 | 0.6− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.4− | |
| 2006 08 30 | 699 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.5− | 0.1+ | 2006 11 14 | 703 | 1.0+ | 0.9− | |
| 2006 08 30 | 699 | 1.0− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.7− | 2.2+ | |
| 2006 09 20 | 699 | 0.4− | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.8− | 1.0+ | |
| 2006 09 20 | 699 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.1+ | 1.5+ | |
| 2006 09 20 | 699 | 1.2+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.6− | 0.4− | |

**2006 SM$_{268}$ = 2001 QB$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 11.38309 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.21507420 | $\omega$ | 121.64547 | | +0.98184240 | | −0.16834306 | | |
| $a$ | 2.7589500 | $\Omega$ | 248.17192 | | +0.12583223 | | +0.92290928 | | |
| $e$ | 0.0718885 | $i$ | 5.40502 | | +0.14195687 | | +0.34626446 | | |
| $P$ | 4.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | (0.7+ | 2.0+) | 2006 09 26 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1− | |
| 2001 08 24 | 699 | 0.8+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | |
| 2001 08 24 | 699 | 0.1+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1− | |
| 2001 08 24 | 699 | 0.4− | 1.5+ | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 | |
| 2001 08 25 | 704 | (1.8+ | 2.8+) | 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.0 | |
| 2001 08 25 | 704 | 1.3+ | 1.2+ | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.0 | 0.6− | |
| 2001 08 25 | 704 | (2.4+ | 1.7+) | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.0 | 0.4− | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 07 | 644 | 0.3− | 0.0 | |
| 2001 09 20 | 645 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.1− | |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.4+ | 0.2+ | |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.0 | |
| 2006 09 26 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2− | | | | | |

**2006 SX$_{268}$ = 2004 BM$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 177.31978 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.25922994 | $\omega$ | 243.74158 | | −0.91166218 | | +0.40801468 | | |
| $a$ | 2.4360112 | $\Omega$ | 320.28647 | | −0.34439482 | | −0.82357893 | | |
| $e$ | 0.0548662 | $i$ | 4.39372 | | −0.22419695 | | −0.39400731 | | |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.1− | |
| 2004 01 16 | 691 | 0.0 | 0.2− | 2006 09 26 | 691 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.6+ | 0.2− | |
| 2004 01 16 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.3− | |
| 2004 01 22 | 704 | 0.6+ | 0.2− | 2006 09 30 | 691 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.3− | 0.6+ | |
| 2004 01 22 | 704 | 0.3+ | 0.3− | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.6− | 0.5+ | |
| 2004 01 22 | 704 | 0.6− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.5− | 0.0 | |
| 2004 01 22 | 704 | 0.2+ | 1.5+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.1− | 0.4− | |
| 2004 01 22 | 704 | 0.2+ | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.2+ | |
| 2006 09 26 | 691 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.0 | |

**2006 SC$_{269}$ = 2001 YX$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 320.08828 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.18425445 | $\omega$ | 156.66146 | | +0.14885483 | | −0.98607816 | | |
| $a$ | 3.0586097 | $\Omega$ | 284.71270 | | +0.89475862 | | +0.16621840 | | |
| $e$ | 0.2142851 | $i$ | 4.39436 | | +0.42100979 | | −0.00461473 | | |
| $P$ | 5.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.3+ | 0.6− | 2006 09 26 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2+ | 0.1− | |
| 2001 12 18 | 704 | 0.4+ | 0.5− | 2006 09 26 | 691 | 0.4− | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.3− | |
| 2001 12 18 | 704 | 0.8− | 0.4+ | 2006 09 30 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.3− | |
| 2001 12 18 | 704 | 0.5− | 1.1− | 2006 09 30 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.4− | |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− | |
| 2001 12 19 | 704 | 0.6+ | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.4− | |
| 2001 12 19 | 704 | 0.4+ | 0.9+ | 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.4− | |
| 2001 12 19 | 704 | 1.0− | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.6− | |
| 2001 12 19 | 704 | 0.6− | 0.8+ | 2006 10 21 | 691 | 0.8− | 0.3+ | 2006 11 25 | G96 | 0.0 | 0.5− | |
| 2006 09 26 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.2− | | | | | |

**2006 SK$_{269}$ = 2004 CE$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 86.36727 | | | (2000.0) | | **P** | | **Q** | |
| $n$ | 0.23273996 | $\omega$ | 118.69821 | | +0.37564953 | | +0.92675073 | | |
| $a$ | 2.6175124 | $\Omega$ | 173.36144 | | −0.86337112 | | +0.35172708 | | |
| $e$ | 0.1133918 | $i$ | 2.24509 | | −0.33686457 | | +0.13198916 | | |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1− | |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1+ | |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− | |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1+ | |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ | |
| 2004 02 29 | 691 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− | |
| 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.5− | |
| 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.5− | |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.7− | |

**2006 SP$_{269}$ = 2004 GH$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 264.15918 | | (2000.0) | | | |
| $n$ | 0.23063996 | $\omega$ | 293.55080 | | −0.75348411 | −0.65105782 |
| $a$ | 2.6333768 | $\Omega$ | 206.11761 | | +0.65313647 | −0.72526835 |
| $e$ | 0.1045492 | $i$ | 12.00612 | | +0.07532900 | −0.22385158 |
| $P$ | 4.27 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 291 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2004 04 14 | 291 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2004 04 14 | 291 | 0.2+ | 0.1+ | 2006 10 14 | 621 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 1.0− | 0.0 |
| 2004 04 22 | 691 | 0.0 | 0.4− | 2006 10 14 | 621 | 0.5+ | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 04 22 | 691 | 0.4+ | 0.5− | 2006 10 14 | 621 | 0.4− | 1.1+ | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2004 04 22 | 691 | 0.5− | 1.0+ | 2006 10 16 | 621 | 0.8+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2006 09 26 | G96 | 0.5+ | 0.1+ | 2006 10 16 | 621 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2006 09 26 | G96 | 0.5+ | 0.4+ | 2006 10 16 | 621 | 0.4+ | 0.7+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2006 09 30 | G96 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.6+ | 0.3+ |
| 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.6− | 0.2+ | | | | |

**2006 SU$_{269}$ = 2000 GP$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.11747 | | (2000.0) | | | |
| $n$ | 0.23948659 | $\omega$ | 211.74803 | | +0.49096584 | −0.85916678 |
| $a$ | 2.5681196 | $\Omega$ | 209.58976 | | +0.84787480 | +0.50926476 |
| $e$ | 0.1599871 | $i$ | 16.97583 | | +0.20015211 | −0.04981822 |
| $P$ | 4.12 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 11 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 01 | 703 | (1.8− | 2.7+) |
| 2000 04 11 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 01 | 703 | 0.0 | 0.3+ |
| 2000 04 11 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.4− | 1.0− | 2006 11 01 | 703 | 0.3− | 0.4− |
| 2000 04 13 | 691 | 0.3− | 0.1− | 2006 10 16 | 703 | 0.4− | 0.6+ | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2000 04 13 | 691 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2000 04 13 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.2− | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 21 | 683 | 0.3+ | 1.3− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 10 21 | 683 | (1.6− | 0.6−) | 2006 11 11 | 644 | 0.1+ | 0.0 |
| 2006 09 30 | 703 | 0.1− | 1.2+ | 2006 10 21 | G96 | 0.6+ | 0.1− | 2006 11 11 | 644 | 0.4− | 0.3+ |
| 2006 09 30 | 703 | 1.0− | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 11 | 644 | 0.0 | 0.1+ |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 21 | 683 | (2.1+ | 1.3−) | 2006 11 19 | 703 | 0.2+ | 0.4− |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.3− | 0.9+ |
| 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 01 | 703 | 0.5− | 0.3+ | 2006 11 19 | 703 | 0.8+ | 0.5− |

**2006 SF$_{270}$ = 1996 VT$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 256.27609 | | (2000.0) | | | |
| $n$ | 0.18076852 | $\omega$ | 225.99166 | | +0.02455937 | −0.99338966 |
| $a$ | 3.0978058 | $\Omega$ | 222.98374 | | +0.95781545 | +0.05550868 |
| $e$ | 0.0628701 | $i$ | 9.46635 | | +0.28633266 | −0.10047770 |
| $P$ | 5.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | 0.3+ | 0.2+ | 2001 09 28 | 644 | 0.4− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 1996 11 11 | 691 | 0.4+ | 0.2+ | 2006 08 28 | 703 | 2.1− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.5+ |
| 1996 11 11 | 691 | 0.4+ | 0.1+ | 2006 08 28 | 703 | 0.5− | 1.3− | 2006 09 27 | 691 | 0.4− | 0.3+ |
| 1996 11 18 | 691 | 0.2− | 0.3− | 2006 08 28 | 703 | 1.6+ | 0.2− | 2006 09 30 | 691 | 0.2− | 0.1− |
| 1996 11 18 | 691 | 0.6− | 0.0 | 2006 08 28 | 703 | 0.2− | 0.8− | 2006 09 30 | 691 | 0.1+ | 0.9− |
| 1996 11 18 | 691 | 0.3− | 0.2− | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2+ |
| 2001 09 28 | 644 | 0.2+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | | | | |
| 2001 09 28 | 644 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.2+ | 0.3+ | | | | |

**2006 SO$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.22893 | | (2000.0) | | | |
| $n$ | 0.26825872 | $\omega$ | 198.21792 | | +0.63420196 | −0.77195973 |
| $a$ | 2.3810407 | $\Omega$ | 212.46158 | | +0.71900017 | +0.60939356 |
| $e$ | 0.2294039 | $i$ | 4.61631 | | +0.28430024 | +0.18088024 |
| $P$ | 3.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 699 | (2.6+ | 2.1−) | 2004 02 11 | 644 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 2003 12 29 | 699 | 1.1+ | 0.4− | 2006 08 29 | 703 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2003 12 29 | 699 | 0.7− | 1.2+ | 2006 08 29 | 703 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.2− | 0.7− |
| 2003 12 29 | 699 | 0.7− | 0.5+ | 2006 08 29 | 703 | 0.2+ | 0.6+ | 2006 09 30 | 691 | 0.1− | 0.0 |
| 2004 02 11 | 644 | 0.7+ | 0.8− | 2006 08 29 | 703 | 0.3− | 0.9+ | 2006 09 30 | 691 | 0.0 | 0.0 |
| 2004 02 11 | 644 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ | | | | |

**2006 SD$_{271}$ = 1995 SH$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.74020 | | (2000.0) | | | |
| $n$ | 0.26807581 | $\omega$ | 299.43455 | | +0.86930520 | +0.49373061 |
| $a$ | 2.3821236 | $\Omega$ | 30.99631 | | −0.43644596 | +0.78878839 |
| $e$ | 0.1039138 | $i$ | 2.58281 | | −0.23199870 | +0.36611878 |
| $P$ | 3.68 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.1+ | 0.2− | 2005 05 08 | G96 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.1− |
| 1995 09 20 | 691 | 0.2+ | 0.1− | 2005 05 08 | G96 | 0.8− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2− |
| 1995 09 20 | 691 | 0.3+ | 0.2− | 2005 05 08 | G96 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.2+ | 1.1+ |
| 1995 09 25 | 691 | 0.2− | 0.0 | 2006 09 15 | 691 | 0.5− | 0.2+ | 2006 09 30 | 703 | (1.4+ | 1.9−) |
| 1995 09 25 | 691 | 0.2− | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.3+ |
| 1995 09 25 | 691 | 0.0 | 0.0 | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.7− | 1.3+ |
| 2001 03 20 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 704 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.3− | 0.2− |
| 2001 03 20 | 691 | 0.4− | 0.6+ | 2006 09 27 | 704 | 1.3+ | 1.3+ | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2001 03 20 | 691 | 0.3− | 0.2+ | 2006 09 27 | 704 | 0.4− | 0.2− | 2006 10 20 | G96 | 0.4− | 0.7− |
| 2004 01 16 | 691 | 0.2+ | 0.2+ | 2006 09 27 | 704 | 0.2− | 1.1+ | 2006 10 20 | G96 | 0.3− | 0.3− |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2004 01 16 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.0 |
| 2005 04 09 | 691 | 0.7+ | 0.3+ | 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 04 09 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 691 | 0.5+ | 0.4− | 2006 11 15 | G96 | 0.5− | 0.3+ |
| 2005 04 09 | 691 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.1+ | | | | |
| 2005 05 08 | G96 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.1− | | | | |

**2006 SQ$_{272}$ = 2002 XG$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.60795 | | (2000.0) | | | |
| $n$ | 0.22334329 | $\omega$ | 216.52526 | | +0.94057170 | −0.33778784 |
| $a$ | 2.6904243 | $\Omega$ | 163.11347 | | +0.33306777 | +0.89747934 |
| $e$ | 0.1304480 | $i$ | 6.91835 | | +0.06626265 | +0.28360220 |
| $P$ | 4.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.3+ | 0.1+ | 2005 06 01 | 691(0.04− | 0.01+) | 2006 09 30 | 703 | 0.4− | 0.2+ | |
| 2002 12 01 | 704 | 0.8+ | 0.0 | 2005 06 14 | 691(0.04− | 0.01+) | 2006 09 30 | 703 | 0.4− | 0.2+ | |
| 2002 12 01 | 704 | 0.6− | 0.2− | 2005 06 14 | 691(0.04− | 0.01+) | 2006 09 30 | 703 | 0.3− | 0.2− | |
| 2002 12 03 | 644 | 0.1− | 0.0 | 2005 06 14 | 691(0.04− | 0.01+) | 2006 09 30 | 703 | 0.1+ | 0.5− | |
| 2002 12 03 | 644 | 0.1− | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.9+ | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2002 12 03 | 644 | 0.2− | 0.0 | 2006 09 18 | 703 | 1.2− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.8+ |
| 2004 03 23 | 691(0.04− | 0.01+) | | 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 10 16 | 703 | 0.4− | 0.3− |
| 2004 03 23 | 691(0.04− | 0.01+) | | 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2004 03 23 | 691(0.04− | 0.01+) | | 2006 09 27 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.6− |
| 2005 06 01 | 691(0.04− | 0.01+) | | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2005 06 01 | 691(0.04− | 0.01+) | | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ |

**2006 SW$_{272}$ = 1999 TN$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.87613 | | | (2000.0) | | |
| $n$ | 0.28330074 | $\omega$ | 70.94909 | | +0.01826442 | −0.99840694 |
| $a$ | 2.2959948 | $\Omega$ | 18.25263 | | +0.84125478 | −0.01350962 |
| $e$ | 0.2093531 | $i$ | 9.81381 | | +0.54033028 | +0.05478197 |
| $P$ | 3.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 10 29 | 704 | 0.0 | 0.4+ | |
| 1999 10 06 | 704 | 0.4+ | 0.6+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 10 29 | 704 | 0.7− | 0.1− | |
| 1999 10 06 | 704 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.4− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | |
| 1999 10 06 | 704 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.0 | |
| 1999 10 06 | 704 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | |
| 1999 10 13 | 691 | 0.9+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.3− | 0.0 | |
| 1999 10 13 | 691 | 0.5− | 0.3− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.1− | 0.2− | |
| 1999 10 13 | 691 | 0.3− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.3+ | 0.1+ | |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.7− | |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.2− | |
| 2006 09 27 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 1.0− | 1.5− | |
| 2006 09 27 | G96 | 0.3− | 0.3− | 2006 10 29 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.4− | |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 10 29 | 704 | 0.1+ | 0.9+ | | | | | |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.8+ | 0.5+ | | | | | |

**2006 SY$_{272}$ = 1999 YY$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.77062 | | | (2000.0) | | |
| $n$ | 0.27393443 | $\omega$ | 148.86410 | | +0.74521919 | +0.66678329 |
| $a$ | 2.3480371 | $\Omega$ | 169.30803 | | −0.61924864 | +0.69588740 |
| $e$ | 0.2244696 | $i$ | 2.14892 | | −0.24734485 | +0.26672228 |
| $P$ | 3.60 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 27 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 1.3− | 0.3− | |
| 1999 12 27 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | (3.4+ | 1.2−) | |
| 1999 12 27 | 691 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | (1.6+ | 1.1−) | |
| 2000 01 02 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.7− | |
| 2000 01 02 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.3+ | |
| 2000 01 02 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 13 | 644 | 0.2− | 0.0 | |
| 2006 09 27 | 704 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.0 | 0.3+ | |
| 2006 09 27 | 704 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.4− | |
| 2006 09 27 | 704 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.4− | |
| 2006 09 30 | G96 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.2− | 0.2− | |
| 2006 09 30 | G96 | 0.0 | 0.6− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− | |
| 2006 09 30 | G96 | 0.1− | 0.6− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | (2.0− | 0.1+) | |
| 2006 09 30 | G96 | 0.1− | 0.6− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 1.3− | 1.0+ | |
| 2006 09 30 | 703 | 1.2+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.7+ | |
| 2006 09 30 | 683 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.4− | 0.4+ | |
| 2006 09 30 | 703 | 0.1− | 0.8− | 2006 11 01 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.2+ | |
| 2006 09 30 | 683 | 1.4+ | 0.5+ | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.2+ | |
| 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.8+ | |
| 2006 09 30 | 703 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 1.3+ | 0.5+ | |

**2006 SA$_{273}$ = 2005 NM$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 119.83821 | | | (2000.0) | | |
| $n$ | 0.19018886 | $\omega$ | 33.56704 | | −0.21630435 | +0.97365462 |
| $a$ | 2.9946495 | $\Omega$ | 224.06272 | | −0.91703832 | −0.22798159 |
| $e$ | 0.1824422 | $i$ | 5.95695 | | −0.33504200 | −0.00459009 |
| $P$ | 5.18 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 644 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2− | 0.6+ | |
| 2004 03 14 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3− | |
| 2004 03 14 | 644 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.5− | |
| 2005 07 05 | 644 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.2+ | |
| 2005 07 05 | 644 | 0.2+ | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.3− | |
| 2005 07 05 | 644 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.5− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.2− | |
| 2005 07 10 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.4− | |
| 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.3+ | |
| 2005 07 10 | 691 | 0.3− | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.5− | 0.2− | |
| 2005 08 06 | 644 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.6− | |
| 2005 08 06 | 644 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.1+ | |
| 2005 08 06 | 644 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.4+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.1− | |
| 2006 09 27 | G96 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.2+ | | | | | |

**2006 SB$_{273}$ = 2005 GX$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.86807 | | | (2000.0) | | |
| $n$ | 0.21552888 | $\omega$ | 299.22231 | | +0.78889542 | +0.60505490 |
| $a$ | 2.7550685 | $\Omega$ | 24.05014 | | −0.43121749 | +0.66965237 |
| $e$ | 0.3332471 | $i$ | 15.29201 | | −0.43783043 | +0.43066725 |
| $P$ | 4.57 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 | |
| 2005 04 02 | G96 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.0 | |
| 2005 04 02 | G96 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 10 22 | 644 | 0.4+ | 0.1+ | |
| 2005 04 02 | G96 | 0.6− | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.0 | |
| 2005 04 09 | 691 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 10 27 | 703 | 0.4+ | 1.1− | |
| 2005 04 09 | 691 | 0.5+ | 0.7− | 2006 10 03 | G96 | 0.2− | 0.3− | 2006 10 27 | 703 | 0.8− | 1.1+ | |
| 2005 04 09 | 691 | 0.4− | 0.4+ | 2006 10 04 | 703 | 0.8+ | 0.6+ | 2006 10 27 | 703 | (2.1+ | 1.8+) | |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.5+ | 0.4− | 2006 10 27 | 703 | 0.5+ | 0.9− | |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.3− | 0.4+ | 2006 11 14 | 703 | (0.3− | 2.0−) | |
| 2006 09 27 | G96 | 0.4− | 0.1− | 2006 10 04 | 703 | 1.2− | 0.6− | 2006 11 14 | 703 | 1.3− | 1.1− | |
| 2006 09 28 | G96 | 0.5+ | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.7− | 0.3+ | |
| 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.7− | 1.4− | |
| 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.4+ | 0.0 | |
| 2006 09 28 | G96 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.8+ | 0.1+ | |
| 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.3+ | 1.0+ | |
| 2006 09 28 | G96 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.2− | 1.1− | |
| 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.3+ | | | | | |
| 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 10 21 | 691 | 0.3− | 0.1− | | | | | |

**2006 SM$_{273}$ = 2005 JO$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.20900 | | | (2000.0) | | |
| $n$ | 0.22703132 | $\omega$ | 269.34398 | | +0.50588495 | +0.86053590 |
| $a$ | 2.6612083 | $\Omega$ | 31.27479 | | −0.73866526 | +0.46787775 |
| $e$ | 0.2400224 | $i$ | 6.59814 | | −0.44548181 | +0.20141591 |
| $P$ | 4.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644(80.3− | 21.1−) | | 2005 05 12 | 644 | 0.4+ | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.3+ | |
| 2001 08 11 | 644(81.0− | 20.9−) | | 2006 09 27 | G96 | 0.9+ | 0.7− | 2006 11 01 | G96 | 0.7+ | 0.0 | |
| 2001 08 11 | 644(80.7− | 21.7−) | | 2006 09 27 | G96 | 0.6− | 0.1− | 2006 11 01 | G96 | 0.6+ | 0.2− | |
| 2001 08 24 | 644(75.3− | 17.8−) | | 2006 09 27 | G96 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1− | |
| 2001 08 24 | 644(75.3− | 18.0−) | | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.2+ | |
| 2001 08 24 | 644(75.5− | 17.9−) | | 2006 09 30 | G96 | 0.5− | 0.1− | 2006 11 14 | G96 | 0.4− | 0.3− | |
| 2005 05 11 | 644 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.5+ | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.1− | |
| 2005 05 11 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.0 | |
| 2005 05 11 | 644 | 0.1− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.2− | |
| 2005 05 12 | 644 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.1− | 0.1− | | | | | |
| 2005 05 12 | 644 | 0.3− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.1+ | | | | | |

**2006 $SO_{273}$ = 2000 $TU_{57}$ = 2003 $FU_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.40608 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17691390 | $\omega$ | 23.62003 | | +0.52428998 | | −0.84587129 |
| $a$ | 3.1426408 | $\Omega$ | 34.98711 | | +0.75147263 | | +0.40541991 |
| $e$ | 0.1231318 | $i$ | 9.85009 | | +0.40051080 | | +0.34660706 |
| $P$ | 5.57 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 704 | 1.0+ | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2000 10 02 | 704 | 0.8− | 1.3+ | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2000 10 02 | 704 | 0.9− | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2000 10 04 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.2− | 0.8+ |
| 2000 10 04 | 691 | 0.3− | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.2+ |
| 2000 10 04 | 691 | 0.2+ | 0.5− | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 0.9+ | 0.6+ |
| 2001 12 19 | 645 | 0.1− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 12 19 | 645 | 0.1− | 0.2− | 2006 11 09 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 01 13 | 644 | 0.2+ | 0.8− | 2006 11 09 | 691 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2002 01 13 | 644 | 0.5+ | 0.7− | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.1− |
| 2002 01 13 | 644 | 0.2+ | 1.0− | 2006 11 09 | 644 | 0.4− | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2003 03 26 | 691 | 1.2+ | 0.9+ | 2006 11 09 | 644 | 0.3− | 0.4+ | 2006 11 16 | 704 | 0.5− | 0.6+ |
| 2003 03 26 | 691 | (1.4+ | 1.7+) | 2006 11 09 | 644 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2003 03 26 | 691 | 0.8+ | 1.2+ | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.5− |
| 2003 03 27 | 644 | 0.0 | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.0 | 0.8+ |
| 2003 03 27 | 644 | 0.2− | 0.7+ | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.9− | 1.0+ |
| 2003 03 27 | 644 | 0.6− | 0.7+ | 2006 11 11 | 703 | 0.9− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 1.3+ |
| 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.3− | 1.1− | 2006 11 22 | 704 | 0.0 | 0.9+ |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.7+ | | | | |
| 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.3− | 0.6+ | | | | |

**2006 $SX_{273}$ = 2001 $YN_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.21310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18588425 | $\omega$ | 65.50694 | | −0.43424485 | | −0.89558156 |
| $a$ | 3.0407052 | $\Omega$ | 50.58306 | | +0.77447504 | | −0.42605260 |
| $e$ | 0.2379185 | $i$ | 7.19609 | | +0.46002154 | | −0.12811264 |
| $P$ | 5.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.4− | 0.3+ | 2006 10 17 | G96 | (1.2+ | 2.4+) | 2006 11 14 | 691 | 0.1+ | 0.1− |
| 2001 12 19 | 644 | 0.7− | 0.2+ | 2006 10 17 | G96 | (2.7+ | 1.6+) | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2001 12 19 | 644 | 0.7− | 0.2+ | 2006 10 20 | 926 | 0.3+ | 0.6+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.5+ | 0.0 | 2006 10 20 | 926 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 10 20 | 926 | 0.1+ | 0.5+ | 2006 11 20 | 703 | 0.7+ | 0.8− |
| 2001 12 19 | 704 | 0.4− | 0.1− | 2006 10 20 | 926 | 0.1+ | 0.5+ | 2006 11 20 | 703 | 0.6+ | 0.7− |
| 2001 12 19 | 704 | 0.0 | 0.5− | 2006 10 21 | 926 | 0.7+ | 0.5+ | 2006 11 20 | 703 | 0.5+ | 0.2+ |
| 2001 12 22 | 704 | 1.0+ | 0.4+ | 2006 10 21 | 926 | 0.4+ | 0.4− | 2006 11 20 | 703 | 0.5+ | 0.4+ |
| 2001 12 22 | 704 | 0.8+ | 0.0 | 2006 10 21 | 926 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 1.1+ |
| 2001 12 22 | 704 | 0.6− | 0.8− | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.7− | 0.1+ |
| 2001 12 22 | 704 | (1.8− | 2.0−) | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 20 | 704 | 0.2− | 0.0 |
| 2001 12 22 | 704 | 0.7+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.7+ |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.3− | 1.1+ |
| 2006 09 27 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.5+ |
| 2006 09 27 | G96 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.5− | 0.4− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.6− | 0.2− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 14 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.7− |
| 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.3− | 0.0 | | | | |

**2006 $SZ_{273}$ = 2001 $WB_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.68364 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20027209 | $\omega$ | 327.76053 | | +0.80986610 | | −0.58483452 |
| $a$ | 2.8932709 | $\Omega$ | 68.09798 | | +0.54811343 | | +0.72667722 |
| $e$ | 0.1223657 | $i$ | 2.82121 | | +0.20901811 | | +0.36042863 |
| $P$ | 4.92 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.7− | 1.0− | 2001 11 21 | 704 | 0.5+ | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 704 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.6− |
| 2001 11 20 | 704 | 0.3+ | 1.3+ | 2006 09 27 | G96 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.5− | 0.5− |
| 2001 11 20 | 704 | 1.4+ | 0.5− | 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.6− | 0.4− |
| 2001 11 20 | 704 | 0.5+ | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.8− | 0.8− |
| 2001 11 21 | 704 | 0.9− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.1− | 1.4+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 0.9− | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2+ |

**2006 $SF_{274}$ = 2002 $PW_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.57865 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27393625 | $\omega$ | 303.37052 | | −0.05081133 | | −0.99775701 |
| $a$ | 2.3480268 | $\Omega$ | 149.45234 | | +0.94242216 | | −0.06234413 |
| $e$ | 0.0941286 | $i$ | 4.91876 | | +0.33054301 | | +0.02437543 |
| $P$ | 3.60 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.4− | 0.4− | 2004 01 26 | 699 | 2.0+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.3− |
| 2002 08 08 | 644 | 0.4− | 0.0 | 2004 01 26 | 699 | 1.6+ | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.8− |
| 2002 08 17 | 644 | 0.4− | 0.2− | 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | (1.9+ | 1.3−) |
| 2002 08 17 | 644 | 1.7+ | 2.1+ | 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.9− | 0.0 |
| 2002 08 17 | 644 | 0.9− | 0.1− | 2004 01 28 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 2004 01 19 | 703 | 1.3− | 0.4+ | 2006 09 17 | 691 | 0.3+ | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2004 01 19 | 703 | 0.2+ | 0.9− | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.8+ | 0.1− |
| 2004 01 19 | 703 | 0.4− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2004 01 19 | 703 | 0.1+ | 0.3− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.2+ |
| 2004 01 26 | 699 | (3.1− | 0.9+) | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.7− | 0.0 |
| 2004 01 26 | 699 | 0.8+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 2.1− | 0.0 |

**2006 $SG_{274}$ = 2001 $WT_{51}$ = 2004 $GS_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.73820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18797047 | $\omega$ | 272.09675 | | +0.59610010 | | +0.79553137 |
| $a$ | 3.0181649 | $\Omega$ | 35.23344 | | −0.64131912 | | +0.55313816 |
| $e$ | 0.0376982 | $i$ | 10.85061 | | −0.48308846 | | +0.24732168 |
| $P$ | 5.24 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.5− | 0.2+ | 2006 09 27 | 691 | 0.4+ | 0.2− | 2006 10 15 | 703 | 0.2+ | 0.1− |
| 2001 11 19 | 704 | 0.2+ | 0.8− | 2006 09 27 | 691 | 0.3+ | 0.4− | 2006 10 21 | 703 | 0.9− | 1.5− |
| 2001 11 19 | 704 | 0.1+ | 0.6− | 2006 09 27 | 691 | 0.5+ | 0.2− | 2006 10 21 | 703 | 1.0+ | 0.4− |
| 2001 11 19 | 704 | 0.0 | 0.2+ | 2006 09 30 | 291 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.7+ | 1.1− |
| 2001 11 19 | 704 | 0.1+ | 0.1− | 2006 09 30 | 291 | 0.2+ | 0.1+ | 2006 10 21 | 703 | (2.4− | 1.2−) |
| 2001 11 21 | 704 | 0.2+ | 0.7− | 2006 09 30 | 291 | 0.0 | 0.3+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2001 11 21 | 704 | 0.5− | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2001 11 21 | 704 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.3+ | 0.9+ | 2006 10 01 | 291 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 01 | 291 | 0.8− | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2004 04 13 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 2004 04 13 | 691 | 0.1− | 0.2− | 2006 10 01 | 291 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2004 04 19 | 704 | 0.5+ | 0.3+ | 2006 10 15 | 703 | 1.2− | 0.8− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 04 19 | 704 | 0.0 | 0.6+ | 2006 10 15 | 703 | 1.5− | 1.1− | | | | |
| 2004 04 19 | 704 | 0.3+ | 0.2− | 2006 10 15 | 703 | 0.6− | 0.2+ | | | | |

**2006 SQ$_{274}$ = 2004 EX$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.72017 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23779352 | $\omega$ | 306.48998 | | +0.91438479 | | +0.40384449 |
| $a$ | 2.5802950 | $\Omega$ | 29.72174 | | −0.35065875 | | +0.82517350 |
| $e$ | 0.1065440 | $i$ | 3.29102 | | −0.20233363 | | +0.39496622 |
| $P$ | 4.14 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.5− | 0.7+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 01 | G96 | 0.5− | 0.3− |
| 2001 07 13 | 644 | 0.0 | 0.6+ | 2006 09 28 | G96 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 07 13 | 644 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.5+ | 0.2+ |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.5+ |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.4− | 2006 11 14 | 691 | 0.2+ | 0.3+ |
| 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1− | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.4− | 0.3− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2006 09 27 | G96 | 0.4− | 0.4− | 2006 11 01 | G96 | 0.2− | 0.4− | | | | |
| 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1− | 0.5− | | | | |

**2006 SV$_{274}$ = 2005 QX$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.64623 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17903352 | $\omega$ | 92.05545 | | +0.84966800 | | +0.51279009 |
| $a$ | 3.1177873 | $\Omega$ | 237.11635 | | −0.52300461 | | +0.78974486 |
| $e$ | 0.0729915 | $i$ | 8.41713 | | −0.06730882 | | +0.33667399 |
| $P$ | 5.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 29 | 644 | 0.0 | 0.3− | 2006 09 28 | G96 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.3− |
| 2005 08 29 | 644 | 0.1+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2− | 0.5+ |
| 2005 08 29 | 644 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 23 | 691 | 0.4− | 0.1+ |
| 2005 08 29 | 599 | 0.5+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2005 08 29 | 599 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2005 08 29 | 599 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 08 30 | 644 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2005 08 30 | 644 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2005 08 30 | 644 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.3+ | 2006 12 01 | 691 | 0.3+ | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.6+ | 1.0− |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.3+ | 0.2+ |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.3− | 0.0 | | | | |
| 2006 09 27 | G96 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.0 | | | | |

**2006 SY$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.94327 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26819819 | $\omega$ | 304.32106 | | +0.97372321 | | +0.21257419 |
| $a$ | 2.3813989 | $\Omega$ | 43.56632 | | −0.14970175 | | +0.86782523 |
| $e$ | 0.1677969 | $i$ | 6.80832 | | −0.17161728 | | +0.44910087 |
| $P$ | 3.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 608 | 0.6+ | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.0 | 2006 11 22 | H07 | 0.2+ | 0.8+ |
| 2002 09 09 | 608 | 0.0 | 0.7+ | 2006 10 20 | G96 | 0.4+ | 0.5− | 2006 11 22 | H07 | 0.2+ | 0.4+ |
| 2002 09 09 | 608 | 0.5+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.6− | 2006 11 22 | 704 | 0.3+ | 1.0− |
| 2002 09 14 | 608 | 0.5+ | 0.5− | 2006 10 20 | G96 | 0.1− | 0.8− | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2002 09 14 | 608 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.3− | 0.4− |
| 2002 09 14 | 608 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.2− | 0.0 |
| 2002 11 06 | 644 | 0.6− | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2002 11 06 | 644 | 0.7− | 0.5+ | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 11 23 | H07 | (1.0+ | 2.5−) |
| 2002 11 06 | 644 | 0.6− | 0.5+ | 2006 11 16 | 704 | 0.0 | 0.3+ | 2006 11 23 | H07 | 0.9+ | 0.4− |
| 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.3− | 2006 11 23 | H07 | 0.3+ | 0.5− |
| 2006 09 27 | G96 | 0.6+ | 0.6− | 2006 11 16 | 704 | 0.5+ | 0.0 | 2006 11 23 | H07 | 0.2+ | 1.4− |
| 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 11 18 | 691 | 0.1− | 0.3+ | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.4+ | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.3− | 0.4+ | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 22 | H07 | 0.1+ | 0.5+ | | | | |
| 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 11 22 | H07 | 0.2+ | 0.9+ | | | | |

**2006 SE$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.97561 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21428405 | $\omega$ | 325.96777 | | +0.94161774 | | −0.33264844 |
| $a$ | 2.7657281 | $\Omega$ | 53.54648 | | +0.32149883 | | +0.84253659 |
| $e$ | 0.0835802 | $i$ | 3.70469 | | +0.09997263 | | +0.42364740 |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.5+ | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.8− |
| 2004 04 16 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.5− |
| 2004 04 16 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.3− |
| 2004 04 21 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.6+ | 0.0 |
| 2004 04 21 | 691 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.0− | 0.3+ |
| 2004 04 21 | 691 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 21 | 703 | 1.0+ | 0.5− |
| 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.7− |
| 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2006 09 30 | 703 | (0.6+ | 2.3+) | 2006 10 15 | 703 | (2.1− | 0.7+) | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2006 09 30 | 703 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.1− | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2006 09 30 | 703 | 1.2− | 0.4+ | 2006 10 15 | 703 | 1.3− | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2006 09 30 | 703 | 1.3− | 0.5+ | 2006 10 15 | 703 | (0.5− | 1.9−) | 2006 11 11 | 691 | 0.3− | 0.4+ |
| 2006 09 30 | 703 | 0.1− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.9− | 0.2+ |
| 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | (0.4− | 1.7+) |
| 2006 09 30 | 703 | 0.5− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | (1.5− | 1.8+) |
| 2006 09 30 | 703 | 0.1− | 0.7+ | 2006 10 17 | G96 | 0.1+ | 1.0− | 2006 11 11 | 703 | 1.0− | 0.3+ |

**2006 SQ$_{275}$ = 2004 GK$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.34384 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22419869 | $\omega$ | 242.46164 | | +0.10178719 | | −0.99319815 |
| $a$ | 2.6835766 | $\Omega$ | 201.91619 | | +0.95778784 | | +0.11320128 |
| $e$ | 0.0554474 | $i$ | 8.71277 | | +0.26885279 | | −0.02725638 |
| $P$ | 4.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 15 | 699 | 0.2+ | 0.2− | 2006 10 16 | 703 | 1.3− | 1.3− | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2004 04 15 | 699 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2004 04 15 | 699 | 0.6− | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.8− | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2004 04 15 | 699 | (0.9+ | 2.0−) | 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2004 04 16 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2004 04 16 | 691 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3+ |
| 2004 04 16 | 691 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.6− | 0.0 | 2006 11 11 | 703 | 1.3+ | 1.0− |
| 2006 09 28 | 621 | 0.2+ | 0.6− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2006 09 28 | 621 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.4+ | 0.4+ |
| 2006 09 28 | 621 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.7− | 0.4+ |
| 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 10 31 | 683 | (1.7− | 1.4−) | 2006 11 14 | 704 | 0.6+ | 0.5+ |
| 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 31 | 683 | 0.5− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.7− |
| 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 10 31 | 683 | (3.1− | 1.3−) | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 02 | 703 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.8− |
| 2006 10 15 | D35 | 0.1+ | 0.3− | 2006 11 02 | 703 | 0.6+ | 0.6− | 2006 11 18 | G96 | 0.0 | 0.7− |
| 2006 10 15 | D35 | 0.5+ | 0.1+ | 2006 11 02 | 703 | 0.6− | 0.5+ | | | | |
| 2006 10 15 | D35 | 0.0 | 0.0 | 2006 11 02 | 703 | 0.3− | 0.0 | | | | |

**2006 SR$_{275}$ = 2002 RM$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.54821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23452548 | $\omega$ | 84.03613 | | −0.42327488 | | +0.90228382 |
| $a$ | 2.6042101 | $\Omega$ | 160.28447 | | −0.89726067 | | −0.40493120 |
| $e$ | 0.0736924 | $i$ | 14.06600 | | −0.12554549 | | −0.14803589 |
| $P$ | 4.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 644 | 0.5+ | 0.4+ | 2005 04 04 | 703 | 0.5− | 0.1− | 2006 09 24 | 688 | 0.4− | 0.7− |
| 2002 09 15 | 644 | 0.4+ | 0.2+ | 2005 04 04 | 703 | 0.6− | 0.1− | 2006 09 24 | 688 | 0.1− | 0.2+ |
| 2002 09 15 | 644 | 0.0 | 0.1+ | 2005 04 04 | 703 | 0.7+ | 0.2+ | 2006 09 28 | 291 | 0.3+ | 0.1+ |
| 2002 09 16 | 644 | 0.5− | 0.2− | 2005 04 04 | 703 | 0.9− | 1.1+ | 2006 09 28 | 291 | 0.5+ | 0.4+ |
| 2002 09 16 | 644 | 0.1− | 0.1+ | 2006 08 19 | 691 | 0.0 | 0.3− | 2006 09 28 | 291 | 0.3+ | 0.1+ |
| 2002 09 16 | 644 | 0.4− | 0.1− | 2006 08 19 | 691 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.1− | 0.3− |
| 2005 03 18 | 703 | 0.2− | 0.8− | 2006 08 19 | 691 | 0.2− | 0.4− | 2006 09 30 | G96 | 0.1− | 0.4− |
| 2005 03 18 | 703 | 0.2+ | 0.7+ | 2006 08 27 | 691 | 0.6− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.5− |
| 2005 03 18 | 703 | 1.3+ | 0.1− | 2006 08 27 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.5− |
| 2005 03 18 | 703 | 0.2+ | 0.6− | 2006 08 27 | 691 | 0.0 | 0.0 | | | | |

**2006 SW$_{277}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.32479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23860669 | $\omega$ | 5.53919 | | +0.67603896 | | −0.73382073 |
| $a$ | 2.5744293 | $\Omega$ | 41.95112 | | +0.67215937 | | +0.57691013 |
| $e$ | 0.2307143 | $i$ | 5.74535 | | +0.30194885 | | +0.35872251 |
| $P$ | 4.13 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 08 | 699 | 0.3+ | 0.8− | 2006 09 18 | 699 | 1.5+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2002 10 08 | 699 | 0.3− | 0.1+ | 2006 09 18 | 699 | 1.0− | 0.2− | 2006 10 12 | 644 | 0.2− | 0.3+ |
| 2002 10 08 | 699 | 0.2− | 0.4+ | 2006 09 26 | 704 | 0.8+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2002 10 08 | 699 | 0.0 | 0.2− | 2006 09 26 | 704 | (1.2− | 1.7+) | 2006 10 16 | 703 | 0.2+ | 0.3− |
| 2002 10 30 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 704 | (1.9+ | 1.1+) | 2006 10 16 | 703 | 0.1− | 0.5+ |
| 2002 10 30 | 644 | 0.0 | 0.2+ | 2006 09 26 | 704 | 0.5− | 0.3− | 2006 10 16 | 703 | (0.2+ | 1.5−) |
| 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 09 28 | 704 | 0.3− | 0.8+ | 2006 10 16 | 703 | 0.1+ | 0.1+ |
| 2002 11 04 | 699 | 0.2+ | 0.2− | 2006 09 28 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2002 11 04 | 699 | 1.0− | 0.7+ | 2006 09 28 | 704 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.3+ |
| 2002 11 04 | 699 | 0.5+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 1.1− |
| 2002 11 04 | 699 | 0.2+ | 0.7− | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 10 22 | 703 | (1.6− | 0.5−) |
| 2006 09 18 | 703 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2006 09 18 | 703 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.2− | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2006 09 18 | 703 | 0.8− | 1.4− | 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.5+ | 0.1− |
| 2006 09 18 | 703 | 0.1− | 0.3− | 2006 09 30 | 703 | 0.2+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2006 09 18 | 699 | 0.6+ | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3+ | | | | |
| 2006 09 18 | 699 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.3+ | | | | |

**2006 SF$_{279}$ = 1976 UL$_{11}$ = 2003 AB$_{32}$**

Id. Minor Planet Center; 2000 GV$_{180}$ = 2003 AB$_{32}$ (*MPO* 42924) is invalid

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.99318 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23028813 | $\omega$ | 341.82878 | | +0.95095248 | | −0.30421784 |
| $a$ | 2.6360583 | $\Omega$ | 36.03531 | | +0.29431694 | | +0.83403636 |
| $e$ | 0.2578359 | $i$ | 5.46665 | | +0.09522040 | | +0.46025520 |
| $P$ | 4.28 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1976 10 22 | 381 | 1.3− | 0.3− | 2006 10 16 | 683 | 0.1+ | 0.4− | 2006 11 11 | 683 | 0.3− | 1.3− |
| 1976 10 22 | 381 | 0.4+ | 0.3− | 2006 10 16 | 683 | 0.9+ | 0.2− | 2006 11 11 | 683 | 0.9+ | 1.2− |
| 1976 10 24 | 381 | 1.1+ | 0.2+ | 2006 10 16 | 683 | 0.5− | 0.2− | 2006 11 11 | 683 | 0.2− | 0.1+ |
| 2003 01 05 | 704 | 1.2− | 0.6− | 2006 10 17 | 683 | 0.6+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2003 01 05 | 704 | 0.4+ | 0.2+ | 2006 10 17 | 683 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.9+ | 0.0 |
| 2003 01 05 | 704 | 0.4− | 0.5− | 2006 10 17 | 683 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2003 01 05 | 704 | 0.2+ | 1.0+ | 2006 10 20 | 683 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2003 01 08 | 704 | 0.8+ | 0.2− | 2006 10 20 | 683 | 1.1+ | 0.3− | 2006 11 13 | 683 | 0.1+ | 0.8− |
| 2003 01 08 | 704 | 0.5− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2003 01 08 | 704 | 0.0 | 0.3+ | 2006 10 20 | 683 | 0.3+ | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2003 01 08 | 704 | 0.7+ | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 13 | 683 | 0.1+ | 0.9− |
| 2006 08 28 | 703 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2006 08 28 | 703 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2006 08 28 | 703 | 0.3+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 13 | 683 | 0.3+ | 0.2+ |
| 2006 08 28 | 703 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 14 | 683 | 0.1− | 0.4− |
| 2006 09 20 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 14 | 683 | 0.7− | 0.8− |
| 2006 09 20 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 14 | 683 | 0.3+ | 0.3− |
| 2006 09 20 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.4− |
| 2006 09 28 | 683 | 1.2+ | 0.5− | 2006 10 23 | 704 | 0.6+ | 1.3+ | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2006 09 28 | 683 | 0.8+ | 0.8+ | 2006 10 23 | 683 | 0.9+ | 0.6− | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2006 09 28 | 683 | 0.4− | 0.1− | 2006 10 23 | 704 | (0.3+ | 1.9+) | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 23 | 704 | (0.8− | 2.7+) | 2006 11 18 | 704 | 0.4− | 0.3+ |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 23 | 683 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.0 |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 23 | 704 | 0.3− | 0.8+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 10 27 | 683 | 0.7+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 27 | 683 | 0.8+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 2006 09 30 | 683 | 0.4− | 0.5− | 2006 10 27 | 683 | 0.7+ | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2006 09 30 | 703 | 0.6+ | 0.4− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | (0.4− | 1.8+) |
| 2006 09 30 | 683 | (1.1− | 1.9+) | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2006 09 30 | 703 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2006 09 30 | 683 | 0.8− | 0.4+ | 2006 10 28 | 704 | 0.9− | 0.5− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2006 10 01 | 683 | 0.9− | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.6+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2006 10 01 | 683 | 0.1− | 0.3+ | 2006 10 28 | 704 | 1.4− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2006 10 01 | 683 | (0.8− | 1.6+) | 2006 10 28 | 704 | 0.6− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2006 10 03 | 704 | 0.0 | 0.0 | 2006 10 28 | 704 | 1.3− | 0.3− | 2006 11 21 | 704 | 0.3+ | 1.0+ |
| 2006 10 03 | 704 | 0.3+ | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.0 | 2006 11 22 | 683 | (4.5+ | 0.2+) |
| 2006 10 03 | 704 | 1.0+ | 0.0 | 2006 10 29 | 691 | 0.6− | 0.2− | 2006 11 22 | 683 | 0.9+ | 0.0 |
| 2006 10 03 | 704 | 0.3+ | 0.9+ | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 22 | 683 | (0.0 | 1.6−) |
| 2006 10 03 | 683 | (1.8+ | 0.1+) | 2006 11 09 | 644 | 0.3− | 0.1− | 2006 11 23 | 683 | 0.7− | 0.6+ |
| 2006 10 03 | 704 | 0.5+ | 1.0+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 23 | 683 | 0.9+ | 0.8− |
| 2006 10 03 | 683 | 0.9− | 1.0+ | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 10 | 683 | (0.4− | 2.4−) | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 683 | (0.4− | 2.4−) | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 10 | 683 | (0.0 | 1.6−) | | | | |

**2006 SM$_{279}$ = 1999 TD$_{287}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.24441 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28177063 | $\omega$ | 123.86866 | | +0.99325864 | | +0.07747579 |
| $a$ | 2.3042994 | $\Omega$ | 231.83971 | | −0.10203837 | | +0.93731370 |
| $e$ | 0.1445556 | $i$ | 6.29580 | | +0.05500404 | | +0.33976541 |
| $P$ | 3.50 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5− | 0.3+ | 2006 09 30 | 703 | 1.0+ | 0.3− | 2006 10 27 | 408 | 0.2+ | 0.9+ |
| 1999 10 10 | 704 | 0.5− | 1.5+ | 2006 10 10 | 644 | 0.4− | 0.5+ | 2006 10 30 | 408 | 1.1+ | 0.3− |
| 1999 10 10 | 704 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 30 | 408 | 0.8+ | 0.1− |
| 1999 10 10 | 704 | 0.7− | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 10 31 | 408 | 1.4+ | 1.2+ |
| 1999 10 20 | 704 | 0.8+ | 1.5− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 31 | 408 | (1.7+ | 1.2+) |
| 1999 10 20 | 704 | 0.4+ | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 1999 10 20 | 704 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 1999 10 20 | 704 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2− | 0.1− |
| 1999 10 20 | 704 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.2+ |
| 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.3− | 0.0 |
| 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.7− | 0.7− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2006 09 30 | 703 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.6− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2006 09 30 | 703 | 0.6− | 0.7− | 2006 10 17 | 703 | 0.6− | 0.8− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2006 09 30 | 703 | 0.2+ | 0.7− | 2006 10 27 | 408 | 0.1+ | 0.6+ | | | | |

**2006 SN$_{279}$ = 1996 VZ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.51331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28934440 | $\omega$ | 44.45051 | | +0.19194981 | +0.97663301 | |
| $a$ | 2.2639109 | $\Omega$ | 236.84508 | | −0.92952214 | +0.14931846 | |
| $e$ | 0.1192073 | $i$ | 6.63001 | | −0.31487118 | +0.15457022 | |
| $P$ | 3.41 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 06 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 27 | 408 | 1.0− | 1.4+ |
| 1996 11 06 | 691 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 27 | 408 | (0.9− | 2.2+) |
| 1996 11 06 | 691 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 1996 11 09 | 691 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 1996 11 09 | 691 | 0.3+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.3− | 0.1− |
| 1996 11 09 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 703 | 0.8− | 0.8+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.6− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 09 30 | 703 | 1.0− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.3− |
| 2006 09 30 | 703 | 0.4+ | 0.6− | 2006 10 17 | 703 | 0.7− | 0.7+ | 2006 11 27 | G96 | 0.0 | 0.4+ |
| 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 10 18 | 408 | (1.3− | 2.0+) | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2006 09 30 | 703 | (1.7− | 0.7−) | 2006 10 18 | 408 | (1.9− | 2.4+) | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2006 10 02 | 691 | 0.2+ | 0.5− | 2006 10 19 | 408 | (2.3+ | 3.6+) | | | | |
| 2006 10 02 | 691 | 0.4− | 0.3+ | 2006 10 19 | 408 | (1.8+ | 3.8+) | | | | |

**2006 SR$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.20063 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23210543 | $\omega$ | 37.75552 | | +0.80408973 | +0.59190771 | |
| $a$ | 2.6222807 | $\Omega$ | 285.86172 | | −0.55854823 | +0.72014945 | |
| $e$ | 0.2763009 | $i$ | 3.31016 | | −0.20362608 | +0.36198071 | |
| $P$ | 4.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 08 13 | 691 | 0.2− | 0.6+ | 2006 08 30 | 699 | (1.9+ | 0.6+) | 2006 10 17 | 703 | 0.2+ | 0.1− |
| 1993 08 13 | 691 | 0.1+ | 0.1+ | 2006 08 30 | 699 | 0.3− | 0.9+ | 2006 10 17 | 703 | 0.4− | 0.2+ |
| 1993 08 13 | 691 | 0.2− | 0.0 | 2006 08 30 | 699 | 1.1− | 1.0+ | 2006 10 20 | 644 | 0.6+ | 0.5+ |
| 2002 11 07 | 291 | 0.2− | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2− |
| 2002 11 07 | 291 | 0.0 | 0.2+ | 2006 09 20 | 699 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4− |
| 2002 11 07 | 291 | 0.3− | 0.3+ | 2006 09 20 | 699 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 11 16 | 644 | 0.2+ | 0.2− | 2006 09 20 | 699 | 0.9+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2002 11 16 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 11 16 | 644 | 0.4+ | 0.5+ | 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 1.2− | 1.0+ |
| 2002 11 24 | 644 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 704 | 1.1− | 0.6+ |
| 2002 11 24 | 644 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.5− | 2006 10 29 | 704 | 0.1+ | 0.7+ |
| 2002 11 24 | 644 | 0.0 | 0.6+ | 2006 09 30 | 703 | 0.3− | 0.6− | 2006 10 29 | 704 | 0.5− | 0.0 |
| 2005 04 10 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.8− | 2006 10 29 | 704 | 0.1− | 0.4− |
| 2005 04 10 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 11 14 | 703 | 0.5− | 0.0 |
| 2005 04 10 | 691 | 0.3+ | 0.5+ | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 11 14 | 703 | 0.6− | 0.2− |
| 2006 08 12 | 644 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.3− | 2006 11 14 | 703 | 0.8+ | 0.2− |
| 2006 08 12 | 644 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 1.5− | 0.2+ |
| 2006 08 12 | 644 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.2+ | 0.2− | | | | |
| 2006 08 30 | 699 | 0.6+ | 0.7− | 2006 10 17 | 703 | 0.2+ | 0.1− | | | | |

**2006 SS$_{279}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.98629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30186821 | $\omega$ | 72.82199 | | +0.93517689 | −0.35071225 | |
| $a$ | 2.2008535 | $\Omega$ | 307.68095 | | +0.29656209 | +0.85169969 | |
| $e$ | 0.1919700 | $i$ | 3.58215 | | +0.19363655 | +0.38936943 | |
| $P$ | 3.27 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 08 | 691 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.3− | 0.5− |
| 1993 11 08 | 691 | 0.8− | 1.5+ | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 14 | 703 | 0.1− | 0.2− |
| 1993 11 08 | 691 | 0.3+ | 0.5− | 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 11 14 | 703 | 0.3− | 0.3− |
| 2005 05 11 | 807 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.3+ | 0.1− |
| 2005 05 11 | 807 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.6− | 0.2− | 2006 11 14 | 703 | 0.0 | 1.4+ |
| 2006 09 20 | 699 | 1.0+ | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 14 | 703 | (0.3+ | 2.5+) |
| 2006 09 20 | 699 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.2− | 1.2− |
| 2006 09 20 | 699 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 14 | 703 | 0.1+ | 0.0 |
| 2006 09 20 | 699 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.6− | 0.6+ |
| 2006 09 23 | 152 | 0.2− | 0.7+ | 2006 10 25 | 106 | 0.3+ | 0.4− | 2006 11 14 | 703 | 0.9+ | 0.5− |
| 2006 09 24 | 152 | 0.1− | 0.3+ | 2006 10 25 | 106 | 0.3− | 0.4+ | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2006 09 24 | 152 | 0.4+ | 0.4+ | 2006 10 25 | 106 | 0.3− | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2006 09 25 | 152 | 0.1− | 0.2− | 2006 10 26 | 106 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2006 09 25 | 152 | 0.3− | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2006 09 25 | 152 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.2− |
| 2006 09 28 | 703 | 0.3− | 0.7− | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.6+ |
| 2006 09 28 | 703 | 0.4− | 0.3− | 2006 10 31 | 703 | 0.0 | 0.7− | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2006 09 28 | 703 | 1.0− | 0.1+ | 2006 10 31 | 703 | 0.4+ | 0.7− | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 2006 09 28 | 703 | 0.9+ | 0.5− | 2006 10 31 | 703 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.6+ | 0.2+ |
| 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 31 | 703 | 0.8− | 1.0− | 2006 11 22 | 704 | 0.3+ | 0.6+ |
| 2006 09 30 | 691 | 0.2+ | 0.4+ | 2006 11 07 | 644 | 0.6+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 1.4− |
| 2006 09 30 | 691 | 0.0 | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.2− | | | | |
| 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 07 | 644 | 0.2+ | 0.2− | | | | |

**2006 SW$_{279}$ = 2005 LO$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.89332 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18529455 | $\omega$ | 79.67639 | | +0.76918660 | +0.62942450 | |
| $a$ | 3.0471532 | $\Omega$ | 241.22372 | | −0.62444286 | +0.70366511 | |
| $e$ | 0.2142347 | $i$ | 7.23249 | | −0.13573169 | +0.32966682 | |
| $P$ | 5.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 06 | 691 | 0.2− | 0.2− | 2005 06 17 | 691 | 0.3− | 0.4− | 2006 10 04 | G96 | 0.2− | 0.2− |
| 2005 06 06 | 691 | 0.2− | 0.4+ | 2006 09 28 | 291 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.4− |
| 2005 06 06 | 691 | 0.2+ | 0.0 | 2006 09 28 | 291 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.4− | 0.2− |
| 2005 06 13 | G96 | 0.4+ | 0.1+ | 2006 09 28 | 291 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2005 06 13 | G96 | 0.5+ | 0.3− | 2006 09 30 | 703 | 0.3− | 1.3+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2005 06 13 | G96 | 0.4+ | 0.1− | 2006 09 30 | 703 | 1.3− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2005 06 13 | G96 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.8+ | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2005 06 17 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 1.3+ | 0.5+ | | | | |
| 2005 06 17 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.4− | | | | |

**2006 SY$_{279}$ = 1999 CW$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.73112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22882833 | $\omega$ | 247.15115 | | +0.85053243 | −0.50705707 | |
| $a$ | 2.6472575 | $\Omega$ | 142.89511 | | +0.52590408 | +0.82222199 | |
| $e$ | 0.2904998 | $i$ | 13.37954 | | −0.00441482 | +0.25854232 | |
| $P$ | 4.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.7− | 0.8− |
| 1999 02 07 | 691 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1− | 0.1− |
| 1999 02 07 | 691 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.1− |
| 1999 02 13 | 691 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.1+ | 0.3− |
| 1999 02 13 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.1− | 0.5− |
| 1999 02 13 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.1− |
| 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 20 | 703 | 0.2+ | 0.0 | 2006 11 01 | 703 | 0.4+ | 0.1+ |
| 2006 09 18 | 703 | 0.2+ | 1.1− | 2006 10 20 | 703 | 0.5− | 0.1+ | 2006 11 01 | 703 | 0.1+ | 0.0 |
| 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 10 20 | 703 | 0.0 | 0.1+ | 2006 11 01 | 703 | 0.1− | 0.7+ |
| 2006 09 18 | 703 | (2.0− | 0.7+) | 2006 10 20 | 703 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.4− | 0.5+ |
| 2006 09 28 | 703 | 0.2+ | 0.4− | 2006 10 20 | 703 | 0.5+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2006 09 28 | 703 | 0.3− | 0.2− | 2006 10 20 | 703 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.2+ | 0.2+ |
| 2006 09 28 | 703 | 0.2− | 0.5− | 2006 10 20 | 703 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2006 09 28 | 703 | 0.3− | 0.0 | 2006 10 20 | 703 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.2− |
| 2006 09 30 | 704 | 0.2+ | 1.2+ | 2006 10 21 | 703 | 0.3− | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.1+ |
| 2006 09 30 | 704 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.0 | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | 704 | 0.0 | 0.8+ | 2006 10 21 | 703 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.2− | 0.0 | |
| 2006 09 30 | 704 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.2+ | 2006 11 23 | 703 | 0.2+ | 0.3+ | |
| 2006 09 30 | 704 | 0.1+ | 0.0 | 2006 10 21 | 703 | (1.9− | 0.7+) | | | | | |

**2006 SB$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 341.87834 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.23708614 | $\omega$ | 272.31731 | | +0.66487374 | | −0.74367539 | |
| $a$ | 2.5854250 | $\Omega$ | 135.74031 | | +0.71895791 | | +0.61175151 | |
| $e$ | 0.2628858 | $i$ | 5.75040 | | +0.20258930 | | +0.26964236 | |
| $P$ | 4.16 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 699 | 0.5+ | 0.9+ | 2006 09 30 | 703 | 0.3− | 1.0+ | 2006 10 22 | 644 | 0.1− | 0.1+ | |
| 2002 11 28 | 699 | 0.8− | 0.5+ | 2006 09 30 | 703 | 0.5− | 1.3− | 2006 10 22 | 644 | 0.0 | 0.4+ | |
| 2002 11 28 | 699 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.8− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ | |
| 2002 11 28 | 699 | 0.7+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.7− | 2006 10 28 | 703 | 0.4− | 1.3+ | |
| 2002 12 05 | 608 | 0.3− | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 10 28 | 703 | 1.1+ | 1.1+ | |
| 2002 12 05 | 608 | 0.1− | 0.9− | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 10 28 | 703 | 0.9+ | 0.0 | |
| 2002 12 05 | 608 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.8+ | 0.4− | 2006 10 28 | 703 | 0.2+ | 1.4+ | |
| 2006 09 29 | 699 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.1+ | 2006 11 16 | 703 | 0.2− | 0.1− | |
| 2006 09 29 | 699 | 0.9− | 0.4+ | 2006 10 22 | 703 | 0.3− | 1.5− | 2006 11 16 | 703 | 0.0 | 0.5− | |
| 2006 09 29 | 699 | 0.6+ | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.7− | 2006 11 16 | 703 | 0.2− | 1.5+ | |
| 2006 09 29 | 699 | 1.1+ | 1.0− | 2006 10 22 | 644 | 0.0 | 0.5+ | 2006 11 16 | 703 | 0.9− | 0.8− | |
| 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | | | | | |
| 2006 09 30 | 703 | 0.9− | 1.0− | 2006 10 22 | 644 | 0.0 | 0.4+ | | | | | |

**2006 SE$_{280}$ = 2004 CR$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 8.49803 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.26711977 | $\omega$ | 265.08758 | | +0.99770135 | | +0.03214849 | |
| $a$ | 2.3878041 | $\Omega$ | 93.06137 | | −0.00604771 | | +0.91903066 | |
| $e$ | 0.2424358 | $i$ | 3.42479 | | −0.06749401 | | +0.39287290 | |
| $P$ | 3.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.1− | 0.4+ | 2006 09 29 | 699 | 1.4+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1+ | |
| 2002 08 29 | 644 | 0.3− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 | |
| 2002 08 29 | 644 | 0.2+ | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.6− | 2006 10 21 | 644 | 0.3− | 0.0 | |
| 2004 02 11 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2− | |
| 2004 02 11 | 691 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.4+ | 0.3+ | 2006 10 22 | 704 | 0.1− | 1.3+ | |
| 2004 02 11 | 691 | 0.4+ | 0.1+ | 2006 10 01 | 704 | 1.1+ | 0.4+ | 2006 10 22 | 704 | 0.3− | 0.9+ | |
| 2004 02 13 | 291 | 0.3− | 0.2+ | 2006 10 01 | 704 | 0.2− | 0.5+ | 2006 10 22 | 704 | 1.1− | 0.2+ | |
| 2004 02 13 | 291 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.5+ | 0.1− | 2006 10 22 | 704 | 0.3+ | 1.0+ | |
| 2004 02 13 | 291 | 0.2− | 0.2− | 2006 10 03 | G96 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.1+ | 1.0− | |
| 2005 04 18 | 691 | 0.1+ | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.7− | 0.2+ | |
| 2005 04 18 | 691 | 0.1+ | 0.4+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.3− | 0.0 | |
| 2005 04 18 | 691 | 0.4+ | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.3+ | |
| 2006 09 20 | 644 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.2− | |
| 2006 09 20 | 644 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.4− | |
| 2006 09 20 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3− | |
| 2006 09 26 | 704 | (0.3+ | 1.6+) | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.3− | |
| 2006 09 26 | 704 | 0.8+ | 0.3− | 2006 10 11 | 644 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.3− | |
| 2006 09 26 | 704 | 1.0+ | 0.2− | 2006 10 16 | 703 | 0.5+ | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.1− | |
| 2006 09 26 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.9+ | 2006 11 09 | 644 | 0.2− | 0.0 | |
| 2006 09 26 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.4− | 0.6+ | |
| 2006 09 29 | 699 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.0 | 0.0 | |
| 2006 09 29 | 699 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.7− | 0.6+ | |
| 2006 09 29 | 699 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.3− | 0.0 | |

**2006 SH$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 335.65783 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.17793101 | $\omega$ | 330.86906 | | +0.47750033 | | −0.87155711 | |
| $a$ | 3.1306532 | $\Omega$ | 90.41134 | | +0.82614269 | | +0.40224337 | |
| $e$ | 0.1324879 | $i$ | 6.38886 | | +0.29913489 | | +0.28033637 | |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 02 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.7− | 2006 10 22 | 703 | 0.2+ | 0.0 | |
| 1997 02 02 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | (1.7+ | 0.7−) | 2006 10 22 | 703 | 0.4− | 0.0 | |
| 1997 02 02 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | (0.8+ | 2.4−) | 2006 11 09 | 644 | 0.1− | 0.4+ | |
| 2003 04 10 | 691 | 0.7− | 0.5+ | 2006 09 30 | 703 | 0.7− | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.1+ | |
| 2003 04 10 | 691 | 0.2− | 0.3+ | 2006 10 15 | D35 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | |
| 2003 04 10 | 691 | 0.5− | 0.3+ | 2006 10 15 | D35 | 0.3− | 0.2− | 2006 11 13 | 703 | 0.4+ | 1.5+ | |
| 2003 04 21 | 291 | 0.0 | 0.4− | 2006 10 15 | D35 | 0.0 | 0.4− | 2006 11 13 | 703 | 0.9+ | 1.1− | |
| 2003 04 21 | 291 | 0.7+ | 0.4− | 2006 10 16 | 703 | 1.0+ | 0.2− | 2006 11 13 | 703 | (0.2+ | 2.4+) | |
| 2003 04 21 | 291 | 0.8+ | 0.4− | 2006 10 16 | 703 | 0.0 | 0.5+ | 2006 11 13 | 703 | (1.7− | 0.9−) | |
| 2006 09 29 | 699 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 1.0− | 2006 11 23 | G96 | (1.4+ | 2.0+) | |
| 2006 09 29 | 699 | 0.4− | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.7+ | 2006 11 23 | G96 | 0.2− | 0.2+ | |
| 2006 09 29 | 699 | 0.6− | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.1− | 0.0 | |
| 2006 09 29 | 699 | 0.4+ | 0.9− | 2006 10 22 | 703 | 1.2− | 0.3− | | | | | |

**2006 SK$_{280}$ = 2005 ML$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 302.18022 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.22208285 | $\omega$ | 306.43376 | | −0.16263734 | | −0.98566908 | |
| $a$ | 2.7005944 | $\Omega$ | 152.82344 | | +0.93374802 | | −0.16841992 | |
| $e$ | 0.1440585 | $i$ | 5.62698 | | +0.31884751 | | −0.00954949 | |
| $P$ | 4.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 1.2+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | |
| 2005 06 29 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 22 | 644 | 0.2− | 0.2− | |
| 2005 06 29 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 13 | 644 | 0.0 | 0.2+ | |
| 2005 07 11 | G96 | 0.0 | 0.7− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.5+ | |
| 2005 07 11 | G96 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 11 13 | 703 | 0.5− | 0.6+ | |
| 2005 07 11 | G96 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.2+ | 2006 11 13 | 703 | 0.1+ | 0.1+ | |
| 2005 07 11 | G96 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.8− | 2006 11 13 | 644 | 0.1+ | 0.6+ | |
| 2006 09 29 | 699 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 13 | 703 | 1.0+ | 0.7− | |
| 2006 09 29 | 699 | 0.7+ | 1.1− | 2006 10 16 | 703 | 0.2+ | 0.5− | 2006 11 13 | 703 | 1.0− | 0.5− | |
| 2006 09 29 | 699 | 0.7− | 0.9+ | 2006 10 22 | 703 | 0.9− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.2− | |
| 2006 09 29 | 699 | 0.9− | 1.1+ | 2006 10 22 | 703 | 0.6− | 0.4− | 2006 11 23 | G96 | 0.0 | 0.1− | |
| 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.6+ | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.3− | |
| 2006 09 30 | 703 | 0.7+ | 0.4+ | 2006 10 22 | 703 | (1.3+ | 1.7−) | 2006 11 23 | G96 | 0.3+ | 0.3− | |
| 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.0 | | | | | |

**2006 SL$_{280}$ = 1999 TL$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 12.23184 | | (2000.0) | | **P** | | **Q** | |
|---|---|---|---|---|---|---|---|---|
| $n$ | 0.28510560 | $\omega$ | 229.11778 | | +0.99797643 | | −0.04910161 | |
| $a$ | 2.2862948 | $\Omega$ | 133.65429 | | +0.06041745 | | +0.93029872 | |
| $e$ | 0.1810711 | $i$ | 3.20087 | | −0.01981842 | | +0.36350148 | |
| $P$ | 3.46 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.9− | 0.1+ | 2006 10 27 | 704 | 0.5+ | 0.4+ | |
| 1999 10 09 | 704 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.4+ | 1.1− | 2006 11 13 | 703 | 0.5+ | 0.0 | |
| 1999 10 09 | 704 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.3− | 0.2− | |
| 1999 10 09 | 704 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.8+ | 2006 11 13 | 703 | 1.0+ | 0.3+ | |
| 1999 10 09 | 704 | 0.6− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 13 | 703 | 0.0 | 0.5− | |
| 1999 10 15 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.1+ | 1.4− | |
| 1999 10 15 | 704 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.4+ | |
| 1999 10 15 | 704 | 0.6+ | 0.8− | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 17 | 704 | 1.2− | 0.5− | |
| 1999 10 15 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.7− | 0.1− | 2006 11 17 | 704 | 0.5− | 0.6+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 29 | 699 | 0.1+ | 0.7+ | 2006 10 22 | 703 | 0.4− | 0.0 | 2006 11 17 | 704 | 0.3− | 1.3− |
| 2006 09 29 | 699 | 0.4+ | 0.4+ | 2006 10 22 | 703 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2006 09 29 | 699 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.4− | 0.6+ |
| 2006 09 29 | 699 | 0.0 | 0.1− | 2006 10 27 | 704 | 0.8− | 0.4− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2006 09 30 | 703 | 0.3− | 0.4− | 2006 10 27 | 704 | 0.9+ | 0.5+ | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2006 09 30 | 703 | 0.5+ | 0.8+ | 2006 10 27 | 704 | 0.1+ | 1.0+ | 2006 11 20 | 704 | 0.9+ | 0.0 |
| 2006 09 30 | 703 | (1.7+ | 1.0−) | 2006 10 27 | 704 | 0.7+ | 0.5+ | | | | |

**2006 SM$_{280}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 24.73942 | | | | | |
| $n$ | 0.12725540 | $\omega$ | 274.96554 | | +0.98113287 | +0.15880479 |
| $a$ | 3.9145805 | $\Omega$ | 75.92851 | | −0.09871072 | +0.90188018 |
| $e$ | 0.2267279 | $i$ | 6.52753 | | −0.16623623 | +0.40173770 |
| $P$ | 7.75 | $H$ | 14.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 20 | 691 | 0.2− | 0.3+ | 2006 09 29 | 699 | 1.3+ | 1.4− | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 1996 05 20 | 691 | 0.2− | 0.1− | 2006 09 29 | 699 | 0.2+ | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 1996 05 20 | 691 | 0.4+ | 0.3− | 2006 09 30 | 703 | 0.4+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2003 05 02 | 691 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.6+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 2003 05 02 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.4− | 2006 11 13 | 703 | 0.2+ | 0.3+ |
| 2003 05 02 | 691 | 0.3+ | 0.5+ | 2006 09 30 | 703 | 0.6+ | 0.3− | 2006 11 13 | 703 | 0.2− | 0.6+ |
| 2005 07 10 | E12 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.2− |
| 2005 07 10 | E12 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.4− | 2006 11 13 | 703 | 0.3− | 0.1− |
| 2005 07 10 | E12 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2005 07 10 | E12 | 0.7− | 0.4− | 2006 10 16 | 703 | 0.3− | 0.6− | 2006 11 20 | 704 | 0.6+ | 0.8+ |
| 2005 08 12 | E12 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.9− | 0.9+ |
| 2005 08 12 | E12 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.2− | 0.7+ |
| 2005 08 12 | E12 | 0.6− | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2005 08 12 | E12 | 0.9+ | 0.7+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 1.3− | 0.4+ |
| 2005 08 24 | E12 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2005 08 24 | E12 | 0.7+ | 0.6+ | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2005 08 24 | E12 | 0.5− | 0.5− | 2006 11 01 | G96 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2005 08 24 | E12 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2006 09 29 | 699 | 0.9− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2006 09 29 | 699 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | | | | |

**2006 SQ$_{280}$ = 2004 FN$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.72137 | | | | | |
| $n$ | 0.22273722 | $\omega$ | 200.08630 | | +0.98137564 | −0.19136831 |
| $a$ | 2.6953026 | $\Omega$ | 170.89770 | | +0.18751714 | +0.93541775 |
| $e$ | 0.0326656 | $i$ | 6.07200 | | +0.04170341 | +0.29727396 |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 09 29 | 699 | 1.2− | 0.9− | 2006 10 16 | 703 | 0.8− | 0.5− |
| 2004 03 17 | 691 | 0.3− | 0.0 | 2006 09 29 | 699 | 0.2+ | 0.6− | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2004 03 17 | 691 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2004 03 18 | 704 | 0.9+ | 0.3+ | 2006 09 30 | 703 | 0.9+ | 0.3− | 2006 10 22 | 703 | 0.3− | 0.3− |
| 2004 03 18 | 704 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.2− | 1.0+ | 2006 10 22 | 703 | 0.5− | 0.0 |
| 2004 03 18 | 704 | 0.0 | 1.0+ | 2006 09 30 | 703 | 1.3− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2004 03 18 | 704 | 1.0+ | 0.4− | 2006 10 16 | 703 | 1.2+ | 1.4+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2006 09 29 | 699 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 09 29 | 699 | 1.2+ | 0.1+ | 2006 10 16 | 703 | (2.5− | 1.7−) | 2006 11 22 | G96 | 0.0 | 0.1+ |

**2006 SS$_{280}$ = 1998 YJ$_{32}$ = 2005 JH$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 40.31537 | | | | | |
| $n$ | 0.22070408 | $\omega$ | 209.83229 | | +0.79234658 | +0.60496548 |
| $a$ | 2.7118301 | $\Omega$ | 112.73075 | | −0.54147265 | +0.75684533 |
| $e$ | 0.2285852 | $i$ | 4.89879 | | −0.28105918 | +0.24739019 |
| $P$ | 4.47 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 691 | 0.1− | 0.4− | 2006 09 30 | 703 | 1.2+ | 1.5− | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 1998 12 16 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 1.1+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 1998 12 16 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.2− |
| 2005 05 08 | 699 | 0.2+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 10 27 | 704 | 0.3− | 0.9+ |
| 2005 05 08 | 699 | 1.2− | 1.1+ | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 10 27 | 704 | 0.8− | 1.0+ |
| 2005 05 08 | 699 | 0.2− | 1.3− | 2006 09 30 | 703 | 0.5− | 0.5− | 2006 10 27 | 704 | 0.6+ | 1.2+ |
| 2005 05 08 | 699 | 1.3+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 10 27 | 704 | 0.3+ | 0.7+ |
| 2005 05 08 | 704 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2005 05 08 | 704 | 0.7− | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2005 05 08 | 704 | 0.1− | 1.5+ | 2006 10 12 | 644 | 0.6+ | 0.1− | 2006 11 13 | 703 | 0.8− | 0.7+ |
| 2005 05 11 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.6− | 2006 11 13 | 703 | 0.7+ | 0.4− |
| 2005 05 11 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4− | 1.1+ | 2006 11 13 | 644 | 0.3− | 0.1− |
| 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.1+ | 1.0− | 2006 11 13 | 703 | 0.4− | 0.7+ |
| 2006 09 29 | 699 | 1.2− | 0.3− | 2006 10 16 | 703 | 0.6+ | 1.3− | 2006 11 13 | 703 | 0.4− | 0.5− |
| 2006 09 29 | 699 | 0.2− | 1.2+ | 2006 10 22 | 703 | 0.4+ | 0.5+ | 2006 11 17 | 704 | 0.6− | 0.8+ |
| 2006 09 29 | 699 | 0.3+ | 0.8− | 2006 10 22 | 703 | 0.0 | 0.9+ | 2006 11 17 | 704 | 2.7− | 1.2− |
| 2006 09 29 | 699 | 0.9+ | 0.3− | 2006 10 22 | 703 | 0.7+ | 0.4− | 2006 11 17 | 704 | 0.1− | 0.1+ |
| 2006 09 30 | 703 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.5+ | 1.3+ |

**2006 SW$_{280}$ = 2004 FV$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.49001 | | | | | |
| $n$ | 0.23390358 | $\omega$ | 194.43662 | | +0.93967317 | −0.34088093 |
| $a$ | 2.6088242 | $\Omega$ | 185.73958 | | +0.33528380 | +0.93435111 |
| $e$ | 0.1594361 | $i$ | 16.58152 | | +0.06781673 | +0.10386622 |
| $P$ | 4.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.1+ |
| 2004 03 16 | 691 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2004 03 16 | 691 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.4− |
| 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.1− | 0.7+ | 2006 10 28 | 703 | 0.1+ | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 704 | (2.0− | 0.6+) | 2006 10 28 | 703 | 0.1+ | 0.7+ |
| 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 10 01 | 704 | 1.4− | 0.1− | 2006 10 28 | 703 | 0.6+ | 0.2+ |
| 2006 09 16 | 703 | (2.0+ | 1.4−) | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 28 | 703 | 1.2− | 0.9− |
| 2006 09 16 | 703 | 0.9+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 10 | 704 | (2.3− | 0.7+) |
| 2006 09 16 | 703 | 1.3+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 11 10 | 704 | (1.7− | 0.4+) |
| 2006 09 16 | 703 | 0.8+ | 0.6+ | 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 11 10 | 704 | 0.8− | 0.2+ |
| 2006 09 29 | 699 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.3+ | 2006 11 16 | 703 | 0.6− | 0.4− |
| 2006 09 29 | 699 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.1+ | 0.2− |
| 2006 09 29 | 699 | 0.9+ | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.7+ | 0.4− |
| 2006 09 29 | 699 | 0.2− | 0.9+ | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.3+ | 0.2− |
| 2006 09 30 | 703 | (1.0+ | 1.6−) | 2006 10 12 | 644 | 0.2+ | 0.2− | | | | |

**2006 SJ$_{281}$ = 2000 YW$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.10196 | | | | | |
| $n$ | 0.16579531 | $\omega$ | 295.06830 | | +0.91265133 | +0.01044881 |
| $a$ | 3.2816170 | $\Omega$ | 66.66207 | | +0.22244312 | +0.82597274 |
| $e$ | 0.3860872 | $i$ | 26.42427 | | −0.34290904 | +0.56361322 |
| $P$ | 5.94 | $H$ | 15.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 26 | 608 | 0.1− | 0.2+ | 2006 09 19 | E12 | 0.0 | 0.2− | 2006 10 02 | E12 | 0.1− | 0.1+ |
| 2000 12 26 | 608 | 0.1+ | 0.2+ | 2006 09 19 | E12 | 0.0 | 0.2+ | 2006 10 02 | E12 | 0.2− | 0.0 |
| 2000 12 26 | 608 | 0.2− | 0.0 | 2006 09 28 | 428 | 0.1+ | 0.5− | 2006 10 02 | E12 | 0.3− | 0.4− |
| 2000 12 27 | 608 | 0.2− | 0.1+ | 2006 09 30 | E12 | 0.1− | 0.1+ | 2006 10 12 | E12 | 0.1− | 0.2− |
| 2000 12 27 | 608 | 0.0 | 0.3− | 2006 09 30 | E12 | 0.1+ | 0.1− | 2006 10 12 | E12 | 0.4+ | 0.1− |
| 2000 12 27 | 608 | 0.3− | 0.7+ | 2006 09 30 | E12 | 0.1+ | 0.1+ | 2006 10 12 | E12 | 0.6− | 0.3+ |
| 2006 08 07 | E12 | 0.3− | 0.5+ | 2006 09 30 | E12 | 0.2− | 0.1− | 2006 10 12 | E12 | 0.0 | 0.1+ |
| 2006 08 07 | E12 | 0.5+ | 0.0 | 2006 09 30 | E12 | 0.0 | 0.1+ | 2006 10 29 | E12 | 0.8+ | 0.3− |
| 2006 08 07 | E12 | 0.2+ | 0.6− | 2006 09 30 | E12 | 0.4− | 0.2+ | 2006 10 29 | E12 | 0.1+ | 0.5+ |
| 2006 08 07 | E12 | 0.4+ | 0.5− | 2006 09 30 | E12 | 0.2+ | 0.0 | 2006 10 29 | E12 | 0.4+ | 0.1+ |
| 2006 09 05 | E12 | 0.3− | 1.0+ | 2006 10 01 | 428 | 1.2− | 0.4− | 2006 10 29 | E12 | 0.1+ | 0.1− |
| 2006 09 05 | E12 | 0.5+ | 0.2− | 2006 10 01 | E12 | 0.9− | 0.0 | 2006 11 11 | E12 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 05 | E12 | 0.9− | 0.9− | 2006 10 01 | E12 | 0.5− | 0.5+ | 2006 11 11 | E12 | 0.6+ | 0.1+ | | |
| 2006 09 05 | E12 | 0.7+ | 0.6+ | 2006 10 01 | E12 | 0.5− | 0.8+ | 2006 11 11 | E12 | 0.4− | 0.0 | | |
| 2006 09 05 | E12 | 0.4+ | 0.3− | 2006 10 02 | E12 | 0.1− | 0.3+ | 2006 11 16 | E12 | 0.3+ | 0.2− | | |
| 2006 09 05 | E12 | 0.0 | 0.3+ | 2006 10 02 | E12 | 0.2− | 0.1+ | 2006 11 16 | E12 | 0.7+ | 0.2− | | |
| 2006 09 05 | E12 | 0.8− | 0.2+ | 2006 10 02 | E12 | 0.3+ | 0.2− | 2006 11 16 | E12 | 0.1+ | 0.4− | | |
| 2006 09 19 | E12 | 0.0 | 0.5− | 2006 10 02 | 428 | 0.5+ | 0.1+ | 2006 11 16 | E12 | 0.1+ | 0.6− | | |
| 2006 09 19 | E12 | 0.6+ | 0.1− | 2006 10 02 | 428 | 0.6+ | 0.1− | | | | | | |

**2006 SO$_{281}$ = 2001 QC$_{113}$ = 2004 FD$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 132.78374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20485811 | $\omega$ | 22.24727 | | −0.61376869 | +0.78189731 | |
| $a$ | 2.8499284 | $\Omega$ | 210.21892 | | −0.75308271 | −0.62135717 | |
| $e$ | 0.0643788 | $i$ | 12.53086 | | −0.23696926 | −0.05051604 | |
| $P$ | 4.81 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | (2.4+ | 0.1−) | 2004 03 16 | 704 | 0.5− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.3− | | |
| 2001 08 24 | 699 | 0.0 | 0.8− | 2004 03 27 | 691 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.0 | | |
| 2001 08 24 | 699 | (1.7− | 1.0+) | 2004 03 27 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.4− | | |
| 2001 08 24 | 699 | 1.0− | 1.3+ | 2004 03 27 | 691 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.6− | 0.0 | | |
| 2001 08 25 | 704 | 0.0 | 0.1+ | 2006 09 16 | 703 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.6− | 0.9+ | | |
| 2001 08 25 | 704 | 0.3− | 0.2+ | 2006 09 16 | 703 | 0.2+ | 0.3− | 2006 10 17 | 703 | (2.1+ | 1.8−) | | |
| 2001 08 25 | 704 | 0.4− | 0.2+ | 2006 09 16 | 703 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.0 | 1.3− | | |
| 2001 08 26 | 704 | 0.5+ | 0.3− | 2006 09 16 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− | | |
| 2001 08 26 | 704 | 0.8+ | 0.7− | 2006 09 29 | 704 | 1.1+ | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.2− | | |
| 2001 08 26 | 704 | 0.3+ | 0.2− | 2006 09 29 | 704 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.7+ | | |
| 2001 09 15 | 644 | 0.0 | 0.2+ | 2006 09 29 | 704 | 0.6+ | 0.9+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2001 09 15 | 644 | 0.0 | 0.3+ | 2006 09 29 | 704 | 0.8+ | 1.2+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | | |
| 2001 09 15 | 644 | 0.2− | 0.4+ | 2006 09 30 | 703 | 1.0− | 1.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ | | |
| 2004 03 16 | 704 | 1.1+ | 0.2− | 2006 09 30 | 703 | 1.0− | 1.4− | 2006 11 15 | G96 | 0.2− | 0.1+ | | |
| 2004 03 16 | 704 | 0.6+ | 0.5− | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.0 | 0.0 | | |
| 2004 03 16 | 704 | 0.7+ | 0.7− | 2006 09 30 | 703 | (0.0 | 1.7−) | 2006 11 15 | G96 | 0.2+ | 0.1+ | | |
| 2004 03 16 | 704 | 0.2− | 0.5− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.0 | | |

**2006 SP$_{281}$ = 2002 TU$_{110}$ = 2004 FR$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.29215 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23852797 | $\omega$ | 151.29935 | | +0.08140936 | −0.99079250 | |
| $a$ | 2.5749957 | $\Omega$ | 293.85380 | | +0.89035529 | +0.12107484 | |
| $e$ | 0.1302946 | $i$ | 6.79301 | | +0.44792854 | −0.06058968 | |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 599 | 0.7− | 0.3− | 2006 08 25 | D35 | 0.3− | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.5− | | |
| 2002 10 02 | 599 | 0.3+ | 0.5+ | 2006 08 25 | D35 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.8− | 0.0 | | |
| 2002 10 02 | 599 | 0.6− | 0.0 | 2006 08 25 | D35 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 02 | 599 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.6− | 2006 10 19 | 691 | 0.2+ | 0.2+ | | |
| 2002 10 05 | 704 | 0.4− | 0.1− | 2006 09 17 | 703 | 0.5− | 0.4− | 2006 10 19 | 691 | 0.0 | 0.4+ | | |
| 2002 10 05 | 704 | 0.1+ | 0.0 | 2006 09 17 | 703 | 0.6+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1− | | |
| 2002 10 05 | 704 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.6− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2002 10 05 | 704 | 0.3+ | 0.1− | 2006 09 27 | 703 | (1.8− | 2.7−) | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 2002 10 05 | 704 | 0.5− | 0.2+ | 2006 09 27 | 703 | (0.3+ | 1.9−) | 2006 10 21 | 691 | 0.6+ | 0.6− | | |
| 2002 11 22 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 703 | 0.1− | 0.3+ | 2006 10 23 | 291 | 0.2+ | 0.1+ | | |
| 2002 11 22 | 644 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.1− | 0.3+ | 2006 10 23 | 291 | 0.3+ | 0.1+ | | |
| 2002 11 22 | 644 | 0.1+ | 0.4+ | 2006 09 29 | 699 | 0.1+ | 1.1− | 2006 10 23 | 291 | 0.2+ | 0.1+ | | |
| 2004 03 16 | 691 | 0.2+ | 0.1− | 2006 09 29 | 699 | 1.2− | 0.4+ | 2006 10 23 | 703 | 0.6− | 1.0− | | |
| 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.3+ | 1.4− | 2006 10 23 | 703 | 0.2+ | 0.5+ | | |
| 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 09 29 | 699 | 0.1− | 1.3+ | 2006 10 23 | 703 | 0.4+ | 0.9− | | |
| 2004 03 27 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 703 | 0.0 | 0.7− | | |
| 2004 03 27 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.5+ | | | | | | |
| 2004 03 27 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.4− | | | | | | |

**2006 SR$_{281}$ = 2004 GE$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.99917 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18162642 | $\omega$ | 298.59323 | | −0.26086691 | −0.96439195 | |
| $a$ | 3.0880432 | $\Omega$ | 166.31766 | | +0.93751155 | −0.26383988 | |
| $e$ | 0.0241066 | $i$ | 10.60949 | | +0.23026193 | −0.01834876 | |
| $P$ | 5.43 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 11 | 644 | 0.1− | 0.2+ | 2006 09 18 | 703 | 1.4+ | 0.8+ | 2006 10 16 | 703 | 1.1− | 0.2− | | |
| 2004 04 11 | 644 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.6− | 0.8− | 2006 10 16 | 703 | 0.0 | 0.2− | | |
| 2004 04 11 | 644 | 0.2− | 0.1− | 2006 09 18 | 699 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.5+ | 0.0 | | |
| 2004 04 13 | 691 | 0.1− | 0.1− | 2006 09 18 | 699 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.4+ | | |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 09 18 | 699 | 0.4+ | 0.6− | 2006 10 20 | 644 | 0.2− | 0.0 | | |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 09 26 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.4+ | | |
| 2006 08 23 | 644 | 0.1− | 0.4− | 2006 09 26 | 704 | 0.5+ | 0.9+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2006 08 23 | 644 | 0.6− | 0.1+ | 2006 09 26 | 704 | 0.5+ | 0.5+ | 2006 10 22 | 703 | 0.2+ | 0.0 | | |
| 2006 08 23 | 644 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.4− | 0.8− | 2006 10 22 | 703 | 0.7− | 0.6− | | |
| 2006 09 18 | 703 | 0.9− | 0.2− | 2006 09 30 | 703 | 0.4+ | 1.1− | 2006 10 22 | 703 | (1.7− | 0.7−) | | |
| 2006 09 18 | 703 | 0.6− | 0.2+ | 2006 09 30 | 703 | 1.2+ | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.6+ | | |
| 2006 09 18 | 703 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.4− | | | | | | |

**2006 SS$_{281}$ = 2001 XM$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.94972 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17891716 | $\omega$ | 254.34592 | | +0.37320967 | −0.92724872 | |
| $a$ | 3.1191389 | $\Omega$ | 173.49310 | | +0.92028639 | +0.36586192 | |
| $e$ | 0.1121100 | $i$ | 15.56249 | | +0.11742023 | +0.07971746 | |
| $P$ | 5.51 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 704 | 0.3− | 0.1− | 2006 09 18 | 703 | 0.7− | 1.2+ | 2006 09 30 | 703 | 0.4+ | 0.1+ | | |
| 2001 12 07 | 704 | 0.3− | 0.5− | 2006 09 18 | 703 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.9+ | 0.2+ | | |
| 2001 12 07 | 704 | 0.5− | 0.1− | 2006 09 26 | 704 | 0.6+ | 0.1− | 2006 10 16 | 703 | 1.2− | 0.3− | | |
| 2001 12 07 | 704 | 0.4+ | 1.0− | 2006 09 26 | 704 | 0.0 | 1.3− | 2006 10 16 | 703 | 0.8− | 0.9+ | | |
| 2001 12 09 | 704 | 0.0 | 0.7+ | 2006 09 26 | 704 | 1.3+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.2− | | |
| 2001 12 09 | 704 | 0.6+ | 0.2− | 2006 09 26 | 704 | (2.4+ | 0.1+) | 2006 10 22 | 703 | 0.4+ | 0.3− | | |
| 2001 12 09 | 704 | 0.1+ | 0.9+ | 2006 09 30 | 703 | 0.7+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.5+ | | |
| 2006 09 18 | 703 | 0.7− | 0.1+ | 2006 09 30 | 703 | 0.3− | 1.9− | 2006 10 22 | 703 | 0.7− | 0.1− | | |
| 2006 09 18 | 703 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.5+ | | |

**2006 SW$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.50111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22345385 | $\omega$ | 213.40391 | | +0.98801545 | −0.09844500 | |
| $a$ | 2.6895368 | $\Omega$ | 151.52235 | | +0.11936710 | +0.97562612 | |
| $e$ | 0.2686988 | $i$ | 14.43814 | | −0.09786192 | +0.19611799 | |
| $P$ | 4.41 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.1− | 0.3− | 2006 09 26 | 703 | 0.6− | 0.7− | 2006 10 28 | 703 | 0.4− | 0.3− | | |
| 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 704 | 0.1+ | 1.2+ | 2006 10 28 | 703 | 0.2+ | 0.5− | | |
| 2004 03 26 | 691 | 0.1− | 0.6+ | 2006 09 30 | 704 | 1.1+ | 1.0+ | 2006 10 28 | 703 | 0.6+ | 0.2− | | |
| 2005 05 06 | 691 | 0.1− | 0.3+ | 2006 09 30 | 704 | 0.9+ | 0.6− | 2006 10 28 | 703 | 1.0+ | 1.3− | | |
| 2005 05 06 | 691 | 0.1+ | 0.2− | 2006 10 20 | 703 | 0.3− | 0.1− | 2006 11 07 | 644 | 0.2+ | 0.1+ | | |
| 2005 05 06 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 703 | 0.3− | 0.4+ | 2006 11 07 | 644 | 0.2+ | 0.4− | | |
| 2005 06 25 | 644 | 0.5− | 0.3+ | 2006 10 20 | 703 | 0.8− | 0.4− | 2006 11 07 | 644 | 0.1+ | 0.3− | | |
| 2005 06 25 | 644 | 0.4+ | 0.1+ | 2006 10 20 | 703 | 0.9− | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.8+ | | |
| 2005 06 25 | 644 | 0.1− | 0.8+ | 2006 10 20 | 703 | 0.5− | 0.2− | 2006 11 17 | 703 | 1.1+ | 0.1− | | |
| 2006 09 19 | 703 | 0.6− | 0.5+ | 2006 10 20 | 703 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.2+ | 0.6+ | | |
| 2006 09 19 | 703 | 0.5− | 0.2+ | 2006 10 20 | 703 | 0.0 | 1.3+ | 2006 11 17 | 703 | 0.2+ | 0.7+ | | |
| 2006 09 19 | 703 | 0.1+ | 1.0+ | 2006 10 20 | 703 | 0.1+ | 0.6+ | 2006 11 23 | 703 | 0.3+ | 0.1+ | | |
| 2006 09 19 | 703 | 1.4− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.0 | 2006 11 23 | 703 | 0.1− | 0.2− | | |
| 2006 09 26 | 703 | 0.5− | 0.6− | 2006 10 21 | 703 | 0.9− | 0.2+ | 2006 11 23 | 703 | 0.6+ | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 26 | 703 | 0.7− | 0.3− | 2006 10 21 | 703 | 0.8− | 0.2+ | 2006 11 23 | 703 | 0.2+ | 0.0 | | |
| 2006 09 26 | 703 | 0.7+ | 0.4− | 2006 10 21 | 703 | (1.8− | 0.1+) | | | | | | |

**2006 SP$_{282}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.50506 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18547567 | $\omega$ | 261.58866 | | +0.28070373 | −0.95950255 | |
| $a$ | 3.0451691 | $\Omega$ | 171.98951 | | +0.93383283 | +0.26733069 | |
| $e$ | 0.0838812 | $i$ | 9.77947 | | +0.22172429 | +0.08882099 | |
| $P$ | 5.31 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.9− | 0.7− | 2006 09 25 | 699 | 1.5− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.1+ | | |
| 1993 04 19 | 691 | 0.4− | 0.5− | 2006 09 25 | 699 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.3− | | |
| 2001 11 19 | 699 | 1.2− | 1.1+ | 2006 09 25 | 699 | (2.2+ | 0.0 ) | 2006 10 16 | 703 | 0.4+ | 0.4− | | |
| 2001 11 19 | 699 | 0.9+ | 0.6+ | 2006 09 29 | 699 | 0.8− | 1.1− | 2006 10 16 | 703 | 0.3− | 0.9− | | |
| 2001 11 19 | 699 | 1.7+ | 0.3− | 2006 09 29 | 699 | 0.1+ | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.0 | | |
| 2001 11 19 | 699 | 0.2− | 1.1+ | 2006 09 29 | 699 | 0.8+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2003 02 22 | 644 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ | | |
| 2003 02 22 | 644 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2003 02 22 | 644 | 0.4+ | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.7− | 2006 10 22 | 703 | 0.2− | 0.3− | | |
| 2005 06 15 | 691 | 0.7+ | 0.6+ | 2006 10 04 | G96 | 0.7− | 0.5− | 2006 10 22 | 703 | 0.6− | 0.2+ | | |
| 2005 06 15 | 691 | 0.4− | 1.6+ | 2006 10 04 | G96 | 0.3+ | 0.6− | 2006 10 22 | 703 | 0.6+ | 0.8+ | | |
| 2005 06 15 | 691 | 0.9+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.2+ | | |
| 2006 09 25 | 699 | 0.5− | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.1+ | | | | | | |

**2006 SR$_{282}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.97831 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22325799 | $\omega$ | 347.09806 | | +0.67711418 | −0.73187207 | |
| $a$ | 2.6911096 | $\Omega$ | 60.22437 | | +0.68275851 | +0.58594558 | |
| $e$ | 0.1552554 | $i$ | 5.06824 | | +0.27451265 | +0.34789517 | |
| $P$ | 4.41 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 28 | 691 | 0.2− | 0.1+ | 2006 09 29 | 699 | 0.7− | 0.7− | 2006 10 16 | 703 | 1.0− | 0.7+ | | |
| 2004 03 28 | 691 | 0.2− | 0.2− | 2006 09 29 | 699 | (0.7+ | 2.8−) | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2004 03 28 | 691 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 2006 09 25 | 699 | 0.9+ | 1.2+ | 2006 10 04 | G96 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.5− | 0.2− | | |
| 2006 09 25 | 699 | 0.8+ | 1.1+ | 2006 10 04 | G96 | 0.1− | 0.7− | 2006 11 23 | G96 | 0.5+ | 0.3+ | | |
| 2006 09 25 | 699 | 0.3+ | 1.0+ | 2006 10 04 | G96 | 0.2+ | 0.6− | 2006 11 23 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 25 | 699 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 1.2− | 2006 11 23 | G96 | 0.6+ | 0.3+ | | |
| 2006 09 29 | 699 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.1− | | | | | | |
| 2006 09 29 | 699 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.2+ | | | | | | |

**2006 ST$_{282}$ = 2004 BM$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.43284 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24259211 | $\omega$ | 132.39777 | | +0.38543083 | +0.91847884 | |
| $a$ | 2.5461556 | $\Omega$ | 159.74573 | | −0.90379986 | +0.39511904 | |
| $e$ | 0.0949093 | $i$ | 14.81884 | | −0.18598090 | −0.01666017 | |
| $P$ | 4.06 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 24 | 691 | 0.1+ | 0.2+ | 2005 04 13 | 703 | 0.7+ | 0.1+ | 2006 09 29 | 699 | (1.4− | 1.5+) | | |
| 1996 01 24 | 691 | 0.1− | 0.1− | 2005 04 13 | 703 | 0.8− | 0.1+ | 2006 09 29 | 699 | 0.3− | 0.4− | | |
| 1996 01 24 | 691 | 0.8− | 0.1+ | 2005 04 13 | 703 | 0.2− | 1.0+ | 2006 09 29 | 699 | 0.9− | 0.8− | | |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2005 05 04 | 703 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.4+ | 0.6+ | | |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2005 05 04 | 703 | 0.8− | 0.0 | 2006 10 02 | 703 | 0.2− | 0.1+ | | |
| 2001 06 16 | 645 | 0.0 | 0.0 | 2005 05 04 | 703 | 1.2− | 0.4− | 2006 10 02 | 703 | 0.3+ | 0.8+ | | |
| 2001 06 16 | 645 | 0.1+ | 0.0 | 2005 05 04 | 703 | 0.3− | 0.3+ | 2006 10 02 | 703 | 0.8− | 0.5− | | |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2005 07 01 | 644 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.2+ | 1.0+ | | |
| 2002 09 05 | 645 | 0.1− | 0.0 | 2005 07 01 | 644 | 0.6+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.5− | | |
| 2004 01 18 | 735 | 0.3+ | 0.1+ | 2005 07 01 | 644 | 0.7+ | 0.4+ | 2006 10 21 | 703 | 0.5− | 0.8− | | |
| 2004 01 18 | 735 | 1.0+ | 0.2− | 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.8− | 0.3+ | | |
| 2004 01 18 | 735 | 1.4+ | 0.0 | 2006 09 25 | 699 | 1.4+ | 0.8+ | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2004 01 20 | 735 | 0.2+ | 0.0 | 2006 09 25 | 699 | 0.2− | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.1+ | | |
| 2004 01 20 | 735 | 0.6+ | 0.3+ | 2006 09 25 | 699 | 0.9− | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.5+ | | |
| 2005 04 13 | 703 | 0.2− | 0.8− | 2006 09 29 | 699 | 1.3+ | 0.4+ | | | | | | |

**2006 SX$_{282}$ = 2004 EK$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.31201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21338528 | $\omega$ | 309.01274 | | +0.83247421 | −0.55149049 | |
| $a$ | 2.7734888 | $\Omega$ | 84.51844 | | +0.52346750 | +0.75130331 | |
| $e$ | 0.1118077 | $i$ | 3.07154 | | +0.18157218 | +0.36249355 | |
| $P$ | 4.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2+ | 0.0 | 2006 09 25 | 941 | 0.0 | 0.1− | 2006 10 11 | 941 | 0.0 | 0.4+ | | |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2006 09 25 | 941 | 0.4− | 0.1+ | 2006 10 11 | 941 | 0.2+ | 0.3+ | | |
| 2004 03 15 | 691 | 0.5+ | 0.3− | 2006 09 25 | 941 | 0.6− | 0.1− | 2006 10 11 | 941 | 0.2+ | 0.2+ | | |
| 2004 03 23 | 691 | 0.4− | 0.3+ | 2006 09 30 | 941 | 0.1− | 0.0 | 2006 10 11 | 941 | 0.4+ | 0.3+ | | |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 30 | 941 | 0.0 | 0.0 | 2006 10 12 | 941 | 0.1+ | 0.0 | | |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 30 | 941 | 0.2− | 0.0 | 2006 10 12 | 941 | 0.1+ | 0.0 | | |
| 2006 09 25 | 941 | 0.2+ | 0.2− | 2006 09 30 | 941 | 0.2− | 0.0 | 2006 10 12 | 941 | 0.2+ | 0.5− | | |
| 2006 09 25 | 941 | 0.3+ | 0.5− | 2006 09 30 | 941 | 0.2− | 0.0 | | | | | | |
| 2006 09 25 | 941 | 0.0 | 0.1+ | 2006 09 30 | 941 | 0.0 | 0.1− | | | | | | |

**2006 SZ$_{282}$ = 2004 CV$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.90045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26562382 | $\omega$ | 343.26071 | | +0.84041632 | −0.53891241 | |
| $a$ | 2.3967609 | $\Omega$ | 49.48947 | | +0.50544561 | +0.74135088 | |
| $e$ | 0.1857081 | $i$ | 4.31602 | | +0.19551252 | +0.39996535 | |
| $P$ | 3.71 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.2− | 0.1− | 2006 09 26 | 704 | 0.7− | 1.4− | 2006 10 03 | G96 | 0.1+ | 0.3+ | | |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 09 26 | 704 | 1.3+ | 1.1+ | 2006 10 03 | G96 | 0.2− | 0.2+ | | |
| 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.5− | 0.6+ | 2006 11 17 | G96 | (2.2+ | 1.2+) | | |
| 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 11 17 | G96 | (2.1+ | 1.5+) | | |
| 2004 02 18 | 691 | 0.1− | 0.2− | 2006 09 30 | 703 | 0.3− | 0.4− | 2006 11 17 | G96 | (1.4+ | 2.3+) | | |
| 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.7− | 0.9− | 2006 11 17 | G96 | (1.8+ | 1.5+) | | |
| 2006 09 26 | 704 | 0.5− | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.1+ | | | | | | |
| 2006 09 26 | 704 | 1.3+ | 0.4− | 2006 10 03 | G96 | 0.6+ | 0.1− | | | | | | |

**2006 SE$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.87553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28901960 | $\omega$ | 199.15249 | | +0.99918799 | −0.02318577 | |
| $a$ | 2.2656067 | $\Omega$ | 162.08028 | | +0.03206792 | +0.95276861 | |
| $e$ | 0.1295600 | $i$ | 6.14782 | | −0.02439267 | +0.30281081 | |
| $P$ | 3.41 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 12 | 691 | 0.0 | 0.4+ | 2006 09 26 | 704 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.0 | | |
| 1996 12 12 | 691 | 0.1− | 0.2− | 2006 09 28 | 699 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.9− | 0.2− | | |
| 1996 12 12 | 691 | 0.3− | 0.0 | 2006 09 28 | 699 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.1− | | |
| 1998 03 25 | 691 | 0.1+ | 0.8− | 2006 09 28 | 699 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.4− | 0.1− | | |
| 1998 03 25 | 691 | 1.0+ | 0.6− | 2006 09 28 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 1.1+ | 0.2− | | |
| 1998 03 25 | 691 | 0.8− | 0.1+ | 2006 09 30 | 703 | 1.0+ | 0.8− | 2006 10 19 | 644 | 0.3+ | 0.1− | | |
| 2005 05 13 | 691 | 0.3− | 0.5+ | 2006 09 30 | 703 | 0.2+ | 1.3− | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2005 05 13 | 691 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.2+ | 0.6− | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 2005 05 13 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2− | | |
| 2006 07 21 | G96 | 0.2− | 0.4− | 2006 10 01 | 704 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.3+ | 0.1− | | |
| 2006 07 21 | G96 | 0.3− | 0.4− | 2006 10 01 | 704 | 0.5− | 0.2+ | 2006 10 22 | 703 | 0.9+ | 0.3− | | |
| 2006 07 21 | G96 | 0.5− | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.4+ | | |
| 2006 09 26 | 704 | 0.7+ | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.1− | 1.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 26 | 704 | (0.3− | 1.7+) | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3− | 0.0 | | |
| 2006 09 26 | 704 | 0.5− | 0.7+ | 2006 10 12 | 644 | 0.0 | 0.1− | | | | | | |
| 2006 09 26 | 704 | 0.1− | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.0 | | | | | | |

**2006 SG$_{283}$ = 1999 VN$_{100}$ = 2006 SH$_{369}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.89523 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27500489 | $\omega$ | 319.69822 | | +0.98496952 | −0.16789373 | |
| $a$ | 2.3419400 | $\Omega$ | 50.01483 | | +0.16895357 | +0.88763225 | |
| $e$ | 0.2056764 | $i$ | 3.03591 | | +0.03591285 | +0.42885975 | |
| $P$ | 3.58 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2+ | 0.3+ | 2006 09 18 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | (2.1+ | 1.7+) | | |
| 1999 11 09 | 704 | 0.3− | 1.0− | 2006 09 18 | 699 | 0.7− | 0.2− | 2006 10 17 | 703 | (1.8+ | 1.4+) | | |
| 1999 11 09 | 704 | 0.8− | 0.7− | 2006 09 26 | 704 | 0.7− | 0.6+ | 2006 10 17 | 703 | (1.5+ | 2.3+) | | |
| 1999 11 09 | 704 | 0.3+ | 0.9− | 2006 09 26 | 704 | 0.7− | 0.1+ | 2006 10 17 | 703 | (1.8+ | 0.4+) | | |
| 1999 11 12 | 704 | 0.4+ | 1.2+ | 2006 09 26 | 704 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.2+ | 0.7− | | |
| 1999 11 12 | 704 | 0.3− | 0.3+ | 2006 09 26 | 704 | 1.1− | 0.5− | 2006 10 19 | 644 | 0.5+ | 0.1+ | | |
| 1999 11 12 | 704 | 0.4+ | 0.8+ | 2006 09 28 | 704 | 0.6+ | 0.1− | 2006 10 19 | 644 | 0.4− | 0.4+ | | |
| 2006 09 18 | 703 | 1.2+ | 0.7+ | 2006 09 28 | 704 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.2− | 0.1− | | |
| 2006 09 18 | 703 | 0.4+ | 1.2− | 2006 09 28 | 704 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.1+ | | |
| 2006 09 18 | 703 | 1.1+ | 0.5+ | 2006 09 30 | 704 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.2+ | | |
| 2006 09 18 | 703 | (1.8+ | 0.3−) | 2006 09 30 | 704 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.3− | | |
| 2006 09 18 | 699 | 0.3+ | 0.7+ | 2006 09 30 | 704 | (0.3− | 1.5−) | | | | | | |
| 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 09 30 | 704 | (0.5− | 2.5−) | | | | | | |

**2006 SP$_{283}$ = 1992 SG$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.58625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28505856 | $\omega$ | 188.73070 | | +0.96551923 | +0.25698892 | |
| $a$ | 2.2865462 | $\Omega$ | 156.25164 | | −0.23218168 | +0.92230785 | |
| $e$ | 0.1913208 | $i$ | 5.92695 | | −0.11774673 | +0.28862593 | |
| $P$ | 3.46 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 22 | 809 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.6+ | 0.9− | | |
| 1992 09 22 | 809 | 0.6− | 1.7− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.3− | | |
| 1992 09 22 | 809 | (2.6− | 3.4−) | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.4+ | | |
| 1992 09 23 | 809 | 0.6+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 17 | 644 | 0.0 | 0.3− | | |
| 1992 09 23 | 809 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.5+ | 0.2− | | |
| 1992 09 23 | 809 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.6+ | 0.0 | | |
| 2006 09 26 | 704 | 0.6+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 703 | 0.1+ | 0.8+ | | |
| 2006 09 26 | 704 | 0.6− | 0.2+ | 2006 10 16 | 703 | 1.1+ | 0.4+ | 2006 11 19 | 703 | 0.4− | 0.3− | | |
| 2006 09 26 | 704 | 0.7− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.3− | 2006 11 19 | 703 | 0.8− | 1.4− | | |
| 2006 09 30 | 703 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.2+ | | |
| 2006 09 30 | 703 | 1.0+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.0 | | | | | | |
| 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.0 | | | | | | |

**2006 SJ$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.38439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23498005 | $\omega$ | 93.97794 | | +0.98916912 | −0.10259603 | |
| $a$ | 2.6008505 | $\Omega$ | 271.93283 | | +0.05263367 | +0.91551437 | |
| $e$ | 0.1013752 | $i$ | 6.02883 | | +0.13701881 | +0.38898264 | |
| $P$ | 4.19 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.1− | 2004 02 18 | 691 | 0.0 | 0.1− | 2006 09 27 | 703 | 0.0 | 0.3− | | |
| 2000 02 12 | 645 | 0.1+ | 0.0 | 2006 08 25 | D35 | 0.6+ | 0.6+ | 2006 09 27 | 703 | 0.6− | 0.0 | | |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2006 08 25 | D35 | 0.6+ | 0.2+ | 2006 09 29 | 699 | (2.0− | 1.4−) | | |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2006 08 25 | D35 | 0.3+ | 0.6+ | 2006 09 29 | 699 | 0.2− | 0.1+ | | |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 09 29 | 699 | 0.2+ | 0.5+ | | |
| 2002 10 05 | 704 | 0.5− | 0.8− | 2006 09 06 | 644 | 0.3− | 0.1− | 2006 09 29 | 699 | 1.1+ | 0.8− | | |
| 2002 10 05 | 704 | 0.4− | 0.9− | 2006 09 06 | 644 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.0 | | |
| 2002 10 05 | 704 | 0.1− | 0.1− | 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.0 | | |
| 2002 10 30 | 608 | 0.3− | 0.6− | 2006 09 06 | 644 | 0.4− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.3+ | | |
| 2002 10 30 | 608 | 0.1+ | 0.4− | 2006 09 06 | 644 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 30 | 608 | 0.1− | 0.8− | 2006 09 17 | 703 | 0.3+ | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.3+ | | |
| 2002 10 31 | 644 | 0.4+ | 1.1+ | 2006 09 17 | 703 | 0.4− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | | |
| 2002 10 31 | 644 | 0.2+ | 1.1+ | 2006 09 17 | 703 | 0.9− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1− | | |
| 2002 10 31 | 644 | 0.5+ | 1.2+ | 2006 09 17 | 703 | 0.9− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3− | | |
| 2004 02 18 | 691 | 0.0 | 0.2+ | 2006 09 27 | 703 | 1.0+ | 1.2− | 2006 10 19 | 691 | 0.0 | 0.1+ | | |
| 2004 02 18 | 691 | 0.0 | 0.1+ | 2006 09 27 | 703 | 1.0− | 0.0 | | | | | | |

**2006 SK$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.49900 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26241617 | $\omega$ | 64.16729 | | +0.54343271 | +0.83506114 | |
| $a$ | 2.4162525 | $\Omega$ | 239.01487 | | −0.80155317 | +0.48583489 | |
| $e$ | 0.1830857 | $i$ | 5.74079 | | −0.24938607 | +0.25814211 | |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 644 | 0.3+ | 0.4+ | 2002 08 25 | 644 | 0.0 | 0.3+ | 2006 09 27 | 703 | 0.4+ | 1.0− | | |
| 2002 07 12 | 644 | 0.2− | 0.0 | 2002 09 04 | 644 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.7+ | 0.9− | | |
| 2002 07 12 | 644 | 0.2+ | 0.1+ | 2002 09 04 | 644 | 0.6+ | 0.0 | 2006 09 30 | 703 | 0.5+ | 0.1− | | |
| 2002 08 05 | 644 | 0.0 | 0.1− | 2002 09 04 | 644 | 0.4+ | 0.0 | 2006 09 30 | 703 | 0.8− | 0.1+ | | |
| 2002 08 05 | 644 | 0.2− | 0.1− | 2006 09 16 | 703 | 0.8− | 0.6+ | 2006 09 30 | 703 | 1.0+ | 0.5+ | | |
| 2002 08 05 | 644 | 0.2− | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | | |
| 2002 08 17 | 644 | 0.0 | 0.3− | 2006 09 16 | 703 | 0.6+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ | | |
| 2002 08 17 | 644 | 0.2− | 0.1− | 2006 09 16 | 703 | 1.0− | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.0 | | |
| 2002 08 17 | 644 | 0.5− | 0.2− | 2006 09 27 | 703 | 0.3+ | 0.6− | 2006 10 12 | 644 | 0.3− | 0.1− | | |
| 2002 08 25 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.7− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.0 | | |
| 2002 08 25 | 644 | 0.4− | 0.3+ | 2006 09 27 | 703 | 0.3+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.4+ | | |

**2006 SL$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.37650 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31270830 | $\omega$ | 157.65924 | | +0.88868062 | +0.45851229 | |
| $a$ | 2.1496930 | $\Omega$ | 175.04504 | | −0.42680019 | +0.83006379 | |
| $e$ | 0.1280825 | $i$ | 2.41323 | | −0.16759579 | +0.31742806 | |
| $P$ | 3.15 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 23 | 691 | (1.5+ | 2.6+) | 2006 09 27 | 704 | 0.7+ | 1.5+ | 2006 10 21 | 703 | 0.1+ | 0.2− | | |
| 1999 05 23 | 691 | 0.1− | 0.3+ | 2006 09 27 | 704 | 0.7+ | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.0 | | |
| 1999 05 23 | 691 | 0.1+ | 0.2− | 2006 09 27 | 704 | 0.7+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2003 11 19 | 691 | 0.1+ | 0.4+ | 2006 09 28 | 683 | 0.8− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 2003 11 19 | 691 | 0.2− | 0.2+ | 2006 09 28 | 683 | (1.0+ | 1.8+) | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2003 11 19 | 699 | 0.3− | 0.3+ | 2006 09 28 | 683 | (0.1− | 1.9+) | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 2003 11 19 | 699 | 0.0 | 0.8− | 2006 09 30 | 703 | (2.2− | 0.3+) | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2003 11 19 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | (0.2− | 2.7+) | 2006 10 23 | 704 | 0.7− | 1.3+ | | |
| 2003 11 19 | 699 | 0.8− | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.5− | 2006 10 23 | 704 | 1.2− | 1.4+ | | |
| 2003 11 19 | 699 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.9− | 2006 10 23 | 704 | 0.5+ | 0.4− | | |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2− | | |
| 2003 12 21 | 691 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3− | | |
| 2003 12 21 | 691 | 0.2− | 0.0 | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.5− | 0.7+ | | |
| 2005 03 08 | G96 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | |
| 2005 03 08 | G96 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1− | | |
| 2005 03 08 | G96 | 0.3− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2005 03 08 | G96 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.2− | | |
| 2005 04 04 | 703 | 1.0− | 1.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2005 04 04 | 703 | 1.0− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.3− | | |
| 2005 04 04 | 703 | 0.6+ | 0.6− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 07 | 644 | 0.2− | 0.1+ | | |
| 2005 04 04 | 703 | (2.2+ | 0.2+) | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 11 07 | 644 | 0.2− | 0.2+ | | |
| 2005 04 04 | G96 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 07 | 644 | 0.1− | 0.1+ | | |
| 2005 04 04 | G96 | 0.5+ | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.2− | | |
| 2005 04 04 | G96 | 0.1+ | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2005 04 04 | G96 | 0.4+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− | | |
| 2006 07 21 | G96 | 0.5− | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.3− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 07 21 | G96 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 1.2− |
| 2006 07 21 | G96 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.5+ |
| 2006 07 21 | G96 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.7+ |
| 2006 08 28 | 703 | (1.7− | 1.5+) | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1+ | 1.1− |
| 2006 08 28 | 703 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.7+ | 0.2+ | 2006 11 21 | 704 | 0.4− | 0.6− |
| 2006 08 28 | 703 | (0.0 | 1.7+) | 2006 10 21 | 703 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.3− |
| 2006 08 28 | 703 | (1.5− | 0.4−) | 2006 10 21 | 703 | 0.6+ | 0.9− | 2006 11 21 | 704 | 1.1− | 0.2− |
| 2006 09 27 | 704 | 0.2+ | 0.5− | 2006 10 21 | 703 | 0.6+ | 0.4− | 2006 11 21 | 704 | 0.2− | 0.2+ |

**2006 SS$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.66805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19145366 | $\omega$ | 205.75757 | | +0.95356122 | −0.29975483 | |
| $a$ | 2.9814459 | $\Omega$ | 171.52447 | | +0.29915664 | +0.93118007 | |
| $e$ | 0.2027450 | $i$ | 11.53103 | | +0.03501855 | +0.20748669 | |
| $P$ | 5.15 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.2+ | 1.4+ | 2002 01 13 | 645 | 0.0 | 0.0 | 2006 09 28 | 704 | 0.1+ | 1.1+ |
| 2001 10 15 | 644 | 0.1+ | 1.0+ | 2002 01 13 | 645 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.2− | 0.4− |
| 2001 10 15 | 644 | 0.2− | 1.1+ | 2006 07 21 | G96 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.5+ |
| 2001 10 23 | 644 | 0.0 | 0.6− | 2006 07 21 | G96 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.4+ | 1.3+ |
| 2001 10 23 | 644 | 0.0 | 0.6− | 2006 07 21 | G96 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.5+ | 0.8+ |
| 2001 10 23 | 644 | 0.2− | 0.4− | 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 10 16 | 703 | 1.0− | 1.3− |
| 2001 11 12 | 645 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.0 | 1.2− | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 18 | 703 | 1.0− | 0.0 | 2006 10 16 | 703 | (3.0+ | 0.8+) |
| 2002 01 08 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 10 16 | 703 | (0.4− | 2.0+) |
| 2002 01 08 | 645 | 0.1− | 0.1+ | 2006 09 18 | 703 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 01 09 | 645 | 0.1− | 0.1− | 2006 09 28 | 704 | 0.8+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 01 09 | 645 | 0.1+ | 0.0 | 2006 09 28 | 704 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |

**2006 ST$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.64902 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26674828 | $\omega$ | 89.22860 | | +0.98779377 | +0.08354587 | |
| $a$ | 2.3900205 | $\Omega$ | 265.97225 | | −0.12861652 | +0.91356724 | |
| $e$ | 0.1342128 | $i$ | 7.57318 | | +0.08787069 | +0.39801379 | |
| $P$ | 3.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.3+ | 0.3+ | 2004 01 17 | 691 | 0.3− | 0.1− | 2006 09 30 | 704 | 0.3− | 1.0+ |
| 2002 07 21 | 644 | 0.1+ | 0.5+ | 2004 01 17 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 704 | 0.3+ | 1.3+ |
| 2002 07 21 | 644 | 0.1+ | 0.4+ | 2006 09 14 | 644 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.9− | 0.3+ |
| 2002 08 05 | 644 | 0.1− | 0.8− | 2006 09 14 | 644 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.5− | 0.7− |
| 2002 08 05 | 644 | 0.2+ | 0.7− | 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.8− |
| 2002 08 05 | 644 | 0.2+ | 0.8− | 2006 09 22 | 699 | 0.5+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.4− |
| 2002 08 11 | 644 | 0.3− | 0.2+ | 2006 09 22 | 699 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 08 11 | 644 | 0.1+ | 0.3+ | 2006 09 22 | 699 | (2.0+ | 0.3−) | 2006 10 22 | 644 | 0.1+ | 0.0 |
| 2002 08 11 | 644 | 0.2− | 0.3+ | 2006 09 28 | 703 | 0.2+ | 1.1− | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2002 08 25 | 644 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2002 08 25 | 644 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.7+ | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 08 25 | 644 | 0.5− | 0.3+ | 2006 09 28 | 703 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2004 01 17 | 691 | 0.1+ | 0.1− | 2006 09 30 | 704 | 0.9− | 0.4+ | | | | |

**2006 SV$_{284}$ = 2002 VO$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.52941 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23953516 | $\omega$ | 311.39265 | | +0.98183059 | −0.16373728 | |
| $a$ | 2.5677725 | $\Omega$ | 58.23970 | | +0.18949168 | +0.87284041 | |
| $e$ | 0.1745365 | $i$ | 6.47684 | | −0.01007950 | +0.45971700 | |
| $P$ | 4.11 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 704 | 0.0 | 0.6+ | 2006 10 04 | G96 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 11 07 | 704 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2002 11 07 | 704 | 0.6+ | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.0 |
| 2002 11 13 | 291 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.7− | 0.2− |
| 2002 11 13 | 291 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.9− | 0.6+ |
| 2002 11 13 | 291 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.3− |
| 2006 09 29 | 699 | 0.6+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.6− |
| 2006 09 29 | 699 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 09 29 | 699 | (1.9− | 2.2+) | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2006 09 29 | 699 | 1.3− | 0.3− | 2006 10 16 | 703 | (2.0+ | 0.6+) | 2006 10 22 | G96 | 0.6+ | 0.3− |
| 2006 09 30 | 703 | 0.3− | 1.1− | 2006 10 16 | 703 | 0.3+ | 1.2+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.3− |
| 2006 09 30 | 703 | 1.4+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.2− |
| 2006 09 30 | 703 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2− |

**2006 SW$_{284}$ = 2002 RA$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.65797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25360156 | $\omega$ | 299.19466 | | +0.72243671 | −0.68911989 | |
| $a$ | 2.4719220 | $\Omega$ | 104.42960 | | +0.65293407 | +0.65300547 | |
| $e$ | 0.2462494 | $i$ | 3.34808 | | +0.22751329 | +0.31416179 | |
| $P$ | 3.89 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 644 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.3+ |
| 2002 09 15 | 644 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.2+ |
| 2002 09 15 | 644 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.1+ |
| 2002 09 16 | 644 | 0.5+ | 1.1− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.3+ | 0.2+ |
| 2002 09 16 | 644 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 09 16 | 644 | 0.2− | 0.5− | 2006 10 10 | 644 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2006 09 29 | 699 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 29 | 699 | 0.3− | 0.8+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 16 | 715 | 0.6+ | 0.2+ |
| 2006 09 29 | 699 | 0.6− | 1.0+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 16 | 715 | 0.6+ | 0.1+ |
| 2006 09 29 | 699 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 715 | 0.0 | 0.0 |
| 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2006 09 30 | 703 | 0.8− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2006 09 30 | 703 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.7− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2006 09 30 | 703 | 0.6+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.7− | 2006 11 24 | G96 | 0.5− | 0.3− |
| 2006 10 04 | G96 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.1− | | | | |

**2006 SX$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.29769 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23054691 | $\omega$ | 236.78525 | | +0.99707753 | −0.02857213 | |
| $a$ | 2.6340853 | $\Omega$ | 124.75593 | | +0.05174509 | +0.93487354 | |
| $e$ | 0.2275548 | $i$ | 4.94723 | | −0.05620364 | +0.35382918 | |
| $P$ | 4.28 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 07 | 691 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 13 | 703 | 0.2− | 0.5+ |
| 1995 02 07 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.7− | 2006 11 13 | 703 | 0.0 | 0.3− |
| 1995 02 07 | 691 | 0.6+ | 0.5− | 2006 10 16 | 703 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.8− | 0.3− |
| 1996 04 14 | 691 | 0.5− | 0.7+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 1996 04 14 | 691 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.5+ | 1.0+ |
| 1996 04 14 | 691 | 0.6+ | 0.1− | 2006 10 22 | 703 | 0.8− | 0.6+ | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2005 05 14 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.0 | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 2005 05 14 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.2− | 2006 11 17 | 704 | 0.3− | 0.0 |
| 2005 05 14 | 691 | 0.5+ | 0.5+ | 2006 10 27 | 704 | 0.2+ | 0.7+ | 2006 11 17 | 704 | 0.6+ | 0.6+ |
| 2006 09 29 | 699 | 0.1+ | 0.6+ | 2006 10 27 | 704 | 0.6+ | 0.3− | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2006 09 29 | 699 | 0.9− | 0.3+ | 2006 10 27 | 704 | (0.4+ | 1.7+) | 2006 11 19 | 703 | 0.5− | 0.4− |
| 2006 09 29 | 699 | 0.8+ | 0.1+ | 2006 10 27 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.1+ |
| 2006 09 29 | 699 | 0.1+ | 0.5+ | 2006 10 27 | 704 | 0.3− | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.0 |
| 2006 09 30 | 703 | 1.1+ | 0.3+ | 2006 10 31 | 704 | (1.6− | 0.5−) | 2006 11 19 | 703 | 0.4+ | 0.5+ |
| 2006 09 30 | 703 | 0.9+ | 1.2+ | 2006 10 31 | 704 | 1.4− | 0.9− | 2006 11 20 | 704 | 1.4− | 0.2+ |
| 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 31 | 704 | 0.4− | 0.4− | 2006 11 20 | 704 | 0.2− | 1.0+ |
| 2006 09 30 | 703 | 0.7− | 0.4+ | 2006 11 13 | 703 | 0.4− | 0.0 | 2006 11 20 | 704 | 1.0+ | 0.8− |

**2006 SB$_{285}$ = 2003 AN$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.47502 | | (2000.0) | | | |
| $n$ | 0.23392245 | $\omega$ | 261.47026 | | +0.87718723 | −0.46760585 |
| $a$ | 2.6086838 | $\Omega$ | 126.33750 | | +0.47630714 | +0.81877274 |
| $e$ | 0.2246015 | $i$ | 7.77879 | | +0.06061407 | +0.33310054 |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 07 | 691 | 0.1− | 0.6+ | 2006 09 29 | 699 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 1995 02 07 | 691 | 0.3+ | 0.3− | 2006 09 29 | 699 | 0.2+ | 0.1+ | 2006 11 10 | 704 | 0.3− | 0.7+ |
| 1995 02 07 | 691 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.4− | 1.1− | 2006 11 10 | 704 | (0.8− | 2.3+) |
| 2003 01 01 | 704 | 0.4− | 0.5− | 2006 09 30 | 703 | 1.4+ | 0.8+ | 2006 11 10 | 704 | 0.6− | 0.1+ |
| 2003 01 01 | 704 | 0.5+ | 0.2+ | 2006 10 01 | 704 | 0.3− | 0.0 | 2006 11 10 | 704 | 0.3− | 0.0 |
| 2003 01 01 | 704 | 0.4− | 0.8+ | 2006 10 01 | 704 | 0.0 | 0.3− | 2006 11 14 | 644 | 0.1+ | 0.1− |
| 2003 01 01 | 704 | 0.6+ | 0.0 | 2006 10 01 | 704 | 0.5+ | 0.3+ | 2006 11 14 | 644 | 0.2+ | 0.3+ |
| 2003 01 07 | 704 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 14 | 644 | 0.1+ | 0.1+ |
| 2003 01 07 | 704 | 0.0 | 0.5− | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.4+ | 0.9+ |
| 2003 01 07 | 704 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 16 | 703 | 0.7+ | 0.1+ |
| 2003 01 07 | 704 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 16 | 703 | 1.2− | 1.2− |
| 2006 09 19 | 703 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.2+ | 1.5− |
| 2006 09 19 | 703 | 0.4+ | 0.5− | 2006 10 16 | 703 | 0.2− | 0.6− | 2006 11 21 | 704 | 0.2+ | 0.8+ |
| 2006 09 19 | 703 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.8+ | 1.0+ |
| 2006 09 19 | 703 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.6− | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.5+ |
| 2006 09 29 | 699 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2006 09 29 | 699 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.0 | 0.2− | | | | |

**2006 SF$_{285}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.86655 | | (2000.0) | | | |
| $n$ | 0.21712557 | $\omega$ | 354.38957 | | +0.77201038 | +0.63555158 |
| $a$ | 2.7415452 | $\Omega$ | 326.14461 | | −0.58255793 | +0.70208983 |
| $e$ | 0.1250302 | $i$ | 0.88570 | | −0.25421690 | +0.32116049 |
| $P$ | 4.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 22 | 691 | 0.4− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1997 11 22 | 691 | 0.2+ | 0.4− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.3− | 0.0 |
| 1997 11 22 | 691 | 0.4+ | 0.3− | 2006 09 28 | 691 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.3+ |
| 1999 02 10 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 1999 02 10 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 1999 02 10 | 691 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.2+ |
| 2001 08 15 | 608 | 0.5− | 0.4− | 2006 10 21 | 703 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2001 08 15 | 608 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.3− | 0.7− | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2001 08 15 | 608 | 0.5− | 0.6− | 2006 10 21 | 703 | 0.8+ | 0.7− | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2001 08 24 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.3− | 1.0− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2001 08 24 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2001 08 24 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.2+ |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 20 | G96 | 0.2− | 0.5+ |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.3− | 0.1+ |
| 2006 09 27 | 152 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.3− | 2006 11 20 | G96 | 0.3+ | 0.3− |
| 2006 09 27 | 152 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.3− | | | | |
| 2006 09 27 | 152 | 0.2− | 0.5− | 2006 11 11 | 691 | 0.2− | 0.3+ | | | | |

**2006 SG$_{285}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 23.26782 | | (2000.0) | | | |
| $n$ | 0.22890954 | $\omega$ | 125.20493 | | +0.99526539 | +0.09570187 |
| $a$ | 2.6466313 | $\Omega$ | 229.30965 | | −0.09485580 | +0.91832626 |
| $e$ | 0.0700046 | $i$ | 1.28237 | | −0.02119395 | +0.38408077 |
| $P$ | 4.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 1995 02 03 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.9+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1995 02 03 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 06 30 | 644 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.4+ | 0.3− |
| 2001 06 30 | 644 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.4− |
| 2001 06 30 | 644 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 1.0− | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.5− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.5− | 0.1+ |
| 2006 09 25 | 152 | (0.5+ | 2.2−) | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.3− | 0.4+ |
| 2006 09 26 | 152 | 0.0 | 0.9+ | 2006 10 22 | 683 | 1.3− | 1.1+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2006 09 26 | 152 | 0.3− | 0.2+ | 2006 10 22 | 683 | (2.6− | 2.3+) | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2006 09 26 | 152 | (1.5+ | 0.2−) | 2006 10 22 | 683 | 0.4− | 1.1+ | 2006 11 20 | 691 | 0.1− | 0.4− |
| 2006 09 27 | 152 | 0.1+ | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.2− |
| 2006 09 27 | 152 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.2+ | 0.4+ |
| 2006 09 27 | 152 | 1.2− | 0.9+ | 2006 10 28 | 691 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.5− | 1.7− |
| 2006 09 28 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.2− | 1.0− |
| 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.4− | 1.2− |
| 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.3− | | | | |

**2006 SQ$_{285}$ = 1998 XT$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 103.77978 | | (2000.0) | | | |
| $n$ | 0.23887817 | $\omega$ | 63.81085 | | −0.00308799 | +0.99990572 |
| $a$ | 2.5724784 | $\Omega$ | 206.02271 | | −0.92801929 | −0.00784957 |
| $e$ | 0.1726677 | $i$ | 1.74755 | | −0.37251934 | +0.01126613 |
| $P$ | 4.13 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 10 | 691 | 0.5+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 1998 12 10 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.5+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 1998 12 10 | 691 | 0.6+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 1998 12 15 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 1998 12 15 | 691 | 0.6− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 1998 12 15 | 691 | 0.6− | 0.0 | 2006 10 15 | 691 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2006 09 24 | J75 | 0.7− | 1.4− | 2006 10 19 | 691 | 0.2− | 0.6− | 2006 11 11 | G96 | 0.5− | 0.7+ |
| 2006 09 24 | J75 | (0.9+ | 3.1−) | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2006 09 25 | G96 | 0.1+ | 0.7− | 2006 10 19 | 691 | 0.5− | 0.6− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.4− | 0.2− |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− | | | | |

**2006 SZ$_{285}$ = 2002 TG$_{305}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 318.39274 | | (2000.0) | | | |
| $n$ | 0.23887666 | $\omega$ | 293.61108 | | +0.57533763 | −0.81389172 |
| $a$ | 2.5724893 | $\Omega$ | 121.01880 | | +0.78066540 | +0.51687354 |
| $e$ | 0.1707050 | $i$ | 5.42590 | | +0.24402489 | +0.26537147 |
| $P$ | 4.13 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 645 | 0.0 | 0.0 | 2002 10 15 | 644 | 0.3− | 0.6+ | 2006 09 25 | 291 | 0.3+ | 0.1+ |
| 2002 10 04 | 645 | 0.0 | 0.1− | 2004 03 17 | 691 | 0.1− | 0.1− | 2006 09 25 | 699 | 0.1+ | 0.5+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 09 25 | 291 | 0.2+ | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2004 03 17 | 691 | 0.0 | 0.0 | 2006 09 25 | 291 | 0.2+ | 0.1− |
| 2002 10 07 | 644 | 0.6− | 0.7+ | 2006 09 17 | 291 | 0.2− | 0.1− | 2006 09 25 | 699 | 0.8+ | 0.1+ |
| 2002 10 07 | 644 | 0.3− | 0.6+ | 2006 09 17 | 291 | 0.2− | 0.1− | 2006 10 02 | 703 | 1.0− | 0.1+ |
| 2002 10 07 | 644 | 0.3− | 0.4+ | 2006 09 17 | 291 | 0.1− | 0.2+ | 2006 10 02 | 703 | (1.9− | 0.5−) |
| 2002 10 15 | 644 | 0.0 | 0.7+ | 2006 09 25 | 699 | 0.8− | 1.4+ | 2006 10 02 | 703 | 0.1− | 0.3+ |
| 2002 10 15 | 644 | 0.1− | 0.4+ | 2006 09 25 | 699 | 1.4+ | 0.5− | 2006 10 02 | 703 | 1.0− | 0.9− |

**2006 SB$_{286}$ = 2003 YW$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.45941 | | (2000.0) | | | |
| $n$ | 0.29536496 | $\omega$ | 274.94053 | | +0.73659976 | −0.67177535 |
| $a$ | 2.2330412 | $\Omega$ | 127.28947 | | +0.65298325 | +0.67621114 |
| $e$ | 0.1221930 | $i$ | 5.65168 | | +0.17616377 | +0.30241754 |
| $P$ | 3.34 | $H$ | 17.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 704 | 0.0 | 0.7+ | 2006 09 18 | 703 | 1.3− | 0.2+ | 2006 09 26 | 703 | 0.2+ | 1.1− |
| 2003 12 22 | 704 | 0.4− | 0.1+ | 2006 09 18 | 703 | 1.2+ | 0.0 | 2006 10 02 | 703 | 0.1+ | 0.9+ |
| 2003 12 22 | 704 | 0.3+ | 0.8+ | 2006 09 18 | 703 | 0.7+ | 0.2− | 2006 10 02 | 703 | 0.1+ | 0.5− |
| 2003 12 22 | 704 | 0.5+ | 0.7− | 2006 09 18 | 703 | 0.5+ | 0.4+ | 2006 10 02 | 703 | 0.5− | 0.7− |
| 2003 12 23 | 704 | 0.6+ | 1.4− | 2006 09 18 | 703 | 0.6+ | 0.6− | 2006 10 02 | 703 | 0.1+ | 0.3+ |
| 2003 12 23 | 704 | 0.3− | 0.4+ | 2006 09 18 | 703 | 0.2+ | 0.7+ | 2006 10 16 | 703 | (3.4− | 4.4−) |
| 2003 12 23 | 704 | 0.3+ | 1.2− | 2006 09 18 | 703 | 0.7− | 0.6+ | 2006 10 16 | 703 | (3.4− | 3.1−) |
| 2003 12 23 | 704 | 0.7− | 0.4+ | 2006 09 18 | 699 | 0.5+ | 0.9+ | 2006 10 16 | 703 | (2.9− | 4.6−) |
| 2003 12 23 | 704 | 0.2+ | 0.8− | 2006 09 18 | 699 | 0.2+ | 0.1+ | 2006 10 16 | 703 | (0.8− | 3.8−) |
| 2003 12 23 | 704 | 0.3− | 0.5+ | 2006 09 18 | 699 | 1.0− | 0.7− | 2006 10 22 | 703 | (5.7− | 5.7−) |
| 2003 12 23 | 704 | 0.2+ | 0.6+ | 2006 09 18 | 699 | 0.1+ | 0.1− | 2006 10 22 | 703 | (4.3− | 4.3−) |
| 2003 12 23 | 704 | 0.3− | 0.8+ | 2006 09 26 | 703 | 0.1− | 1.0− | 2006 10 22 | 703 | (5.0− | 3.4−) |
| 2003 12 23 | 704 | 0.1− | 0.1− | 2006 09 26 | 703 | 1.0− | 1.4+ | 2006 10 22 | 703 | (4.6− | 3.8−) |
| 2006 09 18 | 703 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.6+ | 0.9− | | | | |

**2006 SD$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.33620 | | (2000.0) | | | |
| $n$ | 0.23160242 | $\omega$ | 202.45130 | | +0.27182644 | −0.96132262 |
| $a$ | 2.6260762 | $\Omega$ | 231.80422 | | +0.89129135 | +0.26887803 |
| $e$ | 0.0822227 | $i$ | 3.23691 | | +0.36291889 | +0.05969445 |
| $P$ | 4.26 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 22 | 644 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.4+ | 0.9− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2002 11 22 | 644 | 0.3+ | 0.1− | 2006 09 19 | 703 | 0.6+ | 0.5− | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2002 11 22 | 644 | 0.4+ | 0.4+ | 2006 09 19 | 703 | 0.6+ | 0.9+ | 2006 10 23 | 691 | 0.0 | 0.1+ |
| 2002 12 06 | 291 | 0.4+ | 0.3− | 2006 09 25 | 699 | 0.7+ | 1.2+ | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2002 12 06 | 291 | 0.5− | 0.3− | 2006 09 25 | 699 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.3− |
| 2002 12 06 | 291 | 0.3− | 0.6+ | 2006 09 25 | 699 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.5+ | 0.0 |
| 2004 03 12 | 644 | 0.1+ | 0.2+ | 2006 09 25 | 699 | (0.2+ | 1.7+) | 2006 10 27 | 691 | 0.5− | 0.0 |
| 2004 03 12 | 644 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.6− | 0.6+ | 2006 11 14 | G96 | 0.5− | 0.8− |
| 2004 03 12 | 644 | 0.1+ | 0.1+ | 2006 10 01 | 703 | (1.4+ | 2.4+) | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2006 08 21 | 691 | 0.4− | 0.1+ | 2006 10 01 | 703 | (2.7− | 0.6+) | 2006 11 14 | G96 | 0.3− | 0.7− |
| 2006 08 21 | 691 | 0.3− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2+ |
| 2006 08 21 | 691 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.0 | 0.3− | | | | |
| 2006 09 19 | 703 | (2.3− | 0.6−) | 2006 10 23 | 691 | 0.1− | 0.2+ | | | | |

**2006 SF$_{286}$ = 2004 DW$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 347.25209 | | (2000.0) | | | |
| $n$ | 0.25560029 | $\omega$ | 273.79168 | | +0.91964423 | −0.38027754 |
| $a$ | 2.4590186 | $\Omega$ | 108.58009 | | +0.38875754 | +0.84580539 |
| $e$ | 0.1739629 | $i$ | 5.94657 | | +0.05587540 | +0.37416872 |
| $P$ | 3.86 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.5− | 1.3+ | 2006 09 19 | 703 | 0.1− | 0.3+ | 2006 10 02 | 703 | 0.5− | 0.8− |
| 2002 08 19 | 644 | 0.1− | 1.3+ | 2006 09 19 | 703 | (1.6+ | 0.4−) | 2006 10 02 | 703 | 0.2− | 0.3− |
| 2002 08 19 | 644 | 0.6− | 1.0+ | 2006 09 26 | 703 | 0.1+ | 0.1− | 2006 10 02 | 703 | 0.1+ | 1.1− |
| 2004 02 16 | 291 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.4+ |
| 2004 02 16 | 291 | 0.5+ | 0.2+ | 2006 09 26 | 703 | 0.4− | 1.2− | 2006 10 21 | 703 | 1.2+ | 1.2+ |
| 2004 02 16 | 291 | 0.0 | 0.0 | 2006 09 26 | 703 | 1.2− | 1.1+ | 2006 10 21 | 703 | 0.4+ | 0.2− |
| 2004 02 17 | 291 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.5− | 0.2− | 2006 10 21 | 703 | 0.6+ | 0.5+ |
| 2004 02 17 | 291 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.2+ | 0.8− | 2006 10 28 | 703 | 1.1+ | 0.6+ |
| 2004 02 17 | 291 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.3+ | 0.6− | 2006 10 28 | 703 | 0.1− | 0.8− |
| 2006 09 19 | 703 | 1.1− | 0.5+ | 2006 10 02 | 703 | 0.6− | 0.5− | 2006 10 28 | 703 | 0.3+ | 1.1+ |
| 2006 09 19 | 703 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.5+ | 0.5− | 2006 10 28 | 703 | 0.3− | 0.3+ |

**2006 SK$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 351.03624 | | (2000.0) | | | |
| $n$ | 0.24242347 | $\omega$ | 292.62680 | | +0.94810643 | −0.30515836 |
| $a$ | 2.5473363 | $\Omega$ | 85.23370 | | +0.31457241 | +0.85943519 |
| $e$ | 0.2636492 | $i$ | 5.14055 | | +0.04624285 | +0.41018230 |
| $P$ | 4.07 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 644 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.0 | 1.3− | 2006 10 16 | 703 | 0.6+ | 0.3+ |
| 2002 10 11 | 644 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2002 10 11 | 644 | 0.3− | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2002 10 15 | 644 | 0.5+ | 0.1− | 2006 10 02 | 703 | 0.7+ | 0.6− | 2006 10 16 | 703 | 0.4+ | 1.0− |
| 2002 10 15 | 644 | 0.1+ | 0.1− | 2006 10 02 | 703 | 1.1− | 0.1− | 2006 11 25 | G96 | 0.4− | 0.6+ |
| 2002 10 15 | 644 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.2+ | 0.9+ | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2006 09 19 | 703 | 0.1− | 1.1+ | 2006 10 02 | 703 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.5+ | 0.0 |
| 2006 09 19 | 703 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.3− | 0.2− |
| 2006 09 19 | 703 | 0.3− | 0.6+ | 2006 10 12 | 644 | 0.3− | 0.1+ | | | | |
| 2006 09 26 | 703 | 0.1− | 0.7− | 2006 10 12 | 644 | 0.5+ | 0.3+ | | | | |

**2006 SM$_{286}$ = 2005 MO$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.22775 | | (2000.0) | | | |
| $n$ | 0.22495242 | $\omega$ | 264.86784 | | +0.93086181 | −0.28928562 |
| $a$ | 2.6775789 | $\Omega$ | 111.80165 | | +0.34846174 | +0.88658466 |
| $e$ | 0.2060345 | $i$ | 13.90865 | | −0.10986679 | +0.36094525 |
| $P$ | 4.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 15 | 691 | 0.3+ | 0.3− | 2006 09 26 | 703 | 0.3+ | 0.7− | 2006 10 31 | 703 | 0.2+ | 0.6+ |
| 2005 06 15 | 691 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.8− | 0.6− | 2006 10 31 | 703 | 0.3− | 1.0− |
| 2005 06 15 | 691 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.3+ | 2006 10 31 | 703 | 0.8− | 0.1+ |
| 2005 06 30 | 691 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.1− | 0.1+ | 2006 10 31 | 703 | 0.1− | 0.1+ |
| 2005 06 30 | 691 | 0.2− | 0.2− | 2006 10 02 | 703 | 0.5+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 10 02 | 703 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.5+ |
| 2005 07 01 | 691 | 0.3− | 0.1− | 2006 10 02 | 703 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.3+ | 0.3+ |
| 2005 07 01 | 691 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.1+ |
| 2005 07 01 | 691 | 0.5− | 0.1− | 2006 10 10 | 644 | 0.3− | 0.4− | 2006 11 23 | 703 | (2.8+ | 0.4+) |
| 2006 09 19 | 703 | 1.1− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.4+ | 2006 11 23 | 703 | 0.7− | 0.0 |
| 2006 09 19 | 703 | (0.0 | 1.6−) | 2006 10 21 | 703 | 0.0 | 0.2− | 2006 11 23 | 703 | 0.5+ | 0.1− |
| 2006 09 19 | 703 | 1.0+ | 0.1− | 2006 10 21 | 703 | 0.7+ | 0.5+ | 2006 11 23 | 703 | 0.3− | 0.5+ |
| 2006 09 19 | 703 | (0.3+ | 1.8+) | 2006 10 21 | 703 | 0.3+ | 0.0 | | | | |
| 2006 09 26 | 703 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.4+ | 1.1+ | | | | |

**2006 SN$_{286}$ = 2004 EC$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 288.94560 | | (2000.0) | | | |
| $n$ | 0.23745694 | $\omega$ | 11.21052 | | −0.08721164 | −0.96531432 |
| $a$ | 2.5827328 | $\Omega$ | 84.13853 | | +0.89378904 | −0.18491491 |
| $e$ | 0.0554001 | $i$ | 14.32298 | | +0.43992644 | +0.18432236 |
| $P$ | 4.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 704 | 0.2− | 0.1− | 2004 03 18 | 644 | 0.2− | 0.2− | 2006 10 02 | 703 | 0.0 | 0.1− |
| 2004 02 16 | 704 | 0.3+ | 0.7+ | 2006 09 19 | 703 | 1.0− | 1.1+ | 2006 10 02 | 703 | 0.0 | 0.3− |
| 2004 02 16 | 704 | 0.0 | 0.2+ | 2006 09 19 | 703 | 0.9+ | 0.4− | 2006 10 10 | 644 | 0.3+ | 0.3− |
| 2004 02 16 | 704 | 0.0 | 0.4+ | 2006 09 19 | 703 | 1.1− | 0.5+ | 2006 10 10 | 644 | 0.3+ | 0.7− |
| 2004 03 14 | 704 | 0.0 | 0.6− | 2006 09 26 | 703 | 0.1− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.3+ |
| 2004 03 14 | 704 | 0.4+ | 0.0 | 2006 09 26 | 703 | 0.7+ | 1.0+ | 2006 10 21 | 703 | 0.6− | 0.5− |
| 2004 03 14 | 704 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 1.2− | 0.7− | 2006 10 21 | 703 | 0.7+ | 0.2+ |
| 2004 03 14 | 704 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.6+ | 0.1− | 2006 10 21 | 703 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 644 | 0.3− | 0.2− | 2006 10 02 | 703 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.5+ | 0.2+ | | |
| 2004 03 18 | 644 | 0.3− | 0.3− | 2006 10 02 | 703 | 0.4+ | 0.2− | | | | | | |

**2006 $SO_{286}$ = 2002 $RF_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.94024 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26714481 | $\omega$ | 252.99324 | | +0.26287462 | −0.96475122 | |
| $a$ | 2.3876549 | $\Omega$ | 181.90096 | | +0.96434133 | +0.26312668 | |
| $e$ | 0.2724683 | $i$ | 21.81901 | | +0.03070399 | −0.00440732 | |
| $P$ | 3.69 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.2− | 0.2+ | 2006 09 26 | 703 | 0.1− | 1.2− | 2006 11 01 | 703 | 0.5− | 0.2+ | | |
| 2002 09 12 | 644 | 0.4− | 0.2+ | 2006 09 26 | 703 | 0.1− | 0.2+ | 2006 11 01 | 703 | 0.7+ | 0.2+ | | |
| 2002 09 12 | 644 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.3− | 2006 11 01 | 703 | 0.4− | 0.3+ | | |
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 09 30 | 699 | 0.8+ | 0.5− | 2006 11 18 | 703 | 0.0 | 0.3+ | | |
| 2002 09 13 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 704 | 0.6− | 0.9+ | 2006 11 18 | 703 | 0.1− | 0.2− | | |
| 2002 09 13 | 644 | 0.2+ | 0.2+ | 2006 09 30 | 699 | 0.5+ | 1.0+ | 2006 11 18 | 703 | 0.3− | 0.0 | | |
| 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 30 | 704 | 1.1− | 0.3+ | 2006 11 18 | 703 | 0.3− | 0.3+ | | |
| 2006 07 21 | G96 | 0.1− | 0.3− | 2006 09 30 | 699 | 1.0+ | 0.7+ | 2006 11 19 | 703 | 0.9+ | 0.7+ | | |
| 2006 07 21 | G96 | 0.2− | 0.5− | 2006 09 30 | 704 | 0.9− | 1.3+ | 2006 11 19 | 703 | 0.1− | 0.3+ | | |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 09 30 | 704 | (1.7+ | 1.4+) | 2006 11 19 | 703 | 0.4+ | 0.5+ | | |
| 2006 09 19 | 703 | 1.1− | 0.8− | 2006 09 30 | 699 | 0.1+ | 0.9− | 2006 11 19 | 703 | 0.0 | 0.0 | | |
| 2006 09 19 | 703 | 0.6− | 1.3− | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 24 | 703 | 0.0 | 0.2− | | |
| 2006 09 19 | 703 | 0.4+ | 0.7− | 2006 10 11 | 644 | 0.4+ | 0.2− | 2006 11 24 | 703 | 0.4+ | 0.3− | | |
| 2006 09 19 | 703 | 0.3+ | 0.6− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 24 | 703 | 0.4+ | 0.1− | | |
| 2006 09 26 | 703 | (1.2− | 2.3−) | 2006 11 01 | 703 | 0.5− | 0.3+ | 2006 11 24 | 703 | 0.4+ | 0.8− | | |

**2006 $SU_{286}$ = 1999 $CE_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.66262 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22463012 | $\omega$ | 140.52855 | | −0.15113561 | −0.98366100 | |
| $a$ | 2.6801395 | $\Omega$ | 317.89991 | | +0.86604640 | −0.08405265 | |
| $e$ | 0.1449542 | $i$ | 8.38993 | | +0.47657283 | −0.15920485 | |
| $P$ | 4.39 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 12 | 704 | 0.7+ | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.6+ | 2006 10 19 | 703 | 0.4− | 0.7+ | | |
| 1999 02 12 | 704 | 0.4− | 0.1− | 2006 09 28 | 703 | 0.9+ | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.1− | | |
| 1999 02 12 | 704 | 0.7− | 0.4− | 2006 09 28 | 703 | 0.5+ | 0.8− | 2006 10 27 | 703 | 0.6− | 0.6− | | |
| 1999 02 12 | 704 | 0.6+ | 0.6− | 2006 10 11 | 104 | 0.1+ | 0.3− | 2006 10 27 | 703 | 1.0+ | 0.6− | | |
| 1999 02 16 | 704 | (2.1+ | 3.0+) | 2006 10 11 | 104 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.9− | 0.6− | | |
| 1999 02 16 | 704 | 0.9− | 0.7+ | 2006 10 11 | 104 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.0 | | |
| 1999 02 16 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 104 | 0.0 | 0.2− | 2006 11 14 | 703 | 1.2+ | 1.2+ | | |
| 2006 09 22 | 104 | 0.2− | 0.1+ | 2006 10 16 | 104 | 1.2+ | 0.4+ | 2006 11 14 | 703 | (0.2− | 1.8+) | | |
| 2006 09 22 | 104 | 0.3− | 0.3− | 2006 10 16 | 104 | 0.4− | 0.3− | 2006 11 14 | 703 | 0.7− | 0.9+ | | |
| 2006 09 22 | 104 | 0.3− | 0.1− | 2006 10 19 | 703 | 0.6− | 0.2− | 2006 11 14 | 703 | 0.2− | 0.8− | | |
| 2006 09 28 | 703 | 1.3+ | 0.8+ | 2006 10 19 | 703 | 1.0− | 0.2− | | | | | | |

**2006 $SB_{287}$ = 1993 $TW_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.44625 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22794282 | $\omega$ | 175.23341 | | +0.99632192 | −0.07539472 | |
| $a$ | 2.6541091 | $\Omega$ | 189.38634 | | +0.06802560 | +0.98490617 | |
| $e$ | 0.2601961 | $i$ | 14.45903 | | +0.05210703 | +0.15580587 | |
| $P$ | 4.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.4+ | 0.6− | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 10 22 | 703 | 0.7− | 0.5+ | | |
| 1993 10 09 | 809 | 0.5+ | 1.3− | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 10 22 | 703 | 1.2− | 0.5+ | | |
| 1993 10 09 | 809 | 0.9+ | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.2− | 0.2+ | | |
| 1993 10 11 | 809 | 0.4− | 1.1+ | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 10 22 | 703 | 0.9+ | 0.1− | | |
| 1993 10 11 | 809 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.4+ | | |
| 1993 10 11 | 809 | 1.0− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.7− | 2006 10 23 | 644 | 0.0 | 0.1+ | | |
| 2006 08 28 | 703 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2006 08 28 | 703 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 10 28 | 703 | 0.1− | 0.0 | | |
| 2006 08 28 | 703 | 0.0 | 0.7+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.7− | 0.1− | | |
| 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.3− | 2006 10 28 | 703 | 0.1+ | 0.3− | | |
| 2006 09 22 | 704 | 0.5− | 0.6+ | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 10 28 | 703 | 1.1+ | 0.1− | | |
| 2006 09 22 | 704 | 0.0 | 1.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.5+ | 0.8+ | | |
| 2006 09 22 | 704 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.7− | 1.0− | | |
| 2006 09 30 | 703 | 0.6+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.2− | | |
| 2006 09 30 | 703 | 0.2− | 0.8− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 16 | 703 | (2.8+ | 0.9+) | | |
| 2006 09 30 | 703 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2+ | | | | | | |
| 2006 09 30 | 703 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.6− | 0.5+ | | | | | | |

**2006 $SP_{287}$ = 2004 $BU_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.21768 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27030284 | $\omega$ | 124.55555 | | +0.95640872 | −0.27722483 | |
| $a$ | 2.3690214 | $\Omega$ | 251.68966 | | +0.22609657 | +0.90190233 | |
| $e$ | 0.1819407 | $i$ | 5.54943 | | +0.18483155 | +0.33123794 | |
| $P$ | 3.65 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 691 | 0.2− | 0.2− | 2006 09 22 | 703 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2004 01 17 | 691 | 0.0 | 0.1+ | 2006 09 22 | 703 | 0.9− | 1.0+ | 2006 10 20 | 691 | 0.1+ | 0.0 | | |
| 2004 01 17 | 691 | 0.3+ | 0.5+ | 2006 09 22 | 703 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.3+ | | |
| 2004 01 18 | 691 | 0.1− | 0.2− | 2006 09 29 | 699 | 1.1+ | 1.3− | 2006 10 22 | 691 | 0.0 | 0.1− | | |
| 2004 01 18 | 691 | 0.2+ | 0.2+ | 2006 09 29 | 699 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.3− | | |
| 2004 01 18 | 691 | 0.1− | 0.3− | 2006 09 29 | 699 | 0.4+ | 1.3+ | 2006 10 22 | 691 | 0.0 | 0.2− | | |
| 2006 09 22 | 703 | 0.1− | 0.6− | 2006 09 29 | 699 | (2.3+ | 0.3+) | | | | | | |

**2006 $SU_{287}$ = 2005 $LM_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.41100 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26287118 | $\omega$ | 316.70005 | | +0.87550083 | −0.44166172 | |
| $a$ | 2.4134635 | $\Omega$ | 70.47205 | | +0.48032759 | +0.75112890 | |
| $e$ | 0.2420051 | $i$ | 12.00570 | | +0.05276085 | +0.49065294 | |
| $P$ | 3.75 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 09 30 | 704 | 0.6− | 0.9+ | 2006 11 10 | 704 | 0.5+ | 0.1− | | |
| 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.2− | 2006 11 10 | 704 | 0.1+ | 0.2− | | |
| 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.0 | 0.2− | 2006 11 10 | 704 | 0.3− | 0.2+ | | |
| 2005 06 16 | G96 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 10 | 704 | 0.3− | 0.3+ | | |
| 2005 06 16 | G96 | 0.1− | 0.2− | 2006 10 17 | 703 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.2− | 0.1− | | |
| 2005 06 16 | G96 | 0.4− | 0.2− | 2006 10 17 | 703 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.4− | 0.2− | | |
| 2005 06 16 | G96 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.2− | 0.3− | 2006 11 16 | 703 | 0.1+ | 0.0 | | |
| 2006 09 22 | 703 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.4− | 2006 11 16 | 703 | 0.0 | 0.1+ | | |
| 2006 09 22 | 703 | 0.1+ | 0.4− | 2006 10 28 | 703 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.2− | 0.2+ | | |
| 2006 09 22 | 703 | 0.3+ | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.2+ | | |
| 2006 09 22 | 703 | 0.0 | 0.2− | 2006 10 28 | 703 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.5− | 0.4+ | | |
| 2006 09 30 | 704 | 0.4+ | 0.3− | 2006 10 28 | 703 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.2+ | | |
| 2006 09 30 | 704 | 0.0 | 0.5+ | 2006 11 07 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.1+ | | |
| 2006 09 30 | 704 | 0.2− | 0.1− | 2006 11 07 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.2− | | |
| 2006 09 30 | 704 | 0.4+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.1− | | | | | | |

**2006 $SA_{289}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.53752 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25914795 | $\omega$ | 3.92678 | | +0.40389463 | −0.90680506 | |
| $a$ | 2.4365249 | $\Omega$ | 62.28681 | | +0.83555929 | +0.31195488 | |
| $e$ | 0.0911202 | $i$ | 7.83753 | | +0.37243763 | +0.28352908 | |
| $P$ | 3.80 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 703 | 0.3+ | 0.5+ | 2005 02 18 | 809 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.7− | | |
| 2004 01 28 | 703 | 0.8+ | 0.0 | 2006 09 26 | 703 | 0.7+ | 0.2+ | 2006 10 22 | 703 | 1.0− | 0.0 | | |
| 2004 01 28 | 703 | 0.7+ | 0.4+ | 2006 09 26 | 703 | 0.8+ | 0.4− | 2006 10 22 | 703 | 1.2+ | 0.9− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 703 | 0.8− | 0.3+ | 2006 09 26 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 2004 02 16 | 703 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.6+ | 0.3+ | 2006 10 22 | 703 | (1.8+ | 0.3+) | | |
| 2004 02 16 | 703 | 0.1+ | 0.1− | 2006 10 02 | 703 | (1.7− | 1.2+) | 2006 10 22 | 703 | 0.8+ | 0.2+ | | |
| 2004 02 16 | 703 | 1.8− | 0.8+ | 2006 10 02 | 703 | 0.6+ | 0.9+ | 2006 10 22 | 644 | 0.5− | 0.3+ | | |
| 2004 02 16 | 703 | 0.1− | 0.5− | 2006 10 02 | 703 | 0.5− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | |
| 2004 02 17 | 645 | 0.0 | 0.1− | 2006 10 02 | 703 | 0.1+ | 0.4+ | 2006 10 28 | 703 | (0.9− | 2.0−) | | |
| 2004 02 17 | 645 | 0.0 | 0.1− | 2006 10 17 | 703 | 1.3− | 0.2+ | 2006 10 28 | 703 | 0.3+ | 0.1− | | |
| 2004 02 22 | 703 | (1.1− | 3.7+) | 2006 10 17 | 703 | 0.5+ | 0.6− | 2006 10 28 | 703 | 0.4− | 0.9− | | |
| 2004 02 22 | 703 | 0.6− | 0.4− | 2006 10 17 | 703 | 0.5− | 0.2− | 2006 10 28 | 703 | 0.6− | 0.8+ | | |
| 2004 02 22 | 703 | 0.3+ | 0.5+ | 2006 10 17 | 703 | 0.4− | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2004 02 22 | 703 | 1.0+ | 1.4− | 2006 10 17 | 703 | 0.2− | 0.5− | 2006 11 25 | G96 | 0.3+ | 0.2− | | |
| 2005 02 18 | 809 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.1− | | |
| 2005 02 18 | 809 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.1− | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.3− | | |

**2006 $SR_{289}$ = 1995 $OF_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.50088 | | (2000.0) | | | |
| $n$ | 0.18701665 | $\omega$ | 221.79320 | | +0.98455794 | −0.09826025 |
| $a$ | 3.0284184 | $\Omega$ | 143.08497 | | +0.12752995 | +0.96954557 |
| $e$ | 0.0937234 | $i$ | 13.95830 | | −0.11992405 | +0.22433526 |
| $P$ | 5.27 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 22 | 691 | 0.1− | 0.3+ | 2003 03 11 | 291 | 0.2− | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.4+ | | |
| 1995 07 22 | 691 | 0.4+ | 0.2+ | 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 10 02 | 703 | 0.8+ | 0.4− | | |
| 1995 08 01 | 691 | 0.1− | 0.3+ | 2006 09 19 | 703 | 1.0− | 0.8− | 2006 10 02 | 703 | 0.2+ | 0.4+ | | |
| 1995 08 01 | 691 | 0.2− | 0.3+ | 2006 09 19 | 703 | (0.8+ | 3.2+) | 2006 10 02 | 703 | 1.1− | 0.4− | | |
| 1995 08 01 | 691 | 0.2− | 0.2+ | 2006 09 19 | 703 | 1.4− | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.5+ | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 09 26 | 703 | (2.1+ | 0.4−) | 2006 10 10 | 644 | 0.4+ | 0.4+ | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.1− | 1.5+ | 2006 10 10 | 644 | 0.0 | 0.3+ | | |
| 2003 03 11 | 291 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.4+ | 0.2− | | | | | | |
| 2003 03 11 | 291 | 0.2+ | 1.2+ | 2006 09 26 | 703 | 0.8+ | 0.8− | | | | | | |

**2006 $SX_{289}$ = 2005 $FO_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.98280 | | (2000.0) | | | |
| $n$ | 0.35162599 | $\omega$ | 358.34054 | | −0.12335360 | −0.90253064 |
| $a$ | 1.9879955 | $\Omega$ | 98.59437 | | +0.91521412 | −0.26418647 |
| $e$ | 0.0583611 | $i$ | 24.66207 | | +0.38362351 | +0.34006463 |
| $P$ | 2.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 16 | 699 | 0.3− | 0.7− | 2005 04 11 | 703 | 0.2− | 0.1+ | 2006 10 01 | E12 | 0.5− | 0.3+ | | |
| 1998 12 16 | 699 | 0.5+ | 0.0 | 2005 04 11 | 703 | 0.0 | 0.2+ | 2006 10 12 | E12 | 0.2+ | 0.4+ | | |
| 1998 12 16 | 699 | 0.2+ | 0.8− | 2005 07 05 | 703 | 0.3+ | 0.7− | 2006 10 12 | E12 | 0.6− | 0.1− | | |
| 2005 01 16 | 703 | 0.4+ | 1.0− | 2005 07 05 | 703 | 0.4− | 0.9− | 2006 10 12 | E12 | 0.3− | 0.1+ | | |
| 2005 01 16 | 703 | 0.9− | 0.2+ | 2005 07 05 | 703 | 1.6− | 1.5− | 2006 10 12 | E12 | 0.3− | 0.2+ | | |
| 2005 01 16 | 703 | 2.8+ | 0.4− | 2005 07 05 | 703 | 0.7− | 0.5− | 2006 10 12 | E12 | 0.4− | 0.1+ | | |
| 2005 01 16 | 703 | 0.1+ | 0.3+ | 2006 09 26 | E12 | 0.3+ | 0.7+ | 2006 10 12 | E12 | 0.9+ | 0.3+ | | |
| 2005 03 16 | 703 | 0.3− | 0.3+ | 2006 09 26 | E12 | 0.4+ | 0.1+ | 2006 10 12 | E12 | 0.5+ | 0.6− | | |
| 2005 03 16 | 703 | 0.2+ | 0.3+ | 2006 09 26 | E12 | 0.3− | 0.2+ | 2006 10 12 | E12 | 0.5+ | 0.8− | | |
| 2005 03 16 | 703 | 0.1− | 0.4+ | 2006 09 26 | E12 | 0.2− | 0.8− | 2006 11 18 | E12 | 0.2+ | 0.3− | | |
| 2005 03 16 | 703 | 0.3+ | 0.7+ | 2006 10 01 | E12 | (0.2+ | 3.1+) | 2006 11 18 | E12 | 0.5− | 0.2+ | | |
| 2005 04 11 | 703 | 0.5+ | 0.6+ | 2006 10 01 | E12 | 0.7− | 0.4+ | 2006 11 18 | E12 | 0.4+ | 0.1+ | | |
| 2005 04 11 | 703 | 0.3− | 0.1+ | 2006 10 01 | E12 | 0.7+ | 0.6− | 2006 11 18 | E12 | 0.4− | 0.1+ | | |

**2006 $SM_{290}$ = 2006 $SW_{370}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.13234 | | (2000.0) | | | |
| $n$ | 0.20268954 | $\omega$ | 78.50599 | | +0.60411787 | −0.79688087 |
| $a$ | 2.8702198 | $\Omega$ | 334.32679 | | +0.72680578 | +0.55341353 |
| $e$ | 0.1176614 | $i$ | 0.62690 | | +0.32679496 | +0.24231042 |
| $P$ | 4.86 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 691 | 0.1− | 0.1+ | 2006 09 24 | G98 | 0.1− | 0.4+ | 2006 10 20 | G98 | 0.8+ | 0.5− | | |
| 2001 09 23 | 691 | 0.7− | 0.2− | 2006 09 24 | G98 | 0.7− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3− | | |
| 2001 09 23 | 691 | 0.3− | 0.4− | 2006 09 24 | G98 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.1− | | |
| 2001 10 14 | 691 | 0.6+ | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.3− | | |
| 2001 10 14 | 691 | 0.5+ | 0.1− | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2001 10 14 | 691 | 0.4+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1+ | | |
| 2006 09 18 | G98 | 0.4+ | 0.0 | 2006 09 30 | J75 | 1.0+ | 0.8− | 2006 10 27 | 691 | 0.2+ | 0.2− | | |
| 2006 09 18 | G98 | 0.3− | 0.6+ | 2006 09 30 | J75 | (1.5+ | 1.8−) | 2006 10 28 | G96 | 0.0 | 0.2+ | | |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2+ | | |
| 2006 09 18 | G98 | (0.3+ | 1.8−) | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.6− | 0.2+ | | |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.3− | 0.4+ | | |
| 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.5+ | 0.2− | 2006 10 31 | 691 | 0.3− | 0.1+ | | |
| 2006 09 19 | G98 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.2+ | | |
| 2006 09 19 | G98 | 0.6− | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.4− | | |
| 2006 09 20 | G98 | 0.5− | 0.3+ | 2006 10 20 | G98 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.6− | 0.5− | | |
| 2006 09 20 | G98 | 0.4+ | 0.3− | 2006 10 20 | G98 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.1− | | |
| 2006 09 20 | G98 | 0.7+ | 0.6+ | 2006 10 20 | G98 | 0.6+ | 0.0 | 2006 11 13 | G96 | 0.3− | 0.5+ | | |
| 2006 09 20 | G98 | 0.3− | 0.1− | 2006 10 20 | G98 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.2− | | |

**2006 $SO_{290}$ = 2000 $FV_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 122.71918 | | (2000.0) | | | |
| $n$ | 0.23603688 | $\omega$ | 311.48805 | | −0.33309647 | +0.94258784 |
| $a$ | 2.5930813 | $\Omega$ | 299.04016 | | −0.85670986 | −0.31317393 |
| $e$ | 0.1098084 | $i$ | 1.57155 | | −0.39382098 | −0.11597525 |
| $P$ | 4.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 12 | 691 | 0.1− | 0.1+ | 2000 03 30 | 691 | 0.5+ | 0.1+ | 2006 10 03 | 691 | 0.2+ | 0.3− | | |
| 2000 01 12 | 691 | 0.2− | 0.3− | 2000 03 30 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2000 01 12 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.5+ | 0.2+ | | |
| 2000 02 03 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2000 02 03 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.3+ | | |
| 2000 02 03 | 691 | 0.1+ | 0.2− | 2006 09 27 | 152 | 0.6+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2000 03 29 | 691 | 0.1− | 0.3+ | 2006 09 27 | 152 | 1.0− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.1− | | |
| 2000 03 29 | 691 | 0.3− | 0.5+ | 2006 09 27 | 152 | 0.3+ | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.3− | | |
| 2000 03 29 | 691 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.3− | | |
| 2000 03 30 | 691 | 0.4+ | 0.2− | 2006 10 03 | 691 | 0.6− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1− | | |

**2006 $SP_{290}$ = 1999 $TY_{276}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 258.43180 | | (2000.0) | | | |
| $n$ | 0.28363291 | $\omega$ | 274.79685 | | −0.68571936 | −0.72599504 |
| $a$ | 2.2942019 | $\Omega$ | 218.66665 | | +0.69651734 | −0.63369656 |
| $e$ | 0.1020793 | $i$ | 4.78843 | | +0.21131151 | −0.26713269 |
| $P$ | 3.47 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.1− | | |
| 1999 10 06 | 704 | 0.9− | 1.3+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.0 | | |
| 1999 10 06 | 704 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 1999 10 06 | 704 | 0.9+ | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.1− | | |
| 1999 10 06 | 704 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 1999 10 13 | 704 | 0.2+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 1999 10 13 | 704 | 0.7− | 0.9− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ | | |
| 1999 10 13 | 704 | 0.2− | 1.0− | 2006 10 20 | 691 | (2.1+ | 0.1−) | 2006 11 11 | 691 | 0.1− | 0.0 | | |
| 1999 10 13 | 704 | 0.1+ | 1.0− | 2006 10 21 | 703 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.0 | 0.6− | | |
| 1999 10 13 | 704 | 0.2+ | 0.8− | 2006 10 21 | 703 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.5− | 0.3− | | |
| 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 1.2− | 2006 11 13 | G96 | 0.9− | 0.6− | | |
| 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 1.0− | 2006 11 13 | G96 | 1.2− | 0.8− | | |
| 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 22 | 683 | 0.6− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.1+ | | |
| 2006 09 27 | 152 | 0.2+ | 0.1+ | 2006 10 22 | 683 | (2.3− | 1.7+) | 2006 11 19 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 27 | 152 | 0.4− | 0.9− | 2006 10 22 | 683 | 0.8+ | 0.8+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2006 09 27 | 152 | 0.4+ | 0.4+ | 2006 10 23 | 683 | 1.3− | 1.2− | 2006 11 21 | 691 | 0.3+ | 0.0 | | |
| 2006 10 03 | 691 | 0.2− | 0.1− | 2006 10 23 | 683 | 0.7− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 23 | 683 | (1.6+ | 1.2−) | 2006 11 21 | 691 | 0.1+ | 0.1− |
| 2006 10 03 | 691 | 0.1− | 0.5− | 2006 10 28 | G96 | 0.6+ | 0.0 | | | | |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.1− | | | | |

**2006 SS$_{290}$ = 2000 CQ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.15839 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26428414 | $\omega$ | 162.02074 | | +0.58710467 | | −0.80904211 |
| $a$ | 2.4048536 | $\Omega$ | 252.01873 | | +0.73911025 | | +0.54961666 |
| $e$ | 0.1859239 | $i$ | 1.65976 | | +0.33018805 | | +0.20826039 |
| $P$ | 3.73 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 1.8− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2000 02 02 | 704 | 0.5+ | 1.0− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2000 02 02 | 704 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2000 02 02 | 704 | 0.2− | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.0 |
| 2000 02 03 | 704 | 0.1− | 0.6− | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 07 | 644 | 0.1+ | 0.1− |
| 2000 02 03 | 704 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.4− | 1.0− |
| 2000 02 03 | 704 | 1.5+ | 1.8+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | (1.9+ | 4.1−) |
| 2006 09 25 | 691 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2006 09 25 | 691 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.7− | 0.6− |
| 2006 09 25 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.9+ |
| 2006 09 26 | 152 | 0.1+ | 0.4− | 2006 10 21 | 703 | 0.6− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.6+ |
| 2006 09 26 | 152 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.1− |
| 2006 09 26 | 152 | 1.1+ | 1.3− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | (0.5+ | 1.6+) |
| 2006 09 27 | 152 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2006 09 27 | 152 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2006 09 27 | 152 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.4+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2006 10 03 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2006 10 03 | 691 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.4+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2006 10 03 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 1.3− | 0.3+ |
| 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2006 10 19 | 644 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.1− | | | | |
| 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.5− | 0.3+ | | | | |

**2006 SU$_{290}$ = 2001 PD$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 106.21605 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21981032 | $\omega$ | 61.34698 | | +0.04766323 | | +0.99182391 |
| $a$ | 2.7191761 | $\Omega$ | 212.05813 | | −0.97652659 | | +0.02134601 |
| $e$ | 0.0290549 | $i$ | 12.88697 | | −0.21005720 | | +0.12581609 |
| $P$ | 4.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 1.1− | 0.4+ | 2006 10 16 | 691 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 08 11 | 644 | 0.8− | 0.6+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.4− | 0.1+ |
| 2001 08 11 | 644 | 1.0− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.1+ |
| 2001 08 17 | 644 | 1.0+ | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2001 08 17 | 644 | 0.8+ | 0.5− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 1.0− |
| 2001 08 17 | 644 | 1.0+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.4+ |
| 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.6+ | 0.4− |
| 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 09 26 | 152 | 0.1− | 0.8− | 2006 10 22 | 683 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2006 09 26 | 152 | 0.2− | 0.3− | 2006 10 22 | 683 | 0.9− | 0.5− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 09 26 | 152 | 1.0+ | 0.5− | 2006 10 22 | 683 | (0.5− | 2.0+) | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2006 09 27 | 152 | 0.4− | 0.2− | 2006 10 23 | 683 | (1.2+ | 1.6−) | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2006 09 27 | 152 | 0.1− | 0.2+ | 2006 10 23 | 683 | 1.1+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2006 09 27 | 152 | 0.6+ | 0.3+ | 2006 10 23 | 683 | (1.8+ | 0.5+) | 2006 11 19 | 691 | 0.5− | 0.0 |
| 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.1+ |
| 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.3− | 2006 11 21 | 691 | 0.0 | 0.1− |

**2006 SW$_{290}$ = 2004 FG$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.70727 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23624693 | $\omega$ | 65.79506 | | +0.42243715 | | −0.90639143 |
| $a$ | 2.5915441 | $\Omega$ | 359.21338 | | +0.79683408 | | +0.37200382 |
| $e$ | 0.0826475 | $i$ | 4.99202 | | +0.43197488 | | +0.20016925 |
| $P$ | 4.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 599 | 0.6+ | 0.5+ | 2006 09 27 | 152 | 1.0− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2004 03 16 | 599 | 0.1+ | 0.2+ | 2006 09 27 | 152 | 0.7− | 0.3+ | 2006 10 28 | 691 | 0.5+ | 0.3+ |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 09 27 | 152 | 0.1+ | 1.0− | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.2+ |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.4+ | 0.6− |
| 2004 04 25 | 691 | 0.4− | 0.1− | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2004 04 25 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.7− |
| 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.3− |

**2006 SG$_{291}$ = 2002 XG$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.08989 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21979036 | $\omega$ | 263.74268 | | +0.91429138 | | +0.32123399 |
| $a$ | 2.7193407 | $\Omega$ | 77.31047 | | −0.19137979 | | +0.87945245 |
| $e$ | 0.2281169 | $i$ | 14.65015 | | −0.35699447 | | +0.35124366 |
| $P$ | 4.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3+ | 0.6+ | 2006 07 30 | E12 | 0.4+ | 0.9− | 2006 10 02 | E12 | 0.2+ | 0.2− |
| 2002 12 05 | 704 | 0.0 | 0.3− | 2006 07 30 | E12 | 0.1− | 0.2+ | 2006 10 02 | E12 | 0.2+ | 0.1− |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 08 20 | 644 | 0.3− | 0.2+ | 2006 10 02 | E12 | 0.6− | 0.1− |
| 2002 12 05 | 704 | 0.6− | 0.3+ | 2006 08 20 | 644 | 0.1− | 0.1+ | 2006 10 12 | E12 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.6− | 0.5− | 2006 08 20 | 644 | 0.1+ | 0.1− | 2006 10 12 | E12 | 0.5− | 0.4+ |
| 2002 12 10 | 704 | 0.1− | 0.8− | 2006 09 16 | E12 | 0.4+ | 0.1+ | 2006 10 12 | E12 | 0.5− | 0.6+ |
| 2002 12 10 | 704 | 0.3+ | 1.1+ | 2006 09 16 | E12 | 0.2− | 0.1− | 2006 10 12 | E12 | 0.2− | 0.1− |
| 2002 12 10 | 704 | 0.3+ | 0.1− | 2006 09 16 | E12 | 0.3− | 0.3− | 2006 11 17 | 644 | 0.3+ | 0.0 |
| 2006 07 30 | E12 | 0.0 | 0.4+ | 2006 09 16 | E12 | 1.0+ | 0.2− | 2006 11 17 | 644 | 0.2+ | 0.3− |
| 2006 07 30 | E12 | 0.1− | 0.9+ | 2006 10 02 | E12 | 0.2+ | 0.4− | 2006 11 17 | 644 | 0.2+ | 0.0 |

**2006 SX$_{291}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.20282 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17489980 | $\omega$ | 254.23084 | | +0.60364846 | | −0.78364564 |
| $a$ | 3.1667213 | $\Omega$ | 156.66456 | | +0.79607894 | | +0.60244461 |
| $e$ | 0.1907857 | $i$ | 21.73029 | | −0.04320712 | | +0.15152559 |
| $P$ | 5.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 644 | 0.0 | 0.1+ | 2006 09 21 | 703 | 0.9− | 1.4+ | 2006 11 18 | 703 | 0.2− | 0.7− |
| 2002 02 08 | 644 | 0.0 | 0.0 | 2006 09 21 | 703 | 0.5+ | 0.9+ | 2006 11 18 | 703 | 0.6− | 0.3+ |
| 2002 02 08 | 644 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.7− | 2006 11 18 | 703 | 0.2+ | 0.1− |
| 2003 03 31 | 645 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.7+ | 2006 11 24 | 703 | 1.0− | 1.0− |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 09 28 | 703 | 1.0+ | 0.2− | 2006 11 24 | 703 | 1.1− | 0.2+ |
| 2006 09 21 | 703 | 0.6+ | 0.3− | 2006 09 28 | 703 | 1.6+ | 1.7+ | 2006 11 24 | 703 | 0.6− | 0.8− |
| 2006 09 21 | 703 | 0.1− | 0.1+ | 2006 11 18 | 703 | 0.3− | 0.9+ | 2006 11 24 | 703 | 0.9+ | 1.3− |

**2006 SD$_{292}$ = 2001 TW$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 316.08607 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.17804995 | $\omega$ | 24.86502 | | | +0.14633345 | | −0.87455989 | | | |
| $a$ | 3.1292587 | $\Omega$ | 59.96657 | | | +0.79459783 | | −0.17445618 | | | |
| $e$ | 0.3063303 | $i$ | 32.27685 | | | +0.58923748 | | +0.45244894 | | | |
| $P$ | 5.54 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 704 | 0.2+ | 0.5− | 2006 09 27 | 703 | 0.3+ | 0.2− | 2006 10 11 | E12 | 0.1− | 0.2+ |
| 2001 10 14 | 704 | 0.5+ | 0.3− | 2006 09 27 | 703 | 0.4+ | 0.1− | 2006 10 11 | E12 | 0.4− | 0.5− |
| 2001 10 14 | 704 | 0.4+ | 1.1− | 2006 09 27 | 703 | 0.2+ | 0.3+ | 2006 10 11 | E12 | 0.0 | 0.2− |
| 2001 10 14 | 704 | 0.7+ | 0.1+ | 2006 09 27 | 703 | (0.3− | 3.4−) | 2006 11 15 | E12 | 0.2+ | 1.2+ |
| 2001 10 14 | 704 | 0.7+ | 0.1− | 2006 10 03 | E12 | 1.4+ | 0.1+ | 2006 11 15 | E12 | 0.1+ | 0.5− |
| 2001 10 15 | 704 | 0.5− | 0.2+ | 2006 10 03 | E12 | 1.1− | 0.2− | 2006 11 15 | E12 | 0.2+ | 0.0 |
| 2001 10 15 | 704 | 0.4− | 0.8+ | 2006 10 03 | E12 | 0.6+ | 0.8− | 2006 11 15 | E12 | 0.4− | 0.7− |
| 2001 10 15 | 704 | 0.1− | 0.6+ | 2006 10 03 | E12 | 1.2− | 1.3+ | | | | |
| 2001 10 15 | 704 | 1.2− | 0.2+ | 2006 10 11 | E12 | 0.1− | 0.0 | | | | |

**2006 SS$_{292}$ = 2000 GL$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 117.06179 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.22792902 | $\omega$ | 23.64325 | | | −0.43455342 | | +0.90006170 | | | |
| $a$ | 2.6542162 | $\Omega$ | 220.62050 | | | −0.83407161 | | −0.41576086 | | | |
| $e$ | 0.0188296 | $i$ | 2.85597 | | | −0.33983507 | | −0.13050612 | | | |
| $P$ | 4.32 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 704 | 0.5+ | 0.6+ | 2004 02 17 | 691 | 0.1− | 0.6+ | 2006 09 25 | 691 | 0.3− | 0.1− |
| 2000 04 05 | 704 | (0.4+ | 2.4+) | 2004 02 17 | 691 | 0.1+ | 0.2− | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2000 04 05 | 704 | (1.1+ | 2.7+) | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.3− |
| 2000 04 10 | 691 | 1.0− | 0.8− | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.0 |
| 2000 04 10 | 691 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.3+ | 0.1− |
| 2000 04 10 | 691 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 01 | 691 | 0.4+ | 0.3− |
| 2004 02 17 | 691 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.3+ | 0.5− |

**2006 SP$_{294}$ = 2001 QF$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 215.09536 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.21862028 | $\omega$ | 222.75966 | | | −0.88959841 | | −0.45571325 | | | |
| $a$ | 2.7290349 | $\Omega$ | 290.10584 | | | +0.42737785 | | −0.80684332 | | | |
| $e$ | 0.0199701 | $i$ | 1.87108 | | | +0.16112988 | | −0.37593788 | | | |
| $P$ | 4.51 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.9− | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.4− | 0.7− |
| 2001 08 22 | 691 | 0.4− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 1.5+ | 0.1− |
| 2001 08 22 | 691 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.5+ | 0.4+ | 2006 10 17 | 703 | 0.7+ | 0.9+ |
| 2001 08 24 | 691 | 0.5+ | 0.1− | 2006 10 02 | 691 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.7− |
| 2001 08 24 | 691 | 0.6+ | 0.2− | 2006 10 02 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.4+ | 0.5− |
| 2001 08 24 | 691 | 0.5+ | 0.3− | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.7− |
| 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.7− |
| 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2006 09 17 | 691 | (2.0− | 0.6−) | 2006 10 12 | 644 | 0.2− | 0.2+ | | | | |

**2006 SA$_{295}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 301.46598 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.24207577 | $\omega$ | 227.49954 | | | +0.31488742 | | −0.94870463 | | | |
| $a$ | 2.5497749 | $\Omega$ | 204.19023 | | | +0.88985947 | | +0.30549281 | | | |
| $e$ | 0.0639644 | $i$ | 3.97147 | | | +0.33014548 | | +0.08144737 | | | |
| $P$ | 4.07 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 26 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.2− |
| 1994 10 26 | 691 | 0.4+ | 0.2− | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.0 | 0.3− |
| 1994 10 26 | 691 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2+ |
| 2004 02 22 | 691 | 0.3− | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2004 02 22 | 691 | 0.5− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2004 03 21 | 691 | 0.3+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.4− | 0.3+ |
| 2004 03 21 | 691 | 0.4+ | 0.2− | 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.2+ |
| 2004 03 21 | 691 | 0.3+ | 0.3− | 2006 10 02 | 691 | 0.1− | 0.1+ | | | | |

**2006 SD$_{295}$ = 2004 BJ$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 292.91453 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.21789317 | $\omega$ | 244.42174 | | | +0.25026935 | | −0.96804819 | | | |
| $a$ | 2.7351027 | $\Omega$ | 191.11918 | | | +0.91500673 | | +0.24180964 | | | |
| $e$ | 0.0229123 | $i$ | 4.68354 | | | +0.31642999 | | +0.06641390 | | | |
| $P$ | 4.52 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 291 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | (1.0− | 1.6+) |
| 2004 01 29 | 291 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | (0.4+ | 1.8+) |
| 2004 01 29 | 291 | 0.1− | 0.7− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 16 | G96 | 0.3− | 0.3− |
| 2004 01 30 | 291 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 16 | G96 | 0.3− | 0.5− |
| 2004 01 30 | 291 | 0.3+ | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.9− |
| 2004 01 30 | 291 | 0.2− | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.4+ | 2006 10 16 | G96 | 0.1+ | 0.7− |
| 2004 03 28 | 691 | 0.3+ | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.7− |
| 2004 03 28 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.6− |
| 2004 03 28 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | (3.3− | 2.0+) | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.5− |

**2006 SJ$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 195.96782 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.24009603 | $\omega$ | 347.39525 | | | −0.99733390 | | −0.06700701 | | | |
| $a$ | 2.5637720 | $\Omega$ | 188.91498 | | | +0.07176159 | | −0.97245460 | | | |
| $e$ | 0.2120939 | $i$ | 10.74765 | | | −0.01324290 | | −0.22325348 | | | |
| $P$ | 4.11 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 28 | 703 | 0.7− | 0.8+ | 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.0 | 0.7− |
| 2000 02 28 | 703 | 0.8+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 16 | G96 | 0.1+ | 0.4− |
| 2000 02 28 | 703 | 0.8− | 0.1− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 16 | G96 | 0.2− | 0.1+ |
| 2000 02 28 | 703 | 0.7+ | 0.4− | 2006 10 02 | 691 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.5− | 0.3− |
| 2006 09 17 | 691 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.1− | 0.5+ | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.6− | 2006 10 21 | G96 | 0.2+ | 0.0 |

**2006 SS$_{295}$ = 1999 KD$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 42.03545 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.17723180 | $\omega$ | 100.12836 | | | +0.72814805 | | +0.68497369 | | | |
| $a$ | 3.1388817 | $\Omega$ | 216.64519 | | | −0.64396928 | | +0.67131252 | | | |
| $e$ | 0.0806607 | $i$ | 2.37444 | | | −0.23474239 | | +0.28310871 | | | |
| $P$ | 5.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.9− | 0.3− | 1999 05 22 | 691 | 0.3− | 0.6− | 2006 09 25 | 691 | 0.0 | 0.3+ |
| 1995 09 20 | 691 | 0.5− | 0.8− | 2000 09 03 | 691 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.6+ |
| 1995 09 20 | 691 | 0.8− | 0.4− | 2000 09 03 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 1995 09 25 | 691 | 1.2− | 0.5− | 2000 09 03 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ |
| 1995 09 25 | 691 | (5.2+ | 0.1−) | 2004 04 23 | 691 | 0.2+ | 0.7+ | 2006 10 02 | 691 | 0.7− | 0.0 |
| 1995 09 25 | 691 | 1.1− | 0.1− | 2004 04 23 | 691 | 0.5+ | 0.5+ | 2006 10 02 | G96 | 0.1+ | 0.1− |
| 1999 05 18 | 691 | 0.1+ | 0.2+ | 2004 04 23 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.1+ |
| 1999 05 18 | 691 | 0.1− | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.2+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.2+ |
| 1999 05 22 | 691 | 0.1+ | 0.4− | 2006 09 17 | 691 | 0.1− | 0.2+ | | | | |
| 1999 05 22 | 691 | 0.4− | 0.3− | 2006 09 25 | 691 | 0.0 | 0.3+ | | | | |

**2006 SD$_{296}$ = 1999 CE$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.78769 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21250601 | $\omega$ | 117.60669 | | −0.15637118 | | −0.98743064 |
| $a$ | 2.7811340 | $\Omega$ | 341.34709 | | +0.87896487 | | −0.12849931 |
| $e$ | 0.0609325 | $i$ | 4.12301 | | +0.45052059 | | −0.09202535 |
| $P$ | 4.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 10 01 | 691 | 0.0 | 0.4+ | 1999 02 13 | 691 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.1+ | 0.3+ |
| 1992 10 01 | 691 | 0.2− | 0.0 | 2006 09 17 | 691 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.4+ | 0.2− |
| 1992 10 01 | 691 | 0.0 | 0.1− | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.4− |
| 1999 02 07 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.5− |
| 1999 02 07 | 691 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3− |
| 1999 02 07 | 691 | 0.3+ | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.0 |
| 1999 02 13 | 691 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.2+ | | | | |
| 1999 02 13 | 691 | 0.4− | 0.2− | 2006 10 02 | 691 | 0.3− | 0.0 | | | | |

**2006 SN$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.47703 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24419968 | $\omega$ | 318.50211 | | +0.42864505 | | +0.90337458 |
| $a$ | 2.5349690 | $\Omega$ | 336.86998 | | −0.81971717 | | +0.38265979 |
| $e$ | 0.1509214 | $i$ | 1.94518 | | −0.37990418 | | +0.19361262 |
| $P$ | 4.04 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 691 | 0.3− | 0.3+ | 2005 04 09 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2001 03 31 | 691 | 0.2+ | 0.3− | 2005 04 09 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2001 03 31 | 691 | 0.4+ | 0.2− | 2006 07 22 | G96 | 0.1+ | 0.9− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 10 09 | 291 | 0.2− | 0.1+ | 2006 07 22 | G96 | 0.1+ | 0.5− | 2006 10 22 | G96 | 0.4− | 0.5− |
| 2002 10 09 | 291 | 0.1− | 0.1+ | 2006 07 22 | G96 | 0.9− | 0.8− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2002 10 09 | 291 | 0.1− | 0.1+ | 2006 07 22 | G96 | 0.6− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3+ |
| 2005 03 11 | G96 | 0.7− | 0.2+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2+ |
| 2005 03 11 | G96 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.4+ |
| 2005 03 11 | G96 | 0.2− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2005 03 11 | G96 | 0.8− | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.2+ | | | | |
| 2005 04 09 | 691 | 0.7+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | | | | |

**2006 SO$_{296}$ = 2005 GW$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.38187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24348556 | $\omega$ | 88.48666 | | +0.66125668 | | +0.74984156 |
| $a$ | 2.5399231 | $\Omega$ | 222.93589 | | −0.70038176 | | +0.60668473 |
| $e$ | 0.0983278 | $i$ | 1.83782 | | −0.26870986 | | +0.26395317 |
| $P$ | 4.05 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 10 | 691 | (0.06+ | 0.02+) | 2005 04 07 | 691 | 0.1+ | 0.4+ | 2006 09 25 | 691 | 0.4+ | 0.1− |
| 1994 10 10 | 691 | (0.06+ | 0.02+) | 2005 04 11 | G96 | 0.6− | 0.4− | 2006 10 02 | 691 | 0.2− | 0.1+ |
| 1994 10 10 | 691 | (0.06+ | 0.02+) | 2005 04 11 | G96 | 0.3− | 0.1− | 2006 10 02 | 691 | 0.0 | 0.0 |
| 2001 04 24 | 291 | (76.7+ | 19.3−) | 2005 04 11 | G96 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.6+ |
| 2001 04 24 | 291 | (76.6+ | 19.4−) | 2005 04 11 | G96 | 0.4− | 0.3− | 2006 10 22 | G96 | 0.2− | 0.2− |
| 2001 04 24 | 291 | (76.5+ | 19.3−) | 2005 05 07 | G96 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2004 01 27 | 691 | (20.8+ | 3.8−) | 2005 05 07 | G96 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2004 01 27 | 691 | (20.5+ | 3.4−) | 2005 05 07 | G96 | 0.2+ | 0.3− | 2006 10 22 | G96 | 0.7− | 0.6− |
| 2004 01 27 | 691 | (20.6+ | 4.0−) | 2005 05 07 | G96 | 0.3− | 0.3− | 2006 10 28 | G96 | 0.6+ | 0.5− |
| 2005 01 17 | 809 | 0.5+ | 0.1− | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2005 01 17 | 809 | 0.3− | 0.0 | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2005 01 17 | 809 | 0.3− | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.2+ | | | | |
| 2005 04 07 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.0 | | | | |

**2006 SL$_{297}$ = 2002 TU$_{149}$ = 2005 GQ$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.87950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24535264 | $\omega$ | 291.54270 | | +0.31857141 | | +0.94789735 |
| $a$ | 2.5270213 | $\Omega$ | 357.03229 | | −0.85710620 | | +0.28729282 |
| $e$ | 0.1093741 | $i$ | 1.87787 | | −0.40482245 | | +0.13767156 |
| $P$ | 4.02 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 23 | 691 | 0.1+ | 0.0 | 2005 04 11 | G96 | 0.0 | 0.4− | 2006 09 17 | 691 | 0.0 | 0.1+ |
| 1998 09 23 | 691 | 0.3+ | 0.1− | 2005 04 11 | G96 | 0.1− | 0.4− | 2006 09 17 | 691 | 0.1− | 0.2+ |
| 1998 09 23 | 691 | 0.5+ | 0.2− | 2005 04 11 | G96 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.1+ |
| 2001 05 26 | 291 | 0.6− | 0.2+ | 2005 04 11 | G96 | 0.6+ | 0.4− | 2006 09 25 | 691 | 0.0 | 0.2− |
| 2001 05 26 | 291 | 0.1− | 0.0 | 2005 04 14 | 691 | 0.3+ | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.3− |
| 2001 05 26 | 291 | (2.9+ | 1.1−) | 2005 04 14 | 691 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.5− |
| 2002 10 05 | 644 | 0.7− | 0.4− | 2005 04 14 | 691 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.1− |
| 2002 10 05 | 644 | 0.4− | 0.9− | 2006 07 21 | G96 | 1.4+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.2− |
| 2002 10 05 | 644 | 0.2− | 0.5− | 2006 07 21 | G96 | 1.1+ | 0.8+ | 2006 09 25 | G96 | 0.3− | 0.1− |
| 2002 10 06 | 644 | 0.8− | 0.6+ | 2006 07 21 | G96 | (2.0+ | 0.8+) | 2006 10 02 | 691 | 0.2− | 0.2+ |
| 2002 10 06 | 644 | 0.7− | 0.4+ | 2006 07 21 | G96 | (1.8+ | 0.2+) | 2006 10 02 | 691 | 0.3+ | 0.2+ |
| 2002 10 06 | 644 | 0.6− | 0.6+ | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.1− |

**2006 SM$_{297}$ = 2001 TL$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.10587 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18977460 | $\omega$ | 357.79042 | | +0.99548531 | | +0.09490709 |
| $a$ | 2.9990059 | $\Omega$ | 356.76277 | | −0.08673157 | | +0.90407807 |
| $e$ | 0.1052976 | $i$ | 1.30109 | | −0.03855691 | | +0.41669591 |
| $P$ | 5.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.3+ |
| 2001 10 15 | 691 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.3+ | 0.4− | 2006 10 02 | 691 | 0.4− | 0.3+ |
| 2001 10 15 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1+ |
| 2001 10 21 | 704 | 1.0− | 0.5− | 2006 09 25 | 691 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.3− | 0.5+ |
| 2001 10 21 | 704 | 0.0 | 0.8+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 12 | 644 | 0.5+ | 0.1+ |
| 2001 10 21 | 704 | 0.7− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2001 10 21 | 704 | 0.9− | 0.5+ | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.5− |
| 2006 09 17 | 691 | 0.0 | 0.3+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− |

**2006 SV$_{297}$ = 2001 YP$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.58675 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18138362 | $\omega$ | 299.78593 | | +0.98072457 | | +0.15645093 |
| $a$ | 3.0907983 | $\Omega$ | 51.46684 | | −0.08228072 | | +0.87404440 |
| $e$ | 0.1456535 | $i$ | 8.60620 | | −0.17722640 | | +0.45996685 |
| $P$ | 5.43 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5+ | 0.7− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1− | 0.6+ |
| 2001 12 18 | 704 | 0.3− | 0.8− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.9− | 0.3+ |
| 2001 12 18 | 704 | 0.1− | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 10 22 | 703 | (1.6+ | 0.2−) |
| 2001 12 19 | 704 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2001 12 19 | 704 | 0.2+ | 1.1+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.3− | 0.6+ | 2006 10 10 | 644 | 0.3+ | 0.3+ | 2006 10 22 | G96 | 0.5+ | 0.5− |
| 2006 09 25 | 699 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.4+ | 0.6− |
| 2006 09 25 | 699 | 0.8− | 0.3− | 2006 10 16 | 703 | 0.0 | 1.4− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2006 09 25 | 699 | (0.4− | 1.7+) | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2006 09 25 | 699 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.4− | 1.0+ | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.2+ | | | | | | |
| 2006 10 02 | G96 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.2− | 1.3+ | | | | | | |

**2006 SP$_{298}$ = 2005 MY$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 94.84400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23266447 | $\omega$ | 76.67898 | | +0.12252555 | +0.98852366 | |
| $a$ | 2.6180786 | $\Omega$ | 200.98149 | | −0.97903512 | +0.10578951 | |
| $e$ | 0.0933138 | $i$ | 14.28736 | | −0.16271977 | +0.10784040 | |
| $P$ | 4.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 644 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.3− | | |
| 2005 06 29 | 644 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | | |
| 2005 06 29 | 644 | 0.0 | 0.3− | 2006 10 02 | 691 | 0.2− | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 | | |
| 2005 06 30 | 644 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− | | |
| 2005 06 30 | 644 | 0.2+ | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− | | |
| 2005 06 30 | 644 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2+ | | |
| 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ | | |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1− | | |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.1+ | | | | | | |
| 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.2− | | | | | | |

**2006 SE$_{299}$ = 1979 OR$_5$ = 2004 FP$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.14400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18674503 | $\omega$ | 188.56955 | | +0.56151241 | +0.82169998 | |
| $a$ | 3.0313541 | $\Omega$ | 115.64553 | | −0.75263036 | +0.55615219 | |
| $e$ | 0.1177268 | $i$ | 6.21114 | | −0.34387693 | +0.12451464 | |
| $P$ | 5.28 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1979 07 24 | 675 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.5− | 0.8− | 2006 10 16 | 703 | 0.6+ | 0.1− | | |
| 1979 07 25 | 675 | (7.0+ | 2.1+) | 2006 09 26 | 704 | 1.0− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.0 | | |
| 2004 03 25 | 926 | 0.2+ | 0.0 | 2006 09 26 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.4− | 0.8− | | |
| 2004 03 25 | 926 | 0.3− | 0.1− | 2006 09 26 | 704 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.5− | 0.3− | | |
| 2004 03 25 | 926 | 0.1− | 0.1− | 2006 09 26 | 703 | 1.1+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | | |
| 2004 03 25 | 926 | 0.8− | 0.1− | 2006 09 26 | 703 | (3.6+ | 1.9−) | 2006 10 20 | 644 | 0.3+ | 0.2− | | |
| 2004 03 25 | 926 | 0.1+ | 0.1− | 2006 09 26 | 703 | 1.1+ | 0.9+ | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2004 03 27 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | (1.7+ | 0.2−) | 2006 10 21 | 644 | 0.2+ | 0.1+ | | |
| 2004 03 27 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | | |
| 2004 03 27 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.1+ | | |
| 2006 09 18 | 703 | (1.5− | 0.5+) | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.4− | 1.3− | | |
| 2006 09 18 | 703 | 0.5− | 0.8− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.2− | 0.6+ | | |
| 2006 09 18 | 703 | 1.1+ | 0.5+ | 2006 10 16 | 703 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.5− | 0.0 | | |

**2006 SJ$_{299}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.03236 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29015895 | $\omega$ | 84.08545 | | −0.18574464 | −0.98227952 | |
| $a$ | 2.2596720 | $\Omega$ | 16.68245 | | +0.86352008 | −0.17533078 | |
| $e$ | 0.1081303 | $i$ | 4.99957 | | +0.46886245 | −0.06622732 | |
| $P$ | 3.40 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.9+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.6− | 2006 10 16 | G96 | 0.0 | 0.2− | | |
| 1996 10 04 | 691 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.3− | 0.5− | 2006 10 16 | G96 | 0.3− | 0.3− | | |
| 1996 10 04 | 691 | 0.5− | 0.1− | 2006 09 28 | 699 | 0.2+ | 1.2+ | 2006 10 16 | G96 | 0.0 | 0.3− | | |
| 2004 01 13 | 012 | 0.2+ | 0.2− | 2006 09 28 | 699 | 1.0+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 2004 01 13 | 012 | 0.2− | 0.6+ | 2006 09 28 | 699 | 0.8− | 0.8− | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2004 01 13 | 012 | 0.1− | 0.1− | 2006 09 28 | 699 | 1.8− | 1.0− | 2006 10 20 | 644 | 0.0 | 0.1+ | | |
| 2006 09 19 | 691 | 0.3+ | 0.0 | 2006 10 01 | 704 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2006 09 19 | 691 | 0.1+ | 0.3+ | 2006 10 01 | 704 | 0.5− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.6+ | | |
| 2006 09 19 | 691 | 0.3+ | 0.1− | 2006 10 01 | 704 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 01 | 704 | 0.2+ | 0.0 | | | | | | |
| 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 16 | G96 | 0.0 | 0.1− | | | | | | |

**2006 SF$_{300}$ = 2000 AS$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.89314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26834075 | $\omega$ | 313.07711 | | +0.29470144 | −0.95016458 | |
| $a$ | 2.3805554 | $\Omega$ | 119.52201 | | +0.90718240 | +0.24474843 | |
| $e$ | 0.2291388 | $i$ | 6.71025 | | +0.30028513 | +0.19309448 | |
| $P$ | 3.67 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.1+ | 0.1+ | 2000 01 07 | 704 | 0.4+ | 0.3− | 2006 09 26 | 703 | 0.2− | 0.2+ | | |
| 2000 01 05 | 704 | 0.2− | 0.2+ | 2000 01 07 | 704 | 0.2+ | 0.2− | 2006 10 02 | 703 | 0.2− | 0.4− | | |
| 2000 01 05 | 704 | 1.0− | 0.3− | 2000 01 07 | 704 | 0.1+ | 0.8− | 2006 10 02 | 703 | 0.1+ | 0.8− | | |
| 2000 01 05 | 704 | 0.2− | 0.0 | 2000 01 07 | 704 | 0.1− | 1.6+ | 2006 10 02 | 703 | 0.2+ | 0.6+ | | |
| 2000 01 07 | 704 | 0.5+ | 0.4− | 2006 09 18 | 703 | 1.4− | 1.0− | 2006 10 02 | 703 | 0.2− | 0.2− | | |
| 2000 01 07 | 704 | 0.3+ | 0.6+ | 2006 09 18 | 699 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.1+ | | |
| 2000 01 07 | 704 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.4− | 0.6− | 2006 10 10 | 644 | 0.1+ | 0.2+ | | |
| 2000 01 07 | 704 | 0.2− | 0.5+ | 2006 09 18 | 703 | 0.0 | 1.2− | 2006 10 10 | 644 | 0.1+ | 0.0 | | |
| 2000 01 07 | 704 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1− | | |
| 2000 01 07 | 704 | 0.6− | 0.5− | 2006 09 18 | 699 | (1.9− | 2.0+) | 2006 10 11 | 644 | 0.3+ | 0.3− | | |
| 2000 01 07 | 704 | 0.5+ | 0.5+ | 2006 09 18 | 699 | 1.2+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2− | | |
| 2000 01 07 | 704 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.9+ | 1.5+ | 2006 10 28 | 703 | 0.1+ | 0.9+ | | |
| 2000 01 07 | 704 | 0.3− | 0.5− | 2006 09 26 | 703 | 0.1− | 0.1+ | 2006 10 28 | 703 | 0.7− | 1.0− | | |
| 2000 01 07 | 704 | 0.1+ | 0.3− | 2006 09 26 | 703 | 0.4− | 0.7+ | 2006 10 28 | 703 | 0.5+ | 0.2+ | | |
| 2000 01 07 | 704 | 0.2+ | 0.5− | 2006 09 26 | 703 | 0.3− | 1.1+ | 2006 10 28 | 703 | 0.2− | 0.2+ | | |

**2006 SG$_{300}$ = 2003 YS$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.67427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27478696 | $\omega$ | 244.89841 | | +0.97203152 | −0.21404489 | |
| $a$ | 2.3431781 | $\Omega$ | 127.31448 | | +0.23412642 | +0.91547435 | |
| $e$ | 0.1134097 | $i$ | 6.97938 | | −0.01842662 | +0.34072201 | |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 20 | 644 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.3+ | 1.2+ | 2006 10 17 | 703 | 0.0 | 1.0− | | |
| 2002 07 20 | 644 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.6+ | 0.6+ | 2006 10 17 | 703 | 1.0+ | 1.5− | | |
| 2002 07 20 | 644 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2003 12 27 | 691 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | | |
| 2003 12 27 | 691 | 0.2− | 0.3+ | 2006 10 02 | 703 | 0.2− | 0.8+ | 2006 10 22 | 644 | 0.9+ | 0.3+ | | |
| 2003 12 27 | 691 | 0.5− | 0.1− | 2006 10 02 | 703 | 1.0− | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2003 12 28 | 691 | 0.4+ | 0.0 | 2006 10 02 | 703 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.1+ | | |
| 2003 12 28 | 691 | 0.2+ | 0.3− | 2006 10 02 | 703 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.4+ | 0.2− | | |
| 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.4− | 0.6+ | | |
| 2006 09 18 | 703 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.1+ | 1.3+ | | |
| 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 1.8− | 1.0− | | |
| 2006 09 18 | 703 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.9− | 0.3− | 2006 10 28 | 703 | 0.2− | 0.2+ | | |
| 2006 09 18 | 703 | 0.3− | 0.6+ | 2006 10 17 | 703 | 0.4− | 1.6− | | | | | | |

**2006 SL$_{300}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.69760 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26754906 | $\omega$ | 215.77104 | | +0.85040662 | +0.51646611 | |
| $a$ | 2.3852492 | $\Omega$ | 112.83548 | | −0.45384632 | +0.81659745 | |
| $e$ | 0.1513583 | $i$ | 6.25137 | | −0.26614302 | +0.25774282 | |
| $P$ | 3.68 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.2− | 0.3+ | 2005 05 07 | 691 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.1− | 0.4− | | |
| 2002 07 14 | 644 | 0.2+ | 0.3+ | 2005 05 07 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 1.0+ | 0.5− | | |
| 2002 07 14 | 644 | 0.6− | 0.6− | 2006 09 18 | 703 | 0.1− | 0.8− | 2006 09 26 | 703 | 0.4+ | 0.9− | | |
| 2002 08 29 | 644 | 0.2+ | 0.2− | 2006 09 18 | 703 | 0.7+ | 0.1− | 2006 10 02 | 703 | 0.3+ | 0.8+ | | |
| 2002 08 29 | 644 | 0.1+ | 0.2+ | 2006 09 18 | 703 | 2.2− | 1.0+ | 2006 10 02 | 703 | 0.4− | 1.2+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.3+ | 0.0 | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 02 | 703 | 0.2− | 0.8− | | |
| 2005 05 07 | 691 | 0.1+ | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.5− | 2006 10 02 | 703 | 0.3+ | 1.2+ | | |

**2006 SW$_{300}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.03140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21171801 | $\omega$ | 239.35390 | | +0.69922702 | | +0.67721892 |
| $a$ | 2.7880305 | $\Omega$ | 76.92575 | | −0.54863615 | | +0.71372485 |
| $e$ | 0.1114468 | $i$ | 13.59917 | | −0.45834479 | | +0.17880539 |
| $P$ | 4.66 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 03 | 608 | 1.0− | 0.8− | 2006 09 26 | 703 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.2− | | |
| 2000 06 03 | 608 | 0.3− | 0.7− | 2006 09 26 | 703 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.2− | 0.1+ | | |
| 2000 06 03 | 608 | 0.2− | 0.7− | 2006 10 02 | 703 | 0.4− | 0.8− | 2006 10 21 | 703 | 0.2+ | 0.0 | | |
| 2001 08 18 | 644 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.1− | 0.8− | 2006 10 21 | 703 | 0.5+ | 0.4− | | |
| 2001 08 18 | 644 | 0.0 | 0.5+ | 2006 10 02 | 703 | 0.9− | 0.7− | 2006 10 21 | 703 | 0.3− | 0.9+ | | |
| 2001 08 18 | 644 | 0.1+ | 0.2+ | 2006 10 02 | 703 | 0.3+ | 1.4− | 2006 10 21 | 703 | 0.1− | 0.3+ | | |
| 2001 08 26 | 644 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.3− | 0.0 | | |
| 2001 08 26 | 644 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ | | |
| 2001 08 26 | 644 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.3+ | | |
| 2005 06 16 | G96 | (2.6+ | 1.7+) | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.9+ | 0.1− | | |
| 2005 06 16 | G96 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 10 31 | 703 | (1.6+ | 0.3+) | | |
| 2005 06 16 | G96 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 10 31 | 703 | 0.7+ | 0.7+ | | |
| 2005 06 16 | G96 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 31 | 703 | 1.5+ | 1.4+ | | |
| 2006 09 19 | 703 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.2+ | 0.5− | | |
| 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.3− | 0.7− | | |
| 2006 09 19 | 703 | 0.7+ | 0.5− | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.2+ | 0.3− | | |
| 2006 09 19 | 703 | 0.7+ | 0.4− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 11 23 | 703 | 0.3− | 1.1+ | | |
| 2006 09 26 | 703 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.2− | 0.1+ | | | | | | |
| 2006 09 26 | 703 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.1+ | | | | | | |

**2006 SX$_{300}$ = 2004 KE$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.30081 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17154773 | $\omega$ | 336.71325 | | +0.78626109 | | −0.59510138 |
| $a$ | 3.2078402 | $\Omega$ | 60.85987 | | +0.59262292 | | +0.65011263 |
| $e$ | 0.0940278 | $i$ | 10.97446 | | +0.17490448 | | +0.47244886 |
| $P$ | 5.75 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 19 | 291 | 0.1+ | 0.1− | 2006 10 03 | 704 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | | |
| 2004 05 19 | 291 | 0.8− | 0.8+ | 2006 10 03 | 704 | 0.2− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.9− | | |
| 2004 05 19 | 291 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.6+ | | |
| 2004 05 21 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.4− | 0.3− | | |
| 2004 05 21 | 691 | 0.5+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.7+ | 0.7− | | |
| 2004 05 21 | 691 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.1− | | |
| 2006 09 26 | 703 | 1.2− | 0.4− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.1− | | |
| 2006 09 26 | 703 | 0.3− | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.6+ | 2006 11 24 | G96 | 0.4− | 0.1+ | | |
| 2006 09 26 | 703 | 1.0− | 1.2− | 2006 10 10 | 644 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2006 09 26 | 703 | 0.7− | 0.2− | 2006 10 11 | 644 | 0.5+ | 0.1− | | | | | | |
| 2006 10 03 | 704 | 1.2+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | | | | | | |

**2006 SM$_{301}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.04886 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23301640 | $\omega$ | 334.06646 | | +0.27257088 | | −0.93183043 |
| $a$ | 2.6154418 | $\Omega$ | 99.34578 | | +0.91958725 | | +0.17908072 |
| $e$ | 0.1651539 | $i$ | 14.05185 | | +0.28295653 | | +0.31562975 |
| $P$ | 4.23 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 608 | 0.3+ | 0.2+ | 2002 12 05 | 608 | 0.1+ | 0.2− | 2006 10 02 | 703 | 0.1+ | 0.4− | | |
| 2002 11 06 | 608 | 0.3+ | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.1− | 2006 10 02 | 703 | 0.7− | 0.1+ | | |
| 2002 11 06 | 608 | 0.3+ | 0.7− | 2006 09 26 | 703 | 0.3− | 0.2− | 2006 10 02 | 703 | 0.1+ | 0.2− | | |
| 2002 12 05 | 608 | 1.0− | 0.5+ | 2006 09 26 | 703 | 0.6+ | 0.5+ | 2006 10 02 | 703 | 0.1+ | 0.4+ | | |
| 2002 12 05 | 608 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.4+ | 0.1+ | | | | | | |

**2006 SN$_{301}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.22800 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23866477 | $\omega$ | 288.04546 | | +0.77628827 | | −0.59363563 |
| $a$ | 2.5740116 | $\Omega$ | 108.90278 | | +0.62907968 | | +0.70795452 |
| $e$ | 0.1959129 | $i$ | 12.95337 | | +0.04043861 | | +0.38261878 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 644 | 0.1− | 0.7− | 2006 09 26 | 703 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.4− | 0.1+ | | |
| 2002 12 13 | 644 | 0.3− | 0.8− | 2006 09 26 | 703 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.0 | | |
| 2002 12 13 | 644 | 0.4+ | 0.4+ | 2006 09 26 | 703 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.2− | | |
| 2002 12 13 | 644 | 0.1+ | 0.8− | 2006 09 26 | 703 | 0.1− | 0.4+ | 2006 10 31 | 703 | 0.2+ | 0.4− | | |
| 2002 12 13 | 644 | 0.4+ | 0.2+ | 2006 10 02 | 703 | 0.2+ | 0.2− | 2006 10 31 | 703 | 0.3+ | 0.1− | | |
| 2002 12 13 | 644 | 0.0 | 0.3+ | 2006 10 02 | 703 | 0.2− | 0.2− | 2006 10 31 | 703 | 0.5+ | 0.3+ | | |
| 2003 01 05 | 699 | 0.9− | 0.2− | 2006 10 02 | 703 | 0.0 | 0.1− | 2006 10 31 | 703 | 0.0 | 0.2− | | |
| 2003 01 05 | 699 | 0.2+ | 1.1− | 2006 10 02 | 703 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.1− | | |
| 2003 01 05 | 699 | 0.9+ | 0.2− | 2006 10 04 | 703 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.2− | | |
| 2003 01 05 | 699 | 0.7− | 0.8+ | 2006 10 04 | 703 | 0.2− | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.4+ | | |
| 2003 01 27 | 644 | 0.4+ | 0.3+ | 2006 10 04 | 703 | 0.6− | 0.7+ | 2006 11 17 | 703 | 0.0 | 0.3− | | |
| 2003 01 27 | 644 | 0.3− | 0.7+ | 2006 10 04 | 703 | 0.4− | 0.0 | 2006 11 23 | 703 | 0.4+ | 0.4− | | |
| 2003 01 27 | 644 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.0 | 0.1− | | |
| 2004 02 29 | 691 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.5− | 0.9+ | | |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.1+ | 0.3+ | | |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.0 | | | | | | |

**2006 SK$_{303}$ = 2002 XV$_{100}$ = 2004 FH$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.04228 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21369606 | $\omega$ | 169.70933 | | +0.59884474 | | −0.79898460 |
| $a$ | 2.7707991 | $\Omega$ | 243.48196 | | +0.73035477 | | +0.57293855 |
| $e$ | 0.0659950 | $i$ | 3.51442 | | +0.32858316 | | +0.18266097 |
| $P$ | 4.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 23 | 691 | 0.4− | 0.6+ | 2002 12 10 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.2− | 0.4− | | |
| 1992 09 23 | 691 | 0.1− | 0.6+ | 2002 12 10 | 704 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | | |
| 1992 09 23 | 691 | 0.1+ | 0.1+ | 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 09 27 | 699 | 0.7+ | 0.9+ | | |
| 2000 05 30 | 691 | 0.1− | 0.3− | 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.3+ | 0.2− | | |
| 2000 05 30 | 691 | 0.0 | 0.1+ | 2004 03 16 | 691 | 0.2+ | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.3− | | |
| 2000 05 30 | 691 | 0.2− | 0.3− | 2004 03 18 | 704 | 1.1+ | 0.5+ | 2006 09 27 | 699 | 0.4+ | 0.6+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.6− | 2004 03 18 | 704 | 0.8+ | 0.5+ | 2006 09 27 | 699 | 0.3− | 0.1− | | |
| 2002 12 05 | 704 | 0.3+ | 0.5− | 2004 03 18 | 704 | (2.5+ | 1.0−) | 2006 09 27 | 699 | 0.8− | 0.3+ | | |
| 2002 12 05 | 704 | 0.2− | 0.5− | 2004 03 18 | 704 | 1.0− | 1.0− | 2006 10 01 | 691 | 0.1+ | 0.1+ | | |
| 2002 12 05 | 704 | 0.0 | 0.7− | 2006 09 17 | 703 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.0 | | |
| 2002 12 05 | 704 | 0.5− | 0.2− | 2006 09 17 | 703 | 0.5+ | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.1+ | | |
| 2002 12 10 | 704 | 0.6− | 1.1+ | 2006 09 17 | 703 | 0.1+ | 0.1+ | | | | | | |

**2006 SW$_{303}$ = 1995 CP$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.42669 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22701076 | $\omega$ | 259.51553 | | +0.49068332 | | −0.87118752 |
| $a$ | 2.6613690 | $\Omega$ | 161.07281 | | +0.81769295 | | +0.45397446 |
| $e$ | 0.0408731 | $i$ | 2.86140 | | +0.30101183 | | +0.18692111 |
| $P$ | 4.34 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 809 | (2.7− | 1.5+) | 2004 01 30 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1− | | |
| 1993 10 11 | 809 | 1.0− | 1.5+ | 2004 02 13 | 291 | 0.0 | 0.2+ | 2006 10 02 | H55 | 1.1+ | 0.2+ | | |
| 1993 10 11 | 809 | 0.3+ | 1.0+ | 2004 02 13 | 291 | 0.1+ | 0.4+ | 2006 10 02 | H55 | 1.8+ | 1.2+ | | |
| 1995 02 01 | 691 | 0.4− | 0.1− | 2004 02 13 | 291 | 0.5+ | 0.4+ | 2006 10 02 | H55 | 1.6+ | 0.9+ | | |
| 1995 02 01 | 691 | 0.4− | 0.4− | 2004 03 15 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 07 | 691 | 0.1+ | 0.4− | 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.5+ |
| 1995 02 07 | 691 | 0.3− | 0.7− | 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.5− | 0.4+ |
| 1995 02 07 | 691 | 0.2+ | 0.3− | 2004 04 12 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.9+ | 0.8− |
| 2002 11 23 | 644 | 0.3− | 0.4+ | 2004 04 12 | 691 | 0.2+ | 0.5+ | 2006 10 21 | 703 | 0.6− | 0.4− |
| 2002 11 23 | 644 | 0.4+ | 0.6+ | 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 1.0− | 1.0+ |
| 2002 11 23 | 644 | 0.2+ | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 10 21 | 703 | (2.6− | 5.6−) |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 09 27 | H55 | 0.7− | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2004 01 30 | 691 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2004 01 30 | 691 | 0.1− | 0.1+ | 2006 09 27 | H55 | 0.8− | 0.8+ | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2004 01 30 | 691 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.5− | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 09 27 | H55 | 0.4− | 0.7+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2004 01 30 | 691 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2004 01 30 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.3− |

**2006 SX$_{303}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.47312 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22550853 | $\omega$ | 190.02580 | | +0.88466479 | | +0.46568012 |
| $a$ | 2.6731751 | $\Omega$ | 142.19341 | | −0.42516321 | | +0.82567969 |
| $e$ | 0.0782798 | $i$ | 2.11178 | | −0.19132291 | | +0.31842592 |
| $P$ | 4.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 10 21 | 703 | (2.2− | 0.4−) |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | (0.5+ | 2.0+) |
| 2001 06 18 | 691 | 0.1+ | 0.5− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.0 | 0.8− |
| 2001 06 18 | 691 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 2001 06 18 | 691 | 0.2− | 0.4+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.3− | 0.3− |
| 2002 11 25 | 644 | 0.3− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2002 11 25 | 644 | 0.1− | 0.7+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2002 11 25 | 644 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2006 09 27 | G96 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.2− | 1.2− | 2006 11 16 | G96 | 0.2+ | 0.9− |

**2006 SY$_{303}$ = 2002 UK$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.85411 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24338460 | $\omega$ | 96.82028 | | −0.89862254 | | −0.43677604 |
| $a$ | 2.5406255 | $\Omega$ | 57.28903 | | +0.38065271 | | −0.82300462 |
| $e$ | 0.0321003 | $i$ | 2.81225 | | +0.21813080 | | −0.36316675 |
| $P$ | 4.05 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 2002 10 30 | 644 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.6+ | 0.1+ |
| 2002 10 30 | 644 | 0.3− | 0.1+ | 2006 10 01 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2002 10 31 | 704 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 10 31 | 704 | 0.3− | 0.1− | 2006 10 15 | 703 | 0.1− | 0.9− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2006 09 27 | G96 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.8+ | 1.2+ | 2006 10 22 | G96 | 0.3+ | 0.1− |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 15 | 703 | 1.5− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2006 09 27 | G96 | 0.4− | 0.2+ | 2006 10 21 | 703 | (1.7− | 0.0 ) | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2006 09 27 | G96 | 0.3− | 0.2+ | 2006 10 21 | 703 | (2.0− | 0.2+) | 2006 11 14 | G96 | 0.0 | 0.1+ |
| 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.7− | 1.0+ | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1− | 0.4− | | | | |

**2006 SG$_{304}$ = 2003 YH$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.67795 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28386646 | $\omega$ | 207.38166 | | −0.05106338 | | −0.99473903 |
| $a$ | 2.2929434 | $\Omega$ | 245.65981 | | +0.93319338 | | −0.01585125 |
| $e$ | 0.0614207 | $i$ | 5.59358 | | +0.35572834 | | −0.10120773 |
| $P$ | 3.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.6− | 0.1− | 2006 09 16 | 703 | 0.3+ | 1.1+ | 2006 10 02 | G96 | 0.3+ | 0.2− |
| 2003 12 19 | 704 | 0.7+ | 0.0 | 2006 09 16 | 703 | 0.3+ | 1.1+ | 2006 10 17 | 703 | 0.2+ | 0.8+ |
| 2003 12 19 | 704 | 0.8− | 0.7+ | 2006 09 16 | 703 | 0.9− | 0.4− | 2006 10 17 | 703 | 0.2− | 0.5+ |
| 2003 12 19 | 704 | 0.2− | 0.8− | 2006 09 27 | 703 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.2+ |
| 2003 12 19 | 704 | 0.7− | 0.0 | 2006 09 27 | 703 | 0.3+ | 1.1− | 2006 10 17 | 703 | 0.9− | 0.3+ |
| 2003 12 23 | 704 | 0.1+ | 0.3− | 2006 09 27 | 703 | 0.5+ | 0.5− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2003 12 23 | 704 | 0.5+ | 0.8+ | 2006 09 27 | 703 | 0.3+ | 0.0 | 2006 10 23 | G96 | 0.4+ | 0.3− |
| 2003 12 23 | 704 | 0.8+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 23 | G96 | 0.1− | 0.2− |
| 2003 12 23 | 704 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.6− | 2006 10 23 | G96 | 0.1+ | 0.3− |
| 2006 09 16 | 703 | 0.6− | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.5− | | | | |

**2006 SM$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.32159 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28443719 | $\omega$ | 32.82117 | | +0.44933974 | | +0.88595194 |
| $a$ | 2.2898751 | $\Omega$ | 264.11152 | | −0.84251644 | | +0.37751172 |
| $e$ | 0.1181455 | $i$ | 6.62820 | | −0.29708559 | | +0.26939571 |
| $P$ | 3.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.1+ | 0.2− | 2006 09 16 | 703 | 0.2− | 1.0− | 2006 10 03 | 704 | 0.7− | 1.0+ |
| 2003 12 17 | 691 | 0.3+ | 0.2− | 2006 09 16 | 703 | 0.0 | 0.4− | 2006 10 03 | 704 | 0.5− | 0.5+ |
| 2003 12 17 | 691 | 0.4− | 0.0 | 2006 09 16 | 703 | 0.1+ | 0.2+ | 2006 10 03 | 704 | 0.4+ | 0.7+ |
| 2003 12 29 | 291 | 0.2+ | 0.3+ | 2006 09 27 | 703 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2− |
| 2003 12 29 | 291 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.3− |
| 2003 12 29 | 291 | 0.2− | 0.2− | 2006 09 27 | 703 | 0.1− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4− |
| 2006 09 16 | 703 | 0.1+ | 0.4− | 2006 09 27 | 703 | 0.8+ | 0.2+ | | | | |

**2006 SN$_{304}$ = 1995 VE$_4$ = 2004 DJ$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.70898 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26595038 | $\omega$ | 282.35972 | | +0.51569369 | | −0.85562220 |
| $a$ | 2.3947985 | $\Omega$ | 136.50279 | | +0.80900546 | | +0.46922935 |
| $e$ | 0.1785650 | $i$ | 3.69778 | | +0.28208189 | | +0.21848218 |
| $P$ | 3.71 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.3− | 0.2− | 2004 02 22 | 691 | 0.4+ | 0.0 | 2006 09 18 | 691 | 0.2− | 0.2+ |
| 1995 11 14 | 691 | 0.1− | 0.3− | 2004 02 22 | 695 | 0.5− | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 1995 11 14 | 691 | 0.3− | 0.3− | 2004 02 22 | 691 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.0 |
| 1995 11 19 | 691 | 0.0 | 0.1− | 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1− | 0.7+ |
| 1995 11 19 | 691 | 0.7+ | 0.1+ | 2004 02 29 | 691 | 0.6− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 1995 11 19 | 691 | 0.1+ | 0.1+ | 2004 02 29 | 691 | 0.7+ | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.1+ |
| 2004 02 22 | 691 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.0 | 0.2+ |
| 2004 02 22 | 695 | 0.4− | 0.0 | 2006 09 18 | 691 | 0.4− | 0.1+ | | | | |

**2006 SP$_{304}$ = 2002 XH$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.32768 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22650359 | $\omega$ | 247.46296 | | +0.59162730 | | −0.80552874 |
| $a$ | 2.6653402 | $\Omega$ | 166.11310 | | +0.78113538 | | +0.56255682 |
| $e$ | 0.1757511 | $i$ | 7.94521 | | +0.19951103 | | +0.18615390 |
| $P$ | 4.35 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.2+ | 0.3− |
| 2002 12 10 | 644 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.4− |
| 2002 12 10 | 644 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 |
| 2002 12 14 | 704 | 1.4− | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2002 12 14 | 704 | 0.4+ | 0.6− | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 12 14 | 704 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ |

**2006 SX$_{305}$ = 2002 LT$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.86328 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28926352 | $\omega$ | 226.07154 | | +0.13370249 | | +0.98760522 |
| $a$ | 2.2643329 | $\Omega$ | 51.79169 | | −0.87663680 | | +0.15655513 |
| $e$ | 0.1443159 | $i$ | 6.00598 | | −0.46220296 | | −0.01124335 |
| $P$ | 3.41 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 06 | 704 | 0.4+ | 0.5+ | 2005 04 16 | 691 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 |
| 2002 06 06 | 704 | 0.2− | 0.4+ | 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.2− |
| 2002 06 06 | 704 | 0.5− | 0.1+ | 2006 09 18 | 703 | 0.2− | 0.5+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2002 06 08 | 704 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 0.4+ | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.2− |
| 2002 06 08 | 704 | 0.3+ | 0.3− | 2006 09 18 | 703 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.3+ |
| 2002 06 08 | 704 | 0.2− | 1.1− | 2006 09 18 | 703 | 0.2+ | 0.5− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2002 06 08 | 704 | 0.5− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.5+ |

**2006 SH$_{306}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.21795 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27273116 | $\omega$ | 319.05566 | | +0.84947469 | | −0.52676453 |
| $a$ | 2.3549383 | $\Omega$ | 72.75576 | | +0.49195917 | | +0.77006208 |
| $e$ | 0.2046165 | $i$ | 1.81191 | | +0.19070637 | | +0.35989377 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 29 | 809 | 0.2− | 0.3+ | 2006 10 15 | 703 | 0.9+ | 0.8+ | 2006 10 28 | 704 | 0.4+ | 0.0 |
| 1995 08 30 | 809 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.1+ | 1.1+ | 2006 10 28 | 704 | 0.3+ | 0.1+ |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2006 10 15 | 703 | 0.6+ | 1.2+ | 2006 10 28 | 704 | 1.3+ | 0.1− |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.4+ | 0.9+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2004 02 12 | 691 | 0.1+ | 0.0 | 2006 10 17 | H06 | 0.8− | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2006 08 28 | 703 | 0.2+ | 0.3− | 2006 10 17 | H06 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2006 08 28 | 703 | 0.2− | 0.3− | 2006 10 17 | H06 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2006 08 28 | 703 | (0.6− | 1.7−) | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 2006 08 28 | 703 | 0.0 | 0.3+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.3+ |
| 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.4+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.2− |
| 2006 09 23 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.4− | 0.1− |
| 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2006 09 27 | 704 | 0.6− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1+ |
| 2006 09 27 | 704 | 0.9+ | 0.3+ | 2006 10 21 | 703 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2006 09 27 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.6+ |
| 2006 09 27 | 691 | 1.5− | 1.1− | 2006 10 21 | 703 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2006 09 27 | 691 | 1.0+ | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.1− |
| 2006 10 13 | D35 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 20 | G96 | 0.5− | 0.7− |
| 2006 10 13 | D35 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.6− |
| 2006 10 13 | D35 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.3− |

**2006 SM$_{306}$ = 1999 XU$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.14992 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27609024 | $\omega$ | 232.90234 | | +0.98818807 | | +0.14891450 |
| $a$ | 2.3357984 | $\Omega$ | 118.50760 | | −0.12427305 | | +0.91684377 |
| $e$ | 0.2008650 | $i$ | 2.35948 | | −0.08966910 | | +0.37043485 |
| $P$ | 3.57 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 691 | 0.5− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.4+ | 0.1+ |
| 1999 12 12 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 1999 12 12 | 691 | 0.1− | 0.6− | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.3− |
| 1999 12 17 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2− |
| 1999 12 17 | 691 | 0.4− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.0 | 0.1− |
| 1999 12 17 | 691 | 0.7+ | 0.3− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2006 09 27 | G96 | 0.5− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.1− |

**2006 SR$_{306}$ = 2001 SZ$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.56381 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21264749 | $\omega$ | 237.51185 | | +0.83971026 | | −0.54214165 |
| $a$ | 2.7799002 | $\Omega$ | 155.27522 | | +0.51985652 | | +0.78597747 |
| $e$ | 0.1062801 | $i$ | 4.26839 | | +0.15695820 | | +0.29718991 |
| $P$ | 4.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.5− | 0.1+ | 2006 09 27 | G96 | 0.6− | 0.4− | 2006 10 16 | 703 | 0.1− | 1.3+ |
| 2001 09 19 | 704 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.4+ |
| 2001 09 19 | 704 | 0.2− | 1.0+ | 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.8+ |
| 2001 09 19 | 704 | 0.1+ | 0.9+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.3− |
| 2001 09 19 | 704 | 1.2− | 1.0− | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.3− | 0.2− |
| 2001 09 21 | 704 | 0.6+ | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.6+ |
| 2001 09 21 | 704 | 0.4+ | 0.5+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2006 10 03 | G96 | 0.8+ | 0.4− | 2006 11 13 | 703 | 0.3− | 1.4+ |
| 2003 01 25 | 645 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.7− | 0.8+ |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.4− | 0.6− |
| 2003 01 26 | 291 | 0.4− | 0.4+ | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 13 | 703 | 1.2− | 0.3+ |
| 2003 01 26 | 291 | 0.4+ | 0.8+ | 2006 10 03 | G96 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2003 01 26 | 291 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.5+ | 0.0 |
| 2004 03 23 | 691 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.8+ | 0.6+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.6+ | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.2+ |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.5+ | 0.1+ | | | | |

**2006 SU$_{306}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.56264 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27463508 | $\omega$ | 203.44547 | | +0.81857176 | | +0.57268575 |
| $a$ | 2.3440419 | $\Omega$ | 121.54256 | | −0.51841727 | | +0.76986133 |
| $e$ | 0.2113503 | $i$ | 2.98626 | | −0.24735362 | | +0.28168166 |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 09 | 691 | 0.5− | 0.4− | 2005 04 01 | 691 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.1− |
| 1999 12 09 | 691 | 0.3− | 0.3− | 2005 04 01 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.2− |
| 1999 12 09 | 691 | 0.6− | 0.4+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 1999 12 16 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 1999 12 16 | 691 | 0.0 | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.0 | 0.0 |
| 1999 12 16 | 691 | 0.1− | 0.6+ | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2000 01 05 | 691 | 0.6+ | 0.5− | 2006 09 30 | 703 | 0.2− | 0.8− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2000 01 05 | 691 | 0.4+ | 0.4− | 2006 09 30 | 703 | 0.8+ | 0.7− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2000 01 05 | 691 | 0.8+ | 0.1− | 2006 09 30 | 703 | 0.9− | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.3+ | 2006 09 30 | 703 | (1.6− | 0.3+) | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 07 14 | 644 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2002 07 14 | 644 | 0.1− | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 01 18 | 735 | 0.0 | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 01 18 | 735 | 0.1− | 0.8+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 01 18 | 735 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2005 04 01 | 691 | 0.5− | 0.2− | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− |

**2006 SX$_{306}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.51224 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23988292 | $\omega$ | 57.70141 | | +0.37633448 | | +0.92312890 |
| $a$ | 2.5652902 | $\Omega$ | 234.60498 | | −0.87921378 | | +0.32902857 |
| $e$ | 0.1168071 | $i$ | 5.54540 | | −0.29215663 | | +0.19893020 |
| $P$ | 4.11 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 699 | (2.7+ | 2.9+) | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2− |
| 2005 05 09 | 699 | 0.5+ | 0.7+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.0 | 0.2+ |
| 2005 05 09 | 699 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.3+ | 0.7+ |
| 2005 05 09 | 699 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.3− | 0.2+ |
| 2005 06 01 | G96 | 0.2+ | 0.2− | 2006 09 30 | 703 | (1.9− | 0.5+) | 2006 10 17 | 703 | 0.0 | 0.5− |
| 2005 06 01 | G96 | 0.2− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.1+ | 2006 10 27 | G98 | 0.1+ | 0.3+ |
| 2005 06 01 | G96 | 0.3− | 0.1− | 2006 09 30 | 703 | 0.6− | 1.0− | 2006 10 27 | G98 | 0.2− | 0.3+ |
| 2005 06 01 | G96 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.8+ | 0.8+ | 2006 10 27 | G98 | 0.1+ | 0.1+ |
| 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 27 | G98 | 0.1+ | 0.4+ |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.0 | 0.0 | | | | |

### 2006 $SD_{308}$ = 2001 $QU_{209}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.25245 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21371637 | $\omega$ | 107.16205 | | +0.96575968 | −0.25315940 | |
| $a$ | 2.7706235 | $\Omega$ | 267.53068 | | +0.21118452 | +0.89412666 | |
| $e$ | 0.0841517 | $i$ | 3.25530 | | +0.15069619 | +0.36938846 | |
| $P$ | 4.61 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.4+ | 0.1+ | 2002 12 11 | 291 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 1994 01 08 | 691 | 0.4− | 0.0 | 2002 12 11 | 291 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 1994 01 08 | 691 | 0.2− | 1.0− | 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 08 23 | 699 | 0.1+ | 0.7− | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | 0.0 | 0.4+ | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.5+ | 0.1+ |
| 2001 08 23 | 699 | 0.4− | 1.4+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.8− | 0.6− |
| 2001 08 24 | 644 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4− | 0.3− |
| 2001 08 24 | 644 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.1− | 1.0− |
| 2001 08 24 | 644 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.3+ | 0.8− |
| 2002 12 11 | 291 | 0.1− | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.0 | | | | |

### 2006 $SC_{310}$ = 2005 $LH_{33}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.95290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23695458 | $\omega$ | 93.33881 | | +0.55915145 | +0.82766955 | |
| $a$ | 2.5863818 | $\Omega$ | 210.81456 | | −0.79305702 | +0.51705584 | |
| $e$ | 0.0925873 | $i$ | 5.38688 | | −0.24168205 | +0.21821177 | |
| $P$ | 4.16 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 10 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.0 | 0.6− |
| 2005 06 10 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2005 06 10 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2005 06 14 | 691 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.8− | 0.6+ |
| 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.7+ |
| 2005 06 14 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2006 09 17 | 691 | 0.2+ | 0.3− | 2006 10 17 | 703 | (1.7+ | 0.5−) | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.1− | 1.1− | 2006 10 31 | G96 | 0.3− | 0.3+ |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 17 | 703 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.6+ | 0.1− |

### 2006 $SL_{310}$ = 2000 $SW_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.59309 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17274449 | $\omega$ | 288.69020 | | +0.48903844 | +0.86848080 | |
| $a$ | 3.1930073 | $\Omega$ | 11.65142 | | −0.56873400 | +0.38800462 | |
| $e$ | 0.1393426 | $i$ | 23.68651 | | −0.66134941 | +0.30853445 | |
| $P$ | 5.71 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 684 | 0.6− | 0.2+ | 2004 04 19 | 691 | 0.4+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.1+ |
| 2000 09 21 | 684 | 0.3− | 0.2+ | 2006 09 15 | 691 | 0.3− | 0.3+ | 2006 09 28 | 699 | (2.6+ | 0.2+) |
| 2000 09 22 | 684 | 0.3− | 0.9+ | 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 28 | 699 | 0.7− | 0.8− |
| 2000 09 22 | 684 | 0.6− | 0.3+ | 2006 09 15 | 691 | 0.3− | 0.5+ | 2006 09 28 | 699 | 1.4− | 1.3− |
| 2004 04 14 | 691 | 0.6+ | 0.3+ | 2006 09 19 | 691 | 0.3− | 0.1+ | 2006 09 28 | 699 | 1.0+ | 0.2− |
| 2004 04 14 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 2004 04 19 | 691 | 0.5+ | 0.2+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 2004 04 19 | 691 | 0.4+ | 0.4+ | 2006 09 27 | 691 | 0.2− | 0.1+ | | | | |

### 2006 $SG_{312}$ = 2001 $QC_{334}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.20198 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21070187 | $\omega$ | 204.89067 | | −0.34859514 | −0.93557034 | |
| $a$ | 2.7969871 | $\Omega$ | 265.55194 | | +0.86913705 | −0.30011185 | |
| $e$ | 0.0174008 | $i$ | 3.24736 | | +0.35083074 | −0.18612095 | |
| $P$ | 4.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.2+ | 0.2+ | 2006 10 03 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 2001 08 22 | 691 | 0.2+ | 0.0 | 2006 10 03 | 691 | 0.6+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2001 08 22 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 11 18 | 645 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2005 06 12 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2005 06 12 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2005 06 12 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.4+ |
| 2006 09 27 | 291 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2006 09 27 | 291 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2006 09 27 | 291 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | | | |

### 2006 $SH_{312}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.04811 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18338195 | $\omega$ | 331.55231 | | +0.99928872 | +0.01033492 | |
| $a$ | 3.0683035 | $\Omega$ | 27.92638 | | +0.00748475 | +0.88822081 | |
| $e$ | 0.1419451 | $i$ | 4.44122 | | −0.03695985 | +0.45930054 | |
| $P$ | 5.37 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.9− | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.3− |
| 2004 05 21 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.6+ |
| 2004 05 21 | 691 | 0.4+ | 1.2+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.6+ | 1.0− |
| 2006 07 22 | G96 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2006 07 22 | G96 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | (1.9+ | 1.1−) |
| 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.6+ | 1.3+ | 2006 11 11 | 703 | 0.7+ | 1.1+ |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.6− | 0.0 | | | | |

### 2006 $SO_{312}$ = 2005 $GY_{168}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.39085 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29850468 | $\omega$ | 242.85571 | | −0.02077570 | +0.99922333 | |
| $a$ | 2.2173553 | $\Omega$ | 26.01910 | | −0.88814709 | −0.00306714 | |
| $e$ | 0.1352846 | $i$ | 4.37756 | | −0.45908945 | −0.03928536 | |
| $P$ | 3.30 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 691 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2005 04 12 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2005 04 12 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.6− | 2006 10 28 | 691 | 0.6+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2005 04 17 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2+ |
| 2006 09 27 | G96 | 0.5− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.4− |
| 2006 09 27 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.9+ | 1.0− |

**2006 SP$_{312}$ = 1998 TK$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.07669 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24803873 | $\omega$ | 335.12783 | | +0.99850714 | | +0.01784878 |
| $a$ | 2.5087442 | $\Omega$ | 24.02032 | | +0.01042283 | | +0.86547532 |
| $e$ | 0.3035380 | $i$ | 7.28579 | | −0.05361774 | | +0.50063349 |
| $P$ | 3.97 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 691 | 0.6+ | 0.1− | 2006 10 03 | 291 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 1998 10 12 | 691 | 0.7+ | 0.0 | 2006 10 03 | 291 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 1998 10 12 | 691 | 0.8+ | 0.1− | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 1998 10 13 | 691 | 0.4− | 0.2− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 1998 10 13 | 691 | 0.8− | 0.0 | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 1998 10 13 | 691 | 0.7− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2006 09 27 | G96 | 0.7− | 0.7− | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2006 09 27 | G96 | 0.9+ | 0.2+ | 2006 10 27 | 703 | 0.7− | 0.0 | 2006 11 18 | G96 | 0.5+ | 0.1− |
| 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.7− | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.3− | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.0 |
| 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 10 27 | 703 | 0.3− | 0.7− | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2006 10 03 | 291 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.0 |

**2006 SV$_{312}$ = 2002 RJ$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.04317 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25851175 | $\omega$ | 328.25511 | | −0.80851003 | | −0.58842585 |
| $a$ | 2.4405209 | $\Omega$ | 175.67285 | | +0.56002138 | | −0.77359265 |
| $e$ | 0.0685744 | $i$ | 6.20691 | | +0.18079709 | | −0.23517956 |
| $P$ | 3.81 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.3− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.6+ |
| 2002 09 11 | 644 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.8− |
| 2002 09 11 | 644 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 09 14 | 644 | 0.5+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.4+ |
| 2002 09 14 | 644 | 0.6− | 0.4− | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.1− | 0.7− |
| 2002 09 14 | 644 | 0.8+ | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.6+ | | | | |
| 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1− | 1.0+ | | | | |

**2006 SD$_{313}$ = 2002 VY$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.11841 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23043531 | $\omega$ | 235.70230 | | +0.84600289 | | −0.53287311 |
| $a$ | 2.6349357 | $\Omega$ | 156.48192 | | +0.50283434 | | +0.78614897 |
| $e$ | 0.2195625 | $i$ | 2.59079 | | +0.17730407 | | +0.31307514 |
| $P$ | 4.28 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 291 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 15 | 703 | 0.7− | 0.0 |
| 2002 11 06 | 291 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 15 | 703 | 0.2+ | 0.6− |
| 2002 11 06 | 291 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.5− | 0.4− |
| 2002 11 07 | 704 | 0.6+ | 0.5− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.3− |
| 2002 11 07 | 704 | 0.3+ | 0.2− | 2006 10 01 | 704 | 0.5− | 0.3− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2002 11 07 | 704 | 0.3+ | 0.2+ | 2006 10 01 | 704 | 0.0 | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.5− |
| 2006 09 06 | 644 | 0.2+ | 0.0 | 2006 10 01 | 704 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2006 09 06 | 644 | 0.2+ | 0.1+ | 2006 10 01 | 704 | 1.0+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2006 09 06 | 644 | 0.0 | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2006 09 14 | 703 | 0.9+ | 1.3+ | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2006 09 14 | 703 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 09 14 | 703 | 0.5− | 0.2− | 2006 10 11 | 291 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.6+ | 0.4− |
| 2006 09 14 | 703 | 1.4− | 0.6− | 2006 10 11 | 291 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 11 | 291 | 0.0 | 0.2+ | | | | |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.0 | | | | |

**2006 SH$_{313}$ = 2003 WQ$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.34633 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30207083 | $\omega$ | 34.20645 | | +0.39348096 | | −0.91824581 |
| $a$ | 2.1998692 | $\Omega$ | 32.68717 | | +0.82388494 | | +0.33064212 |
| $e$ | 0.0940263 | $i$ | 4.74692 | | +0.40790482 | | +0.21794590 |
| $P$ | 3.26 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 20 | 704 | 0.5+ | 0.8+ | 2006 10 01 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.3− |
| 2003 11 20 | 704 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2003 11 20 | 704 | 0.7+ | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.9+ |
| 2003 11 20 | 704 | 0.1− | 1.2+ | 2006 10 10 | 644 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2003 11 20 | 704 | 0.1− | 0.8− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4+ | 1.1+ |
| 2003 11 24 | 704 | 0.7− | 0.8− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2003 11 24 | 704 | 0.2+ | 0.6− | 2006 10 15 | 703 | 0.6− | 1.2+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2003 11 24 | 704 | 0.2− | 0.5− | 2006 10 15 | 703 | 0.7− | 0.1− | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2003 11 24 | 704 | 0.2− | 0.4+ | 2006 10 15 | 703 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.1− | 0.4+ |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.9− | 0.2− | 2006 11 11 | 703 | 0.7− | 1.0− |
| 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.6+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.5− | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.2− | | | | |

**2006 SN$_{313}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.01588 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24290847 | $\omega$ | 292.01755 | | +0.85905823 | | +0.50916565 |
| $a$ | 2.5439444 | $\Omega$ | 37.43112 | | −0.43190110 | | +0.77617512 |
| $e$ | 0.0897927 | $i$ | 4.96690 | | −0.27473695 | | +0.37189047 |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 1996 01 15 | 691 | 0.1− | 0.5− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ |
| 1996 01 15 | 691 | 0.1− | 0.4− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.3+ | 0.2− |
| 1998 10 23 | 691 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.9+ | 0.2+ |
| 1998 10 23 | 691 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.2+ |
| 1998 10 23 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.4− |
| 2001 05 25 | 644 | 0.1+ | 0.6+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2001 05 25 | 644 | 0.4+ | 0.6+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2001 05 25 | 644 | 0.3− | 1.0+ | 2006 10 10 | 644 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 10 10 | 644 | 0.3− | 0.5+ | 2006 10 15 | 291 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2002 10 10 | 644 | 0.3− | 0.5+ | 2006 10 15 | 291 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 10 10 | 644 | 0.3− | 0.5+ | 2006 10 15 | 291 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2004 03 17 | 645 | 0.1− | 0.1+ | 2006 10 15 | 703 | 1.0− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 03 17 | 645 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.4− | 1.5+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2004 04 13 | 291 | 0.3+ | 0.3+ | 2006 10 15 | 703 | 1.2− | 1.0+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 04 13 | 291 | 0.3+ | 0.4+ | 2006 10 15 | 703 | 0.6+ | 0.2+ | 2006 11 14 | G96 | 0.5− | 0.6− |
| 2004 04 13 | 291 | 0.6+ | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | | | |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | | | | |

**2006 SG$_{314}$ = 1995 UB$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.03015 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18047384 | $\omega$ | 265.16665 | | +0.95482607 | | −0.29510677 |
| $a$ | 3.1011769 | $\Omega$ | 111.99397 | | +0.28538739 | | +0.87787862 |
| $e$ | 0.1882542 | $i$ | 2.15811 | | +0.08283245 | | +0.37714868 |
| $P$ | 5.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.5− | 0.5− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 1995 10 20 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 1995 10 20 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.4+ |
| 1995 10 25 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 1995 10 25 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 1995 10 25 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5− | 0.0 |
| 2006 09 17 | 691 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.4− | 0.4− | 2006 11 16 | G96 | 0.3− | 0.1− |

**2006 SN$_{315}$ = 1995 UV$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.80435 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18061641 | $\omega$ | 226.85018 | | +0.87591625 | | −0.48202139 |
| $a$ | 3.0995447 | $\Omega$ | 161.93656 | | +0.45972235 | | +0.82088512 |
| $e$ | 0.1857879 | $i$ | 3.81715 | | +0.14637648 | | +0.30627277 |
| $P$ | 5.46 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.3+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1995 10 20 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 1995 10 20 | 691 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.7− | 0.0 |
| 1995 10 24 | 691 | 0.3− | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 1.4+ | 0.5− |
| 1995 10 24 | 691 | 0.1− | 0.5− | 2006 10 10 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.7+ | 1.3+ |
| 1995 10 24 | 691 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.1− | 0.3− |
| 2006 09 17 | 691 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.1+ |
| 2006 09 17 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.7− | 0.5− | 2006 10 22 | G96 | 0.0 | 0.1+ |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | (0.4+ | 1.9+) | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | (0.4+ | 2.7+) | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2006 10 01 | 691 | 0.5− | 0.6− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.1− |

**2006 SO$_{315}$ = 2002 XX$_{11}$ = 2004 FR$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.89637 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22488614 | $\omega$ | 93.93609 | | −0.55483709 | | −0.82583712 |
| $a$ | 2.6781049 | $\Omega$ | 30.46090 | | +0.66245862 | | −0.51179869 |
| $e$ | 0.1053383 | $i$ | 11.46215 | | +0.50329353 | | −0.23675968 |
| $P$ | 4.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.4− | 0.5+ | 2004 03 25 | 699 | 0.4− | 0.1− | 2006 10 15 | 703 | 0.6− | 0.2+ |
| 2002 12 03 | 644 | 0.1+ | 0.2+ | 2004 03 25 | 699 | 0.9+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2002 12 03 | 644 | 0.4− | 0.1+ | 2004 03 26 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.3+ | 0.5− | 2004 03 26 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.6+ |
| 2002 12 05 | 704 | 0.2+ | 0.2− | 2004 03 26 | 691 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.3− | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.1+ | 2004 03 28 | 704 | (0.9+ | 1.9+) | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.9+ | 0.7− | 2004 03 28 | 704 | 1.0+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 0.0 | 1.2+ | 2004 03 28 | 704 | 1.5+ | 0.5+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2002 12 06 | 704 | 0.1+ | 0.2− | 2006 09 17 | 691 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2002 12 06 | 704 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2002 12 06 | 704 | 0.8+ | 0.2− | 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2002 12 06 | 704 | 1.1− | 0.3− | 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2004 03 19 | 704 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2004 03 19 | 704 | 0.2− | 0.5+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2004 03 19 | 704 | 0.1− | 0.3− | 2006 10 01 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2004 03 19 | 704 | 0.5+ | 0.5− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2004 03 22 | 704 | 0.3+ | 0.7+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 11 20 | A44 | 0.4− | 0.1+ |
| 2004 03 22 | 704 | 0.9+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 20 | A44 | 0.5− | 0.3+ |
| 2004 03 22 | 704 | 0.4− | 0.8+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 11 20 | A44 | 0.1− | 0.0 |
| 2004 03 22 | 704 | 0.7+ | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2004 03 22 | 704 | 1.2+ | 0.2− | 2006 10 15 | 703 | 0.2− | 0.9+ | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 03 25 | 699 | 1.2− | 0.8− | 2006 10 15 | 703 | 0.2− | 0.7− | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2004 03 25 | 699 | 0.8− | 0.1+ | 2006 10 15 | 703 | 1.0− | 1.4+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |

**2006 SS$_{315}$ = 2002 TK$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.18167 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25263907 | $\omega$ | 243.87578 | | +0.47944703 | | −0.87754918 |
| $a$ | 2.4781963 | $\Omega$ | 177.44979 | | +0.84649786 | | +0.46060715 |
| $e$ | 0.1661514 | $i$ | 7.96168 | | +0.23145610 | | +0.13322344 |
| $P$ | 3.90 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.0 | 0.3+ | 2006 09 14 | 703 | (1.7− | 1.6−) | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 2002 10 03 | 704 | 0.3− | 0.2− | 2006 09 17 | 691 | 0.3+ | 1.1+ | 2006 10 16 | 703 | 0.5− | 0.3+ |
| 2002 10 03 | 704 | 0.2− | 1.2− | 2006 09 17 | 691 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.7− |
| 2002 10 04 | 644 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.1+ |
| 2002 10 04 | 644 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2002 10 04 | 644 | 0.3+ | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2006 07 21 | G96 | 0.1− | 1.0− | 2006 10 01 | 691 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2006 09 14 | 703 | 1.2− | 0.8− | 2006 10 11 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.8+ | 0.4− |
| 2006 09 14 | 703 | (2.0− | 0.1−) | 2006 10 11 | 644 | 0.3+ | 0.1+ | | | | |
| 2006 09 14 | 703 | 0.5+ | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.1− | | | | |

**2006 SW$_{315}$ = 2006 TP$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.06006 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26817889 | $\omega$ | 212.39761 | | +0.69349273 | | +0.71926861 |
| $a$ | 2.3815132 | $\Omega$ | 101.54706 | | −0.65166193 | | +0.65077894 |
| $e$ | 0.1871189 | $i$ | 2.42638 | | −0.30725326 | | +0.24318602 |
| $P$ | 3.68 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 28 | 608 | 0.2+ | 0.2− | 2005 04 10 | G96 | 0.2+ | 0.3− | 2006 10 15 | 703 | 0.1− | 0.9− |
| 2002 07 28 | 608 | 0.0 | 0.8− | 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.2+ | 0.1+ |
| 2002 07 28 | 608 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2002 08 29 | 644 | 0.2− | 0.1− | 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2002 08 29 | 644 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.6− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2002 08 29 | 644 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.3+ |
| 2002 08 29 | 644 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2002 08 29 | 644 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 04 10 | G96 | 0.1− | 0.5− | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2005 04 10 | G96 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.2− | 0.4− | | | | |
| 2005 04 10 | G96 | 0.3− | 0.1− | 2006 10 15 | 703 | 0.7+ | 1.2− | | | | |

**2006 SC$_{316}$ = 2004 DP$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.21819 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21552422 | $\omega$ | 189.42277 | | +0.76030241 | | +0.64857981 |
| $a$ | 2.7551082 | $\Omega$ | 130.08023 | | −0.59287623 | | +0.71543097 |
| $e$ | 0.0668117 | $i$ | 2.68474 | | −0.26540163 | | +0.25981293 |
| $P$ | 4.57 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 22 | 695 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 01 | 691 | 0.0 | 0.3− |
| 2004 02 22 | 695 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2004 02 26 | 695 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2004 02 26 | 695 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.6− | 0.7+ | 2006 10 22 | G96 | 0.6+ | 0.5− |
| 2006 09 17 | 691 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.2− | 0.3− |
| 2006 09 17 | 691 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1− | | | | |

**2006 SH$_{316}$ = 2004 GT$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.11124 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21059630 | $\omega$ | 317.67258 | | −0.49293925 | | −0.86980236 |
| $a$ | 2.7979217 | $\Omega$ | 161.82901 | | +0.81546513 | | −0.47041299 |
| $e$ | 0.0511940 | $i$ | 3.92102 | | +0.30336037 | | −0.14884716 |
| $P$ | 4.68 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2004 03 16 | 691 | 0.1− | 0.3− | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2004 03 16 | 691 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 1.4− | 0.4+ |
| 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 11 18 | G96 | 0.6+ | 0.2− |
| 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.5+ | 0.0 |
| 2004 04 20 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2004 04 20 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2004 04 20 | 691 | 0.2− | 0.4− | 2006 10 01 | 691 | 0.2− | 0.1− | | | | |

**2006 SL$_{316}$ = 1997 JQ$_{10}$ = 2001 GC$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.30842 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23915671 | $\omega$ | 241.15986 | | +0.18852524 | | +0.98029794 |
| $a$ | 2.5704807 | $\Omega$ | 39.84576 | | −0.86593751 | | +0.19424406 |
| $e$ | 0.2718346 | $i$ | 5.27829 | | −0.46326068 | | +0.03584954 |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 05 | 691 | 0.1− | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 1997 05 05 | 691 | 0.2− | 0.3+ | 2006 10 03 | 691 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 1997 05 05 | 691 | 0.1− | 0.5− | 2006 10 03 | 691 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1997 05 14 | 691 | 0.1+ | 0.1− | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 1997 05 14 | 691 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1997 05 14 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.3+ | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2001 04 15 | 608 | 0.1+ | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 2001 04 15 | 608 | 0.8+ | 0.3− | 2006 10 15 | 703 | (1.7− | 0.7−) | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2001 04 15 | 608 | 0.3+ | 0.4− | 2006 10 15 | 703 | 1.2− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 04 16 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 0.7− | 0.5+ | 2006 11 20 | G96 | 0.9+ | 0.1− |
| 2001 04 16 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.4+ | 0.1− | 2006 11 20 | G96 | (1.6+ | 0.2−) |
| 2001 04 16 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.2+ |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.9+ | 0.1− | 2006 11 20 | G96 | 0.8− | 1.2− |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2006 09 17 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.5− | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.1− | 0.0 |

**2006 SA$_{317}$ = 2001 WX$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.26913 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18596432 | $\omega$ | 283.35291 | | +0.94347575 | | −0.32801098 |
| $a$ | 3.0398324 | $\Omega$ | 95.81113 | | +0.31958529 | | +0.86227010 |
| $e$ | 0.0809341 | $i$ | 2.74033 | | +0.08785647 | | +0.38587442 |
| $P$ | 5.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.4+ | 1.3− | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2001 11 20 | 704 | 0.2− | 0.4+ | 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 1.5+ | 2006 09 27 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2001 11 20 | 704 | 0.7+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 11 21 | 704 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2001 11 21 | 704 | 0.3− | 0.2− | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 11 21 | 704 | 0.7− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2001 11 21 | 704 | 0.2− | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.2+ | | | | |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | | | | |

**2006 SB$_{317}$ = 1999 VE$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.13771 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27639817 | $\omega$ | 20.24323 | | +0.34762378 | | −0.93637225 |
| $a$ | 2.3340632 | $\Omega$ | 49.44765 | | +0.85121390 | | +0.29341125 |
| $e$ | 0.1440155 | $i$ | 3.66947 | | +0.39318265 | | +0.19265735 |
| $P$ | 3.57 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1+ |
| 1999 11 09 | 691 | 0.0 | 0.3− | 2006 09 27 | 691 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.4− |
| 1999 11 09 | 691 | 0.3+ | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.4− |
| 1999 11 14 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.2− |
| 1999 11 14 | 691 | 0.2− | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 1999 11 14 | 691 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.6− | 0.3+ | 2006 10 31 | G96 | 0.6− | 0.3− |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.8+ | 0.1− |
| 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.9+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− |

**2006 SD$_{317}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.17590 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19104341 | $\omega$ | 357.19187 | | +0.86302271 | | −0.49528203 |
| $a$ | 2.9857127 | $\Omega$ | 33.09968 | | +0.46695609 | | +0.70704273 |
| $e$ | 0.0551900 | $i$ | 10.49121 | | +0.19272731 | | +0.50476359 |
| $P$ | 5.16 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.0 | 0.3− | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2001 10 13 | 691 | 0.1+ | 0.5− | 2006 09 17 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2001 10 13 | 691 | 0.4+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 29 | 291 | 0.1− | 0.3+ |
| 2003 01 29 | 645 | 0.1+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 29 | 291 | 0.0 | 0.3+ |
| 2003 01 29 | 645 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 29 | 291 | 0.1+ | 0.3+ |
| 2004 04 22 | 691 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.6+ | 0.3+ |
| 2004 04 22 | 691 | 0.5+ | 0.5+ | 2006 10 01 | 691 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 04 22 | 691 | 0.2+ | 0.6+ | 2006 10 01 | 691 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.1− | | | | |

**2006 SE$_{318}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.36074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28445292 | $\omega$ | 345.43121 | | +0.65984631 | | −0.74910036 |
| $a$ | 2.2897907 | $\Omega$ | 63.24351 | | +0.69581254 | | +0.57964752 |
| $e$ | 0.2026492 | $i$ | 3.77246 | | +0.28363313 | | +0.32071391 |
| $P$ | 3.46 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 291 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.2− |
| 2003 12 29 | 291 | 0.4− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.9− | 1.5− |
| 2003 12 29 | 291 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.4− | 0.5+ | 2006 10 21 | 703 | (1.9− | 0.9−) |
| 2004 02 18 | 691 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.0 | 0.8− | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2004 02 18 | 691 | 0.2+ | 0.2− | 2006 10 15 | 703 | 0.3− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2004 02 18 | 691 | 0.2+ | 0.0 | 2006 10 15 | 703 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.0 |
| 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 2006 09 17 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2006 09 17 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.4− | 0.8+ | 2006 11 18 | G96 | 0.4+ | 0.2+ |
| 2006 09 27 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 18 | G96 | 0.6+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.6+ | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.4+ | | | | |
| 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.0− | 1.1− | | | | |

**2006 SP$_{318}$ = 2002 VP$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.80188 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23556561 | $\omega$ | 63.73505 | | −0.04369358 | | −0.99255702 |
| $a$ | 2.5965387 | $\Omega$ | 29.45440 | | +0.81419605 | | −0.10131374 |
| $e$ | 0.2381286 | $i$ | 13.36586 | | +0.57894358 | | +0.06757286 |
| $P$ | 4.18 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2002 11 13 | 644 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.2− | 0.3− | 2006 10 29 | 291 | 0.0 | 0.1+ |
| 2002 11 13 | 644 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.2− | 2006 10 29 | 291 | 0.2+ | 0.1− |
| 2002 11 14 | 644 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 10 29 | 291 | 0.2− | 0.0 |
| 2002 11 14 | 644 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.6+ | 2006 11 01 | 691 | 0.3− | 0.4− |
| 2002 11 14 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.3+ |
| 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.6+ | 0.3− | 2006 11 13 | G96 | 0.5+ | 1.1− |
| 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.4+ | 0.0 | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.4+ | | | | |

**2006 SS$_{318}$ = 1996 GB$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.91506 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22871479 | $\omega$ | 240.91063 | | +0.03974294 | | +0.98959910 |
| $a$ | 2.6481336 | $\Omega$ | 32.27966 | | −0.80296638 | | +0.11397962 |
| $e$ | 0.0829086 | $i$ | 15.00344 | | −0.59469782 | | −0.08776260 |
| $P$ | 4.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.7− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2+ |
| 1996 03 27 | 691 | 0.8− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.5+ |
| 1996 03 27 | 691 | 1.2− | 0.3− | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 1996 04 12 | 691 | 0.5+ | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 1996 04 12 | 691 | 0.2+ | 0.1+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.5− | 0.5+ |
| 1996 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 1996 04 24 | 691 | 0.9+ | 0.9+ | 2006 10 15 | 703 | 0.4− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.4+ |
| 1996 04 24 | 691 | 0.9+ | 0.3− | 2006 10 15 | 703 | (2.0+ | 0.0 ) | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 1996 04 24 | 691 | 0.7+ | 0.0 | 2006 10 15 | 703 | 0.6− | 1.0− | 2006 11 22 | G96 | 0.3− | 0.6+ |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 15 | 703 | 0.1+ | 0.7− | 2006 11 22 | G96 | 0.1− | 0.6+ |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.2− | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.3+ |

**2006 SP$_{319}$ = 2005 GZ$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.85881 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23917839 | $\omega$ | 172.66581 | | +0.44610244 | | +0.89327586 |
| $a$ | 2.5703253 | $\Omega$ | 123.81306 | | −0.82446866 | | +0.43418297 |
| $e$ | 0.1932834 | $i$ | 3.81178 | | −0.34820117 | | +0.11637607 |
| $P$ | 4.12 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | (0.2− | 2.0+) |
| 2005 04 01 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.5+ |
| 2005 04 01 | 691 | 0.3+ | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.3− | 2006 10 16 | 703 | (3.4− | 0.9−) |
| 2005 04 02 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2005 04 02 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2005 04 02 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1+ | 1.2+ | | | | |

**2006 SH$_{320}$ = 2004 FZ$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.21370 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20376820 | $\omega$ | 221.88602 | | +0.71781744 | | +0.69409092 |
| $a$ | 2.8600817 | $\Omega$ | 94.07064 | | −0.62337638 | | +0.67562210 |
| $e$ | 0.0532318 | $i$ | 3.13506 | | −0.31006453 | | +0.24854089 |
| $P$ | 4.84 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.1+ |
| 2004 03 18 | 691 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2004 03 18 | 691 | 0.2− | 0.2+ | 2006 09 27 | 691 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2004 03 19 | 704 | 0.2+ | 0.4− | 2006 10 01 | 704 | 0.7+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.1+ |
| 2004 03 19 | 704 | 0.0 | 0.4+ | 2006 10 01 | 704 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2004 03 19 | 704 | 0.8+ | 0.6− | 2006 10 01 | 704 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2004 03 19 | 704 | 0.3+ | 0.0 | 2006 10 01 | 704 | 1.4− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2004 03 19 | 704 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 01 | 691 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2006 09 17 | 691 | 0.1+ | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.2+ |
| 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.2− | | | | |

**2006 SO$_{322}$ = 2004 HD$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.80258 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18532621 | $\omega$ | 159.18446 | | −0.98092197 | | +0.16816016 |
| $a$ | 3.0468061 | $\Omega$ | 31.00314 | | −0.19410128 | | −0.81930648 |
| $e$ | 0.0589068 | $i$ | 10.91595 | | −0.01080663 | | −0.54814145 |
| $P$ | 5.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 291 | 0.2− | 0.1+ | 2006 09 17 | 691 | 0.5+ | 0.3− | 2006 10 11 | 291 | 0.1+ | 0.0 |
| 2004 04 25 | 291 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2004 04 25 | 291 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.1+ |
| 2004 04 26 | 704 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2004 04 26 | 704 | 0.4− | 1.1− | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2004 04 26 | 704 | 1.0+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 1.1+ | 0.0 |
| 2004 04 26 | 704 | 0.5+ | 0.2− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.9− | 0.5− |
| 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 291 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 11 | 291 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3+ |

**2006 SP$_{322}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.06268 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23020763 | $\omega$ | 312.89478 | | +0.95885379 | | −0.27700274 |
| $a$ | 2.6366728 | $\Omega$ | 63.27465 | | +0.27652707 | | +0.86165196 |
| $e$ | 0.1166263 | $i$ | 3.99330 | | +0.06428208 | | +0.42523569 |
| $P$ | 4.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.0 | 2002 12 11 | 644 | 0.1− | 0.3+ | 2006 10 22 | 703 | 1.0+ | 0.2+ |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 1.0− | 1.0+ |
| 2002 11 13 | 644 | 0.3+ | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.1− | 2006 10 22 | 703 | 1.4+ | 0.4+ |
| 2002 11 13 | 644 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 1.1+ | 0.5+ |
| 2002 11 13 | 644 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 1.0− | 0.8− |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.1− |
| 2002 11 13 | 644 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3+ |
| 2002 11 13 | 644 | 0.4− | 0.2+ | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2002 11 23 | 644 | 0.1+ | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2002 11 23 | 644 | 0.2− | 0.5− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2002 11 23 | 644 | 0.2− | 0.5− | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2002 12 11 | 644 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2002 12 11 | 644 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.6+ | 0.1+ | | | | |

**2006 SW$_{322}$ = 1995 SZ$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.35990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18288427 | $\omega$ | 203.06786 | | +0.94517981 | −0.32634448 | |
| $a$ | 3.0738675 | $\Omega$ | 175.92609 | | +0.31923825 | +0.91596218 | |
| $e$ | 0.1590764 | $i$ | 9.39174 | | +0.06871725 | +0.23347926 | |
| $P$ | 5.39 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 23 | 691 | 0.7− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.5+ | 1.2+ |
| 1995 09 23 | 691 | 0.3− | 0.3+ | 2006 10 01 | 691 | 1.1− | 0.5+ | 2006 10 16 | 703 | 0.9− | 0.1+ |
| 1995 09 23 | 691 | 0.3− | 0.3− | 2006 10 01 | 691 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.6− |
| 1995 09 27 | 691 | 0.7+ | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 19 | 644 | 0.5+ | 0.1+ |
| 1995 09 27 | 691 | 0.4+ | 0.1− | 2006 10 10 | 644 | 0.8+ | 0.3+ | 2006 10 19 | 644 | 0.8+ | 0.0 |
| 1995 09 27 | 691 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.8+ | 0.1+ | 2006 10 19 | 644 | 0.9+ | 0.2+ |
| 2006 09 17 | 691 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.5+ | 0.0 | 2006 10 22 | 703 | 1.0+ | 0.3− |
| 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.5+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.3+ |
| 2006 09 17 | 691 | 0.0 | 0.3− | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.3+ |
| 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.0 | 1.1− |
| 2006 09 27 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.1− | | | | |

**2006 SY$_{322}$ = 2004 GU$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.58307 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21266853 | $\omega$ | 146.62628 | | −0.81681887 | +0.57362419 | |
| $a$ | 2.7797169 | $\Omega$ | 68.49538 | | −0.54266895 | −0.72792756 | |
| $e$ | 0.0537266 | $i$ | 3.78004 | | −0.19574818 | −0.37560185 | |
| $P$ | 4.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 291 | 0.2+ | 0.2+ | 2006 09 17 | 691 | 0.4+ | 0.3− | 2006 10 01 | 691 | 0.3− | 0.3+ |
| 2004 04 12 | 291 | 0.4+ | 0.0 | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.4− |
| 2004 04 12 | 291 | 0.3− | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2004 04 13 | 291 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2004 04 13 | 291 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.8− |
| 2004 04 13 | 291 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.1+ | | | | |
| 2006 09 17 | 691 | 0.2+ | 0.5− | 2006 10 01 | 691 | 0.1− | 0.3+ | | | | |

**2006 SC$_{323}$ = 2004 EG$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.01505 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24092470 | $\omega$ | 337.01050 | | +0.57242274 | −0.81845885 | |
| $a$ | 2.5578898 | $\Omega$ | 78.03585 | | +0.75995045 | +0.50685772 | |
| $e$ | 0.1302869 | $i$ | 2.90454 | | +0.30790830 | +0.27059261 | |
| $P$ | 4.09 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.6− |
| 2004 03 23 | 691 | 0.2− | 0.2+ | 2006 10 15 | 703 | 0.1− | 1.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2004 03 23 | 691 | 0.2− | 0.3+ | 2006 10 15 | 703 | 0.4+ | 0.3+ | 2006 10 22 | 703 | (0.1− | 1.7+) |
| 2004 03 23 | 691 | 0.2+ | 0.2− | 2006 10 15 | 703 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.4+ |
| 2006 09 17 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.4− | 1.2− | 2006 10 22 | 703 | (0.5+ | 1.8−) |
| 2006 09 17 | 691 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2006 09 27 | 691 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.2− |
| 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.5+ | 2006 10 22 | G96 | 0.5+ | 0.3− |

**2006 SF$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.32989 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26646355 | $\omega$ | 129.29713 | | +0.31486711 | +0.94862288 | |
| $a$ | 2.3917228 | $\Omega$ | 158.99213 | | −0.89540914 | +0.30778551 | |
| $e$ | 0.1713377 | $i$ | 4.99253 | | −0.31480338 | +0.07336701 | |
| $P$ | 3.70 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.2+ | 0.4+ | 2002 08 17 | 644 | 0.0 | 0.3+ | 2002 09 14 | 644 | 0.5− | 0.4+ |
| 2002 08 07 | 644 | 0.1+ | 0.0 | 2002 08 17 | 644 | 0.5+ | 0.1+ | 2006 09 27 | 691 | 0.0 | 0.3+ |
| 2002 08 08 | 644 | 0.3− | 0.1− | 2002 08 17 | 644 | 0.0 | 0.5− | 2006 09 27 | 691 | 0.2− | 0.5+ |
| 2002 08 08 | 644 | 0.2− | 0.1+ | 2002 08 27 | 644 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.0 | 0.2− |
| 2002 08 08 | 644 | 0.2− | 0.3+ | 2002 08 27 | 644 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.1− | 0.6− |
| 2002 08 17 | 644 | 0.4− | 0.1+ | 2002 08 27 | 644 | 0.3+ | 0.3+ | 2006 10 01 | 691 | 0.3+ | 0.1+ |
| 2002 08 17 | 644 | 0.1− | 0.1− | 2002 09 14 | 644 | 0.2+ | 0.4− | 2006 10 01 | 691 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.6+ | 0.1− | 2002 09 14 | 644 | 0.1+ | 0.5− | | | | |

**2006 SJ$_{323}$ = 1998 HR$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.00622 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17794038 | $\omega$ | 305.24642 | | −0.63173891 | −0.77503314 | |
| $a$ | 3.1305433 | $\Omega$ | 184.03191 | | +0.76264839 | −0.61790585 | |
| $e$ | 0.0388892 | $i$ | 12.44467 | | +0.13882859 | −0.13234802 | |
| $P$ | 5.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 24 | 691 | 0.7− | 0.3− | 1998 05 03 | 691 | 0.8− | 0.0 | 2006 09 17 | 691 | 0.6+ | 0.2− |
| 1993 05 24 | 691 | 1.1− | 0.3− | 2000 09 24 | 691 | 0.7− | 0.8− | 2006 09 17 | 691 | 0.4+ | 0.3− |
| 1993 05 24 | 691 | 0.8− | 0.5+ | 2000 09 24 | 691 | 1.1− | 0.9− | 2006 09 17 | 691 | 0.6+ | 0.3− |
| 1993 06 16 | 691 | (6.2+ | 2.4+) | 2000 09 24 | 691 | 1.0− | 0.3− | 2006 09 27 | 691 | 0.4+ | 0.2+ |
| 1993 06 16 | 691 | 0.2− | 0.8− | 2004 05 14 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.5+ | 0.0 |
| 1993 06 16 | 691 | 0.4− | 0.7− | 2004 05 14 | 691 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 1998 04 24 | 691 | 0.2+ | 0.0 | 2004 05 14 | 691 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.3− | 0.2+ |
| 1998 04 24 | 691 | 0.1+ | 0.4− | 2006 07 21 | G96 | 0.6+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.2+ |
| 1998 04 24 | 691 | 0.4− | 0.5− | 2006 07 21 | G96 | 0.2− | 0.4− | 2006 10 01 | 691 | 0.0 | 0.3+ |
| 1998 05 03 | 691 | 0.8− | 0.7− | 2006 07 21 | G96 | 0.1+ | 0.1− | | | | |
| 1998 05 03 | 691 | 0.8− | 0.5− | 2006 07 21 | G96 | 0.3+ | 1.0− | | | | |

**2006 SK$_{323}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.75547 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27701268 | $\omega$ | 97.73804 | | −0.83434503 | −0.54688676 | |
| $a$ | 2.3306100 | $\Omega$ | 49.13747 | | +0.46283005 | −0.76314111 | |
| $e$ | 0.2002576 | $i$ | 5.24695 | | +0.29942730 | −0.34428261 | |
| $P$ | 3.56 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.0 | 0.3+ | 2003 12 28 | 691 | 0.1− | 0.1+ | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2003 12 14 | 691 | 0.1+ | 0.1+ | 2003 12 28 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.0 | 0.4+ |
| 2003 12 14 | 691 | 0.0 | 0.0 | 2003 12 28 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.2+ | 0.1+ |
| 2003 12 14 | 691 | 0.4− | 0.0 | 2004 01 17 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.0 |
| 2003 12 14 | 691 | 0.1+ | 0.3− | 2004 01 17 | 644 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.0 | 0.4− |
| 2003 12 14 | 691 | 0.3+ | 0.2− | 2004 01 17 | 644 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.1− | 0.1− |

**2006 SO$_{323}$ = 1997 WK$_{24}$ = 2004 HP$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.90111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21302995 | $\omega$ | 122.79712 | | −0.99068295 | −0.11591883 | |
| $a$ | 2.7765720 | $\Omega$ | 50.64971 | | +0.07170362 | −0.89022015 | |
| $e$ | 0.0522129 | $i$ | 5.30420 | | +0.11578382 | −0.44053480 | |
| $P$ | 4.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 25 | 691 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.4+ | 0.3− | 2006 10 19 | 644 | 0.1+ | 0.3+ |
| 1997 11 25 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 1997 11 25 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.3− | 0.3+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2004 04 20 | 704 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2004 04 20 | 704 | 0.4− | 0.0 | 2006 10 02 | 291 | 0.4− | 0.3+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2004 04 20 | 704 | 0.2− | 0.2− | 2006 10 02 | 291 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.3− |
| 2004 04 21 | 691 | 0.1− | 0.0 | 2006 10 02 | 291 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2004 04 21 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 04 21 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 09 17 | 691 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 09 17 | 691 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.3+ | | | | |

**2006 SC$_{324}$ = 2003 YU$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 260.36625 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28275675 | $\omega$ | 73.50713 | | −0.55382232 | | −0.83109573 |
| $a$ | 2.2989387 | $\Omega$ | 50.23260 | | +0.73661891 | | −0.51738502 |
| $e$ | 0.1143260 | $i$ | 3.77478 | | +0.38816676 | | −0.20394269 |
| $P$ | 3.49 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 14 | 209 | 0.1− | 0.1+ | 2003 12 28 | 704 | 0.1+ | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.0 |
| 2001 04 14 | 209 | 0.9− | 0.2+ | 2003 12 30 | 704 | 0.7+ | 1.1+ | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 2001 04 14 | 209 | 0.3+ | 0.3+ | 2003 12 30 | 704 | 0.3+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.1− |
| 2001 04 15 | 691 | 0.1− | 0.2+ | 2003 12 30 | 704 | 0.6+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1− |
| 2001 04 15 | 691 | 0.1+ | 0.0 | 2003 12 30 | 704 | 0.6− | 0.4− | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2001 04 15 | 691 | 0.3+ | 0.1+ | 2003 12 30 | 704 | 0.0 | 0.5− | 2006 10 01 | 691 | 0.2+ | 0.2+ |
| 2003 12 28 | 704 | 0.2− | 0.5+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 02 | 691 | 0.3+ | 0.3− |
| 2003 12 28 | 704 | 0.3+ | 0.8− | 2006 09 17 | 691 | 0.7− | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.3− |
| 2003 12 28 | 704 | 1.0− | 1.1+ | 2006 09 17 | 691 | 0.3− | 0.4+ | 2006 10 02 | 691 | 0.3+ | 0.2− |

**2006 SD$_{324}$ = 2002 TR$_{329}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.85336 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25331767 | $\omega$ | 140.47635 | | −0.97824949 | | +0.20019229 |
| $a$ | 2.4737685 | $\Omega$ | 51.15743 | | −0.20356263 | | −0.87615284 |
| $e$ | 0.2031470 | $i$ | 3.99938 | | −0.03987722 | | −0.43849659 |
| $P$ | 3.89 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 06 | 691 | 0.2+ | 0.3− | 2006 09 17 | 691 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 1994 09 06 | 691 | 0.4− | 0.3+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.1+ |
| 1994 09 06 | 691 | 0.0 | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.6− | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 01 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.1+ |
| 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.4+ |

**2006 SS$_{324}$ = 1995 VN$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.01671 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17601439 | $\omega$ | 315.94010 | | −0.44031827 | | −0.89755061 |
| $a$ | 3.1533385 | $\Omega$ | 160.14989 | | +0.84125807 | | −0.42133189 |
| $e$ | 0.1512843 | $i$ | 3.86078 | | +0.31369520 | | −0.12993208 |
| $P$ | 5.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.3− | 0.4+ | 1997 02 01 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.3− | 0.1+ |
| 1995 11 15 | 691 | 0.2− | 1.0− | 1997 02 01 | 691 | 0.0 | 0.4+ | 2006 09 27 | 691 | 0.3− | 0.2− |
| 1995 11 15 | 691 | 0.0 | 0.2+ | 2000 08 26 | 807 | 0.1+ | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1995 11 20 | 691 | 0.3+ | 0.2− | 2000 08 26 | 807 | 0.1− | 0.2+ | 2006 10 01 | 691 | 0.5+ | 0.2+ |
| 1995 11 20 | 691 | 0.1+ | 0.0 | 2006 09 14 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.5− | 0.7− |
| 1995 11 20 | 691 | 0.2+ | 0.1+ | 2006 09 14 | 691 | 0.2+ | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.4+ |
| 1997 02 01 | 691 | 0.0 | 0.2− | 2006 09 14 | 691 | 0.0 | 0.7+ | | | | |

**2006 SW$_{324}$ = 2005 JO$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.75700 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22854525 | $\omega$ | 240.39975 | | +0.19972716 | | +0.97777536 |
| $a$ | 2.6494430 | $\Omega$ | 41.27828 | | −0.86226163 | | +0.20629038 |
| $e$ | 0.1632935 | $i$ | 5.54552 | | −0.46541804 | | +0.03741156 |
| $P$ | 4.31 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.7− | 0.2+ | 2005 06 02 | G96 | 0.1+ | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 2005 04 02 | G96 | 0.9− | 0.5− | 2005 06 02 | G96 | 0.2− | 0.1− | 2006 09 27 | 691 | 0.2+ | 0.0 |
| 2005 04 02 | G96 | 0.8− | 0.1− | 2005 06 02 | G96 | 0.0 | 0.2+ | 2006 09 27 | 691 | 0.3− | 0.2+ |
| 2005 04 02 | G96 | 0.5− | 0.1− | 2005 06 02 | G96 | 0.4− | 0.0 | 2006 10 01 | 691 | 0.8+ | 0.6− |
| 2005 04 17 | 691 | 0.5+ | 0.1− | 2005 06 02 | G96 | 0.6− | 0.1+ | 2006 10 01 | 691 | 0.1+ | 0.0 |
| 2005 04 17 | 691 | 0.4+ | 0.3+ | 2005 06 02 | G96 | 0.2− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1+ |
| 2005 04 17 | 691 | 0.4+ | 0.2+ | 2005 06 02 | G96 | 0.9− | 0.0 | 2006 10 22 | G96 | 0.0 | 0.6− |
| 2005 05 07 | G96 | 0.0 | 0.0 | 2005 06 02 | G96 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.4− | 0.1+ |
| 2005 05 07 | G96 | 0.1− | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.6+ | 0.1+ |
| 2005 05 07 | G96 | 0.9− | 0.6− | 2006 09 17 | 691 | 0.7− | 0.3+ | 2006 10 22 | G96 | 0.2+ | 0.0 |
| 2005 05 07 | G96 | 0.9+ | 0.6− | 2006 09 17 | 691 | 0.5− | 0.0 | | | | |

**2006 SB$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.64300 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18849108 | $\omega$ | 108.26438 | | −0.73890361 | | −0.66941479 |
| $a$ | 3.0126049 | $\Omega$ | 29.85776 | | +0.54509857 | | −0.66089788 |
| $e$ | 0.0564421 | $i$ | 8.87945 | | +0.39609217 | | −0.33926071 |
| $P$ | 5.23 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 24 | 644 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2003 01 24 | 644 | 0.2− | 0.3− | 2006 09 27 | 691 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.6− |
| 2003 01 24 | 644 | 0.2+ | 0.1+ | 2006 09 28 | 699 | 0.3− | 1.0+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2003 02 01 | 644 | 0.4− | 0.6− | 2006 09 28 | 699 | 1.1− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2003 02 01 | 644 | 0.1− | 0.2− | 2006 09 28 | 699 | 1.3+ | 0.6− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2003 02 01 | 644 | 0.0 | 0.0 | 2006 09 28 | 699 | 0.2− | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2003 02 08 | 699 | 0.1− | 0.6+ | 2006 10 01 | 691 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2003 02 08 | 699 | 1.3+ | 0.3+ | 2006 10 01 | 691 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2003 02 08 | 699 | 0.2− | 0.4− | 2006 10 01 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2003 02 08 | 699 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.6− | 0.1+ |
| 2003 02 19 | 644 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.2− | 0.4+ |
| 2003 02 19 | 644 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2003 02 19 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2003 03 03 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.6− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2003 03 03 | 644 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.6− |
| 2003 03 03 | 644 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2006 09 18 | 699 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.6− | 2006 11 13 | G96 | 0.8+ | 0.4− |
| 2006 09 18 | 699 | (1.8− | 0.8+) | 2006 10 21 | 703 | 0.6+ | 0.9+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2006 09 18 | 699 | 0.8− | 0.2− | 2006 10 21 | 703 | 1.0+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2006 09 18 | 699 | (1.6+ | 0.8+) | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2006 09 27 | 691 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.1− | 0.0 |

**2006 SO$_{325}$ = 2005 EU$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.43716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29867062 | $\omega$ | 223.99630 | | −0.26380315 | | +0.96223843 |
| $a$ | 2.2165339 | $\Omega$ | 30.88959 | | −0.84492716 | | −0.19695289 |
| $e$ | 0.1519471 | $i$ | 7.51236 | | −0.46530205 | | −0.18790091 |
| $P$ | 3.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 07 | 704 | 0.2+ | 0.0 | 2005 05 09 | G96 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2005 03 07 | 704 | 1.0+ | 0.1− | 2005 05 09 | G96 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2005 03 07 | 704 | 0.1+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2005 03 07 | 704 | 0.2+ | 0.4− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2005 03 18 | 703 | 0.1− | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2005 03 18 | 703 | 0.4− | 0.9+ | 2006 10 01 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.5+ | 0.0 |
| 2005 03 18 | 703 | 0.7+ | 0.8− | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2005 03 18 | 703 | 1.2− | 0.9− | 2006 10 01 | 691 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.8− |
| 2005 04 04 | 703 | 0.6− | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.8− | 0.8− |
| 2005 04 04 | 703 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2005 04 04 | 703 | 0.3+ | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2005 04 04 | 703 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2005 05 09 | G96 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2005 05 09 | G96 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.7− | 0.3− |

**2006 ST$_{325}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.61993 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22301871 | $\omega$ | 112.47957 | | +0.60994952 | | +0.79062638 |
| $a$ | 2.6930341 | $\Omega$ | 195.47048 | | −0.78065938 | | +0.58788936 |
| $e$ | 0.0947941 | $i$ | 11.58915 | | −0.13613421 | | +0.17116079 |
| $P$ | 4.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 15 | 691 | 0.2− | 0.4+ | 2004 03 21 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.1− |
| 1996 05 15 | 691 | 0.4− | 0.3− | 2004 03 21 | 691 | 0.3+ | 0.5+ | 2006 10 01 | 691 | 0.5− | 1.0+ |
| 1996 05 15 | 691 | 0.2− | 0.3− | 2004 03 21 | 691 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.7− |
| 2000 04 05 | 691 | 0.2− | 0.5− | 2005 05 29 | 599 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.1− | 0.5− |
| 2000 04 05 | 691 | 0.6− | 0.4− | 2005 05 29 | 599 | 0.0 | 0.8+ | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2000 04 05 | 691 | 0.2+ | 0.1− | 2005 05 29 | 599 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.6− | 0.4− |
| 2001 06 15 | 645 | 0.3+ | 0.0 | 2005 05 29 | 599 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.8+ | 0.3+ |
| 2001 06 15 | 645 | 0.3+ | 0.0 | 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.0− | 1.3+ |
| 2001 08 26 | 644 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.5− | 1.4− |
| 2001 08 26 | 644 | 0.1− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.5+ | 0.2+ |
| 2001 08 26 | 644 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.2− |
| 2002 12 10 | 644 | 0.1+ | 0.7+ | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2002 12 10 | 644 | 0.2+ | 0.7+ | 2006 09 27 | 691 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.3− |
| 2002 12 10 | 644 | 0.7+ | 0.6+ | 2006 10 01 | 691 | 0.1+ | 0.1− | | | | |

**2006 SA$_{326}$ = 2004 FC$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.18084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18496034 | $\omega$ | 106.04614 | | +0.51951766 | | +0.85311855 |
| $a$ | 3.0508228 | $\Omega$ | 195.53198 | | −0.83626981 | | +0.49616524 |
| $e$ | 0.0703660 | $i$ | 10.29487 | | −0.17536876 | | +0.16127244 |
| $P$ | 5.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | (6.3− | 1.7−) | 2006 09 27 | 691 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.0 |
| 2003 01 28 | 645 | (6.3− | 1.7−) | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2004 03 16 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.4+ |
| 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 03 16 | 691 | 0.1− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2004 03 23 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.6− |

**2006 SQ$_{326}$ = 2004 CY$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.39579 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27020133 | $\omega$ | 36.63017 | | −0.00564649 | | −0.99885090 |
| $a$ | 2.3696147 | $\Omega$ | 53.74141 | | +0.90289076 | | −0.02554969 |
| $e$ | 0.1586444 | $i$ | 3.38362 | | +0.42983297 | | +0.04054734 |
| $P$ | 3.65 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2+ | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 08 18 | 644 | 0.5− | 0.3+ | 2006 10 13 | D35 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 2002 08 18 | 644 | 0.9− | 0.5+ | 2006 10 13 | D35 | 0.6− | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.3+ |
| 2002 08 29 | 644 | 0.6+ | 0.1− | 2006 10 13 | D35 | 0.5+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 08 29 | 644 | 0.1− | 0.1− | 2006 10 15 | 703 | (0.5− | 2.0+) | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2002 08 29 | 644 | 0.4+ | 0.1+ | 2006 10 15 | 703 | (1.4+ | 1.6+) | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2004 02 11 | 703 | 0.1− | 0.4− | 2006 10 15 | 703 | 0.3+ | 0.8+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2004 02 11 | 703 | 0.8− | 0.4− | 2006 10 15 | 703 | 0.5− | 0.9+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2004 02 11 | 703 | 1.0+ | 0.8− | 2006 10 19 | 644 | 0.7+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2004 02 11 | 703 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2004 02 17 | 704 | 0.4+ | 0.9+ | 2006 10 19 | 644 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2004 02 17 | 704 | 0.4− | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2004 02 17 | 704 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.7+ |
| 2004 02 17 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | (2.0− | 0.2−) |
| 2004 02 17 | 704 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.3+ |
| 2006 09 27 | 691 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 1.4− |
| 2006 09 27 | 691 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 1.1+ |
| 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 17 | 703 | 1.1+ | 1.0− |
| 2006 10 01 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.4− | 0.9+ |
| 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.3− | 0.7− | 2006 11 17 | 703 | 0.2− | 0.8− |

**2006 SA$_{327}$ = 1999 XE$_{63}$ = 2004 FJ$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.26389 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27474423 | $\omega$ | 357.02665 | | −0.17519722 | | −0.98418928 |
| $a$ | 2.3434211 | $\Omega$ | 103.06243 | | +0.90384208 | | −0.17126340 |
| $e$ | 0.2372628 | $i$ | 1.53102 | | +0.39035294 | | −0.04516980 |
| $P$ | 3.59 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.0 | 1.3− | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.8+ |
| 1999 12 07 | 704 | 0.8+ | 2.0− | 2006 09 27 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 1999 12 07 | 704 | 0.5+ | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 1999 12 07 | 704 | 0.5− | 0.2+ | 2006 10 01 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 1999 12 08 | 704 | 0.4+ | 1.0− | 2006 10 01 | 691 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1999 12 08 | 704 | 0.3+ | 0.7− | 2006 10 01 | 691 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.5− | 0.3+ |
| 1999 12 08 | 704 | 0.5− | 0.4− | 2006 10 21 | 703 | 1.0+ | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 2004 03 29 | 291 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2004 03 29 | 291 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.8+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2004 03 29 | 291 | 0.6+ | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 2004 03 30 | 291 | 0.4− | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.5+ |
| 2004 03 30 | 291 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.7+ | 1.3+ | 2006 11 16 | G96 | 0.3+ | 0.4+ |
| 2004 03 30 | 291 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.4+ |
| 2006 09 19 | 691 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.5+ |
| 2006 09 19 | 691 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.6+ | 0.1+ |
| 2006 09 19 | 691 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.3− | 0.7+ | | | | |

**2006 SN$_{327}$ = 2001 US$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.31880 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19929704 | $\omega$ | 356.44333 | | +0.86740713 | | −0.48294595 |
| $a$ | 2.9026999 | $\Omega$ | 33.30322 | | +0.46175622 | | +0.69145303 |
| $e$ | 0.0731451 | $i$ | 12.60974 | | +0.18543480 | | +0.53726708 |
| $P$ | 4.95 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2001 10 20 | 704 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.4+ | 0.1+ |
| 2001 10 20 | 704 | 1.2+ | 1.2+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2006 09 27 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2006 09 27 | 691 | 0.6− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.3− | 0.1− |
| 2006 10 01 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1+ | | | | |
| 2006 10 01 | 691 | 0.5+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2− | | | | |

### 2006 SW$_{327}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.74760 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17999228 | $\omega$ | 274.81402 | | +0.91770452 | | +0.39193925 |
| $a$ | 3.1067058 | $\Omega$ | 62.12320 | | −0.32919570 | | +0.84160843 |
| $e$ | 0.1358532 | $i$ | 4.20545 | | −0.22237040 | | +0.37158966 |
| $P$ | 5.48 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.3− | 0.3+ | 2006 09 27 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1993 02 26 | 691 | 0.0 | 0.4− | 2006 10 01 | 691 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1993 02 26 | 691 | 0.3+ | 0.3− | 2006 10 01 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 05 15 | 691 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 05 15 | 691 | 0.0 | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 1999 05 15 | 691 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 11 17 | 291 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2001 11 17 | 291 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 11 17 | 291 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2004 03 16 | 691 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2004 03 16 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.3+ |
| 2004 03 16 | 691 | 0.5+ | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 07 | 644 | 0.3− | 0.4+ |
| 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.1+ | 0.5+ |
| 2004 04 20 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.6− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2004 04 20 | 691 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.8− | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2004 05 09 | 691 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.8− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 05 09 | 691 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.7+ | 0.6− | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.7− |
| 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2006 09 19 | 691 | 0.3− | 0.7+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.9− | 0.4+ |
| 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.6+ | 0.1+ |
| 2006 09 27 | 691 | 0.1− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.3− | | | | |
| 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.2− | | | | |

### 2006 SX$_{327}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 244.25084 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23778233 | $\omega$ | 79.75439 | | −0.86740662 | | −0.49402161 |
| $a$ | 2.5803760 | $\Omega$ | 70.61829 | | +0.42824729 | | −0.80210565 |
| $e$ | 0.1204479 | $i$ | 3.62047 | | +0.25339694 | | −0.33551331 |
| $P$ | 4.14 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.7− | 0.4+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 1998 12 14 | 691 | 0.9+ | 0.9+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1998 12 14 | 691 | 0.3− | 0.8− | 2006 10 01 | 691 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.4− | 0.5− |
| 2004 03 24 | 699 | 1.2+ | 1.1− | 2006 10 01 | 691 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.6+ | 1.0− |
| 2004 03 24 | 699 | 0.7− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2004 03 24 | 699 | 1.0− | 0.9− | 2006 10 21 | G96 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2004 03 24 | 699 | 0.8+ | 1.6+ | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.6+ | 0.4− |
| 2004 04 16 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2004 04 16 | 691 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.6− |
| 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.7+ | 0.2− |
| 2006 09 27 | 691 | 1.0− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.6+ | 0.0 |
| 2006 09 27 | 691 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.2− | | | | |

### 2006 SL$_{328}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.11422 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23488689 | $\omega$ | 110.37035 | | +0.44645791 | | +0.89446759 |
| $a$ | 2.6015382 | $\Omega$ | 186.31313 | | −0.88145825 | | +0.43491077 |
| $e$ | 0.2693384 | $i$ | 12.90445 | | −0.15396974 | | +0.10382848 |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 24 | 691 | 0.2+ | 0.6+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ |
| 2001 03 24 | 691 | 0.0 | 0.6+ | 2006 09 19 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.8− | 0.1− |
| 2001 03 24 | 691 | 0.3− | 0.6+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 1.0− | 0.5− |
| 2001 05 17 | 608 | 0.6+ | 0.2+ | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1+ |
| 2001 05 17 | 608 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.6+ |
| 2001 05 17 | 608 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.1− | 1.2− | 2006 10 21 | 703 | 0.6+ | 0.7+ |
| 2005 03 12 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.3+ | 0.3+ |
| 2005 03 12 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 1.2− | 0.4+ | 2006 10 21 | 703 | 0.7+ | 0.4− |
| 2005 03 12 | 691 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 10 21 | 703 | 0.1− | 0.2− |
| 2005 04 04 | 703 | 0.2− | 0.8− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.2− | 1.2+ |
| 2005 04 04 | 703 | 1.0− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2005 04 04 | 703 | 0.4+ | 0.5− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.8− | 0.5+ |
| 2005 04 04 | 703 | 1.0− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 22 | 703 | 1.1− | 0.1+ |
| 2006 09 14 | 703 | 1.0− | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 1.2+ | 0.5− |
| 2006 09 14 | 703 | 0.4− | 0.7+ | 2006 10 10 | 644 | 0.2− | 0.5+ | 2006 11 16 | 703 | 0.2+ | 0.0 |
| 2006 09 14 | 703 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2006 09 14 | 703 | 1.4+ | 0.4+ | 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 11 16 | 703 | 1.1− | 0.8+ |
| 2006 09 19 | 691 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | | | | |

### 2006 SN$_{328}$ = 1995 YD$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.64130 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25997922 | $\omega$ | 56.57875 | | −0.91861707 | | +0.39390838 |
| $a$ | 2.4313284 | $\Omega$ | 146.58863 | | −0.37878549 | | −0.85526284 |
| $e$ | 0.1069445 | $i$ | 3.25720 | | −0.11253544 | | −0.33669223 |
| $P$ | 3.79 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 22 | 691 | 0.1+ | 0.7− | 2001 06 11 | 691 | 0.1+ | 0.6+ | 2006 09 19 | 691 | 0.1+ | 0.0 |
| 1995 12 22 | 691 | 0.1+ | 0.1− | 2003 12 21 | 691 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.3+ |
| 1995 12 22 | 691 | 0.2− | 0.2+ | 2003 12 21 | 691 | 0.0 | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.1+ |
| 1995 12 27 | 691 | 0.3+ | 0.4− | 2003 12 21 | 691 | 0.1− | 0.2+ | 2006 09 27 | 691 | 0.1+ | 0.2+ |
| 1995 12 27 | 691 | 0.1+ | 0.2− | 2003 12 27 | 691 | 0.7+ | 0.4+ | 2006 09 27 | 691 | 0.1− | 0.2+ |
| 1995 12 27 | 691 | 0.1− | 0.0 | 2003 12 27 | 691 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.7− | 0.1+ |
| 2001 06 11 | 691 | 0.1+ | 0.5+ | 2003 12 27 | 691 | 0.0 | 0.2+ | 2006 10 01 | 691 | 0.1− | 0.1+ |
| 2001 06 11 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1− | 0.3+ | 2006 10 01 | 691 | 0.2− | 0.4+ |

### 2006 SP$_{328}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.57109 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23542831 | $\omega$ | 272.88743 | | +0.17307757 | | −0.98481735 |
| $a$ | 2.5975481 | $\Omega$ | 167.12242 | | +0.92580459 | | +0.15804231 |
| $e$ | 0.1559657 | $i$ | 3.44094 | | +0.33605062 | | +0.07181507 |
| $P$ | 4.19 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 704 | (1.3− | 1.7+) | 2006 09 19 | 691 | 0.2+ | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.2− |
| 2002 11 13 | 704 | 0.4− | 0.2+ | 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.3− | 0.0 |
| 2002 11 13 | 704 | 0.3+ | 0.6+ | 2006 09 19 | 691 | 0.3+ | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.2− |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3− |
| 2002 12 10 | 644 | 0.0 | 0.1− | 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2002 12 10 | 644 | 0.1+ | 0.1− | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.3− | 1.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 07 21 | G96 | 0.2− | 0.1− | 2006 09 30 | 703 | 1.2+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.0 | 0.9+ | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2006 07 21 | G96 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.4− |

**2006 SC$_{329}$ = 2004 EN$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.32361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25744216 | $\omega$ | 333.99015 | | +0.20760020 | −0.97743075 | |
| $a$ | 2.4472759 | $\Omega$ | 104.00782 | | +0.90438201 | +0.17653159 | |
| $e$ | 0.1703170 | $i$ | 2.31142 | | +0.37282078 | +0.11604188 | |
| $P$ | 3.83 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.3− | 0.2+ | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.6+ | 0.3− |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.5+ | 0.6− | 2006 10 21 | 703 | 1.0− | 0.7− |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2006 10 15 | 703 | 1.1− | 1.2− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2004 03 19 | 704 | 1.0+ | 0.1− | 2006 10 15 | 703 | (1.6+ | 2.0−) | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2004 03 19 | 704 | (1.8+ | 1.5+) | 2006 10 15 | 703 | (3.7+ | 1.9−) | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2004 03 19 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2004 03 19 | 704 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.4+ |
| 2006 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.8− | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2006 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 1.3+ | 0.6− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2006 10 01 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.3+ | | | | |

**2006 SL$_{329}$ = 2005 GQ$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.50578 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30723100 | $\omega$ | 136.27168 | | +0.56702386 | +0.82363845 | |
| $a$ | 2.1751675 | $\Omega$ | 168.25901 | | −0.76882151 | +0.53364097 | |
| $e$ | 0.1239428 | $i$ | 2.86780 | | −0.29563055 | +0.19195578 | |
| $P$ | 3.21 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.0 | 0.4− | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.5− |
| 2005 04 04 | G96 | 0.1− | 0.1+ | 2006 10 01 | 691 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.7+ | 0.1+ |
| 2005 04 04 | G96 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.5− | 0.5− |
| 2005 04 04 | G96 | 0.5− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 04 11 | G96 | 0.6+ | 0.3+ | 2006 10 16 | 691 | 0.5− | 0.6+ | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2005 04 11 | G96 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.6+ | 0.2− |
| 2006 09 27 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1− | 0.4− | | | | |

**2006 SN$_{329}$ = 1995 YB$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.13439 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17142119 | $\omega$ | 315.76992 | | −0.60566413 | −0.79563112 | |
| $a$ | 3.2094187 | $\Omega$ | 171.48260 | | +0.75057042 | −0.57620822 | |
| $e$ | 0.1353460 | $i$ | 4.61613 | | +0.26422530 | −0.18696312 | |
| $P$ | 5.75 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 20 | 691 | 0.0 | 0.2+ | 2003 04 25 | 691 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.1− |
| 1995 12 20 | 691 | 0.2− | 0.2+ | 2003 04 25 | 691 | 0.9− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.3− |
| 1995 12 20 | 691 | 0.2− | 0.3− | 2003 04 25 | 691 | 0.6− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 1995 12 26 | 691 | 0.1− | 0.2− | 2006 09 27 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 1995 12 26 | 691 | 0.1+ | 0.2− | 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.4− | 0.4− |
| 1995 12 26 | 691 | 0.4+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.7+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.3− | 0.6+ | 2006 11 19 | 691 | 0.4− | 0.4+ |
| 2000 10 02 | 645 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.5− | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.3+ |
| 2003 04 08 | 691 | 0.9+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.5+ | 0.1− |
| 2003 04 08 | 691 | 1.0+ | 0.7+ | 2006 10 17 | G96 | 0.3+ | 0.3− | | | | |
| 2003 04 08 | 691 | 0.7+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.1− | | | | |

**2006 SD$_{330}$ = 1995 WO$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.53027 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26465600 | $\omega$ | 285.66629 | | +0.19787290 | −0.97997947 | |
| $a$ | 2.4026004 | $\Omega$ | 152.89105 | | +0.91686363 | +0.17707580 | |
| $e$ | 0.1417822 | $i$ | 2.77454 | | +0.34670938 | +0.09101865 | |
| $P$ | 3.72 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 23 | 691 | 0.4− | 0.3+ | 2002 08 30 | 291 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− |
| 1995 11 23 | 691 | 0.2− | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.6− |
| 1995 11 23 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.6− | 0.6− | 2006 10 02 | G96 | 0.1+ | 0.3− |
| 1995 11 30 | 691 | 0.3+ | 0.4− | 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.3− | 0.4− |
| 1995 11 30 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.4+ | 0.3− |
| 1995 11 30 | 691 | 0.2+ | 0.3+ | 2006 09 27 | 691 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 08 30 | 291 | 0.2+ | 0.1+ | 2006 09 27 | 691 | 0.3+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2002 08 30 | 291 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.2+ | | | | |

**2006 SU$_{330}$ = 2005 DL$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.49678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22901228 | $\omega$ | 216.35250 | | +0.52096937 | −0.85299522 | |
| $a$ | 2.6458397 | $\Omega$ | 202.30218 | | +0.80139078 | +0.50147831 | |
| $e$ | 0.0520623 | $i$ | 4.75614 | | +0.29387709 | +0.14463288 | |
| $P$ | 4.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.3− | 0.6+ | 2005 02 18 | 809 | 0.3+ | 0.5+ | 2006 10 01 | 703 | 0.5− | 1.1− |
| 2002 10 30 | 644 | 0.3− | 0.6+ | 2006 09 20 | 691 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.0 | 0.8− |
| 2002 10 30 | 644 | 0.1+ | 0.8+ | 2006 09 20 | 691 | 0.0 | 0.2+ | 2006 10 01 | 703 | 0.0 | 0.1− |
| 2005 02 16 | 809 | 0.3− | 0.2+ | 2006 09 20 | 691 | 0.1+ | 0.1+ | 2006 10 01 | 703 | (0.6+ | 1.6+) |
| 2005 02 16 | 809 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.2+ |
| 2005 02 16 | 809 | 0.3− | 0.2+ | 2006 09 28 | G96 | 0.6+ | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.2+ |
| 2005 02 18 | 809 | 0.5+ | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 10 03 | G96 | 0.2+ | 0.5− |
| 2005 02 18 | 809 | 0.2+ | 0.5+ | 2006 09 28 | G96 | (1.6− | 0.5+) | 2006 10 03 | G96 | 0.3− | 0.2− |

**2006 SV$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.21456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21455231 | $\omega$ | 154.73521 | | −0.99424369 | +0.00408097 | |
| $a$ | 2.7634223 | $\Omega$ | 26.18193 | | −0.06638415 | −0.80782134 | |
| $e$ | 0.1316415 | $i$ | 14.04325 | | +0.08409898 | −0.58941329 | |
| $P$ | 4.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 12 | E12 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 05 12 | E12 | 0.1+ | 0.4− | 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2004 05 12 | E12 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2004 05 12 | E12 | (2.0− | 0.1+) | 2006 10 02 | G96 | 0.1+ | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 05 13 | 644 | 0.1+ | 0.4+ | 2006 10 02 | G96 | 0.8+ | 0.0 | 2006 10 28 | 691 | 0.4− | 0.7+ |
| 2004 05 13 | 644 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.6+ | 0.6− |
| 2004 05 13 | 644 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.4+ | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.8− |
| 2004 06 05 | 644 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.5+ | 0.2+ | 2006 11 18 | G96 | 0.5+ | 0.7− |
| 2004 06 05 | 644 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.8− |
| 2004 06 05 | 644 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.0 | | | | |
| 2006 09 28 | G96 | 0.7+ | 0.1− | 2006 10 23 | 691 | 1.0− | 0.1+ | | | | |

**2006 SA$_{332}$ = 2004 FE$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 64.57311 | | $\omega$ | 333.17013 | +0.64189447 | +0.76658679 |
| $n$ | 0.19796789 | | $\Omega$ | 336.74959 | −0.69518434 | +0.57200809 |
| $a$ | 2.9156779 | | $i$ | 2.58177 | −0.32355868 | +0.29180721 |
| $e$ | 0.1486050 | | | | | |
| $P$ | 4.98 | $H$ | 16.5 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− |
| 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.5− | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2006 09 28 | G96 | 0.9+ | 0.6− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.6+ |
| 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3− | | | | |
| 2006 10 02 | G96 | 0.6+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.2− | | | | |

**2006 SB$_{332}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.06982 | | $\omega$ | 98.53948 | +0.84498363 | +0.53214587 |
| $n$ | 0.26277563 | | $\Omega$ | 229.32868 | −0.51408594 | +0.78086807 |
| $a$ | 2.4140485 | | $i$ | 4.01731 | −0.14737133 | +0.32720916 |
| $e$ | 0.2388926 | | | | | |
| $P$ | 3.75 | $H$ | 17.8 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.0 | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 19 | 691 | 0.3− | 0.1− |
| 2002 08 16 | 644 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.8− | 2006 10 23 | 691 | 0.4− | 0.3− |
| 2002 08 16 | 644 | 0.3− | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2002 08 28 | 644 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.9− | 0.4− |
| 2002 08 28 | 644 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.5+ | 0.7− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 08 28 | 644 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.6+ |
| 2002 09 13 | 644 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.5− | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2002 09 13 | 644 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2006 09 28 | G96 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.4− | 0.5− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2006 09 28 | G96 | 0.6+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 09 28 | G96 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.9+ | 0.3− |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | |

**2006 SE$_{332}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.11072 | | $\omega$ | 344.95750 | +0.85115073 | +0.52481083 |
| $n$ | 0.27752993 | | $\Omega$ | 343.37381 | −0.47763598 | +0.76580360 |
| $a$ | 2.3277134 | | $i$ | 2.15750 | −0.21772991 | +0.37164288 |
| $e$ | 0.2300940 | | | | | |
| $P$ | 3.55 | $H$ | 17.0 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.2− | 0.3− | 2006 10 03 | 291 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2005 03 11 | G96 | 0.3+ | 0.5− | 2006 10 03 | 291 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2005 03 11 | G96 | 0.0 | 0.3− | 2006 10 03 | 704 | 0.8− | 0.0 | 2006 10 29 | 704 | 0.3+ | 0.2+ |
| 2005 03 11 | G96 | 0.1+ | 0.6− | 2006 10 03 | 291 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.1+ | 0.2+ |
| 2005 05 02 | 691 | 0.3+ | 0.3+ | 2006 10 03 | 704 | 1.0− | 0.4− | 2006 10 29 | 704 | 0.4− | 0.4+ |
| 2005 05 02 | 691 | 0.0 | 0.5+ | 2006 10 03 | 704 | (1.8− | 0.5−) | 2006 10 29 | 704 | 0.1− | 0.1− |
| 2005 05 02 | 691 | 0.2+ | 0.2+ | 2006 10 04 | J95 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 05 12 | G96 | 0.1+ | 0.3+ | 2006 10 04 | J95 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 05 12 | G96 | 0.4− | 0.2+ | 2006 10 05 | J95 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2005 05 12 | G96 | 0.0 | 1.1+ | 2006 10 05 | J95 | 0.7+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.2− |
| 2005 05 12 | G96 | 0.3− | 0.5− | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.5− | 0.0 |
| 2006 07 22 | G96 | (0.2− | 2.0−) | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.8− | 0.8− |
| 2006 07 22 | G96 | 0.4+ | 0.0 | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.4− | 0.1+ |
| 2006 07 22 | G96 | 0.0 | 1.1+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.5− | 0.5+ |
| 2006 07 22 | G96 | 0.7− | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.4− |
| 2006 09 28 | G96 | 0.1− | 0.4− | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5+ | 0.1− |
| 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.7− | 1.0− |
| 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | (2.0− | 0.3+) |
| 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.4+ |
| 2006 10 03 | J95 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.5+ | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.3+ |
| 2006 10 03 | J95 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.2+ | 1.0− |
| 2006 10 03 | J95 | 0.5− | 0.9− | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.6− | 0.2+ |
| 2006 10 03 | J95 | 0.1+ | 0.7+ | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.3− |
| 2006 10 03 | 704 | 0.3− | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.1+ |

**2006 SG$_{332}$ = 2001 YP$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 285.24909 | | $\omega$ | 134.00627 | −0.54139075 | −0.84071955 |
| $n$ | 0.17788921 | | $\Omega$ | 348.76119 | +0.75708010 | −0.48265388 |
| $a$ | 3.1311435 | | $i$ | 2.73817 | +0.36568536 | −0.24542996 |
| $e$ | 0.1339720 | | | | | |
| $P$ | 5.54 | $H$ | 15.9 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.7− | 0.5− | 2006 10 03 | G96 | 0.7+ | 0.1− | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2001 12 18 | 704 | 0.5+ | 0.0 | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 0.8− | 2006 10 03 | 291 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.2− | 2006 10 03 | 291 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.5− | 0.4+ | 2006 10 03 | 291 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.3− | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.1+ |
| 2001 12 19 | 704 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2006 09 28 | G96 | 0.2− | 0.5− | 2006 10 19 | 691 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | G96 | 0.4+ | 0.5− | 2006 10 20 | G96 | 0.4+ | 0.6− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 28 | G96 | 0.7+ | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2006 10 03 | G96 | 0.7+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2006 10 03 | G96 | 0.4+ | 0.4− | 2006 10 23 | 691 | 0.4− | 0.1+ | | | | |

**2006 SO$_{332}$ = 2002 XN$_{38}$ = 2004 FN$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.26429 | | $\omega$ | 16.04243 | +0.84901404 | −0.52752421 |
| $n$ | 0.23593599 | | $\Omega$ | 15.90194 | +0.47198901 | +0.73177673 |
| $a$ | 2.5938205 | | $i$ | 6.26276 | +0.23749008 | +0.43153334 |
| $e$ | 0.1657184 | | | | | |
| $P$ | 4.18 | $H$ | 16.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2000 04 05 | 691 | 0.1− | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 691 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2002 12 06 | 704 | 1.0− | 0.7− | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2002 12 06 | 704 | 0.9+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.7− |
| 2002 12 06 | 704 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 17 | G96 | 0.6+ | 0.5− |
| 2002 12 06 | 704 | 0.4− | 0.9− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2002 12 10 | 704 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.7− |
| 2002 12 10 | 704 | 0.6+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2002 12 10 | 704 | (1.5+ | 1.6−) | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.8− | 1.0− |
| 2004 03 17 | 691 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.5+ |
| 2004 03 17 | 691 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2004 03 17 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2004 03 26 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 22 | 704 | 0.5+ | 1.0+ |
| 2004 03 26 | 691 | 0.2+ | 0.2− | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 22 | 704 | (0.0 | 1.5+) |
| 2004 03 26 | 691 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 2006 09 28 | G96 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3− | 2006 11 22 | 704 | 1.2− | 0.7+ |

**2006 SQ$_{332}$ = 2005 EV$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.45522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27607145 | $\omega$ | 347.11219 | | +0.72269997 | | +0.69103343 |
| $a$ | 2.3359043 | $\Omega$ | 329.16246 | | −0.63180001 | | +0.65268957 |
| $e$ | 0.2098623 | $i$ | 1.48957 | | −0.28023830 | | +0.31059480 |
| $P$ | 3.57 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.0 | 0.6+ | 2006 10 03 | G96 | 0.5+ | 0.7− | 2006 10 23 | 691 | 0.0 | 0.3− |
| 2005 03 10 | G96 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.4− |
| 2005 03 10 | G96 | 0.2− | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.2− |
| 2005 03 10 | G96 | 0.9+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2005 03 17 | 691 | 0.3− | 0.3− | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2005 03 17 | 691 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.4− | 0.5+ |
| 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2006 09 28 | G96 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.6+ | 0.5− | 2006 11 15 | G96 | 0.6+ | 0.5− |
| 2006 10 03 | G96 | 0.2+ | 0.6− | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | (0.1+ | 1.7−) |
| 2006 10 03 | G96 | 0.4+ | 0.3− | 2006 10 20 | G96 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2006 10 03 | G96 | 0.5+ | 0.1− | 2006 10 20 | G96 | 0.7+ | 0.3− | | | | |

**2006 SW$_{332}$ = 2005 JJ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.89716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24136296 | $\omega$ | 291.59096 | | +0.84966741 | | +0.52615303 |
| $a$ | 2.5547925 | $\Omega$ | 36.68865 | | −0.45951467 | | +0.77138001 |
| $e$ | 0.1935486 | $i$ | 3.36284 | | −0.25867268 | | +0.35796071 |
| $P$ | 4.08 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 568 | 0.2+ | 0.3+ | 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 05 04 | 568 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.5+ | 0.4− |
| 2005 05 04 | 568 | 0.1+ | 0.4+ | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2005 05 05 | 568 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.2+ |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.9+ | 2006 11 21 | G96 | 0.4− | 0.4+ |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.2− |

**2006 SK$_{334}$ = 2004 ER$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.45920 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21371055 | $\omega$ | 336.57813 | | +0.52998038 | | −0.84593578 |
| $a$ | 2.7706738 | $\Omega$ | 81.36997 | | +0.78720614 | | +0.46478581 |
| $e$ | 0.0751655 | $i$ | 3.43713 | | +0.31532094 | | +0.26147047 |
| $P$ | 4.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.6+ | 0.2+ |
| 2004 03 14 | 691 | 0.2+ | 0.5− | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2004 03 14 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− |
| 2004 03 21 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.9+ | 1.0+ | 2006 10 20 | 644 | 0.9− | 0.7− |
| 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.2+ |
| 2004 03 21 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 1.4+ | 1.0+ | 2006 10 22 | 703 | 0.0 | 1.0− |
| 2006 09 28 | 691 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.2− |
| 2006 09 28 | 691 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.0 |
| 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ | | | | |

**2006 SE$_{335}$ = 1998 XK$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.83576 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23596013 | $\omega$ | 30.98524 | | −0.26405498 | | −0.96247531 |
| $a$ | 2.5936436 | $\Omega$ | 74.38782 | | +0.87107986 | | −0.26583257 |
| $e$ | 0.0361252 | $i$ | 3.72555 | | +0.41411937 | | −0.05453741 |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 10 | 691 | 0.2+ | 0.2+ | 2002 10 15 | 644 | 0.0 | 0.2− | 2006 10 02 | 691 | 0.4+ | 0.1+ |
| 1998 12 10 | 691 | 0.1− | 0.2+ | 2002 10 15 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.1− |
| 1998 12 10 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.2− |
| 1998 12 15 | 691 | 0.0 | 0.0 | 2006 09 28 | 691 | 0.4− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.8− |
| 1998 12 15 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.5− | 0.6+ |
| 1998 12 15 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.0 | 0.0 | | | | |
| 2002 10 15 | 644 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.2+ | 0.2+ | | | | |

**2006 SJ$_{335}$ = 1995 OF$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.72292 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18935250 | $\omega$ | 229.43408 | | +0.81335942 | | −0.58042874 |
| $a$ | 3.0034611 | $\Omega$ | 165.90032 | | +0.57056165 | | +0.78266298 |
| $e$ | 0.1218237 | $i$ | 9.29718 | | +0.11360392 | | +0.22481356 |
| $P$ | 5.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.2− | 0.3− | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 1995 07 25 | 691 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3− |
| 1995 07 25 | 691 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1− |
| 1995 07 30 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 16 | 703 | (1.0− | 3.0+) |
| 1995 07 30 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.7− | 2006 10 16 | 703 | 0.5− | 0.9+ |
| 1995 07 30 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.6− | 2006 10 16 | 703 | 0.5− | 0.4− |
| 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.6− | 0.3− | 2006 10 16 | 703 | 1.1+ | 0.5+ |
| 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.5− | | | | |

**2006 SE$_{336}$ = 2004 FX$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.34006 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21054449 | $\omega$ | 33.48205 | | −0.18162983 | | −0.97952572 |
| $a$ | 2.7983807 | $\Omega$ | 67.11451 | | +0.88027637 | | −0.20131270 |
| $e$ | 0.0327496 | $i$ | 5.40827 | | +0.43831965 | | −0.00159766 |
| $P$ | 4.68 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 21 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.1− | 0.1− |
| 2004 03 21 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | (0.1− | 1.9−) |
| 2004 03 21 | 691 | 0.4− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.7− |
| 2004 03 28 | 691 | 0.2+ | 0.4+ | 2006 10 02 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 703 | (1.8+ | 0.0 ) |
| 2004 03 28 | 691 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2004 03 28 | 691 | 0.3+ | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2006 09 18 | 291 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2006 09 18 | 291 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2006 09 18 | 291 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.1+ | | | | |

**2006 ST$_{338}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.03149 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23578804 | $\omega$ | 313.28422 | | +0.94937902 | | +0.30411265 |
| $a$ | 2.5949054 | $\Omega$ | 29.27373 | | −0.22080071 | | +0.82424349 |
| $e$ | 0.1255512 | $i$ | 9.26280 | | −0.22344243 | | +0.47763812 |
| $P$ | 4.18 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.8− |
| 2002 10 31 | 644 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.5+ | 0.5− |
| 2002 10 31 | 644 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2002 11 23 | 644 | 0.4− | 0.4+ | 2006 10 10 | 644 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2002 11 23 | 644 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2002 11 23 | 644 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2006 09 25 | 699 | 0.5− | 0.5− | 2006 10 16 | 703 | 0.9− | 1.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2006 09 25 | 699 | (2.6− | 1.0−) | 2006 10 16 | 703 | 0.7+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 09 25 | 699 | (0.3− | 1.8+) | 2006 10 22 | 703 | 0.4+ | 0.9+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | (0.3+ | 1.8+) | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.2+ |
| 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 1.1− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.3+ |
| 2006 10 02 | 691 | 0.3− | 0.2− | 2006 10 22 | G96 | 0.2+ | 0.6− | 2006 11 22 | G96 | 0.1− | 0.0 |

**2006 SD$_{341}$ = 1995 SG$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.20791 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18004702 | $\omega$ | 224.06576 | | +0.77109407 | | −0.63658541 |
| $a$ | 3.1060761 | $\Omega$ | 175.41381 | | +0.62017703 | | +0.74622042 |
| $e$ | 0.1072848 | $i$ | 9.46668 | | +0.14420259 | | +0.19471544 |
| $P$ | 5.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.2− | 0.1+ | 2006 09 30 | 703 | (1.7+ | 0.6+) |
| 1995 09 26 | 691 | 0.1+ | 0.7+ | 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 09 30 | 703 | 0.9+ | 0.5− |
| 1995 09 26 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 0.3+ |
| 1995 09 30 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1+ |
| 1995 09 30 | 691 | 0.3− | 0.2− | 2006 09 28 | 691 | 0.2− | 0.0 | 2006 10 02 | 691 | 0.1− | 0.0 |
| 1995 09 30 | 691 | 0.0 | 0.3− | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1− |
| 2006 07 21 | G96 | 0.2+ | 0.0 | 2006 09 30 | 703 | (2.4+ | 3.3+) | | | | |

**2006 SP$_{341}$ = 1978 WZ$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.61401 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28108190 | $\omega$ | 328.85215 | | +0.96687350 | | −0.25059571 |
| $a$ | 2.3080619 | $\Omega$ | 45.74409 | | +0.24592040 | | +0.86353258 |
| $e$ | 0.1812521 | $i$ | 3.88706 | | +0.06840162 | | +0.43762229 |
| $P$ | 3.51 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 29 | 675 | 0.1+ | 1.0+ | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | (0.1− | 2.2+) |
| 1978 11 30 | 675 | 0.1− | 1.0− | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 22 | 704 | (0.3− | 2.3+) |
| 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 22 | 704 | (0.2− | 1.7+) |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | (0.4− | 2.5+) |
| 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.6− |
| 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.6− |
| 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2006 10 02 | G96 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.6− |
| 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.2+ | 0.1− | 2006 11 26 | 704 | 1.0− | 0.3− |
| 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 26 | 704 | 0.2− | 1.1+ |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 16 | 703 | (1.4− | 2.5−) | 2006 11 26 | 704 | 0.2+ | 0.6+ |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 16 | 703 | 0.6− | 0.0 | 2006 11 27 | 703 | 0.9− | 0.3− |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.8− | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.4− | 0.1+ | 2006 11 27 | 703 | 0.7− | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 1.0− | 0.3− | 2006 11 27 | 703 | 0.3− | 0.1− |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.3+ | 2006 11 29 | 704 | 1.1+ | 0.4+ |
| 2006 10 17 | G96 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.2− | 2006 11 29 | 704 | (3.2+ | 1.1+) |
| 2006 10 17 | G96 | 1.5+ | 0.3− | 2006 11 17 | 704 | 1.2− | 0.4− | 2006 11 29 | 704 | 0.9+ | 0.9− |
| 2006 10 17 | G96 | 0.3+ | 0.6− | 2006 11 17 | 704 | 1.0− | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.9+ |
| 2006 10 20 | 644 | 0.3+ | 0.7− | 2006 11 18 | 704 | 0.8+ | 1.1+ | 2006 11 29 | 704 | 0.3+ | 0.5− |
| 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 18 | 704 | 1.1+ | 1.2+ | 2006 12 01 | G96 | 0.3+ | 0.7− |
| 2006 10 20 | 644 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.5+ | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2006 10 31 | G96 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.4+ | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2006 10 31 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.6+ | 2006 12 01 | G96 | 0.4− | 0.5− |
| 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 22 | 704 | (0.4− | 1.7+) | | | | |

**2006 SU$_{341}$ = 1997 TX$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.06210 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22237130 | $\omega$ | 345.50639 | | +0.97528509 | | +0.22085016 |
| $a$ | 2.6982585 | $\Omega$ | 1.77567 | | −0.17528408 | | +0.79167920 |
| $e$ | 0.1652088 | $i$ | 12.38816 | | −0.13451571 | | +0.56962203 |
| $P$ | 4.43 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.2− | 0.0 | 2006 09 16 | 703 | 1.0− | 0.9− | 2006 10 10 | 644 | 0.3+ | 0.3+ |
| 1997 10 04 | 691 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.9+ | 0.5− | 2006 10 10 | 644 | 0.3− | 0.2− |
| 1997 10 04 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.6− | 0.4− |
| 1997 10 10 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.4− |
| 1997 10 10 | 691 | 0.3+ | 0.1+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1− |
| 1997 10 10 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2006 09 16 | 703 | 0.0 | 0.5+ | 2006 10 02 | 691 | 0.3+ | 0.1+ | | | | |
| 2006 09 16 | 703 | 0.9− | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.2+ | | | | |

**2006 SK$_{342}$ = 2006 UU$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.41210 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25803064 | $\omega$ | 269.05417 | | −0.98895568 | | +0.13556082 |
| $a$ | 2.4435535 | $\Omega$ | 278.73514 | | −0.09998128 | | −0.90861431 |
| $e$ | 0.1238085 | $i$ | 3.47535 | | −0.10940934 | | −0.39502316 |
| $P$ | 3.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 691 | 0.0 | 0.2− | 2004 01 26 | 699 | 0.3− | 0.2+ | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 2003 12 22 | 691 | 0.1− | 0.2− | 2004 01 26 | 699 | 0.9− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.1− |
| 2003 12 22 | 691 | 0.0 | 0.1− | 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.2− |
| 2004 01 15 | 691 | 0.1− | 0.1− | 2004 02 16 | 691 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.2+ | 0.0 |
| 2004 01 15 | 691 | 0.2− | 0.1− | 2004 02 16 | 691 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.3+ |
| 2004 01 15 | 691 | 0.0 | 0.6+ | 2004 04 14 | 645 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.4− |
| 2004 01 26 | 699 | 1.2+ | 0.3− | 2004 04 14 | 645 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 2004 01 26 | 699 | 0.5− | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.0 |

**2006 SG$_{343}$ = 1998 HJ$_{1}$ = 2003 ES$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.90593 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17865241 | $\omega$ | 292.84173 | | −0.89845789 | | −0.41779064 |
| $a$ | 3.1222197 | $\Omega$ | 222.79431 | | +0.43896150 | | −0.86124575 |
| $e$ | 0.1650747 | $i$ | 11.46157 | | −0.00928529 | | −0.28932117 |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 18 | 684 | 0.6− | 1.0+ | 2003 03 11 | 704 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1998 04 18 | 684 | 0.5+ | 0.1+ | 2003 03 11 | 704 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 1998 04 19 | 684 | 0.0 | 0.1− | 2003 03 11 | 704 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 |
| 1998 04 19 | 684 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 1998 04 19 | 684 | 0.0 | 0.5+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 1998 04 20 | 684 | 0.3− | 0.3− | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 1998 04 20 | 684 | 0.5+ | 0.7− | 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2003 03 09 | 699 | 0.4− | 0.5− | 2006 10 02 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2003 03 09 | 699 | 1.1+ | 0.2− | 2006 10 02 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 03 09 | 699 | 0.7+ | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2003 03 09 | 699 | 0.6+ | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.4− | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2003 03 11 | 704 | 1.1− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.3− |

**2006 SC$_{344}$ = 2001 SB$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.96144 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21524731 | $\omega$ | 80.94288 | | +0.99599946 | −0.07845418 | |
| $a$ | 2.7574706 | $\Omega$ | 283.54832 | | +0.05435344 | +0.91187666 | |
| $e$ | 0.1110338 | $i$ | 2.52202 | | +0.07092804 | +0.40289688 | |
| $P$ | 4.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 644 | 0.9− | 0.6− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 29 | 704 | 1.2− | 0.1+ |
| 2001 08 24 | 644 | 0.8− | 0.7− | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.4− | 0.1+ |
| 2001 08 24 | 644 | 0.6− | 0.7− | 2006 10 02 | 691 | 0.3+ | 0.2− | 2006 10 29 | 704 | 0.7− | 0.9+ |
| 2001 09 20 | 704 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 10 29 | 704 | 0.5− | 0.1− |
| 2001 09 20 | 704 | 0.1+ | 0.8− | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.2+ |
| 2001 09 20 | 704 | 1.0+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 09 22 | 704 | 0.4+ | 0.8+ | 2006 10 17 | 691 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2001 09 22 | 704 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.6+ | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2001 09 22 | 704 | 0.1+ | 1.0+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | 0.1+ | 1.4+ | 2006 10 17 | 703 | 1.3+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2001 09 22 | 704 | 0.3+ | 1.4+ | 2006 10 17 | 703 | 0.4+ | 0.0 | 2006 11 14 | 703 | (1.2− | 2.6−) |
| 2001 09 23 | 704 | (3.0+ | 6.7+) | 2006 10 17 | 703 | 0.7− | 0.4− | 2006 11 14 | 703 | 0.8− | 0.1− |
| 2001 09 23 | 704 | (3.0+ | 7.6+) | 2006 10 17 | 703 | 0.3+ | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | (2.9+ | 7.9+) | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.5− | 0.1+ |
| 2004 03 28 | 691 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2004 03 28 | 691 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.2− |
| 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2006 09 24 | 291 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2006 09 24 | 291 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2006 09 24 | 291 | 0.4+ | 0.0 | 2006 10 21 | 703 | 1.0− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.1− | 0.6− | 2006 11 22 | 704 | 0.1+ | 0.9− |
| 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.3− | 0.8− | 2006 11 22 | 704 | 0.4+ | 0.8− |

**2006 SD$_{344}$ = 1995 SK$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 230.66731 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18939152 | $\omega$ | 166.47453 | | −0.92195526 | −0.38711910 | |
| $a$ | 3.0030486 | $\Omega$ | 350.72434 | | +0.34823166 | −0.81534041 | |
| $e$ | 0.0667700 | $i$ | 4.16902 | | +0.16950876 | −0.43053318 | |
| $P$ | 5.20 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.3− | 0.1− | 2000 07 29 | 807 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 1995 09 21 | 691 | 0.0 | 0.5+ | 2003 01 31 | 644 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.1− |
| 1995 09 21 | 691 | 0.1+ | 0.0 | 2003 01 31 | 644 | 0.1− | 0.9+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 1995 09 26 | 691 | 0.3+ | 0.2+ | 2003 01 31 | 644 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.3− | 0.2− |
| 1995 09 26 | 691 | 0.1− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.2− |
| 1995 09 26 | 691 | 0.2− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.3− | 0.3+ |
| 1998 02 24 | 691 | 0.1− | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.2− |
| 1998 02 24 | 691 | 0.1+ | 0.2− | 2006 10 03 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 1.0− |
| 1998 02 24 | 691 | 0.1+ | 0.1− | 2006 10 03 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.4− | 0.1+ |
| 2000 07 29 | 807 | 0.0 | 0.3+ | 2006 10 03 | 691 | 0.2+ | 0.2+ | | | | |

**2006 SY$_{344}$ = 2002 XF$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.35780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21187318 | $\omega$ | 137.36440 | | −0.77224586 | −0.63526069 | |
| $a$ | 2.7866691 | $\Omega$ | 3.23528 | | +0.53175014 | −0.65399920 | |
| $e$ | 0.1872104 | $i$ | 9.12931 | | +0.34767530 | −0.41076623 | |
| $P$ | 4.65 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 09 | 691 | 0.1+ | 0.8+ | 2002 12 15 | 704 | 0.3− | 0.9− | 2006 10 18 | 408 | (0.9− | 3.1−) |
| 1999 02 09 | 691 | 0.1+ | 0.5+ | 2002 12 15 | 704 | 0.2+ | 0.1− | 2006 10 18 | 408 | (1.0− | 3.4−) |
| 1999 02 09 | 691 | 0.6+ | 0.4+ | 2002 12 15 | 704 | 0.2− | 0.5+ | 2006 10 19 | 408 | 1.3+ | 0.9− |
| 2001 09 23 | 691 | 0.1− | 0.6+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 19 | 408 | 1.3+ | 1.3− |
| 2001 09 23 | 691 | 0.2+ | 0.6+ | 2006 09 28 | 691 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2001 09 23 | 691 | 0.8− | 0.0 | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2002 12 12 | 644 | 0.4+ | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2002 12 12 | 644 | 0.0 | 0.1+ | 2006 10 02 | 691 | 0.3− | 0.6+ | 2006 11 25 | G96 | 0.4− | 0.5− |
| 2002 12 12 | 644 | 0.2+ | 0.3+ | 2006 10 02 | 691 | 0.1− | 0.4+ | | | | |

**2006 SA$_{345}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.12512 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21588183 | $\omega$ | 211.09716 | | +0.38876698 | −0.91365624 | |
| $a$ | 2.7520648 | $\Omega$ | 216.40969 | | +0.88106951 | +0.40635242 | |
| $e$ | 0.0876759 | $i$ | 11.53705 | | +0.26940074 | −0.01048757 | |
| $P$ | 4.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 01 | 910 | 0.3− | 0.9+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 1997 10 01 | 910 | 0.1+ | 0.5+ | 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 1997 10 01 | 910 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2001 08 17 | 644 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 08 17 | 644 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.0 | 0.0 |
| 2001 08 17 | 644 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.4+ | 2006 11 06 | 644 | 0.4− | 0.2− |
| 2004 04 20 | 691 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 06 | 644 | 0.2− | 0.7+ |
| 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.8− |
| 2004 04 20 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 1.1− |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 1.0− |
| 2006 09 28 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | | | | |
| 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | | | | |

**2006 SD$_{345}$ = 1999 RE$_{163}$ = 2005 GF$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.45324 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28710387 | $\omega$ | 113.07280 | | +0.99707643 | −0.06505110 | |
| $a$ | 2.2756739 | $\Omega$ | 250.67615 | | +0.04469578 | +0.92203350 | |
| $e$ | 0.1957228 | $i$ | 2.43465 | | +0.06197482 | +0.38160526 | |
| $P$ | 3.43 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 09 | 704 | 0.3− | 0.1− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 1999 09 09 | 704 | 0.2+ | 1.3− | 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 09 09 | 704 | 1.1+ | 0.9− | 2006 10 02 | 691 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 1999 09 14 | 704 | 0.4+ | 0.2+ | 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 1999 09 14 | 704 | 0.8− | 1.2+ | 2006 10 10 | 644 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 1999 09 14 | 704 | 0.5− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.4− |
| 1999 09 14 | 704 | 0.2+ | 0.5− | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2005 04 12 | 691 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.1− |
| 2005 04 12 | 691 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.8− | 1.1+ |
| 2005 04 12 | 691 | 0.1+ | 0.5+ | 2006 10 17 | 691 | 0.2− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2005 04 15 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.3− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2005 04 15 | 691 | 0.6+ | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2005 04 15 | 691 | 0.3+ | 0.4+ | 2006 10 17 | 703 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2006 09 14 | 644 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2006 09 14 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2006 09 14 | 644 | 0.3− | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.1− | | | | |
| 2006 09 28 | 691 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.1+ | | | | |

**2006 SP$_{345}$ = 2004 FU$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.44314 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24664638 | $\omega$ | 221.64428 | | +0.04196734 | −0.99711885 | |
| $a$ | 2.5181768 | $\Omega$ | 226.05632 | | +0.93830769 | +0.06106139 | |
| $e$ | 0.1391000 | $i$ | 5.03467 | | +0.34324541 | −0.04500553 | |
| $P$ | 4.00 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 704 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 03 26 | 704 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 22 | 683 | 1.3+ | 0.2− |
| 2004 03 26 | 704 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 22 | 683 | 0.5− | 0.8+ |
| 2004 03 26 | 704 | 0.2− | 0.8+ | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.2− |
| 2004 03 27 | 704 | 0.1+ | 1.2− | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 0.3− | 0.8− | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2004 03 27 | 704 | 0.6+ | 0.3− | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2004 03 27 | 704 | 1.1− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2004 03 27 | 704 | 0.8+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 03 27 | 704 | 0.1− | 0.9+ | 2006 10 17 | 703 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.4− |
| 2004 03 27 | 704 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2004 03 27 | 704 | 0.1+ | 0.9+ | 2006 10 17 | 703 | 0.6− | 0.7− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2006 09 28 | 691 | 0.3+ | 0.2− | 2006 10 17 | 703 | (4.5+ | 3.3−) | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 683 | 0.9− | 1.2− | 2006 11 20 | G96 | 0.2− | 0.0 |
| 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 683 | (1.9− | 1.5−) | 2006 11 20 | G96 | 0.6− | 0.0 |
| 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 20 | 683 | (6.6− | 1.1−) | 2006 11 20 | G96 | 0.4− | 0.2+ |
| 2006 10 02 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.4− | 0.1− | | | | |
| 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.5+ | | | | |

**2006 ST$_{345}$ = 2003 YF$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.30877 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29215325 | $\omega$ | 166.37188 | | +0.36866941 | | −0.92863037 |
| $a$ | 2.2493769 | $\Omega$ | 261.98186 | | +0.84887180 | | +0.35455737 |
| $e$ | 0.1101454 | $i$ | 2.40631 | | +0.37881332 | | +0.10924604 |
| $P$ | 3.37 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.2+ | 0.2− | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 10 27 | 683 | (1.9+ | 1.9−) |
| 2003 12 19 | 704 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 10 27 | 683 | 0.7+ | 0.7− |
| 2003 12 19 | 704 | 0.8− | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2003 12 19 | 704 | 0.6− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.2− | 0.1+ |
| 2003 12 19 | 704 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.2+ |
| 2003 12 21 | 704 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 11 11 | 703 | (1.7− | 0.9−) |
| 2003 12 21 | 704 | 0.3+ | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.7− | 0.2− |
| 2003 12 21 | 704 | 1.2+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2003 12 21 | 704 | 0.4− | 0.3+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.5+ | 1.1− | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 1.2+ | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.3+ |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2006 10 02 | 691 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2006 10 02 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.2+ |
| 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2006 10 11 | 644 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.3− | 0.5− |
| 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 27 | 683 | 0.7+ | 0.8− | 2006 11 27 | G96 | 0.8− | 2.0− |

**2006 SP$_{346}$ = 2001 UL$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.73308 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18977336 | $\omega$ | 155.74258 | | +0.98555640 | | −0.06790184 |
| $a$ | 2.9990190 | $\Omega$ | 209.46645 | | +0.04850635 | | +0.99090029 |
| $e$ | 0.0913792 | $i$ | 18.38359 | | +0.16225201 | | +0.11621515 |
| $P$ | 5.19 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.0 | 0.6− | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.0 | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.6+ | 0.3+ |
| 2001 10 23 | 704 | 0.3− | 0.2− | 2006 10 02 | 691 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.3− |
| 2001 10 24 | 704 | 0.2− | 0.3− | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.3+ |
| 2001 10 24 | 704 | 0.4+ | 0.1− | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2001 10 24 | 704 | 0.6− | 0.7+ | 2006 10 17 | 703 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.6− |
| 2001 10 24 | 704 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 10 24 | 704 | 0.6+ | 0.5+ | 2006 10 17 | 703 | 1.1− | 1.1− | 2006 11 16 | 691 | 0.4+ | 0.3+ |
| 2004 04 25 | 691 | (22.0+ | 1.2−) | 2006 10 17 | 703 | (0.1+ | 2.1−) | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2004 04 25 | 691 | (21.7+ | 1.4−) | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2004 04 25 | 691 | (21.4+ | 0.9−) | 2006 10 21 | 644 | 0.3+ | 0.6+ | | | | |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.5+ | 0.3+ | | | | |

**2006 SD$_{347}$ = 2001 VW$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.55308 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19343147 | $\omega$ | 37.58474 | | +0.82043411 | | −0.57173368 |
| $a$ | 2.9610879 | $\Omega$ | 357.28153 | | +0.50855735 | | +0.73208256 |
| $e$ | 0.1705872 | $i$ | 3.51639 | | +0.26126096 | | +0.37037241 |
| $P$ | 5.10 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 10 27 | 683 | 0.1+ | 0.0 |
| 2001 11 12 | 704 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 31 | 683 | 0.9+ | 0.0 |
| 2001 11 12 | 704 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 10 31 | 683 | 0.1− | 1.1+ |
| 2001 11 19 | 704 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 31 | 683 | 1.4− | 0.3+ |
| 2001 11 19 | 704 | 0.2− | 0.6− | 2006 10 17 | 703 | 0.5− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2001 11 19 | 704 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.4− | 0.2− | 2006 11 13 | 691 | 0.3+ | 0.1+ |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.8− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.4− |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.5− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2006 09 15 | 691 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.6− | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.3− |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.3− | 1.2+ |
| 2006 09 28 | 691 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.6− | 2006 11 14 | 703 | 1.0− | 0.1+ |
| 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 14 | 703 | 1.3− | 0.3+ |
| 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 22 | 683 | 1.0+ | 0.8− | 2006 11 16 | 691 | 0.2− | 0.3+ |
| 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 22 | 683 | 1.4+ | 0.6− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 683 | 0.8+ | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2006 10 10 | 644 | 0.5− | 0.0 | 2006 10 23 | 683 | 0.1− | 1.0− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2006 10 10 | 644 | 0.4− | 0.2+ | 2006 10 23 | 683 | 0.8+ | 0.9− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 23 | 683 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 27 | 683 | 0.0 | 0.9− | | | | |
| 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 27 | 683 | 0.9− | 0.5+ | | | | |

**2006 SO$_{347}$ = 2004 BC$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.34031 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27089184 | $\omega$ | 287.73246 | | −0.76347713 | | −0.64342566 |
| $a$ | 2.3655862 | $\Omega$ | 212.28623 | | +0.62501603 | | −0.71437579 |
| $e$ | 0.1892796 | $i$ | 5.98905 | | +0.16265804 | | −0.27508299 |
| $P$ | 3.64 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 0.3+ | 0.4− | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 1.0+ |
| 2004 01 29 | 704 | 0.3+ | 0.6− | 2006 09 28 | 691 | 0.4+ | 0.4− | 2006 10 31 | 691 | 0.4− | 0.2− |
| 2004 01 29 | 704 | 0.4− | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.7+ |
| 2004 01 29 | 704 | 0.0 | 0.5+ | 2006 10 02 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2004 01 29 | 704 | 0.8− | 0.2+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.4+ |
| 2004 01 30 | 704 | 0.7+ | 1.3+ | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.5− |
| 2004 01 30 | 704 | 0.1− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2004 01 30 | 704 | 0.1− | 0.8− | 2006 10 19 | 691 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.4− | 2006 11 22 | G96 | 1.1+ | 0.7− |
| 2006 09 18 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.3− | | | | |
| 2006 09 18 | 691 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.6− | | | | |

**2006 SL$_{348}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.24997 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19816510 | $\omega$ | 303.43317 | | +0.89313602 | | +0.43567827 |
| $a$ | 2.9137432 | $\Omega$ | 31.16596 | | −0.30639734 | | +0.77124695 |
| $e$ | 0.0590475 | $i$ | 12.47259 | | −0.32928516 | | +0.46407175 |
| $P$ | 4.97 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.2+ | 0.1− | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.4− |
| 1999 03 20 | 645 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 1999 03 22 | 645 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 1999 03 22 | 645 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2006 09 19 | 691 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.5− | 0.4− |
| 2006 09 19 | 691 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2− | 0.4+ |
| 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2006 09 28 | 691 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 20 | G96 | 0.6+ | 0.7+ |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.6− | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 11 20 | G96 | 0.9+ | 0.2+ |
| 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.2− | 2006 11 20 | G96 | 0.4− | 0.8− |
| 2006 10 02 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 20 | G96 | (1.8− | 0.8−) |

**2006 SM$_{348}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.28959 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21567160 | $\omega$ | 57.68767 | | −0.03392816 | | −0.99722818 |
| $a$ | 2.7538529 | $\Omega$ | 34.44511 | | +0.87309181 | | −0.06181819 |
| $e$ | 0.0734475 | $i$ | 6.72317 | | +0.48637390 | | +0.04140608 |
| $P$ | 4.57 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 699 | 0.3− | 0.7− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2001 08 25 | 699 | 0.8− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 2001 08 25 | 699 | 1.1+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 17 | 703 | 1.3− | 0.2+ |
| 2001 08 25 | 699 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.2+ | 0.8− | 2006 11 17 | 703 | 1.3− | 0.4+ |
| 2004 04 15 | 699 | 0.8− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 1.5− | 0.3− |
| 2004 04 15 | 699 | 0.6+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.6− | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2004 04 15 | 699 | 1.3− | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2004 04 15 | 699 | 0.5+ | 1.4+ | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.5+ |
| 2004 05 10 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2004 05 10 | 691 | 0.5+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2004 05 10 | 691 | 0.5+ | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 11 07 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 1.1+ |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 11 07 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | (0.6− | 1.9+) |
| 2006 09 28 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.7− | 0.8− | 2006 11 21 | 704 | (0.2− | 1.7+) |
| 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 27 | 703 | 0.2− | 0.6− |
| 2006 10 02 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 1.1+ | 0.9− | 2006 11 27 | 703 | (1.5+ | 2.6−) |
| 2006 10 02 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | (1.8− | 0.0 ) | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.5+ |
| 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.2− | | | | |

**2006 SZ$_{348}$ = 2001 QU$_{301}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.57347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23962002 | $\omega$ | 109.43004 | | −0.65614744 | | −0.75413612 |
| $a$ | 2.5671662 | $\Omega$ | 21.64952 | | +0.66154740 | | −0.59228381 |
| $e$ | 0.2054782 | $i$ | 4.25494 | | +0.36307792 | | −0.28368751 |
| $P$ | 4.11 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.0 | 0.2+ | 2006 10 02 | 691 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2001 08 19 | 807 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.5− | 0.1− | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 2001 08 20 | 807 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.5− |
| 2001 08 20 | 807 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.2+ |
| 2006 09 28 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.1− |
| 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3+ | | | | |

**2006 SB$_{349}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.29261 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19328082 | $\omega$ | 349.09047 | | +0.44550267 | | −0.89527681 |
| $a$ | 2.9626263 | $\Omega$ | 74.45399 | | +0.82160751 | | +0.40768337 |
| $e$ | 0.1220039 | $i$ | 0.15506 | | +0.35565218 | | +0.17964881 |
| $P$ | 5.10 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 2001 10 14 | 691 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 691 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2001 10 25 | 644 | 0.4− | 1.4+ | 2006 10 11 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2001 10 25 | 644 | 0.0 | 1.1+ | 2006 10 15 | 691 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2001 10 25 | 644 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.3− | 0.4− |
| 2006 09 18 | 691 | 0.5− | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.3− |
| 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.6− | 0.2+ |
| 2006 09 28 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.5+ | 0.2+ |
| 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− | | | | |
| 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1+ | | | | |

**2006 SE$_{349}$ = 2004 FO$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.89814 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21561596 | $\omega$ | 58.75467 | | +0.56864962 | | −0.82245929 |
| $a$ | 2.7543267 | $\Omega$ | 356.49135 | | +0.65453997 | | +0.46278666 |
| $e$ | 0.0973479 | $i$ | 13.30395 | | +0.49821184 | | +0.33074043 |
| $P$ | 4.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 09 15 | 691 | 0.2− | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.5+ |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 09 | 644 | 0.6+ | 0.1− |
| 2004 03 17 | 691 | 0.2− | 0.6+ | 2006 09 29 | 704 | 0.3− | 1.2− | 2006 10 11 | 644 | 0.2+ | 0.2+ |
| 2004 03 18 | 704 | 0.9+ | 0.7− | 2006 09 29 | 704 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2004 03 18 | 704 | 0.2+ | 0.1+ | 2006 09 29 | 704 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.4+ | 0.2+ |
| 2004 03 18 | 704 | 0.6+ | 0.9+ | 2006 09 29 | 704 | 0.9− | 0.3− | 2006 10 23 | G96 | 0.3− | 0.2− |
| 2006 09 06 | 644 | 0.3+ | 0.2+ | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.4− | 0.3− |
| 2006 09 06 | 644 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.1− | 0.3− |
| 2006 09 06 | 644 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.5− | 0.0 |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.7+ | | | | |

**2006 SN$_{349}$ = 2005 JB$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.87670 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29243778 | $\omega$ | 316.94524 | | +0.72872542 | | +0.68480596 |
| $a$ | 2.2479177 | $\Omega$ | 359.83391 | | −0.60527688 | | +0.64394169 |
| $e$ | 0.1336391 | $i$ | 4.46216 | | −0.32031103 | | +0.34114497 |
| $P$ | 3.37 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.1+ | 0.4+ | 2006 10 10 | 644 | 0.4− | 0.0 | 2006 10 29 | 704 | 0.6+ | 0.1+ |
| 2005 05 10 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 06 | 644 | 0.3− | 0.0 |
| 2005 05 10 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 06 | 644 | 0.4− | 0.0 |
| 2005 05 14 | G96 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 06 | 644 | 0.3− | 0.2− |
| 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2− |
| 2005 05 14 | G96 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2005 05 14 | G96 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2006 08 30 | 699 | 0.9− | 0.7+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 14 | 683 | 0.4+ | 0.1− |
| 2006 08 30 | 699 | 1.5+ | 0.8+ | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 14 | 683 | 1.0+ | 0.4− |
| 2006 08 30 | 699 | 1.0− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 14 | 683 | 1.1+ | 0.5+ |
| 2006 08 30 | 699 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.9− |
| 2006 09 18 | 699 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.3− | 1.0+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 699 | 0.8− | 0.7− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.7− | 0.7+ | | |
| 2006 09 18 | 699 | 0.0 | 0.6− | 2006 10 21 | 703 | 0.5− | 0.4+ | 2006 11 14 | 703 | 0.6+ | 0.3+ | | |
| 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.0 | | |
| 2006 09 29 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2006 09 29 | 691 | 0.5+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.1+ | | |
| 2006 09 29 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.1+ | | |
| 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.1+ | | |
| 2006 10 03 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3− | 0.0 | | |
| 2006 10 03 | 691 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.4− | 0.7+ | 2006 11 19 | 704 | 0.3− | 0.9− | | |
| 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 10 29 | 704 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.5− | | |
| 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 29 | 704 | (1.8− | 0.8+) | | | | | | |

**2006 SO$_{349}$ = 2004 CG$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.54992 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27410226 | $\omega$ | 254.14799 | | +0.95942742 | | −0.25576583 |
| $a$ | 2.3470786 | $\Omega$ | 120.53803 | | +0.28104732 | | +0.90126377 |
| $e$ | 0.2222577 | $i$ | 7.91957 | | −0.02261498 | | +0.34972484 |
| $P$ | 3.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.8+ | 0.4− | 2006 10 17 | 703 | 0.4+ | 0.2+ | | |
| 2004 02 11 | 691 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.3− | 0.3+ | | |
| 2004 02 11 | 691 | 0.0 | 0.1+ | 2006 10 01 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.1− | 0.4− | | |
| 2004 02 12 | 291 | 0.0 | 0.0 | 2006 10 01 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 703 | 0.6+ | 1.2+ | | |
| 2004 02 12 | 291 | 0.1+ | 0.0 | 2006 10 01 | 704 | 1.0+ | 0.4− | 2006 10 28 | 703 | 0.1+ | 1.2− | | |
| 2004 02 12 | 291 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.6− | | |
| 2006 09 18 | 703 | 1.4− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2006 09 18 | 703 | (1.3+ | 1.6−) | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.0 | | |
| 2006 09 18 | 703 | 0.8− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.0 | | |
| 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.2− | | |
| 2006 09 18 | 703 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2+ | | |
| 2006 09 18 | 703 | 0.7− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 17 | 644 | 0.4− | 0.0 | | |
| 2006 09 18 | 703 | 0.4+ | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.3− | 2006 11 17 | 644 | 0.2+ | 0.0 | | |
| 2006 09 18 | 703 | 0.3+ | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.4− | 2006 11 17 | 644 | 0.3− | 0.1+ | | |
| 2006 09 29 | 699 | 0.3+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.5− | 2006 11 17 | 644 | 0.2− | 0.0 | | |
| 2006 09 29 | 699 | 0.3− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.2+ | 2006 11 17 | 644 | 0.3− | 0.3+ | | |
| 2006 09 29 | 699 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.3− | 0.4+ | 2006 11 17 | 644 | 0.6− | 0.4+ | | |

**2006 SN$_{350}$ = 2004 HU$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.98565 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17296424 | $\omega$ | 319.41370 | | +0.84993929 | | +0.52650733 |
| $a$ | 3.1903023 | $\Omega$ | 8.88195 | | −0.44404853 | | +0.73606862 |
| $e$ | 0.0772010 | $i$ | 7.37906 | | −0.28359143 | | +0.42543274 |
| $P$ | 5.70 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.2+ | | |
| 2004 04 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.7− | 0.9+ | 2006 10 20 | 644 | 0.4− | 0.4+ | | |
| 2004 04 19 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.9− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ | | |
| 2004 04 22 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 20 | 695 | 0.4− | 0.4+ | | |
| 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 10 20 | 695 | 0.4− | 0.5+ | | |
| 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1− | | |
| 2006 08 24 | 644 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.0 | | |
| 2006 08 24 | 644 | 0.1− | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ | | |
| 2006 08 24 | 644 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.3− | | |
| 2006 09 14 | 703 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.0 | | |
| 2006 09 14 | 703 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.4− | | |
| 2006 09 14 | 703 | 0.4+ | 0.7− | 2006 10 16 | 703 | 0.7+ | 0.5− | 2006 11 15 | G96 | 0.0 | 0.2− | | |
| 2006 09 14 | 703 | 0.3− | 0.3− | 2006 10 16 | 703 | (0.3+ | 1.8+) | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2006 09 30 | 703 | 0.7− | 1.3− | 2006 10 16 | 703 | 0.5− | 0.7+ | | | | | | |

**2006 SR$_{351}$ = 2004 FZ$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.80083 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17995882 | $\omega$ | 320.40726 | | +0.95289474 | | +0.29615966 |
| $a$ | 3.1070908 | $\Omega$ | 22.62457 | | −0.21677539 | | +0.81589767 |
| $e$ | 0.0627594 | $i$ | 9.79271 | | −0.21213214 | | +0.49658881 |
| $P$ | 5.48 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 695 | 1.0+ | 0.3+ | 2004 04 20 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 699 | 0.5− | 0.2− | | |
| 2003 01 05 | 695 | 1.0+ | 0.2+ | 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 09 26 | 691 | (2.0− | 0.9+) | | |
| 2003 01 05 | 695 | 1.0+ | 0.3+ | 2006 09 18 | 703 | 1.1− | 0.7− | 2006 09 26 | 691 | 0.0 | 1.3+ | | |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1− | 0.1+ | | |
| 2003 01 29 | 645 | 0.1− | 0.0 | 2006 09 18 | 703 | 1.1+ | 0.4− | 2006 09 30 | 691 | 0.3− | 0.2+ | | |
| 2004 03 23 | 691 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.0 | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.0 | | |
| 2004 03 23 | 691 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 09 30 | 691 | 0.1− | 0.2+ | | |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 10 01 | 704 | (1.7− | 0.9+) | | |
| 2004 03 27 | 291 | 0.1+ | 0.2+ | 2006 09 18 | 699 | 0.3+ | 1.3+ | 2006 10 01 | 704 | (0.2− | 2.2+) | | |
| 2004 03 27 | 291 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2− | 2006 10 01 | 704 | 0.5− | 1.4+ | | |
| 2004 03 27 | 291 | 0.5+ | 0.3+ | 2006 09 18 | 699 | (1.7− | 0.8+) | 2006 10 01 | 704 | 1.0− | 0.3− | | |
| 2004 04 20 | 691 | 0.1− | 0.4+ | 2006 09 18 | 699 | 0.5− | 1.4− | | | | | | |

**2006 SW$_{351}$ = 2005 MW$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.17927 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21805858 | $\omega$ | 189.51523 | | +0.99313932 | | +0.10848656 |
| $a$ | 2.7337193 | $\Omega$ | 164.05827 | | −0.09409627 | | +0.96300181 |
| $e$ | 0.1085430 | $i$ | 9.14356 | | −0.06942752 | | +0.24669452 |
| $P$ | 4.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− | | |
| 2005 06 29 | 691 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2005 07 04 | 691 | 0.3− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.9+ | 0.3+ | | |
| 2005 07 04 | 691 | 0.5+ | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ | | |
| 2005 07 04 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2006 09 30 | 703 | 0.7− | 0.6− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2006 09 30 | 703 | 0.3+ | 0.6+ | 2006 10 11 | 644 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.6− | 0.1+ | | |
| 2006 09 30 | 703 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2006 09 30 | 703 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.0+ | 0.8− | | |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 12 | 644 | 0.5− | 0.2+ | 2006 10 22 | 703 | 0.5+ | 0.6− | | |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.9+ | 0.3+ | 2006 10 22 | 703 | 0.5− | 1.1+ | | |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.5− | 0.9− | 2006 10 22 | 703 | 0.2+ | 0.9− | | |
| 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.6− | 1.3+ | | | | | | |
| 2006 10 10 | 644 | 0.4− | 0.4− | 2006 10 16 | 703 | 1.4− | 0.8+ | | | | | | |

**2006 SC$_{352}$ = 2006 SW$_{218}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.92712 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17181424 | $\omega$ | 141.01799 | | +0.99283115 | | +0.06926130 |
| $a$ | 3.2045222 | $\Omega$ | 215.37886 | | −0.09305231 | | +0.95940293 |
| $e$ | 0.0420179 | $i$ | 9.68599 | | +0.07501722 | | +0.27340242 |
| $P$ | 5.74 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 699 | 0.7− | 0.6− | 2006 09 26 | 683 | 0.1+ | 1.8+ | 2006 10 17 | 703 | 1.0− | 0.7+ | | |
| 2000 09 05 | 699 | 0.2− | 0.4− | 2006 09 26 | 683 | (0.5− | 3.7+) | 2006 10 17 | 703 | 0.9+ | 1.1− | | |
| 2000 09 05 | 699 | 0.1− | 0.3− | 2006 09 30 | 703 | 1.3+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.8− | | |
| 2000 09 05 | 699 | 0.5− | 1.1+ | 2006 09 30 | 703 | 0.8− | 0.7− | 2006 10 17 | 703 | 0.5− | 0.5− | | |
| 2000 09 25 | 699 | 0.0 | 0.5− | 2006 09 30 | 703 | 0.7+ | 0.4+ | 2006 10 19 | 644 | 0.4+ | 0.1− | | |
| 2000 09 25 | 699 | 0.1+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.2+ | | |
| 2000 09 25 | 699 | 0.2+ | 0.7+ | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 19 | 644 | 0.5+ | 0.1+ | | |
| 2000 09 25 | 699 | 1.2+ | 0.4− | 2006 10 02 | G96 | 0.3− | 0.7− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |
| 2006 09 18 | 699 | 0.0 | 0.8+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1+ | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 699 | (1.5+ | 2.0−) | 2006 10 02 | G96 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.3+ | | | |
| 2006 09 18 | 699 | 0.3− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.4+ | | | |
| 2006 09 18 | 699 | 0.8− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.4+ | | | |
| 2006 09 26 | 683 | 1.4+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | | | |

**2006 SE$_{352}$ = 2005 JN$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.98375 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21620999 | $\omega$ | 103.72476 | | +0.93114114 | +0.35045844 | |
| $a$ | 2.7492794 | $\Omega$ | 235.84924 | | −0.36352962 | +0.87037697 | |
| $e$ | 0.1646197 | $i$ | 6.99426 | | −0.02867724 | +0.34586530 | |
| $P$ | 4.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | G96 | 0.6+ | 0.1− | 2006 09 30 | 703 | 0.9− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.4+ |
| 2005 05 13 | G96 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2005 05 13 | G96 | 0.2− | 0.1− | 2006 10 03 | G96 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.3+ |
| 2005 05 13 | G96 | 0.2− | 0.2− | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.2+ |
| 2005 05 16 | 644 | 0.2− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 10 17 | 703 | 0.5− | 0.5− |
| 2005 05 16 | 644 | 0.2+ | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.2− | 0.8− |
| 2005 05 16 | 644 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.4+ |
| 2006 09 16 | 703 | 0.0 | 1.0− | 2006 10 03 | G96 | 0.2+ | 0.1+ | 2006 10 20 | 683 | 1.1− | 0.5− |
| 2006 09 16 | 703 | (0.3− | 1.7+) | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 10 20 | 683 | 0.2+ | 0.4+ |
| 2006 09 16 | 703 | 0.2− | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 10 20 | 683 | (0.3+ | 2.3+) |
| 2006 09 16 | 703 | 0.0 | 1.1+ | 2006 10 04 | G96 | 0.0 | 0.8− | 2006 10 21 | 644 | 0.5+ | 0.2+ |
| 2006 09 30 | 703 | 0.8− | 0.1− | 2006 10 04 | G96 | 0.8+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.3+ |
| 2006 09 30 | 703 | (1.6− | 1.2+) | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |

**2006 SV$_{352}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.71416 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17239918 | $\omega$ | 152.30663 | | +0.70063342 | −0.71055374 | |
| $a$ | 3.1972695 | $\Omega$ | 253.13297 | | +0.64144399 | +0.66714288 | |
| $e$ | 0.1717237 | $i$ | 3.89519 | | +0.31250987 | +0.22368226 | |
| $P$ | 5.72 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.1− | 0.3+ | 2006 09 25 | 152 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.3+ |
| 2000 08 30 | 691 | 0.0 | 0.4+ | 2006 09 25 | 152 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2000 08 30 | 691 | 0.0 | 0.4+ | 2006 09 26 | 152 | 0.8+ | 0.7+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2006 09 30 | 703 | 1.1− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 11 11 | 703 | (1.3+ | 1.9−) |
| 2006 09 18 | 699 | 0.9+ | 0.9+ | 2006 09 30 | 703 | 0.0 | 1.3− | 2006 11 11 | 703 | 0.7+ | 0.3− |
| 2006 09 18 | 699 | 0.9+ | 0.2− | 2006 09 30 | 703 | 0.2− | 0.7− | 2006 11 11 | 703 | 0.8− | 0.3+ |
| 2006 09 18 | 699 | 0.5+ | 0.8+ | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.8− | 1.1+ |
| 2006 09 18 | 699 | 0.7− | 1.0− | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2006 09 23 | 152 | (2.8+ | 4.7−) | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 2006 09 23 | 152 | 0.3− | 1.2− | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2006 09 24 | 152 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 09 24 | 152 | 0.5− | 0.7+ | 2006 10 17 | 703 | 0.5− | 0.4+ | | | | |
| 2006 09 24 | 152 | 0.1+ | 0.4+ | 2006 10 17 | 703 | (1.6− | 0.4+) | | | | |

**2006 SW$_{352}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.10093 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21158785 | $\omega$ | 341.56538 | | +0.94983483 | +0.31275132 | |
| $a$ | 2.7891737 | $\Omega$ | 0.21263 | | −0.26112177 | +0.79414759 | |
| $e$ | 0.1715302 | $i$ | 9.84324 | | −0.17213137 | +0.52107218 | |
| $P$ | 4.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 644 | 0.3− | 0.5+ | 2006 09 18 | 699 | 1.9+ | 1.1− | 2006 09 30 | 703 | 0.8+ | 0.2− |
| 2001 08 27 | 644 | 0.2− | 0.4+ | 2006 09 18 | 699 | 1.3− | 1.6+ | 2006 10 03 | G96 | 0.1− | 0.4− |
| 2001 08 27 | 644 | 0.2− | 0.2+ | 2006 09 23 | 152 | 0.1− | 1.4− | 2006 10 03 | G96 | 0.0 | 0.1− |
| 2004 03 14 | 691 | 0.2+ | 0.1+ | 2006 09 23 | 152 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.4− | 0.4− |
| 2004 03 14 | 691 | 0.4+ | 0.4+ | 2006 09 23 | 152 | 0.4+ | 0.8+ | 2006 10 03 | G96 | 0.1+ | 0.3− |
| 2004 03 14 | 691 | 0.2− | 0.2+ | 2006 09 24 | 152 | 0.9− | 0.2+ | 2006 10 17 | 703 | 0.5− | 1.1+ |
| 2006 07 21 | G96 | 0.1− | 0.3+ | 2006 09 24 | 152 | 0.5− | 0.3− | 2006 10 17 | 703 | 0.1− | 0.5− |
| 2006 07 21 | G96 | 0.3− | 0.2− | 2006 09 24 | 152 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.6+ | 0.6− |
| 2006 07 21 | G96 | 0.5− | 0.0 | 2006 09 28 | 699 | 0.9− | 0.9+ | 2006 10 17 | 703 | (0.7− | 1.9−) |
| 2006 07 21 | G96 | 0.3− | 0.0 | 2006 09 28 | 699 | 0.7− | 0.8− | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.4+ | 2006 09 28 | 699 | 1.0+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.2+ | 2006 09 28 | 699 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2006 09 15 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.8+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 18 | 699 | 0.7+ | 1.9− | 2006 09 30 | 703 | 0.4− | 0.5− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2006 09 18 | 699 | 2.3+ | 1.2+ | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.0 |

**2006 SY$_{352}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.92885 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28976339 | $\omega$ | 184.53378 | | +0.53243857 | −0.84195835 | |
| $a$ | 2.2617280 | $\Omega$ | 233.32133 | | +0.78000103 | +0.52806059 | |
| $e$ | 0.0932559 | $i$ | 6.24675 | | +0.32879714 | +0.11071657 | |
| $P$ | 3.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 17 | 566 | 1.0− | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 683 | (1.7+ | 0.3+) |
| 1996 12 17 | 566 | 0.3− | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 1996 12 17 | 566 | 1.1+ | 0.4+ | 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.6− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2005 05 19 | G96 | 0.3− | 0.0 | 2006 10 17 | 703 | 1.2− | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.7− |
| 2005 05 19 | G96 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2005 05 19 | G96 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 0.2− | 0.0 |
| 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.6− |
| 2005 06 06 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | (0.2− | 1.5+) |
| 2005 06 06 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.8+ |
| 2006 09 20 | 699 | 0.5+ | 0.2− | 2006 11 06 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.1− | 0.8+ |
| 2006 09 20 | 699 | 0.4− | 0.0 | 2006 11 06 | 644 | 0.6− | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.5+ |
| 2006 09 20 | 699 | 0.6− | 0.7+ | 2006 11 06 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2006 09 20 | 699 | 0.3− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2006 09 30 | 703 | 0.5− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2006 09 30 | 703 | 0.0 | 0.7− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | (0.7+ | 2.1+) |
| 2006 09 30 | 703 | 0.6− | 0.0 | 2006 11 10 | 683 | 0.6− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2006 09 30 | 703 | 0.5− | 0.7− | 2006 11 10 | 683 | 0.2+ | 0.2− | 2006 11 19 | 704 | 1.2+ | 0.0 |
| 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 11 10 | 683 | 1.3− | 1.1+ | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2006 10 02 | 691 | 0.0 | 0.1− | 2006 11 11 | 683 | 0.7+ | 0.3− | | | | |
| 2006 10 02 | 691 | 0.0 | 0.0 | 2006 11 11 | 683 | (4.0+ | 0.7+) | | | | |

**2006 SZ$_{352}$ = 1995 WF$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.11265 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17179298 | $\omega$ | 245.77611 | | +0.55633564 | +0.82649364 | |
| $a$ | 3.2047865 | $\Omega$ | 58.30120 | | −0.72100778 | +0.53158905 | |
| $e$ | 0.1315455 | $i$ | 5.80244 | | −0.41308406 | +0.18526018 | |
| $P$ | 5.74 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 1995 11 21 | 691 | 0.2+ | 0.7− | 2006 09 30 | 703 | (2.0+ | 1.4−) | 2006 10 21 | G96 | 0.0 | 0.1− |
| 1995 11 21 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.0− | 1.1− | 2006 10 21 | G96 | 0.4+ | 0.2− |
| 1995 11 28 | 691 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 1995 11 28 | 691 | 0.3+ | 0.2+ | 2006 09 30 | 703 | (2.0− | 0.7−) | 2006 11 18 | G96 | 0.3− | 0.0 |
| 1995 11 28 | 691 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.0 | 0.7− | 2006 11 18 | G96 | 0.5− | 0.1− |
| 2004 04 26 | 691 | 0.1+ | 0.6+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.6− | 0.3+ |
| 2004 04 26 | 691 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 04 26 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2006 09 30 | 703 | (1.7+ | 0.8−) | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.4− | 1.3+ |
| 2006 09 30 | 703 | (0.1− | 2.0+) | 2006 10 21 | G96 | 0.5+ | 0.2− | | | | |

**2006 SA$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.16264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17311123 | $\omega$ | 291.09585 | | +0.88370319 | −0.46489587 | |
| $a$ | 3.1884961 | $\Omega$ | 96.64214 | | +0.44713552 | +0.80429061 | |
| $e$ | 0.1194001 | $i$ | 3.12950 | | +0.13834198 | +0.37011949 | |
| $P$ | 5.69 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 09 | 291 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 10 17 | G96 | 0.3− | 0.5− |
| 2003 02 09 | 291 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.2+ |
| 2003 02 09 | 291 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 1.0+ | 1.1+ | 2006 10 20 | 644 | 0.1− | 0.8+ |
| 2003 03 31 | 691 | 0.3+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2003 03 31 | 691 | 0.7+ | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.3− |
| 2003 03 31 | 645 | 0.2− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.6− | 1.1+ |
| 2003 03 31 | 645 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.9+ |
| 2003 03 31 | 691 | 0.7+ | 0.7+ | 2006 09 30 | 703 | 0.7− | 0.8− | 2006 10 21 | 703 | 1.2− | 0.1− |
| 2003 04 09 | 691 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.3− | 0.0 |
| 2003 04 09 | 691 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2003 04 09 | 691 | 0.2− | 0.5− | 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− |
| 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.1− |
| 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 04 25 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.7+ |
| 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2004 05 19 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2006 09 28 | 699 | 0.1+ | 1.2+ | 2006 10 12 | 644 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2006 09 28 | 699 | 0.0 | 0.7+ | 2006 10 17 | G96 | 0.5+ | 0.9− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2006 09 28 | 699 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.7− | | | | |
| 2006 09 28 | 699 | 1.4+ | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.4− | | | | |

**2006 SC$_{353}$ = 2005 EY$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.88484 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29110471 | $\omega$ | 147.00521 | | +0.63987353 | +0.76806204 | |
| $a$ | 2.2547751 | $\Omega$ | 162.73316 | | −0.72227362 | +0.61233786 | |
| $e$ | 0.1709298 | $i$ | 4.89907 | | −0.26245511 | +0.18741145 | |
| $P$ | 3.39 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.7− | 0.4− | 2006 09 30 | 703 | (2.7− | 1.9−) | 2006 10 22 | 703 | (0.8− | 4.1+) |
| 2005 03 10 | G96 | 0.7− | 0.2+ | 2006 09 30 | 703 | 1.1− | 1.1+ | 2006 10 22 | 703 | (2.0+ | 0.9+) |
| 2005 03 10 | G96 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 22 | 703 | (2.1+ | 0.0 ) |
| 2005 03 10 | G96 | 0.9− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 1.0+ | 0.2+ |
| 2005 03 12 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2005 03 12 | 691 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2005 03 12 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.0 |
| 2006 09 30 | 703 | 1.1+ | 0.5+ | 2006 10 11 | 644 | 0.5− | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.6− | 0.2+ | | | | |

**2006 SD$_{353}$ = 2004 GN$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.21350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21019136 | $\omega$ | 344.94944 | | +0.68003740 | −0.72891839 | |
| $a$ | 2.8015141 | $\Omega$ | 62.13234 | | +0.68156108 | +0.58882041 | |
| $e$ | 0.1946010 | $i$ | 5.12127 | | +0.27022883 | +0.34923991 | |
| $P$ | 4.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2004 04 14 | 691 | 0.7+ | 0.3− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2004 04 14 | 691 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2004 04 23 | 691 | 0.2− | 0.2− | 2006 10 15 | 703 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.6+ |
| 2004 04 23 | 691 | 0.2− | 0.1+ | 2006 10 15 | 703 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2004 04 23 | 691 | 0.2− | 0.0 | 2006 10 15 | 703 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.9− |
| 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.1+ |
| 2006 09 30 | 703 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1− |
| 2006 09 30 | 703 | 0.5− | 0.9− | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 11 | 703 | (1.9− | 0.0 ) |
| 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 10 21 | 703 | 1.3− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2006 10 01 | 704 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.4− | 2006 11 18 | G96 | 0.4+ | 0.3+ |
| 2006 10 01 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.3+ |
| 2006 10 01 | 704 | 0.6− | 0.1− | 2006 10 21 | 703 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.2+ |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 22 | G96 | 0.4+ | 0.3− | | | | |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 22 | G96 | 0.0 | 0.3− | | | | |

**2006 SH$_{353}$ = 1996 XQ$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.46316 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18883207 | $\omega$ | 194.09310 | | +0.62798755 | +0.77452604 | |
| $a$ | 3.0089771 | $\Omega$ | 114.86555 | | −0.70567345 | +0.60778739 | |
| $e$ | 0.0995058 | $i$ | 4.79043 | | −0.32811068 | +0.17522528 | |
| $P$ | 5.22 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 01 | 691 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1996 12 01 | 691 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.7− | 2006 10 22 | 703 | 0.8− | 0.5− |
| 1996 12 01 | 691 | 1.0− | 0.5− | 2006 10 02 | G96 | 0.4− | 0.6− | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 1996 12 08 | 691 | 0.6+ | 0.2+ | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.1+ |
| 1996 12 08 | 691 | 0.6+ | 0.1+ | 2006 10 03 | G96 | 0.6+ | 0.3− | 2006 10 22 | 703 | 0.1− | 0.5− |
| 1996 12 08 | 691 | 0.4+ | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.1− | 0.6− |
| 2006 09 18 | 703 | 0.5− | 0.4+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2006 09 18 | 703 | 0.7− | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2006 09 18 | 703 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.2+ | 0.5+ |
| 2006 09 18 | 703 | 0.4− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.2+ | 0.4+ |
| 2006 09 18 | 699 | 1.2+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 07 | 644 | 0.4+ | 0.1− |
| 2006 09 18 | 699 | 0.8− | 1.4+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 16 | 703 | (2.5+ | 0.2+) |
| 2006 09 18 | 699 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 16 | 703 | 0.3+ | 0.8+ |
| 2006 09 18 | 699 | 0.6− | 1.1+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.7+ |
| 2006 09 30 | 703 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.5− | 0.3− |
| 2006 09 30 | 703 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.5+ |
| 2006 09 30 | 703 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2006 10 01 | 704 | 0.3− | 0.6+ | 2006 10 21 | 703 | (0.6− | 1.7−) | 2006 11 24 | G96 | 0.6− | 0.7− |
| 2006 10 01 | 704 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.6− | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2006 10 01 | 704 | 0.7− | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.8− | 2006 11 24 | G96 | 0.0 | 0.7− |
| 2006 10 01 | 704 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.1− | 1.0− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2006 10 01 | 704 | (0.4+ | 2.1+) | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.7− |
| 2006 10 02 | G96 | 0.4− | 0.7− | 2006 10 21 | 644 | 0.1− | 0.1+ | | | | |

**2006 SN$_{353}$ = 2002 XL$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.36274 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22226293 | $\omega$ | 281.75950 | | +0.99216186 | −0.07907624 | |
| $a$ | 2.6991355 | $\Omega$ | 82.83137 | | +0.11194610 | +0.90652154 | |
| $e$ | 0.0445846 | $i$ | 5.59630 | | −0.05552403 | +0.41468741 | |
| $P$ | 4.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.7− | 0.6− | 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 10 21 | 703 | (1.6− | 0.8−) |
| 2002 12 05 | 704 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.5+ | 1.2− | 2006 10 21 | 703 | 0.1+ | 0.6+ |
| 2002 12 05 | 704 | 0.2+ | 0.4− | 2006 10 03 | G96 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.3+ | 1.0+ |
| 2002 12 10 | 704 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.4− |
| 2002 12 10 | 704 | 0.4− | 0.3+ | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.1− | 0.1+ | 2006 10 22 | 703 | (1.8− | 0.1−) |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.3− | 0.6+ | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.8+ | 0.5+ |
| 2002 12 10 | 704 | 0.5+ | 0.7− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 16 | 703 | (1.6− | 1.4−) |
| 2002 12 10 | 704 | 0.1+ | 0.7+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 1.3+ | 0.0 |
| 2002 12 10 | 704 | 0.8+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 11 16 | 703 | (1.1+ | 2.1−) |
| 2006 09 20 | 699 | 0.2− | 0.6− | 2006 10 19 | 644 | 0.5− | 0.1+ | 2006 11 16 | 703 | 0.8− | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 20 | 699 | 0.4+ | 0.6+ | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2006 09 20 | 699 | 0.1+ | 1.0+ | 2006 10 19 | 644 | 0.6− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2006 09 20 | 699 | 1.4− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 09 30 | 703 | 0.0 | 0.9− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.1+ |

**2006 SQ$_{353}$ = 2001 DA$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.42167 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29237833 | $\omega$ | 230.85069 | | +0.76889470 | −0.63902296 | |
| $a$ | 2.2482224 | $\Omega$ | 168.81356 | | +0.61517951 | +0.73034264 | |
| $e$ | 0.0893291 | $i$ | 6.28177 | | +0.17422720 | +0.24134889 | |
| $P$ | 3.37 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 19 | 704 | 0.8+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2001 02 19 | 704 | 0.7+ | 0.9− | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 02 19 | 704 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2001 02 19 | 704 | 0.2− | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.0 | 0.4− |
| 2001 02 22 | 704 | 0.5− | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 10 22 | 703 | 1.2− | 0.3+ |
| 2001 02 22 | 704 | 0.3− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2001 02 22 | 704 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.1+ | 0.2+ |
| 2006 09 30 | 703 | 0.2+ | 0.4− | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2006 09 30 | 703 | 0.6+ | 0.6− | 2006 10 10 | 644 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2006 09 30 | 703 | (0.4− | 2.7−) | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2006 09 30 | 703 | 0.7+ | 0.3− | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2006 10 01 | 704 | 0.0 | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.0 |
| 2006 10 01 | 704 | 0.3− | 0.5+ | 2006 10 15 | 703 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.8− | 0.3− |
| 2006 10 01 | 704 | 0.7+ | 1.1+ | 2006 10 15 | 703 | 0.6− | 0.1− | 2006 11 16 | 703 | (1.5+ | 0.3−) |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 15 | 703 | 0.9− | 0.0 | 2006 11 16 | 703 | 0.5+ | 0.1− |

**2006 SU$_{353}$ = 2004 JJ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.64222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17809862 | $\omega$ | 335.97616 | | +0.88395942 | −0.44626705 | |
| $a$ | 3.1286887 | $\Omega$ | 51.26608 | | +0.45270969 | +0.74228558 | |
| $e$ | 0.0743419 | $i$ | 10.30208 | | +0.11691741 | +0.49985783 | |
| $P$ | 5.53 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 09 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.1− | 2006 10 16 | 703 | 1.1− | 0.2+ |
| 2004 05 09 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.6+ | 0.4− | 2006 10 21 | 703 | 0.3+ | 0.4+ |
| 2004 05 09 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 2004 05 16 | 691 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.1− | 0.3+ |
| 2004 05 16 | 691 | 0.3+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 21 | 703 | 1.3+ | 0.1+ |
| 2004 05 16 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2006 09 30 | 703 | 0.6− | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2006 09 30 | 703 | 1.3+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2006 09 30 | 703 | 0.4− | 0.6+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.5− |
| 2006 09 30 | 703 | 0.7− | 0.3− | 2006 10 16 | 703 | 0.6+ | 0.4− | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2006 09 30 | 703 | 0.8− | 0.3− | 2006 10 16 | 703 | 0.9− | 1.0+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2006 09 30 | 703 | 0.2− | 0.8− | 2006 10 16 | 703 | 0.8− | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.0 |

**2006 SW$_{353}$ = 1999 VV$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.56087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27941945 | $\omega$ | 304.15683 | | +0.98713521 | +0.12126414 | |
| $a$ | 2.3172077 | $\Omega$ | 49.11192 | | −0.05742399 | +0.87715393 | |
| $e$ | 0.1395661 | $i$ | 7.92298 | | −0.14921986 | +0.46464609 | |
| $P$ | 3.53 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.9− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 1999 11 12 | 704 | 1.0+ | 0.1+ | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 10 21 | 703 | 0.0 | 0.2+ |
| 1999 11 12 | 704 | 0.6+ | 0.3− | 2006 10 03 | G96 | 0.2− | 0.4− | 2006 10 21 | 703 | 0.2+ | 0.4+ |
| 1999 11 12 | 704 | 0.5+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.9+ | 0.9+ |
| 1999 11 12 | 704 | 0.7+ | 0.9− | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.6− | 0.8+ |
| 1999 11 13 | 691 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 1999 11 13 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1999 11 13 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2006 09 20 | 699 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2006 09 20 | 699 | 0.3+ | 0.9− | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.4+ | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2006 09 20 | 699 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.4− | 0.9+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2006 09 30 | 703 | 0.9− | 0.1− | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.7− | 0.1− |
| 2006 09 30 | 703 | 0.6− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2006 09 30 | 703 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2006 09 30 | 703 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.5+ | 0.3− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2006 09 30 | 703 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.2− | 0.3+ | | | | |
| 2006 09 30 | 703 | 0.7− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.1− | | | | |

**2006 SE$_{354}$ = 2002 UU$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.68293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24491077 | $\omega$ | 220.74517 | | +0.67153103 | +0.73755625 | |
| $a$ | 2.5300599 | $\Omega$ | 91.56812 | | −0.66002714 | +0.63902455 | |
| $e$ | 0.2420596 | $i$ | 4.07936 | | −0.33676438 | +0.21830802 | |
| $P$ | 4.02 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.4− | 0.1− | 2006 09 30 | 703 | 0.5+ | 0.2+ | 2006 10 16 | 703 | 1.0− | 0.2− |
| 2002 10 30 | 644 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.9+ | 0.5− | 2006 10 16 | 703 | 0.9− | 0.7+ |
| 2002 10 30 | 644 | 0.1− | 0.1+ | 2006 09 30 | 703 | 0.7− | 0.9+ | 2006 10 21 | 703 | 0.0 | 0.9+ |
| 2002 10 31 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.6− | 2006 10 21 | 703 | 1.4+ | 0.1+ |
| 2002 10 31 | 704 | 0.3− | 1.0− | 2006 09 30 | 703 | 0.7− | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.9− |
| 2002 10 31 | 704 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.4+ | 0.2− |
| 2002 10 31 | 704 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.6+ | 0.4− | 2006 10 21 | G96 | 0.4− | 0.2− |
| 2002 10 31 | 704 | 1.2+ | 1.4+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2006 09 30 | 703 | 0.6− | 0.5− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.5− | 0.0 |
| 2006 09 30 | 703 | 0.6− | 1.1+ | 2006 10 16 | 703 | 1.1+ | 0.2+ | 2006 10 21 | G96 | 0.3− | 0.2− |
| 2006 09 30 | 703 | 1.1+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.1− | | | | |

**2006 SH$_{354}$ = 2002 XH$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.16185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22909729 | $\omega$ | 314.92086 | | +0.80963485 | −0.58221597 | |
| $a$ | 2.6451852 | $\Omega$ | 80.82503 | | +0.55746862 | +0.72321886 | |
| $e$ | 0.1584097 | $i$ | 4.31456 | | +0.18363049 | +0.37145531 | |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1+ | 0.6− | 2006 09 30 | 703 | 0.0 | 1.1− | 2006 10 19 | 644 | 0.1+ | 0.0 |
| 2002 12 05 | 704 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1− |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2006 10 02 | G96 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2002 12 06 | 704 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.7− | 0.8− |
| 2002 12 06 | 704 | 0.3+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.9+ | 0.8+ |
| 2002 12 06 | 704 | 1.0− | 0.5+ | 2006 10 11 | 644 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.5− |
| 2006 09 30 | 703 | 0.3+ | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.7+ | 0.3− |
| 2006 09 30 | 703 | 0.9+ | 0.9+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | | | |
| 2006 09 30 | 703 | 0.6− | 0.9+ | 2006 10 19 | 644 | 0.1− | 0.6+ | | | | |

**2006 SJ$_{354}$ = 2000 QB$_{110}$ = 2004 CC$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.84564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17915094 | $\omega$ | 83.26086 | | −0.34069862 | +0.93964359 | |
| $a$ | 3.1164249 | $\Omega$ | 166.68834 | | −0.90761892 | −0.31996730 | |
| $e$ | 0.2721049 | $i$ | 7.87168 | | −0.24525973 | −0.12120579 | |
| $P$ | 5.50 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 24 | 704 | 0.4+ | 0.0 | 2004 02 17 | 704 | 0.6+ | 0.3− | 2006 10 12 | 644 | 0.0 | 0.1− |
| 2000 08 24 | 704 | 0.9+ | 0.4− | 2004 02 17 | 704 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.8+ | 0.2+ |
| 2000 08 24 | 704 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 1.5− | 1.2+ |
| 2000 08 24 | 704 | 1.1− | 0.2+ | 2006 09 30 | 703 | 0.5+ | 0.7+ | 2006 10 16 | 703 | 0.9+ | 0.6− |
| 2000 08 24 | 704 | 0.2+ | 0.7+ | 2006 09 30 | 703 | 0.3− | 0.5− | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 1.3+ | 0.1− |
| 2004 02 11 | 644 | 0.3− | 0.2+ | 2006 10 02 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | (1.9− | 0.6+) |
| 2004 02 17 | 704 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.7− | 0.3+ |
| 2004 02 17 | 704 | 0.2− | 0.7− | 2006 10 12 | 644 | 0.2− | 0.0 | | | | |

**2006 SM$_{354}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.59529 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22886351 | $\omega$ | 271.14051 | | +0.77427017 | | +0.62933819 |
| $a$ | 2.6469862 | $\Omega$ | 49.86245 | | −0.54044364 | | +0.71231246 |
| $e$ | 0.1784726 | $i$ | 4.99973 | | −0.32928161 | | +0.31071595 |
| $P$ | 4.31 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 291 | 0.1+ | 0.1+ | 2005 05 14 | 644 | 0.4− | 0.5+ | 2006 10 10 | 644 | 0.1+ | 0.4+ |
| 2004 03 18 | 291 | 0.1− | 0.3+ | 2005 05 14 | 644 | 0.4− | 0.3+ | 2006 10 10 | 644 | 0.1+ | 0.1+ |
| 2004 03 18 | 291 | 0.1+ | 0.0 | 2005 05 14 | 644 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 2005 04 06 | G96 | 0.9+ | 0.6+ | 2006 09 18 | 703 | 0.5− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2005 04 06 | G96 | 0.2− | 0.3− | 2006 09 18 | 703 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2005 04 06 | G96 | 0.3− | 0.5− | 2006 09 18 | 703 | 0.9+ | 0.5− | 2006 10 22 | 703 | (0.4+ | 2.0+) |
| 2005 04 06 | G96 | 0.8+ | 1.0− | 2006 09 18 | 703 | (1.7− | 0.4+) | 2006 10 22 | 703 | 0.5− | 0.5+ |
| 2005 04 06 | G96 | 0.6+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.6− | 2006 10 22 | 703 | 0.2− | 0.9+ |
| 2005 04 06 | G96 | 0.3− | 0.2+ | 2006 09 30 | 703 | 1.4− | 0.3− | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2005 04 06 | G96 | 0.2− | 0.2− | 2006 10 01 | 704 | 0.4− | 0.6+ | 2006 11 16 | G96 | 0.4+ | 0.3+ |
| 2005 04 06 | G96 | 0.3− | 0.5− | 2006 10 01 | 704 | 0.9− | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.3+ |
| 2005 04 16 | 691 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 1.0+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2005 04 16 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.8+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | | | | |

**2006 SN$_{354}$ = 1978 WO$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.05889 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17499956 | $\omega$ | 336.33430 | | +0.69078086 | | −0.67545354 |
| $a$ | 3.1655177 | $\Omega$ | 68.80387 | | +0.69971173 | | +0.53449156 |
| $e$ | 0.2730374 | $i$ | 16.06710 | | +0.18227807 | | +0.50801701 |
| $P$ | 5.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1978 11 29 | 675 | (4.9− | 1.8+) | 2006 10 10 | 644 | 0.0 | 0.4− | 2006 10 28 | 703 | 0.2+ | 0.9− |
| 1978 11 30 | 675 | 0.1+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 28 | 703 | 0.5− | 1.0− |
| 2006 09 19 | 703 | 1.3+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 11 10 | 704 | 0.2+ | 0.9− |
| 2006 09 19 | 703 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.1+ | 0.1− | 2006 11 10 | 704 | 0.3− | 0.2+ |
| 2006 09 19 | 703 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.1− | 2006 11 10 | 704 | 0.4− | 0.4+ |
| 2006 09 19 | 703 | 0.4+ | 0.1+ | 2006 10 10 | 644 | 0.2− | 0.4− | 2006 11 10 | 704 | 0.2− | 0.5+ |
| 2006 09 30 | 704 | 0.4+ | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.9+ | 0.5+ |
| 2006 09 30 | 704 | 0.3− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.4− | 0.0 |
| 2006 09 30 | 704 | 0.5− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.4− | 0.1+ |
| 2006 09 30 | 704 | 0.7− | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.5− | 0.3+ |
| 2006 10 02 | 703 | 0.5− | 0.5+ | 2006 10 20 | 703 | 0.4+ | 0.6+ | 2006 11 16 | 703 | 0.3− | 0.1− |
| 2006 10 02 | 703 | 0.7− | 0.3+ | 2006 10 20 | 703 | 0.6+ | 0.7+ | 2006 11 16 | 703 | 0.4− | 0.2− |
| 2006 10 02 | 703 | 0.2− | 0.5+ | 2006 10 20 | 703 | 0.6+ | 0.4+ | 2006 11 16 | 703 | 0.1− | 0.4+ |
| 2006 10 02 | 703 | 0.1− | 0.8+ | 2006 10 20 | 703 | 0.1+ | 0.6+ | 2006 11 16 | 703 | 0.2+ | 0.4− |
| 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.7+ | 0.0 | | | | |
| 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.1− | 0.5− | | | | |

**2006 SP$_{354}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.68931 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28037636 | $\omega$ | 125.72610 | | +0.69053300 | | +0.72318229 |
| $a$ | 2.3119323 | $\Omega$ | 187.98602 | | −0.69033291 | | +0.65354598 |
| $e$ | 0.2112363 | $i$ | 5.40942 | | −0.21588109 | | +0.22334957 |
| $P$ | 3.52 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | 695 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2005 03 12 | 695 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.4+ |
| 2005 04 12 | 695 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2005 04 12 | 695 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 10 23 | 691 | 1.3+ | 0.6+ |
| 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 1.2+ | 1.0− | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2006 09 30 | G96 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.3+ |
| 2006 09 30 | G96 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.0 |
| 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.7− | 0.1− | | | | |

**2006 SQ$_{354}$ = 2004 CQ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.62784 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28245355 | $\omega$ | 211.32597 | | +0.93102202 | | −0.36488133 |
| $a$ | 2.3005836 | $\Omega$ | 170.06522 | | +0.34342061 | | +0.86871084 |
| $e$ | 0.1844303 | $i$ | 2.56487 | | +0.12353249 | | +0.33496729 |
| $P$ | 3.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 691 | 0.2+ | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 10 | 691 | 0.4+ | 0.1+ |
| 2004 01 30 | 691 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.1− | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2004 01 30 | 691 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.6− | 0.8− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2004 02 12 | 691 | 0.2− | 0.1+ | 2006 09 30 | 703 | 1.0− | 1.1− | 2006 11 13 | 703 | 0.5− | 0.6− |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2004 02 12 | 691 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.9+ | 0.4− |
| 2004 02 14 | 691 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.7− | 0.4− |
| 2004 02 14 | 691 | 0.3− | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.0 | 0.6− |
| 2004 02 14 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 14 | 704 | 0.2− | 0.7+ |
| 2005 05 11 | G96 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.2− | 0.0 |
| 2005 05 11 | G96 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.7+ | 0.2− | 2006 11 14 | 704 | 0.3− | 0.9− |
| 2005 05 11 | G96 | (0.1+ | 1.7+) | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.3− | 0.8− |
| 2005 05 11 | G96 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 1.0− | 0.2+ |
| 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 0.6+ |
| 2006 07 21 | G96 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.1− |
| 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2006 07 21 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.2+ |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 27 | 704 | 0.2− | 0.3+ | 2006 11 20 | 704 | 0.8− | 1.9+ |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 10 27 | 704 | 0.7+ | 0.2− | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 10 27 | 704 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 1.0− | 1.5+ |
| 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 27 | 704 | 0.8− | 0.6+ | 2006 11 20 | 704 | 1.3− | 0.2+ |

**2006 SJ$_{355}$ = 2002 SY$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.43262 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26322109 | $\omega$ | 277.34281 | | +0.85620580 | | +0.51208610 |
| $a$ | 2.4113242 | $\Omega$ | 51.87971 | | −0.43304898 | | +0.78357021 |
| $e$ | 0.1771759 | $i$ | 4.98828 | | −0.28174495 | | +0.35183171 |
| $P$ | 3.74 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.5+ | 0.2− |
| 2002 09 16 | 644 | 0.8+ | 0.3+ | 2006 10 02 | G96 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2002 09 16 | 644 | 0.7+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.2+ |
| 2002 09 17 | 608 | 1.1− | 0.6− | 2006 10 16 | 691 | 0.7− | 0.3+ | 2006 10 20 | 691 | 0.3+ | 0.2− |
| 2002 09 17 | 608 | 1.0− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2+ | 0.2+ |
| 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 10 17 | G96 | (0.2+ | 1.6−) | 2006 10 22 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.9+ |
| 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.6− |
| 2006 10 02 | G96 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | (2.4− | 2.4−) |
| 2006 10 02 | G96 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | (0.8+ | 2.5−) |

**2006 SR$_{355}$ = 2002 QR$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.17968 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26613620 | $\omega$ | 336.30500 | | +0.46272612 | −0.88424707 | |
| $a$ | 2.3936836 | $\Omega$ | 86.07981 | | +0.82313699 | +0.40209925 | |
| $e$ | 0.1664780 | $i$ | 3.63084 | | +0.32913529 | +0.23753590 | |
| $P$ | 3.70 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.2+ | 0.2− | 2002 09 16 | 644 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.1+ | 1.3− |
| 2002 08 18 | 644 | 0.4− | 0.1− | 2002 09 16 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ |
| 2002 08 19 | 644 | 0.6− | 0.8+ | 2006 09 30 | 703 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 08 19 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 1.0− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 2002 08 26 | 644 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.1+ | 1.3+ | 2006 10 21 | 703 | 0.9+ | 0.9− |
| 2002 08 26 | 644 | 0.1+ | 0.2− | 2006 09 30 | 703 | (0.3+ | 1.7−) | 2006 10 21 | 703 | 0.7− | 0.2− |
| 2002 08 29 | 644 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.7− |
| 2002 08 29 | 644 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 10 21 | 703 | 1.1+ | 0.2+ |
| 2002 08 29 | 644 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 08 30 | 644 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2002 08 30 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2002 08 30 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 07 | 644 | 0.2+ | 0.3+ |
| 2002 09 15 | 644 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 07 | 644 | 0.7− | 0.6+ |
| 2002 09 15 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.0− | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.4+ |
| 2002 09 15 | 644 | 0.7+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.9− | | | | |
| 2002 09 16 | 644 | 0.7− | 0.5+ | 2006 10 16 | 703 | 0.7− | 0.2+ | | | | |

**2006 SB$_{356}$ = 2005 MK$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.00806 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23664707 | $\omega$ | 135.26341 | | +0.81117916 | +0.58341559 | |
| $a$ | 2.5886220 | $\Omega$ | 189.29940 | | −0.58156776 | +0.79758057 | |
| $e$ | 0.1371642 | $i$ | 14.39838 | | −0.06137843 | +0.15326931 | |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 25 | 644 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 10 19 | 118 | 0.3+ | 0.1+ |
| 2005 06 25 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 1.1− |
| 2005 06 25 | 644 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.7+ | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2005 06 30 | 644 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.4− | 0.8+ | 2006 10 22 | 703 | 0.6− | 0.1+ |
| 2005 06 30 | 644 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.9− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.9− |
| 2005 06 30 | 644 | 0.2+ | 0.0 | 2006 10 18 | 118 | 0.1− | 0.5− | 2006 10 28 | 703 | 0.8+ | 1.3+ |
| 2006 09 30 | 703 | 0.2+ | 0.3− | 2006 10 18 | 118 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.3+ | 0.2+ |
| 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 10 18 | 118 | 0.2+ | 0.2− | 2006 10 28 | 703 | 0.2− | 1.3+ |
| 2006 09 30 | 703 | 0.4− | 0.8− | 2006 10 19 | 118 | 0.4+ | 0.1+ | 2006 10 28 | 703 | 1.1− | 0.6+ |
| 2006 09 30 | 703 | 0.4− | 0.8+ | 2006 10 19 | 118 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.7− | 0.9− |
| 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 10 19 | 118 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.3+ | 0.4− |
| 2006 10 03 | G96 | 0.0 | 0.1− | 2006 10 19 | 118 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.7+ | 0.7− |
| 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 10 19 | 118 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.1− | 0.2+ |

**2006 SE$_{356}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.53435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26627389 | $\omega$ | 260.01472 | | +0.56778693 | +0.81988206 | |
| $a$ | 2.3928584 | $\Omega$ | 44.84548 | | −0.70847859 | +0.53222090 | |
| $e$ | 0.0355604 | $i$ | 5.98767 | | −0.41913732 | +0.21103157 | |
| $P$ | 3.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.1− | 0.5− | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.9+ |
| 1991 10 01 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 1.1− | 0.7− |
| 1991 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.2− | 0.3− |
| 2001 04 29 | 691 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2001 04 29 | 691 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2001 04 29 | 691 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 08 19 | 807 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 08 20 | 807 | 0.3+ | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.2− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 02 09 | 644 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.5− | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2004 02 09 | 644 | 0.3− | 0.4+ | 2006 10 12 | 644 | 0.5− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2004 02 09 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.6− | 0.1− | 2006 11 17 | 691 | 0.4+ | 1.3+ |
| 2005 02 16 | 809 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.8+ |
| 2005 02 16 | 809 | 0.2− | 0.0 | 2006 10 19 | 644 | 1.3− | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2005 02 16 | 809 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2005 06 26 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.5− |
| 2005 06 26 | 644 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.5− | 0.8+ |
| 2005 06 26 | 644 | 0.5+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2006 09 30 | 703 | 0.9+ | 0.8− | 2006 10 23 | 691 | 0.8− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2006 09 30 | 703 | (2.1− | 0.0 ) | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2006 09 30 | 703 | 1.4− | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2006 09 30 | 703 | 1.2− | 0.8+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 1.2− | 0.0 |
| 2006 09 30 | 703 | (1.5+ | 0.6−) | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2006 09 30 | 703 | 0.9− | 0.9− | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2006 09 30 | 703 | 1.4+ | 0.7− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.5− |
| 2006 09 30 | 703 | (3.3− | 1.0−) | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.3− |
| 2006 10 02 | G96 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 1.5+ | 0.4− |
| 2006 10 02 | G96 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.6+ | 0.8+ |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.7+ | 0.3− |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.8+ | 0.6+ | 2006 11 27 | 703 | 0.3− | 0.0 |

**2006 SL$_{356}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.69766 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26963336 | $\omega$ | 345.40124 | | +0.70184109 | −0.70857470 | |
| $a$ | 2.3729411 | $\Omega$ | 59.96118 | | +0.66172557 | +0.61055811 | |
| $e$ | 0.1987648 | $i$ | 4.84272 | | +0.26370124 | +0.35375230 | |
| $P$ | 3.66 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 03 | 644 | 0.3− | 1.1+ | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2002 09 03 | 644 | 0.3− | 1.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2002 09 03 | 644 | 0.4− | 1.3+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2004 02 18 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 1.1− | 0.6+ | 2006 11 13 | 703 | 1.1− | 0.5− |
| 2004 02 18 | 691 | 0.0 | 0.1+ | 2006 10 22 | 704 | 0.2+ | 0.7− | 2006 11 13 | 703 | 0.8− | 0.6− |
| 2004 02 18 | 691 | 0.0 | 0.0 | 2006 10 22 | 704 | 0.0 | 0.1+ | 2006 11 13 | 703 | 1.1− | 0.7− |
| 2006 09 30 | 703 | 0.0 | 0.2− | 2006 10 22 | 704 | (2.0+ | 0.8+) | 2006 11 17 | 703 | (0.5+ | 1.5+) |
| 2006 09 30 | 703 | 0.4+ | 0.4− | 2006 10 22 | 704 | 1.5+ | 0.3− | 2006 11 17 | 703 | 0.2+ | 1.3+ |
| 2006 09 30 | 703 | 0.3− | 0.7− | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.2− | 1.0+ |
| 2006 09 30 | 703 | 0.6− | 0.8− | 2006 10 28 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.0 | 1.1+ |
| 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.9+ |
| 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 18 | 704 | (0.1+ | 1.7+) |
| 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.6− | 1.4+ |
| 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.2− | 0.8+ |
| 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.8− | 0.5+ |
| 2006 10 16 | 703 | 0.3+ | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2006 10 16 | 703 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.6− | 0.2+ |
| 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2006 10 17 | G96 | 0.5+ | 0.6− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 10 17 | G96 | 0.1+ | 0.8− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 10 21 | G96 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.1− | 0.2− | | | | |
| 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.4+ | 0.2− | | | | |

**2006 SN$_{356}$ = 1994 RL$_{18}$ = 2005 JS$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.46475 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25275093 | $\omega$ | 182.11731 | | +0.94379862 | +0.33001471 | |
| $a$ | 2.4774650 | $\Omega$ | 158.58522 | | −0.30250628 | +0.88477302 | |
| $e$ | 0.1349605 | $i$ | 2.87108 | | −0.13316953 | +0.32903950 | |
| $P$ | 3.90 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 03 | 809 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.4− | 0.9− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 1994 09 03 | 809 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.6− | 1.4− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 1994 09 03 | 809 | 0.7− | 0.2− | 2006 09 30 | 703 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 1994 09 04 | 809 | 1.6+ | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 1994 09 04 | 809 | 0.1+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1994 09 04 | 809 | 1.2− | 0.5− | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2005 05 10 | G96 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.7+ | 0.4− |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2005 05 10 | G96 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.3− |
| 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2005 05 12 | G96 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 13 | 703 | 1.0+ | 0.2+ |
| 2005 05 12 | G96 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.8+ | 0.4− | 2006 11 13 | 703 | 1.3− | 0.0 |
| 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 13 | 703 | (2.5− | 1.0+) |
| 2006 09 30 | 703 | 0.7− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.6+ | 0.2+ |

**2006 ST$_{356}$ = 2003 YG$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.84716 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30617180 | $\omega$ | 293.22554 | | +0.96083355 | −0.25080743 | |
| $a$ | 2.1801812 | $\Omega$ | 81.46438 | | +0.27712507 | +0.86841148 | |
| $e$ | 0.1913886 | $i$ | 6.84566 | | +0.00076122 | +0.42773488 | |
| $P$ | 3.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.7− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.4− | 0.9+ |
| 2003 12 18 | 704 | 0.7− | 1.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 14 | 704 | 1.0+ | 0.0 |
| 2003 12 18 | 704 | 1.0− | 0.6+ | 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 11 14 | 704 | 0.9− | 0.7+ |
| 2003 12 18 | 704 | 0.1+ | 0.9+ | 2006 10 16 | 703 | (1.6+ | 0.9−) | 2006 11 14 | 704 | 0.3− | 0.5+ |
| 2003 12 21 | 704 | 0.7+ | 0.7− | 2006 10 16 | 703 | 0.9− | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.2− |
| 2003 12 21 | 704 | 1.0+ | 1.0− | 2006 10 16 | 703 | 0.3− | 0.6− | 2006 11 17 | 704 | 0.2− | 0.7− |
| 2003 12 21 | 704 | 0.6+ | 1.0− | 2006 10 22 | 703 | 0.2− | 0.6− | 2006 11 17 | 704 | (0.4+ | 1.8+) |
| 2003 12 21 | 704 | (2.6+ | 0.8+) | 2006 10 22 | 703 | 0.1− | 0.7− | 2006 11 17 | 704 | 0.0 | 1.3+ |
| 2006 09 30 | 703 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.5+ | 0.5− | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2006 09 30 | 703 | 0.4− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.5− | 2006 11 17 | 704 | 0.5+ | 0.2− |
| 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 10 31 | 704 | 0.3− | 0.2+ | 2006 11 19 | 703 | 1.2+ | 0.0 |
| 2006 09 30 | 703 | 0.2− | 0.0 | 2006 10 31 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 703 | 0.5+ | 1.1− |
| 2006 10 01 | 704 | 0.0 | 0.9+ | 2006 10 31 | 704 | 0.8− | 0.0 | 2006 11 19 | 703 | 0.4− | 0.8− |
| 2006 10 01 | 704 | 0.7+ | 0.0 | 2006 10 31 | 704 | 0.0 | 0.7+ | 2006 11 19 | 703 | 0.1− | 0.6− |
| 2006 10 01 | 704 | 0.4− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.3+ | 0.9+ |
| 2006 10 01 | 704 | 0.8+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.5+ | 0.4+ |
| 2006 10 01 | 704 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.1− | 0.4+ |
| 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.5− | 2006 11 20 | 704 | 0.1− | 1.0+ |
| 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.3− | 0.8− | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.8− | | | | |
| 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.1− | 0.6− | | | | |

**2006 SV$_{356}$ = 2005 GR$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.87241 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.36696429 | $\omega$ | 67.48260 | | −0.08372891 | −0.98067508 | |
| $a$ | 1.9322064 | $\Omega$ | 29.09125 | | +0.72710087 | −0.18146222 | |
| $e$ | 0.0867616 | $i$ | 21.32632 | | +0.68140575 | +0.07312895 | |
| $P$ | 2.69 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 14 | 703 | 1.1+ | 0.1− |
| 2005 04 01 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.6− | 0.0 |
| 2005 04 01 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.1− | 1.0+ |
| 2005 04 02 | 691 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.4− | 0.7+ |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.1+ | 0.5− |
| 2005 04 02 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 1.0− | 0.5− |
| 2006 09 30 | 703 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | (0.9+ | 1.7+) |
| 2006 09 30 | 703 | 1.2− | 0.4− | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.2− |
| 2006 09 30 | 703 | 1.1− | 0.9− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 23 | 703 | 0.0 | 0.7− |
| 2006 09 30 | 703 | 1.0− | 0.4− | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 23 | 703 | 0.7− | 0.4− |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.9+ | 0.4− |
| 2006 10 02 | G96 | 0.5− | 0.5− | 2006 10 31 | 691 | 0.5+ | 0.1+ | 2006 11 23 | 703 | 0.9+ | 0.1− |
| 2006 10 02 | G96 | 0.2− | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.2+ | | | | |

**2006 SW$_{356}$ = 2000 CB$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.55481 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26484425 | $\omega$ | 353.56250 | | +0.16146142 | −0.98503400 | |
| $a$ | 2.4014618 | $\Omega$ | 87.13390 | | +0.90811594 | +0.12437072 | |
| $e$ | 0.1836601 | $i$ | 3.46238 | | +0.38633620 | +0.11933120 | |
| $P$ | 3.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 02 | 704 | 0.8− | 0.7+ | 2006 09 30 | 703 | 0.6+ | 0.1+ | 2006 10 16 | 703 | (1.7+ | 0.3+) |
| 2000 02 02 | 704 | 0.1+ | 0.6+ | 2006 09 30 | 703 | 0.3+ | 0.8+ | 2006 10 21 | G96 | 0.2− | 0.0 |
| 2000 02 02 | 704 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2000 02 03 | 704 | 0.5+ | 0.1+ | 2006 10 03 | G96 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2000 02 03 | 704 | 0.8+ | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.1+ |
| 2000 02 03 | 704 | 0.9− | 0.1+ | 2006 10 03 | G96 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2000 02 03 | 704 | 0.1+ | 1.0− | 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2006 09 30 | 703 | 1.2− | 0.3− | 2006 10 16 | 703 | 1.0− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2006 09 30 | 703 | (1.9− | 0.2+) | 2006 10 16 | 703 | 0.7− | 0.5− | 2006 11 01 | G96 | 0.2+ | 0.0 |

**2006 SX$_{356}$ = 2003 ES$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.37489 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18327466 | $\omega$ | 267.80837 | | +0.75573818 | +0.63960601 | |
| $a$ | 3.0695009 | $\Omega$ | 52.39333 | | −0.50785211 | +0.70794305 | |
| $e$ | 0.0735139 | $i$ | 10.22164 | | −0.41345621 | +0.29953428 | |
| $P$ | 5.38 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 327 | 0.4− | 0.4− | 2003 03 09 | 695 | 0.1+ | 0.3− | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 1995 10 21 | 327 | 0.8+ | 0.1+ | 2003 03 09 | 695 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.8− |
| 1995 10 21 | 327 | 0.3− | 0.2− | 2003 03 09 | 695 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1− | 1.5+ |
| 1995 10 21 | 327 | 0.3− | 0.8− | 2003 03 09 | 695 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.9− | 0.2+ |
| 2001 12 07 | 644 | 0.3+ | 0.5+ | 2003 03 09 | 695 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.9+ | 0.4+ |
| 2001 12 07 | 644 | 0.5+ | 0.3+ | 2004 03 31 | 691 | 0.1− | 0.6+ | 2006 10 18 | 691 | 0.2− | 0.0 |
| 2001 12 07 | 644 | 0.7+ | 0.2+ | 2004 03 31 | 691 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.1− |
| 2003 02 01 | 644 | 0.1+ | 0.6+ | 2004 03 31 | 691 | 0.3+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 2003 02 01 | 644 | 0.2+ | 0.5+ | 2005 08 06 | E12 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 02 01 | 644 | 0.3+ | 0.6+ | 2005 08 06 | E12 | 1.0+ | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2003 03 07 | 695 | 0.0 | 0.0 | 2005 08 06 | E12 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 03 07 | 695 | 0.1− | 0.0 | 2005 08 06 | E12 | 0.0 | 1.3+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2003 03 07 | 695 | 0.1+ | 0.0 | 2006 09 30 | 703 | 1.3− | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2003 03 07 | 695 | 0.1+ | 0.0 | 2006 09 30 | 703 | (0.3− | 1.7+) | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2003 03 07 | 695 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.1− | 1.1+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2003 03 09 | 695 | 0.1+ | 0.0 | 2006 09 30 | 703 | (1.7− | 0.4+) | 2006 11 17 | 703 | 0.1+ | 0.8+ |
| 2003 03 09 | 695 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2003 03 09 | 695 | 0.0 | 0.1− | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 1.2− | 0.3− |
| 2003 03 09 | 695 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.2− |

**2006 SF$_{357}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.41544 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25872219 | $\omega$ | 357.07997 | | +0.62329740 | −0.77503341 | |
| $a$ | 2.4391973 | $\Omega$ | 54.33773 | | +0.72002688 | +0.51690994 | |
| $e$ | 0.1425904 | $i$ | 7.35691 | | +0.30506005 | +0.36349321 | |
| $P$ | 3.81 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2002 10 16 | 644 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2002 10 16 | 644 | 0.4− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2004 02 29 | 691 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.6− | 0.8− |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.5− | 0.1− |
| 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.6− |
| 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.7+ | 0.3− | 2006 11 17 | 703 | (1.6− | 1.0−) |
| 2006 09 30 | 703 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2006 09 30 | 703 | 0.7+ | 1.4+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.6− | 0.4+ |
| 2006 09 30 | 703 | 0.7+ | 0.0 | 2006 10 31 | G96 | 1.3− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2006 10 03 | G96 | 0.4+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2006 10 03 | G96 | 0.4+ | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2006 10 03 | G96 | 0.5+ | 0.6− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.9− |
| 2006 10 12 | 644 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.5+ |
| 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.2− | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1− | 1.0+ |
| 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.7− | 1.4+ | 2006 11 21 | 704 | 0.6− | 0.4+ |
| 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 21 | 704 | 1.0+ | 0.5+ |

**2006 SH$_{357}$ = 2005 JZ$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.53289 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23434707 | $\omega$ | 281.29116 | | +0.85188655 | +0.51060054 | |
| $a$ | 2.6055317 | $\Omega$ | 48.12461 | | −0.39837918 | +0.77617924 | |
| $e$ | 0.1785329 | $i$ | 9.00288 | | −0.33997549 | +0.36990928 | |
| $P$ | 4.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.5+ | 1.0+ | 2006 11 09 | 644 | 0.1− | 0.4+ |
| 2005 05 10 | G96 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2005 05 10 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 2005 05 10 | G96 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.8+ | 0.0 | 2006 11 11 | 703 | 0.5− | 1.0− |
| 2005 05 11 | 644 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.1− | 0.0 |
| 2005 05 11 | 644 | 0.4+ | 0.7+ | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.5− | 1.1+ |
| 2005 05 11 | 644 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | (1.8− | 0.7+) |
| 2006 09 30 | 703 | (1.7+ | 0.3+) | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.7+ | 0.9− |
| 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2006 09 30 | 703 | 0.7− | 0.5− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2006 09 30 | 703 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 29 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2006 10 16 | 703 | 0.1− | 1.1+ | 2006 10 29 | 691 | 0.2+ | 0.0 | | | | |

**2006 SO$_{357}$ = 2001 WB$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.55294 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19238714 | $\omega$ | 88.01973 | | +0.70951921 | +0.69497923 | |
| $a$ | 2.9717939 | $\Omega$ | 227.92935 | | −0.69272400 | +0.65751985 | |
| $e$ | 0.0557240 | $i$ | 9.03409 | | −0.12929017 | +0.29098371 | |
| $P$ | 5.12 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2001 11 20 | 704 | 0.2+ | 0.7− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2001 11 20 | 704 | 0.8+ | 0.3+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 704 | 1.1+ | 0.2+ | 2006 10 03 | G96 | 0.6+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2001 11 21 | 704 | 0.7− | 0.8− | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2001 11 21 | 704 | 0.2− | 0.5+ | 2006 10 03 | G96 | 0.6+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 2001 11 21 | 704 | 1.0− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.6+ | 0.3− |
| 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.1− |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.3− |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.6− |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.3− |

**2006 SQ$_{358}$ = 1994 RU$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.69862 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17193855 | $\omega$ | 188.18262 | | +0.97396017 | +0.22479651 | |
| $a$ | 3.2029774 | $\Omega$ | 158.75662 | | −0.20313576 | +0.92296153 | |
| $e$ | 0.0964341 | $i$ | 4.66431 | | −0.10068493 | +0.31242367 | |
| $P$ | 5.73 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 03 | 809 | (2.5− | 0.7−) | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.4− |
| 1994 09 03 | 809 | 1.4− | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− |
| 1994 09 03 | 809 | 0.4− | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.5+ |
| 1994 09 04 | 809 | 0.1+ | 0.9− | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1994 09 04 | 809 | 1.5+ | 0.9+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 1.1− | 0.5− |
| 1994 09 04 | 809 | 0.2+ | 0.6− | 2006 10 10 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2006 09 30 | 703 | 0.7− | 0.3− | 2006 10 10 | 644 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2006 09 30 | 703 | 0.5+ | 0.5− | 2006 10 21 | 703 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 09 30 | 703 | 1.0− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.4− | | | | |
| 2006 09 30 | 703 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.3− | 0.1− | | | | |

**2006 ST$_{358}$ = 1995 WJ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.39125 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26775327 | $\omega$ | 219.70605 | | +0.91232083 | −0.40901569 | |
| $a$ | 2.3840363 | $\Omega$ | 164.40308 | | +0.39164380 | +0.85777047 | |
| $e$ | 0.2118564 | $i$ | 4.14050 | | +0.11952333 | +0.31134543 | |
| $P$ | 3.68 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.4+ | 0.1+ |
| 1995 11 19 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.9− | 0.2− | 2006 10 21 | 703 | 0.8+ | 0.4+ |
| 1995 11 19 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.9+ |
| 1995 11 25 | 691 | 0.3− | 0.1+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 21 | 703 | 0.6− | 0.1− |
| 1995 11 25 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.4− | 0.1+ |
| 1995 11 25 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 30 | 703 | 1.3− | 0.3− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 30 | 703 | 1.0+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.3− |
| 2006 09 30 | 703 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− |
| 2006 09 30 | 703 | (1.8+ | 0.4+) | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 1.1− |
| 2006 09 30 | 703 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2006 09 30 | 703 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.4− | 0.0 | | | | |

**2006 SG$_{359}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.33193 | | (2000.0) | | | |
| $n$ | 0.21468492 | $\omega$ | 264.94434 | | +0.86203282 | +0.47396332 |
| $a$ | 2.7622841 | $\Omega$ | 66.66203 | | −0.35178647 | +0.81458585 |
| $e$ | 0.3113141 | $i$ | 11.28034 | | −0.36489134 | +0.33437803 |
| $P$ | 4.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 13 | 703 | 1.3− | 0.2− |
| 2005 04 07 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.4− | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 2005 04 07 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.6+ |
| 2005 04 15 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.6+ | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.1+ |
| 2005 04 15 | 691 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.4+ | 0.1− | 2006 11 14 | 704 | 1.1+ | 1.1+ |
| 2005 04 15 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.4− | 0.9− | 2006 11 14 | 704 | 0.7+ | 0.4+ |
| 2006 09 30 | 699 | 0.3+ | 0.5− | 2006 10 27 | 704 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2006 09 30 | 699 | 0.7+ | 0.7+ | 2006 10 27 | 704 | 0.5− | 1.1+ | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2006 09 30 | 703 | 0.5− | 0.6− | 2006 10 27 | 704 | 0.9− | 0.3− | 2006 11 17 | 704 | 0.7+ | 0.9− |
| 2006 09 30 | 699 | (0.3+ | 1.6+) | 2006 10 27 | 704 | 0.7+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 2006 09 30 | 703 | 0.0 | 0.2− | 2006 10 27 | 704 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.7− |
| 2006 09 30 | 703 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2006 09 30 | 699 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | (1.8+ | 0.1+) |
| 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.5− |
| 2006 10 01 | 704 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.7+ | 0.3− |
| 2006 10 01 | 704 | 0.7− | 0.3+ | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2006 10 01 | 704 | 0.3− | 1.4+ | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2006 10 01 | 704 | (1.0− | 2.3+) | 2006 11 13 | 703 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.6− | 0.1− |
| 2006 10 16 | 703 | 0.0 | 0.7− | 2006 11 13 | 703 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.7− | 0.2+ |
| 2006 10 16 | 703 | 1.0− | 0.8− | 2006 11 13 | 703 | 0.6− | 0.2− | | | | |

**2006 ST$_{359}$ = 2005 JR$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.53945 | | (2000.0) | | | |
| $n$ | 0.21701334 | $\omega$ | 129.21203 | | +0.82322552 | +0.56493359 |
| $a$ | 2.7424903 | $\Omega$ | 196.63382 | | −0.56230077 | +0.79776142 |
| $e$ | 0.2109649 | $i$ | 11.30665 | | −0.07821498 | +0.21077657 |
| $P$ | 4.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.0+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2005 05 09 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.9+ | 0.4− | 2006 11 13 | 703 | 0.1− | 0.0 |
| 2005 05 09 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.4− | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2005 05 13 | 691 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.7− |
| 2005 05 13 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2005 05 13 | 691 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.4+ | 1.1+ |
| 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 19 | 703 | 0.0 | 0.2+ |
| 2006 09 30 | 703 | 1.5− | 0.3− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 19 | 703 | 0.3− | 1.2+ |
| 2006 09 30 | 703 | 1.4− | 0.6− | 2006 10 22 | 691 | 0.2− | 0.3− | 2006 11 19 | 703 | 1.0+ | 1.2+ |
| 2006 09 30 | 703 | 0.6− | 1.3+ | 2006 11 01 | 703 | (1.4+ | 1.8+) | 2006 11 24 | G96 | 0.3− | 0.5− |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 01 | 703 | 0.6+ | 0.4− | 2006 11 24 | G96 | 0.5− | 0.4− |
| 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 01 | 703 | (0.1− | 1.7−) | 2006 11 24 | G96 | 0.4− | 0.3− |
| 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 01 | 703 | 1.3+ | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 11 08 | 644 | 0.5− | 0.3− | | | | |
| 2006 10 16 | 703 | 0.0 | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.0 | | | | |

**2006 SV$_{359}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 346.36207 | | (2000.0) | | | |
| $n$ | 0.22858546 | $\omega$ | 235.21070 | | +0.65385381 | −0.75656704 |
| $a$ | 2.6491323 | $\Omega$ | 173.93247 | | +0.71909832 | +0.61767253 |
| $e$ | 0.1353174 | $i$ | 4.89966 | | +0.23531423 | +0.21467874 |
| $P$ | 4.31 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 17 | 704 | 1.4+ | 0.1+ |
| 1997 09 30 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 1.3+ | 0.1+ |
| 1997 09 30 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ | 2006 11 17 | 704 | 1.4+ | 0.2+ |
| 2001 07 27 | 699 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 17 | 704 | 0.8+ | 0.1− |
| 2001 07 27 | 699 | 0.6− | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2001 07 27 | 699 | 1.1− | 1.0+ | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 2001 07 27 | 699 | 0.5+ | 1.3+ | 2006 10 22 | 691 | 0.5− | 0.3− | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 704 | 0.7− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 0.2− | 0.4+ | 2006 11 18 | 704 | 1.1+ | 1.5+ |
| 2004 03 16 | 691 | 0.0 | 0.5+ | 2006 10 27 | 704 | 0.1− | 0.5− | 2006 11 18 | 704 | 0.9+ | 0.4+ |
| 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 704 | 0.3+ | 0.3− | 2006 11 18 | 704 | (1.6+ | 0.6+) |
| 2004 04 13 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.8− |
| 2004 04 13 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2006 09 30 | 703 | 0.7− | 0.8+ | 2006 11 11 | 703 | 0.5+ | 0.6+ | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2006 09 30 | 703 | 0.6− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2006 09 30 | 703 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.2− |
| 2006 10 03 | G96 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.8− | 2006 11 19 | 704 | 0.7+ | 0.7+ |
| 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 1.3− |
| 2006 10 03 | G96 | 0.3− | 0.4− | 2006 11 14 | 704 | 0.7+ | 0.3+ | 2006 11 19 | 704 | 0.4+ | 1.5+ |
| 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.4− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2006 10 17 | 683 | (0.6+ | 1.6+) | 2006 11 14 | 704 | 0.1− | 0.3+ | 2006 11 20 | 704 | (2.3+ | 2.1+) |
| 2006 10 17 | 683 | 0.4+ | 1.5+ | 2006 11 16 | 704 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 0.8− | 1.3+ |
| 2006 10 17 | 683 | 0.1− | 1.4+ | 2006 11 16 | 704 | 0.2+ | 0.5− | 2006 11 20 | 704 | 0.6− | 0.2+ |
| 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | (1.5− | 0.0 ) | 2006 11 20 | 704 | 0.6− | 0.8+ |
| 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 17 | 704 | 1.1+ | 0.1+ | 2006 11 20 | 704 | 1.1− | 1.4+ |

**2006 SW$_{359}$ = 2001 SG$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.69031 | | (2000.0) | | | |
| $n$ | 0.21536917 | $\omega$ | 265.20037 | | +0.02696789 | −0.99960611 |
| $a$ | 2.7564303 | $\Omega$ | 183.28453 | | +0.96248231 | +0.02806410 |
| $e$ | 0.1493305 | $i$ | 7.79378 | | +0.27000098 | −0.00019974 |
| $P$ | 4.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.4− | 0.4+ | 2003 01 26 | 699 | 0.7− | 0.2− | 2006 10 16 | 703 | 1.0− | 0.1− |
| 1992 09 30 | 691 | 0.1− | 0.2− | 2003 01 26 | 699 | 0.5+ | 0.9− | 2006 10 22 | 703 | 0.3+ | 0.5+ |
| 1992 09 30 | 691 | 0.2− | 0.3+ | 2003 01 26 | 699 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.2− | 0.8− |
| 2001 08 23 | 691 | 0.0 | 0.2− | 2003 01 26 | 699 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.8− | 0.1− |
| 2001 08 23 | 691 | 0.2+ | 0.3− | 2003 01 26 | 644 | 1.0+ | 1.5+ | 2006 10 22 | 703 | 0.6− | 1.1− |
| 2001 08 23 | 691 | 0.2+ | 0.2− | 2003 01 26 | 644 | 1.1+ | 1.7+ | 2006 11 01 | 703 | 0.4+ | 1.2− |
| 2001 09 20 | 704 | 0.2+ | 0.0 | 2003 01 26 | 644 | 0.4+ | 2.2+ | 2006 11 01 | 703 | 0.6− | 0.5− |
| 2001 09 20 | 704 | 0.0 | 0.2+ | 2004 03 15 | 291 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.1− | 0.6− |
| 2001 09 20 | 704 | 0.7+ | 0.1+ | 2004 03 15 | 291 | 0.2− | 0.6+ | 2006 11 01 | 703 | 0.5− | 0.1− |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2004 03 15 | 291 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.4− | 0.0 |
| 2001 09 20 | 704 | 0.6+ | 0.3+ | 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.2+ |
| 2001 09 22 | 691 | 0.1+ | 0.3+ | 2005 07 09 | 691 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.3− | 0.0 |
| 2001 09 22 | 704 | 0.8− | 0.5+ | 2005 07 09 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 09 22 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2001 09 22 | 704 | 0.2− | 0.3− | 2006 09 30 | 703 | 1.3− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 09 22 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.9+ | 2006 11 11 | 703 | 0.8+ | 1.0+ |
| 2001 09 22 | 704 | 0.3− | 0.0 | 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2001 09 22 | 704 | 0.3− | 0.2− | 2006 10 03 | 704 | 0.9+ | 1.2+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2001 09 22 | 704 | 0.6− | 0.1− | 2006 10 03 | 704 | 0.2+ | 0.7+ | 2006 11 11 | 703 | 1.8− | 0.5− |
| 2001 09 23 | 704 | 0.9+ | 0.4+ | 2006 10 03 | 704 | 0.9+ | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2001 09 23 | 704 | 0.5− | 0.6+ | 2006 10 03 | 704 | 1.1+ | 0.0 | 2006 11 20 | 704 | 1.1− | 0.3+ |
| 2001 09 23 | 704 | 0.5+ | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2001 09 24 | 644 | 0.2− | 0.7+ | 2006 10 03 | G96 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.5+ |
| 2001 09 24 | 644 | 0.3+ | 0.4+ | 2006 10 03 | G96 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2001 09 24 | 644 | 0.2− | 0.4+ | 2006 10 03 | G96 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2001 10 11 | 644 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2001 10 11 | 644 | 0.2+ | 1.0+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2001 10 11 | 644 | 0.1+ | 0.8+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 01 14 | 608 | 0.5+ | 1.0− | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 14 | 608 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.6− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2003 01 14 | 608 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.5+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |

**2006 SX$_{359}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.32440 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29552026 | $\omega$ | 315.11334 | | +0.82427959 | +0.56593193 | |
| $a$ | 2.2322588 | $\Omega$ | 10.45825 | | −0.48989938 | +0.72783243 | |
| $e$ | 0.1837561 | $i$ | 5.32897 | | −0.28383402 | +0.38727381 | |
| $P$ | 3.34 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.3− | 0.1+ | 2006 09 30 | 701 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.4+ | 0.5− |
| 1995 03 27 | 691 | 0.0 | 0.5+ | 2006 09 30 | 701 | 0.5+ | 0.3− | 2006 10 20 | 691 | 1.4− | 0.2− |
| 1995 03 27 | 691 | 0.3+ | 0.5− | 2006 09 30 | 701 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1− |
| 1996 10 17 | 691 | 0.3− | 0.6+ | 2006 09 30 | 701 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 1996 10 17 | 691 | 0.0 | 0.6+ | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1− |
| 1996 10 17 | 691 | 0.4− | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1− |
| 2002 05 10 | 644 | 0.5+ | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.4− | 1.1+ |
| 2002 05 10 | 644 | 0.5+ | 0.9+ | 2006 10 12 | 691 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 05 10 | 644 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2006 09 25 | 691 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 16 | 104 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 16 | 104 | 0.8+ | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2006 09 26 | 734 | (2.7+ | 0.0 ) | 2006 10 16 | 104 | 0.6+ | 0.6− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2006 09 26 | 734 | 0.9+ | 0.4− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2006 09 26 | 734 | (1.8+ | 0.7−) | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2006 09 26 | 734 | 1.3− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.7− |
| 2006 09 26 | 701 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.3− | 0.6− |
| 2006 09 26 | 701 | 0.3+ | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2006 09 26 | 701 | (0.3+ | 5.9−) | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.1− | 1.4− |

**2006 SZ$_{359}$ = 1996 HY$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.60044 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22816191 | $\omega$ | 176.08877 | | +0.95572569 | +0.29362644 | |
| $a$ | 2.6524098 | $\Omega$ | 166.78729 | | −0.27221512 | +0.90711681 | |
| $e$ | 0.0950711 | $i$ | 4.84009 | | −0.11174678 | +0.30153374 | |
| $P$ | 4.32 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 17 | 691 | 0.6− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 1996 04 17 | 691 | 0.4− | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.5+ |
| 1996 04 17 | 691 | 0.3− | 0.2− | 2006 10 10 | 644 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 1996 04 19 | 691 | 0.4+ | 0.4+ | 2006 10 10 | 644 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.2− |
| 1996 04 19 | 691 | 0.6+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 1996 04 19 | 691 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 09 18 | 699 | 1.0− | 0.4− | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2006 09 18 | 699 | 0.7− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 699 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.0 |
| 2006 09 18 | 699 | (0.5+ | 1.7+) | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.2− |
| 2006 09 30 | 703 | 0.6+ | 0.8− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.6+ | 1.0− |
| 2006 09 30 | 703 | 0.1− | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2006 09 30 | 703 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.4− | 0.1+ |
| 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.1+ |
| 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.4+ |

**2006 SB$_{360}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.38558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18764744 | $\omega$ | 284.52502 | | +0.79259182 | +0.60083423 | |
| $a$ | 3.0216276 | $\Omega$ | 38.70144 | | −0.47562670 | +0.71583475 | |
| $e$ | 0.0634662 | $i$ | 9.56577 | | −0.38154615 | +0.35577920 | |
| $P$ | 5.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 291 | 0.2− | 0.1+ | 2006 09 30 | 703 | (1.9− | 0.7−) | 2006 10 21 | 703 | 0.8+ | 0.0 |
| 2001 10 24 | 291 | 0.0 | 0.1+ | 2006 10 02 | 291 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.0 | 0.8− |
| 2001 10 24 | 291 | 0.1+ | 0.0 | 2006 10 02 | 291 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.5− | 0.1− |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 02 | 291 | 0.2− | 0.6+ | 2006 10 21 | 703 | 0.0 | 0.1+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2003 01 25 | 645 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 10 02 | G96 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.3− |
| 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.1− | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.8− | 0.5− |
| 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 20 | G96 | 0.3− | 0.9− |
| 2006 09 30 | 703 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.4+ | 0.6− |

**2006 SG$_{361}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.97760 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28925885 | $\omega$ | 17.94824 | | +0.42982949 | −0.89980326 | |
| $a$ | 2.2643572 | $\Omega$ | 46.67047 | | +0.81528198 | +0.35115910 | |
| $e$ | 0.2137853 | $i$ | 5.90511 | | +0.38802308 | +0.25892350 | |
| $P$ | 3.41 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.2− | 0.1+ |
| 2004 02 16 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2004 02 16 | 691 | 0.4− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 10 | 644 | 0.1+ | 0.3+ |
| 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.2− | 0.7+ |
| 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 1.0− | 1.1− |
| 2004 03 16 | 691 | 0.5+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.9− |
| 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.6+ | 1.0− |
| 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2006 10 03 | G96 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2006 10 03 | G96 | 0.3− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 1.3− | 0.1− |
| 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 09 | J95 | 0.5+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 09 | J95 | 0.3+ | 0.3+ | 2006 11 17 | 703 | (1.8− | 0.2+) |
| 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 09 | J95 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.4+ |
| 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.0 | 0.8+ |
| 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.4+ | 2006 11 27 | 703 | 0.9− | 0.2+ |
| 2006 10 24 | 644 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.3+ | 2006 11 27 | 703 | 1.1− | 0.7+ |
| 2006 10 24 | 644 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.6+ | 1.1− |
| 2006 10 24 | 644 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ | | | | |
| 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.4+ | | | | |

**2006 SH$_{361}$ = 1999 VS$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.37012 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27773228 | $\omega$ | 286.26357 | | +0.98234567 | +0.18192975 | |
| $a$ | 2.3265826 | $\Omega$ | 63.27160 | | −0.14754330 | +0.89664894 | |
| $e$ | 0.2281380 | $i$ | 2.79629 | | −0.11501284 | +0.40363627 | |
| $P$ | 3.55 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.2− | 0.2− | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.5− | 0.7+ |
| 1999 11 09 | 704 | 0.5+ | 0.6− | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 1999 11 09 | 704 | 0.1+ | 0.6− | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 1999 11 09 | 704 | 0.7+ | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 1999 11 09 | 704 | 0.5+ | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.7+ | 0.0 |
| 1999 11 12 | 704 | 0.2+ | 1.1− | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 1999 11 12 | 704 | 0.5− | 1.4− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.1− |
| 1999 11 12 | 704 | 0.1− | 1.2− | 2006 10 21 | 644 | 0.4+ | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2004 01 16 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.8+ |
| 2004 01 16 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.7+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.8− | 0.0 |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.5− | 0.7− | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.3− | 0.1+ | | | | |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 10 31 | 691 | 0.3− | 0.2+ | | | | |

**2006 SV$_{361}$ = 2003 GC$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.73050 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18169242 | $\omega$ | 288.14268 | | −0.57171006 | | −0.81941118 |
| $a$ | 3.0872953 | $\Omega$ | 196.92336 | | +0.79622047 | | −0.54194600 |
| $e$ | 0.1209658 | $i$ | 8.17400 | | +0.19794081 | | −0.18670793 |
| $P$ | 5.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 07 | 291 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2003 04 07 | 291 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2003 04 07 | 291 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.5+ |
| 2003 04 08 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.4− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2003 04 08 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.6− |
| 2003 04 08 | 691 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2006 09 30 | G96 | 0.6+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2+ | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1− | | | | |

**2006 SN$_{362}$ = 2001 FB$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.83541 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28011788 | $\omega$ | 20.60858 | | −0.93831055 | | +0.34579355 |
| $a$ | 2.3133544 | $\Omega$ | 179.62106 | | −0.32466722 | | −0.88061008 |
| $e$ | 0.1521159 | $i$ | 3.24942 | | −0.11901478 | | −0.32396404 |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 691 | 0.0 | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.2− |
| 2001 03 19 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 03 | G96 | 0.2− | 0.2− |
| 2001 03 19 | 691 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.0 | 0.2− |
| 2001 03 20 | 699 | 0.6+ | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2001 03 20 | 699 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 2001 03 20 | 699 | 0.3− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.4+ | 0.5− |
| 2001 03 20 | 699 | 1.3+ | 0.4+ | 2006 10 02 | G96 | 0.4− | 0.6− | 2006 10 23 | 691 | 0.1+ | 0.4+ |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 02 | G96 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.1+ | 0.3+ |
| 2006 09 30 | G96 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.3+ |
| 2006 09 30 | G96 | 0.5+ | 0.5− | 2006 10 03 | G96 | 0.1+ | 0.1+ | | | | |

**2006 SQ$_{362}$ = 2000 JJ$_{81}$ = 2004 FY$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.16814 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22766798 | $\omega$ | 7.64844 | | +0.59933659 | | −0.79082951 |
| $a$ | 2.6562447 | $\Omega$ | 45.63238 | | +0.72495037 | | +0.47051002 |
| $e$ | 0.0076378 | $i$ | 9.99170 | | +0.33947401 | | +0.39141921 |
| $P$ | 4.33 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 10 | 704 | 0.5− | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 09 | J95 | 0.1+ | 0.9− |
| 2000 05 10 | 704 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 09 | J95 | 0.0 | 0.1− |
| 2000 05 10 | 704 | 0.5+ | 1.2+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.1+ |
| 2000 05 11 | 691 | 0.1− | 0.7− | 2006 10 17 | G96 | 0.5+ | 0.6+ | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2000 05 11 | 691 | 0.2− | 0.7− | 2006 10 17 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1+ |
| 2000 05 11 | 691 | 0.4− | 0.6− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2004 03 21 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | (0.2+ | 2.0+) |
| 2004 03 21 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | (0.1+ | 1.6+) |
| 2004 03 21 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 1.0+ | 0.8+ |
| 2004 03 23 | 704 | 1.0+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 1.1− | 0.2+ |
| 2004 03 23 | 704 | 0.8− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2004 03 23 | 704 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.3− |
| 2004 03 23 | 704 | 0.2+ | 1.2+ | 2006 10 28 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2006 09 30 | G96 | 0.2− | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.6+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.4+ | 2006 11 27 | G96 | 0.5+ | 0.3+ |
| 2006 10 02 | 291 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.5+ | 2006 11 27 | 703 | 0.1+ | 0.4+ |
| 2006 10 02 | 291 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.6+ | 0.2− |
| 2006 10 02 | 291 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.6+ | 2006 11 27 | 703 | 1.4− | 0.5− |
| 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 11 09 | J95 | 0.2+ | 1.4− | 2006 11 27 | 703 | 0.3+ | 1.1− |

**2006 SS$_{362}$ = 2003 FU$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.38887 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17231428 | $\omega$ | 339.87754 | | −0.97595887 | | +0.18624065 |
| $a$ | 3.1983196 | $\Omega$ | 211.53576 | | −0.15831161 | | −0.96278001 |
| $e$ | 0.1102186 | $i$ | 12.50170 | | −0.14980562 | | −0.19588023 |
| $P$ | 5.72 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 699 | 0.7− | 0.5− | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 1.4− | 0.2− |
| 2003 03 30 | 699 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.3+ | 1.2+ |
| 2003 03 30 | 699 | 0.8− | 1.3+ | 2006 09 30 | G96 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.8+ | 1.6− |
| 2003 03 30 | 699 | 0.4− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.5+ |
| 2003 03 31 | 691 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2003 03 31 | 691 | 0.9+ | 0.3− | 2006 10 02 | G96 | 0.5+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.3+ |
| 2003 03 31 | 691 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3+ |
| 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.9− | | | | |

**2006 SD$_{363}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.54547 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22704440 | $\omega$ | 244.88698 | | +0.43831232 | | −0.89882120 |
| $a$ | 2.6611061 | $\Omega$ | 179.11163 | | +0.85839467 | | +0.41804935 |
| $e$ | 0.2393856 | $i$ | 6.14388 | | +0.26653498 | | +0.13173910 |
| $P$ | 4.34 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 699 | 0.8+ | 0.2+ | 2006 10 03 | G96 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2003 01 27 | 699 | 0.1+ | 0.7− | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.4− |
| 2003 01 27 | 699 | 0.9− | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.5− |
| 2003 01 27 | 699 | 0.9+ | 0.4− | 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 19 | 704 | 1.1− | 0.3+ |
| 2003 02 04 | 644 | 0.4− | 0.1+ | 2006 10 30 | 703 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.7+ | 0.7− |
| 2003 02 04 | 644 | 0.2− | 0.4+ | 2006 10 30 | 703 | 0.9− | 0.8− | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2003 02 04 | 644 | 0.4− | 0.2+ | 2006 10 30 | 703 | 0.2+ | 0.4+ | 2006 11 19 | 703 | 0.2+ | 0.7− |
| 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 10 30 | 703 | 0.0 | 0.4− | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2006 09 30 | 703 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.8+ | 0.4− |
| 2006 09 30 | 703 | 0.3+ | 1.0+ | 2006 11 13 | 703 | 0.7− | 0.4+ | 2006 11 19 | 703 | 0.2+ | 0.3− |
| 2006 09 30 | 703 | 0.2+ | 0.6− | 2006 11 13 | 703 | 1.3+ | 0.7+ | 2006 11 25 | 704 | 1.2− | 0.5+ |
| 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.1+ | 2006 11 25 | 704 | 1.0− | 0.1− |
| 2006 10 03 | G96 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.2− | 2006 11 25 | 704 | 0.2− | 0.8+ |
| 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.1− | | | | |

**2006 SE$_{363}$ = 2002 XE$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.87599 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24148363 | $\omega$ | 226.54006 | | +0.88315136 | | −0.46809608 |
| $a$ | 2.5539413 | $\Omega$ | 161.30590 | | +0.45315878 | | +0.83456153 |
| $e$ | 0.3285081 | $i$ | 5.45893 | | +0.12120556 | | +0.29050492 |
| $P$ | 4.08 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 704 | 0.4− | 1.2− | 2006 10 03 | 704 | 0.0 | 0.5− | 2006 10 30 | 703 | 0.1− | 0.1+ |
| 2002 12 13 | 704 | 0.9+ | 0.3− | 2006 10 03 | 704 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.7+ | 0.3+ |
| 2002 12 13 | 704 | 0.6+ | 0.3− | 2006 10 03 | 704 | 0.5+ | 0.3− | 2006 11 15 | 703 | 0.7+ | 0.6− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 13 | 704 | 0.0 | 0.5− | 2006 10 09 | 644 | 0.1+ | 0.5− | 2006 11 15 | 703 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 0.3− | 0.0 | 2006 10 09 | 644 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.3− | 0.1+ | 2006 10 09 | 644 | 0.4− | 0.5− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 12 14 | 704 | 0.1− | 0.5+ | 2006 10 16 | 683 | 0.6− | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2002 12 14 | 704 | 0.3− | 0.2+ | 2006 10 16 | 683 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.4− | 1.1− |
| 2002 12 14 | 704 | 0.1− | 0.9+ | 2006 10 16 | 683 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2006 09 16 | 703 | (0.1− | 4.3−) | 2006 10 17 | 683 | 0.0 | 0.1− | 2006 11 25 | 704 | 0.0 | 0.8− |
| 2006 09 16 | 703 | 0.7+ | 0.9− | 2006 10 17 | 683 | 0.7+ | 0.6− | 2006 11 25 | 704 | 0.1− | 0.6+ |
| 2006 09 16 | 703 | 1.3− | 0.9− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 25 | 704 | 0.6− | 0.8+ |
| 2006 09 16 | 703 | (1.2− | 2.7−) | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 25 | 704 | 0.9− | 0.4− |
| 2006 09 30 | 703 | 0.4− | 1.2+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 25 | G96 | 0.7+ | 0.4− |
| 2006 09 30 | 703 | 0.2+ | 0.4+ | 2006 10 30 | 703 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.6+ | 0.3− |
| 2006 09 30 | 703 | 0.3+ | 0.4+ | 2006 10 30 | 703 | 0.3− | 0.6+ | 2006 11 25 | G96 | 1.1− | 0.2+ |
| 2006 10 03 | 704 | 0.4+ | 0.9+ | 2006 10 30 | 703 | 0.7+ | 1.2+ | 2006 11 25 | G96 | 0.1− | 0.5+ |

### 2006 $SP_{363}$ = 1999 $FH_{85}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.39695 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21634456 | $\omega$ | 180.14250 | | +0.93702762 | | −0.34441338 |
| $a$ | 2.7481392 | $\Omega$ | 200.30126 | | +0.32060046 | | +0.91404851 |
| $e$ | 0.1157329 | $i$ | 9.61550 | | +0.13854451 | | +0.21423061 |
| $P$ | 4.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.7+ | 0.9+ |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.5− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.7− | 0.1− |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1+ | | | | |

### 2006 $SR_{363}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.79514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21639458 | $\omega$ | 301.82615 | | +0.99158940 | | +0.07761781 |
| $a$ | 2.7477157 | $\Omega$ | 53.92410 | | −0.02089796 | | +0.88573183 |
| $e$ | 0.0293883 | $i$ | 7.36202 | | −0.12772527 | | +0.45766210 |
| $P$ | 4.55 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.3+ | 0.2+ |
| 2004 03 18 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2004 04 26 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2004 04 26 | 691 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2004 04 26 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.3− | 0.1− |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.5+ | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.0 |
| 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.5+ | 0.1− |
| 2006 09 30 | G96 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.0 | 1.1− |

### 2006 $SG_{364}$ = 2002 $UR_{17}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.26405 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25811203 | $\omega$ | 31.30926 | | +0.50651566 | | −0.86036252 |
| $a$ | 2.4430399 | $\Omega$ | 28.37599 | | +0.76435757 | | +0.41760119 |
| $e$ | 0.1132288 | $i$ | 6.85553 | | +0.39899798 | | +0.29220812 |
| $P$ | 3.82 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 29 | 291 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 17 | 644 | 0.1+ | 0.4+ |
| 2002 10 29 | 291 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 11 19 | 704 | (0.7+ | 1.9−) |
| 2002 10 29 | 291 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.3+ | 1.3− |
| 2002 10 31 | 644 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 1.1− |
| 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2002 10 31 | 644 | 0.3+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2002 10 31 | 608 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.8− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2002 10 31 | 608 | 0.2+ | 0.1− | 2006 11 16 | 704 | 1.0− | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 608 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2004 03 30 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2004 03 30 | 691 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.9− | 0.9+ |
| 2004 03 30 | 691 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | 1.0+ | 0.8+ |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | (1.7− | 0.9−) |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 17 | 644 | 0.7+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 17 | 644 | 0.2+ | 0.2+ | | | | |

### 2006 $SO_{364}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.06225 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22240085 | $\omega$ | 325.76280 | | +0.99605952 | | +0.07207949 |
| $a$ | 2.6980195 | $\Omega$ | 30.23002 | | −0.03879148 | | +0.87802849 |
| $e$ | 0.0886214 | $i$ | 5.89069 | | −0.07975371 | | +0.47314956 |
| $P$ | 4.43 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.5+ |
| 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.6+ |
| 2004 04 13 | 691 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2005 07 16 | E12 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.1+ | 0.6− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2005 07 16 | E12 | 0.3− | 0.7+ | 2006 10 20 | G96 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2005 07 16 | E12 | 0.6− | 0.8+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2005 07 16 | E12 | 0.7+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.2+ |
| 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2006 09 28 | G96 | 0.5+ | 0.2+ | 2006 11 13 | 691 | 0.5− | 0.3+ | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | (0.9− | 1.5−) |
| 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 13 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.3− | 1.3− |
| 2006 10 04 | G96 | 0.5+ | 0.1− | 2006 11 16 | 704 | 0.6+ | 0.8+ | 2006 11 22 | 704 | 1.3− | 0.6− |
| 2006 10 04 | G96 | 0.5+ | 0.0 | 2006 11 16 | 704 | 1.0− | 0.7+ | 2006 11 22 | 704 | 0.9− | 1.1− |
| 2006 10 04 | G96 | 0.4+ | 0.0 | 2006 11 16 | 704 | 0.2− | 0.8+ | | | | |

### 2006 $SQ_{364}$ = 2002 $XV_{85}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.43206 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23804267 | $\omega$ | 123.71742 | | −0.88506872 | | −0.46332864 |
| $a$ | 2.5784943 | $\Omega$ | 28.75446 | | +0.39057298 | | −0.79127050 |
| $e$ | 0.2131414 | $i$ | 5.30730 | | +0.25319185 | | −0.39902075 |
| $P$ | 4.14 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.2− | 0.1− |
| 2002 12 11 | 704 | 0.3+ | 0.4− | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.5− |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 12 11 | 704 | 0.1+ | 0.7− | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.2− |
| 2002 12 11 | 704 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 12 15 | 704 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.6+ |
| 2002 12 15 | 704 | 0.6− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2002 12 15 | 704 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.4− |
| 2002 12 15 | 704 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.7− |
| 2002 12 15 | 704 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7− | 0.2+ |
| 2005 08 27 | 644 | 0.1+ | 0.4+ | 2006 11 16 | 704 | 0.7+ | 0.4+ | 2006 11 23 | 644 | 0.1− | 0.0 |
| 2005 08 27 | 644 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.5+ | 2006 11 23 | 644 | 0.0 | 0.2+ |
| 2005 08 27 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.8+ | 2006 11 23 | 644 | 0.0 | 0.2− |
| 2005 11 06 | G96 | 0.2− | 0.5− | 2006 11 16 | 704 | 0.4+ | 0.5+ | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 2005 11 06 | G96 | 0.7+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.5+ | 2006 11 25 | 691 | 0.1+ | 0.3+ |
| 2005 11 06 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.9+ | 0.4− | 2006 11 25 | 691 | 0.5− | 0.1+ |
| 2005 11 06 | G96 | 0.4− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.7+ | 2006 11 27 | 704 | 0.0 | 0.1− |
| 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.6− | 0.3− | 2006 11 27 | 704 | 0.2− | 0.1− |
| 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.1− | 2006 11 27 | 704 | 0.5− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.0 | 0.5− | | |
| 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.4− | | | | | | |

**2006 SS$_{364}$ = 2004 DR$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.22151 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28303109 | $\omega$ | 18.25028 | | +0.90600679 | −0.42322620 | |
| $a$ | 2.2974529 | $\Omega$ | 6.79610 | | +0.38221061 | +0.81238372 | |
| $e$ | 0.1156926 | $i$ | 2.70924 | | +0.18184264 | +0.40113873 | |
| $P$ | 3.48 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 25 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.4+ | | |
| 1992 11 25 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.7+ | | |
| 1992 11 25 | 691 | 0.1+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.6− | 2006 11 19 | 704 | 0.8− | 0.4+ | | |
| 2002 08 18 | 644 | 0.7− | 0.7+ | 2006 10 04 | G96 | 0.6+ | 0.8− | 2006 11 22 | 691 | 0.2+ | 0.1+ | | |
| 2002 08 18 | 644 | 0.4− | 0.3+ | 2006 10 04 | G96 | 0.5+ | 0.9− | 2006 11 22 | 691 | 0.0 | 0.2− | | |
| 2002 08 18 | 644 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 11 22 | 691 | 0.7− | 0.0 | | |
| 2002 08 29 | 644 | 0.2− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.9+ | 0.0 | | |
| 2002 08 29 | 644 | 0.1− | 0.6+ | 2006 11 10 | 691 | 0.3− | 0.0 | 2006 11 22 | 704 | 1.1− | 0.4− | | |
| 2002 08 29 | 644 | 0.2− | 0.7+ | 2006 11 10 | 691 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.4+ | 0.3+ | | |
| 2004 02 20 | 947 | 0.2− | 1.3+ | 2006 11 18 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.6+ | | |
| 2004 02 20 | 947 | 0.6+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.0 | 2006 11 27 | 704 | 1.5+ | 0.7+ | | |
| 2004 02 20 | 947 | (2.2+ | 0.1+) | 2006 11 18 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 704 | 0.0 | 0.1+ | | |
| 2004 02 23 | 947 | 0.7+ | 0.5+ | 2006 11 18 | 704 | 0.4− | 0.2− | 2006 11 27 | 704 | 1.4+ | 0.2+ | | |
| 2004 02 23 | 947 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.9+ | 0.4+ | 2006 11 27 | 704 | 0.6+ | 0.3+ | | |
| 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1+ | | | | | | |
| 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.5− | 0.3− | | | | | | |

**2006 SE$_{365}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.51709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27167363 | $\omega$ | 163.08734 | | +0.77917726 | −0.62181901 | |
| $a$ | 2.3610457 | $\Omega$ | 235.62675 | | +0.56345422 | +0.74999695 | |
| $e$ | 0.0938188 | $i$ | 5.48486 | | +0.27459450 | +0.22548989 | |
| $P$ | 3.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 691 | 0.2− | 0.3+ | 2005 06 14 | 291 | 0.0 | 0.6+ | 2006 10 17 | 703 | 0.1+ | 0.2+ | | |
| 2000 01 04 | 691 | 0.3− | 0.0 | 2005 06 14 | 291 | 0.1+ | 0.5+ | 2006 10 17 | 703 | 1.0− | 0.1+ | | |
| 2000 01 04 | 691 | 0.1+ | 0.1+ | 2006 09 24 | 152 | (0.1+ | 2.2−) | 2006 10 17 | 703 | 0.6− | 0.0 | | |
| 2002 08 05 | 644 | 0.1− | 0.2+ | 2006 09 24 | 152 | 1.0+ | 0.4+ | 2006 10 17 | 703 | (2.3− | 0.9+) | | |
| 2002 08 05 | 644 | 0.0 | 0.3+ | 2006 09 25 | 152 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.4+ | 0.2+ | | |
| 2002 08 05 | 644 | 0.4+ | 0.0 | 2006 09 25 | 152 | 1.3+ | 1.1+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | | |
| 2002 08 16 | 644 | 0.4+ | 0.5+ | 2006 09 25 | 152 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | |
| 2002 08 16 | 644 | 0.5+ | 0.2+ | 2006 09 26 | 152 | 0.3− | 0.6+ | 2006 10 21 | 644 | 0.4− | 0.3+ | | |
| 2002 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 1.4− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | | |
| 2002 08 26 | 644 | 0.6+ | 0.6− | 2006 09 30 | 703 | 0.7− | 0.7+ | 2006 10 21 | 644 | 0.4+ | 0.0 | | |
| 2002 08 26 | 644 | 0.3+ | 1.0− | 2006 09 30 | 703 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.0 | | |
| 2002 08 26 | 644 | 0.5− | 1.1− | 2006 09 30 | 703 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.3− | | |
| 2004 01 16 | 644 | 0.3+ | 0.4+ | 2006 10 04 | G96 | 0.5− | 0.4− | 2006 11 17 | G96 | 0.0 | 0.1− | | |
| 2004 01 16 | 644 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.6− | 2006 11 17 | G96 | 0.1+ | 0.4− | | |
| 2004 01 16 | 644 | 0.9+ | 0.4+ | 2006 10 04 | G96 | 0.5− | 0.1− | | | | | | |
| 2005 06 14 | 291 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.3− | | | | | | |

**2006 SV$_{365}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.17558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24450074 | $\omega$ | 353.70662 | | +0.60828825 | −0.79299885 | |
| $a$ | 2.5328877 | $\Omega$ | 58.82228 | | +0.72992902 | +0.54220218 | |
| $e$ | 0.1033385 | $i$ | 2.25994 | | +0.31175154 | +0.27779421 | |
| $P$ | 4.03 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 18 | 691 | 0.2+ | 0.6− | 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 1998 11 18 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.9− | 0.0 | | |
| 1998 11 18 | 691 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 | | |
| 2000 04 27 | 691 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ | | |
| 2000 04 27 | 691 | 0.2− | 0.2+ | 2006 10 04 | G96 | 0.7+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.0 | | |
| 2000 04 27 | 691 | 0.3− | 0.4− | 2006 10 04 | G96 | 0.7+ | 0.5− | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2002 10 04 | 599 | 0.8+ | 0.3− | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.9− | | |
| 2002 10 04 | 599 | 0.1+ | 0.5− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.5+ | | |
| 2002 10 04 | 599 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.5+ | | |
| 2004 03 16 | 599 | 0.1− | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 1.1+ | | |
| 2004 03 16 | 599 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | (2.3+ | 0.7−) | | |
| 2004 03 16 | 599 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.2− | | |
| 2004 03 16 | 599 | 0.6+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.4+ | | |
| 2004 03 17 | 926 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.4− | 0.7+ | | |
| 2004 03 17 | 926 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.2− | | |
| 2004 03 17 | 926 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.5− | | |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.4− | | |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.4− | | |

**2006 SY$_{365}$ = 2004 JO$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.29822 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18962680 | $\omega$ | 349.34806 | | −0.95171242 | +0.29888499 | |
| $a$ | 3.0005641 | $\Omega$ | 208.34967 | | −0.26969325 | −0.92306511 | |
| $e$ | 0.0366409 | $i$ | 8.48690 | | −0.14665951 | −0.24211269 | |
| $P$ | 5.20 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 704 | 0.2+ | 0.3+ | 2005 07 30 | 644 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.2+ | | |
| 2004 05 15 | 704 | 0.2+ | 0.8+ | 2005 07 30 | 644 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.5− | 0.2− | | |
| 2004 05 15 | 704 | 0.7+ | 0.8+ | 2005 07 30 | 644 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1+ | | |
| 2004 05 15 | 599 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.5+ | 0.5− | 2006 10 27 | 691 | 0.0 | 0.7+ | | |
| 2004 05 15 | 599 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1− | | |
| 2004 05 15 | 599 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 10 27 | 691 | 0.3− | 0.2− | | |
| 2004 05 18 | 704 | (0.3− | 1.6+) | 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.2− | | |
| 2004 05 18 | 704 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.5− | 0.6− | 2006 10 31 | 691 | 0.3+ | 0.2+ | | |
| 2004 05 18 | 704 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.2+ | | |
| 2004 05 18 | 704 | 0.6− | 0.1− | 2006 10 04 | G96 | 0.2− | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2004 05 18 | 704 | 0.6− | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.7− | 2006 11 15 | G96 | 0.5− | 0.7+ | | |
| 2004 06 16 | 691 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.2+ | | |
| 2004 06 16 | 691 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.1+ | | |
| 2004 06 16 | 691 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2+ | | | | | | |

**2006 SA$_{366}$ = 2004 ET$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.35687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22503850 | $\omega$ | 248.61015 | | +0.43703265 | +0.89852103 | |
| $a$ | 2.6768960 | $\Omega$ | 47.37163 | | −0.80334146 | +0.41032306 | |
| $e$ | 0.0539849 | $i$ | 3.17671 | | −0.40453055 | +0.15586834 | |
| $P$ | 4.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 10 12 | 291 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.4− | | |
| 2004 03 15 | 691 | 0.3− | 0.1− | 2006 10 12 | 291 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.4− | | |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 10 12 | 291 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.3− | | |
| 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 10 15 | 691 | 0.6+ | 0.7+ | 2006 10 27 | 691 | 0.4− | 0.1− | | |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.3+ | | |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | | |
| 2006 09 30 | G96 | 0.4− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2006 09 30 | G96 | 0.1− | 0.8− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 2006 09 30 | G96 | 0.1− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.1+ | | |
| 2006 09 30 | G96 | 0.0 | 0.9− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.2− | | |
| 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2006 10 04 | G96 | 0.4− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.0 | | |
| 2006 10 04 | G96 | 0.2+ | 0.7− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 04 | G96 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.2+ | 0.5− | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2006 10 11 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2006 10 11 | 691 | 0.0 | 0.9+ | 2006 10 23 | 691 | 0.0 | 0.2− | | | | |
| 2006 10 11 | 691 | 0.4− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.4− | | | | |

**2006 SE$_{366}$ = 2004 HL$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.56246 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17751949 | $\omega$ | 305.47466 | | +0.90488936 | | +0.40959156 |
| $a$ | 3.1354896 | $\Omega$ | 30.82839 | | −0.27894005 | | +0.77613332 |
| $e$ | 0.1645608 | $i$ | 13.05982 | | −0.32150848 | | +0.47942865 |
| $P$ | 5.55 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 30 | 291 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2004 04 30 | 291 | 0.8+ | 0.5+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2004 04 30 | 291 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.4+ | 0.1− |
| 2004 05 13 | 691 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2004 05 13 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2004 05 13 | 691 | 0.1+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.4+ |
| 2005 08 06 | E12 | (0.8+ | 2.4+) | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2005 08 06 | E12 | 0.3− | 2.1+ | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 1.4− | 1.1− |
| 2005 08 06 | E12 | (1.0+ | 4.0+) | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2005 08 06 | E12 | (2.8− | 0.7+) | 2006 10 27 | 703 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.6− | 0.4+ |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.0 | 0.9+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 10 27 | 703 | 1.1− | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.6− |
| 2006 10 04 | G96 | 0.4− | 0.6− | 2006 10 27 | 691 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.8− | 0.1+ |
| 2006 10 04 | G96 | 0.3− | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | (2.4+ | 0.8+) |
| 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2006 10 19 | G96 | 0.8+ | 0.5− | 2006 10 31 | 691 | 0.6+ | 0.2+ | | | | |

**2006 SJ$_{366}$ = 2002 XC$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.31875 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24234494 | $\omega$ | 287.77167 | | +0.78069839 | | +0.60230696 |
| $a$ | 2.5478865 | $\Omega$ | 35.72259 | | −0.40829604 | | +0.69339266 |
| $e$ | 0.1757118 | $i$ | 16.57337 | | −0.47307966 | | +0.39551604 |
| $P$ | 4.07 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.7+ | 0.3− | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 27 | 703 | (1.6− | 1.6−) |
| 2002 12 03 | 644 | 0.6+ | 0.1− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.8− | 0.7− |
| 2002 12 03 | 644 | 0.6+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.5+ | 0.9− |
| 2002 12 06 | 704 | 0.2− | 0.3− | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2002 12 06 | 704 | 0.8− | 0.5+ | 2006 10 19 | A50 | 0.3+ | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.4− |
| 2002 12 06 | 704 | 0.9− | 0.3+ | 2006 10 19 | A50 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.4+ | 0.1− |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.6+ | 2006 11 22 | 703 | 0.0 | 0.0 |
| 2006 09 30 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.1− | 0.0 |
| 2006 09 30 | G96 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.0 |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.6+ | 1.1− | 2006 11 22 | 703 | 0.4− | 0.2− |

**2006 SS$_{366}$ = 2005 JV$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.96335 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17493316 | $\omega$ | 107.97585 | | +0.72130626 | | +0.68060999 |
| $a$ | 3.1663186 | $\Omega$ | 209.54207 | | −0.69196546 | | +0.70010198 |
| $e$ | 0.1923737 | $i$ | 15.09493 | | −0.03001787 | | +0.21593344 |
| $P$ | 5.63 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 691 | 0.0 | 0.2+ | 2006 09 16 | 703 | 1.4+ | 0.6+ | 2006 09 27 | 699 | 0.4− | 0.7− |
| 2005 05 04 | 691 | 0.3+ | 0.1− | 2006 09 16 | 703 | 0.4+ | 0.6+ | 2006 09 27 | 699 | 0.0 | 0.1− |
| 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 09 16 | 703 | 0.1− | 0.0 | 2006 10 03 | 703 | 0.7+ | 0.7+ |
| 2005 05 13 | 691 | 0.4− | 0.4− | 2006 09 16 | 703 | 1.0− | 1.6− | 2006 10 03 | 703 | 0.8+ | 0.4− |
| 2005 05 13 | 691 | 0.1− | 0.2+ | 2006 09 27 | 699 | 0.1+ | 0.1+ | 2006 10 03 | 703 | 0.8− | 0.9+ |
| 2005 05 13 | 691 | 0.1+ | 0.0 | 2006 09 27 | 699 | 1.5− | 0.2+ | 2006 10 03 | 703 | 0.5+ | 0.3− |

**2006 ST$_{366}$ = 1998 QL$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 110.33351 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25476054 | $\omega$ | 331.16051 | | −0.41562163 | | +0.90387452 |
| $a$ | 2.4644193 | $\Omega$ | 274.12408 | | −0.81377776 | | −0.41931107 |
| $e$ | 0.0752885 | $i$ | 5.83141 | | −0.40623197 | | −0.08478844 |
| $P$ | 3.87 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 327 | 0.2− | 0.0 | 2002 10 31 | 645 | 0.0 | 0.0 | 2006 09 27 | 699 | (1.6+ | 1.2−) |
| 1998 08 26 | 327 | 0.6− | 0.7− | 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 27 | 699 | 0.4+ | 0.3+ |
| 1998 08 26 | 327 | 0.1− | 0.4− | 2006 09 16 | 703 | 0.2− | 0.3− | 2006 09 27 | 703 | 1.2− | 0.6− |
| 1998 08 31 | 327 | 0.9+ | 0.2− | 2006 09 16 | 703 | (1.7− | 0.5−) | 2006 09 27 | 703 | 0.1+ | 0.8+ |
| 1998 08 31 | 327 | 0.5+ | 0.4− | 2006 09 16 | 703 | 0.8− | 0.5+ | 2006 09 27 | 703 | 0.3− | 0.1+ |
| 1998 08 31 | 327 | 0.5+ | 0.6− | 2006 09 16 | 703 | 0.7+ | 0.9− | 2006 09 27 | 703 | 0.2− | 1.1+ |
| 2002 08 28 | 644 | 0.2− | 0.6+ | 2006 09 16 | 703 | 1.0+ | 0.8− | 2006 10 03 | 703 | 0.1− | 0.0 |
| 2002 08 28 | 644 | 0.3− | 0.7+ | 2006 09 16 | 703 | 1.2+ | 0.3− | 2006 10 03 | 703 | 0.3− | 1.0− |
| 2002 08 28 | 644 | 0.5− | 0.7+ | 2006 09 16 | 703 | 0.2− | 0.7+ | 2006 10 03 | 703 | (0.5+ | 2.0+) |
| 2002 09 13 | 644 | 0.4− | 1.0+ | 2006 09 16 | 703 | 0.2− | 0.5− | 2006 10 03 | 703 | 1.4+ | 0.3− |
| 2002 09 13 | 644 | 0.4− | 1.1+ | 2006 09 27 | 699 | 0.0 | 0.4+ | | | | |
| 2002 09 13 | 644 | 0.2− | 0.9+ | 2006 09 27 | 699 | 0.9− | 0.5− | | | | |

**2006 SW$_{366}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.84275 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18231448 | $\omega$ | 266.50881 | | −0.68090088 | | +0.72464482 |
| $a$ | 3.0802687 | $\Omega$ | 319.88596 | | −0.58938969 | | −0.62820061 |
| $e$ | 0.1273145 | $i$ | 9.48101 | | −0.43473415 | | −0.28329114 |
| $P$ | 5.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 25 | 807 | 0.2− | 0.7+ | 2006 09 17 | 703 | 0.7+ | 0.3+ | 2006 10 03 | 703 | 0.1+ | 0.8+ |
| 2000 08 25 | 807 | 0.1− | 0.1− | 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 10 03 | 703 | 0.9− | 0.0 |
| 2004 02 14 | 644 | 0.3− | 0.4+ | 2006 09 17 | 703 | 1.2− | 0.4+ | 2006 10 03 | 703 | 0.5− | 0.4− |
| 2004 02 14 | 644 | 0.6+ | 0.6+ | 2006 09 17 | 703 | 0.5− | 0.9− | 2006 10 17 | 703 | 0.1+ | 0.5+ |
| 2004 02 14 | 644 | 0.5+ | 0.3+ | 2006 09 27 | 703 | 0.6+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 1.0− |
| 2004 04 12 | 703 | (2.5+ | 0.4+) | 2006 09 27 | 703 | 0.7+ | 1.0+ | 2006 10 17 | 703 | (1.8+ | 2.4−) |
| 2004 04 12 | 703 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2004 04 12 | 703 | 0.7+ | 0.4− | 2006 09 27 | 703 | 0.6+ | 1.7− | | | | |
| 2004 04 12 | 703 | 0.6− | 0.2− | 2006 10 03 | 703 | 0.9− | 0.3+ | | | | |

**2006 SX$_{366}$ = 2003 AZ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.92477 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20516245 | $\omega$ | 240.15446 | | +0.95771472 | | +0.12941401 |
| $a$ | 2.8471092 | $\Omega$ | 111.36881 | | −0.05129665 | | +0.95562506 |
| $e$ | 0.1614910 | $i$ | 16.01814 | | −0.28310981 | | +0.26463703 |
| $P$ | 4.80 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 704 | 0.5+ | 0.1+ | 2005 07 12 | G96 | 0.5+ | 0.4+ | 2006 10 04 | 703 | 0.7+ | 0.1+ |
| 2001 09 11 | 704 | (1.9+ | 1.2−) | 2005 07 12 | G96 | 0.4+ | 0.5+ | 2006 10 21 | 703 | 0.3− | 0.7− |
| 2001 09 11 | 704 | 1.0+ | 0.5− | 2005 07 12 | G96 | 0.9− | 0.1+ | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 2001 10 15 | 704 | 0.2+ | 0.8+ | 2005 07 12 | G96 | 0.6+ | 0.9+ | 2006 10 21 | 703 | 0.5+ | 0.7+ |
| 2001 10 15 | 704 | 0.9− | 0.1− | 2006 09 19 | 703 | 0.6− | 0.4− | 2006 10 21 | 703 | 1.0− | 0.8− |
| 2001 10 15 | 704 | 1.1− | 0.7+ | 2006 09 19 | 703 | 0.0 | 0.8− | 2006 10 31 | 703 | (1.1+ | 1.6−) |
| 2002 11 05 | 291 | 0.2+ | 0.1+ | 2006 09 19 | 703 | 0.1+ | 0.7+ | 2006 10 31 | 703 | 0.1+ | 0.3− |
| 2002 11 05 | 291 | 0.2+ | 0.0 | 2006 09 19 | 703 | 0.9− | 0.5− | 2006 10 31 | 703 | 0.1+ | 0.3− |
| 2002 11 05 | 291 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.4+ | 1.0+ | 2006 10 31 | 703 | 0.1+ | 0.0 |
| 2003 01 03 | 291 | 0.1− | 0.1− | 2006 09 26 | 703 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.3+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 03 | 291 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.3+ | 0.2+ | 2006 11 23 | 703 | 0.7− | 0.1+ |
| 2003 01 03 | 291 | (1.8+ | 1.9−) | 2006 09 26 | 703 | 0.4+ | 0.2+ | 2006 11 23 | 703 | 0.3− | 0.1+ |
| 2003 01 08 | 704 | 0.5+ | 0.3− | 2006 10 04 | 703 | 0.6+ | 0.4+ | 2006 11 23 | 703 | 0.2+ | 0.2− |
| 2003 01 08 | 704 | 0.1− | 1.3+ | 2006 10 04 | 703 | 0.7+ | 0.0 | | | | |
| 2003 01 08 | 704 | 0.5− | 1.2+ | 2006 10 04 | 703 | 0.6− | 1.2+ | | | | |

**2006 SZ$_{366}$ = 1999 RN$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.78173 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28591629 | $\omega$ | 358.97200 | | +0.37823956 | +0.91940621 | |
| $a$ | 2.2819710 | $\Omega$ | 293.24563 | | −0.84848054 | +0.29774785 | |
| $e$ | 0.1336067 | $i$ | 6.73951 | | −0.37015619 | +0.25697946 | |
| $P$ | 3.45 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 704 | 0.1− | 0.3− | 2005 04 05 | 599 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.2− |
| 1999 09 08 | 704 | 0.1− | 0.2+ | 2005 04 15 | 703 | 0.6− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.3− |
| 1999 09 08 | 704 | 0.2+ | 0.2− | 2005 04 15 | 703 | 0.9− | 0.9− | 2006 10 17 | 703 | 0.0 | 0.4− |
| 1999 09 08 | 704 | 0.1− | 0.0 | 2005 04 15 | 703 | (1.8− | 0.6+) | 2006 10 17 | 703 | 0.5+ | 1.2+ |
| 1999 09 08 | 704 | 0.3− | 0.4− | 2005 04 15 | 703 | 0.1+ | 0.8+ | 2006 10 17 | 703 | (0.2− | 1.5−) |
| 1999 09 09 | 704 | 1.0+ | 0.1+ | 2006 09 20 | 699 | 0.1− | 0.9+ | 2006 10 17 | 703 | 0.8− | 0.6+ |
| 1999 09 09 | 704 | 0.1− | 0.1+ | 2006 09 20 | 699 | 1.4− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 1999 09 09 | 704 | 0.2− | 0.3− | 2006 09 20 | 699 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.4− |
| 1999 10 04 | 704 | 0.8− | 0.2+ | 2006 09 20 | 699 | 0.0 | 0.3− | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 1999 10 04 | 704 | 0.3+ | 0.6+ | 2006 09 28 | 703 | 0.8+ | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.4− |
| 1999 10 04 | 704 | 0.7+ | 0.9− | 2006 09 28 | 703 | 0.9+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2005 03 17 | 704 | 0.3+ | 0.2− | 2006 09 28 | 703 | 0.1− | 1.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2005 03 17 | 704 | 0.8+ | 0.8− | 2006 10 04 | 703 | 0.6+ | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.5− |
| 2005 03 17 | 704 | (0.4− | 1.6−) | 2006 10 04 | 703 | 0.9− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.2− |
| 2005 04 05 | 599 | 0.6+ | 0.2+ | 2006 10 04 | 703 | 0.9− | 0.6− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2005 04 05 | 599 | 0.1+ | 0.5− | 2006 10 04 | 703 | 0.4− | 0.6+ | | | | |
| 2005 04 05 | 599 | 0.5− | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.3− | | | | |

**2006 SB$_{367}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.01789 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23326776 | $\omega$ | 261.09549 | | +0.96724618 | −0.14619025 | |
| $a$ | 2.6135626 | $\Omega$ | 107.10637 | | +0.20985389 | +0.92046964 | |
| $e$ | 0.2095930 | $i$ | 12.54006 | | −0.14281514 | +0.36244178 | |
| $P$ | 4.23 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.8− | 0.8+ | 2006 10 31 | 703 | 0.3− | 0.6− |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 04 | 703 | 0.6− | 0.6+ | 2006 10 31 | 703 | 0.3+ | 0.2− |
| 2005 05 02 | 691 | 0.2+ | 0.0 | 2006 10 04 | 703 | 0.4+ | 0.9+ | 2006 10 31 | 703 | 0.0 | 0.3− |
| 2005 05 02 | 691 | 0.2+ | 0.2+ | 2006 10 04 | 703 | 0.6+ | 0.1+ | 2006 11 18 | 703 | 0.8− | 0.2− |
| 2005 05 02 | 691 | 0.0 | 0.1+ | 2006 10 09 | 644 | 0.1+ | 0.2− | 2006 11 18 | 703 | 0.7+ | 0.2+ |
| 2005 05 20 | G96 | 0.4− | 0.4− | 2006 10 09 | 644 | 0.2− | 0.4− | 2006 11 18 | 703 | 1.1+ | 0.6− |
| 2005 05 20 | G96 | 0.6− | 0.4− | 2006 10 09 | 644 | 0.6− | 0.2− | 2006 11 18 | 703 | 0.1− | 0.7+ |
| 2005 05 20 | G96 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.3+ | 2006 11 23 | 703 | 0.2+ | 0.6− |
| 2005 05 20 | G96 | 0.4− | 0.5− | 2006 10 21 | 703 | 0.2− | 0.6− | 2006 11 23 | 703 | 0.6− | 0.2+ |
| 2006 09 24 | 699 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.8+ | 0.4− | 2006 11 23 | 703 | 0.4− | 0.4+ |
| 2006 09 24 | 699 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.6− | 2006 11 23 | 703 | 1.2− | 0.2− |
| 2006 09 24 | 699 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.6+ | 0.1− | | | | |

**2006 SM$_{367}$ = 2002 PQ$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.39066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26386305 | $\omega$ | 264.37243 | | +0.92887375 | −0.31797940 | |
| $a$ | 2.4074115 | $\Omega$ | 114.05001 | | +0.36414756 | +0.87777508 | |
| $e$ | 0.2702285 | $i$ | 12.00587 | | −0.06775033 | +0.35832948 | |
| $P$ | 3.74 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 14 | 644 | 0.1− | 0.2− | 2002 08 30 | 644 | 0.3+ | 0.9− | 2006 11 01 | 703 | 0.2− | 0.1+ |
| 2002 07 14 | 644 | 0.2− | 0.2− | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.9− | 0.3+ |
| 2002 07 14 | 644 | 0.1− | 0.2+ | 2004 02 16 | 691 | 0.1− | 0.4+ | 2006 11 01 | 703 | 0.2+ | 0.2+ |
| 2002 07 14 | 644 | 0.1+ | 0.6+ | 2004 02 16 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 703 | 0.1+ | 0.8+ |
| 2002 07 14 | 644 | 0.0 | 0.5+ | 2006 09 25 | 703 | 0.4+ | 0.5− | 2006 11 06 | 644 | 0.0 | 0.1+ |
| 2002 07 14 | 644 | 0.0 | 0.3+ | 2006 09 25 | 703 | 0.2+ | 0.6− | 2006 11 06 | 644 | 0.5+ | 0.2+ |
| 2002 08 11 | 644 | 0.3− | 0.4+ | 2006 09 25 | 703 | 0.5+ | 0.3− | 2006 11 06 | 644 | 0.1− | 0.2− |
| 2002 08 11 | 644 | 0.1− | 0.3+ | 2006 10 04 | 703 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2002 08 11 | 644 | 0.3− | 0.3+ | 2006 10 04 | 703 | 0.4− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2002 08 11 | 644 | 0.2− | 0.2+ | 2006 10 04 | 703 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.5− |
| 2002 08 11 | 644 | 0.2− | 0.0 | 2006 10 04 | 703 | 0.0 | 0.2− | 2006 11 18 | 703 | 0.5− | 0.4+ |
| 2002 08 11 | 644 | 0.7+ | 1.3+ | 2006 10 09 | 644 | 0.4+ | 0.1− | 2006 11 18 | 703 | 0.0 | 0.2+ |
| 2002 08 30 | 644 | 0.3+ | 0.3− | 2006 10 09 | 644 | 0.1− | 0.2− | 2006 11 18 | 703 | 0.0 | 0.5+ |
| 2002 08 30 | 644 | 0.2− | 0.5− | 2006 10 09 | 644 | 0.5+ | 0.3+ | 2006 11 18 | 703 | 0.1+ | 0.2− |

**2006 SW$_{367}$ = 2006 OT$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.37993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27270695 | $\omega$ | 194.39829 | | +0.97100996 | −0.23899388 | |
| $a$ | 2.3550777 | $\Omega$ | 179.37003 | | +0.23878613 | +0.97069320 | |
| $e$ | 0.2494089 | $i$ | 24.99511 | | −0.01099292 | −0.02523165 | |
| $P$ | 3.61 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.0 | 0.0 | 2006 07 22 | G96 | 0.5+ | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 1995 09 19 | 691 | 0.0 | 0.5− | 2006 09 19 | 703 | 0.3+ | 1.5+ | 2006 10 10 | 644 | 0.1+ | 0.3− |
| 1995 09 19 | 691 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.4− | 0.7+ | 2006 11 20 | 703 | 0.4+ | 0.8− |
| 2006 07 21 | G96 | 0.0 | 0.1− | 2006 09 19 | 703 | 0.6− | 0.0 | 2006 11 20 | 703 | 0.2+ | 0.2− |
| 2006 07 21 | G96 | 0.7+ | 0.1+ | 2006 09 19 | 703 | 0.4+ | 0.6+ | 2006 11 20 | 703 | 0.3+ | 1.2− |
| 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.6+ | 2006 11 20 | 703 | 0.4− | 0.8− |
| 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.4+ | 0.6− | 2006 11 20 | E12 | 0.4+ | 0.2− |
| 2006 07 22 | G96 | 0.8− | 0.7+ | 2006 09 28 | 703 | 0.2+ | 0.4− | 2006 11 20 | E12 | 0.2− | 0.5+ |
| 2006 07 22 | G96 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.4+ | 0.3+ | 2006 11 20 | E12 | 0.9+ | 0.4+ |
| 2006 07 22 | G96 | 0.2− | 0.1− | 2006 10 03 | 703 | (0.7+ | 2.8+) | 2006 11 20 | E12 | 0.2+ | 0.1+ |
| 2006 07 22 | G96 | 0.8+ | 0.2− | 2006 10 03 | 703 | 0.0 | 0.9+ | 2006 11 25 | 703 | 0.0 | 0.7− |
| 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 10 03 | 703 | 0.3+ | 1.0+ | 2006 11 25 | 703 | 1.5− | 0.5+ |
| 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 10 03 | 703 | 0.4− | 0.6+ | 2006 11 25 | 703 | 0.6− | 0.1− |
| 2006 07 22 | G96 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 11 25 | 703 | 1.1− | 0.1− |

**2006 SC$_{369}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.76333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38859818 | $\omega$ | 69.80240 | | −0.05857846 | −0.98572788 | |
| $a$ | 1.8598113 | $\Omega$ | 25.19176 | | +0.72003565 | −0.15122607 | |
| $e$ | 0.0952586 | $i$ | 21.76431 | | +0.69146022 | +0.07396772 | |
| $P$ | 2.54 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.3− | 0.3− | 2005 05 03 | 691 | 1.0+ | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2000 04 05 | 691 | 0.1− | 0.1− | 2005 05 03 | 691 | 1.1+ | 0.7+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2000 04 05 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.5+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2005 04 04 | 703 | 0.7− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.4+ |
| 2005 04 04 | 703 | 0.3+ | 0.4+ | 2006 09 27 | G96 | 0.2− | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2005 04 04 | 703 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.3+ | 0.1− |
| 2005 04 04 | 703 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.9− | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.6− |
| 2005 05 03 | 691 | 1.4+ | 0.4+ | 2006 10 19 | 703 | 0.1+ | 0.3− | | | | |

**2006 $SF_{369}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.50424 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.00200167 | $\omega$ | 288.72858 | | +0.80610802 | | −0.36901588 |
| $a$ | 62.3554072 | $\Omega$ | 95.20083 | | +0.53812296 | | +0.78234649 |
| $e$ | 0.3749589 | $i$ | 27.67996 | | −0.24619818 | | +0.50175816 |
| $P$ | 492 | $H$ | 6.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 22 | 705 | 0.2+ | 0.1− | 2006 10 03 | 705 | 0.0 | 0.0 | 2006 10 29 | 705 | 0.1+ | 0.1− |
| 2005 09 26 | 705 | 0.1− | 0.0 | 2006 10 03 | 705 | 0.0 | 0.2+ | 2006 11 01 | 705 | 0.0 | 0.1+ |
| 2005 11 06 | 705 | 0.0 | 0.1+ | 2006 10 13 | 705 | 0.1− | 0.0 | 2006 11 01 | 705 | 0.1− | 0.0 |
| 2006 09 30 | 705 | 0.0 | 0.0 | 2006 10 13 | 705 | 0.1+ | 0.1+ | 2006 11 02 | 705 | 0.1+ | 0.1− |
| 2006 09 30 | 705 | 0.1+ | 0.0 | 2006 10 22 | 705 | 0.1+ | 0.0 | 2006 11 02 | 705 | 0.1− | 0.1− |
| 2006 10 01 | 705 | 0.1+ | 0.1− | 2006 10 22 | 705 | 0.1− | 0.1− | | | | |
| 2006 10 01 | 705 | 0.1− | 0.0 | 2006 10 29 | 705 | 0.0 | 0.0 | | | | |

**2006 TG**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.23054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21701839 | $\omega$ | 160.26575 | | +0.96810579 | | −0.24036847 |
| $a$ | 2.7424477 | $\Omega$ | 213.89247 | | +0.20946849 | | +0.93128251 |
| $e$ | 0.2286800 | $i$ | 7.28070 | | +0.13745593 | | +0.27374420 |
| $P$ | 4.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 29 | 704 | 0.6− | 1.1− | 2006 10 02 | H06 | 0.7+ | 0.5− | 2006 10 21 | 703 | 0.0 | 0.3− |
| 1997 10 29 | 704 | 0.8− | 1.0− | 2006 10 02 | H06 | 0.6+ | 0.6− | 2006 10 21 | 703 | 0.8− | 0.1− |
| 1997 10 29 | 704 | 1.5− | 0.6+ | 2006 10 02 | H06 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.3− |
| 1997 10 29 | 704 | (0.3− | 2.2−) | 2006 10 03 | 704 | 1.2+ | 0.5+ | 2006 10 27 | 691 | 0.0 | 0.2− |
| 1997 10 29 | 704 | 0.1− | 0.6− | 2006 10 03 | 704 | (0.2+ | 2.5+) | 2006 10 27 | 691 | 0.1− | 0.3− |
| 1997 10 31 | 704 | 0.6+ | 0.5− | 2006 10 03 | 704 | 1.0− | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 1997 10 31 | 704 | 1.4+ | 0.6− | 2006 10 03 | 704 | 0.9+ | 1.0+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 1997 10 31 | 704 | 0.8+ | 0.5− | 2006 10 03 | H06 | 0.3+ | 1.1− | 2006 10 28 | G96 | 0.2− | 0.4− |
| 1997 10 31 | 704 | (2.5+ | 2.7+) | 2006 10 03 | H06 | 1.0+ | 0.3− | 2006 10 28 | G96 | 0.3− | 0.3− |
| 1997 10 31 | 704 | (3.6− | 0.9+) | 2006 10 03 | H06 | 0.1− | 0.5− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 1997 11 06 | 704 | 0.8+ | 1.3+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 1997 11 06 | 704 | (1.2− | 2.6+) | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 1997 11 06 | 704 | 0.7− | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.0 |
| 1997 11 06 | 704 | 0.0 | 1.2+ | 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.6+ |
| 1997 11 06 | 704 | 0.3+ | 0.7+ | 2006 10 15 | 691 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2005 06 16 | 691 | 0.3− | 0.4− | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.4− |
| 2005 06 16 | 691 | 0.1+ | 0.3− | 2006 10 17 | 703 | 0.9− | 0.2− | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 10 17 | 703 | 0.7− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.4− | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2005 06 27 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.3+ |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 2006 09 18 | 699 | 0.1+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2006 09 18 | 699 | 0.1+ | 0.7− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2006 09 18 | 699 | 0.4+ | 1.1+ | 2006 10 21 | 703 | 0.2+ | 0.1+ | | | | |
| 2006 09 18 | 699 | 0.4− | 0.7− | 2006 10 21 | 703 | 0.2− | 0.5+ | | | | |

**2006 TH = 2004 $EU_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.66384 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25659172 | $\omega$ | 257.83455 | | +0.35821201 | | −0.93348785 |
| $a$ | 2.4526804 | $\Omega$ | 171.11955 | | +0.89346582 | | +0.33749879 |
| $e$ | 0.1249959 | $i$ | 6.27388 | | +0.27092985 | | +0.12122298 |
| $P$ | 3.84 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 24 | 910 | 0.4− | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 1998 08 24 | 910 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.0 | 0.9− | 2006 10 21 | 703 | 0.3− | 0.4− |
| 1998 08 24 | 910 | 0.3− | 0.9+ | 2006 10 02 | H06 | 0.8+ | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.2+ |
| 1998 09 14 | 691 | 0.5+ | 0.2− | 2006 10 02 | H06 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.6− |
| 1998 09 14 | 691 | 0.4+ | 0.4− | 2006 10 02 | H06 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.1− |
| 1998 09 14 | 691 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 09 16 | 608 | 1.0− | 0.7− | 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2002 09 16 | 608 | 0.9− | 0.5− | 2006 10 02 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 09 16 | 608 | 1.4− | 0.5− | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.1+ | 0.2− |
| 2002 10 02 | 608 | 0.6− | 0.3+ | 2006 10 03 | H06 | 0.3+ | 0.3− | 2006 10 22 | G96 | 0.1+ | 0.1− |
| 2002 10 02 | 608 | 0.0 | 0.9− | 2006 10 03 | H06 | 0.6+ | 0.1− | 2006 10 22 | G96 | 0.7+ | 0.1− |
| 2002 10 02 | 608 | 0.2− | 0.3+ | 2006 10 03 | H06 | 1.0+ | 0.2− | 2006 10 22 | G96 | 0.5+ | 0.3− |
| 2004 03 15 | 703 | 0.0 | 0.6− | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 11 14 | 704 | 1.0− | 0.8+ |
| 2004 03 15 | 703 | 0.4− | 0.8+ | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.3− | 0.5+ |
| 2004 03 15 | 703 | 0.0 | 1.0+ | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.9− | 0.2+ |
| 2004 03 15 | 703 | 1.2− | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.5− | 0.4− |
| 2004 03 18 | 704 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.9− | 0.7+ |
| 2004 03 18 | 704 | 0.8+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 1.3+ | 0.1+ |
| 2004 03 18 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 703 | 0.6− | 0.2− | 2006 11 17 | 704 | 1.1+ | 0.2+ |
| 2004 03 18 | 704 | 0.1+ | 0.2− | 2006 10 15 | 703 | 1.0− | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.3+ |
| 2004 03 18 | 704 | 0.0 | 0.5− | 2006 10 15 | 703 | 0.8− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.5+ |
| 2004 03 29 | 691 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2004 03 29 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.6+ | 0.5− |
| 2004 03 29 | 691 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.8+ | 0.1− |
| 2006 09 30 | 703 | 0.8− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.7+ | 0.4− |
| 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.8+ | | | | |

**2006 TJ = 2003 $AE_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.13467 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21357107 | $\omega$ | 352.01739 | | +0.78273713 | | −0.61144860 |
| $a$ | 2.7718800 | $\Omega$ | 46.35096 | | +0.57948669 | | +0.64808509 |
| $e$ | 0.1832477 | $i$ | 9.22413 | | +0.22697524 | | +0.45400035 |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 327 | 0.5− | 0.1− | 2003 01 13 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.4− |
| 1997 11 02 | 327 | 0.6+ | 0.1+ | 2006 09 18 | 703 | 0.9− | 0.4− | 2006 10 16 | 703 | 0.5+ | 0.2+ |
| 1997 11 02 | 327 | 0.7+ | 0.3− | 2006 09 18 | 699 | (0.2− | 1.7+) | 2006 10 16 | 703 | 0.3− | 0.6− |
| 1997 11 29 | 704 | 0.7+ | 1.9+ | 2006 09 18 | 703 | 0.9− | 0.2+ | 2006 10 17 | 703 | 0.3+ | 0.0 |
| 1997 11 29 | 704 | 0.8− | 0.9− | 2006 09 18 | 703 | 0.8− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 0.3+ |
| 1997 11 29 | 704 | 0.3− | 1.0+ | 2006 09 18 | 703 | 0.9+ | 0.9− | 2006 10 17 | 703 | 0.5− | 0.0 |
| 1997 11 29 | 704 | 1.1− | 0.0 | 2006 09 18 | 699 | 0.4− | 0.9− | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2001 08 10 | 644 | 0.3− | 0.7+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | 2006 11 06 | 644 | 0.3+ | 0.6+ |
| 2001 08 10 | 644 | 0.2− | 0.0 | 2006 09 18 | 699 | 0.5+ | 0.1+ | 2006 11 06 | 644 | 0.2− | 0.0 |
| 2001 08 10 | 644 | 0.0 | 1.0+ | 2006 10 02 | H06 | 0.4− | 0.1+ | 2006 11 06 | 644 | 0.0 | 0.2− |
| 2003 01 10 | 704 | 0.0 | 0.4− | 2006 10 02 | H06 | 0.7+ | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2003 01 10 | 704 | 0.2+ | 0.5− | 2006 10 02 | H06 | 0.4− | 0.7− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2003 01 10 | 704 | 0.8+ | 0.1− | 2006 10 03 | H06 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2003 01 10 | 704 | 0.1+ | 0.0 | 2006 10 03 | H06 | 0.7+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2003 01 13 | 704 | 0.3− | 0.9+ | 2006 10 03 | H06 | 0.2+ | 0.1+ | | | | |
| 2003 01 13 | 704 | 0.9− | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.3+ | | | | |

**2006 TV = 1998 $XM_{62}$ = 2004 $EG_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.52485 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23481998 | $\omega$ | 79.01790 | | +0.71239513 | | −0.63154779 |
| $a$ | 2.6020323 | $\Omega$ | 319.08614 | | +0.30485004 | | +0.67124811 |
| $e$ | 0.1795419 | $i$ | 27.85538 | | +0.63210730 | | +0.38803784 |
| $P$ | 4.20 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 704 | 1.1− | 1.2+ | 2004 03 27 | 699 | 0.5− | 0.3+ | 2006 10 03 | 704 | 0.1+ | 0.0 |
| 1998 12 11 | 704 | 1.9− | 0.7− | 2004 03 27 | 699 | (0.5− | 1.8+) | 2006 10 03 | 704 | 0.0 | 0.7+ |
| 1998 12 11 | 704 | 0.9+ | 0.6− | 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 03 | 704 | 0.9+ | 0.3+ |
| 1998 12 11 | 704 | (5.2− | 0.1−) | 2006 09 17 | 703 | (0.1+ | 1.8−) | 2006 10 03 | 704 | 0.3− | 0.8+ |
| 1998 12 12 | 704 | 0.0 | 0.3− | 2006 09 17 | 703 | 0.8− | 0.0 | 2006 10 17 | 704 | (2.8+ | 0.9−) |
| 1998 12 12 | 704 | 0.9+ | 0.8+ | 2006 09 17 | 703 | 0.4+ | 0.1+ | 2006 10 17 | 704 | (2.7+ | 0.6−) |
| 1998 12 12 | 704 | 1.2+ | 0.6+ | 2006 09 17 | 703 | 0.0 | 0.1+ | 2006 10 17 | 704 | (4.0+ | 0.4−) |
| 1998 12 12 | 704 | 0.3− | 1.7− | 2006 09 17 | 703 | 0.6− | 0.4+ | 2006 11 15 | 704 | 0.4− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 644 | 0.3+ | 0.2+ | 2006 10 02 | 703 | (2.5− | 0.2+) | 2006 11 15 | 704 | 0.1− | 0.7+ |
| 2004 03 15 | 644 | 0.0 | 0.0 | 2006 10 02 | 703 | (3.4+ | 0.2−) | 2006 11 15 | 704 | 0.7+ | 0.7− |
| 2004 03 15 | 644 | 0.2+ | 0.0 | 2006 10 02 | 703 | 0.0 | 0.4− | 2006 11 15 | 704 | 0.9+ | 0.8− |
| 2004 03 17 | 704 | 0.4+ | 0.4− | 2006 10 02 | 704 | 1.3+ | 0.2− | 2006 11 21 | 703 | 1.1− | 0.1+ |
| 2004 03 17 | 704 | 0.7− | 0.1− | 2006 10 02 | 704 | 0.1− | 0.9− | 2006 11 21 | 703 | 1.0− | 0.6+ |
| 2004 03 17 | 704 | 0.3+ | 0.3− | 2006 10 02 | 704 | (0.4− | 1.5+) | 2006 11 21 | 703 | 0.8− | 0.1+ |
| 2004 03 17 | 704 | 1.3+ | 0.6+ | 2006 10 02 | 704 | 0.4+ | 0.4− | 2006 11 21 | 703 | 1.2− | 0.8− |
| 2004 03 27 | 699 | 0.7− | 0.6+ | 2006 10 02 | 704 | 0.3+ | 0.2+ | | | | |
| 2004 03 27 | 699 | 0.1+ | 0.3− | 2006 10 03 | 704 | 0.4+ | 0.2+ | | | | |

**2006 TZ**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.15178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18186754 | $\omega$ | 144.05302 | | +0.97410461 | +0.21786728 | |
| $a$ | 3.0853132 | $\Omega$ | 203.58139 | | −0.22609381 | +0.93704016 | |
| $e$ | 0.0826060 | $i$ | 8.69084 | | −0.00134300 | +0.27292780 | |
| $P$ | 5.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.0 | 0.4− | 2006 10 03 | 291 | 0.4− | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 1995 09 26 | 691 | 0.0 | 0.2− | 2006 10 03 | 291 | 0.3− | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 1995 09 26 | 691 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2005 05 14 | G96 | 0.2+ | 0.4+ | 2006 10 03 | G96 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 2005 05 14 | G96 | 0.2− | 0.5+ | 2006 10 04 | J95 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 2005 05 14 | G96 | 0.4+ | 0.2+ | 2006 10 04 | J95 | 0.6+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2005 05 14 | G96 | 0.2− | 0.3+ | 2006 10 05 | J95 | 1.2+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2005 05 15 | G96 | 0.4+ | 0.4− | 2006 10 05 | J95 | 0.5+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− |
| 2005 05 15 | G96 | 0.1− | 0.8− | 2006 10 11 | 691 | 0.3+ | 0.6+ | 2006 11 11 | 703 | 1.2− | 0.2+ |
| 2005 05 15 | G96 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | (3.0− | 0.2+) |
| 2005 05 15 | G96 | 0.5− | 0.4+ | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (1.7− | 2.6−) |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | (0.4− | 1.8−) |
| 2006 10 02 | G96 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.6− | 0.8+ |
| 2006 10 03 | J95 | 0.3− | 0.5− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.9+ |
| 2006 10 03 | J95 | 0.1+ | 0.8− | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2006 10 03 | J95 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2006 10 03 | 291 | 0.4− | 0.7+ | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.4− |

**2006 TJ$_1$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.70862 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21518548 | $\omega$ | 18.04730 | | +0.97555363 | −0.21963209 | |
| $a$ | 2.7579988 | $\Omega$ | 354.62316 | | +0.19040944 | +0.86188919 | |
| $e$ | 0.1399155 | $i$ | 4.61549 | | +0.10972401 | +0.45706540 | |
| $P$ | 4.58 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.4+ | 0.3− | 2006 09 17 | 703 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.1+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 691 | 0.9+ | 0.4− | 2006 09 17 | 703 | 0.5− | 0.9− | 2006 10 19 | G96 | 0.1+ | 0.0 |
| 2004 04 13 | 691 | 0.6− | 0.1+ | 2006 09 17 | 703 | 0.7+ | 0.5− | 2006 10 19 | G96 | 0.7+ | 0.0 |
| 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 10 01 | 704 | 0.5− | 1.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2004 04 13 | 691 | 0.1− | 0.7+ | 2006 10 01 | 704 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 01 | 704 | 0.9− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2+ |
| 2006 09 17 | 691 | 0.4− | 0.7+ | 2006 10 02 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− |

**2006 TY$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.60223 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20888257 | $\omega$ | 122.65202 | | +0.88009623 | −0.47396951 | |
| $a$ | 2.8132041 | $\Omega$ | 265.65406 | | +0.42567431 | +0.81378603 | |
| $e$ | 0.0981695 | $i$ | 1.60864 | | +0.21031406 | +0.33631118 | |
| $P$ | 4.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.2+ | 2006 10 01 | 291 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− |
| 1999 03 20 | 645 | 0.1+ | 0.2+ | 2006 10 01 | 291 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.3− |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2006 10 01 | 291 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.4− |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.1− |
| 2001 08 24 | 691 | 0.7− | 0.7+ | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2− |
| 2001 08 24 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.9+ |
| 2001 08 24 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2002 12 31 | 645 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.4− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 12 31 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.5+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− |

**2006 TZ$_1$ = 2004 GU$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.19450 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28013895 | $\omega$ | 89.93890 | | −0.22923653 | −0.97283314 | |
| $a$ | 2.3132384 | $\Omega$ | 13.44634 | | +0.82855124 | −0.21246286 | |
| $e$ | 0.2882400 | $i$ | 7.99601 | | +0.51083603 | −0.09195224 | |
| $P$ | 3.52 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.3+ | 0.1+ | 2006 10 01 | 291 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.4+ | 1.0− |
| 2004 04 12 | 691 | 0.2+ | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 1.0− | 1.1− |
| 2004 04 12 | 691 | 0.3+ | 0.4− | 2006 10 03 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 1.1+ | 0.3− |
| 2004 04 19 | 691 | 0.0 | 0.1− | 2006 10 03 | 691 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2004 04 19 | 691 | 0.5− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2004 04 19 | 691 | 0.4− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2+ |
| 2006 09 24 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2006 09 24 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2006 10 01 | 291 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2006 10 01 | 291 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.2− | 0.4− | | | | |

**2006 TH$_2$ = 1998 DM$_8$ = 2004 FX$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.67271 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17482434 | $\omega$ | 279.48925 | | −0.97339335 | +0.22137018 | |
| $a$ | 3.1676325 | $\Omega$ | 273.31728 | | −0.18002468 | −0.89856083 | |
| $e$ | 0.0212380 | $i$ | 3.39765 | | −0.14176215 | −0.37892438 | |
| $P$ | 5.64 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 21 | 327 | 0.2− | 0.6+ | 2006 08 29 | 691 | 0.1− | 0.0 | 2006 11 11 | 291 | 0.4+ | 0.0 |
| 1998 02 21 | 327 | 0.3+ | 0.3− | 2006 10 02 | G96 | 0.2− | 0.5− | 2006 11 14 | 291 | 0.0 | 0.3− |
| 1998 02 21 | 327 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.7− | 2006 11 14 | 291 | 0.2+ | 0.6− |
| 1998 02 23 | 327 | 0.9− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 14 | 291 | 0.2+ | 0.4− |
| 1998 02 23 | 327 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.3− | 0.7− | 2006 11 21 | 291 | 0.1− | 0.2− |
| 1998 02 23 | 327 | 0.6+ | 0.3− | 2006 10 03 | 291 | 0.2− | 0.4+ | 2006 11 21 | 291 | 0.0 | 0.0 |
| 2004 03 27 | 704 | 0.5− | 0.6+ | 2006 10 03 | 291 | 0.5− | 0.6+ | 2006 11 21 | 291 | 0.4+ | 0.0 |
| 2004 03 27 | 704 | 1.0− | 0.5+ | 2006 10 03 | 291 | 0.1+ | 0.4+ | 2006 11 22 | 291 | 0.6− | 0.1− |
| 2004 03 27 | 704 | 0.2+ | 0.1− | 2006 10 21 | 291 | 0.5+ | 0.1− | 2006 11 22 | 291 | 0.6+ | 0.5+ |
| 2004 03 27 | 704 | 0.7− | 1.0− | 2006 10 21 | 291 | 0.1+ | 0.0 | 2006 11 22 | 291 | 0.2− | 0.3+ |
| 2004 03 31 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 291 | 0.1− | 0.0 | 2006 11 24 | 291 | 0.2+ | 0.2+ |
| 2004 03 31 | 704 | 0.4+ | 0.8+ | 2006 10 29 | 291 | 0.1+ | 0.3+ | 2006 11 24 | 291 | 0.1− | 0.0 |
| 2004 03 31 | 704 | 1.3+ | 0.4− | 2006 10 29 | 291 | 0.1+ | 0.3+ | 2006 11 24 | 291 | 0.2− | 0.0 |
| 2004 03 31 | 704 | 0.1+ | 0.2+ | 2006 10 29 | 291 | 0.2+ | 0.1+ | 2006 11 25 | 291 | 0.2− | 0.1+ |
| 2006 08 29 | 691 | 0.1− | 0.2− | 2006 11 11 | 291 | 0.0 | 0.3− | 2006 11 25 | 291 | 0.1− | 0.1+ |
| 2006 08 29 | 691 | 0.1− | 0.4− | 2006 11 11 | 291 | 0.3+ | 0.0 | 2006 11 25 | 291 | 0.8− | 0.1+ |

**2006 TE$_3$ = 2003 YA$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 165.80323 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.28147725 | $\omega$ | 75.51888 | −0.97639101 | +0.17895517 | | | | | | |
| $a$ | 2.3059002 | $\Omega$ | 114.67225 | −0.21030569 | −0.91539683 | | | | | | |
| $e$ | 0.0528035 | $i$ | 7.65058 | +0.04931652 | −0.36058797 | | | | | | |
| $P$ | 3.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 20 | 704 | 0.9− | 1.0+ | 2005 04 07 | 699 | 0.4+ | 0.2+ | 2006 10 02 | 703 | 0.6− | 0.3+ |
| 2003 12 20 | 704 | 0.1+ | 1.1+ | 2005 05 11 | 703 | 1.1− | 0.2+ | 2006 10 02 | 703 | 0.1+ | 0.8− |
| 2003 12 20 | 704 | 1.1+ | 0.3+ | 2005 05 11 | 703 | 0.8− | 0.7+ | 2006 10 02 | 703 | 1.2− | 0.3+ |
| 2003 12 21 | 691 | 0.1− | 0.2− | 2005 05 11 | 703 | 0.6− | 1.1− | 2006 10 02 | 703 | 0.5− | 0.1+ |
| 2003 12 21 | 691 | 0.0 | 0.3− | 2005 05 11 | 703 | 0.7− | 0.5− | 2006 10 03 | G96 | 0.4− | 0.5+ |
| 2003 12 21 | 691 | 0.1+ | 0.2− | 2006 09 14 | 703 | 2.7+ | 0.3+ | 2006 10 03 | G96 | 0.5+ | 0.5+ |
| 2005 04 07 | 699 | 0.4+ | 0.6− | 2006 09 14 | 703 | 1.1− | 0.5− | 2006 10 03 | G96 | 0.4+ | 0.3+ |
| 2005 04 07 | 699 | 1.1+ | 1.6+ | 2006 09 14 | 703 | 1.2− | 0.2+ | 2006 10 03 | G96 | 0.5+ | 0.3+ |
| 2005 04 07 | 699 | 1.5+ | 0.1+ | 2006 09 14 | 703 | 0.4+ | 0.7− | | | | |

**2006 TW$_3$ = 1995 WU$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 328.69022 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26756391 | $\omega$ | 28.48866 | +0.45692405 | −0.88914027 | | | | | | |
| $a$ | 2.3851610 | $\Omega$ | 34.34025 | +0.80729080 | +0.40248631 | | | | | | |
| $e$ | 0.1986696 | $i$ | 2.59037 | +0.37349963 | +0.21779427 | | | | | | |
| $P$ | 3.68 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.5− | 1.0+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 1995 11 16 | 691 | 0.0 | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 1995 11 16 | 691 | 0.4− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1995 11 21 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1995 11 21 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 1995 11 21 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.6+ |
| 2006 09 19 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.5− | 0.0 |
| 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2006 10 03 | 291 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2006 10 03 | 291 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.5+ |
| 2006 10 03 | 291 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2006 10 15 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 1.0+ |
| 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 10 25 | 850 | 0.3+ | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 25 | 850 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2006 10 19 | 691 | 0.1− | 0.4− | 2006 10 25 | 850 | 0.2+ | 0.6− | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 25 | 850 | 0.5+ | 0.7− | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2006 10 19 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.2+ | | | | |

**2006 TA$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 3.98436 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.24063562 | $\omega$ | 200.50012 | +0.93025064 | −0.36692038 | | | | | | |
| $a$ | 2.5599379 | $\Omega$ | 181.03082 | +0.34896488 | +0.88621182 | | | | | | |
| $e$ | 0.1202475 | $i$ | 5.69907 | +0.11338989 | +0.28283926 | | | | | | |
| $P$ | 4.10 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.1− | 0.3− | 2006 09 30 | 703 | 1.0− | 0.1+ | 2006 10 18 | 691 | 0.5+ | 0.3+ |
| 2002 11 15 | 644 | 0.0 | 0.2+ | 2006 09 30 | 703 | 1.1− | 1.5+ | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2002 11 15 | 644 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2002 11 23 | 644 | 0.3− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 1.3− | 0.7+ |
| 2002 11 23 | 644 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 13 | 703 | 0.1− | 0.6− |
| 2002 11 23 | 644 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.1− | 0.1− |
| 2006 07 21 | G96 | 0.4+ | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.5− | 2006 11 13 | 703 | 0.9+ | 0.9− |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 13 | 703 | 0.8− | 1.3+ |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.6− | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 07 21 | G96 | 0.5− | 0.1+ | 2006 10 03 | G96 | 0.1− | 0.4− | 2006 11 23 | G96 | 0.6+ | 0.2− |
| 2006 09 30 | 703 | 0.5+ | 0.9− | 2006 10 18 | 691 | 0.5+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.5− |
| 2006 09 30 | 703 | 1.0+ | 0.4+ | 2006 10 18 | 691 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.4− |

**2006 TF$_4$ = 2004 ED$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 326.86764 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.26852195 | $\omega$ | 70.81777 | +0.33243274 | −0.94312694 | | | | | | |
| $a$ | 2.3794844 | $\Omega$ | 359.76542 | +0.84500164 | +0.29794397 | | | | | | |
| $e$ | 0.1659463 | $i$ | 2.92484 | +0.41888029 | +0.14744818 | | | | | | |
| $P$ | 3.67 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 12 | 644 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 2004 03 12 | 644 | 0.7+ | 0.1+ | 2006 10 03 | G96 | 0.2− | 0.7− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 03 12 | 644 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2004 03 18 | 691 | 0.6− | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2004 03 18 | 691 | 0.3+ | 0.0 | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2006 10 02 | G96 | 0.6+ | 0.1− | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.5− |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.4+ | 0.3− |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.0 | 0.6− | | | | |
| 2006 10 03 | G96 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.5− | | | | |

**2006 TK$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 328.09847 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27955915 | $\omega$ | 251.41185 | +0.30124959 | −0.95354320 | | | | | | |
| $a$ | 2.3164356 | $\Omega$ | 181.06171 | +0.91066543 | +0.28832723 | | | | | | |
| $e$ | 0.0725661 | $i$ | 6.22890 | +0.28273161 | +0.08730845 | | | | | | |
| $P$ | 3.53 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.4+ | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.2− |
| 2002 08 16 | 644 | 0.3+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2002 08 16 | 644 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2002 09 14 | 644 | 0.5− | 0.6+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 10 03 | G96 | 0.3− | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.4+ | 0.5+ |
| 2004 01 22 | 644 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.4− | 0.7+ | 2006 11 13 | 644 | 0.3− | 0.3− |
| 2004 01 22 | 644 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 14 | 704 | 0.0 | 0.2+ |
| 2004 01 22 | 644 | 0.4− | 0.8+ | 2006 10 16 | 703 | 0.7− | 0.1− | 2006 11 14 | 704 | 1.1+ | 0.9+ |
| 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 1.3− | 0.3− | 2006 11 14 | 704 | (1.5+ | 1.8+) |
| 2004 02 17 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.2+ | 0.3+ |
| 2004 02 17 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.5− | | | | |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− | | | | |

**2006 TM$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 293.25462 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.20537220 | $\omega$ | 98.69119 | +0.02879076 | −0.99847540 | | | | | | |
| $a$ | 2.8451704 | $\Omega$ | 349.31443 | +0.78782706 | +0.05166446 | | | | | | |
| $e$ | 0.1226355 | $i$ | 14.71394 | +0.61522323 | −0.01943326 | | | | | | |
| $P$ | 4.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 27 | 691 | 0.1+ | 0.1− | 2003 01 31 | 644 | 0.3+ | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.0 |
| 2001 08 27 | 691 | 0.1− | 0.1− | 2003 01 31 | 644 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.4− |
| 2001 08 27 | 691 | 0.1− | 0.0 | 2003 01 31 | 644 | 0.3− | 0.3− | 2006 10 04 | G96 | 0.0 | 0.2+ |
| 2001 09 18 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.3− | 0.1− |
| 2001 09 18 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.3+ | 2006 10 04 | G96 | 0.4− | 0.1+ |
| 2001 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.1− | | | | |

**2006 TK$_5$ = 2005 GC$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 329.20702 | | (2000.0) | | | |
| $n$ | 0.36175570 | $\omega$ | 238.91773 | | +0.59370579 | −0.80370153 |
| $a$ | 1.9507089 | $\Omega$ | 174.16742 | | +0.80452309 | +0.59384642 |
| $e$ | 0.0841539 | $i$ | 23.00501 | | −0.01600103 | +0.03755376 |
| $P$ | 2.72 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 699 | 0.1− | 0.0 | 2006 10 02 | 703 | 0.5− | 0.4− | 2006 10 21 | 703 | 0.7− | 0.7− |
| 2005 04 12 | 699 | 0.1− | 0.4+ | 2006 10 02 | 703 | 0.2− | 0.3− | 2006 10 21 | 703 | 0.9+ | 0.0 |
| 2005 04 12 | 699 | 0.1− | 0.1+ | 2006 10 02 | 703 | 0.2− | 0.5+ | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 2005 04 12 | 699 | 0.6− | 1.0− | 2006 10 02 | 703 | 0.4+ | 0.1+ | 2006 10 25 | E12 | 0.3+ | 0.5+ |
| 2005 04 16 | 703 | 0.9+ | 0.3+ | 2006 10 04 | 703 | 0.4+ | 0.3+ | 2006 10 25 | E12 | 0.4− | 0.3+ |
| 2005 04 16 | 703 | 1.2− | 1.2− | 2006 10 04 | 703 | 0.7− | 0.4+ | 2006 10 25 | E12 | 0.4+ | 0.4+ |
| 2005 04 16 | 703 | 0.3− | 0.1− | 2006 10 04 | 703 | 0.5+ | 0.2+ | 2006 10 25 | E12 | 0.7− | 0.1− |
| 2005 04 16 | 703 | 1.5+ | 1.5+ | 2006 10 04 | 703 | 0.0 | 0.7− | | | | |

**2006 TX$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.23481 | | (2000.0) | | | |
| $n$ | 0.27815239 | $\omega$ | 350.41164 | | +0.97747534 | +0.21099944 |
| $a$ | 2.3242393 | $\Omega$ | 357.39393 | | −0.18630757 | +0.85243048 |
| $e$ | 0.1720784 | $i$ | 5.81037 | | −0.09915362 | +0.47837382 |
| $P$ | 3.54 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 703 | 0.7− | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 1999 12 07 | 703 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 12 07 | 703 | 0.3+ | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 1999 12 07 | 703 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2000 12 23 | 645 | 0.1− | 0.0 | 2006 10 13 | 691 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2000 12 23 | 645 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2002 06 18 | 644 | 0.6+ | 0.3− | 2006 10 13 | 691 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2002 06 18 | 644 | 0.3− | 0.0 | 2006 10 17 | 691 | 1.0− | 0.8+ | 2006 11 14 | 703 | 0.2+ | 0.4− |
| 2002 06 18 | 644 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.1+ |
| 2004 01 19 | 699 | 0.1+ | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.7− |
| 2004 01 19 | 699 | 0.4− | 0.7− | 2006 10 21 | 704 | 0.2+ | 0.3− | 2006 11 14 | 703 | 0.0 | 1.0− |
| 2004 01 19 | 699 | 0.0 | 0.8− | 2006 10 21 | 704 | 1.2+ | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.2− |
| 2004 01 19 | 699 | 0.0 | 1.0+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2006 07 22 | G96 | 0.9− | 0.3− | 2006 10 21 | 704 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2006 07 22 | G96 | (0.7+ | 1.6+) | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 10 21 | 704 | 0.5+ | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.1− |
| 2006 07 22 | G96 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.4− | 0.2+ |
| 2006 10 02 | G96 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.8− | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.3− |
| 2006 10 02 | G96 | 0.8+ | 0.1− | 2006 10 27 | 703 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.4+ | 0.0 |
| 2006 10 04 | G96 | 0.0 | 0.4− | 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 23 | 703 | 0.0 | 0.1+ |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.0 | 0.3− | | | | |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.1+ | | | | |

**2006 TY$_5$ = 2002 QU$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 354.01750 | | (2000.0) | | | |
| $n$ | 0.26933100 | $\omega$ | 37.05249 | | +0.82750154 | −0.56143350 |
| $a$ | 2.3747168 | $\Omega$ | 357.08418 | | +0.48394536 | +0.71845088 |
| $e$ | 0.1028655 | $i$ | 6.54486 | | +0.28467189 | +0.41063458 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 02 | 691 | 0.2+ | 0.5− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.1+ | 1.6− |
| 1997 03 02 | 691 | 0.5− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.8+ | 1.5− |
| 1997 03 02 | 691 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2002 08 29 | 644 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.1− | 0.8− |
| 2002 08 29 | 644 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.4− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2002 08 29 | 644 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2002 08 30 | 644 | 0.5− | 0.7+ | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2002 08 30 | 644 | 0.6− | 0.7+ | 2006 10 04 | G96 | 0.4− | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.2− |
| 2002 08 30 | 644 | 0.4− | 0.9+ | 2006 10 19 | 703 | 0.7+ | 0.1+ | 2006 11 23 | 703 | 1.2− | 0.9+ |
| 2004 02 13 | 691 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.3+ | 0.2− | 2006 11 23 | 703 | 0.3+ | 1.7+ |
| 2004 02 13 | 691 | 0.0 | 0.3+ | 2006 10 19 | 703 | 1.0+ | 0.5+ | 2006 11 23 | 703 | 0.3− | 0.6+ |
| 2004 02 13 | 691 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.4− | 0.7− | 2006 11 23 | 703 | 0.0 | 0.4+ |

**2006 TK$_6$ = 2004 EO$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 342.23479 | | (2000.0) | | | |
| $n$ | 0.22317926 | $\omega$ | 344.48926 | | +0.68968366 | −0.71602022 |
| $a$ | 2.6917424 | $\Omega$ | 61.76505 | | +0.67671110 | +0.58428910 |
| $e$ | 0.0237303 | $i$ | 7.03757 | | +0.25767914 | +0.38199646 |
| $P$ | 4.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 01 | I03(21.2− | 10.4+) | | 2006 10 03 | G96 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2000 07 01 | I03(21.2− | 10.6+) | | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.5− | 1.0+ |
| 2000 07 01 | I03(20.8− | 10.6+) | | 2006 10 03 | G96 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.6− | 0.7+ |
| 2004 03 14 | 644 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 2004 03 14 | 644 | 0.5− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2004 03 14 | 644 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.3− | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2004 03 20 | 704 | 0.3− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.6+ |
| 2004 03 20 | 704 | 1.3+ | 0.4− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2004 03 20 | 704 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.6+ |
| 2006 10 03 | G96 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2006 10 03 | G96 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 1.0− | 0.9− |
| 2006 10 03 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.5+ | 1.0− |
| 2006 10 03 | G96 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | | | | |

**2006 TD$_7$ = 2005 LJ$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.88105 | | (2000.0) | | | |
| $n$ | 0.18614446 | $\omega$ | 60.51416 | | +0.57251427 | +0.80152577 |
| $a$ | 3.0378709 | $\Omega$ | 245.42313 | | −0.80252213 | +0.50472740 |
| $e$ | 0.1677899 | $i$ | 10.93951 | | −0.16788580 | +0.32063484 |
| $P$ | 5.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | 599 | 0.1− | 0.2+ | 2005 06 17 | G96 | 0.4− | 0.3− | 2006 10 11 | 644 | 0.3− | 0.4− |
| 2005 06 13 | 599 | 0.4+ | 0.1− | 2005 07 05 | G96 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.8− |
| 2005 06 13 | 599 | 0.2+ | 0.1− | 2005 07 05 | G96 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.5− | 0.5− |
| 2005 06 13 | 599 | 0.2+ | 0.1+ | 2005 07 05 | G96 | 0.3+ | 0.1− | 2006 10 11 | 595 | 0.3− | 0.5+ |
| 2005 06 17 | G96 | 0.1+ | 0.3+ | 2005 07 05 | G96 | 0.3− | 0.0 | 2006 10 11 | 595 | 0.3+ | 0.3+ |
| 2005 06 17 | G96 | 0.3− | 0.1− | 2006 10 10 | 595 | 0.2+ | 0.6+ | 2006 10 12 | 595 | 0.1+ | 0.4+ |
| 2005 06 17 | G96 | 0.2− | 0.2+ | 2006 10 10 | 595 | 0.9+ | 0.2+ | 2006 10 12 | 595 | 0.3− | 0.4− |

**2006 TF$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.27960 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18786532 | $\omega$ | 251.01841 | | +0.45636169 | −0.88944584 | |
| $a$ | 3.0192910 | $\Omega$ | 171.69720 | | +0.86740903 | +0.43846829 | |
| $e$ | 0.0941721 | $i$ | 9.93010 | | +0.19833201 | +0.12896379 | |
| $P$ | 5.25 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.2+ | 0.6− | 2006 07 21 | G96 | 0.4+ | 0.0 | 2006 10 11 | 104 | 0.5− | 0.4+ |
| 1995 08 22 | 691 | 0.2− | 0.2− | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 11 | 104 | 0.7− | 0.7+ |
| 1995 08 22 | 691 | 0.3+ | 0.5− | 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 10 11 | 104 | 0.0 | 0.6+ |
| 2001 10 10 | 644 | 0.4− | 0.0 | 2006 08 28 | 703 | 0.8− | 0.1+ | 2006 10 11 | 104 | 0.3− | 0.9+ |
| 2001 10 10 | 644 | 0.7− | 0.0 | 2006 08 28 | 703 | 0.3− | 1.4+ | 2006 10 12 | 644 | 0.3+ | 0.5+ |
| 2001 10 10 | 644 | 0.2− | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.2+ |
| 2001 10 24 | 644 | 0.5− | 0.1+ | 2006 08 28 | 703 | 0.7+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.4+ |
| 2001 10 24 | 644 | 0.3− | 0.2+ | 2006 09 28 | 699 | (0.0 | 1.7+) | 2006 10 12 | 104 | 0.3− | 0.4+ |
| 2001 10 24 | 644 | 0.3− | 0.2+ | 2006 09 28 | 699 | 0.9− | 1.4+ | 2006 10 12 | 104 | 0.1+ | 0.3+ |
| 2001 11 11 | 645 | 0.0 | 0.1− | 2006 09 28 | 699 | 0.3− | 0.4+ | 2006 10 12 | 104 | 0.6− | 1.4+ |
| 2001 11 11 | 645 | 0.0 | 0.1− | 2006 09 28 | 699 | (0.2+ | 1.9+) | 2006 10 17 | 104 | (0.1− | 1.6−) |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.5+ | 2006 10 17 | 104 | (2.7− | 2.9+) |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2001 12 18 | 645 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.5+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2006 10 10 | 104 | 0.4− | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.1− |
| 2002 01 08 | 645 | 0.0 | 0.1− | 2006 10 10 | 104 | 0.1− | 0.6+ | 2006 11 25 | G96 | 0.5+ | 0.0 |
| 2002 01 08 | 645 | 0.1− | 0.1− | 2006 10 10 | 104 | 0.4+ | 0.9+ | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 10 11 | 104 | (1.3+ | 1.9+) | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2002 11 13 | 645 | 0.0 | 0.1+ | 2006 10 11 | 104 | 1.4− | 0.6+ | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2006 07 21 | G96 | 0.0 | 0.3+ | 2006 10 11 | 104 | (0.8+ | 2.4−) | | | | |

**2006 TE$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.44400 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17504601 | $\omega$ | 270.13154 | | −0.61148640 | −0.74183793 | |
| $a$ | 3.1649577 | $\Omega$ | 221.99186 | | +0.78376508 | −0.61561951 | |
| $e$ | 0.1627293 | $i$ | 24.29375 | | −0.10861253 | −0.26587422 | |
| $P$ | 5.63 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 644 | 1.2− | 1.1− | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2003 03 31 | 644 | 0.7+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2003 03 31 | 644 | 0.6+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.3+ | 1.0+ |
| 2005 08 31 | 644 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2005 08 31 | 644 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.8+ | 1.0+ |
| 2005 08 31 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.2+ |
| 2006 09 19 | 703 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 2.0+ | 0.7+ |
| 2006 09 19 | 703 | 0.7+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.7− | 0.6+ |
| 2006 09 19 | 703 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2006 09 19 | 703 | 0.6− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.8− | 0.8+ |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2006 10 04 | G96 | 0.5+ | 0.3− | 2006 10 28 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 1.7− | 0.2− |
| 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.6− |
| 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.5− |
| 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.7− |
| 2006 10 15 | 691 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.6− | 2006 11 23 | 683 | 2.2+ | 2.2− |
| 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.6− | 2006 11 23 | 683 | 1.3+ | 0.4+ |

**2006 TK$_7$ = 1995 SP$_{26}$ = 2001 YD$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.55603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17957701 | $\omega$ | 66.67917 | | +0.37520124 | −0.92694318 | |
| $a$ | 3.1114935 | $\Omega$ | 1.28455 | | +0.84020907 | +0.33981566 | |
| $e$ | 0.1429600 | $i$ | 1.55870 | | +0.39150064 | +0.15906497 | |
| $P$ | 5.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1+ | 0.1− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 26 | 143 | 0.0 | 0.2+ |
| 1995 09 19 | 691 | 0.2+ | 0.3− | 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 26 | 143 | 0.6− | 0.1− |
| 1995 09 19 | 691 | 0.3+ | 0.0 | 2006 09 14 | 691 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.3− | 0.1− |
| 1995 09 30 | 691 | 0.0 | 0.3− | 2006 10 10 | 143 | 0.5+ | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.3− |
| 1995 09 30 | 691 | 0.1− | 0.1− | 2006 10 10 | 143 | 0.6+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1995 09 30 | 691 | 0.3+ | 0.3− | 2006 10 10 | 143 | 0.8+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2000 08 20 | 691 | 0.1− | 0.4+ | 2006 10 11 | 143 | 0.7+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 2000 08 20 | 691 | 0.1− | 0.1+ | 2006 10 12 | 143 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2000 08 20 | 691 | 0.3− | 0.0 | 2006 10 12 | 143 | 0.8+ | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 12 18 | 704 | 0.7− | 0.1− | 2006 10 13 | 143 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.4− | 0.2− | 2006 10 13 | 143 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.0 | 0.2+ | 2006 10 15 | 143 | 0.1+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.5+ |
| 2001 12 18 | 704 | 0.3− | 0.5+ | 2006 10 15 | 143 | 0.3+ | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.4+ | 2006 11 13 | 691 | 0.3− | 0.4− |
| 2001 12 19 | 704 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2001 12 19 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.6− | 0.4− |
| 2001 12 19 | 704 | 0.4− | 0.5− | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2001 12 19 | 704 | 0.2+ | 1.2+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.6− | 0.3− |
| 2003 03 30 | 695 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.4− | 0.1− | | | | |
| 2003 03 30 | 695 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− | | | | |

**2006 TG$_8$ = 1995 FW$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.63185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22051539 | $\omega$ | 193.15123 | | +0.85178892 | −0.52378989 | |
| $a$ | 2.7133769 | $\Omega$ | 198.44592 | | +0.48346727 | +0.79327438 | |
| $e$ | 0.0912548 | $i$ | 1.80916 | | +0.20177966 | +0.31041894 | |
| $P$ | 4.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 28 | 691 | 0.6− | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 11 11 | 703 | 1.1− | 0.8+ |
| 1995 03 28 | 691 | 0.5− | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 1995 03 28 | 691 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.8− | 0.1− |
| 1995 04 05 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 1995 04 05 | 691 | 0.4+ | 0.0 | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.2− |
| 1995 04 05 | 691 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.5− | 0.4− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2006 09 25 | G96 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.5− | 0.4− | 2006 11 13 | G96 | 1.2+ | 0.3− |
| 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.4− | 2006 11 17 | 703 | 0.6+ | 1.2+ |
| 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.9− | 1.1− |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.8+ | 2006 11 17 | 703 | 0.4− | 0.8+ |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.6− | 2006 11 17 | 703 | 1.4− | 0.1− |
| 2006 10 04 | G96 | 0.1− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.5+ | 2006 11 21 | 704 | (1.8− | 1.2−) |
| 2006 10 04 | G96 | 0.0 | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.7− | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2006 10 04 | G96 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.7− | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2006 10 11 | 691 | 0.2− | 1.0+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.6+ | 0.2− |
| 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2− | | | | |
| 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.7− | | | | |

### 2006 $TO_8$ = 2005 $JE_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 65.76694 | | | (2000.0) | | |
| $n$ | 0.29029245 | $\omega$ | 268.69082 | | +0.54389599 | +0.83537903 |
| $a$ | 2.2589792 | $\Omega$ | 34.64055 | | −0.70353351 | +0.50557877 |
| $e$ | 0.1593004 | $i$ | 8.03895 | | −0.45740327 | +0.21571272 |
| $P$ | 3.40 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | G96 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.7− | 0.0 |
| 2005 05 09 | G96 | 0.5− | 0.7− | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2005 05 09 | G96 | 0.5− | 0.3− | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2005 05 09 | G96 | 0.3− | 0.3− | 2006 10 15 | 691 | 0.6+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2005 05 13 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2005 05 13 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2006 10 04 | G96 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.9− | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.0 |

### 2006 $TP_8$ = 2001 $YU_{146}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 334.68968 | | | (2000.0) | | |
| $n$ | 0.19004741 | $\omega$ | 16.45650 | | +0.24842323 | −0.96853084 |
| $a$ | 2.9961352 | $\Omega$ | 59.16155 | | +0.88670118 | +0.22102170 |
| $e$ | 0.3201536 | $i$ | 1.02064 | | +0.38993194 | +0.11444398 |
| $P$ | 5.19 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.6− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.9− |
| 2001 12 18 | 704 | 0.1− | 0.4+ | 2006 10 04 | G96 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2001 12 18 | 704 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | (1.1− | 2.0+) |
| 2001 12 18 | 704 | 0.1− | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2001 12 18 | 704 | (1.8+ | 0.6−) | 2006 10 19 | 691 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2001 12 18 | 704 | (3.0+ | 2.6−) | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2001 12 19 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.6− |
| 2001 12 19 | 704 | 0.1+ | 1.0+ | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.7+ | 0.2− |
| 2001 12 19 | 704 | 0.8− | 0.2− | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 0.8+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.4− |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.1− | | | | |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2− | | | | |

### 2006 $TV_8$ = 2001 $YL_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.54956 | | | (2000.0) | | |
| $n$ | 0.18195733 | $\omega$ | 45.05140 | | +0.78399632 | −0.62076113 |
| $a$ | 3.0842980 | $\Omega$ | 353.31915 | | +0.56377978 | +0.71358545 |
| $e$ | 0.2030416 | $i$ | 1.14268 | | +0.25981172 | +0.32473285 |
| $P$ | 5.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5− | 0.2− | 2006 10 12 | A13 | 0.6− | 0.3− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2001 12 18 | 704 | 0.3+ | 0.1− | 2006 10 12 | A13 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 12 18 | 704 | 0.8+ | 0.5+ | 2006 10 12 | A13 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2001 12 18 | 704 | 0.3− | 0.6− | 2006 10 17 | 703 | (1.8− | 0.7−) | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 12 19 | 704 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 12 19 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.3− | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.1− | 0.2− | 2006 10 17 | A13 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 10 17 | A13 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2006 09 24 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2006 09 24 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.5+ | 0.5− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 703 | 0.7− | 1.2+ | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 10 21 | 703 | 1.3+ | 0.9− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2006 10 12 | A13 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.2− | 0.0 |

### 2006 $TF_9$ = 1999 $SO_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.46984 | | | (2000.0) | | |
| $n$ | 0.28153052 | $\omega$ | 116.82521 | | +0.77074319 | +0.63653899 |
| $a$ | 2.3056094 | $\Omega$ | 203.67287 | | −0.60639485 | +0.71945217 |
| $e$ | 0.2091265 | $i$ | 3.97076 | | −0.19555108 | +0.27786090 |
| $P$ | 3.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 1999 09 30 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1999 09 30 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 1999 10 01 | 691 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 1999 10 01 | 691 | 0.2− | 0.2− | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 1999 10 01 | 691 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.5+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2006 09 25 | G96 | 0.5− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.4+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2006 09 25 | G96 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2006 10 04 | G96 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.6− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.2− |

### 2006 $TL_9$ = 1995 $SK_{82}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.12434 | | | (2000.0) | | |
| $n$ | 0.27340596 | $\omega$ | 197.75878 | | +0.99972110 | +0.02230934 |
| $a$ | 2.3510619 | $\Omega$ | 160.95787 | | −0.01774259 | +0.92601386 |
| $e$ | 0.2061473 | $i$ | 1.36056 | | −0.01558590 | +0.37682971 |
| $P$ | 3.60 | $H$ | 17.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.1+ | 0.4− | 2006 10 12 | 291 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 1995 09 24 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 1995 09 24 | 691 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 1995 09 27 | 691 | 0.6+ | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 1995 09 27 | 691 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.6− |
| 1995 09 27 | 691 | 1.0− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2006 10 11 | 691 | 0.6+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | (1.2+ | 2.1−) |
| 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.1− |
| 2006 10 11 | 691 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.9− |
| 2006 10 12 | 291 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 1.0+ | 0.2− |
| 2006 10 12 | 291 | 0.4− | 0.0 | 2006 10 27 | 691 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.2+ | 1.0− |
| 2006 10 12 | 291 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2006 10 12 | 291 | 0.5− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2006 10 12 | 291 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.6− | 0.3+ | | | | |

### 2006 $TS_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 313.99321 | | | (2000.0) | | |
| $n$ | 0.18476404 | $\omega$ | 121.93903 | | +0.46826791 | −0.87691681 |
| $a$ | 3.0529833 | $\Omega$ | 299.76477 | | +0.76269048 | +0.46306655 |
| $e$ | 0.1027684 | $i$ | 7.17091 | | +0.44612599 | +0.12878773 |
| $P$ | 5.33 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 17 | 703 | 0.4− | 1.1− |
| 1995 07 26 | 691 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.1+ |
| 1995 07 26 | 691 | 0.5− | 0.3+ | 2006 10 11 | 118 | 1.2+ | 0.2− | 2006 10 17 | 703 | 0.4− | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 11 | 118 | 0.2+ | 0.2− | 2006 10 17 | 703 | (1.6− | 0.4−) |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 11 | 118 | 0.2+ | 0.1+ | 2006 10 17 | 118 | 0.0 | 0.2− |
| 2003 02 22 | 644 | 0.2+ | 0.4+ | 2006 10 11 | 118 | 0.9+ | 0.0 | 2006 10 17 | 118 | 0.0 | 0.1− |
| 2003 02 22 | 644 | 0.1+ | 0.4+ | 2006 10 14 | 118 | 0.3+ | 0.5+ | 2006 10 17 | 118 | 0.3+ | 0.4− |
| 2003 02 22 | 644 | 0.1− | 0.2+ | 2006 10 14 | 118 | 0.3+ | 0.1− | 2006 10 18 | 118 | 0.6− | 0.5+ |
| 2006 09 06 | 644 | 0.1− | 0.6+ | 2006 10 14 | 118 | 0.4+ | 0.2− | 2006 10 18 | 118 | 1.3+ | 0.0 |
| 2006 09 06 | 644 | 0.1− | 0.7+ | 2006 10 14 | 118 | 0.2+ | 0.3+ | 2006 10 19 | 118 | 0.3− | 1.0− |
| 2006 09 06 | 644 | 0.4− | 0.3+ | 2006 10 14 | 118 | 0.2+ | 0.2+ | 2006 10 19 | 118 | 0.4− | 1.0− |
| 2006 09 19 | 699 | 0.2+ | 0.9+ | 2006 10 14 | 118 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2006 09 19 | 699 | 0.4− | 0.2− | 2006 10 14 | 118 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 2006 09 19 | 699 | 0.4− | 0.2− | 2006 10 14 | 118 | 0.9+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2006 09 19 | 699 | 1.2− | 0.1+ | 2006 10 14 | 118 | 0.4+ | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.5+ |
| 2006 09 27 | 703 | 0.7− | 0.1+ | 2006 10 15 | 118 | 1.1− | 1.1− | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2006 09 27 | 703 | 0.4− | 0.4+ | 2006 10 15 | 118 | 0.1+ | 0.5− | 2006 10 22 | 644 | 0.5− | 0.1+ |
| 2006 09 27 | 703 | 0.2+ | 0.6+ | 2006 10 15 | 118 | 0.9+ | 1.0+ | 2006 10 23 | 644 | 0.4− | 0.3+ |
| 2006 09 27 | 703 | (0.6− | 1.8+) | 2006 10 16 | 118 | 0.6+ | 1.0− | 2006 10 23 | 644 | 0.2− | 0.4− |
| 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 118 | (0.1− | 2.1−) | 2006 10 23 | 644 | 0.3− | 0.1− |

**2006 TZ$_9$ = 2006 SU$_{371}$ = 2002 QZ$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.43799 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25938957 | $\omega$ | 201.21362 | | +0.39872609 | −0.91671738 | |
| $a$ | 2.4350116 | $\Omega$ | 225.29810 | | +0.84646139 | +0.37855562 | |
| $e$ | 0.1887312 | $i$ | 2.05046 | | +0.35287478 | +0.12776889 | |
| $P$ | 3.80 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 06 | 691 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 10 14 | 958 | 0.1+ | 0.3− |
| 1991 11 06 | 691 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 10 14 | 958 | 0.2+ | 0.5− |
| 1991 11 06 | 691 | 0.2− | 0.4− | 2006 09 28 | 699 | 0.0 | 0.5+ | 2006 10 14 | 958 | 0.5+ | 0.6+ |
| 2002 08 17 | 644 | 0.2− | 0.3+ | 2006 09 28 | 699 | 1.2− | 0.4+ | 2006 10 15 | 958 | 0.6− | 0.8+ |
| 2002 08 17 | 644 | 0.0 | 0.2+ | 2006 09 28 | 699 | 0.4− | 0.0 | 2006 10 15 | 958 | 1.3− | 0.3− |
| 2002 08 17 | 644 | 0.1+ | 0.7+ | 2006 09 28 | 699 | 0.8− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.2− |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2006 09 29 | 704 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.4− |
| 2002 08 28 | 644 | 0.3− | 0.2+ | 2006 09 29 | 704 | (0.3− | 2.2+) | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2002 08 28 | 644 | 0.1+ | 0.5+ | 2006 09 29 | 704 | (0.0 | 1.6+) | 2006 10 20 | G96 | 0.2− | 0.2− |
| 2004 02 17 | 691 | 0.1− | 0.3+ | 2006 09 29 | 704 | 0.3− | 1.2+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2004 02 17 | 691 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 1.0+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 02 17 | 691 | 0.2+ | 0.6+ | 2006 10 01 | 704 | 0.2+ | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.5+ |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 01 | 704 | (0.8− | 1.6+) | | | | |
| 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 10 01 | 704 | (0.7+ | 1.9+) | | | | |

**2006 TC$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.25830 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28028358 | $\omega$ | 297.67762 | | +0.98265436 | +0.16440731 | |
| $a$ | 2.3124425 | $\Omega$ | 52.98427 | | −0.10818905 | +0.88398550 | |
| $e$ | 0.1896707 | $i$ | 6.16823 | | −0.15061716 | +0.43765269 | |
| $P$ | 3.52 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.4− | 1.0+ | 2006 10 16 | 703 | 0.8+ | 0.1− | 2006 10 31 | G96 | 0.8+ | 0.2− |
| 1992 11 27 | 691 | 1.3+ | 1.5− | 2006 10 16 | 703 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 1992 11 27 | 691 | 0.3− | 0.3− | 2006 10 16 | 703 | 1.0+ | 0.8− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 1999 11 16 | 691 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 1999 11 16 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.0 | 0.7+ |
| 1999 11 16 | 691 | 0.0 | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.7+ |
| 1999 11 29 | 691 | 0.7− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.7− |
| 1999 11 29 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.3− | 2006 11 11 | 703 | 1.2− | 0.9+ |
| 1999 11 29 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2006 10 03 | G96 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 1.4+ |
| 2006 10 03 | G96 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.5− | 0.5− |
| 2006 10 03 | G96 | 0.4− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.9− | 0.7+ |
| 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2006 10 14 | D35 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 10 14 | D35 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2006 10 14 | D35 | 0.4− | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.3− |

**2006 TM$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 153.56725 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28219379 | $\omega$ | 245.24510 | | −0.84446933 | +0.53414011 | |
| $a$ | 2.3019952 | $\Omega$ | 326.99968 | | −0.46141931 | −0.76303142 | |
| $e$ | 0.0656518 | $i$ | 4.16652 | | −0.27196280 | −0.36397444 | |
| $P$ | 3.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 21 | 691 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.4+ | 0.5+ | 2006 10 15 | 461 | 0.1− | 0.2+ |
| 2001 02 21 | 691 | 0.1+ | 0.0 | 2006 09 17 | 703 | (1.8− | 2.2−) | 2006 10 15 | 461 | 0.1− | 0.2+ |
| 2001 02 21 | 691 | 0.0 | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.0 | 2006 10 16 | 461 | 0.1− | 0.1+ |
| 2002 07 06 | 644 | 0.1− | 0.0 | 2006 09 17 | 691 | 0.3− | 0.0 | 2006 10 16 | 461 | 0.6+ | 0.5− |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 703 | 0.1+ | 0.3+ | 2006 10 16 | 461 | 0.5− | 0.0 |
| 2002 08 08 | 644 | 0.1+ | 0.1+ | 2006 09 17 | 691 | 0.2+ | 0.1− | 2006 10 17 | 461 | 0.0 | 0.1− |
| 2003 11 23 | 695 | 1.9+ | 0.0 | 2006 09 17 | 703 | 0.4− | 0.3− | 2006 10 17 | 461 | 0.2+ | 0.0 |
| 2003 11 23 | 695 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 18 | 461 | 0.1− | 0.1+ |
| 2003 12 25 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 18 | 461 | 0.1+ | 0.2+ |
| 2003 12 25 | 691 | 0.3− | 0.0 | 2006 09 25 | 691 | 0.3− | 0.4+ | 2006 10 18 | 461 | 0.4+ | 0.2− |
| 2003 12 25 | 691 | 0.1− | 0.2+ | 2006 10 14 | 461 | 0.3− | 0.1− | 2006 10 23 | G96 | 0.3+ | 0.1− |
| 2005 05 19 | 644 | 0.3+ | 0.6+ | 2006 10 14 | 461 | 0.1+ | 0.0 | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2005 05 19 | 644 | 0.4+ | 0.5+ | 2006 10 14 | 461 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.4+ | 0.4− |
| 2005 05 19 | 644 | 0.1+ | 0.6+ | 2006 10 15 | 461 | 0.9+ | 0.8+ | 2006 10 23 | G96 | 0.1+ | 0.4− |

**2006 TT$_{10}$ = 1998 SD$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.26405 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24615284 | $\omega$ | 345.14688 | | +0.96249696 | +0.27129186 | |
| $a$ | 2.5215416 | $\Omega$ | 359.11137 | | −0.24501513 | +0.86836728 | |
| $e$ | 0.1397312 | $i$ | 2.10267 | | −0.11647824 | +0.41513731 | |
| $P$ | 4.00 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 21 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.4− |
| 1998 09 21 | 691 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 1998 09 21 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.3− | 0.4+ | 2006 10 29 | 691 | 0.4+ | 0.0 |
| 1998 09 30 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.5+ | 0.0 |
| 1998 09 30 | 691 | 0.2+ | 0.8− | 2006 10 21 | 703 | 0.7+ | 0.9+ | 2006 10 29 | 691 | 0.3+ | 0.2+ |
| 1998 09 30 | 691 | 0.3+ | 1.0− | 2006 10 21 | 703 | (2.3+ | 1.3−) | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2002 11 09 | 695 | 1.0+ | 0.4− | 2006 10 21 | 703 | 0.3+ | 0.8+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2002 11 09 | 695 | 1.0+ | 0.4− | 2006 10 21 | 703 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2006 10 03 | 691 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2006 10 03 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2006 10 03 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2006 10 16 | 104 | 0.5− | 0.4− | 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.4− | 0.1+ |
| 2006 10 16 | 104 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2006 10 16 | 104 | 0.9+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.3− | 0.0 |
| 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.5− | | | | |
| 2006 10 16 | 691 | 0.6− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.4− | | | | |

**2006 TV$_{10}$ = 2004 FM$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.43483 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22471432 | $\omega$ | 123.07567 | | +0.94194971 | −0.33492003 | |
| $a$ | 2.6794699 | $\Omega$ | 256.50155 | | +0.29937333 | +0.86968845 | |
| $e$ | 0.1096164 | $i$ | 1.39368 | | +0.15200774 | +0.36258872 | |
| $P$ | 4.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 26 | 691 | 0.5+ | 0.5− | 2006 10 16 | 104 | 0.7− | 0.5− | 2006 10 23 | 691 | 0.0 | 0.0 |
| 2004 03 26 | 691 | 0.1+ | 0.3− | 2006 10 16 | 104 | 1.1+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2004 03 26 | 691 | 0.0 | 0.7− | 2006 10 16 | 104 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 10 17 | 104 | 0.8− | 1.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2004 03 29 | 691 | 0.3− | 0.8+ | 2006 10 17 | 104 | 0.9− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2004 03 29 | 691 | 0.2− | 0.5+ | 2006 10 17 | 104 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2006 09 28 | G96 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.5+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.6+ | 0.0 |
| 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.2− |
| 2006 10 15 | 691 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.7+ | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.4+ |
| 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2006 10 15 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3+ | | | | |

### 2006 $TZ_{10}$ = 2005 $NU_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.73965 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23814624 | $\omega$ | 12.38866 | | −0.01726477 | +0.88644119 | |
| $a$ | 2.5777466 | $\Omega$ | 258.05095 | | −0.95295865 | −0.15459246 | |
| $e$ | 0.1127970 | $i$ | 28.21379 | | −0.30260824 | +0.43626046 | |
| $P$ | 4.14 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.1+ | 0.5− | 2006 10 16 | 240 | 0.0 | 0.2− | 2006 11 01 | 703 | 0.7+ | 0.7+ |
| 2002 11 15 | 644 | 0.0 | 0.1+ | 2006 10 16 | 240 | 0.2+ | 0.2− | 2006 11 01 | 703 | 0.5− | 1.0− |
| 2002 11 15 | 644 | 0.1− | 0.3− | 2006 10 16 | 240 | 0.1− | 0.1− | 2006 11 01 | 703 | 0.4+ | 0.2+ |
| 2005 07 03 | 704 | (0.5+ | 1.6+) | 2006 10 18 | 240 | 0.3− | 0.4+ | 2006 11 08 | 240 | 0.3+ | 0.6− |
| 2005 07 03 | 704 | 0.5− | 0.4− | 2006 10 18 | 240 | 0.2− | 0.8+ | 2006 11 08 | 240 | 0.4+ | 0.4− |
| 2005 07 03 | 704 | 1.0+ | 0.4− | 2006 10 18 | 240 | 0.2− | 1.1+ | 2006 11 08 | 240 | 0.1+ | 0.1+ |
| 2005 07 03 | 704 | 0.3− | 0.4+ | 2006 10 18 | 240 | 0.4− | 1.0+ | 2006 11 08 | 240 | 0.1+ | 0.0 |
| 2005 07 04 | 704 | 0.0 | 0.2− | 2006 10 25 | 240 | 0.0 | 0.6− | 2006 11 08 | 240 | 0.0 | 0.1− |
| 2005 07 04 | 704 | (0.3− | 1.7−) | 2006 10 25 | 240 | 0.1− | 0.4− | 2006 11 09 | 240 | 0.4− | 0.1− |
| 2005 07 04 | 704 | 0.4+ | 0.2− | 2006 10 25 | 240 | 0.7+ | 0.3− | 2006 11 09 | 240 | 0.3− | 0.1− |
| 2005 07 04 | 704 | 0.4+ | 0.5+ | 2006 10 25 | 240 | 0.7+ | 0.1− | 2006 11 09 | 240 | 0.1+ | 0.1+ |
| 2005 07 05 | G96 | 0.3− | 0.3+ | 2006 10 25 | 240 | 0.6+ | 0.3− | 2006 11 09 | 240 | 0.6− | 0.3− |
| 2005 07 05 | G96 | 0.5− | 0.2+ | 2006 10 25 | 240 | 1.0+ | 0.3+ | 2006 11 18 | 240 | 0.3+ | 0.1+ |
| 2005 07 05 | G96 | 0.2− | 0.4− | 2006 10 25 | 240 | 0.9+ | 0.3+ | 2006 11 18 | 240 | 0.1+ | 0.1+ |
| 2006 10 15 | 240 | 0.6+ | 0.2− | 2006 10 26 | 240 | 0.2− | 0.1+ | 2006 11 18 | 240 | 0.0 | 0.0 |
| 2006 10 15 | 240 | 0.1+ | 0.2− | 2006 10 26 | 240 | 0.4− | 0.2+ | 2006 11 21 | 703 | 0.6− | 0.7+ |
| 2006 10 15 | 240 | 0.3− | 0.2− | 2006 10 26 | 240 | 0.4− | 0.2+ | 2006 11 21 | 703 | 0.4− | 0.5+ |
| 2006 10 16 | 240 | 0.1+ | 0.0 | 2006 10 26 | 240 | 0.1− | 0.1+ | 2006 11 21 | 703 | 0.7− | 0.1+ |
| 2006 10 16 | 240 | 0.1− | 0.1− | 2006 10 26 | 240 | 0.3− | 0.0 | 2006 11 21 | 703 | 0.5− | 0.6− |
| 2006 10 16 | 240 | 0.0 | 0.0 | 2006 11 01 | 703 | 0.5− | 0.3− | | | | |

### 2006 $TB_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.01877 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22870971 | $\omega$ | 93.64496 | | +0.48904896 | +0.86546514 | |
| $a$ | 2.6481728 | $\Omega$ | 206.51660 | | −0.86523465 | +0.46556422 | |
| $e$ | 0.0799917 | $i$ | 14.08276 | | −0.11045413 | +0.18498660 | |
| $P$ | 4.31 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 809 | 1.5+ | 1.4+ | 2006 10 14 | 461 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 1993 10 12 | 809 | 0.9− | 0.1− | 2006 10 14 | 461 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 1993 10 12 | 809 | 0.8− | 0.8+ | 2006 10 14 | 461 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.5+ | 0.0 | 2006 10 15 | 461 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.5− |
| 2002 10 31 | 644 | 0.5− | 0.3+ | 2006 10 15 | 461 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.5− |
| 2002 10 31 | 644 | 0.2− | 0.6+ | 2006 10 15 | 461 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.5− |
| 2005 06 09 | 703 | 1.0+ | 0.5+ | 2006 10 15 | 461 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2005 06 09 | 703 | 0.7− | 0.3+ | 2006 10 16 | 461 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2005 06 09 | 703 | 1.3− | 1.0− | 2006 10 16 | 461 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2005 06 09 | 703 | 0.2+ | 1.0− | 2006 10 16 | 461 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2005 07 04 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 461 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2005 07 04 | 644 | 0.4+ | 0.3+ | 2006 10 16 | 461 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 2005 07 04 | 644 | 0.2+ | 0.2+ | 2006 10 17 | 461 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.6− |
| 2006 09 20 | 699 | 0.2+ | 1.4− | 2006 10 17 | 461 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2006 09 20 | 699 | 0.2− | 0.4+ | 2006 10 17 | 461 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.3− |
| 2006 09 20 | 699 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.0 |
| 2006 09 20 | 699 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | (0.6+ | 1.5−) |
| 2006 10 02 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 1.4+ | 2006 11 17 | 703 | 0.1+ | 1.2− |
| 2006 10 02 | 691 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | 1.1− | 0.4− |
| 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 1.2− | 0.2− |
| 2006 10 14 | 461 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2006 10 14 | 461 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2006 10 14 | 461 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2006 10 14 | 461 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.3− |

### 2006 $TG_{11}$ = 2005 $GG_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.06216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26200905 | $\omega$ | 89.99203 | | +0.30578484 | +0.95208778 | |
| $a$ | 2.4187549 | $\Omega$ | 197.81577 | | −0.87984326 | +0.28058795 | |
| $e$ | 0.1844990 | $i$ | 0.92680 | | −0.36382891 | +0.12165222 | |
| $P$ | 3.76 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1− | 0.3− | 2005 05 13 | G96 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.1− | 0.4− | 2005 05 13 | G96 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.3− |
| 2002 09 14 | 644 | 0.0 | 0.4+ | 2005 05 13 | G96 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2002 09 14 | 644 | 0.1+ | 0.1− | 2006 09 18 | 691 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2002 09 14 | 644 | 0.3+ | 0.2− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2005 03 10 | G96 | 0.3− | 0.1− | 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.7+ | 0.2− |
| 2005 03 10 | G96 | 0.3− | 0.0 | 2006 10 14 | 461 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2005 03 10 | G96 | 0.6− | 0.3+ | 2006 10 14 | 461 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− |
| 2005 03 10 | G96 | 0.3+ | 0.0 | 2006 10 15 | 461 | 0.8− | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2005 04 04 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 461 | (0.4− | 1.6+) | 2006 10 28 | 691 | 0.5+ | 0.2− |
| 2005 04 04 | 691 | 0.2− | 0.4− | 2006 10 16 | 461 | 0.6+ | 0.1+ | 2006 10 28 | 691 | 0.5+ | 0.1+ |
| 2005 04 04 | 691 | 0.7+ | 0.4− | 2006 10 16 | 461 | 0.0 | 0.8+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2005 04 09 | G96 | 0.4− | 0.1+ | 2006 10 16 | 461 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.7− |
| 2005 04 09 | G96 | 0.4− | 0.1− | 2006 10 17 | 461 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2005 04 09 | G96 | 0.6− | 0.6+ | 2006 10 17 | 461 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.6− | 0.0 |
| 2005 04 09 | G96 | 0.8− | 0.4+ | 2006 10 17 | 461 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2005 05 13 | G96 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.3− | 0.1− | | | | |

### 2006 $TQ_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.67630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22219172 | $\omega$ | 334.25004 | | +0.83555096 | −0.52882770 | |
| $a$ | 2.6997122 | $\Omega$ | 58.47752 | | +0.52944247 | +0.70256545 | |
| $e$ | 0.1501790 | $i$ | 10.06546 | | +0.14678308 | +0.47617544 | |
| $P$ | 4.44 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 01 | 644 | 0.2− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.2− |
| 2001 08 01 | 644 | 0.7− | 0.6+ | 2006 10 22 | 683 | 0.4+ | 0.6+ | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 08 01 | 644 | 0.5− | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2001 08 09 | 644 | 0.4+ | 0.6− | 2006 10 22 | 683 | 0.9+ | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.1− |
| 2001 08 09 | 644 | 0.1+ | 0.7− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 14 | 704 | (1.5− | 1.6+) |
| 2001 08 09 | 644 | 0.8+ | 0.5− | 2006 10 23 | 683 | 0.5+ | 0.2+ | 2006 11 14 | 704 | (1.6− | 2.7+) |
| 2006 10 03 | 704 | 0.3+ | 1.1+ | 2006 10 23 | 683 | 0.7+ | 0.8− | 2006 11 14 | 704 | 0.7− | 0.2+ |
| 2006 10 03 | 704 | 0.0 | 0.8+ | 2006 10 23 | 683 | 0.1− | 0.3+ | 2006 11 14 | 704 | (0.9+ | 2.4+) |
| 2006 10 03 | 704 | 0.4+ | 0.8+ | 2006 10 27 | 704 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2006 10 03 | 704 | 0.4− | 0.1− | 2006 10 27 | 704 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 10 27 | 704 | 0.5− | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 10 16 | 683 | 0.4− | 0.9− | 2006 10 27 | 704 | 0.7+ | 0.9+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2006 10 16 | 703 | 0.0 | 0.3− | 2006 10 27 | 683 | 0.2+ | 1.2− | 2006 11 17 | 703 | 0.3+ | 0.7− |
| 2006 10 16 | 703 | 0.3− | 0.3− | 2006 10 27 | 683 | 0.2+ | 0.8− | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2006 10 16 | 683 | 1.1− | 1.2+ | 2006 10 27 | 683 | 0.2+ | 0.6− | 2006 11 17 | 703 | 0.6+ | 0.2− |
| 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 10 28 | 683 | 0.8+ | 0.8− | 2006 11 17 | 703 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 16 | 683 | 1.2− | 1.0− | 2006 10 28 | 683 | 0.3+ | 0.8− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2006 10 17 | 683 | 0.3+ | 0.7− | 2006 10 28 | 683 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2006 10 17 | 683 | 0.2+ | 0.3+ | 2006 10 31 | 683 | 1.1− | 0.9− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 683 | (0.5+ | 2.0−) | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 10 31 | 683 | 0.4+ | 1.3− | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 1.1− | 1.0+ |
| 2006 10 19 | 683 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.4− | 0.8+ |
| 2006 10 19 | 683 | 0.2− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.9+ |
| 2006 10 19 | 683 | (1.6+ | 1.1+) | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.4+ |
| 2006 10 20 | 683 | 0.6+ | 0.9− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | (1.7− | 0.8−) |
| 2006 10 20 | 683 | 0.3− | 0.9− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | (2.3− | 0.9−) |
| 2006 10 21 | 683 | 0.5− | 0.5− | 2006 11 10 | 683 | (2.4+ | 1.4−) | 2006 11 21 | 704 | (1.6− | 0.1−) |
| 2006 10 21 | 683 | 0.0 | 1.4+ | 2006 11 10 | 683 | (1.7+ | 0.7−) | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2006 10 21 | 683 | 0.4− | 0.8+ | 2006 11 10 | 683 | (1.9+ | 0.0 ) | 2006 11 21 | 704 | 0.9− | 0.7+ |
| 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.3+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2006 10 22 | 704 | (1.0− | 2.2+) | 2006 11 11 | 683 | 1.2+ | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2006 10 22 | 704 | 0.4− | 1.0+ | 2006 11 11 | 683 | 1.1+ | 0.6− | 2006 11 28 | 704 | 0.2+ | 0.4+ |
| 2006 10 22 | 704 | 0.2− | 0.6+ | 2006 11 11 | 683 | 0.3+ | 0.6− | 2006 11 28 | 704 | 0.2− | 1.0+ |
| 2006 10 22 | 704 | (1.7+ | 0.9+) | 2006 11 11 | 703 | 0.2+ | 0.5− | 2006 11 28 | 704 | 0.5− | 0.7+ |
| 2006 10 22 | 704 | (1.7+ | 0.2+) | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2006 10 22 | 683 | 1.4− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.3− | 0.9+ |

### 2006 TD$_{12}$ = 1999 VX$_{206}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.44885 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27702861 | $\omega$ | 34.51774 | | +0.64356073 | | +0.76486808 |
| $a$ | 2.3305207 | $\Omega$ | 275.55730 | | −0.70851066 | | +0.58128516 |
| $e$ | 0.2304407 | $i$ | 1.63495 | | −0.28955523 | | +0.27764075 |
| $P$ | 3.56 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 695 | 0.9− | 1.1− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1999 11 10 | 695 | 0.1+ | 1.0− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.0 |
| 1999 11 14 | 704 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 1999 11 14 | 704 | 0.7+ | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1999 11 14 | 704 | 0.2− | 0.4− | 2006 10 17 | 703 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.2+ |
| 1999 11 15 | 691 | 0.1− | 0.3− | 2006 10 17 | 703 | 0.4− | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1999 11 15 | 691 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.8+ | 2006 11 10 | 291 | 0.0 | 0.0 |
| 1999 11 15 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 291 | 0.1+ | 0.1− |
| 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.1+ | 2006 11 10 | 291 | 0.2+ | 0.0 |
| 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2006 09 25 | 691 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2006 10 03 | 691 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2006 10 03 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2006 10 03 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.7+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.8+ | 1.0+ |
| 2006 10 10 | 644 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.1+ | 0.2− | 2006 11 11 | 703 | (0.9+ | 1.9+) |
| 2006 10 10 | 644 | 0.3− | 0.3− | 2006 10 21 | 703 | 0.5− | 0.1+ | 2006 11 11 | 703 | 1.4+ | 0.3+ |
| 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.3− |
| 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.0 |

### 2006 TJ$_{12}$ = 2005 NX$_{9}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.30120 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18157445 | $\omega$ | 97.78103 | | +0.71768506 | | +0.68072159 |
| $a$ | 3.0886324 | $\Omega$ | 219.50045 | | −0.69443343 | | +0.68391048 |
| $e$ | 0.1557656 | $i$ | 13.34216 | | −0.05186880 | | +0.26245872 |
| $P$ | 5.43 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 28 | 691 | 0.0 | 0.3+ | 2006 09 20 | 699 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ |
| 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 09 20 | 699 | 0.1− | 0.4+ | 2006 10 27 | 683 | 0.4− | 0.4− |
| 2004 03 28 | 691 | 0.2+ | 0.7+ | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 10 27 | 683 | 0.4+ | 0.5− |
| 2005 07 02 | 703 | 0.9− | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 10 27 | 683 | (1.7− | 0.1−) |
| 2005 07 02 | 703 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.2+ | 2006 10 28 | 683 | 0.2+ | 0.7− |
| 2005 07 02 | 703 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.2+ | 2006 10 28 | 683 | 1.1+ | 0.4+ |
| 2005 07 02 | 703 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.2− | 0.7+ | 2006 10 28 | 683 | 0.7+ | 0.6+ |
| 2005 07 04 | 644 | 0.4+ | 0.3+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.3− | 0.3+ |
| 2005 07 04 | 644 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.0 | 0.3+ | 2006 11 06 | 644 | 0.1+ | 0.3+ |
| 2005 07 04 | 644 | 0.4+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 1.1+ | 2006 11 06 | 644 | 0.2+ | 0.5+ |
| 2006 08 12 | 644 | 0.5− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2006 08 12 | 644 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2006 08 12 | 644 | 0.5− | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2006 09 20 | 699 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.0 |
| 2006 09 20 | 699 | 0.3+ | 1.1− | 2006 10 21 | 644 | 0.1− | 0.4+ | | | | |

### 2006 TP$_{12}$ = 2004 AP$_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.43004 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28072224 | $\omega$ | 252.11165 | | +0.89305540 | | −0.44823769 |
| $a$ | 2.3100329 | $\Omega$ | 134.49782 | | +0.43081581 | | +0.82671567 |
| $e$ | 0.1755980 | $i$ | 3.14877 | | +0.12980675 | | +0.34003555 |
| $P$ | 3.51 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.2+ | 1.2− | 2006 10 16 | 703 | 0.6− | 0.3− |
| 2004 01 15 | 691 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.0 | 0.9+ |
| 2004 01 15 | 691 | 0.2+ | 0.7+ | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.4− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.0 |
| 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 01 27 | 691 | 0.2− | 0.3− | 2006 10 10 | 644 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.3− |
| 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 01 27 | 691 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.5− |
| 2006 09 30 | 703 | 0.0 | 1.5+ | 2006 10 16 | 703 | 0.8− | 1.0+ | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2006 09 30 | 703 | 0.1+ | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.3− |

### 2006 TV$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.39834 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17685376 | $\omega$ | 97.40906 | | +0.69717090 | | +0.67902408 |
| $a$ | 3.1433532 | $\Omega$ | 220.24786 | | −0.71290741 | | +0.69047705 |
| $e$ | 0.1796413 | $i$ | 20.84947 | | +0.07560272 | | +0.24933460 |
| $P$ | 5.57 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 644 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.1+ |
| 2005 06 30 | 644 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 2005 06 30 | 644 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2005 08 27 | 644 | 0.4− | 0.4+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2005 08 27 | 644 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |
| 2005 08 27 | 644 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.3− | 0.4+ |
| 2006 09 17 | 703 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.2+ |
| 2006 09 17 | 703 | 0.4− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.3− | 0.2− |
| 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.8− | 2006 11 14 | 703 | 0.9− | 1.3− |
| 2006 09 17 | 703 | 0.1− | 0.6− | 2006 10 17 | 703 | 0.4− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.1+ |
| 2006 10 10 | 644 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.8+ | 0.6+ |

### 2006 TE$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.54930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23235236 | $\omega$ | 192.43039 | | +0.71214279 | | −0.69395487 |
| $a$ | 2.6204226 | $\Omega$ | 212.34681 | | +0.65990597 | | +0.71332013 |
| $e$ | 0.1631213 | $i$ | 11.44903 | | +0.23953446 | | +0.09798486 |
| $P$ | 4.24 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 15 | 291 | 0.0 | 0.9+ | 2006 10 02 | 291 | 0.0 | 0.3− | 2006 10 17 | 703 | 0.4+ | 0.3+ |
| 2005 06 15 | 291 | 0.4− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2005 06 15 | 291 | 0.4+ | 1.7− | 2006 10 10 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 22 | 621 | 0.2+ | 0.8− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 09 22 | 621 | 1.4+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2006 09 22 | 621 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.6+ | 0.4− |
| 2006 09 22 | 621 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.2− | 0.3+ |
| 2006 09 28 | 699 | 0.9− | 1.3+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.5− | 0.1+ |
| 2006 09 28 | 699 | 1.0− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2006 09 28 | 699 | 1.4− | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2006 09 28 | 699 | 0.6− | 0.2+ | 2006 10 17 | 703 | 0.5+ | 0.8+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2006 10 02 | 291 | 0.0 | 0.2− | 2006 10 17 | 703 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 10 02 | 291 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.4− | 0.4− | | | | |

### 2006 $TP_{13}$ = 2004 $DC_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.48662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23355738 | $\omega$ | 222.55385 | | +0.98523995 | −0.16612513 | |
| $a$ | 2.6114015 | $\Omega$ | 146.94178 | | +0.17022869 | +0.92546443 | |
| $e$ | 0.0968815 | $i$ | 4.34083 | | +0.01801203 | +0.34046737 | |
| $P$ | 4.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 1.1− | 0.6− |
| 2004 02 16 | 691 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2004 02 18 | 291 | 0.3− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.4+ |
| 2004 02 18 | 291 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2004 02 18 | 291 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 20 | 644 | 0.4− | 0.0 |
| 2006 09 21 | 699 | 0.3+ | 1.3− | 2006 10 11 | 644 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2006 09 21 | 699 | (2.3+ | 1.0−) | 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.7− |
| 2006 09 21 | 699 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 21 | 699 | 0.5− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2006 10 10 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.5− | 0.8+ | | | | |

### 2006 $TR_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.69208 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23676964 | $\omega$ | 329.17971 | | −0.28790368 | −0.95505880 | |
| $a$ | 2.5877285 | $\Omega$ | 137.43980 | | +0.89851819 | −0.29486998 | |
| $e$ | 0.2480772 | $i$ | 5.98538 | | +0.33132543 | −0.03023886 | |
| $P$ | 4.16 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.6− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2002 10 30 | 644 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 10 30 | 644 | 0.5+ | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 11 06 | 699 | 0.4− | 0.8− | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 699 | 0.5− | 0.0 | 2006 10 10 | 644 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.5− |
| 2002 11 06 | 699 | 0.4+ | 0.6− | 2006 10 10 | 644 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.7+ | 0.9− |
| 2002 11 06 | 699 | 0.9+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.5− | 0.1− |
| 2002 11 13 | 644 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.6+ |
| 2002 11 13 | 644 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.7+ | 0.5− |
| 2002 11 13 | 644 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.2− |
| 2002 12 08 | 644 | 0.1− | 0.8+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 22 | 703 | 1.0+ | 1.1− |
| 2002 12 08 | 644 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.3− |
| 2002 12 08 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.7+ | 2006 11 16 | 703 | (2.7− | 1.4+) |
| 2005 07 05 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.2− | 0.1− | 2006 11 16 | 703 | 0.6− | 1.1+ |
| 2005 07 05 | G96 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 16 | 703 | (0.2− | 1.8+) |
| 2005 07 05 | G96 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 16 | 703 | 0.2− | 1.2− |
| 2005 07 05 | G96 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.3− | 0.1− | | | | |
| 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | | | | |

### 2006 $TT_{13}$ = 2001 $QS_{325}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.63858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20957814 | $\omega$ | 175.61236 | | +0.58033532 | +0.81128987 | |
| $a$ | 2.8069762 | $\Omega$ | 129.84414 | | −0.74995693 | +0.56631482 | |
| $e$ | 0.0904201 | $i$ | 5.29463 | | −0.31745160 | +0.14524557 | |
| $P$ | 4.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 13 | 691 | 0.1+ | 0.0 | 2004 02 16 | 291 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.3− |
| 1999 02 13 | 691 | 0.2− | 0.0 | 2004 02 16 | 291 | 0.0 | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.4− |
| 1999 02 13 | 691 | 0.0 | 0.5− | 2004 02 16 | 291 | 0.2+ | 0.3+ | 2006 10 10 | 644 | 0.3− | 0.1+ |
| 2001 08 17 | 644 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.9− | 1.3+ | 2006 10 10 | 644 | 0.1− | 0.1+ |
| 2001 08 17 | 644 | 0.4− | 0.5+ | 2006 09 30 | 703 | 1.6+ | 0.6− | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2001 08 17 | 644 | 0.1− | 0.8+ | 2006 09 30 | 703 | 0.2− | 1.0+ | 2006 10 12 | 644 | 0.4+ | 0.1+ |
| 2001 08 19 | 807 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.2− | 0.2+ |
| 2001 08 19 | 807 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.1− | 0.2+ |

### 2006 $TX_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.18370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23800079 | $\omega$ | 322.43600 | | +0.87281992 | −0.43839160 | |
| $a$ | 2.5787968 | $\Omega$ | 64.87487 | | +0.48516275 | +0.73172981 | |
| $e$ | 0.1721966 | $i$ | 13.70278 | | +0.05293856 | +0.52190448 | |
| $P$ | 4.14 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 644 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | (2.4+ | 0.9−) |
| 2002 10 30 | 644 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.4+ | 0.2+ | 2006 10 28 | 703 | (0.3+ | 2.0+) |
| 2002 10 30 | 644 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 28 | 703 | 0.5− | 0.5+ |
| 2002 11 22 | 644 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.3+ | 0.8− |
| 2002 11 22 | 644 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.6− | 0.7+ |
| 2002 11 22 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.5+ | 0.5− |
| 2006 09 25 | 703 | 1.1+ | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 1.1− | 0.7+ |
| 2006 09 25 | 703 | 0.2− | 0.6− | 2006 10 12 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2006 09 25 | 703 | 0.4− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2006 09 25 | 703 | 0.1− | 0.9− | 2006 10 21 | 703 | 0.7+ | 0.3+ | | | | |
| 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.4− | 0.7− | | | | |

### 2006 $TB_{14}$ = 2004 $GL_{71}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.96521 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20999581 | $\omega$ | 65.38894 | | −0.08956615 | −0.98832698 | |
| $a$ | 2.8032530 | $\Omega$ | 30.54359 | | +0.80342586 | −0.14482328 | |
| $e$ | 0.1368309 | $i$ | 14.03429 | | +0.58862958 | +0.04728631 | |
| $P$ | 4.69 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2003 02 07 | 699 | 0.5+ | 0.1+ | 2006 10 12 | 644 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2003 02 07 | 699 | 0.2− | 0.4− | 2006 10 15 | 703 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2003 02 07 | 699 | 0.1+ | 0.3− | 2006 10 15 | 703 | 0.2+ | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2003 02 07 | 699 | 0.3− | 0.9+ | 2006 10 15 | 703 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2003 03 09 | 699 | (1.0− | 1.8−) | 2006 10 15 | 703 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2003 03 09 | 699 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.7− | 0.7− | 2006 11 11 | 703 | 0.4− | 1.3− |
| 2003 03 09 | 699 | 0.3+ | 1.4+ | 2006 10 20 | 644 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.1+ |
| 2003 03 09 | 699 | (1.8− | 2.2+) | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.0− | 0.6− |
| 2004 04 13 | 644 | 0.3− | 0.6+ | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2004 04 13 | 644 | 0.7+ | 0.8+ | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2004 04 13 | 644 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.5− | 1.0− |
| 2004 04 20 | 704 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.6− |
| 2004 04 20 | 704 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.4− | 2006 11 18 | 704 | 1.1+ | 0.3− |
| 2004 04 20 | 704 | 0.3+ | 0.6− | 2006 10 21 | 703 | 0.2− | 0.4− | 2006 11 18 | 704 | 1.4+ | 1.0+ |
| 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 17 | 691 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3− | 1.0+ |
| 2006 09 17 | 691 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.4+ | 1.3+ |
| 2006 09 30 | 703 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | (1.4+ | 1.9+) |
| 2006 09 30 | 703 | 0.4− | 0.1− | 2006 10 23 | 704 | 1.5− | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.6+ |
| 2006 09 30 | 703 | (2.2− | 2.3−) | 2006 10 23 | 704 | 0.8+ | 0.8+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2006 09 30 | 703 | (1.8− | 2.1−) | 2006 10 23 | 704 | (0.5− | 2.1+) | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 10 23 | 704 | 1.4+ | 0.4− | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2006 10 10 | 644 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.2− |

### 2006 TD$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.24558 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26151802 | $\omega$ | 17.53821 | | +0.76997005 | +0.63538094 | |
| $a$ | 2.4217816 | $\Omega$ | 302.86846 | | −0.59347569 | +0.67936728 | |
| $e$ | 0.2038938 | $i$ | 4.00258 | | −0.23437732 | +0.36708467 | |
| $P$ | 3.77 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 699 | 0.5− | 0.4+ | 2006 09 28 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1− |
| 2002 08 08 | 699 | 0.7− | 0.2− | 2006 09 30 | 703 | (2.7− | 2.1−) | 2006 10 17 | 703 | 0.1+ | 0.1+ |
| 2002 08 08 | 699 | 0.7− | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.1− |
| 2002 08 08 | 699 | 0.7+ | 0.4− | 2006 09 30 | 703 | 0.7+ | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 2002 08 13 | 699 | 0.4+ | 0.6− | 2006 09 30 | 703 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.2+ | 0.4+ |
| 2002 08 13 | 699 | 0.2+ | 0.2+ | 2006 10 10 | 644 | 0.6+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2002 08 13 | 699 | 1.1+ | 0.0 | 2006 10 10 | 644 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2002 08 13 | 699 | 0.6+ | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ |
| 2002 08 17 | 644 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 08 17 | 644 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 08 17 | 644 | 0.4− | 0.3− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.5− | | | | |
| 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.2− | | | | |

### 2006 TE$_{14}$ = 1995 TJ

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.47951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27352962 | $\omega$ | 27.00480 | | +0.90519664 | −0.42495407 | |
| $a$ | 2.3503533 | $\Omega$ | 358.11438 | | +0.35148414 | +0.75616994 | |
| $e$ | 0.1490473 | $i$ | 10.06864 | | +0.23890993 | +0.49761537 | |
| $P$ | 3.60 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.4− | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.0 |
| 1995 10 01 | 691 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.1− | 2.3− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1995 10 01 | 691 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.3− | 0.3− | 2006 10 12 | 644 | 0.4+ | 0.5− |
| 1995 10 03 | 691 | 0.2+ | 0.1− | 2006 09 30 | 703 | 1.5− | 1.0− | 2006 10 17 | 703 | 0.1− | 0.1+ |
| 1995 10 03 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 703 | 0.5+ | 1.1+ | 2006 10 17 | 703 | 0.2− | 0.7− |
| 1995 10 03 | 691 | 0.2+ | 0.1− | 2006 10 10 | 644 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 0.9− | 0.2+ |
| 1995 10 03 | 691 | 0.3+ | 0.1− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.4− | 0.9+ |
| 1995 10 03 | 691 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 1995 10 03 | 691 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.2− |
| 2006 09 28 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.4+ | | | | |

### 2006 TO$_{14}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.26738 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22843615 | $\omega$ | 352.64261 | | +0.21960694 | +0.96952842 | |
| $a$ | 2.6502865 | $\Omega$ | 289.99602 | | −0.88909677 | +0.15308369 | |
| $e$ | 0.1533639 | $i$ | 6.63447 | | −0.40159647 | +0.19125905 | |
| $P$ | 4.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 08 29 | 703 | 0.4− | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.3− |
| 2003 12 28 | 691 | 0.3+ | 0.1− | 2006 08 29 | 703 | 0.7− | 0.7+ | 2006 10 12 | 644 | 0.2− | 0.1+ |
| 2003 12 28 | 691 | 0.0 | 0.4+ | 2006 08 29 | 703 | 0.1+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 09 19 | 699 | 0.4+ | 0.5− | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2004 01 15 | 691 | 0.3− | 0.1+ | 2006 09 19 | 699 | 1.0− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2004 01 15 | 691 | 0.2+ | 0.0 | 2006 09 19 | 699 | 0.7+ | 0.9− | 2006 10 17 | 691 | 0.1+ | 0.2− |
| 2005 04 15 | 703 | 0.5− | 1.5− | 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2005 04 15 | 703 | 1.0− | 0.8− | 2006 09 27 | 703 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2005 04 15 | 703 | 0.3+ | 0.0 | 2006 09 27 | 703 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1− |
| 2005 04 15 | 703 | 0.2+ | 0.2+ | 2006 09 27 | 703 | 1.5− | 0.0 | 2006 10 21 | 691 | 0.2+ | 0.0 |
| 2005 05 01 | 644 | 0.1− | 0.4+ | 2006 09 27 | 703 | 0.0 | 0.6+ | 2006 10 21 | 691 | 0.3+ | 0.8− |
| 2005 05 01 | 644 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ |
| 2005 05 01 | 644 | 0.6+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 24 | 644 | 0.2+ | 0.1+ |
| 2005 05 11 | 644 | 0.4+ | 0.4+ | 2006 10 11 | 691 | 0.4+ | 0.5− | 2006 10 24 | 644 | 0.4+ | 0.3+ |
| 2005 05 11 | 644 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.3+ | 2006 10 24 | 644 | 0.1+ | 0.2+ |
| 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1− | | | | |
| 2006 08 29 | 703 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.5+ | 0.4+ | | | | |

### 2006 TA$_{15}$ = 2001 UV$_{210}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.23420 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19822899 | $\omega$ | 140.63344 | | +0.99287398 | −0.09890052 | |
| $a$ | 2.9131170 | $\Omega$ | 225.18143 | | +0.07111294 | +0.93938275 | |
| $e$ | 0.1118436 | $i$ | 5.37790 | | +0.09562534 | +0.32829671 | |
| $P$ | 4.97 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 0.1− | 1.4− | 2006 10 15 | 691 | 0.8− | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.3− |
| 2001 10 21 | 704 | 0.7− | 0.7+ | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2001 10 21 | 704 | 0.9− | 0.7+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2001 10 21 | 704 | 0.7+ | 0.4− | 2006 10 17 | 703 | (0.0 | 3.0+) | 2006 11 13 | 691 | 0.2− | 0.1− |
| 2001 10 21 | 704 | 0.9+ | 0.2+ | 2006 10 17 | 703 | (0.9− | 1.6+) | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2001 10 23 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2001 10 23 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | (1.6+ | 1.1−) | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2001 10 23 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.3− | 0.6+ | | | | |
| 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.1− | | | | |

### 2006 TC$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.39243 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17789452 | $\omega$ | 177.71312 | | +0.29221913 | −0.95570113 | |
| $a$ | 3.1310812 | $\Omega$ | 255.29448 | | +0.87685560 | +0.28246409 | |
| $e$ | 0.0860253 | $i$ | 2.08918 | | +0.38174892 | +0.08276103 | |
| $P$ | 5.54 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 07 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.5+ | 0.0 |
| 2001 12 07 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.4+ | 0.1+ |
| 2001 12 07 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2005 07 15 | G96 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2005 07 15 | G96 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.7− | 0.0 | 2006 11 17 | G96 | 0.7+ | 0.3− |
| 2005 07 15 | G96 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2005 07 15 | G96 | 0.3− | 0.5− | 2006 10 27 | 691 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2006 09 19 | 691 | 0.5+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.3+ | 0.3− |
| 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2006 09 30 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.0 | 2006 11 27 | G96 | 0.2− | 0.2+ |
| 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.5− | 2006 11 27 | G96 | 0.3+ | 0.2− |

**2006 TF$_{15}$ = 2004 KA$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 238.13283 | | (2000.0) | | | |
| $n$ | 0.16916212 | $\omega$ | 292.85492 | | −0.80530116 | −0.58171571 |
| $a$ | 3.2379288 | $\Omega$ | 211.91599 | | +0.59157747 | −0.77571891 |
| $e$ | 0.0244759 | $i$ | 12.50170 | | +0.03906576 | −0.24467735 |
| $P$ | 5.83 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 07 | 691 | (0.3− | 2.2+) | 2004 05 18 | 704 | 0.6+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.2+ |
| 1992 05 07 | 691 | 0.5+ | 1.7+ | 2004 05 20 | 691 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 1992 05 07 | 691 | 0.2− | 1.1+ | 2004 05 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2003 01 27 | 608 | 0.4+ | 0.9− | 2004 05 20 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2003 01 27 | 608 | 0.2+ | 0.4− | 2005 07 31 | 644 | 0.0 | 0.5+ | 2006 11 11 | 691 | 0.3− | 0.2+ |
| 2003 01 27 | 608 | 0.4− | 0.6− | 2005 07 31 | 644 | 0.4− | 0.2+ | 2006 11 11 | 703 | 1.3− | 1.4+ |
| 2003 03 08 | 699 | 0.8+ | 0.1− | 2005 07 31 | 644 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2003 03 08 | 699 | 0.5+ | 0.7+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2003 03 08 | 699 | 0.5+ | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1+ | 1.1+ |
| 2003 03 08 | 699 | 0.8+ | 1.1+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2003 03 28 | 699 | 0.1+ | 0.5− | 2006 10 15 | 691 | 0.6+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2003 03 28 | 699 | (2.4− | 1.6−) | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.2+ |
| 2003 03 28 | 699 | 0.1− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2003 03 28 | 699 | 0.7− | 0.8+ | 2006 10 16 | 683 | (1.7− | 0.3−) | 2006 11 18 | 291 | 0.0 | 0.4+ |
| 2003 04 11 | 691 | 0.1− | 1.3+ | 2006 10 16 | 683 | 0.3+ | 1.4+ | 2006 11 18 | 291 | 0.0 | 0.8+ |
| 2003 04 11 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 291 | 0.1+ | 0.8+ |
| 2003 04 11 | 691 | 0.3+ | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2004 05 18 | 704 | 0.1+ | 0.8+ | 2006 10 27 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2004 05 18 | 704 | 0.1+ | 0.7+ | 2006 10 31 | 691 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ |

**2006 TJ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.04099 | | (2000.0) | | | |
| $n$ | 0.26699933 | $\omega$ | 122.90476 | | +0.99142733 | −0.12917852 |
| $a$ | 2.3885221 | $\Omega$ | 244.52406 | | +0.11144709 | +0.91442553 |
| $e$ | 0.2186661 | $i$ | 1.24501 | | +0.06820111 | +0.38358684 |
| $P$ | 3.69 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 12 | 599 | 0.4+ | 0.8− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2002 07 12 | 599 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2002 07 12 | 599 | 0.3− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2− | 0.3− |
| 2002 08 02 | 599 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.3− | 0.2+ |
| 2002 08 02 | 599 | 0.5− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.3− | 0.2− |
| 2002 08 02 | 599 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.3− | 0.6− | 2006 10 28 | G96 | 0.1− | 0.1+ |
| 2006 09 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 703 | (1.1− | 2.0−) | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 691 | 0.2− | 0.0 | 2006 10 17 | 703 | 0.9− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2006 09 19 | 691 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.6− | 1.2− | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2006 10 02 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2006 10 02 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2006 10 02 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.7+ | 1.3+ | 2006 11 13 | G96 | 0.6+ | 0.0 |
| 2006 10 11 | 691 | 0.4− | 0.3+ | 2006 10 21 | 703 | 1.0+ | 0.7+ | 2006 11 13 | G96 | 0.6− | 0.3− |
| 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | (0.3− | 1.8+) | 2006 11 20 | G96 | 0.4+ | 0.0 |
| 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.5+ | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2006 10 11 | 644 | 0.3+ | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.5+ | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.5+ | 2006 11 20 | G96 | 0.3+ | 0.1+ |
| 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.3+ | | | | |

**2006 TL$_{15}$ = 2001 UA$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.44627 | | (2000.0) | | | |
| $n$ | 0.18719443 | $\omega$ | 160.39574 | | +0.97946326 | −0.18491715 |
| $a$ | 3.0265006 | $\Omega$ | 210.61120 | | +0.15743099 | +0.95041740 |
| $e$ | 0.1494596 | $i$ | 9.07973 | | +0.12596509 | +0.25002484 |
| $P$ | 5.27 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.9− | 0.7+ | 2006 10 19 | 644 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.4− |
| 2001 10 23 | 704 | 0.4+ | 1.2+ | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2001 10 23 | 704 | 0.5+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2001 10 23 | 704 | 0.4+ | 0.3+ | 2006 10 20 | H07 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 10 23 | 704 | 0.1− | 0.3+ | 2006 10 20 | 703 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2001 10 24 | 704 | 0.1+ | 1.2− | 2006 10 20 | H07 | 0.5+ | 0.4− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.3+ | 0.8− | 2006 10 20 | 703 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 10 24 | 704 | 0.7− | 1.3− | 2006 10 20 | H07 | 0.4− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 20 | 703 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 20 | 703 | 0.4− | 1.4+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 21 | 703 | 0.8+ | 0.7+ | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | 1.1+ | 1.2− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.3+ | 2006 11 10 | 691 | 0.8+ | 0.0 |
| 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.8+ | 0.6+ | 2006 11 11 | 703 | 0.6+ | 0.2+ |
| 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 21 | 703 | 1.2− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.1+ |
| 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.3+ | 2006 11 11 | 703 | (0.4− | 1.8+) |
| 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.2− | 0.9+ | 2006 11 11 | 703 | 0.7− | 0.2− |
| 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.5+ |
| 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.4− |

**2006 TM$_{15}$ = 2004 GP$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.66258 | | (2000.0) | | | |
| $n$ | 0.23237279 | $\omega$ | 242.71880 | | −0.00382515 | −0.99299067 |
| $a$ | 2.6202689 | $\Omega$ | 208.26283 | | +0.98283563 | +0.01805562 |
| $e$ | 0.0955701 | $i$ | 14.44647 | | +0.18444376 | −0.11680551 |
| $P$ | 4.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 644 | 0.2− | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2004 04 12 | 644 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2004 04 12 | 644 | 0.1+ | 0.0 | 2006 10 20 | 703 | 1.2− | 0.7+ | 2006 11 11 | 691 | 0.4+ | 0.1+ |
| 2004 04 16 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 703 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2004 04 16 | 644 | 0.0 | 0.3+ | 2006 10 20 | 703 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 04 16 | 644 | 0.1+ | 0.0 | 2006 10 20 | 703 | (1.7+ | 0.5−) | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.5+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2006 10 11 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.3− | 0.1− | 2006 11 20 | G96 | 0.6+ | 0.1− |
| 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.3− | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 20 | G96 | 0.1− | 0.1− |
| 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | | | | |
| 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | | | |

**2006 TN$_{15}$ = 2001 RD$_{110}$ = 2004 HN$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 291.18050 | | (2000.0) | | | |
| $n$ | 0.21362652 | $\omega$ | 77.36626 | | −0.03079057 | −0.99933664 |
| $a$ | 2.7714004 | $\Omega$ | 14.44067 | | +0.88411541 | −0.03630645 |
| $e$ | 0.0325864 | $i$ | 4.47281 | | +0.46625302 | +0.00285027 |
| $P$ | 4.61 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.4− | 0.7− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.0 | 0.2− | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2+ |
| 2001 09 12 | 704 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2001 09 12 | 704 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.3− | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2006 10 20 | 644 | 0.6+ | 0.7+ | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2001 09 19 | 704 | 0.3− | 0.1+ | 2006 10 20 | 703 | 0.0 | 0.6+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2004 04 20 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 703 | 0.3− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2004 04 20 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 703 | 0.8− | 0.5− | 2006 11 20 | G96 | 0.4− | 0.2− |
| 2004 04 21 | 704 | 0.4− | 0.8+ | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2004 04 21 | 704 | 0.0 | 1.0+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 20 | G96 | 0.6− | 0.4− |
| 2004 04 21 | 704 | 0.5− | 0.0 | 2006 10 27 | 691 | 0.2− | 0.3+ | 2006 11 20 | G96 | 0.2− | 0.6− |
| 2004 04 21 | 704 | 0.9+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1+ | | | | |
| 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.3− | 0.1+ | | | | |

**2006 TO$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.19370 | | (2000.0) | | | |
| $n$ | 0.19468274 | $\omega$ | 155.14509 | | +0.88781541 | −0.45965080 |
| $a$ | 2.9483866 | $\Omega$ | 232.23819 | | +0.41733040 | +0.82473099 |
| $e$ | 0.0998083 | $i$ | 1.62878 | | +0.19395653 | +0.32945398 |
| $P$ | 5.06 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 18 | 691 | (3.4− | 1.4+) | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.1− |
| 1996 10 18 | 691 | 0.3+ | 0.3− | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.3− | 0.2− |
| 1996 10 18 | 691 | 0.1− | 0.3− | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.4− | 0.4− |
| 2000 07 30 | 807 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.4− | 0.3− |
| 2000 07 30 | 807 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.7+ |
| 2001 11 21 | 691 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2001 11 21 | 691 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2001 11 21 | 691 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.4+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2006 07 22 | G96 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2006 07 22 | G96 | 0.8− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2006 07 22 | G96 | (2.3− | 1.0−) | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.9− | 0.7− |
| 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.5− |
| 2006 09 28 | 691 | 0.6+ | 0.6− | 2006 10 27 | 691 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.5− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2006 10 02 | 691 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2006 10 02 | 691 | 0.7+ | 1.0− | 2006 10 28 | G96 | 0.1+ | 0.1− | | | | |

**2006 TT$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.69840 | | (2000.0) | | | |
| $n$ | 0.26372560 | $\omega$ | 113.06251 | | +0.79505135 | +0.60529937 |
| $a$ | 2.4082479 | $\Omega$ | 209.72997 | | −0.58119699 | +0.74196597 |
| $e$ | 0.1212941 | $i$ | 4.48827 | | −0.17350335 | +0.28826927 |
| $P$ | 3.74 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 09 | 691 | 0.0 | 0.4+ | 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 1991 10 09 | 691 | 0.1− | 0.1− | 2005 05 14 | G96 | 0.0 | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.3− |
| 1991 10 09 | 691 | 0.1+ | 0.3− | 2005 05 14 | G96 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.2+ | 0.2− |
| 2002 08 08 | 699 | 0.3− | 0.6− | 2006 09 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2002 08 08 | 699 | 1.2+ | 0.2− | 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2002 08 08 | 699 | 0.7+ | 0.1+ | 2006 09 19 | 691 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.4− | 0.1− |
| 2002 08 08 | 699 | 0.5+ | 0.4− | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1− |
| 2002 08 16 | 644 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− |
| 2002 08 16 | 644 | 0.6− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 08 16 | 644 | 0.7− | 0.0 | 2006 10 11 | 691 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2005 04 02 | G96 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.4+ |
| 2005 04 02 | G96 | 0.6− | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2005 04 02 | G96 | 0.6− | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2005 04 02 | G96 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.7− | 2006 10 28 | G96 | 0.5+ | 0.1+ |
| 2005 04 17 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2005 05 14 | G96 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.6− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2− |

**2006 TA$_{16}$ = 2002 VU$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 322.17706 | | (2000.0) | | | |
| $n$ | 0.24416183 | $\omega$ | 202.64857 | | +0.56714120 | −0.82252956 |
| $a$ | 2.5352310 | $\Omega$ | 212.84473 | | +0.76712139 | +0.54626549 |
| $e$ | 0.0362009 | $i$ | 4.48151 | | +0.29979264 | +0.15823757 |
| $P$ | 4.04 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 691 | 0.0 | 0.2− | 2006 09 23 | 152 | (4.9− | 1.2+) | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1998 10 01 | 691 | 0.0 | 1.1− | 2006 09 26 | 691 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3− |
| 1998 10 01 | 691 | 0.5+ | 0.1− | 2006 09 26 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2002 11 04 | 291 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2002 11 04 | 291 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2002 11 04 | 291 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2002 11 07 | 695 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.1− |
| 2002 11 07 | 695 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.8+ | 0.1− |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.5+ | 0.1− |
| 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.8+ | 0.7+ | 2006 11 22 | G96 | 0.7+ | 0.1+ |
| 2006 09 23 | 152 | 1.4− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1+ | | | | |
| 2006 09 23 | 152 | 0.8− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | | | | |

**2006 TC$_{16}$ = 2001 WS$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.91851 | | (2000.0) | | | |
| $n$ | 0.18693603 | $\omega$ | 111.81052 | | +0.95525630 | +0.29528536 |
| $a$ | 3.0292890 | $\Omega$ | 231.01902 | | −0.27884294 | +0.87978715 |
| $e$ | 0.1388580 | $i$ | 1.25948 | | −0.09865093 | +0.37253340 |
| $P$ | 5.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2001 11 20 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.6+ | 0.3+ |
| 2001 11 20 | 691 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.5+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.4− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.4+ | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.6+ | 0.2− |
| 2001 11 21 | 704 | 0.1+ | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.4+ |
| 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.4− | 0.6+ |
| 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.5+ | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.7+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 10 21 | 703 | (1.6− | 0.8+) | 2006 11 20 | G96 | 0.2+ | 0.3− |
| 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.7− | 0.8− | 2006 11 20 | G96 | 0.5− | 1.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.9− | 0.8+ | 2006 11 20 | G96 | 0.2− | 0.3− | | |
| 2006 10 11 | 644 | 0.7+ | 0.6+ | 2006 10 23 | 691 | 0.7− | 0.1− | 2006 11 20 | G96 | 0.8+ | 0.4− | | |
| 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ | | | | | | |

**2006 TK$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.00480 | | | (2000.0) | | |
| $n$ | 0.21886676 | $\omega$ | 330.10628 | | +0.99786624 | −0.03332913 |
| $a$ | 2.7269856 | $\Omega$ | 31.95213 | | +0.05617623 | +0.87649585 |
| $e$ | 0.0320011 | $i$ | 6.08996 | | −0.03327448 | +0.48025429 |
| $P$ | 4.50 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 27 | 695 | 0.1− | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2004 02 27 | 695 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2004 03 30 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2004 03 30 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.9− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2004 03 30 | 691 | 0.2− | 0.0 | 2006 10 21 | 703 | 1.0− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2006 10 02 | 691 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.7− | 0.1+ |
| 2006 10 02 | 691 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2006 10 15 | 691 | 0.3− | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2006 10 15 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.7+ | 0.2− | 2006 11 13 | G96 | 0.5+ | 0.3− |

**2006 TL$_{16}$ = 1999 VY$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.91809 | | | (2000.0) | | |
| $n$ | 0.28037645 | $\omega$ | 54.93869 | | +0.11969602 | −0.99058342 |
| $a$ | 2.3119318 | $\Omega$ | 28.40710 | | +0.85933539 | +0.06984516 |
| $e$ | 0.1301405 | $i$ | 8.03087 | | +0.49720776 | +0.11775456 |
| $P$ | 3.52 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.2− | 1.0− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 1999 11 03 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 1999 11 03 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 1999 11 10 | 691 | 0.1+ | 0.3− | 2006 10 21 | 703 | 0.5− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.6+ |
| 1999 11 10 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 1999 11 10 | 691 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 2006 09 23 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2006 09 23 | 691 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2006 09 23 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1+ |
| 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.9+ | 0.7− |
| 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | (2.6+ | 1.9+) |
| 2006 10 15 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | (1.7− | 0.1+) |
| 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.0 |
| 2006 10 15 | 691 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2006 10 19 | 691 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2− | | | | |
| 2006 10 19 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.3− | | | | |

**2006 TQ$_{16}$ = 1996 TK$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 48.50435 | | | (2000.0) | | |
| $n$ | 0.29379557 | $\omega$ | 291.02433 | | +0.68990243 | +0.72363291 |
| $a$ | 2.2409864 | $\Omega$ | 22.63553 | | −0.64365874 | +0.62568398 |
| $e$ | 0.1693814 | $i$ | 2.94144 | | −0.33126737 | +0.29133309 |
| $P$ | 3.35 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 04 | 691 | 0.1− | 0.0 | 2006 10 16 | 683 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 1996 10 04 | 691 | 0.2+ | 0.1− | 2006 10 16 | 683 | 0.5− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.5− |
| 1996 10 04 | 691 | 0.2− | 0.0 | 2006 10 16 | 683 | 1.1+ | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 1996 10 15 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 1996 10 15 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.2+ | 1.0+ |
| 1996 10 15 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 20 | G96 | 0.9+ | 0.7− |
| 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.6− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.6− | 1.3− | 2006 11 20 | G96 | 0.3− | 0.3− |
| 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.3− |
| 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.4− |

**2006 TX$_{16}$ = 2005 EV$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.85025 | | | (2000.0) | | |
| $n$ | 0.27882780 | $\omega$ | 138.72396 | | +0.84312305 | +0.53768414 |
| $a$ | 2.3204845 | $\Omega$ | 188.75650 | | −0.50352370 | +0.78535932 |
| $e$ | 0.1799733 | $i$ | 2.35977 | | −0.18869925 | +0.30676784 |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2005 03 08 | G96 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2005 03 08 | G96 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2005 03 08 | G96 | 0.7− | 0.2− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2005 04 02 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2005 04 02 | 691 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 04 02 | 691 | 0.3+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2005 05 13 | G96 | 0.6− | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.8+ |
| 2005 05 13 | G96 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 2005 05 13 | G96 | 0.3− | 0.5+ | 2006 10 19 | 691 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.3+ |
| 2005 05 13 | G96 | 0.0 | 0.7+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.9+ |
| 2006 09 20 | 699 | 0.9+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 09 20 | 699 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.7− |
| 2006 09 20 | 699 | 1.2− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2006 09 20 | 699 | 0.8+ | 0.7− | 2006 10 21 | 703 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.7− |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | 703 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.5+ |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 21 | 703 | 0.4− | 0.9− | 2006 11 17 | 703 | 0.0 | 0.1+ |
| 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.6+ | 0.6− |
| 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2006 10 11 | 691 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.0 | | | | |

**2006 TY$_{16}$ = 2001 TS$_{130}$ = 2004 EM$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 6.76173 | | | (2000.0) | | |
| $n$ | 0.21235519 | $\omega$ | 342.45825 | | +0.96594931 | −0.23180609 |
| $a$ | 2.7824506 | $\Omega$ | 31.66152 | | +0.25578002 | +0.78865396 |
| $e$ | 0.0990762 | $i$ | 12.64721 | | +0.03896812 | +0.56946543 |
| $P$ | 4.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 10 | 644 | 0.5− | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2001 10 10 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 10 10 | 644 | 0.9− | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.4+ | 0.2− |
| 2001 10 15 | 644 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 11 | 703 | (1.7+ | 1.8−) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.2− | 0.6+ | 2006 10 12 | 644 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.9− |
| 2001 10 15 | 644 | 0.1− | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.6− |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.3+ | 2006 11 11 | 703 | (0.6+ | 8.0−) |
| 2004 03 14 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.1− |
| 2004 03 14 | 691 | 0.4+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.7− | 0.5+ | 2006 11 15 | 691 | 0.7+ | 0.2− |
| 2004 03 21 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2006 09 19 | 691 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.6− | 0.4+ |
| 2006 09 19 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.6− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.6− | | | | |

**2006 TZ$_{16}$ = 2005 NO$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.85015 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24353594 | $\omega$ | 82.23597 | +0.16819411 | | +0.98561554 | |
| $a$ | 2.5395728 | $\Omega$ | 197.47305 | −0.92470682 | | +0.15195153 | |
| $e$ | 0.0873636 | $i$ | 3.15306 | −0.34150847 | | +0.07397799 | |
| $P$ | 4.05 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 28 | 691 | 0.4+ | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.8− | 2006 10 19 | 691 | 0.2− | 0.0 |
| 1994 10 28 | 691 | 0.0 | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.7− | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 1994 10 28 | 691 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 1998 10 17 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.9+ | 0.6− | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 1998 10 17 | 691 | 0.2− | 0.9− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 |
| 1998 10 17 | 691 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2005 07 04 | 644 | 0.1− | 0.3− | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2005 07 04 | 644 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.5− | 0.0 |
| 2005 07 04 | 644 | 0.2+ | 0.8− | 2006 10 11 | 644 | 0.5+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2005 07 05 | G96 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.8+ |
| 2005 07 05 | G96 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.7+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 07 05 | G96 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.6+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 07 05 | G96 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.2− | 0.3− | | | | |

**2006 TB$_{17}$ = 2002 XV$_{74}$ = 2004 KZ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.69605 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22545705 | $\omega$ | 80.96014 | −0.50773395 | | −0.86025387 | |
| $a$ | 2.6735819 | $\Omega$ | 39.66470 | +0.75898692 | | −0.47223530 | |
| $e$ | 0.1665157 | $i$ | 4.18474 | +0.40760899 | | −0.19224228 | |
| $P$ | 4.37 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 12 11 | 704 | 0.4+ | 0.0 | 2006 10 15 | 691 | 0.5− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2002 12 11 | 704 | 0.5− | 1.0+ | 2006 10 19 | 691 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2002 12 11 | 704 | 0.4− | 0.8+ | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2002 12 11 | 704 | 0.5+ | 0.6+ | 2006 10 19 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2002 12 14 | 704 | (0.7− | 1.7+) | 2006 10 21 | 703 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2002 12 14 | 704 | 0.3− | 0.9+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2002 12 14 | 704 | (0.6− | 2.9+) | 2006 10 21 | 703 | 0.1+ | 1.3− | 2006 11 11 | G96 | 0.2+ | 0.7− |
| 2004 05 16 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.6− |
| 2004 05 16 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2004 05 16 | 691 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.4− |
| 2004 05 19 | 691 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2004 05 19 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2004 05 19 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2006 09 30 | 703 | 0.1− | 0.7− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2006 09 30 | 703 | (1.0− | 3.3−) | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.1− |
| 2006 09 30 | 703 | 0.7+ | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.4+ | 0.3+ |
| 2006 09 30 | 703 | 0.2− | 1.2+ | 2006 10 23 | 691 | 0.5− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 1.0+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.3− |
| 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2006 10 11 | 691 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.6+ |
| 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.7− |

**2006 TE$_{17}$ = 1998 SB$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.66744 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.12463269 | $\omega$ | 315.24388 | +0.99848146 | | +0.03668017 | |
| $a$ | 3.9693075 | $\Omega$ | 42.70478 | −0.01499586 | | +0.89889614 | |
| $e$ | 0.2680231 | $i$ | 3.47437 | −0.05300845 | | +0.43662374 | |
| $P$ | 7.91 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 1.7+ | 0.4− | 2006 10 17 | 683 | (0.2− | 1.7+) | 2006 10 28 | 704 | (1.8− | 0.0 ) |
| 1998 09 26 | 704 | (1.6+ | 2.4−) | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 10 28 | 704 | (0.7− | 1.9+) |
| 1998 09 26 | 704 | 0.8− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.1+ | 0.8+ |
| 1998 09 26 | 704 | 1.2+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 10 28 | 704 | 0.3− | 1.5+ |
| 1998 09 27 | 704 | 1.4− | 0.8− | 2006 10 19 | 683 | 0.5+ | 0.4− | 2006 11 11 | 703 | 0.9+ | 0.7− |
| 1998 09 27 | 704 | 1.2+ | 0.0 | 2006 10 19 | 683 | 1.1+ | 1.4+ | 2006 11 11 | 703 | 0.7+ | 0.1+ |
| 1998 09 27 | 704 | 0.9− | 0.4− | 2006 10 19 | 683 | 1.5+ | 0.9+ | 2006 11 11 | 703 | 0.0 | 0.9− |
| 1998 09 27 | 704 | 0.9− | 1.0+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.8+ |
| 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 20 | 683 | (2.0+ | 0.1−) | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 10 20 | 683 | 1.1+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 2006 09 30 | 703 | 0.5− | 0.1− | 2006 10 20 | 683 | 1.1+ | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.7+ |
| 2006 09 30 | 703 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 1.2+ | 0.4− |
| 2006 09 30 | 703 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.1− | 0.8+ |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | (0.6+ | 1.7−) |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.7− | 0.6+ |
| 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2006 10 15 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.8− | 0.1+ |
| 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2006 10 17 | 683 | 0.7− | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.6− | 0.2− |
| 2006 10 17 | 683 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.5+ | 0.2− |

**2006 TF$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.07657 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18721672 | $\omega$ | 151.47925 | +0.98229616 | | +0.18363309 | |
| $a$ | 3.0262604 | $\Omega$ | 198.05315 | −0.18640993 | | +0.93850567 | |
| $e$ | 0.1165902 | $i$ | 6.86750 | −0.01858988 | | +0.29237989 | |
| $P$ | 5.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 06 01 | 691 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2000 06 01 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | (0.3− | 2.2−) |
| 2000 06 01 | 691 | 0.2− | 0.3− | 2006 09 30 | G96 | 0.3− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 07 24 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.3− |
| 2000 07 24 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2000 07 24 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.8+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2000 07 24 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.6− | 0.8+ |
| 2000 07 24 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2000 07 24 | 691 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2004 04 25 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2004 04 25 | 691 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 04 25 | 691 | 0.6+ | 0.4+ | 2006 10 19 | 691 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.0 | | | | |

**2006 TG$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.13247 | | (2000.0) | | | |
| $n$ | 0.23566425 | $\omega$ | 17.31109 | | +0.52067342 | −0.85171042 |
| $a$ | 2.5958140 | $\Omega$ | 41.36427 | | +0.77234677 | +0.44041388 |
| $e$ | 0.1893277 | $i$ | 5.12775 | | +0.36384015 | +0.28394539 |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.3− | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2002 11 24 | 644 | 0.1+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.0 |
| 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8− | 0.2− |
| 2004 04 13 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 11 | G96 | 1.0+ | 0.6− |
| 2006 09 30 | 703 | 1.0− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 1.9+ | 0.1+ |
| 2006 09 30 | 703 | 0.6− | 0.4− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.9− |
| 2006 09 30 | 703 | 0.8− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2006 09 30 | 703 | 1.4− | 1.1+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.3+ | 1.0− |
| 2006 10 11 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 11 17 | 691 | 0.1− | 0.4− |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.6− | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 11 17 | 691 | 0.3+ | 0.2− |
| 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2006 10 11 | 691 | 0.2− | 0.7+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2006 10 11 | 644 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 1.0− | 0.3− |
| 2006 10 11 | 644 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.8+ |
| 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.5− | 0.7+ |
| 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 10 28 | 704 | 1.0− | 1.1+ | 2006 11 27 | 703 | 0.2+ | 0.1− |
| 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 28 | 704 | 1.6− | 0.6− | 2006 11 27 | 703 | 0.4+ | 0.7+ |
| 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 28 | 704 | 0.3− | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.8+ |
| 2006 10 15 | 691 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.0 | | | | |

**2006 TT$_{17}$ = 2005 MK$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 84.84593 | | (2000.0) | | | |
| $n$ | 0.19832087 | $\omega$ | 199.48879 | | +0.41890117 | +0.90648507 |
| $a$ | 2.9122173 | $\Omega$ | 95.30614 | | −0.82588295 | +0.40460413 |
| $e$ | 0.0579837 | $i$ | 3.04989 | | −0.37741113 | +0.12074898 |
| $P$ | 4.97 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2001 10 18 | 644 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2001 10 18 | 644 | 0.4− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.1− | 1.0+ | 2006 10 11 | 691 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 03 28 | 691 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.2+ |
| 2004 03 28 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2004 03 28 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2005 06 03 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2005 06 16 | 691 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.3− | 0.6− |
| 2005 06 16 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2005 06 16 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2005 07 05 | 701 | 1.2+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2005 07 05 | 701 | 0.3− | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.4+ |

**2006 TX$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 7.86578 | | (2000.0) | | | |
| $n$ | 0.26918341 | $\omega$ | 296.84377 | | +0.99223443 | −0.11876456 |
| $a$ | 2.3755847 | $\Omega$ | 69.99599 | | +0.12344093 | +0.90377836 |
| $e$ | 0.2079834 | $i$ | 2.25402 | | +0.01527030 | +0.41119296 |
| $P$ | 3.66 | $H$ | 17.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 08 | 644 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2002 08 08 | 644 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2002 08 08 | 644 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2004 02 26 | 695 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.2− |
| 2004 02 26 | 695 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.7+ |
| 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.2+ |
| 2005 05 10 | G96 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 1.3− |
| 2005 05 10 | G96 | 0.5+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2005 05 10 | G96 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | (0.3+ | 1.7−) |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.7− | 0.8+ |

**2006 TB$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 51.15773 | | (2000.0) | | | |
| $n$ | 0.20313415 | $\omega$ | 262.06846 | | +0.86711865 | +0.49219851 |
| $a$ | 2.8660301 | $\Omega$ | 68.41775 | | −0.41845663 | +0.80309783 |
| $e$ | 0.0476343 | $i$ | 4.71635 | | −0.27018381 | +0.33581916 |
| $P$ | 4.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.5+ | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.6− |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.7+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2006 10 03 | G96 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2006 10 03 | G96 | 0.0 | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2006 10 03 | G96 | (2.0− | 0.7−) | 2006 10 22 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.8− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2006 10 11 | 691 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.3+ | | | | |
| 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.0 | | | | |

**2006 TC$_{18}$ = 2001 QH$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.80330 | | (2000.0) | | | |
| $n$ | 0.21662047 | $\omega$ | 257.58955 | | +0.81279810 | +0.58034832 |
| $a$ | 2.7458052 | $\Omega$ | 66.91438 | | −0.51085606 | +0.75178718 |
| $e$ | 0.2166827 | $i$ | 3.14988 | | −0.27997380 | +0.31306846 |
| $P$ | 4.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 608 | 0.4− | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 08 26 | 608 | 0.5− | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 08 26 | 608 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 08 27 | 644 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 2001 08 27 | 644 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.7− |
| 2001 08 27 | 644 | 0.1+ | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.1+ |
| 2006 10 02 | G96 | 0.4− | 0.4− | 2006 10 19 | 644 | 0.9+ | 0.5+ | 2006 11 11 | 703 | 0.9+ | 0.2+ |
| 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 19 | 644 | 0.6+ | 0.3+ | 2006 11 17 | 703 | (0.1− | 1.7−) |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 1.4+ | 0.1− |
| 2006 10 02 | G96 | 0.4− | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.2− |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 1.1+ | 0.8+ | 2006 11 17 | 703 | 0.8− | 1.1− |
| 2006 10 11 | 691 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.3− |
| 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.6− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |

**2006 TE$_{18}$ = 2001 WQ$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.43075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18152060 | $\omega$ | 118.84695 | | −0.93705488 | | −0.33056764 |
| $a$ | 3.0892433 | $\Omega$ | 42.12781 | | +0.23221777 | | −0.83053263 |
| $e$ | 0.0592242 | $i$ | 9.65373 | | +0.26077398 | | −0.44826397 |
| $P$ | 5.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.5+ | 1.0+ | 2006 09 19 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 0.6+ | 0.9+ | 2006 09 19 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2001 11 19 | 704 | 0.1− | 0.6+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1− |
| 2001 11 20 | 704 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.5− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 1.4− | 2006 10 11 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 11 20 | 704 | 0.8− | 0.5− | 2006 10 15 | 691 | 0.5+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.3+ |
| 2001 11 20 | 704 | 0.4− | 0.7− | 2006 10 15 | 691 | 0.3− | 0.8+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2001 11 20 | 704 | (0.8− | 1.7−) | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2003 03 08 | 644 | (0.03+ | 0.01−) | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2003 03 08 | 644 | (0.03+ | 0.01−) | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 01 | 691 | 0.1− | 0.6+ |
| 2003 03 08 | 644 | (0.03+ | 0.01−) | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.5− |
| 2006 09 19 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.8− | 2006 11 01 | 691 | 0.3+ | 0.3− |

**2006 TG$_{18}$ = 1995 TD$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.92659 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27412724 | $\omega$ | 154.25847 | | +0.71901494 | | +0.69484414 |
| $a$ | 2.3469361 | $\Omega$ | 161.70281 | | −0.64533880 | | +0.67522238 |
| $e$ | 0.2206014 | $i$ | 2.64019 | | −0.25798324 | | +0.24752043 |
| $P$ | 3.60 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.5+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.2− |
| 1995 09 26 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 1.0+ | 0.4+ | 2006 10 21 | 703 | (3.4+ | 1.2−) |
| 1995 09 26 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.1− | 0.5− |
| 1995 10 01 | 691 | 0.0 | 0.0 | 2006 10 16 | 621 | 0.1+ | 0.5− | 2006 10 21 | 703 | (4.1+ | 1.7−) |
| 1995 10 01 | 691 | 0.0 | 0.1+ | 2006 10 17 | 621 | 0.3− | 0.7− | 2006 10 21 | 703 | 0.2+ | 1.7− |
| 1995 10 01 | 691 | 0.2− | 0.0 | 2006 10 17 | 621 | 0.5+ | 0.2+ | 2006 10 21 | G96 | 0.6− | 0.3− |
| 2006 10 11 | 691 | 0.3− | 0.7+ | 2006 10 17 | G96 | 0.6− | 0.3− | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2006 10 11 | 691 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.2− | 0.3− |
| 2006 10 11 | 691 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.3− | 0.5− | 2006 10 21 | G96 | 0.4− | 0.2− |

**2006 TL$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.41843 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24351177 | $\omega$ | 317.81888 | | −0.47001959 | | −0.88253008 |
| $a$ | 2.5397409 | $\Omega$ | 160.20238 | | +0.82112318 | | −0.44338631 |
| $e$ | 0.1266603 | $i$ | 2.52267 | | +0.32378745 | | −0.15668195 |
| $P$ | 4.05 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.2+ | 0.8+ | 2006 10 11 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 1996 04 12 | 691 | 0.5+ | 1.7+ | 2006 10 11 | 691 | 0.3− | 0.8+ | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 1996 04 12 | 691 | 0.0 | 0.7+ | 2006 10 11 | 691 | 0.4+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 1998 10 29 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 1998 10 29 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2001 06 29 | 691 | 0.1− | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2001 06 29 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 461 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2001 06 29 | 691 | 0.2− | 0.2+ | 2006 10 17 | 461 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 10 15 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 461 | 0.3+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 10 15 | 644 | 0.3+ | 0.6+ | 2006 10 17 | 461 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.6+ |
| 2002 10 15 | 644 | 0.0 | 0.5+ | 2006 10 17 | 461 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 10 30 | 644 | 0.6+ | 0.1+ | 2006 10 17 | 461 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2002 10 30 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 461 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1− | 1.0+ |
| 2002 10 30 | 644 | 0.6+ | 0.2+ | 2006 10 19 | 461 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 04 23 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 461 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.6− |
| 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 04 23 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2006 07 21 | G96 | 0.6− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2006 07 21 | G96 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 1.2− | 1.4− |

**2006 TN$_{18}$ = 2005 GY$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.20072 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23427535 | $\omega$ | 285.58707 | | +0.71453317 | | +0.69034755 |
| $a$ | 2.6060635 | $\Omega$ | 31.02354 | | −0.52739013 | | +0.63803725 |
| $e$ | 0.2824053 | $i$ | 12.71218 | | −0.45967598 | | +0.34106997 |
| $P$ | 4.21 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 0.4− | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.7− | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2005 04 11 | G96 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2005 04 11 | G96 | 0.3+ | 0.4+ | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2005 04 11 | G96 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2005 04 12 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.4− |
| 2005 04 12 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.6− |
| 2005 04 12 | 691 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2006 09 30 | 703 | 0.2− | 0.2+ | 2006 10 19 | 644 | 0.8+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2006 09 30 | 703 | 1.1− | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.5− | 2006 11 07 | 644 | 0.5− | 0.0 |
| 2006 09 30 | 703 | 0.0 | 0.6+ | 2006 10 19 | 644 | 0.6+ | 0.4+ | 2006 11 07 | 644 | 0.0 | 0.4− |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.4+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.2+ | 2006 11 18 | 691 | 0.6− | 0.0 |
| 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.0 | 1.4+ | 2006 11 18 | 691 | 0.3+ | 0.1+ |
| 2006 10 12 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.1+ | | | | |
| 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.3+ | | | | |

**2006 TO$_{18}$ = 2002 WN$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.07793 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23433172 | $\omega$ | 35.83204 | | +0.14006241 | | −0.98911631 |
| $a$ | 2.6056455 | $\Omega$ | 46.16424 | | +0.89326772 | | +0.10659029 |
| $e$ | 0.1397940 | $i$ | 3.58242 | | +0.42714786 | | +0.10142704 |
| $P$ | 4.21 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.5− | 0.5− | 2004 04 20 | 691 | (65.0+ | 31.4−) | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 11 24 | 644 | 0.3− | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2002 11 24 | 644 | 0.5− | 0.7− | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2002 11 25 | 644 | 0.4+ | 0.1+ | 2006 10 11 | 691 | 0.6+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2002 11 25 | 644 | 0.1+ | 0.9+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 11 25 | 644 | 0.9+ | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2004 04 20 | 691 | (65.1+ | 31.1−) | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.1− |
| 2004 04 20 | 691 | (65.1+ | 31.2−) | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 21 | 691 | 0.2+ | 0.0 |

**2006 TX$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.39260 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18266096 | $\omega$ | 206.24454 | | +0.26964485 | | −0.95619686 |
| $a$ | 3.0763723 | $\Omega$ | 228.34208 | | +0.90815174 | | +0.29185585 |
| $e$ | 0.0478367 | $i$ | 8.77102 | | +0.32023754 | | −0.02253277 |
| $P$ | 5.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 644 | 0.3− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2001 12 20 | 644 | 0.2+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.5+ |
| 2001 12 20 | 644 | 0.1+ | 0.7+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.4− |
| 2004 05 20 | 599 | 0.1− | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2004 05 20 | 599 | 0.4+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.3− |
| 2004 05 20 | 599 | 0.1− | 0.6+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2005 07 10 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2005 07 10 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.5− |
| 2005 07 10 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.7− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2005 09 12 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 13 | 644 | 0.2− | 0.4+ |
| 2005 09 12 | 691 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 2005 09 12 | 691 | 0.1− | 0.3− | 2006 10 26 | A13 | 0.4− | 0.6− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 26 | A13 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 26 | A13 | 0.3− | 0.7− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | | | |

**2006 TY**$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 310.30896 | | | (2000.0) | | |
| $n$ | 0.18209242 | $\omega$ | 78.87383 | | −0.20706394 | −0.97379926 |
| $a$ | 3.0827725 | $\Omega$ | 23.71759 | | +0.78135350 | −0.22244066 |
| $e$ | 0.2219562 | $i$ | 13.51762 | | +0.58873698 | −0.04727735 |
| $P$ | 5.41 | $H$ | 15.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 23 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 1.0+ | 0.2+ |
| 2001 12 23 | 644 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.2− |
| 2001 12 23 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | (0.3+ | 2.9+) |
| 2003 04 24 | 699 | 0.7− | 0.9− | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | (0.6− | 2.1+) |
| 2003 04 24 | 699 | (0.5+ | 2.2+) | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 16 | 704 | (0.7+ | 1.6+) |
| 2003 04 24 | 699 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 1.2− | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2003 04 24 | 699 | (1.3+ | 1.6+) | 2006 10 27 | 703 | 0.7− | 0.5− | 2006 11 19 | 704 | 0.4− | 0.3− |
| 2006 08 28 | 703 | 0.0 | 1.2− | 2006 10 27 | 703 | 0.1− | 0.5− | 2006 11 19 | 704 | 0.8+ | 0.2+ |
| 2006 08 28 | 703 | 0.9+ | 1.0− | 2006 10 27 | 703 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.0 |
| 2006 08 28 | 703 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2006 08 28 | 703 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.5+ |
| 2006 10 11 | 691 | 0.6− | 0.1− | 2006 10 29 | 704 | 0.5+ | 0.4− | 2006 11 22 | 704 | 0.7− | 0.1+ |
| 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.3+ | 0.0 | 2006 11 22 | 704 | 1.0+ | 0.6+ |
| 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.5− | 0.1+ |
| 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2006 10 15 | 691 | 0.6− | 0.8− | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.1+ | 1.3− | | | | |
| 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.8+ | 1.0− | | | | |

**2006 TD**$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.56194 | | | (2000.0) | | |
| $n$ | 0.17222179 | $\omega$ | 96.08959 | | −0.50396394 | −0.86123338 |
| $a$ | 3.1994646 | $\Omega$ | 24.51732 | | +0.71675198 | −0.45935351 |
| $e$ | 0.1259220 | $i$ | 9.08937 | | +0.48196156 | −0.21741990 |
| $P$ | 5.72 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.5+ | 0.3− | 2006 10 28 | 691 | 0.6− | 0.3+ |
| 2000 09 03 | 691 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2000 09 03 | 691 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.0 |
| 2001 12 18 | 699 | 0.6− | 0.6− | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.6+ | 1.0+ |
| 2001 12 18 | 699 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 699 | 0.6+ | 0.0 | 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 699 | 0.6− | 0.6− | 2006 10 15 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.2− |
| 2003 04 29 | 691 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.4− | 0.4− |
| 2003 04 29 | 691 | 0.3+ | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.5− | 2006 11 14 | 703 | (2.4− | 1.0−) |
| 2003 04 29 | 691 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.5− | 2006 11 14 | 703 | 0.9− | 0.0 |
| 2003 05 05 | 691 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2003 05 05 | 691 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2003 05 05 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.6− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.2+ | | | | |

**2006 TE**$_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.17388 | | | (2000.0) | | |
| $n$ | 0.27352651 | $\omega$ | 352.25026 | | +0.96941216 | −0.24100873 |
| $a$ | 2.3503711 | $\Omega$ | 21.86577 | | +0.23134239 | +0.83407201 |
| $e$ | 0.1157933 | $i$ | 7.16000 | | +0.08198022 | +0.49622441 |
| $P$ | 3.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 13 | 691 | 0.3+ | 0.6+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 1.4− | 0.1+ |
| 2001 04 13 | 691 | 0.6+ | 1.0+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | 1.4− | 0.0 |
| 2001 04 13 | 691 | 0.5+ | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.0 | 0.4− |
| 2002 08 13 | 644 | 0.3− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2002 08 13 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 08 13 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2002 08 19 | 644 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2002 08 19 | 644 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2002 08 19 | 644 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | (2.0+ | 0.0 ) |
| 2004 02 17 | 645 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.2+ | 1.4− |
| 2004 02 17 | 645 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2004 02 18 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.7+ |
| 2004 02 18 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2004 02 18 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.9+ | 0.2− |
| 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 22 | 704 | 1.0+ | 1.2+ |
| 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.4− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.8+ |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.5+ | 1.0− |
| 2006 10 11 | 691 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.6− | 0.0 |

**2006 TF**$_{19}$ **= 1996 OS = 2005 JZ**$_{87}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 45.42312 | | | (2000.0) | | |
| $n$ | 0.30699160 | $\omega$ | 328.27067 | | +0.82905301 | +0.55916708 |
| $a$ | 2.1762981 | $\Omega$ | 357.72868 | | −0.50300540 | +0.74436339 |
| $e$ | 0.1465394 | $i$ | 2.61653 | | −0.24424713 | +0.36504152 |
| $P$ | 3.21 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 07 22 | 684 | 1.5− | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 1996 07 22 | 684 | 0.3− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1996 07 23 | 684 | 0.5+ | 0.6− | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 1996 07 23 | 684 | 1.3+ | 0.4− | 2006 10 15 | 691 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 1996 07 23 | 684 | (2.6− | 0.8−) | 2006 10 15 | 691 | 0.5+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.1+ |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2005 05 10 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2005 05 10 | 691 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2005 05 12 | G96 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.5+ | 0.5− | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2005 05 12 | G96 | 0.6− | 0.9+ | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.5+ | 0.6− |
| 2005 05 12 | G96 | 1.0+ | 0.9+ | 2006 10 20 | G96 | 0.6+ | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.5− |
| 2005 05 12 | G96 | 0.3− | 0.0 | 2006 10 20 | G96 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.0 | | | | |

**2006 TK$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.04222 | | (2000.0) | | | |
| $n$ | 0.17737310 | $\omega$ | 306.16957 | | +0.90863155 | +0.37754759 |
| $a$ | 3.1372145 | $\Omega$ | 32.75014 | | −0.18919876 | +0.75314829 |
| $e$ | 0.0330201 | $i$ | 19.26134 | | −0.37228018 | +0.53872579 |
| $P$ | 5.56 | $H$ | 15.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.0 | 0.1− | 2005 09 02 | E12 | 0.8+ | 1.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2000 09 05 | 645 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2000 09 23 | 699 | 1.5+ | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2000 09 23 | 699 | 1.0− | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 09 23 | 699 | 1.3− | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2000 09 23 | 699 | 0.5+ | 0.5+ | 2006 10 11 | 691 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.6− | 0.3− |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2003 03 09 | 644 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.9+ |
| 2003 03 09 | 644 | 1.0+ | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.8− | 1.2− |
| 2003 03 09 | 644 | 0.3+ | 0.8+ | 2006 10 15 | 691 | 0.2+ | 0.3− | 2006 11 14 | 703 | 0.2− | 1.4− |
| 2003 03 22 | 644 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.8+ | 0.9− |
| 2003 03 22 | 644 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.8+ | 1.1+ | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2003 03 22 | 644 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.8− | 0.5− |
| 2005 07 04 | E12 | (0.1+ | 2.4+) | 2006 10 21 | H07 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.9+ |
| 2005 07 04 | E12 | 0.6− | 0.0 | 2006 10 21 | H07 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.4+ | 1.0+ |
| 2005 07 04 | E12 | 0.4− | 0.4+ | 2006 10 21 | H07 | (1.6− | 0.4−) | 2006 11 19 | 704 | 0.3− | 0.9− |
| 2005 07 04 | E12 | (1.8− | 1.4+) | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2005 09 02 | E12 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.6− |
| 2005 09 02 | E12 | 1.0− | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 1.0+ | 1.3+ |
| 2005 09 02 | E12 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.4+ |

**2006 TL$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.36892 | | (2000.0) | | | |
| $n$ | 0.18577247 | $\omega$ | 156.98175 | | +0.89887229 | −0.43583647 |
| $a$ | 3.0419249 | $\Omega$ | 228.93751 | | +0.39206845 | +0.84629911 |
| $e$ | 0.0955468 | $i$ | 3.46375 | | +0.19573179 | +0.30630766 |
| $P$ | 5.31 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.1− | 2005 07 08 | 691 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2000 09 03 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.3+ |
| 2001 12 09 | 644 | 0.1− | 0.3+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2001 12 09 | 644 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 12 09 | 644 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.6+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 05 09 | 691 | 0.5+ | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2004 05 09 | 691 | 0.0 | 0.5+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.3+ |
| 2004 05 09 | 691 | 0.2− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.1+ |
| 2004 05 13 | 291 | 0.2+ | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2− | 0.4+ |
| 2004 05 13 | 291 | 0.2+ | 0.9+ | 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2004 05 13 | 291 | 0.2+ | 0.9+ | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2005 06 18 | G96 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.4− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2005 06 18 | G96 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.1+ |
| 2005 06 18 | G96 | 0.6− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2005 06 18 | G96 | 0.3+ | 0.9+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.6+ | 0.0 |
| 2005 07 08 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.6+ | 0.1+ |
| 2005 07 08 | 691 | 0.1− | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 0.6+ | 0.2− |

**2006 TM$_{19}$ = 2001 XD$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 317.39705 | | (2000.0) | | | |
| $n$ | 0.18207152 | $\omega$ | 211.70850 | | +0.10484377 | −0.99291535 |
| $a$ | 3.0830084 | $\Omega$ | 232.33321 | | +0.92655859 | +0.11795248 |
| $e$ | 0.1244447 | $i$ | 4.05086 | | +0.36124363 | −0.01436398 |
| $P$ | 5.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2001 12 14 | 704 | 1.1− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2001 12 14 | 704 | 0.2+ | 0.4− | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.4− | 2006 11 14 | G96 | 0.4− | 0.4− |
| 2001 12 17 | 704 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2006 09 28 | G96 | 0.3− | 0.8− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2006 09 28 | G96 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | | | |
| 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | | | | |

**2006 TP$_{19}$ = 1999 FD$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.57696 | | (2000.0) | | | |
| $n$ | 0.21570439 | $\omega$ | 173.49003 | | +0.85340773 | −0.51752442 |
| $a$ | 2.7535738 | $\Omega$ | 217.88637 | | +0.47355119 | +0.81962270 |
| $e$ | 0.1208731 | $i$ | 5.80941 | | +0.21781761 | +0.24573788 |
| $P$ | 4.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.1− | 1.3− |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.6− | 0.0 | 2006 11 11 | G96 | (1.7+ | 0.2−) |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 1.3− | 0.7− |
| 1999 03 22 | 645 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.6− | 0.6− |
| 2006 09 28 | G96 | 0.2− | 0.5− | 2006 10 27 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 1.2+ |
| 2006 09 28 | G96 | 0.2+ | 0.7− | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.9+ |
| 2006 09 28 | G96 | 0.9+ | 0.6− | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.5+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.5− |
| 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.6+ | 0.0 |
| 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2006 10 19 | 691 | 0.6− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.1− | | | | |

**2006 TQ$_{19}$ = 2004 JO$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.89078 | | (2000.0) | | | |
| $n$ | 0.21113010 | $\omega$ | 160.35337 | | +0.86714496 | −0.49404455 |
| $a$ | 2.7932038 | $\Omega$ | 229.41642 | | +0.44512928 | +0.82557463 |
| $e$ | 0.0281371 | $i$ | 4.76474 | | +0.22342682 | +0.27266558 |
| $P$ | 4.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.1− | 0.7+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2001 10 19 | 644 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 13 | 644 | 0.4+ | 0.2+ |
| 2001 10 19 | 644 | 0.2− | 0.4+ | 2006 10 15 | 691 | 0.5+ | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2004 05 09 | 691 | 0.1− | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.1− |
| 2004 05 09 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2004 05 09 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.5− | 0.4+ | 2006 11 14 | G96 | 0.6+ | 0.4− |
| 2004 05 24 | 691 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.5+ |
| 2004 05 24 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 1.0+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 24 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.2+ | 2006 11 17 | 703 | 0.2− | 1.0− |
| 2005 07 11 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 17 | 703 | 1.4+ | 1.3− |
| 2005 07 11 | G96 | 0.3− | 0.2+ | 2006 11 11 | 703 | 1.3+ | 0.7+ | 2006 11 27 | G96 | 0.5+ | 0.4− |
| 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.3+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2005 07 11 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.5+ | | | | |

**2006 TX$_{19}$ = 2001 SN$_{193}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.85316 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21089683 | $\omega$ | 22.16803 | | +0.94630781 | | −0.32325176 |
| $a$ | 2.7952631 | $\Omega$ | 356.68689 | | +0.28785613 | | +0.84702162 |
| $e$ | 0.1070110 | $i$ | 3.10911 | | +0.14710667 | | +0.42197474 |
| $P$ | 4.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.3+ | 2006 10 15 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.6− |
| 2001 09 19 | 704 | 0.5+ | 0.4− | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.8+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.5+ | 0.2− |
| 2001 09 19 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | 0.3− | 0.8− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 09 21 | 704 | (0.9+ | 1.7−) | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2001 09 21 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.5+ | 0.3+ |
| 2006 09 28 | G96 | 0.2− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.3− | 0.0 |
| 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.2− |
| 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 10 21 | 691 | 0.5− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.0 | | | | |
| 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.4− | 0.3+ | | | | |

**2006 TC$_{20}$ = 2002 XM$_{103}$ = 2004 JC$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.68801 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22786697 | $\omega$ | 190.98871 | | −0.46083151 | | −0.88724494 |
| $a$ | 2.6546981 | $\Omega$ | 286.45483 | | +0.81588602 | | −0.41433400 |
| $e$ | 0.1571543 | $i$ | 1.23999 | | +0.34923390 | | −0.20278991 |
| $P$ | 4.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 10 28 | 691 | (1.3− | 2.4+) |
| 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.3− |
| 2002 12 05 | 704 | 0.8+ | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | (0.0 | 1.7−) |
| 2002 12 10 | 704 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 1.4− |
| 2002 12 10 | 704 | 0.4− | 0.4− | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | (2.3+ | 0.7−) |
| 2002 12 10 | 704 | 0.3+ | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.1+ |
| 2002 12 10 | 704 | 0.5− | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.5+ |
| 2002 12 10 | 704 | 0.1+ | 0.5− | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2002 12 10 | 704 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.5+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2004 05 09 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 1.0− | 0.6+ |
| 2004 05 09 | 691 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2004 05 09 | 691 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2004 05 16 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.7− | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2004 05 16 | 691 | 0.6+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2004 05 16 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | | | | |

**2006 TD$_{20}$ = 2000 TY$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.73232 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17379129 | $\omega$ | 287.36141 | | +0.53236430 | | +0.84617776 |
| $a$ | 3.1801727 | $\Omega$ | 14.87602 | | −0.73701929 | | +0.47720956 |
| $e$ | 0.1600030 | $i$ | 5.34279 | | −0.41640223 | | +0.23717976 |
| $P$ | 5.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.5+ | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.0 |
| 2000 10 01 | 704 | 0.5+ | 1.3+ | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.1+ | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2000 10 01 | 704 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 0.5+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.2− |
| 2000 10 02 | 704 | 0.8− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 691 | 0.3+ | 0.0 |
| 2000 10 02 | 704 | 0.5− | 0.4− | 2006 10 17 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.3− |
| 2000 10 02 | 704 | 0.9− | 0.4− | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.5+ | 0.5− |
| 2000 10 02 | 704 | 0.4+ | 0.6− | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2006 09 28 | G96 | 0.1− | 0.9− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2006 09 28 | G96 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.8+ | 0.8− | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.2− | 0.4+ |
| 2006 09 28 | G96 | 0.4+ | 0.7− | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.0 | | | | |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ | | | | |

**2006 TG$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.78095 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23293604 | $\omega$ | 63.99158 | | +0.99272687 | | +0.11751655 |
| $a$ | 2.6160433 | $\Omega$ | 289.25047 | | −0.11796700 | | +0.90622736 |
| $e$ | 0.1494479 | $i$ | 1.58654 | | −0.02402410 | | +0.40613031 |
| $P$ | 4.23 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 05 | 691 | 0.6− | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.5+ |
| 1997 08 05 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2− |
| 1997 08 05 | 691 | 0.7+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 2004 02 22 | 695 | 0.2+ | 0.7+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2004 02 22 | 695 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2005 06 14 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2005 06 14 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2005 06 14 | G96 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.0 |
| 2005 06 14 | G96 | (1.6− | 2.9−) | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2006 09 28 | G96 | 0.2+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.5+ |
| 2006 09 28 | G96 | 0.4+ | 0.5− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.7− |
| 2006 09 28 | G96 | 0.0 | 0.6− | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.4+ | 0.1− |
| 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 10 11 | 691 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.4+ | | | | |

**2006 TK$_{20}$ = 2002 LO$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.00127 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29576618 | $\omega$ | 60.38868 | | +0.14118661 | | +0.98710757 |
| $a$ | 2.2310213 | $\Omega$ | 217.96129 | | −0.94540338 | | +0.11183972 |
| $e$ | 0.1553059 | $i$ | 7.04068 | | −0.29373250 | | +0.11450120 |
| $P$ | 3.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 704 | 0.6+ | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.4+ | 0.1+ |
| 2002 06 05 | 704 | 0.1− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2002 06 05 | 704 | 0.9+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.6− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 09 | 704 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.2+ | 0.1+ | | |
| 2002 06 09 | 704 | 0.2− | 0.3− | 2006 10 29 | G96 | 0.5+ | 0.4− | 2006 11 22 | 691 | 0.1− | 0.2+ | | |
| 2002 06 09 | 704 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.4+ | 0.5− | 2006 11 22 | 691 | 0.4− | 0.0 | | |
| 2002 06 09 | 704 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.5+ | 0.6− | 2006 11 22 | 691 | 0.2− | 0.2+ | | |
| 2002 06 09 | 704 | 1.1− | 0.3− | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.7− | | |
| 2005 05 12 | G96 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.8− | | |
| 2005 05 12 | G96 | 0.1+ | 0.4+ | 2006 10 29 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.4− | | |
| 2005 05 12 | G96 | 0.0 | 0.4+ | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.4− | | |
| 2005 05 12 | G96 | 0.1+ | 0.5+ | 2006 11 09 | 691 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.4+ | | |
| 2006 10 11 | 691 | 0.5− | 0.3+ | 2006 11 09 | 691 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.5+ | 0.3+ | | |
| 2006 10 11 | 691 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.5+ | | |
| 2006 10 11 | 691 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.4− | | | | | | |

**2006 TL$_{20}$ = 2003 WL$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.44061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31214610 | $\omega$ | 98.33638 | | +0.88477042 | | +0.46434817 |
| $a$ | 2.1522734 | $\Omega$ | 234.00463 | | −0.44449195 | | +0.81536180 |
| $e$ | 0.1301739 | $i$ | 2.80004 | | −0.14002933 | | +0.34578304 |
| $P$ | 3.16 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 30 | 291 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.6+ | 0.4− | 2006 10 19 | 691 | 0.2− | 0.3− | | |
| 2003 11 30 | 291 | 0.3− | 0.0 | 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.1+ | 0.0 | | |
| 2003 11 30 | 291 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ | | |
| 2003 12 01 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.3+ | | |
| 2003 12 01 | 691 | 0.5+ | 0.0 | 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2003 12 01 | 691 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2006 09 28 | G96 | 0.1− | 0.3− | 2006 10 15 | 691 | 0.3+ | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 10 19 | 691 | 0.0 | 0.1+ | | | | | | |
| 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2− | | | | | | |

**2006 TM$_{20}$ = 1999 VV$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.56045 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27196584 | $\omega$ | 58.87515 | | +0.40260149 | | +0.91344812 |
| $a$ | 2.3593542 | $\Omega$ | 234.98127 | | −0.86259280 | | +0.35688273 |
| $e$ | 0.0768053 | $i$ | 4.15711 | | −0.30634245 | | +0.19556905 |
| $P$ | 3.62 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 02 | 691 | 0.2+ | 0.3− | 2003 12 25 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 291 | 0.2− | 0.0 | | |
| 1999 11 02 | 691 | 0.0 | 0.3− | 2006 08 21 | 691 | 0.4+ | 0.2− | 2006 10 11 | 291 | 0.2− | 0.1+ | | |
| 1999 11 02 | 691 | 0.1− | 0.2− | 2006 08 21 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 291 | 0.3− | 0.0 | | |
| 1999 11 03 | 691 | 0.0 | 0.1+ | 2006 08 21 | 691 | 0.2+ | 0.3− | 2006 10 13 | 291 | 0.3− | 0.2+ | | |
| 1999 11 03 | 691 | 0.2+ | 0.1− | 2006 09 20 | 703 | 0.7+ | 0.9+ | 2006 10 13 | 291 | 0.0 | 0.2+ | | |
| 1999 11 03 | 691 | 0.0 | 0.3− | 2006 09 20 | 703 | 0.7− | 0.6− | 2006 10 13 | 291 | 0.1+ | 0.3+ | | |
| 2003 12 25 | 691 | 0.2− | 0.1+ | 2006 09 20 | 703 | 0.2− | 0.4+ | | | | | | |
| 2003 12 25 | 691 | 0.1+ | 0.2+ | 2006 09 20 | 703 | 0.4− | 0.4+ | | | | | | |

**2006 TN$_{20}$ = 2005 QF$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.72221 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17031061 | $\omega$ | 208.01492 | | −0.38187331 | | +0.92274616 |
| $a$ | 3.2233558 | $\Omega$ | 39.59736 | | −0.83195294 | | −0.31866335 |
| $e$ | 0.0739173 | $i$ | 4.68675 | | −0.40252588 | | −0.21677914 |
| $P$ | 5.79 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 28 | E12 | 0.5+ | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− | | |
| 2005 08 28 | E12 | 0.7− | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2005 08 28 | E12 | 0.9+ | 0.5− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2005 08 28 | E12 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2005 08 30 | 644 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.5− | | |
| 2005 08 30 | 644 | 0.7− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.2+ | | |
| 2005 08 30 | 644 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.3− | 0.0 | | |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.1+ | | |
| 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.4+ | | | | | | |

**2006 TO$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.76492 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22700107 | $\omega$ | 243.04919 | | −0.07505457 | | −0.97720569 |
| $a$ | 2.6614447 | $\Omega$ | 213.16899 | | +0.99409710 | | −0.05767783 |
| $e$ | 0.1134533 | $i$ | 21.28271 | | +0.07834391 | | −0.20430933 |
| $P$ | 4.34 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.8− | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1+ | | |
| 2001 07 13 | 644 | 1.1− | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− | | |
| 2001 07 13 | 644 | 1.3− | 0.7+ | 2006 10 15 | 691 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2001 08 09 | 644 | 1.2+ | 0.5− | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.2− | | |
| 2001 08 09 | 644 | 1.0+ | 0.6− | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 1.0− | 1.1− | | |
| 2001 08 09 | 644 | 0.8+ | 0.6− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.9− | | |
| 2004 04 25 | 703 | 0.3+ | 1.0+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.3− | | |
| 2004 04 25 | 703 | 0.7+ | 1.4+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 13 | 703 | (0.3+ | 1.6+) | | |
| 2004 04 25 | 703 | 0.1− | 1.2+ | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.5− | 0.2+ | | |
| 2004 04 25 | 703 | (0.3− | 1.8+) | 2006 10 23 | 691 | 0.4− | 0.4− | 2006 11 13 | 703 | 0.2− | 1.1+ | | |
| 2004 05 21 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.4− | 0.3− | 2006 11 13 | 703 | 0.6+ | 0.6+ | | |
| 2004 05 21 | 691 | 0.2− | 0.3+ | 2006 10 27 | 683 | 0.3− | 1.5− | 2006 11 13 | 958 | 0.4+ | 0.1− | | |
| 2004 05 21 | 691 | 0.1− | 0.0 | 2006 10 27 | 683 | 0.3− | 0.8+ | 2006 11 13 | 958 | 0.1− | 0.6− | | |
| 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 27 | 683 | (0.7− | 2.1+) | 2006 11 13 | 958 | 0.3− | 0.6+ | | |
| 2006 09 27 | G96 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.8− | 0.5+ | | |
| 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.5+ | | |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.2+ | | |
| 2006 10 11 | 691 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.3− | 0.0 | | |

**2006 TQ$_{20}$ = 2005 GZ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.39356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29747886 | $\omega$ | 272.95232 | | +0.73449380 | | +0.67804526 |
| $a$ | 2.2224499 | $\Omega$ | 44.35882 | | −0.60574741 | | +0.67355021 |
| $e$ | 0.1939304 | $i$ | 2.27979 | | −0.30592309 | | +0.29425285 |
| $P$ | 3.31 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.1− | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 | | |
| 2005 04 04 | G96 | 0.2− | 0.6− | 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2005 04 04 | G96 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.5− | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.6+ | | |
| 2005 04 04 | G96 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.5+ | 0.3+ | | |
| 2005 04 09 | G96 | 0.0 | 0.5− | 2006 10 15 | 691 | 0.4+ | 0.4+ | 2006 10 29 | 691 | 0.4+ | 0.3+ | | |
| 2005 04 09 | G96 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.3− | 0.6− | | |
| 2005 04 09 | G96 | 0.3+ | 1.2+ | 2006 10 19 | 691 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.1+ | | |
| 2005 04 09 | G96 | 0.3+ | 0.5− | 2006 10 19 | 691 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.3− | 0.1+ | | |
| 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.3− | | |
| 2006 10 04 | G96 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2006 10 04 | G96 | 0.4− | 0.6− | 2006 10 23 | 691 | 0.4− | 0.4− | 2006 11 14 | G96 | 0.2− | 0.1+ | | |
| 2006 10 04 | G96 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.3− | 0.0 | | |
| 2006 10 11 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.3+ | | |

**2006 TU$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.31770 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27172002 | $\omega$ | 329.57554 | | +0.01296430 | | −0.99990938 |
| $a$ | 2.3607770 | $\Omega$ | 119.68142 | | +0.91824368 | | +0.01046977 |
| $e$ | 0.1853915 | $i$ | 0.23915 | | +0.39580357 | | +0.00846207 |
| $P$ | 3.63 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 1995 09 17 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.8− | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 1995 09 17 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.7− | 2006 11 11 | 703 | 1.0+ | 0.0 |
| 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.6− | 2006 11 11 | 703 | 0.9− | 1.3+ |
| 2004 03 23 | 691 | 0.4+ | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.4+ | 1.0+ |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 1.0− | 0.4− |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.6+ |
| 2006 10 04 | G96 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 1.4− | 0.2− |
| 2006 10 04 | G96 | 0.5+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.3− |
| 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 1.1− | 1.3− |
| 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.4+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2006 10 15 | 691 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.5+ | 0.1+ |
| 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.1+ | 1.4+ | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2006 10 19 | 691 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.9+ | 1.3+ | | | | |
| 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.5− | | | | |

**2006 TF$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.42732 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25237170 | $\omega$ | 77.49441 | | +0.32752279 | | +0.94298544 |
| $a$ | 2.4799463 | $\Omega$ | 211.82172 | | −0.90463648 | | +0.29487870 |
| $e$ | 0.0468583 | $i$ | 6.44891 | | −0.27269334 | | +0.15435355 |
| $P$ | 3.91 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 699 | (1.2− | 1.7+) | 2006 10 15 | 691 | 0.6+ | 0.7+ | 2006 10 31 | 691 | 0.5− | 0.1+ |
| 2004 02 13 | 699 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2004 02 13 | 699 | 0.1− | 0.6− | 2006 10 19 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2004 02 13 | 699 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.3+ |
| 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.2+ |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2004 02 17 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 17 | 703 | (2.5− | 0.5+) |
| 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2006 10 15 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.5+ | 1.0− |

**2006 TG$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.72964 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18021291 | $\omega$ | 218.19364 | | +0.85635564 | | −0.51637419 |
| $a$ | 3.1041696 | $\Omega$ | 172.89300 | | +0.48058201 | | +0.79443326 |
| $e$ | 0.1800546 | $i$ | 1.65161 | | +0.18893372 | | +0.31973974 |
| $P$ | 5.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 31 | 691 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 1997 01 31 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 1.0+ |
| 1997 01 31 | 691 | 0.2− | 0.4− | 2006 10 11 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2005 06 13 | G96 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.5+ | 1.1− |
| 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2005 06 13 | G96 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.0 | 0.6+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2005 06 13 | G96 | 0.0 | 0.0 | 2006 10 16 | 291 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2005 06 13 | 291 | 0.0 | 0.1+ | 2006 10 16 | 291 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.9− |
| 2005 06 13 | 291 | 0.1+ | 0.1− | 2006 10 16 | 291 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2005 06 13 | 291 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2006 09 30 | G96 | 0.1+ | 0.7− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.7+ | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.6− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 27 | 703 | 1.5+ | 0.8+ |
| 2006 09 30 | G96 | 0.3+ | 0.7− | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.8− | 1.3− |
| 2006 09 30 | G96 | 0.0 | 0.6− | 2006 10 31 | 691 | 0.1− | 0.3− | | | | |

**2006 TM$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.74723 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21463151 | $\omega$ | 300.83505 | | +0.94547966 | | +0.31717121 |
| $a$ | 2.7627425 | $\Omega$ | 40.80300 | | −0.24653251 | | +0.84540359 |
| $e$ | 0.0571995 | $i$ | 6.49911 | | −0.21281432 | | +0.42976178 |
| $P$ | 4.59 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2004 03 14 | 691 | 0.1− | 0.1+ | 2006 10 18 | 291 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2004 03 14 | 691 | 0.1+ | 0.2− | 2006 10 18 | 291 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2004 04 23 | 691 | 0.4− | 0.2+ | 2006 10 18 | 291 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2004 04 23 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | (0.1+ | 1.9−) |
| 2004 04 23 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.4+ |
| 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2006 09 25 | G96 | 0.4− | 0.8− | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2006 09 25 | G96 | 0.4− | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 12 | G96 | 0.1+ | 1.0− |
| 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.5− |
| 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2006 10 11 | 691 | 0.3− | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ | | | | |

**2006 TP$_{21}$ = 2001 SJ$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.07649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21852597 | $\omega$ | 162.78987 | | +0.98822856 | | −0.14891198 |
| $a$ | 2.7298200 | $\Omega$ | 205.85218 | | +0.12918859 | | +0.93506599 |
| $e$ | 0.0716823 | $i$ | 4.61239 | | +0.08194281 | | +0.32167812 |
| $P$ | 4.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5+ | 0.9− | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 1.2+ | 0.1− |
| 2001 09 20 | 704 | (0.3+ | 2.3−) | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.7− | 1.0− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (2.4+ | 1.0−) |
| 2001 09 20 | 704 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2001 09 20 | 704 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 09 22 | 704 | 1.3+ | 0.6+ | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 09 22 | 704 | 0.4− | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 0.5− | 1.1+ | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2001 09 22 | 704 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 10 27 | 691 | 0.3− | 0.4+ | 2006 11 17 | 703 | 0.7+ | 0.3− |
| 2006 09 25 | G96 | 0.4+ | 0.7− | 2006 10 27 | 691 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2006 09 25 | G96 | 0.3+ | 0.9− | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2006 09 25 | G96 | 0.3+ | 0.8− | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | (1.0+ | 1.9+) |
| 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.3− | 1.0+ |
| 2006 10 11 | 691 | 0.4+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.3+ |
| 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2006 10 11 | 691 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.4− | 0.0 | 2006 11 27 | 703 | 0.5− | 0.5− |
| 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.4+ | 0.6− |
| 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 27 | 703 | 1.3+ | 0.2− |
| 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 703 | (1.1+ | 1.6−) |

**2006 TU$_{21}$ = 2001 YA$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.95989 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18522927 | $\omega$ | 312.95033 | | +0.99466530 | | −0.07817620 |
| $a$ | 3.0478691 | $\Omega$ | 51.64672 | | +0.10005825 | | +0.88983918 |
| $e$ | 0.0717840 | $i$ | 4.92325 | | −0.02508546 | | +0.44952722 |
| $P$ | 5.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1− | 0.2+ | 2004 04 12 | 291 | 0.1+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 1995 09 18 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1− | 0.3− |
| 1995 09 18 | 691 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.6+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2001 12 18 | 704 | 0.8+ | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2001 12 18 | 704 | 0.1+ | 0.7+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2001 12 18 | 704 | 0.7+ | 0.8+ | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2001 12 18 | 704 | 0.9+ | 0.1− | 2006 10 23 | 691 | 0.8− | 0.3+ | 2006 11 17 | 703 | 0.7+ | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 17 | 703 | (1.0+ | 1.6−) |
| 2001 12 19 | 704 | 0.9− | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2001 12 19 | 704 | 0.4− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | (0.8+ | 2.1−) |
| 2001 12 19 | 704 | 0.8− | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.4− | 0.5− |
| 2001 12 20 | 644 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 12 20 | 644 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2001 12 20 | 644 | 0.5− | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2004 04 12 | 291 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.5+ | | | | |
| 2004 04 12 | 291 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | | | | |

### 2006 $TY_{21}$ = 2002 $PE_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.18005 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27158131 | $\omega$ | 209.09882 | | +0.95497003 | | +0.29621277 |
| $a$ | 2.3615808 | $\Omega$ | 133.66039 | | −0.26746067 | | +0.88428891 |
| $e$ | 0.2319119 | $i$ | 1.34940 | | −0.12844081 | | +0.36095861 |
| $P$ | 3.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 07 | 644 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.5+ | 0.1+ |
| 2002 08 07 | 644 | 0.2− | 0.4− | 2006 10 19 | 691 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2002 08 07 | 644 | 0.6− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2002 08 08 | 644 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2002 08 08 | 644 | 0.4+ | 0.2+ | 2006 10 27 | 691 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 08 08 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | (0.2− | 2.1−) |
| 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 17 | 703 | (2.0+ | 0.8−) |
| 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2006 10 15 | 691 | 0.5− | 0.2+ | 2006 11 08 | 644 | 0.4+ | 0.4− | | | | |

### 2006 $TB_{22}$ = 2001 $XC_{242}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.69282 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18355988 | $\omega$ | 258.67709 | | +0.91604334 | | +0.39362647 |
| $a$ | 3.0663205 | $\Omega$ | 78.10547 | | −0.33044124 | | +0.84943752 |
| $e$ | 0.0902585 | $i$ | 4.51088 | | −0.22731736 | | +0.35144573 |
| $P$ | 5.37 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 1.2+ | 0.6+ | 2006 10 11 | 691 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2001 12 14 | 704 | (0.4− | 1.8+) | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 12 14 | 704 | 0.1+ | 1.2+ | 2006 10 11 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 0.1+ | 1.1+ | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2001 12 19 | 704 | 0.6− | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.9+ | 0.2− |
| 2001 12 19 | 704 | 0.0 | 1.0− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 1.3− |
| 2001 12 19 | 704 | (1.8− | 0.1−) | 2006 10 16 | 703 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.8− | 0.3− |
| 2001 12 19 | 704 | 0.3− | 0.6− | 2006 10 16 | 703 | (1.9+ | 1.4+) | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2001 12 19 | 704 | 0.7− | 0.9− | 2006 10 16 | 703 | 1.3− | 1.2+ | 2006 11 15 | G96 | 0.1− | 0.7− |
| 2005 07 02 | 691 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.9+ | 1.2+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2005 07 02 | 691 | 1.1− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2005 07 02 | 691 | 1.2+ | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | (1.9− | 0.5−) |
| 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2006 10 02 | G96 | 0.2− | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 1.0− |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.3− | 0.1− | | | | |

### 2006 $TC_{22}$ = 1996 $VN_{19}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.26116 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29509976 | $\omega$ | 357.98434 | | +0.55056387 | | −0.83094312 |
| $a$ | 2.2343788 | $\Omega$ | 58.60086 | | +0.76721429 | | +0.46585045 |
| $e$ | 0.1511596 | $i$ | 5.38342 | | +0.32903141 | | +0.30416590 |
| $P$ | 3.34 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.2− | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 1996 11 07 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.3+ |
| 1996 11 07 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 1.4− | 0.3+ |
| 1996 11 18 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.6+ |
| 1996 11 18 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 17 | 703 | 1.0+ | 0.4+ |
| 1996 11 18 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1− | 1.0+ |
| 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.7+ |
| 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.4+ |
| 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.3− | 0.8+ |
| 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 19 | 704 | (1.8+ | 0.5+) |
| 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.5− | 2006 11 19 | 704 | 1.2+ | 0.2+ |
| 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.4− | 2006 11 19 | 704 | 1.4+ | 0.4− |
| 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.7− | 1.0+ |
| 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.1+ | 1.0+ |
| 2006 10 21 | 644 | 0.2− | 0.4− | 2006 11 13 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.8+ | 0.8+ |
| 2006 10 21 | 644 | 0.2− | 0.4− | 2006 11 13 | 644 | 0.5− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.4− | 0.3− |
| 2006 10 27 | 691 | 0.4+ | 0.3− | 2006 11 13 | 644 | 0.3− | 0.2− | 2006 11 28 | 704 | 1.1− | 1.1− |
| 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− | 2006 11 28 | 704 | 0.4+ | 0.6− |
| 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.8− | 0.5− |
| 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.1− | 0.8+ |

### 2006 $TG_{22}$ = 2005 $JX_{162}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.83130 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24207834 | $\omega$ | 262.37152 | | +0.84657896 | | +0.52611393 |
| $a$ | 2.5497568 | $\Omega$ | 65.85326 | | −0.44682271 | | +0.78483378 |
| $e$ | 0.1698428 | $i$ | 5.07210 | | −0.28922920 | | +0.32747529 |
| $P$ | 4.07 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 19 | 691 | (2.7+ | 2.8+) | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.4− |
| 1998 12 19 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.4+ |
| 1998 12 19 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 2005 05 08 | G96 | 0.3− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2005 05 08 | G96 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2005 05 08 | G96 | 0.5− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.2+ |
| 2005 05 08 | G96 | 0.4− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2005 05 18 | 644 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2005 05 18 | 644 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | (0.4− | 2.3+) |
| 2005 05 18 | 644 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.0 |
| 2005 06 11 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 1.0− |
| 2005 06 11 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.0− | 0.8+ |
| 2005 06 11 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.8+ |
| 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.8− |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.5− |
| 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.1− | | | | |

**2006 TP$_{22}$ = 2001 TC$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.78870 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21086513 | $\omega$ | 45.34495 | | −0.61385501 | −0.78707668 | |
| $a$ | 2.7955432 | $\Omega$ | 82.62009 | | +0.70583527 | −0.58170269 | |
| $e$ | 0.0330083 | $i$ | 3.51283 | | +0.35352312 | −0.20526150 | |
| $P$ | 4.67 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3+ | |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.0 | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.4+ | 0.3+ | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 | |
| 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.6+ | 2006 11 15 | G96 | 0.3+ | 0.2+ | |
| 2006 10 11 | 691 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.3− | |
| 2006 10 11 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.5− | |
| 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.3− | 0.2− | |
| 2006 10 15 | 691 | 0.6− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | | | | | |

**2006 TQ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.41194 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29902043 | $\omega$ | 321.13020 | | +0.97937426 | −0.16335805 | |
| $a$ | 2.2148049 | $\Omega$ | 48.70016 | | +0.20094520 | +0.84904787 | |
| $e$ | 0.1067167 | $i$ | 9.10725 | | −0.02114425 | +0.50242598 | |
| $P$ | 3.30 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.2+ | 0.8+ | 2006 10 15 | 691 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.3+ | |
| 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.3+ | 0.0 | |
| 2005 05 03 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.1− | |
| 2005 05 13 | G96 | 0.2− | 0.1− | 2006 10 16 | 703 | 1.2− | 0.4− | 2006 11 11 | G96 | 0.1− | 0.1− | |
| 2005 05 13 | G96 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.5− | 2006 11 11 | G96 | 0.2− | 0.1− | |
| 2005 05 13 | G96 | 0.3− | 0.2− | 2006 10 16 | 703 | 0.9− | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.1− | |
| 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.6+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.0 | |
| 2006 10 02 | G96 | 0.4+ | 0.7− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.1− | |
| 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.2+ | |
| 2006 10 02 | G96 | 0.0 | 0.6− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.1+ | |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.5− | 1.1+ | |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.0 | |
| 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.5− | 1.0− | |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.0 | 0.3+ | |

**2006 TU$_{22}$ = 2002 XQ$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.76787 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23289966 | $\omega$ | 321.06482 | | +0.91265079 | −0.40436156 | |
| $a$ | 2.6163157 | $\Omega$ | 62.88391 | | +0.38977222 | +0.81702152 | |
| $e$ | 0.1411934 | $i$ | 3.84377 | | +0.12306967 | +0.41105664 | |
| $P$ | 4.23 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 1.1− | 0.1− | 2006 11 11 | 683 | (2.2+ | 0.2−) | |
| 2002 12 10 | 704 | 0.3+ | 0.5− | 2006 10 16 | 703 | (2.1− | 0.8+) | 2006 11 15 | G96 | 0.2+ | 0.3− | |
| 2002 12 10 | 704 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.3− | |
| 2002 12 11 | 704 | 0.3+ | 0.8− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.5− | |
| 2002 12 11 | 704 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− | |
| 2002 12 11 | 704 | 0.2− | 0.8+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.5− | |
| 2002 12 11 | 704 | 0.2− | 1.0+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.5− | |
| 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.1− | |
| 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.9+ | 0.4+ | |
| 2006 10 11 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.4+ | |
| 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.1− | 0.4− | 2006 11 27 | 703 | (1.7+ | 0.2+) | |
| 2006 10 15 | 691 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.2+ | |
| 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 11 | 683 | 0.5− | 0.2− | 2006 11 27 | 703 | 0.4− | 0.6+ | |
| 2006 10 16 | 703 | (0.1− | 1.5−) | 2006 11 11 | 683 | 0.2− | 0.6+ | 2006 11 27 | 703 | 0.5− | 0.4− | |

**2006 TD$_{23}$ = 1988 AB$_{2}$ = 2001 UU$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.87030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19923447 | $\omega$ | 302.85801 | | +0.83562727 | −0.54660362 | |
| $a$ | 2.9033077 | $\Omega$ | 90.33115 | | +0.52038113 | +0.75609035 | |
| $e$ | 0.0716283 | $i$ | 3.11436 | | +0.17587083 | +0.35993314 | |
| $P$ | 4.95 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 01 14 | 046 | (1.0+ | 3.2−) | 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.3− | 0.2− | |
| 1988 01 14 | 046 | 1.7− | 1.2+ | 2006 10 11 | 691 | 0.3− | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.1− | |
| 2001 10 23 | 704 | 0.9+ | 0.9− | 2006 10 14 | 621 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.1− | 0.2+ | |
| 2001 10 23 | 704 | 0.0 | 0.5+ | 2006 10 15 | 621 | 0.0 | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.3+ | |
| 2001 10 23 | 704 | 0.9+ | 0.5− | 2006 10 15 | 621 | 0.3− | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.3+ | |
| 2001 10 24 | 704 | (1.7+ | 0.2−) | 2006 10 15 | 691 | 0.1− | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.0 | |
| 2001 10 24 | 704 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.4− | 0.3− | |
| 2001 10 24 | 704 | 0.4− | 0.3− | 2006 10 15 | 691 | 0.2− | 0.4− | 2006 11 15 | G96 | 0.0 | 0.5− | |
| 2001 10 24 | 691 | 0.2+ | 0.6− | 2006 10 16 | 621 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.0 | |
| 2001 10 24 | 691 | 0.1+ | 0.7− | 2006 10 16 | 621 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1+ | |
| 2001 10 24 | 691 | 0.1+ | 0.2− | 2006 10 16 | 621 | 0.2+ | 0.7− | 2006 11 27 | 291 | 0.2− | 1.0+ | |
| 2004 04 24 | 691 | 0.4− | 0.6− | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 27 | 291 | 0.1+ | 0.7+ | |
| 2004 04 24 | 691 | 0.2− | 0.8− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 27 | 291 | 0.1− | 1.0+ | |
| 2004 04 24 | 691 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.7+ | 1.0− | | | | | |
| 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.2− | 0.0 | | | | | |

**2006 TE$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.11201 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22758315 | $\omega$ | 205.35382 | | +0.99534602 | −0.09544755 | |
| $a$ | 2.6569047 | $\Omega$ | 160.10979 | | +0.09371897 | +0.92674046 | |
| $e$ | 0.1022455 | $i$ | 2.23523 | | +0.02242906 | +0.36337568 | |
| $P$ | 4.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 13 | 691 | 0.2+ | 0.6− | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1− | 0.2+ | |
| 1999 01 13 | 691 | 0.4− | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.3+ | |
| 1999 01 13 | 691 | 0.1− | 0.4− | 2006 10 11 | 691 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.5+ | |
| 2000 05 04 | 691 | 0.2+ | 0.6+ | 2006 10 15 | 691 | 0.3+ | 0.4+ | 2006 10 31 | 691 | 0.5− | 0.2+ | |
| 2000 05 04 | 691 | 0.4+ | 0.8+ | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.2+ | |
| 2000 05 04 | 691 | 0.2+ | 1.1+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.4− | |
| 2004 03 23 | 691 | 0.4+ | 0.7+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.4− | |
| 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.2+ | |
| 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− | |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 27 | 291 | 0.2+ | 0.4+ | |
| 2006 09 30 | G96 | 0.5− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 27 | 291 | 0.2+ | 0.3+ | |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 27 | 291 | 0.1− | 0.1+ | |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.2− | 0.0 | | | | | |

**2006 TF$_{23}$ = 2000 HO$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.82313 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22267953 | $\omega$ | 277.91178 | | +0.77859111 | +0.60121483 | |
| $a$ | 2.6957680 | $\Omega$ | 45.35890 | | −0.42838360 | +0.71861543 | |
| $e$ | 0.0886692 | $i$ | 14.63919 | | −0.45856666 | +0.34947473 | |
| $P$ | 4.43 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.2− | |
| 2000 04 28 | 691 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1+ | |
| 2000 04 28 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1+ | |
| 2000 05 07 | 691 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.2+ | |
| 2000 05 07 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.6+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 691 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.8+ |
| 2006 09 30 | G96 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 21 | 644 | 1.1+ | 0.6− | 2006 11 13 | G96 | 0.3− | 0.5− |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.6+ | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.1− | 0.8− | 2006 11 13 | G96 | 0.7+ | 0.7− |
| 2006 10 11 | 691 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.6− |
| 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2006 10 15 | 691 | (2.0+ | 0.0 ) | 2006 10 27 | 691 | 0.2+ | 0.1+ | | | | |

**2006 TG$_{23}$ = 2001 LG$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.07799 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23328775 | $\omega$ | 133.11702 | | +0.85150189 | | +0.52327854 |
| $a$ | 2.6134132 | $\Omega$ | 195.42798 | | −0.51021514 | | +0.81210311 |
| $e$ | 0.2117562 | $i$ | 7.24027 | | −0.12093403 | | +0.25820168 |
| $P$ | 4.22 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 15 | 704 | 0.2+ | 0.4+ | 2006 10 16 | 683 | 0.4+ | 1.3+ | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2001 06 15 | 704 | 1.1+ | 0.4− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2001 06 15 | 704 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2001 06 15 | 704 | 0.2− | 0.5− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2001 06 15 | 704 | 0.7+ | 0.2− | 2006 10 17 | 683 | 0.7− | 0.0 | 2006 11 13 | 703 | 0.4+ | 0.4− |
| 2001 06 21 | 704 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.6+ | 0.5− |
| 2001 06 21 | 704 | 0.8− | 0.4− | 2006 10 17 | 683 | 0.3+ | 0.7+ | 2006 11 13 | 703 | 0.7+ | 0.4+ |
| 2001 06 21 | 704 | 1.1− | 0.7+ | 2006 10 17 | 683 | (1.6+ | 1.5+) | 2006 11 13 | 703 | 0.3+ | 0.6− |
| 2006 09 30 | G96 | 0.3− | 0.3− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.5− | 0.7− |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2006 09 30 | G96 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.3+ | 2006 11 16 | G96 | 0.5− | 0.6− |
| 2006 09 30 | G96 | 0.3− | 0.5− | 2006 10 19 | 683 | 0.1− | 0.7+ | 2006 11 16 | G96 | 0.7− | 0.5− |
| 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 19 | 683 | (3.0− | 1.9+) | 2006 11 20 | 704 | 0.4+ | 0.5+ |
| 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 683 | 1.0− | 0.2+ | 2006 11 20 | 704 | 0.5− | 1.5+ |
| 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 20 | 683 | 0.4− | 1.2+ | 2006 11 20 | 704 | 0.1− | 1.4+ |
| 2006 10 16 | 683 | 0.3+ | 0.1+ | 2006 10 20 | 683 | 0.7+ | 1.0+ | 2006 11 20 | 704 | 0.4− | 0.2+ |
| 2006 10 16 | 703 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 20 | 704 | 0.2− | 0.5+ |
| 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 23 | G96 | 0.7+ | 0.2− |
| 2006 10 16 | 683 | 1.0+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | 703 | 0.5+ | 0.7− | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2006 10 16 | 703 | 0.2− | 0.7− | 2006 10 22 | 691 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.0 |

**2006 TJ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 202.50244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28993049 | $\omega$ | 133.67518 | | −0.99436886 | | −0.09041774 |
| $a$ | 2.2608589 | $\Omega$ | 41.22942 | | +0.05559929 | | −0.88914036 |
| $e$ | 0.0862109 | $i$ | 4.81080 | | +0.09021800 | | −0.44861348 |
| $P$ | 3.40 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 18 | 691 | 0.0 | 0.6− | 2003 12 25 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 291 | 0.1+ | 0.1− |
| 1996 10 18 | 691 | 0.3+ | 0.1+ | 2003 12 25 | 691 | 0.3+ | 0.2+ | 2006 10 15 | 291 | 0.3+ | 0.1+ |
| 1996 10 18 | 691 | 0.0 | 0.0 | 2006 09 17 | 691 | 0.5− | 0.5− | 2006 10 15 | 291 | 0.1+ | 0.2+ |
| 2003 11 24 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.6− | 0.5− | 2006 10 15 | 291 | 0.1+ | 0.1+ |
| 2003 11 24 | 691 | 0.3+ | 0.2− | 2006 09 17 | 691 | 0.2− | 0.4− | 2006 10 22 | G96 | 0.4+ | 0.3− |
| 2003 11 24 | 691 | 0.3− | 0.3− | 2006 09 27 | 691 | 0.1+ | 0.6+ | 2006 10 22 | G96 | 0.5+ | 0.2− |
| 2003 11 30 | 691 | 0.3− | 0.5+ | 2006 09 27 | 691 | 0.0 | 0.8+ | 2006 10 22 | G96 | 0.5− | 0.3− |
| 2003 11 30 | 691 | 0.3− | 0.0 | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.8+ | 0.1− |
| 2003 11 30 | 691 | 0.4− | 0.1− | 2006 10 11 | 291 | 0.1− | 0.3+ | | | | |
| 2003 12 25 | 691 | 0.4+ | 0.1+ | 2006 10 11 | 291 | 0.1+ | 0.1+ | | | | |

**2006 TK$_{23}$ = 2003 YT$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.46706 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30629660 | $\omega$ | 55.75807 | | −0.25569069 | | −0.96554572 |
| $a$ | 2.1795890 | $\Omega$ | 49.13246 | | +0.86460264 | | −0.25078989 |
| $e$ | 0.1073563 | $i$ | 3.67048 | | +0.43253270 | | −0.06946862 |
| $P$ | 3.22 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 01 | 699 | 0.3+ | 0.9+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2001 02 01 | 699 | 0.7− | 0.1− | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 11 13 | G96 | 0.4+ | 0.2+ |
| 2001 02 01 | 699 | 0.2− | 0.6− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 1.1− | 0.8− |
| 2001 02 01 | 699 | 0.2+ | 1.3− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 13 | G96 | 0.6+ | 0.1− |
| 2003 12 18 | 704 | 0.6− | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.4+ |
| 2003 12 18 | 704 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.1− |
| 2003 12 18 | 704 | 0.7+ | 0.8− | 2006 10 15 | 691 | (1.7− | 0.2+) | 2006 11 17 | 703 | (1.4+ | 2.5−) |
| 2003 12 22 | 704 | 0.2− | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2003 12 22 | 704 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.1+ |
| 2003 12 22 | 704 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2003 12 22 | 704 | 0.1+ | 0.5+ | 2006 10 19 | 691 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.2+ |

**2006 TN$_{23}$ = 2002 TM$_{95}$ = 2004 BS$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.26342 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26328731 | $\omega$ | 237.73062 | | +0.66501390 | | +0.74554164 |
| $a$ | 2.4109198 | $\Omega$ | 74.01775 | | −0.66894219 | | +0.62074601 |
| $e$ | 0.1081219 | $i$ | 2.61527 | | −0.33207359 | | +0.24257382 |
| $P$ | 3.74 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.4− |
| 2002 10 03 | 704 | 0.6− | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 704 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 1.3+ | 1.3− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.5+ | 2006 10 15 | 691 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2002 10 04 | 644 | 0.1− | 0.4+ | 2006 10 16 | 703 | 0.8+ | 0.8− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 01 16 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2004 01 16 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.3− |
| 2004 01 16 | 691 | 0.7+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.7+ | 0.5− |
| 2004 01 27 | 691 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.5− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 19 | 691 | 0.5− | 0.3+ | 2006 11 17 | 703 | 1.2+ | 0.7+ |
| 2006 09 30 | G96 | 0.3+ | 0.6− | 2006 10 19 | 691 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.7− | 0.8+ |
| 2006 09 30 | G96 | 0.3+ | 0.6− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 17 | 703 | 1.0+ | 0.7+ |
| 2006 09 30 | G96 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | (0.1+ | 2.5+) |
| 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− | | | | |
| 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.7+ | | | | |

**2006 TO$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 193.14577 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23584536 | $\omega$ | 353.91752 | | −0.95123670 | | +0.30046100 |
| $a$ | 2.5944849 | $\Omega$ | 203.92957 | | −0.27526033 | | −0.92895645 |
| $e$ | 0.0256603 | $i$ | 9.90895 | | −0.13921382 | | −0.21624775 |
| $P$ | 4.18 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 16 | 691 | 0.5− | 0.5+ | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.1+ |
| 1993 09 16 | 691 | 0.4+ | 0.4− | 2006 10 11 | 691 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 1993 09 16 | 691 | 0.2+ | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2001 08 16 | 644 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2001 08 16 | 644 | 0.2− | 0.6+ | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2001 08 16 | 644 | 0.3− | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.7+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.1− | | |
| 2002 11 16 | 644 | 0.3− | 0.6+ | 2006 10 17 | G96 | 0.4− | 1.3− | 2006 11 16 | G96 | 0.1− | 0.2+ | | |
| 2002 11 16 | 644 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 17 | 703 | 0.6− | 0.2+ | | |
| 2004 02 14 | 644 | 0.2+ | 0.2+ | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 11 17 | 703 | (2.1+ | 0.4−) | | |
| 2004 02 14 | 644 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | (1.6+ | 0.0 ) | | |
| 2004 02 14 | 644 | 0.0 | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.1− | 1.4− | | |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.5+ | 2006 11 22 | G96 | 0.5+ | 0.0 | | |
| 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 22 | G96 | 0.7+ | 0.8− | | |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.1+ | | |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.7− | 0.6− | 2006 11 22 | G96 | 0.0 | 0.2+ | | |

**2006 TC$_{24}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.98356 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22207596 | $\omega$ | 287.77652 | | +0.61005990 | +0.79177646 | |
| $a$ | 2.7006503 | $\Omega$ | 19.91026 | | −0.68912784 | +0.54905573 | |
| $e$ | 0.0616697 | $i$ | 5.10141 | | −0.39106232 | +0.26763378 | |
| $P$ | 4.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 22 | 644 | 0.4− | 1.4+ | 2006 09 26 | 691 | 0.2− | 0.3− | 2006 10 16 | G96 | 0.6+ | 0.1+ |
| 2001 06 22 | 644 | 0.5− | 0.9+ | 2006 09 26 | 691 | 0.2− | 0.4− | 2006 10 16 | G96 | 0.3+ | 0.2+ |
| 2001 06 22 | 644 | 0.4+ | 0.6− | 2006 09 26 | 691 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.6+ |
| 2004 02 16 | 691 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.6+ |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 10 21 | G96 | 0.0 | 0.5+ |
| 2004 02 16 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 10 21 | G96 | 0.5− | 0.4+ |
| 2004 03 16 | 691 | 0.3− | 0.7+ | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2004 03 16 | 691 | 0.5+ | 0.6+ | 2006 10 11 | 291 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.7+ |
| 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 291 | 0.3− | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.5+ |
| 2006 09 18 | 691 | 0.3− | 0.6− | 2006 10 11 | 291 | 0.3− | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.4+ |
| 2006 09 18 | 691 | 0.2− | 0.8− | 2006 10 16 | G96 | 0.1+ | 0.4+ | | | | |
| 2006 09 18 | 691 | 0.3− | 0.8− | 2006 10 16 | G96 | 0.3+ | 0.1+ | | | | |

**2006 TD$_{24}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.79412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37435733 | $\omega$ | 46.66049 | | +0.53878842 | −0.83958505 | |
| $a$ | 1.9066830 | $\Omega$ | 11.35933 | | +0.63458639 | +0.35036549 | |
| $e$ | 0.1224121 | $i$ | 20.60356 | | +0.55408226 | +0.41513968 | |
| $P$ | 2.63 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | 703 | 1.5− | 0.5− | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.6+ |
| 2005 03 16 | 703 | 0.4+ | 0.4+ | 2006 10 11 | 644 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2005 03 16 | 703 | 0.3+ | 1.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2005 03 16 | 703 | 0.4+ | 0.7− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.4− |
| 2005 04 16 | 691 | 0.8+ | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2005 04 16 | 691 | 1.0+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.1+ |
| 2006 09 18 | 703 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.2+ |
| 2006 09 18 | 703 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.6+ | 0.3+ |
| 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.3+ | | | | |

**2006 TE$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.51594 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19003899 | $\omega$ | 329.88697 | | +0.59928547 | +0.80031549 | |
| $a$ | 2.9962238 | $\Omega$ | 336.91564 | | −0.72459648 | +0.53232448 | |
| $e$ | 0.1484200 | $i$ | 2.74285 | | −0.34031876 | +0.27590898 | |
| $P$ | 5.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.3+ | 0.7− | 2006 10 03 | 691 | 0.9+ | 0.9− | 2006 10 29 | 691 | 0.1− | 0.1− |
| 1993 01 29 | 691 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2001 10 19 | 691 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2001 10 19 | 691 | 0.1− | 0.3− | 2006 10 12 | 691 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 10 19 | 691 | 0.1+ | 0.5− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2001 10 26 | 644 | 0.2+ | 0.7+ | 2006 10 16 | 691 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2001 10 26 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 07 | 644 | 0.1− | 0.0 |
| 2001 10 26 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 07 | 644 | 0.2+ | 0.0 |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2004 03 15 | 703 | (3.6+ | 2.1+) | 2006 10 19 | 644 | 0.4− | 0.2− | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2004 03 15 | 703 | 1.2+ | 1.3+ | 2006 10 19 | 644 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 703 | 1.1+ | 0.6+ | 2006 10 19 | 644 | 0.3− | 0.4+ | 2006 11 11 | 703 | (0.8− | 1.5+) |
| 2004 03 15 | 703 | 0.8− | 1.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | (1.7− | 0.4−) |
| 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | (0.5− | 1.9−) |
| 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | (2.0− | 1.1−) |
| 2006 09 25 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2006 09 26 | 152 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2006 09 26 | 152 | 0.9− | 0.6− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.4− | 0.0 |
| 2006 09 26 | 152 | 0.2− | 0.9+ | 2006 10 21 | 644 | 0.6− | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2006 09 27 | 152 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2006 09 27 | 152 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.3+ |
| 2006 09 27 | 152 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.2+ |
| 2006 10 03 | 691 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.1+ |

**2006 TF$_{24}$ = 2001 SC$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.68571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21247750 | $\omega$ | 95.78435 | | +0.98535068 | −0.16425253 | |
| $a$ | 2.7813827 | $\Omega$ | 273.67564 | | +0.13253917 | +0.90685432 | |
| $e$ | 0.1129649 | $i$ | 2.63519 | | +0.10731920 | +0.38811899 | |
| $P$ | 4.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2001 09 20 | 704 | 0.6+ | 0.7− | 2006 10 16 | 691 | 0.0 | 0.5+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 09 20 | 704 | 0.6+ | 0.6− | 2006 10 16 | 691 | 0.0 | 0.6− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2001 09 22 | 704 | 0.4− | 0.8+ | 2006 10 16 | 691 | 1.1− | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 09 22 | 704 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2001 09 22 | 704 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2001 09 22 | 704 | (0.0 | 1.7+) | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2006 10 03 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.4− |
| 2006 10 03 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.2− |
| 2006 10 03 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2006 10 12 | 691 | 0.6+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2006 10 12 | 691 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2006 10 12 | 691 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 | | | | |

**2006 TH$_{24}$ = 2005 LR$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.88837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23511085 | $\omega$ | 52.02383 | | +0.45601082 | +0.88834292 | |
| $a$ | 2.5998858 | $\Omega$ | 245.18736 | | −0.83401277 | +0.40543188 | |
| $e$ | 0.1356384 | $i$ | 3.40185 | | −0.31060720 | +0.21557329 | |
| $P$ | 4.19 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 06 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2005 06 06 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.2− |
| 2005 06 06 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.4+ | 0.2+ |
| 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2005 06 13 | G96 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2005 06 13 | G96 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.3− | | |
| 2006 10 12 | 691 | 0.4− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2006 10 12 | 691 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.2+ | | |
| 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1− | | | | | | |
| 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | | | |

**2006 TK$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.88213 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19588619 | $\omega$ | 173.53068 | | +0.85152113 | −0.51286014 | |
| $a$ | 2.9362983 | $\Omega$ | 217.97174 | | +0.47276400 | +0.84092528 | |
| $e$ | 0.1402737 | $i$ | 10.20650 | | +0.22672884 | +0.17268225 | |
| $P$ | 5.03 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.1− | 0.1− | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2001 10 13 | 691 | 0.3+ | 0.2+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2001 10 13 | 691 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2001 10 23 | 049 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 10 23 | 049 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 10 23 | 049 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.5− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2006 10 03 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.1− | 0.2− |

**2006 TL$_{24}$ = 2004 GU$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.84845 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21044257 | $\omega$ | 133.06483 | | +0.73647508 | −0.67547786 | |
| $a$ | 2.7992841 | $\Omega$ | 269.46186 | | +0.60954595 | +0.68606729 | |
| $e$ | 0.0697178 | $i$ | 2.09332 | | +0.29335677 | +0.27026161 | |
| $P$ | 4.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ | | |
| 2004 04 13 | 691 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.5− | 2006 11 15 | 691 | 0.2+ | 0.2+ | | |
| 2004 04 13 | 691 | 0.0 | 0.3− | 2006 10 16 | 104 | (0.1+ | 1.6−) | 2006 11 15 | 691 | 0.1− | 0.1− | | |
| 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 104 | 1.0+ | 0.3− | 2006 11 15 | 691 | 0.5+ | 0.3+ | | |
| 2004 04 20 | 691 | 0.2+ | 0.1− | 2006 10 16 | 104 | (2.7+ | 0.8−) | 2006 11 18 | 691 | 0.0 | 0.1− | | |
| 2004 04 20 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.1+ | | |
| 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.7− | 0.3− | | |
| 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.1− | | |
| 2006 10 03 | 691 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.2+ | | |

**2006 TT$_{24}$ = 2002 XP$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.86692 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23712969 | $\omega$ | 73.22558 | | −0.09081316 | −0.99520769 | |
| $a$ | 2.5851084 | $\Omega$ | 22.08135 | | +0.87302128 | −0.09707538 | |
| $e$ | 0.2923149 | $i$ | 5.53476 | | +0.47915218 | −0.01174800 | |
| $P$ | 4.16 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.3− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.3+ |
| 2002 12 06 | 704 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.2+ |
| 2002 12 06 | 704 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2002 12 11 | 704 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.4− |
| 2002 12 11 | 704 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.5− |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3− | 0.8− |
| 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.7− | 2006 11 11 | 703 | (0.1− | 2.0−) |
| 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.8+ | 0.8− | 2006 11 11 | 703 | (1.9− | 0.5+) |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.6+ | 1.4− | 2006 11 11 | 703 | 0.1− | 1.0− |
| 2006 10 12 | 691 | 0.3− | 0.0 | 2006 10 21 | 703 | 1.2+ | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.4+ |
| 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2− | | | | |

**2006 TX$_{24}$ = 2005 NW$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.15797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17068492 | $\omega$ | 327.42373 | | +0.76881093 | +0.63947206 | |
| $a$ | 3.2186416 | $\Omega$ | 352.82249 | | −0.58271302 | +0.69908804 | |
| $e$ | 0.0920282 | $i$ | 1.05009 | | −0.26339190 | +0.31992407 | |
| $P$ | 5.77 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 23 | 291 | 0.5− | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2003 02 23 | 291 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2003 02 23 | 291 | 0.6+ | 0.5− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.6+ | 0.0 |
| 2004 05 14 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2004 05 14 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.5− | 0.6+ |
| 2004 05 14 | 691 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.4+ | 0.2− | 2006 11 22 | 691 | 0.6− | 0.3− |
| 2005 07 04 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2005 07 04 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2005 07 04 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2005 07 16 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.5− | 0.1+ |
| 2005 07 16 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2005 07 16 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.5+ |
| 2006 09 26 | G96 | 0.2− | 0.5− | 2006 11 09 | 691 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 11 09 | 691 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.2+ | | | | |
| 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.0 | | | | |

**2006 TB$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.29266 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17755126 | $\omega$ | 38.36314 | | +0.93687256 | −0.34964224 | |
| $a$ | 3.1351155 | $\Omega$ | 342.10073 | | +0.31710695 | +0.85495853 | |
| $e$ | 0.0916757 | $i$ | 0.83606 | | +0.14735328 | +0.38313994 | |
| $P$ | 5.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 807 | 0.0 | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2− |
| 2000 08 28 | 807 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2004 04 25 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.4− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (0.2− | 1.6+) |
| 2005 07 11 | 691 | 0.5− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.6+ | 0.9+ |
| 2005 07 11 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.4+ |
| 2006 07 22 | G96 | 1.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2006 07 22 | G96 | 0.4− | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.4− | 0.2+ |
| 2006 07 22 | G96 | 1.0− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2006 07 22 | G96 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2006 10 12 | 691 | 0.0 | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.1− | | | | |

**2006 TC$_{25}$ = 2004 FX$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 274.68925 | | | (2000.0) | | |
| $n$ | 0.23553043 | $\omega$ | 91.26255 | | −0.43532148 | −0.89951245 |
| $a$ | 2.5967972 | $\Omega$ | 24.64816 | | +0.78662937 | −0.40006082 |
| $e$ | 0.0322518 | $i$ | 5.09656 | | +0.43784636 | −0.17558101 |
| $P$ | 4.18 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 25 | 691 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2000 03 25 | 691 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2000 03 25 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2000 04 13 | 691 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 10 29 | 691 | 0.3− | 0.3+ |
| 2000 04 13 | 691 | 0.3− | 0.3− | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2000 04 13 | 691 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2004 03 18 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.4− |
| 2004 03 19 | 704 | 0.6− | 1.3+ | 2006 10 16 | 691 | 0.1− | 0.9+ | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2004 03 19 | 704 | (1.1− | 1.9+) | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.5− |
| 2004 03 19 | 704 | (1.6− | 1.7+) | 2006 10 20 | 691 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.4+ | 0.3+ |
| 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.5+ |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− | | | | |

**2006 TD$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 155.04308 | | | (2000.0) | | |
| $n$ | 0.17958904 | $\omega$ | 201.24389 | | −0.62137133 | +0.78204455 |
| $a$ | 3.1113545 | $\Omega$ | 30.40019 | | −0.70449874 | −0.53084595 |
| $e$ | 0.0824363 | $i$ | 5.44295 | | −0.34289823 | −0.32651017 |
| $P$ | 5.49 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 28 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.5+ | 0.2+ |
| 2004 04 28 | 691 | 0.0 | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.2− |
| 2004 04 28 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 691 | 0.4− | 0.1+ |
| 2004 06 13 | 691 | 0.1− | 0.4− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.5+ |
| 2004 06 13 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.4− | 2006 11 09 | 691 | 0.1− | 0.4+ |
| 2004 06 13 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2006 10 04 | G96 | 0.6− | 0.6− | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2006 10 04 | G96 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.2− | | | | |
| 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ | | | | |

**2006 TO$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 52.12799 | | | (2000.0) | | |
| $n$ | 0.18021437 | $\omega$ | 306.50517 | | +0.90104845 | +0.41997638 |
| $a$ | 3.1041529 | $\Omega$ | 29.11936 | | −0.29133190 | +0.77106786 |
| $e$ | 0.0233751 | $i$ | 12.86037 | | −0.32130580 | +0.47861696 |
| $P$ | 5.47 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.4+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.6− |
| 1995 09 26 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.4− |
| 1995 09 26 | 691 | 0.2+ | 0.5− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 2000 11 27 | 645 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.4+ | 0.0 |
| 2000 11 27 | 645 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.4+ | 0.2− |
| 2005 08 10 | E12 | 0.8+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.5− | 0.3+ |
| 2005 08 10 | E12 | 0.8− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2005 08 10 | E12 | 0.6− | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2005 08 10 | E12 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 22 | 691 | 0.4+ | 0.2+ |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 26 | 104 | 0.7− | 0.4+ | 2006 11 22 | 691 | 0.2+ | 0.4+ |
| 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 26 | 104 | 1.4− | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 26 | 104 | 0.7− | 0.7+ | 2006 11 23 | 691 | 0.3+ | 0.4+ |
| 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2006 10 12 | 691 | 0.5− | 0.5− | 2006 10 28 | 691 | 0.4− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.3− | 0.2− |
| 2006 10 15 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.3− |
| 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2− | | | | |
| 2006 10 15 | 691 | 0.1+ | 0.5+ | 2006 11 09 | 691 | 0.4+ | 0.1+ | | | | |

**2006 TQ$_{25}$ = 2001 YZ$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 128.87891 | | | (2000.0) | | |
| $n$ | 0.17338436 | $\omega$ | 240.85664 | | −0.21430438 | +0.97670791 |
| $a$ | 3.1851466 | $\Omega$ | 16.77887 | | −0.88274803 | −0.18895906 |
| $e$ | 0.0494787 | $i$ | 2.13161 | | −0.41812622 | −0.10166679 |
| $P$ | 5.68 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.1− | 0.4− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 10 26 | 104 | 0.3+ | 0.5+ |
| 2001 12 18 | 704 | 0.3+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 26 | 104 | 1.1− | 0.7+ |
| 2001 12 18 | 704 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 26 | 104 | 0.8+ | 0.3+ |
| 2001 12 18 | 704 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.4− | 0.6+ |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.2− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.3− | 0.3+ |
| 2001 12 19 | 704 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.3+ | 0.2− |
| 2001 12 19 | 704 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2003 02 22 | 644 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2003 02 22 | 644 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2003 02 22 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2003 02 26 | 599 | 0.2− | 0.3− | 2006 10 26 | 104 | 0.5− | 0.7− | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2003 02 26 | 599 | 0.1+ | 0.0 | 2006 10 26 | 104 | (2.2− | 0.2+) | 2006 11 13 | 691 | 0.4+ | 0.5− |
| 2003 02 26 | 599 | 0.3− | 0.2− | 2006 10 26 | 104 | 0.0 | 0.9+ | | | | |
| 2003 02 26 | 599 | 0.4+ | 0.3− | 2006 10 26 | 104 | 0.4+ | 0.1+ | | | | |

**2006 TS$_{25}$ = 2005 NK$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 325.97279 | | | (2000.0) | | |
| $n$ | 0.20103659 | $\omega$ | 133.39365 | | +0.37625457 | −0.92643267 |
| $a$ | 2.8859312 | $\Omega$ | 294.50065 | | +0.84605846 | +0.34902702 |
| $e$ | 0.0834447 | $i$ | 0.78394 | | +0.37764743 | +0.14107673 |
| $P$ | 4.90 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 291 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2001 12 20 | 291 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.2− | 0.3− |
| 2001 12 20 | 291 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.7− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2003 01 28 | 291 | 0.5+ | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 09 | 691 | 0.2− | 0.4− |
| 2003 01 28 | 291 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 11 09 | 691 | 0.3+ | 0.2+ |
| 2003 01 28 | 291 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 09 | 691 | 0.3− | 0.1− |
| 2005 07 06 | 291 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2005 07 06 | 291 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.2+ |
| 2005 07 06 | 291 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2005 07 15 | G96 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2005 07 15 | G96 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2005 07 15 | G96 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.5− | 0.4+ |
| 2005 07 15 | G96 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.5+ | 0.2+ | | | | |

**2006 TU$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.77732 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27753844 | $\omega$ | 46.55169 | | −0.08123176 | +0.99489046 | |
| $a$ | 2.3276658 | $\Omega$ | 218.90862 | | −0.93980269 | −0.09648818 | |
| $e$ | 0.2124827 | $i$ | 5.47748 | | −0.33192213 | +0.02971524 | |
| $P$ | 3.55 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.1+ | 0.1− | 2002 08 16 | 644 | 0.2− | 0.4− | 2005 05 12 | 691 | 0.0 | 0.5+ |
| 1995 10 24 | 691 | 0.1− | 0.4− | 2002 08 16 | 644 | 0.4− | 0.7− | 2005 05 12 | 691 | 0.0 | 0.4+ |
| 1995 10 24 | 691 | 0.1− | 0.3− | 2002 08 26 | 644 | 0.3− | 0.0 | 2005 05 12 | 691 | 0.1+ | 0.4+ |
| 1999 10 29 | 691 | 0.0 | 0.1− | 2002 08 26 | 644 | 0.5− | 0.7+ | 2006 09 27 | G96 | 0.0 | 0.1+ |
| 1999 10 29 | 691 | 0.3− | 0.1+ | 2002 08 26 | 644 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.2+ |
| 1999 10 29 | 691 | 0.2− | 0.2− | 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.3+ |
| 1999 11 16 | 691 | 0.1+ | 0.3− | 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− |
| 1999 11 16 | 691 | 0.4+ | 0.2− | 2002 09 13 | 644 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.2− | 0.0 |
| 1999 11 16 | 691 | 0.5+ | 0.1+ | 2005 03 09 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.4− |
| 2002 07 21 | 644 | 0.4− | 0.5+ | 2005 03 09 | 691 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1− |
| 2002 07 21 | 644 | 0.2− | 0.5+ | 2005 03 09 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.6+ |
| 2002 07 21 | 644 | 0.1− | 0.3+ | 2005 04 03 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.6+ |
| 2002 08 08 | 699 | 0.2+ | 1.6+ | 2005 04 03 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.5− | 0.3− |
| 2002 08 08 | 699 | 0.6+ | 0.4+ | 2005 04 03 | 644 | 0.4+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.7+ |
| 2002 08 08 | 699 | 0.6+ | 2.0+ | 2005 05 02 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.3− | 1.4+ |
| 2002 08 08 | 699 | 0.3+ | 0.7+ | 2005 05 02 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 1.8+ |
| 2002 08 16 | 644 | 0.2− | 0.5− | 2005 05 02 | 691 | 0.1+ | 0.5+ | | | | |

**2006 TY$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.24120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26226220 | $\omega$ | 241.62209 | | −0.07344202 | +0.99700025 | |
| $a$ | 2.4171981 | $\Omega$ | 24.20302 | | −0.89288510 | −0.05482156 | |
| $e$ | 0.0536093 | $i$ | 3.41612 | | −0.44425497 | −0.05463610 | |
| $P$ | 3.76 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 15 | 691 | 0.5− | 0.5− | 2006 10 12 | 691 | 0.3− | 0.2− | 2006 11 09 | 691 | 0.5− | 0.5+ |
| 1997 04 15 | 691 | 0.3− | 0.7− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 1997 04 15 | 691 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.5− | 0.1− |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.4− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2002 10 10 | 645 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.3− | 0.4+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 26 | 104 | 0.6+ | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2006 10 26 | 104 | 0.7+ | 0.7+ | 2006 11 23 | 691 | 0.3− | 0.1+ |
| 2002 11 08 | 645 | 0.0 | 0.1− | 2006 10 26 | 104 | 0.5+ | 0.3− | 2006 11 23 | 691 | 0.5+ | 0.1+ |
| 2006 09 27 | G96 | 0.0 | 0.3+ | 2006 10 26 | 104 | 0.4− | 0.1− | 2006 11 27 | 691 | 0.4+ | 0.2+ |
| 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.5− | 2006 11 27 | 691 | 0.5+ | 0.1+ |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2− | | | | |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 09 | 691 | 0.5− | 0.1+ | | | | |

**2006 TD$_{26}$ = 1995 KD$_5$ = 2005 JY$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.39011 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28850514 | $\omega$ | 74.06046 | | +0.35617080 | +0.93352258 | |
| $a$ | 2.2682992 | $\Omega$ | 216.88729 | | −0.88130001 | +0.32102978 | |
| $e$ | 0.1956227 | $i$ | 3.91314 | | −0.31056829 | +0.15961040 | |
| $P$ | 3.42 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 26 | 691 | 1.2− | 1.0− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.3+ | 0.3− |
| 1995 05 26 | 691 | 0.7− | 0.4− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 29 | G96 | 0.5+ | 0.4− |
| 1995 05 27 | 691 | 1.0− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 1995 05 27 | 691 | 0.5− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 10 29 | 691 | 0.2− | 0.0 |
| 1995 05 30 | 691 | 1.3+ | 0.2+ | 2006 10 12 | 691 | 0.6− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 1995 05 30 | 691 | 0.7+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 1995 05 30 | 691 | 1.4+ | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2005 05 12 | G96 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2005 05 12 | G96 | 0.4+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.3− |
| 2005 05 12 | G96 | 0.1− | 0.5− | 2006 10 16 | 691 | 0.5+ | 0.7+ | 2006 11 13 | 691 | 0.5− | 0.2− |
| 2005 05 12 | G96 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.3− | 2006 11 13 | 691 | 0.6+ | 0.2− |
| 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2005 05 14 | G96 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.7− |
| 2005 05 14 | G96 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2005 05 14 | G96 | 0.3+ | 0.2− | 2006 10 29 | G96 | 0.3+ | 0.3− | 2006 11 22 | G96 | 0.8+ | 0.5− |

**2006 TF$_{26}$ = 2002 TF$_{352}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.59005 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27258270 | $\omega$ | 42.19689 | | −0.21944482 | +0.97366415 | |
| $a$ | 2.3557933 | $\Omega$ | 215.25761 | | −0.92129638 | −0.22765923 | |
| $e$ | 0.0829649 | $i$ | 6.14810 | | −0.32102484 | −0.01222313 | |
| $P$ | 3.62 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.0 | 0.7− |
| 2002 09 13 | 644 | 0.3− | 0.8+ | 2006 09 27 | G96 | 0.2− | 0.4+ | 2006 10 29 | G96 | 0.3− | 0.3− |
| 2002 09 13 | 644 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.4− | 0.4− |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.6− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2002 10 10 | 645 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.4− | 0.3− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.0 | 0.6+ | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2005 05 20 | G96 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2005 05 20 | G96 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.4− | 2006 11 13 | 691 | 0.5+ | 0.2− |
| 2005 05 20 | G96 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.1− |
| 2005 05 20 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.6+ |
| 2005 06 06 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.5+ |
| 2005 06 06 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.4− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.7− |
| 2005 06 06 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2005 06 27 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.1+ | 2006 11 27 | 291 | 0.5+ | 0.3+ |
| 2005 06 27 | 691 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.1− | 0.6− | 2006 11 27 | 291 | 0.0 | 0.1− |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.3+ | 0.1− | 2006 11 27 | 291 | 0.0 | 0.2+ |

**2006 TH$_{26}$ = 2004 ED$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.75826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25992945 | $\omega$ | 32.86428 | | +0.60771846 | −0.79399208 | |
| $a$ | 2.4316388 | $\Omega$ | 19.72579 | | +0.71803046 | +0.54076756 | |
| $e$ | 0.1869826 | $i$ | 2.71103 | | +0.33927943 | +0.27775355 | |
| $P$ | 3.79 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.5− |
| 2004 03 15 | 691 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.5− |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2004 03 23 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2004 03 23 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.7− | 0.7− |
| 2004 03 23 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2006 10 12 | 691 | 0.1− | 0.9− | 2006 10 28 | 691 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.9− | 0.1+ |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.7+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | (1.6+ | 1.3−) | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 22 | 104 | 0.4+ | 0.2+ |
| 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 22 | 104 | 0.4+ | 0.6+ |
| 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.1− | 2006 11 22 | 104 | 0.3− | 0.4+ |

**2006 TK$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 36.19515 | | | (2000.0) | | |
| $n$ | 0.18609345 | $\omega$ | 315.55720 | | +0.91474914 | +0.40399378 |
| $a$ | 3.0384259 | $\Omega$ | 20.61618 | | −0.36678377 | +0.83535942 |
| $e$ | 0.1922243 | $i$ | 0.78092 | | −0.16942159 | +0.37277830 |
| $P$ | 5.30 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 19 | 809 | 1.4+ | 0.8+ | 2006 07 21 | G96 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1995 08 20 | 809 | 1.5+ | 0.8+ | 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1995 08 22 | 809 | 1.6+ | 1.0+ | 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1995 08 25 | 809 | 0.7− | 1.8− | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 1995 09 17 | 809 | 0.3− | 0.8− | 2006 09 25 | G96 | 0.6+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 1995 09 18 | 809 | (0.8− | 2.9−) | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 1995 09 20 | 809 | 0.0 | 1.0+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.1+ |
| 1995 09 22 | 809 | 0.4+ | 0.9+ | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 2000 07 29 | 699 | 1.5− | 1.6− | 2006 10 12 | 691 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2000 07 29 | 699 | 1.8− | 0.3− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2000 07 29 | 699 | 0.4− | 2.0+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2000 07 29 | 699 | 1.4− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2001 10 24 | 291 | 1.1− | 0.6− | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2001 10 24 | 291 | 0.4+ | 0.7− | 2006 10 19 | 644 | 0.6+ | 0.7+ | 2006 11 17 | 703 | 0.9− | 0.6− |
| 2001 10 24 | 291 | 0.7− | 1.1− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2001 12 09 | 644 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.3− | 0.7+ |
| 2001 12 09 | 644 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.7+ |
| 2001 12 09 | 644 | 0.5− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2003 01 30 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2003 01 30 | 291 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.6+ | 0.2− | 2006 11 18 | 704 | 0.9+ | 1.1+ |
| 2003 01 30 | 291 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 10 23 | H07 | 0.2+ | 0.6− | 2006 11 21 | 704 | 1.0+ | 0.7+ |
| 2004 04 14 | 691 | 0.5+ | 0.2+ | 2006 10 23 | H07 | 0.1+ | 0.2+ | 2006 11 21 | 704 | (1.6+ | 1.2+) |
| 2004 04 14 | 691 | 0.4+ | 0.2+ | 2006 10 23 | H07 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.3+ | 1.1+ |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 2006 07 21 | G96 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.2+ |

**2006 TN$_{26}$ = 1998 VV$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 352.73498 | | | (2000.0) | | |
| $n$ | 0.24394563 | $\omega$ | 184.97884 | | +0.82720315 | −0.56078615 |
| $a$ | 2.5367287 | $\Omega$ | 209.22004 | | +0.51800767 | +0.78548479 |
| $e$ | 0.1887825 | $i$ | 4.15969 | | +0.21772232 | +0.26178720 |
| $P$ | 4.04 | $H$ | 18.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− |
| 1998 11 14 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 1998 11 14 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.4− | 0.3− |
| 1998 11 16 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.1− |
| 1998 11 16 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 1998 11 16 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2006 10 12 | 691 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | | | | |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− | | | | |

**2006 TS$_{26}$ = 2004 FO$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 69.29279 | | | (2000.0) | | |
| $n$ | 0.21726172 | $\omega$ | 278.20269 | | +0.71259715 | +0.70091475 |
| $a$ | 2.7403997 | $\Omega$ | 37.30561 | | −0.62232342 | +0.65151044 |
| $e$ | 0.0389902 | $i$ | 2.87461 | | −0.32391182 | +0.29026309 |
| $P$ | 4.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2004 03 17 | 691 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2004 03 26 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.4+ |
| 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.6− | 2006 11 22 | G96 | 0.6− | 0.1+ |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.7− | 0.1+ |
| 2006 09 25 | G96 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.1− | 0.4+ |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2006 09 25 | G96 | 0.8+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.1+ | | | | |
| 2006 10 12 | 691 | 0.2− | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.3+ | | | | |

**2006 TZ$_{26}$ = 1995 VO$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 15.16933 | | | (2000.0) | | |
| $n$ | 0.18133760 | $\omega$ | 340.36453 | | +0.97483334 | −0.21584939 |
| $a$ | 3.0913213 | $\Omega$ | 32.26228 | | +0.21594995 | +0.85216069 |
| $e$ | 0.0734392 | $i$ | 5.99586 | | +0.05536774 | +0.47668774 |
| $P$ | 5.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.2− | 0.0 | 2004 05 19 | 691 | (57.4+ | 24.5−) | 2006 10 12 | 691 | 0.2+ | 0.3+ |
| 1995 10 28 | 691 | 0.4− | 0.0 | 2004 05 19 | 691 | (57.9+ | 24.6−) | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 1995 10 28 | 691 | 0.2− | 0.2− | 2006 09 25 | G96 | 0.1− | 0.6− | 2006 10 16 | 691 | 0.3− | 0.3+ |
| 1995 11 14 | 691 | 0.0 | 0.6+ | 2006 09 25 | G96 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.1− |
| 1995 11 14 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 1995 11 14 | 691 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.4− | 2006 10 20 | 691 | 0.4− | 0.0 |
| 1995 11 19 | 691 | 1.3+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1995 11 19 | 691 | 0.1+ | 0.2− | 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 1995 11 19 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.5+ | 0.1− |
| 2003 01 28 | 645 | (55.1+ | 29.9−) | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2003 01 28 | 645 | (55.2+ | 29.8−) | 2006 10 12 | 691 | 0.2− | 0.2+ | | | | |
| 2004 05 19 | 691 | (57.4+ | 24.6−) | 2006 10 12 | 691 | 0.1− | 0.1− | | | | |

**2006 TB$_{27}$ = 2003 YO$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 322.80629 | | | (2000.0) | | |
| $n$ | 0.29405398 | $\omega$ | 37.78820 | | +0.33462878 | −0.94172742 |
| $a$ | 2.2396733 | $\Omega$ | 32.70232 | | +0.84840328 | +0.28524980 |
| $e$ | 0.1221438 | $i$ | 3.63459 | | +0.41016516 | +0.17827509 |
| $P$ | 3.35 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.7− | 0.5− | 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2003 12 19 | 704 | 0.2+ | 0.3− | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2003 12 19 | 704 | 0.9+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2003 12 23 | 704 | 0.3+ | 0.2− | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2003 12 23 | 704 | 0.8− | 0.1+ | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2003 12 23 | 704 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2003 12 23 | 704 | 0.0 | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2004 01 13 | 699 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2004 01 13 | 699 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.1− |
| 2004 01 13 | 699 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.4+ | 0.1− |
| 2004 01 13 | 699 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ | | | | |

**2006 TD$_{27}$ = 2002 XQ$_{98}$ = 2004 FJ$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 347.09647 | | | (2000.0) | | |
| $n$ | 0.23117431 | $\omega$ | 185.02715 | | +0.74023237 | −0.67127126 |
| $a$ | 2.6293173 | $\Omega$ | 217.23060 | | +0.61904383 | +0.70255681 |
| $e$ | 0.0277627 | $i$ | 3.60963 | | +0.26237527 | +0.23623893 |
| $P$ | 4.26 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.6+ | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.1+ | 0.9+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 1.3+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5+ | 1.2+ | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.0 | 1.2− |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.3+ |
| 2002 12 10 | 704 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2002 12 10 | 704 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2002 12 10 | 704 | 0.9− | 0.8− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2004 03 26 | 704 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2004 03 26 | 704 | 0.6− | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | 1.2+ | 0.5− |
| 2004 03 26 | 704 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 17 | 703 | 1.0− | 0.3− |
| 2004 03 26 | 704 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 17 | 703 | 1.1− | 0.6+ |
| 2004 03 27 | 704 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2004 03 27 | 704 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2004 03 27 | 704 | 0.5+ | 0.6− | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2004 03 27 | 704 | 0.9− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2004 03 27 | 704 | 0.3− | 0.8+ | 2006 11 09 | 644 | 0.7− | 0.1− | | | | |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | | | | |

**2006 TE$_{27}$ = 2002 TL$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.01365 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25381108 | $\omega$ | 347.61134 | | +0.92592920 | | −0.37676695 |
| $a$ | 2.4705615 | $\Omega$ | 34.55962 | | +0.35039374 | | +0.83069656 |
| $e$ | 0.1784012 | $i$ | 2.67667 | | +0.14099411 | | +0.40986570 |
| $P$ | 3.88 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 06 | 291 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.8+ | 1.4− |
| 2002 10 06 | 291 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.3+ | 1.1− |
| 2002 10 06 | 291 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.5− | 0.4+ |
| 2002 10 07 | 704 | 0.6+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 291 | 0.1+ | 0.1+ |
| 2002 10 07 | 704 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 11 | 291 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | 1.3− | 1.0− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 11 | 291 | 0.1− | 0.2+ |
| 2002 10 07 | 704 | 0.9+ | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2006 10 04 | G96 | 0.7+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2006 10 04 | G96 | 0.4+ | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.8+ | 0.6− |
| 2006 10 12 | 691 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.9+ |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.8+ |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.1+ | 2006 11 17 | 703 | (1.6− | 1.1+) |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | (1.2− | 2.8+) | | | | |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.3− | | | | |

**2006 TS$_{27}$ = 2006 SR$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.55193 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29327205 | $\omega$ | 296.14377 | | +0.85833003 | | +0.51273414 |
| $a$ | 2.2436526 | $\Omega$ | 33.02018 | | −0.45719168 | | +0.78135739 |
| $e$ | 0.0988340 | $i$ | 2.03180 | | −0.23290627 | | +0.35578693 |
| $P$ | 3.36 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 09 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.9+ | 0.3− | 2006 10 16 | 691 | 0.6− | 0.1+ |
| 1996 11 09 | 691 | 0.1+ | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.8− | 0.1+ |
| 1996 11 09 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2005 04 10 | G96 | 0.6+ | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.6− | 2006 10 20 | 691 | 0.2− | 0.2− |
| 2005 04 10 | G96 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.8− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2005 04 10 | G96 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2005 04 10 | G96 | 0.4− | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.2+ | 0.5+ | 2006 11 14 | G96 | 0.4+ | 0.1+ |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2006 09 25 | G96 | 0.1+ | 0.7− | 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 14 | G96 | 0.7+ | 0.1− |
| 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.7+ | 0.5+ |
| 2006 09 27 | G96 | 1.2+ | 0.2− | 2006 10 16 | 691 | 0.4− | 0.1+ | | | | |

**2006 TV$_{27}$ = 2004 GE$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.15161 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23167022 | $\omega$ | 220.69674 | | +0.25366765 | | −0.96655777 |
| $a$ | 2.6255638 | $\Omega$ | 214.65684 | | +0.90376774 | | +0.25070806 |
| $e$ | 0.1190727 | $i$ | 3.79794 | | +0.34475585 | | +0.05395872 |
| $P$ | 4.25 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.6− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2004 04 13 | 691 | 1.0+ | 0.4+ | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1− |
| 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2004 04 20 | 691 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 2004 04 20 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2006 09 27 | G96 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.4+ |
| 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.5− | 2006 10 31 | 691 | 0.3+ | 0.0 |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.4− | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2006 10 12 | 691 | 0.3− | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2006 10 12 | 691 | 0.4+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.4− |

**2006 TZ$_{27}$ = 1995 WP$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.62628 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17858386 | $\omega$ | 187.12777 | | −0.69275337 | | +0.69058217 |
| $a$ | 3.1230187 | $\Omega$ | 39.36792 | | −0.64444132 | | −0.46343543 |
| $e$ | 0.0941310 | $i$ | 19.12544 | | −0.32370999 | | −0.55526918 |
| $P$ | 5.52 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 23 | 691 | 1.0+ | 0.5− | 2006 10 19 | 691 | 1.3− | 0.3− | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 1995 11 23 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.3+ | 0.2+ |
| 1995 11 23 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.7− | 0.4− |
| 1995 11 30 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.8+ |
| 1995 11 30 | 691 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 1995 11 30 | 691 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 1.5+ | 1.0− |
| 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.3− | 0.0 |
| 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2006 10 15 | 691 | 0.4+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.9+ |
| 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.9− | 1.2+ |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.3− | 1.2+ |
| 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.9+ |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2+ | | | | |
| 2006 10 19 | 691 | 0.3− | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.2+ | | | | |

**2006 TA$_{28}$ = 1996 TA$_{26}$ = 2001 WU$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.22024 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19620200 | $\omega$ | 288.08362 | | −0.11886297 | | −0.99290264 |
| $a$ | 2.9331465 | $\Omega$ | 168.74062 | | +0.91853642 | | −0.11148580 |
| $e$ | 0.1708425 | $i$ | 1.17187 | | +0.37704436 | | −0.04141578 |
| $P$ | 5.02 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.2+ | 0.3− | 2006 10 12 | 691 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 1996 10 06 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.1− | 0.5− |
| 1996 10 06 | 691 | 0.6+ | 0.3+ | 2006 10 12 | 691 | 0.4− | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 1996 10 08 | 691 | 0.5− | 0.3+ | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 |
| 1996 10 08 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.3− | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 1996 10 08 | 691 | 0.5− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.5+ | 2006 11 13 | G96 | 0.3+ | 0.0 | | |
| 2001 11 20 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.4− | 2006 11 13 | G96 | 0.1− | 0.1− | | |
| 2001 11 20 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.8− | | |
| 2001 11 21 | 704 | 1.2− | 0.6− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.4− | 0.4− | | |
| 2001 11 21 | 704 | (1.6− | 0.9−) | 2006 10 20 | 691 | 0.3+ | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.3− | | |
| 2001 11 21 | 704 | (2.0− | 0.6−) | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.4+ | 0.3− | | |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.5− | 0.6− | | |

### 2006 $TD_{28}$ = 2005 MH

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.82773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24148112 | $\omega$ | 217.68760 | | +0.71229411 | | +0.70148659 |
| $a$ | 2.5539590 | $\Omega$ | 97.74822 | | −0.63805066 | | +0.66112139 |
| $e$ | 0.0902636 | $i$ | 1.36074 | | −0.29245249 | | +0.26614860 |
| $P$ | 4.08 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 16 | G96 | 0.6+ | 0.1− | 2005 06 17 | G96 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.0 | 0.2− |
| 2005 06 16 | G96 | 0.3+ | 0.1− | 2005 06 17 | G96 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2005 06 16 | G96 | 0.5− | 0.1+ | 2005 06 17 | G96 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.4+ | 0.1− |
| 2005 06 16 | G96 | 0.9+ | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2005 06 17 | G96 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2005 06 17 | G96 | 0.2− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2005 06 17 | G96 | 0.2− | 0.3+ | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2005 06 17 | G96 | 0.7− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.1+ | | | | |
| 2005 06 17 | G96 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2− | | | | |

### 2006 $TM_{28}$ = 2000 $SH_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.20977 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17906997 | $\omega$ | 116.23362 | | +0.82022665 | | +0.55974781 |
| $a$ | 3.1173642 | $\Omega$ | 210.15610 | | −0.57174450 | | +0.79557891 |
| $e$ | 0.1964190 | $i$ | 13.57864 | | −0.01834336 | | +0.23181151 |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.2− | 0.6+ |
| 2000 09 23 | 704 | 0.5− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1+ |
| 2000 09 23 | 704 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.8− | 0.9+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 09 26 | 704 | 0.2+ | 0.6− | 2006 10 16 | 703 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.7− |
| 2000 09 26 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2000 09 26 | 704 | 0.9+ | 0.0 | 2006 10 16 | 703 | 0.8− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2006 09 25 | G96 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.2− |
| 2006 10 04 | G96 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 2006 10 04 | G96 | 0.6+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7− | 0.7− |
| 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 1.0− |
| 2006 10 04 | G96 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | (1.4+ | 1.7+) |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6+ | 1.2+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.1+ | 0.1− |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.2+ |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.5− |

### 2006 $TN_{28}$ = 1999 $UK_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.21079 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28233714 | $\omega$ | 264.72065 | | +0.60247361 | | +0.79478750 |
| $a$ | 2.3012160 | $\Omega$ | 42.60980 | | −0.68286257 | | +0.56068415 |
| $e$ | 0.1880512 | $i$ | 6.19561 | | −0.41318793 | | +0.23226301 |
| $P$ | 3.49 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.2+ | 0.4− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 1999 10 31 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 1999 10 31 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 1999 11 05 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.5− |
| 1999 11 05 | 691 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.6− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 1999 11 05 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.5+ | 2006 11 22 | G96 | 1.5+ | 0.4+ |
| 2006 09 30 | G96 | 0.2+ | 0.6− | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.6+ |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.2+ |
| 2006 09 30 | G96 | 0.2− | 0.6− | 2006 10 28 | G96 | 0.5− | 0.3− | 2006 11 22 | G96 | 0.6− | 0.2− |
| 2006 09 30 | G96 | (0.1− | 1.6−) | 2006 10 28 | G96 | 0.2− | 0.2− | | | | |
| 2006 10 12 | 691 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.1− | | | | |

### 2006 $TO_{28}$ = 1997 $WF_{26}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.64905 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21790321 | $\omega$ | 185.04247 | | −0.65558078 | | +0.73982646 |
| $a$ | 2.7350187 | $\Omega$ | 44.10464 | | −0.68499496 | | −0.49836171 |
| $e$ | 0.0925667 | $i$ | 12.55016 | | −0.31779828 | | −0.45198718 |
| $P$ | 4.52 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.1− | 0.3− | 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.3+ | 0.2+ |
| 1997 11 23 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 1997 11 23 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 1997 12 05 | 691 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3− | 0.7− |
| 1997 12 05 | 691 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.4− |
| 1997 12 05 | 691 | 0.4+ | 0.2+ | 2006 10 18 | 291 | 0.8− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.5− |
| 2006 09 30 | G96 | 0.0 | 0.5− | 2006 10 18 | 291 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 18 | 291 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2006 09 30 | G96 | 0.0 | 0.5− | 2006 10 20 | 691 | 0.3+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.0 |
| 2006 09 30 | G96 | 0.5+ | 0.7− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 22 | G96 | 1.0+ | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.2− |

### 2006 $TW_{28}$ = 1995 $WW_{32}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.30742 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18053203 | $\omega$ | 251.32045 | | +0.59967226 | | +0.79969420 |
| $a$ | 3.1005105 | $\Omega$ | 55.56228 | | −0.71997143 | | +0.55534991 |
| $e$ | 0.1374734 | $i$ | 2.06406 | | −0.34933410 | | +0.22820091 |
| $P$ | 5.46 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 20 | 691 | 0.9+ | 0.0 | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− |
| 1995 11 20 | 691 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.6− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 1995 11 20 | 691 | 0.6+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 29 | G96 | 0.1− | 0.1− |
| 1995 11 25 | 691 | 0.7− | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.0 |
| 1995 11 25 | 691 | 0.2− | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 10 29 | G96 | 0.2− | 0.2− |
| 1995 11 25 | 691 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2001 12 17 | 291 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 291 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.4+ | 0.1− |
| 2001 12 17 | 291 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.4− | 0.4− |
| 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.5− | 0.4− |
| 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 27 | G96 | 0.2− | 0.1+ | 2006 11 22 | G96 | 0.5− | 0.5− |
| 2006 10 04 | G96 | 0.8+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | | | | |

**2006 TX$_{28}$ = 1998 HE$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 265.28177 | | (2000.0) | | | |
| $n$ | 0.29710830 | $\omega$ | 86.21052 | | −0.53987547 | −0.83795928 |
| $a$ | 2.2242974 | $\Omega$ | 36.82725 | | +0.70981970 | −0.50413243 |
| $e$ | 0.0307736 | $i$ | 7.64499 | | +0.45242731 | −0.20898501 |
| $P$ | 3.32 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 1996 11 08 | 691 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 10 29 | G96 | 0.2− | 0.6− |
| 1996 11 08 | 691 | 0.4+ | 0.4− | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 10 29 | G96 | 0.3− | 0.5− |
| 1998 04 18 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 10 29 | G96 | 0.2+ | 0.7− |
| 1998 04 18 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 10 29 | G96 | 0.1− | 0.4− |
| 1998 04 18 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 1998 04 27 | 691 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.1− |
| 1998 04 27 | 691 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.3− |
| 1998 04 27 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 2006 10 12 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.5− | 0.4+ |
| 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 10 28 | 291 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.4+ |
| 2006 10 12 | 691 | 0.4+ | 0.1+ | 2006 10 28 | 291 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 10 28 | 291 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.2+ |
| 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.2− |

**2006 TZ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.82547 | | (2000.0) | | | |
| $n$ | 0.23863540 | $\omega$ | 139.21004 | | +0.85525403 | +0.51816195 |
| $a$ | 2.5742228 | $\Omega$ | 189.58835 | | −0.48567443 | +0.79678806 |
| $e$ | 0.2302699 | $i$ | 2.40202 | | −0.18072324 | +0.31086491 |
| $P$ | 4.13 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 691 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2001 05 26 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2001 05 26 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2005 05 14 | G96 | 0.2+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.2− |
| 2005 05 14 | G96 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2005 05 14 | G96 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.2+ |
| 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.7− | 0.5− | 2006 10 20 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.4+ | 0.4+ |
| 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.4− |
| 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 20 | 644 | 0.4+ | 0.1− | 2006 11 13 | 691 | 0.5− | 0.2− |
| 2006 10 04 | G96 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.2− | 0.5− |
| 2006 10 04 | G96 | 0.3+ | 0.7− | 2006 10 20 | 644 | 0.1+ | 1.0+ | | | | |
| 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.3− | | | | |

**2006 TD$_{29}$ = 2002 GA$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.92683 | | (2000.0) | | | |
| $n$ | 0.29168990 | $\omega$ | 270.24186 | | +0.76362421 | +0.64501464 |
| $a$ | 2.2517584 | $\Omega$ | 49.59154 | | −0.57627133 | +0.70104876 |
| $e$ | 0.2708795 | $i$ | 2.17380 | | −0.29118624 | +0.30411635 |
| $P$ | 3.38 | $H$ | 17.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 13 | 691 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2002 04 13 | 691 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | (0.6− | 1.8−) |
| 2002 04 13 | 691 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4− | 0.8− |
| 2002 04 19 | 291 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3− | 1.2+ |
| 2002 04 19 | 291 | 0.3+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.8− |
| 2002 04 19 | 291 | 0.2+ | 0.7+ | 2006 10 28 | G96 | (0.7+ | 2.9−) | 2006 11 13 | 691 | 0.0 | 0.4+ |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.2− | 0.5− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.5− | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2006 09 26 | G96 | 0.5+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2006 10 12 | 691 | 0.3− | 0.2+ | 2006 10 29 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.7− |
| 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.0+ | 1.0+ |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.6+ | 0.5− |
| 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.7+ | 0.5− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.8+ | 0.4− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.9+ | 0.3− |
| 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | | | | |

**2006 TQ$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.63544 | | (2000.0) | | | |
| $n$ | 0.18516219 | $\omega$ | 307.01856 | | +0.95708439 | +0.26965179 |
| $a$ | 3.0486052 | $\Omega$ | 37.67070 | | −0.17825343 | +0.83665014 |
| $e$ | 0.1154228 | $i$ | 10.00712 | | −0.22850642 | +0.47676457 |
| $P$ | 5.32 | $H$ | 15.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 26 | 691 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.3− | 0.1+ |
| 1993 02 26 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2− |
| 1993 02 26 | 691 | 0.4+ | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.4− |
| 2004 04 19 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.5+ |
| 2004 05 28 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.1− |
| 2004 05 28 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.8+ | 1.2+ |
| 2004 05 28 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.8− |
| 2005 06 07 | E12 | 0.0 | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | (0.5+ | 2.0+) |
| 2005 06 07 | E12 | 0.2+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2005 06 07 | E12 | 0.4− | 0.6+ | 2006 10 26 | A13 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2005 06 07 | E12 | 0.2− | 1.2+ | 2006 10 26 | A13 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.6− | 1.2+ |
| 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 26 | A13 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 28 | 704 | 1.1+ | 0.6+ | 2006 11 21 | 704 | 0.3− | 1.1+ |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 28 | 704 | 0.3+ | 0.2+ | 2006 11 26 | 704 | 0.8+ | 0.3+ |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 1.3+ | 0.7+ | 2006 11 26 | 704 | 0.1− | 1.1+ |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 10 28 | 704 | 0.9− | 0.5+ | 2006 11 26 | 704 | 1.2− | 0.8+ |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.0 | | | | |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1− | 0.0 | | | | |

**2006 TR$_{29}$ = 2004 GB$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 275.84541 | | (2000.0) | | | |
| $n$ | 0.21521718 | $\omega$ | 30.00716 | | −0.43163608 | −0.90148068 |
| $a$ | 2.7577280 | $\Omega$ | 85.58057 | | +0.82110051 | −0.40733485 |
| $e$ | 0.0227172 | $i$ | 1.83824 | | +0.37347590 | −0.14632466 |
| $P$ | 4.58 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2004 04 13 | 691 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.6− |
| 2004 04 19 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | | | | |
| 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | | | | |

**2006 TG$_{30}$ = 2005 JX$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.35901 | | (2000.0) | | | |
| $n$ | 0.29637099 | $\omega$ | 274.59316 | | +0.70758403 | +0.70228911 |
| $a$ | 2.2279849 | $\Omega$ | 40.82613 | | −0.59159905 | +0.64927880 |
| $e$ | 0.0613397 | $i$ | 6.86964 | | −0.38643940 | +0.29193671 |
| $P$ | 3.33 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | 691 | 0.2+ | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 10 29 | G96 | 0.2− | 0.2− |
| 2005 04 07 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.7− | 0.2+ | 2006 10 29 | G96 | 0.5− | 0.2− |
| 2005 04 07 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.7− | 0.4− | 2006 10 29 | G96 | 0.1+ | 0.2− |
| 2005 05 04 | G96 | 0.3− | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2005 05 04 | G96 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 29 | G96 | 1.0− | 0.3+ |
| 2005 05 04 | G96 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.4+ |
| 2005 05 04 | G96 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2005 05 07 | G96 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.5+ |
| 2005 05 07 | G96 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2005 05 07 | G96 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2005 05 07 | G96 | 0.8− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.5+ | 0.6− |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 2006 09 30 | G96 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.3− | 0.3− | | | | |

**2006 TH$_{30}$ = 2004 GJ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 270.03365 | | (2000.0) | | | |
| $n$ | 0.23181899 | $\omega$ | 95.14828 | | −0.61768773 | −0.78450626 |
| $a$ | 2.6244404 | $\Omega$ | 33.19954 | | +0.67598614 | −0.56531247 |
| $e$ | 0.1021786 | $i$ | 5.75223 | | +0.40187636 | −0.25489555 |
| $P$ | 4.25 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.6+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2004 04 13 | 691 | 0.3+ | 0.3− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2004 04 19 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.3− | 0.3− |
| 2004 04 19 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2006 10 04 | G96 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.5− |
| 2006 10 04 | G96 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 10 04 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.4− | | | | |

**2006 TJ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.43606 | | (2000.0) | | | |
| $n$ | 0.28333290 | $\omega$ | 221.96000 | | +0.41290334 | −0.90999060 |
| $a$ | 2.2958211 | $\Omega$ | 203.72743 | | +0.85860759 | +0.40275811 |
| $e$ | 0.0467095 | $i$ | 5.38858 | | +0.30381547 | +0.09850381 |
| $P$ | 3.48 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 24 | 691 | 0.2+ | 0.2− | 2006 10 04 | 703 | 0.1+ | 0.4− | 2006 10 19 | 644 | 0.3+ | 0.9+ |
| 1995 06 24 | 691 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 20 | 683 | (0.1+ | 2.0+) |
| 1995 06 24 | 691 | 0.0 | 0.5− | 2006 10 04 | 703 | 1.0+ | 0.2+ | 2006 10 20 | 683 | 0.6− | 0.0 |
| 2002 08 05 | 644 | 0.3− | 0.3+ | 2006 10 04 | 703 | 0.7− | 1.5− | 2006 10 20 | 683 | (1.5+ | 1.3−) |
| 2002 08 05 | 644 | 0.3− | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2002 08 05 | 644 | 0.3− | 0.5+ | 2006 10 04 | 703 | 0.6+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.3− |
| 2002 08 11 | 644 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.3− |
| 2002 08 11 | 644 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2002 08 11 | 644 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2005 07 03 | 691 | 0.1− | 0.6− | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.4+ | 0.4− |
| 2005 07 03 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (0.6− | 2.0−) |
| 2005 07 03 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.9− |
| 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | (0.6+ | 1.8+) |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | (0.5+ | 1.8+) |
| 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 21 | 704 | 0.2− | 1.4+ |
| 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | | | |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.5+ | 0.0 | | | | |

**2006 TM$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.14360 | | (2000.0) | | | |
| $n$ | 0.17331263 | $\omega$ | 283.06647 | | +0.80004111 | +0.59664505 |
| $a$ | 3.1860255 | $\Omega$ | 40.35286 | | −0.50595653 | +0.72728106 |
| $e$ | 0.1370922 | $i$ | 5.56942 | | −0.32240070 | +0.33922993 |
| $P$ | 5.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 21 | 691 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.6+ | 2006 10 29 | G96 | 0.0 | 0.5− |
| 1998 03 21 | 691 | 0.3− | 0.4− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 1998 03 21 | 691 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.1− |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 691 | 0.4+ | 0.2+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.5+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.5− |
| 2004 04 12 | 691 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.4− | 0.5+ |
| 2004 04 12 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2004 04 12 | 691 | 0.3− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.5− | 0.8− |
| 2004 07 16 | 807 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.5− |
| 2004 07 17 | 807 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.6− | 2006 11 22 | G96 | 0.1+ | 0.6− |
| 2006 09 26 | G96 | 0.5− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 29 | G96 | 0.3− | 0.7− | 2006 11 23 | 691 | 0.1+ | 0.6+ |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 29 | G96 | 0.3+ | 0.7− | 2006 11 23 | 691 | 0.2+ | 0.4+ |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.0 | 0.6− | | | | |

**2006 TO$_{30}$ = 2001 HO$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 230.34129 | | (2000.0) | | | |
| $n$ | 0.27568678 | $\omega$ | 313.57585 | | −0.95223377 | −0.29100288 |
| $a$ | 2.3380767 | $\Omega$ | 209.86409 | | +0.30502361 | −0.92083743 |
| $e$ | 0.0932942 | $i$ | 10.71321 | | −0.01454104 | −0.25956839 |
| $P$ | 3.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 691 | 0.2+ | 0.1− | 2002 10 06 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.3+ |
| 1999 10 15 | 691 | 0.1+ | 0.0 | 2002 10 06 | 644 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.7+ |
| 1999 10 15 | 691 | 0.2− | 0.0 | 2002 10 30 | 645 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2001 04 23 | 704 | 0.4− | 0.9+ | 2002 10 30 | 645 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2001 04 23 | 704 | 0.8+ | 1.3+ | 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 2001 04 23 | 704 | 0.6− | 1.0+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2001 04 23 | 704 | 0.2+ | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2001 04 23 | 704 | 0.3+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2001 04 27 | 704 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.4− | 0.4+ |
| 2001 04 27 | 704 | 0.2− | 1.2+ | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.0 | 0.7− |
| 2001 04 27 | 704 | 0.6+ | 1.1+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.2− |
| 2001 04 27 | 704 | (0.4+ | 1.9+) | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.9− |
| 2002 09 12 | 644 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2002 09 12 | 644 | 0.0 | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 11 21 | 704 | 1.3+ | 0.3+ |
| 2002 09 12 | 644 | 0.3− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | (0.9− | 2.1+) |
| 2002 10 06 | 644 | 0.4− | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 11 21 | 704 | (0.4+ | 2.2+) |

**2006 TQ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.48511 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21533220 | $\omega$ | 141.58954 | | +0.95882985 | | +0.28282197 |
| $a$ | 2.7567459 | $\Omega$ | 202.02281 | | −0.27451140 | | +0.89995718 |
| $e$ | 0.0847302 | $i$ | 3.91977 | | −0.07272423 | | +0.33179634 |
| $P$ | 4.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 29 | 691 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 10 29 | G96 | 0.2+ | 0.3− |
| 1992 09 29 | 691 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.6+ | 2006 10 29 | 691 | 0.5− | 0.1+ |
| 1992 09 29 | 691 | 0.1− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.6+ | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 1997 11 21 | 691 | 0.5+ | 0.5− | 2006 10 16 | 691 | 0.1− | 0.6+ | 2006 10 31 | G96 | 0.3+ | 1.7− |
| 1997 11 21 | 691 | 0.0 | 0.5− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.2− |
| 1997 11 21 | 691 | 0.1− | 0.8− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.7+ | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 09 25 | G96 | 0.7+ | 0.1− | 2006 10 22 | 691 | 0.7− | 0.2+ | 2006 11 09 | 691 | 0.3+ | 0.2+ |
| 2006 09 25 | G96 | 0.9+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 09 | 691 | 0.0 | 0.4+ |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2006 10 04 | G96 | 0.5+ | 0.2+ | 2006 10 29 | G96 | 0.4+ | 0.2− | 2006 11 13 | 691 | 0.4− | 0.1− |
| 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.1+ |
| 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 10 29 | 691 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.3+ |

**2006 TR$_{30}$ = 2004 BF$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.71229 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27802518 | $\omega$ | 343.93781 | | +0.97646041 | | −0.21444247 |
| $a$ | 2.3249483 | $\Omega$ | 28.47692 | | +0.20287241 | | +0.87648777 |
| $e$ | 0.2071729 | $i$ | 2.79219 | | +0.07326560 | | +0.43102623 |
| $P$ | 3.55 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.2+ | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1999 12 05 | 691 | 0.1+ | 0.5− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 1999 12 05 | 691 | 0.0 | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2004 01 28 | 691 | 0.5+ | 0.4+ | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2004 01 28 | 691 | 0.8+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.1− | 0.0 |
| 2004 01 28 | 691 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.4− | 0.1+ |
| 2004 01 29 | 291 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.3+ | 0.0 |
| 2004 01 29 | 291 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (1.6− | 0.2−) |
| 2004 01 29 | 291 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.3− |
| 2004 02 14 | 691 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.7+ |
| 2004 02 14 | 691 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 2004 02 14 | 691 | 0.2− | 0.4− | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.4+ |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | (0.6− | 2.0+) |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2− | | | | |

**2006 TT$_{30}$ = 2005 NR$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.11712 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20141723 | $\omega$ | 303.12002 | | −0.83788324 | | −0.54575782 |
| $a$ | 2.8822942 | $\Omega$ | 203.80814 | | +0.50870120 | | −0.77408355 |
| $e$ | 0.0071309 | $i$ | 1.42008 | | +0.19792616 | | −0.32084740 |
| $P$ | 4.89 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 291 | 0.8+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 2003 01 11 | 291 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2003 01 11 | 291 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2003 01 29 | 645 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.0 |
| 2003 01 29 | 645 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2004 03 23 | 291 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2004 03 23 | 291 | 0.3+ | 0.7+ | 2006 10 16 | 691 | 0.3− | 0.3− | 2006 10 28 | G96 | 0.6+ | 0.2+ |
| 2004 03 23 | 291 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2005 07 04 | G96 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.5− | 2006 11 11 | 691 | 0.3− | 0.4+ |
| 2005 07 04 | G96 | 0.7− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.4+ |
| 2005 07 04 | G96 | (2.0− | 0.0 ) | 2006 10 20 | 691 | 0.1− | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.5+ |
| 2005 07 04 | G96 | 0.1− | 0.7− | 2006 10 20 | 691 | 0.2+ | 0.9+ | 2006 11 22 | G96 | 0.4− | 0.1− |
| 2005 07 10 | 691 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 1.4+ | 0.5− |
| 2005 07 10 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2005 07 10 | 691 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.5− |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1+ | | | | |

**2006 TU$_{30}$ = 2005 EV$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.77979 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28323919 | $\omega$ | 103.12324 | | +0.52150702 | | +0.85318895 |
| $a$ | 2.2963275 | $\Omega$ | 198.32046 | | −0.79459291 | | +0.48137451 |
| $e$ | 0.2041886 | $i$ | 1.81440 | | −0.31088991 | | +0.20086613 |
| $P$ | 3.48 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 09 | G96 | 0.3− | 0.6− | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2005 03 09 | G96 | 0.1− | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2005 03 09 | G96 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2005 03 09 | G96 | 0.4− | 0.8− | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2005 03 13 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.6+ |
| 2005 03 13 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2005 03 13 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2006 09 26 | G96 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.8+ | 0.6− |
| 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.4− |
| 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.3− |
| 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.2− | | | | |

**2006 TX$_{30}$ = 2001 OS$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.20676 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21346197 | $\omega$ | 310.81267 | | +0.94647691 | | +0.31357763 |
| $a$ | 2.7728244 | $\Omega$ | 31.13656 | | −0.23321811 | | +0.82822135 |
| $e$ | 0.2636200 | $i$ | 8.50666 | | −0.22313845 | | +0.46445502 |
| $P$ | 4.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 20 | 644 | 0.1+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 27 | 224 | 0.6+ | 0.6− |
| 2001 07 20 | 644 | 0.5− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2001 07 20 | 644 | 0.1+ | 1.0+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 07 20 | 644 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2001 07 20 | 644 | 0.4+ | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.5− | 0.0 |
| 2001 07 20 | 644 | 0.6− | 0.5− | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2001 07 27 | 644 | 0.4+ | 0.6− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2001 07 27 | 644 | 0.0 | 0.6− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | (2.8− | 0.7−) |
| 2001 07 27 | 644 | 0.3+ | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.1− | 1.0− |
| 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 1.5− |
| 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 17 | 691 | 0.3+ | 0.1− |
| 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.4+ | 0.2+ |
| 2006 10 04 | G96 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.6+ | 0.1− |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.3− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 04 | G96 | 0.3− | 0.3− | 2006 10 27 | 224 | 0.8+ | 0.2− | 2006 11 23 | 691 | 0.4− | 0.0 | | |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 27 | 224 | 0.8+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.2+ | | |

**2006 TB$_{31}$ = 1995 WE$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.54086 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17547333 | $\omega$ | 212.21972 | | +0.44519171 | | −0.89005720 |
| $a$ | 3.1598173 | $\Omega$ | 211.65909 | | +0.85604949 | | +0.45515308 |
| $e$ | 0.0735852 | $i$ | 10.76030 | | +0.26264731 | | +0.02517644 |
| $P$ | 5.62 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.6− | 0.5+ |
| 1995 11 16 | 691 | 0.3+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1995 11 16 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1995 11 21 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.2− |
| 1995 11 21 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.6− |
| 1995 11 21 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.6+ | 1.1+ |
| 2004 05 16 | 599 | 0.3− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.6− | 1.0+ |
| 2004 05 16 | 599 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2004 05 16 | 599 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.5+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2004 05 16 | 599 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.3+ |
| 2005 07 31 | 644 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 2005 07 31 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2005 07 31 | 644 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.5+ |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 27 | 683 | 0.0 | 0.9− | 2006 11 17 | 703 | 0.7− | 0.3− |
| 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 27 | 683 | 0.9− | 0.8− | 2006 11 18 | G92 | 0.3+ | 0.1− |
| 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 29 | 691 | 0.2− | 0.1+ | 2006 11 18 | G92 | 0.8+ | 0.3− |
| 2006 10 04 | 703 | 0.6− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.1+ | 2006 11 18 | G92 | 0.6+ | 0.7+ |
| 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 19 | G92 | 0.3+ | 0.8− |
| 2006 10 04 | 703 | 0.4− | 0.6− | 2006 10 31 | 683 | 0.1+ | 0.3− | 2006 11 19 | G92 | 0.8− | 0.4− |
| 2006 10 04 | 703 | 1.0− | 1.3− | 2006 10 31 | 683 | (2.2− | 0.6−) | 2006 11 19 | G92 | 0.1+ | 0.3+ |
| 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 09 | 691 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 1.2+ |
| 2006 10 04 | 703 | 1.2− | 0.8− | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.2+ |
| 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.3+ | | | | |

**2006 TF$_{31}$ = 2001 UG$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.79203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19900250 | $\omega$ | 222.06072 | | +0.65256064 | | −0.75772811 |
| $a$ | 2.9055634 | $\Omega$ | 187.20691 | | +0.70256859 | | +0.60680725 |
| $e$ | 0.0180155 | $i$ | 1.62973 | | +0.28383444 | | +0.24006890 |
| $P$ | 4.95 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 16 | 691 | 0.0 | 0.5+ | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 1999 05 16 | 691 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 1999 05 16 | 691 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 09 | 691 | 0.3− | 0.0 |
| 2001 10 20 | 704 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2001 10 20 | 704 | 0.3+ | 0.6− | 2006 10 12 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.6+ |
| 2001 10 20 | 704 | 0.7+ | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.3− |
| 2001 10 23 | 704 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2001 10 23 | 704 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2001 10 23 | 704 | 0.4+ | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 11 13 | 691 | 0.3− | 1.0− |
| 2001 10 23 | 704 | 1.5− | 0.5+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.0 |
| 2006 09 25 | G96 | 0.4− | 0.5− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.4− | 0.9− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 27 | 291 | 0.6+ | 0.2+ |
| 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 20 | 691 | 0.5− | 0.4+ | 2006 11 27 | 291 | 0.1− | 0.3+ |
| 2006 09 25 | G96 | 0.5− | 0.6− | 2006 10 29 | 691 | 0.1− | 0.2− | 2006 11 27 | 291 | 0.2+ | 0.1+ |

**2006 TG$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.03558 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20524230 | $\omega$ | 108.52403 | | +0.52953167 | | +0.84826513 |
| $a$ | 2.8463707 | $\Omega$ | 193.45564 | | −0.78847391 | | +0.48934375 |
| $e$ | 0.0471332 | $i$ | 1.60506 | | −0.31289790 | | +0.20245732 |
| $P$ | 4.80 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 20 | 691 | 0.1− | 0.2+ | 2006 09 25 | G96 | 0.7+ | 0.5− | 2006 10 28 | G96 | (1.5+ | 0.3−) |
| 1996 09 20 | 691 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 10 28 | G96 | 0.1− | 0.8+ |
| 1996 09 20 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2001 09 12 | 695 | 0.6− | 0.3− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.3+ | 0.4+ |
| 2001 09 12 | 695 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.5+ |
| 2001 09 19 | 691 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.6− |
| 2001 09 19 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.5+ | 0.2+ |
| 2001 09 19 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.7− | 0.1+ |
| 2001 10 15 | 291 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2001 10 15 | 291 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.3− | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2001 10 15 | 291 | 0.7+ | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.3− | 0.7− |
| 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.7− | 0.2− | 2006 11 22 | G96 | 0.7− | 0.5− |
| 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.1− | | | | |

**2006 TN$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.99136 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17625441 | $\omega$ | 101.71634 | | +0.62676513 | | +0.77376052 |
| $a$ | 3.1504751 | $\Omega$ | 207.75904 | | −0.76946419 | | +0.59599094 |
| $e$ | 0.0901719 | $i$ | 11.38986 | | −0.12284269 | | +0.21468454 |
| $P$ | 5.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 10 18 | 691 | 0.1+ | 0.2− |
| 1995 10 17 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.2+ |
| 1995 10 17 | 691 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2+ |
| 1995 10 23 | 691 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 1995 10 23 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.6+ | 0.0 |
| 1995 10 23 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.4− | 0.8− |
| 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.5+ | 0.3− |

**2006 TT$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.54775 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23043406 | $\omega$ | 278.21231 | | +0.66563653 | | +0.73436330 |
| $a$ | 2.6349453 | $\Omega$ | 34.72321 | | −0.55934282 | | +0.60874903 |
| $e$ | 0.2800912 | $i$ | 13.48312 | | −0.49402796 | | +0.30022519 |
| $P$ | 4.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2005 04 12 | 691 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.2− |
| 2005 04 12 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.3− |
| 2005 05 10 | G96 | 0.7− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2005 05 10 | G96 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.4− | 0.1− |
| 2005 05 10 | G96 | 0.5− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2005 05 10 | G96 | 0.4− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2006 09 30 | G96 | 0.4− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.4+ | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.6− | 0.2− |
| 2006 09 30 | G96 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 1.0+ | 0.2− |
| 2006 09 30 | G96 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.2− | 0.5+ |
| 2006 10 12 | 691 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.3+ |

**2006 TU$_{31}$ = 2002 VV$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 349.11234 | | (2000.0) | | | |
| $n$ | 0.24170803 | $\omega$ | 212.98434 | | +0.78239831 | −0.62276939 |
| $a$ | 2.5523604 | $\Omega$ | 185.53787 | | +0.57862504 | +0.72890233 |
| $e$ | 0.1175389 | $i$ | 1.98446 | | +0.23031706 | +0.28435837 |
| $P$ | 4.08 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 644 | 0.5− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1− | 0.4− |
| 2002 11 05 | 644 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.9+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2002 11 05 | 644 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.9− |
| 2002 11 06 | 704 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.6+ |
| 2002 11 06 | 704 | 0.7− | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.3− |
| 2002 11 06 | 704 | 0.9+ | 1.1+ | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.4+ |
| 2002 11 06 | 704 | 0.3+ | 0.1− | 2006 10 22 | 683 | (2.1− | 0.9−) | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2002 11 06 | 704 | 0.1+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.3− |
| 2002 11 07 | 704 | 0.4− | 0.4− | 2006 10 22 | 683 | (1.3− | 1.7−) | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2002 11 07 | 704 | 0.3+ | 0.4− | 2006 10 22 | 683 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2002 11 07 | 704 | 0.0 | 1.0− | 2006 10 27 | 683 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.2− | 1.1+ |
| 2002 11 07 | 704 | 0.1+ | 0.9+ | 2006 10 27 | 683 | 0.5− | 0.7+ | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2002 11 07 | 704 | 0.9+ | 0.6+ | 2006 10 27 | 683 | 0.7− | 0.2− | 2006 11 17 | 703 | 1.2+ | 0.4+ |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 18 | G92 | 0.8− | 0.5− |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.5− | 2006 11 18 | G92 | 0.7− | 0.0 |
| 2006 10 12 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 18 | G92 | 1.2− | 0.3− |
| 2006 10 16 | 691 | 0.6+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.6− | 1.1+ |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.0 | | | | |
| 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.5+ | 0.2+ | | | | |

**2006 TW$_{31}$ = 2004 JQ$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 205.35576 | | (2000.0) | | | |
| $n$ | 0.20083854 | $\omega$ | 335.41539 | | −0.98990748 | +0.14039727 |
| $a$ | 2.8878282 | $\Omega$ | 212.67357 | | −0.12339359 | −0.92082516 |
| $e$ | 0.1251407 | $i$ | 2.04686 | | −0.06969364 | −0.36382638 |
| $P$ | 4.91 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 15 | 691 | 0.2+ | 0.6+ | 2004 05 16 | 704 | 0.2+ | 1.4− | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 1994 04 15 | 691 | 0.1+ | 0.6+ | 2004 05 16 | 704 | 1.0− | 0.5− | 2006 10 16 | 691 | 0.4+ | 0.3− |
| 1994 04 15 | 691 | 0.2+ | 0.3+ | 2004 05 16 | 704 | 0.5− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2001 11 20 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ |
| 2001 11 20 | 691 | 0.2+ | 0.6− | 2006 09 25 | G96 | 0.1− | 0.7− | 2006 10 27 | G96 | 0.4− | 0.0 |
| 2004 04 24 | 291 | 0.1− | 0.8+ | 2006 09 25 | G96 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.1+ |
| 2004 04 24 | 291 | 0.1+ | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 04 24 | 291 | 0.3+ | 0.8+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2004 05 15 | 704 | 1.2+ | 0.8− | 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2004 05 15 | 704 | 1.0+ | 0.6− | 2006 10 04 | G96 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.6+ |
| 2004 05 15 | 704 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.5− | 0.7+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2004 05 15 | 704 | (1.7+ | 0.1+) | 2006 10 12 | 691 | 0.1+ | 0.7+ | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2004 05 15 | 704 | (1.6+ | 0.6−) | 2006 10 12 | 691 | 0.1− | 1.0+ | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2004 05 16 | 704 | 0.0 | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.4− | 0.4+ |

**2006 TH$_{32}$ = 1999 VF$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.86256 | | (2000.0) | | | |
| $n$ | 0.28153503 | $\omega$ | 197.99662 | | +0.56558071 | −0.82461431 |
| $a$ | 2.3055847 | $\Omega$ | 217.56304 | | +0.75891825 | +0.52582644 |
| $e$ | 0.1729077 | $i$ | 1.07038 | | +0.32274069 | +0.20860919 |
| $P$ | 3.50 | $H$ | 18.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 1999 11 04 | 691 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.0 |
| 1999 11 04 | 691 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 1999 11 05 | 691 | 0.4+ | 0.7− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.0 |
| 1999 11 05 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.3− | 0.3+ |
| 1999 11 05 | 691 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.5− | 0.1− |
| 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2006 10 04 | G96 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2006 10 12 | 691 | 0.7− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.0 |

**2006 TJ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 86.43929 | | (2000.0) | | | |
| $n$ | 0.12751437 | $\omega$ | 256.20988 | | +0.43303108 | +0.90049914 |
| $a$ | 3.9092786 | $\Omega$ | 39.52718 | | −0.80095005 | +0.40467139 |
| $e$ | 0.0679569 | $i$ | 3.58684 | | −0.41347684 | +0.15919283 |
| $P$ | 7.73 | $H$ | 14.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 12 | 645 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 03 | G96 | 0.1+ | 0.1+ |
| 2002 03 12 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 03 | G96 | 0.1− | 0.4− |
| 2003 03 25 | 291 | 0.2+ | 0.7+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 03 | G96 | 1.0− | 0.2+ |
| 2003 03 25 | 291 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 03 | G96 | 0.7− | 0.3+ |
| 2003 03 25 | 291 | 0.1− | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.2− | 0.8+ |
| 2003 04 26 | 691 | (0.7+ | 1.7+) | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.4− | 0.3+ |
| 2003 04 26 | 691 | (0.7+ | 1.6+) | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2003 04 26 | 691 | 0.8+ | 1.5+ | 2006 10 27 | G96 | (0.2− | 2.0−) | 2006 11 14 | G96 | 0.4+ | 0.1+ |
| 2005 07 28 | 644 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.9+ | 0.1− |
| 2005 07 28 | 644 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.2+ |
| 2005 07 28 | 644 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.1+ |
| 2005 08 27 | 644 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2005 08 27 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 22 | G96 | 1.0− | 0.1− |
| 2005 08 27 | 644 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.5− | 0.3+ |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2006 10 12 | 691 | 0.2− | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.1+ |
| 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.6+ | 0.0 |

**2006 TL$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 229.36461 | | (2000.0) | | | |
| $n$ | 0.22961286 | $\omega$ | 313.13438 | | −0.93187395 | −0.36265745 |
| $a$ | 2.6412241 | $\Omega$ | 205.60653 | | +0.33890963 | −0.86089746 |
| $e$ | 0.0235840 | $i$ | 1.26136 | | +0.12942643 | −0.35684049 |
| $P$ | 4.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.6− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.2+ |
| 1995 02 03 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.1+ |
| 1995 02 03 | 691 | 0.4+ | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3+ |
| 2000 04 11 | 691 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2000 04 11 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.4− | 0.6+ |
| 2000 04 11 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.4+ |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.6− | 0.3+ |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.3+ | 1.2− | 2006 11 03 | G96 | 0.4− | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 03 | G96 | 0.1− | 0.1+ |
| 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.5+ | 0.0 | 2006 11 03 | G96 | 0.5+ | 0.3− |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.1+ | 2006 11 03 | G96 | 0.3+ | 0.1+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.5− | 0.0 | |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2+ | |

**2006 TO$_{32}$ = 2004 GR$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.63774 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22194092 | $\omega$ | 19.43646 | | +0.74158855 | | −0.67065275 |
| $a$ | 2.7017457 | $\Omega$ | 22.70662 | | +0.60971129 | | +0.66355330 |
| $e$ | 0.0953264 | $i$ | 2.44566 | | +0.27981883 | | +0.33154473 |
| $P$ | 4.44 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 11 | 644 | 0.3+ | 1.1+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 1.0− |
| 2004 04 11 | 644 | 0.9+ | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.4− | 0.7− |
| 2004 04 11 | 644 | 0.2+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2004 04 20 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2004 04 20 | 691 | 0.2− | 0.7− | 2006 10 21 | 644 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 2004 04 20 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 1.2− | 0.6− |
| 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.3− |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.4− | 2006 11 17 | 703 | 0.2+ | 1.0− |
| 2006 09 25 | G96 | 0.5+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 28 | 704 | (1.6− | 1.0+) | 2006 11 18 | 704 | 0.5+ | 1.1+ |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 28 | 704 | 1.2+ | 1.1+ | 2006 11 18 | 704 | 1.1− | 0.9+ |
| 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 28 | 704 | 0.6− | 0.9+ | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 10 28 | 704 | 0.9+ | 0.9+ | 2006 11 21 | 704 | 0.5− | 0.1− |
| 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.9+ |
| 2006 10 11 | 644 | 0.6+ | 0.1+ | 2006 10 29 | 691 | 0.4− | 0.5+ | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2006 10 11 | 644 | 0.1+ | 0.5+ | 2006 10 29 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 683 | 1.0+ | 0.4+ |
| 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.4− | 2006 11 22 | 683 | 0.6+ | 0.4+ |
| 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 22 | 683 | (2.4+ | 0.8+) |
| 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 23 | 683 | 0.1+ | 0.6+ |
| 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 23 | 683 | (1.5+ | 0.8−) |
| 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 23 | 683 | 0.2− | 0.9− |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.2− |
| 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.2− |

**2006 TR$_{32}$ = 2004 FZ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.22074 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21907021 | $\omega$ | 199.08892 | | −0.49204114 | | +0.87020316 |
| $a$ | 2.7252969 | $\Omega$ | 41.44669 | | −0.79367206 | | −0.43642809 |
| $e$ | 0.0480126 | $i$ | 2.19372 | | −0.35774319 | | −0.22864159 |
| $P$ | 4.50 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 695 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.5− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2004 02 26 | 695 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 03 | G96 | 0.2+ | 0.1− |
| 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 03 | G96 | 0.4+ | 0.1+ |
| 2004 03 17 | 691 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 03 | G96 | 0.3− | 0.5− |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 03 | G96 | 0.5+ | 0.3− |
| 2004 03 23 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2004 03 31 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.6+ | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.2+ |
| 2004 03 31 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.8+ | 0.3− | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2004 03 31 | 691 | 0.2− | 0.6+ | 2006 10 28 | G96 | 0.4+ | 0.3− | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2006 09 25 | G96 | 0.6− | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2006 09 25 | G96 | 0.1+ | 0.5− | 2006 10 28 | G96 | 0.8+ | 0.4− | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.3− | | | | |
| 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 29 | 691 | 0.0 | 0.2+ | | | | |

**2006 TU$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.39006 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28636686 | $\omega$ | 195.45767 | | +0.85971918 | | +0.51074824 |
| $a$ | 2.2795767 | $\Omega$ | 133.82780 | | −0.46797382 | | +0.79109559 |
| $e$ | 0.1307032 | $i$ | 0.34772 | | −0.20465444 | | +0.33660661 |
| $P$ | 3.44 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 691 | 0.1+ | 0.4− | 2006 07 21 | G96 | 0.1+ | 0.8− | 2006 10 20 | 691 | 0.4− | 0.1− |
| 1999 10 12 | 691 | 0.1+ | 0.1− | 2006 07 21 | G96 | 0.4− | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 1999 10 12 | 691 | 0.2+ | 0.4− | 2006 09 25 | G96 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.5+ |
| 2003 12 14 | 291 | 0.2− | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2003 12 14 | 291 | 0.3+ | 0.6− | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.1− |
| 2003 12 14 | 291 | 0.2− | 0.3− | 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2005 04 10 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.4− | 0.0 |
| 2005 04 10 | 691 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2005 04 10 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2005 04 17 | 691 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2005 04 17 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2005 04 17 | 691 | 0.0 | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.3+ | | | | |
| 2006 07 21 | G96 | 0.7+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1− | | | | |

**2006 TV$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.67402 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20885075 | $\omega$ | 127.62354 | | +0.94528622 | | +0.32105206 |
| $a$ | 2.8134899 | $\Omega$ | 213.76180 | | −0.32242610 | | +0.89227242 |
| $e$ | 0.0214137 | $i$ | 5.98659 | | −0.04975301 | | +0.31745159 |
| $P$ | 4.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.2− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.5− |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.4− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.2− | 0.1− |
| 2006 09 26 | G96 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.5+ |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.3− | | | | |

**2006 TE$_{33}$ = 2001 UJ$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.86604 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20277918 | $\omega$ | 267.42687 | | +0.54393766 | | +0.83690873 |
| $a$ | 2.8693739 | $\Omega$ | 35.74303 | | −0.72245291 | | +0.50402198 |
| $e$ | 0.0372826 | $i$ | 5.98968 | | −0.42684144 | | +0.21341422 |
| $P$ | 4.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.7+ | 0.4− |
| 2001 10 20 | 704 | 0.7+ | 0.9− | 2006 10 20 | 691 | 0.3− | 0.5− | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2001 10 23 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 14 | G96 | 0.5+ | 0.1− |
| 2001 10 23 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.6+ |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.3+ | 0.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.3− |

**2006 TF$_{33}$ = 2004 LY$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.18585 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17598584 | $\omega$ | 21.76322 | | −0.57369541 | | +0.81538357 |
| $a$ | 3.1536796 | $\Omega$ | 213.37105 | | −0.77075554 | | −0.56948803 |
| $e$ | 0.0586794 | $i$ | 8.11108 | | −0.27714521 | | −0.10408175 |
| $P$ | 5.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 12 | 291 | 0.0 | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2003 03 12 | 291 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2003 03 12 | 291 | 0.5+ | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 09 | 691 | 0.0 | 0.4+ |
| 2004 06 09 | 691 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.5+ |
| 2004 06 09 | 691 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2− |
| 2004 06 09 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.8− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2004 06 16 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 1.1+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2004 06 16 | 691 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.8− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2004 06 16 | 691 | 0.3+ | 0.7+ | 2006 10 27 | G96 | 0.5+ | 0.7− | 2006 11 11 | 691 | 0.1+ | 0.3+ |
| 2005 07 30 | 644 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 11 | 691 | 0.3− | 0.0 |
| 2005 07 30 | 644 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.5+ | 0.6− | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2005 07 30 | 644 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.1− | 0.6+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 22 | 691 | 0.2+ | 0.4+ |
| 2006 09 26 | G96 | 0.3− | 0.5− | 2006 10 27 | G96 | (4.6+ | 0.4−) | 2006 11 22 | 691 | 0.4+ | 0.3+ |
| 2006 09 26 | G96 | 0.3+ | 0.8− | 2006 10 28 | G96 | 0.5+ | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.7+ |
| 2006 10 04 | G96 | 0.3− | 0.7− | 2006 10 28 | G96 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2006 10 04 | G96 | 0.1− | 0.5− | 2006 10 28 | G96 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.8− | 0.2+ |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.5− | 0.3− |
| 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ | | | | |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | | | | |

**2006 TK$_{33}$ = 2003 YS$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.39300 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27218296 | $\omega$ | 141.81776 | | −0.99640301 | | −0.05069973 |
| $a$ | 2.3580993 | $\Omega$ | 35.45593 | | +0.01168110 | | −0.87580500 |
| $e$ | 0.0981443 | $i$ | 6.72221 | | +0.08393214 | | −0.47999494 |
| $P$ | 3.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 704 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.4− |
| 2003 12 27 | 704 | (2.5+ | 1.7+) | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.2− | 0.3− |
| 2003 12 27 | 704 | 0.5− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2003 12 27 | 704 | 0.5− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2003 12 29 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2003 12 29 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2003 12 29 | 704 | 0.6+ | 0.4− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2003 12 29 | 704 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.2− | 0.3+ |
| 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.8− |
| 2006 09 26 | G96 | 0.2+ | 0.8− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.7− | 2006 11 13 | G96 | 0.6− | 0.4+ |

**2006 TM$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.11657 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21796416 | $\omega$ | 337.52942 | | +0.98085436 | | −0.19199992 |
| $a$ | 2.7345088 | $\Omega$ | 33.59187 | | +0.18642615 | | +0.87739019 |
| $e$ | 0.0840988 | $i$ | 3.37474 | | +0.05630284 | | +0.43968453 |
| $P$ | 4.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 23 | 691 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 1997 11 23 | 691 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 1997 11 23 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.2− | 0.2− |
| 1997 12 05 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 734 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 1997 12 05 | 691 | 0.4+ | 1.0− | 2006 10 23 | 734 | 0.4+ | 0.3− | 2006 11 10 | 691 | 0.5− | 0.4+ |
| 1997 12 05 | 691 | (3.7+ | 6.3−) | 2006 10 23 | 734 | 0.5+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.3+ |
| 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 23 | 734 | 0.7+ | 0.5+ | 2006 11 24 | 291 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.4− | 0.4− | 2006 10 23 | 734 | 0.6+ | 0.8+ | 2006 11 24 | 291 | 0.4− | 0.1+ |
| 2006 09 25 | G96 | 0.5+ | 0.7− | 2006 10 24 | 734 | 0.3+ | 0.2− | 2006 11 24 | 291 | 0.0 | 0.3+ |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 24 | 734 | 1.4+ | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.6+ |
| 2006 10 04 | G96 | 0.4+ | 0.1− | 2006 10 24 | 734 | 0.6− | 0.3− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 24 | 734 | 0.3+ | 1.2− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2006 10 04 | G96 | 0.3+ | 0.6− | 2006 10 24 | 734 | 0.5+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.7+ |
| 2006 10 04 | G96 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− | | | | |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | (0.3− | 3.2−) | | | | |

**2006 TR$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.60351 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23668330 | $\omega$ | 271.61746 | | +0.59437405 | | +0.80232617 |
| $a$ | 2.5883577 | $\Omega$ | 35.03680 | | −0.69475039 | | +0.54655670 |
| $e$ | 0.1037987 | $i$ | 5.46749 | | −0.40502022 | | +0.23989265 |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 05 | 644 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.8− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2002 11 05 | 644 | 0.0 | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2002 11 05 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2002 11 24 | 644 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2002 11 24 | 644 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.4− |
| 2002 11 24 | 644 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2004 02 13 | 691 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.2+ | 1.3+ |
| 2004 02 13 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | (1.6− | 0.8−) |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.5+ |
| 2006 09 26 | G96 | 0.4− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2006 09 26 | G96 | 0.9+ | 1.3+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.4− |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.2+ |

**2006 TZ$_{33}$ = 2006 SG$_{217}$ = 1999 YM$_{29}$ = 2000 CS$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.90065 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26662793 | $\omega$ | 311.63594 | | +0.45770720 | | −0.88734067 |
| $a$ | 2.3907397 | $\Omega$ | 111.04392 | | +0.83252235 | | +0.40563913 |
| $e$ | 0.2009859 | $i$ | 3.43698 | | +0.31210680 | | +0.21927935 |
| $P$ | 3.70 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 31 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.4+ |
| 1999 12 31 | 691 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1999 12 31 | 691 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.5− | 0.1− | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2000 02 02 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.4− |
| 2000 02 02 | 691 | 0.2+ | 0.4− | 2006 10 02 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 2000 02 02 | 691 | 0.3− | 0.0 | 2006 10 02 | 691 | 1.1+ | 0.7− | 2006 10 16 | 703 | 0.3− | 0.7− |
| 2000 02 07 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.5+ | 0.3+ |
| 2000 02 07 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3− | 2006 10 22 | 703 | (2.0− | 2.5−) |
| 2000 02 07 | 691 | 0.2+ | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.9+ |
| 2006 09 18 | 291 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.1− |
| 2006 09 18 | 291 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2006 09 18 | 291 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1− | 0.4+ | | | | |

**2006 TB$_{34}$ = 2001 UA$_{92}$ = 2003 BA$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.29152 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18952001 | $\omega$ | 214.00086 | | +0.99606961 | +0.05943823 | |
| $a$ | 3.0016911 | $\Omega$ | 142.42282 | | −0.03564192 | +0.94770103 | |
| $e$ | 0.1216238 | $i$ | 6.18185 | | −0.08108634 | +0.31357592 | |
| $P$ | 5.20 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.0 | 0.3+ | 2006 09 29 | 699 | 1.3− | 1.4+ | 2006 10 21 | 644 | 0.0 | 0.5− |
| 2001 10 18 | 644 | 0.3+ | 0.0 | 2006 09 29 | 699 | (0.5− | 1.9+) | 2006 10 21 | 644 | 0.1− | 0.7− |
| 2001 10 18 | 644 | 0.2− | 0.2+ | 2006 09 29 | 699 | 0.0 | 0.9− | 2006 10 21 | 644 | 0.2− | 0.5− |
| 2001 10 19 | 644 | (0.2+ | 2.4−) | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.8+ | 1.2+ |
| 2001 10 19 | 644 | (0.1+ | 1.8−) | 2006 10 11 | 644 | 0.0 | 0.4− | 2006 10 22 | 703 | (0.8+ | 2.5+) |
| 2001 10 19 | 644 | 0.1+ | 1.4− | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.3+ |
| 2003 01 30 | 644 | 0.3+ | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.5+ | 1.0+ |
| 2003 01 30 | 644 | 0.7+ | 0.2− | 2006 10 12 | 644 | 0.2+ | 0.6− | 2006 10 22 | 703 | (1.6+ | 0.3−) |
| 2003 01 30 | 644 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4− | 2006 10 22 | 703 | 0.3− | 0.3− |
| 2003 01 31 | 644 | 0.9− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.5+ | 2006 10 22 | 703 | 0.5− | 0.5− |
| 2003 01 31 | 644 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.6+ | 0.0 |
| 2003 01 31 | 644 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.6+ | | | | |
| 2006 09 29 | 699 | 0.5+ | 1.1+ | 2006 10 16 | 703 | 0.2− | 0.8+ | | | | |

**2006 TM$_{34}$ = 1999 VP$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.84874 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28377243 | $\omega$ | 198.60574 | | +0.13976332 | −0.98902341 | |
| $a$ | 2.2934498 | $\Omega$ | 243.38386 | | +0.91514760 | +0.14751100 | |
| $e$ | 0.1423809 | $i$ | 3.07426 | | +0.37811517 | +0.00855522 | |
| $P$ | 3.47 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 02 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 1999 11 02 | 691 | 0.0 | 0.5− | 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1999 11 02 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 1999 11 06 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 1999 11 06 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 1999 11 06 | 691 | 0.3+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2006 09 30 | G96 | 0.6+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.3− | 0.4+ | 2006 11 27 | G96 | (0.4− | 1.8−) |

**2006 TO$_{34}$ = 2005 LJ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.41013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22993196 | $\omega$ | 116.12949 | | +0.97450846 | +0.21752124 | |
| $a$ | 2.6387799 | $\Omega$ | 231.35703 | | −0.22263434 | +0.90738362 | |
| $e$ | 0.1807354 | $i$ | 4.03316 | | −0.02769879 | +0.35963799 | |
| $P$ | 4.29 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 06 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 06 06 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 06 06 | 691 | 0.5− | 0.1+ | 2006 10 20 | 691 | (0.5− | 2.8−) | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2005 06 10 | 691 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.5+ | 0.2+ |
| 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.5− | 0.8+ |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.8− |
| 2006 09 28 | G96 | 0.5− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2006 09 28 | G96 | 0.1− | 0.7− | 2006 10 23 | H07 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 23 | H07 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.8+ | 0.0 |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 10 23 | H07 | 0.1+ | 0.6− | 2006 11 17 | 703 | 1.2− | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4+ | 1.1− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.7− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 1.4− | 1.1+ |

**2006 TR$_{34}$ = 2004 GF$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.44184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21027665 | $\omega$ | 4.47506 | | +0.87349086 | −0.48393255 | |
| $a$ | 2.8007564 | $\Omega$ | 24.68921 | | +0.44262671 | +0.74397432 | |
| $e$ | 0.1910159 | $i$ | 7.30797 | | +0.20271980 | +0.46077273 | |
| $P$ | 4.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.4− | 0.1+ |
| 2004 04 13 | 691 | 0.5+ | 0.6+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2004 04 13 | 691 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2004 04 19 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2004 04 19 | 691 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.6− | 0.4− |
| 2004 04 19 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.5− | 0.3− |
| 2006 09 27 | G96 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 24 | 408 | 1.3+ | 0.4+ |
| 2006 09 27 | G96 | 0.1+ | 0.6− | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 24 | 408 | 1.0+ | 0.2+ |
| 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− | | | | |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | | | | |

**2006 TW$_{34}$ = 2004 GQ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.67542 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21490700 | $\omega$ | 199.57281 | | −0.81541519 | +0.57858089 | |
| $a$ | 2.7603809 | $\Omega$ | 15.81959 | | −0.52165632 | −0.72058503 | |
| $e$ | 0.0381127 | $i$ | 3.89108 | | −0.25094372 | −0.38210126 | |
| $P$ | 4.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.6+ | 0.1+ |
| 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 04 13 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 04 20 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2004 04 20 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.6− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.0 |
| 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.3+ | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | | | | |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.3− | | | | |

**2006 TC$_{35}$ = 2004 BM$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.79098 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23715792 | $\omega$ | 22.89649 | | +0.96908268 | −0.24668116 | |
| $a$ | 2.5849033 | $\Omega$ | 351.37978 | | +0.22065387 | +0.87590071 | |
| $e$ | 0.1125590 | $i$ | 1.99277 | | +0.11041119 | +0.41466414 | |
| $P$ | 4.16 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 20 | 309 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 1.1− | 0.6− |
| 2004 01 20 | 309 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.7− |
| 2004 01 22 | 309 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.7− |
| 2004 01 22 | 309 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.6+ | 0.1+ | 2006 11 21 | 704 | 0.5+ | 0.5− |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.9− | 1.0+ |
| 2006 09 28 | G96 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.2+ |
| 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 1.1+ |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.1+ | 1.2+ |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | (0.3+ | 2.4+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 12 | 691 | 1.0− | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.8+ | | |
| 2006 10 16 | 691 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.4− | 0.3− | | |
| 2006 10 16 | 691 | 0.6+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.6− | 0.6− | | |
| 2006 10 16 | 691 | 0.6+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.2− | | | | | | |
| 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | (1.6− | 2.3−) | | | | | | |

**2006 TE$_{35}$ = 1998 VL$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.29311 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24542459 | $\omega$ | 149.56529 | | +0.97511767 | −0.20505017 | |
| $a$ | 2.5265273 | $\Omega$ | 222.53336 | | +0.16985574 | +0.93530570 | |
| $e$ | 0.2970837 | $i$ | 7.16015 | | +0.14245896 | +0.28837072 | |
| $P$ | 4.02 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.4+ | 1.0+ | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 1998 11 14 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 1998 11 14 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 1998 11 16 | 691 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 1998 11 16 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5− | 1.2− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.4+ |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.6+ |
| 2006 10 12 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− | | | | |
| 2006 10 16 | 691 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.1+ | | | | |

**2006 TK$_{35}$ = 1999 FQ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.38454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21189903 | $\omega$ | 108.20231 | | −0.60971060 | −0.79211841 | |
| $a$ | 2.7864424 | $\Omega$ | 19.44910 | | +0.69130649 | −0.54890665 | |
| $e$ | 0.1137283 | $i$ | 4.87718 | | +0.38774775 | −0.26692679 | |
| $P$ | 4.65 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 809 | (1.2+ | 2.8+) | 2001 11 12 | 645 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 1994 02 10 | 809 | (1.6+ | 3.0+) | 2001 11 12 | 645 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 1994 02 10 | 809 | (0.0 | 3.0+) | 2003 01 29 | 644 | 0.4+ | 0.6+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 1999 03 18 | 691 | 0.2+ | 0.2+ | 2003 01 29 | 644 | 0.1+ | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 1999 03 18 | 691 | 0.2− | 0.4+ | 2003 01 29 | 644 | 0.0 | 0.8+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 1999 03 18 | 691 | 0.1− | 0.6+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 1999 03 22 | 691 | 0.3+ | 0.6+ | 2006 09 28 | G96 | 0.3+ | 0.5− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 1999 03 22 | 691 | 0.3+ | 0.5+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 1999 03 22 | 691 | 0.7+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2001 10 16 | 291 | 0.9− | 0.6+ | 2006 10 12 | 691 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 2001 10 16 | 291 | 0.2− | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2001 10 16 | 291 | 0.4− | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 26 | 104 | 0.3− | 0.6− |
| 2001 10 16 | 291 | 0.8− | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 26 | 104 | 0.9− | 0.2− |
| 2001 10 16 | 291 | 1.0− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 26 | 104 | 0.6+ | 0.6− |
| 2001 10 16 | 291 | (1.6− | 0.4+) | 2006 10 16 | 691 | 0.3− | 0.0 | | | | |

**2006 TL$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.42303 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18171881 | $\omega$ | 240.74855 | | −0.29391497 | −0.94864025 | |
| $a$ | 3.0869964 | $\Omega$ | 226.83878 | | +0.92318393 | −0.25001381 | |
| $e$ | 0.1566496 | $i$ | 9.23232 | | +0.24768007 | −0.19384214 | |
| $P$ | 5.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.3− |
| 1995 11 30 | 691 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.5+ |
| 1995 11 30 | 691 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2003 03 22 | 644 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 1.1+ |
| 2003 03 22 | 644 | 0.1− | 0.8+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.0 |
| 2003 03 22 | 644 | 0.4− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2003 03 27 | 599 | 0.6+ | 0.1− | 2006 11 01 | 691 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.3− |
| 2003 03 27 | 599 | 0.6+ | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.8− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2003 03 27 | 599 | 0.1− | 1.2+ | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2003 03 27 | 599 | 0.0 | 0.4+ | 2006 11 11 | 703 | (1.8+ | 1.7−) | 2006 11 21 | 704 | (0.6+ | 2.0+) |
| 2005 08 29 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.4− | 2006 11 21 | G96 | 0.4+ | 0.5− |
| 2005 08 29 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.7− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2005 08 29 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.0+ | 0.5− |
| 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.3+ |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.9+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.0 | 0.8− | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.7+ | 0.0 |
| 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.5+ | 0.4− | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.4+ | 0.2− | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.8− | 0.2− |

**2006 TQ$_{35}$ = 2005 NZ$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.03403 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17535559 | $\omega$ | 177.25328 | | +0.71450765 | −0.69111180 | |
| $a$ | 3.1612315 | $\Omega$ | 227.11195 | | +0.63903130 | +0.70800170 | |
| $e$ | 0.0882157 | $i$ | 8.54185 | | +0.28481191 | +0.14525172 | |
| $P$ | 5.62 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.2− |
| 1995 12 27 | 691 | 0.0 | 0.3− | 2006 10 12 | 691 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2005 07 10 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2005 07 10 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2005 07 15 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2005 07 15 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.5− | 2006 11 12 | G96 | 0.2− | 0.5− |
| 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.1− | | | | |
| 2006 09 30 | G96 | 0.6+ | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.0 | | | | |

**2006 TV$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.66842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22804313 | $\omega$ | 64.04557 | | +0.74035036 | +0.67061424 | |
| $a$ | 2.6533307 | $\Omega$ | 253.80192 | | −0.63275969 | +0.67189541 | |
| $e$ | 0.0911497 | $i$ | 2.77267 | | −0.22692846 | +0.31437732 | |
| $P$ | 4.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 20 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 1993 11 20 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.6+ | 0.5− |
| 1993 11 20 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2003 01 04 | 291 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (2.3+ | 3.2+) |
| 2003 01 04 | 291 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | (1.8+ | 0.8+) |
| 2003 01 04 | 291 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.5− | 0.2+ | 2006 11 17 | 703 | (0.6+ | 1.9+) |
| 2006 09 30 | G96 | 0.3+ | 0.7− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | (1.8+ | 0.7+) |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.6− | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.6− |
| 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.5+ | 1.0− | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.5+ | 0.3+ | 2006 11 27 | G96 | 0.5− | 0.1+ |
| 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.3− | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | (2.0+ | 1.4−) | 2006 11 27 | 703 | (3.0+ | 1.7−) |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 1.0− | 2006 11 27 | 703 | 1.4+ | 3.0+ |
| 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.2− | 2006 11 27 | 703 | 0.9+ | 0.0 |
| 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | (2.1+ | 0.4−) | 2006 11 27 | 703 | 0.5+ | 0.5− |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (3.1− | 2.5−) | | | | |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.5− | | | | |

**2006 TY$_{35}$ = 2005 GU$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.86818 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27542533 | $\omega$ | 38.86732 | | +0.85859700 | | +0.51228939 |
| $a$ | 2.3395561 | $\Omega$ | 290.30597 | | −0.47532460 | | +0.78145008 |
| $e$ | 0.2243820 | $i$ | 1.17645 | | −0.19203572 | | +0.35622374 |
| $P$ | 3.58 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 695 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2005 04 11 | 695 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2005 04 12 | 695 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.8− |
| 2005 04 12 | 695 | 0.8+ | 0.4− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.7− |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2006 10 16 | 691 | 0.3+ | 0.4− | 2006 11 11 | 703 | 1.4− | 0.0 | | | | |

**2006 TJ$_{36}$ = 2004 CO$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.31428 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27761495 | $\omega$ | 93.55790 | | −0.57694441 | | −0.81093014 |
| $a$ | 2.3272381 | $\Omega$ | 32.30977 | | +0.65798627 | | −0.53224959 |
| $e$ | 0.1358630 | $i$ | 10.52229 | | +0.48393100 | | −0.24311046 |
| $P$ | 3.55 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.1− | 0.9− |
| 2004 01 17 | 644 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.6+ |
| 2004 01 17 | 644 | 0.7+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 1.2− | 0.7− |
| 2004 02 11 | 644 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 16 | 704 | (0.6+ | 1.7+) |
| 2004 02 11 | 644 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 16 | 704 | 1.4− | 0.3+ |
| 2004 02 11 | 644 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.4− | 0.1+ |
| 2004 02 14 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2004 02 14 | 704 | 1.0− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2004 02 14 | 704 | 0.7+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2006 09 25 | G96 | 0.5− | 0.4− | 2006 11 11 | 703 | 0.3− | 0.4+ | 2006 11 19 | 704 | (1.7+ | 0.4+) |
| 2006 09 25 | G96 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.3+ | 0.8+ | 2006 11 19 | 704 | 0.8+ | 0.3− |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.4+ | 0.5− | 2006 11 19 | 704 | 1.2+ | 0.4+ |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.3− | 2006 11 19 | 704 | 1.4+ | 0.1− |

**2006 TS$_{36}$ = 2004 CC$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.31154 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24593200 | $\omega$ | 357.62544 | | −0.27313538 | | +0.96115564 |
| $a$ | 2.5230509 | $\Omega$ | 256.52163 | | −0.88192101 | | −0.26667867 |
| $e$ | 0.0784174 | $i$ | 2.34032 | | −0.38420359 | | −0.07115002 |
| $P$ | 4.01 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.3− | 0.2− | 2004 02 19 | 704 | 0.3+ | 1.2+ | 2006 10 12 | 691 | 0.0 | 0.1− |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1− |
| 2004 02 12 | 691 | 0.2− | 0.2− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.4− |
| 2004 02 19 | 704 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.0 |
| 2004 02 19 | 704 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2004 02 19 | 704 | 0.7+ | 0.6− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 02 19 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.0 |

**2006 TX$_{36}$ = 2004 HB$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.11354 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20179009 | $\omega$ | 127.77636 | | +0.97890119 | | −0.20254929 |
| $a$ | 2.8787425 | $\Omega$ | 243.92421 | | +0.17677307 | | +0.90561708 |
| $e$ | 0.0794002 | $i$ | 1.71929 | | +0.10248774 | | +0.37260097 |
| $P$ | 4.88 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.1− | 0.2+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 1996 10 06 | 691 | 0.2− | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.0 |
| 1996 10 06 | 691 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.1+ |
| 2004 04 16 | 691 | 0.2− | 0.6+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2004 04 16 | 691 | 0.6− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.6+ | 0.5− |
| 2004 04 21 | 291 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2004 04 21 | 291 | 0.7+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2004 04 21 | 291 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.7− | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2005 06 14 | G96 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2005 06 14 | G96 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2005 06 14 | G96 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2005 06 14 | G96 | 0.7+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.1+ |
| 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.0 | | | | |

**2006 TB$_{37}$ = 2005 GD$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.79207 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26549125 | $\omega$ | 272.81440 | | +0.51099087 | | +0.85946602 |
| $a$ | 2.3975586 | $\Omega$ | 27.93014 | | −0.77596512 | | +0.46840907 |
| $e$ | 0.1699697 | $i$ | 1.75803 | | −0.36981949 | | +0.20472201 |
| $P$ | 3.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.1− | 0.1− | 2005 06 01 | G96 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2005 04 02 | G96 | 0.0 | 0.4− | 2005 06 01 | G96 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.5− | 0.3+ |
| 2005 04 02 | G96 | 1.3− | 0.1+ | 2005 06 01 | G96 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 2005 04 02 | G96 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 2005 04 10 | G96 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2005 04 10 | G96 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2005 04 10 | G96 | 0.1+ | 0.6+ | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2005 04 10 | G96 | 0.4− | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.0+ | 0.1+ |
| 2005 04 14 | 691 | 0.7+ | 0.0 | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 17 | 703 | 1.4− | 1.2+ |
| 2005 04 14 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.3− | 0.5− | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2005 04 14 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2005 05 07 | G96 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2005 05 07 | G96 | 0.5− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2005 05 07 | G96 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2005 05 07 | G96 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2005 06 01 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | |

**2006 TK$_{37}$ = 2005 LX$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.19377 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22856156 | $\omega$ | 115.53115 | | +0.90689698 | | +0.39029409 |
| $a$ | 2.6493169 | $\Omega$ | 222.00756 | | −0.41812472 | | +0.88016497 |
| $e$ | 0.1576922 | $i$ | 13.72402 | | +0.05205363 | | +0.27014837 |
| $P$ | 4.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.3− |
| 2005 06 08 | 691 | 0.7− | 0.3− | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.7− |
| 2005 06 08 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.3− |
| 2005 06 10 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.5− |
| 2005 06 10 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 28 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2005 06 28 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2005 06 28 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 1.1+ |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.9− | 0.3− | 2006 11 17 | 703 | 1.0+ | 0.3+ |
| 2006 10 16 | 691 | 0.4+ | 0.2− | 2006 11 10 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.8+ | 0.4+ |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.9− | 0.5− | | | | |
| 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.7− | | | | |

### 2006 TM$_{37}$ = 2005 LN$_{36}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.79017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22943264 | $\omega$ | 120.60862 | | +0.97991537 | +0.19860355 | |
| $a$ | 2.6426070 | $\Omega$ | 227.94253 | | −0.19023939 | +0.90403345 | |
| $e$ | 0.2218494 | $i$ | 1.38593 | | −0.05978993 | +0.37852365 | |
| $P$ | 4.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.3+ |
| 2005 06 13 | G96 | 0.7− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2005 06 13 | G96 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2005 06 14 | 291 | 0.0 | 0.4− | 2006 11 01 | 691 | 1.2− | 1.3− | 2006 11 12 | G96 | 0.5+ | 0.0 |
| 2005 06 14 | 291 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2005 06 14 | 291 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.7+ | 0.1+ |
| 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 1.1+ |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 17 | 703 | 1.2− | 0.5− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 1.3+ | 2006 11 17 | 703 | 0.2+ | 0.2+ |
| 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2− | | | | |

### 2006 TV$_{37}$ = 2001 SL$_{327}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.79502 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21370333 | $\omega$ | 152.91812 | | +0.94334041 | −0.32430468 | |
| $a$ | 2.7707362 | $\Omega$ | 226.19028 | | +0.28408771 | +0.89872147 | |
| $e$ | 0.0466874 | $i$ | 5.58660 | | +0.17147314 | +0.29517148 | |
| $P$ | 4.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | (1.6+ | 0.2−) | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2001 09 18 | 699 | 1.0+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 1.1− | 0.2+ |
| 2001 09 18 | 699 | (1.5− | 1.0+) | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.8+ |
| 2001 09 18 | 699 | 0.6− | 1.3− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.1+ | 0.6− |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2001 09 19 | 704 | 0.3+ | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2001 09 19 | 704 | 0.2− | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.2+ | | | | |

### 2006 TX$_{37}$ = 2004 GG$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.00511 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17488511 | $\omega$ | 297.10568 | | +0.97603935 | +0.21683922 | |
| $a$ | 3.1668986 | $\Omega$ | 50.37656 | | −0.19038833 | +0.89133774 | |
| $e$ | 0.1722734 | $i$ | 1.34718 | | −0.10535401 | +0.39811781 | |
| $P$ | 5.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 291 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2004 04 14 | 291 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2004 04 14 | 291 | 0.5− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2004 04 22 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2004 04 22 | 691 | 0.4+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 12 | G96 | 0.9− | 0.4− |
| 2004 04 22 | 691 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.5− | 2006 11 12 | G96 | 0.3− | 0.5− |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.4− | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.6− | 2006 11 21 | G96 | 0.2− | 0.5− |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.6− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.4− |
| 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.4+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.5− |

### 2006 TY$_{37}$ = 1995 VT$_{2}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.44197 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27144938 | $\omega$ | 127.40171 | | −0.96774112 | −0.24388830 | |
| $a$ | 2.3623458 | $\Omega$ | 38.59733 | | +0.18702421 | −0.86350251 | |
| $e$ | 0.0465382 | $i$ | 5.81548 | | +0.16881668 | −0.44145431 | |
| $P$ | 3.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 691 | 0.7− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 1995 11 14 | 691 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 1995 11 14 | 691 | 0.6+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1− | 0.0 |
| 1995 11 19 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (2.0+ | 0.9−) |
| 1995 11 19 | 691 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.4− |
| 2006 09 25 | G96 | 0.6− | 0.1− | 2006 10 28 | 691 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.5+ | 0.5− |
| 2006 09 25 | G96 | 0.2− | 0.9− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.6− |
| 2006 09 25 | G96 | 0.4− | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.5− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 1.1+ | 0.7− |
| 2006 10 12 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.3+ | 0.5+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.6− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.7− | 0.4− |

### 2006 TA$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.93637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25287638 | $\omega$ | 216.51326 | | +0.41351027 | −0.91027718 | |
| $a$ | 2.4766456 | $\Omega$ | 209.07680 | | +0.84485879 | +0.39184270 | |
| $e$ | 0.0592261 | $i$ | 2.37248 | | +0.33944497 | +0.13362168 | |
| $P$ | 3.90 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 691 | 0.5+ | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 291 | 0.2− | 0.1+ |
| 1994 09 12 | 691 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 29 | 291 | 0.3− | 0.2+ |
| 1994 09 12 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 10 04 | 599 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 10 04 | 599 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.3− |
| 2002 10 04 | 599 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 11 08 | 644 | 0.3− | 0.2− |
| 2002 10 11 | 291 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2002 10 11 | 291 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.5− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2002 10 11 | 291 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.4− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 12 | 691 | 0.0 | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.5− | | |
| 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 10 29 | 291 | 0.3− | 0.2+ | | | | | | |

**2006 TD$_{38}$ = 1993 TQ$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.35998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22927059 | $\omega$ | 190.13044 | | +0.70115863 | −0.70093841 | |
| $a$ | 2.6438521 | $\Omega$ | 215.55917 | | +0.66887954 | +0.71008090 | |
| $e$ | 0.1612145 | $i$ | 12.98003 | | +0.24693469 | +0.06686150 | |
| $P$ | 4.30 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.5+ | 0.4− | | |
| 1993 10 09 | 691 | 0.1+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 1993 10 09 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2− | | |
| 1993 10 15 | 691 | 0.0 | 0.3− | 2006 10 24 | 644 | 0.4+ | 0.0 | 2006 11 17 | 704 | 0.9− | 0.3+ | | |
| 1993 10 15 | 691 | 0.2− | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.5+ | 0.7+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.7− | 2006 10 24 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.2+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.7− | 2006 10 28 | 704 | (0.0 | 1.6+) | 2006 11 17 | 704 | 1.3+ | 1.0+ | | |
| 2006 09 27 | G96 | 0.3− | 0.7− | 2006 10 28 | 704 | (0.8− | 2.5+) | 2006 11 20 | 704 | 0.5+ | 0.8+ | | |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 0.6− | 0.5+ | 2006 11 20 | 704 | 0.7+ | 0.9+ | | |
| 2006 10 12 | 691 | 0.3− | 0.1− | 2006 11 10 | 644 | 0.2+ | 0.3− | 2006 11 20 | 704 | 1.2+ | 0.1− | | |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.5− | | |
| 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.2+ | | |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 25 | 291 | 0.2− | 0.1− | | |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.2− | 2006 11 25 | 291 | 0.2− | 0.0 | | |
| 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 1.2− | 0.5− | 2006 11 25 | 291 | 0.1− | 0.0 | | |
| 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.1− | 0.3− | | | | | | |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− | | | | | | |

**2006 TF$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.24030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18050454 | $\omega$ | 223.54622 | | +0.09856030 | −0.99414285 | |
| $a$ | 3.1008252 | $\Omega$ | 220.85717 | | +0.93058312 | +0.10786106 | |
| $e$ | 0.1087430 | $i$ | 3.88631 | | +0.35256336 | −0.00678081 | |
| $P$ | 5.46 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− | | |
| 2000 08 30 | 691 | 0.0 | 0.7− | 2006 10 16 | 691 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.3+ | | |
| 2000 08 30 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ | | |
| 2000 09 29 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2000 09 29 | 691 | 0.3+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2000 09 29 | 691 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.6+ | 0.2+ | | |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.5+ | 0.2− | | |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.6− | 2006 11 21 | G96 | 0.6+ | 0.2− | | |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.2− | | | | | | |
| 2006 10 12 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1− | | | | | | |

**2006 TQ$_{38}$ = 1995 UL$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.67074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27373164 | $\omega$ | 216.39481 | | +0.38403409 | −0.92166877 | |
| $a$ | 2.3491967 | $\Omega$ | 211.13008 | | +0.87032382 | +0.38129949 | |
| $e$ | 0.0854294 | $i$ | 6.12679 | | +0.30830874 | +0.07167555 | |
| $P$ | 3.60 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 683 | 0.7− | 0.2+ | | |
| 1995 10 23 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.8− | 2006 11 15 | 683 | (1.7+ | 0.5−) | | |
| 1995 10 23 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 15 | 683 | 0.2+ | 1.0+ | | |
| 1995 10 28 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4− | | |
| 1995 10 28 | 691 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 1995 10 28 | 691 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− | | |
| 2002 09 13 | 644 | 0.4− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2002 09 13 | 644 | 0.4+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | (0.2− | 1.6−) | | |
| 2002 09 13 | 644 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.6+ | 0.0 | | |
| 2004 02 11 | 644 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | (0.7− | 1.5−) | | |
| 2004 02 11 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 1.3− | 0.7− | 2006 11 17 | 703 | 1.1+ | 0.1+ | | |
| 2004 02 11 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.8+ | 2006 11 21 | 704 | 0.6+ | 0.0 | | |
| 2004 02 17 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.6+ | 2006 11 21 | 704 | (1.6+ | 0.8+) | | |
| 2004 02 17 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.7− | 0.1− | 2006 11 21 | 704 | 0.7− | 0.7+ | | |
| 2004 02 17 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.1− | | |
| 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.3− | 0.2+ | | | | | | |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.0 | | | | | | |

**2006 TU$_{38}$ = 2005 NQ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.18553 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18182350 | $\omega$ | 224.86583 | | +0.64497067 | −0.76420503 | |
| $a$ | 3.0858114 | $\Omega$ | 184.97176 | | +0.70707649 | +0.59768258 | |
| $e$ | 0.1870686 | $i$ | 1.23943 | | +0.28992356 | +0.24241742 | |
| $P$ | 5.42 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 07 | 568 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 13 | G96 | 0.1+ | 0.3− | | |
| 2005 07 07 | 568 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.6− | 2006 11 13 | G96 | 0.8+ | 0.4− | | |
| 2005 07 07 | 568 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.0 | 0.6− | | |
| 2005 07 08 | 568 | 0.5+ | 0.8+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.5+ | 0.2− | | |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.4− | | |
| 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.4− | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.2− | | |
| 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.5+ | 2006 11 27 | G96 | 0.2− | 0.2− | | |
| 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 0.2+ | 0.3− | | |
| 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.6+ | 2006 11 27 | G96 | 0.4− | 0.5− | | |
| 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.3− | | |
| 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 13 | G96 | 0.1− | 0.4− | | | | | | |

**2006 TZ$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.26751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24025949 | $\omega$ | 209.12926 | | −0.26024756 | +0.96211960 | |
| $a$ | 2.5626090 | $\Omega$ | 45.91901 | | −0.86253376 | −0.19385269 | |
| $e$ | 0.1360913 | $i$ | 6.49214 | | −0.43394323 | −0.19169510 | |
| $P$ | 4.10 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 22 | 644 | 0.1+ | 0.7− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2001 06 22 | 644 | 0.3+ | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.1+ | 1.4− | | |
| 2001 06 22 | 644 | 0.1+ | 0.6− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.4− | | |
| 2001 07 13 | 644 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | (2.0+ | 0.8−) | | |
| 2001 07 13 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.0 | 0.5− | | |
| 2001 07 13 | 644 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− | | |
| 2002 11 04 | 291 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 11 | 703 | (2.4+ | 0.3+) | | |
| 2002 11 04 | 291 | 0.4− | 1.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.2− | | |
| 2002 11 04 | 291 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.6+ | 0.3− | | |
| 2005 07 03 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 12 | G96 | 0.1− | 0.5− | | |
| 2005 07 03 | 644 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.8+ | 0.0 | | |
| 2005 07 03 | 644 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 12 | G96 | 0.1− | 0.4− | | |
| 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.3− | | |
| 2006 09 26 | G96 | 0.2− | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.6+ | 0.9− | | |
| 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.8+ | | |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.7+ | 1.6+ | | |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.8+ | 0.2+ | | |

**2006 TA$_{39}$ = 1995 WX$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.01096 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17878331 | $\omega$ | 299.05763 | | +0.99587791 | +0.08634656 | |
| $a$ | 3.1206956 | $\Omega$ | 56.00191 | | −0.06711326 | +0.90746100 | |
| $e$ | 0.2809097 | $i$ | 1.91989 | | −0.06101639 | +0.41116760 | |
| $P$ | 5.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.1+ | |
| 1995 11 16 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.2+ | |
| 1995 11 16 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.5+ | 1.1− | |
| 1995 11 19 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | 1.3+ | 1.0− | |
| 1995 11 19 | 691 | 0.5+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.9− | |
| 1995 11 19 | 691 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.8+ | 0.5+ | |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.8+ | |
| 2006 10 12 | 691 | 0.3− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.0 | 0.2+ | |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 1.4− | 0.3+ | |
| 2006 10 16 | 691 | (1.8+ | 0.4−) | 2006 11 10 | 644 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1− | |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− | |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.2− | |
| 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.1− | 0.1+ | |
| 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.9− | 2006 11 27 | 703 | 0.3− | 0.2+ | |
| 2006 10 28 | G96 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.4+ | |
| 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.9− | 0.1− | |
| 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.0 | 0.9+ | |

**2006 TD$_{39}$ = 2004 CX$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 147.94216 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23486318 | $\omega$ | 202.17078 | | −0.53066922 | +0.84368306 | |
| $a$ | 2.6017132 | $\Omega$ | 35.92237 | | −0.75539292 | −0.42734177 | |
| $e$ | 0.1474060 | $i$ | 7.95285 | | −0.38441086 | −0.32492755 | |
| $P$ | 4.20 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.5− | 0.7+ | 2004 02 15 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2− | |
| 2001 08 14 | 644 | 0.7− | 0.9+ | 2004 02 15 | 704 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.2− | |
| 2001 08 14 | 644 | 0.1− | 1.0+ | 2005 07 29 | E12 | 0.4+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.2− | |
| 2001 08 23 | 608 | 0.2+ | 0.6− | 2005 07 29 | E12 | 0.1+ | 0.7+ | 2006 10 20 | 695 | 0.1+ | 0.0 | |
| 2001 08 23 | 608 | 0.6+ | 0.6− | 2005 07 29 | E12 | (2.1− | 0.7+) | 2006 10 20 | 695 | 0.7− | 0.1− | |
| 2001 08 23 | 608 | 0.2+ | 0.1− | 2005 07 29 | E12 | 0.6− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2− | |
| 2001 08 23 | 608 | 0.1+ | 0.7− | 2006 09 25 | G96 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.4− | 0.4+ | |
| 2001 08 23 | 608 | 0.2+ | 0.2− | 2006 09 25 | G96 | 0.5+ | 0.6− | 2006 10 28 | 691 | 0.6− | 0.1+ | |
| 2001 08 23 | 608 | 0.1− | 0.5− | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 | |
| 2002 12 05 | 695 | 0.5+ | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2− | 1.5+ | |
| 2002 12 05 | 695 | 0.4+ | 0.6− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ | |
| 2004 02 10 | 644 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.1− | |
| 2004 02 10 | 644 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2− | |
| 2004 02 10 | 644 | 0.0 | 0.5+ | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 15 | G96 | (0.0 | 1.9+) | |
| 2004 02 15 | 704 | 0.2− | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.2− | |
| 2004 02 15 | 704 | 0.7+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2− | | | | | |

**2006 TP$_{39}$ = 2004 CY$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.06369 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26136783 | $\omega$ | 32.30510 | | +0.40611181 | −0.91126029 | |
| $a$ | 2.4227092 | $\Omega$ | 33.87515 | | +0.81016952 | +0.32441450 | |
| $e$ | 0.1300088 | $i$ | 7.04836 | | +0.42272752 | +0.25369255 | |
| $P$ | 3.77 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.0 | |
| 2004 02 13 | 691 | 0.3+ | 0.2− | 2006 10 20 | 695 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ | |
| 2004 02 13 | 691 | 0.4+ | 0.3− | 2006 10 20 | 695 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ | |
| 2004 02 29 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.8− | |
| 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 695 | 0.1+ | 0.1− | 2006 11 14 | 703 | (0.5+ | 2.5−) | |
| 2004 02 29 | 691 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.9− | 1.1+ | 2006 11 14 | 703 | 0.2− | 0.9− | |
| 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 10 20 | 695 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.5+ | |
| 2006 10 12 | 691 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.4− | |
| 2006 10 12 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.2− | |
| 2006 10 16 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.4− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.2− | |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.5− | 0.2− | |

**2006 TV$_{39}$ = 2000 FP$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.06913 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22857279 | $\omega$ | 241.38127 | | +0.17582063 | +0.97792400 | |
| $a$ | 2.6492302 | $\Omega$ | 39.26444 | | −0.82938354 | +0.20894521 | |
| $e$ | 0.0933734 | $i$ | 10.27789 | | −0.53029242 | −0.00255803 | |
| $P$ | 4.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 704 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 1.2− | |
| 2000 03 29 | 704 | 0.1− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.1− | 0.0 | |
| 2000 03 29 | 704 | 1.4+ | 0.8− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.5− | |
| 2000 03 29 | 704 | 0.2− | 0.7− | 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.1− | 0.3− | |
| 2000 03 29 | 704 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.5− | |
| 2000 04 08 | 704 | 0.6− | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.6− | |
| 2000 04 08 | 704 | 0.1− | 0.9− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.4− | |
| 2000 04 08 | 704 | 1.2+ | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.1− | |
| 2000 04 08 | 704 | 0.6+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.6+ | 2006 11 15 | G96 | (0.6− | 3.5+) | |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− | |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.5+ | |
| 2001 07 22 | 644 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.6+ | |
| 2001 07 22 | 644 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.5+ | |
| 2001 07 22 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 1.4+ | 0.3+ | |
| 2004 03 18 | 703 | 1.2− | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 22 | 104 | 0.9+ | 0.8+ | |
| 2004 03 18 | 703 | (1.7− | 0.4−) | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 22 | 104 | 0.8− | 0.6− | |
| 2004 03 18 | 703 | (3.2+ | 1.1+) | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 22 | 104 | 0.8− | 1.5− | |
| 2004 03 18 | 703 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.6− | |
| 2004 04 14 | 644 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.9− | 2006 11 27 | G96 | 0.3+ | 0.5− | |
| 2004 04 14 | 644 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.6− | |
| 2004 04 14 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.7+ | 2006 11 27 | G96 | 0.2+ | 0.6− | |
| 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.2− | | | | | |
| 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3− | 0.3+ | | | | | |

**2006 TL$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.93771 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21444594 | $\omega$ | 249.09719 | | −0.41753939 | −0.90833393 | |
| $a$ | 2.7643360 | $\Omega$ | 225.60649 | | +0.84580387 | −0.37874582 | |
| $e$ | 0.0657749 | $i$ | 1.94857 | | +0.33207931 | −0.17742904 | |
| $P$ | 4.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 291 | 0.3+ | 0.7+ | 2006 10 16 | 691 | 0.6− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ | |
| 2001 09 23 | 291 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 12 | G96 | 0.1− | 0.2− | |
| 2001 09 23 | 291 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.1+ | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.2− | |
| 2001 10 15 | 645 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.5− | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.4− | |
| 2006 09 27 | G96 | 1.2+ | 0.5− | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.0 | |
| 2006 09 27 | G96 | 0.6+ | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.5− | 2006 11 21 | G96 | 0.6− | 0.1+ | |
| 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1− | 0.4− | |
| 2006 09 27 | G96 | 0.1+ | 0.7− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.8− | |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.6+ | 2006 11 27 | G96 | 0.2+ | 0.2− | |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.9+ | 0.2− | |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.3− | |
| 2006 10 16 | 691 | 0.5+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.3− | |

**2006 TN$_{40}$ = 2004 GE$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.09335 | | (2000.0) | | | |
| $n$ | 0.21311734 | $\omega$ | 27.85848 | | +0.47641141 | −0.87802233 |
| $a$ | 2.7758129 | $\Omega$ | 33.74812 | | +0.79052660 | +0.40490437 |
| $e$ | 0.0564391 | $i$ | 4.74171 | | +0.38483745 | +0.25520431 |
| $P$ | 4.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 291 | (2.4− | 0.4+) |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 291 | (2.3− | 0.8+) |
| 2004 04 14 | 291 | 0.6+ | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 21 | 291 | 0.5− | 0.3+ |
| 2004 04 14 | 291 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2004 04 14 | 291 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 04 22 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2004 04 22 | 691 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2004 04 22 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.4− | 0.4+ | 2006 11 27 | G96 | 0.4− | 0.0 |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.5− | 0.1− |
| 2006 10 12 | 691 | 0.6− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.3+ |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.5+ |
| 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.2− | | | | |

**2006 TT$_{40}$ = 2000 SF$_{159}$ = 2004 HW$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 101.43091 | | (2000.0) | | | |
| $n$ | 0.17290789 | $\omega$ | 252.31786 | | +0.26577215 | +0.96350539 |
| $a$ | 3.1909954 | $\Omega$ | 33.14797 | | −0.86084423 | +0.25212398 |
| $e$ | 0.0633610 | $i$ | 3.35255 | | −0.43394974 | +0.08994918 |
| $P$ | 5.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.3+ | 0.3− | 2004 05 13 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2000 09 27 | 691 | 0.2− | 0.3− | 2004 05 13 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2000 09 27 | 691 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2000 09 28 | 691 | 0.5− | 0.2+ | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2000 09 28 | 691 | 0.4+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | (1.7− | 2.4−) |
| 2000 09 28 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 1.1+ | 1.0− |
| 2004 04 28 | 691 | 0.5− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2004 04 28 | 691 | 0.4+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.3− |
| 2004 04 28 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.5− | 0.1+ | | | | |
| 2004 05 13 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.5+ | | | | |

**2006 TU$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 302.69828 | | (2000.0) | | | |
| $n$ | 0.19746996 | $\omega$ | 85.56575 | | −0.08712341 | −0.99618484 |
| $a$ | 2.9205772 | $\Omega$ | 9.43681 | | +0.90140029 | −0.08098079 |
| $e$ | 0.0554937 | $i$ | 1.75741 | | +0.42413090 | −0.03252513 |
| $P$ | 4.99 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 12 | 691 | 0.1+ | 0.3− | 2006 10 12 | 691 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.3− | 0.1− |
| 1996 10 12 | 691 | 0.0 | 0.4− | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 1996 10 12 | 691 | 0.3+ | 0.2− | 2006 10 12 | 691 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2001 11 11 | 691 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2001 11 11 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 11 11 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 09 27 | G96 | 0.5+ | 0.3− | 2006 10 20 | 691 | 1.0+ | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2006 09 27 | G96 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 10 20 | 691 | 0.6− | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2006 09 27 | G96 | 0.6+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.6− |

**2006 TZ$_{40}$ = 1997 RE$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.58717 | | (2000.0) | | | |
| $n$ | 0.22818850 | $\omega$ | 173.14277 | | +0.69212471 | −0.72118319 |
| $a$ | 2.6522037 | $\Omega$ | 233.05360 | | +0.66046526 | +0.64917928 |
| $e$ | 0.1366195 | $i$ | 2.10067 | | +0.29111686 | +0.24178723 |
| $P$ | 4.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 910 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | (2.3− | 1.3−) |
| 1997 09 08 | 910 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.8− |
| 1997 09 08 | 910 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.4+ |
| 1997 09 08 | 910 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 1997 09 08 | 910 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 1997 09 08 | 910 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 1.0+ | 0.2+ |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.8+ | 1.4− |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.4− | 1.3− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.5+ | 2006 11 27 | 703 | 0.6− | 1.1− |

**2006 TE$_{41}$ = 2004 HP$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 218.62572 | | (2000.0) | | | |
| $n$ | 0.20468293 | $\omega$ | 310.41554 | | −0.99578276 | −0.06415832 |
| $a$ | 2.8515542 | $\Omega$ | 226.01739 | | +0.08266511 | −0.93748871 |
| $e$ | 0.0277207 | $i$ | 5.22900 | | −0.03978902 | −0.34205063 |
| $P$ | 4.82 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 291 | (82.1+ | 26.4+) | 2004 05 16 | 926 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.2− |
| 2001 12 18 | 291 | (82.3+ | 26.4+) | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 291 | (83.9+ | 26.2+) | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.6+ | 0.7− |
| 2004 04 24 | 691 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2004 04 24 | 691 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2− | 0.5+ |
| 2004 04 24 | 691 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.3+ |
| 2004 05 14 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 05 14 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 05 14 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.5+ |
| 2004 05 16 | 926 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1− | | | | |
| 2004 05 16 | 926 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.2+ | | | | |

**2006 TF$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 66.39641 | | (2000.0) | | | |
| $n$ | 0.31815327 | $\omega$ | 88.84175 | | +0.59827645 | +0.79978645 |
| $a$ | 2.1250955 | $\Omega$ | 218.04476 | | −0.76319298 | +0.55010830 |
| $e$ | 0.1199138 | $i$ | 4.56602 | | −0.24413474 | +0.24025505 |
| $P$ | 3.10 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 18 | 691 | 0.2+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2003 11 18 | 691 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2003 11 18 | 691 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.6− | 0.1− |
| 2005 05 14 | G96 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2005 05 14 | G96 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2005 05 14 | G96 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.5− |
| 2005 05 14 | G96 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2006 09 28 | G96 | 0.9+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.7+ | 0.0 |
| 2006 09 28 | G96 | 0.3− | 0.8− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2006 09 28 | G96 | 0.5+ | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.3+ | | | | |

**2006 TH$_{41}$ = 2001 WP$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.76820 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19618944 | $\omega$ | 105.70733 | | +0.83287428 | | +0.53994648 |
| $a$ | 2.9332717 | $\Omega$ | 221.81839 | | −0.55139742 | | +0.79054871 |
| $e$ | 0.0543681 | $i$ | 10.50491 | | −0.04776310 | | +0.28894727 |
| $P$ | 5.02 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2− | 1.0+ | 2005 10 01 | G96 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ |
| 2001 11 20 | 704 | 0.0 | 0.7+ | 2005 10 01 | G96 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.9− | 0.7− |
| 2001 11 20 | 704 | 0.6+ | 0.6+ | 2005 10 01 | G96 | 0.3+ | 0.3+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2001 11 20 | 704 | 0.4+ | 0.6+ | 2005 10 01 | G96 | 0.2− | 0.7+ | 2006 10 20 | 695 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.9− | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 12 09 | 691 | 0.2+ | 0.5− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2001 12 09 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2001 12 09 | 691 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2003 03 30 | 645 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.2+ |

**2006 TK$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.94071 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26909433 | $\omega$ | 1.86929 | | −0.74829934 | | +0.65958381 |
| $a$ | 2.3761089 | $\Omega$ | 219.69849 | | −0.61004900 | | −0.72609896 |
| $e$ | 0.0992950 | $i$ | 6.35406 | | −0.26055385 | | −0.19424079 |
| $P$ | 3.66 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 01 | 691 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2001 05 01 | 691 | 0.4+ | 1.2+ | 2006 09 27 | G96 | 1.0+ | 0.4− | 2006 10 28 | 691 | 1.2− | 0.8+ |
| 2001 05 01 | 691 | 0.3+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.5− | 0.3+ |
| 2001 05 25 | 691 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 05 25 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2001 05 25 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2006 09 27 | G96 | 0.5+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.3+ | | | | |
| 2006 09 27 | G96 | 0.7+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.2+ | | | | |

**2006 TR$_{41}$ = 2004 JV$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.94246 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17758944 | $\omega$ | 72.68424 | | −0.42895731 | | −0.89189926 |
| $a$ | 3.1346661 | $\Omega$ | 43.63058 | | +0.72977748 | | −0.43560083 |
| $e$ | 0.0571587 | $i$ | 11.97941 | | +0.53237248 | | −0.12152211 |
| $P$ | 5.55 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | E12 | 0.4+ | 1.4+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.0 | 1.0+ |
| 2004 05 15 | E12 | 0.1− | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.4− | 0.1− |
| 2004 05 15 | E12 | (0.6− | 2.3+) | 2006 10 12 | 644 | 0.4+ | 0.5− | 2006 10 22 | G96 | 0.1− | 0.2− |
| 2004 05 15 | E12 | 0.6+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.4+ | 0.1− |
| 2004 05 22 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.4− | 0.2− | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2004 05 22 | 704 | 1.0− | 1.1− | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 10 22 | G96 | 0.1− | 0.3− |
| 2004 05 22 | 704 | 0.0 | 1.3− | 2006 10 16 | 703 | 1.1− | 1.2+ | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2006 10 02 | G96 | 0.6+ | 0.1− | 2006 10 22 | 703 | (0.2+ | 2.8+) | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.2− | 1.3+ | 2006 11 18 | G96 | 0.3+ | 0.2+ |

**2006 TD$_{42}$ = 2001 QC$_{300}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.12597 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23350677 | $\omega$ | 17.71971 | | +0.71535543 | | −0.69868229 |
| $a$ | 2.6117788 | $\Omega$ | 26.61101 | | +0.63823678 | | +0.64721957 |
| $e$ | 0.0524253 | $i$ | 1.33964 | | +0.28446516 | | +0.30487684 |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.1− | 0.4+ | 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.5+ |
| 2001 08 19 | 807 | 0.1+ | 0.4+ | 2004 04 19 | 691 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.6+ |
| 2001 08 20 | 807 | 0.2− | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.5+ |
| 2001 08 20 | 807 | 0.3− | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.5+ |
| 2004 03 23 | 291 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2004 03 23 | 291 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2004 03 23 | 291 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.5+ | 0.5+ |

**2006 TE$_{42}$ = 2002 XQ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.51762 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23268996 | $\omega$ | 288.77266 | | −0.84111949 | | −0.52655570 |
| $a$ | 2.6178873 | $\Omega$ | 219.71534 | | +0.53974648 | | −0.80264326 |
| $e$ | 0.1344873 | $i$ | 11.14598 | | +0.03452158 | | −0.28018367 |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 12 10 | 644 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2002 12 10 | 644 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2002 12 14 | 704 | 0.7+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2002 12 14 | 704 | 0.0 | 1.0− | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.7− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.6+ | 2006 11 12 | G96 | 0.2− | 0.4− |
| 2006 10 12 | 691 | 0.4+ | 0.4− | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.3− |
| 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.4− | 0.2− | 2006 11 21 | 704 | (1.6+ | 0.4+) |
| 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.0 | 1.2− | | | | |

**2006 TM$_{42}$ = 2003 JZ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.39976 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17910310 | $\omega$ | 70.40138 | | −0.34317326 | | −0.92045110 |
| $a$ | 3.1169798 | $\Omega$ | 41.23477 | | +0.71974658 | | −0.38567466 |
| $e$ | 0.2093216 | $i$ | 16.48915 | | +0.60348734 | | −0.06344158 |
| $P$ | 5.50 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 06 | 291 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 15 | 704 | 0.2− | 0.6+ |
| 2003 05 06 | 291 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 15 | 704 | (0.8+ | 2.0+) |
| 2003 05 06 | 291 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.1+ | 1.4+ |
| 2003 05 10 | 691 | 0.2− | 0.4− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 16 | 704 | (0.5− | 2.3+) |
| 2003 05 10 | 691 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.8+ |
| 2003 05 10 | 691 | 0.4− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 16 | 704 | (1.8+ | 0.4+) |
| 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.6+ |
| 2006 09 26 | G96 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.5− | 0.1− | 2006 11 17 | 704 | 1.2− | 1.1+ |
| 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 2006 10 12 | 291 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.4− | 0.2− |
| 2006 10 12 | 291 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.1− |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.4− | 2006 11 19 | 704 | 0.4− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 12 | 291 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.1+ | | |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.0 | | |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.4+ | | |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2006 10 16 | 691 | 0.4+ | 0.7− | 2006 11 14 | G96 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.1+ | | |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.5− | 2006 11 22 | 704 | 1.4+ | 0.2− | | |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.6− | 2006 11 22 | 704 | (1.7+ | 0.4+) | | |
| 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.6− | 2006 11 22 | 704 | (1.7+ | 0.1−) | | |

### 2006 $TQ_{42}$ = 2001 $WB_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.49678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19617641 | $\omega$ | 177.76311 | | −0.76650564 | +0.63059440 | |
| $a$ | 2.9334016 | $\Omega$ | 42.15698 | | −0.59202172 | −0.62028655 | |
| $e$ | 0.0214422 | $i$ | 10.45023 | | −0.24895659 | −0.46647111 | |
| $P$ | 5.02 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.2+ | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.3+ | | |
| 2001 11 19 | 704 | 0.5− | 0.6− | 2006 09 26 | G96 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.1+ | | |
| 2001 11 19 | 704 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1+ | | |
| 2001 11 19 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 291 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2+ | | |
| 2001 11 21 | 704 | 0.5− | 0.2− | 2006 10 12 | 291 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2− | 1.4− | | |
| 2001 11 21 | 704 | 0.2− | 1.0+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.2− | 0.3+ | | |
| 2001 11 21 | 704 | 0.2+ | 0.7+ | 2006 10 12 | 291 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.9+ | | |
| 2004 04 28 | 691 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5− | | |
| 2004 04 28 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.1− | | |
| 2004 04 28 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | (1.8+ | 0.4−) | 2006 11 13 | G96 | 0.5+ | 0.7− | | |
| 2004 06 08 | 691 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.0 | | |
| 2004 06 08 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.2− | | |
| 2004 06 08 | 691 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.2+ | | | | | | |
| 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | | | | | | |

### 2006 $TT_{42}$ = 2005 $MO_{50}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 139.65696 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21758870 | $\omega$ | 27.33987 | | −0.33343595 | +0.92487380 | |
| $a$ | 2.7376536 | $\Omega$ | 223.86660 | | −0.90600264 | −0.36798129 | |
| $e$ | 0.1215361 | $i$ | 15.29799 | | −0.26072913 | +0.09590738 | |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 20 | 691 | 0.1− | 0.7− | 2005 07 08 | 703 | 1.3− | 0.4− | 2006 10 12 | 691 | 0.2+ | 0.1+ | | |
| 1997 11 20 | 691 | 0.1+ | 0.8− | 2005 07 08 | 703 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.4+ | 0.2+ | | |
| 1997 11 20 | 691 | 0.0 | 0.4− | 2005 07 17 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.2− | | |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2005 07 17 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.3+ | | |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2005 07 17 | 644 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.7+ | | |
| 2005 06 30 | 644 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1+ | | |
| 2005 06 30 | 644 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.7− | 0.4− | 2006 10 20 | 691 | 0.0 | 0.3+ | | |
| 2005 06 30 | 644 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.7− | 0.7+ | | |
| 2005 07 08 | 703 | 1.0+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.4− | | | | | | |
| 2005 07 08 | 703 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.1+ | | | | | | |

### 2006 $TV_{42}$ = 2001 $YM_{40}$ = 2003 $DP_{21}$ = 2003 $DS_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.07116 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17791576 | $\omega$ | 289.25398 | | −0.59536138 | +0.80340096 | |
| $a$ | 3.1308320 | $\Omega$ | 304.20389 | | −0.73274145 | −0.54781178 | |
| $e$ | 0.1012314 | $i$ | 0.66351 | | −0.32959793 | −0.23334342 | |
| $P$ | 5.54 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 11 | 691 | 0.1+ | 0.6+ | 2003 03 06 | 644 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.0 | | |
| 1992 03 11 | 691 | 0.5+ | 0.1− | 2003 03 06 | 644 | 0.1+ | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.2+ | | |
| 1992 03 11 | 691 | 0.1− | 0.5− | 2003 03 06 | 644 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.7+ | | |
| 1997 01 03 | 691 | 0.2− | 0.8− | 2003 04 03 | 699 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | | |
| 1997 01 03 | 691 | 0.1− | 0.2− | 2003 04 03 | 699 | 0.7+ | 0.1− | 2006 10 28 | 691 | 0.4− | 0.1− | | |
| 1997 01 03 | 691 | 0.1− | 0.3− | 2003 04 03 | 699 | 1.0+ | 0.6+ | 2006 11 01 | 691 | 0.5− | 0.3− | | |
| 2001 12 18 | 704 | 0.8+ | 0.3− | 2003 04 03 | 699 | 0.9− | 1.1+ | 2006 11 01 | 691 | 0.1− | 0.1− | | |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2005 07 30 | 644 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1− | | |
| 2001 12 18 | 704 | 0.2− | 0.1+ | 2005 07 30 | 644 | 0.5+ | 0.1+ | 2006 11 02 | 691 | 0.5+ | 0.1− | | |
| 2001 12 18 | 704 | 0.7+ | 0.8+ | 2005 07 30 | 644 | 0.3+ | 0.2+ | 2006 11 02 | 691 | 0.1+ | 0.0 | | |
| 2001 12 18 | 704 | 0.2+ | 0.1+ | 2005 08 28 | 691 | 0.1− | 0.4+ | 2006 11 02 | 691 | 0.0 | 0.7+ | | |
| 2001 12 19 | 704 | 0.5+ | 0.2− | 2005 08 28 | 691 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.6+ | 1.2− | | |
| 2001 12 19 | 704 | 0.5+ | 1.1+ | 2005 08 28 | 691 | (1.1+ | 1.7+) | 2006 11 11 | 703 | (0.4+ | 2.1−) | | |
| 2001 12 19 | 704 | 0.5+ | 0.6+ | 2005 09 26 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.1+ | | |
| 2001 12 19 | 704 | 0.1+ | 0.6+ | 2005 09 26 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.3− | | |
| 2002 01 12 | 691 | 0.8− | 0.3+ | 2005 09 26 | 691 | 0.3− | 0.4+ | 2006 11 12 | 703 | 0.2− | 0.9+ | | |
| 2002 01 12 | 691 | 1.0− | 0.1− | 2005 11 25 | G96 | 0.9− | 0.2− | 2006 11 12 | 703 | 0.1+ | 0.3− | | |
| 2002 01 12 | 691 | 0.5− | 0.4− | 2005 11 25 | G96 | 0.1− | 0.2− | 2006 11 12 | 703 | 0.1+ | 0.1+ | | |
| 2002 12 07 | 645 | 0.1+ | 0.0 | 2005 11 25 | G96 | 0.5− | 0.0 | 2006 11 12 | 703 | (2.1− | 0.4−) | | |
| 2002 12 07 | 645 | 0.0 | 0.1− | 2005 11 25 | G96 | 0.4− | 0.3− | 2006 11 12 | G96 | 0.2− | 0.0 | | |
| 2003 02 10 | 291 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.2− | 0.0 | | |
| 2003 02 10 | 291 | 0.1− | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 12 | G96 | 0.0 | 0.5− | | |
| 2003 02 10 | 291 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.3− | 0.1+ | | |
| 2003 02 23 | 699 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.3− | 0.1+ | | |
| 2003 02 23 | 699 | 0.3− | 0.9+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 1.0− | 0.2− | | |
| 2003 02 23 | 699 | 0.9+ | 0.6+ | 2006 10 12 | 691 | 0.5+ | 0.1+ | 2006 11 17 | 703 | 1.3+ | 1.6+ | | |
| 2003 02 23 | 699 | 1.2+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.1− | | |
| 2003 02 26 | 599 | 0.5+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.4− | 0.4− | | |
| 2003 02 26 | 599 | 0.7+ | 0.6+ | 2006 10 16 | 691 | 0.3+ | 0.3− | 2006 11 20 | G96 | 0.2− | 0.3− | | |
| 2003 02 26 | 599 | 0.6+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 20 | G96 | 0.3+ | 0.2− | | |
| 2003 02 26 | 599 | 0.5+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.4− | 2006 11 20 | G96 | 0.1+ | 0.0 | | |

### 2006 $TB_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.47472 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22865557 | $\omega$ | 302.04973 | | −0.94396797 | −0.32766551 | |
| $a$ | 2.6485907 | $\Omega$ | 218.86316 | | +0.32004198 | −0.87957556 | |
| $e$ | 0.2024250 | $i$ | 3.60872 | | +0.08060769 | −0.34493788 | |
| $P$ | 4.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 11 | 699 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.5− | 1.0− | | |
| 1999 02 11 | 699 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.5− | 0.6− | | |
| 1999 02 11 | 699 | 0.4− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 1.3− | 0.8− | | |
| 2001 08 27 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.8+ | | |
| 2001 08 27 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 0.5− | | |
| 2001 08 27 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.2− | | |
| 2006 10 12 | 691 | 0.7+ | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.3− | | |
| 2006 10 12 | 691 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.1+ | | |
| 2006 10 12 | 691 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.1− | | |
| 2006 10 13 | 291 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.5− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− | | |
| 2006 10 13 | 291 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.4− | 0.1− | | |
| 2006 10 13 | 291 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.6+ | 2006 11 27 | 703 | (1.8− | 1.0−) | | |
| 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | (2.2− | 0.4+) | | |
| 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.4+ | 0.3− | 2006 11 27 | 703 | (0.1+ | 2.5+) | | |
| 2006 10 27 | G96 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.4− | 2006 11 27 | 703 | 0.9+ | 1.1− | | |

### 2006 $TD_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.41940 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27872345 | $\omega$ | 275.17786 | | +0.67235994 | +0.73727307 | |
| $a$ | 2.3210636 | $\Omega$ | 37.35008 | | −0.62870154 | +0.61587328 | |
| $e$ | 0.2500930 | $i$ | 6.24873 | | −0.39072560 | +0.27772022 | |
| $P$ | 3.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | 703 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.6− |
| 2005 04 04 | 703 | (1.2− | 4.6−) | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2005 04 04 | 703 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 13 | 104 | 0.0 | 0.0 |
| 2005 04 04 | 703 | 0.6+ | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 13 | 104 | 0.6+ | 0.5− |
| 2005 05 12 | G96 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 13 | 104 | 0.3+ | 0.2− |
| 2005 05 12 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2005 05 12 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2006 08 28 | 703 | 0.6+ | 0.0 | 2006 11 10 | 644 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.6− |
| 2006 08 28 | 703 | (0.9+ | 1.7−) | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2006 08 28 | 703 | 0.9− | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2006 08 28 | 703 | 0.4+ | 0.4− | 2006 11 10 | 644 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.1+ | 2006 11 22 | 704 | 1.0− | 1.0+ |
| 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.3− | 2006 11 22 | 704 | 0.3− | 1.1+ |
| 2006 09 25 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.7− | 1.0+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.2+ | 2006 11 22 | 704 | 1.0+ | 0.3+ |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.2− | | | | |

## 2006 TS$_{43}$ = 2005 GB$_{87}$ = 2005 JO$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.32743 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26378219 | $\omega$ | 268.31313 | | +0.70061920 | | +0.71216066 |
| $a$ | 2.4079035 | $\Omega$ | 46.27263 | | −0.62788202 | | +0.64480280 |
| $e$ | 0.2005136 | $i$ | 3.51232 | | −0.33896445 | | +0.27759061 |
| $P$ | 3.74 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 04 | G96 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.4+ | 0.1− |
| 2005 04 04 | G96 | 0.1+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2005 04 04 | G96 | 0.4+ | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.0 |
| 2005 04 04 | G96 | 0.5− | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.9− |
| 2005 05 04 | 568 | 0.0 | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5− | 0.2+ |
| 2005 05 04 | 568 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.6− | 1.1+ |
| 2005 05 04 | 568 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.6− | 0.8+ |
| 2005 05 05 | 568 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.2− | 0.5− | 2006 11 17 | 703 | (0.5− | 2.1−) |
| 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.4− | 1.0− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.5− | 0.9+ |
| 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 1.3+ | 0.6+ |
| 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.1− | | | | |

## 2006 TT$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.07931 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20255308 | $\omega$ | 21.48162 | | −0.35315936 | | +0.93088234 |
| $a$ | 2.8715088 | $\Omega$ | 227.97006 | | −0.87565057 | | −0.36406726 |
| $e$ | 0.1658805 | $i$ | 7.22896 | | −0.32941545 | | −0.03021748 |
| $P$ | 4.87 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 16 | 691 | 0.4+ | 0.1− | 2005 08 26 | 644 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1− |
| 1994 03 16 | 691 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.6+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.5− |
| 1994 03 16 | 691 | 0.4− | 0.0 | 2006 09 27 | G96 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1− |
| 2001 11 11 | 691 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.5− | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2001 11 11 | 691 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2001 11 11 | 691 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2005 07 31 | 644 | 0.2+ | 0.1− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.7+ | 0.5− |
| 2005 07 31 | 644 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.7− | 0.4− |
| 2005 07 31 | 644 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2005 08 26 | 644 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2005 08 26 | 644 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.3+ | 0.0 | | | | |

## 2006 TZ$_{43}$ = 2001 FD$_{140}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 156.83169 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27478713 | $\omega$ | 12.73841 | | −0.56582811 | | +0.82109726 |
| $a$ | 2.3431771 | $\Omega$ | 222.86543 | | −0.76583661 | | −0.55711253 |
| $e$ | 0.1632754 | $i$ | 6.33692 | | −0.30550425 | | −0.12419709 |
| $P$ | 3.59 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 691 | 0.3+ | 0.1+ | 2001 04 24 | 699 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 1999 12 16 | 691 | 0.0 | 0.4− | 2001 04 24 | 699 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1999 12 16 | 691 | 0.2− | 0.3− | 2001 04 24 | 699 | 0.7− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.3− |
| 2001 03 21 | 608 | 1.4− | 0.1+ | 2005 02 10 | 809 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 |
| 2001 03 21 | 608 | 1.3− | 0.3+ | 2005 02 10 | 809 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2001 03 21 | 608 | 1.0− | 0.9+ | 2005 02 10 | 809 | 0.5− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 03 24 | 699 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 03 24 | 699 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2001 03 24 | 699 | 0.5+ | 0.5− | 2006 10 12 | 691 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2001 03 24 | 699 | 0.5+ | 0.8− | 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 03 24 | 704 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.5+ | 0.7+ | 2006 11 11 | G96 | (2.6− | 1.0−) |
| 2001 03 24 | 704 | 0.6+ | 0.8+ | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.1− |
| 2001 03 24 | 704 | 1.3+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 2001 03 24 | 704 | 1.2+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 1.5− | 1.1− |
| 2001 04 24 | 699 | 0.5+ | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.6− | 0.4− |

## 2006 TB$_{44}$ = 2004 JP$_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.86268 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17846555 | $\omega$ | 22.40913 | | −0.37868133 | | +0.92363616 |
| $a$ | 3.1243987 | $\Omega$ | 225.39688 | | −0.86125169 | | −0.37505718 |
| $e$ | 0.1104642 | $i$ | 4.76409 | | −0.33888933 | | −0.07892000 |
| $P$ | 5.52 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 704 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2004 05 15 | 704 | 0.5− | 0.3+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2004 05 15 | 704 | 0.1− | 1.0+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2004 05 15 | 704 | 0.7− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 05 17 | 704 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 1.2− | 0.3+ |
| 2004 05 17 | 704 | 0.7+ | 0.3− | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 11 | G96 | (1.8− | 0.7+) |
| 2004 05 17 | 704 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2+ | 1.1+ |
| 2004 05 17 | 704 | 0.2+ | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 1.1+ |
| 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 09 27 | G96 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.6− |
| 2006 09 27 | G96 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | | | |
| 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ | | | | |

## 2006 TK$_{44}$ = 2003 AD$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.63923 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21572527 | $\omega$ | 97.79095 | | −0.78403948 | | −0.60958148 |
| $a$ | 2.7533961 | $\Omega$ | 44.74569 | | +0.48357062 | | −0.71805247 |
| $e$ | 0.0954784 | $i$ | 9.56833 | | +0.38915492 | | −0.33587361 |
| $P$ | 4.57 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.9+ | 0.5− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 2003 01 10 | 704 | 1.2+ | 0.8− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2003 01 10 | 704 | 1.3+ | 0.9− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2003 01 13 | 704 | 0.2− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2003 01 13 | 704 | 0.9− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.3− | 0.5− |
| 2003 01 13 | 704 | 1.1− | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2003 01 13 | 704 | 1.2− | 0.9+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.8+ | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 18 | 704 | 1.4+ | 0.4− | | |
| 2006 09 25 | G96 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | (3.1− | 0.0 ) | | |
| 2006 09 25 | G96 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.1− | 0.7+ | | |
| 2006 09 25 | G96 | 0.6− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.9+ | 0.7+ | | |
| 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.0 | 2006 11 27 | 703 | (0.7− | 1.9+) | | |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | | | | | | |

**2006 TM$_{44}$ = 1996 FB$_{19}$ = 2002 XN$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.41956 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24193610 | $\omega$ | 62.04157 | | −0.35541307 | −0.93278379 | |
| $a$ | 2.5507561 | $\Omega$ | 48.90663 | | +0.82719472 | −0.34375680 | |
| $e$ | 0.0574474 | $i$ | 4.56378 | | +0.43523609 | −0.10837738 | |
| $P$ | 4.07 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 24 | 809 | (1.0+ | 2.7+) | 2004 03 14 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.2+ | | |
| 1996 03 24 | 809 | (0.3− | 4.5+) | 2004 04 23 | 691 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 1996 03 24 | 809 | (3.0− | 6.1+) | 2004 04 23 | 691 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.2+ | | |
| 1996 03 26 | 809 | (7.3− | 5.6+) | 2004 04 23 | 691 | 0.8+ | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.3+ | | |
| 1996 03 26 | 809 | (8.6− | 4.0+) | 2006 10 12 | 691 | 0.4− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | |
| 1996 03 26 | 809 | (8.0− | 3.0+) | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2002 11 07 | 291 | 0.2− | 0.3− | 2006 10 12 | 691 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.2− | | |
| 2002 11 07 | 291 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2002 11 07 | 291 | 0.4+ | 0.3− | 2006 10 16 | 691 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.5− | | |
| 2002 12 02 | 704 | 0.2− | 0.6− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.7+ | 0.3− | | |
| 2002 12 02 | 704 | 0.7− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 1.1+ | | |
| 2002 12 02 | 704 | 0.0 | 1.3− | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.4+ | | |
| 2002 12 05 | 704 | 0.3− | 0.8− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 18 | 704 | 1.2+ | 0.9+ | | |
| 2002 12 05 | 704 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.4+ | | |
| 2002 12 05 | 704 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.4− | | |
| 2002 12 05 | 704 | 0.5+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.1− | 0.4− | | |
| 2004 03 14 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 27 | 703 | 0.8− | 0.2− | | |
| 2004 03 14 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.7+ | 2006 11 27 | 703 | 0.0 | 0.1+ | | |

**2006 TT$_{44}$ = 2003 VV$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.93796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31826439 | $\omega$ | 108.24222 | | +0.86323990 | +0.50470627 | |
| $a$ | 2.1246009 | $\Omega$ | 221.44731 | | −0.46834166 | +0.79381285 | |
| $e$ | 0.2280330 | $i$ | 0.81412 | | −0.18834269 | +0.33931215 | |
| $P$ | 3.10 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 15 | 291 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | 703 | 0.1+ | 0.0 | | |
| 2003 11 15 | 291 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 12 | 703 | (0.4+ | 1.6−) | | |
| 2003 11 15 | 291 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.7− | | |
| 2003 11 16 | 291 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 1.3− | 0.1+ | | |
| 2003 11 16 | 291 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.5+ | 0.6− | | |
| 2003 11 16 | 291 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.8+ | 0.1− | 2006 11 17 | 703 | 1.3− | 0.1− | | |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.1− | | |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.1− | 0.1− | | |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.1− | 0.1− | | |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− | | |
| 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 12 | 703 | 0.2+ | 0.4− | | | | | | |
| 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 12 | 703 | 0.4+ | 0.2− | | | | | | |

**2006 TU$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.21644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26511995 | $\omega$ | 45.30667 | | +0.00014807 | −0.99548921 | |
| $a$ | 2.3997967 | $\Omega$ | 44.94552 | | +0.87531452 | −0.04574803 | |
| $e$ | 0.0503156 | $i$ | 7.71820 | | +0.48355399 | +0.08311650 | |
| $P$ | 3.72 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 09 | 599 | 0.1+ | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | (1.5+ | 0.2−) | | |
| 2002 09 09 | 599 | 0.1+ | 1.3+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.3+ | 0.5+ | | |
| 2002 09 09 | 599 | 0.6+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 1.1+ | 0.3+ | | |
| 2002 10 01 | 608 | 0.0 | 0.7− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 2002 10 01 | 608 | 0.9− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.1− | | |
| 2002 10 01 | 608 | 0.2− | 0.7− | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 1.0+ | | |
| 2004 01 29 | 703 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.5+ | 2006 11 18 | 704 | 1.2+ | 0.4+ | | |
| 2004 01 29 | 703 | 0.1+ | 0.7+ | 2006 11 11 | 703 | 0.9− | 1.1+ | 2006 11 18 | 704 | 0.2+ | 0.1− | | |
| 2004 01 29 | 703 | 0.8− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.6+ | 2006 11 21 | 704 | 0.5− | 0.8− | | |
| 2004 01 29 | 703 | 0.8+ | 0.8− | 2006 11 11 | 703 | 0.3− | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.0 | | |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 12 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.7+ | | |
| 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.2+ | | |
| 2006 09 26 | G96 | 0.2− | 0.4− | 2006 11 12 | G96 | 0.5+ | 0.5− | 2006 11 27 | 703 | 0.4− | 0.3− | | |
| 2006 09 26 | G96 | 0.3− | 0.5− | 2006 11 12 | G96 | 0.4+ | 0.5− | 2006 11 27 | 703 | 0.9− | 0.4+ | | |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.7− | 0.5− | | |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.2− | 2006 11 27 | 703 | 1.1− | 0.3− | | |
| 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.4− | 2006 11 29 | 704 | (1.6− | 1.9+) | | |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.3− | 2006 11 29 | 704 | 1.2− | 0.6+ | | |
| 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 14 | 691 | 0.5+ | 0.1− | 2006 11 29 | 704 | 1.5− | 0.8+ | | |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.4+ | 0.1− | 2006 11 29 | 704 | 1.0− | 1.0+ | | |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | (1.7+ | 0.7−) | 2006 11 29 | 704 | 0.7− | 0.9+ | | |

**2006 TX$_{44}$ = 2005 JZ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.85192 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29766117 | $\omega$ | 225.09481 | | +0.17649375 | +0.98055506 | |
| $a$ | 2.2215423 | $\Omega$ | 55.25603 | | −0.87110832 | +0.19618750 | |
| $e$ | 0.1639874 | $i$ | 5.99361 | | −0.45827966 | +0.00471605 | |
| $P$ | 3.31 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 19 | 691 | 0.6+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.0 | | |
| 2005 04 19 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.5− | 0.7− | | |
| 2005 04 19 | 691 | 0.4+ | 0.0 | 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2005 05 08 | 691 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2005 05 08 | 691 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2005 05 08 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2005 05 11 | G96 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.6− | | |
| 2005 05 11 | G96 | 0.6− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.3− | | |
| 2005 05 11 | G96 | 0.6− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− | | |
| 2005 05 11 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.4− | | |
| 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.7+ | 0.3+ | | | | | | |
| 2006 09 30 | G96 | 0.5− | 0.6− | 2006 10 28 | G96 | 0.0 | 0.3− | | | | | | |

**2006 TY$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.71844 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21412498 | $\omega$ | 182.35957 | | −0.53735529 | +0.83764352 | |
| $a$ | 2.7670977 | $\Omega$ | 55.15307 | | −0.77179537 | −0.44158863 | |
| $e$ | 0.0181447 | $i$ | 6.85773 | | −0.33997233 | −0.32148532 | |
| $P$ | 4.60 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 08 | 644 | 0.5− | 0.2+ | 2005 08 10 | E12 | 0.7− | 1.3+ | 2006 10 28 | G96 | 0.1+ | 0.5− | | |
| 2001 10 08 | 644 | 0.3− | 0.1+ | 2005 08 10 | E12 | 0.7− | 1.0− | 2006 10 28 | G96 | 0.3+ | 0.4− | | |
| 2001 10 08 | 644 | 0.4− | 0.1− | 2005 08 10 | E12 | 0.3+ | 0.7− | 2006 10 28 | G96 | 0.4+ | 0.1+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.1+ | 0.3+ | 2005 08 10 | E12 | 0.3+ | 0.6− | 2006 11 01 | 691 | 0.4+ | 0.2− |
| 2001 10 16 | 644 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 10 16 | 644 | 0.2+ | 0.9+ | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | (1.1− | 2.0−) |
| 2001 10 24 | 644 | 0.7− | 1.0+ | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2001 10 24 | 644 | 0.6− | 1.0+ | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2001 10 24 | 644 | 0.5− | 1.0+ | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 03 16 | 691 | 0.6+ | 0.8+ | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2004 03 16 | 691 | 0.1+ | 0.6+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 12 | 703 | 0.0 | 0.5− |
| 2004 03 16 | 691 | 0.0 | 0.7+ | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 12 | 703 | 1.2+ | 0.9− |
| 2004 05 28 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 12 | 703 | 0.9+ | 0.3− |
| 2004 05 28 | 691 | 0.6+ | 0.1+ | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 12 | 703 | (1.6+ | 1.1−) |
| 2004 05 28 | 691 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2005 07 18 | 644 | 0.3+ | 0.8+ | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2005 07 18 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2005 07 18 | 644 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.2− | 0.1− |

**2006 TD$_{45}$ = 2001 YN$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.31528 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18812918 | $\omega$ | 284.57071 | | +0.95778452 | | −0.28547387 |
| $a$ | 3.0164672 | $\Omega$ | 92.02515 | | +0.27511561 | | +0.87586661 |
| $e$ | 0.0943891 | $i$ | 1.94752 | | +0.08342788 | | +0.38905314 |
| $P$ | 5.24 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.4− | 0.8− | 2005 07 12 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.5− |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.4− | 0.8− |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.8− |
| 2001 12 17 | 704 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.2+ | 0.4+ |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 16 | 621 | 0.1+ | 0.3− |
| 2001 12 18 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 16 | 621 | 0.5+ | 0.2− |
| 2001 12 18 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 16 | 621 | 0.0 | 0.3− |
| 2001 12 18 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.7− | 2006 11 17 | 703 | 0.8− | 0.0 |
| 2005 07 12 | G96 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.6− | 1.2+ |
| 2005 07 12 | G96 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.0 | 0.3+ |

**2006 TF$_{45}$ = 1996 AE$_{17}$**

Id. Minor Planet Center; 1994 SA$_8$ = 1996 AE$_{17}$ (*MPO* 6721) is invalid.

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.10717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25312184 | $\omega$ | 117.83449 | | +0.59020557 | | +0.80724422 |
| $a$ | 2.4750443 | $\Omega$ | 188.34017 | | −0.74946444 | | +0.54621721 |
| $e$ | 0.0496947 | $i$ | 1.48622 | | −0.29993407 | | +0.22361467 |
| $P$ | 3.89 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 02 | 691 | 0.1− | 0.1− | 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.6+ | 0.3− |
| 1994 10 02 | 691 | 1.0+ | 0.6+ | 2002 10 31 | 644 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.5− |
| 1994 10 02 | 691 | 0.3− | 1.6− | 2002 10 31 | 644 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 1994 10 11 | 691 | 0.3+ | 0.1+ | 2004 02 12 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1994 10 11 | 691 | 0.1+ | 0.1− | 2004 02 12 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 1994 10 11 | 691 | 0.6− | 0.4− | 2004 02 12 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 1996 01 13 | 691 | 0.2+ | 0.1+ | 2004 03 20 | 691 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.7+ | 0.5+ |
| 1996 01 13 | 691 | 0.2+ | 0.0 | 2004 03 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 1996 01 13 | 691 | 0.3+ | 0.0 | 2004 03 20 | 691 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.8− | 0.4+ |
| 1996 01 19 | 691 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 1996 01 19 | 691 | 0.6− | 0.1− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.8− |
| 1996 01 19 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.9− |
| 2000 02 27 | 691 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 1.0+ | 0.2− |
| 2000 02 27 | 691 | 0.1− | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.8+ | 0.8− |
| 2000 02 27 | 691 | 0.0 | 0.7− | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 1.9− | 1.2+ |
| 2002 10 15 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 1.1− | 0.5+ |
| 2002 10 15 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2002 10 15 | 644 | 0.3+ | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.8− | 0.6+ |

**2006 TG$_{45}$ = 1995 UM$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.69721 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18483958 | $\omega$ | 251.51703 | | +0.79686748 | | +0.60124479 |
| $a$ | 3.0521514 | $\Omega$ | 71.48178 | | −0.52806927 | | +0.74077822 |
| $e$ | 0.2398206 | $i$ | 3.58062 | | −0.29350481 | | +0.29958694 |
| $P$ | 5.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 1995 10 20 | 691 | 0.6+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 16 | 621 | 0.1− | 0.1− |
| 1995 10 20 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 16 | 621 | 0.1+ | 0.2− |
| 1995 10 25 | 691 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 16 | 621 | 0.2+ | 0.7+ |
| 1995 10 25 | 691 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 26 | 621 | 0.0 | 0.1+ |
| 1995 10 25 | 691 | 0.9− | 0.3− | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 26 | 621 | 0.1+ | 0.0 |
| 2004 03 26 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.5+ | 2006 11 26 | 621 | 0.1+ | 0.3+ |
| 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1− | 2006 11 27 | 621 | 0.0 | 0.1+ |
| 2004 03 26 | 691 | 0.1− | 0.6− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 27 | 621 | 0.2+ | 0.0 |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.3− | 2006 11 28 | 621 | 0.0 | 0.1− |
| 2006 10 12 | 691 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.3− | 0.5− | | | | |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.5− | 0.3− | | | | |

**2006 TK$_{45}$ = 2002 XZ$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.44747 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23596558 | $\omega$ | 297.83512 | | +0.97796876 | | +0.19663079 |
| $a$ | 2.5936037 | $\Omega$ | 50.91140 | | −0.14518942 | | +0.88196470 |
| $e$ | 0.2607029 | $i$ | 5.18143 | | −0.14999048 | | +0.42833936 |
| $P$ | 4.18 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.6+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 13 | 644 | 0.2− | 0.4+ |
| 2002 12 06 | 704 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.5− | 0.3− | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2002 12 06 | 704 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.6+ | 1.0+ |
| 2002 12 06 | 704 | 0.5− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2002 12 11 | 704 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.7+ | 0.3− | 2006 11 17 | 703 | (0.0 | 1.8−) |
| 2002 12 11 | 704 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 1.2− | 1.0+ |
| 2002 12 11 | 704 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.5− |
| 2005 05 04 | G96 | 0.4− | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2005 05 04 | G96 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.4+ |
| 2005 05 04 | G96 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.7+ | 1.2+ |
| 2005 05 04 | G96 | 1.1− | 1.2+ | 2006 11 11 | 703 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2005 05 12 | 691 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.8− | 0.3+ |
| 2005 05 12 | 691 | 0.7+ | 0.4+ | 2006 11 11 | 703 | 0.6− | 0.7− | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2005 05 12 | 691 | 0.0 | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.7− | 2006 11 18 | 704 | 0.7+ | 0.7+ |
| 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | (0.0 | 1.6−) | 2006 11 21 | 704 | 1.1− | 0.9+ |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.4− | 1.2− |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.6− |
| 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.1− | 0.8− |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.4− | 1.2+ |
| 2006 10 20 | 644 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.4− |
| 2006 10 20 | 644 | 0.5− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.2− |
| 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.3+ | | | | |

**2006 TV$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.54865 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19974972 | $\omega$ | 214.42055 | | +0.79353379 | | −0.60852274 |
| $a$ | 2.8983129 | $\Omega$ | 183.06456 | | +0.56658402 | | +0.74006564 |
| $e$ | 0.0652708 | $i$ | 2.19883 | | +0.22200602 | | +0.28636153 |
| $P$ | 4.93 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 644 | 0.3+ | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2001 10 25 | 644 | 0.5− | 1.1+ | 2006 10 12 | 691 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.3− | 0.1+ | | |
| 2001 10 25 | 644 | (2.0− | 2.0+) | 2006 10 12 | 691 | 0.5− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.7+ | 0.3− | 2006 11 12 | G96 | 0.6− | 0.8− | | |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2− | 0.4− | | |
| 2005 07 04 | G96 | 0.6+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2005 07 04 | G96 | 0.5− | 0.6− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.1− | 0.4− | | |
| 2005 07 04 | G96 | 0.6+ | 0.4− | 2006 10 20 | 691 | 0.2− | 0.1+ | | | | | | |
| 2005 07 04 | G96 | 0.4− | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.3+ | | | | | | |

**2006 TZ$_{45}$ = 2004 GP$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.71387 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22595002 | $\omega$ | 251.20412 | | +0.05001109 | −0.99865871 | |
| $a$ | 2.6696918 | $\Omega$ | 195.94703 | | +0.93372482 | +0.05151422 | |
| $e$ | 0.0832940 | $i$ | 2.79634 | | +0.35448110 | +0.00520168 | |
| $P$ | 4.36 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− | | |
| 2004 04 14 | 291 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.4− | 0.5+ | | |
| 2004 04 14 | 291 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | | |
| 2004 04 22 | 691 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.6− | | |
| 2004 04 22 | 691 | 0.3− | 0.4− | 2006 10 28 | 691 | 0.4− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.7− | | |
| 2004 04 22 | 691 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.7− | | |
| 2006 10 12 | 691 | 0.6+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.9− | | |
| 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 | | | | | | |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ | | | | | | |

**2006 TA$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.02346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21039794 | $\omega$ | 55.19641 | | −0.22041813 | −0.97209024 | |
| $a$ | 2.7996800 | $\Omega$ | 47.74825 | | +0.85571641 | −0.23225173 | |
| $e$ | 0.0194748 | $i$ | 6.23200 | | +0.46815090 | −0.03316172 | |
| $P$ | 4.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 291 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.1+ | | |
| 2004 04 20 | 291 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.0 | | |
| 2004 04 20 | 291 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.6− | 0.1− | 2006 11 13 | G96 | 0.0 | 0.3− | | |
| 2004 05 14 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.1− | | |
| 2004 05 14 | 691 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.6+ | 0.6− | | |
| 2004 05 14 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.3− | | |
| 2006 10 12 | 691 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.4− | 0.8− | 2006 11 20 | G96 | 0.5− | 0.1+ | | |
| 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.3+ | 0.6− | 2006 11 20 | G96 | 0.4− | 0.0 | | |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.8+ | 1.1− | 2006 11 20 | G96 | 0.8− | 0.0 | | |
| 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.6− | 0.9+ | 2006 11 20 | G96 | 0.3− | 0.0 | | |
| 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 12 | 703 | 0.4− | 0.5+ | 2006 11 21 | G96 | 0.4− | 0.4+ | | |
| 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 12 | 703 | (1.9− | 0.1+) | 2006 11 21 | G96 | 0.5− | 0.4+ | | |
| 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.4+ | 0.1+ | 2006 11 21 | G96 | 0.6− | 0.3− | | |
| 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 12 | 703 | 0.4− | 0.7− | 2006 11 21 | G96 | 0.5− | 0.4+ | | |
| 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.1− | | | | | | |
| 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.0 | | | | | | |

**2006 TF$_{46}$ = 2003 CB$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.96604 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19643096 | $\omega$ | 310.88907 | | +0.70143463 | −0.71208908 | |
| $a$ | 2.9308669 | $\Omega$ | 94.54070 | | +0.66272318 | +0.63597861 | |
| $e$ | 0.0992329 | $i$ | 1.74229 | | +0.26227363 | +0.29742286 | |
| $P$ | 5.02 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 07 | I03 | 0.6+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.0 | | |
| 2003 02 07 | I03 | 0.6− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 2003 02 07 | I03 | 0.4− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.3− | | |
| 2003 02 08 | I03 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.4− | 0.5− | | |
| 2003 02 08 | I03 | 0.7+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ | | |
| 2003 02 08 | I03 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.1+ | | |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.0 | | |
| 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2+ | | | | | | |
| 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.3− | | | | | | |

**2006 TG$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.05095 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21269451 | $\omega$ | 81.59581 | | +0.47267047 | +0.87729413 | |
| $a$ | 2.7794905 | $\Omega$ | 216.98527 | | −0.85317697 | +0.43190779 | |
| $e$ | 0.1571081 | $i$ | 7.95812 | | −0.22061660 | +0.20930997 | |
| $P$ | 4.63 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2000 04 28 | 691 | 0.3+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.3+ | | |
| 2000 04 28 | 691 | 0.3− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2+ | | |
| 2001 09 28 | 644 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.3+ | 0.5+ | 2006 11 12 | G96 | 0.6+ | 0.8− | | |
| 2001 09 28 | 644 | 0.4− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.7− | | |
| 2001 09 28 | 644 | 0.2− | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.2− | | |
| 2004 03 18 | 291 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.2− | 0.5− | | |
| 2004 03 18 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.8+ | 0.0 | | |
| 2004 03 18 | 291 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.3− | 0.0 | | |
| 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 28 | G96 | 0.2+ | 1.0− | 2006 11 12 | G96 | 0.7+ | 0.4+ | | |
| 2006 09 25 | G96 | 0.1− | 0.7− | 2006 10 28 | G96 | 0.6− | 0.4− | 2006 11 12 | G96 | 0.5− | 0.1− | | |
| 2006 09 25 | G96 | 0.0 | 0.6− | 2006 10 28 | G96 | 0.3− | 0.4− | | | | | | |
| 2006 09 25 | G96 | 0.2+ | 0.9− | 2006 10 28 | G96 | 0.4− | 0.5− | | | | | | |

**2006 TH$_{46}$ = 2004 HO$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.70054 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19470154 | $\omega$ | 38.81792 | | −0.31792013 | +0.94467832 | |
| $a$ | 2.9481967 | $\Omega$ | 212.87316 | | −0.90273407 | −0.32761719 | |
| $e$ | 0.0203055 | $i$ | 8.54849 | | −0.28982407 | −0.01580634 | |
| $P$ | 5.06 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 06 09 | 691 | 0.0 | 0.2+ | 2005 07 30 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.4+ | 0.3− | | |
| 1994 06 09 | 691 | 0.0 | 0.4+ | 2005 07 30 | 644 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.2+ | 0.1+ | | |
| 1994 06 09 | 691 | 0.1+ | 0.3+ | 2005 07 30 | 644 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 | | |
| 2004 04 28 | 691 | 0.2− | 0.1+ | 2005 08 24 | 644 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ | | |
| 2004 04 28 | 691 | 0.3− | 0.1+ | 2005 08 24 | 644 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.2− | 0.3+ | | |
| 2004 04 28 | 691 | 0.0 | 0.1− | 2005 08 24 | 644 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.3+ | | |
| 2004 05 13 | 691 | 0.1+ | 0.1+ | 2005 09 02 | 644 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.4+ | | |
| 2004 05 13 | 691 | 0.0 | 0.2+ | 2005 09 02 | 644 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 | | |
| 2004 05 13 | 691 | 0.3+ | 0.2+ | 2005 09 02 | 644 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.1+ | | |
| 2005 07 30 | 644 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.2+ | | |
| 2005 07 30 | 644 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.3+ | 0.1− | | | | | | |
| 2005 07 30 | 644 | 0.3− | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.1− | | | | | | |

**2006 TQ$_{46}$ = 1995 OZ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.39647 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27748502 | $\omega$ | 188.52907 | | +0.85975701 | −0.50981001 | |
| $a$ | 2.3279645 | $\Omega$ | 202.20172 | | +0.47314894 | +0.81739387 | |
| $e$ | 0.2347029 | $i$ | 4.58309 | | +0.19221856 | +0.26825550 | |
| $P$ | 3.55 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 27 | 691 | 1.0+ | 0.3+ | 2006 10 16 | 703 | 1.2− | 0.6+ | 2006 11 09 | 644 | 0.5+ | 0.4+ |
| 1995 07 27 | 691 | 0.5+ | 0.4+ | 2006 10 16 | 703 | 0.2+ | 0.7− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 1995 07 27 | 691 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1995 07 30 | 691 | 0.3− | 1.1− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 1995 07 30 | 691 | 0.6− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.3− |
| 1995 07 30 | 691 | 0.5− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.3− |
| 2006 09 26 | G96 | 0.0 | 0.9− | 2006 10 18 | 691 | 1.0+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.6+ |
| 2006 09 26 | G96 | 0.6− | 0.5− | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.4+ |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.7− | 0.9+ | 2006 11 28 | 704 | (0.5+ | 1.9+) |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 02 | 703 | 1.0+ | 0.8− | 2006 11 28 | 704 | 0.2+ | 0.3+ |
| 2006 10 16 | 703 | 0.4+ | 1.0+ | 2006 11 02 | 703 | 0.3− | 0.6− | 2006 11 28 | 704 | 0.4+ | 1.0+ |
| 2006 10 16 | 703 | 0.5− | 0.3+ | 2006 11 02 | 703 | 1.1− | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.1− |

**2006 TT$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.59275 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29631484 | $\omega$ | 172.64260 | | −0.78999570 | | +0.60859910 |
| $a$ | 2.2282664 | $\Omega$ | 45.12558 | | −0.56772244 | | −0.68039340 |
| $e$ | 0.1075896 | $i$ | 6.01473 | | −0.23151248 | | −0.40825477 |
| $P$ | 3.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.3− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1996 10 06 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 1996 10 06 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.5− | 0.0 |
| 1998 05 02 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.4− | 1.3+ |
| 1998 05 02 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.3− | 0.4− | 2006 11 11 | 703 | (3.2− | 4.1−) |
| 1998 05 02 | 691 | 0.4− | 0.4− | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 11 | 703 | (3.4+ | 3.4−) |
| 2001 02 01 | 699 | 0.5− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2001 02 01 | 699 | 0.5+ | 0.8+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2001 02 01 | 699 | 0.5+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.5+ | 0.4− |
| 2001 02 01 | 699 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2006 09 26 | G96 | 0.5+ | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.9− |
| 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 28 | 691 | 0.3+ | 0.3− | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2006 09 26 | G96 | 0.4− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ | | | | |

**2006 TX$_{46}$ = 2003 BO$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.80062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21615335 | $\omega$ | 206.95361 | | +0.46200976 | | −0.87747012 |
| $a$ | 2.7497597 | $\Omega$ | 215.94768 | | +0.84812163 | | +0.47960256 |
| $e$ | 0.1466899 | $i$ | 12.67545 | | +0.25930037 | | −0.00525085 |
| $P$ | 4.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 644 | 0.4− | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.3+ | 0.1− |
| 2003 01 25 | 644 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.8− | 0.6+ |
| 2003 01 25 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 14 | 704 | 1.2+ | 0.8+ |
| 2003 01 28 | 704 | 0.9+ | 0.7− | 2006 10 20 | 691 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.7− | 0.1+ |
| 2003 01 28 | 704 | 0.5− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 14 | 704 | (1.1+ | 2.1+) |
| 2003 01 28 | 704 | 0.0 | 0.8+ | 2006 11 02 | 703 | (2.6− | 1.9+) | 2006 11 14 | 704 | (0.8+ | 1.5+) |
| 2003 01 28 | 704 | 0.1+ | 0.4+ | 2006 11 02 | 703 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2004 05 14 | 691 | 0.1− | 0.4+ | 2006 11 02 | 703 | (1.7− | 0.1−) | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2004 05 14 | 691 | 0.2− | 0.6+ | 2006 11 02 | 703 | 0.9− | 0.8+ | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2004 05 14 | 691 | 0.5+ | 0.3+ | 2006 11 02 | 703 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 02 | 703 | 0.4− | 0.3− | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2006 09 27 | G96 | 0.3− | 0.1+ | 2006 11 02 | 703 | 0.9− | 0.7− | 2006 11 17 | 703 | 0.1+ | 0.9− |
| 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 02 | 703 | 0.8− | 0.3− | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.5− | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 1.0+ | 0.5+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.9+ | 1.3+ |
| 2006 10 16 | 703 | (2.8+ | 2.8−) | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.8+ | 1.0+ |
| 2006 10 16 | 703 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 20 | 704 | 1.1+ | 0.9+ |
| 2006 10 16 | 703 | 0.9− | 1.0− | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.6+ |
| 2006 10 16 | 703 | 0.2+ | 0.8− | 2006 11 10 | 644 | 0.3− | 0.1+ | | | | |
| 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.0 | | | | |

**2006 TA$_{47}$ = 1996 VR$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.35925 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19639509 | $\omega$ | 179.44203 | | +0.88345212 | | −0.46836546 |
| $a$ | 2.9312237 | $\Omega$ | 208.49615 | | +0.42976182 | | +0.82037287 |
| $e$ | 0.0669263 | $i$ | 1.45199 | | +0.18659350 | | +0.32805815 |
| $P$ | 5.02 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 10 | 691 | 0.6+ | 0.2+ | 2005 07 15 | G96 | 0.4+ | 0.7− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 1996 11 10 | 691 | 0.6+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 1996 11 10 | 691 | 0.5+ | 0.0 | 2006 10 12 | 691 | 0.9+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.0 |
| 1996 11 17 | 691 | 1.3− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 1996 11 17 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.6− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 1996 11 17 | 691 | 0.5− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.7− |
| 2000 07 31 | 807 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2000 07 31 | 807 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.8− | 0.2+ |
| 2003 01 28 | 645 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 1.1− | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2005 07 15 | G96 | 0.4+ | 0.6− | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2005 07 15 | G96 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2005 07 15 | G96 | 0.5− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1− | | | | |

**2006 TB$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.41338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17181389 | $\omega$ | 35.58692 | | +0.14692085 | | −0.98294946 |
| $a$ | 3.2045265 | $\Omega$ | 46.25136 | | +0.86840930 | | +0.07466208 |
| $e$ | 0.0676788 | $i$ | 8.80410 | | +0.47358163 | | +0.16803549 |
| $P$ | 5.74 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 644 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.5+ |
| 2002 01 13 | 644 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2− |
| 2002 01 13 | 644 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2002 01 13 | 644 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.3− |
| 2002 01 13 | 644 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.7+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.9− |
| 2002 01 13 | 644 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2003 03 27 | 691 | 0.1+ | 0.7− | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.1− |
| 2003 03 27 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.7+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2003 03 27 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.4− | 0.2− |
| 2003 04 09 | 691 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.9− |
| 2003 04 09 | 691 | 0.1+ | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2003 04 09 | 691 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 1.2+ |
| 2006 10 12 | 691 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.3− | 0.5+ | 2006 11 18 | 704 | 1.0− | 1.2+ |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.9− | 0.7− |
| 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.6− | 0.9+ |

**2006 TF$_{47}$ = 1989 TG$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.55059 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17662509 | $\omega$ | 325.25821 | | +0.98014971 | | −0.14640995 |
| $a$ | 3.1460657 | $\Omega$ | 43.78171 | | +0.19506647 | | +0.83267824 |
| $e$ | 0.2293681 | $i$ | 11.13990 | | −0.03543466 | | +0.53405156 |
| $P$ | 5.58 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 10 07 | 809 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 1989 10 07 | 809 | 1.6− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.7+ | 0.4− |
| 1989 10 07 | 809 | (3.7− | 0.1+) | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 1989 10 08 | 809 | 0.5+ | 0.7− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.8+ | 0.7+ |
| 1989 10 08 | 809 | 0.8+ | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.7+ |
| 1989 10 08 | 809 | 0.2+ | 0.8+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.8+ |
| 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.2+ | 1.1+ |
| 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.0 |
| 2006 09 26 | G96 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.8− | 0.6+ |
| 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.2− | 0.4+ |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 17 | 704 | 1.0− | 0.1+ |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.7− |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 1.1+ | 1.0− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.7− | 0.3+ |
| 2006 10 23 | 644 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2006 10 23 | 644 | 0.0 | 0.4+ | 2006 11 10 | 644 | 0.3+ | 0.5− | 2006 11 19 | 704 | 0.5− | 0.0 |
| 2006 10 23 | 644 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.4+ | 1.0− | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.3− |
| 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.1− |
| 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.4+ | 0.9− |
| 2006 10 28 | 704 | (0.3+ | 2.2+) | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 11 29 | 704 | 0.2− | 1.7+ |
| 2006 10 28 | 704 | 0.0 | 0.7− | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.6− | 1.0+ |
| 2006 10 28 | 704 | 0.8+ | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.0 | 0.2− |
| 2006 10 28 | 704 | 0.5− | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.5− | | | | |

**2006 TJ$_{47}$ = 2002 VE$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.13017 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24595651 | $\omega$ | 97.43325 | | +0.53546057 | | +0.84404808 |
| $a$ | 2.5228834 | $\Omega$ | 205.01081 | | −0.79971596 | | +0.49552596 |
| $e$ | 0.1100997 | $i$ | 3.98849 | | −0.27154440 | | +0.20502892 |
| $P$ | 4.01 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.5+ | 2006 11 10 | 644 | 0.4+ | 0.1+ |
| 2002 11 04 | 644 | 0.7− | 0.2+ | 2006 10 16 | 691 | 0.7+ | 0.4+ | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 2002 11 04 | 644 | 0.4+ | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.4+ | 0.2+ |
| 2002 11 06 | 704 | 0.3+ | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.8− |
| 2002 11 06 | 704 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2002 11 06 | 704 | 0.1− | 0.7− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (0.5− | 1.7−) |
| 2002 11 06 | 704 | 0.2+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.9− | 1.3− |
| 2004 02 17 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 11 | 644 | 0.0 | 0.7− |
| 2004 02 17 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 644 | 0.0 | 0.2− |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.3+ |
| 2006 07 22 | G96 | 0.2− | 0.9− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2006 07 22 | G96 | 0.7+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2006 07 22 | G96 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2006 07 22 | G96 | 0.3− | 0.8− | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.6− |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2006 09 26 | G96 | (3.4− | 1.0−) | 2006 10 28 | G96 | 0.5+ | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.5− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2006 10 12 | 691 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.8+ |
| 2006 10 16 | 703 | 0.8− | 1.3+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 1.1+ |
| 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.6− |
| 2006 10 16 | 703 | 1.1− | 1.1+ | 2006 11 09 | 644 | 0.3+ | 0.4+ | | | | |

**2006 TP$_{47}$ = 2001 SV$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.43622 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21622432 | $\omega$ | 334.08618 | | +0.70486880 | | −0.70898591 |
| $a$ | 2.7491579 | $\Omega$ | 71.08556 | | +0.65484044 | | +0.63828756 |
| $e$ | 0.1087925 | $i$ | 1.35302 | | +0.27266092 | | +0.29987992 |
| $P$ | 4.56 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.2− | 0.6− | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2001 08 19 | 807 | 0.2− | 0.6− | 2006 10 20 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | (1.5− | 1.9+) |
| 2001 09 19 | 704 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 09 19 | 704 | (1.7− | 0.8+) | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2001 09 19 | 704 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.5− | 0.2− |
| 2001 09 19 | 704 | 0.5− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.9− | 1.1− |
| 2001 09 21 | 704 | 1.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2001 09 21 | 704 | 0.6− | 1.0+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.8+ | 0.1− |
| 2001 09 21 | 704 | 0.7− | 1.1+ | 2006 11 01 | 691 | 0.1− | 0.6+ | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.3− |
| 2003 01 25 | 645 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.3+ |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.1− | 1.4+ |
| 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2006 10 12 | 691 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2006 10 12 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 10 16 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | (1.9− | 0.3+) | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | (0.5− | 1.7+) | | | | |
| 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.2+ | | | | |

**2006 TQ$_{47}$ = 2001 SA$_{203}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.06328 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21442155 | $\omega$ | 244.71107 | | +0.99827555 | | +0.05441361 |
| $a$ | 2.7645457 | $\Omega$ | 112.16330 | | −0.04156144 | | +0.92011645 |
| $e$ | 0.0832998 | $i$ | 1.36272 | | −0.04145561 | | +0.38784645 |
| $P$ | 4.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.2+ | 0.1− | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.4− | 0.3+ |
| 2001 09 19 | 704 | (1.7+ | 1.3−) | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.6+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.5+ | 0.4+ |
| 2001 09 19 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.8+ | 0.8− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.9− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 09 21 | 704 | 0.6− | 0.4− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | | | | |

**2006 TR$_{47}$ = 2003 AR$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.62304 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21457249 | $\omega$ | 328.55773 | | +0.95593950 | | −0.24747935 |
| $a$ | 2.7632490 | $\Omega$ | 46.64786 | | +0.29353914 | | +0.79884317 |
| $e$ | 0.0878574 | $i$ | 12.54199 | | +0.00380021 | | +0.54827325 |
| $P$ | 4.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 644 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2001 08 26 | 644 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2001 08 26 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.5− |
| 2003 01 10 | 704 | 1.2+ | 0.9+ | 2006 10 16 | 703 | 0.7+ | 1.1− | 2006 11 13 | G96 | 0.9+ | 0.8− |
| 2003 01 10 | 704 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.5+ | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2003 01 10 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 1.1− | 0.3− | 2006 11 13 | G96 | 0.5+ | 0.5− |
| 2003 01 10 | 704 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 2003 01 13 | 704 | 0.7− | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.5− |
| 2003 01 13 | 704 | (0.7− | 2.1+) | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 13 | 704 | 0.5− | 0.5− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.9− |
| 2003 01 13 | 704 | 0.5− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.2+ |
| 2004 04 20 | E12 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 1.4− | 1.2+ |
| 2004 04 20 | E12 | 0.3+ | 0.5− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2004 04 20 | E12 | 0.2− | 0.6− | 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.2− | 1.0+ |
| 2004 04 20 | E12 | 1.2− | 0.8− | 2006 10 28 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.3− | 1.2+ |
| 2006 09 30 | 703 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.5− | 2006 11 18 | 704 | 0.5− | 0.8+ |
| 2006 09 30 | 703 | 1.3− | 0.7+ | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 21 | 704 | (0.4− | 2.5+) |
| 2006 09 30 | 703 | 0.9− | 0.7− | 2006 11 11 | 703 | 0.6− | 0.1− | 2006 11 21 | 704 | (0.8+ | 1.7+) |
| 2006 09 30 | 703 | 0.0 | 0.8+ | 2006 11 11 | G96 | 0.6+ | 0.2− | 2006 11 21 | 704 | 0.0 | 1.3+ |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.8+ |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 1.2+ | 1.1+ |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.1− | 1.5− |
| 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.7− | 1.0+ |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.5− | | | | |

**2006 TU$_{47}$ = 2004 AN$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.27079 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27314078 | $\omega$ | 179.37863 | | −0.60742748 | | +0.79370169 |
| $a$ | 2.3525834 | $\Omega$ | 53.21712 | | −0.72900096 | | −0.54061114 |
| $e$ | 0.0563801 | $i$ | 2.34017 | | −0.31557796 | | −0.27888568 |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 691 | 0.0 | 0.2+ | 2004 01 15 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2001 03 20 | 691 | 0.1− | 0.2+ | 2004 01 15 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.1− |
| 2001 03 20 | 691 | 0.5− | 0.2+ | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 04 29 | 691 | 0.1− | 0.0 | 2004 01 27 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 04 29 | 691 | 0.3+ | 0.2+ | 2004 01 27 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2001 04 29 | 691 | 0.5+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2001 05 22 | 807 | 0.7+ | 0.2+ | 2006 10 12 | 691 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2001 05 23 | 807 | 0.6+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.2+ |
| 2002 09 11 | 644 | 0.4− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2002 09 11 | 644 | 0.2− | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2002 09 11 | 644 | 0.4− | 0.9+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2003 12 28 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2003 12 28 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2003 12 28 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 01 15 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.8− | 0.1− | | | | |

**2006 TA$_{48}$ = 2001 SB$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.77286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21425658 | $\omega$ | 4.27519 | | +0.30897048 | | −0.95081543 |
| $a$ | 2.7659645 | $\Omega$ | 67.72879 | | +0.87188231 | | +0.27389635 |
| $e$ | 0.0496999 | $i$ | 1.36682 | | +0.37994536 | | +0.14467481 |
| $P$ | 4.60 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.9+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.7− | 0.5− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.3− |
| 2001 09 19 | 704 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.5+ |
| 2001 09 21 | 704 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2006 10 12 | 691 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.7− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2006 10 12 | 691 | 0.4+ | 0.4− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.1− | 1.0+ |
| 2006 10 16 | 691 | 0.7+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1− |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.9+ | 0.7− |
| 2006 10 16 | 691 | 0.4− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 1.0− | 0.7+ |

**2006 TD$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 151.06617 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18434245 | $\omega$ | 53.59809 | | −0.43392837 | | +0.90094358 |
| $a$ | 3.0576362 | $\Omega$ | 190.68573 | | −0.83105431 | | −0.40138500 |
| $e$ | 0.0481116 | $i$ | 0.80837 | | −0.34792946 | | −0.16489619 |
| $P$ | 5.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 1.4− | 0.2− | 2004 05 16 | E12 | 0.5+ | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 1993 04 21 | 691 | 0.1+ | 0.0 | 2004 05 16 | E12 | 1.1+ | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 1993 04 21 | 691 | 0.0 | 0.1− | 2004 06 11 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 1995 10 01 | 691 | 0.1+ | 0.5− | 2004 06 11 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.7− |
| 1995 10 01 | 691 | 0.3+ | 0.5− | 2004 06 11 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.4− | 0.2− |
| 1995 10 01 | 691 | 0.3+ | 0.6− | 2005 10 25 | G96 | 0.7+ | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 1995 10 15 | 691 | 0.0 | 0.1− | 2005 10 25 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.4− | 0.1− |
| 1995 10 15 | 691 | 0.1− | 0.2− | 2005 10 25 | G96 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 1995 10 15 | 691 | 0.2+ | 0.1− | 2005 10 25 | G96 | 0.3− | 0.3+ | 2006 11 22 | G96 | 2.0+ | 0.5− |
| 1995 10 23 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 1995 10 23 | 691 | 0.3− | 0.2− | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 1995 10 23 | 691 | 1.1+ | 0.7+ | 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.6− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2002 12 07 | 645 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2003 01 05 | 291 | 0.3− | 0.3+ | 2006 10 12 | 691 | 0.5− | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2003 01 05 | 291 | 0.2+ | 0.1− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2003 01 05 | 291 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.0 |
| 2003 01 28 | 645 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2003 01 28 | 645 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 05 16 | E12 | 0.6+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2004 05 16 | E12 | 0.1+ | 1.0+ | 2006 10 20 | 691 | 1.0− | 1.2+ | | | | |

**2006 TU$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.53203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27091549 | $\omega$ | 356.47029 | | +0.71856738 | | −0.69491780 |
| $a$ | 2.3654484 | $\Omega$ | 47.59081 | | +0.63897466 | | +0.64414847 |
| $e$ | 0.1871050 | $i$ | 2.12592 | | +0.27454017 | | +0.31962792 |
| $P$ | 3.64 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 369 | 0.6− | 1.8+ | 2006 10 29 | 704 | 0.6− | 0.3− | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 1995 10 20 | 369 | 1.3+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 1995 10 20 | 369 | 0.9− | 1.3− | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2002 08 08 | 644 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | (0.6+ | 2.2+) |
| 2002 08 08 | 644 | 0.3− | 0.7+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 1.1− | 0.3+ |
| 2002 08 08 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.4+ | 2006 11 18 | 704 | 1.0+ | 0.9+ |
| 2002 08 18 | 644 | 0.2− | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | (1.8− | 0.4−) |
| 2002 08 18 | 644 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2002 08 18 | 644 | 0.3− | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.3− |
| 2004 02 16 | 691 | 0.5+ | 0.0 | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | (0.9+ | 1.8+) |
| 2004 02 16 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.2− | 2006 11 18 | 704 | (3.8+ | 0.2+) |
| 2004 02 16 | 691 | 0.2− | 0.4+ | 2006 11 10 | 644 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.7+ | 1.0+ |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | (0.5− | 1.7+) |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 11 10 | 644 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.0 | 2006 11 21 | G96 | 0.6+ | 0.3− |
| 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.7+ | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | (1.6+ | 1.1+) |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.4− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 12 | G96 | 0.1− | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.5− | 0.2+ |
| 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.7+ | 0.1− |
| 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 15 | 701 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.7+ |
| 2006 10 28 | 691 | 0.4− | 0.2+ | 2006 11 15 | 701 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.8− | 0.5+ |
| 2006 10 28 | 691 | 0.4− | 0.1+ | 2006 11 15 | 701 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2006 10 28 | 691 | 0.4− | 0.1+ | 2006 11 15 | 701 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.5− | 0.5+ |
| 2006 10 29 | 704 | 0.3− | 0.7− | 2006 11 15 | 701 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.5− | 0.3+ |
| 2006 10 29 | 704 | 0.6− | 0.4+ | 2006 11 15 | 701 | 0.4+ | 0.0 | 2006 11 29 | 704 | 0.0 | 0.6+ |
| 2006 10 29 | 704 | 0.0 | 1.1+ | 2006 11 15 | 701 | 0.2+ | 0.4− | | | | |
| 2006 10 29 | 704 | 0.5+ | 0.4+ | 2006 11 17 | 703 | 0.6− | 0.1+ | | | | |

**2006 TV$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 330.74846 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22173571 | $\omega$ | 214.24474 | | +0.38760272 | −0.92068331 |
| $a$ | 2.7034124 | $\Omega$ | 213.01755 | | +0.86349414 | +0.38005467 |
| $e$ | 0.0598302 | $i$ | 4.83160 | | +0.32271039 | +0.08888581 |
| $P$ | 4.44 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 11 | 691 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2− |
| 1997 10 11 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1997 10 11 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.5− | 2006 11 09 | 644 | 0.5− | 0.0 |
| 1997 10 21 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 11 | 291 | 0.0 | 0.2+ |
| 1997 10 21 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 11 | 291 | 0.1− | 0.3+ |
| 1997 10 21 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 11 | 291 | 0.1− | 0.3+ |
| 2004 04 25 | 691 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.7− |
| 2004 04 25 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.6+ | 0.4− |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2006 10 12 | 691 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.6− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.3+ |

**2006 TB$_{49}$ = 1999 VS$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 354.31483 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.27972800 | $\omega$ | 85.58507 | | +0.87683257 | −0.47829142 |
| $a$ | 2.3155034 | $\Omega$ | 302.98161 | | +0.41470069 | +0.80393426 |
| $e$ | 0.2853855 | $i$ | 3.34943 | | +0.24328578 | +0.35345017 |
| $P$ | 3.52 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 704 | 0.0 | 1.1+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.4− |
| 1999 11 03 | 704 | 0.5+ | 0.6+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 1999 11 03 | 704 | 0.1+ | 1.5+ | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 1999 11 03 | 704 | 0.4+ | 0.4− | 2006 10 19 | 703 | 0.8− | 0.5− | 2006 11 14 | 703 | 0.2− | 0.4+ |
| 1999 11 09 | 703 | 0.7− | 0.5− | 2006 10 19 | 703 | 0.6− | 0.8− | 2006 11 14 | 703 | 0.4− | 0.6− |
| 1999 11 09 | 703 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.9− | 1.2− | 2006 11 14 | 703 | 0.8+ | 0.4+ |
| 1999 11 09 | 703 | 0.6− | 0.5− | 2006 10 19 | 703 | 0.7− | 0.5− | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 1999 11 09 | 703 | 0.6+ | 1.9− | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.0 |
| 2006 08 30 | 699 | 0.1− | 0.9+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2006 08 30 | 699 | (0.6− | 2.3+) | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2006 08 30 | 699 | (1.0+ | 1.6−) | 2006 10 21 | 704 | 0.7+ | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2006 08 30 | 699 | 0.1+ | 0.5+ | 2006 10 21 | 704 | 0.8+ | 0.7− | 2006 11 22 | 704 | 0.6+ | 0.7+ |
| 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 21 | 704 | 0.4+ | 0.6+ | 2006 11 22 | 704 | 0.0 | 1.1+ |
| 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 21 | 704 | (1.7− | 0.8−) | 2006 11 22 | 704 | 0.1+ | 1.0+ |
| 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.5+ |
| 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2006 10 12 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.5− | | | | |
| 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.4− | | | | |

**2006 TC$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 49.61807 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23459210 | $\omega$ | 352.37695 | | +0.67709355 | +0.73569308 |
| $a$ | 2.6037171 | $\Omega$ | 320.23757 | | −0.67373524 | +0.61025943 |
| $e$ | 0.2086318 | $i$ | 1.55179 | | −0.29601545 | +0.29383520 |
| $P$ | 4.20 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 13 | 644 | 0.2− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.5+ |
| 2002 11 13 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.8+ |
| 2002 11 13 | 644 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.7− |
| 2004 02 12 | 291 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2004 02 12 | 291 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2004 02 12 | 291 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2005 05 19 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2005 05 19 | 644 | 0.2+ | 0.7+ | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.4+ | 0.2− |
| 2005 05 19 | 644 | 0.2+ | 0.6+ | 2006 10 20 | 644 | 0.4− | 0.5− | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 2005 06 27 | 644 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.7− | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2005 06 27 | 644 | 0.4+ | 1.0+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2005 06 27 | 644 | 0.3+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2006 10 11 | 644 | 0.5− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3− | 2006 11 23 | 691 | 1.2− | 0.2− |
| 2006 10 11 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.4+ | 0.0 | | | | |
| 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.2− | | | | |

**2006 TD$_{49}$ = 1999 UM$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 324.18729 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.28364086 | $\omega$ | 47.17199 | | +0.34952789 | −0.93676898 |
| $a$ | 2.2941590 | $\Omega$ | 22.38689 | | +0.84594176 | +0.30766385 |
| $e$ | 0.1857721 | $i$ | 2.58095 | | +0.40275650 | +0.16675384 |
| $P$ | 3.47 | $H$ | 17.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 11 | 691 | 0.0 | 0.4− | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.3− |
| 1994 04 11 | 691 | 0.5− | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.6+ | 0.4− |
| 1994 04 11 | 691 | 0.5+ | 0.2− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 1999 10 30 | 557 | 0.3+ | 0.6− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.6+ | 0.0 |
| 1999 10 30 | 557 | 1.2− | 0.8+ | 2006 10 16 | 691 | 0.5− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 1999 10 30 | 557 | 1.2− | 0.7+ | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 0.6+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 07 | 644 | 0.0 | 0.0 |
| 1999 11 09 | 704 | 0.7− | 0.8+ | 2006 10 20 | 691 | 0.5− | 0.1− | 2006 11 07 | 644 | 0.0 | 0.2+ |
| 1999 11 09 | 704 | 0.4+ | 0.3+ | 2006 10 21 | 703 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 1999 11 09 | 704 | 0.1+ | 0.6+ | 2006 10 21 | 703 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.2− |
| 1999 11 09 | 704 | 0.2+ | 0.4+ | 2006 10 21 | 703 | 0.2+ | 1.0+ | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2004 02 13 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 1.0− | 0.4− | 2006 11 11 | 703 | 1.5+ | 0.7− |
| 2004 02 13 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2004 02 13 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 27 | 683 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 27 | 683 | (0.1− | 1.6−) | 2006 11 19 | 691 | 0.2+ | 0.3− |
| 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 27 | 683 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.4+ |
| 2006 10 12 | 644 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.0 | 0.5− | | | | |

**2006 TF$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 30.74705 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.31274364 | $\omega$ | 129.63753 | | +0.92585715 | +0.37645665 |
| $a$ | 2.1495311 | $\Omega$ | 208.29263 | | −0.36437972 | +0.86653115 |
| $e$ | 0.1417479 | $i$ | 3.95536 | | −0.10007973 | +0.32772574 |
| $P$ | 3.15 | $H$ | 17.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 23 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.1+ | 0.3− |
| 1999 05 23 | 691 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 1999 05 23 | 691 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2002 04 19 | 291 | 0.5+ | 0.6+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2002 04 19 | 291 | 0.5+ | 0.3+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.1− |
| 2002 04 19 | 291 | 0.4+ | 0.7+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2003 11 19 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.2− |
| 2003 11 19 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2003 11 19 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2003 12 21 | 691 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2003 12 21 | 691 | 0.2− | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2005 03 14 | G96 | 0.4− | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 03 14 | G96 | 0.9− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 03 14 | G96 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 07 | 644 | 0.0 | 0.5− |
| 2005 03 14 | G96 | 0.5− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.2− |
| 2005 04 05 | G96 | 0.3− | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 07 | 644 | 0.2+ | 0.6+ |
| 2005 04 05 | G96 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2005 04 05 | G96 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7+ | 1.2− |
| 2005 04 05 | G96 | 0.2+ | 0.1− | 2006 10 19 | 683 | 0.4− | 1.4− | 2006 11 11 | 703 | (1.6− | 1.4+) |
| 2005 05 08 | G96 | 0.1− | 0.6− | 2006 10 19 | 683 | (1.7− | 1.3−) | 2006 11 11 | 703 | 0.0 | 1.0+ |
| 2005 05 08 | G96 | 0.3− | 0.5− | 2006 10 19 | 683 | 1.1+ | 0.6+ | 2006 11 21 | 691 | 0.2+ | 0.0 |
| 2005 05 08 | G96 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 691 | 0.3+ | 0.3+ |
| 2005 05 08 | G96 | 0.4− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2006 09 20 | 699 | 1.5+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | (0.8+ | 1.7+) |
| 2006 09 20 | 699 | (1.5+ | 2.5−) | 2006 10 21 | 703 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2006 09 20 | 699 | 0.8+ | 0.8+ | 2006 10 21 | 703 | 0.0 | 1.4− | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2006 09 20 | 699 | 0.7+ | 0.7− | 2006 10 21 | 703 | 0.3− | 0.3+ | | | | |

**2006 TL$_{49}$ = 2002 AD$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.56845 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17109151 | $\omega$ | 57.95801 | | +0.82004971 | −0.57224277 | |
| $a$ | 3.2135402 | $\Omega$ | 336.94607 | | +0.51837269 | +0.74829721 | |
| $e$ | 0.1112046 | $i$ | 1.10158 | | +0.24250406 | +0.33554358 | |
| $P$ | 5.76 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.6+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2002 01 08 | 704 | 0.6+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2002 01 08 | 704 | 0.9− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.3− | 0.3+ |
| 2002 01 08 | 704 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2002 01 14 | 704 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.2− |
| 2002 01 14 | 704 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 2002 01 14 | 704 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.9+ |
| 2002 01 14 | 704 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2006 09 26 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.5+ | 0.3− |
| 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 27 | G96 | 0.4+ | 1.1− | 2006 11 21 | 704 | (0.2+ | 1.7+) |
| 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 10 11 | 644 | 0.6+ | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2006 10 12 | 644 | 0.3+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.1+ | | | | |

**2006 TT$_{49}$ = 2003 AJ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.97445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21358589 | $\omega$ | 355.04808 | | +0.42527900 | −0.90045656 | |
| $a$ | 2.7717518 | $\Omega$ | 69.75932 | | +0.83367996 | +0.35052379 | |
| $e$ | 0.0571827 | $i$ | 5.57753 | | +0.35230029 | +0.25750934 | |
| $P$ | 4.61 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3+ |
| 2003 01 05 | 704 | 0.3− | 0.3− | 2006 10 12 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2003 01 05 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 2003 01 05 | 704 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2003 01 05 | 704 | 0.5+ | 0.5− | 2006 10 16 | 703 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2003 01 09 | 704 | 0.6− | 0.5− | 2006 10 16 | 703 | 0.7+ | 0.7− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2003 01 09 | 704 | 0.1+ | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.8+ |
| 2003 01 09 | 704 | 0.7− | 0.3− | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.9− |
| 2003 01 09 | 704 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2003 01 09 | 704 | 0.6+ | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.0 |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | (0.9− | 1.5+) |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | (0.8− | 1.6−) |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.7+ | 0.4+ | | | | |

**2006 TU$_{49}$ = 2001 SB$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.51655 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20879194 | $\omega$ | 263.45981 | | +0.72335786 | −0.68879596 | |
| $a$ | 2.8140181 | $\Omega$ | 140.05883 | | +0.65941309 | +0.66848180 | |
| $e$ | 0.0968582 | $i$ | 4.29668 | | +0.20476276 | +0.28052133 | |
| $P$ | 4.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 04 14 | 691 | 0.2− | 0.1− | 2006 10 16 | 703 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.9− | 0.0 | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2001 09 19 | 704 | 0.5− | 0.8− | 2004 04 14 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 1.1− | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.6− | 2006 10 03 | G96 | 0.3− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.4+ | 0.1− | 2006 10 03 | G96 | 0.0 | 0.6− | 2006 11 23 | G96 | 0.5+ | 0.2+ |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.3− | 0.6− | 2006 11 23 | G96 | 0.7+ | 0.3+ |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2006 10 03 | G96 | 0.5− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.8+ | 0.5+ |
| 2001 09 21 | 704 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.6+ | | | | |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | | | | |

**2006 TV$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.46230 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18133521 | $\omega$ | 289.74561 | | −0.51985012 | −0.85347388 | |
| $a$ | 3.0913484 | $\Omega$ | 191.78531 | | +0.83540898 | −0.49896791 | |
| $e$ | 0.0799155 | $i$ | 10.31760 | | +0.17845920 | −0.15037739 | |
| $P$ | 5.44 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 18 | 691 | 0.1+ | 0.3− | 2003 03 07 | 699 | 0.8− | 0.7+ | 2006 10 16 | 703 | 0.7− | 0.0 |
| 1993 05 18 | 691 | 0.3− | 0.5+ | 2003 03 26 | 644 | 0.6+ | 0.1+ | 2006 10 16 | 703 | 1.4− | 0.4+ |
| 1993 05 18 | 691 | 0.1− | 0.3− | 2003 03 26 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | (1.9− | 1.1−) |
| 1995 09 18 | 691 | 0.4+ | 0.0 | 2003 03 26 | 644 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.7+ |
| 1995 09 18 | 691 | 0.1− | 0.1− | 2005 07 30 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 1.2− | 0.0 |
| 1995 09 18 | 691 | 1.0− | 0.5− | 2005 07 30 | 644 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.2+ |
| 1995 09 22 | 691 | 0.3+ | 0.2− | 2005 07 30 | 644 | 0.3− | 0.2+ | 2006 10 16 | 703 | 1.1− | 0.5+ |
| 1995 09 22 | 691 | 0.0 | 0.1− | 2005 09 02 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 1995 09 22 | 691 | 0.4+ | 0.1− | 2005 09 02 | 644 | 0.1+ | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2000 09 21 | 695 | 0.7+ | 1.1+ | 2005 09 02 | 644 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2000 09 21 | 695 | 0.7+ | 1.1+ | 2006 07 21 | G96 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 12 23 | 209 | 0.0 | 0.0 | 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 12 23 | 209 | 0.0 | 0.7+ | 2006 07 21 | G96 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 12 23 | 209 | 0.2+ | 0.0 | 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.4+ | 0.1+ |
| 2003 03 06 | 333 | 0.2+ | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 13 | 703 | (0.3+ | 1.7+) |
| 2003 03 06 | 333 | 0.4− | 0.9+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | (1.6− | 0.7+) |
| 2003 03 06 | 333 | 0.6− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 13 | 703 | 1.2− | 0.7− |
| 2003 03 07 | 333 | 0.2+ | 1.1− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.6+ | 0.5+ |
| 2003 03 07 | 699 | 0.7+ | 0.4− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2003 03 07 | 333 | 0.2+ | 0.8− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 699 | 0.7+ | 1.1+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2003 03 07 | 699 | 0.4+ | 0.7+ | 2006 10 16 | 703 | 0.8+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1− |

**2006 TX$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.22290 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26335458 | $\omega$ | 341.92186 | | +0.12051814 | −0.99181959 | |
| $a$ | 2.4105092 | $\Omega$ | 101.13998 | | +0.91600463 | +0.09477386 | |
| $e$ | 0.1538059 | $i$ | 2.45706 | | +0.38263677 | +0.08550918 | |
| $P$ | 3.74 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 09 | 644 | 0.2+ | 0.7+ | 2006 10 15 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2004 04 09 | 644 | 0.0 | 0.3+ | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2004 04 09 | 644 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 11 | 691 | 0.5+ | 0.2− |
| 2004 04 12 | 291 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.4+ | 1.0− | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2004 04 12 | 291 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.6− | 0.3− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2004 04 12 | 291 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2006 10 02 | G96 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.1+ |
| 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | (0.1+ | 1.7+) |
| 2006 10 12 | 644 | 0.1− | 0.4− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.7− | 0.1− |
| 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.2− | | | | |
| 2006 10 15 | 691 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.0 | 0.3− | | | | |

**2006 TZ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.66131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19398026 | $\omega$ | 38.55661 | | −0.22550260 | −0.95454530 | |
| $a$ | 2.9555004 | $\Omega$ | 65.25284 | | +0.83217168 | −0.29275713 | |
| $e$ | 0.0942015 | $i$ | 12.39355 | | +0.50659537 | +0.05600474 | |
| $P$ | 5.08 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 21 | 644 | 0.8+ | 0.7+ | 2006 10 11 | 644 | 0.0 | 0.5+ | 2006 10 22 | 644 | 0.4+ | 0.1− |
| 2003 02 21 | 644 | 0.5+ | 0.7+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2003 02 21 | 644 | 0.4+ | 1.0+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.4− | 0.4+ |
| 2003 03 08 | 699 | 0.7− | 0.4+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.4+ | 0.5+ |
| 2003 03 08 | 699 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 10 28 | 703 | 1.1+ | 0.4+ |
| 2003 03 08 | 699 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 10 28 | 703 | (0.6+ | 1.9+) |
| 2003 03 08 | 699 | 1.2− | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.8− | 2006 10 28 | 703 | 1.1− | 0.3+ |
| 2003 03 08 | 644 | 0.2+ | 1.1− | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 19 | 703 | 0.7+ | 0.6+ |
| 2003 03 08 | 644 | 0.1+ | 1.1− | 2006 10 22 | 703 | (3.8+ | 3.1+) | 2006 11 19 | 703 | 0.8− | 0.2− |
| 2003 03 08 | 644 | 0.1+ | 1.3− | 2006 10 22 | 703 | (1.6+ | 0.0 ) | 2006 11 19 | 703 | 0.8+ | 0.0 |
| 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.2− | 0.8− |
| 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.8− | | | | |

**2006 TK$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.61003 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17305911 | $\omega$ | 232.41204 | | +0.98708396 | +0.12949976 | |
| $a$ | 3.1891362 | $\Omega$ | 119.96575 | | −0.08953838 | +0.93412883 | |
| $e$ | 0.1910281 | $i$ | 6.24998 | | −0.13284630 | +0.33261561 | |
| $P$ | 5.70 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 699 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.5+ |
| 2000 09 23 | 699 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.2− |
| 2000 09 23 | 699 | 0.8+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.2− | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2000 09 23 | 699 | 0.8+ | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.8− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2000 10 02 | 699 | 0.7− | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.8+ |
| 2000 10 02 | 699 | 0.4+ | 0.6− | 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.4+ |
| 2000 10 02 | 699 | 1.4− | 0.4+ | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.5− |
| 2000 10 02 | 699 | 0.3− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.8− | 0.6− |
| 2004 04 23 | 691 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.5− | 1.1− | 2006 11 13 | 703 | 0.7− | 0.4− |
| 2004 04 23 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.5− | 0.6+ |
| 2004 04 23 | 691 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.8− | 2006 11 24 | G96 | 0.6+ | 0.4+ |
| 2006 09 30 | 703 | 0.6+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 11 24 | G96 | 0.0 | 0.4+ |
| 2006 09 30 | 703 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.5+ | 0.5+ |
| 2006 09 30 | 703 | 1.1+ | 0.7− | 2006 10 22 | 703 | 1.3− | 0.5+ | 2006 11 24 | G96 | 0.7+ | 0.4+ |
| 2006 09 30 | 703 | 1.2− | 0.0 | 2006 10 22 | 703 | 0.2+ | 0.6+ | | | | |
| 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.0 | 0.1+ | | | | |

**2006 TN$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.97247 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24053496 | $\omega$ | 195.29448 | | +0.63202933 | −0.77491278 | |
| $a$ | 2.5606521 | $\Omega$ | 215.50635 | | +0.71225771 | +0.58444256 | |
| $e$ | 0.1104867 | $i$ | 0.69136 | | +0.30533242 | +0.24070121 | |
| $P$ | 4.10 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2004 03 31 | 291 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 0.4− |
| 2004 03 31 | 291 | 0.1− | 0.6+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.1− | 0.2− |
| 2004 03 31 | 291 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | (1.9− | 0.9+) |
| 2004 04 23 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.0 |
| 2004 04 23 | 691 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2004 04 23 | 691 | 0.2− | 0.4− | 2006 11 13 | 644 | 0.2− | 0.1− | 2006 11 27 | 703 | 1.0+ | 0.9− |
| 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.6− | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.4− | 2006 11 27 | 703 | 0.3− | 0.6− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.9− | 0.2− | 2006 11 27 | 703 | 0.4− | 1.0− |
| 2006 10 16 | 691 | 0.1− | 0.8+ | 2006 11 18 | 704 | 0.9+ | 0.2− | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.5− | 2006 12 01 | G96 | 0.3− | 0.8− |
| 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 1.4+ | 0.6− | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.5− | 2006 12 01 | G96 | 0.2+ | 0.5− |

**2006 TQ$_{50}$ = 2000 GU$_{144}$ = 2004 FY$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.48919 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22648094 | $\omega$ | 161.62924 | | +0.99228670 | +0.12385744 | |
| $a$ | 2.6655180 | $\Omega$ | 191.25969 | | −0.11678059 | +0.92006848 | |
| $e$ | 0.0984960 | $i$ | 1.50877 | | −0.04158595 | +0.37166292 | |
| $P$ | 4.35 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 07 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.5+ | 2006 10 30 | G96 | 0.1+ | 0.2− |
| 2000 04 07 | 691 | 0.9+ | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 30 | G96 | 0.2+ | 0.0 |
| 2000 04 07 | 691 | 0.5− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 1.1+ | 2006 10 30 | G96 | 0.4+ | 0.0 |
| 2000 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 10 30 | G96 | 0.1+ | 0.2− |
| 2000 04 13 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2000 04 13 | 691 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.4− | 0.1− |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 12 | 703 | 0.2+ | 1.1− |
| 2004 03 17 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 12 | 703 | 0.3− | 1.2− |
| 2004 03 28 | 291 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.5− | 2006 11 12 | 703 | (0.7− | 1.8−) |
| 2004 03 28 | 291 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.6+ | 0.3− | 2006 11 12 | 703 | 0.0 | 0.4+ |
| 2004 03 28 | 291 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.3− | 2006 11 12 | G96 | 0.2+ | 0.5− |
| 2004 03 29 | 691 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.4+ | 0.6− |
| 2004 03 29 | 691 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.4− | 2006 11 12 | G96 | 0.0 | 0.6− |
| 2004 03 29 | 691 | 0.2+ | 0.2− | 2006 10 29 | G96 | 0.0 | 0.5− | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.4+ | 0.2− | | | | |

**2006 TO$_{51}$ = 1993 RM$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.88823 | | | (2000.0) | | |
| $n$ | 0.23292395 | $\omega$ | 186.78519 | | +0.96292464 | −0.26953814 |
| $a$ | 2.6161338 | $\Omega$ | 188.87562 | | +0.25079467 | +0.90970976 |
| $e$ | 0.1485215 | $i$ | 4.16103 | | +0.09938902 | +0.31587552 |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | 0.1− | 0.2+ | 2006 11 02 | 703 | 1.0+ | 0.9− | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 1993 09 15 | 809 | 0.2+ | 1.0− | 2006 11 02 | 703 | 0.8+ | 0.6− | 2006 11 18 | 704 | (0.3+ | 2.2−) |
| 1993 09 15 | 809 | 1.6− | 0.5− | 2006 11 02 | 703 | 0.5− | 0.5+ | 2006 11 18 | 704 | 0.5+ | 1.3+ |
| 1993 09 17 | 809 | 1.8+ | 0.7+ | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | (2.5− | 0.3−) |
| 1993 09 17 | 809 | 0.2+ | 1.0− | 2006 11 10 | 644 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.7+ |
| 1993 09 17 | 809 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.2− | 0.3+ |
| 2000 04 13 | 691 | 0.3− | 0.4+ | 2006 11 14 | 704 | (0.8+ | 1.7+) | 2006 11 20 | 704 | 0.2+ | 0.3− |
| 2000 04 13 | 691 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.4− | 1.1+ | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2000 04 13 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 704 | (0.4− | 3.2+) | 2006 11 20 | 704 | 0.3− | 0.4+ |
| 2004 03 26 | 691 | 0.0 | 0.1− | 2006 11 14 | 704 | (0.2+ | 1.7+) | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2004 03 26 | 691 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.1+ | 1.0+ | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2004 03 26 | 691 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.0 | 0.6− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2006 09 30 | G96 | 0.8+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.3− | 0.2− |
| 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.5− | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.4− | 2006 11 27 | 691 | 0.3− | 0.3− |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.0 | 0.3+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.3− | 0.5+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.2− | 0.3− |
| 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 1.1+ | 0.6+ | 2006 11 28 | 704 | 0.9+ | 0.2+ |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 17 | 704 | 1.3− | 0.5+ | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.8− | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.3− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.4− | 2006 12 01 | 691 | 0.1+ | 0.0 |
| 2006 11 02 | 703 | (0.2− | 1.8−) | 2006 11 17 | 704 | 0.3− | 0.6− | 2006 12 01 | 691 | 0.2+ | 0.3+ |

**2006 TP$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 255.89924 | | | (2000.0) | | |
| $n$ | 0.17671466 | $\omega$ | 298.57383 | | −0.88605291 | −0.45050825 |
| $a$ | 3.1450025 | $\Omega$ | 214.97243 | | +0.46322436 | −0.85110339 |
| $e$ | 0.0237386 | $i$ | 10.99587 | | +0.01826021 | −0.26956507 |
| $P$ | 5.58 | $H$ | 15.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 699 | 0.7+ | 0.4− | 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2000 10 07 | 699 | 0.8− | 0.9+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2000 10 07 | 699 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2000 10 07 | 699 | 0.1− | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2003 03 31 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2003 03 31 | 691 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 1.3− |
| 2003 03 31 | 691 | 0.0 | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.4− |
| 2005 09 23 | 644 | 0.0 | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2005 09 23 | 644 | 0.3− | 0.6+ | 2006 10 20 | 691 | 0.4− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2005 09 23 | 644 | 0.1− | 0.9+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2006 09 30 | G96 | 0.0 | 0.5− | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.4+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.1− |

**2006 TQ$_{51}$ = 2005 NU$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.69748 | | | (2000.0) | | |
| $n$ | 0.19449900 | $\omega$ | 274.53252 | | +0.78175593 | −0.62209237 |
| $a$ | 2.9502431 | $\Omega$ | 123.94305 | | +0.59075728 | +0.71669345 |
| $e$ | 0.0622820 | $i$ | 2.97896 | | +0.19965849 | +0.31520087 |
| $P$ | 5.07 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 20 | 691 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 1998 03 20 | 691 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 1998 03 20 | 691 | 0.1− | 1.0+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2003 03 30 | 645 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2005 07 11 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2005 07 11 | 691 | 0.1− | 0.4+ | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2005 07 11 | 691 | 0.0 | 0.4+ | 2006 11 12 | G96 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.5+ | 0.6− |
| 2005 07 12 | G96 | 0.2− | 0.3+ | 2006 11 12 | G96 | 0.4− | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2005 07 12 | G96 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.5− |
| 2005 07 12 | G96 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2005 07 12 | G96 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.3+ | | | | |

**2006 TS$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.91644 | | | (2000.0) | | |
| $n$ | 0.26911477 | $\omega$ | 249.34765 | | +0.99919457 | −0.02220487 |
| $a$ | 2.3759886 | $\Omega$ | 111.91252 | | +0.03337932 | +0.92223609 |
| $e$ | 0.2050378 | $i$ | 2.06462 | | −0.02227168 | +0.38598903 |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.7+ | 0.1+ | 2005 05 08 | G96 | 0.5+ | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.4− |
| 2002 08 18 | 644 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.0 | 0.3− |
| 2002 08 18 | 644 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.4− |
| 2002 08 29 | 644 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.2− | 0.4+ |
| 2002 08 29 | 644 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.6− | 0.5− | 2006 11 14 | 691 | 0.0 | 0.3− |
| 2002 08 29 | 644 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.3− | 0.2+ |
| 2002 09 04 | 644 | 0.4− | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 09 04 | 644 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.9+ |
| 2002 09 04 | 644 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.9+ |
| 2005 05 08 | G96 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2005 05 08 | G96 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3− | | | | |
| 2005 05 08 | G96 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− | | | | |

**2006 TW$_{51}$ = 1995 US$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 338.11704 | | | (2000.0) | | |
| $n$ | 0.18621947 | $\omega$ | 221.51415 | | +0.34244968 | −0.93793016 |
| $a$ | 3.0370550 | $\Omega$ | 208.58738 | | +0.88943375 | +0.34246449 |
| $e$ | 0.1410217 | $i$ | 6.58962 | | +0.30271408 | +0.05481876 |
| $P$ | 5.29 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.3− | 2006 10 29 | A55 | 0.2+ | 0.2− |
| 1995 08 22 | 691 | 0.4+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 10 30 | A55 | 0.0 | 0.4− |
| 1995 08 22 | 691 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 30 | A55 | 1.1− | 0.4+ |
| 1995 10 18 | 691 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 30 | A55 | 0.8− | 0.3+ |
| 1995 10 18 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 10 30 | A55 | 0.1− | 0.8+ |
| 1995 10 18 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.4− |
| 1995 10 23 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 1995 10 23 | 691 | 0.1− | 0.8− | 2006 10 20 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.6− |
| 1995 10 23 | 691 | 0.2− | 0.5− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2006 10 12 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.2+ | | | | |
| 2006 10 12 | 691 | 0.1− | 0.3− | 2006 10 29 | A55 | 1.1− | 0.3− | | | | |

**2006 TY$_{51}$ = 1997 WF$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 302.51125 | | | (2000.0) | | |
| $n$ | 0.21917059 | $\omega$ | 297.13294 | | −0.21235139 | −0.97714923 |
| $a$ | 2.7244648 | $\Omega$ | 165.11848 | | +0.90887396 | −0.20098777 |
| $e$ | 0.0300430 | $i$ | 2.07264 | | +0.35896381 | −0.06916141 |
| $P$ | 4.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 691 | 0.6− | 0.6− | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | (0.7− | 2.9+) |
| 1997 11 29 | 691 | 0.2− | 0.7− | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.1− | 1.0− |
| 1997 11 29 | 691 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.4+ |
| 1997 12 05 | 691 | 0.8+ | 0.0 | 2006 10 16 | 691 | 0.4− | 0.9+ | 2006 11 17 | 703 | 0.7+ | 1.0− |
| 1997 12 05 | 691 | 0.3+ | 0.6− | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 20 | 704 | 0.2+ | 1.3− |
| 1997 12 05 | 691 | 0.4+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 11 20 | 704 | (0.0 | 3.2−) |
| 2001 09 18 | 291 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.4+ | 2006 11 20 | 704 | (2.2− | 6.6−) |
| 2001 09 18 | 291 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.4− | 0.4+ | | | | |
| 2001 09 18 | 291 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.5+ | | | | |

## 2006 $TZ_{51}$ = 2004 $GC_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.34387 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22169282 | $\omega$ | 309.73890 | | +0.95827748 | | −0.26108066 |
| $a$ | 2.7037610 | $\Omega$ | 65.67857 | | +0.28535210 | | +0.85001470 |
| $e$ | 0.0592238 | $i$ | 7.33670 | | +0.01668664 | | +0.45750618 |
| $P$ | 4.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 06 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.3+ |
| 1995 04 06 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 1.3+ |
| 1995 04 06 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2004 04 11 | 644 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.4+ |
| 2004 04 11 | 644 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.4+ |
| 2004 04 11 | 644 | 0.6+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.1− | 1.4+ |
| 2004 04 20 | 704 | 0.6+ | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.6− | 0.1+ |
| 2004 04 20 | 704 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2004 04 20 | 704 | 0.3− | 0.9+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.6− | 0.5− |
| 2005 07 06 | E12 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.2+ | 0.6− | 2006 11 21 | 704 | (1.6− | 1.2+) |
| 2005 07 06 | E12 | 0.1+ | 0.9+ | 2006 11 11 | 703 | (1.0+ | 1.9−) | 2006 11 27 | G96 | 0.2− | 0.6− |
| 2005 07 06 | E12 | 0.4− | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.6− | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2005 07 06 | E12 | 0.4− | 0.7+ | 2006 11 11 | 703 | 0.8+ | 0.5− | 2006 11 27 | G96 | 0.1− | 0.6− |
| 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 1.1+ | 2006 11 27 | G96 | 0.3+ | 0.6− |
| 2006 10 12 | 691 | 0.0 | 0.6+ | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.8+ | 0.4+ |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.4− | 0.3− |
| 2006 10 16 | 691 | 1.0+ | 0.3+ | 2006 11 13 | 644 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.7+ | 0.8+ |
| 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.3− | 0.4− | 2006 11 29 | 704 | 1.5+ | 0.3+ |
| 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.3− | 2006 12 01 | G96 | 0.4− | 0.5− |
| 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.3− | 0.7− |
| 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.4− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2006 10 20 | 644 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.8− | | | | |
| 2006 10 20 | 691 | 0.5− | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.5− | | | | |

## 2006 $TJ_{52}$ = 2004 $GZ_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.59187 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25330900 | $\omega$ | 21.43760 | | −0.44355152 | | −0.89533573 |
| $a$ | 2.4738250 | $\Omega$ | 94.91229 | | +0.81627755 | | −0.42219686 |
| $e$ | 0.1330296 | $i$ | 2.32665 | | +0.37007164 | | −0.14185822 |
| $P$ | 3.89 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 11 | 644 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2004 04 11 | 644 | 0.3+ | 0.5+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2004 04 11 | 644 | 0.7+ | 0.6+ | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 04 20 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3− | 0.9− |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2004 07 15 | 807 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.6+ | 1.1− |
| 2004 07 15 | 807 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.5+ | 1.1− |

## 2006 $TX_{52}$ = 2005 $GP_{139}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.72499 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26282116 | $\omega$ | 255.55950 | | +0.58746734 | | +0.79473993 |
| $a$ | 2.4137697 | $\Omega$ | 51.45475 | | −0.64683037 | | +0.57442236 |
| $e$ | 0.2041099 | $i$ | 11.24728 | | −0.48630504 | | +0.19602907 |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2005 04 02 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2005 04 02 | 691 | 0.5+ | 0.4− | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.4− | 0.1− |
| 2005 04 12 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.4− | 0.7− |
| 2005 04 12 | 691 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 04 12 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 04 14 | 691 | 0.3− | 0.0 | 2006 10 12 | 691 | 0.4− | 0.2− | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2005 04 14 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2005 04 14 | 691 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.6− |
| 2005 05 14 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2005 05 14 | 644 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.5+ | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2005 05 14 | 644 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | | | | |

## 2006 $TB_{53}$ = 2001 $FM_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.09009 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27909676 | $\omega$ | 77.82223 | | −0.45818559 | | +0.88876435 |
| $a$ | 2.3189934 | $\Omega$ | 164.88786 | | −0.83341347 | | −0.42455414 |
| $e$ | 0.1285341 | $i$ | 2.81467 | | −0.30901124 | | −0.17277650 |
| $P$ | 3.53 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.0 | 0.5+ | 2001 04 16 | 645 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.5− |
| 1995 10 01 | 691 | 0.0 | 0.1+ | 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.5− |
| 1995 10 01 | 691 | 0.1− | 0.2− | 2003 12 28 | 691 | 0.1− | 0.5− | 2006 09 30 | G96 | 1.0+ | 1.2− |
| 2001 03 18 | 704 | 0.1− | 1.1+ | 2003 12 28 | 691 | 0.3+ | 0.7− | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2001 03 18 | 704 | 0.3+ | 0.2+ | 2003 12 28 | 691 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.1+ |
| 2001 03 18 | 704 | 0.6+ | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.5− | 0.7+ |
| 2001 03 19 | 691 | 0.0 | 0.4+ | 2004 01 27 | 691 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.3− | 0.5+ |
| 2001 03 19 | 691 | 0.0 | 0.2+ | 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.8+ |
| 2001 03 19 | 691 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ |

## 2006 $TE_{53}$ = 2005 $LM_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.00368 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23760795 | $\omega$ | 226.79680 | | +0.53358117 | | +0.84221789 |
| $a$ | 2.5816384 | $\Omega$ | 75.60324 | | −0.75101570 | | +0.51381366 |
| $e$ | 0.2021040 | $i$ | 4.57161 | | −0.38893001 | | +0.16329283 |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.1− | 0.2+ | 2005 06 04 | 704 | 0.3− | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.1+ |
| 2002 11 07 | 695 | 0.1+ | 0.2+ | 2005 06 10 | 691 | 0.7+ | 0.6+ | 2006 10 12 | 691 | 0.4+ | 0.2+ |
| 2005 05 19 | G96 | 0.0 | 0.1− | 2005 06 10 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.3+ |
| 2005 05 19 | G96 | 0.2− | 0.3− | 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ |
| 2005 05 19 | G96 | 0.0 | 0.0 | 2005 06 17 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.0 |
| 2005 05 19 | G96 | 0.2+ | 0.1− | 2005 06 17 | 691 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2005 06 04 | 704 | 0.0 | 0.2− | 2005 06 17 | 691 | 0.4− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.4− |
| 2005 06 04 | 704 | 0.6+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.2− |

**2006 TN$_{53}$ = 2004 HM$_{7}$ = 2005 NY$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.98493 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.25957848 | $\omega$ | 333.71667 | −0.33886396 | | −0.94062498 | |
| $a$ | 2.4338301 | $\Omega$ | 136.08331 | +0.86817349 | | −0.32077240 | |
| $e$ | 0.1452387 | $i$ | 1.64376 | +0.36255484 | | −0.11103924 | |
| $P$ | 3.80 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 704 | 0.4+ | 0.8+ | 2005 07 10 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.0 |
| 2004 04 19 | 704 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2004 04 19 | 704 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2004 04 20 | 691 | 0.1− | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.5− | 0.9− |
| 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2004 04 20 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.8− |
| 2005 06 14 | G96 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2005 06 14 | G96 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | (1.7− | 1.3−) |
| 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.5+ | 0.6+ |
| 2005 07 06 | 691 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 703 | 0.9− | 0.1+ |
| 2005 07 06 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.7+ | 0.4− |
| 2005 07 06 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.6+ | 0.7− |
| 2005 07 10 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.7− | 2006 11 27 | 703 | 1.0+ | 1.0− |
| 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.4− | | | | |

**2006 TP$_{53}$ = 2000 HB$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.60769 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22776128 | $\omega$ | 78.77859 | +0.37055252 | | +0.92467336 | |
| $a$ | 2.6555193 | $\Omega$ | 213.39603 | −0.90213237 | | +0.33586822 | |
| $e$ | 0.0895606 | $i$ | 9.15532 | −0.22101587 | | +0.17936474 | |
| $P$ | 4.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 29 | 704 | 0.5+ | 0.6− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.4+ | 0.2+ |
| 2000 04 29 | 704 | 0.9+ | 0.1− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 02 | 703 | (6.0+ | 4.3−) |
| 2000 04 29 | 704 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.5+ | 0.3− | 2006 11 02 | 703 | (5.9+ | 2.6−) |
| 2000 05 07 | 704 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.4− | 0.2− |
| 2000 05 07 | 704 | 1.6− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 02 | 703 | (0.9− | 2.1−) |
| 2000 05 07 | 704 | 0.5+ | 0.9+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | (2.5+ | 1.3+) |
| 2000 05 07 | 704 | 1.0+ | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.5+ |
| 2000 05 07 | 704 | 0.9− | 1.0+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.9+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | (1.0− | 2.3−) |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.3− | 0.5− |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2006 09 26 | G96 | 0.4− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | | | | |

**2006 TT$_{53}$ = 2001 YK$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.65856 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18861102 | $\omega$ | 82.84234 | −0.70514982 | | −0.68944623 | |
| $a$ | 3.0113276 | $\Omega$ | 53.40094 | +0.54143798 | | −0.67437175 | |
| $e$ | 0.0710009 | $i$ | 11.90485 | +0.45783037 | | −0.26436081 | |
| $P$ | 5.23 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.2+ | 0.3+ |
| 2001 12 18 | 704 | 0.5− | 0.3+ | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.3+ |
| 2001 12 18 | 704 | 0.1− | 0.1+ | 2006 10 30 | G96 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.4+ |
| 2001 12 18 | 704 | 0.6+ | 0.6+ | 2006 10 30 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2001 12 19 | 704 | 0.8− | 0.7+ | 2006 10 30 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2001 12 19 | 704 | 0.2− | 0.4+ | 2006 10 30 | G96 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.3− |
| 2001 12 19 | 704 | 0.2− | 0.7+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.1− | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.4+ | 2006 11 27 | 703 | 2.2− | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.2+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3− | 2006 11 27 | 703 | 0.9− | 0.1+ |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.6− | 1.1− | 2006 11 27 | 703 | 0.2+ | 0.7− |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.8+ | 0.9− | 2006 12 01 | G96 | 0.2+ | 0.9− |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.7− |
| 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.7− | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.6− | 2006 12 01 | G96 | 0.1+ | 0.8− |
| 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.8− | 2006 12 01 | G96 | 0.3+ | 0.7− |
| 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.7− | 2006 12 01 | G96 | 0.3+ | 0.5− |
| 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 12 | 703 | 0.7− | 1.1− | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 12 | 703 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2006 10 29 | G96 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.5− | 0.7+ | | | | |
| 2006 10 29 | G96 | 0.2+ | 0.2− | 2006 11 12 | 703 | 0.5− | 0.1− | | | | |

**2006 TU$_{53}$ = 2005 NM$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.01329 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17170566 | $\omega$ | 257.21813 | +0.79730975 | | −0.60310674 | |
| $a$ | 3.2058730 | $\Omega$ | 139.86770 | +0.56702557 | | +0.73503062 | |
| $e$ | 0.1875434 | $i$ | 2.10295 | +0.20683122 | | +0.30982616 | |
| $P$ | 5.74 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 691 | 0.0 | 0.2+ | 2005 07 16 | 691 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 2000 09 03 | 691 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.1− | 0.2− |
| 2000 09 03 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.6+ |
| 2002 01 22 | 291 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3− | 1.2+ |
| 2002 01 22 | 291 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.2− |
| 2002 01 22 | 291 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 21 | 704 | (1.7+ | 0.2−) |
| 2002 02 13 | 691 | 0.4+ | 0.7+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 1.1+ | 0.9+ |
| 2002 02 13 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.6+ |
| 2002 02 13 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1− | 0.6− |
| 2005 07 12 | G96 | 1.1− | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2005 07 12 | G96 | 0.7− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.6− | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2005 07 12 | G96 | 0.4− | 0.8+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.6+ | 0.5− |
| 2005 07 12 | G96 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.3− | 0.1+ |
| 2005 07 16 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 1.1− | 2006 11 28 | 704 | 0.8+ | 0.4− |
| 2005 07 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.9− |

**2006 TK$_{54}$ = 2000 TM$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.72984 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.16963900 | $\omega$ | 62.43603 | +0.90945419 | | +0.41068016 | |
| $a$ | 3.2318579 | $\Omega$ | 273.25465 | −0.40077590 | | +0.82408579 | |
| $e$ | 0.1327023 | $i$ | 3.73725 | −0.11077795 | | +0.39015948 | |
| $P$ | 5.81 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 03 | 704 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.6+ | 1.4− |
| 2000 10 03 | 704 | 0.7+ | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 1.2− | 1.2+ |
| 2000 10 03 | 704 | 0.5− | 0.7− | 2006 10 22 | 644 | 0.4− | 0.6+ | 2006 11 14 | 703 | (0.6− | 1.8+) |
| 2000 10 06 | 608 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.5− | 0.7+ | 2006 11 14 | 703 | 0.1+ | 0.8− |
| 2000 10 06 | 608 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2000 10 06 | 608 | 0.6− | 0.2− | 2006 10 27 | 703 | 0.9+ | 0.7− | 2006 11 17 | G96 | 0.0 | 0.0 |
| 2005 06 14 | G96 | 0.4+ | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.4− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2005 06 14 | G96 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 2005 06 14 | G96 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.2− | 2006 11 22 | 704 | 0.6− | 0.8+ |
| 2005 06 14 | G96 | 0.7− | 0.5− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | (0.5+ | 1.7−) |
| 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.5− |
| 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.5+ | 0.6− | 2006 11 22 | 704 | 1.0− | 0.5+ |
| 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 27 | 104 | 0.3+ | 0.8+ |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.1− | 2006 11 27 | 104 | 0.5+ | 0.3+ |
| 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 27 | 104 | 0.4+ | 0.2+ |
| 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.3− | | | | |
| 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.3− | | | | |

**2006 TL$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.32675 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27914505 | $\omega$ | 332.63679 | | +0.93091616 | | +0.36511445 |
| $a$ | 2.3187260 | $\Omega$ | 5.97137 | | −0.31661703 | | +0.81943780 |
| $e$ | 0.1884643 | $i$ | 5.13037 | | −0.18206800 | | +0.44182930 |
| $P$ | 3.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 703 | 0.7+ | 0.8+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.2− | 0.7− |
| 1999 11 09 | 703 | 0.3− | 1.0− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.2− | 0.0 |
| 1999 11 09 | 703 | 1.0+ | 0.7+ | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.6+ |
| 1999 11 09 | 703 | 0.7− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 16 | 704 | 1.1− | 1.0+ |
| 2002 06 13 | 644 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2002 06 13 | 644 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | 1.3− | 0.7+ |
| 2002 06 13 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 2002 06 18 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.9− | 1.0+ |
| 2002 06 18 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2002 06 18 | 644 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2002 07 19 | 644 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2002 07 19 | 644 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.5+ | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.9− |
| 2002 07 19 | 644 | 0.4− | 0.2+ | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.0 |
| 2004 01 18 | 691 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.4− |
| 2004 01 18 | 691 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.3+ |
| 2004 01 18 | 691 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.3+ | 1.0+ | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2005 04 15 | 691 | 0.5+ | 0.6+ | 2006 10 27 | 703 | 0.6+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2005 04 15 | 691 | 0.4+ | 0.8+ | 2006 10 27 | 703 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2005 04 15 | 691 | 0.4+ | 0.6+ | 2006 10 27 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2006 07 21 | G96 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.9+ |
| 2006 07 21 | G96 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 22 | 704 | 0.7+ | 0.0 |
| 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.5− | 0.4− |
| 2006 07 21 | G96 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.1− |
| 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2006 10 12 | 644 | 0.3+ | 0.5+ | 2006 11 14 | 703 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.2+ |
| 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.5− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 1.0+ | 1.4− | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2006 10 13 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2006 10 13 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.8− | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.4− |

**2006 TP$_{54}$ = 2005 JZ$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.89912 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23247835 | $\omega$ | 106.08360 | | +0.91486508 | | +0.37334984 |
| $a$ | 2.6194757 | $\Omega$ | 232.25196 | | −0.40271631 | | +0.87112836 |
| $e$ | 0.2144734 | $i$ | 11.21058 | | +0.02900808 | | +0.31897536 |
| $P$ | 4.24 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2− |
| 2005 05 07 | 691 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.4− | 0.1− |
| 2005 05 07 | 691 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− |
| 2005 05 07 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2005 05 07 | 691 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2005 05 07 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | (0.3− | 2.0+) |
| 2005 05 11 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.1+ |
| 2005 05 11 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.2+ |
| 2005 06 12 | G96 | 0.0 | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.1− | 0.4− |
| 2005 06 12 | G96 | 0.5− | 0.7+ | 2006 10 23 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | 1.4+ | 0.2+ |
| 2005 06 12 | G96 | 0.2− | 1.1+ | 2006 10 23 | 644 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.9− |
| 2005 06 12 | G96 | 0.7− | 0.3+ | 2006 10 29 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2006 10 12 | 644 | 0.1− | 0.1− | 2006 10 29 | 704 | 0.6− | 1.2+ | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 10 29 | 704 | (2.5− | 0.1−) | 2006 11 22 | 704 | 0.6+ | 0.9− |
| 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 29 | 704 | 0.9+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.9+ | 1.4+ |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2− | | | | |
| 2006 10 13 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1− | 0.1− | | | | |

**2006 TV$_{54}$ = 1995 WF$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.20371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17942746 | $\omega$ | 64.08349 | | −0.36848788 | | −0.87915572 |
| $a$ | 3.1132222 | $\Omega$ | 50.97282 | | +0.65106221 | | −0.47606672 |
| $e$ | 0.0782349 | $i$ | 22.88977 | | +0.66357719 | | −0.02111160 |
| $P$ | 5.49 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.2+ | 2006 11 14 | 704 | 0.7− | 1.0− |
| 1995 11 19 | 691 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.5− | 1.1+ |
| 1995 11 19 | 691 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.6+ | 0.2+ | 2006 11 14 | 704 | 1.1− | 1.0− |
| 1995 11 25 | 691 | 0.5− | 0.1− | 2006 10 22 | 703 | 0.3+ | 0.6− | 2006 11 17 | 704 | 0.1+ | 1.1+ |
| 1995 11 25 | 691 | 0.4− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 1995 11 25 | 691 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.9− | 0.9− | 2006 11 17 | 704 | 1.1+ | 1.0− |
| 2006 09 30 | 703 | 0.1− | 0.7+ | 2006 10 22 | 703 | 0.5− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.9− |
| 2006 09 30 | 703 | 0.9− | 0.1− | 2006 10 23 | 644 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2006 09 30 | 703 | 0.1− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2006 09 30 | 703 | 0.0 | 0.8− | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 1.1+ |
| 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.7+ |
| 2006 10 11 | 644 | 0.4+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 10 12 | 644 | 0.5− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2006 10 12 | 644 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 10 16 | 703 | 0.6+ | 0.4− | 2006 11 14 | 704 | (1.1+ | 2.0+) | | | | |

**2006 TX$_{54}$ = 2000 EE$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.43738 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24079344 | $\omega$ | 174.92337 | | +0.82109405 | | +0.56851115 |
| $a$ | 2.5588193 | $\Omega$ | 150.24778 | | −0.52724226 | | +0.78963578 |
| $e$ | 0.2195677 | $i$ | 5.89719 | | −0.21867821 | | +0.23080385 |
| $P$ | 4.09 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 04 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.9+ |
| 2000 03 04 | 691 | 0.1− | 0.6− | 2006 10 16 | 703 | 0.3− | 0.5− | 2006 11 13 | 703 | 0.8− | 0.6+ |
| 2000 03 04 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | (1.6+ | 0.2+) | 2006 11 13 | 703 | 0.9− | 0.1− |
| 2000 03 12 | 691 | 0.2− | 0.2− | 2006 10 22 | 703 | 1.2+ | 0.3− | 2006 11 19 | 703 | 0.1+ | 0.5− |
| 2000 03 12 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.5− | 0.3+ |
| 2000 03 12 | 691 | 0.4+ | 0.9+ | 2006 10 22 | 703 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.9− | 0.0 |
| 2006 09 30 | 699 | 1.3− | 0.5− | 2006 10 22 | 703 | 0.1− | 0.1+ | 2006 11 19 | 703 | 0.8− | 1.1+ |
| 2006 09 30 | 699 | 0.6+ | 0.3− | 2006 11 08 | 644 | 0.3+ | 0.1− | 2006 11 19 | 703 | 1.1+ | 0.2+ |
| 2006 09 30 | 699 | 0.4− | 1.1+ | 2006 11 08 | 644 | 0.2+ | 0.4− | 2006 11 19 | 703 | 0.1− | 1.2− |
| 2006 09 30 | 699 | 0.2+ | 0.6+ | 2006 11 08 | 644 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.8− | 0.1− |
| 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 11 10 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.9− | 1.4− |
| 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.5+ | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 10 | 644 | 0.7+ | 0.9− | 2006 11 20 | 704 | (1.9+ | 2.3−) |
| 2006 10 16 | 703 | 1.2+ | 0.3− | 2006 11 13 | 703 | 0.1+ | 0.3+ | 2006 11 20 | 704 | (2.3+ | 1.9−) |

**2006 TY$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.62760 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27770720 | $\omega$ | 229.71716 | | +0.99796730 | | −0.01201971 |
| $a$ | 2.3267227 | $\Omega$ | 130.87542 | | +0.03303328 | | +0.93738804 |
| $e$ | 0.1864888 | $i$ | 4.74773 | | −0.05449829 | | +0.34807930 |
| $P$ | 3.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.2− | 1.0+ | 2005 04 15 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.3+ |
| 2002 06 16 | 644 | 0.1− | 0.7+ | 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.3+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 16 | 644 | 0.2− | 0.7+ | 2005 04 15 | 691 | 0.2+ | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.4+ | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2004 02 14 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.8+ | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2004 02 14 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.7+ | | | | |

### 2006 TZ$_{54}$ = 2000 CC$_{147}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.16741 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.26915814 | $\omega$ | 287.94135 | | | +0.64733824 | −0.75876198 |
| $a$ | 2.3757334 | $\Omega$ | 121.49720 | | | +0.72748257 | +0.58674117 |
| $e$ | 0.1633195 | $i$ | 4.86699 | | | +0.22742540 | +0.28286933 |
| $P$ | 3.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.3+ | 0.4− | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 14 | 644 | 0.3+ | 0.3− |
| 2000 02 04 | 691 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 14 | 644 | 0.3+ | 0.0 |
| 2000 02 04 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 1.3− | 0.1− | 2006 11 14 | 704 | 0.2− | 1.4− |
| 2000 02 08 | B18 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 11 14 | 644 | 0.2+ | 0.1− |
| 2000 02 08 | B18 | 0.1− | 2.0+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 14 | 644 | 0.2+ | 0.6+ |
| 2000 02 08 | B18 | 0.3− | 1.3+ | 2006 10 16 | 703 | 0.6− | 0.7+ | 2006 11 14 | 704 | 0.9+ | 0.1+ |
| 2000 02 08 | B18 | 1.4+ | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.3+ | 0.3− |
| 2000 02 09 | B18 | 0.9− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 703 | 0.0 | 0.4− |
| 2000 02 09 | B18 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.2− | 1.0− |
| 2000 02 09 | B18 | 0.7− | 0.2− | 2006 10 22 | 703 | 0.2− | 0.4− | 2006 11 19 | 703 | 0.3− | 0.6− |
| 2005 06 17 | G96 | 0.5+ | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.1+ | 2006 11 19 | 703 | 0.4− | 0.9− |
| 2005 06 17 | G96 | 0.0 | 0.5+ | 2006 10 22 | 703 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.1+ | 0.1+ |
| 2005 06 17 | G96 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.1− | 2006 11 19 | 703 | 0.4+ | 0.3+ |
| 2005 06 17 | G96 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.5+ |
| 2006 09 14 | 703 | 1.0− | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.3− | 0.6+ |
| 2006 09 14 | 703 | 1.3+ | 0.9+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.6− | 0.1+ |
| 2006 09 14 | 703 | 0.6− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.9− | 0.4− |
| 2006 09 14 | 703 | 0.4− | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.4− |
| 2006 09 30 | 699 | 0.5+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.5− |
| 2006 09 30 | 699 | 0.4− | 0.3+ | 2006 11 14 | 644 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2006 09 30 | 699 | 0.3+ | 0.2+ | 2006 11 14 | 644 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2006 09 30 | 699 | 0.4+ | 0.3− | 2006 11 14 | 704 | 0.1− | 1.1+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | (1.6+ | 1.4+) | 2006 11 24 | G96 | 0.0 | 0.3− |

### 2006 TE$_{55}$ = 2001 YG$_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.93484 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17673003 | $\omega$ | 299.31514 | | | +0.86915949 | −0.45550289 |
| $a$ | 3.1448201 | $\Omega$ | 88.37370 | | | +0.49356480 | +0.77465981 |
| $e$ | 0.2389953 | $i$ | 11.10668 | | | +0.03091224 | +0.43865624 |
| $P$ | 5.58 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | (1.8− | 4.7−) | 2006 09 22 | 703 | 0.4− | 0.7+ | 2006 10 22 | 703 | 0.8− | 0.7− |
| 1995 12 27 | 691 | 0.4+ | 0.1− | 2006 09 22 | 703 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 0.6+ | 0.2− |
| 1995 12 27 | 691 | 0.4− | 0.2+ | 2006 09 22 | 703 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 1.4− | 0.2− |
| 2001 12 18 | 644 | 0.6+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.3− |
| 2001 12 18 | 644 | 0.5+ | 0.4+ | 2006 10 12 | 644 | 0.6+ | 0.2+ | 2006 11 13 | 703 | 0.3+ | 0.6− |
| 2001 12 18 | 644 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.4+ | 0.4+ | 2006 11 17 | 644 | 0.4+ | 0.1+ |
| 2001 12 18 | 704 | 0.5− | 1.3+ | 2006 10 12 | 644 | 0.4+ | 0.2+ | 2006 11 17 | 644 | 0.4+ | 0.2+ |
| 2001 12 18 | 704 | 0.6+ | 1.1+ | 2006 10 12 | 644 | 0.0 | 0.4+ | 2006 11 17 | 644 | 0.4+ | 0.1+ |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.8+ | 0.9− | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.2+ | 2006 11 19 | 703 | (1.6+ | 1.2−) |
| 2001 12 19 | 704 | 0.1+ | 1.3+ | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 19 | 703 | 0.3− | 0.3− |
| 2001 12 19 | 704 | 0.4− | 1.1+ | 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 21 | 704 | (0.8+ | 1.6+) |
| 2001 12 20 | 645 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.9− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2001 12 20 | 645 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.7− | 2006 11 21 | 704 | 1.0− | 0.3+ |
| 2006 09 22 | 703 | 0.1− | 0.4+ | 2006 10 22 | 703 | (2.3+ | 0.3−) | 2006 11 21 | 704 | 0.2− | 1.0+ |

### 2006 TJ$_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.76176 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.23799374 | $\omega$ | 262.82579 | | | +0.73423736 | −0.67373680 |
| $a$ | 2.5788477 | $\Omega$ | 139.47818 | | | +0.66251098 | +0.68421811 |
| $e$ | 0.1109589 | $i$ | 7.38475 | | | +0.14823868 | +0.27914927 |
| $P$ | 4.14 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.3+ | 0.3+ | 2006 10 22 | 703 | 0.6− | 0.2+ |
| 2000 02 12 | 645 | 0.1− | 0.0 | 2006 09 29 | 699 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 11 12 | 644 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.3+ | 1.1+ | 2006 10 23 | 644 | 0.4+ | 0.1+ |
| 2002 11 12 | 644 | 0.4+ | 0.1− | 2006 09 29 | 699 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2002 11 12 | 644 | 0.4+ | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.7+ | 0.5+ |
| 2002 11 23 | 644 | 0.3+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.0 | 0.6+ |
| 2002 11 23 | 644 | 0.2+ | 0.2+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.8− |
| 2002 11 23 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 13 | 703 | 0.2− | 0.1− |
| 2002 12 13 | 608 | 0.5− | 1.0− | 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2002 12 13 | 608 | 0.2+ | 1.5− | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2002 12 13 | 608 | 0.4− | 0.6− | 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.0 |
| 2004 03 20 | 691 | 0.1− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2004 03 20 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.4− | | | | |
| 2004 03 20 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.9− | 0.1− | | | | |

### 2006 TT$_{55}$ = 2001 YG$_{132}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.89209 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.17832936 | $\omega$ | 294.22361 | | | +0.96255101 | +0.02148498 |
| $a$ | 3.1259893 | $\Omega$ | 65.51047 | | | +0.11911260 | +0.86196608 |
| $e$ | 0.2462558 | $i$ | 17.27532 | | | −0.24353180 | +0.50651048 |
| $P$ | 5.53 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.2+ | 0.3− | 2001 12 22 | 704 | 0.1+ | 1.4+ | 2006 10 22 | 703 | 0.5− | 0.4+ |
| 1995 11 16 | 691 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 1995 11 16 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 1999 06 12 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 1999 06 12 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 1999 06 12 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.9− | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.8− | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.6+ |
| 2001 12 19 | 704 | 0.0 | 0.8− | 2006 10 22 | 703 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2001 12 22 | 704 | 0.0 | 0.9+ | 2006 10 22 | 703 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2001 12 22 | 704 | 0.6− | 0.6+ | 2006 10 22 | 703 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.4+ | 0.2− |

### 2006 TV$_{55}$ = 1999 TS$_{242}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.28356 | | | (2000.0) | | **P** | **Q** |
| $n$ | 0.28113060 | $\omega$ | 228.19747 | | | +0.74262736 | +0.64760842 |
| $a$ | 2.3077954 | $\Omega$ | 90.70202 | | | −0.55266555 | +0.73650546 |
| $e$ | 0.2472768 | $i$ | 9.82406 | | | −0.37823987 | +0.19535363 |
| $P$ | 3.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 04 | 703 | 0.6+ | 0.5+ | 2005 03 16 | 703 | 0.6− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 1999 10 04 | 703 | 0.5+ | 0.4+ | 2005 04 06 | 703 | 1.0+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.1+ |
| 1999 10 04 | 703 | 0.4+ | 0.5+ | 2005 04 06 | 703 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.7− | 0.1+ |
| 1999 10 04 | 703 | 1.0+ | 0.2+ | 2005 04 06 | 703 | 1.2− | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.4+ |
| 1999 10 09 | 704 | 0.7− | 0.6− | 2005 04 06 | 703 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.6+ |
| 1999 10 09 | 704 | 0.2− | 0.3+ | 2006 09 30 | 699 | 0.1+ | 1.0− | 2006 10 16 | 703 | 0.1− | 0.4+ |
| 1999 10 09 | 704 | 0.3− | 0.3− | 2006 09 30 | 699 | 1.0+ | 0.8− | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1999 10 09 | 704 | 1.0− | 0.0 | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 1999 10 09 | 704 | 0.6− | 0.5− | 2006 09 30 | 699 | 0.0 | 0.8+ | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2004 02 27 | 695 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.5− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2004 02 27 | 695 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | 703 | 0.5+ | 0.7− | 2006 09 30 | 699 | 0.5+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2005 03 16 | 703 | 0.0 | 0.2+ | 2006 09 30 | 703 | 0.8− | 0.7− | | | | |
| 2005 03 16 | 703 | 0.6+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.2+ | | | | |

**2006 TC$_{56}$ = 1998 DG$_{25}$ = 2003 AR$_{9}$ = 2004 FG$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.97993 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17392252 | $\omega$ | 220.79562 | | +0.50425262 | | +0.86302503 |
| $a$ | 3.1785728 | $\Omega$ | 79.50636 | | −0.78407781 | | +0.47225695 |
| $e$ | 0.1294375 | $i$ | 1.76492 | | −0.36187193 | | +0.17933536 |
| $P$ | 5.67 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.1+ | 0.0 | 2003 01 05 | 291 | 0.3− | 0.4+ | 2006 09 28 | 699 | 0.4− | 1.0+ |
| 1998 02 23 | 691 | 0.2+ | 0.2− | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 28 | 699 | 0.1− | 0.5+ |
| 1998 02 23 | 691 | 0.0 | 0.0 | 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 09 28 | 699 | 0.1+ | 1.2+ |
| 1998 03 02 | 691 | 0.1+ | 0.4− | 2004 03 17 | 691 | 0.2+ | 0.4+ | 2006 10 13 | 291 | 0.1− | 0.2+ |
| 1998 03 02 | 691 | 0.0 | 0.0 | 2004 03 19 | 704 | (1.8+ | 0.2+) | 2006 10 13 | 291 | 0.1− | 0.4+ |
| 1998 03 02 | 691 | 0.1+ | 0.3− | 2004 03 19 | 704 | 0.8+ | 0.2+ | 2006 10 13 | 291 | 0.0 | 0.1+ |
| 2000 08 07 | 608 | 1.3− | 0.5− | 2004 03 19 | 704 | 0.1− | 1.3+ | 2006 10 15 | 291 | 0.0 | 0.2+ |
| 2000 08 07 | 608 | 1.4− | 0.6− | 2005 02 11 | 809 | 0.6+ | 1.0+ | 2006 10 15 | 291 | 0.1+ | 0.1+ |
| 2000 08 07 | 608 | 1.1− | 0.3− | 2005 02 11 | 809 | 0.4+ | 1.4+ | 2006 10 15 | 291 | 0.1+ | 0.2+ |
| 2001 12 19 | 691 | 0.7+ | 0.1− | 2005 02 11 | 809 | (3.2+ | 2.0+) | 2006 10 20 | 644 | 0.4− | 0.1+ |
| 2001 12 19 | 691 | 0.6+ | 0.0 | 2006 08 22 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1− |
| 2001 12 19 | 691 | 0.5+ | 0.4+ | 2006 08 22 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2003 01 03 | 291 | 0.3− | 0.1− | 2006 08 22 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 01 03 | 291 | 0.4− | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2− |
| 2003 01 03 | 291 | 0.7− | 0.2+ | 2006 09 18 | 699 | 0.1+ | 0.7− | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2003 01 05 | 291 | 0.2+ | 0.5+ | 2006 09 18 | 699 | 0.4+ | 0.1+ | | | | |
| 2003 01 05 | 291 | 0.3− | 0.2+ | 2006 09 18 | 699 | 0.5− | 0.2− | | | | |

**2006 TL$_{56}$ = 2005 MD$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.12374 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22388587 | $\omega$ | 143.23907 | | +0.98432351 | | −0.13823886 |
| $a$ | 2.6860758 | $\Omega$ | 225.10193 | | +0.10094463 | | +0.95081297 |
| $e$ | 0.2159471 | $i$ | 8.89515 | | +0.14462851 | | +0.27720879 |
| $P$ | 4.40 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 29 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2005 06 29 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1+ | 1.0+ |
| 2005 06 29 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.2+ | 0.0 |
| 2005 07 03 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2005 07 03 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.1− |
| 2005 07 03 | 691 | 0.0 | 0.6− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.4− |
| 2006 10 02 | G96 | 0.5+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.3− |
| 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.4− |
| 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.4+ |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.4− |
| 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.6− | 1.0− |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2+ | 2006 11 27 | 291 | 0.0 | 0.3+ |
| 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.2+ | 2006 11 27 | 291 | 0.3+ | 0.4+ |
| 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 27 | 291 | 0.1+ | 0.1+ |
| 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 27 | G96 | 0.2+ | 0.5− |
| 2006 10 22 | 644 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.5− | 2006 11 27 | G96 | 0.2+ | 0.5− |
| 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 27 | G96 | 0.1− | 0.5− |

**2006 TT$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.65339 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18603251 | $\omega$ | 155.64881 | | +0.98436636 | | −0.15522760 |
| $a$ | 3.0390895 | $\Omega$ | 213.61382 | | +0.12660017 | | +0.95209038 |
| $e$ | 0.0911889 | $i$ | 8.64696 | | +0.12245517 | | +0.26349250 |
| $P$ | 5.30 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 809 | 0.2− | 0.6− | 2006 10 20 | 691 | 0.6− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2005 06 06 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2005 06 06 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2005 06 06 | 691 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.3− | 0.4− |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2006 09 26 | G96 | 0.3− | 0.1− | 2006 10 23 | 734 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1− | 1.3+ |
| 2006 10 04 | 703 | 0.3+ | 0.3− | 2006 10 23 | 734 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.1+ |
| 2006 10 04 | 703 | 0.3+ | 0.2− | 2006 10 23 | 734 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.7+ | 0.4+ |
| 2006 10 04 | 703 | 0.3+ | 0.8+ | 2006 10 23 | 734 | 0.2+ | 0.2− | 2006 11 11 | 703 | (1.7− | 3.1−) |
| 2006 10 04 | 703 | (0.1− | 1.6−) | 2006 10 23 | 734 | 0.5+ | 0.3− | 2006 11 17 | 703 | 0.5− | 0.9+ |
| 2006 10 14 | 734 | 0.1+ | 0.1− | 2006 10 24 | 734 | 0.6+ | 0.1− | 2006 11 17 | 703 | 0.1− | 1.0− |
| 2006 10 14 | 734 | 0.1− | 0.3+ | 2006 10 24 | 734 | 0.5+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4+ |
| 2006 10 14 | 734 | 0.2+ | 0.3− | 2006 10 24 | 734 | 0.6+ | 0.1− | 2006 11 17 | 703 | 0.6− | 0.0 |
| 2006 10 14 | 734 | 0.0 | 0.3− | 2006 10 24 | 734 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.9+ |
| 2006 10 14 | 734 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.6− | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2006 10 14 | 734 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.8+ |
| 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 24 | 703 | (1.8+ | 0.6−) |
| 2006 10 20 | 734 | 0.5− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 24 | 703 | 0.0 | 0.2− |
| 2006 10 20 | 734 | 0.4− | 0.4− | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 24 | 703 | 1.3− | 0.4+ |
| 2006 10 20 | 734 | 0.4− | 0.5− | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 24 | 703 | 0.2+ | 0.6− |
| 2006 10 20 | 691 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.3+ | 0.1+ | | | | |
| 2006 10 20 | 691 | 1.0− | 1.3+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | | | | |

**2006 TU$_{56}$ = 2001 TC$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.64955 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20289088 | $\omega$ | 29.83176 | | +0.36086507 | | −0.92740073 |
| $a$ | 2.8683206 | $\Omega$ | 39.25053 | | +0.82189615 | | +0.26632411 |
| $e$ | 0.0928134 | $i$ | 8.95712 | | +0.44075290 | | +0.26267729 |
| $P$ | 4.86 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.7+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 10 15 | 645 | 0.1+ | 0.0 | 2006 10 19 | H36 | 1.3+ | 1.0− | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 19 | H36 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2001 11 12 | 645 | 0.1− | 0.1+ | 2006 10 19 | H36 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.6− |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | (2.3+ | 0.1+) | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 21 | 703 | (1.6+ | 0.1−) | 2006 11 15 | 691 | 0.5− | 0.1+ |
| 2006 09 19 | 691 | 0.5− | 0.2+ | 2006 10 21 | 703 | 0.9+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.3− |
| 2006 09 19 | 691 | 0.3− | 0.1− | 2006 10 21 | 703 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.2− | 0.4+ |
| 2006 09 19 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2006 10 14 | H36 | 0.6+ | 0.8+ | 2006 10 21 | 644 | 0.4+ | 0.5+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2006 10 14 | H36 | 1.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.4+ | 0.2− |
| 2006 10 14 | H36 | 0.0 | 0.1− | 2006 10 23 | 734 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2006 10 14 | H36 | 0.3+ | 0.4+ | 2006 10 23 | 734 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.6+ |
| 2006 10 15 | 691 | 0.1+ | 0.3− | 2006 10 23 | 734 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 23 | 734 | 0.1− | 0.0 | | | | |
| 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 10 23 | 734 | 0.1+ | 0.0 | | | | |

**2006 TW$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.44651 | | (2000.0) | | | |
| $n$ | 0.18311697 | $\omega$ | 202.32207 | | +0.83186551 | −0.55407756 |
| $a$ | 3.0712628 | $\Omega$ | 191.48583 | | +0.53013886 | +0.81018404 |
| $e$ | 0.0555485 | $i$ | 9.12773 | | +0.16417237 | +0.19131094 |
| $P$ | 5.38 | $H$ | 15.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 03 25 | 566 | 0.6+ | 1.5+ | 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 1998 03 25 | 566 | 0.5− | 0.7− | 2006 07 21 | G96 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.3− |
| 1998 03 25 | 566 | 0.4− | 0.4− | 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.0 |
| 2000 09 24 | 691 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.3+ |
| 2000 09 24 | 691 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2000 09 24 | 691 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.3− | 0.2− | 2006 11 13 | 703 | 0.0 | 1.5− |
| 2002 01 05 | 209 | 0.1− | 0.3− | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.1− | 0.2+ |
| 2002 01 05 | 209 | 0.1+ | 0.1− | 2006 10 14 | D35 | 0.3+ | 0.4+ | 2006 11 13 | 703 | 0.7− | 1.1+ |
| 2002 01 05 | 209 | 0.2+ | 0.3− | 2006 10 14 | D35 | 0.1+ | 0.7+ | 2006 11 13 | 703 | 0.8− | 0.1+ |
| 2002 01 09 | 644 | 0.4+ | 0.1− | 2006 10 14 | D35 | 0.7+ | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.2− |
| 2002 01 09 | 644 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.1− | 0.6− | 2006 11 14 | 704 | 0.6+ | 1.3+ |
| 2002 01 09 | 644 | 0.0 | 0.6− | 2006 10 16 | 703 | 0.8− | 1.1− | 2006 11 14 | 704 | 0.1− | 0.9+ |
| 2002 01 10 | 209 | (4.0− | 0.4−) | 2006 10 16 | 703 | 0.7+ | 0.1+ | 2006 11 14 | 704 | 0.4− | 0.9+ |
| 2002 01 10 | 209 | (2.5− | 0.4+) | 2006 10 16 | 703 | 1.1− | 0.3+ | 2006 11 23 | G96 | 0.5− | 0.2− |
| 2002 01 10 | 209 | (2.9− | 0.4+) | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.1− |
| 2005 07 29 | 644 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 23 | G96 | 0.5− | 0.2− |
| 2005 07 29 | 644 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.2− |
| 2005 07 29 | 644 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.2− | | | | |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.4− | 0.4− | | | | |

**2006 TA$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.42323 | | (2000.0) | | | |
| $n$ | 0.23243419 | $\omega$ | 288.92797 | | +0.66869398 | −0.74203512 |
| $a$ | 2.6198075 | $\Omega$ | 119.01252 | | +0.70089759 | +0.60786297 |
| $e$ | 0.1871257 | $i$ | 3.09697 | | +0.24817521 | +0.28264197 |
| $P$ | 4.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.4+ | 0.6− | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.3− | 0.3+ |
| 1995 02 01 | 691 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.4− | 0.9+ |
| 1995 02 01 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.8+ | 0.2+ |
| 1998 12 26 | 691 | 0.3− | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.5+ | 0.3+ |
| 1998 12 26 | 691 | 0.4− | 0.5− | 2006 10 18 | 691 | 0.1+ | 0.3− | 2006 11 14 | 704 | 0.4− | 0.9+ |
| 1998 12 26 | 691 | 0.6− | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2001 06 29 | 691 | 0.4+ | 0.7− | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2001 06 29 | 691 | 0.2− | 0.8− | 2006 10 22 | 691 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2001 06 29 | 691 | 0.1− | 0.6− | 2006 10 22 | 691 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2004 03 16 | 691 | 0.2− | 0.2+ | 2006 10 27 | 704 | 0.1+ | 0.9+ | 2006 11 17 | 704 | 0.2− | 0.5+ |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 0.6+ | 0.8+ | 2006 11 17 | 704 | 0.1− | 0.4+ |
| 2004 03 16 | 691 | 0.3+ | 0.5+ | 2006 10 27 | 704 | 0.9+ | 0.8+ | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2006 08 28 | 703 | 1.2− | 0.3− | 2006 10 27 | 704 | 0.2+ | 1.0+ | 2006 11 17 | 704 | 0.3+ | 0.6+ |
| 2006 08 28 | 703 | 1.4− | 0.3+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.2− |
| 2006 08 28 | 703 | 0.9− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2006 08 28 | 703 | (1.0+ | 1.7−) | 2006 11 08 | 644 | 0.9− | 0.1− | 2006 11 20 | 704 | 0.7+ | 0.5+ |
| 2006 10 14 | D35 | 0.1− | 0.1− | 2006 11 13 | 703 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.3+ |
| 2006 10 14 | D35 | 0.6− | 0.6+ | 2006 11 13 | 703 | 0.4− | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.6+ |
| 2006 10 14 | D35 | 0.7− | 0.8+ | 2006 11 13 | 703 | 0.1− | 0.1+ | | | | |
| 2006 10 16 | 703 | 1.0− | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.7− | | | | |

**2006 TO$_{57}$ = 1999 VC$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.91031 | | (2000.0) | | | |
| $n$ | 0.28617342 | $\omega$ | 220.26507 | | +0.59774853 | −0.80145470 |
| $a$ | 2.2806039 | $\Omega$ | 193.06367 | | +0.75560236 | +0.57121424 |
| $e$ | 0.1416024 | $i$ | 4.86225 | | +0.26788386 | +0.17715716 |
| $P$ | 3.44 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.8− | 0.5+ | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 1999 11 09 | 691 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.4+ | 0.4− |
| 1999 11 09 | 691 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.7+ | 2006 11 10 | 644 | 0.4+ | 0.3− |
| 1999 11 12 | 691 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.6+ | 0.2− |
| 1999 11 12 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.5+ | 0.1− |
| 1999 11 12 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 644 | 0.5+ | 0.5− |
| 2006 09 26 | G96 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.4+ | 0.5− |
| 2006 09 26 | G96 | 0.3− | 0.2+ | 2006 10 23 | 691 | 1.3− | 0.2− | 2006 11 17 | 704 | 0.8− | 1.5− |
| 2006 09 26 | G96 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.2− | 0.1− |
| 2006 09 26 | G96 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.4+ | 0.6+ | 2006 11 17 | 704 | 0.7− | 0.1+ |
| 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.3− | 2006 11 25 | 291 | 0.3− | 0.2+ |
| 2006 10 15 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.5+ | 0.2+ | 2006 11 25 | 291 | 0.4− | 0.1− |
| 2006 10 15 | 691 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.2− | 2006 11 25 | 291 | 0.6− | 0.0 |
| 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 10 31 | 691 | 0.4+ | 0.2+ | | | | |

**2006 TS$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 227.37084 | | (2000.0) | | | |
| $n$ | 0.26153972 | $\omega$ | 125.44816 | | −0.86866159 | −0.49370824 |
| $a$ | 2.4216476 | $\Omega$ | 25.04317 | | +0.41736043 | −0.77387017 |
| $e$ | 0.0555688 | $i$ | 5.55530 | | +0.26690321 | −0.39670786 |
| $P$ | 3.77 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 703 | 0.5− | 0.2− | 2006 10 15 | 703 | 0.9+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.3− |
| 2004 01 16 | 703 | 0.3+ | 0.1− | 2006 10 15 | 703 | 0.3+ | 1.0− | 2006 10 27 | G96 | 0.0 | 0.3− |
| 2004 01 16 | 703 | 0.2+ | 0.6+ | 2006 10 15 | 703 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2004 01 16 | 703 | 0.7− | 0.1− | 2006 10 16 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.1− |
| 2004 01 26 | 699 | (1.7− | 2.5+) | 2006 10 16 | G96 | 0.1+ | 0.1− | 2006 10 29 | 291 | 0.2− | 0.4+ |
| 2004 01 26 | 699 | 0.0 | 0.7− | 2006 10 16 | G96 | 0.1− | 0.0 | 2006 10 29 | 291 | 0.2− | 0.3+ |
| 2004 01 26 | 699 | 0.3− | 1.1+ | 2006 10 16 | G96 | 0.1+ | 0.2− | 2006 10 29 | 291 | 0.2− | 0.2+ |
| 2004 01 26 | 699 | 0.9+ | 0.5− | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.5+ | 0.3− |
| 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.6− |
| 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.4+ | 1.0− |
| 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.7+ | 1.4− |
| 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.4− | 1.1+ | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.6− | 0.8+ |
| 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.4+ | | | | |
| 2006 10 15 | 703 | 1.0− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2− | | | | |

**2006 TU$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.01873 | | (2000.0) | | | |
| $n$ | 0.22129001 | $\omega$ | 167.80716 | | +0.99086531 | +0.13484599 |
| $a$ | 2.7070411 | $\Omega$ | 184.44404 | | −0.12537982 | +0.91685864 |
| $e$ | 0.1367128 | $i$ | 1.17028 | | −0.04965728 | +0.37574831 |
| $P$ | 4.45 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.4− | 0.5+ | 2005 06 27 | G96 | 0.7− | 0.1+ | 2006 10 16 | G96 | 0.2+ | 0.1− |
| 2000 03 30 | 691 | 0.3+ | 0.6+ | 2005 06 27 | G96 | 0.2− | 0.4+ | 2006 10 16 | G96 | 0.0 | 0.2− |
| 2000 03 30 | 691 | 0.0 | 0.1− | 2005 06 27 | G96 | 0.4+ | 0.4+ | 2006 10 16 | G96 | 0.9+ | 0.4+ |
| 2000 04 13 | 691 | 0.2+ | 0.1− | 2005 06 27 | G96 | 0.3+ | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2000 04 13 | 691 | 0.3+ | 0.4− | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 691 | 0.3− | 0.1− | 2006 09 25 | 691 | 0.2− | 0.3− | 2006 10 19 | 644 | 0.3+ | 0.6+ |
| 2002 12 13 | 644 | 0.5− | 0.3− | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2002 12 13 | 644 | 0.1+ | 0.5+ | 2006 10 03 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2002 12 13 | 644 | 0.1− | 0.5+ | 2006 10 03 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.0 |
| 2003 01 11 | 291 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2003 01 11 | 291 | 0.1+ | 0.1− | 2006 10 15 | 703 | 0.0 | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2003 01 11 | 291 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.5− | 0.6− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2005 02 16 | 809 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.8+ | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2005 02 16 | 809 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.9− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2005 02 16 | 809 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.4+ | 0.1+ | | | | |

### 2006 TZ$_{57}$ = 1999 SR$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.35389 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27919920 | $\omega$ | 14.56780 | | +0.70255970 | −0.71035453 | |
| $a$ | 2.3184261 | $\Omega$ | 30.83521 | | +0.64432663 | +0.60963096 | |
| $e$ | 0.2284406 | $i$ | 4.75625 | | +0.30208123 | +0.35177626 | |
| $P$ | 3.53 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 30 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− |
| 1999 09 30 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.3− | 0.5+ |
| 1999 09 30 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.6+ |
| 1999 10 01 | 691 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 1999 10 01 | 691 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 1999 10 01 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 1.2− | 1.1− | 2006 11 13 | G96 | 1.0+ | 0.4− |
| 1999 10 29 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.3− | 0.6+ | 2006 11 13 | G96 | 0.4− | 0.7− |
| 1999 10 29 | 691 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.0 | 0.7+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 1999 10 29 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2006 10 15 | 703 | (1.8− | 0.6−) | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.3− | 0.0 |
| 2006 10 15 | 703 | 1.3+ | 1.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2006 10 15 | 703 | 0.8+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.4− | 0.2− |
| 2006 10 15 | 703 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3− | | | | |
| 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.5− | | | | |

### 2006 TB$_{58}$ = 1997 VQ$_{4}$ = 2001 PL$_{56}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.16546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22004378 | $\omega$ | 172.24952 | | +0.76326063 | +0.64585458 | |
| $a$ | 2.7172524 | $\Omega$ | 147.49958 | | −0.59450681 | +0.71265011 | |
| $e$ | 0.0602188 | $i$ | 1.86286 | | −0.25297206 | +0.27386436 | |
| $P$ | 4.48 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 02 | 552 | 0.2+ | 0.0 | 2001 08 16 | 704 | 0.4+ | 0.6+ | 2006 09 30 | 703 | 0.9− | 0.4− |
| 1997 11 02 | 552 | 0.5+ | 0.2− | 2001 08 16 | 704 | 0.2+ | 0.0 | 2006 09 30 | 703 | 0.7− | 0.1− |
| 1997 11 03 | 552 | 0.6− | 0.4− | 2001 08 16 | 704 | 0.5+ | 0.3− | 2006 09 30 | 703 | 1.6− | 0.0 |
| 1997 11 03 | 552 | 0.1+ | 0.2+ | 2001 08 25 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.5− |
| 1998 12 23 | 691 | (0.2− | 3.0−) | 2001 08 25 | 691 | 0.1− | 0.0 | 2006 09 30 | 703 | 1.5− | 0.4+ |
| 1998 12 23 | 691 | 0.8+ | 1.1− | 2001 08 25 | 691 | 0.3− | 0.1− | 2006 10 15 | 703 | 0.4− | 0.6− |
| 1998 12 23 | 691 | 0.3− | 0.2− | 2002 10 29 | 291 | 0.7− | 0.1+ | 2006 10 15 | 703 | 0.4− | 1.0− |
| 2000 04 29 | 691 | 0.2+ | 0.1+ | 2002 10 29 | 291 | 0.1− | 0.0 | 2006 10 15 | 703 | 0.3+ | 0.2+ |
| 2000 04 29 | 691 | 0.1− | 0.4+ | 2002 10 29 | 291 | 0.3− | 0.4+ | 2006 10 15 | 703 | 0.5+ | 0.5+ |
| 2000 04 29 | 691 | 0.2+ | 0.2+ | 2005 01 22 | 809 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ |
| 2000 05 28 | 691 | 0.2− | 0.2+ | 2005 01 22 | 809 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2000 05 28 | 691 | 0.0 | 0.1+ | 2005 01 22 | 809 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1+ |
| 2000 05 28 | 691 | 0.1+ | 0.3+ | 2006 09 14 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | (1.9+ | 0.1+) |
| 2001 08 14 | 608 | 0.3− | 1.3− | 2006 09 14 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.1− |
| 2001 08 14 | 608 | 0.1+ | 0.8− | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3− | 0.5+ |
| 2001 08 14 | 608 | 0.2+ | 0.9− | 2006 09 30 | 703 | 0.8+ | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 2001 08 16 | 704 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2001 08 16 | 704 | 1.1+ | 1.1− | 2006 09 30 | 703 | 1.2− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.3+ |

### 2006 TD$_{58}$ = 2004 HM$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.64340 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18476842 | $\omega$ | 355.30603 | | +0.89993955 | −0.42382424 | |
| $a$ | 3.0529350 | $\Omega$ | 30.43119 | | +0.40632741 | +0.73005458 | |
| $e$ | 0.0838928 | $i$ | 11.66169 | | +0.15813555 | +0.53609077 | |
| $P$ | 5.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 24 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.8+ | 2006 10 21 | 703 | 0.4+ | 0.5− |
| 2004 04 24 | 691 | 0.0 | 0.1+ | 2006 10 15 | 703 | 0.5− | 1.2+ | 2006 10 21 | 703 | 0.4− | 0.1− |
| 2004 04 24 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2004 04 25 | 291 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2004 04 25 | 291 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.6− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2004 04 25 | 291 | 0.1+ | 0.1+ | 2006 10 18 | H07 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 18 | H07 | 0.3+ | 1.1− | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2006 09 19 | 691 | 0.1− | 0.0 | 2006 10 18 | H07 | 0.4− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2006 09 19 | 691 | 0.3− | 0.0 | 2006 10 18 | H07 | 0.7+ | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.6+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2006 09 27 | 691 | 0.1+ | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.3+ | 0.3+ |
| 2006 10 13 | D35 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2006 10 13 | D35 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.6− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.4+ |
| 2006 10 13 | D35 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2006 10 15 | 703 | 0.9+ | 1.1+ | 2006 10 21 | 703 | 0.6− | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.3− |
| 2006 10 15 | 703 | 0.4− | 0.9+ | 2006 10 21 | 703 | 0.4− | 0.9− | 2006 11 19 | 691 | 0.4− | 0.3− |

### 2006 TF$_{58}$ = 1999 TH$_{159}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.39434 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28881685 | $\omega$ | 138.71524 | | +0.89217695 | −0.45030414 | |
| $a$ | 2.2666668 | $\Omega$ | 248.08037 | | +0.40378490 | +0.83015206 | |
| $e$ | 0.1736422 | $i$ | 2.18101 | | +0.20243037 | +0.32874569 | |
| $P$ | 3.41 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 704 | 0.1+ | 0.3+ | 2006 10 17 | 461 | 0.1− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 1999 10 09 | 704 | 0.2− | 0.1+ | 2006 10 17 | 461 | 0.7− | 0.2+ | 2006 11 10 | 644 | 0.2+ | 0.3− |
| 1999 10 09 | 704 | 0.0 | 0.5+ | 2006 10 18 | 461 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.2− |
| 1999 10 09 | 704 | 0.4− | 0.9+ | 2006 10 18 | 461 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 1999 10 13 | 704 | 0.3− | 0.4− | 2006 10 18 | 461 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.3− |
| 1999 10 13 | 704 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 1999 10 13 | 704 | 0.4+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.9+ |
| 1999 10 13 | 704 | 0.1+ | 1.0− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.7− | 1.4− | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2004 01 30 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.7− | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2004 01 30 | 691 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.8− | 2006 11 12 | G96 | 0.0 | 0.4− |
| 2004 02 12 | 691 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.8− | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2004 02 12 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.8− | 0.1− |
| 2004 02 12 | 691 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.8− | 1.4− |
| 2005 05 10 | G96 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.7− | 0.0 |
| 2005 05 10 | G96 | 0.6− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2005 05 10 | G96 | 0.2+ | 0.2+ | 2006 11 02 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.6+ |
| 2005 05 10 | G96 | 0.3+ | 0.2+ | 2006 11 02 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 2006 10 13 | 691 | 0.3+ | 0.3+ | 2006 11 02 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.9− | 0.7+ |
| 2006 10 13 | 691 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.6+ | 1.0− |
| 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.3+ | 1.0+ |
| 2006 10 17 | 461 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.9− | 0.1− |
| 2006 10 17 | 461 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2006 10 17 | 461 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2006 10 17 | 461 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.5+ | 0.1− | | | | |

**2006 TX$_{58}$ = 2001 SC$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 161.91866 | | (2000.0) | | | |
| $n$ | 0.22054719 | $\omega$ | 228.35255 | | −0.65470451 | +0.75588413 |
| $a$ | 2.7131160 | $\Omega$ | 0.75277 | | −0.66649021 | −0.57659449 |
| $e$ | 0.0500161 | $i$ | 4.76288 | | −0.35658492 | −0.31012575 |
| $P$ | 4.47 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 691 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.5− | 0.1− |
| 2001 09 20 | 691 | 0.5− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.4− | 0.3− |
| 2001 09 20 | 691 | 0.6− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2+ |
| 2001 09 21 | 691 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2001 09 21 | 691 | 0.4+ | 0.2+ | 2006 10 30 | 408 | 0.8− | 0.4− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2001 09 21 | 691 | 0.4+ | 0.2+ | 2006 10 30 | 408 | 0.6− | 0.6− | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 10 31 | 408 | 1.0+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2006 10 13 | 691 | 0.1− | 0.2− | 2006 10 31 | 408 | 0.6+ | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2006 10 13 | 691 | 0.1− | 0.3− | 2006 11 16 | 408 | 1.1+ | 0.2− | 2006 11 18 | G96 | 0.3− | 0.1− |
| 2006 10 17 | 691 | 0.1+ | 0.6+ | 2006 11 16 | 408 | 0.8+ | 0.3− | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2006 10 17 | 691 | 0.5+ | 0.1− | 2006 11 17 | G96 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.5− | 0.1+ |

**2006 TZ$_{59}$ = 1995 VO$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.16695 | | (2000.0) | | | |
| $n$ | 0.17759125 | $\omega$ | 161.48074 | | +0.78023416 | −0.60834966 |
| $a$ | 3.1346448 | $\Omega$ | 236.86558 | | +0.54969831 | +0.77783145 |
| $e$ | 0.0697814 | $i$ | 10.00021 | | +0.29843997 | +0.15776222 |
| $P$ | 5.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.0 | 0.5− | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.3− | 0.1− |
| 1995 11 15 | 691 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.3− | 0.9− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 1995 11 15 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1995 11 20 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.2− | 0.1− |
| 1995 11 20 | 691 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.4+ | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.9+ |
| 1995 11 20 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.5+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2006 10 13 | 691 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.1− | | | | |

**2006 TC$_{60}$ = 1995 UV$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 35.86756 | | (2000.0) | | | |
| $n$ | 0.27406269 | $\omega$ | 322.99905 | | +0.98021472 | +0.18805139 |
| $a$ | 2.3473045 | $\Omega$ | 26.36294 | | −0.13125828 | +0.85113885 |
| $e$ | 0.1066960 | $i$ | 7.99626 | | −0.14815655 | +0.49010135 |
| $P$ | 3.60 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.7+ | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 1995 10 20 | 691 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.4− | 0.6+ |
| 1995 10 20 | 691 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.7− | 2006 11 08 | 644 | 0.1− | 0.7+ |
| 1995 10 26 | 691 | 0.4− | 0.6− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.5− | 0.1+ |
| 1995 10 26 | 691 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2+ |
| 1995 10 26 | 691 | 0.2+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.5− | 0.7+ |
| 2006 10 13 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.4− | 0.3+ |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.2− | | | | |
| 2006 10 13 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 | | | | |

**2006 TH$_{60}$ = 2005 GL$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 100.28439 | | (2000.0) | | | |
| $n$ | 0.29403260 | $\omega$ | 258.76512 | | +0.15073250 | +0.98790761 |
| $a$ | 2.2397819 | $\Omega$ | 20.01406 | | −0.86057153 | +0.14920174 |
| $e$ | 0.1639916 | $i$ | 6.08971 | | −0.48651450 | +0.04215911 |
| $P$ | 3.35 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 691 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.9+ | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2005 04 11 | 691 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 04 11 | 691 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2005 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2005 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.0 | 0.6− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2005 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2006 10 13 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2006 10 13 | 691 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.5− | 0.3+ | | | | |

**2006 TT$_{60}$ = 2001 SP$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 18.37399 | | (2000.0) | | | |
| $n$ | 0.21249841 | $\omega$ | 180.49219 | | +0.99199604 | −0.12589244 |
| $a$ | 2.7812003 | $\Omega$ | 186.76342 | | +0.11613037 | +0.93992074 |
| $e$ | 0.1187390 | $i$ | 4.74579 | | +0.04957404 | +0.31733279 |
| $P$ | 4.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.2+ | 0.5+ | 2001 09 23 | 704 | (1.8− | 0.8−) | 2006 10 16 | 703 | 1.5+ | 0.7− |
| 1994 02 10 | 691 | 0.2− | 0.2+ | 2004 03 29 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.9+ | 0.6+ |
| 1994 02 10 | 691 | 0.2+ | 0.0 | 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.1+ |
| 2001 08 24 | 691 | 0.2+ | 0.4+ | 2004 03 29 | 691 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.8+ | 0.4− |
| 2001 08 24 | 691 | 0.1− | 0.6+ | 2006 09 30 | G96 | 0.0 | 0.6− | 2006 10 17 | G96 | 0.1+ | 0.7− |
| 2001 08 24 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.4− | 0.4− |
| 2001 09 20 | 704 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.6− |
| 2001 09 20 | 704 | 0.2+ | 0.9− | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2001 09 20 | 704 | 0.8+ | 0.1+ | 2006 10 14 | 621 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.5− | 0.2+ |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2006 10 15 | 621 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2001 09 22 | 704 | (1.9− | 1.3+) | 2006 10 15 | 621 | 1.0+ | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.2− |
| 2001 09 22 | 704 | 1.0− | 1.4+ | 2006 10 15 | 691 | 0.3+ | 0.5+ | 2006 11 08 | 644 | 0.3− | 0.1− |
| 2001 09 22 | 704 | (0.6+ | 1.9+) | 2006 10 15 | 691 | 0.3− | 1.0+ | 2006 11 08 | 644 | 0.7− | 0.2− |
| 2001 09 23 | 691 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.5+ |
| 2001 09 23 | 691 | 0.2− | 0.3+ | 2006 10 16 | 621 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2001 09 23 | 704 | (1.4− | 1.8+) | 2006 10 16 | 621 | 0.8− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2001 09 23 | 691 | 0.3− | 0.7− | 2006 10 16 | 621 | 0.6− | 1.1+ | 2006 11 16 | G96 | 0.2+ | 0.7− |
| 2001 09 23 | 704 | 0.3− | 1.1+ | 2006 10 16 | 703 | (0.4+ | 1.7−) | | | | |

**2006 TU$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.75151 | | (2000.0) | | | |
| $n$ | 0.20545017 | $\omega$ | 246.07738 | | +0.23846204 | −0.97098296 |
| $a$ | 2.8444505 | $\Omega$ | 190.17701 | | +0.92412553 | +0.23260791 |
| $e$ | 0.0442526 | $i$ | 5.88275 | | +0.29854291 | +0.05554870 |
| $P$ | 4.80 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2001 10 24 | 691 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2001 10 24 | 691 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.6+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2005 07 06 | 691 | 0.1+ | 0.3− | 2006 10 11 | 691 | 0.5− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2005 07 06 | 691 | 0.3− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 10 14 | 621 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2005 07 30 | E12 | 0.2+ | 0.3− | 2006 10 15 | 621 | 0.5+ | 0.4− | 2006 10 30 | A44 | 0.0 | 0.1− |
| 2005 07 30 | E12 | 0.4+ | 0.4+ | 2006 10 15 | 621 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2005 07 30 | E12 | (1.7+ | 1.1−) | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 16 | G96 | 0.6+ | 0.5− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 30 | E12 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.3+ | 0.3− | | | | |
| 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.2− | | | | |

**2006 TA$_{61}$ = 2006 UM$_{217}$ = 2005 JG$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.02782 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23012454 | $\omega$ | 152.39263 | | +0.96594202 | | +0.25807219 |
| $a$ | 2.6373074 | $\Omega$ | 192.69416 | | −0.25039240 | | +0.91387202 |
| $e$ | 0.2566162 | $i$ | 4.91699 | | −0.06526603 | | +0.31342730 |
| $P$ | 4.28 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 22 | 809 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.5+ | 0.5+ |
| 1993 09 22 | 809 | 0.5− | 0.9+ | 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.2− | 0.7+ |
| 1993 09 22 | 809 | 0.1− | 1.8+ | 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.3− | 0.1+ |
| 1993 09 24 | 809 | 0.4+ | 0.7− | 2006 10 17 | G96 | 0.7+ | 0.9+ | 2006 11 14 | 704 | 0.3+ | 0.0 |
| 1993 09 24 | 809 | 0.3− | 1.8− | 2006 10 17 | G96 | 0.5+ | 0.2− | 2006 11 14 | 704 | 0.2− | 0.8− |
| 1993 09 24 | 809 | (2.3− | 3.6−) | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.5+ | 0.9− |
| 2005 05 04 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 14 | 704 | 0.3+ | 0.4− |
| 2005 05 04 | 691 | 0.3+ | 0.5+ | 2006 10 19 | 683 | 0.3+ | 0.7+ | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2005 05 04 | 691 | 0.2+ | 0.0 | 2006 10 19 | 683 | 1.4− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2005 05 10 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 683 | (2.1− | 1.2+) | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2005 05 10 | 691 | 0.3+ | 0.1− | 2006 10 20 | 683 | 0.0 | 0.7− | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2005 05 10 | 691 | 0.0 | 0.2+ | 2006 10 20 | 683 | 1.0− | 0.3− | 2006 11 17 | 704 | (1.2+ | 1.8+) |
| 2005 05 19 | G96 | 0.7− | 0.3− | 2006 10 20 | 683 | 0.4+ | 0.4+ | 2006 11 17 | 704 | (1.2+ | 1.7+) |
| 2005 05 19 | G96 | 0.6− | 0.5− | 2006 10 21 | 644 | 0.2− | 0.4+ | 2006 11 17 | 704 | (0.7+ | 1.9+) |
| 2005 05 19 | G96 | 0.6− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | (0.4+ | 1.7+) |
| 2005 05 19 | G96 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.1− | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | (1.4+ | 2.4−) |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | (2.7+ | 0.8−) |
| 2006 09 30 | 703 | 0.2− | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.1+ | 1.0+ |
| 2006 09 30 | 703 | 0.2− | 0.7− | 2006 10 31 | G96 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.8+ | 1.0+ |
| 2006 09 30 | 703 | 0.1+ | 0.6− | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.0 | 0.0 |
| 2006 09 30 | 703 | 0.1− | 1.0− | 2006 11 13 | 703 | 0.2+ | 0.9+ | 2006 11 20 | 704 | 1.1+ | 0.4+ |

**2006 TO$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.23396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22109784 | $\omega$ | 78.35426 | | +0.60930298 | | +0.79251740 |
| $a$ | 2.7086094 | $\Omega$ | 229.21601 | | −0.74013977 | | +0.55675338 |
| $e$ | 0.0662696 | $i$ | 1.95326 | | −0.28450483 | | +0.24888118 |
| $P$ | 4.46 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.3+ | 0.1− | 2006 10 12 | 691 | 0.4− | 0.1− | 2006 10 29 | 691 | 0.3− | 0.1− |
| 1997 09 28 | 691 | 0.0 | 0.4− | 2006 10 12 | 691 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 1997 09 28 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.1− |
| 1999 01 18 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.3− | 0.4+ | 2006 11 09 | 691 | 0.3+ | 0.2+ |
| 1999 01 18 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.2+ |
| 1999 01 18 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 09 | 691 | 0.4− | 0.3+ |
| 2001 08 23 | 699 | 0.4+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2001 08 23 | 699 | 0.9− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.1+ |
| 2001 08 23 | 699 | 0.9− | 1.0+ | 2006 10 17 | 104 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 08 23 | 699 | (0.5+ | 1.7+) | 2006 10 17 | 104 | 0.7− | 1.0+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2004 03 28 | 691 | 0.3+ | 0.1− | 2006 10 17 | 104 | 0.1− | 0.6− | 2006 11 13 | 691 | 0.1− | 0.5+ |
| 2004 03 28 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4+ | 0.4− | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2004 03 28 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.2− |
| 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.5+ | 0.1− |
| 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2006 10 12 | 691 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.0 | 0.1− | | | | |

**2006 TR$_{61}$ = 2004 EV$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 206.98089 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19908189 | $\omega$ | 263.99468 | | −0.88883533 | | −0.42772498 |
| $a$ | 2.9047909 | $\Omega$ | 250.58628 | | +0.45812427 | | −0.82189795 |
| $e$ | 0.0372877 | $i$ | 10.03775 | | +0.00969048 | | −0.37621152 |
| $P$ | 4.95 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 644 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.3− | 0.2+ | 2006 10 03 | 703 | 0.8− | 0.9− |
| 2004 03 14 | 644 | 0.3− | 0.2− | 2006 09 16 | 703 | 1.1+ | 0.6− | 2006 10 09 | 644 | 0.2+ | 0.5+ |
| 2004 03 14 | 644 | 0.1− | 0.7− | 2006 09 16 | 703 | 0.6+ | 0.5+ | 2006 10 09 | 644 | 0.2+ | 0.3+ |
| 2004 03 17 | 703 | 0.4+ | 1.0+ | 2006 09 16 | 703 | 0.8− | 0.6+ | 2006 10 09 | 644 | 0.3+ | 0.4+ |
| 2004 03 17 | 703 | (3.3+ | 0.3−) | 2006 10 03 | 703 | 0.5+ | 0.3− | 2006 10 12 | 644 | 0.4− | 0.1+ |
| 2004 03 17 | 703 | (1.8+ | 0.5+) | 2006 10 03 | 703 | 0.5− | 0.8− | 2006 10 12 | 644 | 0.5+ | 0.5+ |
| 2004 03 17 | 703 | 0.1+ | 0.2+ | 2006 10 03 | 703 | 0.4− | 1.0− | 2006 10 12 | 644 | 0.0 | 0.5+ |

**2006 TX$_{61}$ = 2004 DF$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.57987 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22562616 | $\omega$ | 36.29975 | | +0.97854205 | | −0.17772349 |
| $a$ | 2.6722459 | $\Omega$ | 333.36126 | | +0.08590413 | | +0.81180829 |
| $e$ | 0.0680238 | $i$ | 13.44613 | | +0.18728572 | | +0.55622087 |
| $P$ | 4.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 691 | 0.0 | 0.3− | 2006 09 27 | 703 | 0.4− | 0.5− | 2006 10 17 | 703 | 0.8− | 0.5− |
| 2004 02 17 | 691 | 0.3− | 0.3− | 2006 10 09 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2004 02 17 | 691 | 0.0 | 0.1− | 2006 10 09 | 644 | 0.5+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 09 | 644 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 |
| 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ |
| 2004 02 29 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 2006 09 19 | 699 | (1.8+ | 0.4+) | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.3− |
| 2006 09 19 | 699 | 0.2+ | 0.9+ | 2006 10 17 | 691 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2006 09 19 | 699 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2006 09 27 | 703 | 0.4− | 1.1− | 2006 10 17 | 703 | 0.7+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1− |
| 2006 09 27 | 703 | 1.1+ | 0.4+ | 2006 10 17 | 703 | 0.4− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2006 09 27 | 703 | 0.3− | 0.3+ | 2006 10 17 | 703 | 0.0 | 1.0+ | 2006 10 28 | 691 | 0.2− | 0.1− |

**2006 TE$_{62}$ = 1999 AT$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.03821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22400124 | $\omega$ | 303.04694 | | +0.28729245 | | −0.94100996 |
| $a$ | 2.6851534 | $\Omega$ | 129.20591 | | +0.93763324 | | +0.23814892 |
| $e$ | 0.1608920 | $i$ | 13.33967 | | +0.19572164 | | +0.24038584 |
| $P$ | 4.40 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 11 | 691 | 0.3+ | 0.2− | 2000 05 09 | 691 | 0.2+ | 0.2− | 2006 09 25 | 703 | 0.0 | 0.2+ |
| 1999 01 11 | 691 | 0.6+ | 0.1− | 2000 05 09 | 691 | 0.1+ | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.1− |
| 1999 01 11 | 691 | 0.5+ | 0.2+ | 2000 05 09 | 691 | 0.5+ | 0.2− | 2006 10 09 | 644 | 0.1− | 0.3+ |
| 1999 01 13 | 691 | 0.5− | 0.1− | 2003 01 27 | 644 | 0.5+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.4+ |
| 1999 01 13 | 691 | 0.4− | 0.2− | 2003 01 27 | 644 | 0.2+ | 0.3+ | 2006 10 09 | 644 | 0.3− | 0.4+ |
| 1999 01 13 | 691 | 0.7− | 0.3+ | 2003 01 27 | 644 | 1.0+ | 0.4+ | 2006 10 10 | 644 | 0.1− | 0.5+ |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 09 25 | 703 | 0.0 | 1.5− | 2006 10 10 | 644 | 0.0 | 0.6+ |
| 2000 05 04 | 645 | 0.1− | 0.1+ | 2006 09 25 | 703 | 0.5− | 0.6− | 2006 10 10 | 644 | 0.3− | 0.0 |

**2006 TG$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.01871 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16887673 | $\omega$ | 287.78207 | | +0.89595172 | | +0.35590783 |
| $a$ | 3.2415758 | $\Omega$ | 52.22766 | | −0.15518846 | | +0.81138232 |
| $e$ | 0.1367700 | $i$ | 19.64224 | | −0.41615748 | | +0.46366836 |
| $P$ | 5.84 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 24 | 645 | 0.1+ | 0.0 | 2006 09 25 | 703 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.4− | 0.2− |
| 2003 03 24 | 645 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.4− |
| 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 10 09 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.5− | 0.7+ |
| 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 10 09 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.6+ | 0.0 |
| 2004 03 29 | 691 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 703 | 0.6− | 0.9+ |
| 2004 04 15 | 644 | 0.2+ | 0.4+ | 2006 10 09 | 644 | 0.4+ | 0.3− | 2006 10 28 | 703 | 0.3− | 1.0− |
| 2004 04 15 | 644 | 0.2− | 0.2+ | 2006 10 09 | 644 | 0.3+ | 0.2+ | 2006 10 28 | 703 | 0.4− | 0.2+ |
| 2004 04 15 | 644 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.3+ | 1.9− |
| 2006 09 25 | 703 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.4− | 0.1+ |
| 2006 09 25 | 703 | 0.7+ | 0.6+ | 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 23 | 703 | 0.2− | 0.9+ |
| 2006 09 25 | 703 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.6− | 0.1− | 2006 11 23 | 703 | 0.2− | 0.9+ |

**2006 TJ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.33550 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18875839 | $\omega$ | 291.66840 | | +0.83350743 | | −0.51981710 |
| $a$ | 3.0097601 | $\Omega$ | 100.09760 | | +0.55058390 | | +0.75320019 |
| $e$ | 0.1070898 | $i$ | 10.96311 | | +0.04607314 | | +0.40308766 |
| $P$ | 5.22 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 18 | 691 | 0.6+ | 0.6− | 2001 10 15 | 644 | 0.0 | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.0 |
| 1996 11 18 | 691 | 0.1− | 0.7+ | 2001 10 23 | 644 | 0.7− | 0.2− | 2006 10 21 | 703 | 1.0− | 0.1+ |
| 1996 11 18 | 691 | 0.5+ | 1.0− | 2001 10 23 | 644 | 0.3− | 0.2− | 2006 10 21 | 703 | 0.3+ | 0.4+ |
| 1996 12 03 | 691 | 0.1− | 0.8+ | 2001 10 23 | 644 | 0.7− | 0.0 | 2006 10 21 | 703 | 0.5+ | 1.0+ |
| 1996 12 03 | 691 | 1.5− | 0.6+ | 2001 12 18 | 645 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.1+ | 0.5− |
| 1996 12 03 | 691 | 1.2− | 0.5+ | 2001 12 18 | 645 | 0.1+ | 0.1− | 2006 10 28 | 703 | 0.3− | 0.4− |
| 1996 12 12 | 691 | 0.6+ | 0.4− | 2006 10 09 | 644 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.7− | 1.3+ |
| 1996 12 12 | 691 | 0.6+ | 0.2− | 2006 10 09 | 644 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.4+ | 0.4− |
| 1996 12 12 | 691 | 0.6+ | 0.1+ | 2006 10 09 | 644 | 0.2+ | 0.1− | 2006 10 28 | 703 | 0.5+ | 0.4− |
| 2001 10 15 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.1− | | | | |
| 2001 10 15 | 644 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1+ | | | | |

**2006 TK$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.60445 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24597174 | $\omega$ | 218.63572 | | +0.97233685 | | +0.16883041 |
| $a$ | 2.5227792 | $\Omega$ | 130.85226 | | −0.12301710 | | +0.95759401 |
| $e$ | 0.1022136 | $i$ | 12.32225 | | −0.19856445 | | +0.23347376 |
| $P$ | 4.01 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 645 | 0.0 | 0.1+ | 2004 03 17 | 645 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.6+ |
| 2001 05 23 | 645 | 0.0 | 0.1+ | 2006 09 25 | 703 | 0.1+ | 0.9+ | 2006 10 09 | 644 | 0.1− | 0.1+ |
| 2004 02 11 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.5− | 0.3− |
| 2004 02 11 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.1− | 1.5+ | 2006 10 10 | 644 | 0.2− | 0.2− |
| 2004 02 11 | 691 | 0.2+ | 0.3+ | 2006 09 25 | 703 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.0 | 0.1+ |
| 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 09 | 644 | 0.6− | 0.4+ | | | | |

**2006 TM$_{62}$ = 2005 GO$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.29378 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28832331 | $\omega$ | 328.93961 | | +0.77303339 | | −0.62430293 |
| $a$ | 2.2692528 | $\Omega$ | 70.11732 | | +0.60381589 | | +0.66974426 |
| $e$ | 0.1657882 | $i$ | 6.87326 | | +0.19448843 | | +0.40210506 |
| $P$ | 3.42 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.4− | 0.6− | 2006 08 16 | 644 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.1− | 0.3− |
| 1997 01 09 | 691 | 0.0 | 0.1− | 2006 08 16 | 644 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.6− |
| 1997 01 09 | 691 | 0.4+ | 0.7+ | 2006 09 18 | 703 | 0.6− | 1.6− | 2006 09 26 | 703 | 0.4− | 0.8− |
| 2005 04 11 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | 0.7− | 1.5+ | 2006 09 26 | 703 | 0.5+ | 0.8+ |
| 2005 04 11 | 691 | 0.1+ | 0.3− | 2006 09 18 | 703 | 0.6+ | 1.0− | 2006 10 10 | 644 | 0.0 | 0.2+ |
| 2005 04 11 | 691 | 0.1+ | 0.2− | 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 10 | 644 | 0.2− | 0.2+ |
| 2005 04 15 | 691 | 0.0 | 0.0 | 2006 09 26 | 703 | 0.7+ | 0.2− | 2006 10 10 | 644 | 0.0 | 0.0 |
| 2005 04 15 | 691 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.5+ | 0.9+ | 2006 10 11 | 644 | 0.0 | 0.1+ |
| 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.4− | 0.2+ |
| 2006 08 16 | 644 | 0.2+ | 0.3− | 2006 09 26 | 703 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.1− |

**2006 TN$_{62}$ = 2002 TM$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.66870 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24107526 | $\omega$ | 145.14576 | | +0.91320500 | | −0.40134187 |
| $a$ | 2.5568247 | $\Omega$ | 238.66636 | | +0.35257166 | | +0.86501382 |
| $e$ | 0.2481848 | $i$ | 4.73974 | | +0.20432779 | | +0.30112421 |
| $P$ | 4.09 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 09 | 704 | 0.2+ | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.7− | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 2002 10 09 | 704 | 0.7+ | 0.4+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2002 10 09 | 704 | 0.5− | 0.3− | 2006 10 10 | 644 | 0.5− | 0.3− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2002 10 12 | 704 | 0.3+ | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2002 10 12 | 704 | 0.5+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.4+ |
| 2002 10 12 | 704 | 1.3− | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.2+ | 0.1− |
| 2006 09 17 | 703 | 0.9− | 0.9+ | 2006 10 11 | 644 | 0.3− | 0.6− | 2006 10 21 | 691 | 0.0 | 0.4− |
| 2006 09 17 | 703 | 0.6+ | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.2− | | | | |
| 2006 09 17 | 703 | 0.9+ | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.1− | | | | |

**2006 TS$_{62}$ = 2001 UJ$_{128}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.64649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18862799 | $\omega$ | 260.94915 | | −0.50890871 | | +0.85803861 |
| $a$ | 3.0111470 | $\Omega$ | 338.03496 | | −0.69919807 | | −0.45888083 |
| $e$ | 0.0363997 | $i$ | 10.65364 | | −0.50212945 | | −0.23064718 |
| $P$ | 5.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 704 | 0.4+ | 0.4+ | 2006 09 16 | 703 | 1.1− | 0.7− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2001 10 18 | 704 | 0.9− | 0.4+ | 2006 09 16 | 703 | 1.1+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 2001 10 18 | 704 | 1.2− | 0.4− | 2006 09 16 | 703 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.1− |
| 2001 10 24 | 704 | 0.2+ | 0.5− | 2006 09 27 | 703 | 0.7+ | 0.4− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 2001 10 24 | 704 | (2.6+ | 0.1−) | 2006 09 27 | 703 | 1.1− | 0.1+ | 2006 10 11 | 644 | 0.0 | 0.2− |
| 2001 10 24 | 704 | 0.9+ | 0.2+ | 2006 09 27 | 703 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.4+ | 0.5+ |
| 2001 10 24 | 704 | 0.6+ | 0.2− | 2006 09 27 | 703 | 1.3− | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.0 |
| 2006 09 16 | 703 | 0.2+ | 0.6− | 2006 10 10 | 644 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |

**2006 TU$_{62}$ = 2002 PL$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.22310 | | (2000.0) | | | |
| $n$ | 0.27430363 | $\omega$ | 68.76789 | | +0.77801688 | +0.61912312 |
| $a$ | 2.3459298 | $\Omega$ | 252.82200 | | −0.60983324 | +0.70345546 |
| $e$ | 0.1205639 | $i$ | 6.40985 | | −0.15097401 | +0.34905154 |
| $P$ | 3.59 | $H$ | 16.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 03 | 644 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.7+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.2+ |
| 2002 08 03 | 644 | 0.3+ | 0.1− | 2006 09 28 | 703 | 1.3− | 0.1− | 2006 10 11 | 644 | 0.2− | 0.1− |
| 2002 08 03 | 644 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.5− | 0.3− | 2006 10 19 | 644 | 0.4+ | 0.1− |
| 2002 08 05 | 644 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.6+ | 0.7+ | 2006 10 19 | 644 | 0.4+ | 0.4+ |
| 2002 08 05 | 644 | 0.2− | 0.7+ | 2006 09 28 | 703 | 0.5− | 0.6− | 2006 10 19 | 644 | 0.3+ | 0.4− |
| 2002 08 05 | 644 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 28 | 703 | 0.0 | 0.6− | 2006 10 10 | 644 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.5+ |
| 2006 09 28 | 703 | 0.3+ | 0.3− | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− |
| 2006 09 28 | 703 | 1.0+ | 0.1− | 2006 10 11 | 644 | 0.1− | 0.2− | | | | |

**2006 TW$_{62}$ = 2000 YW$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.67431 | | (2000.0) | | | |
| $n$ | 0.29849336 | $\omega$ | 354.40261 | | −0.37817930 | +0.92250931 |
| $a$ | 2.2174114 | $\Omega$ | 253.35764 | | −0.84618682 | −0.37829199 |
| $e$ | 0.0915880 | $i$ | 4.62052 | | −0.37543079 | −0.07662727 |
| $P$ | 3.30 | $H$ | 17.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 21 | 691 | 0.4+ | 0.2− | 2003 10 18 | 691 | 0.4+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.5− |
| 1993 11 21 | 691 | 0.5− | 0.3− | 2003 10 18 | 691 | 0.4+ | 0.2− | 2006 10 17 | 703 | 0.3− | 0.4− |
| 1993 11 21 | 691 | 0.3+ | 0.6− | 2003 10 18 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.5+ | 0.5+ |
| 1998 01 01 | 691 | 0.5+ | 0.0 | 2003 11 15 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.7− |
| 1998 01 01 | 691 | 0.4+ | 0.2+ | 2003 11 15 | 691 | 0.1+ | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 1998 01 01 | 691 | 0.1+ | 0.2− | 2003 11 15 | 691 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.2− | 0.4+ |
| 1998 01 28 | 691 | 0.5− | 0.2+ | 2003 12 22 | 691 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.3− | 0.6+ |
| 1998 01 28 | 691 | 0.1− | 0.0 | 2003 12 22 | 691 | 1.1− | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1998 01 28 | 691 | (0.1− | 9.6−) | 2003 12 22 | 691 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 12 17 | 691 | 0.4− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2000 12 17 | 691 | 0.9− | 0.0 | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2000 12 17 | 691 | 0.4− | 0.1− | 2006 10 10 | 644 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2000 12 21 | 691 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2000 12 21 | 691 | 0.4+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | |
| 2000 12 21 | 691 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.1+ | | | | |

**2006 TE$_{63}$ = 2001 QG$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.00908 | | (2000.0) | | | |
| $n$ | 0.21484527 | $\omega$ | 250.66701 | | +0.68577308 | −0.72704599 |
| $a$ | 2.7609096 | $\Omega$ | 155.93434 | | +0.69476517 | +0.64024436 |
| $e$ | 0.0912601 | $i$ | 4.70628 | | +0.21683323 | +0.24797437 |
| $P$ | 4.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.3+ | 0.2− | 2006 09 27 | 691 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.3− | 0.5− |
| 2001 08 21 | 691 | 0.4+ | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.3+ | 1.2− |
| 2001 08 21 | 691 | 0.6− | 0.2+ | 2006 10 10 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2+ |
| 2001 08 24 | 644 | 0.2− | 0.0 | 2006 10 10 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 08 24 | 644 | 0.0 | 0.3− | 2006 10 10 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 2001 08 24 | 644 | 0.4− | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.6+ |
| 2001 08 24 | 644 | 0.2+ | 0.1− | 2006 10 11 | 644 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.6− | 0.9− |
| 2001 08 24 | 644 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.2+ |
| 2001 08 24 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | (1.8− | 0.6+) | 2006 10 22 | 703 | 0.9+ | 0.1+ |
| 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 16 | 703 | (1.9− | 0.1−) | | | | |

**2006 TF$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.21440 | | (2000.0) | | | |
| $n$ | 0.19268207 | $\omega$ | 215.35507 | | +0.84317090 | −0.53756278 |
| $a$ | 2.9687607 | $\Omega$ | 177.11337 | | +0.52627972 | +0.82162830 |
| $e$ | 0.1132263 | $i$ | 10.80239 | | +0.10996585 | +0.18961326 |
| $P$ | 5.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.6− | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.5− | 2006 10 16 | 703 | 0.8+ | 0.4+ |
| 2001 10 16 | 644 | 0.5− | 0.4+ | 2006 07 21 | G96 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.7+ | 0.3+ |
| 2001 10 16 | 644 | 0.3− | 0.8+ | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2001 10 24 | 644 | 0.3+ | 0.5+ | 2006 09 17 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.4− |
| 2001 10 24 | 644 | 0.1+ | 0.6+ | 2006 09 17 | 691 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 10 24 | 644 | 0.3+ | 0.7+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.3− | 0.6− |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 1.1− | 1.0+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.3− | 0.3+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.6+ |
| 2004 04 23 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.2− | 1.1+ |
| 2004 04 23 | 691 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.9+ | 0.5+ |
| 2004 04 23 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.0 |
| 2006 07 21 | G96 | 0.3− | 0.8− | 2006 10 16 | 703 | 0.3+ | 0.5+ | | | | |

**2006 TG$_{63}$ = 2004 EP$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.21048 | | (2000.0) | | | |
| $n$ | 0.27528215 | $\omega$ | 314.57306 | | −0.64610554 | −0.76253466 |
| $a$ | 2.3403672 | $\Omega$ | 175.30522 | | +0.76303951 | −0.64633571 |
| $e$ | 0.1792898 | $i$ | 23.77204 | | +0.01784207 | +0.02812532 |
| $P$ | 3.58 | $H$ | 16.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.3− | 0.3+ | 2004 03 16 | 704 | 0.3+ | 1.3+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 1995 09 27 | 691 | 0.2+ | 0.6+ | 2004 03 16 | 704 | 0.1− | 0.4− | 2006 10 10 | 644 | 0.2+ | 0.0 |
| 1995 09 27 | 691 | 0.2+ | 0.4+ | 2004 03 16 | 704 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.3+ | 0.3− |
| 1997 04 04 | 566 | 0.0 | 0.3+ | 2006 09 26 | 703 | 1.3− | 1.1− | 2006 10 10 | 644 | 0.6+ | 0.3− |
| 1997 04 04 | 566 | 0.5− | 0.3+ | 2006 09 26 | 703 | 0.8− | 0.0 | 2006 10 11 | 644 | 0.5+ | 0.2+ |
| 1997 04 04 | 566 | 0.1− | 0.6+ | 2006 09 26 | 703 | 1.1− | 0.7− | 2006 10 11 | 644 | 0.1+ | 0.2− |
| 2004 03 13 | 644 | 0.0 | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.4+ | 0.3+ |
| 2004 03 13 | 644 | 0.1+ | 0.2+ | 2006 10 10 | 644 | 0.7+ | 0.1+ | | | | |
| 2004 03 13 | 644 | 0.1+ | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.4+ | | | | |

**2006 TJ$_{63}$ = 2004 FP$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 261.31854 | | (2000.0) | | | |
| $n$ | 0.23337969 | $\omega$ | 300.56310 | | −0.63587062 | −0.77030176 |
| $a$ | 2.6127268 | $\Omega$ | 189.38481 | | +0.76965538 | −0.62825164 |
| $e$ | 0.1203305 | $i$ | 17.11835 | | +0.05743827 | −0.10924774 |
| $P$ | 4.22 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.6+ | 0.1− | 2006 10 02 | G96 | 1.0− | 0.1− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.3− | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2004 03 24 | 699 | 0.4− | 0.3+ | 2006 09 14 | 691 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.1− | 0.0 |
| 2004 03 24 | 699 | 0.2− | 0.8− | 2006 09 14 | 691 | 0.2+ | 0.1+ | 2006 10 10 | 644 | 0.4− | 0.7+ |
| 2004 03 24 | 699 | 0.1− | 0.5+ | 2006 09 14 | 691 | 0.4+ | 0.0 | 2006 10 11 | 644 | 0.6+ | 0.2+ |
| 2004 03 24 | 699 | 0.5+ | 0.6+ | 2006 10 02 | G96 | 0.8− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 2004 03 27 | 704 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.5− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 2004 03 27 | 704 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.7− | 0.1+ | | | | |

**2006 TK$_{63}$ = 1999 RT$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.09051 | | | (2000.0) | | |
| $n$ | 0.29087902 | $\omega$ | 64.67690 | | +0.97262152 | +0.22311518 |
| $a$ | 2.2559413 | $\Omega$ | 282.37656 | | −0.22988125 | +0.88264794 |
| $e$ | 0.0846804 | $i$ | 3.81656 | | −0.03408805 | +0.41370549 |
| $P$ | 3.39 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 07 | 704 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 1999 09 07 | 704 | 0.1− | 0.6− | 2006 10 10 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 1999 09 07 | 704 | 0.6− | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.1− | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 1999 09 07 | 704 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.4+ | 2006 11 06 | 644 | 0.1+ | 0.8+ |
| 1999 09 07 | 704 | 0.4− | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.3− | 2006 11 06 | 644 | 0.5+ | 0.3+ |
| 1999 09 14 | 704 | 0.9+ | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.2− | 0.5+ |
| 1999 09 14 | 704 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.5− | 0.0 |
| 1999 09 14 | 704 | 0.8+ | 0.8− | 2006 10 17 | 703 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.1− | 0.0 |
| 2006 09 20 | 699 | 1.1− | 1.4+ | 2006 10 17 | 703 | 0.5+ | 0.6− | 2006 11 14 | 703 | 0.4− | 0.7− |
| 2006 09 20 | 699 | 1.3+ | 1.2+ | 2006 10 17 | 703 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.3+ |
| 2006 09 20 | 699 | 0.1+ | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.6+ | 2006 11 19 | 704 | 0.4− | 0.5− |
| 2006 09 20 | 699 | 0.4− | 0.4− | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.1+ | 0.1− |
| 2006 09 28 | 691 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.7− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 1.0− |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 1.0+ | 0.1+ |
| 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2006 09 30 | 703 | 0.0 | 1.0− | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.3− |
| 2006 09 30 | 703 | 0.3+ | 0.3− | 2006 10 20 | 644 | 0.4− | 0.1+ | | | | |
| 2006 09 30 | 703 | (2.3− | 0.9−) | 2006 10 20 | 644 | 0.2− | 0.2+ | | | | |

**2006 TO$_{63}$ = 1999 TR$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.85866 | | | (2000.0) | | |
| $n$ | 0.28418843 | $\omega$ | 18.76941 | | +0.93378175 | −0.35781123 |
| $a$ | 2.2912112 | $\Omega$ | 2.21362 | | +0.31046946 | +0.80345849 |
| $e$ | 0.1136406 | $i$ | 7.09698 | | +0.17793360 | +0.47584196 |
| $P$ | 3.47 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.4− | 0.2− | 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 1999 10 06 | 704 | 1.1+ | 0.1− | 2006 07 21 | G96 | 0.4− | 0.1+ | 2006 10 10 | 644 | 0.1+ | 0.1− |
| 1999 10 06 | 704 | 0.4− | 0.6+ | 2006 07 21 | G96 | 0.5+ | 0.4− | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 1999 10 06 | 704 | 0.2+ | 0.2+ | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 1999 10 06 | 704 | 0.1− | 0.5+ | 2006 09 15 | 691 | 0.4− | 0.0 | 2006 10 11 | 644 | 0.0 | 0.3+ |
| 1999 10 13 | 704 | 0.7− | 0.1+ | 2006 09 15 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.7− |
| 1999 10 13 | 704 | 0.7+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 1.2+ | 0.2− |
| 1999 10 13 | 704 | 0.3− | 0.3+ | 2006 09 28 | 691 | 1.3+ | 0.9+ | 2006 10 17 | 703 | 1.4− | 1.1− |
| 1999 10 13 | 704 | 0.4− | 0.7− | 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.2− | 1.4− |
| 2003 12 18 | 691 | 0.1− | 0.2+ | 2006 10 02 | 691 | 0.3− | 0.2+ | 2006 10 18 | 408 | 0.5+ | 0.3− |
| 2003 12 18 | 691 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.2− | 0.9− | 2006 10 18 | 408 | 0.7+ | 0.6− |
| 2003 12 18 | 691 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.5− | 0.1− | 2006 10 19 | 408 | (2.0+ | 0.6−) |
| 2006 07 21 | G96 | 0.4− | 0.2− | 2006 10 10 | 644 | 0.4− | 0.3+ | 2006 10 19 | 408 | (1.9+ | 0.2+) |

**2006 TT$_{63}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.83655 | | | (2000.0) | | |
| $n$ | 0.20105612 | $\omega$ | 304.61741 | | +0.95561792 | −0.24422780 |
| $a$ | 2.8857444 | $\Omega$ | 70.00793 | | +0.29305568 | +0.84537309 |
| $e$ | 0.0737950 | $i$ | 10.09782 | | −0.03021186 | +0.47507591 |
| $P$ | 4.90 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.4− | 0.6+ | 2006 09 18 | 703 | 1.1− | 1.8− | 2006 10 21 | 644 | 0.4− | 0.5− |
| 2001 10 15 | 644 | 0.3− | 0.6+ | 2006 10 10 | 644 | 0.4− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2001 10 15 | 644 | 0.2− | 0.6+ | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.1+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2002 12 13 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.1+ | 0.5+ |
| 2002 12 13 | 645 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2006 08 29 | D35 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.5− | 2006 10 28 | 703 | 0.1+ | 0.8− |
| 2006 08 29 | D35 | 0.8+ | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.7− | 2006 10 28 | 703 | 0.1− | 0.6− |
| 2006 08 29 | D35 | 0.8+ | 0.4+ | 2006 10 16 | 703 | 0.1− | 1.7+ | 2006 10 28 | 703 | 0.1+ | 0.4+ |
| 2006 09 18 | 703 | 0.5− | 0.9− | 2006 10 16 | 703 | 0.3+ | 0.6− | 2006 10 28 | 703 | 1.0+ | 0.3+ |
| 2006 09 18 | 703 | 0.0 | 1.6− | 2006 10 21 | 644 | 0.4+ | 0.4+ | | | | |
| 2006 09 18 | 703 | 0.0 | 0.9− | 2006 10 21 | 644 | 0.1+ | 0.4+ | | | | |

**2006 TV$_{63}$ = 1995 SP$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 72.91845 | | | (2000.0) | | |
| $n$ | 0.18831678 | $\omega$ | 136.33803 | | +0.55642517 | +0.82849916 |
| $a$ | 3.0144636 | $\Omega$ | 167.04080 | | −0.81847245 | +0.55960396 |
| $e$ | 0.0649492 | $i$ | 16.33916 | | −0.14315683 | +0.02079789 |
| $P$ | 5.23 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.3− | 0.2− | 2000 09 02 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 703 | 1.1+ | 1.1− |
| 1995 09 26 | 691 | 0.2− | 0.0 | 2000 09 02 | 691 | 0.4+ | 0.5+ | 2006 09 18 | 703 | 0.6− | 1.4+ |
| 1995 09 26 | 691 | 0.5− | 0.0 | 2001 11 17 | 699 | 0.6− | 0.5+ | 2006 09 18 | 703 | 0.8− | 0.0 |
| 1995 10 02 | 691 | 0.6+ | 0.2− | 2001 11 17 | 699 | 0.1− | 0.3− | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 1995 10 02 | 691 | 0.6+ | 0.1− | 2001 11 17 | 699 | 1.3− | 1.3+ | 2006 10 10 | 644 | 0.2+ | 0.2+ |
| 1995 10 02 | 691 | 0.3+ | 0.3− | 2001 11 17 | 699 | 0.3− | 0.7+ | 2006 10 10 | 644 | 0.3+ | 0.2+ |
| 2000 09 02 | 699 | 0.7− | 0.5− | 2004 04 25 | 699 | 0.7+ | 0.8+ | 2006 10 11 | 644 | 0.7+ | 0.1+ |
| 2000 09 02 | 699 | 1.7− | 0.3+ | 2004 04 25 | 699 | 0.5− | 0.8− | 2006 10 11 | 644 | 0.6+ | 0.1+ |
| 2000 09 02 | 699 | 1.4− | 0.6− | 2004 04 25 | 699 | 1.5+ | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2000 09 02 | 699 | 0.1− | 0.8− | 2004 04 25 | 699 | 1.2− | 0.1+ | | | | |
| 2000 09 02 | 691 | 0.1− | 0.4+ | 2006 09 18 | 703 | 0.3− | 2.1− | | | | |

**2006 TX$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.14742 | | | (2000.0) | | |
| $n$ | 0.27975820 | $\omega$ | 242.34406 | | +0.52018766 | +0.84573853 |
| $a$ | 2.3153368 | $\Omega$ | 59.49172 | | −0.72689980 | +0.51150219 |
| $e$ | 0.1260599 | $i$ | 7.93077 | | −0.44835418 | +0.15196002 |
| $P$ | 3.52 | $H$ | 16.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 20 | 644 | 0.1− | 0.0 | 2005 05 14 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 2002 06 20 | 644 | 0.0 | 0.1+ | 2005 05 14 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2002 06 20 | 644 | 0.3+ | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.5− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2002 07 16 | 644 | 0.3− | 0.3+ | 2006 10 10 | 644 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.3− |
| 2002 07 16 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 1.1+ | 0.5− | 2006 10 22 | 703 | 0.4− | 0.6− |
| 2002 07 16 | 644 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.8− | 0.2− |
| 2002 07 27 | 644 | 0.1− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.4− | 2006 10 22 | 703 | 0.1− | 0.6+ |
| 2002 07 27 | 644 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1− | 0.5− | 2006 10 22 | 703 | 0.6+ | 0.3+ |
| 2002 07 27 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.5+ | 1.4+ | 2006 11 13 | 703 | 0.8− | 1.5+ |
| 2005 05 08 | 703 | 0.4− | 0.9+ | 2006 10 16 | 703 | 0.4+ | 0.1+ | 2006 11 13 | 703 | 0.9− | 1.1+ |
| 2005 05 08 | 703 | 1.1− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 13 | 703 | (0.3+ | 4.2+) |
| 2005 05 08 | 703 | 0.7+ | 1.5− | 2006 10 16 | 703 | 0.4− | 0.8+ | 2006 11 13 | 703 | 1.0− | 0.3+ |
| 2005 05 08 | 703 | 0.3+ | 1.2− | 2006 10 20 | 644 | 0.1+ | 0.3− | | | | |
| 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.0 | | | | |

**2006 TY$_{63}$ = 1996 EA$_{15}$ = 2002 UN$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 357.36774 | | | (2000.0) | | |
| $n$ | 0.24660768 | $\omega$ | 232.67265 | | +0.91359155 | −0.40212075 |
| $a$ | 2.5184403 | $\Omega$ | 150.89536 | | +0.40119232 | +0.86714412 |
| $e$ | 0.1282263 | $i$ | 7.13438 | | +0.06629637 | +0.29387068 |
| $P$ | 4.00 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.0 | 0.2− | 2005 06 14 | 691 | 0.2− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.4+ |
| 1996 03 12 | 691 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.0 | 1.6+ | 2006 10 11 | 644 | 0.4− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 1.5+ | 1.4+ | 2006 10 11 | 644 | 0.1+ | 0.6+ |
| 2002 10 29 | 645 | 0.1− | 0.1− | 2006 09 18 | 703 | 0.2− | 0.8+ | 2006 10 22 | 703 | 1.0− | 0.1− |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.1− | 0.1− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.9− | 0.4− | 2006 10 22 | 703 | 0.2− | 0.9+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.5− | 2006 10 22 | 703 | 0.1+ | 0.1− |
| 2004 03 14 | 691 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.6− | 2006 10 28 | 703 | 0.3+ | 0.1+ |
| 2004 03 14 | 691 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.8+ | 0.3− | 2006 10 28 | 703 | 1.0+ | 0.4+ |
| 2004 03 14 | 691 | 0.2+ | 0.5+ | 2006 10 10 | 644 | 0.0 | 0.4+ | 2006 10 28 | 703 | 0.3+ | 0.5− |
| 2005 06 14 | 691 | 0.3+ | 0.4+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 10 28 | 703 | 1.1− | 1.3− |
| 2005 06 14 | 691 | 0.0 | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.2+ | | | | |

**2006 TA$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.32935 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18981640 | $\omega$ | 202.01336 | | +0.80086191 | | +0.56595696 |
| $a$ | 2.9985657 | $\Omega$ | 122.02862 | | −0.50924273 | | +0.81560916 |
| $e$ | 0.0905420 | $i$ | 13.34893 | | −0.31510641 | | +0.12030964 |
| $P$ | 5.19 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 07 | 608 | 0.5− | 0.2− | 2004 03 22 | 699 | 1.6+ | 0.1− | 2006 10 10 | 644 | 0.4− | 0.5+ |
| 2000 08 07 | 608 | 0.4− | 0.8− | 2004 03 22 | 699 | (2.0+ | 0.3−) | 2006 10 10 | 644 | 0.2− | 0.4+ |
| 2000 08 07 | 608 | 0.6− | 0.4− | 2004 03 22 | 699 | 0.6+ | 0.6− | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 09 23 | 699 | 0.0 | 0.6+ | 2004 04 13 | 703 | (3.0+ | 1.2+) | 2006 10 11 | 644 | 0.3− | 0.3+ |
| 2001 09 23 | 699 | 0.5+ | 0.3− | 2004 04 13 | 703 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.5+ |
| 2001 09 23 | 699 | (0.1+ | 1.6+) | 2004 04 13 | 703 | 0.1− | 0.1+ | 2006 10 20 | 703 | 0.5− | 0.2+ |
| 2001 09 23 | 699 | 1.1− | 0.4+ | 2004 04 13 | 703 | 1.5+ | 0.5− | 2006 10 20 | 703 | 0.4+ | 0.4+ |
| 2001 12 18 | 645 | 0.1+ | 0.1− | 2006 09 19 | 703 | 0.3− | 0.5− | 2006 10 20 | 703 | 0.4− | 0.0 |
| 2001 12 18 | 645 | 0.2+ | 0.2− | 2006 09 19 | 703 | 0.3− | 0.5+ | 2006 10 20 | 703 | 0.7− | 0.4+ |
| 2002 12 10 | 644 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.3+ | 0.6+ | 2006 10 28 | 703 | 0.8− | 0.1− |
| 2002 12 10 | 644 | 0.3+ | 0.2− | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.3+ |
| 2002 12 10 | 644 | 0.7+ | 0.2+ | 2006 09 26 | 703 | 0.7− | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.2− |
| 2002 12 28 | 291 | 0.4− | 0.1+ | 2006 09 26 | 703 | 0.2− | 0.4+ | 2006 10 28 | 703 | 0.1+ | 0.6+ |
| 2002 12 28 | 291 | 0.4− | 0.5+ | 2006 09 26 | 703 | 0.7+ | 0.7+ | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2002 12 28 | 291 | 0.3− | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.7+ | 0.6+ |
| 2003 01 30 | 644 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.7− |
| 2003 01 30 | 644 | 0.3+ | 0.2− | 2006 10 10 | 644 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.3+ | 0.3− |
| 2003 01 30 | 644 | 0.1+ | 0.4− | 2006 10 10 | 644 | 0.0 | 0.3+ | | | | |
| 2004 03 22 | 699 | 0.6− | 0.3+ | 2006 10 10 | 644 | 0.1− | 0.6+ | | | | |

**2006 TK$_{64}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.34525 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21725408 | $\omega$ | 177.97421 | | +0.73246955 | | −0.67238482 |
| $a$ | 2.7404639 | $\Omega$ | 224.90783 | | +0.62247696 | | +0.72491738 |
| $e$ | 0.1732042 | $i$ | 8.69381 | | +0.27570056 | | +0.14964439 |
| $P$ | 4.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 11 | 691 | 0.0 | 0.2+ | 2005 07 11 | G96 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2000 05 11 | 691 | 0.3− | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.3− | 2006 10 11 | 644 | 0.4+ | 0.3− |
| 2000 05 11 | 691 | 0.3+ | 0.1+ | 2006 09 06 | 644 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.2− |
| 2002 12 05 | 644 | 0.0 | 0.3+ | 2006 09 06 | 644 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.4+ | 0.3− |
| 2002 12 05 | 644 | 0.5− | 0.3+ | 2006 09 22 | 703 | 0.7+ | 0.5− | 2006 10 18 | 691 | 0.3+ | 0.1− |
| 2002 12 05 | 644 | 0.6+ | 0.7+ | 2006 09 22 | 703 | 0.9− | 0.7+ | 2006 10 20 | 691 | 0.6+ | 0.1− |
| 2005 07 11 | G96 | 0.2− | 0.5+ | 2006 09 22 | 703 | 1.4− | 1.3+ | 2006 10 20 | 691 | 0.2+ | 0.4− |
| 2005 07 11 | G96 | 0.3+ | 0.2+ | 2006 09 22 | 703 | 0.9− | 0.2+ | 2006 10 20 | 691 | 0.3+ | 0.3− |
| 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.2+ | | | | |

**2006 TQ$_{64}$ = 2006 SZ$_{25}$ = 2005 JE$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.83155 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23289813 | $\omega$ | 10.97542 | | −0.13705748 | | +0.98363231 |
| $a$ | 2.6163272 | $\Omega$ | 251.22684 | | −0.91792398 | | −0.17050486 |
| $e$ | 0.1621022 | $i$ | 7.09679 | | −0.37233160 | | +0.05827154 |
| $P$ | 4.23 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | E12 | 0.0 | 0.1− | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2005 05 04 | E12 | 0.6+ | 0.3+ | 2006 09 16 | 703 | 0.7− | 0.8+ | 2006 10 17 | 691 | 0.2− | 0.4− |
| 2005 05 04 | E12 | 0.6+ | 0.1+ | 2006 09 19 | 699 | 0.5+ | 0.6− | 2006 10 19 | 691 | 0.0 | 0.6+ |
| 2005 05 04 | E12 | 0.2+ | 0.0 | 2006 09 19 | 699 | 1.6+ | 1.9− | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 2005 05 09 | 703 | 0.5− | 0.4+ | 2006 09 19 | 699 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.6+ |
| 2005 05 09 | 703 | 0.7− | 0.8+ | 2006 09 19 | 699 | 0.1− | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 2005 05 09 | 703 | 0.0 | 0.6− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2005 05 09 | 703 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2006 09 16 | 703 | 0.4− | 0.8− | 2006 10 11 | 691 | 0.3+ | 0.3− | | | | |
| 2006 09 16 | 703 | 0.3+ | 0.8− | 2006 10 17 | 691 | 0.2+ | 0.3+ | | | | |

**2006 TT$_{64}$ = 2001 AH$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.67961 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29811354 | $\omega$ | 170.46853 | | −0.50829053 | | −0.85736889 |
| $a$ | 2.2192944 | $\Omega$ | 310.03418 | | +0.78299164 | | −0.42093463 |
| $e$ | 0.1143488 | $i$ | 6.07196 | | +0.35855938 | | −0.29619694 |
| $P$ | 3.31 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 14 | 691 | 0.1− | 0.1− | 2003 11 14 | 644 | 0.4+ | 0.1− | 2006 09 27 | 703 | 0.5+ | 0.8− |
| 2001 01 14 | 691 | 0.0 | 0.4+ | 2003 11 14 | 644 | 0.3+ | 0.2− | 2006 09 27 | 703 | (1.7+ | 0.5−) |
| 2001 01 14 | 691 | 0.1− | 0.3+ | 2003 12 01 | 691 | 0.2+ | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.1+ |
| 2001 01 19 | 704 | 1.0+ | 1.0+ | 2003 12 01 | 691 | 0.5+ | 0.0 | 2006 10 11 | 691 | 0.1+ | 0.2+ |
| 2001 01 19 | 704 | 0.5+ | 1.0− | 2003 12 01 | 691 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ |
| 2001 01 19 | 704 | (2.1+ | 0.3−) | 2006 09 20 | 703 | 0.4− | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.6+ |
| 2001 01 19 | 704 | 0.3+ | 0.0 | 2006 09 20 | 703 | 1.2− | 1.3− | 2006 10 17 | 691 | 0.3+ | 0.5+ |
| 2003 10 27 | 691 | 0.5− | 0.1− | 2006 09 20 | 703 | 0.2+ | 1.1+ | 2006 10 17 | 691 | 0.1− | 0.2− |
| 2003 10 27 | 691 | 0.2− | 0.2− | 2006 09 20 | 703 | (2.1− | 0.7−) | 2006 10 19 | 691 | 0.2− | 0.2− |
| 2003 10 27 | 691 | 0.3− | 0.3− | 2006 09 27 | 703 | (0.8+ | 2.0−) | 2006 10 19 | 691 | 0.1− | 0.3+ |
| 2003 11 14 | 644 | 0.0 | 0.0 | 2006 09 27 | 703 | 1.3− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− |

**2006 TB$_{65}$ = 2000 SU$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.40485 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17276892 | $\omega$ | 162.79479 | | +0.61409854 | | −0.78545885 |
| $a$ | 3.1927063 | $\Omega$ | 249.25044 | | +0.71406331 | | +0.59454124 |
| $e$ | 0.1847357 | $i$ | 4.72647 | | +0.33614964 | | +0.17197415 |
| $P$ | 5.70 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.5− | 0.1+ | 2006 10 01 | 703 | 1.0+ | 0.2− | 2006 10 17 | 691 | 0.3+ | 0.1+ |
| 2000 09 28 | 691 | 0.4− | 0.1− | 2006 10 01 | 703 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ |
| 2000 09 28 | 691 | 0.1+ | 0.8− | 2006 10 01 | 703 | (0.1+ | 1.8−) | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2000 09 29 | 691 | 0.0 | 0.6+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1+ |
| 2000 09 29 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 691 | 0.3− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2000 09 29 | 691 | 0.5+ | 0.2− | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 2006 09 17 | 703 | 0.2− | 0.9+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ |
| 2006 09 17 | 703 | (1.8− | 0.3−) | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2006 09 17 | 703 | 0.7− | 0.2+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2006 09 17 | 703 | 0.1− | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2006 10 01 | 703 | 0.6+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1+ | | | | |

**2006 TU$_{66}$ = 1999 CW$_{30}$ = 2002 XB$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 245.22628 | | | (2000.0) | | |
| $n$ | 0.21677482 | $\omega$ | 159.46430 | | −0.75773261 | −0.65087816 |
| $a$ | 2.7445017 | $\Omega$ | 339.70245 | | +0.57827184 | −0.63643139 |
| $e$ | 0.1030642 | $i$ | 7.76888 | | +0.30239538 | −0.41389938 |
| $P$ | 4.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 704 | 0.5− | 1.4+ | 2002 12 10 | 704 | 0.2− | 0.7− | 2006 10 03 | G96 | 0.3+ | 0.3− |
| 1999 02 10 | 704 | 0.4+ | 0.0 | 2002 12 10 | 704 | 0.5− | 0.3− | 2006 10 03 | G96 | 0.2− | 0.3− |
| 1999 02 10 | 704 | (1.9− | 2.9+) | 2002 12 10 | 704 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.8+ | 1.4− |
| 1999 02 13 | 704 | 0.2− | 0.8− | 2004 03 20 | 699 | 0.8+ | 1.1− | 2006 10 11 | 644 | 0.1− | 0.3+ |
| 1999 02 13 | 704 | 0.7+ | 0.6+ | 2004 03 20 | 699 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.1− |
| 1999 02 13 | 704 | 0.1− | 0.5− | 2004 03 20 | 699 | 0.5− | 0.7+ | 2006 10 11 | 644 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.1+ | 0.4− | 2004 03 20 | 699 | 0.5− | 0.7− | 2006 10 17 | 703 | 0.4+ | 0.2− |
| 2002 12 05 | 704 | 0.5+ | 0.7+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 1.1− |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2006 09 17 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2006 09 17 | 691 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.4+ |
| 2002 12 10 | 704 | 0.6+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.2− | | | | |

**2006 TB$_{67}$ = 2001 SQ$_{344}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.60454 | | | (2000.0) | | |
| $n$ | 0.20056470 | $\omega$ | 38.06479 | | +0.82135462 | +0.55554928 |
| $a$ | 2.8904561 | $\Omega$ | 287.70637 | | −0.55098844 | +0.71399939 |
| $e$ | 0.0892374 | $i$ | 7.80624 | | −0.14760869 | +0.42611015 |
| $P$ | 4.91 | $H$ | 15.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 644 | 0.4− | 0.8− | 2006 09 20 | 699 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.2+ |
| 2001 09 23 | 644 | 0.4− | 0.3− | 2006 09 20 | 699 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2001 09 23 | 644 | 0.4− | 0.5− | 2006 09 20 | 699 | 0.3+ | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2001 09 25 | 704 | 0.2− | 0.8+ | 2006 09 28 | 703 | 0.3+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.4+ |
| 2001 09 25 | 704 | 1.0+ | 0.6+ | 2006 09 28 | 703 | 0.1+ | 1.6− | 2006 10 12 | 644 | 0.1+ | 0.1+ |
| 2001 09 25 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.2− | 0.5− | 2006 10 12 | 644 | 0.1− | 0.5+ |
| 2006 09 20 | 699 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.6− | 0.6− | | | | |

**2006 TN$_{67}$ = 2005 MJ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 44.25167 | | | (2000.0) | | |
| $n$ | 0.21681559 | $\omega$ | 128.77180 | | +0.83346311 | +0.54776584 |
| $a$ | 2.7441576 | $\Omega$ | 198.37839 | | −0.55091582 | +0.81353373 |
| $e$ | 0.1462279 | $i$ | 13.33965 | | −0.04279029 | +0.19523179 |
| $P$ | 4.55 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.2− |
| 2005 06 27 | 691 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2005 06 27 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.8− | 1.2+ | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2005 06 30 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | (2.8+ | 4.0+) | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2005 06 30 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.3− | 1.2− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 0.5− | 0.5+ |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.0 | | | | |

**2006 TR$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 5.22665 | | | (2000.0) | | |
| $n$ | 0.21741164 | $\omega$ | 196.51875 | | +0.96064119 | −0.27779189 |
| $a$ | 2.7391397 | $\Omega$ | 179.60898 | | +0.26125792 | +0.90295434 |
| $e$ | 0.0596057 | $i$ | 3.48934 | | +0.09440768 | +0.32787973 |
| $P$ | 4.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 07 | 691 | 0.1− | 0.5+ | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3− | 0.1− |
| 1995 04 07 | 691 | 0.2− | 0.3− | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.1− |
| 1995 04 07 | 691 | 0.2+ | 0.6− | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2003 01 03 | 291 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2003 01 03 | 291 | 0.3+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2003 01 03 | 291 | 0.5− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 03 26 | 691 | 0.3− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2004 03 26 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 03 26 | 691 | 0.5+ | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.4− | 0.1− | | | | |

**2006 TS$_{67}$ = 2003 FJ$_{51}$ = 2004 KW$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 272.38852 | | | (2000.0) | | |
| $n$ | 0.17609235 | $\omega$ | 275.13026 | | −0.43646808 | −0.89265070 |
| $a$ | 3.1524078 | $\Omega$ | 201.85886 | | +0.89765074 | −0.42356328 |
| $e$ | 0.0468647 | $i$ | 17.59739 | | +0.06098167 | −0.15417161 |
| $P$ | 5.60 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 25 | 608 | 0.6+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.0 | 0.5+ |
| 2003 03 25 | 608 | 0.6+ | 0.4− | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 21 | 703 | 1.2+ | 0.7− |
| 2003 03 25 | 608 | 1.2+ | 0.5− | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 21 | 703 | 1.3− | 0.2− |
| 2003 03 28 | 699 | 0.3− | 0.0 | 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1+ |
| 2003 03 28 | 699 | 1.4− | 0.4+ | 2006 10 02 | 691 | 0.4+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2003 03 28 | 699 | 0.6− | 1.2+ | 2006 10 02 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 703 | 0.5+ | 0.6+ |
| 2003 03 28 | 699 | (1.9− | 2.0+) | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2004 05 21 | 599 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.2− |
| 2004 05 21 | 599 | 0.9+ | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.6− | 0.1− |
| 2004 05 23 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.5− | 0.3− | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2004 05 23 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2004 05 23 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.6− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2006 09 18 | 691 | 0.3+ | 0.0 | 2006 10 19 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2006 09 18 | 691 | 0.3+ | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 19 | 644 | 0.3− | 0.0 | | | | |

**2006 TT$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.81142 | | | (2000.0) | | |
| $n$ | 0.17806159 | $\omega$ | 100.48719 | | +0.33365405 | −0.93344532 |
| $a$ | 3.1291224 | $\Omega$ | 328.99500 | | +0.73353445 | +0.34485248 |
| $e$ | 0.2315841 | $i$ | 14.81775 | | +0.59211670 | +0.09877552 |
| $P$ | 5.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 30 | 691 | 0.0 | 0.0 | 2006 09 28 | 703 | 1.4− | 1.2+ | 2006 10 22 | 644 | 0.0 | 0.1− |
| 2000 08 30 | 691 | 0.0 | 0.1− | 2006 09 28 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2000 08 30 | 691 | 0.0 | 0.0 | 2006 09 28 | 703 | (1.9+ | 0.3+) | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2002 01 05 | 644 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2002 01 05 | 699 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.0 |
| 2002 01 05 | 644 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.7+ | 2006 10 27 | 703 | 0.3− | 0.3− |
| 2002 01 05 | 699 | 0.1+ | 0.7− | 2006 10 12 | 644 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 2002 01 05 | 699 | 0.5+ | 0.2+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.9− | 0.5+ |
| 2002 01 05 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.2− |
| 2002 01 05 | 699 | 1.3− | 0.2− | 2006 10 19 | 703 | 0.1+ | 1.2+ | 2006 11 15 | 703 | 0.5− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 644 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.4− | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2002 01 14 | 644 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.5+ | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.2− |
| 2002 01 14 | 644 | (2.1+ | 0.5−) | 2006 10 19 | 703 | 0.2− | 0.5+ | 2006 11 15 | 703 | 0.7− | 0.2+ |
| 2002 02 03 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.1− | 0.2− |
| 2002 02 03 | 644 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.2+ | 1.1− |
| 2002 02 03 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.5+ | 0.9− |
| 2006 09 28 | 703 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.4+ | 0.8− |

**2006 TW$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.03685 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21446901 | $\omega$ | 76.77733 | | +0.97252763 | | +0.11658533 |
| $a$ | 2.7641377 | $\Omega$ | 276.25523 | | −0.19180572 | | +0.89178955 |
| $e$ | 0.1917111 | $i$ | 11.69465 | | +0.13191123 | | +0.43717189 |
| $P$ | 4.60 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.2+ | 0.2− | 2006 09 28 | 703 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.4+ |
| 2001 07 25 | 608 | 0.1− | 0.5− | 2006 09 28 | 703 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2001 07 25 | 608 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.5− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 08 17 | 644 | 0.1− | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2001 08 17 | 644 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 24 | 644 | 0.1+ | 0.3+ |
| 2001 08 17 | 644 | 0.3− | 0.4+ | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 24 | 644 | 0.2+ | 0.2+ |
| 2006 09 17 | 703 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.5+ | 0.1+ | 2006 10 24 | 644 | 0.3+ | 0.1+ |
| 2006 09 17 | 703 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.2− | 0.1− |
| 2006 09 17 | 703 | 0.1− | 0.9− | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.5− | 0.1− |
| 2006 09 17 | 703 | 0.1+ | 0.4− | 2006 10 19 | 703 | 0.2− | 0.2+ | 2006 11 22 | 703 | 0.1− | 0.3− |
| 2006 09 28 | 703 | 0.2− | 0.5− | 2006 10 19 | 703 | 0.4− | 0.8+ | | | | |

**2006 TJ$_{68}$ = 2003 YJ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.53953 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28702649 | $\omega$ | 192.72964 | | +0.34766889 | | −0.93385965 |
| $a$ | 2.2760828 | $\Omega$ | 236.98216 | | +0.86877556 | | +0.35448967 |
| $e$ | 0.0811119 | $i$ | 5.73985 | | +0.35264058 | | +0.04736263 |
| $P$ | 3.43 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 21 | 608 | 0.1− | 0.9− | 2006 09 30 | 703 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.0 | 0.0 |
| 2001 03 21 | 608 | 0.5− | 0.6− | 2006 09 30 | 703 | 0.4− | 0.6− | 2006 11 06 | 644 | 0.2− | 0.1+ |
| 2001 03 21 | 608 | 0.3− | 0.9− | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 11 06 | 644 | 0.3+ | 0.2+ |
| 2003 12 19 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.8+ | 0.6+ | 2006 11 06 | 644 | 0.3− | 0.2− |
| 2003 12 19 | 704 | 1.2+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.1− | 0.5+ |
| 2003 12 19 | 704 | 0.4+ | 0.1+ | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.9− | 1.1− |
| 2003 12 19 | 704 | 0.4+ | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.6− | 0.5− |
| 2003 12 22 | 704 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.3+ | 0.5− |
| 2003 12 22 | 704 | 0.6− | 0.1− | 2006 10 17 | 703 | 0.4+ | 0.4+ | 2006 11 15 | 704 | 0.2+ | 0.2+ |
| 2003 12 22 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 703 | 0.0 | 0.6+ | 2006 11 15 | 704 | 1.4+ | 0.1− |
| 2003 12 22 | 704 | 1.0− | 0.6+ | 2006 10 17 | 703 | 0.7+ | 0.0 | 2006 11 15 | 704 | 0.3+ | 0.2+ |
| 2003 12 22 | 704 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2005 05 04 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2005 05 04 | G96 | (0.4− | 1.6−) | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.2− | 0.6− |
| 2005 05 04 | G96 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2005 05 04 | G96 | 0.2− | 1.0+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | | | |

**2006 TK$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.99883 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28948929 | $\omega$ | 243.62807 | | −0.11977650 | | −0.99256025 |
| $a$ | 2.2631554 | $\Omega$ | 213.27365 | | +0.92448588 | | −0.10348217 |
| $e$ | 0.1752194 | $i$ | 2.28319 | | +0.36191084 | | −0.06415279 |
| $P$ | 3.40 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 703 | 0.1− | 0.4− | 2006 09 26 | 691 | 0.6− | 0.2+ | 2006 10 28 | 691 | 0.5+ | 0.1− |
| 2004 01 16 | 703 | 0.3− | 0.3+ | 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 01 16 | 703 | 0.3− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2004 01 16 | 703 | 0.7+ | 1.2− | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2004 04 14 | 645 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2004 04 14 | 645 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.8− |
| 2006 09 26 | 691 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.6− | 0.4− |
| 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.5− | 0.4− |
| 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.4+ | 0.3+ | 2006 11 22 | G96 | 0.4− | 0.5− |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.3− |
| 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.5+ | 0.3+ | 2006 11 22 | G96 | 0.2− | 0.3− |

**2006 TM$_{68}$ = 2003 AF$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.93267 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21150724 | $\omega$ | 117.59582 | | −0.73715935 | | −0.66843491 |
| $a$ | 2.7898824 | $\Omega$ | 20.95408 | | +0.48015976 | | −0.62120451 |
| $e$ | 0.2740975 | $i$ | 16.06259 | | +0.47543948 | | −0.40902290 |
| $P$ | 4.66 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 12 | 699 | 0.1+ | 0.8+ | 2006 09 29 | 691 | 0.3+ | 0.6− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2003 01 12 | 699 | 0.2+ | 0.1− | 2006 09 29 | 691 | 0.0 | 0.7+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2003 01 12 | 699 | 0.1− | 0.3+ | 2006 09 29 | 691 | 0.7+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.2− |
| 2003 01 12 | 699 | 0.6+ | 0.1− | 2006 10 11 | 644 | 0.6− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1− |
| 2003 01 14 | 704 | 0.7− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2003 01 14 | 704 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.4− | 0.2− |
| 2003 01 14 | 704 | 0.2− | 0.8− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (1.7+ | 0.4+) |
| 2003 01 14 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | (0.7+ | 2.1+) |
| 2003 01 14 | 704 | 0.7− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | (0.7− | 2.6+) |
| 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.6+ |
| 2006 09 14 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.8+ | 0.1+ |
| 2006 09 14 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 21 | 703 | 0.6− | 0.4+ | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2006 09 25 | G96 | 0.4− | 0.4− | 2006 10 21 | 703 | 0.6− | 1.0− | 2006 11 18 | 291 | 0.4+ | 0.5− |
| 2006 09 25 | G96 | 0.2− | 0.5− | 2006 10 21 | 703 | 0.1− | 0.7− | 2006 11 18 | 291 | 0.0 | 0.3+ |
| 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 18 | 291 | 0.0 | 0.4+ |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.3+ | | | | |
| 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− | | | | |

**2006 TN$_{68}$ = 2004 FD$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.59352 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21234756 | $\omega$ | 186.88619 | | +0.99927190 | | +0.03656431 |
| $a$ | 2.7825173 | $\Omega$ | 170.99675 | | −0.03083600 | | +0.94216906 |
| $e$ | 0.1111694 | $i$ | 3.99262 | | −0.02246810 | | +0.33313737 |
| $P$ | 4.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 691 | 0.1− | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 703 | 0.7− | 0.3− |
| 2004 03 23 | 691 | 0.2− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.8− | 1.0+ |
| 2004 03 23 | 691 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 15 | 703 | 1.1− | 0.2+ |
| 2004 03 27 | 291 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.4− |
| 2004 03 27 | 291 | 0.1+ | 0.0 | 2006 10 11 | 291 | 0.1+ | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.6− |
| 2004 03 27 | 291 | 0.1+ | 0.2− | 2006 10 11 | 291 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.4− |
| 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 291 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.3− |
| 2006 10 01 | 691 | 0.6− | 0.7− | 2006 10 15 | 703 | 0.6− | 0.2− | | | | |

**2006 TS$_{68}$ = 2005 LJ$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.65069 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29213146 | $\omega$ | 330.55499 | | +0.13634502 | | −0.98841617 |
| $a$ | 2.2494888 | $\Omega$ | 111.54060 | | +0.92235270 | | +0.10210269 |
| $e$ | 0.0867947 | $i$ | 4.10962 | | +0.36149072 | | +0.11228761 |
| $P$ | 3.37 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 07 | 691 | 0.7+ | 0.1− | 2006 09 20 | 644 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.5+ | 0.1− |
| 1994 01 07 | 691 | 0.7− | 0.1− | 2006 09 20 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2005 05 15 | G96 | 0.7− | 0.3− | 2006 09 30 | 703 | 0.1− | 1.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2005 05 15 | G96 | 0.6− | 0.4− | 2006 09 30 | 703 | 0.7+ | 0.4+ | 2006 10 22 | 703 | 0.1+ | 1.1+ |
| 2005 05 15 | G96 | 1.3− | 1.2− | 2006 09 30 | 703 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.9+ |
| 2005 05 15 | G96 | 0.2− | 0.5− | 2006 09 30 | 703 | 0.6+ | 0.2+ | 2006 10 22 | 703 | 1.4− | 0.6− |
| 2005 06 01 | 691 | 0.1+ | 0.4+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.7+ |
| 2005 06 01 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2005 06 01 | 691 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.3+ | 0.1− |
| 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.4− | 2006 10 22 | 703 | 1.1− | 0.1+ |
| 2005 06 08 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 703 | (0.6+ | 1.6−) | 2006 10 22 | 703 | 0.7+ | 1.3− |
| 2005 06 08 | 691 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.8− | 0.7− | | | | |
| 2006 09 20 | 644 | 0.2+ | 0.0 | 2006 10 16 | 703 | (0.1+ | 1.6+) | | | | |

**2006 TD$_{69}$ = 1997 YP$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.87260 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21149410 | $\omega$ | 37.49661 | | +0.04438924 | | −0.97918026 |
| $a$ | 2.7899979 | $\Omega$ | 50.85692 | | +0.84357102 | | −0.06947936 |
| $e$ | 0.1529180 | $i$ | 14.79719 | | +0.53517991 | | +0.19073184 |
| $P$ | 4.66 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 27 | 691 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1997 12 27 | 691 | 0.3− | 0.1+ | 2006 10 11 | 644 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 1997 12 27 | 691 | 0.7− | 0.2− | 2006 10 11 | 644 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1998 01 01 | 691 | 0.5+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.1− |
| 1998 01 01 | 691 | 0.3+ | 0.1− | 2006 10 12 | 644 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 1998 01 01 | 691 | 0.8+ | 0.2− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2002 11 28 | 699 | 0.3+ | 0.5+ | 2006 10 17 | 703 | (1.4+ | 1.6+) | 2006 10 23 | 644 | 0.3− | 0.2+ |
| 2002 11 28 | 699 | 0.8+ | 1.3+ | 2006 10 17 | 703 | 0.2− | 0.6− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2002 11 28 | 699 | 0.8− | 0.9− | 2006 10 17 | 703 | 0.5+ | 0.4− | 2006 10 23 | 644 | 0.4+ | 0.3+ |
| 2002 11 28 | 699 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.9− | 0.1+ | | | | |

**2006 TF$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.99289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22652757 | $\omega$ | 65.53764 | | −0.30227718 | | −0.91360390 |
| $a$ | 2.6651521 | $\Omega$ | 45.05551 | | +0.67445687 | | −0.40659525 |
| $e$ | 0.0654972 | $i$ | 22.59547 | | +0.67359961 | | −0.00286617 |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 03 | 608 | 0.3+ | 0.6− | 2002 11 05 | 644 | 0.2+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 2002 11 03 | 608 | 0.5− | 0.5− | 2002 11 23 | 644 | 0.0 | 0.3− | 2006 10 11 | 644 | 0.7+ | 0.1+ |
| 2002 11 03 | 608 | 0.2− | 0.7− | 2002 11 23 | 644 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.3− | 0.2− |
| 2002 11 05 | 644 | 0.1+ | 0.7+ | 2002 11 23 | 644 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2002 11 05 | 644 | 0.2+ | 0.9+ | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1− |

**2006 TP$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.02087 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23564320 | $\omega$ | 233.74155 | | +0.55626680 | | +0.79643088 |
| $a$ | 2.5959686 | $\Omega$ | 71.74686 | | −0.65958563 | | +0.59678052 |
| $e$ | 0.2561244 | $i$ | 14.46394 | | −0.50548397 | | +0.09772852 |
| $P$ | 4.18 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 29 | 691 | 0.1− | 0.2− | 2006 09 24 | 699 | 0.7+ | 1.1− | 2006 10 21 | 703 | 0.4− | 0.8− |
| 1997 05 29 | 691 | 0.2+ | 0.2+ | 2006 09 24 | 699 | 1.0− | 0.1− | 2006 10 21 | 703 | 0.6+ | 0.0 |
| 1997 05 29 | 691 | 0.1− | 0.0 | 2006 09 24 | 699 | 0.7− | 1.1+ | 2006 10 21 | 703 | 0.7− | 0.5− |
| 1998 12 15 | 691 | 0.3− | 0.4+ | 2006 09 24 | 699 | (0.5+ | 1.6+) | 2006 10 21 | 703 | 0.3− | 0.4− |
| 1998 12 15 | 691 | 0.3− | 0.3− | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 10 31 | 703 | 1.3+ | 0.7− |
| 1998 12 15 | 691 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 31 | 703 | 1.1− | 0.4+ |
| 2002 10 16 | 699 | 0.5+ | 1.2+ | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 31 | 703 | 0.9− | 0.2+ |
| 2002 10 16 | 699 | 1.2+ | 0.6− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 31 | 703 | 1.0+ | 0.2− |
| 2002 10 16 | 699 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.8+ | 0.0 |
| 2002 10 16 | 699 | 0.2+ | 0.6− | 2006 10 12 | 644 | 0.1+ | 0.2+ | 2006 11 23 | 703 | 0.7− | 0.2− |
| 2002 11 14 | 644 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 11 23 | 703 | 0.6+ | 0.1− |
| 2002 11 14 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.4+ | 2006 11 23 | 703 | 0.3+ | 0.9+ |
| 2002 11 14 | 644 | 0.0 | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1+ | | | | |

**2006 TY$_{69}$ = 2003 YE$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.91325 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23964612 | $\omega$ | 359.74155 | | +0.42047782 | | +0.90460946 |
| $a$ | 2.5669798 | $\Omega$ | 295.12244 | | −0.83229555 | | +0.35391768 |
| $e$ | 0.2539843 | $i$ | 4.42515 | | −0.36122363 | | +0.23753736 |
| $P$ | 4.11 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.6− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 2003 12 19 | 691 | 0.5+ | 0.5− | 2006 10 17 | 703 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2003 12 19 | 691 | 0.3− | 0.5− | 2006 10 17 | 703 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.1+ |
| 2003 12 21 | 291 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.5− | 0.9− | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2003 12 21 | 291 | 0.2− | 0.6+ | 2006 10 19 | 644 | 0.4+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 12 21 | 291 | 0.4− | 0.4+ | 2006 10 19 | 644 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2006 10 11 | 644 | 0.4− | 0.1+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.4+ | | | | |
| 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 19 | 644 | 0.0 | 0.1− | | | | |

**2006 TE$_{70}$ = 1996 CO$_{1}$ = 2004 DM$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.96404 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25554974 | $\omega$ | 313.48754 | | +0.21594625 | | −0.96534919 |
| $a$ | 2.4593429 | $\Omega$ | 123.48856 | | +0.93887028 | | +0.16408664 |
| $e$ | 0.1055192 | $i$ | 10.11849 | | +0.26812277 | | +0.20291997 |
| $P$ | 3.86 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 02 09 | 540 | (2.4+ | 0.0 ) | 2004 02 18 | 608 | 0.0 | 0.5− | 2006 10 12 | 644 | 0.3+ | 0.2+ |
| 1996 02 09 | 540 | 1.3− | 0.9+ | 2004 02 18 | 608 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.6+ | 0.0 |
| 1996 02 09 | 540 | 0.8+ | 0.0 | 2006 09 19 | 703 | 0.7+ | 0.9− | 2006 10 12 | 644 | 0.4+ | 0.3+ |
| 1996 02 12 | 709 | 0.5− | 0.1− | 2006 09 19 | 703 | 0.0 | 1.4+ | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 1996 02 12 | 709 | 0.5+ | 0.7− | 2006 09 19 | 703 | 0.3+ | 0.8+ | 2006 10 17 | 703 | 1.0+ | 1.4+ |
| 1996 02 12 | 709 | 0.2+ | 0.4+ | 2006 09 19 | 703 | 0.9− | 0.5+ | 2006 10 17 | 703 | 0.6− | 1.1− |
| 1996 02 12 | 709 | 0.2+ | 0.1− | 2006 09 26 | 703 | 1.5− | 0.2− | 2006 10 17 | 703 | 0.2− | 1.2− |
| 2002 09 10 | 644 | 0.1− | 0.1+ | 2006 09 26 | 703 | 2.4− | 0.1+ | 2006 10 17 | 703 | (0.9+ | 2.2−) |
| 2002 09 10 | 644 | 0.1− | 0.3+ | 2006 09 26 | 703 | 1.1− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2002 09 10 | 644 | 0.0 | 0.6+ | 2006 09 26 | 703 | (2.6− | 3.9−) | 2006 10 22 | 644 | 0.3+ | 0.3− |
| 2004 02 16 | 704 | 0.3+ | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2004 02 16 | 704 | 0.2+ | 0.9+ | 2006 10 11 | 644 | 0.4+ | 0.0 | 2006 10 28 | 703 | 1.5+ | 0.7− |
| 2004 02 16 | 704 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.1− | 1.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 704 | 0.6− | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 10 28 | 703 | 0.7+ | 0.3− |
| 2004 02 18 | 608 | 0.4+ | 0.4− | 2006 10 12 | 644 | 0.7+ | 0.1− | 2006 10 28 | 703 | 1.0+ | 0.9+ |

**2006 TL$_{70}$ = 2002 YW$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.48142 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23068625 | $\omega$ | 329.50960 | | +0.14516763 | | −0.98146618 |
| $a$ | 2.6330246 | $\Omega$ | 111.89440 | | +0.93280279 | | +0.09361008 |
| $e$ | 0.2478400 | $i$ | 7.74859 | | +0.32985650 | | +0.16721629 |
| $P$ | 4.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 18 | 910 | 0.1+ | 0.1+ | 2006 09 26 | 703 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 1998 12 18 | 910 | 0.5+ | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 1998 12 18 | 910 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2002 12 31 | 704 | 0.0 | 0.6− | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 2002 12 31 | 704 | 1.0− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.7+ | 2006 10 28 | 703 | 0.6− | 0.3− |
| 2002 12 31 | 704 | 0.5− | 0.1− | 2006 10 16 | 703 | 0.0 | 1.0+ | 2006 10 28 | 703 | 0.2+ | 0.1− |
| 2003 01 07 | 704 | 1.3+ | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.8− | 2006 10 28 | 703 | 0.0 | 0.5+ |
| 2003 01 07 | 704 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.7+ | 2006 10 28 | 703 | 0.3+ | 0.2+ |
| 2003 01 07 | 704 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.1− | 0.2+ | 2006 11 16 | 703 | (0.4+ | 1.7−) |
| 2003 01 07 | 704 | 0.3− | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.5− | 2006 11 16 | 703 | 0.6− | 1.0− |
| 2003 01 07 | 704 | 0.4+ | 0.4− | 2006 10 22 | 703 | 0.2− | 0.7− | 2006 11 16 | 703 | 0.1+ | 0.9− |
| 2006 09 26 | 703 | (1.9+ | 0.0 ) | 2006 10 22 | 703 | 0.4+ | 0.5− | 2006 11 16 | 703 | 0.4− | 0.4− |
| 2006 09 26 | 703 | 0.7− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3+ | | | | |
| 2006 09 26 | 703 | 0.8+ | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.2+ | | | | |

**2006 TS$_{70}$ = 2004 DJ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.84628 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26728909 | $\omega$ | 356.20584 | | −0.25373118 | | −0.96570203 |
| $a$ | 2.3867956 | $\Omega$ | 108.48628 | | +0.88898049 | | −0.25528022 |
| $e$ | 0.1466761 | $i$ | 3.33287 | | +0.38122719 | | −0.04745093 |
| $P$ | 3.69 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc (or two decimals in units of degrees)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | (0.15+ | 0.05+) | 2004 02 23 | 704 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.6+ |
| 1995 11 15 | 691 | (0.15+ | 0.05+) | 2004 02 23 | 704 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.3+ | 0.2+ |
| 1995 11 15 | 691 | (0.15+ | 0.05+) | 2004 02 23 | 704 | 0.2+ | 0.5− | 2006 10 16 | 703 | 0.2+ | 0.0 |
| 2004 02 17 | 704 | 0.4− | 0.4− | 2006 09 30 | 703 | 0.9− | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2004 02 17 | 704 | 0.2− | 0.3− | 2006 09 30 | 703 | 0.3− | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.2− |
| 2004 02 17 | 704 | 0.2− | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.4+ |
| 2004 02 17 | 704 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2004 02 17 | 704 | 0.1+ | 0.2− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2004 02 23 | 704 | 0.7+ | 1.0+ | 2006 10 11 | 644 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2004 02 23 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.2− |

**2006 TZ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.62549 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24320027 | $\omega$ | 232.17190 | | +0.95226326 | | −0.30128164 |
| $a$ | 2.5419091 | $\Omega$ | 145.28414 | | +0.30015241 | | +0.89458819 |
| $e$ | 0.1741011 | $i$ | 4.95949 | | +0.05570650 | | +0.33006263 |
| $P$ | 4.05 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 608 | 0.0 | 0.1+ | 2006 09 28 | 699 | 0.6− | 0.6+ | 2006 10 16 | 703 | 0.7− | 0.6− |
| 2002 11 06 | 608 | 0.1− | 0.6+ | 2006 09 28 | 699 | (1.9− | 0.1−) | 2006 10 16 | 703 | 0.5+ | 0.5− |
| 2002 11 06 | 608 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.2− | 0.2− |
| 2005 05 16 | G96 | 0.0 | 0.5− | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.7− | 0.8− |
| 2005 05 16 | G96 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2005 05 16 | G96 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 05 16 | G96 | 0.2+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.5+ | 2006 10 21 | 644 | 0.8+ | 0.0 |
| 2006 09 28 | 699 | 0.4+ | 1.1+ | 2006 10 11 | 644 | 0.1− | 0.1+ | | | | |
| 2006 09 28 | 699 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.0 | 0.2+ | | | | |

**2006 TA$_{71}$ = 2001 WY$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.30250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18546799 | $\omega$ | 268.27910 | | +0.78549121 | | +0.60520623 |
| $a$ | 3.0452532 | $\Omega$ | 54.45485 | | −0.48556910 | | +0.73226453 |
| $e$ | 0.0816400 | $i$ | 9.14665 | | −0.38370068 | | +0.31227243 |
| $P$ | 5.31 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 1.3− | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1+ |
| 2001 11 20 | 704 | 0.2+ | 0.4+ | 2006 10 02 | G96 | 1.4+ | 0.3+ | 2006 10 20 | 644 | 0.6+ | 0.1− |
| 2001 11 20 | 704 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.5+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2001 11 21 | 704 | 0.6− | 0.2− | 2006 10 11 | 644 | 0.7+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2001 11 21 | 704 | 0.3+ | 0.1− | 2006 10 16 | 703 | 1.4− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2001 11 21 | 704 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 703 | 1.0− | 0.5− | 2006 11 18 | G96 | 0.0 | 0.3+ |
| 2006 09 30 | 703 | 0.4− | 1.0− | 2006 10 16 | 703 | 0.3− | 1.2+ | | | | |
| 2006 09 30 | 703 | 0.2− | 0.7+ | 2006 10 20 | 644 | 0.4− | 0.3+ | | | | |

**2006 TE$_{71}$ = 2004 EF$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.02411 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23517621 | $\omega$ | 74.65293 | | +0.86213050 | | −0.50596570 |
| $a$ | 2.5994040 | $\Omega$ | 315.73335 | | +0.44876746 | | +0.78724731 |
| $e$ | 0.1595721 | $i$ | 2.21795 | | +0.23524195 | | +0.35247749 |
| $P$ | 4.19 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.1− |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 0.4− | 2006 11 13 | 691 | 0.5+ | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | (1.2− | 1.6+) | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.3+ | 2006 11 14 | 703 | (0.5− | 2.4−) |
| 2006 10 02 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.2− | 2006 11 14 | 703 | (1.6− | 0.7−) |
| 2006 10 02 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.6− | 0.1+ | 2006 11 14 | 703 | (0.0 | 2.2−) |
| 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 14 | 703 | 1.2− | 0.4− |
| 2006 10 11 | 644 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2006 10 12 | 644 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2006 10 12 | 644 | 0.1+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ | | | | |

**2006 TF$_{71}$ = 1995 WU$_{38}$ = 1999 XE$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.46656 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26721643 | $\omega$ | 125.51374 | | +0.38741942 | | −0.92149228 |
| $a$ | 2.3872282 | $\Omega$ | 301.66970 | | +0.83500973 | | +0.36340518 |
| $e$ | 0.1823877 | $i$ | 1.85398 | | +0.39072361 | | +0.13707169 |
| $P$ | 3.69 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 23 | 691 | 0.1+ | 0.0 | 1999 12 17 | 691 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.2− | 0.2− |
| 1995 11 23 | 691 | 0.0 | 0.0 | 2002 08 28 | 644 | 0.2+ | 0.7− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 1995 11 23 | 691 | 0.1+ | 0.0 | 2002 08 28 | 644 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 1995 11 30 | 691 | 0.2− | 0.3+ | 2002 08 28 | 644 | 0.1+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1− |
| 1995 11 30 | 691 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1− | 0.2− |
| 1995 11 30 | 691 | 0.2− | 0.4+ | 2006 10 11 | 644 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 1999 12 14 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.6− |
| 1999 12 14 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 1999 12 14 | 691 | 0.2− | 0.8− | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 11 13 | 691 | 0.1− | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 17 | 691 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 1999 12 17 | 691 | 0.1− | 0.1− | 2006 10 19 | 644 | 0.9− | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.1− |

**2006 TG$_{71}$ = 2004 FB$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.45649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18719385 | $\omega$ | 281.67746 | | +0.07297722 | | +0.99723615 |
| $a$ | 3.0265069 | $\Omega$ | 352.46573 | | −0.86861363 | | +0.05668284 |
| $e$ | 0.0760533 | $i$ | 6.10389 | | −0.49008641 | | +0.04803242 |
| $P$ | 5.27 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.1+ | 0.2− | 2004 03 27 | 704 | 0.8+ | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− |
| 2004 03 20 | 704 | 0.3− | 0.4+ | 2004 04 16 | 644 | 0.1+ | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1− |
| 2004 03 20 | 704 | 0.4− | 0.4− | 2004 04 16 | 644 | 0.2− | 0.1+ | 2006 10 11 | 644 | 0.4− | 0.5− |
| 2004 03 20 | 704 | 0.9− | 0.7− | 2004 04 16 | 644 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.1− | 0.1+ |
| 2004 03 27 | 704 | 0.7+ | 1.4+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.3+ | 0.1− |
| 2004 03 27 | 704 | 0.0 | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.4− | 0.2− |
| 2004 03 27 | 704 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.1+ | 0.1+ | | | | |

**2006 TH$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.03412 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30236948 | $\omega$ | 28.05926 | | +0.91647571 | | +0.39910665 |
| $a$ | 2.1984204 | $\Omega$ | 308.39073 | | −0.37344429 | | +0.82818764 |
| $e$ | 0.1594711 | $i$ | 2.05007 | | −0.14356755 | | +0.39347060 |
| $P$ | 3.26 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 29 | 691 | 0.2− | 0.0 | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 12 29 | 691 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.6− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2000 12 29 | 691 | 0.3− | 0.0 | 2006 10 11 | 644 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2003 12 29 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 12 29 | 691 | 0.4+ | 0.2− | 2006 10 11 | 644 | 0.5− | 0.2+ | 2006 10 30 | 408 | 1.3− | 1.1− |
| 2003 12 29 | 691 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.4− | 0.0 | 2006 10 30 | 408 | 1.1− | 1.0− |
| 2005 05 12 | G96 | 0.2+ | 0.6− | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 10 31 | 408 | 0.5− | 0.3+ |
| 2005 05 12 | G96 | 0.1− | 1.0− | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 10 31 | 408 | 0.2− | 0.3+ |
| 2005 05 12 | G96 | 0.3+ | 0.4+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.1+ |
| 2005 05 12 | G96 | 0.6− | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2006 09 28 | 699 | (1.9+ | 0.2−) | 2006 10 17 | 703 | 0.0 | 0.9+ | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2006 09 28 | 699 | 0.6+ | 0.9− | 2006 10 17 | 703 | 1.1+ | 0.1+ | 2006 11 16 | 691 | 0.4− | 0.0 |
| 2006 09 28 | 699 | 1.4+ | 0.4− | 2006 10 17 | 703 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.0 |
| 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | 1.0+ | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.4− |
| 2006 09 28 | 699 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.2+ | 0.1− | | | | |
| 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1+ | | | | |

**2006 TJ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.58155 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18901839 | $\omega$ | 64.46827 | | +0.25242344 | | −0.96699052 |
| $a$ | 3.0069994 | $\Omega$ | 11.08055 | | +0.81000449 | | +0.19149074 |
| $e$ | 0.0468302 | $i$ | 10.43522 | | +0.52931572 | | +0.16810896 |
| $P$ | 5.21 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 04 | 699 | 0.9− | 0.8− | 2003 03 03 | 644 | 0.6− | 0.1+ | 2006 07 21 | G96 | 0.1− | 0.0 |
| 2003 02 04 | 699 | (2.1− | 0.9+) | 2003 03 03 | 644 | 0.4+ | 0.6− | 2006 10 11 | 644 | 0.2+ | 0.2− |
| 2003 02 04 | 699 | 0.4+ | 0.9− | 2003 03 07 | 644 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.0 |
| 2003 02 04 | 699 | 0.5− | 1.2+ | 2003 03 07 | 644 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.0 |
| 2003 02 19 | 644 | 0.4+ | 0.7+ | 2003 03 07 | 644 | 0.4+ | 0.7− | 2006 10 12 | 644 | 0.1+ | 0.0 |
| 2003 02 19 | 644 | 0.2+ | 0.4+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 |
| 2003 02 19 | 644 | 0.3+ | 0.7+ | 2006 07 21 | G96 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.3− | 0.2+ |
| 2003 03 03 | 644 | 0.1− | 0.2+ | 2006 07 21 | G96 | 0.0 | 0.1− | | | | |

**2006 TM$_{71}$ = 2000 AC$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.91529 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27071352 | $\omega$ | 142.06815 | | +0.69166402 | | −0.72099660 |
| $a$ | 2.3666249 | $\Omega$ | 264.12658 | | +0.65186869 | | +0.64827350 |
| $e$ | 0.1748199 | $i$ | 2.42038 | | +0.31091494 | | +0.24475573 |
| $P$ | 3.64 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.9− | 0.2+ | 2006 10 17 | 703 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2000 01 05 | 704 | 0.0 | 0.5− | 2006 10 17 | 703 | 0.6+ | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2000 01 05 | 704 | 1.2− | 0.2+ | 2006 10 17 | 703 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.4+ | 0.1− |
| 2000 01 05 | 704 | 0.7− | 0.4− | 2006 10 17 | 703 | 0.4− | 0.8+ | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2000 01 11 | 691 | 0.2+ | 0.0 | 2006 10 19 | 644 | 0.4− | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2000 01 11 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.0 | 2006 11 10 | 683 | (2.1+ | 0.8−) |
| 2000 01 11 | 691 | 0.3+ | 0.2+ | 2006 10 19 | 644 | 0.2− | 0.1− | 2006 11 10 | 683 | (2.9+ | 0.2−) |
| 2006 10 02 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 10 | 683 | 1.1+ | 1.1− |
| 2006 10 02 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.2+ | 2006 11 11 | 683 | 1.2− | 0.7+ |
| 2006 10 02 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | 683 | (1.7− | 0.5−) |
| 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.8− | 2006 11 14 | 703 | 1.2+ | 0.3− |
| 2006 10 11 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 1.0− | 0.5− | 2006 11 14 | 703 | 0.4− | 1.0− |
| 2006 10 11 | 644 | 0.2− | 0.1+ | 2006 10 21 | 703 | 1.4− | 0.2− | 2006 11 14 | 703 | 0.4− | 0.4+ |
| 2006 10 12 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.6− | 0.1− | 2006 11 14 | 703 | 1.2+ | 0.7− |
| 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.0 |
| 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1− |
| 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 25 | 106 | 0.5+ | 0.4+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2006 10 12 | 644 | 0.3− | 0.7+ | 2006 10 25 | 106 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 25 | 106 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 10 25 | 106 | 0.6+ | 0.7− | | | | |
| 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | | | | |

**2006 TN$_{71}$ = 2004 BY$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.36346 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29018760 | $\omega$ | 90.97421 | | +0.66361077 | | −0.74789680 |
| $a$ | 2.2595232 | $\Omega$ | 317.43460 | | +0.67630355 | | +0.60920288 |
| $e$ | 0.1969045 | $i$ | 1.39483 | | +0.31974092 | | +0.26367068 |
| $P$ | 3.40 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.8− | 0.2+ |
| 2004 01 28 | 691 | 0.2− | 0.2− | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.1+ |
| 2004 01 28 | 691 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.3− | 1.4+ |
| 2004 01 29 | 291 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 01 29 | 291 | 0.3+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 01 29 | 291 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2006 09 24 | 691 | 0.2− | 0.3+ | 2006 10 17 | 703 | 0.6+ | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.4− |
| 2006 09 24 | 691 | 0.2+ | 0.3− | 2006 10 17 | 703 | 0.7− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2006 09 24 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.8− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2006 10 11 | 644 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.8+ | | | | |

**2006 TW$_{71}$ = 2005 JN$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.29190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26927981 | $\omega$ | 246.61551 | | +0.87631152 | | +0.46777521 |
| $a$ | 2.3750177 | $\Omega$ | 85.32259 | | −0.38895651 | | +0.82806543 |
| $e$ | 0.0796763 | $i$ | 6.63572 | | −0.28423750 | | +0.30902103 |
| $P$ | 3.66 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.3+ | 0.0 | 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.1+ |
| 2003 12 21 | 691 | 0.3+ | 0.0 | 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.0 | 0.7+ |
| 2003 12 21 | 691 | 0.2− | 0.1+ | 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1+ |
| 2004 01 16 | 691 | 0.4− | 0.1+ | 2005 05 11 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.5− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | (1.4− | 2.4−) |
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2005 05 04 | 691 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.6+ | 0.1− |
| 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.3− | | | | |

**2006 TK$_{72}$ = 2004 CE$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.59081 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25960208 | $\omega$ | 321.74537 | | +0.54524093 | −0.82550350 | |
| $a$ | 2.4336826 | $\Omega$ | 94.75855 | | +0.80063455 | +0.46128465 | |
| $e$ | 0.0788539 | $i$ | 8.41255 | | +0.24838810 | +0.32520830 | |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.8+ |
| 2004 02 13 | 691 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.9− | 0.3+ |
| 2004 02 13 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.9− | 0.5− |
| 2004 02 15 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.0 | 0.8+ |
| 2004 02 15 | 704 | 0.5+ | 0.6+ | 2006 10 12 | 644 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.4+ | 0.2+ |
| 2004 02 15 | 704 | 0.3− | 0.5− | 2006 10 16 | 703 | 1.0− | 0.5− | 2006 10 28 | 703 | 0.3− | 0.8− |
| 2004 02 15 | 704 | 0.0 | 0.2− | 2006 10 16 | 703 | 1.0+ | 0.4+ | 2006 10 28 | 703 | 0.5+ | 1.0+ |
| 2004 02 15 | 704 | 0.5+ | 0.6+ | 2006 10 16 | 703 | 0.3− | 0.3− | 2006 10 28 | 703 | 0.4+ | 0.7− |
| 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 1.1+ | 1.1− | | | | |

**2006 TX$_{72}$ = 2005 EU$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.64008 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30320806 | $\omega$ | 33.67993 | | +0.79036961 | −0.61260037 | |
| $a$ | 2.1943651 | $\Omega$ | 4.11328 | | +0.54181304 | +0.69435952 | |
| $e$ | 0.1334679 | $i$ | 4.84237 | | +0.28592745 | +0.37760515 | |
| $P$ | 3.25 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | 695 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2005 03 11 | 695 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2005 03 12 | 695 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2006 09 28 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 1.1− | 0.9− |
| 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2006 10 11 | 644 | 0.5− | 0.7+ | 2006 10 29 | 104 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 29 | 104 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 10 29 | 104 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.2− |
| 2006 10 17 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.1− |

**2006 TH$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.69742 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18828087 | $\omega$ | 7.34079 | | +0.92871562 | −0.36556380 | |
| $a$ | 3.0148468 | $\Omega$ | 14.57661 | | +0.32643472 | +0.72671155 | |
| $e$ | 0.0534417 | $i$ | 14.27375 | | +0.17586263 | +0.58159560 | |
| $P$ | 5.23 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.2− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2003 02 21 | 644 | 0.4− | 0.4+ | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 02 21 | 644 | 0.0 | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2003 02 21 | 644 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 2003 03 08 | 644 | 0.4+ | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2003 03 08 | 644 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2003 03 08 | 644 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.6− | 0.6− |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.1+ | 0.3− |
| 2006 10 04 | G96 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.8− | 0.7− |
| 2006 10 04 | G96 | 0.4+ | 0.3− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.6− | 0.5− |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.2+ |
| 2006 10 11 | 644 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.2+ | 0.2− | 2006 11 13 | 644 | 0.5− | 0.3+ |

**2006 TN$_{73}$ = 2004 FS$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.27688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25964380 | $\omega$ | 28.10137 | | −0.15734147 | −0.98492505 | |
| $a$ | 2.4334219 | $\Omega$ | 71.02602 | | +0.89121745 | −0.17297102 | |
| $e$ | 0.1522744 | $i$ | 4.35907 | | +0.42541171 | −0.00191524 | |
| $P$ | 3.80 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 21 | 118 | 0.2+ | 0.4− | 2004 04 16 | 691 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 1996 01 21 | 118 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 1996 01 21 | 118 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 1996 01 21 | 118 | 0.0 | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.5+ |
| 1996 01 21 | 118 | 0.2− | 0.6− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 14 | 704 | 0.1+ | 0.1+ |
| 1996 01 21 | 118 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.3+ | 0.3− | 2006 11 14 | 704 | 0.4+ | 0.0 |
| 1996 01 21 | 118 | 0.3− | 0.4− | 2006 10 11 | 644 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4− | 0.6− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2004 03 20 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.3− | 0.9− | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2004 03 20 | 704 | (0.3− | 1.5−) | 2006 10 16 | 703 | (1.7− | 0.1+) | 2006 11 17 | 703 | 0.3+ | 1.1+ |
| 2004 03 20 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 1.5− | 0.7− | 2006 11 17 | 703 | 0.8− | 0.3− |
| 2004 03 20 | 704 | 0.3+ | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.5− | 1.1+ |
| 2004 03 20 | 704 | 0.4− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.1+ | 1.1+ |
| 2004 03 23 | 704 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.6+ |
| 2004 03 23 | 704 | 0.9+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.7− | 1.1− |
| 2004 03 23 | 704 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 1.0+ | 1.4+ |
| 2004 04 16 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2004 04 16 | 691 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 1.3+ | 0.9+ |

**2006 TP$_{73}$ = 2003 GH$_{25}$ = 2004 JE$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.37644 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17476338 | $\omega$ | 250.68605 | | +0.85429832 | −0.49881677 | |
| $a$ | 3.1683690 | $\Omega$ | 138.87685 | | +0.51977312 | +0.82155808 | |
| $e$ | 0.1087765 | $i$ | 12.83839 | | −0.00320725 | +0.27608721 | |
| $P$ | 5.64 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 691 | 0.8+ | 0.6+ | 2004 05 19 | 691 | 0.2+ | 0.1+ | 2006 09 26 | 703 | 1.4− | 0.6− |
| 2003 04 04 | 691 | 0.6+ | 0.8+ | 2004 05 19 | 691 | 0.0 | 0.1− | 2006 09 26 | 703 | 0.1− | 0.2− |
| 2003 04 04 | 691 | 0.7+ | 1.2+ | 2004 05 19 | 691 | 0.1− | 0.1− | 2006 10 11 | 644 | 0.7+ | 0.0 |
| 2003 04 08 | 691 | 1.0− | 0.9− | 2006 09 18 | 703 | 1.4− | 1.4+ | 2006 10 11 | 644 | 0.6+ | 0.1+ |
| 2003 04 08 | 691 | 0.5− | 0.8− | 2006 09 18 | 703 | 0.1+ | 0.8+ | 2006 10 11 | 644 | 0.6+ | 0.2+ |
| 2003 04 08 | 691 | 0.5− | 0.6− | 2006 09 18 | 703 | 0.1+ | 0.8− | 2006 10 17 | 703 | 0.3− | 0.2− |
| 2004 05 14 | 691 | 0.0 | 0.2+ | 2006 09 18 | 703 | 0.9− | 0.3+ | 2006 10 17 | 703 | 0.9+ | 0.7+ |
| 2004 05 14 | 691 | 0.3− | 0.0 | 2006 09 26 | 703 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.4− | 0.7− |
| 2004 05 14 | 691 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.4+ | 0.0 | 2006 10 17 | 703 | 0.4+ | 0.1− |

**2006 TT$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.59161 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17902641 | $\omega$ | 221.32572 | | +0.93709946 | +0.34731350 | |
| $a$ | 3.1178698 | $\Omega$ | 118.31944 | | −0.30894357 | +0.87177650 | |
| $e$ | 0.1944536 | $i$ | 2.27200 | | −0.16247605 | +0.34551275 | |
| $P$ | 5.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.6+ | 0.4− | 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1997 01 09 | 691 | 0.5− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 1997 01 09 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.4+ | 0.2+ |
| 1999 06 18 | 691 | 0.4− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.5+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 06 18 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6+ | 1.0− |
| 1999 06 18 | 691 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.9− | 0.4+ |
| 2004 04 13 | 691 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 11 | 703 | (0.2+ | 1.6−) |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.8+ | 0.1− |
| 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2006 10 11 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 10 11 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.3− |
| 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.7− |

### 2006 $TX_{73}$ = 2004 $FJ_{76}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.03586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22977548 | $\omega$ | 227.70710 | | +0.93008485 | −0.36387280 | |
| $a$ | 2.6399777 | $\Omega$ | 153.51299 | | +0.36143682 | +0.88197643 | |
| $e$ | 0.1615772 | $i$ | 6.48681 | | +0.06561703 | +0.29952323 | |
| $P$ | 4.29 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 12 | 644 | 0.0 | 0.6+ | 2006 10 11 | 644 | 0.1− | 0.4− | 2006 10 23 | 644 | 0.4+ | 0.0 |
| 2002 12 12 | 644 | 0.3+ | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.5+ |
| 2002 12 12 | 644 | 0.4− | 0.2− | 2006 10 16 | 703 | 1.1− | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.0 |
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2004 03 18 | 691 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.8+ | 1.0− | 2006 10 23 | 644 | 0.1+ | 0.3− |
| 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.7+ | 2006 10 28 | 703 | 0.4− | 0.5+ |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.5+ | 0.2+ | 2006 10 28 | 703 | (1.8+ | 0.6−) |
| 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 10 28 | 703 | 0.1+ | 0.5− |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 10 28 | 703 | 0.8+ | 0.3+ |
| 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 10 22 | 703 | 0.5− | 0.4− | 2006 11 19 | 703 | 0.0 | 0.7+ |
| 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.2+ | 1.0− |
| 2006 09 27 | G96 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.6− | 0.9+ | 2006 11 19 | 703 | 0.4+ | 0.4− |
| 2006 09 27 | G96 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.0 | 0.1− | 2006 11 19 | 703 | 1.7− | 1.2− |
| 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.2− | 0.3− | | | | |

### 2006 $TB_{74}$ = 2004 $GG_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.55239 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18038894 | $\omega$ | 155.40615 | | +0.97111081 | +0.23088248 | |
| $a$ | 3.1021499 | $\Omega$ | 191.73414 | | −0.23647477 | +0.96498597 | |
| $e$ | 0.1829464 | $i$ | 17.25009 | | +0.03199189 | +0.12448035 | |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1− | 0.1+ | 2006 09 20 | 699 | (0.4+ | 1.7+) | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2004 03 16 | 691 | 0.2+ | 0.2− | 2006 10 03 | G96 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.4+ | 0.4− |
| 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 10 22 | 703 | 0.1− | 0.6− |
| 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.0 |
| 2004 04 20 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2004 04 20 | 691 | 0.2− | 0.1− | 2006 10 11 | 644 | 0.4+ | 0.3+ | 2006 10 28 | 703 | 0.9− | 0.4− |
| 2004 04 20 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.4+ | 2006 10 28 | 703 | (2.0− | 1.3−) |
| 2006 09 20 | 699 | 0.4+ | 1.4+ | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 10 28 | 703 | (1.5− | 1.6−) |
| 2006 09 20 | 699 | 1.5− | 1.0− | 2006 10 16 | 703 | 0.4− | 0.4− | 2006 10 28 | 703 | 0.5+ | 1.1+ |
| 2006 09 20 | 699 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.8− | 0.2+ | | | | |

### 2006 $TC_{74}$ = 2001 $YE_{99}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.30352 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18081831 | $\omega$ | 306.80091 | | +0.84047652 | −0.53212175 | |
| $a$ | 3.0972370 | $\Omega$ | 85.56119 | | +0.52404925 | +0.75032995 | |
| $e$ | 0.1501224 | $i$ | 5.88381 | | +0.13773742 | +0.39223897 | |
| $P$ | 5.45 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.7− | 2006 10 22 | 703 | 0.4− | 0.6+ |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | (1.9− | 0.0 ) | 2006 10 22 | 703 | 0.3− | 0.2− |
| 2001 12 17 | 704 | 0.5+ | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.2+ | 2006 10 22 | 703 | 0.5+ | 1.3+ |
| 2001 12 17 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 703 | 1.0+ | 0.9− | 2006 10 22 | 703 | 1.1− | 0.1− |
| 2001 12 20 | 704 | 1.0− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2001 12 20 | 704 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.6+ | 0.3− | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2001 12 20 | 704 | (1.3+ | 2.4−) | 2006 10 20 | 644 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.3+ | 0.0 | | | | |
| 2006 10 11 | 644 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 | | | | |

### 2006 $TG_{74}$ = 1999 $BN_{28}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.42583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22334422 | $\omega$ | 290.83003 | | +0.56216925 | −0.82472566 | |
| $a$ | 2.6904168 | $\Omega$ | 124.81409 | | +0.78393608 | +0.50767777 | |
| $e$ | 0.1074182 | $i$ | 4.30222 | | +0.26345769 | +0.24918040 | |
| $P$ | 4.41 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 17 | 691 | 0.1− | 0.1+ | 2006 10 11 | 644 | 0.3− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 1999 01 17 | 691 | 0.4− | 0.5− | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.7+ | 1.1+ |
| 1999 01 17 | 691 | 0.2+ | 0.3− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 10 22 | 703 | (0.0 | 2.1+) |
| 1999 01 19 | 691 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.0 | 0.2− |
| 1999 01 19 | 691 | 0.0 | 0.5+ | 2006 10 12 | 644 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.8+ | 1.0+ |
| 1999 01 19 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.4− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2006 10 03 | G96 | 0.0 | 0.5− | 2006 10 16 | 703 | (1.2− | 1.9−) | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2006 10 03 | G96 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 10 03 | G96 | 0.7+ | 0.5− | 2006 10 16 | 703 | (0.7− | 1.8−) | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2006 10 03 | G96 | 0.7− | 0.5− | 2006 10 21 | 644 | 0.1− | 0.2+ | | | | |
| 2006 10 11 | 644 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ | | | | |

### 2006 $TH_{74}$ = 2000 $SD_{373}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.98780 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17212557 | $\omega$ | 293.57623 | | +0.78023395 | −0.61703125 | |
| $a$ | 3.2006569 | $\Omega$ | 104.68221 | | +0.60554618 | +0.70409517 | |
| $e$ | 0.1807131 | $i$ | 6.08282 | | +0.15668060 | +0.35145759 | |
| $P$ | 5.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 2000 09 26 | 645 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.8+ | 0.3+ | 2006 11 13 | 703 | (2.0+ | 0.7−) |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.5+ | 1.3− | 2006 11 13 | 703 | 0.2− | 0.9+ |
| 2000 09 27 | 645 | 0.1− | 0.0 | 2006 10 16 | 703 | (0.4+ | 1.9−) | 2006 11 13 | 703 | 0.7+ | 0.9− |
| 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.4− | 0.4+ |
| 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.6+ | 0.7− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.2+ | 0.4+ | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 22 | 703 | 1.0− | 0.9− | 2006 11 24 | G96 | 0.4− | 0.1− |

### 2006 $TO_{74}$ = 2004 $FM_{133}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.50066 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21427890 | $\omega$ | 235.23768 | | +0.78745550 | +0.60488819 | |
| $a$ | 2.7657724 | $\Omega$ | 87.25195 | | −0.51966119 | +0.75485282 | |
| $e$ | 0.0524763 | $i$ | 6.80899 | | −0.33146053 | +0.25358923 | |
| $P$ | 4.60 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.8+ | 0.1+ | 2006 09 30 | 703 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.2+ | 0.7+ |
| 2004 03 23 | 704 | 0.1− | 0.7− | 2006 09 30 | 703 | 0.6− | 0.7− | 2006 10 16 | 703 | 0.0 | 1.2+ |
| 2004 03 23 | 704 | 0.4+ | 0.5− | 2006 09 30 | 703 | 0.4− | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 03 23 | 704 | 0.1+ | 1.0+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 30 | 691 | 0.0 | 0.1− | 2006 10 11 | 644 | 0.0 | 0.5− | 2006 11 23 | G96 | 0.4− | 0.2+ |
| 2004 03 30 | 691 | 0.1− | 0.2+ | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.1+ |
| 2004 03 30 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.2− | | | | |
| 2006 09 30 | 703 | 0.3− | 0.7− | 2006 10 16 | 703 | 0.9+ | 0.1+ | | | | |

**2006 TV$_{74}$ = 2002 AM$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.42529 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17187237 | $\omega$ | 26.00340 | | +0.68837232 | | −0.72534473 |
| $a$ | 3.2037996 | $\Omega$ | 20.49611 | | +0.66333746 | | +0.62709946 |
| $e$ | 0.1515154 | $i$ | 0.70528 | | +0.29347396 | | +0.28393890 |
| $P$ | 5.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 645 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 11 11 | 703 | (2.0− | 1.5+) |
| 2001 12 20 | 645 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 01 09 | 599 | (3.7− | 4.5+) | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2002 01 09 | 599 | 0.5+ | 0.5− | 2006 10 20 | 683 | 1.1+ | 1.4− | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2002 01 09 | 599 | 0.4+ | 0.5+ | 2006 10 20 | 683 | 1.4+ | 1.2− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2002 01 14 | 691 | 0.1− | 0.2− | 2006 10 20 | 683 | (0.9+ | 1.8+) | 2006 11 13 | G96 | 0.7− | 0.5− |
| 2002 01 14 | 691 | 0.7+ | 0.1+ | 2006 10 21 | 703 | 0.7+ | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2002 01 14 | 691 | 0.2+ | 0.3− | 2006 10 21 | 703 | 0.1− | 0.6− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2002 01 18 | 291 | 0.2− | 0.9+ | 2006 10 21 | 703 | 0.3− | 0.5− | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2002 01 18 | 291 | 0.4− | 0.4+ | 2006 10 21 | 703 | 0.6+ | 0.6+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2002 01 18 | 291 | 0.1+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.3+ |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.6+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2006 09 25 | G96 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2006 10 12 | 644 | 0.2+ | 0.4+ | 2006 10 29 | 691 | 0.3− | 0.4+ | | | | |
| 2006 10 12 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.7− | | | | |

**2006 TY$_{74}$ = 2005 LS$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.36524 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23324522 | $\omega$ | 152.94962 | | +0.98861474 | | −0.06645867 |
| $a$ | 2.6137309 | $\Omega$ | 211.76183 | | +0.04083185 | | +0.98199992 |
| $e$ | 0.1242919 | $i$ | 14.86000 | | +0.14482284 | | +0.17680328 |
| $P$ | 4.23 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 2005 06 13 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.4− |
| 2005 06 13 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.1+ |
| 2005 06 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.6+ |
| 2005 06 27 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.4+ | 1.0− | 2006 11 11 | 703 | 0.3+ | 0.7− |
| 2005 06 27 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.6+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.1− | 0.6+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2006 09 25 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.7+ | 0.2+ |
| 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 23 | 683 | 1.0− | 0.5− | 2006 11 21 | 704 | 0.9+ | 0.1− |
| 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 23 | 683 | 1.0+ | 1.0− | 2006 11 21 | 704 | 0.6+ | 0.4− |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 10 23 | 683 | 0.6− | 1.1+ | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | (1.6+ | 0.2+) |
| 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.6− | | | | |

**2006 TD$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.11678 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24412610 | $\omega$ | 285.39554 | | +0.93590478 | | +0.34980745 |
| $a$ | 2.5354783 | $\Omega$ | 54.14613 | | −0.30040020 | | +0.85402802 |
| $e$ | 0.1983323 | $i$ | 2.93046 | | −0.18396186 | | +0.38505958 |
| $P$ | 4.04 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 18 | 691 | 0.7− | 0.6+ | 2005 06 01 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.9− |
| 1998 10 18 | 691 | 0.9− | 0.2+ | 2005 06 01 | G96 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.5− |
| 1998 10 28 | 691 | 0.5+ | 0.1+ | 2005 06 01 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.5− |
| 1998 10 28 | 691 | 0.4+ | 0.1+ | 2005 06 01 | G96 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2− |
| 1998 10 28 | 691 | 0.5+ | 0.0 | 2006 08 22 | 461 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.3− | 0.3− |
| 1998 12 12 | 691 | (1.4+ | 4.9−) | 2006 08 22 | 461 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 1998 12 12 | 691 | 0.9+ | 0.7− | 2006 08 22 | 461 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 1998 12 12 | 691 | 0.6− | 0.7− | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2002 10 31 | 699 | 0.6− | 0.1− | 2006 09 30 | 703 | 0.8− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 10 31 | 699 | 0.1− | 1.1+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.6+ |
| 2002 10 31 | 699 | 0.0 | 1.3+ | 2006 10 11 | 644 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.5− |
| 2002 10 31 | 644 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.1+ |
| 2002 10 31 | 699 | 0.7+ | 0.7+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.5+ | 0.6+ |
| 2002 10 31 | 644 | 0.0 | 0.8+ | 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2002 10 31 | 644 | 0.1+ | 0.6+ | 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2002 11 06 | 608 | 0.3− | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.6− | 0.4− |
| 2002 11 06 | 608 | 1.1− | 0.5+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.6+ | 0.0 |
| 2002 11 06 | 608 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2002 11 22 | 644 | 0.9− | 0.6+ | 2006 10 12 | 644 | 0.5+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 2002 11 22 | 644 | 0.2− | 0.5+ | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2002 11 22 | 644 | 0.2+ | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.6− | 1.0− |
| 2005 04 07 | 691 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.7+ | 0.7+ |
| 2005 04 07 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 1.1− | 0.4− |
| 2005 04 07 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.8− | 0.5− |
| 2005 05 04 | G96 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.6+ | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2005 05 04 | G96 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.4+ | 0.2− |
| 2005 05 04 | G96 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2005 05 04 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− | | | | |

**2006 TK$_{75}$ = 2004 HX$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.44883 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18350750 | $\omega$ | 215.22956 | | +0.99760770 | | +0.02225036 |
| $a$ | 3.0669039 | $\Omega$ | 143.32708 | | −0.00052091 | | +0.94917820 |
| $e$ | 0.0648832 | $i$ | 6.29154 | | −0.06912750 | | +0.31395169 |
| $P$ | 5.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.8− | 0.8− | 2004 04 20 | 704 | 0.2+ | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.8− |
| 1993 04 19 | 691 | 0.4− | 0.8− | 2004 04 20 | 704 | 0.1− | 1.0+ | 2006 10 11 | 644 | 0.2+ | 0.1+ |
| 2000 08 20 | 691 | 0.4+ | 0.5+ | 2004 04 20 | 704 | 1.1+ | 0.4+ | 2006 10 11 | 644 | 0.4+ | 0.5+ |
| 2000 08 20 | 691 | 0.1+ | 0.1+ | 2004 04 22 | 599 | 0.1− | 0.4+ | 2006 10 11 | 644 | 0.5+ | 0.1− |
| 2000 08 20 | 691 | 0.0 | 0.5+ | 2004 04 22 | 599 | 0.1− | 1.0+ | 2006 10 16 | 703 | 0.8− | 1.2− |
| 2002 12 07 | 645 | 0.1− | 0.1− | 2004 04 22 | 599 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.4− |
| 2002 12 07 | 645 | 0.0 | 0.0 | 2005 07 05 | G96 | 0.3− | 0.2+ | 2006 10 16 | 703 | 0.6− | 0.7− |
| 2003 01 26 | 291 | 0.6+ | 0.8+ | 2005 07 05 | G96 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2003 01 26 | 291 | 0.2− | 1.0+ | 2005 07 05 | G96 | 0.4− | 0.2+ | 2006 11 17 | 644 | 0.3+ | 0.1+ |
| 2003 01 26 | 291 | 1.1+ | 0.5+ | 2006 09 30 | 703 | 0.2− | 0.7− | 2006 11 17 | 644 | 0.0 | 0.1+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.6+ | 1.3− | 2006 11 17 | 644 | 0.1− | 0.5+ |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.8− | 0.7+ | | | | |

**2006 TL$_{75}$ = 2002 YL$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.32866 | | | (2000.0) | | |
| $n$ | 0.23466992 | $\omega$ | 318.42033 | | +0.47880457 | −0.87305780 |
| $a$ | 2.6031415 | $\Omega$ | 102.78260 | | +0.82839470 | +0.41448377 |
| $e$ | 0.2359191 | $i$ | 5.42996 | | +0.29070329 | +0.25685265 |
| $P$ | 4.20 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.5− | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.0 | 0.6− |
| 2002 12 31 | 704 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 11 13 | 703 | (0.1+ | 1.8−) |
| 2002 12 31 | 704 | 0.5− | 1.0− | 2006 10 12 | 644 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.7− |
| 2002 12 31 | 704 | 0.3+ | 0.9+ | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 11 13 | 703 | 0.7+ | 0.2+ |
| 2003 01 04 | 704 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.9− | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2003 01 04 | 704 | 0.3+ | 0.1− | 2006 10 22 | 703 | 0.7− | 0.3+ | 2006 11 17 | 704 | 0.6+ | 0.4− |
| 2003 01 04 | 704 | 0.3− | 0.3− | 2006 10 22 | 703 | 0.6− | 0.6+ | 2006 11 17 | 704 | 0.6+ | 0.2− |
| 2003 01 04 | 704 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.2− | 2006 11 17 | 704 | 0.5− | 0.2+ |
| 2003 01 04 | 704 | 0.3+ | 0.3− | 2006 10 23 | 644 | 0.2− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.4− |
| 2006 10 11 | 644 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.8+ | | | | |
| 2006 10 11 | 644 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | | | | |

**2006 TM$_{75}$ = 2003 YK$_{170}$ = 2005 JS$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.80702 | | | (2000.0) | | |
| $n$ | 0.29002665 | $\omega$ | 275.26817 | | +0.95091854 | +0.27863367 |
| $a$ | 2.2603591 | $\Omega$ | 68.60673 | | −0.19405696 | +0.87578352 |
| $e$ | 0.1612619 | $i$ | 8.31184 | | −0.24103076 | +0.39416558 |
| $P$ | 3.40 | $H$ | 16.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.3+ | 0.2− |
| 2003 12 18 | 691 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.3− | 0.5+ |
| 2003 12 18 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.1+ | 0.4− |
| 2003 12 28 | 704 | 0.5− | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 13 | 703 | 0.7− | 0.9− |
| 2003 12 28 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.2+ | 1.4+ |
| 2003 12 28 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.7+ |
| 2003 12 28 | 704 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 14 | 704 | 0.5+ | 1.2+ |
| 2005 05 14 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 1.5− | 0.4− | 2006 11 14 | 704 | 0.8− | 0.1+ |
| 2005 05 14 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.0 | 0.2+ |
| 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.6+ | 1.0− | 2006 11 17 | 644 | 0.2− | 0.4+ |
| 2005 05 15 | 644 | 0.4+ | 0.3+ | 2006 10 22 | 703 | 1.0− | 0.5− | 2006 11 17 | 644 | 0.4+ | 0.1+ |
| 2005 05 15 | 644 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.4− | 0.3− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2005 05 15 | 644 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.5+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2006 10 11 | 644 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.5+ |

**2006 TR$_{75}$ = 1995 JU**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 347.32660 | | | (2000.0) | | |
| $n$ | 0.21358501 | $\omega$ | 341.79983 | | +0.74704576 | −0.63659845 |
| $a$ | 2.7717594 | $\Omega$ | 59.28033 | | +0.63424085 | +0.59623802 |
| $e$ | 0.0917965 | $i$ | 12.86979 | | +0.19915112 | +0.48912435 |
| $P$ | 4.61 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 01 | 691 | 0.4+ | 0.8+ | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 10 22 | 644 | 0.6− | 0.5+ |
| 1995 05 01 | 691 | 0.3+ | 0.0 | 2006 10 11 | 644 | 0.4− | 0.5+ | 2006 11 14 | 704 | (0.6− | 1.6+) |
| 1995 05 04 | 691 | 1.0+ | 0.7+ | 2006 10 11 | 644 | 0.3− | 0.4+ | 2006 11 14 | 704 | 0.1− | 1.0+ |
| 1995 05 04 | 691 | 0.4− | 0.6+ | 2006 10 12 | 644 | 0.1− | 0.6+ | 2006 11 14 | 704 | 0.3+ | 1.0+ |
| 1995 05 04 | 691 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 14 | 704 | (0.5− | 2.6+) |
| 1997 12 04 | 327 | 0.2− | 0.1+ | 2006 10 12 | 644 | 0.3− | 0.2+ | 2006 11 17 | 644 | 0.5− | 0.2+ |
| 1997 12 04 | 327 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.3+ |
| 1997 12 04 | 327 | 0.4+ | 0.9+ | 2006 10 16 | 703 | (1.7− | 0.2+) | 2006 11 17 | 704 | 1.3− | 0.6+ |
| 2004 03 29 | 703 | (1.5+ | 3.5+) | 2006 10 16 | 703 | 0.6− | 0.9+ | 2006 11 17 | 644 | 0.3− | 0.1− |
| 2004 03 29 | 703 | (1.9+ | 2.1−) | 2006 10 16 | 703 | 0.7+ | 0.3− | 2006 11 17 | 704 | 0.5− | 0.6− |
| 2004 03 29 | 703 | 0.8+ | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.6− | 0.6− |
| 2004 03 29 | 703 | 0.5+ | 0.5+ | 2006 10 22 | 703 | (0.7− | 1.8+) | 2006 11 17 | 644 | 0.3− | 0.2+ |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | (0.2+ | 1.8+) | 2006 11 20 | 704 | 0.3+ | 0.0 |
| 2004 04 14 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.7+ | 0.9+ | 2006 11 20 | 704 | 0.1− | 0.5− |
| 2004 04 14 | 691 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.5− | 0.6+ | 2006 11 20 | 704 | 1.0+ | 0.5+ |
| 2006 09 29 | 699 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.4− | 0.2+ | 2006 11 20 | 704 | 0.7− | 0.3− |
| 2006 09 29 | 699 | 0.3+ | 0.2+ | 2006 10 22 | 644 | 0.5− | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.2+ |
| 2006 09 29 | 699 | 0.8+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.1− | | | | |
| 2006 09 29 | 699 | (0.0 | 1.6+) | 2006 10 22 | 644 | 0.8− | 0.0 | | | | |

**2006 TV$_{75}$ = 2001 ML$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 50.13353 | | | (2000.0) | | |
| $n$ | 0.22776639 | $\omega$ | 346.30406 | | +0.82687645 | +0.56155611 |
| $a$ | 2.6554795 | $\Omega$ | 339.44314 | | −0.50745193 | +0.72163648 |
| $e$ | 0.1362194 | $i$ | 4.98257 | | −0.24242088 | +0.40484011 |
| $P$ | 4.33 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 27 | 644 | 0.2+ | 0.4+ | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2001 06 27 | 644 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.2− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.3− |
| 2001 06 27 | 644 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 2001 06 30 | 644 | 0.1+ | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2001 06 30 | 644 | 0.1− | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 1.3+ | 0.4− |
| 2001 06 30 | 644 | 0.3− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2006 10 04 | G96 | 0.2− | 0.6− | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2006 10 04 | G96 | 0.2− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.6− |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.5+ | 1.0+ | 2006 11 23 | 703 | 1.2− | 0.2− |
| 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 23 | 703 | 0.6− | 0.4+ |
| 2006 10 11 | 644 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.9+ | 0.1− |
| 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 23 | 703 | (0.5− | 2.4−) |

**2006 TZ$_{75}$ = 2001 SS$_{325}$ = 2004 EB$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.12884 | | | (2000.0) | | |
| $n$ | 0.21390166 | $\omega$ | 321.16161 | | +0.92194486 | −0.37983366 |
| $a$ | 2.7690233 | $\Omega$ | 61.32009 | | +0.37341685 | +0.81970665 |
| $e$ | 0.0806274 | $i$ | 4.95586 | | +0.10284714 | +0.42872764 |
| $P$ | 4.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 17 | 699 | (1.3− | 1.8+) | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 09 17 | 699 | 0.9− | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2001 09 17 | 699 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 09 17 | 699 | 0.7− | 0.8+ | 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2001 09 21 | 704 | 1.0+ | 0.9− | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | (2.0+ | 0.8−) | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 09 21 | 704 | 0.6+ | 1.4− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.6+ |
| 2004 03 14 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.9− | 0.1− |
| 2004 03 14 | 691 | 0.3− | 0.0 | 2006 10 21 | 703 | 1.2− | 1.1− | 2006 11 11 | 703 | 1.1+ | 1.0+ |
| 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.3− |
| 2004 03 21 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.0 | 0.2− |
| 2004 03 21 | 691 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.7− |
| 2004 03 21 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.8+ |
| 2006 09 30 | 703 | 1.3+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.9− | 1.0− |
| 2006 09 30 | 703 | 1.4+ | 1.0+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2006 09 30 | 703 | 0.2− | 1.3+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2006 09 30 | 703 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.0 | | | | |

**2006 TD$_{76}$ = 2005 JF$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.70395 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27683189 | $\omega$ | 311.02207 | | +0.96010510 | +0.25263049 | |
| $a$ | 2.3316246 | $\Omega$ | 34.83871 | | −0.14847972 | +0.82388136 | |
| $e$ | 0.1859336 | $i$ | 12.11556 | | −0.23696405 | +0.50734342 | |
| $P$ | 3.56 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2005 04 10 | 691 | 0.4+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2005 04 10 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2005 05 04 | 568 | 0.4− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2005 05 04 | 568 | 0.5− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2005 05 04 | 568 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2005 05 05 | 568 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2006 10 02 | G96 | 0.4− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.7− | 0.1+ |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2006 10 02 | G96 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.4+ |
| 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 19 | 691 | 0.3+ | 0.1− |
| 2006 10 11 | 644 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2006 10 11 | 644 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 21 | 691 | 0.3+ | 0.2− |
| 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.6− | 2006 11 21 | 691 | 0.3+ | 0.5− |

**2006 TJ$_{76}$ = 2004 GJ$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.77430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22627173 | $\omega$ | 352.33498 | | +0.31615234 | −0.94673025 | |
| $a$ | 2.6671607 | $\Omega$ | 79.21924 | | +0.87369672 | +0.26539377 | |
| $e$ | 0.1371940 | $i$ | 3.57377 | | +0.36973198 | +0.18239513 | |
| $P$ | 4.36 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 24 | 691 | 0.4− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 1995 02 24 | 691 | 0.9+ | 0.0 | 2006 10 11 | 644 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 1995 02 24 | 691 | 0.5− | 0.3− | 2006 10 12 | 644 | 0.5+ | 0.1− | 2006 11 11 | 703 | (0.5+ | 1.9+) |
| 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.5− |
| 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.1− |
| 2004 04 25 | 691 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2004 04 25 | 691 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.6+ |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.8+ | 1.1+ |
| 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.9− | 0.0 |
| 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 11 17 | 703 | 1.0− | 0.6− |

**2006 TK$_{76}$ = 1999 TV$_{295}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.28507 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28423158 | $\omega$ | 198.65184 | | +0.91251358 | −0.40887357 | |
| $a$ | 2.2909793 | $\Omega$ | 185.52610 | | +0.38924744 | +0.87691248 | |
| $e$ | 0.2135676 | $i$ | 7.09251 | | +0.12571956 | +0.25267945 | |
| $P$ | 3.47 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 01 | 703 | 0.1− | 0.3− | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.0 | 0.2+ |
| 1999 10 01 | 703 | 0.7+ | 0.5+ | 2006 09 23 | 691 | 0.0 | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.3+ |
| 1999 10 01 | 703 | 0.6+ | 0.2+ | 2006 09 23 | 691 | 0.0 | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ |
| 1999 10 01 | 703 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 0.8− | 1.0− | 2006 10 16 | 703 | 0.7− | 0.2− |
| 1999 10 09 | 704 | 1.3− | 0.5− | 2006 09 30 | 703 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.3− | 0.5+ |
| 1999 10 09 | 704 | 0.5+ | 0.2+ | 2006 09 30 | 703 | 1.2+ | 0.9− | 2006 10 16 | 703 | 0.9+ | 0.0 |
| 1999 10 09 | 704 | 0.4− | 0.9− | 2006 09 30 | 703 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.3− |

**2006 TQ$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.12907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24285253 | $\omega$ | 342.81248 | | +0.96620255 | +0.25756483 | |
| $a$ | 2.5443350 | $\Omega$ | 2.34159 | | −0.19517009 | +0.75783397 | |
| $e$ | 0.1235787 | $i$ | 15.07953 | | −0.16840801 | +0.59945644 | |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 25 | 644 | 0.1+ | 0.0 | 2006 10 11 | 644 | 0.1− | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.2− |
| 2002 11 25 | 644 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 11 25 | 644 | 0.1− | 0.0 | 2006 10 11 | 644 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.2− | 0.2− |
| 2002 11 25 | 644 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 703 | (0.7− | 1.6−) |
| 2002 11 25 | 644 | 0.1− | 0.4− | 2006 10 12 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.8− |
| 2002 11 25 | 644 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.7− | 0.2+ |
| 2004 02 17 | 691 | 0.2− | 0.1− | 2006 10 19 | 703 | 1.2− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.9− |
| 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 1.1+ | 0.4− | 2006 11 22 | 703 | 0.5− | 0.5+ |
| 2004 02 17 | 691 | 0.1+ | 0.0 | 2006 10 19 | 703 | 1.0+ | 1.0+ | 2006 11 22 | 703 | 0.0 | 0.7+ |
| 2006 09 28 | 703 | (0.7− | 1.8−) | 2006 10 19 | 703 | 0.4− | 0.3+ | 2006 11 22 | 703 | 0.1− | 1.0− |
| 2006 09 28 | 703 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.0 | 2006 11 22 | 703 | 0.8+ | 1.2+ |
| 2006 09 28 | 703 | 0.4+ | 0.3+ | 2006 10 22 | 644 | 0.3− | 0.1+ | | | | |
| 2006 09 28 | 703 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.1− | 0.4− | | | | |

**2006 TU$_{76}$ = 2000 SB$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.22837 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17976854 | $\omega$ | 306.29183 | | +0.41233627 | +0.91018464 | |
| $a$ | 3.1092830 | $\Omega$ | 347.87222 | | −0.76440263 | +0.32219389 | |
| $e$ | 0.0644406 | $i$ | 10.77503 | | −0.49564849 | +0.26029794 | |
| $P$ | 5.48 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.2− | 0.6+ | 2005 07 10 | E12 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.9− | 0.1+ |
| 2000 09 24 | 704 | 0.9− | 0.4+ | 2005 08 04 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.6− | 0.9+ |
| 2000 09 24 | 704 | 0.1− | 0.4+ | 2005 08 04 | 644 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.9+ | 0.6+ |
| 2000 09 24 | 704 | 0.5− | 0.4+ | 2005 08 04 | 644 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.9+ |
| 2000 09 24 | 704 | 0.5− | 0.6− | 2006 10 11 | 644 | 0.0 | 0.3− | 2006 11 15 | 703 | 0.2− | 0.1− |
| 2000 09 24 | 608 | 0.6+ | 1.6− | 2006 10 11 | 644 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.2− | 0.1+ |
| 2000 09 24 | 608 | 0.4+ | 1.4− | 2006 10 11 | 644 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.7− | 0.3− |
| 2000 09 24 | 608 | 0.4+ | 1.0− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 15 | 703 | 1.2+ | 0.1− |
| 2000 09 26 | 704 | 0.1+ | 0.5− | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 22 | 703 | 0.6+ | 0.4− |
| 2000 09 26 | 704 | 0.3+ | 0.7+ | 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.5+ | 0.8− |
| 2000 09 26 | 704 | 0.9+ | 1.0+ | 2006 10 19 | 703 | 0.1+ | 0.5+ | 2006 11 22 | 703 | 0.2− | 0.3− |
| 2000 09 26 | 704 | 0.4− | 1.0+ | 2006 10 19 | 703 | 0.1+ | 0.2− | 2006 11 22 | 703 | 0.1+ | 0.1+ |
| 2005 07 10 | E12 | 0.4− | 0.1− | 2006 10 19 | 703 | 0.8− | 0.5− | | | | |
| 2005 07 10 | E12 | 0.4− | 0.8− | 2006 10 19 | 703 | 0.5+ | 0.6+ | | | | |

**2006 TN$_{77}$ = 1998 DJ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.36018 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18386579 | $\omega$ | 23.31483 | | +0.64675730 | +0.74469264 | |
| $a$ | 3.0629184 | $\Omega$ | 287.41008 | | −0.72412597 | +0.53173893 | |
| $e$ | 0.1360054 | $i$ | 9.94164 | | −0.23947145 | +0.40334423 | |
| $P$ | 5.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.3− | 0.1+ | 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.3+ |
| 1998 02 23 | 691 | 0.3− | 0.5− | 2006 09 28 | 703 | 0.3− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.0 |
| 1998 02 23 | 691 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.8+ | 0.2− | 2006 10 17 | 703 | 0.2− | 0.4+ |
| 1998 02 28 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.2− | 2006 10 17 | 703 | 0.1− | 0.4− |
| 1998 02 28 | 691 | 0.1+ | 0.1+ | 2006 09 28 | 703 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.0 | 0.1+ |
| 1998 02 28 | 691 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.1+ | | | | |
| 2003 01 25 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2− | 0.3+ | | | | |

**2006 TQ$_{77}$ = 2005 JW$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 62.68465 | | (2000.0) | | | |
| $n$ | 0.21703745 | $\omega$ | 99.28405 | | +0.53687885 | +0.84152329 |
| $a$ | 2.7422871 | $\Omega$ | 203.49224 | | −0.82103596 | +0.50480069 |
| $e$ | 0.2046241 | $i$ | 8.65649 | | −0.19406456 | +0.19239232 |
| $P$ | 4.54 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2005 05 10 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.0 |
| 2005 05 10 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.8− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 2005 05 17 | G96 | 0.5− | 0.5− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2005 05 17 | G96 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2+ |
| 2005 05 17 | G96 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2005 05 17 | G96 | 0.1− | 0.6− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.6+ |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.3− | | | | |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1− | | | | |

**2006 TS$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.43508 | | (2000.0) | | | |
| $n$ | 0.20611076 | $\omega$ | 198.31118 | | +0.88303012 | −0.46928631 |
| $a$ | 2.8383696 | $\Omega$ | 189.68196 | | +0.43443652 | +0.82162825 |
| $e$ | 0.0810686 | $i$ | 1.80817 | | +0.17754636 | +0.32356975 |
| $P$ | 4.78 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 07 | 291 | 0.3− | 0.6+ | 2006 10 16 | 691 | 0.6+ | 1.3− | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2002 12 07 | 291 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.7− |
| 2002 12 07 | 291 | 0.7+ | 0.6+ | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2003 02 01 | 645 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.5− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.0 | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.4− | 1.0− | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 10 29 | 691 | 0.1− | 0.4− |
| 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.5+ |
| 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2006 10 12 | 691 | 0.7− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.6+ | | | | |

**2006 TT$_{77}$ = 2001 FD$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 202.07939 | | (2000.0) | | | |
| $n$ | 0.28247131 | $\omega$ | 348.60847 | | −0.98676590 | +0.15999793 |
| $a$ | 2.3004872 | $\Omega$ | 200.65434 | | −0.14228773 | −0.93228599 |
| $e$ | 0.1301451 | $i$ | 4.28228 | | −0.07776407 | −0.32441253 |
| $P$ | 3.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.1+ | 0.2+ | 2001 03 26 | 704 | 0.0 | 0.6+ | 2005 01 22 | 809 | 0.9+ | 0.2− |
| 1995 07 25 | 691 | 0.1− | 0.0 | 2001 03 26 | 704 | 0.6+ | 0.1− | 2005 01 22 | 809 | 1.0− | 0.1+ |
| 1995 07 25 | 691 | 0.4− | 0.2+ | 2001 03 26 | 704 | 1.0+ | 0.4+ | 2006 09 25 | G96 | 0.1− | 0.3− |
| 1999 10 14 | 645 | 0.1+ | 0.2− | 2001 03 29 | 699 | 0.6− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.1+ |
| 1999 10 14 | 645 | 0.0 | 0.1− | 2001 03 29 | 699 | 0.4+ | 0.8+ | 2006 09 25 | G96 | 0.2+ | 0.3− |
| 1999 10 19 | 691 | 0.1+ | 0.2− | 2001 03 29 | 699 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.3+ | 0.3− |
| 1999 10 19 | 691 | 0.3+ | 0.2− | 2001 03 29 | 699 | 0.7− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.4+ |
| 1999 10 19 | 691 | 0.3+ | 0.3− | 2001 04 01 | 704 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.4+ |
| 2001 03 24 | 704 | 0.5− | 0.1− | 2001 04 01 | 704 | 1.2+ | 0.5+ | 2006 10 12 | 691 | 0.1− | 0.8+ |
| 2001 03 24 | 704 | 0.2+ | 0.2+ | 2001 04 01 | 704 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.7− | 0.1+ |
| 2001 03 24 | 704 | 0.1− | 0.2− | 2001 04 01 | 704 | (0.1+ | 1.7+) | 2006 10 18 | 691 | 0.3− | 0.6+ |
| 2001 03 26 | 704 | 0.7− | 0.6− | 2001 04 01 | 704 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2001 03 26 | 704 | 0.4− | 0.7+ | 2005 01 22 | 809 | 1.5+ | 0.4− | | | | |

**2006 TJ$_{78}$ = 2000 ST$_{321}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 97.01138 | | (2000.0) | | | |
| $n$ | 0.17543306 | $\omega$ | 282.49126 | | +0.16571030 | +0.98614022 |
| $a$ | 3.1603008 | $\Omega$ | 357.01028 | | −0.83251466 | +0.13541761 |
| $e$ | 0.0447713 | $i$ | 9.06716 | | −0.52863924 | +0.09586206 |
| $P$ | 5.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.1− | 0.2− | 2004 04 16 | E12 | 0.4+ | 0.3+ | 2006 10 12 | 644 | 0.2− | 0.0 |
| 2000 09 28 | 691 | 0.1− | 0.3− | 2004 04 16 | E12 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.4+ | 0.1− |
| 2000 09 28 | 691 | 0.1− | 0.3− | 2006 09 28 | 691 | 0.6− | 0.6− | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.4+ | 1.1+ | 2006 09 28 | 691 | 0.4+ | 1.1+ | 2006 10 17 | 691 | 0.1− | 0.0 |
| 2000 10 01 | 704 | 0.6+ | 0.1− | 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.2− | 0.9− |
| 2000 10 01 | 704 | 0.4+ | 1.0+ | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.6+ | 0.2+ |
| 2000 10 01 | 704 | 0.2+ | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.1− | 0.4+ |
| 2000 10 01 | 704 | 0.1− | 1.5+ | 2006 10 02 | 691 | 0.1+ | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.2− |
| 2004 04 16 | E12 | 0.4− | 0.1− | 2006 10 12 | 644 | 0.2− | 0.1+ | | | | |
| 2004 04 16 | E12 | (2.3+ | 0.8−) | 2006 10 12 | 644 | 0.2− | 0.2− | | | | |

**2006 TS$_{78}$ = 2001 YK$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 349.65192 | | (2000.0) | | | |
| $n$ | 0.17548977 | $\omega$ | 78.15261 | | +0.76771405 | −0.63919963 |
| $a$ | 3.1596200 | $\Omega$ | 321.55445 | | +0.55601542 | +0.69951772 |
| $e$ | 0.1437943 | $i$ | 4.16467 | | +0.31853099 | +0.31952901 |
| $P$ | 5.62 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 06 | 691 | 0.1+ | 0.2− | 2006 09 20 | 699 | 1.0+ | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 1997 02 06 | 691 | 0.3− | 0.3+ | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.4+ | 1.2− |
| 1997 02 06 | 691 | 0.0 | 0.1+ | 2006 10 12 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 2001 12 18 | 704 | 0.6+ | 0.9+ | 2006 10 12 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.4− |
| 2001 12 18 | 704 | 0.4+ | 0.4+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | (1.9− | 1.7+) |
| 2001 12 18 | 704 | 0.5+ | 0.3− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.5− | 0.1+ | 2006 11 23 | 703 | 1.1+ | 1.4− |
| 2001 12 19 | 704 | 0.1− | 0.4− | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 23 | 703 | (1.7+ | 0.2−) |
| 2001 12 19 | 704 | 0.1+ | 0.8− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 23 | 703 | 0.7+ | 0.0 |
| 2005 07 07 | 691 | 1.4+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 23 | 703 | (1.7− | 0.2−) |
| 2005 07 07 | 691 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.5− |
| 2005 07 07 | 691 | 0.9− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2006 09 20 | 699 | (1.7+ | 1.0+) | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2006 09 20 | 699 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 09 20 | 699 | 0.8+ | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | | | | |

**2006 TW$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 90.33735 | | (2000.0) | | | |
| $n$ | 0.17738783 | $\omega$ | 65.34902 | | +0.33763982 | +0.93510413 |
| $a$ | 3.1370408 | $\Omega$ | 224.84170 | | −0.90934684 | +0.29452523 |
| $e$ | 0.0765057 | $i$ | 8.77785 | | −0.24307958 | +0.19706634 |
| $P$ | 5.56 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 09 | 012 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.3− |
| 2001 12 09 | 012 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2001 12 09 | 012 | 0.6+ | 0.6− | 2006 10 17 | 691 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 12 09 | 012 | 0.8− | 0.4− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2001 12 09 | 012 | (2.1+ | 0.5+) | 2006 10 21 | 691 | 0.6− | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2004 04 24 | 691 | 0.2+ | 0.8+ | 2006 10 21 | 691 | 0.6− | 0.4+ | 2006 11 13 | 691 | 0.6− | 0.1+ |
| 2004 04 24 | 691 | 0.2+ | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.2− | 0.5+ |
| 2004 04 24 | 691 | 0.1+ | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.2+ |
| 2005 07 29 | 644 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2005 07 29 | 644 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.2+ |
| 2005 07 29 | 644 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.4+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 28 | G96 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2006 09 28 | G96 | 0.1+ | 0.6− | 2006 11 09 | 691 | 0.2+ | 0.4+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 09 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2006 10 12 | 644 | 0.2− | 0.4+ | 2006 11 09 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.5+ |
| 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.7+ | 0.2− | 2006 11 27 | 691 | 0.5+ | 0.1+ |

**2006 TA$_{79}$ = 2005 QS$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 61.14122 | | $\omega$ | 111.83747 | +0.92206689 | +0.37692467 |
| $n$ | 0.15956016 | | $\Omega$ | 226.14280 | −0.38458354 | +0.86682411 |
| $a$ | 3.3665604 | | $i$ | 6.99919 | −0.04345286 | +0.32641041 |
| $e$ | 0.0581443 | | | | | |
| $P$ | 6.18 | | $H$ | 15.6 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 17 | 691 | 0.5− | 0.0 | 2005 10 05 | 691 | 0.1− | 0.7+ | 2006 11 12 | G96 | 0.9+ | 0.3+ |
| 2000 12 17 | 691 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.3+ | 0.3− | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2000 12 17 | 691 | 0.6+ | 0.5+ | 2006 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.0 |
| 2005 07 31 | 644 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2005 07 31 | 644 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 11 14 | 691 | 0.2− | 0.2+ |
| 2005 07 31 | 644 | 0.2+ | 0.6− | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 16 | 703 | 0.2− | 1.0− |
| 2005 07 31 | 644 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 16 | 703 | 0.1+ | 0.8− |
| 2005 07 31 | 644 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2+ | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2005 07 31 | 644 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.6− | 2006 11 16 | 703 | 0.4− | 0.7+ |
| 2005 08 26 | 644 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.6+ |
| 2005 08 26 | 644 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.3− | 0.5+ |
| 2005 08 26 | 644 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.9− | 1.2+ |
| 2005 08 30 | 644 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 2005 08 30 | 644 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2005 08 30 | 644 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2005 10 05 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2005 10 05 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.4+ | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.3− |

**2006 TL$_{79}$ = 2002 TU$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 339.02698 | | $\omega$ | 162.48422 | +0.58312653 | −0.80561882 |
| $n$ | 0.25978885 | | $\Omega$ | 251.72227 | +0.73153605 | +0.57672159 |
| $a$ | 2.4325161 | | $i$ | 6.32459 | +0.35329656 | +0.13553788 |
| $e$ | 0.0932694 | | | | | |
| $P$ | 3.79 | | $H$ | 16.7 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.1+ | 1.1+ |
| 2002 10 04 | 644 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.7+ | 0.8− |
| 2002 10 05 | 704 | 0.4+ | 0.5− | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 14 | 703 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 0.9− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.2− |
| 2002 10 05 | 704 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.6+ | 0.4− | 2006 11 14 | 703 | (2.7− | 1.9+) |
| 2002 10 05 | 704 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.8− | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 27 | 703 | 1.3+ | 0.7+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.1− | 0.7+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 27 | 104 | 0.2− | 0.6+ |
| 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 27 | 104 | 0.3− | 0.3+ |
| 2006 10 12 | 644 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.1− | 2006 11 27 | 104 | 0.3− | 0.4+ |
| 2006 10 12 | 644 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.0 | 1.4− | | | | |
| 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.2− | | | | |

**2006 TM$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 73.92640 | | $\omega$ | 104.59198 | +0.46468453 | +0.88519372 |
| $n$ | 0.29362011 | | $\Omega$ | 193.16679 | −0.84551813 | +0.43607043 |
| $a$ | 2.2418791 | | $i$ | 5.63555 | −0.26299692 | +0.16209457 |
| $e$ | 0.1374763 | | | | | |
| $P$ | 3.36 | | $H$ | 16.6 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2005 03 08 | G96 | 0.5− | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.7− | 0.2+ |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2005 03 08 | G96 | 1.2− | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2005 03 17 | 691 | 0.1− | 0.2+ | 2006 10 12 | 644 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.5− |
| 2005 03 17 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.5+ | 2006 10 31 | G96 | 0.2− | 0.2+ |
| 2005 03 17 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.6− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | 1.0− | 0.4+ | 2006 11 08 | 644 | 0.5+ | 0.3+ |
| 2005 04 02 | G96 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.3+ | 1.2+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2005 04 02 | G96 | 0.4− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.7− |
| 2005 04 11 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.7− |
| 2005 04 11 | 691 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.2+ | 1.0− |
| 2005 04 11 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 16 | G96 | 0.9+ | 0.5− |
| 2005 04 11 | 699 | 1.2+ | 0.6− | 2006 10 17 | G96 | 0.8+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2005 04 11 | 699 | 0.9− | 0.8+ | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2005 04 11 | 699 | 0.1− | 1.0+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2005 04 11 | 699 | 0.7− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.5− |

**2006 TB$_{80}$ = 1999 TD$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.74331 | | $\omega$ | 22.90280 | +0.87417798 | +0.48239041 |
| $n$ | 0.28393191 | | $\Omega$ | 308.13613 | −0.45579402 | +0.77544594 |
| $a$ | 2.2925910 | | $i$ | 4.06731 | −0.16752514 | +0.40741021 |
| $e$ | 0.1711474 | | | | | |
| $P$ | 3.47 | | $H$ | 17.4 | $G$ 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 704 | 0.2− | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 1999 10 14 | 704 | 0.5+ | 0.7− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 |
| 1999 10 14 | 704 | 0.3− | 0.9+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.3− | 0.2+ |
| 1999 10 14 | 704 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.6+ |
| 1999 10 14 | 704 | 0.6+ | 0.7+ | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.4− |
| 1999 10 16 | 704 | 0.3+ | 0.3− | 2006 10 19 | 703 | (2.0+ | 1.8−) | 2006 10 27 | 703 | 0.4− | 0.1+ |
| 1999 10 16 | 704 | 0.5− | 0.2− | 2006 10 19 | 703 | (2.2+ | 0.4−) | 2006 10 27 | 703 | 0.6− | 0.1+ |
| 1999 10 16 | 704 | 0.5+ | 0.5+ | 2006 10 19 | 703 | 1.3− | 0.6− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 1999 10 16 | 704 | 0.2+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1999 10 16 | 704 | 0.9− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2006 10 13 | 691 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 | | | | |

**2006 TH$_{80}$ = 1995 SU$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.24604 | | $\omega$ | 285.26698 | +0.52773709 | +0.84607652 |
| $n$ | 0.18355912 | | $\Omega$ | 17.21902 | −0.64879547 | +0.45862185 |
| $a$ | 3.0663289 | | $i$ | 14.70701 | −0.54823171 | +0.27169931 |
| $e$ | 0.3097251 | | | | | |
| $P$ | 5.37 | | $H$ | 15.9 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.1+ | 0.1− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.2− | 0.2− |
| 1995 09 26 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 1995 09 26 | 691 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 1995 10 01 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.3+ |
| 1995 10 01 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 1995 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 13 | 691 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.3− | 0.9− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.1− | | | | |

**2006 TL$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.88143 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18909739 | $\omega$ | 0.08244 | | +0.98771332 | | −0.15387157 |
| $a$ | 3.0061618 | $\Omega$ | 8.90969 | | +0.14327994 | | +0.82185494 |
| $e$ | 0.0433162 | $i$ | 10.15697 | | +0.06239601 | | +0.54852346 |
| $P$ | 5.21 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 644 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.1− | 0.3+ |
| 2003 03 07 | 644 | 0.3+ | 0.6+ | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 1.1+ | 0.5− |
| 2003 03 07 | 644 | 0.6+ | 0.9+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | (2.3+ | 0.1−) |
| 2005 07 10 | E12 | 0.3− | 0.2− | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 14 | 703 | 1.1− | 1.3− |
| 2005 07 10 | E12 | 0.3+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2005 07 10 | E12 | 0.8− | 0.8+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.3− |
| 2005 07 10 | E12 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.6+ | 0.5− |
| 2006 09 19 | 703 | 0.7+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2006 09 19 | 703 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.6− | 0.4+ |
| 2006 09 19 | 703 | 0.6− | 0.6+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 23 | 703 | 0.6+ | 0.2+ |
| 2006 09 19 | 703 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.5+ | 0.4− | 2006 11 23 | 703 | 0.3− | 0.2− |
| 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.5− | 2006 11 23 | 703 | 0.5− | 0.3− |
| 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.4− | | | | |
| 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.4− | | | | |

**2006 TR$_{80}$ = 2002 JP$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.61689 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31017364 | $\omega$ | 38.64064 | | +0.46556640 | | +0.88063513 |
| $a$ | 2.1613883 | $\Omega$ | 259.26570 | | −0.83259015 | | +0.40214007 |
| $e$ | 0.1221043 | $i$ | 5.13395 | | −0.30006928 | | +0.25052970 |
| $P$ | 3.18 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 10 | 644 | 0.5− | 0.1− | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.3+ | 0.9− |
| 2002 05 10 | 644 | 0.2− | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.2− | 0.7+ |
| 2002 05 10 | 644 | 0.5− | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.8− |
| 2002 05 11 | 704 | 0.8+ | 0.4− | 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 05 11 | 704 | 0.2− | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2002 05 11 | 704 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2002 05 11 | 704 | 1.0+ | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 22 | 104 | 0.2− | 0.9+ |
| 2003 12 01 | 691 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 22 | 104 | 2.1− | 0.8− |
| 2003 12 01 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.5+ | 0.9− | 2006 11 22 | 104 | 0.5+ | 0.6+ |
| 2003 12 01 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.8− | | | | |

**2006 TE$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.65008 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28365823 | $\omega$ | 71.14990 | | +0.78780662 | | +0.60776040 |
| $a$ | 2.2940654 | $\Omega$ | 251.29901 | | −0.59734134 | | +0.71435951 |
| $e$ | 0.1045248 | $i$ | 6.05659 | | −0.15014677 | | +0.34686855 |
| $P$ | 3.47 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 291 | 1.1+ | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 02 | 691 | 0.2− | 0.3+ |
| 2002 06 05 | 291 | 0.6− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 02 | 691 | 0.2− | 0.2+ |
| 2002 06 05 | 291 | 0.6− | 0.3− | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 02 | 691 | 0.0 | 0.1+ |
| 2002 07 03 | 644 | 0.2− | 0.3− | 2006 10 13 | 691 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2002 07 03 | 644 | 0.1+ | 0.2− | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 07 03 | 644 | 0.5− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2002 08 05 | 644 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 22 | 104 | 0.2+ | 1.0+ |
| 2002 08 05 | 644 | 0.3+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 104 | 1.0+ | 0.6+ |
| 2002 08 05 | 644 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 22 | 104 | (1.3− | 2.5+) |
| 2006 10 04 | G96 | 0.1− | 0.6− | 2006 10 31 | 691 | 0.3− | 0.5+ | | | | |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.0 | | | | |

**2006 TO$_{81}$ = 2004 HO$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.62506 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19086953 | $\omega$ | 326.58185 | | +0.96739531 | | +0.24562199 |
| $a$ | 2.9875257 | $\Omega$ | 19.48406 | | −0.17211919 | | +0.81650205 |
| $e$ | 0.1087978 | $i$ | 10.67324 | | −0.18579909 | | +0.52248851 |
| $P$ | 5.16 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 10 21 | 691 | 0.1+ | 0.3− |
| 2004 04 19 | 691 | 0.2− | 0.0 | 2006 10 13 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.2− | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2004 04 25 | 691 | 0.3+ | 0.2− | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.3− | 0.4+ | 2006 11 23 | G96 | 0.5− | 0.4− |
| 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.3− | 0.8− |
| 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.1− | 0.3+ | | | | |

**2006 TQ$_{81}$ = 2002 XU$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.97836 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23682525 | $\omega$ | 119.41837 | | +0.72056710 | | −0.69176187 |
| $a$ | 2.5873233 | $\Omega$ | 284.39665 | | +0.61800151 | | +0.67173511 |
| $e$ | 0.2131077 | $i$ | 2.80612 | | +0.31441563 | | +0.26502351 |
| $P$ | 4.16 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 12 05 | 704 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.5− |
| 2002 12 05 | 704 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.2+ | 0.8− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.6− |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.7+ | 0.1+ | 2006 11 19 | 704 | (0.6− | 1.6−) |
| 2002 12 10 | 704 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.4− | 0.5− | 2006 11 19 | 704 | 0.7− | 0.8+ |
| 2002 12 10 | 704 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.6− |
| 2002 12 10 | 704 | 0.6− | 0.9+ | 2006 10 27 | 703 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.7− | 0.0 |
| 2002 12 10 | 704 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.4+ | 0.4− | 2006 11 19 | 704 | 1.4− | 0.2− |
| 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.1− | 1.1+ | 2006 11 19 | 704 | (0.5+ | 1.8−) |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.6− | 0.5− |
| 2006 10 02 | G96 | 0.5+ | 0.4− | 2006 11 14 | 703 | 0.7+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.6− |
| 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | (1.6− | 1.3+) | 2006 11 22 | 704 | 0.5+ | 0.9− |
| 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.2+ | 1.1+ | 2006 11 22 | 704 | 0.7+ | 0.6− |
| 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.8− |
| 2006 10 17 | 691 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.7− | | | | |
| 2006 10 17 | 691 | 0.6− | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.3− | | | | |

**2006 TC$_{82}$ = 2004 FF$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.93303 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26840708 | $\omega$ | 86.92749 | | −0.28356285 | | −0.95640127 |
| $a$ | 2.3801632 | $\Omega$ | 19.97738 | | +0.77832343 | | −0.27213026 |
| $e$ | 0.1765183 | $i$ | 11.80916 | | +0.56018278 | | −0.10602702 |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 27 | 703 | 1.0+ | 0.3+ |
| 2004 03 18 | 691 | 0.3− | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.4+ | 2006 10 27 | 703 | (2.0− | 0.0 ) |
| 2004 03 18 | 691 | 0.3− | 0.0 | 2006 10 13 | 691 | 0.4− | 0.1− | 2006 10 27 | 703 | 0.9− | 1.3− |
| 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2004 03 20 | 704 | 0.4+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.3− | 0.0 |
| 2004 03 20 | 704 | 0.7+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 20 | 704 | 0.4+ | 0.1− | 2006 10 17 | 691 | 0.4+ | 0.0 | 2006 11 23 | 703 | 1.3+ | 0.4− |
| 2004 03 20 | 704 | 0.9+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 23 | 703 | 0.6− | 0.3− |
| 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.0 | 1.0+ |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 23 | 703 | 0.5− | 0.7− |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 27 | 703 | 1.2+ | 0.3+ | | | | |

**2006 TL$_{82}$ = 2004 GV$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.36044 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23574765 | $\omega$ | 169.19406 | −0.08142067 | | −0.99556735 | |
| $a$ | 2.5952018 | $\Omega$ | 285.46377 | +0.91075449 | | −0.05513196 | |
| $e$ | 0.1277285 | $i$ | 2.79979 | +0.40484186 | | −0.07619786 | |
| $P$ | 4.18 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.2+ | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 2004 04 12 | 691 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.3+ |
| 2004 04 12 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.0 | 0.3− |
| 2004 04 13 | 291 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2− |
| 2004 04 13 | 291 | 0.1− | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.4− |
| 2004 04 13 | 291 | 0.0 | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.2+ | | | | |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 17 | 691 | 0.1− | 0.3+ | | | | |

**2006 TO$_{82}$ = 1996 TX$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.08254 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20131576 | $\omega$ | 266.00025 | +0.26484404 | | +0.96198781 | |
| $a$ | 2.8832626 | $\Omega$ | 19.75080 | −0.78791294 | | +0.25570875 | |
| $e$ | 0.1180921 | $i$ | 11.36837 | −0.55592340 | | +0.09587744 | |
| $P$ | 4.90 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 1996 10 07 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 1996 10 07 | 691 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1− |
| 1996 10 16 | 691 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 1996 10 16 | 691 | 0.4− | 0.0 | 2006 10 13 | 691 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.6+ | 0.5− |
| 1996 10 16 | 691 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 17 | 691 | 0.0 | 0.5− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 17 | 691 | 0.0 | 0.2+ | | | | |

**2006 TY$_{82}$ = 1997 SN$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.64738 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22194874 | $\omega$ | 36.91439 | +0.86777670 | | −0.49678362 | |
| $a$ | 2.7016822 | $\Omega$ | 352.83704 | +0.42734375 | | +0.75934436 | |
| $e$ | 0.0378317 | $i$ | 5.99563 | +0.25365511 | | +0.42024061 | |
| $P$ | 4.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 691 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.2− |
| 1997 09 30 | 691 | 0.5− | 0.1+ | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.1− |
| 1997 09 30 | 691 | 0.2+ | 0.1− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 1.1− | 1.4+ |
| 1997 10 05 | 691 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 1997 10 05 | 691 | 0.2+ | 0.1− | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.0 | 1.1− |
| 1997 10 05 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2006 10 04 | G96 | 0.1− | 0.4− | 2006 10 17 | 691 | 0.5+ | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2006 10 04 | G96 | 0.3− | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.2− | | | | |

**2006 TB$_{83}$ = 2004 FQ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 152.61847 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23239624 | $\omega$ | 290.07662 | −0.58767416 | | +0.80768250 | |
| $a$ | 2.6200927 | $\Omega$ | 303.83951 | −0.71915627 | | −0.54852313 | |
| $e$ | 0.0505079 | $i$ | 3.30145 | −0.37074700 | | −0.21626684 | |
| $P$ | 4.24 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 704 | 0.3− | 0.9− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2004 03 16 | 704 | 1.2+ | 0.7− | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.4− | 0.2− |
| 2004 03 16 | 704 | 0.6− | 0.7+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2004 03 16 | 704 | (1.7+ | 0.6+) | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 704 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.2+ |
| 2004 03 18 | 704 | 1.0− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.2− |
| 2004 03 18 | 704 | 0.6+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.9+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 10 13 | 691 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.8+ | 0.0 | 2006 11 27 | 691 | 0.4− | 0.0 |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.3− | | | | |

**2006 TG$_{83}$ = 1993 TJ$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.48563 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22876501 | $\omega$ | 62.50896 | +0.33802532 | | −0.94091949 | |
| $a$ | 2.6477460 | $\Omega$ | 7.81615 | +0.80244493 | | +0.27691177 | |
| $e$ | 0.2184525 | $i$ | 8.55624 | +0.49175300 | | +0.19491121 | |
| $P$ | 4.31 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 10 | 691 | 0.4− | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 10 28 | 291 | 0.4− | 0.0 |
| 1993 10 10 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.4− | 2006 10 28 | 291 | 0.1+ | 0.1+ |
| 1993 10 10 | 691 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 1993 10 16 | 691 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.5+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 1993 10 16 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 1993 10 16 | 691 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2− | | | | |
| 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 10 28 | 291 | 0.1− | 0.4+ | | | | |

**2006 TM$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.58716 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22315895 | $\omega$ | 32.72693 | +0.47923718 | | +0.87449085 | |
| $a$ | 2.6919057 | $\Omega$ | 266.00787 | −0.82052947 | | +0.41613955 | |
| $e$ | 0.1265490 | $i$ | 4.30112 | −0.31154955 | | +0.24918593 | |
| $P$ | 4.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.3+ | 0.7− | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 1997 09 28 | 691 | 0.2+ | 0.6− | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 1997 09 28 | 691 | 0.2+ | 0.7− | 2006 10 13 | 691 | 0.1+ | 0.5− | 2006 11 13 | 691 | 0.3+ | 0.2+ |
| 2001 07 18 | 691 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.4− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2001 07 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2001 07 18 | 691 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2003 01 05 | 291 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2003 01 05 | 291 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2003 01 05 | 291 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2006 10 04 | G96 | 0.9− | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.5+ |
| 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2006 10 04 | G96 | 0.6− | 0.3− | 2006 11 10 | 691 | 0.4+ | 0.2+ | | | | |

**2006 TC$_{84}$ = 2004 GQ$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 86.82421 | | | (2000.0) | +0.30132981 | +0.95234899 |
| $n$ | 0.17368800 | $\omega$ | 274.01139 | | −0.77734474 | +0.27404585 |
| $a$ | 3.1814334 | $\Omega$ | 13.80934 | | −0.55220966 | +0.13390393 |
| $e$ | 0.1375367 | $i$ | 11.41520 | | | |
| $P$ | 5.67 | $H$ | 15.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.8− |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.6− |
| 2004 04 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.6+ | 0.4− |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | | | | |
| 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ | | | | |

**2006 TJ$_{84}$ = 2005 MY$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 34.52275 | | | (2000.0) | +0.93387047 | +0.33598583 |
| $n$ | 0.23116594 | $\omega$ | 98.07503 | | −0.35756375 | +0.87168684 |
| $a$ | 2.6293808 | $\Omega$ | 242.36515 | | −0.00584045 | +0.35675704 |
| $e$ | 0.1407850 | $i$ | 7.94618 | | | |
| $P$ | 4.26 | $H$ | 16.8 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2005 06 30 | 691 | 0.1+ | 0.3− | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.2− | 0.0 |
| 2005 07 05 | G96 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1− | 0.5− |
| 2005 07 05 | G96 | 0.5− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2005 07 05 | G96 | 0.6− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2005 07 05 | G96 | 0.4− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.4− |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.4− |
| 2006 10 04 | G96 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.5+ |
| 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.4+ | 0.0 |

**2006 TK$_{84}$ = 1999 FV$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 309.07941 | | | (2000.0) | +0.11696664 | −0.99273829 |
| $n$ | 0.21208148 | $\omega$ | 104.68478 | | +0.87908286 | +0.11665653 |
| $a$ | 2.7848441 | $\Omega$ | 338.53785 | | +0.46209538 | +0.02935867 |
| $e$ | 0.0461741 | $i$ | 4.40428 | | | |
| $P$ | 4.65 | $H$ | 16.7 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2− | 0.0 | 2006 10 26 | 198 | 0.6− | 0.2+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 10 26 | 198 | 0.6− | 0.3+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.4+ | 0.5+ |
| 2006 10 13 | 691 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.7− |
| 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 26 | 198 | 0.9− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 10 26 | 198 | 0.5− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.4− |

**2006 TQ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 98.57217 | | | (2000.0) | +0.14796828 | +0.98796388 |
| $n$ | 0.22954618 | $\omega$ | 321.74763 | | −0.89042079 | +0.11324191 |
| $a$ | 2.6417355 | $\Omega$ | 316.70835 | | −0.43041399 | +0.10537382 |
| $e$ | 0.1459529 | $i$ | 3.76996 | | | |
| $P$ | 4.29 | $H$ | 16.1 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 16 | 699 | 0.6− | 0.8+ | 2004 02 12 | 691 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.5+ | 0.3− |
| 2001 07 16 | 699 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2001 07 16 | 699 | (2.2− | 0.5+) | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 13 | 644 | 0.2− | 0.2+ |
| 2001 07 16 | 699 | 0.5− | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.3+ |
| 2001 07 27 | 699 | 0.5+ | 0.2− | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.0 |
| 2001 07 27 | 699 | 0.5+ | 0.6− | 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | (1.9+ | 0.3−) |
| 2001 07 27 | 699 | 0.2+ | 0.2− | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 1.2− | 1.2− |
| 2001 07 27 | 699 | 1.2+ | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.7+ | 0.5+ |
| 2001 08 26 | 608 | 0.9− | 1.2+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.5+ | 1.3+ |
| 2001 08 26 | 608 | 1.4− | 1.4+ | 2006 10 17 | 691 | 0.2− | 0.5+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2001 08 26 | 608 | 0.7− | 1.0+ | 2006 10 17 | 691 | 0.1+ | 0.6− | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2004 01 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2004 01 30 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 01 30 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 24 | 408 | (2.4+ | 1.2+) |
| 2004 02 12 | 691 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 24 | 408 | (2.4+ | 1.6+) |
| 2004 02 12 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.4− | | | | |

**2006 TD$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 115.66684 | | | (2000.0) | −0.04164951 | +0.99908826 |
| $n$ | 0.29075752 | $\omega$ | 262.48989 | | −0.87054703 | −0.03168076 |
| $a$ | 2.2565697 | $\Omega$ | 5.15101 | | −0.49031948 | −0.02861796 |
| $e$ | 0.0768389 | $i$ | 5.99673 | | | |
| $P$ | 3.39 | $H$ | 16.8 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 16 | 644 | 0.1+ | 0.3− | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.3− |
| 2002 07 16 | 644 | 0.3− | 0.2− | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2002 07 16 | 644 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.3− |
| 2005 05 12 | 644 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 01 | G96 | 0.3+ | 1.1− |
| 2005 05 12 | 644 | 0.1+ | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.6+ | 0.6− |
| 2005 05 12 | 644 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.7− | 0.0 | 2006 11 23 | G96 | 0.4+ | 0.6− |
| 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.6− |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 21 | 691 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 27 | 703 | 1.0− | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.5− |
| 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 10 27 | 703 | (0.3− | 1.8+) | | | | |
| 2006 10 13 | 691 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.5+ | 1.1+ | | | | |

**2006 TL$_{85}$ = 1999 FB$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.40940 | | | (2000.0) | +0.96457678 | −0.25887670 |
| $n$ | 0.21166755 | $\omega$ | 74.75402 | | +0.21384938 | +0.87994970 |
| $a$ | 2.7884736 | $\Omega$ | 300.22614 | | +0.15446706 | +0.39833576 |
| $e$ | 0.0902426 | $i$ | 3.36652 | | | |
| $P$ | 4.66 | $H$ | 16.6 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.8+ | 0.4− |
| 1999 03 20 | 645 | 0.1− | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.7+ | 0.7− |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 1999 03 21 | 645 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2003 01 03 | 291 | 0.6− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.2− | 1.0− |
| 2003 01 03 | 291 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.6− | 0.1+ | 2006 11 14 | 703 | 2.2+ | 1.2− |
| 2003 01 03 | 291 | 0.5+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 1.6− | 1.2+ |
| 2006 10 02 | G96 | 0.3+ | 0.6− | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.8+ |
| 2006 10 02 | G96 | 0.3− | 0.5− | 2006 10 27 | 703 | 0.9+ | 1.1+ | 2006 11 18 | G96 | 0.5+ | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 27 | 703 | 0.8− | 0.8− | 2006 11 18 | G96 | 0.0 | 0.6− | | |
| 2006 10 02 | G96 | 0.1− | 0.6− | 2006 10 27 | 703 | 0.1+ | 1.1+ | 2006 11 18 | G96 | 0.1+ | 0.5− | | |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 10 27 | 703 | 1.0+ | 0.2+ | 2006 11 18 | G96 | 0.2+ | 0.5− | | |

**2006 TO$_{85}$ = 2002 XB$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.23397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23989762 | $\omega$ | 106.96904 | | +0.98921448 | | −0.13430245 |
| $a$ | 2.5651854 | $\Omega$ | 260.77849 | | +0.10139809 | | +0.91590736 |
| $e$ | 0.3234939 | $i$ | 3.39535 | | +0.10570305 | | +0.37825462 |
| $P$ | 4.11 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 16 | 704 | 1.3− | 0.1− |
| 2002 12 05 | 704 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.7− | 0.3− |
| 2002 12 05 | 704 | 0.2+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.3+ |
| 2002 12 05 | 704 | 0.5− | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 704 | 0.3− | 0.9+ | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2002 12 05 | 608 | 0.0 | 0.9− | 2006 10 27 | 703 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2002 12 05 | 608 | 0.0 | 0.9− | 2006 10 27 | 703 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.9− |
| 2002 12 05 | 608 | 0.1+ | 1.1− | 2006 10 27 | 703 | 0.1+ | 0.4+ | 2006 11 17 | 704 | 0.3− | 0.1− |
| 2002 12 10 | 704 | 1.0− | 0.7− | 2006 10 29 | 704 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.9− |
| 2002 12 10 | 704 | 0.6− | 0.3− | 2006 10 29 | 704 | 0.6− | 0.0 | 2006 11 17 | 704 | 1.0− | 0.7+ |
| 2002 12 10 | 704 | 0.2+ | 0.7+ | 2006 10 29 | 704 | 0.6+ | 0.4+ | 2006 11 18 | G96 | 0.5+ | 0.2− |
| 2002 12 10 | 704 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 12 10 | 704 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 12 10 | 704 | 0.5− | 0.4− | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2002 12 10 | 704 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2002 12 10 | 704 | 1.3+ | 0.4− | 2006 11 01 | G96 | 0.6+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2002 12 10 | 704 | 0.1− | 0.5− | 2006 11 01 | G96 | 0.7+ | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2002 12 10 | 704 | 0.6+ | 0.2− | 2006 11 01 | G96 | 0.5+ | 0.5− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2002 12 10 | 704 | 1.2+ | 0.7+ | 2006 11 01 | G96 | 0.3+ | 0.5− | 2006 11 22 | 704 | 0.4− | 1.2+ |
| 2002 12 10 | 704 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2002 12 10 | 704 | 0.2− | 0.5+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.4+ |
| 2006 10 13 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.6− | 2006 11 22 | 704 | 0.0 | 0.8+ |
| 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.8+ | 0.1− |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.7− | 2006 11 29 | 704 | 1.2+ | 0.8+ |
| 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.1+ | 0.1+ | 2006 11 29 | 704 | 0.7− | 1.2+ |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.9− | 0.9+ | 2006 11 29 | 704 | 0.7+ | 0.8− |
| 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 16 | 704 | (0.4− | 2.4+) | | | | |
| 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.5− | | | | |

**2006 TP$_{85}$ = 2003 YA$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.95791 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28743491 | $\omega$ | 185.48166 | | −0.98815352 | | −0.15258278 |
| $a$ | 2.2739262 | $\Omega$ | 345.70998 | | +0.14321805 | | −0.87827659 |
| $e$ | 0.1343364 | $i$ | 3.82490 | | +0.05514712 | | −0.45315419 |
| $P$ | 3.43 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 13 | 645 | 0.0 | 0.0 | 2003 12 27 | 691 | 0.1+ | 0.3− | 2006 10 13 | 691 | 0.3+ | 0.3+ |
| 1999 10 13 | 645 | 0.0 | 0.2− | 2003 12 28 | 704 | 0.4+ | 0.7+ | 2006 10 13 | 691 | 0.1+ | 0.4+ |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2003 12 28 | 704 | 0.9+ | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.0 |
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2003 12 28 | 704 | 0.0 | 0.2+ | 2006 10 17 | 691 | 1.0− | 0.6+ |
| 2001 03 23 | 699 | 0.1+ | 0.7+ | 2003 12 28 | 704 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.7− | 1.1+ |
| 2001 03 23 | 699 | 0.4+ | 0.2+ | 2003 12 28 | 704 | 0.8− | 0.7− | 2006 10 17 | 691 | 0.2+ | 0.8+ |
| 2001 03 23 | 699 | 0.8+ | 1.0+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2001 03 23 | 699 | 0.4+ | 1.5+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2003 12 27 | 691 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.7+ | 0.3− |
| 2003 12 27 | 691 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.3− |

**2006 TT$_{85}$ = 2002 WJ$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.71917 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24307829 | $\omega$ | 44.44985 | | +0.58807102 | | −0.80857558 |
| $a$ | 2.5427594 | $\Omega$ | 9.58639 | | +0.70574636 | | +0.50124520 |
| $e$ | 0.1428248 | $i$ | 6.70442 | | +0.39508803 | | +0.30815383 |
| $P$ | 4.05 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1+ | 0.7+ | 2006 10 02 | G96 | 0.4− | 0.4− | 2006 10 21 | 691 | 0.4− | 0.7+ |
| 2002 11 24 | 644 | 0.1− | 0.9+ | 2006 10 02 | G96 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2002 11 24 | 644 | 0.0 | 0.8+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 2002 11 25 | 644 | 0.1− | 0.5− | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.8− |
| 2002 11 25 | 644 | 0.3− | 0.2− | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.6− |
| 2002 11 25 | 644 | 0.0 | 0.5− | 2006 10 17 | 691 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.8− |
| 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.7− |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.1+ | | | | |

**2006 TC$_{86}$ = 2005 GJ$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.50363 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29982570 | $\omega$ | 351.93372 | | +0.97516977 | | +0.22139819 |
| $a$ | 2.2108374 | $\Omega$ | 355.26567 | | −0.19952494 | | +0.86820955 |
| $e$ | 0.1416048 | $i$ | 3.59419 | | −0.09609228 | | +0.44406646 |
| $P$ | 3.29 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2005 04 11 | 691 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.6− |
| 2005 04 11 | 691 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.9− | 0.3− |
| 2005 04 16 | 691 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2005 04 16 | 691 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.6− | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.0 |
| 2005 04 16 | 691 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.7+ | 2006 11 16 | 704 | 0.8+ | 1.3+ |
| 2006 08 29 | 703 | 0.2− | 1.3+ | 2006 10 27 | 703 | 0.3− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 1.3+ |
| 2006 08 29 | 703 | 0.9+ | 0.5+ | 2006 10 29 | 704 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.7− | 0.5− |
| 2006 08 29 | 703 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.6− |
| 2006 08 29 | 703 | 1.3− | 0.7+ | 2006 10 29 | 704 | 0.2+ | 0.7+ | 2006 11 18 | G96 | 0.1+ | 0.6− |
| 2006 10 02 | G96 | 0.3− | 0.6− | 2006 10 29 | 704 | 0.3− | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.6− |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.2− | 0.6− |
| 2006 10 02 | G96 | 0.3− | 0.7− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 2006 10 02 | G96 | 0.1− | 0.6− | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2006 10 13 | 691 | 0.5− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2006 10 13 | 691 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.3− | 0.2− | 2006 11 22 | 704 | (0.3+ | 1.7+) |
| 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 2006 10 17 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 1.1− | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.0 | | | | |
| 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.4− | 1.0− | | | | |

**2006 TM$_{86}$ = 2004 DY$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.37667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24328281 | $\omega$ | 337.94263 | | +0.85923309 | | +0.51149355 |
| $a$ | 2.5413341 | $\Omega$ | 351.27507 | | −0.45936991 | | +0.76310948 |
| $e$ | 0.1398433 | $i$ | 3.64203 | | −0.22516170 | | +0.39501680 |
| $P$ | 4.05 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 23 | 704 | (0.8+ | 2.2+) | 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 1.0− |
| 2004 02 23 | 704 | (2.3+ | 0.1+) | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2004 02 23 | 704 | 0.5+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2004 02 23 | 704 | 0.7+ | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2004 02 29 | 691 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 691 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2004 02 29 | 691 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 1.0+ | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.7− | 1.1+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.9− |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.9+ | 0.2+ |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 2006 10 13 | 691 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.7− | 0.0 | 2006 11 19 | 704 | (2.3+ | 1.4−) |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.0 | 0.3− | | | | |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.0 | | | | |

### 2006 $TR_{86}$ = 1995 $WZ_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.67666 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27007596 | $\omega$ | 56.75832 | | +0.64685455 | | +0.75855545 |
| $a$ | 2.3703479 | $\Omega$ | 253.74920 | | −0.72408644 | | +0.57857603 |
| $e$ | 0.2017029 | $i$ | 4.69417 | | −0.23932824 | | +0.29973891 |
| $P$ | 3.65 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 1995 11 17 | 691 | 0.3+ | 0.5− | 2006 10 17 | 691 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.0 | 0.1+ |
| 1995 11 17 | 691 | 0.8+ | 0.3− | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1+ |
| 1995 11 23 | 691 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 1995 11 23 | 691 | 0.1− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 1995 11 23 | 691 | 0.6− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2006 10 13 | 691 | 0.2+ | 0.3− | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.1− | 0.0 |
| 2006 10 13 | 691 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2+ |

### 2006 $TT_{86}$ = 2005 $NF_{83}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.55083 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18810436 | $\omega$ | 109.95688 | | +0.98008509 | | +0.15401278 |
| $a$ | 3.0167326 | $\Omega$ | 241.36162 | | −0.18764997 | | +0.92482240 |
| $e$ | 0.0929618 | $i$ | 8.21139 | | +0.06496699 | | +0.34782697 |
| $P$ | 5.24 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 15 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.4+ |
| 2005 06 15 | 691 | 0.4+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.2+ |
| 2005 06 15 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 644 | 0.3− | 0.1− |
| 2005 07 01 | 644 | 0.2+ | 0.6− | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 2005 07 01 | 644 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.2− |
| 2005 07 01 | 644 | 0.5− | 0.2− | 2006 10 27 | 703 | 0.7− | 0.9− | 2006 11 13 | G96 | 0.5+ | 0.1− |
| 2005 07 15 | 691 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.8− | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2005 07 15 | 691 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.1− | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.4+ |
| 2005 07 15 | 691 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.8− | 0.8− | 2006 11 18 | G96 | 0.1− | 0.5+ |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.2+ |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.6+ |
| 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.0 | | | | |
| 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.2+ | | | | |

### 2006 $TU_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.45352 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27657858 | $\omega$ | 318.84339 | | +0.75103392 | | +0.66026361 |
| $a$ | 2.3330481 | $\Omega$ | 359.83653 | | −0.59585994 | | +0.67770857 |
| $e$ | 0.2224124 | $i$ | 2.08447 | | −0.28442747 | | +0.32367122 |
| $P$ | 3.56 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.2+ | 0.3− | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.9+ |
| 2005 04 02 | 691 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 1.1+ |
| 2005 04 02 | 691 | 0.2− | 0.2+ | 2006 10 17 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 1.1− |
| 2005 05 12 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2005 05 12 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2005 05 12 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2006 07 22 | G96 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2006 07 22 | G96 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2006 07 22 | G96 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2006 07 22 | G96 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.4− | 0.4− |
| 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 10 | 644 | 0.3− | 0.6− | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.3− | 0.3− |
| 2006 09 30 | G96 | 0.4+ | 0.4− | 2006 11 10 | 644 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.2− | 0.4− |
| 2006 10 13 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.3+ |

### 2006 $TZ_{86}$ = 1996 $TZ_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.47418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29920415 | $\omega$ | 43.62061 | | +0.64073708 | | −0.76774873 |
| $a$ | 2.2138982 | $\Omega$ | 6.53663 | | +0.69382053 | | +0.57666329 |
| $e$ | 0.1020949 | $i$ | 2.12876 | | +0.32873858 | | +0.27932300 |
| $P$ | 3.29 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 1996 10 06 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 1996 10 06 | 691 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1996 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.8− | 0.3− |
| 1996 10 16 | 691 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | (2.2+ | 2.5+) |
| 1996 10 16 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.0 | 0.9− |
| 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 1.1+ |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.6+ | 0.4− |
| 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.7+ | 0.5− |
| 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.8− |

### 2006 $TD_{87}$ = 2003 $AK_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.32400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22936104 | $\omega$ | 41.51247 | | +0.55140157 | | −0.83409784 |
| $a$ | 2.6431570 | $\Omega$ | 15.04512 | | +0.74891105 | | +0.48678620 |
| $e$ | 0.3011018 | $i$ | 3.40069 | | +0.36754394 | | +0.25946095 |
| $P$ | 4.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.3+ | 0.3− | 2006 10 29 | 704 | (2.5+ | 0.0 ) | 2006 11 15 | 704 | 1.2+ | 0.1+ |
| 2003 01 05 | 704 | 0.2+ | 0.2+ | 2006 10 29 | 704 | 0.7− | 0.6+ | 2006 11 15 | 704 | (1.8+ | 0.5−) |
| 2003 01 05 | 704 | 0.6+ | 0.8+ | 2006 10 29 | 704 | 0.2+ | 0.4+ | 2006 11 15 | 704 | 0.5+ | 0.2+ |
| 2003 01 05 | 704 | 1.1− | 0.4+ | 2006 10 29 | 704 | 1.2− | 0.3− | 2006 11 16 | 704 | (1.7− | 1.1+) |
| 2003 01 09 | 704 | 0.2+ | 1.0− | 2006 11 01 | G96 | 0.1+ | 0.6− | 2006 11 16 | 704 | 0.5− | 0.4− |
| 2003 01 09 | 704 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.7− | 2006 11 16 | 704 | 0.7+ | 1.2+ |
| 2003 01 09 | 704 | 0.7− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.8− | 2006 11 16 | 704 | 0.7− | 0.5− |
| 2003 01 09 | 704 | 0.4+ | 0.5− | 2006 11 01 | G96 | 0.2− | 0.5− | 2006 11 16 | 704 | 1.0− | 0.5− |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1− | 0.5+ |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 1.0+ |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 16 | 704 | 1.1− | 0.0 |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 16 | 704 | 1.0− | 1.1+ |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 2006 09 30 | G96 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 10 | 644 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4+ | 1.0− | 2006 11 19 | 704 | 0.3+ | 0.9+ |
| 2006 10 13 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | (0.5− | 1.6−) | 2006 11 19 | 704 | (2.5− | 1.0+) |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.9− | 2006 11 19 | 704 | (2.0− | 0.2−) |
| 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.4− | 2006 11 19 | 704 | (0.4− | 1.8+) |
| 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.5+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 21 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 1.2+ | 0.1− |
| 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.6− | 2006 11 22 | 704 | 0.0 | 0.4+ |
| 2006 10 27 | 703 | 1.0+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.5+ | 0.1− |
| 2006 10 27 | 703 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.5− | 2006 12 01 | 704 | 1.0− | 0.3− |
| 2006 10 27 | 703 | 0.5+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− | 2006 12 01 | 704 | 0.4− | 0.4− |
| 2006 10 27 | 703 | 0.7+ | 0.5− | 2006 11 15 | 704 | 0.8− | 1.0+ | 2006 12 01 | 704 | 0.4− | 0.3+ |

**2006 TG$_{87}$ = 2001 SC$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.48151 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21024369 | $\omega$ | 290.60702 | | +0.69892189 | | +0.71417666 |
| $a$ | 2.8010492 | $\Omega$ | 23.86928 | | −0.61599567 | | +0.62826234 |
| $e$ | 0.1564771 | $i$ | 5.41811 | | −0.36339719 | | +0.30860674 |
| $P$ | 4.69 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.3+ | 0.9+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.9− | 1.3− | 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2001 09 19 | 704 | 0.7− | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.5− | 1.1+ | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.0 |
| 2001 09 19 | 704 | 0.8− | 1.2+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.3+ |
| 2001 09 21 | 704 | 1.0+ | 1.1− | 2006 10 21 | 691 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.1− | 0.9+ |
| 2001 09 21 | 704 | 0.6+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.3− | 0.0 |
| 2001 09 21 | 704 | 0.7+ | 1.1− | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 18 | G96 | 0.3− | 0.1− |

**2006 TN$_{87}$ = 2005 NG$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.74886 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21531525 | $\omega$ | 183.76112 | | +0.42076780 | | −0.90479657 |
| $a$ | 2.7568906 | $\Omega$ | 241.36597 | | +0.83424748 | | +0.41432030 |
| $e$ | 0.0813868 | $i$ | 4.28347 | | +0.35635040 | | +0.09839639 |
| $P$ | 4.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.1+ | 0.0 | 2005 07 11 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.0 |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2005 07 11 | G96 | 0.6− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3+ |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.5− | 0.1− |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2004 05 13 | 691 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2004 05 13 | 691 | 0.1+ | 0.7+ | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.3− | 0.1+ |
| 2004 05 13 | 691 | 0.3+ | 0.5+ | 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.1− |
| 2004 05 21 | 691 | 0.6+ | 0.4+ | 2006 10 13 | 691 | 0.1+ | 0.6+ | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2004 05 21 | 691 | 0.4− | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2004 05 21 | 691 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.6+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2005 07 08 | 691 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2005 07 08 | 691 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.6+ | 2006 11 13 | G96 | 0.3+ | 0.1− |
| 2005 07 08 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.6− | 0.4+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2005 07 11 | G96 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.2− | | | | |
| 2005 07 11 | G96 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.3− | 1.2− | | | | |

**2006 TP$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.38340 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20916730 | $\omega$ | 76.00320 | | +0.99775198 | | −0.05610645 |
| $a$ | 2.8106505 | $\Omega$ | 287.20339 | | +0.03631954 | | +0.91230630 |
| $e$ | 0.0787220 | $i$ | 2.19863 | | +0.05631939 | | +0.40564675 |
| $P$ | 4.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2001 10 20 | 691 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.5− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2001 10 20 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.9+ | 0.3+ |
| 2001 10 20 | 691 | 0.2− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.4− | 0.1+ |
| 2004 04 13 | 691 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2004 04 13 | 691 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.6+ | 0.4− |
| 2006 10 02 | G96 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.1− |
| 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2006 10 02 | G96 | 0.5+ | 0.3+ | 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 2006 10 02 | G96 | 0.6+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 21 | H55 | 0.0 | 0.4+ |
| 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.6− | 2006 11 21 | H55 | 0.1− | 0.2+ |
| 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 21 | H55 | 0.4− | 0.1+ |
| 2006 10 13 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− | | | | |

**2006 TT$_{87}$ = 2005 GL$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.61260 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29339483 | $\omega$ | 278.99726 | | +0.53640260 | | +0.84213385 |
| $a$ | 2.2430265 | $\Omega$ | 23.70057 | | −0.70986569 | | +0.48577927 |
| $e$ | 0.1147202 | $i$ | 7.93979 | | −0.45646790 | | +0.23415612 |
| $P$ | 3.36 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | G96 | 0.7− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.7+ | 2006 11 18 | G96 | 0.1− | 0.1+ |
| 2005 04 12 | G96 | 0.7− | 0.2− | 2006 10 21 | 691 | 0.6− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2005 04 12 | G96 | 0.7− | 0.4− | 2006 10 21 | 691 | 0.6− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2005 04 12 | G96 | 0.6− | 0.8− | 2006 10 21 | 691 | 0.6− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2+ |
| 2005 04 17 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.5+ | 0.5− | 2006 11 18 | G96 | 0.2− | 0.2+ |
| 2005 04 17 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 18 | G96 | 0.4+ | 0.2+ |
| 2005 04 17 | 691 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.1+ |
| 2006 10 13 | 691 | 0.6+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.6− | 2006 11 20 | H55 | 0.1+ | 0.3+ |
| 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 20 | H55 | 0.4− | 0.1+ |
| 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.5+ | 2006 11 20 | H55 | 1.4− | 0.9− |
| 2006 10 17 | 691 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | | | | |
| 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.3− | | | | |

**2006 TV$_{87}$ = 2002 TY$_{248}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.53053 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25615820 | $\omega$ | 311.56967 | | +0.87530550 | | +0.48276353 |
| $a$ | 2.4554469 | $\Omega$ | 19.61477 | | −0.41522449 | | +0.77993456 |
| $e$ | 0.2043662 | $i$ | 4.77128 | | −0.24784856 | | +0.39829821 |
| $P$ | 3.85 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 07 | 704 | 0.9+ | 0.4+ | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2002 10 07 | 704 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.4− | 0.3− | 2006 11 08 | 644 | 0.2− | 0.1− |
| 2002 10 07 | 704 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.5− |
| 2002 10 07 | 704 | 0.5− | 0.9+ | 2006 10 13 | 691 | 0.4+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2002 10 11 | 704 | 0.2− | 0.9− | 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2002 10 11 | 704 | 0.2+ | 0.6+ | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2002 10 11 | 704 | 0.2+ | 0.6− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 704 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2002 10 11 | 704 | 0.1− | 0.7− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2006 09 30 | G96 | 0.8− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.2− |

**2006 TY$_{87}$ = 2001 SK$_{238}$ = 2001 TU$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.10492 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21161772 | $\omega$ | 146.62923 | | −0.96573444 | | −0.25830812 |
| $a$ | 2.7889113 | $\Omega$ | 18.45075 | | +0.21730117 | | −0.85781961 |
| $e$ | 0.0134514 | $i$ | 4.56286 | | +0.14190560 | | −0.44432244 |
| $P$ | 4.66 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.9− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 0.7+ | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 01 | G96 | 0.3− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.0− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 1.0− | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.5− | 0.2+ | 2006 10 13 | 691 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.0 |
| 2001 09 21 | 704 | 0.4− | 0.3− | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 1.0− | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 10 14 | 691 | 0.9+ | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.8− | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2001 10 14 | 691 | 0.4− | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 2001 10 14 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2001 10 17 | 644 | (1.1+ | 2.6+) | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2001 10 17 | 644 | (1.5+ | 2.8+) | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2001 10 17 | 644 | (1.5+ | 2.9+) | 2006 11 01 | G96 | 0.0 | 0.1− | | | | |

**2006 TZ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.01863 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24125067 | $\omega$ | 20.04244 | | −0.13709939 | | +0.98748682 |
| $a$ | 2.5555852 | $\Omega$ | 242.14574 | | −0.92041224 | | −0.15607551 |
| $e$ | 0.1070333 | $i$ | 5.05693 | | −0.36612166 | | +0.02258802 |
| $P$ | 4.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 27 | 691 | 0.7− | 0.2− | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1996 03 27 | 691 | 0.7− | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 1996 03 27 | 691 | 0.5− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 1997 08 01 | 910 | 0.5+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 1.1+ |
| 1997 08 01 | 910 | 0.5+ | 0.4− | 2006 10 17 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.8− | 0.1+ |
| 1997 08 01 | 910 | 0.8+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 1998 12 14 | 691 | 0.5+ | 0.0 | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 1998 12 14 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.6− |
| 1998 12 14 | 691 | 0.1− | 0.4− | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 1998 12 24 | 691 | 0.7+ | 0.8− | 2006 11 08 | 644 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 1998 12 24 | 691 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.5− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.3− |
| 1998 12 24 | 691 | 0.0 | 0.8− | 2006 11 08 | 644 | 0.5− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2004 02 18 | 691 | 0.5+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 1.0− | 0.3+ |
| 2004 02 18 | 691 | 0.8+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 27 | 703 | 1.4− | 0.8+ |
| 2004 02 18 | 691 | 0.6+ | 0.4+ | 2006 11 09 | 644 | 0.7− | 0.2+ | 2006 11 27 | 703 | 0.9+ | 0.3+ |
| 2006 10 13 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | (0.8− | 1.7+) | 2006 11 27 | 703 | 0.1+ | 1.5+ |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.7− | 1.5− |
| 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1− | | | | |

**2006 TR$_{88}$ = 2004 EX$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.58523 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23736228 | $\omega$ | 44.79086 | | +0.82636906 | | −0.56306092 |
| $a$ | 2.5834194 | $\Omega$ | 349.46657 | | +0.50231781 | | +0.74406660 |
| $e$ | 0.0557048 | $i$ | 2.74385 | | +0.25454077 | | +0.35962104 |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 16 | 644 | 0.1+ | 0.1− | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2002 11 16 | 644 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.9− |
| 2002 11 16 | 644 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3− | 1.0+ |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.3+ | 0.0 |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.2− |
| 2004 03 15 | 691 | 0.3+ | 0.0 | 2006 10 13 | 691 | 0.3− | 0.3+ | 2006 11 14 | 703 | 1.4+ | 0.5− |
| 2004 03 18 | 704 | 0.3+ | 0.9+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.4+ | 0.3+ |
| 2004 03 18 | 704 | 0.4− | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.1+ | 1.0− |
| 2004 03 18 | 704 | 0.3+ | 0.4− | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.4+ |
| 2004 03 31 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 03 31 | 691 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2004 03 31 | 691 | 0.8− | 0.6− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.2− | | | | |

**2006 TD$_{89}$ = 1995 UE$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.04647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17986410 | $\omega$ | 189.29109 | | −0.85454080 | | +0.51690119 |
| $a$ | 3.1081816 | $\Omega$ | 22.06110 | | −0.46743213 | | −0.72281024 |
| $e$ | 0.0892010 | $i$ | 7.76187 | | −0.22642264 | | −0.45864858 |
| $P$ | 5.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.4+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 1995 10 19 | 691 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 1995 10 19 | 691 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.4− |
| 1995 10 24 | 691 | 0.2− | 0.1− | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.5+ | 0.5− |
| 1995 10 24 | 691 | 0.1+ | 0.2− | 2006 10 17 | 691 | 0.4+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 1995 10 24 | 691 | 0.5− | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2006 09 30 | G96 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2006 09 30 | G96 | 0.3− | 0.4− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.7− |
| 2006 09 30 | G96 | 0.3− | 0.4− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.2− |

**2006 TG$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.85559 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27048849 | $\omega$ | 123.01404 | | +0.99531351 | | −0.00891019 |
| $a$ | 2.3679372 | $\Omega$ | 237.66832 | | −0.02440342 | | +0.94037281 |
| $e$ | 0.1233694 | $i$ | 6.54343 | | +0.09357074 | | +0.34002882 |
| $P$ | 3.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 04 | 644 | 0.4− | 0.5+ | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.1− |
| 2002 08 04 | 644 | 0.4− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2002 08 04 | 644 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 13 | 104 | 0.4+ | 0.4+ |
| 2002 09 04 | 644 | 0.1− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 13 | 104 | 0.5+ | 0.1− |
| 2002 09 04 | 644 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.3− | 0.2− | 2006 11 13 | 104 | 0.3− | 0.8+ |
| 2002 09 04 | 644 | 0.1+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 09 04 | 644 | 0.2+ | 0.3− | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2002 09 04 | 644 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.3− |
| 2002 09 04 | 644 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2002 09 12 | 644 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.8+ | 1.1+ |
| 2002 09 12 | 644 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.1+ |
| 2002 09 12 | 644 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.1+ |
| 2005 05 13 | G96 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2005 05 13 | G96 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.0 |
| 2005 05 13 | G96 | 0.5− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.7+ |
| 2005 05 13 | G96 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 1.0+ | 0.6+ |
| 2005 06 06 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2005 06 06 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.0 | 0.4− |
| 2005 06 06 | 691 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 1.3− | 0.1− |
| 2005 06 15 | 691 | 0.1− | 0.5+ | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.0 | 0.5+ |
| 2005 06 15 | 691 | 0.1+ | 0.5− | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.2+ | 0.4+ |
| 2005 06 15 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.2+ | | | | |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.3− | | | | |

**2006 TH$_{89}$ = 2005 LC$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.93405 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25837386 | $\omega$ | 202.37721 | | −0.25778687 | | −0.96438919 |
| $a$ | 2.4413891 | $\Omega$ | 262.60144 | | +0.89526139 | | −0.21538462 |
| $e$ | 0.1174438 | $i$ | 3.41987 | | +0.36339094 | | −0.15350229 |
| $P$ | 3.81 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 25 | 691 | 0.2− | 0.2+ | 2005 06 14 | G96 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 1995 12 25 | 691 | 0.0 | 0.1− | 2005 06 14 | G96 | 0.5+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 1995 12 25 | 691 | 0.6+ | 0.2− | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 1996 01 13 | 691 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.4− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 13 | 691 | 0.3− | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ | | |
| 1996 01 13 | 691 | 0.0 | 0.2+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 10 | 644 | 0.1+ | 0.4+ | | |
| 2004 03 26 | 699 | (1.0− | 1.9+) | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 10 | 644 | 0.6− | 0.4+ | | |
| 2004 03 26 | 699 | 0.4− | 1.4− | 2006 10 17 | 691 | 0.2+ | 0.4− | 2006 11 10 | 644 | 0.1− | 0.1+ | | |
| 2004 03 26 | 699 | 0.2− | 0.3− | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.5+ | | |
| 2004 03 26 | 699 | 0.5+ | 0.9− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.7+ | | |
| 2004 03 28 | 691 | 0.2− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.4− | 0.1+ | | |
| 2004 03 28 | 691 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.0 | | |
| 2004 03 28 | 691 | 0.5+ | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.6+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2005 06 13 | G96 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.7− | 0.7+ | 2006 11 14 | G96 | 0.1+ | 0.1− | | |
| 2005 06 13 | G96 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.2− | | |
| 2005 06 13 | G96 | 0.1− | 0.6+ | 2006 10 27 | 703 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.2− | 0.4+ | | |
| 2005 06 13 | G96 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.7+ | | |
| 2005 06 14 | G96 | 0.6− | 0.5+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |

**2006 TU$_{89}$ = 1998 SD$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.98188 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25881212 | $\omega$ | 211.99317 | | −0.60745649 | | +0.79324595 |
| $a$ | 2.4386322 | $\Omega$ | 20.69631 | | −0.70152069 | | −0.51096033 |
| $e$ | 0.0592428 | $i$ | 6.81251 | | −0.37264639 | | −0.33118032 |
| $P$ | 3.81 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 13 | 104 | 0.5− | 0.4+ | | |
| 1998 09 19 | 645 | 0.1− | 0.0 | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 13 | 104 | 0.4− | 0.1− | | |
| 1998 09 25 | 645 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 13 | 104 | 0.2− | 0.3+ | | |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2006 09 30 | G96 | 0.0 | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.1− | | |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2006 09 30 | G96 | 0.1− | 0.5− | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.2− | | |

**2006 TD$_{90}$ = 1999 FV$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.20807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21926865 | $\omega$ | 83.06335 | | +0.02664160 | | −0.99962763 |
| $a$ | 2.7236524 | $\Omega$ | 5.42051 | | +0.89072547 | | +0.02105899 |
| $e$ | 0.0992303 | $i$ | 3.58125 | | +0.45376025 | | +0.01735256 |
| $P$ | 4.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.3+ | 0.1+ | 2006 10 13 | 691 | 0.3+ | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.1− | | |
| 1999 03 19 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.4− | 0.3+ | 2006 11 16 | 704 | 0.8+ | 0.0 | | |
| 1999 03 19 | 691 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.1+ | | |
| 1999 03 24 | 691 | 0.1+ | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.4− | | |
| 1999 03 24 | 691 | 1.0− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.6− | 0.2− | | |
| 1999 03 24 | 691 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.1+ | 1.1+ | | |
| 2006 10 13 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.3− | | | | | | |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | (0.5− | 1.8+) | | | | | | |

**2006 TG$_{90}$ = 2001 QV$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.65180 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22676904 | $\omega$ | 107.48931 | | +0.38108118 | | −0.92421714 |
| $a$ | 2.6632599 | $\Omega$ | 320.08238 | | +0.83311243 | | +0.35476096 |
| $e$ | 0.1039019 | $i$ | 2.18734 | | +0.40087507 | | +0.14130584 |
| $P$ | 4.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 691 | 0.1+ | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.2− | 0.9+ | | |
| 2001 08 21 | 691 | 0.3− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 15 | 704 | 0.8+ | 0.1+ | | |
| 2001 08 21 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.0 | 1.4+ | | |
| 2001 08 24 | 644 | 0.5− | 1.0− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | (0.2− | 1.6+) | | |
| 2001 08 24 | 644 | 0.2− | 0.7− | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.5− | | |
| 2001 08 24 | 644 | 0.3− | 0.8− | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.4− | 1.1+ | | |
| 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | (0.2+ | 2.0+) | | |
| 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.8+ | 0.2+ | | |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | (0.0 | 2.0−) | | |
| 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.9+ | 0.7− | | |
| 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.0 | 0.9− | 2006 11 19 | 704 | 0.4− | 0.7+ | | |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.3+ | 0.3− | | |
| 2006 10 19 | 703 | 1.3− | 1.2− | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 11 22 | 704 | 0.1− | 0.7+ | | |
| 2006 10 19 | 703 | 0.4− | 1.1+ | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.4− | 1.1+ | | |
| 2006 10 19 | 703 | 0.2+ | 1.5− | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | (0.3+ | 1.8+) | | |
| 2006 10 19 | 703 | 0.5− | 1.0− | 2006 11 13 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.2− | 0.9+ | | |
| 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.5+ | | |
| 2006 10 20 | G96 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.0 | 1.0− | | | | | | |
| 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.1+ | 0.0 | | | | | | |

**2006 TJ$_{90}$ = 2003 YQ$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.15806 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29346790 | $\omega$ | 89.71873 | | −0.47263825 | | −0.87891806 |
| $a$ | 2.2426542 | $\Omega$ | 28.76661 | | +0.74620275 | | −0.43787390 |
| $e$ | 0.0332549 | $i$ | 7.66122 | | +0.46882250 | | −0.18912825 |
| $P$ | 3.36 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 27 | 691 | 0.0 | 0.1+ | 2003 12 30 | 704 | 0.1+ | 1.1+ | 2006 10 21 | 691 | 0.2− | 0.1+ | | |
| 2003 12 27 | 691 | 0.1− | 0.1− | 2003 12 30 | 704 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.0 | | |
| 2003 12 27 | 691 | 0.0 | 0.4+ | 2003 12 30 | 704 | 0.5− | 0.5− | 2006 11 09 | 644 | 0.2+ | 0.2+ | | |
| 2003 12 28 | 704 | 0.7− | 0.3+ | 2006 10 13 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.4+ | 0.0 | | |
| 2003 12 28 | 704 | 0.1− | 0.3+ | 2006 10 13 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | | |
| 2003 12 28 | 704 | 0.3+ | 0.6− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.0 | 0.2− | | |
| 2003 12 28 | 704 | 0.3+ | 0.4− | 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.3− | | |
| 2003 12 28 | 704 | 0.9+ | 0.1− | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 1.2− | 0.3+ | | |
| 2003 12 30 | 704 | 0.7+ | 1.2− | 2006 10 17 | 691 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.5+ | | |
| 2003 12 30 | 704 | 0.0 | 0.3− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.7− | | |

**2006 TL$_{90}$ = 2004 GM$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.83516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22273503 | $\omega$ | 330.63305 | | −0.89823484 | | +0.41587876 |
| $a$ | 2.6953202 | $\Omega$ | 234.62950 | | −0.36152510 | | −0.88309481 |
| $e$ | 0.0361749 | $i$ | 10.04256 | | −0.24994755 | | −0.21722895 |
| $P$ | 4.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 09 | E12 | 0.5− | 0.7− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.1+ | | |
| 2004 04 09 | E12 | 0.2− | 1.0− | 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.2+ | | |
| 2004 04 09 | E12 | 1.0− | 0.5+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.8+ | | |
| 2004 04 09 | E12 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.2− | | |
| 2004 04 14 | 699 | (1.8− | 1.3+) | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.1+ | | |
| 2004 04 14 | 699 | 1.2+ | 0.7− | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.8+ | 0.1− | | |
| 2004 04 14 | 699 | 1.2− | 0.9+ | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.1− | 0.4− | | |
| 2004 04 14 | 699 | 0.0 | 0.9+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.3− | | |
| 2004 04 17 | 704 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.7+ | 0.2− | | |
| 2004 04 17 | 704 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.6+ | 2006 11 21 | 704 | 0.9+ | 0.3+ | | |
| 2004 04 17 | 704 | 0.2+ | 0.8+ | 2006 11 11 | 703 | (0.4− | 1.7+) | 2006 11 21 | 704 | 0.3+ | 1.0+ | | |
| 2004 04 17 | 704 | 1.3+ | 1.2+ | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.2+ | | |
| 2005 08 24 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.5+ | 2006 11 27 | 703 | (0.1+ | 1.7−) | | |
| 2005 08 24 | 644 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.4− | | |
| 2005 08 24 | 644 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.8− | 0.8− | | |
| 2005 09 02 | 644 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 27 | 703 | (0.7+ | 1.7−) | | |
| 2005 09 02 | 644 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.2− | 0.8− | | |
| 2005 09 02 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.5− | | |
| 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.6− | | |
| 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.9− | 0.4− | | |
| 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1+ | | | | | | |
| 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.1− | | | | | | |

**2006 TN$_{90}$ = 1999 GS$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.53631 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19741048 | $\omega$ | 262.17687 | +0.33239582 | | +0.94191687 | |
| $a$ | 2.9211638 | $\Omega$ | 27.38869 | −0.81896387 | | +0.31350842 | |
| $e$ | 0.0890143 | $i$ | 5.99141 | −0.46777258 | | +0.12043707 | |
| $P$ | 4.99 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 691 | 0.1+ | 0.3+ | 2005 07 03 | 644 | 0.1+ | 0.9+ | 2006 10 21 | G96 | 0.2− | 0.4+ |
| 1999 04 12 | 691 | 0.1+ | 1.1+ | 2005 07 26 | 644 | 0.3+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 1999 04 12 | 691 | 0.7− | 0.5+ | 2005 07 26 | 644 | 0.3+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.3+ |
| 1999 04 18 | 691 | 0.7+ | 0.5+ | 2005 07 26 | 644 | 0.3+ | 0.9+ | 2006 10 21 | 691 | 0.3− | 0.6+ |
| 1999 04 18 | 691 | 0.5+ | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.2+ |
| 1999 04 18 | 691 | 0.7+ | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.0 | 0.1− |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.8− | 0.4+ | 2006 11 09 | 691 | 0.1− | 0.3+ |
| 2003 01 29 | 645 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.8− | 0.2+ | 2006 11 09 | 691 | 0.2− | 0.5+ |
| 2004 05 10 | 691 | 0.3+ | 0.1+ | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2004 05 10 | 691 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2004 05 10 | 691 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.3+ | 0.3− |
| 2004 05 19 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.4− | 0.2− |
| 2004 05 19 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.5+ | 0.3+ | 2006 11 16 | 691 | 0.4− | 0.3+ |
| 2004 05 19 | 691 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.5− | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2005 07 03 | 644 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.4+ | 0.2+ | | | | |
| 2005 07 03 | 644 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.2− | 0.3+ | | | | |

**2006 TP$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.12296 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.30632425 | $\omega$ | 114.68831 | +0.99157399 | | +0.10482859 | |
| $a$ | 2.1794578 | $\Omega$ | 239.37554 | −0.12518605 | | +0.92649121 | |
| $e$ | 0.0468518 | $i$ | 5.07389 | +0.03330874 | | +0.36142082 | |
| $P$ | 3.22 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 11 10 | 691 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 1993 11 10 | 691 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.2− | 0.5+ | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 1993 11 10 | 691 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 1.3+ | 0.4− |
| 2004 01 13 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | 1.1+ | 0.3− |
| 2004 01 13 | 691 | 0.7− | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.0 | 0.7+ |
| 2004 01 13 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | (0.2− | 1.6+) |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.5− | 0.2− | 2006 11 18 | 704 | 1.2+ | 0.4+ |
| 2005 05 10 | G96 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.4− | 0.8+ |
| 2005 05 10 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.3− | 0.4+ | 2006 11 18 | 704 | 1.1− | 0.7+ |
| 2005 05 10 | G96 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.8+ | 0.2+ |
| 2005 06 11 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2005 06 11 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.4− | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2005 06 11 | 691 | 0.6+ | 1.0+ | 2006 11 11 | 703 | 1.1− | 0.4+ | 2006 12 01 | G96 | 0.4− | 0.1− |
| 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.1+ | | | | |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.3− | 0.2− | | | | |

**2006 TS$_{90}$ = 1997 EY$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.88796 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17227998 | $\omega$ | 131.18009 | −0.34048962 | | −0.94012548 | |
| $a$ | 3.1987442 | $\Omega$ | 338.71202 | +0.84964638 | | −0.30071849 | |
| $e$ | 0.0821715 | $i$ | 2.39873 | +0.40270069 | | −0.16041341 | |
| $P$ | 5.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 27 | 691 | 0.0 | 0.0 | 2003 04 29 | 691 | (0.7+ | 1.7+) | 2006 10 21 | 691 | 0.1− | 0.1− |
| 1994 09 27 | 691 | 0.0 | 0.1− | 2003 04 29 | 691 | (0.6+ | 2.0+) | 2006 10 21 | 691 | 0.2− | 0.0 |
| 1994 09 27 | 691 | 0.2− | 0.7+ | 2006 10 13 | 691 | 0.2+ | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.3+ |
| 1997 03 05 | 691 | 0.2+ | 0.4− | 2006 10 13 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 691 | 0.4− | 0.2+ |
| 1997 03 05 | 691 | 0.1+ | 0.2− | 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.3− | 0.1+ |
| 1997 03 05 | 691 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 1997 03 10 | 691 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 1997 03 10 | 691 | 0.3− | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 1997 03 10 | 691 | 0.5− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2003 04 05 | 691 | 0.4+ | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.5+ | 0.0 |
| 2003 04 05 | 691 | 0.3+ | 0.9+ | 2006 10 21 | G96 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.4+ |
| 2003 04 05 | 691 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.3+ | 0.3− | | | | |
| 2003 04 29 | 691 | (1.2+ | 1.9+) | 2006 10 21 | 691 | 0.1− | 0.1+ | | | | |

**2006 TV$_{90}$ = 2004 JB$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.29467 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17579590 | $\omega$ | 308.18005 | +0.96546021 | | +0.21540353 | |
| $a$ | 3.1559507 | $\Omega$ | 39.99441 | −0.10214393 | | +0.83047868 | |
| $e$ | 0.1287103 | $i$ | 13.18384 | −0.23969398 | | +0.51371828 | |
| $P$ | 5.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 09 | 691 | 0.2− | 0.3+ |
| 2004 04 22 | 691 | 0.4+ | 0.4− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 09 | 691 | 0.0 | 0.3+ |
| 2004 04 22 | 691 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 10 13 | 691 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2004 05 09 | 691 | 0.0 | 0.3+ | 2006 10 13 | 691 | 0.4− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2004 05 09 | 691 | 0.2+ | 0.6+ | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2004 05 16 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.5− |
| 2004 05 16 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2004 05 16 | 691 | 0.4− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.4+ | | | | |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.1+ | | | | |

**2006 TZ$_{90}$ = 2607 T-3 = 2005 JH$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.61045 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.30809202 | $\omega$ | 23.68907 | −0.32424592 | | +0.94445066 | |
| $a$ | 2.1711130 | $\Omega$ | 227.43862 | −0.87913709 | | −0.32178851 | |
| $e$ | 0.0565876 | $i$ | 4.17651 | −0.34926002 | | −0.06682146 | |
| $P$ | 3.20 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.8− | 2.3+ | 2005 06 23 | 644 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 1977 10 11 | 675 | 0.5− | 2.1+ | 2005 06 23 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.6− |
| 1977 10 12 | 675 | 0.6+ | 0.3+ | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (0.4+ | 2.1−) |
| 1977 10 12 | 675 | 2.0− | 0.7+ | 2006 10 13 | 691 | 0.7− | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 1977 10 16 | 675 | 1.3+ | 1.1− | 2006 10 13 | 691 | 0.6− | 0.1+ | 2006 11 11 | 703 | (1.7− | 0.7−) |
| 1977 10 16 | 675 | (0.0 | 3.2−) | 2006 10 17 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 1998 02 22 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.6+ | 0.2− |
| 1998 02 22 | 691 | 0.0 | 0.4+ | 2006 10 17 | 691 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 1998 02 22 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 1.2− | 0.8+ |
| 2005 05 14 | 704 | 0.5+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.0 | 0.4− |
| 2005 05 14 | 704 | 0.6− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.4− |
| 2005 05 14 | 704 | 0.2+ | 1.2+ | 2006 11 01 | 691 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2005 05 14 | 704 | 1.0− | 0.3+ | 2006 11 01 | 691 | 0.8+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2005 05 20 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.1+ | 2006 11 21 | G96 | 0.4+ | 0.4− |
| 2005 05 20 | G96 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.5+ | 0.0 |
| 2005 05 20 | G96 | 0.0 | 0.6− | 2006 11 08 | 644 | 0.0 | 0.1− | | | | |
| 2005 06 23 | 644 | 0.5+ | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3+ | | | | |

**2006 TG$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.10294 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26804905 | $\omega$ | 41.56312 | +0.84624439 | | −0.53278755 | |
| $a$ | 2.3822822 | $\Omega$ | 350.62964 | +0.48417287 | | +0.77120304 | |
| $e$ | 0.1866789 | $i$ | 0.98671 | +0.22236697 | | +0.34840104 | |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 691 | 0.1− | 0.6− | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2000 01 11 | 691 | 0.2− | 0.4− | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 1.3+ | 0.8− |
| 2000 01 11 | 691 | 0.1− | 0.7− | 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.9− | 1.1− |
| 2002 08 06 | 599 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | (1.0+ | 2.2−) |
| 2002 08 06 | 599 | 0.1+ | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | (0.5+ | 3.4−) |
| 2002 08 18 | 644 | 0.1+ | 0.9+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2002 08 18 | 644 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2002 08 18 | 644 | 0.1+ | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.4− |
| 2002 08 18 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2002 08 18 | 644 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.5+ |
| 2002 08 18 | 644 | 0.5+ | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.2+ |
| 2002 09 04 | 644 | 0.3+ | 0.7+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.6− | 0.3+ |
| 2002 09 04 | 644 | 0.0 | 0.5+ | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.2+ | 1.0+ |
| 2002 09 04 | 644 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.9− | 0.2+ |
| 2002 09 11 | 608 | 0.8− | 0.6− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2002 09 11 | 608 | 1.1− | 0.7− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.3− | 0.3+ |
| 2002 09 11 | 608 | 0.7− | 1.2− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2004 02 16 | 691 | 0.2+ | 0.8+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.4+ |
| 2004 02 16 | 691 | 0.1+ | 0.8+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.5− | 0.1+ |
| 2004 02 16 | 691 | 0.6+ | 0.6+ | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.7+ |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.4− | 0.8+ |
| 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 13 | 644 | 0.3− | 0.1+ | | | | |
| 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 13 | 644 | 0.1− | 0.0 | | | | |

### 2006 $TO_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 21.80755 | | (2000.0) | | | |
| $n$ | 0.20067746 | $\omega$ | 144.00644 | | +0.95300780 | −0.28787060 |
| $a$ | 2.8893732 | $\Omega$ | 232.99516 | | +0.24291781 | +0.91228785 |
| $e$ | 0.0185405 | $i$ | 6.78696 | | +0.18101679 | +0.29130979 |
| $P$ | 4.91 | $H$ | 15.9 | $G$ 0.15 | | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | (4.1+ | 0.5+) | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.4− |
| 1999 05 18 | 691 | 0.0 | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (3.4+ | 3.3−) |
| 1999 05 18 | 691 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.1− | 1.2+ |
| 2005 07 15 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.2+ |
| 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.5+ |
| 2005 08 24 | 644 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 1.2+ |
| 2005 08 24 | 644 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2− | 1.1− | 2006 11 21 | 704 | 1.3+ | 0.7+ |
| 2005 08 24 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.7− |
| 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.2− |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.0 | 2006 12 01 | G96 | 0.6− | 0.2+ |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.7− | | | | |
| 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.0 | | | | |

### 2006 $TD_{92}$ = 2004 $BN_{87}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 277.30030 | | (2000.0) | | | |
| $n$ | 0.28898436 | $\omega$ | 259.32889 | | −0.62321663 | −0.77466716 |
| $a$ | 2.2657909 | $\Omega$ | 229.76917 | | +0.76114706 | −0.56935420 |
| $e$ | 0.1138348 | $i$ | 8.07188 | | +0.17960008 | −0.27518463 |
| $P$ | 3.41 | $H$ | 17.1 | $G$ 0.15 | | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 23 | 699 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2004 01 23 | 699 | 0.0 | 0.2+ | 2006 11 02 | 691 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.8− | 0.3+ |
| 2004 01 23 | 699 | 1.0− | 0.1− | 2006 11 02 | 691 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.1+ |
| 2004 01 23 | 699 | 0.4+ | 0.1− | 2006 11 02 | 691 | 0.2− | 0.2− | 2006 11 17 | 703 | 1.2+ | 0.1+ |
| 2004 01 29 | 704 | 0.1− | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.2+ |
| 2004 01 29 | 704 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.4− |
| 2004 01 29 | 704 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4− | 1.2+ |
| 2004 01 29 | 704 | 0.9+ | 0.1− | 2006 11 11 | 703 | 1.1− | 0.7− | 2006 11 18 | 704 | 1.2+ | 0.7+ |
| 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.5− | 2006 11 21 | G96 | 0.1− | 0.6− |
| 2006 10 13 | 691 | 0.5+ | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.5− | 2006 11 21 | 704 | 1.0− | 0.0 |
| 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 12 | 703 | 0.5− | 0.6− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 11 12 | 703 | 0.6− | 0.4− | 2006 11 21 | 704 | (1.3− | 1.7−) |
| 2006 10 17 | 691 | 0.5+ | 0.2+ | 2006 11 12 | 703 | 0.6− | 0.3− | 2006 11 21 | 704 | 0.7− | 0.3+ |
| 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.4+ | 0.3+ | 2006 11 21 | 704 | 0.3− | 0.4+ |
| 2006 10 21 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.9− | 1.4+ |
| 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.8− | 0.5− |
| 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.5− | 1.4− |
| 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.8− | 1.3− |

### 2006 $TF_{92}$ = 2001 $SQ_{283}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 246.81164 | | (2000.0) | | | |
| $n$ | 0.21420491 | $\omega$ | 175.00922 | | −0.94422549 | −0.32922693 |
| $a$ | 2.7664093 | $\Omega$ | 345.76303 | | +0.30114481 | −0.85480606 |
| $e$ | 0.0876969 | $i$ | 1.61174 | | +0.13322919 | −0.40114365 |
| $P$ | 4.60 | $H$ | 16.6 | $G$ 0.15 | | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 691 | 0.2− | 0.1+ | 2006 10 13 | 691 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.4− |
| 2001 09 20 | 691 | 0.2+ | 0.3− | 2006 10 13 | 691 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2001 09 20 | 691 | 0.1+ | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.6− |
| 2001 09 23 | 291 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.3− | 0.0 | 2006 11 02 | 691 | 0.2+ | 0.1+ |
| 2001 09 23 | 291 | 0.3− | 0.3− | 2006 10 17 | 691 | 0.3+ | 0.7− | 2006 11 02 | 691 | 0.1− | 0.0 |
| 2001 09 23 | 291 | 0.4+ | 0.5+ | 2006 10 17 | 691 | 0.4+ | 0.4+ | 2006 11 02 | 691 | 0.1− | 0.5− |
| 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 12 | G96 | (2.4+ | 0.8+) |
| 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.3− | 0.3+ | 2006 11 12 | G96 | (2.6+ | 0.3+) |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 21 | 691 | 0.9+ | 0.6+ | 2006 11 12 | G96 | (3.7+ | 0.6+) |
| 2006 09 30 | G96 | 0.3+ | 0.6− | 2006 11 01 | G96 | 0.1− | 0.2− | | | | |

### 2006 $TO_{92}$ = 2001 $YW_{46}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 276.21411 | | (2000.0) | | | |
| $n$ | 0.17871273 | $\omega$ | 61.36805 | | −0.57443137 | −0.80287028 |
| $a$ | 3.1215171 | $\Omega$ | 64.56827 | | +0.67577648 | −0.57507948 |
| $e$ | 0.0804980 | $i$ | 10.17012 | | +0.46190341 | −0.15710792 |
| $P$ | 5.52 | $H$ | 15.2 | $G$ 0.15 | | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2− | 0.0 | 2006 10 14 | D35 | 0.6− | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 0.0 | 2006 10 14 | D35 | 0.4− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.2+ | 0.0 | 2006 10 14 | D35 | 1.1− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2001 12 18 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.7− | 2006 11 08 | 644 | 0.0 | 0.6+ |
| 2001 12 18 | 704 | 0.3+ | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.4+ |
| 2001 12 19 | 704 | 0.7+ | 0.1− | 2006 10 16 | 703 | (0.4− | 1.7−) | 2006 11 13 | 703 | 0.6+ | 0.0 |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 1.4+ | 0.2− | 2006 11 13 | 703 | 0.4− | 0.4+ |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.8− | 1.0− | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.6− | 0.1+ |
| 2003 03 12 | 644 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2003 03 12 | 644 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2003 03 12 | 644 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2003 04 02 | 608 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.0 | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2003 04 02 | 608 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.0 | | | | |
| 2003 04 02 | 608 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.2+ | | | | |

### 2006 $TR_{92}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 4.62619 | | (2000.0) | | | |
| $n$ | 0.20597232 | $\omega$ | 289.17998 | | +0.93807164 | −0.34203873 |
| $a$ | 2.8396413 | $\Omega$ | 90.85154 | | +0.33493852 | +0.85478947 |
| $e$ | 0.0509286 | $i$ | 3.15639 | | +0.08853122 | +0.39031329 |
| $P$ | 4.79 | $H$ | 16.3 | $G$ 0.15 | | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 12 31 | 645 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2004 03 19 | 291 | 0.3− | 1.2+ | 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2004 03 19 | 291 | 0.6+ | 0.1− | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 2004 03 19 | 291 | 0.5+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.4− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.6+ |
| 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2004 03 23 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.4+ | 0.4+ |
| 2004 04 20 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 01 | G96 | 1.0+ | 0.3+ |
| 2004 04 20 | 691 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 1.0− | 0.5− |
| 2004 04 20 | 691 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.3+ | | | | |
| 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ | | | | |

**2006 TL$_{93}$ = 1995 UJ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.55503 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17899382 | $\omega$ | 235.53873 | | −0.21944094 | | +0.97287111 |
| $a$ | 3.1182483 | $\Omega$ | 22.13308 | | −0.81917351 | | −0.14294433 |
| $e$ | 0.0388768 | $i$ | 11.21295 | | −0.52990607 | | −0.18190307 |
| $P$ | 5.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.6+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 1995 10 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 1995 10 19 | 691 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1995 10 24 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 1995 10 24 | 691 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.4+ | 0.0 |
| 1995 10 24 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2006 10 15 | 691 | 0.6− | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.4− | 0.1− |
| 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1− | | | | |
| 2006 10 15 | 691 | 0.0 | 0.6− | 2006 10 28 | 691 | 0.3+ | 0.1+ | | | | |

**2006 TN$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.93418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23460335 | $\omega$ | 5.39391 | | +0.87111795 | | +0.49063717 |
| $a$ | 2.6036339 | $\Omega$ | 325.19903 | | −0.45189707 | | +0.78440723 |
| $e$ | 0.1114016 | $i$ | 2.07902 | | −0.19220445 | | +0.37944759 |
| $P$ | 4.20 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 18 | 291 | 0.3+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 2004 02 18 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.4− |
| 2004 02 18 | 291 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 1.3+ | 0.5− |
| 2004 03 17 | 691 | 0.4− | 0.2+ | 2006 10 28 | 691 | 0.4+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.5+ |
| 2004 03 17 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.4+ | 0.2− |
| 2004 03 17 | 691 | 0.2− | 0.5− | 2006 10 28 | 691 | (2.6+ | 0.0 ) | 2006 11 13 | 691 | 0.0 | 0.5+ |
| 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.5− |
| 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 21 | 691 | 0.5+ | 0.6− |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.1− | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.6− | 2006 11 01 | 691 | 0.2− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2006 10 15 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2006 10 15 | 691 | 0.3− | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.4− | 0.2+ |
| 2006 10 17 | 691 | 0.4− | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (1.0− | 1.8−) | | | | |

**2006 TO$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.99177 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21367054 | $\omega$ | 64.21644 | | +0.52525181 | | +0.84893894 |
| $a$ | 2.7710197 | $\Omega$ | 237.59155 | | −0.80341859 | | +0.47212057 |
| $e$ | 0.0524128 | $i$ | 3.96809 | | −0.28040883 | | +0.23749704 |
| $P$ | 4.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 22 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.6+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2001 08 22 | 691 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2001 08 22 | 691 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.5+ | 0.2− |
| 2001 10 14 | 645 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2001 10 14 | 645 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.6+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.5+ | 0.3+ | 2006 11 10 | 691 | 0.4− | 0.2+ |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2006 10 23 | 691 | 1.1− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2004 04 25 | 691 | 0.3+ | 0.8+ | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2004 04 25 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.8− | 0.2− | 2006 11 22 | 691 | 0.4+ | 0.1+ |
| 2004 04 25 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.4+ | 0.1− |
| 2006 09 28 | G96 | 0.8+ | 1.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.4− |
| 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.5− |
| 2006 09 28 | G96 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.4− | 0.2+ | | | | |

**2006 TS$_{93}$ = 1995 CJ$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.80109 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23214509 | $\omega$ | 183.78690 | | +0.07414929 | | −0.99673685 |
| $a$ | 2.6219820 | $\Omega$ | 261.96271 | | +0.91580064 | | +0.08071961 |
| $e$ | 0.0832302 | $i$ | 1.84612 | | +0.39472912 | | −0.00003988 |
| $P$ | 4.25 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 1995 02 01 | 691 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 1995 02 01 | 691 | 0.0 | 0.4+ | 2006 10 17 | 691 | 0.6+ | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 1995 02 07 | 691 | 0.2− | 0.6− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 1995 02 07 | 691 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.5− | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 1995 02 07 | 691 | 0.0 | 1.0− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2006 09 28 | G96 | 0.5− | 0.8− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.5− | 0.6− |
| 2006 09 28 | G96 | 0.9+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.6+ | 0.1+ |
| 2006 10 15 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.3+ | | | | |
| 2006 10 15 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1− | 0.2+ | | | | |

**2006 TJ$_{94}$ = 2000 SC$_{327}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.15853 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16214515 | $\omega$ | 268.48467 | | +0.58047977 | | +0.81342396 |
| $a$ | 3.3306839 | $\Omega$ | 37.08051 | | −0.72039385 | | +0.53432005 |
| $e$ | 0.1069252 | $i$ | 3.53838 | | −0.37957337 | | +0.22987723 |
| $P$ | 6.08 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 691 | 0.2+ | 0.1− | 2006 09 14 | 703 | 0.4− | 0.3− | 2006 10 17 | 703 | 0.3− | 0.9+ |
| 2000 09 29 | 691 | 0.1+ | 0.4− | 2006 09 14 | 703 | 0.6+ | 0.6− | 2006 10 17 | 703 | 1.1− | 0.2+ |
| 2000 09 29 | 691 | 0.1+ | 0.0 | 2006 09 14 | 703 | 1.1+ | 1.1− | 2006 10 31 | G96 | 0.6+ | 0.2+ |
| 2000 10 01 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2000 10 01 | 704 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3+ |
| 2000 10 01 | 704 | 0.2+ | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.7+ |
| 2000 10 01 | 704 | 1.1− | 0.1+ | 2006 10 15 | 703 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2000 10 01 | 704 | 1.1− | 0.7+ | 2006 10 15 | 703 | 0.1+ | 1.3+ | 2006 11 14 | G96 | 0.4− | 0.2− |
| 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.5+ | 1.1+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2004 04 19 | 691 | 0.3− | 0.3− | 2006 10 15 | 703 | 1.0+ | 0.1− | 2006 11 14 | G96 | 0.5− | 0.3− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 691 | 0.4+ | 0.6+ | 2006 10 17 | 703 | 0.5− | 0.9− | |
| 2006 09 14 | 703 | 1.0− | 1.3− | 2006 10 17 | 703 | 0.1− | 0.5+ | |

**2006 TL$_{94}$ = 2001 JX$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.44628 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25746703 | $\omega$ | 131.67510 | | −0.09994211 | | +0.99438085 |
| $a$ | 2.4471183 | $\Omega$ | 132.55348 | | −0.92638860 | | −0.08019357 |
| $e$ | 0.1426088 | $i$ | 2.71583 | | −0.36306436 | | −0.06910651 |
| $P$ | 3.83 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.3− | 1.0+ | 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.4+ | 0.1− |
| 1998 09 25 | 645 | 0.2+ | 0.8− | 2004 01 27 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.6+ |
| 2001 05 15 | 699 | 1.0+ | 0.3+ | 2006 09 30 | G96 | 0.9− | 0.8− | 2006 10 22 | 691 | 0.3+ | 0.0 |
| 2001 05 15 | 699 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 1.4− | 0.7− | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2001 05 15 | 699 | 0.9+ | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.5− | 2006 10 22 | 691 | 0.2− | 0.3− |
| 2001 05 15 | 699 | (0.7+ | 1.7+) | 2006 09 30 | G96 | 1.2− | 0.7− | 2006 11 15 | G96 | 0.1+ | 1.3− |
| 2001 05 16 | 691 | 0.1− | 0.1+ | 2006 10 15 | D35 | 0.8+ | 0.5+ | 2006 11 15 | G96 | 0.6+ | 0.9− |
| 2001 05 16 | 691 | 0.2− | 0.0 | 2006 10 15 | D35 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2001 05 16 | 691 | 0.1− | 0.0 | 2006 10 15 | D35 | 0.4− | 0.4+ | 2006 11 15 | G96 | 0.2− | 0.9− |
| 2004 01 27 | 691 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.3+ | | | | | |

**2006 TM$_{94}$ = 2001 QS$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.43265 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22360543 | $\omega$ | 237.62997 | | +0.03527441 | | −0.99105027 |
| $a$ | 2.6883212 | $\Omega$ | 211.13688 | | +0.98003109 | | +0.05952872 |
| $e$ | 0.2203958 | $i$ | 14.41723 | | +0.19569050 | | −0.11948094 |
| $P$ | 4.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 28 | 691 | 0.6+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 1.1− |
| 1997 09 28 | 691 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 704 | (0.4− | 2.4+) |
| 1997 09 28 | 691 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.5+ |
| 1997 12 03 | 910 | 0.8− | 0.5+ | 2006 10 22 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.5+ | 1.3+ |
| 1997 12 03 | 910 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 14 | 704 | (0.8+ | 2.0+) |
| 1997 12 03 | 910 | 0.0 | 0.9+ | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 14 | 704 | (2.0− | 3.0+) |
| 2001 08 21 | 460 | 0.0 | 0.9− | 2006 10 27 | 683 | 1.1− | 0.4− | 2006 11 17 | 704 | 0.3− | 0.5− |
| 2001 08 21 | 460 | 0.6+ | 1.4− | 2006 10 27 | 683 | 0.9− | 1.3− | 2006 11 17 | 704 | 0.6− | 0.5− |
| 2001 08 22 | 460 | 0.5− | 0.5− | 2006 10 27 | 683 | 0.5− | 0.3− | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 2001 08 22 | 460 | (0.4− | 2.9+) | 2006 11 02 | 703 | 0.1+ | 0.2+ | 2006 11 17 | 704 | (1.5− | 1.6−) |
| 2001 08 23 | 460 | (1.6− | 3.0−) | 2006 11 02 | 703 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.1− | 0.6+ |
| 2001 08 23 | 460 | (2.0− | 0.0 ) | 2006 11 02 | 703 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.1− | 0.4− |
| 2002 11 18 | 644 | 0.1+ | 0.2− | 2006 11 02 | 703 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.1− | 0.4+ |
| 2002 11 18 | 644 | 1.1− | 0.9− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 19 | 703 | 0.0 | 0.6+ |
| 2002 11 18 | 644 | 1.1− | 0.1− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2002 12 06 | 644 | 0.0 | 0.6− | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.3− | 0.4− |
| 2002 12 06 | 644 | 1.0+ | 1.1− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2002 12 06 | 644 | 0.0 | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.4− | 0.3+ |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.6− |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2006 10 15 | D35 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2006 10 15 | D35 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.1+ | | | | |
| 2006 10 15 | D35 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.0 | | | | |

**2006 TR$_{94}$ = 2002 QD$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.54739 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27612180 | $\omega$ | 276.58305 | | +0.89479021 | | +0.43678353 |
| $a$ | 2.3356203 | $\Omega$ | 57.55530 | | −0.35390537 | | +0.82025296 |
| $e$ | 0.1899485 | $i$ | 6.29808 | | −0.27221586 | | +0.36933079 |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.2− |
| 2002 08 30 | 644 | 0.3+ | 0.0 | 2006 10 15 | D35 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.5+ |
| 2002 08 30 | 644 | 0.4+ | 0.1− | 2006 10 15 | D35 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2002 08 31 | 644 | 0.1− | 0.1+ | 2006 10 15 | D35 | 0.3− | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2002 08 31 | 644 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 12 | G96 | 0.3− | 0.0 |
| 2002 08 31 | 644 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 12 | G96 | 0.4− | 0.1+ |
| 2005 04 18 | 691 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.1+ |
| 2005 04 18 | 691 | 0.2+ | 0.1− | 2006 11 02 | 703 | 1.2+ | 0.6+ | 2006 11 17 | 703 | 0.7− | 0.3− |
| 2005 04 18 | 691 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.2− | 0.5− |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 02 | 703 | 0.7+ | 0.8+ | 2006 11 17 | 703 | 0.3+ | 0.9− |
| 2006 09 30 | G96 | 0.6− | 0.3− | 2006 11 02 | 703 | (0.4+ | 2.1+) | 2006 11 17 | 703 | 0.7− | 0.3− |
| 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 11 | 703 | (0.6− | 1.8−) | | | | |

**2006 TV$_{94}$ = 1995 WY$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.98213 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17759599 | $\omega$ | 7.72619 | | +0.43241604 | | −0.88615577 |
| $a$ | 3.1345891 | $\Omega$ | 56.79580 | | +0.81625983 | | +0.30623714 |
| $e$ | 0.0901487 | $i$ | 11.48255 | | +0.38306169 | | +0.34777401 |
| $P$ | 5.55 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 11 17 | 703 | 0.2− | 0.4− |
| 1995 11 21 | 691 | 0.1− | 0.5− | 2006 10 16 | 703 | 1.2+ | 0.6− | 2006 11 18 | 704 | 0.6− | 0.4+ |
| 1995 11 21 | 691 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.6− |
| 1995 11 28 | 691 | 0.3+ | 0.6− | 2006 10 18 | 691 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 1995 11 28 | 691 | 0.1+ | 0.4− | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.3− |
| 2000 09 26 | 645 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 1.1− | 0.8+ |
| 2000 09 26 | 645 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2002 01 15 | 644 | (0.1+ | 3.4+) | 2006 10 22 | 691 | 0.6− | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.9+ |
| 2002 01 15 | 644 | 2.4+ | 0.0 | 2006 10 22 | 691 | 0.6− | 0.3+ | 2006 11 21 | 704 | 0.2+ | 0.7+ |
| 2002 02 03 | 644 | 0.3− | 1.4− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.0 |
| 2002 02 03 | 644 | 0.7− | 1.5− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 1.0+ |
| 2002 02 03 | 644 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 26 | 715 | 0.1+ | 0.2+ |
| 2005 07 03 | 644 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.8− | 1.1− | 2006 11 26 | 715 | 0.3− | 0.3− |
| 2005 07 03 | 644 | 0.6− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.3− | 2006 11 26 | 715 | 0.0 | 0.2− |
| 2005 07 03 | 644 | 0.8− | 0.6+ | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 27 | 703 | 0.2− | 0.3+ |
| 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 27 | 703 | 0.1− | 0.4+ |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.6− | 0.0 |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | (0.7+ | 1.6−) | 2006 11 27 | 703 | 0.0 | 0.3− |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.6− | 2006 11 29 | 704 | 0.0 | 1.1+ |
| 2006 10 15 | D35 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.7− | 2006 11 29 | 704 | 0.4− | 1.0+ |
| 2006 10 15 | D35 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2006 10 15 | D35 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 1.4+ | 1.4+ |
| 2006 10 16 | 703 | 0.1+ | 0.8+ | 2006 11 17 | 703 | 0.2+ | 0.1+ | | | | |

**2006 TW$_{94}$ = 1999 VS$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.87340 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27841770 | $\omega$ | 299.74329 | | +0.98636780 | | +0.13460968 |
| $a$ | 2.3227626 | $\Omega$ | 52.68278 | | −0.07639244 | | +0.88402973 |
| $e$ | 0.2735535 | $i$ | 6.83521 | | −0.14574898 | | +0.44762895 |
| $P$ | 3.54 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.2− | 0.7− | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.6+ | 0.2− |
| 1999 11 12 | 704 | 1.0− | 0.5− | 2006 10 16 | 703 | 0.4+ | 0.9− | 2006 11 13 | G96 | 0.5+ | 0.6− |
| 1999 11 12 | 704 | 0.8− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 13 | G96 | 0.5+ | 0.8− |
| 1999 11 12 | 704 | 0.1− | 0.7+ | 2006 10 17 | G96 | 0.7+ | 0.4− | 2006 11 13 | G96 | 0.1− | 0.5− |
| 1999 11 14 | 704 | 1.7+ | 1.0− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 1999 11 14 | 704 | 0.2− | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 1999 11 14 | 704 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.3− | 0.4+ | 2006 11 13 | 644 | 0.1− | 0.1− |
| 1999 11 14 | 704 | 0.5+ | 0.1+ | 2006 10 18 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.8− | 0.1+ |
| 2006 09 18 | 703 | 0.6− | 0.5− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.9+ | 0.1− |
| 2006 09 18 | 703 | 0.4+ | 1.4− | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 18 | 703 | 0.4+ | 0.8+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.5+ | | |
| 2006 09 18 | 703 | 0.7− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.3+ | 1.1− | | |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.6+ | | |
| 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.7+ | 0.9+ | | |
| 2006 09 30 | G96 | 0.6+ | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.2− | 0.3+ | | |
| 2006 10 15 | D35 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.2− | 0.5+ | | |
| 2006 10 15 | D35 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.3− | 2006 11 27 | 703 | 1.7− | 0.6− | | |
| 2006 10 15 | D35 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.5+ | 0.7+ | 2006 11 27 | 703 | 0.1+ | 1.4− | | |
| 2006 10 16 | 703 | 0.4+ | 1.1− | 2006 11 11 | 703 | 0.2+ | 0.6− | 2006 11 27 | 703 | 0.4+ | 0.0 | | |
| 2006 10 16 | 703 | (0.5− | 2.2+) | 2006 11 11 | 703 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.8− | 0.1− | | |

**2006 TA$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.82111 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22434941 | $\omega$ | 10.62039 | | +0.52702438 | −0.84007557 | |
| $a$ | 2.6823746 | $\Omega$ | 47.71466 | | +0.76643266 | +0.40448641 | |
| $e$ | 0.0681444 | $i$ | 10.00458 | | +0.36718698 | +0.36147445 | |
| $P$ | 4.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 30 | 566 | 0.1+ | 0.8+ | 2004 05 21 | 691 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.5+ | 0.8+ | | |
| 2001 09 21 | 644 | 0.5− | 1.3+ | 2006 09 27 | G96 | 0.8+ | 1.4+ | 2006 10 21 | G96 | 0.4+ | 0.6+ | | |
| 2001 09 21 | 644 | 0.5− | 0.7+ | 2006 09 27 | G96 | 0.8+ | 1.1+ | 2006 10 21 | G96 | 0.1− | 1.0+ | | |
| 2001 10 15 | 644 | 0.5− | 0.4+ | 2006 09 27 | G96 | 0.8+ | 1.6+ | 2006 10 21 | G96 | 0.2− | 0.7+ | | |
| 2001 10 15 | 644 | 0.9− | 0.1+ | 2006 09 27 | G96 | 0.9+ | 1.1+ | 2006 10 21 | G96 | 0.2− | 0.8+ | | |
| 2001 10 15 | 644 | 0.5− | 0.4+ | 2006 10 15 | 216 | 0.3+ | 1.2+ | 2006 11 13 | 691 | 0.2− | 0.0 | | |
| 2004 04 13 | 691 | 0.5+ | 1.0+ | 2006 10 15 | 216 | 0.6+ | 0.7+ | 2006 11 13 | 691 | 0.1− | 0.0 | | |
| 2004 04 13 | 691 | 0.4+ | 0.9+ | 2006 10 16 | 216 | 0.3− | 1.7+ | 2006 11 13 | 691 | 0.2− | 0.3+ | | |
| 2004 04 13 | 691 | 0.4+ | 1.2+ | 2006 10 17 | G96 | 0.4+ | 0.3+ | 2006 11 25 | 691 | 0.3− | 0.5− | | |
| 2004 05 21 | 691 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.7+ | 2006 11 25 | 691 | 0.3− | 0.4− | | |
| 2004 05 21 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.5+ | 2006 11 25 | 691 | 0.2− | 0.6− | | |

**2006 TL$_{95}$ = 2003 MR$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.61373 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.38127883 | $\omega$ | 266.19153 | | +0.81728852 | −0.45688791 | |
| $a$ | 1.8835374 | $\Omega$ | 120.67478 | | +0.53596194 | +0.82652973 | |
| $e$ | 0.1053439 | $i$ | 24.09528 | | −0.21162293 | +0.32878875 | |
| $P$ | 2.59 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 17 | 209 | 0.1+ | 0.0 | 2005 03 08 | 703 | 0.3+ | 0.5+ | 2006 10 13 | E12 | 0.4+ | 1.4− | | |
| 2002 01 17 | 209 | 0.0 | 0.3− | 2005 03 08 | 703 | 0.5− | 0.1− | 2006 10 13 | E12 | 0.2+ | 0.2+ | | |
| 2002 01 17 | 209 | 0.2+ | 0.2− | 2005 03 08 | 703 | 0.1+ | 0.5+ | 2006 10 24 | E12 | 0.0 | 0.8+ | | |
| 2003 06 29 | 704 | 0.3+ | 0.3− | 2005 03 08 | 703 | 0.4+ | 0.1− | 2006 10 24 | E12 | 0.5− | 0.6+ | | |
| 2003 06 29 | 704 | 0.3− | 0.3− | 2006 10 03 | E12 | 0.3− | 0.1+ | 2006 10 24 | E12 | 0.2+ | 0.3− | | |
| 2003 06 29 | 704 | 1.2− | 0.6− | 2006 10 03 | E12 | 0.6− | 0.5− | 2006 10 24 | E12 | 0.3+ | 0.3+ | | |
| 2003 06 29 | 704 | 0.0 | 0.1+ | 2006 10 03 | E12 | 0.3− | 0.6+ | 2006 11 18 | E12 | 0.1− | 0.3+ | | |
| 2003 06 30 | 704 | 1.2+ | 0.3+ | 2006 10 03 | E12 | 0.3− | 0.7− | 2006 11 18 | E12 | 0.0 | 0.7+ | | |
| 2003 06 30 | 704 | 0.6+ | 0.2+ | 2006 10 13 | E12 | 0.5+ | 0.9− | 2006 11 18 | E12 | 0.6+ | 0.6+ | | |
| 2003 06 30 | 704 | 0.6− | 0.8+ | 2006 10 13 | E12 | 0.5− | 0.5+ | 2006 11 18 | E12 | 0.2+ | 0.0 | | |

**2006 TV$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.16346 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23468187 | $\omega$ | 326.17632 | | +0.43970465 | +0.89151564 | |
| $a$ | 2.6030531 | $\Omega$ | 329.48982 | | −0.76921997 | +0.31121640 | |
| $e$ | 0.1772836 | $i$ | 12.38647 | | −0.46363828 | +0.32915683 | |
| $P$ | 4.20 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 29 | 291 | 0.1− | 0.1+ | 2006 09 16 | 703 | 0.5+ | 0.7+ | 2006 10 19 | 703 | 0.1+ | 0.0 | | |
| 2003 10 29 | 291 | 0.2− | 0.1+ | 2006 09 16 | 703 | 0.9+ | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.2− | | |
| 2003 10 29 | 291 | 0.4+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.7+ | 2006 10 22 | 644 | 0.3− | 0.4− | | |
| 2004 01 28 | 691 | 0.2+ | 0.0 | 2006 09 16 | 703 | 0.3− | 0.6+ | 2006 10 22 | 644 | 0.4− | 0.1− | | |
| 2004 01 28 | 691 | 0.1− | 0.1− | 2006 09 28 | 703 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.3− | 0.0 | | |
| 2004 01 28 | 691 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.7− | 0.4+ | 2006 10 23 | 644 | 0.0 | 0.0 | | |
| 2006 08 12 | 644 | 0.2− | 0.3− | 2006 09 28 | 703 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.2− | | |
| 2006 08 12 | 644 | 0.5− | 0.2+ | 2006 09 28 | 703 | 0.7+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.7− | | |
| 2006 08 12 | 644 | 0.2− | 0.3− | 2006 10 12 | 644 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.5− | 0.3− | | |
| 2006 08 29 | 699 | 0.5− | 0.5− | 2006 10 12 | 644 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.1− | 0.1+ | | |
| 2006 08 29 | 699 | 0.9+ | 0.6− | 2006 10 12 | 644 | 0.3− | 0.4− | 2006 10 27 | 703 | 0.3− | 0.3− | | |
| 2006 08 29 | 699 | 1.3+ | 1.0+ | 2006 10 19 | 703 | 0.3− | 0.3− | | | | | | |
| 2006 08 29 | 699 | (3.3+ | 0.5−) | 2006 10 19 | 703 | 0.6+ | 0.2− | | | | | | |

**2006 TH$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.91148 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18049198 | $\omega$ | 99.10218 | | +0.03519911 | −0.99811938 | |
| $a$ | 3.1009692 | $\Omega$ | 348.51662 | | +0.78900457 | +0.05857620 | |
| $e$ | 0.1805404 | $i$ | 14.60121 | | +0.61337819 | −0.01807038 | |
| $P$ | 5.46 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 02 | 644 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.2+ | 0.3− | 2006 10 27 | 703 | 0.9− | 0.0 | | |
| 2002 02 02 | 644 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.8− | 0.3− | | |
| 2002 02 02 | 644 | 0.0 | 0.1− | 2006 10 12 | 644 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.6+ | 0.3+ | | |
| 2003 03 29 | 699 | 0.1+ | 0.4+ | 2006 10 12 | 644 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.7+ | 0.2+ | | |
| 2003 03 29 | 699 | 0.4+ | 0.5− | 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 15 | 703 | 0.5+ | 0.4+ | | |
| 2003 03 29 | 699 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.3− | 0.1− | | |
| 2003 03 29 | 699 | 0.4− | 1.0+ | 2006 10 19 | 703 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.1− | 0.6+ | | |
| 2006 09 17 | 703 | 0.3− | 0.5− | 2006 10 19 | 703 | 0.6+ | 0.1+ | 2006 11 22 | 703 | 0.6− | 0.4− | | |
| 2006 09 17 | 703 | 0.2− | 0.0 | 2006 10 20 | 704 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.2+ | 0.2− | | |
| 2006 09 17 | 703 | 0.4− | 0.8+ | 2006 10 20 | 704 | 0.5− | 0.7+ | 2006 11 22 | 703 | 0.5− | 0.4− | | |
| 2006 09 28 | 703 | 0.1+ | 0.1+ | 2006 10 20 | 704 | 0.8+ | 0.5− | 2006 11 22 | 703 | 0.1+ | 0.1− | | |
| 2006 09 28 | 703 | 0.1− | 0.6+ | 2006 10 20 | 704 | 1.3+ | 0.0 | | | | | | |
| 2006 09 28 | 703 | 1.0− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.4− | | | | | | |

**2006 TF$_{97}$ = 2000 AV$_{147}$ = 2004 FQ$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.75498 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26742087 | $\omega$ | 236.13925 | | −0.69628868 | −0.71280474 | |
| $a$ | 2.3860114 | $\Omega$ | 258.23177 | | +0.68367764 | −0.62291878 | |
| $e$ | 0.1308875 | $i$ | 4.93462 | | +0.21855654 | −0.32230667 | |
| $P$ | 3.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.3+ | 0.5+ | 2005 07 05 | G96 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.3− | 0.2− | | |
| 2000 01 05 | 704 | 0.6+ | 0.0 | 2005 07 05 | G96 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.8− | | |
| 2000 01 05 | 704 | 0.2+ | 0.9+ | 2005 07 05 | G96 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2+ | | |
| 2000 01 09 | 704 | 0.4+ | 0.2− | 2005 07 05 | G96 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.2− | | |
| 2000 01 09 | 704 | 0.8− | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.0 | | |
| 2000 01 09 | 704 | 0.7− | 1.3− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.1− | | |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.1− | | |
| 2004 03 16 | 691 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.1− | | |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2004 03 27 | 691 | 0.3− | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2− | | |
| 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 10 13 | 691 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.1− | | |
| 2004 03 27 | 691 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.5− | | | | | | |

**2006 TL$_{97}$ = 2002 QO$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 192.42728 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28377629 | $\omega$ | 225.01504 | | −0.91083323 | +0.41222774 | |
| $a$ | 2.2934291 | $\Omega$ | 339.30142 | | −0.35979376 | −0.81809357 | |
| $e$ | 0.0717247 | $i$ | 3.44508 | | −0.20231481 | −0.40098778 | |
| $P$ | 3.47 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2003 12 18 | 691 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.2− | 0.1− |
| 2002 08 30 | 644 | 0.2− | 0.1+ | 2003 12 18 | 691 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.2− | 0.6− |
| 2002 08 30 | 644 | 0.2− | 0.3+ | 2003 12 28 | 691 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.2− | 0.1− |
| 2002 08 31 | 291 | 0.1+ | 0.2− | 2003 12 28 | 691 | 0.8− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− |
| 2002 08 31 | 291 | 0.1+ | 0.1+ | 2003 12 28 | 691 | 0.1+ | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.3− |
| 2002 08 31 | 291 | 0.2− | 0.1+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | | | | |
| 2003 12 18 | 691 | 0.3+ | 0.2+ | 2006 10 13 | 691 | 0.1+ | 0.1+ | | | | |

**2006 TQ$_{97}$ = 1995 WC$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.90618 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18107204 | $\omega$ | 24.47672 | | +0.52094801 | −0.83735291 | |
| $a$ | 3.0943430 | $\Omega$ | 34.80843 | | +0.72750313 | +0.33401894 | |
| $e$ | 0.1246386 | $i$ | 16.87351 | | +0.44648893 | +0.43274872 | |
| $P$ | 5.44 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 23 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.6− | 2006 11 11 | 703 | 0.6− | 0.6+ |
| 1995 11 23 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 1995 11 23 | 691 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.5− | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 1995 11 30 | 691 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.6− | 0.1+ |
| 1995 11 30 | 691 | 0.4− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.9− | 2.2− |
| 1995 11 30 | 691 | 0.5− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.3− | 2006 11 14 | 703 | 0.7+ | 1.3− |
| 2006 08 28 | 703 | 0.1+ | 0.9− | 2006 10 19 | 703 | 0.4+ | 0.0 | 2006 11 14 | 703 | 0.2− | 0.4− |
| 2006 08 28 | 703 | 0.8+ | 1.3+ | 2006 10 27 | 703 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2006 08 28 | 703 | 0.1+ | 0.4− | 2006 10 27 | 703 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2006 08 28 | 703 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.0 | 2006 11 14 | G96 | 1.1+ | 0.3+ |
| 2006 09 30 | G96 | 0.3− | 0.3− | 2006 10 27 | 703 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.6+ | 0.7− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.7+ | 0.7− |
| 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.2− | 0.8+ |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1+ | 1.7+ |
| 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.8− | 0.3− |
| 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.8− | 0.1+ |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.3− | 0.4+ |
| 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.6+ | | | | |

**2006 TR$_{97}$ = 2002 LV$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.19370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27614641 | $\omega$ | 353.70848 | | +0.82582532 | +0.56356499 | |
| $a$ | 2.3354816 | $\Omega$ | 331.95895 | | −0.51550323 | +0.73992661 | |
| $e$ | 0.2670672 | $i$ | 2.45966 | | −0.22862404 | +0.36729158 | |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 02 | 691 | 0.2+ | 0.2− | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 1995 09 02 | 691 | 0.1− | 0.2− | 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.2+ |
| 1995 09 02 | 691 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2002 06 06 | 704 | (2.1+ | 7.1+) | 2006 10 19 | 703 | 0.9− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2002 06 06 | 704 | (2.4+ | 6.4+) | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2002 06 06 | 704 | (2.4+ | 7.4+) | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2002 06 08 | 704 | (0.8+ | 1.7+) | 2006 10 19 | 703 | 0.3+ | 0.7− | 2006 11 15 | 704 | (0.2− | 2.6+) |
| 2002 06 08 | 704 | (0.8+ | 1.8+) | 2006 10 19 | 703 | 0.4− | 0.3− | 2006 11 15 | 704 | (1.6+ | 1.3+) |
| 2002 06 08 | 704 | 0.4+ | 1.1+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 15 | 704 | (0.4− | 1.8+) |
| 2002 06 08 | 704 | (1.2+ | 1.5+) | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 15 | 704 | (0.6+ | 2.6+) |
| 2002 06 21 | 644 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.7− | 2006 11 16 | 704 | 0.7− | 0.7− |
| 2002 06 21 | 644 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.5+ | 0.4− | 2006 11 16 | 704 | 0.2− | 0.5+ |
| 2002 06 21 | 644 | 0.3− | 0.4+ | 2006 10 19 | 703 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.8− | 0.7+ |
| 2003 12 19 | 691 | 0.0 | 0.2− | 2006 10 19 | 703 | 1.1− | 0.6− | 2006 11 16 | 704 | 0.4+ | 0.6+ |
| 2003 12 19 | 691 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.5+ | 0.0 | 2006 11 16 | 704 | 1.0− | 0.5+ |
| 2003 12 19 | 691 | 0.4− | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.4+ |
| 2005 03 11 | G96 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.1− | 0.7− | 2006 11 16 | 704 | 0.8+ | 0.1+ |
| 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.7− | 2006 11 17 | 704 | 0.8− | 1.1+ |
| 2005 03 11 | G96 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.9− | 0.7+ |
| 2005 03 11 | G96 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.3− | 1.3+ |
| 2005 05 14 | G96 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2005 05 14 | G96 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 1.0+ |
| 2005 05 14 | G96 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 1.0+ |
| 2005 05 14 | G96 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.2− | 2006 11 22 | 704 | 0.7− | 2.9− |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.7− | 0.1− |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.8− | 1.5+ |
| 2006 10 13 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.0 | | | | |

**2006 TF$_{98}$ = 2006 SU$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.72718 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24660958 | $\omega$ | 268.57983 | | +0.43143732 | +0.90181768 | |
| $a$ | 2.5184273 | $\Omega$ | 27.02001 | | −0.80505217 | +0.39698313 | |
| $e$ | 0.0767811 | $i$ | 3.05630 | | −0.40712755 | +0.17067298 | |
| $P$ | 4.00 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 26 | 691 | 0.5− | 0.7− | 2006 09 18 | 691 | 0.7− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 1995 12 26 | 691 | 0.2− | 0.5− | 2006 09 18 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2− |
| 1995 12 26 | 691 | (1.4− | 5.8−) | 2006 09 18 | 691 | 0.4− | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2002 10 04 | 599 | 0.3+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2002 10 04 | 599 | 0.1+ | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 10 04 | 599 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.4+ |
| 2002 10 11 | 644 | 0.3+ | 0.4+ | 2006 09 25 | G96 | 0.6+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.8− |
| 2002 10 11 | 644 | 0.3− | 0.5+ | 2006 10 15 | 691 | 0.5+ | 0.4+ | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2002 10 11 | 644 | 0.4− | 0.9+ | 2006 10 15 | 691 | 0.1− | 0.5− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 10 11 | 291 | 0.1+ | 0.2+ | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2002 10 11 | 291 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.8− |
| 2002 10 11 | 291 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2002 12 06 | 291 | 1.0− | 1.4+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.6+ | 0.1− |
| 2002 12 06 | 291 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2002 12 06 | 291 | 0.8+ | 1.2− | 2006 10 21 | 644 | 0.5+ | 0.3+ | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2004 02 18 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 18 | 691 | 0.3+ | 0.3− |
| 2004 02 18 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.3+ |
| 2004 02 18 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2004 03 17 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.4− | 0.1+ |
| 2004 03 17 | 645 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 | | | | |

**2006 TY$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.37898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17140659 | $\omega$ | 268.62267 | | −0.00110759 | −0.99996415 | |
| $a$ | 3.2096010 | $\Omega$ | 181.51893 | | +0.99622079 | −0.00037432 | |
| $e$ | 0.1645850 | $i$ | 18.46239 | | +0.08684989 | −0.00845885 | |
| $P$ | 5.75 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 11 | 644 | 0.1− | 0.3+ | 2006 09 28 | 691 | 0.0 | 0.4+ | 2006 10 20 | G96 | 0.4+ | 0.1− |
| 2003 03 11 | 644 | 0.0 | 0.1+ | 2006 09 28 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 2003 03 11 | 644 | 0.1− | 0.1+ | 2006 09 28 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2003 03 23 | 691 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.1− |
| 2003 03 23 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2003 03 23 | 691 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 21 | 291 | 0.0 | 0.1+ |
| 2003 04 07 | 291 | 0.1− | 0.7+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 10 21 | 291 | 0.1+ | 0.2+ |
| 2003 04 07 | 291 | 0.1+ | 0.5+ | 2006 10 15 | 291 | 0.0 | 0.2+ | 2006 10 21 | 291 | 0.1− | 0.2+ |
| 2003 04 07 | 291 | 0.3+ | 0.7+ | 2006 10 15 | 291 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1+ |
| 2006 08 21 | 691 | 0.4− | 0.1+ | 2006 10 15 | 291 | 0.3+ | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1+ |
| 2006 08 21 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.5+ | 0.0 |
| 2006 08 21 | 691 | 0.3− | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.0 |
| 2006 08 28 | 703 | 0.5− | 0.3− | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2006 08 28 | 703 | 0.8− | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.3+ |
| 2006 08 28 | 703 | 0.9− | 0.5+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2006 08 28 | 703 | 0.1− | 1.1+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 23 | G96 | 0.4+ | 0.1− |
| 2006 09 16 | 691 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.4− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 16 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.0 | |
| 2006 09 16 | 691 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.2− | 0.1− | |

**2006 TQ$_{99}$ = 2000 JK$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.93970 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21538534 | $\omega$ | 270.39041 | | +0.73511732 | +0.67550402 | |
| $a$ | 2.7562924 | $\Omega$ | 47.11748 | | −0.58666000 | +0.67629862 | |
| $e$ | 0.0885552 | $i$ | 4.49429 | | −0.33975369 | +0.29379330 | |
| $P$ | 4.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 01 | 691 | 0.2+ | 0.6+ | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2000 05 01 | 691 | 0.6+ | 0.4+ | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2000 05 01 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2000 05 04 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2000 05 04 | 691 | 0.2− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2000 05 04 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.6+ |
| 2004 02 29 | 691 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.4+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2004 02 29 | 691 | 0.5+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.6− | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 10 24 | 734 | 0.2+ | 0.4− | 2006 11 14 | G96 | 0.3− | 0.2+ |
| 2006 09 18 | 691 | 0.2− | 0.1+ | 2006 10 24 | 734 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2006 09 18 | 691 | 0.3− | 0.2− | 2006 10 24 | 734 | 0.2+ | 0.4− | 2006 11 21 | 691 | 0.5+ | 0.8+ |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 24 | 734 | 0.7+ | 0.1− | 2006 11 21 | 691 | 0.1− | 0.4+ |
| 2006 10 15 | 691 | 0.2− | 0.4− | 2006 10 24 | 734 | 0.1− | 0.4− | 2006 11 21 | 691 | 0.1+ | 0.4+ |

**2006 TT$_{99}$ = 2005 LP$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.88023 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24114243 | $\omega$ | 322.98105 | | −0.90584757 | +0.41357518 | |
| $a$ | 2.5563499 | $\Omega$ | 241.68903 | | −0.35944720 | −0.86490822 | |
| $e$ | 0.0738111 | $i$ | 5.97401 | | −0.22413811 | −0.28441053 | |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.4− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.3− |
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.5+ |
| 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 2004 03 21 | 691 | 0.2+ | 0.6+ | 2006 10 02 | G96 | 0.3− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2004 03 21 | 691 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.7+ | 0.6− | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2005 06 10 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.6− | 0.9+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2005 06 10 | 691 | 0.0 | 0.4+ | 2006 10 15 | 691 | 0.4− | 0.8+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2005 06 10 | 691 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2005 06 17 | 691 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2005 06 17 | 691 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2005 06 17 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.5+ |

**2006 TU$_{99}$ = 2004 FV$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 283.39637 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27851114 | $\omega$ | 217.08232 | | −0.64898531 | −0.75847647 | |
| $a$ | 2.3222430 | $\Omega$ | 273.46327 | | +0.71152298 | −0.57744082 | |
| $e$ | 0.2529309 | $i$ | 3.41314 | | +0.26935685 | −0.30211843 | |
| $P$ | 3.54 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | 0.6+ | 1.2+ | 2004 03 19 | 704 | 0.8− | 0.3− | 2006 10 21 | 691 | 0.6− | 0.2+ |
| 2004 03 16 | 703 | 0.3− | 0.3− | 2006 10 15 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.2− |
| 2004 03 16 | 703 | 0.0 | 0.7− | 2006 10 15 | 691 | 0.4+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2004 03 16 | 703 | 0.3+ | 1.0+ | 2006 10 15 | 691 | 0.4− | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.3− |
| 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2004 03 19 | 704 | 0.7+ | 0.1− | 2006 10 19 | 691 | 0.5+ | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2004 03 19 | 704 | 0.2+ | 1.1− | 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2004 03 19 | 704 | 0.7− | 0.0 | 2006 10 21 | 691 | 0.3+ | 0.4− | 2006 11 21 | 691 | 0.1− | 0.3− |

**2006 TY$_{99}$ = 2001 TT$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.01850 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21027846 | $\omega$ | 98.79233 | | −0.43675447 | −0.89805486 | |
| $a$ | 2.8007404 | $\Omega$ | 17.39601 | | +0.74105862 | −0.39218567 | |
| $e$ | 0.0715248 | $i$ | 10.08902 | | +0.50997810 | −0.19921816 | |
| $P$ | 4.69 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 16 | 540 | 0.3− | 0.5+ |
| 2001 10 15 | 645 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 16 | 540 | 0.2+ | 0.4+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2006 09 28 | G96 | 0.3− | 0.7− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.6− | 0.2+ |
| 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.5+ |
| 2006 09 28 | G96 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 20 | 540 | 0.3+ | 0.0 |
| 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2006 10 15 | 691 | 0.6− | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2006 10 15 | 691 | 0.3− | 0.5+ | 2006 10 31 | 691 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 10 19 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1− | | | | |
| 2006 10 19 | 691 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− | | | | |

**2006 TB$_{100}$ = 1997 JT$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.70207 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27619034 | $\omega$ | 123.73947 | | +0.17428825 | −0.98427408 | |
| $a$ | 2.3352339 | $\Omega$ | 316.19433 | | +0.88913122 | +0.16986569 | |
| $e$ | 0.1786971 | $i$ | 2.38264 | | +0.42316579 | +0.04847868 | |
| $P$ | 3.57 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 07 | 568 | 0.4− | 0.6− | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 1997 05 07 | 568 | 0.2− | 0.4− | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 1997 05 08 | 568 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 1997 05 08 | 568 | 0.0 | 0.3− | 2006 10 15 | 691 | 1.0+ | 0.4− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 1997 05 08 | 568 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 1997 05 08 | 568 | 0.3− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 1997 05 08 | 568 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.5− | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 1997 05 08 | 568 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2002 08 10 | 807 | 0.3− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 21 | 691 | 0.0 | 0.1+ |
| 2002 08 10 | 807 | 0.4+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.4− |
| 2006 10 02 | G96 | 0.1+ | 0.6− | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.4− | 0.2− |
| 2006 10 02 | G96 | 0.1+ | 0.6− | 2006 10 28 | 691 | 0.5− | 0.6+ | 2006 11 23 | 691 | 0.4+ | 0.2+ |
| 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |

**2006 TG$_{100}$ = 1995 SU$_{33}$ = 2001 YY$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.20060 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18553480 | $\omega$ | 14.18679 | | +0.99654946 | −0.08230023 | |
| $a$ | 3.0445220 | $\Omega$ | 350.51440 | | +0.06835515 | +0.88733438 | |
| $e$ | 0.1661698 | $i$ | 3.74483 | | +0.04708244 | +0.45372278 | |
| $P$ | 5.31 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 22 | 809 | 0.8+ | 0.9− | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 1995 09 22 | 691 | 0.2+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 1995 09 22 | 691 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 1995 09 22 | 691 | 0.2− | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.9+ | 2006 11 13 | 691 | 0.2− | 0.3− |
| 1995 09 24 | 809 | 0.7+ | 0.8− | 2006 10 15 | 691 | 0.7− | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.1− |
| 1995 09 27 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 1995 09 27 | 691 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 1995 09 27 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.5− |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2001 12 18 | 704 | 0.0 | 0.8+ | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 22 | 691 | 0.4+ | 0.2+ |
| 2001 12 18 | 704 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2001 12 19 | 704 | 0.5+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.5+ |
| 2001 12 19 | 704 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 12 19 | 704 | 0.5− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.7− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2− | | | | |
| 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.2− | | | | |

**2006 TH$_{100}$ = 2004 FK$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.09166 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24566557 | $\omega$ | 211.20313 | | −0.81888606 | | −0.57259600 |
| $a$ | 2.5248748 | $\Omega$ | 293.81444 | | +0.53508993 | | −0.73673709 |
| $e$ | 0.1131742 | $i$ | 2.47394 | | +0.20761596 | | −0.35965579 |
| $P$ | 4.01 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 29 | 704 | 0.6− | 0.5− | 2006 10 02 | G96 | 1.1+ | 0.5− | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2004 03 29 | 704 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.6− | 2006 11 01 | 691 | 0.3+ | 1.0− |
| 2004 03 29 | 704 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.6+ | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.5− |
| 2004 03 29 | 704 | 0.7− | 0.6− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2004 03 29 | 704 | 0.5+ | 0.1+ | 2006 10 15 | 691 | 0.4− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1− |
| 2004 03 30 | 704 | 0.1− | 0.9+ | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.4− | 0.3− |
| 2004 03 30 | 704 | 0.5+ | 0.1+ | 2006 10 19 | 691 | 0.6− | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2004 03 30 | 704 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.4− | 0.9+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2006 10 02 | G96 | 0.9+ | 0.5− | 2006 10 23 | 691 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2006 10 02 | G96 | 1.3+ | 0.4− | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.0 |

**2006 TB$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.88827 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21266482 | $\omega$ | 116.85514 | | +0.99267672 | | −0.10801388 |
| $a$ | 2.7797492 | $\Omega$ | 249.38642 | | +0.07972172 | | +0.92218434 |
| $e$ | 0.0880810 | $i$ | 3.31308 | | +0.09076001 | | +0.37136107 |
| $P$ | 4.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2001 11 18 | 645 | 0.1− | 0.0 | 2006 10 15 | 691 | 1.0− | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2004 03 29 | 691 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2004 03 29 | 691 | 0.2− | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2004 03 29 | 691 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2006 08 19 | 291 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 08 19 | 291 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.1− |
| 2006 08 19 | 291 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.2− | 0.1+ | | | | |

**2006 TK$_{101}$ = 2004 GE$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.82732 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22440370 | $\omega$ | 113.53110 | | −0.03129987 | | −0.99938048 |
| $a$ | 2.6819419 | $\Omega$ | 338.24417 | | +0.90047060 | | −0.02120705 |
| $e$ | 0.0574139 | $i$ | 2.48843 | | +0.43378913 | | −0.02808775 |
| $P$ | 4.39 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.3− | 0.3+ | 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 2004 04 13 | 691 | 0.3+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2004 04 20 | 691 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 2004 04 20 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2004 04 20 | 691 | 0.2− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 20 | G96 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.3− | 0.0 |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 20 | G96 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.7− |
| 2006 10 02 | G96 | 0.7− | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.7− | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.1− |
| 2006 10 15 | 691 | 1.1+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.3− |

**2006 TQ$_{101}$ = 2004 HS$_{40}$ = 2005 NW$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.61840 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21774232 | $\omega$ | 206.89078 | | −0.37268474 | | −0.92726280 |
| $a$ | 2.7363658 | $\Omega$ | 265.00859 | | +0.85773925 | | −0.32945715 |
| $e$ | 0.0335100 | $i$ | 2.06598 | | +0.35410376 | | −0.17788110 |
| $P$ | 4.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 10 03 | G96 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2004 04 19 | 691 | 0.2+ | 0.5+ | 2006 10 03 | G96 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.8+ |
| 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.3− | 1.2+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2004 04 25 | 691 | 0.2+ | 0.6+ | 2006 10 15 | 691 | 0.4+ | 0.4− | 2006 11 01 | 691 | 0.4− | 0.4+ |
| 2004 04 25 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2004 04 25 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.5+ |
| 2005 07 07 | 568 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2005 07 07 | 568 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2005 07 07 | 568 | 0.2− | 0.5+ | 2006 10 20 | G96 | 1.4+ | 0.9− | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2005 07 08 | 568 | 0.1− | 1.2+ | 2006 10 20 | G96 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 10 20 | G96 | 0.5+ | 0.3− | | | | |
| 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 10 20 | G96 | 0.3+ | 0.1+ | | | | |

**2006 TR$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.72872 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28125020 | $\omega$ | 64.74011 | | +0.43868056 | | +0.89535750 |
| $a$ | 2.3071411 | $\Omega$ | 231.49749 | | −0.85575280 | | +0.39013732 |
| $e$ | 0.2001953 | $i$ | 5.63001 | | −0.27431097 | | +0.21477386 |
| $P$ | 3.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 31 | 699 | 0.2+ | 0.8− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2005 03 31 | 699 | (1.7+ | 1.9−) | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 03 31 | 699 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 03 31 | 699 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.6− | 0.0 | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2005 04 13 | 699 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2005 04 13 | 699 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.2+ |
| 2005 04 13 | 699 | 0.6− | 1.0+ | 2006 10 20 | 644 | 0.3− | 0.3− | 2006 11 11 | 703 | (1.8+ | 1.7−) |
| 2005 04 13 | 699 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 14 | G96 | (1.0+ | 3.8−) |
| 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.5+ | 0.6+ | 2006 11 14 | G96 | 0.5+ | 0.5− |
| 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 10 22 | 644 | 0.6+ | 0.5+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.3− |
| 2006 10 15 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.5− | 0.3+ |
| 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.3− |
| 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.5− | 1.1+ |
| 2006 10 19 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 | | | | |
| 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | | | | |

**2006 TT$_{101}$ = 1995 WS$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.37488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27087954 | $\omega$ | 145.33216 | | −0.98792225 | | −0.14353892 |
| $a$ | 2.3656577 | $\Omega$ | 26.59702 | | +0.09533462 | | −0.85998974 |
| $e$ | 0.0440902 | $i$ | 7.49025 | | +0.12215130 | | −0.48970830 |
| $P$ | 3.64 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.7+ | 0.2− | 2004 01 28 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 |
| 1995 10 28 | 691 | 1.0+ | 0.2− | 2004 01 28 | 691 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.7− |
| 1995 10 28 | 691 | 1.1+ | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.4+ | 0.3+ |
| 1995 11 17 | 691 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 1995 11 17 | 691 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.2+ |
| 1995 11 17 | 691 | 0.4− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.6− | 0.3+ |
| 1995 11 23 | 691 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1995 11 23 | 691 | 0.3− | 0.1− | 2006 10 15 | 691 | 0.5+ | 0.2+ | 2006 11 01 | 691 | 0.6− | 0.2+ |
| 1995 11 23 | 691 | 1.0− | 0.6− | 2006 10 15 | 691 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.5+ |
| 2004 01 17 | 644 | 0.0 | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2004 01 17 | 644 | 0.0 | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2004 01 17 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2− | | | | |
| 2004 01 28 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.0 | | | | |

**2006 TX$_{101}$ = 2003 YD$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.04046 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30917347 | $\omega$ | 41.30480 | | +0.98535680 | | −0.17044138 |
| $a$ | 2.1660471 | $\Omega$ | 328.50777 | | +0.15399966 | | +0.90137058 |
| $e$ | 0.1942914 | $i$ | 0.51116 | | +0.07318529 | | +0.39809649 |
| $P$ | 3.19 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2003 12 18 | 704 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2003 12 18 | 704 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2003 12 18 | 704 | 1.4+ | 0.6+ | 2006 10 23 | H07 | 0.3+ | 0.7− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2003 12 18 | 704 | 0.4− | 1.0− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.7− |
| 2003 12 22 | 704 | 0.1− | 1.0+ | 2006 10 23 | H07 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.0 | 0.6− |
| 2003 12 22 | 704 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2003 12 22 | 704 | 0.2+ | 0.7+ | 2006 10 23 | H07 | 0.2− | 0.8+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2003 12 22 | 704 | 0.3− | 0.9+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.8− | 0.3− |
| 2003 12 22 | 704 | 0.5− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | (0.1+ | 2.3−) |
| 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.0 | 2006 11 17 | 703 | 1.1+ | 1.4− |
| 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | (1.9+ | 1.3−) |
| 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 1.2+ | 0.6− |
| 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2006 10 15 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | 1.0+ | 0.2− | 2006 11 21 | 704 | 0.5− | 0.2− |
| 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (0.7+ | 2.8−) | 2006 11 21 | 704 | 0.7− | 0.7− |
| 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.7− | 2006 11 21 | 704 | 0.4− | 0.5− |
| 2006 10 21 | H07 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.2+ |
| 2006 10 21 | H07 | 0.1− | 0.5+ | 2006 11 13 | 644 | 0.1− | 0.1+ | | | | |
| 2006 10 21 | H07 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.0 | | | | |

**2006 TY$_{101}$ = 2000 SH$_{323}$ = 2004 HC$_{52}$ = 2005 NJ$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.19393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17151321 | $\omega$ | 304.94402 | | +0.85146953 | | +0.52413238 |
| $a$ | 3.2082706 | $\Omega$ | 23.45992 | | −0.46624946 | | +0.77138412 |
| $e$ | 0.1128814 | $i$ | 2.42991 | | −0.24002308 | | +0.36090413 |
| $P$ | 5.75 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.0 | 0.2+ | 2004 04 25 | 291 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 2000 09 28 | 691 | 0.1+ | 0.1− | 2005 07 07 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.4− | 0.4+ |
| 2000 09 28 | 691 | 0.0 | 0.4+ | 2005 07 07 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ |
| 2000 10 01 | 704 | 0.3+ | 0.0 | 2005 07 07 | 691 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2000 10 01 | 704 | 1.3− | 0.6− | 2005 07 11 | 691 | 0.5− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 0.2− | 0.2+ | 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.5+ | 0.5+ | 2005 07 11 | 691 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2003 03 30 | 645 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2004 04 24 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.9+ | 0.1− |
| 2004 04 24 | 691 | 0.2+ | 0.7+ | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 04 24 | 691 | 0.5+ | 0.0 | 2006 10 15 | 691 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2004 04 25 | 291 | 0.2+ | 0.5+ | 2006 10 15 | 691 | 0.5− | 0.6+ | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2004 04 25 | 291 | 0.4+ | 0.4+ | 2006 10 15 | 691 | 0.2− | 0.5+ | | | | |

**2006 TJ$_{102}$ = 1995 UH$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.66367 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27183440 | $\omega$ | 164.13296 | | +0.78426618 | | −0.61960182 |
| $a$ | 2.3601147 | $\Omega$ | 234.19829 | | +0.56485978 | | +0.73437542 |
| $e$ | 0.1735507 | $i$ | 2.25694 | | +0.25663200 | | +0.27710346 |
| $P$ | 3.63 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 18 | 691 | 0.5− | 0.3− | 2006 10 15 | 691 | 0.1− | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 1995 10 18 | 691 | 0.4+ | 0.3− | 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 11 09 | 691 | 0.0 | 0.4− |
| 1995 10 18 | 691 | 0.1+ | 0.1− | 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 1995 10 23 | 691 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.3− | 0.0 |
| 1995 10 23 | 691 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 1995 10 23 | 691 | 0.9− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.4− | 0.1+ |
| 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.3− | 2006 11 13 | 691 | 0.4− | 0.2+ |
| 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.7+ |
| 2006 09 28 | G96 | 0.5− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.2− | | | | |
| 2006 09 28 | G96 | 0.3− | 0.6− | 2006 11 09 | 691 | 0.6+ | 0.1− | | | | |

**2006 TL$_{102}$ = 2005 LU$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.96272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25404081 | $\omega$ | 285.40897 | | −0.90189193 | | −0.42636343 |
| $a$ | 2.4690718 | $\Omega$ | 229.40739 | | +0.42301151 | | −0.83926010 |
| $e$ | 0.0711880 | $i$ | 5.23766 | | +0.08747694 | | −0.33742659 |
| $P$ | 3.88 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 05 | 691 | 0.5+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.4+ | 0.1− | 2006 11 09 | 691 | 0.0 | 0.2− |
| 2005 06 05 | 691 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.5− | 2006 11 09 | 691 | 0.0 | 0.3− |
| 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.4− | 0.1− |
| 2005 06 10 | 691 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2+ |
| 2005 06 10 | 691 | 0.5− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2006 10 15 | 691 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.4− |
| 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2006 10 15 | 691 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.3+ | 0.5+ |

**2006 TX$_{102}$ = 2004 FN$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.77417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27626967 | $\omega$ | 219.30885 | | −0.38646946 | | −0.92187371 |
| $a$ | 2.3347869 | $\Omega$ | 253.44237 | | +0.85341424 | | −0.34587923 |
| $e$ | 0.1918275 | $i$ | 1.68056 | | +0.34975063 | | −0.17468953 |
| $P$ | 3.57 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 21 | 291 | 0.5− | 0.3− | 2004 03 18 | 704 | 1.0+ | 0.6+ | 2006 10 23 | 691 | 0.7− | 0.1− |
| 2003 11 21 | 291 | 0.1+ | 0.2− | 2006 09 28 | G96 | 1.0+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2003 11 21 | 291 | 0.1− | 0.5− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.2− |
| 2004 03 16 | 599 | 0.2− | 0.4+ | 2006 09 28 | G96 | 0.8+ | 0.4− | 2006 10 28 | 691 | 0.4+ | 0.2+ |
| 2004 03 16 | 599 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.4+ |
| 2004 03 16 | 599 | 0.5− | 0.5+ | 2006 10 15 | 691 | 0.6− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2004 03 16 | 599 | 0.8− | 0.3+ | 2006 10 15 | 691 | 0.4+ | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2004 03 18 | 704 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.5+ | 0.2+ |
| 2004 03 18 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2004 03 18 | 704 | 1.2+ | 0.6+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | | | | |
| 2004 03 18 | 704 | 0.7+ | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1− | | | | |

**2006 TE$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 186.21089 | | | (2000.0) | | |
| $n$ | 0.27037561 | $\omega$ | 294.81073 | | −0.92259485 | +0.38471348 |
| $a$ | 2.3685963 | $\Omega$ | 267.82584 | | −0.34282699 | −0.85156412 |
| $e$ | 0.1052884 | $i$ | 1.63636 | | −0.17688526 | −0.35613775 |
| $P$ | 3.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 691 | 0.3− | 0.7− | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 10 21 | 691 | 0.0 | 0.4− |
| 1997 03 03 | 691 | 0.2− | 0.9− | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2− |
| 1997 03 03 | 691 | 0.2− | 0.6− | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 2002 10 31 | 645 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2003 12 28 | 691 | (0.9+ | 2.2+) | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.4+ |
| 2003 12 28 | 691 | 0.1− | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.6+ | 0.2− |
| 2003 12 28 | 691 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.7+ | 0.2+ |
| 2006 09 28 | G96 | 0.5+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.1+ | | | | |

**2006 TM$_{103}$ = 2001 SK$_{336}$ = 2004 EO$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 56.13960 | | | (2000.0) | | |
| $n$ | 0.21295427 | $\omega$ | 113.09591 | | +0.81218329 | +0.58266434 |
| $a$ | 2.7772298 | $\Omega$ | 211.28886 | | −0.55380171 | +0.75418602 |
| $e$ | 0.0974660 | $i$ | 3.23806 | | −0.18347200 | +0.30282951 |
| $P$ | 4.63 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.5+ | 2004 03 15 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1− |
| 2001 09 20 | 704 | 0.5− | 0.3+ | 2004 03 23 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2001 09 20 | 704 | 0.5− | 0.1− | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.1+ | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 1.3+ | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.9+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.4− | 0.1− |
| 2001 09 22 | 704 | 0.5− | 0.0 | 2006 09 25 | G96 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.1+ |
| 2001 09 22 | 704 | (2.0+ | 0.7+) | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2001 09 22 | 704 | 1.0+ | 0.2+ | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.2− | 0.1+ |
| 2001 09 22 | 704 | 1.1+ | 0.4− | 2006 10 15 | 691 | 0.4+ | 0.5+ | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.6− | 0.1− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.4− | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3− | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2004 03 15 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.1− |

**2006 TN$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.76340 | | | (2000.0) | | |
| $n$ | 0.17542014 | $\omega$ | 185.94373 | | +0.99983703 | −0.01801428 |
| $a$ | 3.1604560 | $\Omega$ | 175.08800 | | +0.01707860 | +0.92269515 |
| $e$ | 0.0893918 | $i$ | 0.78900 | | +0.00585030 | +0.38510928 |
| $P$ | 5.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 17 | 691 | 0.3− | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.1− | 0.3+ |
| 1997 01 17 | 691 | 0.1+ | 0.5− | 2006 10 04 | G96 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.3− |
| 1997 01 17 | 691 | 0.1− | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 2003 03 07 | 291 | 0.1+ | 0.4+ | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.2− |
| 2003 03 07 | 291 | 0.2− | 0.5+ | 2006 10 15 | 691 | 0.7+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2003 03 07 | 291 | 0.6+ | 0.5+ | 2006 10 15 | 691 | 0.1− | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2005 07 09 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2005 07 09 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2006 07 22 | G96 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2006 07 22 | G96 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.0 | 0.6− |
| 2006 07 22 | G96 | 0.6+ | 1.1− | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2006 07 22 | G96 | 0.7− | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.1+ | | | | |
| 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.2− | | | | |

**2006 TT$_{103}$ = 2005 JL$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.80405 | | | (2000.0) | | |
| $n$ | 0.29163671 | $\omega$ | 147.47168 | | +0.99853925 | +0.04173513 |
| $a$ | 2.2520322 | $\Omega$ | 210.19304 | | −0.05098518 | +0.93804551 |
| $e$ | 0.1818094 | $i$ | 3.91249 | | +0.01788500 | +0.34398952 |
| $P$ | 3.38 | $H$ | 18.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 568 | 0.0 | 0.2+ | 2006 10 15 | 691 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.7− | 0.5− |
| 2005 05 04 | 568 | 0.1+ | 0.4+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2005 05 04 | 568 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2005 05 05 | 568 | 0.2+ | 0.6+ | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2006 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.4− | | | | |
| 2006 10 15 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.4− | | | | |

**2006 TZ$_{103}$ = 1993 FL$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 275.77980 | | | (2000.0) | | |
| $n$ | 0.26696292 | $\omega$ | 279.39042 | | −0.67157675 | −0.73677741 |
| $a$ | 2.3887393 | $\Omega$ | 213.22981 | | +0.72348411 | −0.62925552 |
| $e$ | 0.1589248 | $i$ | 8.22339 | | +0.15986062 | −0.24737932 |
| $P$ | 3.69 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 21 | 809 | 0.7− | 1.3+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.1− |
| 1993 03 22 | 809 | 0.7+ | 1.1− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.9− |
| 2006 09 27 | G96 | 0.0 | 0.6− | 2006 10 23 | 691 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.1+ | 1.1− |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.3− |
| 2006 09 27 | G96 | 0.8+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.2− | 0.7− |
| 2006 09 27 | G96 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.2+ |
| 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2006 10 15 | 691 | 0.2+ | 0.5− | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.2− | | | | |

**2006 TA$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 125.52017 | | | (2000.0) | | |
| $n$ | 0.20227662 | $\omega$ | 68.39105 | | −0.06320853 | +0.99796655 |
| $a$ | 2.8741246 | $\Omega$ | 197.99078 | | −0.92520055 | −0.06168127 |
| $e$ | 0.0193677 | $i$ | 1.52377 | | −0.37417726 | −0.01606845 |
| $P$ | 4.87 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.3+ | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.0 |
| 1999 03 19 | 691 | 0.2+ | 0.2+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.3+ |
| 1999 03 19 | 691 | 0.2− | 0.5+ | 2006 09 25 | G96 | 1.3− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2004 04 22 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.8− | 0.7+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2004 04 22 | 691 | 0.2+ | 0.3+ | 2006 10 15 | 691 | 0.3+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.4− |
| 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 10 15 | 691 | 0.6+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2004 05 13 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.5− | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2004 05 13 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.7+ | 2006 11 11 | G96 | 0.6− | 0.0 |
| 2004 05 13 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2005 07 04 | G96 | 0.1− | 0.9+ | 2006 10 19 | 691 | 0.1− | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2005 07 04 | G96 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2005 07 04 | G96 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.3− | 0.0 | | | | |
| 2005 07 04 | G96 | (2.5− | 1.4+) | 2006 10 27 | 691 | 0.1− | 0.5+ | | | | |

**2006 TD$_{104}$ = 2005 MV$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.65125 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18396801 | $\omega$ | 157.22719 | | +0.76025101 | | +0.64961167 |
| $a$ | 3.0617837 | $\Omega$ | 162.25785 | | −0.59842470 | | +0.70318587 |
| $e$ | 0.0747789 | $i$ | 0.90341 | | −0.25279693 | | +0.28902303 |
| $P$ | 5.36 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 24 | 691 | 0.3+ | 0.4+ | 2005 08 28 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.6+ | 0.3− |
| 2004 04 24 | 691 | 0.3+ | 0.3+ | 2005 08 28 | 691 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.4− |
| 2004 04 24 | 691 | 0.2− | 0.4+ | 2006 10 15 | 691 | 0.3+ | 0.5+ | 2006 10 31 | 691 | 0.7+ | 0.1− |
| 2005 06 27 | 691 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2005 06 27 | 691 | 0.0 | 0.5+ | 2006 10 15 | 691 | 0.7− | 0.3− | 2006 11 11 | G96 | 0.4+ | 0.2+ |
| 2005 06 27 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.5− |
| 2005 07 03 | G96 | 0.5− | 0.1+ | 2006 10 19 | 691 | 0.5− | 0.2+ | 2006 11 11 | G96 | 1.2− | 0.5− |
| 2005 07 03 | G96 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2005 07 03 | G96 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.6+ | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2005 07 03 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.2+ |
| 2005 08 28 | 691 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.1+ |

**2006 TM$_{104}$ = 2001 YD$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.77444 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18020542 | $\omega$ | 264.52370 | | +0.55781274 | | −0.82986302 |
| $a$ | 3.1042557 | $\Omega$ | 151.55919 | | +0.77197745 | | +0.51296552 |
| $e$ | 0.1904782 | $i$ | 1.57946 | | +0.30478808 | | +0.21953072 |
| $P$ | 5.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.4− | 0.4+ | 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2+ |
| 2001 12 17 | 704 | 0.4+ | 0.3+ | 2006 07 21 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.6− |
| 2001 12 17 | 704 | 0.3+ | 0.0 | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 12 18 | 644 | 0.3− | 0.4+ | 2006 10 15 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2001 12 18 | 644 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2001 12 18 | 644 | 0.5+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.1− | 0.4− |
| 2005 07 15 | G96 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.3+ |
| 2005 07 15 | G96 | 0.7− | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.4− | 1.0− |
| 2005 07 15 | G96 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2005 07 15 | G96 | 0.7+ | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.6− |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.7+ |
| 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.0+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.9+ |

**2006 TJ$_{105}$ = 2002 LR$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.94475 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29257866 | $\omega$ | 218.75836 | | +0.24330014 | | +0.96853688 |
| $a$ | 2.2471960 | $\Omega$ | 65.37885 | | −0.87495531 | | +0.24244982 |
| $e$ | 0.2075533 | $i$ | 3.30173 | | −0.41863855 | | +0.05616396 |
| $P$ | 3.37 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 25 | 691 | 1.1− | 0.2+ | 2003 11 29 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.1+ |
| 1995 04 25 | 691 | 0.5+ | 1.0− | 2003 11 29 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3− |
| 1995 04 25 | 691 | 0.3+ | 1.4− | 2003 11 29 | 691 | 0.2− | 0.4− | 2006 10 19 | 691 | 0.2− | 0.0 |
| 1996 11 17 | 691 | 0.0 | 0.1− | 2005 03 11 | 691 | 0.2+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.2+ |
| 1996 11 17 | 691 | 0.2− | 0.0 | 2005 03 11 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1− |
| 1996 11 17 | 691 | 0.4− | 0.2− | 2005 03 11 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2002 06 06 | 704 | 0.6− | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.3− | 0.3+ |
| 2002 06 06 | 704 | 0.9− | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2002 06 06 | 704 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ |
| 2002 06 08 | 704 | 0.7+ | 0.5+ | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2002 06 08 | 704 | 0.8+ | 0.1− | 2006 10 15 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2002 06 08 | 704 | 0.4− | 0.2− | 2006 10 15 | 691 | 0.6+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 2002 06 08 | 704 | 0.1− | 0.6− | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |

**2006 TV$_{105}$ = 1999 TK$_{300}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.12535 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28829054 | $\omega$ | 23.78667 | | +0.79821441 | | +0.59535960 |
| $a$ | 2.2694248 | $\Omega$ | 299.35906 | | −0.56816685 | | +0.69357579 |
| $e$ | 0.2087790 | $i$ | 6.03650 | | −0.20010046 | | +0.40558548 |
| $P$ | 3.42 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 18 | 691 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.7− |
| 1994 01 18 | 691 | 0.0 | 0.2+ | 2006 10 12 | 644 | 0.3− | 0.0 | 2006 10 27 | 703 | 0.3− | 1.1− |
| 1994 01 18 | 691 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.2+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.6− |
| 1999 10 03 | 703 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.1+ | 2006 11 15 | 703 | 0.8+ | 0.2− |
| 1999 10 03 | 703 | 0.0 | 0.7+ | 2006 10 19 | 703 | 0.4+ | 0.5− | 2006 11 15 | 703 | 0.1+ | 0.0 |
| 1999 10 03 | 703 | 0.7− | 0.5− | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 703 | 0.1+ | 0.2+ |
| 1999 10 03 | 703 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.7− | 0.0 |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 2006 10 22 | 644 | 0.4+ | 0.3+ | 2006 11 22 | 703 | 0.2+ | 0.9+ |
| 1999 10 10 | 704 | 0.1− | 0.0 | 2006 10 23 | 644 | 0.4+ | 0.5+ | 2006 11 22 | 703 | 0.9− | 0.3− |
| 1999 10 10 | 704 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.0 | 0.5+ | 2006 11 22 | 703 | 0.3− | 0.3− |
| 1999 10 10 | 704 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.1+ | 0.6+ |
| 1999 10 10 | 704 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.9− | 0.5− | | | | |

**2006 TX$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.01314 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21781568 | $\omega$ | 316.53511 | | +0.85777964 | | −0.47410270 |
| $a$ | 2.7357513 | $\Omega$ | 72.75651 | | +0.50987272 | | +0.73582445 |
| $e$ | 0.2963866 | $i$ | 12.00184 | | +0.06514521 | | +0.48351733 |
| $P$ | 4.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 683 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.6− |
| 2001 07 19 | 644 | 0.0 | 0.1+ | 2006 10 30 | 703 | 0.5+ | 0.0 | 2006 11 18 | G96 | 0.4+ | 0.6− |
| 2001 07 19 | 644 | 0.1− | 0.3− | 2006 10 30 | 703 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.6− |
| 2003 03 07 | 645 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.7− |
| 2003 03 07 | 645 | 0.0 | 0.0 | 2006 10 30 | 703 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2006 09 19 | 699 | (0.2+ | 1.9−) | 2006 11 14 | 704 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3− | 0.4− |
| 2006 09 19 | 699 | 0.4− | 0.3+ | 2006 11 14 | 704 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.3− | 0.4− |
| 2006 09 19 | 699 | 0.2+ | 0.8+ | 2006 11 14 | 704 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2006 09 19 | 699 | 0.4− | 0.2+ | 2006 11 14 | 704 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2006 10 09 | 644 | 0.2− | 0.2− | 2006 11 14 | 704 | 0.4+ | 0.4− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2006 10 09 | 644 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.3+ | 0.1+ |
| 2006 10 09 | 644 | 0.5+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | (2.1− | 2.7+) | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2006 10 20 | 644 | 0.4− | 0.4− | 2006 11 17 | 704 | 0.5+ | 0.7+ | 2006 11 29 | 704 | 0.1+ | 1.4+ |
| 2006 10 21 | 683 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.5+ | 0.1− | 2006 11 29 | 704 | 0.6+ | 1.5+ |
| 2006 10 21 | 683 | 0.4+ | 1.2+ | 2006 11 17 | 704 | 0.8+ | 1.2+ | 2006 11 29 | 704 | 0.3+ | 1.1+ |
| 2006 10 21 | 683 | 0.5− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.4+ | 2006 11 29 | 704 | 0.1+ | 0.5+ |
| 2006 10 22 | 683 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 1.0− | 0.5− | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2006 10 22 | 683 | 0.4+ | 0.6+ | 2006 11 18 | 704 | 0.8− | 1.0+ | 2006 12 01 | 691 | 0.1− | 0.1− |
| 2006 10 22 | 683 | 0.1+ | 0.3+ | 2006 11 18 | 704 | (1.9+ | 0.1−) | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2006 10 23 | 683 | 0.2+ | 1.2− | 2006 11 18 | 704 | (0.9− | 2.1+) | 2006 12 01 | 691 | 0.2− | 0.1− |
| 2006 10 23 | 683 | 0.2+ | 0.6− | 2006 11 18 | G96 | 0.1+ | 0.6− | | | | |

**2006 TJ$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.98955 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18350431 | $\omega$ | 92.02203 | | +0.47463408 | | −0.87993054 |
| $a$ | 3.0669395 | $\Omega$ | 329.61382 | | +0.79007320 | | +0.43648095 |
| $e$ | 0.0467780 | $i$ | 2.38947 | | +0.38795209 | | +0.18763430 |
| $P$ | 5.37 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 27 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.1− |
| 1995 08 27 | 691 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.4− | 2006 11 21 | 691 | 0.2− | 0.2− |
| 1995 08 27 | 691 | (2.2− | 4.7−) | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2004 06 17 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.3− | 2006 11 21 | 691 | 0.2+ | 0.2− |
| 2004 06 17 | 691 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | (0.4+ | 1.6−) |
| 2004 06 17 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.4+ | 0.2− |
| 2006 09 28 | G96 | 0.1− | 0.5− | 2006 11 09 | 691 | 0.3+ | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.6− | 0.1+ |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2006 10 15 | 691 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2006 10 15 | 691 | 1.1− | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2006 10 21 | 691 | 0.5− | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.8+ | | | | |
| 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.3+ | | | | |

**2006 TO$_{106}$ = 2006 SZ$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.46293 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28492912 | $\omega$ | 357.89226 | | +0.44067443 | −0.89652103 | |
| $a$ | 2.2872387 | $\Omega$ | 65.95818 | | +0.82431806 | +0.38415129 | |
| $e$ | 0.2163238 | $i$ | 2.84599 | | +0.35539526 | +0.22063053 | |
| $P$ | 3.46 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.2+ | 0.4+ | 2006 10 01 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2001 03 25 | 695 | 0.0 | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2004 01 18 | 644 | 0.1+ | 0.2+ | 2006 10 15 | 703 | 0.8− | 0.1+ | 2006 11 06 | 644 | 0.1− | 0.1+ |
| 2004 01 18 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 703 | 0.4− | 0.3+ | 2006 11 06 | 644 | 0.0 | 0.5+ |
| 2004 01 18 | 644 | 0.0 | 0.2+ | 2006 10 15 | 703 | 0.1− | 0.7− | 2006 11 06 | 644 | 0.1− | 0.6+ |
| 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 15 | 703 | 1.4− | 0.1+ | 2006 11 11 | 703 | (0.5+ | 1.7−) |
| 2006 09 17 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.5− |
| 2006 09 17 | 691 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 703 | (1.6+ | 0.9−) |
| 2006 09 27 | 691 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.8− |
| 2006 09 27 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2006 09 27 | 691 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2006 09 28 | 699 | 1.3+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2006 09 28 | 699 | 0.2− | 1.4− | 2006 10 21 | 703 | 0.8− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2006 09 28 | 699 | (2.5− | 0.8−) | 2006 10 22 | G96 | 0.4+ | 0.2− | | | | |
| 2006 10 01 | 691 | 0.3− | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.2− | | | | |

**2006 TQ$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.01178 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28567907 | $\omega$ | 351.03432 | | +0.61036197 | −0.79001673 | |
| $a$ | 2.2832341 | $\Omega$ | 61.32857 | | +0.73077571 | +0.53347646 | |
| $e$ | 0.1050708 | $i$ | 3.77214 | | +0.30565523 | +0.30211989 | |
| $P$ | 3.45 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 703 | 0.2+ | 0.2+ |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 10 15 | 703 | 0.3− | 0.1+ |
| 2003 12 18 | 691 | 0.1− | 0.0 | 2006 09 28 | 699 | 0.7− | 0.3− | 2006 10 15 | 703 | 0.2− | 0.2− |
| 2003 12 28 | 691 | 0.3+ | 0.4− | 2006 09 28 | 699 | 1.2− | 1.0+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2003 12 28 | 691 | 0.2− | 0.0 | 2006 09 28 | 699 | 1.0− | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2003 12 28 | 691 | 0.1+ | 0.3+ | 2006 09 28 | 699 | 1.1+ | 0.7− | 2006 10 22 | G96 | 0.2+ | 0.1− |
| 2006 09 27 | 691 | 0.3+ | 0.1− | 2006 10 15 | 703 | 0.8− | 0.5− | 2006 10 22 | G96 | 0.6+ | 0.3+ |

**2006 TS$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.68539 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24374264 | $\omega$ | 352.07753 | | +0.66602515 | −0.74535611 | |
| $a$ | 2.5381369 | $\Omega$ | 56.15600 | | +0.68629222 | +0.59694905 | |
| $e$ | 0.1404966 | $i$ | 2.01729 | | +0.29225586 | +0.29680987 | |
| $P$ | 4.04 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.2− | 0.1+ | 2002 11 07 | 695 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2002 10 10 | 644 | 0.0 | 0.0 | 2002 11 07 | 695 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1− | 0.3− |
| 2002 10 10 | 644 | 0.4− | 0.1+ | 2006 10 15 | 703 | 0.3+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.3− |
| 2002 10 30 | 644 | 0.4+ | 0.2+ | 2006 10 15 | 703 | 0.2+ | 0.7− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 2002 10 30 | 644 | 0.2+ | 0.4+ | 2006 10 15 | 703 | 0.1+ | 0.2+ | | | | |
| 2002 10 30 | 644 | 0.1+ | 0.0 | 2006 10 15 | 703 | 0.7− | 1.4+ | | | | |

**2006 TT$_{106}$ = 1995 UG$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.49430 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18259046 | $\omega$ | 272.05838 | | −0.45073519 | −0.89058882 | |
| $a$ | 3.0771641 | $\Omega$ | 205.01412 | | +0.86544023 | −0.41930490 | |
| $e$ | 0.2496015 | $i$ | 8.25894 | | +0.21874871 | −0.17616739 | |
| $P$ | 5.40 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.1+ | 0.1+ | 2003 05 01 | 291 | 0.2+ | 0.6+ | 2006 10 15 | D35 | 0.6+ | 0.0 |
| 1995 10 17 | 691 | 0.0 | 0.3+ | 2003 05 01 | 291 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 1995 10 17 | 691 | 0.2− | 0.3+ | 2003 05 01 | 291 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1995 10 22 | 691 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.5+ |
| 1995 10 22 | 691 | 0.2− | 0.6− | 2006 09 30 | G96 | 0.1− | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 1995 10 22 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.4+ |
| 2000 10 07 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.9+ |
| 2000 10 07 | 691 | 0.1− | 0.1+ | 2006 10 15 | D35 | 0.3+ | 0.2+ | | | | |
| 2000 10 07 | 691 | 0.1+ | 0.0 | 2006 10 15 | D35 | 0.0 | 0.1+ | | | | |

**2006 TC$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.74586 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24097478 | $\omega$ | 142.96614 | | +0.93206639 | +0.36110685 | |
| $a$ | 2.5575354 | $\Omega$ | 195.94213 | | −0.35264198 | +0.88580433 | |
| $e$ | 0.2296984 | $i$ | 6.10789 | | −0.08304141 | +0.29146617 | |
| $P$ | 4.09 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 16 | 691 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2001 05 16 | 691 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 05 16 | 691 | 0.3+ | 0.3+ | 2006 10 13 | D35 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2002 11 14 | 644 | 0.1− | 1.0+ | 2006 10 13 | D35 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2002 11 14 | 644 | 0.2− | 1.0+ | 2006 10 13 | D35 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2002 11 14 | 644 | 0.1+ | 1.1+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.1+ |
| 2005 04 06 | G96 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.2− |
| 2005 04 06 | G96 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2005 04 06 | G96 | 1.1+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.3+ | 0.6+ |
| 2005 04 06 | G96 | 0.0 | 0.7− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 | | | | |
| 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.3− | | | | |

**2006 TH$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.72648 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28421844 | $\omega$ | 192.00951 | | +0.71707940 | −0.69464881 | |
| $a$ | 2.2910499 | $\Omega$ | 212.22902 | | +0.64801187 | +0.69461447 | |
| $e$ | 0.1049315 | $i$ | 6.14611 | | +0.25666663 | +0.18701274 | |
| $P$ | 3.47 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.3− | 1.8+ |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.8− | 0.5+ |
| 2006 10 15 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.8− |
| 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.1− |
| 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 26 | 151 | 1.5+ | 0.7− |
| 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 26 | 151 | 0.3+ | 0.6− |
| 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.4+ | 2006 11 26 | 151 | 0.8− | 0.6− |
| 2006 10 21 | 644 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.7− | | | | |
| 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.9+ | 1.3+ | | | | |

**2006 TG$_{108}$ = 2000 AL$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.41661 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28654871 | $\omega$ | 282.89115 | | +0.81028938 | −0.45157661 | |
| $a$ | 2.2786122 | $\Omega$ | 105.03563 | | +0.56160495 | +0.78044864 | |
| $e$ | 0.2823036 | $i$ | 22.75246 | | −0.16742463 | +0.43241009 | |
| $P$ | 3.44 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 09 | 704 | 0.0 | 0.3+ | 2006 11 18 | 232 | 0.5+ | 0.1+ | 2006 11 18 | 711 | 0.1+ | 0.2+ |
| 2000 01 09 | 704 | 0.8− | 0.2+ | 2006 11 18 | 232 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2000 01 09 | 704 | 1.5− | 0.9− | 2006 11 18 | 232 | 0.1− | 0.4− | 2006 11 18 | 711 | 0.0 | 0.2+ |
| 2000 01 09 | 704 | 0.5− | 0.2+ | 2006 11 18 | 232 | 1.0+ | 0.0 | 2006 11 18 | 711 | 0.0 | 0.1+ |
| 2000 01 11 | 704 | 0.0 | 0.9+ | 2006 11 18 | 232 | 0.1− | 0.2− | 2006 11 18 | 734 | 0.2+ | 0.1− |
| 2000 01 11 | 704 | 0.3− | 1.3+ | 2006 11 18 | I77 | 0.3+ | 0.1− | 2006 11 18 | 734 | 0.1+ | 0.1− |
| 2000 01 11 | 704 | 0.2− | 0.8+ | 2006 11 18 | I77 | 0.1− | 0.3− | 2006 11 18 | 734 | 0.2+ | 0.0 |
| 2000 01 11 | 704 | 1.0+ | 1.7+ | 2006 11 18 | I77 | 0.3+ | 0.0 | 2006 11 18 | 423 | 0.2+ | 0.1− |
| 2000 01 11 | 704 | 0.3+ | 0.0 | 2006 11 18 | H98 | 0.1+ | 0.2− | 2006 11 18 | 423 | 0.2− | 0.6− |
| 2004 02 26 | 703 | 0.7− | 0.5+ | 2006 11 18 | H98 | 0.3+ | 0.1− | 2006 11 18 | D35 | 0.2− | 0.1− |
| 2004 02 26 | 703 | 0.1+ | 0.2+ | 2006 11 18 | H98 | 0.2− | 0.4− | 2006 11 18 | D35 | 0.1− | 0.2− |
| 2004 02 26 | 703 | 0.5− | 0.2− | 2006 11 18 | 448 | 0.2+ | 0.1− | 2006 11 18 | D35 | (1.7− | 0.5+) |
| 2004 02 26 | 703 | 0.0 | 0.3− | 2006 11 18 | 448 | 0.0 | 0.1+ | 2006 11 19 | A06 | 0.0 | 0.1− |
| 2005 07 01 | 644 | 0.7+ | 0.2− | 2006 11 18 | 448 | 0.1+ | 0.0 | 2006 11 19 | A06 | 0.2+ | 0.1+ |
| 2005 07 01 | 644 | 0.2+ | 0.0 | 2006 11 18 | 651 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.4− |
| 2005 07 01 | 644 | 0.0 | 0.6+ | 2006 11 18 | 651 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1− | 0.5− |
| 2006 10 01 | E12 | 0.1+ | 0.2+ | 2006 11 18 | 651 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7− | 0.2− |
| 2006 10 01 | E12 | 0.5− | 0.1+ | 2006 11 18 | 850 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2006 10 01 | E12 | 0.1− | 0.0 | 2006 11 18 | 850 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.8+ |
| 2006 10 01 | E12 | 0.1− | 0.6+ | 2006 11 18 | 850 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.1− | 0.2+ |
| 2006 11 17 | 703 | 0.0 | 0.1+ | 2006 11 18 | H06 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.0 | 0.2+ |
| 2006 11 17 | 703 | 0.2− | 0.4− | 2006 11 18 | H06 | 1.0− | 0.5− | 2006 11 22 | 703 | 0.8+ | 0.5− |
| 2006 11 17 | 703 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.4− |
| 2006 11 18 | 232 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1− | | | | |
| 2006 11 18 | 232 | 0.5+ | 0.5− | 2006 11 18 | G96 | 0.0 | 0.1− | | | | |

**2006 UC = 2003 BZ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.92613 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17773452 | $\omega$ | 198.69834 | | −0.19135538 | −0.93826600 | |
| $a$ | 3.1329601 | $\Omega$ | 263.13451 | | +0.93348485 | −0.08324812 | |
| $e$ | 0.1109295 | $i$ | 16.87280 | | +0.30329714 | −0.33574792 | |
| $P$ | 5.55 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 644 | 0.4+ | 1.2+ | 2006 09 27 | 703 | 0.4− | 0.6− | 2006 10 17 | 673 | 0.1+ | 0.2+ |
| 2003 01 25 | 644 | 0.1+ | 1.2+ | 2006 09 27 | 703 | 0.7− | 0.1+ | 2006 10 17 | 673 | 0.1− | 0.1+ |
| 2003 01 25 | 644 | (0.3+ | 1.5+) | 2006 09 27 | 703 | 0.9+ | 0.1− | 2006 10 17 | 673 | 0.1+ | 0.2+ |
| 2003 01 28 | 704 | 0.4+ | 0.9− | 2006 09 27 | 703 | 0.5− | 0.5+ | 2006 10 20 | 673 | 0.2+ | 0.1− |
| 2003 01 28 | 704 | 0.4+ | 0.7− | 2006 10 16 | 673 | 0.2+ | 0.0 | 2006 10 20 | 673 | 0.1+ | 0.2− |
| 2003 01 28 | 704 | (1.2− | 1.8−) | 2006 10 16 | 673 | 0.4+ | 0.3+ | 2006 10 20 | 673 | 0.1+ | 0.2− |
| 2003 01 28 | 704 | 1.2− | 0.7− | 2006 10 16 | 673 | 0.4− | 0.3− | 2006 10 20 | 673 | 0.1+ | 0.1− |

**2006 UD = 2001 SY$_{318}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.92248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19520248 | $\omega$ | 324.10520 | | +0.42763896 | −0.90267703 | |
| $a$ | 2.9431506 | $\Omega$ | 100.53350 | | +0.84031668 | +0.37742631 | |
| $e$ | 0.1104769 | $i$ | 2.79547 | | +0.33315581 | +0.20669678 | |
| $P$ | 5.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 704 | 0.1+ | 0.9+ | 2003 01 26 | 608 | 0.0 | 0.1+ | 2006 09 28 | 699 | 0.6− | 0.1+ |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2003 01 26 | 608 | 0.2+ | 0.7+ | 2006 10 11 | 104 | (0.7− | 1.8−) |
| 2001 09 21 | 704 | 0.6− | 0.6+ | 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 11 | 104 | 0.1+ | 1.3− |
| 2001 09 21 | 704 | 1.1− | 0.2+ | 2004 04 14 | 691 | 0.0 | 0.3+ | 2006 10 11 | 104 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.5− | 0.7+ | 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 10 11 | 104 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.6− | 0.1+ | 2006 09 20 | 691 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.6+ | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 0.7+ | 2006 09 20 | 691 | 0.3+ | 0.4− | 2006 10 16 | 703 | 0.5− | 0.8− |
| 2001 09 21 | 704 | 0.3+ | 0.6+ | 2006 09 20 | 691 | 0.3− | 0.4− | 2006 10 16 | 703 | (0.3+ | 1.5−) |
| 2001 09 21 | 704 | 0.3+ | 1.4+ | 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.8− | 1.5− |
| 2001 09 21 | 704 | 0.6− | 0.1+ | 2006 09 28 | 699 | 0.5+ | 0.8− | 2006 10 16 | 012 | 0.2+ | 0.3− |
| 2001 09 26 | 704 | 0.1+ | 0.6+ | 2006 09 28 | 691 | 0.0 | 0.5+ | 2006 10 16 | 012 | 0.2− | 0.0 |
| 2001 09 26 | 704 | 0.2+ | 0.1− | 2006 09 28 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 012 | 0.6+ | 0.2− |
| 2001 09 26 | 704 | 0.3− | 0.3− | 2006 09 28 | 699 | 0.1− | 0.1− | 2006 10 16 | 012 | 0.0 | 1.1+ |
| 2003 01 26 | 608 | 0.1+ | 0.6+ | 2006 09 28 | 699 | 0.4− | 1.4+ | 2006 10 16 | 012 | 0.3+ | 0.2− |

**2006 UV**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.48628 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26175166 | $\omega$ | 74.81653 | | +0.42725013 | +0.90159032 | |
| $a$ | 2.4203402 | $\Omega$ | 220.69280 | | −0.86430520 | +0.38527964 | |
| $e$ | 0.1440273 | $i$ | 5.96581 | | −0.26539375 | +0.19670917 | |
| $P$ | 3.77 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 10 20 | A44 | 0.4+ | 0.5+ |
| 2005 04 14 | 691 | 0.1+ | 0.8+ | 2006 10 16 | A44 | 0.1− | 0.3+ | 2006 10 20 | A44 | 0.4+ | 0.3+ |
| 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 10 16 | A44 | 0.3+ | 0.2+ | 2006 10 20 | A44 | 0.9+ | 0.2+ |
| 2005 04 14 | 691 | 0.4+ | 0.3+ | 2006 10 16 | A44 | 0.2+ | 0.3− | 2006 10 30 | A44 | 0.2− | 0.6+ |
| 2005 05 11 | G96 | 0.0 | 0.1+ | 2006 10 17 | A44 | 0.7− | 0.4+ | 2006 10 30 | A44 | 0.4+ | 0.0 |
| 2005 05 11 | G96 | 0.3− | 0.2+ | 2006 10 17 | A44 | 0.3+ | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.8− |
| 2005 05 11 | G96 | 0.1− | 0.4+ | 2006 10 17 | A44 | 0.3+ | 0.5+ | 2006 11 13 | G96 | 0.3− | 0.0 |
| 2005 05 11 | G96 | 0.5− | 0.8− | 2006 10 18 | A44 | 0.6+ | 0.7− | 2006 11 13 | G96 | 0.1− | 0.4+ |
| 2006 09 25 | 691 | 0.5+ | 0.1+ | 2006 10 18 | A44 | 0.4− | 0.6− | 2006 11 13 | G96 | 0.1+ | 0.2− |
| 2006 09 25 | 691 | 0.5+ | 0.2− | 2006 10 18 | A44 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.7+ |
| 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 20 | 691 | 0.3− | 0.2− |
| 2006 10 16 | 691 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.0 |

**2006 UA$_1$ = 2001 UV$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.32287 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20384211 | $\omega$ | 274.25675 | | +0.71480502 | −0.69818539 | |
| $a$ | 2.8593904 | $\Omega$ | 130.03102 | | +0.66050816 | +0.65529340 | |
| $e$ | 0.0684731 | $i$ | 2.98600 | | +0.22974497 | +0.28831878 | |
| $P$ | 4.84 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4+ | 0.0 | 2006 10 18 | A44 | 0.4+ | 0.0 | 2006 10 30 | A44 | 0.1− | 0.2− |
| 2001 10 20 | 704 | 0.6+ | 0.1+ | 2006 10 18 | A44 | 0.6+ | 0.1− | 2006 10 30 | A44 | 0.2− | 0.1+ |
| 2001 10 20 | 704 | 0.8+ | 0.8− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.5− |
| 2001 10 20 | 704 | (1.8+ | 0.8+) | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.3− | 0.1+ |
| 2001 10 23 | 704 | 1.1− | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.3+ | 0.5− |
| 2001 10 23 | 704 | 0.0 | 0.4− | 2006 10 18 | A44 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.1− | 0.6+ |
| 2001 10 23 | 704 | 0.1− | 0.0 | 2006 10 18 | A44 | 0.4+ | 1.1− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 10 23 | 704 | 0.2− | 0.3− | 2006 10 20 | A44 | 0.6+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | A44 | 0.2− | 0.6+ | 2006 10 20 | A44 | 0.4+ | 0.1− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2006 10 17 | A44 | 0.7− | 1.0+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2006 10 17 | A44 | 0.3− | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.2− | | | | |
| 2006 10 18 | A44 | 0.6+ | 0.2+ | 2006 10 22 | 691 | 0.3+ | 0.3+ | | | | |

**2006 UL$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.83943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23051424 | $\omega$ | 319.57506 | | −0.93445502 | +0.28814827 | |
| $a$ | 2.6343342 | $\Omega$ | 238.36477 | | −0.22878919 | −0.93604757 | |
| $e$ | 0.0685777 | $i$ | 14.22385 | | −0.27285404 | −0.20195424 | |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 10 | 644 | 0.1+ | 0.1+ | 2003 01 27 | 644 | 0.3+ | 0.8− | 2006 11 01 | G96 | 0.0 | 0.4− |
| 2001 08 10 | 644 | 0.1− | 0.2− | 2003 01 27 | 644 | 0.4+ | 0.9− | 2006 11 01 | G96 | 0.0 | 0.1− |
| 2002 11 13 | 644 | 0.3− | 0.3− | 2006 10 17 | 461 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2002 11 13 | 644 | 0.3− | 0.1+ | 2006 10 17 | 461 | 0.1− | 0.2+ | 2006 11 02 | 691 | 0.1+ | 0.2− |
| 2002 11 24 | 644 | 0.0 | 0.6− | 2006 10 17 | 461 | 0.3− | 0.3+ | 2006 11 02 | 691 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.1− | 0.3− | 2006 10 17 | 461 | 0.1− | 0.0 | 2006 11 02 | 691 | 0.1+ | 0.2− |
| 2002 11 24 | 644 | 0.4− | 0.3− | 2006 10 17 | 461 | 0.3− | 0.1+ | 2006 11 22 | 291 | 0.3+ | 0.1+ |
| 2002 12 10 | 644 | 0.2− | 0.1+ | 2006 10 17 | 461 | 0.0 | 0.1+ | 2006 11 22 | 291 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 461 | 0.1− | 0.0 | 2006 11 22 | 291 | 0.3+ | 0.2+ |
| 2002 12 10 | 644 | 0.3+ | 1.3+ | 2006 10 19 | 461 | 0.2+ | 0.1− | 2006 11 23 | 291 | 0.1+ | 0.0 |
| 2002 12 27 | 644 | 0.2− | 0.1+ | 2006 10 19 | 461 | 0.1− | 0.0 | 2006 11 23 | 291 | 0.2− | 0.2+ |
| 2002 12 27 | 644 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.7− | 0.3− | 2006 11 23 | 291 | 0.1− | 0.1+ |
| 2002 12 27 | 644 | 0.4+ | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.4+ | 2006 11 24 | 291 | 0.1+ | 0.1− |
| 2003 01 18 | 644 | 0.3+ | 0.8+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 24 | 291 | 0.2+ | 0.0 |
| 2003 01 18 | 644 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 24 | 291 | 0.3+ | 0.0 |

**2006 UP$_1$ = 2005 JB$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.96564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29391825 | $\omega$ | 307.99518 | | +0.89653061 | +0.44174177 | |
| $a$ | 2.2403628 | $\Omega$ | 25.83930 | | −0.37887428 | +0.80338334 | |
| $e$ | 0.1701876 | $i$ | 4.35836 | | −0.22953680 | +0.39929864 | |
| $P$ | 3.35 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 01 18 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 22 | 683 | 0.3− | 0.3− |
| 2004 01 18 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 22 | 683 | 1.3− | 0.2+ |
| 2005 03 09 | G96 | 0.4+ | 0.1+ | 2006 10 03 | 704 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2005 03 09 | G96 | 0.1− | 0.3+ | 2006 10 03 | 704 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.3− |
| 2005 03 09 | G96 | 0.1+ | 0.2− | 2006 10 03 | 704 | 0.6+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.2− |
| 2005 03 09 | G96 | 0.2− | 0.6+ | 2006 10 16 | 683 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2005 05 02 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 683 | 0.8+ | 0.0 | 2006 11 07 | 644 | 0.2+ | 0.3+ |
| 2005 05 02 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 683 | 1.4+ | 1.2+ | 2006 11 07 | 644 | 0.2+ | 0.3+ |
| 2005 05 02 | 691 | 0.1+ | 0.0 | 2006 10 17 | 683 | 0.0 | 0.6− | 2006 11 07 | 644 | 0.4+ | 0.2+ |
| 2005 05 04 | G96 | 0.3− | 0.3+ | 2006 10 17 | 683 | 0.3+ | 0.2− | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2005 05 04 | G96 | 0.4+ | 0.3+ | 2006 10 19 | 683 | 1.0− | 0.4− | 2006 11 07 | 644 | 0.1+ | 0.4+ |
| 2005 05 04 | G96 | 0.2− | 0.3− | 2006 10 19 | 683 | 0.3− | 1.2+ | 2006 11 07 | 644 | 0.1+ | 0.0 |
| 2005 05 04 | G96 | 0.4− | 0.4+ | 2006 10 19 | 683 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2006 08 30 | 699 | 1.2− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.1+ | 1.2− |
| 2006 08 30 | 699 | 1.2+ | 0.4− | 2006 10 19 | 644 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.9+ | 0.3− |
| 2006 08 30 | 699 | 0.8+ | 0.6+ | 2006 10 19 | 644 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.7− |
| 2006 08 30 | 699 | (2.6− | 0.9−) | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.1− |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.3− | 1.0+ |
| 2006 09 18 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 1.4+ |
| 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.6− | 0.6+ |

**2006 UF$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.91905 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22876229 | $\omega$ | 106.82782 | | +0.73928093 | +0.66577990 | |
| $a$ | 2.6477670 | $\Omega$ | 211.64776 | | −0.66754360 | +0.70483204 | |
| $e$ | 0.0345408 | $i$ | 11.09819 | | −0.08859603 | +0.24484468 | |
| $P$ | 4.31 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 691 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2000 04 05 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 1.0− | 1.1− | 2006 10 22 | 691 | 0.4+ | 0.0 |
| 2000 04 05 | 691 | 0.1+ | 0.0 | 2006 10 16 | 621 | 0.0 | 0.5− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 07 13 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 621 | 0.5+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1+ |
| 2001 07 13 | 644 | 0.1+ | 0.6+ | 2006 10 16 | 621 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.4− | 0.5+ |
| 2001 07 13 | 644 | 0.3+ | 0.6+ | 2006 10 17 | 621 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2001 08 23 | 699 | 0.3+ | 0.2+ | 2006 10 17 | 621 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2001 08 23 | 699 | 0.7− | 0.6− | 2006 10 17 | 621 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.6− |
| 2001 08 23 | 699 | 0.4− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.5+ | 1.1− |
| 2001 08 23 | 699 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2004 03 27 | 703 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.7− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2004 03 27 | 703 | 0.5+ | 0.8+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2004 03 27 | 703 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2004 03 27 | 703 | 0.1− | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.5+ |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 1.6− | 1.1+ |
| 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.3− | 1.8+ |

**2006 UN$_2$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.10858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19205177 | $\omega$ | 95.79356 | | +0.97094360 | −0.20601561 | |
| $a$ | 2.9752526 | $\Omega$ | 276.13963 | | +0.14050901 | +0.90264662 | |
| $e$ | 0.1535079 | $i$ | 7.03438 | | +0.19371562 | +0.37787120 | |
| $P$ | 5.13 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 28 | 691 | 0.1− | 0.1− | 2006 09 06 | 644 | 1.1− | 0.4− | 2006 10 17 | 703 | 1.5+ | 0.4+ |
| 1998 02 28 | 691 | 0.0 | 0.2− | 2006 09 16 | 703 | 0.3− | 0.4− | 2006 10 17 | 703 | 0.2+ | 0.2− |
| 1998 02 28 | 691 | 0.1− | 0.2− | 2006 09 16 | 703 | 0.4− | 0.4− | 2006 10 17 | 703 | 0.1− | 1.0− |
| 2001 10 13 | 699 | 0.2− | 0.9+ | 2006 09 16 | 703 | 0.2+ | 0.2− | 2006 10 17 | 703 | 0.7+ | 0.2+ |
| 2001 10 13 | 699 | 0.9− | 0.4− | 2006 09 16 | 703 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2001 10 13 | 699 | 0.3− | 0.4+ | 2006 09 27 | 703 | 0.7− | 0.1+ | 2006 10 23 | 703 | 0.1− | 1.0− |
| 2001 10 13 | 699 | (1.3− | 2.1−) | 2006 09 27 | 703 | 0.4+ | 1.8+ | 2006 10 23 | 644 | 0.1+ | 0.4− |
| 2001 10 20 | 644 | 0.2+ | 0.6+ | 2006 09 27 | 703 | 0.4− | 0.3− | 2006 10 23 | 703 | 0.8+ | 0.2+ |
| 2001 10 20 | 644 | 0.3+ | 0.4+ | 2006 09 27 | 703 | 0.2+ | 0.4− | 2006 10 23 | 703 | 0.3− | 1.3− |
| 2001 10 20 | 644 | 0.1+ | 0.5+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 23 | 703 | 0.3+ | 0.5− |
| 2003 01 27 | 644 | 0.3− | 0.1− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.2− | 0.1− |
| 2003 01 27 | 644 | 0.1+ | 0.2+ | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 24 | 644 | 0.1+ | 0.1− |
| 2003 01 27 | 644 | 0.2+ | 0.0 | 2006 10 16 | 683 | 0.4+ | 0.5− | 2006 10 24 | 644 | 0.2+ | 0.1− |
| 2006 09 06 | 644 | 0.1+ | 0.5+ | 2006 10 16 | 683 | 0.5+ | 0.1− | 2006 10 24 | 644 | 0.2− | 0.2− |
| 2006 09 06 | 644 | 0.1− | 0.5+ | 2006 10 16 | 683 | 0.6− | 1.5+ | | | | |

### 2006 $UQ_2$ = 2002 $XS_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.36993 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23539078 | $\omega$ | 317.85730 | | +0.91619862 | −0.39026041 | |
| $a$ | 2.5978242 | $\Omega$ | 65.32424 | | +0.38917641 | +0.81244991 | |
| $e$ | 0.2871581 | $i$ | 5.74608 | | +0.09550819 | +0.43315350 | |
| $P$ | 4.19 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 08 | 291 | 0.3+ | 0.1− | 2006 09 18 | 703 | 1.6− | 0.1− | 2006 10 16 | 703 | 0.2− | 0.9− |
| 2002 12 08 | 291 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.5+ | 0.6− | 2006 10 16 | 703 | 0.8− | 1.2− |
| 2002 12 08 | 291 | 0.2− | 0.1− | 2006 09 26 | 703 | 0.8− | 0.2− | 2006 10 17 | 703 | 0.3+ | 0.5− |
| 2002 12 13 | 926 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.6− | 2006 10 17 | 703 | 0.2+ | 0.7+ |
| 2002 12 13 | 926 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.0 | 0.2+ | 2006 10 17 | 703 | 0.9− | 0.4+ |
| 2002 12 13 | 926 | 0.7+ | 0.2− | 2006 09 26 | 703 | 0.9+ | 1.1+ | 2006 10 17 | 703 | 0.9+ | 0.6+ |
| 2006 09 18 | 703 | 0.1+ | 0.7− | 2006 10 16 | 703 | 0.2+ | 0.1− | | | | |
| 2006 09 18 | 703 | 1.1+ | 0.9+ | 2006 10 16 | 703 | 0.0 | 1.0+ | | | | |

### 2006 $UC_3$ = 2000 $SG_{328}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.72133 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17405871 | $\omega$ | 242.03943 | | +0.87971090 | −0.47491061 | |
| $a$ | 3.1769146 | $\Omega$ | 146.29845 | | +0.44997820 | +0.81521908 | |
| $e$ | 0.1888314 | $i$ | 2.46315 | | +0.15371518 | +0.33147816 | |
| $P$ | 5.66 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 691 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.2− |
| 2000 09 30 | 691 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.4− | 0.1− | 2006 11 10 | 291 | 0.1+ | 0.0 |
| 2000 09 30 | 691 | 0.4+ | 0.2− | 2006 10 18 | 691 | (1.9+ | 0.8+) | 2006 11 10 | 291 | 0.0 | 0.1+ |
| 2000 10 02 | 704 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 10 | 291 | 0.0 | 0.0 |
| 2000 10 02 | 704 | 0.2− | 1.2+ | 2006 10 22 | 691 | 0.6− | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.2+ |
| 2000 10 02 | 704 | 0.4+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.2− |
| 2000 10 02 | 704 | 0.6− | 0.7− | 2006 11 02 | 703 | 1.2+ | 1.3+ | 2006 11 10 | 644 | 0.0 | 0.1− |
| 2000 10 02 | 704 | 0.7− | 0.3+ | 2006 11 02 | 703 | 0.8+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2005 07 15 | 691 | 0.0 | 0.2+ | 2006 11 02 | 703 | (1.0+ | 1.6+) | 2006 11 15 | G96 | 0.5− | 0.1− |
| 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 11 02 | 703 | 1.3+ | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2005 07 15 | 691 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.2− | 0.6− |
| 2006 10 16 | 703 | 0.8+ | 0.5+ | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.5− |
| 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.5+ | 0.9+ |
| 2006 10 16 | 703 | 1.0+ | 1.3− | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.3− | 0.7+ |

### 2006 $UE_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.62250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22970099 | $\omega$ | 207.35932 | | +0.73430540 | −0.67755933 | |
| $a$ | 2.6405484 | $\Omega$ | 195.51662 | | +0.64763562 | +0.71751835 | |
| $e$ | 0.1956128 | $i$ | 8.88945 | | +0.20338063 | +0.16149541 | |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.2− | 2006 11 11 | 703 | 0.4− | 0.2+ |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 10 17 | 683 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2004 03 23 | 691 | 0.4− | 0.0 | 2006 10 17 | 683 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 10 17 | 683 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 10 19 | 683 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.6− | 0.1− |
| 2004 04 13 | 691 | 0.1− | 0.1+ | 2006 10 19 | 683 | 0.5+ | 1.3+ | 2006 11 13 | 703 | 0.2− | 0.2− |
| 2006 07 22 | G96 | 0.1− | 0.4− | 2006 10 19 | 683 | 0.4+ | 0.9+ | 2006 11 13 | 703 | 0.3− | 0.4− |
| 2006 07 22 | G96 | 0.4+ | 0.0 | 2006 10 20 | 683 | (2.7+ | 0.2−) | 2006 11 13 | 703 | 0.4− | 0.5− |
| 2006 07 22 | G96 | 0.3− | 0.0 | 2006 10 20 | 683 | 0.2+ | 0.7+ | 2006 11 13 | 958 | 0.6− | 0.0 |
| 2006 07 22 | G96 | 0.1+ | 0.5+ | 2006 10 20 | 683 | (2.5+ | 0.8+) | 2006 11 14 | 958 | 0.1+ | 0.2− |
| 2006 09 30 | 703 | 0.6− | 0.6− | 2006 10 31 | A50 | 0.3− | 0.4+ | 2006 11 14 | 958 | 0.4+ | 0.2+ |
| 2006 09 30 | 703 | 0.1+ | 0.6+ | 2006 11 01 | 703 | 0.0 | 0.3− | 2006 11 19 | 703 | 0.2+ | 0.9+ |
| 2006 09 30 | 703 | 0.6− | 0.2+ | 2006 11 01 | 703 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.1+ | 0.2− |
| 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.0 | 2006 11 19 | 703 | 0.4− | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 01 | 703 | 1.0+ | 0.4+ | 2006 11 19 | 703 | 0.3− | 0.1+ |
| 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.6− | 0.6+ |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.2− | 0.2+ |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.1− | 0.1+ |
| 2006 10 16 | 683 | 1.2+ | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2006 10 16 | 683 | (1.7+ | 0.3+) | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.6+ |
| 2006 10 16 | 683 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.2− | 0.5− |
| 2006 10 16 | 703 | 0.3− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2006 10 16 | 703 | 0.2+ | 0.7+ | 2006 11 09 | 644 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.5+ | 0.5− |
| 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.4+ | | | | |

### 2006 $UJ_3$ = 2005 $MA_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.97977 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20586885 | $\omega$ | 268.63565 | | −0.58067651 | −0.81403787 | |
| $a$ | 2.8405927 | $\Omega$ | 216.87170 | | +0.75501585 | −0.53268635 | |
| $e$ | 0.0250526 | $i$ | 1.19711 | | +0.30457489 | −0.23148997 | |
| $P$ | 4.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 10 | 691 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.7+ |
| 1999 03 10 | 691 | 0.3+ | 0.8+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 1999 03 10 | 691 | 0.7+ | 1.0+ | 2006 10 12 | 691 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 06 30 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 1.2+ | 0.8− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2005 06 30 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 11 | G96 | 0.4− | 0.2− |
| 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2005 07 05 | G96 | 0.5− | 0.0 | 2006 10 18 | 291 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2005 07 05 | G96 | 0.4− | 0.4− | 2006 10 18 | 291 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2005 07 05 | G96 | 0.2− | 0.1− | 2006 10 18 | 291 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2005 07 05 | G96 | 0.6− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.5+ | | | | |
| 2006 09 27 | G96 | 0.3− | 0.4− | 2006 10 28 | 691 | 0.2− | 0.6+ | | | | |

### 2006 $UK_3$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.09021 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27142731 | $\omega$ | 255.59798 | | +0.78556818 | −0.61806668 | |
| $a$ | 2.3624739 | $\Omega$ | 142.56404 | | +0.58482466 | +0.72598836 | |
| $e$ | 0.2106279 | $i$ | 2.79115 | | +0.20214535 | +0.30155343 | |
| $P$ | 3.63 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 02 23 | 691 | 0.0 | 0.9− | 2004 02 18 | 291 | 0.3+ | 1.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 1993 02 23 | 691 | 0.0 | 0.4− | 2004 02 18 | 291 | 0.5+ | 1.1+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 1993 02 23 | 691 | 0.6− | 0.5− | 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.2− | 0.4− |
| 1999 12 04 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 1999 12 04 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 1999 12 04 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.2− |
| 2002 08 08 | 644 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 1.0− |
| 2002 08 08 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2002 08 08 | 644 | 0.5− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.6+ | 2006 11 14 | 704 | (1.2− | 1.6+) |
| 2002 08 17 | 644 | 0.1− | 0.3+ | 2006 10 16 | 703 | 0.9− | 0.0 | 2006 11 14 | 704 | (1.4+ | 1.6+) |
| 2002 08 17 | 644 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 704 | (1.8+ | 1.1+) |
| 2002 08 17 | 644 | 0.4− | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2002 08 17 | 644 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.4− | 0.4+ |
| 2002 08 17 | 644 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.6− | 0.5+ |
| 2002 08 17 | 644 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.7+ |
| 2002 08 30 | 291 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2002 08 30 | 291 | 0.2+ | 0.7+ | 2006 10 28 | 683 | (2.4+ | 0.1+) | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 08 30 | 291 | 0.0 | 0.5+ | 2006 10 28 | 683 | (3.4+ | 1.2−) | 2006 11 17 | 704 | 0.1+ | 1.3+ |
| 2002 09 04 | 644 | 0.2− | 0.2+ | 2006 10 28 | 683 | 0.3+ | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2002 09 04 | 644 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2002 09 04 | 644 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.3− | 1.3+ | | |
| 2004 02 16 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.6+ | | |
| 2004 02 16 | 691 | 0.5+ | 0.3+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.7+ | 1.1+ | | |
| 2004 02 18 | 291 | 0.1+ | 1.0+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | (0.7+ | 1.8+) | | |

**2006 UA$_4$ = 2005 MX$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 108.55075 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22194608 | $\omega$ | 45.52819 | | −0.29348479 | +0.94893599 | |
| $a$ | 2.7017037 | $\Omega$ | 208.02297 | | −0.93203591 | −0.31094533 | |
| $e$ | 0.0624926 | $i$ | 14.25677 | | −0.21254586 | +0.05323055 | |
| $P$ | 4.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.6+ | 0.2− | 2005 07 11 | 691 | 0.2+ | 0.1− | 2006 10 18 | 461 | 0.3− | 0.2+ | | |
| 2002 11 15 | 644 | 0.5− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 18 | 461 | 0.3− | 0.4+ | | |
| 2005 06 30 | 644 | 0.5− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 18 | 461 | 0.5− | 0.6+ | | |
| 2005 06 30 | 644 | 0.5− | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− | | |
| 2005 06 30 | 644 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.7− | 0.0 | | |
| 2005 07 11 | 691 | 0.1− | 0.1+ | 2006 10 17 | 461 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− | | |
| 2005 07 11 | 691 | 0.2+ | 0.1− | 2006 10 17 | 461 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.6+ | 0.1− | | |

**2006 UJ$_4$ = 2005 LL$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.50140 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29872247 | $\omega$ | 189.32095 | | +0.34146504 | −0.93967230 | |
| $a$ | 2.2162774 | $\Omega$ | 240.71526 | | +0.86383875 | +0.32232751 | |
| $e$ | 0.0517156 | $i$ | 1.34253 | | +0.37038391 | +0.11454668 | |
| $P$ | 3.30 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 06 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 104 | 0.8+ | 0.5+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | | |
| 1996 10 06 | 691 | 0.1+ | 0.0 | 2006 10 17 | 104 | 0.8+ | 0.6+ | 2006 11 10 | 644 | 0.1+ | 0.2+ | | |
| 1996 10 06 | 691 | 0.0 | 0.1+ | 2006 10 17 | 104 | (0.5− | 3.2−) | 2006 11 10 | 644 | 0.1+ | 0.1+ | | |
| 1998 03 24 | 691 | 0.4− | 0.6+ | 2006 10 17 | 104 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.1− | 0.2+ | | |
| 1998 03 24 | 691 | 0.2− | 0.4+ | 2006 10 17 | 104 | 0.5+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 1998 03 24 | 691 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 2001 03 04 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.3− | 0.1+ | | |
| 2001 03 04 | 691 | 0.6+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.2+ | 2006 11 11 | 703 | (1.6+ | 0.5−) | | |
| 2001 03 04 | 691 | 0.5+ | 0.1+ | 2006 10 26 | 104 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.7− | 1.0+ | | |
| 2005 06 10 | 691 | 0.2+ | 0.3+ | 2006 10 26 | 104 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 1.0+ | | |
| 2005 06 10 | 691 | 0.3+ | 0.3+ | 2006 10 26 | 104 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.5+ | | |
| 2005 06 10 | 691 | 0.5+ | 0.1+ | 2006 10 26 | 104 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.2+ | | |
| 2005 06 17 | 691 | 0.2+ | 0.5+ | 2006 10 26 | 104 | 0.6− | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.1+ | | |
| 2005 06 17 | 691 | 0.0 | 0.3+ | 2006 10 26 | 104 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1+ | | |
| 2005 06 17 | 691 | 0.1− | 0.3+ | 2006 10 26 | 104 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.8− | | |
| 2006 09 27 | G96 | 0.0 | 0.5− | 2006 10 29 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 1.2− | | |
| 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 10 29 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.2+ | | |
| 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | 1.3− | 0.3+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.5+ | | |
| 2006 10 16 | 104 | 0.7− | 1.0+ | 2006 11 09 | 691 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 2006 10 16 | 104 | (1.8− | 2.0+) | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1+ | | |
| 2006 10 16 | 104 | 0.3− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ | | | | | | |
| 2006 10 17 | 104 | 0.2+ | 0.7+ | 2006 11 09 | 691 | 0.3− | 0.1+ | | | | | | |

**2006 UU$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.53028 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29498924 | $\omega$ | 218.87147 | | +0.83265941 | +0.55341736 | |
| $a$ | 2.2349369 | $\Omega$ | 107.51531 | | −0.50265746 | +0.77058080 | |
| $e$ | 0.1362193 | $i$ | 1.21298 | | −0.23240867 | +0.31612412 | |
| $P$ | 3.34 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 07 | 291 | 0.0 | 0.2+ | 2006 09 28 | 699 | 1.3+ | 0.6− | 2006 10 17 | G96 | 0.0 | 0.2− | | |
| 2002 06 07 | 291 | 0.3− | 0.2− | 2006 09 28 | 699 | (3.0+ | 0.8−) | 2006 10 29 | 291 | 0.1− | 0.3+ | | |
| 2002 06 07 | 291 | 0.3+ | 0.2− | 2006 09 28 | 699 | 1.0+ | 0.5− | 2006 10 29 | 291 | 0.2− | 0.3+ | | |
| 2005 04 06 | G96 | 0.6+ | 0.7+ | 2006 09 28 | 699 | 0.6+ | 0.3+ | 2006 10 29 | 291 | 0.2+ | 0.3+ | | |
| 2005 04 06 | G96 | 0.1− | 0.1− | 2006 10 03 | 691 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.3− | | |
| 2005 04 06 | G96 | 0.4− | 0.2− | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− | | |
| 2005 04 06 | G96 | 0.1+ | 0.4− | 2006 10 03 | 691 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.2− | | |
| 2005 05 10 | 691 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.2− | | |
| 2005 05 10 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | | |
| 2005 05 10 | 691 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.4− | | |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 291 | 0.7− | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 291 | 0.3− | 0.2+ | 2006 11 20 | G96 | 1.6+ | 0.6− | | |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 16 | 291 | 0.5− | 0.2+ | 2006 11 20 | G96 | 0.2+ | 0.0 | | |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.7− | 2006 11 20 | G96 | 0.9+ | 0.4+ | | |
| 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 20 | G96 | 0.3− | 0.4− | | |
| 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.6− | | | | | | |

**2006 UW$_4$ = 2004 DY$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.20030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22334578 | $\omega$ | 331.28338 | | +0.98877141 | −0.13250653 | |
| $a$ | 2.6904043 | $\Omega$ | 36.53505 | | +0.14938268 | +0.86409943 | |
| $e$ | 0.0373202 | $i$ | 6.66434 | | +0.00398952 | +0.48556585 | |
| $P$ | 4.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 03 | 691 | 0.0 | 0.0 | 2004 03 17 | 691 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.7− | | |
| 2000 04 03 | 691 | 0.3+ | 0.0 | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.0 | | |
| 2000 04 03 | 691 | 0.1− | 0.3+ | 2004 03 17 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2004 02 29 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2004 02 29 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1− | | |
| 2004 02 29 | 691 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.5+ | | |
| 2004 03 01 | 291 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.1+ | 1.0− | 2006 11 22 | G96 | 0.1− | 0.0 | | |
| 2004 03 01 | 291 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.5+ | | |
| 2004 03 01 | 291 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.2− | 0.2− | | | | | | |

**2006 UY$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.93249 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17619771 | $\omega$ | 263.43318 | | +0.43422265 | +0.89512265 | |
| $a$ | 3.1511509 | $\Omega$ | 32.90301 | | −0.73541144 | +0.41702623 | |
| $e$ | 0.0541193 | $i$ | 10.71802 | | −0.52021217 | +0.15762158 | |
| $P$ | 5.59 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.5+ | 0.3− | | |
| 1995 11 16 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.5− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.4+ | | |
| 1995 11 16 | 691 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.4+ | 0.9+ | 2006 11 01 | 691 | 0.3− | 0.1+ | | |
| 2004 04 22 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.4− | | |
| 2004 04 22 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.2− | | |
| 2004 04 22 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.4− | 0.5− | 2006 11 16 | G96 | 0.0 | 0.6− | | |
| 2004 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 16 | G96 | 0.8+ | 0.0 | | |
| 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.1− | 0.5− | | |
| 2004 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.6− | 0.2− | | |
| 2006 09 17 | 691 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.6− | 0.6− | | |
| 2006 09 17 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.5− | 0.6− | | |

**2006 UZ$_4$ = 2004 HF$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 288.31328 | | | (2000.0) | | |
| $n$ | 0.23273761 | $\omega$ | 61.91943 | | −0.30770139 | −0.94990383 |
| $a$ | 2.6175300 | $\Omega$ | 46.11220 | | +0.84411279 | −0.29910184 |
| $e$ | 0.1696453 | $i$ | 4.36049 | | +0.43908251 | −0.09066869 |
| $P$ | 4.23 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 049 | 0.0 | 0.1− | 2004 04 22 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1− |
| 2002 10 31 | 049 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2002 10 31 | 049 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2004 04 16 | 691 | 0.2+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2004 04 16 | 691 | 0.2+ | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.6+ |
| 2004 04 16 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2004 04 22 | 691 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.6− | | | | |

**2006 UB$_5$ = 2006 RU$_{55}$ = 2004 GK$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.61457 | | | (2000.0) | | |
| $n$ | 0.19251911 | $\omega$ | 288.66507 | | +0.97941902 | +0.19811793 |
| $a$ | 2.9704357 | $\Omega$ | 59.92410 | | −0.16428725 | +0.89352662 |
| $e$ | 0.0344487 | $i$ | 2.55459 | | −0.11725222 | +0.40293853 |
| $P$ | 5.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 16 | 691 | 0.4+ | 0.6+ | 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.1− |
| 1999 05 16 | 691 | 0.4+ | 0.3+ | 2006 09 14 | 691 | 0.4− | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.4− |
| 1999 05 16 | 691 | 0.2− | 0.5+ | 2006 09 14 | 691 | 0.1− | 0.8+ | 2006 10 29 | 291 | 0.0 | 0.2+ |
| 2003 01 25 | 645 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.2+ | 2006 10 29 | 291 | 0.0 | 0.3+ |
| 2003 01 25 | 645 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.5+ | 2006 10 29 | 291 | 0.1− | 0.1− |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 09 18 | 691 | 0.7+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2004 03 23 | 691 | 0.2+ | 0.6+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.5− | 0.5− |
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 2004 04 13 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2004 04 13 | 691 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 04 20 | 691 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.7+ |
| 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.8− | 0.2− | | | | |
| 2004 04 20 | 691 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.4− | | | | |

**2006 UE$_5$ = 2001 DS$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.87403 | | | (2000.0) | | |
| $n$ | 0.27736927 | $\omega$ | 333.51769 | | +0.53995391 | +0.84136352 |
| $a$ | 2.3286121 | $\Omega$ | 329.14632 | | −0.76384580 | +0.47804084 |
| $e$ | 0.1635063 | $i$ | 2.63812 | | −0.35353837 | +0.25215943 |
| $P$ | 3.55 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 16 | 691 | 0.0 | 0.0 | 2005 03 17 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 703 | 0.0 | 1.1− |
| 2001 02 16 | 691 | 0.1+ | 0.5+ | 2005 05 10 | 691 | 0.1− | 0.3+ | 2006 10 21 | 703 | 0.9− | 0.8− |
| 2001 02 16 | 691 | 0.2+ | 0.2+ | 2005 05 10 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.8− |
| 2001 02 17 | 691 | 0.1− | 0.0 | 2005 05 10 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 644 | 0.5− | 0.3+ |
| 2001 02 17 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ |
| 2001 02 17 | 691 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 06 17 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 06 17 | 644 | 0.5− | 0.2+ | 2006 10 17 | 703 | 0.5− | 1.3− | 2006 10 28 | 691 | 0.1− | 0.1+ |
| 2002 06 17 | 644 | 0.2+ | 0.7+ | 2006 10 17 | 703 | 0.2− | 0.6− | 2006 10 28 | 691 | 0.5+ | 0.4+ |
| 2002 07 14 | 644 | 0.3− | 0.8+ | 2006 10 17 | 703 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 07 14 | 644 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2002 07 14 | 644 | 0.4− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2005 03 17 | 691 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | | | |
| 2005 03 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.2− | 0.5− | | | | |

**2006 UM$_5$ = 2004 CH$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.14173 | | | (2000.0) | | |
| $n$ | 0.24601518 | $\omega$ | 356.92800 | | +0.67381047 | −0.73565921 |
| $a$ | 2.5224822 | $\Omega$ | 50.69728 | | +0.67982273 | +0.58053048 |
| $e$ | 0.0785848 | $i$ | 5.12871 | | +0.28951770 | +0.34898406 |
| $P$ | 4.01 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 01 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.2− | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 1994 11 01 | 691 | 0.6+ | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.0 |
| 1994 11 01 | 691 | 0.3+ | 0.2− | 2006 09 30 | 703 | 1.3− | 0.5− | 2006 11 09 | 691 | 0.3+ | 0.1− |
| 1996 03 21 | 691 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.3+ | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 1996 03 21 | 691 | 0.4− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 1996 03 21 | 691 | 0.5− | 0.3− | 2006 10 16 | 683 | 0.2+ | 0.9− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 1998 10 23 | 691 | 0.2− | 0.0 | 2006 10 16 | 683 | 0.5− | 0.6− | 2006 11 11 | 703 | 0.2− | 0.6− |
| 1998 10 23 | 691 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.2+ |
| 1998 10 23 | 691 | 0.7− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2002 11 06 | 608 | 0.5− | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.2− | 1.1− |
| 2002 11 06 | 608 | 0.2− | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2002 11 06 | 608 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 2004 02 13 | 691 | 0.2+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2004 02 13 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.4+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2004 02 13 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2004 02 29 | 691 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2004 02 29 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 10 31 | G96 | (1.0− | 1.5−) | 2006 11 22 | G96 | 0.6+ | 0.1− |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.5− | | | | |

**2006 UR$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 295.76275 | | | (2000.0) | | |
| $n$ | 0.23738775 | $\omega$ | 16.12236 | | −0.28249611 | −0.95730724 |
| $a$ | 2.5832346 | $\Omega$ | 90.31809 | | +0.87320076 | −0.28308373 |
| $e$ | 0.1433843 | $i$ | 3.51500 | | +0.39713522 | −0.05853584 |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 03 | 691 | 0.4− | 0.3− | 2006 10 03 | G96 | 0.5+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 1994 12 03 | 691 | 0.3+ | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.1− | 0.2− |
| 1994 12 03 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.5+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.2− |
| 2002 10 31 | 049 | 0.4− | 0.4− | 2006 10 03 | G96 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2002 10 31 | 049 | 0.8− | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2002 10 31 | 049 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.6− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2002 11 23 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.5− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2002 11 23 | 644 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.1+ | 0.8− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2002 11 23 | 644 | 0.2− | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2002 12 10 | 644 | 0.1+ | 0.6+ | 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2002 12 10 | 644 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.0 |
| 2002 12 10 | 644 | 0.5+ | 0.5+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.3− | 0.3+ |
| 2005 07 07 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.5+ |
| 2005 07 07 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ | | | | |
| 2005 07 07 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1− | | | | |

**2006 US$_5$ = 2001 YX$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 347.30516 | | | (2000.0) | | |
| $n$ | 0.18301650 | $\omega$ | 338.11743 | | +0.66923574 | −0.73974903 |
| $a$ | 3.0723867 | $\Omega$ | 69.79937 | | +0.69231059 | +0.58656936 |
| $e$ | 0.3007627 | $i$ | 4.27532 | | +0.26986955 | +0.32970859 |
| $P$ | 5.39 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 645 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 13 | 644 | 0.4+ | 0.0 |
| 2001 12 18 | 645 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.7− |
| 2001 12 19 | 645 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.2− |
| 2001 12 19 | 645 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 14 | 704 | (0.6+ | 2.6+) |
| 2006 10 03 | G96 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.0 | 1.5+ |
| 2006 10 03 | G96 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.2− | 1.5+ |
| 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2006 10 16 | 703 | 1.0− | 0.7+ | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 703 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2006 10 16 | 703 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.0 | 0.1− | | | | |

**2006 UW$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.86008 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18185904 | $\omega$ | 313.48662 | | −0.81660334 | −0.57703064 | |
| $a$ | 3.0854093 | $\Omega$ | 191.29543 | | +0.54799880 | −0.76747483 | |
| $e$ | 0.0784185 | $i$ | 4.08432 | | +0.18126306 | −0.27931706 | |
| $P$ | 5.42 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 27 | 807 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.3− | 0.1+ |
| 2000 08 27 | 807 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.3− |
| 2000 09 28 | 691 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.7+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2000 09 28 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2000 09 28 | 691 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.2− | 0.3− |
| 2000 10 02 | 645 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2000 10 02 | 645 | 0.1+ | 0.1− | 2006 10 18 | 291 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2003 04 01 | 695 | 0.1− | 0.1+ | 2006 10 18 | 291 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2003 04 01 | 695 | 0.2+ | 0.1+ | 2006 10 18 | 291 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2006 09 26 | G96 | 0.5+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.3+ |

**2006 UX$_5$ = 1995 GF$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.39114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21876751 | $\omega$ | 11.79653 | | +0.55898566 | −0.82593744 | |
| $a$ | 2.7278103 | $\Omega$ | 44.27218 | | +0.75197021 | +0.46774276 | |
| $e$ | 0.0092572 | $i$ | 6.02149 | | +0.34939351 | +0.31471267 | |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 02 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 1995 04 02 | 691 | 0.4− | 1.2− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 1995 04 02 | 691 | 0.5− | 0.4− | 2006 09 26 | G96 | 0.3− | 0.4− | 2006 10 29 | 691 | 0.1− | 0.1− |
| 1995 04 08 | 691 | 0.4− | 0.8− | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.0 | 0.3+ |
| 1995 04 08 | 691 | 0.0 | 0.4− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 09 | 691 | 0.1− | 0.2+ |
| 1995 04 08 | 691 | 0.1− | 0.8− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 09 | 691 | 0.3+ | 0.1+ |
| 1997 11 01 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 13 | 691 | 0.3+ | 0.1+ |
| 1997 11 01 | 691 | 0.3− | 0.9− | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 1997 11 01 | 691 | 0.4+ | 0.5− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.5− | 0.4+ |
| 2004 03 14 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2004 03 14 | 691 | 0.6− | 0.8+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2004 03 14 | 691 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2004 03 28 | 691 | 0.3+ | 0.7+ | 2006 10 17 | G96 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2004 03 28 | 691 | 0.4+ | 0.7+ | 2006 10 17 | G96 | 0.7+ | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.6− |
| 2004 03 28 | 691 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2005 08 04 | 644 | 0.4− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.5+ | 2006 11 22 | G96 | 0.2− | 0.5− |
| 2005 08 04 | 644 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.1+ | | | | |
| 2005 08 04 | 644 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.4− | 0.0 | | | | |

**2006 UY$_5$ = 2005 HR$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.77389 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22215660 | $\omega$ | 74.53047 | | +0.13723419 | +0.98885587 | |
| $a$ | 2.6999967 | $\Omega$ | 203.59064 | | −0.95509653 | +0.11665277 | |
| $e$ | 0.2778372 | $i$ | 8.29163 | | −0.26259739 | +0.09249968 | |
| $P$ | 4.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 16 | 691 | 0.0 | 0.0 | 2005 04 30 | 599 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2005 04 16 | 691 | 0.1+ | 0.5+ | 2005 04 30 | 599 | 1.1+ | 0.5− | 2006 10 22 | 691 | 0.4− | 0.6+ |
| 2005 04 16 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2005 04 30 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2005 04 30 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2+ |
| 2005 04 30 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2005 04 30 | 599 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.2− | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2005 04 30 | 599 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.4+ | 0.8+ | | | | |

**2006 UZ$_5$ = 2001 SZ$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.85473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21594554 | $\omega$ | 19.13283 | | +0.05016046 | −0.99800153 | |
| $a$ | 2.7515235 | $\Omega$ | 68.00696 | | +0.91083878 | +0.02992711 | |
| $e$ | 0.0241704 | $i$ | 2.37538 | | +0.40970311 | +0.05565356 | |
| $P$ | 4.56 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.6− | 1.0+ | 2004 03 16 | 691 | 0.1− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.5+ | 2004 04 13 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.3− | 2004 04 13 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.2+ |
| 2001 09 21 | 704 | 0.2− | 0.1+ | 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.4+ |
| 2001 09 21 | 704 | 0.3− | 0.5+ | 2004 05 09 | 691 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.1+ | 0.6− |
| 2001 09 21 | 704 | 0.2− | 0.5+ | 2004 05 09 | 691 | 0.2+ | 0.7+ | 2006 10 17 | G96 | 0.7+ | 0.4+ |
| 2001 09 21 | 704 | 0.3− | 0.8+ | 2004 05 09 | 691 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.5− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.4+ |
| 2002 12 04 | 695 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.4+ |
| 2002 12 04 | 695 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2004 03 16 | 691 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.5− | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2004 03 16 | 691 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.2+ |

**2006 UF$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.28394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17845223 | $\omega$ | 272.52225 | | +0.88143925 | +0.46355099 | |
| $a$ | 3.1245541 | $\Omega$ | 59.87477 | | −0.38101684 | +0.81111153 | |
| $e$ | 0.1341148 | $i$ | 6.00419 | | −0.27908961 | +0.35667712 | |
| $P$ | 5.52 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.0 | 0.4− | 2006 10 16 | 703 | 0.6+ | 1.1+ | 2006 10 27 | 691 | 0.3− | 0.2+ |
| 1995 12 19 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.4+ |
| 1995 12 19 | 691 | 0.3+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.8− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2000 09 05 | 645 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2000 11 27 | 645 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2000 11 27 | 645 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2004 04 14 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 04 14 | 691 | 0.2+ | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2004 04 14 | 691 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.3− | 0.3− |

**2006 $UG_6$ = 2001 $RF_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.20496 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22298560 | $\omega$ | 133.14413 | | +0.82772793 | | +0.56051793 |
| $a$ | 2.6933007 | $\Omega$ | 192.83752 | | −0.54295747 | | +0.78826516 |
| $e$ | 0.0666649 | $i$ | 6.77046 | | −0.14164624 | | +0.25388519 |
| $P$ | 4.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.7− | 0.3− | 2006 09 30 | G96 | 1.0− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2001 09 10 | 704 | 0.7− | 0.2− | 2006 09 30 | G96 | 0.3+ | 1.0+ | 2006 10 22 | 691 | 0.6− | 0.0 |
| 2001 09 10 | 704 | 0.8− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.4− | 0.5− |
| 2001 09 10 | 704 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2001 09 12 | 704 | 0.1+ | 0.6− | 2006 10 16 | 703 | (1.6+ | 1.0+) | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2001 09 12 | 704 | 0.9+ | 1.1+ | 2006 10 16 | 703 | 0.7− | 0.9+ | 2006 10 31 | G96 | 1.0+ | 1.2− |
| 2001 09 12 | 704 | 0.7+ | 0.5+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2001 09 12 | 704 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.6+ | 0.9− | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2004 04 24 | 691 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2004 04 24 | 691 | 0.4+ | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.2+ |

**2006 $UH_6$ = 2005 $EL_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.74807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30814762 | $\omega$ | 113.91378 | | +0.50519365 | | +0.86296809 |
| $a$ | 2.1708518 | $\Omega$ | 186.44814 | | −0.81567916 | | +0.47440635 |
| $e$ | 0.2113506 | $i$ | 4.13106 | | −0.28186323 | | +0.17385249 |
| $P$ | 3.20 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 20 | 691 | 1.1− | 0.1− | 2005 04 09 | G96 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.4− |
| 2002 03 20 | 691 | 0.3− | 0.9+ | 2005 05 04 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2002 03 20 | 691 | 0.5− | 0.9+ | 2005 05 04 | G96 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2002 04 19 | 691 | 0.6+ | 0.7− | 2005 05 04 | G96 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.3− |
| 2002 04 19 | 691 | 0.6+ | 1.0− | 2005 05 04 | G96 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3+ |
| 2002 04 19 | 691 | 0.4+ | 0.8− | 2006 10 16 | 703 | 0.8− | 0.6− | 2006 11 11 | 703 | (0.5− | 1.6+) |
| 2005 03 08 | 699 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.6− | 1.1+ | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2005 03 08 | 699 | 0.3− | 1.2+ | 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2005 03 08 | 699 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 03 08 | 699 | 0.3+ | 0.6− | 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 11 16 | G96 | 0.1+ | 0.3+ |
| 2005 03 09 | G96 | 0.2− | 0.1+ | 2006 10 17 | G96 | (0.6− | 1.9−) | 2006 11 16 | G96 | 0.3− | 0.2− |
| 2005 03 09 | G96 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2005 03 09 | G96 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.9− | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2005 03 09 | G96 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2005 04 09 | G96 | 0.1+ | 0.7+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2005 04 09 | G96 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.0 | | | | |
| 2005 04 09 | G96 | 0.5− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− | | | | |

**2006 $UK_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.65605 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23153863 | $\omega$ | 354.34209 | | +0.48784818 | | −0.86936189 |
| $a$ | 2.6265585 | $\Omega$ | 66.43669 | | +0.80423107 | | +0.41250469 |
| $e$ | 0.0815677 | $i$ | 4.93354 | | +0.33943563 | | +0.27212091 |
| $P$ | 4.26 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.3+ | 1.0− | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2004 03 14 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 1.0+ | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2004 03 14 | 691 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2004 03 28 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2004 03 28 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.7+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2004 03 28 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.1− |
| 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.1− |
| 2006 10 16 | 703 | 0.6− | 0.4− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2006 10 16 | 703 | 0.4− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.4− | 0.2+ |

**2006 $UM_6$ = 2003 $AV_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.14919 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23176771 | $\omega$ | 237.92394 | | +0.54652522 | | −0.83744107 |
| $a$ | 2.6248275 | $\Omega$ | 178.94294 | | +0.79499252 | | +0.51821024 |
| $e$ | 0.2315085 | $i$ | 5.05823 | | +0.26324339 | | +0.17363931 |
| $P$ | 4.25 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.5− | 0.4− |
| 2003 01 01 | 704 | 0.7+ | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.1+ |
| 2003 01 01 | 704 | 0.2+ | 0.5+ | 2006 10 19 | 644 | 0.3+ | 0.4− | 2006 11 13 | 703 | 0.4− | 0.7− |
| 2003 01 01 | 704 | 0.8+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.8− |
| 2003 01 01 | 704 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.4+ | 0.1− |
| 2003 01 07 | 704 | 0.1− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 704 | 0.7+ | 0.5+ |
| 2003 01 07 | 704 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2003 01 07 | 704 | 0.6− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.9+ | 0.7+ |
| 2003 01 07 | 704 | 0.2− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | (2.1− | 0.1+) |
| 2003 01 07 | 704 | 0.5− | 0.4− | 2006 10 21 | G96 | 0.1− | 0.2− | 2006 11 17 | 644 | 0.1+ | 0.3+ |
| 2006 07 21 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | 1.0+ | 0.5+ |
| 2006 07 21 | G96 | 0.4− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2006 07 21 | G96 | 0.1− | 0.6− | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.2+ |
| 2006 07 21 | G96 | 0.2− | 0.3− | 2006 10 27 | 704 | 1.0+ | 1.1+ | 2006 11 20 | 704 | 0.3+ | 0.7− |
| 2006 08 28 | 703 | (1.8− | 0.4+) | 2006 10 27 | 704 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.1− |
| 2006 08 28 | 703 | 0.2+ | 0.5− | 2006 10 27 | 704 | 0.9+ | 0.5− | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2006 08 28 | 703 | 1.2+ | 0.3− | 2006 10 27 | 704 | (0.6+ | 2.0+) | 2006 11 20 | 704 | 1.0− | 0.3+ |
| 2006 08 28 | 703 | (2.1+ | 0.5−) | 2006 10 27 | 704 | 0.8− | 0.6− | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.2− | 1.1+ |
| 2006 10 02 | G96 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.6+ |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2006 10 18 | 691 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ | | | | |
| 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.3− | | | | |

**2006 $UN_6$ = 2003 $EK_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.06374 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18704876 | $\omega$ | 247.78683 | | +0.09866985 | | −0.99377605 |
| $a$ | 3.0280718 | $\Omega$ | 196.79907 | | +0.96615181 | | +0.10811368 |
| $e$ | 0.0745055 | $i$ | 10.30572 | | +0.23835883 | | −0.02684393 |
| $P$ | 5.27 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 608 | 0.2+ | 0.2− | 2006 07 21 | G96 | 0.6− | 0.2− | 2006 11 01 | G96 | 0.5+ | 0.1− |
| 2001 11 21 | 608 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.2+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.2− |
| 2001 11 21 | 608 | 0.3− | 0.6+ | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.6+ | 0.1+ |
| 2003 03 07 | 704 | 0.1+ | 0.5− | 2006 09 30 | 703 | 0.8− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.1− |
| 2003 03 07 | 704 | 0.2+ | 0.2+ | 2006 09 30 | 703 | 1.1+ | 0.6− | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2003 03 07 | 704 | 0.5− | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 2003 03 07 | 704 | 0.5− | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.3+ |
| 2003 03 07 | 704 | 0.8+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 13 | 644 | 0.1+ | 0.4+ |
| 2003 03 07 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.4− | 0.9+ | 2006 11 13 | 644 | 0.1− | 0.2− |
| 2003 03 07 | 704 | 0.7− | 0.8+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.1+ |
| 2003 03 07 | 704 | 0.6+ | 0.9+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.6− | 0.7− |
| 2003 03 08 | 704 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 13 | 703 | 1.4− | 0.5+ |
| 2003 03 08 | 704 | 0.5− | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 11 13 | 703 | 1.5− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 704 | 0.9+ | 0.6− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 13 | 703 | (0.5− | 1.6−) | | |
| 2003 03 08 | 704 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.5− | | |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.7+ | 0.2− | 2006 11 22 | G96 | 0.0 | 0.4− | | |
| 2006 07 21 | G96 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.5− | | |
| 2006 07 21 | G96 | 0.3+ | 0.0 | 2006 11 01 | G96 | 0.7+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.3− | | |

### 2006 $UQ_6$ = 2002 $TV_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.94685 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26228300 | $\omega$ | 165.34193 | | +0.55680645 | +0.82980329 | |
| $a$ | 2.4170703 | $\Omega$ | 138.47494 | | −0.76765427 | +0.53122769 | |
| $e$ | 0.2398127 | $i$ | 3.22745 | | −0.31729086 | +0.17094922 | |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 0.7+ | 0.6+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.5+ | 0.3− | | |
| 2002 10 01 | 699 | 0.7− | 0.8+ | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.1− | | |
| 2002 10 01 | 699 | 0.9− | 0.2− | 2006 10 16 | 703 | 1.3+ | 0.8− | 2006 10 21 | G96 | 0.5+ | 0.0 | | |
| 2002 10 01 | 699 | 0.0 | 0.6+ | 2006 10 16 | 703 | 0.7− | 1.0+ | 2006 10 22 | 691 | 0.3− | 0.1− | | |
| 2002 10 03 | 704 | 0.2− | 0.7− | 2006 10 16 | 703 | (1.7− | 1.3+) | 2006 10 22 | 691 | 0.4− | 0.3− | | |
| 2002 10 03 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.3− | | |
| 2002 10 03 | 704 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.7+ | 0.2− | | |
| 2002 10 03 | 704 | 0.6+ | 1.2− | 2006 10 18 | 691 | 0.0 | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.1− | | |
| 2006 10 03 | G96 | 0.0 | 0.5− | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.1+ | | |
| 2006 10 03 | G96 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.2− | | |

### 2006 $UR_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.89339 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21210242 | $\omega$ | 74.52603 | | −0.52290896 | −0.83379640 | |
| $a$ | 2.7846608 | $\Omega$ | 48.38972 | | +0.66271368 | −0.52832035 | |
| $e$ | 0.1635696 | $i$ | 13.69841 | | +0.53607536 | −0.16019106 | |
| $P$ | 4.65 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 07 | 699 | 0.7− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.6− | 2006 11 17 | 703 | 0.5+ | 0.9+ | | |
| 2003 02 07 | 699 | 0.1+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.7− | 2006 11 17 | 703 | 0.5− | 0.5+ | | |
| 2003 02 07 | 699 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.6− | 2006 11 17 | 703 | 0.9− | 0.7+ | | |
| 2003 02 07 | 699 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.2− | 0.2− | | |
| 2006 10 16 | 703 | 1.0− | 0.8− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.6+ | | |
| 2006 10 16 | 703 | 0.4+ | 0.5− | 2006 11 09 | 644 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.4+ | 1.2− | | |
| 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.7+ | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.8+ | | |
| 2006 10 16 | 703 | 0.8− | 0.2− | 2006 11 11 | 703 | 0.7+ | 1.3− | 2006 11 18 | 704 | 0.3− | 1.0+ | | |
| 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.5− | 0.5− | 2006 11 21 | 704 | 0.0 | 0.8+ | | |
| 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 1.7− | 0.2+ | 2006 11 21 | 704 | 0.1+ | 0.5− | | |
| 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.7− | 2006 11 21 | 704 | 0.3+ | 0.9+ | | |
| 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.5− | 0.1+ | | |
| 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.8− | 2006 11 21 | 704 | 0.1+ | 0.8+ | | |
| 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.7− | | | | | | |
| 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.2− | | | | | | |

### 2006 $UU_6$ = 2004 $CB_{67}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.38980 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28881199 | $\omega$ | 0.17071 | | +0.58478617 | −0.80716218 | |
| $a$ | 2.2666923 | $\Omega$ | 54.04226 | | +0.74413175 | +0.49417214 | |
| $e$ | 0.2045263 | $i$ | 5.72256 | | +0.32294439 | +0.32292897 | |
| $P$ | 3.41 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 15 | 704 | 0.4+ | 0.7+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.3+ | | |
| 2004 02 15 | 704 | 0.4+ | 0.5− | 2006 10 22 | 704 | 0.8− | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.4+ | | |
| 2004 02 15 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.4+ | | |
| 2004 02 15 | 704 | 0.2− | 1.2+ | 2006 10 22 | 704 | 0.8− | 0.8+ | 2006 11 18 | 704 | 0.4+ | 0.3+ | | |
| 2004 02 16 | 691 | 0.0 | 0.0 | 2006 10 27 | 704 | (2.2+ | 1.1+) | 2006 11 19 | 704 | 0.0 | 0.5+ | | |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 10 27 | 704 | 1.2+ | 0.5+ | 2006 11 19 | 704 | 0.5+ | 0.1+ | | |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 10 27 | 704 | 0.6+ | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2006 09 22 | 693 | 0.2+ | 0.0 | 2006 10 28 | 704 | 0.6− | 0.6+ | 2006 11 19 | 704 | 1.4− | 0.4+ | | |
| 2006 09 22 | 693 | 0.2+ | 0.0 | 2006 10 28 | 704 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 0.0 | 0.0 | | |
| 2006 09 22 | 693 | 0.1+ | 0.2− | 2006 10 28 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.9+ | | |
| 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.6+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.3+ | | |
| 2006 10 03 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2− | 0.7+ | | |
| 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.9− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.4+ | | |
| 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.6− | 0.1+ | | |
| 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.6+ | 0.7− | | |
| 2006 10 16 | 703 | 0.7+ | 0.5+ | 2006 11 11 | 703 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.7− | | |
| 2006 10 16 | 703 | 0.6− | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 22 | G96 | (0.1+ | 1.5−) | | |
| 2006 10 16 | 703 | 0.8− | 0.1− | 2006 11 11 | 703 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.6− | | |
| 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.0 | 2006 11 26 | 704 | 0.2+ | 1.1− | | |
| 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.7+ | 1.3− | 2006 11 26 | 704 | 0.4− | 0.6− | | |
| 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.6− | 2006 11 26 | 704 | 0.2+ | 0.9+ | | |
| 2006 10 19 | 644 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− | 2006 11 28 | 683 | 0.0 | 1.8− | | |
| 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2− | 0.6− | 2006 11 28 | 683 | 0.4+ | 1.8− | | |
| 2006 10 19 | 644 | 0.3− | 0.6+ | 2006 11 17 | 703 | 0.7+ | 0.5− | 2006 11 28 | 683 | 1.1+ | 0.5+ | | |
| 2006 10 22 | 704 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.1− | 0.1+ | | |
| 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.1+ | | |
| 2006 10 22 | 704 | 0.4− | 0.8+ | 2006 11 17 | 703 | 0.1+ | 0.7− | 2006 11 28 | 704 | 0.4+ | 0.5+ | | |
| 2006 10 22 | 704 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.6+ | 1.0+ | 2006 11 28 | 704 | 0.6+ | 0.3+ | | |

### 2006 $UY_6$ = 2005 $GM_{172}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 45.84202 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23604332 | $\omega$ | 156.04223 | | +0.71241147 | +0.70126164 | |
| $a$ | 2.5930342 | $\Omega$ | 159.35619 | | −0.65538381 | +0.67835290 | |
| $e$ | 0.2614902 | $i$ | 4.30998 | | −0.25088237 | +0.21924748 | |
| $P$ | 4.18 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 23 | G96 | 0.1− | 0.1+ | | |
| 2005 04 14 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 1.2− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.2− | | |
| 2005 04 14 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.9+ | 2006 11 23 | G96 | 0.9+ | 0.7− | | |
| 2005 04 18 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1− | | |
| 2005 04 18 | 691 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.3+ | | |
| 2005 04 18 | 691 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.2− | 0.2+ | | |
| 2006 10 03 | G96 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.1− | | |
| 2006 10 03 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1+ | | |
| 2006 10 03 | G96 | 0.2− | 0.4− | 2006 10 22 | 691 | 0.1− | 0.0 | | | | | | |
| 2006 10 03 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | | | | | | |

### 2006 $UZ_6$ = 2004 $GU_{70}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.56435 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21861520 | $\omega$ | 342.42821 | | −0.02494373 | −0.99786488 | |
| $a$ | 2.7290772 | $\Omega$ | 108.96775 | | +0.92469112 | −0.04597588 | |
| $e$ | 0.0860298 | $i$ | 3.65951 | | +0.37990017 | +0.04638855 | |
| $P$ | 4.51 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 25 | 691 | 0.6− | 0.7+ | 2005 07 15 | G96 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.8− | 0.8+ | | |
| 1995 04 25 | 691 | 0.3+ | 0.1− | 2005 07 15 | G96 | 0.7− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.3+ | | |
| 1995 04 25 | 691 | 0.4+ | 0.6+ | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.3− | 0.0 | | |
| 1999 03 20 | 910 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.4+ | | |
| 1999 03 21 | 910 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.6+ | | |
| 1999 03 21 | 910 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3+ | | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.4− | 0.3+ | 2006 11 13 | 703 | 0.3+ | 1.4+ | | |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | (0.8− | 2.2+) | 2006 11 13 | 703 | 0.9− | 0.2+ | | |
| 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.4− | 1.5+ | 2006 11 13 | 703 | 0.1− | 0.7+ | | |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.7+ | 0.6− | | |
| 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.4− | 0.1− | | |
| 2004 04 20 | 691 | 0.1+ | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.0 | | |
| 2004 04 20 | 691 | 0.4+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.4− | | |
| 2005 07 15 | G96 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.0 | | | | | | |
| 2005 07 15 | G96 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.4+ | | | | | | |

**2006 UA$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.68149 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23672700 | $\omega$ | 256.75863 | | +0.49759888 | | +0.84949918 |
| $a$ | 2.5880392 | $\Omega$ | 44.52559 | | −0.66703166 | | +0.50397664 |
| $e$ | 0.1143910 | $i$ | 14.48088 | | −0.55449448 | | +0.15607273 |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.6− |
| 2002 11 24 | 644 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.2+ |
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.7− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.6+ |
| 2004 01 17 | 644 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 19 | 704 | (0.8− | 1.5+) |
| 2004 01 17 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.1+ | 2006 11 19 | 704 | 0.4− | 1.1+ |
| 2004 01 17 | 644 | 0.4+ | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 1.2− |
| 2004 03 18 | 645 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 2004 05 14 | 645 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.9+ | 0.4− |
| 2004 05 14 | 645 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.2− |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.7− | 0.6− |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 08 | 644 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.6+ |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.7− |
| 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.5− |
| 2006 10 16 | 703 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 22 | G96 | 0.2− | 0.4− |
| 2006 10 16 | 703 | 0.5− | 1.0+ | 2006 11 11 | 703 | 0.4+ | 0.5− | 2006 11 22 | G96 | 0.2+ | 0.5− |
| 2006 10 16 | 703 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 11 | G96 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2006 10 17 | G96 | 0.7+ | 0.6− | 2006 11 11 | 703 | 0.9+ | 0.7+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 11 | 703 | 1.3− | 0.6+ | | | | |
| 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.6+ | 1.3− | | | | |

**2006 UD$_7$ = 1994 AJ$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.39958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22162262 | $\omega$ | 287.10756 | | +0.52952825 | | −0.84744600 |
| $a$ | 2.7043319 | $\Omega$ | 130.85755 | | +0.79609467 | | +0.48102590 |
| $e$ | 0.2535784 | $i$ | 2.87098 | | +0.29297287 | | +0.22460935 |
| $P$ | 4.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.3+ | 0.4− | 2006 10 22 | 691 | 0.4+ | 0.6− | 2006 11 14 | 704 | 0.4+ | 0.1− |
| 1994 01 08 | 691 | 0.6+ | 0.6− | 2006 11 01 | 703 | (1.7− | 0.2−) | 2006 11 14 | 704 | 0.7− | 0.2+ |
| 1994 01 08 | 691 | 0.5− | 0.0 | 2006 11 01 | 703 | 0.4− | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 1994 01 13 | 691 | 0.4− | 0.0 | 2006 11 01 | 703 | 0.7− | 0.6+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 1994 01 13 | 691 | 0.2− | 1.4+ | 2006 11 01 | 703 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 1994 01 13 | 691 | 0.3+ | 0.5− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.3− |
| 2003 01 27 | 608 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.4− |
| 2003 01 27 | 608 | 0.1+ | 0.7− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.1+ |
| 2003 01 27 | 608 | 0.2− | 0.7− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.6+ |
| 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.3+ |
| 2006 10 16 | 703 | 0.7+ | 1.3− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.6+ | 1.2+ |
| 2006 10 16 | 703 | 0.4+ | 1.0− | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.9+ |
| 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 11 | 703 | 0.3− | 0.5+ | 2006 11 20 | 704 | 0.2+ | 0.1+ |
| 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2006 10 18 | 691 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.2− | 1.1+ |
| 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.4− | 2006 11 25 | 291 | 0.1− | 0.8+ |
| 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.3− | 2006 11 25 | 291 | 0.1+ | 0.1− |
| 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.5− | 0.4− | 2006 11 25 | 291 | 0.0 | 0.1− |
| 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.1− | 0.1+ | | | | |
| 2006 10 22 | 691 | 0.6− | 0.7− | 2006 11 14 | 704 | 0.2− | 0.5− | | | | |

**2006 UH$_7$ = 2000 HG$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.74639 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22770198 | $\omega$ | 214.97726 | | +0.94610112 | | −0.32346497 |
| $a$ | 2.6559803 | $\Omega$ | 163.87183 | | +0.30886927 | | +0.88607876 |
| $e$ | 0.1286585 | $i$ | 3.34735 | | +0.09742916 | | +0.33201634 |
| $P$ | 4.33 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2000 04 24 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 1.4− | 0.2+ | 2006 11 13 | 644 | 0.4+ | 0.3− |
| 2000 04 24 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 13 | 644 | 0.7+ | 0.0 |
| 2000 05 05 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2000 05 05 | 691 | 0.5− | 0.2− | 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.2− | 0.5− |
| 2000 05 05 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2004 04 12 | 691 | 0.5+ | 0.4− | 2006 10 20 | 683 | 0.9+ | 1.5− | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2004 04 12 | 691 | 0.5− | 0.5+ | 2006 10 20 | 683 | 1.2+ | 1.1− | 2006 11 17 | 704 | 0.9+ | 0.4+ |
| 2004 04 12 | 691 | 0.0 | 0.1+ | 2006 10 20 | 683 | 0.1− | 0.8+ | 2006 11 17 | 704 | 0.4− | 0.3− |
| 2006 09 30 | 703 | 0.5+ | 0.6+ | 2006 10 22 | 683 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.7− | 1.1+ |
| 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.1− | 0.9+ |
| 2006 09 30 | 703 | 0.1+ | 1.2+ | 2006 10 22 | 683 | 0.6+ | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2006 09 30 | 703 | 0.2− | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.8− |
| 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 10 22 | 683 | 1.4+ | 0.4+ | 2006 11 20 | 704 | 1.4+ | 0.1+ |
| 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.7+ |

**2006 UJ$_7$ = 1995 SV$_{18}$ = 2003 EG$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.00994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18439347 | $\omega$ | 254.04590 | | −0.00481996 | | −0.99901415 |
| $a$ | 3.0570722 | $\Omega$ | 196.42119 | | +0.96678147 | | +0.00662284 |
| $e$ | 0.0319724 | $i$ | 8.98093 | | +0.25555890 | | −0.04389614 |
| $P$ | 5.35 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1− | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.5+ | 0.4+ |
| 1995 09 18 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.1+ | 2006 11 10 | 644 | 0.9+ | 0.1− |
| 1995 09 18 | 691 | 0.9− | 0.2+ | 2006 10 16 | 703 | 0.5− | 1.0− | 2006 11 10 | 644 | 0.4+ | 0.2+ |
| 1995 09 22 | 691 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6+ | 1.2+ | 2006 11 16 | G96 | 0.6+ | 0.1− |
| 1995 09 22 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.5+ | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 1995 09 22 | 691 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.1+ | 0.7− | 2006 11 16 | G96 | 0.6+ | 0.3− |
| 2003 03 07 | 704 | 0.5+ | 0.4− | 2006 10 17 | G96 | 0.8+ | 0.3− | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2003 03 07 | 704 | 0.6− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2003 03 07 | 704 | 0.8− | 0.7− | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.6+ | 0.3− |
| 2003 03 07 | 704 | (0.4+ | 1.8+) | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.3− |
| 2003 03 10 | 699 | (0.0 | 2.0−) | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2003 03 10 | 699 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2003 03 10 | 699 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.5− | 0.6+ | 2006 11 23 | G96 | 0.3+ | 0.3+ |
| 2003 03 10 | 699 | 1.4+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.2+ |
| 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 1.4− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1+ | | | | |

**2006 UK$_7$ = 2001 YW$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.24814 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17569591 | $\omega$ | 357.40658 | | +0.56639699 | | −0.81051401 |
| $a$ | 3.1571481 | $\Omega$ | 58.05246 | | +0.75925641 | | +0.44277963 |
| $e$ | 0.0827937 | $i$ | 10.12733 | | +0.32050608 | | +0.38342306 |
| $P$ | 5.61 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 1.0+ | 0.6+ | 2006 10 17 | G96 | 0.4+ | 0.8− | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.4+ | 0.7+ | 2006 10 17 | G96 | 0.4+ | 0.6− | 2006 11 08 | 644 | 0.4− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.7+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | (1.7− | 0.4−) |
| 2001 12 22 | 704 | 1.0− | 0.6− | 2006 10 18 | 691 | (1.0− | 2.4−) | 2006 11 11 | 703 | 0.7− | 0.1− |
| 2001 12 22 | 704 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.6+ |
| 2001 12 22 | 704 | 0.9− | 0.6+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.9− |
| 2001 12 22 | 704 | 0.0 | 0.9− | 2006 10 22 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2006 10 02 | G96 | 0.5− | 0.6− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2006 10 02 | G96 | 0.2− | 0.8− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2006 10 02 | G96 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.6− |
| 2006 10 16 | 703 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | (1.7− | 0.1−) |
| 2006 10 16 | 703 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.5+ |
| 2006 10 16 | 703 | 0.8+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 1.0+ | 2006 11 18 | 704 | (0.5− | 1.8−) |
| 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 10 27 | 691 | 0.7+ | 0.1+ | 2006 11 18 | 704 | 1.1+ | 0.7− |
| 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 08 | 644 | 0.1+ | 0.0 | | | | |

### 2006 $UO_7$ = 5102 T-2

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.94741 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23998454 | $\omega$ | 136.87961 | | +0.94455760 | | +0.31415734 |
| $a$ | 2.5645660 | $\Omega$ | 205.28590 | | −0.32742463 | | +0.92297221 |
| $e$ | 0.3172801 | $i$ | 12.91655 | | +0.02457744 | | +0.22232289 |
| $P$ | 4.11 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 20 | 675 | 0.4+ | 0.3− | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 10 | 644 | 0.3+ | 0.3− |
| 1973 09 20 | 675 | 0.6+ | 1.9+ | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.2+ |
| 1973 09 24 | 675 | (0.1+ | 3.2+) | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6− | 0.7+ |
| 1973 09 24 | 675 | 1.7− | 2.2+ | 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 644 | 0.1+ | 0.2+ |
| 1973 09 25 | 675 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.6+ |
| 1973 09 25 | 675 | 0.1− | 1.1+ | 2006 10 20 | 683 | 0.9+ | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 1973 09 29 | 675 | 0.0 | 1.4− | 2006 10 20 | 683 | (0.6+ | 1.8+) | 2006 11 11 | 644 | 0.2− | 0.5+ |
| 1973 09 29 | 675 | 0.0 | 2.1− | 2006 10 21 | 644 | 0.1+ | 0.4+ | 2006 11 11 | 644 | 0.1− | 0.1+ |
| 1973 09 30 | 675 | 0.8+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 1973 09 30 | 675 | (1.9− | 4.0−) | 2006 10 21 | 644 | 0.4− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.3+ |
| 2005 05 10 | G96 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.4+ |
| 2005 05 10 | G96 | 0.4− | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.4− | 2006 11 14 | 704 | 0.5+ | 0.5+ |
| 2005 05 10 | G96 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.3− | 2006 11 14 | 704 | 0.9− | 0.6− |
| 2005 05 10 | G96 | 0.2− | 0.3+ | 2006 11 01 | 703 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.1− | 0.1− |
| 2006 08 29 | 703 | 0.1− | 1.2− | 2006 11 01 | 703 | 0.3+ | 0.6− | 2006 11 14 | 704 | 0.4− | 0.6+ |
| 2006 08 29 | 703 | (0.2− | 1.9−) | 2006 11 01 | 703 | 0.4− | 0.9− | 2006 11 17 | 704 | 0.2+ | 0.4+ |
| 2006 08 29 | 703 | 0.3− | 0.0 | 2006 11 01 | 703 | 0.1+ | 0.1− | 2006 11 17 | 704 | (2.0− | 1.4+) |
| 2006 08 29 | 703 | (0.0 | 1.7−) | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.8+ | 1.2+ |
| 2006 10 02 | 291 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.3+ | 2006 11 17 | 704 | (0.8− | 1.7+) |
| 2006 10 02 | 291 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.5+ | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.1+ |
| 2006 10 02 | 291 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.0 |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 19 | 703 | 0.1+ | 0.4− |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 703 | 0.2− | 0.0 |
| 2006 10 02 | G96 | 0.5+ | 0.3− | 2006 11 10 | 644 | 0.1− | 0.2+ | | | | |
| 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 10 | 644 | 0.3− | 0.2+ | | | | |

### 2006 $UR_7$ = 2005 $LX_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.54560 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24335406 | $\omega$ | 155.89476 | | +0.99635722 | | +0.06580936 |
| $a$ | 2.5408381 | $\Omega$ | 200.55278 | | −0.07773452 | | +0.96239701 |
| $e$ | 0.1460633 | $i$ | 8.88689 | | +0.03506610 | | +0.26355478 |
| $P$ | 4.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 10 | 644 | 0.4+ | 0.2− |
| 2002 11 15 | 644 | 0.1− | 0.5+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.2− |
| 2002 11 15 | 644 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | (1.5− | 0.2+) |
| 2005 06 08 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.8+ |
| 2005 06 08 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2005 06 08 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 14 | 704 | 0.6− | 0.5+ |
| 2005 06 11 | 691 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.9+ | 2006 11 14 | 704 | 0.3− | 0.8+ |
| 2005 06 11 | 691 | 0.1+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 14 | 704 | 0.2− | 0.2+ |
| 2005 06 11 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 14 | 704 | 1.0− | 0.0 |
| 2006 08 28 | 703 | (2.4− | 0.0 ) | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.6− | 0.1+ |
| 2006 08 28 | 703 | 0.8− | 0.6− | 2006 10 28 | 224 | (0.5− | 2.0+) | 2006 11 17 | 704 | 0.0 | 0.0 |
| 2006 08 28 | 703 | 0.7+ | 0.1+ | 2006 10 28 | 224 | (2.3− | 2.7+) | 2006 11 17 | 704 | 0.8+ | 1.1− |
| 2006 08 28 | 703 | 0.8− | 1.1− | 2006 10 28 | 224 | (1.8− | 0.9+) | 2006 11 17 | 704 | 0.5− | 0.1+ |
| 2006 09 30 | 703 | 0.5+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2006 09 30 | 703 | 0.6− | 0.8− | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2006 09 30 | 703 | 1.0− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | (0.6− | 2.7−) |
| 2006 09 30 | 703 | 0.1+ | 1.3+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.2− |

### 2006 $UT_7$ = 1997 $MV_2$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.51866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23594680 | $\omega$ | 233.37859 | | +0.81817893 | | +0.57091136 |
| $a$ | 2.5937413 | $\Omega$ | 91.71074 | | −0.50336021 | | +0.76851531 |
| $e$ | 0.2165935 | $i$ | 3.90908 | | −0.27786999 | | +0.28886751 |
| $P$ | 4.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 06 28 | 704 | 0.5− | 0.2+ | 2006 10 16 | 703 | 0.7+ | 0.2+ | 2006 11 02 | 703 | 0.7− | 0.0 |
| 1997 06 28 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.5− | 0.2+ | 2006 11 02 | 703 | 0.6+ | 0.2− |
| 1997 06 28 | 704 | 1.1+ | 0.2− | 2006 10 16 | 703 | 0.4+ | 0.8− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1997 07 02 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | (2.7+ | 0.8−) | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 1997 07 02 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 703 | 0.5− | 1.3+ | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1997 07 02 | 704 | 0.3+ | 0.0 | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 11 | 644 | 0.1+ | 0.4+ |
| 1997 07 02 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.9− | 2006 11 11 | 644 | 0.1− | 0.3+ |
| 1997 07 02 | 704 | 0.5+ | 1.1+ | 2006 10 16 | 703 | (1.1+ | 2.3−) | 2006 11 11 | 644 | 0.0 | 0.1+ |
| 1997 07 02 | 704 | 0.3+ | 1.3− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 14 | 683 | 0.4+ | 0.1+ |
| 1997 07 02 | 704 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 14 | 683 | 0.9+ | 0.1− |
| 1997 07 02 | 704 | 0.7− | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 683 | 1.4− | 0.6+ |
| 1997 07 02 | 704 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 10 03 | G96 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2006 10 03 | G96 | 0.1− | 0.6− | 2006 11 02 | 703 | 0.0 | 0.6− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2006 10 03 | G96 | 0.3+ | 0.5− | 2006 11 02 | 703 | 0.3− | 1.0− | | | | |

### 2006 $UV_7$ = 2003 $AX_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.28139 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23354135 | $\omega$ | 255.79936 | | −0.14558009 | | −0.98865454 |
| $a$ | 2.6115210 | $\Omega$ | 202.67143 | | +0.94069634 | | −0.12674279 |
| $e$ | 0.1984820 | $i$ | 5.50774 | | +0.30642590 | | −0.08061309 |
| $P$ | 4.22 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.2− | 0.2+ | 2006 11 02 | 703 | 0.7− | 1.3+ | 2006 11 15 | 683 | 0.3+ | 0.4+ |
| 2003 01 01 | 704 | 1.1+ | 0.6− | 2006 11 02 | 703 | (1.8− | 0.8−) | 2006 11 15 | 683 | 1.4− | 0.2− |
| 2003 01 01 | 704 | 0.9+ | 0.2− | 2006 11 02 | 703 | 0.3+ | 0.8− | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2003 01 07 | 704 | 0.4− | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2003 01 07 | 704 | 0.1− | 1.0+ | 2006 11 02 | 703 | 0.1+ | 0.9− | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2003 01 07 | 704 | 0.3− | 0.5− | 2006 11 02 | 703 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3− | 0.7− |
| 2003 01 07 | 704 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.3− | 0.3− | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2003 01 07 | 704 | 1.0− | 0.9+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.7− | 0.1+ |
| 2004 04 12 | 691 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 1.0− |
| 2004 04 12 | 691 | 0.1+ | 0.7+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.4+ | 0.1− |
| 2004 04 12 | 691 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.2− | 0.3+ |
| 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.4− | 1.5− |
| 2006 10 16 | 703 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.1− | 0.5− |
| 2006 10 16 | 703 | 0.1− | 0.6+ | 2006 11 10 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.1+ |
| 2006 10 16 | 703 | 0.5+ | 0.8+ | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.5+ | 0.9+ |
| 2006 10 17 | G96 | 0.3+ | 0.6− | 2006 11 10 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.9− | 2006 11 20 | 704 | 0.7+ | 0.8+ |
| 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.7− | 2006 11 20 | 704 | 0.8− | 0.0 |
| 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.4+ | | |
| 2006 10 18 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 683 | (1.4− | 1.6−) | 2006 11 28 | 704 | 0.7+ | 0.4+ | | |
| 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 13 | 683 | 0.1+ | 0.1− | 2006 11 28 | 704 | 1.5− | 0.4− | | |
| 2006 10 18 | 691 | 0.4− | 0.3+ | 2006 11 14 | 683 | 0.9+ | 0.8− | 2006 11 28 | 704 | 0.0 | 1.2+ | | |
| 2006 10 18 | 691 | 0.1− | 0.4+ | 2006 11 14 | 683 | 0.9+ | 0.4+ | 2006 11 28 | 704 | 0.0 | 0.4+ | | |
| 2006 10 18 | 691 | 0.1+ | 0.5+ | 2006 11 14 | 683 | 0.0 | 0.5+ | | | | | | |
| 2006 11 02 | 703 | 0.7− | 0.3+ | 2006 11 15 | 683 | 0.3+ | 0.3− | | | | | | |

### 2006 UY$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.77670 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28262748 | $\omega$ | 296.37810 | | +0.98820588 | −0.14639688 | |
| $a$ | 2.2996397 | $\Omega$ | 72.06737 | | +0.15185314 | +0.89905047 | |
| $e$ | 0.2465252 | $i$ | 2.70567 | | +0.01974242 | +0.41264538 | |
| $P$ | 3.49 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.3− | | |
| 2005 05 14 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.2+ | | |
| 2005 05 14 | G96 | 0.5+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.2+ | | |
| 2005 05 14 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.6− | 2006 11 18 | 704 | 0.3+ | 0.3+ | | |
| 2006 08 28 | 703 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.8+ | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.1− | | |
| 2006 08 28 | 703 | 0.5− | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.2+ | 1.0+ | | |
| 2006 08 28 | 703 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.6− | 2006 11 21 | 704 | 0.0 | 1.0+ | | |
| 2006 08 28 | 703 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 1.3− | 0.9+ | | |
| 2006 10 16 | 703 | 0.3− | 0.3− | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.1+ | 1.5+ | | |
| 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 12 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.1− | 0.5+ | | |
| 2006 10 16 | 703 | 0.6− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 26 | 704 | 0.1+ | 0.3− | | |
| 2006 10 16 | 703 | 0.4+ | 0.2− | 2006 11 17 | 703 | 1.1− | 0.8− | 2006 11 26 | 704 | 0.8+ | 1.1− | | |
| 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 17 | 703 | 0.3− | 0.2+ | 2006 11 26 | 704 | 0.4+ | 0.6− | | |
| 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.5− | 0.9− | 2006 11 27 | 703 | 0.1+ | 0.5− | | |
| 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 17 | 703 | 0.8− | 0.0 | 2006 11 27 | 703 | 0.2− | 1.0+ | | |
| 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.7+ | 2006 11 27 | 703 | 0.4− | 0.0 | | |
| 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.6− | 2006 11 27 | 703 | 0.3− | 0.3+ | | |
| 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.2− | | | | | | |
| 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.2− | | | | | | |

### 2006 UZ$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.37205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30313497 | $\omega$ | 287.84864 | | +0.98623902 | −0.16220623 | |
| $a$ | 2.1947178 | $\Omega$ | 81.49553 | | +0.16127141 | +0.90134567 | |
| $e$ | 0.1730101 | $i$ | 1.85211 | | +0.03638850 | +0.40157828 | |
| $P$ | 3.25 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.0 | | |
| 2005 04 10 | G96 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.1− | | |
| 2005 04 10 | G96 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.7+ | | |
| 2005 04 10 | G96 | 0.7− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.4− | | |
| 2005 05 14 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 1.0− | 0.9− | | |
| 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.4− | | |
| 2005 05 14 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 1.4− | 0.1− | | |
| 2005 05 14 | G96 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.1+ | | |
| 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.1− | | |
| 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.2− | | |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.3− | 0.1− | | |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.1− | | |
| 2006 10 16 | 703 | (0.1+ | 1.6+) | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.3− | | |
| 2006 10 16 | 703 | 0.6+ | 1.4+ | 2006 11 11 | 703 | 0.9+ | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.8− | | |
| 2006 10 16 | 703 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.2+ | 0.2− | 2006 11 28 | 704 | 1.0− | 0.4+ | | |
| 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.2− | 2006 11 28 | 704 | 0.1+ | 0.2+ | | |
| 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.3+ | | |
| 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.3+ | 0.1+ | | | | | | |
| 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.0 | | | | | | |

### 2006 UE$_8$ = 2002 XA$_{100}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.46961 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23176072 | $\omega$ | 46.54887 | | −0.34206549 | −0.93656706 | |
| $a$ | 2.6248802 | $\Omega$ | 63.59836 | | +0.83563971 | −0.34036064 | |
| $e$ | 0.2124068 | $i$ | 4.89156 | | +0.42976445 | −0.08364677 | |
| $P$ | 4.25 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.7− | 0.2− | 2006 10 02 | G96 | 0.4+ | 0.7− | 2006 10 23 | 691 | 0.3− | 0.2+ | | |
| 2002 12 05 | 704 | 0.5− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.7− | 2006 10 28 | 691 | 0.6+ | 0.2− | | |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1− | 0.7− | 2006 10 28 | 691 | 0.1− | 0.2+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.6+ | 2006 10 16 | 703 | 0.5− | 1.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.5+ | | |
| 2002 12 10 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.8− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.1− | | |
| 2002 12 10 | 704 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.9− | 2006 11 01 | G96 | 0.2+ | 0.2− | | |
| 2002 12 10 | 704 | 0.1+ | 0.6− | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.4+ | | |
| 2002 12 10 | 704 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 11 01 | G96 | 0.0 | 0.4− | | |
| 2002 12 10 | 704 | 0.4+ | 0.8+ | 2006 10 17 | G96 | 0.6+ | 0.9− | 2006 11 01 | G96 | 0.2− | 0.0 | | |
| 2004 05 19 | 291 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.4+ | | |
| 2004 05 19 | 291 | 0.5− | 0.6+ | 2006 10 22 | 691 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.2− | 0.3+ | | |
| 2004 05 19 | 291 | 0.9+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.5− | 0.2+ | | |
| 2006 10 02 | G96 | 0.3− | 0.5− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.0 | | |
| 2006 10 02 | G96 | 0.2− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1+ | | |

### 2006 UH$_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.92688 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27422066 | $\omega$ | 240.74233 | | +0.48422239 | +0.87073085 | |
| $a$ | 2.3464030 | $\Omega$ | 58.46668 | | −0.76377340 | +0.46848199 | |
| $e$ | 0.2323139 | $i$ | 5.77540 | | −0.42682417 | +0.14950720 | |
| $P$ | 3.59 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.9+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.2− | | |
| 1999 11 17 | 691 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.6− | 0.0 | 2006 11 01 | G96 | 0.3− | 0.4− | | |
| 1999 11 17 | 691 | 0.2− | 0.0 | 2006 10 16 | 703 | (0.0 | 1.8+) | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2002 06 20 | 644 | 0.1+ | 0.7+ | 2006 10 16 | 703 | 0.0 | 1.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− | | |
| 2002 06 20 | 644 | 0.4+ | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 01 | G96 | 0.3+ | 0.4− | | |
| 2002 06 20 | 644 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.5+ | 0.7− | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2002 07 06 | 644 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.6+ | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2002 07 06 | 644 | 0.2+ | 0.4− | 2006 10 17 | G96 | 0.4+ | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.2+ | | |
| 2002 07 06 | 644 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 | | |
| 2002 07 06 | 644 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.1− | | |
| 2002 07 06 | 644 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.5− | | |
| 2002 07 06 | 644 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2002 07 16 | 644 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.4− | | |
| 2002 07 16 | 644 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | | | |
| 2002 07 16 | 644 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.4− | 0.0 | | | | | | |

### 2006 UJ$_8$ = 2000 AR$_{248}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.86306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26417162 | $\omega$ | 295.18378 | | +0.54770316 | −0.83576302 | |
| $a$ | 2.4055365 | $\Omega$ | 121.55127 | | +0.78316729 | +0.49571599 | |
| $e$ | 0.1797982 | $i$ | 2.62345 | | +0.29439810 | +0.23614789 | |
| $P$ | 3.73 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.3+ | 0.4− | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.2+ | 1.0− | | |
| 1991 10 07 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 13 | 703 | 0.3− | 0.4− | | |
| 1991 10 07 | 691 | 0.1− | 0.2− | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 14 | 704 | 0.9− | 1.1+ | | |
| 2000 01 04 | 691 | 0.2− | 0.6+ | 2006 10 17 | G96 | 0.1+ | 0.8− | 2006 11 14 | 704 | 0.2+ | 0.7− | | |
| 2000 01 04 | 691 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 14 | 704 | 1.0− | 0.7+ | | |
| 2000 01 04 | 691 | 0.0 | 0.3− | 2006 10 19 | 644 | 0.6+ | 0.0 | 2006 11 14 | 704 | (1.0− | 1.8+) | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 11 | 691 | 0.2+ | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.2− | 0.4+ | | |
| 2000 01 11 | 691 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | (2.1− | 1.4+) | | |
| 2000 01 11 | 691 | 0.4− | 0.4− | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 11 17 | 704 | 1.0− | 0.5+ | | |
| 2006 09 30 | 703 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.0 | 2006 11 17 | 704 | 1.0− | 0.1− | | |
| 2006 09 30 | 703 | 0.4− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.2+ | 1.2+ | | |
| 2006 09 30 | 703 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.5− | 0.2− | 2006 11 20 | 704 | 0.2+ | 1.0+ | | |
| 2006 09 30 | 703 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.3+ | 0.1− | | |
| 2006 10 16 | 703 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.9+ | 0.8+ | | |
| 2006 10 16 | 703 | 0.8+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.7+ | 2006 11 20 | 704 | 0.7+ | 0.5+ | | |
| 2006 10 16 | 703 | 0.8+ | 0.7+ | 2006 11 13 | 703 | 0.4− | 0.9− | | | | | | |
| 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 11 13 | 703 | 0.3− | 0.4− | | | | | | |

**2006 UK$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.55775 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22857820 | $\omega$ | 306.11955 | | +0.97428461 | | +0.22283136 |
| $a$ | 2.6491884 | $\Omega$ | 41.03451 | | −0.18691185 | | +0.88206070 |
| $e$ | 0.2121613 | $i$ | 2.91634 | | −0.12583111 | | +0.41510854 |
| $P$ | 4.31 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.6− | | |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.6− | 0.3+ | | |
| 2004 03 14 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.0 | 0.2+ | | |
| 2005 05 11 | 644 | 0.1+ | 0.5+ | 2006 11 01 | H07 | 0.4− | 0.6− | 2006 11 18 | 704 | 0.2− | 0.2+ | | |
| 2005 05 11 | 644 | 0.0 | 0.6+ | 2006 11 01 | H07 | 0.6− | 0.2− | 2006 11 21 | 704 | (0.4− | 1.9+) | | |
| 2005 05 11 | 644 | 0.2+ | 0.6+ | 2006 11 01 | H07 | 0.3− | 0.7− | 2006 11 21 | 704 | (0.6− | 1.9+) | | |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | (0.5− | 1.8+) | | |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | (1.2− | 1.9+) | | |
| 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | (0.8− | 1.7+) | | |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.2+ | 2006 11 25 | 704 | 0.2− | 1.1− | | |
| 2006 10 16 | 703 | 0.0 | 1.1− | 2006 11 11 | 703 | 1.1− | 0.2− | 2006 11 25 | 704 | 0.1− | 0.4− | | |
| 2006 10 16 | 703 | 0.4− | 0.3− | 2006 11 11 | 703 | (1.8− | 0.1+) | 2006 11 25 | 704 | 0.1− | 1.0+ | | |
| 2006 10 16 | 703 | 0.7− | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.4+ | 2006 11 25 | 704 | 0.5− | 0.1+ | | |
| 2006 10 16 | 703 | 0.5− | 0.3− | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 26 | 704 | 0.1− | 1.1− | | |
| 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 13 | 644 | 0.2− | 0.1+ | 2006 11 26 | 704 | 0.1+ | 0.7+ | | |
| 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.1− | 0.1− | 2006 11 26 | 704 | 0.3+ | 0.6− | | |
| 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.7− | 0.6− | | |
| 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 14 | 691 | 0.4+ | 0.0 | 2006 11 27 | 703 | 1.1+ | 0.1− | | |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.8+ | 2.5+ | | |
| 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 703 | 0.9− | 0.0 | 2006 11 29 | 704 | 0.6+ | 0.6+ | | |
| 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.8+ | 1.0+ | | |
| 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 16 | 703 | 0.7− | 0.1− | 2006 11 29 | 704 | 0.2− | 0.0 | | |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.8− | 0.3− | 2006 11 29 | 704 | 0.1+ | 0.3− | | |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.1+ | 1.0+ | | |
| 2006 10 23 | 704 | 0.7+ | 0.3+ | 2006 11 17 | 704 | 0.9+ | 0.5+ | 2006 12 01 | G96 | 0.5+ | 0.2− | | |
| 2006 10 23 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.5− | 1.2+ | 2006 12 01 | G96 | 0.2− | 0.0 | | |
| 2006 10 23 | 704 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.9− | 2006 12 01 | G96 | 0.7+ | 1.0− | | |
| 2006 10 23 | 704 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.1− | 0.3− | | |
| 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.0 | | | | | | |

**2006 UN$_8$ = 2000 US$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.34158 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16871999 | $\omega$ | 238.64605 | | −0.32047493 | | −0.92718214 |
| $a$ | 3.2435830 | $\Omega$ | 231.31528 | | +0.93141512 | | −0.27114183 |
| $e$ | 0.0705750 | $i$ | 14.38906 | | +0.17251575 | | −0.25848673 |
| $P$ | 5.84 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 25 | 704 | 0.6− | 0.8+ | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.9− | 0.6− | | |
| 2000 10 25 | 704 | 0.1+ | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.5− | | |
| 2000 10 25 | 704 | 0.5− | 1.3+ | 2006 10 17 | 691 | 0.3+ | 0.5− | 2006 11 18 | 704 | 0.3− | 0.3− | | |
| 2000 11 03 | 704 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.7− | 0.4+ | | |
| 2000 11 03 | 704 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.0 | 0.9+ | | |
| 2000 11 03 | 704 | 0.2− | 1.3+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2− | 0.4− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 644 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 21 | 691 | 0.1− | 0.1− | | |
| 2002 02 08 | 644 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.3− | 2006 11 21 | 691 | 0.0 | 0.1+ | | |
| 2002 02 08 | 644 | 0.5+ | 0.7+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | 691 | 0.1− | 0.1+ | | |
| 2003 03 31 | 644 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.4− | 2006 11 21 | 704 | 0.9+ | 0.3+ | | |
| 2003 03 31 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 1.1+ | 0.4+ | | |
| 2003 03 31 | 644 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.3+ | | |
| 2005 08 29 | 644 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.7− | 0.4+ | | |
| 2005 08 29 | 644 | 0.4− | 0.4+ | 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.5− | | |
| 2005 08 29 | 644 | 0.1− | 0.5+ | 2006 11 12 | G96 | 0.2− | 0.3− | 2006 11 23 | H07 | 0.2+ | 0.1− | | |
| 2005 11 04 | G96 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 23 | H07 | 0.5+ | 0.6+ | | |
| 2005 11 04 | G96 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 23 | H07 | 0.7− | 0.3+ | | |
| 2005 11 04 | G96 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.4− | | |
| 2005 11 04 | G96 | 0.5+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.4+ | 0.2− | | |
| 2006 09 27 | G96 | 0.5+ | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.4− | | |
| 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.2− | | |
| 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.6+ | 1.1+ | 2006 11 29 | 704 | 0.5+ | 1.4− | | |
| 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.4+ | 2006 11 29 | 704 | 0.0 | 0.5− | | |
| 2006 10 16 | 703 | 0.5+ | 0.7+ | 2006 11 17 | 703 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.4+ | | |
| 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.7− | 0.8− | | |
| 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1− | 1.1+ | 2006 11 29 | 704 | 0.4− | 0.3− | | |

**2006 UP$_8$ = 1993 TC$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.30022 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22898893 | $\omega$ | 184.95441 | | +0.56079243 | | −0.81205218 |
| $a$ | 2.6460196 | $\Omega$ | 231.03626 | | +0.76659233 | | +0.58295079 |
| $e$ | 0.1410849 | $i$ | 11.98811 | | +0.31280673 | | +0.02719609 |
| $P$ | 4.30 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 08 | 691 | 0.1− | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.6− | 2006 11 18 | 704 | 0.4− | 0.3+ | | |
| 1993 10 08 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 1.0+ | 0.5+ | | |
| 1993 10 08 | 691 | 0.2+ | 0.0 | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.4+ | | |
| 1993 10 09 | 691 | 0.6+ | 0.2− | 2006 10 28 | 704 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.6+ | 0.6− | | |
| 1993 10 09 | 691 | 1.8− | 1.1+ | 2006 10 28 | 704 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.6+ | | |
| 1993 10 09 | 691 | 0.5+ | 1.2− | 2006 10 28 | 704 | 0.5+ | 0.5− | 2006 11 18 | 704 | 0.5− | 0.1+ | | |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.7− | 0.9+ | 2006 11 19 | H07 | 0.2− | 0.1− | | |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 19 | H07 | (1.0+ | 1.6+) | | |
| 2000 05 28 | 691 | 0.5− | 0.0 | 2006 11 10 | 691 | 0.3− | 0.2+ | 2006 11 19 | H07 | 0.7− | 0.7+ | | |
| 2000 05 28 | 691 | 0.3− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 19 | H07 | 0.2+ | 1.2− | | |
| 2000 05 28 | 691 | 0.5− | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.4+ | | |
| 2001 09 20 | 645 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.3+ | | |
| 2001 09 20 | 645 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.1+ | | |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.7− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.4− | | |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | (0.8+ | 3.1−) | 2006 11 21 | 704 | (0.6− | 1.6−) | | |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 1.2+ | 1.0− | 2006 11 29 | 704 | 0.3+ | 0.2− | | |
| 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.0 | 2006 11 29 | 704 | 1.2+ | 0.3− | | |
| 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.6+ | 2006 11 29 | 704 | 0.6+ | 0.6− | | |
| 2006 10 16 | 703 | 0.9− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.6+ | 2006 11 29 | 704 | 0.1+ | 0.1+ | | |
| 2006 10 16 | 703 | 0.1− | 0.9+ | 2006 11 18 | 704 | 1.0+ | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.7− | | |

**2006 UQ$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.75748 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17616686 | $\omega$ | 219.91348 | | +0.01267073 | | −0.97872359 |
| $a$ | 3.1515189 | $\Omega$ | 230.37969 | | +0.97181487 | | +0.06027017 |
| $e$ | 0.2297079 | $i$ | 15.41829 | | +0.23540456 | | −0.19613172 |
| $P$ | 5.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 01 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.0 | | |
| 2003 05 01 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 1.1− | 0.2− | | |
| 2003 05 01 | 691 | 0.2− | 0.2− | 2006 10 28 | 704 | 0.3+ | 0.7+ | 2006 11 19 | 704 | 0.2+ | 0.6− | | |
| 2003 05 24 | 691 | 0.4− | 0.9+ | 2006 10 28 | 704 | 0.2+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 0.3+ | | |
| 2003 05 24 | 691 | 0.1+ | 0.2− | 2006 10 28 | 704 | 0.9− | 0.4+ | 2006 11 20 | 704 | 0.0 | 0.3+ | | |
| 2003 05 24 | 691 | 0.7+ | 0.1− | 2006 10 28 | 704 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.5+ | 0.3+ | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 20 | 704 | (2.3+ | 0.2+) |
| 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.6+ | 1.5− |
| 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.5− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.4− |
| 2006 10 16 | 703 | 0.4− | 0.6− | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2006 10 16 | 703 | 0.2− | 0.5+ | 2006 11 11 | 703 | (1.7− | 0.8−) | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2006 10 16 | 703 | 0.2− | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.8− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.2− | 1.2− | 2006 11 29 | 704 | 0.2− | 0.1+ |
| 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.7+ | 0.1− |
| 2006 10 17 | G96 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.8+ | 0.3+ | 2006 11 29 | 704 | 0.3− | 0.4+ |
| 2006 10 17 | G96 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.3+ | 2006 11 29 | 704 | 0.6+ | 0.1+ |
| 2006 10 20 | 926 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.6+ | 2006 12 01 | 691 | 0.4+ | 0.3+ |
| 2006 10 20 | 926 | 0.2+ | 0.4+ | 2006 11 17 | 704 | 1.2+ | 0.3+ | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2006 10 20 | 926 | 0.2+ | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.9− | 0.2− |
| 2006 10 20 | 926 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.1+ | | | | |
| 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.5− | 0.4+ | | | | |

### 2006 $UX_8$ = 2005 $JV_{128}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.09412 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23534195 | $\omega$ | 173.99081 | | +0.83418896 | +0.55081584 | |
| $a$ | 2.5981835 | $\Omega$ | 152.53206 | | −0.50838094 | +0.78706909 | |
| $e$ | 0.2173454 | $i$ | 3.35969 | | −0.21372318 | +0.27771237 | |
| $P$ | 4.19 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 291 | 0.4− | 0.0 | 2005 05 14 | 644 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2004 01 30 | 291 | 0.1+ | 0.0 | 2005 05 14 | 644 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2004 01 30 | 291 | 0.6+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 10 | 683 | 0.3− | 0.1+ |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 10 | 683 | 0.8− | 1.5− |
| 2004 03 18 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 10 | 683 | 1.2− | 0.4− |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 1.3+ | 0.6− |
| 2005 05 13 | 691 | 0.3+ | 0.2+ | 2006 10 16 | 703 | 0.8+ | 1.4− | 2006 11 11 | 703 | 1.0+ | 0.5+ |
| 2005 05 13 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.5+ | 0.2+ |
| 2005 05 13 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.7+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.1+ |
| 2005 05 14 | G96 | 0.4− | 0.2− | 2006 10 16 | 703 | (2.1+ | 0.1−) | 2006 11 14 | 683 | 0.8+ | 0.3− |
| 2005 05 14 | G96 | 0.3− | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 683 | 1.1− | 1.2+ |
| 2005 05 14 | G96 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 683 | 1.6− | 0.8− |
| 2005 05 14 | G96 | 0.3− | 0.6− | 2006 10 18 | 691 | 0.1− | 0.2+ | | | | |
| 2005 05 14 | 644 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1+ | | | | |

### 2006 $UD_9$ = 2004 $JS_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.28090 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17604064 | $\omega$ | 296.12739 | | +0.96530835 | +0.10338557 | |
| $a$ | 3.1530250 | $\Omega$ | 58.80766 | | +0.03620349 | +0.85641270 | |
| $e$ | 0.0761189 | $i$ | 16.27778 | | −0.25859059 | +0.50583467 | |
| $P$ | 5.60 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 704 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2004 05 15 | 704 | 0.2+ | 0.8+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2004 05 15 | 704 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.7− | 0.8+ |
| 2004 05 16 | 704 | 0.6+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.6+ | 2006 11 18 | 704 | 1.1− | 0.1+ |
| 2004 05 16 | 704 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.5− | 0.2− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2004 05 16 | 704 | (2.0+ | 1.7+) | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.9+ |
| 2004 05 16 | 704 | 0.9+ | 1.3+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2006 10 02 | G96 | 0.6+ | 0.4− | 2006 11 11 | 703 | 0.7− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 1.0+ |
| 2006 10 02 | G96 | 1.0+ | 0.3− | 2006 11 11 | 703 | 0.6− | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.6+ | 2006 11 26 | 104 | 0.1+ | 0.1− |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.3+ | 2006 11 26 | 104 | 0.3− | 0.5+ |
| 2006 10 16 | 703 | 1.4+ | 1.2− | 2006 11 18 | 704 | 0.1+ | 0.4+ | 2006 11 26 | 104 | 0.2+ | 0.2+ |
| 2006 10 16 | 703 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.9− | 2006 11 26 | 104 | 0.2− | 0.3− |
| 2006 10 16 | 703 | 0.2− | 1.1− | 2006 11 18 | 704 | 0.9− | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.4− |
| 2006 10 16 | 703 | (1.0+ | 1.6−) | 2006 11 18 | 704 | 0.2+ | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.4+ |
| 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (2.0+ | 0.2+) | 2006 11 29 | 704 | 0.8+ | 1.0− |
| 2006 10 18 | 691 | 0.2− | 0.3− | 2006 11 18 | 704 | 1.3− | 0.4− | 2006 11 29 | 704 | 1.2+ | 0.1+ |

### 2006 $UG_9$ = 2001 $YQ_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.33248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18067292 | $\omega$ | 292.85620 | | +0.97095551 | −0.21375329 | |
| $a$ | 3.0988984 | $\Omega$ | 79.62044 | | +0.23918334 | +0.87854584 | |
| $e$ | 0.1704231 | $i$ | 6.27394 | | −0.00605999 | +0.42716126 | |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 1.0+ | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1− | 0.4− |
| 2001 12 18 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.8− | 0.1− |
| 2001 12 19 | 704 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.5+ |
| 2001 12 19 | 704 | 0.4+ | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.5− | 0.1− |
| 2001 12 19 | 704 | 1.0− | 0.5+ | 2006 11 02 | 703 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.8+ | 0.6− |
| 2001 12 19 | 704 | 0.3+ | 0.5− | 2006 11 02 | 703 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.1− | 0.2− |
| 2001 12 19 | 704 | 0.7− | 0.9− | 2006 11 02 | 703 | 0.7− | 0.8− | 2006 11 17 | 703 | 0.4+ | 0.7− |
| 2006 10 16 | 703 | 0.3− | 1.3− | 2006 11 02 | 703 | 0.5− | 0.6+ | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2006 10 16 | 703 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2006 10 16 | 703 | 0.5+ | 0.1− | 2006 11 09 | 644 | 0.6− | 0.1− | 2006 11 20 | 704 | 0.4+ | 0.8+ |
| 2006 10 16 | 703 | 1.0− | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 20 | 704 | 1.0+ | 0.1+ |
| 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.3+ | 1.4+ |
| 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 10 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.4+ | 1.4+ |
| 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.5− | 0.9− | 2006 11 20 | 704 | 0.4+ | 0.2− |
| 2006 10 17 | G96 | 0.3+ | 0.8− | 2006 11 15 | G96 | 0.1+ | 0.3− | | | | |
| 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− | | | | |

### 2006 $UJ_9$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.58071 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17001396 | $\omega$ | 52.90562 | | +0.03090260 | +0.97129881 | |
| $a$ | 3.2271043 | $\Omega$ | 220.87741 | | −0.99264421 | +0.00218929 | |
| $e$ | 0.0941544 | $i$ | 21.12340 | | −0.11705769 | +0.23785253 | |
| $P$ | 5.80 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 08 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2002 02 08 | 645 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2004 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2004 04 30 | 691 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2004 04 30 | 691 | 0.2− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2004 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2004 06 14 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.1+ |
| 2004 06 14 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2005 08 31 | 644 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2005 08 31 | 644 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 | | | | |
| 2005 08 31 | 644 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.1− | | | | |

### 2006 $UN_9$ = 1995 $WO_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.42179 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17780199 | $\omega$ | 275.53756 | | −0.61941273 | −0.78028666 | |
| $a$ | 3.1321675 | $\Omega$ | 213.23628 | | +0.76819822 | −0.57970061 | |
| $e$ | 0.1874349 | $i$ | 9.07937 | | +0.16186219 | −0.23473374 | |
| $P$ | 5.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.7− | 0.1+ | 2006 11 10 | 291 | 0.1− | 0.1+ |
| 1995 11 17 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 10 | 291 | 0.1− | 0.3+ |
| 1995 11 17 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 291 | 0.2+ | 0.1+ |
| 1995 11 22 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 10 | 644 | 0.4+ | 0.1− |
| 1995 11 22 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 24 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 10 | 644 | 1.0+ | 0.2− |
| 2003 05 24 | 691 | 0.4+ | 0.6+ | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 15 | G96 | 0.7+ | 0.4− |
| 2003 05 24 | 691 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.6− |
| 2006 09 26 | G96 | 0.3− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2− | 0.7− |
| 2006 09 26 | G96 | 1.1− | 0.1+ | 2006 10 22 | 691 | 0.6− | 0.2+ | 2006 11 15 | G96 | 0.8+ | 0.1− |
| 2006 09 26 | G96 | 0.7− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ | | | | |

**2006 $UO_9$ = 2000 $SE_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.72998 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17357258 | $\omega$ | 189.48993 | | +0.88251946 | | −0.46979493 |
| $a$ | 3.1828437 | $\Omega$ | 198.57654 | | +0.43572887 | | +0.83386178 |
| $e$ | 0.0798877 | $i$ | 3.82704 | | +0.17691733 | | +0.28977103 |
| $P$ | 5.68 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.4− | 0.2+ | 2006 11 11 | 644 | 0.3− | 0.4− |
| 2000 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2000 09 28 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2000 10 01 | 704 | 0.7+ | 1.1+ | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2000 10 01 | 704 | 0.4− | 0.5+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2000 10 01 | 704 | 0.4− | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | (0.1− | 1.7+) |
| 2000 10 01 | 704 | 0.1− | 1.4− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.8+ |
| 2002 01 08 | 644 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.8+ |
| 2002 01 08 | 644 | 0.4− | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | (1.5+ | 1.7+) |
| 2002 01 08 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.5− | 0.5+ |
| 2003 03 23 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2003 03 23 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.7+ |
| 2003 03 23 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2005 10 27 | G96 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 1.2− | 0.7− | 2006 11 28 | 704 | 0.1+ | 0.1+ |
| 2005 10 27 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.9− | 2006 11 28 | 704 | 0.3+ | 0.7− |
| 2005 10 27 | G96 | 0.7− | 0.3+ | 2006 11 11 | 703 | 0.0 | 1.2− | 2006 11 28 | 704 | 0.5− | 0.7+ |
| 2005 10 27 | G96 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.3− | 2006 11 28 | 704 | 0.1+ | 2.3+ |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.0 | | | | |
| 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 644 | 0.1− | 0.1− | | | | |

**2006 $UV_9$ = 2005 $JT_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.14168 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27636595 | $\omega$ | 240.96248 | | +0.72427160 | | +0.67797265 |
| $a$ | 2.3342446 | $\Omega$ | 76.04237 | | −0.57901462 | | +0.69695525 |
| $e$ | 0.1252831 | $i$ | 7.43813 | | −0.37439647 | | +0.23368026 |
| $P$ | 3.57 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.4− | 0.4+ | 2005 06 16 | G96 | 0.4− | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2002 08 20 | 644 | 0.2+ | 0.5+ | 2005 06 27 | 644 | 0.5+ | 0.7+ | 2006 10 18 | 291 | 0.3− | 0.0 |
| 2002 08 20 | 644 | 0.0 | 0.5+ | 2005 06 27 | 644 | 0.6+ | 0.5+ | 2006 10 18 | 291 | 0.6− | 0.3+ |
| 2002 09 09 | 644 | 0.3− | 0.3− | 2005 06 27 | 644 | 0.6+ | 0.6+ | 2006 10 18 | 291 | 0.3− | 0.1− |
| 2002 09 09 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 1.1+ | 1.0+ | 2006 11 14 | 704 | 0.2+ | 0.1+ |
| 2002 09 09 | 644 | 0.1+ | 0.5− | 2006 10 16 | 703 | 0.3− | 0.6+ | 2006 11 14 | 704 | 0.9− | 0.4− |
| 2003 12 21 | 645 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.0+ | 2006 11 14 | 704 | 0.3+ | 0.1− |
| 2003 12 21 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.1− | 0.7+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2005 05 12 | G96 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2005 05 12 | G96 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 05 12 | G96 | 0.0 | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 05 12 | G96 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2005 05 14 | 644 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2005 05 14 | 644 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2005 05 14 | 644 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 28 | 704 | 0.5− | 0.1− |
| 2005 06 16 | G96 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.5− | 0.0 | 2006 11 28 | 704 | 1.1+ | 0.2+ |
| 2005 06 16 | G96 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.3+ | 2.2+ |
| 2005 06 16 | G96 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ | | | | |

**2006 $UX_9$ = 2004 $HO_{76}$ = 2005 $NA_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.59930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19973756 | $\omega$ | 279.54938 | | +0.88197604 | | +0.46977148 |
| $a$ | 2.8984305 | $\Omega$ | 52.44089 | | −0.41150806 | | +0.80675833 |
| $e$ | 0.0982732 | $i$ | 2.73711 | | −0.22973766 | | +0.35840724 |
| $P$ | 4.93 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 807 | 0.1− | 0.3− | 2005 07 07 | 691 | 0.3+ | 0.6+ | 2006 11 12 | 703 | (1.7+ | 1.4+) |
| 2000 07 29 | 807 | 0.0 | 0.3− | 2005 07 11 | 691 | 0.1− | 0.1− | 2006 11 12 | 703 | 1.1+ | 0.2− |
| 2001 11 12 | 291 | 0.1+ | 0.3+ | 2005 07 11 | 691 | 0.3− | 0.1− | 2006 11 12 | 703 | 0.0 | 0.6+ |
| 2001 11 12 | 291 | 0.1− | 0.5+ | 2005 07 11 | 691 | 0.0 | 0.2− | 2006 11 12 | 703 | 1.0+ | 0.5+ |
| 2001 11 12 | 291 | 0.3− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2004 04 26 | 568 | 0.1+ | 0.6+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 14 | 691 | 0.3+ | 0.2− |
| 2004 04 26 | 568 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2004 04 26 | 568 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.3− | 0.4− |
| 2004 04 27 | 568 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.3− | 0.6− | 2006 11 27 | G96 | 0.4− | 0.1− |
| 2005 07 07 | 691 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.6− | 0.5− |
| 2005 07 07 | 691 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 27 | G96 | 0.2− | 0.2− |

**2006 $UZ_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.82431 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24286041 | $\omega$ | 279.26210 | | +0.55160221 | | −0.83355748 |
| $a$ | 2.5442800 | $\Omega$ | 137.21511 | | +0.78171484 | | +0.50395024 |
| $e$ | 0.1500721 | $i$ | 2.55510 | | +0.29095862 | | +0.22630973 |
| $P$ | 4.06 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.4+ | 0.2− |
| 2002 11 24 | 644 | 0.2− | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 12 10 | 644 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2002 12 10 | 644 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2002 12 10 | 644 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 11 13 | 703 | 0.2− | 0.5− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 13 | 703 | 1.4− | 0.1− | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.9− | 0.3− | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 13 | 703 | 0.6− | 0.0 | 2006 12 01 | 691 | 0.3+ | 0.4− |
| 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.7− | 2006 12 01 | 691 | 0.3− | 0.4+ |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.5− | | | | |
| 2006 10 16 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.3− | | | | |

**2006 $UF_{10}$ = 2002 $TN_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.09350 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23883410 | $\omega$ | 139.18759 | | +0.04875363 | | −0.99047672 |
| $a$ | 2.5727949 | $\Omega$ | 307.62284 | | +0.86892745 | | +0.10562910 |
| $e$ | 0.1695021 | $i$ | 9.35583 | | +0.49253241 | | −0.08830828 |
| $P$ | 4.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.0 | 0.1+ | 2002 10 05 | 704 | 0.2+ | 0.7+ | 2006 10 18 | 691 | 0.0 | 0.1− |
| 2002 10 03 | 644 | 0.1− | 0.4+ | 2002 10 05 | 704 | 0.7+ | 0.2− | 2006 10 18 | 691 | 0.3− | 0.1− |
| 2002 10 03 | 644 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.6− | 0.7− | 2006 10 18 | 691 | 0.6+ | 0.4+ |
| 2002 10 05 | 704 | 0.5− | 0.9− | 2006 10 17 | 703 | 0.9+ | 0.4− | 2006 10 20 | 691 | 0.2+ | 0.6+ |
| 2002 10 05 | 704 | 0.3+ | 0.1+ | 2006 10 17 | 703 | 1.0− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.3− |
| 2002 10 05 | 704 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2− |

**2006 UG$_{10}$ = 1997 SA$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 311.36025 | | | (2000.0) | | |
| $n$ | 0.22162121 | $\omega$ | 91.90317 | | +0.26690418 | −0.96322140 |
| $a$ | 2.7043434 | $\Omega$ | 342.52080 | | +0.83793584 | +0.24788299 |
| $e$ | 0.0218401 | $i$ | 5.94160 | | +0.47605219 | +0.10372346 |
| $P$ | 4.45 | $H$ | 17.3 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 29 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 10 18 | 291 | 0.2+ | 0.1− |
| 1997 09 29 | 691 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.4+ |
| 1997 10 04 | 691 | 0.1+ | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 1997 10 04 | 691 | 0.2− | 0.2− | 2006 10 18 | 291 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.0 |
| 1997 10 04 | 691 | 0.0 | 0.4+ | 2006 10 18 | 291 | 0.0 | 0.1− | | | | |

**2006 UL$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 126.20988 | | | (2000.0) | | |
| $n$ | 0.24128524 | $\omega$ | 212.40393 | | −0.35093185 | +0.92140971 |
| $a$ | 2.5553411 | $\Omega$ | 37.80906 | | −0.79061151 | −0.19605040 |
| $e$ | 0.1306922 | $i$ | 15.79705 | | −0.50177711 | −0.33551213 |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 599 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2002 10 04 | 599 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2002 10 04 | 599 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 03 | G96 | 0.5+ | 0.3− |
| 2002 10 31 | 291 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 03 | G96 | 0.1+ | 0.4− |
| 2002 10 31 | 644 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 11 03 | G96 | 0.2− | 0.2+ |
| 2002 10 31 | 291 | 0.1+ | 0.5− | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 03 | G96 | 0.0 | 0.5+ |
| 2002 10 31 | 644 | 0.4+ | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.2+ |
| 2002 10 31 | 644 | 0.1+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 291 | 0.4− | 0.3+ | 2006 10 22 | 691 | 0.5− | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.6− |
| 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.0 | 0.0 | | | | |
| 2006 10 02 | G96 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.0 | | | | |

**2006 UO$_{10}$ = 2005 JU$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.89406 | | | (2000.0) | | |
| $n$ | 0.27298262 | $\omega$ | 318.55250 | | +0.99622652 | −0.04160215 |
| $a$ | 2.3534919 | $\Omega$ | 44.01184 | | +0.07254733 | +0.88089542 |
| $e$ | 0.1501067 | $i$ | 6.29391 | | −0.04764038 | +0.47147908 |
| $P$ | 3.61 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.5− |
| 2001 03 22 | 691 | 0.3+ | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2001 03 22 | 691 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 02 17 | 691 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.1− |
| 2004 02 17 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2004 02 17 | 691 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2005 05 04 | G96 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2005 05 04 | G96 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.4− |
| 2005 05 04 | G96 | 0.6− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2005 05 04 | G96 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.2− | 1.0+ |
| 2005 05 07 | 691 | 0.4+ | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 25 | 703 | 0.1− | 0.7+ |
| 2005 05 07 | 691 | 0.1+ | 0.7+ | 2006 10 22 | 691 | 1.4− | 1.0+ | 2006 11 25 | 703 | 0.1+ | 0.6+ |
| 2005 05 07 | 691 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 25 | 703 | 0.0 | 0.7+ |
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 25 | 703 | 0.2− | 1.2+ |
| 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.2− |
| 2006 10 02 | G96 | 0.1− | 0.7+ | 2006 11 10 | 691 | 0.4+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2006 10 02 | G96 | 0.6+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.3+ |

**2006 UQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 73.64056 | | | (2000.0) | | |
| $n$ | 0.21701740 | $\omega$ | 246.50323 | | +0.44557234 | +0.89212280 |
| $a$ | 2.7424560 | $\Omega$ | 50.17075 | | −0.78179207 | +0.42841080 |
| $e$ | 0.1458535 | $i$ | 5.58311 | | −0.43619543 | +0.14346110 |
| $P$ | 4.54 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 04 | 691 | 0.0 | 0.8− | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 1997 12 04 | 691 | 0.3+ | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 1997 12 04 | 691 | 0.3+ | 0.3− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 2001 08 25 | 644 | 0.7+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 08 25 | 644 | 0.6+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 09 | 691 | 0.0 | 0.1− |
| 2001 08 25 | 644 | 0.6+ | 0.1+ | 2006 10 17 | G96 | 0.3− | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.0 |
| 2001 08 25 | 699 | 0.8− | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 09 | 691 | 0.5− | 0.1− |
| 2001 08 25 | 699 | 0.1− | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2001 08 25 | 699 | 1.2− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2001 08 25 | 699 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.7+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2001 10 10 | 644 | 0.2+ | 1.0− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2001 10 10 | 644 | 0.0 | 0.8− | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2001 10 10 | 644 | 0.2+ | 1.1− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.5+ |
| 2005 02 09 | 809 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.5+ |
| 2005 02 09 | 809 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2005 02 09 | 809 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.2− |

**2006 UW$_{10}$ = 1995 WE$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 196.63060 | | | (2000.0) | | |
| $n$ | 0.17813513 | $\omega$ | 158.79918 | | −0.93838628 | +0.20078672 |
| $a$ | 3.1282611 | $\Omega$ | 36.65326 | | −0.34363006 | −0.62863256 |
| $e$ | 0.0901045 | $i$ | 28.11035 | | +0.03673662 | −0.75133601 |
| $P$ | 5.53 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.4+ | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 10 29 | G96 | 0.0 | 0.6− |
| 1995 11 17 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 10 29 | G96 | 0.3+ | 0.5− |
| 1995 11 17 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 1995 11 23 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.0 | 0.5− |
| 1995 11 23 | 691 | 0.2− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 1995 11 23 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.4+ |
| 1995 11 30 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 1995 11 30 | 691 | 0.7− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 10 | 691 | 0.4+ | 0.1− |
| 1995 11 30 | 691 | 0.5− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.3+ | 0.0 |
| 2003 04 01 | 645 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2003 04 01 | 645 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2003 04 26 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.6− |
| 2003 04 26 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2− | 1.1+ | 2006 11 14 | G96 | 0.0 | 0.7− |
| 2006 10 17 | G96 | 0.1− | 0.6− | 2006 10 29 | G96 | 0.2+ | 0.6− | | | | |

**2006 UE$_{11}$ = 1997 GY$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 190.40600 | | | (2000.0) | | |
| $n$ | 0.26433340 | $\omega$ | 14.19220 | | −0.95176465 | +0.30681001 |
| $a$ | 2.4045548 | $\Omega$ | 183.68020 | | −0.28644448 | −0.89246731 |
| $e$ | 0.0700607 | $i$ | 3.04990 | | −0.10997092 | −0.33071092 |
| $P$ | 3.73 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.3− | 0.3− | 2004 01 18 | 644 | 0.3+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.2+ |
| 1997 04 03 | 704 | 0.2− | 0.8+ | 2004 01 18 | 644 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.2+ |
| 1997 04 07 | 704 | 1.3+ | 0.0 | 2004 03 17 | 645 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.4− | 0.3+ |
| 1997 04 07 | 704 | 0.1+ | 1.3+ | 2004 03 17 | 645 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.2− | 0.2+ |
| 2001 05 25 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2001 05 25 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 25 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2001 06 11 | 691 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 06 11 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.4− | 2006 11 09 | 691 | 0.4+ | 0.1− |
| 2001 06 11 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.5+ | 1.0− | 2006 11 09 | 691 | 0.2+ | 0.2− |
| 2003 12 29 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.2+ |
| 2003 12 29 | 691 | 0.3+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2003 12 29 | 691 | 0.0 | 0.5+ | 2006 10 17 | G96 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2004 01 18 | 644 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.4+ |

**2006 UH$_{11}$ = 2005 LB$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.67071 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24649509 | $\omega$ | 137.98289 | | +0.87453199 | | +0.48475465 |
| $a$ | 2.5192071 | $\Omega$ | 193.04302 | | −0.46018838 | | +0.82012749 |
| $e$ | 0.1190637 | $i$ | 3.65269 | | −0.15303740 | | +0.30397997 |
| $P$ | 4.00 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 22 | 691 | 0.5− | 0.5+ | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.1− |
| 2001 05 22 | 691 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.2+ | 2006 11 09 | 691 | 0.3+ | 0.2− |
| 2001 05 22 | 691 | 0.5− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 09 | 691 | 0.1− | 0.1+ |
| 2001 06 16 | 691 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2001 06 16 | 691 | 0.4+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 06 16 | 691 | 0.7+ | 0.2− | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.6+ | 1.0− |
| 2005 06 08 | 691 | 0.0 | 0.3− | 2006 10 18 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.3+ | 0.3− |
| 2005 06 08 | 691 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2005 06 08 | 691 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2005 06 13 | 691 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 0.5+ |
| 2005 06 13 | 691 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2005 06 13 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1+ | 2006 11 17 | 703 | (0.2+ | 1.6−) |
| 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1− | | | | |
| 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.7− | 0.5− | | | | |

**2006 UK$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.29645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17836040 | $\omega$ | 300.30932 | | +0.06722958 | | −0.99762196 |
| $a$ | 3.1256266 | $\Omega$ | 145.82562 | | +0.92443986 | | +0.05655739 |
| $e$ | 0.1334956 | $i$ | 1.54919 | | +0.37535468 | | +0.03939156 |
| $P$ | 5.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 291 | 0.3+ | 1.4+ | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2003 03 10 | 291 | 0.0 | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.1− | 2006 11 09 | 691 | 0.3− | 0.0 |
| 2003 03 10 | 291 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.3+ |
| 2003 03 26 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2003 03 26 | 691 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2003 03 26 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 11 | 703 | 0.9− | 0.9+ |
| 2005 07 12 | 291 | 0.6− | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.7− |
| 2005 07 12 | 291 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2005 07 12 | 291 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.9+ |
| 2006 07 22 | G96 | 0.6− | 0.8+ | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 11 19 | G92 | 0.0 | 0.6+ |
| 2006 07 22 | G96 | 0.4− | 0.9+ | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 19 | G92 | 0.7− | 0.2− |
| 2006 07 22 | G96 | 0.4− | 1.1+ | 2006 10 31 | G96 | 0.0 | 0.1+ | 2006 11 19 | G92 | 0.9− | 0.6+ |
| 2006 07 22 | G96 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.2+ | 0.2− | | | | |
| 2006 09 26 | G96 | 0.3− | 0.3− | 2006 11 09 | 691 | 0.1− | 0.0 | | | | |

**2006 UL$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.91905 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27743406 | $\omega$ | 315.07501 | | −0.88120821 | | −0.47215016 |
| $a$ | 2.3282496 | $\Omega$ | 196.79460 | | +0.45326450 | | −0.82985082 |
| $e$ | 0.0608929 | $i$ | 4.63991 | | +0.13425119 | | −0.29735810 |
| $P$ | 3.55 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 15 | 691 | 0.2+ | 0.0 | 2004 01 14 | 644 | 0.9− | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.3+ |
| 1994 04 15 | 691 | 0.5+ | 0.2− | 2004 01 14 | 644 | 1.4− | 0.4− | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 1994 04 15 | 691 | (1.7− | 3.1+) | 2004 01 14 | 644 | 0.6− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 |
| 1999 10 06 | 691 | 0.6+ | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.5− | 0.0 |
| 1999 10 06 | 691 | 0.6+ | 0.0 | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 1999 10 06 | 691 | 0.8+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2001 03 23 | 691 | 0.8+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.6+ |
| 2001 03 23 | 691 | 0.8+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2001 03 23 | 691 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 13 | 691 | 0.2− | 0.6+ |
| 2003 12 22 | 691 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.4+ |
| 2003 12 22 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.7+ |
| 2003 12 22 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.4− | 0.2+ | | | | |

**2006 UQ$_{11}$ = 2001 QQ$_{332}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.98649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22751810 | $\omega$ | 284.00875 | | +0.80953770 | | +0.57442188 |
| $a$ | 2.6574111 | $\Omega$ | 41.12271 | | −0.44191433 | | +0.73215342 |
| $e$ | 0.0623475 | $i$ | 10.61905 | | −0.38647178 | | +0.36604764 |
| $P$ | 4.33 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 14 | 291 | 0.1+ | 0.0 |
| 2001 07 19 | 644 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 14 | 291 | 0.2+ | 0.1− |
| 2001 07 19 | 644 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 14 | 291 | 0.1+ | 0.0 |
| 2001 08 21 | 644 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 14 | 291 | 0.2+ | 0.0 |
| 2001 08 21 | 644 | 0.6− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 14 | 291 | 0.1+ | 0.1+ |
| 2001 08 21 | 644 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | (3.0− | 1.3−) |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.7+ | 0.1− |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.9− | 0.8+ |
| 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 1.3− | 1.2+ |
| 2006 09 30 | G96 | 0.0 | 0.7− | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2006 09 30 | G96 | 0.4+ | 0.5− | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.5+ | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 13 | 691 | 0.1− | 0.7+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.3− |
| 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 14 | 291 | 0.0 | 0.3− | | | | |

**2006 UR$_{11}$ = 2005 NA$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.56293 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15958813 | $\omega$ | 140.99252 | | +0.94151479 | | +0.33438500 |
| $a$ | 3.3661670 | $\Omega$ | 199.59508 | | −0.33183321 | | +0.89852632 |
| $e$ | 0.1185745 | $i$ | 7.13787 | | −0.05862277 | | +0.28431871 |
| $P$ | 6.18 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 695 | 0.1+ | 0.4+ | 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2003 03 30 | 695 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2005 07 05 | 644 | 0.2− | 0.2+ | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2005 07 05 | 644 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.2+ | 0.7− | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2005 07 05 | 644 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2005 07 09 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2005 07 09 | 691 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.0 |
| 2005 07 09 | 691 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2006 09 26 | G96 | 0.8− | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.0 |

**2006 UV$_{11}$ = 1995 SM$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 319.82067 | | $\omega$ | 296.67099 | +0.20688305 | −0.97807130 |
| $n$ | 0.18475350 | | $\Omega$ | 141.36511 | +0.91074238 | +0.18356451 |
| $a$ | 3.0530993 | | $i$ | 2.20286 | +0.35741812 | +0.09839008 |
| $e$ | 0.0988101 | | $H$ | 16.8 | $G$ 0.15 | $U$ 5 |
| $P$ | 5.33 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.4− | 0.9− | 2006 10 31 | G96 | 0.4+ | 0.5− |
| 1995 09 19 | 691 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 1995 09 19 | 691 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 1995 09 25 | 691 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1995 09 25 | 691 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.6+ | 0.6− |
| 1995 09 25 | 691 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 10 17 | G96 | 0.6+ | 1.0+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2006 10 17 | G96 | 0.4− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.5− |

**2006 UY$_{11}$ = 1996 RP$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.00728 | | $\omega$ | 244.94392 | +0.64443835 | −0.76455364 |
| $n$ | 0.20501745 | | $\Omega$ | 164.91203 | +0.71775970 | +0.59918425 |
| $a$ | 2.8484515 | | $i$ | 2.75859 | +0.26366687 | +0.23756255 |
| $e$ | 0.0509630 | | $H$ | 17.2 | $G$ 0.15 | $U$ 4 |
| $P$ | 4.81 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 15 | 691 | 0.7+ | 0.7− | 2001 10 11 | 644 | 0.7− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.3+ |
| 1996 09 15 | 691 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1996 09 15 | 691 | 0.5+ | 0.3− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.6+ | 0.5− |
| 1996 09 22 | 691 | 1.1− | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 31 | G96 | 0.6+ | 0.5− |
| 1996 09 22 | 691 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 1996 09 22 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.5− | 0.4+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 09 21 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 1.3+ | 0.3− | 2006 11 16 | G96 | 0.5+ | 0.2− |
| 2001 09 21 | 691 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.6− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2001 09 21 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2001 10 11 | 644 | 0.5− | 0.4+ | 2006 10 18 | 691 | 0.5− | 0.4+ | | | | |
| 2001 10 11 | 644 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1− | | | | |

**2006 UB$_{12}$ = 2001 FP$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 248.47688 | | $\omega$ | 96.82429 | −0.85929600 | −0.50304366 |
| $n$ | 0.28668765 | | $\Omega$ | 53.01646 | +0.41152190 | −0.78736980 |
| $a$ | 2.2778759 | | $i$ | 6.65010 | +0.30374348 | −0.35636481 |
| $e$ | 0.1011820 | | $H$ | 17.1 | $G$ 0.15 | $U$ 3 |
| $P$ | 3.44 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 704 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.4− | 0.5− | 2006 10 29 | 691 | 0.5− | 0.2+ |
| 2001 03 26 | 704 | 0.1− | 0.7+ | 2006 10 02 | G96 | 0.4− | 0.4− | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2001 03 26 | 704 | 1.3+ | 0.5+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 2001 03 26 | 704 | 0.3+ | 0.8− | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2001 03 27 | 699 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2001 03 27 | 699 | 0.4− | 0.5− | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 03 27 | 699 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.7− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2001 03 27 | 699 | 0.3− | 0.3+ | 2006 10 17 | G96 | 1.0+ | 0.4− | 2006 11 15 | G96 | 1.3+ | 0.4− |
| 2001 06 12 | 691 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2001 06 12 | 691 | 0.3+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.1+ |
| 2001 06 12 | 691 | 0.1+ | 0.6+ | 2006 10 18 | 691 | 0.4+ | 0.3+ | 2006 11 15 | G96 | 0.4− | 0.2− |

**2006 UC$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.37991 | | $\omega$ | 191.97329 | +0.84441984 | −0.53283122 |
| $n$ | 0.27917202 | | $\Omega$ | 200.51379 | +0.50356007 | +0.82470126 |
| $a$ | 2.3185766 | | $i$ | 9.06144 | +0.18270850 | +0.18962788 |
| $e$ | 0.0036835 | | $H$ | 16.7 | $G$ 0.15 | $U$ 2 |
| $P$ | 3.53 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.2+ | 0.2− | 2002 09 04 | 644 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.3+ |
| 1994 04 06 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 1994 04 06 | 691 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1− |
| 2002 08 04 | 644 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2002 08 04 | 644 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2002 08 04 | 644 | 0.4+ | 0.1− | 2006 10 16 | 703 | (1.8+ | 1.7−) | 2006 10 31 | G96 | 0.1− | 0.1+ |
| 2002 08 13 | 699 | 0.8− | 1.0− | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.5+ | 0.2− |
| 2002 08 13 | 699 | 0.6− | 0.0 | 2006 10 16 | 703 | 1.0+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2002 08 13 | 699 | 0.2− | 0.8+ | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.5+ |
| 2002 08 13 | 699 | (2.6+ | 1.1+) | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2002 08 15 | 644 | 0.4+ | 0.4+ | 2006 10 17 | G96 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 2002 08 15 | 644 | 0.4+ | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2002 08 15 | 644 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.8− | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2002 09 04 | 644 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2002 09 04 | 644 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.0 |

**2006 UF$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.33793 | | $\omega$ | 61.42479 | −0.42325590 | −0.89997416 |
| $n$ | 0.21802754 | | $\Omega$ | 53.99187 | +0.77963076 | −0.42049602 |
| $a$ | 2.7339788 | | $i$ | 7.41575 | +0.46155208 | −0.11502004 |
| $e$ | 0.1634621 | | $H$ | 16.6 | $G$ 0.15 | $U$ 3 |
| $P$ | 4.52 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.4− | 0.1+ |
| 2002 12 31 | 699 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 27 | 691 | 0.5− | 0.2− |
| 2002 12 31 | 699 | 1.4− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 10 27 | 691 | 0.4− | 0.2+ |
| 2002 12 31 | 699 | 1.3− | 0.2+ | 2006 10 17 | G96 | 0.6+ | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 12 31 | 699 | 1.0+ | 0.2+ | 2006 10 17 | G96 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2003 01 31 | 699 | 0.0 | 0.9+ | 2006 10 17 | G96 | 0.6+ | 0.6− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2003 01 31 | 699 | 0.4− | 0.4− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 1.1− |
| 2003 01 31 | 699 | 1.1+ | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.0 |
| 2003 01 31 | 699 | 0.5+ | 0.3+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.0− | 0.2− |
| 2004 05 19 | 599 | 0.2+ | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.5− |
| 2004 05 19 | 599 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | (0.1− | 2.2−) |
| 2004 05 19 | 599 | 0.3+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | (3.0+ | 1.3−) |
| 2004 05 20 | 599 | 0.2− | 0.8+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.6− |
| 2006 10 02 | G96 | 0.8+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.9+ |

**2006 UU$_{12}$ = 1999 AJ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 296.47171 | | $\omega$ | 319.52579 | −0.20807952 | −0.97758947 |
| $n$ | 0.22578058 | | $\Omega$ | 142.45215 | +0.91039906 | −0.20551894 |
| $a$ | 2.6710273 | | $i$ | 3.00658 | +0.35759819 | −0.04561573 |
| $e$ | 0.0627941 | | $H$ | 17.2 | $G$ 0.15 | $U$ 4 |
| $P$ | 4.37 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 11 | 691 | 0.6− | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 1999 01 11 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1999 01 11 | 691 | 0.4− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 1999 01 15 | 691 | 0.8+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.5+ | 2006 10 30 | A44 | 0.2+ | 0.2+ |
| 1999 01 15 | 691 | 0.6+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 10 30 | A44 | 0.0 | 0.2− |
| 1999 01 15 | 691 | 1.0+ | 0.3− | 2006 10 17 | G96 | 0.0 | 0.8− | 2006 11 16 | G96 | 0.8+ | 0.5− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 18 | 691 | 0.4− | 0.2− | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.4− | 0.3− | | |
| 1999 01 18 | 691 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.5+ | 0.0 | 2006 11 16 | G96 | 0.6+ | 0.0 | | |
| 1999 01 18 | 691 | 0.6− | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.0 | | |
| 2006 09 30 | G96 | 0.3− | 0.2− | 2006 10 18 | 691 | 0.2− | 0.4+ | | | | | | |

**2006 UV$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.17611 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20379003 | $\omega$ | 252.28601 | | +0.85930882 | −0.51042253 | |
| $a$ | 2.8598774 | $\Omega$ | 138.38982 | | +0.48585040 | +0.79477221 | |
| $e$ | 0.0786055 | $i$ | 2.80651 | | +0.15980529 | +0.32833820 | |
| $P$ | 4.84 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 24 | 691 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.8− | 0.6− | 2006 10 22 | 691 | 1.5+ | 0.0 |
| 2001 10 24 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.7− | 2006 10 23 | 691 | 0.2+ | 0.1− |
| 2001 10 24 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2003 01 30 | 291 | 0.5− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.2− |
| 2003 01 30 | 291 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.6+ | 0.2− | 2006 10 27 | 691 | 0.3− | 0.4+ |
| 2003 01 30 | 291 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.5− | 0.0 | 2006 10 27 | 691 | 0.5− | 0.1+ |
| 2005 07 03 | G96 | 0.1− | 0.5+ | 2006 10 18 | 691 | 0.4− | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.1+ |
| 2005 07 03 | G96 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 07 03 | G96 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.2+ | 0.7− |
| 2005 07 03 | G96 | 0.3− | 0.7+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.8+ | 0.5− |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.4+ | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2006 09 30 | G96 | 0.3− | 0.4− | 2006 10 22 | 691 | 0.5− | 0.1− | | | | |
| 2006 09 30 | G96 | 0.4+ | 0.4− | 2006 10 22 | 691 | 0.3− | 0.0 | | | | |

**2006 UB$_{13}$ = 2004 DY$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.24809 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23325277 | $\omega$ | 189.05003 | | +0.76136007 | +0.64706075 | |
| $a$ | 2.6136746 | $\Omega$ | 130.54926 | | −0.59144268 | +0.71880820 | |
| $e$ | 0.1169777 | $i$ | 3.05810 | | −0.26556807 | +0.25421871 | |
| $P$ | 4.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 04 29 | 691 | 0.6− | 0.4+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 1992 04 29 | 691 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2002 11 25 | 644 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.6− | 0.1− |
| 2002 11 25 | 644 | 0.3+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.9− | 0.8+ |
| 2002 11 25 | 644 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.9+ |
| 2004 02 17 | 691 | 0.3+ | 0.4− | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.0 | 0.3+ |
| 2004 02 17 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 1.5+ |
| 2004 02 17 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2004 02 29 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.4+ | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2004 02 29 | 691 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1− | 0.6− |

**2006 UF$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 176.68990 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21166059 | $\omega$ | 46.70155 | | −0.78662877 | +0.61728916 | |
| $a$ | 2.7885346 | $\Omega$ | 171.38862 | | −0.58865310 | −0.74344631 | |
| $e$ | 0.0228666 | $i$ | 4.98474 | | −0.18628661 | −0.25737460 | |
| $P$ | 4.66 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 11 | 691 | 0.3+ | 0.1+ | 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.3+ | 0.3+ |
| 1999 03 11 | 691 | 0.1+ | 0.0 | 2004 04 14 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.2− |
| 1999 03 11 | 691 | 0.0 | 0.5+ | 2005 07 01 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.1− | 0.4− |
| 2001 09 11 | 691 | 0.2− | 0.3+ | 2005 07 01 | 691 | 0.5+ | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.4− |
| 2001 09 11 | 691 | 0.4− | 0.4+ | 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.5+ |
| 2001 09 11 | 691 | 0.6− | 0.1+ | 2005 07 10 | 691 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2001 09 18 | 691 | 0.3+ | 0.1− | 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.1− | 0.0 |
| 2001 09 18 | 691 | 0.4+ | 0.1+ | 2005 07 10 | 691 | 0.2− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2001 09 18 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2004 04 14 | 691 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.6− | 0.1− | | | | |

**2006 UL$_{13}$ = 2005 LV$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.66898 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18361026 | $\omega$ | 146.89859 | | +0.69169300 | +0.72215976 | |
| $a$ | 3.0657595 | $\Omega$ | 166.86130 | | −0.66891624 | +0.64418229 | |
| $e$ | 0.1670416 | $i$ | 1.71128 | | −0.27223495 | +0.25202075 | |
| $P$ | 5.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 22 | 691 | 0.0 | 0.8+ | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 1999 05 22 | 691 | 0.9− | 0.5− | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 10 28 | G96 | 0.4+ | 0.2− |
| 1999 05 22 | 691 | 1.2+ | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.0 |
| 2005 06 08 | 691 | 0.3+ | 0.1− | 2006 09 26 | G96 | 0.8− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2005 06 08 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.5+ | 0.0 | 2006 10 28 | G96 | 0.5+ | 0.2− |
| 2005 06 08 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.3− | 0.4− | 2006 11 11 | 291 | 0.3+ | 0.1+ |
| 2005 06 15 | G96 | 0.5− | 0.2− | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 11 | 291 | 0.5+ | 0.4+ |
| 2005 06 15 | G96 | 0.6− | 0.3− | 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 11 | 291 | 0.5+ | 0.5+ |
| 2005 06 15 | G96 | 0.4− | 0.3− | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2005 06 15 | G96 | 0.7− | 0.1− | 2006 10 18 | 691 | 0.6− | 0.4+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2005 06 16 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2005 06 16 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.2+ |
| 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 | | | | |

**2006 UP$_{13}$ = 1999 TA$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.65454 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28728247 | $\omega$ | 286.88333 | | +0.99927739 | +0.01247973 | |
| $a$ | 2.2747306 | $\Omega$ | 72.41287 | | +0.00325396 | +0.91300483 | |
| $e$ | 0.1646457 | $i$ | 2.15840 | | −0.03786951 | +0.40775782 | |
| $P$ | 3.43 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 691 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 1999 10 10 | 691 | 0.3− | 0.5− | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.1− | 1.1− |
| 1999 10 10 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.1− | 0.4− |
| 1999 10 13 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.8+ |
| 1999 10 13 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | (2.2− | 0.7+) |
| 1999 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2006 10 17 | G96 | 0.9− | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.5+ | 2006 11 23 | G96 | 0.3− | 0.3− |
| 2006 10 17 | G96 | 0.4+ | 0.8− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.6− |
| 2006 10 17 | G96 | 0.0 | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.4− |
| 2006 10 17 | G96 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 11 | 291 | 0.2− | 0.1+ | 2006 11 27 | 703 | 1.2+ | 0.5− |
| 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 11 | 291 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.2+ | 1.2− |
| 2006 10 22 | 691 | 0.3− | 0.3− | 2006 11 11 | 291 | 0.0 | 0.4+ | 2006 11 27 | 703 | (2.8− | 1.3−) |
| 2006 10 28 | G96 | 0.4+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.5− | 2006 11 27 | 703 | 1.1+ | 0.3− |
| 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.2− | 0.5− | | | | |
| 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.5− | | | | |

**2006 US$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.68209 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22901821 | $\omega$ | 17.05230 | | +0.31600407 | −0.94250204 | |
| $a$ | 2.6457941 | $\Omega$ | 54.65522 | | +0.85417384 | +0.23272449 | |
| $e$ | 0.0700907 | $i$ | 7.66324 | | +0.41295094 | +0.23985249 | |
| $P$ | 4.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.9+ |
| 2000 05 28 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.3− | 0.7+ |
| 2000 05 28 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.3+ | 0.2+ |
| 2006 09 30 | G96 | 0.3− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.4− |
| 2006 09 30 | G96 | 0.5− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2006 09 30 | G96 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.8+ |
| 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.5+ | 0.4− |
| 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.5− |
| 2006 10 17 | G96 | 0.4+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.7+ |
| 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.7+ |
| 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.6+ |
| 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.1+ | 2006 11 27 | 703 | 0.7− | 0.1− |
| 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.9− |
| 2006 10 22 | 691 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.2− | 0.6+ | 2006 11 27 | 703 | 0.9− | 0.0 |
| 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.8− |
| 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 13 | G96 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.1− | 0.1+ |
| 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 13 | G96 | 0.0 | 1.0− | 2006 11 29 | 704 | 1.1+ | 0.9− |
| 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.8+ | 0.2− |
| 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.3− |
| 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 448 | 0.3− | 0.5− | | | | |
| 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 16 | 448 | 0.3+ | 1.0− | | | | |

### 2006 UF$_{14}$ = 2001 YD$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.37528 | | (2000.0) | | | |
| $n$ | 0.18854838 | $\omega$ | 353.19844 | | +0.53111299 | −0.84385728 |
| $a$ | 3.0119945 | $\Omega$ | 64.69503 | | +0.78130604 | +0.45290561 |
| $e$ | 0.2570699 | $i$ | 4.84234 | | +0.32784121 | +0.28771755 |
| $P$ | 5.23 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3− | 0.7− | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.5− |
| 2001 12 18 | 704 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.6+ | 2006 11 17 | 703 | 0.7− | 0.0 |
| 2001 12 18 | 704 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.8− | 0.6− |
| 2001 12 19 | 704 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.8+ | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2001 12 19 | 704 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.6+ | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2001 12 19 | 704 | 0.5+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.4− | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.8+ | 2006 11 11 | 703 | 0.5− | 0.6− | 2006 11 21 | 704 | 1.2− | 0.3+ |
| 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 11 | 703 | 1.1− | 1.0− | 2006 11 21 | 704 | 0.7+ | 0.3+ |
| 2006 10 17 | G96 | 0.3− | 0.7− | 2006 11 11 | 703 | 0.4− | 1.0+ | 2006 11 21 | 704 | 1.1+ | 0.0 |
| 2006 10 17 | G96 | 0.1+ | 0.7− | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.7+ | 1.3+ |
| 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 13 | G96 | 0.4+ | 0.6− | 2006 11 27 | 703 | 0.2+ | 0.4− |
| 2006 10 18 | 691 | 0.1− | 0.3− | 2006 11 13 | G96 | (1.0+ | 2.4−) | 2006 11 27 | 703 | 0.1+ | 0.5− |
| 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.4− | 2006 11 27 | 703 | 0.9− | 0.5+ |
| 2006 10 18 | 691 | 0.3+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.3− | 0.5− |
| 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.7− | 0.2− | | | | |
| 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.5− | | | | |

### 2006 UH$_{14}$ = 2000 SK$_{374}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.63403 | | (2000.0) | | | |
| $n$ | 0.17744186 | $\omega$ | 353.36047 | | +0.66563455 | −0.73089882 |
| $a$ | 3.1364040 | $\Omega$ | 54.78389 | | +0.69290176 | +0.53028170 |
| $e$ | 0.0963962 | $i$ | 10.63128 | | +0.27716024 | +0.42963733 |
| $P$ | 5.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2000 09 26 | 645 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.7− | 0.4− |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 13 | G96 | 0.2− | 2.0− |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 18 | 691 | 0.0 | 0.1+ | | | | |
| 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.5+ | | | | |

### 2006 UJ$_{14}$ = 2004 JT$_{7}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 297.57879 | | (2000.0) | | | |
| $n$ | 0.21094149 | $\omega$ | 287.72416 | | −0.22288489 | −0.97483785 |
| $a$ | 2.7948684 | $\Omega$ | 175.14991 | | +0.91005798 | −0.20942157 |
| $e$ | 0.0240846 | $i$ | 2.49008 | | +0.34945214 | −0.07637915 |
| $P$ | 4.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 691 | 0.1− | 0.3+ | 2004 05 10 | 291 | 0.6+ | 0.8+ | 2006 10 17 | G96 | 0.2− | 0.2+ |
| 2001 09 21 | 691 | 0.2− | 0.8+ | 2004 05 14 | 691 | 0.2− | 0.4+ | 2006 10 17 | G96 | 0.4+ | 0.2+ |
| 2001 09 21 | 691 | 0.2− | 0.5+ | 2004 05 14 | 691 | 0.3− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.9+ |
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2004 05 14 | 691 | 0.2− | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.4+ |
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2005 07 05 | G96 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.3− | 0.1+ |
| 2004 04 20 | 291 | 0.1+ | 0.2+ | 2005 07 05 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2004 04 20 | 291 | 0.2+ | 0.1+ | 2005 07 05 | G96 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.3+ |
| 2004 04 20 | 291 | 0.6+ | 0.0 | 2005 07 05 | G96 | 0.7− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 05 10 | 291 | 0.2+ | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.1+ | | | | |
| 2004 05 10 | 291 | 0.3+ | 0.8+ | 2006 10 17 | G96 | 0.2− | 0.5+ | | | | |

### 2006 UE$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 30.88250 | | (2000.0) | | | |
| $n$ | 0.18129763 | $\omega$ | 158.89341 | | +0.99246934 | −0.09849283 |
| $a$ | 3.0917756 | $\Omega$ | 207.07405 | | +0.07625531 | +0.96206862 |
| $e$ | 0.0666535 | $i$ | 9.20744 | | +0.09586308 | +0.25440741 |
| $P$ | 5.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 30 | 691 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 1.3− | 0.2+ |
| 2000 10 30 | 691 | 0.1+ | 0.2− | 2006 10 17 | G96 | 0.1− | 0.6− | 2006 11 11 | 703 | 0.1+ | 0.1− |
| 2000 10 30 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.5+ |
| 2004 06 16 | 691 | 0.2+ | 0.4+ | 2006 10 17 | G96 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.5+ |
| 2004 06 16 | 691 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.2− | 0.5+ | 2006 11 15 | 683 | 0.1− | 0.2+ |
| 2004 06 16 | 691 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.5+ | 2006 11 15 | 683 | 0.1− | 1.4− |
| 2005 07 30 | 644 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 15 | 683 | 0.5+ | 0.4+ |
| 2005 07 30 | 644 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2005 07 30 | 644 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 18 | 691 | 1.3+ | 0.7− | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ | | | | |
| 2006 09 30 | G96 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.1− | 0.2+ | | | | |

### 2006 UG$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.68311 | | (2000.0) | | | |
| $n$ | 0.12400082 | $\omega$ | 149.07009 | | +0.99526360 | +0.06382235 |
| $a$ | 3.9827803 | $\Omega$ | 207.55863 | | −0.08107362 | +0.96115531 |
| $e$ | 0.2794562 | $i$ | 9.11953 | | +0.05364169 | +0.26852780 |
| $P$ | 7.95 | $H$ | 15.4 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 15 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2005 07 15 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.3− | 0.2− |
| 2005 07 15 | 691 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.6− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2005 08 29 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.8− |
| 2005 08 29 | 691 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.5− |
| 2005 08 29 | 691 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.7+ | 0.5− |
| 2006 09 30 | G96 | 0.3− | 0.7− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.3− | 0.7+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 0.6− | | |
| 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.7+ | | |

**2006 UR$_{15}$ = 2004 JU$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.97268 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17926526 | $\omega$ | 279.67607 | | +0.94105899 | +0.29095724 | |
| $a$ | 3.1150997 | $\Omega$ | 63.57736 | | −0.18130144 | +0.86440824 | |
| $e$ | 0.0877422 | $i$ | 11.10501 | | −0.28554818 | +0.41005155 | |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 28 | 691 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.0 | | |
| 1993 04 28 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3− | 0.5+ | | |
| 1993 04 28 | 691 | 0.3− | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.6− | | |
| 1995 12 16 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.6− | | |
| 1995 12 16 | 691 | 0.3− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.6− | | |
| 1995 12 16 | 691 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.6− | | |
| 2000 09 26 | 645 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.5+ | 0.0 | | |
| 2000 09 26 | 645 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.6− | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.1+ | | |
| 2004 05 12 | 699 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.5− | 0.2+ | 2006 11 17 | 703 | 0.4+ | 0.2− | | |
| 2004 05 12 | 699 | (0.5+ | 2.0+) | 2006 10 22 | 691 | 0.0 | 0.8+ | 2006 11 17 | 703 | 0.6− | 0.3+ | | |
| 2004 05 12 | 699 | 1.0− | 0.8+ | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.9− | 0.2+ | | |
| 2004 05 12 | 699 | 0.5− | 1.0− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 1.0+ | 0.2− | | |
| 2004 05 13 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3− | 1.0+ | | |
| 2004 05 13 | 691 | 0.3+ | 0.5+ | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 1.1+ | | |
| 2004 05 13 | 691 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.2− | | |
| 2005 08 04 | 644 | 0.4− | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.9− | | |
| 2005 08 04 | 644 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.6+ | 2006 11 21 | 704 | 0.6+ | 0.4+ | | |
| 2005 08 04 | 644 | 0.1+ | 0.8+ | 2006 11 11 | 703 | 0.9− | 1.3− | 2006 11 21 | 704 | 0.0 | 0.8+ | | |

**2006 UX$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.98826 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25793392 | $\omega$ | 268.00541 | | +0.97736038 | −0.20502905 | |
| $a$ | 2.4441644 | $\Omega$ | 103.82292 | | +0.20913790 | +0.89873425 | |
| $e$ | 0.1848204 | $i$ | 3.08433 | | +0.03206301 | +0.38760784 | |
| $P$ | 3.82 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.2+ | | |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.9− | 2006 11 15 | G96 | 0.0 | 0.2− | | |
| 2002 10 15 | 644 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.1− | | |
| 2002 10 15 | 644 | 0.5− | 0.4− | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.2+ | | |
| 2002 10 15 | 644 | 0.4− | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.8− | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.1− | | |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.5+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.5− | | |
| 2006 09 30 | G96 | 0.5− | 0.4− | 2006 10 18 | 691 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.4− | | |
| 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.4− | | |
| 2006 09 30 | G96 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.6− | 0.3+ | | | | | | |

**2006 UC$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.82378 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23770994 | $\omega$ | 280.62141 | | +0.99359717 | +0.07250312 | |
| $a$ | 2.5808998 | $\Omega$ | 75.26200 | | −0.02991122 | +0.90837298 | |
| $e$ | 0.2273487 | $i$ | 5.14038 | | −0.10894942 | +0.41182743 | |
| $P$ | 4.15 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.1− | 0.7− | 2006 11 01 | A55 | 0.6+ | 0.1+ | 2006 11 14 | 704 | 0.8+ | 1.0+ | | |
| 2005 05 20 | G96 | 0.3+ | 0.1− | 2006 11 01 | A55 | 0.1− | 0.0 | 2006 11 14 | 704 | (0.8+ | 1.8+) | | |
| 2005 05 20 | G96 | 0.0 | 0.3− | 2006 11 02 | 703 | 0.2+ | 0.1− | 2006 11 14 | 704 | 1.1− | 1.3+ | | |
| 2005 05 20 | G96 | 0.4− | 0.1− | 2006 11 02 | 703 | 0.6+ | 0.1+ | 2006 11 17 | 704 | 0.4− | 0.1− | | |
| 2005 06 14 | 291 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.0 | 0.7− | 2006 11 17 | 704 | 0.5− | 0.3+ | | |
| 2005 06 14 | 291 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.1− | 0.4− | 2006 11 17 | 704 | 1.3+ | 0.0 | | |
| 2005 06 14 | 291 | 0.0 | 0.1+ | 2006 11 02 | A55 | 1.5+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.4− | | |
| 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 02 | A55 | 0.8+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.7− | | |
| 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 02 | A55 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.3+ | | |
| 2006 10 17 | G96 | 0.4+ | 0.7− | 2006 11 11 | 703 | 0.7− | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.1− | | |
| 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 1.3− | 0.8− | 2006 11 17 | 703 | 0.4+ | 0.2− | | |
| 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.2+ | 1.0+ | | |
| 2006 10 18 | 691 | 0.7+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.5− | 0.6+ | | |
| 2006 10 18 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.1− | 0.4+ | | |
| 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.5− | 2006 11 20 | 704 | 0.0 | 0.3+ | | |
| 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.4− | 0.4+ | | |
| 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.2− | | | | | | |
| 2006 11 01 | A55 | 0.0 | 0.4+ | 2006 11 14 | 704 | (0.7+ | 2.2+) | | | | | | |

**2006 UJ$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.20087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24693130 | $\omega$ | 331.28941 | | +0.85816944 | −0.46644914 | |
| $a$ | 2.5162394 | $\Omega$ | 58.08987 | | +0.50592409 | +0.69757735 | |
| $e$ | 0.0284713 | $i$ | 14.63006 | | +0.08709782 | +0.54388513 | |
| $P$ | 3.99 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 14 | 691 | 0.1+ | 0.5− | 2006 10 18 | 691 | 0.5+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.4− | | |
| 1998 11 14 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.4− | 0.4− | | |
| 1998 11 14 | 691 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.4− | 0.3− | | |
| 1998 11 27 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.2+ | | |
| 1998 11 27 | 691 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.4− | | |
| 1998 11 27 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.5− | | |
| 2002 12 28 | 291 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.5− | 0.7+ | 2006 11 27 | 703 | 0.1− | 0.9− | | |
| 2002 12 28 | 291 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.4+ | 0.3− | | |
| 2002 12 28 | 291 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.6+ | 0.3− | | |
| 2006 10 02 | G96 | 0.5− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.2+ | | |
| 2006 10 02 | G96 | 0.3− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.3− | 0.5+ | | |
| 2006 10 02 | G96 | 0.3− | 0.5− | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.3− | 1.3− | | |
| 2006 10 02 | G96 | 0.2− | 0.5− | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.1− | | |
| 2006 10 17 | G96 | 1.1+ | 1.3− | 2006 11 12 | G96 | 0.3+ | 0.5− | 2006 11 29 | 704 | 0.7− | 0.1− | | |
| 2006 10 17 | G96 | 0.3+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.4− | 2006 11 29 | 704 | (2.5+ | 1.0+) | | |
| 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 14 | 691 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.6+ | 0.4+ | | |
| 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 14 | 691 | 0.0 | 0.0 | | | | | | |
| 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.3+ | | | | | | |

**2006 UG$_{17}$ = 2001 SM$_{297}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.46465 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21174063 | $\omega$ | 162.52284 | | +0.95208913 | −0.30344305 | |
| $a$ | 2.7878319 | $\Omega$ | 215.21381 | | +0.27210978 | +0.89735530 | |
| $e$ | 0.0830732 | $i$ | 3.78456 | | +0.13957992 | +0.32043063 | |
| $P$ | 4.65 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 734 | 1.0+ | 1.0+ | 2006 11 03 | G96 | 0.0 | 0.0 | | |
| 2001 09 20 | 704 | 0.1+ | 0.3+ | 2006 10 20 | 734 | 0.4− | 1.2− | 2006 11 03 | G96 | 0.1+ | 0.2+ | | |
| 2001 09 20 | 704 | 0.1− | 0.6+ | 2006 10 20 | 734 | 0.6+ | 0.0 | 2006 11 03 | G96 | 0.2− | 0.3− | | |
| 2001 09 20 | 704 | 0.3+ | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2001 09 23 | 704 | 0.7+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2001 09 23 | 704 | 0.7− | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.3− | | |
| 2001 09 23 | 704 | 0.8− | 1.3− | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.1− | | |
| 2006 09 26 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2006 09 26 | G96 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 03 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2006 10 16 | 691 | 0.4− | 0.2− | 2006 11 03 | G96 | 0.1+ | 0.2+ | 2006 11 25 | 703 | 0.2+ | 0.3+ | | |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 03 | G96 | 0.1+ | 0.4− | 2006 11 25 | 703 | 0.6− | 0.6+ | | |
| 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 03 | G96 | 0.2+ | 0.7− | 2006 11 25 | 703 | 0.2− | 0.5+ | | |
| 2006 10 20 | 734 | 0.5+ | 0.6+ | 2006 11 03 | G96 | 0.2− | 0.1+ | 2006 11 25 | 703 | 0.3− | 0.7+ | | |

**2006 UX$_{17}$ = 2001 VR$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.69497 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.39049162 | $\omega$ | 309.89392 | | +0.95110294 | | +0.15834779 |
| $a$ | 1.8537944 | $\Omega$ | 42.98797 | | +0.04555268 | | +0.77729209 |
| $e$ | 0.0963238 | $i$ | 22.88854 | | −0.30549656 | | +0.60888667 |
| $P$ | 2.52 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.4− | 0.8+ | 2006 09 26 | 703 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2001 11 10 | 704 | 0.2− | 0.3+ | 2006 09 26 | 703 | 0.3− | 0.3+ | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2001 11 10 | 704 | 0.2− | 0.4+ | 2006 09 26 | 703 | 0.4− | 0.7+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 11 10 | 704 | 1.4− | 0.2+ | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.3− |
| 2001 11 10 | 644 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.8− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2001 11 10 | 644 | 0.5+ | 0.2− | 2006 10 16 | 703 | 0.5+ | 0.2+ | 2006 11 13 | 644 | 0.4− | 0.1− |
| 2001 11 10 | 644 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 13 | 644 | 0.0 | 0.3− |
| 2001 11 12 | 704 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.2+ | 0.3− |
| 2001 11 12 | 704 | (2.1− | 0.3+) | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.2+ | 1.0+ |
| 2001 11 12 | 704 | 0.9+ | 0.9− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2001 11 12 | 704 | 0.0 | 0.3− | 2006 10 31 | G96 | 1.2+ | 0.8+ | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2006 09 26 | 703 | 1.3+ | 0.8− | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1− | 0.6− |

**2006 UN$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.08530 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26034831 | $\omega$ | 262.75880 | | −0.77070884 | | +0.63643568 |
| $a$ | 2.4290300 | $\Omega$ | 316.76121 | | −0.56533614 | | −0.70539717 |
| $e$ | 0.1313918 | $i$ | 2.58897 | | −0.29394377 | | −0.31203278 |
| $P$ | 3.79 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 12 | 699 | 0.1+ | 0.9+ | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2001 05 12 | 699 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 05 12 | 699 | 0.0 | 0.7− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2001 05 12 | 699 | (4.3+ | 0.5−) | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2002 10 04 | 644 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.5− | 0.1− |
| 2002 10 04 | 644 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | (2.9− | 0.9+) |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.6− |
| 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (2.6+ | 2.8+) |
| 2006 09 25 | 691 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.4− | 1.3− |
| 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.3+ | | | | |

**2006 UP$_{19}$ = 2005 JH$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.93862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22920212 | $\omega$ | 93.84469 | | +0.66485140 | | +0.73719555 |
| $a$ | 2.6443786 | $\Omega$ | 218.72878 | | −0.73870509 | | +0.62494681 |
| $e$ | 0.1449819 | $i$ | 11.10291 | | −0.11084856 | | +0.25687391 |
| $P$ | 4.30 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 291 | 0.2+ | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2002 11 14 | 291 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2002 11 14 | 291 | 0.2− | 0.3− | 2006 10 03 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2005 05 14 | G96 | 0.3− | 0.0 | 2006 10 03 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.8+ | 0.1+ |
| 2005 05 14 | G96 | 0.2− | 0.1+ | 2006 10 03 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2005 05 14 | G96 | 0.4− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.2+ |
| 2005 05 14 | G96 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 2005 05 19 | G96 | 0.4− | 0.4− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2005 05 19 | G96 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.4− | 0.1− |
| 2005 05 19 | G96 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2005 05 19 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.6− | 0.2+ |
| 2005 06 04 | 691 | 0.7+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.7− | 0.2+ |
| 2005 06 04 | 691 | 0.1− | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.5− | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2005 06 04 | 691 | 0.1− | 0.7− | 2006 10 20 | 644 | 0.3− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1− | | | | |

**2006 UV$_{19}$ = 2000 KQ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.30223 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21738315 | $\omega$ | 79.82971 | | +0.77989648 | | +0.62146038 |
| $a$ | 2.7393791 | $\Omega$ | 241.70666 | | −0.60227674 | | +0.71272494 |
| $e$ | 0.0302907 | $i$ | 4.85270 | | −0.17036493 | | +0.32528472 |
| $P$ | 4.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 691 | 0.1− | 0.4− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2000 05 30 | 691 | 0.5+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.5− | 0.6+ |
| 2000 05 30 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2000 06 05 | 691 | 0.5− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2000 06 05 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.3− | 0.2− |
| 2000 06 05 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2006 09 28 | 291 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2006 09 28 | 291 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2006 09 28 | 291 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.0 | 0.3− |
| 2006 10 03 | 691 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2006 10 16 | 691 | 0.5− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2− |

**2006 UD$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.81573 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21254231 | $\omega$ | 292.79168 | | −0.16885491 | | +0.98529514 |
| $a$ | 2.7808172 | $\Omega$ | 327.45310 | | −0.88558101 | | −0.16328760 |
| $e$ | 0.0501465 | $i$ | 2.78135 | | −0.43270578 | | −0.05030559 |
| $P$ | 4.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.5+ |
| 2004 04 13 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.6+ | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2004 04 13 | 691 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.6+ | 0.1+ |
| 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2006 10 03 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.4− |
| 2006 10 16 | 691 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.3− |

**2006 UJ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.15291 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28838991 | $\omega$ | 312.77561 | | +0.22447834 | | +0.97417354 |
| $a$ | 2.2689034 | $\Omega$ | 330.17075 | | −0.87913376 | | +0.19164910 |
| $e$ | 0.1691455 | $i$ | 2.81175 | | −0.42039661 | | +0.11940074 |
| $P$ | 3.42 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 691 | 0.1+ | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ |
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.3− |
| 2005 03 17 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2005 04 12 | G96 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2005 04 12 | G96 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.6− |
| 2005 04 12 | G96 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.6− | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2005 04 12 | G96 | 0.4− | 0.7− | 2006 10 20 | 691 | 0.4− | 0.6− | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2006 10 03 | 691 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.5− |
| 2006 10 03 | 691 | 0.3+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.2+ | | | | |

**2006 UK$_{20}$ = 1995 TE$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 325.27659 | | (2000.0) | | | |
| $n$ | 0.17814999 | $\omega$ | 145.79150 | | +0.25413262 | −0.96668157 |
| $a$ | 3.1280872 | $\Omega$ | 289.46964 | | +0.87991616 | +0.24427103 |
| $e$ | 0.2422387 | $i$ | 1.86686 | | +0.40145258 | +0.07654029 |
| $P$ | 5.53 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 1995 10 15 | 691 | 0.1+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.4+ | 0.1+ |
| 1995 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.3− |
| 1995 10 22 | 691 | 1.1− | 1.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 1995 10 22 | 691 | 0.2− | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 1995 10 22 | 691 | 0.2+ | 0.9+ | 2006 10 28 | 691 | 0.1− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2006 09 25 | 691 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.4− |
| 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.3− |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.1− | 0.4− |

**2006 UL$_{20}$ = 2005 NM$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 117.56776 | | (2000.0) | | | |
| $n$ | 0.17005793 | $\omega$ | 285.47439 | | −0.24752678 | +0.96868862 |
| $a$ | 3.2265479 | $\Omega$ | 330.17303 | | −0.87338527 | −0.23171318 |
| $e$ | 0.1047222 | $i$ | 2.22489 | | −0.41943851 | −0.08917039 |
| $P$ | 5.80 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 24 | 691 | 0.1+ | 0.4+ | 2005 07 18 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2004 04 24 | 691 | 0.4+ | 0.6+ | 2005 07 18 | 644 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2004 04 24 | 691 | 0.1+ | 0.6+ | 2005 07 18 | 644 | 0.6− | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2005 07 12 | G96 | 0.4+ | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2005 07 12 | G96 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.4− | 0.2+ |
| 2005 07 12 | G96 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.6+ | | | | |
| 2005 07 12 | G96 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.0 | | | | |

**2006 UW$_{20}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 212.21139 | | (2000.0) | | | |
| $n$ | 0.20877790 | $\omega$ | 185.48482 | | −0.99135788 | −0.13051169 |
| $a$ | 2.8141444 | $\Omega$ | 346.99347 | | +0.12249152 | −0.88468179 |
| $e$ | 0.0384039 | $i$ | 3.38166 | | +0.04696140 | −0.44755427 |
| $P$ | 4.72 | $H$ | 17.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 11 | 691 | (1.5− | 3.8+) | 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.5− | 0.5+ |
| 1999 03 11 | 691 | 0.0 | 0.2+ | 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.4+ |
| 1999 03 11 | 691 | 0.2+ | 0.5+ | 2004 04 13 | 691 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2001 09 12 | 691 | 0.0 | 0.2+ | 2004 04 13 | 691 | 0.6+ | 0.5+ | 2006 10 20 | 691 | 0.6− | 0.0 |
| 2001 09 12 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ |
| 2001 09 12 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.5− | 0.1+ |
| 2002 12 07 | 695 | 0.1− | 0.5− | 2006 09 25 | 691 | 0.8+ | 0.5+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2002 12 07 | 695 | 0.1+ | 0.4− | 2006 10 03 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2004 03 16 | 691 | 0.3+ | 0.1+ | 2006 10 03 | 691 | 0.1− | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 03 16 | 691 | 0.0 | 0.4+ | 2006 10 03 | 691 | 0.1− | 0.1+ | | | | |

**2006 UX$_{20}$ = 1999 TJ$_{309}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.57452 | | (2000.0) | | | |
| $n$ | 0.28244502 | $\omega$ | 256.03166 | | −0.76939966 | −0.63789315 |
| $a$ | 2.3006300 | $\Omega$ | 244.32231 | | +0.59943909 | −0.70296817 |
| $e$ | 0.0966062 | $i$ | 2.12474 | | +0.22067384 | −0.31452834 |
| $P$ | 3.49 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.1+ | 0.5− | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.0 |
| 1999 10 06 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.7+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 1999 10 06 | 691 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.3− |
| 1999 10 13 | 704 | 0.3+ | 0.3− | 2006 10 16 | 691 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.4+ | 0.0 |
| 1999 10 13 | 704 | 0.3+ | 0.6− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 16 | 691 | 1.0− | 0.1+ |
| 1999 10 13 | 704 | 0.4− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2006 09 25 | 691 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 18 | 691 | 0.3+ | 0.3+ |
| 2006 09 25 | 691 | 0.3+ | 0.6+ | 2006 11 10 | 691 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.4− |

**2006 UK$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.73817 | | (2000.0) | | | |
| $n$ | 0.21144767 | $\omega$ | 336.99008 | | +0.73905466 | +0.67351040 |
| $a$ | 2.7904064 | $\Omega$ | 340.65174 | | −0.61155452 | +0.66240339 |
| $e$ | 0.0752544 | $i$ | 2.33342 | | −0.28248767 | +0.32803275 |
| $P$ | 4.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.6− | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2001 05 24 | 807 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.6+ |
| 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2006 10 16 | 691 | 0.7+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2006 10 16 | 691 | 0.4+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.5− | | | | |

**2006 UQ$_{22}$ = 2002 UA$_{68}$ = 2004 FT$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 287.07112 | | (2000.0) | | | |
| $n$ | 0.23552032 | $\omega$ | 266.35370 | | +0.03470877 | −0.99938136 |
| $a$ | 2.5968715 | $\Omega$ | 181.68878 | | +0.97625669 | +0.03511932 |
| $e$ | 0.1562463 | $i$ | 11.10153 | | +0.21381808 | +0.00187927 |
| $P$ | 4.18 | $H$ | 17.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.1+ | 0.1+ | 2004 03 18 | 704 | 1.0+ | 0.8− | 2006 10 16 | G96 | 0.1+ | 0.1− |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.8+ | 0.9− | 2006 10 16 | G96 | 0.4+ | 0.2+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 03 18 | 704 | 0.8+ | 0.5− | 2006 10 16 | G96 | 0.5− | 0.0 |
| 2002 10 30 | 645 | 0.0 | 0.1+ | 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 16 | G96 | 0.4+ | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.3+ |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.1− | 0.6+ | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2006 09 23 | 691 | 0.3− | 0.2+ | | | | |

**2006 UB$_{23}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 204.19318 | | (2000.0) | | | |
| $n$ | 0.21937016 | $\omega$ | 151.50888 | | −0.91955872 | −0.39281368 |
| $a$ | 2.7228122 | $\Omega$ | 5.39333 | | +0.33613535 | −0.80009361 |
| $e$ | 0.0343919 | $i$ | 6.38256 | | +0.20353081 | −0.45337361 |
| $P$ | 4.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 14 | 691 | 0.4− | 0.3+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.1− |
| 1993 12 14 | 691 | 0.1+ | 0.0 | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 16 | G96 | 0.1+ | 0.2− |
| 1993 12 14 | 691 | 0.4+ | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.0 |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.3− | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 02 17 | 691 | 0.1− | 0.1+ | 2006 09 30 | 691 | 0.5− | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2006 09 30 | 691 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.4− | 0.2− |
| 2004 03 26 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.3+ |
| 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.5− | 0.6− |
| 2004 03 26 | 691 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3+ |
| 2006 08 18 | 691 | 0.3+ | 0.4− | 2006 09 30 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 2006 08 18 | 691 | 0.4− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.3− | | | | |
| 2006 08 18 | 691 | 0.1+ | 0.4− | 2006 10 16 | G96 | 0.6+ | 0.0 | | | | |

**2006 UD$_{23}$ = 2004 EB$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.09324 | | (2000.0) | | | |
| $n$ | 0.26761031 | $\omega$ | 111.49501 | | −0.07588332 | −0.99705188 |
| $a$ | 2.3848853 | $\Omega$ | 342.84525 | | +0.89997764 | −0.06357720 |
| $e$ | 0.1538488 | $i$ | 2.20918 | | +0.42928076 | −0.04295918 |
| $P$ | 3.68 | $H$ | 18.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.4+ | 0.1− | 2004 03 14 | 691 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 1995 10 15 | 691 | 0.4+ | 0.1− | 2004 03 23 | 291 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1995 10 15 | 691 | 0.7+ | 0.3− | 2004 03 23 | 291 | 0.5− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.1− |
| 1995 10 23 | 691 | 0.4− | 0.4+ | 2004 03 23 | 291 | 0.6− | 0.5+ | 2006 11 16 | 691 | 0.3− | 0.3− |
| 1995 10 23 | 691 | 0.5− | 0.1− | 2006 10 16 | G98 | 0.8+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.6− |
| 1995 10 23 | 691 | 0.4− | 0.3+ | 2006 10 16 | G98 | 0.3+ | 0.4+ | 2006 11 16 | G98 | 0.9+ | 0.3− |
| 1995 11 16 | 691 | 0.2+ | 0.3− | 2006 10 16 | G98 | 0.2+ | 0.0 | 2006 11 16 | G98 | 0.1+ | 0.6− |
| 1995 11 16 | 691 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 16 | G98 | 0.3+ | 0.2+ |
| 1995 11 16 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 11 19 | G98 | 0.3+ | 0.4+ |
| 2004 02 29 | 291 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 19 | G98 | 0.3− | 0.7+ |
| 2004 02 29 | 291 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.2+ | 2006 11 19 | G98 | 0.4+ | 0.0 |
| 2004 02 29 | 291 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 19 | G98 | 0.5− | 0.1+ |
| 2004 03 14 | 691 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.4+ | 2006 11 19 | G98 | 0.1− | 0.1+ |
| 2004 03 14 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 19 | G98 | 0.7+ | 0.7− |

**2006 UE$_{23}$ = 2004 DH$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.40717 | | (2000.0) | | | |
| $n$ | 0.27249787 | $\omega$ | 150.33146 | | +0.47252972 | −0.88045225 |
| $a$ | 2.3562822 | $\Omega$ | 271.44544 | | +0.80071906 | +0.44737533 |
| $e$ | 0.1622487 | $i$ | 2.23471 | | +0.36819104 | +0.15703234 |
| $P$ | 3.62 | $H$ | 17.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 26 | 644 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2002 08 26 | 644 | 0.7− | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2002 08 26 | 644 | 0.1+ | 0.9+ | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2004 02 12 | 691 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 02 12 | 691 | 0.3− | 0.1+ | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 02 12 | 691 | 0.5− | 0.4+ | 2006 10 19 | 644 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2004 02 22 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 2004 02 22 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2004 02 29 | 691 | 0.5+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.3+ |
| 2004 02 29 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.6− | 0.4− |
| 2004 02 29 | 691 | 0.2+ | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.5− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.7− |
| 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.0 |

**2006 UF$_{23}$ = 2004 HY$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 90.49383 | | (2000.0) | | | |
| $n$ | 0.17754489 | $\omega$ | 269.48329 | | +0.26439798 | +0.96270019 |
| $a$ | 3.1351905 | $\Omega$ | 16.20350 | | −0.78251864 | +0.24897634 |
| $e$ | 0.0787420 | $i$ | 11.88368 | | −0.56370053 | +0.10592035 |
| $P$ | 5.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.7+ | 0.2− | 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.0 |
| 2004 04 16 | 691 | 0.7+ | 0.8+ | 2006 07 21 | G96 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2004 04 16 | 691 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2004 04 22 | 691 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.4− | 0.1− |
| 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2006 07 21 | G96 | 0.0 | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | | | | |
| 2006 07 21 | G96 | 0.6+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.9+ | | | | |

**2006 UU$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 235.05748 | | (2000.0) | | | |
| $n$ | 0.19254584 | $\omega$ | 187.90352 | | −0.92882182 | −0.37005668 |
| $a$ | 2.9701608 | $\Omega$ | 330.35586 | | +0.34198147 | −0.83679783 |
| $e$ | 0.0895346 | $i$ | 2.16174 | | +0.14261384 | −0.40351884 |
| $P$ | 5.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 644 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.4+ |
| 2003 01 31 | 644 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 1.0+ | 0.4− |
| 2003 01 31 | 644 | 0.1− | 0.6+ | 2006 10 03 | 691 | 0.0 | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2003 03 09 | 291 | 0.3+ | 0.3+ | 2006 10 03 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2003 03 09 | 291 | 0.2− | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2003 03 09 | 291 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2005 07 12 | G96 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.4+ | 0.2− |
| 2005 07 12 | G96 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2005 07 12 | G96 | 0.1− | 1.0+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.4− |
| 2005 07 12 | G96 | 0.7− | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.0 | | | | |
| 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.3− | | | | |

**2006 UV$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 85.67329 | | (2000.0) | | | |
| $n$ | 0.17272879 | $\omega$ | 258.07992 | | +0.16912660 | +0.98279021 |
| $a$ | 3.1932008 | $\Omega$ | 22.07916 | | −0.80976199 | +0.18153031 |
| $e$ | 0.1768092 | $i$ | 11.39955 | | −0.56185561 | +0.03420739 |
| $P$ | 5.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 691 | 0.4+ | 0.5+ | 2006 09 26 | 291 | 0.6− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2004 04 14 | 691 | 0.0 | 0.4+ | 2006 09 26 | 291 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.7+ | 0.0 |
| 2004 04 14 | 691 | 0.4+ | 0.5+ | 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.7+ | 0.3− | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 2004 04 23 | 691 | 0.2+ | 0.4+ | 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 11 11 | 691 | 0.3− | 0.5+ |
| 2004 04 23 | 691 | 0.5+ | 0.3+ | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 11 11 | 691 | 0.4− | 0.5+ |
| 2005 08 06 | E12 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.6+ |
| 2005 08 06 | E12 | 0.0 | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2005 08 06 | E12 | 0.6− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2005 08 06 | E12 | 0.1− | 1.2+ | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2006 09 26 | 291 | 1.4− | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.1− | | | | |

**2006 UZ$_{23}$ = 2001 XQ$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 276.92338 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17634852 | $\omega$ | 248.77763 | | −0.50696455 | | −0.85778897 |
| $a$ | 3.1493542 | $\Omega$ | 231.96807 | | +0.82536875 | | −0.45473581 |
| $e$ | 0.1052345 | $i$ | 6.17783 | | +0.24850225 | | −0.23961099 |
| $P$ | 5.59 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.8− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2001 12 14 | 704 | 0.1+ | 0.5− | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.5− | 0.1− |
| 2001 12 14 | 704 | 0.3+ | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 12 14 | 704 | 0.3+ | 0.7+ | 2006 10 03 | 691 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 12 17 | 704 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.6+ | 2006 11 19 | 691 | 0.0 | 0.4− |
| 2001 12 17 | 704 | 0.1− | 0.6+ | 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.3+ | 0.1+ |
| 2001 12 17 | 704 | 0.4+ | 1.2− | 2006 10 16 | 691 | 0.3+ | 0.6+ | 2006 11 21 | 691 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | 691 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2+ | | | | |

**2006 UB$_{24}$ = 1997 TJ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.17911 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22503951 | $\omega$ | 313.50939 | | +0.47706228 | | +0.87879568 |
| $a$ | 2.6768880 | $\Omega$ | 344.97249 | | −0.79314391 | | +0.42491036 |
| $e$ | 0.1073964 | $i$ | 2.51774 | | −0.37859520 | | +0.21718502 |
| $P$ | 4.38 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.1+ | 0.5− | 2006 09 25 | 691 | 0.0 | 0.6+ | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 1997 10 04 | 691 | 0.5+ | 0.0 | 2006 09 25 | 691 | 0.2− | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 1997 10 04 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.1− | 1.0+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 1997 10 09 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.3− |
| 1997 10 09 | 691 | 0.4− | 0.2+ | 2006 10 16 | 691 | 0.5− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 1997 10 09 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.5− |
| 2002 12 05 | 695 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.7+ | 0.2− |
| 2002 12 05 | 695 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1+ | | | | |

**2006 UF$_{24}$ = 2004 FM$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.86106 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22134657 | $\omega$ | 140.87253 | | +0.99679959 | | −0.04900117 |
| $a$ | 2.7065799 | $\Omega$ | 222.06894 | | +0.02533234 | | +0.94300917 |
| $e$ | 0.0425231 | $i$ | 5.40922 | | +0.07582117 | | +0.32913917 |
| $P$ | 4.45 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.1− | 1.2− |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 1.1− | 1.1+ |
| 2004 03 16 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | (1.8− | 0.7+) |
| 2004 03 28 | 691 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.0 |
| 2004 03 28 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.2− |
| 2004 03 28 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2006 09 25 | 691 | 0.0 | 0.7− | 2006 10 20 | 691 | 0.5− | 0.1− | | | | |
| 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | 0.2+ | 0.1+ | | | | |

**2006 UG$_{24}$ = 1999 XV$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.11559 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27490402 | $\omega$ | 167.70825 | | +0.90616128 | | −0.41546572 |
| $a$ | 2.3425129 | $\Omega$ | 217.16110 | | +0.37609671 | | +0.87715522 |
| $e$ | 0.2191659 | $i$ | 7.52627 | | +0.19345027 | | +0.24080479 |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.1− | 0.8+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 11 | 703 | (1.3− | 2.6+) |
| 1999 12 07 | 704 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 1999 12 07 | 704 | 0.1+ | 0.3− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 1999 12 07 | 704 | 0.1− | 0.8+ | 2006 10 20 | 644 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 1999 12 07 | 704 | 0.3+ | 1.4+ | 2006 10 20 | 644 | 0.6+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 1999 12 14 | 704 | 0.8− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1999 12 14 | 704 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 1999 12 14 | 704 | 0.8+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.3− | 0.1− |
| 1999 12 14 | 704 | 0.2− | 1.4− | 2006 10 23 | 704 | 0.2− | 0.6+ | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2005 05 08 | 691 | 0.2+ | 0.8+ | 2006 10 23 | 704 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2005 05 08 | 691 | 0.2+ | 0.7+ | 2006 10 23 | 704 | 0.2− | 0.6− | 2006 11 17 | 691 | 0.1− | 0.5+ |
| 2005 05 08 | 691 | 0.1− | 0.6+ | 2006 10 23 | 704 | 0.4− | 0.6+ | 2006 11 17 | 691 | 0.6+ | 0.3+ |
| 2006 08 29 | 703 | 0.1− | 0.8− | 2006 10 23 | 704 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.5+ |
| 2006 08 29 | 703 | 0.4− | 0.2+ | 2006 10 28 | 704 | (0.8− | 2.9+) | 2006 11 17 | 703 | 1.3− | 0.0 |
| 2006 08 29 | 703 | 0.1+ | 0.2− | 2006 10 28 | 704 | 0.5+ | 0.6+ | 2006 11 17 | 703 | 0.2− | 0.3+ |
| 2006 08 29 | 703 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.4− | 0.5+ |
| 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 10 28 | 704 | 1.0− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.0 |
| 2006 10 03 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2006 10 03 | 691 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.6+ | 2006 11 18 | 704 | 0.6+ | 0.2− |
| 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 10 28 | 704 | (0.1− | 1.9+) | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.6+ | 2006 11 18 | 704 | 0.6+ | 0.6− |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 10 28 | 704 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2006 10 19 | 644 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.3− |
| 2006 10 19 | 644 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 2006 10 19 | 644 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.9+ | 0.2− |
| 2006 10 20 | 691 | 0.4− | 0.2− | 2006 11 11 | 703 | (2.1− | 0.1+) | 2006 11 21 | 704 | 0.4+ | 0.2− |

**2006 UY$_{24}$ = 2004 JE$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.20761 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22644906 | $\omega$ | 163.66860 | | −0.82004866 | | −0.57212834 |
| $a$ | 2.6657681 | $\Omega$ | 341.41270 | | +0.52012246 | | −0.73504591 |
| $e$ | 0.1301561 | $i$ | 2.47425 | | +0.23873169 | | −0.36383605 |
| $P$ | 4.35 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 691 | 0.1+ | 0.1− | 2006 09 25 | 691 | 0.2− | 0.5+ | 2006 11 15 | 691 | 0.2− | 0.3− |
| 2001 08 23 | 691 | 0.3+ | 0.3− | 2006 10 03 | 691 | 0.7− | 0.5+ | 2006 11 15 | 691 | 0.3− | 0.5+ |
| 2001 08 23 | 691 | 0.2− | 0.2− | 2006 10 03 | 691 | 0.7− | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 03 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 2004 05 13 | 691 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 2004 05 13 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2004 05 21 | 691 | 0.2+ | 0.5+ | 2006 10 16 | 691 | 0.8− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2004 05 21 | 691 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.4− |
| 2004 05 21 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 20 | 691 | 0.4+ | 0.4− |
| 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2005 07 05 | 691 | 0.6+ | 0.3− | 2006 10 29 | 691 | 0.4− | 0.2+ | 2006 11 20 | 691 | (3.3+ | 0.2−) |
| 2005 07 05 | 691 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.2− | 0.5+ | 2006 11 23 | 691 | 0.3+ | 0.3+ |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2006 09 25 | 691 | 0.4− | 1.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1+ |

**2006 UD$_{25}$ = 2004 GM$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 73.93818 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18913153 | $\omega$ | 341.35601 | | +0.55769739 | | +0.82991732 |
| $a$ | 3.0058000 | $\Omega$ | 322.53687 | | −0.75848276 | | +0.50243187 |
| $e$ | 0.0766251 | $i$ | 1.36798 | | −0.33716096 | | +0.24248599 |
| $P$ | 5.21 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 291 | 0.2− | 0.7+ | 2005 06 26 | G96 | 0.4− | 0.7+ | 2006 10 20 | 691 | 0.4− | 0.1− |
| 2003 01 27 | 291 | 0.1+ | 0.2− | 2005 06 26 | G96 | 0.3− | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2003 01 27 | 291 | 0.1+ | 0.2− | 2005 06 26 | G96 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2004 04 13 | 691 | 0.1+ | 0.1− | 2005 06 26 | G96 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2004 04 13 | 691 | 0.5+ | 0.1+ | 2005 07 07 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.5+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.3− | 0.2+ | 2005 07 07 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2004 04 20 | 691 | 0.1+ | 0.5+ | 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.7+ |
| 2004 04 20 | 691 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.7+ |
| 2005 06 16 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2005 06 16 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | | | | |
| 2005 06 16 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2− | | | | |

**2006 UJ$_{25}$ = 2004 FN$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.53874 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22281280 | $\omega$ | 25.59284 | | +0.66930469 | | −0.74200336 |
| $a$ | 2.6946930 | $\Omega$ | 22.45762 | | +0.66332212 | | +0.57356154 |
| $e$ | 0.0057170 | $i$ | 5.74511 | | +0.33471631 | | +0.34707085 |
| $P$ | 4.42 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.5− | 2006 11 17 | 691 | 0.1− | 0.6− |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.3− |
| 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 03 26 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.6+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2004 03 26 | 691 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 23 | 691 | 0.7+ | 0.2− |
| 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.4+ |
| 2006 09 25 | G96 | 0.3+ | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.2+ | | | | |
| 2006 09 25 | G96 | 0.2+ | 0.7− | 2006 11 17 | 691 | 0.1+ | 0.4− | | | | |

**2006 UL$_{25}$ = 2002 TO$_{16}$ = 2005 GG$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.49497 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25612545 | $\omega$ | 72.31034 | | +0.83978400 | | +0.54228946 |
| $a$ | 2.4556562 | $\Omega$ | 254.84268 | | −0.50783156 | | +0.76754639 |
| $e$ | 0.1890544 | $i$ | 1.55377 | | −0.19201547 | | +0.34175236 |
| $P$ | 3.85 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.5− | 0.1+ | 2005 04 17 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.4− |
| 2002 10 02 | 704 | 0.1− | 0.3− | 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.2− |
| 2002 10 02 | 704 | 0.4+ | 0.6− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.1+ |
| 2002 10 02 | 704 | (0.3+ | 1.6+) | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.8− |
| 2002 10 03 | 704 | 0.1+ | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.2− | 0.3+ |
| 2002 10 03 | 704 | 0.5+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.6+ | 0.2+ |
| 2002 10 03 | 704 | (0.5+ | 1.6−) | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.4+ |
| 2002 10 03 | 704 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2002 10 03 | 704 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 21 | 691 | 0.1− | 0.1+ |
| 2005 04 12 | G96 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.0 | 0.3− |
| 2005 04 12 | G96 | 0.9− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ | 2006 11 23 | 691 | 0.5− | 0.1+ |
| 2005 04 12 | G96 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.4− | 0.1− |
| 2005 04 12 | G96 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.2− | 0.3− |
| 2005 04 17 | 691 | 0.5+ | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | | | | |

**2006 UG$_{26}$ = 1995 FN$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.92736 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22550904 | $\omega$ | 39.15122 | | +0.44484522 | | −0.89457921 |
| $a$ | 2.6731710 | $\Omega$ | 24.52511 | | +0.79356102 | | +0.37149900 |
| $e$ | 0.0870724 | $i$ | 5.93274 | | +0.41517905 | | +0.24842813 |
| $P$ | 4.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.2− | 0.7− | 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1995 03 23 | 691 | 0.0 | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 1995 03 23 | 691 | 0.3− | 0.1+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.6− |
| 1995 03 29 | 691 | 0.1− | 0.5− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 1.3− | 0.2+ |
| 1995 03 29 | 691 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.7+ |
| 1995 03 29 | 691 | 1.3+ | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.1+ |
| 1995 04 04 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 1995 04 04 | 691 | 0.2+ | 0.4− | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 1995 04 04 | 691 | 0.6− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.0 | 0.4− |
| 2006 09 25 | G96 | 0.1− | 0.5− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.5− | 0.1− | 2006 10 20 | 691 | 0.0 | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.1− |

**2006 UL$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.17717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17951164 | $\omega$ | 85.83831 | | +0.28720758 | | −0.95786041 |
| $a$ | 3.1122488 | $\Omega$ | 347.46875 | | +0.87153531 | | +0.26301007 |
| $e$ | 0.1772771 | $i$ | 1.03086 | | +0.39741415 | | +0.11545188 |
| $P$ | 5.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 02 | 691 | 0.1+ | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.2+ |
| 1995 10 02 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.3+ |
| 1995 10 02 | 691 | 0.2+ | 0.5− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2005 07 12 | G96 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2005 07 12 | G96 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2005 07 12 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2005 07 12 | G96 | 0.8− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2006 09 26 | G96 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | | | | |

**2006 UP$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.20070 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17273346 | $\omega$ | 120.99007 | | +0.91377229 | | +0.37224436 |
| $a$ | 3.1931433 | $\Omega$ | 217.85179 | | −0.39933091 | | +0.89657826 |
| $e$ | 0.0707435 | $i$ | 15.37067 | | +0.07453207 | | +0.23996157 |
| $P$ | 5.71 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2004 04 22 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 04 22 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 22 | G96 | 0.6+ | 0.1− |
| 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2006 09 28 | G96 | 0.6+ | 0.4− | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.3− | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.6− | 2006 11 24 | 703 | 0.0 | 0.6+ |
| 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 1.2+ | 0.0 | 2006 11 24 | 703 | 0.3+ | 1.0− |
| 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.7+ | 1.7− | 2006 11 24 | 703 | 0.1+ | 1.8− |
| 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 1.2+ | 0.5+ | 2006 11 24 | 703 | 0.4+ | 0.4− |
| 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.4− | 0.2+ |
| 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.8− | | | | |

**2006 UV$_{26}$ = 2005 JF$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.74563 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26965314 | $\omega$ | 105.15331 | | +0.93853914 | | +0.34444391 |
| $a$ | 2.3728251 | $\Omega$ | 234.70375 | | −0.32630118 | | +0.86416963 |
| $e$ | 0.0921428 | $i$ | 1.57412 | | −0.11256920 | | +0.36683680 |
| $P$ | 3.66 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | (2.4+ | 3.4−) | 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.5+ |
| 1995 11 17 | 691 | 0.3− | 0.4− | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.7− | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.7− | 0.0 | 2006 09 27 | G96 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.4+ | | |
| 2001 05 21 | 807 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.0 | 0.3+ | | |
| 2001 05 22 | 807 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.7+ | | |
| 2002 10 04 | 688 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.4+ | 0.6+ | 2006 11 13 | G96 | 0.2− | 0.6+ | | |
| 2002 10 04 | 688 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.1+ | | |
| 2005 05 09 | G96 | 0.2− | 0.9− | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.5− | | |
| 2005 05 09 | G96 | 0.3− | 0.6− | 2006 10 20 | 691 | 0.6− | 0.2+ | 2006 11 13 | G96 | 0.9+ | 0.7− | | |
| 2005 05 09 | G96 | 0.2− | 0.8− | 2006 10 20 | 691 | 0.1− | 0.2+ | | | | | | |
| 2005 05 09 | G96 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.5+ | 0.1+ | | | | | | |

**2006 UW$_{26}$ = 2005 JC$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.05554 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26576563 | $\omega$ | 141.82516 | | +0.99859120 | −0.02771512 | |
| $a$ | 2.3959082 | $\Omega$ | 219.83511 | | +0.01030354 | +0.93780215 | |
| $e$ | 0.1277253 | $i$ | 4.05063 | | +0.05205249 | +0.34606212 | |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.4− | 2006 11 22 | G96 | 0.2− | 0.1+ | | |
| 2002 09 13 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.1− | 0.3− | | |
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.2− | | |
| 2005 05 08 | G96 | 0.1+ | 0.7+ | 2006 10 20 | 691 | 0.5− | 0.1− | 2006 11 24 | G96 | 0.3− | 0.3− | | |
| 2005 05 08 | G96 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2005 05 08 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2005 05 08 | G96 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.6− | 0.2− | | |
| 2005 05 09 | G96 | 0.6− | 0.4− | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 25 | 703 | 0.7− | 1.4+ | | |
| 2005 05 09 | G96 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 25 | 703 | 0.4+ | 0.7+ | | |
| 2005 05 09 | G96 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 25 | 703 | 0.4+ | 0.4− | | |
| 2005 05 09 | G96 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.2+ | 2006 11 25 | 703 | 1.2− | 1.2+ | | |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.5+ | 2006 11 27 | 691 | 0.6+ | 0.3− | | |
| 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.3+ | | | | | | |
| 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1− | 0.7− | | | | | | |

**2006 UX$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.98296 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17251051 | $\omega$ | 76.08326 | | −0.08282689 | −0.99617827 | |
| $a$ | 3.1958938 | $\Omega$ | 18.73472 | | +0.87776657 | −0.08609730 | |
| $e$ | 0.1464190 | $i$ | 4.95162 | | +0.47187452 | −0.01470097 | |
| $P$ | 5.71 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 05 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1− | | |
| 2003 04 05 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 2003 04 05 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 2003 05 06 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.1+ | | |
| 2003 05 06 | 691 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.1− | 0.1− | | |
| 2003 05 06 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.3− | | |
| 2006 09 27 | G96 | 0.1+ | 0.9− | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.3− | | |
| 2006 09 27 | G96 | 0.0 | 0.6− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.3− | | |
| 2006 09 27 | G96 | 0.3− | 0.5− | 2006 11 10 | 691 | 0.2− | 0.0 | | | | | | |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.2+ | | | | | | |

**2006 UE$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 255.12709 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18022065 | $\omega$ | 271.15236 | | −0.71354374 | −0.70028666 | |
| $a$ | 3.1040807 | $\Omega$ | 224.39816 | | +0.65430112 | −0.65519871 | |
| $e$ | 0.0397825 | $i$ | 1.74503 | | +0.25049027 | −0.28339591 | |
| $P$ | 5.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 28 | 691 | 0.0 | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.5− | | |
| 1995 10 28 | 691 | 0.1− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.4− | | |
| 1995 10 28 | 691 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 1995 11 20 | 691 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.5− | 0.1− | | |
| 1995 11 20 | 691 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.3+ | 0.4+ | | |
| 1995 11 20 | 691 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.5− | 0.3+ | | |
| 2006 09 26 | G96 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 691 | 0.4+ | 0.1− | | |
| 2006 09 26 | G96 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.0 | | | | | | |

**2006 UG$_{27}$ = 2004 EP$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.53938 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24101069 | $\omega$ | 174.18302 | | +0.81659325 | −0.57707938 | |
| $a$ | 2.5572813 | $\Omega$ | 221.07059 | | +0.52881651 | +0.75659288 | |
| $e$ | 0.1297306 | $i$ | 1.08534 | | +0.23136243 | +0.30748432 | |
| $P$ | 4.09 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 644 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 21 | 703 | 0.3− | 0.5− | | |
| 2002 11 04 | 644 | 0.5− | 0.6+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.5− | | |
| 2002 11 04 | 644 | 0.4+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.7− | | |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.6− | | |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.3− | | |
| 2004 03 15 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.3− | | |
| 2004 03 27 | 291 | 0.1− | 0.9+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.1− | | |
| 2004 03 27 | 291 | 0.2+ | 0.7− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.2− | | |
| 2004 03 27 | 291 | 0.1+ | 0.3− | 2006 10 21 | 703 | 1.1− | 0.6+ | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 21 | 703 | 1.2+ | 1.0+ | 2006 11 23 | 691 | 0.2− | 0.3− | | |
| 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 21 | 703 | 1.0− | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.1− | | |

**2006 US$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.33110 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17010923 | $\omega$ | 177.97624 | | −0.88617431 | +0.46210273 | |
| $a$ | 3.2258993 | $\Omega$ | 29.62227 | | −0.42607765 | −0.78385193 | |
| $e$ | 0.1241935 | $i$ | 3.94460 | | −0.18207946 | −0.41477371 | |
| $P$ | 5.79 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 06 | 691 | 0.3+ | 0.4− | 2003 01 27 | 608 | 0.4+ | 0.4+ | 2006 10 04 | G96 | 0.1− | 0.2− | | |
| 1994 10 06 | 691 | 0.0 | 0.6− | 2005 08 27 | 644 | 0.4− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.1− | | |
| 1994 10 06 | 691 | 0.7+ | 0.2− | 2005 08 27 | 644 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.4+ | 0.1− | | |
| 2000 09 29 | 691 | 0.2+ | 0.0 | 2005 08 27 | 644 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.2+ | | |
| 2000 09 29 | 691 | 0.1− | 0.1− | 2005 11 06 | G96 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.4+ | 0.4+ | | |
| 2000 09 29 | 691 | 0.0 | 0.1+ | 2005 11 06 | G96 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.3+ | | |
| 2000 11 16 | 691 | 0.3− | 0.2− | 2005 11 06 | G96 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.4+ | | |
| 2000 11 16 | 691 | 0.1+ | 0.1+ | 2005 11 06 | G96 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | | |
| 2000 11 16 | 691 | 0.6− | 0.5− | 2006 09 25 | G96 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.5+ | | |
| 2002 12 14 | 645 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.1+ | | |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.2− | 0.1− | | |
| 2003 01 27 | 608 | 0.2+ | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.1+ | 2006 11 13 | G96 | 0.9+ | 0.2+ | | |
| 2003 01 27 | 608 | 0.5+ | 0.2− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.1− | 0.8− | | |

**2006 UX$_{27}$ = 2001 UE$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.79250 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20221463 | $\omega$ | 164.21228 | | +0.96867106 | −0.24368940 | |
| $a$ | 2.8747120 | $\Omega$ | 210.02265 | | +0.21624385 | +0.92242828 | |
| $e$ | 0.0889619 | $i$ | 5.49053 | | +0.12212689 | +0.29956893 | |
| $P$ | 4.87 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 291 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.3− | | |
| 2001 10 18 | 291 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.8− | 2006 10 27 | G96 | 0.3− | 0.4− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 291 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.0 | 0.4− |
| 2001 10 21 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2001 10 21 | 704 | 0.8− | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2001 10 21 | 704 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 10 21 | 704 | 0.2− | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.1− | 0.4+ |
| 2004 04 13 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 04 13 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.5− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.4− | 2006 11 27 | 691 | 0.4+ | 0.2+ |

**2006 UY$_{27}$ = 1997 YM$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.09990 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21373555 | $\omega$ | 58.89849 | | +0.06619218 | | −0.99647527 |
| $a$ | 2.7704578 | $\Omega$ | 27.44827 | | +0.87316915 | | +0.03285188 |
| $e$ | 0.0275145 | $i$ | 6.41895 | | +0.48290189 | | +0.07718673 |
| $P$ | 4.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 21 | 691 | 0.4+ | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 10 29 | 691 | 0.3− | 0.2+ |
| 1997 12 21 | 691 | 0.4+ | 0.2− | 2006 09 25 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | (0.6+ | 4.4+) |
| 1997 12 21 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2− | 0.7− | 2006 11 11 | 703 | 1.3+ | 0.3+ |
| 1997 12 27 | 691 | 0.1+ | 0.6− | 2006 09 25 | G96 | 0.8− | 0.9− | 2006 11 11 | 703 | (0.5− | 2.3+) |
| 1997 12 27 | 691 | 0.3− | 0.4− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 1.2+ |
| 1997 12 27 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.2− |
| 2004 03 16 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2004 03 16 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.6− |
| 2004 03 16 | 691 | 0.4+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.3− | 0.9+ |
| 2004 03 23 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.4+ | 0.0 |
| 2004 03 23 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.3+ |
| 2004 04 20 | 691 | 0.3+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2004 04 20 | 691 | 0.1+ | 0.8+ | 2006 10 29 | 691 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.2+ |
| 2004 04 20 | 691 | 0.1− | 0.5+ | 2006 10 29 | 691 | 0.4− | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.0 |

**2006 UB$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.47526 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23019817 | $\omega$ | 36.54388 | | +0.32951062 | | +0.94406700 |
| $a$ | 2.6367450 | $\Omega$ | 252.69823 | | −0.86935246 | | +0.29814806 |
| $e$ | 0.2480758 | $i$ | 0.75969 | | −0.36830564 | | +0.14087309 |
| $P$ | 4.28 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 691 | 0.2− | 0.5+ | 2006 10 04 | G96 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 04 11 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2005 04 11 | 691 | 0.3+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.0 |
| 2005 05 12 | G96 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2005 05 12 | G96 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.6− | 0.3+ |
| 2005 05 12 | G96 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2005 05 12 | G96 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 17 | 691 | 0.1− | 0.3− |
| 2006 10 04 | G96 | 0.6+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.3+ | 0.1− |
| 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.1+ | | | | |
| 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.1+ | | | | |

**2006 UF$_{28}$ = 2002 TG$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.15846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25263289 | $\omega$ | 188.83213 | | +0.61479135 | | −0.78860466 |
| $a$ | 2.4782367 | $\Omega$ | 223.23221 | | +0.72463808 | | +0.57060149 |
| $e$ | 0.2435443 | $i$ | 0.96938 | | +0.31133784 | | +0.22916505 |
| $P$ | 3.90 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 704 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.8+ | 0.8− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2002 10 03 | 704 | 0.5+ | 1.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 14 | 701 | 0.0 | 0.0 |
| 2002 10 03 | 704 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 14 | 701 | 0.1+ | 0.0 |
| 2002 10 05 | 644 | 0.9− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 14 | 701 | 0.3+ | 0.2+ |
| 2002 10 05 | 644 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 14 | 701 | 0.1+ | 0.1+ |
| 2002 10 05 | 644 | 0.5− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.1+ |
| 2006 10 16 | 691 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 10 29 | 691 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− | | | | |

**2006 UH$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 275.49819 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21790941 | $\omega$ | 267.10563 | | −0.48522391 | | −0.87196698 |
| $a$ | 2.7349668 | $\Omega$ | 212.18277 | | +0.84291164 | | −0.44667813 |
| $e$ | 0.0785829 | $i$ | 7.01501 | | +0.23250317 | | −0.20038021 |
| $P$ | 4.52 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 01 | 691 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 1997 11 01 | 691 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.5− | 0.5− |
| 1997 11 01 | 691 | 0.4− | 0.6+ | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2004 04 22 | 691 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.1− | 0.6+ |
| 2004 04 22 | 691 | 0.1− | 0.9+ | 2006 10 16 | 691 | 0.3+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.7+ |
| 2004 04 22 | 691 | 0.1+ | 1.1+ | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.6+ | 0.6− |
| 2004 05 13 | 691 | 0.5− | 0.7+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2004 05 13 | 691 | 0.6+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2004 05 13 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2+ | 1.0− |
| 2006 09 26 | G96 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− | | | | |

**2006 UJ$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.02142 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24391868 | $\omega$ | 46.69029 | | −0.21050670 | | +0.97064093 |
| $a$ | 2.5369155 | $\Omega$ | 211.71337 | | −0.94874078 | | −0.23154877 |
| $e$ | 0.0300222 | $i$ | 12.79033 | | −0.23574958 | | +0.06512564 |
| $P$ | 4.04 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 691 | 0.2− | 0.0 | 2005 06 25 | 644 | 0.0 | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.3+ |
| 1998 10 17 | 691 | 0.0 | 0.0 | 2005 06 25 | 644 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.3− |
| 1998 10 17 | 691 | 0.2+ | 0.3− | 2006 10 16 | 691 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 2002 11 06 | 608 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2002 11 06 | 608 | 0.6− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2002 11 06 | 608 | 0.5+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.4+ |
| 2004 02 17 | 644 | 0.3+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.9+ | 0.1− |
| 2004 02 17 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2004 02 17 | 644 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.2− |
| 2005 06 25 | 644 | 0.3− | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.1+ | | | | |

**2006 UL$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.57298 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23821147 | $\omega$ | 350.54638 | | +0.99630018 | | −0.08436229 |
| $a$ | 2.5772760 | $\Omega$ | 14.32384 | | +0.08254547 | | +0.88623080 |
| $e$ | 0.2234303 | $i$ | 3.80085 | | +0.02392072 | | +0.45549751 |
| $P$ | 4.14 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 27 | 699 | 0.4− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.9− | 2006 10 21 | 703 | 0.4− | 0.1− |
| 2002 11 27 | 699 | 0.2+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 10 21 | 703 | 0.8− | 0.3− |
| 2002 11 27 | 699 | 0.5+ | 1.1− | 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 27 | 699 | 0.5− | 0.4− | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 12 27 | 644 | 0.3− | 0.8+ | 2006 10 03 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.3− |
| 2002 12 27 | 644 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2002 12 27 | 644 | 0.3+ | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.5+ | 0.0 |
| 2006 08 28 | 703 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2006 08 28 | 703 | 0.1+ | 1.0+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 07 | 644 | 0.2− | 0.1− |
| 2006 08 28 | 703 | 0.6+ | 1.2− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.1− |
| 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.2− |
| 2006 09 18 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2006 09 26 | G96 | 0.3− | 0.9− | 2006 10 21 | 703 | 1.0− | 0.5− | | | | |
| 2006 09 26 | G96 | 0.2− | 1.0− | 2006 10 21 | 703 | 0.4− | 0.6− | | | | |

**2006 UP$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.89757 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17921530 | $\omega$ | 38.03463 | | +0.44921754 | | −0.88872827 |
| $a$ | 3.1156787 | $\Omega$ | 25.65730 | | +0.75918278 | | +0.32574443 |
| $e$ | 0.0906083 | $i$ | 12.19499 | | +0.47100437 | | +0.32257188 |
| $P$ | 5.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.6− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 1995 09 27 | 691 | 0.6+ | 0.4− | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 1995 09 27 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2003 01 13 | 291 | 0.6− | 0.5− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.2− |
| 2003 01 13 | 291 | 0.2− | 0.5− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2003 01 13 | 291 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2003 03 25 | 644 | 0.5+ | 0.5− | 2006 10 20 | 644 | 0.4− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2003 03 25 | 644 | 0.2+ | 0.8− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.3− |
| 2003 03 25 | 644 | 0.7+ | 0.6− | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2003 04 04 | 691 | 0.7+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 0.4− | 2006 11 18 | 691 | 0.3+ | 0.3− |
| 2003 04 04 | 691 | 0.0 | 1.1+ | 2006 10 21 | 703 | 0.5+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2003 04 04 | 691 | 0.1+ | 0.5+ | 2006 10 21 | 703 | 0.8− | 0.5+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2006 09 25 | G96 | 0.3− | 0.3+ | 2006 10 21 | 703 | 1.0− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | | | |

**2006 UT$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.64220 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26838746 | $\omega$ | 165.68420 | | +0.95895558 | | −0.27799468 |
| $a$ | 2.3802792 | $\Omega$ | 210.63409 | | +0.24817805 | | +0.91817895 |
| $e$ | 0.1687837 | $i$ | 6.29657 | | +0.13715629 | | +0.28225234 |
| $P$ | 3.67 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.3+ | 0.8− |
| 2002 08 05 | 644 | 0.3− | 0.2− | 2006 09 25 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2002 08 05 | 644 | 0.1+ | 0.4− | 2006 09 25 | 691 | (2.0+ | 2.0−) | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2002 08 15 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2002 08 15 | 644 | 0.6+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2002 08 15 | 644 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2002 08 15 | 644 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2002 08 15 | 644 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2002 08 15 | 644 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.7− |
| 2002 08 25 | 644 | 0.0 | 0.2− | 2006 10 21 | 703 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.8+ | 0.4− |
| 2002 08 25 | 644 | 0.2− | 0.1− | 2006 10 21 | 703 | 0.6− | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2002 08 25 | 644 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.5+ | | | | |

**2006 UW$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.26782 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17717650 | $\omega$ | 238.25954 | | −0.34866726 | | −0.93587118 |
| $a$ | 3.1395348 | $\Omega$ | 232.23111 | | +0.88016740 | | −0.30834228 |
| $e$ | 0.1399185 | $i$ | 3.68148 | | +0.32208150 | | −0.17049975 |
| $P$ | 5.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 22 | 691 | 0.4+ | 0.2+ | 2006 10 03 | 691 | 0.8− | 0.5+ | 2006 10 28 | G96 | 0.6− | 0.2− |
| 1995 10 22 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.6− | 2006 10 28 | G96 | 0.4− | 0.4− |
| 1995 10 22 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− |
| 1995 11 16 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.4− |
| 1995 11 16 | 691 | 0.7− | 0.7− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2000 09 29 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 2000 09 29 | 691 | 0.2− | 0.5+ | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 10 29 | 691 | 0.2− | 0.0 |
| 2000 09 29 | 691 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2003 04 08 | 691 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2003 04 08 | 691 | 0.2+ | 1.2+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2003 04 08 | 691 | 0.4+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.5− | 0.7+ |
| 2006 10 03 | 691 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2006 10 03 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 1.2+ | 0.2+ |

**2006 UC$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.32810 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20451543 | $\omega$ | 100.69589 | | +0.68474561 | | −0.72864141 |
| $a$ | 2.8531109 | $\Omega$ | 306.07870 | | +0.66152688 | | +0.62968030 |
| $e$ | 0.0769688 | $i$ | 1.01543 | | +0.30578691 | | +0.26941494 |
| $P$ | 4.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 02 | 691 | 0.1− | 0.1+ | 2003 02 01 | 645 | 0.1+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 1994 04 02 | 691 | 0.2− | 0.2− | 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.5+ | 0.1− |
| 1994 04 02 | 691 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 2001 09 23 | 691 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.4− | 0.5+ | 2006 11 18 | 691 | 1.2− | 1.4− |
| 2001 09 23 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.3+ | 0.4+ |
| 2001 09 23 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2001 10 13 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2001 10 13 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 10 13 | 691 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2003 01 31 | 291 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.3− | 0.1+ |
| 2003 01 31 | 291 | 0.2− | 0.7+ | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.4− |
| 2003 01 31 | 291 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.0 |

**2006 UD$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.33307 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31564513 | $\omega$ | 97.01328 | | +0.51181271 | | −0.85905873 |
| $a$ | 2.1363381 | $\Omega$ | 322.19851 | | +0.78288729 | | +0.47027863 |
| $e$ | 0.0287746 | $i$ | 0.75854 | | +0.35374460 | | +0.20212892 |
| $P$ | 3.12 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 10 20 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.9− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.9+ |
| 2003 10 20 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.5+ | 0.1+ |
| 2003 10 20 | 691 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.0 |
| 2003 10 24 | 695 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2003 10 24 | 695 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.5− |
| 2003 11 16 | 291 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2003 11 16 | 291 | 0.3− | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.8− | 2006 10 29 | 691 | 0.2+ | 0.3− |
| 2003 11 16 | 291 | 0.1+ | 0.1− | 2006 10 21 | 703 | 1.0− | 0.6− | 2006 10 29 | 691 | 0.3+ | 0.1− |
| 2005 05 14 | G96 | 0.1− | 0.0 | 2006 10 21 | 703 | 0.5+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2005 05 14 | G96 | 0.5+ | 0.9+ | 2006 10 21 | 703 | 0.5+ | 1.2− | 2006 11 01 | 691 | 0.3− | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | G96 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.6− | 0.1+ |
| 2005 05 14 | G96 | 0.4+ | 0.5+ | 2006 10 28 | 691 | 0.0 | 0.1− | | | | |

**2006 UE$_{30}$ = 1999 GX$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 120.85148 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19318670 | $\omega$ | 42.57599 | | −0.21636398 | | +0.97144721 |
| $a$ | 2.9635885 | $\Omega$ | 215.25652 | | −0.93499798 | | −0.23487495 |
| $e$ | 0.0624933 | $i$ | 9.70917 | | −0.28100783 | | +0.03352723 |
| $P$ | 5.10 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 12 | 691 | 0.4+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.4− | 0.1− |
| 1999 04 12 | 691 | 0.1− | 0.2− | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.4− |
| 1999 04 12 | 691 | 0.1− | 0.2+ | 2006 10 03 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2− |
| 1999 04 16 | 691 | 0.3+ | 0.2− | 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.2− | 0.0 |
| 1999 04 16 | 691 | 0.0 | 0.1− | 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 1999 04 16 | 691 | 0.6− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2001 10 13 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2001 10 13 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2001 10 13 | 691 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2004 04 13 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 1.1+ | 0.7− |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.5− | 0.3− |
| 2004 04 13 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 1.0+ | 1.3+ | 2006 11 15 | 691 | 0.4− | 0.7+ |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 21 | 703 | (1.6+ | 1.3+) | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.7+ | 0.5− | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 21 | 703 | (3.0+ | 1.9−) | 2006 11 20 | 691 | 0.3+ | 0.2− |
| 2006 09 25 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.1+ |

**2006 UF$_{30}$ = 2001 RH$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.79015 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21417580 | $\omega$ | 279.63626 | | +0.49900035 | | +0.86616011 |
| $a$ | 2.7666600 | $\Omega$ | 20.36943 | | −0.76066602 | | +0.45307231 |
| $e$ | 0.0401043 | $i$ | 4.55860 | | −0.41519377 | | +0.21093160 |
| $P$ | 4.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 704 | 0.3+ | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2001 09 12 | 704 | 0.6− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2001 09 12 | 704 | 0.8+ | 1.0+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | (1.8+ | 0.2−) | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.1− | 0.8− | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.4+ |
| 2001 09 19 | 704 | 0.5− | 0.3− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.2+ | 0.5− | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 20 | 691 | 0.4+ | 0.2− |
| 2006 09 18 | 691 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.5− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1− | 0.3− | | | | |

**2006 UH$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.84628 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20477130 | $\omega$ | 108.55748 | | +0.55806569 | | −0.82965269 |
| $a$ | 2.8507337 | $\Omega$ | 307.51052 | | +0.75378404 | | +0.51464788 |
| $e$ | 0.0637842 | $i$ | 1.11695 | | +0.34694711 | | +0.21636536 |
| $P$ | 4.81 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 22 | 691 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.3+ | 0.0 |
| 2001 09 22 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2001 09 22 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.4+ | 0.5− |
| 2001 10 11 | 644 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.5− | 0.2+ |
| 2001 10 11 | 644 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.4− |
| 2001 10 11 | 644 | 0.2+ | 0.5− | 2006 10 21 | 703 | 0.1− | 0.9+ | 2006 11 15 | 691 | 0.1+ | 0.4− |
| 2003 01 04 | 291 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 1.2+ | 1.1− | 2006 11 18 | 691 | 0.4+ | 0.0 |
| 2003 01 04 | 291 | 0.1− | 0.1− | 2006 10 21 | 703 | 0.7− | 1.4+ | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2003 01 04 | 291 | 0.1− | 0.0 | 2006 10 21 | 703 | (1.2+ | 2.1+) | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2006 10 03 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.5− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2006 10 03 | 691 | 0.4− | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.5− | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2006 10 03 | 691 | 0.3− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.6− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | | | |

**2006 UU$_{30}$ = 2005 JE$_{157}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.80635 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22754757 | $\omega$ | 84.85483 | | +0.47769185 | | +0.86809919 |
| $a$ | 2.6571817 | $\Omega$ | 214.73841 | | −0.87026548 | | +0.44656375 |
| $e$ | 0.1723377 | $i$ | 13.70028 | | −0.12020192 | | +0.21675934 |
| $P$ | 4.33 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 691 | 0.5+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 2005 05 04 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2+ |
| 2005 05 04 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.2− | 0.4+ |
| 2005 05 17 | G96 | 0.7− | 0.7− | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.3− |
| 2005 05 17 | G96 | 0.7− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 2005 05 17 | G96 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 10 29 | 691 | 0.3− | 0.4+ |
| 2005 05 17 | G96 | 0.3− | 0.6− | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 10 29 | 691 | 0.0 | 0.3+ |
| 2006 09 28 | G96 | 0.7+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2006 09 28 | G96 | 0.7+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | | | |
| 2006 09 28 | G96 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.5− | | | | |

**2006 UF$_{31}$ = 1995 UJ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.99574 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18241549 | $\omega$ | 336.26266 | | +0.98782262 | | −0.10782547 |
| $a$ | 3.0791316 | $\Omega$ | 30.58798 | | +0.15255182 | | +0.81289110 |
| $e$ | 0.2007093 | $i$ | 12.73348 | | −0.03056810 | | +0.57234756 |
| $P$ | 5.40 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.9+ | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.4− | 2006 11 09 | 691 | 0.0 | 0.1− |
| 1995 10 19 | 691 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.0 |
| 1995 10 19 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.3− |
| 1995 10 24 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.6− |
| 1995 10 24 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 1.0+ | 0.1+ |
| 1995 10 24 | 691 | 0.9− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2006 09 25 | G96 | 0.4+ | 0.8− | 2006 10 28 | 691 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2006 09 25 | G96 | 0.7− | 0.6− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.3− |
| 2006 09 25 | G96 | 0.4+ | 0.7− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2006 09 25 | G96 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.4+ | | | | |

**2006 UQ$_{31}$ = 2004 JH$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 175.98722 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19106711 | $\omega$ | 349.37089 | | −0.82493785 | | +0.56472152 |
| $a$ | 2.9854657 | $\Omega$ | 225.03942 | | −0.51608174 | | −0.76973042 |
| $e$ | 0.0392080 | $i$ | 1.92871 | | −0.23051502 | | −0.29766540 |
| $P$ | 5.16 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.1+ | 0.3− | 2004 05 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 1995 07 26 | 691 | 0.5+ | 0.5− | 2004 05 19 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 |
| 1995 07 26 | 691 | 0.2− | 0.2− | 2004 05 19 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.0 |
| 1996 12 17 | 691 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− |
| 1996 12 17 | 691 | 0.1+ | 0.5− | 2006 09 27 | G96 | 0.0 | 0.4+ | 2006 10 29 | 691 | 0.1+ | 0.4+ |
| 1996 12 17 | 691 | 0.2+ | 0.5− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2004 04 25 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.7+ | 0.2+ | 2006 10 29 | 691 | 0.2− | 0.3− |
| 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 22 | G96 | 0.1+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.2− | 0.6+ | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2004 05 09 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.7− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2004 05 09 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2004 05 09 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.5− | 1.1+ | | | | |

**2006 UE$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.81924 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22072104 | $\omega$ | 282.08638 | | +0.76394344 | | +0.64292236 |
| $a$ | 2.7116912 | $\Omega$ | 37.94234 | | −0.55165636 | | +0.69504681 |
| $e$ | 0.1787141 | $i$ | 5.14578 | | −0.33476212 | | +0.32180859 |
| $P$ | 4.47 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2001 07 19 | 644 | 0.5+ | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2001 07 19 | 644 | 0.2− | 0.2− | 2006 10 16 | 691 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 07 19 | 644 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2001 08 14 | 644 | 0.0 | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.5+ | 0.5− |
| 2001 08 14 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2001 08 14 | 644 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2001 08 27 | 644 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.2− |
| 2001 08 27 | 644 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2001 08 27 | 644 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.4− |

**2006 UF$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.95516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23673420 | $\omega$ | 270.05173 | | −0.66991412 | | −0.74179303 |
| $a$ | 2.5879867 | $\Omega$ | 222.06395 | | +0.69823237 | | −0.61530656 |
| $e$ | 0.1939453 | $i$ | 2.64819 | | +0.25236208 | | −0.26672258 |
| $P$ | 4.16 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 28 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3− | 0.7+ | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2004 04 28 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.2+ |
| 2004 04 28 | 691 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2004 06 08 | 691 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 06 08 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.5+ | 0.7− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2004 06 08 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2006 09 27 | G96 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2006 09 27 | G96 | 0.8+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.0 | 0.3+ |
| 2006 09 27 | G96 | 0.5+ | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2006 10 16 | 691 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− | | | | |

**2006 UG$_{32}$ = 2004 HV$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.32806 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19235244 | $\omega$ | 70.09857 | | +0.24264342 | | +0.96694055 |
| $a$ | 2.9721513 | $\Omega$ | 214.24917 | | −0.93402669 | | +0.21100837 |
| $e$ | 0.0476666 | $i$ | 8.01000 | | −0.26214179 | | +0.14318326 |
| $P$ | 5.12 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2005 07 05 | 644 | 1.3+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2005 07 05 | 644 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.7− | 0.1+ |
| 2004 04 16 | 691 | 0.1− | 0.3+ | 2005 07 05 | 644 | 0.4− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.2− |
| 2004 04 16 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.3+ |
| 2004 04 16 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.1+ |
| 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2004 04 22 | 691 | 0.0 | 0.8+ | 2006 09 27 | G96 | 0.4+ | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.6+ |
| 2004 04 22 | 691 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.6+ |
| 2004 05 23 | 691 | 0.3+ | 0.3+ | 2006 10 04 | G96 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.6+ |
| 2004 05 23 | 691 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.8+ | 0.3+ |
| 2004 05 23 | 691 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.4+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 2005 05 15 | 291 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.6− | 0.2− | 2006 11 13 | G96 | 0.2− | 0.0 |
| 2005 05 15 | 291 | 0.3− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 2005 05 15 | 291 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.5− | 0.1+ | | | | |

**2006 UH$_{32}$ = 1995 UV$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.35595 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27066774 | $\omega$ | 221.26550 | | +0.21071966 | | −0.97688876 |
| $a$ | 2.3668917 | $\Omega$ | 216.61167 | | +0.91191598 | | +0.20965292 |
| $e$ | 0.2112852 | $i$ | 3.44670 | | +0.35214552 | | +0.04164137 |
| $P$ | 3.64 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.3− | 0.0 | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.4+ |
| 1995 10 17 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.7+ | 0.3+ |
| 1995 10 17 | 691 | 0.5− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 1.2+ | 0.6− |
| 1995 10 22 | 691 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.4− | 0.3+ |
| 1995 10 22 | 691 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.1− |
| 1995 10 22 | 691 | 0.6+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.5− |
| 2004 03 15 | 691 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.4− |
| 2004 03 15 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 13 | G96 | 0.4− | 0.4+ |
| 2004 04 13 | 691 | 0.1− | 0.6+ | 2006 10 29 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.8+ |
| 2004 04 13 | 691 | 0.5+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.6− | 1.3− |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.2− | 0.9− |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.9+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 1.2− |
| 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.0 | | | | |
| 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.2+ | | | | |

**2006 UL$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 185.20112 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21759157 | $\omega$ | 355.69008 | | −0.89915706 | | +0.43599468 |
| $a$ | 2.7376295 | $\Omega$ | 210.24849 | | −0.39924055 | | −0.85256163 |
| $e$ | 0.0454768 | $i$ | 4.29790 | | −0.17923051 | | −0.28817929 |
| $P$ | 4.53 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 03 | 291 | 0.4− | 0.1− | 2005 07 06 | 691 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.1− |
| 2003 01 03 | 291 | 0.5− | 0.1+ | 2005 07 06 | 691 | 0.1− | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.1− |
| 2003 01 03 | 291 | 0.9+ | 1.0+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2004 03 27 | 699 | 0.6+ | 0.9+ | 2006 10 12 | 691 | 0.4+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2004 03 27 | 699 | 0.3− | 0.9− | 2006 10 12 | 691 | 0.1− | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.5+ |
| 2004 03 27 | 699 | (0.0 | 1.8+) | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.2− | 0.4+ |
| 2004 03 27 | 699 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2004 04 20 | 691 | 0.4+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2004 04 20 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.6− |
| 2004 04 20 | 691 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2005 07 06 | 691 | 0.2− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.1− |

**2006 UF$_{33}$ = 2005 JP$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.42486 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27305145 | $\omega$ | 220.16802 | | +0.14473093 | | +0.98839402 |
| $a$ | 2.3530964 | $\Omega$ | 58.20052 | | −0.89331918 | | +0.15058240 |
| $e$ | 0.1917541 | $i$ | 3.11302 | | −0.42548067 | | +0.02005505 |
| $P$ | 3.61 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 30 | 644 | 0.1+ | 0.1+ | 2005 05 08 | 691 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.2− |
| 2002 08 30 | 644 | 0.3− | 0.1+ | 2005 05 08 | 691 | 0.0 | 0.7+ | 2006 10 20 | 691 | 0.3− | 0.0 |
| 2002 08 30 | 644 | 0.1+ | 0.1+ | 2005 05 08 | 691 | 0.0 | 0.7+ | 2006 10 20 | 691 | 1.5− | 0.6+ |
| 2005 04 01 | 691 | 0.2+ | 0.4+ | 2005 05 10 | G96 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.4+ |
| 2005 04 01 | 691 | 0.5+ | 0.0 | 2005 05 10 | G96 | 0.9− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.3+ |
| 2005 04 01 | 691 | 0.1− | 0.1− | 2005 05 10 | G96 | 0.6− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2005 04 12 | 691 | 0.1+ | 0.0 | 2005 05 10 | G96 | 1.3+ | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.0 |
| 2005 04 12 | 691 | 0.1− | 0.4− | 2006 10 16 | 691 | 0.3+ | 0.0 | | | | |
| 2005 04 12 | 691 | 0.0 | 0.5− | 2006 10 16 | 691 | 0.2+ | 0.2+ | | | | |

**2006 UJ$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.85538 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18090503 | $\omega$ | 118.58507 | | −0.97779274 | | +0.20676150 |
| $a$ | 3.0962471 | $\Omega$ | 73.36470 | | −0.20259048 | | −0.89072223 |
| $e$ | 0.1058755 | $i$ | 2.04677 | | −0.05365123 | | −0.40480069 |
| $P$ | 5.45 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 691 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.3+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2000 09 29 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.5− | 0.5− | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2000 09 29 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.6− | 0.6− |
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.2− | 1.1− |
| 2000 10 02 | 645 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.3+ |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.5+ | 0.4− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.7− |
| 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.8+ | 0.2− |

**2006 UZ$_{33}$ = 2001 SM$_{299}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.08893 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21464311 | $\omega$ | 27.97318 | | −0.57637465 | | +0.81595095 |
| $a$ | 2.7626429 | $\Omega$ | 206.90429 | | −0.76705093 | | −0.55914677 |
| $e$ | 0.0078098 | $i$ | 5.69503 | | −0.28182464 | | −0.14689772 |
| $P$ | 4.59 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 28 | 691 | 0.7− | 0.1− | 2001 09 20 | 704 | 0.7− | 0.3+ | 2006 10 16 | 691 | 0.4− | 0.2+ |
| 1997 11 28 | 691 | 0.4+ | 0.3− | 2001 09 20 | 704 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.7− |
| 1997 11 28 | 691 | 0.4+ | 0.1+ | 2001 09 23 | 704 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.5+ | 0.1+ |
| 2001 08 22 | 691 | 0.1+ | 0.2+ | 2001 09 23 | 704 | 1.2− | 0.4− | 2006 10 16 | 291 | 0.4− | 0.5+ |
| 2001 08 22 | 691 | 0.0 | 0.0 | 2001 09 23 | 704 | 0.9+ | 0.3− | 2006 10 16 | 291 | 0.2+ | 0.3+ |
| 2001 08 22 | 691 | 0.8+ | 0.1− | 2006 09 25 | G96 | 0.6+ | 0.3− | 2006 10 16 | 291 | 0.4+ | 0.0 |
| 2001 09 20 | 704 | 0.8− | 0.2− | 2006 09 25 | G96 | 0.0 | 0.6− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.5− | 0.8− | 2006 09 25 | G96 | 0.4+ | 0.6− | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 704 | 0.6− | 0.7+ | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1− |

**2006 UA$_{34}$ = 2005 SX$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.37465 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.12530206 | $\omega$ | 152.68560 | | +0.49622409 | | +0.86808774 |
| $a$ | 3.9551587 | $\Omega$ | 147.05974 | | −0.80105277 | | +0.46383860 |
| $e$ | 0.1912955 | $i$ | 1.43456 | | −0.33477770 | | +0.17685424 |
| $P$ | 7.87 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 17 | G96 | 0.3+ | 0.1+ | 2005 09 23 | 691 | 0.0 | 0.2− | 2006 09 26 | G96 | 0.3− | 0.3− |
| 2005 06 17 | G96 | 0.1+ | 0.1+ | 2005 10 01 | G96 | 0.5+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2005 06 17 | G96 | 0.4+ | 0.1+ | 2005 10 01 | G96 | 0.2− | 0.3− | 2006 10 16 | 691 | 0.3+ | 0.1− |
| 2005 06 17 | G96 | 0.2+ | 0.2+ | 2005 10 01 | G96 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 |
| 2005 07 29 | 644 | 0.4− | 0.1− | 2005 10 01 | G96 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 2005 07 29 | 644 | 0.1− | 0.1− | 2005 10 29 | G96 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 2005 07 29 | 644 | 0.1− | 0.1+ | 2005 10 29 | G96 | 0.9+ | 0.6− | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2005 08 27 | 644 | 0.3− | 0.4− | 2005 10 29 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1− | 0.3+ |
| 2005 08 27 | 644 | 0.1+ | 0.1− | 2005 10 29 | G96 | 0.4+ | 0.6+ | 2006 10 29 | 691 | 0.4+ | 0.2+ |
| 2005 08 27 | 644 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.0 | 0.5− | 2006 10 29 | 691 | 0.1− | 0.3− |
| 2005 09 23 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1− | 0.3− | | | | |
| 2005 09 23 | 691 | 0.2− | 0.4+ | 2006 09 26 | G96 | 0.4+ | 0.8− | | | | |

**2006 UD$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.97275 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25257148 | $\omega$ | 76.68786 | | −0.75135156 | | −0.65877166 |
| $a$ | 2.4786384 | $\Omega$ | 62.09108 | | +0.58727781 | | −0.69420118 |
| $e$ | 0.1163443 | $i$ | 2.50415 | | +0.30095782 | | −0.29000796 |
| $P$ | 3.90 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 644 | 0.1+ | 0.0 | 2004 03 23 | 691 | (3.3+ | 0.2−) | 2006 10 20 | 691 | 0.1+ | 0.4− |
| 2002 10 10 | 644 | 0.2− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.2+ |
| 2002 10 10 | 644 | 0.3− | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 10 29 | 691 | 0.1− | 0.1− |
| 2004 03 15 | 703 | 0.7+ | 0.3− | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 10 29 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 703 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.7− | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 2004 03 15 | 703 | (1.2− | 1.7+) | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.2− |
| 2004 03 15 | 703 | 1.2− | 0.9+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.9− |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.7+ |
| 2004 03 23 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.2− |

**2006 UW$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.72250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17532983 | $\omega$ | 12.75447 | | +0.66815027 | | −0.73723441 |
| $a$ | 3.1615412 | $\Omega$ | 35.46940 | | +0.66655233 | | +0.53321476 |
| $e$ | 0.0883682 | $i$ | 9.95391 | | +0.33058011 | | +0.41493065 |
| $P$ | 5.62 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.7+ |
| 2001 12 19 | 644 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.3+ | 0.2− |
| 2001 12 19 | 644 | 0.0 | 0.3+ | 2006 10 29 | G96 | 0.2+ | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.3+ | 0.7− | 2006 11 11 | 691 | 0.2− | 0.2− |
| 2006 09 25 | G96 | 0.3− | 0.1+ | 2006 10 29 | G96 | 0.3+ | 0.4− | 2006 11 11 | 691 | 0.2+ | 0.3− |
| 2006 09 25 | G96 | 0.5− | 0.3− | 2006 10 29 | G96 | 0.4+ | 0.6− | 2006 11 11 | 691 | 0.2− | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.4− |
| 2006 10 04 | G96 | 0.2− | 0.2− | 2006 10 29 | 691 | 0.2− | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.2− |
| 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.3− | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2006 10 04 | G96 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.5− | 2006 11 17 | 703 | 0.3− | 0.7+ |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 17 | 703 | 1.8+ | 0.8+ |
| 2006 10 16 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 691 | 0.4− | 1.1+ | 2006 11 17 | 703 | 0.2− | 0.8+ |
| 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | (1.3− | 2.9−) |
| 2006 10 16 | 691 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2− | | | | |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.3− | | | | |

**2006 UO$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.22587 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29320653 | $\omega$ | 226.02014 | | −0.50491884 | | −0.86243494 |
| $a$ | 2.2439868 | $\Omega$ | 254.33716 | | +0.80212954 | | −0.45360953 |
| $e$ | 0.1056328 | $i$ | 2.11517 | | +0.31881840 | | −0.22459824 |
| $P$ | 3.36 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2003 12 17 | 691 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.6+ | 0.6− |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2004 01 27 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.7+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 28 | G96 | 0.6+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 28 | G96 | 0.3− | 0.6− | 2006 10 20 | 691 | 0.1− | 0.3+ | | | | |

**2006 US$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.96227 | | (2000.0) | | | |
| $n$ | 0.19300313 | $\omega$ | 140.81338 | | +0.97805780 | −0.17623065 |
| $a$ | 2.9654674 | $\Omega$ | 229.70420 | | +0.13486027 | +0.94207571 |
| $e$ | 0.0452761 | $i$ | 8.37657 | | +0.15879439 | +0.28537015 |
| $P$ | 5.11 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2001 10 16 | 291 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2001 10 16 | 291 | 0.2− | 1.0+ | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 11 19 | 608 | 0.4− | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2001 11 19 | 608 | 0.1− | 0.4− | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2001 11 19 | 608 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.4+ | 0.2− | 2006 11 26 | 104 | 1.4− | 0.8+ |
| 2004 05 23 | 691 | 0.3+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 26 | 104 | 0.2+ | 0.2− |
| 2004 05 23 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 26 | 104 | 0.6− | 0.2− |
| 2004 05 23 | 691 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.5− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2005 07 09 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2005 07 09 | 691 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.5+ | 0.2+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2005 07 09 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.3− |

**2006 UW$_{35}$ = 2000 SM$_{346}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 162.78755 | | (2000.0) | | | |
| $n$ | 0.17903466 | $\omega$ | 233.62281 | | −0.63944917 | +0.76882909 |
| $a$ | 3.1177741 | $\Omega$ | 356.62307 | | −0.69068836 | −0.57591933 |
| $e$ | 0.0619646 | $i$ | 2.49944 | | −0.33771934 | −0.27788263 |
| $P$ | 5.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 695 | 0.1− | 0.1− | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1+ |
| 2000 09 21 | 695 | 0.1− | 0.1+ | 2005 08 27 | 644 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.5− |
| 2000 09 25 | 691 | 0.0 | 0.3− | 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.3− |
| 2000 09 25 | 691 | 0.2+ | 0.1− | 2006 09 28 | G96 | 0.7+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.5+ |
| 2000 09 25 | 691 | 0.1+ | 0.2− | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2002 12 14 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2005 07 12 | G96 | 0.1− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.7+ | 0.6− |
| 2005 07 12 | G96 | 0.6− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 1.0+ | 0.0 |
| 2005 07 12 | G96 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ | | | | |
| 2005 07 12 | G96 | 0.8− | 0.1+ | 2006 10 16 | 691 | 0.8− | 0.0 | | | | |

**2006 UZ$_{35}$ = 2005 JR$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 96.22317 | | (2000.0) | | | |
| $n$ | 0.27228696 | $\omega$ | 46.20971 | | +0.17931748 | +0.98038193 |
| $a$ | 2.3574988 | $\Omega$ | 234.29415 | | −0.92907706 | +0.14140436 |
| $e$ | 0.1245989 | $i$ | 5.78384 | | −0.32351361 | +0.13731746 |
| $P$ | 3.62 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 05 10 | G96 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2005 05 10 | G96 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2005 05 10 | G96 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.4+ |
| 2005 05 16 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2005 05 16 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.4− | 0.6+ | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2005 05 16 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.6− | 0.2− |
| 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.6− | 1.8− |

**2006 UC$_{36}$ = 1996 RM$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.40137 | | (2000.0) | | | |
| $n$ | 0.30225516 | $\omega$ | 118.80659 | | +0.53787248 | −0.84295328 |
| $a$ | 2.1989747 | $\Omega$ | 298.65031 | | +0.76899028 | +0.49598362 |
| $e$ | 0.1192546 | $i$ | 0.72403 | | +0.34546655 | +0.20839872 |
| $P$ | 3.26 | $H$ | 18.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.3− | 0.0 |
| 1996 09 13 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1996 09 13 | 691 | 0.5− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.5+ |
| 1996 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 1996 09 15 | 691 | 0.5+ | 0.4− | 2006 10 16 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 1996 09 15 | 691 | 0.4+ | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1+ |
| 2001 02 16 | 209 | 0.4+ | 0.7− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2001 02 16 | 209 | 0.6+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 | | | | |
| 2001 02 17 | 209 | 1.4− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 | | | | |

**2006 UJ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.76710 | | (2000.0) | | | |
| $n$ | 0.23362917 | $\omega$ | 27.48897 | | +0.38345560 | −0.89860824 |
| $a$ | 2.6108665 | $\Omega$ | 40.97979 | | +0.77638905 | +0.18860621 |
| $e$ | 0.2096636 | $i$ | 18.97414 | | +0.50018182 | +0.39614508 |
| $P$ | 4.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 644 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.1+ |
| 2003 01 31 | 644 | 0.5+ | 0.5+ | 2006 10 19 | 703 | (1.8− | 0.5+) | 2006 11 15 | 703 | 0.1− | 0.4− |
| 2003 01 31 | 644 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.6+ | 1.0+ | 2006 11 15 | 703 | 0.2+ | 0.1+ |
| 2003 02 10 | 644 | 0.1− | 0.8− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.3+ |
| 2003 02 10 | 644 | 0.3− | 0.7− | 2006 10 19 | 703 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.0 | 0.3+ |
| 2003 02 10 | 644 | 0.4− | 0.7− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.0 | 0.0 |
| 2004 03 26 | 291 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.8− | 2006 11 15 | 704 | 0.1+ | 1.0− |
| 2004 03 26 | 291 | 0.4+ | 0.4+ | 2006 10 20 | G96 | 0.4+ | 0.4− | 2006 11 15 | 704 | 0.0 | 0.1− |
| 2004 03 26 | 291 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.6− | 2006 11 15 | 704 | 0.6+ | 0.2+ |
| 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.4− | 2006 11 21 | 703 | 0.8− | 0.0 |
| 2006 09 27 | G96 | 0.3− | 0.1− | 2006 10 20 | G96 | 0.1− | 0.6− | 2006 11 21 | 703 | 0.3− | 0.0 |
| 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 02 | 703 | 0.1− | 0.3+ | 2006 11 21 | 703 | 1.1+ | 0.5− |
| 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.4− | 1.2− | 2006 11 29 | 704 | 0.3− | 1.3+ |
| 2006 10 16 | 703 | 1.2+ | 1.2+ | 2006 11 02 | 703 | 0.6− | 0.8− | 2006 11 29 | 704 | 0.2− | 1.0+ |
| 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 02 | 703 | 0.3− | 1.0+ | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2006 10 16 | 703 | 1.3− | 0.6+ | 2006 11 14 | 703 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.7− | 0.6+ |
| 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 11 14 | 703 | 1.0+ | 0.6− | | | | |

**2006 UM$_{36}$ = 2004 FG$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 245.44135 | | (2000.0) | | | |
| $n$ | 0.23399431 | $\omega$ | 154.61119 | | −0.91799998 | −0.39657702 |
| $a$ | 2.6081497 | $\Omega$ | 2.02661 | | +0.35545057 | −0.82462770 |
| $e$ | 0.0935039 | $i$ | 2.66949 | | +0.17587194 | −0.40338049 |
| $P$ | 4.21 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 11 | 691 | 0.2+ | 0.3+ | 2004 03 18 | 704 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.2+ | 0.3+ |
| 1997 08 11 | 691 | 0.2− | 0.3+ | 2004 03 18 | 704 | 0.6+ | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.4+ |
| 1997 08 11 | 691 | 0.2− | 0.4+ | 2004 04 12 | 699 | (1.6+ | 0.1+) | 2006 10 16 | 691 | 0.1− | 0.5+ |
| 1997 09 23 | 691 | 0.2− | 0.1+ | 2004 04 12 | 699 | 0.6− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.3+ |
| 1997 09 23 | 691 | 0.3− | 0.6+ | 2004 04 12 | 699 | (2.3− | 0.6+) | 2006 10 16 | 691 | 0.2− | 0.0 |
| 1997 09 23 | 691 | 0.2− | 0.2+ | 2004 04 12 | 699 | (2.1− | 0.4+) | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2002 11 07 | 291 | 0.1+ | 0.3+ | 2004 04 13 | 691 | 0.2+ | 0.7+ | 2006 10 20 | 691 | 0.2− | 0.3+ |
| 2002 11 07 | 291 | 0.4− | 0.7− | 2004 04 13 | 691 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.4− | 0.3− |
| 2002 11 07 | 291 | 0.3+ | 0.0 | 2004 04 13 | 691 | 0.3+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2004 03 16 | 691 | 0.4+ | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.3+ | 0.4+ | 2006 09 28 | G96 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.5+ |
| 2004 03 16 | 691 | 0.5+ | 0.3+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 22 | 104 | 0.5− | 0.2+ |
| 2004 03 18 | 704 | 0.1+ | 0.4+ | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 22 | 104 | 0.2+ | 1.5+ |
| 2004 03 18 | 704 | 0.6− | 0.7+ | 2006 10 12 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 104 | 1.3− | 0.9+ |

**2006 UT$_{36}$ = 2004 CC$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.93349 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25163544 | $\omega$ | 179.09736 | | −0.85074634 | | +0.52120885 |
| $a$ | 2.4847814 | $\Omega$ | 32.60238 | | −0.48298999 | | −0.72458428 |
| $e$ | 0.1312182 | $i$ | 7.20925 | | −0.20724705 | | −0.45090903 |
| $P$ | 3.92 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 09 | 691 | 0.5+ | 0.2+ | 2004 02 15 | 704 | 1.2+ | 0.5+ | 2006 10 20 | 691 | 0.1+ | 0.1− |
| 1994 10 09 | 691 | 0.3− | 0.3− | 2006 09 27 | G96 | 0.4+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2− |
| 1994 10 09 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 |
| 2004 02 13 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 02 13 | 691 | 0.1− | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2004 02 13 | 691 | 0.3− | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2004 02 15 | 704 | 0.4+ | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.2+ | | | | |
| 2004 02 15 | 704 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | | | | |

**2006 UZ$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.18295 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22741078 | $\omega$ | 258.16871 | | +0.70482416 | | +0.67378721 |
| $a$ | 2.6582471 | $\Omega$ | 59.00505 | | −0.50714707 | | +0.69731060 |
| $e$ | 0.0891160 | $i$ | 15.00164 | | −0.49600883 | | +0.24447644 |
| $P$ | 4.33 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.8+ | 0.8+ | 2005 07 25 | E12 | 0.6+ | 0.4+ | 2006 11 11 | 703 | 0.9− | 0.3− |
| 2000 04 05 | 699 | 0.2− | 0.4− | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 15 | 691 | 0.4− | 0.1+ |
| 2000 04 05 | 699 | 0.6+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2000 04 05 | 699 | 0.1+ | 1.2+ | 2006 09 28 | G96 | 0.4− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.3+ |
| 2004 03 24 | 703 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 17 | 644 | 0.2− | 0.1+ |
| 2004 03 24 | 703 | 1.3+ | 1.3− | 2006 10 16 | 703 | 0.5− | 1.4− | 2006 11 17 | 644 | 0.2− | 0.1− |
| 2004 03 24 | 703 | 1.2+ | 0.5− | 2006 10 16 | 703 | 1.2+ | 0.3− | 2006 11 17 | 644 | 0.1+ | 0.1+ |
| 2004 03 24 | 703 | 1.1− | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.3+ | 2006 11 18 | 704 | 0.1− | 1.2+ |
| 2004 04 24 | 703 | 0.8− | 0.9+ | 2006 10 16 | 703 | 0.8− | 0.0 | 2006 11 18 | 704 | 0.4− | 0.4− |
| 2004 04 24 | 703 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2004 04 24 | 703 | 1.2+ | 1.3+ | 2006 10 19 | G96 | 0.3− | 0.4− | 2006 11 18 | 704 | 0.9− | 0.3− |
| 2004 04 24 | 703 | 0.6− | 1.0+ | 2006 10 19 | G96 | 0.2− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2005 06 08 | E12 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2005 06 08 | E12 | 0.4− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2005 06 08 | E12 | 0.3+ | 0.3− | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2005 06 08 | E12 | 0.5+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.9+ |
| 2005 07 04 | E12 | 0.8− | 0.9+ | 2006 10 28 | G96 | 0.5− | 0.3− | 2006 11 21 | 704 | 0.8+ | 1.3+ |
| 2005 07 04 | E12 | 1.1− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2005 07 04 | E12 | 0.2− | 1.4+ | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2005 07 04 | E12 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2005 07 25 | E12 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.4+ | 0.0 |
| 2005 07 25 | E12 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.0 | 1.3+ | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2005 07 25 | E12 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.1+ | | | | |

**2006 UC$_{37}$ = 2001 WZ$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.96055 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19679596 | $\omega$ | 104.31131 | | −0.14664878 | | −0.98918464 |
| $a$ | 2.9272418 | $\Omega$ | 354.11930 | | +0.89667823 | | −0.13173542 |
| $e$ | 0.0784702 | $i$ | 1.56965 | | +0.41768682 | | −0.06449435 |
| $P$ | 5.01 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 22 | 696 | 0.5− | 0.4+ | 2001 12 18 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.3− |
| 1998 01 22 | 696 | 0.7− | 0.2+ | 2001 12 18 | 691 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.0 |
| 2001 11 19 | 704 | 0.0 | 0.7+ | 2002 12 14 | 645 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.4+ |
| 2001 11 19 | 704 | 0.3− | 0.6+ | 2002 12 14 | 645 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.6− | 0.1− |
| 2001 11 19 | 704 | 0.1− | 1.1+ | 2003 03 09 | 291 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 0.5− | 0.9+ | 2003 03 09 | 291 | 0.5+ | 0.8+ | 2006 10 20 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 704 | 1.3− | 0.7+ | 2003 03 09 | 291 | 1.3+ | 0.8+ | 2006 11 08 | 644 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.5+ | 1.0+ | 2006 09 27 | G96 | 0.0 | 0.8− | 2006 11 08 | 644 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.6+ | 0.6+ | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.5− | | | | |
| 2001 12 18 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.1− | | | | |

**2006 UJ$_{37}$ = 2002 QT$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.71343 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28344271 | $\omega$ | 8.45891 | | −0.51782334 | | +0.85196607 |
| $a$ | 2.2952281 | $\Omega$ | 230.39326 | | −0.79066612 | | −0.51122746 |
| $e$ | 0.0822554 | $i$ | 5.77643 | | −0.32665896 | | −0.11313844 |
| $P$ | 3.48 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 03 | 599 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (0.9+ | 2.8−) |
| 2002 08 03 | 599 | 0.4+ | 0.7− | 2006 10 16 | 691 | 0.9− | 1.1+ | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2002 08 03 | 599 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 1.1+ | 0.3− |
| 2002 08 03 | 599 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.7+ | 0.4+ |
| 2002 08 26 | 644 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.2− | 1.2+ |
| 2002 08 26 | 644 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.8− |
| 2002 08 26 | 644 | 0.5+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.0 |
| 2005 06 27 | G96 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | (1.9+ | 0.7+) |
| 2005 06 27 | G96 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2005 06 27 | G96 | 0.1− | 1.2+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2005 06 27 | G96 | (1.8+ | 0.5+) | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2005 07 12 | G96 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.4+ | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2005 07 12 | G96 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2005 07 12 | G96 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.3+ | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2005 07 12 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.8− | | | | |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.1− | 0.7− | | | | |

**2006 UR$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.35926 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30870206 | $\omega$ | 218.43101 | | −0.79702995 | | −0.60367669 |
| $a$ | 2.1682517 | $\Omega$ | 284.42608 | | +0.55855499 | | −0.72558899 |
| $e$ | 0.1191740 | $i$ | 1.05457 | | +0.22969454 | | −0.33029542 |
| $P$ | 3.19 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 29 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.3− | 0.2− |
| 2003 11 29 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2003 11 29 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2003 12 29 | 691 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.6− |
| 2003 12 29 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.6− | 0.0 |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.5+ | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2006 10 16 | 691 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.3+ |
| 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 11 27 | G96 | 0.3+ | 0.3− |
| 2006 10 20 | 691 | 0.1− | 0.5+ | 2006 11 12 | G96 | 0.5+ | 0.6− | | | | |
| 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.2− | 0.0 | | | | |

**2006 UU$_{37}$ = 2004 EE$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 307.67756 | | (2000.0) | | | |
| $n$ | 0.26892393 | $\omega$ | 72.11334 | | −0.10925275 | −0.99395086 |
| $a$ | 2.3771125 | $\Omega$ | 24.16731 | | +0.90131733 | −0.10381101 |
| $e$ | 0.1340723 | $i$ | 1.56818 | | +0.41915498 | −0.03584642 |
| $P$ | 3.67 | $H$ | 18.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 27 | 695 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 02 27 | 695 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2004 03 14 | 691 | 0.4− | 0.5− | 2006 10 16 | 691 | 0.6− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2004 03 14 | 691 | 0.6− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.8− | 1.1+ |
| 2004 03 14 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2004 03 21 | 291 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2004 03 21 | 291 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.5+ | 0.1− | 2006 11 12 | G96 | 0.3− | 0.4− |
| 2004 03 21 | 291 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.4+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.5− |
| 2004 03 21 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2004 03 21 | 691 | 0.4+ | 0.6− | 2006 11 01 | 691 | 0.0 | 0.1+ | | | | |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | | | |

**2006 UV$_{37}$ = 2001 WN$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 244.73892 | | (2000.0) | | | |
| $n$ | 0.19199865 | $\omega$ | 120.89837 | | −0.93438412 | −0.35283405 |
| $a$ | 2.9758014 | $\Omega$ | 38.50244 | | +0.29380651 | −0.84147350 |
| $e$ | 0.0685166 | $i$ | 4.54575 | | +0.20150446 | −0.40918270 |
| $P$ | 5.13 | $H$ | 15.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2001 11 19 | 704 | 0.1− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2001 11 19 | 704 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2001 11 21 | 704 | 0.3− | 0.8− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.5− |
| 2001 11 21 | 704 | 0.6+ | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 13 | G96 | 0.4− | 0.3− |
| 2001 11 21 | 704 | 0.0 | 1.0− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2001 11 21 | 704 | 0.3− | 0.7+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2006 10 16 | 691 | 0.6+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.3− |

**2006 UX$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.06729 | | (2000.0) | | | |
| $n$ | 0.19337393 | $\omega$ | 69.05387 | | +0.97416774 | −0.22549006 |
| $a$ | 2.9616752 | $\Omega$ | 303.97591 | | +0.20128760 | +0.89172927 |
| $e$ | 0.1370952 | $i$ | 0.85028 | | +0.10237436 | +0.39239412 |
| $P$ | 5.10 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 291 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2001 11 16 | 291 | 0.2− | 0.2+ | 2006 10 16 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2001 11 16 | 291 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2001 12 07 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2001 12 07 | 691 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2001 12 07 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.2− | 0.3+ |
| 2006 09 30 | G96 | 0.3+ | 0.6− | 2006 10 28 | 691 | 0.0 | 0.1− | | | | |

**2006 UZ$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 326.44552 | | (2000.0) | | | |
| $n$ | 0.22585122 | $\omega$ | 214.11369 | | +0.23436169 | −0.97102111 |
| $a$ | 2.6704703 | $\Omega$ | 222.38613 | | +0.90670919 | +0.23570526 |
| $e$ | 0.1436359 | $i$ | 3.98302 | | +0.35064661 | +0.03950994 |
| $P$ | 4.36 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 15 | 691 | 0.7− | 0.5+ | 2006 11 11 | 703 | 0.7+ | 0.4− | 2006 11 21 | 704 | 0.8+ | 0.8− |
| 1993 12 15 | 691 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 1993 12 15 | 691 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.5+ | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2004 04 23 | 333 | 0.3− | 1.7+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.1+ |
| 2004 04 23 | 333 | 0.2− | 2.8+ | 2006 11 11 | 703 | 0.8+ | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2004 04 24 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.4− | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2004 04 24 | 691 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2005 06 14 | 691 | 0.3+ | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2005 06 14 | 691 | 0.0 | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 23 | 204 | 0.0 | 0.0 |
| 2005 07 05 | G96 | 0.5− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 23 | 204 | 0.1− | 0.1+ |
| 2005 07 05 | G96 | 0.6− | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2005 07 05 | G96 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2005 07 05 | G96 | 0.5− | 0.2+ | 2006 11 17 | 703 | 0.0 | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.2+ | 0.7+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.2+ | 2006 11 27 | 703 | 1.0+ | 0.6+ |
| 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.5+ | 0.2− | 2006 11 27 | 703 | 0.6− | 0.2+ |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.6+ | 2006 11 27 | 703 | 0.4+ | 0.2+ |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.8− | 0.7+ | 2006 11 27 | 703 | 1.2− | 0.1− |
| 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.6− | 1.0+ |
| 2006 11 09 | 644 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.3− |
| 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.1− | 2006 11 28 | 704 | 0.3− | 0.8+ |
| 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.3+ | 2006 11 28 | 704 | 0.4+ | 0.1− |

**2006 UF$_{38}$ = 2004 FC$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.39781 | | (2000.0) | | | |
| $n$ | 0.24021672 | $\omega$ | 287.18945 | | +0.88078550 | −0.47350218 |
| $a$ | 2.5629131 | $\Omega$ | 101.07255 | | +0.43580411 | +0.80768590 |
| $e$ | 0.1024205 | $i$ | 0.20712 | | +0.18518012 | +0.35133912 |
| $P$ | 4.10 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 1.2+ |
| 2004 03 15 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.2− |
| 2004 03 23 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 03 23 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2004 03 27 | 291 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.8+ | 0.3+ |
| 2004 03 27 | 291 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 2004 03 27 | 291 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2006 09 27 | G96 | 0.8+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2006 09 27 | G96 | 0.2− | 0.5− | 2006 11 01 | 691 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 691 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.4− |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.2− |

**2006 UK$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.73273 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17729463 | $\omega$ | 260.09653 | | −0.53036805 | | −0.84640690 |
| $a$ | 3.1381401 | $\Omega$ | 222.04859 | | +0.80319789 | | −0.48355778 |
| $e$ | 0.1540338 | $i$ | 4.11073 | | +0.27126163 | | −0.22308570 |
| $P$ | 5.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 01 | 691 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.4+ |
| 1994 09 01 | 691 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1994 09 01 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 1995 12 16 | 691 | 0.3+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 1995 12 16 | 691 | 0.2− | 0.6− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.2+ |
| 1995 12 16 | 691 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2003 04 25 | 691 | 0.3+ | 0.9+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.4+ |
| 2003 04 25 | 691 | 0.3+ | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 2003 04 25 | 691 | 0.3+ | 1.0+ | 2006 10 27 | G96 | 0.7+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2+ |
| 2006 09 25 | G96 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2006 09 25 | G96 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.3+ | | | | |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.5+ | | | | |

**2006 UL$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.10146 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29207011 | $\omega$ | 303.88894 | | +0.93147774 | | +0.35774175 |
| $a$ | 2.2498038 | $\Omega$ | 35.27929 | | −0.28439966 | | +0.82937437 |
| $e$ | 0.1975885 | $i$ | 6.57234 | | −0.22686129 | | +0.42913750 |
| $P$ | 3.37 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.5+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.3+ |
| 2003 12 18 | 691 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.3− | 2006 11 14 | 703 | 1.0+ | 1.0− |
| 2003 12 18 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.7+ | 0.2+ |
| 2005 04 10 | G96 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 2005 04 10 | G96 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.5− | 0.1− | 2006 11 14 | 703 | (2.7− | 2.2−) |
| 2005 04 10 | G96 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2005 04 10 | G96 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.2− |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 1.4− | 1.1+ |
| 2006 09 26 | G96 | 0.0 | 0.8− | 2006 11 11 | 703 | 0.4− | 1.0− | 2006 11 19 | 704 | 1.0+ | 0.8+ |
| 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.5+ | 0.5− | 2006 11 19 | 704 | 0.4+ | 0.3− |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 1.2− | | | | |

**2006 UR$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.36490 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21859857 | $\omega$ | 121.48237 | | +0.99954594 | | −0.02008821 |
| $a$ | 2.7292156 | $\Omega$ | 239.67743 | | +0.00987842 | | +0.92261699 |
| $e$ | 0.0966103 | $i$ | 1.49088 | | +0.02846641 | | +0.38519393 |
| $P$ | 4.51 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.4+ | 0.0 |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2004 03 26 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.0 |
| 2004 03 26 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 03 26 | 691 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.5+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.6+ | 0.4− |
| 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 1.3− | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.0 | 0.4− |

**2006 UF$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.67684 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20944990 | $\omega$ | 66.16901 | | −0.16850097 | | −0.98407746 |
| $a$ | 2.8081218 | $\Omega$ | 33.68544 | | +0.86319915 | | −0.17502077 |
| $e$ | 0.0104848 | $i$ | 5.85300 | | +0.47591454 | | −0.03097243 |
| $P$ | 4.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2001 11 12 | 645 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.5+ | 0.2− |
| 2001 11 12 | 645 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2006 09 25 | G96 | 0.1+ | 0.8− | 2006 10 28 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2006 09 25 | G96 | 0.1− | 0.6− | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.2− |
| 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2006 09 25 | G96 | 0.1− | 0.5− | 2006 11 01 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.0 | 1.4− |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2− | | | | |
| 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.1− | | | | |

**2006 UJ$_{39}$ = 2001 WN$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.24642 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19250758 | $\omega$ | 326.69151 | | +0.99671612 | | +0.07881416 |
| $a$ | 2.9705543 | $\Omega$ | 28.80530 | | −0.06328293 | | +0.90132921 |
| $e$ | 0.1552807 | $i$ | 2.21023 | | −0.05051985 | | +0.42590372 |
| $P$ | 5.12 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.7+ | 0.8+ | 2006 09 25 | G96 | 0.4− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 11 19 | 704 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.4− | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2001 11 19 | 704 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.4− | 0.5− | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2001 11 21 | 704 | 0.6− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.9− |
| 2001 11 21 | 704 | 0.0 | 0.7+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 703 | 1.1− | 0.1+ |
| 2001 11 21 | 704 | 0.7− | 0.1− | 2006 10 20 | 691 | 0.5+ | 1.3+ | 2006 11 17 | 703 | (1.7− | 0.9−) |
| 2001 11 21 | 704 | 0.0 | 0.4− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | (2.1− | 0.6−) |
| 2006 07 21 | G96 | 0.6+ | 0.5− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | (3.7− | 0.9+) |
| 2006 07 21 | G96 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.2− | 0.7− |
| 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2006 07 21 | G96 | 0.3− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 1.4+ | 1.7− |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.3− | 1.7− |

**2006 UL$_{39}$ = 2001 QM$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.82757 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22766222 | $\omega$ | 10.21110 | | +0.52384205 | | +0.85168167 |
| $a$ | 2.6562895 | $\Omega$ | 291.38068 | | −0.78266395 | | +0.47424666 |
| $e$ | 0.0571473 | $i$ | 0.92878 | | −0.33619434 | | +0.22299873 |
| $P$ | 4.33 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | 0.1+ | 0.3− | 2004 03 14 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.3+ |
| 1997 10 05 | 691 | 0.2+ | 0.6− | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 1997 10 05 | 691 | (1.3− | 3.6−) | 2004 03 14 | 691 | 0.2+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 1997 10 10 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 1997 10 10 | 691 | 0.3+ | 0.2− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.3+ | 0.0 |
| 1997 10 10 | 691 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.9+ |
| 2001 08 22 | 691 | 0.9− | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.0 | 0.7+ |
| 2001 08 22 | 691 | 0.3− | 0.6− | 2006 10 16 | 691 | 0.3− | 0.6+ | 2006 11 17 | 703 | 0.4+ | 0.6− |
| 2001 08 22 | 691 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.2− | 0.7+ | 2006 11 17 | 703 | 0.8+ | 1.1+ |
| 2001 08 24 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.1− | 0.7− |
| 2001 08 24 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2001 09 22 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.5− | 2.1− |
| 2001 09 22 | 691 | 0.5+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 | | | | |
| 2001 09 22 | 691 | 0.0 | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | | | |

**2006 US$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 46.43029 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17106388 | $\omega$ | 112.77213 | | +0.87017408 | | +0.49223303 |
| $a$ | 3.2138863 | $\Omega$ | 217.75090 | | −0.46446453 | | +0.80417268 |
| $e$ | 0.1626650 | $i$ | 2.10085 | | −0.16452891 | | +0.33318604 |
| $P$ | 5.76 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 291 | 0.3+ | 0.7+ | 2006 10 20 | 691 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2004 04 14 | 291 | 0.2+ | 0.6+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2004 04 14 | 291 | 0.2+ | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2005 06 05 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2005 06 05 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.0 |
| 2005 06 05 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.9− |
| 2006 09 25 | G96 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.3− | 0.3+ | 2006 11 14 | G96 | 0.4− | 0.2− |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.6+ | 0.0 |
| 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2006 10 16 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2006 10 16 | 691 | 0.1+ | 1.0+ | 2006 11 08 | 644 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.1+ | | | | |

**2006 UF$_{40}$ = 2000 QX$_{248}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.34531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18022320 | $\omega$ | 258.18544 | | +0.97282642 | | +0.23151983 |
| $a$ | 3.1040515 | $\Omega$ | 88.42795 | | −0.21136142 | | +0.89277467 |
| $e$ | 0.1936676 | $i$ | 0.15517 | | −0.09452571 | | +0.38646081 |
| $P$ | 5.47 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 807 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.7− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2000 08 28 | 807 | 0.0 | 0.7+ | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.2− |
| 2000 08 31 | 691 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2000 08 31 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2000 08 31 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 691 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.1− | 0.3+ |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.1− | | | | |

**2006 UK$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 171.84867 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21933327 | $\omega$ | 174.98250 | | −0.79583118 | | +0.60193918 |
| $a$ | 2.7231174 | $\Omega$ | 42.25700 | | −0.55889818 | | −0.68843992 |
| $e$ | 0.0945213 | $i$ | 5.61038 | | −0.23299262 | | −0.40462292 |
| $P$ | 4.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 04 | 691 | 0.6− | 0.5+ | 2006 09 26 | G96 | 0.4− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.2− |
| 1995 03 04 | 691 | 0.2+ | 1.2− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.0 |
| 2004 03 17 | 333 | 0.8+ | 0.6+ | 2006 10 04 | G96 | 0.1+ | 0.7− | 2006 10 29 | 691 | 0.0 | 0.1− |
| 2004 03 17 | 333 | 0.6+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 29 | 691 | 0.1− | 0.2+ |
| 2004 03 17 | 333 | 0.3− | 0.4+ | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.2− | 0.1− |
| 2004 04 16 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 291 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.3+ | 0.4− |
| 2004 04 16 | 691 | 0.0 | 0.3+ | 2006 10 16 | 291 | 0.2− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2004 04 16 | 691 | 0.2+ | 0.0 | 2006 10 16 | 291 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.5− | 0.4− |
| 2006 09 26 | G96 | 0.2− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.5+ | 0.4− |
| 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.9+ | 0.7+ | | | | |

**2006 UP$_{40}$ = 2004 HQ$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.67298 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24283097 | $\omega$ | 250.74528 | | −0.44791614 | | −0.89385665 |
| $a$ | 2.5444856 | $\Omega$ | 225.88128 | | +0.83029982 | | −0.40765624 |
| $e$ | 0.1213405 | $i$ | 1.57918 | | +0.33162228 | | −0.18664585 |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.5− | 0.1− |
| 1998 12 14 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 1998 12 14 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.6+ | 0.4− |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.4+ |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.5+ | 2006 11 21 | G96 | 0.1+ | 0.4+ |
| 2004 04 25 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.3+ |
| 2004 04 25 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.3− | 0.1+ |
| 2004 04 25 | 691 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.4− | 0.0 |
| 2006 10 16 | 691 | 0.2+ | 0.6− | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.4− | 0.0 |
| 2006 10 16 | 691 | 0.1− | 0.6+ | 2006 11 12 | G96 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.1+ |
| 2006 10 16 | 691 | 0.4+ | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.7+ | 0.2+ |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.5− | | | | |

**2006 UQ$_{40}$ = 2004 KL$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.10930 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17842036 | $\omega$ | 67.73406 | | +0.42082710 | | +0.89823264 |
| $a$ | 3.1249263 | $\Omega$ | 227.79370 | | −0.88251626 | | +0.37303137 |
| $e$ | 0.0890883 | $i$ | 9.85794 | | −0.20992762 | | +0.23243434 |
| $P$ | 5.52 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 691 | 0.7− | 0.1− | 2005 07 31 | 644 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.5+ |
| 2004 04 22 | 691 | 0.3− | 0.1− | 2005 09 02 | 644 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.6+ |
| 2004 04 22 | 691 | 0.4− | 0.0 | 2005 09 02 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.6+ |
| 2004 05 01 | 926 | 0.5+ | 0.1− | 2005 09 02 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2004 05 01 | 926 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2004 05 01 | 926 | 0.2+ | 0.3− | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2004 05 13 | 291 | 0.4+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2004 05 13 | 291 | 0.4+ | 0.4+ | 2006 09 27 | G96 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2004 05 13 | 291 | 0.4+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2004 05 16 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 1.1+ | 1.2+ |
| 2004 05 16 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.6+ | 0.9+ |
| 2004 05 16 | 691 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.9− | 0.3+ |
| 2005 07 16 | 703 | 0.0 | 0.9− | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | (1.9− | 0.1+) |
| 2005 07 16 | 703 | 0.9− | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2005 07 16 | 703 | 0.6+ | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2005 07 16 | 703 | 1.1+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2005 07 31 | 644 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | 0.4− | 0.2− |
| 2005 07 31 | 644 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.4+ | | | | |

**2006 UR$_{40}$ = 2004 FL$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.33738 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23310583 | $\omega$ | 153.61872 | | −0.98452297 | | +0.16738075 |
| $a$ | 2.6147728 | $\Omega$ | 36.13621 | | −0.17230163 | | −0.87024719 |
| $e$ | 0.0498519 | $i$ | 5.05345 | | −0.03204177 | | −0.46330714 |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.0 | 0.1− | 2004 04 10 | 644 | 0.6+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.0 |
| 2002 11 07 | 695 | 0.0 | 0.2− | 2004 04 10 | 644 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 704 | 0.6+ | 0.6+ | 2004 04 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 704 | 0.8+ | 0.3− | 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2004 03 18 | 704 | 0.1+ | 0.9− | 2004 04 19 | 691 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2004 03 18 | 704 | 0.5− | 0.5− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2004 03 22 | 704 | 0.8+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.7+ | 0.2+ |
| 2004 03 22 | 704 | 0.5− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 1.0+ | 0.5− |
| 2004 03 22 | 704 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.5− | 0.1+ | | | | |
| 2004 04 10 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1− | | | | |

**2006 UU$_{40}$ = 2004 EU$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.12986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22891442 | $\omega$ | 310.84814 | | +0.97685496 | | +0.21302316 |
| $a$ | 2.6465937 | $\Omega$ | 36.86429 | | −0.18524795 | | +0.88780985 |
| $e$ | 0.0929125 | $i$ | 1.85105 | | −0.10694662 | | +0.40793971 |
| $P$ | 4.31 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.5+ | 0.3+ | 2004 03 30 | 291 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2000 04 12 | 691 | 0.1+ | 0.5+ | 2004 03 30 | 291 | 0.5+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2000 04 12 | 691 | 0.1− | 0.3+ | 2004 03 30 | 291 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2004 03 15 | 691 | 0.4− | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.2+ | 0.5− |
| 2004 03 15 | 691 | 0.1+ | 0.4− | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.4− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.7+ | 0.1− |
| 2004 03 17 | 291 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2004 03 17 | 291 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.3+ | | | | |
| 2004 03 17 | 291 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | | | | |

**2006 UX$_{40}$ = 1999 TG$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.17212 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29657584 | $\omega$ | 45.87949 | | +0.18332855 | | +0.98276491 |
| $a$ | 2.2269589 | $\Omega$ | 234.69866 | | −0.91003652 | | +0.16052786 |
| $e$ | 0.1351427 | $i$ | 1.66717 | | −0.37178512 | | +0.09167300 |
| $P$ | 3.32 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 02 | 691 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 1999 10 02 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.5+ | 2006 11 13 | G96 | 0.4− | 0.7− |
| 1999 10 02 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 1.0− |
| 1999 10 09 | 691 | 0.2− | 0.6− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.6+ | 0.6− |
| 1999 10 09 | 691 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.7− | 0.5+ | 2006 11 13 | G96 | 1.5+ | 0.5− |
| 1999 10 09 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.5− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2005 05 06 | 703 | (1.8+ | 1.9+) | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2005 05 06 | 703 | (2.6+ | 0.3+) | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2005 05 06 | 703 | (0.5− | 1.7+) | 2006 11 01 | 691 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2005 05 06 | 703 | 0.8− | 0.7− | 2006 11 01 | 691 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2005 05 12 | G96 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2005 05 12 | G96 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2005 05 12 | G96 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2005 05 12 | G96 | 0.3+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2006 09 27 | G96 | 0.3+ | 0.6− | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.6− |
| 2006 09 27 | G96 | 0.6+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 27 | G96 | 0.4+ | 0.7− |
| 2006 09 27 | G96 | 0.6− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.3− |

**2006 UA$_{41}$ = 2004 HS$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.06714 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23722469 | $\omega$ | 73.68448 | | −0.40334396 | | −0.91297269 |
| $a$ | 2.5844182 | $\Omega$ | 40.27978 | | +0.79896469 | | −0.38419230 |
| $e$ | 0.1124877 | $i$ | 5.46736 | | +0.44605950 | | −0.13739409 |
| $P$ | 4.15 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.2+ |
| 2004 04 16 | 691 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 04 16 | 691 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 04 25 | 291 | 0.3− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2004 04 25 | 291 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 13 | G96 | 0.4− | 0.4− |
| 2004 04 25 | 291 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.4− | 0.6− |
| 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.0 | 0.7− |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ | | | | |

**2006 UB$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 103.79309 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16780139 | $\omega$ | 58.82024 | | +0.22895294 | | +0.97342428 |
| $a$ | 3.2554099 | $\Omega$ | 224.41612 | | −0.89555961 | | +0.20859110 |
| $e$ | 0.1247260 | $i$ | 0.41523 | | −0.38151479 | | +0.09452473 |
| $P$ | 5.87 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 07 | 291 | 0.3+ | 0.0 | 2005 06 17 | G96 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− |
| 2003 03 07 | 291 | 0.7+ | 0.1− | 2005 11 25 | G96 | 0.2− | 0.2+ | 2006 10 20 | 691 | 0.3+ | 0.4+ |
| 2003 03 07 | 291 | 0.6− | 0.6+ | 2005 11 25 | G96 | 0.6− | 0.5− | 2006 10 20 | 691 | 0.4− | 0.2+ |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1− |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2005 11 25 | G96 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1+ |
| 2004 04 12 | 691 | 0.2− | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2004 04 12 | 691 | 0.2+ | 0.4+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2005 06 17 | G96 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2005 06 17 | G96 | 0.1+ | 0.1− | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2005 06 17 | G96 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |

**2006 UL$_{41}$ = 2005 NC$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.93147 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19307066 | $\omega$ | 205.76755 | | +0.53949016 | | −0.84191529 |
| $a$ | 2.9647758 | $\Omega$ | 211.58716 | | +0.77621373 | | +0.50252574 |
| $e$ | 0.2189110 | $i$ | 1.24251 | | +0.32625544 | | +0.19658719 |
| $P$ | 5.10 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 07 | 568 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.7− | 0.3− |
| 2005 07 07 | 568 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.6+ | 0.0 |
| 2005 07 07 | 568 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2005 07 08 | 568 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.4− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.2− |
| 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− |

**2006 $UO_{41}$ = 1995 $SY_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.24200 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19167833 | $\omega$ | 21.13489 | | +0.50122166 | −0.86523618 | |
| $a$ | 2.9791157 | $\Omega$ | 38.78698 | | +0.79114968 | +0.45261494 | |
| $e$ | 0.0378403 | $i$ | 1.09456 | | +0.35051253 | +0.21565265 | |
| $P$ | 5.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.2− | 0.1− | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 1995 09 21 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1995 09 21 | 691 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.0 |
| 1995 10 01 | 691 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 12 | 703 | 0.3+ | 0.9+ |
| 1995 10 01 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 12 | 703 | 1.0+ | 0.6+ |
| 1995 10 01 | 691 | 0.5− | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 12 | 703 | 0.3+ | 0.2+ |
| 2004 05 12 | E12 | (0.2− | 1.7−) | 2006 10 28 | 691 | 0.2− | 0.4+ | 2006 11 12 | 703 | 0.0 | 0.3+ |
| 2004 05 12 | E12 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2004 05 12 | E12 | 0.1− | 1.1− | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2004 05 12 | E12 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2006 10 12 | 691 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.3− | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.1− |

**2006 $UT_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.03280 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25826019 | $\omega$ | 265.11974 | | +0.61557607 | +0.78606304 | |
| $a$ | 2.4421054 | $\Omega$ | 43.04281 | | −0.68640406 | +0.56989353 | |
| $e$ | 0.0826805 | $i$ | 4.73242 | | −0.38718933 | +0.23942902 | |
| $P$ | 3.82 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 17 | 809 | 0.1− | 0.4− | 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.1+ |
| 1998 09 24 | 699 | 0.3− | 0.7+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.9+ | 1.0− |
| 1998 09 24 | 699 | 0.4+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.0 | 2006 11 12 | 703 | (2.2− | 2.4+) |
| 1998 09 24 | 699 | 0.4− | 1.2+ | 2006 10 20 | 691 | 0.4+ | 0.3− | 2006 11 12 | 703 | (0.5+ | 2.4+) |
| 2001 04 27 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 12 | 703 | 0.3− | 0.5+ |
| 2001 04 27 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.4+ | 0.1+ |
| 2001 04 27 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2002 10 10 | 644 | 0.6− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2002 10 10 | 644 | 0.6− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2002 10 10 | 644 | 0.7− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.8+ |
| 2004 01 18 | 644 | 0.6+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | (1.1− | 1.5+) |
| 2004 01 18 | 644 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2004 01 18 | 644 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.3− |
| 2004 01 28 | 703 | (1.6+ | 1.7−) | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2004 01 28 | 703 | 0.6+ | 1.3+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2004 01 28 | 703 | 0.6− | 1.2+ | 2006 11 11 | 703 | 0.3− | 0.7− | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2004 01 28 | 703 | 0.6− | 0.8− | 2006 11 11 | 703 | 0.6− | 1.0− | 2006 11 20 | G96 | 0.2+ | 0.2− |

**2006 $UY_{41}$ = 2004 $FH_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.31404 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21843278 | $\omega$ | 322.62256 | | +0.98158571 | −0.13824746 | |
| $a$ | 2.7305964 | $\Omega$ | 45.88539 | | +0.18666703 | +0.84071931 | |
| $e$ | 0.1258336 | $i$ | 10.58008 | | −0.04055744 | +0.52352524 | |
| $P$ | 4.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 608 | 0.2+ | 0.7− | 2006 10 16 | 691 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2001 08 23 | 608 | 0.1+ | 0.2− | 2006 10 16 | 691 | 0.6− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.5− |
| 2001 08 23 | 608 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.5− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2001 08 23 | 608 | 0.1− | 0.9+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2001 08 23 | 608 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 08 23 | 608 | 0.7− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.3− |
| 2001 09 17 | 699 | 0.3+ | 0.7+ | 2006 10 28 | 691 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.2− | 0.4− |
| 2001 09 17 | 699 | 0.7+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.4− |
| 2001 09 17 | 699 | (0.4− | 2.1+) | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2001 09 17 | 699 | (0.3+ | 1.9+) | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.3+ |
| 2004 03 21 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 1.0+ |
| 2004 03 21 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | (0.7+ | 1.7−) |
| 2004 03 21 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.7+ |
| 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.5− | 2006 11 18 | 704 | 1.3+ | 0.4+ |
| 2004 03 23 | 704 | 1.2+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 1.0− | 0.3+ |
| 2004 03 23 | 704 | 1.1+ | 0.4+ | 2006 11 12 | 703 | 0.6+ | 0.6+ | 2006 11 21 | 704 | 0.3+ | 0.1+ |
| 2004 03 28 | 691 | 0.2+ | 0.1− | 2006 11 12 | 703 | 0.8+ | 0.5+ | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2004 03 28 | 691 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.9+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.4+ |
| 2004 03 28 | 691 | 0.1− | 0.4+ | 2006 11 12 | 703 | 0.2+ | 1.0+ | 2006 11 21 | 704 | (0.5+ | 1.7−) |

**2006 $UF_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 289.42184 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26534831 | $\omega$ | 259.91277 | | −0.52906488 | −0.84816188 | |
| $a$ | 2.3984196 | $\Omega$ | 222.06486 | | +0.79332191 | −0.48320786 | |
| $e$ | 0.1396498 | $i$ | 2.28219 | | +0.30121537 | −0.21709811 | |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.5− | 0.7+ | 2005 07 05 | G96 | 0.8+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2002 10 05 | 644 | 0.3− | 1.0+ | 2005 07 05 | G96 | 0.2+ | 1.4− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2002 10 05 | 644 | 0.5+ | 0.4+ | 2005 07 05 | G96 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2002 10 09 | 291 | 0.2− | 0.1+ | 2005 07 05 | G96 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2002 10 09 | 291 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.7− |
| 2002 10 09 | 291 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2004 03 15 | 703 | 0.6+ | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.5− |
| 2004 03 15 | 703 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.5+ | 0.4− |
| 2004 03 15 | 703 | 0.1− | 0.7− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2004 03 15 | 703 | 1.1+ | 1.0+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 04 25 | 691 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1+ | | | | |
| 2004 04 25 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.0 | | | | |

**2006 $UN_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.59864 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23910701 | $\omega$ | 198.99027 | | +0.59177716 | −0.79865029 | |
| $a$ | 2.5708368 | $\Omega$ | 214.96964 | | +0.76208286 | +0.59850438 | |
| $e$ | 0.2306783 | $i$ | 10.99895 | | +0.26273465 | +0.06285077 | |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 08 | 608 | 0.1− | 0.1+ | 2006 10 27 | 704 | 0.8+ | 0.8+ | 2006 11 17 | 704 | 1.1+ | 1.9− |
| 2002 12 08 | 608 | 0.1+ | 0.3+ | 2006 10 27 | 704 | 0.4− | 0.6+ | 2006 11 17 | 704 | 0.8− | 0.0 |
| 2002 12 08 | 608 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.8+ | 0.2− | 2006 11 17 | 704 | (2.2− | 0.5+) |
| 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 02 | 703 | 1.2+ | 0.1− | 2006 11 17 | 704 | 1.4+ | 1.2− |
| 2006 09 27 | G96 | 0.6+ | 0.2− | 2006 11 02 | 703 | 0.5+ | 0.4+ | 2006 11 17 | 704 | 0.6− | 0.5− |
| 2006 09 27 | G96 | 0.7+ | 0.1− | 2006 11 02 | 703 | 0.3− | 0.4− | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 11 | 683 | 0.6+ | 0.6− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 683 | 1.3+ | 0.8− | 2006 11 17 | G96 | 0.3− | 0.1− |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 683 | 1.1+ | 0.7+ | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.2+ |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.6− | 0.2+ |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 13 | 683 | (1.1− | 2.3+) | 2006 11 19 | 704 | 0.9− | 0.3+ |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 13 | 683 | 0.8+ | 1.5+ | 2006 11 20 | 704 | 0.0 | 0.7− |
| 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 13 | 683 | 0.2− | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.6− |
| 2006 10 23 | 704 | 0.5− | 0.5+ | 2006 11 14 | 704 | 0.0 | 0.7+ | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2006 10 23 | 704 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.1− | 0.7+ | 2006 11 20 | 704 | 0.6− | 0.8− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 23 | 704 | 0.3− | 0.6− | 2006 11 14 | 704 | 0.0 | 0.5+ | 2006 11 20 | 704 | 0.0 | 0.6− | | |
| 2006 10 23 | 704 | 1.1− | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.0 | | | | | | |
| 2006 10 27 | 704 | 0.0 | 0.8+ | 2006 11 14 | 704 | 0.8− | 0.5+ | | | | | | |

**2006 UO$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 306.21502 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.21136550 | $\omega$ | 33.69966 | | −0.13741224 | | −0.98783150 | | |
| $a$ | 2.7911294 | $\Omega$ | 64.29315 | | +0.89000255 | | −0.15541471 | | |
| $e$ | 0.0611691 | $i$ | 4.63742 | | +0.43475665 | | +0.00593286 | | |
| $P$ | 4.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 13 | G96 | 0.8+ | 0.6− | | |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.4+ | 0.0 | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.8− | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.5+ | | |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.5+ | | |
| 2001 11 18 | 645 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.6− | 2006 11 17 | 703 | 0.0 | 0.9+ | | |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.3− | 0.4− | 2006 11 17 | 703 | 0.1+ | 0.3+ | | |
| 2003 02 01 | 645 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1+ | 2006 11 26 | 621 | 0.0 | 0.0 | | |
| 2004 04 25 | 691 | 0.4− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 26 | 621 | 0.0 | 0.1− | | |
| 2004 04 25 | 691 | 0.0 | 0.6− | 2006 11 01 | 691 | 0.1− | 0.3− | 2006 11 26 | 621 | 0.1+ | 0.2− | | |
| 2004 04 25 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 27 | 621 | 0.0 | 0.2− | | |
| 2006 10 16 | 691 | 0.5+ | 0.2+ | 2006 11 08 | 644 | 0.3+ | 0.5+ | 2006 11 27 | 621 | 0.5+ | 0.2+ | | |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.3− | 0.9+ | 2006 11 28 | 621 | 1.0− | 0.1− | | |
| 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.7+ | 0.0 | | | | | | |

**2006 UW$_{42}$ = 2005 LO$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 89.12790 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.26112142 | $\omega$ | 76.79881 | | +0.38304122 | | +0.91587570 | | |
| $a$ | 2.4242331 | $\Omega$ | 216.46719 | | −0.90635374 | | +0.34751517 | | |
| $e$ | 0.1159896 | $i$ | 11.66886 | | −0.17833208 | | +0.20100971 | | |
| $P$ | 3.77 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | 691 | 0.4− | 0.8+ | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.1+ | | |
| 2005 06 13 | 691 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− | | |
| 2005 06 13 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2− | | |
| 2005 06 17 | 691 | 0.3+ | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2+ | | |
| 2005 06 17 | 691 | 0.2+ | 0.3− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3− | 0.0 | | |
| 2005 06 17 | 691 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.2− | | |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.5− | 0.2+ | | | | | | |

**2006 UY$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 273.04553 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18014233 | $\omega$ | 84.39933 | | −0.70193929 | | −0.70276234 | | |
| $a$ | 3.1049804 | $\Omega$ | 50.88329 | | +0.58001992 | | −0.65837602 | | |
| $e$ | 0.0757679 | $i$ | 8.58259 | | +0.41334988 | | −0.26956652 | | |
| $P$ | 5.47 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 691 | 0.5+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 12 | 703 | 0.2− | 0.6− | | |
| 2003 03 26 | 691 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 12 | 703 | 1.1+ | 0.8+ | | |
| 2003 03 26 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 12 | 703 | (0.1− | 1.9+) | | |
| 2003 03 26 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.3+ | 0.2+ | | |
| 2003 03 26 | 644 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.5− | | |
| 2003 03 26 | 644 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.1− | | |
| 2003 04 10 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.1+ | | |
| 2003 04 10 | 691 | 0.6− | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.2− | | |
| 2003 04 10 | 691 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− | | |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.6+ | 0.0 | | |
| 2006 09 30 | G96 | 0.6− | 0.3− | 2006 10 28 | 691 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.5− | 1.2+ | | |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.2− | | |
| 2006 09 30 | G96 | 0.4− | 0.5− | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.2− | 0.1− | | |
| 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.1− | | |
| 2006 10 12 | 691 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.4− | 2006 11 21 | 704 | 0.3+ | 0.9+ | | |
| 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 21 | 704 | 1.0+ | 0.9+ | | |
| 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.5− | | | | | | |
| 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.3− | | | | | | |

**2006 UA$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 15.62865 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.21460834 | $\omega$ | 169.58952 | | +0.95419964 | | −0.29711417 | | |
| $a$ | 2.7629413 | $\Omega$ | 207.77262 | | +0.26879909 | | +0.90282272 | | |
| $e$ | 0.0878377 | $i$ | 4.30986 | | +0.13133961 | | +0.31086058 | | |
| $P$ | 4.59 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 691 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.8+ | | |
| 2001 09 11 | 691 | 0.3+ | 0.1− | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ | | |
| 2001 09 11 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.2− | | |
| 2001 10 15 | 645 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.2− | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.3+ | 0.1− | | |
| 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.6− | 2006 11 12 | G96 | 0.3− | 0.5− | | |

**2006 UD$_{43}$ = 2001 SX$_{186}$ = 2003 AK$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 322.80249 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.22162875 | $\omega$ | 264.54101 | | +0.22189961 | | −0.97506094 | | |
| $a$ | 2.7042821 | $\Omega$ | 172.63454 | | +0.90676678 | | +0.20481171 | | |
| $e$ | 0.0456483 | $i$ | 1.82820 | | +0.35851718 | | +0.08548876 | | |
| $P$ | 4.45 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 691 | 0.6− | 0.4− | 2004 04 16 | 644 | 0.8+ | 0.8+ | 2006 11 11 | 703 | 0.8− | 0.8− | | |
| 1999 03 20 | 691 | 0.3− | 0.5− | 2004 04 16 | 644 | 0.2+ | 0.8+ | 2006 11 11 | 703 | 0.5+ | 1.0− | | |
| 1999 03 20 | 691 | 0.1− | 0.3− | 2004 04 16 | 644 | 1.5+ | 0.6+ | 2006 11 11 | 703 | 0.8− | 0.3+ | | |
| 2001 09 19 | 704 | 0.5− | 0.4− | 2004 05 28 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.4+ | 1.2− | | |
| 2001 09 19 | 704 | 0.2+ | 0.1− | 2004 05 28 | 691 | 0.2+ | 0.5− | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2001 09 19 | 704 | 0.8− | 0.4− | 2004 05 28 | 691 | 0.2− | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2001 09 19 | 704 | 0.1− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− | | |
| 2001 09 19 | 704 | 0.4− | 0.1− | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2001 09 21 | 704 | 0.3− | 0.5− | 2006 10 12 | 691 | 1.3− | 0.2− | 2006 11 17 | 703 | 0.7+ | 1.0− | | |
| 2001 09 21 | 704 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.7− | | |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.0 | | |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 0.4+ | | |
| 2001 09 21 | 704 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.6+ | | |
| 2001 09 25 | 691 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 1.1+ | | |
| 2001 09 25 | 691 | 0.1+ | 0.5− | 2006 10 20 | 691 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.2+ | | |
| 2001 09 25 | 691 | 0.8+ | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.7− | | |
| 2003 01 02 | 704 | 0.5− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.9+ | | |
| 2003 01 02 | 704 | 1.3+ | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.6− | 0.4− | | |
| 2003 01 02 | 704 | (0.2− | 2.1+) | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.6− | 1.1+ | | |
| 2003 01 02 | 704 | 0.4+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.1− | | |
| 2003 01 02 | 704 | 1.0+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 1.0+ | 0.7+ | | |
| 2003 01 04 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.5+ | 2006 11 28 | 704 | 0.3+ | 2.1+ | | |
| 2003 01 04 | 704 | 0.1+ | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 28 | 704 | 1.1+ | 2.3+ | | |
| 2003 01 04 | 704 | 0.6+ | 0.8− | 2006 11 09 | 644 | 0.1+ | 0.0 | | | | | | |

**2006 UH$_{43}$ = 1995 UQ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 27.80971 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.18427918 | $\omega$ | 140.58400 | | +0.98131131 | | +0.18962749 | | |
| $a$ | 3.0583360 | $\Omega$ | 208.53548 | | −0.18927546 | | +0.92056561 | | |
| $e$ | 0.2354147 | $i$ | 3.92554 | | −0.03468298 | | +0.34146798 | | |
| $P$ | 5.35 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.4+ | 0.9+ | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.4− |
| 1995 10 17 | 691 | 0.5− | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 1995 10 17 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1995 10 22 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.9− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1995 10 22 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 1.0− | 2006 11 11 | 291 | 0.4− | 0.1+ |
| 1995 10 22 | 691 | 0.1+ | 1.7− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 11 | 291 | 0.1+ | 0.3+ |
| 2006 10 16 | 691 | 0.4+ | 0.3− | 2006 10 28 | G96 | 0.5− | 0.6− | 2006 11 11 | 291 | 0.1− | 0.0 |
| 2006 10 16 | 691 | 0.6− | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.0 | | | | |
| 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 1.0+ | 0.3+ | | | | |

**2006 UJ$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.91297 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23811014 | $\omega$ | 304.82770 | | +0.95740642 | | +0.23272941 |
| $a$ | 2.5780072 | $\Omega$ | 42.45344 | | −0.10121501 | | +0.82484953 |
| $e$ | 0.1328281 | $i$ | 14.66709 | | −0.27042276 | | +0.51522837 |
| $P$ | 4.14 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.1− |
| 2002 11 24 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.0 |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2006 09 30 | 703 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 09 30 | 703 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 17 | G96 | 0.1− | 0.2− |
| 2006 09 30 | 703 | 0.0 | 0.7+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2006 09 30 | 703 | 0.9− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2006 09 30 | G96 | 0.4+ | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.9+ | 2006 11 19 | 704 | 1.9+ | 1.7+ |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.8− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.7− | 1.3+ | 2006 11 19 | 704 | 0.5+ | 0.3− |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.4− | 2006 11 21 | H55 | 0.1− | 0.5− |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.4− | 2006 11 21 | H55 | 0.1− | 0.4− |
| 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.4− | 2006 11 21 | H55 | 0.2− | 0.0 |
| 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.3− | 0.1− | 2006 11 22 | 704 | 1.5+ | 1.6− |
| 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2006 10 23 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.8− | 0.0 |
| 2006 10 23 | 644 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.3− | 0.0 | | | | |

**2006 UB$_{44}$ = 2005 JP$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.70353 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31502263 | $\omega$ | 330.51462 | | +0.98513207 | | −0.17105340 |
| $a$ | 2.1391515 | $\Omega$ | 39.34465 | | +0.16214708 | | +0.89500497 |
| $e$ | 0.1813175 | $i$ | 1.44483 | | +0.05677257 | | +0.41195491 |
| $P$ | 3.13 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 29 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.0 |
| 2003 11 29 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 |
| 2003 11 29 | 691 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.6− | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2005 05 04 | 568 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 10 | 644 | 0.0 | 0.1+ |
| 2005 05 04 | 568 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.1+ | 0.4+ |
| 2005 05 04 | 568 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2005 05 05 | 568 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2006 09 25 | G96 | 0.4+ | 0.7− | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.2+ | 0.9+ |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | (0.2− | 2.2+) |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.4− |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (0.7− | 1.5+) |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.4+ | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.3− | 0.4+ | 2006 11 27 | G96 | 0.2− | 0.6− |
| 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.0 | 0.6− |
| 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.2− | 0.7− |

**2006 UH$_{44}$ = 2000 GF$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.68172 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24688259 | $\omega$ | 216.10791 | | +0.27119875 | | −0.96231425 |
| $a$ | 2.5165703 | $\Omega$ | 218.16790 | | +0.89053384 | | +0.25877007 |
| $e$ | 0.0461107 | $i$ | 1.86047 | | +0.36524063 | | +0.08360219 |
| $P$ | 3.99 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.2− | 0.1+ | 2002 11 05 | 644 | 0.2+ | 1.4+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1998 11 15 | 691 | 0.1− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 1998 11 15 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2000 03 03 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.5− | 0.5− | 2006 11 11 | G96 | 0.5− | 0.3− |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2000 04 03 | 691 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2000 04 03 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 1.1+ | 1.0− |
| 2000 04 03 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.5− | 2006 11 21 | G96 | 0.3− | 0.3− |
| 2000 04 10 | 695 | 0.1+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.7− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2000 04 10 | 695 | 0.1− | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2002 11 05 | 644 | 0.5+ | 1.1+ | 2006 10 27 | G96 | 0.3+ | 0.0 | | | | |
| 2002 11 05 | 644 | 0.2+ | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.2+ | | | | |

**2006 US$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.88274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21129348 | $\omega$ | 221.72508 | | −0.00746990 | | +0.98736192 |
| $a$ | 2.7917636 | $\Omega$ | 48.49228 | | −0.85236502 | | +0.07649464 |
| $e$ | 0.0497438 | $i$ | 12.20403 | | −0.52289393 | | −0.13879843 |
| $P$ | 4.66 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.4+ | 0.4− |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.2− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2001 11 21 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.5+ | 0.1− |
| 2006 09 28 | G96 | 0.5− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.1− |
| 2006 09 28 | G96 | 0.4− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 17 | 703 | (0.1+ | 1.5+) |
| 2006 09 28 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.9− | 0.5+ |
| 2006 09 28 | G96 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | (0.8+ | 1.6−) |
| 2006 09 28 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2006 09 28 | G96 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.0 | 0.1− | | | | |

**2006 UY$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 124.25938 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22993533 | $\omega$ | 76.04675 | | −0.01608138 | | +0.99982599 |
| $a$ | 2.6387541 | $\Omega$ | 193.04283 | | −0.93277719 | | −0.01840699 |
| $e$ | 0.0943668 | $i$ | 2.40101 | | −0.36009457 | | +0.00302987 |
| $P$ | 4.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 12 | 691 | 0.4+ | 0.2+ | 2004 03 28 | 691 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.2− |
| 2000 04 12 | 691 | 0.4+ | 0.1+ | 2005 06 29 | 691 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.3− |
| 2000 04 12 | 691 | 0.5+ | 0.2+ | 2005 06 29 | 691 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.2− | 0.4− |
| 2000 04 29 | 691 | 0.5− | 0.4− | 2005 06 29 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2000 04 29 | 691 | 0.4− | 0.2− | 2006 10 16 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2000 04 29 | 691 | 0.6− | 0.6− | 2006 10 16 | 691 | 0.1− | 0.9+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 03 16 | 291 | 0.6+ | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2004 03 16 | 291 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.3− | 2006 11 12 | G96 | 0.0 | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 291 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.2+ | | |
| 2004 03 28 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.3− | 0.4− | | |
| 2004 03 28 | 691 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.2− | | | | | | |

**2006 UZ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.48694 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22982890 | $\omega$ | 244.89280 | | −0.27441492 | | −0.95115983 |
| $a$ | 2.6395686 | $\Omega$ | 221.85361 | | +0.94084529 | | −0.23517889 |
| $e$ | 0.2333157 | $i$ | 12.23417 | | +0.19876263 | | −0.19996466 |
| $P$ | 4.29 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.1+ | 0.3− | 2006 10 23 | 704 | (1.5+ | 0.3−) | 2006 11 17 | 704 | 0.1− | 0.4+ | | |
| 1993 10 12 | 691 | 0.0 | 0.2− | 2006 10 23 | 704 | 0.2+ | 1.2+ | 2006 11 17 | 704 | 0.2+ | 0.1+ | | |
| 2001 08 16 | 644 | 0.7+ | 0.8+ | 2006 10 23 | 704 | 1.2− | 0.5+ | 2006 11 17 | 704 | 0.0 | 1.1+ | | |
| 2001 08 16 | 644 | 0.9+ | 0.6+ | 2006 10 23 | 704 | (1.7+ | 0.4−) | 2006 11 17 | 704 | 0.3+ | 1.1+ | | |
| 2001 08 16 | 644 | 0.3+ | 1.0+ | 2006 10 28 | 704 | (1.8− | 0.7+) | 2006 11 18 | 704 | 0.2− | 0.4+ | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 28 | 704 | (1.7− | 1.2+) | 2006 11 18 | 704 | 0.2− | 0.3− | | |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.2− | 0.3+ | | |
| 2001 10 15 | 645 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.1− | 0.4+ | | |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 28 | 704 | (0.3− | 1.7−) | 2006 11 18 | 704 | 0.2− | 0.4− | | |
| 2004 06 22 | 691 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.1− | 0.3+ | | |
| 2004 06 22 | 691 | 0.0 | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.2+ | 0.4+ | | |
| 2004 06 22 | 691 | 0.1+ | 0.6+ | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.3+ | 0.5+ | | |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.0 | | |
| 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 25 | 683 | 1.1− | 1.7− | | |
| 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 25 | 683 | 0.6− | 2.2− | | |
| 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 02 | 703 | 0.4+ | 0.3+ | 2006 11 25 | 683 | 0.3+ | 0.6− | | |
| 2006 10 16 | 691 | 0.3+ | 0.1+ | 2006 11 02 | 703 | 0.9+ | 0.8+ | 2006 11 25 | 704 | 0.9+ | 0.3+ | | |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.2− | 0.4+ | 2006 11 25 | 704 | 1.2+ | 1.6+ | | |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 02 | 703 | 0.4− | 0.2+ | 2006 11 25 | 704 | 0.6− | 0.7− | | |
| 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.3+ | 2006 11 25 | 704 | 0.7+ | 1.6+ | | |
| 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.4+ | 1.5+ | 2006 11 28 | 704 | 0.2+ | 0.5+ | | |
| 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 14 | 704 | 0.6− | 0.0 | 2006 11 28 | 704 | 0.4− | 0.4+ | | |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.5− | 0.4− | 2006 11 28 | 704 | 0.9− | 1.4+ | | |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.1− | 0.7+ | 2006 11 28 | 704 | 0.5− | 0.3+ | | |
| 2006 10 20 | 691 | 0.3− | 0.2− | 2006 11 17 | 704 | 0.4+ | 0.4+ | 2006 11 28 | 704 | 0.4+ | 0.2+ | | |

**2006 UB$_{45}$ = 2005 JY$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.98559 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25801914 | $\omega$ | 282.42506 | | +0.89713689 | | +0.43777517 |
| $a$ | 2.4436262 | $\Omega$ | 51.64355 | | −0.37032604 | | +0.81830403 |
| $e$ | 0.1809351 | $i$ | 4.32570 | | −0.24084026 | | +0.37246667 |
| $P$ | 3.82 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 29 | 608 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 12 | 703 | 0.2− | 1.3+ | | |
| 2002 09 29 | 608 | 0.5− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 12 | 703 | 0.2− | 0.5+ | | |
| 2002 09 29 | 608 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 12 | 703 | 0.3+ | 0.1− | | |
| 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.1− | | |
| 2005 04 11 | G96 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.3− | | |
| 2005 04 11 | G96 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2005 04 11 | G96 | 0.4− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.1− | | |
| 2005 05 07 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.6− | 0.5− | 2006 11 14 | 691 | 0.4+ | 0.3+ | | |
| 2005 05 07 | 691 | 0.1− | 1.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.4+ | | |
| 2005 05 07 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.4+ | | |
| 2005 05 11 | 691 | 0.6+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.5+ | 2006 11 16 | 703 | 1.2− | 1.0+ | | |
| 2005 05 11 | 691 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.6+ | 2006 11 16 | 703 | (1.7− | 1.8+) | | |
| 2005 05 11 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.3− | 1.0+ | 2006 11 16 | 703 | (2.2+ | 0.9+) | | |
| 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | (0.5− | 1.7−) | 2006 11 16 | 703 | 0.7− | 0.2+ | | |
| 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 1.1− | 1.2+ | | |
| 2006 09 28 | G96 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.7+ | 2006 11 18 | 704 | (0.1− | 2.9+) | | |
| 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | (1.0+ | 2.6+) | | |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.2− | 0.1+ | | |
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.4+ | | |
| 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2− | 2006 12 01 | G96 | 0.2− | 0.0 | | |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 12 | 703 | 0.9− | 0.6+ | 2006 12 01 | G96 | 0.5+ | 0.1− | | |

**2006 UC$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.83248 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29017598 | $\omega$ | 256.47990 | | +0.58719385 | | +0.80436499 |
| $a$ | 2.2595836 | $\Omega$ | 49.84959 | | −0.68927402 | | +0.55553343 |
| $e$ | 0.1215286 | $i$ | 6.80402 | | −0.42438746 | | +0.21066460 |
| $P$ | 3.40 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 13 | 557 | 0.2− | 0.5+ | 2005 05 10 | G96 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.2− | | |
| 1999 09 13 | 557 | 0.1+ | 0.0 | 2005 06 01 | G96 | 0.1+ | 0.1− | 2006 11 12 | 703 | 1.5− | 1.0− | | |
| 1999 09 14 | 557 | 1.1+ | 0.2− | 2005 06 01 | G96 | 0.4+ | 0.2+ | 2006 11 12 | 703 | 0.3− | 0.0 | | |
| 1999 09 14 | 557 | 0.7− | 0.3+ | 2005 06 01 | G96 | 0.1+ | 0.0 | 2006 11 12 | 703 | 0.6+ | 0.3− | | |
| 1999 09 14 | 557 | 0.2+ | 0.6− | 2005 06 01 | G96 | 0.0 | 0.1− | 2006 11 12 | 703 | 0.0 | 0.2+ | | |
| 1999 09 14 | 557 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.9+ | 0.2− | | |
| 1999 11 11 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.2− | | |
| 1999 11 11 | 691 | 0.1+ | 0.5− | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 1999 11 11 | 691 | 0.4+ | 0.4− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.0 | 0.3− | | |
| 2002 07 06 | 644 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.4+ | | |
| 2002 07 06 | 644 | 0.4− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.3+ | | |
| 2002 07 06 | 644 | 0.0 | 0.5+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.4+ | | |
| 2002 07 16 | 644 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.3− | 1.1− | | |
| 2002 07 16 | 644 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.2− | 1.1− | | |
| 2002 07 16 | 644 | 0.7+ | 0.4− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 12 01 | G96 | 1.1− | 1.3+ | | |
| 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 12 01 | G96 | 1.1+ | 2.1+ | | |
| 2005 05 10 | G96 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.1− | | | | | | |
| 2005 05 10 | G96 | 1.1− | 0.8− | 2006 10 27 | G96 | 0.1− | 0.2− | | | | | | |

**2006 UK$_{45}$ = 2002 XW$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.33391 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23577368 | $\omega$ | 27.96412 | | −0.12134234 | | −0.99049543 |
| $a$ | 2.5950108 | $\Omega$ | 69.06632 | | +0.89727922 | | −0.13735676 |
| $e$ | 0.2414657 | $i$ | 3.97635 | | +0.42445970 | | +0.00720524 |
| $P$ | 4.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.6− | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.0 | | |
| 2002 12 14 | 704 | 0.1+ | 0.4+ | 2006 11 14 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.0 | 0.5+ | 2006 11 14 | 691 | (0.4+ | 2.5+) | 2006 11 21 | 691 | 0.4− | 0.0 | | |
| 2002 12 15 | 704 | (1.9− | 0.1+) | 2006 11 17 | 703 | 0.1+ | 0.7− | 2006 11 21 | 691 | 0.3− | 0.0 | | |
| 2002 12 15 | 704 | 0.4− | 1.0− | 2006 11 17 | 703 | 0.1+ | 0.3− | 2006 11 21 | 691 | 0.3− | 0.0 | | |
| 2002 12 15 | 704 | 0.9+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.7+ | 0.5− | | |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.5− | 0.8+ | | |
| 2006 09 30 | G96 | 0.0 | 0.7− | 2006 11 17 | 703 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.9+ | | |
| 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.1+ | | |
| 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 17 | 703 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.2− | | |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.2+ | 0.1− | | |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.2− | | |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.6+ | 1.0− | 2006 11 27 | 703 | 0.2+ | 0.4− | | |
| 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.6− | 2006 11 27 | G96 | 0.1+ | 0.0 | | |
| 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.1+ | 0.7− | | |
| 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.2+ | 2006 11 27 | 703 | 0.8− | 0.2− | | |
| 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.2− | 2006 11 27 | 703 | 0.2− | 0.1+ | | |
| 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.8+ | 0.1+ | | |
| 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.1− | 2006 11 29 | 704 | 0.3+ | 0.2− | | |
| 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 18 | 711 | 0.4− | 0.1+ | 2006 11 29 | 704 | 0.2− | 0.1+ | | |
| 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 18 | 711 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.8+ | 0.1+ | | |
| 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 18 | 711 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.1+ | | |
| 2006 11 13 | 644 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.1+ | | | | | | |
| 2006 11 13 | 644 | 0.1+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.1+ | | | | | | |

**2006 UM$_{45}$ = 2002 TK$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.59456 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26516131 | $\omega$ | 300.98063 | | +0.98345680 | −0.16167556 | |
| $a$ | 2.3995471 | $\Omega$ | 68.43099 | | +0.18110769 | +0.88647414 | |
| $e$ | 0.1464675 | $i$ | 5.03959 | | −0.00356617 | +0.43361804 | |
| $P$ | 3.72 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | (2.0+ | 0.2−) |
| 2001 05 17 | 691 | 0.8+ | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2001 05 17 | 691 | 0.1− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.7− | 0.2− |
| 2002 10 04 | 704 | 0.6− | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | (2.0− | 0.2−) |
| 2002 10 04 | 704 | 0.2+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 1.0+ | 0.2− |
| 2002 10 04 | 704 | 1.0− | 0.5− | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | (3.9− | 1.0−) |
| 2002 10 04 | 704 | 0.5− | 0.0 | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1− | 0.3+ |
| 2002 10 04 | 704 | 0.2+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.6− | 0.8− |
| 2002 10 04 | 704 | 0.6− | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.6− |
| 2002 10 04 | 704 | 0.8+ | 0.8− | 2006 11 11 | 703 | 0.4+ | 0.7+ | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2002 10 04 | 704 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.9− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2002 10 05 | 704 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2002 10 05 | 704 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2002 10 05 | 704 | 0.4+ | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.6+ |
| 2002 10 05 | 704 | 0.9− | 0.2− | 2006 11 14 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2002 10 05 | 704 | 0.1+ | 0.5− | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2002 10 06 | 704 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.4− | 1.2− |
| 2002 10 06 | 704 | 1.2+ | 0.6+ | 2006 11 14 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2002 10 06 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.2− |
| 2005 06 14 | G96 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.1− | 0.4− | 2006 11 27 | 703 | 0.7− | 0.6− |
| 2005 06 14 | G96 | 0.3− | 0.1− | 2006 11 17 | 703 | 1.0− | 0.3− | 2006 11 27 | 703 | 0.1+ | 0.2+ |
| 2005 06 14 | G96 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.5− | 2006 11 27 | 703 | 0.2− | 0.2− |
| 2005 06 14 | G96 | 0.3+ | 0.9− | 2006 11 17 | 703 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.0 | 0.7+ |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.4− | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.5+ |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.3− | 0.6− | 2006 11 29 | 704 | 0.7+ | 0.0 |
| 2006 09 30 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.3− | 0.2+ | 2006 11 29 | 704 | 0.0 | 0.6+ |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.7− | 0.7− | 2006 11 29 | 704 | 1.1+ | 1.5− |

**2006 US$_{45}$ = 2000 AK$_{136}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.95615 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27137190 | $\omega$ | 6.58262 | | −0.07543599 | −0.99553711 | |
| $a$ | 2.3627955 | $\Omega$ | 87.75426 | | +0.91226073 | −0.09186192 | |
| $e$ | 0.1841743 | $i$ | 3.25311 | | +0.40260374 | +0.02161604 | |
| $P$ | 3.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.2+ | 0.4− | 2006 11 02 | 703 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.2+ |
| 1995 11 15 | 691 | 0.2+ | 0.8− | 2006 11 02 | 703 | (1.6− | 1.1+) | 2006 11 18 | 704 | 0.7− | 0.3+ |
| 1995 11 15 | 691 | 0.3+ | 0.8− | 2006 11 02 | 703 | 0.3− | 0.6+ | 2006 11 18 | 704 | 0.4− | 0.7+ |
| 2000 01 04 | 704 | 0.5− | 0.8+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.5− | 0.3+ |
| 2000 01 04 | 704 | 0.6− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.5+ | 0.2− |
| 2000 01 04 | 704 | 0.0 | 0.6− | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 18 | 704 | 1.0− | 0.0 |
| 2000 01 08 | 704 | 0.3+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 18 | 704 | (3.0− | 0.6+) |
| 2000 01 08 | 704 | 0.2+ | 1.6− | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.3− |
| 2000 01 08 | 704 | 0.3− | 0.4− | 2006 11 10 | 644 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2000 01 08 | 704 | 0.5− | 0.6− | 2006 11 12 | G96 | 0.2− | 0.7− | 2006 11 19 | 704 | 0.1− | 0.8+ |
| 2000 01 08 | 691 | 0.1+ | 0.5− | 2006 11 12 | G96 | 0.2− | 0.7− | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2000 01 08 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.7+ |
| 2000 01 08 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.6− | 2006 11 21 | 691 | 0.2− | 0.2+ |
| 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.3− | 0.3− | 2006 11 21 | 691 | 0.1− | 0.2+ |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 13 | 703 | 1.3− | 0.2− | 2006 11 21 | 691 | 0.4− | 0.4+ |
| 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 13 | 703 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.8+ | 0.7+ |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.7− | 0.8+ | 2006 11 21 | 704 | 0.9+ | 0.3+ |
| 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.5− | 2006 11 21 | 704 | 1.4+ | 0.2+ |
| 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.8+ | 0.8+ |
| 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.7+ | 0.7+ |
| 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.2− | 0.1+ |
| 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.8− | 0.3− |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.9+ |
| 2006 11 02 | 703 | 1.1− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2− | | | | |

**2006 UT$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.06605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31511241 | $\omega$ | 222.13308 | | +0.85019504 | −0.52643492 | |
| $a$ | 2.1387452 | $\Omega$ | 169.62700 | | +0.49133219 | +0.78938711 | |
| $e$ | 0.1427820 | $i$ | 1.87411 | | +0.18910600 | +0.31580732 | |
| $P$ | 3.13 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 695 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2004 02 26 | 695 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2005 05 08 | 691 | 0.0 | 0.4+ | 2006 11 02 | 703 | (0.7− | 1.6+) | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2005 05 08 | 691 | 0.0 | 0.3+ | 2006 11 02 | 703 | 0.6− | 1.2+ | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 02 | 703 | 0.4+ | 0.4− | 2006 11 16 | 691 | 0.1− | 0.2− |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 02 | 703 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.9+ | 1.2+ |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.1− | 0.2+ |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 10 | 644 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.2+ |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.5− | 1.3− |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | 0.3− | 0.2− |
| 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 12 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2006 10 19 | G96 | 0.6+ | 0.5− | 2006 11 13 | 703 | 1.0− | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.6+ |
| 2006 10 19 | G96 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.6+ | 2006 11 20 | 704 | 0.8+ | 1.2+ |
| 2006 10 20 | 644 | 0.3− | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.9+ |
| 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 13 | 703 | (0.7− | 1.7+) | 2006 11 20 | 704 | 0.1− | 1.7+ |
| 2006 10 20 | 644 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.5+ | 0.2− |

**2006 UV$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.30879 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29889921 | $\omega$ | 279.46909 | | +0.98162170 | +0.17159561 | |
| $a$ | 2.2154037 | $\Omega$ | 70.68573 | | −0.12098340 | +0.89798400 | |
| $e$ | 0.2043615 | $i$ | 5.07671 | | −0.14758675 | +0.40519093 | |
| $P$ | 3.30 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 05 | 291 | 0.0 | 0.7+ | 2006 11 13 | 703 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2002 06 05 | 291 | 0.1+ | 0.3+ | 2006 11 13 | 703 | 0.1+ | 0.4+ | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2002 06 05 | 291 | 0.4+ | 0.5+ | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.8+ |
| 2005 05 03 | 691 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.3+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 0.3+ |
| 2005 05 03 | 691 | 0.1− | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2005 05 03 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.7+ |
| 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.6+ | 0.0 |
| 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.6+ |
| 2006 10 16 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 1.2+ |
| 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | (0.2− | 2.7+) | 2006 11 27 | G96 | 0.0 | 0.0 |
| 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.6+ | 0.0 |
| 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.2− | 2006 11 27 | 224 | 1.6− | 1.6+ |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2− | 0.3− | 2006 11 27 | 224 | 0.8− | 0.1− |
| 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.3− | 2006 11 27 | 224 | 0.3− | 0.3+ |
| 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 1.4− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.5− |
| 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 1.1+ | 0.9+ | 2006 11 29 | 704 | 1.0+ | 1.0− |
| 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.1− |
| 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.2+ | | | | |
| 2006 11 13 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 1.3− | 0.5+ | | | | |

**2006 UH$_{46}$ = 2004 NO$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.33586 | | (2000.0) | | +0.99625819 | +0.08534072 |
| $n$ | 0.20530193 | $\omega$ | 195.34260 | | −0.07456150 | +0.92860455 |
| $a$ | 2.8458196 | $\Omega$ | 159.74683 | | −0.04370589 | +0.36112400 |
| $e$ | 0.0959403 | $i$ | 2.26143 | | | |
| $P$ | 4.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.3+ | 0.0 | 2005 06 10 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2001 10 18 | 644 | 0.3− | 0.1− | 2005 07 04 | G96 | 0.6− | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2001 10 18 | 644 | 0.2− | 0.4+ | 2005 07 04 | G96 | 0.2− | 0.4+ | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2004 04 19 | 691 | 0.5+ | 0.2+ | 2005 07 04 | G96 | 0.7− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2004 04 19 | 691 | 0.4− | 0.2+ | 2005 07 04 | G96 | 0.3− | 0.6+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2004 07 15 | 807 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2004 07 15 | 807 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2004 07 16 | 807 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2004 07 17 | 807 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.6+ | 0.4− |
| 2005 06 10 | 691 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.0 | 0.0 | | | | |
| 2005 06 10 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2+ | | | | |

**2006 UU$_{46}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 32.45198 | | (2000.0) | | +0.96502238 | +0.26198589 |
| $n$ | 0.27019283 | $\omega$ | 183.71262 | | −0.23975187 | +0.89695762 |
| $a$ | 2.3696644 | $\Omega$ | 161.09075 | | −0.10606999 | +0.35613260 |
| $e$ | 0.1934474 | $i$ | 1.72527 | | | |
| $P$ | 3.65 | $H$ | 18.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 25 | 695 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.6− | 0.2− | 2006 10 31 | 621 | 0.2+ | 0.2− |
| 2001 03 25 | 695 | 0.5+ | 0.6+ | 2006 10 16 | 691 | 1.0+ | 0.9+ | 2006 10 31 | 621 | 0.0 | 0.4+ |
| 2002 08 19 | 644 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2002 08 19 | 644 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2004 02 26 | 695 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.2− | | | | |
| 2004 02 26 | 695 | 0.3+ | 0.4+ | 2006 10 31 | 621 | 0.2+ | 0.8− | | | | |

**2006 UY$_{46}$ = 2003 GS$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 232.79907 | | (2000.0) | | −0.97368248 | −0.01595616 |
| $n$ | 0.18498998 | $\omega$ | 126.37793 | | −0.11100757 | −0.83801693 |
| $a$ | 3.0504968 | $\Omega$ | 53.81841 | | +0.19904710 | −0.54541087 |
| $e$ | 0.1200889 | $i$ | 16.35987 | | | |
| $P$ | 5.33 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 10 | 644 | 0.1− | 0.4− | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.5− | 0.7− |
| 2003 03 10 | 644 | 0.2+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2003 03 10 | 644 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.6− | 0.7− | 2006 11 21 | G96 | 1.2+ | 0.1+ |
| 2003 04 05 | 699 | 0.5+ | 0.9− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2003 04 05 | 699 | 0.7+ | 0.2+ | 2006 10 20 | 691 | 0.4+ | 0.5− | 2006 11 21 | G96 | 0.2− | 0.0 |
| 2003 04 05 | 699 | 0.9− | 0.9− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2003 04 05 | 699 | 0.8− | 0.6+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 12 01 | G96 | 0.6− | 0.5− |
| 2003 04 09 | 644 | 0.3− | 0.6+ | 2006 11 01 | 691 | 0.3+ | 0.4+ | 2006 12 01 | G96 | 0.5− | 0.1− |
| 2003 04 09 | 644 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.3+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.1+ |
| 2003 04 09 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2006 10 12 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.1− | | | | |
| 2006 10 12 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.3− | | | | |

**2006 UA$_{47}$ = 2000 OY$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 43.58233 | | (2000.0) | | +0.89257729 | +0.44839115 |
| $n$ | 0.18633222 | $\omega$ | 258.49351 | | −0.39216085 | +0.82393079 |
| $a$ | 3.0358297 | $\Omega$ | 74.85106 | | −0.22252110 | +0.34653057 |
| $e$ | 0.2323959 | $i$ | 2.81747 | | | |
| $P$ | 5.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 699 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.6− | 0.4− |
| 2000 07 29 | 699 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 18 | 704 | (0.7− | 2.0+) |
| 2000 07 29 | 699 | 0.3+ | 0.7− | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 18 | 704 | 0.0 | 1.1+ |
| 2000 07 29 | 699 | 0.6− | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2000 08 01 | 704 | 0.4+ | 1.0+ | 2006 11 12 | 703 | 0.0 | 0.8+ | 2006 11 18 | 704 | 0.3− | 0.1+ |
| 2000 08 01 | 704 | 0.0 | 0.7+ | 2006 11 12 | 703 | 0.7− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2000 08 01 | 704 | 0.5− | 0.2+ | 2006 11 12 | 703 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2004 04 14 | 691 | 0.4− | 0.1+ | 2006 11 12 | 703 | 0.2− | 0.6− | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2004 04 14 | 691 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.3− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 04 14 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.2− | 0.2+ | 2006 11 21 | 704 | (0.8+ | 2.0+) |
| 2006 10 16 | 691 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3− | 1.4+ |
| 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.5− | 0.3− | 2006 11 21 | 704 | (0.1− | 1.6+) |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.1− | 0.2− | 2006 11 26 | 104 | 0.7+ | 0.8+ |
| 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 17 | 703 | 1.1− | 0.1+ | 2006 11 26 | 104 | 0.1+ | 0.8+ |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.5+ | 2006 11 26 | 104 | 1.6+ | 1.4+ |

**2006 UE$_{47}$ = 2001 YR$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 6.06050 | | (2000.0) | | +0.83782318 | −0.54570816 |
| $n$ | 0.18838108 | $\omega$ | 199.56741 | | +0.50953798 | +0.79212278 |
| $a$ | 3.0137776 | $\Omega$ | 193.54078 | | +0.19601880 | +0.27339368 |
| $e$ | 0.0836835 | $i$ | 3.91019 | | | |
| $P$ | 5.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.5− | 0.3+ | 2005 07 10 | 691 | 0.2− | 0.6+ | 2006 10 20 | 691 | 0.2− | 0.1+ |
| 2000 07 31 | 807 | 0.4− | 0.3+ | 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2000 08 30 | 691 | 0.1+ | 0.3− | 2005 07 28 | 644 | 0.1− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 08 30 | 691 | 0.6+ | 0.6− | 2005 07 28 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.3+ |
| 2000 08 30 | 691 | 0.1− | 0.2− | 2005 07 28 | 644 | 0.1+ | 0.6+ | 2006 11 12 | G96 | 0.4+ | 0.5− |
| 2001 12 17 | 704 | 0.3− | 0.8− | 2005 10 01 | G96 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.8+ | 0.3− |
| 2001 12 17 | 704 | 0.3− | 0.3− | 2005 10 01 | G96 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.1− | 0.6− |
| 2001 12 17 | 704 | 0.2− | 0.7− | 2005 10 01 | G96 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.0 | 1.0− |
| 2001 12 17 | 704 | 0.5− | 0.2− | 2005 10 01 | G96 | 1.1+ | 0.3+ | 2006 11 17 | 703 | 0.7+ | 0.1− |
| 2001 12 19 | 704 | 0.7+ | 1.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.7− | 0.5− |
| 2001 12 19 | 704 | 0.3− | 1.0+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2001 12 19 | 704 | (0.3− | 1.8+) | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 0.1− |
| 2001 12 19 | 704 | 1.0+ | 0.4+ | 2006 10 20 | 691 | 0.4− | 0.1+ | | | | |
| 2005 07 10 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.0 | 0.3+ | | | | |

**2006 UO$_{47}$ = 2001 WK$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.97768 | | (2000.0) | | +0.43214134 | +0.88979940 |
| $n$ | 0.17619255 | $\omega$ | 62.72707 | | −0.87834319 | +0.37843733 |
| $a$ | 3.1512125 | $\Omega$ | 233.63950 | | −0.20437004 | +0.25503374 |
| $e$ | 0.0685957 | $i$ | 10.49357 | | | |
| $P$ | 5.59 | $H$ | 15.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 704 | 0.3+ | 0.4− | 2006 09 16 | 703 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.2+ | 0.3+ |
| 2001 11 19 | 704 | 0.2− | 1.0+ | 2006 09 16 | 703 | 0.4+ | 0.2− | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 2001 11 19 | 704 | 0.8− | 0.3− | 2006 09 16 | 703 | 0.5− | 1.1− | 2006 10 17 | 691 | 0.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.6+ | 0.7+ | 2006 09 16 | 703 | (1.0+ | 2.0−) | 2006 10 20 | 691 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.1− | 0.3+ | 2006 09 27 | 703 | 0.8− | 0.7+ | 2006 10 20 | 691 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 0.5− | 0.1− | 2006 09 27 | 703 | 0.0 | 0.7− | 2006 10 20 | 691 | 0.1− | 0.1+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.1+ | 0.9− | 2006 09 27 | 703 | (0.1− | 1.6+) | | | | | | | |
| 2001 11 21 | 704 | 0.5+ | 0.2− | 2006 09 27 | 703 | 0.3− | 0.7+ | | | | | | | |

**2006 UP$_{48}$ = 2002 TA$_{136}$ = 2002 VT$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 328.38614 | | (2000.0) | | | |
| $n$ | 0.23734343 | $\omega$ | 110.30034 | | +0.66905920 | −0.73612414 |
| $a$ | 2.5835562 | $\Omega$ | 297.27598 | | +0.63166725 | +0.63580729 |
| $e$ | 0.1939601 | $i$ | 6.61426 | | +0.39160730 | +0.23209983 |
| $P$ | 4.15 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 699 | 1.2− | 0.9− | 2002 10 30 | 608 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2002 10 04 | 699 | 0.2+ | 0.3+ | 2002 11 05 | 704 | 0.5− | 0.7− | 2006 10 19 | 691 | 0.2+ | 0.2− |
| 2002 10 04 | 699 | 0.5− | 0.7− | 2002 11 05 | 704 | 0.3− | 0.1− | 2006 10 23 | 703 | 0.4− | 0.3+ |
| 2002 10 04 | 699 | 0.5+ | 0.5+ | 2002 11 05 | 704 | 0.5+ | 1.1− | 2006 10 23 | 703 | 0.2+ | 0.7+ |
| 2002 10 05 | 704 | 0.3− | 0.9+ | 2002 11 06 | 704 | 0.1+ | 0.8+ | 2006 10 23 | 703 | 0.1− | 0.3− |
| 2002 10 05 | 704 | 0.5− | 0.5+ | 2002 11 06 | 704 | 0.3+ | 0.2− | 2006 10 23 | 703 | 1.1− | 0.2− |
| 2002 10 05 | 704 | 0.4+ | 1.2+ | 2002 11 06 | 704 | 0.2+ | 0.2+ | 2006 10 24 | 644 | 0.0 | 0.3+ |
| 2002 10 05 | 704 | 0.2− | 0.8+ | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.4+ |
| 2002 10 05 | 704 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.3− | 2006 10 24 | 644 | 0.0 | 0.8+ |
| 2002 10 30 | 608 | 0.3+ | 0.2− | 2006 10 17 | 691 | 0.0 | 0.2− | | | | |
| 2002 10 30 | 608 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.3+ | | | | |

**2006 UM$_{50}$ = 2002 TE$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 38.82752 | | (2000.0) | | | |
| $n$ | 0.25269414 | $\omega$ | 343.49892 | | +0.91031179 | +0.41365141 |
| $a$ | 2.4778363 | $\Omega$ | 352.01763 | | −0.36652020 | +0.78869484 |
| $e$ | 0.0803475 | $i$ | 6.20028 | | −0.19234183 | +0.45481090 |
| $P$ | 3.90 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 01 | 691 | 0.6+ | 0.9− | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.1− | 0.5− |
| 1998 10 01 | 691 | 0.5− | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 691 | 0.3− | 0.4− |
| 1998 10 01 | 691 | 0.1− | 0.5+ | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.6− | 0.9− |
| 2002 10 05 | 644 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.2− | 0.4− | 2006 10 21 | 691 | 0.6− | 0.3− |
| 2002 10 05 | 644 | 0.5− | 0.2+ | 2006 10 17 | 691 | 0.3+ | 0.4− | 2006 10 29 | 691 | 0.8+ | 1.5+ |
| 2002 10 05 | 644 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.6+ |
| 2002 10 06 | 644 | 0.0 | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.4+ | 0.2+ |
| 2002 10 06 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.5− | | | | |
| 2002 10 06 | 644 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.6− | | | | |

**2006 UN$_{50}$ = 2005 PC$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 164.10005 | | (2000.0) | | | |
| $n$ | 0.18320819 | $\omega$ | 320.72910 | | −0.78039580 | +0.61623513 |
| $a$ | 3.0702433 | $\Omega$ | 257.63825 | | −0.54289251 | −0.75186915 |
| $e$ | 0.0628647 | $i$ | 6.22996 | | −0.31024204 | −0.23440787 |
| $P$ | 5.38 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | E12 | 1.0− | 1.3+ | 2005 08 06 | 644 | 0.8− | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.3− |
| 2004 04 16 | E12 | 0.2+ | 1.2+ | 2005 08 06 | 644 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2004 04 16 | E12 | 0.1+ | 1.3+ | 2005 08 06 | 644 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1+ |
| 2004 04 16 | E12 | (2.2+ | 0.8−) | 2005 08 31 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2004 05 12 | E12 | (0.4− | 1.8+) | 2005 08 31 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2004 05 12 | E12 | (1.7+ | 1.2+) | 2005 08 31 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2004 05 12 | E12 | 1.2+ | 1.2+ | 2006 09 26 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.5− | 0.5+ |
| 2004 05 12 | E12 | 0.5+ | 0.4+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.2+ |
| 2005 06 29 | 691 | 0.2+ | 0.2+ | 2006 09 26 | 691 | 0.1+ | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.5+ |
| 2005 06 29 | 691 | 0.0 | 0.1+ | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2005 06 29 | 691 | 0.2− | 0.3+ | 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.6+ | 0.3− |
| 2005 07 08 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 1.4− | 0.4− |
| 2005 07 08 | 691 | 0.0 | 0.5− | 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 14 | 703 | 0.7− | 1.0− |
| 2005 07 08 | 691 | 0.0 | 0.6− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | (3.7− | 2.6+) |
| 2005 08 01 | 599 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2005 08 01 | 599 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.6− |
| 2005 08 01 | 599 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2005 08 01 | 599 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 25 | G96 | 0.0 | 0.3− |

**2006 UZ$_{51}$ = 2001 QQ$_{176}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 60.76275 | | (2000.0) | | | |
| $n$ | 0.21988021 | $\omega$ | 26.48994 | | +0.62809785 | +0.77768368 |
| $a$ | 2.7185999 | $\Omega$ | 282.43178 | | −0.71864908 | +0.56669683 |
| $e$ | 0.1627592 | $i$ | 1.55381 | | −0.29838999 | +0.27214482 |
| $P$ | 4.48 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 1.0− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2001 08 24 | 691 | 0.7− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.4− | 2006 10 31 | 691 | 0.1− | 0.3+ |
| 2001 08 24 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 10 31 | 691 | 0.5+ | 0.1+ |
| 2001 08 28 | 691 | 0.5+ | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2001 08 28 | 691 | 0.2+ | 0.6− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 08 28 | 691 | 0.3+ | 0.4− | 2006 10 21 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2006 09 28 | G96 | 0.1− | 0.2− | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2006 09 28 | G96 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2− |
| 2006 09 28 | G96 | 0.7+ | 0.7− | 2006 10 28 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 | | | | |
| 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ | | | | |

**2006 UH$_{52}$ = 1998 VL$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.04798 | | (2000.0) | | | |
| $n$ | 0.23931744 | $\omega$ | 174.88613 | | −0.39896724 | +0.91414854 |
| $a$ | 2.5693296 | $\Omega$ | 71.58508 | | −0.84396008 | −0.33545092 |
| $e$ | 0.1283563 | $i$ | 4.34100 | | −0.35854780 | −0.22760741 |
| $P$ | 4.12 | $H$ | 16.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.6− | 0.3− | 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 1998 11 15 | 691 | 0.7− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.8− | 2006 11 01 | G96 | 0.2+ | 0.1+ |
| 1998 11 15 | 691 | 0.6− | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.2+ |
| 1998 11 19 | 691 | 0.6+ | 0.2− | 2006 10 17 | G96 | 0.5+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 1998 11 19 | 691 | 0.5+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.3− | 0.4+ |
| 1998 11 19 | 691 | 0.8+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.2− | 0.2+ |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.5− | 0.1+ |
| 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.0 |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.1+ | 0.4+ | | | | |
| 2006 10 02 | G96 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.0 | | | | |

**2006 UJ$_{52}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 146.26186 | | (2000.0) | | | |
| $n$ | 0.21777478 | $\omega$ | 127.32985 | | −0.53510809 | +0.84373672 |
| $a$ | 2.7360939 | $\Omega$ | 110.26806 | | −0.78855980 | −0.48102256 |
| $e$ | 0.0329944 | $i$ | 2.56879 | | −0.30303922 | −0.23817145 |
| $P$ | 4.53 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.0 | 0.4+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2004 03 29 | 691 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2004 03 29 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.5− | 0.6+ |
| 2004 07 16 | 807 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.9− | 2006 10 28 | 691 | 0.3+ | 0.5+ |
| 2004 07 16 | 807 | 0.7− | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2005 06 03 | 691 | 0.4− | 0.3− | 2006 10 17 | G96 | 0.6+ | 0.5− | 2006 11 01 | G96 | 0.4+ | 0.5− |
| 2005 06 03 | 691 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.4− | 0.2− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 03 | 691 | 0.4+ | 0.4− | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.5+ | | | |
| 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.5− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.1− | | | |
| 2005 06 13 | G96 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1+ | | | |
| 2005 06 13 | G96 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | | |
| 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.1+ | | | | | | | |

### 2006 UM$_{52}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.35816 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18110728 | $\omega$ | 354.15920 | | +0.78548480 | | −0.60747637 |
| $a$ | 3.0939416 | $\Omega$ | 43.97959 | | +0.57448353 | | +0.64462703 |
| $e$ | 0.0250054 | $i$ | 9.80578 | | +0.23017886 | | +0.46414270 |
| $P$ | 5.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 21 | 691 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.0 | 1.0− | 2006 11 11 | 703 | 0.7− | 0.7+ | | | |
| 2004 05 21 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.1− | | | |
| 2004 05 21 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.2− | 0.2− | | | |
| 2004 06 13 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.7+ | 0.6− | 2006 11 14 | G96 | 0.1+ | 0.1− | | | |
| 2004 06 13 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.2− | | | |
| 2004 06 13 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 1.4− | 0.3+ | | | |
| 2005 07 03 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.2− | | | |
| 2005 07 03 | 644 | 0.4− | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.8− | | | |
| 2005 07 03 | 644 | 0.3+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 0.1− | | | |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.1− | | | |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.4− | 2006 11 22 | G96 | 0.0 | 0.2− | | | |
| 2006 09 30 | G96 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.3+ | 0.0 | | | |
| 2006 09 30 | G96 | 1.5− | 0.2+ | 2006 11 11 | 703 | 0.6+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.3− | | | |

### 2006 UP$_{52}$ = 2001 TC$_{217}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.69685 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18553821 | $\omega$ | 72.10739 | | +0.38006475 | | +0.92228500 |
| $a$ | 3.0444848 | $\Omega$ | 220.45560 | | −0.88435493 | | +0.34005961 |
| $e$ | 0.1439303 | $i$ | 6.21929 | | −0.27104822 | | +0.18371130 |
| $P$ | 5.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 291 | 0.0 | 0.2+ | 2001 11 12 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.0 | | | |
| 2001 10 13 | 291 | 0.3+ | 0.2− | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.7+ | 0.1− | | | |
| 2001 10 13 | 291 | 0.8+ | 0.2− | 2006 10 01 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.8+ | 0.3+ | | | |
| 2001 10 17 | 691 | 0.4− | 0.0 | 2006 10 01 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.4+ | 0.1− | | | |
| 2001 10 17 | 691 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.5− | 1.0− | 2006 11 15 | G96 | 0.1+ | 0.4+ | | | |
| 2001 10 17 | 691 | 0.5− | 0.1− | 2006 10 17 | 703 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.5+ | 0.3+ | | | |
| 2001 11 12 | 691 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.8− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.3+ | | | |
| 2001 11 12 | 691 | 0.2− | 0.3− | 2006 10 17 | 703 | 0.7− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.2+ | | | |

### 2006 UR$_{52}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.96835 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27231081 | $\omega$ | 106.93766 | | +0.75261545 | | +0.65691812 |
| $a$ | 2.3573612 | $\Omega$ | 212.03948 | | −0.63181874 | | +0.70121283 |
| $e$ | 0.1348327 | $i$ | 4.87027 | | −0.18540516 | | +0.27705442 |
| $P$ | 3.62 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.2− | 0.4+ | 2005 03 11 | G96 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.2+ | | | |
| 1995 10 20 | 691 | 0.1− | 0.1+ | 2005 03 11 | G96 | 0.2− | 0.7− | 2006 10 19 | G96 | 0.1− | 0.3− | | | |
| 1995 10 20 | 691 | 0.0 | 0.3+ | 2005 04 09 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.4− | 0.4− | | | |
| 1999 11 04 | 691 | 0.0 | 0.4+ | 2005 04 09 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.2− | 0.2− | | | |
| 1999 11 04 | 691 | 0.1+ | 0.2+ | 2005 04 09 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.1+ | 0.2− | | | |
| 1999 11 04 | 691 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.4− | 0.3+ | | | |
| 2002 06 23 | 950 | 0.2+ | 0.0 | 2006 09 17 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− | | | |
| 2002 06 23 | 950 | 0.1+ | 0.0 | 2006 09 17 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.6+ | | | |
| 2002 06 23 | 950 | 0.1+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− | | | |
| 2002 08 05 | 644 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3− | | | |
| 2002 08 05 | 644 | 0.0 | 0.1+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.4+ | 0.4− | | | |
| 2002 08 05 | 644 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.6− | | | |
| 2005 03 11 | G96 | 0.2− | 0.1+ | 2006 10 17 | 703 | 0.2+ | 0.5− | | | | | | | |
| 2005 03 11 | G96 | 0.0 | 0.5− | 2006 10 17 | 703 | 1.4+ | 0.0 | | | | | | | |

### 2006 UB$_{53}$ = 2004 DD$_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.36296 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27845640 | $\omega$ | 3.07104 | | +0.55377495 | | −0.83181088 |
| $a$ | 2.3225473 | $\Omega$ | 53.30586 | | +0.76295006 | | +0.48873535 |
| $e$ | 0.1809323 | $i$ | 2.69741 | | +0.33352736 | | +0.26311293 |
| $P$ | 3.54 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 14 | 691(73.0− | 19.4−) | | 2006 10 28 | G96 | 0.2− | 0.5− | 2006 11 10 | 644 | 0.1+ | 0.1− | | | |
| 1999 12 14 | 691(73.2− | 19.5−) | | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 10 | 644 | 0.0 | 0.1+ | | | |
| 1999 12 14 | 691(72.8− | 19.3−) | | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.1+ | 0.1+ | | | |
| 2004 02 29 | 691 | 0.0 | 0.3− | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.3− | 0.3− | | | |
| 2004 02 29 | 691 | 0.5− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.6− | | | |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.2− | | | |
| 2004 03 01 | 291 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.6− | | | |
| 2004 03 01 | 291 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.4+ | | | |
| 2004 03 01 | 291 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.3+ | | | |
| 2006 10 17 | G96 | 0.7+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.2+ | | | |
| 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.5+ | 0.4− | | | |
| 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 27 | 703 | 1.2+ | 0.0 | | | |
| 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.5− | 0.5+ | | | |
| 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.8− | 0.4− | | | |
| 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.3+ | | | | | | | |
| 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.4− | | | | | | | |

### 2006 UL$_{53}$ = 2003 BA$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.87292 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18992723 | $\omega$ | 348.44794 | | +0.58305834 | | +0.81070737 |
| $a$ | 2.9973990 | $\Omega$ | 317.18890 | | −0.73905442 | | +0.50224109 |
| $e$ | 0.0777413 | $i$ | 4.46303 | | −0.33740411 | | +0.30084457 |
| $P$ | 5.19 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 291 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.4+ | 0.3+ | | | |
| 2003 01 27 | 291 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.6− | 2006 10 27 | 703 | 1.2− | 0.5− | | | |
| 2003 01 27 | 291 | 0.1− | 0.2− | 2006 10 19 | 703 | 1.5− | 0.4− | 2006 10 27 | 703 | 0.3− | 0.2+ | | | |
| 2003 01 30 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.6− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.4+ | | | |
| 2003 01 30 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | 1.1+ | 1.2− | 2006 10 31 | 691 | 0.0 | 0.5+ | | | |
| 2003 01 30 | 644 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | | | |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.4− | | | |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.1− | 0.3− | | | |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.3− | | | |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.1− | | | |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.4− | 0.3+ | | | | | | | |
| 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.3− | | | | | | | |

### 2006 UM$_{53}$ = 2003 AM$_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.05847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23348240 | $\omega$ | 327.19836 | | +0.87925297 | | −0.46710927 |
| $a$ | 2.6119606 | $\Omega$ | 60.92140 | | +0.45683637 | | +0.77130845 |
| $e$ | 0.2435635 | $i$ | 6.13480 | | +0.13496198 | | +0.43231032 |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 1.1+ | 1.3+ | 2006 11 02 | 703 | 0.2+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.3+ | | | |
| 2003 01 07 | 704 | 1.0− | 0.8− | 2006 11 02 | 703 | 1.0− | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.0 | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 0.1+ | 0.1− | 2006 11 02 | 703 | 0.4− | 0.1+ | 2006 11 18 | 704 | (2.3− | 1.1−) |
| 2003 01 07 | 704 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.0 |
| 2003 01 09 | 704 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 2003 01 09 | 704 | 0.8− | 0.6− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2003 01 09 | 704 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.6+ |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.9+ | 0.4+ | 2006 11 21 | 704 | 0.3+ | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.7+ | 0.9+ | 2006 11 21 | 704 | 0.1− | 0.7+ |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 12 | 703 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.3+ |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 12 | 703 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2006 10 17 | G96 | 0.3− | 0.5− | 2006 11 12 | 703 | 0.6− | 0.2− | 2006 11 27 | 703 | 0.7− | 0.2− |
| 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 12 | 703 | 0.6− | 0.2− | 2006 11 27 | 703 | 0.7+ | 0.8+ |
| 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 14 | 691 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.3+ | 0.5− |
| 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 14 | 691 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.3+ |
| 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.5− |
| 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.2+ | 2006 11 29 | 704 | 0.7− | 0.1− |
| 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.3− | 0.6+ |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.9+ | 0.2− |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.3− | 2006 12 01 | G96 | 0.2− | 0.2− |
| 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.6+ | 2006 12 01 | G96 | 0.4− | 0.5− |
| 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.5− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.4+ | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3+ | | | | |
| 2006 11 02 | 703 | 0.0 | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.4+ | | | | |

### 2006 $US_{53}$ = 2004 $ER_{92}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 98.26662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23927948 | $\omega$ | 80.96848 | | +0.36690940 | +0.92910357 | |
| $a$ | 2.5696013 | $\Omega$ | 210.68476 | | −0.88516990 | +0.33338536 | |
| $e$ | 0.1336669 | $i$ | 5.20595 | | −0.28609745 | +0.16006484 | |
| $P$ | 4.12 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 08 | 910 | 0.2+ | 0.3+ | 2004 03 21 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 1997 09 08 | 910 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 14 | 691 | 0.3− | 0.2+ |
| 1997 09 08 | 910 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.5+ | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2001 06 29 | 608 | 0.4− | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 1.3− | 0.2+ |
| 2001 06 29 | 608 | 0.1− | 0.5+ | 2006 10 19 | G96 | 0.0 | 1.5− | 2006 11 18 | 704 | 0.8− | 0.1+ |
| 2001 06 29 | 608 | 0.3− | 0.6+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2002 12 10 | 644 | 0.5− | 1.2+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2002 12 10 | 644 | 0.1− | 1.3+ | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2002 12 10 | 644 | 0.2− | 1.1+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.3− |
| 2004 03 15 | 704 | 0.9+ | 0.2+ | 2006 11 09 | 644 | 0.7+ | 0.4+ | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2004 03 15 | 704 | 0.0 | 0.7+ | 2006 11 10 | 691 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2004 03 15 | 704 | 0.5+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.5+ | 0.1+ |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.6− | 0.0 | | | | |
| 2004 03 21 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.3+ | | | | |

### 2006 $UA_{54}$ = 2005 $OT_{16}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.90067 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18270438 | $\omega$ | 116.34907 | | +0.93830661 | +0.32877780 | |
| $a$ | 3.0758848 | $\Omega$ | 224.67740 | | −0.34580284 | +0.89116119 | |
| $e$ | 0.0936238 | $i$ | 8.76748 | | −0.00105017 | +0.31262899 | |
| $P$ | 5.39 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 17 | 691 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 1995 10 17 | 691 | 0.3− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.2− | 0.1− |
| 1995 10 17 | 691 | 0.1+ | 0.2− | 2006 09 27 | G96 | 0.4− | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 2005 07 30 | 644 | 0.0 | 0.4+ | 2006 09 27 | G96 | 0.6− | 0.2+ | 2006 11 14 | 691 | 0.4+ | 0.2+ |
| 2005 07 30 | 644 | 0.1+ | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.6+ | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2005 07 30 | 644 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2005 07 31 | 644 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 19 | 704 | 1.2− | 1.5+ |
| 2005 07 31 | 644 | 0.2− | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.8+ | 2006 11 19 | 704 | 0.1− | 1.0+ |
| 2005 07 31 | 644 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.7− | 0.1+ |
| 2005 08 24 | 644 | 0.6+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.3+ | 0.0 |
| 2005 08 24 | 644 | 0.4− | 0.1− | 2006 10 19 | G96 | 0.1− | 0.4+ | 2006 11 21 | 691 | 0.2− | 0.3− |
| 2005 08 24 | 644 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.5+ | 0.5− | 2006 11 21 | 691 | 0.0 | 0.0 |

### 2006 $UD_{54}$ = 2002 $PK_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.61995 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28161226 | $\omega$ | 178.36969 | | +0.50605093 | −0.85763917 | |
| $a$ | 2.3051632 | $\Omega$ | 241.22012 | | +0.79014579 | +0.50350387 | |
| $e$ | 0.0789019 | $i$ | 5.99063 | | +0.34580643 | +0.10458924 | |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 05 | 644 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.8+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.4+ |
| 2002 08 05 | 644 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.6+ |
| 2002 08 05 | 644 | 0.1− | 0.2+ | 2006 10 17 | 703 | 0.9− | 1.0+ | 2006 11 14 | 703 | 0.0 | 1.1− |
| 2002 08 07 | 644 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.5+ | 0.2− | 2006 11 14 | 703 | 1.0− | 0.8− |
| 2002 08 07 | 644 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.3+ | 0.6− |
| 2002 08 07 | 644 | 0.2− | 0.4− | 2006 10 19 | G96 | 0.7+ | 0.2− | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.6+ | 1.1+ |
| 2006 09 30 | 703 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2006 09 30 | 703 | (2.3− | 0.3+) | 2006 10 19 | G96 | 0.2− | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.5+ |
| 2006 09 30 | 703 | 0.9− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.8− | 2006 11 19 | 704 | 0.6− | 0.0 |
| 2006 10 17 | 703 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.2− | 0.4+ | | | | |

### 2006 $UF_{54}$ = 2005 $LA_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.62088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19075021 | $\omega$ | 126.18033 | | +0.91846264 | +0.33793290 | |
| $a$ | 2.9887714 | $\Omega$ | 215.41642 | | −0.36428481 | +0.92514421 | |
| $e$ | 0.2884823 | $i$ | 20.76871 | | +0.15402259 | +0.17294376 | |
| $P$ | 5.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 333 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 09 18 | 333 | 0.8− | 0.6− | 2006 10 17 | 703 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2001 09 18 | 333 | 0.4+ | 0.6− | 2006 10 19 | 704 | (2.9+ | 0.2+) | 2006 11 09 | 644 | 0.4− | 0.2− |
| 2001 11 19 | 699 | 0.1− | 1.0+ | 2006 10 19 | 704 | (1.8+ | 1.1+) | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2001 11 19 | 699 | 0.2+ | 1.0+ | 2006 10 19 | 704 | 1.0+ | 0.3− | 2006 11 10 | 691 | 0.2− | 0.3+ |
| 2001 11 19 | 699 | 0.3− | 0.5+ | 2006 10 19 | 704 | 0.6− | 0.6− | 2006 11 10 | 691 | 0.1+ | 0.9− |
| 2001 11 19 | 699 | 0.8+ | 0.8+ | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2005 01 17 | 809 | 0.7+ | 0.2− | 2006 10 19 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2005 01 17 | 809 | 0.4+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4− | 1.5− |
| 2005 01 17 | 809 | 0.0 | 0.0 | 2006 10 20 | 704 | 0.1+ | 0.6+ | 2006 11 11 | 703 | (2.6− | 2.2+) |
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 704 | 0.8+ | 1.0+ | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2005 05 08 | 691 | 0.2− | 0.1+ | 2006 10 20 | 704 | 1.1+ | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 2005 06 01 | 691 | 0.1− | 0.0 | 2006 10 20 | 704 | 1.1− | 0.9+ | 2006 11 13 | G96 | 0.2− | 0.4− |
| 2005 06 01 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2005 06 01 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2005 06 05 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.2− | 1.1− |
| 2005 06 05 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.1− | 0.1+ |
| 2005 06 05 | 691 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2006 09 17 | 703 | 1.2− | 0.4+ | 2006 10 21 | 703 | 0.4− | 0.4− | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2006 09 17 | 703 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.1− |
| 2006 09 17 | 703 | 1.3− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.2− | 2006 11 18 | 704 | 1.3+ | 0.6+ |
| 2006 09 17 | 703 | 0.3− | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.2+ |
| 2006 09 28 | 703 | 0.8− | 0.4− | 2006 10 29 | 704 | 1.1+ | 0.9− | 2006 11 21 | 704 | 0.3+ | 0.2+ |
| 2006 09 28 | 703 | 0.0 | 0.1+ | 2006 10 29 | 704 | (2.0+ | 0.9−) | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2006 09 28 | 703 | 0.2+ | 0.0 | 2006 10 29 | 704 | 0.4+ | 0.6− | 2006 11 21 | 704 | 0.1− | 0.0 |
| 2006 09 28 | 703 | 0.1+ | 0.4+ | 2006 10 29 | 704 | 0.6+ | 0.3+ | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2006 10 17 | 703 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 21 | 704 | (0.0 | 1.6+) |
| 2006 10 17 | 703 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ | | | | |

**2006 UL$_{54}$ = 2006 UZ$_{292}$ = 1998 RB$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.48388 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.12520835 | $\omega$ | 42.92629 | | +0.94047687 | +0.32836775 | |
| $a$ | 3.9571318 | $\Omega$ | 297.71078 | | −0.33243183 | +0.83522498 | |
| $e$ | 0.3249525 | $i$ | 5.68017 | | −0.07065638 | +0.44110526 | |
| $P$ | 7.87 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.5+ | 1.0− | 2006 09 28 | 703 | 0.5− | 0.6− | 2006 10 19 | 703 | 1.2+ | 0.4+ |
| 1998 09 25 | 699 | 1.1− | 1.1+ | 2006 09 28 | 703 | 0.2− | 0.7− | 2006 10 19 | 644 | 0.0 | 0.2+ |
| 1998 09 25 | 699 | 0.3− | 1.0+ | 2006 09 28 | 703 | 0.0 | 0.6− | 2006 10 19 | 703 | 0.1+ | 0.3− |
| 1998 10 18 | 699 | 0.8+ | 0.4+ | 2006 10 17 | 703 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 1998 10 18 | 699 | 0.8+ | 0.6− | 2006 10 17 | 703 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1− | 0.3+ |
| 1998 10 18 | 699 | 0.7− | 0.7− | 2006 10 17 | 703 | 0.7+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 2006 09 20 | 699 | 0.7+ | 0.3− | 2006 10 17 | 703 | 0.6− | 0.5+ | 2006 10 19 | 644 | 0.4− | 0.5+ |
| 2006 09 20 | 699 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 10 31 | 703 | 0.8− | 0.1+ |
| 2006 09 20 | 699 | 0.3+ | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 10 31 | 703 | 0.0 | 0.4− |
| 2006 09 20 | 699 | 0.1− | 0.5+ | 2006 10 19 | G96 | 0.2+ | 0.1+ | 2006 10 31 | 703 | 0.0 | 0.0 |
| 2006 09 28 | 703 | 0.3− | 0.7− | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 10 31 | 703 | 0.3− | 0.4+ |

**2006 UQ$_{54}$ = 2001 WP$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.25078 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17732840 | $\omega$ | 100.24770 | | +0.95866411 | +0.24422439 | |
| $a$ | 3.1377416 | $\Omega$ | 245.73996 | | −0.28004986 | +0.90064853 | |
| $e$ | 0.1031470 | $i$ | 9.21549 | | +0.05035076 | +0.35942548 | |
| $P$ | 5.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3− | 0.4+ | 2006 10 17 | 703 | 0.2+ | 0.7− | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2001 11 20 | 704 | 0.4− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 10 31 | 703 | 1.1− | 0.3+ |
| 2001 11 20 | 704 | 0.2+ | 0.2− | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 10 31 | 703 | (2.5+ | 2.1−) |
| 2001 11 20 | 704 | 0.0 | 0.4− | 2006 10 19 | G96 | 0.0 | 0.0 | 2006 10 31 | 703 | 0.7+ | 1.2+ |
| 2001 11 21 | 704 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.1+ | 2006 10 31 | 703 | 0.1+ | 0.6− |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.7+ | 0.6+ | 2006 10 19 | 644 | 0.2+ | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2006 10 17 | 703 | 0.9− | 0.6− | 2006 10 19 | 644 | 0.5− | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.2+ |
| 2006 10 17 | 703 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2006 10 17 | 703 | 1.2− | 0.3+ | 2006 10 20 | 644 | 0.4+ | 0.4+ | | | | |

**2006 UH$_{55}$ = 1997 RU$_{5}$ = 2004 FF$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.81560 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23123475 | $\omega$ | 68.68343 | | +0.79862604 | −0.60128245 | |
| $a$ | 2.6288592 | $\Omega$ | 328.26211 | | +0.53255506 | +0.72588204 | |
| $e$ | 0.1167760 | $i$ | 2.79053 | | +0.28032402 | +0.33399803 | |
| $P$ | 4.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.1− | 0.5− | 2004 04 23 | 691 | 0.2− | 0.5+ | 2006 11 15 | 704 | (0.4+ | 1.6+) |
| 1995 02 02 | 691 | 0.7+ | 0.2− | 2004 04 23 | 691 | 0.1− | 0.8+ | 2006 11 15 | 704 | 0.8+ | 1.4+ |
| 1995 02 02 | 691 | 0.6+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 1997 09 02 | 367 | 0.5+ | 0.7− | 2006 10 04 | G96 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.8− | 0.2+ |
| 1997 09 02 | 367 | 0.4− | 0.7− | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.6− | 0.2+ |
| 1997 09 04 | 402 | 0.1+ | 0.4− | 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.9− | 0.1+ |
| 1997 09 04 | 402 | 0.3− | 0.6− | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.6+ |
| 1997 09 04 | 402 | 0.1+ | 0.5− | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.7− | 0.6+ |
| 1997 09 09 | 402 | 0.3+ | 0.5− | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.3− | 0.7+ |
| 1997 09 09 | 402 | 0.2− | 0.4+ | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 16 | 704 | 0.7− | 0.0 |
| 1998 12 28 | 691 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.5+ |
| 1998 12 28 | 691 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 16 | 704 | 1.2− | 0.9+ |
| 1998 12 28 | 691 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.4− | 0.6− | 2006 11 17 | 704 | 0.1− | 0.9+ |
| 1999 01 10 | 691 | 0.5− | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.2− | 0.3− |
| 1999 01 10 | 691 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 1999 01 10 | 691 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.7+ | 0.2+ | 2006 11 17 | 704 | 0.7+ | 0.9+ |
| 2001 06 28 | 644 | 0.5+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.0 | 2006 11 17 | 704 | 1.4+ | 0.4+ |
| 2001 06 28 | 644 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.9+ | 0.2+ |
| 2001 06 28 | 644 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2004 03 27 | 704 | 0.1− | 0.9+ | 2006 11 11 | 703 | 0.4+ | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2004 03 27 | 704 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2004 03 27 | 704 | 0.5+ | 0.7+ | 2006 11 14 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.8+ |
| 2004 03 27 | 704 | 0.9+ | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.8− | 2006 11 22 | 704 | 0.4− | 0.6+ |
| 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.6+ | 0.6+ |
| 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.3+ | 0.3+ | | | | |
| 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 704 | 0.5+ | 1.1+ | | | | |

**2006 UJ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.41576 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21472843 | $\omega$ | 27.47186 | | +0.43597837 | −0.88265105 | |
| $a$ | 2.7619110 | $\Omega$ | 37.43959 | | +0.76357249 | +0.25949881 | |
| $e$ | 0.2454681 | $i$ | 16.79331 | | +0.47631913 | +0.39190240 | |
| $P$ | 4.59 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2003 02 01 | 644 | 0.3− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.2− |
| 2003 02 01 | 644 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.5+ | 0.6− | 2006 11 11 | 703 | 0.0 | 0.0 |
| 2003 03 09 | 644 | 0.0 | 0.0 | 2006 10 19 | 703 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.2− |
| 2003 03 09 | 644 | 0.4+ | 0.2− | 2006 10 27 | 691 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.7− |
| 2003 03 09 | 644 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 703 | (1.6+ | 4.2+) |
| 2006 08 28 | 703 | (2.2− | 3.9−) | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.2− | 0.0 |
| 2006 08 28 | 703 | (2.8− | 1.4−) | 2006 10 29 | 400 | 0.2− | 0.7− | 2006 11 14 | 703 | 0.2− | 0.0 |
| 2006 08 28 | 703 | 1.0− | 0.7+ | 2006 10 29 | 400 | 0.2− | 0.6− | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 2006 08 28 | 703 | 0.5+ | 0.3+ | 2006 10 30 | 400 | 0.6+ | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 30 | 400 | 0.9+ | 0.5− | 2006 11 16 | 704 | 0.3− | 0.1− |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.1− |
| 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 22 | 703 | 0.1− | 0.1− |
| 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 22 | 703 | 0.1+ | 0.1+ |
| 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.2− | | | | |
| 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | | | | |

**2006 UL$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.79087 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29527121 | $\omega$ | 91.46839 | | +0.77636912 | +0.62821374 | |
| $a$ | 2.2335138 | $\Omega$ | 229.61637 | | −0.60161347 | +0.71451889 | |
| $e$ | 0.2022635 | $i$ | 3.83716 | | −0.18791544 | +0.30791274 | |
| $P$ | 3.34 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 17 | 691 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1+ |
| 1996 11 17 | 691 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 1996 11 17 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2002 05 18 | 644 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2002 05 18 | 644 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.2+ |
| 2002 05 18 | 644 | 0.3+ | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2002 06 12 | 291 | 0.6+ | 0.7+ | 2006 11 11 | G96 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2002 06 12 | 291 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2002 06 12 | 291 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.1+ |
| 2005 03 13 | G96 | 0.4+ | 1.0+ | 2006 11 12 | G96 | 0.2+ | 0.5− | 2006 11 22 | G96 | 0.1+ | 0.2+ |
| 2005 03 13 | G96 | 0.4+ | 0.9+ | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.5+ |
| 2005 03 13 | G96 | 0.3− | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2005 03 13 | G96 | 0.6+ | 0.7+ | 2006 11 12 | G96 | 0.1+ | 0.0 | 2006 11 27 | 703 | 0.2− | 0.1+ |
| 2006 10 17 | 691 | 0.3+ | 0.3+ | 2006 11 21 | G96 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.1− | 0.9+ |
| 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.2− | 2006 11 27 | 703 | 0.1− | 0.3+ |
| 2006 10 17 | 691 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.4− | 0.9− |
| 2006 10 20 | 691 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1+ | | | | |

**2006 UN$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.46105 | | | (2000.0) | | |
| $n$ | 0.23311474 | $\omega$ | 296.72671 | | +0.80911481 | +0.58233196 |
| $a$ | 2.6147061 | $\Omega$ | 27.87077 | | −0.46117378 | +0.71242366 |
| $e$ | 0.2644180 | $i$ | 9.71479 | | −0.36421419 | +0.39158908 |
| $P$ | 4.23 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 1.0− | 0.0 | 2006 10 17 | 104 | 0.7− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2005 04 02 | G96 | 0.6− | 0.3− | 2006 10 17 | 104 | 0.1− | 0.5− | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2005 04 02 | G96 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 04 02 | G96 | 0.6+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.2− |
| 2005 04 17 | 691 | 0.3+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2005 04 17 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2005 04 17 | 691 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2005 05 14 | G96 | 0.7− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.6+ | 0.2− |
| 2005 05 14 | G96 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2005 05 14 | G96 | 0.4− | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.7+ | 0.2− |
| 2005 05 14 | G96 | 0.7− | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 26 | 104 | 0.5− | 0.4+ | 2006 11 22 | 691 | 0.3+ | 0.2− |
| 2006 09 25 | G96 | 0.3− | 0.5− | 2006 10 26 | 104 | 0.5− | 1.1+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2006 09 25 | G96 | 0.3− | 0.3+ | 2006 10 26 | 104 | 0.2+ | 0.6+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2006 09 25 | G96 | 0.1+ | 0.6− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2006 10 16 | 104 | 1.5− | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.4− | 0.1− |
| 2006 10 16 | 104 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.6− | 2006 11 23 | 691 | 0.4− | 0.0 |
| 2006 10 16 | 104 | (0.9− | 3.6−) | 2006 10 31 | 691 | 0.2+ | 0.0 | | | | |
| 2006 10 17 | 104 | 0.4− | 0.8+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | | | | |

**2006 UW$_{55}$ = 1996 VK$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 146.88915 | | | (2000.0) | | |
| $n$ | 0.18944572 | $\omega$ | 308.61633 | | −0.88491826 | +0.44222632 |
| $a$ | 3.0024758 | $\Omega$ | 258.06808 | | −0.36725976 | −0.85551616 |
| $e$ | 0.0366570 | $i$ | 8.58999 | | −0.28642617 | −0.26931019 |
| $P$ | 5.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 04 | 691 | 0.2+ | 0.5+ | 1996 11 11 | 691 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1996 11 04 | 691 | 0.4− | 0.4+ | 1996 11 11 | 691 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.1− |
| 1996 11 04 | 691 | 0.0 | 0.8− | 1996 11 11 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.4+ | 0.1− |
| 1996 11 10 | 691 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.6+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 1996 11 10 | 691 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 1996 11 10 | 691 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.4− | 0.5− | 2006 10 22 | 691 | 0.3− | 0.2+ |

**2006 UP$_{56}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 79.20937 | | | (2000.0) | | |
| $n$ | 0.23027157 | $\omega$ | 11.71248 | | −0.18306231 | +0.97481080 |
| $a$ | 2.6361847 | $\Omega$ | 247.84349 | | −0.91272195 | −0.21667555 |
| $e$ | 0.1600847 | $i$ | 7.90687 | | −0.36527637 | +0.05287344 |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 03 | 644 | 0.2+ | 0.4+ | 2005 05 14 | 644 | 0.3+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.2− |
| 2002 10 03 | 644 | 0.4− | 0.0 | 2005 05 14 | 644 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2002 10 03 | 644 | 0.0 | 0.2+ | 2005 05 14 | 644 | 0.6+ | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.1− |
| 2005 05 04 | E12 | 0.7− | 0.0 | 2006 09 06 | 644 | 0.5+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.2+ |
| 2005 05 04 | E12 | 0.4− | 0.4− | 2006 09 06 | 644 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.3+ | 0.0 |
| 2005 05 04 | E12 | 0.4+ | 0.5+ | 2006 09 06 | 644 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.3+ |
| 2005 05 04 | E12 | 0.8− | 0.1− | 2006 09 27 | 703 | 0.3+ | 0.9− | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 2005 05 14 | 644 | 0.3+ | 0.4− | 2006 09 27 | 703 | 0.1− | 0.6+ | 2006 10 22 | 691 | 0.2+ | 0.3− |
| 2005 05 14 | 644 | 0.4+ | 0.5+ | 2006 09 27 | 703 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2005 05 14 | 644 | 0.3− | 0.2+ | 2006 09 27 | 703 | 0.9− | 0.3− | | | | |

**2006 UK$_{57}$ = 1995 OY$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 83.69304 | | | (2000.0) | | |
| $n$ | 0.27630310 | $\omega$ | 4.73668 | | −0.05123162 | +0.99261770 |
| $a$ | 2.3345986 | $\Omega$ | 262.35565 | | −0.91988207 | −0.08976076 |
| $e$ | 0.0927233 | $i$ | 6.36832 | | −0.38883455 | +0.08156655 |
| $P$ | 3.57 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 04 | 691 | 0.2+ | 0.3+ | 2003 12 14 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.3+ | 0.2+ |
| 1995 07 04 | 691 | 0.1− | 0.0 | 2003 12 14 | 291 | 0.0 | 0.2− | 2006 10 18 | 291 | 0.2− | 0.0 |
| 1995 07 04 | 691 | 0.2+ | 0.3− | 2003 12 14 | 691 | 0.1− | 0.3+ | 2006 10 18 | 291 | 0.2+ | 0.5+ |
| 1995 07 22 | 691 | 0.0 | 0.3+ | 2003 12 14 | 691 | 0.3− | 0.1+ | 2006 10 18 | 291 | 0.4+ | 0.0 |
| 1995 07 22 | 691 | 0.1+ | 0.0 | 2006 09 27 | 703 | 0.4+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.3− |
| 1995 07 22 | 691 | 0.3+ | 0.2+ | 2006 09 27 | 703 | 0.6+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.0 |
| 1995 07 27 | 691 | 0.8− | 0.2− | 2006 09 27 | 703 | 0.3+ | 1.0+ | 2006 10 19 | 691 | 0.1− | 0.1− |
| 1995 07 27 | 691 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.5+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2003 12 14 | 291 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.2− | 0.3− |
| 2003 12 14 | 291 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.7− | 2006 10 21 | 691 | 0.3− | 0.0 |

**2006 UM$_{57}$ = 2004 KP$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 128.05778 | | | (2000.0) | | |
| $n$ | 0.17242597 | $\omega$ | 204.08086 | | −0.28908934 | +0.95571275 |
| $a$ | 3.1969384 | $\Omega$ | 49.16483 | | −0.86605498 | −0.23655743 |
| $e$ | 0.1053574 | $i$ | 4.17943 | | −0.40789231 | −0.17508206 |
| $P$ | 5.72 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 691 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.4− | 0.2+ | 2006 10 29 | G96 | 0.2+ | 0.3− |
| 2004 04 25 | 691 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.3+ | 0.6+ | 2006 10 29 | G96 | 0.2+ | 0.7− |
| 2004 04 25 | 691 | 0.2+ | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.4+ |
| 2004 05 16 | 691 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.7− | 2006 10 29 | G96 | 0.1+ | 0.5− |
| 2004 05 16 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.2+ | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2004 05 16 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.3− | 0.1+ |
| 2004 05 19 | 691 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.2− |
| 2004 05 19 | 691 | 0.2− | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.4− |
| 2004 05 19 | 691 | 0.1+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.4+ | 2006 11 22 | G96 | 0.3− | 0.5− |
| 2005 08 05 | 644 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2005 08 05 | 644 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2005 08 05 | 644 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.6+ |
| 2006 09 26 | G96 | 0.7− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.5− | 0.6+ |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2− | | | | |
| 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 29 | G96 | 0.1+ | 0.3− | | | | |

**2006 UW$_{57}$ = 1995 SN$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.39876 | | | (2000.0) | | |
| $n$ | 0.27842288 | $\omega$ | 292.52286 | | −0.02552706 | −0.99949058 |
| $a$ | 2.3227338 | $\Omega$ | 158.91288 | | +0.93563549 | −0.03063546 |
| $e$ | 0.1319514 | $i$ | 3.05197 | | +0.35204347 | +0.00894653 |
| $P$ | 3.54 | $H$ | 17.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.3− | 0.2+ | 2004 03 27 | 691 | 0.4− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 1995 09 21 | 691 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 10 27 | 691 | 0.4+ | 0.2− |
| 1995 09 21 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 1995 09 26 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.1− | 0.6− | 2006 11 08 | 644 | 0.0 | 0.0 |
| 1995 09 26 | 691 | 0.2− | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 1995 09 26 | 691 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 1999 11 02 | 691 | 0.4+ | 0.1− | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.2+ |
| 1999 11 02 | 691 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 1999 11 02 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 2001 05 16 | 691 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.3+ | 0.1+ |
| 2001 05 16 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 16 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 10 | 644 | 0.1− | 0.2− | | |
| 2004 03 27 | 691 | 0.1− | 0.7+ | 2006 10 23 | 691 | 0.5− | 0.1− | | | | | | |
| 2004 03 27 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.3− | | | | | | |

**2006 UG$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.39934 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28549482 | $\omega$ | 146.57538 | | −0.66343536 | | −0.74817454 |
| $a$ | 2.2842163 | $\Omega$ | 344.97982 | | +0.67829751 | | −0.59607371 |
| $e$ | 0.1057296 | $i$ | 2.07893 | | +0.31585757 | | −0.29142923 |
| $P$ | 3.45 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.8+ | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.5+ |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.9+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2003 12 19 | 691 | 0.2+ | 0.4− | 2006 10 03 | G96 | 0.8+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2004 01 15 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 01 15 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.7− | 0.3+ |
| 2004 01 15 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2004 02 16 | 691 | 0.2+ | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.6− | 2006 11 15 | G96 | 0.1+ | 0.6− |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.5+ | 0.4− | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2006 10 03 | G96 | 0.2+ | 0.1− | 2006 10 20 | G96 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.2− |

**2006 UP$_{59}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 264.29470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17526403 | $\omega$ | 132.26036 | | −0.63484664 | | −0.77258858 |
| $a$ | 3.1623324 | $\Omega$ | 357.10629 | | +0.64798460 | | −0.52621855 |
| $e$ | 0.0559327 | $i$ | 9.98591 | | +0.42081552 | | −0.35524770 |
| $P$ | 5.62 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 19 | 695 | 0.2+ | 0.5+ | 2005 07 03 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.5+ | 1.1− |
| 2000 09 19 | 695 | 0.1+ | 0.3+ | 2005 09 01 | 644 | 0.1+ | 0.7+ | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2000 10 30 | 691 | 0.3− | 0.1+ | 2005 09 01 | 644 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.1− |
| 2000 10 30 | 691 | 0.2− | 0.2− | 2005 09 01 | 644 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2000 10 30 | 691 | 0.5− | 0.1+ | 2006 09 30 | 691 | 0.1+ | 0.8+ | 2006 10 20 | G96 | 0.2+ | 0.1+ |
| 2003 04 07 | 691 | 0.2+ | 0.8+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.3+ | 0.3− |
| 2003 04 07 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 27 | 703 | 1.1+ | 1.4+ |
| 2003 04 07 | 691 | 0.6+ | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.5− | 0.4− |
| 2005 07 03 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.1+ | 2006 10 27 | 703 | 1.2− | 0.3− |
| 2005 07 03 | 644 | 0.3− | 0.4− | 2006 10 19 | 703 | 0.4− | 0.1− | | | | |

**2006 UX$_{59}$ = 2001 YE$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.68814 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18459072 | $\omega$ | 114.45885 | | +0.74973077 | | −0.65727375 |
| $a$ | 3.0548940 | $\Omega$ | 286.73054 | | +0.57440509 | | +0.70399517 |
| $e$ | 0.1956679 | $i$ | 4.59849 | | +0.32857658 | | +0.26903908 |
| $P$ | 5.34 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.8− | 1.0+ | 2006 10 19 | 703 | 0.6− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2+ |
| 2001 12 18 | 704 | 0.7+ | 0.9+ | 2006 10 19 | 703 | 0.5− | 0.8− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 12 18 | 704 | 0.7− | 0.4− | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 10 27 | 703 | 1.0+ | 0.2+ |
| 2001 12 18 | 704 | 0.6− | 0.3− | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 10 27 | 703 | (0.1+ | 1.7−) |
| 2001 12 18 | 704 | 0.0 | 0.5− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 10 27 | 703 | (1.8+ | 0.1−) |
| 2001 12 19 | 704 | 0.3+ | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.7− | 0.2− |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.5+ | 0.2− | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.1− | 0.3+ |
| 2001 12 19 | 704 | 0.0 | 0.7− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 25 | G96 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.5− | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.2+ |
| 2006 10 19 | 703 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.1− | 0.0 | | | | |

**2006 UA$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.00469 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17888121 | $\omega$ | 146.05790 | | +0.87130579 | | −0.46405130 |
| $a$ | 3.1195569 | $\Omega$ | 242.37181 | | +0.40066551 | | +0.86051672 |
| $e$ | 0.1309476 | $i$ | 10.38009 | | +0.28336085 | | +0.21016032 |
| $P$ | 5.51 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | 644 | 0.3− | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 1.1+ | 0.2− |
| 2005 06 27 | 644 | 0.2+ | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.8+ | 0.1− |
| 2005 06 27 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.0+ | 0.2− |
| 2006 10 19 | 703 | 0.3− | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2006 10 19 | 703 | 0.2− | 0.1+ | 2006 10 27 | 703 | 1.4− | 0.1− | 2006 11 19 | 704 | 0.8− | 0.1+ |
| 2006 10 19 | 703 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4+ | 1.0+ |
| 2006 10 19 | A50 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 0.5− |
| 2006 10 19 | A50 | 0.1+ | 0.3− | 2006 10 27 | 703 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.5− | 0.7+ |
| 2006 10 20 | G96 | 0.4+ | 0.3− | 2006 10 29 | 704 | 0.5− | 0.8+ | 2006 11 22 | 704 | 0.4+ | 0.2− |
| 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 10 29 | 704 | 0.5− | 1.0+ | 2006 11 22 | 704 | 0.9− | 0.3− |
| 2006 10 20 | G96 | 0.4+ | 0.3− | 2006 10 29 | 704 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2006 10 20 | G96 | 0.3+ | 0.4− | 2006 11 14 | 703 | 0.9− | 0.7− | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2006 10 20 | G96 | 0.3+ | 1.1− | 2006 11 14 | 703 | (0.9+ | 2.0−) | 2006 11 25 | G96 | 0.3+ | 0.2− |
| 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 1.4− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.0 | | | | |
| 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | 1.0+ | 1.0+ | | | | |

**2006 UX$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.37645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24602620 | $\omega$ | 102.13347 | | +0.98317908 | | −0.17367031 |
| $a$ | 2.5224069 | $\Omega$ | 267.88739 | | +0.13769572 | | +0.90820497 |
| $e$ | 0.0956322 | $i$ | 3.24382 | | +0.11999493 | | +0.38079174 |
| $P$ | 4.01 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 10 20 | 701 | 0.6+ | 0.3− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2006 10 20 | 701 | 0.2+ | 0.6− | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2002 11 24 | 644 | 0.3+ | 0.1− | 2006 10 20 | 701 | 0.3− | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 2002 11 24 | 644 | 0.2+ | 0.5+ | 2006 10 20 | 291 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 10 20 | 291 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.7+ | 0.5+ |
| 2004 03 27 | 691 | 0.0 | 0.0 | 2006 10 20 | 291 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.8− |
| 2004 03 27 | 691 | 0.4+ | 0.2− | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2004 03 27 | 691 | 0.2− | 0.5+ | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 1.1+ | 0.5+ |
| 2006 10 19 | 703 | (1.7− | 2.5+) | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | (1.6+ | 0.8−) |
| 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.1− | 1.1− | 2006 11 19 | 704 | 0.7+ | 1.2+ |
| 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2006 10 19 | 703 | 0.1− | 1.4− | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 22 | 704 | 0.7+ | 0.0 |
| 2006 10 19 | G96 | 0.0 | 0.6− | 2006 11 13 | 691 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.6+ | 0.6− |
| 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.8− | 0.2+ |
| 2006 10 19 | 703 | 0.5− | 0.5− | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 1.3− |
| 2006 10 19 | 703 | 0.2+ | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.7− | 0.4+ |
| 2006 10 20 | 701 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2+ | | | | |

**2006 UY$_{60}$ = 2002 TK$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.16876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26320591 | $\omega$ | 43.37828 | | +0.50779147 | | −0.86115422 |
| $a$ | 2.4114169 | $\Omega$ | 16.15104 | | +0.76530133 | | +0.43830254 |
| $e$ | 0.1364468 | $i$ | 4.88555 | | +0.39555240 | | +0.25749622 |
| $P$ | 3.74 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.6− | 2006 10 23 | 691 | 0.1+ | 0.3+ |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ | | |
| 2002 10 31 | 645 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.6− | | |
| 2002 10 31 | 645 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.4− | | |
| 2006 10 19 | G96 | 0.1− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2006 10 19 | G96 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.4− | | |

**2006 UU$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.64089 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26182818 | $\omega$ | 83.24959 | | +0.82881596 | +0.53633338 | |
| $a$ | 2.4198686 | $\Omega$ | 244.20245 | | −0.55728514 | +0.76584676 | |
| $e$ | 0.2977948 | $i$ | 10.19813 | | −0.04997382 | +0.35471854 | |
| $P$ | 3.76 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 06 23 | 644 | 0.4− | 0.1+ | 2006 10 17 | A50 | 0.0 | 0.7− | 2006 10 21 | 704 | 0.9− | 0.4+ | | |
| 2002 06 23 | 644 | 0.2− | 0.3+ | 2006 10 17 | A50 | 0.0 | 0.4− | 2006 10 21 | 704 | 0.8+ | 0.0 | | |
| 2002 06 23 | 644 | 0.2− | 0.3+ | 2006 10 18 | A50 | 0.3+ | 0.6+ | 2006 10 21 | 704 | 0.6− | 0.8+ | | |
| 2002 07 09 | 644 | 0.3+ | 0.1− | 2006 10 18 | A50 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 0.4− | 0.4− | | |
| 2002 07 09 | 644 | 0.3+ | 0.1− | 2006 10 18 | A50 | 0.2+ | 0.5+ | 2006 10 27 | 703 | 0.6− | 0.4− | | |
| 2002 07 09 | 644 | 0.1+ | 0.2− | 2006 10 18 | A50 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.2+ | 0.3− | | |
| 2006 08 12 | 644 | 0.1− | 0.2− | 2006 10 18 | A50 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.6− | 0.8− | | |
| 2006 08 12 | 644 | 0.1+ | 0.2− | 2006 10 18 | A50 | 0.3+ | 0.6+ | 2006 11 14 | 703 | 0.1− | 0.6+ | | |
| 2006 08 12 | 644 | 0.1− | 0.0 | 2006 10 18 | A50 | 0.4+ | 0.5+ | 2006 11 14 | 703 | 0.5+ | 0.9+ | | |
| 2006 10 17 | A50 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.3− | 0.8− | 2006 11 14 | 703 | 0.9+ | 0.9+ | | |
| 2006 10 17 | A50 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.3+ | 0.5− | 2006 11 14 | 703 | 0.6− | 1.4+ | | |
| 2006 10 17 | A50 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 11 25 | G96 | 0.0 | 0.3− | | |
| 2006 10 17 | A50 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.1− | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.4− | | |
| 2006 10 17 | A50 | 0.0 | 0.3− | 2006 10 21 | 704 | (0.6− | 1.7−) | 2006 11 25 | G96 | 0.3− | 0.3− | | |
| 2006 10 17 | A50 | 0.1− | 0.5− | 2006 10 21 | 704 | 0.4+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− | | |

**2006 UV$_{61}$ = 2003 YP$_{104}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.35407 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27639280 | $\omega$ | 77.14908 | | +0.98315559 | +0.14702052 | |
| $a$ | 2.3340934 | $\Omega$ | 274.32022 | | −0.17872893 | +0.89760631 | |
| $e$ | 0.1444430 | $i$ | 6.25141 | | +0.03822377 | +0.41555730 | |
| $P$ | 3.57 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 691 | 0.1+ | 0.1+ | 2006 10 17 | A50 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.2+ | | |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 10 17 | A50 | 0.4+ | 0.2− | 2006 10 19 | 703 | 0.7+ | 0.4− | | |
| 2003 12 21 | 691 | 0.0 | 0.1− | 2006 10 17 | A50 | 0.5− | 0.7− | 2006 10 19 | 703 | 0.5+ | 0.1+ | | |
| 2003 12 23 | 704 | 0.2+ | 0.3+ | 2006 10 17 | A50 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.1+ | 0.5+ | | |
| 2003 12 23 | 704 | 0.5− | 0.3+ | 2006 10 17 | A50 | 0.2− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.3− | | |
| 2003 12 23 | 704 | 0.1− | 0.7− | 2006 10 18 | A50 | 0.6− | 1.2+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | | |
| 2006 09 17 | 703 | 0.3− | 0.7− | 2006 10 18 | A50 | 0.7− | 1.0+ | 2006 10 22 | 644 | 0.3+ | 0.1+ | | |
| 2006 09 17 | 703 | 0.2+ | 0.1+ | 2006 10 18 | A50 | 0.1− | 0.7+ | 2006 11 14 | 703 | 0.7+ | 0.2+ | | |
| 2006 09 17 | 703 | 0.7+ | 0.0 | 2006 10 18 | A50 | 0.6− | 0.9+ | 2006 11 14 | 703 | 1.4− | 0.1− | | |
| 2006 09 17 | 703 | 0.6+ | 0.5− | 2006 10 18 | A50 | 0.4− | 0.4+ | 2006 11 14 | 703 | 0.1− | 0.8− | | |
| 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 10 18 | A50 | 1.2− | 0.1− | 2006 11 14 | 703 | 0.2− | 0.5− | | |
| 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 18 | A50 | 1.2− | 0.8+ | 2006 11 29 | 704 | 0.0 | 0.6+ | | |
| 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.4+ | 0.6+ | | |
| 2006 10 17 | A50 | 0.2+ | 0.5− | 2006 10 19 | 703 | 0.5+ | 0.4− | 2006 11 29 | 704 | 0.3− | 1.2− | | |
| 2006 10 17 | A50 | 0.5+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.6+ | 0.4− | | |
| 2006 10 17 | A50 | 0.5+ | 0.4− | 2006 10 19 | 703 | 0.7− | 0.2− | | | | | | |

**2006 UZ$_{61}$ = 2005 GN$_{148}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.34599 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28315941 | $\omega$ | 46.93188 | | +0.14083142 | +0.98599191 | |
| $a$ | 2.2967587 | $\Omega$ | 231.38094 | | −0.93833520 | +0.10414449 | |
| $e$ | 0.1068250 | $i$ | 6.56790 | | −0.31574288 | +0.13028386 | |
| $P$ | 3.48 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 691 | 0.2+ | 0.0 | 2005 06 14 | G96 | 0.2− | 0.5+ | 2006 10 27 | 408 | 0.1+ | 0.5+ | | |
| 2005 04 06 | 691 | 0.4− | 0.0 | 2005 06 14 | G96 | 0.4− | 0.4+ | 2006 10 27 | 408 | 0.9+ | 0.6+ | | |
| 2005 04 06 | 691 | 0.7+ | 0.1− | 2006 09 28 | 691 | (2.0+ | 0.3−) | 2006 10 30 | 408 | (0.2− | 1.5−) | | |
| 2005 04 11 | 699 | 0.0 | 0.8− | 2006 09 28 | 691 | 0.2+ | 0.1− | 2006 10 30 | 408 | 0.2− | 1.2− | | |
| 2005 04 11 | 699 | 0.4− | 0.5− | 2006 09 28 | 691 | 0.5+ | 0.2+ | 2006 10 31 | 408 | 1.2+ | 1.2+ | | |
| 2005 04 11 | 699 | 0.3− | 0.1+ | 2006 10 17 | 691 | 0.3− | 0.4− | 2006 10 31 | 408 | 1.4+ | 1.2+ | | |
| 2005 04 11 | 699 | 1.2− | 0.6+ | 2006 10 17 | 691 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.2− | | |
| 2005 04 15 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.0 | | |
| 2005 04 15 | 691 | 0.2+ | 0.0 | 2006 10 18 | 408 | 0.5− | 0.7− | 2006 11 13 | 691 | 0.1− | 0.4+ | | |
| 2005 04 15 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 408 | 1.0− | 0.1− | 2006 11 27 | G96 | 0.6− | 0.1+ | | |
| 2005 05 01 | 644 | 0.2− | 0.3+ | 2006 10 19 | 408 | 0.4+ | 0.9− | 2006 11 27 | G96 | 0.5− | 0.2− | | |
| 2005 05 01 | 644 | 0.2+ | 0.0 | 2006 10 19 | 408 | 1.2+ | 0.8− | 2006 11 27 | G96 | 0.4− | 0.1+ | | |
| 2005 05 01 | 644 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.8− | 0.1+ | | |
| 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2+ | | | | | | |
| 2005 06 14 | G96 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | | | | | | |

**2006 UB$_{62}$ = 2001 QU$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.43276 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21057960 | $\omega$ | 44.76194 | | +0.99417692 | +0.01250498 | |
| $a$ | 2.7980696 | $\Omega$ | 314.19468 | | −0.06356752 | +0.87007824 | |
| $e$ | 0.2920444 | $i$ | 8.58537 | | +0.08701395 | +0.49275500 | |
| $P$ | 4.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | 1.3+ | 0.4− | 2006 10 19 | H82 | 0.3+ | 0.0 | 2006 10 22 | H82 | 0.2− | 0.2+ | | |
| 2001 08 16 | 704 | 0.3+ | 0.4− | 2006 10 19 | H82 | 0.1− | 0.3− | 2006 10 22 | H82 | 0.6− | 0.0 | | |
| 2001 08 16 | 704 | 0.0 | 0.9+ | 2006 10 19 | H82 | 0.1− | 0.6− | 2006 10 22 | 644 | 0.0 | 0.2+ | | |
| 2001 08 16 | 704 | 0.2− | 0.1− | 2006 10 19 | H82 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.0 | 0.3+ | | |
| 2001 08 19 | 704 | 0.1+ | 0.6− | 2006 10 19 | 703 | 0.2+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.4+ | | |
| 2001 08 19 | 704 | 0.7− | 0.4+ | 2006 10 19 | H82 | 0.3+ | 0.8− | 2006 10 23 | 644 | 0.0 | 0.3+ | | |
| 2001 08 19 | 704 | 0.1− | 0.6+ | 2006 10 19 | 703 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.4+ | | |
| 2001 08 19 | 704 | 0.7− | 0.6− | 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 10 23 | 644 | 0.1− | 0.3+ | | |
| 2006 09 17 | 703 | 0.2− | 0.4+ | 2006 10 19 | H82 | 0.2+ | 0.9− | 2006 10 26 | H82 | 0.4+ | 0.1+ | | |
| 2006 09 17 | 703 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 10 26 | H82 | 0.1− | 0.1− | | |
| 2006 09 17 | 703 | 0.2− | 0.5− | 2006 10 19 | H82 | 0.0 | 0.4− | 2006 10 26 | H82 | 0.1− | 0.4− | | |
| 2006 09 17 | 703 | 0.3+ | 0.1− | 2006 10 21 | H82 | 0.0 | 0.2− | 2006 10 26 | H82 | 0.2− | 0.4+ | | |
| 2006 09 28 | 703 | 0.3+ | 0.3+ | 2006 10 21 | H82 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.4+ | | |
| 2006 09 28 | 703 | 0.1+ | 0.1− | 2006 10 21 | H82 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.5− | 0.1− | | |
| 2006 09 28 | 703 | 0.1− | 0.6+ | 2006 10 21 | H82 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.3− | 0.1+ | | |
| 2006 09 28 | 703 | 0.5− | 0.1+ | 2006 10 21 | 704 | (0.8− | 1.6+) | 2006 10 27 | 703 | 0.2− | 0.1+ | | |
| 2006 10 16 | H82 | 0.4− | 0.1+ | 2006 10 21 | 704 | 0.4+ | 0.9+ | 2006 10 30 | H82 | 0.0 | 0.0 | | |
| 2006 10 16 | H82 | 0.7− | 0.1− | 2006 10 21 | 704 | 0.3+ | 0.6+ | 2006 10 30 | H82 | 0.3+ | 0.2− | | |
| 2006 10 16 | H82 | 0.3− | 0.3+ | 2006 10 21 | 704 | (0.4− | 1.6+) | 2006 10 30 | H82 | 0.3+ | 0.3− | | |
| 2006 10 16 | H82 | 0.4− | 0.2+ | 2006 10 22 | H82 | 0.3− | 0.0 | | | | | | |
| 2006 10 19 | H82 | 0.1+ | 0.2− | 2006 10 22 | H82 | 0.3− | 0.0 | | | | | | |

**2006 UE$_{62}$ = 2002 XQ$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.77873 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23920061 | $\omega$ | 357.02903 | | +0.74086722 | −0.66856286 | |
| $a$ | 2.5701661 | $\Omega$ | 45.15269 | | +0.61808402 | +0.64115681 | |
| $e$ | 0.2298784 | $i$ | 5.20659 | | +0.26284578 | +0.37675144 | |
| $P$ | 4.12 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.6+ | 0.3− | 2006 10 28 | 704 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.6− | | |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 10 28 | 704 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.0 | 0.3− | | |
| 2002 12 11 | 704 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.2+ | | |
| 2002 12 14 | 704 | 0.4− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.4− | 0.1− | | |
| 2002 12 14 | 704 | 1.0− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 20 | 703 | 0.2− | 0.7− | | |
| 2002 12 14 | 704 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.1− | 0.3+ | 2006 11 20 | 703 | 0.0 | 0.7− | | |
| 2002 12 14 | 704 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.0 | 2006 11 20 | 703 | 0.3+ | 0.4− | | |
| 2002 12 14 | 704 | 0.8+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.8− | 2006 11 20 | 704 | 0.2− | 0.2+ | | |
| 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.4− | 2006 11 20 | 703 | 0.4− | 0.5− | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.2+ |
| 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.3− | 0.8+ |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2006 10 17 | G96 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2006 10 17 | G96 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2006 10 17 | G96 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.3+ | 0.1+ |
| 2006 10 21 | 926 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2006 10 21 | 926 | 0.0 | 0.6− | 2006 11 14 | 691 | 0.7+ | 0.7+ | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2006 10 21 | 926 | 0.3+ | 0.5+ | 2006 11 17 | 704 | (2.3− | 1.1+) | 2006 11 22 | 704 | 0.2+ | 0.1− |
| 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 17 | 704 | (2.0− | 0.4+) | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2006 10 27 | G96 | 0.2− | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 17 | 704 | (2.1− | 0.6−) | 2006 12 01 | 704 | (1.7+ | 2.6+) |
| 2006 10 27 | G96 | (2.4− | 1.4−) | 2006 11 18 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.4+ | 0.7− |
| 2006 10 28 | 704 | 0.9− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.8+ | 0.1− |
| 2006 10 28 | 704 | 0.7− | 0.5+ | 2006 11 18 | 691 | 0.3− | 0.0 | 2006 12 01 | 704 | 0.2+ | 0.6+ |
| 2006 10 28 | 704 | 1.2+ | 0.3+ | 2006 11 19 | 704 | 0.4− | 0.0 | | | | |

### 2006 UG$_{62}$ = 2005 QY$_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 228.59856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23336558 | $\omega$ | 139.51811 | | −0.98231696 | | +0.18047277 |
| $a$ | 2.6128321 | $\Omega$ | 50.95010 | | −0.18404013 | | −0.88189248 |
| $e$ | 0.1620542 | $i$ | 3.67883 | | −0.03438914 | | −0.43554016 |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 19 | 691 | (0.8− | 4.1−) | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2004 05 19 | 691 | (0.0 | 1.9−) | 2006 10 17 | G96 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2004 05 19 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 926 | 0.9+ | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2005 08 27 | 644 | 0.2+ | 0.3− | 2006 10 21 | 926 | 0.5− | 0.0 | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2005 08 27 | 644 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 20 | G96 | 0.1− | 0.1+ |
| 2005 08 27 | 644 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3+ | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2005 08 31 | 691 | 0.8− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 20 | G96 | 0.3+ | 0.1+ |
| 2005 08 31 | 691 | 0.7+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 2005 08 31 | 691 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 10 | 691 | 0.4− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.3+ |
| 2006 10 17 | G96 | 0.7+ | 0.5− | 2006 11 10 | 691 | 0.1− | 0.1− | | | | |

### 2006 UR$_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.98986 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17335438 | $\omega$ | 25.68560 | | +0.47992680 | | −0.87695788 |
| $a$ | 3.1855139 | $\Omega$ | 35.64872 | | +0.79739996 | | +0.42425072 |
| $e$ | 0.0972881 | $i$ | 2.43898 | | +0.36581904 | | +0.22573478 |
| $P$ | 5.69 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 2000 10 01 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 644 | 0.3+ | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2000 10 01 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2+ |
| 2000 10 01 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2000 10 01 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2000 10 01 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2000 10 02 | 645 | 0.1− | 0.0 | 2006 10 23 | 734 | 0.4+ | 0.4− | 2006 11 11 | 703 | (1.9− | 2.0+) |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 23 | 734 | 0.4+ | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.8+ |
| 2006 07 21 | G96 | 0.2+ | 0.1+ | 2006 10 23 | 734 | 0.8+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 23 | 734 | 0.3+ | 0.6− | 2006 11 11 | 703 | 0.7− | 0.5− |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 23 | 734 | 0.4− | 0.3− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2006 07 21 | G96 | 0.2− | 0.3+ | 2006 10 23 | 734 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2006 10 04 | G96 | 0.4− | 0.0 | 2006 10 24 | 734 | 0.3+ | 0.4− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 24 | 734 | 0.5+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.7− |
| 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 10 24 | 734 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 24 | 734 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 24 | 734 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 10 24 | 734 | 0.2− | 0.3− | 2006 11 27 | 691 | 0.4+ | 0.2+ |
| 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 10 20 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.5− | 0.3+ |
| 2006 10 20 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− | | | | |
| 2006 10 20 | 691 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | | | | |

### 2006 UY$_{62}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.53902 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17681959 | $\omega$ | 67.79628 | | +0.73875023 | | −0.67035050 |
| $a$ | 3.1437582 | $\Omega$ | 334.13386 | | +0.54426450 | | +0.65448039 |
| $e$ | 0.0861967 | $i$ | 9.21245 | | +0.39752265 | | +0.34969363 |
| $P$ | 5.57 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 09 | 644 | 0.7+ | 0.3− | 2006 10 17 | A50 | 0.4+ | 1.3+ | 2006 10 19 | 703 | 0.2+ | 0.5− |
| 2003 03 09 | 644 | 0.5+ | 0.3− | 2006 10 18 | A50 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.4+ | 0.2− |
| 2003 03 09 | 644 | 0.7+ | 0.5− | 2006 10 18 | A50 | 0.0 | 0.8+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2003 04 05 | 691 | 0.4− | 0.1+ | 2006 10 18 | A50 | 0.4+ | 0.8+ | 2006 10 22 | 644 | 0.1− | 0.4− |
| 2003 04 05 | 691 | 0.1+ | 0.1− | 2006 10 18 | A50 | 0.1+ | 1.1+ | 2006 10 27 | 703 | 0.2− | 0.4− |
| 2003 04 05 | 691 | 0.2− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.8− | 2006 10 27 | 703 | 0.7− | 0.9− |
| 2006 09 28 | 703 | 0.4+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.6− | 2006 10 27 | 703 | 0.0 | 0.3− |
| 2006 09 28 | 703 | 0.3+ | 0.7− | 2006 10 19 | 703 | 0.2− | 0.8− | 2006 10 27 | 703 | 1.0+ | 0.2− |
| 2006 09 28 | 703 | 1.3− | 0.4+ | 2006 10 19 | 703 | 0.3− | 1.4− | 2006 11 14 | 703 | 0.5− | 0.8+ |
| 2006 09 28 | 703 | 0.9− | 0.1+ | 2006 10 19 | 703 | 0.0 | 0.5− | 2006 11 14 | 703 | 0.1− | 0.1− |
| 2006 10 17 | A50 | 0.5+ | 1.4+ | 2006 10 19 | 703 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.9+ | 0.6− |
| 2006 10 17 | A50 | 0.3+ | 1.4+ | 2006 10 19 | 703 | 0.5− | 0.3− | 2006 11 14 | 703 | (1.8− | 0.8−) |

### 2006 UA$_{63}$ = 2002 EP$_{11}$ = 2003 MV$_{3}$ = 2004 RU$_{9}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.20858 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17455686 | $\omega$ | 327.03292 | | −0.33668691 | | +0.81582929 |
| $a$ | 3.1708676 | $\Omega$ | 279.29192 | | −0.72740295 | | −0.54242489 |
| $e$ | 0.2359575 | $i$ | 28.45226 | | −0.59793551 | | +0.20049391 |
| $P$ | 5.65 | $H$ | 14.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 17 | 691 | 0.1− | 1.2− | 2003 06 26 | 704 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2000 12 17 | 691 | 0.2− | 0.3+ | 2003 06 27 | 704 | 0.1+ | 0.4− | 2006 10 21 | G96 | 0.0 | 0.0 |
| 2000 12 17 | 691 | 0.2− | 0.3+ | 2003 06 27 | 704 | 0.1− | 0.5+ | 2006 10 22 | J95 | 0.4− | 0.6− |
| 2002 01 13 | 608 | 0.9+ | 0.1− | 2003 06 27 | 704 | 0.2+ | 0.2− | 2006 10 22 | J95 | 0.6+ | 0.0 |
| 2002 01 13 | 608 | 0.8+ | 0.3− | 2004 09 06 | 704 | 0.6+ | 0.5+ | 2006 10 22 | J95 | 0.1+ | 0.5+ |
| 2002 01 13 | 608 | 0.3+ | 1.0− | 2004 09 06 | 704 | 0.4− | 0.6+ | 2006 10 22 | G96 | 0.2− | 0.6+ |
| 2002 03 14 | 704 | 0.8+ | 0.3+ | 2004 09 06 | 704 | 0.0 | 0.7+ | 2006 10 22 | G96 | 0.1+ | 0.2+ |
| 2002 03 14 | 704 | 0.2+ | 0.1+ | 2004 09 06 | 704 | (0.9+ | 3.2+) | 2006 10 22 | G96 | 0.0 | 0.5+ |
| 2002 03 14 | 704 | 0.0 | 0.4− | 2004 09 08 | 704 | 0.0 | 0.7− | 2006 10 23 | 711 | 0.0 | 0.8+ |
| 2002 03 17 | 704 | 0.6− | 1.0+ | 2004 09 08 | 704 | 0.4+ | 0.3+ | 2006 10 23 | 711 | (1.9+ | 0.3−) |
| 2002 03 17 | 704 | 0.8+ | 0.4+ | 2004 09 08 | 704 | 0.1+ | 0.8− | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2002 03 17 | 704 | 0.2− | 0.1+ | 2004 09 08 | 704 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.2+ |
| 2002 03 17 | 704 | 1.3− | 0.8+ | 2004 09 08 | 704 | 0.3+ | 0.7+ | 2006 11 01 | G96 | 0.2− | 0.2+ |
| 2003 06 26 | 704 | 0.1+ | 0.5− | 2004 09 08 | 704 | 1.1− | 0.7+ | 2006 11 01 | G96 | 0.4+ | 0.2+ |
| 2003 06 26 | 704 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 | | | | |
| 2003 06 26 | 704 | 0.2+ | 0.0 | 2006 10 21 | G96 | 0.1− | 0.2− | | | | |

### 2006 UB$_{63}$ = 2001 FZ$_{111}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 234.21674 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.08457978 | $\omega$ | 302.30856 | | +0.06308834 | | −0.95808596 |
| $a$ | 5.1399437 | $\Omega$ | 140.89920 | | +0.99770984 | | +0.05370330 |
| $e$ | 0.0666223 | $i$ | 26.30090 | | +0.02439119 | | +0.28140230 |
| $P$ | 11.65 | $H$ | 12.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 608 | 0.3− | 0.9− | 2006 10 22 | G96 | 0.4− | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2001 03 18 | 608 | 0.0 | 1.1− | 2006 10 22 | G96 | 0.2− | 0.4+ | 2006 10 23 | 711 | 0.7+ | 0.9+ |
| 2001 03 18 | 608 | 0.1− | 0.8− | 2006 10 22 | G96 | 0.4− | 0.6+ | 2006 10 23 | 448 | 0.4+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.6− | 1.1+ | 2006 10 22 | G96 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2001 03 19 | 704 | 0.1+ | 1.4+ | 2006 10 22 | 673 | 0.1− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.4− |
| 2001 03 19 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 673 | 0.1+ | 0.2− | 2006 10 23 | 711 | 0.4+ | 0.5+ |
| 2006 07 21 | D35 | 0.3+ | 0.2− | 2006 10 22 | 673 | 0.2− | 0.3− | 2006 10 23 | 682 | 0.2− | 0.0 |
| 2006 07 21 | D35 | 0.4+ | 0.1+ | 2006 10 22 | 673 | 0.4− | 0.4− | 2006 10 23 | G96 | 0.1− | 0.1− |
| 2006 07 21 | D35 | 0.0 | 0.0 | 2006 10 22 | 651 | (1.0+ | 4.5+) | 2006 10 23 | 711 | 0.0 | 0.1− |
| 2006 08 15 | 644 | 0.4− | 0.2− | 2006 10 22 | 651 | (3.8+ | 6.7+) | 2006 10 23 | 448 | 0.2− | 0.3− |
| 2006 08 15 | 644 | 0.5− | 0.0 | 2006 10 22 | 474 | 0.9+ | 0.7+ | 2006 10 23 | 682 | 0.1− | 0.0 |
| 2006 08 15 | 644 | 0.2− | 0.1+ | 2006 10 22 | 474 | 0.4+ | 0.1− | 2006 10 24 | 474 | 0.2− | 0.3+ |
| 2006 10 22 | G96 | 0.3− | 0.3− | 2006 10 22 | 474 | 0.5+ | 0.1+ | 2006 10 24 | 474 | 0.0 | 0.2− |
| 2006 10 22 | G96 | 0.1+ | 0.1+ | 2006 10 22 | 474 | 0.5+ | 0.1+ | 2006 10 24 | 474 | 0.1− | 0.2+ |
| 2006 10 22 | G96 | 0.1− | 0.2− | 2006 10 23 | 448 | 0.6+ | 0.8− | 2006 10 24 | 474 | 0.5− | 0.2− |
| 2006 10 22 | G96 | 0.2− | 0.1+ | 2006 10 23 | 682 | 0.1− | 0.1+ | | | | |

### 2006 $UM_{63}$ = 2004 $CT_{88}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.91145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28074534 | $\omega$ | 44.06777 | | +0.55474785 | | −0.83175466 |
| $a$ | 2.3099062 | $\Omega$ | 12.28838 | | +0.73353699 | | +0.47704573 |
| $e$ | 0.1076236 | $i$ | 5.64969 | | +0.39265545 | | +0.28392173 |
| $P$ | 3.51 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 695 | 1.3+ | 0.6+ | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 30 | 408 | 0.5+ | 1.0− |
| 2001 03 26 | 695 | 0.1+ | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 10 30 | 408 | 0.3+ | 0.9− |
| 2002 08 15 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 408 | 0.8+ | 1.0− | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2002 08 15 | 644 | 0.2− | 0.3+ | 2006 10 20 | 408 | 0.6+ | 1.0− | 2006 10 31 | 691 | 0.3+ | 0.1+ |
| 2002 08 15 | 644 | 0.6− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 10 31 | 408 | 0.1− | 0.1− |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 10 31 | 408 | 0.0 | 0.6+ |
| 2004 02 11 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2004 02 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2004 02 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1− |
| 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 408 | 0.8+ | 1.1− | 2006 11 14 | 703 | (1.9+ | 0.4+) |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 21 | 408 | 0.1+ | 1.0− | 2006 11 14 | 703 | 1.0− | 0.1− |
| 2004 03 18 | 645 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.9− | 1.3+ |
| 2005 02 17 | 809 | 0.2− | 0.5+ | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.7+ | 1.0− |
| 2005 02 17 | 809 | 0.2− | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 1.4− | 0.6+ |
| 2006 07 21 | G96 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.3+ | 1.1+ |
| 2006 07 21 | G96 | 0.3+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.5+ |
| 2006 07 21 | G96 | 0.3+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.4− |
| 2006 07 21 | G96 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.5+ | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2006 09 30 | G96 | 0.3− | 0.1− | 2006 10 27 | 703 | (3.8+ | 1.3+) | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.8− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2006 09 30 | G96 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 27 | 408 | 1.0+ | 0.5− | | | | |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 27 | 408 | 0.5+ | 0.1− | | | | |

### 2006 $UN_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.97181 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27675052 | $\omega$ | 346.57153 | | +0.85777516 | | −0.51296310 |
| $a$ | 2.3320817 | $\Omega$ | 44.34057 | | +0.47586620 | | +0.76816519 |
| $e$ | 0.2419699 | $i$ | 2.70830 | | +0.19435313 | | +0.38313328 |
| $P$ | 3.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2004 02 16 | 691 | 0.1− | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.9+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2005 05 10 | G96 | 0.3+ | 0.4− | 2006 10 28 | 704 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2005 05 10 | G96 | 0.1+ | 0.0 | 2006 10 28 | 704 | 0.7− | 0.0 | 2006 11 17 | 703 | 0.8− | 0.1− |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 10 28 | 704 | 0.8− | 0.4− | 2006 11 17 | 703 | 0.3− | 0.3− |
| 2005 05 10 | G96 | 0.3− | 0.0 | 2006 10 28 | 704 | 0.6− | 0.6+ | 2006 11 17 | 703 | 0.7+ | 0.1− |
| 2006 10 16 | 691 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.6− |
| 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 10 29 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.8+ |
| 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 10 29 | G96 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.9+ | 0.4− |
| 2006 10 19 | 644 | 0.1+ | 0.5− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | (1.1+ | 2.6−) |
| 2006 10 19 | 644 | 0.0 | 0.2− | 2006 10 29 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.3− | 0.7+ |
| 2006 10 19 | 644 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | (0.3+ | 2.2+) |
| 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.2+ |
| 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 21 | 704 | (0.4+ | 2.6+) |
| 2006 10 21 | H07 | 0.4− | 1.0− | 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.3+ | 1.2+ |
| 2006 10 21 | H07 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.7− | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2006 10 21 | H07 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.3+ | 2006 11 22 | G96 | 0.3− | 0.0 |
| 2006 10 23 | H07 | 0.2+ | 0.9− | 2006 11 11 | 703 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.1+ |
| 2006 10 23 | H07 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.0 | 0.4− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2006 10 23 | H07 | 0.0 | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.1− | 2006 11 26 | 704 | 0.0 | 0.0 |
| 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 26 | 704 | 0.5+ | 0.0 |
| 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 26 | 704 | 0.6+ | 0.0 |

### 2006 $UR_{63}$ = 2004 $HF_{64}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.33910 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19752838 | $\omega$ | 136.98614 | | −0.24117900 | | +0.96283251 |
| $a$ | 2.9200013 | $\Omega$ | 118.71630 | | −0.92378326 | | −0.18936561 |
| $e$ | 0.0711223 | $i$ | 7.96982 | | −0.29741751 | | −0.19259861 |
| $P$ | 4.99 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 21 | 645 | 0.0 | 0.0 | 2004 04 16 | 691 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 2001 09 21 | 645 | 0.1− | 0.0 | 2004 04 21 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2002 01 08 | 645 | 0.0 | 0.2+ | 2004 04 21 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.3+ |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2004 04 21 | 691 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1− | 0.1+ |
| 2002 01 14 | 645 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.0 | 0.6− | 2006 10 24 | 734 | 0.3+ | 0.0 |
| 2002 01 14 | 645 | 0.0 | 0.2− | 2006 10 16 | 703 | (0.4− | 1.6−) | 2006 10 24 | 734 | 0.2+ | 0.3+ |
| 2004 04 16 | 691 | 0.0 | 0.4+ | 2006 10 16 | 703 | (1.7− | 1.5+) | 2006 10 24 | 734 | 0.2+ | 0.2− |
| 2004 04 16 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.4− | | | | |

### 2006 $UV_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.73357 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21388341 | $\omega$ | 18.91804 | | +0.30491405 | | −0.95126499 |
| $a$ | 2.7691808 | $\Omega$ | 53.35479 | | +0.86621960 | | +0.25689904 |
| $e$ | 0.1718660 | $i$ | 3.29161 | | +0.39584217 | | +0.17058080 |
| $P$ | 4.61 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 13 | 649 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.6− | 0.1− | 2006 10 23 | 734 | 0.0 | 0.1− |
| 2001 09 13 | 649 | 1.0+ | 1.1− | 2006 10 21 | 703 | 1.0− | 0.5− | 2006 10 23 | 734 | 0.1− | 0.3− |
| 2001 09 13 | 649 | 1.2− | 0.9+ | 2006 10 21 | 703 | 0.3− | 0.3− | 2006 10 23 | 734 | 0.1− | 0.2+ |
| 2001 09 13 | 649 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.1+ | 0.2+ | 2006 10 24 | 734 | 0.1+ | 0.2− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 10 24 | 734 | 0.2+ | 0.1− |
| 2003 01 29 | 645 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.4− | 2006 10 24 | 734 | 0.3+ | 0.0 |
| 2003 02 01 | 645 | 0.1+ | 0.1+ | 2006 10 23 | 734 | 1.0+ | 0.6+ | 2006 10 24 | 734 | 0.4− | 0.3+ |
| 2003 02 01 | 645 | 0.1+ | 0.0 | 2006 10 23 | 734 | 0.2− | 0.1+ | 2006 10 28 | 734 | 0.1+ | 0.1+ |
| 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 23 | 734 | 0.0 | 0.4− | 2006 10 28 | 734 | 0.2+ | 0.2+ |
| 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 23 | 734 | 0.2+ | 0.1− | 2006 10 28 | 734 | 0.2− | 0.0 |
| 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 23 | 734 | 0.6− | 0.0 | 2006 11 14 | G96 | 0.5− | 0.1− |
| 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 10 23 | 734 | 0.9+ | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.2− |
| 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 734 | 0.5+ | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.1+ |
| 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 734 | 0.5− | 0.4− | 2006 11 14 | G96 | 0.1− | 0.0 |

### 2006 $UZ_{63}$

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 199.42936 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19924735 | $\omega$ | 160.50871 | | −0.97410308 | | +0.21962443 |
| $a$ | 2.9031826 | $\Omega$ | 32.32820 | | −0.21849113 | | −0.85316611 |
| $e$ | 0.0609368 | $i$ | 5.76783 | | −0.05817921 | | −0.47315187 |
| $P$ | 4.95 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 06 | 691 | 0.0 | 0.0 | 2001 10 15 | 691 | 0.1− | 0.5+ | 2006 10 16 | 947 | 0.5+ | 0.3+ |
| 1996 11 06 | 691 | 0.1+ | 0.2− | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 10 16 | 947 | 0.0 | 1.2− |
| 1996 11 06 | 691 | 0.2− | 0.1+ | 2002 12 31 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.1− | 0.6+ |
| 1999 04 09 | 691 | 0.3− | 0.0 | 2006 09 25 | G96 | 0.8+ | 0.2− | 2006 10 20 | 691 | 0.4− | 0.5− |
| 1999 04 09 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1− |
| 1999 04 09 | 691 | 0.3+ | 0.1− | 2006 09 25 | G96 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.2− | 0.2+ |
| 2001 10 15 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 10 29 | 691 | 0.3− | 0.3+ |
| 2001 10 15 | 691 | 0.1− | 0.4+ | 2006 10 16 | 947 | 0.1+ | 0.4− | 2006 10 29 | 691 | 0.3− | 0.0 |

**2006 UH$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.40022 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19056440 | $\omega$ | 87.73498 | | +0.59306406 | | −0.80143736 |
| $a$ | 2.9907139 | $\Omega$ | 325.51254 | | +0.67378837 | | +0.54655838 |
| $e$ | 0.0873858 | $i$ | 7.84501 | | +0.44077688 | | +0.24284171 |
| $P$ | 5.17 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 699 | 0.5+ | 0.4+ | 2003 03 12 | 291 | 0.4+ | 0.3− | 2006 10 24 | 400 | 0.8− | 1.4− |
| 2001 11 11 | 699 | 0.6− | 0.7− | 2006 09 28 | 703 | 0.6+ | 0.4+ | 2006 10 24 | 400 | 0.1− | 0.5− |
| 2001 11 11 | 699 | 0.1− | 0.7+ | 2006 09 28 | 703 | 0.2+ | 0.6+ | 2006 10 27 | 703 | 0.3+ | 0.4− |
| 2001 11 11 | 699 | 0.6− | 1.3+ | 2006 09 28 | 703 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 2001 11 11 | 644 | 0.1+ | 0.6+ | 2006 09 28 | 703 | 0.8− | 1.1− | 2006 10 27 | 703 | 0.3− | 0.4+ |
| 2001 11 11 | 644 | 0.2− | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.5− | 0.0 |
| 2001 11 11 | 644 | 0.2− | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.2− | 2006 10 29 | 400 | 0.0 | 0.1− |
| 2003 01 28 | 645 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.0 | 2006 10 29 | 400 | 0.8+ | 0.4− |
| 2003 01 28 | 645 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.3− | 0.5+ | 2006 10 29 | 400 | 0.6− | 1.2− |
| 2003 02 22 | 699 | 0.8+ | 0.4+ | 2006 10 22 | 644 | 0.0 | 0.4+ | 2006 11 07 | 644 | 0.2− | 0.7+ |
| 2003 02 22 | 699 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 07 | 644 | 0.3− | 0.2+ |
| 2003 02 22 | 699 | 0.8− | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 07 | 644 | 0.4− | 0.2+ |
| 2003 02 22 | 699 | 0.9+ | 0.8+ | 2006 10 23 | 644 | 0.2− | 0.2+ | 2006 11 15 | 703 | 1.0+ | 0.4+ |
| 2003 03 06 | 644 | 0.4+ | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.2− | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 2003 03 06 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 1.2+ | 0.2+ |
| 2003 03 06 | 644 | 0.3+ | 0.0 | 2006 10 23 | 400 | 1.1+ | 0.5− | 2006 11 15 | 703 | 0.5− | 0.5− |
| 2003 03 12 | 291 | 0.1+ | 0.1− | 2006 10 23 | 400 | (1.9+ | 1.0−) | | | | |
| 2003 03 12 | 291 | 0.3+ | 0.2− | 2006 10 23 | 400 | 1.4+ | 0.5− | | | | |

**2006 UM$_{64}$ = 2004 HD$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 137.37190 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18115860 | $\omega$ | 241.66966 | | −0.46593767 | | +0.88481609 |
| $a$ | 3.0933572 | $\Omega$ | 0.56687 | | −0.74444578 | | −0.39103906 |
| $e$ | 0.0817654 | $i$ | 9.32603 | | −0.47822857 | | −0.25335536 |
| $P$ | 5.44 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 645 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.5+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.3− |
| 2003 04 26 | 645 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1+ |
| 2004 04 25 | 704 | 0.4+ | 0.4− | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.2− |
| 2004 04 25 | 704 | 0.2− | 0.3+ | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 10 30 | 198 | 0.4− | 0.3+ |
| 2004 04 25 | 704 | 0.4+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.2+ | 2006 10 30 | 198 | 0.3− | 0.4+ |
| 2004 04 25 | 704 | 0.8+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.1+ | 2006 10 30 | 198 | 0.4− | 0.3+ |
| 2004 04 25 | 704 | 0.3− | 0.4− | 2006 10 22 | G96 | 0.1− | 0.2+ | 2006 10 30 | 198 | 0.4− | 0.3+ |
| 2004 05 15 | 704 | 0.1+ | 1.0+ | 2006 10 22 | A44 | 0.1+ | 0.3− | 2006 10 30 | 198 | 0.5− | 0.2+ |
| 2004 05 15 | 704 | 0.6− | 1.0+ | 2006 10 22 | A44 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.1+ | 0.5− |
| 2004 05 15 | 704 | 0.3+ | 0.2− | 2006 10 22 | A44 | 0.2− | 0.3− | 2006 11 14 | 703 | 0.8− | 1.5+ |
| 2005 08 04 | 644 | 0.1− | 0.4+ | 2006 10 22 | A44 | 0.3− | 0.3− | 2006 11 14 | 703 | 0.3+ | 1.3− |
| 2005 08 04 | 644 | 0.2− | 0.6+ | 2006 10 24 | A44 | 0.5+ | 0.1− | 2006 11 14 | 703 | 1.4+ | 0.5+ |
| 2005 08 04 | 644 | 0.2− | 0.4+ | 2006 10 24 | A44 | 0.5− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.7− |
| 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 24 | A44 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.2+ |
| 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 25 | A44 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.5+ |
| 2006 09 26 | 691 | 0.2+ | 0.2+ | 2006 10 25 | A44 | 0.2+ | 0.4+ | 2006 11 14 | 703 | 0.5− | 0.2+ |

**2006 UO$_{64}$ = 2005 NY$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.64482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17905805 | $\omega$ | 160.39163 | | +0.42110346 | | −0.89735618 |
| $a$ | 3.1175025 | $\Omega$ | 264.51760 | | +0.81346410 | | +0.43802091 |
| $e$ | 0.0573662 | $i$ | 7.62019 | | +0.40118330 | | +0.05375475 |
| $P$ | 5.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.8− | 0.2− | 2006 10 24 | A55 | 0.3+ | 0.1+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.1− | 2006 10 25 | A55 | 0.2− | 0.0 |
| 2005 07 08 | 691 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.3− | 0.1− | 2006 10 25 | A55 | 0.2+ | 0.3+ |
| 2005 07 08 | 691 | 0.1− | 0.3+ | 2006 10 23 | A55 | 0.5− | 0.2+ | 2006 10 25 | A55 | 0.8+ | 0.5− |
| 2005 07 08 | 691 | 0.4+ | 0.3− | 2006 10 23 | A55 | 0.6− | 0.1+ | 2006 11 10 | A55 | 0.5− | 0.5+ |
| 2005 07 11 | G96 | 0.5− | 0.1− | 2006 10 23 | A55 | 0.3− | 0.3+ | 2006 11 10 | A55 | 0.8+ | 0.1+ |
| 2005 07 11 | G96 | 0.1− | 0.2+ | 2006 10 23 | A55 | 0.4− | 0.1+ | 2006 11 10 | A55 | 0.6+ | 0.2+ |
| 2005 07 11 | G96 | 0.7− | 0.2+ | 2006 10 24 | A55 | 0.2+ | 0.0 | | | | |
| 2005 07 11 | G96 | (0.9− | 2.0−) | 2006 10 24 | A55 | 0.7+ | 0.5− | | | | |

**2006 UT$_{64}$ = 2006 UL$_{292}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.04357 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26862603 | $\omega$ | 75.39816 | | +0.99317591 | | −0.11651372 |
| $a$ | 2.3788697 | $\Omega$ | 291.29258 | | +0.10477804 | | +0.91068179 |
| $e$ | 0.2024990 | $i$ | 0.31453 | | +0.05121691 | | +0.39633727 |
| $P$ | 3.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 21 | 691 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.2− |
| 1995 11 21 | 691 | 0.2− | 0.8− | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.4− |
| 1995 11 21 | 691 | 0.3+ | 0.5− | 2006 10 23 | 701 | 0.2+ | 0.5+ | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2002 08 12 | 807 | 0.7− | 0.5+ | 2006 10 23 | 701 | 0.9+ | 0.3+ | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2002 08 12 | 807 | 0.3− | 0.8+ | 2006 10 23 | 701 | 0.5+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 09 05 | 699 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2002 09 05 | 699 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2002 09 05 | 699 | 0.8+ | 0.8+ | 2006 10 31 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.1− |
| 2002 09 05 | 699 | 0.2+ | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.3+ | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2004 02 12 | 691 | 0.1+ | 0.3− | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | (1.1− | 1.9+) |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.8− | 0.5+ |
| 2004 02 12 | 291 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.9+ | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2004 02 12 | 291 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 1.3− | 0.1− | 2006 11 27 | G96 | 0.4− | 0.4− |
| 2004 02 12 | 291 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2005 05 04 | G96 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.2+ |
| 2005 05 04 | G96 | 1.4− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2005 05 04 | G96 | 0.0 | 0.2+ | 2006 11 13 | 691 | 0.7− | 0.8+ | 2006 11 27 | 703 | 0.2+ | 0.8+ |
| 2005 05 04 | G96 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.5+ |
| 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 17 | 704 | (1.7+ | 0.3−) | 2006 11 27 | 703 | 0.1− | 0.9− |
| 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 17 | 704 | (2.0+ | 0.5−) | 2006 11 29 | 704 | 0.2− | 0.4+ |
| 2006 09 27 | G96 | 0.5− | 0.7− | 2006 11 17 | 704 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.3− | 1.0+ |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.5− | 0.6+ |
| 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.3+ | 0.5+ |
| 2006 10 17 | G96 | 0.9+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.6− |
| 2006 10 17 | G96 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.2− | | | | |

**2006 UU$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.35231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21094509 | $\omega$ | 293.25378 | | +0.97477563 | | +0.00620600 |
| $a$ | 2.7948367 | $\Omega$ | 67.01142 | | +0.10262982 | | +0.87519581 |
| $e$ | 0.2200402 | $i$ | 14.02512 | | −0.19819079 | | +0.48372903 |
| $P$ | 4.67 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 683 | 1.1+ | 0.9+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2000 04 27 | 691 | 0.1− | 0.5+ | 2006 10 22 | 683 | (2.2− | 0.4+) | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2000 04 27 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 683 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2001 07 23 | 644 | 0.5− | 0.4+ | 2006 10 23 | 683 | (2.3− | 0.4−) | 2006 11 17 | 704 | (1.7+ | 0.0 ) |
| 2001 07 23 | 644 | 0.3− | 0.2− | 2006 10 30 | 703 | 0.4− | 0.6− | 2006 11 17 | 704 | 0.2+ | 0.5+ |
| 2001 07 23 | 644 | 0.2− | 0.5+ | 2006 10 30 | 703 | (1.3− | 2.0−) | 2006 11 17 | 704 | 0.4+ | 1.0+ |
| 2001 08 03 | 644 | 0.8+ | 0.5+ | 2006 10 30 | 703 | 0.3− | 0.6− | 2006 11 17 | 704 | 0.8+ | 0.3+ |
| 2001 08 03 | 644 | 0.6+ | 0.5+ | 2006 10 30 | 703 | 0.6+ | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.7+ |
| 2001 08 03 | 644 | 0.9+ | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2001 08 23 | 608 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.4− | 0.4− | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2001 08 23 | 608 | 0.5− | 0.8− | 2006 11 09 | 644 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.4+ |
| 2001 08 23 | 608 | 0.7− | 0.5− | 2006 11 14 | 704 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3− | 1.0+ |
| 2006 10 20 | 644 | 0.1− | 0.8− | 2006 11 14 | 704 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.3− | 1.1+ |
| 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.9− | 0.8− | 2006 11 28 | 704 | 0.5− | 1.3+ |
| 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 14 | 704 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.2− | 1.3+ |
| 2006 10 22 | 683 | 0.6− | 0.5− | 2006 11 16 | G96 | 0.4− | 0.6− | 2006 11 28 | 704 | 0.2+ | 0.8+ |

**2006 UW$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.28718 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30188636 | $\omega$ | 192.50394 | | +0.92928674 | | +0.36713484 |
| $a$ | 2.2007652 | $\Omega$ | 145.86911 | | −0.33236486 | | +0.87897603 |
| $e$ | 0.1776418 | $i$ | 4.13666 | | −0.16112033 | | +0.30432407 |
| $P$ | 3.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 03 | 644 | 0.1+ | 0.5+ | 2006 10 23 | 400 | 0.2+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.1+ |
| 2002 05 03 | 644 | 0.4+ | 0.6+ | 2006 10 23 | 400 | 0.8+ | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 2002 05 03 | 644 | 0.3− | 0.6+ | 2006 10 23 | 400 | 0.8+ | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 24 | 400 | 0.6+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 2004 01 28 | 691 | 0.1+ | 0.2− | 2006 10 24 | 400 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.3+ |
| 2004 01 28 | 691 | 0.1+ | 0.3− | 2006 10 24 | 400 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.4+ |
| 2005 04 01 | 691 | 0.0 | 0.4+ | 2006 10 26 | 400 | 0.3+ | 0.8− | 2006 11 11 | 703 | 0.8+ | 0.4+ |
| 2005 04 01 | 691 | 0.2+ | 0.2+ | 2006 10 26 | 400 | 0.2+ | 0.2+ | 2006 11 11 | 703 | (1.6+ | 0.3+) |
| 2005 04 01 | 691 | 0.1+ | 0.0 | 2006 10 26 | 400 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2006 09 30 | 703 | 0.9− | 0.9+ | 2006 10 29 | 400 | 0.8− | 0.8+ | 2006 11 11 | 703 | 1.1− | 0.7+ |
| 2006 09 30 | 703 | 0.3− | 0.3− | 2006 10 29 | 400 | 0.7− | 0.1+ | 2006 11 17 | 704 | 1.1− | 1.2+ |
| 2006 09 30 | 703 | (2.0− | 0.5−) | 2006 10 29 | 400 | 0.7− | 1.3− | 2006 11 17 | 704 | 0.8− | 0.4+ |
| 2006 09 30 | 703 | 0.4+ | 1.4− | 2006 11 01 | 703 | 0.3+ | 0.3− | 2006 11 17 | 704 | 1.0+ | 0.2− |
| 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 01 | 703 | 1.3− | 0.1+ | 2006 11 17 | 704 | (0.4+ | 1.7+) |
| 2006 10 03 | G96 | 0.2− | 0.0 | 2006 11 01 | 703 | 0.4+ | 0.1− | 2006 11 19 | 703 | 1.0− | 0.2+ |
| 2006 10 03 | G96 | 0.3− | 0.2+ | 2006 11 01 | 703 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.9− | 0.6− |
| 2006 10 03 | G96 | 0.2+ | 0.1+ | 2006 11 01 | 400 | 1.0+ | 0.6− | 2006 11 19 | 703 | 0.6− | 0.7+ |
| 2006 10 16 | 703 | 0.2− | 0.1− | 2006 11 01 | 400 | 0.1+ | 0.6+ | 2006 11 19 | 703 | 1.0− | 0.2+ |
| 2006 10 16 | 703 | 0.3+ | 0.2− | 2006 11 01 | 400 | 0.5+ | 0.9+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2006 10 16 | 703 | 0.3− | 1.5+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 703 | (0.2+ | 1.8+) | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 10 23 | 400 | 1.4+ | 0.5+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.3− |

**2006 UX$_{64}$ = 2004 HS$_{35}$ = 2005 MV$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.66334 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23116368 | $\omega$ | 252.32560 | | +0.01572401 | | −0.99786324 |
| $a$ | 2.6293979 | $\Omega$ | 197.15016 | | +0.97940666 | | +0.02813908 |
| $e$ | 0.1484151 | $i$ | 12.41919 | | +0.20128424 | | −0.05896733 |
| $P$ | 4.26 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 704 | 0.3+ | 0.1+ | 2005 06 29 | 644 | 0.3− | 0.1+ | 2006 10 26 | 400 | 0.4− | 0.2− |
| 2004 04 20 | 704 | 0.7+ | 0.3− | 2005 06 29 | 644 | 0.1+ | 0.1− | 2006 10 30 | 400 | 0.2+ | 0.4− |
| 2004 04 20 | 704 | 0.8+ | 0.2+ | 2006 10 22 | 703 | 0.3+ | 0.2− | 2006 10 30 | 400 | 0.5+ | 0.3+ |
| 2004 04 20 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.6− | 0.5+ | 2006 10 30 | 400 | 0.1+ | 0.7− |
| 2004 04 20 | 704 | 0.6− | 0.9− | 2006 10 22 | 703 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.2+ | 0.2+ |
| 2004 04 23 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.8− | 0.2+ | 2006 11 13 | 703 | 0.2+ | 0.1+ |
| 2004 04 23 | 704 | 0.9− | 0.0 | 2006 10 23 | 400 | 0.4+ | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.6− |
| 2004 04 23 | 704 | 1.2− | 0.7+ | 2006 10 23 | 400 | 0.1− | 0.2+ | 2006 11 13 | 703 | 0.8+ | 0.2− |
| 2004 04 23 | 704 | 0.5+ | 0.6+ | 2006 10 23 | 400 | 0.1+ | 0.7+ | 2006 11 20 | 704 | 0.8− | 0.6+ |
| 2005 06 27 | 644 | 0.3+ | 0.1+ | 2006 10 24 | 400 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.2+ |
| 2005 06 27 | 644 | 0.1− | 0.1− | 2006 10 24 | 400 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.8− | 0.2− |
| 2005 06 27 | 644 | 0.0 | 0.1− | 2006 10 26 | 400 | 0.5+ | 0.9+ | 2006 11 20 | 704 | (1.7− | 0.6−) |
| 2005 06 29 | 644 | 0.0 | 0.3+ | 2006 10 26 | 400 | 0.3− | 0.3− | | | | |

**2006 UB$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.61734 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17223277 | $\omega$ | 237.58356 | | +0.37155277 | | +0.92786417 |
| $a$ | 3.1993287 | $\Omega$ | 54.26050 | | −0.83806702 | | +0.34997632 |
| $e$ | 0.1642992 | $i$ | 2.25128 | | −0.39948993 | | +0.12878145 |
| $P$ | 5.72 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1− | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | (0.5− | 2.2−) |
| 2004 03 17 | 691 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.2− | 2006 10 21 | 703 | (0.5− | 2.2−) |
| 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.1− |
| 2004 04 12 | 691 | 0.1− | 0.3+ | 2006 09 25 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.3+ |
| 2004 04 12 | 691 | 0.2− | 0.4+ | 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 2004 04 12 | 691 | 0.1+ | 0.1− | 2006 10 03 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2004 04 22 | 691 | 0.2+ | 0.2− | 2006 10 03 | 691 | 0.2+ | 0.8+ | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2004 04 22 | 691 | 0.2+ | 0.4− | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2004 04 22 | 691 | 0.8+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2006 09 14 | 691 | 0.3− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1+ | 0.9− |
| 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 10 16 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2006 09 14 | 691 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.7− | 1.0− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 09 18 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 1.1− | 0.1+ | | | | |

**2006 UL$_{65}$ = 2001 SN$_{340}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.42717 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19905186 | $\omega$ | 354.28482 | | +0.81942131 | | +0.57310899 |
| $a$ | 2.9050831 | $\Omega$ | 330.74112 | | −0.52510086 | | +0.74375297 |
| $e$ | 0.0741924 | $i$ | 1.14143 | | −0.22982124 | | +0.34406047 |
| $P$ | 4.95 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 26 | 691 | 0.0 | 0.0 | 2001 09 21 | 704 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.8− | 0.1− |
| 2001 08 26 | 691 | 0.1+ | 0.2− | 2001 09 21 | 704 | 0.5− | 0.5+ | 2006 09 30 | 703 | 0.9− | 0.4+ |
| 2001 08 26 | 691 | 0.0 | 0.1+ | 2001 09 23 | 691 | 0.2+ | 0.5− | 2006 10 16 | G96 | 0.4− | 0.3− |
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 09 23 | 691 | 0.3+ | 0.4− | 2006 10 16 | G96 | 0.2+ | 0.2− |
| 2001 09 19 | 704 | 0.3− | 0.0 | 2001 09 23 | 691 | 0.4+ | 0.2− | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.4− | 0.8+ | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 16 | G96 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 0.2− | 0.2+ | 2006 09 28 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.4+ | 0.0 |
| 2001 09 19 | 704 | 1.5− | 0.2+ | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | (1.1+ | 1.8+) | 2006 10 23 | G96 | 0.1+ | 0.1− |
| 2001 09 21 | 704 | 0.1− | 1.2+ | 2006 09 30 | 703 | (0.8− | 2.1−) | 2006 10 23 | G96 | 0.2+ | 0.3− |

**2006 UR$_{65}$ = 2001 QQ$_{285}$ = 2002 XN$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.73378 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20848466 | $\omega$ | 25.07869 | | +0.34790175 | | −0.92895427 |
| $a$ | 2.8167825 | $\Omega$ | 44.85835 | | +0.82709137 | | +0.24056545 |
| $e$ | 0.0804749 | $i$ | 10.33342 | | +0.44145695 | | +0.28137559 |
| $P$ | 4.73 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 17 | 691 | 0.2+ | 0.1+ | 2004 04 26 | 691 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.1− | 0.1+ |
| 1993 12 17 | 691 | 0.4+ | 0.2+ | 2004 04 26 | 691 | 0.3+ | 0.5+ | 2006 10 19 | 644 | 0.2+ | 0.1− |
| 1993 12 17 | 691 | 0.4− | 0.0 | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.0 | 0.1+ |
| 2001 08 23 | 608 | 0.3+ | 1.1+ | 2006 09 18 | 703 | (0.4+ | 1.5−) | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2001 08 23 | 608 | 0.8− | 0.4+ | 2006 09 18 | 703 | 0.3+ | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2001 08 23 | 608 | 0.3− | 1.0+ | 2006 09 18 | 703 | 1.3+ | 0.9+ | 2006 10 20 | 644 | 0.1− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 608 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− | | |
| 2001 08 24 | 608 | 0.5− | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.3− | 0.0 | | |
| 2001 08 24 | 608 | 0.2+ | 0.6+ | 2006 09 26 | 703 | 1.5− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2001 10 10 | 644 | (1.9− | 0.6+) | 2006 09 26 | 703 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.1+ | 0.6+ | | |
| 2001 10 10 | 644 | (1.8− | 0.7+) | 2006 09 28 | 699 | 0.3+ | 0.8+ | 2006 10 22 | 703 | (1.0− | 1.6+) | | |
| 2001 10 10 | 644 | 1.7− | 0.8+ | 2006 09 28 | 699 | 0.3+ | 0.4− | 2006 10 22 | 703 | 0.8− | 0.1− | | |
| 2002 12 05 | 704 | 0.5+ | 1.2+ | 2006 09 28 | 699 | 0.2+ | 0.1+ | 2006 10 22 | 703 | (0.3+ | 2.3+) | | |
| 2002 12 05 | 704 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.8+ | 2006 11 24 | G96 | 0.2− | 0.3− | | |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.6+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | |
| 2002 12 05 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2004 04 26 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.6− | 1.1+ | 2006 11 24 | G96 | 0.0 | 0.2− | | |

**2006 UX$_{65}$ = 2002 RE$_{221}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 311.34313 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.25910969 | | $\omega$ | 359.01625 | | | +0.23814102 | | | −0.96935177 | | | |
| $a$ | 2.4367648 | | $\Omega$ | 77.20501 | | | +0.89150898 | | | +0.19350317 | | | |
| $e$ | 0.1491694 | | $i$ | 3.55000 | | | +0.38535774 | | | +0.15137259 | | | |
| $P$ | 3.80 | | $H$ | 17.0 | | $G$ | 0.15 | | $U$ | 5 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 12 08 | 691 | 1.3− | 0.6+ | 2006 09 17 | 691 | 1.0− | 0.6− | 2006 10 21 | 644 | 0.9+ | 0.3+ | | |
| 1991 12 08 | 691 | 1.3+ | 0.5− | 2006 10 16 | 703 | (1.7+ | 0.2+) | 2006 10 22 | 703 | 0.4+ | 0.6+ | | |
| 2002 09 15 | 644 | 0.2− | 0.1− | 2006 10 16 | 703 | (1.8+ | 1.0+) | 2006 10 22 | 703 | 0.6+ | 0.4+ | | |
| 2002 09 15 | 644 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.8+ | 1.5+ | 2006 10 22 | 703 | 0.8+ | 0.5− | | |
| 2002 09 15 | 644 | 0.2+ | 0.1− | 2006 10 16 | 703 | (1.6+ | 0.6+) | 2006 10 22 | 703 | 0.5+ | 0.7+ | | |
| 2002 09 16 | 644 | 0.1− | 0.5+ | 2006 10 19 | 644 | 0.9+ | 0.3+ | 2006 11 23 | G96 | (4.3+ | 2.2+) | | |
| 2002 09 16 | 644 | 0.4+ | 0.5+ | 2006 10 19 | 644 | 1.2+ | 0.3+ | 2006 11 23 | G96 | (4.0+ | 2.3+) | | |
| 2002 09 16 | 644 | 0.1− | 0.6+ | 2006 10 19 | 644 | 1.2+ | 0.5+ | 2006 11 23 | G96 | (3.9+ | 2.2+) | | |
| 2006 09 17 | 691 | 0.9− | 0.6− | 2006 10 21 | 644 | 1.2+ | 0.6+ | | | | | | |
| 2006 09 17 | 691 | 0.7− | 0.6− | 2006 10 21 | 644 | 1.3+ | 0.5+ | | | | | | |

**2006 UY$_{65}$ = 1999 VN$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 338.94282 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.28023393 | | $\omega$ | 334.03666 | | | +0.71940151 | | | −0.68356565 | | | |
| $a$ | 2.3127156 | | $\Omega$ | 69.66350 | | | +0.65798278 | | | +0.61379700 | | | |
| $e$ | 0.2324479 | | $i$ | 7.55522 | | | +0.22253119 | | | +0.39495727 | | | |
| $P$ | 3.52 | | $H$ | 17.3 | | $G$ | 0.15 | | $U$ | 4 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 03 | 703 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.8+ | 2006 10 28 | 703 | 0.9+ | 0.2− | | |
| 1999 11 03 | 703 | 1.4+ | 0.2− | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 10 28 | 703 | 0.2+ | 0.6− | | |
| 1999 11 03 | 703 | 0.0 | 1.0+ | 2006 10 16 | 703 | 0.3+ | 0.6− | 2006 10 28 | 703 | 0.4− | 0.4− | | |
| 1999 11 03 | 703 | 0.8+ | 0.1− | 2006 10 16 | 703 | 0.4− | 0.4+ | 2006 11 10 | 644 | 1.1− | 0.1− | | |
| 1999 11 06 | 704 | 0.7− | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.1− | 2006 11 10 | 704 | 0.6+ | 0.0 | | |
| 1999 11 06 | 704 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.2− | | |
| 1999 11 06 | 704 | 0.6− | 0.2− | 2006 10 22 | 703 | 0.6+ | 0.1+ | 2006 11 10 | 704 | 0.5+ | 0.2+ | | |
| 1999 11 06 | 704 | 1.2− | 0.6− | 2006 10 22 | 644 | 0.2+ | 0.1− | 2006 11 10 | 704 | 0.2+ | 0.2+ | | |
| 2006 09 25 | 699 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.4+ | 0.2− | | |
| 2006 09 25 | 699 | 0.5− | 0.2+ | 2006 10 22 | 644 | 0.2− | 0.3− | 2006 11 10 | 704 | 0.2− | 0.4+ | | |
| 2006 09 25 | 699 | 0.4+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.3− | | | | | | |
| 2006 09 25 | 699 | 0.8− | 0.2+ | 2006 10 28 | 703 | 0.4+ | 0.2− | | | | | | |

**2006 UL$_{66}$ = 1995 UB$_{10}$ = 2002 PL$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 36.24407 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.27132579 | | $\omega$ | 59.80172 | | | +0.83883144 | | | +0.54432759 | | | |
| $a$ | 2.3630631 | | $\Omega$ | 267.21836 | | | −0.50229077 | | | +0.76797355 | | | |
| $e$ | 0.1958671 | | $i$ | 0.47753 | | | −0.20991857 | | | +0.33752644 | | | |
| $P$ | 3.63 | | $H$ | 18.0 | | $G$ | 0.15 | | $U$ | 2 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ | | |
| 1995 10 16 | 691 | 0.3− | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.6− | 2006 10 28 | G96 | 0.4+ | 0.5− | | |
| 1995 10 16 | 691 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.6− | | |
| 1995 10 21 | 691 | 0.1+ | 0.3− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.4+ | 0.6− | | |
| 1995 10 21 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.2− | 0.4− | | |
| 1995 10 21 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.1+ | | |
| 2002 08 06 | 644 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | | |
| 2002 08 06 | 644 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.1+ | 1.5+ | 2006 10 29 | 691 | 0.4+ | 0.1+ | | |
| 2002 08 06 | 644 | 0.3− | 0.0 | 2006 10 21 | 703 | 0.2+ | 0.6− | 2006 11 15 | 691 | 0.7− | 0.1− | | |
| 2002 08 07 | 644 | 0.3− | 0.2+ | 2006 10 21 | 703 | 0.5− | 0.5− | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 07 | 644 | 0.6+ | 0.3+ | 2006 10 21 | 703 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.6− | 0.4− | | |
| 2002 08 07 | 644 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.1− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.2+ | | |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.5+ | 0.5− | | |
| 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 10 21 | 644 | 0.6− | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.1+ | | |

**2006 UO$_{66}$ = 2005 KE$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 98.00658 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.27815031 | | $\omega$ | 60.52794 | | | +0.04973140 | | | +0.99697639 | | | |
| $a$ | 2.3242509 | | $\Omega$ | 212.48889 | | | −0.95052924 | | | +0.02889199 | | | |
| $e$ | 0.0950633 | | $i$ | 6.38202 | | | −0.30662835 | | | +0.07213406 | | | |
| $P$ | 3.54 | | $H$ | 17.9 | | $G$ | 0.15 | | $U$ | 1 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 18 | 691 | 0.4− | 0.3+ | 2005 04 16 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2+ | 0.2+ | | |
| 1998 06 18 | 691 | 0.4+ | 0.3− | 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.2+ | | |
| 1998 06 18 | 691 | 0.0 | 0.1+ | 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.4+ | | |
| 2002 08 15 | 644 | 0.2+ | 0.2− | 2005 05 17 | G96 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.5− | | |
| 2002 08 15 | 644 | 0.3− | 0.3+ | 2005 05 17 | G96 | 0.5− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.3− | | |
| 2002 08 15 | 644 | 0.1+ | 0.1− | 2005 05 17 | G96 | 0.5+ | 0.2+ | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2005 04 02 | G96 | 0.3+ | 0.0 | 2005 05 19 | G96 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.1+ | | |
| 2005 04 02 | G96 | 0.3− | 0.0 | 2005 05 19 | G96 | 0.6− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.2+ | | |
| 2005 04 02 | G96 | 0.7− | 0.1+ | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.3− | 0.2− | | |
| 2005 04 02 | G96 | 0.1− | 0.0 | 2005 05 19 | G96 | 0.2− | 0.4− | | | | | | |

**2006 UU$_{66}$ = 2004 HQ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 303.13745 | | | (2000.0) | | | **P** | | | **Q** | | | |
| $n$ | 0.21017223 | | $\omega$ | 15.94905 | | | +0.13109498 | | | −0.98509771 | | | |
| $a$ | 2.8016840 | | $\Omega$ | 66.62570 | | | +0.89579210 | | | +0.06959364 | | | |
| $e$ | 0.0839661 | | $i$ | 6.96681 | | | +0.42470062 | | | +0.15728709 | | | |
| $P$ | 4.69 | | $H$ | 15.9 | | $G$ | 0.15 | | $U$ | 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.1+ | 0.2− | 2006 09 29 | 699 | 0.6+ | 0.4+ | 2006 10 22 | 703 | 0.8− | 0.7− | | |
| 2004 03 16 | 691 | 0.1− | 0.0 | 2006 09 29 | 699 | (2.3+ | 0.3+) | 2006 10 22 | 703 | 0.3− | 0.2+ | | |
| 2004 03 16 | 691 | 0.0 | 0.0 | 2006 09 29 | 699 | 0.4− | 0.5+ | 2006 10 22 | 703 | 1.0− | 0.0 | | |
| 2004 04 23 | 691 | 0.0 | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.5− | 0.3− | | |
| 2004 04 23 | 691 | 0.1+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 2004 04 23 | 691 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.1− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.0 | | |
| 2004 04 25 | 704 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.2+ | 0.1− | | |
| 2004 04 25 | 704 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.5− | 2006 10 23 | 644 | 0.1− | 0.1+ | | |
| 2004 04 25 | 704 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 10 23 | 644 | 0.6+ | 0.4+ | | |
| 2004 04 25 | 704 | 0.7+ | 0.9+ | 2006 10 16 | 703 | 0.1+ | 0.5+ | 2006 10 23 | 644 | 0.4+ | 0.1− | | |
| 2004 04 25 | 704 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1+ | | |
| 2006 09 18 | 703 | 0.6− | 1.2− | 2006 10 21 | 644 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.2+ | | |
| 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.0 | | |
| 2006 09 18 | 703 | (1.6− | 0.1−) | 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.1+ | | |
| 2006 09 18 | 703 | 0.4+ | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.2+ | | | | | | |
| 2006 09 29 | 699 | 0.9+ | 0.2+ | 2006 10 21 | 644 | 0.6+ | 0.2− | | | | | | |

**2006 UH$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.85427 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23769230 | $\omega$ | 251.75700 | | +0.97225479 | +0.21267105 | |
| $a$ | 2.5810275 | $\Omega$ | 95.87627 | | −0.15992428 | +0.90824796 | |
| $e$ | 0.3161709 | $i$ | 5.62055 | | −0.17071864 | +0.36035632 | |
| $P$ | 4.15 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 10 | 691 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.4− | 0.0 | |
| 1997 05 10 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 13 | 703 | 0.4+ | 1.1+ | |
| 1997 05 10 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 11 13 | 703 | 0.2+ | 0.7− | |
| 2002 11 24 | 644 | 0.5− | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.5+ | 0.1− | |
| 2002 11 24 | 644 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.5− | 2006 11 19 | 703 | 0.4+ | 0.3− | |
| 2002 11 24 | 644 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.4− | 0.3− | |
| 2002 12 03 | 608 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.8− | |
| 2002 12 03 | 608 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.3+ | 0.8+ | |
| 2002 12 03 | 608 | 0.4+ | 0.3− | 2006 10 22 | 644 | 0.3− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.2− | |
| 2006 09 29 | 699 | 0.9− | 0.9− | 2006 10 22 | 644 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.3+ | 0.1− | |
| 2006 09 29 | 699 | (1.6+ | 0.3+) | 2006 10 28 | 703 | 0.6+ | 0.4− | 2006 11 24 | G96 | 0.0 | 0.1− | |
| 2006 09 29 | 699 | 1.1+ | 0.7+ | 2006 10 28 | 703 | 0.2− | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.2− | |
| 2006 09 29 | 699 | (1.9− | 1.1+) | 2006 10 28 | 703 | 0.4− | 0.3− | | | | | |
| 2006 10 16 | 703 | 0.4− | 0.1+ | 2006 10 28 | 703 | 0.5+ | 0.1− | | | | | |

**2006 UO$_{67}$ = 2004 FG$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.13863 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19030724 | $\omega$ | 120.05817 | | +0.70854798 | +0.69956176 | |
| $a$ | 2.9934075 | $\Omega$ | 196.18234 | | −0.70562290 | +0.70377506 | |
| $e$ | 0.0854924 | $i$ | 19.40423 | | +0.00748882 | +0.12374978 | |
| $P$ | 5.18 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 645 | 0.0 | 0.0 | 2004 03 27 | 704 | 0.1− | 1.1+ | 2006 10 20 | 644 | 0.7− | 0.0 | |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2004 03 27 | 704 | 0.2+ | 1.3+ | 2006 10 21 | 644 | 0.1− | 0.6+ | |
| 2002 01 08 | 645 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ | |
| 2002 01 08 | 645 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.4+ | 0.3+ | |
| 2002 01 14 | 645 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.2− | 0.5+ | |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.1+ | 1.1+ | |
| 2004 03 20 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.8+ | 0.0 | 2006 10 22 | 703 | 0.8− | 1.2+ | |
| 2004 03 20 | 704 | 0.4+ | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 10 22 | 703 | 1.1− | 0.1− | |
| 2004 03 20 | 704 | 0.5− | 0.0 | 2006 10 16 | 703 | 1.3+ | 0.3− | 2006 11 19 | 703 | 0.2− | 1.1+ | |
| 2004 03 27 | 704 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 19 | 703 | 0.5− | 0.5− | |
| 2004 03 27 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 11 19 | 703 | 1.5+ | 0.1+ | |
| 2004 03 27 | 704 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.4+ | 2006 11 19 | 703 | 0.9− | 0.3− | |

**2006 UR$_{67}$ = 2003 YS$_{167}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 247.55333 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29951995 | $\omega$ | 76.56796 | | −0.78892497 | −0.60570011 | |
| $a$ | 2.2123418 | $\Omega$ | 66.05428 | | +0.51080021 | −0.74010472 | |
| $e$ | 0.0755664 | $i$ | 6.50635 | | +0.34158533 | −0.29218553 | |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 26 | 291 | 0.1− | 0.0 | 2003 12 27 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 1.4+ | 0.2+ | |
| 2003 11 26 | 291 | 0.2+ | 0.0 | 2005 02 18 | 809 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.0 | 0.1− | |
| 2003 11 26 | 291 | 0.1− | 0.0 | 2005 02 18 | 809 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2− | |
| 2003 12 18 | 704 | 0.1− | 0.2+ | 2005 02 18 | 809 | 0.1+ | 0.1+ | 2006 10 20 | 644 | 0.3− | 0.2+ | |
| 2003 12 18 | 704 | 0.6+ | 0.8+ | 2006 09 30 | 703 | 0.4+ | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.6− | |
| 2003 12 18 | 704 | 1.0+ | 0.8− | 2006 09 30 | 703 | 0.5+ | 0.8− | 2006 10 22 | 691 | 0.1− | 0.2− | |
| 2003 12 18 | 704 | 0.6+ | 0.3+ | 2006 09 30 | 703 | 0.5− | 1.0+ | 2006 10 22 | 691 | 0.1+ | 0.1− | |
| 2003 12 27 | 704 | 0.2− | 0.4− | 2006 09 30 | 703 | 1.5− | 1.0+ | 2006 11 13 | 703 | 0.5− | 0.2+ | |
| 2003 12 27 | 704 | 0.6− | 0.3− | 2006 10 16 | 703 | 0.3+ | 1.2+ | 2006 11 13 | 703 | 0.1+ | 0.4+ | |
| 2003 12 27 | 704 | 0.7− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.7− | 2006 11 13 | 703 | (0.6− | 1.7+) | |
| 2003 12 27 | 704 | 0.4− | 0.0 | 2006 10 16 | 703 | 0.7+ | 1.1− | 2006 11 13 | 703 | 0.0 | 1.4+ | |

**2006 UU$_{67}$ = 2004 GH$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.63998 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18111156 | $\omega$ | 252.67210 | | +0.56836460 | +0.80935038 | |
| $a$ | 3.0938929 | $\Omega$ | 52.89072 | | −0.66668218 | +0.55846006 | |
| $e$ | 0.0604812 | $i$ | 10.69751 | | −0.48217895 | +0.18186346 | |
| $P$ | 5.44 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 15 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3− | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.4− | |
| 1993 04 15 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | 1.0− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1− | |
| 1993 04 15 | 691 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.1+ | |
| 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.0 | |
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.3+ | 0.1− | 2006 11 01 | G96 | 0.0 | 0.1− | |
| 2004 04 13 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.7+ | 2006 11 01 | G96 | 0.2+ | 0.1− | |
| 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2− | |
| 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.5− | 0.2+ | |
| 2004 04 20 | 691 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.2− | | | | | |
| 2006 10 16 | 703 | 0.6+ | 0.3− | 2006 10 21 | G96 | 0.5+ | 0.4− | | | | | |

**2006 UZ$_{67}$ = 2002 RH$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.70299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25962515 | $\omega$ | 325.30706 | | +0.74681904 | −0.64947681 | |
| $a$ | 2.4335384 | $\Omega$ | 75.85497 | | +0.63865497 | +0.64049021 | |
| $e$ | 0.1259629 | $i$ | 8.47878 | | +0.18542155 | +0.40981966 | |
| $P$ | 3.80 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 01 | 691 | 0.0 | 0.3+ | 2005 07 03 | 644 | 0.1− | 0.2− | 2006 11 13 | 703 | 0.2− | 0.5− | |
| 1997 05 01 | 691 | 1.0+ | 0.8+ | 2005 07 03 | 644 | 0.2+ | 0.0 | 2006 11 13 | 703 | 0.7− | 0.0 | |
| 1997 05 01 | 691 | 0.4− | 0.1− | 2005 07 03 | 644 | 0.5− | 1.3+ | 2006 11 19 | 703 | 0.1+ | 0.6+ | |
| 2002 09 13 | 699 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.5− | 0.1− | |
| 2002 09 13 | 699 | (0.2+ | 2.0+) | 2006 10 16 | 703 | 0.5− | 0.5+ | 2006 11 19 | 703 | 0.4+ | 0.0 | |
| 2002 09 13 | 699 | 1.0+ | 0.6+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 19 | 703 | 0.8+ | 0.3− | |
| 2002 09 13 | 699 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.0 | 0.5+ | |
| 2002 09 16 | 608 | 0.6− | 0.8− | 2006 10 22 | 703 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.1− | 0.1+ | |
| 2002 09 16 | 608 | 0.6− | 0.6− | 2006 10 22 | 703 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.6− | 0.9+ | |
| 2002 09 16 | 608 | 0.4− | 0.9− | 2006 10 22 | 703 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.4− | 0.8+ | |
| 2002 10 08 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.4− | 0.5+ | 2006 11 22 | 704 | 0.1+ | 1.3+ | |
| 2002 10 08 | 644 | 0.0 | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.9+ | |
| 2002 10 08 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.8− | 1.3+ | |
| 2005 06 13 | G96 | 0.3+ | 0.0 | 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.1− | 0.5+ | |
| 2005 06 13 | G96 | 0.1− | 0.5+ | 2006 10 28 | 703 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.2− | |
| 2005 06 13 | G96 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.4+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.0 | |
| 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.1− | |
| 2005 06 13 | G96 | 0.2− | 0.3+ | 2006 10 28 | 703 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.3+ | 0.2− | |
| 2005 06 13 | G96 | 0.5+ | 0.0 | 2006 11 13 | 703 | 0.6− | 0.0 | | | | | |
| 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.2− | 0.5− | | | | | |

**2006 UC$_{68}$ = 2001 YR$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.87199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17926806 | $\omega$ | 9.30730 | | +0.11449391 | −0.97787363 | |
| $a$ | 3.1150674 | $\Omega$ | 74.26802 | | +0.89934705 | +0.02716594 | |
| $e$ | 0.1820964 | $i$ | 10.48030 | | +0.42197871 | +0.20742510 | |
| $P$ | 5.50 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.7+ | 1.2− | 2006 09 30 | 703 | (1.9+ | 0.3+) | 2006 10 22 | 703 | 0.1− | 1.2+ | |
| 2001 12 18 | 704 | 0.5+ | 0.6− | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.9− | 0.5+ | |
| 2001 12 18 | 704 | 0.8+ | 0.5− | 2006 10 12 | 644 | 0.7+ | 0.4+ | 2006 11 19 | 703 | 0.6+ | 0.4− | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 704 | 0.6− | 0.3+ | 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.8− | 0.6− | 2006 11 19 | 703 | 0.2+ | 0.5− |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 10 16 | 703 | 0.8+ | 0.4− | 2006 11 19 | 703 | 0.8− | 0.6+ |
| 2001 12 19 | 704 | 0.5− | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 0.8− | 1.0+ | 2006 10 16 | 703 | 0.8− | 0.3+ | 2006 11 23 | G96 | 1.8− | 0.1+ |
| 2006 09 30 | 703 | 0.8+ | 0.7− | 2006 10 22 | 703 | 0.6− | 0.9+ | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2006 09 30 | 703 | 0.9+ | 0.6− | 2006 10 22 | 703 | 0.8− | 1.0− | 2006 11 23 | G96 | 0.7+ | 0.0 |

**2006 UG$_{68}$ = 2001 UN$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.77482 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19483836 | $\omega$ | 229.48715 | | +0.98794283 | | +0.14764362 |
| $a$ | 2.9468164 | $\Omega$ | 121.97427 | | −0.12017261 | | +0.92102769 |
| $e$ | 0.1055379 | $i$ | 3.14820 | | −0.09760899 | | +0.36042940 |
| $P$ | 5.06 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.1+ | 0.1+ | 2001 10 22 | 704 | 1.0− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.4− |
| 1993 01 29 | 691 | 0.1− | 0.4+ | 2001 10 22 | 704 | 0.7− | 1.0+ | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 1993 01 29 | 691 | 0.2+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− |
| 1998 01 30 | 691 | 0.3+ | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− |
| 1998 01 30 | 691 | 0.5− | 0.4− | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 11 01 | G96 | 0.1− | 0.2− |
| 1998 01 30 | 691 | 0.0 | 0.6− | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 10 20 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.2+ | 0.0 |
| 2001 10 20 | 704 | 0.1− | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2001 10 20 | 704 | 0.6+ | 0.1− | 2006 10 16 | 703 | 0.3− | 0.8+ | | | | |
| 2001 10 22 | 704 | 0.0 | 0.1− | 2006 10 16 | 703 | 0.3− | 0.2− | | | | |

**2006 UH$_{68}$ = 2001 XY$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.67395 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18670839 | $\omega$ | 174.59989 | | +0.96485007 | | +0.26234379 |
| $a$ | 3.0317507 | $\Omega$ | 170.14937 | | −0.24437871 | | +0.91733927 |
| $e$ | 0.1139609 | $i$ | 5.19626 | | −0.09666121 | | +0.29944015 |
| $P$ | 5.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.2− | 0.3+ | 2004 04 25 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2001 12 11 | 704 | 0.2+ | 0.3+ | 2006 10 03 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.0 |
| 2001 12 11 | 704 | 0.6+ | 0.3− | 2006 10 03 | G96 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2001 12 11 | 704 | 0.7− | 1.0+ | 2006 10 03 | G96 | 0.2+ | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2001 12 14 | 644 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2001 12 14 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 12 14 | 644 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 13 | 703 | (0.5+ | 1.6−) |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.0 | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 11 13 | 703 | 0.3− | 0.8+ |
| 2004 04 25 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.3− | 0.3− | 2006 11 13 | 703 | (0.9+ | 1.7+) |
| 2004 04 25 | 691 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.2− | 0.2− | | | | |

**2006 UT$_{68}$ = 2005 JK$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.84634 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27390946 | $\omega$ | 287.10555 | | +0.95715950 | | −0.28143702 |
| $a$ | 2.3481799 | $\Omega$ | 89.28123 | | +0.28476166 | | +0.87223586 |
| $e$ | 0.1968440 | $i$ | 3.90572 | | +0.05250230 | | +0.39999727 |
| $P$ | 3.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 08 | 691 | 0.1+ | 0.1− | 2006 10 16 | 703 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.5+ | 0.1− |
| 2005 05 08 | 691 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.2+ |
| 2005 05 08 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4− | 0.1+ | 2006 11 17 | 704 | 0.8+ | 0.5− |
| 2005 05 11 | G96 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.2− | 0.1+ | 2006 11 17 | 704 | (1.6− | 0.3−) |
| 2005 05 11 | G96 | 0.6− | 0.6− | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 17 | 704 | 1.5− | 0.8− |
| 2005 05 11 | G96 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.4+ |
| 2005 05 11 | G96 | 1.2− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.1+ |
| 2006 10 16 | 703 | 0.1+ | 0.6− | 2006 11 08 | 644 | 0.2+ | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2006 10 16 | 703 | 0.3− | 0.4− | 2006 11 13 | 703 | 0.4+ | 0.4+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2006 10 16 | 703 | 0.3+ | 0.2+ | 2006 11 13 | 703 | (1.9+ | 0.6+) | 2006 11 22 | G96 | 0.1− | 0.0 |

**2006 UU$_{68}$ = 1999 RO$_{254}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.81035 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28793381 | $\omega$ | 276.65564 | | +0.99556717 | | +0.05754325 |
| $a$ | 2.2712988 | $\Omega$ | 80.06426 | | −0.02220534 | | +0.91244447 |
| $e$ | 0.2531998 | $i$ | 4.33162 | | −0.09139443 | | +0.40513437 |
| $P$ | 3.42 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 08 | 703 | 1.3+ | 0.5+ | 2006 10 16 | 703 | 1.2− | 1.3− | 2006 11 13 | 644 | 0.1− | 0.2− |
| 1999 09 08 | 703 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 13 | 703 | (1.0− | 1.9+) |
| 1999 09 08 | 703 | 1.1− | 0.1− | 2006 10 16 | 703 | 0.7− | 0.4− | 2006 11 13 | 703 | (0.0 | 1.7+) |
| 1999 09 08 | 703 | 0.3− | 0.4− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 13 | 644 | 0.4− | 0.4− |
| 1999 09 13 | 704 | 0.4+ | 0.8− | 2006 10 20 | 644 | 0.0 | 0.4− | 2006 11 13 | 644 | 0.1+ | 0.4− |
| 1999 09 13 | 704 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 13 | 703 | (1.9+ | 1.5+) |
| 1999 09 13 | 704 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.0 | 0.2− | 2006 11 13 | 703 | 0.8+ | 0.5+ |
| 1999 09 13 | 704 | 0.6− | 0.8+ | 2006 10 22 | 703 | 0.0 | 0.1− | 2006 11 14 | 704 | (1.7− | 0.6+) |
| 2004 01 18 | 691 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.5− | 0.6+ |
| 2004 01 18 | 691 | 0.1− | 0.0 | 2006 10 22 | 703 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.5− | 0.8+ |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 14 | 704 | 1.0− | 0.7+ |
| 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 14 | 704 | 0.5− | 0.5− |
| 2006 09 30 | 703 | 2.1+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 17 | 704 | 1.2+ | 1.0+ |
| 2006 09 30 | 703 | 1.3+ | 0.3+ | 2006 11 13 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.3− |
| 2006 09 30 | 703 | 0.4+ | 0.4+ | 2006 11 13 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 704 | 0.2+ | 0.1+ |
| 2006 10 16 | 703 | 0.2− | 0.6− | 2006 11 13 | 644 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.0 |

**2006 UV$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.43417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22660430 | $\omega$ | 248.59090 | | +0.99474883 | | −0.06510685 |
| $a$ | 2.6645505 | $\Omega$ | 115.06980 | | +0.08948686 | | +0.92772824 |
| $e$ | 0.1031891 | $i$ | 5.00143 | | −0.04966755 | | +0.36753422 |
| $P$ | 4.35 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 14 | 691 | 0.0 | 0.3− | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.2+ | 0.2+ |
| 1998 12 14 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 1998 12 14 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.5+ | 2006 11 17 | 644 | 0.1− | 0.2+ |
| 1998 12 24 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.9− | 2006 11 17 | 644 | 0.2+ | 0.3+ |
| 1998 12 24 | 691 | 0.4− | 0.5+ | 2006 10 22 | 703 | 0.3− | 0.2− | 2006 11 17 | 644 | 0.6− | 0.1− |
| 1998 12 24 | 691 | 0.1− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.5− | 2006 11 19 | 703 | 0.5+ | 0.4+ |
| 1999 01 08 | 691 | 0.4+ | 0.2− | 2006 10 22 | 703 | 1.1− | 0.2− | 2006 11 19 | 703 | 0.6+ | 0.8+ |
| 1999 01 08 | 691 | 0.0 | 0.2− | 2006 10 22 | 703 | 0.3+ | 0.5− | 2006 11 19 | 703 | 1.0+ | 0.2+ |
| 1999 01 08 | 691 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.4+ | 0.0 | 2006 11 19 | 703 | (2.7− | 1.4−) |
| 2000 03 15 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 20 | 704 | 1.2+ | 0.1+ |
| 2000 03 15 | 691 | 0.1+ | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2000 03 15 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.2+ |
| 2006 09 30 | 703 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2006 09 30 | 703 | 0.9− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 23 | G96 | 1.4− | 0.8+ |
| 2006 09 30 | 703 | (2.3− | 1.3+) | 2006 11 13 | 703 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.4− | 0.4− |
| 2006 09 30 | 703 | 0.1+ | 0.7− | 2006 11 13 | 703 | 0.9− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.4− |

**2006 UF$_{69}$ = 2003 XT$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.30645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30486298 | $\omega$ | 253.42694 | | +0.91158276 | | +0.40142154 |
| $a$ | 2.1864167 | $\Omega$ | 82.83499 | | −0.33479361 | | +0.85013922 |
| $e$ | 0.1911784 | $i$ | 5.13222 | | −0.23860029 | | +0.34076979 |
| $P$ | 3.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 15 | 947 | 0.5− | 0.3+ | 2006 09 30 | 703 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.2+ |
| 2003 12 15 | 947 | 0.2− | 0.4− | 2006 10 12 | 644 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.2+ |
| 2003 12 15 | 947 | 0.3− | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.2+ |
| 2003 12 19 | 704 | 0.9+ | 0.7− | 2006 10 12 | 644 | 0.1+ | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.3+ |
| 2003 12 19 | 704 | 0.2+ | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.3+ | 2006 11 13 | 703 | 0.7+ | 0.1− |
| 2003 12 19 | 704 | 1.0+ | 0.4− | 2006 10 16 | 703 | 0.2− | 0.2+ | 2006 11 13 | 703 | 0.4+ | 0.3− |
| 2003 12 19 | 704 | (0.7− | 1.8−) | 2006 10 16 | 703 | 1.0− | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.0 |
| 2003 12 20 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.7− | 1.4− | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2003 12 20 | 704 | 0.3− | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.1+ | 0.9− |
| 2003 12 20 | 704 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.1+ | 2006 11 14 | 704 | 0.2− | 0.2− |
| 2006 09 30 | 699 | 0.2− | 0.9+ | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 14 | 704 | 0.1− | 0.0 |
| 2006 09 30 | 699 | 0.3+ | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2006 09 30 | 699 | 0.8+ | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2006 09 30 | 703 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2006 09 30 | 703 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1+ | 0.4+ |
| 2006 09 30 | 699 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.3− | 0.2+ | | | | |
| 2006 09 30 | 703 | 0.1+ | 0.7+ | 2006 11 09 | 644 | 0.1− | 0.0 | | | | |

**2006 UG$_{69}$ = 2003 BL$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.37127 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21955276 | $\omega$ | 302.85049 | | +0.39393393 | −0.91676311 | |
| $a$ | 2.7213023 | $\Omega$ | 123.81227 | | +0.86762634 | +0.34717899 | |
| $e$ | 0.2253060 | $i$ | 4.55896 | | +0.30338192 | +0.19751494 | |
| $P$ | 4.49 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 704 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.9− | 0.6+ |
| 2003 01 31 | 704 | 0.2− | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 704 | 0.1+ | 0.4+ |
| 2003 01 31 | 704 | 0.1− | 0.8− | 2006 11 09 | 644 | 0.4+ | 0.0 | 2006 11 17 | 704 | (0.5− | 1.8−) |
| 2003 01 31 | 704 | 0.2+ | 0.1+ | 2006 11 10 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 2003 02 02 | 608 | 0.1− | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.2+ |
| 2003 02 02 | 608 | 0.3+ | 0.7− | 2006 11 10 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 1.3+ | 1.1+ |
| 2003 02 02 | 608 | 0.3− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 19 | 703 | (2.1− | 1.2−) |
| 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 10 | 644 | 0.2+ | 0.3+ | 2006 11 19 | 703 | 0.8− | 0.6− |
| 2006 10 16 | 703 | 0.8− | 0.4+ | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 19 | 703 | 0.3+ | 0.0 |
| 2006 10 16 | 703 | 0.1+ | 0.4− | 2006 11 13 | 703 | 0.3+ | 0.1− | 2006 11 19 | 703 | 1.4+ | 0.4+ |
| 2006 10 16 | 703 | 0.6− | 0.3+ | 2006 11 13 | 703 | 0.5− | 1.1− | 2006 11 20 | 704 | 0.7− | 0.8− |
| 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.8− | 0.8− | 2006 11 20 | 704 | 0.1+ | 0.1− |
| 2006 10 21 | G96 | 0.6+ | 0.5− | 2006 11 13 | 703 | 0.5− | 0.8− | 2006 11 20 | 704 | 1.1− | 0.1+ |
| 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 11 13 | 644 | 0.2+ | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2006 10 21 | G96 | 0.6+ | 0.4− | 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.6+ |
| 2006 11 01 | 703 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.7− |
| 2006 11 01 | 703 | 0.3+ | 1.0− | 2006 11 14 | 704 | 0.2+ | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.7− |
| 2006 11 01 | 703 | 1.0− | 0.9+ | 2006 11 14 | 704 | 0.5− | 0.7+ | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2006 11 01 | 703 | 1.0+ | 0.6+ | 2006 11 14 | 704 | 0.7− | 0.1− | 2006 11 23 | G96 | 0.8− | 0.1+ |

**2006 UC$_{70}$ = 2004 FQ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.47186 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24444984 | $\omega$ | 204.61683 | | +0.51003090 | −0.85415688 | |
| $a$ | 2.5332393 | $\Omega$ | 214.96789 | | +0.81559423 | +0.51769110 | |
| $e$ | 0.0279848 | $i$ | 10.19210 | | +0.27326641 | +0.04911154 | |
| $P$ | 4.03 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | 0.4− | 1.3− | 2006 10 22 | G96 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.8+ | 0.7+ |
| 2004 03 16 | 703 | 0.4− | 1.3+ | 2006 10 22 | G96 | 0.2− | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2004 03 16 | 703 | 0.6+ | 0.4+ | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2004 03 16 | 703 | 0.0 | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.9− | 2006 11 24 | 691 | 0.4+ | 0.6+ |
| 2004 03 19 | 704 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.9+ | 0.5+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2004 03 19 | 704 | 0.2+ | 0.7− | 2006 11 02 | 703 | (2.3+ | 0.6−) | 2006 11 28 | 683 | (2.3− | 1.7−) |
| 2004 03 19 | 704 | (1.8+ | 0.6−) | 2006 11 02 | 703 | 0.6+ | 0.4+ | 2006 11 28 | 683 | (0.6+ | 1.6−) |
| 2006 09 28 | G96 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 1.2− | 0.2+ |
| 2006 09 28 | G96 | 0.3+ | 1.1− | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 28 | 683 | (0.2+ | 3.5−) |
| 2006 09 28 | G96 | 0.6− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2006 10 16 | 703 | 0.7− | 0.5− | 2006 11 20 | 691 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.6− |
| 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.2− | 2006 11 28 | 704 | 1.2+ | 0.4+ |
| 2006 10 16 | 703 | 1.2− | 0.1+ | 2006 11 20 | 691 | 0.4− | 0.1− | 2006 11 28 | 704 | 0.5+ | 1.2− |
| 2006 10 16 | 703 | 0.6+ | 0.6− | 2006 11 20 | 704 | 0.1+ | 0.2+ | | | | |
| 2006 10 22 | G96 | 0.4− | 0.1+ | 2006 11 20 | 704 | (0.2− | 1.9+) | | | | |

**2006 UK$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.83884 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17057123 | $\omega$ | 274.54993 | | +0.74051649 | +0.64869189 | |
| $a$ | 3.2200716 | $\Omega$ | 45.13885 | | −0.47521375 | +0.69020082 | |
| $e$ | 0.1012839 | $i$ | 14.34331 | | −0.47519177 | +0.32065817 | |
| $P$ | 5.78 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 28 | 691 | 0.1− | 0.4+ | 2006 09 25 | G96 | 0.4+ | 0.8− | 2006 10 31 | G96 | 0.8+ | 0.1− |
| 2004 04 28 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.2− | 0.7− | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 2004 04 28 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 05 21 | 691 | 0.0 | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.2− | 0.4+ |
| 2004 05 21 | 691 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.4+ |
| 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.3+ |
| 2005 09 06 | E12 | 0.8− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2005 09 06 | E12 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2005 09 06 | E12 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.4+ | 0.1+ |
| 2005 09 06 | E12 | 0.2+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.3− |
| 2006 09 25 | G96 | 0.6− | 1.1− | 2006 10 21 | 691 | 0.5− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2006 09 25 | G96 | 0.6− | 1.0− | 2006 10 31 | G96 | 0.5− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |

**2006 UQ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.37205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24752547 | $\omega$ | 260.72390 | | +0.98548478 | +0.02734410 | |
| $a$ | 2.5122111 | $\Omega$ | 97.57743 | | +0.03743940 | +0.92763580 | |
| $e$ | 0.1146526 | $i$ | 9.73103 | | −0.16558394 | +0.37248371 | |
| $P$ | 3.98 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.0 | 0.0 | 2005 06 16 | 691 | 0.2+ | 0.6+ | 2006 10 16 | 703 | 0.4+ | 1.4+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2005 06 16 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 703 | 0.8− | 0.0 |
| 2002 12 08 | 644 | 0.5+ | 0.7+ | 2005 07 05 | G96 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2002 12 08 | 644 | 0.3− | 0.7+ | 2005 07 05 | G96 | 0.1− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.7− |
| 2002 12 08 | 644 | 0.4− | 0.8+ | 2005 07 05 | G96 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.4+ | 0.2− |
| 2004 02 17 | 691 | 0.1+ | 0.3+ | 2005 07 05 | G96 | 0.4− | 0.1− | 2006 11 17 | 644 | 0.1− | 0.1+ |
| 2004 02 17 | 691 | 0.2+ | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 17 | 644 | 0.4− | 0.2+ |
| 2004 02 17 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 0.6+ | 1.0+ | 2006 11 17 | 644 | 0.2− | 0.2+ |
| 2005 06 16 | 691 | 0.2+ | 0.4+ | 2006 10 16 | 703 | 1.2− | 1.2+ | | | | |

**2006 UR$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.96261 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25388235 | $\omega$ | 312.67643 | | +0.84756223 | −0.49623188 | |
| $a$ | 2.4700991 | $\Omega$ | 77.89524 | | +0.52555660 | +0.73562976 | |
| $e$ | 0.1940289 | $i$ | 11.09324 | | +0.07367849 | +0.46108870 | |
| $P$ | 3.88 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.6− | 2006 11 13 | 703 | 0.6− | 0.1− |
| 2002 10 16 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.0 |
| 2002 10 16 | 644 | 0.3− | 0.4− | 2006 10 22 | 703 | 0.6− | 0.1+ | 2006 11 13 | 703 | 0.6− | 0.0 |
| 2002 11 05 | 644 | 0.3− | 0.1+ | 2006 10 25 | 224 | 0.2− | 0.0 | 2006 11 19 | 703 | 0.2+ | 0.1+ |
| 2002 11 05 | 644 | 0.0 | 0.7+ | 2006 10 25 | 224 | 0.2+ | 0.5− | 2006 11 19 | 703 | 0.5+ | 0.2− |
| 2002 11 05 | 644 | 0.3+ | 0.3+ | 2006 10 25 | 224 | 0.2− | 1.0− | 2006 11 19 | 703 | 0.1− | 0.4+ |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 26 | 224 | 0.6+ | 0.1+ | 2006 11 19 | 703 | 0.2+ | 0.3+ |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 10 26 | 224 | 0.5− | 0.1+ | 2006 11 19 | 703 | 0.3+ | 0.3− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 16 | 703 | 0.5+ | 0.5+ | 2006 10 26 | 224 | 0.2+ | 0.3− | 2006 11 19 | 703 | 0.5− | 0.1− |
| 2006 10 16 | 703 | 1.4+ | 0.7− | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 19 | 703 | 0.3− | 0.2+ |
| 2006 10 16 | 703 | 0.5− | 1.3+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.0 | 0.5− |
| 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 11 08 | 644 | 0.2+ | 0.1+ | | | | |
| 2006 10 22 | 703 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.3+ | 0.1+ | | | | |

**2006 UT$_{70}$ = 2005 LY$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.95643 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22500892 | $\omega$ | 175.37019 | | +0.97496944 | | +0.22025101 |
| $a$ | 2.6771306 | $\Omega$ | 171.71608 | | −0.21016697 | | +0.95755744 |
| $e$ | 0.1851839 | $i$ | 12.18022 | | −0.07255644 | | +0.18593881 |
| $P$ | 4.38 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | 691 | 0.4+ | 0.4+ | 2005 06 07 | 703 | 0.4− | 0.8− | 2006 10 16 | 703 | 0.9− | 0.8− |
| 2005 05 14 | 691 | 0.2+ | 0.2+ | 2006 09 18 | 703 | 0.6+ | 0.4+ | 2006 10 16 | 703 | 0.1+ | 0.8− |
| 2005 05 14 | 691 | 0.1+ | 0.3+ | 2006 09 18 | 703 | (1.3+ | 1.5+) | 2006 10 22 | 703 | 0.3− | 0.4+ |
| 2005 06 04 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | 0.6− | 0.4+ | 2006 10 22 | 703 | 0.1+ | 0.0 |
| 2005 06 04 | 691 | 0.0 | 0.1− | 2006 09 18 | 703 | (0.7+ | 2.6+) | 2006 10 22 | 703 | 0.6+ | 0.6+ |
| 2005 06 04 | 691 | 0.1− | 0.1+ | 2006 09 30 | 703 | 1.0− | 0.0 | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2005 06 07 | 703 | 0.9− | 0.2+ | 2006 09 30 | 703 | 1.2− | 0.7− | 2006 11 16 | 703 | 0.7+ | 0.7+ |
| 2005 06 07 | 703 | 0.1− | 1.0− | 2006 10 16 | 703 | 0.3− | 0.8− | 2006 11 16 | 703 | 1.0+ | 0.4+ |
| 2005 06 07 | 703 | 0.5− | 0.4− | 2006 10 16 | 703 | 0.8+ | 0.0 | 2006 11 16 | 703 | 0.1+ | 0.6+ |

**2006 UU$_{70}$ = 2002 RF$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.05901 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26250662 | $\omega$ | 248.65149 | | +0.96062244 | | −0.26408120 |
| $a$ | 2.4156975 | $\Omega$ | 126.56010 | | +0.27763249 | | +0.89975910 |
| $e$ | 0.1993484 | $i$ | 6.17527 | | +0.01116824 | | +0.34741140 |
| $P$ | 3.75 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 1.1+ | 0.1− | 2006 11 01 | 703 | 0.3+ | 0.8− |
| 2000 02 06 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 703 | 1.3+ | 0.4+ | 2006 11 01 | 703 | 1.1− | 1.1− |
| 2000 02 06 | 691 | 0.2− | 0.5− | 2006 10 16 | 703 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 0.7+ | 0.3+ |
| 2002 09 13 | 704 | 1.1+ | 1.0+ | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 08 | 644 | 0.0 | 0.8+ |
| 2002 09 13 | 704 | 0.8+ | 0.0 | 2006 10 16 | 703 | 1.2− | 1.1− | 2006 11 08 | 644 | 0.4− | 0.8+ |
| 2002 09 13 | 704 | 0.7− | 0.3+ | 2006 10 16 | 703 | 0.7− | 0.1+ | 2006 11 08 | 644 | 0.4− | 1.0+ |
| 2002 09 16 | 644 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.4− | 2006 11 13 | 703 | 0.6+ | 0.3− |
| 2002 09 16 | 644 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.9− | 0.7− | 2006 11 13 | 703 | 0.3+ | 0.8+ |
| 2002 09 16 | 644 | 0.4− | 0.0 | 2006 10 22 | 703 | 0.6− | 0.1− | 2006 11 13 | 703 | 0.1− | 1.2− |
| 2006 09 30 | 703 | 0.2+ | 0.0 | 2006 10 22 | 703 | 0.6+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.3+ |
| 2006 09 30 | 703 | 1.4+ | 0.8+ | 2006 11 01 | 703 | (0.1+ | 1.7+) | | | | |

**2006 UY$_{70}$ = 2003 BY$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.91240 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22283836 | $\omega$ | 358.96549 | | +0.32426399 | | −0.93327241 |
| $a$ | 2.6944869 | $\Omega$ | 72.09972 | | +0.86906891 | | +0.22942439 |
| $e$ | 0.2101480 | $i$ | 9.34095 | | +0.37359349 | | +0.27634590 |
| $P$ | 4.42 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 31 | 699 | 0.5− | 0.0 | 2006 10 27 | 704 | 0.8+ | 0.6− | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2003 01 31 | 699 | 0.0 | 1.1+ | 2006 10 27 | 704 | 0.7+ | 0.2+ | 2006 11 17 | G96 | 0.4+ | 0.7− |
| 2003 01 31 | 699 | 0.3− | 0.1− | 2006 11 01 | 703 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.7− | 0.1+ |
| 2003 01 31 | 699 | 0.6− | 0.1− | 2006 11 01 | 703 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.6− |
| 2003 02 06 | 699 | 1.3+ | 0.4− | 2006 11 01 | 703 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.6+ | 0.7− |
| 2003 02 06 | 699 | 0.4+ | 0.2− | 2006 11 01 | 703 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.6− | 1.3+ |
| 2003 02 06 | 699 | 0.3+ | 0.8− | 2006 11 11 | 703 | 0.3+ | 0.2+ | 2006 11 19 | 704 | (1.8− | 0.6+) |
| 2003 02 06 | 699 | 0.5− | 0.8+ | 2006 11 11 | 703 | 0.7+ | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2006 10 16 | 703 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.1+ | 2006 11 19 | 704 | (2.0− | 0.4+) |
| 2006 10 16 | 703 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.4− | 0.7− | 2006 11 20 | 704 | 0.3+ | 0.2+ |
| 2006 10 16 | 703 | 0.3− | 0.2− | 2006 11 14 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2006 10 22 | 703 | 0.3− | 0.1+ | 2006 11 14 | 704 | 0.6− | 0.4− | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2006 10 22 | 703 | 0.1− | 0.4− | 2006 11 14 | 704 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.3− |
| 2006 10 22 | 703 | 0.3− | 0.5+ | 2006 11 14 | 704 | 0.7− | 1.0− | 2006 11 28 | 704 | 0.4+ | 0.0 |
| 2006 10 22 | 703 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.3− | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.4− |
| 2006 10 27 | 704 | (2.3+ | 1.0+) | 2006 11 17 | 704 | 0.8− | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.2+ |
| 2006 10 27 | 704 | 0.2− | 1.3+ | 2006 11 17 | 704 | 0.4− | 0.3+ | 2006 11 28 | 704 | 0.6+ | 0.4+ |
| 2006 10 27 | 704 | 0.6− | 1.1+ | 2006 11 17 | 704 | 0.6− | 0.5+ | 2006 11 28 | 704 | 1.1+ | 0.1+ |

**2006 UZ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.75340 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29592005 | $\omega$ | 297.05309 | | +0.97353960 | | −0.18216475 |
| $a$ | 2.2302478 | $\Omega$ | 73.70708 | | +0.22459598 | | +0.87412850 |
| $e$ | 0.1995350 | $i$ | 8.26468 | | −0.04215792 | | +0.45023923 |
| $P$ | 3.33 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.0 | 0.1− | 2006 11 01 | 703 | 1.1− | 0.2− | 2006 11 14 | 704 | 0.0 | 1.1− |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 14 | 704 | 0.7− | 1.0+ |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 14 | 704 | 0.8+ | 0.9+ |
| 2006 10 16 | 703 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 14 | 704 | 0.6+ | 0.1+ |
| 2006 10 16 | 703 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.1− |
| 2006 10 16 | 703 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 10 16 | 703 | 0.5+ | 1.0+ | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 2006 10 22 | 703 | 1.0− | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2006 10 22 | 703 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.3− | 1.0− | 2006 11 20 | 704 | 1.2− | 0.1− |
| 2006 10 22 | 703 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.6+ | 0.0 |
| 2006 10 22 | 703 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.7+ | 1.4− | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2006 11 01 | 703 | 0.1− | 0.4+ | 2006 11 13 | 104 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 1.2+ |
| 2006 11 01 | 703 | 0.8− | 0.8− | 2006 11 13 | 104 | 0.3− | 0.3+ | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2006 11 01 | 703 | 0.1+ | 0.3− | 2006 11 13 | 104 | 0.0 | 0.5+ | | | | |

**2006 UA$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.09859 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29854572 | $\omega$ | 234.26459 | | +0.89486254 | | −0.44408871 |
| $a$ | 2.2171521 | $\Omega$ | 152.02045 | | +0.43411720 | | +0.84263464 |
| $e$ | 0.1722429 | $i$ | 5.47847 | | +0.10374627 | | +0.30455225 |
| $P$ | 3.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 31 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.0 | 0.1+ | 2006 11 13 | 703 | 0.4+ | 0.4+ |
| 2001 03 31 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.0 |
| 2001 03 31 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.6− | 0.1− | 2006 11 13 | 703 | 0.6+ | 0.1− |
| 2003 12 22 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.7− | 0.5+ | 2006 11 19 | 703 | 0.5− | 0.3− |
| 2003 12 22 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.2− | 2006 11 19 | 703 | 0.5− | 0.4− |
| 2003 12 22 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 703 | 0.9− | 0.3− |
| 2005 05 14 | 691 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.8− | 2006 11 19 | 703 | 0.3+ | 0.5− |
| 2005 05 14 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 0.4− | 0.0 | 2006 11 20 | 704 | (0.4+ | 1.7+) |
| 2005 05 14 | 691 | 0.0 | 0.1+ | 2006 11 01 | 703 | 0.4− | 0.4− | 2006 11 20 | 704 | 0.7+ | 1.1+ |
| 2006 09 18 | 703 | 0.8− | 0.1− | 2006 11 01 | 703 | 0.2+ | 0.8+ | 2006 11 20 | 704 | 0.3+ | 1.0+ |
| 2006 09 18 | 703 | 0.8+ | 0.5− | 2006 11 01 | 703 | 0.4+ | 0.6+ | 2006 11 20 | 704 | 0.8− | 0.8+ |
| 2006 09 18 | 703 | 0.8+ | 0.6+ | 2006 11 01 | 703 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.0 | 0.1− |
| 2006 09 18 | 703 | 0.3− | 0.9+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2006 09 19 | 683 | (3.0+ | 1.7−) | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2006 09 19 | 683 | (1.6+ | 0.9−) | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2006 09 19 | 683 | (3.2+ | 0.2−) | 2006 11 13 | 703 | 0.1− | 0.8− | 2006 11 25 | G96 | 0.4+ | 0.2− |

**2006 UB$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.00141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22268330 | $\omega$ | 160.41728 | | +0.99503723 | +0.08213261 | |
| $a$ | 2.6957376 | $\Omega$ | 195.20119 | | −0.09176476 | +0.97571905 | |
| $e$ | 0.2433110 | $i$ | 12.36983 | | +0.03847269 | +0.20304325 | |
| $P$ | 4.43 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 10 | 691 | 0.1+ | 0.1− | 2006 09 17 | 699 | 0.3− | 0.2+ | 2006 11 01 | 703 | 0.2+ | 0.7+ |
| 1996 05 10 | 691 | 0.0 | 0.3+ | 2006 09 17 | 699 | 0.4+ | 1.2− | 2006 11 01 | 703 | 0.5− | 0.6+ |
| 1996 05 10 | 691 | 0.3− | 0.3− | 2006 09 17 | 699 | 0.8− | 0.4+ | 2006 11 01 | 703 | 0.2− | 1.3− |
| 2000 04 13 | 691 | 0.1− | 0.2+ | 2006 09 17 | 699 | 0.3+ | 0.3− | 2006 11 01 | 703 | 0.1+ | 0.0 |
| 2000 04 13 | 691 | 0.1+ | 0.2− | 2006 09 30 | 699 | (1.8+ | 2.8+) | 2006 11 12 | D35 | 0.0 | 0.3+ |
| 2000 04 13 | 691 | 0.3+ | 0.0 | 2006 09 30 | 699 | 1.2+ | 0.5− | 2006 11 12 | D35 | 0.2− | 0.1+ |
| 2005 05 13 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 0.4− | 0.8− | 2006 11 12 | D35 | 0.1+ | 0.1+ |
| 2005 05 13 | 691 | 0.2− | 0.3+ | 2006 09 30 | 699 | 0.1+ | 0.8− | 2006 11 13 | 703 | 0.0 | 0.7+ |
| 2005 05 13 | 691 | 0.1+ | 0.3− | 2006 09 30 | 703 | 0.6− | 0.6+ | 2006 11 13 | 703 | 0.1+ | 0.7+ |
| 2005 06 05 | 691 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.3− | 2006 11 13 | 703 | 0.9+ | 0.7+ |
| 2005 06 05 | 691 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.4+ | 2006 11 13 | 703 | 0.5+ | 0.9+ |
| 2005 06 05 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 19 | 703 | 0.9− | 0.0 |
| 2005 06 29 | 644 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.9− | 0.2+ | 2006 11 19 | 703 | 0.0 | 0.2− |
| 2005 06 29 | 644 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4− | 0.9− | 2006 11 19 | 703 | 0.1− | 0.8+ |
| 2005 06 29 | 644 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.1− | 0.4− | 2006 11 19 | 703 | 0.3− | 0.3+ |
| 2006 08 28 | 703 | 0.5− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.6− | 2006 11 20 | 704 | 1.1− | 1.0+ |
| 2006 08 28 | 703 | 0.5+ | 0.2− | 2006 10 22 | 703 | 0.3− | 0.1+ | 2006 11 20 | 704 | 1.8+ | 2.4+ |
| 2006 08 28 | 703 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.1− |
| 2006 08 28 | 703 | 0.4− | 0.4+ | 2006 10 22 | 703 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.9+ | 0.7+ |

**2006 UC$_{71}$ = 2005 QG$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.02875 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17740020 | $\omega$ | 287.29503 | | −0.39504682 | −0.91846917 | |
| $a$ | 3.1368950 | $\Omega$ | 186.07386 | | +0.89578295 | −0.38059632 | |
| $e$ | 0.1210147 | $i$ | 10.21915 | | +0.20374225 | −0.10752131 | |
| $P$ | 5.56 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 691 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.2+ |
| 2000 09 03 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | 1.4+ | 0.9+ | 2006 11 13 | 703 | 0.3+ | 0.0 |
| 2000 09 03 | 691 | 0.5+ | 0.4+ | 2006 10 22 | 703 | 0.8− | 0.2− | 2006 11 19 | 703 | 0.3− | 0.2− |
| 2005 08 24 | 644 | 0.9− | 0.2+ | 2006 10 22 | 703 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.2+ | 0.3+ |
| 2005 08 24 | 644 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.5− |
| 2005 08 24 | 644 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.2− | 0.2− | 2006 11 19 | 703 | 0.9− | 0.3− |
| 2005 08 29 | 599 | 0.0 | 0.2+ | 2006 11 01 | 703 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2005 08 29 | 599 | 0.2− | 0.3+ | 2006 11 01 | 703 | 0.5+ | 0.1− | 2006 11 25 | G96 | 0.4− | 0.1+ |
| 2005 08 29 | 599 | 0.2+ | 0.5+ | 2006 11 01 | 703 | 0.4− | 0.7− | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2005 08 29 | 599 | 1.2+ | 0.4− | 2006 11 01 | 703 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.2− | 0.0 |
| 2006 10 16 | 703 | 0.3− | 1.0+ | 2006 11 13 | 703 | 0.1− | 0.1− | | | | |
| 2006 10 16 | 703 | 1.1+ | 0.7+ | 2006 11 13 | 703 | 0.6+ | 0.2+ | | | | |

**2006 UK$_{71}$ = 1996 AQ$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.52197 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25640719 | $\omega$ | 57.60342 | | −0.71786082 | −0.69214333 | |
| $a$ | 2.4538570 | $\Omega$ | 78.47443 | | +0.61030406 | −0.67743045 | |
| $e$ | 0.1472008 | $i$ | 4.38539 | | +0.33496984 | −0.24904937 | |
| $P$ | 3.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 15 | 691 | 0.2+ | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1996 01 15 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.3− | 0.1+ |
| 1996 01 15 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.3− | 0.2− |
| 1996 01 21 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 1996 01 21 | 691 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.7− |
| 1996 01 21 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2+ | | | | |
| 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1− | | | | |

**2006 UL$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.27329 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18709431 | $\omega$ | 312.60651 | | +0.58495200 | −0.80995705 | |
| $a$ | 3.0275803 | $\Omega$ | 101.54607 | | +0.75624565 | +0.52575760 | |
| $e$ | 0.0368337 | $i$ | 2.48234 | | +0.29312739 | +0.25990098 | |
| $P$ | 5.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 24 | 691 | 0.2+ | 0.0 | 2006 09 27 | 691 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.5− | 0.0 |
| 1993 03 24 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.6− | 0.6+ | 2006 10 22 | 691 | 0.2+ | 0.1+ |
| 1993 03 24 | 691 | 0.0 | 0.1− | 2006 10 16 | 621 | 0.9+ | 0.4− | 2006 10 30 | 621 | 0.2+ | 0.1− |
| 2004 04 25 | 691 | 0.3− | 0.0 | 2006 10 16 | 621 | 0.4+ | 0.1− | 2006 10 30 | 621 | 0.8+ | 0.3− |
| 2004 04 25 | 691 | 0.1− | 0.0 | 2006 10 16 | 621 | 0.1+ | 0.4− | 2006 10 31 | 621 | 0.3+ | 0.3− |
| 2004 04 25 | 691 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.2+ | 1.2− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 2006 09 19 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2006 09 27 | 691 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.0 | 0.2− | | | | |

**2006 UV$_{71}$ = 2001 TQ$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.10356 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18939651 | $\omega$ | 82.27725 | | +0.61069337 | +0.78317044 | |
| $a$ | 3.0029958 | $\Omega$ | 226.05224 | | −0.77540836 | +0.56145548 | |
| $e$ | 0.0902571 | $i$ | 9.35538 | | −0.16060976 | +0.26722986 | |
| $P$ | 5.20 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.5− | 0.4+ | 2004 03 27 | 691 | 0.1− | 0.2+ | 2006 09 27 | 703 | 1.0− | 1.5− |
| 2001 09 28 | 644 | 0.2− | 0.3+ | 2004 03 27 | 691 | 0.0 | 0.2+ | 2006 09 27 | 703 | 0.9− | 0.8− |
| 2001 09 28 | 644 | 0.5− | 0.8+ | 2004 03 27 | 691 | 0.3+ | 0.1+ | 2006 09 27 | 703 | 0.9− | 0.1− |
| 2001 10 14 | 704 | 0.8− | 0.2+ | 2005 02 09 | 809 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.5+ |
| 2001 10 14 | 704 | 0.2− | 0.1+ | 2005 02 09 | 809 | 0.2− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2001 10 14 | 704 | 0.5− | 0.9− | 2005 02 09 | 809 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 10 17 | 704 | 0.6+ | 0.1+ | 2005 06 27 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.2+ | 0.0 |
| 2001 10 17 | 704 | 1.0+ | 0.6+ | 2005 06 27 | 644 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.3+ |
| 2001 10 17 | 704 | 0.0 | 0.2+ | 2005 06 27 | 644 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.3+ | 0.1− |
| 2001 10 17 | 704 | 0.6+ | 0.6+ | 2006 09 27 | 703 | 0.6+ | 1.2− | | | | |

**2006 UU$_{72}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.37571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21711965 | $\omega$ | 97.14874 | | +0.65183839 | −0.75560332 | |
| $a$ | 2.7415950 | $\Omega$ | 311.95996 | | +0.65699771 | +0.60519491 | |
| $e$ | 0.0384188 | $i$ | 4.98206 | | +0.37876210 | +0.25060476 | |
| $P$ | 4.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 30 | 691 | 0.4+ | 0.4− | 2001 05 22 | 807 | 0.6− | 0.2+ | 2006 10 21 | 691 | 0.7− | 0.3+ |
| 1992 09 30 | 691 | 0.2+ | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.0 |
| 1992 09 30 | 691 | 0.4− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.3− |
| 1999 02 09 | 691 | 0.6+ | 0.3− | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.3− | 0.1+ |
| 1999 02 09 | 691 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1+ |
| 1999 02 09 | 691 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2− |
| 2001 05 22 | 807 | 0.2+ | 0.5+ | 2006 10 17 | 691 | 0.6+ | 0.1− | | | | |

**2006 UK$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.41390 | | (2000.0) | | | |
| $n$ | 0.22485290 | $\omega$ | 93.33815 | | +0.97901605 | −0.18846057 |
| $a$ | 2.6783689 | $\Omega$ | 277.53512 | | +0.14164993 | +0.90284308 |
| $e$ | 0.0728594 | $i$ | 4.48515 | | +0.14650209 | +0.38646731 |
| $P$ | 4.38 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 291 | 0.3+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2003 01 10 | 291 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 10 31 | 703 | 0.3− | 0.4− |
| 2003 01 10 | 291 | 0.4− | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 10 31 | 703 | 1.7− | 1.6+ |
| 2006 09 26 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 10 31 | 703 | 0.2+ | 0.8− |
| 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 10 31 | 703 | 0.5+ | 0.2+ |
| 2006 09 26 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.6+ | 1.0− |
| 2006 09 28 | 703 | 0.5+ | 0.4+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 1.7+ | 0.3+ |
| 2006 09 28 | 703 | 0.3+ | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.5− |
| 2006 09 28 | 703 | 0.5− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.8+ |
| 2006 09 28 | 703 | 0.2+ | 1.1− | 2006 10 21 | 644 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 10 17 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2006 10 17 | 691 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 1.4− | 1.4− |

**2006 UQ$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 301.65755 | | (2000.0) | | | |
| $n$ | 0.18269582 | $\omega$ | 97.81819 | | −0.03303372 | −0.99937047 |
| $a$ | 3.0759809 | $\Omega$ | 354.02896 | | +0.86096381 | −0.02187861 |
| $e$ | 0.0951906 | $i$ | 7.14562 | | +0.50759244 | −0.02792838 |
| $P$ | 5.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 691 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.3+ | 1.0− | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2003 03 31 | 691 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.9+ |
| 2003 03 31 | 691 | 0.3+ | 0.3− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.9− |
| 2003 04 09 | 691 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.9− | 0.3− |
| 2003 04 09 | 691 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.2+ |
| 2003 04 09 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.9− | 0.3− |
| 2006 09 30 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.4+ | 0.6− |
| 2006 09 30 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.4− |
| 2006 09 30 | 691 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.8− | 1.0− |
| 2006 10 17 | 691 | 0.4+ | 0.2+ | 2006 10 29 | 691 | 0.1− | 0.3+ | | | | |

**2006 UW$_{73}$ = 1999 EB$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 288.01364 | | (2000.0) | | | |
| $n$ | 0.21931089 | $\omega$ | 129.53812 | | −0.23036017 | −0.97242655 |
| $a$ | 2.7233027 | $\Omega$ | 333.71234 | | +0.86574339 | −0.18774889 |
| $e$ | 0.0767610 | $i$ | 4.70701 | | +0.44432261 | −0.13833640 |
| $P$ | 4.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 09 | 691 | 0.4− | 0.2− | 2006 09 30 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.4+ | 0.1+ |
| 1999 03 09 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.4+ | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 1999 03 09 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.5− | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 1999 03 14 | 691 | 0.6+ | 0.2+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.3− |
| 1999 03 14 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.3+ | 0.7− |
| 1999 03 14 | 691 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.9− | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1− | | | | |
| 2006 09 30 | 691 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.4+ | | | | |

**2006 UH$_{74}$ = 1999 RY$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 69.39272 | | (2000.0) | | | |
| $n$ | 0.15368002 | $\omega$ | 328.74786 | | +0.63023540 | +0.77592988 |
| $a$ | 3.4518966 | $\Omega$ | 340.27782 | | −0.69471564 | +0.54797819 |
| $e$ | 0.0645705 | $i$ | 4.61165 | | −0.34666052 | +0.31249436 |
| $P$ | 6.41 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 691 | 0.3− | 0.2− | 2005 07 18 | 644 | 0.1− | 0.2+ | 2006 09 28 | 291 | 0.1+ | 0.2+ |
| 1999 09 14 | 691 | 0.1+ | 0.2− | 2005 07 18 | 644 | 0.2− | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.0 |
| 1999 09 14 | 691 | 0.1+ | 0.1− | 2005 07 27 | 644 | 0.0 | 0.3+ | 2006 10 03 | 691 | 0.1− | 0.3+ |
| 1999 09 18 | 691 | 0.4+ | 0.2− | 2005 07 27 | 644 | 0.1− | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.2+ |
| 1999 09 18 | 691 | 0.1+ | 0.3− | 2005 07 27 | 644 | 0.3− | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 1999 09 18 | 691 | 0.3+ | 0.2− | 2005 09 01 | 644 | 0.2+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.1+ |
| 2005 07 18 | 644 | 0.1− | 0.6+ | 2005 09 01 | 644 | 0.4+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2+ |
| 2005 07 18 | 644 | 0.4− | 0.3+ | 2005 09 01 | 644 | 0.3− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.3− |
| 2005 07 18 | 644 | 0.1− | 0.4+ | 2006 09 28 | 291 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2005 07 18 | 644 | 0.2− | 0.2+ | 2006 09 28 | 291 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2+ | 0.2− |

**2006 UJ$_{74}$ = 2004 HV$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 240.91213 | | (2000.0) | | | |
| $n$ | 0.23076823 | $\omega$ | 145.58345 | | −0.87314209 | −0.48721339 |
| $a$ | 2.6324009 | $\Omega$ | 5.33111 | | +0.40063663 | −0.73557277 |
| $e$ | 0.0808250 | $i$ | 9.71880 | | +0.27769261 | −0.47069716 |
| $P$ | 4.27 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 30 | 291 | 0.3+ | 0.1− | 2006 09 30 | 691 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 1.0− |
| 2004 03 30 | 291 | 0.2+ | 0.1− | 2006 09 30 | 691 | 0.3+ | 0.5+ | 2006 10 22 | G96 | 0.5+ | 0.1− |
| 2004 03 30 | 291 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.4− | 2006 10 22 | G96 | 0.3+ | 0.0 |
| 2004 04 19 | 691 | 0.4− | 0.4− | 2006 10 17 | 691 | 0.2+ | 0.4− | 2006 10 29 | 691 | 0.7+ | 0.0 |
| 2004 04 19 | 691 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.8− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.2− |
| 2004 04 23 | 291 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2004 04 23 | 291 | 0.1− | 0.5+ | 2006 10 21 | 691 | 1.2− | 0.1+ | | | | |
| 2004 04 23 | 291 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.4+ | | | | |

**2006 UK$_{74}$ = 2004 HO$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 263.01107 | | (2000.0) | | | |
| $n$ | 0.22400841 | $\omega$ | 109.38385 | | −0.56947324 | −0.81935117 |
| $a$ | 2.6850961 | $\Omega$ | 15.86410 | | +0.63391924 | −0.48890778 |
| $e$ | 0.0401911 | $i$ | 13.98461 | | +0.52330357 | −0.29938744 |
| $P$ | 4.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.0 | 0.1− | 2004 04 28 | 691 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 |
| 2004 03 14 | 691 | 0.0 | 0.2+ | 2004 04 28 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2004 04 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.2− |
| 2004 04 14 | 691 | 0.3− | 0.2− | 2006 10 03 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2004 04 14 | 691 | 0.2− | 0.1− | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1− |
| 2004 04 14 | 691 | 0.2− | 0.1− | 2006 10 03 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2004 04 23 | 691 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1− |
| 2004 04 23 | 691 | 0.4+ | 0.0 | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1+ |
| 2004 04 23 | 691 | 0.2− | 0.0 | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.3+ | 0.1− |

**2006 UM$_{74}$ = 1997 CR$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.90502 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18071604 | $\omega$ | 138.49106 | +0.13790229 | | −0.98873988 | |
| $a$ | 3.0984055 | $\Omega$ | 303.50474 | +0.88935719 | | +0.14943517 | |
| $e$ | 0.1041535 | $i$ | 3.99594 | +0.43592058 | | +0.00791027 | |
| $P$ | 5.45 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 03 | 691 | 0.5− | 0.2− | 2006 09 26 | 691 | 0.4+ | 0.3− | 2006 10 17 | 691 | 0.1− | 0.0 |
| 1997 02 03 | 691 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1− | 0.1+ |
| 1997 02 03 | 691 | 0.0 | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1− |
| 1997 02 07 | 691 | 0.2+ | 0.0 | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.3− |
| 1997 02 07 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.3+ |
| 1997 02 07 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 |

**2006 UO$_{74}$ = 2001 XV$_{242}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.12326 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17902192 | $\omega$ | 180.77267 | +0.08224182 | | −0.99443881 | |
| $a$ | 3.1179220 | $\Omega$ | 264.51158 | +0.91472815 | | +0.10152274 | |
| $e$ | 0.1199055 | $i$ | 3.78935 | +0.39561181 | | −0.02801043 | |
| $P$ | 5.51 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.5+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 0.3− | 0.8+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2001 12 14 | 704 | 0.2+ | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.7+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 2001 12 19 | 704 | 0.5− | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.2− | 0.1+ |
| 2001 12 19 | 704 | 0.0 | 0.7− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.4− | 0.3− | 2006 10 29 | 691 | 0.0 | 0.2− | | | | |

**2006 UE$_{75}$ = 2005 JB$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 282.62915 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.37837579 | $\omega$ | 69.00249 | −0.13120278 | | −0.97447326 | |
| $a$ | 1.8931593 | $\Omega$ | 30.37314 | +0.72179457 | | −0.21986719 | |
| $e$ | 0.1364618 | $i$ | 21.11821 | +0.67955753 | | +0.04539034 | |
| $P$ | 2.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 18 | 703 | 1.8− | 0.0 | 2005 05 09 | G96 | 0.3− | 0.0 | 2006 10 17 | 703 | 0.8− | 0.5+ |
| 2005 03 18 | 703 | 0.1+ | 0.7− | 2005 05 09 | G96 | 0.1− | 0.1+ | 2006 10 17 | 703 | 0.1− | 0.6+ |
| 2005 03 18 | 703 | 0.3+ | 1.2+ | 2005 05 09 | G96 | 0.2− | 0.2+ | 2006 10 17 | 703 | 0.4− | 1.1+ |
| 2005 03 18 | 703 | 0.7+ | 0.1− | 2005 05 09 | G96 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.7− | 0.1+ |
| 2005 04 04 | 703 | 0.1− | 0.0 | 2005 05 13 | G96 | 0.8+ | 0.6+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2005 04 04 | 703 | 0.4− | 0.0 | 2005 05 13 | G96 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.4+ |
| 2005 04 04 | 703 | 0.4− | 0.0 | 2005 05 13 | G96 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.5+ |
| 2005 04 04 | 703 | 0.2− | 0.4− | 2005 05 13 | G96 | 0.3− | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.1+ |
| 2005 04 09 | 699 | 0.6+ | 1.3+ | 2006 10 02 | 703 | 1.3− | 0.2− | 2006 10 22 | 703 | 0.4− | 0.2− |
| 2005 04 09 | 699 | 0.9+ | 0.6+ | 2006 10 02 | 703 | 1.2+ | 0.5− | 2006 10 22 | 703 | 0.3+ | 0.7− |
| 2005 04 09 | 699 | 0.9+ | 0.0 | 2006 10 02 | 703 | 0.1− | 0.3− | 2006 10 22 | 703 | 0.1− | 0.7+ |
| 2005 04 09 | 699 | 2.1+ | 0.5− | 2006 10 02 | 703 | 0.5+ | 0.2− | | | | |

**2006 UF$_{75}$ = 2000 AP$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.51988 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26723528 | $\omega$ | 131.44625 | +0.62523776 | | −0.77816326 | |
| $a$ | 2.3871160 | $\Omega$ | 279.75513 | +0.69683027 | | +0.59096289 | |
| $e$ | 0.1830761 | $i$ | 3.46094 | +0.35143323 | | +0.21266125 | |
| $P$ | 3.69 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 691 | 0.6+ | 0.3+ | 2006 09 18 | 699 | 0.3+ | 0.3+ | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2000 01 03 | 704 | 0.9+ | 0.8− | 2006 09 18 | 699 | (0.6− | 2.3−) | 2006 10 19 | 644 | 0.3+ | 0.0 |
| 2000 01 03 | 691 | 0.5− | 0.5− | 2006 09 18 | 699 | 0.5+ | 0.9− | 2006 10 19 | 644 | 0.5+ | 0.1+ |
| 2000 01 03 | 704 | 1.1+ | 1.1− | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 01 03 | 691 | 0.3+ | 0.1+ | 2006 10 10 | 644 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2000 01 03 | 704 | 0.5+ | 0.8+ | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.3+ |
| 2000 01 08 | 691 | 0.1− | 0.2+ | 2006 10 17 | 683 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2000 01 08 | 691 | 0.2− | 0.1− | 2006 10 17 | 683 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2− |
| 2000 01 08 | 691 | 0.6− | 0.2+ | 2006 10 17 | 683 | 1.4− | 1.0+ | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2004 03 21 | 691 | 0.3− | 0.1− | 2006 10 17 | 703 | 0.5− | 1.1− | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2004 03 21 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.3+ | 0.4+ | 2006 11 20 | G96 | 0.2− | 0.4− |
| 2004 03 21 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.4− | 0.2+ | 2006 11 20 | G96 | 0.3+ | 0.0 |
| 2006 09 18 | 699 | 0.7− | 1.2+ | 2006 10 17 | 703 | 0.7− | 1.1− | 2006 11 20 | G96 | 0.4− | 0.9− |

**2006 UQ$_{75}$ = 1995 UA$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.88239 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18187424 | $\omega$ | 308.08541 | +0.75466362 | | −0.65447096 | |
| $a$ | 3.0852375 | $\Omega$ | 92.84450 | +0.61557348 | | +0.68180592 | |
| $e$ | 0.0296658 | $i$ | 2.66129 | +0.22705091 | | +0.32681562 | |
| $P$ | 5.42 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.2+ | 0.4− | 2001 12 18 | 691 | 0.3− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 1995 10 01 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.6− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 1995 10 01 | 691 | 0.2− | 0.0 | 2006 09 19 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 691 | 0.3+ | 0.3− |
| 1995 10 19 | 691 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 1995 10 19 | 691 | 0.5− | 0.4+ | 2006 09 27 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 1995 10 19 | 691 | 0.2− | 0.1+ | 2006 09 27 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 1995 10 24 | 691 | 0.3+ | 0.3+ | 2006 09 27 | 691 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1995 10 24 | 691 | 0.2+ | 0.5− | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 18 | G96 | 0.5+ | 0.2+ |
| 1995 10 24 | 691 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.7− | 0.2− | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2001 12 18 | 691 | 0.3− | 0.0 | 2006 10 17 | G96 | 0.4+ | 0.2− | 2006 11 18 | G96 | 0.2− | 0.6− |
| 2001 12 18 | 691 | 0.6+ | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.4− |

**2006 UT$_{76}$ = 1997 SE$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.04621 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22144564 | $\omega$ | 26.59287 | +0.96808206 | | −0.24968754 | |
| $a$ | 2.7057726 | $\Omega$ | 347.80672 | +0.20768661 | | +0.84775773 | |
| $e$ | 0.0536905 | $i$ | 5.91192 | +0.14029753 | | +0.46793479 | |
| $P$ | 4.45 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.7− | 0.2− | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 1997 09 27 | 691 | 0.2+ | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 1997 09 27 | 691 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 1997 10 04 | 691 | 0.6+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 1997 10 04 | 691 | 0.5+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.6− |
| 2004 03 17 | 691 | 0.2− | 0.5− | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.3− |
| 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.3− |

**2006 UY$_{76}$ = 2005 LQ$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.56674 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20917628 | $\omega$ | 122.83687 | +0.78759072 | | −0.61192388 | |
| $a$ | 2.8105701 | $\Omega$ | 274.99559 | +0.53825516 | | +0.74043726 | |
| $e$ | 0.0365225 | $i$ | 4.17100 | +0.29997041 | | +0.27803207 | |
| $P$ | 4.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.3− |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2005 06 08 | 691 | 0.3+ | 0.2− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 08 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.2+ | | |
| 2005 06 08 | 691 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.2− | | |
| 2005 06 13 | G96 | 0.3− | 0.2− | 2006 10 21 | 691 | 0.4+ | 0.3− | 2006 11 19 | 691 | 0.2− | 0.2+ | | |
| 2005 06 13 | G96 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.3− | | |
| 2005 06 13 | G96 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.1+ | | |

**2006 UC$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.11742 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18629456 | $\omega$ | 67.88196 | | +0.25858384 | | −0.96582386 |
| $a$ | 3.0362389 | $\Omega$ | 7.20217 | | +0.82550484 | | +0.21134297 |
| $e$ | 0.2371512 | $i$ | 8.18603 | | +0.50167336 | | +0.15006138 |
| $P$ | 5.29 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 04 | 691 | 0.8+ | 0.0 | 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 14 | 703 | (2.4− | 1.1+) | | |
| 2003 04 04 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.1+ | | |
| 2003 04 04 | 691 | 0.6− | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.9− | 0.4+ | | |
| 2006 09 26 | 691 | 0.1− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.2− | | |
| 2006 09 26 | 691 | 0.4− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 1.1− | 0.2+ | | |
| 2006 09 26 | 691 | 0.3− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.9− | | |
| 2006 09 30 | 691 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.5+ | 0.5− | 2006 11 22 | 704 | 0.8− | 1.1− | | |
| 2006 09 30 | 691 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.4+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.2− | | |
| 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.2− | | |
| 2006 10 17 | 691 | 0.4+ | 0.0 | 2006 10 31 | 691 | 1.0− | 0.5+ | 2006 11 25 | G96 | 0.7+ | 0.2− | | |
| 2006 10 17 | 691 | 0.7+ | 0.2+ | 2006 11 14 | 703 | 0.1− | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.2− | | |

**2006 UH$_{77}$ = 2001 WQ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.66693 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18787739 | $\omega$ | 163.87810 | | +0.81956923 | | −0.55786328 |
| $a$ | 3.0191617 | $\Omega$ | 230.77039 | | +0.50529359 | | +0.81127386 |
| $e$ | 0.0834113 | $i$ | 9.71743 | | +0.27015673 | | +0.17499511 |
| $P$ | 5.25 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.0 | 0.0 | 2001 11 21 | 704 | 0.9− | 1.2− | 2006 10 21 | 691 | 0.1− | 0.1− | | |
| 1995 08 25 | 691 | 0.0 | 0.2+ | 2001 11 21 | 704 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.4− | | |
| 1995 08 25 | 691 | 0.0 | 0.2− | 2001 11 21 | 704 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.0 | | |
| 2001 11 20 | 704 | 0.1− | 0.5+ | 2006 10 17 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 2001 11 20 | 704 | 0.0 | 0.9+ | 2006 10 17 | 691 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.1− | | |
| 2001 11 20 | 704 | 0.7+ | 0.2− | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.5− | | |

**2006 UW$_{77}$ = 2004 GK$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 259.80054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21665450 | $\omega$ | 164.83419 | | −0.68272467 | | −0.73036839 |
| $a$ | 2.7455176 | $\Omega$ | 328.21398 | | +0.66612591 | | −0.61023089 |
| $e$ | 0.0394418 | $i$ | 2.30560 | | +0.30027206 | | −0.30688805 |
| $P$ | 4.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 695 | 0.0 | 0.5− | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 09 | 691 | 0.9+ | 0.1− | | |
| 2002 12 06 | 695 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.3− | 0.5+ | 2006 11 09 | 691 | 0.2+ | 0.2+ | | |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.5− | 0.3+ | 2006 11 09 | 691 | 0.2+ | 0.1+ | | |
| 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.4− | 2006 11 10 | 691 | 0.4+ | 0.3+ | | |
| 2004 04 13 | 691 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.6+ | | |
| 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 10 | 691 | 0.3+ | 0.3+ | | |
| 2004 04 19 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.1+ | | |
| 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.4+ | 0.0 | | |
| 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.2+ | 0.2+ | | |
| 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.4+ | 0.2+ | | |
| 2006 09 28 | G96 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2− | | |
| 2006 10 17 | 691 | 0.5− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1− | | |
| 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2− | 0.2− | 2006 11 27 | 691 | 0.2− | 0.3− | | |
| 2006 10 17 | 691 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.5+ | 0.0 | | |

**2006 UZ$_{77}$ = 2002 XR$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.93364 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23748101 | $\omega$ | 34.91158 | | +0.76460652 | | −0.64445026 |
| $a$ | 2.5825583 | $\Omega$ | 5.23338 | | +0.57016182 | | +0.67073111 |
| $e$ | 0.2203225 | $i$ | 4.90089 | | +0.30048687 | | +0.36715615 |
| $P$ | 4.15 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.8− | 0.8− | 2006 09 25 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1+ | | |
| 2002 12 06 | 704 | 1.0+ | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | | |
| 2002 12 06 | 704 | 1.4+ | 0.4+ | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.4+ | | |
| 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.1+ | | |
| 2002 12 11 | 704 | 1.4− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.4− | | |
| 2002 12 11 | 704 | 0.1− | 1.0− | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.4− | | |
| 2002 12 11 | 704 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.1− | 0.1− | | |
| 2002 12 11 | 704 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.0 | 0.1− | | |

**2006 UA$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.34528 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27583615 | $\omega$ | 308.80213 | | +0.71778286 | | +0.69620295 |
| $a$ | 2.3372326 | $\Omega$ | 7.09281 | | −0.61275284 | | +0.63807203 |
| $e$ | 0.2516731 | $i$ | 4.38727 | | −0.33063835 | | +0.32888529 |
| $P$ | 3.57 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.7− | 0.1+ | 2005 04 05 | G96 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1+ | | |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− | | |
| 2005 04 02 | G96 | 0.4+ | 0.1− | 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | | |
| 2005 04 02 | G96 | 1.3+ | 0.2+ | 2006 09 27 | G96 | 0.5− | 1.4− | 2006 10 21 | 644 | 0.4+ | 0.2+ | | |
| 2005 04 02 | G96 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.2− | | |
| 2005 04 02 | G96 | 0.0 | 0.1+ | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.1− | | |
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.1− | | |
| 2005 04 02 | G96 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.2+ | | |
| 2005 04 05 | G96 | 0.9− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.3+ | | |
| 2005 04 05 | G96 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.2− | | |
| 2005 04 05 | G96 | 0.7− | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.7+ | 2006 11 21 | 691 | 0.0 | 0.1− | | |
| 2005 04 05 | G96 | 0.4+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 691 | 0.4+ | 0.1− | | |
| 2005 04 05 | G96 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 21 | 691 | 0.1+ | 0.3− | | |
| 2005 04 05 | G96 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2− | | | | | | |
| 2005 04 05 | G96 | 0.7+ | 0.7− | 2006 10 21 | 691 | 0.1− | 0.3+ | | | | | | |

**2006 UT$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.04748 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31315948 | $\omega$ | 252.15431 | | −0.94090565 | | −0.33411696 |
| $a$ | 2.1476278 | $\Omega$ | 268.29827 | | +0.32790035 | | −0.85786689 |
| $e$ | 0.0135698 | $i$ | 3.17372 | | +0.08472263 | | −0.39042318 |
| $P$ | 3.15 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 18 | 691 | 0.3− | 0.1− | 2006 09 26 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2− | | |
| 2000 12 18 | 691 | 0.2− | 0.2− | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.2− | | |
| 2000 12 18 | 691 | 0.5+ | 0.2− | 2006 09 26 | 691 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.2− | 0.2+ | | |
| 2003 10 18 | 691 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.1+ | | |
| 2003 10 18 | 691 | 0.3+ | 0.0 | 2006 10 17 | 691 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 2003 10 18 | 691 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.2− | | |
| 2003 12 18 | 691 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.5+ | 0.2− | | |
| 2003 12 18 | 691 | 0.6− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.3− | | |
| 2003 12 18 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1− | | |

**2006 UU$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.82662 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18416007 | $\omega$ | 69.84509 | | +0.56311789 | +0.81761846 | |
| $a$ | 3.0596546 | $\Omega$ | 235.00370 | | −0.80231303 | +0.50614047 | |
| $e$ | 0.0651964 | $i$ | 8.42286 | | −0.19796981 | +0.27444832 | |
| $P$ | 5.35 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 09 | 691 | 0.0 | 0.2− | 2004 04 12 | 644 | 0.2− | 0.4+ | 2006 09 26 | 691 | 0.2− | 0.4+ |
| 2000 08 09 | 691 | 0.1+ | 0.2− | 2004 04 12 | 644 | 0.1− | 1.0+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2000 08 09 | 691 | 0.1+ | 0.3− | 2004 04 12 | 644 | 0.0 | 0.8+ | 2006 10 17 | 691 | 0.7+ | 0.2− |
| 2000 08 09 | 691 | 0.1+ | 0.3− | 2005 07 01 | 644 | 0.1− | 0.7+ | 2006 10 17 | 691 | 0.3− | 0.2− |
| 2000 08 09 | 691 | 0.1+ | 0.2− | 2005 07 01 | 644 | 0.1− | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.3− |
| 2000 08 09 | 691 | 0.1+ | 0.1− | 2005 07 01 | 644 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.4− | 0.0 |
| 2001 12 13 | 644 | 0.3− | 0.5+ | 2005 07 01 | 644 | 0.1− | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.1+ |
| 2001 12 13 | 644 | 0.1− | 0.4+ | 2005 07 01 | 644 | 0.1− | 0.7+ | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2001 12 13 | 644 | 0.1+ | 0.9+ | 2005 07 01 | 644 | 0.0 | 0.6+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 2002 11 13 | 645 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2002 11 13 | 645 | 0.0 | 0.1− | 2006 09 26 | 691 | 0.1− | 0.2+ | | | | |

**2006 UV$_{78}$ = 2004 FS$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.26952 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23605431 | $\omega$ | 151.40384 | | −0.50043824 | −0.86530044 | |
| $a$ | 2.5929537 | $\Omega$ | 328.60031 | | +0.78352194 | −0.43860615 | |
| $e$ | 0.0609650 | $i$ | 3.14437 | | +0.36831364 | −0.24265159 | |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 695 | 0.1+ | 0.2− | 2004 03 29 | 691 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.2− |
| 2002 12 05 | 695 | 0.0 | 0.2− | 2004 04 25 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.4− |
| 2004 03 26 | 704 | 0.1+ | 1.2+ | 2004 04 25 | 691 | 0.2+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2004 03 26 | 704 | 0.2− | 1.1+ | 2004 04 25 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2004 03 26 | 704 | 1.4− | 0.5+ | 2006 09 26 | 691 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1− |
| 2004 03 26 | 704 | 0.4+ | 0.2+ | 2006 09 26 | 691 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2004 03 27 | 704 | 0.1− | 0.2+ | 2006 09 26 | 691 | 0.1− | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2004 03 27 | 704 | 1.0− | 0.7− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 21 | 691 | 0.4+ | 0.1− |
| 2004 03 27 | 704 | 0.1− | 1.0+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.0 | 0.3+ |
| 2004 03 29 | 691 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1− | | | | |
| 2004 03 29 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.1− | | | | |

**2006 UW$_{78}$ = 2001 SW$_{308}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.58300 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21012480 | $\omega$ | 43.29012 | | +0.93238928 | −0.36095001 | |
| $a$ | 2.8021057 | $\Omega$ | 337.84676 | | +0.31626720 | +0.84028423 | |
| $e$ | 0.1075585 | $i$ | 2.90544 | | +0.17500084 | +0.40452133 | |
| $P$ | 4.69 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 691 | 0.6− | 0.7− | 2001 09 23 | 704 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.4+ | 0.0 |
| 1999 03 22 | 691 | 0.4− | 0.8− | 2001 09 23 | 691 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.0 | 0.4+ |
| 1999 03 22 | 691 | 0.1+ | 0.2− | 2001 09 23 | 704 | 1.0− | 0.2+ | 2006 10 20 | 644 | 0.3− | 0.3+ |
| 2001 08 26 | 691 | 0.1+ | 0.5− | 2001 09 23 | 704 | 0.4− | 0.7− | 2006 10 20 | 644 | 0.5− | 0.1− |
| 2001 08 26 | 691 | 0.2+ | 0.4− | 2001 09 23 | 704 | 0.6− | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.0 |
| 2001 08 26 | 691 | 0.0 | 0.3− | 2006 09 25 | 691 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2001 09 22 | 704 | 0.9+ | 1.0+ | 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.5− | 0.2− |
| 2001 09 22 | 704 | (0.8− | 1.6+) | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2001 09 22 | 704 | 0.5− | 1.3+ | 2006 10 03 | 691 | 0.4− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 09 22 | 704 | (1.0− | 1.7+) | 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2001 09 23 | 691 | 0.2+ | 0.2− | 2006 10 03 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.5+ | 0.0 |
| 2001 09 23 | 691 | 0.2+ | 0.2− | 2006 10 17 | 691 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2001 09 23 | 704 | 0.7+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.5− | 2006 11 15 | 691 | 0.0 | 0.2+ |

**2006 UX$_{78}$ = 2001 SV$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.42672 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21230758 | $\omega$ | 19.03613 | | +0.99982817 | −0.00717853 | |
| $a$ | 2.7828666 | $\Omega$ | 341.35042 | | −0.00114946 | +0.89619005 | |
| $e$ | 0.1071064 | $i$ | 3.06364 | | +0.01850136 | +0.44361228 | |
| $P$ | 4.64 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 291 | 0.0 | 0.1+ | 2004 03 26 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1− |
| 2001 09 18 | 291 | 0.2− | 0.1− | 2004 03 26 | 691 | 0.2+ | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2001 09 18 | 291 | 0.2+ | 0.2− | 2004 03 26 | 691 | 0.3+ | 0.3+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.7+ | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.3+ |
| 2001 09 19 | 704 | 0.2− | 0.6+ | 2006 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.3+ |
| 2001 09 21 | 691 | 0.0 | 0.3− | 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.3− |
| 2001 09 21 | 691 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 691 | 0.5− | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 09 21 | 704 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.7+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.7+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.6+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 21 | 691 | 0.0 | 0.3− |
| 2001 09 21 | 704 | 0.9+ | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 21 | 691 | 0.2− | 0.3− |
| 2001 09 21 | 704 | 0.4− | 1.0+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 21 | 691 | 0.1− | 0.0 |

**2006 UJ$_{79}$ = 1996 EO$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.96445 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23552785 | $\omega$ | 213.96320 | | −0.65124149 | +0.75689196 | |
| $a$ | 2.5968161 | $\Omega$ | 15.63823 | | −0.64327292 | −0.51231451 | |
| $e$ | 0.1376938 | $i$ | 11.72170 | | −0.40259715 | −0.40576890 | |
| $P$ | 4.18 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 03 12 | 691 | 0.1− | 0.1+ | 2006 09 25 | 691 | 0.2− | 0.3− | 2006 10 21 | 691 | 0.2− | 0.1− |
| 1996 03 12 | 691 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.7− | 0.1+ |
| 1996 03 12 | 691 | 0.1− | 0.0 | 2006 09 25 | 691 | 0.2+ | 0.7− | 2006 10 21 | 691 | 0.0 | 0.0 |
| 1996 03 23 | 691 | 0.0 | 1.4− | 2006 10 03 | 691 | 0.4+ | 0.0 | 2006 11 25 | G96 | 0.5+ | 0.1+ |
| 1996 03 23 | 691 | 0.6− | 0.5+ | 2006 10 03 | 691 | 0.0 | 0.3− | 2006 11 25 | G96 | 0.8− | 0.0 |
| 1996 03 23 | 691 | 0.0 | 0.1− | 2006 10 03 | 691 | 0.2+ | 0.4+ | 2006 11 25 | G96 | 0.6+ | 0.2− |
| 2004 02 11 | 644 | 0.3+ | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.5+ | 0.3− |
| 2004 02 11 | 644 | 0.3+ | 0.7+ | 2006 10 17 | 691 | 0.5+ | 0.2+ | | | | |
| 2004 02 11 | 644 | 0.4+ | 1.1+ | 2006 10 17 | 691 | 0.3+ | 0.2− | | | | |

**2006 UM$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.45572 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25648627 | $\omega$ | 48.08968 | | +0.09978232 | +0.98913454 | |
| $a$ | 2.4533526 | $\Omega$ | 227.97506 | | −0.95051690 | +0.06267370 | |
| $e$ | 0.2378081 | $i$ | 8.35683 | | −0.29421269 | +0.13298450 | |
| $P$ | 3.84 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 807 | 0.1− | 0.2+ | 2002 10 04 | 644 | 0.2− | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 03 26 | 807 | 0.5− | 0.7+ | 2002 10 04 | 644 | 0.1− | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 2001 03 26 | 807 | 0.0 | 0.0 | 2005 04 06 | 699 | 0.5− | 0.4− | 2006 10 17 | 691 | 0.0 | 0.1+ |
| 2001 03 26 | 807 | 0.1+ | 0.2+ | 2005 04 06 | 699 | 1.5+ | 0.7+ | 2006 10 21 | 691 | 0.3+ | 0.5− |
| 2001 03 26 | 807 | 0.1− | 0.5+ | 2005 04 06 | 699 | 1.1+ | 1.4+ | 2006 10 21 | 691 | 0.1+ | 0.1+ |
| 2001 03 26 | 807 | 0.3+ | 0.1− | 2005 04 06 | 699 | 1.3− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.4+ |
| 2001 03 26 | 807 | 0.2+ | 0.3− | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.6− | 1.1− |
| 2001 03 26 | 807 | 0.2+ | 0.1− | 2006 09 26 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2002 10 04 | 644 | 0.2+ | 0.8+ | 2006 09 26 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1+ |

**2006 UO$_{79}$ = 2004 CQ$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.20978 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24345727 | $\omega$ | 335.95338 | | −0.17748347 | | +0.98309716 |
| $a$ | 2.5401199 | $\Omega$ | 283.79873 | | −0.89524955 | | −0.18025076 |
| $e$ | 0.0209731 | $i$ | 2.65234 | | −0.40869043 | | −0.03208806 |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 25 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 1998 11 25 | 691 | 0.3+ | 0.5− | 2006 09 25 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.5+ |
| 1998 11 25 | 691 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.1− | 0.4− |
| 2004 02 11 | 644 | 0.3+ | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.3− |
| 2004 02 11 | 644 | 0.5+ | 0.7+ | 2006 10 17 | 691 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2004 02 11 | 644 | 0.8+ | 0.9+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2004 02 12 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2004 02 12 | 691 | 0.1− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.6+ | 0.2+ |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2004 03 20 | 691 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2004 03 20 | 691 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2004 03 20 | 691 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.1− | 1.1+ |
| 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.3− |

**2006 UP$_{79}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.10302 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20990405 | $\omega$ | 126.02107 | | −0.21791200 | | −0.97566279 |
| $a$ | 2.8040699 | $\Omega$ | 336.52977 | | +0.87454765 | | −0.18409777 |
| $e$ | 0.0708743 | $i$ | 3.51573 | | +0.43322138 | | −0.11912238 |
| $P$ | 4.70 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 688 | 0.2− | 0.1− | 2002 12 06 | 645 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.3− |
| 1997 11 29 | 688 | 0.2+ | 0.1+ | 2002 12 06 | 645 | 0.0 | 0.1− | 2006 10 21 | 691 | 0.4− | 0.2+ |
| 2001 09 12 | 691 | 0.2+ | 0.2− | 2006 09 25 | 691 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.3+ | 0.2− |
| 2001 09 12 | 691 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.3+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1+ |
| 2001 09 12 | 691 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2002 11 07 | 645 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.4− | 0.3+ |
| 2002 11 07 | 645 | 0.1− | 0.1− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.2+ |

**2006 UQ$_{79}$ = 2004 FR$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.78609 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21885828 | $\omega$ | 208.71832 | | −0.96498399 | | +0.26160359 |
| $a$ | 2.7270561 | $\Omega$ | 346.40594 | | −0.22231715 | | −0.85455456 |
| $e$ | 0.0499524 | $i$ | 4.69083 | | −0.13921560 | | −0.44866476 |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 24 | 699 | 0.6+ | 0.0 | 2004 03 27 | 704 | 0.9+ | 0.9+ | 2006 10 17 | 691 | 0.2− | 0.0 |
| 2004 03 24 | 699 | 0.5− | 0.2+ | 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.3+ |
| 2004 03 24 | 699 | 1.3− | 0.4+ | 2004 04 19 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.5− | 0.4+ |
| 2004 03 24 | 699 | 0.1− | 1.1+ | 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 21 | 691 | 0.4− | 0.0 |
| 2004 03 27 | 704 | 0.4+ | 1.2− | 2005 08 08 | 807 | 0.0 | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2004 03 27 | 704 | 0.1− | 0.1+ | 2005 08 08 | 807 | 0.3− | 1.0+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 704 | 0.8+ | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2004 03 27 | 704 | 1.1+ | 0.5− | 2006 10 17 | 691 | 0.5+ | 0.0 | | | | |

**2006 UX$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.73896 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22600804 | $\omega$ | 282.77662 | | +0.94330959 | | +0.32212676 |
| $a$ | 2.6692349 | $\Omega$ | 58.48215 | | −0.25630872 | | +0.86011210 |
| $e$ | 0.1094690 | $i$ | 5.38537 | | −0.21088587 | | +0.39552689 |
| $P$ | 4.36 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2000 05 05 | 645 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 12 10 | 644 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.9+ | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.5− |
| 2002 12 10 | 644 | 0.2+ | 0.1− | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2002 12 10 | 644 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.6+ | 0.2− |
| 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.3− | 0.2+ | | | | |
| 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.2+ | | | | |

**2006 UD$_{80}$ = 2001 UG$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.31952 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20242068 | $\omega$ | 201.38885 | | +0.80823279 | | +0.58713940 |
| $a$ | 2.8727608 | $\Omega$ | 122.57751 | | −0.53222458 | | +0.76107409 |
| $e$ | 0.0734231 | $i$ | 3.06275 | | −0.25198564 | | +0.27574183 |
| $P$ | 4.87 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.8+ | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2001 10 23 | 704 | 0.1− | 0.5− | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2001 10 23 | 704 | (1.8+ | 0.8−) | 2006 10 03 | G96 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1− |
| 2001 10 24 | 704 | 0.2− | 0.5− | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.1+ |
| 2001 10 24 | 704 | 0.3+ | 1.0+ | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 0.9− | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.4+ | | | | |
| 2006 10 03 | G96 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1+ | | | | |

**2006 UF$_{80}$ = 2002 TB$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.12268 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25606622 | $\omega$ | 330.22319 | | +0.10392946 | | −0.99381914 |
| $a$ | 2.4560349 | $\Omega$ | 113.78751 | | +0.92072955 | | +0.08130383 |
| $e$ | 0.1613205 | $i$ | 2.44368 | | +0.37610604 | | +0.07558571 |
| $P$ | 3.85 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2+ | 1.2+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.1− |
| 2006 10 03 | G96 | 0.3+ | 0.4− | 2006 10 17 | G96 | 0.6+ | 0.3− | 2006 11 01 | G96 | 0.5+ | 0.2− |
| 2006 10 03 | G96 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.1− | 0.1− | | | | |
| 2006 10 03 | G96 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1+ | | | | |

**2006 UK$_{80}$ = 1997 TQ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.41523 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22516136 | $\omega$ | 139.03735 | | +0.93201675 | | +0.36022151 |
| $a$ | 2.6759221 | $\Omega$ | 199.95689 | | −0.35544208 | | +0.88710397 |
| $e$ | 0.1278592 | $i$ | 6.69898 | | −0.07075106 | | +0.28859488 |
| $P$ | 4.38 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 04 | 691 | 0.1+ | 0.4− | 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 1997 10 04 | 691 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 01 | G96 | 0.4− | 0.1+ |
| 1997 10 04 | 691 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.0 |
| 1997 10 04 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.5− | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 1997 10 04 | 691 | 0.2− | 0.5+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.1− | 0.6− |
| 1997 10 04 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.8+ | 0.6− | 2006 11 10 | 691 | 0.4+ | 0.3+ |
| 1997 10 09 | 691 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.1− |
| 1997 10 09 | 691 | 0.6− | 0.2− | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2006 09 25 | G96 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.2− | 0.0 | | | | |

**2006 UQ$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.67254 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29303097 | $\omega$ | 74.58710 | | −0.50618355 | | −0.85787219 |
| $a$ | 2.2448829 | $\Omega$ | 46.17252 | | +0.73673885 | | −0.48348002 |
| $e$ | 0.0369210 | $i$ | 7.04699 | | +0.44832363 | | −0.17407576 |
| $P$ | 3.36 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 22 | 691 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 1998 05 22 | 691 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 1998 05 22 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.2− | 0.3− |
| 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.2+ |
| 2006 09 30 | G96 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.3+ | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2006 10 14 | D35 | 0.4+ | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.2+ | 2006 11 24 | 703 | 0.9+ | 1.1− |
| 2006 10 14 | D35 | 0.8+ | 0.6+ | 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 24 | 703 | 1.0+ | 0.5+ |
| 2006 10 14 | D35 | 0.9+ | 0.9+ | 2006 11 13 | 691 | 0.2− | 0.2+ | 2006 11 24 | 703 | 0.4+ | 0.5− |
| 2006 10 17 | G96 | 0.1+ | 0.8− | 2006 11 13 | 691 | 0.0 | 0.2+ | 2006 11 24 | 703 | 0.4+ | 0.3− |
| 2006 10 17 | G96 | 0.9+ | 0.0 | 2006 11 13 | 691 | 0.4− | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2006 10 17 | G96 | 0.2+ | 0.7− | 2006 11 22 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.5− | | | | |

**2006 UR$_{80}$ = 2002 XB$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.62167 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23487036 | $\omega$ | 182.45432 | | +0.91856477 | | −0.39212983 |
| $a$ | 2.6016602 | $\Omega$ | 200.85019 | | +0.36499198 | | +0.88975270 |
| $e$ | 0.1665624 | $i$ | 8.03148 | | +0.15172219 | | +0.23361150 |
| $P$ | 4.20 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 704 | 0.3− | 0.8− | 2006 10 21 | 644 | 0.6+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 12 01 | 704 | 0.6− | 0.6− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2002 12 01 | 704 | 0.4− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2002 12 03 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | (0.3− | 1.7+) |
| 2002 12 03 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 13 | 703 | 0.4+ | 0.4+ |
| 2002 12 03 | 644 | 0.6+ | 0.3+ | 2006 10 23 | 704 | 0.2− | 0.8+ | 2006 11 13 | 703 | 0.5− | 0.8+ |
| 2006 09 25 | G96 | 0.1+ | 0.1+ | 2006 10 23 | 704 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.4− | 0.9+ |
| 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.1+ | 1.0− | 2006 11 14 | 704 | (1.8− | 2.0−) |
| 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 23 | 704 | 0.3− | 0.7+ | 2006 11 14 | 704 | (0.7+ | 1.6+) |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.1+ | 0.1+ |
| 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.8+ | 0.2− |
| 2006 10 17 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 704 | (2.6+ | 1.0+) |
| 2006 10 17 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.5+ | 0.7+ |
| 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 17 | 704 | 1.1+ | 0.6− |
| 2006 10 17 | 683 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.3− | 0.3− | 2006 11 17 | 704 | (1.7+ | 0.3+) |
| 2006 10 17 | 683 | 0.4− | 1.2+ | 2006 11 01 | G96 | 0.3− | 0.2− | | | | |
| 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.3− | | | | |

**2006 UU$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 77.01090 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17453384 | $\omega$ | 99.24452 | | +0.53175164 | | +0.84357666 |
| $a$ | 3.1711464 | $\Omega$ | 203.35808 | | −0.83214640 | | +0.50398856 |
| $e$ | 0.1036701 | $i$ | 10.89788 | | −0.15739303 | | +0.18540215 |
| $P$ | 5.65 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 19 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 1993 05 19 | 691 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 1993 05 19 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4− |
| 2000 09 08 | 691 | 0.4+ | 0.1− | 2006 10 17 | G96 | 0.6+ | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.1+ |
| 2000 09 08 | 691 | 0.4+ | 0.3− | 2006 10 17 | G96 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.1− | 0.2+ |
| 2000 09 08 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.8+ | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2000 09 26 | 699 | 1.8− | 2.0+ | 2006 10 17 | G96 | 0.5− | 0.8− | 2006 11 16 | G96 | 0.0 | 0.2+ |
| 2000 09 26 | 699 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2000 09 26 | 699 | 0.6− | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2000 09 26 | 699 | 1.2− | 0.5+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2006 09 30 | G96 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.0 |

**2006 UW$_{80}$ = 1997 SE$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 88.47562 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21942997 | $\omega$ | 53.21560 | | +0.11704738 | | +0.98971011 |
| $a$ | 2.7223174 | $\Omega$ | 223.73336 | | −0.94489451 | | +0.08546731 |
| $e$ | 0.1186613 | $i$ | 6.83757 | | −0.30573564 | | +0.11475727 |
| $P$ | 4.49 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.2+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.5+ | 0.1+ |
| 1997 09 27 | 691 | 0.3+ | 0.3− | 2006 10 19 | 644 | 0.4− | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 1997 09 27 | 691 | 0.5+ | 0.3− | 2006 10 19 | 644 | 0.5− | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.6− |
| 1997 09 30 | 691 | 0.1− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2− |
| 1997 09 30 | 691 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.5+ | 2006 11 16 | 691 | 0.5+ | 0.1− |
| 1997 09 30 | 691 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2006 09 28 | 691 | 0.1− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2006 09 28 | 691 | 0.0 | 0.5+ | 2006 10 22 | 683 | 0.7+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2006 09 28 | 691 | 0.0 | 0.3+ | 2006 10 22 | 683 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2006 10 17 | 703 | 0.6− | 0.9− | 2006 10 22 | 683 | 0.7− | 0.5+ | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2006 10 17 | 703 | 0.4+ | 0.5− | 2006 10 31 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.1− |
| 2006 10 17 | 703 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.4− | 0.1+ |
| 2006 10 17 | 703 | 0.3+ | 0.5+ | 2006 10 31 | 691 | 0.6− | 0.1+ | 2006 11 27 | G96 | 0.6− | 0.0 |
| 2006 10 19 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.4+ | 0.0 | 2006 11 27 | G96 | 0.7− | 0.2− |
| 2006 10 19 | 644 | 0.2− | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | | | | |

**2006 UH$_{81}$ = 2005 NO$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.04258 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17394873 | $\omega$ | 231.08982 | | +0.89655411 | | +0.44109748 |
| $a$ | 3.1782536 | $\Omega$ | 102.70286 | | −0.39252745 | | +0.83337881 |
| $e$ | 0.1387659 | $i$ | 2.36737 | | −0.20521435 | | +0.33303569 |
| $P$ | 5.67 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | 691 | 0.4+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 2005 07 04 | 691 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2− |
| 2005 07 04 | 691 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.7+ |
| 2005 07 09 | 691 | 0.3− | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 07 09 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2005 07 09 | 691 | 0.3− | 0.2− | 2006 10 17 | G96 | 0.9+ | 0.3+ | 2006 11 15 | G96 | 0.6+ | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 11 15 | G96 | 0.5+ | 0.5− |

**2006 UM$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.76600 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23436406 | $\omega$ | 229.01537 | | −0.89578860 | | −0.43886169 |
| $a$ | 2.6054058 | $\Omega$ | 284.84580 | | +0.42655157 | | −0.80422637 |
| $e$ | 0.2053819 | $i$ | 4.17959 | | +0.12496616 | | −0.40077471 |
| $P$ | 4.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.0 | 0.3− | 2005 10 27 | G96 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.1+ |
| 1995 02 03 | 691 | 0.0 | 0.1+ | 2005 10 27 | G96 | 0.6+ | 0.4− | 2006 10 21 | 691 | 0.5− | 0.0 |
| 1995 02 03 | 691 | 0.1− | 0.2+ | 2005 10 27 | G96 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.2+ |
| 2002 11 24 | 644 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 10 27 | 703 | 0.4+ | 1.1+ |
| 2002 11 24 | 644 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 27 | 703 | 0.1+ | 0.6− |
| 2002 11 24 | 644 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 10 27 | 703 | (1.9+ | 0.5−) |
| 2004 06 12 | E12 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2004 06 12 | E12 | 0.6+ | 0.1− | 2006 10 17 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2004 06 12 | E12 | 0.0 | 0.9+ | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2− |
| 2004 06 12 | E12 | 0.5− | 0.9+ | 2006 10 17 | 691 | 0.1− | 0.1+ | | | | |
| 2005 10 27 | G96 | 0.4+ | 0.2− | 2006 10 21 | 691 | 0.1− | 0.4+ | | | | |

**2006 UZ$_{81}$ = 1999 FN$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.89395 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20566962 | $\omega$ | 355.68275 | | +0.99318703 | | +0.11644139 |
| $a$ | 2.8424268 | $\Omega$ | 357.61597 | | −0.10335158 | | +0.86204123 |
| $e$ | 0.0763019 | $i$ | 6.31465 | | −0.05383290 | | +0.49328118 |
| $P$ | 4.79 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 02 | 691 | 0.1+ | 0.0 |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.8+ | 0.9+ | 2006 11 02 | 691 | 0.0 | 0.1− |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 02 | 691 | 0.3+ | 0.2+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 11 | 291 | 0.0 | 0.1+ |
| 2001 10 23 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 11 | 291 | 0.2− | 0.1+ |
| 2001 10 23 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.4− | 0.2+ | 2006 11 11 | 291 | 0.2− | 0.1− |
| 2001 10 23 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 10 02 | G96 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.2− | 0.2+ | 2006 11 23 | G96 | 0.5+ | 0.8− |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.2+ | 1.2− |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.3− | | | | |
| 2006 10 17 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.4− | | | | |

**2006 UP$_{82}$ = 2005 GA$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.35310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27075069 | $\omega$ | 336.79323 | | +0.86177297 | | +0.50719670 |
| $a$ | 2.3664082 | $\Omega$ | 352.70566 | | −0.45229746 | | +0.75932387 |
| $e$ | 0.2962720 | $i$ | 4.49120 | | −0.22972668 | | +0.40765031 |
| $P$ | 3.64 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.4− | 0.6− | 2006 10 20 | 644 | 0.3+ | 0.3− | 2006 10 27 | 703 | 1.1+ | 0.9− |
| 2005 04 06 | G96 | 0.2− | 0.4− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.2+ | 1.4− |
| 2005 04 06 | G96 | 0.4− | 0.2+ | 2006 10 21 | 704 | 0.1− | 0.8+ | 2006 10 27 | 703 | 0.1− | 0.1+ |
| 2005 04 06 | G96 | 0.3+ | 0.5+ | 2006 10 21 | 704 | 0.4+ | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.7− |
| 2005 04 07 | G96 | 0.2+ | 0.0 | 2006 10 21 | 691 | 0.5− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 04 07 | G96 | 0.6+ | 0.4+ | 2006 10 21 | 704 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2005 04 07 | G96 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2005 04 07 | G96 | 0.3− | 0.2− | 2006 10 21 | 704 | 0.1+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 2006 10 17 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.3− | 0.3+ |
| 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.1+ |
| 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2006 10 19 | 644 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2006 10 19 | 644 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.8− | 0.8+ |
| 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.0 |
| 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1+ | | | | |

**2006 UR$_{82}$ = 2005 KR$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.85140 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23069880 | $\omega$ | 329.76419 | | +0.39701210 | | +0.91736139 |
| $a$ | 2.6329291 | $\Omega$ | 323.60535 | | −0.83205594 | | +0.34649496 |
| $e$ | 0.1806914 | $i$ | 2.78221 | | −0.38738135 | | +0.19593196 |
| $P$ | 4.27 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 19 | 644 | 0.0 | 0.0 | 2005 05 21 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.1− |
| 2005 05 19 | 644 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.1− |
| 2005 05 19 | 644 | 0.1− | 0.0 | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 |
| 2005 05 21 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2005 05 21 | 644 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2005 05 21 | 644 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2005 05 21 | 644 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.2− | 0.2+ | | | | |
| 2005 05 21 | 644 | 0.1+ | 0.0 | 2006 10 17 | 691 | 0.6+ | 0.2+ | | | | |

**2006 UT$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.41375 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23490092 | $\omega$ | 337.80935 | | +0.99558997 | | +0.02463907 |
| $a$ | 2.6014346 | $\Omega$ | 21.38445 | | +0.03448784 | | +0.80119410 |
| $e$ | 0.0700041 | $i$ | 14.37401 | | −0.08724221 | | +0.59789709 |
| $P$ | 4.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2000 05 04 | 645 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2002 12 12 | 644 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.5− | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2002 12 12 | 644 | 0.3+ | 0.5− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.5+ | 0.0 |
| 2002 12 12 | 644 | 0.2+ | 0.4− | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 27 | 703 | 0.1− | 0.6− | 2006 11 14 | 703 | 1.7− | 0.2+ |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 27 | 703 | 0.0 | 1.0− | 2006 11 14 | 703 | 0.8+ | 0.1+ |
| 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 27 | 703 | 0.8− | 1.6− | 2006 11 14 | 703 | 0.2+ | 0.7+ |
| 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 10 27 | 703 | 0.3+ | 0.9− | 2006 11 14 | 703 | 0.6+ | 0.4− |
| 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.3+ | | | | |

**2006 UM$_{83}$ = 2004 HG$_{14}$ = 2005 LV$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.10952 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22216395 | $\omega$ | 231.12219 | | +0.88910752 | | +0.45317618 |
| $a$ | 2.6999372 | $\Omega$ | 101.84514 | | −0.39700287 | | +0.83336304 |
| $e$ | 0.0812617 | $i$ | 3.75999 | | −0.22776420 | | +0.31644492 |
| $P$ | 4.44 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 699 | 0.1− | 0.9+ | 2005 06 16 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.1− | 0.7+ |
| 2001 08 25 | 699 | 0.2− | 1.0+ | 2005 06 16 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2001 08 25 | 699 | 0.2− | 0.7+ | 2005 06 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.2− |
| 2001 08 25 | 699 | 0.7− | 0.3+ | 2006 10 17 | G96 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 04 16 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2004 04 16 | 691 | 0.1− | 0.2+ | 2006 10 17 | G96 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.9+ | 1.6− |
| 2004 04 16 | 691 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.3− | 0.5+ |
| 2004 04 21 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 1.1− | 1.0− |
| 2004 04 21 | 691 | 0.6+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.3− |
| 2004 04 21 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.6+ | 2006 11 23 | G96 | 0.6+ | 0.1− |
| 2005 06 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8+ | 0.6+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2005 06 12 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 1.8− | 0.9+ | 2006 11 23 | G96 | 0.5+ | 0.2− |
| 2005 06 12 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.5+ | 2006 11 23 | G96 | 0.1− | 0.1+ |

**2006 US$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 124.29415 | | (2000.0) | | | |
| $n$ | 0.25573030 | $\omega$ | 346.71254 | | −0.21370995 | +0.97363860 |
| $a$ | 2.4581851 | $\Omega$ | 270.90469 | | −0.88883831 | −0.22765854 |
| $e$ | 0.1138051 | $i$ | 4.57328 | | −0.40533261 | −0.01412328 |
| $P$ | 3.85 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.2− | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.7− |
| 2004 01 16 | 691 | 0.1− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.8− |
| 2004 01 16 | 691 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.7− |
| 2004 04 15 | 645 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.4− | 0.3− | 2006 11 22 | 291 | 0.5+ | 0.3+ |
| 2004 04 15 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 22 | 291 | 0.6+ | 0.0 |
| 2006 10 02 | G96 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 22 | 291 | 0.2+ | 0.3+ |
| 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 24 | 408 | (2.0+ | 1.6−) |
| 2006 10 02 | G96 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.5− | 2006 11 24 | 408 | (0.6+ | 1.6−) |

**2006 UV$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 49.60674 | | (2000.0) | | | |
| $n$ | 0.22945591 | $\omega$ | 26.09155 | | +0.79097049 | +0.60904900 |
| $a$ | 2.6424283 | $\Omega$ | 296.26355 | | −0.57216437 | +0.70238164 |
| $e$ | 0.1859139 | $i$ | 3.74181 | | −0.21678014 | +0.36840108 |
| $P$ | 4.30 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.0 |
| 2000 02 12 | 645 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2000 03 03 | 645 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.3− | 0.1− |
| 2005 05 16 | 644 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.1+ | 0.5+ |
| 2005 05 16 | 644 | 0.0 | 0.4+ | 2006 10 21 | 691 | 0.2− | 0.6+ | 2006 11 14 | 703 | 1.1+ | 0.0 |
| 2005 05 16 | 644 | 0.2− | 0.3+ | 2006 10 27 | 703 | 0.6− | 0.1− | 2006 11 14 | 703 | 1.1− | 0.7− |
| 2006 10 04 | G96 | 0.5+ | 0.4− | 2006 10 27 | 703 | 0.6− | 1.4+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.5− |
| 2006 10 04 | G96 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.1− |

**2006 UF$_{84}$ = 2005 NL$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.54987 | | (2000.0) | | | |
| $n$ | 0.20390415 | $\omega$ | 127.64868 | | +0.99556608 | +0.09290284 |
| $a$ | 2.8588103 | $\Omega$ | 227.02591 | | −0.09139760 | +0.91833896 |
| $e$ | 0.0778277 | $i$ | 1.15430 | | −0.02224099 | +0.38473708 |
| $P$ | 4.83 | $H$ | 17.2 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.1+ | 0.6− | 2005 07 15 | G96 | 0.5− | 0.2− | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 691 | 0.1+ | 0.0 | 2005 07 15 | G96 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.2+ |
| 2001 10 14 | 691 | 0.0 | 0.2− | 2005 07 15 | G96 | 0.3− | 0.1− | 2006 11 16 | 703 | 0.3− | 0.4+ |
| 2003 01 29 | 291 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 16 | 703 | (2.6− | 1.1−) |
| 2003 01 29 | 291 | 0.4− | 0.5+ | 2006 10 17 | G96 | 0.6+ | 0.4− | 2006 11 16 | 703 | 0.4+ | 0.4+ |
| 2003 01 29 | 291 | 0.3+ | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.6+ | 0.2+ |
| 2005 07 04 | G96 | 0.2− | 0.9+ | 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.3+ |
| 2005 07 04 | G96 | 0.5+ | 0.7+ | 2006 10 21 | 691 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.5+ |
| 2005 07 04 | G96 | 0.3− | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.4+ |
| 2005 07 04 | G96 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2005 07 07 | 568 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.2− | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2005 07 07 | 568 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.4− | 0.7− | 2006 11 27 | G96 | 0.4+ | 0.1− |
| 2005 07 07 | 568 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 27 | G96 | 0.3+ | 0.2− |
| 2005 07 08 | 568 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.6+ | 0.0 | | | | |
| 2005 07 15 | G96 | 0.7− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.4+ | | | | |

**2006 UH$_{84}$ = 2004 FJ$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 22.36078 | | (2000.0) | | | |
| $n$ | 0.23345264 | $\omega$ | 144.19103 | | +0.99947308 | −0.03055952 |
| $a$ | 2.6121825 | $\Omega$ | 217.56474 | | +0.02400301 | +0.92274509 |
| $e$ | 0.2061364 | $i$ | 1.02822 | | +0.02185010 | +0.38419736 |
| $P$ | 4.22 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 09 | 291 | 0.3− | 0.4− | 2006 10 28 | 704 | (1.9− | 0.0 ) | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 2002 12 09 | 291 | 0.2+ | 0.0 | 2006 10 28 | 704 | 0.4− | 1.3+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2002 12 09 | 291 | 0.1+ | 0.2− | 2006 10 28 | 704 | 0.8− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.0 |
| 2004 03 27 | 291 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 21 | 704 | 0.0 | 0.4+ |
| 2004 03 27 | 291 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2004 03 27 | 291 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 2004 03 31 | 691 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2004 03 31 | 691 | 0.6+ | 0.2+ | 2006 11 13 | 644 | 0.3− | 0.2+ | 2006 11 26 | 704 | 0.4+ | 0.1− |
| 2004 03 31 | 691 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.0 | 2006 11 26 | 704 | 0.5+ | 0.0 |
| 2006 09 16 | 703 | 0.8− | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 26 | 704 | 0.4− | 0.0 |
| 2006 09 16 | 703 | 0.4− | 0.2− | 2006 11 14 | 691 | 0.1− | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2006 09 16 | 703 | 0.5+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2006 09 16 | 703 | 0.9+ | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.4+ | 0.5− | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 11 16 | 703 | 0.1− | 0.5− | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.1− | 0.8− |
| 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.1+ |
| 2006 10 17 | G96 | 0.1+ | 0.6− | 2006 11 17 | 704 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.4+ | 0.7− |
| 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 17 | 704 | 1.4− | 1.1+ | 2006 11 29 | 704 | 0.4+ | 0.3+ |
| 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.5+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.5− |
| 2006 10 23 | 704 | 0.6− | 0.2+ | 2006 11 17 | 704 | 1.3− | 0.1+ | 2006 11 29 | 704 | 0.5+ | 0.3− |
| 2006 10 23 | 704 | 0.9+ | 0.1− | 2006 11 18 | 704 | 0.5+ | 0.6+ | 2006 11 29 | 704 | 0.3+ | 0.3+ |
| 2006 10 23 | 704 | 0.7+ | 0.6+ | 2006 11 18 | 704 | 0.3+ | 0.7+ | 2006 11 29 | 704 | 0.0 | 0.1− |
| 2006 10 23 | 704 | 0.5− | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.6+ | 0.6− |
| 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.5− | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.6− |
| 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.1− | 0.6+ | 2006 12 01 | G96 | 0.6+ | 0.6− |
| 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.4− | 0.7+ | | | | |

**2006 UT$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.20799 | | (2000.0) | | | |
| $n$ | 0.20946481 | $\omega$ | 82.26332 | | +0.87572472 | −0.48132740 |
| $a$ | 2.8079886 | $\Omega$ | 306.50098 | | +0.42235728 | +0.80167032 |
| $e$ | 0.1078141 | $i$ | 2.69650 | | +0.23392423 | +0.35446952 |
| $P$ | 4.71 | $H$ | 16.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2001 10 11 | 644 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.6− | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.3+ |
| 2001 10 11 | 644 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.6− | 1.1− | 2006 11 18 | G96 | 0.2− | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.1+ | 2006 11 18 | G96 | 0.4− | 1.0− |
| 2006 10 02 | G96 | 0.6− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 2006 10 17 | 691 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.3− |
| 2006 10 17 | 691 | 0.9+ | 0.5+ | 2006 11 08 | 644 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.0 | 0.8− |
| 2006 10 21 | 691 | 0.1− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.2+ | | | | |
| 2006 10 21 | 691 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.3+ | | | | |

**2006 UU$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.20808 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18888165 | $\omega$ | 49.89332 | | −0.26646917 | | −0.96306871 |
| $a$ | 3.0084505 | $\Omega$ | 55.60211 | | +0.86945232 | | −0.25748122 |
| $e$ | 0.0655280 | $i$ | 2.68388 | | +0.41598901 | | −0.07875322 |
| $P$ | 5.22 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.8+ | 0.2− | 2006 11 14 | 691 | 0.5− | 0.2+ |
| 1995 09 18 | 691 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1995 09 18 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 1.1+ | 0.9− | 2006 11 14 | 691 | 0.1+ | 0.7− |
| 2003 03 09 | 291 | 0.7− | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2003 03 09 | 291 | 0.7− | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2003 03 09 | 291 | 0.2− | 0.5+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.2+ |
| 2003 03 13 | 291 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2003 03 13 | 291 | 0.4+ | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.6− |
| 2003 03 13 | 291 | 0.6+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 27 | G96 | 0.5+ | 0.3− |
| 2003 04 01 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1− | | | | |
| 2003 04 01 | 645 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.4− | 0.2+ | | | | |

**2006 UY$_{84}$ = 2005 JG$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.99202 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28135922 | $\omega$ | 271.12968 | | +0.74457900 | | +0.65970555 |
| $a$ | 2.3065451 | $\Omega$ | 47.60352 | | −0.54432535 | | +0.68842295 |
| $e$ | 0.1357207 | $i$ | 7.93387 | | −0.38640914 | | +0.30143395 |
| $P$ | 3.50 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.6+ | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.0 | 0.3− |
| 2004 01 18 | 691 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2004 01 18 | 691 | 0.6− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2005 05 09 | G96 | 0.3+ | 0.4+ | 2006 09 28 | G96 | 0.4+ | 0.5− | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2005 05 09 | G96 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2005 05 09 | G96 | 0.1+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2005 05 09 | G96 | 0.1− | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2005 05 11 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2005 05 11 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.8− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.6+ |
| 2005 05 11 | 691 | 0.1+ | 0.5+ | 2006 10 17 | G96 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.6− | 0.6+ |
| 2006 09 28 | G96 | 0.3+ | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.7+ | | | | |
| 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.4+ | | | | |

**2006 UJ$_{85}$ = 2001 UK$_{194}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.98756 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21010205 | $\omega$ | 8.78296 | | +0.64009025 | | −0.76685797 |
| $a$ | 2.8023079 | $\Omega$ | 41.43756 | | +0.70051320 | | +0.55737161 |
| $e$ | 0.0926127 | $i$ | 4.07646 | | +0.31554038 | | +0.31822279 |
| $P$ | 4.69 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 1.1− | 0.3− | 2006 09 27 | G96 | 0.2− | 0.6− | 2006 10 21 | G96 | 0.3− | 0.4+ |
| 2001 10 18 | 644 | 1.0− | 0.5− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.7− | 0.2+ |
| 2001 10 18 | 644 | 0.6− | 0.0 | 2006 10 17 | G96 | 0.7+ | 0.4+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 10 21 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 2001 10 21 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2001 10 21 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.4− | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.2+ |

**2006 UK$_{85}$ = 1995 UM$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.08578 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18364382 | $\omega$ | 59.32566 | | −0.29833245 | | −0.93990221 |
| $a$ | 3.0653860 | $\Omega$ | 48.98966 | | +0.78301016 | | −0.34050882 |
| $e$ | 0.1873096 | $i$ | 12.71425 | | +0.54579561 | | −0.02525022 |
| $P$ | 5.37 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1− | 0.0 | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.2− | 0.0 |
| 1995 10 21 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 1995 10 21 | 691 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.4+ |
| 1995 10 27 | 691 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 1.2+ | 0.4+ |
| 1995 10 27 | 691 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 1995 10 27 | 691 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.1+ | 2006 11 22 | 704 | 1.1+ | 1.2+ |
| 2006 09 27 | G96 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2006 09 27 | G96 | 0.3+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.1+ | 2006 11 25 | 691 | 0.2− | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 25 | 691 | 0.3− | 0.5− |
| 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.0 | | | | |
| 2006 10 17 | G96 | 0.8− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1− | | | | |

**2006 UP$_{85}$ = 2004 FY$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.85422 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23062153 | $\omega$ | 182.01156 | | −0.82977518 | | +0.54689939 |
| $a$ | 2.6335171 | $\Omega$ | 31.95537 | | −0.50906536 | | −0.65999234 |
| $e$ | 0.1202166 | $i$ | 12.13288 | | −0.22874791 | | −0.51508365 |
| $P$ | 4.27 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 704 | 0.8+ | 1.1− | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.0 | 0.0 |
| 2004 03 23 | 704 | 0.8+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2004 03 23 | 704 | 0.9+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.4− | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2004 03 23 | 704 | 0.6+ | 0.4− | 2006 10 17 | 691 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2004 03 23 | 704 | 0.6+ | 0.6+ | 2006 10 17 | 691 | 0.1− | 0.8+ | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2004 03 30 | 691 | 0.4− | 0.0 | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2004 03 30 | 691 | 0.3− | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2004 03 30 | 691 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 01 | G96 | 0.7+ | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.3+ |

**2006 UR$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.30513 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22021539 | $\omega$ | 68.53834 | | +0.02380431 | | −0.99927110 |
| $a$ | 2.7158405 | $\Omega$ | 20.16667 | | +0.88219332 | | +0.00695383 |
| $e$ | 0.0846181 | $i$ | 4.96598 | | +0.47028534 | | +0.03753538 |
| $P$ | 4.48 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 24 | 807 | 0.5+ | 0.4+ | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.3− |
| 2001 05 24 | 807 | 0.4+ | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.5+ |
| 2001 08 19 | 807 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 1.3+ | 1.0+ |
| 2001 08 19 | 807 | 0.5− | 0.4+ | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.5+ | 1.4+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.5− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2004 05 21 | 691 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.4+ | 0.4+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 1.0+ | 1.5− | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2004 05 21 | 691 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.6− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2006 09 30 | G96 | 0.4− | 0.3− | 2006 10 27 | 703 | 1.2+ | 0.4+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.4− | 0.3− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.2− |

**2006 UG$_{86}$ = 2002 JP$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.89131 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29908050 | $\omega$ | 337.45008 | | +0.51876582 | +0.85311383 | |
| $a$ | 2.2145083 | $\Omega$ | 323.73242 | | −0.76936760 | +0.43757050 | |
| $e$ | 0.1972264 | $i$ | 5.38216 | | −0.37276739 | +0.28412823 | |
| $P$ | 3.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 15 | 644 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.4− | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.0 |
| 2002 05 15 | 644 | 0.2− | 0.5+ | 2006 09 28 | 703 | 0.3+ | 0.2− | 2006 10 20 | 644 | 0.2+ | 0.2− |
| 2002 05 15 | 644 | 0.0 | 0.2+ | 2006 09 28 | 703 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2002 05 17 | 644 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.2− | 0.2+ | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2002 05 17 | 644 | 0.0 | 0.0 | 2006 10 17 | 703 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.3− |
| 2002 05 17 | 644 | 0.1− | 0.5− | 2006 10 17 | 703 | 0.8− | 0.9+ | 2006 10 20 | 644 | 0.3+ | 0.1− |
| 2005 03 02 | 691 | 0.0 | 0.1− | 2006 10 17 | 703 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.0 |
| 2005 03 02 | 691 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.2+ |
| 2005 03 02 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.2− | 2006 10 21 | 644 | 0.1− | 0.0 |
| 2006 09 28 | 703 | 0.5+ | 0.6− | 2006 10 19 | 644 | 0.3+ | 0.2− | | | | |

**2006 UK$_{86}$ = 1995 WN$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.26218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18115065 | $\omega$ | 192.84670 | | +0.40462958 | −0.90557822 | |
| $a$ | 3.0934477 | $\Omega$ | 233.42673 | | +0.85241462 | +0.42390139 | |
| $e$ | 0.1684260 | $i$ | 9.11986 | | +0.33115588 | +0.01535225 | |
| $P$ | 5.44 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.4− | 0.3+ | 2006 10 17 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.4− | 0.3− |
| 1995 11 17 | 691 | 0.2− | 0.4+ | 2006 10 17 | 691 | 0.7+ | 0.2+ | 2006 11 16 | 703 | 0.9+ | 1.0+ |
| 1995 11 17 | 691 | 0.3− | 0.2+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 16 | 703 | 0.8− | 0.0 |
| 1995 11 28 | 691 | 0.5+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.3− | 0.1+ |
| 1995 11 28 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.3− | 0.2− | 2006 11 16 | 703 | (0.2− | 2.1+) |
| 1995 11 28 | 691 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.5− | 2006 11 21 | G96 | 0.3+ | 0.3+ |
| 2006 09 27 | G96 | 0.5− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.5− | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2006 09 27 | G96 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.3+ |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.6− | 2006 11 21 | G96 | 0.0 | 0.3+ |
| 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.6− | 0.8+ | 2006 11 27 | G96 | (0.5+ | 2.3−) |
| 2006 10 17 | G96 | 0.0 | 0.9− | 2006 11 09 | 644 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2006 10 17 | G96 | 0.6− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2006 10 17 | G96 | 0.5− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.1− | 2006 11 27 | G96 | 0.7+ | 0.1+ |
| 2006 10 17 | G96 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.4− | | | | |
| 2006 10 17 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.0 | | | | |

**2006 UL$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.00433 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18373886 | $\omega$ | 121.71087 | | −0.95818722 | −0.27749310 | |
| $a$ | 3.0643288 | $\Omega$ | 42.29231 | | +0.21461619 | −0.85833478 | |
| $e$ | 0.2413629 | $i$ | 5.95560 | | +0.18925416 | −0.43157732 | |
| $P$ | 5.36 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 05 10 | 291 | 0.2− | 0.5+ | 2005 09 13 | 691 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.5− | 0.0 |
| 2003 05 10 | 291 | 0.0 | 0.6+ | 2006 10 17 | G96 | 0.6+ | 0.8− | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2003 05 10 | 291 | 0.3− | 0.3+ | 2006 10 17 | G96 | 0.5+ | 0.3− | 2006 11 09 | 691 | 0.1− | 0.3+ |
| 2003 05 20 | 699 | 0.5+ | 0.3− | 2006 10 17 | G96 | 0.4+ | 0.6− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2003 05 20 | 699 | 1.3− | 0.1+ | 2006 10 17 | G96 | 0.4+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.4+ |
| 2003 05 20 | 699 | 0.8− | 0.0 | 2006 10 21 | 691 | 0.3+ | 0.0 | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2003 05 20 | 699 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.4+ | 0.3+ | 2006 11 16 | 691 | 0.4− | 0.4+ |
| 2003 06 04 | 691 | 0.6+ | 0.3+ | 2006 10 21 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.4− | 0.4+ |
| 2003 06 04 | 691 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2003 06 04 | 691 | 0.8+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 18 | A13 | 0.6− | 0.1− |
| 2005 09 13 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 11 18 | A13 | 0.5− | 0.4− |
| 2005 09 13 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3− | 0.4− | 2006 11 18 | A13 | 0.4− | 0.1+ |

**2006 UP$_{86}$ = 2004 HQ$_{62}$ = 2004 JF$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 138.04861 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20108130 | $\omega$ | 246.97868 | | −0.11064229 | +0.99380717 | |
| $a$ | 2.8855035 | $\Omega$ | 16.67874 | | −0.89823999 | −0.09556693 | |
| $e$ | 0.0177623 | $i$ | 2.05184 | | −0.42535068 | −0.05669454 | |
| $P$ | 4.90 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.1+ | 0.5− | 2004 05 09 | 691 | 0.2− | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.5+ |
| 1999 05 18 | 691 | 0.2− | 0.5− | 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 1999 05 18 | 691 | 0.2− | 0.0 | 2004 05 16 | 691 | 0.4+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.6+ |
| 2003 01 31 | 644 | 0.0 | 0.0 | 2004 05 16 | 691 | 0.3+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.4+ |
| 2003 01 31 | 644 | 0.1− | 0.2− | 2004 05 16 | 691 | 0.8+ | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.3+ |
| 2003 01 31 | 644 | 0.0 | 0.2+ | 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 11 18 | A13 | 0.5− | 0.4− |
| 2004 04 25 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.3− | 0.0 | 2006 11 18 | A13 | 0.4− | 0.2− |
| 2004 04 25 | 691 | 0.3+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 18 | A13 | 0.5− | 0.2− |
| 2004 04 25 | 691 | 0.2+ | 0.2− | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 18 | A13 | 0.3− | 0.4− |
| 2004 05 01 | 291 | 0.4− | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.3+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2004 05 01 | 291 | 0.3− | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2004 05 01 | 291 | 0.9− | 0.2+ | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2004 05 09 | 691 | 0.4+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.3− |

**2006 UU$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 229.56476 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27995775 | $\omega$ | 139.95293 | | −0.99692657 | −0.03183748 | |
| $a$ | 2.3142364 | $\Omega$ | 38.40418 | | −0.00626851 | −0.87835108 | |
| $e$ | 0.0998942 | $i$ | 6.61681 | | +0.07809040 | −0.47695467 | |
| $P$ | 3.52 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.2− | 1.4− |
| 2004 01 17 | 644 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.0+ | 0.7+ |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2006 10 17 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 10 31 | G96 | 0.7+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.2+ |

**2006 UF$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.10414 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27775894 | $\omega$ | 134.29916 | | +0.99681753 | −0.02600892 | |
| $a$ | 2.3264337 | $\Omega$ | 227.34615 | | −0.00048477 | +0.94328305 | |
| $e$ | 0.1739272 | $i$ | 5.88081 | | +0.07971563 | +0.33096922 | |
| $P$ | 3.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 26 | 691 | 0.3− | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 1995 10 26 | 691 | 0.3+ | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 1995 10 26 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2002 08 05 | 644 | 0.2+ | 1.2+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.7− | 1.4− |
| 2002 08 05 | 644 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.2− | 0.1− |
| 2002 08 05 | 644 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (0.7+ | 1.9−) |
| 2002 08 15 | 644 | 0.7− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 2002 08 15 | 644 | 0.8− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.9− | 0.6+ |
| 2002 08 15 | 644 | 0.6− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.5− | 0.0 |
| 2002 08 26 | 644 | 0.3+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.5− |
| 2002 08 26 | 644 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.8+ |
| 2002 08 26 | 644 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | (0.7+ | 1.9+) |
| 2005 06 13 | G96 | 0.2+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.8− | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | G96 | 0.4+ | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 1.2− | 0.7+ | 2002 10 03 | 704 | 0.8− | 1.2+ | 2006 10 31 | 691 | 0.1− | 0.4+ | 2006 11 20 | 703 | 0.8− | 1.0+ |
| 2005 06 13 | G96 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.0 | 1.3+ | 2006 11 21 | 704 | 0.1− | 0.6+ | 2002 10 03 | 704 | 0.1− | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2005 06 13 | G96 | 0.5− | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.4+ | 2006 11 23 | H07 | 0.4+ | 0.3− | 2002 10 03 | 704 | 0.4− | 1.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 23 | H07 | 0.1− | 0.2− | 2003 12 21 | 645 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.6− | 2006 11 23 | H07 | 0.5+ | 0.7+ | 2003 12 21 | 645 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 11 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.0 | 0.0 | | | | | | | | | | | | |
| 2006 09 27 | G96 | 0.3+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.1+ | 0.0 | | | | | | | | | | | | |
| 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.6− | 0.3− | 2006 11 27 | G96 | 0.4+ | 0.1− | | | | | | | | | | | | |
| 2006 10 17 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.3− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.0 | | | | | | | | | | | | |
| 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.3− | 1.7+ | | | | | | | | | | | | |
| 2006 10 17 | G96 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.5− | | | | | | | | | | | | |
| 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 29 | 704 | 1.0+ | 1.0+ | | | | | | | | | | | | |
| 2006 10 17 | 691 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.5− | 0.6− | 2006 11 29 | 704 | 0.4+ | 0.6+ | | | | | | | | | | | | |
| 2006 10 17 | 691 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.5− | 0.2+ | 2006 11 29 | 704 | 0.3+ | 0.6+ | | | | | | | | | | | | |
| 2006 10 21 | 691 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.3− | 0.2+ | | | | | | | | | | | | | | | | |
| 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.2− | 0.2− | | | | | | | | | | | | | | | | |

### 2006 UH$_{87}$ = 2004 JS$_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.04612 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21394704 | $\omega$ | 32.39336 | | +0.19785044 | | −0.97932018 |
| $a$ | 2.7686318 | $\Omega$ | 46.23413 | | +0.88641041 | | +0.16033457 |
| $e$ | 0.0642700 | $i$ | 3.35595 | | +0.41848750 | | +0.12338885 |
| $P$ | 4.61 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.1− | 0.5− | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.2− | 2006 11 20 | 703 | 0.8− | 1.0+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.5+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2001 10 07 | 644 | 0.4− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2001 10 07 | 644 | 1.1− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1− | | | | |
| 2001 10 07 | 644 | 0.8− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 1.2+ | 0.6+ | 2006 10 23 | 691 | 0.2+ | 0.0 | 2006 11 20 | 703 | 0.9− | 0.3+ | | | | |
| 2001 10 16 | 291 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.6+ | 0.3− | | | | |
| 2001 10 16 | 291 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.7+ | 2002 10 04 | 644 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 20 | 703 | 0.6+ | 0.2+ |
| 2001 10 16 | 291 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1+ | 2002 10 04 | 644 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.4− | 0.1+ | 2006 11 20 | 703 | (1.9− | 0.3+) |
| 2004 05 09 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.2− | 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.4+ |
| 2004 05 09 | 691 | 0.0 | 0.6+ | 2006 11 09 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.2− | 2006 10 17 | G96 | 1.0− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | (1.7− | 0.1+) |
| 2004 05 09 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 691 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2006 09 27 | G96 | 0.2− | 0.2+ | 2006 11 09 | 691 | 1.0+ | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.3− | 2006 10 17 | G96 | 1.0− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.8− | 0.4− |
| 2006 09 27 | G96 | 0.5− | 0.2+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.4− | 2006 10 17 | G96 | 0.7− | 0.7+ | 2006 10 31 | 691 | 0.4+ | 0.0 | | | | |
| 2006 09 27 | G96 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.3− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.2− | 0.1− | | | | |
| 2006 09 27 | G96 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.3− | 0.3+ | 2006 12 01 | G96 | 0.4− | 0.9− | | | | | | | | | | | | |
| 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.2+ | | | | | | | | | | | | |
| 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ | | | | | | | | | | | | | | | | |

### 2006 UR$_{87}$ = 2002 TZ$_{21}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 122.88093 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27180936 | $\omega$ | 247.98679 | | −0.01192543 | | +0.99976116 |
| $a$ | 2.3602596 | $\Omega$ | 21.35440 | | −0.89787120 | | −0.00264533 |
| $e$ | 0.1521119 | $i$ | 2.88289 | | −0.44009669 | | −0.02169390 |
| $P$ | 3.63 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 699 | 0.1+ | 1.2+ | 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 20 | 703 | 1.4− | 1.7− |
| 2001 03 19 | 699 | 0.3− | 0.6+ | 2004 01 18 | 691 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 1.4− | 0.3+ |
| 2001 03 19 | 699 | 1.4+ | 1.0+ | 2004 01 18 | 691 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.1+ | | | | |
| 2001 03 19 | 699 | (1.6+ | 0.2+) | 2006 10 17 | G96 | 0.4+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.3− | 0.2+ | | | | |
| 2001 03 29 | 691 | 0.3+ | 0.6+ | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.7− | | | | |
| 2001 03 29 | 691 | 0.3+ | 0.5+ | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.7− | | | | |
| 2001 03 29 | 691 | 0.3+ | 0.7+ | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5− | | | | |
| 2002 10 02 | 704 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2− | 1.5+ | 2006 10 28 | G96 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.4+ | | | | |
| 2002 10 02 | 704 | 0.0 | 1.3+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.8+ | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.8+ | 1.3+ | | | | |
| 2002 10 02 | 704 | 0.5− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.6− | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.0 | 1.1+ | | | | |
| 2002 10 02 | 704 | 0.5− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3− | 2006 11 20 | 703 | 0.5− | 1.7− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.6− | 0.2− | | | | |
| 2002 10 03 | 704 | 0.5− | 1.3+ | 2006 10 27 | 691 | 0.1− | 0.3− | 2006 11 20 | 703 | 1.4− | 1.7− | 2006 10 31 | 691 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.3− | 0.2− | | | | |
| 2002 10 03 | 704 | 0.9− | 1.0+ | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 703 | 1.4− | 0.3+ | 2006 10 31 | 691 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.0 | | | | |
| 2002 10 03 | 704 | 0.8− | 1.2+ | 2006 10 31 | 691 | 0.1− | 0.4+ | 2006 11 20 | 703 | 0.8− | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.8− | 0.4+ | | | | |

### 2006 US$_{87}$ = 1998 MZ$_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.30686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27763643 | $\omega$ | 343.97398 | | −0.14567364 | | +0.98847817 |
| $a$ | 2.3271181 | $\Omega$ | 277.63609 | | −0.90307919 | | −0.14982788 |
| $e$ | 0.1419382 | $i$ | 2.37723 | | −0.40401382 | | −0.02150613 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 26 | 809 | 1.7+ | 0.6− | 2006 10 23 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.1− | 0.4+ | 2006 11 20 | 703 | 0.8− | 1.0+ | 2006 11 20 | 703 | 0.8− | 1.0+ |
| 1998 06 26 | 809 | 0.9+ | 0.1+ | 2006 10 23 | 691 | 0.5+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 1998 06 26 | 809 | 0.8+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 1998 06 27 | 809 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1− | | | | |
| 1998 06 27 | 809 | 2.0− | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.0 | 2006 11 20 | 703 | 0.9− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.8− | | | | |
| 1998 06 27 | 809 | 1.2− | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 20 | 703 | 0.6+ | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.3− | | | | |
| 2002 10 04 | 644 | 0.0 | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 20 | 703 | 0.6+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.1− | | | | |
| 2002 10 04 | 644 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.4− | 0.1+ | 2006 11 20 | 703 | (1.9− | 0.3+) | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.1− | | | | |
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− | | | | |
| 2006 10 17 | G96 | 1.0− | 0.4− | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | (1.7− | 0.1+) | 2006 11 18 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.2− | | | | |
| 2006 10 17 | G96 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.1− | | | | |
| 2006 10 17 | G96 | 1.0− | 0.5− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 12 01 | G96 | 0.8− | 0.4− | 2006 11 19 | 704 | 0.3− | 0.6− | 2006 11 24 | G96 | 0.1− | 0.2− | | | | |
| 2006 10 17 | G96 | 0.7− | 0.7+ | 2006 10 31 | 691 | 0.4+ | 0.0 | | | | | 2006 11 20 | 703 | 0.5− | 1.7− | 2006 12 01 | 704 | 0.3− | 0.3+ | | | | |
| 2006 10 23 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.2− | 0.1− | | | | | 2006 11 20 | 703 | 1.4− | 1.7− | 2006 12 01 | 704 | 0.0 | 0.4+ | | | | |

### 2006 UU$_{87}$ = 2005 LE$_{14}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.41181 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22980384 | $\omega$ | 129.59532 | | +0.97268546 | | −0.19671095 |
| $a$ | 2.6397605 | $\Omega$ | 242.07125 | | +0.14601272 | | +0.93121345 |
| $e$ | 0.0681082 | $i$ | 8.01801 | | +0.18045298 | | +0.30683270 |
| $P$ | 4.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 04 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.5+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.3− | 2006 12 01 | 704 | 0.7+ | 0.6+ |
| 2005 06 04 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.3− | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.6− |
| 2005 06 04 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.6− | 0.8+ |
| 2005 06 09 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.3− | 0.3+ |
| 2005 06 09 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 1.3− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.8− | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.0 | 0.4+ |
| 2005 06 09 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.7− | 2006 11 24 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.2− | 0.2− | | | | |
| 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.7− | 2006 11 24 | G96 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.4− | 2006 11 24 | G96 | 0.1− | 0.2− | | | | |
| 2006 10 17 | G96 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.5− | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.2− | | | | |
| 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.2− | 2006 11 24 | G96 | 0.1− | 0.2− | | | | |
| 2006 10 17 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.8+ | 1.3+ | 2006 12 01 | 704 | 0.7+ | 0.6+ | 2006 11 18 | 704 | 0.7+ | 0.3− | 2006 11 24 | G96 | 0.2− | 0.1− | | | | |
| 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.0 | 1.1+ | 2006 12 01 | 704 | 0.3+ | 0.6− | 2006 11 18 | 704 | 0.8− | 0.4+ | | | | | | | | |
| 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.6− | 0.2− | 2006 12 01 | 704 | 0.6− | 0.8+ | | | | | | | | | | | | |
| 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3− | 0.2− | 2006 12 01 | 704 | 0.3− | 0.3+ | | | | | | | | | | | | |
| 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.5+ | 0.0 | 2006 12 01 | 704 | 0.0 | 0.4+ | | | | | | | | | | | | |
| 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.4+ | | | | | | | | | | | | | | | | |

### 2006 UT$_{88}$ = 2004 EL$_{97}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.03455 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27756898 | $\omega$ | 39.54493 | | +0.26351673 | | −0.96427905 |
| $a$ | 2.3274950 | $\Omega$ | 35.20002 | | +0.87280419 | | +0.22644704 |
| $e$ | 0.2051407 | $i$ | 2.67703 | | +0.41081843 | | +0.13743234 |
| $P$ | 3.55 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.4+ | 0.1− |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.6− | 0.4− |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.1− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.7− | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2004 03 23 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.4+ | 0.0 |
| 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.8− | 0.6+ |
| 2006 09 25 | G96 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.5+ | 0.6+ |
| 2006 09 25 | G96 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.7− | 0.4+ |
| 2006 09 25 | G96 | 0.5− | 0.2− | 2006 11 11 | 703 | (2.2+ | 5.2−) | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.4− | 1.4+ | 2006 11 19 | 704 | 0.7+ | 0.9− |
| 2006 10 17 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.7+ | 0.7+ | 2006 11 19 | 704 | 1.3+ | 1.0− |
| 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.1− | 0.0 | | | | |

**2006 UW$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 289.14703 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.19673432 | $\omega$ | 105.35452 | −0.49844057 | −0.86688030 |
| $a$ | 2.9278532 | $\Omega$ | 14.55195 | +0.78153032 | −0.45365935 |
| $e$ | 0.0755830 | $i$ | 1.98223 | +0.37518976 | −0.20666816 |
| $P$ | 5.01 | $H$ | 16.3 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.1− |
| 2001 11 11 | 691 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2001 11 11 | 691 | 0.0 | 0.6− | 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.2+ | 0.5+ |
| 2001 11 19 | 699 | (3.4− | 2.3+) | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2001 11 19 | 699 | 1.3+ | 1.2+ | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2001 11 19 | 699 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2001 11 19 | 699 | 0.7− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.4+ |
| 2003 02 22 | 644 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2003 02 22 | 644 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3− | 0.5− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2003 02 22 | 644 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2005 12 02 | 695 | 0.1− | 0.5+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 12 02 | 695 | 0.2− | 0.3+ | 2006 11 09 | 691 | 0.3+ | 0.0 | | | | |

**2006 UZ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 67.49902 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23247325 | $\omega$ | 73.05987 | +0.40626883 | +0.85783821 |
| $a$ | 2.6195140 | $\Omega$ | 225.39293 | −0.91138100 | +0.40522320 |
| $e$ | 0.2672194 | $i$ | 26.23690 | +0.06580508 | +0.31608190 |
| $P$ | 4.24 | $H$ | 16.5 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 01 | 644 | 0.6+ | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2005 05 01 | 644 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.3− | 0.2+ |
| 2005 05 14 | 644 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.3− | 0.0 |
| 2005 05 14 | 644 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2005 05 14 | 644 | 0.3+ | 0.1− | 2006 10 17 | 691 | 0.6+ | 0.5− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2005 05 14 | G96 | 0.4− | 0.3− | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.4− |
| 2005 05 14 | G96 | 0.4− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2005 05 14 | G96 | 0.3− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2005 05 14 | G96 | 0.5− | 0.8+ | 2006 10 21 | 691 | 0.1− | 0.2+ | | | | |

**2006 UG$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 32.35223 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.26666108 | $\omega$ | 315.82153 | +0.94447560 | +0.32728284 |
| $a$ | 2.3905416 | $\Omega$ | 25.11820 | −0.27918589 | +0.84615798 |
| $e$ | 0.2132846 | $i$ | 3.94244 | −0.17326592 | +0.42059792 |
| $P$ | 3.70 | $H$ | 17.6 | $G$ 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.1− | 0.6− | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2002 08 19 | 644 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2002 08 19 | 644 | 0.3− | 0.7− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 13 | 104 | 0.7+ | 0.2+ |
| 2002 08 19 | 644 | 0.8+ | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 13 | 104 | 0.1+ | 0.6− |
| 2002 08 19 | 644 | 0.1+ | 0.4− | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 13 | 104 | 0.5+ | 0.8+ |
| 2002 08 19 | 644 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2002 08 30 | 644 | 0.5− | 0.6+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.1− | 0.3+ |
| 2002 08 30 | 644 | 0.1− | 0.6+ | 2006 11 08 | 644 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.5− | 0.8+ |
| 2002 08 30 | 644 | 0.2− | 0.8+ | 2006 11 08 | 644 | 0.2+ | 0.6− | 2006 11 17 | 703 | 0.9− | 0.4+ |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | (1.9+ | 1.7+) | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | (0.2− | 1.7+) | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2006 09 27 | G96 | 0.4− | 0.2− | 2006 11 11 | 703 | (0.9+ | 1.8+) | 2006 11 18 | G96 | 0.5+ | 0.0 |
| 2006 10 17 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.4+ | 1.1+ | 2006 11 19 | 682 | 0.4+ | 0.6− |
| 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.7+ | 0.8− | 2006 11 19 | 682 | 0.6− | 0.4− |
| 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.6− | 2006 11 19 | 682 | (2.2+ | 0.8−) |

**2006 UH$_{89}$ = 2000 EG$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 88.30452 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23321042 | $\omega$ | 286.80992 | +0.47688512 | +0.87886421 |
| $a$ | 2.6139910 | $\Omega$ | 11.69971 | −0.77928653 | +0.42978164 |
| $e$ | 0.0865794 | $i$ | 3.77537 | −0.40656252 | +0.20708801 |
| $P$ | 4.23 | $H$ | 16.0 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 02 | 691 | 0.3− | 0.3− | 2004 02 16 | 291 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.2− |
| 2000 03 02 | 691 | 0.2− | 0.1− | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2000 03 02 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.4− | 0.2− |
| 2000 03 03 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2000 03 03 | 691 | 0.0 | 0.3− | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2000 03 03 | 691 | 0.1+ | 0.1− | 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2001 08 13 | 644 | 0.2− | 0.7− | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2001 08 13 | 644 | 0.1+ | 0.5− | 2006 10 17 | 691 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.4+ |
| 2001 08 13 | 644 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2001 08 25 | 644 | 0.0 | 0.7+ | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.4− | 0.0 |
| 2001 08 25 | 644 | 0.1+ | 0.7+ | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.6− |
| 2001 08 25 | 644 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 22 | 704 | 0.6+ | 0.0 |
| 2004 02 16 | 291 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.7− | | | | |
| 2004 02 16 | 291 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.4− | | | | |

**2006 UP$_{89}$ = 2001 XG$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 1.95098 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.18952140 | $\omega$ | 162.62236 | +0.83558369 | −0.52324010 |
| $a$ | 3.0016764 | $\Omega$ | 230.12089 | +0.47455990 | +0.84098389 |
| $e$ | 0.2464969 | $i$ | 12.59908 | +0.27675405 | +0.13771671 |
| $P$ | 5.20 | $H$ | 16.0 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 11 | 704 | 0.6− | 0.5− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 16 | 703 | 0.4+ | 0.4− |
| 2001 12 11 | 704 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.3− | 0.1+ |
| 2001 12 11 | 704 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.2− |
| 2001 12 11 | 704 | 0.5− | 0.7+ | 2006 11 11 | 703 | 0.3+ | 0.8− | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2001 12 17 | 704 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.1− | 0.1− |
| 2001 12 17 | 704 | 0.3− | 0.5− | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.4− | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.6+ | 0.4− | 2006 11 12 | 703 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.6+ | 2006 11 12 | 703 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.3− |
| 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 12 | 703 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.4+ |
| 2006 10 17 | 691 | 0.2+ | 0.3+ | 2006 11 12 | 703 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 1.3+ | 0.8− |
| 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | (1.6− | 1.3−) | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.0 |
| 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.7+ | 0.2− |
| 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2+ | 0.0 |
| 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 13 | 644 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.3+ | 0.7+ |
| 2006 10 22 | 644 | 0.3+ | 0.0 | 2006 11 13 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2006 10 31 | G96 | 0.2+ | 0.2− | 2006 11 14 | 691 | (2.1− | 0.8−) | 2006 11 29 | 704 | 0.9− | 1.3+ |
| 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.3− | 0.1+ |
| 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.6+ |
| 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 16 | 703 | 0.1− | 0.6− | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 16 | 703 | 0.4− | 0.1− | | | | |

### 2006 US$_{89}$ = 2004 EW$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.83070 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27142736 | $\omega$ | 78.98540 | | −0.11065532 | −0.99374845 | |
| $a$ | 2.3624736 | $\Omega$ | 17.38848 | | +0.89140110 | −0.10582773 | |
| $e$ | 0.1320498 | $i$ | 2.84112 | | +0.43949913 | −0.03556003 | |
| $P$ | 3.63 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.3− | 0.7+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3− |
| 2002 09 13 | 644 | 0.6− | 0.5+ | 2006 10 17 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.2+ |
| 2002 09 13 | 644 | 0.2− | 1.0+ | 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.5− | 1.0− |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.7+ |
| 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2004 03 21 | 691 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.4+ | 1.2+ |
| 2004 03 21 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.5− | 0.1+ |
| 2004 03 30 | 691 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.9− | 0.1+ |
| 2004 03 30 | 691 | 0.2+ | 0.2+ | 2006 11 09 | 691 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2004 03 30 | 691 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.8− |
| 2006 09 27 | G96 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.4+ | 2006 11 22 | 704 | 1.3+ | 1.0− |
| 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.7− | 0.4+ | | | | |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.4− | 0.3− | | | | |

### 2006 UT$_{89}$ = 1993 RJ$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.24582 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23296141 | $\omega$ | 7.08564 | | +0.99297232 | −0.11834667 | |
| $a$ | 2.6158533 | $\Omega$ | 359.71088 | | +0.10684900 | +0.89712252 | |
| $e$ | 0.1808397 | $i$ | 1.94366 | | +0.05088472 | +0.42563511 | |
| $P$ | 4.23 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | 1.0+ | 0.4− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.2− | 0.5− |
| 1993 09 15 | 809 | 0.9+ | 1.0− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 2.0+ | 1.1− |
| 1993 09 15 | 809 | 1.0− | 0.9− | 2006 10 31 | G96 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.6− | 0.0 |
| 1993 09 22 | 809 | (0.9+ | 3.0−) | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.3− | 0.6+ |
| 1993 09 22 | 809 | 0.6+ | 0.9− | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.8− | 0.6+ |
| 1993 09 22 | 809 | (0.6− | 2.5−) | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 16 | 704 | 1.0− | 0.2+ |
| 2000 04 08 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 1.1− |
| 2000 04 08 | 691 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2000 04 08 | 691 | 0.2− | 0.3− | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 2004 02 17 | 291 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.1− | 1.5+ |
| 2004 02 17 | 291 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2004 02 17 | 291 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.5− | 2006 11 22 | 704 | 0.2+ | 0.3+ |
| 2006 10 17 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.8+ | 0.0 |
| 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.6− | 1.0+ | 2006 11 22 | 704 | 0.7+ | 0.0 |
| 2006 10 17 | 691 | 0.4+ | 0.6− | 2006 11 15 | 704 | 0.7+ | 0.2+ | 2006 11 22 | 704 | 0.9+ | 0.1+ |
| 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 15 | 704 | 0.5+ | 0.4+ | 2006 11 22 | 704 | 0.4+ | 0.0 |

### 2006 UU$_{89}$ = 2001 YL$_{30}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.07907 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19022125 | $\omega$ | 1.97433 | | +0.99983862 | +0.01790432 | |
| $a$ | 2.9943096 | $\Omega$ | 356.99858 | | −0.01684426 | +0.90577942 | |
| $e$ | 0.1772948 | $i$ | 1.61330 | | −0.00624570 | +0.42337108 | |
| $P$ | 5.18 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 24 | 691 | 0.2− | 0.2− | 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.3+ | 0.0 |
| 1995 07 24 | 691 | 0.2− | 0.1+ | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.3+ |
| 1995 08 01 | 691 | 0.5+ | 0.0 | 2006 10 17 | 691 | 0.4− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 1995 08 01 | 691 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.4− | 0.4+ | 2006 11 24 | G96 | 0.5− | 0.3− |
| 1995 08 01 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2001 12 18 | 704 | 0.4+ | 0.5− | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2001 12 18 | 704 | 0.2− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 24 | G96 | 0.6− | 0.3− |
| 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.5− | 2006 12 01 | G96 | 0.2+ | 0.7− |
| 2001 12 18 | 704 | 0.1− | 0.6− | 2006 10 31 | G96 | 0.4+ | 0.7− | 2006 12 01 | G96 | 0.6+ | 0.7− |
| 2001 12 19 | 704 | 0.2+ | 0.6− | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2001 12 19 | 704 | 0.7− | 1.2− | 2006 11 13 | 691 | 0.5+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2001 12 19 | 704 | 0.7+ | 0.6+ | 2006 11 13 | 691 | 0.2+ | 0.0 | | | | |
| 2001 12 19 | 704 | 0.1− | 0.4− | 2006 11 13 | 691 | 0.3− | 0.0 | | | | |

### 2006 UV$_{89}$ = 2001 NX$_{3}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.31900 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23394443 | $\omega$ | 144.72714 | | +0.76085874 | −0.64650916 | |
| $a$ | 2.6085205 | $\Omega$ | 255.65066 | | +0.58134253 | +0.71734259 | |
| $e$ | 0.1372842 | $i$ | 3.30520 | | +0.28833114 | +0.25970275 | |
| $P$ | 4.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 691 | 0.5− | 0.0 | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.2− | 0.5+ |
| 1998 10 29 | 691 | 0.2+ | 0.0 | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.1+ | 1.3+ |
| 1998 10 29 | 691 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.2+ | 1.2+ |
| 2001 07 13 | 644 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.7+ |
| 2001 07 13 | 644 | 0.5− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2001 07 13 | 644 | 0.1− | 0.6− | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | (0.7+ | 2.1+) |
| 2001 07 14 | 644 | 0.3+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.7− | 0.4− |
| 2001 07 14 | 644 | 0.2+ | 0.4+ | 2006 11 10 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2001 07 14 | 644 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.9− | 0.4+ |
| 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.1+ | 1.2+ |
| 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2006 10 17 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.0 | 0.4− |
| 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 16 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.3− | 0.3− |
| 2006 10 31 | G96 | 0.3+ | 0.5− | 2006 11 17 | 704 | 0.8+ | 1.1+ | | | | |
| 2006 11 09 | 691 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.3+ | 1.2+ | | | | |

### 2006 UA$_{90}$ = 2001 XM$_{131}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.41030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19073011 | $\omega$ | 232.91420 | | −0.38809874 | −0.91206633 | |
| $a$ | 2.9889814 | $\Omega$ | 240.42527 | | +0.88648690 | −0.33016684 | |
| $e$ | 0.0564804 | $i$ | 8.75255 | | +0.25203243 | −0.24315606 | |
| $P$ | 5.17 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.6− | 0.5+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.8+ | 0.8+ |
| 2001 12 14 | 704 | 0.8− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2001 12 14 | 704 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2001 12 14 | 704 | 0.8− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2001 12 17 | 704 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.4− | 0.7− | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2001 12 17 | 704 | 0.5+ | 0.7− | 2006 11 18 | 691 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2001 12 17 | 704 | 0.5+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2001 12 17 | 704 | 0.4+ | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 11 20 | 691 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.6− |
| 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2006 10 17 | 691 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.4− |
| 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.2+ | 0.5− |
| 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.5− | | | | |
| 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.3+ | | | | |

**2006 UE$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.91984 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24247553 | $\omega$ | 339.11077 | | +0.96440958 | −0.25583727 | |
| $a$ | 2.5469716 | $\Omega$ | 35.92376 | | +0.25586517 | +0.83925473 | |
| $e$ | 0.2216795 | $i$ | 6.53704 | | +0.06668715 | +0.47979036 | |
| $P$ | 4.06 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2− | 0.1− | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.2− | 0.6+ |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.7+ | 1.0+ |
| 2004 03 15 | 691 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.8− |
| 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6− | 0.5+ |
| 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.8+ |
| 2006 09 25 | G96 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.2+ | 0.3+ |
| 2006 09 25 | G96 | 0.1+ | 0.2+ | 2006 11 13 | 691 | (1.7+ | 2.6+) | 2006 11 17 | 704 | 0.2+ | 0.6+ |
| 2006 10 17 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.9+ | 2006 11 17 | 704 | 0.8+ | 0.4− |
| 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 14 | 703 | 0.5− | 0.6− | 2006 11 19 | 704 | 0.4+ | 0.5+ |
| 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.5− | 0.8− | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.8+ | 1.0+ |
| 2006 10 21 | 691 | 0.0 | 0.4+ | 2006 11 15 | 704 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2006 10 31 | G96 | 0.3− | 0.4− | 2006 11 15 | 704 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.2+ |
| 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.5+ | 0.3− |
| 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.2+ | 0.4− |
| 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.4− |
| 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.6− | | | | |

**2006 UF$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.24211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21040745 | $\omega$ | 145.46641 | | +0.94309648 | −0.29430204 | |
| $a$ | 2.7995957 | $\Omega$ | 232.40468 | | +0.24361808 | +0.92834013 | |
| $e$ | 0.1074452 | $i$ | 11.26455 | | +0.22631671 | +0.22709228 | |
| $P$ | 4.68 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 644 | 0.8+ | 0.4+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.2− | 0.2+ |
| 2001 09 29 | 644 | 0.4+ | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | (1.8− | 0.2−) |
| 2001 09 29 | 644 | 0.6+ | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.4− | 0.2− |
| 2001 10 13 | 699 | 0.6+ | 1.2− | 2006 11 09 | 644 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2001 10 13 | 699 | 1.2+ | 1.9+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | (1.9+ | 2.0+) |
| 2001 10 13 | 699 | 1.8− | 0.5+ | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2001 10 13 | 699 | 1.9− | 1.3− | 2006 11 11 | G96 | 0.1+ | 0.6− | 2006 11 21 | 704 | (0.1− | 1.9+) |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 21 | 704 | 1.0+ | 0.8+ |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.0 |
| 2006 10 17 | 691 | 0.5+ | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.3− | 1.1− |
| 2006 10 17 | 691 | 0.4+ | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.5+ | 0.0 |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2006 10 21 | 691 | 0.8− | 0.8+ | 2006 11 17 | 703 | (0.4− | 1.7+) | 2006 11 27 | 703 | 0.4− | 0.5− |
| 2006 10 21 | 691 | 0.6− | 0.9− | 2006 11 17 | 703 | 0.7− | 0.5+ | 2006 11 27 | 703 | 0.3− | 0.2− |
| 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.2+ | 0.2+ |

**2006 UK$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.62951 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21331224 | $\omega$ | 96.93358 | | +0.99240901 | −0.11452028 | |
| $a$ | 2.7741218 | $\Omega$ | 269.64937 | | +0.08748613 | +0.91358494 | |
| $e$ | 0.1102777 | $i$ | 2.56931 | | +0.08643226 | +0.39018927 | |
| $P$ | 4.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.3− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 1999 03 21 | 645 | 0.1+ | 0.1+ | 2006 10 21 | 691 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.0 |
| 1999 03 21 | 645 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.2− | 0.2− |
| 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.8− | 2006 11 13 | 691 | 0.1+ | 0.7+ |
| 2005 06 03 | 691 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.1− | 0.7− |
| 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.2− | 0.4− |
| 2006 10 17 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.4− |

**2006 UL$_{90}$ = 2001 WW$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.78368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20221316 | $\omega$ | 108.68102 | | +0.96473867 | +0.23451242 | |
| $a$ | 2.8747259 | $\Omega$ | 237.91597 | | −0.26120845 | +0.90890418 | |
| $e$ | 0.1318562 | $i$ | 8.10895 | | +0.03239497 | +0.34481462 | |
| $P$ | 4.87 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.8− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 10 26 | 644 | 0.4− | 0.2− | 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2001 10 26 | 644 | 0.8− | 0.2− | 2006 10 21 | 691 | 0.2+ | 0.3− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2001 11 19 | 704 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 27 | G96 | 0.1+ | 0.5− |
| 2001 11 19 | 704 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.0 | 0.6− |
| 2001 11 19 | 704 | 0.5− | 0.7− | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.6− |
| 2001 11 19 | 704 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.2+ |
| 2001 11 21 | 704 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.2− | 0.4− |
| 2001 11 21 | 704 | 0.9+ | 0.5+ | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 703 | (1.9− | 0.3+) |
| 2001 11 21 | 704 | 0.7+ | 0.6+ | 2006 11 09 | 691 | 0.2− | 0.8+ | 2006 11 27 | 703 | (1.9− | 0.5−) |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.0 | 2006 11 27 | 703 | 0.3+ | 0.6− |
| 2006 10 17 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.2− | | | | |
| 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.1+ | | | | |

**2006 UM$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.04719 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20347539 | $\omega$ | 33.60304 | | +0.57243215 | −0.81983837 | |
| $a$ | 2.8628249 | $\Omega$ | 21.48680 | | +0.74384583 | +0.51222107 | |
| $e$ | 0.0624731 | $i$ | 2.13656 | | +0.34498523 | +0.25591917 | |
| $P$ | 4.84 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.6− | 0.4+ | 2006 10 17 | 691 | 0.2− | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.6+ |
| 1996 10 07 | 691 | (2.3+ | 4.1−) | 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 11 09 | 691 | 0.3− | 0.5+ |
| 1996 10 07 | 691 | 0.7− | 0.9+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.4+ |
| 2000 07 30 | 807 | 0.6− | 2.6+ | 2006 10 21 | 691 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.3− | 0.4+ |
| 2000 07 30 | 807 | 0.4− | 2.6+ | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.1− | 1.4− |
| 2001 11 12 | 691 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.5+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2001 11 12 | 691 | 0.2− | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2001 11 12 | 691 | 0.0 | 0.7+ | 2006 10 31 | G96 | 0.1+ | 0.7− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 2006 10 17 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.6− | 2006 11 18 | 691 | 0.4+ | 0.1+ |

**2006 UN$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.67361 | | | (2000.0) | | |
| $n$ | 0.27136250 | $\omega$ | 30.46414 | | +0.68624591 | −0.72726408 |
| $a$ | 2.3628501 | $\Omega$ | 16.21317 | | +0.65808041 | +0.61352847 |
| $e$ | 0.1995904 | $i$ | 2.54324 | | +0.30983338 | +0.30768452 |
| $P$ | 3.63 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2− |
| 1995 09 27 | 691 | 0.8+ | 0.1+ | 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.4− |
| 1995 09 27 | 691 | 0.7− | 0.2− | 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 2004 02 26 | 695 | 0.1+ | 0.3− | 2006 11 09 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2004 02 26 | 695 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.3− |
| 2004 03 18 | 691 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.5+ | 0.2+ | 2006 11 19 | 704 | 0.7− | 0.2+ |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.1− |
| 2006 07 21 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.4− | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.5+ |
| 2006 07 21 | G96 | 0.5− | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2006 07 21 | G96 | 0.5− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2006 07 21 | G96 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.7− | 0.5+ | 2006 11 22 | 704 | 0.3− | 0.7− |
| 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.6+ |
| 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 1.3+ | 0.7+ | 2006 11 22 | 704 | 0.4− | 0.5− |
| 2006 09 27 | G96 | 0.4− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.1+ |
| 2006 10 17 | 691 | 0.3− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2006 10 17 | 691 | 0.5+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2+ | | | | |
| 2006 10 17 | 691 | 0.4+ | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.2+ | | | | |

**2006 UP$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.71760 | | | (2000.0) | | |
| $n$ | 0.12458002 | $\omega$ | 313.83756 | | +0.98667481 | +0.15315555 |
| $a$ | 3.9704260 | $\Omega$ | 37.45238 | | −0.11087866 | +0.87995747 |
| $e$ | 0.2585911 | $i$ | 5.18164 | | −0.11907448 | +0.44968681 |
| $P$ | 7.91 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 807 | 0.7− | 0.8+ | 2005 11 06 | G96 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2003 04 01 | 807 | 1.4+ | 0.4+ | 2005 11 06 | G96 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.4− | 0.1− |
| 2003 04 01 | 807 | 0.3− | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2003 04 01 | 807 | 0.6+ | 0.3+ | 2006 10 17 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2005 08 05 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2005 08 05 | 644 | 0.2− | 0.1+ | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.2− |
| 2005 08 05 | 644 | 0.3− | 0.4+ | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2005 11 06 | G96 | 0.2+ | 0.5+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2005 11 06 | G96 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.7+ | | | | |

**2006 UQ$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 354.62210 | | | (2000.0) | | |
| $n$ | 0.24492480 | $\omega$ | 16.73322 | | +0.71267728 | −0.70078009 |
| $a$ | 2.5299632 | $\Omega$ | 27.83877 | | +0.63560916 | +0.62603104 |
| $e$ | 0.1502990 | $i$ | 3.87966 | | +0.29680311 | +0.34204152 |
| $P$ | 4.02 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.5+ | 1.2− | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.7+ | 1.0+ |
| 2002 11 24 | 644 | 0.1− | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2002 11 24 | 644 | 0.4− | 0.3+ | 2006 11 09 | D35 | 0.1− | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.1− |
| 2002 12 05 | 695 | 0.0 | 0.0 | 2006 11 09 | D35 | 0.6+ | 0.2− | 2006 11 19 | 704 | 0.7− | 0.1− |
| 2002 12 05 | 695 | 0.2+ | 0.0 | 2006 11 09 | D35 | 0.4+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.2− |
| 2006 09 27 | G96 | 0.6+ | 0.7+ | 2006 11 13 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.2− |
| 2006 09 27 | G96 | 0.2+ | 0.8+ | 2006 11 13 | 691 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 2006 09 27 | G96 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.4− | 2006 11 19 | 704 | 1.1+ | 1.0− |
| 2006 09 27 | G96 | 1.1− | 0.4− | 2006 11 16 | 704 | (0.7+ | 1.6+) | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.7− | 2006 11 20 | 691 | 0.2− | 0.3+ |
| 2006 10 17 | 691 | 0.1− | 0.4− | 2006 11 16 | 704 | (0.0 | 1.6+) | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2006 10 17 | 691 | 0.1+ | 0.3− | 2006 11 16 | 704 | 1.1+ | 0.5+ | 2006 11 20 | 691 | 0.4− | 0.0 |
| 2006 10 21 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.7− | 0.0 |
| 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.7− | 0.2− |
| 2006 11 09 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.2+ | | | | |

**2006 US$_{90}$ = 2005 JJ$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.10013 | | | (2000.0) | | |
| $n$ | 0.24329973 | $\omega$ | 27.21224 | | +0.76297872 | +0.64609094 |
| $a$ | 2.5412163 | $\Omega$ | 292.52470 | | −0.59709055 | +0.69209716 |
| $e$ | 0.2271290 | $i$ | 1.28629 | | −0.24768195 | +0.32181984 |
| $P$ | 4.05 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.7+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2005 05 07 | 691 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.2− |
| 2005 05 07 | 691 | 0.2− | 0.2− | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.3− | 0.1+ |
| 2005 05 11 | 691 | 0.4+ | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2005 05 11 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2005 05 11 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.0 |
| 2006 09 27 | G96 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 10 31 | G96 | (2.0+ | 0.0 ) | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.1+ | | | | |
| 2006 10 17 | 691 | 0.0 | 0.4− | 2006 11 09 | 691 | 0.0 | 0.2− | | | | |

**2006 UY$_{90}$ = 2001 US$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 11.53247 | | | (2000.0) | | |
| $n$ | 0.21260636 | $\omega$ | 350.53736 | | +0.91042689 | −0.41019168 |
| $a$ | 2.7802588 | $\Omega$ | 33.83943 | | +0.38554429 | +0.79448992 |
| $e$ | 0.1651238 | $i$ | 5.51638 | | +0.14992822 | +0.44780414 |
| $P$ | 4.64 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.1− | 0.7− | 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2001 10 16 | 644 | 0.4− | 0.6− | 2006 10 17 | 691 | 0.5+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2001 10 16 | 644 | 0.0 | 0.9− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.4− |
| 2001 10 17 | 644 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2001 10 17 | 644 | 0.2+ | 0.7+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2001 10 17 | 644 | 0.4+ | 0.7+ | 2006 10 27 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2006 09 27 | G96 | 0.7− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.4− | 0.3− |
| 2006 09 27 | G96 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.6− | 0.8− |
| 2006 09 27 | G96 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.5− | 0.7− |
| 2006 10 17 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.1− | 2006 11 23 | 703 | 0.4− | 0.9− |

**2006 UE$_{91}$ = 2004 JR$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 150.11260 | | | (2000.0) | | |
| $n$ | 0.19201362 | $\omega$ | 24.43932 | | −0.27967162 | +0.95038436 |
| $a$ | 2.9756467 | $\Omega$ | 229.62295 | | −0.90767772 | −0.30796452 |
| $e$ | 0.0444930 | $i$ | 10.29997 | | −0.31289764 | +0.04390254 |
| $P$ | 5.13 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 704 | (0.8+ | 1.6+) | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.5− | 0.8− |
| 2004 05 15 | 704 | 1.4+ | 0.7− | 2006 10 21 | 691 | 0.5+ | 0.3− | 2006 11 17 | 703 | 0.8− | 0.5+ |
| 2004 05 15 | 704 | (0.5+ | 2.4+) | 2006 10 21 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.7+ |
| 2004 05 15 | 704 | 0.7− | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2004 05 19 | 704 | 0.7− | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.7− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2004 05 19 | 704 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.5+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 19 | 704 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.6− | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2004 05 19 | 704 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 21 | 691 | 0.1+ | 0.0 |
| 2005 08 29 | 644 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 21 | 691 | 0.2+ | 0.1+ |
| 2005 08 29 | 644 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1− | 0.3− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2005 08 29 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.2+ |
| 2006 10 17 | 691 | 0.3− | 0.8+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 1.4+ | 0.5+ |
| 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.5− | 0.6− |
| 2006 10 17 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.5+ | 2006 11 21 | 704 | 0.7+ | 0.8− |

**2006 UF$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.22062 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19247145 | $\omega$ | 338.82347 | | +0.91407663 | | −0.38298732 |
| $a$ | 2.9709260 | $\Omega$ | 44.43875 | | +0.39405235 | | +0.76106460 |
| $e$ | 0.1076499 | $i$ | 10.98040 | | +0.09584711 | | +0.52354693 |
| $P$ | 5.12 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 644 | 0.1+ | 0.9− | 2006 10 21 | 691 | 1.0− | 0.7− | 2006 11 16 | 704 | 1.0− | 0.3+ |
| 2001 12 14 | 644 | 0.5+ | 1.2− | 2006 10 31 | G96 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.4+ | 1.0+ |
| 2001 12 14 | 644 | 0.7+ | 1.1− | 2006 10 31 | G96 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.3− |
| 2004 04 25 | 691 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.7+ | 0.8+ |
| 2004 04 25 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.9− | 0.9− |
| 2004 04 25 | 691 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2004 05 28 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2004 05 28 | 691 | 0.6+ | 0.1+ | 2006 11 09 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.5− | 0.3− |
| 2004 05 28 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.9+ | 0.6+ |
| 2006 09 27 | G96 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2006 10 17 | 691 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2006 10 17 | 691 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.1+ | 0.8+ |
| 2006 10 17 | 691 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.0 | 1.1+ |
| 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.8+ | 2006 11 22 | 704 | 0.1+ | 0.9+ |
| 2006 10 21 | 691 | 0.3− | 0.3+ | 2006 11 15 | 704 | 0.2+ | 1.1+ | | | | |

**2006 UK$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.38876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28100880 | $\omega$ | 142.58755 | | +0.84498908 | | +0.53471592 |
| $a$ | 2.3084622 | $\Omega$ | 185.10973 | | −0.51083714 | | +0.80234431 |
| $e$ | 0.1868772 | $i$ | 5.48001 | | −0.15823676 | | +0.26518390 |
| $P$ | 3.51 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | G96 | 0.2− | 0.3+ | 2006 07 22 | G96 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.5+ |
| 2005 03 08 | G96 | 0.4− | 0.0 | 2006 07 22 | G96 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2005 03 08 | G96 | 0.8− | 0.1− | 2006 07 22 | G96 | (0.1− | 1.7+) | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2005 03 08 | G96 | 0.2− | 0.0 | 2006 07 22 | G96 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2005 04 02 | 691 | 0.3+ | 0.4+ | 2006 08 28 | 703 | 1.4− | 1.1+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2005 04 02 | 691 | 0.1+ | 0.3+ | 2006 08 28 | 703 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2005 04 02 | 691 | 0.4+ | 0.3+ | 2006 08 28 | 703 | 0.9+ | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2005 04 09 | G96 | 0.2− | 0.0 | 2006 08 28 | 703 | (2.1+ | 0.3+) | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2005 04 09 | G96 | 0.1+ | 0.5+ | 2006 09 20 | 644 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 04 09 | G96 | 0.1+ | 0.9+ | 2006 09 20 | 644 | 0.5+ | 0.7+ | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2005 04 09 | G96 | 0.4+ | 0.6+ | 2006 09 20 | 644 | 0.5+ | 0.0 | 2006 11 20 | G96 | 0.3− | 0.2+ |
| 2005 05 11 | G96 | 0.4+ | 0.2− | 2006 10 18 | 621 | 0.0 | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2005 05 11 | G96 | 0.4− | 0.2− | 2006 10 18 | 621 | 0.3+ | 0.4+ | 2006 11 20 | G96 | 0.5+ | 0.2− |
| 2005 05 11 | G96 | 0.3− | 0.2− | 2006 10 18 | 621 | 0.1+ | 0.1− | | | | |
| 2005 05 11 | G96 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.3+ | | | | |

**2006 UZ$_{91}$ = 2001 WE$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.95949 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18949404 | $\omega$ | 236.14023 | | +0.97968371 | | −0.19985310 |
| $a$ | 3.0019653 | $\Omega$ | 135.38168 | | +0.19095637 | | +0.90415707 |
| $e$ | 0.2393657 | $i$ | 1.36164 | | +0.06128216 | | +0.37756950 |
| $P$ | 5.20 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.5− | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2001 11 20 | 704 | 0.6− | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.5− | 0.1+ |
| 2001 11 20 | 704 | 0.6− | 0.3− | 2006 09 30 | 703 | 0.5+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.3− |
| 2001 11 20 | 704 | 0.3+ | 0.4− | 2006 09 30 | 703 | 0.7− | 0.2+ | 2006 11 10 | 691 | 0.4+ | 0.2− |
| 2001 11 20 | 704 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.0 |
| 2001 11 21 | 704 | 0.2+ | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2001 11 21 | 704 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.9− | 0.6− |
| 2001 11 21 | 704 | 0.3+ | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.9− |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.6− |
| 2001 12 07 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.4+ | 0.1+ |
| 2001 12 07 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2001 12 07 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.3+ |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 11 17 | G92 | 0.3− | 0.3− |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 17 | G92 | 0.7− | 0.1+ |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.5− | 0.0 | 2006 11 17 | G92 | 0.5− | 0.2− |

**2006 UB$_{92}$ = 2002 XF$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.19630 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23767442 | $\omega$ | 34.43803 | | +0.26172953 | | −0.96178310 |
| $a$ | 2.5811570 | $\Omega$ | 40.55689 | | +0.85533976 | | +0.19253629 |
| $e$ | 0.1662770 | $i$ | 7.10675 | | +0.44709233 | | +0.19468706 |
| $P$ | 4.15 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2002 11 07 | 695 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2002 12 06 | 704 | 0.3− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2002 12 06 | 704 | 0.4− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.6− |
| 2002 12 06 | 704 | 0.1− | 0.6− | 2006 10 29 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 1.4− | 1.3− |
| 2002 12 06 | 704 | 0.7− | 0.5− | 2006 11 03 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.7+ | 1.1− |
| 2002 12 06 | 704 | 0.5− | 0.5+ | 2006 11 03 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.0 | 0.8− |
| 2002 12 11 | 704 | 0.9+ | 1.0+ | 2006 11 03 | G96 | 0.4+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2002 12 11 | 704 | 0.8+ | 0.5+ | 2006 11 03 | G96 | 0.1− | 0.5− | 2006 11 17 | 703 | (1.7− | 0.5−) |
| 2002 12 11 | 704 | 0.2+ | 0.4− | 2006 11 03 | G96 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.7+ | 0.2+ |
| 2006 09 30 | G96 | 0.5+ | 0.5− | 2006 11 03 | G96 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 03 | G96 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.4+ | 0.1+ |
| 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 03 | G96 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2006 09 30 | G96 | 0.5+ | 0.4− | 2006 11 10 | 691 | 0.2+ | 0.2+ | 2006 11 25 | 703 | 0.6− | 0.0 |
| 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.1+ | 2006 11 25 | 703 | 0.9− | 0.9+ |
| 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.3+ | 2006 11 25 | 703 | (1.3− | 1.6+) |
| 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.9− | 2006 11 25 | 703 | (2.1− | 0.3−) |
| 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 1.0+ | 1.2− | | | | |

**2006 UD$_{92}$ = 2001 TB$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 214.33900 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20807466 | $\omega$ | 347.19744 | | −0.99714228 | | −0.07505123 |
| $a$ | 2.8204815 | $\Omega$ | 188.51252 | | +0.07343258 | | −0.93603434 |
| $e$ | 0.0312287 | $i$ | 3.34463 | | +0.01774612 | | −0.34381249 |
| $P$ | 4.74 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.1− | 0.2− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 10 14 | 691 | 0.6− | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2− | 0.2+ |
| 2001 10 14 | 691 | 0.7− | 0.0 | 2006 10 18 | 691 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.7+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 691 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.5− | 0.4− | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2001 10 17 | 691 | 0.2+ | 0.3− | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2001 10 17 | 691 | 1.1+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.1+ | 0.3− |
| 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2− | 2006 11 09 | 691 | 0.3+ | 1.1+ |
| 2006 09 26 | G96 | 1.0− | 0.6− | 2006 10 22 | 691 | 0.2− | 0.3− | | | | |

**2006 UG$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.42254 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23927194 | $\omega$ | 277.44736 | | +0.70914919 | | +0.69200965 |
| $a$ | 2.5696553 | $\Omega$ | 38.91409 | | −0.53183594 | | +0.65074395 |
| $e$ | 0.1892023 | $i$ | 12.41231 | | −0.46288006 | | +0.31249793 |
| $P$ | 4.12 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 695 | 0.3− | 0.2− | 2006 10 13 | D35 | 0.6+ | 0.1− | 2006 10 29 | G96 | 0.4− | 0.6+ |
| 2002 12 05 | 695 | 0.4+ | 0.1+ | 2006 10 13 | D35 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2005 04 07 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.4− | 0.3+ |
| 2005 04 07 | 691 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.5+ |
| 2005 04 07 | 691 | 0.1+ | 0.6+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2005 05 16 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.5− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2005 05 16 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.5− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2005 05 16 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.6− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2005 05 16 | G96 | 0.3+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.5+ | 0.2+ |
| 2006 10 02 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.5+ | 0.2+ |
| 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2006 10 13 | D35 | 0.3− | 0.1− | 2006 10 29 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.7+ |

**2006 UH$_{92}$ = 2005 GC$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.63183 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28385567 | $\omega$ | 219.97232 | | −0.03755024 | | +0.99670674 |
| $a$ | 2.2930015 | $\Omega$ | 48.00401 | | −0.89034880 | | −0.00071319 |
| $e$ | 0.1446135 | $i$ | 5.54962 | | −0.45372788 | | −0.08108734 |
| $P$ | 3.47 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 16 | G96 | 0.6− | 0.3− | 2005 04 18 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.5+ |
| 2005 03 16 | G96 | 0.3− | 0.3+ | 2005 06 14 | G96 | 0.3− | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 2005 03 16 | G96 | 0.0 | 0.2+ | 2005 06 14 | G96 | 0.2− | 1.0+ | 2006 10 22 | 691 | 0.1− | 0.5+ |
| 2005 03 16 | G96 | 0.2+ | 0.2+ | 2005 06 14 | G96 | 0.6− | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 04 10 | 691 | 0.3+ | 0.3+ | 2005 06 14 | G96 | 0.5− | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2005 04 10 | 691 | 0.3+ | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.4− | 0.1− |
| 2005 04 10 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.6+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2005 04 11 | G96 | 0.3− | 0.3− | 2006 09 30 | G96 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.6− |
| 2005 04 11 | G96 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.6− |
| 2005 04 11 | G96 | 0.4− | 0.0 | 2006 10 13 | D35 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.3− |
| 2005 04 11 | G96 | 0.5− | 0.1− | 2006 10 13 | D35 | 0.6+ | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2005 04 18 | 691 | 0.3+ | 0.0 | 2006 10 13 | D35 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2005 04 18 | 691 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.3+ | 0.5+ | | | | |

**2006 UJ$_{92}$ = 2004 EL$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 187.23793 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22922132 | $\omega$ | 32.63444 | | −0.93106296 | | +0.36480250 |
| $a$ | 2.6442309 | $\Omega$ | 168.75555 | | −0.34139295 | | −0.86486407 |
| $e$ | 0.0504692 | $i$ | 1.87946 | | −0.12873465 | | −0.34486126 |
| $P$ | 4.30 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 12 | 695 | 0.3− | 0.3+ | 2005 07 03 | G96 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 2001 09 12 | 695 | 0.0 | 0.4+ | 2005 07 03 | G96 | 0.3− | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.4+ |
| 2004 03 15 | 691 | 0.3− | 0.1+ | 2005 07 03 | G96 | 0.2− | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.6+ |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.5− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.5+ | 2006 09 26 | G96 | 0.5+ | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.5− |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.2− | 0.1− |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2004 04 13 | 691 | 0.3+ | 0.2+ | 2006 09 26 | G96 | 0.7− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 09 26 | G96 | 0.8− | 0.0 | 2006 11 11 | 691 | 0.5+ | 0.5+ |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.3− |
| 2005 07 03 | G96 | 0.4+ | 0.7+ | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.3− |

**2006 UN$_{92}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.31024 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18158483 | $\omega$ | 144.99355 | | +0.96604935 | | +0.25192100 |
| $a$ | 3.0885147 | $\Omega$ | 200.64253 | | −0.25815314 | | +0.93241252 |
| $e$ | 0.0513551 | $i$ | 9.35583 | | −0.01027676 | | +0.25911909 |
| $P$ | 5.43 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.4+ | 0.8+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 1995 10 15 | 691 | 0.1+ | 0.0 | 2006 10 13 | D35 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 1995 10 15 | 691 | 0.1+ | 0.1− | 2006 10 13 | D35 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2004 03 26 | 291 | 0.2+ | 0.1+ | 2006 10 13 | D35 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2004 03 26 | 291 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.2+ | 0.0 |
| 2004 03 26 | 291 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.7− | 0.2− |
| 2006 09 26 | G96 | 0.5+ | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.6+ |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2006 09 26 | G96 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.5+ | 0.1+ | 2006 11 01 | G96 | 0.3− | 0.1− |
| 2006 09 30 | 703 | 0.0 | 1.1− | 2006 10 22 | 691 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.0 |
| 2006 09 30 | 703 | (1.1− | 2.4+) | 2006 10 22 | 691 | 0.2− | 0.2− | | | | |
| 2006 09 30 | 703 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.2− | | | | |

**2006 UR$_{92}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 107.13862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18198167 | $\omega$ | 81.68768 | | +0.19462830 | | +0.97941925 |
| $a$ | 3.0840231 | $\Omega$ | 199.78101 | | −0.95061108 | | +0.17490847 |
| $e$ | 0.0101533 | $i$ | 9.08853 | | −0.24178173 | | +0.10072214 |
| $P$ | 5.42 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 01 | 691 | 0.2+ | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 1995 10 01 | 691 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.5+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.3− |
| 1995 10 01 | 691 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.1− |
| 1995 10 15 | 691 | 0.0 | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.1+ |
| 1995 10 15 | 691 | 0.4− | 0.2+ | 2006 09 26 | G96 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1995 10 15 | 691 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.6− |
| 2005 07 10 | 691 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.3− | 0.1+ |
| 2005 07 10 | 691 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2005 07 10 | 691 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 07 30 | 644 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2005 07 30 | 644 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.3− | 0.0 | | | | |
| 2005 07 30 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 | | | | |

**2006 US$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.01043 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24321219 | $\omega$ | 66.12613 | | −0.77481559 | | −0.63095159 |
| $a$ | 2.5418260 | $\Omega$ | 74.72931 | | +0.56410514 | | −0.71823370 |
| $e$ | 0.0869073 | $i$ | 2.34716 | | +0.28538780 | | −0.29332651 |
| $P$ | 4.05 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1− | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2000 03 03 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.5− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2000 05 04 | 645 | 0.1+ | 0.0 | 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2000 05 04 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.2− | 0.1− |
| 2004 03 29 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 09 | 691 | 0.3+ | 0.1− |
| 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.4+ | 0.1− | 2006 11 09 | 691 | 0.4+ | 0.1+ |
| 2004 03 29 | 691 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.0 |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.1+ |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.6− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.1− | 0.3+ | | | | |
| 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.7+ | 0.1+ | | | | |

### 2006 UW$_{92}$ = 2002 UA$_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 295.91598 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25805494 | $\omega$ | 322.60125 | | −0.26925683 | −0.96283581 | |
| $a$ | 2.4434001 | $\Omega$ | 143.00535 | | +0.89187828 | −0.25758563 | |
| $e$ | 0.1461364 | $i$ | 2.01571 | | +0.36339221 | −0.08122101 | |
| $P$ | 3.82 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 03 | 691 | 0.4+ | 0.4− | 2004 04 25 | 691 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2000 01 03 | 691 | 0.1+ | 0.9− | 2004 04 25 | 691 | 0.5+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 2000 01 03 | 691 | 0.8− | 0.4− | 2004 04 25 | 691 | 0.3+ | 0.8+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2000 01 16 | 691 | 0.4+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2000 01 16 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2000 01 16 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2002 10 30 | 645 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.3+ |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.2+ |
| 2002 10 31 | 645 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.1− | 0.5+ |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.6− | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.5+ |
| 2004 03 29 | 691 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2004 03 29 | 691 | 0.1− | 0.7+ | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.6+ | 0.2+ |
| 2004 03 29 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.5+ |

### 2006 UA$_{93}$ = 1995 SR$_{75}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.64232 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27442440 | $\omega$ | 234.18821 | | +0.95364418 | −0.30039831 | |
| $a$ | 2.3452415 | $\Omega$ | 143.28380 | | +0.28490125 | +0.88196164 | |
| $e$ | 0.1795014 | $i$ | 1.72435 | | +0.09692298 | +0.36318661 | |
| $P$ | 3.59 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 20 | 691 | 0.3− | 0.2− | 2006 10 13 | D35 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 1.6− | 0.8+ |
| 1995 09 20 | 691 | 0.3− | 0.0 | 2006 10 13 | D35 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.8− | 0.2+ |
| 1995 09 20 | 691 | 0.1− | 0.3− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.6− | 1.4+ |
| 1995 09 25 | 691 | (5.4+ | 0.3−) | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.0 | 0.1+ |
| 1995 09 25 | 691 | (5.5+ | 0.6+) | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.2+ |
| 1995 09 25 | 691 | (5.8+ | 0.6+) | 2006 10 21 | 644 | 0.1− | 0.7+ | 2006 11 13 | 644 | 0.8− | 1.1+ |
| 1995 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 1995 10 01 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 1995 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.6+ | 0.0 |
| 2002 07 14 | 644 | 0.4− | 0.6+ | 2006 10 22 | 691 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2002 07 14 | 644 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.3+ | 0.4+ |
| 2002 07 14 | 644 | 0.1− | 0.9+ | 2006 10 31 | G96 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.7− | 0.5− |
| 2004 02 11 | 291 | 0.6− | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 17 | 703 | 0.1− | 0.3− |
| 2004 02 11 | 291 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.1− | 0.6− |
| 2004 02 11 | 291 | 0.5+ | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.7− | 0.4+ |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− | | | | |
| 2006 10 13 | D35 | 0.6+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.2+ | | | | |

### 2006 UB$_{93}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.58887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17669892 | $\omega$ | 295.04322 | | +0.93354981 | −0.35562323 | |
| $a$ | 3.1451892 | $\Omega$ | 85.81468 | | +0.34296024 | +0.84974527 | |
| $e$ | 0.2510428 | $i$ | 2.58088 | | +0.10422585 | +0.38918517 | |
| $P$ | 5.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 644 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.4+ |
| 2001 12 19 | 644 | 0.2+ | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.0 | 2006 11 13 | 644 | 0.3+ | 0.3+ |
| 2001 12 19 | 644 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.3+ |
| 2004 04 20 | 291 | 0.4− | 0.0 | 2006 10 23 | 704 | 0.1+ | 1.0+ | 2006 11 17 | 703 | 0.2+ | 0.3− |
| 2004 04 20 | 291 | 0.7+ | 0.8+ | 2006 10 23 | 704 | 0.5+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.5− |
| 2004 04 20 | 291 | 0.1+ | 0.2+ | 2006 10 23 | 704 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.7− | 0.2− |
| 2006 09 30 | G96 | 0.5− | 0.2− | 2006 10 23 | 704 | 0.2− | 0.0 | 2006 11 19 | 704 | 1.1+ | 0.0 |
| 2006 09 30 | G96 | 0.5− | 0.1− | 2006 10 23 | 704 | 0.2− | 0.6+ | 2006 11 19 | 704 | 1.3+ | 0.1− |
| 2006 09 30 | G96 | 0.5− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2006 09 30 | 703 | (1.8− | 0.5−) | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 2006 09 30 | G96 | 0.4− | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.1− | 0.7− |
| 2006 09 30 | 703 | 0.5+ | 1.0+ | 2006 10 31 | G96 | 0.4+ | 0.1− | 2006 11 21 | 704 | 0.2− | 0.3− |
| 2006 09 30 | 683 | (1.5+ | 0.3+) | 2006 11 11 | 703 | (1.7+ | 1.8+) | 2006 11 21 | 704 | 0.1+ | 0.3+ |
| 2006 09 30 | 703 | 1.0− | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.2+ |
| 2006 09 30 | 683 | 0.0 | 0.8+ | 2006 11 11 | 703 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2006 09 30 | 703 | 1.0− | 0.5− | 2006 11 11 | 703 | 0.0 | 0.6+ | | | | |
| 2006 09 30 | 683 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.2+ | | | | |

### 2006 UV$_{93}$ = 2001 FJ$_{133}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 231.36444 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28179219 | $\omega$ | 98.08461 | | −0.95923701 | −0.27285984 | |
| $a$ | 2.3041819 | $\Omega$ | 66.10570 | | +0.21708093 | −0.87810491 | |
| $e$ | 0.0886216 | $i$ | 4.61509 | | +0.18094264 | −0.39303853 | |
| $P$ | 3.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 20 | 699 | 0.1− | 0.7− | 2002 08 19 | 644 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.6+ | 0.7− |
| 2001 03 20 | 699 | 0.2− | 0.4+ | 2002 08 19 | 644 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2001 03 20 | 699 | 0.0 | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.0 | 2006 10 31 | G96 | 0.1− | 0.5− |
| 2001 03 20 | 699 | 0.8− | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 03 20 | 608 | 0.2+ | 1.4− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.6− | 1.1+ |
| 2001 03 20 | 608 | 0.3+ | 1.3− | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 1.0− | 0.6− |
| 2001 03 20 | 608 | 0.6+ | 0.6− | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.5+ |
| 2001 03 26 | 704 | 0.3− | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.4− | 0.3− |
| 2001 03 26 | 704 | 0.8+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 1.1− |
| 2001 03 26 | 704 | 0.5− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.2+ |
| 2001 03 26 | 704 | 0.1+ | 1.0+ | 2006 10 22 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2002 08 19 | 644 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.0 |

### 2006 UY$_{93}$ = 1999 TW$_{72}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.21312 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27920195 | $\omega$ | 275.01072 | | +0.33917650 | −0.94054319 | |
| $a$ | 2.3184110 | $\Omega$ | 155.13818 | | +0.87949356 | +0.31010641 | |
| $e$ | 0.1854567 | $i$ | 2.50552 | | +0.33384184 | +0.13860921 | |
| $P$ | 3.53 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 09 | 691 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.1+ | 0.1+ |
| 1999 10 09 | 691 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 1999 10 09 | 691 | 0.3+ | 0.2− | 2006 10 18 | 691 | 0.7+ | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 1999 10 15 | 691 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.3− | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 15 | 691 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.4− | 0.1+ |
| 1999 10 15 | 691 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.6+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2006 10 02 | G96 | 0.1− | 0.7− | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2006 10 02 | G96 | 0.5− | 0.5− | 2006 10 31 | G96 | 0.5+ | 0.3− | | | | |
| 2006 10 02 | G96 | 0.5− | 0.6− | 2006 10 31 | G96 | 0.0 | 0.0 | | | | |

**2006 UD$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 65.75129 | | | (2000.0) | | |
| $n$ | 0.23798226 | $\omega$ | 137.97826 | | +0.55935432 | +0.82881059 |
| $a$ | 2.5789306 | $\Omega$ | 166.01415 | | −0.77511037 | +0.52894619 |
| $e$ | 0.1733108 | $i$ | 3.31869 | | −0.29381399 | +0.18245255 |
| $P$ | 4.14 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 03 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.0 |
| 2005 06 03 | 691 | 0.4− | 0.4+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2005 06 03 | 691 | 0.3+ | 0.7− | 2006 10 18 | 691 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 2005 06 12 | 691 | 0.3+ | 0.3+ | 2006 10 18 | 691 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2005 06 12 | 691 | 0.1+ | 0.3+ | 2006 10 18 | 691 | 0.5+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.2− |
| 2005 06 12 | 691 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2006 09 30 | G96 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.3− |

**2006 UE$_{94}$ = 1995 UN$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.42572 | | | (2000.0) | | |
| $n$ | 0.17748900 | $\omega$ | 155.94305 | | +0.86359734 | +0.50413538 |
| $a$ | 3.1358486 | $\Omega$ | 173.76980 | | −0.47223267 | +0.81356841 |
| $e$ | 0.1396568 | $i$ | 3.62789 | | −0.17662373 | +0.28974810 |
| $P$ | 5.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.0 | 0.1− | 2000 09 27 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.3− | 0.3− |
| 1995 10 19 | 691 | 0.1− | 0.3+ | 2006 10 18 | 691 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.6− |
| 1995 10 19 | 691 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.2− | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.1+ |
| 1995 10 25 | 691 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 1995 10 25 | 691 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 1995 10 25 | 691 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.1+ |
| 2000 09 27 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2000 09 27 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.0 | | | | |

**2006 UM$_{95}$ = 2000 ER$_{149}$ = 2004 FU$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 301.26236 | | | (2000.0) | | |
| $n$ | 0.25821207 | $\omega$ | 5.59642 | | −0.21073955 | −0.97615703 |
| $a$ | 2.4424088 | $\Omega$ | 96.57706 | | +0.89483385 | −0.21405924 |
| $e$ | 0.1690991 | $i$ | 3.00177 | | +0.39352411 | −0.03600146 |
| $P$ | 3.82 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.8+ | 0.5− | 2004 03 19 | 704 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2000 03 05 | 704 | 0.4− | 1.1− | 2004 03 22 | 704 | 1.0+ | 1.2+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2000 03 05 | 704 | 0.0 | 1.6+ | 2004 03 22 | 704 | 0.2− | 1.2+ | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 2000 03 05 | 704 | 0.6+ | 0.1− | 2004 03 22 | 704 | (0.6+ | 1.8+) | 2006 11 10 | 644 | 0.2− | 0.2− |
| 2000 03 11 | 699 | 0.8− | 0.5− | 2004 03 22 | 704 | (2.1+ | 0.0 ) | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 2000 03 11 | 699 | 0.9+ | 0.8+ | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | (1.6+ | 0.5−) |
| 2000 03 11 | 699 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 1.3− | 0.5+ |
| 2000 03 11 | 699 | 0.8− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.1− | 1.3+ |
| 2002 10 05 | 645 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.6+ | 0.1− |
| 2004 03 19 | 704 | 0.6+ | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.3− | 2006 11 13 | 644 | 0.1+ | 0.1− |
| 2004 03 19 | 704 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 13 | 644 | 0.2− | 0.3− |
| 2004 03 19 | 704 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.4− | | | | |

**2006 UR$_{95}$ = 2001 TU$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.54825 | | | (2000.0) | | |
| $n$ | 0.20388215 | $\omega$ | 215.29483 | | +0.63309786 | −0.77315906 |
| $a$ | 2.8590160 | $\Omega$ | 195.53931 | | +0.73853213 | +0.61785969 |
| $e$ | 0.3169980 | $i$ | 8.06361 | | +0.23185642 | +0.14308904 |
| $P$ | 4.83 | $H$ | 18.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.1− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2006 09 26 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.2− | | | | |
| 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.1− | | | | |

**2006 UT$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 86.06987 | | | (2000.0) | | |
| $n$ | 0.17898966 | $\omega$ | 101.72139 | | +0.46073193 | +0.88612014 |
| $a$ | 3.1182966 | $\Omega$ | 196.00432 | | −0.86859852 | +0.43856240 |
| $e$ | 0.0616840 | $i$ | 10.48466 | | −0.18238064 | +0.14984698 |
| $P$ | 5.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 695 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.4− | 0.4+ | 2006 10 22 | 691 | 0.5− | 0.2− |
| 2000 09 21 | 695 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.6+ | 2006 11 01 | G96 | 0.5+ | 0.2+ |
| 2000 10 07 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2− | 0.3+ | 2006 11 01 | G96 | 0.8+ | 0.3− |
| 2000 10 07 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 11 01 | G96 | 0.3− | 0.5− |
| 2000 10 07 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.6+ | 0.1− |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.3− | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.2+ | 0.2− | 2006 11 22 | G96 | 0.5+ | 0.1+ |

**2006 UX$_{95}$ = 1999 CL$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 215.55906 | | | (2000.0) | | |
| $n$ | 0.21757053 | $\omega$ | 38.49687 | | −0.99580383 | −0.08470830 |
| $a$ | 2.7378060 | $\Omega$ | 136.60457 | | +0.06639228 | −0.92915979 |
| $e$ | 0.0202878 | $i$ | 2.88925 | | +0.06298259 | −0.35984246 |
| $P$ | 4.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.1+ | 0.5+ | 2005 07 15 | G96 | 0.8− | 0.5− | 2006 10 31 | G96 | 0.4+ | 0.2− |
| 1999 02 07 | 691 | 0.0 | 0.2− | 2005 07 15 | G96 | 0.3− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2+ |
| 1999 02 07 | 691 | 0.1+ | 0.4− | 2005 07 15 | G96 | 0.6+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.0 |
| 1999 02 13 | 691 | 0.0 | 0.3+ | 2005 07 15 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.6− |
| 1999 02 13 | 691 | 0.2+ | 0.2− | 2006 10 18 | 691 | 0.3− | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 1999 02 13 | 691 | 0.4− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.4− |
| 2005 07 03 | G96 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2005 07 03 | G96 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2005 07 03 | G96 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.2− | | | | |
| 2005 07 03 | G96 | 0.4+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.2+ | | | | |

**2006 UB$_{96}$ = 2005 NM$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.26583 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19654255 | $\omega$ | 348.38371 | | −0.11949052 | | −0.99148554 |
| $a$ | 2.9297574 | $\Omega$ | 108.46257 | | +0.91522297 | | −0.13020435 |
| $e$ | 0.0311038 | $i$ | 3.12771 | | +0.38482324 | | +0.00180054 |
| $P$ | 5.01 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.2− | 0.4− |
| 2005 07 05 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2005 07 05 | 691 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2005 07 12 | G96 | 0.1+ | 0.8− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2005 07 12 | G96 | 0.1+ | 0.3− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 2005 07 12 | G96 | 0.1+ | 0.8− | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.3+ | 0.0 |
| 2005 07 12 | G96 | 0.5− | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1− | | | | |
| 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.0 | | | | |

**2006 UU$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.63616 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17064155 | $\omega$ | 338.54864 | | +0.37661790 | | −0.92429961 |
| $a$ | 3.2191869 | $\Omega$ | 89.28365 | | +0.85867552 | | +0.32325147 |
| $e$ | 0.0825856 | $i$ | 3.54803 | | +0.34761375 | | +0.20292539 |
| $P$ | 5.78 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 27 | 691 | 0.5− | 0.2− | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2000 10 27 | 691 | 0.2+ | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2000 10 27 | 691 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2001 12 15 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.1+ |
| 2001 12 15 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2006 10 02 | G96 | 1.8+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.4+ |
| 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.1− |

**2006 UV$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 166.05752 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25292578 | $\omega$ | 29.96658 | | −0.76729159 | | +0.64100407 |
| $a$ | 2.4763231 | $\Omega$ | 189.97089 | | −0.60842113 | | −0.73719592 |
| $e$ | 0.0724740 | $i$ | 6.44203 | | −0.20270015 | | −0.21367255 |
| $P$ | 3.90 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 25 | 691 | 0.1+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 1993 04 25 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 1993 04 25 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 1994 09 11 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.3− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.8− |
| 1994 09 11 | 691 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.4+ | 0.0 | 2006 11 01 | G96 | 0.7+ | 0.3− |
| 2002 10 10 | 644 | 0.3+ | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2002 10 10 | 644 | 0.5+ | 0.4+ | 2006 10 18 | 691 | 0.3− | 0.1+ | | | | |
| 2002 10 10 | 644 | 0.2+ | 0.9+ | 2006 10 22 | 691 | 0.3− | 0.0 | | | | |

**2006 UL$_{97}$ = 1995 WF$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.90564 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17653266 | $\omega$ | 217.21800 | | +0.74702203 | | −0.66475147 |
| $a$ | 3.1471637 | $\Omega$ | 184.47024 | | +0.63190571 | | +0.71373489 |
| $e$ | 0.1734329 | $i$ | 5.87135 | | +0.20652664 | | +0.22065356 |
| $P$ | 5.58 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.1− | 0.1− |
| 1995 11 16 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.2+ | 0.2− |
| 1995 11 16 | 691 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.0 |
| 1995 11 21 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.6+ | 0.1− |
| 1995 11 21 | 691 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.2+ |
| 1995 11 21 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.4− | 0.5+ | 2006 11 01 | G96 | 1.1+ | 0.1− |
| 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.0 | | | | |

**2006 UN$_{97}$ = 2004 JP$_3$ = 2004 JC$_{50}$ = 2004 JZ$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 195.34589 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19673918 | $\omega$ | 139.91413 | | −0.96110404 | | +0.24838844 |
| $a$ | 2.9278050 | $\Omega$ | 54.87405 | | −0.27572746 | | −0.83773223 |
| $e$ | 0.0263563 | $i$ | 8.49044 | | −0.01591820 | | −0.48632078 |
| $P$ | 5.01 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 25 | 645 | 0.0 | 0.0 | 2004 05 14 | 291 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2003 01 25 | 645 | 0.1− | 0.1+ | 2004 05 14 | 691 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.2+ | 0.0 |
| 2003 01 25 | 645 | 0.1+ | 0.0 | 2004 05 14 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2003 01 25 | 645 | 0.0 | 0.1− | 2004 05 14 | 691 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.5+ |
| 2004 05 09 | 291 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.4− | 0.1+ |
| 2004 05 09 | 291 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2004 05 09 | 291 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.6+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 05 13 | 291 | 0.4+ | 0.1− | 2006 10 02 | G96 | 0.8+ | 0.5− | 2006 11 16 | G96 | 0.1− | 0.4+ |
| 2004 05 13 | 291 | 0.3+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.5− | 0.1− |
| 2004 05 13 | 291 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2004 05 14 | 291 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.2+ | | | | |
| 2004 05 14 | 291 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1+ | | | | |

**2006 UO$_{97}$ = 1995 SG$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.20874 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18130035 | $\omega$ | 230.75463 | | +0.66054227 | | −0.75078504 |
| $a$ | 3.0917446 | $\Omega$ | 177.89950 | | +0.70739234 | | +0.62129050 |
| $e$ | 0.2152850 | $i$ | 3.74526 | | +0.25155515 | | +0.22432104 |
| $P$ | 5.44 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1+ | 0.2− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1+ |
| 1995 09 18 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1995 09 18 | 691 | 0.3+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 13 | 703 | 0.5+ | 0.0 |
| 1995 09 22 | 691 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 13 | 703 | 0.1− | 1.0− |
| 1995 09 22 | 691 | 0.2− | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.0 | 0.8− |
| 1995 09 22 | 691 | 0.2− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 13 | 703 | 0.5− | 0.3− |
| 2003 03 31 | 291 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.4+ |
| 2003 03 31 | 291 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.2− | 0.5− |
| 2003 03 31 | 291 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.3+ |
| 2006 07 21 | G96 | 0.5+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.3− |
| 2006 07 21 | G96 | 0.0 | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.9− | 0.2− |
| 2006 07 21 | G96 | 0.1− | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.8+ | 0.6− |
| 2006 07 21 | G96 | 0.7− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.1− | 0.4− |
| 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.6+ | 1.0+ |

**2006 UP$_{97}$ = 2004 EP$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.33543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25930196 | $\omega$ | 300.07060 | | +0.62218617 | | −0.78197560 |
| $a$ | 2.4355601 | $\Omega$ | 111.40584 | | +0.73138746 | | +0.56357071 |
| $e$ | 0.1794823 | $i$ | 2.30206 | | +0.27920737 | | +0.26627468 |
| $P$ | 3.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 14 | 704 | 0.1− | 0.3− |
| 2004 03 15 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.5+ | 0.6+ | 2006 11 14 | 704 | 0.7+ | 0.3+ |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.8+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.6− |
| 2004 03 23 | 691 | 0.4+ | 0.0 | 2006 10 21 | 644 | 0.7+ | 0.3+ | 2006 11 16 | G96 | 0.2− | 0.7− |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.5− | 0.6− |
| 2004 03 23 | 691 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.2+ |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.6− | 2006 11 17 | 703 | 0.2+ | 0.3+ |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.4− | 0.6+ |
| 2006 10 02 | G96 | 0.4− | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.9+ |
| 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.2− | | | | |
| 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.0 | 1.0+ | | | | |

**2006 UU$_{97}$ = 2004 ER$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 278.70092 | | (2000.0) | | −0.59058554 | −0.80684161 |
| $n$ | 0.26498442 | $\omega$ | 325.27981 | | +0.75017705 | −0.55562855 |
| $a$ | 2.4006148 | $\Omega$ | 160.90545 | | +0.29739388 | −0.20070757 |
| $e$ | 0.1373636 | $i$ | 2.57104 | | | |
| $P$ | 3.72 | $H$ | 18.1 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 691 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 2004 03 14 | 691 | 0.2− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2004 03 14 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.0 | 0.1− |
| 2004 03 21 | 691 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.3+ | 0.2− |
| 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.1+ |
| 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.6+ | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.7+ | 0.1− | | | | |

**2006 UV$_{97}$ = 2004 FG$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.66797 | | (2000.0) | | +0.13028560 | −0.99143650 |
| $n$ | 0.25634552 | $\omega$ | 257.01968 | | +0.94179025 | +0.12655969 |
| $a$ | 2.4542505 | $\Omega$ | 185.51750 | | +0.30993029 | +0.03219180 |
| $e$ | 0.1476385 | $i$ | 5.31517 | | | |
| $P$ | 3.84 | $H$ | 18.2 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 16 | 691 | 0.2+ | 0.0 | 2004 03 26 | 691 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1998 09 16 | 691 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 1998 09 16 | 691 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.3− | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.1+ |
| 2002 11 08 | 645 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2004 03 21 | 291 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2004 03 21 | 291 | 0.1− | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 03 21 | 291 | 0.1− | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 03 26 | 691 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2004 03 26 | 691 | 0.5+ | 0.3− | 2006 10 22 | 691 | 0.4− | 0.2− | | | | |

**2006 UA$_{98}$ = 2004 BJ$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.14967 | | (2000.0) | | +0.88497044 | −0.46151738 |
| $n$ | 0.29399881 | $\omega$ | 314.73686 | | +0.44343211 | +0.79471987 |
| $a$ | 2.2399535 | $\Omega$ | 72.83943 | | +0.14211011 | +0.39423601 |
| $e$ | 0.1584581 | $i$ | 3.71320 | | | |
| $P$ | 3.35 | $H$ | 17.7 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.9+ | 0.3− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 13 | 703 | (2.2− | 0.1−) |
| 1994 01 08 | 691 | 0.2− | 0.4− | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.5+ | 0.4− |
| 1994 01 08 | 691 | 1.0− | 0.6− | 2006 10 18 | 691 | 0.0 | 0.1− | 2006 11 13 | 703 | (1.3− | 2.1+) |
| 2003 12 19 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 13 | 703 | 0.3− | 0.3+ |
| 2003 12 19 | 691 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.6− |
| 2004 01 16 | 691 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2004 01 16 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2004 01 16 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.6− | 2006 11 17 | 703 | 1.1+ | 0.1+ |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 17 | 703 | (1.5+ | 0.5+) |
| 2004 01 18 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.4+ | 1.4+ |
| 2004 01 18 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 703 | (0.4+ | 1.6−) |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.3+ | 0.1− | | | | |
| 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.3+ | 0.1− | | | | |

**2006 UB$_{98}$ = 2003 AH$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 299.85277 | | (2000.0) | | −0.30688824 | −0.95000798 |
| $n$ | 0.23025726 | $\omega$ | 9.55551 | | +0.86932833 | −0.30438679 |
| $a$ | 2.6362939 | $\Omega$ | 98.33299 | | +0.38741176 | −0.06952351 |
| $e$ | 0.1637533 | $i$ | 3.33062 | | | |
| $P$ | 4.28 | $H$ | 16.9 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 1.0+ | 0.6− | 2003 01 04 | 704 | 0.6− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.3− |
| 2003 01 04 | 704 | 1.4− | 0.3+ | 2003 01 08 | 704 | 0.2+ | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.3+ |
| 2003 01 04 | 704 | 0.4+ | 1.3− | 2003 01 08 | 704 | 0.1+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2003 01 04 | 704 | 0.2+ | 0.7+ | 2003 01 08 | 704 | 0.3− | 0.3+ | 2006 10 18 | 691 | 0.1+ | 0.2+ |
| 2003 01 04 | 704 | 0.9+ | 1.1− | 2004 05 19 | 691 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.3+ | 0.0 | 2004 05 19 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.1+ | 0.5− | 2004 05 19 | 691 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.3− |
| 2003 01 04 | 704 | 0.1+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2003 01 04 | 704 | 1.1− | 1.0+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2003 01 04 | 704 | 0.2+ | 0.9+ | 2006 10 02 | G96 | 0.6− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.0 |

**2006 UC$_{98}$ = 2004 AJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 224.75106 | | (2000.0) | | −0.99825939 | −0.02577383 |
| $n$ | 0.27881736 | $\omega$ | 74.93076 | | +0.00334211 | −0.92272832 |
| $a$ | 2.3205424 | $\Omega$ | 103.57076 | | +0.05888145 | −0.38458830 |
| $e$ | 0.1640330 | $i$ | 3.12817 | | | |
| $P$ | 3.53 | $H$ | 17.5 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.1+ | 0.1− | 2004 01 31 | 691 | 0.0 | 0.2+ | 2006 10 18 | 691 | 0.4+ | 0.3+ |
| 2003 12 21 | 645 | 0.1+ | 0.1− | 2005 07 07 | 691 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.3− |
| 2003 12 21 | 291 | 0.3− | 0.2+ | 2005 07 07 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.2+ | 0.1− |
| 2003 12 21 | 291 | 0.2− | 0.0 | 2005 07 07 | 691 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2003 12 21 | 291 | 0.0 | 0.3+ | 2006 09 30 | G96 | 0.3− | 0.3+ | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2004 01 13 | 691 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.6+ | 0.1− |
| 2004 01 13 | 691 | 0.3− | 0.2+ | 2006 09 30 | G96 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 01 13 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.5− |
| 2004 01 31 | 691 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.1− | 0.0 | | | | |
| 2004 01 31 | 691 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.0 | 0.4+ | | | | |

**2006 UF$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 9.96791 | | (2000.0) | | +0.94579201 | −0.25076629 |
| $n$ | 0.20635100 | $\omega$ | 327.53363 | | +0.32410292 | +0.76956435 |
| $a$ | 2.8361661 | $\Omega$ | 48.44348 | | −0.02085120 | +0.58727079 |
| $e$ | 0.1450270 | $i$ | 16.00977 | | | |
| $P$ | 4.78 | $H$ | 16.2 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.7− | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 21 | G96 | 0.2− | 0.4− |
| 2001 10 15 | 644 | 0.7− | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.8− |
| 2001 10 15 | 644 | 0.6− | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.8+ | 1.1+ |
| 2001 10 23 | 644 | 0.7+ | 0.4− | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.3+ | 0.9+ |
| 2001 10 23 | 644 | 0.7+ | 0.1− | 2006 11 11 | 703 | 0.5− | 0.4− | 2006 11 21 | 704 | 1.2+ | 1.3+ |
| 2001 10 23 | 644 | 0.9+ | 0.9− | 2006 11 11 | 703 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.2+ | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.9− | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2006 10 18 | 691 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 21 | G96 | 0.2− | 0.3− | | | | |
| 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.4− | | | | |

**2006 UJ$_{98}$ = 2005 NA$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.98877 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18577987 | $\omega$ | 166.25754 | | +0.43852492 | | +0.89739543 |
| $a$ | 3.0418440 | $\Omega$ | 129.72884 | | −0.83043361 | | +0.42535201 |
| $e$ | 0.0607258 | $i$ | 3.63488 | | −0.34362176 | | +0.11729074 |
| $P$ | 5.31 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.1+ | 0.0 | 2005 07 27 | 644 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 1995 09 19 | 691 | 0.2+ | 0.1− | 2005 07 27 | 644 | 0.5− | 0.3− | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 1995 09 19 | 691 | 0.2− | 0.0 | 2005 07 27 | 644 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2005 07 03 | G96 | 0.9+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 16 | G96 | 1.0− | 0.5− |
| 2005 07 03 | G96 | 0.1− | 0.2+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 16 | G96 | 0.5− | 0.2− |
| 2005 07 03 | G96 | 0.4+ | 0.3− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2005 07 03 | G96 | 0.1− | 0.6+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 25 | 291 | 0.6+ | 0.0 |
| 2005 07 05 | G96 | 0.0 | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 25 | 291 | 0.7+ | 0.1+ |
| 2005 07 05 | G96 | 0.2− | 0.8+ | 2006 10 18 | 691 | 0.4− | 0.7+ | 2006 11 25 | 291 | 0.7+ | 0.2− |
| 2005 07 05 | G96 | 0.1+ | 0.0 | 2006 10 18 | 691 | 0.3− | 0.3+ | | | | |
| 2005 07 05 | G96 | (2.7− | 0.8−) | 2006 10 22 | 691 | 0.4− | 0.3− | | | | |

**2006 US$_{98}$ = 2004 EP$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 134.33042 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20448934 | $\omega$ | 163.63877 | | −0.34396236 | | +0.93333476 |
| $a$ | 2.8533537 | $\Omega$ | 86.15139 | | −0.87263788 | | −0.27729835 |
| $e$ | 0.1771080 | $i$ | 5.91614 | | −0.34668867 | | −0.22801721 |
| $P$ | 4.82 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 704 | 0.5− | 0.4− | 2004 03 20 | 704 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 704 | 0.2+ | 0.2− | 2005 09 03 | 644 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.0 | 0.0 |
| 2004 03 15 | 704 | 0.3− | 0.3− | 2005 09 03 | 644 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.4+ | 0.1+ |
| 2004 03 15 | 704 | 0.4+ | 0.3− | 2005 09 03 | 644 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2004 03 15 | 704 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.4− |
| 2004 03 20 | 704 | 0.6− | 0.1+ | 2006 10 02 | G96 | 0.6+ | 0.6− | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2004 03 20 | 704 | 1.1+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.2− | | | | |
| 2004 03 20 | 704 | 0.5− | 0.4+ | 2006 10 02 | G96 | 0.7+ | 0.3− | | | | |

**2006 UB$_{99}$ = 2000 SV$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.52207 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17724768 | $\omega$ | 209.85992 | | +0.70503065 | | −0.70793791 |
| $a$ | 3.1386942 | $\Omega$ | 195.44136 | | +0.67784077 | | +0.69006971 |
| $e$ | 0.0946819 | $i$ | 9.05449 | | +0.20847943 | | +0.15042510 |
| $P$ | 5.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 10 | 644 | 0.6+ | 0.4+ |
| 2000 09 24 | 704 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 10 | 644 | 1.0+ | 0.2+ |
| 2000 09 24 | 704 | 1.0− | 0.7− | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.7− | 0.5+ |
| 2000 09 24 | 704 | 0.1− | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | (1.2− | 1.6−) |
| 2000 09 26 | 704 | 0.6+ | 0.8+ | 2006 10 18 | 691 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2000 09 26 | 704 | 1.0− | 0.0 | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2000 09 26 | 704 | 0.6+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2000 09 26 | 704 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2003 03 23 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2003 03 23 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.3− |
| 2003 03 23 | 691 | 0.0 | 0.9+ | 2006 11 01 | 703 | 0.4− | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.9+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 09 12 | 691 | 0.2− | 0.3+ | 2006 11 01 | 703 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.8− | 1.0+ |
| 2005 09 12 | 691 | 0.1− | 0.5+ | 2006 11 01 | 703 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.1+ | 1.4+ |
| 2005 09 12 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 703 | 0.9− | 0.4− | 2006 11 20 | 704 | 0.7+ | 1.3+ |
| 2006 07 22 | G96 | 0.8− | 0.2− | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2006 07 22 | G96 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 2006 07 22 | G96 | 0.4+ | 0.5− | 2006 11 10 | 644 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.5− |

**2006 UL$_{99}$ = 2005 JP$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.65295 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23141747 | $\omega$ | 172.01800 | | +0.87585513 | | +0.48183954 |
| $a$ | 2.6274752 | $\Omega$ | 159.11194 | | −0.44677443 | | +0.83049312 |
| $e$ | 0.1931318 | $i$ | 4.28123 | | −0.18240176 | | +0.27948495 |
| $P$ | 4.26 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | 691 | 0.1− | 0.3+ | 2005 06 04 | 691 | 0.0 | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.1+ |
| 2005 05 14 | 691 | 0.1+ | 0.1+ | 2005 06 04 | 691 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2005 05 14 | 691 | 0.3+ | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 2005 05 16 | G96 | 0.6− | 0.0 | 2006 10 03 | G96 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2005 05 16 | G96 | 0.2− | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2005 05 16 | G96 | 0.5− | 0.1+ | 2006 10 03 | G96 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2005 05 16 | G96 | 0.6− | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.5+ | 0.6− |
| 2005 06 04 | 691 | 0.0 | 0.7− | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.3− | 0.7− |

**2006 UR$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.58261 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27774631 | $\omega$ | 210.50958 | | +0.27463593 | | +0.95736283 |
| $a$ | 2.3265043 | $\Omega$ | 75.55650 | | −0.86246089 | | +0.28647026 |
| $e$ | 0.2223728 | $i$ | 5.30996 | | −0.42513094 | | +0.03729869 |
| $P$ | 3.55 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 01 | 691 | 0.1+ | 0.1− | 2002 08 30 | 644 | 0.4− | 1.6− | 2006 10 03 | G96 | 0.1+ | 0.2− |
| 1998 05 01 | 691 | 0.0 | 0.1− | 2002 08 30 | 644 | 0.3+ | 0.6+ | 2006 10 03 | G96 | 0.1+ | 0.0 |
| 1998 05 01 | 691 | 0.0 | 0.4+ | 2002 08 30 | 644 | 0.6− | 0.5+ | 2006 10 03 | G96 | 0.5+ | 0.1+ |
| 1999 11 09 | 691 | 0.1+ | 0.2− | 2002 08 30 | 644 | 0.4+ | 0.8+ | 2006 10 03 | G96 | 0.4+ | 0.2− |
| 1999 11 09 | 691 | 0.1+ | 0.2− | 2002 08 30 | 644 | 0.2− | 0.5+ | 2006 10 18 | 691 | 0.0 | 0.2+ |
| 1999 11 09 | 691 | 0.0 | 0.1− | 2002 08 30 | 644 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.3+ | 0.4+ |
| 2002 07 30 | 608 | 0.1+ | 0.6− | 2005 05 03 | 691 | 0.3+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.8+ |
| 2002 07 30 | 608 | 0.0 | 0.9− | 2005 05 03 | 691 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.4− | 0.6+ |
| 2002 07 30 | 608 | 0.3+ | 0.4− | 2005 05 03 | 691 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2002 08 19 | 644 | 0.1− | 0.6+ | 2005 05 12 | 691 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.7− | 0.3− |
| 2002 08 19 | 644 | 0.1− | 0.4+ | 2005 05 12 | 691 | 0.2+ | 0.3+ | | | | |
| 2002 08 19 | 644 | 0.3− | 0.5+ | 2005 05 12 | 691 | 0.0 | 0.3+ | | | | |

**2006 UY$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 169.52551 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30235403 | $\omega$ | 144.81397 | | −0.74035744 | | +0.66357843 |
| $a$ | 2.1984953 | $\Omega$ | 77.13189 | | −0.63923881 | | −0.64557077 |
| $e$ | 0.1048494 | $i$ | 6.32487 | | −0.20795337 | | −0.37802388 |
| $P$ | 3.26 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 29 | 691 | 0.2+ | 0.0 | 2005 06 13 | G96 | 0.4− | 0.5+ | 2006 11 15 | 224 | 0.4+ | 0.4− |
| 2003 11 29 | 691 | 0.1+ | 0.1+ | 2005 06 13 | G96 | (0.9− | 1.9−) | 2006 11 16 | G96 | 0.3+ | 0.5− |
| 2003 11 29 | 691 | 0.1− | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.6− |
| 2003 12 29 | 291 | 0.3− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.9+ | 0.4− |
| 2003 12 29 | 291 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.4− | 0.2+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2003 12 29 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 18 | 224 | 0.0 | 0.6+ |
| 2003 12 29 | 691 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.0 | 0.3− | 2006 11 18 | 224 | 0.1− | 0.4+ |
| 2003 12 29 | 291 | 0.4− | 0.3− | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 18 | 224 | 0.3+ | 0.1+ |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 224 | 0.8+ | 0.1− | |
| 2005 06 13 | G96 | 0.7+ | 0.7+ | 2006 11 15 | 224 | 0.3− | 0.4+ | |

**2006 UM$_{100}$ = 1995 UF$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.17057 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18567231 | $\omega$ | 203.11711 | | +0.75695438 | | −0.65004136 |
| $a$ | 3.0430187 | $\Omega$ | 197.93842 | | +0.62831529 | | +0.75210352 |
| $e$ | 0.0805353 | $i$ | 12.53204 | | +0.17955491 | | +0.10856577 |
| $P$ | 5.31 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 16 | 691 | 0.6− | 0.3+ | 2001 12 20 | 209 | 0.4− | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ |
| 1995 10 16 | 691 | 0.4− | 0.8− | 2006 10 02 | G96 | 0.5+ | 0.0 | 2006 11 13 | 703 | 0.0 | 1.2+ |
| 1995 10 16 | 691 | 0.1− | 0.5+ | 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 11 13 | 703 | 0.8+ | 0.7− |
| 1995 10 21 | 691 | 0.3+ | 0.5+ | 2006 10 02 | G96 | 0.5+ | 0.0 | 2006 11 13 | 703 | 0.1− | 0.9− |
| 1995 10 21 | 691 | 0.7+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 11 13 | 703 | (1.6− | 0.3+) |
| 1995 10 21 | 691 | 0.0 | 0.5+ | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 1998 03 23 | 691 | 0.5+ | 0.9+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.5+ | 0.5− |
| 1998 03 23 | 691 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 1998 03 23 | 691 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.5− |
| 2001 12 20 | 209 | 0.2+ | 0.9− | 2006 10 22 | 691 | 0.3− | 0.0 | | | | |

**2006 UW$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.08890 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27780621 | $\omega$ | 274.57542 | | +0.98171352 | | −0.18062078 |
| $a$ | 2.3261698 | $\Omega$ | 95.83895 | | +0.18964273 | | +0.90046352 |
| $e$ | 0.1210042 | $i$ | 3.46483 | | +0.01655871 | | +0.39565336 |
| $P$ | 3.55 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 01 | 691 | 0.1+ | 0.4− | 2005 05 08 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.2− | 0.0 |
| 1999 11 01 | 691 | 0.2+ | 0.2− | 2005 05 08 | G96 | 0.2− | 0.5− | 2006 10 22 | 691 | 0.4− | 0.0 |
| 1999 11 01 | 691 | 0.2+ | 0.3− | 2005 05 08 | G96 | 0.2− | 0.9− | 2006 10 22 | 691 | 0.3− | 0.1− |
| 1999 11 15 | 691 | 0.2− | 0.1− | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.3− | 0.1− |
| 1999 11 15 | 691 | 0.5− | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.4+ |
| 1999 11 15 | 691 | 0.3− | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.3− | 2006 11 09 | 644 | 0.1− | 1.6+ |
| 1999 11 28 | 691 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.6− |
| 1999 11 28 | 691 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.3− | 0.5− |
| 1999 11 28 | 691 | 0.4+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.5+ | 0.3− |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.2+ | 0.3+ | | | | |

**2006 UG$_{101}$ = 2004 EJ$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.83959 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22591891 | $\omega$ | 161.94818 | | +0.91123655 | | +0.41170925 |
| $a$ | 2.6699369 | $\Omega$ | 173.70037 | | −0.39007351 | | +0.87195696 |
| $e$ | 0.0617147 | $i$ | 6.26639 | | −0.13225207 | | +0.26492745 |
| $P$ | 4.36 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.1− | 2004 07 15 | 807 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.3+ |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2004 07 16 | 807 | 0.0 | 0.5− | 2006 10 22 | 691 | 0.3− | 0.6+ |
| 2004 03 15 | 691 | 0.3− | 0.2+ | 2006 10 03 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 23 | G96 | 0.0 | 0.2− |
| 2004 03 23 | 691 | 0.2+ | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.5+ | 0.4− |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.6− |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.3+ | 0.3− |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | | | | |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.6− | | | | |

**2006 US$_{101}$ = 2004 GK$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.96400 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21106712 | $\omega$ | 63.27993 | | −0.78239370 | | +0.62199377 |
| $a$ | 2.7937593 | $\Omega$ | 155.14340 | | −0.59462406 | | −0.73109504 |
| $e$ | 0.0421282 | $i$ | 4.27939 | | −0.18515487 | | −0.28039936 |
| $P$ | 4.67 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.4− | 0.1− | 2006 11 16 | G96 | 0.5+ | 0.6− |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.6− |
| 2004 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2004 04 14 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.6+ | 0.3+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2004 04 14 | 691 | 0.0 | 0.0 | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2004 04 22 | 599 | 0.8− | 0.3− | 2006 10 18 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2004 04 22 | 599 | 0.5+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2004 04 22 | 599 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.2+ |
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.5− | 0.0 | | | | |

**2006 UX$_{101}$ = 1999 KX$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.63516 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18764088 | $\omega$ | 134.67040 | | +0.85324445 | | +0.51966770 |
| $a$ | 3.0216981 | $\Omega$ | 194.20532 | | −0.51458432 | | +0.82528881 |
| $e$ | 0.0463252 | $i$ | 10.28416 | | −0.08471654 | | +0.22100645 |
| $P$ | 5.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 17 | 691 | 0.2+ | 0.1+ | 2004 04 22 | 599 | (1.9− | 0.4+) | 2006 10 18 | 691 | 0.1− | 0.4+ |
| 1999 05 17 | 691 | 0.2− | 0.1− | 2004 04 22 | 599 | 0.8− | 0.0 | 2006 10 18 | 691 | 0.4+ | 0.2+ |
| 1999 05 17 | 691 | 0.2− | 0.0 | 2004 04 22 | 599 | (1.7− | 0.4+) | 2006 10 22 | 691 | 0.1− | 0.1− |
| 1999 05 21 | 691 | 0.0 | 0.2+ | 2004 04 22 | 599 | 1.2− | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1999 05 21 | 691 | 0.1+ | 0.0 | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.6+ |
| 1999 05 21 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 03 16 | 291 | 0.2+ | 0.5+ | 2006 10 02 | G96 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.4+ | 0.0 |
| 2004 03 16 | 291 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 03 16 | 291 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.2− |

**2006 US$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 191.50751 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27577008 | $\omega$ | 146.11927 | | −0.91367974 | | +0.37742961 |
| $a$ | 2.3376059 | $\Omega$ | 56.76101 | | −0.40129350 | | −0.77891819 |
| $e$ | 0.1532426 | $i$ | 10.38612 | | −0.06444264 | | −0.50083265 |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.3+ | 0.6− | 2006 10 31 | G96 | 0.1+ | 0.5− |
| 1999 11 17 | 691 | 0.1− | 0.0 | 2006 10 03 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 1999 11 17 | 691 | 0.1− | 0.1− | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2001 05 18 | 699 | 0.2− | 1.2− | 2006 10 18 | 691 | 0.3+ | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.0 |
| 2001 05 18 | 699 | 0.2− | 0.8+ | 2006 10 18 | 691 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.4+ | 0.1+ |
| 2001 05 18 | 699 | 0.3+ | 0.6+ | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 05 18 | 699 | 0.4+ | 0.2+ | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 16 | G96 | 0.5− | 0.4+ |
| 2006 10 03 | G96 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.2− | 0.3+ | | | | |
| 2006 10 03 | G96 | 0.1− | 0.5− | 2006 10 31 | G96 | 0.2+ | 0.1+ | | | | |

**2006 UW$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 93.97669 | | (2000.0) | | | |
| $n$ | 0.29105449 | $\omega$ | 99.75663 | | +0.21272297 | +0.97710331 |
| $a$ | 2.2550344 | $\Omega$ | 182.53715 | | −0.92989863 | +0.20110701 |
| $e$ | 0.1144532 | $i$ | 5.50765 | | −0.30006246 | +0.06946280 |
| $P$ | 3.39 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | G96 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2005 04 12 | G96 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 23 | G96 | 0.5+ | 0.1+ |
| 2005 04 12 | G96 | 0.4+ | 0.2− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2005 04 12 | G96 | 0.3+ | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2005 05 11 | 699 | (1.4− | 3.8−) | 2006 10 18 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.1− | 0.2− |
| 2005 05 11 | 699 | 0.9− | 0.3− | 2006 10 18 | 691 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2005 05 11 | 699 | 0.0 | 0.6+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2005 05 11 | 699 | 0.1− | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2006 10 02 | G96 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1− | | | | |

**2006 UX$_{102}$ = 2001 FV$_{189}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 188.64706 | | (2000.0) | | | |
| $n$ | 0.28254232 | $\omega$ | 21.89211 | | −0.91352057 | +0.40676556 |
| $a$ | 2.3001017 | $\Omega$ | 182.12698 | | −0.38943836 | −0.87781844 |
| $e$ | 0.1130841 | $i$ | 7.25084 | | −0.11754966 | −0.25293590 |
| $P$ | 3.49 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 691 | 0.1+ | 0.1− | 2006 10 03 | G96 | 0.4+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.1− |
| 2001 03 02 | 691 | 0.1+ | 0.2− | 2006 10 03 | G96 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 03 02 | 691 | 0.2+ | 0.1− | 2006 10 03 | G96 | 0.7+ | 0.1− | 2006 10 22 | 691 | 0.4− | 0.0 |
| 2001 03 18 | 704 | 1.1− | 0.6+ | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2− |
| 2001 03 18 | 704 | 0.4− | 0.3+ | 2006 10 18 | 691 | 0.6− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2001 03 18 | 704 | 0.2+ | 0.2+ | 2006 10 18 | 691 | 0.4+ | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.4+ |
| 2001 03 25 | 695 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.5+ | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2001 03 25 | 695 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.7+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 10 03 | G96 | 1.2+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.0 | | | | |

**2006 UU$_{103}$ = 2003 YT$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 271.91787 | | (2000.0) | | | |
| $n$ | 0.29039419 | $\omega$ | 72.18474 | | −0.65489580 | −0.75007324 |
| $a$ | 2.2584515 | $\Omega$ | 59.08665 | | +0.64627495 | −0.61910991 |
| $e$ | 0.0912750 | $i$ | 6.16955 | | +0.39171442 | −0.23257911 |
| $P$ | 3.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 29 | 704 | 0.1− | 0.5− | 2004 01 27 | 703 | 0.7− | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.3+ |
| 2003 12 29 | 704 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 1.1− | 2006 11 09 | 644 | 0.2− | 0.1+ |
| 2003 12 29 | 704 | 0.8− | 0.0 | 2006 09 30 | G96 | 0.2+ | 1.0− | 2006 11 11 | 703 | 0.6+ | 1.1+ |
| 2003 12 29 | 704 | 0.8− | 0.4+ | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.6+ | 0.6− |
| 2003 12 30 | 704 | 0.2− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 1.0− | 0.1− |
| 2003 12 30 | 704 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.6− | 1.0− |
| 2003 12 30 | 704 | 0.5− | 0.3+ | 2006 10 18 | 691 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2003 12 30 | 704 | 1.3+ | 0.6+ | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.5− |
| 2003 12 30 | 704 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2004 01 27 | 703 | (4.1+ | 0.5+) | 2006 10 22 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.0 |
| 2004 01 27 | 703 | 0.5+ | 1.2− | 2006 10 22 | 691 | 0.1− | 0.1+ | | | | |
| 2004 01 27 | 703 | 0.7+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | | | | |

**2006 UW$_{103}$ = 2001 WO$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 266.48091 | | (2000.0) | | | |
| $n$ | 0.19050861 | $\omega$ | 66.93645 | | −0.79018462 | −0.60745615 |
| $a$ | 2.9912977 | $\Omega$ | 75.56116 | | +0.52710082 | −0.74125816 |
| $e$ | 0.0898778 | $i$ | 4.81414 | | +0.31268673 | −0.28554049 |
| $P$ | 5.17 | $H$ | 16.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 1.0− | 0.7− | 2001 12 11 | 291 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1+ | 0.1− |
| 2001 11 20 | 704 | 0.3+ | 0.3+ | 2001 12 11 | 291 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.4− | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.5+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 2001 11 21 | 704 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2001 11 21 | 704 | 0.5+ | 0.4− | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.4+ |
| 2001 11 21 | 704 | 0.0 | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.1− |
| 2001 12 11 | 291 | 0.2+ | 0.4− | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.1+ |

**2006 UY$_{104}$ = 2004 EL$_{23}$ = 2005 NH$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 189.61981 | | (2000.0) | | | |
| $n$ | 0.23719489 | $\omega$ | 68.86272 | | −0.86653375 | +0.49740360 |
| $a$ | 2.5846346 | $\Omega$ | 140.93333 | | −0.47881539 | −0.80504630 |
| $e$ | 0.0576534 | $i$ | 3.76098 | | −0.14090810 | −0.32324930 |
| $P$ | 4.16 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.4+ | 0.3+ | 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.1− |
| 2001 08 25 | 691 | 0.8− | 0.6+ | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.2+ | 0.3+ |
| 2001 08 25 | 691 | 0.1+ | 0.3+ | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.5+ | 0.1+ |
| 2004 03 15 | 704 | 0.5+ | 0.7+ | 2005 07 04 | G96 | 0.4+ | 0.4− | 2006 09 30 | G96 | 0.2+ | 0.3− |
| 2004 03 15 | 704 | 0.5+ | 0.5+ | 2005 07 04 | G96 | 0.1+ | 0.3− | 2006 10 18 | 691 | 0.1− | 0.1+ |
| 2004 03 15 | 704 | 0.1+ | 0.0 | 2005 07 04 | G96 | 0.8+ | 0.2− | 2006 10 18 | 691 | 0.2− | 0.2+ |
| 2004 03 16 | 599 | 0.1+ | 0.2+ | 2005 07 04 | G96 | 0.7− | 0.4− | 2006 10 18 | 691 | 0.1− | 0.2+ |
| 2004 03 16 | 599 | 0.1+ | 0.4+ | 2005 07 07 | 691 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2− |
| 2004 03 16 | 599 | 0.1+ | 0.6+ | 2005 07 07 | 691 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2004 03 16 | 599 | 0.4− | 0.4+ | 2005 07 07 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.3+ | 0.1+ |

**2006 UA$_{105}$ = 2001 PT$_{38}$ = 2004 FF$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 41.59477 | | (2000.0) | | | |
| $n$ | 0.22322883 | $\omega$ | 288.97327 | | +0.94011321 | +0.25773226 |
| $a$ | 2.6913439 | $\Omega$ | 56.67510 | | −0.10969211 | +0.84837509 |
| $e$ | 0.1043884 | $i$ | 15.48408 | | −0.32273023 | +0.46242165 |
| $P$ | 4.42 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 26 | 566 | 0.8+ | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.7− | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 1997 11 26 | 566 | 0.5+ | 0.4+ | 2006 09 30 | 699 | 1.2+ | 0.6+ | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 1997 11 26 | 566 | 0.9− | 0.5− | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2000 04 27 | 699 | 0.5+ | 1.0+ | 2006 09 30 | 703 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 2000 04 27 | 699 | 0.0 | 1.5+ | 2006 09 30 | 703 | 0.0 | 0.5− | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2000 04 27 | 699 | 0.2+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 1.0+ | 0.5− |
| 2000 04 27 | 699 | 0.3+ | 0.4− | 2006 10 18 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | 0.0 | 0.8− |
| 2000 06 04 | 608 | 0.2− | 0.5− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.5− |
| 2000 06 04 | 608 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.4+ |
| 2000 06 04 | 608 | 0.0 | 1.4− | 2006 10 22 | 691 | 1.5− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.6+ |
| 2001 08 11 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2001 08 11 | 644 | 0.2+ | 0.2+ | 2006 10 27 | 704 | 0.5+ | 1.2+ | 2006 11 18 | 704 | 1.4− | 0.4+ |
| 2001 08 11 | 644 | 0.3+ | 0.1+ | 2006 10 27 | 704 | 0.9+ | 0.8+ | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2001 08 17 | 644 | 0.4− | 0.2+ | 2006 10 27 | 704 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.3+ |
| 2001 08 17 | 644 | 0.3− | 0.2+ | 2006 10 27 | 704 | 0.8− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2001 08 17 | 644 | 0.1− | 0.3+ | 2006 10 27 | 704 | 0.9− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2001 10 14 | 644 | 0.6− | 0.7+ | 2006 11 02 | 703 | 0.3− | 0.6− | 2006 11 18 | 704 | 0.4− | 0.7+ |
| 2001 10 14 | 644 | 0.7− | 0.4+ | 2006 11 02 | 703 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.5+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 644 | 0.3− | 0.2+ | 2006 11 02 | 703 | 0.4− | 0.4+ | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2001 10 14 | 644 | 0.6− | 0.8+ | 2006 11 02 | 703 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.9+ |
| 2004 03 19 | 644 | 0.4+ | 0.3+ | 2006 11 10 | 644 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.9+ |
| 2004 03 19 | 644 | 0.5+ | 0.5+ | 2006 11 10 | 644 | 0.1+ | 0.0 | 2006 11 21 | 704 | 1.4− | 1.0+ |
| 2004 03 19 | 644 | 0.3+ | 0.4+ | 2006 11 10 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | (0.2− | 1.7+) |
| 2004 03 25 | 704 | 0.2+ | 1.1+ | 2006 11 11 | 703 | 0.0 | 0.6− | 2006 11 29 | 704 | 0.4+ | 0.2− |
| 2004 03 25 | 704 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.0 | 0.9− | 2006 11 29 | 704 | 1.3− | 0.8− |
| 2004 03 25 | 704 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.6+ | 0.4− | 2006 11 29 | 704 | 1.6+ | 0.1− |
| 2004 03 25 | 704 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.2− |
| 2006 09 30 | 699 | 0.7+ | 0.9+ | 2006 11 11 | 644 | 0.5+ | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.4− |
| 2006 09 30 | 699 | 0.2− | 0.3+ | 2006 11 11 | 644 | 0.3+ | 0.2− | | | | |
| 2006 09 30 | 699 | 0.2+ | 0.2− | 2006 11 11 | 644 | 0.2+ | 0.1+ | | | | |

**2006 UG$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.85874 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27973623 | $\omega$ | 144.54995 | | +0.93718205 | | +0.34759664 |
| $a$ | 2.3154580 | $\Omega$ | 195.19219 | | −0.34033784 | | +0.89256196 |
| $e$ | 0.1429110 | $i$ | 6.44909 | | −0.07655038 | | +0.28724505 |
| $P$ | 3.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 27 | 691 | 0.1− | 0.2+ | 2002 08 15 | 644 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.4+ |
| 1998 04 27 | 691 | 0.1+ | 0.1+ | 2005 05 04 | 691 | 0.2+ | 0.7+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 1998 04 27 | 691 | 0.1+ | 0.2+ | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.4− |
| 2002 07 12 | 644 | 0.0 | 0.0 | 2005 05 04 | 691 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 1.0+ | 0.1+ |
| 2002 07 12 | 644 | 0.2+ | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2002 07 12 | 644 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.7+ |
| 2002 08 05 | 644 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2002 08 05 | 644 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2002 08 05 | 644 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.4− | 0.2− |
| 2002 08 15 | 644 | 0.1− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.5+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 08 15 | 644 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.5− | 0.3+ | | | | |

**2006 US$_{105}$ = 2001 QW$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.44533 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22821711 | $\omega$ | 113.50376 | | +0.62255862 | | +0.78175206 |
| $a$ | 2.6519821 | $\Omega$ | 195.16526 | | −0.75865812 | | +0.59166504 |
| $e$ | 0.0865417 | $i$ | 7.87426 | | −0.19198597 | | +0.19696751 |
| $P$ | 4.32 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 13 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2000 04 13 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2000 04 13 | 691 | 0.0 | 0.8+ | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2001 08 25 | 704 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.8+ | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.2− |
| 2001 08 25 | 704 | 0.7− | 0.0 | 2006 10 18 | 691 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.3+ | 0.1− |
| 2001 08 25 | 704 | 0.6+ | 0.4+ | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.6+ | 0.3− |
| 2001 08 27 | 704 | 0.1− | 0.6+ | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.4+ | 0.1+ |
| 2001 08 27 | 704 | 0.6− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2001 08 27 | 704 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.6− | 0.0 | 2006 11 18 | G96 | 0.3+ | 0.4+ |

**2006 UV$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.41287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17237265 | $\omega$ | 175.71429 | | +0.88050430 | | −0.44835738 |
| $a$ | 3.1975977 | $\Omega$ | 212.37769 | | +0.42593127 | | +0.89080062 |
| $e$ | 0.0180070 | $i$ | 16.70308 | | +0.20807385 | | +0.07382360 |
| $P$ | 5.72 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 691 | 0.2− | 0.3+ | 2000 10 30 | 691 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1998 04 20 | 691 | 0.2− | 0.3+ | 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.2+ | 0.3+ |
| 1998 04 20 | 691 | 0.7− | 0.2− | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 1998 04 29 | 691 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 1998 04 29 | 691 | 0.1− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.4+ |
| 1998 04 29 | 691 | 1.1+ | 0.4+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.7− | 0.8+ |
| 2000 10 30 | 691 | 0.3+ | 0.3− | 2006 10 18 | 691 | 0.2+ | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.0 |
| 2000 10 30 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 1.3+ | | | | |

**2006 UZ$_{105}$ = 2000 CJ$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.38192 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26588724 | $\omega$ | 64.29195 | | −0.71119384 | | −0.69636168 |
| $a$ | 2.3951776 | $\Omega$ | 71.40193 | | +0.60305205 | | −0.67476601 |
| $e$ | 0.1732061 | $i$ | 5.83482 | | +0.36129151 | | −0.24448155 |
| $P$ | 3.71 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 18 | 691 | 0.0 | 0.0 | 2004 03 28 | 703 | 0.1+ | 1.5+ | 2006 10 18 | 691 | 0.2+ | 0.1+ |
| 2000 02 01 | 461 | 0.1− | 0.7− | 2004 03 28 | 703 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2000 02 01 | 461 | 0.4+ | 0.1− | 2006 10 03 | G96 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2000 02 01 | 461 | 0.5+ | 0.5− | 2006 10 03 | G96 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.1− |
| 2000 02 02 | 461 | 0.3+ | 0.2− | 2006 10 03 | G96 | 0.5− | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.2− |
| 2000 02 02 | 461 | 1.2− | 0.2+ | 2006 10 03 | G96 | 0.7− | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 03 28 | 703 | 0.1− | 1.4+ | 2006 10 18 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2004 03 28 | 703 | 0.8+ | 0.2− | 2006 10 18 | 691 | 0.6+ | 0.1+ | 2006 11 15 | G96 | 0.1− | 0.4− |

**2006 UQ$_{106}$ = 2001 FV$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.28528 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26699979 | $\omega$ | 169.76130 | | −0.26516916 | | +0.95969216 |
| $a$ | 2.3885194 | $\Omega$ | 84.81558 | | −0.89111939 | | −0.20703095 |
| $e$ | 0.0929105 | $i$ | 5.36667 | | −0.36822757 | | −0.19007668 |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 22 | 691 | 0.8− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.3− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2001 03 22 | 691 | 0.5− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.0 | 0.5+ |
| 2001 03 22 | 691 | 0.5− | 0.2− | 2006 10 03 | G96 | 0.5+ | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2001 03 24 | 691 | 0.1− | 0.9+ | 2006 10 03 | G96 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2001 03 24 | 691 | 0.7+ | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 03 24 | 691 | 1.5+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.0 |
| 2003 12 21 | 691 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2003 12 21 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.1− |
| 2003 12 21 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.1− | 0.0 | | | | |

**2006 UT$_{106}$ = 1995 WM$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.79849 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17646688 | $\omega$ | 133.81502 | | −0.95678824 | | +0.23807764 |
| $a$ | 3.1479458 | $\Omega$ | 60.61842 | | −0.28970096 | | −0.82998345 |
| $e$ | 0.0677689 | $i$ | 11.04645 | | +0.02509207 | | −0.50442691 |
| $P$ | 5.59 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.1+ | 0.2− | 2005 07 28 | 644 | 0.4− | 0.2+ | 2006 11 02 | 703 | 0.0 | 0.2+ |
| 1995 11 19 | 691 | 0.0 | 0.0 | 2005 07 28 | 644 | 0.4− | 0.7+ | 2006 11 02 | 703 | 0.2+ | 0.8− |
| 1995 11 19 | 691 | 0.2− | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 1995 11 27 | 691 | 0.2+ | 0.3− | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.7− | 0.5+ |
| 1995 11 27 | 691 | 0.3+ | 0.5− | 2006 10 03 | G96 | 0.4− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 |
| 1995 11 27 | 691 | 0.0 | 0.2− | 2006 10 03 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.1− |
| 2003 03 26 | 644 | 0.6+ | 0.9+ | 2006 10 18 | 691 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.0 |
| 2003 03 26 | 644 | 0.0 | 0.9+ | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | 0.4+ | 0.6+ |
| 2003 03 26 | 644 | 0.6+ | 1.0+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.3+ |
| 2003 04 09 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2003 04 09 | 644 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.1− |
| 2003 04 09 | 644 | 0.1+ | 0.1+ | 2006 11 02 | 703 | 0.5+ | 0.8+ | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2005 07 28 | 644 | 0.3− | 0.5+ | 2006 11 02 | 703 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.7− | 0.1− |

**2006 UC$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.64064 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17914032 | $\omega$ | 210.34988 | | +0.97362606 | | +0.22593054 |
| $a$ | 3.1165480 | $\Omega$ | 136.55531 | | −0.19894827 | | +0.90885750 |
| $e$ | 0.1723733 | $i$ | 2.64587 | | −0.11167756 | | +0.35061864 |
| $P$ | 5.50 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.2+ | 0.5− | 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.3+ |
| 1995 10 25 | 691 | 0.2− | 0.7− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 1995 10 25 | 691 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.2− | 0.1− |
| 1995 10 25 | 691 | 0.5+ | 0.2− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.2− |
| 2000 08 26 | 807 | 0.0 | 0.1− | 2006 10 18 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2000 08 26 | 807 | 0.1+ | 0.1− | 2006 10 18 | 691 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.5+ | | | | |

**2006 UF$_{107}$ = 2006 TL$_{61}$ = 2000 KH$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.83824 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22349305 | $\omega$ | 185.28465 | | −0.34069098 | | +0.93316923 |
| $a$ | 2.6892223 | $\Omega$ | 64.83723 | | −0.85789037 | | −0.25870369 |
| $e$ | 0.0894096 | $i$ | 7.27173 | | −0.38464759 | | −0.24953475 |
| $P$ | 4.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 704 | 0.2+ | 0.1+ | 2005 08 12 | E12 | 0.2− | 0.2− | 2006 10 18 | 691 | 0.2+ | 0.3+ |
| 2000 05 28 | 704 | 0.1+ | 0.0 | 2005 08 12 | E12 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.1− | 0.2− |
| 2000 05 28 | 704 | 0.9+ | 0.3+ | 2005 08 12 | E12 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.4+ |
| 2000 05 29 | 704 | 0.8− | 0.0 | 2005 08 12 | E12 | 0.2− | 1.1− | 2006 10 22 | 691 | 0.1− | 0.2+ |
| 2000 05 29 | 704 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.7− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2000 05 29 | 704 | 0.6+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2000 05 29 | 704 | 0.2− | 0.8+ | 2006 09 30 | G96 | 0.4− | 0.6− | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2005 07 10 | E12 | 0.3+ | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.5− | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2005 07 10 | E12 | 0.4+ | 0.2+ | 2006 10 15 | D35 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2005 07 10 | E12 | 0.1+ | 0.2+ | 2006 10 15 | D35 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2005 07 10 | E12 | 0.3− | 0.0 | 2006 10 15 | D35 | 0.2+ | 0.4+ | | | | |

**2006 UH$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 186.60655 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27809415 | $\omega$ | 143.86526 | | −0.85489281 | | +0.50979015 |
| $a$ | 2.3245638 | $\Omega$ | 67.05652 | | −0.49714730 | | −0.75190431 |
| $e$ | 0.1201854 | $i$ | 6.00210 | | −0.14833357 | | −0.41803577 |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 13 | 691 | 0.2− | 0.6− | 2001 05 23 | 699 | 0.9+ | 0.4− | 2006 10 18 | 691 | 0.2− | 0.4+ |
| 1999 11 13 | 691 | 0.0 | 0.9− | 2002 09 05 | 599 | 1.6− | 0.8+ | 2006 10 18 | 691 | 0.4− | 0.2+ |
| 1999 11 13 | 691 | 0.4+ | 0.0 | 2002 09 05 | 599 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.6− | 0.1+ |
| 1999 12 18 | 691 | 0.3+ | 0.1− | 2002 09 06 | 599 | 0.5− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.6+ |
| 1999 12 18 | 691 | 0.1+ | 0.1+ | 2002 09 06 | 599 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.6− | 0.4+ |
| 1999 12 18 | 691 | 0.2+ | 0.0 | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.8− |
| 2001 04 17 | 699 | 0.1− | 0.5+ | 2003 12 28 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.0+ | 1.6+ |
| 2001 04 17 | 699 | 0.4+ | 0.4+ | 2003 12 28 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 1.3+ | 0.3− |
| 2001 04 17 | 699 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | (3.6+ | 0.0 ) |
| 2001 04 17 | 699 | 0.5+ | 0.5+ | 2006 09 30 | G96 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.4− | 0.3− |
| 2001 05 23 | 699 | 0.6− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.0 |
| 2001 05 23 | 699 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2001 05 23 | 699 | 0.9+ | 1.1+ | 2006 10 18 | 691 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.2− |

**2006 UT$_{107}$ = 2004 EQ$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 236.52732 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25846144 | $\omega$ | 118.72512 | | −0.98735296 | | −0.02326399 |
| $a$ | 2.4408376 | $\Omega$ | 60.33481 | | −0.05444058 | | −0.87927252 |
| $e$ | 0.1769276 | $i$ | 10.39747 | | +0.14889710 | | −0.47575060 |
| $P$ | 3.81 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 14 | 704 | 0.3+ | 0.2+ | 2004 03 26 | 703 | (1.2+ | 2.1+) | 2006 10 22 | 691 | 0.0 | 0.1− |
| 2004 03 14 | 704 | 0.5+ | 0.3+ | 2004 03 26 | 703 | (0.8− | 1.8+) | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2004 03 14 | 704 | 0.2+ | 0.3− | 2004 03 26 | 703 | 1.5− | 0.3+ | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2004 03 25 | 704 | 0.9− | 0.3+ | 2006 10 18 | 691 | 0.5− | 0.5− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2004 03 25 | 704 | 0.2− | 0.1− | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2004 03 25 | 704 | 0.1+ | 0.3− | 2006 10 18 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2004 03 25 | 704 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.1+ | 0.9− |
| 2004 03 26 | 703 | 1.2+ | 0.8− | 2006 10 22 | 691 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.1− | 0.4− |

**2006 UG$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.41572 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17794370 | $\omega$ | 268.23995 | | −0.48512967 | | −0.86986647 |
| $a$ | 3.1305043 | $\Omega$ | 211.28929 | | +0.85501619 | | −0.45045467 |
| $e$ | 0.0575149 | $i$ | 9.90520 | | +0.18329356 | | −0.20105452 |
| $P$ | 5.54 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 27 | 691 | 0.1− | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 2003 03 27 | 691 | 0.5+ | 0.1− | 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2003 03 27 | 691 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 2003 05 05 | 691 | 0.3− | 0.0 | 2006 10 18 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3− |
| 2003 05 05 | 691 | 0.5− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.3+ | 0.2+ |
| 2003 05 05 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.2− | 0.2− |
| 2006 09 30 | G96 | 0.0 | 0.3+ | 2006 10 22 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.4− | 1.2+ |
| 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2+ | 0.6+ |
| 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.5− | 0.8+ |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.0 | | | | |
| 2006 10 12 | 691 | 0.7− | 1.1+ | 2006 11 16 | 691 | 0.3+ | 0.1− | | | | |

**2006 UQ$_{108}$ = 1996 RA$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.60915 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29809858 | $\omega$ | 227.20852 | | +0.54299779 | | −0.83949673 |
| $a$ | 2.2193686 | $\Omega$ | 189.96140 | | +0.80020308 | | +0.52449872 |
| $e$ | 0.1364827 | $i$ | 6.62783 | | +0.25461426 | | +0.14193775 |
| $P$ | 3.31 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 08 | 691 | 0.5− | 0.5− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 1996 09 08 | 691 | 0.1− | 0.4− | 2006 10 02 | G96 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 1996 09 08 | 691 | 0.4− | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.2− | 0.5− |
| 1996 09 12 | 691 | 0.4+ | 0.2+ | 2006 10 18 | 691 | 0.2+ | 0.1+ | 2006 11 23 | G96 | 0.4− | 0.5− |
| 1996 09 12 | 691 | 0.6+ | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.6− |
| 2006 10 02 | G96 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.2+ | | | | |
| 2006 10 02 | G96 | 0.4+ | 0.0 | 2006 10 22 | 691 | 0.3− | 0.2+ | | | | |

**2006 UX$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 197.73655 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18516565 | $\omega$ | 147.57114 | | −0.85704325 | | +0.44726995 |
| $a$ | 3.0485671 | $\Omega$ | 61.08283 | | −0.51266716 | | −0.69066278 |
| $e$ | 0.1072111 | $i$ | 16.99092 | | −0.05147095 | | −0.56827328 |
| $P$ | 5.32 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 644 | 0.1+ | 0.1+ | 2005 07 28 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | (1.4− | 1.7−) |
| 2003 02 01 | 644 | 0.2+ | 0.2+ | 2005 09 02 | 644 | 0.1− | 0.7+ | 2006 11 12 | G96 | 0.2+ | 0.3+ |
| 2003 02 01 | 644 | 0.1+ | 0.0 | 2005 09 02 | 644 | 0.3+ | 0.3+ | 2006 11 12 | G96 | 1.2+ | 0.3− |
| 2003 02 22 | 644 | 0.1− | 0.2− | 2005 09 02 | 644 | 0.6− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.6− |
| 2003 02 22 | 644 | 0.3− | 0.0 | 2006 10 03 | G96 | 0.2− | 0.6− | 2006 11 17 | 703 | 0.1− | 0.1− |
| 2003 02 22 | 644 | 0.0 | 0.2+ | 2006 10 03 | G96 | 0.2+ | 0.6− | 2006 11 17 | 703 | 0.2− | 0.8− |
| 2003 03 09 | 644 | 0.4− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.6− | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2003 03 09 | 644 | 0.3− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | (1.2− | 1.8+) |
| 2003 03 09 | 644 | 0.3− | 0.4+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | (0.7− | 2.0−) |
| 2003 03 21 | 644 | 1.0+ | 0.1+ | 2006 10 18 | 691 | 0.1− | 0.2+ | 2006 11 23 | G96 | (1.7+ | 2.0−) |
| 2003 03 21 | 644 | 0.1+ | 0.3− | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.5+ | 0.3− |
| 2003 03 21 | 644 | 0.3+ | 0.6− | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.7+ | 0.4− |
| 2003 04 01 | 644 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2003 04 01 | 644 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 28 | 704 | 1.4+ | 0.5+ |
| 2003 04 01 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.4− | 1.1+ | 2006 11 28 | 704 | 0.5+ | 0.2− |
| 2005 07 28 | 644 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.5+ |
| 2005 07 28 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.8+ | 0.2+ |

**2006 UA$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.75216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19106539 | $\omega$ | 115.52254 | | +0.72051133 | | +0.69118566 |
| $a$ | 2.9854837 | $\Omega$ | 200.90379 | | −0.67910105 | | +0.68699943 |
| $e$ | 0.2148250 | $i$ | 9.01515 | | −0.14030392 | | +0.22426363 |
| $P$ | 5.16 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 03 | 691 | 0.5+ | 0.4+ | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 1994 05 03 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.0 | 0.7+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 1994 05 03 | 691 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.6− | 0.0 | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 1999 04 14 | 691 | 0.2− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.8− |
| 1999 04 14 | 691 | 0.3− | 0.6− | 2006 09 30 | G96 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.6+ | 0.3− |
| 1999 04 14 | 691 | 0.4− | 0.8− | 2006 10 18 | 691 | 0.2+ | 0.6+ | 2006 11 17 | G96 | 0.2− | 1.0− |
| 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 10 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.8− |
| 2004 03 29 | 691 | 0.4+ | 0.3+ | 2006 10 18 | 691 | 0.3+ | 0.0 | | | | |

**2006 UE$_{109}$ = 2005 GO$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.37009 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30275159 | $\omega$ | 134.69390 | | +0.86755298 | | +0.49621003 |
| $a$ | 2.1965702 | $\Omega$ | 195.65383 | | −0.48421690 | | +0.82731657 |
| $e$ | 0.1869243 | $i$ | 7.14846 | | −0.11351573 | | +0.26329240 |
| $P$ | 3.26 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | 691 | 0.1+ | 0.2+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2005 04 02 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2005 04 02 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.4+ | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1− |
| 2005 04 09 | G96 | 0.3− | 0.1− | 2006 10 18 | 691 | 0.3− | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2005 04 09 | G96 | 0.8− | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2005 04 09 | G96 | 0.2− | 0.6− | 2006 10 18 | 691 | 0.2+ | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2005 04 09 | G96 | 0.3− | 0.7− | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1− |

**2006 UH$_{109}$ = 2005 JM$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 118.13103 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26937584 | $\omega$ | 246.45047 | | −0.12636435 | | +0.99180451 |
| $a$ | 2.3744533 | $\Omega$ | 16.32353 | | −0.88390044 | | −0.10394365 |
| $e$ | 0.1804126 | $i$ | 3.84849 | | −0.45027999 | | −0.07429354 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 18 | 699 | 0.2+ | 0.3− | 2005 05 13 | E12 | 0.6+ | 0.1+ | 2006 10 21 | 691 | 0.4− | 0.5+ |
| 2001 03 18 | 699 | 0.3− | 1.3+ | 2005 05 13 | E12 | 0.3+ | 0.8+ | 2006 10 21 | 691 | 0.6− | 0.7+ |
| 2001 03 18 | 699 | 0.7+ | 0.2+ | 2005 05 18 | E12 | 0.3+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.5+ |
| 2001 03 18 | 699 | 0.3+ | 0.7+ | 2005 05 18 | E12 | 1.4+ | 0.9+ | 2006 11 01 | G96 | 0.0 | 0.8− |
| 2002 09 14 | 557 | 1.1+ | 0.5− | 2005 05 18 | E12 | 0.2− | 0.6− | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2002 09 14 | 557 | 0.8+ | 0.2+ | 2005 05 18 | E12 | 0.8− | 1.4+ | 2006 11 01 | G96 | 0.0 | 0.8− |
| 2002 09 14 | 644 | 0.4− | 0.2− | 2006 09 30 | G96 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.5− |
| 2002 09 14 | 644 | 0.2− | 0.5+ | 2006 09 30 | G96 | 0.1− | 0.6− | 2006 11 14 | G96 | 0.4+ | 0.3+ |
| 2002 10 01 | 608 | 0.1− | 0.5− | 2006 09 30 | G96 | 0.6+ | 0.6+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2002 10 01 | 608 | 0.8− | 0.6+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.1+ |
| 2002 10 07 | 291 | 0.1+ | 0.0 | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.5+ | 0.1− |
| 2002 10 07 | 291 | 0.2+ | 0.1− | 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2002 10 07 | 291 | 0.4− | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2005 05 13 | E12 | 0.6− | 0.2+ | 2006 10 19 | 461 | 0.5− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2005 05 13 | E12 | 0.2− | 0.6+ | 2006 10 19 | 461 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.4+ | 0.2− |

**2006 UG$_{110}$ = 2002 NU$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.40310 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26875155 | $\omega$ | 22.64606 | | +0.23563167 | | +0.96793943 |
| $a$ | 2.3781289 | $\Omega$ | 261.06997 | | −0.90459504 | | +0.18572039 |
| $e$ | 0.1612996 | $i$ | 5.05311 | | −0.35522604 | | +0.16911891 |
| $P$ | 3.67 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 13 | 644 | 0.1− | 0.4+ | 2006 09 17 | 703 | 0.6− | 1.0− | 2006 09 27 | 703 | (0.6+ | 2.7−) |
| 2002 07 13 | 644 | 0.2+ | 0.4+ | 2006 09 17 | 703 | 1.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.2+ |
| 2002 07 13 | 644 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2002 07 14 | 704 | 0.1+ | 0.7− | 2006 09 17 | 703 | 0.5+ | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.2+ |
| 2002 07 14 | 704 | 0.5− | 0.1+ | 2006 09 27 | 703 | 1.0− | 0.9− | 2006 10 21 | 691 | 0.2− | 0.4+ |
| 2002 07 14 | 704 | 0.1− | 0.1− | 2006 09 27 | 703 | 1.0− | 1.5− | 2006 10 21 | 691 | 0.2+ | 0.2− |
| 2002 07 14 | 704 | 0.3+ | 0.4− | 2006 09 27 | 703 | 1.2+ | 0.8− | 2006 10 21 | 691 | 0.3+ | 0.1− |

**2006 UH$_{112}$ = 2003 WA$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.74418 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29638727 | $\omega$ | 259.78180 | | −0.23650748 | | −0.97051635 |
| $a$ | 2.2279034 | $\Omega$ | 204.05319 | | +0.93014210 | | −0.21231418 |
| $e$ | 0.1051022 | $i$ | 6.55091 | | +0.28089124 | | −0.11410828 |
| $P$ | 3.33 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 17 | 703 | 0.3+ | 1.0+ | 2003 11 19 | 699 | 0.4+ | 0.8− | 2006 10 21 | 691 | 0.5− | 0.1+ |
| 2003 11 17 | 703 | 0.7+ | 0.1+ | 2003 11 19 | 699 | 1.1+ | 1.3+ | 2006 10 21 | 691 | 0.4− | 0.1− |
| 2003 11 17 | 703 | 0.5+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2003 11 17 | 703 | 0.1− | 0.3− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.3+ | 0.0 |
| 2003 11 18 | 691 | 0.4− | 0.2− | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 |
| 2003 11 18 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2003 11 18 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.0 | 0.0 |
| 2003 11 19 | 699 | 0.0 | 1.4− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.6+ | 0.1+ |
| 2003 11 19 | 699 | 0.2+ | 1.3+ | 2006 10 21 | 691 | 0.2− | 0.0 | | | | |

**2006 US$_{112}$ = 1995 FS$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.08341 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21357206 | $\omega$ | 272.54156 | | +0.18389421 | | +0.98290614 |
| $a$ | 2.7718715 | $\Omega$ | 8.07139 | | −0.87491347 | | +0.16778306 |
| $e$ | 0.0667554 | $i$ | 3.61655 | | −0.44800595 | | +0.07579161 |
| $P$ | 4.61 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.8− | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− |
| 1995 03 27 | 691 | 0.4− | 0.7+ | 2006 09 28 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.3− | 0.5+ |
| 1995 03 27 | 691 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 05 | 691 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.2− | 0.1− |
| 1995 04 05 | 691 | 0.4+ | 1.0− | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.3− |
| 1995 04 05 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− |
| 2004 03 18 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.6− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1+ |
| 2004 03 18 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2+ |
| 2004 03 18 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2− | | | | |
| 2006 09 28 | 691 | 0.6+ | 0.0 | 2006 10 23 | 691 | 0.1+ | 0.3− | | | | |

**2006 UJ$_{113}$ = 2004 GN$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 181.29871 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19717402 | $\omega$ | 177.93105 | | −0.93695781 | +0.34332468 | |
| $a$ | 2.9234988 | $\Omega$ | 22.48911 | | −0.32300179 | −0.77981051 | |
| $e$ | 0.0331309 | $i$ | 9.79927 | | −0.13334132 | −0.52347276 | |
| $P$ | 5.00 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− |
| 2001 11 12 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2001 11 12 | 691 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2004 04 12 | 691 | 0.4+ | 0.5+ | 2006 10 17 | 703 | 1.4− | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.3− |
| 2004 04 12 | 691 | 0.3+ | 0.6+ | 2006 10 17 | 703 | (2.3+ | 0.7+) | 2006 10 27 | 691 | 0.1− | 0.2− |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 1.2+ | 0.6+ | 2006 10 31 | 691 | 0.4− | 0.3+ |
| 2004 04 14 | 291 | 0.3+ | 0.2+ | 2006 10 17 | 703 | 0.5+ | 1.3− | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2004 04 14 | 291 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.4+ |
| 2004 04 14 | 291 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 2006 09 18 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.5+ |
| 2006 09 18 | 691 | 0.0 | 0.6+ | 2006 10 21 | 703 | (2.6− | 2.4−) | 2006 11 10 | 691 | 0.4− | 0.2+ |
| 2006 09 18 | 691 | 0.3+ | 0.5+ | 2006 10 21 | 703 | 0.9− | 0.2− | 2006 11 16 | 691 | 0.4− | 0.3+ |
| 2006 09 24 | 691 | 0.1− | 0.2− | 2006 10 21 | 703 | 0.4− | 0.7+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2006 09 24 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 703 | (1.3− | 1.6−) | 2006 11 16 | 691 | 0.1− | 0.3− |
| 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2− | | | | |

**2006 UN$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.52810 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18970801 | $\omega$ | 266.75788 | | −0.44192999 | −0.89456775 | |
| $a$ | 2.9997077 | $\Omega$ | 209.75651 | | +0.86713051 | −0.40697070 | |
| $e$ | 0.0749360 | $i$ | 7.72122 | | +0.22974456 | −0.18472520 | |
| $P$ | 5.20 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 03 | 691 | 0.2+ | 0.0 | 2006 10 02 | 691 | 1.0+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− |
| 1996 12 03 | 691 | 0.2− | 0.2− | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1+ |
| 1996 12 03 | 691 | 0.0 | 0.2− | 2006 10 11 | 691 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.5− | 0.1+ |
| 2004 05 15 | 599 | 0.3+ | 1.1− | 2006 10 11 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1+ |
| 2004 05 15 | 599 | 0.5− | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.9+ |
| 2006 09 24 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 1.0− | 0.6+ |
| 2006 09 24 | 691 | 0.1+ | 0.4− | 2006 10 19 | 691 | 0.2− | 0.6+ | 2006 11 11 | G96 | 1.0− | 0.3+ |
| 2006 09 24 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.4+ |
| 2006 10 02 | 691 | 0.6+ | 0.2− | 2006 10 23 | 691 | 0.6− | 0.0 | | | | |
| 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1+ | | | | |

**2006 UZ$_{113}$ = 2004 HK$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.79715 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18892873 | $\omega$ | 226.32721 | | −0.33029030 | +0.94374171 | |
| $a$ | 3.0079507 | $\Omega$ | 24.40021 | | −0.85437742 | −0.29166787 | |
| $e$ | 0.0558614 | $i$ | 2.23650 | | −0.40118269 | −0.15582499 | |
| $P$ | 5.22 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.5− | 0.4+ | 2004 04 25 | 691 | 0.1+ | 1.0+ | 2006 10 19 | 691 | 0.3− | 0.2+ |
| 1995 09 19 | 691 | 0.1− | 0.9+ | 2004 04 25 | 691 | 0.3− | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.1− |
| 1995 09 19 | 691 | 0.3− | 0.4+ | 2005 07 07 | 691 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2003 01 25 | 645 | 0.0 | 0.1+ | 2005 07 07 | 691 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 2003 01 25 | 645 | 0.1+ | 0.0 | 2005 07 07 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− |
| 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 09 18 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 1.1− |
| 2004 04 19 | 691 | 0.1+ | 0.0 | 2006 09 18 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.1− |
| 2004 04 25 | 691 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.4+ | 0.7− |

**2006 UH$_{114}$ = 1999 GX$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.61502 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19838414 | $\omega$ | 285.76453 | | +0.71742957 | +0.69633170 | |
| $a$ | 2.9115980 | $\Omega$ | 30.11106 | | −0.62255345 | +0.65401838 | |
| $e$ | 0.0706607 | $i$ | 2.33276 | | −0.31260520 | +0.29560466 | |
| $P$ | 4.97 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.2− |
| 1999 03 20 | 645 | 0.1+ | 0.0 | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 1999 03 22 | 645 | 0.1+ | 0.2+ | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.4+ |
| 1999 04 11 | 691 | (2.3− | 4.5−) | 2006 10 19 | 691 | 0.2− | 0.7+ | 2006 11 13 | G96 | 0.2− | 0.5− |
| 1999 04 11 | 691 | 1.3− | 1.1− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.7− |
| 1999 04 11 | 691 | 0.8− | 0.7− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.7− |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 13 | G96 | 1.3+ | 0.3− |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 21 | 691 | 0.3+ | 0.4− |
| 2006 09 18 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.1− | 2006 11 21 | 691 | 0.1− | 0.6− |
| 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 21 | 691 | 0.5+ | 0.0 |
| 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.1+ | | | | |

**2006 UZ$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.18713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21965944 | $\omega$ | 229.03507 | | −0.05186361 | +0.99828714 | |
| $a$ | 2.7204211 | $\Omega$ | 38.01782 | | −0.90253805 | −0.03525045 | |
| $e$ | 0.2718837 | $i$ | 2.51933 | | −0.42747543 | −0.04669252 | |
| $P$ | 4.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.4− | 0.0 | 2005 05 01 | 644 | 0.8+ | 0.2+ | 2005 06 01 | G96 | 0.3− | 0.0 |
| 2005 03 10 | G96 | 0.0 | 0.2+ | 2005 05 01 | 644 | 0.6+ | 0.1+ | 2005 06 01 | G96 | 0.6− | 0.1+ |
| 2005 03 10 | G96 | 0.3− | 0.1+ | 2005 05 01 | 644 | 0.5+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2− |
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 05 01 | 644 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.3+ |
| 2005 04 02 | G96 | 0.2− | 0.3+ | 2005 05 01 | 644 | 0.5+ | 0.0 | 2006 10 19 | 691 | 0.1− | 0.4− |
| 2005 04 02 | G96 | 0.4− | 0.1+ | 2005 05 01 | 644 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.4+ |
| 2005 04 02 | G96 | 0.2+ | 0.1+ | 2005 05 11 | G96 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ |
| 2005 04 02 | G96 | 0.3+ | 0.2+ | 2005 05 11 | G96 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.4+ |
| 2005 04 10 | G96 | 0.5+ | 0.0 | 2005 05 11 | G96 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2005 04 10 | G96 | 0.4+ | 0.3− | 2005 05 11 | G96 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.6− |
| 2005 04 10 | G96 | 0.2+ | 0.0 | 2005 06 01 | G96 | 0.6− | 0.1− | 2006 10 27 | G96 | 0.9+ | 0.1+ |
| 2005 04 10 | G96 | 0.3− | 0.1+ | 2005 06 01 | G96 | 0.6− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.1− |

**2006 UA$_{115}$ = 2004 HB$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.50678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17494008 | $\omega$ | 183.46380 | | −0.53012532 | +0.84767003 | |
| $a$ | 3.1662352 | $\Omega$ | 54.52334 | | −0.77734277 | −0.47617297 | |
| $e$ | 0.1202205 | $i$ | 1.44661 | | −0.33868180 | −0.23391199 | |
| $P$ | 5.63 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 20 | 291 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2004 04 20 | 291 | 0.2− | 0.0 | 2006 09 24 | 691 | 1.1+ | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.2− |
| 2004 04 20 | 291 | 0.1− | 0.1− | 2006 10 02 | 691 | 0.7− | 0.5+ | 2006 10 27 | G96 | 0.5+ | 0.4− |
| 2004 04 30 | 291 | 0.2+ | 0.1+ | 2006 10 02 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2004 04 30 | 291 | 0.1+ | 0.0 | 2006 10 02 | 691 | 0.8− | 0.1− | 2006 11 11 | G96 | 0.9+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 30 | 291 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2006 09 19 | 691 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2006 09 19 | 691 | 0.1+ | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.8+ | 0.0 |
| 2006 09 19 | 691 | 0.0 | 0.6− | 2006 10 23 | 691 | 0.3− | 0.2+ | | | | |
| 2006 09 24 | 691 | 0.6+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.4− | | | | |

**2006 UQ$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 216.93033 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26026270 | $\omega$ | 328.04563 | | −0.98477922 | | −0.16993877 |
| $a$ | 2.4295626 | $\Omega$ | 202.25696 | | +0.17273147 | | −0.93352814 |
| $e$ | 0.1051081 | $i$ | 5.52677 | | +0.01933197 | | −0.31566759 |
| $P$ | 3.79 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 23 | 291 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.3+ |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2004 02 11 | 644 | 0.0 | 0.1− | 2006 10 23 | 291 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2+ |
| 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 10 23 | 291 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.7− |
| 2006 10 19 | 691 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.2+ |
| 2006 10 19 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.5− | 0.1+ |
| 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.0 | | | | |
| 2006 10 23 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.3− | 0.5− | | | | |

**2006 UF$_{116}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.79458 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23900094 | $\omega$ | 152.75501 | | +0.23047707 | | +0.96902780 |
| $a$ | 2.5715974 | $\Omega$ | 130.43044 | | −0.91265589 | | +0.24688201 |
| $e$ | 0.2417866 | $i$ | 6.69078 | | −0.33754933 | | −0.00586473 |
| $P$ | 4.12 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.2− | 0.1− | 2005 04 17 | 691 | 0.2+ | 0.1+ | 2006 10 09 | 644 | 0.1− | 0.1− |
| 1993 04 21 | 691 | 0.3+ | 0.1− | 2005 04 17 | 691 | 0.1− | 0.1− | 2006 10 09 | 644 | 0.3+ | 0.1− |
| 1993 04 21 | 691 | 0.3− | 0.2+ | 2005 04 17 | 691 | 0.1+ | 0.4− | 2006 10 09 | 644 | 1.0+ | 0.0 |
| 2001 03 19 | 699 | 0.4+ | 0.1− | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.4− |
| 2001 03 19 | 699 | 0.1+ | 0.2− | 2006 08 29 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.1+ |
| 2001 03 19 | 699 | 0.3− | 0.9+ | 2006 08 29 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.0 | 0.6− |
| 2001 03 19 | 645 | 0.1− | 0.2− | 2006 09 14 | 703 | 0.0 | 0.6− | 2006 10 19 | 703 | 1.3− | 1.0+ |
| 2001 03 19 | 645 | 0.1− | 0.2− | 2006 09 14 | 703 | 1.0− | 0.4− | 2006 10 21 | 644 | 0.5+ | 0.2− |
| 2001 03 19 | 699 | 0.4+ | 0.4− | 2006 09 14 | 703 | 0.2+ | 0.2+ | 2006 10 21 | 644 | 0.5+ | 0.4+ |
| 2005 04 05 | 152 | (2.3− | 0.5+) | 2006 09 14 | 703 | 0.3− | 0.4+ | 2006 10 21 | 644 | 0.5+ | 0.1− |
| 2005 04 05 | 152 | 0.1+ | 0.4+ | 2006 09 20 | 644 | 0.3− | 0.3+ | 2006 10 24 | 644 | 0.0 | 0.1+ |
| 2005 04 05 | 152 | 1.0− | 0.3+ | 2006 09 20 | 644 | 0.1− | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.2− |
| 2005 04 05 | 152 | 0.4+ | 0.1+ | 2006 09 20 | 644 | 0.0 | 0.1+ | 2006 10 24 | 644 | 0.0 | 0.0 |

**2006 UW$_{116}$ = 1999 UE$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.71844 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27612216 | $\omega$ | 141.05628 | | −0.98947152 | | −0.14216529 |
| $a$ | 2.3356183 | $\Omega$ | 30.80290 | | +0.11598854 | | −0.89099618 |
| $e$ | 0.1507101 | $i$ | 3.03508 | | +0.08656083 | | −0.43117842 |
| $P$ | 3.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.1− | 0.4− | 2006 09 25 | G96 | 0.7+ | 0.1− | 2006 10 28 | 691 | 0.4− | 0.1+ |
| 1997 01 09 | 691 | 0.0 | 0.1+ | 2006 09 25 | G96 | 0.4+ | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 1997 01 09 | 691 | (2.0+ | 3.5−) | 2006 09 25 | G96 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1999 10 30 | 691 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.4− |
| 1999 10 30 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 1999 10 30 | 691 | 0.2+ | 0.6− | 2006 10 19 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 1999 11 09 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.3− | 2006 11 11 | 691 | 0.6+ | 0.3+ |
| 1999 11 09 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 1999 11 09 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2− |
| 2003 12 28 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2003 12 28 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2003 12 28 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.7+ | 0.8− | 2006 10 27 | G96 | 0.5+ | 0.6− | 2006 11 13 | G96 | 0.9− | 1.0+ |

**2006 UX$_{116}$ = 2005 LU$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 174.92868 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30121127 | $\omega$ | 4.44348 | | −0.89928476 | | +0.43629324 |
| $a$ | 2.2040523 | $\Omega$ | 201.50527 | | −0.40380021 | | −0.85510254 |
| $e$ | 0.1082962 | $i$ | 4.78504 | | −0.16802472 | | −0.28008543 |
| $P$ | 3.27 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 09 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2005 06 09 | 691 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.5+ |
| 2005 06 09 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.4+ |
| 2005 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2005 06 14 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2005 06 14 | 691 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.5− | 2006 11 16 | G96 | 0.2+ | 0.6− |
| 2006 09 25 | G96 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.7− | 0.5− | 2006 11 16 | G96 | 0.6+ | 0.3− |
| 2006 09 25 | G96 | 0.8+ | 0.9+ | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.8− |
| 2006 09 25 | G96 | 0.8+ | 0.5− | 2006 10 28 | 691 | 0.0 | 0.3+ | | | | |

**2006 UZ$_{116}$ = 2006 SE$_{201}$ = 2005 MS$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.18977 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17435460 | $\omega$ | 32.50088 | | −0.06353473 | | +0.99796483 |
| $a$ | 3.1733194 | $\Omega$ | 233.85696 | | −0.91706072 | | −0.06053027 |
| $e$ | 0.0305321 | $i$ | 0.38558 | | −0.39365336 | | −0.02005697 |
| $P$ | 5.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 21 | 691 | 0.1+ | 0.2− | 2006 09 24 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.1− |
| 2000 10 21 | 691 | 0.2+ | 0.4− | 2006 09 24 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.2− |
| 2000 10 21 | 691 | 0.0 | 0.1− | 2006 09 24 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2005 06 30 | 691 | 0.1+ | 0.2+ | 2006 09 28 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2005 06 30 | 691 | 0.3+ | 0.7+ | 2006 09 28 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 2005 06 30 | 691 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.6+ | 0.3− |
| 2005 07 03 | G96 | 0.1− | 0.3+ | 2006 10 19 | 691 | 0.7− | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2005 07 03 | G96 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.8− |
| 2005 07 03 | G96 | 1.2− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2005 07 03 | G96 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.4+ | 0.3+ | 2006 11 13 | G96 | 1.1+ | 0.5− |
| 2005 08 31 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.2− | 1.5− |
| 2005 08 31 | 691 | 0.3− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.4− |
| 2005 08 31 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 13 | G96 | 0.2− | 0.3+ |

**2006 UB$_{117}$ = 2001 TD$_{230}$ = 2004 FN$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.00371 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20095867 | $\omega$ | 321.69834 | | +0.97930638 | | +0.20166029 |
| $a$ | 2.8866772 | $\Omega$ | 26.68253 | | −0.17503307 | | +0.88633322 |
| $e$ | 0.0867847 | $i$ | 2.18137 | | −0.10159938 | | +0.41682917 |
| $P$ | 4.90 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2004 03 31 | 291 | 0.4+ | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 10 15 | 691 | 0.1− | 0.4+ | 2006 09 18 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2001 10 15 | 691 | 0.1− | 0.5+ | 2006 09 18 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2001 10 15 | 691 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 10 18 | 644 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.9− |
| 2001 10 18 | 644 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.4+ | 0.5− |
| 2001 10 18 | 644 | 0.3+ | 0.6+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.4+ | 0.2+ |
| 2002 12 31 | 645 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.5− | 0.3+ | | |
| 2004 03 29 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.7+ | 0.1− | | |
| 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.3− | 0.4+ | | |
| 2004 03 29 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 20 | 691 | 0.3+ | 0.2+ | | |
| 2004 03 31 | 291 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.6− | 0.4+ | | |
| 2004 03 31 | 291 | 0.4+ | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1− | | |

**2006 UP$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 201.11382 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26346610 | $\omega$ | 347.77344 | | −0.97543072 | +0.21118440 | |
| $a$ | 2.4098290 | $\Omega$ | 204.68992 | | −0.18735672 | −0.94500855 | |
| $e$ | 0.2661200 | $i$ | 8.63829 | | −0.11589811 | −0.24971982 | |
| $P$ | 3.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 291 | 0.6+ | 0.1+ | 2005 09 03 | 644 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.3+ | | |
| 2002 10 10 | 291 | 0.1− | 0.1− | 2006 09 25 | G96 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1+ | | |
| 2002 10 10 | 291 | 0.6− | 0.0 | 2006 09 25 | G96 | 0.5− | 0.1− | 2006 10 23 | 691 | 0.3+ | 0.2+ | | |
| 2005 06 28 | 644 | 0.2+ | 0.1− | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 11 01 | 691 | 0.2− | 0.1− | | |
| 2005 06 28 | 644 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.6+ | 0.1+ | | |
| 2005 06 28 | 644 | 0.3+ | 0.5− | 2006 10 15 | 691 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.2− | | |
| 2005 07 30 | 644 | 0.0 | 0.2− | 2006 10 15 | 691 | 0.7+ | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.2− | | |
| 2005 07 30 | 644 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.6− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2− | | |
| 2005 07 30 | 644 | 0.0 | 0.1− | 2006 10 19 | 691 | 1.1− | 0.6− | 2006 11 14 | G96 | 0.2+ | 0.4+ | | |
| 2005 09 03 | 644 | 0.3− | 0.3+ | 2006 10 19 | 691 | 0.4+ | 0.3+ | 2006 11 14 | G96 | 0.4+ | 0.4− | | |
| 2005 09 03 | 644 | 0.6− | 0.0 | 2006 10 19 | 691 | 0.4− | 0.1+ | | | | | | |

**2006 UC$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 188.93565 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17086977 | $\omega$ | 167.24144 | | −0.93983354 | +0.31405350 | |
| $a$ | 3.2163198 | $\Omega$ | 32.08383 | | −0.33145595 | −0.74286759 | |
| $e$ | 0.0885911 | $i$ | 14.66524 | | −0.08276400 | −0.59120059 | |
| $P$ | 5.77 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 08 | 644 | 0.3− | 0.2− | 2006 10 11 | 691 | 0.4− | 0.5+ | 2006 10 29 | 691 | 0.0 | 0.4+ | | |
| 2003 03 08 | 644 | 0.1− | 0.1+ | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.4− | | |
| 2003 03 08 | 644 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.5+ | | |
| 2003 03 23 | 644 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.5− | | |
| 2003 03 23 | 644 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.2+ | | |
| 2003 03 23 | 644 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.1− | | |
| 2006 09 18 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.2+ | | |
| 2006 09 18 | 691 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.4− | | |
| 2006 09 18 | 691 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.2− | 0.3− | | |
| 2006 09 26 | G96 | 0.1− | 0.6− | 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.3− | | |
| 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 23 | 691 | 0.3− | 0.0 | | |
| 2006 09 26 | G96 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.6+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.3− | | |
| 2006 09 26 | G96 | 0.5+ | 0.6− | 2006 10 29 | 691 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.1+ | | |
| 2006 10 11 | 691 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.2+ | | | | | | |

**2006 UD$_{118}$ = 2004 FJ$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.87676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21475409 | $\omega$ | 272.28103 | | +0.81972358 | +0.57270907 | |
| $a$ | 2.7616910 | $\Omega$ | 52.77972 | | −0.52163672 | +0.75196297 | |
| $e$ | 0.0532354 | $i$ | 0.54593 | | −0.23653411 | +0.32642918 | |
| $P$ | 4.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 10 28 | 691 | 0.3− | 0.3+ | | |
| 2004 03 17 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.3+ | | |
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 10 11 | 691 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.4+ | | |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.5− | | |
| 2004 03 23 | 691 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.4− | | |
| 2004 03 23 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.6− | 0.5+ | 2006 11 15 | 691 | 0.3+ | 0.2− | | |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.0 | | |
| 2006 09 25 | G96 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 17 | 691 | 0.5+ | 0.3− | | |
| 2006 09 25 | G96 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.3− | | |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.3− | | |
| 2006 10 04 | G96 | 1.2+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 20 | 691 | 0.1− | 0.6+ | | |
| 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 2006 10 04 | G96 | 0.8+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.1− | | | | | | |

**2006 UE$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.26319 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24043331 | $\omega$ | 54.00598 | | +0.07916204 | −0.98694679 | |
| $a$ | 2.5613738 | $\Omega$ | 32.32368 | | +0.80922413 | −0.01853660 | |
| $e$ | 0.0922107 | $i$ | 15.20607 | | +0.58214232 | +0.15997632 | |
| $P$ | 4.10 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 12 | 691 | 0.6− | 0.6− | 2006 10 19 | 691 | 0.5− | 0.1+ | 2006 10 23 | 691 | 0.7− | 0.1+ | | |
| 1996 04 12 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2+ | | |
| 1996 04 12 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.1− | | |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.4− | | |
| 2002 11 24 | 644 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.5− | | |
| 2002 11 24 | 644 | 0.8− | 0.5− | 2006 10 20 | 644 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.6− | | |
| 2002 12 11 | 644 | 0.5+ | 0.1− | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.6+ | 0.3− | | |
| 2002 12 11 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 703 | (0.6− | 1.5−) | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2002 12 11 | 644 | 0.5+ | 0.1− | 2006 10 21 | 703 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2004 04 21 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 703 | 0.3+ | 0.8− | 2006 10 28 | 691 | 0.3+ | 0.0 | | |
| 2004 04 21 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 703 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.3+ | 0.1+ | | |
| 2004 04 21 | 691 | 0.1+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | | |
| 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.1− | | |
| 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 10 21 | 644 | 0.5+ | 0.2− | | | | | | |

**2006 UQ$_{118}$ = 2001 US$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 268.70695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19672760 | $\omega$ | 71.26895 | | −0.53945651 | −0.84160270 | |
| $a$ | 2.9279199 | $\Omega$ | 51.40622 | | +0.75930400 | −0.49972811 | |
| $e$ | 0.0546988 | $i$ | 1.92816 | | +0.36392872 | −0.20488216 | |
| $P$ | 5.01 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | 0.9− | 0.9− | 2006 10 11 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.4+ | | |
| 2001 10 23 | 704 | 0.1+ | 0.8− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.6+ | 0.2+ | | |
| 2001 10 23 | 704 | 0.5− | 0.8− | 2006 10 11 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2001 10 23 | 704 | 0.4− | 1.2− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.1− | | |
| 2001 10 24 | 704 | 0.9+ | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.1− | | |
| 2001 10 24 | 704 | 0.3+ | 1.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.8− | 0.5− | | |
| 2001 10 24 | 704 | 0.3+ | 0.9− | 2006 10 21 | 644 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.0 | | |
| 2001 10 24 | 704 | 0.4− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.2− | 0.0 | | |
| 2001 10 24 | 704 | 0.6+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.0 | | |
| 2001 10 24 | 704 | 0.3− | 0.9+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.3− | 0.0 | | |
| 2001 10 24 | 704 | 0.8+ | 1.0− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.2− | 0.0 | | |
| 2001 10 24 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 17 | 691 | 0.3− | 0.1+ | | |
| 2001 10 24 | 704 | 0.7+ | 0.4− | 2006 10 27 | G96 | 0.6− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 27 | G96 | 0.2− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.3− | | |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.2+ | | | | | | |
| 2006 09 26 | G96 | 0.0 | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.4+ | | | | | | |

**2006 UH$_{119}$ = 2004 DS$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 198.11790 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24073584 | $\omega$ | 358.72923 | | −0.99085127 | +0.13470971 | |
| $a$ | 2.5592274 | $\Omega$ | 189.02497 | | −0.12335681 | −0.92861804 | |
| $e$ | 0.0400304 | $i$ | 2.99246 | | −0.05474361 | −0.34571930 | |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 26 | 704 | 0.9+ | 0.6+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2004 02 26 | 704 | 0.9+ | 1.3− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.3+ |
| 2004 02 26 | 704 | (2.4− | 1.5−) | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2004 02 26 | 704 | 0.3− | 0.6− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2004 02 29 | 691 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.7− | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.6− |
| 2006 09 30 | G96 | 0.3− | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.7− |
| 2006 09 30 | G96 | 0.6+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.4+ | | | | |
| 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 10 27 | G96 | 0.3+ | 0.1− | | | | |

**2006 US$_{119}$ = 2004 FC$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.74128 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22867996 | $\omega$ | 76.30878 | | −0.37037990 | −0.92156250 | |
| $a$ | 2.6484025 | $\Omega$ | 36.12704 | | +0.75759211 | −0.37218856 | |
| $e$ | 0.0579896 | $i$ | 11.38342 | | +0.53746900 | −0.11044564 | |
| $P$ | 4.31 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 21 | 691 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.1+ |
| 2004 03 21 | 691 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2004 03 21 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.6+ | 0.4− |
| 2004 03 28 | 691 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 13 | G96 | 1.1− | 0.4+ |
| 2004 03 28 | 691 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.4− | 0.1− |
| 2004 03 28 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2006 10 19 | 691 | 0.9+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.3+ | 0.3+ |
| 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | | | |

**2006 UY$_{119}$ = 2002 RR$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.35868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25803807 | $\omega$ | 254.65017 | | +0.69319465 | +0.72002751 | |
| $a$ | 2.4435067 | $\Omega$ | 59.27984 | | −0.64604049 | +0.64057025 | |
| $e$ | 0.2460446 | $i$ | 2.15147 | | −0.31955102 | +0.26688976 | |
| $P$ | 3.82 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 644 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1+ |
| 2002 09 11 | 644 | 0.4+ | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.3− |
| 2002 09 11 | 644 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.1− |
| 2002 09 13 | 644 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 09 13 | 644 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2002 09 13 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.8+ | 0.6− |
| 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | | | | |

**2006 UH$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.17816 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26167853 | $\omega$ | 72.68289 | | −0.65866936 | −0.74998193 | |
| $a$ | 2.4207912 | $\Omega$ | 58.67263 | | +0.66055911 | −0.61497655 | |
| $e$ | 0.1291979 | $i$ | 4.07336 | | +0.36030035 | −0.24357944 | |
| $P$ | 3.77 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2004 07 15 | 807 | 1.0+ | 0.3− | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 01 | 691 | 0.8− | 0.2+ |
| 2004 07 16 | 807 | 0.8− | 0.6+ | 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.6+ | 0.0 |
| 2006 10 02 | G96 | 0.2− | 0.5− | 2006 10 19 | 691 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 1.9+ | 0.3− |
| 2006 10 02 | G96 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.7− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2006 10 11 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.4− |

**2006 UV$_{120}$ = 2004 EN$_{97}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.24543 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23460602 | $\omega$ | 15.08431 | | −0.65561252 | −0.75403707 | |
| $a$ | 2.6036141 | $\Omega$ | 115.89937 | | +0.68810356 | −0.61842222 | |
| $e$ | 0.0193259 | $i$ | 2.54881 | | +0.31094325 | −0.22131890 | |
| $P$ | 4.20 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.3+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.6− |
| 2004 03 15 | 691 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 2004 03 23 | 691 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.4− |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 10 22 | 691 | 0.3+ | 0.1− | 2006 11 11 | 691 | (1.8+ | 0.8−) |
| 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 23 | 691 | 0.2− | 0.2+ | | | | |

**2006 UB$_{121}$ = 2005 ND$_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.80460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20443504 | $\omega$ | 306.01547 | | +0.07917726 | −0.99636560 | |
| $a$ | 2.8538589 | $\Omega$ | 139.40799 | | +0.92943131 | +0.06239354 | |
| $e$ | 0.0433299 | $i$ | 2.76689 | | +0.36040034 | +0.05798827 | |
| $P$ | 4.82 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 291 | 0.2− | 0.2− | 2006 10 02 | G96 | 0.6+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.2− |
| 2003 01 11 | 291 | 0.0 | 0.1+ | 2006 10 02 | G96 | 1.0+ | 0.3− | 2006 10 23 | 691 | 1.0− | 0.1− |
| 2003 01 11 | 291 | 0.4+ | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.3− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.8+ | 0.1− | 2006 10 23 | 691 | 1.0− | 0.1− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2005 07 07 | 568 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.9+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2005 07 07 | 568 | 0.1− | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.4− |
| 2005 07 07 | 568 | 0.1− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.6+ | | | | |
| 2005 07 08 | 568 | 0.2+ | 0.8+ | 2006 10 22 | 691 | 0.3− | 0.2− | | | | |

**2006 UE$_{121}$ = 2005 NS$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.85763 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18548595 | $\omega$ | 279.50424 | | +0.70621870 | −0.70734000 | |
| $a$ | 3.0450566 | $\Omega$ | 125.52227 | | +0.66335302 | +0.64606426 | |
| $e$ | 0.1834743 | $i$ | 2.14187 | | +0.24742256 | +0.28682938 | |
| $P$ | 5.31 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 09 | 675 | 0.5− | 0.2− | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2005 07 09 | 675 | 0.9− | 0.4− | 2006 10 11 | 691 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2005 07 09 | 675 | 0.8+ | 0.3− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2005 07 10 | 675 | 0.4+ | 1.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2005 07 10 | 675 | 0.3− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2005 07 10 | 675 | 0.6+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.3− |
| 2006 10 02 | G96 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.7− | | |
| 2006 10 02 | G96 | 0.3− | 0.4− | 2006 10 23 | 691 | 0.3− | 0.0 | | | | | | |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.2− | | | | | | |

**2006 UF$_{121}$ = 2001 QQ$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 159.41677 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23691800 | $\omega$ | 32.54058 | | −0.73189489 | +0.68107914 | |
| $a$ | 2.5866481 | $\Omega$ | 190.47148 | | −0.64774275 | −0.70516380 | |
| $e$ | 0.1471543 | $i$ | 6.78522 | | −0.21156370 | −0.19716802 | |
| $P$ | 4.16 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.1+ | 0.2− | 2004 02 13 | 699 | 1.2− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.5+ | | |
| 2001 08 17 | 644 | 0.2− | 0.1+ | 2005 06 15 | 691 | 0.8− | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.4+ | | |
| 2001 08 17 | 644 | 0.0 | 0.2+ | 2005 06 15 | 691 | 0.6+ | 0.2+ | 2006 10 23 | 691 | 0.5+ | 0.2− | | |
| 2001 08 18 | 644 | 0.2− | 0.2+ | 2005 06 15 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.1+ | | |
| 2001 08 18 | 644 | 0.2+ | 0.3+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.2+ | 0.3− | | |
| 2001 08 18 | 644 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.5+ | 0.5− | | |
| 2004 02 13 | 699 | 0.6+ | 1.4+ | 2006 10 02 | G96 | 0.3− | 0.7− | 2006 11 01 | G96 | 0.3− | 0.4− | | |
| 2004 02 13 | 699 | 1.0+ | 0.2+ | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 01 | G96 | 0.1− | 0.3− | | |
| 2004 02 13 | 699 | 0.5+ | 1.7+ | 2006 10 19 | 691 | 0.4− | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.4− | | |

**2006 UW$_{121}$ = 2004 CS$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 262.98033 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27033337 | $\omega$ | 68.51421 | | −0.71916310 | −0.69291580 | |
| $a$ | 2.3688430 | $\Omega$ | 67.58231 | | +0.61501706 | −0.66940160 | |
| $e$ | 0.1464190 | $i$ | 3.20557 | | +0.32335500 | −0.26789773 | |
| $P$ | 3.65 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 333 | 1.3+ | 0.3− | 2004 02 16 | 704 | 0.7+ | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.0 | | |
| 2004 02 11 | 333 | 0.2− | 0.3+ | 2004 02 16 | 704 | 1.0+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.2− | | |
| 2004 02 11 | 333 | 0.9− | 0.2+ | 2004 02 16 | 704 | 1.4+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.2− | | |
| 2004 02 13 | 691 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1− | | |
| 2004 02 13 | 691 | 0.3− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.3− | | |
| 2004 02 13 | 691 | 0.3− | 0.3− | 2006 10 19 | 691 | 0.4+ | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.1+ | | |
| 2004 02 16 | 704 | 0.1− | 1.2+ | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.7+ | | |
| 2004 02 16 | 704 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.5+ | | |

**2006 UL$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.73180 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22625739 | $\omega$ | 279.84674 | | +0.76911458 | +0.63259328 | |
| $a$ | 2.6672734 | $\Omega$ | 40.99182 | | −0.51839782 | +0.70080018 | |
| $e$ | 0.2249785 | $i$ | 7.97799 | | −0.37380003 | +0.32970419 | |
| $P$ | 4.36 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.6− | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.2+ | | |
| 2005 04 16 | 691 | 0.3+ | 0.5+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2005 05 07 | G96 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.3+ | | |
| 2005 05 07 | G96 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.5− | | |
| 2005 05 07 | G96 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.3− | | |
| 2005 05 07 | G96 | 0.3− | 0.2− | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.3+ | | |
| 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.2+ | | |
| 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.5+ | | |
| 2006 10 02 | G96 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.4− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.0 | | |
| 2006 10 02 | G96 | 0.2+ | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 17 | 691 | 0.2− | 0.5− | | |
| 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.4+ | | | | | | |
| 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.2+ | | | | | | |

**2006 UY$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.66583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23248453 | $\omega$ | 162.52400 | | +0.98856515 | +0.15059562 | |
| $a$ | 2.6194292 | $\Omega$ | 188.82535 | | −0.14367748 | +0.92508457 | |
| $e$ | 0.1504449 | $i$ | 2.89173 | | −0.04577914 | +0.34862514 | |
| $P$ | 4.24 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 19 | G96 | 0.2− | 0.3+ | 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.0 | | |
| 2005 05 19 | G96 | 0.2+ | 0.2− | 2006 10 11 | 644 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 | | |
| 2005 05 19 | G96 | 0.2+ | 0.0 | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.2+ | 0.8− | | |
| 2005 05 19 | G96 | 0.1− | 0.4+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.1− | | |
| 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.9+ | 0.1+ | | |
| 2005 06 08 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 | | |
| 2005 06 08 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.3− | 0.2− | | |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.3− | | |
| 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.2− | | |
| 2006 09 25 | G96 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.0 | | |

**2006 UB$_{123}$ = 2000 CN$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.26603 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26030868 | $\omega$ | 333.84053 | | −0.43201182 | −0.90164081 | |
| $a$ | 2.4292765 | $\Omega$ | 141.74550 | | +0.83307462 | −0.40755470 | |
| $e$ | 0.1322047 | $i$ | 1.87327 | | +0.34547426 | −0.14471704 | |
| $P$ | 3.79 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 691 | 0.1+ | 1.1+ | 2006 09 18 | 691 | 0.5− | 0.1+ | 2006 10 22 | 691 | 0.0 | 0.0 | | |
| 2000 02 08 | 691 | 0.2+ | 0.6+ | 2006 09 18 | 691 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.1− | | |
| 2000 02 08 | 691 | 0.1+ | 0.5+ | 2006 10 19 | 691 | 0.1+ | 0.5− | 2006 10 23 | 691 | 0.3− | 0.4− | | |
| 2000 02 10 | 691 | 0.3− | 1.1− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.2+ | 0.5− | | |
| 2000 02 10 | 691 | 0.1− | 0.5− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.3− | 0.0 | | |
| 2000 02 10 | 691 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.1+ | | |
| 2006 09 18 | 691 | 0.0 | 0.5+ | 2006 10 22 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.6+ | 0.1+ | | |

**2006 UH$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.65478 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23714196 | $\omega$ | 90.52943 | | +0.21070110 | +0.97747271 | |
| $a$ | 2.5850192 | $\Omega$ | 191.65610 | | −0.91941811 | +0.19386914 | |
| $e$ | 0.1369323 | $i$ | 3.50015 | | −0.33207738 | +0.08343770 | |
| $P$ | 4.16 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 12 | 691 | 0.1+ | 0.3− | 2005 06 13 | 691 | 0.5− | 0.8− | 2006 10 23 | 691 | 0.2− | 0.0 | | |
| 1998 12 12 | 691 | 0.1+ | 0.6− | 2005 06 13 | 691 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | | |
| 1998 12 12 | 691 | 0.0 | 0.5− | 2005 06 13 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.1− | 0.0 | | |
| 2005 03 17 | G96 | 0.4− | 0.3+ | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.0 | | |
| 2005 03 17 | G96 | 0.7− | 0.5+ | 2006 09 26 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.2+ | | |
| 2005 03 17 | G96 | 0.6− | 0.2− | 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.2+ | 0.1+ | | |
| 2005 03 17 | G96 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.3+ | | |
| 2005 06 01 | 691 | 0.1− | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 | | |
| 2005 06 01 | 691 | 0.3+ | 0.3+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.1+ | | |
| 2005 06 01 | 691 | 0.1+ | 0.2+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.3− | | |
| 2005 06 13 | 691 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.5+ | 0.0 | | |
| 2005 06 13 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.1+ | | |
| 2005 06 13 | 691 | 0.2+ | 0.3− | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.5+ | 0.1− | | |

**2006 UD$_{124}$ = 2006 SJ$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.16514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28589327 | $\omega$ | 336.34322 | | −0.97263697 | | −0.23176458 |
| $a$ | 2.2820935 | $\Omega$ | 190.29549 | | +0.22499902 | | −0.92227234 |
| $e$ | 0.0919431 | $i$ | 5.20108 | | +0.05790299 | | −0.30935240 |
| $P$ | 3.45 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 31 | 691 | 0.1− | 0.4− | 2006 09 24 | 691 | 0.3+ | 0.1− | 2006 10 22 | 691 | 0.6− | 0.0 |
| 1999 10 31 | 691 | 0.2+ | 0.2− | 2006 09 24 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.5− |
| 1999 10 31 | 691 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.1+ | 0.2− | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 10 02 | 691 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2001 04 16 | 645 | 0.0 | 0.1− | 2006 10 02 | 691 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.3− |
| 2001 04 27 | 691 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2001 04 27 | 691 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.8− | 0.0 |
| 2001 04 27 | 691 | 0.1− | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 21 | 691 | 0.1− | 0.0 |
| 2006 09 18 | 691 | 0.4+ | 0.3− | 2006 10 21 | G96 | 0.5+ | 0.1+ | 2006 11 21 | 691 | 0.3− | 0.4+ |
| 2006 09 18 | 691 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.5+ | 0.0 | 2006 11 21 | 691 | 0.1+ | 0.3+ |
| 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.6+ | 0.6− | | | | |
| 2006 09 24 | 691 | 0.4+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− | | | | |

**2006 UG$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.30929 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18906016 | $\omega$ | 21.12285 | | +0.94823919 | | +0.29497373 |
| $a$ | 3.0065565 | $\Omega$ | 321.09857 | | −0.31154334 | | +0.79238778 |
| $e$ | 0.1045055 | $i$ | 10.79455 | | −0.06150758 | | +0.53395890 |
| $P$ | 5.21 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 27 | 699 | 0.5+ | 0.4− | 2006 09 28 | 703 | 0.5+ | 0.4− | 2006 10 24 | 644 | 0.6− | 0.0 |
| 2003 01 27 | 699 | 0.8− | 0.5+ | 2006 09 28 | 703 | 0.4+ | 0.5+ | 2006 10 24 | 644 | 0.2− | 0.4− |
| 2003 01 27 | 699 | 0.2− | 0.6+ | 2006 09 28 | 703 | 0.2+ | 0.3− | 2006 10 24 | 644 | 0.2− | 0.3− |
| 2003 01 27 | 699 | 0.4+ | 0.8− | 2006 10 19 | 703 | 0.4− | 0.1− | 2006 11 23 | 703 | 0.6+ | 1.0+ |
| 2004 04 15 | 703 | (0.6− | 2.3−) | 2006 10 19 | 703 | 0.1− | 0.0 | 2006 11 23 | 703 | 1.0+ | 0.8+ |
| 2004 04 15 | 703 | 0.1− | 1.1− | 2006 10 19 | 703 | 0.9− | 0.1− | 2006 11 23 | 703 | 0.2− | 0.1+ |
| 2004 04 15 | 703 | 1.0+ | 0.5+ | 2006 10 23 | 644 | 0.4+ | 0.1− | 2006 11 23 | 703 | 0.7− | 0.6− |
| 2004 04 15 | 703 | 1.2− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1− | | | | |
| 2006 09 28 | 703 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.0 | | | | |

**2006 UM$_{124}$ = 2004 FN$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.70509 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21770684 | $\omega$ | 27.83252 | | +0.89326025 | | −0.44953627 |
| $a$ | 2.7366630 | $\Omega$ | 358.87667 | | +0.39342414 | | +0.78369439 |
| $e$ | 0.0318974 | $i$ | 5.29073 | | +0.21749385 | | +0.42864933 |
| $P$ | 4.53 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.1− | 0.2+ |
| 2004 03 18 | 691 | 0.3− | 0.4− | 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.4− | 0.0 |
| 2004 03 18 | 691 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.4− | 0.2− |
| 2004 03 21 | 291 | 0.0 | 0.3+ | 2006 09 25 | 691 | 0.2+ | 0.4− | 2006 10 22 | G96 | 0.7− | 0.0 |
| 2004 03 21 | 291 | 0.2− | 0.5+ | 2006 09 25 | 691 | 0.3+ | 0.4− | 2006 10 22 | G96 | 0.0 | 0.1− |
| 2004 03 21 | 291 | 0.3+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.6+ | 2006 10 22 | G96 | 0.2+ | 0.3+ |
| 2006 09 17 | 691 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.4+ | 0.1+ | | | | |

**2006 UO$_{124}$ = 2004 FM$_{119}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.61950 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21427040 | $\omega$ | 123.68617 | | −0.18719067 | | −0.98216281 |
| $a$ | 2.7658456 | $\Omega$ | 337.08302 | | +0.88548373 | | −0.16087615 |
| $e$ | 0.0516197 | $i$ | 2.61599 | | +0.42529780 | | −0.09734003 |
| $P$ | 4.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 691 | 0.3− | 0.5+ | 2004 03 29 | 691 | 0.2− | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2+ |
| 1997 10 02 | 691 | 0.1− | 0.6+ | 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 10 19 | G96 | 0.1− | 0.8− |
| 1997 10 02 | 691 | 0.1+ | 0.2− | 2006 09 17 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.7− |
| 2001 05 23 | 807 | 0.2− | 0.8+ | 2006 09 17 | 691 | 0.4− | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.4− |
| 2001 05 23 | 807 | 0.4− | 0.5+ | 2006 09 17 | 691 | 0.4− | 0.2+ | 2006 10 22 | G96 | 1.2+ | 0.3+ |
| 2004 03 23 | 291 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2004 03 23 | 291 | 0.0 | 0.2+ | 2006 09 25 | 691 | 0.3+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2004 03 23 | 291 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.1+ | 0.6− | | | | |
| 2004 03 29 | 691 | 0.1+ | 0.5− | 2006 10 19 | G96 | 0.1− | 0.4− | | | | |

**2006 UU$_{124}$ = 2004 CX$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.05277 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19828500 | $\omega$ | 283.13610 | | +0.09248558 | | +0.99564220 |
| $a$ | 2.9125684 | $\Omega$ | 352.14115 | | −0.87631849 | | +0.07568679 |
| $e$ | 0.1552694 | $i$ | 5.01797 | | −0.47277090 | | +0.05448053 |
| $P$ | 4.97 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.2− | 0.0 | 2006 07 22 | G96 | 0.6− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.1+ |
| 2004 02 12 | 691 | 0.2+ | 0.1+ | 2006 07 22 | G96 | 0.3− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.4− |
| 2004 02 12 | 691 | 0.1− | 0.1+ | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.4− | 0.5− |
| 2004 02 16 | 691 | 0.0 | 0.2− | 2006 09 17 | 691 | 0.1− | 0.3+ | 2006 10 22 | G96 | 0.9+ | 0.6− |
| 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.6+ | 0.6− |
| 2004 02 16 | 691 | 0.1+ | 0.0 | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.5− |
| 2005 02 15 | 809 | 0.0 | 0.0 | 2006 09 25 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− |
| 2005 02 15 | 809 | 0.1+ | 0.3+ | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2006 07 22 | G96 | 0.3+ | 0.7− | 2006 10 19 | G96 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2006 07 22 | G96 | 0.6+ | 0.2− | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.3− |

**2006 UK$_{125}$ = 2001 TJ$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 117.98572 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21356594 | $\omega$ | 299.24512 | | −0.04767118 | | +0.99837223 |
| $a$ | 2.7719244 | $\Omega$ | 327.97618 | | −0.89472564 | | −0.05661576 |
| $e$ | 0.0273606 | $i$ | 3.38507 | | −0.44406474 | | +0.00689537 |
| $P$ | 4.62 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.3+ | 0.2− | 2006 11 18 | G96 | 0.3− | 0.5+ |
| 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.0 | | | | |

**2006 UR$_{125}$ = 2005 JD$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.02531 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22331433 | $\omega$ | 276.66567 | | +0.46484031 | | +0.88173023 |
| $a$ | 2.6906569 | $\Omega$ | 21.60774 | | −0.70121488 | | +0.42211027 |
| $e$ | 0.2619551 | $i$ | 12.62198 | | −0.54057486 | | +0.21065306 |
| $P$ | 4.41 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.3+ | 0.2− | 2006 09 28 | G96 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1+ |
| 2005 03 11 | G96 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2005 03 11 | G96 | 0.2− | 0.4− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2005 05 01 | 644 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.4+ |
| 2005 05 01 | 644 | 0.4+ | 0.4+ | 2006 10 20 | 644 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2005 05 01 | 644 | 0.6+ | 0.1+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2005 05 06 | 703 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.6+ | 0.7− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2005 05 06 | 703 | 1.3− | 0.9− | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2005 05 06 | 703 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2005 05 06 | 703 | 0.7− | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2006 09 28 | G96 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1− | | | | |
| 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.2− | | | | |

## 2006 UY$_{125}$ = 2001 WK$_{103}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 14.62316 | | | (2000.0) | | |
| $n$ | 0.19707884 | $\omega$ | 134.52701 | | +0.98678942 | −0.12257277 |
| $a$ | 2.9244400 | $\Omega$ | 232.80015 | | +0.08280822 | +0.94363260 |
| $e$ | 0.1339948 | $i$ | 7.64283 | | +0.13924600 | +0.30746289 |
| $P$ | 5.00 | $H$ | 16.6 | $G$ 0.15 | | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 644 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2001 10 26 | 644 | 0.2+ | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 10 26 | 644 | 0.5+ | 0.6+ | 2006 10 28 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | (0.1+ | 1.7−) |
| 2001 11 19 | 704 | 0.7− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.7− |
| 2001 11 19 | 704 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.2− | 1.4− |
| 2001 11 19 | 704 | (1.0− | 1.8+) | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.4+ | 0.8− |
| 2001 11 19 | 704 | 0.1− | 0.4− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.3− |
| 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2006 10 23 | 691 | 0.3− | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 11 | 691 | 0.4+ | 0.3− | | | | |

## 2006 UJ$_{126}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 63.75649 | | | (2000.0) | | |
| $n$ | 0.18050763 | $\omega$ | 49.25493 | | +0.68065043 | +0.72929310 |
| $a$ | 3.1007899 | $\Omega$ | 263.78435 | | −0.69149431 | +0.60815882 |
| $e$ | 0.1197802 | $i$ | 4.01565 | | −0.24197233 | +0.31348751 |
| $P$ | 5.46 | $H$ | 16.3 | $G$ 0.15 | | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 291 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.5+ | 0.5− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 12 18 | 291 | 0.8+ | 0.2+ | 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2− |
| 2001 12 18 | 291 | 1.1− | 0.6− | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.3− |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.4+ | 0.0 |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.2+ |
| 2005 06 10 | 691 | 0.4− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2005 06 10 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.5− | 0.4+ | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2005 06 10 | 691 | 0.5+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.5+ | 0.5− |
| 2005 07 15 | 691 | 0.6+ | 1.1− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.1− |
| 2005 07 15 | 691 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.1− | | | | |
| 2005 07 15 | 691 | 0.2− | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.0 | | | | |

## 2006 UT$_{126}$ = 2004 FX$_{78}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.19694 | | | (2000.0) | | |
| $n$ | 0.23351812 | $\omega$ | 94.34913 | | −0.20956079 | −0.97770189 |
| $a$ | 2.6116942 | $\Omega$ | 7.78710 | | +0.85280881 | −0.18952951 |
| $e$ | 0.0472031 | $i$ | 5.73461 | | +0.47833191 | −0.09042998 |
| $P$ | 4.22 | $H$ | 17.9 | $G$ 0.15 | | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 291 | 0.1+ | 0.3− | 2006 10 02 | G96 | (0.5+ | 1.7−) | 2006 10 28 | 691 | 0.4+ | 0.6+ |
| 2004 03 19 | 291 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.4+ | 0.4− |
| 2004 03 19 | 291 | 0.6− | 0.5− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.4+ | 0.4+ |
| 2004 03 23 | 291 | 0.4+ | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2004 03 23 | 291 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.8− | 0.5− |
| 2004 03 23 | 291 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.7− | 0.3− |
| 2006 10 02 | G96 | 0.8+ | 0.3− | 2006 10 23 | 691 | 0.6− | 0.4+ | 2006 11 18 | G96 | 0.6− | 0.2− |
| 2006 10 02 | G96 | 0.2+ | 0.9− | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.7− | 0.0 |
| 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 28 | 691 | 0.5+ | 0.4− | | | | |

## 2006 UA$_{127}$ = 2004 DG$_{79}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 44.80434 | | | (2000.0) | | |
| $n$ | 0.22340273 | $\omega$ | 353.26205 | | +0.84270630 | +0.53794078 |
| $a$ | 2.6899471 | $\Omega$ | 334.15828 | | −0.49160848 | +0.75254499 |
| $e$ | 0.1644920 | $i$ | 2.83811 | | −0.21947027 | +0.37986280 |
| $P$ | 4.41 | $H$ | 17.0 | $G$ 0.15 | | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 291 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2004 02 29 | 291 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2004 02 29 | 291 | 0.1+ | 0.5+ | 2006 10 02 | G96 | 0.0 | 0.4− | 2006 11 13 | 691 | 0.5− | 0.2− |
| 2004 03 23 | 291 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2004 03 23 | 291 | 0.4− | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.3+ | 0.2+ |
| 2004 03 23 | 291 | 0.5+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | | | | |
| 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 10 23 | 691 | 0.1+ | 0.3+ | | | | |

## 2006 UM$_{127}$ = 2004 CR$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 231.00344 | | | (2000.0) | | |
| $n$ | 0.26384040 | $\omega$ | 154.49973 | | −0.97364643 | −0.22726790 |
| $a$ | 2.4075493 | $\Omega$ | 12.40880 | | +0.19113945 | −0.85867484 |
| $e$ | 0.1072280 | $i$ | 5.07922 | | +0.12441199 | −0.45937655 |
| $P$ | 3.74 | $H$ | 17.6 | $G$ 0.15 | | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 19 | 691 | 0.2− | 0.1+ | 2004 02 13 | 691 | 0.5− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 1993 03 19 | 691 | 1.1+ | 0.2− | 2004 02 16 | 691 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 1993 03 19 | 691 | 0.6− | 0.7+ | 2004 02 16 | 691 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2002 10 07 | 291 | 0.2+ | 0.1− | 2004 02 16 | 691 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.4+ | 0.1+ |
| 2002 10 07 | 291 | 0.5+ | 0.8− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.4− |
| 2002 10 07 | 291 | 0.2+ | 0.4− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2004 02 11 | 644 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.5+ |
| 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 10 23 | 691 | 0.7− | 0.2+ | 2006 11 22 | 691 | 0.5+ | 0.0 |
| 2004 02 11 | 644 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.6− | 0.5+ | 2006 11 22 | 691 | 0.5+ | 0.1+ |
| 2004 02 13 | 691 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.7− | 0.0 | | | | |
| 2004 02 13 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2+ | | | | |

**2006 UN$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.73924 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.30404860 | $\omega$ | 294.11971 | +0.67096072 | | +0.74081258 | |
| $a$ | 2.1903190 | $\Omega$ | 18.13619 | −0.63788382 | | +0.59851242 | |
| $e$ | 0.1601893 | $i$ | 5.85540 | −0.37804225 | | +0.30492558 | |
| $P$ | 3.24 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 09 | 807 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.5+ | 0.5− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2002 04 09 | 807 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2005 03 10 | G96 | 0.5+ | 0.2+ | 2006 10 15 | 691 | 0.6− | 0.6+ | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2005 03 10 | G96 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.3− | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.6− |
| 2005 03 10 | G96 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.6+ | 0.3+ |
| 2005 03 10 | G96 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2005 04 04 | G96 | 0.6+ | 0.2+ | 2006 10 19 | 691 | 0.5− | 0.2+ | 2006 11 18 | G96 | 0.6+ | 0.5− |
| 2005 04 04 | G96 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.7− | 1.4+ | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2005 04 04 | G96 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 18 | G96 | 0.6+ | 0.4− |
| 2005 04 04 | G96 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 22 | 691 | 0.3+ | 0.2− |
| 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.1+ |
| 2006 09 28 | G96 | 0.8+ | 0.6− | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.5+ | 0.1+ |

**2006 UY$_{127}$ = 2003 BA$_{72}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.17687 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21912236 | $\omega$ | 257.15272 | −0.61184824 | | −0.78170769 | |
| $a$ | 2.7248645 | $\Omega$ | 231.23760 | +0.77241256 | | −0.55761667 | |
| $e$ | 0.2751848 | $i$ | 8.90676 | +0.17035426 | | −0.27927895 | |
| $P$ | 4.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 28 | 704 | 0.3− | 0.5− | 2006 10 02 | G96 | 0.6+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 01 28 | 704 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2003 01 28 | 704 | 0.6− | 0.3− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 01 28 | 704 | 0.4− | 0.6− | 2006 10 19 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2003 02 01 | 699 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2003 02 01 | 699 | 0.2− | 0.4− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.7− | 0.6− |
| 2003 02 01 | 699 | 0.6+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.1+ |
| 2003 02 01 | 699 | 0.4+ | 1.3+ | 2006 10 23 | 691 | 0.1− | 0.0 | | | | |
| 2006 10 02 | G96 | 0.6+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1− | | | | |

**2006 UC$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.68241 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18799122 | $\omega$ | 55.77273 | +0.81939527 | | −0.57303973 | |
| $a$ | 3.0179428 | $\Omega$ | 339.17774 | +0.51136235 | | +0.74232875 | |
| $e$ | 0.0979874 | $i$ | 2.37432 | +0.25903657 | | +0.34723695 | |
| $P$ | 5.24 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 807 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 10 19 | 691 | 0.3− | 0.1+ |
| 2000 08 28 | 807 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2004 05 19 | 691 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.4+ | 0.6− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2004 05 19 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.4+ | 1.1+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 2004 05 19 | 691 | 0.0 | 0.3+ | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 10 29 | 704 | (0.8+ | 1.7+) |
| 2005 08 08 | 807 | 0.1+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 29 | 704 | 0.3+ | 0.3+ |
| 2005 08 08 | 807 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 29 | 704 | 0.5− | 0.3− |
| 2006 09 28 | G96 | 0.6+ | 0.4− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 10 29 | 704 | 0.6+ | 0.1+ |

**2006 UD$_{128}$ = 2005 LY$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.24557 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24148208 | $\omega$ | 79.92794 | +0.51249414 | | +0.83870078 | |
| $a$ | 2.5539523 | $\Omega$ | 222.59578 | −0.85508053 | | +0.47880890 | |
| $e$ | 0.1655490 | $i$ | 15.79277 | −0.07865770 | | +0.25946683 | |
| $P$ | 4.08 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 12 | 691 | 0.2+ | 0.0 | 2005 06 13 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.3+ |
| 2001 06 12 | 691 | 0.2− | 0.2+ | 2005 06 13 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2001 06 12 | 691 | 0.1− | 0.0 | 2005 06 13 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2005 05 10 | G96 | 0.5− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.3− |
| 2005 05 10 | G96 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2005 05 10 | G96 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.5− |
| 2005 05 10 | G96 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2005 06 09 | 691 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2005 06 09 | 691 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.5− | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2005 06 09 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ | | | | |

**2006 UG$_{128}$ = 2005 LV$_{46}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.69336 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27012834 | $\omega$ | 317.24395 | −0.98738653 | | +0.14371707 | |
| $a$ | 2.3700415 | $\Omega$ | 231.13975 | −0.11215676 | | −0.93105421 | |
| $e$ | 0.1367415 | $i$ | 4.89408 | −0.11175282 | | −0.33538555 | |
| $P$ | 3.65 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2− |
| 2005 06 13 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2005 06 13 | 691 | 0.3+ | 0.1− | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.4+ |
| 2005 06 17 | 691 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 2005 06 17 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.0 |
| 2005 06 17 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.7− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.1+ |

**2006 UJ$_{128}$ = 2004 EE$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.90150 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26153855 | $\omega$ | 194.36203 | −0.07588721 | | −0.99701682 | |
| $a$ | 2.4216548 | $\Omega$ | 259.99161 | +0.91624253 | | −0.06414972 | |
| $e$ | 0.1499482 | $i$ | 0.81992 | +0.39337101 | | −0.04292163 | |
| $P$ | 3.77 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 08 | 691 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 2000 02 08 | 691 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2000 02 08 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 10 10 | 645(35.6+ | | 15.3+) | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2002 10 10 | 645(35.8+ | | 15.3+) | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.8− |
| 2004 03 15 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.8+ | 0.4+ | 2006 11 11 | G96 | 0.7− | 0.2+ |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.6+ | 2006 11 16 | 715 | 0.2− | 0.2− |
| 2004 03 23 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.4+ | 0.2− | 2006 11 16 | 715 | 0.5− | 0.0 |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 16 | 715 | 0.3− | 0.2− |

**2006 UM$_{128}$ = 2005 JM$_{141}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.63584 | | (2000.0) | | | |
| $n$ | 0.22311814 | $\omega$ | 89.61307 | | +0.66593873 | +0.73882954 |
| $a$ | 2.6922340 | $\Omega$ | 222.75059 | | −0.73056672 | +0.61787492 |
| $e$ | 0.1916106 | $i$ | 8.74725 | | −0.15098966 | +0.26900092 |
| $P$ | 4.42 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | G96 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.4− |
| 2005 05 14 | G96 | 0.3− | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2005 05 14 | G96 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2005 05 14 | G96 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.0 | 0.2+ |
| 2005 05 18 | 644 | 0.3+ | 0.3+ | 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2005 05 18 | 644 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 11 | 291 | 0.0 | 0.1+ |
| 2005 05 18 | 644 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 291 | 0.2+ | 0.3− |
| 2005 06 14 | 691 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 11 | 291 | 0.2+ | 0.2+ |
| 2005 06 14 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2005 06 14 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 23 | 691 | 0.5− | 0.1+ | 2006 11 14 | G96 | 0.6+ | 0.3− |
| 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.5+ | 0.2− |
| 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2006 10 02 | G96 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.2− |

**2006 UQ$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.79505 | | (2000.0) | | | |
| $n$ | 0.17407269 | $\omega$ | 124.45598 | | +0.98074518 | +0.18715917 |
| $a$ | 3.1767445 | $\Omega$ | 224.82988 | | −0.19483321 | +0.91813689 |
| $e$ | 0.2573276 | $i$ | 4.53721 | | −0.01337581 | +0.34927939 |
| $P$ | 5.66 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 04 | 691 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.6− | 0.2− |
| 2000 09 04 | 691 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2000 09 04 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.4+ |
| 2000 09 29 | 691 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.5+ |
| 2000 09 29 | 691 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.0 |
| 2000 09 29 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2000 10 19 | 691 | 0.1+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2000 10 19 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.7− | 0.5− | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2000 10 19 | 691 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.3− | | | | |

**2006 UU$_{128}$ = 2002 XK$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 308.07175 | | (2000.0) | | | |
| $n$ | 0.23230420 | $\omega$ | 108.40745 | | −0.18915619 | −0.98194188 |
| $a$ | 2.6207846 | $\Omega$ | 352.49396 | | +0.89149818 | −0.17037650 |
| $e$ | 0.2069865 | $i$ | 1.39254 | | +0.41164418 | −0.08223133 |
| $P$ | 4.24 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.1− | 0.4− | 2006 10 15 | 691 | 0.6+ | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.4− | 0.7+ | 2006 10 15 | 691 | (1.8+ | 0.9−) | 2006 11 11 | 703 | 1.2+ | 0.6− |
| 2002 12 05 | 704 | 0.3+ | 0.1− | 2006 10 19 | 691 | (1.3− | 1.7−) | 2006 11 11 | 703 | 0.5+ | 0.0 |
| 2002 12 10 | 704 | (1.8+ | 0.1+) | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 2002 12 10 | 704 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.2− |
| 2002 12 10 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2006 10 11 | 691 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.4− |
| 2006 10 11 | 691 | 0.4− | 0.1− | 2006 10 23 | 691 | 0.9− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2006 10 11 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2006 10 15 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.0 | | | | |

**2006 UX$_{128}$ = 2001 SL$_{302}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 62.97467 | | (2000.0) | | | |
| $n$ | 0.21073137 | $\omega$ | 40.77569 | | +0.73745596 | +0.67508445 |
| $a$ | 2.7967260 | $\Omega$ | 276.75117 | | −0.62489902 | +0.67049771 |
| $e$ | 0.0899690 | $i$ | 1.18207 | | −0.25624194 | +0.30772360 |
| $P$ | 4.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.5− | 0.4− | 2006 10 23 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.1+ | 1.4+ | 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.2+ | 0.9+ | 2006 09 28 | G96 | 0.4+ | 0.8− | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.8+ | 0.8− | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2001 09 23 | 704 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 09 23 | 704 | 0.6− | 0.7− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2001 09 23 | 704 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.2+ | | | | |

**2006 UZ$_{128}$ = 1999 VP$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 32.36454 | | (2000.0) | | | |
| $n$ | 0.27615366 | $\omega$ | 108.46247 | | +0.90375752 | +0.42762875 |
| $a$ | 2.3354407 | $\Omega$ | 226.22531 | | −0.40192358 | +0.83261887 |
| $e$ | 0.2148085 | $i$ | 1.49733 | | −0.14724054 | +0.35196515 |
| $P$ | 3.57 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.8+ | 1.2− | 2006 10 11 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 1.0+ |
| 1999 11 09 | 704 | 0.3+ | 1.2− | 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 1999 11 09 | 704 | 0.2− | 1.9− | 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.1− | 0.2− |
| 1999 11 12 | 704 | 0.4− | 0.7− | 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1999 11 12 | 704 | 0.7− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 1999 11 12 | 704 | 0.3+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.3− |
| 1999 12 13 | 691 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.7+ |
| 1999 12 13 | 691 | 0.1− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.1− |
| 1999 12 13 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.1− | 1.0+ |
| 2005 03 10 | G96 | 0.3+ | 1.0+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 18 | 704 | (1.6+ | 0.2−) |
| 2005 03 10 | G96 | 0.5+ | 0.5+ | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 18 | 704 | 1.4+ | 0.8+ |
| 2005 03 10 | G96 | 0.0 | 0.7+ | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 2005 03 10 | G96 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2006 08 28 | 703 | 1.2+ | 0.3− | 2006 11 09 | 644 | 0.5− | 0.6+ | 2006 11 21 | 704 | 0.9+ | 0.4+ |
| 2006 08 28 | 703 | 0.9− | 0.4− | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.6+ | 1.0+ |
| 2006 08 28 | 703 | (2.6+ | 0.8−) | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2006 08 28 | 703 | 1.0+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.3+ |
| 2006 09 28 | G96 | 0.6+ | 0.6− | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.1+ |
| 2006 09 28 | G96 | 0.4+ | 0.7− | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.4+ | 0.2+ |
| 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 1.4+ | 0.5+ | 2006 11 22 | G96 | 0.1+ | 0.3+ |
| 2006 09 28 | G96 | 0.4+ | 0.6− | 2006 11 11 | G96 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.5+ | 0.1+ |
| 2006 10 11 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (0.7+ | 1.6+) | | | | |
| 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.7+ | | | | |

**2006 UD$_{129}$ = 2004 GV$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 289.40927 | | (2000.0) | | | |
| $n$ | 0.21620064 | $\omega$ | 76.50381 | | −0.24979062 | −0.96757669 |
| $a$ | 2.7493587 | $\Omega$ | 28.04712 | | +0.85477726 | −0.23849527 |
| $e$ | 0.0319948 | $i$ | 4.56419 | | +0.45492910 | −0.08315857 |
| $P$ | 4.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.4+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2004 04 12 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.5− | 2006 11 15 | G96 | 0.1− | 0.9− |
| 2004 04 12 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2004 04 19 | 691 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.1+ |
| 2004 04 19 | 691 | 0.3− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.3− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.3+ | |
| 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.4+ | |

**2006 UP$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.14545 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23619296 | $\omega$ | 311.43719 | | −0.98682337 | | +0.15181594 |
| $a$ | 2.5919388 | $\Omega$ | 237.36640 | | −0.12142248 | | −0.92344227 |
| $e$ | 0.1285850 | $i$ | 3.81014 | | −0.10694028 | | −0.35242914 |
| $P$ | 4.17 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 291 | 0.0 | 0.4+ | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 19 | 691 | 0.3+ | 0.4+ |
| 2002 11 04 | 291 | 0.5− | 0.5+ | 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 23 | 691 | 0.6− | 0.2+ |
| 2002 11 04 | 291 | 0.3+ | 0.2− | 2005 07 01 | 691 | 0.4− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.1+ |
| 2004 03 16 | 703 | 0.1− | 2.0+ | 2005 07 01 | 691 | 0.1− | 0.8+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 03 16 | 703 | 0.7− | 0.2− | 2005 07 01 | 691 | 0.2− | 1.0+ | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2004 03 16 | 703 | 0.0 | 1.5+ | 2006 09 28 | G96 | 0.6+ | 0.8− | 2006 11 01 | 691 | 0.2− | 0.1+ |
| 2004 03 16 | 703 | 1.3+ | 0.9+ | 2006 09 28 | G96 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2004 04 12 | 691 | 0.4+ | 0.4+ | 2006 09 28 | G96 | 0.6+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.5+ |
| 2004 04 12 | 691 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.5+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.9+ |
| 2004 04 12 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.6+ | 0.1− |
| 2004 04 24 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.1+ | | | | |

**2006 UD$_{130}$ = 2004 FC$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.91458 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22265204 | $\omega$ | 293.45777 | | −0.64538227 | | +0.76368828 |
| $a$ | 2.6959899 | $\Omega$ | 296.33783 | | −0.69407307 | | −0.59513561 |
| $e$ | 0.0542167 | $i$ | 1.03475 | | −0.31897382 | | −0.25018757 |
| $P$ | 4.43 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.0 | 0.1− | 2005 06 13 | G96(47.4+ | 13.3+) | | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2005 06 13 | G96(47.3+ | 13.2+) | | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2004 03 17 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.4+ | 0.6+ |
| 2004 03 23 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.3− |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2004 03 23 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.6− |
| 2005 06 13 | G96(46.1+ | 13.2+) | | 2006 10 23 | 691 | 0.5− | 0.2+ | | | | |
| 2005 06 13 | G96(46.6+ | 13.7+) | | 2006 10 23 | 691 | 0.5− | 0.0 | | | | |

**2006 UH$_{130}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.16032 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19949860 | $\omega$ | 0.87485 | | +0.27971066 | | +0.95990747 |
| $a$ | 2.9007445 | $\Omega$ | 285.36824 | | −0.88097620 | | +0.24898633 |
| $e$ | 0.1337672 | $i$ | 1.09508 | | −0.38163188 | | +0.12877678 |
| $P$ | 4.94 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 691 | 0.2− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2004 03 23 | 691 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.3− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2004 03 23 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.5+ |
| 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.3+ | 0.3− |
| 2004 04 13 | 691 | 0.5+ | 0.4− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2004 04 13 | 691 | 0.3− | 0.6+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 |

**2006 UA$_{131}$ = 1995 UK$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.99303 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27209881 | $\omega$ | 201.04623 | | +0.14881702 | | −0.98833982 |
| $a$ | 2.3585855 | $\Omega$ | 240.40782 | | +0.91247599 | | +0.14980405 |
| $e$ | 0.1702063 | $i$ | 2.12323 | | +0.38110505 | | +0.02726069 |
| $P$ | 3.62 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.2+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.3+ | 0.2+ |
| 1995 10 23 | 691 | 0.4+ | 0.0 | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.4+ | 0.4− |
| 1995 10 23 | 691 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 1995 10 28 | 691 | 0.2− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 1995 10 28 | 691 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2− |
| 1995 10 28 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2006 09 28 | G96 | 0.4+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2006 09 28 | G96 | 0.7+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 11 10 | 691 | 0.1− | 0.2+ | | | | |
| 2006 10 19 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1− | | | | |

**2006 UG$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 194.61845 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22890765 | $\omega$ | 220.45495 | | −0.96743047 | | +0.25265445 |
| $a$ | 2.6466459 | $\Omega$ | 334.16707 | | −0.22201368 | | −0.87651262 |
| $e$ | 0.0304772 | $i$ | 2.05439 | | −0.12160676 | | −0.40974547 |
| $P$ | 4.31 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 0.6+ | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 1995 02 05 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 1995 02 05 | 691 | 0.5− | 0.5− | 2006 10 21 | 691 | 0.5− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.4+ |
| 2001 08 28 | 644 | (1.8− | 1.5+) | 2006 10 21 | 691 | 0.3− | 0.5+ | 2006 11 21 | 691 | 0.2+ | 0.7− |
| 2001 08 28 | 644 | 0.2− | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.4+ | 2006 11 21 | 691 | 0.1+ | 0.2+ |
| 2001 08 28 | 644 | (1.6+ | 0.3−) | 2006 10 23 | 691 | 0.9− | 0.3+ | 2006 11 21 | 691 | 0.4− | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.8− | 0.3+ | 2006 11 22 | 691 | 0.4+ | 0.4− |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.6− | 0.2+ | 2006 11 22 | 691 | 1.0+ | 0.2+ |
| 2004 03 23 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.4+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2004 04 21 | 691 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2004 04 21 | 691 | 0.2+ | 0.5− | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2004 04 21 | 691 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 09 28 | G96 | 0.3− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.3− |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.2− | 0.5− | 2006 11 27 | 691 | 0.0 | 0.5+ |
| 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 09 | 691 | 0.0 | 0.2+ | | | | |
| 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.4+ | 0.1− | | | | |

**2006 UL$_{131}$ = 1995 TP$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.85347 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17892483 | $\omega$ | 89.75035 | | +0.72524159 | | +0.68397892 |
| $a$ | 3.1190498 | $\Omega$ | 227.09285 | | −0.66668948 | | +0.66911837 |
| $e$ | 0.0554415 | $i$ | 6.17003 | | −0.17190048 | | +0.29060875 |
| $P$ | 5.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2− | 0.3− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.2+ | 1.1+ |
| 1995 10 15 | 691 | 0.3− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.6+ | 0.3− |
| 1995 10 15 | 691 | 0.2− | 0.5− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 1995 10 22 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.1+ |
| 1995 10 22 | 691 | 0.0 | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 1995 10 22 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.4− |
| 2006 09 28 | G96 | 0.4+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.2− | 0.4− | 2006 11 13 | 691 | 0.2+ | 0.1− | | |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.0 | 0.3− | | | | | | |
| 2006 10 19 | 691 | 0.2− | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1− | | | | | | |

**2006 UB$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.39814 | | (2000.0) | | | |
| $n$ | 0.22698129 | $\omega$ | 302.20566 | | +0.54691718 | +0.83717913 |
| $a$ | 2.6615993 | $\Omega$ | 0.97205 | | −0.67987405 | +0.44662824 |
| $e$ | 0.2163970 | $i$ | 12.12800 | | −0.48852111 | +0.31568072 |
| $P$ | 4.34 | $H$ | 16.0 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 691 | 0.0 | 0.2+ | 2005 05 12 | 703 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2004 02 16 | 691 | 0.2+ | 0.2+ | 2005 06 05 | E12 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2004 02 16 | 691 | 0.1− | 0.5+ | 2005 06 05 | E12 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.0 |
| 2004 03 18 | 645 | 0.0 | 0.1− | 2005 06 05 | E12 | 0.6+ | 0.9+ | 2006 10 22 | 644 | 0.1+ | 0.4+ |
| 2004 03 18 | 645 | 0.0 | 0.1− | 2005 06 05 | E12 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.5+ |
| 2005 01 19 | 291 | 0.0 | 0.3+ | 2006 09 15 | 703 | 0.0 | 0.5− | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2005 01 19 | 291 | 0.2− | 0.7+ | 2006 09 15 | 703 | 0.7− | 0.1− | 2006 10 23 | 644 | 0.1− | 0.4+ |
| 2005 01 19 | 291 | 0.0 | 0.4+ | 2006 09 15 | 703 | 0.4− | 0.3− | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2005 04 10 | E12 | 0.2+ | 0.2+ | 2006 09 15 | 703 | 1.2− | 0.3− | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2005 04 10 | E12 | 0.6− | 0.2− | 2006 09 28 | 703 | 0.6− | 0.2− | 2006 10 27 | 703 | 1.0− | 0.1− |
| 2005 04 10 | E12 | 0.9+ | 0.2+ | 2006 09 28 | 703 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.8− | 0.7− |
| 2005 04 10 | E12 | 1.0+ | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.8− | 0.0 |
| 2005 05 01 | E12 | 0.3− | 0.1+ | 2006 09 28 | 703 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.7− | 0.4+ |
| 2005 05 01 | E12 | 0.2− | 0.8+ | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 10 30 | 104 | 1.0− | 0.8− |
| 2005 05 01 | E12 | 0.1− | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.3+ | 2006 10 30 | 104 | 1.0+ | 0.6+ |
| 2005 05 01 | E12 | 0.4− | 0.5+ | 2006 10 19 | 703 | 0.1+ | 0.5+ | 2006 10 30 | 104 | 0.3+ | 0.5+ |
| 2005 05 12 | 703 | (1.7− | 0.4−) | 2006 10 21 | 704 | 1.1+ | 0.6+ | 2006 11 15 | 703 | 1.0+ | 0.2− |
| 2005 05 12 | 703 | 0.4+ | 0.9− | 2006 10 21 | 704 | 1.0+ | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.6+ |
| 2005 05 12 | 703 | 0.4+ | 0.5− | 2006 10 21 | 704 | 0.6+ | 0.3+ | 2006 11 15 | 703 | 0.4− | 0.7+ |

**2006 UC$_{132}$ = 1995 NK$_1$ = 2004 GH$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 256.46677 | | (2000.0) | | | |
| $n$ | 0.21302307 | $\omega$ | 274.46313 | | −0.68425593 | −0.70470418 |
| $a$ | 2.7766318 | $\Omega$ | 220.90343 | | +0.72922572 | −0.65950078 |
| $e$ | 0.0983217 | $i$ | 16.64695 | | +0.00486593 | −0.26163094 |
| $P$ | 4.63 | $H$ | 15.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 01 | 691 | 0.1+ | 0.0 | 2004 04 25 | 704 | (1.7+ | 0.6+) | 2006 10 19 | 644 | 0.2− | 0.1− |
| 1995 07 01 | 691 | 0.5− | 0.2+ | 2004 04 25 | 703 | 0.7− | 0.3− | 2006 10 21 | 703 | 0.7+ | 0.3− |
| 1995 07 01 | 691 | 0.3− | 0.4− | 2004 04 25 | 703 | 0.2− | 0.4+ | 2006 10 21 | 703 | 0.0 | 1.4+ |
| 1995 07 05 | 691 | 0.2+ | 0.2+ | 2004 04 25 | 703 | 0.5− | 0.3− | 2006 10 21 | 703 | 0.2+ | 0.4+ |
| 1995 07 05 | 691 | 0.4+ | 0.1− | 2004 04 25 | 703 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.3− | 1.1+ |
| 1995 07 05 | 691 | 0.1+ | 0.1− | 2005 06 30 | 644 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2001 10 13 | 644 | 0.1+ | 0.1− | 2005 06 30 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 2001 10 13 | 644 | 0.1+ | 0.2+ | 2005 06 30 | 644 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2001 10 13 | 644 | 0.3+ | 0.4+ | 2006 09 30 | 703 | (1.7+ | 0.1+) | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2004 04 15 | 699 | 1.2− | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.5+ |
| 2004 04 15 | 699 | 0.6+ | 0.4− | 2006 09 30 | 703 | 1.2− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.3+ |
| 2004 04 15 | 699 | 0.8− | 0.6+ | 2006 09 30 | 703 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.3+ | 0.3− |
| 2004 04 15 | 699 | 0.4− | 1.1+ | 2006 10 17 | 703 | 1.0+ | 1.3− | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2004 04 20 | 704 | 0.2+ | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.9+ | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 2004 04 20 | 704 | 0.8+ | 0.1+ | 2006 10 17 | 703 | 0.5− | 1.2+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2004 04 20 | 704 | 1.3− | 0.7+ | 2006 10 17 | 703 | 0.9− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2004 04 20 | 704 | 0.3− | 0.3− | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.2− |
| 2004 04 25 | 704 | 1.1+ | 0.8+ | 2006 10 19 | G96 | 0.6+ | 0.4− | 2006 11 19 | 704 | 0.9− | 1.0− |
| 2004 04 25 | 704 | 1.3+ | 0.3+ | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 19 | 704 | (1.5− | 0.0 ) |
| 2004 04 25 | 704 | 0.8+ | 0.3− | 2006 10 19 | 644 | 0.6+ | 0.5+ | 2006 11 19 | 704 | 0.9− | 0.5+ |
| 2004 04 25 | 704 | 1.0+ | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.3+ | | | | |

**2006 UF$_{132}$ = 2005 NJ$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 114.43710 | | (2000.0) | | | |
| $n$ | 0.18668546 | $\omega$ | 298.23997 | | −0.21011718 | +0.97657907 |
| $a$ | 3.0319990 | $\Omega$ | 319.54538 | | −0.87013555 | −0.20838995 |
| $e$ | 0.1237978 | $i$ | 4.09235 | | −0.44577450 | −0.05354398 |
| $P$ | 5.28 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 28 | 807 | 0.1− | 0.4+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 27 | J95 | 0.2+ | 0.3+ |
| 2000 08 28 | 807 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.6− | 2006 10 27 | 291 | 0.1− | 0.1− |
| 2005 07 02 | 691 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.6+ | 0.3− | 2006 10 27 | 291 | 0.0 | 0.2+ |
| 2005 07 02 | 691 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.3− | 0.5− | 2006 10 27 | 291 | 0.1+ | 0.1+ |
| 2005 07 02 | 691 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.5− | 2006 10 28 | 291 | 0.2− | 0.1+ |
| 2005 07 11 | 691 | 0.1− | 0.1− | 2006 10 21 | 691 | 0.5− | 0.2− | 2006 10 28 | 291 | 0.4− | 0.2+ |
| 2005 07 11 | 691 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.3− | 0.3− | 2006 10 28 | 291 | 0.3− | 0.0 |
| 2005 07 11 | 691 | 0.5+ | 0.0 | 2006 10 21 | 691 | 0.5− | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 27 | J95 | 0.3+ | 0.2− | 2006 10 29 | 691 | 0.2− | 0.1+ |
| 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 27 | J95 | 0.7+ | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.1+ |

**2006 UJ$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.54055 | | (2000.0) | | | |
| $n$ | 0.30315137 | $\omega$ | 63.12752 | | +0.97491031 | −0.21356479 |
| $a$ | 2.1946387 | $\Omega$ | 309.13639 | | +0.16447857 | +0.88113608 |
| $e$ | 0.2058920 | $i$ | 4.64174 | | +0.14998897 | +0.42188777 |
| $P$ | 3.25 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 21 | 691 | 0.2− | 0.1− | 2006 10 19 | A50 | 0.3− | 0.3− | 2006 10 23 | 644 | 0.2− | 0.3+ |
| 1993 10 21 | 691 | 0.4+ | 0.2+ | 2006 10 21 | 704 | 0.5− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3+ |
| 1993 10 21 | 691 | 0.2− | 0.0 | 2006 10 21 | 704 | 0.2+ | 0.7− | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2006 09 28 | 703 | 0.5+ | 0.5+ | 2006 10 21 | 704 | 0.4− | 1.0+ | 2006 10 27 | 703 | 0.1+ | 0.7− |
| 2006 09 28 | 703 | 0.3+ | 1.2− | 2006 10 21 | 704 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.6+ | 0.5− |
| 2006 09 28 | 703 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.5+ | 0.0 |
| 2006 09 28 | 703 | 0.7− | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2006 10 19 | 703 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.4+ | 0.1+ |
| 2006 10 19 | 703 | 0.1− | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.8− | 0.2− |
| 2006 10 19 | 703 | 0.1+ | 0.6− | 2006 10 22 | 644 | 0.3− | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.3+ |
| 2006 10 19 | 703 | 0.6+ | 0.3+ | 2006 10 22 | 644 | 0.2− | 0.3+ | | | | |
| 2006 10 19 | A50 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.0 | 0.1+ | | | | |

**2006 US$_{132}$ = 1982 DB$_2$ = 2004 ES$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 11.19149 | | (2000.0) | | | |
| $n$ | 0.22736224 | $\omega$ | 320.78921 | | +0.98926544 | −0.14134741 |
| $a$ | 2.6586254 | $\Omega$ | 47.37854 | | +0.14351817 | +0.89203373 |
| $e$ | 0.2104194 | $i$ | 2.88829 | | +0.02750319 | +0.42929796 |
| $P$ | 4.33 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1982 02 16 | 046 | 0.5− | 1.2− | 2006 10 19 | 644 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 1982 02 16 | 046 | (1.8+ | 3.0+) | 2006 10 21 | 644 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 10 23 | 704 | (2.5+ | 1.6+) | 2006 11 11 | 703 | 0.5− | 1.1+ |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 10 23 | 704 | 0.9− | 0.8+ | 2006 11 17 | 703 | 0.2+ | 0.1− |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 704 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 10 23 | 704 | 0.7+ | 1.4+ | 2006 11 17 | 703 | 0.6− | 0.4+ |
| 2006 08 28 | 703 | 1.1− | 1.5+ | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 17 | 703 | (3.1− | 3.2+) |
| 2006 08 28 | 703 | 0.1+ | 1.2+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.9− | 0.7+ |
| 2006 08 28 | 703 | (0.8− | 1.6+) | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | (1.0+ | 2.3+) |
| 2006 08 28 | 703 | 1.2− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | (1.8+ | 1.7+) |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 18 | 704 | (1.5+ | 3.0−) |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.1− |
| 2006 09 30 | G96 | 0.3− | 0.4− | 2006 10 27 | 691 | (1.4− | 2.5−) | 2006 11 21 | 704 | 0.3+ | 0.2− |
| 2006 10 04 | 703 | 1.4+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.7− |
| 2006 10 04 | 703 | 0.0 | 0.7− | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 1.1+ | 0.8− |
| 2006 10 04 | 703 | 0.2+ | 0.3− | 2006 10 28 | 704 | 0.7+ | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2006 10 04 | 703 | 0.3+ | 0.5− | 2006 10 28 | 704 | 0.5− | 0.8+ | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.6− | 0.6+ | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2006 10 19 | 691 | 0.0 | 0.1− | 2006 10 28 | 704 | 0.1+ | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2006 10 19 | 691 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.5− |
| 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.5− |
| 2006 10 19 | 644 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.5− |
| 2006 10 19 | 644 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.2− | | | | |
| 2006 10 19 | 644 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.1− | 0.3+ | | | | |

### 2006 UT$_{132}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.53038 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19230387 | $\omega$ | 156.79005 | | +0.99526202 | −0.09633383 | |
| $a$ | 2.9726518 | $\Omega$ | 208.74758 | | +0.08436428 | +0.92293009 | |
| $e$ | 0.1185188 | $i$ | 1.56852 | | +0.04833410 | +0.37271953 | |
| $P$ | 5.13 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 291 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.5+ | 0.1+ |
| 2001 12 10 | 291 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2001 12 10 | 291 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2004 04 14 | 291 | 0.3− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.6+ | 0.0 |
| 2004 04 14 | 291 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2004 04 14 | 291 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.4+ |
| 2006 10 19 | 691 | 0.0 | 0.6+ | 2006 10 27 | G96 | 0.7+ | 0.2− | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2006 10 19 | 691 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.7− | 0.3− |

### 2006 UD$_{133}$ = 2003 KK$_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.77120 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17421417 | $\omega$ | 350.31712 | | +0.51918413 | −0.85392717 | |
| $a$ | 3.1750244 | $\Omega$ | 68.39772 | | +0.78666580 | +0.46125683 | |
| $e$ | 0.1826409 | $i$ | 2.18469 | | +0.33407298 | +0.24093675 | |
| $P$ | 5.66 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 02 13 | 691 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.0 | 0.5− | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2002 02 13 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.6+ | 0.0 | 2006 11 13 | G96 | 0.1− | 0.0 |
| 2002 02 13 | 691 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.7+ | 0.2+ |
| 2003 05 31 | 807 | 0.2+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.7− |
| 2003 05 31 | 807 | 0.4+ | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 1.1+ | 1.3+ |
| 2003 06 01 | 807 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 1.2+ | 1.4+ |
| 2006 09 30 | G96 | 0.3− | 0.6− | 2006 10 27 | 691 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.7− |
| 2006 09 30 | G96 | 0.1− | 0.5− | 2006 10 27 | 691 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.6+ | 0.6− |
| 2006 09 30 | G96 | 0.0 | 0.8− | 2006 11 11 | 703 | 0.5+ | 0.4− | 2006 11 21 | G96 | 0.5+ | 0.2− |
| 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 11 | 703 | 1.2+ | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 1.1− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2006 10 19 | 691 | 0.3− | 0.4+ | 2006 11 13 | G96 | 0.4+ | 0.5− | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.1− | 0.4− | 2006 11 21 | G96 | 0.2+ | 0.1+ |

### 2006 UK$_{133}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.66036 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26692449 | $\omega$ | 89.99943 | | +0.48332294 | +0.87205551 | |
| $a$ | 2.3889686 | $\Omega$ | 209.30218 | | −0.85267445 | +0.44902149 | |
| $e$ | 0.1247202 | $i$ | 9.04360 | | −0.19835629 | +0.19467636 | |
| $P$ | 3.69 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 25 | 691 | 0.1+ | 0.0 | 2005 05 08 | 691 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.3− | 0.5+ |
| 1995 10 25 | 691 | 0.1− | 0.5− | 2005 05 08 | 691 | (2.2+ | 0.2+) | 2006 10 19 | 691 | 0.6− | 0.3+ |
| 1995 10 25 | 691 | 0.2+ | 0.2− | 2005 05 13 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 |
| 2002 10 30 | 645 | 0.1+ | 0.1− | 2005 05 13 | 691 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.8+ |
| 2002 10 30 | 645 | 0.1+ | 0.1+ | 2005 05 13 | 691 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.0 | 0.4+ |
| 2002 11 08 | 645 | 0.1− | 0.1− | 2005 05 13 | 691 | 0.3+ | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 11 08 | 645 | 0.1− | 0.2− | 2005 05 13 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.6+ |
| 2005 04 11 | G96 | 0.5− | 0.0 | 2005 05 13 | 691 | 0.5− | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 2005 04 11 | G96 | 0.0 | 0.2+ | 2006 10 11 | 691 | (2.6− | 2.6−) | 2006 11 16 | G96 | 0.4+ | 0.0 |
| 2005 04 11 | G96 | 0.1− | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.9+ | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2006 10 11 | 691 | 0.4− | 0.5+ | 2006 11 16 | G96 | 0.5+ | 0.0 |
| 2005 05 08 | 691 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.3+ | 0.1− |

### 2006 UN$_{133}$ = 2003 XJ$_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.90263 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30146765 | $\omega$ | 7.38713 | | +0.50134289 | −0.86346057 | |
| $a$ | 2.2028025 | $\Omega$ | 52.54058 | | +0.79022499 | +0.43075431 | |
| $e$ | 0.1213063 | $i$ | 4.01639 | | +0.35241988 | +0.26246250 | |
| $P$ | 3.27 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.2+ | 0.0 | 2006 11 11 | 703 | (0.5− | 1.7−) |
| 2003 12 14 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2003 12 14 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2003 12 18 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.4− | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2003 12 18 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.4− | 0.2− | 2006 11 13 | G96 | 0.6+ | 0.6− |
| 2003 12 18 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.6+ | 0.3− |
| 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | (0.3− | 2.0+) | 2006 11 21 | G96 | 0.4+ | 0.4− |
| 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | (1.6+ | 0.6+) | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 11 | 703 | 1.2− | 1.4+ | 2006 11 21 | G96 | 0.7+ | 0.2− |

### 2006 UY$_{133}$ = 2001 YZ$_{98}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.72419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18646128 | $\omega$ | 225.39091 | | +0.77726412 | −0.62917107 | |
| $a$ | 3.0344287 | $\Omega$ | 173.59709 | | +0.58236263 | +0.71819064 | |
| $e$ | 0.1955462 | $i$ | 1.05875 | | +0.23814753 | +0.29723050 | |
| $P$ | 5.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.3− | 0.4− | 2006 10 19 | 691 | 0.4− | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.1− |
| 2001 12 17 | 704 | 0.3+ | 0.2− | 2006 10 19 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.4− |
| 2001 12 17 | 704 | 0.0 | 0.1− | 2006 10 19 | 691 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.8− | 1.2− |
| 2001 12 17 | 704 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.0 | 1.0− |
| 2001 12 17 | 704 | 0.5+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.8− |
| 2001 12 20 | 704 | 0.8+ | 0.6− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2001 12 20 | 704 | 1.0− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.5+ | 2006 11 13 | G96 | 0.4+ | 0.6− |
| 2001 12 20 | 704 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2001 12 20 | 704 | (0.6− | 1.7−) | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2001 12 20 | 704 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2003 03 13 | 291 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2003 03 13 | 291 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.3+ | 2006 11 13 | 644 | 0.5+ | 0.0 |
| 2003 03 13 | 291 | 0.3+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | (0.7+ | 1.5+) |
| 2006 07 21 | G96 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.8+ | 1.0+ |
| 2006 07 21 | G96 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.9+ |
| 2006 07 21 | G96 | 0.1+ | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 17 | 703 | (0.9+ | 1.6+) |
| 2006 07 21 | G96 | 0.3+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.0 | | | | |

**2006 UJ$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.97459 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30084097 | $\omega$ | 0.53341 | | +0.48174741 | −0.87244181 | |
| $a$ | 2.2058606 | $\Omega$ | 60.66937 | | +0.80364905 | +0.40243159 | |
| $e$ | 0.0985591 | $i$ | 5.41344 | | +0.34938179 | +0.27729786 | |
| $P$ | 3.28 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 12 18 | 691 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2005 06 14 | G96 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.4− | 0.4− |
| 2005 06 14 | G96 | 0.0 | 0.4+ | 2006 10 21 | 644 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.7− | 0.1+ |
| 2005 06 14 | G96 | 0.2+ | 0.7+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.4− |
| 2005 06 14 | G96 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 1.1− | 0.6− |
| 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 18 | 704 | 1.2+ | 1.1+ |
| 2006 10 02 | G96 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.1+ |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.4+ | 0.0 | 2006 11 18 | 704 | (1.7+ | 0.9+) |
| 2006 10 02 | G96 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 1.2+ | 0.3+ |
| 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.3+ |
| 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4− |
| 2006 10 11 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.9− |
| 2006 10 15 | 691 | (2.1+ | 3.3+) | 2006 11 11 | 703 | 0.0 | 0.7+ | 2006 11 21 | 704 | 0.7+ | 0.3− |
| 2006 10 15 | 691 | (0.3+ | 3.6+) | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 1.0+ |
| 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 1.2− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.3− |
| 2006 10 16 | 703 | (0.4+ | 2.2−) | 2006 11 11 | 703 | 0.5− | 0.0 | 2006 11 27 | 703 | 1.0− | 0.2+ |
| 2006 10 16 | 703 | (2.0+ | 2.0−) | 2006 11 13 | 644 | 0.4+ | 0.3− | 2006 11 27 | 703 | 0.0 | 0.5− |
| 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 13 | 644 | 0.1− | 0.2− | 2006 11 27 | 703 | 1.2− | 0.1− |
| 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.5+ | 0.5− |
| 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.1− | 0.1− | | | | |

**2006 UZ$_{134}$ = 2004 HR$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.79219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19665980 | $\omega$ | 276.64023 | | +0.98079541 | +0.18833874 | |
| $a$ | 2.9285928 | $\Omega$ | 72.51302 | | −0.15127140 | +0.89860101 | |
| $e$ | 0.0502180 | $i$ | 3.04614 | | −0.12311513 | +0.39628871 | |
| $P$ | 5.01 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 22 | 691 | 0.1+ | 0.5− | 2004 04 22 | 691 | 0.2− | 0.5+ | 2006 10 19 | 691 | 0.2+ | 0.2+ |
| 1993 01 22 | 691 | 0.7− | 0.1+ | 2004 04 22 | 691 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.1− | 0.5+ |
| 1993 01 22 | 691 | 0.5+ | 0.2+ | 2005 07 07 | 691 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.3+ |
| 2001 11 20 | 691 | 0.2− | 0.5+ | 2005 07 07 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.0 |
| 2001 11 20 | 691 | 0.1+ | 0.2+ | 2005 07 07 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1+ |
| 2001 11 20 | 691 | 0.1− | 0.1− | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 10 23 | 691 | 0.5− | 0.6+ |
| 2004 04 16 | 691 | 0.1+ | 0.6+ | 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2004 04 16 | 691 | 0.1+ | 0.3+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.1− | 0.0 |
| 2004 04 16 | 691 | 0.1− | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.2− | | | | |
| 2004 04 22 | 691 | 0.6+ | 0.3+ | 2006 10 19 | 691 | 0.4+ | 0.4+ | | | | |

**2006 UD$_{135}$ = 2002 JC$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.29988 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30133969 | $\omega$ | 244.68622 | | +0.38037504 | +0.91923147 | |
| $a$ | 2.2034261 | $\Omega$ | 48.06188 | | −0.79179031 | +0.38046724 | |
| $e$ | 0.1625447 | $i$ | 7.85241 | | −0.47789428 | +0.10128271 | |
| $P$ | 3.27 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 644 | 0.5− | 0.1− | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.1− |
| 2002 05 09 | 644 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.0 | 2006 10 19 | 691 | 0.0 | 0.0 |
| 2002 05 09 | 644 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.0 | 0.4+ |
| 2002 05 11 | 704 | 0.5+ | 0.3+ | 2006 09 30 | G96 | 0.4− | 0.3− | 2006 10 23 | 691 | 0.1− | 0.1− |
| 2002 05 11 | 704 | 0.4+ | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− |
| 2002 05 11 | 704 | 0.3− | 0.2− | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.3− |
| 2002 05 11 | 704 | 0.9+ | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.3+ | | | | |

**2006 UN$_{135}$ = 2001 WS$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.76934 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18747471 | $\omega$ | 169.70603 | | +0.77727122 | +0.62889662 | |
| $a$ | 3.0234835 | $\Omega$ | 151.29964 | | −0.57993729 | +0.72748729 | |
| $e$ | 0.1339130 | $i$ | 2.19560 | | −0.24397170 | +0.27431968 | |
| $P$ | 5.26 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 809 | 1.7+ | 0.1+ | 2005 06 26 | 644 | 0.4+ | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.3− |
| 1995 09 20 | 809 | 0.3− | 1.4− | 2005 06 26 | 644 | 0.2+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.2+ |
| 1995 09 22 | 809 | 1.1+ | 0.9− | 2006 09 30 | G96 | 0.2+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 2000 08 31 | 691 | 0.4− | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.0 |
| 2000 08 31 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2000 08 31 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.4+ | 0.4− | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2001 11 20 | 704 | 0.1− | 1.0+ | 2006 10 11 | 691 | 0.1− | 0.5+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 2001 11 20 | 704 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2001 11 20 | 704 | 1.3− | 0.0 | 2006 10 11 | 691 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2001 11 21 | 704 | 0.4− | 0.5− | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2001 11 21 | 704 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2001 11 21 | 704 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 27 | 291 | 0.0 | 0.1+ |
| 2001 11 21 | 704 | 0.7+ | 1.2+ | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 27 | 291 | 0.1+ | 0.1+ |
| 2005 06 26 | 644 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 27 | 291 | 0.2− | 0.1− |

**2006 UC$_{136}$ = 2004 GY$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.88129 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19119875 | $\omega$ | 151.70782 | | +0.74843447 | +0.66314207 | |
| $a$ | 2.9840952 | $\Omega$ | 166.73923 | | −0.61595053 | +0.70029037 | |
| $e$ | 0.0810390 | $i$ | 2.34971 | | −0.24586743 | +0.26426500 | |
| $P$ | 5.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.1− | 0.5+ | 2005 06 15 | G96 | 0.2− | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.2− |
| 2004 04 12 | 691 | 0.1+ | 0.1+ | 2005 06 15 | G96 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1+ |
| 2004 04 12 | 691 | 0.5+ | 0.1− | 2005 07 06 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.0 |
| 2004 04 19 | 691 | 0.1− | 0.1+ | 2005 07 06 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.5+ |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2005 07 06 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.5+ |
| 2005 05 20 | G96 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.1+ | 0.7− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2005 05 20 | G96 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.5+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2005 05 20 | G96 | 0.1+ | 0.0 | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 2005 05 20 | G96 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2005 06 15 | G96 | 0.1+ | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.1− | | | | |
| 2005 06 15 | G96 | 0.0 | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.4+ | | | | |

**2006 UP$_{136}$ = 2004 JT$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.65148 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17981022 | $\omega$ | 119.82832 | | +0.98468036 | −0.03882304 | |
| $a$ | 3.1088025 | $\Omega$ | 242.86408 | | −0.01613422 | +0.95043055 | |
| $e$ | 0.0727472 | $i$ | 11.01221 | | +0.17362105 | +0.30850370 | |
| $P$ | 5.48 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 05 13 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.2+ |
| 2004 05 13 | 691 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.5− |
| 2004 05 21 | 691 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.0 | 0.6− | 2006 11 19 | 704 | (2.4+ | 0.1+) |
| 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.7+ | 0.4+ | 2006 11 19 | 704 | 1.0+ | 0.8+ |
| 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.2− | 0.5+ | 2006 11 19 | 704 | 0.2− | 1.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 31 | 644 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 19 | 704 | 1.0− | 0.3+ | | |
| 2005 07 31 | 644 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.9− | 0.4+ | | |
| 2005 07 31 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.5− | | |
| 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.2+ | 0.1− | | |
| 2006 10 04 | G96 | 0.5+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 1.1− | 2006 11 22 | 704 | 0.8+ | 0.0 | | |
| 2006 10 04 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1+ | 1.1+ | | |
| 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 11 | 703 | 1.2− | 0.7− | 2006 11 29 | 704 | 0.1− | 0.3− | | |
| 2006 10 19 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 1.2− | 2006 11 29 | 704 | 0.1− | 0.3− | | |
| 2006 10 19 | G96 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.2+ | | |
| 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.1− | | | | | | |
| 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.1− | | | | | | |

**2006 UD$_{137}$ = 2004 FV$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.06306 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24618048 | $\omega$ | 224.53684 | | −0.49048716 | | +0.87046880 |
| $a$ | 2.5213529 | $\Omega$ | 16.23199 | | −0.75263380 | | −0.39924271 |
| $e$ | 0.1030665 | $i$ | 8.49834 | | −0.43927748 | | −0.28790507 |
| $P$ | 4.00 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 14 | 644 | 0.2− | 0.1+ | 2005 07 05 | E12 | 0.4− | 1.2+ | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 2002 11 14 | 644 | 0.0 | 0.1− | 2005 07 05 | E12 | 0.8+ | 0.6+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | | |
| 2002 11 14 | 644 | 0.2+ | 0.4+ | 2006 10 04 | G96 | 0.7+ | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.0 | | |
| 2004 02 16 | 691 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.3− | | |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.4+ | | |
| 2004 02 16 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.1− | | |
| 2004 03 20 | 704 | 0.6+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.9− | 1.0+ | | |
| 2004 03 20 | 704 | 0.2− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | (3.2− | 4.6+) | | |
| 2004 03 20 | 704 | 0.1+ | 0.9+ | 2006 10 19 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.0 | 1.0+ | | |
| 2004 03 20 | 704 | 0.2− | 0.9+ | 2006 10 19 | G96 | 0.0 | 0.6− | 2006 11 14 | 703 | (7.4+ | 3.2−) | | |
| 2004 03 23 | 704 | 0.1+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.1+ | 2006 11 14 | 703 | 0.9+ | 0.9− | | |
| 2004 03 23 | 704 | 0.9+ | 0.9+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 14 | 703 | 1.0+ | 0.7+ | | |
| 2004 03 23 | 704 | 0.4+ | 0.7+ | 2006 10 23 | 691 | 0.7− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.9+ | | |
| 2004 03 23 | 704 | 0.3+ | 0.4+ | 2006 10 25 | D35 | 0.6+ | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.1− | | |
| 2005 07 05 | E12 | (1.9− | 1.0+) | 2006 10 25 | D35 | 0.6+ | 0.1− | 2006 11 22 | 704 | (0.5+ | 1.8−) | | |
| 2005 07 05 | E12 | 1.5− | 1.3+ | 2006 10 25 | D35 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.5− | 0.0 | | |

**2006 UE$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.57546 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30898595 | $\omega$ | 22.08134 | | +0.69257043 | | +0.71971615 |
| $a$ | 2.1669234 | $\Omega$ | 291.79049 | | −0.66939521 | | +0.61616382 |
| $e$ | 0.1541141 | $i$ | 2.99571 | | −0.26880524 | | +0.31992313 |
| $P$ | 3.19 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 08 | 608 | 0.2+ | 1.0+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.2+ | 0.8− | | |
| 2002 05 08 | 608 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.2− | | |
| 2002 05 08 | 608 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2003 12 29 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.6+ | 0.3+ | | |
| 2003 12 29 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.4− | | |
| 2003 12 29 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.2+ | 1.1+ | | |
| 2005 04 05 | 699 | 0.5− | 0.9+ | 2006 10 29 | 400 | 0.3+ | 1.2− | 2006 11 14 | G96 | 0.3+ | 0.4− | | |
| 2005 04 05 | 699 | 1.2+ | 0.8+ | 2006 10 29 | 400 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.5− | | |
| 2005 04 05 | 699 | 0.9+ | 0.9− | 2006 10 30 | 400 | 0.7+ | 0.0 | 2006 11 15 | 704 | 0.2− | 0.9+ | | |
| 2005 04 05 | 699 | 0.6− | 0.4+ | 2006 10 30 | 400 | 0.8− | 0.5− | 2006 11 15 | 704 | 0.3+ | 0.7+ | | |
| 2005 04 14 | 703 | 0.6− | 0.4− | 2006 10 30 | 400 | 0.1− | 0.9+ | 2006 11 15 | 704 | 0.8+ | 0.9+ | | |
| 2005 04 14 | 703 | 0.0 | 0.9− | 2006 10 31 | 691 | 0.1− | 0.3+ | 2006 11 15 | 704 | (0.4+ | 1.6+) | | |
| 2005 04 14 | 703 | 1.2− | 0.8− | 2006 10 31 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1− | | |
| 2005 04 14 | 703 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.5− | 0.1+ | | |
| 2006 08 29 | 703 | 0.9− | 0.7+ | 2006 11 09 | 691 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.4− | | |
| 2006 08 29 | 703 | 0.8+ | 0.0 | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.6− | 0.7− | | |
| 2006 08 29 | 703 | 1.1− | 0.9− | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.3− | 1.4+ | | |
| 2006 08 29 | 703 | 0.8− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 16 | 704 | (0.3+ | 2.0+) | | |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.9− | 0.2− | 2006 11 16 | 704 | 0.5− | 0.1+ | | |
| 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 1.2+ | 0.0 | | |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.0 | 1.1− | 2006 11 19 | 704 | (2.1+ | 1.0+) | | |
| 2006 10 04 | G96 | 0.3+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.9+ | | |
| 2006 10 19 | A50 | 0.8+ | 0.1+ | 2006 11 13 | 691 | 0.6− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.4+ | | |
| 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.6+ | | |
| 2006 10 19 | 703 | 1.2+ | 0.2− | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | (0.3+ | 2.0+) | | |
| 2006 10 19 | 703 | 0.3+ | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2− | 0.9+ | | |
| 2006 10 19 | 703 | 0.4+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | (1.7+ | 0.1+) | | |

**2006 UU$_{137}$ = 2000 TM$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.38282 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17793240 | $\omega$ | 35.36223 | | +0.74861401 | | −0.66293004 |
| $a$ | 3.1306369 | $\Omega$ | 6.19074 | | +0.58484755 | | +0.65315396 |
| $e$ | 0.1514064 | $i$ | 5.34280 | | +0.31229858 | | +0.36594216 |
| $P$ | 5.54 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.3− | 0.2− | | |
| 2000 10 01 | 704 | 0.0 | 0.5− | 2006 10 19 | 691 | 0.8− | 0.5− | 2006 11 15 | G96 | 0.1− | 0.3− | | |
| 2000 10 01 | 704 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.1+ | | |
| 2000 10 01 | 704 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ | | |
| 2000 10 01 | 704 | 0.5− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.9+ | 0.6− | | |
| 2000 10 02 | 704 | 0.1+ | 0.8+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.9+ | 0.6− | | |
| 2000 10 02 | 704 | 0.1+ | 0.6+ | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.1− | 0.6+ | | |
| 2000 10 02 | 704 | 0.4+ | 0.6− | 2006 10 23 | 691 | 1.0− | 1.0+ | 2006 11 15 | 704 | 0.2− | 1.3+ | | |
| 2006 10 04 | G96 | 0.4+ | 0.6− | 2006 11 11 | 703 | 0.2− | 1.4+ | 2006 11 19 | 704 | (1.9− | 0.4+) | | |
| 2006 10 04 | G96 | 0.0 | 0.7+ | 2006 11 11 | 703 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.9+ | 0.9− | | |
| 2006 10 04 | G96 | 0.6+ | 0.2− | 2006 11 11 | 703 | 0.6+ | 0.9+ | 2006 11 19 | 704 | 0.2− | 0.3+ | | |
| 2006 10 19 | A50 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.1+ | 0.2− | | |
| 2006 10 19 | A50 | 0.2+ | 0.5− | 2006 11 14 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.4− | 0.5+ | | |
| 2006 10 19 | G96 | 0.7+ | 1.2− | 2006 11 14 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.7− | 0.9+ | | |
| 2006 10 19 | G96 | 1.2+ | 1.3− | 2006 11 14 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.0 | | |
| 2006 10 19 | G96 | 0.6+ | 0.5− | 2006 11 14 | G96 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.2+ | 0.4+ | | |
| 2006 10 19 | G96 | 0.6+ | 0.2− | 2006 11 15 | G96 | 0.4− | 0.2− | 2006 11 22 | 704 | 1.2− | 0.2− | | |
| 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.6− | 0.2+ | | |

**2006 UW$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.39851 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30002637 | $\omega$ | 134.98593 | | +0.94154389 | | −0.31904030 |
| $a$ | 2.2098515 | $\Omega$ | 243.89882 | | +0.26513790 | | +0.89989930 |
| $e$ | 0.1293133 | $i$ | 6.92058 | | +0.20783887 | | +0.29731219 |
| $P$ | 3.29 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.0 | 0.4− | 2006 11 16 | A89 | 0.9+ | 0.6+ | | |
| 2001 02 20 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 16 | A89 | (2.3+ | 1.4+) | | |
| 2005 05 11 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.0 | 2006 11 16 | A89 | (3.5+ | 1.4+) | | |
| 2005 05 11 | 691 | 0.1+ | 0.1+ | 2006 10 29 | 704 | 0.1− | 1.1+ | 2006 11 17 | 704 | 0.3+ | 0.5+ | | |
| 2005 05 11 | 691 | 0.0 | 0.2+ | 2006 10 29 | 704 | 0.4+ | 1.1+ | 2006 11 17 | 704 | 0.1+ | 0.6+ | | |
| 2006 10 04 | G96 | 0.0 | 0.4− | 2006 10 29 | 704 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 1.1+ | | |
| 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.9+ | | |
| 2006 10 04 | G96 | 0.4+ | 0.6− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.2+ | | |
| 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.2+ | | |
| 2006 10 19 | 704 | 0.3− | 1.1− | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.1− | | |
| 2006 10 19 | 704 | (0.6− | 1.6−) | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.0 | 0.2+ | | |
| 2006 10 19 | 704 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.2− | 0.0 | | |
| 2006 10 19 | 704 | 0.2+ | 0.6− | 2006 11 11 | 703 | 0.6− | 0.3− | 2006 11 21 | H55 | 0.2− | 0.7− | | |
| 2006 10 19 | 703 | 0.2− | 0.7− | 2006 11 13 | 644 | 0.4− | 0.1+ | 2006 11 21 | H55 | 0.1− | 0.6− | | |
| 2006 10 19 | 703 | 0.1− | 0.6− | 2006 11 13 | 644 | 0.4− | 0.1+ | 2006 11 21 | H55 | 0.1− | 0.1+ | | |
| 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 13 | 644 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.1− | 1.2+ | | |
| 2006 10 21 | 704 | 0.3− | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.7+ | 1.0− | | |
| 2006 10 21 | 704 | 0.8− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.5+ | 1.2− | | |
| 2006 10 21 | 704 | 0.8− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.7− | 0.9+ | | |
| 2006 10 21 | 704 | 0.0 | 0.8+ | 2006 11 14 | G96 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.5− | 0.0 | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 21 | 704 | (1.6− | 0.3+) | 2006 11 16 | 704 | (0.1+ | 1.7+) | 2006 11 29 | 704 | 0.5+ | 0.3+ | | | |
| 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.3− | 0.7+ | 2006 11 29 | 704 | 0.1− | 0.5+ | | | |
| 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.3+ | | | |
| 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 0.2+ | 0.4− | | | |
| 2006 10 27 | 703 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.2+ | 0.3− | | | |

**2006 UF$_{138}$ = 2001 SM$_{332}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 61.16924 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21730540 | $\omega$ | 340.77622 | | +0.89333612 | | +0.44922774 |
| $a$ | 2.7400325 | $\Omega$ | 352.49594 | | −0.39928731 | | +0.78115804 |
| $e$ | 0.0396053 | $i$ | 5.29084 | | −0.20620433 | | +0.43357416 |
| $P$ | 4.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 691 | 0.3+ | 0.1− | 2006 10 04 | G96 | 1.1+ | 0.0 | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2001 09 19 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1− |
| 2001 09 19 | 691 | 0.3− | 0.2− | 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.0 | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 09 21 | 704 | 0.7+ | 0.8+ | 2006 10 19 | 691 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2001 09 21 | 704 | 0.7+ | 0.1− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.8− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 14 | G96 | 0.6+ | 0.4− |
| 2001 09 21 | 704 | 0.3− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.3+ | | | | |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1− | | | | |

**2006 UK$_{138}$ = 2004 FG$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 177.78204 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22313849 | $\omega$ | 332.76373 | | −0.72749740 | | +0.66326098 |
| $a$ | 2.6920703 | $\Omega$ | 249.92262 | | −0.59054596 | | −0.73560210 |
| $e$ | 0.1368739 | $i$ | 10.77500 | | −0.34928926 | | −0.13774769 |
| $P$ | 4.42 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 704 | 0.2+ | 0.4− | 2004 03 27 | 699 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.5− |
| 2004 03 17 | 704 | 0.3+ | 0.2− | 2005 08 29 | 644 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.4− | 0.4− |
| 2004 03 17 | 704 | 0.2+ | 0.0 | 2005 08 29 | 644 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.4+ | 0.1+ |
| 2004 03 17 | 704 | 0.2− | 0.1+ | 2005 08 29 | 644 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.3+ |
| 2004 03 17 | 704 | 0.9− | 0.2+ | 2006 10 19 | 691 | 0.4− | 0.2− | 2006 10 27 | 691 | 0.4+ | 0.1− |
| 2004 03 27 | 699 | 0.1+ | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.7+ |
| 2004 03 27 | 699 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.5− | 0.5+ |
| 2004 03 27 | 699 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1+ |

**2006 UL$_{138}$ = 2002 YN$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.46016 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23923528 | $\omega$ | 121.84930 | | +0.51593146 | | −0.85359995 |
| $a$ | 2.5699178 | $\Omega$ | 296.92545 | | +0.75613959 | | +0.49328892 |
| $e$ | 0.0810503 | $i$ | 4.63095 | | +0.40257625 | | +0.16743110 |
| $P$ | 4.12 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.3+ | 0.0 | 2006 10 27 | 703 | (0.3− | 2.3−) | 2006 11 14 | G96 | 0.3+ | 0.6− |
| 2001 07 13 | 644 | 0.2+ | 0.2− | 2006 10 27 | 703 | 1.0− | 0.8− | 2006 11 14 | G96 | 0.5+ | 0.4− |
| 2001 07 13 | 644 | 0.4− | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2002 12 31 | 704 | 0.6+ | 0.6− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | (0.9− | 1.7+) |
| 2002 12 31 | 704 | 0.2+ | 0.6− | 2006 10 27 | 691 | 0.7− | 0.3+ | 2006 11 16 | 704 | 0.1+ | 0.1− |
| 2002 12 31 | 704 | (0.8− | 2.9−) | 2006 10 31 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.1+ |
| 2003 01 05 | 704 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.2+ |
| 2003 01 05 | 704 | 0.3− | 1.0+ | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.3+ |
| 2003 01 05 | 704 | 0.3− | 0.5+ | 2006 11 02 | 703 | (1.8− | 0.9+) | 2006 11 16 | 704 | 0.1+ | 0.4− |
| 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 11 02 | 703 | 0.2+ | 0.9+ | 2006 11 16 | 704 | 0.5− | 0.1− |
| 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 02 | 703 | 0.2+ | 0.6+ | 2006 11 16 | 704 | 0.3− | 0.8+ |
| 2006 10 19 | 691 | 0.3+ | 0.1− | 2006 11 02 | 703 | 1.1+ | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 14 | 703 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 14 | 703 | (0.9− | 2.1+) | 2006 11 19 | 704 | 1.1− | 0.4− |
| 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 14 | 703 | (0.1+ | 1.8+) | 2006 11 19 | 704 | 1.1− | 0.1+ |
| 2006 10 27 | 703 | 0.3− | 0.7− | 2006 11 14 | 703 | 0.7+ | 0.2+ | 2006 11 19 | 704 | 1.2+ | 0.7− |
| 2006 10 27 | 703 | 0.1− | 1.0+ | 2006 11 14 | G96 | 0.1+ | 0.8− | | | | |

**2006 UP$_{138}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 238.09424 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26248904 | $\omega$ | 161.72845 | | −0.94299046 | | −0.33281402 |
| $a$ | 2.4158053 | $\Omega$ | 358.82649 | | +0.29221582 | | −0.82512018 |
| $e$ | 0.0181776 | $i$ | 5.47713 | | +0.15930757 | | −0.45652110 |
| $P$ | 3.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 15 | 691 | 0.4− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2− |
| 1993 04 15 | 691 | 0.2− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.1+ |
| 1993 04 15 | 691 | 0.1− | 0.9− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.5− | 0.2− | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 2004 02 16 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.6− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2004 02 16 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.7+ | 0.3− |
| 2004 06 17 | 568 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.7+ | 0.3− |
| 2004 06 17 | 568 | 0.1− | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.6+ | 0.3− |

**2006 UZ$_{138}$ = 2005 JR$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 59.06812 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22552833 | $\omega$ | 280.81493 | | +0.61250640 | | +0.78356766 |
| $a$ | 2.6730186 | $\Omega$ | 27.80021 | | −0.60943733 | | +0.55206304 |
| $e$ | 0.2740403 | $i$ | 12.90987 | | −0.50341041 | | +0.28504056 |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 07 | 557 | 0.1+ | 0.1+ | 2005 05 04 | 699 | 0.5+ | 1.0+ | 2006 10 27 | 703 | 0.3− | 0.4− |
| 1997 10 07 | 557 | 0.1+ | 0.4− | 2005 05 04 | 644 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.6+ | 0.2+ |
| 1997 10 07 | 557 | 0.0 | 0.0 | 2005 05 04 | 644 | 0.4+ | 0.0 | 2006 10 27 | 703 | 0.4− | 0.1+ |
| 1997 10 07 | 557 | 0.2− | 0.0 | 2005 05 04 | 644 | 0.6+ | 0.3+ | 2006 10 27 | 703 | (0.4− | 1.6−) |
| 1997 10 08 | 388 | 0.6− | 0.2− | 2005 05 16 | 644 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 1997 10 08 | 388 | 0.2+ | 0.3+ | 2005 05 16 | 644 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 1997 10 08 | 388 | 0.7+ | 0.3− | 2005 05 16 | 644 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.3+ |
| 1997 10 08 | 388 | (2.6+ | 0.2+) | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.8+ |
| 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2004 03 18 | 645 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.3− |
| 2005 03 11 | G96 | 0.4+ | 0.1− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 11 | 703 | 0.6− | 0.5+ |
| 2005 03 11 | G96 | 0.1− | 0.1− | 2006 10 19 | 703 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.6+ | 0.4− |
| 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.8− | 0.5+ | 2006 11 22 | 703 | 1.2− | 0.0 |
| 2005 03 11 | G96 | 0.1+ | 0.1+ | 2006 10 19 | 703 | (3.0+ | 0.8+) | 2006 11 22 | 703 | 1.4+ | 0.8− |
| 2005 05 01 | E12 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.4+ | 0.7+ | 2006 11 22 | 703 | 0.5− | 0.1− |
| 2005 05 01 | E12 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.2− |
| 2005 05 01 | E12 | 0.2+ | 0.8+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 25 | G96 | 0.3+ | 0.0 |
| 2005 05 01 | E12 | 1.0− | 1.1+ | 2006 10 19 | 691 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2005 05 04 | 699 | 0.6− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.1− |
| 2005 05 04 | 699 | 1.1+ | 0.5− | 2006 10 23 | 691 | 0.3− | 0.2+ | | | | |
| 2005 05 04 | 699 | (1.8+ | 0.1+) | 2006 10 23 | 691 | 0.4− | 0.3+ | | | | |

**2006 UB$_{139}$ = 1999 XL$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.99021 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27868656 | $\omega$ | 145.78311 | | +0.61250042 | | −0.78621682 |
| $a$ | 2.3212685 | $\Omega$ | 266.30905 | | +0.70564962 | | +0.59052257 |
| $e$ | 0.2054628 | $i$ | 4.70713 | | +0.35623286 | | +0.18206099 |
| $P$ | 3.54 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 1.4− | 2006 11 14 | 703 | 0.2− | 0.1+ |
| 1995 08 28 | 691 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.6− | 0.7− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.5+ | 0.2− |
| 1999 12 07 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 1999 12 07 | 704 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 1999 12 07 | 704 | 0.4+ | 1.9− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 1.0+ | 0.0 |
| 1999 12 07 | 704 | 0.3− | 1.2− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | (0.6− | 1.8+) |
| 1999 12 13 | 704 | 0.3+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.3+ | 2006 11 22 | 704 | 1.3− | 1.3+ |
| 1999 12 13 | 704 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | (0.9− | 2.1+) |
| 1999 12 13 | 704 | 0.5− | 1.2− | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.8− | 1.4+ |
| 2006 10 19 | 703 | 0.7+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | (0.6− | 2.0+) |
| 2006 10 19 | 703 | 0.1− | 0.7− | 2006 11 14 | 703 | 0.2+ | 0.5− | | | | |

**2006 UU$_{139}$ = 1999 FG$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.52679 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21283410 | $\omega$ | 63.63254 | | −0.32354105 | | +0.94618737 |
| $a$ | 2.7782750 | $\Omega$ | 187.50078 | | −0.88640697 | | −0.30571408 |
| $e$ | 0.0395726 | $i$ | 3.12522 | | −0.33106475 | | −0.10615254 |
| $P$ | 4.63 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 11 | 691 | 0.4− | 0.7− | 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.3− |
| 1994 02 11 | 691 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.8+ | 0.7− | 2006 11 23 | 691 | 0.4− | 0.3+ |
| 1994 02 11 | 691 | 0.1+ | 0.6− | 2006 10 19 | G96 | 0.8+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 1999 03 20 | 645 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.7+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.5+ |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 1999 03 21 | 645 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.6+ | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.6− | 0.5− | | | | |

**2006 UZ$_{139}$ = 2003 AZ$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.62155 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22183181 | $\omega$ | 112.36775 | | −0.76584998 | | −0.63455569 |
| $a$ | 2.7026315 | $\Omega$ | 28.56729 | | +0.48037625 | | −0.67210751 |
| $e$ | 0.1268915 | $i$ | 12.55960 | | +0.42744878 | | −0.38158953 |
| $P$ | 4.44 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 704 | 0.3− | 0.8+ | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.0 |
| 2003 01 10 | 704 | 0.3− | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 2003 01 10 | 704 | 0.0 | 0.9+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.1− | 0.5− |
| 2003 01 10 | 704 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.4+ | 1.0+ |
| 2003 01 12 | 699 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.6− | 0.3− |
| 2003 01 12 | 699 | 0.0 | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.0 |
| 2003 01 12 | 699 | 0.2+ | 0.9− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.2+ | 0.3+ |
| 2003 01 12 | 699 | (1.7− | 0.7−) | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 |
| 2003 01 31 | 644 | 0.6+ | 0.3− | 2006 10 31 | 691 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2003 01 31 | 644 | 0.1+ | 0.5− | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2003 01 31 | 644 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.4− | 0.7− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2006 10 19 | A50 | 0.3+ | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.5+ | 2006 11 25 | G96 | 0.1+ | 0.1− |
| 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.2+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.1− |

**2006 UR$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.77748 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28302336 | $\omega$ | 346.45267 | | +0.46549600 | | +0.88441380 |
| $a$ | 2.2974947 | $\Omega$ | 311.27830 | | −0.80780081 | | +0.40907174 |
| $e$ | 0.2548025 | $i$ | 2.55883 | | −0.36162317 | | +0.22466094 |
| $P$ | 3.48 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.3+ | 0.0 |
| 2005 03 17 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2005 03 17 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2005 04 02 | 644 | 0.6− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2005 04 02 | 644 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2005 04 02 | 644 | 0.3− | 0.5+ | 2006 11 09 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.3− |
| 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.2− | 0.2− | | | | |
| 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.3− | 0.2+ | | | | |

**2006 UW$_{140}$ = 2002 SA$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.80356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26091975 | $\omega$ | 41.07996 | | +0.54860373 | | −0.83558352 |
| $a$ | 2.4254821 | $\Omega$ | 15.71826 | | +0.73652726 | | +0.46664332 |
| $e$ | 0.1336980 | $i$ | 6.11990 | | +0.39567859 | | +0.28990376 |
| $P$ | 3.78 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 27 | 644 | 1.2− | 0.2− | 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 2002 09 27 | 644 | 0.6− | 0.1− | 2006 10 19 | 691 | 0.5+ | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2002 09 27 | 644 | 0.6− | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.7+ | 0.6− |
| 2002 09 29 | 291 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.5+ | 0.1− |
| 2002 09 29 | 291 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.9+ | 0.4+ |
| 2002 09 29 | 291 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 1.1− | 0.1+ | 2006 12 01 | G96 | 0.7+ | 0.3− |
| 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.0 | 0.3− | | | | |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.0 | | | | |

**2006 UY$_{140}$ = 2005 NH$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.40722 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21742064 | $\omega$ | 85.60534 | | +0.99304235 | | +0.07915280 |
| $a$ | 2.7390642 | $\Omega$ | 269.83802 | | −0.10745868 | | +0.91192541 |
| $e$ | 0.0433586 | $i$ | 5.00187 | | +0.04816148 | | +0.40264982 |
| $P$ | 4.53 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 05 | 691 | 0.3+ | 0.1+ | 2005 07 08 | 691 | 0.4− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.2+ |
| 2005 07 05 | G96 | 0.3− | 0.2− | 2005 07 08 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.2+ |
| 2005 07 05 | 691 | 0.3+ | 0.3− | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2005 07 05 | G96 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.4+ | 1.2− |
| 2005 07 05 | G96 | 0.1− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.1− | 0.1− |
| 2005 07 05 | 691 | 0.5+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.2+ |
| 2005 07 05 | G96 | 0.4− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.3+ |
| 2005 07 08 | 691 | 0.3− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− |

**2006 UE$_{141}$ = 2002 AJ$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.39894 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18153575 | $\omega$ | 5.83947 | | +0.08233215 | | −0.99502573 |
| $a$ | 3.0890713 | $\Omega$ | 79.44726 | | +0.91204293 | | +0.05254233 |
| $e$ | 0.1569679 | $i$ | 3.27033 | | +0.40174508 | | +0.08463514 |
| $P$ | 5.43 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 704 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.7+ | 1.0+ |
| 2002 01 08 | 704 | 0.2+ | 0.5− | 2006 11 01 | G96 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2002 01 08 | 704 | 0.8+ | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | (2.1− | 1.1−) |
| 2002 01 08 | 704 | 0.4+ | 0.5− | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.4− |
| 2002 01 08 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2− | 0.2− |
| 2002 01 14 | 704 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2002 01 14 | 704 | 0.0 | 0.7− | 2006 11 11 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.4− | 0.5+ |
| 2002 01 14 | 704 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.3− |
| 2002 01 14 | 704 | 0.5− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | (1.6+ | 3.0−) |
| 2006 10 19 | G96 | 0.0 | 0.3+ | 2006 11 15 | 691 | (0.7+ | 2.3−) | 2006 11 27 | 703 | 0.2− | 0.3+ |
| 2006 10 19 | G96 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.0 | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.8− | 0.9− | | |
| 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.0 | 2006 11 29 | 704 | 1.2+ | 0.2+ | | |
| 2006 10 23 | G96 | 0.0 | 0.2+ | 2006 11 21 | 704 | 1.2+ | 0.7+ | 2006 11 29 | 704 | (1.5+ | 0.1+) | | |
| 2006 10 23 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.2− | 2006 11 29 | 704 | 1.0+ | 0.3+ | | |
| 2006 10 23 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1+ | 1.0+ | 2006 11 29 | 704 | 0.2+ | 0.4+ | | |

**2006 UH$_{141}$ = 2000 WQ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.36773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17669885 | $\omega$ | 115.03866 | | +0.90405698 | | +0.41682014 |
| $a$ | 3.1451901 | $\Omega$ | 220.51180 | | −0.42546848 | | +0.85656992 |
| $e$ | 0.1170323 | $i$ | 8.37019 | | −0.04071300 | | +0.30421858 |
| $P$ | 5.58 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 19 | 691 | 0.4+ | 0.1− | 2005 08 24 | 644 | 0.1− | 0.5+ | 2006 10 23 | G96 | 0.4+ | 0.2− |
| 2000 11 19 | 691 | 0.0 | 0.4− | 2005 08 24 | 644 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.0 |
| 2000 11 19 | 691 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.4− | 0.2+ |
| 2000 11 24 | 691 | 0.3+ | 0.3− | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.2− | 0.3+ |
| 2000 11 24 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2000 11 24 | 691 | 0.4− | 0.5− | 2006 09 28 | G96 | 0.6− | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.3+ |
| 2004 04 28 | 691 | 0.0 | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 19 | 691 | 0.1− | 0.5+ |
| 2004 04 28 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 0.6+ | 0.4− | 2006 11 20 | 691 | 0.1− | 0.3+ |
| 2004 04 28 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.7− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2005 07 31 | 644 | 0.2− | 0.7+ | 2006 10 19 | G96 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2005 07 31 | 644 | 0.3− | 0.7+ | 2006 10 23 | G96 | 0.2+ | 0.5− | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2005 07 31 | 644 | 0.2− | 0.7+ | 2006 10 23 | G96 | 0.3− | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2005 08 24 | 644 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.4− | 2006 11 24 | 691 | 0.1− | 0.1+ |

**2006 UK$_{141}$ = 2001 QR$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.33853 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23002376 | $\omega$ | 138.98122 | | +0.97273462 | | +0.22924306 |
| $a$ | 2.6380777 | $\Omega$ | 207.82510 | | −0.22755281 | | +0.91412213 |
| $e$ | 0.0869891 | $i$ | 4.31775 | | −0.04480044 | | +0.33440747 |
| $P$ | 4.28 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 843 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.4− |
| 2001 08 21 | 843 | (2.4− | 0.9−) | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.4+ | 0.4− |
| 2001 08 21 | 843 | 0.2− | 0.5+ | 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 10 22 | G96 | 0.2+ | 0.3− |
| 2001 08 22 | 843 | 1.0− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.3− |
| 2001 08 22 | 843 | 0.6− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 08 22 | 843 | 0.3+ | 1.0+ | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2001 08 22 | 843 | 0.5+ | 0.4− | 2006 10 19 | G96 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 695 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2004 03 29 | 691 | 0.0 | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2004 03 29 | 691 | 0.2+ | 0.0 | 2006 10 19 | 695 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1+ |

**2006 UN$_{141}$ = 2000 GW$_{182}$ = 2004 FK$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.01608 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22912879 | $\omega$ | 177.21080 | | −0.22535881 | | +0.97177391 |
| $a$ | 2.6449427 | $\Omega$ | 79.75814 | | −0.89524751 | | −0.17829127 |
| $e$ | 0.1733419 | $i$ | 4.06610 | | −0.38437651 | | −0.15449174 |
| $P$ | 4.30 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 05 | 699 | 0.1− | 1.2+ | 2005 09 01 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.5− | 0.3− |
| 2000 04 05 | 699 | 0.4− | 0.5+ | 2005 11 06 | G96 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2000 04 05 | 699 | 1.0− | 0.1+ | 2005 11 06 | G96 | 0.4− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2000 04 05 | 699 | 0.2− | 1.5+ | 2005 11 06 | G96 | 0.4+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2000 04 11 | 608 | 0.8+ | 0.6− | 2005 11 06 | G96 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2000 04 11 | 608 | 0.4+ | 1.1− | 2006 10 19 | G96 | 0.2− | 0.9− | 2006 11 19 | 691 | 0.3+ | 0.1− |
| 2000 04 11 | 608 | 0.5+ | 0.9− | 2006 10 19 | G96 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2001 10 16 | 644 | 0.0 | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2001 10 16 | 644 | 0.3− | 0.4+ | 2006 10 19 | 695 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 10 16 | 644 | 0.0 | 0.5+ | 2006 10 19 | G96 | 0.6+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2004 03 20 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 695 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.5+ | 0.5− |
| 2004 03 20 | 704 | (2.2+ | 0.9+) | 2006 10 19 | 695 | 0.5+ | 0.3− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2004 03 20 | 704 | (0.7+ | 2.6+) | 2006 10 19 | 695 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.0 | 0.6− |
| 2004 03 23 | 704 | 1.2+ | 0.1+ | 2006 10 20 | 695 | 0.0 | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2004 03 23 | 704 | 0.6− | 0.7+ | 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2004 03 23 | 704 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2005 08 05 | 644 | 0.1+ | 0.2+ | 2006 10 23 | G96 | 0.2− | 0.4− | 2006 11 25 | G96 | 0.1+ | 0.5− |
| 2005 08 05 | 644 | 0.1− | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2005 08 05 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.5− | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2005 09 01 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.4− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2005 09 01 | 644 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.3− | 1.0+ | | | | |

**2006 UB$_{142}$ = 1998 HH$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 89.66737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17823676 | $\omega$ | 276.03438 | | +0.53427141 | | +0.84194147 |
| $a$ | 3.1270719 | $\Omega$ | 26.69104 | | −0.69385540 | | +0.48775826 |
| $e$ | 0.0929708 | $i$ | 9.66648 | | −0.48282372 | | +0.23070854 |
| $P$ | 5.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.3− | 0.1− | 2006 10 19 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.4+ |
| 1998 04 17 | 691 | 0.5+ | 0.0 | 2006 10 19 | G96 | 1.0+ | 0.1− | 2006 11 14 | G96 | 0.4− | 0.1− |
| 1998 04 17 | 691 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.3+ | 0.6− | 2006 11 14 | G96 | 0.1+ | 0.7− |
| 1998 04 24 | 691 | 0.4+ | 0.6− | 2006 10 19 | 691 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1998 04 24 | 691 | 0.2− | 0.2− | 2006 10 19 | G96 | 1.1+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1998 04 24 | 691 | 0.6− | 0.5+ | 2006 10 19 | G96 | 0.5+ | 0.7− | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2006 10 19 | G96 | 0.3− | 0.2− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2006 10 19 | G96 | 0.0 | 0.3− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2006 10 19 | G96 | 0.9+ | 0.1− | 2006 10 23 | 691 | 0.8− | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.0 |
| 2006 10 19 | G96 | 0.3+ | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.4+ | | | | |
| 2006 10 19 | 691 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.3− | 0.6+ | | | | |

**2006 UC$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.28124 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26591863 | $\omega$ | 320.60385 | | −0.70515339 | | +0.70453968 |
| $a$ | 2.3949891 | $\Omega$ | 264.38925 | | −0.62859709 | | −0.67328819 |
| $e$ | 0.1032728 | $i$ | 4.60439 | | −0.32806156 | | −0.22429189 |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.2− | 0.3+ | 2006 10 19 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.3− | 0.2+ |
| 2005 05 20 | G96 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2005 05 20 | G96 | 0.3+ | 0.3+ | 2006 10 19 | G96 | 0.5+ | 0.0 | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2005 05 20 | G96 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.2+ |
| 2005 06 10 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2005 06 10 | 691 | 0.2+ | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.0 |
| 2005 06 10 | 691 | 0.1+ | 0.3− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.5− |
| 2005 07 05 | G96 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.1+ |
| 2005 07 05 | G96 | 0.6− | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2005 07 05 | G96 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.1− | 0.2+ |
| 2005 07 05 | G96 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2006 10 04 | G96 | 0.5+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.4− |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.3− | 0.1+ | | | | |

**2006 UH$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.02014 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17251489 | $\omega$ | 259.36800 | | +0.26653847 | | +0.95818475 |
| $a$ | 3.1958398 | $\Omega$ | 26.80345 | | −0.76917148 | | +0.27655684 |
| $e$ | 0.2499625 | $i$ | 13.34897 | | −0.58080331 | | +0.07347317 |
| $P$ | 5.71 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 04 | 691 | 0.1+ | 0.2− | 2005 09 06 | E12 | 0.4+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.3+ |
| 2000 12 04 | 691 | 0.2+ | 0.2− | 2006 10 04 | G96 | 0.4+ | 0.2+ | 2006 10 25 | D35 | 0.2+ | 0.3+ |
| 2000 12 04 | 691 | 0.3+ | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 25 | D35 | 0.1+ | 0.1+ |
| 2005 07 05 | E12 | 0.3+ | 0.0 | 2006 10 04 | G96 | 0.3+ | 0.1− | 2006 10 25 | D35 | 0.0 | 0.0 |
| 2005 07 05 | E12 | 0.2+ | 0.5+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.1− |
| 2005 07 05 | E12 | 0.4− | 0.6− | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 10 27 | 691 | 0.1− | 0.0 |
| 2005 07 05 | E12 | 0.6− | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 10 27 | 691 | 0.1− | 0.2+ |
| 2005 08 05 | E12 | 0.5− | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 02 | 691 | 0.1+ | 0.4− |
| 2005 08 05 | E12 | 0.1+ | 0.2+ | 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 02 | 691 | 0.5+ | 0.2+ |
| 2005 08 05 | E12 | 0.5+ | 0.4+ | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 02 | 691 | 0.2− | 0.1+ |
| 2005 08 05 | E12 | (0.4+ | 2.1−) | 2006 10 19 | 691 | 0.0 | 0.5+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2005 09 06 | E12 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.2− |
| 2005 09 06 | E12 | 0.5+ | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2005 09 06 | E12 | 0.3− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.1− |

**2006 UJ$_{142}$ = 1995 YZ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.99063 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25976637 | $\omega$ | 209.58560 | | −0.50198053 | | −0.86166158 |
| $a$ | 2.4326563 | $\Omega$ | 270.63654 | | +0.80743047 | | −0.43601046 |
| $e$ | 0.1678618 | $i$ | 4.27454 | | +0.30995418 | | −0.25968098 |
| $P$ | 3.79 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 28 | 691 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.0 |
| 1995 12 28 | 691 | 0.1+ | 0.1+ | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.3+ |
| 1995 12 28 | 691 | 0.2+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.6− | 0.8+ |
| 1995 12 29 | 691 | 0.2+ | 0.1− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.5− | 0.5+ |
| 1995 12 29 | 691 | 0.3− | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.3− | 0.8+ |
| 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.5+ | 0.6− |
| 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2006 10 19 | G96 | 0.6+ | 0.4− | 2006 10 27 | 691 | 0.2+ | 0.4+ | | | | |

**2006 UW$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.73106 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23349358 | $\omega$ | 328.00405 | | +0.78038750 | | +0.62521518 |
| $a$ | 2.6118772 | $\Omega$ | 353.27099 | | −0.55407010 | | +0.68394424 |
| $e$ | 0.1824886 | $i$ | 4.92809 | | −0.28983043 | | +0.37593384 |
| $P$ | 4.22 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 22 | 809 | 0.5− | 0.7+ | 2006 10 19 | 691 | 0.4+ | 0.1+ | 2006 11 09 | 644 | 0.4− | 0.1+ |
| 1993 09 22 | 809 | 0.6+ | 1.0+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1+ |
| 1993 09 22 | 809 | 0.9− | 0.2+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 703 | (1.6− | 0.6+) |
| 2000 02 27 | 691 | 0.1+ | 0.3− | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.6+ |
| 2000 02 27 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | (1.1− | 1.5+) |
| 2000 02 27 | 691 | 0.9− | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 2002 12 03 | 644 | 0.2− | 0.1− | 2006 10 27 | 703 | 1.0− | 0.2− | 2006 11 14 | 703 | 0.8− | 1.2− |
| 2002 12 03 | 644 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.1− | 0.6+ | 2006 11 14 | 703 | 0.5− | 0.3+ |
| 2002 12 03 | 644 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.1− | 0.7+ | 2006 11 14 | G96 | 0.4+ | 0.2− |
| 2004 02 22 | 691 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.3+ | 0.5+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2004 02 22 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 14 | 703 | (2.3− | 1.1+) |
| 2004 02 22 | 691 | 0.7+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.9+ | 1.2− |
| 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.4+ | 2006 11 22 | 703 | (0.8− | 1.7−) |
| 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 22 | 703 | 1.2− | 0.8+ |
| 2006 10 19 | G96 | 0.4+ | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.2− | 1.4− |
| 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.9+ | 0.2− |
| 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.2+ | 0.1+ | | | | |
| 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2− | | | | |

**2006 UY$_{142}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.15683 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23760314 | $\omega$ | 175.72625 | | +0.51166714 | | −0.84998868 |
| $a$ | 2.5816732 | $\Omega$ | 243.45493 | | +0.78407339 | | +0.52160217 |
| $e$ | 0.1478618 | $i$ | 8.05572 | | +0.35131988 | | +0.07382700 |
| $P$ | 4.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 28 | 599 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2002 11 28 | 599 | 0.8+ | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.6− |
| 2002 11 28 | 599 | 1.5+ | 1.1+ | 2006 10 27 | 703 | 1.4+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2002 11 28 | 599 | (0.8− | 3.1−) | 2006 10 27 | 703 | 0.7+ | 0.5+ | 2006 11 15 | 704 | 0.3− | 0.6+ |
| 2002 12 05 | 608 | 0.6− | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.2+ |
| 2002 12 05 | 608 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.5− | 0.2+ | 2006 11 15 | 704 | 0.1+ | 0.7+ |
| 2002 12 05 | 608 | 0.4− | 0.4+ | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.9+ | 0.5+ |
| 2006 10 19 | G96 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.7+ |
| 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.1− | 0.0 |
| 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.6+ | 1.1+ |
| 2006 10 19 | G96 | 1.1− | 0.2− | 2006 11 08 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.8+ | 0.1− |
| 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2006 10 19 | 691 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.7− | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.3+ |
| 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.1+ | 1.0+ | 2006 11 22 | 704 | 0.4− | 0.3− |
| 2006 10 22 | 644 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.9− | 0.5− | 2006 11 22 | 704 | 0.6+ | 0.7− |
| 2006 10 22 | 644 | 0.6− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 22 | 704 | 0.7+ | 1.2+ |
| 2006 10 23 | 691 | 0.3− | 0.5− | 2006 11 11 | 703 | 1.3− | 0.4− | 2006 11 22 | 704 | 0.6+ | 0.6− |
| 2006 10 23 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1− | 0.7− | 2006 11 22 | 704 | 0.7− | 0.5+ |

**2006 UC$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.08321 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24181709 | $\omega$ | 188.49019 | | +0.01409096 | | −0.99598214 |
| $a$ | 2.5515929 | $\Omega$ | 260.73602 | | +0.92257300 | | +0.04705509 |
| $e$ | 0.1139143 | $i$ | 5.14090 | | +0.38556519 | | −0.07619310 |
| $P$ | 4.08 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 27 | 699 | 1.7− | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2002 11 27 | 699 | 0.4+ | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.4+ | 0.2+ |
| 2002 11 27 | 699 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2002 11 27 | 699 | 0.8+ | 0.7− | 2006 10 19 | 703 | 0.1− | 0.8− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2002 12 11 | 644 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.3+ | 1.2+ | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2002 12 11 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2002 12 11 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.6− | 0.7+ |
| 2005 06 15 | G96 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.4+ | 0.7+ |
| 2005 06 15 | G96 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 15 | 704 | (0.8+ | 1.6+) |
| 2005 06 15 | G96 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.4− | 2006 11 16 | 704 | (3.0− | 0.2−) |
| 2005 06 15 | G96 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.9+ |
| 2005 07 05 | G96 | 0.3− | 0.2+ | 2006 10 27 | 703 | (1.6+ | 1.2−) | 2006 11 16 | 704 | 1.0+ | 0.1+ |
| 2005 07 05 | G96 | 0.1− | 0.1+ | 2006 10 27 | 703 | 1.2− | 0.2− | 2006 11 16 | 704 | (1.1− | 2.1+) |
| 2005 07 05 | G96 | 0.3− | 0.5+ | 2006 10 27 | 703 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.4+ | 1.4+ |
| 2005 07 05 | G96 | 0.1− | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.9− | 2006 11 19 | 704 | 0.2+ | 1.1+ |
| 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | (0.2+ | 1.9+) |
| 2006 10 04 | G96 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 1.3+ |
| 2006 10 04 | G96 | 0.3− | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.2− |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 19 | G96 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 1.1− | 0.2+ | | |
| 2006 10 19 | 703 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.5+ | 0.5− | | |
| 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.2+ | | | | | | |

**2006 UL$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 358.19299 | | (2000.0) | | | |
| $n$ | 0.26581181 | $\omega$ | 157.76571 | | +0.91931704 | −0.38542100 |
| $a$ | 2.3956307 | $\Omega$ | 225.16082 | | +0.34208830 | +0.88247537 |
| $e$ | 0.1282805 | $i$ | 6.43043 | | +0.19450391 | +0.26960690 |
| $P$ | 3.71 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 08 | 691 | 0.1− | 0.2− | 2005 06 08 | 691 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.3− | 0.9− | | |
| 1991 10 08 | 691 | 0.3+ | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.6+ | 0.4− | | |
| 1991 10 08 | 691 | 0.3− | 0.4+ | 2006 09 30 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2002 08 27 | 644 | 0.1+ | 0.3+ | 2006 09 30 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.2+ | | |
| 2002 08 27 | 644 | 0.0 | 0.5+ | 2006 10 19 | 644 | 0.8− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2002 08 27 | 644 | 0.5+ | 0.1+ | 2006 10 19 | 644 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.4+ | 0.1+ | | |
| 2002 08 27 | 644 | 0.2− | 0.3+ | 2006 10 19 | 644 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.3+ | 0.2+ | | |
| 2002 08 27 | 644 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.3+ | | |
| 2002 08 27 | 644 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.6− | | |
| 2002 09 04 | 644 | 0.4− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.6− | 0.7− | | |
| 2002 09 04 | 644 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.6+ | 0.4+ | | |
| 2002 09 04 | 644 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.1− | 0.1− | | |
| 2004 02 11 | 644 | 0.1+ | 1.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− | | |
| 2004 02 11 | 644 | 0.4+ | 0.7+ | 2006 11 10 | 683 | 0.7− | 1.1− | 2006 11 23 | 691 | 0.2− | 0.0 | | |
| 2004 02 11 | 644 | 0.5+ | 1.3+ | 2006 11 10 | 683 | (1.5− | 2.8−) | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2005 06 08 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.5− | | | | | | |
| 2005 06 08 | 691 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.0 | 0.1− | | | | | | |

**2006 US$_{143}$ = 2002 XB$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 301.35407 | | (2000.0) | | | |
| $n$ | 0.24210921 | $\omega$ | 197.53907 | | −0.49260129 | −0.86751546 |
| $a$ | 2.5495400 | $\Omega$ | 282.02099 | | +0.80666173 | −0.42541554 |
| $e$ | 0.1932219 | $i$ | 4.04536 | | +0.32655907 | −0.25775675 |
| $P$ | 4.07 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.7− | | |
| 2002 12 06 | 704 | 0.3− | 0.7− | 2006 10 23 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.0 | | |
| 2002 12 06 | 704 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.0 | | |
| 2002 12 06 | 704 | 0.3+ | 0.2− | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.5− | 1.2− | | |
| 2002 12 06 | 704 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.1− | 0.2− | | |
| 2002 12 11 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.2− | 0.5+ | | |
| 2002 12 11 | 704 | 0.8+ | 0.7− | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.0 | | |
| 2002 12 11 | 704 | 0.5− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 1.5− | 0.9+ | | |
| 2002 12 11 | 704 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.2− | 0.4− | | |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.0 | 0.6+ | | |
| 2002 12 11 | 333 | 0.5− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.6− | 0.9+ | | |
| 2002 12 11 | 333 | 0.3− | 0.3− | 2006 11 11 | 644 | 0.0 | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.2− | | |
| 2002 12 11 | 333 | 0.2− | 0.6− | 2006 11 11 | 644 | 0.1− | 0.1+ | 2006 11 22 | 704 | 1.2− | 1.0− | | |
| 2004 06 13 | 691 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.1− | 0.6− | | |
| 2004 06 13 | 691 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.9− | 0.4− | 2006 12 01 | 691 | 0.0 | 1.9+ | | |
| 2004 06 13 | 691 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.0 | 0.7+ | 2006 12 01 | 691 | 0.2+ | 0.3− | | |
| 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 1.4+ | 0.5+ | 2006 12 01 | 691 | 0.3+ | 0.1+ | | |
| 2006 10 19 | 691 | 0.5+ | 0.1+ | 2006 11 16 | 704 | 0.5− | 0.1+ | | | | | | |

**2006 UT$_{143}$ = 1995 WG$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 51.45597 | | (2000.0) | | | |
| $n$ | 0.18086440 | $\omega$ | 306.05869 | | +0.95226302 | +0.23758255 |
| $a$ | 3.0967108 | $\Omega$ | 41.18562 | | −0.08478287 | +0.80907367 |
| $e$ | 0.0996349 | $i$ | 16.92496 | | −0.29326952 | +0.53754472 |
| $P$ | 5.45 | $H$ | 15.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 15 | 704 | 0.4+ | 0.5− | | |
| 1995 11 18 | 691 | 0.1+ | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.7− | 2006 11 15 | 704 | 0.2− | 0.8− | | |
| 1995 11 18 | 691 | 0.3+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 11 15 | 704 | 0.4+ | 0.9− | | |
| 1995 11 24 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1+ | 0.8+ | 2006 11 16 | 704 | (0.3+ | 1.5−) | | |
| 1995 11 24 | 691 | 0.4− | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 1.0+ | 0.7+ | | |
| 1995 11 24 | 691 | 0.2− | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.3− | | |
| 2000 09 27 | 645 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.9− | 0.7+ | | |
| 2000 09 27 | 645 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.4− | | |
| 2005 08 08 | E12 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.6− | | |
| 2005 08 08 | E12 | 0.1+ | 0.8+ | 2006 11 14 | 703 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.5− | | |
| 2005 08 08 | E12 | 0.1− | 0.2+ | 2006 11 14 | 703 | (0.9− | 2.3+) | 2006 11 21 | G96 | 0.1+ | 0.5− | | |
| 2005 08 08 | E12 | 0.9− | 0.5+ | 2006 11 14 | 703 | (0.3+ | 2.1+) | | | | | | |
| 2006 10 04 | G96 | 0.3− | 0.6− | 2006 11 14 | 703 | 0.3− | 0.7+ | | | | | | |

**2006 UU$_{143}$ = 2001 SL$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 8.17147 | | (2000.0) | | | |
| $n$ | 0.21405229 | $\omega$ | 131.01005 | | +0.97348807 | −0.20440511 |
| $a$ | 2.7677241 | $\Omega$ | 241.01691 | | +0.15826885 | +0.92596017 |
| $e$ | 0.2382184 | $i$ | 6.73977 | | +0.16514223 | +0.31751586 |
| $P$ | 4.60 | $H$ | 15.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 699 | 1.2+ | 1.0+ | 2006 10 19 | 644 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.2+ | 0.2− | | |
| 2001 09 18 | 699 | 0.2− | 0.4+ | 2006 10 19 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.6+ | 0.4− | | |
| 2001 09 18 | 699 | 0.2− | 0.7− | 2006 10 19 | 644 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.6− | | |
| 2001 09 18 | 699 | 0.8+ | 1.0− | 2006 10 21 | 704 | 0.5+ | 0.9+ | 2006 11 16 | 704 | 1.4+ | 0.6+ | | |
| 2001 09 21 | 704 | 0.7− | 0.1− | 2006 10 21 | 704 | 0.5+ | 1.0+ | 2006 11 16 | 704 | 0.9− | 0.1+ | | |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 10 21 | 704 | 0.0 | 0.7+ | 2006 11 16 | 704 | 0.7+ | 0.2+ | | |
| 2001 09 21 | 704 | 0.7+ | 0.6− | 2006 10 21 | 704 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.3+ | | |
| 2001 09 21 | 704 | 0.8− | 0.7+ | 2006 10 21 | 704 | 0.9+ | 1.1+ | 2006 11 18 | 704 | 0.2+ | 0.7+ | | |
| 2001 09 21 | 704 | 0.7− | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.1− | 0.5+ | | |
| 2001 09 21 | 704 | 0.5− | 0.4+ | 2006 10 23 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.8+ | | |
| 2001 09 21 | 704 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.2− | | |
| 2001 09 21 | 704 | 0.3− | 0.9+ | 2006 10 27 | 703 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.2− | 0.2− | | |
| 2005 06 16 | G96 | 0.1+ | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.1+ | | |
| 2005 06 16 | G96 | 0.0 | 0.4− | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.1− | 0.1− | | |
| 2005 06 16 | G96 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.2− | | |
| 2005 06 16 | G96 | 0.1− | 0.1− | 2006 10 29 | 704 | (0.1− | 1.6−) | 2006 11 22 | 704 | 0.8− | 0.7− | | |
| 2006 08 29 | 703 | 0.0 | 0.5− | 2006 10 29 | 704 | 0.3− | 0.2+ | 2006 11 22 | 704 | 0.4− | 1.4− | | |
| 2006 08 29 | 703 | 0.7+ | 0.3− | 2006 10 29 | 704 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.6− | 0.2+ | | |
| 2006 08 29 | 703 | 0.8− | 0.2− | 2006 10 29 | 704 | (2.0− | 0.0 ) | 2006 11 22 | 704 | 0.1− | 0.2− | | |
| 2006 08 29 | 703 | 0.1− | 1.0− | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.4− | | |
| 2006 10 04 | G96 | 0.0 | 0.6− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.7− | 0.3+ | | |
| 2006 10 04 | G96 | 0.1+ | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.1+ | | |
| 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.1− | | |
| 2006 10 04 | G96 | 0.1− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.9− | 0.8+ | | |
| 2006 10 12 | 644 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 1.2+ | 0.2+ | | |
| 2006 10 12 | 644 | 0.2+ | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.1− | | | | | | |
| 2006 10 12 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 1.1− | 0.7− | | | | | | |

**2006 UX$_{143}$ = 2002 XK$_{104}$ = 2005 NS$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 339.98697 | | $\omega$ | 160.57220 | +0.40569079 | −0.91256854 |
| $n$ | 0.24034213 | | $\Omega$ | 265.46582 | +0.83162973 | +0.39183833 |
| $a$ | 2.5620216 | | $i$ | 2.95089 | +0.37921890 | +0.11696741 |
| $e$ | 0.0502173 | | $H$ | 16.6 | $G$ 0.15 | $U$ 3 |
| $P$ | 4.10 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2005 07 15 | 691 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.6− |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2005 07 15 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.3− |
| 2002 12 05 | 704 | 0.6− | 0.4+ | 2005 07 15 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2002 12 05 | 704 | 0.4− | 0.1− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.3− |
| 2002 12 10 | 704 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.2+ | 0.2− |
| 2002 12 10 | 704 | 0.0 | 0.8+ | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.6− | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2002 12 10 | 704 | 0.2− | 0.6+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.5− | 0.8+ |
| 2002 12 10 | 704 | 0.6+ | 0.4− | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.5+ | 1.3+ |
| 2002 12 10 | 704 | 0.5+ | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 21 | 704 | 0.5− | 0.9+ |
| 2002 12 10 | 704 | 0.1− | 0.9− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.0 | 1.0+ |
| 2005 07 10 | 691 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.2− | 0.0 |
| 2005 07 10 | 691 | 1.0+ | 1.1+ | 2006 11 10 | 691 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2005 07 10 | 691 | 1.0− | 0.3− | 2006 11 10 | 691 | 0.9+ | 0.5− | 2006 11 22 | 691 | 0.2− | 0.9+ |

**2006 UZ$_{143}$ = 2005 EC$_{258}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.21247 | | $\omega$ | 30.11867 | +0.90714593 | +0.42015713 |
| $n$ | 0.29887236 | | $\Omega$ | 305.01834 | −0.39160227 | +0.82236684 |
| $a$ | 2.2155363 | | $i$ | 1.64728 | −0.15405819 | +0.38364147 |
| $e$ | 0.2711158 | | $H$ | 16.9 | $G$ 0.15 | $U$ 4 |
| $P$ | 3.30 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 11 | G96 | 0.7− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.5+ |
| 2005 03 11 | G96 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.7+ | 0.0 |
| 2005 03 11 | G96 | 0.9− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.1− |
| 2005 03 11 | G96 | 0.9− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.4− | 2006 11 20 | 704 | 1.0+ | 0.0 |
| 2005 03 17 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 704 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 0.6+ | 0.1+ |
| 2005 03 17 | 691 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.6+ | 0.3+ | 2006 11 21 | 704 | 1.1− | 0.9+ |
| 2005 03 17 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.7− | 1.5+ |
| 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 11 15 | 704 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2006 09 18 | 703 | 0.3+ | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2006 09 18 | 703 | 0.2− | 0.4+ | 2006 11 16 | 704 | 1.4− | 1.3− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2006 09 18 | 703 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.7+ | 0.7− | 2006 11 22 | 704 | 0.3− | 0.4− |
| 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 1.1+ | 0.3− | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2006 10 19 | 691 | 0.3− | 0.2+ | 2006 11 19 | 704 | 1.7+ | 2.2− | 2006 11 22 | 704 | 0.2+ | 0.5+ |
| 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 1.4+ | 1.0− | | | | |
| 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.5+ | | | | |

**2006 UG$_{144}$ = 2003 FW$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 273.50195 | | $\omega$ | 283.54579 | −0.79950870 | −0.59154967 |
| $n$ | 0.18346374 | | $\Omega$ | 220.32753 | +0.59430950 | −0.75392678 |
| $a$ | 3.0673916 | | $i$ | 9.26444 | +0.08707500 | −0.28576807 |
| $e$ | 0.0441750 | | $H$ | 14.7 | $G$ 0.15 | $U$ 4 |
| $P$ | 5.37 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 28 | 691 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.1− |
| 2003 03 28 | 691 | 0.3+ | 0.0 | 2006 09 28 | G96 | 0.5+ | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.0 |
| 2003 03 28 | 691 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.1+ |
| 2003 04 01 | 644 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1− |
| 2003 04 01 | 644 | 0.4− | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.1− |
| 2003 04 01 | 644 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.1− | 0.7− | 2006 11 12 | G96 | 0.3− | 0.2+ |
| 2006 09 28 | G96 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2006 09 28 | G96 | 0.1− | 0.3− | 2006 10 19 | 703 | 1.4+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2006 09 28 | G96 | 0.3− | 0.3− | 2006 10 19 | 703 | 0.2− | 1.0+ | | | | |

**2006 UJ$_{144}$ = 2001 QB$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 36.33354 | | $\omega$ | 57.98583 | +0.96939399 | +0.24233066 |
| $n$ | 0.22659057 | | $\Omega$ | 287.96449 | −0.23690102 | +0.88117672 |
| $a$ | 2.6646581 | | $i$ | 2.37290 | −0.06444534 | +0.40595991 |
| $e$ | 0.1973195 | | $H$ | 16.8 | $G$ 0.15 | $U$ 3 |
| $P$ | 4.35 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 14 | 644 | 0.5− | 0.9+ | 2002 12 28 | 735 | 0.1+ | 0.5+ | 2006 11 09 | 691 | 0.1+ | 0.2− |
| 2001 07 14 | 644 | 1.0− | 0.6+ | 2002 12 28 | 735 | 0.7− | 0.7+ | 2006 11 09 | 691 | 0.2+ | 0.1+ |
| 2001 07 14 | 644 | 0.9− | 0.5+ | 2002 12 28 | 735 | 0.8+ | 0.4− | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2001 07 14 | 644 | 0.5− | 0.9+ | 2006 10 19 | 691 | 0.0 | 0.7− | 2006 11 13 | 691 | 0.0 | 0.3− |
| 2001 07 14 | 644 | 0.1− | 1.4+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2001 07 14 | 644 | 0.2− | 0.9+ | 2006 10 19 | 691 | 0.4+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.1− |
| 2001 07 27 | 608 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2001 07 27 | 608 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 2001 07 27 | 608 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.2+ |
| 2001 08 23 | 691 | 0.5+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2001 08 23 | 691 | 0.4+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2001 08 23 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.3+ |
| 2001 08 24 | 704 | 0.0 | 0.6− | 2006 10 31 | 691 | 0.1− | 0.7+ | 2006 12 01 | G96 | 0.2+ | 0.4− |
| 2001 08 24 | 704 | 0.3− | 0.8− | 2006 10 31 | 691 | 0.1− | 0.1+ | | | | |
| 2001 08 24 | 704 | 0.5− | 0.4− | 2006 10 31 | 691 | 0.3− | 0.0 | | | | |

**2006 UN$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.54427 | | $\omega$ | 120.84733 | +0.98546729 | −0.03094806 |
| $n$ | 0.19179290 | | $\Omega$ | 241.39748 | −0.02214409 | +0.95146637 |
| $a$ | 2.9779292 | | $i$ | 10.96671 | +0.16841573 | +0.30619269 |
| $e$ | 0.1306523 | | $H$ | 16.2 | $G$ 0.15 | $U$ 3 |
| $P$ | 5.14 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2001 11 17 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2001 11 17 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.0 |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2− |
| 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2006 10 04 | G96 | 0.5+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2006 10 04 | G96 | 0.4− | 0.3− | 2006 10 27 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.7− | 0.0 |
| 2006 10 19 | 695 | 0.1+ | 0.3+ | 2006 11 09 | 691 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2006 10 19 | 695 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.3− | 1.9+ |
| 2006 10 19 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.9+ |
| 2006 10 19 | 691 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.6− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2006 10 19 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.8+ | 0.8− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2+ | 0.9+ | 2006 11 24 | G96 | 0.2+ | 0.3− |

**2006 UG$_{145}$ = 1996 AK$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 314.95830 | | $\omega$ | 107.60229 | +0.48733145 | −0.86691238 |
| $n$ | 0.25457309 | | $\Omega$ | 312.76159 | +0.73729491 | +0.47277370 |
| $a$ | 2.4656289 | | $i$ | 8.20208 | +0.46787207 | +0.15794920 |
| $e$ | 0.2033922 | | $H$ | 17.4 | $G$ 0.15 | $U$ 3 |
| $P$ | 3.87 | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 12 | 691 | 0.5− | 0.1− | 2002 08 28 | 644 | 0.4− | 0.8+ | 2006 09 22 | 703 | 0.5− | 0.6− |
| 1996 01 12 | 691 | 0.6− | 0.2+ | 2006 09 14 | 703 | 0.4+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.0 |
| 1996 01 12 | 691 | 0.2− | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− |
| 1996 01 19 | 691 | 0.5+ | 0.1+ | 2006 09 14 | 703 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 19 | 691 | 0.6+ | 0.1+ | 2006 09 14 | 703 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.3+ | 0.2+ | | |
| 1996 01 19 | 691 | 0.2+ | 0.2− | 2006 09 22 | 703 | 1.1− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2− | | |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2006 09 22 | 703 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.1− | | |
| 2002 08 28 | 644 | 0.3− | 0.4+ | 2006 09 22 | 703 | 0.1+ | 0.7− | | | | | | |

**2006 UD$_{146}$ = 2003 WH$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.73117 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27584482 | $\omega$ | 15.96035 | | +0.99323866 | +0.10899292 | |
| $a$ | 2.3371836 | $\Omega$ | 337.66556 | | −0.11465675 | +0.86706018 | |
| $e$ | 0.1276452 | $i$ | 6.03741 | | −0.01818771 | +0.48613494 | |
| $P$ | 3.57 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 704 | 0.2− | 0.3+ | 2003 12 17 | 691 | 0.1− | 0.3− | 2006 09 30 | G96 | 0.0 | 0.2− |
| 2003 11 19 | 704 | 1.1+ | 0.8+ | 2003 12 29 | 691 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1− | 0.1− |
| 2003 11 19 | 704 | 0.7− | 0.4− | 2003 12 29 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.6+ | 0.0 |
| 2003 11 19 | 704 | 0.2+ | 1.0+ | 2003 12 29 | 691 | 0.2− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.2+ |
| 2003 11 19 | 704 | 0.1+ | 0.2+ | 2005 05 14 | G96 | 0.2− | 0.5+ | 2006 10 20 | G96 | (1.5− | 1.6+) |
| 2003 11 20 | 704 | (0.6+ | 2.1+) | 2005 05 14 | G96 | 0.1− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2003 11 20 | 704 | 0.1− | 0.5+ | 2005 05 14 | G96 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.0 | 0.1− |
| 2003 11 20 | 704 | 0.0 | 1.0+ | 2005 05 14 | G96 | 0.4+ | 0.3− | 2006 10 23 | G96 | 0.5− | 0.3− |
| 2003 12 17 | 691 | 0.1+ | 0.4− | 2006 09 30 | G96 | 0.1− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.3− | 2006 09 30 | G96 | 0.3+ | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.1− |

**2006 UL$_{146}$ = 1999 TL$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.50218 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27708632 | $\omega$ | 113.66764 | | +0.86002649 | +0.50716612 | |
| $a$ | 2.3301971 | $\Omega$ | 215.92858 | | −0.49599705 | +0.80519016 | |
| $e$ | 0.1389656 | $i$ | 5.47730 | | −0.11975541 | +0.30732936 | |
| $P$ | 3.56 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 1.0+ | 0.6− | 1999 11 29 | 691 | 0.0 | 0.0 | 2006 09 19 | 703 | 0.5+ | 0.4− |
| 1999 10 10 | 704 | 0.5+ | 0.1− | 1999 11 29 | 691 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.0 |
| 1999 10 10 | 704 | 0.0 | 0.8− | 2006 08 21 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.0 | 0.3+ |
| 1999 10 13 | 704 | 0.2+ | 0.1+ | 2006 08 21 | 691 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ |
| 1999 10 13 | 704 | 0.9+ | 0.2− | 2006 08 21 | 691 | 0.2− | 0.0 | 2006 10 22 | 691 | 0.2+ | 0.1+ |
| 1999 10 13 | 704 | 0.0 | 1.6+ | 2006 09 19 | 703 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 1999 10 13 | 704 | 1.3− | 0.3+ | 2006 09 19 | 703 | 1.3+ | 1.2− | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 1999 11 29 | 691 | 0.1+ | 0.4− | 2006 09 19 | 703 | 0.5− | 0.1+ | | | | |

**2006 UR$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.55887 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22517376 | $\omega$ | 85.22433 | | +0.57975066 | −0.81240652 | |
| $a$ | 2.6758239 | $\Omega$ | 329.07637 | | +0.69121104 | +0.53087912 | |
| $e$ | 0.1506913 | $i$ | 6.96633 | | +0.43141217 | +0.24117008 | |
| $P$ | 4.38 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 291 | 0.3− | 0.1− | 2004 02 11 | 644 | 0.2− | 0.2− | 2006 10 22 | G96 | 0.1+ | 0.6+ |
| 2004 01 30 | 291 | 0.2− | 0.2− | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 10 22 | G96 | 0.2+ | 0.4− |
| 2004 01 30 | 291 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.2− | 2006 10 22 | G96 | 0.3+ | 0.1+ |
| 2004 02 11 | 644 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.1− | 0.2− | 2006 10 22 | G96 | 0.2− | 0.3+ |
| 2004 02 11 | 644 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.4− | 0.1− | | | | |

**2006 UP$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.10480 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23038636 | $\omega$ | 127.22591 | | +0.86030581 | −0.50733043 | |
| $a$ | 2.6353090 | $\Omega$ | 263.31072 | | +0.45035771 | +0.80223931 | |
| $e$ | 0.2311143 | $i$ | 2.87972 | | +0.23885527 | +0.31468702 | |
| $P$ | 4.28 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 291 | 0.3− | 0.1− | 2006 10 20 | 691 | 0.5+ | 1.5− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 01 02 | 291 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.1− | 0.1− |
| 2003 01 02 | 291 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2006 09 25 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.4− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ |
| 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 20 | 644 | 0.5− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2006 10 03 | 691 | 0.3+ | 1.1+ | 2006 10 21 | 703 | 0.6+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2006 10 03 | 691 | 0.4− | 0.3+ | 2006 10 21 | 703 | 0.1+ | 0.6+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2006 10 03 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 0.7+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 2006 10 15 | 104 | 1.1+ | 0.6+ | 2006 10 21 | 703 | 0.4+ | 0.6− | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2006 10 15 | 104 | 0.2− | 0.6+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.2+ |
| 2006 10 15 | 104 | 0.7+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2006 10 15 | 104 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | | | | |

**2006 UH$_{148}$ = 1998 XU$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.11002 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23262217 | $\omega$ | 267.45949 | | +0.36818048 | −0.92957937 | |
| $a$ | 2.6183959 | $\Omega$ | 160.90643 | | +0.87344598 | +0.33916885 | |
| $e$ | 0.0543429 | $i$ | 3.16084 | | +0.31864596 | +0.14438379 | |
| $P$ | 4.24 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 11 | 691 | 0.8+ | 0.3+ | 2004 02 14 | 691 | 0.0 | 0.5+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1998 12 11 | 691 | 0.4+ | 0.2− | 2004 03 17 | 691 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.0 |
| 1998 12 11 | 691 | 0.0 | 0.1+ | 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.0 |
| 1998 12 19 | 691 | 0.4− | 0.2− | 2004 03 17 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.3+ | 0.4− |
| 1998 12 19 | 691 | 0.3− | 0.5− | 2006 09 15 | 691 | 0.1+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.1+ |
| 1998 12 19 | 691 | 0.2− | 0.6− | 2006 09 15 | 691 | 1.4− | 0.8− | 2006 10 20 | G96 | 0.1− | 0.1+ |
| 2000 04 03 | 691 | 0.1+ | 0.1+ | 2006 09 15 | 691 | 0.1+ | 0.5+ | 2006 10 20 | G96 | 0.1− | 0.0 |
| 2000 04 03 | 691 | 0.0 | 0.1− | 2006 09 30 | 691 | 0.2+ | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.3+ |
| 2000 04 03 | 691 | 0.1− | 0.0 | 2006 09 30 | 691 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.2+ |
| 2004 02 14 | 691 | 0.2+ | 0.5+ | 2006 09 30 | 691 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.2− | 0.6+ |
| 2004 02 14 | 691 | 0.2+ | 0.4+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.8+ |

**2006 UF$_{149}$ = 2001 QE$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.35631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21662101 | $\omega$ | 18.58279 | | +0.29632200 | −0.95407517 | |
| $a$ | 2.7458006 | $\Omega$ | 54.20319 | | +0.86926013 | +0.25033112 | |
| $e$ | 0.0671552 | $i$ | 3.10795 | | +0.39570203 | +0.16454453 | |
| $P$ | 4.55 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.0 |
| 2001 08 19 | 807 | 0.3− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2001 08 20 | 807 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2001 08 20 | 807 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2006 09 26 | G96 | 0.1+ | 0.2− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.4− | 0.8− |
| 2006 09 26 | G96 | 0.3− | 0.6− | 2006 10 22 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.5+ | 0.4+ |
| 2006 09 26 | G96 | 0.6+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.5− | 2006 11 09 | 691 | 0.2− | 0.7+ |
| 2006 09 26 | G96 | 0.2− | 0.2+ | 2006 10 22 | 691 | 0.1− | 0.5− | 2006 11 09 | 691 | 0.0 | 0.9+ |
| 2006 09 26 | G96 | 0.7+ | 0.4+ | 2006 10 29 | G96 | 0.2− | 0.6− | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 29 | G96 | 0.8+ | 0.0 | 2006 11 22 | G96 | 0.4− | 0.4− |
| 2006 09 26 | G96 | 0.3+ | 0.1+ | 2006 10 29 | G96 | 0.1+ | 0.5− | 2006 11 22 | G96 | 0.4− | 0.7− |
| 2006 09 26 | G96 | 0.1− | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.5− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 10 29 | G96 | 0.1+ | 0.6− | | | | | | |
| 2006 09 26 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.0 | 0.1− | | | | | | |

**2006 UR$_{149}$ = 2002 TA$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.76781 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23442744 | $\omega$ | 209.04523 | | −0.61313337 | | +0.78932721 |
| $a$ | 2.6049362 | $\Omega$ | 23.18448 | | −0.70813848 | | −0.53115235 |
| $e$ | 0.0907294 | $i$ | 4.67596 | | −0.35015335 | | −0.30796060 |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 29 | 691 | 0.6+ | 0.1+ | 2005 05 21 | 644 | 0.3+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.2− | | |
| 1998 10 29 | 691 | 0.3− | 0.1− | 2006 09 15 | 691 | 0.1− | 0.5+ | 2006 09 30 | 703 | 0.3− | 0.2− | | |
| 1998 10 29 | 691 | 0.3− | 0.0 | 2006 09 15 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.3+ | 1.0− | | |
| 2002 10 07 | 644 | 0.0 | 0.1− | 2006 09 15 | 691 | 0.4− | 0.3+ | 2006 09 30 | 703 | 0.1− | 0.6+ | | |
| 2002 10 07 | 644 | 0.0 | 0.6+ | 2006 09 30 | 691 | 0.6+ | 0.5− | 2006 10 20 | G96 | 0.3− | 0.2− | | |
| 2002 10 07 | 644 | 0.9− | 0.5+ | 2006 09 30 | 691 | 0.3+ | 0.3− | 2006 10 20 | G96 | 0.0 | 0.5− | | |
| 2002 10 08 | 291 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.1+ | 0.2− | 2006 10 20 | G96 | 0.4+ | 0.3− | | |
| 2002 10 08 | 291 | 0.0 | 0.1+ | 2006 09 30 | G96 | 0.0 | 0.5− | 2006 10 20 | G96 | 0.3− | 0.0 | | |
| 2002 10 08 | 291 | 0.2+ | 0.1+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 10 21 | 291 | 0.2+ | 0.6+ | | |
| 2005 05 21 | 644 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 10 21 | 291 | 0.1− | 0.3+ | | |
| 2005 05 21 | 644 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.5− | 2006 10 21 | 291 | 0.1+ | 0.2− | | |

**2006 UV$_{149}$ = 2005 LK$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.75475 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17283226 | $\omega$ | 267.45065 | | +0.93176867 | | +0.19475785 |
| $a$ | 3.1919262 | $\Omega$ | 81.19221 | | −0.05054968 | | +0.90531029 |
| $e$ | 0.2829671 | $i$ | 18.06218 | | −0.35951616 | | +0.37746876 |
| $P$ | 5.70 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 13 | 599 | 0.2+ | 0.1− | 2006 10 02 | 703 | 0.3+ | 0.4+ | 2006 10 20 | 703 | 0.3− | 0.0 | | |
| 2005 06 13 | 599 | 0.4+ | 0.2+ | 2006 10 02 | 703 | 0.2− | 0.1− | 2006 10 20 | 703 | 0.6+ | 0.3− | | |
| 2005 06 13 | 599 | 0.0 | 0.2+ | 2006 10 02 | 703 | 0.2− | 0.3− | 2006 10 20 | 703 | 0.7− | 0.2− | | |
| 2005 06 13 | 599 | 0.3− | 0.5− | 2006 10 02 | 703 | 0.4+ | 0.4− | 2006 10 21 | 703 | 0.2+ | 0.3− | | |
| 2005 06 17 | G96 | 0.4+ | 0.5+ | 2006 10 10 | 644 | 0.2− | 0.0 | 2006 10 21 | 703 | 0.4− | 0.1+ | | |
| 2005 06 17 | G96 | 0.5− | 0.1− | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.7+ | 0.1+ | | |
| 2005 06 17 | G96 | 0.2− | 0.1− | 2006 10 10 | 644 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 0.2− | | |
| 2005 06 17 | G96 | 0.1− | 0.0 | 2006 10 20 | 703 | 0.3+ | 0.7+ | | | | | | |

**2006 UO$_{151}$ = 2002 XO$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.71367 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23816607 | $\omega$ | 327.97211 | | +0.86367862 | | −0.47669806 |
| $a$ | 2.5776036 | $\Omega$ | 61.35313 | | +0.49281437 | | +0.73043107 |
| $e$ | 0.2083677 | $i$ | 10.75471 | | +0.10579809 | | +0.48911084 |
| $P$ | 4.14 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.6− | 0.6− | 2006 11 11 | 703 | 0.7+ | 0.6− | 2006 11 18 | G96 | 0.0 | 0.1+ | | |
| 2002 12 11 | 704 | 0.7+ | 0.3− | 2006 11 11 | 703 | 1.2− | 0.3− | 2006 11 18 | G96 | 0.1− | 0.1+ | | |
| 2002 12 11 | 704 | 0.8+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.1+ | | |
| 2002 12 14 | 704 | 0.6− | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.0 | 0.2+ | | |
| 2002 12 14 | 704 | 0.8− | 0.8+ | 2006 11 17 | 703 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.0 | 0.9+ | | |
| 2002 12 14 | 704 | 0.6+ | 0.0 | 2006 11 17 | 703 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.2− | | |
| 2006 10 20 | 703 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.7− | 0.8+ | 2006 11 21 | 704 | 0.4− | 0.4+ | | |
| 2006 10 20 | 703 | 0.1− | 0.3+ | 2006 11 17 | 703 | (1.7+ | 0.0 ) | 2006 11 21 | 704 | 0.0 | 0.1− | | |
| 2006 10 20 | 703 | 1.3− | 1.4+ | 2006 11 17 | 703 | (1.6− | 0.8+) | 2006 11 21 | 704 | 0.0 | 0.2− | | |
| 2006 10 20 | 703 | 0.4− | 0.7− | 2006 11 18 | 704 | (1.0− | 1.8−) | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2006 10 22 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.9+ | 0.3+ | 2006 11 27 | G96 | 0.0 | 0.0 | | |
| 2006 10 22 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.8+ | 0.9− | 2006 11 27 | 703 | 0.5− | 0.1− | | |
| 2006 10 22 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.5+ | 0.3− | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.1− | 0.0 | | |
| 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.3+ | 0.0 | | |
| 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.3− | | |
| 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.6+ | 0.8− | 2006 11 27 | 703 | 0.2+ | 0.3− | | |
| 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.7− | 2006 11 29 | 704 | 0.1+ | 0.3+ | | |
| 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 18 | G96 | 0.3+ | 1.5+ | 2006 11 29 | 704 | 0.2− | 0.6+ | | |
| 2006 11 11 | 703 | 0.8− | 0.3− | 2006 11 18 | G96 | 0.4+ | 0.4− | 2006 11 29 | 704 | 0.2+ | 0.3+ | | |
| 2006 11 11 | 703 | 1.1− | 0.9− | 2006 11 18 | 704 | 0.4+ | 0.7− | 2006 11 29 | 704 | 0.6− | 0.3+ | | |

**2006 UC$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 210.73636 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19099487 | $\omega$ | 30.28007 | | −0.97962943 | | +0.20055980 |
| $a$ | 2.9862185 | $\Omega$ | 161.28160 | | −0.18997747 | | −0.90930172 |
| $e$ | 0.0502633 | $i$ | 1.80290 | | −0.06507484 | | −0.36461780 |
| $P$ | 5.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 23 | 691 | 0.3− | 0.8+ | 2005 08 27 | 644 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.5− | | |
| 1995 09 23 | 691 | 0.4− | 0.9+ | 2006 10 16 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.5− | | |
| 1995 09 23 | 691 | 0.3− | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.1− | | |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.5+ | 0.1− | | |
| 2002 12 07 | 645 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2003 01 05 | 291 | 0.2− | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.2− | | |
| 2003 01 05 | 291 | 0.6− | 0.2+ | 2006 10 20 | 691 | 0.8+ | 0.4− | 2006 11 01 | 691 | 0.4+ | 0.4+ | | |
| 2003 01 05 | 291 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.6− | | |
| 2003 03 08 | 291 | 0.4+ | 0.3+ | 2006 10 22 | 691 | 0.4− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.5− | | |
| 2003 03 08 | 291 | 0.7+ | 0.5+ | 2006 10 22 | 691 | 0.5− | 0.4− | 2006 11 12 | G96 | 0.2− | 0.3− | | |
| 2003 03 08 | 291 | 1.1+ | 0.8+ | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.5− | | |
| 2005 08 27 | 644 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.4− | 0.6− | | | | | | |
| 2005 08 27 | 644 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | | | | | |

**2006 UG$_{155}$ = 2002 RZ$_{194}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.95811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25450311 | $\omega$ | 238.48667 | | +0.89564500 | | −0.44395120 |
| $a$ | 2.4660809 | $\Omega$ | 147.84673 | | +0.42332364 | | +0.83228798 |
| $e$ | 0.2261276 | $i$ | 2.90482 | | +0.13644457 | | +0.33196994 |
| $P$ | 3.87 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.1+ | 0.2+ | 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | (0.4+ | 1.8+) | | |
| 2002 09 12 | 644 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.2+ | 0.4− | 2006 10 21 | 703 | (0.6+ | 2.3−) | | |
| 2002 09 12 | 644 | 0.1− | 0.0 | 2006 10 01 | 691 | 0.4− | 0.0 | 2006 10 21 | 703 | (1.2− | 1.8−) | | |
| 2002 09 15 | 644 | 0.3− | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.1− | | |
| 2002 09 15 | 644 | 0.1− | 0.1− | 2006 10 10 | 644 | 0.5+ | 0.5+ | 2006 10 22 | G96 | 0.1+ | 0.1+ | | |
| 2002 09 15 | 644 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.4+ | 0.5+ | 2006 10 22 | G96 | 0.4+ | 0.1− | | |
| 2006 09 17 | 691 | 0.1− | 0.2+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.3+ | 0.2+ | | |
| 2006 09 17 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 1.0− | 0.5− | | | | | | |

**2006 UD$_{156}$ = 1995 ON$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 321.56271 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18231201 | $\omega$ | 251.76599 | | +0.54635048 | | −0.83630682 |
| $a$ | 3.0802966 | $\Omega$ | 164.85446 | | +0.81928810 | | +0.52229247 |
| $e$ | 0.0370651 | $i$ | 10.08235 | | +0.17397751 | | +0.16673776 |
| $P$ | 5.41 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 25 | 691 | 0.0 | 0.0 | 2001 10 11 | 691 | 0.2− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | | |
| 1995 07 25 | 691 | 0.4− | 0.5− | 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.0 | 0.1+ | | |
| 1995 07 25 | 691 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.1− | 0.2+ | | |
| 1995 07 27 | 691 | 0.3+ | 0.6+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 10 21 | G96 | 0.1− | 0.1+ | | |
| 1995 07 27 | 691 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.5+ | 0.1− | 2006 10 22 | 703 | 0.9− | 0.6+ | | |
| 1995 07 27 | 691 | 0.3+ | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.8+ | 0.3+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 703 | 1.3− | 0.8− |
| 2001 10 11 | 691 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.4− | 0.3+ | 2006 10 22 | 703 | 0.3+ | 0.2− |

**2006 UC$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 17.24930 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.26566652 | $\omega$ | 313.22063 | | +0.99481352 | | +0.07521179 | | |
| $a$ | 2.3965041 | $\Omega$ | 42.60260 | | −0.03497499 | | +0.88511588 | | |
| $e$ | 0.1302048 | $i$ | 5.80613 | | −0.09551339 | | +0.45925273 | | |
| $P$ | 3.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.1− | 0.5+ | 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.0 |
| 2002 08 13 | 644 | 0.2− | 0.8+ | 2006 10 01 | 691 | 0.3+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2002 08 13 | 644 | 0.0 | 0.4+ | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2002 08 19 | 644 | 0.3− | 0.2− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 |
| 2002 08 19 | 644 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 08 19 | 644 | 0.4− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 08 30 | 644 | 0.2+ | 0.0 | 2006 10 21 | 703 | (1.8− | 0.4−) | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2002 08 30 | 644 | 0.0 | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2002 08 30 | 644 | 0.3+ | 0.6+ | 2006 10 21 | 703 | 0.3− | 1.0− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2004 02 17 | 691 | 0.4− | 0.3+ | 2006 10 21 | G96 | 0.2+ | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 02 17 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2004 02 17 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 703 | 0.5− | 1.2− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2005 05 10 | G96 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2005 05 10 | G96 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.5− | 0.0 | | | | |
| 2005 05 10 | G96 | 0.1+ | 0.0 | 2006 10 22 | 691 | 0.4− | 0.0 | | | | |

**2006 UF$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 309.97709 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.25198625 | $\omega$ | 37.84065 | | +0.27262658 | | −0.95568998 | | |
| $a$ | 2.4824746 | $\Omega$ | 36.71843 | | +0.83119244 | | +0.17582407 | | |
| $e$ | 0.0452412 | $i$ | 10.70390 | | +0.48455534 | | +0.23609862 | | |
| $P$ | 3.91 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.3− | 2006 10 23 | 691 | 0.5− | 0.2+ |
| 2002 10 10 | 645 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.6− | 1.2− | 2006 10 23 | 691 | 0.3− | 0.2+ |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 21 | G96 | 0.2− | 0.7− | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2006 10 01 | 691 | 0.2+ | 0.1− | 2006 10 21 | 703 | 1.3− | 0.2+ | 2006 11 01 | 691 | 0.4+ | 0.2+ |
| 2006 10 01 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.5− | 2006 11 17 | 703 | (2.5+ | 0.3−) |
| 2006 10 01 | 691 | 0.1− | 0.2− | 2006 10 21 | G96 | (2.1+ | 1.4−) | 2006 11 17 | 703 | 0.6− | 0.6− |
| 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.3+ |
| 2006 10 20 | 644 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2006 10 20 | 644 | 0.7+ | 0.1+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2006 10 21 | 703 | 0.1− | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.3+ | 0.1− |

**2006 UK$_{158}$ = 2006 SN$_{72}$ = 2005 NJ$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 182.24806 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.19784963 | $\omega$ | 48.72758 | | −0.93288082 | | +0.35956207 | | |
| $a$ | 2.9168396 | $\Omega$ | 152.32616 | | −0.34259638 | | −0.86764160 | | |
| $e$ | 0.0227546 | $i$ | 2.61350 | | −0.11118046 | | −0.34338488 | | |
| $P$ | 4.98 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 04 | G96 | 0.7− | 0.2− | 2006 09 23 | 691 | 0.4+ | 0.9− | 2006 10 21 | G96 | 0.4+ | 0.4− |
| 2005 07 04 | G96 | 0.0 | 0.4− | 2006 09 23 | 691 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.3− |
| 2005 07 04 | G96 | 0.4− | 0.1− | 2006 10 01 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.0 | 0.4+ |
| 2005 07 04 | G96 | 0.4+ | 0.2− | 2006 10 01 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 691 | 0.6− | 0.0 |
| 2005 07 09 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 691 | 0.4− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.4+ |
| 2005 07 09 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2005 07 09 | 691 | 0.2− | 0.1+ | 2006 10 21 | G96 | 0.7+ | 0.2− | 2006 10 31 | G96 | 0.7+ | 0.3− |
| 2006 09 19 | 691 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.6− |
| 2006 09 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.5− |
| 2006 09 19 | 691 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.1− | 0.3− | | | | |
| 2006 09 23 | 691 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.9+ | 0.3− | | | | |

**2006 UG$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 287.93426 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.20098800 | $\omega$ | 327.63923 | | −0.15173135 | | −0.98767043 | | |
| $a$ | 2.8863964 | $\Omega$ | 131.05748 | | +0.91739167 | | −0.15523161 | | |
| $e$ | 0.0365841 | $i$ | 2.92909 | | +0.36792678 | | −0.02025506 | | |
| $P$ | 4.90 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 691 | 0.3− | 0.0 | 2005 07 03 | G96 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2001 10 25 | 691 | 0.0 | 0.6+ | 2005 07 03 | G96 | 0.1− | 0.5+ | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2001 10 25 | 691 | 0.3− | 0.5+ | 2005 07 03 | G96 | 0.2+ | 0.3− | 2006 10 22 | 691 | 0.1− | 0.0 |
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2005 07 15 | G96 | 0.4+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2003 02 01 | 645 | 0.0 | 0.1+ | 2005 07 15 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.4− |
| 2004 05 21 | 691 | 0.3+ | 0.6+ | 2005 07 15 | G96 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.4− |
| 2004 05 21 | 691 | 0.3+ | 0.6+ | 2005 07 15 | G96 | 0.0 | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2004 05 21 | 691 | 0.3− | 0.3+ | 2006 09 19 | 691 | 0.1+ | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2005 06 14 | G96 | 0.6− | 0.1+ | 2006 09 19 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2005 06 14 | G96 | 0.2+ | 0.7+ | 2006 09 19 | 691 | 0.2− | 0.6+ | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2005 06 14 | G96 | 0.6+ | 0.0 | 2006 10 21 | G96 | 0.3− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.2− |
| 2005 06 14 | G96 | 0.2− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.3+ | | | | |
| 2005 07 03 | G96 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− | | | | |

**2006 UD$_{160}$ = 2005 JT$_{137}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 145.44401 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.29806145 | $\omega$ | 147.30434 | | −0.66145688 | | +0.74853849 | | |
| $a$ | 2.2195529 | $\Omega$ | 81.23935 | | −0.69781608 | | −0.59152819 | | |
| $e$ | 0.1177512 | $i$ | 2.69837 | | −0.27482268 | | −0.29964068 | | |
| $P$ | 3.31 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 291 | 0.2+ | 0.2+ | 2005 05 13 | 704 | 0.6+ | 0.3− | 2006 10 01 | 691 | 0.6+ | 0.1− |
| 2003 12 22 | 291 | 0.6+ | 0.1+ | 2005 05 13 | 704 | 1.0+ | 1.0+ | 2006 10 01 | 691 | 0.2+ | 0.0 |
| 2003 12 22 | 291 | 0.9− | 0.2+ | 2005 05 13 | 704 | 0.4− | 0.3+ | 2006 10 01 | 691 | 0.1− | 0.2+ |
| 2005 03 14 | G96 | 0.1− | 0.0 | 2005 05 19 | G96 | 0.5− | 0.4− | 2006 10 21 | G96 | 0.0 | 0.3− |
| 2005 03 14 | G96 | 0.2+ | 0.1− | 2005 05 19 | G96 | 0.4− | 0.3− | 2006 10 21 | G96 | 0.5+ | 0.6− |
| 2005 03 14 | G96 | 0.3+ | 0.4− | 2005 05 19 | G96 | 0.5− | 0.0 | 2006 10 21 | G96 | 0.2− | 0.2− |
| 2005 03 14 | G96 | 0.5+ | 0.4+ | 2005 05 19 | G96 | 0.7− | 0.1− | 2006 10 21 | G96 | 0.2− | 0.5− |
| 2005 04 30 | 691 | 0.2+ | 0.3+ | 2006 09 19 | 691 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.2+ | 0.2− |
| 2005 04 30 | 691 | 0.1+ | 0.3+ | 2006 09 19 | 691 | 0.6− | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.2+ |
| 2005 04 30 | 691 | 0.1+ | 0.1+ | 2006 09 19 | 691 | 0.3− | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.3− |

**2006 US$_{160}$ = 2002 AP$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $M$ | 307.44714 | | (2000.0) | | **P** | | **Q** | | |
| $n$ | 0.17222963 | $\omega$ | 333.09128 | | −0.05764084 | | −0.99762271 | | |
| $a$ | 3.1993676 | $\Omega$ | 120.19169 | | +0.92364318 | | −0.06764805 | | |
| $e$ | 0.1888164 | $i$ | 2.50440 | | +0.37889419 | | +0.01314049 | | |
| $P$ | 5.72 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 704 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.2+ | 0.0 |
| 2002 01 13 | 704 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2002 01 13 | 704 | 0.1+ | 0.4+ | 2006 10 21 | G96 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.3− |
| 2002 01 15 | 704 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.4+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2002 01 15 | 704 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.3− | 0.3− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2002 01 15 | 704 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.2+ | | | | |

**2006 UM$_{161}$ = 2001 SS$_{311}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 266.76050 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21269094 | $\omega$ | 300.41754 | | −0.70369435 | | −0.70946266 |
| $a$ | 2.7795216 | $\Omega$ | 194.51314 | | +0.69308737 | | −0.67353812 |
| $e$ | 0.1685415 | $i$ | 8.82157 | | +0.15634627 | | −0.20738647 |
| $P$ | 4.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 19 | 691 | 0.2+ | 0.6+ | 2001 09 26 | 704 | 0.0 | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.0 |
| 1999 03 19 | 691 | 0.1+ | 0.1− | 2001 10 15 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1+ | 0.0 |
| 1999 03 19 | 691 | 0.1− | 0.5+ | 2001 10 15 | 645 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1− |
| 2001 08 22 | 691 | 0.4+ | 0.1+ | 2004 05 09 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2+ | 0.1+ |
| 2001 08 22 | 691 | 1.0+ | 0.1+ | 2004 05 09 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ |
| 2001 08 22 | 691 | 0.0 | 0.1+ | 2004 05 09 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.5+ |
| 2001 09 20 | 704 | 0.9+ | 1.1+ | 2005 07 10 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2001 09 20 | 704 | 0.5+ | 0.2+ | 2005 07 10 | 691 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.4− | 0.3− |
| 2001 09 20 | 704 | 0.0 | 0.1− | 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2001 09 20 | 704 | 0.6+ | 0.7+ | 2005 07 30 | 644 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.4− | 0.1+ |
| 2001 09 25 | 704 | (1.7− | 0.2−) | 2005 07 30 | 644 | 0.2− | 0.2− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 09 25 | 704 | 0.7− | 1.3+ | 2005 07 30 | 644 | 0.3− | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ |
| 2001 09 25 | 704 | 0.6− | 0.7+ | 2006 09 18 | 691 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.1− |
| 2001 09 25 | 704 | 1.2− | 1.4+ | 2006 09 18 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1− | 0.1− |
| 2001 09 26 | 704 | 1.6− | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2001 09 26 | 704 | 0.1+ | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.1− |

**2006 UN$_{161}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.38823 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.14817621 | $\omega$ | 275.28548 | | +0.92637801 | | −0.32734281 |
| $a$ | 3.5368534 | $\Omega$ | 103.92282 | | +0.37375558 | | +0.85975300 |
| $e$ | 0.1069514 | $i$ | 11.05995 | | −0.04615780 | | +0.39200952 |
| $P$ | 6.65 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 11 29 | 691 | 0.2+ | 0.4− | 2004 05 09 | 691 | 0.2+ | 0.9+ | 2006 10 22 | 644 | 0.3− | 0.3− |
| 1994 11 29 | 691 | 0.2− | 0.1+ | 2005 06 03 | 691 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.0 | 0.6− |
| 1994 11 29 | 691 | 0.3− | 0.2+ | 2005 06 03 | 691 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.5− |
| 2002 01 06 | 691 | 0.1+ | 0.1+ | 2005 06 03 | 691 | 0.4+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.1− |
| 2002 01 06 | 691 | 0.2− | 0.1− | 2006 09 20 | 703 | 0.5+ | 0.0 | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2002 01 06 | 691 | 0.1+ | 0.5+ | 2006 09 20 | 703 | 0.6− | 0.4+ | 2006 10 24 | 644 | 0.2− | 0.1− |
| 2002 01 12 | 644 | 0.8+ | 0.3+ | 2006 09 20 | 703 | 0.1− | 0.1+ | 2006 10 24 | 644 | 0.2− | 0.0 |
| 2002 01 12 | 644 | 0.6+ | 0.4+ | 2006 09 20 | 703 | 0.1− | 1.2+ | 2006 10 24 | 644 | 0.5− | 0.2− |
| 2002 01 12 | 644 | 0.2− | 0.6+ | 2006 10 21 | 703 | 0.1+ | 0.6+ | 2006 10 28 | 703 | 1.4+ | 0.8+ |
| 2003 03 31 | 645 | 0.1− | 0.4+ | 2006 10 21 | 703 | 0.5+ | 1.0+ | 2006 10 28 | 703 | 0.5+ | 1.3+ |
| 2003 03 31 | 645 | 0.0 | 0.4+ | 2006 10 21 | 703 | 1.2− | 0.9− | 2006 10 28 | 703 | 0.3− | 0.1+ |
| 2004 05 09 | 691 | 0.3+ | 0.9+ | 2006 10 21 | 703 | 0.8+ | 0.7+ | 2006 10 28 | 703 | 1.9− | 0.3+ |
| 2004 05 09 | 691 | 0.1+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.3− | | | | |

**2006 UN$_{162}$ = 2000 KA$_{50}$ = 2004 FP$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.69652 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21544581 | $\omega$ | 61.70292 | | −0.64536526 | | +0.76371690 |
| $a$ | 2.7557766 | $\Omega$ | 168.06559 | | −0.72446927 | | −0.60551574 |
| $e$ | 0.0324776 | $i$ | 4.29796 | | −0.24217340 | | −0.22380167 |
| $P$ | 4.57 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 30 | 691 | 0.1− | 0.2− | 2004 03 16 | 599 | 0.1+ | 1.0+ | 2006 09 22 | 621 | 0.6+ | 0.4− |
| 2000 05 30 | 691 | 0.1+ | 0.1− | 2004 03 16 | 599 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.2− |
| 2000 05 30 | 691 | 0.3+ | 0.1− | 2004 03 16 | 599 | 0.3− | 0.7+ | 2006 10 21 | G96 | 0.5+ | 0.2− |
| 2000 06 05 | 691 | 0.3− | 0.3+ | 2004 03 18 | 704 | (1.9+ | 2.0−) | 2006 10 21 | G96 | 0.0 | 0.2− |
| 2000 06 05 | 691 | 0.0 | 0.2+ | 2004 03 18 | 704 | 1.0+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.0 |
| 2000 06 05 | 691 | 0.1− | 0.3+ | 2004 03 18 | 704 | 1.4+ | 0.6− | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 291 | 0.1− | 0.1+ | 2004 03 18 | 704 | 0.6− | 0.8+ | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2001 09 19 | 291 | 0.1− | 0.2+ | 2004 03 18 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 691 | 0.4− | 0.3+ |
| 2001 09 19 | 291 | 0.1+ | 0.1+ | 2006 09 22 | 621 | 0.4+ | 1.2+ | | | | |
| 2004 03 16 | 599 | 0.6− | 0.7+ | 2006 09 22 | 621 | 0.9− | 0.0 | | | | |

**2006 UO$_{162}$ = 2001 UN$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.07252 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19525094 | $\omega$ | 26.00932 | | +0.41216588 | | −0.90039071 |
| $a$ | 2.9426636 | $\Omega$ | 40.06989 | | +0.79361921 | | +0.27967108 |
| $e$ | 0.0433747 | $i$ | 12.50127 | | +0.44753529 | | +0.33328764 |
| $P$ | 5.05 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 17 | 691 | 0.1− | 0.4− | 2001 10 26 | 691 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 1999 04 17 | 691 | 0.4− | 0.1+ | 2001 10 26 | 691 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 1999 04 17 | 691 | 0.0 | 0.5− | 2004 04 24 | 691 | 0.2+ | 0.6+ | 2006 10 22 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 0.6− | 0.3− | 2004 04 24 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.3− |
| 2001 10 23 | 704 | 0.3− | 0.1+ | 2004 04 24 | 691 | 0.2+ | 0.1+ | 2006 11 16 | G96 | 0.1+ | 0.4+ |
| 2001 10 23 | 704 | 0.3− | 0.7+ | 2006 10 21 | G96 | 0.2+ | 0.6− | 2006 11 16 | G96 | 0.4+ | 0.3− |
| 2001 10 23 | 704 | 0.5+ | 0.2+ | 2006 10 21 | G96 | 0.8+ | 0.4− | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.9+ | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.6− | | | | |
| 2001 10 26 | 691 | 0.1+ | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.4− | | | | |

**2006 UP$_{162}$ = 2004 JE$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.42197 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17783840 | $\omega$ | 230.14621 | | −0.03928646 | | +0.98530906 |
| $a$ | 3.1317400 | $\Omega$ | 38.59451 | | −0.81600347 | | +0.06436201 |
| $e$ | 0.0326463 | $i$ | 15.45197 | | −0.57671042 | | −0.15818845 |
| $P$ | 5.54 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 14 | 691 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2004 05 14 | 691 | 0.2− | 0.0 | 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.5− | 0.5+ |
| 2004 05 14 | 691 | 0.0 | 0.2+ | 2006 10 02 | G96 | 0.3+ | 0.3− | 2006 10 22 | 691 | 0.1+ | 0.2+ |
| 2004 05 23 | 691 | 0.0 | 0.3− | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2004 05 23 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.5+ | 0.2− | 2006 10 31 | G96 | 0.1− | 0.2+ |
| 2004 05 23 | 691 | 0.4+ | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.6+ | 0.4− | | | | |

**2006 UQ$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.80648 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20104012 | $\omega$ | 351.48387 | | +0.79356324 | | −0.59777848 |
| $a$ | 2.8858975 | $\Omega$ | 45.86991 | | +0.56718975 | | +0.65904489 |
| $e$ | 0.0673662 | $i$ | 9.11123 | | +0.22034782 | | +0.45642165 |
| $P$ | 4.90 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 25 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.4− | 0.3+ | 2006 10 31 | G96 | 0.5+ | 0.1+ |
| 2001 10 25 | 645 | 0.0 | 0.0 | 2006 10 21 | 703 | 0.1− | 1.4− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 10 21 | 703 | 0.2+ | 1.1+ | 2006 10 31 | G96 | 0.0 | 0.0 |
| 2006 10 12 | 644 | 0.4+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.6− | 2006 10 31 | G96 | 0.1− | 0.0 |
| 2006 10 12 | 644 | 0.4+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2006 10 20 | 644 | 0.5+ | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.8− | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.2− | 0.0 |
| 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2006 10 21 | 703 | 0.5+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1+ | | | | |

**2006 UR$_{162}$ = 2001 UB$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.10324 | | (2000.0) | | | |
| $n$ | 0.19908755 | $\omega$ | 220.47763 | | +0.99923373 | +0.02314434 |
| $a$ | 2.9047359 | $\Omega$ | 138.16360 | | −0.01003373 | +0.93095997 |
| $e$ | 0.0841077 | $i$ | 2.71238 | | −0.03783231 | +0.36438698 |
| $P$ | 4.95 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4− | 0.3− | 2006 10 01 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.4− |
| 2001 10 20 | 704 | 0.3+ | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.4− |
| 2001 10 20 | 704 | 0.3+ | 0.4+ | 2006 10 01 | 691 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2001 10 24 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.9+ | 0.6− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2001 10 24 | 691 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.1− | 0.4− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 10 24 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | 0.2− | 1.0+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2006 09 23 | 691 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.2− |
| 2006 09 23 | 691 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.3− |
| 2006 09 23 | 691 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.1+ |

**2006 UW$_{163}$ = 2004 BO$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 95.43097 | | (2000.0) | | | |
| $n$ | 0.23457880 | $\omega$ | 176.65043 | | +0.04061416 | +0.99752265 |
| $a$ | 2.6038155 | $\Omega$ | 95.67167 | | −0.91806131 | +0.05994334 |
| $e$ | 0.1479913 | $i$ | 3.30894 | | −0.39435253 | −0.03681509 |
| $P$ | 4.20 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.2− | 0.2− | 2005 06 11 | 703 | 0.3− | 0.3+ | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2004 01 19 | 691 | 0.2+ | 0.2− | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.0 |
| 2004 01 19 | 691 | 0.2− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2004 01 28 | 691 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.4+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.7+ | 0.4− | 2006 10 31 | G96 | 0.3− | 0.2− |
| 2004 01 28 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2005 06 11 | 703 | 1.4+ | 1.2+ | 2006 10 21 | G96 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.1+ | 0.1+ |
| 2005 06 11 | 703 | 0.0 | 0.5− | 2006 10 21 | G96 | 0.3+ | 0.0 | | | | |
| 2005 06 11 | 703 | 1.0− | 0.3− | 2006 10 21 | G96 | 0.3+ | 0.3+ | | | | |

**2006 UF$_{164}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 348.12016 | | (2000.0) | | | |
| $n$ | 0.20274613 | $\omega$ | 201.55858 | | +0.78907976 | −0.61145392 |
| $a$ | 2.8696857 | $\Omega$ | 196.55276 | | +0.58951735 | +0.78074643 |
| $e$ | 0.0901252 | $i$ | 11.94539 | | +0.17269169 | +0.12868224 |
| $P$ | 4.86 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 691 | 0.1+ | 0.4− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 10 16 | 691 | 0.1+ | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2001 10 16 | 691 | 0.3+ | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.6+ |
| 2001 10 23 | 291 | 1.2− | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2001 10 23 | 291 | 0.5+ | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2001 10 23 | 291 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2006 09 18 | 691 | 0.3+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.4− |

**2006 UP$_{164}$ = 1993 UX$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 315.65906 | | (2000.0) | | | |
| $n$ | 0.22894940 | $\omega$ | 352.84048 | | +0.05357035 | −0.99737973 |
| $a$ | 2.6463242 | $\Omega$ | 94.08022 | | +0.91856417 | +0.03012458 |
| $e$ | 0.2138917 | $i$ | 2.79390 | | +0.39162493 | +0.06577370 |
| $P$ | 4.30 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 809 | 0.3+ | 1.0+ | 2006 10 20 | 644 | 0.1+ | 0.1− | 2006 10 23 | 704 | (0.3− | 1.6+) |
| 1993 10 11 | 809 | 1.3− | 1.9+ | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.3− |
| 1993 10 11 | 809 | 0.2− | 0.1+ | 2006 10 20 | 644 | 0.4− | 0.7+ | 2006 11 11 | 703 | 0.3+ | 0.1− |
| 1993 10 20 | 809 | (3.8+ | 1.7−) | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.4− |
| 1993 10 20 | 809 | (1.3+ | 2.2−) | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 1.0− |
| 1993 10 20 | 809 | (1.5+ | 3.3−) | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 1999 02 12 | 699 | 0.2+ | 0.3− | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.2− |
| 1999 02 12 | 699 | 0.5+ | 0.8+ | 2006 10 21 | G96 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.1− | 0.3− |
| 1999 02 12 | 699 | 0.3− | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.1− | 0.4− |
| 2006 10 02 | G96 | 0.3− | 0.4− | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.8− |
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1− | 2006 11 20 | 704 | 1.2+ | 0.2− |
| 2006 10 02 | G96 | 0.3− | 0.3− | 2006 10 22 | 691 | 0.3− | 0.2+ | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 23 | 704 | (1.9+ | 3.5+) | 2006 11 20 | 704 | 0.6+ | 0.8+ |
| 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 10 23 | 704 | 1.3+ | 1.4+ | 2006 11 20 | 704 | 0.1+ | 0.1− |

**2006 UX$_{164}$ = 2001 SA$_{327}$ = 2005 LF$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.75492 | | (2000.0) | | | |
| $n$ | 0.21079512 | $\omega$ | 227.95544 | | +0.71067004 | −0.70350323 |
| $a$ | 2.7961621 | $\Omega$ | 176.73842 | | +0.67103615 | +0.67544026 |
| $e$ | 0.0029859 | $i$ | 5.64402 | | +0.21132579 | +0.22105126 |
| $P$ | 4.68 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 291 | 0.2− | 0.0 | 2005 06 09 | 691 | 0.5+ | 0.0 | 2006 10 21 | G96 | 0.4+ | 0.1− |
| 2001 09 18 | 291 | 0.1− | 0.0 | 2005 06 09 | 691 | 0.2− | 0.2− | 2006 10 21 | G96 | 0.4+ | 0.3− |
| 2001 09 18 | 291 | 0.1− | 0.1+ | 2005 06 09 | 691 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.5+ | 0.3− |
| 2001 09 19 | 704 | 0.0 | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.5+ | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.5− | 2006 10 22 | 691 | 0.0 | 0.2− |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 10 22 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.7+ | 0.5− | 2006 10 02 | G96 | 0.2− | 0.5− | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 2001 09 19 | 704 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2004 03 20 | 699 | 1.0− | 0.0 | 2006 10 16 | 703 | 1.0+ | 0.1+ | 2006 11 11 | 691 | 0.5− | 0.4+ |
| 2004 03 20 | 699 | 0.3+ | 0.7+ | 2006 10 16 | 703 | 0.7+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2004 03 20 | 699 | (0.9− | 1.7+) | 2006 10 16 | 703 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.3− |
| 2004 03 20 | 699 | 0.7+ | 0.7− | 2006 10 20 | 644 | 0.4+ | 0.3+ | 2006 11 22 | G96 | 0.1− | 0.5− |
| 2005 06 04 | 691 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2005 06 04 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.6+ | 0.5+ | | | | |
| 2005 06 04 | 691 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.3+ | 0.2− | | | | |

**2006 UN$_{166}$ = 2000 SY$_{343}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 38.35625 | | (2000.0) | | | |
| $n$ | 0.17702854 | $\omega$ | 125.40943 | | +0.81389519 | +0.56512057 |
| $a$ | 3.1412839 | $\Omega$ | 201.22357 | | −0.57522738 | +0.81644786 |
| $e$ | 0.2281586 | $i$ | 21.88844 | | +0.08178067 | +0.11853955 |
| $P$ | 5.57 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.8− | 1.3+ | 2006 09 30 | 703 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.4+ |
| 2000 09 22 | 704 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.2− | 1.3+ | 2006 10 16 | 703 | 0.1− | 0.2− |
| 2000 09 22 | 704 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.2+ |
| 2000 09 22 | 704 | 0.0 | 0.7− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2000 09 27 | 704 | 1.1+ | 0.0 | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− |
| 2000 09 27 | 704 | 0.6+ | 0.0 | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.1+ |
| 2000 09 27 | 704 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2000 09 27 | 704 | 0.3− | 0.0 | 2006 10 16 | 703 | 1.1+ | 0.2− | 2006 10 22 | 691 | 0.0 | 0.0 |
| 2000 09 27 | 704 | 0.1− | 0.5− | 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.1− |
| 2006 09 30 | 703 | 1.1− | 1.0− | 2006 10 16 | 703 | 0.7− | 0.0 | 2006 10 22 | 691 | 0.1+ | 0.0 |
| 2006 09 30 | 703 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.2+ | 0.8+ | | | | |

**2006 UR$_{166}$ = 2000 ET$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 147.91667 | | | (2000.0) | | |
| $n$ | 0.23888010 | $\omega$ | 83.81068 | | −0.65732551 | +0.75254944 |
| $a$ | 2.5724645 | $\Omega$ | 144.98799 | | −0.71600946 | −0.60713843 |
| $e$ | 0.1691575 | $i$ | 3.98834 | | −0.23506088 | −0.25505344 |
| $P$ | 4.13 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.9+ | 0.1+ | 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.5+ | 0.1+ |
| 2000 02 05 | 691 | 0.0 | 0.4− | 2004 01 19 | 691 | 0.0 | 0.2+ | 2006 10 21 | G96 | 0.5+ | 0.1− |
| 2000 02 05 | 691 | 0.1− | 0.3− | 2004 01 19 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 691 | 0.1+ | 0.2− |
| 2000 03 01 | 691 | 0.7− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 10 22 | 691 | 0.5− | 0.1− |
| 2000 03 01 | 691 | 0.4− | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.4− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 2000 03 01 | 691 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 2000 03 11 | 691 | 0.1+ | 0.1+ | 2006 10 02 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.0 |
| 2000 03 11 | 691 | 0.0 | 0.2− | 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.2− |
| 2000 03 11 | 691 | 0.1+ | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.2+ |

**2006 UE$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.25588 | | | (2000.0) | | |
| $n$ | 0.29493275 | $\omega$ | 318.25310 | | +0.96696665 | −0.24422764 |
| $a$ | 2.2352223 | $\Omega$ | 56.02504 | | +0.25091635 | +0.86153290 |
| $e$ | 0.1371939 | $i$ | 5.04986 | | +0.04490519 | +0.44509990 |
| $P$ | 3.34 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | G96 | 0.5− | 0.5− | 2006 10 12 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 691 | 0.0 | 0.1+ |
| 2005 04 06 | G96 | 0.4+ | 0.7− | 2006 10 12 | 644 | 0.5+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 2005 04 06 | G96 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2− |
| 2005 04 06 | G96 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.3− |
| 2006 09 30 | 703 | 0.6+ | 0.7+ | 2006 10 20 | 644 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1− |
| 2006 09 30 | 703 | 0.3− | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2006 09 30 | 703 | 0.9+ | 1.1− | 2006 10 21 | 703 | 0.1− | 0.2+ | 2006 11 07 | 644 | 0.3+ | 0.6− |
| 2006 09 30 | 703 | 0.4− | 0.5− | 2006 10 21 | 703 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.1+ | 0.1+ |
| 2006 10 02 | G96 | 0.1− | 0.2+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 07 | 644 | 0.2+ | 0.2+ |
| 2006 10 02 | G96 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.4+ | 0.3− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2006 10 02 | G96 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2006 10 02 | G96 | 0.3− | 0.3− | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2006 10 12 | 644 | 0.5+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.3− |

**2006 UF$_{168}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 56.56107 | | | (2000.0) | | |
| $n$ | 0.19015619 | $\omega$ | 271.62961 | | +0.72190325 | +0.67944476 |
| $a$ | 2.9949924 | $\Omega$ | 45.59710 | | −0.53913762 | +0.67108682 |
| $e$ | 0.0910069 | $i$ | 10.58100 | | −0.43380448 | +0.29664338 |
| $P$ | 5.18 | $H$ | 16.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.6− | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2004 03 18 | 691 | 0.5− | 0.2− | 2006 10 22 | 691 | 0.2− | 1.3+ | 2006 10 31 | G96 | 0.4+ | 0.1− |
| 2004 03 18 | 691 | 0.7+ | 0.3+ | 2006 10 22 | 691 | 0.1+ | 0.3− | 2006 11 16 | G96 | 0.4+ | 0.1− |
| 2006 10 21 | G96 | 0.2+ | 0.8− | 2006 10 22 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.1+ |
| 2006 10 21 | G96 | 0.2+ | 0.7− | 2006 10 31 | G96 | 0.2− | 0.6− | 2006 11 16 | G96 | 0.7− | 0.1+ |
| 2006 10 21 | G96 | 0.3+ | 0.8− | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.3+ |

**2006 UV$_{169}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 285.30232 | | | (2000.0) | | |
| $n$ | 0.28472866 | $\omega$ | 58.08123 | | −0.47143205 | −0.87710267 |
| $a$ | 2.2883121 | $\Omega$ | 60.31511 | | +0.76921695 | −0.45991602 |
| $e$ | 0.1783214 | $i$ | 6.07122 | | +0.43134338 | −0.13844911 |
| $P$ | 3.46 | $H$ | 17.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 28 | 703 | 0.7+ | 0.4+ | 2004 02 16 | 703 | 0.1− | 0.9+ | 2004 03 18 | 645 | 0.0 | 0.0 |
| 2004 01 28 | 703 | 0.8− | 0.0 | 2004 02 16 | 703 | 0.5+ | 0.5− | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 01 28 | 703 | 0.1− | 0.2+ | 2004 02 16 | 703 | 0.7− | 0.2− | 2006 10 21 | G96 | 0.3+ | 0.0 |
| 2004 01 28 | 703 | 0.3− | 1.3− | 2004 02 22 | 703 | 1.5− | 0.3+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2004 02 22 | 703 | 0.6+ | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.1− |
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2004 02 22 | 703 | 0.0 | 1.2+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2004 02 11 | 691 | 0.1+ | 0.1− | 2004 02 22 | 703 | 0.1+ | 0.6− | 2006 10 22 | 691 | 0.3− | 0.2+ |
| 2004 02 16 | 703 | (0.6− | 2.5+) | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.3+ | 0.1− |

**2006 UK$_{170}$ = 2001 YM$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.94232 | | | (2000.0) | | |
| $n$ | 0.18240383 | $\omega$ | 65.79535 | | −0.32795932 | −0.92814670 |
| $a$ | 3.0792628 | $\Omega$ | 44.59494 | | +0.74999648 | −0.36910826 |
| $e$ | 0.2694869 | $i$ | 14.52024 | | +0.57441097 | −0.04798735 |
| $P$ | 5.40 | $H$ | 16.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 644 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2001 12 20 | 644 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.2− | 0.0 |
| 2001 12 20 | 644 | 0.4− | 0.2+ | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 09 | 691 | 0.1− | 0.1− |
| 2001 12 20 | 644 | 0.1− | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.2− |
| 2001 12 20 | 644 | 0.0 | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2+ |
| 2001 12 20 | 644 | 0.0 | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.5+ | 2006 11 11 | 691 | 0.4+ | 0.1− |
| 2001 12 23 | 704 | 0.4+ | 0.7− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.3+ | 0.0 |
| 2001 12 23 | 704 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2001 12 23 | 704 | 0.0 | 1.3− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.3+ |
| 2003 05 02 | 291 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.4+ | 0.1+ |
| 2003 05 02 | 291 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2003 05 02 | 291 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.6− | 0.5− |

**2006 UO$_{170}$ = 2006 UM$_{96}$ = 1995 CN$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 313.25434 | | | (2000.0) | | |
| $n$ | 0.23167955 | $\omega$ | 283.45416 | | +0.17050123 | −0.98508695 |
| $a$ | 2.6254933 | $\Omega$ | 156.69075 | | +0.92511955 | +0.15196734 |
| $e$ | 0.0835229 | $i$ | 3.34493 | | +0.33923907 | +0.08068229 |
| $P$ | 4.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 01 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | (0.1+ | 1.5−) | 2006 10 21 | G96 | 0.2+ | 0.4− |
| 1995 02 01 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.2− | 0.2+ |
| 1995 02 01 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.5− | 2006 10 22 | 691 | 0.1− | 0.3+ |
| 1995 02 07 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | (0.1− | 1.5+) | 2006 10 22 | 691 | 0.1− | 0.4+ |
| 1995 02 07 | 691 | 0.2+ | 0.0 | 2006 10 18 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.6+ | 0.2− |
| 1995 02 07 | 691 | 0.3+ | 0.1− | 2006 10 18 | 691 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.5+ | 0.3− |
| 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 10 18 | 691 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.3− |
| 2002 12 10 | 644 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2002 12 10 | 644 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.7+ | 0.2+ | 2006 11 13 | 703 | 1.0− | 0.8+ |
| 2006 10 02 | G96 | 0.0 | 0.1− | 2006 10 20 | 644 | 0.7+ | 0.1+ | 2006 11 13 | 703 | 1.3− | 0.8+ |
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 13 | 703 | 0.6− | 0.5− |
| 2006 10 02 | G96 | 0.3− | 0.0 | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.3− | | | | |

### 2006 UP$_{171}$ = 2003 YW$_{65}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.98767 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30302582 | $\omega$ | 352.56005 | | +0.09798028 | −0.99159006 | |
| $a$ | 2.1952448 | $\Omega$ | 91.79036 | | +0.91736929 | +0.05705672 | |
| $e$ | 0.0855444 | $i$ | 4.85263 | | +0.38578938 | +0.11616233 | |
| $P$ | 3.25 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 291 | 0.0 | 0.1− | 2005 06 27 | G96 | 0.2+ | 0.6+ | 2006 11 01 | 703 | (2.1+ | 0.1−) |
| 2003 12 14 | 291 | 0.4− | 0.2− | 2005 06 27 | G96 | 0.1− | 0.5+ | 2006 11 01 | 703 | (1.2+ | 1.5−) |
| 2003 12 14 | 291 | 0.9− | 0.1− | 2006 10 16 | 703 | 1.2+ | 0.7+ | 2006 11 01 | 703 | 0.2− | 0.0 |
| 2003 12 20 | 704 | 0.3+ | 0.8+ | 2006 10 16 | 703 | 0.6− | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.1− |
| 2003 12 20 | 704 | 1.1+ | 0.2+ | 2006 10 16 | 703 | 0.1+ | 0.7− | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2003 12 20 | 704 | (1.8+ | 0.6+) | 2006 10 16 | 703 | 0.0 | 0.5− | 2006 11 09 | 644 | 0.3+ | 0.1+ |
| 2003 12 20 | 704 | 1.5+ | 0.1+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.1+ |
| 2003 12 20 | 704 | 0.9+ | 0.9+ | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.9+ | 0.3− |
| 2003 12 21 | 704 | (1.7+ | 0.8+) | 2006 10 21 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.8+ |
| 2003 12 21 | 704 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.5+ |
| 2003 12 21 | 704 | 0.3+ | 0.4+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2003 12 21 | 704 | 1.1+ | 1.1+ | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 23 | G96 | 0.3+ | 0.6− |
| 2005 06 27 | G96 | 0.7+ | 0.9+ | 2006 10 22 | 691 | 0.6− | 0.3+ | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2005 06 27 | G96 | 0.1− | 0.4+ | 2006 11 01 | 703 | 0.8− | 0.7− | 2006 11 23 | G96 | 0.4+ | 0.5− |

### 2006 UV$_{171}$ = 2006 WB$_{185}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.87630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23631071 | $\omega$ | 149.26348 | | +0.65013573 | +0.75947280 | |
| $a$ | 2.5910778 | $\Omega$ | 161.25687 | | −0.71080889 | +0.61857559 | |
| $e$ | 0.0527237 | $i$ | 4.08749 | | −0.26846647 | +0.20140830 | |
| $P$ | 4.17 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 06 29 | 691 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2001 06 29 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 2001 06 29 | 691 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 21 | G96 | 0.8+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2004 03 18 | 691 | 0.3− | 0.2+ | 2006 10 21 | G96 | 0.7+ | 0.3− | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2004 03 18 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 22 | 691 | 0.5− | 0.9+ | 2006 11 17 | G96 | 0.7+ | 0.3− |
| 2006 09 30 | G96 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.1− | | | | |
| 2006 09 30 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.3− | | | | |

### 2006 UG$_{172}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.66384 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18564914 | $\omega$ | 27.59176 | | +0.39353627 | −0.91188733 | |
| $a$ | 3.0432719 | $\Omega$ | 39.54389 | | +0.80611730 | +0.28133421 | |
| $e$ | 0.0635670 | $i$ | 10.55084 | | +0.44193224 | +0.29885208 | |
| $P$ | 5.31 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 645 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.7− | 0.5− |
| 2002 12 11 | 645 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.1+ |
| 2003 03 23 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.7− |
| 2003 03 23 | 645 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.1+ | 0.7+ |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.2− | 0.8− |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.6+ | 0.2+ |
| 2006 09 27 | G96 | 0.9− | 0.2− | 2006 10 27 | 691 | 0.4− | 0.9− | 2006 11 16 | 704 | 0.0 | 0.7+ |
| 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.7+ |
| 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.5+ |
| 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.3− | 0.2− |
| 2006 10 16 | 703 | 0.2+ | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.5+ | 1.2+ |
| 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2006 10 16 | 703 | 0.8− | 1.1+ | 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.3− |
| 2006 10 16 | 703 | 0.6− | 0.2− | 2006 11 14 | 703 | 0.8+ | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.5+ |
| 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.6− | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2006 10 21 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2006 10 22 | 644 | 0.4− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | | | | |

### 2006 UT$_{172}$ = 2004 FT$_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.95622 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24509005 | $\omega$ | 92.12946 | | −0.85281138 | −0.52109942 | |
| $a$ | 2.5288259 | $\Omega$ | 56.46626 | | +0.46135093 | −0.78245997 | |
| $e$ | 0.1591182 | $i$ | 2.34993 | | +0.24467953 | −0.34089850 | |
| $P$ | 4.02 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.1− | 2004 03 22 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2000 03 03 | 645 | 0.0 | 0.1− | 2004 04 22 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.3+ | 0.4− |
| 2004 03 19 | 704 | 0.4− | 0.3+ | 2004 04 22 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 691 | 0.2− | 0.3+ |
| 2004 03 19 | 704 | 0.7+ | 0.2+ | 2004 04 22 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1− |
| 2004 03 19 | 704 | 0.3− | 0.5+ | 2006 09 24 | 691 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2004 03 19 | 704 | 0.1+ | 0.5− | 2006 09 24 | 691 | 0.3+ | 0.1− | 2006 10 23 | 691 | 0.0 | 0.2+ |
| 2004 03 19 | 704 | 0.2+ | 0.2+ | 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 691 | 0.5− | 0.0 |
| 2004 03 22 | 704 | (0.5+ | 1.7+) | 2006 10 02 | 691 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.5− | 0.1− |
| 2004 03 22 | 704 | 0.7+ | 1.1+ | 2006 10 02 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.5+ | 0.3+ |
| 2004 03 22 | 704 | (0.1+ | 1.6+) | 2006 10 02 | 691 | 0.1+ | 0.2+ | | | | |

### 2006 UF$_{173}$ = 2005 GA$_{93}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.83013 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30052032 | $\omega$ | 97.55488 | | +0.28828117 | +0.95748799 | |
| $a$ | 2.2074294 | $\Omega$ | 189.22072 | | −0.90239234 | +0.26798456 | |
| $e$ | 0.0763862 | $i$ | 3.76509 | | −0.32028432 | +0.10677556 | |
| $P$ | 3.28 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.1+ | 0.3− | 2005 04 06 | G96 | 0.2+ | 0.2+ | 2006 10 22 | 691 | 0.5+ | 0.0 |
| 2005 03 10 | G96 | 0.2− | 0.1+ | 2005 04 06 | G96 | 0.2− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.2+ |
| 2005 03 10 | G96 | 0.1+ | 0.0 | 2005 04 06 | G96 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.1− |
| 2005 03 10 | G96 | 0.5+ | 0.3+ | 2005 04 10 | G96 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ |
| 2005 03 10 | G96 | 0.1− | 0.0 | 2005 04 10 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.6+ | 0.4− |
| 2005 03 10 | G96 | 0.3− | 0.1− | 2005 04 10 | G96 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.4− |
| 2005 03 10 | G96 | 0.6− | 0.2− | 2005 04 10 | G96 | 0.3− | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.4− |
| 2005 03 10 | G96 | 0.5+ | 0.1+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 10 31 | G96 | 0.7+ | 0.4− |
| 2005 04 06 | G96 | 0.2+ | 0.2− | 2006 10 22 | 691 | 0.2− | 0.1+ | | | | |

### 2006 UH$_{173}$ = 2005 NK$_{81}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.84254 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17348521 | $\omega$ | 233.06420 | | +0.99124042 | +0.12708835 | |
| $a$ | 3.1839121 | $\Omega$ | 119.60865 | | −0.10418069 | +0.91963566 | |
| $e$ | 0.1795277 | $i$ | 2.36851 | | −0.08117147 | +0.37164338 | |
| $P$ | 5.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 14 | 645 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.4− | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 2002 01 14 | 645 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.2+ | 0.7− | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2005 07 12 | G96 | 0.3− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.5+ |
| 2005 07 12 | G96 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2005 07 12 | G96 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2005 07 16 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 25 | G96 | 0.3+ | 0.5− |
| 2005 07 16 | 691 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.8− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2005 07 16 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.3− | 0.6− | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2006 10 22 | G96 | 0.2+ | 0.7− | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.2− | 0.5− |
| 2006 10 22 | G96 | 0.0 | 0.8− | 2006 11 15 | 691 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 22 | G96 | 0.1− | 0.6− | 2006 11 15 | 691 | 0.2− | 0.4+ | 2006 11 27 | 691 | 0.3+ | 0.5− |
| 2006 10 22 | G96 | 0.1− | 0.7− | 2006 11 19 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.3− |

**2006 UO$_{173}$ = 2004 CR$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.68994 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27067128 | $\omega$ | 350.76541 | | +0.56838715 | | −0.81700073 |
| $a$ | 2.3668710 | $\Omega$ | 64.53810 | | +0.76157371 | | +0.47773136 |
| $e$ | 0.1536471 | $i$ | 6.17959 | | +0.31135435 | | +0.32292810 |
| $P$ | 3.64 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.5− | 0.1− | 2006 11 02 | 703 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 1995 12 19 | 691 | 0.5+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.4+ | 1.4+ |
| 1995 12 19 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 20 | 704 | 1.8− | 0.7− |
| 2004 02 13 | 691 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 11 20 | 704 | 1.4− | 0.1− |
| 2004 02 13 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.1− | 2006 11 20 | 704 | 2.0− | 0.3+ |
| 2004 02 13 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.1− | 1.1− | 2006 11 20 | 704 | 1.4− | 0.3− |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4+ | 1.3+ | 2006 11 21 | 704 | 0.3+ | 0.4− |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1+ | 0.5+ | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.0 |
| 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.7− | 0.5+ |
| 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2006 10 22 | G96 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.6+ | 0.5− | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2006 10 22 | G96 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 27 | 703 | 0.4− | 0.3+ |
| 2006 10 23 | G96 | 0.5+ | 0.4− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.3− | 0.3+ |
| 2006 10 23 | G96 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.2+ | 1.3+ | 2006 11 27 | 703 | 0.7− | 0.3− |
| 2006 10 23 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | (1.1− | 2.0+) | 2006 11 29 | 704 | 0.8− | 0.1− |
| 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.8+ | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2006 11 02 | 703 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.8− | 2006 11 29 | 704 | 0.2+ | 1.3− |
| 2006 11 02 | 703 | 0.7− | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.5+ |
| 2006 11 02 | 703 | 0.0 | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.2− | | | | |

**2006 UA$_{174}$ = 1996 VP$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.82325 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29566905 | $\omega$ | 172.77768 | | +0.51149141 | | −0.85005237 |
| $a$ | 2.2315098 | $\Omega$ | 246.38651 | | +0.78136531 | | +0.52095289 |
| $e$ | 0.1485260 | $i$ | 7.88184 | | +0.35755389 | | +0.07758261 |
| $P$ | 3.33 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 11 | 691 | 0.3− | 0.2− | 2006 10 19 | 703 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.5+ |
| 1996 11 11 | 691 | 0.3− | 0.2+ | 2006 10 23 | 644 | 0.7+ | 0.0 | 2006 11 14 | 703 | 0.8− | 0.7− |
| 1996 11 11 | 691 | 0.1− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.9+ | 0.4− |
| 1996 11 13 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 1.0+ |
| 1996 11 13 | 691 | 0.2+ | 0.1− | 2006 10 25 | 106 | 0.5− | 0.1+ | 2006 11 19 | 704 | 0.0 | 1.1+ |
| 1996 11 13 | 691 | 0.3+ | 0.2− | 2006 10 25 | 106 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.5− | 0.7+ |
| 2006 10 19 | 703 | 0.5− | 0.1− | 2006 10 25 | 106 | 0.1− | 0.5− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 10 25 | 106 | 0.3− | 0.6+ | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2006 10 19 | 703 | 0.5+ | 0.3− | 2006 11 14 | 703 | 0.1− | 0.4− | 2006 11 25 | G96 | 0.2+ | 0.5− |

**2006 UL$_{174}$ = 1995 WU$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.12757 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17925191 | $\omega$ | 27.08046 | | +0.97821288 | | +0.20190886 |
| $a$ | 3.1152544 | $\Omega$ | 321.17389 | | −0.20168526 | | +0.86909837 |
| $e$ | 0.1401602 | $i$ | 4.41787 | | −0.04922010 | | +0.45155381 |
| $P$ | 5.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.2+ | 0.2− | 2000 10 07 | 691 | 0.3+ | 0.7+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 1995 11 19 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.7− | 1.4+ | 2006 10 31 | 691 | 0.1− | 0.2+ |
| 1995 11 19 | 691 | 0.2+ | 0.2− | 2006 10 19 | 703 | 0.7+ | 1.2+ | 2006 11 09 | 644 | 0.3− | 0.1+ |
| 1995 11 24 | 691 | 0.3− | 0.1− | 2006 10 19 | 703 | 1.3− | 0.6+ | 2006 11 09 | 644 | 0.1− | 0.2− |
| 1995 11 24 | 691 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.9− | 1.5+ | 2006 11 09 | 644 | 0.1+ | 0.1+ |
| 1995 11 24 | 691 | 0.1− | 0.2− | 2006 10 19 | 691 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.1− | 0.1+ |
| 1998 03 23 | 691 | 0.0 | 1.6− | 2006 10 19 | 691 | 0.2− | 0.1− | 2006 11 10 | 644 | 0.2+ | 0.0 |
| 1998 03 23 | 691 | 0.2+ | 1.6+ | 2006 10 19 | 691 | 0.3− | 0.3− | 2006 11 10 | 644 | 0.3+ | 0.0 |
| 1998 03 23 | 691 | 0.4+ | 1.1+ | 2006 10 25 | D35 | 0.8+ | 0.1− | 2006 11 14 | 703 | (1.0+ | 1.5−) |
| 2000 09 02 | 699 | 1.1− | 1.1+ | 2006 10 25 | D35 | 0.7+ | 0.3+ | 2006 11 14 | 703 | (0.9+ | 1.9−) |
| 2000 09 02 | 699 | 0.8+ | 0.0 | 2006 10 25 | D35 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 1.1− | 0.6− |
| 2000 09 02 | 699 | 0.3+ | 0.8− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.2+ |
| 2000 09 02 | 699 | 0.4+ | 0.7+ | 2006 10 27 | 691 | 0.5− | 0.5+ | 2006 11 14 | G96 | 0.3− | 0.5− |
| 2000 10 07 | 691 | 0.4− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2000 10 07 | 691 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.6− |

**2006 UN$_{174}$ = 2001 SX$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.06513 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21761299 | $\omega$ | 112.18027 | | +0.79797139 | | −0.59924309 |
| $a$ | 2.7374499 | $\Omega$ | 284.69348 | | +0.52553098 | | +0.74414403 |
| $e$ | 0.1668908 | $i$ | 3.81835 | | +0.29505736 | | +0.29522430 |
| $P$ | 4.53 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.2− | 0.2+ | 2006 10 25 | D35 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.4+ | 1.2+ |
| 2001 09 20 | 704 | 0.5− | 0.1+ | 2006 10 25 | D35 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.3+ | 0.0 |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2006 10 27 | 703 | 0.5− | 0.5− | 2006 11 15 | 704 | 0.0 | 1.4+ |
| 2001 09 20 | 704 | 0.5− | 0.2+ | 2006 10 27 | 703 | 0.2− | 1.0+ | 2006 11 16 | 704 | 1.1− | 0.9+ |
| 2001 09 22 | 704 | 0.5+ | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.5− | 2006 11 16 | 704 | 0.1− | 0.6+ |
| 2001 09 22 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.5+ | 0.5− |
| 2001 09 22 | 704 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.5+ |
| 2001 09 22 | 704 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2006 10 19 | 703 | 0.3+ | 1.0− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.9+ |
| 2006 10 19 | G96 | 0.1− | 0.5− | 2006 11 11 | 703 | (1.1+ | 5.7+) | 2006 11 19 | 704 | 0.9− | 0.1− |
| 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.8+ | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2006 10 19 | 703 | 0.3− | 0.3+ | 2006 11 11 | 703 | (2.0+ | 1.1−) | 2006 11 22 | 704 | 0.2+ | 0.8+ |
| 2006 10 19 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 22 | 704 | 1.2+ | 0.1+ |
| 2006 10 19 | G96 | 0.1+ | 0.6− | 2006 11 14 | 703 | 0.6− | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.4− |
| 2006 10 19 | 703 | 1.4− | 0.2+ | 2006 11 14 | 703 | 0.1− | 1.0− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2006 10 19 | 703 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.8− | 0.6− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2006 10 25 | D35 | 0.3+ | 0.0 | 2006 11 14 | 703 | 1.4− | 0.0 | | | | |

**2006 UR$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.70847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27046295 | $\omega$ | 16.84400 | | +0.86902948 | | −0.49403987 |
| $a$ | 2.3680863 | $\Omega$ | 12.86378 | | +0.43899520 | | +0.74507646 |
| $e$ | 0.1283736 | $i$ | 6.88544 | | +0.22819067 | | +0.44809114 |
| $P$ | 3.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 23 | 807 | 0.0 | 0.2+ | 2004 03 10 | 644 | 0.7+ | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 2001 05 24 | 807 | 0.0 | 0.3+ | 2006 10 19 | 703 | (0.3+ | 1.7+) | 2006 11 15 | 704 | 0.8− | 1.3+ |
| 2002 08 21 | 644 | 0.2− | 0.0 | 2006 10 19 | 703 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.2+ | 0.0 |
| 2002 08 21 | 644 | 0.4− | 0.1+ | 2006 10 19 | 703 | 0.7− | 0.2− | 2006 11 15 | 704 | 0.4+ | 0.4+ |
| 2002 08 21 | 644 | 0.3− | 0.0 | 2006 10 19 | 703 | 0.6+ | 0.8+ | 2006 11 15 | 704 | 0.3− | 0.4+ |
| 2002 08 30 | 699 | 0.3− | 1.3− | 2006 10 25 | D35 | 0.0 | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2002 08 30 | 699 | 0.1+ | 0.2+ | 2006 10 25 | D35 | 0.3+ | 0.2+ | 2006 11 20 | G96 | 0.4+ | 0.1− |
| 2002 08 30 | 699 | 0.2− | 0.1+ | 2006 10 25 | D35 | 0.3+ | 0.4+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 08 30 | 699 | 0.2− | 0.4+ | 2006 10 25 | D35 | 0.3+ | 0.4+ | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2002 09 05 | 699 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 1.0− | 0.3− | 2006 11 21 | 703 | 0.5+ | 0.3− |
| 2002 09 05 | 699 | 0.3− | 1.3+ | 2006 11 02 | 703 | 0.9− | 0.1+ | 2006 11 21 | 703 | (1.2− | 2.2−) |
| 2002 09 05 | 699 | 0.1+ | 1.1+ | 2006 11 02 | 703 | 0.4− | 1.0− | 2006 11 21 | 703 | (0.8+ | 2.6−) |
| 2002 09 05 | 699 | 0.2− | 0.9+ | 2006 11 02 | 703 | 0.9− | 1.0− | 2006 11 21 | 703 | 0.4− | 0.2− |
| 2004 03 10 | 644 | 0.3+ | 0.9+ | 2006 11 11 | 691 | 0.2+ | 0.1− | | | | |
| 2004 03 10 | 644 | 0.9+ | 1.5+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | | | | |

**2006 US$_{174}$ = 2002 SL$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 345.01799 | | (2000.0) | | | |
| $n$ | 0.27164095 | $\omega$ | 224.05918 | | +0.42400254 | −0.90522254 |
| $a$ | 2.3612351 | $\Omega$ | 200.90229 | | +0.85124540 | +0.40895615 |
| $e$ | 0.2067605 | $i$ | 4.52994 | | +0.30919753 | +0.11544274 |
| $P$ | 3.63 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 16 | 644 | 0.1− | 0.6+ | 2006 10 25 | D35 | 0.4+ | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.5− |
| 2002 09 16 | 644 | 0.1− | 0.5+ | 2006 10 25 | D35 | 0.7+ | 0.4+ | 2006 11 18 | 704 | 0.4− | 0.6+ |
| 2002 09 16 | 644 | 0.1− | 0.7+ | 2006 10 25 | D35 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 0.1+ | 0.1+ |
| 2002 09 18 | 644 | 0.1− | 0.2+ | 2006 11 12 | D35 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.8+ | 0.3+ |
| 2002 09 18 | 644 | 0.4− | 0.3+ | 2006 11 12 | D35 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.8− |
| 2002 09 18 | 644 | 0.4− | 0.5+ | 2006 11 12 | D35 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.7− | 0.5− |
| 2004 03 26 | 691 | 0.2+ | 0.1− | 2006 11 17 | 704 | 1.0− | 0.3− | 2006 11 29 | 704 | 1.3− | 0.9+ |
| 2004 03 26 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 1.2− | 0.7− | 2006 11 29 | 704 | 0.7− | 0.0 |
| 2004 03 26 | 691 | 0.2− | 0.6+ | 2006 11 17 | 704 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.2− | 1.0+ |
| 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 17 | 704 | 0.1− | 1.2+ | 2006 11 29 | 704 | 0.8− | 0.5+ |
| 2006 09 28 | G96 | 0.5+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.2+ | 0.0 |
| 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.4+ | 0.3− |
| 2006 09 28 | G96 | 0.6− | 0.9− | 2006 11 17 | G96 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.3+ | 0.3− |
| 2006 10 21 | D35 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.6+ | 0.4− |
| 2006 10 21 | D35 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.6+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2006 10 21 | D35 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.0 | 0.1+ | | | | |

**2006 UT$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.18367 | | (2000.0) | | | |
| $n$ | 0.23255437 | $\omega$ | 132.49948 | | +0.98490934 | +0.03465155 |
| $a$ | 2.6189048 | $\Omega$ | 226.29572 | | −0.07504254 | +0.96836489 |
| $e$ | 0.2857680 | $i$ | 13.56566 | | +0.15595578 | +0.24712084 |
| $P$ | 4.24 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 14 | G96 | 0.2− | 0.2+ | 2006 10 25 | D35 | 0.6+ | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.5+ |
| 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 10 25 | D35 | 0.4+ | 0.4+ | 2006 11 17 | 704 | 0.3− | 1.0+ |
| 2005 05 14 | G96 | 0.5− | 0.2+ | 2006 10 27 | 704 | 0.5− | 1.3− | 2006 11 17 | 704 | 0.2+ | 0.6+ |
| 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 10 27 | 704 | (1.4+ | 1.6−) | 2006 11 18 | 704 | 0.3− | 0.7− |
| 2005 06 23 | 644 | 0.1− | 0.5+ | 2006 10 27 | 704 | 0.3− | 1.3− | 2006 11 18 | 704 | 0.6− | 0.9+ |
| 2005 06 23 | 644 | 0.4+ | 0.4+ | 2006 10 27 | 704 | 0.0 | 0.3− | 2006 11 18 | 704 | (0.4− | 2.0+) |
| 2005 06 23 | 644 | 0.3+ | 0.3+ | 2006 10 29 | 704 | (2.3+ | 1.4−) | 2006 11 20 | 704 | 0.8− | 0.2+ |
| 2006 08 29 | 703 | 0.2− | 1.1+ | 2006 10 29 | 704 | 0.2− | 1.0− | 2006 11 20 | 704 | 0.7− | 1.2+ |
| 2006 08 29 | 703 | 1.1− | 0.8+ | 2006 10 29 | 704 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.4− | 0.5+ |
| 2006 08 29 | 703 | 0.5− | 0.4+ | 2006 10 29 | 704 | 0.7+ | 0.5− | 2006 11 20 | 704 | 0.4− | 0.4+ |
| 2006 08 29 | 703 | 0.1− | 0.6− | 2006 11 02 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.9− | 1.1+ |
| 2006 09 18 | 703 | 0.6+ | 0.0 | 2006 11 02 | G96 | 0.4+ | 0.4− | 2006 11 25 | 704 | 0.4+ | 0.3− |
| 2006 09 18 | 703 | 0.1+ | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.5− | 2006 11 25 | 704 | 0.2+ | 0.7− |
| 2006 09 18 | 703 | 0.0 | 0.5+ | 2006 11 02 | G96 | 0.5+ | 0.5− | 2006 11 25 | 704 | 0.3+ | 0.3− |
| 2006 09 18 | 703 | 0.5+ | 0.3+ | 2006 11 02 | 703 | 0.6+ | 0.3+ | 2006 11 25 | 704 | 0.4+ | 0.6+ |
| 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 02 | 703 | 1.1+ | 0.2− | 2006 11 25 | 703 | 0.4− | 0.4− |
| 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.5− | 0.7− | 2006 11 25 | 703 | 0.4− | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.7− | 2006 11 02 | 703 | 0.6+ | 0.2− | 2006 11 25 | 703 | 0.1+ | 0.9− |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 14 | 704 | 0.7− | 0.7+ | 2006 11 25 | 703 | 0.8+ | 0.7− |
| 2006 10 22 | 703 | 0.2+ | 0.0 | 2006 11 14 | 704 | 0.1− | 0.5+ | 2006 11 28 | 704 | 0.1− | 0.4− |
| 2006 10 22 | 703 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.3− | 1.1+ | 2006 11 28 | 704 | 0.1− | 0.3+ |
| 2006 10 22 | 703 | 0.4− | 0.3− | 2006 11 14 | 704 | 0.2+ | 1.1+ | 2006 11 28 | 704 | 0.1− | 0.0 |
| 2006 10 22 | 703 | 0.0 | 0.5− | 2006 11 17 | 704 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.1+ | 0.2+ |
| 2006 10 25 | D35 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.5+ | 2006 11 28 | 704 | 0.4+ | 0.1− |

**2006 UB$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.35407 | | (2000.0) | | | |
| $n$ | 0.21744272 | $\omega$ | 62.33377 | | −0.23327643 | −0.96616450 |
| $a$ | 2.7388787 | $\Omega$ | 41.63559 | | +0.82361180 | −0.25646979 |
| $e$ | 0.1877159 | $i$ | 9.53336 | | +0.51695813 | −0.02737524 |
| $P$ | 4.53 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 23 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.4+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2004 05 23 | 691 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.2− | 1.4+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2004 05 23 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.5− | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2006 09 18 | 703 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.2− | 0.7− | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 2006 09 18 | 703 | 0.7− | 0.0 | 2006 10 16 | 703 | 1.8− | 0.4+ | 2006 10 22 | 703 | 0.3+ | 0.3− |
| 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 10 16 | 703 | 0.7+ | 1.0− | 2006 10 22 | 703 | 0.1+ | 1.2− |
| 2006 09 18 | 703 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.1+ | 0.6+ | 2006 10 22 | 703 | 0.5+ | 0.0 |
| 2006 09 30 | 703 | 0.7+ | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 703 | 0.3− | 0.0 |

**2006 UE$_{175}$ = 1999 CC$_{134}$ = 2004 FJ$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 353.29157 | | (2000.0) | | | |
| $n$ | 0.21487755 | $\omega$ | 237.39010 | | +0.95197015 | −0.30043138 |
| $a$ | 2.7606331 | $\Omega$ | 140.00526 | | +0.30259979 | +0.89363003 |
| $e$ | 0.1222739 | $i$ | 5.27675 | | +0.04675674 | +0.33341619 |
| $P$ | 4.59 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 07 | 691 | 0.2− | 0.1− | 2004 03 18 | 691 | 0.0 | 0.1+ | 2006 10 16 | 703 | 0.6− | 0.2+ |
| 1999 02 07 | 691 | 0.1+ | 0.1+ | 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.1+ | 0.8− |
| 1999 02 07 | 691 | 0.3+ | 0.0 | 2006 09 27 | 291 | 0.6− | 0.2− | 2006 10 20 | 644 | 0.0 | 0.0 |
| 1999 02 12 | 691 | 0.0 | 0.0 | 2006 09 27 | 291 | 0.5− | 0.1+ | 2006 10 20 | 644 | 0.5+ | 0.2− |
| 1999 02 12 | 691 | 0.0 | 0.1+ | 2006 09 27 | 291 | 0.0 | 0.4+ | 2006 10 20 | 644 | 0.4+ | 0.5+ |
| 1999 02 12 | 691 | 0.2− | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 10 22 | 703 | 1.7+ | 0.0 |
| 2004 03 16 | 599 | 0.3+ | 0.2+ | 2006 10 12 | 644 | 0.4+ | 0.1− | 2006 10 22 | 703 | 0.6− | 0.5+ |
| 2004 03 16 | 599 | 0.6+ | 0.6+ | 2006 10 12 | 644 | 0.1+ | 0.5+ | 2006 10 22 | 703 | 0.3+ | 0.4+ |
| 2004 03 16 | 599 | 0.4− | 0.4+ | 2006 10 16 | 703 | 0.1+ | 1.4− | 2006 10 22 | 703 | 0.5+ | 0.6+ |
| 2004 03 18 | 691 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.7+ | 0.4− | | | | |

**2006 UJ$_{175}$ = 2003 YZ$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 251.90353 | | (2000.0) | | | |
| $n$ | 0.27363415 | $\omega$ | 69.48240 | | −0.62958362 | −0.77280345 |
| $a$ | 2.3497547 | $\Omega$ | 59.79374 | | +0.67388629 | −0.59441963 |
| $e$ | 0.0862780 | $i$ | 5.31112 | | +0.38665453 | −0.22235135 |
| $P$ | 3.60 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2003 12 27 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.3− |
| 2003 12 18 | 691 | 0.1+ | 0.2+ | 2003 12 27 | 691 | 0.2− | 0.2− | 2006 10 16 | 703 | (2.4+ | 1.3−) |
| 2003 12 18 | 691 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.3− | 0.6+ | 2006 10 16 | 703 | (1.7+ | 1.0−) |
| 2003 12 23 | 704 | 0.1+ | 0.1+ | 2003 12 28 | 704 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.5+ | 0.1− |
| 2003 12 23 | 704 | 0.2+ | 0.2+ | 2003 12 28 | 704 | 0.5− | 0.1+ | 2006 10 22 | 703 | 0.0 | 0.1− |
| 2003 12 23 | 704 | 0.0 | 0.6− | 2003 12 28 | 704 | 0.2+ | 0.4− | 2006 10 22 | 703 | 0.8− | 1.0− |
| 2003 12 23 | 704 | 0.1+ | 0.0 | 2006 10 02 | 691 | 1.4− | 1.1+ | 2006 10 22 | 703 | 1.1− | 0.8− |
| 2003 12 23 | 704 | 0.3+ | 0.2− | 2006 10 02 | 691 | 0.7+ | 0.3− | 2006 10 22 | 703 | 0.2+ | 0.4+ |
| 2003 12 27 | 691 | 0.1− | 0.3− | 2006 10 02 | 691 | 0.9+ | 0.3− | | | | |

**2006 UK$_{175}$ = 2004 BW$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.39780 | | (2000.0) | | | |
| $n$ | 0.28722958 | $\omega$ | 317.14095 | | +0.57746002 | −0.81418981 |
| $a$ | 2.2750098 | $\Omega$ | 97.49932 | | +0.76454102 | +0.51338553 |
| $e$ | 0.2179317 | $i$ | 3.48632 | | +0.28638603 | +0.27116463 |
| $P$ | 3.43 | $H$ | 18.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.1+ | 0.1− | 2004 03 18 | 645 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2004 01 19 | 691 | 0.2− | 0.0 | 2004 03 18 | 645 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.4+ |
| 2004 01 19 | 691 | 0.2− | 0.3+ | 2006 09 30 | 703 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 2004 01 22 | 704 | 0.1+ | 0.3+ | 2006 09 30 | 703 | (2.0+ | 0.6−) | 2006 10 22 | 703 | 0.1+ | 0.0 |
| 2004 01 22 | 704 | 0.1− | 0.5+ | 2006 09 30 | 703 | 1.1− | 1.0+ | 2006 10 22 | 703 | 0.7+ | 0.5− |
| 2004 01 22 | 704 | 0.6+ | 0.4+ | 2006 09 30 | 703 | 0.9− | 0.2− | 2006 10 22 | 703 | 0.8+ | 0.9− |
| 2004 01 22 | 704 | 0.1+ | 1.3+ | 2006 10 16 | 703 | 0.4+ | 0.0 | 2006 11 23 | G96 | 0.3− | 0.5− |
| 2004 01 22 | 704 | 0.0 | 1.3+ | 2006 10 16 | 703 | 0.5+ | 0.3− | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2004 02 14 | 691 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.4+ | 1.1− | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2004 02 14 | 691 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2004 02 14 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.0 | 0.4+ | | | | |

**2006 UM$_{175}$ = 2005 JK$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 328.81324 | | (2000.0) | | | |
| $n$ | 0.28964554 | $\omega$ | 305.10166 | | +0.68024187 | −0.72998135 |
| $a$ | 2.2623415 | $\Omega$ | 101.89173 | | +0.69263207 | +0.61054642 |
| $e$ | 0.0962229 | $i$ | 3.88612 | | +0.23985791 | +0.30718121 |
| $P$ | 3.40 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 11 | 691 | 0.5+ | 1.5+ | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.4+ | 0.0 |
| 1994 01 11 | 691 | 1.1− | 2.0− | 2005 05 14 | G96 | 0.5− | 0.3− | 2006 10 16 | 703 | 0.9+ | 0.6+ |
| 1994 01 11 | 691 | 0.6+ | 0.2+ | 2006 09 18 | 703 | 2.0− | 0.6− | 2006 10 16 | 703 | 0.3+ | 0.6− |
| 2004 02 27 | 695 | 0.2− | 0.8+ | 2006 09 18 | 703 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.3+ | 0.1+ |
| 2004 02 27 | 695 | 0.0 | 0.9+ | 2006 09 18 | 703 | 0.4− | 0.2− | 2006 10 22 | 703 | 1.2+ | 1.1− |
| 2005 05 13 | 691 | 0.2+ | 0.1− | 2006 09 18 | 703 | 0.6+ | 0.8+ | 2006 10 22 | 703 | 0.6− | 0.4+ |
| 2005 05 13 | 691 | 0.4+ | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.6+ | 2006 10 22 | 703 | 0.8− | 1.1− |
| 2005 05 13 | 691 | 0.4− | 0.1+ | 2006 09 30 | 703 | 0.5− | 1.3+ | 2006 10 22 | 703 | 0.1+ | 0.7− |
| 2005 05 14 | G96 | 0.4− | 0.4− | 2006 09 30 | 703 | 1.2+ | 2.1+ | | | | |
| 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 09 30 | 703 | 0.2− | 1.4− | | | | |

**2006 UR$_{175}$ = 1995 VQ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 21.31871 | | (2000.0) | | | |
| $n$ | 0.17638704 | $\omega$ | 279.40818 | | +0.92856205 | +0.33979316 |
| $a$ | 3.1488957 | $\Omega$ | 60.85564 | | −0.23621293 | +0.85138985 |
| $e$ | 0.1661610 | $i$ | 9.84764 | | −0.28631446 | +0.39959471 |
| $P$ | 5.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | 0.3+ | 0.7− | 2006 10 16 | 703 | 0.1− | 0.2− |
| 1995 11 15 | 691 | 0.3+ | 0.2− | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 10 16 | 703 | 0.7+ | 0.4+ |
| 1995 11 15 | 691 | 0.1+ | 0.1− | 2006 09 26 | 703 | 0.1+ | 0.8+ | 2006 10 22 | 703 | 0.3− | 0.8− |
| 1995 11 20 | 691 | 0.2+ | 0.0 | 2006 09 26 | 703 | 0.5− | 0.3+ | 2006 10 22 | 703 | 1.1− | 0.3+ |
| 1995 11 20 | 691 | 0.0 | 0.1+ | 2006 09 26 | 703 | 0.9+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.6+ |
| 1995 11 20 | 691 | 0.7− | 0.3+ | 2006 09 26 | 703 | (0.4+ | 1.8−) | 2006 10 22 | 703 | 0.0 | 0.6− |
| 2006 09 18 | 703 | 0.9+ | 0.1− | 2006 10 16 | 703 | 0.6+ | 0.7+ | | | | |
| 2006 09 18 | 703 | 0.8− | 0.3+ | 2006 10 16 | 703 | 0.3− | 1.0− | | | | |

**2006 UT$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 106.70019 | | (2000.0) | | | |
| $n$ | 0.21871562 | $\omega$ | 114.03049 | | −0.11166910 | +0.99107285 |
| $a$ | 2.7282417 | $\Omega$ | 149.28306 | | −0.95568266 | −0.08701305 |
| $e$ | 0.0261436 | $i$ | 8.19755 | | −0.27239799 | −0.10101157 |
| $P$ | 4.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 15 | 608 | 0.2− | 0.3− | 2005 02 14 | 809 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.2− | 1.0+ |
| 2001 08 15 | 608 | 0.7+ | 0.0 | 2005 02 14 | 809 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.4− | 0.5− |
| 2001 08 15 | 608 | 0.7+ | 1.1+ | 2006 09 18 | 703 | 1.2+ | 2.5+ | 2006 10 21 | 644 | 0.3− | 0.2− |
| 2001 08 24 | 699 | 0.2− | 0.8− | 2006 09 18 | 703 | 0.3+ | 1.6− | 2006 10 21 | 644 | 0.2+ | 0.3+ |
| 2001 08 24 | 699 | 0.1− | 0.2− | 2006 09 18 | 703 | 0.3+ | 2.4− | 2006 10 22 | 703 | 0.8+ | 0.1− |
| 2001 08 24 | 699 | 0.2+ | 0.6+ | 2006 09 18 | 703 | 0.3+ | 0.9− | 2006 10 22 | 703 | 0.1− | 0.5+ |
| 2001 08 24 | 699 | 0.6− | 0.2− | 2006 09 26 | 703 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.1+ | 0.9+ |
| 2001 09 08 | 735 | 1.2− | 0.5+ | 2006 09 26 | 703 | 0.4− | 0.4− | 2006 10 22 | 703 | 0.8+ | 0.8+ |
| 2001 09 08 | 735 | 0.1− | 1.2+ | 2006 09 26 | 703 | 0.2− | 0.3− | 2006 10 23 | 644 | 0.5− | 0.4+ |
| 2001 09 08 | 735 | 0.5+ | 0.9− | 2006 09 26 | 703 | 1.1− | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.2− |
| 2004 03 11 | 644 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 0.5+ | 0.2− | 2006 10 23 | 644 | 0.4− | 0.2+ |
| 2004 03 11 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | (0.7− | 1.9+) | | | | |
| 2004 03 11 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.7− | 0.3+ | | | | |

**2006 UB$_{176}$ = 1999 XP$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 54.12744 | | (2000.0) | | | |
| $n$ | 0.27011898 | $\omega$ | 238.22560 | | +0.56226158 | +0.82176269 |
| $a$ | 2.3700962 | $\Omega$ | 66.26356 | | −0.72041607 | +0.54170130 |
| $e$ | 0.1477998 | $i$ | 5.80352 | | −0.40603276 | +0.17682135 |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 08 | 691 | 0.5+ | 0.3− | 2006 09 26 | 703 | 1.0− | 0.1− | 2006 10 16 | 703 | 1.4− | 1.1− |
| 1999 12 08 | 691 | 0.0 | 0.4+ | 2006 09 26 | 703 | 0.9+ | 0.4− | 2006 10 21 | 644 | 0.4+ | 0.2+ |
| 1999 12 08 | 691 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.4+ |
| 1999 12 13 | 691 | 0.1− | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.4+ |
| 1999 12 13 | 691 | 0.2− | 0.0 | 2006 10 12 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.3+ |
| 1999 12 13 | 691 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 1.2− | 2006 10 22 | 703 | 0.6+ | 0.8− |
| 2006 09 26 | 703 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.6− | 0.8+ |
| 2006 09 26 | 703 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.2+ |

**2006 UD$_{176}$ = 1998 XC$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 2.28257 | | (2000.0) | | | |
| $n$ | 0.23823742 | $\omega$ | 295.34833 | | +0.97494205 | −0.18197432 |
| $a$ | 2.5770889 | $\Omega$ | 75.34855 | | +0.21968348 | +0.87814285 |
| $e$ | 0.0748320 | $i$ | 7.60016 | | −0.03503111 | +0.44243698 |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 07 | 910 | 0.3− | 0.3+ | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 10 22 | 703 | (0.9+ | 1.6−) |
| 1998 12 07 | 910 | 0.6− | 0.5+ | 2006 09 25 | 699 | 1.1+ | 0.3− | 2006 10 22 | 703 | 0.9+ | 0.5+ |
| 1998 12 07 | 910 | 0.0 | 0.2+ | 2006 09 25 | 699 | 1.0− | 0.6− | 2006 10 22 | 703 | (2.3− | 1.2−) |
| 1998 12 15 | 910 | 0.6+ | 0.5− | 2006 09 25 | 699 | (1.6− | 0.0 ) | 2006 10 22 | 703 | 0.5+ | 0.5− |
| 1998 12 15 | 910 | 0.7+ | 0.7− | 2006 09 25 | 699 | 0.2− | 0.1− | 2006 10 23 | 644 | 1.1− | 1.0+ |
| 1998 12 15 | 910 | 0.5+ | 0.9− | 2006 10 16 | 703 | 0.3+ | 0.8− | 2006 10 23 | 644 | 0.4− | 0.0 |
| 2002 10 30 | 644 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2002 10 30 | 644 | 0.2− | 0.4+ | 2006 10 16 | 703 | 0.8+ | 0.3+ | 2006 10 28 | 703 | 0.7+ | 0.6+ |
| 2002 10 30 | 644 | 0.6− | 0.3+ | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 10 28 | 703 | 0.2− | 0.1− |
| 2005 06 13 | G96 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 10 28 | 703 | 1.1− | 1.1+ |
| 2005 06 13 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.4− | 2006 10 28 | 703 | 0.6+ | 0.2− |
| 2005 06 13 | G96 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | | | | |

**2006 UL$_{176}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPCD

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 313.13800 | | | (2000.0) | | |
| $n$ | 0.18423040 | $\omega$ | 325.23433 | | +0.07837463 | −0.99274137 |
| $a$ | 3.0588758 | $\Omega$ | 120.11242 | | +0.93691429 | +0.04207912 |
| $e$ | 0.2230976 | $i$ | 6.05351 | | +0.34065971 | +0.11266729 |
| $P$ | 5.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 09 | 691 | 0.0 | 0.2− | 2003 04 09 | 691 | 0.3+ | 0.3− | 2006 10 16 | 703 | 1.4− | 0.6+ |
| 1997 01 09 | 691 | 0.5+ | 0.0 | 2006 09 14 | 291 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.5+ | 1.6+ |
| 1997 01 09 | 691 | 0.2− | 0.1+ | 2006 09 14 | 291 | 0.0 | 0.4+ | 2006 10 22 | 703 | 0.4+ | 0.7+ |
| 2001 08 26 | 691 | 0.1− | 0.1− | 2006 09 14 | 291 | 0.4+ | 0.3− | 2006 10 22 | 703 | 0.8+ | 0.5+ |
| 2001 08 26 | 691 | 0.3− | 0.2+ | 2006 10 04 | G96 | 0.9+ | 0.4+ | 2006 10 22 | 703 | 0.9− | 0.5− |
| 2001 08 26 | 691 | 0.7− | 0.2+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 28 | 703 | 1.1+ | 0.7− |
| 2003 03 26 | 691 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.5+ | 0.3− | 2006 10 28 | 703 | (2.3+ | 0.1−) |
| 2003 03 26 | 691 | 0.5+ | 0.2− | 2006 10 04 | G96 | 0.5+ | 0.4− | 2006 10 28 | 703 | 0.2− | 0.3− |
| 2003 03 26 | 691 | 0.1− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.2− | 2006 10 28 | 703 | 1.1− | 1.8− |
| 2003 04 09 | 691 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.3+ | | | | |
| 2003 04 09 | 691 | 0.5− | 0.6+ | 2006 10 16 | 703 | 0.5− | 0.3− | | | | |

**2006 UD$_{177}$ = 2004 CB$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 104.07359 | | | (2000.0) | | |
| $n$ | 0.24529152 | $\omega$ | 184.96942 | | +0.02231218 | +0.98817633 |
| $a$ | 2.5274410 | $\Omega$ | 86.36664 | | −0.91193681 | +0.08229847 |
| $e$ | 0.0355017 | $i$ | 8.74256 | | −0.40972360 | −0.12936193 |
| $P$ | 4.02 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.1− | 0.0 | 2004 01 18 | 644 | 0.2+ | 0.2+ | 2006 10 16 | 703 | 1.0+ | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2004 01 18 | 644 | 0.4+ | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.5− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.3+ | 0.9+ | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.1− | 0.7+ | 2006 10 16 | 703 | 0.3+ | 0.7− |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 1.0− | 0.5+ | 2006 10 22 | 703 | 0.4− | 0.7− |
| 2002 10 29 | 645 | 0.0 | 0.0 | 2004 02 15 | 704 | 0.0 | 0.2− | 2006 10 22 | 703 | (2.2− | 1.5+) |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.2+ | 0.5+ |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.1+ | 0.2− | 2006 10 22 | 703 | (1.1− | 1.6−) |
| 2004 01 18 | 644 | 0.3+ | 0.2− | 2004 02 16 | 691 | 0.2− | 0.1− | | | | |

**2006 UE$_{178}$ = 2001 ST$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 45.06579 | | | (2000.0) | | |
| $n$ | 0.19724294 | $\omega$ | 145.60518 | | +0.91247538 | +0.40740481 |
| $a$ | 2.9228177 | $\Omega$ | 190.55415 | | −0.40608497 | +0.89067809 |
| $e$ | 0.0631700 | $i$ | 11.82993 | | −0.04983662 | +0.20177676 |
| $P$ | 5.00 | $H$ | 15.6 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 1.1− | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.4− |
| 2001 09 19 | 704 | 0.3+ | 0.5+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.9+ | 0.2− |
| 2001 09 19 | 704 | 0.2+ | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.2− | 2006 10 16 | 703 | 0.0 | 0.4+ |
| 2001 09 21 | 704 | 0.9+ | 0.0 | 2006 10 16 | 703 | 1.0− | 0.4+ | 2006 10 22 | 703 | 0.3+ | 1.0− |
| 2001 09 21 | 704 | 0.5− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 10 22 | 703 | 0.2+ | 0.3− |
| 2001 09 21 | 704 | 0.5− | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.2− | 2006 10 22 | 703 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.6+ | 0.5+ | 2006 10 16 | 703 | 0.6− | 0.5+ | 2006 10 22 | 703 | 0.4+ | 0.3+ |
| 2006 10 03 | G96 | 0.2− | 0.4− | 2006 10 16 | 703 | 0.0 | 0.7+ | | | | |

**2006 UM$_{178}$ = 2001 WY$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 74.06586 | | | (2000.0) | | |
| $n$ | 0.18672582 | $\omega$ | 224.21404 | | +0.35235917 | +0.91463582 |
| $a$ | 3.0315621 | $\Omega$ | 67.33993 | | −0.78799397 | +0.40420997 |
| $e$ | 0.1704255 | $i$ | 12.40277 | | −0.50488465 | +0.00745774 |
| $P$ | 5.28 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 691 | 0.3− | 0.1− | 2001 11 20 | 704 | 0.3+ | 0.3− | 2006 10 16 | 703 | 0.5+ | 0.5+ |
| 2001 10 19 | 691 | 0.1+ | 0.2− | 2001 11 20 | 704 | 0.8+ | 0.5+ | 2006 10 22 | 703 | 1.1− | 0.6− |
| 2001 10 19 | 691 | 0.0 | 0.1− | 2001 12 09 | 691 | 0.0 | 0.3+ | 2006 10 22 | 703 | 0.4+ | 0.5− |
| 2001 11 17 | 704 | 0.7− | 0.2+ | 2001 12 09 | 691 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.2− | 0.0 |
| 2001 11 17 | 704 | 1.0− | 0.5+ | 2001 12 09 | 691 | 0.2− | 0.4− | 2006 10 22 | 703 | 1.2− | 0.5+ |
| 2001 11 17 | 704 | 0.2+ | 0.0 | 2002 11 07 | 645 | 0.0 | 0.1+ | 2006 11 19 | 703 | 0.3− | 0.3+ |
| 2001 11 17 | 704 | 0.4− | 0.5+ | 2002 11 07 | 645 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.2− | 0.4+ |
| 2001 11 18 | 704 | 0.0 | 0.3− | 2006 09 30 | 703 | 0.0 | 0.2− | 2006 11 19 | 703 | 0.4− | 0.0 |
| 2001 11 18 | 704 | 0.4− | 0.3− | 2006 09 30 | 703 | (0.9+ | 1.7+) | 2006 11 19 | 703 | 0.7− | 0.7− |
| 2001 11 18 | 704 | (0.6− | 1.6+) | 2006 09 30 | 703 | 1.2+ | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.7− |
| 2001 11 18 | 704 | 0.5+ | 0.2− | 2006 09 30 | 703 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.8− |
| 2001 11 20 | 704 | 0.5+ | 0.9+ | 2006 10 16 | 703 | 1.0+ | 0.6+ | 2006 11 24 | G96 | 0.2+ | 0.6− |
| 2001 11 20 | 704 | (1.7+ | 0.7+) | 2006 10 16 | 703 | 0.2+ | 0.9+ | 2006 11 24 | G96 | 0.1+ | 0.8− |
| 2001 11 20 | 704 | 1.1+ | 1.4+ | 2006 10 16 | 703 | 0.7+ | 0.5− | | | | |

**2006 UN$_{178}$ = 2002 XP$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.06574 | | | (2000.0) | | |
| $n$ | 0.23788579 | $\omega$ | 289.10124 | | +0.94240881 | −0.31698669 |
| $a$ | 2.5796278 | $\Omega$ | 89.49245 | | +0.33269540 | +0.85568798 |
| $e$ | 0.3510208 | $i$ | 6.12541 | | +0.03434245 | +0.40904464 |
| $P$ | 4.14 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 17 | 950 | 0.0 | 0.2− | 2006 10 10 | 644 | 0.2− | 0.3+ | 2006 11 13 | 703 | 0.5− | 0.2− |
| 1998 11 17 | 950 | 0.0 | 0.0 | 2006 10 10 | 644 | 0.2− | 0.4+ | 2006 11 17 | 644 | 0.1− | 0.2− |
| 1998 11 17 | 950 | 0.0 | 0.1− | 2006 10 10 | 644 | 0.1− | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.1− |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 17 | 644 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 10 16 | 703 | 0.5+ | 0.2+ | 2006 11 19 | 703 | 0.2+ | 0.8+ |
| 2002 12 05 | 704 | 0.4+ | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.4− | 2006 11 19 | 703 | 0.9+ | 0.6+ |
| 2002 12 05 | 704 | 0.4− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 19 | 703 | (0.5+ | 1.9+) |
| 2002 12 05 | 704 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.0 | 2006 11 19 | 703 | 0.1+ | 1.1+ |
| 2002 12 10 | 704 | 0.8+ | 0.7− | 2006 10 22 | 703 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 12 10 | 704 | 0.8+ | 0.3− | 2006 10 22 | 703 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2002 12 10 | 704 | 0.8− | 0.3− | 2006 10 22 | 703 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2003 01 01 | 291 | 0.4+ | 0.0 | 2006 11 13 | 703 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2003 01 01 | 291 | 0.3− | 0.1+ | 2006 11 13 | 703 | 0.1+ | 0.3+ | | | | |
| 2003 01 01 | 291 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.2− | 0.3− | | | | |

**2006 UY$_{178}$ = 2002 XC$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 350.09976 | | | (2000.0) | | |
| $n$ | 0.23204439 | $\omega$ | 295.90415 | | +0.79302484 | −0.60524334 |
| $a$ | 2.6227406 | $\Omega$ | 101.41920 | | +0.58114262 | +0.71753156 |
| $e$ | 0.1633628 | $i$ | 4.04977 | | +0.18271526 | +0.34471577 |
| $P$ | 4.25 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 22 | 691 | 0.1− | 0.2− | 2006 09 30 | 703 | (1.7− | 0.1+) | 2006 10 22 | 703 | 0.4− | 0.5− |
| 1998 11 22 | 691 | 0.0 | 0.3− | 2006 09 30 | 703 | 1.3+ | 0.6− | 2006 10 22 | 703 | 0.6+ | 0.0 |
| 1998 11 22 | 691 | (6.0+ | 3.9+) | 2006 09 30 | 703 | 0.2+ | 0.9− | 2006 10 22 | 703 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.5+ | 0.8+ | 2006 10 16 | 703 | 0.3+ | 0.3+ | 2006 11 13 | 703 | 1.0− | 0.9+ |
| 2002 12 05 | 704 | 0.0 | 0.5+ | 2006 10 16 | 703 | 0.1− | 0.0 | 2006 11 13 | 703 | 0.7+ | 0.4+ |
| 2002 12 05 | 704 | 0.5− | 0.3+ | 2006 10 16 | 703 | 1.1− | 0.3+ | 2006 11 13 | 703 | 0.4+ | 1.2− |
| 2002 12 05 | 704 | 0.3− | 0.4+ | 2006 10 16 | 703 | 0.5− | 0.7+ | 2006 11 13 | 703 | 0.4− | 0.8− |
| 2002 12 10 | 704 | 0.6− | 0.3− | 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.1− | 0.5+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 644 | 0.3+ | 0.1− |
| 2002 12 10 | 704 | 0.1+ | 0.7+ | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.5− | 0.4+ |
| 2003 01 11 | 291 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 17 | 644 | 0.3+ | 0.3− |
| 2003 01 11 | 291 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.4− | 0.6+ |
| 2003 01 11 | 291 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.1+ |
| 2006 09 30 | 703 | 0.1− | 1.0− | 2006 10 22 | 703 | 0.4− | 0.7+ | 2006 11 17 | 644 | 0.0 | 0.2− |

**2006 UJ$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 300.33772 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.18965101 | $\omega$ | 23.02645 | −0.19704081 | −0.96800266 |
| $a$ | 3.0003087 | $\Omega$ | 78.62096 | +0.87303240 | −0.24536120 |
| $e$ | 0.1245502 | $i$ | 9.12012 | +0.44608222 | +0.05261867 |
| $P$ | 5.20 | $H$ | 16.3 | $G$ 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 644 | 0.1− | 0.0 | 2003 04 04 | 691 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.5+ | 0.4− |
| 2001 12 13 | 644 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 1.1+ | 0.6− | 2006 10 22 | 703 | 0.2+ | 0.6− |
| 2001 12 13 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 2.1− | 2.0+ | 2006 10 22 | 703 | 0.8+ | 0.5− |
| 2003 04 04 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 703 | 0.4+ | 1.3+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2003 04 04 | 691 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.6− | 1.1− | | | | |

**2006 UQ$_{179}$ = 1997 NZ$_{11}$ = 2002 XG$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 346.62956 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23465615 | $\omega$ | 264.08041 | +0.69546065 | −0.71625870 |
| $a$ | 2.6032433 | $\Omega$ | 141.64343 | +0.69049213 | +0.64399311 |
| $e$ | 0.1342186 | $i$ | 5.31798 | +0.19888464 | +0.26878683 |
| $P$ | 4.20 | $H$ | 16.7 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.3− | 0.1− | 2002 12 05 | 704 | 0.1− | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.3− |
| 1995 02 03 | 691 | 0.1− | 0.7− | 2002 12 05 | 704 | 0.0 | 0.2+ | 2006 10 22 | 703 | 0.8+ | 0.2+ |
| 1995 02 03 | 691 | 0.1− | 0.2− | 2004 03 14 | 691 | 0.1+ | 0.2+ | 2006 10 22 | 703 | 0.2− | 0.5+ |
| 1997 07 10 | 691 | 0.6+ | 1.0− | 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 703 | 0.7− | 0.5− |
| 1997 07 10 | 691 | 0.0 | 0.3− | 2004 03 14 | 691 | 0.1− | 0.2+ | 2006 10 22 | 703 | 0.1+ | 0.1+ |
| 1997 07 10 | 691 | 0.3− | 0.5+ | 2006 09 30 | 703 | 2.6− | 0.2− | 2006 11 08 | 644 | 0.4+ | 0.4+ |
| 2002 12 03 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.3+ | 0.8+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2002 12 03 | 644 | 0.6+ | 0.5+ | 2006 09 30 | 703 | 1.2− | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.0 |
| 2002 12 03 | 644 | 1.4+ | 0.3+ | 2006 09 30 | 703 | 0.6− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.9+ | 0.7− | 2006 10 16 | 703 | 0.9+ | 0.3+ | 2006 11 08 | 644 | 0.3+ | 0.1+ |
| 2002 12 05 | 704 | 0.2− | 0.1+ | 2006 10 16 | 703 | 0.2− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1− |
| 2002 12 05 | 704 | 0.2− | 0.6− | 2006 10 16 | 703 | 0.8− | 0.3+ | | | | |

**2006 UT$_{179}$ = 2004 CF$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 325.87984 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.27915748 | $\omega$ | 341.69379 | +0.37375708 | −0.91932463 |
| $a$ | 2.3186572 | $\Omega$ | 86.21078 | +0.86565724 | +0.29809037 |
| $e$ | 0.0985726 | $i$ | 7.08527 | +0.33308136 | +0.25687420 |
| $P$ | 3.53 | $H$ | 17.5 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 10 12 | 644 | 0.0 | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2004 02 11 | 691 | 0.0 | 0.0 | 2006 10 16 | 703 | (0.3+ | 1.7−) | 2006 11 13 | 703 | 0.4+ | 0.8− |
| 2004 02 11 | 691 | 0.3+ | 0.0 | 2006 10 16 | 703 | (1.7− | 0.2+) | 2006 11 13 | 703 | 0.5+ | 0.3+ |
| 2004 02 15 | 704 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.5+ | 0.3− | 2006 11 13 | 703 | 1.2+ | 0.4+ |
| 2004 02 15 | 704 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 13 | 703 | 1.2− | 0.1− |
| 2004 02 15 | 704 | 0.6− | 0.2+ | 2006 10 22 | 703 | 0.8− | 0.6− | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2004 02 15 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 703 | 1.3+ | 1.4+ | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2004 04 16 | 645 | 0.1− | 0.1− | 2006 10 22 | 703 | 0.7− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.8− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2006 10 12 | 644 | 0.1+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.1− | | | | |
| 2006 10 12 | 644 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1− | 0.1+ | | | | |

**2006 UB$_{180}$ = 2001 YH$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 354.58455 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.18145374 | $\omega$ | 338.79705 | +0.76045790 | −0.58277373 |
| $a$ | 3.0900020 | $\Omega$ | 60.11864 | +0.63316162 | +0.56739486 |
| $e$ | 0.1910455 | $i$ | 19.29427 | +0.14425722 | +0.58175412 |
| $P$ | 5.43 | $H$ | 15.0 | $G$ 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 20 | 644 | 0.2− | 0.2− | 2006 10 16 | 703 | (1.7+ | 0.6−) | 2006 11 13 | 644 | 0.4+ | 0.2− |
| 2001 12 20 | 644 | 0.0 | 0.2− | 2006 10 16 | 703 | 0.1+ | 0.1− | 2006 11 13 | 644 | 0.2+ | 0.1− |
| 2001 12 20 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.3− | 2006 11 14 | 704 | 0.5+ | 1.3+ |
| 2001 12 23 | 704 | 0.4+ | 0.5+ | 2006 10 22 | 703 | 0.9− | 0.1− | 2006 11 14 | 704 | 0.0 | 0.5+ |
| 2001 12 23 | 704 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.1+ | 1.2− | 2006 11 14 | 704 | 0.7+ | 1.4+ |
| 2001 12 23 | 704 | 0.4− | 0.5− | 2006 10 22 | 703 | 0.6− | 0.7− | 2006 11 14 | 704 | 0.6− | 0.2− |
| 2002 01 05 | 644 | 0.1− | 0.1+ | 2006 11 01 | 703 | 0.0 | 0.1− | 2006 11 19 | 703 | 0.7− | 0.8− |
| 2002 01 05 | 644 | 0.2+ | 0.1+ | 2006 11 01 | 703 | 0.1− | 0.3− | 2006 11 19 | 703 | 0.1− | 0.1+ |
| 2002 01 05 | 644 | 0.3− | 0.4+ | 2006 11 01 | 703 | 0.2− | 0.5− | 2006 11 19 | 703 | 0.1+ | 0.4+ |
| 2006 09 30 | 703 | 0.8+ | 0.3+ | 2006 11 01 | 703 | 0.3+ | 0.3− | 2006 11 19 | 703 | 0.3+ | 0.3− |
| 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.7+ | 2006 11 20 | 704 | 0.1− | 0.5− |
| 2006 09 30 | 703 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 20 | 704 | 0.1− | 0.0 |
| 2006 09 30 | 703 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.3− | 0.1+ |
| 2006 10 16 | 703 | 0.5− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.5− | 2006 11 20 | 704 | 0.1+ | 0.3+ |
| 2006 10 16 | 703 | 0.5+ | 0.6− | 2006 11 13 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.1− | 0.2− |

**2006 UC$_{180}$ = 2000 SK$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 340.94442 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.18464747 | $\omega$ | 215.85435 | +0.51731671 | −0.84154679 |
| $a$ | 3.0542680 | $\Omega$ | 204.18798 | +0.84664969 | +0.52976138 |
| $e$ | 0.1083795 | $i$ | 22.30480 | +0.12477070 | −0.10560246 |
| $P$ | 5.34 | $H$ | 14.7 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.7− | 0.1+ | 2004 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.4− | 0.5+ |
| 2000 09 22 | 704 | 0.1+ | 0.6− | 2004 06 22 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.0 |
| 2000 09 22 | 704 | (1.0− | 2.3−) | 2004 06 22 | 691 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.2− | 0.1+ |
| 2000 09 27 | 704 | 0.4+ | 0.5− | 2004 06 22 | 691 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ |
| 2000 09 27 | 704 | 0.5+ | 0.1+ | 2006 09 30 | 699 | (2.0+ | 0.4−) | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2000 09 27 | 704 | 0.3+ | 0.4+ | 2006 09 30 | 699 | 1.0− | 0.7− | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2000 09 27 | 704 | 0.1− | 1.0− | 2006 09 30 | 699 | (1.8+ | 1.2+) | 2006 11 13 | 703 | 0.8− | 0.5− |
| 2000 09 27 | 704 | 0.3− | 0.3− | 2006 09 30 | 703 | 0.3− | 1.0+ | 2006 11 13 | 703 | 0.3− | 0.1− |
| 2001 12 13 | 644 | 0.3− | 0.4+ | 2006 09 30 | 703 | 0.1+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.5− |
| 2001 12 13 | 644 | 0.3− | 0.4+ | 2006 09 30 | 699 | 0.4+ | 0.2− | 2006 11 13 | 703 | 0.2+ | 0.1− |
| 2001 12 13 | 644 | 0.4+ | 0.7+ | 2006 09 30 | 703 | 0.1− | 0.3+ | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2002 01 08 | 608 | 0.3− | 0.7− | 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 11 19 | 703 | 0.5+ | 0.2− |
| 2002 01 08 | 608 | 0.6+ | 1.2− | 2006 10 16 | 703 | 0.8+ | 1.0+ | 2006 11 19 | 703 | 0.2+ | 0.3+ |
| 2002 01 08 | 608 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.8+ | 0.8+ | 2006 11 19 | 703 | 0.0 | 0.7+ |
| 2004 06 14 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.1+ | | | | |
| 2004 06 14 | 691 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.8− | | | | |

**2006 UF$_{180}$ = 1993 TO$_{33}$ = 2005 KA$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 26.33998 | | (2000.0) | **P** | **Q** |
|---|---|---|---|---|---|
| $n$ | 0.23053340 | $\omega$ | 311.65378 | +0.97279446 | +0.16958127 |
| $a$ | 2.6341882 | $\Omega$ | 39.35308 | −0.05275172 | +0.82555453 |
| $e$ | 0.2949623 | $i$ | 14.41355 | −0.22558410 | +0.53823964 |
| $P$ | 4.28 | $H$ | 15.5 | $G$ 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 09 | 809 | 0.4+ | 0.9+ | 2006 08 29 | 703 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1993 10 09 | 809 | 1.0− | 0.6+ | 2006 08 29 | 703 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.2+ | 0.3+ |
| 1993 10 09 | 809 | 0.4− | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 |
| 1993 10 11 | 809 | 0.8+ | 0.6− | 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.0 |
| 1993 10 11 | 809 | 0.0 | 0.8− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 11 | 809 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.4− | 2006 11 10 | 644 | 0.1+ | 0.1+ |
| 1996 04 18 | 691 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.1− |
| 1996 04 18 | 691 | 0.2− | 0.3− | 2006 10 16 | 703 | 0.8+ | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.3+ |
| 1996 04 18 | 691 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.8− | 0.8− |
| 2002 12 12 | 644 | 0.1+ | 1.1+ | 2006 10 20 | 704 | (1.0+ | 1.9+) | 2006 11 14 | 703 | 0.2− | 0.8− |
| 2002 12 12 | 644 | 0.3+ | 0.9+ | 2006 10 20 | 704 | 0.6+ | 0.6+ | 2006 11 15 | 704 | 0.0 | 0.5− |
| 2002 12 12 | 644 | 0.1+ | 1.2+ | 2006 10 20 | 704 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.0 | 0.8− |
| 2005 05 18 | 644 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.0 | 0.3− |
| 2005 05 18 | 644 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.1− | 0.4+ | 2006 11 15 | 704 | 0.1− | 0.5− |
| 2005 05 18 | 644 | 0.7+ | 0.9+ | 2006 10 27 | 703 | 0.1− | 0.5− | 2006 11 20 | G96 | 0.3+ | 0.1+ |
| 2005 05 19 | 644 | 0.2− | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.2− | 2006 11 20 | G96 | 0.1+ | 0.0 |
| 2005 05 19 | 644 | 0.1+ | 0.2+ | 2006 10 29 | 704 | 1.2− | 0.2+ | 2006 11 20 | G96 | 0.4+ | 0.1+ |
| 2005 05 19 | 644 | 0.3+ | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2006 08 29 | 703 | 0.2− | 0.7− | 2006 10 29 | 704 | 0.8+ | 0.1− | | | | |
| 2006 08 29 | 703 | 0.6− | 0.5− | 2006 10 29 | 704 | 1.2− | 0.5+ | | | | |

**2006 UL$_{180}$ = 2002 VA$_{115}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.09470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24630420 | $\omega$ | 343.11564 | | +0.71520836 | | −0.66576140 |
| $a$ | 2.5205086 | $\Omega$ | 60.59279 | | +0.66613666 | | +0.55723853 |
| $e$ | 0.1809449 | $i$ | 14.13176 | | +0.21151586 | | +0.49623278 |
| $P$ | 4.00 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 11 | 704 | 1.1− | 0.4+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.4− | 0.5+ |
| 2002 11 11 | 704 | 0.8+ | 1.3− | 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 19 | 703 | 1.1− | 0.2− |
| 2002 11 11 | 704 | 1.2+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 19 | 703 | 0.5− | 0.7+ |
| 2002 11 14 | 644 | 0.2− | 0.4+ | 2006 11 13 | 703 | 0.3+ | 0.5− | 2006 11 19 | 703 | 0.2+ | 0.0 |
| 2002 11 14 | 644 | 0.4− | 0.2+ | 2006 11 13 | 703 | 0.1− | 0.4− | 2006 11 19 | 703 | 0.3+ | 0.2+ |
| 2002 11 14 | 644 | 0.1− | 0.4+ | 2006 11 13 | 703 | 0.5− | 0.3− | 2006 11 20 | 704 | 0.6− | 0.5− |
| 2006 10 16 | 703 | 0.2− | 0.6+ | 2006 11 13 | 703 | 0.3+ | 1.1− | 2006 11 20 | 704 | (2.5+ | 0.6−) |
| 2006 10 16 | 703 | (2.8− | 0.7+) | 2006 11 14 | 704 | 0.6+ | 0.3+ | 2006 11 20 | 704 | 0.4+ | 0.9− |
| 2006 10 16 | 703 | 0.1+ | 0.8− | 2006 11 14 | 704 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.4− | 0.6− |
| 2006 10 16 | 703 | 0.6+ | 0.5+ | 2006 11 14 | 704 | 0.6− | 0.8+ | 2006 11 20 | 704 | 1.2− | 0.3− |
| 2006 10 22 | 703 | (1.8− | 1.6+) | 2006 11 14 | 704 | 0.6+ | 1.5+ | 2006 11 22 | G96 | 0.2+ | 0.2− |
| 2006 10 22 | 703 | (0.8+ | 2.9+) | 2006 11 17 | 704 | 0.7+ | 1.0+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2006 10 22 | 703 | 0.9− | 0.8− | 2006 11 17 | 704 | 0.0 | 0.6+ | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2006 10 22 | 703 | 0.4− | 0.3+ | 2006 11 17 | 704 | 1.3+ | 1.0+ | 2006 11 22 | G96 | 0.1+ | 0.3− |

**2006 UQ$_{180}$ = 2005 NC$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.54008 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24490889 | $\omega$ | 348.41243 | | −0.60308345 | | −0.79316227 |
| $a$ | 2.5300728 | $\Omega$ | 138.59997 | | +0.74171458 | | −0.59669562 |
| $e$ | 0.2115914 | $i$ | 7.36367 | | +0.29351291 | | −0.12185221 |
| $P$ | 4.02 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 23 | 691 | 0.1− | 0.3− | 2004 05 01 | 703 | 0.6+ | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.2− |
| 1996 04 23 | 691 | 0.2− | 0.1− | 2005 06 29 | 688 | 0.9− | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.0 |
| 1996 04 23 | 691 | 0.2− | 0.5− | 2005 06 29 | 688 | 0.8− | 0.2− | 2006 10 22 | 703 | 0.4+ | 0.7− |
| 2000 04 28 | 699 | 1.1+ | 1.0+ | 2005 07 05 | G96 | 0.6+ | 0.0 | 2006 10 22 | 703 | 1.1+ | 1.3− |
| 2000 04 28 | 699 | 0.0 | 0.8+ | 2005 07 05 | G96 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.2− |
| 2000 04 28 | 699 | 0.7+ | 0.1+ | 2005 07 05 | G96 | 0.3+ | 0.3+ | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2000 04 28 | 699 | 0.9+ | 0.3+ | 2005 07 05 | G96 | 0.6+ | 0.1+ | 2006 11 17 | 644 | 0.2+ | 0.7+ |
| 2004 05 01 | 703 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.1− | 2006 11 17 | 644 | 0.2− | 0.6+ |
| 2004 05 01 | 703 | 0.6− | 0.1+ | 2006 10 16 | 703 | 0.5− | 0.7+ | | | | |
| 2004 05 01 | 703 | 0.7− | 0.4− | 2006 10 16 | 703 | 0.8− | 0.0 | | | | |

**2006 UT$_{180}$ = 2005 MJ$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.11478 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23204177 | $\omega$ | 165.75299 | | +0.97629169 | | +0.21633308 |
| $a$ | 2.6227603 | $\Omega$ | 181.80324 | | −0.21437131 | | +0.96158547 |
| $e$ | 0.1269580 | $i$ | 13.57281 | | −0.02999126 | | +0.16897749 |
| $P$ | 4.25 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 23 | 809 | 0.2+ | 2.0+ | 2005 07 03 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | (0.8+ | 2.8−) |
| 1993 09 23 | 809 | 0.3+ | 0.6+ | 2005 07 03 | 691 | 0.2− | 0.2+ | 2006 10 16 | 703 | 1.0+ | 0.1− |
| 1993 09 23 | 809 | 0.7− | 1.4− | 2005 07 03 | 691 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.8+ | 0.7+ |
| 2000 03 12 | 691 | 0.2− | 0.1− | 2006 09 30 | 699 | 0.7+ | 0.7+ | 2006 10 22 | 703 | 0.3− | 0.8+ |
| 2000 03 12 | 691 | 0.0 | 0.1− | 2006 09 30 | 699 | 0.3− | 0.0 | 2006 10 22 | 703 | 0.9− | 0.2− |
| 2000 03 12 | 691 | 0.2+ | 0.2− | 2006 09 30 | 703 | 0.3− | 1.0− | 2006 10 22 | 703 | 0.2− | 0.8+ |
| 2004 03 16 | 691 | 0.1+ | 0.3+ | 2006 09 30 | 699 | 0.6+ | 1.1− | 2006 10 22 | 703 | 1.3− | 0.5+ |
| 2004 03 16 | 691 | 0.1+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.1+ | 0.6+ |
| 2004 03 16 | 691 | 0.0 | 0.5+ | 2006 09 30 | 703 | 0.1+ | 0.4+ | 2006 11 16 | 703 | 0.8+ | 0.4+ |
| 2005 06 30 | 644 | 0.1+ | 0.0 | 2006 09 30 | 699 | 0.5− | 0.3+ | 2006 11 16 | 703 | 0.3+ | 0.2− |
| 2005 06 30 | 644 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.7− | 0.4− | 2006 11 16 | 703 | 0.2− | 0.4+ |
| 2005 06 30 | 644 | 0.3+ | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.1− | | | | |

**2006 UA$_{181}$ = 2004 FR$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 331.02330 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23312564 | $\omega$ | 291.87938 | | +0.43602248 | | −0.89505314 |
| $a$ | 2.6146246 | $\Omega$ | 131.92039 | | +0.86513921 | | +0.38824185 |
| $e$ | 0.1025164 | $i$ | 7.22799 | | +0.24782763 | | +0.21942687 |
| $P$ | 4.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 05 20 | 691 | (1.2− | 5.5−) | 2004 03 23 | 704 | 1.5+ | 0.4− | 2006 10 16 | 703 | 0.4− | 0.7+ |
| 1996 05 20 | 691 | 0.2+ | 0.2+ | 2004 03 26 | 691 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.5+ | 1.0+ |
| 1996 05 20 | 691 | 0.2− | 0.0 | 2004 03 26 | 691 | 0.1− | 0.2+ | 2006 10 16 | 703 | 0.8− | 0.8− |
| 2002 12 10 | 644 | 0.3− | 0.1− | 2004 03 26 | 691 | 0.2+ | 0.7+ | 2006 10 22 | 703 | 0.0 | 0.3+ |
| 2002 12 10 | 644 | 0.0 | 0.2− | 2004 04 26 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.2+ | 0.4+ |
| 2002 12 10 | 644 | 0.1+ | 0.0 | 2004 04 26 | 691 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.6− | 0.4− |
| 2003 02 01 | 291 | 0.0 | 0.2− | 2004 04 26 | 691 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.4− | 0.4+ |
| 2003 02 01 | 291 | 0.2+ | 0.1− | 2006 09 30 | 703 | 1.2+ | 1.4− | 2006 11 08 | 644 | 0.0 | 0.8+ |
| 2003 02 01 | 291 | 0.0 | 0.2− | 2006 09 30 | 703 | 0.7− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.5+ |
| 2004 03 23 | 704 | 0.3− | 0.6− | 2006 09 30 | 703 | 0.6− | 0.9+ | 2006 11 08 | 644 | 0.2− | 0.4+ |
| 2004 03 23 | 704 | 0.2+ | 0.4+ | 2006 09 30 | 703 | 0.0 | 0.4+ | | | | |
| 2004 03 23 | 704 | 1.1+ | 0.2− | 2006 10 16 | 703 | 0.3+ | 0.4+ | | | | |

**2006 UB$_{181}$ = 2004 FD$_{43}$ = 2005 ND$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.77737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22644083 | $\omega$ | 167.35282 | | +0.93379087 | | +0.35683166 |
| $a$ | 2.6658327 | $\Omega$ | 171.59566 | | −0.34208617 | | +0.91204246 |
| $e$ | 0.1303350 | $i$ | 10.47256 | | −0.10493643 | | +0.20211312 |
| $P$ | 4.35 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.0 | 0.1− | 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.5− | 0.5− |
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 10 22 | 703 | 0.7− | 0.2− |
| 2004 03 18 | 691 | 0.2− | 0.0 | 2005 07 11 | 691 | 0.1− | 0.4+ | 2006 10 22 | 703 | 1.1− | 0.2− |
| 2004 03 20 | 291 | 0.2+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.3+ | 2006 10 22 | 703 | 0.7+ | 1.3+ |
| 2004 03 20 | 291 | 0.1− | 0.1− | 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.5+ |
| 2004 03 20 | 291 | 0.1− | 0.5+ | 2006 10 12 | 644 | 0.2− | 0.6+ | 2006 11 17 | 644 | 0.4+ | 0.1− |
| 2005 07 04 | 644 | 0.2+ | 0.3− | 2006 10 16 | 703 | 0.6+ | 1.3− | 2006 11 17 | 644 | 0.0 | 0.3− |
| 2005 07 04 | 644 | 0.3− | 0.4− | 2006 10 16 | 703 | 0.9+ | 0.4− | 2006 11 17 | 644 | 0.2+ | 0.4− |
| 2005 07 04 | 644 | 0.0 | 0.5− | 2006 10 16 | 703 | 0.4− | 0.8+ | | | | |

**2006 UL$_{181}$ = 2001 XL$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.95929 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17256993 | $\omega$ | 270.04521 | | +0.94298633 | −0.26512764 | |
| $a$ | 3.1951602 | $\Omega$ | 105.33033 | | +0.32091573 | +0.88458294 | |
| $e$ | 0.1015267 | $i$ | 12.04209 | | −0.08826024 | +0.38369305 | |
| $P$ | 5.71 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1+ | 0.1− | 2006 10 12 | 644 | 0.1− | 0.5+ | 2006 10 22 | 703 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.8+ | 0.3+ | 2006 10 12 | 644 | 0.0 | 0.6+ | 2006 10 22 | 703 | 1.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.4+ | 0.8+ | 2006 10 12 | 644 | 0.3− | 0.5+ | 2006 10 22 | 703 | 0.2− | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 0.4− | 2006 10 16 | 703 | 0.5− | 1.1− | 2006 11 16 | 703 | (2.0+ | 2.3−) |
| 2001 12 17 | 704 | 0.7− | 0.2− | 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 16 | 703 | (2.7+ | 2.1−) |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2006 10 16 | 703 | 0.6+ | 0.5− | 2006 11 16 | 703 | (1.6+ | 2.0−) |
| 2001 12 17 | 704 | 0.1− | 0.3− | 2006 10 16 | 703 | 1.1− | 0.3+ | 2006 11 16 | 703 | (2.9+ | 2.0−) |
| 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 10 22 | 703 | 0.8+ | 0.3− | | | | |

**2006 UW$_{181}$ = 2004 JV$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.32485 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17455996 | $\omega$ | 146.47869 | | +0.82187979 | +0.56963167 | |
| $a$ | 3.1708300 | $\Omega$ | 178.75143 | | −0.56333711 | +0.81422119 | |
| $e$ | 0.0264207 | $i$ | 15.37515 | | −0.08464579 | +0.11208755 | |
| $P$ | 5.65 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 11 | 691 | 0.1− | 0.2+ | 2004 06 19 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.9+ |
| 2003 04 11 | 691 | 0.0 | 0.7+ | 2005 07 31 | 644 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.6+ | 0.2− |
| 2003 04 11 | 691 | 0.2+ | 0.3+ | 2005 07 31 | 644 | 0.2− | 0.1+ | 2006 10 16 | 703 | (0.2+ | 2.0−) |
| 2004 05 14 | 704 | 0.2− | 0.1+ | 2005 07 31 | 644 | 0.3− | 0.1+ | 2006 10 16 | 703 | (1.6+ | 0.1−) |
| 2004 05 14 | 704 | 0.6+ | 0.7− | 2005 08 26 | 699 | 0.3− | 0.3+ | 2006 10 22 | 703 | (0.0 | 2.1+) |
| 2004 05 14 | 704 | 0.9+ | 0.2+ | 2005 08 26 | 699 | 0.4+ | 1.0+ | 2006 10 22 | 703 | 0.6− | 0.8+ |
| 2004 05 14 | 704 | 0.1− | 1.1+ | 2005 08 26 | 699 | 0.3+ | 1.3+ | 2006 10 22 | 703 | 0.3+ | 0.7+ |
| 2004 05 24 | 704 | 0.6+ | 0.7+ | 2005 08 26 | 699 | (0.3− | 2.2+) | 2006 10 22 | 703 | (0.7+ | 2.9+) |
| 2004 05 24 | 704 | 0.9− | 0.4+ | 2006 09 30 | 703 | 1.3− | 0.7+ | 2006 12 01 | G96 | 0.1+ | 0.2+ |
| 2004 05 24 | 704 | 0.1+ | 1.0+ | 2006 09 30 | 703 | 0.1+ | 1.1+ | 2006 12 01 | G96 | 0.4+ | 0.3+ |
| 2004 06 19 | 691 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.6− | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.2+ |
| 2004 06 19 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 0.4− | 0.3− | 2006 12 01 | G96 | 0.4+ | 0.2− |

**2006 UB$_{182}$ = 2004 FV$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.76370 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23598365 | $\omega$ | 136.67504 | | +0.81661825 | +0.57618247 | |
| $a$ | 2.5934713 | $\Omega$ | 188.34677 | | −0.57246474 | +0.80106408 | |
| $e$ | 0.1126154 | $i$ | 13.50004 | | −0.07361218 | +0.16220388 | |
| $P$ | 4.18 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 644 | 0.2− | 0.3− | 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 10 22 | 703 | 0.6− | 0.5− |
| 2004 02 14 | 644 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.1− | 0.0 |
| 2004 02 14 | 644 | 0.7− | 0.1+ | 2006 09 30 | 703 | 1.0+ | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.5− |
| 2004 03 18 | 704 | 0.5− | 1.1− | 2006 09 30 | 703 | 0.3− | 0.5+ | 2006 10 22 | 703 | 1.4− | 0.5+ |
| 2004 03 18 | 704 | 0.8+ | 1.4+ | 2006 09 30 | 703 | 0.5− | 1.6+ | 2006 11 08 | 644 | 0.4+ | 0.1+ |
| 2004 03 18 | 704 | 0.1+ | 0.4− | 2006 09 30 | 703 | 0.1− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 10 16 | 703 | 0.7+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2004 03 18 | 704 | 0.1+ | 0.4− | 2006 10 16 | 703 | 0.8− | 0.5− | 2006 11 08 | 644 | 0.2+ | 0.1+ |
| 2004 03 19 | 704 | 0.4− | 0.7+ | 2006 10 16 | 703 | 0.8+ | 1.4− | 2006 11 08 | 644 | 0.3+ | 0.2+ |
| 2004 03 19 | 704 | 0.5+ | 0.0 | 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.4+ |

**2006 UJ$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.42590 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27521213 | $\omega$ | 218.52577 | | +0.99270988 | −0.11242802 | |
| $a$ | 2.3407642 | $\Omega$ | 147.84942 | | +0.12048642 | +0.93518345 | |
| $e$ | 0.2259103 | $i$ | 4.68237 | | −0.00318152 | +0.33584498 | |
| $P$ | 3.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.3− | 0.6− | 2006 11 19 | 703 | (1.7+ | 0.5+) |
| 2002 08 06 | 644 | 0.2− | 0.5+ | 2006 10 22 | 703 | 0.2+ | 0.1− | 2006 11 19 | 703 | 0.4+ | 0.7+ |
| 2002 08 06 | 644 | 0.0 | 0.0 | 2006 10 22 | 703 | 0.3+ | 0.3+ | 2006 11 19 | 703 | 0.1+ | 0.1− |
| 2005 04 30 | 691 | 0.1− | 0.3+ | 2006 11 01 | 703 | 0.2− | 0.3− | 2006 11 19 | 703 | 1.0+ | 0.5+ |
| 2005 04 30 | 691 | 0.4+ | 0.2+ | 2006 11 01 | 703 | 1.2− | 0.3− | 2006 11 20 | 704 | (1.6− | 2.1+) |
| 2005 04 30 | 691 | 0.5+ | 0.1+ | 2006 11 01 | 703 | 0.6− | 0.1− | 2006 11 20 | 704 | 0.3+ | 1.1+ |
| 2005 05 11 | 691 | 0.1− | 0.0 | 2006 11 01 | 703 | 0.4− | 0.0 | 2006 11 20 | 704 | 0.5+ | 0.7+ |
| 2005 05 11 | 691 | 0.2− | 0.1+ | 2006 11 11 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.1+ |
| 2005 05 11 | 691 | 0.3− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.0 | 1.2+ |
| 2006 10 16 | 703 | (0.3+ | 1.8+) | 2006 11 11 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2006 10 16 | 703 | 0.5− | 0.6− | 2006 11 13 | 703 | 0.3+ | 0.6− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 13 | 703 | 0.4− | 0.0 | 2006 11 23 | G96 | 0.6+ | 0.1− |
| 2006 10 16 | 703 | 1.0− | 0.5− | 2006 11 13 | 703 | 0.1− | 0.4+ | 2006 11 23 | G96 | 0.6+ | 0.1− |
| 2006 10 22 | 703 | 0.9− | 0.5+ | 2006 11 13 | 703 | 0.3− | 0.3+ | | | | |

**2006 UV$_{182}$ = 2003 AD$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.17626 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22037744 | $\omega$ | 67.91647 | | −0.88956216 | −0.40308526 | |
| $a$ | 2.7145091 | $\Omega$ | 87.76056 | | +0.29782630 | −0.86852933 | |
| $e$ | 0.1351640 | $i$ | 12.42195 | | +0.34637934 | −0.28840784 | |
| $P$ | 4.47 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 23 | 699 | 0.2− | 0.0 | 2003 01 09 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 703 | 0.9− | 0.2+ |
| 1999 02 23 | 699 | 0.8+ | 0.1+ | 2003 01 09 | 704 | 0.6− | 0.4+ | 2006 11 13 | 703 | 0.8− | 0.1− |
| 1999 02 23 | 699 | 0.2− | 1.1+ | 2006 10 16 | 703 | 0.5+ | 0.1+ | 2006 11 19 | 703 | 0.6+ | 0.9+ |
| 1999 03 21 | 699 | 0.7− | 0.3− | 2006 10 16 | 703 | 0.5− | 0.4− | 2006 11 19 | 703 | 0.4+ | 0.5+ |
| 1999 03 21 | 699 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 1.1− | 2006 11 19 | 703 | 0.3+ | 0.9+ |
| 1999 03 21 | 699 | 0.7+ | 1.0− | 2006 10 16 | 703 | (1.3− | 2.2−) | 2006 11 19 | 703 | 0.8+ | 1.0+ |
| 2003 01 05 | 704 | 1.1+ | 0.1+ | 2006 10 22 | 703 | (1.6+ | 0.8−) | 2006 11 25 | G96 | 0.1− | 0.3− |
| 2003 01 05 | 704 | 0.4+ | 0.0 | 2006 10 22 | 703 | 0.3− | 0.4− | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2003 01 05 | 704 | 0.0 | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.5− | 2006 11 25 | G96 | 0.0 | 0.4− |
| 2003 01 05 | 704 | (1.7+ | 0.3+) | 2006 10 22 | 703 | 0.3+ | 0.8− | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2003 01 09 | 704 | 0.5− | 1.0− | 2006 11 13 | 703 | 0.9− | 0.4+ | | | | |
| 2003 01 09 | 704 | 0.6− | 0.7− | 2006 11 13 | 703 | 0.3+ | 0.4+ | | | | |

**2006 UC$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.83869 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30400514 | $\omega$ | 11.06779 | | +0.09879694 | −0.98985760 | |
| $a$ | 2.1905278 | $\Omega$ | 73.32260 | | +0.90466288 | +0.04661095 | |
| $e$ | 0.1332050 | $i$ | 6.11742 | | +0.41451688 | +0.13419889 | |
| $P$ | 3.24 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 08 | 691 | 0.3+ | 0.0 | 2005 06 13 | G96 | 0.1+ | 0.1− | 2006 10 17 | 703 | 0.2+ | 0.8− |
| 1995 04 08 | 691 | 0.3− | 0.1+ | 2005 06 13 | G96 | 0.8+ | 1.0+ | 2006 10 17 | 703 | 0.4+ | 0.3− |
| 1995 04 08 | 691 | 0.0 | 0.0 | 2005 06 13 | G96 | 0.1− | 0.2− | 2006 10 17 | 703 | (1.7+ | 1.2−) |
| 2003 12 04 | 703 | 0.1− | 0.6+ | 2006 09 18 | 703 | 0.5− | 1.0− | 2006 10 17 | 703 | 0.4+ | 0.1+ |
| 2003 12 04 | 703 | 0.1− | 0.9+ | 2006 09 18 | 703 | 0.7− | 0.2+ | 2006 10 19 | 644 | 0.1+ | 0.4− |
| 2003 12 04 | 703 | 0.2+ | 0.1+ | 2006 09 18 | 703 | 0.1+ | 1.0+ | 2006 10 19 | 644 | 0.2− | 0.3+ |
| 2003 12 04 | 703 | 1.3+ | 0.7− | 2006 09 18 | 703 | 0.3− | 0.0 | 2006 10 19 | 644 | 0.1− | 0.2+ |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2006 09 26 | 703 | 0.2+ | 0.9− | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2003 12 21 | 691 | 0.2− | 0.1+ | 2006 09 26 | 703 | 0.5+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.1+ |
| 2003 12 21 | 691 | 0.1− | 0.1+ | 2006 09 26 | 703 | 0.3− | 0.2+ | 2006 10 20 | 644 | 0.6− | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 20 | G96 | 0.4− | 0.2+ | 2006 09 26 | 703 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.6+ | 0.2− | | |
| 2005 05 20 | G96 | 0.4− | 0.4+ | 2006 10 17 | 703 | 0.6+ | 0.9+ | 2006 11 25 | G96 | 0.4+ | 0.0 | | |
| 2005 05 20 | G96 | 0.1+ | 0.3+ | 2006 10 17 | 703 | 0.3− | 0.2− | 2006 11 25 | G96 | 0.2+ | 0.3− | | |
| 2005 05 20 | G96 | 0.1+ | 0.6+ | 2006 10 17 | 703 | 0.1− | 0.9+ | 2006 11 25 | G96 | 0.1+ | 0.2− | | |
| 2005 06 13 | G96 | 0.5+ | 0.7− | 2006 10 17 | 703 | (1.1+ | 2.5+) | | | | | | |

**2006 UV$_{183}$ = 2005 EZ$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.96908 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37346359 | $\omega$ | 294.21666 | | +0.46053175 | −0.82194675 | |
| $a$ | 1.9097237 | $\Omega$ | 124.10502 | | +0.88746950 | +0.43383286 | |
| $e$ | 0.0997521 | $i$ | 23.87511 | | −0.01756126 | +0.36904280 | |
| $P$ | 2.64 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 08 | 703 | 0.1− | 0.4+ | 2005 03 14 | 703 | 0.7+ | 0.1− | 2006 10 18 | E12 | 0.4− | 0.1+ |
| 2005 03 08 | 703 | 0.2− | 0.3− | 2006 09 30 | E12 | 0.0 | 0.8+ | 2006 10 18 | E12 | 0.1− | 0.2+ |
| 2005 03 08 | 703 | 0.1− | 0.1+ | 2006 09 30 | E12 | 0.5− | 0.1− | 2006 10 25 | E12 | 0.5− | 0.2+ |
| 2005 03 08 | 703 | 0.3+ | 0.0 | 2006 09 30 | E12 | 0.0 | 0.1+ | 2006 10 25 | E12 | 0.9+ | 0.3+ |
| 2005 03 14 | 703 | 0.0 | 0.6− | 2006 09 30 | E12 | 1.1+ | 0.7− | 2006 10 25 | E12 | 0.1+ | 0.2+ |
| 2005 03 14 | 703 | 0.4− | 0.2+ | 2006 10 18 | E12 | 0.6− | 0.1+ | 2006 10 25 | E12 | 0.2− | 0.8− |
| 2005 03 14 | 703 | 0.2− | 0.3+ | 2006 10 18 | E12 | 0.2+ | 0.4− | | | | |

**2006 UY$_{183}$ = 2002 XD$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.46674 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23092568 | $\omega$ | 146.60269 | | +0.71086915 | −0.66960652 | |
| $a$ | 2.6312043 | $\Omega$ | 257.00261 | | +0.58723090 | +0.73343449 | |
| $e$ | 0.2470467 | $i$ | 12.75681 | | +0.38707225 | +0.11705110 | |
| $P$ | 4.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.1− | 2006 10 02 | 703 | 0.5+ | 0.1+ | 2006 10 20 | 703 | 0.4− | 0.0 |
| 2002 12 05 | 704 | 0.1+ | 0.1+ | 2006 10 02 | 703 | 0.2+ | 0.0 | 2006 10 20 | 703 | 0.6− | 0.5− |
| 2002 12 05 | 704 | 0.4+ | 0.6− | 2006 10 19 | 703 | 0.4− | 0.0 | 2006 10 20 | 703 | 0.0 | 0.3− |
| 2002 12 05 | 704 | 0.5− | 0.3− | 2006 10 19 | 703 | 0.3− | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.3− |
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.2− | 2006 10 19 | 703 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2002 12 11 | 704 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.4+ | 0.5− | 2006 10 27 | 703 | 0.1− | 1.1+ |
| 2002 12 11 | 704 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.1− | 2006 10 27 | 703 | 1.1− | 0.7+ |
| 2002 12 11 | 704 | (0.9+ | 1.8+) | 2006 10 19 | 703 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.3− | 0.5+ |
| 2006 10 02 | 703 | 0.6+ | 0.5− | 2006 10 19 | 703 | 0.3− | 0.5− | 2006 11 15 | 703 | (2.4+ | 0.8−) |
| 2006 10 02 | 703 | 0.3− | 0.1+ | 2006 10 20 | 704 | 0.3− | 0.2− | 2006 11 15 | 703 | (3.1+ | 2.6+) |
| 2006 10 02 | 703 | 0.1+ | 0.3− | 2006 10 20 | 704 | 0.6+ | 0.8+ | 2006 11 15 | 703 | 0.9+ | 0.8− |
| 2006 10 02 | 703 | 0.4− | 0.4− | 2006 10 20 | 704 | 1.0+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.8+ |
| 2006 10 02 | 703 | 0.1+ | 0.4+ | 2006 10 20 | 704 | 0.2+ | 0.4+ | | | | |
| 2006 10 02 | 703 | 0.2− | 0.2− | 2006 10 20 | 703 | 0.9− | 0.1− | | | | |

**2006 UF$_{184}$ = 2003 AF$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.21375 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22698532 | $\omega$ | 51.21911 | | +0.65513010 | −0.75547388 | |
| $a$ | 2.6615678 | $\Omega$ | 357.80168 | | +0.61243820 | +0.53722266 | |
| $e$ | 0.1650451 | $i$ | 12.01576 | | +0.44240705 | +0.37503470 | |
| $P$ | 4.34 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 03 | 704 | 0.0 | 0.4+ | 2006 09 28 | 703 | 0.1+ | 0.4− | 2006 10 23 | 644 | 0.5− | 0.1+ |
| 2003 01 03 | 704 | 0.6+ | 0.7− | 2006 10 11 | 644 | 0.3− | 0.3+ | 2006 10 27 | 703 | 0.7+ | 0.7− |
| 2003 01 03 | 704 | 0.1+ | 0.1− | 2006 10 11 | 644 | 0.3− | 0.3− | 2006 10 27 | 703 | 0.4− | 0.1− |
| 2003 01 03 | 704 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 27 | 703 | 0.0 | 0.6− |
| 2003 01 03 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 1.2+ | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.4− |
| 2003 01 04 | 704 | 0.8− | 0.6− | 2006 10 19 | 703 | 0.4− | 0.3− | 2006 11 15 | 703 | 0.5− | 0.1− |
| 2003 01 04 | 704 | 0.4− | 0.0 | 2006 10 19 | 703 | 0.5− | 0.1+ | 2006 11 15 | 703 | 1.0− | 0.1+ |
| 2003 01 04 | 704 | 0.5− | 0.4+ | 2006 10 20 | 704 | 0.4+ | 1.2+ | 2006 11 15 | 703 | 0.6− | 0.4+ |
| 2003 01 04 | 704 | 0.4+ | 0.0 | 2006 10 20 | 704 | (1.6− | 1.9+) | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2003 01 04 | 704 | 0.3+ | 0.1− | 2006 10 20 | 704 | 1.3+ | 0.6+ | 2006 11 22 | 703 | 0.5+ | 0.0 |
| 2006 09 28 | 703 | 0.4− | 0.4− | 2006 10 20 | 704 | 0.7+ | 0.9+ | 2006 11 22 | 703 | 0.5+ | 0.4− |
| 2006 09 28 | 703 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.6− | 0.1+ | 2006 11 22 | 703 | 0.4+ | 0.0 |
| 2006 09 28 | 703 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.6− | 0.0 | 2006 11 22 | 703 | 0.3+ | 0.0 |

**2006 UG$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.99466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27750784 | $\omega$ | 5.69115 | | +0.95204323 | +0.30312333 | |
| $a$ | 2.3278369 | $\Omega$ | 336.53320 | | −0.28467519 | +0.82775852 | |
| $e$ | 0.2485586 | $i$ | 5.99530 | | −0.11213266 | +0.47215684 | |
| $P$ | 3.55 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 703 | 0.5− | 0.5− | 2006 11 15 | 703 | 0.6− | 0.3− |
| 2004 02 11 | 691 | 0.1− | 0.3− | 2006 10 24 | 644 | 0.2+ | 0.5+ | 2006 11 15 | 703 | 0.8− | 1.0− |
| 2004 02 11 | 691 | 0.0 | 0.2+ | 2006 10 24 | 644 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.7+ | 0.9− |
| 2005 04 06 | 691 | 0.3+ | 0.3+ | 2006 10 24 | 644 | 0.4+ | 0.3− | 2006 11 15 | 703 | 0.9− | 0.0 |
| 2005 04 06 | 691 | 0.1− | 0.2− | 2006 10 27 | 703 | 0.7+ | 0.4+ | 2006 11 15 | 704 | (0.2− | 1.9+) |
| 2005 04 06 | 691 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.8+ | 0.6+ | 2006 11 15 | 704 | (0.9+ | 1.8+) |
| 2006 10 19 | 703 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.2+ | 1.5+ | 2006 11 15 | 704 | (1.5− | 0.8+) |
| 2006 10 19 | 703 | 0.4+ | 0.6+ | 2006 10 27 | 703 | 0.8+ | 0.3+ | 2006 11 15 | 704 | 0.6− | 0.4+ |
| 2006 10 19 | 703 | 0.2− | 0.1− | 2006 11 02 | G96 | 0.0 | 0.4− | 2006 11 21 | 703 | 0.1− | 0.1+ |
| 2006 10 19 | 703 | 0.5− | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.1− | 2006 11 21 | 703 | 0.3− | 0.2− |
| 2006 10 19 | 703 | 0.3+ | 0.1+ | 2006 11 02 | G96 | 0.3+ | 0.0 | 2006 11 21 | 703 | 0.4− | 0.2+ |
| 2006 10 19 | 703 | 0.2+ | 0.5− | 2006 11 02 | G96 | 0.0 | 0.2− | 2006 11 21 | 703 | 0.1− | 0.1− |

**2006 UH$_{184}$ = 2005 JQ$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.56751 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27863477 | $\omega$ | 301.76296 | | +0.97414489 | −0.20570567 | |
| $a$ | 2.3215561 | $\Omega$ | 70.25113 | | +0.22584618 | +0.87579666 | |
| $e$ | 0.1129949 | $i$ | 5.69632 | | +0.00593561 | +0.43665248 | |
| $P$ | 3.54 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 11 | G96 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.6− | 0.5− | 2006 10 19 | 644 | 0.3− | 0.2− |
| 2005 05 11 | G96 | 0.5− | 0.3− | 2006 09 30 | 703 | 0.8− | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ |
| 2005 05 11 | G96 | 0.1− | 0.1− | 2006 09 30 | 703 | 0.6+ | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.1+ |
| 2005 05 11 | G96 | 0.0 | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.2+ |
| 2005 05 12 | 691 | 0.1− | 0.1+ | 2006 10 03 | G96 | 0.5+ | 0.3− | 2006 10 21 | 703 | (1.8− | 2.4−) |
| 2005 05 12 | 691 | 0.6+ | 0.1+ | 2006 10 03 | G96 | 0.4+ | 0.3− | 2006 10 21 | 703 | 0.6− | 0.6+ |
| 2005 05 12 | 691 | 0.0 | 0.2− | 2006 10 11 | 644 | 0.3+ | 0.0 | 2006 10 21 | 703 | 0.5− | 0.4− |
| 2005 05 13 | 691 | 0.2− | 0.0 | 2006 10 11 | 644 | 0.2+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 2005 05 13 | 691 | 0.0 | 0.0 | 2006 10 11 | 644 | 0.3+ | 0.4+ | 2006 10 21 | 644 | 0.0 | 0.4+ |
| 2005 05 13 | 691 | 0.1− | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.1+ |
| 2006 09 30 | 703 | 0.2− | 0.1− | 2006 10 19 | 644 | 0.2− | 0.2+ | | | | |

**2006 UL$_{184}$ = 2003 YB$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.36852 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28233560 | $\omega$ | 40.19693 | | +0.89083807 | +0.44118305 | |
| $a$ | 2.3012243 | $\Omega$ | 293.30979 | | −0.44124401 | +0.78330840 | |
| $e$ | 0.2146403 | $i$ | 6.78286 | | −0.10821860 | +0.43793317 | |
| $P$ | 3.49 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.2+ | 0.1+ | 2006 11 02 | G96 | 0.1− | 0.1− | 2006 11 20 | 718 | 0.5+ | 0.9− |
| 2003 12 19 | 691 | 0.4+ | 0.3− | 2006 11 02 | G96 | 0.1− | 0.0 | 2006 11 20 | 718 | 0.1+ | 0.6+ |
| 2003 12 19 | 691 | 0.1− | 0.1+ | 2006 11 02 | G96 | 0.2+ | 0.1− | 2006 11 20 | 718 | 2.4+ | 0.9− |
| 2003 12 21 | 691 | 0.3− | 0.0 | 2006 11 02 | 703 | 0.7− | 1.3+ | 2006 11 20 | H36 | 0.6+ | 1.5+ |
| 2003 12 21 | 691 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.5− | 0.7− | 2006 11 20 | H36 | 0.4− | 0.6− |
| 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 11 02 | 703 | 0.1+ | 1.2+ | 2006 11 20 | H36 | 1.1− | 0.2− |
| 2006 10 19 | 703 | 0.1+ | 0.5+ | 2006 11 02 | 703 | 0.2+ | 0.5+ | 2006 11 20 | H36 | 0.8− | 0.2− |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 19 | 703 | 0.2− | 0.5+ | 2006 11 15 | 703 | 0.4− | 0.6− | 2006 11 21 | 703 | 0.2+ | 0.4− |
| 2006 10 19 | 703 | 1.1− | 0.4+ | 2006 11 15 | 703 | 0.3− | 0.6− | 2006 11 21 | 703 | 1.1− | 1.7+ |
| 2006 10 19 | 703 | 0.5+ | 0.9− | 2006 11 15 | 703 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.1+ | 1.2− |
| 2006 10 23 | 703 | 0.9+ | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.1+ | 2006 11 21 | 703 | 1.2− | 0.3− |
| 2006 10 23 | 703 | 0.4+ | 0.5− | 2006 11 19 | 718 | 0.2+ | 0.3+ | 2006 11 24 | 718 | 0.0 | 0.1− |
| 2006 10 23 | 703 | 0.5− | 0.7− | 2006 11 19 | 718 | 0.0 | 0.0 | 2006 11 24 | 718 | 0.0 | 0.2− |
| 2006 10 23 | 703 | 0.7+ | 1.2− | 2006 11 19 | 718 | 0.6+ | 0.3− | 2006 11 24 | 718 | 0.2+ | 0.5+ |
| 2006 11 02 | G96 | 0.1+ | 0.1+ | 2006 11 19 | 718 | 0.9+ | 1.1+ | 2006 11 24 | 718 | 0.1+ | 0.2+ |

**2006 UM$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.13029 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23389189 | $\omega$ | 65.47187 | | +0.89654078 | | −0.43692558 |
| $a$ | 2.6089110 | $\Omega$ | 320.32572 | | +0.35377511 | | +0.80527742 |
| $e$ | 0.2063671 | $i$ | 6.55445 | | +0.26656668 | | +0.40077963 |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 21 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 703 | 1.0+ | 0.5− | 2006 11 13 | 644 | 0.0 | 0.3+ |
| 1995 02 21 | 691 | 0.3− | 0.0 | 2006 10 23 | 703 | 0.1− | 0.4− | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 1995 02 21 | 691 | 0.1+ | 0.2− | 2006 10 23 | 703 | 0.7− | 0.2− | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 2006 08 29 | 703 | 0.2+ | 0.2+ | 2006 10 29 | 703 | 0.5+ | 0.3+ | 2006 11 15 | 703 | 0.3− | 0.1− |
| 2006 08 29 | 703 | 0.2− | 1.0− | 2006 10 29 | 703 | 0.8− | 0.1− | 2006 11 15 | 703 | 0.0 | 0.1+ |
| 2006 08 29 | 703 | 0.2+ | 0.0 | 2006 10 29 | 703 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.6− |
| 2006 08 29 | 703 | 0.1− | 0.3+ | 2006 10 29 | 703 | 0.2− | 0.1− | 2006 11 21 | 703 | 0.3− | 0.2+ |
| 2006 10 19 | 703 | 0.6+ | 0.7+ | 2006 11 02 | G96 | 0.4+ | 0.2− | 2006 11 21 | 703 | 0.2− | 0.1− |
| 2006 10 19 | 703 | 0.0 | 0.1+ | 2006 11 02 | G96 | 0.3+ | 0.2− | 2006 11 21 | 703 | 0.4− | 0.4+ |
| 2006 10 19 | 703 | 0.1− | 0.3+ | 2006 11 02 | G96 | 0.1− | 0.3− | 2006 11 21 | 703 | 0.3− | 0.7+ |
| 2006 10 19 | 703 | 0.3− | 0.2+ | 2006 11 02 | G96 | 0.2+ | 0.1− | | | | |
| 2006 10 23 | 703 | 0.6+ | 0.6− | 2006 11 13 | 644 | 0.1− | 0.1+ | | | | |

**2006 UU$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.74646 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22565652 | $\omega$ | 264.58891 | | +0.82337573 | | −0.56420041 |
| $a$ | 2.6720062 | $\Omega$ | 129.74198 | | +0.54704316 | | +0.76045625 |
| $e$ | 0.1046935 | $i$ | 4.55581 | | +0.15098407 | | +0.32153412 |
| $P$ | 4.37 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 23 | 691 | 0.2+ | 0.0 | 2006 10 24 | 400 | 0.7+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.6+ |
| 1995 03 23 | 691 | 0.4− | 0.2− | 2006 10 26 | 400 | 0.1+ | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.2− |
| 1995 03 23 | 691 | 0.1+ | 0.1+ | 2006 10 26 | 400 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 1999 01 18 | 691 | 0.1+ | 0.3+ | 2006 10 26 | 400 | 0.2− | 0.6− | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 1999 01 18 | 691 | 0.0 | 0.1− | 2006 10 29 | 400 | 0.0 | 1.1− | 2006 11 14 | 704 | 1.0+ | 1.5+ |
| 1999 01 18 | 691 | 0.1− | 0.0 | 2006 10 29 | 400 | 1.1+ | 0.8− | 2006 11 14 | 704 | 0.9+ | 0.4+ |
| 2001 09 20 | 291 | 0.1− | 0.3− | 2006 10 29 | 400 | 1.2+ | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.1− |
| 2001 09 20 | 291 | 0.2+ | 0.2+ | 2006 10 30 | 400 | 0.8− | 0.3− | 2006 11 14 | 704 | 0.0 | 0.7+ |
| 2001 09 20 | 291 | 0.1− | 0.3+ | 2006 10 30 | 400 | 0.7− | 0.4− | 2006 11 19 | 703 | 0.4− | 1.1+ |
| 2006 09 14 | 703 | (2.8− | 0.9−) | 2006 10 30 | 400 | 0.7+ | 1.0− | 2006 11 19 | 703 | 0.4+ | 0.7− |
| 2006 09 14 | 703 | 0.9− | 1.0+ | 2006 11 01 | 703 | 0.7+ | 0.8+ | 2006 11 19 | 703 | 0.3− | 1.2− |
| 2006 09 14 | 703 | 0.1− | 0.9+ | 2006 11 01 | 703 | 0.3− | 0.7− | 2006 11 19 | 703 | 1.0− | 0.8+ |
| 2006 09 14 | 703 | (1.8+ | 0.7+) | 2006 11 01 | 703 | 0.8− | 0.2+ | 2006 11 20 | 704 | 0.3− | 0.0 |
| 2006 10 03 | G96 | 0.2+ | 0.4− | 2006 11 01 | 703 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.3− | 0.2+ |
| 2006 10 03 | G96 | 0.0 | 0.3− | 2006 11 01 | 400 | (0.8− | 2.2−) | 2006 11 20 | 704 | 0.9− | 0.0 |
| 2006 10 03 | G96 | 0.2− | 0.4− | 2006 11 01 | 400 | 1.0+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2006 10 03 | G96 | 0.2− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.5− | 1.0+ |
| 2006 10 16 | 703 | 0.9− | 0.3− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.4+ | 0.5− |
| 2006 10 16 | 703 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 703 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2006 10 16 | 703 | 0.2− | 0.5− | 2006 11 10 | 644 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2006 10 24 | 400 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1− | | | | |
| 2006 10 24 | 400 | 0.4+ | 0.0 | 2006 11 11 | 703 | (1.7− | 0.3−) | | | | |

**2006 UX$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.20269 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18120580 | $\omega$ | 103.79931 | | +0.49638420 | | −0.86271567 |
| $a$ | 3.0928200 | $\Omega$ | 316.00635 | | +0.73307317 | | +0.47615264 |
| $e$ | 0.0828762 | $i$ | 7.99136 | | +0.46498005 | | +0.17029483 |
| $P$ | 5.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 01 | 807 | 0.3− | 0.5+ | 2006 09 16 | 703 | 0.3+ | 1.4− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2000 08 01 | 807 | 0.2− | 0.5+ | 2006 09 26 | 152 | 0.1− | 0.6+ | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2003 02 09 | 644 | 0.2− | 0.0 | 2006 09 26 | 152 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2003 02 09 | 644 | 0.6+ | 0.3+ | 2006 09 26 | 152 | 0.1+ | 0.3+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2003 02 09 | 644 | 0.8+ | 0.1− | 2006 09 26 | 152 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.3+ | 0.3+ |
| 2003 02 22 | 644 | 0.3− | 0.3+ | 2006 09 26 | 152 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.1− |
| 2003 02 22 | 644 | 0.4− | 0.3+ | 2006 09 26 | 152 | 0.4+ | 0.8− | 2006 10 30 | H55 | (0.1− | 2.3−) |
| 2003 02 22 | 644 | 0.2+ | 0.5+ | 2006 10 17 | 703 | 0.5− | 0.3− | 2006 10 30 | H55 | (0.1− | 2.0−) |
| 2006 09 16 | 703 | 0.2− | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.3− | 2006 10 30 | H55 | (0.9− | 2.6−) |
| 2006 09 16 | 703 | 0.4− | 0.8+ | 2006 10 17 | 703 | 0.2+ | 0.8− | | | | |
| 2006 09 16 | 703 | 0.1− | 1.4+ | 2006 10 17 | 703 | 0.3+ | 1.0− | | | | |

**2006 UE$_{186}$ = 2002 XU$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.56754 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22295176 | $\omega$ | 65.43021 | | +0.98036547 | | +0.17561214 |
| $a$ | 2.6935732 | $\Omega$ | 284.35481 | | −0.19708780 | | +0.88722100 |
| $e$ | 0.0448595 | $i$ | 5.31195 | | +0.00632038 | | +0.42661372 |
| $P$ | 4.42 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 27 | 699 | 0.4+ | 0.4+ | 2002 12 06 | 704 | 0.2+ | 0.3− | 2006 10 10 | 644 | 0.1+ | 0.3+ |
| 2001 07 27 | 699 | 0.7+ | 0.8+ | 2002 12 11 | 704 | 0.2− | 0.5+ | 2006 10 10 | 644 | 0.3+ | 0.1− |
| 2001 07 27 | 699 | 0.5+ | 0.2+ | 2002 12 11 | 704 | 0.2− | 0.1− | 2006 10 17 | 703 | 0.8− | 0.1+ |
| 2001 07 27 | 699 | 0.9− | 0.0 | 2002 12 11 | 704 | 0.8− | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.6− |
| 2001 08 10 | 644 | 0.0 | 0.6− | 2002 12 11 | 704 | 0.2− | 1.0− | 2006 10 17 | 703 | 0.2− | 1.2− |
| 2001 08 10 | 644 | 0.2− | 0.5− | 2006 09 20 | 699 | 0.5− | 0.4− | 2006 10 17 | 703 | 0.1− | 0.3+ |
| 2001 08 10 | 644 | 0.4− | 0.7− | 2006 09 20 | 699 | 0.9+ | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.3− |
| 2002 12 06 | 704 | 0.3+ | 0.0 | 2006 09 20 | 699 | 0.8+ | 1.4+ | 2006 10 22 | 644 | 0.1+ | 0.1− |
| 2002 12 06 | 704 | 0.8+ | 0.6+ | 2006 09 20 | 699 | 0.2− | 1.3+ | 2006 10 22 | 644 | 0.2− | 0.2− |
| 2002 12 06 | 704 | 0.2+ | 0.0 | 2006 10 10 | 644 | 0.3− | 0.1− | | | | |

**2006 UH$_{186}$ = 2001 XW$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.65540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18324117 | $\omega$ | 75.09274 | | +0.90296083 | | +0.40770904 |
| $a$ | 3.0698749 | $\Omega$ | 260.69467 | | −0.42780423 | | +0.82305491 |
| $e$ | 0.1401115 | $i$ | 7.90821 | | −0.04056212 | | +0.39541618 |
| $P$ | 5.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 1.4+ | 1.3+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.1− |
| 2001 12 15 | 704 | 0.2− | 1.4+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.6− | 0.0 |
| 2001 12 15 | 704 | 1.1− | 1.2+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 17 | 703 | 1.1+ | 0.8− |
| 2001 12 19 | 704 | 0.6+ | 0.0 | 2006 09 18 | 703 | 0.7+ | 0.6− | 2006 10 17 | 703 | 0.5+ | 1.4+ |
| 2001 12 19 | 704 | 0.3+ | 0.5− | 2006 09 18 | 703 | 0.1− | 0.4− | 2006 10 17 | 703 | 0.6− | 1.1+ |
| 2001 12 19 | 704 | 0.0 | 0.4− | 2006 09 18 | 703 | 0.8− | 0.6+ | 2006 10 17 | 703 | 0.4+ | 0.7− |
| 2001 12 19 | 704 | 0.2+ | 0.0 | 2006 09 18 | 703 | 0.7− | 0.8− | 2006 10 22 | 644 | 0.4− | 0.5+ |
| 2002 01 08 | 691 | 0.0 | 0.3− | 2006 09 18 | G92 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2002 01 08 | 691 | 0.0 | 0.7− | 2006 09 18 | G92 | 0.2+ | 0.1+ | 2006 10 22 | 644 | 0.2− | 0.2+ |
| 2002 01 08 | 691 | 0.4− | 0.0 | 2006 09 18 | G92 | 0.0 | 0.2− | | | | |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2+ | | | | |

### 2006 UQ$_{186}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.66357 | | | (2000.0) | | |
| $n$ | 0.27124028 | $\omega$ | 75.41997 | | +0.76269678 | −0.64660987 |
| $a$ | 2.3635598 | $\Omega$ | 324.86341 | | +0.58380440 | +0.69745890 |
| $e$ | 0.2348957 | $i$ | 1.36985 | | +0.27832723 | +0.30894460 |
| $P$ | 3.63 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 10 | 691 | 0.0 | 0.2− | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.3+ |
| 2000 01 10 | 691 | 0.2− | 0.2− | 2006 11 09 | 691 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2000 01 10 | 691 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 19 | 704 | (0.9− | 2.0+) |
| 2001 05 22 | 807 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | (0.6+ | 1.6+) |
| 2001 05 23 | 807 | 0.3+ | 0.6+ | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.0 | 0.9+ |
| 2002 08 17 | 644 | 0.3− | 0.9+ | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.4+ |
| 2002 08 17 | 644 | 0.4− | 0.5+ | 2006 11 11 | 703 | 0.9− | 0.6+ | 2006 11 19 | 704 | 0.4− | 1.2+ |
| 2002 08 17 | 644 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.5− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2004 02 17 | 291 | 0.1− | 0.7+ | 2006 11 11 | 703 | 0.6− | 0.8− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2004 02 17 | 291 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2004 02 17 | 291 | 0.5+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | (1.7+ | 0.2+) |
| 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | (1.9+ | 0.3+) |
| 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 15 | 704 | 0.9− | 0.6+ | 2006 11 21 | 704 | 0.6+ | 0.4+ |
| 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.2+ | 1.1+ | 2006 11 21 | 704 | (2.4+ | 0.1−) |
| 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 15 | 704 | 0.2− | 0.6− | 2006 11 21 | 704 | (1.7+ | 0.3−) |
| 2006 10 17 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.3− | 0.6+ | 2006 11 22 | 704 | 0.9− | 1.3− |
| 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | (1.6+ | 1.4+) | 2006 11 22 | 704 | 0.2− | 0.6− |
| 2006 10 17 | 691 | (1.1− | 2.2+) | 2006 11 16 | 704 | 0.4− | 0.2+ | 2006 11 22 | 704 | (2.8− | 1.1−) |
| 2006 10 22 | 644 | 0.1− | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.9+ | 2006 11 22 | 704 | 0.2− | 0.5+ |
| 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.3+ | 2006 11 22 | 704 | (2.0− | 0.1−) |
| 2006 10 22 | 644 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.3+ | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.8− |
| 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 17 | 704 | 1.2− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2006 10 31 | G96 | 0.2− | 0.1+ | 2006 11 17 | 704 | 1.3+ | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.0 | 1.4+ | | | | |
| 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ | | | | |

### 2006 UB$_{187}$ = 2000 RB$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.96644 | | | (2000.0) | | |
| $n$ | 0.17595683 | $\omega$ | 25.14978 | | +0.99350027 | −0.03829913 |
| $a$ | 3.1540262 | $\Omega$ | 336.29007 | | −0.03493007 | +0.79368895 |
| $e$ | 0.1052656 | $i$ | 15.46082 | | +0.10833794 | +0.60711698 |
| $P$ | 5.60 | $H$ | 15.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 02 | 684 | 0.0 | 0.3− | 2006 09 16 | 703 | 0.4− | 0.7− | 2006 10 19 | 703 | 1.5+ | 0.0 |
| 2000 09 02 | 684 | 0.1+ | 0.6− | 2006 09 16 | 703 | 0.1+ | 0.5− | 2006 10 19 | 703 | 0.3− | 1.1+ |
| 2000 09 02 | 684 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.1+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.3− |
| 2000 09 04 | 684 | 0.1− | 0.0 | 2006 09 28 | 703 | 0.4− | 0.6− | 2006 10 22 | 644 | 0.2− | 0.5− |
| 2000 09 04 | 684 | 0.1+ | 0.8+ | 2006 09 28 | 703 | 0.6+ | 1.4+ | 2006 10 22 | 644 | 0.2− | 0.7− |
| 2006 09 16 | 703 | 0.1− | 0.6− | 2006 09 28 | 703 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.7− | 0.2− |
| 2006 09 16 | 703 | 0.2− | 1.0+ | 2006 10 19 | 703 | 0.2+ | 0.1+ | | | | |

### 2006 UO$_{187}$ = 2001 YW$_{51}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.97283 | | | (2000.0) | | |
| $n$ | 0.18515987 | $\omega$ | 99.65210 | | +0.92245501 | −0.34816296 |
| $a$ | 3.0486306 | $\Omega$ | 280.86938 | | +0.25250044 | +0.87101666 |
| $e$ | 0.3505148 | $i$ | 9.78551 | | +0.29209635 | +0.34657255 |
| $P$ | 5.32 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 07 26 | 691 | 0.4+ | 0.2− | 2001 12 19 | 704 | 0.1+ | 0.2− | 2006 10 19 | 703 | 0.1+ | 0.0 |
| 1995 07 26 | 691 | 0.2− | 0.3− | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 10 19 | 703 | 0.4+ | 0.4+ |
| 1995 07 26 | 691 | 0.3− | 0.7+ | 2006 09 17 | 703 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 0.3− | 2006 09 17 | 703 | 0.4− | 0.5− | 2006 10 19 | 703 | 0.2+ | 0.6+ |
| 2001 12 18 | 704 | 0.5+ | 0.4+ | 2006 09 17 | 703 | 0.4+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.0 |
| 2001 12 18 | 704 | 0.1+ | 0.9+ | 2006 09 28 | 703 | 0.5− | 0.3− | 2006 10 22 | 644 | 0.4+ | 0.0 |
| 2001 12 19 | 704 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.7− | 0.4− | 2006 10 22 | 644 | 0.3+ | 0.0 |
| 2001 12 19 | 704 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.2− | 0.1+ | | | | |
| 2001 12 19 | 704 | 0.5− | 0.2+ | 2006 09 28 | 703 | 0.2+ | 0.0 | | | | |

### 2006 UP$_{187}$ = 2002 XS$_{108}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 344.88686 | | | (2000.0) | | |
| $n$ | 0.23247945 | $\omega$ | 130.04368 | | +0.80528328 | −0.55721596 |
| $a$ | 2.6194674 | $\Omega$ | 264.74910 | | +0.46292590 | +0.80438270 |
| $e$ | 0.1686523 | $i$ | 11.73646 | | +0.37043007 | +0.20610396 |
| $P$ | 4.24 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.4+ | 0.2− | 2006 09 17 | 703 | 0.3− | 0.2+ | 2006 10 19 | 703 | 0.8− | 0.2− |
| 2002 12 06 | 704 | 0.0 | 0.1+ | 2006 09 17 | 703 | 0.5− | 0.8− | 2006 10 19 | 703 | 0.2− | 1.2+ |
| 2002 12 06 | 704 | 0.4− | 1.3− | 2006 09 17 | 703 | 0.5+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.5− |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2006 09 17 | 703 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.4− |
| 2002 12 11 | 704 | 0.1+ | 0.1− | 2006 09 28 | 703 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.1− | 0.3− |
| 2002 12 11 | 704 | 0.2− | 0.4− | 2006 09 28 | 703 | 0.8− | 1.2− | 2006 11 23 | 703 | 0.8− | 0.2− |
| 2002 12 11 | 704 | 0.3− | 0.9+ | 2006 09 28 | 703 | 1.0+ | 0.3− | 2006 11 23 | 703 | 0.1+ | 0.4+ |
| 2002 12 27 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 0.7+ | 0.1− | 2006 11 23 | 703 | 1.4+ | 0.9+ |
| 2002 12 27 | 644 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.1+ | 2006 11 23 | 703 | 0.4− | 0.4+ |
| 2002 12 27 | 644 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.1+ | 0.3+ | | | | |

### 2006 UR$_{187}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 91.60295 | | | (2000.0) | | |
| $n$ | 0.24041273 | $\omega$ | 10.30607 | | +0.10072178 | +0.97386357 |
| $a$ | 2.5615199 | $\Omega$ | 265.69109 | | −0.92672982 | +0.01738743 |
| $e$ | 0.0679593 | $i$ | 11.78017 | | −0.36197647 | +0.22646727 |
| $P$ | 4.10 | $H$ | 15.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 01 | 644 | 0.4− | 1.2+ | 2005 05 30 | E12 | 0.1− | 1.2+ | 2006 10 19 | 703 | 0.1+ | 0.2− |
| 2002 11 01 | 644 | 0.1− | 0.9+ | 2005 05 30 | E12 | 2.2+ | 0.5+ | 2006 10 19 | 703 | 0.7+ | 0.6− |
| 2002 11 01 | 644 | 0.4+ | 0.9+ | 2005 05 30 | E12 | 0.5+ | 0.4+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 11 13 | 644 | 0.4− | 0.3+ | 2006 09 17 | 703 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 11 13 | 644 | 0.4− | 0.3+ | 2006 09 17 | 703 | 0.4+ | 0.7+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2002 11 13 | 644 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.6− | 0.6− | 2006 11 11 | 291 | 0.1− | 0.1+ |
| 2004 01 18 | 644 | 0.1+ | 0.6+ | 2006 09 17 | 703 | 0.3+ | 0.3− | 2006 11 11 | 291 | 0.6+ | 0.3+ |
| 2004 01 18 | 644 | 0.2+ | 0.6+ | 2006 09 28 | 703 | 0.4− | 0.1+ | 2006 11 11 | 291 | 0.2+ | 0.1+ |
| 2004 01 18 | 644 | 0.3+ | 0.4+ | 2006 09 28 | 703 | 2.0− | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.3− |
| 2004 02 12 | 644 | 0.1− | 0.3+ | 2006 09 28 | 703 | 0.7− | 1.4+ | 2006 11 14 | 703 | 0.6+ | 0.1+ |
| 2004 02 12 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 1.7− | 0.7− | 2006 11 14 | 703 | 0.2+ | 0.5− |
| 2004 02 12 | 644 | 0.3+ | 0.7+ | 2006 10 19 | 703 | 0.6− | 0.3− | 2006 11 14 | 703 | 0.8+ | 0.1− |
| 2005 05 30 | E12 | 2.6− | 2.1+ | 2006 10 19 | 703 | 0.4+ | 0.7− | | | | |

### 2006 UB$_{188}$ = 2001 XO$_{163}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 331.75448 | | | (2000.0) | | |
| $n$ | 0.18282122 | $\omega$ | 172.69996 | | +0.46645832 | −0.86842749 |
| $a$ | 3.0745742 | $\Omega$ | 249.37008 | | +0.80220501 | +0.49538739 |
| $e$ | 0.2632709 | $i$ | 10.34615 | | +0.37267112 | +0.02061599 |
| $P$ | 5.39 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2001 12 17 | 704 | 0.4+ | 0.2+ | 2006 10 19 | 703 | 0.7− | 0.2− |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 09 17 | 703 | 0.1− | 0.7− | 2006 10 19 | 703 | 0.5+ | 0.5+ |
| 2001 12 14 | 704 | 0.0 | 0.4+ | 2006 09 17 | 703 | 1.5− | 1.1− | 2006 10 19 | 703 | 0.2+ | 0.3+ |
| 2001 12 14 | 704 | 0.1− | 0.0 | 2006 09 17 | 703 | 1.0− | 0.1− | 2006 10 19 | 703 | 0.3+ | 0.0 |
| 2001 12 14 | 704 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.4− | 0.4− | 2006 10 23 | 644 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.0 | 0.3− | 2006 09 28 | 703 | 0.7+ | 0.7− | 2006 10 23 | 644 | 0.1+ | 0.1+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.3− | 1.0− | 2006 09 28 | 703 | 1.5+ | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 12 17 | 704 | 0.1− | 0.6+ | 2006 09 28 | 703 | 0.1+ | 1.1+ | | | | |
| 2001 12 17 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.6+ | | | | |

**2006 UK$_{188}$ = 2004 FO$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.02474 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23129135 | $\omega$ | 169.29473 | | −0.40876133 | | −0.89456065 |
| $a$ | 2.6284302 | $\Omega$ | 304.59821 | | +0.82026911 | | −0.27328057 |
| $e$ | 0.1209958 | $i$ | 12.68545 | | +0.40009094 | | −0.35366507 |
| $P$ | 4.26 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 15 | 644 | 0.1+ | 0.4− | 2004 03 26 | 704 | 0.6− | 1.4− | 2006 09 28 | 703 | 0.0 | 0.4− |
| 2002 11 15 | 644 | 0.5+ | 0.0 | 2004 03 28 | 699 | 0.8+ | 1.0+ | 2006 09 28 | 703 | 0.1+ | 0.7− |
| 2002 11 15 | 644 | 0.3− | 0.6− | 2004 03 28 | 699 | 0.4+ | 0.2− | 2006 09 28 | 703 | 0.7− | 0.2− |
| 2002 12 12 | 644 | 0.4− | 0.3+ | 2004 03 28 | 699 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.5− | 0.1+ |
| 2002 12 12 | 644 | 0.1+ | 0.1+ | 2004 03 28 | 699 | 0.7+ | 0.4+ | 2006 10 19 | 703 | 0.7− | 0.1+ |
| 2002 12 12 | 644 | 0.0 | 0.4+ | 2004 04 12 | E12 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.4− |
| 2004 03 26 | 704 | 0.7− | 0.6− | 2004 04 12 | E12 | 0.7− | 0.9+ | 2006 10 19 | 703 | 0.5+ | 0.8+ |
| 2004 03 26 | 704 | 1.0+ | 0.7− | 2004 04 12 | E12 | 0.9− | 0.6+ | 2006 10 22 | 644 | 0.5+ | 0.1− |
| 2004 03 26 | 704 | 1.0+ | 0.6− | 2004 04 12 | E12 | 0.8− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.1+ |
| 2004 03 26 | 704 | 0.4+ | 0.1+ | 2006 09 28 | 703 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2+ |

**2006 UN$_{188}$ = 1995 QK$_{13}$ = 1995 QD$_{17}$ = 2000 PZ$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.14842 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18710534 | $\omega$ | 349.92416 | | +0.30227111 | | +0.93162901 |
| $a$ | 3.0274612 | $\Omega$ | 297.42578 | | −0.85798554 | | +0.17369498 |
| $e$ | 0.0968372 | $i$ | 13.13737 | | −0.41532275 | | +0.31921379 |
| $P$ | 5.27 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.1− | 0.3− | 2003 01 05 | 291 | 0.5− | 0.1+ | 2006 09 17 | 703 | 0.7− | 0.2− |
| 1995 08 25 | 691 | 0.1+ | 0.1− | 2003 01 05 | 291 | 0.4+ | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.0 |
| 1995 08 25 | 691 | 0.2+ | 0.2− | 2003 01 05 | 291 | 0.4+ | 0.0 | 2006 09 28 | 703 | 0.7+ | 1.1+ |
| 1995 08 31 | 691 | 0.3+ | 0.2+ | 2003 01 30 | 699 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.2+ | 0.2− |
| 1995 08 31 | 691 | 0.3− | 0.0 | 2003 01 30 | 699 | 0.1+ | 0.0 | 2006 09 28 | 703 | 0.7+ | 0.5− |
| 1995 08 31 | 691 | 0.1+ | 0.1− | 2003 01 30 | 699 | 0.5+ | 0.7+ | 2006 10 19 | 703 | 0.0 | 0.8+ |
| 2000 08 02 | 704 | 0.4+ | 0.4− | 2003 01 30 | 699 | 0.9− | 0.6− | 2006 10 19 | 703 | 0.5+ | 0.0 |
| 2000 08 02 | 704 | 0.4+ | 0.9+ | 2003 01 30 | 608 | 0.0 | 0.6+ | 2006 10 19 | 703 | 0.9− | 0.9− |
| 2000 08 02 | 704 | 0.2+ | 0.1+ | 2003 01 30 | 608 | 0.3− | 1.0+ | 2006 10 19 | 703 | 0.4− | 0.0 |
| 2000 08 02 | 704 | 0.3+ | 1.0+ | 2003 01 30 | 608 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.4+ |
| 2000 08 07 | 608 | 0.7− | 0.5+ | 2006 09 17 | 703 | 1.0− | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.2− |
| 2000 08 07 | 608 | 1.1− | 0.5+ | 2006 09 17 | 703 | (1.3+ | 2.6+) | 2006 10 22 | 644 | 0.6+ | 0.0 |
| 2000 08 07 | 608 | 1.3− | 0.6+ | 2006 09 17 | 703 | 0.6− | 0.1+ | | | | |

**2006 UO$_{188}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.07487 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23753154 | $\omega$ | 73.37089 | | +0.98228820 | | −0.06314347 |
| $a$ | 2.5821920 | $\Omega$ | 289.97494 | | −0.02333493 | | +0.89295623 |
| $e$ | 0.0640623 | $i$ | 10.81910 | | +0.18591765 | | +0.44569281 |
| $P$ | 4.15 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 13 | 644 | 0.1+ | 0.3+ | 2006 10 11 | 644 | 0.0 | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.2+ |
| 2002 10 13 | 644 | 0.0 | 0.3+ | 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.5− |
| 2002 10 13 | 644 | 0.1+ | 0.4+ | 2006 10 19 | 703 | 0.7+ | 1.0− | 2006 10 27 | 703 | 0.0 | 0.3+ |
| 2002 11 25 | 644 | 0.1− | 0.4− | 2006 10 19 | 703 | 0.7− | 0.1− | 2006 10 27 | 703 | 0.4+ | 0.6− |
| 2002 11 25 | 644 | 0.1− | 0.3− | 2006 10 19 | 703 | 1.1+ | 0.3− | 2006 10 27 | 703 | 0.5− | 0.1− |
| 2002 11 25 | 644 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.3+ | 0.6− | 2006 10 27 | 703 | 0.4+ | 0.4− |
| 2006 09 28 | 703 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.3− | 1.0+ |
| 2006 09 28 | 703 | 0.4− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.1+ |
| 2006 09 28 | 703 | 0.5+ | 0.6− | 2006 10 22 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.9− | 0.1− |
| 2006 09 28 | 703 | 0.7− | 0.6+ | 2006 10 23 | 644 | 0.1+ | 0.5+ | | | | |
| 2006 10 11 | 644 | 0.5+ | 0.1− | 2006 10 23 | 644 | 0.1− | 0.1+ | | | | |

**2006 UM$_{189}$ = 1997 SE$_{33}$ = 2006 UR$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.94852 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22992222 | $\omega$ | 179.18547 | | −0.41067013 | | −0.89802241 |
| $a$ | 2.6388543 | $\Omega$ | 295.04909 | | +0.83555733 | | −0.30137724 |
| $e$ | 0.1188717 | $i$ | 10.03211 | | +0.36495753 | | −0.32051132 |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 30 | 691 | 0.2− | 0.2+ | 2005 06 17 | G96 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.6+ | 0.4+ |
| 1997 09 30 | 691 | 0.5− | 0.3− | 2005 06 17 | G96 | 0.5− | 0.5+ | 2006 10 19 | 703 | 0.3− | 0.3− |
| 1997 09 30 | 691 | 0.1− | 0.0 | 2005 06 17 | G96 | 0.4− | 0.7+ | 2006 10 22 | 644 | 0.0 | 0.3+ |
| 1997 10 11 | 691 | 0.2+ | 0.4− | 2006 09 17 | 703 | 1.2− | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 1997 10 11 | 691 | 1.3+ | 0.4− | 2006 09 17 | 703 | 0.6− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3+ |
| 1997 10 11 | 691 | 0.0 | 0.2− | 2006 09 17 | 703 | 0.1+ | 0.9+ | 2006 10 23 | 644 | 0.0 | 0.1+ |
| 2004 04 24 | 608 | 0.2− | 0.5− | 2006 09 17 | 703 | 0.7− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 2004 04 24 | 608 | 0.3− | 0.3+ | 2006 09 28 | 703 | 0.5+ | 1.0+ | 2006 10 23 | 644 | 0.1+ | 0.4+ |
| 2004 04 24 | 608 | 0.3+ | 0.1− | 2006 09 28 | 703 | 0.6+ | 0.3− | 2006 10 27 | 703 | 0.2+ | 0.4+ |
| 2004 05 13 | 644 | 0.1− | 0.6+ | 2006 09 28 | 703 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.4+ |
| 2004 05 13 | 644 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 1.0− | 0.7+ | 2006 10 27 | 703 | 0.2+ | 0.8− |
| 2004 05 13 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.5− | 0.4− |
| 2005 06 17 | G96 | 0.2+ | 0.5+ | 2006 10 19 | 703 | 0.6− | 0.1+ | | | | |

**2006 UR$_{189}$ = 2000 QR$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.03745 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18165492 | $\omega$ | 20.08821 | | +0.92980844 | | +0.34874688 |
| $a$ | 3.0877202 | $\Omega$ | 318.89104 | | −0.35737409 | | +0.77912946 |
| $e$ | 0.1191773 | $i$ | 10.30423 | | −0.08797742 | | +0.52089625 |
| $P$ | 5.43 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 21 | 699 | 0.8+ | 0.1+ | 2003 01 28 | 291 | 0.2+ | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.1− |
| 2000 08 21 | 699 | 0.5+ | 0.2− | 2003 01 28 | 291 | 0.2− | 0.2+ | 2006 10 19 | 703 | 0.3− | 0.3+ |
| 2000 08 21 | 699 | 1.0− | 1.0+ | 2003 01 28 | 291 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2000 08 21 | 699 | (2.3− | 1.5+) | 2006 09 28 | 703 | 0.5+ | 0.4− | 2006 10 22 | 644 | 0.1− | 0.1+ |
| 2000 08 24 | 704 | 0.4− | 0.5+ | 2006 09 28 | 703 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.1+ |
| 2000 08 24 | 704 | 0.6− | 0.4+ | 2006 09 28 | 703 | 1.3+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2000 08 24 | 704 | 0.2+ | 0.1− | 2006 09 28 | 703 | 0.1− | 1.0− | | | | |
| 2000 08 24 | 704 | 0.2− | 0.4− | 2006 10 19 | 703 | 0.3− | 0.3− | | | | |

**2006 UZ$_{189}$ = 2002 XX$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.98155 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21796844 | $\omega$ | 110.19223 | | +0.08632753 | | −0.99414772 |
| $a$ | 2.7344730 | $\Omega$ | 334.58854 | | +0.84821655 | | +0.10753550 |
| $e$ | 0.0985271 | $i$ | 8.70496 | | +0.52256698 | | −0.01031653 |
| $P$ | 4.52 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 28 | 644 | 0.2− | 0.1+ | 2006 09 28 | 703 | (0.9− | 2.1+) | 2006 10 23 | 644 | 0.1+ | 0.4− |
| 2001 08 28 | 644 | 0.3+ | 0.5− | 2006 09 28 | 703 | 0.1+ | 0.1− | 2006 10 27 | 703 | 1.1− | 0.8+ |
| 2001 08 28 | 644 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.5+ | 0.3+ | 2006 10 27 | 703 | 0.2− | 0.1− |
| 2002 12 03 | 644 | 0.2− | 1.2+ | 2006 10 19 | 703 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.3− | 0.4− |
| 2002 12 03 | 644 | 0.0 | 1.1+ | 2006 10 19 | 703 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.1− |
| 2002 12 03 | 644 | 0.9− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.1− | 2006 11 09 | 104 | 0.6− | 0.3+ |
| 2002 12 05 | 704 | (0.0 | 2.5−) | 2006 10 22 | 644 | 0.0 | 0.3− | 2006 11 09 | 104 | 0.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.3+ | 1.4− | 2006 10 22 | 644 | 0.1− | 0.5− | 2006 11 09 | 104 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.8+ | 1.0− | 2006 10 22 | 644 | 0.0 | 0.3− | 2006 11 13 | 104 | 0.1+ | 0.3− |
| 2006 09 28 | 703 | 0.3− | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.2− | 2006 11 13 | 104 | 0.2+ | 0.2− |
| 2006 09 28 | 703 | 0.2+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.2− | 2006 11 13 | 104 | 0.1+ | 0.0 |

**2006 UF$_{190}$ = 2004 FR$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.87910 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23807626 | $\omega$ | 60.35848 | | +0.56496538 | −0.82484130 | |
| $a$ | 2.5782518 | $\Omega$ | 355.08029 | | +0.64521624 | +0.45768253 | |
| $e$ | 0.1025032 | $i$ | 14.33659 | | +0.51430548 | +0.33190892 | |
| $P$ | 4.14 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.2+ | 0.0 | 2006 09 17 | 703 | 0.1+ | 0.5+ | 2006 10 12 | 644 | 0.3+ | 0.4+ |
| 2004 03 17 | 691 | 0.2− | 0.0 | 2006 09 17 | 703 | 0.4− | 0.3− | 2006 10 19 | 703 | 0.8− | 0.1− |
| 2004 03 17 | 691 | 0.3+ | 0.0 | 2006 09 28 | 703 | 0.4+ | 0.5− | 2006 10 19 | 703 | 0.2− | 1.4− |
| 2004 03 21 | 291 | 0.0 | 0.0 | 2006 09 28 | 703 | 0.5+ | 1.0+ | 2006 10 19 | 703 | 0.0 | 0.6− |
| 2004 03 21 | 291 | 0.2− | 0.1− | 2006 09 28 | 703 | (2.1− | 0.1−) | 2006 10 22 | 644 | 0.1− | 0.3+ |
| 2004 03 21 | 291 | 0.0 | 0.1+ | 2006 09 28 | 703 | 0.9+ | 1.0− | 2006 10 22 | 644 | 0.3+ | 0.4+ |
| 2006 09 17 | 703 | 1.4− | 0.1+ | 2006 10 12 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 644 | 0.3+ | 0.5+ |
| 2006 09 17 | 703 | 1.0− | 0.4+ | 2006 10 12 | 644 | 0.4+ | 0.1+ | | | | |

**2006 UN$_{190}$ = 2000 SY$_{347}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.76605 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17628842 | $\omega$ | 188.32584 | | +0.21456714 | −0.94086637 | |
| $a$ | 3.1500699 | $\Omega$ | 249.60162 | | +0.91145326 | +0.28935003 | |
| $e$ | 0.1014759 | $i$ | 16.24270 | | +0.35101838 | −0.17620167 | |
| $P$ | 5.59 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.2− | 0.3− | 2003 03 23 | 644 | 0.0 | 0.3− | 2006 10 19 | 703 | 0.1− | 0.2+ |
| 2000 09 22 | 704 | 0.8+ | 0.6− | 2003 03 23 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.2+ |
| 2000 09 22 | 704 | 0.7+ | 0.4+ | 2003 03 23 | 644 | 0.2+ | 0.3+ | 2006 10 19 | 703 | 0.2− | 0.0 |
| 2000 09 30 | 704 | 0.3+ | 0.3− | 2006 09 28 | 703 | 0.7+ | 0.8− | 2006 10 19 | 703 | 0.4− | 0.4+ |
| 2000 09 30 | 704 | 0.5− | 0.5+ | 2006 09 28 | 703 | 0.3− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2000 09 30 | 704 | 0.6− | 0.2− | 2006 09 28 | 703 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.0 | 0.2+ |
| 2000 09 30 | 704 | 0.7− | 0.9+ | 2006 09 28 | 703 | 0.2− | 0.7− | 2006 10 22 | 644 | 0.0 | 0.4+ |

**2006 UR$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.64017 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17484671 | $\omega$ | 62.89718 | | +0.88742411 | −0.44964775 | |
| $a$ | 3.1673623 | $\Omega$ | 323.56899 | | +0.33872980 | +0.78541877 | |
| $e$ | 0.2268743 | $i$ | 9.83782 | | +0.31263488 | +0.42536367 | |
| $P$ | 5.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 25 | 691 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.5+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.4− |
| 2000 09 25 | 691 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.5+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.2− |
| 2000 09 25 | 691 | 0.0 | 0.0 | 2006 10 19 | 703 | 1.1+ | 1.1+ | 2006 10 27 | 703 | 1.4− | 0.0 |
| 2001 12 15 | 645 | 0.1+ | 0.0 | 2006 10 19 | 703 | 1.2− | 0.7+ | 2006 10 27 | 703 | 0.6− | 0.3+ |
| 2001 12 15 | 645 | 0.1− | 0.0 | 2006 10 19 | 703 | 1.1+ | 0.3− | 2006 10 27 | 703 | 0.3− | 0.2− |
| 2006 09 28 | 703 | 0.1− | 0.6− | 2006 10 19 | 703 | 0.9+ | 0.2− | 2006 10 27 | 703 | 0.5− | 0.4− |
| 2006 09 28 | 703 | 0.5+ | 0.8− | 2006 10 19 | 703 | 0.2+ | 1.0− | 2006 11 15 | 703 | 1.4− | 0.1+ |
| 2006 09 28 | 703 | 0.6+ | 0.2− | 2006 10 19 | 703 | 0.4− | 0.2+ | 2006 11 15 | 703 | 0.6− | 1.2+ |
| 2006 09 28 | 703 | 0.8− | 0.5+ | 2006 10 23 | 644 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.1+ | 1.0+ |
| 2006 10 11 | 644 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.2− | 2006 11 15 | 703 | 0.0 | 0.2− |
| 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.1+ | 0.3− | | | | |
| 2006 10 11 | 644 | 0.2+ | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.2− | | | | |

**2006 UT$_{190}$ = 2006 UQ$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.55528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23136566 | $\omega$ | 10.76654 | | +0.29846576 | +0.93373874 | |
| $a$ | 2.6278674 | $\Omega$ | 276.82182 | | −0.88978767 | +0.19732754 | |
| $e$ | 0.1107751 | $i$ | 11.47967 | | −0.34524787 | +0.29865333 | |
| $P$ | 4.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 1.4− | 1.1+ | 2006 10 27 | 703 | 0.4+ | 0.5− |
| 2001 08 14 | 644 | 0.1+ | 0.1− | 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.3− | 0.1+ |
| 2001 08 14 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.1+ | 0.1+ |
| 2006 09 28 | 703 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.1− | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.3− |
| 2006 09 28 | 703 | 1.0+ | 1.5− | 2006 10 23 | 644 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.1+ |
| 2006 09 28 | 703 | 0.8− | 0.1− | 2006 10 23 | 644 | 0.3+ | 0.4+ | 2006 11 22 | 703 | 0.4− | 0.4− |
| 2006 09 28 | 703 | 0.9+ | 0.3+ | 2006 10 23 | 644 | 0.1+ | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.5+ |
| 2006 10 19 | 703 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.3+ | 0.2+ | 2006 11 22 | 703 | 0.6− | 1.3+ |
| 2006 10 19 | 703 | 0.2− | 0.8− | 2006 10 27 | 703 | 0.4+ | 0.4− | 2006 11 22 | 703 | 0.8+ | 1.8− |
| 2006 10 19 | 703 | 0.6− | 0.3+ | 2006 10 27 | 703 | 0.1− | 0.5− | | | | |

**2006 UH$_{191}$ = 2000 RW$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.73933 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17437272 | $\omega$ | 72.51011 | | +0.95013680 | −0.28584662 | |
| $a$ | 3.1730995 | $\Omega$ | 303.93028 | | +0.19713677 | +0.86026803 | |
| $e$ | 0.2314497 | $i$ | 8.63873 | | +0.24161365 | +0.42217370 | |
| $P$ | 5.65 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 704 | 0.4+ | 0.9− | 2006 10 19 | 703 | 0.9− | 0.4− | 2006 10 30 | 104 | 1.2+ | 0.8− |
| 2000 09 03 | 704 | 0.9− | 0.5+ | 2006 10 23 | 644 | 0.6− | 0.3+ | 2006 10 30 | 104 | 0.4− | 0.3− |
| 2000 09 03 | 704 | 1.7− | 0.1− | 2006 10 23 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 1.4+ | 1.1+ |
| 2000 09 03 | 704 | 0.9− | 1.7+ | 2006 10 23 | 644 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.5+ | 1.0+ |
| 2000 09 05 | 704 | 1.6+ | 0.1− | 2006 10 27 | 703 | 0.6+ | 0.3− | 2006 11 15 | 703 | 0.5+ | 0.2+ |
| 2000 09 05 | 704 | 0.3+ | 0.0 | 2006 10 27 | 703 | 0.0 | 0.1− | 2006 11 15 | 703 | (1.1+ | 1.9+) |
| 2000 09 05 | 704 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 0.9− | 0.8− | 2006 11 22 | 703 | (0.5+ | 2.4−) |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.2− | 0.7− |
| 2001 12 19 | 645 | 0.1+ | 0.0 | 2006 10 29 | 104 | (0.9+ | 3.5+) | 2006 11 22 | 703 | 0.5− | 0.5+ |
| 2006 10 19 | 703 | 1.1− | 0.2− | 2006 10 29 | 104 | 1.2+ | 1.0+ | 2006 11 22 | 703 | 0.2+ | 0.9− |
| 2006 10 19 | 703 | 0.3− | 0.2− | 2006 10 29 | 104 | (1.0+ | 1.9−) | | | | |
| 2006 10 19 | 703 | 0.2+ | 0.2+ | 2006 10 30 | 104 | 0.3− | 0.5− | | | | |

**2006 UN$_{191}$ = 2003 BU$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.77515 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19260850 | $\omega$ | 2.04405 | | +0.62410383 | +0.77114142 | |
| $a$ | 2.9695165 | $\Omega$ | 306.59836 | | −0.71907222 | +0.50386283 | |
| $e$ | 0.0641567 | $i$ | 9.01788 | | −0.30566248 | +0.38918268 | |
| $P$ | 5.12 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 29 | 699 | 0.5− | 1.1+ | 2003 01 28 | 704 | 0.8− | 0.1+ | 2006 09 28 | 703 | 0.3− | 0.4+ |
| 2000 07 29 | 699 | 0.4− | 0.1+ | 2003 01 28 | 704 | 0.2− | 0.2− | 2006 09 28 | 703 | 0.6− | 0.1− |
| 2000 07 29 | 699 | 0.4+ | 0.0 | 2003 01 30 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 1.0− | 2.3+ |
| 2000 07 29 | 699 | 0.4− | 0.7+ | 2003 01 30 | 644 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.5+ | 0.1− |
| 2003 01 11 | 291 | 0.1+ | 0.2+ | 2003 01 30 | 644 | 0.1+ | 0.2+ | 2006 10 19 | 703 | 0.7+ | 0.1− |
| 2003 01 11 | 291 | 0.8− | 0.6− | 2004 04 13 | 644 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.2− | 0.8− |
| 2003 01 11 | 291 | 0.1+ | 0.3+ | 2004 04 13 | 644 | 0.3+ | 0.5+ | 2006 10 19 | 703 | 0.5+ | 1.0− |
| 2003 01 27 | 291 | 0.2+ | 0.1+ | 2004 04 13 | 644 | 0.1− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 01 27 | 291 | 0.4+ | 0.3+ | 2004 04 13 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.1− |
| 2003 01 27 | 291 | 0.4+ | 0.0 | 2004 04 13 | 644 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2003 01 28 | 704 | 0.4− | 0.4− | 2004 04 13 | 644 | 0.1+ | 0.2+ | | | | |
| 2003 01 28 | 704 | 0.2− | 0.5+ | 2006 09 28 | 703 | 0.1− | 0.3+ | | | | |

**2006 UP$_{191}$ = 2000 SV$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.24412 | | (2000.0) | | | |
| $n$ | 0.17718665 | $\omega$ | 64.99814 | | +0.77541703 | +0.57913835 |
| $a$ | 3.1394149 | $\Omega$ | 258.63015 | | −0.63113037 | +0.69815171 |
| $e$ | 0.2801976 | $i$ | 14.87354 | | −0.02007216 | +0.42093108 |
| $P$ | 5.56 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 22 | 704 | 0.1+ | 0.9+ | 2001 12 19 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 703 | 0.3− | 0.2+ |
| 2000 09 22 | 704 | 0.1+ | 0.0 | 2001 12 19 | 691 | 0.3− | 0.0 | 2006 10 19 | 703 | 1.1+ | 0.2+ |
| 2000 09 22 | 704 | 0.5+ | 0.1+ | 2001 12 19 | 691 | 0.0 | 0.1− | 2006 10 19 | 703 | 0.4− | 0.2− |
| 2000 09 28 | 704 | 0.5− | 0.4− | 2006 10 02 | 703 | 0.4− | 0.1− | 2006 10 19 | 703 | (0.9+ | 2.4−) |
| 2000 09 28 | 704 | 0.4+ | 0.7− | 2006 10 02 | 703 | 0.1− | 0.8+ | 2006 10 22 | 644 | 0.6+ | 0.5+ |
| 2000 09 28 | 704 | 0.7− | 0.6+ | 2006 10 02 | 703 | 0.7− | 0.4− | 2006 10 22 | 644 | 0.8+ | 0.1+ |
| 2000 09 28 | 704 | 0.1− | 0.1− | 2006 10 02 | 703 | 0.7− | 1.0− | 2006 10 22 | 644 | 0.2+ | 0.5− |

**2006 UX$_{191}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 336.93274 | | (2000.0) | | | |
| $n$ | 0.23553278 | $\omega$ | 173.83164 | | +0.57073864 | −0.80390240 |
| $a$ | 2.5967799 | $\Omega$ | 241.24569 | | +0.74498099 | +0.59264574 |
| $e$ | 0.1511087 | $i$ | 11.00310 | | +0.34534148 | +0.05011952 |
| $P$ | 4.18 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1− | 0.5− |
| 2002 12 10 | 644 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.1− |
| 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 10 23 | 644 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.3− |
| 2006 10 11 | 644 | 0.6+ | 0.2+ | 2006 10 23 | 644 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2006 10 11 | 644 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.8+ | 1.3+ | 2006 11 19 | 704 | 0.5− | 0.9+ |
| 2006 10 11 | 644 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.7+ | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2006 10 19 | 703 | 0.6− | 0.8− | 2006 10 27 | 703 | 1.2− | 0.3+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2006 10 19 | 703 | 0.4+ | 0.3− | 2006 10 27 | 703 | 0.5+ | 0.7− | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2006 10 19 | 703 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.3− | 0.3− |
| 2006 10 19 | 703 | 0.9− | 0.7− | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2006 10 22 | 644 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 | | | | |
| 2006 10 22 | 644 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.4+ | 0.2− | | | | |

**2006 UD$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 12.98178 | | (2000.0) | | | |
| $n$ | 0.25918790 | $\omega$ | 82.69965 | | +0.99037570 | −0.10659093 |
| $a$ | 2.4362746 | $\Omega$ | 283.38979 | | +0.06065097 | +0.90760661 |
| $e$ | 0.1474724 | $i$ | 5.20690 | | +0.12440834 | +0.40606479 |
| $P$ | 3.80 | $H$ | 16.8 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1− | 0.0 | 2006 10 21 | 644 | 0.3− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1+ |
| 2002 09 13 | 644 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 10 23 | 644 | 0.6− | 0.1− |
| 2002 09 13 | 644 | 0.0 | 0.0 | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.6− | 0.0 |
| 2006 10 19 | 703 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.7− | 0.1− | 2006 10 27 | 703 | 1.2+ | 0.6+ |
| 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.5+ | 0.4− |
| 2006 10 19 | 703 | 0.7+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.2− | 0.0 |
| 2006 10 19 | 703 | 0.8+ | 0.3− | 2006 10 23 | 644 | 0.3− | 0.3+ | | | | |

**2006 UE$_{192}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 342.87094 | | (2000.0) | | | |
| $n$ | 0.18422607 | $\omega$ | 122.64256 | | +0.55790232 | −0.82582011 |
| $a$ | 3.0589238 | $\Omega$ | 293.23186 | | +0.72829450 | +0.53470529 |
| $e$ | 0.2681804 | $i$ | 5.13569 | | +0.39790970 | +0.17919653 |
| $P$ | 5.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 644 | 0.1− | 0.0 | 2006 10 19 | 703 | 0.6− | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.2− |
| 2002 01 05 | 644 | 0.3+ | 0.0 | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− |
| 2002 01 05 | 644 | 0.4+ | 0.0 | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.3− |
| 2002 01 05 | 644 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.5− |
| 2002 01 05 | 644 | 0.2− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.5+ | 2006 11 14 | 703 | 0.2+ | 0.0 |
| 2002 01 05 | 644 | 0.2− | 0.5− | 2006 10 23 | 644 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.1− | 0.4+ |
| 2006 10 19 | 703 | 0.1− | 0.4+ | 2006 10 23 | 644 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.6+ | 0.5+ |
| 2006 10 19 | 703 | 0.3+ | 0.7− | 2006 10 23 | 644 | 0.3− | 0.1− | 2006 11 14 | 703 | 1.0− | 0.1− |

**2006 UH$_{192}$ = 2001 RJ$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.66154 | | (2000.0) | | | |
| $n$ | 0.21745366 | $\omega$ | 72.69183 | | +0.58641273 | −0.80865757 |
| $a$ | 2.7387869 | $\Omega$ | 341.17428 | | +0.67710674 | +0.52110608 |
| $e$ | 0.1563889 | $i$ | 8.34440 | | +0.44457459 | +0.27298605 |
| $P$ | 4.53 | $H$ | 16.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 02 | 809 | (2.1+ | 3.8−) | 2001 10 11 | 644 | 0.3+ | 0.5+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |
| 1992 09 02 | 809 | (0.7+ | 3.6−) | 2003 01 26 | 644 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.0 | 0.1− |
| 1992 09 02 | 809 | (1.2+ | 3.3−) | 2003 01 26 | 644 | 0.3− | 0.5− | 2006 10 23 | 644 | 0.2+ | 0.2+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2003 01 26 | 644 | 0.3− | 0.2− | 2006 10 27 | 703 | 0.5+ | 0.1− |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.3+ |
| 2001 08 28 | 644 | (1.7− | 0.3−) | 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.5− |
| 2001 08 28 | 644 | 1.0− | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 0.4− | 0.7− |
| 2001 08 28 | 644 | 0.7− | 0.4− | 2006 10 11 | 644 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.2+ |
| 2001 09 12 | 704 | 0.3− | 0.2+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 1.0+ | 1.2− |
| 2001 09 12 | 704 | 0.6− | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 11 15 | 703 | 1.1+ | 0.9− |
| 2001 09 12 | 704 | 0.9− | 0.1+ | 2006 10 19 | 703 | 0.4− | 0.2+ | 2006 11 15 | 703 | 0.2− | 1.1+ |
| 2001 09 19 | 704 | 0.4+ | 0.0 | 2006 10 19 | 703 | 0.7− | 0.1+ | 2006 11 22 | 703 | 1.3− | 0.1+ |
| 2001 09 19 | 704 | 0.4+ | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.9+ | 0.0 | 2006 10 19 | 703 | 0.3− | 0.0 | 2006 11 22 | 703 | 0.9− | 0.1+ |
| 2001 09 19 | 704 | 0.2+ | 0.4+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.0 | 1.4+ |
| 2001 10 11 | 644 | 0.4+ | 0.6+ | 2006 10 22 | 644 | 0.1+ | 0.1+ | | | | |
| 2001 10 11 | 644 | 0.3+ | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1+ | | | | |

**2006 UJ$_{192}$ = 2002 XF$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 0.61477 | | (2000.0) | | | |
| $n$ | 0.23006836 | $\omega$ | 135.89987 | | +0.88476196 | −0.42184301 |
| $a$ | 2.6377368 | $\Omega$ | 250.01325 | | +0.34749761 | +0.88039138 |
| $e$ | 0.1128404 | $i$ | 12.16918 | | +0.31055062 | +0.21670139 |
| $P$ | 4.28 | $H$ | 15.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3− | 0.3+ | 2006 10 19 | 703 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.8− | 2006 10 19 | 703 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.0 | 0.6− |
| 2002 12 05 | 704 | 0.2+ | 0.0 | 2006 10 19 | 703 | 0.5− | 0.3− | 2006 10 27 | 703 | 0.3+ | 1.0− |
| 2002 12 05 | 704 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 10 27 | 703 | 1.0+ | 0.9− |
| 2002 12 05 | 704 | 0.7+ | 0.6+ | 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2002 12 10 | 704 | 0.2− | 0.1− | 2006 10 22 | 644 | 0.0 | 0.4+ | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2002 12 10 | 704 | 0.4− | 0.3− | 2006 10 22 | 644 | 0.0 | 0.4+ | 2006 11 17 | 644 | 0.1+ | 0.4+ |
| 2002 12 10 | 704 | 0.1− | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.9− |
| 2006 10 11 | 644 | 0.0 | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 23 | 703 | 0.5− | 0.4− |
| 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.3+ | 2006 11 23 | 703 | 0.3− | 0.2+ |
| 2006 10 11 | 644 | 0.2+ | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 703 | 0.6+ | 0.5+ |
| 2006 10 19 | 703 | 0.3− | 0.9+ | 2006 10 23 | 644 | 0.1+ | 0.0 | | | | |

### 2006 $UN_{192}$ = 2001 $XC_{224}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.75868 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18664233 | $\omega$ | 181.57094 | | +0.24116152 | −0.93936414 | |
| $a$ | 3.0324661 | $\Omega$ | 254.52468 | | +0.89313842 | +0.31310010 | |
| $e$ | 0.0740167 | $i$ | 14.65312 | | +0.37966418 | −0.13986899 | |
| $P$ | 5.28 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | 0.3+ | 0.4+ | 2002 01 15 | 691 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.3− | 0.5+ | |
| 2001 12 15 | 704 | 0.1+ | 0.9+ | 2006 10 11 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | (1.0+ | 1.9+) | |
| 2001 12 15 | 704 | 0.0 | 1.0+ | 2006 10 11 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.1+ | |
| 2001 12 15 | 704 | 0.8+ | 1.1+ | 2006 10 11 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 1.1+ | 0.3+ | |
| 2001 12 18 | 704 | 0.5+ | 0.2− | 2006 10 19 | 703 | (1.7− | 0.4−) | 2006 11 17 | 644 | 0.3+ | 0.1− | |
| 2001 12 18 | 704 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.9− | 1.0− | 2006 11 17 | 644 | 0.0 | 0.1− | |
| 2001 12 18 | 704 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.5− | 0.1− | 2006 11 17 | 644 | 0.2− | 0.1+ | |
| 2001 12 18 | 704 | 0.5− | 0.8− | 2006 10 19 | 703 | 1.2− | 0.7− | 2006 11 22 | 703 | 0.5+ | 0.7− | |
| 2001 12 18 | 704 | 0.5− | 1.3− | 2006 10 22 | 644 | 0.5+ | 0.4+ | 2006 11 22 | 703 | 0.0 | 0.1− | |
| 2002 01 15 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.4+ | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.3+ | |
| 2002 01 15 | 691 | 0.1− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.7+ | 2006 11 22 | 703 | 1.2+ | 0.2− | |

### 2006 $UU_{192}$ = 2001 $XQ_{138}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.55705 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18490890 | $\omega$ | 104.16332 | | +0.95874556 | +0.22377963 | |
| $a$ | 3.0513885 | $\Omega$ | 243.15558 | | −0.26935638 | +0.91224875 | |
| $e$ | 0.2394598 | $i$ | 11.33068 | | +0.09085202 | +0.34311061 | |
| $P$ | 5.33 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.3+ | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.2− | |
| 2001 12 14 | 704 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.3− | |
| 2001 12 14 | 704 | 0.2+ | 0.5+ | 2006 10 23 | 644 | 0.1− | 0.5+ | 2006 11 18 | G96 | 0.1+ | 0.1− | |
| 2001 12 14 | 704 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.8− | 1.3− | 2006 11 19 | 704 | 0.0 | 0.1− | |
| 2001 12 17 | 704 | 0.9− | 0.7+ | 2006 10 27 | 703 | 0.9− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.1− | |
| 2001 12 17 | 704 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.8− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.4− | |
| 2001 12 17 | 704 | 0.2+ | 0.5− | 2006 10 27 | 703 | 0.9− | 0.6− | 2006 11 19 | 704 | 0.7+ | 1.0+ | |
| 2001 12 17 | 704 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.2+ | |
| 2001 12 17 | 704 | 0.5− | 0.2− | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.3− | |
| 2005 07 12 | G96 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.5− | 0.7+ | |
| 2005 07 12 | G96 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.0 | 0.4+ | |
| 2005 07 12 | G96 | 0.2− | 0.2+ | 2006 11 14 | 703 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.4+ | 1.0+ | |
| 2005 07 12 | G96 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.9+ | 0.1+ | 2006 11 22 | 704 | 0.4+ | 1.1+ | |
| 2006 10 19 | 703 | 0.4− | 0.3− | 2006 11 14 | 703 | 0.6− | 0.0 | 2006 11 27 | 104 | 0.0 | 0.4− | |
| 2006 10 19 | 703 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.0 | 0.5− | 2006 11 27 | 104 | 0.1+ | 0.3− | |
| 2006 10 19 | 703 | 0.3+ | 0.5− | 2006 11 14 | 703 | 0.3− | 0.5+ | 2006 11 27 | 104 | 0.5+ | 0.1− | |
| 2006 10 19 | 703 | 0.1− | 0.3+ | 2006 11 14 | 703 | 0.3+ | 0.1+ | 2006 11 28 | 104 | 0.2− | 0.0 | |
| 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.6− | 2006 11 28 | 104 | 0.3+ | 0.8+ | |
| 2006 10 22 | 644 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.1− | 0.1− | 2006 11 28 | 104 | 0.6+ | 0.7+ | |
| 2006 10 22 | 644 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.0 | 0.2− | 2006 11 28 | 104 | 0.3+ | 0.1− | |

### 2006 $UV_{192}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.58967 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27062282 | $\omega$ | 63.16803 | | +0.97376852 | −0.22335764 | |
| $a$ | 2.3671536 | $\Omega$ | 309.70574 | | +0.18354666 | +0.88386181 | |
| $e$ | 0.1186427 | $i$ | 3.23621 | | +0.13448235 | +0.41097404 | |
| $P$ | 3.64 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 608 | 0.1− | 0.1− | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.3− | 1.2+ | |
| 2002 08 18 | 608 | 0.3+ | 0.4− | 2006 10 27 | 703 | 0.4+ | 1.2− | 2006 11 16 | 704 | 0.4− | 1.0+ | |
| 2002 08 18 | 608 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.2+ | 0.1+ | 2006 11 16 | 704 | (1.2− | 1.6+) | |
| 2002 09 05 | 699 | 0.5+ | 0.1+ | 2006 10 27 | 703 | 1.0− | 1.2− | 2006 11 18 | G96 | 0.1− | 0.1− | |
| 2002 09 05 | 699 | 0.3− | 0.2+ | 2006 10 27 | 703 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.1− | 0.1− | |
| 2002 09 05 | 699 | 0.4+ | 0.6+ | 2006 11 02 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2002 09 05 | 699 | 0.7− | 0.1+ | 2006 11 02 | 691 | 0.2− | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.2− | |
| 2002 09 14 | 644 | 0.0 | 0.2− | 2006 11 02 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.0 | 0.6− | |
| 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.1+ | |
| 2002 09 14 | 644 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.6− | 0.0 | |
| 2006 10 04 | G96 | 0.5+ | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.2− | |
| 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 11 | 703 | 1.4+ | 0.8− | 2006 11 19 | 704 | 0.5− | 0.9+ | |
| 2006 10 04 | G96 | 0.4+ | 0.5− | 2006 11 11 | 703 | 0.8+ | 0.9+ | 2006 11 22 | 704 | 0.3+ | 0.1− | |
| 2006 10 04 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.7+ | 1.0+ | 2006 11 22 | 704 | 0.1+ | 0.1− | |
| 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 11 | 703 | 1.0+ | 1.1+ | 2006 11 22 | 704 | 0.3− | 0.6− | |
| 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 14 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2− | 0.8− | |
| 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.4− | 0.2+ | |
| 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.3− | | | | | |
| 2006 10 22 | 644 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.1− | | | | | |

### 2006 $UN_{193}$ = 2004 $FO_{34}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.32612 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22828139 | $\omega$ | 46.22838 | | +0.84057054 | −0.53888676 | |
| $a$ | 2.6514842 | $\Omega$ | 346.07851 | | +0.40737583 | +0.69596121 | |
| $e$ | 0.1054523 | $i$ | 13.25307 | | +0.35705195 | +0.47459357 | |
| $P$ | 4.32 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 22 | 644 | 0.1+ | 0.1+ | 2004 03 16 | 703 | 0.3+ | 0.9+ | 2006 09 28 | 703 | 0.7− | 0.3− | |
| 2001 07 22 | 644 | 0.1− | 0.1− | 2004 03 16 | 703 | 1.2− | 0.6− | 2006 09 28 | 703 | 0.4+ | 0.8+ | |
| 2001 07 22 | 644 | 0.0 | 0.1+ | 2004 03 19 | 704 | 1.1+ | 0.8+ | 2006 10 20 | 704 | 0.2− | 0.9− | |
| 2001 08 12 | 644 | 0.4+ | 0.0 | 2004 03 19 | 704 | 0.8− | 0.1+ | 2006 10 20 | 704 | 0.8+ | 0.5− | |
| 2001 08 12 | 644 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.6+ | 1.0+ | 2006 10 20 | 704 | 0.2+ | 0.3− | |
| 2001 08 12 | 644 | 0.2− | 0.2+ | 2004 03 19 | 704 | 0.8+ | 0.3− | 2006 10 20 | 704 | 0.3− | 0.0 | |
| 2001 08 24 | 644 | 0.2− | 0.1+ | 2006 09 17 | 703 | 0.1+ | 1.1+ | 2006 10 22 | 644 | 0.3− | 0.1+ | |
| 2001 08 24 | 644 | 0.3− | 0.4+ | 2006 09 17 | 703 | 0.0 | 0.9+ | 2006 10 22 | 644 | 0.4− | 0.2+ | |
| 2001 08 24 | 644 | 0.1− | 0.1+ | 2006 09 17 | 703 | 0.0 | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.2+ | |
| 2004 03 16 | 703 | 0.2+ | 0.2+ | 2006 09 28 | 703 | 0.2+ | 0.2+ | | | | | |
| 2004 03 16 | 703 | 0.5+ | 0.0 | 2006 09 28 | 703 | 0.3− | 0.1− | | | | | |

### 2006 $UA_{194}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.85045 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18487412 | $\omega$ | 64.59490 | | −0.15057850 | −0.98804803 | |
| $a$ | 3.0517712 | $\Omega$ | 34.11634 | | +0.88458819 | −0.14955300 | |
| $e$ | 0.0716034 | $i$ | 3.37027 | | +0.44139534 | −0.03734968 | |
| $P$ | 5.33 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 30 | 691 | 0.1+ | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.0 | |
| 1995 09 30 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.4+ | 2006 11 11 | G96 | 1.3+ | 0.3+ | |
| 1995 09 30 | 691 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.0 | |
| 2003 03 31 | 645 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.5− | |
| 2003 03 31 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.5+ | 0.2− | |
| 2005 08 08 | 807 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.7− | |
| 2005 08 08 | 807 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.1− | 0.6− | |
| 2006 10 16 | 691 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.4− | |
| 2006 10 16 | 691 | 0.9− | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.1− | | | | | |
| 2006 10 16 | 691 | 0.4+ | 0.0 | 2006 10 29 | 691 | 0.1− | 0.1+ | | | | | |

### 2006 $UJ_{194}$ = 2000 $PC_{31}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.83712 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18009734 | $\omega$ | 307.81162 | | +0.99983701 | −0.00695372 | |
| $a$ | 3.1054975 | $\Omega$ | 52.59295 | | +0.01316661 | +0.91226896 | |
| $e$ | 0.1787723 | $i$ | 1.20187 | | −0.01235287 | +0.40953265 | |
| $P$ | 5.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.6− | 0.5− | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.5− |
| 1995 09 27 | 691 | 0.4− | 0.4− | 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2− | 0.6− |
| 1995 09 27 | 691 | 1.5+ | 0.5− | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.0+ | 0.8− |
| 2000 08 01 | 807 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 14 | G96 | 0.3− | 0.4− |
| 2000 08 01 | 807 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1− | 1.0− |
| 2000 08 02 | 691 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2000 08 02 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.1− | 0.2− |
| 2000 08 02 | 691 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.5− | 0.0 |
| 2006 09 25 | G96 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.1− | 0.1− |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.6+ | 1.0+ | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.3− | 0.4+ | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.2− | 0.5+ | | | | |
| 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.4− | | | | |

**2006 UN$_{195}$ = 2001 SG$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.90645 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21176669 | $\omega$ | 81.81203 | | +0.14216406 | | +0.98977687 |
| $a$ | 2.7876032 | $\Omega$ | 196.37439 | | −0.92340658 | | +0.12844657 |
| $e$ | 0.1463140 | $i$ | 2.32796 | | −0.35652443 | | +0.06199376 |
| $P$ | 4.65 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2001 09 20 | 704 | 0.3+ | 1.2+ | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 10 | 691 | 0.3+ | 0.4+ |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4− | 0.2− | 2006 11 10 | 691 | 0.3− | 0.2− |
| 2001 09 20 | 704 | 0.0 | 0.7+ | 2006 10 27 | G96 | 0.4− | 0.3− | 2006 11 10 | 691 | 0.3+ | 0.3+ |
| 2001 09 22 | 704 | 0.3+ | 0.7− | 2006 10 28 | G96 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.0 |
| 2001 09 22 | 704 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.4− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2001 09 22 | 704 | 1.1− | 0.2− | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2001 09 22 | 704 | 0.1+ | 0.9− | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2004 02 17 | 691 | 0.2− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.6− | 0.1− |
| 2004 02 17 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.7− | 2006 11 14 | G96 | 0.6− | 0.5− |
| 2004 02 17 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.0 | 0.7− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2006 10 20 | 691 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.4+ | 1.0− | 2006 11 14 | G96 | 0.1− | 0.6− |
| 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.1+ | | | | |
| 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.3+ | 0.3+ | | | | |

**2006 UP$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.97802 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19541181 | $\omega$ | 13.75387 | | +0.56218813 | | −0.82643785 |
| $a$ | 2.9410484 | $\Omega$ | 42.05050 | | +0.75435970 | | +0.49721318 |
| $e$ | 0.0555543 | $i$ | 2.63059 | | +0.33894830 | | +0.26415818 |
| $P$ | 5.04 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 03 | G96 | 0.4+ | 0.5− |
| 2001 10 14 | 691 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 03 | G96 | 0.1+ | 0.8+ |
| 2001 10 14 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 14 | G96 | 0.3− | 0.0 |
| 2001 11 16 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2001 11 16 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2+ |
| 2001 11 16 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.8− |
| 2006 09 26 | G96 | 0.7− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.6− | 0.1+ |
| 2006 09 26 | G96 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 22 | G96 | 1.0+ | 0.2− |
| 2006 09 26 | G96 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.3+ | 2006 11 22 | G96 | 0.4+ | 0.0 |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 10 29 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 03 | G96 | 0.4− | 0.7− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 03 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.0 | 0.2+ |

**2006 UQ$_{195}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 129.76765 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30125217 | $\omega$ | 209.44699 | | −0.39706439 | | +0.91670960 |
| $a$ | 2.2038528 | $\Omega$ | 37.20861 | | −0.82699926 | | −0.33632061 |
| $e$ | 0.1105355 | $i$ | 4.22344 | | −0.39801017 | | −0.21571268 |
| $P$ | 3.27 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 02 | G96 | 0.1+ | 0.1+ | 2005 06 14 | G96 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2005 04 02 | G96 | 0.1− | 0.2+ | 2005 06 14 | G96 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.7− |
| 2005 04 02 | G96 | 0.3− | 0.0 | 2005 06 14 | G96 | 0.6− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2005 04 02 | G96 | 0.5− | 0.0 | 2006 10 12 | 691 | 0.3+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 2005 05 01 | 644 | 0.8+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.1− |
| 2005 05 01 | 644 | 0.1+ | 0.1+ | 2006 10 12 | 691 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 10 20 | 691 | 0.4− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2005 05 11 | G96 | 0.1− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.0 |
| 2005 05 11 | G96 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.3− |
| 2005 05 11 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.4+ |
| 2005 05 11 | G96 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2005 06 14 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.3− | 0.2+ |

**2006 UR$_{195}$ = 2004 EN$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.12514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18197737 | $\omega$ | 135.29621 | | +0.81659616 | | +0.57635091 |
| $a$ | 3.0840716 | $\Omega$ | 189.65777 | | −0.56804379 | | +0.79275664 |
| $e$ | 0.1242903 | $i$ | 10.81183 | | −0.10245471 | | +0.19838483 |
| $P$ | 5.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.3+ | 2006 08 29 | 703 | 1.3− | 0.9− | 2006 10 20 | G96 | 0.1+ | 0.0 |
| 2004 03 15 | 691 | 0.3+ | 0.2+ | 2006 08 29 | 703 | 0.7+ | 1.0− | 2006 10 20 | G96 | 0.1+ | 0.6− |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 08 29 | 703 | 0.5− | 1.2+ | 2006 10 20 | G96 | 0.1− | 0.2− |
| 2004 03 23 | 691 | 0.1+ | 0.0 | 2006 09 19 | 703 | 0.6+ | 1.1+ | 2006 10 20 | G96 | 0.7− | 0.1+ |
| 2004 03 23 | 691 | 0.1− | 0.4+ | 2006 09 19 | 703 | 0.8− | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.1+ |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 703 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 2005 06 30 | 691 | 0.4− | 0.2+ | 2006 09 19 | 703 | 0.9+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 2005 06 30 | 691 | 0.2+ | 0.2− | 2006 09 28 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 2005 06 30 | 691 | 0.2+ | 0.1+ | 2006 09 28 | 691 | 0.1− | 0.3+ | | | | |
| 2006 08 29 | 703 | 0.7− | 0.7− | 2006 09 28 | 691 | 0.1− | 0.5+ | | | | |

**2006 UA$_{196}$ = 2004 GW$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.93447 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23634192 | $\omega$ | 13.49458 | | +0.72572735 | | −0.68750418 |
| $a$ | 2.5908496 | $\Omega$ | 29.98883 | | +0.62635293 | | +0.64483538 |
| $e$ | 0.1042466 | $i$ | 2.94129 | | +0.28460817 | | +0.33395408 |
| $P$ | 4.17 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.7+ | 0.2+ |
| 2002 11 24 | 644 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2002 11 24 | 644 | 0.2+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 04 12 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.6− |
| 2004 04 12 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.6− |
| 2004 04 12 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.8− | 1.0+ |
| 2004 04 19 | 691 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2004 04 19 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.8− | 0.4+ |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.5+ |
| 2006 07 21 | G96 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1− | 0.4− |
| 2006 07 21 | G96 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.6− | 0.5− |
| 2006 07 21 | G96 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.8− | 0.4− |
| 2006 07 21 | G96 | 0.6+ | 0.5− | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.8− |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.6− | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.2+ |
| 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 21 | 704 | 1.0+ | 0.7− |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.2+ |
| 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.2− | 0.5+ | 2006 11 21 | 704 | (2.3− | 3.2−) |
| 2006 10 20 | 691 | 0.2+ | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.2− | 2006 11 21 | 704 | (1.9− | 1.0+) |
| 2006 10 22 | 644 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.0 | 0.6− | 2006 11 27 | 703 | 1.2+ | 0.2+ |
| 2006 10 22 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.4+ | 0.6− | 2006 11 27 | 703 | 0.3+ | 0.3+ |
| 2006 10 22 | 644 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.4+ | 0.0 |
| 2006 10 28 | 691 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.9+ | 0.0 | 2006 11 27 | 703 | 0.6+ | 0.8+ |

**2006 UG$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 336.33470 | | (2000.0) | | | |
| $n$ | 0.26127965 | $\omega$ | 17.72428 | | +0.46403180 | −0.88569821 |
| $a$ | 2.4232543 | $\Omega$ | 44.63112 | | +0.81018519 | +0.41768981 |
| $e$ | 0.2156644 | $i$ | 1.19083 | | +0.35815422 | +0.20266698 |
| $P$ | 3.77 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.2+ |
| 2002 09 13 | 644 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.9+ |
| 2002 09 13 | 644 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 1.0+ | 0.4− |
| 2006 07 21 | G96 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.3+ |
| 2006 07 21 | G96 | 0.1+ | 0.6− | 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.1+ |
| 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.6+ |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.2+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 1.0+ | 0.1+ |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.3+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.7+ | 0.2+ |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 1.2− | 2006 11 21 | 704 | 0.5+ | 1.2+ |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.1+ | 1.0− | 2006 11 27 | 703 | 1.1− | 0.5− |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.3− | 0.4+ |
| 2006 10 27 | G96 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.9− | 0.1+ |
| 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.1+ | 0.5− |
| 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.0 | 1.2− | | | | |

**2006 US$_{196}$ = 1997 UX$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 286.50747 | | (2000.0) | | | |
| $n$ | 0.22040634 | $\omega$ | 72.15329 | | −0.37724094 | −0.92450790 |
| $a$ | 2.7142718 | $\Omega$ | 40.14575 | | +0.81444759 | −0.35921246 |
| $e$ | 0.0612037 | $i$ | 4.85246 | | +0.44086777 | −0.12748157 |
| $P$ | 4.47 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 21 | 691 | 0.4+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | (1.6− | 1.0−) |
| 1997 10 21 | 691 | 0.5+ | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.7− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 1997 10 21 | 691 | 0.5+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.9− | 2006 11 12 | G96 | 0.8+ | 0.0 |
| 1997 10 28 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 1997 10 28 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.1+ |
| 1997 10 28 | 691 | 0.7− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.7+ | 0.5− |
| 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.4+ | 0.9− |
| 2006 09 25 | G96 | 0.1− | 0.5− | 2006 11 01 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 1.3+ | 0.7− |
| 2006 09 25 | G96 | 0.5− | 0.7− | 2006 11 01 | 691 | 0.0 | 1.1+ | 2006 11 15 | G96 | 0.3+ | 0.5− |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.2− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.4− |
| 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.8− | 0.6+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.7+ | 0.9− | 2006 11 27 | G96 | 0.1+ | 0.4− |

**2006 UV$_{196}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 117.66427 | | (2000.0) | | | |
| $n$ | 0.27996736 | $\omega$ | 342.91502 | | −0.22624594 | +0.96837483 |
| $a$ | 2.3141835 | $\Omega$ | 273.91273 | | −0.88091960 | −0.24949430 |
| $e$ | 0.1039718 | $i$ | 6.05173 | | −0.41568429 | +0.00166844 |
| $P$ | 3.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 21 | 644 | 0.1+ | 0.6+ | 2005 05 11 | 644 | 0.2+ | 0.3+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 2002 07 21 | 644 | 0.3− | 0.5+ | 2005 05 11 | 644 | 0.3+ | 0.4+ | 2006 10 20 | G96 | 0.3+ | 0.1+ |
| 2002 07 21 | 644 | 0.3+ | 0.3+ | 2005 05 11 | 644 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.3− | 0.0 |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2005 05 11 | 644 | 0.4+ | 0.2+ | 2006 10 22 | 644 | 0.0 | 0.5+ |
| 2002 08 17 | 644 | 0.0 | 0.2+ | 2005 05 11 | 644 | 0.1+ | 0.1+ | 2006 10 22 | 644 | 0.3+ | 0.3+ |
| 2002 08 17 | 644 | 0.2− | 0.3+ | 2005 05 12 | 703 | 1.4− | 0.5− | 2006 10 22 | 644 | 0.1− | 0.6+ |
| 2002 08 26 | 644 | 0.1− | 0.6− | 2005 05 12 | 703 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.1− |
| 2002 08 26 | 644 | 0.1+ | 0.8− | 2005 05 12 | 703 | 0.3+ | 0.5− | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2002 08 26 | 644 | 0.2+ | 0.7− | 2005 05 12 | 703 | 0.2− | 0.3− | 2006 11 25 | G96 | 0.1− | 0.4− |
| 2005 05 11 | 644 | 0.1+ | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 25 | G96 | 0.3− | 0.2− |

**2006 UB$_{197}$ = 1996 VW$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 207.01154 | | (2000.0) | | | |
| $n$ | 0.19508407 | $\omega$ | 343.53840 | | −0.97100052 | +0.23885222 |
| $a$ | 2.9443415 | $\Omega$ | 210.28645 | | −0.21696554 | −0.89858883 |
| $e$ | 0.0454828 | $i$ | 1.17856 | | −0.10041881 | −0.36808658 |
| $P$ | 5.05 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 08 | 691 | 0.1+ | 0.1+ | 2004 06 17 | 691 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 1996 11 08 | 691 | 0.2+ | 0.0 | 2004 06 17 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 1996 11 08 | 691 | 0.1+ | 0.5− | 2004 06 17 | 691 | 0.2+ | 0.3− | 2006 10 28 | 691 | 0.6− | 0.4+ |
| 1996 11 09 | 691 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.5− |
| 1996 11 09 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.6+ | 0.8− | 2006 11 01 | 691 | 0.3− | 0.0 |
| 1996 11 09 | 691 | 0.2− | 0.1− | 2006 10 12 | 691 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.5+ |
| 2001 10 21 | 291 | 0.8− | 0.7+ | 2006 10 16 | 691 | 0.0 | 0.6− | 2006 11 01 | 691 | 0.3− | 0.6+ |
| 2001 10 21 | 291 | 0.0 | 0.6+ | 2006 10 16 | 691 | 0.1+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2001 10 21 | 291 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2003 02 09 | 333 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2003 02 09 | 333 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2004 05 16 | E12 | 0.5− | 1.1+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.6+ | 0.3− |
| 2004 05 16 | E12 | 1.0− | 1.0+ | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 05 16 | E12 | (0.5+ | 1.7+) | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2004 05 16 | E12 | 0.2+ | 1.4+ | 2006 10 27 | G96 | 0.4− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.3− |

**2006 UL$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 338.64596 | | (2000.0) | | | |
| $n$ | 0.22626644 | $\omega$ | 14.44548 | | +0.48791987 | −0.87162559 |
| $a$ | 2.6672023 | $\Omega$ | 46.37551 | | +0.79428793 | +0.42104257 |
| $e$ | 0.0999899 | $i$ | 3.71768 | | +0.36199570 | +0.25098203 |
| $P$ | 4.36 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 25 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.4+ | 0.1− |
| 2004 04 25 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.7+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 2004 04 25 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.5+ | 0.3− |
| 2004 04 26 | 568 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.0 |
| 2004 04 26 | 568 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 13 | G96 | 0.5+ | 0.7− |
| 2004 04 26 | 568 | 0.2+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.2− |
| 2004 07 16 | 807 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.1+ |
| 2004 07 17 | 807 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2006 10 13 | 291 | 0.7+ | 0.9− | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.1+ |
| 2006 10 13 | 291 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.4− | 0.1+ | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2006 10 13 | 291 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.3− | 2006 11 20 | G96 | 0.0 | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.5− | 1.0+ | 2006 11 20 | G96 | 0.4− | 0.4− | | |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.0 | 0.4− | | | | | | |
| 2006 10 20 | 691 | 0.4+ | 0.4+ | 2006 11 11 | 703 | 0.7− | 0.4+ | | | | | | |

**2006 UM$_{197}$ = 2001 YN$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.41821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18879274 | $\omega$ | 8.83657 | | +0.52323605 | −0.85125458 | |
| $a$ | 3.0093950 | $\Omega$ | 49.62464 | | +0.77863419 | +0.45853653 | |
| $e$ | 0.2053642 | $i$ | 3.00003 | | +0.34634208 | +0.25516641 | |
| $P$ | 5.22 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.8− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.6− | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 2001 12 18 | 704 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2001 12 18 | 704 | 0.5− | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.2− | 0.4+ |
| 2001 12 19 | 704 | 0.3− | 0.1+ | 2006 10 28 | 691 | 0.4− | 0.4+ | 2006 11 13 | 644 | 0.2− | 0.5+ |
| 2001 12 19 | 704 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2001 12 19 | 704 | 0.9− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.6− |
| 2001 12 19 | 704 | 0.5+ | 0.0 | 2006 11 08 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.5− | 0.4+ |
| 2001 12 19 | 704 | 0.8+ | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2001 12 19 | 704 | 1.1+ | 0.5+ | 2006 11 08 | 644 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.2− |
| 2001 12 19 | 704 | (1.7+ | 0.4+) | 2006 11 09 | 644 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2− |
| 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2006 10 12 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.4− |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1− | 1.4− | | | | |
| 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.2− | | | | |

**2006 UU$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.82473 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18357693 | $\omega$ | 259.65449 | | +0.56403540 | +0.82491448 | |
| $a$ | 3.0661306 | $\Omega$ | 44.74783 | | −0.73546264 | +0.52231047 | |
| $e$ | 0.0062790 | $i$ | 3.02499 | | −0.37544475 | +0.21612005 | |
| $P$ | 5.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 1.1+ | 0.5− | 2003 04 05 | 691 | 0.4+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1995 11 19 | 691 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 1995 11 19 | 691 | 0.3− | 0.2− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.4− |
| 2000 10 06 | 691 | 0.1− | 0.5+ | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2000 10 06 | 691 | 0.3− | 0.4+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.3− |
| 2000 10 06 | 691 | 0.5− | 0.9+ | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2003 03 23 | 645 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2003 03 23 | 645 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.5+ | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.6− |
| 2003 03 30 | 645 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2003 03 30 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.5− |
| 2003 04 05 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.0 | | | | |
| 2003 04 05 | 691 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.1+ | | | | |

**2006 UV$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.40534 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24718759 | $\omega$ | 334.74054 | | +0.93214284 | −0.35907102 | |
| $a$ | 2.5144998 | $\Omega$ | 46.38623 | | +0.34219258 | +0.83143613 | |
| $e$ | 0.0551617 | $i$ | 3.69559 | | +0.11838059 | +0.42400704 | |
| $P$ | 3.99 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1998 11 15 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 |
| 1998 11 15 | 691 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.9− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.7+ |
| 1998 11 27 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.5− | 0.3+ |
| 1998 11 27 | 691 | 0.5− | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 1998 11 27 | 691 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.8+ | 0.4− |
| 2002 11 05 | 291 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2002 11 05 | 291 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.5+ | 0.0 |
| 2002 11 05 | 291 | 0.2+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ | | | | |

**2006 UQ$_{198}$ = 1994 RB$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.74105 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25417789 | $\omega$ | 118.25468 | | +0.81428596 | +0.58029904 | |
| $a$ | 2.4681840 | $\Omega$ | 206.28094 | | −0.54291425 | +0.75296106 | |
| $e$ | 0.1904021 | $i$ | 1.79055 | | −0.20538377 | +0.31032671 | |
| $P$ | 3.88 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 03 | 809 | 0.8− | 0.7− | 2005 04 16 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1994 09 03 | 809 | 0.3+ | 0.4− | 2005 04 16 | 691 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1994 09 03 | 809 | 1.0+ | 0.3+ | 2005 06 13 | G96 | 0.9− | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 1994 09 04 | 809 | 0.2− | 0.5− | 2005 06 13 | G96 | 0.7− | 0.8+ | 2006 11 09 | 644 | 0.1+ | 0.6+ |
| 1994 09 04 | 809 | 0.1+ | 1.5+ | 2005 06 13 | G96 | 0.9− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 1994 09 04 | 809 | 1.4− | 0.7+ | 2005 06 13 | G96 | 0.1− | 1.3+ | 2006 11 09 | 644 | 0.0 | 0.2+ |
| 1998 09 25 | 699 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 1998 09 25 | 699 | 1.0+ | 0.4− | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.1− |
| 1998 09 25 | 699 | 1.7+ | 0.8+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.4− | 0.4− |
| 1998 10 16 | 691 | 0.3− | 0.3− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 13 | G96 | 1.5+ | 0.9− |
| 1998 10 16 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.4− | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 1998 10 16 | 691 | 0.1+ | 0.6− | 2006 10 20 | 691 | 0.3− | 0.4+ | 2006 11 21 | G96 | 0.4+ | 0.2− |
| 2002 10 10 | 644 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.6+ | 0.3− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2002 10 10 | 644 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2002 10 10 | 644 | 0.5− | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.2− | | | | |
| 2005 04 16 | 691 | 0.7+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.2− | | | | |

**2006 US$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 293.87052 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18979974 | $\omega$ | 256.41589 | | −0.45555547 | −0.88989552 | |
| $a$ | 2.9987411 | $\Omega$ | 220.71143 | | +0.83008113 | −0.41507527 | |
| $e$ | 0.1328164 | $i$ | 2.07022 | | +0.32161240 | −0.18920485 | |
| $P$ | 5.19 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 26 | 691 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 1993 04 26 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.6− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 1993 04 26 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2001 11 16 | 691 | 0.1+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.4+ | 0.1+ |
| 2001 11 16 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2001 11 16 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.3− | 0.5+ | 2006 11 21 | G96 | 0.9+ | 0.0 |
| 2001 12 11 | 291 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2001 12 11 | 291 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2001 12 11 | 291 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.2− | 0.2+ |
| 2002 01 18 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.5− | 2006 11 22 | G96 | 0.2+ | 0.1− |
| 2002 01 18 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.2+ | 0.3− |
| 2002 01 18 | 691 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 12 | G96 | 0.3+ | 0.0 | 2006 11 22 | G96 | 0.4+ | 0.2− |
| 2006 10 12 | 691 | 0.2+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.7+ | 0.0 |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.5+ | 0.3− |

**2006 UU$_{198}$ = 2002 YC$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.71441 | | (2000.0) | | | |
| $n$ | 0.23628887 | $\omega$ | 79.51978 | | +0.97409778 | −0.21978824 |
| $a$ | 2.5912374 | $\Omega$ | 293.16038 | | +0.17818291 | +0.89081141 |
| $e$ | 0.2620780 | $i$ | 3.31506 | | +0.13922772 | +0.39767846 |
| $P$ | 4.17 | $H$ | 15.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 1.1− | 0.6+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.2− |
| 1995 02 03 | 691 | 0.8+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 1995 02 03 | 691 | 0.5+ | 0.1− | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 1998 12 12 | 691 | 0.4− | 0.3− | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 1998 12 12 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 1998 12 12 | 691 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 1998 12 22 | 691 | 0.2+ | 0.5− | 2006 11 14 | 703 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.0 | 0.1+ |
| 1998 12 22 | 691 | 0.1− | 0.2− | 2006 11 15 | 704 | 0.1+ | 0.6+ | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 1998 12 22 | 691 | 0.3+ | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.1− | 0.3− |
| 2002 12 31 | 704 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.7+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2002 12 31 | 704 | 0.4+ | 0.3+ | 2006 11 15 | 704 | 0.2− | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2002 12 31 | 704 | 0.0 | 0.4− | 2006 11 16 | 704 | (1.1+ | 1.6+) | 2006 11 23 | 644 | 0.2− | 0.1− |
| 2002 12 31 | 704 | (0.5+ | 2.1+) | 2006 11 16 | 704 | 0.5+ | 0.3+ | 2006 11 23 | 644 | 0.1− | 0.0 |
| 2002 12 31 | 704 | 0.8− | 0.5+ | 2006 11 16 | 704 | 0.3− | 1.2+ | 2006 11 23 | 644 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.3− | 0.5− | 2006 11 16 | 704 | 0.4+ | 0.7+ | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2003 01 04 | 704 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.4− | 1.1+ | 2006 11 25 | 691 | 0.3+ | 0.0 |
| 2003 01 04 | 704 | 0.1+ | 0.6+ | 2006 11 16 | 704 | 0.4− | 1.2+ | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2003 01 04 | 704 | 0.3+ | 0.7+ | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.0 | 0.6+ |
| 2003 01 04 | 704 | 0.1+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.5− | 0.2+ |
| 2006 10 20 | G96 | 0.6− | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.1− | 2006 11 28 | 704 | 0.4− | 0.3+ |
| 2006 10 20 | G96 | 0.2− | 0.4+ | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 28 | 704 | 0.6+ | 1.3+ |
| 2006 10 20 | G96 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.2− | 2006 11 28 | 704 | 0.4− | 0.2+ |
| 2006 10 20 | G96 | 1.0+ | 0.3+ | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.1− | 0.6− |
| 2006 10 27 | 703 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.2+ | 0.2+ |
| 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 19 | 704 | (1.2− | 1.5−) | 2006 11 28 | 704 | 0.6− | 0.3+ |
| 2006 10 27 | 703 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.5− | 2006 11 28 | 704 | 0.0 | 0.2+ |
| 2006 10 27 | 703 | 0.8− | 0.5− | 2006 11 19 | 704 | 0.7+ | 0.3− | 2006 11 28 | 704 | 0.8+ | 0.2+ |
| 2006 10 29 | 704 | 0.4+ | 1.1− | 2006 11 21 | 691 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.2+ | 0.5+ |
| 2006 10 29 | 704 | 0.9− | 0.8− | 2006 11 21 | 691 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.0 | 0.0 |
| 2006 10 29 | 704 | 0.2+ | 1.1− | 2006 11 21 | 691 | 0.1− | 0.2− | 2006 11 28 | 704 | 1.1+ | 0.4+ |
| 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 21 | 691 | 0.1− | 0.2− | 2006 11 28 | 704 | 1.1+ | 0.5+ |
| 2006 11 10 | 644 | 0.1− | 0.2+ | 2006 11 21 | 691 | 0.2− | 0.3− | | | | |

**2006 UX$_{198}$ = 2001 WV$_{96}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.95512 | | (2000.0) | | | |
| $n$ | 0.18915302 | $\omega$ | 63.27638 | | −0.45093954 | −0.89216025 |
| $a$ | 3.0055725 | $\Omega$ | 53.55269 | | +0.80674080 | −0.42011931 |
| $e$ | 0.0935174 | $i$ | 1.88972 | | +0.38186753 | −0.16598151 |
| $P$ | 5.21 | $H$ | 16.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 291 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.3− |
| 2001 11 17 | 291 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.4− |
| 2001 11 17 | 291 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | (1.8+ | 1.5−) | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 11 21 | 704 | (1.5+ | 2.3−) | 2006 10 27 | G96 | 0.5+ | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | (2.4+ | 2.2−) | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.6− | 0.2+ |
| 2001 11 21 | 704 | (1.3+ | 1.9−) | 2006 11 01 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 703 | (0.7+ | 1.5+) |
| 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (1.0+ | 1.9+) |
| 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.6+ | 0.3+ |
| 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2006 10 20 | 691 | 1.2− | 0.6− | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2006 10 20 | 691 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 21 | G96 | 0.5+ | 0.2+ |

**2006 UG$_{199}$ = 2005 NN$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 226.81177 | | (2000.0) | | | |
| $n$ | 0.26630582 | $\omega$ | 330.47387 | | −0.99804605 | +0.05929323 |
| $a$ | 2.3926671 | $\Omega$ | 212.94322 | | −0.04783057 | −0.92795434 |
| $e$ | 0.1216064 | $i$ | 2.07690 | | −0.04020359 | −0.36794709 |
| $P$ | 3.70 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 28 | 291 | 0.2− | 0.3+ | 2005 07 09 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.4− | 0.0 |
| 2002 10 28 | 291 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2002 10 28 | 291 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.1− |
| 2004 02 14 | 691 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2004 02 14 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.6− |
| 2004 02 14 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2004 03 18 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.5+ | 0.2+ |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.3+ | 2006 11 14 | 691 | 0.3+ | 0.0 |
| 2005 07 06 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 16 | 703 | 0.5+ | 0.8+ |
| 2005 07 06 | 691 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.3+ | 2006 11 16 | 703 | 0.5+ | 0.2+ |
| 2005 07 06 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.6− | 2006 11 16 | 703 | 0.5− | 1.0+ |
| 2005 07 09 | 691 | 0.2− | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 16 | 703 | 0.9− | 0.1+ |
| 2005 07 09 | 691 | (0.4− | 2.0+) | 2006 11 01 | 691 | 0.1− | 0.2+ | | | | |

**2006 UP$_{199}$ = 1989 QQ**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 33.46087 | | (2000.0) | | | |
| $n$ | 0.17857756 | $\omega$ | 278.04485 | | +0.70913040 | +0.67634505 |
| $a$ | 3.1230921 | $\Omega$ | 39.74205 | | −0.45893070 | +0.65727078 |
| $e$ | 0.1863916 | $i$ | 18.15673 | | −0.53527254 | +0.33249435 |
| $P$ | 5.52 | $H$ | 15.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1989 08 26 | 413 | 1.1+ | 0.1+ | 2006 10 11 | 644 | 0.5+ | 0.3− | 2006 10 28 | 703 | 0.1+ | 1.4− |
| 1989 08 26 | 413 | 0.2− | 0.4− | 2006 10 21 | 703 | 0.8− | 0.1− | 2006 10 28 | 703 | 0.1− | 1.0+ |
| 1989 09 03 | 413 | 0.0 | 0.4− | 2006 10 21 | 703 | 0.3+ | 0.3− | 2006 10 28 | 703 | 0.1− | 1.1+ |
| 1989 09 03 | 413 | 0.9− | 0.8+ | 2006 10 21 | 703 | 0.7− | 1.0+ | 2006 10 28 | 703 | 0.3+ | 0.1− |
| 2006 09 20 | 703 | 0.0 | 0.5− | 2006 10 21 | 703 | 0.7− | 0.1− | 2006 11 19 | G92 | 0.2+ | 0.7− |
| 2006 09 20 | 703 | 0.3+ | 1.1+ | 2006 10 23 | 644 | 0.3− | 0.2− | 2006 11 19 | G92 | 0.0 | 0.4+ |
| 2006 10 11 | 644 | 0.3+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.4− | 2006 11 19 | G92 | 0.0 | 0.3+ |
| 2006 10 11 | 644 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.2+ | 0.2− | | | | |

**2006 UW$_{199}$ = 2002 PH$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.33994 | | (2000.0) | | | |
| $n$ | 0.26493830 | $\omega$ | 151.37082 | | +0.95526237 | +0.29568980 |
| $a$ | 2.4008934 | $\Omega$ | 191.43576 | | −0.27716104 | +0.88739089 |
| $e$ | 0.2176135 | $i$ | 1.85867 | | −0.10322582 | +0.35370179 |
| $P$ | 3.72 | $H$ | 18.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 13 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.2− | 0.3− | 2006 10 16 | G96 | 0.1− | 0.0 |
| 1991 09 13 | 691 | 0.0 | 0.2− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 21 | 703 | (1.6− | 0.1−) |
| 1991 09 13 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.2− | 0.6− | 2006 10 21 | 703 | 0.3+ | 0.5+ |
| 2002 08 06 | 644 | 0.2− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 21 | 703 | 0.0 | 0.3+ |
| 2002 08 06 | 644 | 0.1− | 0.1+ | 2006 09 25 | G96 | 0.1+ | 0.8− | 2006 10 21 | 703 | 0.3+ | 0.4+ |
| 2002 08 06 | 644 | 0.0 | 0.2+ | 2006 10 03 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1− |
| 2002 08 07 | 644 | 0.1+ | 0.2+ | 2006 10 03 | 691 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2002 08 07 | 644 | 0.0 | 0.0 | 2006 10 03 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3− | 0.3+ |
| 2002 08 07 | 644 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.9+ | 2006 10 27 | G96 | 0.1− | 0.3− |
| 2006 09 14 | 691 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2006 09 14 | 691 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.4− |
| 2006 09 14 | 691 | 0.0 | 0.1+ | 2006 10 16 | G96 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.1− | 0.4− |
| 2006 09 25 | 691 | 0.1+ | 0.3− | 2006 10 16 | G96 | 0.0 | 0.2− | | | | |
| 2006 09 25 | 691 | 0.2+ | 0.2− | 2006 10 16 | G96 | 0.2+ | 0.3− | | | | |

**2006 UB$_{200}$ = 1999 GW$_{15}$ = 2001 VD$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.59141 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18752347 | $\omega$ | 272.31885 | | +0.63333772 | | +0.76566221 |
| $a$ | 3.0229592 | $\Omega$ | 37.75273 | | −0.61676769 | | +0.58716848 |
| $e$ | 0.0864034 | $i$ | 10.58321 | | −0.46741946 | | +0.26266816 |
| $P$ | 5.26 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 15 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.7+ | 0.2− | 2006 11 11 | 703 | 0.8− | 0.4− |
| 1999 04 15 | 691 | 0.0 | 0.3+ | 2006 10 21 | 703 | 1.0+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.0 |
| 1999 04 19 | 691 | 0.2+ | 0.0 | 2006 10 21 | 703 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 1999 04 19 | 691 | 0.1− | 0.0 | 2006 10 21 | 703 | 1.1+ | 1.4+ | 2006 11 11 | G96 | 0.3+ | 0.1+ |
| 1999 04 19 | 691 | 0.4+ | 0.1+ | 2006 10 21 | 703 | 0.1+ | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2001 11 12 | 704 | 0.5+ | 0.6+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2001 11 12 | 704 | 0.2+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.3− | 0.3− |
| 2001 11 12 | 704 | 0.5+ | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 703 | 0.5− | 0.2+ |
| 2001 11 12 | 704 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.3− | 0.4− |
| 2001 11 12 | 704 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.6+ | 1.2− |
| 2001 11 19 | 699 | 0.4+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.9− |
| 2001 11 19 | 699 | 0.7− | 0.7− | 2006 10 28 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.5− | 0.9− |
| 2001 11 19 | 699 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 17 | 703 | (2.5− | 0.1−) |
| 2001 11 19 | 699 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.3+ |
| 2001 11 19 | 704 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2001 11 19 | 704 | 0.8+ | 0.9− | 2006 11 11 | 703 | 1.2− | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.4+ |
| 2001 11 19 | 704 | 0.9− | 0.4− | 2006 11 11 | 703 | 0.9− | 0.4− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2006 10 20 | 644 | 0.5+ | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.5+ |
| 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− | | | | |

**2006 UE$_{200}$ = 2002 XY$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.01259 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22521769 | $\omega$ | 289.00363 | | +0.97240793 | | +0.03900859 |
| $a$ | 2.6754760 | $\Omega$ | 69.29687 | | +0.07467969 | | +0.88198777 |
| $e$ | 0.1822770 | $i$ | 14.23386 | | −0.22101077 | | +0.46965509 |
| $P$ | 4.38 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3− | 0.2− | 2002 12 10 | 704 | 0.2− | 0.6− | 2006 10 10 | 644 | 0.0 | 0.3+ |
| 2002 12 05 | 704 | 0.1+ | 0.1− | 2002 12 10 | 704 | 0.1− | 0.9− | 2006 10 21 | 703 | 0.5− | 0.6− |
| 2002 12 05 | 704 | 0.5− | 0.1− | 2006 09 25 | 703 | 0.5− | 0.8− | 2006 10 21 | 703 | 0.4+ | 0.6− |
| 2002 12 05 | 704 | 0.2− | 0.3+ | 2006 09 25 | 703 | 0.1+ | 0.2+ | 2006 10 21 | 703 | 0.2+ | 0.0 |
| 2002 12 05 | 704 | 0.6− | 0.1− | 2006 09 25 | 703 | 0.1+ | 0.5− | 2006 10 21 | 703 | 0.1+ | 0.0 |
| 2002 12 10 | 704 | 0.6+ | 0.8+ | 2006 09 25 | 703 | 0.3+ | 0.6+ | 2006 10 23 | 644 | 0.0 | 0.3+ |
| 2002 12 10 | 704 | 0.3+ | 0.6+ | 2006 10 10 | 644 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.2− | 0.4+ |
| 2002 12 10 | 704 | 0.8+ | 0.3+ | 2006 10 10 | 644 | 0.2− | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1+ |

**2006 UG$_{200}$ = 1999 TE$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.34725 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28350388 | $\omega$ | 1.14189 | | +0.99502471 | | −0.09928650 |
| $a$ | 2.2948980 | $\Omega$ | 4.58077 | | +0.09056921 | | +0.86695279 |
| $e$ | 0.1867315 | $i$ | 5.92723 | | +0.04150956 | | +0.48840050 |
| $P$ | 3.48 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.6+ | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 1999 10 10 | 704 | 0.1+ | 0.5− | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 1999 10 10 | 704 | 0.5+ | 0.4+ | 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.4+ | 0.1− |
| 1999 10 10 | 704 | 0.2+ | 0.7+ | 2006 10 21 | 691 | 0.5− | 0.4+ | 2006 11 23 | G96 | 0.5+ | 0.5− |
| 1999 10 14 | 645 | 0.0 | 0.2− | 2006 10 21 | 691 | 0.4− | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.5− |
| 1999 10 14 | 645 | 0.1+ | 0.1− | 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.4− |
| 1999 10 15 | 704 | 0.2− | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.4+ | 2006 11 23 | G96 | 0.2− | 0.4− |
| 1999 10 15 | 704 | 0.8− | 0.6+ | 2006 10 23 | 644 | 0.2+ | 0.3+ | 2006 11 23 | 703 | (1.6+ | 2.3−) |
| 1999 10 15 | 704 | 0.7− | 0.0 | 2006 10 23 | 644 | 0.0 | 0.4+ | 2006 11 23 | 703 | 0.3+ | 0.1+ |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 27 | 703 | 0.4− | 0.3+ | 2006 11 23 | 703 | (2.8+ | 1.0−) |
| 2006 10 02 | G96 | 0.1+ | 0.1− | 2006 10 27 | 703 | (0.2+ | 1.6−) | 2006 11 23 | 703 | 1.0+ | 0.4− |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.1+ | 0.5− | | | | |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 27 | 703 | 0.4− | 0.7− | | | | |

**2006 UJ$_{200}$ = 2004 EH$_{101}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.07047 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25845830 | $\omega$ | 80.94798 | | +0.55133196 | | −0.83381617 |
| $a$ | 2.4408573 | $\Omega$ | 335.52933 | | +0.73644175 | | +0.50216544 |
| $e$ | 0.1700037 | $i$ | 3.87508 | | +0.39202885 | | +0.22930432 |
| $P$ | 3.81 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 26 | 691 | 1.0− | 0.7− | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.3+ | 0.1− |
| 1996 01 26 | 691 | 0.1+ | 0.5− | 2006 10 21 | 691 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 1996 01 26 | 691 | 0.5+ | 0.2+ | 2006 10 21 | 691 | 0.5− | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.1+ |
| 1998 08 31 | 691 | 0.7+ | 0.6+ | 2006 10 21 | 691 | 0.3− | 0.3+ | 2006 11 02 | 691 | 0.1+ | 0.2+ |
| 1998 08 31 | 691 | 0.2− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.7+ | 2006 11 02 | 691 | 0.2+ | 0.1− |
| 1998 08 31 | 691 | 0.4− | 0.3− | 2006 10 22 | 644 | 0.1− | 0.5+ | 2006 11 02 | 691 | 0.2+ | 0.1− |
| 2004 03 15 | 691 | 0.3+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 13 | 291 | 0.0 | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.2+ | 0.1− | 2006 11 13 | 291 | 0.0 | 0.1+ |
| 2004 03 15 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 703 | 0.3− | 0.2+ | 2006 11 13 | 291 | 0.1− | 0.1+ |
| 2004 03 23 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.9− | 0.2+ | 2006 11 23 | G96 | 0.6+ | 0.2− |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 27 | 703 | 1.1+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2006 10 02 | G96 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.3− | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.2− |
| 2006 10 02 | G96 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.0 | | | | |
| 2006 10 02 | G96 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.2− | | | | |

**2006 UL$_{200}$ = 2005 JN$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.99891 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22873263 | $\omega$ | 353.57874 | | +0.91172742 | | +0.41020711 |
| $a$ | 2.6479959 | $\Omega$ | 342.15412 | | −0.37363476 | | +0.80582314 |
| $e$ | 0.1923672 | $i$ | 4.11340 | | −0.17073420 | | +0.42705877 |
| $P$ | 4.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.8+ |
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.1+ | 2006 11 19 | 704 | 0.9+ | 1.0+ |
| 2005 05 12 | 644 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.4+ | 1.1+ |
| 2005 05 12 | 644 | 0.2+ | 0.0 | 2006 10 27 | 703 | 0.7+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 1.2− |
| 2005 05 12 | 644 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.3− | 0.8+ | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2005 05 16 | 644 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2005 05 16 | 644 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6− | 0.0 |
| 2005 05 16 | 644 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.5− | 0.4+ |
| 2006 10 12 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.8− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.1+ |
| 2006 10 12 | 644 | 0.4+ | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.4+ | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2006 10 12 | 644 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.3+ | 1.3+ | 2006 11 25 | G96 | 0.3− | 0.4− |
| 2006 10 21 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.7− | 2006 11 25 | G96 | 0.1+ | 0.6− |
| 2006 10 21 | 691 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.8− | 1.2− | 2006 11 25 | G96 | 0.0 | 0.6− |
| 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.9+ | 0.6+ | 2006 11 25 | G96 | 0.1− | 0.5− |
| 2006 10 22 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.4− | | | | |
| 2006 10 22 | 644 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.1− | | | | |

**2006 UM$_{200}$ = 2003 MP$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.27282 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.38366606 | $\omega$ | 123.83905 | | +0.93906945 | | +0.24836692 |
| $a$ | 1.8757162 | $\Omega$ | 223.17839 | | −0.28626634 | | +0.94776464 |
| $e$ | 0.0899962 | $i$ | 20.31963 | | +0.19026339 | | +0.20014009 |
| $P$ | 2.57 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 23 | 704 | 0.4− | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 06 23 | 704 | (0.7+ | 1.5+) | 2006 10 21 | 691 | 0.2− | 0.3− | 2006 11 15 | G96 | 0.5+ | 0.1− |
| 2003 06 23 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2003 06 23 | 704 | 0.1+ | 1.4+ | 2006 10 22 | 644 | 0.6+ | 0.1+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2003 06 25 | 704 | 0.5− | 1.1− | 2006 10 22 | 644 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2003 06 25 | 704 | 0.1− | 0.9− | 2006 10 27 | 703 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.8− | 0.2+ |
| 2003 06 25 | 704 | (0.5− | 1.6−) | 2006 10 27 | 703 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2006 10 21 | 704 | 1.4− | 0.7+ | 2006 10 27 | 703 | 0.6+ | 1.1− | 2006 11 20 | 704 | 0.5− | 0.3+ |
| 2006 10 21 | 704 | 0.9− | 1.3+ | 2006 10 27 | 703 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.2− |
| 2006 10 21 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.0 | | | | |
| 2006 10 21 | 704 | 1.4+ | 1.4+ | 2006 11 01 | 691 | 0.2+ | 0.1+ | | | | |

**2006 UP$_{200}$ = 1999 TU$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.89929 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28891337 | $\omega$ | 65.06261 | | +0.37103611 | | −0.92860978 |
| $a$ | 2.2661620 | $\Omega$ | 3.16602 | | +0.82366203 | | +0.32710298 |
| $e$ | 0.0504334 | $i$ | 4.16318 | | +0.42885086 | | +0.17517852 |
| $P$ | 3.41 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.1+ | 0.1− | 2005 02 14 | 809 | 0.8+ | 0.5+ | 2006 11 11 | 703 | 1.2− | 0.9+ |
| 1999 10 06 | 704 | 0.1− | 1.2+ | 2005 02 14 | 809 | 0.5+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 1999 10 06 | 704 | 0.2− | 0.5+ | 2005 02 14 | 809 | 0.2+ | 0.6+ | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 1999 10 06 | 704 | 0.5− | 0.0 | 2005 02 14 | 809 | 0.6+ | 0.5+ | 2006 11 11 | 703 | 0.3− | 0.3− |
| 1999 10 06 | 704 | 0.8+ | 0.2− | 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.3+ | 0.2− |
| 1999 10 09 | 704 | 0.4+ | 1.3+ | 2006 10 13 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.0 |
| 1999 10 09 | 704 | 0.0 | 0.1− | 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 1999 10 09 | 704 | 1.0− | 0.7− | 2006 10 21 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2001 02 20 | 691 | 0.1+ | 0.6+ | 2006 10 21 | 691 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1+ |
| 2001 02 20 | 691 | 0.1− | 0.0 | 2006 10 21 | 691 | 0.1− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2001 02 20 | 691 | 0.0 | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.6− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2001 03 30 | 691 | 0.3− | 0.1− | 2006 10 27 | 703 | 0.0 | 0.7− | 2006 11 18 | G96 | 0.1+ | 0.1− |
| 2001 03 30 | 691 | 0.5+ | 0.5+ | 2006 10 27 | 703 | 0.8+ | 0.7+ | 2006 11 19 | 704 | (1.7+ | 0.2+) |
| 2001 03 30 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 703 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.7− |
| 2004 01 18 | 691 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 1.4− | 0.5+ |
| 2004 01 18 | 691 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.7+ | | | | |
| 2004 01 18 | 691 | 0.1+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.5+ | | | | |

**2006 US$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.99427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24132933 | $\omega$ | 198.52447 | | −0.29783568 | | −0.95258521 |
| $a$ | 2.5550299 | $\Omega$ | 268.84018 | | +0.88352492 | | −0.25037426 |
| $e$ | 0.1743820 | $i$ | 3.56982 | | +0.36149359 | | −0.17289923 |
| $P$ | 4.08 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2002 11 24 | 644 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2− | 0.2− |
| 2006 10 13 | 691 | 0.2+ | 0.1− | 2006 11 01 | G96 | 0.4+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.3− |
| 2006 10 13 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 |
| 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 1.1− | 0.2− |
| 2006 10 27 | 703 | 0.1+ | 1.4− | 2006 11 08 | 644 | 0.1+ | 1.2+ | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 2006 10 27 | 703 | 0.3+ | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.8+ |
| 2006 10 27 | 703 | 0.1− | 0.7− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |

**2006 UX$_{200}$ = 2005 QK$_{170}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 145.13160 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.15850743 | $\omega$ | 16.40167 | | −0.29717304 | | +0.94058467 |
| $a$ | 3.3814499 | $\Omega$ | 236.58686 | | −0.89665431 | | −0.33404297 |
| $e$ | 0.0510311 | $i$ | 11.35053 | | −0.32817560 | | +0.06095719 |
| $P$ | 6.22 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 17 | 691 | 0.2+ | 0.2− | 2005 08 31 | 699 | 0.0 | 1.1+ | 2006 11 08 | 644 | 0.2+ | 0.3+ |
| 2000 11 17 | 691 | 0.2+ | 0.6− | 2005 08 31 | 699 | 0.4− | 0.4− | 2006 11 08 | 644 | 0.1+ | 0.7+ |
| 2000 11 17 | 691 | 0.2+ | 0.2− | 2005 11 04 | G96 | 0.7− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.6+ |
| 2000 12 03 | 691 | 0.2− | 0.3− | 2005 11 04 | G96 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.7+ |
| 2000 12 03 | 691 | 0.3− | 0.2+ | 2005 11 04 | G96 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2000 12 03 | 691 | 0.2− | 0.0 | 2005 11 04 | G96 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.3+ |
| 2003 03 23 | 644 | 0.5+ | 0.8+ | 2006 10 21 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2003 03 23 | 644 | 0.5+ | 1.1+ | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 09 | 644 | 0.1+ | 0.5+ |
| 2003 03 23 | 644 | 0.4+ | 0.9+ | 2006 10 21 | 691 | 0.1− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.2+ |
| 2003 03 30 | 691 | 0.1+ | 0.6+ | 2006 10 27 | 703 | 0.2+ | 0.7− | 2006 11 11 | 703 | (0.3+ | 2.4+) |
| 2003 03 30 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.1− | 1.1+ |
| 2003 03 30 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.7− | 0.2− | 2006 11 11 | 703 | 0.0 | 1.1+ |
| 2005 08 29 | 644 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.5− | 0.5− | 2006 11 11 | 703 | 0.5− | 0.8+ |
| 2005 08 29 | 644 | 0.2− | 0.6+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.8+ | 0.1+ |
| 2005 08 29 | 644 | 0.4− | 0.3+ | 2006 11 01 | G96 | 0.5+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.1+ |
| 2005 08 31 | 699 | 0.5+ | 0.9+ | 2006 11 01 | G96 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.2+ |
| 2005 08 31 | 699 | 0.1+ | 1.4+ | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.1+ |

**2006 UA$_{201}$ = 2006 UC$_{89}$ = 2005 MH$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.07579 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18023414 | $\omega$ | 169.17950 | | +0.70327917 | | −0.70346182 |
| $a$ | 3.1039259 | $\Omega$ | 236.03322 | | +0.64265821 | | +0.69083628 |
| $e$ | 0.1706912 | $i$ | 7.11069 | | +0.30395532 | | +0.16699310 |
| $P$ | 5.47 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 17 | 703 | (1.8− | 1.4+) |
| 2005 06 30 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.4− | 0.1+ |
| 2005 06 30 | 691 | 0.3− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.6+ |
| 2005 07 11 | 691 | 0.2− | 0.0 | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.6− | 0.0 |
| 2005 07 11 | 691 | 0.1− | 0.2− | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1+ | 1.3+ |
| 2005 07 31 | 599 | 0.6+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.5− | 1.1+ |
| 2005 07 31 | 599 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.7+ | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2005 07 31 | 599 | (3.0− | 2.6−) | 2006 11 11 | 703 | 0.3− | 0.4+ | 2006 11 21 | 704 | 0.3− | 0.6+ |
| 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.6− | 0.6− | 2006 11 21 | 704 | 0.4+ | 0.1− |
| 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 12 | 703 | 0.8+ | 0.7+ | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 2006 10 17 | 691 | 0.1− | 0.2+ | 2006 11 12 | 703 | 0.7+ | 1.0+ | 2006 11 27 | 703 | 1.2− | 1.1− |
| 2006 10 21 | 691 | 0.1− | 0.4− | 2006 11 12 | 703 | 0.6+ | 0.7+ | 2006 11 27 | 703 | 0.8+ | 0.9+ |
| 2006 10 21 | 691 | 0.2− | 0.2− | 2006 11 12 | 703 | 0.7+ | 1.4+ | 2006 11 27 | 703 | 0.4− | 0.6− |
| 2006 10 21 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.5+ | 0.2− | 2006 11 27 | 703 | 0.5− | 0.1− |
| 2006 10 27 | 703 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2006 10 27 | 703 | 0.6+ | 0.7− | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 12 01 | G96 | 0.5+ | 0.2− |
| 2006 10 27 | 703 | 0.4+ | 0.6− | 2006 11 12 | G96 | 0.3+ | 0.3− | 2006 12 01 | G96 | 0.3+ | 0.1− |
| 2006 10 27 | 703 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.3+ | 0.4− | 2006 12 01 | G96 | 1.0− | 2.2− |
| 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.0 | 0.1+ | | | | |

**2006 UJ$_{201}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.26658 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20079198 | $\omega$ | 208.44064 | | +0.14990082 | | −0.98846372 |
| $a$ | 2.8882746 | $\Omega$ | 232.94630 | | +0.91217978 | | +0.14671729 |
| $e$ | 0.0960845 | $i$ | 1.55533 | | +0.38138929 | | +0.03759669 |
| $P$ | 4.91 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 31 | 807 | 0.1+ | 0.3+ | 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2000 07 31 | 807 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.5− | 0.3+ |
| 2001 10 23 | 291 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 18 | 691 | 0.3− | 0.0 |
| 2001 10 23 | 291 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 18 | 691 | 0.1+ | 0.4+ |
| 2001 10 23 | 291 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.3− | 0.4− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2006 09 27 | G96 | 0.0 | 0.7− | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.1− | 0.1+ |
| 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.2+ |
| 2006 09 27 | G96 | 0.4− | 0.5− | 2006 11 09 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2006 10 21 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.2− | 0.2+ | | | | |

**2006 UT$_{201}$ = 1994 RW$_2$ = 1995 VQ$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.17212 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17880181 | $\omega$ | 78.39579 | | +0.79366492 | | +0.60808712 |
| $a$ | 3.1204803 | $\Omega$ | 244.15026 | | −0.56568152 | | +0.72674695 |
| $e$ | 0.0777811 | $i$ | 1.14967 | | −0.22383120 | | +0.31948226 |
| $P$ | 5.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 02 | 691 | 0.2+ | 0.2− | 2005 08 06 | 644 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.4− | 0.2− |
| 1994 09 02 | 691 | 0.0 | 0.6+ | 2005 08 27 | 644 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.4+ |
| 1994 09 02 | 691 | 0.1+ | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 1994 09 08 | 691 | 0.3− | 0.1+ | 2005 08 27 | 644 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.5+ | 0.3+ |
| 1994 09 08 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.5+ | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 1994 09 08 | 691 | 0.1+ | 0.3− | 2006 10 17 | G96 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.5+ |
| 1995 11 15 | 691 | 0.0 | 0.5− | 2006 10 17 | G96 | 0.9+ | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.4+ |
| 1995 11 15 | 691 | 0.2+ | 0.7− | 2006 10 17 | G96 | 0.4+ | 0.1− | 2006 11 18 | 691 | 0.2− | 0.2+ |
| 1995 11 27 | 691 | 0.1− | 0.3− | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.5− | 0.1+ |
| 1995 11 27 | 691 | 0.1+ | 0.3− | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 1995 11 27 | 691 | 0.2+ | 0.1− | 2006 10 21 | 691 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.5− | 0.2+ |
| 2005 07 28 | 644 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2005 07 28 | 644 | 0.1− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.5+ | 0.1+ |
| 2005 07 28 | 644 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2005 08 06 | 644 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 08 06 | 644 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.3+ | | | | |

**2006 UV$_{201}$ = 2004 EN$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.24751 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23044321 | $\omega$ | 76.63869 | | +0.44349918 | | −0.89440532 |
| $a$ | 2.6348755 | $\Omega$ | 346.57739 | | +0.69518288 | | +0.38402190 |
| $e$ | 0.0539809 | $i$ | 14.43306 | | +0.56571127 | | +0.22927344 |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 691 | 0.5+ | 0.2+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 699 | 1.9+ | 2.1− |
| 1993 09 14 | 691 | 0.3− | 0.1− | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 09 27 | 703 | 0.2− | 0.1+ |
| 1993 09 14 | 691 | 0.2− | 0.1− | 2004 03 29 | 691 | 0.2− | 0.1+ | 2006 09 27 | 703 | 0.7+ | 1.0− |
| 2002 11 25 | 644 | 0.5+ | 0.4− | 2006 08 29 | 703 | 1.1− | 0.7+ | 2006 09 27 | 703 | 0.5+ | 0.1+ |
| 2002 11 25 | 644 | 0.1+ | 0.5− | 2006 08 29 | 703 | 0.3− | 0.4− | 2006 09 27 | 703 | 0.3+ | 0.5+ |
| 2002 11 25 | 644 | 0.3+ | 0.6− | 2006 08 29 | 703 | 0.2+ | 0.6+ | 2006 10 22 | 644 | 0.2− | 0.3+ |
| 2004 03 15 | 704 | (0.2+ | 1.5+) | 2006 08 29 | 703 | 1.4− | 1.8+ | 2006 10 22 | 644 | 0.1− | 0.0 |
| 2004 03 15 | 704 | 1.0+ | 0.9+ | 2006 09 16 | 644 | 0.3+ | 0.1− | 2006 10 22 | 644 | 0.4− | 0.3+ |
| 2004 03 15 | 704 | 0.0 | 0.6+ | 2006 09 16 | 644 | 0.2+ | 0.6+ | 2006 10 23 | 703 | 0.9− | 0.4+ |
| 2004 03 15 | 704 | 0.8+ | 1.1+ | 2006 09 16 | 644 | 0.0 | 0.5+ | 2006 10 23 | 703 | 0.5+ | 0.6+ |
| 2004 03 18 | 704 | 0.2− | 0.0 | 2006 09 27 | 699 | 1.8− | 0.4− | 2006 10 23 | 703 | 0.2+ | 1.6+ |
| 2004 03 18 | 704 | 0.1+ | 0.7− | 2006 09 27 | 699 | 0.3− | 0.1+ | 2006 10 23 | 703 | 0.6− | 0.3− |
| 2004 03 18 | 704 | (2.2− | 1.1−) | 2006 09 27 | 699 | 0.6− | 0.2+ | | | | |

**2006 UP$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.96448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21500363 | $\omega$ | 317.69793 | | +0.48312516 | | −0.86925025 |
| $a$ | 2.7595537 | $\Omega$ | 103.16269 | | +0.82937439 | | +0.41597350 |
| $e$ | 0.1504307 | $i$ | 6.18170 | | +0.28058547 | | +0.26715173 |
| $P$ | 4.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 13 | 291 | 0.2+ | 0.3− | 2006 10 22 | 703 | 0.5+ | 0.5− | 2006 10 23 | 644 | 0.2− | 0.5+ |
| 2003 01 13 | 291 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 10 28 | 703 | 1.5+ | 0.1+ |
| 2003 01 13 | 291 | 0.2− | 0.2+ | 2006 10 22 | 644 | 0.3− | 0.3+ | 2006 10 28 | 703 | 0.3− | 0.1− |
| 2006 10 22 | 703 | 0.7− | 0.7− | 2006 10 22 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 703 | 0.5− | 0.4+ |
| 2006 10 22 | 703 | 0.2+ | 0.3− | 2006 10 23 | 644 | 0.2− | 0.2+ | 2006 10 28 | 703 | 0.7− | 0.6− |
| 2006 10 22 | 703 | 0.7+ | 0.4− | 2006 10 23 | 644 | 0.0 | 0.6+ | | | | |

**2006 UQ$_{202}$ = 2001 YX$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.03592 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18475175 | $\omega$ | 291.68750 | | +0.97038302 | | +0.15248021 |
| $a$ | 3.0531187 | $\Omega$ | 59.98108 | | −0.04285250 | | +0.87197119 |
| $e$ | 0.1945923 | $i$ | 12.49736 | | −0.23774032 | | +0.46520536 |
| $P$ | 5.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2+ | 0.5− | 2001 12 19 | 704 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.9+ | 0.7+ |
| 2001 12 18 | 704 | 0.2+ | 0.3− | 2006 10 11 | 644 | 0.1+ | 0.1− | 2006 10 22 | 703 | 0.5− | 0.9+ |
| 2001 12 18 | 704 | 0.6+ | 0.4+ | 2006 10 11 | 644 | 0.1− | 0.5− | 2006 10 22 | 703 | 0.3− | 0.6+ |
| 2001 12 19 | 704 | 0.4− | 0.7− | 2006 10 11 | 644 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.8+ | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 10 23 | 644 | 0.2+ | 0.4− |
| 2001 12 19 | 704 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.1− |
| 2001 12 19 | 704 | 0.9+ | 1.1+ | 2006 10 20 | 644 | 0.0 | 0.3+ | 2006 10 28 | 703 | 0.0 | 0.6+ |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 10 28 | 703 | 0.3− | 0.3− |
| 2001 12 19 | 704 | 1.0− | 1.0− | 2006 10 21 | 644 | 0.3+ | 0.5− | 2006 10 28 | 703 | 1.2− | 1.0− |
| 2001 12 19 | 704 | 1.0− | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 10 28 | 703 | 0.2+ | 0.5− |
| 2001 12 19 | 704 | 0.2+ | 0.1+ | 2006 10 22 | 703 | 0.1+ | 0.0 | | | | |

**2006 US$_{202}$ = 2001 MX$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.81676 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23117383 | $\omega$ | 333.05233 | | +0.06760631 | | +0.98074275 |
| $a$ | 2.6293210 | $\Omega$ | 300.31246 | | −0.87285891 | | −0.03081517 |
| $e$ | 0.1557174 | $i$ | 12.25404 | | −0.48326670 | | +0.19285768 |
| $P$ | 4.26 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.1− | 2003 12 19 | 291 | 0.3− | 0.2+ | 2006 09 28 | 703 | 0.3+ | 0.5− |
| 2000 05 05 | 645 | 0.1− | 0.0 | 2003 12 19 | 291 | 0.4− | 0.2+ | 2006 09 28 | 703 | 0.4+ | 0.0 |
| 2001 06 25 | 644 | 0.7− | 0.2+ | 2003 12 19 | 291 | 0.0 | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.1− |
| 2001 06 25 | 644 | 0.1− | 0.0 | 2004 01 28 | 691 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.0 | 0.6+ |
| 2001 06 25 | 644 | 0.2− | 0.4+ | 2004 01 28 | 691 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.4+ | 0.2+ |
| 2001 06 30 | 644 | 0.5− | 0.9+ | 2004 01 28 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 06 30 | 644 | 0.1− | 0.8+ | 2006 09 28 | 703 | 0.0 | 0.0 | 2006 10 23 | 644 | 0.0 | 0.3− |
| 2001 06 30 | 644 | 0.2+ | 0.4+ | 2006 09 28 | 703 | 0.8− | 0.7+ | 2006 10 23 | 644 | 0.0 | 0.1− |

**2006 UF$_{203}$ = 2001 YH$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.06216 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18244646 | $\omega$ | 319.69176 | | +0.89838941 | | −0.38909199 |
| $a$ | 3.0787830 | $\Omega$ | 64.31735 | | +0.43813492 | | +0.76168188 |
| $e$ | 0.1414093 | $i$ | 13.06508 | | +0.03056570 | | +0.51811981 |
| $P$ | 5.40 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.7+ | 0.5+ | 2006 10 11 | 644 | 0.4+ | 0.1+ | 2006 10 22 | 644 | 0.1− | 0.2+ |
| 2001 12 18 | 704 | 0.9+ | 0.6+ | 2006 10 11 | 644 | 0.0 | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.2+ |
| 2001 12 18 | 704 | 0.4− | 0.0 | 2006 10 17 | 703 | 0.7+ | 0.4+ | 2006 10 23 | 644 | 0.1+ | 0.1+ |
| 2001 12 18 | 704 | 0.3− | 0.4− | 2006 10 17 | 703 | (1.6+ | 0.8−) | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 12 18 | 704 | 0.6− | 0.6− | 2006 10 17 | 703 | 0.6− | 0.3+ | 2006 10 23 | 644 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.1+ | 0.8+ | 2006 10 17 | 703 | 0.7− | 0.6− | 2006 10 28 | 703 | (1.9− | 0.9−) |
| 2001 12 19 | 704 | 0.6− | 0.9− | 2006 10 22 | 703 | 1.4+ | 0.4− | 2006 10 28 | 703 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 10 22 | 703 | 0.1− | 0.7− | 2006 10 28 | 703 | 0.3− | 0.0 |
| 2001 12 19 | 704 | 0.3+ | 0.3− | 2006 10 22 | 703 | 0.1− | 0.6+ | 2006 10 28 | 703 | 0.9− | 0.0 |
| 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 10 22 | 703 | 0.6− | 0.1+ | | | | |
| 2006 10 11 | 644 | 0.1+ | 0.2+ | 2006 10 22 | 644 | 0.1− | 0.1+ | | | | |

## 2006 UH$_{203}$ = 2005 JD$_{129}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.65945 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27310025 | $\omega$ | 294.90551 | | +0.93913504 | | −0.32613501 |
| $a$ | 2.3528161 | $\Omega$ | 84.27892 | | +0.34113919 | | +0.84812293 |
| $e$ | 0.1485864 | $i$ | 6.23048 | | +0.04061321 | | +0.41752060 |
| $P$ | 3.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | 691 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.0 | 0.4− | 2006 11 13 | 703 | 0.8− | 0.0 |
| 2005 05 13 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 703 | 0.2− | 0.2− | 2006 11 13 | 703 | 1.1− | 0.4− |
| 2005 05 13 | 691 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.7+ | 0.5+ |
| 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 10 22 | 644 | 0.3+ | 0.2− | 2006 11 14 | 704 | 0.3+ | 0.5+ |
| 2005 05 14 | G96 | 0.0 | 0.4− | 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 14 | 704 | 0.5− | 0.7+ |
| 2005 05 14 | G96 | 0.5+ | 0.2− | 2006 10 22 | 644 | 0.2+ | 0.2− | 2006 11 14 | 704 | 0.0 | 1.1+ |
| 2005 05 14 | G96 | 0.4+ | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.1− | 2006 11 14 | 704 | 0.9− | 0.5+ |
| 2006 09 15 | 644 | 0.0 | 0.3− | 2006 10 23 | 644 | 0.1+ | 0.5− | 2006 11 17 | 704 | 0.0 | 1.1+ |
| 2006 09 15 | 644 | 0.0 | 0.2− | 2006 10 23 | 644 | 0.2+ | 0.1− | 2006 11 17 | 704 | (2.1− | 1.5+) |
| 2006 09 15 | 644 | 0.1+ | 0.6− | 2006 10 28 | 703 | 0.4− | 0.3+ | 2006 11 17 | 704 | (0.9− | 1.8+) |
| 2006 09 29 | 699 | 0.5− | 0.5+ | 2006 10 28 | 703 | 0.6+ | 0.1− | 2006 11 17 | 704 | 0.0 | 0.4+ |
| 2006 09 29 | 699 | 0.0 | 0.5+ | 2006 10 28 | 703 | 0.6− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2006 09 29 | 699 | 0.4− | 1.3+ | 2006 10 28 | 703 | 0.5+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 09 29 | 699 | 1.1+ | 0.3− | 2006 11 13 | 703 | 0.6− | 0.2− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 13 | 703 | 1.2+ | 1.1− | 2006 11 24 | G96 | 0.4+ | 0.1− |

## 2006 UN$_{203}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.54073 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23887100 | $\omega$ | 41.64260 | | +0.97794186 | | +0.13850054 |
| $a$ | 2.5725299 | $\Omega$ | 309.70158 | | −0.19992157 | | +0.83748229 |
| $e$ | 0.2087726 | $i$ | 11.72552 | | +0.06050696 | | +0.52862180 |
| $P$ | 4.13 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.0 | 0.0 | 2006 09 25 | 703 | (0.3− | 2.1+) | 2006 10 31 | 703 | 0.7− | 0.0 |
| 2000 02 12 | 645 | 0.0 | 0.1− | 2006 10 22 | 644 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.2− | 0.6− |
| 2002 12 12 | 644 | 0.2+ | 0.2+ | 2006 10 22 | 644 | 0.3+ | 0.1− | 2006 11 16 | 703 | 0.2− | 0.0 |
| 2002 12 12 | 644 | 0.0 | 0.2+ | 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.0 | 0.8− |
| 2002 12 12 | 644 | 0.1− | 0.3− | 2006 10 23 | 703 | 0.8+ | 0.3− | 2006 11 16 | 703 | 0.0 | 0.4− |
| 2004 03 21 | 691 | 0.3+ | 0.3+ | 2006 10 23 | 703 | 0.1− | 0.3− | 2006 11 22 | 703 | 1.2− | 0.0 |
| 2004 03 21 | 691 | 0.0 | 0.0 | 2006 10 23 | 703 | 0.7+ | 0.3− | 2006 11 22 | 703 | 0.2− | 0.2+ |
| 2004 03 21 | 691 | 0.1− | 0.2− | 2006 10 31 | 703 | 0.2+ | 0.0 | 2006 11 22 | 703 | 0.4− | 0.5+ |
| 2006 09 25 | 703 | 0.3+ | 1.0+ | 2006 10 31 | 703 | 0.3+ | 0.2+ | 2006 11 22 | 703 | 0.3− | 0.8+ |
| 2006 09 25 | 703 | 0.2+ | 0.2+ | 2006 10 31 | 703 | 0.1− | 0.2− | | | | |

## 2006 UW$_{203}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.25405 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24428746 | $\omega$ | 139.34190 | | −0.00971509 | | −0.99610902 |
| $a$ | 2.5343617 | $\Omega$ | 311.02426 | | +0.88471920 | | +0.03226148 |
| $e$ | 0.1829005 | $i$ | 6.66730 | | +0.46602313 | | −0.08201232 |
| $P$ | 4.03 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 06 | 699 | 0.7− | 0.2− | 2002 11 14 | 644 | 0.2+ | 0.2− | 2006 10 22 | 644 | 0.4+ | 0.3− |
| 2002 11 06 | 699 | 0.1+ | 0.3− | 2006 09 28 | 703 | 0.9+ | 0.2− | 2006 10 22 | 644 | 0.1+ | 0.1+ |
| 2002 11 06 | 699 | 0.6− | 0.7+ | 2006 09 28 | 703 | 0.4+ | 0.1+ | 2006 10 23 | 644 | 0.0 | 0.2+ |
| 2002 11 06 | 699 | 1.0+ | 0.6+ | 2006 09 28 | 703 | 0.4− | 0.4− | 2006 10 23 | 644 | 0.2− | 0.2+ |
| 2002 11 14 | 644 | 0.0 | 0.5− | 2006 09 28 | 703 | 0.7− | 0.4+ | 2006 10 23 | 644 | 0.4− | 0.1− |
| 2002 11 14 | 644 | 0.1+ | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.1− | | | | |

## 2006 UX$_{203}$ = 2000 SZ$_{18}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.43232 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17599647 | $\omega$ | 26.40389 | | +0.98317835 | | −0.17131120 |
| $a$ | 3.1535525 | $\Omega$ | 343.09656 | | +0.10351967 | | +0.80838915 |
| $e$ | 0.0775807 | $i$ | 12.58374 | | +0.15047927 | | +0.56316912 |
| $P$ | 5.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.7− | 0.6+ | 2000 09 26 | 704 | 0.6− | 1.3+ | 2005 07 10 | E12 | 0.2+ | 0.6+ |
| 2000 09 23 | 704 | 0.8− | 0.4+ | 2000 09 26 | 704 | 0.1+ | 0.3+ | 2005 07 10 | E12 | 0.1− | 1.1+ |
| 2000 09 23 | 704 | 0.9− | 1.2+ | 2000 09 26 | 704 | 0.0 | 0.5+ | 2005 07 10 | E12 | 0.0 | 0.0 |
| 2000 09 24 | 704 | 0.1− | 0.2+ | 2000 09 26 | 704 | 0.3− | 0.0 | 2005 07 10 | E12 | 1.1− | 0.2+ |
| 2000 09 24 | 704 | 1.8− | 0.3− | 2000 09 26 | 704 | 0.1+ | 0.3+ | 2006 09 17 | 703 | 0.4− | 0.8− |
| 2000 09 24 | 704 | 0.7− | 0.6− | 2000 09 26 | 704 | 0.7− | 0.6− | 2006 09 17 | 703 | 1.2+ | 0.1+ |
| 2000 09 24 | 704 | 0.4+ | 0.8− | 2000 09 26 | 704 | 1.6+ | 0.2+ | 2006 09 17 | 703 | 0.5+ | 1.3+ |
| 2000 09 25 | 704 | 0.5+ | 0.4+ | 2000 09 26 | 704 | 0.6− | 0.5+ | 2006 09 17 | 703 | 1.0+ | 0.2+ |
| 2000 09 25 | 704 | 0.6− | 0.0 | 2000 09 26 | 704 | 0.8− | 0.2− | 2006 10 22 | 644 | 0.0 | 0.0 |
| 2000 09 25 | 704 | 0.8+ | 0.3− | 2000 09 26 | 704 | 0.5+ | 1.6+ | 2006 10 22 | 644 | 0.1− | 0.2− |
| 2000 09 25 | 704 | 0.2+ | 1.0+ | 2000 09 26 | 704 | 0.3+ | 0.8+ | 2006 10 22 | 644 | 0.4− | 0.0 |
| 2000 09 25 | 704 | 1.1− | 0.0 | 2003 03 07 | 291 | 0.3+ | 0.3+ | 2006 10 27 | 703 | 1.0− | 0.9− |
| 2000 09 25 | 704 | 0.5+ | 0.8− | 2003 03 07 | 291 | 0.0 | 0.5+ | 2006 10 27 | 703 | 0.9+ | 0.1+ |
| 2000 09 25 | 704 | 0.4+ | 0.4+ | 2003 03 07 | 291 | 0.1− | 0.4+ | 2006 10 27 | 703 | 0.4− | 1.0− |
| 2000 09 25 | 704 | 0.2− | 0.3+ | 2003 03 24 | 691 | 0.4+ | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.1− |
| 2000 09 26 | 704 | 0.6− | 0.2+ | 2003 03 24 | 691 | 0.3+ | 0.1+ | | | | |
| 2000 09 26 | 704 | 0.1− | 0.4+ | 2003 03 24 | 691 | 0.5+ | 0.3+ | | | | |

## 2006 UG$_{204}$ = 2005 JK$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.81856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22312081 | $\omega$ | 33.62194 | | +0.63496438 | | +0.74388720 |
| $a$ | 2.6922125 | $\Omega$ | 276.70991 | | −0.74695549 | | +0.52229636 |
| $e$ | 0.2844253 | $i$ | 12.11586 | | −0.19717437 | | +0.41693926 |
| $P$ | 4.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 05 | 644 | 0.2− | 0.1− | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 703 | 0.5− | 0.1− |
| 2005 05 05 | 644 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 10 23 | 703 | 0.7− | 0.4+ |
| 2005 05 05 | 644 | 0.0 | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.2+ | 2006 10 23 | 703 | 1.1− | 0.1− |
| 2005 05 12 | 644 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.1− | 0.3− | 2006 11 15 | 703 | 1.0− | 0.1− |
| 2005 05 12 | 644 | 0.2− | 0.1+ | 2006 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.6− | 0.3− |
| 2005 05 12 | 644 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.3+ | 0.8+ |
| 2006 10 12 | 644 | 0.1+ | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 1.6+ | 0.4− |
| 2006 10 12 | 644 | 0.2− | 0.0 | 2006 10 23 | 703 | 0.8+ | 0.7− | | | | |

**2006 US$_{204}$ = 2004 GL$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.02676 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22790483 | $\omega$ | 115.25169 | | +0.16388976 | −0.98612566 | |
| $a$ | 2.6544041 | $\Omega$ | 325.28344 | | +0.88759000 | +0.15908142 | |
| $e$ | 0.0571047 | $i$ | 2.65570 | | +0.43049290 | +0.04742661 | |
| $P$ | 4.32 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.3− | 0.5+ | 2006 10 22 | 644 | 0.4+ | 0.4+ | 2006 11 15 | 704 | 0.5− | 0.5− | |
| 2001 08 21 | 807 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.0 | 0.4− | |
| 2001 08 23 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.0 | |
| 2001 08 23 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1+ | |
| 2001 08 23 | 691 | 0.1− | 0.4+ | 2006 11 09 | 691 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.2− | |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.6+ | 1.3+ | |
| 2004 04 12 | 691 | 0.0 | 0.5+ | 2006 11 09 | 691 | 0.3− | 0.4+ | 2006 11 17 | 704 | 1.3− | 0.8+ | |
| 2004 04 12 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.4+ | 0.1+ | 2006 11 17 | 704 | (0.5− | 1.5+) | |
| 2004 04 19 | 691 | 0.2+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.6+ | 1.1+ | |
| 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.6− | 0.5+ | |
| 2004 04 19 | 691 | 0.1+ | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.8+ | 2006 11 19 | 704 | 0.1+ | 1.2− | |
| 2004 05 19 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.3− | 0.3+ | |
| 2004 05 19 | 691 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.7− | 0.5− | 2006 11 19 | 704 | 0.9+ | 1.0+ | |
| 2004 05 19 | 691 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.8+ | 1.1− | 2006 11 19 | 704 | 0.2+ | 0.3− | |
| 2004 05 19 | 691 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2+ | 0.1+ | |
| 2004 05 19 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.3− | 0.3+ | 2006 11 22 | 704 | 0.4− | 0.6+ | |
| 2004 05 19 | 691 | 0.3+ | 0.3+ | 2006 11 13 | 691 | 0.2− | 0.5+ | 2006 11 22 | 704 | 0.8+ | 0.6+ | |
| 2005 07 11 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.9+ | |
| 2005 07 11 | 691 | 0.2+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.2− | |
| 2005 07 11 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8+ | 1.1+ | |
| 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.2− | | | | | |
| 2006 10 22 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.2+ | 1.0+ | | | | | |

**2006 UT$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.85597 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18902109 | $\omega$ | 300.43806 | | +0.88971897 | +0.44421387 | |
| $a$ | 3.0069708 | $\Omega$ | 33.51632 | | −0.32540579 | +0.77879898 | |
| $e$ | 0.1133703 | $i$ | 10.98670 | | −0.32017375 | +0.44288394 | |
| $P$ | 5.21 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 21 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.0 | 0.5− | |
| 2004 05 21 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.3+ | 2006 11 15 | 704 | 0.4+ | 0.7− | |
| 2004 05 21 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.4+ | 2006 11 15 | 704 | 0.5+ | 0.8+ | |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 27 | 691 | (2.4− | 1.2+) | 2006 11 16 | 704 | 0.8+ | 0.4− | |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.9− | |
| 2006 10 04 | G96 | 0.5− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.5− | |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.5+ | 0.2+ | |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.7− | |
| 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.9− | 0.4+ | |
| 2006 10 04 | G96 | 0.1+ | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.0 | |
| 2006 10 19 | 691 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.4+ | |
| 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.0 | 2006 11 22 | 704 | 1.1− | 1.1− | |
| 2006 10 19 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | (0.5− | 1.5−) | 2006 11 22 | 704 | (0.5+ | 1.6−) | |
| 2006 10 22 | 644 | 0.1− | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.3− | 0.3− | |
| 2006 10 22 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.7− | |
| 2006 10 22 | 644 | 0.4+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.8− | 1.2− | |
| 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1+ | | | | | |
| 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.5+ | 0.5+ | | | | | |

**2006 UV$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.18922 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21605035 | $\omega$ | 190.79420 | | +0.25691843 | −0.93775610 | |
| $a$ | 2.7506335 | $\Omega$ | 244.65947 | | +0.90483300 | +0.31834970 | |
| $e$ | 0.1629411 | $i$ | 14.98456 | | +0.33951461 | −0.13880550 | |
| $P$ | 4.56 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 608 | 0.0 | 1.2− | 2006 10 22 | 644 | 0.0 | 0.3− | 2006 11 16 | 704 | 0.7+ | 1.2+ | |
| 2001 08 21 | 608 | 0.3− | 0.3− | 2006 10 22 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.9+ | 0.1− | |
| 2001 08 21 | 608 | 0.6− | 0.5+ | 2006 10 23 | 644 | 0.4+ | 0.5+ | 2006 11 16 | 704 | 0.2− | 0.3− | |
| 2001 09 21 | 644 | 0.7− | 0.0 | 2006 10 23 | 644 | 0.1+ | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.4− | |
| 2001 09 21 | 644 | 0.5− | 0.2+ | 2006 10 23 | 644 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.3+ | |
| 2001 09 21 | 699 | 1.0+ | 1.2+ | 2006 10 27 | 703 | 1.1− | 0.0 | 2006 11 16 | 704 | 0.5− | 0.3+ | |
| 2001 09 21 | 644 | 0.4− | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.0 | |
| 2001 09 21 | 699 | 0.7+ | 0.4+ | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.0 | 0.5+ | |
| 2001 09 21 | 699 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.6+ | |
| 2001 09 21 | 699 | 0.5+ | 0.3+ | 2006 11 14 | 703 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.8+ | |
| 2001 09 30 | 644 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.1+ | 0.9+ | |
| 2001 09 30 | 644 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.2+ | 1.3+ | |
| 2001 09 30 | 644 | 0.2− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.1− | 0.9+ | |
| 2001 10 15 | 608 | 0.0 | 0.6− | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1− | 0.8+ | |
| 2001 10 15 | 608 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.1− | 0.7− | 2006 12 01 | G96 | 0.1− | 0.2− | |
| 2001 10 15 | 608 | 0.3+ | 0.5− | 2006 11 15 | 704 | 0.0 | 1.3+ | 2006 12 01 | G96 | 0.1− | 0.3− | |
| 2003 01 14 | 644 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.3+ | 0.8+ | 2006 12 01 | G96 | 0.3− | 0.3− | |
| 2003 01 14 | 644 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.4− | |
| 2003 01 14 | 644 | 0.1+ | 0.3+ | 2006 11 15 | 704 | 0.1− | 0.2+ | 2006 12 01 | 704 | 0.1+ | 0.4− | |
| 2004 06 08 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.7+ | 2006 12 01 | 704 | 0.5− | 0.8− | |
| 2004 06 08 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.8− | 0.0 | 2006 12 01 | 704 | 0.7+ | 0.2− | |
| 2004 06 08 | 691 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.6+ | 0.5+ | 2006 12 01 | 704 | 0.2+ | 0.1+ | |
| 2006 10 22 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | (2.6− | 1.8+) | 2006 12 01 | 704 | 0.2+ | 0.8− | |

**2006 UJ$_{205}$ = 2006 SQ$_{200}$ = 1995 UJ$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.94379 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17986725 | $\omega$ | 142.24486 | | +0.99570316 | +0.09205425 | |
| $a$ | 3.1081453 | $\Omega$ | 212.47763 | | −0.08887007 | +0.91937811 | |
| $e$ | 0.1371969 | $i$ | 1.07363 | | −0.02602546 | +0.38245249 | |
| $P$ | 5.48 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.7+ | 0.4− | 2006 09 24 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− | |
| 1995 10 19 | 691 | 0.1− | 0.2− | 2006 09 24 | 691 | 0.4− | 0.3+ | 2006 10 27 | G96 | 0.4− | 0.1+ | |
| 1995 10 19 | 691 | 0.4+ | 0.1+ | 2006 09 28 | 691 | 0.5+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.4+ | |
| 1995 10 22 | 691 | 0.1− | 0.2− | 2006 09 28 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.1+ | |
| 1995 10 22 | 691 | 0.0 | 0.1− | 2006 09 28 | 691 | 0.5− | 0.3+ | 2006 10 31 | 691 | 0.5+ | 0.2+ | |
| 1995 10 22 | 691 | 0.5+ | 0.6+ | 2006 10 23 | 691 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.1− | |
| 1995 10 28 | 691 | 0.1− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 1.0− | 0.1+ | |
| 1995 10 28 | 691 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2+ | |
| 1995 10 28 | 691 | 0.5− | 0.4− | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.5− | |
| 2006 09 24 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1− | | | | | |

**2006 UG$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.78781 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24761847 | $\omega$ | 76.41029 | | −0.97183036 | −0.23538390 | |
| $a$ | 2.5115820 | $\Omega$ | 89.97449 | | +0.21139781 | −0.89280605 | |
| $e$ | 0.0946979 | $i$ | 0.67839 | | +0.10419562 | −0.38404660 | |
| $P$ | 3.98 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 691 | 0.1− | 0.3− | 2004 02 14 | 691 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.4+ | 0.1− | |
| 2000 03 09 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.4+ | |
| 2000 03 09 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.2− | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 291 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.2− |
| 2002 10 10 | 291 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 16 | G96 | 1.1+ | 1.0− |
| 2002 10 10 | 291 | 0.4− | 0.2+ | 2006 10 27 | G96 | 0.5− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.1− |
| 2004 02 14 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.4− | 2006 11 16 | G96 | 0.5+ | 0.1− |
| 2004 02 14 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.4− | | | | |

**2006 UK$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.79976 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24003075 | $\omega$ | 123.24265 | | +0.95640883 | | +0.25351489 |
| $a$ | 2.5642368 | $\Omega$ | 222.58124 | | −0.28284767 | | +0.92765884 |
| $e$ | 0.2986902 | $i$ | 12.37043 | | +0.07265905 | | +0.27418838 |
| $P$ | 4.11 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.3− |
| 2005 04 14 | 691 | 0.2− | 0.2− | 2006 10 28 | 704 | (0.2− | 1.9+) | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2005 04 14 | 691 | 0.3+ | 0.5+ | 2006 10 28 | 704 | (0.2− | 2.0+) | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2005 05 10 | 807 | 0.1− | 0.4+ | 2006 10 28 | 704 | (1.7+ | 1.7+) | 2006 11 12 | G96 | 0.0 | 0.2− |
| 2005 05 10 | 807 | 0.2− | 0.4+ | 2006 10 28 | 704 | (1.7− | 0.4+) | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2006 08 29 | 703 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2006 08 29 | 703 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2006 08 29 | 703 | 0.9+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.3− | 0.4− |
| 2006 08 29 | 703 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.8− |
| 2006 09 18 | 703 | 0.8+ | 0.2+ | 2006 11 08 | 644 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.7− |
| 2006 09 18 | 703 | 0.4+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.1+ | 0.4− |
| 2006 09 18 | 703 | 0.5− | 0.1− | 2006 11 08 | 644 | 0.4− | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.4+ |
| 2006 09 18 | 703 | 0.5+ | 0.4− | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.9+ |
| 2006 10 17 | 691 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.3+ |
| 2006 10 17 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | (1.6− | 1.4+) |
| 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.0+ |
| 2006 10 22 | 644 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.7+ | 0.5+ |
| 2006 10 22 | 644 | 0.1+ | 0.1+ | 2006 11 10 | 644 | 0.2+ | 0.2+ | 2006 11 23 | 683 | 0.3− | 0.7− |
| 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 10 | 644 | 0.2− | 0.3+ | 2006 11 23 | 683 | 0.7− | 0.7+ |
| 2006 10 23 | 704 | 1.3− | 0.0 | 2006 11 10 | 644 | 0.1+ | 0.3+ | 2006 11 23 | 683 | 0.3− | 0.8+ |
| 2006 10 23 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | 0.3+ | 0.0 | 2006 11 25 | 683 | 1.6+ | 0.4− |
| 2006 10 23 | 704 | 0.4+ | 0.7+ | 2006 11 11 | 703 | 0.1+ | 0.6− | 2006 11 25 | 683 | 2.5+ | 0.1+ |
| 2006 10 23 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.2+ | 2006 11 25 | 683 | 0.3+ | 0.4− |
| 2006 10 23 | 704 | 1.0− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.3+ | 2006 11 28 | 704 | 0.8− | 0.1− |
| 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 11 | 644 | 0.0 | 0.5− | 2006 11 28 | 704 | 0.7− | 0.8− |
| 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 11 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.5− |
| 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 11 | 644 | 0.0 | 0.3+ | 2006 11 28 | 704 | 0.5− | 0.5− |

**2006 UW$_{207}$ = 2000 EM$_{72}$ = 2006 WD$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.04390 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23796977 | $\omega$ | 81.39343 | | +0.14360617 | | +0.98963100 |
| $a$ | 2.5790209 | $\Omega$ | 196.86391 | | −0.91170623 | | +0.13120280 |
| $e$ | 0.1439625 | $i$ | 0.55006 | | −0.38492728 | | +0.05844923 |
| $P$ | 4.14 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 05 | 691 | 0.5− | 0.5+ | 2005 06 13 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.1− |
| 1997 08 05 | 691 | 0.3− | 0.6+ | 2005 06 13 | G96 | 0.9+ | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.2− |
| 1997 08 05 | 691 | 0.3+ | 0.2+ | 2005 06 13 | G96 | 0.3− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1+ |
| 2000 03 10 | 691 | 0.0 | 0.1+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.6− | 0.2− |
| 2000 03 10 | 691 | 0.0 | 0.0 | 2006 10 11 | 691 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.5− |
| 2000 03 10 | 691 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.1+ |
| 2000 03 12 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 2000 03 12 | 691 | 0.3+ | 0.1+ | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2000 03 12 | 691 | 0.0 | 0.2+ | 2006 10 19 | 691 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2004 01 30 | 691 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2004 01 30 | 691 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.5− | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.1− |
| 2004 01 30 | 691 | 0.2+ | 0.6+ | 2006 10 23 | 691 | 0.3− | 0.4− | | | | |

**2006 UY$_{207}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 269.95715 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21305097 | $\omega$ | 89.97872 | | −0.66699682 | | −0.74452261 |
| $a$ | 2.7763894 | $\Omega$ | 41.90315 | | +0.66561300 | | −0.61251476 |
| $e$ | 0.0917904 | $i$ | 2.42920 | | +0.33477541 | | −0.26554049 |
| $P$ | 4.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 |
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.5+ |
| 2002 11 07 | 645 | 0.0 | 0.1− | 2006 10 23 | 691 | 0.5− | 0.3− | 2006 11 14 | G96 | 0.8+ | 0.2+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2+ |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 12 06 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.9+ | 0.4+ | 2006 11 27 | G96 | 0.6+ | 0.2− |
| 2004 04 25 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 27 | G96 | 0.2+ | 0.2− |
| 2004 04 25 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 04 25 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.4− | 0.2+ |

**2006 UQ$_{208}$ = 1999 TC$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 95.85397 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28981543 | $\omega$ | 230.61741 | | +0.09852951 | | +0.99442794 |
| $a$ | 2.2614572 | $\Omega$ | 45.08127 | | −0.89597083 | | +0.10503943 |
| $e$ | 0.1725345 | $i$ | 3.03435 | | −0.43304526 | | +0.00893263 |
| $P$ | 3.40 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 691 | 0.1− | 0.2− | 2005 05 06 | G96 | 0.2+ | 0.6− | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 1999 10 12 | 691 | 0.0 | 0.0 | 2005 05 06 | G96 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 1999 10 12 | 691 | 0.0 | 0.1+ | 2005 05 06 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.4− | 0.2+ |
| 1999 10 16 | 691 | 0.2− | 0.4− | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 1999 10 16 | 691 | 0.3+ | 0.1+ | 2006 10 23 | 691 | 0.9− | 0.6+ | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 1999 10 16 | 691 | 0.3+ | 0.4− | 2006 10 23 | 691 | 0.0 | 0.5+ | 2006 11 14 | G96 | 0.7+ | 0.0 |
| 2005 03 09 | G96 | 0.9+ | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2005 03 09 | G96 | 0.8− | 0.5− | 2006 10 27 | G96 | 0.8+ | 0.8− | 2006 11 21 | G96 | 0.3+ | 0.2− |
| 2005 03 09 | G96 | 1.4− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.3− |
| 2005 03 09 | G96 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.5− |
| 2005 05 06 | G96 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.4− | 2006 11 21 | G96 | 0.4+ | 0.9− |

**2006 UR$_{208}$ = 2000 SK$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.02252 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17469932 | $\omega$ | 217.96824 | | +0.25833452 | | −0.94167704 |
| $a$ | 3.1691435 | $\Omega$ | 218.46379 | | +0.94930995 | | +0.28883459 |
| $e$ | 0.0122553 | $i$ | 20.28579 | | +0.17909184 | | −0.17268157 |
| $P$ | 5.64 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 608 | 0.6− | 0.5− | 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 15 | 683 | (1.6+ | 1.8+) |
| 2000 09 21 | 608 | 1.0− | 0.4− | 2006 10 12 | 691 | 0.4+ | 0.3+ | 2006 11 15 | 683 | 0.3+ | 1.4+ |
| 2000 09 21 | 608 | 1.1− | 0.7− | 2006 10 12 | 691 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2000 09 26 | 608 | 1.1+ | 0.1+ | 2006 10 12 | 691 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.3− |
| 2000 09 26 | 608 | 0.7+ | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2000 09 26 | 608 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.2− |
| 2004 04 14 | 644 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 17 | 703 | 0.8+ | 0.9− |
| 2004 04 14 | 644 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.5+ |
| 2004 04 14 | 644 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 17 | 703 | 0.6− | 0.0 |
| 2004 06 13 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.0 | 0.7− |
| 2004 06 13 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.2+ |
| 2004 06 13 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.0 |
| 2004 06 27 | 691 | 0.2− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.5− | 0.4+ |
| 2004 06 27 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 1.5+ | 0.2+ |
| 2004 06 27 | 691 | 0.0 | 0.2− | 2006 10 31 | 691 | 0.2− | 0.2− | 2006 11 21 | 704 | (0.4+ | 2.0−) |
| 2004 07 09 | 644 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 07 09 | 644 | 0.5− | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2004 07 09 | 644 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.6+ | 2006 11 21 | 704 | 0.4+ | 0.3− |
| 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.1+ | | | | |
| 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 15 | 683 | 0.1− | 0.6+ | | | | |

**2006 UT$_{208}$ = 2004 HV$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 312.22102 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.22221308 | $\omega$ | 40.50332 | | +0.09153259 | −0.98307037 |
| $a$ | 2.6995392 | $\Omega$ | 44.91987 | | +0.84568260 | −0.00742063 |
| $e$ | 0.0688343 | $i$ | 12.99049 | | +0.52577820 | +0.18307809 |
| $P$ | 4.44 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 19 | 704 | 0.5+ | 0.8+ | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 2004 04 19 | 704 | (0.0 | 2.3+) | 2006 09 30 | G96 | 0.1− | 0.9− | 2006 11 11 | 703 | 0.2+ | 0.2+ |
| 2004 04 19 | 704 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2004 04 19 | 704 | 0.0 | 0.8+ | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2004 04 23 | 691 | 0.1− | 0.9− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.0 |
| 2004 04 23 | 691 | 0.0 | 0.4+ | 2006 10 11 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.5+ |
| 2004 04 23 | 691 | 0.0 | 0.3+ | 2006 10 23 | 691 | 0.4− | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.7− |
| 2006 09 30 | 703 | 0.6− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | (0.3+ | 2.1+) |
| 2006 09 30 | 703 | 1.0− | 0.3− | 2006 10 23 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 1.2+ | 0.9− |
| 2006 09 30 | 703 | 1.2− | 0.3− | 2006 10 27 | 691 | 0.7+ | 0.5+ | 2006 11 17 | 703 | 0.4− | 0.3+ |
| 2006 09 30 | 703 | 1.0− | 0.8+ | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.6+ | 0.1− |
| 2006 09 30 | G96 | 0.4− | 0.8− | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.3− | 0.2− |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.2− | 0.2− |
| 2006 09 30 | G96 | 0.5− | 0.9− | 2006 10 31 | 691 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.4− | 0.2− |
| 2006 09 30 | G96 | 0.2− | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2006 09 30 | G96 | 0.0 | 0.8− | 2006 11 11 | 703 | 0.4− | 0.9− | | | | |

**2006 UK$_{209}$ = 2001 TN$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 42.74520 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.21150961 | $\omega$ | 183.79492 | | +0.97240587 | +0.23303493 |
| $a$ | 2.7898615 | $\Omega$ | 162.71724 | | −0.21305566 | +0.90630426 |
| $e$ | 0.0215976 | $i$ | 2.12671 | | −0.09504795 | +0.35257243 |
| $P$ | 4.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.1− | 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2001 10 14 | 645 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.2− | 0.5− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.6+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 15 | G96 | 0.0 | 0.5− |
| 2006 09 30 | G96 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.3− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2006 09 30 | G96 | 0.5+ | 0.2+ | 2006 10 27 | 691 | 0.2− | 0.6+ | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2006 09 30 | G96 | 0.3− | 0.3− | 2006 10 27 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.1− |

**2006 UL$_{209}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 352.05394 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23372167 | $\omega$ | 199.97962 | | +0.79048259 | −0.61180714 |
| $a$ | 2.6101776 | $\Omega$ | 197.83310 | | +0.57395039 | +0.75634435 |
| $e$ | 0.0993871 | $i$ | 5.39571 | | +0.21381820 | +0.23159283 |
| $P$ | 4.22 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 28 | 691 | 0.1− | 0.6− | 2006 10 11 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.4+ | 0.0 |
| 2000 04 28 | 691 | 0.0 | 0.4− | 2006 10 11 | 691 | 0.1+ | 0.4+ | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2000 04 28 | 691 | 0.3− | 0.3− | 2006 10 11 | 691 | 0.2+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2002 12 10 | 644 | 0.1+ | 0.2− | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.9+ |
| 2002 12 10 | 644 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.6− | 0.3− | 2006 11 11 | 703 | 1.5− | 0.4+ |
| 2002 12 10 | 644 | 0.1− | 0.1+ | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.5− | 0.6+ |
| 2004 03 17 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 11 | 703 | 1.4+ | 0.4− |
| 2004 03 17 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.1− | 0.6− |
| 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 16 | G96 | 0.3− | 0.3− |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.3− | 2006 11 16 | G96 | 0.4− | 0.7− |
| 2006 09 30 | G96 | 0.2+ | 0.5− | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 16 | G96 | 0.6+ | 0.4− |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.2− | | | | |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.1− | 0.4− | | | | |

**2006 US$_{209}$ = 2004 HB$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 3.01096 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.23765756 | $\omega$ | 4.42541 | | +0.88541475 | −0.45671213 |
| $a$ | 2.5812791 | $\Omega$ | 23.36235 | | +0.41948579 | +0.70518050 |
| $e$ | 0.1851858 | $i$ | 12.57593 | | +0.20018092 | +0.54234167 |
| $P$ | 4.15 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 10 19 | 703 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2004 04 16 | 691 | 0.1− | 0.1+ | 2006 10 19 | 703 | 1.0− | 0.1− | 2006 11 11 | 703 | 0.7+ | 0.0 |
| 2004 04 16 | 691 | 0.0 | 0.1− | 2006 10 19 | 703 | 1.0− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1+ |
| 2004 04 21 | 691 | 0.1+ | 0.2− | 2006 10 20 | A50 | 0.0 | 0.1+ | 2006 11 13 | 104 | 0.0 | 0.1− |
| 2004 04 21 | 691 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 13 | 104 | 0.1− | 0.0 |
| 2004 04 21 | 691 | 0.1+ | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 13 | 104 | 0.2+ | 0.1− |
| 2006 08 28 | 703 | 0.7− | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.5+ | 0.3+ |
| 2006 08 28 | 703 | 0.3+ | 0.9+ | 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 14 | 703 | 0.9+ | 0.2− |
| 2006 08 28 | 703 | 0.7− | 0.2− | 2006 10 27 | 703 | 0.5− | 0.7− | 2006 11 14 | 703 | 0.8+ | 0.0 |
| 2006 08 28 | 703 | 0.1− | 0.0 | 2006 10 27 | 703 | 0.3+ | 0.4− | 2006 11 14 | 703 | 0.2+ | 0.3+ |
| 2006 09 16 | 703 | 0.3− | 0.5− | 2006 10 27 | 703 | 0.8+ | 0.8− | 2006 11 16 | 704 | 1.0− | 0.6+ |
| 2006 09 16 | 703 | 1.1+ | 0.4− | 2006 11 02 | 703 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.1− | 0.1+ |
| 2006 09 16 | 703 | 0.7− | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.1+ | 0.6+ |
| 2006 09 16 | 703 | 1.1+ | 0.2+ | 2006 11 02 | 703 | 0.8+ | 0.5+ | 2006 11 16 | 704 | 0.2+ | 1.0− |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 02 | 703 | 1.2+ | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.5+ |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 22 | 703 | 1.0− | 0.5− |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.2− | 0.4− |
| 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 22 | 703 | (2.3− | 1.8−) |
| 2006 10 19 | 703 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.1+ | 2006 11 22 | 703 | (1.3+ | 2.3−) |

**2006 UV$_{209}$ = 2001 PL$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| $M$ | 323.79607 | | (2000.0) | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $n$ | 0.21860083 | $\omega$ | 192.03277 | | +0.19100329 | −0.96305686 |
| $a$ | 2.7291968 | $\Omega$ | 247.19623 | | +0.91680617 | +0.24412520 |
| $e$ | 0.0881787 | $i$ | 11.88433 | | +0.35069103 | −0.11368543 |
| $P$ | 4.51 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 11 | 644 | 0.1− | 1.0+ | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.8− | 0.3− |
| 2001 08 11 | 644 | 0.2− | 0.7+ | 2006 10 31 | 691 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.0 |
| 2001 08 11 | 644 | 0.4+ | 1.0+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.0 |
| 2001 08 16 | 644 | 1.4− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.4+ | 1.1+ |
| 2001 08 16 | 644 | 1.0− | 0.1+ | 2006 11 14 | 703 | (1.6− | 1.0−) | 2006 11 19 | 704 | 0.9+ | 0.1+ |
| 2001 08 16 | 644 | (1.7− | 0.6−) | 2006 11 14 | 703 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.4+ |
| 2001 09 18 | 645 | 0.1+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.2− | 0.6− |
| 2001 09 18 | 645 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.8− | 0.2+ | 2006 11 19 | 704 | (1.6− | 0.6+) |
| 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 14 | 703 | 0.2− | 1.1− | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.5− | 2006 11 22 | 704 | (0.2− | 1.9+) |
| 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.2+ | 0.7+ |
| 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 1.3+ | 0.7− | 2006 11 22 | 704 | 0.5+ | 0.3+ |

**2006 UY$_{209}$ = 1999 RX$_{225}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 27.67829 | | (2000.0) | | | |
| $n$ | 0.29403339 | $\omega$ | 97.76985 | | +0.98578841 | +0.12275573 |
| $a$ | 2.2397778 | $\Omega$ | 255.23225 | | −0.15688779 | +0.91680224 |
| $e$ | 0.1535445 | $i$ | 6.81137 | | +0.06006195 | +0.38000615 |
| $P$ | 3.35 | $H$ | 17.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 04 | 703 | 0.0 | 0.6− | 2006 10 19 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.2+ |
| 1999 09 04 | 703 | 0.7+ | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 1999 09 04 | 703 | 0.4− | 0.3− | 2006 10 19 | 691 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.3+ | 0.2+ |
| 1999 09 04 | 703 | 0.7+ | 0.4+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 1999 09 09 | 704 | 0.9− | 0.4− | 2006 10 23 | 691 | 0.5− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.5− |
| 1999 09 09 | 704 | 1.0− | 0.4+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 11 | 703 | 1.6+ | 0.1− |
| 1999 09 09 | 704 | 0.5+ | 0.4+ | 2006 10 27 | 703 | 0.2− | 0.4+ | 2006 11 11 | 703 | 1.6+ | 0.0 |
| 1999 09 09 | 704 | 0.4+ | 0.7+ | 2006 10 27 | 703 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.3− | 1.3− |
| 1999 09 09 | 704 | 0.2− | 0.0 | 2006 10 27 | 703 | 0.2+ | 0.8+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2003 12 17 | 691 | 0.1+ | 0.2− | 2006 10 27 | 703 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2003 12 17 | 691 | 0.2− | 0.3+ | 2006 10 27 | 691 | 0.4+ | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.1− |

**2006 UB$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.86779 | | (2000.0) | | | |
| $n$ | 0.17503476 | $\omega$ | 168.34320 | | +0.37055530 | −0.91963675 |
| $a$ | 3.1650933 | $\Omega$ | 259.79904 | | +0.84117998 | +0.39172743 |
| $e$ | 0.0846169 | $i$ | 7.60313 | | +0.39383373 | +0.02859837 |
| $P$ | 5.63 | $H$ | 15.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 691 | 0.0 | 0.2+ | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.4− | 0.2− |
| 2003 03 30 | 691 | 0.2− | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.3+ | 2006 11 13 | 644 | 0.3− | 0.1+ |
| 2003 03 30 | 691 | 0.4+ | 0.5+ | 2006 10 27 | 703 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.2− | 0.3− |
| 2005 08 24 | 644 | 0.1+ | 0.8+ | 2006 10 27 | 703 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.6− | 0.5− |
| 2005 08 24 | 644 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.3− | 0.3+ | 2006 11 14 | 703 | 0.2− | 0.5− |
| 2005 08 24 | 644 | 0.1− | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 703 | 0.6− | 0.1+ |
| 2006 10 19 | 703 | (2.1− | 1.1−) | 2006 10 27 | 691 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2006 10 19 | 703 | 0.5+ | 0.5+ | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.4− |
| 2006 10 19 | 703 | 0.8+ | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.4− |
| 2006 10 19 | 703 | 1.6− | 0.9+ | 2006 10 31 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 704 | 1.0− | 0.5− |
| 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.9+ | 1.1− |
| 2006 10 23 | 691 | 0.4− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.2− | | | | |

**2006 UN$_{210}$ = 2001 YD$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 259.21315 | | (2000.0) | | | |
| $n$ | 0.18294182 | $\omega$ | 240.54132 | | −0.84355950 | −0.51910974 |
| $a$ | 3.0732229 | $\Omega$ | 267.87181 | | +0.52797485 | −0.75477827 |
| $e$ | 0.0495021 | $i$ | 7.91421 | | +0.09823407 | −0.40104220 |
| $P$ | 5.39 | $H$ | 15.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.1+ | 1.3− | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2001 12 17 | 704 | 0.2− | 0.9+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.7− | 0.7− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.6+ | 0.0 |
| 2001 12 17 | 704 | 0.4+ | 0.5+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.5+ | 0.0 |
| 2001 12 19 | 704 | 0.4− | 0.3+ | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.1+ |
| 2001 12 19 | 704 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 22 | 704 | (2.1− | 3.1−) |
| 2001 12 19 | 704 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.8− | 0.5− |
| 2001 12 19 | 704 | 0.7+ | 0.5+ | 2006 11 14 | G96 | 0.5+ | 0.4− | 2006 11 22 | 704 | 0.1− | 0.3+ |
| 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.0 | | | | |

**2006 UP$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 356.81715 | | (2000.0) | | | |
| $n$ | 0.18248783 | $\omega$ | 23.91272 | | +0.71819931 | −0.69339045 |
| $a$ | 3.0783178 | $\Omega$ | 20.34536 | | +0.60832588 | +0.58498691 |
| $e$ | 0.1173089 | $i$ | 9.65396 | | +0.33783039 | +0.42071368 |
| $P$ | 5.40 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 05 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.2+ |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2000 09 23 | 691 | 0.3− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2000 09 23 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 22 | 703 | (1.0− | 2.8−) |
| 2000 09 23 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 22 | 703 | (4.3+ | 2.9−) |
| 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 02 | 703 | (0.1− | 1.8+) | 2006 11 22 | 703 | (0.3− | 1.8+) |
| 2006 10 04 | G96 | 0.4− | 0.3− | 2006 11 02 | 703 | (0.6+ | 1.6+) | 2006 11 22 | 703 | 0.0 | 1.4− |
| 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 02 | 703 | 0.0 | 0.2− | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.6− | 0.8− | 2006 11 25 | G96 | 0.2+ | 0.1− |
| 2006 10 23 | 691 | 0.5− | 0.2+ | 2006 11 14 | 703 | 1.0− | 0.3− | 2006 11 25 | G96 | 0.3+ | 0.1+ |
| 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.4+ | 0.3− | 2006 11 25 | G96 | 0.5+ | 0.1+ |
| 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.3− | 0.5+ | | | | |
| 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | 0.5− | 0.7− | | | | |

**2006 UL$_{212}$ = 1995 SP$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.74009 | | (2000.0) | | | |
| $n$ | 0.27856087 | $\omega$ | 88.37099 | | +0.36436181 | −0.93111797 |
| $a$ | 2.3219667 | $\Omega$ | 340.23705 | | +0.83433892 | +0.33408102 |
| $e$ | 0.1645066 | $i$ | 2.73226 | | +0.41366536 | +0.14631884 |
| $P$ | 3.54 | $H$ | 18.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.2− | 1.1+ | 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1+ |
| 1995 09 21 | 691 | 0.3− | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.1− |
| 1995 09 21 | 691 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 1995 09 26 | 691 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 1995 09 26 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 1995 09 26 | 691 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2006 10 23 | 691 | 0.1+ | 0.7− | 2006 11 17 | 691 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.3− | 0.0 |

**2006 UY$_{212}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 303.98398 | | (2000.0) | | | |
| $n$ | 0.26595983 | $\omega$ | 99.54717 | | −0.43103005 | −0.90223940 |
| $a$ | 2.3947418 | $\Omega$ | 16.00591 | | +0.80779114 | −0.39239805 |
| $e$ | 0.1793322 | $i$ | 2.76673 | | +0.40210269 | −0.17885142 |
| $P$ | 3.71 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 703 | 0.2+ | 1.5− | 2004 05 09 | 691 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.4+ | 0.6+ |
| 2000 02 06 | 703 | 1.7+ | 1.0+ | 2006 09 30 | G96 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.2− | 0.1− |
| 2000 02 06 | 703 | 0.7+ | 0.1− | 2006 09 30 | G96 | 0.5+ | 0.1+ | 2006 11 17 | 691 | 0.2− | 0.3− |
| 2000 02 06 | 703 | 0.0 | 0.4+ | 2006 09 30 | G96 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2000 02 25 | 703 | 0.6− | 0.0 | 2006 09 30 | G96 | 0.6+ | 0.0 | 2006 11 19 | 704 | 0.0 | 1.0+ |
| 2000 02 25 | 703 | 0.8+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2000 02 25 | 703 | 0.1+ | 0.7+ | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.3− | 0.0 |
| 2000 02 25 | 703 | (3.3− | 1.1−) | 2006 10 23 | 691 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.3− |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.3− | 0.1− |
| 2004 04 13 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.3− | 1.0+ |
| 2004 05 09 | 691 | 0.3+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.1− | 0.5+ |
| 2004 05 09 | 691 | 0.2+ | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.3− | 2006 11 22 | 704 | (1.8+ | 1.0+) |

**2006 UJ$_{213}$ = 2001 SH$_{336}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.53098 | | (2000.0) | | | |
| $n$ | 0.22119755 | $\omega$ | 86.73136 | | +0.51486762 | −0.85710282 |
| $a$ | 2.7077954 | $\Omega$ | 332.25952 | | +0.77139392 | +0.47180865 |
| $e$ | 0.0548515 | $i$ | 2.08249 | | +0.37398231 | +0.20681236 |
| $P$ | 4.46 | $H$ | 17.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 1.0+ | 0.1+ | 2001 09 22 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.5− | 0.4+ |
| 2001 09 20 | 704 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.5− |
| 2001 09 20 | 704 | 0.2− | 0.5+ | 2006 10 23 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 2001 09 20 | 704 | 0.8− | 1.2− | 2006 10 23 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2001 09 22 | 691 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.3− | | | | |
| 2001 09 22 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.3+ | 0.7+ | | | | |

**2006 UU$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.44655 | | (2000.0) | | | |
| $n$ | 0.24262427 | $\omega$ | 2.98537 | | +0.72753865 | −0.66360071 |
| $a$ | 2.5459305 | $\Omega$ | 40.43765 | | +0.62376149 | +0.53412188 |
| $e$ | 0.1729520 | $i$ | 15.57287 | | +0.28567308 | +0.52378232 |
| $P$ | 4.06 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.4+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.5− | 0.8+ |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.9− | 0.5+ |
| 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2006 10 23 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.2− | 1.6+ | 2006 11 20 | G96 | 0.0 | 0.5− |
| 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.5− | 1.3+ | 2006 11 20 | G96 | 0.1+ | 0.4− |
| 2006 10 23 | 691 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.5− | 0.0 | 2006 11 20 | G96 | 0.2− | 0.6− |
| 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.1+ | 2006 11 20 | G96 | 0.1− | 0.4− |
| 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.2− |
| 2006 10 31 | 691 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.2− | | | | |
| 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.2− | | | | |

**2006 UV$_{213}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.25088 | | (2000.0) | | | |
| $n$ | 0.27011486 | $\omega$ | 98.95662 | | +0.99145563 | +0.09946655 |
| $a$ | 2.3701204 | $\Omega$ | 255.36799 | | −0.12413124 | +0.91824867 |
| $e$ | 0.1585837 | $i$ | 5.00378 | | +0.04008953 | +0.38330899 |
| $P$ | 3.65 | $H$ | 17.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 08 | 608 | 0.3+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2002 09 08 | 608 | 0.1+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.1− |
| 2002 09 08 | 608 | 0.3− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2002 10 31 | 645 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.5+ | 0.6+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 10 31 | 645 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.4+ | 0.3+ | 2006 11 22 | 704 | (1.9+ | 1.9+) |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.7− | 1.0+ | 2006 11 22 | 704 | (1.0+ | 2.6+) |
| 2006 10 23 | 691 | 0.2− | 0.4− | 2006 11 13 | 691 | 0.2− | 0.1− | 2006 11 22 | 704 | 1.1+ | 0.3− |
| 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 13 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.6− | 1.2+ |
| 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.3− | | | | |

**2006 UX$_{213}$ = 2001 UK$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 14.81499 | | (2000.0) | | | |
| $n$ | 0.20416426 | $\omega$ | 340.66731 | | +0.91756758 | −0.35352826 |
| $a$ | 2.8563816 | $\Omega$ | 41.51420 | | +0.39126004 | +0.72168106 |
| $e$ | 0.1412935 | $i$ | 15.92859 | | +0.07060684 | +0.59514218 |
| $P$ | 4.83 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 704 | (0.0 | 1.7−) | 2006 10 19 | 695 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2001 10 23 | 704 | 0.1− | 0.4− | 2006 10 19 | 695 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 10 23 | 704 | 1.0− | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2001 10 23 | 704 | 0.9− | 1.2− | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2001 10 24 | 691 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2001 10 24 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.3− | 0.1− |
| 2001 10 24 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 11 21 | 691 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.4− |
| 2001 11 21 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2001 11 21 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1− |

**2006 UB$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 58.92380 | | (2000.0) | | | |
| $n$ | 0.26375279 | $\omega$ | 84.18309 | | +0.92451667 | +0.37202081 |
| $a$ | 2.4080824 | $\Omega$ | 253.95421 | | −0.37484383 | +0.84811465 |
| $e$ | 0.0391505 | $i$ | 4.94745 | | −0.06900017 | +0.37722945 |
| $P$ | 3.74 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 644 | 0.2− | 0.5+ | 2006 10 27 | 691 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2002 10 31 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2002 10 31 | 644 | 0.4− | 0.5+ | 2006 11 09 | 691 | 0.4− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2004 02 18 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2004 02 18 | 691 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.2+ | 2006 12 01 | G96 | 1.0+ | 0.2+ |
| 2004 02 18 | 691 | 0.3− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2+ | 2006 12 01 | G96 | 0.8− | 0.7− |
| 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 13 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2− | 0.2+ |
| 2006 10 23 | 691 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.2+ | | | | |
| 2006 10 27 | 691 | 0.3+ | 0.3− | 2006 11 18 | 691 | 0.3+ | 0.2+ | | | | |

**2006 UD$_{214}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 329.15118 | | (2000.0) | | | |
| $n$ | 0.24116707 | $\omega$ | 162.55670 | | +0.18363599 | −0.98179538 |
| $a$ | 2.5561758 | $\Omega$ | 276.84094 | | +0.89595069 | +0.18748426 |
| $e$ | 0.1706239 | $i$ | 2.80192 | | +0.40441339 | +0.03045477 |
| $P$ | 4.09 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 18 | 557 | 0.4+ | 0.3− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2− | 0.4− |
| 1998 12 18 | 557 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 1.4+ | 0.6+ |
| 1998 12 18 | 557 | 0.4− | 0.8− | 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 1.2− | 0.5+ |
| 1998 12 18 | 557 | 0.2− | 0.8− | 2006 10 31 | 691 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.6+ |
| 1998 12 18 | 557 | 0.2+ | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.3− | 0.6+ |
| 1998 12 18 | 557 | 0.5− | 0.6− | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.7+ |
| 2004 04 16 | 691 | 0.0 | 0.7+ | 2006 11 09 | 691 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.2− | 0.4+ |
| 2004 04 16 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 2004 04 16 | 691 | 0.5+ | 0.1− | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.2+ | 1.3+ |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | (1.6+ | 0.6+) |
| 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.6+ | 1.2+ |
| 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2006 09 30 | G96 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2006 10 23 | 691 | 0.2+ | 0.0 | 2006 11 16 | 691 | 0.4− | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.5− |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 27 | 691 | 0.6+ | 0.1− | | 2006 11 16 | 704 | (0.5− | 2.2+) | | | | | | |
| 2006 10 27 | 691 | 0.2+ | 0.0 | | 2006 11 16 | 704 | 0.1+ | 0.2+ | | | | | | |

**2006 UE$_{214}$ = 2000 VZ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.12164 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16817326 | $\omega$ | 292.34295 | | +0.86883039 | +0.42407730 | |
| $a$ | 3.2506091 | $\Omega$ | 43.73664 | | −0.19261019 | +0.76494516 | |
| $e$ | 0.2489820 | $i$ | 21.69117 | | −0.45610861 | +0.48478587 | |
| $P$ | 5.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 691 | 0.4+ | 0.1+ | 2006 10 23 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 | |
| 2000 11 01 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.3− | 0.1− | |
| 2000 11 01 | 691 | 0.7+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.4− | 2006 11 23 | 703 | 0.4+ | 0.5+ | |
| 2000 11 03 | 691 | 0.6− | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 23 | 703 | 1.0− | 0.1+ | |
| 2000 11 03 | 691 | 0.2− | 0.0 | 2006 11 02 | 691 | 0.1− | 0.3− | 2006 11 23 | 703 | 1.0+ | 0.9+ | |
| 2000 11 03 | 691 | 0.5− | 0.1− | 2006 11 02 | 691 | 0.2+ | 0.1− | 2006 11 23 | 703 | 0.1+ | 0.2− | |
| 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 02 | 691 | 0.2+ | 0.1− | | | | | |
| 2006 10 23 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 | | | | | |

**2006 UJ$_{214}$ = 2004 GD$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 296.65112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24450730 | $\omega$ | 144.97403 | | −0.40848683 | −0.91239818 | |
| $a$ | 2.5328424 | $\Omega$ | 329.11233 | | +0.82553010 | −0.35721812 | |
| $e$ | 0.0978134 | $i$ | 2.88602 | | +0.38940798 | −0.19981184 | |
| $P$ | 4.03 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.2+ | 0.8+ | 2005 07 05 | 691 | 0.9− | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.0 | |
| 2002 11 24 | 644 | 0.7− | 0.8+ | 2005 07 05 | 691 | 0.3+ | 0.4+ | 2006 10 31 | 691 | 0.2+ | 0.0 | |
| 2002 11 24 | 644 | 0.0 | 0.6+ | 2006 10 19 | A50 | 0.4− | 0.7+ | 2006 11 02 | 691 | 0.0 | 0.3+ | |
| 2004 04 13 | 691 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.4− | 0.2+ | 2006 11 02 | 691 | 0.1− | 0.3+ | |
| 2004 04 13 | 691 | 0.1+ | 0.5+ | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 02 | 691 | 0.1− | 0.1− | |
| 2004 04 13 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.2+ | |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.6+ | 2006 11 15 | 691 | 0.1− | 0.2+ | |
| 2004 04 19 | 691 | 0.3+ | 0.6+ | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1− | |
| 2004 04 19 | 691 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.1+ | 0.1+ | | | | | |
| 2005 07 05 | 691 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | | | | | |

**2006 UT$_{214}$ = 2002 XX$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.34051 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23281873 | $\omega$ | 141.40277 | | +0.56733790 | −0.79320287 | |
| $a$ | 2.6169219 | $\Omega$ | 272.94801 | | +0.68983579 | +0.60452229 | |
| $e$ | 0.2339408 | $i$ | 12.80040 | | +0.44972691 | +0.07336216 | |
| $P$ | 4.23 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.7+ | 0.5+ | 2002 12 14 | 704 | 0.3− | 0.1− | 2006 09 25 | 703 | 0.4+ | 0.6− | |
| 2002 12 06 | 704 | (2.3+ | 2.1−) | 2002 12 14 | 704 | 0.4− | 0.6− | 2006 09 25 | 703 | 0.1+ | 0.8− | |
| 2002 12 06 | 704 | (3.6+ | 3.1−) | 2002 12 14 | 704 | 0.7− | 0.4+ | 2006 10 24 | 644 | 0.4− | 0.0 | |
| 2002 12 13 | 704 | 0.2− | 0.4− | 2002 12 14 | 704 | 0.1+ | 0.2− | 2006 10 24 | 644 | 0.1+ | 0.1− | |
| 2002 12 13 | 704 | 0.2− | 0.1− | 2002 12 14 | 704 | 0.0 | 0.3+ | 2006 10 24 | 644 | 0.3+ | 0.1− | |
| 2002 12 13 | 704 | 0.2+ | 0.2− | 2002 12 14 | 704 | 0.6+ | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.5+ | |
| 2002 12 13 | 704 | 1.2+ | 0.1− | 2002 12 14 | 704 | 0.7− | 0.0 | 2006 10 27 | 703 | 0.6+ | 0.2− | |
| 2002 12 13 | 704 | 0.4+ | 0.6− | 2002 12 14 | 704 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.3− | 0.2+ | |
| 2002 12 14 | 704 | 0.0 | 0.3− | 2006 09 25 | 703 | 0.3− | 0.8+ | 2006 10 27 | 703 | 0.1− | 0.2− | |
| 2002 12 14 | 704 | 0.9− | 0.5+ | 2006 09 25 | 703 | 0.2− | 0.5+ | | | | | |

**2006 UU$_{214}$ = 2000 AN$_{135}$ = 2002 RF$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.38568 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27205482 | $\omega$ | 103.67654 | | −0.14025491 | −0.99008427 | |
| $a$ | 2.3588397 | $\Omega$ | 354.36835 | | +0.87466886 | −0.12017966 | |
| $e$ | 0.1994768 | $i$ | 4.59116 | | +0.46398593 | −0.07273233 | |
| $P$ | 3.62 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 04 | 704 | 0.4− | 0.6− | 2004 05 09 | 608 | (3.2− | 0.3+) | 2006 11 10 | 644 | 0.4− | 0.1+ | |
| 2000 01 04 | 704 | 0.3− | 0.5+ | 2004 05 09 | 608 | (1.7− | 0.5−) | 2006 11 10 | 644 | 0.2− | 0.2+ | |
| 2000 01 04 | 704 | 0.4− | 0.9− | 2006 10 04 | G96 | 0.5+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.0 | |
| 2000 01 04 | 704 | 0.4− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 10 | 644 | 0.1− | 0.1+ | |
| 2000 01 04 | 704 | 0.4+ | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1− | 0.4− | |
| 2000 01 08 | 704 | 0.6− | 0.8− | 2006 10 04 | G96 | 0.1− | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.3− | |
| 2000 01 08 | 704 | 0.3− | 0.6− | 2006 10 19 | 703 | 0.3− | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.1+ | |
| 2000 01 08 | 704 | 0.7− | 0.9− | 2006 10 19 | G96 | 0.3+ | 0.5− | 2006 11 11 | 703 | 0.1− | 0.3− | |
| 2000 01 08 | 704 | 0.4+ | 0.2− | 2006 10 19 | G96 | 0.4+ | 0.5− | 2006 11 14 | 703 | 0.1− | 0.9− | |
| 2000 01 08 | 704 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.1− | |
| 2000 01 29 | 327 | 0.3+ | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.5− | 0.3− | |
| 2000 01 29 | 327 | 0.5+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 14 | 703 | 0.6+ | 0.4− | |
| 2000 02 22 | 327 | 1.0+ | 0.2− | 2006 10 19 | 703 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.3+ | 0.9+ | |
| 2000 02 22 | 327 | 0.0 | 0.5+ | 2006 10 19 | 703 | 0.3+ | 0.3− | 2006 11 15 | 704 | 0.4+ | 1.2+ | |
| 2002 08 20 | 644 | (1.8+ | 0.5−) | 2006 10 25 | D35 | 0.0 | 0.3− | 2006 11 15 | 704 | 0.5+ | 1.5+ | |
| 2002 08 20 | 644 | (0.4− | 1.7−) | 2006 10 25 | D35 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.3+ | 0.6+ | |
| 2002 08 20 | 644 | 0.6+ | 0.6− | 2006 10 25 | D35 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1− | 0.1+ | |
| 2002 08 30 | 644 | 0.4+ | 0.4+ | 2006 10 27 | 703 | 0.1− | 0.9+ | 2006 11 16 | 704 | 0.4+ | 0.4− | |
| 2002 08 30 | 644 | 0.2+ | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.6− | 2006 11 19 | 704 | 0.3+ | 0.9− | |
| 2002 08 30 | 644 | 0.2+ | 0.8+ | 2006 10 27 | 703 | 1.2− | 0.6+ | 2006 11 19 | 704 | 0.5+ | 0.1− | |
| 2002 09 12 | 644 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.6+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.5− | |
| 2002 09 12 | 644 | 0.1− | 0.8+ | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.7− | 0.4− | |
| 2002 09 12 | 644 | 0.1− | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.4− | 0.6− | |
| 2002 09 15 | 644 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.7− | 0.9+ | |
| 2002 09 15 | 644 | 0.4+ | 0.1− | 2006 11 02 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.3− | 1.3+ | |
| 2002 09 15 | 644 | 0.4+ | 0.1+ | 2006 11 02 | 691 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.5+ | |
| 2002 09 16 | 644 | 0.3− | 0.4− | 2006 11 02 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.5− | 1.4+ | |
| 2002 09 16 | 644 | 0.7− | 0.1− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 22 | 704 | 1.5+ | 0.9+ | |
| 2002 09 16 | 644 | 0.3− | 1.2− | 2006 11 08 | 644 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.8− | 0.4+ | |
| 2004 04 15 | 691 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.4− | 0.2− | 2006 11 22 | 703 | (1.7− | 0.8−) | |
| 2004 04 15 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 644 | 0.0 | 0.1− | 2006 11 22 | 703 | 0.7+ | 0.6+ | |
| 2004 04 15 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 644 | 0.1− | 0.1− | 2006 11 22 | 703 | 0.2− | 0.4− | |

**2006 UV$_{214}$ = 2006 TC$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 90.47580 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18260650 | $\omega$ | 272.23270 | | +0.46193477 | +0.88305584 | |
| $a$ | 3.0769839 | $\Omega$ | 25.79173 | | −0.71939107 | +0.42754821 | |
| $e$ | 0.1090241 | $i$ | 10.94828 | | −0.51874151 | +0.19342935 | |
| $P$ | 5.40 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 699 | 0.5− | 1.0+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.1− | 0.2− | |
| 2000 09 24 | 699 | 0.5+ | 0.5− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.2+ | |
| 2000 09 24 | 699 | 0.6+ | 0.2− | 2006 10 19 | G96 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.0 | |
| 2000 09 24 | 699 | 0.6− | 0.3− | 2006 10 19 | G96 | 1.3− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | |
| 2004 04 25 | 703 | 0.3+ | 0.3− | 2006 10 19 | G96 | 0.4+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.0 | |
| 2004 04 25 | 703 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.1− | |
| 2004 04 25 | 703 | 0.2− | 0.4+ | 2006 10 25 | D35 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.0 | |
| 2004 04 25 | 703 | (1.0+ | 3.6−) | 2006 10 25 | D35 | 0.7− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.2− | |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 25 | D35 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.1− | 0.3− | |
| 2006 10 04 | G96 | 0.1− | 0.4− | 2006 10 27 | 691 | 0.1− | 0.1+ | | | | | |

**2006 UB$_{215}$ = 2005 NC$_{98}$ = 2006 UZ$_{190}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.24281 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17437400 | $\omega$ | 71.36570 | | +0.92724053 | −0.36063121 | |
| $a$ | 3.1730839 | $\Omega$ | 309.64315 | | +0.27478718 | +0.83823593 | |
| $e$ | 0.0608960 | $i$ | 7.52534 | | +0.25439538 | +0.40903014 | |
| $P$ | 5.65 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 10 22 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 703 | 0.1− | 0.8+ |
| 2005 07 09 | 691 | 0.2+ | 0.4− | 2006 10 22 | 644 | 0.2− | 0.7+ | 2006 10 29 | 400 | 0.3− | 0.2+ |
| 2005 07 09 | 691 | 0.1− | 0.1+ | 2006 10 23 | 644 | 0.1− | 0.5+ | 2006 10 29 | 400 | 0.2+ | 0.3− |
| 2005 07 16 | 691 | 0.2+ | 0.3+ | 2006 10 23 | 644 | 0.1− | 0.9+ | 2006 10 29 | 400 | 0.9− | 0.7+ |
| 2005 07 16 | 691 | 0.1− | 0.2− | 2006 10 23 | 644 | 0.1− | 0.6+ | 2006 10 30 | 400 | 0.4− | 0.0 |
| 2005 07 16 | 691 | 0.0 | 0.0 | 2006 10 26 | 400 | 0.2+ | 0.4+ | 2006 10 30 | 400 | 0.4+ | 1.3− |
| 2006 10 19 | 703 | 0.2+ | 1.4− | 2006 10 26 | 400 | 0.3+ | 0.6− | 2006 11 15 | 703 | 0.5+ | 0.3− |
| 2006 10 19 | 703 | 0.9+ | 1.1− | 2006 10 26 | 400 | 0.4− | 0.1− | 2006 11 15 | 703 | 0.7+ | 0.1+ |
| 2006 10 19 | 703 | 1.3− | 0.3+ | 2006 10 27 | 703 | 0.4+ | 1.2− | 2006 11 15 | 703 | 0.5− | 1.0+ |
| 2006 10 19 | 703 | 0.3+ | 0.2− | 2006 10 27 | 703 | 0.3+ | 0.2+ | 2006 11 15 | 703 | 0.8− | 0.4− |
| 2006 10 22 | 644 | 0.3+ | 0.5+ | 2006 10 27 | 703 | 0.6+ | 0.5− | | | | |

**2006 UE$_{215}$ = 2001 XG$_{207}$ = 2004 HF$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 168.51466 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16909326 | $\omega$ | 336.02291 | | −0.88285934 | +0.43132167 | |
| $a$ | 3.2388079 | $\Omega$ | 230.84659 | | −0.38279226 | −0.89009389 | |
| $e$ | 0.0173387 | $i$ | 13.86282 | | −0.27208357 | −0.14729047 | |
| $P$ | 5.83 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 645 | 0.0 | 0.0 | 2004 05 13 | 691 | 0.1+ | 0.4+ | 2006 10 26 | A55 | 0.3+ | 0.0 |
| 2000 09 27 | 645 | 0.0 | 0.0 | 2004 05 13 | 691 | 0.0 | 0.2+ | 2006 10 26 | A55 | 0.0 | 0.5+ |
| 2001 12 11 | 704 | 0.5− | 0.7+ | 2006 09 16 | 703 | 0.1− | 2.0− | 2006 10 27 | A55 | 0.5+ | 0.3+ |
| 2001 12 11 | 704 | 0.0 | 0.4− | 2006 09 16 | 703 | 0.2+ | 0.5− | 2006 10 27 | A55 | 0.2+ | 0.1− |
| 2001 12 11 | 704 | 0.7− | 0.1+ | 2006 09 16 | 703 | 0.4+ | 1.1+ | 2006 10 27 | A55 | 0.5+ | 0.3+ |
| 2001 12 11 | 704 | 0.3+ | 0.1+ | 2006 09 16 | 703 | 0.9− | 0.0 | 2006 10 28 | A55 | 0.3− | 0.2+ |
| 2001 12 11 | 704 | 0.2− | 0.6− | 2006 09 28 | 703 | 0.0 | 1.1− | 2006 10 28 | A55 | 0.1+ | 0.5− |
| 2001 12 18 | 704 | 0.3+ | 0.9+ | 2006 09 28 | 703 | 2.2+ | 0.2+ | 2006 10 28 | A55 | 0.5+ | 0.0 |
| 2001 12 18 | 704 | 0.3+ | 1.2+ | 2006 09 28 | 703 | 0.2− | 0.4+ | 2006 11 12 | A55 | 0.2− | 0.2− |
| 2001 12 18 | 704 | 0.8+ | 0.7+ | 2006 09 28 | 703 | 1.2− | 1.0+ | 2006 11 12 | A55 | 0.3+ | 0.1+ |
| 2001 12 18 | 704 | 0.1− | 0.1− | 2006 10 17 | 703 | 1.6− | 1.3+ | 2006 11 12 | A55 | 0.4− | 0.0 |
| 2004 04 28 | 691 | 0.0 | 0.1+ | 2006 10 17 | 703 | 0.3− | 1.3+ | 2006 11 14 | 703 | 0.2+ | 0.3+ |
| 2004 04 28 | 691 | 0.3− | 0.1+ | 2006 10 17 | 703 | 0.0 | 0.5+ | 2006 11 14 | 703 | 0.4+ | 0.4+ |
| 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.2− | 0.7− | 2006 11 14 | 703 | 1.5− | 0.3+ |
| 2004 05 13 | 691 | 0.3+ | 0.2+ | 2006 10 26 | A55 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.9+ |

**2006 UH$_{215}$ = 2004 FJ$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.09564 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23437663 | $\omega$ | 34.66800 | | +0.64681906 | −0.76254087 | |
| $a$ | 2.6053127 | $\Omega$ | 15.04269 | | +0.68835232 | +0.57666971 | |
| $e$ | 0.1333779 | $i$ | 2.76301 | | +0.32832329 | +0.29322938 | |
| $P$ | 4.21 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 291 | 0.1+ | 0.2− | 2006 10 27 | G98 | 0.3− | 0.3+ | 2006 10 29 | G98 | 0.4+ | 0.0 |
| 2004 03 19 | 291 | 0.1+ | 0.3− | 2006 10 27 | G98 | 0.1− | 0.6+ | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 2004 03 19 | 291 | 0.2+ | 0.1+ | 2006 10 27 | G98 | 0.5+ | 0.4+ | 2006 11 11 | 703 | 0.0 | 0.6− |
| 2004 03 23 | 291 | 0.2− | 0.3+ | 2006 10 27 | G98 | 0.3+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.4− |
| 2004 03 23 | 291 | 0.0 | 0.2+ | 2006 10 28 | G98 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.9− |
| 2004 03 23 | 291 | 0.2− | 0.1+ | 2006 10 28 | G98 | 1.5− | 0.4− | 2006 11 13 | G98 | 0.1− | 0.1+ |
| 2006 09 25 | G96 | (1.5+ | 2.0+) | 2006 10 28 | G98 | 0.2− | 0.4+ | 2006 11 13 | G98 | 0.1+ | 0.6+ |
| 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 28 | G98 | 1.2− | 0.3− | 2006 11 13 | G98 | 0.0 | 0.2+ |
| 2006 09 25 | G96 | 0.7+ | 0.4− | 2006 10 28 | G98 | 0.2− | 0.4+ | 2006 11 13 | G98 | 0.4− | 0.4+ |
| 2006 09 25 | G96 | 0.4− | 0.3− | 2006 10 28 | G98 | 0.8− | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2006 10 16 | 691 | (1.8− | 0.9+) | 2006 10 28 | G98 | 0.4− | 0.5+ | 2006 11 15 | 691 | 0.3+ | 0.1+ |
| 2006 10 16 | 691 | (2.8− | 0.9+) | 2006 10 28 | G98 | 0.8− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2006 10 16 | 691 | (3.5− | 0.9+) | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.2− |
| 2006 10 20 | 644 | 0.2− | 0.3− | 2006 10 29 | 691 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2006 10 20 | 644 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 10 29 | G98 | 0.5− | 0.4+ | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2006 10 21 | 644 | 0.0 | 0.1+ | 2006 10 29 | G98 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2006 10 21 | 644 | 0.2− | 0.0 | 2006 10 29 | G98 | 0.1− | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2006 10 21 | 644 | 0.2− | 0.1+ | 2006 10 29 | G98 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2006 10 27 | G98 | 0.5− | 0.2+ | 2006 10 29 | G98 | 0.6+ | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2006 10 27 | G98 | 0.1− | 0.3+ | 2006 10 29 | G98 | 0.4+ | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.0 |

**2006 UC$_{216}$ = 2004 BP$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.56162 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29769940 | $\omega$ | 134.29018 | | +0.85511505 | −0.51817613 | |
| $a$ | 2.2213521 | $\Omega$ | 256.92634 | | +0.47070934 | +0.78932425 | |
| $e$ | 0.2150482 | $i$ | 0.96967 | | +0.21728083 | +0.32933375 | |
| $P$ | 3.31 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 21 | 645 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 10 29 | G98 | 0.3+ | 0.1− |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 07 | 644 | 0.1− | 0.1− |
| 2003 12 21 | 691 | 0.1+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 07 | 644 | 0.0 | 0.4− |
| 2003 12 21 | 691 | 0.0 | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.1+ | 2006 11 07 | 644 | 0.0 | 0.3− |
| 2003 12 21 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.2− | 2006 11 11 | 703 | (1.6− | 1.2−) |
| 2004 01 31 | 691 | 0.2− | 0.2+ | 2006 10 28 | G98 | 0.8− | 0.7+ | 2006 11 11 | 703 | 0.8+ | 0.7− |
| 2004 01 31 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G98 | 0.4− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 1.0− |
| 2004 01 31 | 691 | 0.7+ | 0.0 | 2006 10 28 | G98 | 0.1− | 0.1+ | 2006 11 11 | 703 | (0.9− | 1.6−) |
| 2006 09 25 | 691 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.1− |
| 2006 09 25 | 691 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 2006 09 25 | 691 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 2006 10 16 | 691 | 0.6− | 0.2+ | 2006 10 29 | G98 | 0.6+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2006 10 16 | 691 | 0.6− | 0.1+ | 2006 10 29 | G98 | 0.5+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2006 10 16 | 691 | 0.3− | 0.2− | 2006 10 29 | G98 | 0.5+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 10 29 | G98 | 0.6+ | 0.2+ | | | | |

**2006 UL$_{216}$ = 2002 VN$_{71}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.17799 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24612764 | $\omega$ | 152.25378 | | +0.98270224 | +0.17535450 | |
| $a$ | 2.5217138 | $\Omega$ | 197.94608 | | −0.18429821 | +0.95757221 | |
| $e$ | 0.0883831 | $i$ | 11.14497 | | +0.01817875 | +0.22870564 | |
| $P$ | 4.00 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 12 01 | 691 | 2.8+ | 1.7+ | 2002 11 11 | 704 | 0.5− | 0.2+ | 2006 10 30 | 400 | 0.2− | 0.0 |
| 1994 12 01 | 691 | 1.3− | 0.6− | 2002 11 11 | 704 | 1.1− | 0.4− | 2006 11 08 | 644 | 0.4+ | 0.1− |
| 1994 12 01 | 691 | 1.1− | 0.8− | 2006 09 30 | 703 | 1.2− | 0.4− | 2006 11 08 | 644 | 0.3+ | 0.3− |
| 1996 03 19 | 691 | 0.3− | 0.2+ | 2006 09 30 | 703 | 0.2− | 1.2+ | 2006 11 08 | 644 | 0.0 | 0.0 |
| 1996 03 19 | 691 | 0.2+ | 0.1− | 2006 09 30 | 703 | 0.8− | 1.1+ | 2006 11 08 | 644 | 0.4+ | 0.1− |
| 1996 03 19 | 691 | 0.1+ | 0.1+ | 2006 09 30 | 703 | 0.7+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2+ |
| 2002 11 07 | 704 | 0.5− | 0.6− | 2006 10 02 | G96 | 0.3+ | 0.5− | 2006 11 08 | 644 | 0.2− | 0.3− |
| 2002 11 07 | 704 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 22 | 400 | 0.9− | 0.6+ |
| 2002 11 07 | 704 | 0.8− | 0.5+ | 2006 10 02 | G96 | 0.3+ | 0.4− | 2006 11 22 | 400 | 0.1− | 1.3− |
| 2002 11 07 | 704 | 0.8− | 0.5+ | 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 11 22 | 400 | 1.4+ | 0.8− |
| 2002 11 07 | 704 | 0.3+ | 1.3+ | 2006 10 29 | 400 | 0.9+ | 0.6+ | 2006 11 25 | 400 | 0.7+ | 1.4− |
| 2002 11 11 | 704 | (1.9− | 0.9+) | 2006 10 29 | 400 | 0.8+ | 0.3− | 2006 11 25 | 400 | 0.1− | 0.7− |
| 2002 11 11 | 704 | 1.2− | 0.3+ | 2006 10 30 | 400 | 0.2+ | 0.2+ | | | | |

**2006 UF$_{217}$ = 2004 BX$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 344.52464 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.26741059 | $\omega$ | 81.53597 | +0.51949955 | −0.85446100 | | | | | | | | |
| $a$ | 2.3860725 | $\Omega$ | 337.16393 | +0.77977164 | +0.47602920 | | | | | | | | |
| $e$ | 0.1455113 | $i$ | 0.60174 | +0.34939436 | +0.20806873 | | | | | | | | |
| $P$ | 3.69 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 0 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 691 | 0.2− | 0.1− | 2004 01 30 | 568 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 1.4+ | 0.0 | | | | | |
| 2000 01 05 | 691 | 0.1− | 0.4− | 2006 09 27 | G96 | 0.3+ | 0.5− | 2006 11 21 | 704 | 1.1+ | 0.6− | | | | | |
| 2000 01 05 | 691 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.1− | 0.1+ | | | | | |
| 2000 02 12 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.7− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.9+ | | | | | |
| 2000 02 12 | 691 | 0.3+ | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1− | 0.3− | | | | | |
| 2000 02 12 | 691 | 0.2− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 22 | 691 | 0.2− | 0.7+ | | | | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.5− | 0.2+ | | | | | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.6− | 0.1+ | | | | | |
| 2004 01 22 | 568 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.3+ | 0.4− | | | | | |
| 2004 01 22 | 568 | 0.1+ | 0.6+ | 2006 10 29 | J75 | 1.1+ | 0.5− | 2006 12 01 | G96 | 0.2− | 0.2− | | | | | |
| 2004 01 22 | 568 | 0.1+ | 0.5+ | 2006 10 29 | J75 | 1.1+ | 0.4− | 2006 12 01 | G96 | 0.4+ | 0.1+ | | | | | |
| 2004 01 30 | 568 | 0.4+ | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.2− | | | | | |
| 2004 01 30 | 568 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.5+ | | | | | | | | | |

**2006 US$_{217}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 286.31826 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.17932223 | $\omega$ | 124.98081 | −0.48082734 | −0.87661263 | | | | | | | | |
| $a$ | 3.1144399 | $\Omega$ | 353.67173 | +0.73838335 | −0.39322611 | | | | | | | | |
| $e$ | 0.0737147 | $i$ | 9.84733 | +0.47285843 | −0.27735091 | | | | | | | | |
| $P$ | 5.50 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 644 | 0.0 | 1.4− | 2006 10 25 | 360 | 0.0 | 0.1+ | 2006 11 12 | 360 | 0.1+ | 0.1− | | | | | |
| 2003 04 01 | 644 | 0.2+ | 1.3− | 2006 10 25 | 360 | 0.0 | 0.1+ | 2006 11 12 | 360 | 0.5+ | 0.1+ | | | | | |
| 2003 04 01 | 644 | 0.0 | 1.4− | 2006 10 27 | 703 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.7+ | 0.6+ | | | | | |
| 2003 04 07 | 691 | 0.3− | 1.1+ | 2006 10 27 | 703 | 0.2+ | 0.3− | 2006 11 15 | 703 | 0.1+ | 1.3− | | | | | |
| 2003 04 07 | 691 | 0.6− | 0.4+ | 2006 10 27 | 703 | (2.0+ | 2.5−) | 2006 11 15 | 703 | (0.6+ | 1.9−) | | | | | |
| 2003 04 07 | 691 | 0.9− | 0.0 | 2006 10 27 | 703 | 1.0− | 0.5− | 2006 11 15 | 703 | 0.4− | 0.1+ | | | | | |
| 2003 05 01 | 691 | 1.0+ | 0.3− | 2006 10 29 | 360 | 0.3− | 0.2+ | 2006 11 17 | 360 | 0.1− | 0.0 | | | | | |
| 2003 05 01 | 691 | 0.5+ | 0.2− | 2006 10 29 | 360 | 0.4+ | 0.3+ | 2006 11 17 | 360 | 0.4− | 0.3+ | | | | | |
| 2003 05 01 | 691 | 0.4+ | 0.0 | 2006 10 29 | 360 | 0.2+ | 0.1+ | 2006 11 17 | 360 | 0.1− | 0.1+ | | | | | |
| 2006 10 25 | 360 | 0.1+ | 0.2+ | 2006 10 29 | 360 | 0.4+ | 0.4− | | | | | | | | | |
| 2006 10 25 | 360 | 0.3+ | 0.2+ | 2006 11 12 | 360 | 0.7− | 0.0 | | | | | | | | | |

**2006 UZ$_{217}$ = 1999 TU$_{287}$ = 2006 UG$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 10.47048 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.28848821 | $\omega$ | 198.47887 | +0.88191741 | −0.47105959 | | | | | | | | |
| $a$ | 2.2683880 | $\Omega$ | 189.68384 | +0.44488462 | +0.84433339 | | | | | | | | |
| $e$ | 0.1133909 | $i$ | 6.14810 | +0.15588255 | +0.25535071 | | | | | | | | |
| $P$ | 3.42 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 10 | 704 | 0.5− | 0.2+ | 2005 07 03 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | (0.3+ | 2.9+) | | | | | |
| 1999 10 10 | 704 | 0.5− | 0.0 | 2005 07 03 | 691 | 0.1+ | 0.5+ | 2006 11 19 | 704 | 0.8− | 0.7+ | | | | | |
| 1999 10 10 | 704 | 0.5− | 0.4− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.0 | | | | | |
| 1999 10 10 | 704 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.9− | 0.5+ | | | | | |
| 1999 10 10 | 704 | 0.6+ | 0.7− | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 1.2− | 0.4+ | | | | | |
| 1999 10 19 | 704 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.1− | | | | | |
| 1999 10 19 | 704 | 0.4+ | 0.4− | 2006 10 23 | G96 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.2+ | 1.1+ | | | | | |
| 1999 10 19 | 704 | 0.4+ | 1.9− | 2006 10 23 | G96 | 0.4− | 0.1− | 2006 11 20 | 704 | 0.4− | 1.0+ | | | | | |
| 1999 10 19 | 704 | 0.6+ | 0.5− | 2006 10 23 | G96 | 0.4− | 0.2− | 2006 11 20 | 704 | 0.6+ | 0.6+ | | | | | |
| 1999 10 19 | 704 | 0.6+ | 0.0 | 2006 10 30 | 400 | 1.4− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.1− | | | | | |
| 2002 07 12 | 644 | 0.4− | 0.4+ | 2006 10 30 | 400 | 0.0 | 0.8+ | 2006 11 22 | G96 | 0.3+ | 0.1− | | | | | |
| 2002 07 12 | 644 | 0.3− | 0.3+ | 2006 10 30 | 400 | 1.1− | 1.0− | 2006 11 22 | G96 | 0.2+ | 0.1+ | | | | | |
| 2002 07 12 | 644 | 0.1− | 0.3+ | 2006 11 01 | 400 | 1.0− | 0.3− | 2006 11 22 | G96 | 0.1+ | 0.1+ | | | | | |
| 2002 08 05 | 644 | 0.6− | 0.6+ | 2006 11 01 | 400 | 0.2− | 0.4+ | 2006 11 22 | 683 | (1.9+ | 0.2+) | | | | | |
| 2002 08 05 | 644 | 0.5− | 0.7+ | 2006 11 01 | 400 | 0.1− | 1.1− | 2006 11 22 | 683 | (1.6− | 0.7+) | | | | | |
| 2002 08 05 | 644 | 0.2− | 0.7+ | 2006 11 14 | 704 | (0.7+ | 1.7+) | 2006 11 22 | 683 | (1.6− | 1.4+) | | | | | |
| 2002 08 26 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 704 | 0.2− | 0.6+ | 2006 11 23 | G96 | 0.5+ | 0.0 | | | | | |
| 2002 08 26 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.8+ | 2006 11 23 | G96 | 0.0 | 0.0 | | | | | |
| 2002 08 26 | 644 | 0.6+ | 0.6+ | 2006 11 14 | 704 | 1.3− | 1.0+ | 2006 11 23 | G96 | 0.1+ | 0.0 | | | | | |
| 2004 02 11 | 644 | 0.4+ | 0.8+ | 2006 11 14 | 704 | 0.6+ | 1.0+ | 2006 11 28 | 704 | 0.8+ | 0.2+ | | | | | |
| 2004 02 11 | 644 | 0.4+ | 1.0+ | 2006 11 15 | 703 | 0.2+ | 0.5+ | 2006 11 28 | 704 | 0.4+ | 0.2+ | | | | | |
| 2004 02 11 | 644 | 0.1+ | 0.9+ | 2006 11 15 | 703 | 1.1+ | 0.4− | 2006 11 28 | 704 | 0.4− | 0.0 | | | | | |
| 2005 06 08 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.6+ | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.1+ | | | | | |
| 2005 06 08 | 691 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.4+ | 0.2+ | 2006 11 28 | 704 | 0.5+ | 0.2+ | | | | | |
| 2005 06 08 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | (1.2+ | 2.3+) | | | | | | | | | |
| 2005 07 03 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.5+ | 1.5+ | | | | | | | | | |

**2006 UA$_{218}$ = 2004 CB$_{59}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 353.17957 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.28681292 | $\omega$ | 315.66169 | +0.64848965 | −0.74992248 | | | | | | | | |
| $a$ | 2.2772126 | $\Omega$ | 93.45701 | +0.72974125 | +0.56358061 | | | | | | | | |
| $e$ | 0.0889841 | $i$ | 7.52270 | +0.21665382 | +0.34640030 | | | | | | | | |
| $P$ | 3.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 11 01 | 400 | 1.0+ | 0.9− | 2006 11 20 | 691 | 0.4− | 0.1+ | | | | | |
| 2001 04 16 | 645 | 0.0 | 0.1+ | 2006 11 01 | 400 | 0.5+ | 0.2+ | 2006 11 20 | 704 | (0.0 | 1.6+) | | | | | |
| 2002 08 13 | 644 | 0.1+ | 0.8+ | 2006 11 15 | 703 | 0.3+ | 0.3+ | 2006 11 20 | 704 | (1.6− | 1.0+) | | | | | |
| 2002 08 13 | 644 | 0.5− | 0.8+ | 2006 11 15 | 703 | 0.7− | 0.1− | 2006 11 20 | 704 | (0.5− | 1.8+) | | | | | |
| 2002 08 13 | 644 | 0.1− | 0.8+ | 2006 11 15 | 703 | 0.5+ | 0.4+ | 2006 11 22 | 400 | 1.3+ | 0.1− | | | | | |
| 2004 02 10 | 644 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.5− | 2006 11 22 | 400 | 0.4− | 0.3− | | | | | |
| 2004 02 10 | 644 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.3− | 0.1+ | 2006 11 22 | 400 | 0.2+ | 0.4− | | | | | |
| 2004 02 10 | 644 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 11 24 | 691 | 0.1− | 0.1+ | | | | | |
| 2004 02 10 | 644 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.0 | 2006 11 24 | 691 | 0.0 | 0.2+ | | | | | |
| 2004 02 10 | 644 | 0.4+ | 0.4+ | 2006 11 17 | 704 | 0.8+ | 0.7+ | 2006 11 24 | 691 | 0.1− | 0.2+ | | | | | |
| 2004 02 10 | 644 | 0.9+ | 0.2+ | 2006 11 17 | 704 | 0.7− | 0.6+ | 2006 11 24 | G96 | 0.2+ | 0.1− | | | | | |
| 2004 02 15 | 704 | 0.8+ | 0.7+ | 2006 11 17 | 704 | 0.3+ | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.2− | | | | | |
| 2004 02 15 | 704 | 0.5− | 0.2+ | 2006 11 17 | 704 | 0.3+ | 1.1− | 2006 11 24 | G96 | 0.3+ | 0.1+ | | | | | |
| 2004 02 15 | 704 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.1+ | 0.8− | 2006 11 24 | G96 | 0.2− | 0.1− | | | | | |
| 2004 02 15 | 704 | 0.2+ | 0.2− | 2006 11 17 | 644 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.5+ | 0.3− | | | | | |
| 2004 04 16 | 645 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.4+ | 0.1+ | 2006 11 28 | 704 | 1.2+ | 0.1− | | | | | |
| 2004 04 16 | 645 | 0.0 | 0.1− | 2006 11 17 | 644 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.3+ | 0.5+ | | | | | |
| 2006 10 30 | 400 | 0.3+ | 0.8+ | 2006 11 20 | 691 | 0.2− | 0.0 | | | | | | | | | |
| 2006 10 30 | 400 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.2− | 0.0 | | | | | | | | | |

**2006 UH$_{218}$ = 2004 FN$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 8.77384 | | | (2000.0) | | **P** | | **Q** | | | | | |
| $n$ | 0.22882121 | $\omega$ | 39.31061 | +0.94412876 | −0.32909149 | | | | | | | | |
| $a$ | 2.6473124 | $\Omega$ | 339.88121 | +0.28776848 | +0.84959240 | | | | | | | | |
| $e$ | 0.0910521 | $i$ | 2.97960 | +0.16065551 | +0.41217902 | | | | | | | | |
| $P$ | 4.31 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 | | | | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 10 27 | 703 | (2.2− | 2.4+) | 2006 11 08 | 644 | 0.3+ | 0.6+ | | | | | |
| 2004 03 17 | 691 | 0.2− | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.7− | 2006 11 16 | 408 | (1.7− | 0.3−) | | | | | |
| 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 1.2+ | 0.6− | 2006 11 16 | 408 | 1.2− | 0.2− | | | | | |
| 2004 03 23 | 291 | 0.0 | 0.2− | 2006 10 27 | 408 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.4− | 0.1− | | | | | |
| 2004 03 23 | 291 | 0.1+ | 0.1− | 2006 10 27 | 408 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.4− | 0.3− | | | | | |
| 2004 03 23 | 291 | 0.3+ | 0.1− | 2006 10 30 | 408 | 0.5+ | 0.6− | 2006 11 17 | G96 | 0.4− | 0.2− | | | | | |
| 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 10 30 | 408 | 0.0 | 0.6− | 2006 11 17 | G96 | 0.4− | 0.2− | | | | | |
| 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 408 | (1.6− | 0.0 ) | 2006 11 17 | G96 | 0.0 | 0.3− | | | | | |
| 2004 03 29 | 691 | 0.4− | 0.1+ | 2006 10 31 | 408 | (1.8− | 0.2−) | 2006 11 17 | G96 | 0.4− | 0.3− | | | | | |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 17 | G96 | 0.2− | 0.2− | | | | | |
| 2006 10 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.1− | 0.3− | | | | | |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.4− | 2006 11 17 | 408 | 0.7+ | 0.5+ | | | | | |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 17 | 408 | 0.9+ | 0.5− | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.4+ | 0.0 | 2006 11 24 | 408 | 0.8+ | 0.3+ |
| 2006 10 21 | 691 | 0.4− | 0.8+ | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 24 | 408 | 0.9+ | 0.5+ |
| 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 25 | 408 | (0.6+ | 2.5−) |
| 2006 10 21 | 644 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.0 | 2006 11 25 | 408 | (0.8+ | 2.8−) |
| 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.4− | 0.0 | | | | |
| 2006 10 27 | 703 | 0.1+ | 0.5− | 2006 11 08 | 644 | 0.1+ | 0.4+ | | | | |

**2006 UJ$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.50630 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23623917 | $\omega$ | 350.34120 | | +0.99211737 | +0.12526031 | |
| $a$ | 2.5916008 | $\Omega$ | 2.47160 | | −0.10867212 | +0.87434032 | |
| $e$ | 0.0378186 | $i$ | 4.79390 | | −0.06239794 | +0.46886976 | |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 644 | 0.2− | 0.7+ | 2006 10 27 | 408 | 1.0+ | 1.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2001 07 19 | 644 | 0.0 | 0.8+ | 2006 10 27 | 408 | 0.3+ | 0.9+ | 2006 11 17 | 408 | (1.7+ | 1.3−) |
| 2001 07 19 | 644 | 0.4− | 0.6+ | 2006 10 30 | 408 | 0.3− | 0.5− | 2006 11 17 | 408 | (2.3+ | 2.6−) |
| 2004 03 14 | 691 | 0.2− | 0.0 | 2006 10 30 | 408 | 0.9− | 0.6− | 2006 11 18 | 291 | 0.0 | 0.2+ |
| 2004 03 14 | 691 | 0.2+ | 0.2+ | 2006 10 31 | 408 | 0.6+ | 0.3+ | 2006 11 18 | 291 | 0.2+ | 0.2+ |
| 2004 03 14 | 691 | 0.3+ | 0.1+ | 2006 10 31 | 408 | 0.3+ | 0.7+ | 2006 11 18 | 291 | 0.1+ | 0.1+ |
| 2004 03 21 | 691 | 0.3+ | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2004 03 21 | 691 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.6− | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2004 03 21 | 691 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.4− | 0.3− |
| 2006 10 13 | 691 | 0.3− | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2006 10 13 | 691 | 0.4− | 0.0 | 2006 11 16 | 408 | (2.6+ | 0.0 ) | 2006 11 19 | 291 | 0.0 | 0.0 |
| 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 16 | 408 | (2.2+ | 0.1−) | 2006 11 19 | 291 | 0.1+ | 0.1+ |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.3− | 2006 11 19 | 291 | 0.1+ | 0.2+ |
| 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.3− | 2006 11 24 | 408 | 0.1+ | 0.2− |
| 2006 10 21 | 691 | 0.5− | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2− | 2006 11 24 | 408 | 0.3+ | 0.2− |
| 2006 10 27 | 703 | 1.1+ | 0.7− | 2006 11 17 | G96 | 0.0 | 0.3− | 2006 11 25 | 408 | 0.3+ | 0.1+ |
| 2006 10 27 | 703 | 0.5+ | 0.5− | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 25 | 408 | 0.3− | 0.7+ |
| 2006 10 27 | 703 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.2− | | | | |
| 2006 10 27 | 703 | 0.4+ | 0.4+ | 2006 11 17 | G96 | 0.2+ | 0.4− | | | | |

**2006 UK$_{218}$ = 2000 ER$_2$ = 2004 FD$_{117}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 254.74937 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24699742 | $\omega$ | 193.82160 | | −0.72207478 | −0.69072537 | |
| $a$ | 2.5157903 | $\Omega$ | 302.42211 | | +0.63901734 | −0.64442065 | |
| $e$ | 0.1138468 | $i$ | 2.63543 | | +0.26507518 | −0.32805562 | |
| $P$ | 3.99 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 704 | 0.3+ | 0.1− | 2004 03 27 | 704 | 0.0 | 0.6− | 2006 09 28 | 691 | 0.1− | 0.2+ |
| 2000 03 03 | 704 | 0.8− | 0.4− | 2004 03 27 | 704 | 0.3+ | 0.0 | 2006 09 28 | 691 | 0.3− | 0.1+ |
| 2000 03 03 | 704 | 0.7− | 0.1− | 2004 03 27 | 704 | 1.2− | 1.0+ | 2006 09 28 | 691 | 0.2− | 0.3+ |
| 2000 03 03 | 704 | 1.2+ | 0.7− | 2004 03 27 | 704 | 0.3− | 0.6+ | 2006 10 30 | 408 | 0.4+ | 0.6− |
| 2000 03 04 | 704 | 0.8+ | 1.5+ | 2004 03 28 | 691 | 0.1+ | 0.2− | 2006 10 30 | 408 | 0.7+ | 0.5− |
| 2000 03 04 | 704 | 0.3+ | 0.8+ | 2004 03 28 | 691 | 0.0 | 0.2− | 2006 10 31 | 408 | 0.6+ | 0.5− |
| 2000 03 04 | 704 | 0.4− | 0.5+ | 2004 03 28 | 691 | 0.0 | 0.2− | 2006 10 31 | 408 | 0.9+ | 0.5− |

**2006 UO$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 308.66608 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17488608 | $\omega$ | 241.91153 | | +0.16185056 | −0.98284251 | |
| $a$ | 3.1668869 | $\Omega$ | 199.38843 | | +0.97283006 | +0.17395258 | |
| $e$ | 0.1020483 | $i$ | 15.45411 | | +0.16554777 | −0.06132785 | |
| $P$ | 5.64 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 24 | 691 | 0.2+ | 0.2+ | 2006 09 28 | 699 | 1.2+ | 0.1− | 2006 10 21 | 644 | 0.1− | 0.1+ |
| 2004 04 24 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.8− | 0.2+ |
| 2004 04 24 | 691 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.1+ | 1.2− |
| 2004 05 23 | 691 | 0.3− | 0.1− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 13 | 703 | 1.3− | 0.6+ |
| 2004 05 23 | 691 | 0.2+ | 0.2− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.3− |
| 2004 05 23 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.3+ |
| 2006 09 15 | 691 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.9+ | 0.8− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 10 21 | 703 | 1.0+ | 0.2+ | 2006 11 18 | G96 | 0.1− | 0.3+ |
| 2006 09 28 | 699 | 0.5+ | 0.1+ | 2006 10 21 | 703 | 0.6+ | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.2+ |
| 2006 09 28 | 699 | 0.1+ | 0.1− | 2006 10 21 | 703 | 0.4− | 0.3+ | | | | |
| 2006 09 28 | 699 | 0.8− | 0.7+ | 2006 10 21 | 644 | 0.0 | 0.0 | | | | |

**2006 UQ$_{218}$ = 2002 TY$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 277.97126 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23702567 | $\omega$ | 65.47768 | | +0.10188079 | −0.99099416 | |
| $a$ | 2.5858647 | $\Omega$ | 19.28429 | | +0.79066725 | +0.02765554 | |
| $e$ | 0.0359978 | $i$ | 15.25508 | | +0.60370986 | +0.13101813 | |
| $P$ | 4.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 704 | 0.3+ | 0.6− | 2002 10 11 | 704 | 0.4− | 0.2+ | 2006 09 26 | 152 | 0.0 | 1.6+ |
| 2002 10 02 | 704 | 0.8+ | 0.2+ | 2002 10 11 | 704 | 0.7− | 0.2− | 2006 09 30 | 703 | 0.1+ | 1.6− |
| 2002 10 02 | 704 | 0.5+ | 0.1+ | 2002 10 11 | 704 | 0.8− | 0.8+ | 2006 09 30 | 703 | 1.2− | 1.7− |
| 2002 10 02 | 704 | 0.6+ | 0.9+ | 2002 10 11 | 704 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.8− | 0.8− |
| 2002 10 03 | 704 | 0.0 | 0.2+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.6+ | 0.2+ |
| 2002 10 03 | 704 | 0.5− | 0.3+ | 2004 02 17 | 645 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.4+ | 0.5− |
| 2002 10 03 | 704 | 0.4− | 0.1− | 2006 09 25 | 152 | 1.9+ | 2.0+ | 2006 10 16 | 703 | 0.9− | 0.3− |
| 2002 10 03 | 704 | 0.2− | 0.4+ | 2006 09 25 | 152 | 0.8+ | 0.2− | 2006 10 16 | 703 | (1.1− | 2.3−) |
| 2002 10 03 | 704 | 0.6− | 0.2+ | 2006 09 25 | 152 | 0.4+ | 0.4+ | 2006 10 16 | 703 | (2.3− | 1.1−) |
| 2002 10 07 | 704 | (2.3+ | 1.2+) | 2006 09 25 | 152 | 0.7+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.5− |
| 2002 10 07 | 704 | 0.1+ | 0.3− | 2006 09 26 | 152 | 0.6− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.6− |
| 2002 10 07 | 704 | 0.2+ | 0.7− | 2006 09 26 | 152 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.2− | 0.2− |

**2006 US$_{218}$ = 1995 TU$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.45337 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17809324 | $\omega$ | 224.53974 | | +0.00235324 | −0.99286320 | |
| $a$ | 3.1287517 | $\Omega$ | 225.72721 | | +0.95766039 | +0.03656453 | |
| $e$ | 0.0874528 | $i$ | 9.58581 | | +0.28789067 | −0.11351519 | |
| $P$ | 5.53 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1+ | 0.7− | 2006 10 16 | 691 | 0.3− | 0.2− | 2006 10 29 | 691 | 0.4+ | 0.2+ |
| 1995 10 15 | 691 | 0.1− | 0.5− | 2006 10 16 | 691 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 1995 10 15 | 691 | 0.2+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1995 10 22 | 691 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 1995 10 22 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1995 10 22 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2006 10 03 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.2− |
| 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 10 29 | 691 | 0.4+ | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2006 10 16 | 691 | 0.2− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.1− | 0.3− |

**2006 UV$_{218}$ = 2001 SU$_{307}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.79819 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19913917 | $\omega$ | 239.51589 | | +0.57304549 | −0.81942819 | |
| $a$ | 2.9042339 | $\Omega$ | 175.46134 | | +0.79560726 | +0.55259888 | |
| $e$ | 0.0966317 | $i$ | 9.09035 | | +0.19653997 | +0.15222325 | |
| $P$ | 4.95 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1+ | 1.0− | 2001 09 23 | 704 | 0.3+ | 0.2+ | 2006 09 18 | 691 | 0.2− | 0.0 |
| 2001 09 19 | 704 | 0.5− | 1.3− | 2001 09 23 | 704 | 0.4− | 0.4+ | 2006 09 18 | 691 | 0.2+ | 0.1− |
| 2001 09 19 | 704 | (0.8+ | 1.8−) | 2001 09 23 | 704 | 0.1+ | 0.7+ | 2006 09 26 | 691 | 0.3+ | 0.2+ |
| 2001 09 19 | 704 | 0.4+ | 1.6− | 2001 09 26 | 704 | 0.2+ | 0.6− | 2006 09 26 | 691 | 0.3+ | 0.2+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | (0.3+ | 2.3−) | 2001 09 26 | 704 | 0.6− | 1.2− | 2006 09 26 | 691 | 0.1+ | 0.2+ |
| 2001 09 19 | 704 | 0.1− | 0.4+ | 2001 09 26 | 704 | 0.4− | 0.1+ | 2006 10 16 | 703 | 0.4− | 0.7+ |
| 2001 09 19 | 704 | 0.3− | 0.7+ | 2004 04 14 | 691 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 09 19 | 704 | 1.0− | 0.9+ | 2004 04 14 | 691 | 0.1+ | 0.0 | 2006 10 16 | 703 | 0.7− | 0.1− |
| 2001 09 21 | 704 | 0.5+ | 0.4+ | 2004 04 14 | 691 | 0.1− | 0.0 | 2006 10 16 | 703 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.1− | 0.2− | 2006 07 21 | G96 | 0.1− | 0.6− | 2006 10 20 | 644 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 0.3+ | 0.1+ | 2006 07 21 | G96 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.2− | 0.2− |
| 2001 09 21 | 704 | 0.5+ | 1.2+ | 2006 07 21 | G96 | 0.1− | 0.5− | 2006 10 21 | 644 | 0.5− | 0.2− |
| 2001 09 21 | 704 | 0.5+ | 0.5+ | 2006 07 21 | G96 | 0.5− | 0.6− | | | | |
| 2001 09 23 | 704 | 0.5+ | 0.4+ | 2006 09 18 | 691 | 0.2− | 0.2+ | | | | |

**2006 UN$_{219}$ = 1999 TS$_{304}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.36672 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28232399 | $\omega$ | 40.29198 | | +0.31188302 | −0.94814479 | |
| $a$ | 2.3012874 | $\Omega$ | 31.67496 | | +0.83896713 | +0.24457111 | |
| $e$ | 0.0737777 | $i$ | 6.69747 | | +0.44594074 | +0.20299367 | |
| $P$ | 3.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 03 | 691 | 0.1− | 0.5− | 2006 09 26 | G96 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.5+ |
| 1994 04 03 | 691 | 0.1− | 0.7− | 2006 09 26 | G96 | 0.4− | 1.0− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 1994 04 03 | 691 | 0.5− | 0.4− | 2006 09 26 | G96 | 0.5+ | 1.3− | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 1999 10 04 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 1999 10 04 | 691 | 0.2+ | 0.2− | 2006 10 16 | 691 | 1.0− | 0.3+ | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 1999 10 04 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.4− | 0.4+ | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 1999 10 11 | 691 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 1999 10 11 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1999 10 11 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 04 18 | 691 | 0.4+ | 0.7+ | 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 04 18 | 691 | 0.1− | 1.0+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 04 18 | 691 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2005 02 15 | 809 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1− | | | | |
| 2005 02 15 | 809 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.9+ | 0.8− | | | | |

**2006 UE$_{220}$ = 2002 XX$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.91979 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23767737 | $\omega$ | 342.19984 | | +0.85594137 | −0.50533836 | |
| $a$ | 2.5811356 | $\Omega$ | 48.66310 | | +0.49037648 | +0.72614108 | |
| $e$ | 0.2046507 | $i$ | 8.38830 | | +0.16399780 | +0.46621055 | |
| $P$ | 4.15 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.3+ | 2006 11 13 | 691 | 0.4+ | 0.1− |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 10 22 | 691 | 0.4− | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2002 12 06 | 704 | 0.9+ | 0.7− | 2006 10 22 | 691 | 0.5− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 15 | G92 | 0.4+ | 0.1+ |
| 2002 12 06 | 704 | 0.2− | 0.1− | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 15 | G92 | 0.2− | 0.6+ |
| 2002 12 06 | 704 | 0.4+ | 1.1− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 15 | G92 | 1.2− | 0.5+ |
| 2002 12 06 | 704 | 0.1+ | 0.8+ | 2006 11 01 | G96 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.1− | 0.8+ |
| 2002 12 07 | 704 | 0.1+ | 0.9− | 2006 11 01 | 734 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.5+ | 0.5− |
| 2002 12 07 | 704 | 0.1+ | 0.4− | 2006 11 01 | 734 | 0.4+ | 0.3− | 2006 11 17 | 703 | 0.9− | 0.3− |
| 2002 12 07 | 704 | 1.1+ | 0.1+ | 2006 11 01 | 734 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.8+ | 0.6− |
| 2002 12 07 | 704 | 0.7− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 18 | G92 | 0.1− | 0.6+ |
| 2002 12 07 | 704 | 0.7− | 0.1− | 2006 11 01 | 734 | 0.1+ | 0.3− | 2006 11 18 | G92 | 0.4+ | 0.5− |
| 2004 03 20 | 691 | 0.2+ | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.1− | 2006 11 18 | G92 | 0.0 | 0.4+ |
| 2004 03 20 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 734 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.2− |
| 2004 03 20 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | (0.2− | 1.7+) |
| 2006 09 29 | 699 | 0.7+ | 0.9+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.2− | 1.5+ |
| 2006 09 29 | 699 | 0.4+ | 0.2− | 2006 11 01 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2006 09 29 | 699 | 0.9+ | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2006 09 29 | 699 | 1.0+ | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.4+ |
| 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.7+ |
| 2006 10 16 | 703 | 0.1+ | 0.7− | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 2006 10 16 | 703 | 0.8− | 0.3− | 2006 11 09 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2006 10 16 | 703 | 0.6− | 0.0 | 2006 11 10 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 10 | 644 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1− |
| 2006 10 20 | 644 | 0.2− | 0.0 | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 24 | 703 | 0.5+ | 0.1− |
| 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 24 | 703 | 0.3+ | 0.4− |
| 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 24 | 703 | 0.1+ | 0.2+ |
| 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 24 | 703 | 2.3− | 0.0 |
| 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.3+ | | | | |

**2006 UG$_{220}$ = 2002 XS$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.21317 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22741057 | $\omega$ | 22.32872 | | +0.82287791 | −0.56808017 | |
| $a$ | 2.6582487 | $\Omega$ | 12.31145 | | +0.51205110 | +0.73180295 | |
| $e$ | 0.1232956 | $i$ | 3.36739 | | +0.24632421 | +0.37649616 | |
| $P$ | 4.33 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.2− | 0.5+ | 2006 10 19 | 644 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.0 | 0.5− |
| 2002 12 11 | 704 | 0.9− | 0.7− | 2006 10 19 | 644 | 0.6+ | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.6+ |
| 2002 12 11 | 704 | (0.9− | 1.7−) | 2006 10 21 | 644 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.2+ | 1.4− |
| 2002 12 11 | 704 | 0.4+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.4− |
| 2002 12 14 | 704 | 0.2− | 0.6− | 2006 10 21 | 644 | 0.6+ | 0.2+ | 2006 11 17 | G96 | 0.7+ | 0.3− |
| 2002 12 14 | 704 | 0.9+ | 1.2− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.6− |
| 2002 12 14 | 704 | (1.4+ | 2.3−) | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.5− |
| 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.3− | 1.1+ |
| 2004 03 29 | 691 | 0.3− | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.6− | 1.2+ |
| 2004 03 29 | 691 | 0.2− | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.8− | 0.4+ |
| 2004 04 23 | 291 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 2004 04 23 | 291 | 0.7+ | 0.3+ | 2006 11 08 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2004 04 23 | 291 | 0.6+ | 0.2+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2006 07 21 | G96 | 0.3− | 0.3+ | 2006 11 08 | 644 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.6+ |
| 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2006 07 21 | G96 | 0.2− | 0.4+ | 2006 11 14 | 703 | 0.7+ | 0.5− | 2006 11 21 | 704 | 0.2− | 0.2− |
| 2006 07 21 | G96 | 0.1− | 0.4+ | 2006 11 14 | 703 | 0.7+ | 0.7− | 2006 11 21 | 704 | 0.2− | 0.9+ |
| 2006 10 16 | 691 | 0.2− | 0.3+ | 2006 11 14 | 703 | 0.1+ | 0.6− | 2006 11 22 | 704 | 0.1+ | 0.0 |
| 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 14 | 703 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.8− | 0.7+ |
| 2006 10 16 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.1− | 0.7− | 2006 11 22 | 704 | (1.6− | 1.6+) |
| 2006 10 19 | 644 | 0.5− | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.1+ | 1.1+ |

**2006 UM$_{220}$ = 1999 TW$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 33.63141 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29175585 | $\omega$ | 338.84376 | | +0.79978942 | +0.59976302 | |
| $a$ | 2.2514190 | $\Omega$ | 344.22681 | | −0.53674603 | +0.69593091 | |
| $e$ | 0.2214757 | $i$ | 5.26082 | | −0.26877608 | +0.39492340 | |
| $P$ | 3.38 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 09 | 691 | 0.0 | 0.3+ | 2005 03 11 | G96 | 0.4+ | 0.2+ | 2006 10 10 | 644 | 0.3− | 0.5+ |
| 1996 12 09 | 691 | 0.0 | 0.1− | 2005 03 11 | G96 | 0.0 | 0.2+ | 2006 10 17 | 691 | 0.0 | 0.0 |
| 1996 12 09 | 691 | 0.1+ | 0.4− | 2005 03 11 | G96 | 0.1+ | 0.6+ | 2006 10 17 | 691 | 0.1+ | 0.0 |
| 1999 10 13 | 691 | 0.2+ | 0.1− | 2005 03 11 | G96 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1− | 0.2+ |
| 1999 10 13 | 691 | 0.3+ | 0.1− | 2006 09 28 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3− | 0.1+ |
| 1999 10 13 | 691 | 0.1+ | 0.3− | 2006 09 28 | 691 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2− |
| 1999 10 14 | 691 | 0.4− | 0.9+ | 2006 09 28 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 1999 10 14 | 691 | 0.8− | 0.1− | 2006 10 10 | 644 | 0.7+ | 0.6+ | | | | |
| 1999 10 14 | 691 | 0.6+ | 0.2− | 2006 10 10 | 644 | 0.1+ | 0.1+ | | | | |

**2006 UO$_{220}$ = 2003 BP$_{63}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 211.21012 | | (2000.0) | | | |
| $n$ | 0.18417432 | $\omega$ | 171.12554 | | −0.99626588 | −0.08545099 |
| $a$ | 3.0594968 | $\Omega$ | 4.03453 | | +0.06445169 | −0.83121746 |
| $e$ | 0.0640940 | $i$ | 10.10612 | | +0.05744796 | −0.54934112 |
| $P$ | 5.35 | $H$ | 15.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 699 | 0.5− | 0.7− | 2003 01 31 | 704 | 0.0 | 0.7− | 2006 10 17 | 691 | 0.2+ | 0.1− |
| 2001 11 11 | 699 | 0.5+ | 1.2+ | 2003 01 31 | 704 | 0.5− | 0.8− | 2006 10 17 | 691 | 0.6+ | 0.4− |
| 2001 11 11 | 699 | 0.1− | 0.4+ | 2005 08 04 | 644 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.2− | 0.8− |
| 2001 11 11 | 699 | 0.3− | 0.1+ | 2005 08 04 | 644 | 0.2− | 0.4+ | 2006 10 17 | 703 | 0.3+ | 0.8− |
| 2003 01 28 | 644 | 0.4+ | 0.7+ | 2005 08 04 | 644 | 0.1− | 0.1− | 2006 10 17 | 703 | (1.8− | 2.8−) |
| 2003 01 28 | 644 | 0.3+ | 0.3+ | 2006 09 28 | 691 | 0.2− | 0.2− | 2006 10 17 | 703 | 0.3− | 0.0 |
| 2003 01 28 | 644 | 0.4+ | 0.6+ | 2006 09 28 | 691 | 0.1− | 0.2− | 2006 10 20 | 644 | 0.2− | 0.2− |
| 2003 01 31 | 704 | 1.3− | 0.2+ | 2006 09 28 | 691 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.7− | 0.3− |
| 2003 01 31 | 704 | 0.7+ | 0.3− | 2006 10 17 | 691 | 0.2− | 1.1+ | 2006 10 20 | 644 | 0.2− | 0.1− |

**2006 UA$_{221}$ = 1995 QH$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 358.54214 | | (2000.0) | | | |
| $n$ | 0.18494912 | $\omega$ | 115.81597 | | +0.93565326 | −0.34259622 |
| $a$ | 3.0509461 | $\Omega$ | 264.31519 | | +0.28557396 | +0.87603832 |
| $e$ | 0.3427422 | $i$ | 4.88514 | | +0.20736558 | +0.33938871 |
| $P$ | 5.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 28 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.3− |
| 1995 08 28 | 691 | 0.4− | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.1− | 2006 11 14 | 703 | 0.5− | 0.3− |
| 1995 08 28 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.2− | 0.6− |
| 1995 09 03 | 691 | 0.4+ | 0.1+ | 2006 10 29 | 691 | 0.2+ | 0.0 | 2006 11 14 | 703 | 0.5− | 1.0− |
| 1995 09 03 | 691 | 0.2+ | 0.1− | 2006 10 29 | 704 | 0.2− | 0.8− | 2006 11 14 | 703 | 0.0 | 0.1− |
| 1995 09 03 | 691 | 0.1+ | 0.2− | 2006 10 29 | 704 | 0.2+ | 0.6− | 2006 11 14 | 703 | 0.1+ | 0.3− |
| 2006 09 30 | 691 | 1.1− | 0.1+ | 2006 10 29 | 704 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.8− | 1.1+ |
| 2006 09 30 | 691 | 0.2+ | 0.6+ | 2006 10 29 | 704 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.8+ | 0.3+ |
| 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 703 | 0.1+ | 0.9+ | 2006 11 19 | 704 | 0.2+ | 1.3+ |
| 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 10 31 | 703 | 1.0+ | 1.3− | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 10 31 | 703 | 0.4+ | 0.6− | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2006 10 17 | 691 | 0.3+ | 0.0 | 2006 10 31 | 703 | 0.2+ | 0.0 | 2006 11 25 | G96 | 0.5+ | 0.5− |
| 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.3+ | 2006 11 25 | G96 | 0.3+ | 0.4− |
| 2006 10 21 | 644 | 0.1− | 0.0 | 2006 11 14 | 703 | 1.3− | 0.2+ | | | | |

**2006 UG$_{221}$ = 1996 XH$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 330.69274 | | (2000.0) | | | |
| $n$ | 0.19257047 | $\omega$ | 49.56856 | | +0.59879485 | −0.80085121 |
| $a$ | 2.9699075 | $\Omega$ | 3.68277 | | +0.68547672 | +0.50661393 |
| $e$ | 0.1563836 | $i$ | 8.10820 | | +0.41420575 | +0.31934256 |
| $P$ | 5.12 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 06 | 691 | 0.0 | 0.1− | 2006 09 19 | 691 | 0.0 | 0.2− | 2006 10 17 | 703 | 1.4− | 0.6− |
| 1996 12 06 | 691 | 0.0 | 0.2− | 2006 09 27 | 691 | 0.4− | 1.4+ | 2006 10 17 | 703 | 1.2+ | 0.3− |
| 1996 12 06 | 691 | 0.2+ | 0.5+ | 2006 09 27 | 691 | 0.1+ | 0.1− | 2006 10 17 | 703 | 1.0− | 0.5+ |
| 1996 12 07 | 691 | 0.2+ | 0.2− | 2006 09 27 | 691 | 0.1− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.3− |
| 1996 12 07 | 691 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.1− |
| 1996 12 07 | 691 | 0.2− | 0.0 | 2006 10 01 | 691 | 0.1+ | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2− |
| 2006 09 19 | 691 | 0.1+ | 0.3− | 2006 10 01 | 691 | 0.2+ | 0.1− | | | | |
| 2006 09 19 | 691 | 0.2+ | 0.1− | 2006 10 17 | 703 | 0.2− | 0.0 | | | | |

**2006 UO$_{221}$ = 2004 KN$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 282.76911 | | (2000.0) | | | |
| $n$ | 0.20500790 | $\omega$ | 54.68254 | | −0.15859989 | −0.98398180 |
| $a$ | 2.8485399 | $\Omega$ | 44.66707 | | +0.86412994 | −0.17821691 |
| $e$ | 0.0184020 | $i$ | 6.64926 | | +0.47762487 | −0.00430640 |
| $P$ | 4.81 | $H$ | 16.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 09 | 691 | 0.0 | 0.1− | 2006 10 01 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.9+ |
| 2004 05 09 | 691 | 0.2+ | 0.3+ | 2006 10 01 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.1− |
| 2004 05 09 | 691 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.8− | 2006 11 16 | G96 | 0.2+ | 0.0 |
| 2004 05 24 | 691 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.7− | 2006 11 16 | G96 | 0.1− | 0.1− |
| 2004 05 24 | 691 | 0.0 | 0.4+ | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.3− | 0.2+ |
| 2004 05 24 | 691 | 0.3+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.1− | 0.5− |
| 2006 09 27 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 20 | G96 | 0.3− | 0.4+ |
| 2006 09 27 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.5− | 0.4+ | 2006 11 20 | G96 | 0.4− | 0.2− |
| 2006 09 27 | 691 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 20 | G96 | 1.1+ | 0.0 |
| 2006 10 01 | 691 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 20 | G96 | 0.2− | 0.3− |

**2006 UR$_{221}$ = 2001 RA$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 337.75423 | | (2000.0) | | | |
| $n$ | 0.21217223 | $\omega$ | 187.86419 | | +0.60795291 | −0.78836006 |
| $a$ | 2.7840499 | $\Omega$ | 224.75671 | | +0.73554712 | +0.60392454 |
| $e$ | 0.1079327 | $i$ | 7.69206 | | +0.29893763 | +0.11731822 |
| $P$ | 4.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 10 | 704 | 0.4+ | 0.4− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.4+ | 0.9− |
| 2001 09 10 | 704 | 0.1− | 0.1+ | 2006 10 17 | 691 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 09 10 | 704 | 0.1+ | 0.5− | 2006 10 17 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2001 09 10 | 704 | 0.3− | 0.2− | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 09 16 | 704 | 0.4− | 1.1+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 25 | 703 | 0.2− | 0.1+ |
| 2001 09 16 | 704 | 0.2− | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 25 | 703 | (0.1− | 2.1+) |
| 2001 09 16 | 704 | 0.8+ | 1.5+ | 2006 10 21 | 644 | 0.3− | 0.3+ | 2006 11 25 | 703 | 0.6− | 0.7+ |
| 2001 09 16 | 704 | 0.4− | 1.0+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 25 | 703 | 0.5− | 0.0 |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 11 18 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.1− |
| 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 17 | 703 | 0.5+ | 0.1+ | | | | |
| 2006 09 28 | G96 | 0.1+ | 0.6− | 2006 11 17 | 703 | 0.1− | 0.6− | | | | |

**2006 UV$_{221}$ = 1996 HC$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 302.64094 | | (2000.0) | | | |
| $n$ | 0.24357568 | $\omega$ | 51.49511 | | −0.04444277 | −0.99195221 |
| $a$ | 2.5392966 | $\Omega$ | 41.53179 | | +0.85188002 | −0.09962049 |
| $e$ | 0.1064400 | $i$ | 10.30038 | | +0.52184794 | +0.07814461 |
| $P$ | 4.05 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 18 | 691 | 0.5− | 0.6− | 2004 03 14 | 691 | 0.0 | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.1− |
| 1996 04 18 | 691 | 0.1+ | 0.3− | 2004 03 14 | 691 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.2+ |
| 1996 04 18 | 691 | 0.4+ | 0.6− | 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 1996 04 24 | 691 | 0.8− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 1996 04 24 | 691 | 0.3− | 0.2− | 2006 10 02 | G96 | 0.7+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.3− |
| 1996 04 24 | 691 | 0.4− | 0.4− | 2006 10 02 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2002 10 16 | 644 | 0.2− | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 10 16 | 644 | 0.1− | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.6− | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2002 10 16 | 644 | 0.6+ | 0.6+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 11 04 | 291 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.3+ | 0.5− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2002 11 04 | 291 | 0.0 | 0.0 | 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.6− | 0.0 |
| 2002 11 04 | 291 | 0.0 | 0.2− | 2006 10 20 | 644 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.6+ | 0.1− |
| 2004 03 14 | 691 | 0.3+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.3− |

**2006 UV$_{222}$ = 2004 HG$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.96631 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17624041 | $\omega$ | 41.62991 | | −0.01249010 | +0.98722232 | |
| $a$ | 3.1506419 | $\Omega$ | 228.30511 | | −0.96441903 | −0.05385209 | |
| $e$ | 0.0425524 | $i$ | 12.28346 | | −0.26408319 | +0.14997345 | |
| $P$ | 5.59 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 13 | 644 | 0.2− | 0.6+ | 2004 05 23 | 691 | 0.3+ | 0.3+ | 2006 09 28 | 703 | 0.1+ | 0.9+ |
| 2001 12 13 | 644 | 0.0 | 0.8+ | 2004 05 23 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.3− | 0.2+ |
| 2001 12 13 | 644 | 0.2+ | 0.3+ | 2004 05 23 | 691 | 0.2+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 0.1− |
| 2003 01 25 | 644 | 0.0 | 0.3+ | 2006 09 28 | 703 | 0.4− | 1.1− | 2006 10 17 | 703 | 0.1− | 0.4− |
| 2003 01 25 | 644 | 0.3+ | 0.2+ | 2006 09 28 | 703 | 1.0+ | 0.0 | 2006 10 17 | 703 | 0.6+ | 1.3+ |
| 2003 01 25 | 644 | 0.3− | 0.5− | 2006 09 28 | 703 | 1.2− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.2+ |
| 2004 04 25 | 704 | 0.3− | 0.8+ | 2006 09 28 | 703 | 0.1+ | 0.7+ | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2004 04 25 | 704 | (2.1− | 0.4−) | 2006 09 28 | 703 | 1.1− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.5+ |
| 2004 04 25 | 704 | 0.4− | 0.3+ | 2006 09 28 | 703 | 0.7+ | 0.6+ | | | | |
| 2004 04 25 | 704 | 0.9− | 0.7+ | 2006 09 28 | 703 | 0.7− | 0.0 | | | | |

**2006 UK$_{223}$ = 2006 SD$_{262}$ = 2000 SX$_{196}$ = 2002 AW$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.33244 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17499374 | $\omega$ | 253.22349 | | +0.17244151 | −0.98498183 | |
| $a$ | 3.1655878 | $\Omega$ | 186.86414 | | +0.92904779 | +0.16555268 | |
| $e$ | 0.1514512 | $i$ | 4.14772 | | +0.32731352 | +0.04902149 | |
| $P$ | 5.63 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.1− | 0.0 | 2005 07 01 | 691 | 0.2− | 0.0 | 2006 10 21 | 644 | 0.7+ | 0.2− |
| 1995 12 27 | 691 | 0.2− | 0.1− | 2005 08 01 | 599 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.5+ | 0.3+ |
| 2000 09 24 | 704 | 0.2− | 0.9+ | 2005 08 01 | 599 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.7+ | 0.3− |
| 2000 09 24 | 704 | 0.2− | 0.7+ | 2005 08 01 | 599 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2000 09 24 | 704 | 0.5+ | 0.6+ | 2005 08 01 | 599 | 0.1+ | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 2000 09 24 | 704 | 0.3− | 0.3− | 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 2000 10 01 | 704 | 0.3− | 0.2− | 2006 07 21 | G96 | 0.7+ | 0.9+ | 2006 11 01 | G96 | 0.1− | 0.5− |
| 2000 10 01 | 704 | 1.1+ | 0.1+ | 2006 07 21 | G96 | 0.9− | 0.3+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2000 10 01 | 704 | 0.5+ | 0.2+ | 2006 07 21 | G96 | 0.4− | 0.3− | 2006 11 01 | G96 | 0.0 | 0.5− |
| 2000 10 01 | 704 | 0.3− | 1.2+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 11 01 | G96 | 0.6+ | 0.3− |
| 2002 01 08 | 608 | 0.1+ | 0.3+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.5+ |
| 2002 01 08 | 608 | 0.5+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 11 09 | 691 | 1.0− | 0.3+ |
| 2002 01 08 | 608 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.1+ | 0.4− | 2006 11 09 | 691 | 0.1+ | 0.3+ |
| 2002 01 09 | 704 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 11 | 691 | 0.1+ | 0.4+ |
| 2002 01 09 | 704 | 0.3− | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.7+ |
| 2002 01 09 | 704 | 0.3− | 0.7− | 2006 09 30 | G96 | 0.4− | 0.4− | 2006 11 11 | 691 | 0.1− | 0.3+ |
| 2002 01 09 | 704 | (2.0+ | 0.2−) | 2006 09 30 | 703 | 0.4+ | 0.8+ | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2003 03 27 | 691 | 0.4− | 0.1+ | 2006 09 30 | G96 | 1.0− | 1.2+ | 2006 11 13 | 691 | 0.2− | 0.4+ |
| 2003 03 27 | 691 | 0.1+ | 0.7+ | 2006 09 30 | 703 | (1.2+ | 2.3+) | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2003 03 27 | 691 | 0.5+ | 0.6+ | 2006 09 30 | 703 | 0.7− | 0.5− | 2006 11 17 | 703 | 1.0− | 1.2− |
| 2003 04 08 | 691 | 0.4+ | 0.8+ | 2006 09 30 | 703 | 1.1− | 1.0+ | 2006 11 17 | 703 | 0.9+ | 0.9+ |
| 2003 04 08 | 691 | 0.4+ | 0.5+ | 2006 10 18 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.8− |
| 2003 04 08 | 691 | 0.3+ | 0.9+ | 2006 10 18 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.6− | 1.3− |
| 2005 07 01 | 691 | 0.2− | 0.3+ | 2006 10 18 | 691 | 0.0 | 0.0 | | | | |
| 2005 07 01 | 691 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | | | |

**2006 UZ$_{223}$ = 2004 EL$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.59493 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22592409 | $\omega$ | 12.60253 | | +0.87631279 | −0.48053034 | |
| $a$ | 2.6698961 | $\Omega$ | 16.25099 | | +0.43072213 | +0.74977918 | |
| $e$ | 0.1270262 | $i$ | 7.01018 | | +0.21576455 | +0.45488655 | |
| $P$ | 4.36 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 699 | 0.4− | 0.2+ | 2006 09 28 | 699 | 0.4− | 1.9+ |
| 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 09 18 | 699 | 0.6− | 1.0− | 2006 09 30 | J75 | 0.8+ | 0.5− |
| 2004 03 15 | 691 | 0.3− | 0.1+ | 2006 09 18 | 699 | 0.6− | 1.0+ | 2006 09 30 | J75 | 0.4− | 0.3+ |
| 2004 03 23 | 691 | 0.2− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.4− | 2006 10 19 | 644 | 0.7+ | 0.0 |
| 2004 03 23 | 691 | 0.2+ | 0.2− | 2006 09 26 | G96 | 0.4+ | 0.4− | 2006 10 19 | 644 | 0.2+ | 0.0 |
| 2004 03 23 | 691 | 0.1− | 0.4− | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 10 19 | 644 | 0.1− | 0.4+ |
| 2006 09 18 | 691 | 0.3+ | 0.1+ | 2006 09 26 | G96 | 0.5+ | 0.2− | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2006 09 18 | 691 | 0.6− | 0.5− | 2006 09 28 | 699 | 0.1+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1+ |
| 2006 09 18 | 691 | 0.2+ | 0.3+ | 2006 09 28 | 699 | 1.1+ | 0.2− | 2006 10 21 | 644 | 0.5− | 0.1− |
| 2006 09 18 | 699 | 0.5− | 0.8+ | 2006 09 28 | 699 | 0.6− | 0.5− | | | | |

**2006 UF$_{224}$ = 2005 JS$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.82750 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24067782 | $\omega$ | 278.82165 | | +0.81902764 | +0.57225158 | |
| $a$ | 2.5596387 | $\Omega$ | 46.28373 | | −0.50126266 | +0.74886135 | |
| $e$ | 0.1960688 | $i$ | 3.29123 | | −0.27915852 | +0.33426756 | |
| $P$ | 4.10 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 28 | 691 | 0.3+ | 0.2− | 2006 09 17 | 691 | 0.4− | 0.2− | 2006 10 21 | 703 | 0.1+ | 1.3− |
| 2001 04 28 | 691 | 0.4− | 0.1− | 2006 10 19 | 644 | 0.1+ | 0.1+ | 2006 10 21 | 703 | 1.4− | 0.6+ |
| 2001 04 28 | 691 | 0.0 | 0.1− | 2006 10 19 | 644 | 0.3+ | 0.0 | 2006 10 21 | 644 | 0.0 | 0.3+ |
| 2005 05 04 | 568 | 0.5+ | 0.5+ | 2006 10 19 | 644 | 0.5+ | 0.1+ | 2006 10 21 | 644 | 0.2− | 0.1+ |
| 2005 05 04 | 568 | 0.4+ | 0.5+ | 2006 10 20 | 644 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.5+ |
| 2005 05 04 | 568 | 0.2+ | 0.5+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.7+ |
| 2005 05 05 | 568 | 0.0 | 0.8+ | 2006 10 20 | 644 | 0.1− | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.1+ |
| 2006 09 17 | 691 | 0.3+ | 0.4+ | 2006 10 21 | 703 | 0.9+ | 1.1− | 2006 10 31 | G96 | 0.0 | 0.1− |
| 2006 09 17 | 691 | 0.0 | 0.2− | 2006 10 21 | 703 | 1.1− | 0.7− | 2006 10 31 | G96 | 0.0 | 0.1+ |

**2006 UJ$_{224}$ = 2002 RD$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.01805 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26383687 | $\omega$ | 5.62087 | | +0.97877831 | +0.20148842 | |
| $a$ | 2.4075708 | $\Omega$ | 342.61858 | | −0.19254803 | +0.84188084 | |
| $e$ | 0.1231332 | $i$ | 7.18349 | | −0.07013042 | +0.50063865 | |
| $P$ | 3.74 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 20 | 644 | 0.4+ | 0.4+ | 2002 09 07 | 704 | 0.1− | 0.8+ | 2006 09 28 | 703 | 0.4− | 0.9− |
| 2002 08 20 | 644 | 0.0 | 0.1− | 2002 09 07 | 704 | 0.0 | 0.3+ | 2006 10 19 | 703 | 1.2− | 1.2+ |
| 2002 08 20 | 644 | 0.7+ | 0.0 | 2002 09 07 | 704 | 0.7+ | 0.9+ | 2006 10 19 | 703 | (1.7− | 0.1−) |
| 2002 09 05 | 704 | 0.6− | 0.8− | 2002 09 14 | 644 | 0.1− | 0.2− | 2006 10 19 | 703 | (0.8+ | 1.8−) |
| 2002 09 05 | 704 | 0.1+ | 0.4− | 2002 09 14 | 644 | 0.1− | 0.1+ | 2006 10 19 | 703 | 0.2+ | 0.8− |
| 2002 09 05 | 704 | 0.0 | 0.2− | 2002 09 14 | 644 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.4+ |
| 2002 09 05 | 704 | 0.5+ | 0.7− | 2006 09 28 | 703 | 0.9+ | 0.8− | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2002 09 05 | 704 | 0.2− | 0.0 | 2006 09 28 | 703 | 0.9+ | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3+ |
| 2002 09 07 | 704 | 1.1− | 0.2+ | 2006 09 28 | 703 | 0.0 | 0.1− | | | | |

**2006 UK$_{225}$ = 2000 SG$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.24368 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17750078 | $\omega$ | 166.43202 | | +0.99622506 | −0.08495281 | |
| $a$ | 3.1357099 | $\Omega$ | 198.46943 | | +0.07345765 | +0.93457139 | |
| $e$ | 0.2175929 | $i$ | 3.23022 | | +0.04625593 | +0.34548421 | |
| $P$ | 5.55 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 21 | 691 | 0.3− | 0.1− | 2006 10 28 | 704 | 0.3+ | 0.3− | 2006 11 17 | 703 | 1.3− | 0.3+ |
| 2000 09 21 | 691 | 0.0 | 0.0 | 2006 10 28 | 704 | 1.1+ | 0.8− | 2006 11 17 | 703 | 0.7+ | 0.6− |
| 2000 09 21 | 691 | 0.0 | 0.3− | 2006 10 28 | 704 | 0.4+ | 0.8− | 2006 11 17 | 703 | 0.4− | 0.3− |
| 2000 09 24 | 704 | 0.2− | 0.5− | 2006 10 28 | 704 | 0.0 | 0.5+ | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2000 09 24 | 704 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2000 09 24 | 704 | 0.4− | 0.4+ | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.1− | 0.6+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 704 | 1.4+ | 1.7+ | 2006 11 08 | 644 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.4− | 0.2− | | |
| 2000 09 24 | 704 | 0.2− | 0.7+ | 2006 11 11 | 703 | 0.6+ | 0.4− | 2006 11 18 | 704 | 0.4− | 0.2− | | |
| 2006 07 22 | G96 | 0.3− | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.9− | | |
| 2006 07 22 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.3+ | | |
| 2006 07 22 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.3+ | | |
| 2006 07 22 | G96 | 0.3+ | 0.4− | 2006 11 13 | 644 | 0.2− | 0.5− | 2006 11 21 | 704 | 0.2+ | 0.4− | | |
| 2006 10 19 | 691 | 0.2− | 0.5+ | 2006 11 13 | 644 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.8+ | | |
| 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 13 | 644 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.0 | 0.4+ | | |
| 2006 10 19 | 691 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.5− | 2006 11 28 | 704 | 0.2+ | 0.3+ | | |
| 2006 10 21 | 644 | 0.2+ | 0.4− | 2006 11 15 | G96 | 0.2− | 0.4− | 2006 11 28 | 704 | 0.2+ | 0.8+ | | |
| 2006 10 21 | 644 | 0.3+ | 0.4− | 2006 11 15 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.4+ | 0.0 | | |
| 2006 10 21 | 644 | 0.3− | 0.3− | 2006 11 15 | G96 | 0.3− | 0.3− | 2006 11 28 | 704 | 0.2− | 0.3+ | | |

**2006 UN$_{225}$ = 1999 UZ$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 347.57847 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28073272 | $\omega$ | 142.33874 | | +0.83914984 | | −0.53505974 |
| $a$ | 2.3099754 | $\Omega$ | 250.28238 | | +0.47040306 | | +0.80410033 |
| $e$ | 0.1869701 | $i$ | 5.95510 | | +0.27303573 | | +0.25910177 |
| $P$ | 3.51 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 28 | 703 | 1.1− | 0.2+ | 1999 11 04 | 703 | 0.1+ | 0.2− | 2006 09 28 | 703 | 0.7− | 0.0 | | |
| 1999 10 28 | 703 | 0.7− | 0.4+ | 1999 11 04 | 703 | 0.3− | 0.1− | 2006 09 28 | 703 | 0.4− | 0.3− | | |
| 1999 10 28 | 703 | 0.3+ | 0.2+ | 2005 05 12 | G96 | 0.3+ | 0.1+ | 2006 09 28 | 703 | 0.2− | 0.3+ | | |
| 1999 10 28 | 703 | 0.5+ | 0.5+ | 2005 05 12 | G96 | 0.1− | 0.2− | 2006 10 19 | 644 | 0.2+ | 0.0 | | |
| 1999 11 04 | 704 | 0.5+ | 0.9− | 2005 05 12 | G96 | 0.1− | 0.3− | 2006 10 19 | 644 | 0.2+ | 0.5+ | | |
| 1999 11 04 | 704 | 0.3+ | 0.0 | 2005 05 12 | G96 | 0.2− | 0.2− | 2006 10 19 | 644 | 0.1+ | 0.1+ | | |
| 1999 11 04 | 704 | 0.6+ | 0.6− | 2006 08 30 | 699 | 0.4+ | 0.1+ | 2006 10 21 | 644 | 0.1− | 0.1− | | |
| 1999 11 04 | 703 | 0.5− | 0.5+ | 2006 08 30 | 699 | 0.3− | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.1− | | |
| 1999 11 04 | 704 | 0.4+ | 0.7− | 2006 08 30 | 699 | 0.3+ | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.1− | | |
| 1999 11 04 | 703 | 0.4− | 0.1+ | 2006 08 30 | 699 | 0.2+ | 0.5+ | | | | | | |
| 1999 11 04 | 704 | 0.5+ | 0.4− | 2006 09 28 | 703 | 0.1+ | 0.2+ | | | | | | |

**2006 UZ$_{225}$ = 1996 JZ$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.27203 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22620961 | $\omega$ | 197.90470 | | +0.97023203 | | +0.23928222 |
| $a$ | 2.6676490 | $\Omega$ | 148.17680 | | −0.21263550 | | +0.91548163 |
| $e$ | 0.0670395 | $i$ | 4.06007 | | −0.11591357 | | +0.32347706 |
| $P$ | 4.36 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.7+ | 0.0 | 2004 02 29 | 691 | 0.3+ | 0.4+ | 2006 09 30 | 703 | 0.6− | 0.5+ | | |
| 1995 02 03 | 691 | 0.7− | 0.2+ | 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 09 30 | 703 | 0.3− | 0.5+ | | |
| 1995 02 03 | 691 | 0.1+ | 0.1− | 2004 02 29 | 691 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.8− | 0.7− | | |
| 1996 05 15 | 691 | 0.4− | 0.1− | 2005 06 16 | 691 | 0.1+ | 0.5+ | 2006 09 30 | 703 | 0.8− | 0.6+ | | |
| 1996 05 15 | 691 | 0.2− | 0.1+ | 2005 06 16 | 691 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.1− | 0.0 | | |
| 1996 05 21 | 691 | 0.1+ | 0.3− | 2005 06 16 | 691 | 0.3+ | 0.4+ | 2006 10 20 | 644 | 0.2+ | 0.3+ | | |
| 1996 05 21 | 691 | 0.1+ | 0.3+ | 2005 07 12 | G96 | 0.3+ | 0.1− | 2006 10 20 | 644 | 0.1+ | 0.3+ | | |
| 1996 05 21 | 691 | 0.3+ | 0.7− | 2005 07 12 | G96 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.6+ | 0.2+ | | |
| 2000 05 04 | 645 | 0.0 | 0.1− | 2005 07 12 | G96 | 0.3+ | 0.4− | 2006 10 21 | 644 | 0.0 | 0.1+ | | |
| 2000 05 04 | 645 | 0.1− | 0.0 | 2005 07 12 | G96 | 0.7− | 0.3− | 2006 10 21 | 644 | 0.6+ | 0.2+ | | |

**2006 UB$_{226}$ = 2000 FV$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 38.30145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22032071 | $\omega$ | 309.27739 | | +0.87837082 | | +0.47684626 |
| $a$ | 2.7149750 | $\Omega$ | 22.30192 | | −0.40749985 | | +0.78304953 |
| $e$ | 0.1661063 | $i$ | 4.97341 | | −0.24981710 | | +0.39931325 |
| $P$ | 4.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 29 | 691 | 0.3+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ | | |
| 2000 03 29 | 691 | 0.4− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.1+ | | |
| 2000 03 29 | 691 | 0.4− | 0.1− | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.4+ | 0.0 | | |
| 2000 04 05 | 691 | 0.0 | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1− | 0.9− | | |
| 2000 04 05 | 691 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2− | 0.3+ | | |
| 2000 04 05 | 691 | 0.2+ | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.2− | 0.8− | | |
| 2006 09 25 | G96 | 0.3− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.5+ | | |
| 2006 09 25 | G96 | 0.5− | 0.0 | 2006 10 21 | 644 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.2− | | |
| 2006 09 25 | G96 | 0.4− | 0.2− | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.0 | | |
| 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ | | | | | | |

**2006 UE$_{226}$ = 1995 WZ$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.06244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18061801 | $\omega$ | 235.58590 | | −0.06158977 | | −0.99388413 |
| $a$ | 3.0995264 | $\Omega$ | 218.26820 | | +0.95742772 | | −0.03288209 |
| $e$ | 0.0666285 | $i$ | 8.51052 | | +0.28202636 | | −0.10541874 |
| $P$ | 5.46 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 17 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 11 17 | 703 | 1.0− | 1.1− | | |
| 1995 11 17 | 691 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.3− | 1.4+ | | |
| 1995 11 17 | 691 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.7− | 0.1− | | |
| 1995 11 27 | 691 | 0.5− | 0.7− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1− | 0.3+ | | |
| 1995 11 27 | 691 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.3+ | | |
| 1995 11 27 | 691 | 0.5+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.3+ | | |
| 2004 06 22 | 691 | 0.1+ | 0.4+ | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.0 | 0.6+ | | |
| 2004 06 22 | 691 | 0.0 | 0.8+ | 2006 10 21 | 644 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.4+ | 0.3+ | | |
| 2004 06 22 | 691 | 0.0 | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1− | | |
| 2005 07 10 | 691 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.1− | | |
| 2005 07 10 | 691 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.0 | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.2− | | |
| 2005 07 10 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.1− | | |
| 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.3+ | | |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.7+ | | |

**2006 UJ$_{226}$ = 2001 SQ$_{305}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.79348 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20329049 | $\omega$ | 199.25545 | | +0.80249121 | | −0.59660575 |
| $a$ | 2.8645605 | $\Omega$ | 197.37957 | | +0.55102300 | | +0.74639072 |
| $e$ | 0.0743880 | $i$ | 1.59864 | | +0.22887007 | | +0.29489401 |
| $P$ | 4.85 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 15 | 691 | 0.1+ | 0.3− | 2006 09 26 | G96 | 0.2− | 0.3− | 2006 10 21 | 644 | 0.2+ | 0.2+ | | |
| 1999 04 15 | 691 | 0.2− | 0.0 | 2006 09 26 | G96 | 0.2+ | 0.6− | 2006 10 21 | 644 | 0.5+ | 0.1− | | |
| 2001 09 20 | 691 | 0.4+ | 0.2− | 2006 09 26 | G96 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.3+ | 0.1− | | |
| 2001 09 20 | 704 | 0.5+ | 0.5− | 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2001 09 20 | 691 | 0.2+ | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.0 | | |
| 2001 09 20 | 704 | 0.1− | 1.0− | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 10 27 | G96 | 0.4+ | 0.0 | | |
| 2001 09 20 | 691 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.1− | | |
| 2001 09 20 | 704 | 0.1− | 0.3− | 2006 10 16 | 691 | 0.2+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.0 | | |
| 2001 09 20 | 704 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.6− | 1.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2001 09 23 | 704 | 0.6− | 0.6+ | 2006 10 16 | 691 | 0.0 | 0.2− | 2006 11 25 | 703 | 0.8− | 0.9− | | |
| 2001 09 23 | 704 | 0.8+ | 1.1+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 25 | 703 | 0.6+ | 1.3− | | |
| 2001 09 23 | 704 | 0.1− | 1.4+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 25 | 703 | 0.7− | 0.2− | | |
| 2001 09 23 | 704 | 0.1− | 0.8+ | 2006 10 20 | 691 | 0.8− | 0.5− | 2006 11 25 | 703 | 1.0− | 0.6+ | | |
| 2001 09 23 | 704 | (0.4+ | 1.6+) | 2006 10 20 | 644 | 0.4+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.3+ | | |
| 2001 10 16 | 691 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2001 10 16 | 691 | 0.3− | 0.1− | 2006 10 20 | 644 | 0.7+ | 0.2− | 2006 11 27 | 691 | 0.4+ | 0.3− | | |
| 2001 10 16 | 691 | 0.4− | 0.3− | 2006 10 21 | 644 | 0.4+ | 0.1+ | | | | | | |

**2006 US$_{226}$ = 2004 EE$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.90652 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26508407 | $\omega$ | 39.53825 | | +0.39571268 | −0.91812691 | |
| $a$ | 2.4000132 | $\Omega$ | 27.17109 | | +0.83032947 | +0.34776136 | |
| $e$ | 0.1880949 | $i$ | 2.67573 | | +0.39238304 | +0.19001321 | |
| $P$ | 3.72 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.1+ |
| 2004 03 15 | 691 | 0.2− | 0.3− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.1− |
| 2004 03 15 | 691 | 0.5− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.8− | 0.5+ |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.3+ | 0.6+ | 2006 11 17 | 703 | 0.9− | 0.4− |
| 2004 03 23 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.6− |
| 2004 03 23 | 691 | 0.3+ | 0.2+ | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 1.2+ | 1.0− |
| 2006 09 25 | G96 | 0.2+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.1+ |
| 2006 09 25 | G96 | 0.7+ | 0.3− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.0− | 0.4− |
| 2006 09 25 | G96 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 1.3+ | 0.3+ |
| 2006 09 25 | G96 | 0.0 | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.8− | 2006 11 18 | 704 | 0.2− | 1.4+ |
| 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.9+ |
| 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.8− | 0.3+ | | | | |

**2006 UC$_{227}$ = 2005 JN$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.69914 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23254029 | $\omega$ | 102.91431 | | +0.77966325 | +0.60976298 | |
| $a$ | 2.6190105 | $\Omega$ | 219.77265 | | −0.62525369 | +0.74555121 | |
| $e$ | 0.1872762 | $i$ | 12.87296 | | −0.03439523 | +0.26896561 | |
| $P$ | 4.24 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.0 | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3− | 2006 11 22 | 701 | 0.8− | 0.1+ |
| 2005 05 03 | 691 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 23 | 701 | 0.2+ | 0.2+ |
| 2005 05 03 | 691 | 0.1− | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.3− | 2006 11 23 | 701 | 0.3+ | 0.5+ |
| 2005 05 08 | 691 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.4− | 0.3− | 2006 11 23 | 701 | 0.7− | 1.2− |
| 2005 05 08 | 691 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.3− | 2006 11 23 | 701 | (1.2+ | 4.3+) |
| 2005 05 08 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.4− | 2006 11 24 | 701 | 1.1− | 0.2+ |
| 2006 09 30 | 691 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.2− | 0.1− | 2006 11 24 | 701 | 0.3− | 0.9− |
| 2006 09 30 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.0 | 2006 11 24 | 701 | 0.6+ | 0.4− |
| 2006 09 30 | 691 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.3+ | 0.0 | 2006 11 25 | 701 | 0.1− | 0.6+ |
| 2006 10 20 | 644 | 0.5− | 0.3+ | 2006 11 22 | 701 | 0.9+ | 0.6− | 2006 11 25 | 701 | 0.3+ | 1.0+ |
| 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 22 | 701 | 0.1− | 0.3− | 2006 11 25 | 701 | 0.6+ | 0.4+ |
| 2006 10 20 | 644 | 0.5− | 0.1− | 2006 11 22 | 701 | 0.3+ | 0.0 | 2006 11 25 | 701 | 0.1− | 0.1+ |

**2006 UE$_{227}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 217.75894 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26822709 | $\omega$ | 165.41668 | | −0.98598124 | −0.16647433 | |
| $a$ | 2.3812279 | $\Omega$ | 5.04132 | | +0.13732823 | −0.84804345 | |
| $e$ | 0.0472157 | $i$ | 7.37647 | | +0.09477312 | −0.50309899 | |
| $P$ | 3.67 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 11 | 608 | (0.1+ | 1.8−) | 2006 09 26 | 691 | 0.2− | 0.3+ | 2006 10 21 | 644 | 0.1+ | 0.1− |
| 2002 09 11 | 608 | 0.7+ | 1.3− | 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.1− |
| 2002 09 11 | 608 | 0.3+ | 1.1− | 2006 10 20 | 644 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.4− | 0.4+ | 2006 10 20 | 644 | 0.4− | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.1− |
| 2002 09 13 | 644 | 0.1− | 0.6+ | 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 14 | 703 | 0.7− | 0.5+ |
| 2002 09 13 | 644 | 0.1+ | 0.5+ | 2006 10 20 | 644 | 0.6− | 0.0 | 2006 11 14 | 703 | 0.6+ | 0.3+ |
| 2004 01 17 | 644 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.8+ | 1.4− |
| 2004 01 17 | 644 | 0.2+ | 0.0 | 2006 10 20 | 644 | 0.3− | 0.4− | 2006 11 14 | 703 | 0.5+ | 0.2− |
| 2004 01 17 | 644 | 0.3+ | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.6+ | 0.0 |
| 2004 01 28 | 691 | 0.0 | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 25 | G96 | 0.2+ | 0.2− |
| 2004 01 28 | 691 | 0.2− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2004 01 28 | 691 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.3+ | 0.2− | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2006 09 26 | 691 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.0 | 0.2− | | | | |

**2006 UP$_{227}$ = 2004 FL$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.75211 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23340137 | $\omega$ | 240.00509 | | +0.77190600 | −0.63486911 | |
| $a$ | 2.6125651 | $\Omega$ | 159.34715 | | +0.61089052 | +0.72626793 | |
| $e$ | 0.0311449 | $i$ | 5.40150 | | +0.17599407 | +0.26358322 | |
| $P$ | 4.22 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.1+ | 0.1− | 2004 03 18 | 691 | 0.2− | 0.0 | 2006 10 20 | 644 | 0.1+ | 0.2+ |
| 2000 03 03 | 645 | 0.0 | 0.1− | 2004 03 19 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.1+ |
| 2000 05 05 | 645 | 0.1− | 0.1+ | 2004 03 19 | 704 | 0.5+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.2+ |
| 2000 05 05 | 645 | 0.0 | 0.2+ | 2004 03 19 | 704 | 0.7+ | 0.7− | 2006 10 21 | 644 | 0.1+ | 0.2+ |
| 2002 11 23 | 644 | 0.0 | 0.3+ | 2004 03 19 | 704 | 0.2+ | 0.1− | 2006 10 21 | 644 | 0.3+ | 0.0 |
| 2002 11 23 | 644 | 0.1+ | 0.1− | 2006 09 30 | 703 | 0.2+ | 0.8+ | 2006 10 21 | 644 | 0.2− | 0.3+ |
| 2002 11 23 | 644 | 0.0 | 0.1+ | 2006 09 30 | 703 | 0.6− | 0.0 | 2006 10 21 | 644 | 0.1− | 0.4+ |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 09 30 | 703 | 0.3− | 0.1+ | 2006 10 21 | 644 | 0.4+ | 0.1+ |
| 2004 03 18 | 691 | 0.1− | 0.2+ | 2006 09 30 | 703 | 0.5− | 0.3− | 2006 10 21 | 644 | 0.1− | 0.0 |

**2006 UF$_{228}$ = 1995 UW$_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.55169 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18300578 | $\omega$ | 343.66373 | | +0.94308731 | −0.32061370 | |
| $a$ | 3.0725068 | $\Omega$ | 35.42924 | | +0.31960099 | +0.80051332 | |
| $e$ | 0.1457271 | $i$ | 8.75935 | | +0.09187779 | +0.50634501 | |
| $P$ | 5.39 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 1995 10 20 | 691 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.3+ | 0.2+ | 2006 11 13 | 644 | 0.3+ | 0.5+ |
| 1995 10 20 | 691 | 0.2+ | 0.2− | 2006 10 21 | 644 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 1995 10 26 | 691 | 0.2− | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.0 | 0.3− |
| 1995 10 26 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 1995 10 26 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.2− |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (0.9− | 1.5+) |
| 2003 01 28 | 645 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.6+ | 0.5− |
| 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 08 | 644 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.3− |
| 2006 10 12 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 17 | 703 | 0.4+ | 0.8− |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.4+ | 0.4+ | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.3+ |
| 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.7+ | 0.5+ |
| 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.0 |

**2006 UL$_{228}$ = 2001 VN$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.15695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19535659 | $\omega$ | 70.76039 | | +0.50977410 | −0.85986293 | |
| $a$ | 2.9416026 | $\Omega$ | 348.46967 | | +0.72814557 | +0.44837271 | |
| $e$ | 0.0100140 | $i$ | 7.95941 | | +0.45818599 | +0.24412629 | |
| $P$ | 5.05 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 10 | 704 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.3− | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.0 |
| 2001 11 10 | 704 | 0.6+ | 0.3− | 2006 10 21 | 644 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− |
| 2001 11 10 | 704 | 0.3− | 0.1− | 2006 10 21 | 644 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.3− | 0.2− |
| 2001 11 10 | 704 | 0.5+ | 0.6+ | 2006 10 21 | 644 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.1+ |
| 2001 11 10 | 704 | 0.8+ | 0.4+ | 2006 10 22 | 644 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.0 |
| 2001 11 12 | 704 | 0.5− | 0.4− | 2006 10 22 | 644 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.9− |
| 2001 11 12 | 704 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.5− | 0.2+ |
| 2001 11 12 | 704 | 0.3+ | 0.0 | 2006 10 27 | 703 | 1.3+ | 0.4− | 2006 11 15 | 703 | 0.0 | 0.5+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 12 | 704 | 1.0− | 0.3+ | 2006 10 27 | 703 | 0.0 | 0.1− | 2006 11 15 | 703 | 1.0− | 0.9− |
| 2006 10 11 | 644 | 0.1+ | 0.3+ | 2006 10 27 | 703 | 0.3− | 1.0− | 2006 11 23 | 703 | 0.2+ | 0.3+ |
| 2006 10 11 | 644 | 0.3+ | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.5+ | 2006 11 23 | 703 | 0.2− | 0.7+ |
| 2006 10 11 | 644 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.4+ | 0.5− |
| 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.1− | 2006 11 23 | 703 | 0.1− | 0.1− |
| 2006 10 20 | 644 | 0.2+ | 0.6+ | 2006 11 01 | G96 | 0.4+ | 0.1− | | | | |

**2006 UN$_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.71300 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29488215 | $\omega$ | 140.95460 | | +0.93075856 | | −0.36002441 |
| $a$ | 2.2354779 | $\Omega$ | 240.25911 | | +0.31435077 | | +0.87705666 |
| $e$ | 0.1615138 | $i$ | 4.21407 | | +0.18674071 | | +0.31804722 |
| $P$ | 3.34 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 08 17 | 691 | 0.0 | 0.1− | 2006 10 15 | 691 | 0.5− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 1999 08 17 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.2− |
| 1999 08 17 | 691 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2003 12 17 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.3− |
| 2003 12 17 | 691 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2003 12 17 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2003 12 21 | 645 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2003 12 21 | 645 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.8− |
| 2005 05 16 | G96 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2005 05 16 | G96 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.4+ |
| 2005 05 16 | G96 | 0.3+ | 0.3+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.6− |
| 2005 05 16 | G96 | 0.1+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.0 |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.1− |
| 2006 10 02 | G96 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2006 10 15 | 691 | 0.2− | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.4+ |
| 2006 10 15 | 691 | 0.0 | 0.3+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | | | | |

**2006 UO$_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.36493 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26785270 | $\omega$ | 151.39419 | | +0.52390424 | | −0.85057594 |
| $a$ | 2.3834463 | $\Omega$ | 266.97830 | | +0.77261287 | | +0.49689327 |
| $e$ | 0.1749981 | $i$ | 2.59545 | | +0.35859964 | | +0.17209779 |
| $P$ | 3.68 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 14 | 644 | 0.3− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.3− | 2006 11 16 | 704 | 0.5+ | 0.6+ |
| 2002 09 14 | 644 | 0.2− | 0.4+ | 2006 10 21 | 644 | 0.3+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 1.0+ |
| 2002 09 14 | 644 | 0.1+ | 0.3+ | 2006 10 29 | 704 | 0.2− | 0.0 | 2006 11 18 | 704 | 1.0− | 1.0+ |
| 2006 08 28 | 703 | 0.5− | 0.3+ | 2006 10 29 | 704 | 0.1− | 0.6+ | 2006 11 18 | 704 | (0.8+ | 1.9+) |
| 2006 08 28 | 703 | 1.3+ | 0.2+ | 2006 10 29 | 704 | 0.2− | 0.9+ | 2006 11 19 | 704 | 0.4− | 0.4− |
| 2006 08 28 | 703 | (1.9+ | 0.1+) | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2006 08 28 | 703 | 0.5− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.4+ | 0.7− |
| 2006 09 30 | G96 | 0.1− | 0.7− | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.3− |
| 2006 09 30 | G96 | 0.2+ | 0.7− | 2006 11 13 | 644 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2006 09 30 | G96 | 0.1− | 0.8− | 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.6+ | 0.3− |
| 2006 09 30 | G96 | 0.4− | 0.7− | 2006 11 13 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.2+ | 0.4− | 2006 11 22 | 704 | 0.3+ | 0.8− |
| 2006 10 13 | 691 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.3+ | 0.4+ | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.5− | 0.5− |
| 2006 10 20 | 644 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.9− | 0.7− | 2006 11 29 | 704 | 0.0 | 0.7+ |
| 2006 10 20 | 644 | 0.3− | 0.4− | 2006 11 16 | 704 | (1.8+ | 1.4+) | 2006 11 29 | 704 | (0.1+ | 1.9+) |
| 2006 10 20 | 644 | 0.3− | 0.2− | 2006 11 16 | 704 | 0.3+ | 1.0+ | 2006 11 29 | 704 | 0.6− | 0.4+ |
| 2006 10 21 | 644 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.7+ | 2006 11 29 | 704 | 0.1+ | 1.1+ |

**2006 UP$_{228}$ = 2001 SG$_{259}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.49563 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21492733 | $\omega$ | 338.05477 | | +0.92570364 | | −0.37676856 |
| $a$ | 2.7602068 | $\Omega$ | 44.12500 | | +0.35378629 | | +0.83116603 |
| $e$ | 0.0798886 | $i$ | 2.75298 | | +0.13382089 | | +0.40891134 |
| $P$ | 4.59 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.5− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2− | 2006 11 09 | 691 | 0.3+ | 0.1+ |
| 2001 09 20 | 704 | 0.2− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.0 |
| 2001 09 20 | 704 | 1.0− | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.1− |
| 2001 09 20 | 704 | 0.1− | 1.0+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2001 09 21 | 704 | 0.4− | 0.8− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.0 |
| 2001 09 21 | 704 | 0.5+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2004 04 20 | 691 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2004 04 20 | 691 | 0.3+ | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 22 | G96 | 0.3− | 0.4− |
| 2004 04 20 | 691 | 0.5+ | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 10 29 | G96 | 0.4+ | 0.4− | 2006 11 22 | G96 | 0.4+ | 0.3− |
| 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.6+ |
| 2006 10 20 | 691 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2006 10 20 | 644 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1− |

**2006 UR$_{228}$ = 1996 TG$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.14745 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29812071 | $\omega$ | 254.92529 | | +0.53387304 | | +0.84016469 |
| $a$ | 2.2192588 | $\Omega$ | 47.74714 | | −0.71783147 | | +0.50996275 |
| $e$ | 0.2275691 | $i$ | 7.40597 | | −0.44687533 | | +0.18455700 |
| $P$ | 3.31 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 07 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.0 | 0.6− | 2006 10 31 | G96 | 0.1+ | 0.0 |
| 1996 10 07 | 691 | 0.2+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.6+ | 0.2− |
| 1996 10 07 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 09 | 691 | 0.5+ | 0.3− |
| 1996 10 11 | 691 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 11 09 | 691 | 0.2+ | 0.0 |
| 1996 10 11 | 691 | 0.1+ | 0.2+ | 2006 10 14 | D35 | 0.7+ | 0.2− | 2006 11 09 | 691 | 0.2+ | 0.0 |
| 1996 10 11 | 691 | 1.0− | 0.0 | 2006 10 14 | D35 | 0.7+ | 0.4− | 2006 11 11 | 691 | 0.9− | 0.5− |
| 2002 04 09 | 644 | 0.3+ | 0.2+ | 2006 10 14 | D35 | 0.3+ | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 2002 04 09 | 644 | 0.2+ | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1+ |
| 2002 04 09 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2002 04 09 | 644 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.6+ | 0.7− | 2006 11 13 | 691 | 0.2− | 0.0 |
| 2002 04 09 | 691 | 0.0 | 0.1+ | 2006 10 22 | 691 | 0.3− | 0.3− | 2006 11 13 | 691 | 0.0 | 0.7+ |
| 2002 04 09 | 691 | 0.2+ | 0.3+ | 2006 10 22 | 691 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2002 04 14 | 644 | 0.4+ | 0.5+ | 2006 10 22 | 691 | 0.5− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.5+ |
| 2002 04 14 | 644 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.5+ |
| 2002 04 14 | 644 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.6+ | 0.1− | | | | |

**2006 UZ$_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.17908 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29032792 | $\omega$ | 221.05290 | | +0.53837264 | | −0.84259787 |
| $a$ | 2.2587951 | $\Omega$ | 196.38872 | | +0.78517643 | | +0.50739486 |
| $e$ | 0.1492137 | $i$ | 2.75354 | | +0.30602757 | | +0.18049732 |
| $P$ | 3.39 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.2− | 2006 11 20 | 704 | (2.4+ | 0.2+) |
| 2004 02 11 | 644 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.0 | 0.2− | 2006 11 20 | 704 | (0.2− | 1.8+) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.4+ | 1.3+ |
| 2004 02 17 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | (2.5+ | 2.6+) |
| 2004 02 17 | 691 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.3+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 02 17 | 691 | 0.2− | 0.1+ | 2006 11 02 | 703 | (1.5− | 1.6−) | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2004 03 01 | 691 | 0.0 | 0.1− | 2006 11 02 | 703 | (0.3− | 1.6−) | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2004 03 01 | 691 | 0.2+ | 0.2− | 2006 11 02 | 703 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2004 03 01 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2006 09 28 | G96 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 29 | 704 | (1.2+ | 2.4+) |
| 2006 09 28 | G96 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.4− | 0.1− | 2006 11 29 | 704 | 1.5− | 0.9+ |
| 2006 09 28 | G96 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.5+ |
| 2006 10 19 | 695 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 29 | 704 | 0.3− | 0.9+ |
| 2006 10 19 | 695 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.4− | 0.7+ |
| 2006 10 20 | 644 | 0.2+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.2− | 2006 12 01 | 691 | 0.1+ | 0.4− |
| 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | (2.1+ | 0.9−) | 2006 12 01 | 691 | 0.0 | 0.1+ |
| 2006 10 20 | 644 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.0 |

### 2006 UB$_{229}$ = 1993 SP$_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.52296 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23385529 | $\omega$ | 163.79062 | | +0.88140152 | | +0.47208928 |
| $a$ | 2.6091833 | $\Omega$ | 167.99983 | | −0.44159033 | | +0.83567866 |
| $e$ | 0.3073185 | $i$ | 4.47417 | | −0.16771801 | | +0.28066510 |
| $P$ | 4.21 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 19 | 010 | 0.5+ | 1.2+ | 2006 09 16 | 703 | 0.3− | 0.6− | 2006 11 22 | 400 | 0.8+ | 1.0+ |
| 1993 09 19 | 010 | 1.8+ | 0.8+ | 2006 09 16 | 703 | 0.8− | 1.5− | 2006 11 22 | 400 | 0.1− | 0.4+ |
| 1993 09 20 | 010 | 0.1− | 0.2+ | 2006 09 16 | 703 | (0.2+ | 2.3+) | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 1993 09 20 | 010 | 1.1− | 0.7− | 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 1993 09 20 | 010 | 1.3− | 0.9− | 2006 10 20 | 644 | 0.2− | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2005 05 14 | 644 | 0.2+ | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2005 05 14 | 644 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2005 05 14 | 644 | 0.2− | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2006 08 29 | 703 | 0.4+ | 0.7− | 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2006 08 29 | 703 | (1.3− | 1.6−) | 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 25 | 400 | 1.3− | 0.2− |
| 2006 08 29 | 703 | (0.2+ | 1.6−) | 2006 11 20 | 691 | 0.0 | 0.1+ | 2006 11 25 | 400 | 0.7− | 0.4− |
| 2006 08 29 | 703 | (2.0+ | 3.1−) | 2006 11 20 | 691 | 0.1+ | 0.0 | | | | |
| 2006 09 16 | 703 | (2.4− | 0.4−) | 2006 11 20 | 691 | 0.1+ | 0.0 | | | | |

### 2006 UM$_{229}$ = 2002 XY$_{77}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.27271 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23699894 | $\omega$ | 306.25553 | | +0.88355667 | | −0.36405818 |
| $a$ | 2.5860591 | $\Omega$ | 76.76459 | | +0.46380419 | | +0.76740219 |
| $e$ | 0.2046077 | $i$ | 17.61617 | | −0.06490978 | | +0.52778359 |
| $P$ | 4.16 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.3− | 0.7+ | 2006 11 16 | 735 | 0.1− | 0.4− | 2006 11 20 | 704 | 0.1− | 0.7+ |
| 2002 12 11 | 704 | 0.2− | 1.1+ | 2006 11 16 | 735 | 0.1+ | 0.8+ | 2006 11 20 | 704 | 0.6− | 0.3− |
| 2002 12 11 | 704 | 0.4− | 0.5+ | 2006 11 16 | 735 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.8+ | 0.1+ |
| 2002 12 11 | 704 | 0.3− | 0.8+ | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.4− | 0.5+ |
| 2002 12 14 | 704 | 0.4− | 0.6− | 2006 11 16 | 691 | 0.2− | 0.0 | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.9+ | 0.6− | 2006 11 16 | 691 | 0.1− | 0.2+ | 2006 11 20 | G96 | 0.1+ | 0.1− |
| 2002 12 14 | 704 | 0.8+ | 0.3− | 2006 11 17 | 704 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.0 | 0.1− |
| 2002 12 14 | 704 | 0.5− | 0.7− | 2006 11 17 | 704 | 0.4− | 1.0− | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 12 14 | 704 | 0.4+ | 0.9− | 2006 11 17 | 704 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.2− |
| 2006 10 20 | 644 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.1− | 0.4− | 2006 11 24 | 691 | 0.1+ | 0.3− |
| 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 17 | 704 | 0.4+ | 0.6− | 2006 11 24 | 691 | 0.3+ | 0.4− |
| 2006 10 20 | 644 | 0.4− | 0.3+ | 2006 11 18 | 735 | (3.4− | 1.9+) | 2006 11 29 | 704 | 0.1+ | 0.2− |
| 2006 10 22 | 703 | 0.5+ | 0.3− | 2006 11 18 | 704 | 0.3− | 0.3− | 2006 11 29 | 704 | 0.2+ | 0.3− |
| 2006 10 22 | 703 | 0.0 | 1.3− | 2006 11 18 | 704 | 0.4− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.0 |
| 2006 10 22 | 703 | 0.3− | 0.4− | 2006 11 18 | 735 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2006 10 22 | 703 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2006 11 14 | 704 | 0.2+ | 0.8+ | 2006 11 18 | 704 | 0.2− | 1.0+ | 2006 12 01 | G96 | 0.4+ | 0.1− |
| 2006 11 14 | 704 | 0.1+ | 0.3− | 2006 11 18 | 735 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.2− | 0.1− |
| 2006 11 14 | 704 | 0.6+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2006 11 14 | 704 | 0.2+ | 0.8+ | 2006 11 20 | 691 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2006 11 16 | 735 | 0.3+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.5+ | | | | |

### 2006 UG$_{230}$ = 1997 GO$_{11}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.81540 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17745870 | $\omega$ | 283.59975 | | −0.52244385 | | −0.84502206 |
| $a$ | 3.1362055 | $\Omega$ | 199.23493 | | +0.85266779 | | −0.51725472 |
| $e$ | 0.3530185 | $i$ | 20.24049 | | +0.00317230 | | −0.13559228 |
| $P$ | 5.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 03 | 704 | 0.2+ | 0.7+ | 2003 06 03 | 691 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.0 | 0.0 |
| 1997 04 03 | 704 | 0.2+ | 0.5+ | 2006 09 17 | 691 | 0.1− | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1+ |
| 1997 04 05 | 704 | 1.1+ | 0.1+ | 2006 09 17 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.2− | 0.0 |
| 1997 04 05 | 704 | 0.8+ | 0.2+ | 2006 09 17 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.1− | 0.1− |
| 1997 04 05 | 704 | 0.1+ | 0.2+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.1− |
| 1997 04 05 | 704 | (2.7− | 0.1+) | 2006 09 30 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.1− |
| 1997 04 06 | 704 | 0.7− | 0.6− | 2006 09 30 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.6− | 0.0 |
| 1997 04 06 | 704 | 0.7− | 1.0+ | 2006 10 17 | 703 | 0.3+ | 0.5− | 2006 11 14 | G96 | 0.1− | 0.0 |
| 1997 04 07 | 704 | 0.9− | 1.0+ | 2006 10 17 | 703 | (0.4− | 2.9−) | 2006 11 14 | G96 | 0.8+ | 0.1+ |
| 1997 04 07 | 704 | 0.1+ | 0.6+ | 2006 10 17 | 703 | (0.5− | 2.0−) | 2006 11 14 | G96 | 0.2+ | 0.1+ |
| 2001 12 22 | 608 | 0.0 | 0.2+ | 2006 10 17 | 703 | 1.0− | 1.2− | 2006 11 14 | G96 | 0.1+ | 0.1+ |
| 2001 12 22 | 608 | 0.1+ | 0.0 | 2006 10 21 | 644 | 0.4+ | 0.8+ | 2006 11 16 | G96 | 0.4− | 0.1− |
| 2001 12 22 | 608 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.3+ | 0.3− |
| 2003 06 03 | 691 | 0.3− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.1− | 0.1+ |
| 2003 06 03 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.3+ |

### 2006 UH$_{230}$ = 1994 GA$_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.91404 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19469597 | $\omega$ | 302.10749 | | +0.60722602 | | +0.79452245 |
| $a$ | 2.9482529 | $\Omega$ | 5.28523 | | −0.71651859 | | +0.54937471 |
| $e$ | 0.0717544 | $i$ | 2.02881 | | −0.34333318 | | +0.25869190 |
| $P$ | 5.06 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 04 06 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.5+ | 0.2+ |
| 1994 04 06 | 691 | 0.1− | 0.1+ | 2006 10 02 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.0 |
| 1994 04 06 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.1− | 0.0 |
| 1994 04 07 | 691 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.5− | 0.1+ |
| 2004 03 30 | 291 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.2− | 0.0 | 2006 11 13 | G96 | 0.8+ | 0.1− |
| 2004 03 30 | 291 | 0.3+ | 0.1− | 2006 10 21 | 703 | 0.6+ | 1.1+ | 2006 11 13 | G96 | 0.1− | 0.1+ |
| 2004 03 30 | 291 | 0.3+ | 0.2− | 2006 10 21 | 703 | 0.9− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2004 04 19 | 691 | 0.2− | 0.1+ | 2006 10 21 | 703 | 0.8− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2004 04 19 | 691 | 0.2− | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.9+ | 2006 11 16 | 691 | 0.0 | 0.4− |
| 2004 04 19 | 691 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.2− |
| 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1− |

### 2006 UJ$_{230}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 135.14632 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27029047 | $\omega$ | 312.73084 | | −0.55018823 | | +0.83444123 |
| $a$ | 2.3690936 | $\Omega$ | 283.86324 | | −0.75629956 | | −0.51400922 |
| $e$ | 0.1337956 | $i$ | 1.86723 | | −0.35398288 | | −0.19875197 |
| $P$ | 3.65 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 02 | 699 | 0.7+ | 0.7− | 2005 05 12 | 703 | 0.0 | 1.0+ | 2006 10 16 | 691 | 0.2+ | 0.1− |
| 2001 03 02 | 699 | 1.3− | 0.3+ | 2005 06 11 | 703 | 0.1− | 0.3+ | 2006 10 21 | 703 | (0.4+ | 1.7−) |
| 2001 03 02 | 699 | 0.1+ | 0.6+ | 2005 06 11 | 703 | 0.9+ | 0.4− | 2006 10 21 | 703 | 0.1+ | 0.1− |
| 2001 03 02 | 699 | 0.3+ | 0.7+ | 2005 06 11 | 703 | 0.1+ | 0.8− | 2006 10 21 | 703 | (1.8− | 0.9+) |
| 2001 03 26 | 608 | 0.1+ | 0.0 | 2005 06 11 | 703 | 0.3− | 1.3− | 2006 10 21 | 703 | 0.5+ | 0.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 608 | 0.3+ | 0.7− | 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | | |
| 2001 03 26 | 608 | 0.0 | 0.1− | 2006 09 25 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.6− | 0.2− | | |
| 2005 05 12 | 703 | 0.2− | 0.5+ | 2006 09 25 | 691 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 2005 05 12 | 703 | 0.3+ | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.1− | | | | | | |
| 2005 05 12 | 703 | 0.6− | 1.2+ | 2006 10 16 | 691 | 0.1+ | 0.3+ | | | | | | |

**2006 UT$_{230}$ = 2001 XR$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.68827 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18175582 | $\omega$ | 162.83136 | | +0.93781192 | −0.34169639 | |
| $a$ | 3.0865774 | $\Omega$ | 217.32969 | | +0.30545983 | +0.89609183 | |
| $e$ | 0.1432617 | $i$ | 5.79773 | | +0.16493359 | +0.28330729 | |
| $P$ | 5.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 03 | 691 | 0.1+ | 0.1− | 2006 09 17 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 2000 08 03 | 691 | 0.0 | 0.0 | 2006 09 25 | 683 | 1.2+ | 0.5+ | 2006 10 21 | 644 | 0.0 | 0.4+ | | |
| 2000 08 03 | 691 | 0.1− | 0.0 | 2006 09 25 | 683 | 0.2− | 1.4+ | 2006 10 21 | 644 | 0.1+ | 0.2− | | |
| 2001 12 14 | 704 | 0.6− | 0.1− | 2006 09 25 | 683 | (0.4− | 1.6+) | 2006 10 27 | 691 | 0.2− | 0.2− | | |
| 2001 12 14 | 704 | 0.7+ | 1.4+ | 2006 09 30 | 691 | 0.8+ | 0.9+ | 2006 10 27 | 691 | 0.3− | 0.3− | | |
| 2001 12 14 | 704 | 0.3− | 0.1+ | 2006 09 30 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.1− | 0.1+ | | |
| 2001 12 14 | 704 | 0.5− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.1− | | |
| 2001 12 17 | 704 | 0.7+ | 0.8− | 2006 10 17 | 703 | 0.3+ | 0.4− | 2006 10 31 | 691 | 0.3− | 0.2− | | |
| 2001 12 17 | 704 | 0.4− | 0.1+ | 2006 10 17 | 703 | 0.1+ | 1.2− | 2006 10 31 | 691 | 0.2− | 0.1+ | | |
| 2001 12 17 | 704 | 0.3+ | 1.3− | 2006 10 17 | 703 | 0.1− | 1.4− | 2006 11 15 | G96 | 0.1+ | 0.3− | | |
| 2001 12 17 | 704 | 0.3+ | 1.5+ | 2006 10 17 | 703 | 0.9− | 0.8− | 2006 11 15 | G96 | 0.0 | 0.4− | | |
| 2001 12 17 | 704 | 0.3− | 0.3− | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.5− | | |
| 2006 09 17 | 691 | 0.7− | 0.4+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.6− | | |
| 2006 09 17 | 691 | 0.8+ | 0.3+ | 2006 10 20 | 644 | 0.3+ | 0.6+ | | | | | | |

**2006 UV$_{230}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.63796 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24501096 | $\omega$ | 338.86643 | | +0.92348520 | −0.34736985 | |
| $a$ | 2.5293701 | $\Omega$ | 42.59705 | | +0.37736395 | +0.74610552 | |
| $e$ | 0.1371605 | $i$ | 13.91929 | | +0.06907633 | +0.56803235 | |
| $P$ | 4.02 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2002 09 14 | 608 | 0.5− | 0.5+ | 2006 10 21 | 644 | 0.2− | 0.0 | | |
| 1998 09 19 | 645 | 0.0 | 0.1− | 2006 09 29 | 699 | 0.8− | 0.2− | 2006 10 21 | 644 | 0.2+ | 0.5+ | | |
| 1998 09 25 | 645 | 0.0 | 0.1+ | 2006 09 29 | 699 | 0.2− | 0.5− | 2006 10 22 | 703 | 0.7+ | 0.1− | | |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2006 09 29 | 699 | (0.4− | 1.7+) | 2006 10 22 | 703 | 0.9+ | 0.5+ | | |
| 2002 09 14 | 608 | 0.1− | 0.1+ | 2006 09 29 | 699 | 0.9+ | 0.2− | 2006 10 22 | 703 | 1.0− | 0.7− | | |
| 2002 09 14 | 608 | 0.0 | 0.3+ | 2006 10 21 | 644 | 0.2+ | 0.3+ | 2006 10 22 | 703 | 0.2− | 0.4− | | |

**2006 UD$_{231}$ = 1999 VX$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.23492 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27295985 | $\omega$ | 327.37731 | | +0.88252674 | −0.45777282 | |
| $a$ | 2.3536228 | $\Omega$ | 60.23055 | | +0.45367053 | +0.76850296 | |
| $e$ | 0.1346173 | $i$ | 7.12460 | | +0.12381278 | +0.44704278 | |
| $P$ | 3.61 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 704 | 0.3+ | 0.5− | 2005 05 08 | G96 | 0.1− | 0.1− | 2006 10 16 | 703 | 0.6− | 0.9+ | | |
| 1999 11 09 | 704 | 0.1− | 0.8− | 2005 05 08 | G96 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.5− | | |
| 1999 11 09 | 704 | 1.2− | 0.2− | 2005 05 08 | G96 | 0.0 | 0.0 | 2006 10 16 | 703 | 0.2− | 0.7− | | |
| 1999 11 09 | 704 | 0.1− | 0.5− | 2006 09 18 | 703 | 1.2+ | 0.1+ | 2006 10 16 | 703 | 0.3+ | 1.4− | | |
| 1999 11 12 | 704 | 0.2− | 0.2+ | 2006 09 18 | 703 | 0.7+ | 2.1+ | 2006 10 21 | 644 | 0.3+ | 0.5+ | | |
| 1999 11 12 | 704 | 1.2+ | 0.3− | 2006 09 18 | 703 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.6+ | | |
| 1999 11 12 | 704 | 0.4+ | 0.9+ | 2006 09 18 | 703 | 1.0− | 0.3+ | 2006 10 21 | 644 | 0.3+ | 0.5+ | | |
| 2004 02 17 | 691 | 0.2− | 0.3+ | 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 10 22 | 703 | 0.1+ | 0.9− | | |
| 2004 02 17 | 691 | 0.1− | 0.0 | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.8+ | 0.5+ | | |
| 2004 02 17 | 691 | 0.3+ | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 10 22 | 703 | 1.2− | 0.4+ | | |
| 2005 05 08 | G96 | 0.4− | 0.3− | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 10 22 | 703 | 0.9− | 0.8− | | |

**2006 UP$_{231}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.69571 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17094392 | $\omega$ | 336.76893 | | −0.71284273 | −0.70036959 | |
| $a$ | 3.2153897 | $\Omega$ | 158.63846 | | +0.65817946 | −0.68608842 | |
| $e$ | 0.1240848 | $i$ | 5.76276 | | +0.24218803 | −0.19688860 | |
| $P$ | 5.77 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 05 06 | 691 | 0.1− | 0.5− | 2003 03 23 | 691 | 0.3+ | 1.0+ | 2006 10 21 | 644 | 0.4− | 0.4+ | | |
| 1992 05 06 | 691 | 0.0 | 0.0 | 2003 03 23 | 691 | 0.2+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.5+ | | |
| 1992 05 06 | 691 | 0.3− | 0.3+ | 2003 04 07 | 691 | 0.0 | 0.2+ | 2006 10 22 | G96 | 0.6− | 0.6− | | |
| 2000 09 30 | 691 | 0.1− | 0.2+ | 2003 04 07 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | (0.9+ | 1.7+) | | |
| 2000 09 30 | 691 | 0.3− | 0.2+ | 2003 04 07 | 691 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.0 | | |
| 2000 09 30 | 691 | 0.1− | 0.3+ | 2005 07 29 | 644 | 0.4− | 0.6+ | 2006 11 24 | G96 | 0.1+ | 0.1+ | | |
| 2000 10 02 | 645 | 0.0 | 0.3+ | 2005 07 29 | 644 | 0.2− | 0.8+ | 2006 11 24 | G96 | 0.4− | 0.2− | | |
| 2000 10 02 | 645 | 0.0 | 0.2+ | 2005 07 29 | 644 | 0.1− | 0.8+ | 2006 11 24 | G96 | 0.5− | 0.2− | | |
| 2003 03 23 | 691 | 0.5+ | 0.8+ | 2006 10 21 | 644 | 0.9− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.3− | | |

**2006 UQ$_{231}$ = 2000 HM$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.62361 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22271971 | $\omega$ | 265.69193 | | +0.79583194 | +0.59769235 | |
| $a$ | 2.6954438 | $\Omega$ | 57.57322 | | −0.49990714 | +0.73896114 | |
| $e$ | 0.0304544 | $i$ | 6.60116 | | −0.34167875 | +0.31096670 | |
| $P$ | 4.43 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 691 | 0.4+ | 0.2+ | 2001 08 16 | 644 | 0.5+ | 0.4− | 2006 10 21 | 644 | 0.3+ | 0.2+ | | |
| 2000 04 27 | 691 | 0.2+ | 0.1− | 2004 02 29 | 691 | 0.2− | 0.2− | 2006 10 21 | 644 | 0.5− | 0.3+ | | |
| 2000 04 27 | 691 | 0.1+ | 0.1+ | 2004 02 29 | 691 | 0.2+ | 0.4− | 2006 10 21 | 644 | 0.2− | 0.5+ | | |
| 2000 05 07 | 691 | 0.1− | 0.1+ | 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.1− | 0.1+ | | |
| 2000 05 07 | 691 | 0.2− | 0.4+ | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.0 | | |
| 2000 05 07 | 691 | 0.2− | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.2− | | |
| 2001 08 16 | 644 | 0.1+ | 0.6− | 2006 10 02 | G96 | 0.9− | 0.3+ | 2006 10 22 | G96 | 0.4− | 0.0 | | |
| 2001 08 16 | 644 | 0.6+ | 0.4− | 2006 10 02 | G96 | 0.0 | 0.5+ | | | | | | |

**2006 UM$_{232}$ = 2003 AA$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.05020 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23390316 | $\omega$ | 266.99301 | | −0.96979611 | −0.10351432 | |
| $a$ | 2.6088273 | $\Omega$ | 266.99067 | | +0.18282590 | −0.90787624 | |
| $e$ | 0.2020727 | $i$ | 12.77762 | | −0.16146270 | −0.40625794 | |
| $P$ | 4.21 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 02 | 704 | 0.0 | 0.6+ | 2003 02 06 | 644 | 0.1+ | 0.5+ | 2006 09 30 | 691 | 0.4− | 0.5+ | | |
| 2003 01 02 | 704 | 0.5+ | 0.4+ | 2003 03 08 | 699 | 0.1− | 0.4− | 2006 10 21 | G96 | 0.4+ | 0.1+ | | |
| 2003 01 02 | 704 | 0.1− | 0.4+ | 2003 03 08 | 699 | 0.0 | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.3− | | |
| 2003 01 02 | 704 | 0.3− | 0.2+ | 2003 03 08 | 699 | 0.1− | 0.9− | 2006 10 21 | G96 | 0.4+ | 0.1− | | |
| 2003 01 02 | 704 | 0.2+ | 0.5+ | 2003 03 08 | 699 | 1.1− | 0.1− | 2006 10 21 | G96 | 0.4− | 0.5− | | |
| 2003 01 05 | 704 | 1.2+ | 0.2+ | 2004 06 25 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2003 01 05 | 704 | 1.0+ | 0.1− | 2004 06 25 | 691 | 0.3− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.1− | | |
| 2003 01 05 | 704 | 0.1+ | 1.0+ | 2004 06 25 | 691 | 0.0 | 0.5+ | 2006 10 28 | G96 | 0.3− | 0.0 | | |
| 2003 02 06 | 644 | 0.2+ | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | | | | | | |
| 2003 02 06 | 644 | 0.1+ | 0.4+ | 2006 09 30 | 691 | 0.2+ | 0.1+ | | | | | | |

**2006 UV$_{232}$ = 2004 GC$_{36}$ = 2005 NH$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 92.44027 | | $(2000.0)$ | | | |
| $n$ | 0.18476417 | $\omega$ | 17.42365 | | +0.35590187 | +0.92299347 |
| $a$ | 3.0529818 | $\Omega$ | 273.62326 | | −0.87392730 | +0.27324635 |
| $e$ | 0.0587968 | $i$ | 8.43216 | | −0.33103615 | +0.27096031 |
| $P$ | 5.33 | $H$ | 15.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 644 | 0.2− | 0.3+ | 2005 07 10 | 691 | 0.0 | 0.1− | 2006 10 21 | 644 | 0.0 | 0.1+ |
| 2004 04 13 | 644 | 0.2− | 0.7+ | 2005 07 10 | 691 | 0.3+ | 0.1+ | 2006 10 21 | 644 | 0.3− | 0.3− |
| 2004 04 13 | 644 | 0.1− | 0.6+ | 2005 07 15 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.3+ |
| 2004 04 16 | E12 | 0.2− | 0.6+ | 2005 07 15 | 691 | 0.2− | 0.1− | 2006 10 23 | 644 | 0.8− | 0.3+ |
| 2004 04 16 | E12 | 0.3− | 1.1− | 2005 07 15 | 691 | 0.4− | 0.2− | 2006 10 23 | 644 | 0.3+ | 0.3− |
| 2004 04 16 | E12 | 1.0+ | 1.2− | 2006 10 12 | 644 | 0.3+ | 0.1+ | 2006 10 23 | 644 | 0.7+ | 0.1+ |
| 2004 04 16 | E12 | 0.0 | 0.2− | 2006 10 12 | 644 | 0.0 | 0.2− | | | | |
| 2005 07 10 | 691 | 0.1− | 0.0 | 2006 10 12 | 644 | 0.1+ | 0.2− | | | | |

**2006 UA$_{233}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 13.03286 | | $(2000.0)$ | | | |
| $n$ | 0.21928091 | $\omega$ | 183.28066 | | +0.99980195 | −0.01986767 |
| $a$ | 2.7235509 | $\Omega$ | 177.85673 | | +0.01888871 | +0.92910761 |
| $e$ | 0.2165297 | $i$ | 1.76641 | | +0.00626659 | +0.36927542 |
| $P$ | 4.49 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 23 | 608 | 0.1+ | 0.6− | 2006 09 30 | 703 | 0.2+ | 1.7+ | 2006 10 27 | G96 | 0.4+ | 0.5− |
| 2001 07 23 | 608 | 0.1− | 0.0 | 2006 09 30 | 703 | 0.3− | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− |
| 2001 07 23 | 608 | 0.2+ | 0.7− | 2006 09 30 | 703 | 0.0 | 1.4− | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2005 05 19 | G96 | 0.3+ | 0.1+ | 2006 10 11 | 644 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.3+ |
| 2005 05 19 | G96 | 0.1− | 0.5+ | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.3− |
| 2005 05 19 | G96 | 0.5+ | 0.5+ | 2006 10 11 | 644 | 0.2+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.2+ |
| 2005 05 19 | G96 | 0.1− | 0.4+ | 2006 10 20 | 644 | 0.1+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.1+ |
| 2005 06 10 | 691 | 0.4+ | 0.1+ | 2006 10 20 | 644 | 0.4+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.2+ |
| 2005 06 10 | 691 | 0.0 | 0.6+ | 2006 10 20 | 644 | 0.4+ | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.4− |
| 2005 06 10 | 691 | 0.4− | 0.1− | 2006 10 21 | 644 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2006 09 26 | G96 | 0.3− | 0.2− | 2006 10 21 | 644 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2006 09 26 | G96 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 09 26 | G96 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.4+ |
| 2006 09 26 | G96 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.4+ |

**2006 UB$_{233}$ = 2001 WX$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 17.01509 | | $(2000.0)$ | | | |
| $n$ | 0.18963825 | $\omega$ | 306.56498 | | +0.99743380 | −0.06205208 |
| $a$ | 3.0004433 | $\Omega$ | 57.01864 | | +0.07131255 | +0.90532983 |
| $e$ | 0.1258846 | $i$ | 2.43998 | | −0.00635136 | +0.42015169 |
| $P$ | 5.20 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 21 | 691 | 0.7− | 0.2− | 2006 09 30 | 703 | 1.4− | 0.6+ | 2006 11 14 | G96 | 0.1− | 0.5− |
| 1999 04 21 | 691 | 0.4+ | 0.4+ | 2006 09 30 | 703 | 0.1− | 0.9+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 1999 04 21 | 691 | 0.3+ | 0.2− | 2006 09 30 | 703 | 0.8+ | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 11 20 | 691 | 0.4+ | 0.1+ | 2006 09 30 | 703 | (1.5− | 0.0 ) | 2006 11 17 | 703 | 0.5− | 1.1− |
| 2001 11 20 | 691 | 0.4+ | 0.2− | 2006 10 12 | 644 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.3+ | 0.1+ |
| 2001 11 20 | 691 | 0.4+ | 0.1− | 2006 10 12 | 644 | 0.5+ | 0.3+ | 2006 11 17 | 703 | 0.0 | 0.5+ |
| 2001 11 21 | 704 | 1.5− | 0.2− | 2006 10 12 | 644 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 1.2− | 1.0+ |
| 2001 11 21 | 704 | 0.9− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.4− | 0.0 | 2006 10 21 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.4− | 0.2+ |
| 2001 11 21 | 704 | 0.5− | 0.4− | 2006 10 21 | 644 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2001 11 21 | 704 | 0.8− | 1.2− | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 25 | 703 | 0.6− | 0.0 |
| 2004 04 12 | 691 | 0.2+ | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.4− | 2006 11 25 | 703 | 0.5+ | 0.1+ |
| 2004 04 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 25 | 703 | 0.5+ | 0.9+ |
| 2004 04 12 | 691 | 0.2+ | 0.5+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 25 | 703 | 0.5− | 0.3− |
| 2006 09 30 | G96 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2006 09 30 | G96 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.0 | 0.3− | | | | |

**2006 UF$_{233}$ = 2001 XE$_{244}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.42570 | | $(2000.0)$ | | | |
| $n$ | 0.18871722 | $\omega$ | 294.30049 | | +0.94290676 | +0.29727298 |
| $a$ | 3.0101977 | $\Omega$ | 48.77928 | | −0.18354226 | +0.84007075 |
| $e$ | 0.0806150 | $i$ | 11.51752 | | −0.27791919 | +0.45377298 |
| $P$ | 5.22 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 05 18 | 691 | 0.0 | 0.1− | 2006 09 30 | 703 | 1.2− | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 1999 05 18 | 691 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.4+ | 1.1− | 2006 11 11 | 703 | 0.6− | 0.6+ |
| 1999 05 18 | 691 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.0 | 0.4+ | 2006 11 17 | 703 | 0.3− | 0.3+ |
| 2001 12 15 | 704 | 0.6+ | 0.5+ | 2006 10 21 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.9− |
| 2001 12 15 | 704 | 0.2− | 0.1− | 2006 10 21 | 644 | 0.6+ | 0.2+ | 2006 11 17 | 703 | 0.2+ | 0.4− |
| 2001 12 15 | 704 | 0.4− | 0.2− | 2006 10 22 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.6+ | 0.3− |
| 2001 12 15 | 704 | 0.2− | 0.4+ | 2006 10 22 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 0.1− |
| 2001 12 15 | 704 | 0.2+ | 0.1− | 2006 10 22 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.3− |
| 2001 12 19 | 704 | 0.4+ | 0.6− | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2001 12 19 | 704 | 0.2− | 0.5− | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.2− |
| 2006 09 30 | 703 | 0.5− | 0.3− | 2006 11 11 | 703 | 0.5− | 1.4− | | | | |
| 2006 09 30 | 703 | 0.1− | 0.2+ | 2006 11 11 | 703 | (1.3+ | 2.1−) | | | | |

**2006 UJ$_{233}$ = 2004 FS$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.29008 | | $(2000.0)$ | | | |
| $n$ | 0.27774674 | $\omega$ | 245.97097 | | +0.14210155 | −0.98883536 |
| $a$ | 2.3265018 | $\Omega$ | 196.05310 | | +0.95687107 | +0.14882510 |
| $e$ | 0.1725789 | $i$ | 9.33461 | | +0.25338688 | −0.00746445 |
| $P$ | 3.55 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 14 | 644 | 0.3− | 0.0 | 2004 03 19 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.6+ |
| 2004 02 14 | 644 | 0.2− | 0.2+ | 2004 03 19 | 704 | 1.1+ | 0.2+ | 2006 10 22 | 691 | 0.3− | 0.1− |
| 2004 02 14 | 644 | 0.2− | 0.1+ | 2004 03 19 | 704 | 0.2+ | 0.0 | 2006 10 22 | 691 | 0.1− | 0.1− |
| 2004 03 18 | 704 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.7+ | 0.1− | 2006 10 22 | 691 | 0.3− | 0.1+ |
| 2004 03 18 | 704 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.6+ | 0.1+ | 2006 11 20 | 704 | 1.4− | 0.4+ |
| 2004 03 18 | 704 | 0.3+ | 0.1− | 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.1+ | 1.3− |
| 2004 03 18 | 704 | 0.5− | 0.2+ | 2006 10 21 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 1.5+ | 0.0 |
| 2004 03 18 | 704 | 0.8− | 0.7− | 2006 10 21 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 704 | 0.7+ | 0.2− |

**2006 UO$_{233}$ = 2002 TE$_{338}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 179.12379 | | $(2000.0)$ | | | |
| $n$ | 0.25636241 | $\omega$ | 152.73689 | | −0.90076176 | +0.42365569 |
| $a$ | 2.4541428 | $\Omega$ | 52.65369 | | −0.41717264 | −0.78273488 |
| $e$ | 0.0472763 | $i$ | 6.90857 | | −0.12081079 | −0.45589688 |
| $P$ | 3.84 | $H$ | 17.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2+ |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 10 02 | G96 | 0.1+ | 0.7− | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 10 22 | 691 | 0.5− | 0.4+ | 2006 11 01 | 691 | 0.1+ | 0.4− |
| 2004 02 18 | 691 | 0.1+ | 0.1− | 2006 10 22 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.8+ | 0.0 |
| 2004 02 18 | 691 | 0.3+ | 0.2− | 2006 10 22 | 691 | 0.5− | 0.1− | 2006 11 14 | G96 | 0.2− | 0.4− |
| 2004 02 18 | 691 | 0.4− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2006 10 02 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.2+ | 2006 11 14 | G96 | 0.5+ | 0.6− |

**2006 UQ$_{233}$ = 1999 VX$_{205}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.01470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28083905 | $\omega$ | 354.90877 | | +0.73529740 | | −0.66783933 |
| $a$ | 2.3093923 | $\Omega$ | 47.69081 | | +0.62719926 | | +0.60596544 |
| $e$ | 0.1199730 | $i$ | 8.98130 | | +0.25682450 | | +0.43219963 |
| $P$ | 3.51 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 12 | 704 | 0.5+ | 0.1− | 2006 10 16 | 703 | 0.4+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 1999 11 12 | 704 | 0.6+ | 0.5+ | 2006 10 22 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 1999 11 12 | 704 | 0.9− | 0.1− | 2006 10 22 | 691 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 1999 11 12 | 704 | 1.2− | 1.0+ | 2006 10 22 | 691 | 0.3− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 1999 11 13 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.5− |
| 1999 11 13 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.3+ | 0.2+ |
| 1999 11 13 | 691 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.4+ | 0.5+ |
| 2001 04 16 | 645 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.5+ | 0.3+ |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1− | 2006 11 25 | 703 | 0.2− | 0.5− |
| 2006 10 16 | 703 | 0.5− | 1.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 25 | 703 | 1.1− | 0.8− |
| 2006 10 16 | 703 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 25 | 703 | 0.2+ | 0.2− |
| 2006 10 16 | 703 | 0.7+ | 1.1+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 25 | 703 | 1.2− | 0.8− |

**2006 UQ$_{234}$ = 2005 SQ$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.68087 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17277178 | $\omega$ | 124.75151 | | +0.64932536 | | −0.75779768 |
| $a$ | 3.1926710 | $\Omega$ | 284.62570 | | +0.67428238 | | +0.61268143 |
| $e$ | 0.1660839 | $i$ | 3.80327 | | +0.35173833 | | +0.22441956 |
| $P$ | 5.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 23 | 691 | 0.0 | 0.3+ | 2005 10 01 | 703 | 0.6− | 0.4− | 2006 10 29 | G96 | 0.1− | 0.1− |
| 2002 03 23 | 691 | 0.1+ | 0.7+ | 2005 10 01 | 703 | 1.3− | 0.1+ | 2006 10 29 | G96 | 0.6− | 0.2+ |
| 2002 03 23 | 691 | 0.3+ | 0.1− | 2005 10 01 | 703 | 0.3− | 0.5+ | 2006 10 29 | G96 | 0.2− | 0.3+ |
| 2005 08 31 | 599 | 1.0+ | 1.4+ | 2005 10 01 | 703 | 0.4− | 0.5+ | 2006 10 29 | G96 | 0.3− | 0.4+ |
| 2005 08 31 | 599 | 0.3+ | 0.4+ | 2006 10 22 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.1− |
| 2005 09 22 | 644 | 0.2− | 0.4+ | 2006 10 22 | G96 | 0.2+ | 0.2− | 2006 11 27 | G96 | 0.5+ | 0.4− |
| 2005 09 22 | 644 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.5− | 0.1+ | 2006 11 27 | G96 | 0.6+ | 0.2− |
| 2005 09 22 | 644 | 0.1− | 0.2+ | 2006 10 22 | G96 | 0.5− | 0.1− | 2006 11 27 | G96 | 0.1+ | 0.2− |

**2006 UH$_{235}$ = 2001 UG$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.14936 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19804882 | $\omega$ | 90.15598 | | +0.55263598 | | +0.83183744 |
| $a$ | 2.9148835 | $\Omega$ | 213.55674 | | −0.79685386 | | +0.50932090 |
| $e$ | 0.0748918 | $i$ | 5.33346 | | −0.24416675 | | +0.22054182 |
| $P$ | 4.98 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 291 | 0.3+ | 0.5+ | 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.3− |
| 2001 10 17 | 291 | 0.6+ | 0.4+ | 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2001 10 17 | 291 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.2+ |
| 2001 10 21 | 291 | 0.4− | 0.4+ | 2006 10 11 | 691 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.3+ | 0.1+ |
| 2001 10 21 | 291 | 1.1− | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.1− |
| 2006 09 15 | 691 | 0.2− | 0.1− | 2006 10 23 | 691 | 0.1− | 0.6− | 2006 11 10 | 691 | 0.3− | 0.2+ |
| 2006 09 15 | 691 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.3− |
| 2006 09 15 | 691 | 0.1− | 0.1− | 2006 10 23 | 691 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2006 09 28 | 691 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ |

**2006 UM$_{236}$ = 2004 FL$_{151}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.71978 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17382605 | $\omega$ | 273.47000 | | +0.82320082 | | +0.56739228 |
| $a$ | 3.1797488 | $\Omega$ | 51.96250 | | −0.51021016 | | +0.75488085 |
| $e$ | 0.1512147 | $i$ | 1.46671 | | −0.24905019 | | +0.32896947 |
| $P$ | 5.67 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.0 | 0.0 | 2006 09 25 | G96 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.6− |
| 2004 03 16 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2004 03 16 | 691 | 0.1− | 0.2− | 2006 09 25 | G96 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.3− |
| 2004 03 27 | 291 | 0.0 | 0.3+ | 2006 09 25 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.4− | 0.3− |
| 2004 03 27 | 291 | 0.8+ | 0.2− | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 291 | 0.1− | 0.7+ | 2006 10 15 | 691 | 0.4− | 0.8+ | 2006 11 17 | 691 | 0.1+ | 0.1+ |
| 2004 04 13 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.3− |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.1+ | 0.3− |
| 2004 04 13 | 691 | 0.1− | 0.2− | 2006 10 23 | 691 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.7− | 2.1− |
| 2004 05 09 | 691 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2004 05 09 | 691 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.1− | 1.1+ |
| 2004 05 09 | 691 | 0.2+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.4+ | 0.3− |
| 2006 07 21 | G96 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2006 07 21 | G96 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.4+ | 0.1− |
| 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 | | | | |
| 2006 07 21 | G96 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.0 | | | | |

**2006 UG$_{237}$ = 2006 TV$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.16351 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22431015 | $\omega$ | 349.49000 | | +0.53295423 | | −0.84452047 |
| $a$ | 2.6826876 | $\Omega$ | 68.28646 | | +0.78035643 | | +0.46663640 |
| $e$ | 0.1252840 | $i$ | 3.23285 | | +0.32711409 | | +0.26274636 |
| $P$ | 4.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 23 | 691 | 0.2+ | 0.2− | 2006 10 15 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− |
| 2004 03 23 | 691 | 0.0 | 0.0 | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.3− |
| 2004 03 23 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.7− | 0.3+ | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 04 13 | 691 | 0.2+ | 0.1+ | 2006 10 23 | 691 | 0.4− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.3− |
| 2004 04 13 | 691 | 0.1+ | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2004 04 13 | 691 | 0.5− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.6− |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.6+ |
| 2006 10 02 | G96 | 0.1− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.7− | 1.0+ |
| 2006 10 02 | G96 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.2− | 0.7− |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.6− | 0.5− |
| 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.4+ | 0.2+ |
| 2006 10 11 | 691 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2006 10 11 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.0 |

**2006 UN$_{237}$ = 2004 CD$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 154.08554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23508107 | $\omega$ | 166.71592 | | −0.69005468 | | +0.71857382 |
| $a$ | 2.6001053 | $\Omega$ | 59.57053 | | −0.67286318 | | −0.59292848 |
| $e$ | 0.1709946 | $i$ | 5.75518 | | −0.26660771 | | −0.36343842 |
| $P$ | 4.19 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 691 | 0.2+ | 0.4+ | 2005 07 06 | E12 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.0 |
| 2004 02 11 | 691 | 0.2+ | 0.4+ | 2005 07 06 | E12 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.7+ |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 10 03 | G96 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 2004 02 15 | 704 | 0.8− | 0.7− | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 02 15 | 704 | 0.5− | 0.6− | 2006 10 03 | G96 | 0.0 | 0.6− | 2006 11 01 | 691 | 0.1+ | 0.3− |
| 2004 02 15 | 704 | 0.1+ | 1.0− | 2006 10 03 | G96 | 0.4+ | 0.5− | 2006 11 01 | 691 | 0.2− | 0.3− |
| 2004 02 15 | 704 | 0.6− | 0.9− | 2006 10 23 | 691 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.5+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 06 | E12 | 0.7− | 0.6+ | 2006 10 23 | 691 | 0.6− | 0.3− | 2006 11 11 | 691 | 0.2+ | 0.3− | | |
| 2005 07 06 | E12 | 0.8+ | 0.2− | 2006 10 23 | 691 | 0.5− | 0.8+ | 2006 11 11 | 691 | 0.4+ | 0.2− | | |

**2006 UR$_{237}$ = 2003 GJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 241.24433 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17421672 | $\omega$ | 344.75677 | | −0.91570017 | | −0.40179734 |
| $a$ | 3.1749934 | $\Omega$ | 171.54195 | | +0.37364295 | | −0.85787256 |
| $e$ | 0.1173068 | $i$ | 2.81253 | | +0.14793289 | | −0.32033352 |
| $P$ | 5.66 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 03 | 699 | 0.0 | 0.4− | 2003 05 01 | 691 | 0.6− | 0.1− | 2006 10 23 | 691 | 0.5− | 0.1− |
| 2003 04 03 | 699 | 0.0 | 0.6+ | 2005 09 30 | G96 | 0.2− | 0.2− | 2006 10 23 | 691 | 0.4− | 0.0 |
| 2003 04 03 | 699 | 0.4− | 0.4− | 2005 09 30 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 2003 04 03 | 699 | (1.4− | 1.7+) | 2005 09 30 | G96 | 0.2+ | 0.7+ | 2006 10 28 | 691 | 0.0 | 0.0 |
| 2003 04 05 | 691 | 0.1+ | 0.0 | 2005 09 30 | G96 | 0.2− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2003 04 05 | 691 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.2+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 04 05 | 691 | 0.1− | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2003 05 01 | 691 | 0.4+ | 0.1+ | 2006 10 15 | 691 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 2003 05 01 | 691 | 0.4+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2− | | | | |

**2006 UW$_{237}$ = 2001 SO$_{340}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.12244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21318734 | $\omega$ | 290.33258 | | −0.37017499 | | −0.92896092 |
| $a$ | 2.7752052 | $\Omega$ | 181.39630 | | +0.87287390 | | −0.34729275 |
| $e$ | 0.1701750 | $i$ | 3.39565 | | +0.31790193 | | −0.12813803 |
| $P$ | 4.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.0 | 0.0 | 2005 07 11 | G96 | 1.1− | 1.3+ | 2006 10 28 | 691 | 0.0 | 0.2− |
| 2001 08 25 | 691 | 0.0 | 0.2+ | 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2001 08 25 | 691 | 0.8− | 0.7+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 2001 09 21 | 704 | 0.7− | 0.2− | 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2001 09 21 | 704 | 0.5− | 0.9+ | 2006 09 30 | G96 | 0.2− | 0.5− | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2001 09 21 | 704 | 0.4− | 0.3− | 2006 10 15 | 691 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.4+ | 0.1− |
| 2001 09 21 | 704 | 0.1+ | 0.7+ | 2006 10 15 | 691 | 0.2+ | 0.6+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 09 21 | 704 | 0.1+ | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.1− | 0.1− |
| 2001 09 23 | 691 | 0.2+ | 0.8− | 2006 10 20 | 644 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2001 09 23 | 691 | 0.5+ | 0.2− | 2006 10 20 | 644 | 0.0 | 0.6+ | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2001 09 23 | 691 | 0.5+ | 0.4− | 2006 10 20 | 644 | 0.2+ | 0.5+ | 2006 11 17 | 703 | 0.0 | 1.1+ |
| 2005 07 11 | G96 | 0.4+ | 0.5− | 2006 10 23 | 691 | 0.3− | 0.3− | 2006 11 17 | 703 | 0.5+ | 0.8− |
| 2005 07 11 | G96 | 0.4+ | 0.4− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.7− | 1.2+ |
| 2005 07 11 | G96 | 0.4+ | 0.5− | 2006 10 23 | 691 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.8+ | 0.1− |

**2006 UY$_{237}$ = 2003 XD$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.52556 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31062975 | $\omega$ | 300.72952 | | +0.88734512 | | −0.46004325 |
| $a$ | 2.1592720 | $\Omega$ | 86.67654 | | +0.43304940 | | +0.80812667 |
| $e$ | 0.0973007 | $i$ | 1.79589 | | +0.15838829 | | +0.36781991 |
| $P$ | 3.17 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 01 | 291 | 0.5− | 0.1+ | 2006 10 02 | G96 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2003 12 01 | 291 | 0.1+ | 0.1− | 2006 10 11 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2003 12 01 | 291 | 0.3+ | 0.1− | 2006 10 11 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2003 12 14 | 691 | 0.0 | 0.2+ | 2006 10 11 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2003 12 14 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2003 12 14 | 691 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2006 10 02 | G96 | 0.4− | 0.2− | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 14 | G96 | 0.5+ | 0.7− |
| 2006 10 02 | G96 | 0.1− | 0.3− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2006 10 02 | G96 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.1+ | | | | |

**2006 US$_{238}$ = 1995 QQ$_{15}$ = 2003 YQ$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 140.53917 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27410585 | $\omega$ | 294.42270 | | −0.47648082 | | +0.87826034 |
| $a$ | 2.3470581 | $\Omega$ | 307.06103 | | −0.78723687 | | −0.44661318 |
| $e$ | 0.0779339 | $i$ | 2.89541 | | −0.39143856 | | −0.17086676 |
| $P$ | 3.60 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.0 | 0.6− | 2002 09 14 | 644 | 0.1− | 0.5+ | 2006 10 23 | 691 | 0.3+ | 0.1− |
| 1995 08 25 | 691 | 0.3− | 0.9− | 2003 12 28 | 704 | 0.4− | 0.6+ | 2006 10 23 | 691 | 0.5− | 0.1+ |
| 1995 08 25 | 691 | 0.2+ | 0.9− | 2003 12 28 | 704 | 0.6+ | 0.3+ | 2006 10 23 | 691 | 0.3− | 0.1− |
| 1995 08 28 | 691 | 0.0 | 0.4+ | 2003 12 28 | 704 | 0.2+ | 0.7− | 2006 10 28 | 691 | 0.4+ | 0.2+ |
| 1995 08 28 | 691 | 0.6+ | 0.3+ | 2003 12 30 | 704 | 0.4+ | 0.8+ | 2006 10 28 | 691 | 0.5+ | 0.0 |
| 1995 08 28 | 691 | 0.4+ | 0.3− | 2003 12 30 | 704 | 0.6+ | 1.4+ | 2006 10 28 | 691 | 0.4+ | 0.0 |
| 1997 02 14 | 691 | 0.2+ | 0.4− | 2003 12 30 | 704 | (1.8+ | 1.2+) | 2006 11 01 | 691 | 0.1+ | 0.2− |
| 1997 02 14 | 691 | 0.7− | 0.5− | 2006 10 02 | G96 | 0.5− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1997 02 14 | 691 | 0.1− | 0.5− | 2006 10 02 | G96 | 0.2+ | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2001 03 20 | 608 | 0.2+ | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.6− | 2006 11 18 | G96 | 0.0 | 0.2− |
| 2001 03 20 | 608 | 0.1− | 0.4− | 2006 10 02 | G96 | 1.0− | 0.4− | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2001 03 20 | 608 | 0.3− | 0.2+ | 2006 10 15 | 691 | 0.6− | 0.7+ | 2006 11 18 | G96 | 0.2− | 0.4− |
| 2002 09 14 | 644 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2+ | 0.3+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 2002 09 14 | 644 | 0.2− | 0.2+ | 2006 10 15 | 691 | 0.8− | 0.2+ | | | | |

**2006 UK$_{239}$ = 2004 GJ$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.98314 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21616510 | $\omega$ | 169.07673 | | +0.69474565 | | −0.71676054 |
| $a$ | 2.7496600 | $\Omega$ | 236.88398 | | +0.65440027 | | +0.66444266 |
| $e$ | 0.0447193 | $i$ | 4.09814 | | +0.29847742 | | +0.21158988 |
| $P$ | 4.56 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.2+ | 0.1− | 2006 10 02 | G96 | 0.3+ | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.2+ |
| 2004 04 13 | 691 | 0.1+ | 0.3− | 2006 10 02 | G96 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 2004 04 13 | 691 | 0.1− | 0.2− | 2006 10 02 | G96 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.5− | 0.3− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 2004 04 20 | 691 | 0.0 | 0.1+ | 2006 10 23 | 691 | 0.2− | 0.1− | | | | |
| 2006 10 02 | G96 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.1+ | | | | |

**2006 UN$_{239}$ = 2004 GO$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 240.59522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23299139 | $\omega$ | 222.96716 | | −0.93866134 | | −0.34461328 |
| $a$ | 2.6156290 | $\Omega$ | 296.87073 | | +0.32006644 | | −0.85714685 |
| $e$ | 0.1093267 | $i$ | 0.80377 | | +0.12834473 | | −0.38280670 |
| $P$ | 4.23 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 24 | 691 | 0.2− | 0.2− | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.4+ | 0.2+ |
| 2000 05 24 | 691 | 0.0 | 0.3− | 2004 04 16 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2000 05 24 | 691 | 0.2+ | 0.5+ | 2004 04 16 | 644 | 0.3+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2002 11 25 | 644 | 0.3− | 0.0 | 2004 04 16 | 644 | 0.3+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 11 25 | 644 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.8+ | 0.7− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 11 25 | 644 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.6+ | 0.6− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2004 03 16 | 691 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2004 03 16 | 691 | 0.1− | 0.3− | 2006 09 28 | G96 | 0.5− | 0.6− | 2006 11 15 | G96 | 0.3+ | 0.7− |
| 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2004 04 13 | 691 | 0.1− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.3− | 0.2+ | | | | |

**2006 UO$_{239}$ = 2005 NV$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 237.39181 | | (2000.0) | | −0.93750606 | −0.34793487 |
| $n$ | 0.19721948 | $\omega$ | 171.68678 | | +0.31789900 | −0.85071680 |
| $a$ | 2.9230496 | $\Omega$ | 347.94873 | | +0.14150125 | −0.39398256 |
| $e$ | 0.0590169 | $i$ | 1.33633 | | | |
| $P$ | 5.00 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 691 | 0.5+ | 0.4− | 2004 06 13 | 691 | 0.2+ | 0.2+ | 2006 10 23 | 691 | 0.6− | 0.1− |
| 1996 10 05 | 691 | 0.2− | 0.6− | 2005 07 12 | G96 | 0.8− | 0.2+ | 2006 10 23 | 691 | 0.4− | 0.1− |
| 1996 10 05 | 691 | 0.3− | 0.0 | 2005 07 12 | G96 | 0.4− | 0.4+ | 2006 10 28 | 691 | 0.1+ | 0.7+ |
| 2000 08 25 | 807 | 0.2− | 0.2+ | 2005 07 12 | G96 | 0.5+ | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2000 08 25 | 807 | 1.0− | 0.1+ | 2005 07 12 | G96 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2001 11 12 | 691 | 0.6+ | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.2+ |
| 2001 11 12 | 691 | 0.4+ | 0.4− | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.3− | 0.7+ |
| 2001 11 12 | 691 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.6+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2003 02 09 | 291 | 1.2− | 0.1+ | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2003 02 09 | 291 | 0.5+ | 0.4+ | 2006 10 15 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.9+ | 0.2+ |
| 2003 02 09 | 291 | 0.7+ | 0.3+ | 2006 10 15 | 691 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.8+ | 0.2+ |
| 2004 06 13 | 691 | 0.4+ | 0.3+ | 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.9+ | 0.4− |
| 2004 06 13 | 691 | 0.0 | 0.5+ | 2006 10 23 | 691 | 0.3− | 0.1− | | | | |

**2006 UF$_{240}$ = 2004 FW$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 188.94522 | | (2000.0) | | −0.90940518 | +0.41375615 |
| $n$ | 0.24222527 | $\omega$ | 179.97895 | | −0.38160601 | −0.78963821 |
| $a$ | 2.5487256 | $\Omega$ | 24.59766 | | −0.16540577 | −0.45307543 |
| $e$ | 0.1733461 | $i$ | 5.83065 | | | |
| $P$ | 4.07 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 26 | 691 | 0.1+ | 0.2− | 2004 03 16 | 704 | 0.1+ | 1.0− | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 1992 03 26 | 691 | 0.0 | 0.4+ | 2004 03 16 | 704 | 0.6+ | 0.3+ | 2006 10 28 | 691 | 0.6+ | 0.2− |
| 1992 03 26 | 691 | 0.1− | 0.2− | 2004 03 19 | 644 | 0.3− | 0.2− | 2006 10 28 | 691 | 0.5+ | 0.3+ |
| 2004 02 16 | 691 | 0.3− | 0.0 | 2004 03 19 | 644 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2004 02 16 | 691 | 0.2− | 0.1− | 2004 03 19 | 644 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 02 16 | 691 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.3− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2004 03 16 | 704 | 0.3+ | 0.2+ | 2006 10 23 | 691 | 0.8− | 0.3− | | | | |
| 2004 03 16 | 704 | 0.3+ | 0.8+ | 2006 10 23 | 691 | 0.4− | 0.2+ | | | | |

**2006 UJ$_{240}$ = 2003 YV$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 172.68650 | | (2000.0) | | −0.82832000 | +0.56004410 |
| $n$ | 0.26026721 | $\omega$ | 249.07616 | | −0.50355288 | −0.75624172 |
| $a$ | 2.4295346 | $\Omega$ | 324.97760 | | −0.24560227 | −0.33830320 |
| $e$ | 0.1521597 | $i$ | 1.53578 | | | |
| $P$ | 3.79 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 645 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.5+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.3+ |
| 1998 09 25 | 645 | 0.1+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 1.3− | 2006 10 31 | 691 | 0.2− | 0.1+ |
| 2003 12 19 | 691 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.5+ | 0.4− | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2003 12 19 | 691 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.6+ | 0.3− | 2006 11 10 | 691 | 0.7+ | 0.3+ |
| 2003 12 19 | 691 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 2003 12 21 | 645 | 0.0 | 0.2− | 2006 10 23 | 691 | 0.6− | 0.2− | 2006 11 10 | 691 | 0.3− | 0.1− |
| 2003 12 21 | 645 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.6− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.7− |
| 2003 12 21 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.2− |
| 2003 12 21 | 691 | 0.2− | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.5+ |
| 2003 12 21 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.3+ | 0.2− | | | | |

**2006 UX$_{240}$ = 2005 NV$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.54703 | | (2000.0) | | +0.99657484 | −0.07936312 |
| $n$ | 0.21853269 | $\omega$ | 172.07854 | | +0.06879024 | +0.95156031 |
| $a$ | 2.7297641 | $\Omega$ | 192.54440 | | +0.04589651 | +0.29704287 |
| $e$ | 0.0629923 | $i$ | 6.14232 | | | |
| $P$ | 4.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 645 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2001 12 10 | 645 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.4+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2005 07 05 | 644 | 0.6− | 0.2− | 2006 10 28 | G96 | 0.4− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.3+ |
| 2005 07 05 | 644 | 0.1+ | 0.1− | 2006 11 02 | 703 | 0.9− | 1.5− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2005 07 05 | 644 | 0.2+ | 0.2− | 2006 11 02 | 703 | 2.2− | 1.9− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 07 08 | 691 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.2− | 0.6+ | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2005 07 08 | 691 | 0.2+ | 0.2− | 2006 11 02 | 703 | 0.7+ | 1.0− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2005 07 08 | 691 | 0.1− | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.2+ | 2006 11 28 | 704 | 0.9+ | 0.2+ |
| 2006 10 23 | G96 | 0.2− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.4− |
| 2006 10 23 | G96 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.1+ | 2006 11 28 | 704 | 1.1+ | 0.3+ |
| 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.0 | 2006 11 28 | 704 | 1.8+ | 0.4+ |
| 2006 10 23 | G96 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.2− | 0.2+ | | | | |
| 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.2+ | | | | |

**2006 UH$_{241}$ = 2002 UV$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.16073 | | (2000.0) | | +0.98633723 | +0.10692297 |
| $n$ | 0.24013991 | $\omega$ | 58.55571 | | −0.15239864 | +0.88111181 |
| $a$ | 2.5634597 | $\Omega$ | 295.04442 | | +0.06255809 | +0.46066197 |
| $e$ | 0.2097346 | $i$ | 7.95127 | | | |
| $P$ | 4.10 | $H$ | 15.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 0.8− | 1.2+ | 2006 10 29 | 703 | 0.2− | 0.0 | 2006 11 15 | 704 | 1.1− | 0.9+ |
| 2002 10 31 | 704 | 0.4+ | 0.2− | 2006 10 29 | 703 | 0.3− | 0.4+ | 2006 11 15 | 704 | 0.1+ | 0.4− |
| 2002 10 31 | 704 | (1.7− | 0.1+) | 2006 10 29 | 703 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.8+ | 0.7− |
| 2002 10 31 | 704 | 1.0− | 0.5+ | 2006 11 02 | G96 | 0.2+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 1.2+ |
| 2002 10 31 | 704 | 0.0 | 1.1+ | 2006 11 02 | G96 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.3+ | 0.0 |
| 2002 11 06 | 704 | 0.4− | 0.2+ | 2006 11 02 | G96 | 0.4+ | 0.0 | 2006 11 21 | 703 | 0.6− | 0.2− |
| 2002 11 06 | 704 | 0.7+ | 0.3− | 2006 11 02 | G96 | 0.7− | 1.2− | 2006 11 21 | 703 | 0.4− | 0.1− |
| 2002 11 06 | 704 | 0.4+ | 1.0− | 2006 11 15 | 703 | 0.2+ | 0.0 | 2006 11 21 | 703 | (3.9− | 1.2−) |
| 2002 11 06 | 704 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.3− | 0.1− | 2006 11 21 | 703 | (2.0− | 0.4+) |
| 2002 11 06 | 704 | 0.4+ | 0.7− | 2006 11 15 | 703 | 0.3+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.2− |
| 2006 10 23 | 703 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2006 10 23 | 703 | 0.7+ | 0.1− | 2006 11 15 | 703 | 0.5− | 0.3+ | 2006 11 29 | 704 | 0.1− | 0.9− |
| 2006 10 23 | 703 | 0.4− | 0.1− | 2006 11 15 | 703 | 0.4+ | 0.4+ | 2006 11 29 | 704 | 0.3− | 0.1− |
| 2006 10 23 | 703 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.0 | 0.1+ | | | | |
| 2006 10 29 | 703 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.2+ | | | | |

**2006 UU$_{241}$ = 1995 SF$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 309.56353 | | (2000.0) | | +0.46613033 | −0.88295567 |
| $n$ | 0.17484674 | $\omega$ | 218.64847 | | +0.84225718 | +0.46217559 |
| $a$ | 3.1673619 | $\Omega$ | 203.72518 | | +0.27078656 | +0.08235901 |
| $e$ | 0.2144621 | $i$ | 7.96939 | | | |
| $P$ | 5.64 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.6+ | 1.3− | 2006 08 29 | 691 | 0.2− | 0.1+ | 2006 10 28 | 291 | 0.3− | 0.1− |
| 1995 09 26 | 691 | 0.2+ | 0.6+ | 2006 08 29 | 691 | 0.1+ | 0.1− | 2006 10 28 | 291 | 0.4+ | 0.1+ |
| 1995 09 26 | 691 | 0.2+ | 0.2+ | 2006 08 29 | 691 | 0.0 | 0.1− | 2006 10 28 | 291 | 0.0 | 0.3+ |
| 1995 10 01 | 691 | 0.3− | 0.2− | 2006 10 27 | 291 | 0.4− | 0.2+ | 2006 10 29 | 291 | 0.5+ | 0.1+ |
| 1995 10 01 | 691 | 0.3− | 0.2− | 2006 10 27 | 291 | 0.1− | 0.1− | 2006 10 29 | 291 | 0.1+ | 0.3+ |
| 1995 10 01 | 691 | 0.0 | 0.1− | 2006 10 27 | 291 | 0.3+ | 0.1− | 2006 10 29 | 291 | 0.2+ | 0.0 |
| 2001 12 14 | 644 | 0.4− | 0.2+ | 2006 10 27 | 291 | 0.2− | 0.2− | 2006 11 10 | 291 | (0.3− | 1.6+) |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 644 | 0.1+ | 0.5+ | 2006 10 27 | 291 | 0.1− | 0.0 | 2006 11 10 | 291 | 0.1− | 0.7+ | | |
| 2001 12 14 | 644 | 0.4+ | 0.6+ | 2006 10 27 | 291 | 0.2− | 0.1+ | 2006 11 10 | 291 | 0.4− | 0.0 | | |

**2006 UC$_{242}$ = 1995 UY$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 182.81150 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17874355 | $\omega$ | 350.52223 | | −0.94289795 | | +0.25965934 |
| $a$ | 3.1211584 | $\Omega$ | 207.46780 | | −0.26823500 | | −0.96326009 |
| $e$ | 0.0730195 | $i$ | 26.89026 | | −0.19746755 | | +0.06860779 |
| $P$ | 5.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.1− | 0.2− | 2006 10 11 | 691 | 0.6+ | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2+ | | |
| 1995 10 24 | 691 | 0.1+ | 0.0 | 2006 10 15 | 691 | 0.8+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.2+ | | |
| 1995 10 24 | 691 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 1.1− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.4− | | |
| 1995 10 28 | 691 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.5− | 0.6− | 2006 11 16 | 691 | (2.1+ | 2.3+) | | |
| 1995 10 28 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3− | 0.3+ | 2006 11 16 | 691 | (1.8+ | 2.4+) | | |
| 1995 10 28 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 16 | 691 | (1.6+ | 2.7+) | | |
| 2006 10 11 | 691 | 0.6+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.3− | | | | | | |
| 2006 10 11 | 691 | 0.4+ | 0.0 | 2006 10 28 | G96 | 0.7− | 0.4+ | | | | | | |

**2006 UJ$_{242}$ = 2003 HB$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 286.97491 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17250763 | $\omega$ | 86.25475 | | −0.30147163 | | −0.95244804 |
| $a$ | 3.1959294 | $\Omega$ | 21.45240 | | +0.81973766 | | −0.28260704 |
| $e$ | 0.1392105 | $i$ | 6.94847 | | +0.48697537 | | −0.11391219 |
| $P$ | 5.71 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.3+ | 0.0 | 2003 05 01 | 291 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.0 | 0.1+ | | |
| 2000 10 02 | 691 | 0.0 | 0.2− | 2006 09 18 | 691 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.1+ | | |
| 2000 10 02 | 691 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1+ | | |
| 2003 04 04 | 691 | 0.0 | 0.3− | 2006 09 18 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.1− | | |
| 2003 04 04 | 691 | 0.5− | 0.1− | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.4− | 0.3− | | |
| 2003 04 04 | 691 | 0.2− | 0.1− | 2006 09 25 | 691 | 0.1+ | 0.5+ | 2006 10 28 | G96 | 0.3+ | 0.0 | | |
| 2003 04 29 | 291 | 0.1+ | 0.0 | 2006 09 25 | G96 | 0.1+ | 0.7− | 2006 10 28 | G96 | 0.1− | 0.3− | | |
| 2003 04 29 | 291 | 0.3+ | 0.0 | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 11 27 | G96 | 0.3− | 0.4− | | |
| 2003 04 29 | 291 | 0.8+ | 0.6− | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.3+ | 0.0 | | |
| 2003 05 01 | 291 | 0.4− | 0.1− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.2− | 0.6− | | |
| 2003 05 01 | 291 | 0.2− | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 27 | G96 | 0.2− | 0.5− | | |

**2006 UV$_{242}$ = 1995 UG$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.44829 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26921673 | $\omega$ | 137.55126 | | +0.98693525 | | −0.15981555 |
| $a$ | 2.3753887 | $\Omega$ | 231.65634 | | +0.13994200 | | +0.91316701 |
| $e$ | 0.2365126 | $i$ | 1.49337 | | +0.07984384 | | +0.37494665 |
| $P$ | 3.66 | $H$ | 19.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 24 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.3− | | |
| 1995 10 24 | 691 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.8− | 0.2+ | | |
| 1995 10 24 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1− | | |
| 1995 10 28 | 691 | 0.2− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.1+ | | |
| 1995 10 28 | 691 | 0.1+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.0 | | |
| 1995 10 28 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.3− | 2006 11 18 | 691 | 0.4+ | 0.4+ | | |
| 2006 10 19 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.4− | | |
| 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.3+ | 0.0 | | | | | | |
| 2006 10 19 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.3+ | | | | | | |

**2006 UE$_{243}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 207.32888 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18005284 | $\omega$ | 333.97306 | | −0.98813754 | | −0.14665609 |
| $a$ | 3.1060092 | $\Omega$ | 197.77172 | | +0.15349494 | | −0.95253762 |
| $e$ | 0.0644478 | $i$ | 8.58543 | | −0.00484813 | | −0.26676594 |
| $P$ | 5.47 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 05 20 | 691 | 0.1+ | 1.0+ | 2006 09 18 | 691 | 1.1− | 1.0+ | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 1993 05 20 | 691 | 0.0 | 0.1+ | 2006 09 18 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.4− | 0.1− | | |
| 1993 05 20 | 691 | 0.2+ | 0.1+ | 2006 09 26 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.4+ | 0.3− | | |
| 1995 09 17 | 691 | 0.2+ | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 29 | 291 | 0.2+ | 0.1+ | | |
| 1995 09 17 | 691 | 0.1− | 0.1− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 29 | 291 | 0.1+ | 0.2+ | | |
| 1995 09 17 | 691 | 0.3− | 0.4+ | 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 29 | 291 | 0.0 | 0.0 | | |
| 2002 11 13 | 645 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.5+ | 0.5+ | 2006 10 31 | G96 | 0.3+ | 0.1− | | |
| 2002 11 13 | 645 | 0.1+ | 0.0 | 2006 10 03 | 691 | 0.3+ | 0.7+ | 2006 10 31 | G96 | 0.3− | 0.1− | | |
| 2003 03 30 | 645 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.6+ | 0.4− | | |
| 2003 03 30 | 645 | 0.1− | 0.2+ | 2006 10 16 | G96 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.7− | | |
| 2006 09 14 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.3+ | 0.1− | | |
| 2006 09 14 | 691 | 0.2− | 0.0 | 2006 10 16 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2006 09 14 | 691 | 0.1− | 0.1− | 2006 10 16 | G96 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.4+ | 0.1− | | |
| 2006 09 18 | 691 | 0.3− | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.1− | | |

**2006 UJ$_{243}$ = 1999 VY$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.57356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27943785 | $\omega$ | 10.79474 | | +0.66549506 | | −0.74620014 |
| $a$ | 2.3171060 | $\Omega$ | 37.48851 | | +0.68266696 | | +0.59909461 |
| $e$ | 0.1975946 | $i$ | 1.63539 | | +0.30179819 | | +0.29029467 |
| $P$ | 3.53 | $H$ | 19.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.2+ | 0.1− | 2006 09 25 | 691 | 1.5+ | 1.0− | 2006 10 27 | G96 | 0.1+ | 0.3+ | | |
| 1999 11 10 | 691 | 0.1− | 0.3− | 2006 10 16 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.3+ | | |
| 1999 11 10 | 691 | 0.0 | 0.1− | 2006 10 16 | G96 | 0.0 | 0.8− | 2006 10 28 | 691 | 0.0 | 0.3+ | | |
| 1999 11 15 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ | | |
| 1999 11 15 | 691 | 0.0 | 0.0 | 2006 10 16 | G96 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.2+ | | |
| 1999 11 15 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.4− | | |
| 2006 09 25 | 691 | 0.6− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.1+ | | |
| 2006 09 25 | 691 | 0.7− | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.7+ | 2006 11 11 | G96 | 0.4− | 0.1− | | |

**2006 UY$_{243}$ = 2001 TJ$_{206}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.10550 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20373241 | $\omega$ | 256.84235 | | +0.17400783 | | −0.98474270 |
| $a$ | 2.8604167 | $\Omega$ | 183.13832 | | +0.91545356 | | +0.16242069 |
| $e$ | 0.0207564 | $i$ | 1.83794 | | +0.36285818 | | +0.06246063 |
| $P$ | 4.84 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 12 | 691 | 0.2− | 0.6− | 2004 04 20 | 691 | 0.1− | 0.3+ | 2006 09 25 | G96 | 0.4− | 0.2− | | |
| 1996 09 12 | 691 | 0.2− | 0.5− | 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | | |
| 1996 09 12 | 691 | 0.1− | 0.2− | 2004 05 09 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.2− | | |
| 1999 04 12 | 691 | 0.2− | 0.3− | 2004 05 09 | 691 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.5+ | 0.2+ | | |
| 1999 04 12 | 691 | 0.1− | 0.6− | 2004 05 09 | 691 | 0.0 | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.3− | | |
| 1999 04 12 | 691 | 0.4− | 0.5− | 2004 05 24 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.2− | | |
| 1999 04 19 | 691 | 0.4− | 0.3− | 2004 05 24 | 691 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.1+ | | |
| 1999 04 19 | 691 | 0.2+ | 0.3− | 2004 05 24 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.4− | 0.3− | | |
| 1999 04 19 | 691 | 0.1+ | 0.5− | 2005 06 13 | G96 | 0.0 | 0.2− | 2006 10 28 | 691 | 0.0 | 0.4+ | | |
| 2001 09 21 | 291 | 0.2+ | 0.2− | 2005 06 13 | G96 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.3− | 0.4+ | | |
| 2001 09 21 | 291 | 0.1− | 0.1− | 2005 06 13 | G96 | 0.3+ | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1+ | | |
| 2001 09 21 | 291 | 0.1+ | 0.0 | 2005 06 13 | G96 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.7+ | 0.3− | | |
| 2001 10 11 | 644 | 0.2+ | 1.0+ | 2006 07 21 | G96 | 0.2− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.3− | | |
| 2001 10 11 | 644 | 0.2+ | 0.6+ | 2006 07 21 | G96 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.3− | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.4+ | 0.8+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2001 10 16 | 291 | 0.5+ | 0.5+ | 2006 07 21 | G96 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.4+ | | |
| 2001 10 16 | 291 | 0.3+ | 0.4+ | 2006 09 14 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.5+ | 0.1+ | | |
| 2001 10 16 | 291 | 0.1+ | 0.5+ | 2006 09 14 | 691 | 0.2− | 0.2+ | 2006 11 20 | G96 | 0.5+ | 0.0 | | |
| 2004 03 16 | 691 | 0.4+ | 0.1+ | 2006 09 14 | 691 | 0.4− | 0.2+ | 2006 11 20 | G96 | 1.0− | 0.2− | | |
| 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 11 20 | G96 | 0.4− | 0.2+ | | |
| 2004 03 16 | 691 | 0.1− | 0.5+ | 2006 09 25 | G96 | 0.8− | 0.0 | 2006 11 20 | G96 | 1.2− | 0.2− | | |
| 2004 04 20 | 691 | 0.2− | 0.4+ | 2006 09 25 | G96 | 0.2+ | 0.2− | | | | | | |

**2006 UA$_{244}$ = 2001 UM$_{185}$ = 2004 GX$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 160.50005 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19854722 | $\omega$ | 35.57635 | | −0.78181352 | +0.62351050 | |
| $a$ | 2.9100035 | $\Omega$ | 182.99790 | | −0.57852997 | −0.72631102 | |
| $e$ | 0.0116427 | $i$ | 1.65305 | | −0.23253106 | −0.28932155 | |
| $P$ | 4.96 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 14 | 691 | 0.0 | 0.3+ | 2004 04 13 | 691 | 0.7+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.3− | | |
| 1999 04 14 | 691 | 0.6− | 0.2+ | 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.3− | | |
| 1999 04 14 | 691 | 0.4− | 0.1+ | 2004 04 20 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.1− | | |
| 2001 10 14 | 291 | 0.1+ | 0.3+ | 2004 04 20 | 691 | 0.1+ | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | | |
| 2001 10 14 | 291 | 0.7+ | 0.5+ | 2005 06 14 | G96 | 0.1− | 0.1− | 2006 10 28 | 691 | 1.2− | 0.7+ | | |
| 2001 10 14 | 291 | 1.3+ | 0.4+ | 2005 06 14 | G96 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.3+ | | |
| 2001 10 17 | 691 | 0.3− | 0.4− | 2005 06 14 | G96 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.5− | 0.5− | | |
| 2001 10 17 | 691 | 0.4− | 0.2− | 2005 06 14 | G96 | 0.5− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ | | |
| 2001 10 17 | 691 | 0.4− | 0.0 | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.0 | | |
| 2001 10 20 | 704 | (2.3+ | 0.8−) | 2006 09 14 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.8− | | |
| 2001 10 20 | 704 | (1.7+ | 1.4−) | 2006 09 14 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.5− | 0.3− | | |
| 2001 10 20 | 704 | (2.2+ | 0.2+) | 2006 10 16 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− | | |
| 2001 10 20 | 704 | (2.5+ | 0.7−) | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.4+ | 0.0 | | |
| 2004 04 13 | 691 | 0.4+ | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.6− | 0.3+ | | |
| 2004 04 13 | 691 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.6− | 2006 11 19 | 691 | 0.1+ | 0.2+ | | |

**2006 UM$_{244}$ = 1999 WT$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.63264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27635983 | $\omega$ | 120.82187 | | +0.93495391 | +0.35464349 | |
| $a$ | 2.3342790 | $\Omega$ | 218.40879 | | −0.33046629 | +0.86091537 | |
| $e$ | 0.1975282 | $i$ | 0.87094 | | −0.12904733 | +0.36476393 | |
| $P$ | 3.57 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 17 | 691 | 0.6− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 13 | G96 | 0.9− | 0.2− | | |
| 1999 11 17 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 13 | G96 | 0.4− | 0.5− | | |
| 1999 11 17 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.3+ | 0.0 | 2006 11 13 | G96 | 0.1+ | 0.0 | | |
| 1999 11 28 | 691 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1− | 0.6− | 2006 11 13 | G96 | (1.7− | 1.5−) | | |
| 1999 11 28 | 691 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.7+ | 0.2+ | | |
| 1999 11 28 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.2− | | |
| 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.0 | 0.3+ | | |
| 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 10 29 | 691 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.1− | | |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ | | |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.3− | 0.2− | | |
| 2006 10 16 | 691 | 0.3+ | 0.5+ | 2006 11 11 | G96 | 0.0 | 0.4− | | | | | | |
| 2006 10 16 | 691 | 0.3− | 0.6+ | 2006 11 11 | G96 | 0.1+ | 0.8− | | | | | | |

**2006 UN$_{245}$ = 2005 JQ$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.84252 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22797662 | $\omega$ | 273.09116 | | +0.56994546 | +0.81319966 | |
| $a$ | 2.6538467 | $\Omega$ | 32.56827 | | −0.63985358 | +0.52915829 | |
| $e$ | 0.2600874 | $i$ | 12.63677 | | −0.51550905 | +0.24227631 | |
| $P$ | 4.32 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.1− | 0.5− | 2005 05 05 | 568 | 0.2− | 0.6+ | 2006 10 27 | G96 | 0.3+ | 0.2− | | |
| 2005 04 14 | 691 | 0.1+ | 0.1+ | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1+ | | |
| 2005 04 14 | 691 | 0.1+ | 0.3+ | 2006 10 19 | 691 | 0.5− | 0.1− | 2006 10 28 | G96 | 0.4− | 0.2− | | |
| 2005 05 04 | 568 | 0.1+ | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.5− | 0.0 | | |
| 2005 05 04 | 568 | 0.2+ | 0.0 | 2006 10 27 | G96 | 0.5− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.0 | | |
| 2005 05 04 | 568 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− | | |

**2006 UQ$_{245}$ = 2005 GP$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 237.49010 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.35376258 | $\omega$ | 118.41785 | | −0.84134883 | −0.50421767 | |
| $a$ | 1.9799830 | $\Omega$ | 32.45042 | | +0.27332650 | −0.70763885 | |
| $e$ | 0.0750170 | $i$ | 21.27263 | | +0.46628830 | −0.49498667 | |
| $P$ | 2.79 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.9− | 0.2+ | 2006 10 03 | G96 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1− | | |
| 2005 04 10 | G96 | 0.3− | 0.2+ | 2006 10 03 | G96 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.4+ | 0.3+ | | |
| 2005 04 10 | G96 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.3+ | | |
| 2005 04 10 | G96 | 0.5− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.0 | | |
| 2005 04 16 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.2− | | |
| 2005 04 16 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1+ | | |
| 2005 04 16 | 691 | 0.7+ | 0.7− | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 16 | 691 | 0.3− | 0.3− | | |
| 2006 10 03 | G96 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.4− | | | | | | |
| 2006 10 03 | G96 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.3− | 0.2− | | | | | | |

**2006 UB$_{246}$ = 2004 GP$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 222.44734 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20820135 | $\omega$ | 108.25372 | | −0.96629687 | −0.25721342 | |
| $a$ | 2.8193372 | $\Omega$ | 56.84274 | | +0.23116444 | −0.88503330 | |
| $e$ | 0.0090803 | $i$ | 0.72306 | | +0.11328442 | −0.38801716 | |
| $P$ | 4.73 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 291 | 0.3− | 0.1− | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.9− | | |
| 2001 10 16 | 291 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.1− | | |
| 2001 10 16 | 291 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.3+ | | |
| 2004 04 13 | 691 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2004 04 13 | 691 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.6− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1− | | |
| 2004 04 13 | 691 | 0.4− | 0.5− | 2006 10 28 | G96 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.2− | | |
| 2004 04 19 | 691 | 0.4+ | 0.3+ | 2006 10 28 | G96 | 0.6− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.1− | | |
| 2004 04 19 | 691 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.8+ | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.7− | | |
| 2004 04 19 | 691 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.0 | | |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1− | | | | | | |
| 2006 10 12 | 691 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.0 | 0.2+ | | | | | | |

**2006 UK$_{246}$ = 2004 EZ$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.49079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26456476 | $\omega$ | 251.95815 | | −0.43936102 | −0.89802612 | |
| $a$ | 2.4031528 | $\Omega$ | 224.12723 | | +0.83597658 | −0.39953380 | |
| $e$ | 0.1480591 | $i$ | 1.86054 | | +0.32879333 | −0.18417881 | |
| $P$ | 3.73 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 695 | 0.2− | 0.2+ | 2006 09 26 | G96 | 0.6+ | 0.5− | 2006 10 27 | G96 | 0.2+ | 0.2− | | |
| 2002 11 07 | 695 | 0.1− | 0.5+ | 2006 09 26 | G96 | 1.0+ | 0.5− | 2006 10 29 | 691 | 0.1− | 0.2+ | | |
| 2004 03 15 | 599 | 0.5+ | 1.0− | 2006 09 26 | G96 | 0.2+ | 0.3− | 2006 10 29 | 691 | 0.2− | 0.0 | | |
| 2004 03 15 | 599 | 0.1+ | 0.2+ | 2006 09 26 | G96 | 0.6+ | 0.5− | 2006 10 29 | 691 | 0.1− | 0.2+ | | |
| 2004 03 15 | 599 | 0.3+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.4+ | 0.0 | | |
| 2004 03 15 | 599 | 0.4+ | 0.4− | 2006 10 20 | 691 | 0.7− | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 18 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.1+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.1− | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.1− | | | | | | |
| 2004 03 18 | 691 | 0.3− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− | | | | | | |

**2006 UZ$_{247}$ = 2004 HO$_{69}$ = 2004 JL$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 133.27209 | | (2000.0) | | | |
| $n$ | 0.17819031 | $\omega$ | 18.16135 | | −0.34783676 | +0.93644899 |
| $a$ | 3.1276152 | $\Omega$ | 231.50883 | | −0.86724116 | −0.33982172 |
| $e$ | 0.0847693 | $i$ | 3.33470 | | −0.35623358 | −0.08708895 |
| $P$ | 5.53 | $H$ | 16.2 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.1+ | 0.2− | 2004 05 13 | 291 | 0.3+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.1+ |
| 1995 10 15 | 691 | 0.1− | 0.4+ | 2004 05 13 | 291 | 0.4+ | 0.5+ | 2006 10 27 | G96 | 0.0 | 0.1− |
| 1995 10 15 | 691 | 0.6− | 0.1+ | 2004 05 13 | 291 | 0.3+ | 0.6+ | 2006 10 27 | G96 | 0.1+ | 0.1− |
| 2000 09 25 | 691 | 0.2+ | 0.0 | 2005 07 29 | 644 | 0.7− | 0.4− | 2006 10 27 | G96 | 0.0 | 0.1+ |
| 2000 09 25 | 691 | 0.4+ | 0.5− | 2005 07 29 | 644 | 0.6− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.0 |
| 2000 09 25 | 691 | 0.5+ | 0.1+ | 2005 07 29 | 644 | 0.6− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.4+ |
| 2004 04 22 | 691 | 0.0 | 0.2+ | 2006 09 27 | G96 | 0.5+ | 0.3+ | 2006 10 29 | 691 | 0.5− | 0.3− |
| 2004 04 22 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.1− | 0.3+ | 2006 10 29 | 691 | 0.1− | 0.5+ |
| 2004 04 22 | 691 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.5+ |
| 2004 05 09 | 691 | 0.1− | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.7+ |
| 2004 05 09 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.3+ |
| 2004 05 09 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.6− | 0.4+ | | | | |

**2006 UG$_{248}$ = 2002 TM$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 37.24629 | | (2000.0) | | | |
| $n$ | 0.25390850 | $\omega$ | 102.20445 | | +0.85985536 | +0.50819897 |
| $a$ | 2.4699295 | $\Omega$ | 227.27444 | | −0.49043705 | +0.79565428 |
| $e$ | 0.1977984 | $i$ | 3.80984 | | −0.14184589 | +0.32964842 |
| $P$ | 3.88 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2002 10 28 | 644 | 0.7− | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2002 10 28 | 644 | 0.4+ | 0.6+ | 2006 11 11 | 703 | 1.0− | 0.0 |
| 2002 10 04 | 704 | 0.8+ | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | (1.7− | 0.1+) |
| 2002 10 04 | 704 | 0.7+ | 0.5− | 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | (2.3− | 0.6−) |
| 2002 10 04 | 704 | 0.1− | 0.2+ | 2006 09 28 | G96 | 0.3+ | 0.5− | 2006 11 14 | G96 | 0.2− | 0.6− |
| 2002 10 04 | 644 | 0.3+ | 0.4+ | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.0 | 0.6− |
| 2002 10 04 | 704 | 0.6− | 0.4+ | 2006 10 11 | 691 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.0 | 0.5− |
| 2002 10 04 | 644 | 0.2+ | 0.1+ | 2006 10 11 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2002 10 04 | 704 | 0.2+ | 0.8− | 2006 10 11 | 691 | 0.1− | 0.4+ | 2006 11 17 | 703 | 0.0 | 1.3− |
| 2002 10 04 | 644 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | (0.7− | 3.2−) |
| 2002 10 05 | 644 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2002 10 05 | 644 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 0.5− | 0.3− |
| 2002 10 05 | 704 | 0.7− | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2002 10 05 | 704 | 0.6− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2002 10 05 | 704 | 0.5+ | 0.2− | 2006 10 29 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 10 05 | 704 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2002 10 05 | 704 | 0.4− | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2002 10 05 | 644 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2002 10 28 | 644 | 1.0− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.3+ | | | | |

**2006 UJ$_{248}$ = 2002 VJ$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 193.05260 | | (2000.0) | | | |
| $n$ | 0.23803611 | $\omega$ | 350.75498 | | −0.95317085 | +0.29993093 |
| $a$ | 2.5785417 | $\Omega$ | 206.79775 | | −0.27168367 | −0.90556575 |
| $e$ | 0.1188560 | $i$ | 4.93924 | | −0.13286579 | −0.29998685 |
| $P$ | 4.14 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 04 | 950 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.3− | 0.5− |
| 2002 11 04 | 950 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.6+ | 0.2+ |
| 2002 11 04 | 950 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.2− |
| 2002 11 05 | 950 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.6+ | 0.2− | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2002 11 05 | 950 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.5− | 2006 11 10 | 691 | 0.1+ | 0.2− |
| 2002 11 05 | 950 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.5+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.0 |
| 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.3− | | | | |

**2006 UW$_{248}$ = 2002 TD$_{353}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 227.93584 | | (2000.0) | | | |
| $n$ | 0.27754259 | $\omega$ | 318.94964 | | −0.98703682 | −0.15192586 |
| $a$ | 2.3276426 | $\Omega$ | 212.42119 | | +0.16049316 | −0.93331860 |
| $e$ | 0.1638135 | $i$ | 5.53775 | | +0.00050769 | −0.32532281 |
| $P$ | 3.55 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 18 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.2+ |
| 2001 05 18 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2001 05 18 | 691 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2002 10 10 | 645 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 22 | 691 | 0.8− | 0.2− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 22 | 691 | 0.3+ | 0.1− |
| 2002 10 11 | 645 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.4+ |
| 2006 09 26 | G96 | 0.4− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.3+ |
| 2006 09 26 | G96 | 0.4− | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2006 09 26 | G96 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.6+ | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2006 09 26 | G96 | 0.3+ | 0.3+ | 2006 10 29 | 691 | 0.2+ | 0.2+ | | | | |
| 2006 10 20 | 691 | 0.0 | 0.2− | 2006 10 29 | 691 | 0.2+ | 0.1− | | | | |

**2006 UX$_{248}$ = 2006 UF$_{220}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 321.34592 | | (2000.0) | | | |
| $n$ | 0.26416851 | $\omega$ | 36.45078 | | +0.26730658 | −0.96300689 |
| $a$ | 2.4055554 | $\Omega$ | 38.07855 | | +0.87050269 | +0.22613677 |
| $e$ | 0.1556933 | $i$ | 3.17241 | | +0.41324600 | +0.14656020 |
| $P$ | 3.73 | $H$ | 17.5 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.3− | 1.0+ | 2006 10 21 | 644 | 0.2− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1+ |
| 2002 09 12 | 644 | 0.6− | 0.8+ | 2006 10 21 | 644 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.1+ |
| 2002 09 12 | 644 | 0.3− | 0.8+ | 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2004 02 29 | 691 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2004 02 29 | 691 | 0.2− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2004 02 29 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.5− |
| 2004 03 21 | 691 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | (1.0− | 2.0−) |
| 2004 03 21 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | (0.8− | 2.1−) |
| 2004 03 21 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 17 | 703 | 0.1− | 1.3− |
| 2006 09 26 | G96 | 0.4− | 0.3− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.5− | 1.0− |
| 2006 09 26 | G96 | 0.2− | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2006 09 26 | G96 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2006 09 26 | G96 | 0.5− | 0.4− | 2006 10 29 | 691 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2006 10 16 | 691 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.5− | 0.4− | 2006 11 24 | 291 | 0.2+ | 0.2+ |
| 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 24 | 291 | 0.3+ | 0.1+ |
| 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.4− | 2006 11 24 | 291 | 0.3+ | 0.1+ |
| 2006 10 21 | 644 | 0.6− | 0.3− | 2006 11 10 | 691 | 0.3− | 0.3+ | | | | |

**2006 UF$_{249}$ = 1999 UD$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 319.90007 | | (2000.0) | | | |
| $n$ | 0.28197082 | $\omega$ | 229.01382 | | +0.24045700 | −0.97057573 |
| $a$ | 2.3032086 | $\Omega$ | 207.08066 | | +0.89877644 | +0.22760053 |
| $e$ | 0.1598695 | $i$ | 1.60793 | | +0.36658060 | +0.07861773 |
| $P$ | 3.50 | $H$ | 18.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 14 | 645 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.4+ | 0.1+ | | |
| 1999 10 14 | 645 | 0.0 | 0.1+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.1+ | | |
| 1999 10 31 | 691 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 09 | 691 | 0.2+ | 0.0 | | |
| 1999 10 31 | 691 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2+ | | |
| 1999 10 31 | 691 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− | | |
| 1999 11 05 | 691 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.3− | 0.3− | | |
| 1999 11 05 | 691 | 0.1− | 0.3− | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.4+ | 0.1+ | | |
| 1999 11 05 | 691 | 0.4− | 0.6− | 2006 10 27 | G96 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.4− | 0.4+ | | |
| 2006 10 04 | G96 | 0.1+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.1+ | | |
| 2006 10 04 | G96 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.4+ | | |
| 2006 10 04 | G96 | 0.3+ | 0.3+ | 2006 10 29 | G96 | 0.3+ | 0.3− | 2006 11 22 | 691 | 0.4− | 0.4+ | | |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 10 29 | G96 | 0.0 | 0.7− | 2006 11 22 | 691 | 0.0 | 0.2− | | |
| 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 29 | G96 | 0.2+ | 0.6− | 2006 11 27 | 691 | 0.2− | 0.2− | | |
| 2006 10 04 | G96 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.1− | | |
| 2006 10 04 | G96 | 0.4− | 0.2− | 2006 10 29 | G96 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2006 10 04 | G96 | 0.5− | 0.4− | 2006 10 29 | 691 | 0.3− | 0.1− | | | | | | |
| 2006 10 16 | 691 | 0.1− | 0.4+ | 2006 10 29 | 691 | 0.3− | 0.0 | | | | | | |

**2006 UA$_{251}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.69833 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24303061 | $\omega$ | 98.18097 | | +0.76430650 | | +0.64453896 |
| $a$ | 2.5430919 | $\Omega$ | 221.69116 | | −0.60291726 | | +0.70318237 |
| $e$ | 0.2473486 | $i$ | 1.73410 | | −0.22874954 | | +0.30017342 |
| $P$ | 4.06 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 16 | 691 | 0.3+ | 0.3− | 2005 04 05 | G96 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.2− | 0.3− | | |
| 1998 11 16 | 691 | 0.1+ | 0.3− | 2005 04 05 | G96 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.7+ | 0.2− | | |
| 1998 11 16 | 691 | 0.3+ | 0.7− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.1− | 0.4+ | | |
| 1998 11 26 | 691 | 0.3+ | 0.7+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.2− | 0.3+ | | |
| 1998 11 26 | 691 | 0.6− | 0.1+ | 2006 09 27 | G96 | 0.5+ | 0.7− | 2006 10 29 | 691 | 0.3− | 0.4+ | | |
| 1998 11 26 | 691 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 22 | G96 | 0.3− | 0.0 | | |
| 2001 04 26 | 691 | 0.2+ | 0.4+ | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 11 22 | G96 | 0.4+ | 0.3+ | | |
| 2001 04 26 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.0 | 0.1+ | | |
| 2001 04 26 | 691 | 0.3− | 0.3+ | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 22 | G96 | 0.6+ | 0.2− | | |
| 2005 04 05 | G96 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− | | | | | | |
| 2005 04 05 | G96 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.4− | 0.6+ | | | | | | |

**2006 UE$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 64.78984 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25808705 | $\omega$ | 296.94179 | | +0.53530344 | | +0.84465963 |
| $a$ | 2.4431975 | $\Omega$ | 5.42281 | | −0.77278066 | | +0.49002544 |
| $e$ | 0.1815257 | $i$ | 0.34957 | | −0.34096961 | | +0.21546501 |
| $P$ | 3.82 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 1.9+ | 1.1− | 2006 09 27 | G96 | 0.6+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.1− | | |
| 2005 04 11 | G96 | 0.7− | 0.5+ | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 10 29 | 691 | 0.1+ | 0.2+ | | |
| 2005 04 11 | G96 | 0.7+ | 1.0+ | 2006 10 20 | 691 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.0 | | |
| 2005 04 11 | G96 | 0.3− | 0.2+ | 2006 10 20 | 691 | 0.4− | 0.4+ | 2006 11 11 | G96 | 0.2− | 0.6− | | |
| 2005 05 11 | G96 | 0.8− | 0.1− | 2006 10 20 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− | | |
| 2005 05 11 | G96 | 0.4− | 0.8+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.3+ | | |
| 2005 05 11 | G96 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1− | 0.2+ | | |
| 2005 05 11 | G96 | 0.5− | 1.1− | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.9+ | 0.2− | | |
| 2006 09 27 | G96 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.0 | | |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.1− | 0.2+ | | |

**2006 UF$_{251}$ = 2005 NU$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 6.45158 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17935906 | $\omega$ | 152.98294 | | +0.92943293 | | −0.36773234 |
| $a$ | 3.1140136 | $\Omega$ | 228.62683 | | +0.33078739 | | +0.86693109 |
| $e$ | 0.0885417 | $i$ | 2.32573 | | +0.16350574 | | +0.33645715 |
| $P$ | 5.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 13 | 691 | 0.1+ | 0.1+ | 2005 07 11 | G96 | (0.9− | 1.7−) | 2006 10 29 | 691 | 0.1+ | 0.1+ | | |
| 1996 12 13 | 691 | 0.2+ | 0.6− | 2006 09 27 | G96 | 0.2− | 0.4− | 2006 10 29 | 691 | 0.2+ | 0.0 | | |
| 1996 12 13 | 691 | 0.3− | 0.7+ | 2006 09 27 | G96 | 0.4− | 0.5− | 2006 10 29 | 691 | 0.1+ | 0.2+ | | |
| 2005 06 29 | 691 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2005 06 29 | 691 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− | | |
| 2005 06 29 | 691 | 0.2− | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2005 07 10 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.1− | | |
| 2005 07 10 | 691 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.1− | | |
| 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.0 | | |
| 2005 07 11 | G96 | 0.1− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.1+ | | |
| 2005 07 11 | G96 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.5− | 0.6− | | |
| 2005 07 11 | G96 | 0.4− | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.1− | | | | | | |

**2006 UK$_{252}$ = 2003 BF$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 223.29783 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19576958 | $\omega$ | 139.89607 | | −0.99872233 | | −0.04560217 |
| $a$ | 2.9374641 | $\Omega$ | 37.50729 | | +0.03210195 | | −0.90530286 |
| $e$ | 0.1225586 | $i$ | 2.04953 | | +0.03902785 | | −0.42231171 |
| $P$ | 5.03 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 27 | 807 | 0.7− | 0.4+ | 2005 08 27 | 644 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.2− | 0.3− | | |
| 2000 08 27 | 807 | 0.1− | 0.4+ | 2005 08 27 | 644 | 0.3+ | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.2+ | | |
| 2001 11 12 | 691 | 0.2− | 0.1− | 2005 08 27 | 644 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.1+ | 0.1− | | |
| 2001 11 12 | 691 | 0.3+ | 0.3− | 2006 09 25 | G96 | 0.3− | 0.5+ | 2006 10 29 | 691 | 0.1+ | 0.3+ | | |
| 2001 11 12 | 691 | 0.2+ | 0.0 | 2006 09 25 | G96 | 0.9+ | 0.7− | 2006 10 29 | 691 | 0.2− | 0.1+ | | |
| 2003 01 27 | 608 | 0.4+ | 0.3− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.2+ | | |
| 2003 01 27 | 608 | 0.0 | 0.1− | 2006 09 25 | G96 | 0.8− | 0.6− | 2006 11 14 | G96 | 0.4− | 0.1+ | | |
| 2003 01 27 | 608 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.6+ | 0.0 | | |
| 2003 01 31 | 644 | 0.2+ | 0.8+ | 2006 10 20 | 691 | 0.3− | 0.6+ | 2006 11 14 | G96 | 0.7+ | 1.6− | | |
| 2003 01 31 | 644 | 0.1− | 0.7+ | 2006 10 20 | 691 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2− | | |
| 2003 01 31 | 644 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.1+ | 0.6− | | | | | | |

**2006 UY$_{252}$ = 2005 MD$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.58284 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17391348 | $\omega$ | 60.49817 | | +0.10768178 | | +0.99311299 |
| $a$ | 3.1786830 | $\Omega$ | 215.77511 | | −0.93730391 | | +0.08592990 |
| $e$ | 0.1804340 | $i$ | 4.52925 | | −0.33146043 | | +0.07964068 |
| $P$ | 5.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.0 | 0.1+ | 2005 07 08 | 691 | 0.2− | 0.2− | 2006 09 27 | G96 | 0.3− | 0.5+ | | |
| 2004 04 13 | 691 | 0.3+ | 0.4+ | 2005 07 08 | 691 | 0.5− | 0.7+ | 2006 09 27 | G96 | 0.9+ | 0.0 | | |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2005 07 29 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1− | 0.1+ | | |
| 2005 06 29 | 691 | 0.1+ | 0.1+ | 2005 07 29 | 644 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.3− | | |
| 2005 06 29 | 691 | 0.1+ | 0.0 | 2005 07 29 | 644 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.1+ | | |
| 2005 06 29 | 691 | 0.2− | 0.1+ | 2005 08 31 | 691 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.4+ | | |
| 2005 07 04 | 691 | 0.2− | 0.0 | 2005 08 31 | 691 | 0.2+ | 0.2− | 2006 10 29 | 691 | 0.5− | 0.6+ | | |
| 2005 07 04 | 691 | 0.1+ | 0.0 | 2005 08 31 | 691 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.3− | 0.1+ | | |
| 2005 07 04 | 691 | 0.3+ | 0.2+ | 2006 09 27 | G96 | 0.3− | 0.4− | 2006 10 29 | 691 | 0.5+ | 0.1+ | | |
| 2005 07 08 | 691 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.3− | | | | | | |

**2006 UB$_{253}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.67172 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.14910039 | $\omega$ | 113.22387 | | +0.84677458 | +0.52396779 | |
| $a$ | 3.5222232 | $\Omega$ | 215.37153 | | −0.52735719 | +0.80422384 | |
| $e$ | 0.1069927 | $i$ | 9.12649 | | −0.06976537 | +0.28050272 | |
| $P$ | 6.61 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 644 | 0.3+ | 0.8+ | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.2+ |
| 2003 03 26 | 644 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.3− |
| 2003 03 26 | 644 | 0.3− | 0.3+ | 2006 09 27 | G96 | 0.3− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2004 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.4+ |
| 2004 04 30 | 691 | 0.1+ | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.3+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2004 04 30 | 691 | 0.2− | 0.5+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2005 07 31 | 644 | 0.1− | 0.2− | 2006 10 20 | 691 | 0.4− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.3+ |
| 2005 07 31 | 644 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.5− | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2005 07 31 | 644 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2005 09 02 | 644 | 0.2− | 0.1− | 2006 10 27 | 691 | (0.3+ | 2.3−) | 2006 11 13 | G96 | 0.3+ | 0.4− |
| 2005 09 02 | 644 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 2005 09 02 | 644 | 0.3+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 13 | G96 | 0.2− | 0.3− |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.2− |

**2006 UU$_{253}$ = 2003 FT$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 183.12457 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17131830 | $\omega$ | 55.38140 | | −0.82133804 | +0.57042608 | |
| $a$ | 3.2107036 | $\Omega$ | 159.39754 | | −0.52722914 | −0.75626527 | |
| $e$ | 0.0958446 | $i$ | 0.68925 | | −0.21779179 | −0.32043241 | |
| $P$ | 5.75 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 7 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 695 | 0.5+ | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.7− | 2006 11 01 | 691 | 0.0 | 0.3+ |
| 2003 03 30 | 695 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.5+ | 0.4− | 2006 11 13 | G96 | (2.8+ | 0.6+) |
| 2003 03 31 | 691 | 0.3− | 0.1+ | 2006 10 28 | 691 | 1.1+ | 0.2− | 2006 11 13 | G96 | (2.2+ | 0.4+) |
| 2003 03 31 | 691 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.3− | 0.0 | 2006 11 13 | G96 | (4.2+ | 0.6+) |
| 2003 03 31 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.4+ | 0.0 | 2006 11 13 | G96 | (2.5+ | 1.0+) |
| 2006 10 20 | 691 | 0.2− | 0.2− | 2006 10 29 | 291 | 0.5− | 0.1+ | 2006 11 21 | G96 | (8.7+ | 3.3+) |
| 2006 10 20 | 691 | 0.0 | 0.0 | 2006 10 29 | 291 | 0.3− | 0.1+ | 2006 11 21 | G96 | (8.4+ | 2.7+) |
| 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 10 29 | 291 | 0.2− | 0.0 | 2006 11 21 | G96 | (8.3+ | 3.0+) |
| 2006 10 27 | G96 | 0.6− | 0.4− | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 21 | G96 | (8.7+ | 3.1+) |
| 2006 10 27 | G96 | 0.3− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.0 | | | | |

**2006 UW$_{253}$ = 1999 VN$_{133}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 330.48594 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28308791 | $\omega$ | 205.40941 | | +0.39749267 | −0.91515054 | |
| $a$ | 2.2971455 | $\Omega$ | 221.26066 | | +0.85829328 | +0.39665908 | |
| $e$ | 0.1522522 | $i$ | 5.83755 | | +0.32454926 | +0.07184055 | |
| $P$ | 3.48 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.2+ | 0.1− | 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 10 28 | 691 | 0.1+ | 0.5+ |
| 1999 11 10 | 691 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.1+ |
| 1999 11 10 | 691 | 0.1− | 0.0 | 2006 10 16 | 691 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1999 11 14 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 1999 11 14 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.6+ |
| 1999 11 14 | 691 | 0.0 | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.4+ | 2006 11 13 | G96 | 0.3− | 0.4− |
| 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.4− | 0.5− |
| 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2006 09 30 | G96 | 0.5+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.9− |

**2006 UC$_{254}$ = 1997 WN$_{25}$ = 2001 SB$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.41306 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21704488 | $\omega$ | 226.33800 | | +0.04650392 | −0.99473615 | |
| $a$ | 2.7422246 | $\Omega$ | 221.26010 | | +0.95171305 | +0.07188835 | |
| $e$ | 0.0513519 | $i$ | 7.95856 | | +0.30344631 | −0.07302099 | |
| $P$ | 4.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 28 | 691 | 0.2+ | 0.1+ | 2005 07 09 | 691 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.0 |
| 1997 11 28 | 691 | 0.1− | 0.7− | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | (3.9− | 1.4+) |
| 1997 11 28 | 691 | 0.3− | 0.8− | 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.1− |
| 1997 12 04 | 691 | 0.0 | 0.3− | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.1− |
| 1997 12 04 | 691 | 1.1+ | 0.2− | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− |
| 1997 12 04 | 691 | 0.0 | 0.7− | 2006 10 27 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.6− | 0.9− |
| 2001 09 16 | 704 | 0.6+ | 0.8+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.0 |
| 2001 09 16 | 704 | (0.2− | 2.4−) | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2001 09 16 | 704 | (0.9+ | 2.2+) | 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.3− | 0.2− |
| 2001 09 16 | 704 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.6− | 0.7− |
| 2001 09 21 | 704 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.7− | 0.3− |
| 2001 09 21 | 704 | 0.8− | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | (1.8− | 0.2−) |
| 2001 09 21 | 704 | 0.0 | 0.6+ | 2006 11 01 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.5− | 0.2− |
| 2001 11 12 | 645 | 0.1− | 0.2− | 2006 11 10 | 644 | 0.6− | 0.4+ | 2006 11 27 | 291 | 0.0 | 0.7+ |
| 2001 11 12 | 645 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.1+ | 0.7+ | 2006 11 27 | 291 | 0.1+ | 0.7+ |
| 2004 05 21 | 691 | 0.2− | 0.3+ | 2006 11 10 | 644 | 0.1+ | 0.6+ | 2006 11 27 | 291 | 0.1+ | 0.8+ |
| 2004 05 21 | 691 | 0.1− | 0.4+ | 2006 11 10 | 644 | 0.3− | 0.7+ | 2006 11 27 | G96 | 0.2+ | 0.1− |
| 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 11 10 | 644 | 0.2− | 0.5+ | 2006 11 27 | G96 | 0.0 | 0.3− |
| 2005 07 09 | 691 | 0.4+ | 0.1− | 2006 11 10 | 644 | 0.0 | 0.5+ | 2006 11 27 | G96 | 0.3− | 0.3+ |
| 2005 07 09 | 691 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.6− | 2006 11 27 | G96 | 0.0 | 0.0 |

**2006 UO$_{254}$ = 2005 PN$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.64238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17484939 | $\omega$ | 243.99340 | | +0.36077441 | +0.91545893 | |
| $a$ | 3.1673299 | $\Omega$ | 48.35047 | | −0.74748780 | +0.39812255 | |
| $e$ | 0.2292054 | $i$ | 13.80178 | | −0.55776682 | +0.05859510 | |
| $P$ | 5.64 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.0 | 2005 08 08 | E12 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.6+ | 0.5− |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.1− | 0.5− |
| 2005 07 04 | E12 | 0.3− | 0.1+ | 2006 09 26 | G96 | 0.3+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.1− |
| 2005 07 04 | E12 | 0.1+ | 0.5− | 2006 09 26 | G96 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.3+ |
| 2005 07 04 | E12 | 0.4+ | 0.0 | 2006 09 26 | G96 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.4+ | 0.1− |
| 2005 07 04 | E12 | 0.5− | 0.3+ | 2006 10 16 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2005 08 07 | E12 | 0.1+ | 0.5+ | 2006 10 16 | 691 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2005 08 07 | E12 | 0.7− | 0.2− | 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 08 07 | E12 | 0.4+ | 0.1+ | 2006 10 20 | 691 | (1.5+ | 2.3−) | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2005 08 07 | E12 | 0.3+ | 0.5+ | 2006 10 20 | 691 | 0.4− | 0.6+ | 2006 11 11 | G96 | 0.1− | 0.3− |
| 2005 08 08 | E12 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.4− |
| 2005 08 08 | E12 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.2− | 0.5− |
| 2005 08 08 | E12 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.3− | | | | |

**2006 US$_{254}$ = 2002 TN$_{351}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.04219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26845555 | $\omega$ | 160.51727 | | +0.94392949 | −0.32263011 | |
| $a$ | 2.3798767 | $\Omega$ | 218.53042 | | +0.28602449 | +0.90512518 | |
| $e$ | 0.1206021 | $i$ | 6.45666 | | +0.16488514 | +0.27687222 | |
| $P$ | 3.67 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.4+ | 0.1− | 2006 11 11 | 703 | 0.1− | 0.4− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.8− | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.3− | 0.3+ | 2006 11 11 | 703 | 0.9+ | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.0 |
| 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.1− | 0.2− |
| 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 08 | 644 | 0.4− | 0.4+ | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2006 10 16 | 691 | 0.5− | 0.6+ | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.4− | 0.3− |
| 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 08 | 644 | 0.3− | 0.1+ | 2006 11 17 | 703 | (0.0 | 1.6−) |
| 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 10 | 644 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.4+ | 1.1+ |
| 2006 10 27 | G96 | 0.2− | 0.7− | 2006 11 10 | 644 | 0.0 | 0.0 | 2006 11 17 | 703 | (0.2+ | 1.7+) |
| 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 10 | 644 | 0.4− | 0.1+ | 2006 11 17 | 703 | (1.1+ | 3.5+) |
| 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.9+ | 0.2− | | | | |

**2006 UH$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 256.19641 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21635489 | $\omega$ | 303.99041 | | −0.82724001 | | −0.56179967 |
| $a$ | 2.7480517 | $\Omega$ | 201.83211 | | +0.52184509 | | −0.76337782 |
| $e$ | 0.1330093 | $i$ | 1.14364 | | +0.20821062 | | −0.31880313 |
| $P$ | 4.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 02 10 | 691 | (3.7+ | 3.4−) | 2005 08 08 | 807 | 0.4+ | 1.0− | 2006 10 29 | 691 | 0.1+ | 0.3− |
| 1999 02 10 | 691 | 1.1− | 2.0− | 2006 10 20 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 1999 02 10 | 691 | 0.6− | 0.5+ | 2006 10 20 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.3− | 0.0 |
| 1999 03 21 | 691 | 0.6− | 1.3+ | 2006 10 20 | 691 | 0.2+ | 0.5− | 2006 11 10 | 691 | 0.3− | 0.1− |
| 1999 03 21 | 691 | 0.6− | 1.6+ | 2006 10 27 | G96 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 1999 03 21 | 691 | 0.6− | 1.3+ | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.2− | 0.1− |
| 2004 04 28 | 691 | 0.0 | 0.5− | 2006 10 27 | G96 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.3− |
| 2004 04 28 | 691 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 2004 04 28 | 691 | 0.1− | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.1+ | | | | |
| 2005 08 08 | 807 | 0.5+ | 0.7− | 2006 10 29 | 691 | 0.1− | 0.3+ | | | | |

**2006 UM$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 239.98889 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21594053 | $\omega$ | 308.56665 | | −0.88071767 | | −0.47341617 |
| $a$ | 2.7515661 | $\Omega$ | 203.18807 | | +0.44528329 | | −0.81707776 |
| $e$ | 0.0382317 | $i$ | 2.12674 | | +0.16142855 | | −0.32903048 |
| $P$ | 4.56 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.2+ | 0.5+ | 2006 09 25 | G96 | 0.3− | 0.4− | 2006 10 29 | G96 | 0.2+ | 0.1− |
| 2001 08 24 | 691 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.8− | 0.1+ | 2006 10 29 | G96 | 0.5+ | 0.2+ |
| 2001 08 24 | 691 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.1− |
| 2004 04 13 | 691 | 0.2+ | 0.0 | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 10 29 | G96 | 0.1+ | 0.4− |
| 2004 04 13 | 691 | 0.2− | 0.3+ | 2006 10 27 | G96 | 0.5+ | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.3+ |
| 2004 04 13 | 691 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.5+ |
| 2005 07 11 | G96 | 0.1− | 0.6− | 2006 10 27 | G96 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.3− | 0.1− |
| 2005 07 11 | G96 | 0.1− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.5+ | 0.0 |
| 2005 07 11 | G96 | 0.7+ | 0.5− | 2006 10 28 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1− | 0.2− |
| 2006 09 25 | G96 | 0.6− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.4− | 0.1− |
| 2006 09 25 | G96 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.5+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2006 09 25 | G96 | 0.5− | 0.5− | 2006 10 29 | G96 | 0.0 | 0.2− | 2006 11 22 | G96 | 0.9− | 0.3− |

**2006 UW$_{255}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.30636 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17935228 | $\omega$ | 149.75525 | | +0.95806240 | | −0.28536421 |
| $a$ | 3.1140920 | $\Omega$ | 226.84958 | | +0.25521022 | | +0.89118929 |
| $e$ | 0.3453127 | $i$ | 2.05394 | | +0.13032336 | | +0.35263142 |
| $P$ | 5.50 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 06 | 621 | 0.1− | 1.0+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.2− |
| 2000 08 06 | 621 | 0.4− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.2+ | 0.7− |
| 2001 12 18 | 691 | 0.5− | 0.7+ | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3− |
| 2001 12 18 | 691 | 0.4+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2001 12 18 | 691 | 0.2+ | 0.6− | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2003 05 29 | 807 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.2+ |
| 2003 05 30 | 807 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.6+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2006 09 27 | G96 | 0.1+ | 0.5− | 2006 11 17 | 704 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2006 09 27 | G96 | 0.0 | 0.3− | 2006 11 17 | 704 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.5− |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.6− |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.6− |
| 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.7+ | 0.8+ |
| 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 1.0+ | 0.2− | 2006 11 27 | 704 | 0.1− | 1.0+ |
| 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.2+ | 0.6− | 2006 11 27 | 704 | 0.3− | 0.9+ |
| 2006 10 27 | G96 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.4− | 2006 11 27 | 704 | 0.2+ | 1.4+ |
| 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 18 | 704 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.6− | 0.4+ |
| 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 18 | 704 | 0.2− | 0.3+ | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2006 10 28 | 704 | 0.5+ | 1.0− | 2006 11 19 | 704 | 0.1+ | 0.3+ | 2006 11 29 | 704 | 0.4+ | 0.1+ |
| 2006 10 28 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.5+ | 2006 11 29 | 704 | 0.3− | 0.7+ |
| 2006 10 28 | 704 | 0.4− | 0.5+ | 2006 11 19 | 704 | 0.0 | 1.1+ | 2006 11 29 | 704 | 1.1− | 0.5− |
| 2006 10 28 | 704 | 0.2− | 0.1− | 2006 11 19 | 704 | (2.1− | 0.0 ) | | | | |
| 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 19 | 704 | 1.0− | 0.5− | | | | |

**2006 UM$_{256}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.25640 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19515601 | $\omega$ | 149.23425 | | +0.95431062 | | +0.29786208 |
| $a$ | 2.9436178 | $\Omega$ | 193.49956 | | −0.29072819 | | +0.90706039 |
| $e$ | 0.0891055 | $i$ | 5.86717 | | −0.06905333 | | +0.29752248 |
| $P$ | 5.05 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 26 | 691 | 0.2− | 0.1− | 2006 09 25 | G96 | 0.5+ | 0.1+ | 2006 10 29 | G96 | 0.4+ | 0.1− |
| 2001 10 26 | 691 | 0.2− | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.0 | 2006 10 29 | G96 | 0.2− | 0.5− |
| 2001 10 26 | 691 | 0.4+ | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 10 29 | G96 | 0.1− | 0.1− |
| 2004 03 29 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.4+ | 2006 10 29 | G96 | 0.0 | 0.1+ |
| 2004 03 29 | 691 | 0.2− | 0.4+ | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.2− |
| 2004 03 29 | 691 | 0.2+ | 0.7+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.3− |
| 2004 07 16 | 807 | 1.6+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2004 07 16 | 807 | 0.6+ | 0.3+ | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2006 09 14 | 691 | 0.3− | 0.5+ | 2006 10 28 | 691 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.4+ | 0.4− |
| 2006 09 14 | 691 | 1.0− | 0.6+ | 2006 10 29 | G96 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.3− |
| 2006 09 14 | 691 | 0.2− | 0.7+ | 2006 10 29 | G96 | 0.1+ | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 2006 09 25 | G96 | 0.3− | 1.0− | 2006 10 29 | G96 | 0.5+ | 0.7− | | | | |

**2006 UR$_{256}$ = 2006 RR$_{53}$ = 2001 SG$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.01909 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20404007 | $\omega$ | 246.48326 | | +0.65380426 | | −0.75657612 |
| $a$ | 2.8575406 | $\Omega$ | 162.67223 | | +0.70756261 | | +0.60591522 |
| $e$ | 0.0705510 | $i$ | 2.21537 | | +0.26813267 | | +0.24588476 |
| $P$ | 4.83 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 691 | 0.2− | 0.3+ | 2006 09 14 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.4− |
| 2001 09 19 | 691 | 0.1+ | 0.2+ | 2006 09 18 | 691 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 09 19 | 691 | 0.2+ | 0.1+ | 2006 09 18 | 691 | 0.1+ | 0.7+ | 2006 10 29 | 291 | 0.0 | 0.2+ |
| 2001 09 21 | 704 | 1.0+ | 1.1− | 2006 09 18 | 691 | 0.4− | 0.1+ | 2006 10 29 | 291 | 0.2+ | 0.2+ |
| 2001 09 21 | 704 | 0.4+ | 0.2− | 2006 09 25 | 691 | 0.5− | 0.5+ | 2006 10 29 | 291 | 0.1− | 0.1− |
| 2001 09 21 | 704 | 0.7+ | 0.1+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.4− |
| 2001 09 21 | 704 | 0.6+ | 0.1− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 11 16 | G96 | 0.1+ | 0.5− |
| 2001 10 15 | 645 | 0.0 | 0.2− | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.2− | 0.1+ |
| 2001 10 15 | 645 | 0.1− | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.8− |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2006 09 14 | 691 | 0.3+ | 0.5+ | 2006 10 16 | 691 | 0.0 | 0.1− | |
| 2006 09 14 | 691 | 0.5+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.5− | |

**2006 UY$_{256}$ = 2004 DA$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.66273 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27662006 | $\omega$ | 117.68351 | | −0.39173934 | | −0.92005380 |
| $a$ | 2.3328148 | $\Omega$ | 355.36515 | | +0.81366834 | | −0.34316566 |
| $e$ | 0.1798736 | $i$ | 4.56082 | | +0.42951615 | | −0.18904583 |
| $P$ | 3.56 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 25 | 645 | 0.1− | 0.0 | 2004 03 18 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.0 | |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.4+ | 0.2− | |
| 2004 02 17 | 704 | (0.1+ | 1.6+) | 2006 09 30 | 291 | 0.5+ | 0.1− | 2006 10 29 | G96 | 0.1+ | 0.2− | |
| 2004 02 17 | 704 | 0.1− | 0.2+ | 2006 09 30 | 291 | 0.3+ | 0.1− | 2006 10 29 | G96 | 0.3− | 0.3− | |
| 2004 02 17 | 704 | 0.3+ | 0.5+ | 2006 09 30 | 291 | 0.2+ | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.2− | |
| 2004 02 23 | 704 | 0.3+ | 0.6− | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 25 | G96 | 0.4− | 0.2− | |
| 2004 02 23 | 704 | 0.1− | 0.7− | 2006 10 20 | 691 | 0.2− | 0.5+ | 2006 11 25 | G96 | 0.6− | 0.2− | |
| 2004 02 23 | 704 | 0.6− | 0.6− | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.8− | 0.7+ | |
| 2004 03 18 | 691 | 0.1+ | 0.0 | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 25 | G96 | 0.3− | 0.1− | |

**2006 UR$_{257}$ = 2002 TT$_{327}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 150.46417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26187147 | $\omega$ | 205.44022 | | −0.68311398 | | +0.72927538 |
| $a$ | 2.4196019 | $\Omega$ | 21.54189 | | −0.65064658 | | −0.58354651 |
| $e$ | 0.1299623 | $i$ | 6.08042 | | −0.33168406 | | −0.35725465 |
| $P$ | 3.76 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.5− | 0.9− | 2002 11 08 | 645 | 0.1− | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.1+ | |
| 2002 10 05 | 644 | 0.1− | 1.2+ | 2003 12 28 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.2− | 0.1− | |
| 2002 10 05 | 644 | 0.0 | 1.4+ | 2003 12 28 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.2− | 0.5− | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2003 12 28 | 691 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.1− | 0.0 | |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.4− | 0.6− | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.3− | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ | |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 09 26 | G96 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.4+ | 0.1+ | |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.3− | 0.3+ | | | | | |
| 2002 11 08 | 645 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.0 | | | | | |

**2006 UT$_{257}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 211.10137 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27037154 | $\omega$ | 161.25414 | | −0.99990453 | | +0.00493542 |
| $a$ | 2.3686201 | $\Omega$ | 19.04250 | | −0.01002484 | | −0.90192697 |
| $e$ | 0.1513709 | $i$ | 2.26701 | | +0.00950937 | | −0.43186037 |
| $P$ | 3.65 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 27 | 691 | 0.0 | 0.6− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.1+ | 0.1+ | |
| 1995 10 27 | 691 | 0.2+ | 0.3− | 2006 09 25 | G96 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.7+ | 0.5+ | |
| 1995 10 27 | 691 | 0.3− | 0.6− | 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 10 29 | 691 | 0.3− | 0.1+ | |
| 1999 12 05 | 691 | 0.5+ | 0.7− | 2006 09 25 | G96 | 0.0 | 0.3− | 2006 11 13 | G96 | 0.2+ | 0.7− | |
| 1999 12 05 | 691 | 0.3+ | 0.3− | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.5− | 0.3+ | |
| 1999 12 05 | 691 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.5− | 0.2+ | 2006 11 13 | G96 | 0.7+ | 0.1+ | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.5+ | 2006 11 13 | G96 | 0.4− | 0.2+ | |
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.1+ | |
| 2004 01 21 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.4− | 0.3+ | |
| 2004 01 21 | 691 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.5− | 0.4+ | |
| 2004 01 21 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2+ | | | | | |

**2006 UC$_{258}$ = 1995 UZ$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.79665 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17796608 | $\omega$ | 8.90865 | | +0.81516000 | | −0.57356460 |
| $a$ | 3.1302419 | $\Omega$ | 26.60076 | | +0.51969541 | | +0.66256294 |
| $e$ | 0.1404496 | $i$ | 10.40333 | | +0.25579455 | | +0.48169908 |
| $P$ | 5.54 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 19 | 691 | 0.4− | 0.2+ | 2006 09 25 | G96 | 0.6+ | 0.4− | 2006 10 29 | 691 | 0.1+ | 0.1− | |
| 1995 10 19 | 691 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 10 29 | 691 | 0.0 | 0.0 | |
| 1995 10 19 | 691 | 0.5− | 0.1− | 2006 10 16 | 691 | 0.3− | 0.5+ | 2006 10 29 | 691 | 0.2+ | 0.1+ | |
| 1995 10 24 | 691 | 0.6+ | 0.2+ | 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 10 29 | 691 | 0.1+ | 0.1+ | |
| 1995 10 24 | 691 | 0.4− | 0.4− | 2006 10 28 | G96 | 0.5+ | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.4+ | |
| 1995 10 24 | 691 | 0.8+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ | |
| 2006 09 25 | G96 | 1.3+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.4− | 0.2− | |
| 2006 09 25 | G96 | 0.9+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.3− | 0.2− | |
| 2006 09 25 | G96 | 0.1− | 0.4− | 2006 10 29 | 691 | 0.1− | 0.1− | | | | | |

**2006 UW$_{259}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 162.34239 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20517566 | $\omega$ | 177.11922 | | −0.69401548 | | +0.71904671 |
| $a$ | 2.8469870 | $\Omega$ | 48.92848 | | −0.66150811 | | −0.61698586 |
| $e$ | 0.0135636 | $i$ | 2.75637 | | −0.28416463 | | −0.31984414 |
| $P$ | 4.80 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.2− | 0.6+ | |
| 1999 03 20 | 645 | 0.0 | 0.1+ | 2006 10 28 | G96 | 1.1+ | 0.5− | 2006 11 09 | 691 | 0.3− | 0.3+ | |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 09 | 691 | 0.1− | 0.3− | |
| 1999 03 21 | 645 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 14 | 291 | 0.1− | 0.5+ | |
| 2001 10 23 | 291 | 1.2+ | 0.1+ | 2006 10 28 | G96 | 0.2− | 0.6− | 2006 11 14 | 291 | 0.4− | 0.5+ | |
| 2001 10 23 | 291 | 0.8− | 0.5+ | 2006 10 29 | G96 | 0.2− | 0.5− | 2006 11 14 | 291 | 0.3+ | 0.3+ | |
| 2001 10 23 | 291 | 0.8− | 0.4+ | 2006 10 29 | G96 | 0.1+ | 0.7− | 2006 11 22 | G96 | 0.2− | 0.7− | |
| 2006 10 20 | 691 | 0.1− | 0.6− | 2006 10 29 | G96 | 0.2− | 0.7− | 2006 11 22 | G96 | 0.3− | 0.0 | |
| 2006 10 20 | 691 | 0.2+ | 0.4+ | 2006 10 29 | 691 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.3+ | 0.7− | |
| 2006 10 20 | 691 | 0.3+ | 0.3− | 2006 10 29 | G96 | 0.4− | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.2− | |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.1− | 0.2− | | | | | |
| 2006 10 20 | 691 | 0.2+ | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.2− | | | | | |

**2006 UG$_{260}$ = 2005 MU$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 99.78122 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24165459 | $\omega$ | 59.13700 | | +0.02817637 | | +0.98755845 |
| $a$ | 2.5527367 | $\Omega$ | 213.56465 | | −0.98579186 | | +0.00181369 |
| $e$ | 0.1322584 | $i$ | 16.24959 | | −0.16559136 | | +0.15724188 |
| $P$ | 4.08 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 16 | 691 | 0.2+ | 0.3+ | 2006 10 20 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.2− | |
| 2005 06 16 | 691 | 0.2− | 0.1− | 2006 10 20 | 691 | 0.5− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.4− | |
| 2005 06 16 | 691 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.1+ | 2006 10 29 | 691 | 0.4+ | 0.0 | |
| 2005 06 30 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.0 | 2006 10 29 | 691 | 0.4− | 0.3+ | |
| 2005 06 30 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.2+ | |
| 2005 06 30 | 691 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1+ | 0.3− | |
| 2005 07 07 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.5− | 0.8− | 2006 11 10 | 691 | 0.3+ | 0.0 | |
| 2005 07 07 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 10 | 691 | 0.3− | 0.2+ | |
| 2005 07 07 | 691 | 0.1− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1+ | | | | | |

**2006 UO$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 224.89964 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18751104 | $\omega$ | 324.38468 | | −0.97790718 | −0.20783322 | |
| $a$ | 3.0230929 | $\Omega$ | 203.64978 | | +0.20239953 | −0.91455652 | |
| $e$ | 0.0255560 | $i$ | 3.20469 | | +0.05226828 | −0.34697510 | |
| $P$ | 5.26 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 22 | 809 | 0.2+ | 0.6+ | 2006 09 25 | G96 | 0.4+ | 0.6− | 2006 10 28 | G96 | 0.1− | 0.3− |
| 2001 12 14 | 691 | 0.3− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.4− | 2006 10 28 | G96 | 0.4+ | 0.4− |
| 2001 12 14 | 691 | 0.1+ | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.1− |
| 2001 12 14 | 691 | 0.1+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 2003 02 22 | 644 | 0.1− | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 10 29 | 691 | 0.0 | 0.2+ |
| 2003 02 22 | 644 | 0.0 | 0.3+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 10 29 | 691 | 0.2+ | 0.1+ |
| 2003 02 22 | 644 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 29 | 691 | 0.2+ | 0.0 |
| 2003 02 22 | 644 | 0.2− | 0.6− | 2006 10 12 | 691 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.5+ | 0.4− |
| 2003 02 22 | 644 | 0.1+ | 0.8− | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 2003 02 22 | 644 | 0.2+ | 0.8− | 2006 10 20 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2006 09 25 | G96 | 0.5+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2006 09 25 | G96 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.3+ | | | | |

**2006 UD$_{261}$ = 2001 YD$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.67199 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17987073 | $\omega$ | 239.88970 | | −0.40498452 | −0.90090059 | |
| $a$ | 3.1081052 | $\Omega$ | 234.81859 | | +0.89078436 | −0.35027683 | |
| $e$ | 0.1760096 | $i$ | 11.01005 | | +0.20613289 | −0.25628942 | |
| $P$ | 5.48 | $H$ | 14.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 27 | 691 | 0.4− | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.1− | 1.0+ |
| 1995 12 27 | 691 | 0.6+ | 0.6− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.2− | 0.2+ |
| 1995 12 27 | 691 | 0.2− | 0.5− | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.9− | 0.5− |
| 2001 12 19 | 704 | 0.6+ | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.0 | 0.4− |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2006 10 28 | 704 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.5− |
| 2001 12 19 | 704 | 0.3+ | 0.5+ | 2006 10 28 | 704 | 1.2+ | 0.8− | 2006 11 17 | 704 | 0.3+ | 1.0+ |
| 2001 12 19 | 704 | 0.5− | 1.0− | 2006 10 28 | 704 | 0.7+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.1+ | 0.3+ | 2006 10 28 | 704 | 0.8+ | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 12 22 | 683 | (1.6+ | 2.4+) | 2006 10 29 | G96 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 12 22 | 683 | 0.4− | 0.8+ | 2006 10 29 | G96 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.6+ |
| 2001 12 22 | 683 | 0.3+ | 0.8+ | 2006 10 29 | G96 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.1+ | 0.5+ |
| 2002 02 20 | 644 | 0.0 | 0.2+ | 2006 10 29 | G96 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.2+ |
| 2002 02 20 | 644 | 0.0 | 0.2+ | 2006 11 14 | 704 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.7− | 0.2− |
| 2002 02 20 | 644 | 0.1+ | 0.3+ | 2006 11 14 | 704 | 0.6− | 0.3+ | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2005 10 02 | 699 | 0.5− | 0.6+ | 2006 11 14 | 704 | 0.5− | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2005 10 02 | 699 | 0.1− | 0.4− | 2006 11 14 | 704 | 0.6− | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2005 10 02 | 699 | 0.1+ | 1.0+ | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2005 10 02 | 699 | 0.1− | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2006 09 27 | G96 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.6+ |
| 2006 09 27 | G96 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.5+ | 0.4− | 2006 11 29 | 704 | 0.5− | 1.8+ |
| 2006 09 27 | G96 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.8− | 2006 11 29 | 704 | 0.1− | 0.4+ |
| 2006 09 27 | G96 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.3− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.2+ |

**2006 UK$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.01943 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17802616 | $\omega$ | 82.96227 | | +0.05471762 | +0.99849970 | |
| $a$ | 3.1295376 | $\Omega$ | 190.17508 | | −0.92069885 | +0.04964673 | |
| $e$ | 0.1335800 | $i$ | 0.67549 | | −0.38641896 | +0.02309887 | |
| $P$ | 5.54 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 20 | 691 | 0.1− | 0.1− | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 10 29 | 291 | 0.2+ | 0.4+ |
| 2000 09 20 | 691 | 0.1− | 0.2+ | 2005 08 06 | 644 | 0.4+ | 0.2− | 2006 10 29 | 291 | 0.2+ | 0.1+ |
| 2000 09 20 | 691 | 0.1+ | 0.0 | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 10 29 | 291 | 0.1+ | 0.3+ |
| 2004 05 13 | 691 | 0.2+ | 0.2+ | 2005 08 25 | 644 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.5− |
| 2004 05 13 | 691 | 0.0 | 0.5+ | 2005 08 25 | 644 | 0.0 | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.1− |
| 2004 05 13 | 691 | 0.1+ | 0.2+ | 2005 08 25 | 644 | 0.5− | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.2− |
| 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 09 25 | G96 | 0.7+ | 0.5− | 2006 11 11 | G96 | 0.3+ | 0.3+ |
| 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− |
| 2004 05 21 | 691 | 0.1+ | 0.3+ | 2006 09 25 | G96 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 2005 06 13 | G96 | 0.5+ | 0.5+ | 2006 09 25 | G96 | 1.0− | 1.3− | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2005 06 13 | G96 | 0.1− | 0.6− | 2006 10 20 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2005 06 13 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.1+ |
| 2005 06 13 | G96 | 0.4+ | 0.1− | 2006 10 20 | 691 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.3− | 0.3+ |
| 2005 07 28 | 644 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.5+ |
| 2005 07 28 | 644 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.3− | 0.6+ | | | | |
| 2005 07 28 | 644 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.9+ | | | | |

**2006 UM$_{261}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.39350 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19097187 | $\omega$ | 265.68206 | | +0.80720724 | −0.57507495 | |
| $a$ | 2.9864582 | $\Omega$ | 129.36202 | | +0.58643035 | +0.75565287 | |
| $e$ | 0.2464962 | $i$ | 9.91004 | | +0.06720059 | +0.31349249 | |
| $P$ | 5.16 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 05 | 608 | 0.3− | 0.2− | 2006 09 30 | 703 | 0.2+ | 0.2− | 2006 10 31 | 704 | 0.6+ | 0.2+ |
| 2000 08 05 | 608 | 0.0 | 0.4+ | 2006 09 30 | 703 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.2+ | 0.2− |
| 2000 08 05 | 608 | 0.3+ | 0.1− | 2006 09 30 | 703 | 0.2− | 0.5− | 2006 11 13 | 703 | 0.6+ | 0.4− |
| 2003 03 23 | 645 | 0.1+ | 0.0 | 2006 09 30 | 703 | 0.3+ | 0.1− | 2006 11 13 | 703 | 0.0 | 0.0 |
| 2003 03 23 | 645 | 0.1+ | 0.1+ | 2006 10 28 | 703 | 0.1+ | 0.5+ | 2006 11 13 | 703 | 0.0 | 0.6− |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.4− | 0.1− | 2006 11 19 | 703 | 0.1− | 0.3− |
| 2003 03 31 | 645 | 0.2− | 0.1− | 2006 10 28 | 703 | 0.0 | 0.3− | 2006 11 19 | 703 | 0.2+ | 0.1+ |
| 2006 09 18 | 703 | 0.3+ | 0.2− | 2006 10 28 | 703 | 0.0 | 0.8+ | 2006 11 19 | 703 | 0.4− | 0.1+ |
| 2006 09 18 | 703 | 1.1− | 0.2+ | 2006 10 30 | 703 | 0.3+ | 1.1+ | 2006 11 19 | 703 | 0.6− | 0.1+ |
| 2006 09 18 | 703 | 0.2+ | 0.3− | 2006 10 30 | 703 | 0.9+ | 0.7+ | 2006 11 20 | 704 | (1.3− | 2.7+) |
| 2006 09 18 | 703 | 0.9+ | 1.1− | 2006 10 30 | 703 | 0.7− | 0.2+ | 2006 11 20 | 704 | 0.7− | 0.7− |
| 2006 09 18 | 703 | 0.1− | 0.1− | 2006 10 30 | 703 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2006 09 18 | 703 | 0.4+ | 0.3− | 2006 10 31 | 704 | 0.7− | 1.3− | 2006 11 20 | 704 | 0.1− | 0.1− |
| 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 10 31 | 704 | 0.9− | 1.1+ | | | | |
| 2006 09 18 | 703 | 0.1+ | 0.1− | 2006 10 31 | 704 | 0.8+ | 0.8+ | | | | |

**2006 UQ$_{261}$ = 2002 TK$_{150}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 25.85690 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25784495 | $\omega$ | 131.07260 | | +0.98557254 | +0.16354356 | |
| $a$ | 2.4447266 | $\Omega$ | 219.57174 | | −0.16841851 | +0.92207230 | |
| $e$ | 0.2294624 | $i$ | 3.92374 | | −0.01679188 | +0.35076512 | |
| $P$ | 3.82 | $H$ | 18.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 644 | 0.4− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 10 30 | G96 | 0.1+ | 0.1+ |
| 2002 10 05 | 644 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.5− | 0.3+ | 2006 10 30 | G96 | 0.4+ | 0.2+ |
| 2002 10 05 | 644 | (0.3− | 2.0−) | 2006 10 28 | G96 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2002 10 06 | 644 | 0.7+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2002 10 06 | 644 | 0.1+ | 0.2− | 2006 10 29 | G96 | 0.3− | 0.3− | 2006 11 01 | 691 | 0.2− | 0.2− |
| 2002 10 06 | 644 | 0.4− | 0.1− | 2006 10 29 | G96 | 0.7+ | 0.1+ | 2006 11 11 | G96 | 0.7− | 0.2− |
| 2006 10 28 | G96 | 0.4+ | 0.3− | 2006 10 29 | G96 | 0.4− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.5+ |
| 2006 10 28 | G96 | 0.3− | 0.3− | 2006 10 29 | G96 | 0.1+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.2− |
| 2006 10 28 | G96 | 0.4− | 0.1+ | 2006 10 30 | G96 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 2006 10 28 | G96 | 0.4+ | 0.1− | 2006 10 30 | G96 | 0.2− | 0.0 | | | | |

**2006 UD$_{262}$ = 2004 NX$_{18}$ = 2005 RZ$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 221.84575 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18440125 | $\omega$ | 301.33896 | | −0.76308294 | | +0.58419810 |
| $a$ | 3.0569861 | $\Omega$ | 275.85938 | | −0.45712609 | | −0.79022725 |
| $e$ | 0.0358222 | $i$ | 16.13420 | | −0.45688091 | | −0.18507692 |
| $P$ | 5.34 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 08 | 644 | 0.2+ | 0.5+ | 2004 06 15 | 691 | 0.1− | 0.1+ | 2005 09 03 | 644 | 0.2− | 0.2+ |
| 2002 01 08 | 644 | 0.4+ | 0.2+ | 2004 07 14 | 704 | 0.6− | 0.2− | 2005 09 03 | 644 | 0.2− | 0.2+ |
| 2002 01 08 | 644 | 0.4+ | 0.4+ | 2004 07 14 | 704 | 1.0− | 0.6+ | 2005 09 03 | 644 | 0.0 | 0.3+ |
| 2002 02 07 | 644 | 0.8+ | 0.5+ | 2004 07 14 | 704 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.0 |
| 2002 02 07 | 644 | 0.3+ | 0.4+ | 2004 07 14 | 704 | 0.5− | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.0 |
| 2002 02 07 | 644 | 0.0 | 0.2+ | 2004 07 16 | 704 | 0.5+ | 0.3− | 2006 10 28 | G96 | 0.1+ | 0.2− |
| 2002 02 17 | 644 | 0.1− | 0.3+ | 2004 07 16 | 704 | 0.4+ | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.1− |
| 2002 02 17 | 644 | 0.1− | 0.7+ | 2004 07 16 | 704 | 0.1+ | 0.5+ | 2006 10 29 | G96 | 0.1+ | 0.2− |
| 2002 02 17 | 644 | 0.1− | 0.7+ | 2005 09 01 | 644 | 0.3− | 0.3+ | 2006 10 29 | G96 | 0.1+ | 0.1− |
| 2004 06 15 | 691 | 0.1+ | 0.0 | 2005 09 01 | 644 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.5− | 0.6− |
| 2004 06 15 | 691 | 0.0 | 0.2+ | 2005 09 01 | 644 | 0.1− | 0.2+ | 2006 10 29 | G96 | 0.2− | 0.3− |

**2006 UF$_{262}$ = 1997 JA$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 115.74243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25730233 | $\omega$ | 66.31243 | | −0.03913652 | | +0.99914508 |
| $a$ | 2.4481625 | $\Omega$ | 201.45737 | | −0.92953265 | | −0.04129483 |
| $e$ | 0.1792450 | $i$ | 2.08680 | | −0.36665703 | | −0.00195870 |
| $P$ | 3.83 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 08 | 691 | 0.5+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.6− | 2006 10 30 | G96 | 0.2− | 0.4− |
| 1997 05 08 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.3+ | 0.1+ | 2006 10 30 | G96 | 0.1+ | 0.0 |
| 1997 05 08 | 691 | 0.6+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.4+ | 2006 10 30 | G96 | 0.0 | 0.6− |
| 1997 05 09 | 691 | 0.3− | 0.4− | 2006 10 28 | G96 | 0.5+ | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.0 |
| 1997 05 09 | 691 | 0.8− | 0.5+ | 2006 10 29 | G96 | 0.3− | 0.1+ | 2006 11 01 | 691 | 0.6+ | 0.7+ |
| 1997 05 09 | 691 | 0.1− | 0.2− | 2006 10 29 | G96 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.7+ | 0.4+ |
| 1998 10 14 | 691 | 0.0 | 0.1− | 2006 10 29 | G96 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.5− |
| 1998 10 14 | 691 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.4− |
| 1998 10 14 | 691 | 0.0 | 0.2+ | 2006 10 29 | G96 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2006 10 16 | 691 | 0.5− | 0.6− | 2006 10 29 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.0 | 1.3− |
| 2006 10 16 | 691 | 0.5− | 0.2+ | 2006 10 29 | G96 | 0.2+ | 0.4+ | | | | |
| 2006 10 16 | 691 | 0.4− | 0.3+ | 2006 10 30 | G96 | 0.3+ | 0.6− | | | | |

**2006 UZ$_{262}$ = 2005 GD$_{34}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.00085 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31114595 | $\omega$ | 227.14292 | | +0.43846045 | | +0.89817244 |
| $a$ | 2.1568831 | $\Omega$ | 68.88880 | | −0.81418616 | | +0.41213546 |
| $e$ | 0.1574384 | $i$ | 1.97984 | | −0.38059602 | | +0.15307070 |
| $P$ | 3.17 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 01 | 691 | 0.3+ | 0.0 | 2006 10 28 | G96 | 1.1+ | 0.3− | 2006 10 30 | G96 | 0.2− | 0.3− |
| 2005 04 01 | 691 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 10 30 | G96 | 0.3− | 0.4− |
| 2005 04 01 | 691 | 0.4+ | 0.1+ | 2006 10 28 | G96 | 0.9− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.0 |
| 2005 04 06 | G96 | 0.4− | 0.1− | 2006 10 29 | G96 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.1+ | 0.1− |
| 2005 04 06 | G96 | 0.5− | 0.2− | 2006 10 29 | G96 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2005 04 06 | G96 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.3− | 0.7+ | 2006 11 11 | G96 | 0.2+ | 0.2+ |
| 2005 04 06 | G96 | 0.1− | 0.0 | 2006 10 30 | G96 | 0.2+ | 0.0 | | | | |
| 2006 10 28 | G96 | 0.1− | 0.3+ | 2006 10 30 | G96 | 0.1+ | 0.2− | | | | |

**2006 UE$_{263}$ = 2004 KA$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 148.74815 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18844424 | $\omega$ | 31.65484 | | −0.35159475 | | +0.93033317 |
| $a$ | 3.0131041 | $\Omega$ | 218.04510 | | −0.89033649 | | −0.36670944 |
| $e$ | 0.0499713 | $i$ | 9.73592 | | −0.28927853 | | −0.00209299 |
| $P$ | 5.23 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 17 | 704 | (1.1− | 1.7+) | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 1.2+ | 0.1+ |
| 2004 05 17 | 704 | 0.4− | 1.1+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.7− | 0.4+ |
| 2004 05 17 | 704 | (0.4− | 2.6+) | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.8− |
| 2004 05 21 | 704 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.1− | 0.4− |
| 2004 05 21 | 704 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2004 05 21 | 704 | 0.3+ | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2004 05 21 | 704 | 0.4− | 0.3+ | 2006 10 28 | G96 | 0.5− | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2004 06 09 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.8− | 0.4− |
| 2004 06 09 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.5− | 0.5− |
| 2004 06 09 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.9+ | 0.2+ |
| 2006 10 12 | 691 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.4+ |
| 2006 10 12 | 691 | 0.1+ | 0.5− | 2006 11 02 | 621 | 0.0 | 0.0 | 2006 11 28 | 704 | 0.5+ | 0.8+ |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 02 | 621 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.8− | 0.6+ |
| 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 02 | 621 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.6− | 0.8− |
| 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.3− | | | | |

**2006 UH$_{263}$ = 1995 UX$_{64}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.91474 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18196806 | $\omega$ | 327.46871 | | +0.90330146 | | −0.40246676 |
| $a$ | 3.0841768 | $\Omega$ | 56.96570 | | +0.42167709 | | +0.76921075 |
| $e$ | 0.1156895 | $i$ | 10.20636 | | +0.07896139 | | +0.49632180 |
| $P$ | 5.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 21 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1− | 0.1− | 2006 11 02 | 621 | 0.2+ | 0.0 |
| 1995 10 21 | 691 | 0.2+ | 0.3+ | 2006 10 17 | G96 | 0.9+ | 0.4+ | 2006 11 02 | 621 | 0.2− | 0.3− |
| 1995 10 21 | 691 | 0.4+ | 0.2+ | 2006 10 17 | G96 | 0.5− | 0.7+ | 2006 11 02 | 621 | 0.2+ | 0.1− |
| 1995 10 26 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 1.1+ | 0.0 | 2006 11 13 | G96 | 0.7− | 0.3+ |
| 1995 10 26 | 691 | 0.7+ | 0.1+ | 2006 10 22 | 691 | 0.7− | 0.4− | 2006 11 13 | G96 | 0.4+ | 0.3− |
| 1995 10 26 | 691 | 0.1− | 0.1− | 2006 10 22 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.4+ | 0.2− |
| 1995 11 14 | 691 | 0.3− | 0.0 | 2006 10 22 | 691 | 0.2− | 0.6− | 2006 11 13 | G96 | 1.1+ | 0.5− |
| 1995 11 14 | 691 | 0.4− | 0.2+ | 2006 10 31 | 621 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.7+ |
| 1995 11 14 | 691 | 0.5− | 0.6− | 2006 10 31 | 621 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.7+ | 0.6− |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 10 31 | 621 | 0.4− | 0.2− | 2006 11 17 | 703 | 1.4− | 1.1+ |
| 2006 09 30 | G96 | 1.2+ | 0.3+ | 2006 11 01 | 691 | 0.0 | 0.4+ | 2006 11 17 | 703 | (0.7− | 2.3−) |
| 2006 09 30 | G96 | 0.8+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 | | | | |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.0 | 0.3+ | | | | |

**2006 UR$_{263}$ = 1997 TB$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.11001 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21781519 | $\omega$ | 60.92115 | | +0.99847292 | | −0.04999913 |
| $a$ | 2.7357554 | $\Omega$ | 301.93571 | | +0.03594212 | | +0.91089961 |
| $e$ | 0.0947126 | $i$ | 1.58631 | | +0.04195222 | | +0.40958758 |
| $P$ | 4.52 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 02 | 691 | 0.8− | 0.2+ | 2001 08 24 | 691 | 0.1+ | 0.2− | 2006 09 30 | 691 | 0.1+ | 0.0 |
| 1997 10 02 | 691 | 0.1+ | 0.0 | 2001 08 24 | 691 | 0.1+ | 0.1+ | 2006 10 27 | 691 | 0.0 | 0.0 |
| 1997 10 02 | 691 | 0.4− | 0.0 | 2006 09 19 | 691 | 0.2− | 0.6+ | 2006 10 27 | 691 | 0.0 | 0.2+ |
| 1997 10 06 | 691 | 0.4+ | 0.0 | 2006 09 19 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.3− |
| 1997 10 06 | 691 | 0.3+ | 0.6− | 2006 09 19 | 691 | 0.1− | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.2− |
| 1997 10 06 | 691 | 0.7+ | 0.3− | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2001 08 24 | 691 | 0.1− | 0.1− | 2006 09 30 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.0 |

**2006 UU$_{263}$ = 2004 AX$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 233.60096 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27094657 | $\omega$ | 230.76868 | | −0.87304923 | | −0.48661559 |
| $a$ | 2.3652676 | $\Omega$ | 280.09208 | | +0.45666525 | | −0.79327125 |
| $e$ | 0.0826720 | $i$ | 1.83171 | | +0.17100261 | | −0.36595901 |
| $P$ | 3.64 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 13 | 691 | 0.1+ | 0.2+ | 2004 01 31 | 691 | 1.3− | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1− |
| 2004 01 13 | 691 | 0.1− | 0.4+ | 2004 01 31 | 691 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.0 | 0.4− |
| 2004 01 13 | 691 | 0.1+ | 0.4+ | 2006 09 19 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2004 01 22 | 704 | 0.9+ | 0.3− | 2006 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.5− |
| 2004 01 22 | 704 | 0.5+ | 1.2− | 2006 09 19 | 691 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.3− | 0.0 |
| 2004 01 22 | 704 | 0.3+ | 0.2− | 2006 10 15 | 691 | 0.4− | 0.5+ | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2004 01 22 | 704 | 1.3+ | 0.2− | 2006 10 15 | 691 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.1− |
| 2004 01 22 | 704 | 0.6+ | 0.1− | 2006 10 15 | 691 | 0.2− | 0.6+ | 2006 11 17 | G96 | 0.5+ | 0.2− |
| 2004 01 31 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.2− | 2006 11 17 | G96 | 0.1+ | 0.9− |

**2006 UZ$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.28241 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21031449 | $\omega$ | 148.89634 | | +0.99283653 | | −0.06374549 |
| $a$ | 2.8004206 | $\Omega$ | 215.19747 | | +0.03547131 | | +0.96491104 |
| $e$ | 0.1120992 | $i$ | 10.09741 | | +0.11409385 | | +0.25472179 |
| $P$ | 4.69 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 09 | 699 | 0.2+ | 0.9− | 2006 09 28 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ |
| 2001 09 09 | 699 | 0.1− | 0.4− | 2006 09 28 | 691 | 0.3− | 0.1+ | 2006 10 31 | 691 | 0.6− | 0.3− |
| 2001 09 09 | 699 | 0.1− | 0.0 | 2006 10 19 | 683 | 1.2+ | 0.6− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2001 09 09 | 699 | 0.1+ | 0.9+ | 2006 10 19 | 683 | 0.5− | 0.4+ | 2006 11 13 | 691 | 0.4+ | 0.0 |
| 2006 09 20 | 699 | 1.1+ | 0.0 | 2006 10 19 | 683 | 1.2+ | 0.2+ | 2006 11 13 | 691 | 0.4+ | 0.3− |
| 2006 09 20 | 699 | 0.5+ | 0.7− | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.6− | 0.2− |
| 2006 09 20 | 699 | 0.3+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2006 09 20 | 699 | 0.7+ | 0.6+ | 2006 10 27 | 691 | 0.5− | 0.1+ | 2006 11 22 | G96 | 0.5− | 0.2− |
| 2006 09 28 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− |

**2006 UB$_{264}$ = 2004 HF$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 271.78411 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22154468 | $\omega$ | 239.10995 | | −0.48440046 | | −0.87344135 |
| $a$ | 2.7049661 | $\Omega$ | 239.94310 | | +0.82093534 | | −0.43424016 |
| $e$ | 0.1062038 | $i$ | 3.28268 | | +0.30235965 | | −0.22030815 |
| $P$ | 4.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2001 09 19 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.7+ | 0.3+ | 2006 11 17 | G96 | 0.5− | 0.1− |
| 2004 04 19 | 691 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2004 04 19 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 17 | G96 | 0.1− | 0.1+ |
| 2004 04 19 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.7− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2+ |
| 2004 04 25 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.4− | 0.2+ |
| 2004 04 25 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2004 04 25 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1− |

**2006 UM$_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 62.85161 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26757384 | $\omega$ | 315.49561 | | +0.39025275 | | +0.92058283 |
| $a$ | 2.3851019 | $\Omega$ | 337.46152 | | −0.83331613 | | +0.34615761 |
| $e$ | 0.1706374 | $i$ | 2.26781 | | −0.39151887 | | +0.18083740 |
| $P$ | 3.68 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 29 | 644 | 0.4− | 0.3+ | 2005 05 12 | G96 | 0.1− | 0.1+ | 2006 10 27 | 691 | 0.3− | 0.3− |
| 2002 08 29 | 644 | 0.2− | 0.6+ | 2006 09 30 | 691 | 0.2+ | 0.4+ | 2006 10 31 | 691 | 0.2− | 0.5− |
| 2002 08 29 | 644 | 0.2− | 0.1+ | 2006 09 30 | 691 | 0.2+ | 0.5+ | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2002 10 10 | 291 | 0.1− | 0.2+ | 2006 09 30 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ |
| 2002 10 10 | 291 | 0.0 | 0.5− | 2006 10 15 | 691 | 0.2− | 0.2− | 2006 11 18 | 291 | 0.1+ | 0.4+ |
| 2002 10 10 | 291 | 0.4+ | 0.3− | 2006 10 15 | 691 | 0.4+ | 0.0 | 2006 11 18 | 291 | 0.1− | 0.1+ |
| 2005 05 12 | G96 | 0.3− | 0.2− | 2006 10 15 | 691 | 0.1− | 0.0 | 2006 11 18 | 291 | 0.1+ | 0.1+ |
| 2005 05 12 | G96 | 0.1− | 0.3− | 2006 10 27 | 691 | 0.2− | 0.3− | | | | |
| 2005 05 12 | G96 | 0.4+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.1− | | | | |

**2006 UN$_{264}$ = 2004 GZ$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 78.23057 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17736772 | $\omega$ | 77.72514 | | +0.40973396 | | +0.90772304 |
| $a$ | 3.1372779 | $\Omega$ | 216.88313 | | −0.88447650 | | +0.37110132 |
| $e$ | 0.0748160 | $i$ | 8.65476 | | −0.22320261 | | +0.19576185 |
| $P$ | 5.56 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 12 | 691 | 0.0 | 0.3+ | 2006 10 17 | 703 | 0.7− | 0.7+ | 2006 10 31 | 691 | 0.2− | 0.0 |
| 2004 04 12 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.0 | 0.9+ | 2006 11 10 | 691 | 0.2+ | 0.3− |
| 2004 04 12 | 691 | 0.3+ | 0.1− | 2006 10 17 | 703 | 0.7− | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.1− |
| 2004 04 19 | 691 | 0.1− | 0.3+ | 2006 10 17 | 703 | 0.2+ | 0.5− | 2006 11 10 | 691 | 0.2− | 0.1+ |
| 2004 04 19 | 691 | 0.0 | 0.3+ | 2006 10 27 | 691 | 0.2+ | 0.5+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2004 04 19 | 691 | 0.0 | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2004 05 28 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.3+ |
| 2004 05 28 | 691 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.0 | | | | |
| 2004 05 28 | 691 | 0.0 | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.6− | | | | |

**2006 UP$_{264}$ = 1996 TK$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.01615 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29344102 | $\omega$ | 23.96969 | | +0.45285154 | | −0.89067285 |
| $a$ | 2.2427911 | $\Omega$ | 39.13721 | | +0.80733894 | | +0.39044209 |
| $e$ | 0.1425970 | $i$ | 3.66444 | | +0.37832436 | | +0.23293099 |
| $P$ | 3.36 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 08 | 691 | 0.2− | 0.5− | 2003 12 28 | 691 | 0.1+ | 0.3+ | 2006 10 21 | 703 | 0.7− | 0.7− |
| 1996 10 08 | 691 | 0.2+ | 0.2− | 2003 12 28 | 691 | 0.0 | 0.2+ | 2006 10 21 | 703 | 1.9+ | 2.7− |
| 1996 10 08 | 691 | 0.3− | 0.3− | 2006 09 23 | 691 | 1.5− | 0.7+ | 2006 10 21 | 703 | 1.6+ | 0.4− |
| 1996 10 12 | 691 | 0.1− | 0.3− | 2006 09 23 | 691 | 1.3− | 0.4+ | 2006 10 27 | 691 | 0.3+ | 0.3− |
| 1996 10 12 | 691 | 0.1− | 0.1+ | 2006 09 23 | 691 | 1.3− | 0.4+ | 2006 10 27 | 691 | 0.5+ | 0.1+ |
| 1996 10 12 | 691 | 0.1+ | 0.2− | 2006 10 01 | 691 | 0.6+ | 0.2+ | 2006 10 27 | 691 | 0.3+ | 0.2+ |
| 1996 10 18 | 691 | 0.3+ | 0.4− | 2006 10 01 | 691 | 0.3+ | 0.4+ | 2006 10 31 | 691 | 0.3− | 0.1+ |
| 1996 10 18 | 691 | 0.4+ | 0.4− | 2006 10 01 | 691 | 0.1+ | 0.5+ | 2006 10 31 | 691 | 0.1+ | 0.2+ |
| 1996 10 18 | 691 | 0.3+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.4− | 2006 10 31 | 691 | 0.0 | 0.2− |
| 2003 12 18 | 691 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.3− | 0.0 |
| 2003 12 18 | 691 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2003 12 18 | 691 | 0.1+ | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.5+ | 0.0 |
| 2003 12 28 | 691 | 0.4− | 0.0 | 2006 10 21 | 703 | 0.7+ | 1.4+ | | | | |

**2006 UY$_{264}$ = 2001 YS$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.21673 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17775389 | $\omega$ | 69.80277 | | −0.03348321 | | −0.99941125 |
| $a$ | 3.1327325 | $\Omega$ | 22.12003 | | +0.90938681 | | −0.03357229 |
| $e$ | 0.0976264 | $i$ | 1.13903 | | +0.41460162 | | −0.00707497 |
| $P$ | 5.54 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 03 | 691 | 0.2− | 0.2− | 2003 02 01 | 291 | 0.2+ | 0.9+ | 2006 10 27 | 691 | 0.2+ | 0.3− |
| 1995 10 03 | 691 | 0.3+ | 0.3− | 2003 02 01 | 291 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.2− | 0.1− |
| 1995 10 03 | 691 | 0.2+ | 0.3− | 2003 02 01 | 291 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2− | 0.3+ | 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.3− |
| 2001 12 18 | 704 | 0.8+ | 1.0− | 2006 09 19 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.5− |
| 2001 12 18 | 704 | (2.2− | 1.0−) | 2006 09 19 | 691 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.3− | 0.3+ |
| 2001 12 18 | 704 | 0.6− | 0.7− | 2006 10 02 | 691 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2001 12 18 | 704 | (0.0 | 1.9−) | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.3+ | 0.5+ |
| 2001 12 19 | 704 | 0.2− | 0.5− | 2006 10 02 | 691 | 0.4+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.9+ |
| 2001 12 19 | 704 | 0.2− | 0.4− | 2006 10 27 | 691 | 1.1− | 0.4− | 2006 11 11 | 691 | 0.3− | 1.3+ |
| 2001 12 19 | 704 | 0.7+ | 0.3− | 2006 10 27 | 691 | 0.5− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.5− |

### 2006 UH$_{265}$ = 2004 BC$_{94}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.89273 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27441442 | $\omega$ | 178.53727 | | −0.02875592 | | −0.99360866 |
| $a$ | 2.3452984 | $\Omega$ | 273.10180 | | +0.91598909 | | +0.01752362 |
| $e$ | 0.0681794 | $i$ | 6.27587 | | +0.40017132 | | −0.11151119 |
| $P$ | 3.59 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.3+ | 1.0+ | 2006 11 14 | 703 | 0.1− | 0.9− |
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 10 12 | 644 | 0.2+ | 0.5+ | 2006 11 14 | 703 | 0.4+ | 0.8+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.7+ | 0.2− |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.8− | 0.8+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2004 01 28 | 608 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.1+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2004 01 28 | 608 | 0.4− | 0.2+ | 2006 10 27 | 703 | 0.2+ | 0.7− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2004 01 28 | 608 | 0.0 | 1.0− | 2006 11 01 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2004 01 29 | 704 | 1.2− | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.0 | 2006 11 23 | 703 | 0.6− | 0.2+ |
| 2004 01 29 | 704 | 0.7+ | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.0 | 2006 11 23 | 703 | 0.5+ | 0.1− |
| 2004 01 29 | 704 | 0.9+ | 0.6+ | 2006 11 01 | G96 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 1.0− | 0.5− |
| 2006 10 12 | 644 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 1.5− | 0.7− | 2006 11 23 | 703 | 1.2+ | 0.3− |

### 2006 UJ$_{265}$ = 2002 EX$_{9}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.95998 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31415017 | $\omega$ | 75.62712 | | +0.08310990 | | +0.99609632 |
| $a$ | 2.1431103 | $\Omega$ | 199.21526 | | −0.94559943 | | +0.06940477 |
| $e$ | 0.2232597 | $i$ | 5.18566 | | −0.31453850 | | +0.05454452 |
| $P$ | 3.14 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 691 | (4.3+ | 0.4−) | 2002 03 13 | 644 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.2− |
| 1999 03 21 | 691 | 1.7− | 0.6+ | 2002 03 13 | 644 | 0.3+ | 0.1− | 2006 10 27 | G96 | 0.3− | 0.4− |
| 1999 03 21 | 691 | 2.2− | 1.0+ | 2002 03 15 | 704 | 0.2− | 0.6− | 2006 10 27 | G96 | 0.6− | 0.0 |
| 2002 03 11 | 644 | 0.3+ | 0.0 | 2002 03 15 | 704 | 0.4+ | 1.0− | 2006 10 27 | G96 | 0.6− | 0.5− |
| 2002 03 11 | 644 | 0.1+ | 0.2+ | 2002 03 15 | 704 | 0.3− | 0.5− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2002 03 11 | 644 | 0.3+ | 0.3− | 2003 10 23 | 695 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 1.1+ |
| 2002 03 13 | 704 | 0.4− | 0.8+ | 2003 10 23 | 695 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 2002 03 13 | 704 | 1.1− | 0.0 | 2006 09 25 | G96 | 0.5+ | 0.4− | 2006 11 14 | G96 | 0.6+ | 0.1− |
| 2002 03 13 | 704 | 0.2− | 0.8− | 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 11 14 | G96 | 0.5− | 0.1− |
| 2002 03 13 | 704 | 0.5− | 1.0− | 2006 09 25 | G96 | 0.2+ | 0.1+ | 2006 11 14 | G96 | 0.4+ | 0.7− |
| 2002 03 13 | 644 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.2− | 0.4− |

### 2006 UM$_{265}$ = 2001 QP$_{285}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 91.13545 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21871434 | $\omega$ | 244.74727 | | +0.21427546 | | +0.96605276 |
| $a$ | 2.7282523 | $\Omega$ | 38.52658 | | −0.79194862 | | +0.25830980 |
| $e$ | 0.0977096 | $i$ | 13.39705 | | −0.57175468 | | +0.00425587 |
| $P$ | 4.51 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 608 | 0.1− | 0.3− | 2006 10 02 | G96 | 0.4+ | 0.5− | 2006 11 01 | 691 | 0.1+ | 0.3+ |
| 2001 08 23 | 608 | 0.6− | 0.3− | 2006 10 11 | 691 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 2001 08 23 | 608 | 0.4− | 0.5+ | 2006 10 11 | 691 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 2001 08 26 | 644 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.4− | 0.1+ |
| 2001 08 26 | 644 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.4+ | 0.4− | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2001 08 26 | 644 | 0.4+ | 0.0 | 2006 10 27 | G96 | 0.3+ | 0.6− | 2006 11 17 | 691 | 0.5+ | 0.0 |
| 2006 10 02 | G96 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.2+ | 0.6− | 2006 11 17 | 691 | 0.1− | 0.0 |
| 2006 10 02 | G96 | 0.1+ | 0.6− | 2006 11 01 | 691 | 0.2− | 0.2+ | | | | |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.2+ | | | | |

### 2006 US$_{265}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.73292 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25712031 | $\omega$ | 164.74934 | | +0.19559487 | | −0.97652001 |
| $a$ | 2.4493177 | $\Omega$ | 273.90827 | | +0.89002690 | | +0.21541949 |
| $e$ | 0.0927315 | $i$ | 5.19209 | | +0.41181886 | | −0.00176496 |
| $P$ | 3.83 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.2+ | 0.1− | 2006 10 19 | 703 | 0.5+ | 1.2+ | 2006 11 01 | G96 | 0.3+ | 0.2+ |
| 2002 10 04 | 644 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.4− | 1.0− | 2006 11 01 | G96 | 0.3+ | 0.4− |
| 2002 10 04 | 644 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.9+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.2− |
| 2004 03 18 | 291 | 0.3+ | 0.0 | 2006 10 27 | 703 | (0.1− | 1.6−) | 2006 11 01 | G96 | 0.2− | 0.3− |
| 2004 03 18 | 291 | 0.0 | 0.3+ | 2006 10 27 | 703 | 0.4− | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.3− |
| 2004 03 18 | 291 | 0.7+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.0 | 2006 11 10 | 291 | 0.3− | 0.0 |
| 2004 03 27 | 691 | 0.4− | 0.3− | 2006 11 01 | G96 | 0.4+ | 0.1+ | 2006 11 10 | 291 | 0.1− | 0.0 |
| 2004 03 27 | 691 | 0.4− | 0.0 | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 10 | 291 | 0.1− | 0.1+ |
| 2004 03 27 | 691 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2006 10 19 | 703 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2006 10 19 | 703 | 1.1+ | 0.9+ | 2006 11 01 | G96 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.4− | 0.1− |
| 2006 10 19 | 703 | 0.7− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.2− | 0.5− |

### 2006 UT$_{265}$ = 2005 LE$_{48}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.92425 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18997620 | $\omega$ | 342.79236 | | +0.67666093 | | +0.73488480 |
| $a$ | 2.9968839 | $\Omega$ | 329.74344 | | −0.66445491 | | +0.58282019 |
| $e$ | 0.2149067 | $i$ | 5.18600 | | −0.31722178 | | +0.34679238 |
| $P$ | 5.19 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 16 | 704 | (0.5− | 2.1+) |
| 1993 01 29 | 691 | 0.2− | 0.4+ | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.8− | 0.3− |
| 1993 01 29 | 691 | 0.1− | 0.2− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.6− | 0.5− |
| 2003 01 29 | 645 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 16 | 704 | (0.1− | 1.6+) |
| 2003 01 29 | 645 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.7− | 0.4− | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2004 03 15 | 691 | 0.5+ | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.5+ | 2006 11 19 | 704 | 0.8− | 0.9+ |
| 2004 03 15 | 703 | 0.6− | 0.0 | 2006 10 19 | 703 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2004 03 15 | 703 | (1.3+ | 2.1+) | 2006 10 19 | 703 | 0.2− | 0.2− | 2006 11 19 | 704 | 1.3+ | 0.3+ |
| 2004 03 15 | 691 | 0.1+ | 0.4+ | 2006 10 27 | 703 | 1.1− | 1.0+ | 2006 11 19 | 704 | 0.6+ | 0.2+ |
| 2004 03 15 | 703 | 0.8− | 0.1− | 2006 10 27 | 703 | 0.6− | 0.4+ | 2006 11 22 | 704 | 0.5− | 0.0 |
| 2004 03 15 | 703 | 0.1− | 1.0+ | 2006 10 27 | 703 | 0.5+ | 1.4+ | 2006 11 22 | 704 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.2+ | 0.4+ | 2006 10 27 | 703 | 0.9− | 0.1− | 2006 11 22 | 704 | 0.4+ | 0.4+ |
| 2004 04 24 | 691 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 1.0+ |
| 2004 04 24 | 691 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2004 04 24 | 691 | 0.0 | 0.2+ | 2006 11 01 | G96 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.9+ | 1.2+ |
| 2005 06 10 | 428 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2005 06 10 | 428 | 0.3+ | 0.4+ | 2006 11 14 | 703 | (6.3+ | 1.7+) | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2005 06 17 | 428 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.3+ | 0.4+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2005 06 17 | 428 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.1− | 0.8+ | 2006 11 23 | G96 | 0.1+ | 0.1− |
| 2005 06 17 | 428 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 0.0 | 0.1+ | | | | |

### 2006 UU$_{265}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.58810 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28160872 | $\omega$ | 304.00839 | | +0.63770748 | | +0.77019606 |
| $a$ | 2.3051825 | $\Omega$ | 5.65265 | | −0.66357667 | | +0.55674564 |
| $e$ | 0.2034889 | $i$ | 6.57467 | | −0.39114597 | | +0.31117891 |
| $P$ | 3.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 12 | 691 | 0.3+ | 0.1− | 2006 10 13 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 2005 03 12 | 691 | 0.2+ | 0.1− | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2005 03 12 | 691 | 0.2+ | 0.2+ | 2006 10 13 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | (0.4+ | 2.2−) |
| 2005 04 05 | G96 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 14 | 703 | 0.9+ | 0.3+ |
| 2005 04 05 | G96 | 0.5− | 0.1− | 2006 10 21 | 691 | 0.4− | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.9+ |
| 2005 04 05 | G96 | 0.5− | 0.0 | 2006 10 21 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | (0.8+ | 1.9−) |
| 2005 04 05 | G96 | 0.6− | 0.2− | 2006 10 27 | 703 | 0.6− | 0.5− | 2006 11 23 | G96 | 0.1− | 0.3− |
| 2005 05 14 | G96 | 0.1− | 0.4+ | 2006 10 27 | 703 | 1.1+ | 0.6− | 2006 11 23 | G96 | 0.3+ | 0.2− |
| 2005 05 14 | G96 | 0.3− | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.4− | 2006 11 23 | G96 | 0.2− | 0.4− |
| 2005 05 14 | G96 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.4+ | 0.5− | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.0 | | | | |

**2006 UV$_{265}$ = 2000 QG$_{229}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.21090 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17835208 | $\omega$ | 66.40031 | | +0.98375842 | | −0.17167228 |
| $a$ | 3.1257238 | $\Omega$ | 303.44638 | | +0.13308509 | | +0.89356185 |
| $e$ | 0.1548766 | $i$ | 3.60198 | | +0.12044804 | | +0.41482026 |
| $P$ | 5.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 18 | 691 | 0.0 | 0.1+ | 2006 10 27 | 703 | 0.2− | 0.1+ | 2006 11 18 | G96 | 0.4+ | 0.4− |
| 1995 11 18 | 691 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2000 08 31 | 704 | 0.7+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2000 08 31 | 704 | 0.7+ | 0.4+ | 2006 10 31 | 691 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 2000 08 31 | 704 | 0.7+ | 0.2− | 2006 11 09 | 644 | 0.2− | 0.4+ | 2006 11 19 | 291 | 0.2+ | 0.2+ |
| 2000 08 31 | 704 | 0.2− | 0.0 | 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 19 | 291 | 0.2+ | 0.1+ |
| 2000 09 02 | 699 | 0.3− | 1.2− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 19 | 291 | 0.2+ | 0.0 |
| 2000 09 02 | 699 | 1.0− | 0.2+ | 2006 11 16 | 408 | 0.8+ | 0.8+ | 2006 11 19 | 704 | 0.5− | 0.6+ |
| 2000 09 02 | 699 | (2.1− | 2.5+) | 2006 11 16 | 408 | 0.9+ | 0.7+ | 2006 11 19 | 704 | 0.3+ | 1.0− |
| 2000 09 02 | 699 | 0.7− | 1.0+ | 2006 11 17 | G96 | 0.4+ | 0.2− | 2006 11 19 | 704 | 1.0− | 0.7+ |
| 2006 10 02 | G96 | 0.7+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2006 10 02 | G96 | 0.7+ | 0.3− | 2006 11 17 | G96 | 0.1− | 0.3− | 2006 11 22 | 704 | 0.2− | 0.3− |
| 2006 10 02 | G96 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.3+ | 0.2− | 2006 11 22 | 704 | (0.6− | 2.0−) |
| 2006 10 02 | G96 | 1.0+ | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2006 10 17 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.2− |
| 2006 10 17 | 691 | 0.6− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.3− | 2006 11 24 | 408 | 1.3+ | 0.5+ |
| 2006 10 17 | 691 | 0.4− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− | 2006 11 24 | 408 | (1.6+ | 0.4+) |
| 2006 10 27 | 703 | 0.6− | 0.2− | 2006 11 18 | 291 | 0.3− | 0.0 | 2006 11 25 | 408 | (0.3+ | 3.1−) |
| 2006 10 27 | 703 | 0.0 | 0.8− | 2006 11 18 | 291 | 0.1+ | 0.1+ | 2006 11 25 | 408 | (0.8+ | 3.8−) |
| 2006 10 27 | 703 | 0.2+ | 0.5− | 2006 11 18 | 291 | 0.1− | 0.0 | | | | |

**2006 UB$_{266}$ = 2002 YC**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.71363 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22510931 | $\omega$ | 263.58105 | | −0.74731238 | | −0.55728410 |
| $a$ | 2.6763346 | $\Omega$ | 241.94994 | | +0.64364231 | | −0.74240847 |
| $e$ | 0.4241839 | $i$ | 24.20782 | | −0.16507207 | | −0.37183880 |
| $P$ | 4.38 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 19 | 608 | 0.4+ | 0.6+ | 2006 11 02 | 703 | 0.0 | 0.2+ | 2006 11 15 | A89 | 0.1− | 0.1+ |
| 2002 12 19 | 608 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 15 | A89 | 0.2− | 1.2− |
| 2002 12 19 | 608 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.4+ | 0.1+ |
| 2002 12 21 | 608 | 0.5− | 0.5− | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.0 | 0.2− |
| 2002 12 21 | 608 | 0.0 | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2002 12 21 | 608 | 0.3− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.3− |
| 2003 01 11 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.4+ | 2006 11 16 | 704 | 0.1+ | 0.1+ |
| 2003 01 11 | 644 | 0.4+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 22 | 704 | 1.4− | 0.1+ |
| 2003 01 11 | 644 | 0.1+ | 0.2+ | 2006 11 14 | 644 | 0.1+ | 0.4+ | 2006 11 22 | 704 | 0.2+ | 1.2+ |
| 2006 10 20 | 704 | 0.1− | 0.5+ | 2006 11 14 | 644 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2006 10 20 | 704 | (1.6− | 0.0 ) | 2006 11 14 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.5+ |
| 2006 10 20 | 704 | 0.5+ | 0.5+ | 2006 11 14 | 703 | 1.0+ | 0.0 | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2006 10 20 | 704 | (1.8+ | 0.2+) | 2006 11 14 | 703 | 0.2+ | 0.2− | 2006 11 22 | 703 | 0.0 | 0.1− |
| 2006 10 27 | 703 | (1.6+ | 0.1−) | 2006 11 14 | 703 | 0.3+ | 0.3− | 2006 11 22 | 703 | 0.1− | 0.4− |
| 2006 10 27 | 703 | 0.1− | 0.3− | 2006 11 14 | 703 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.7− | 0.2− |
| 2006 10 27 | 703 | 0.1+ | 0.6+ | 2006 11 14 | 703 | 0.4+ | 0.9− | 2006 11 22 | 703 | 0.2− | 0.3− |
| 2006 10 27 | 703 | 0.8+ | 0.0 | 2006 11 14 | 703 | 0.6− | 0.1+ | 2006 12 01 | 704 | 0.7+ | 0.1+ |
| 2006 11 02 | 703 | 0.6− | 0.2− | 2006 11 14 | 703 | 0.3− | 0.5+ | 2006 12 01 | 704 | 0.4+ | 0.1+ |
| 2006 11 02 | 703 | 0.3− | 0.4− | 2006 11 14 | 703 | 0.2+ | 0.3− | 2006 12 01 | 704 | 0.0 | 0.2+ |
| 2006 11 02 | 703 | 0.3− | 0.3− | 2006 11 15 | A89 | 0.5− | 0.9− | 2006 12 01 | 704 | 0.2− | 0.1− |

**2006 UC$_{266}$ = 1997 TD$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.65504 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22441086 | $\omega$ | 88.13367 | | +0.93312981 | | +0.34924247 |
| $a$ | 2.6818849 | $\Omega$ | 251.41766 | | −0.35518218 | | +0.85853858 |
| $e$ | 0.0276824 | $i$ | 5.17107 | | −0.05580650 | | +0.37542137 |
| $P$ | 4.39 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 691 | 0.2− | 0.2− | 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 1997 10 03 | 691 | 0.6− | 0.3+ | 2006 10 13 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 1997 10 03 | 691 | 0.0 | 0.4+ | 2006 10 27 | 703 | (2.0− | 0.8+) | 2006 11 17 | G96 | 0.0 | 0.0 |
| 1997 10 05 | 691 | 0.4+ | 0.2− | 2006 10 27 | 703 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 1997 10 05 | 691 | 0.0 | 0.2− | 2006 10 27 | 703 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.0 | 0.1− |
| 1997 10 05 | 691 | 0.4+ | 0.1− | 2006 10 27 | 703 | 1.0− | 0.2− | 2006 11 18 | G96 | 0.2+ | 0.0 |
| 2006 10 02 | G96 | 0.2+ | 0.4− | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2006 10 02 | G96 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | (1.6+ | 0.8+) |
| 2006 10 02 | G96 | 0.3− | 0.1− | 2006 11 01 | G96 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.8+ |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.0 | | | | |

**2006 UJ$_{266}$ = 2004 GH$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.08922 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17439031 | $\omega$ | 253.62612 | | +0.46934513 | | +0.86847390 |
| $a$ | 3.1728861 | $\Omega$ | 45.49749 | | −0.70044650 | | +0.47622189 |
| $e$ | 0.1355169 | $i$ | 12.92978 | | −0.53767076 | | +0.13771633 |
| $P$ | 5.65 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 691 | 0.2− | 0.1+ | 2006 09 30 | G96 | 0.1+ | 0.5− | 2006 10 31 | 691 | 0.2+ | 0.1− |
| 2004 04 14 | 691 | 0.2+ | 0.1− | 2006 10 15 | 691 | 0.3+ | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.0 |
| 2004 04 14 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.1− | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.3− |
| 2004 04 23 | 691 | 0.0 | 0.1+ | 2006 10 15 | 691 | 0.0 | 0.4+ | 2006 11 13 | G96 | 0.5+ | 0.3− |
| 2004 04 23 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.2− | 2006 11 13 | G96 | 0.3− | 0.3− |
| 2004 04 23 | 691 | 0.2+ | 0.0 | 2006 10 27 | 691 | 0.7− | 0.3− | 2006 11 21 | G96 | (2.8+ | 1.9+) |
| 2006 09 30 | G96 | 0.1+ | 0.6− | 2006 10 27 | 691 | 0.3− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2006 09 30 | G96 | 0.3− | 0.3− | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.3− | 0.1+ |
| 2006 09 30 | G96 | 0.2− | 0.4− | 2006 10 31 | 691 | 0.2+ | 0.3+ | 2006 11 21 | G96 | 0.0 | 0.1− |

**2006 UL$_{266}$ = 1998 SB$_{173}$ = 2006 UL$_{326}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.54334 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25415990 | $\omega$ | 229.32502 | | +0.76177177 | | −0.64783600 |
| $a$ | 2.4683005 | $\Omega$ | 171.05169 | | +0.60097681 | | +0.70463064 |
| $e$ | 0.1388282 | $i$ | 1.29100 | | +0.24193107 | | +0.28948951 |
| $P$ | 3.88 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.0 | 0.1+ | 2006 10 31 | 691 | 0.2− | 0.3+ |
| 1998 09 19 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.4− |
| 1998 09 25 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.7+ | 0.4− |
| 1998 09 25 | 645 | 0.0 | 0.1− | 2006 10 27 | 691 | 0.1− | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2006 10 15 | 691 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.3+ | 0.5+ | 2006 11 13 | G96 | 0.1+ | 0.7− |
| 2006 10 15 | 691 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.5− | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.5− |
| 2006 10 15 | 691 | 0.5+ | 0.6+ | 2006 10 31 | 691 | 0.1+ | 0.5− | | | | |

**2006 UP$_{266}$ = 2004 JQ$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 167.07805 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19904140 | $\omega$ | 154.52021 | | −0.70547240 | | +0.70710502 |
| $a$ | 2.9051848 | $\Omega$ | 70.56940 | | −0.65866592 | | −0.62907827 |
| $e$ | 0.0160456 | $i$ | 2.92211 | | −0.26166371 | | −0.32289784 |
| $P$ | 4.95 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 31 | 691 | 0.1− | 0.2− | 2004 05 14 | 691 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.4− | 0.1+ |
| 1997 12 31 | 691 | 0.1+ | 0.2+ | 2004 05 14 | 691 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.9+ |
| 1997 12 31 | 691 | 0.2+ | 0.2+ | 2004 05 14 | 691 | 0.5+ | 0.7+ | 2006 10 27 | 691 | 0.1+ | 0.8+ |
| 2001 10 23 | 691 | 0.3− | 0.2− | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 10 27 | 691 | 0.0 | 0.4+ |
| 2001 10 23 | 691 | 0.1+ | 0.4+ | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 10 23 | 691 | 0.1− | 0.3+ | 2006 09 30 | G96 | 0.3+ | 0.0 | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2004 04 24 | 691 | 0.2+ | 0.2+ | 2006 09 30 | G96 | 0.2− | 0.3− | 2006 10 31 | 691 | 0.2− | 0.4− |
| 2004 04 24 | 691 | 0.2+ | 0.5+ | 2006 10 11 | 691 | 0.1− | 0.5+ | 2006 11 15 | G96 | 0.0 | 0.0 |
| 2004 04 24 | 691 | 0.1− | 0.5+ | 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 15 | G96 | 0.3+ | 0.1+ |
| 2004 05 10 | 291 | 0.3+ | 0.9+ | 2006 10 11 | 691 | 0.9− | 0.5+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2004 05 10 | 291 | 0.4+ | 0.5+ | 2006 10 19 | 691 | 0.2− | 0.5+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2004 05 10 | 291 | 0.3+ | 0.9+ | 2006 10 19 | 691 | 0.3− | 0.6+ | | | | |

**2006 UR$_{266}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 146.31029 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21698809 | $\omega$ | 183.79893 | | −0.45574129 | | +0.88646089 |
| $a$ | 2.7427030 | $\Omega$ | 59.10458 | | −0.81416846 | | −0.37857577 |
| $e$ | 0.0597004 | $i$ | 5.38570 | | −0.35976325 | | −0.26620945 |
| $P$ | 4.54 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 02 | 691 | 0.5+ | 0.1+ | 2006 09 30 | G96 | 0.6+ | 0.3− | 2006 10 27 | 691 | 0.9− | 0.3+ |
| 1995 04 02 | 691 | 0.1− | 0.2+ | 2006 09 30 | G96 | 0.6+ | 0.3− | 2006 10 27 | 691 | 0.2+ | 0.4− |
| 1995 04 02 | 691 | 0.3− | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 1995 04 06 | 691 | 0.1− | 0.1− | 2006 10 15 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1+ | 0.0 |
| 1995 04 06 | 691 | 0.1− | 0.4+ | 2006 10 15 | 691 | 0.4− | 0.6− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 1995 04 06 | 691 | 0.1− | 0.0 | 2006 10 15 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.4+ | 0.0 |
| 1995 04 23 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.5+ | 0.2− | 2006 11 15 | G96 | 0.7+ | 0.2− |
| 1995 04 23 | 691 | 0.0 | 0.8− | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.3+ | 0.1− |
| 1995 04 23 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.1− |
| 2006 09 30 | G96 | 0.6+ | 0.1− | 2006 10 27 | 691 | 0.4− | 0.2+ | | | | |

**2006 UW$_{266}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.76851 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27877564 | $\omega$ | 78.31183 | | +0.82489310 | | −0.55956298 |
| $a$ | 2.3207739 | $\Omega$ | 315.64905 | | +0.46356279 | | +0.75084721 |
| $e$ | 0.1049025 | $i$ | 6.59229 | | +0.32351338 | | +0.35088136 |
| $P$ | 3.54 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 31 | 691 | 0.1+ | 0.0 | 2004 02 29 | 691 | 0.3− | 0.4− | 2006 10 27 | 703 | 0.1− | 0.3− |
| 2004 01 31 | 691 | 0.2− | 0.1− | 2004 02 29 | 691 | 0.6+ | 0.3+ | 2006 11 02 | G96 | 0.1+ | 0.2− |
| 2004 01 31 | 691 | 0.1+ | 0.0 | 2004 02 29 | 691 | 0.1+ | 0.0 | 2006 11 02 | G96 | 0.3+ | 0.0 |
| 2004 02 11 | 691 | 0.4− | 0.1+ | 2006 10 27 | 703 | 0.1+ | 0.3− | 2006 11 02 | G96 | 0.4+ | 0.1+ |
| 2004 02 11 | 691 | 0.1− | 0.1− | 2006 10 27 | 703 | 0.5− | 0.5+ | 2006 11 02 | G96 | 0.1− | 0.2− |
| 2004 02 11 | 691 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.4+ | | | | |

**2006 UX$_{266}$ = 2004 BN$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.68019 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29961665 | $\omega$ | 68.57240 | | +0.93102931 | | −0.35791322 |
| $a$ | 2.2118657 | $\Omega$ | 312.32249 | | +0.28884101 | | +0.84208150 |
| $e$ | 0.1740082 | $i$ | 5.53323 | | +0.22305893 | | +0.40348095 |
| $P$ | 3.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 17 | 691 | 0.3− | 0.4− | 2004 01 31 | 691 | 0.2− | 0.2− | 2006 11 02 | G96 | 0.4+ | 0.3− |
| 2003 12 17 | 691 | 0.1− | 0.0 | 2004 01 31 | 691 | 0.0 | 0.2− | 2006 11 02 | G96 | 0.4+ | 0.2− |
| 2003 12 17 | 691 | 0.2− | 0.1− | 2006 09 18 | 703 | 0.5− | 0.6+ | 2006 11 15 | 703 | 0.1− | 0.3− |
| 2004 01 21 | 704 | 1.4+ | 1.0+ | 2006 09 18 | 703 | (0.4+ | 2.2+) | 2006 11 15 | 703 | 0.0 | 0.9+ |
| 2004 01 21 | 704 | (3.1+ | 2.6+) | 2006 09 18 | 703 | 0.0 | 0.6+ | 2006 11 15 | 703 | 0.2+ | 0.1− |
| 2004 01 21 | 704 | 0.6+ | 1.0− | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.2− |
| 2004 01 21 | 704 | 0.8+ | 0.7+ | 2006 10 19 | 703 | 0.5− | 0.5− | 2006 11 15 | 704 | (2.4+ | 1.1+) |
| 2004 01 22 | 704 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.8− | 0.7− | 2006 11 15 | 704 | (3.3+ | 0.6+) |
| 2004 01 22 | 704 | 0.7+ | 0.7+ | 2006 10 19 | 703 | 0.1− | 0.4+ | 2006 11 15 | 704 | 0.9+ | 1.2− |
| 2004 01 22 | 704 | 0.2− | 1.1+ | 2006 10 19 | 703 | 0.8− | 0.6+ | 2006 11 15 | 704 | (4.0+ | 0.4+) |
| 2004 01 22 | 704 | 0.5− | 0.0 | 2006 10 27 | 703 | 0.4+ | 0.7+ | 2006 11 15 | 704 | (3.8+ | 1.7−) |
| 2004 01 22 | 704 | 0.0 | 0.8+ | 2006 10 27 | 703 | 0.0 | 0.1− | 2006 11 21 | 703 | 0.2− | 0.2− |
| 2004 01 22 | 704 | (1.9− | 1.6+) | 2006 10 27 | 703 | 0.1+ | 0.1+ | 2006 11 21 | 703 | 0.1− | 0.1− |
| 2004 01 22 | 704 | 0.6− | 0.1− | 2006 10 27 | 703 | 0.8+ | 0.8+ | 2006 11 21 | 703 | 0.2− | 0.1− |
| 2004 01 22 | 704 | 0.4− | 0.7+ | 2006 11 02 | G96 | 0.1+ | 0.3− | | | | |
| 2004 01 31 | 691 | 0.3+ | 0.1+ | 2006 11 02 | G96 | 0.0 | 0.2− | | | | |

**2006 UY$_{266}$ = 2001 YG$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.00207 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17603934 | $\omega$ | 30.16964 | | +0.54102718 | | −0.83152505 |
| $a$ | 3.1530406 | $\Omega$ | 27.67047 | | +0.70720508 | | +0.36879534 |
| $e$ | 0.0600148 | $i$ | 15.73286 | | +0.45513796 | | +0.41539870 |
| $P$ | 5.60 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 699 | 0.1− | 0.2− | 2005 08 28 | E12 | 0.3− | 0.5+ | 2006 11 11 | 703 | 0.2− | 0.9+ |
| 2001 12 19 | 699 | 0.3+ | 0.4− | 2006 10 19 | 703 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.9+ |
| 2001 12 19 | 699 | 0.3+ | 0.3− | 2006 10 19 | 703 | 0.2− | 0.3− | 2006 11 14 | 703 | 0.2+ | 0.1− |
| 2001 12 19 | 699 | 0.6− | 0.1− | 2006 10 19 | 703 | 0.0 | 0.2− | 2006 11 14 | 703 | 0.3− | 0.1+ |
| 2001 12 23 | 704 | 0.3+ | 0.6− | 2006 10 19 | 703 | 0.8− | 0.2− | 2006 11 14 | 703 | 0.6− | 0.2+ |
| 2001 12 23 | 704 | 0.2− | 0.8− | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 14 | 703 | 0.5− | 0.4− |
| 2001 12 23 | 704 | 0.1+ | 1.0− | 2006 10 19 | 691 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.2− | 1.3+ |
| 2001 12 23 | 704 | 0.7− | 1.4− | 2006 10 19 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2001 12 23 | 704 | (1.2− | 1.6−) | 2006 10 27 | 703 | 0.4− | 0.4+ | 2006 11 16 | 704 | 0.1− | 0.2− |
| 2003 03 26 | 691 | 0.7+ | 0.2+ | 2006 10 27 | 703 | 0.5+ | 0.3+ | 2006 11 22 | 703 | 0.3− | 0.2+ |
| 2003 03 26 | 691 | 0.6− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.6+ | 2006 11 22 | 703 | 0.2− | 0.7+ |
| 2003 03 26 | 691 | 1.1+ | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.1+ | 2006 11 22 | 703 | 0.3− | 0.8+ |
| 2003 03 26 | 691 | 0.3− | 0.0 | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 22 | 703 | 1.3+ | 1.3+ |
| 2003 03 26 | 691 | 0.8+ | 0.4+ | 2006 11 02 | 703 | 0.6− | 0.3+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2003 03 26 | 691 | 0.6− | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.6− | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2005 08 28 | E12 | 0.2− | 0.5+ | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2005 08 28 | E12 | 0.8− | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2005 08 28 | E12 | 0.5+ | 0.1+ | 2006 11 11 | 703 | 0.0 | 0.6+ | | | | |

**2006 UF$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 205.94272 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30717256 | $\omega$ | 172.55053 | | −0.98051040 | | +0.19441967 |
| $a$ | 2.1754433 | $\Omega$ | 18.73261 | | −0.18449335 | | −0.86165522 |
| $e$ | 0.0752091 | $i$ | 5.05377 | | −0.06753934 | | −0.46877636 |
| $P$ | 3.21 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.1− | 0.0 | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3− | 0.1− |
| 2002 07 06 | 644 | 0.3+ | 0.3+ | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.2+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.2− | 0.4− | 2006 11 01 | G96 | 0.3− | 0.5− | 2006 11 19 | 704 | 1.0− | 0.4+ | | |
| 2006 09 30 | G96 | 0.5− | 0.4− | 2006 11 01 | G96 | 0.6+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.5+ | | |
| 2006 09 30 | G96 | 0.3− | 0.7− | 2006 11 13 | 104 | 0.2+ | 0.0 | 2006 11 20 | H36 | 0.8+ | 0.3+ | | |
| 2006 09 30 | G96 | 0.1− | 0.7− | 2006 11 13 | 104 | 0.6+ | 0.4+ | 2006 11 20 | H36 | 1.1+ | 0.4− | | |
| 2006 09 30 | G96 | 0.4− | 0.6− | 2006 11 13 | 104 | 0.1− | 0.3+ | 2006 11 20 | H45 | 0.3− | 0.2+ | | |
| 2006 10 13 | 691 | 0.3+ | 0.4+ | 2006 11 14 | G96 | 0.4− | 0.6− | 2006 11 20 | H45 | 0.1− | 0.2+ | | |
| 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.6− | 0.5− | 2006 11 20 | H45 | 0.5+ | 0.2+ | | |
| 2006 10 13 | 691 | 0.1+ | 0.4+ | 2006 11 14 | G96 | 0.7− | 0.7− | 2006 11 20 | H45 | 0.1+ | 0.4+ | | |
| 2006 10 27 | 703 | (1.6+ | 0.8−) | 2006 11 14 | G96 | 0.4− | 0.6− | 2006 11 20 | H45 | 0.0 | 0.3+ | | |
| 2006 10 27 | 703 | 0.1+ | 1.0− | 2006 11 18 | 185 | 0.9+ | 1.0− | 2006 11 20 | H45 | 0.2+ | 0.1− | | |
| 2006 10 27 | 703 | 0.1+ | 0.2− | 2006 11 18 | 185 | 0.4+ | 0.5− | 2006 11 20 | H45 | 0.8− | 0.1+ | | |
| 2006 10 27 | 703 | 0.4− | 0.9+ | 2006 11 19 | 704 | 0.2+ | 0.2+ | 2006 11 20 | H45 | 0.6− | 0.1− | | |

**2006 UU$_{267}$ = 2002 XK$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.38237 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24309361 | $\omega$ | 43.91649 | | +0.80832098 | | −0.58859350 |
| $a$ | 2.5426526 | $\Omega$ | 352.10819 | | +0.51009767 | | +0.71138427 |
| $e$ | 0.2362386 | $i$ | 5.52708 | | +0.29396863 | | +0.38404442 |
| $P$ | 4.05 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.7− | 0.1− | 2006 10 19 | 703 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.1− | | |
| 2002 12 03 | 644 | 0.5− | 0.1+ | 2006 10 27 | 703 | 0.2+ | 0.6+ | 2006 11 11 | 703 | (1.4− | 1.6−) | | |
| 2002 12 03 | 644 | 0.7− | 0.7+ | 2006 10 27 | 703 | 0.6− | 0.1+ | 2006 11 14 | 703 | 0.5+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.5− | 2006 10 27 | 703 | 0.6+ | 0.5− | 2006 11 14 | 703 | 0.2+ | 0.3− | | |
| 2002 12 05 | 704 | (1.8+ | 0.8−) | 2006 10 27 | 703 | 0.3+ | 0.1− | 2006 11 14 | 703 | 0.6+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.4+ | 0.1+ | 2006 11 02 | 703 | 0.0 | 0.6+ | 2006 11 14 | 703 | 0.4+ | 0.4− | | |
| 2002 12 05 | 704 | 0.9+ | 0.5− | 2006 11 02 | 703 | 0.6− | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.2+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.2− | 2006 11 02 | 703 | 0.0 | 0.2+ | 2006 11 16 | 704 | (1.1+ | 2.1+) | | |
| 2006 09 18 | 703 | 0.5+ | 0.1+ | 2006 11 02 | 703 | 0.4− | 1.0+ | 2006 11 16 | 704 | 1.3− | 0.0 | | |
| 2006 09 18 | 703 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.8+ | 0.9− | | |
| 2006 09 18 | 703 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.2+ | 0.3+ | 2006 11 22 | 703 | 0.0 | 0.4+ | | |
| 2006 09 18 | 703 | 0.4+ | 0.2− | 2006 11 11 | 703 | 0.2+ | 0.4+ | 2006 11 22 | 703 | 0.3− | 0.6+ | | |
| 2006 10 19 | 703 | 1.0− | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ | 2006 11 22 | 703 | (1.6− | 0.1+) | | |
| 2006 10 19 | 703 | 0.7− | 0.4− | 2006 11 11 | 703 | 0.2+ | 0.7− | | | | | | |
| 2006 10 19 | 703 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.4− | 0.4− | | | | | | |

**2006 UG$_{268}$ = 2001 UU$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.42701 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20329319 | $\omega$ | 176.33039 | | +0.88461960 | | −0.46616356 |
| $a$ | 2.8645352 | $\Omega$ | 211.46381 | | +0.42725559 | | +0.82041926 |
| $e$ | 0.1064270 | $i$ | 1.29755 | | +0.18681764 | | +0.33106461 |
| $P$ | 4.85 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 20 | 691 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.3+ | | |
| 1996 09 20 | 691 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.6− | 0.1− | | |
| 1996 09 20 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.0 | | |
| 2001 10 17 | 291 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.8+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.1− | | |
| 2001 10 17 | 291 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.3+ | 0.3− | | |
| 2001 10 17 | 291 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.1− | | |
| 2001 10 21 | 704 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.6− | 0.4− | | |
| 2001 10 21 | 704 | 0.7− | 0.9− | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.2+ | | |
| 2001 10 21 | 704 | 0.2− | 0.8− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.2− | | |

**2006 UQ$_{268}$ = 2004 FH$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 297.86229 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26619297 | $\omega$ | 230.21289 | | −0.34743318 | | −0.93768391 |
| $a$ | 2.3933433 | $\Omega$ | 240.11856 | | +0.86251568 | | −0.31695222 |
| $e$ | 0.1445330 | $i$ | 0.41303 | | +0.36790879 | | −0.14244358 |
| $P$ | 3.70 | $H$ | 18.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 691 | 0.5− | 0.3− | 2004 03 23 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.4− | | |
| 2000 02 06 | 691 | 0.1+ | 0.4− | 2006 10 27 | G96 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.1− | | |
| 2000 02 06 | 691 | 0.2+ | 0.1− | 2006 10 27 | G96 | 0.7+ | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.1− | | |
| 2004 03 17 | 691 | 0.0 | 0.3+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.2− | | |
| 2004 03 17 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.5− | 0.3+ | | |
| 2004 03 17 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.1+ | | |
| 2004 03 23 | 691 | 0.4+ | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.0 | | |
| 2004 03 23 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.5− | 0.0 | | |

**2006 UU$_{268}$ = 2004 HG$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.03716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17281625 | $\omega$ | 267.51639 | | +0.67003184 | | +0.72720301 |
| $a$ | 3.1921234 | $\Omega$ | 45.77442 | | −0.57113548 | | +0.63331260 |
| $e$ | 0.0879230 | $i$ | 12.00968 | | −0.47419574 | | +0.26474694 |
| $P$ | 5.70 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 28 | 691 | 0.0 | 0.0 | 2006 09 26 | G96 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2004 04 28 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.5+ | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.2− | | |
| 2004 04 28 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.4− | 0.4− | 2006 11 20 | G96 | 0.4+ | 0.1+ | | |
| 2004 05 13 | 691 | 0.3+ | 0.0 | 2006 10 27 | G96 | 0.3− | 0.5− | 2006 11 20 | G96 | 0.5− | 0.1+ | | |
| 2004 05 13 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.4− | 0.5+ | 2006 11 20 | G96 | 0.5− | 0.1+ | | |
| 2006 09 26 | G96 | 0.6+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.3+ | | |
| 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ | | | | | | |
| 2006 09 26 | G96 | 0.7+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− | | | | | | |

**2006 UK$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.20689 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23322161 | $\omega$ | 107.30115 | | +0.93118288 | | +0.36284203 |
| $a$ | 2.6139073 | $\Omega$ | 231.43857 | | −0.34925926 | | +0.86020382 |
| $e$ | 0.0964123 | $i$ | 2.58539 | | −0.10448167 | | +0.35832255 |
| $P$ | 4.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 30 | 291 | 0.1+ | 0.0 | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.1− | | |
| 2004 01 30 | 291 | 0.4− | 0.6+ | 2006 10 27 | G96 | 0.4+ | 0.2− | 2006 11 17 | 703 | (1.8− | 1.1+) | | |
| 2004 01 30 | 291 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | (1.8+ | 0.1−) | | |
| 2004 03 20 | 291 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 703 | 0.1− | 0.3− | | |
| 2004 03 20 | 291 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | (1.5− | 1.8+) | | |
| 2004 03 20 | 291 | 0.0 | 0.1− | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.5− | 0.1+ | | |
| 2006 10 13 | 691 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.2− | 0.1+ | | |
| 2006 10 13 | 691 | 0.5− | 0.2− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.8+ | 0.5+ | | |
| 2006 10 13 | 691 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.1+ | | |
| 2006 10 27 | G96 | 0.6+ | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.1+ | | | | | | |
| 2006 10 27 | G96 | 0.2+ | 0.3− | 2006 11 11 | G96 | 0.2+ | 0.0 | | | | | | |

**2006 UR$_{269}$ = 2004 FD$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.87242 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27717823 | $\omega$ | 150.25145 | | +0.62734302 | | −0.77212336 |
| $a$ | 2.3296820 | $\Omega$ | 260.70353 | | +0.69268757 | | +0.61272810 |
| $e$ | 0.1854119 | $i$ | 5.89300 | | +0.35584360 | | +0.16849271 |
| $P$ | 3.56 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 27 | 691 | 0.1+ | 0.3− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.4+ | | |
| 1999 12 27 | 691 | 0.0 | 0.3− | 2006 11 10 | 644 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.1+ | 1.2+ | | |
| 1999 12 27 | 691 | 0.1− | 0.1− | 2006 11 10 | 644 | 0.3− | 0.1− | 2006 11 16 | 704 | (0.6− | 1.7+) | | |
| 2004 03 17 | 568 | 0.4+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.5+ | 0.3+ | | |
| 2004 03 17 | 568 | 0.4+ | 0.2− | 2006 11 10 | 644 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.4− | 0.8+ | | |
| 2004 03 17 | 568 | 0.3+ | 0.5− | 2006 11 10 | 644 | 0.5− | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.5+ | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 568 | 0.0 | 0.7+ | 2006 11 10 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.1+ | | |
| 2004 03 19 | 568 | 0.0 | 0.6+ | 2006 11 11 | 703 | 0.4+ | 0.6− | 2006 11 16 | 704 | 0.7− | 1.1+ | | |
| 2004 03 19 | 568 | 0.5− | 0.9+ | 2006 11 11 | 703 | 0.2+ | 0.7− | 2006 11 16 | 704 | 0.2+ | 0.4+ | | |
| 2006 10 19 | 703 | 0.7+ | 0.8− | 2006 11 11 | 703 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.6− | 0.3+ | | |
| 2006 10 19 | 703 | 0.0 | 1.0− | 2006 11 11 | 703 | 0.1− | 0.6− | 2006 11 16 | 704 | 1.3− | 0.1− | | |
| 2006 10 19 | 703 | 1.2+ | 0.2− | 2006 11 13 | 644 | 0.3+ | 0.0 | 2006 11 17 | 704 | 0.2− | 0.0 | | |
| 2006 10 19 | 703 | 0.5− | 0.4− | 2006 11 13 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.4+ | | |
| 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.8− | 0.7− | | |
| 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 14 | 703 | (2.1+ | 0.2+) | 2006 11 17 | 704 | 0.3− | 0.4− | | |
| 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.8− | 0.2+ | 2006 11 19 | 704 | 0.4− | 0.4+ | | |
| 2006 10 27 | 691 | 0.4+ | 0.5+ | 2006 11 14 | G96 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.6− | 0.2+ | | |
| 2006 10 27 | 691 | 0.2+ | 0.2+ | 2006 11 14 | 703 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.7+ | | |
| 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.4− | 0.4− | | |
| 2006 10 31 | 691 | 0.3+ | 0.3− | 2006 11 14 | 703 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.0 | 0.7− | | |
| 2006 10 31 | 691 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.7+ | 0.2+ | | |
| 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1− | 0.4− | 2006 11 22 | 704 | 0.6+ | 0.4+ | | |
| 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.3+ | | |
| 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 15 | 704 | 0.5− | 0.0 | 2006 11 22 | 704 | (0.2− | 1.8+) | | |

**2006 UV$_{269}$ = 2001 WB$_{91}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.46248 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19307534 | $\omega$ | 356.79085 | | +0.94944416 | | −0.30757754 |
| $a$ | 2.9647279 | $\Omega$ | 21.45004 | | +0.29172322 | | +0.79041307 |
| $e$ | 0.0762493 | $i$ | 9.89857 | | +0.11598859 | | +0.52975771 |
| $P$ | 5.10 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 21 | 704 | 0.9+ | 1.0+ | 2006 10 19 | 703 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.1− | | |
| 2001 11 21 | 704 | 0.4− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 15 | 704 | 0.9− | 0.3+ | | |
| 2001 11 21 | 704 | 0.1+ | 0.6− | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.4+ | 0.2+ | | |
| 2001 11 24 | 704 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 11 15 | 704 | (2.9+ | 0.2−) | | |
| 2001 11 24 | 704 | 0.9− | 0.3+ | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.5+ | 1.0+ | | |
| 2001 11 24 | 704 | 0.4+ | 0.6− | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | (0.4+ | 1.7+) | | |
| 2006 10 04 | G96 | 0.4+ | 0.1+ | 2006 10 31 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.2+ | 1.2+ | | |
| 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 14 | 703 | (2.4− | 0.4−) | 2006 11 16 | 704 | 0.3+ | 0.4− | | |
| 2006 10 04 | G96 | 0.0 | 0.1+ | 2006 11 14 | 703 | (2.4− | 0.2+) | 2006 11 22 | 704 | 1.3+ | 0.1− | | |
| 2006 10 04 | G96 | 0.0 | 0.2+ | 2006 11 14 | 703 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.2+ | 1.0+ | | |
| 2006 10 19 | 703 | 0.3+ | 0.7− | 2006 11 14 | 703 | 1.0− | 1.1− | 2006 11 22 | 704 | 0.7+ | 0.9+ | | |
| 2006 10 19 | 703 | 0.6+ | 0.7− | 2006 11 15 | 691 | 0.0 | 0.3− | 2006 11 22 | 704 | 0.3+ | 0.1+ | | |
| 2006 10 19 | 703 | 0.6− | 0.6+ | 2006 11 15 | 691 | 0.3− | 0.2− | | | | | | |

**2006 UW$_{269}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.58285 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18160468 | $\omega$ | 90.65544 | | −0.38261678 | | −0.92126541 |
| $a$ | 3.0882896 | $\Omega$ | 22.24372 | | +0.75724985 | | −0.35599594 |
| $e$ | 0.0477840 | $i$ | 10.62818 | | +0.52931754 | | −0.15664271 |
| $P$ | 5.43 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 20 | 688 | 0.3− | 0.1− | 2003 05 01 | 691 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.0 | | |
| 1998 04 20 | 688 | 0.3+ | 0.1+ | 2003 05 01 | 691 | 0.2− | 0.0 | 2006 10 31 | 691 | 0.4− | 0.2− | | |
| 1998 04 20 | 688 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.0 | 0.4− | | |
| 2003 03 26 | 644 | 0.4+ | 0.0 | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2003 03 26 | 644 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.1− | | |
| 2003 03 26 | 644 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.5+ | | |
| 2003 05 01 | 691 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 | | |

**2006 UB$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.48777 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21653915 | $\omega$ | 131.20877 | | −0.99028735 | | +0.04003626 |
| $a$ | 2.7464926 | $\Omega$ | 51.51674 | | −0.10078700 | | −0.86638919 |
| $e$ | 0.1594721 | $i$ | 9.79320 | | +0.09577545 | | −0.49776185 |
| $P$ | 4.55 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.2− | | |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.1− | 2006 11 21 | G96 | 0.0 | 0.0 | | |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | (1.5+ | 1.3+) | 2006 11 27 | 703 | 0.6+ | 0.4− | | |
| 2001 12 10 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.9+ | 2006 11 27 | 703 | 0.1+ | 0.5+ | | |
| 2006 09 28 | G96 | 0.2− | 0.6− | 2006 11 11 | G96 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.0 | 0.9− | | |
| 2006 09 28 | G96 | 0.4− | 0.5− | 2006 11 11 | 703 | 0.2− | 0.6− | 2006 11 27 | 703 | 0.5− | 0.0 | | |
| 2006 09 28 | G96 | 0.1+ | 0.8− | 2006 11 11 | G96 | 0.2− | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.0 | | |
| 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 12 01 | G96 | 0.1− | 0.5− | | |
| 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.2+ | 1.0+ | 2006 12 01 | G96 | 0.0 | 0.2− | | |
| 2006 10 20 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.4− | 0.1+ | | |
| 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.4+ | | |
| 2006 10 27 | G96 | 0.3− | 0.0 | 2006 11 17 | 703 | 1.0− | 0.8− | 2006 12 01 | G96 | 0.1+ | 0.3− | | |
| 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.9+ | 0.3− | 2006 12 01 | G96 | 0.2+ | 0.1− | | |
| 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.9+ | 0.3+ | 2006 12 01 | G96 | 0.3− | 0.1− | | |
| 2006 10 27 | G96 | 0.3− | 1.0+ | 2006 11 21 | G96 | 0.4+ | 0.2+ | | | | | | |
| 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.1+ | | | | | | |

**2006 UJ$_{270}$ = 2001 XF$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.76719 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19500103 | $\omega$ | 129.23110 | | +0.92244339 | | −0.36598177 |
| $a$ | 2.9451773 | $\Omega$ | 252.54785 | | +0.30243037 | | +0.88300426 |
| $e$ | 0.1204260 | $i$ | 7.41460 | | +0.24007096 | | +0.29387213 |
| $P$ | 5.05 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 15 | 704 | (1.3− | 1.7+) | 2002 01 09 | 691 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 2001 12 15 | 704 | 1.1− | 0.3+ | 2002 01 09 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.2− | 0.0 | | |
| 2001 12 15 | 704 | (1.5− | 1.6+) | 2005 06 17 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.4+ | 0.2+ | | |
| 2001 12 15 | 704 | 0.7− | 0.5+ | 2005 06 17 | 691 | 0.0 | 0.4+ | 2006 10 31 | 691 | 0.0 | 0.1− | | |
| 2001 12 15 | 704 | 1.4− | 0.4+ | 2005 06 17 | 691 | 0.3− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.1− | | |
| 2001 12 18 | 704 | 0.0 | 0.7+ | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.4− | | |
| 2001 12 18 | 704 | 0.2− | 1.1+ | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.4+ | 0.6− | | |
| 2001 12 18 | 704 | 0.5+ | 0.6+ | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.4− | | |
| 2001 12 18 | 704 | 0.3+ | 1.3+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 14 | G96 | 0.1+ | 0.5− | | |
| 2002 01 09 | 691 | 0.2+ | 0.2− | 2006 10 27 | 691 | 0.3− | 0.1+ | | | | | | |

**2006 UQ$_{270}$ = 2001 SS$_{350}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.25374 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21716639 | $\omega$ | 191.62662 | | +0.53539597 | | −0.83912631 |
| $a$ | 2.7412016 | $\Omega$ | 226.09043 | | +0.78519804 | | +0.53639215 |
| $e$ | 0.0481459 | $i$ | 7.65851 | | +0.31115140 | | +0.09028012 |
| $P$ | 4.54 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 18 | 290 | 0.3− | 0.3+ | 2001 09 19 | 290 | 0.3+ | 0.3− | 2006 10 27 | G96 | 0.1− | 0.5− | | |
| 2001 09 18 | 290 | 0.3− | 0.6+ | 2001 09 19 | 290 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.2− | 0.1− | | |
| 2001 09 18 | 290 | 0.5− | 0.4+ | 2001 09 19 | 290 | 0.3+ | 0.3− | 2006 11 01 | 691 | 0.8+ | 0.2+ | | |
| 2001 09 18 | 290 | 0.3− | 0.1+ | 2001 09 19 | 290 | 0.4+ | 0.3− | 2006 11 01 | 691 | 0.3− | 0.1+ | | |
| 2001 09 18 | 290 | 0.4− | 0.2+ | 2006 10 17 | G96 | 0.9− | 0.4− | 2006 11 12 | G96 | 0.6− | 0.1− | | |
| 2001 09 18 | 290 | 0.4− | 0.3+ | 2006 10 17 | G96 | 0.4+ | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2001 09 19 | 290 | 0.1+ | 0.1− | 2006 10 17 | G96 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.0 | 0.1− | | |
| 2001 09 19 | 290 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.3− | | |
| 2001 09 19 | 290 | 0.0 | 0.1− | 2006 10 27 | G96 | 0.2− | 0.5− | 2006 11 14 | 691 | 0.1+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 290 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 290 | 0.3+ | 0.2− | 2006 10 27 | G96 | 0.7+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.1+ |

**2006 UV$_{270}$ = 2001 TG$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.06514 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20898008 | $\omega$ | 18.87594 | | +0.29512635 | | −0.94857032 |
| $a$ | 2.8123290 | $\Omega$ | 54.11668 | | +0.85742165 | | +0.21004969 |
| $e$ | 0.0687379 | $i$ | 8.12571 | | +0.42157864 | | +0.23684061 |
| $P$ | 4.72 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 11 | 644 | 0.1− | 0.5+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 10 11 | 644 | 0.1− | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.3+ | 0.8+ |
| 2001 10 11 | 644 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.6− | 0.6− | 2006 11 16 | 703 | 0.5+ | 0.6+ |
| 2001 10 15 | 704 | 0.5+ | 0.5+ | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.2+ | 0.4+ |
| 2001 10 15 | 704 | 0.6− | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 16 | 703 | 0.7− | 0.2+ |
| 2001 10 15 | 704 | 0.6− | 0.7− | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.0 | 0.2− |
| 2004 04 25 | 691 | 0.5+ | 0.4+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.0 |
| 2004 04 25 | 691 | 0.3− | 0.4+ | 2006 11 01 | 691 | 0.3+ | 0.2+ | 2006 11 27 | G96 | 0.1+ | 0.0 |
| 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 27 | 703 | 0.1+ | 0.4+ |
| 2004 05 19 | 688 | 1.0+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.1− |
| 2004 05 19 | 688 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.9+ |
| 2006 10 12 | 691 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.2− | 0.3− |
| 2006 10 12 | 691 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.4− | 0.2− | 2006 11 27 | 703 | 1.0+ | 1.1+ |
| 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.2− | 0.2+ | | | | |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.1− | 0.2+ | | | | |

**2006 UX$_{270}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.74226 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21488710 | $\omega$ | 266.92202 | | +0.72206316 | | +0.68325497 |
| $a$ | 2.7605513 | $\Omega$ | 49.94684 | | −0.56495627 | | +0.67291998 |
| $e$ | 0.1873033 | $i$ | 8.15425 | | −0.39931091 | | +0.28344550 |
| $P$ | 4.59 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 08 | 644 | 0.1+ | 0.3− | 2006 10 27 | G96 | 0.4− | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2001 10 08 | 644 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2001 10 08 | 644 | 0.8+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.2− |
| 2001 10 16 | 644 | 0.3− | 0.5+ | 2006 10 31 | G96 | 0.3− | 0.6− | 2006 11 16 | 703 | 0.6− | 0.4+ |
| 2001 10 16 | 644 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 16 | 703 | 0.1− | 1.2+ |
| 2001 10 16 | 644 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 11 16 | 703 | 0.7− | 0.9+ |
| 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.2− | 0.7− |
| 2006 10 17 | G96 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2006 10 17 | G96 | 0.5+ | 0.4− | 2006 11 13 | 691 | 0.4+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.7− |
| 2006 10 17 | G96 | 0.3− | 0.7+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.6− |
| 2006 10 27 | G96 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.1+ | | | | |

**2006 UG$_{271}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.87622 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21342538 | $\omega$ | 105.19744 | | +0.74249506 | | −0.66745188 |
| $a$ | 2.7731414 | $\Omega$ | 296.70954 | | +0.58766357 | | +0.68964811 |
| $e$ | 0.0699866 | $i$ | 3.63587 | | +0.32148502 | | +0.28087981 |
| $P$ | 4.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 10 | 291 | 0.4− | 0.3+ | 2006 10 04 | G96 | 0.5+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.3+ |
| 2003 01 10 | 291 | 0.6+ | 0.3+ | 2006 10 04 | G96 | 0.5+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.3− |
| 2003 01 10 | 291 | 0.1+ | 0.4+ | 2006 10 04 | G96 | 0.0 | 0.3+ | 2006 10 31 | 691 | 0.0 | 0.1+ |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2006 10 04 | G96 | 0.7+ | 0.2− | 2006 10 31 | 691 | 0.4− | 0.1+ |
| 2003 01 29 | 645 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 10 31 | 691 | 0.0 | 0.0 |
| 2005 07 15 | G96 | 0.4+ | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.6− | 2006 11 14 | G96 | 0.2+ | 0.1− |
| 2005 07 15 | G96 | 0.4− | 0.4+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2005 07 15 | G96 | 0.2− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 14 | G96 | 0.1− | 0.4− |
| 2005 07 15 | G96 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.3+ | 0.2− |

**2006 UK$_{271}$ = 1997 TY$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.70149 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22901280 | $\omega$ | 142.31185 | | +0.97193313 | | +0.23500594 |
| $a$ | 2.6458357 | $\Omega$ | 204.10292 | | −0.22180115 | | +0.89995743 |
| $e$ | 0.2185855 | $i$ | 1.52547 | | −0.07842342 | | +0.36721770 |
| $P$ | 4.30 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 691 | 0.2+ | 0.1+ | 2005 06 27 | G96 | 1.1+ | 0.5− | 2006 10 27 | G96 | 0.2− | 0.1+ |
| 1997 10 03 | 691 | 0.1+ | 0.1− | 2005 06 27 | G96 | 0.7+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.2− |
| 1997 10 03 | 691 | 0.2− | 0.4+ | 2005 06 27 | G96 | 1.0+ | 0.3− | 2006 11 01 | G96 | 0.1− | 0.3− |
| 1997 10 09 | 691 | 0.0 | 0.5+ | 2005 06 27 | G96 | 0.6+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.1− |
| 1997 10 09 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 1997 10 09 | 691 | 0.4+ | 0.4− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 1997 11 03 | 691 | 0.2− | 0.7− | 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 1997 11 03 | 691 | 0.3− | 0.2− | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.2+ |
| 1997 11 03 | 691 | 0.1+ | 0.1+ | 2006 10 17 | G96 | 0.7+ | 0.9− | 2006 11 18 | 704 | 0.7− | 0.2− |
| 2005 02 16 | 809 | 0.5+ | 0.0 | 2006 10 17 | G96 | 0.4− | 0.5− | 2006 11 18 | 704 | 0.1− | 0.9+ |
| 2005 02 16 | 809 | 0.0 | 0.1+ | 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.2− |
| 2005 02 16 | 809 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 21 | 691 | 0.3− | 0.2+ |
| 2005 06 15 | 291 | 1.4− | 0.1+ | 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 21 | 691 | 0.2− | 0.1+ |
| 2005 06 15 | 291 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 21 | 691 | 0.2− | 0.4+ |
| 2005 06 15 | 291 | 0.5+ | 0.3+ | 2006 10 27 | G96 | 0.7+ | 0.1− | | | | |

**2006 UN$_{271}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 100.07616 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27940441 | $\omega$ | 229.63753 | | +0.16802325 | | +0.98244914 |
| $a$ | 2.3172908 | $\Omega$ | 50.22501 | | −0.86948649 | | +0.18641994 |
| $e$ | 0.2406463 | $i$ | 6.05013 | | −0.46450127 | | +0.00642555 |
| $P$ | 3.53 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 691 | 0.0 | 0.0 | 2005 04 13 | 699 | 1.3− | 0.9− | 2006 10 27 | G96 | 0.4+ | 0.4− |
| 2005 04 06 | 691 | 0.1− | 0.1+ | 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 1.0+ | 0.3+ |
| 2005 04 06 | 691 | 0.2− | 0.0 | 2005 04 18 | 691 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.7− | 0.0 |
| 2005 04 13 | 699 | 1.2+ | 1.0− | 2005 04 18 | 691 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.5− | 0.1− |
| 2005 04 13 | 699 | 1.6+ | 0.2− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.4− | 0.1− |
| 2005 04 13 | 699 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.9+ | 0.4+ | 2006 10 31 | G96 | 0.7− | 0.2+ |

**2006 UP$_{271}$ = 2004 EU$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.78991 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27358709 | $\omega$ | 45.34876 | | −0.09936020 | | −0.99456975 |
| $a$ | 2.3500241 | $\Omega$ | 50.37906 | | +0.90119087 | | −0.10313618 |
| $e$ | 0.1482256 | $i$ | 2.30357 | | +0.42187980 | | −0.01392639 |
| $P$ | 3.60 | $H$ | 18.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.5+ | 2006 11 18 | 691 | 0.2+ | 0.4+ |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2004 03 23 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.3+ |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.6+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2004 03 23 | 691 | 0.3− | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.4− |
| 2006 10 27 | G96 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.5− | 0.1− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2006 10 27 | G96 | 0.4− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.4− | | | | |

**2006 US$_{271}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 109.33045 | | (2000.0) | | | |
| $n$ | 0.35253860 | $\omega$ | 51.63442 | | +0.17271334 | +0.95374069 |
| $a$ | 1.9845632 | $\Omega$ | 230.16366 | | −0.97374142 | +0.12771225 |
| $e$ | 0.0762163 | $i$ | 18.69017 | | −0.14831640 | +0.27215486 |
| $P$ | 2.80 | $H$ | 17.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 09 29 | 699 | 0.2− | 1.1+ | 2006 10 17 | G96 | 0.4+ | 0.5− | 2006 11 16 | 113 | 1.0+ | 0.7− |
| 2003 09 29 | 699 | 0.2− | 0.1− | 2006 10 17 | G96 | 0.1+ | 0.1+ | 2006 11 16 | 113 | 0.0 | 0.4− |
| 2003 09 29 | 699 | 0.1− | 0.9+ | 2006 10 17 | G96 | 0.3+ | 0.4− | 2006 11 16 | 113 | 0.5+ | 0.8− |
| 2003 09 29 | 699 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.4− | 2006 11 16 | 246 | 1.4− | 0.2+ |
| 2003 10 20 | 644 | 0.0 | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.4− | 2006 11 16 | 246 | 0.4− | 0.5+ |
| 2003 10 20 | 644 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.0 | 0.3+ |
| 2003 10 20 | 644 | 0.2+ | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.3+ | 1.3+ |
| 2005 04 10 | E12 | 1.1− | 0.6+ | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.8− | 0.6− |
| 2005 04 10 | E12 | 0.1+ | 0.5+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | (0.0 | 1.8−) |
| 2005 04 10 | E12 | 0.4+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.6− | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2005 04 10 | E12 | 0.5+ | 0.6− | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.3− | 0.2− |
| 2005 05 01 | 644 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.4+ | 1.1+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2005 05 01 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.7+ | 1.3− | 2006 11 28 | 704 | 0.8+ | 0.9+ |
| 2005 05 01 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 703 | (1.3+ | 2.5−) | 2006 11 28 | 704 | 0.4− | 1.5+ |
| 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.1− | 2006 11 28 | 704 | 0.4− | 0.6− |
| 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4+ | 1.1+ |
| 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.1− | 2006 11 28 | 704 | 0.7+ | 0.4+ |
| 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.2− | 0.2+ | | | | |

**2006 UT$_{271}$ = 2003 HS$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 279.21222 | | (2000.0) | | | |
| $n$ | 0.18543472 | $\omega$ | 279.87614 | | −0.87705289 | −0.46686714 |
| $a$ | 3.0456174 | $\Omega$ | 232.38304 | | +0.47740207 | −0.82079271 |
| $e$ | 0.1980494 | $i$ | 8.21594 | | +0.05353023 | −0.32914191 |
| $P$ | 5.32 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 29 | 704 | 0.4− | 0.4+ | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2003 04 29 | 704 | 0.1− | 0.4− | 2006 10 27 | G96 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2003 04 29 | 704 | 0.9− | 0.2− | 2006 10 27 | G96 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2003 04 29 | 704 | 0.5− | 0.8− | 2006 10 31 | G96 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.4− | 0.0 |
| 2003 04 30 | 704 | (2.1+ | 2.0−) | 2006 10 31 | G96 | 0.6− | 0.1+ | 2006 11 21 | 704 | 1.2+ | 0.2− |
| 2003 04 30 | 704 | 0.7+ | 1.2− | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2003 04 30 | 704 | 1.2+ | 1.3− | 2006 10 31 | G96 | 0.6− | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.6+ |
| 2003 04 30 | 704 | (0.9+ | 2.0−) | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2003 05 24 | 691 | 0.2+ | 0.9+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2003 05 24 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2003 05 24 | 691 | 0.5+ | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.0 |
| 2003 06 01 | 691 | 0.3− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2003 06 01 | 691 | 0.5− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2003 06 01 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.6− | 0.7− | 2006 11 27 | 703 | 0.4+ | 0.3− |
| 2006 10 17 | G96 | 0.4− | 0.3+ | 2006 11 11 | G96 | 0.8− | 0.7− | 2006 11 27 | 703 | 1.2− | 1.5− |
| 2006 10 17 | G96 | 0.4− | 0.2− | 2006 11 11 | G96 | 0.6− | 0.6− | 2006 11 27 | 703 | 0.4+ | 0.8+ |
| 2006 10 17 | G96 | 0.5− | 0.1+ | 2006 11 11 | G96 | 0.7− | 0.5− | 2006 11 27 | 703 | 2.4+ | 0.1+ |
| 2006 10 17 | G96 | 0.0 | 0.8+ | 2006 11 15 | 691 | 0.1− | 0.2+ | | | | |
| 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2+ | | | | |

**2006 UY$_{271}$ = 2001 SY$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 52.86046 | | (2000.0) | | | |
| $n$ | 0.21598504 | $\omega$ | 326.09491 | | +0.92066589 | +0.38976450 |
| $a$ | 2.7511880 | $\Omega$ | 11.02724 | | −0.32870868 | +0.80368018 |
| $e$ | 0.0736905 | $i$ | 6.42374 | | −0.21053488 | +0.44964631 |
| $P$ | 4.56 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.7− | 0.4+ | 2006 10 04 | G96 | 0.5− | 0.7− | 2006 10 31 | 691 | 0.1+ | 0.4+ |
| 2001 09 19 | 704 | 0.4+ | 1.2+ | 2006 10 04 | G96 | 0.6+ | 1.2− | 2006 10 31 | 691 | 0.2+ | 0.1+ |
| 2001 09 19 | 704 | 0.2+ | 0.7+ | 2006 10 04 | G96 | 0.2+ | 0.5− | 2006 11 08 | 644 | 0.1− | 0.0 |
| 2001 09 19 | 704 | 1.1− | 0.5+ | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.2− |
| 2001 09 19 | 704 | 0.5− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 08 | 644 | 0.1+ | 0.2+ |
| 2001 09 21 | 704 | (1.7+ | 2.1−) | 2006 10 19 | G96 | 0.3+ | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 09 21 | 704 | (2.0+ | 2.1−) | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 14 | G96 | 0.0 | 0.2− |
| 2001 09 21 | 704 | (1.6+ | 2.1−) | 2006 10 19 | 691 | 0.2+ | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2001 09 21 | 704 | (1.1+ | 3.3−) | 2006 10 19 | 691 | 0.0 | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | (2.2+ | 2.0−) | 2006 10 19 | 691 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.2− | 0.2− |
| 2004 03 30 | 291 | 0.1+ | 0.5+ | 2006 10 27 | 691 | 0.1− | 0.2+ | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2004 03 30 | 291 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 14 | G96 | 0.3− | 0.1− |
| 2004 03 30 | 291 | 0.3+ | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.1− |
| 2006 10 04 | G96 | 0.5− | 0.7− | 2006 10 31 | 691 | 0.3− | 0.0 | | | | |

**2006 UZ$_{271}$ = 1995 YK$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 237.86307 | | (2000.0) | | | |
| $n$ | 0.26890272 | $\omega$ | 303.61167 | | −0.99125925 | −0.10386283 |
| $a$ | 2.3772376 | $\Omega$ | 230.56366 | | +0.12530299 | −0.93414338 |
| $e$ | 0.0828096 | $i$ | 6.04611 | | −0.04128258 | −0.34145081 |
| $P$ | 3.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 22 | 691 | 0.4− | 1.2− | 2006 10 27 | G96 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− |
| 1995 12 22 | 691 | 0.2− | 0.4+ | 2006 10 27 | G96 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.1− |
| 1995 12 22 | 691 | 0.2+ | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 1995 12 28 | 691 | 0.4+ | 0.2− | 2006 10 27 | G96 | 0.2− | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 1995 12 28 | 691 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 1995 12 28 | 691 | 0.1− | 0.3− | 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2004 03 01 | 703 | 0.9+ | 0.1− | 2006 10 31 | G96 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2004 03 01 | 703 | 0.5− | 0.9+ | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 03 01 | 703 | 1.0+ | 0.6+ | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2004 03 01 | 703 | 0.7− | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | 0.2− | 0.2− |
| 2005 06 29 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 0.6− | 0.1− |
| 2005 06 29 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.3− | 0.1− |
| 2005 06 29 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− | | | | |

**2006 UD$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 341.02945 | | (2000.0) | | | |
| $n$ | 0.22850722 | $\omega$ | 202.68031 | | +0.34734252 | −0.93437009 |
| $a$ | 2.6497370 | $\Omega$ | 227.09650 | | +0.87613024 | +0.35354433 |
| $e$ | 0.2102086 | $i$ | 6.22351 | | +0.33428877 | +0.04425991 |
| $P$ | 4.31 | $H$ | 16.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 26 | 608 | 0.2− | 0.8− | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.3+ | 1.3+ |
| 2003 01 26 | 608 | 0.0 | 0.5− | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.1− | 0.1+ |
| 2003 01 26 | 608 | 0.2− | 0.7− | 2006 10 31 | G96 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2004 05 13 | 291 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2004 05 13 | 291 | 0.1− | 0.7+ | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2004 05 13 | 291 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 05 13 | 291 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.2− | 0.3+ |
| 2004 05 13 | 291 | 0.1− | 0.7+ | 2006 11 12 | 703 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.1+ | 0.0 |
| 2004 05 13 | 291 | 0.1+ | 0.5+ | 2006 11 12 | 703 | (0.2− | 1.5−) | 2006 11 20 | 704 | 0.1+ | 0.4+ |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 12 | 703 | 0.7+ | 0.9− | 2006 11 20 | 704 | 0.6+ | 0.2+ |
| 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 12 | 703 | (3.6+ | 1.1−) | 2006 11 27 | 703 | 0.3− | 0.3+ |
| 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.4+ | 0.3− |
| 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.7− | 0.7+ | 2006 11 27 | 703 | 0.4+ | 0.0 |
| 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 17 | 704 | (1.6+ | 0.8+) | 2006 11 27 | 703 | 0.1+ | 0.1+ |
| 2006 10 19 | G96 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.0 | 1.1+ | 2006 11 29 | 704 | 0.5+ | 0.1− |
| 2006 10 19 | G96 | 0.1− | 0.2+ | 2006 11 17 | 704 | (0.9− | 1.6+) | 2006 11 29 | 704 | 0.2− | 0.0 |
| 2006 10 19 | G96 | 0.1− | 0.1+ | 2006 11 17 | 644 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.2+ | 0.2− |
| 2006 10 27 | G96 | 0.4+ | 0.1− | 2006 11 17 | 644 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.5− | 0.6− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 27 | G96 | 0.1+ | 0.6− | 2006 11 17 | 644 | 0.0 | 0.2+ | 2006 11 29 | 704 | 1.0− | 0.2− | | |
| 2006 10 27 | G96 | 0.5+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3− | | | | | | |
| 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.5+ | | | | | | |

**2006 UJ$_{272}$ = 1997 TG$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.96807 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22727878 | $\omega$ | 135.72767 | | +0.97067658 | | −0.23895353 |
| $a$ | 2.6592762 | $\Omega$ | 238.11424 | | +0.21108445 | | +0.89947194 |
| $e$ | 0.0947777 | $i$ | 1.77046 | | +0.11502319 | | +0.36585713 |
| $P$ | 4.34 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 03 | 910 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 1997 10 03 | 910 | 0.0 | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 1997 10 03 | 910 | 0.5+ | 0.3+ | 2006 11 11 | G96 | 0.9− | 0.6− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 1997 10 04 | 910 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.2+ | 2006 11 27 | 703 | 0.1+ | 1.4− |
| 1997 10 04 | 910 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 1997 10 04 | 910 | 0.2− | 0.5− | 2006 11 11 | G96 | 0.4− | 0.1− | 2006 11 27 | 703 | 0.2+ | 0.1+ |
| 2006 10 27 | G96 | 0.3− | 0.6− | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 27 | 703 | 0.2− | 1.0− |
| 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2006 10 27 | G96 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.4+ | 0.1+ |
| 2006 10 27 | G96 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 10 31 | G96 | 0.4+ | 0.2+ | 2006 11 19 | 691 | 0.2− | 0.3+ | | | | |
| 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.5+ | | | | |

**2006 UM$_{272}$ = 1995 VU$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 263.81325 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18579696 | $\omega$ | 100.05545 | | −0.91808462 | | −0.36806187 |
| $a$ | 3.0416575 | $\Omega$ | 58.48600 | | +0.26095229 | | −0.84064039 |
| $e$ | 0.0786029 | $i$ | 9.93898 | | +0.29836977 | | −0.39730869 |
| $P$ | 5.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 15 | 691 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.5+ |
| 1995 11 15 | 691 | 0.3− | 0.4+ | 2006 10 19 | G96 | 0.5− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 1995 11 15 | 691 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.2− | 0.2− |
| 1995 11 20 | 691 | 0.1− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 11 | G96 | 0.0 | 0.8− |
| 1995 11 20 | 691 | 0.1− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.6− |
| 1995 11 20 | 691 | 0.1+ | 0.3+ | 2006 10 27 | G96 | 0.3− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2003 03 26 | 644 | 0.1− | 0.3+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 11 | H36 | (1.8+ | 1.5−) |
| 2003 03 26 | 644 | 0.4+ | 0.3+ | 2006 10 27 | G96 | 0.1− | 0.5− | 2006 11 11 | H36 | (2.1+ | 0.7+) |
| 2003 03 26 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.6+ | 0.5− | 2006 11 11 | H36 | 0.4+ | 0.1− |
| 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.5+ | 0.9− | 2006 11 11 | H36 | (2.1+ | 0.2+) |
| 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2006 09 28 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.5+ | 1.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.3+ |

**2006 UP$_{272}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.61580 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17493232 | $\omega$ | 344.06623 | | +0.81574459 | | −0.55793108 |
| $a$ | 3.1663288 | $\Omega$ | 50.85857 | | +0.54984471 | | +0.66613196 |
| $e$ | 0.1100482 | $i$ | 11.34394 | | +0.17953148 | | +0.49495567 |
| $P$ | 5.63 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2000 10 02 | 645 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2002 01 19 | 699 | 0.7− | 0.9− | 2006 10 27 | G96 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2002 01 19 | 699 | 0.5− | 0.1+ | 2006 10 27 | G96 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 2002 01 19 | 699 | 1.1− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.6− | 2006 11 20 | 703 | 0.7− | 0.0 |
| 2002 01 19 | 699 | 0.4+ | 1.3− | 2006 10 31 | G96 | 0.2+ | 0.6− | 2006 11 20 | 703 | 0.1+ | 0.1+ |
| 2002 02 03 | 644 | (0.1− | 1.6+) | 2006 10 31 | G96 | 0.3+ | 0.6− | 2006 11 20 | 703 | 0.1− | 0.3+ |
| 2002 02 03 | 644 | 0.4+ | 1.0+ | 2006 10 31 | G96 | 0.0 | 0.6− | 2006 11 20 | 704 | 0.9+ | 0.7+ |
| 2002 02 03 | 644 | 0.6+ | 0.8+ | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 20 | 703 | 1.2− | 1.4+ |
| 2003 03 29 | 291 | 0.4− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.2− | 2006 11 20 | 704 | 1.0+ | 0.2+ |
| 2003 03 29 | 291 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.2− | 2006 11 20 | 704 | 1.3+ | 0.5+ |
| 2003 03 29 | 291 | 0.3+ | 0.3+ | 2006 11 13 | 644 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.3+ |
| 2005 07 03 | 644 | 0.1− | 1.0+ | 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.6+ | 0.3+ |
| 2005 07 03 | 644 | 0.6− | 0.9+ | 2006 11 13 | 644 | 0.2− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 07 03 | 644 | 0.8− | 0.8+ | 2006 11 17 | 704 | 0.1+ | 0.9+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2006 08 29 | 703 | 0.4− | 0.9− | 2006 11 17 | 704 | 0.0 | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2006 08 29 | 703 | 0.6− | 0.4+ | 2006 11 17 | 704 | 0.2− | 1.1+ | 2006 11 22 | 704 | 0.3− | 0.5+ |
| 2006 08 29 | 703 | 0.7− | 0.5− | 2006 11 17 | 704 | 0.1− | 0.6+ | 2006 11 22 | 704 | 0.3+ | 0.3+ |
| 2006 08 29 | 703 | 0.3− | 0.8− | 2006 11 18 | 691 | 0.1− | 0.2+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2006 09 28 | G96 | 0.1− | 0.4− | 2006 11 18 | 691 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1+ | 2006 11 22 | 704 | (1.0+ | 2.3+) |
| 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.5− | | | | |

**2006 UV$_{272}$ = 2001 UR$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.45479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21119341 | $\omega$ | 57.87566 | | +0.73539846 | | −0.67734136 |
| $a$ | 2.7926455 | $\Omega$ | 344.72926 | | +0.59341747 | | +0.65793370 |
| $e$ | 0.0297138 | $i$ | 4.34288 | | +0.32717702 | | +0.32913815 |
| $P$ | 4.67 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.3+ | 1.2− | 2001 10 23 | 691 | 0.4+ | 0.1+ | 2006 10 27 | 691 | 0.1− | 0.1+ |
| 2001 10 19 | 644 | 0.2+ | 0.8− | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 10 27 | 691 | 0.1+ | 0.1+ |
| 2001 10 19 | 644 | 0.3+ | 1.0− | 2006 10 04 | G96 | 0.2+ | 0.1+ | 2006 10 27 | 691 | 0.1+ | 0.2− |
| 2001 10 21 | 691 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.2+ |
| 2001 10 21 | 691 | 0.4− | 0.0 | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.0 | 0.3− |
| 2001 10 21 | 691 | 0.1− | 0.3+ | 2006 10 23 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− |
| 2001 10 23 | 691 | 0.3− | 0.4+ | 2006 10 23 | 691 | 0.3− | 0.0 | | | | |
| 2001 10 23 | 691 | 0.4+ | 0.2− | 2006 10 23 | 691 | 0.2− | 0.0 | | | | |

**2006 UW$_{272}$ = 2004 LK$_4$ = 2005 RT$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 155.01296 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18322809 | $\omega$ | 342.48559 | | −0.36771225 | | +0.91960037 |
| $a$ | 3.0700211 | $\Omega$ | 265.76107 | | −0.83574397 | | −0.39200538 |
| $e$ | 0.0865791 | $i$ | 7.97059 | | −0.40782315 | | −0.02582537 |
| $P$ | 5.38 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 06 11 | 704 | 0.2− | 0.6+ | 2005 09 03 | 568 | 0.1+ | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.2− |
| 2004 06 11 | 704 | 0.9− | 1.1+ | 2005 09 05 | 568 | 0.1− | 0.3+ | 2006 10 31 | 691 | 0.1− | 0.1+ |
| 2004 06 11 | 704 | 0.4+ | 0.0 | 2006 10 23 | 691 | 0.0 | 0.4− | 2006 10 31 | 691 | 0.0 | 0.4+ |
| 2004 06 13 | 644 | 0.2− | 0.0 | 2006 10 23 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.4+ |
| 2004 06 13 | 644 | 0.3+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.4+ |
| 2004 06 13 | 644 | 0.7+ | 0.6− | 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.2+ |
| 2005 09 03 | 568 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.0 | 0.0 | | | | |
| 2005 09 03 | 568 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.3− | | | | |

**2006 UB$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.63878 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26922089 | $\omega$ | 170.62742 | | −0.97532399 | | +0.21573625 |
| $a$ | 2.3753642 | $\Omega$ | 22.00209 | | −0.20980631 | | −0.83952908 |
| $e$ | 0.0494214 | $i$ | 7.19380 | | −0.06873448 | | −0.49864697 |
| $P$ | 3.66 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 04 27 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.2− |
| 1997 04 27 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 1997 04 27 | 691 | 0.1− | 0.2− | 2006 10 27 | 691 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 2004 02 13 | 691 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.3+ | | |
| 2004 02 13 | 691 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.1− | 0.4− | 2006 11 22 | 691 | 0.1− | 0.3− | | |
| 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.1− | | |
| 2006 10 04 | G96 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.3− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.1− | 0.4+ | | | | | | |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.1+ | | | | | | |

**2006 UF$_{273}$ = 2004 FH$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 161.87164 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23838040 | $\omega$ | 215.11014 | | −0.49307925 | +0.86825118 | |
| $a$ | 2.5760583 | $\Omega$ | 25.47978 | | −0.76616010 | −0.40348039 | |
| $e$ | 0.1448752 | $i$ | 7.33037 | | −0.41215477 | −0.28869266 | |
| $P$ | 4.13 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 20 | 691 | 0.5+ | 0.2+ | 2006 10 04 | G96 | 0.5+ | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.3− | | |
| 1996 04 20 | 691 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.1− | | |
| 1996 04 20 | 691 | 0.3− | 0.2− | 2006 10 04 | G96 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.5− | 0.2− | 2006 10 04 | G96 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.0 | | |
| 2004 03 20 | 704 | 1.0− | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | | |
| 2004 03 20 | 704 | 0.9+ | 1.0+ | 2006 10 27 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.3− | | |
| 2004 03 25 | 704 | 0.2− | 0.4+ | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.3+ | | |
| 2004 03 25 | 704 | 0.2− | 0.4− | 2006 10 31 | 691 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.2+ | | |
| 2004 03 25 | 704 | 0.4− | 1.2− | 2006 10 31 | 691 | 0.4− | 0.4− | 2006 11 17 | 691 | 0.0 | 0.1+ | | |
| 2004 03 25 | 704 | 1.2+ | 0.9− | 2006 10 31 | 691 | 0.0 | 0.1+ | | | | | | |

**2006 US$_{273}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 218.15436 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22014053 | $\omega$ | 216.46547 | | −0.98085905 | +0.19422722 | |
| $a$ | 2.7164562 | $\Omega$ | 334.72359 | | −0.17011748 | −0.88932986 | |
| $e$ | 0.0297186 | $i$ | 1.85636 | | −0.09473949 | −0.41396642 | |
| $P$ | 4.48 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 23 | 691 | 0.0 | 0.0 | 2005 07 12 | G96 | 0.3− | 0.3− | 2006 10 31 | 691 | 0.3+ | 0.0 | | |
| 2001 09 23 | 691 | 0.1− | 0.1− | 2005 07 12 | G96 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.0 | | |
| 2001 09 23 | 691 | 0.1− | 0.4− | 2005 07 28 | 644 | 0.3+ | 0.6+ | 2006 11 13 | 691 | 0.0 | 0.5− | | |
| 2001 10 13 | 691 | 0.2− | 0.1− | 2005 07 28 | 644 | 0.3+ | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.2− | | |
| 2001 10 13 | 691 | 0.2+ | 0.2+ | 2005 07 28 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.2+ | | |
| 2001 10 13 | 691 | 0.2+ | 0.2+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.0 | | |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | | |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.4− | 0.5− | | |
| 2005 07 12 | G96 | 0.2− | 0.4− | 2006 10 31 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.0 | | |
| 2005 07 12 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.2+ | 0.2+ | 2006 11 25 | 691 | 0.6− | 0.5+ | | |

**2006 UT$_{273}$ = 1994 TU$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.64555 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25145911 | $\omega$ | 329.96277 | | +0.99317658 | −0.10491073 | |
| $a$ | 2.4859428 | $\Omega$ | 36.16908 | | +0.11656907 | +0.88012289 | |
| $e$ | 0.1856071 | $i$ | 4.95077 | | +0.00345517 | +0.46300911 | |
| $P$ | 3.92 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 06 | 691 | 0.2− | 0.3− | 2006 10 17 | G96 | 0.4− | 0.4− | 2006 11 13 | 691 | 0.3− | 0.0 | | |
| 1994 10 06 | 691 | 0.1− | 0.5+ | 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.1+ | 0.1− | | |
| 1994 10 06 | 691 | 0.3+ | 0.3− | 2006 10 17 | G96 | 0.7− | 0.0 | 2006 11 13 | 691 | 0.2− | 0.1− | | |
| 1994 10 12 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.5− | 0.5− | 2006 11 17 | 691 | 0.4+ | 0.0 | | |
| 1994 10 12 | 691 | 0.0 | 0.0 | 2006 10 27 | 691 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.1− | 0.3+ | | |
| 1994 10 12 | 691 | 0.1+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.4+ | 0.2− | | |
| 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 10 27 | 691 | 0.4+ | 0.2− | 2006 11 25 | 691 | 0.2− | 0.1− | | |
| 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.2+ | | |
| 2006 09 27 | G96 | 0.4+ | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 25 | 691 | 0.3− | 0.3+ | | |
| 2006 09 27 | G96 | 0.1+ | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.3− | | | | | | |

**2006 UW$_{273}$ = 2004 EL$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 299.08114 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27665077 | $\omega$ | 144.10849 | | −0.42177619 | −0.90659245 | |
| $a$ | 2.3326422 | $\Omega$ | 330.83087 | | +0.82505741 | −0.37736602 | |
| $e$ | 0.1389566 | $i$ | 1.64168 | | +0.37601211 | −0.18890476 | |
| $P$ | 3.56 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.1− | 0.0 | 2006 10 27 | 691 | 0.1− | 0.4− | 2006 11 09 | 691 | 0.1+ | 0.2+ | | |
| 2002 09 05 | 645 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.3− | 0.3+ | | |
| 2004 03 14 | 691 | 0.0 | 0.1+ | 2006 10 27 | 691 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.2− | 0.2+ | | |
| 2004 03 14 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 13 | 691 | 0.4− | 0.4+ | | |
| 2004 03 14 | 691 | 0.1+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 24 | 703 | 0.0 | 0.1− | | |
| 2004 03 16 | 291 | 0.2+ | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 24 | 703 | 0.9− | 1.5− | | |
| 2004 03 16 | 291 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 24 | 703 | 0.0 | 0.4− | | |
| 2004 03 16 | 291 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.6+ | 0.3+ | 2006 11 24 | 703 | 0.6+ | 0.8+ | | |

**2006 UX$_{273}$ = 2004 HA$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 257.45230 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21665826 | $\omega$ | 260.72600 | | −0.89593753 | −0.43522307 | |
| $a$ | 2.7454859 | $\Omega$ | 253.43227 | | +0.43515998 | −0.81998064 | |
| $e$ | 0.0554415 | $i$ | 5.31296 | | +0.08906034 | −0.37176958 | |
| $P$ | 4.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 28 | 691 | 0.1+ | 0.0 | 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.5− | 0.1+ | | |
| 2004 04 28 | 691 | 0.1− | 0.0 | 2006 10 23 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.2− | 0.0 | | |
| 2004 04 28 | 691 | 0.1+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.3+ | 0.4+ | | |
| 2004 05 13 | 691 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.5+ | 0.9− | | |
| 2004 05 13 | 691 | 0.3+ | 0.2− | 2006 10 27 | 691 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.5+ | 0.3− | | |
| 2004 05 13 | 691 | 0.2+ | 0.1− | 2006 10 27 | 691 | 0.3+ | 0.6− | 2006 12 01 | G96 | 0.1− | 0.3− | | |
| 2004 06 08 | 691 | 0.6+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.4+ | 2006 12 01 | G96 | 0.6+ | 0.5− | | |
| 2004 06 08 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ | | | | | | |
| 2004 06 08 | 691 | 1.3− | 0.2− | 2006 10 31 | 691 | 0.3+ | 0.1+ | | | | | | |

**2006 UA$_{274}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.95193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17727678 | $\omega$ | 343.71663 | | +0.95415037 | −0.29076064 | |
| $a$ | 3.1383507 | $\Omega$ | 33.45173 | | +0.28700177 | +0.82121336 | |
| $e$ | 0.1184409 | $i$ | 7.41092 | | +0.08501204 | +0.49098560 | |
| $P$ | 5.56 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 19 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.5− | 0.9− | 2006 10 27 | 691 | 0.6+ | 0.0 | | |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1− | 0.3− | 2006 10 31 | 691 | 0.1− | 0.1+ | | |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.1+ | 0.4− | 2006 10 31 | 691 | 0.4− | 0.2+ | | |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1− | | |
| 2005 08 04 | 644 | 0.3− | 0.3+ | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.5− | 0.2+ | | |
| 2005 08 04 | 644 | 0.2− | 0.4+ | 2006 10 23 | 691 | 0.0 | 0.2+ | 2006 11 23 | 703 | 0.2− | 0.5+ | | |
| 2005 08 04 | 644 | 0.1+ | 0.4+ | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 23 | 703 | 1.1− | 0.2+ | | |
| 2006 09 30 | G96 | 0.4− | 0.7− | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 23 | 703 | 0.3− | 0.0 | | |

**2006 UB$_{274}$ = 2001 SJ$_{344}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.59599 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21670741 | $\omega$ | 110.25349 | | +0.99222146 | | +0.01861040 |
| $a$ | 2.7450708 | $\Omega$ | 248.84199 | | −0.06101961 | | +0.93453902 |
| $e$ | 0.1503270 | $i$ | 7.58422 | | +0.10850430 | | +0.35537370 |
| $P$ | 4.55 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.3+ | 0.0 | 2001 09 25 | 704 | 0.3+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 1999 03 21 | 645 | 0.3− | 0.0 | 2001 09 25 | 704 | 0.3+ | 0.4− | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2001 08 11 | 644 | 0.1+ | 0.9+ | 2006 10 27 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.2+ |
| 2001 08 11 | 644 | 0.2+ | 0.6+ | 2006 10 27 | 691 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.4− | 0.2+ |
| 2001 08 11 | 644 | 0.5− | 1.1+ | 2006 10 27 | 691 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.4− | 0.3+ |
| 2001 09 23 | 644 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.3+ |
| 2001 09 23 | 644 | 0.3− | 0.0 | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2001 09 23 | 644 | 0.4− | 0.3+ | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2001 09 25 | 704 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.3− | 2006 12 01 | G96 | 0.5+ | 0.1− |
| 2001 09 25 | 704 | 0.1− | 0.6− | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2001 09 25 | 704 | 0.5+ | 1.0− | 2006 11 10 | 691 | 0.1− | 0.3− | | | | |

**2006 UD$_{274}$ = 2000 CC$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.65092 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26652856 | $\omega$ | 97.30757 | | +0.85599298 | | −0.51640393 |
| $a$ | 2.3913339 | $\Omega$ | 293.78658 | | +0.46310966 | | +0.78703282 |
| $e$ | 0.1931524 | $i$ | 1.53776 | | +0.22979440 | | +0.33750010 |
| $P$ | 3.70 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 691 | 0.4+ | 1.0− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | (0.7− | 2.2+) |
| 2000 02 03 | 691 | 0.3− | 0.8− | 2006 11 09 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | (1.5− | 1.0+) |
| 2000 02 03 | 691 | 0.0 | 0.9− | 2006 11 09 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | (1.8− | 0.0 ) |
| 2000 02 08 | 691 | 0.2− | 0.9+ | 2006 11 09 | 691 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2000 02 08 | 691 | 0.0 | 0.8+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2000 02 08 | 691 | 0.0 | 1.0+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.6− | 0.3+ |
| 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 16 | 704 | (1.4+ | 1.7+) | 2006 11 21 | 704 | 0.9− | 0.7+ |
| 2006 09 30 | G96 | 0.3+ | 0.1+ | 2006 11 16 | 704 | 0.4− | 0.4+ | 2006 11 21 | 704 | (0.3− | 1.7−) |
| 2006 09 30 | G96 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.6− | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | (0.1+ | 1.7+) | 2006 12 01 | G96 | 0.8− | 0.4− |
| 2006 10 27 | 691 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2006 10 27 | 691 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.0 | 0.5− |
| 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.5− |
| 2006 10 31 | 691 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.1+ | | | | |

**2006 UJ$_{274}$ = 2003 LX$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 278.38112 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17468500 | $\omega$ | 268.00201 | | −0.88156543 | | −0.43278387 |
| $a$ | 3.1693168 | $\Omega$ | 246.31016 | | +0.47164790 | | −0.82422670 |
| $e$ | 0.2409409 | $i$ | 11.88042 | | −0.01976478 | | −0.36516910 |
| $P$ | 5.64 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 06 01 | 807 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 13 | 691 | 0.4− | 0.1− |
| 2003 06 01 | 807 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2003 06 02 | 807 | 0.2+ | 0.0 | 2006 11 02 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2003 06 02 | 807 | 0.1− | 0.1+ | 2006 11 02 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2006 10 19 | A50 | 0.3+ | 0.8+ | 2006 11 02 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.4+ | 0.2− |
| 2006 10 19 | A50 | 0.4+ | 1.0+ | 2006 11 09 | 691 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.1− | 0.0 |
| 2006 10 27 | 691 | 0.3− | 0.3− | 2006 11 09 | 691 | 0.0 | 0.4− | 2006 12 01 | G96 | 0.6+ | 0.4− |
| 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.3− | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2+ |
| 2006 10 27 | 691 | 0.3+ | 0.3− | 2006 11 13 | 691 | 0.1− | 0.0 | | | | |
| 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.1+ | | | | |

**2006 UO$_{274}$ = 1999 WW$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.28275 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27499135 | $\omega$ | 224.69253 | | +0.26756739 | | +0.96270152 |
| $a$ | 2.3420169 | $\Omega$ | 60.86569 | | −0.87066671 | | +0.25942434 |
| $e$ | 0.0979041 | $i$ | 2.63575 | | −0.41273135 | | +0.07684270 |
| $P$ | 3.58 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 29 | 691 | 0.3+ | 0.4+ | 2005 04 10 | G96 | 0.1− | 0.0 | 2006 09 27 | 691 | 0.0 | 0.1+ |
| 1999 10 29 | 691 | 0.0 | 0.3+ | 2005 04 10 | G96 | 0.0 | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 |
| 1999 10 29 | 691 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.2− | 0.1+ |
| 1999 11 28 | 691 | 0.0 | 0.6− | 2005 05 14 | G96 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.0 | 0.0 |
| 1999 11 28 | 691 | 0.3− | 0.2+ | 2005 05 14 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.0 |
| 1999 11 28 | 691 | 0.1+ | 0.1+ | 2005 05 14 | G96 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.0 | 0.0 |
| 1999 12 05 | 691 | 0.0 | 0.0 | 2006 09 19 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.2+ | 0.1− |
| 1999 12 05 | 691 | 0.2− | 0.3− | 2006 09 19 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 1999 12 05 | 691 | 0.2+ | 0.0 | 2006 09 19 | 691 | 0.5− | 0.0 | 2006 11 01 | 691 | 0.1− | 0.3− |
| 2005 04 10 | G96 | 0.3+ | 0.1− | 2006 09 27 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.2+ | 0.2− |
| 2005 04 10 | G96 | 0.2+ | 0.1− | 2006 09 27 | 691 | 0.1− | 0.0 | | | | |

**2006 UA$_{275}$ = 2002 TH$_{320}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 265.35177 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26247891 | $\omega$ | 141.99954 | | −0.56826672 | | −0.82268174 |
| $a$ | 2.4158675 | $\Omega$ | 342.61069 | | +0.74090451 | | −0.50292696 |
| $e$ | 0.0769347 | $i$ | 3.13821 | | +0.35795732 | | −0.26506456 |
| $P$ | 3.75 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 09 25 | 691 | 0.0 | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.2− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 09 30 | 291 | 0.2+ | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.2− |
| 2002 10 11 | 645 | 0.0 | 0.1+ | 2006 09 30 | 291 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 30 | 291 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2002 10 30 | 645 | 0.2+ | 0.1− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2002 10 30 | 645 | 0.0 | 0.1− | 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.5− | 0.2+ |
| 2006 09 25 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 |

**2006 UB$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.23077 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21881353 | $\omega$ | 67.07367 | | +0.99940119 | | −0.00675908 |
| $a$ | 2.7274278 | $\Omega$ | 293.29960 | | −0.00778712 | | +0.91164086 |
| $e$ | 0.0906718 | $i$ | 2.11745 | | +0.03371382 | | +0.41093218 |
| $P$ | 4.50 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2− | 0.3− | 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 10 28 | 691 | 0.3+ | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.3− | 2006 09 25 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.2− |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 691 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.3+ | 0.1− |
| 2004 04 13 | 691 | 0.3− | 0.5+ | 2006 10 16 | 691 | 0.2− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 04 13 | 691 | 0.4+ | 0.0 | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.2+ |

**2006 UC$_{275}$ = 2006 UK$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.11103 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18368468 | $\omega$ | 50.69707 | | +0.45905155 | | −0.88778972 |
| $a$ | 3.0649314 | $\Omega$ | 12.10873 | | +0.75863552 | | +0.37228522 |
| $e$ | 0.0295678 | $i$ | 9.10169 | | +0.46232437 | | +0.27061619 |
| $P$ | 5.37 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 26 | 691 | 0.2+ | 0.1+ | 2006 10 03 | 691 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.4+ | 0.3+ |
| 1995 09 26 | 691 | 0.5− | 0.1+ | 2006 10 03 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.0 |
| 1995 09 26 | 691 | 0.3+ | 0.2− | 2006 10 03 | 691 | 0.2+ | 0.6+ | 2006 10 28 | 691 | 0.4− | 0.0 |
| 1998 03 04 | 691 | 0.1+ | 0.2+ | 2006 10 16 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.4+ | 0.0 |
| 1998 03 04 | 691 | 0.1− | 0.2− | 2006 10 16 | 691 | 0.1+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.3− |
| 1998 03 04 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.1− |
| 2006 09 25 | 691 | 0.1− | 0.3− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.2− |
| 2006 09 25 | 691 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2006 09 25 | 691 | 0.3+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.6− | 0.2− |

**2006 UD$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 64.03412 | | (2000.0) | | | |
| $n$ | 0.22963535 | $\omega$ | 28.79090 | | +0.50837643 | +0.85928606 |
| $a$ | 2.6410516 | $\Omega$ | 271.81588 | | −0.80049247 | +0.44741838 |
| $e$ | 0.1582532 | $i$ | 3.23478 | | −0.31743537 | +0.24787953 |
| $P$ | 4.29 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 29 | 691 | 0.5+ | 0.1+ | 2006 09 23 | 152 | 0.6− | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2004 02 29 | 691 | 0.2+ | 0.3+ | 2006 09 23 | 152 | 1.2− | 1.0+ | 2006 11 10 | 691 | 0.3− | 0.1− |
| 2004 02 29 | 691 | 0.6− | 0.0 | 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 1.0+ | 0.7+ |
| 2005 05 04 | 644 | 0.0 | 0.5+ | 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.8+ |
| 2005 05 04 | 644 | 0.3+ | 0.6+ | 2006 09 25 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | (2.0− | 0.8−) |
| 2005 05 04 | 644 | 0.3+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.8+ | 0.5+ |
| 2005 05 18 | E12 | 0.1− | 0.5+ | 2006 10 03 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2005 05 18 | E12 | 0.4− | 0.2+ | 2006 10 03 | 691 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2005 05 18 | E12 | 0.2− | 1.0+ | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2005 05 18 | E12 | (2.6+ | 4.1+) | 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2− |
| 2005 06 11 | 703 | 0.6− | 0.6− | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2− |
| 2005 06 11 | 703 | 1.2− | 1.2− | 2006 10 28 | 691 | 0.4− | 0.5− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2005 06 11 | 703 | 0.6+ | 0.8− | 2006 10 28 | 691 | 1.0+ | 0.1+ | 2006 11 19 | 704 | 0.5− | 0.4+ |
| 2005 06 11 | 703 | 0.5+ | 1.0+ | 2006 10 28 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 2005 07 04 | 644 | 0.5+ | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.8+ |
| 2005 07 04 | 644 | 0.5+ | 0.5+ | 2006 11 01 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2005 07 04 | 644 | 0.3+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1− | | | | |
| 2006 09 23 | 152 | 0.1− | 0.3− | 2006 11 10 | 691 | 0.2− | 0.0 | | | | |

**2006 UH$_{275}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 49.40004 | | (2000.0) | | | |
| $n$ | 0.18228642 | $\omega$ | 71.92645 | | +0.64555958 | +0.76030186 |
| $a$ | 3.0805848 | $\Omega$ | 238.49916 | | −0.72876406 | +0.58505209 |
| $e$ | 0.2084491 | $i$ | 4.84871 | | −0.22837637 | +0.28223243 |
| $P$ | 5.41 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 16 | G96 | 0.2− | 0.2− | 2006 10 02 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.3− |
| 2005 06 16 | G96 | 0.1+ | 0.1− | 2006 10 02 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.1− |
| 2005 06 16 | G96 | 0.3− | 0.0 | 2006 10 17 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2005 06 16 | G96 | 0.0 | 0.1− | 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.6+ | 0.8+ |
| 2005 07 05 | G96 | 0.3+ | 1.0− | 2006 10 17 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.0 | 0.4+ |
| 2005 07 05 | G96 | 0.3− | 0.3+ | 2006 10 17 | 703 | 1.0− | 1.2+ | 2006 11 10 | 691 | 0.5− | 0.4+ |
| 2005 07 05 | G96 | 0.3− | 0.3+ | 2006 10 17 | 703 | 1.0− | 0.4− | 2006 11 16 | 691 | 0.3+ | 0.3− |
| 2005 07 05 | G96 | 0.7+ | 0.7+ | 2006 10 17 | 703 | 1.3− | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2006 09 28 | 691 | 0.3+ | 0.0 | 2006 10 17 | 703 | (1.2− | 1.8−) | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 2006 09 28 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2− | 0.4− |
| 2006 09 28 | 691 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.4− |
| 2006 10 02 | 691 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 691 | 0.2+ | 0.3− |

**2006 UR$_{275}$ = 1995 TU$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 169.59763 | | (2000.0) | | | |
| $n$ | 0.27037737 | $\omega$ | 181.13166 | | −0.85125280 | +0.52405571 |
| $a$ | 2.3685860 | $\Omega$ | 30.52171 | | −0.48103391 | −0.75865088 |
| $e$ | 0.1413409 | $i$ | 3.05852 | | −0.20970227 | −0.38705872 |
| $P$ | 3.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.7− | 0.5+ | 2001 03 29 | 608 | 0.7+ | 0.1− | 2006 10 28 | 691 | 0.5+ | 0.3− |
| 1995 10 15 | 691 | 0.5− | 0.1+ | 2001 04 25 | 608 | 0.6− | 0.2− | 2006 10 28 | 691 | 0.4+ | 0.1+ |
| 1995 10 15 | 691 | 0.6− | 0.0 | 2001 04 25 | 608 | 0.7− | 0.3− | 2006 10 28 | 691 | 0.2− | 0.1+ |
| 1995 10 21 | 691 | 1.1+ | 0.2+ | 2001 04 25 | 608 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.0 |
| 1995 10 21 | 691 | 0.3+ | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 1995 10 21 | 691 | 0.1+ | 0.1+ | 2006 09 25 | G96 | 0.6− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.5− |
| 2001 03 29 | 608 | 0.5+ | 0.7+ | 2006 09 25 | G96 | 0.0 | 0.1+ | | | | |
| 2001 03 29 | 608 | 0.6+ | 0.3+ | 2006 09 25 | G96 | 0.2+ | 0.6− | | | | |

**2006 UA$_{276}$ = 2001 UT$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 323.14436 | | (2000.0) | | | |
| $n$ | 0.20035806 | $\omega$ | 259.68821 | | +0.42178294 | −0.90663880 |
| $a$ | 2.8924431 | $\Omega$ | 165.35164 | | +0.84694791 | +0.38992396 |
| $e$ | 0.0459140 | $i$ | 2.32499 | | +0.32369489 | +0.16113783 |
| $P$ | 4.92 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 16 | 691 | 0.0 | 0.0 | 2001 10 20 | 704 | 1.2− | 0.4− | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 1999 04 16 | 691 | 0.1− | 0.1− | 2001 10 20 | 704 | 0.1+ | 0.3− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1999 04 16 | 691 | 0.1+ | 0.1+ | 2001 10 20 | 704 | 0.3− | 0.9+ | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 2001 10 17 | 691 | 0.2+ | 0.0 | 2001 10 20 | 704 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1− |
| 2001 10 17 | 691 | 0.2+ | 0.0 | 2006 10 19 | 691 | 0.7− | 0.3− | 2006 11 14 | G96 | 0.5+ | 0.3− |
| 2001 10 17 | 691 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2001 10 18 | I03 | 0.2+ | 0.2− | 2006 10 19 | 691 | 0.2+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.3− |
| 2001 10 18 | I03 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.2− |
| 2001 10 18 | I03 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.1− | 0.2+ | | | | |

**2006 UY$_{276}$ = 2000 FP$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 80.13955 | | (2000.0) | | | |
| $n$ | 0.22722457 | $\omega$ | 293.38735 | | +0.49948397 | +0.86627499 |
| $a$ | 2.6596992 | $\Omega$ | 6.60058 | | −0.76300629 | +0.44488437 |
| $e$ | 0.0641049 | $i$ | 4.55719 | | −0.41028913 | +0.22725656 |
| $P$ | 4.34 | $H$ | 17.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 30 | 691 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.6+ |
| 2000 03 30 | 691 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.3− | 0.5− | 2006 11 17 | 691 | 0.4+ | 0.3− |
| 2000 03 30 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.3− | 0.5− |
| 2000 04 05 | 704 | 1.6+ | 0.8+ | 2006 11 01 | 691 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.8+ | 0.1− |
| 2000 04 05 | 704 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.2− | 2006 11 21 | 691 | 0.2− | 0.2− |
| 2000 04 05 | 704 | 0.3+ | 0.5+ | 2006 11 10 | 691 | 0.0 | 0.2− | 2006 11 21 | 691 | 0.4− | 0.0 |
| 2006 10 28 | 691 | 0.2− | 0.6+ | 2006 11 10 | 691 | 0.6+ | 0.3+ | 2006 11 21 | 691 | 0.5− | 0.6+ |

**2006 UR$_{277}$ = 2003 YX$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 228.96324 | | (2000.0) | | | |
| $n$ | 0.27908432 | $\omega$ | 180.81635 | | −0.98941610 | −0.14501746 |
| $a$ | 2.3190623 | $\Omega$ | 350.84068 | | +0.13331217 | −0.89464071 |
| $e$ | 0.1390302 | $i$ | 1.82578 | | +0.05730314 | −0.42259666 |
| $P$ | 3.53 | $H$ | 18.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 691 | 0.1− | 0.2+ | 2003 12 21 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.7− | 0.0 |
| 2003 12 19 | 691 | 0.1− | 0.3− | 2006 10 19 | 691 | 0.7+ | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.2− |
| 2003 12 19 | 691 | 0.2+ | 0.6− | 2006 10 19 | 691 | 0.3− | 0.3− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 2003 12 21 | 691 | 0.2+ | 0.2+ | 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.5+ | 0.0 |
| 2003 12 21 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 |

**2006 UA$_{278}$ = 2004 BN$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 245.71398 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27988085 | $\omega$ | 157.89204 | | −0.86529485 | −0.50125136 | |
| $a$ | 2.3146603 | $\Omega$ | 352.02251 | | +0.45609849 | −0.78445646 | |
| $e$ | 0.0749234 | $i$ | 1.42443 | | +0.20793987 | −0.36520561 | |
| $P$ | 3.52 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.1+ | 0.2− | 2004 01 24 | 704 | 0.3− | 0.2+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 1999 11 10 | 691 | 0.1− | 0.1− | 2004 01 24 | 704 | 0.4+ | 0.7+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 1999 11 10 | 691 | 0.1+ | 0.1− | 2004 01 24 | 704 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2003 12 19 | 691 | 0.2− | 0.4− | 2004 01 24 | 704 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2003 12 19 | 691 | 0.2− | 0.3− | 2004 01 24 | 704 | (0.6− | 2.1+) | 2006 11 15 | G96 | 0.1+ | 0.2+ |
| 2003 12 19 | 691 | 0.1+ | 0.3+ | 2006 10 11 | 691 | 0.3− | 0.5− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2004 01 22 | 704 | 0.8+ | 0.2+ | 2006 10 11 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 2004 01 22 | 704 | 0.8+ | 0.1− | 2006 10 11 | 691 | 0.3+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.4− |
| 2004 01 22 | 704 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | | | | |
| 2004 01 22 | 704 | 0.6− | 0.1− | 2006 10 28 | 691 | 0.2− | 0.1+ | | | | |

**2006 UL$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.68318 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.15379928 | $\omega$ | 197.13861 | | +0.41086797 | −0.90434013 | |
| $a$ | 3.4501120 | $\Omega$ | 228.76735 | | +0.85344478 | +0.42609856 | |
| $e$ | 0.0401137 | $i$ | 8.83999 | | +0.32065483 | +0.02467702 | |
| $P$ | 6.41 | $H$ | 14.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 16 | 691 | 0.1− | 0.1− | 2005 08 26 | 699 | 0.1+ | 0.4+ | 2006 10 19 | 644 | 0.4+ | 0.1− |
| 2000 12 16 | 691 | 0.2− | 0.5− | 2005 08 26 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.1− | 0.3+ |
| 2000 12 16 | 691 | 0.3+ | 0.1− | 2005 08 26 | 644 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.4+ |
| 2002 02 07 | 644 | 0.2+ | 0.8+ | 2005 08 26 | 644 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.1+ | 0.3+ |
| 2002 02 07 | 644 | 0.2+ | 1.4+ | 2006 10 02 | G96 | 0.3+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2002 02 07 | 644 | 0.2+ | 0.8+ | 2006 10 02 | G96 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2002 02 17 | 644 | 0.1+ | 0.2+ | 2006 10 02 | G96 | 0.5+ | 0.2− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2002 02 17 | 644 | 0.3+ | 0.4+ | 2006 10 02 | G96 | 0.4+ | 0.2− | 2006 11 11 | 703 | 1.4+ | 0.6− |
| 2002 02 17 | 644 | 0.2+ | 0.1+ | 2006 10 15 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.3− |
| 2005 07 29 | 699 | 0.9+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.3− | 0.4+ |
| 2005 07 29 | 699 | 0.1+ | 0.5+ | 2006 10 15 | 691 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.9+ | 0.4− |
| 2005 07 29 | 699 | 0.0 | 0.3− | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1− | 1.1+ |
| 2005 07 29 | 699 | 1.0− | 0.0 | 2006 10 19 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.5+ |
| 2005 08 26 | 699 | 0.5− | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2005 08 26 | 699 | 0.1+ | 0.7+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.5+ |
| 2005 08 26 | 699 | 0.6− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.4− |

**2006 UR$_{278}$ = 2000 JZ$_{89}$ = 2004 FV$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.11374 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23049966 | $\omega$ | 217.75725 | | −0.47861491 | +0.87751790 | |
| $a$ | 2.6344453 | $\Omega$ | 23.69208 | | −0.78640711 | −0.41331388 | |
| $e$ | 0.1280221 | $i$ | 4.25804 | | −0.39050176 | −0.24317477 | |
| $P$ | 4.28 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 04 | 645 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.1+ | 0.2− | 2006 10 19 | 691 | 0.1− | 0.1− |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.3− | 0.3+ |
| 2000 05 05 | 645 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.4+ | 0.5− | 2006 10 28 | 691 | 0.5+ | 0.3+ |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.0 | 0.6− | 2006 10 28 | 691 | 0.3− | 0.6+ |
| 2004 03 17 | 291 | 0.3− | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.3− | 2006 11 01 | 691 | 0.3+ | 0.2+ |
| 2004 03 17 | 291 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.6− | 2006 11 01 | 691 | 0.1− | 1.5− |
| 2004 03 17 | 291 | 0.0 | 0.1+ | 2006 10 19 | 691 | 0.4− | 0.5+ | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 03 18 | 691 | 0.0 | 0.0 | 2006 10 19 | 691 | 0.3+ | 0.1− | | | | |

**2006 UX$_{278}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.17687 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27583266 | $\omega$ | 15.75170 | | +0.00084987 | +0.99863403 | |
| $a$ | 2.3372523 | $\Omega$ | 254.31905 | | −0.92324171 | −0.01928930 | |
| $e$ | 0.1888666 | $i$ | 3.11056 | | −0.38421871 | +0.04855930 | |
| $P$ | 3.57 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 16 | 644 | 0.3− | 0.1− | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.4− |
| 2002 08 16 | 644 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.2− | 0.6− | 2006 11 01 | 691 | 0.4+ | 0.1+ |
| 2002 08 16 | 644 | 0.3+ | 0.3+ | 2006 10 19 | 691 | 0.2− | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.1− |
| 2005 04 06 | 691 | 0.1− | 0.0 | 2006 10 19 | 691 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.2− | 0.4− |
| 2005 04 06 | 691 | 0.2− | 0.0 | 2006 10 19 | 691 | 0.6− | 0.1− | 2006 11 09 | 691 | 0.0 | 0.1+ |
| 2005 04 06 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.2+ | 0.0 |
| 2005 04 15 | 691 | 0.2+ | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.6+ | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2005 04 15 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.8+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.1+ |
| 2005 04 15 | 691 | 0.1+ | 0.0 | 2006 10 31 | 691 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.1+ |
| 2006 10 02 | G96 | 0.5+ | 0.8− | 2006 10 31 | 691 | 0.1+ | 0.2− | | | | |
| 2006 10 02 | G96 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.2− | 0.3+ | | | | |

**2006 UN$_{279}$ = 2000 EA$_{184}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.75135 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24025982 | $\omega$ | 161.09806 | | −0.77225076 | +0.62943823 | |
| $a$ | 2.5626067 | $\Omega$ | 58.21721 | | −0.59518463 | −0.66929439 | |
| $e$ | 0.1650773 | $i$ | 5.82242 | | −0.22222518 | −0.39478162 | |
| $P$ | 4.10 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 0.1+ | 0.8+ | 2004 02 23 | 049 | 1.1− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.4− |
| 2000 03 05 | 704 | 0.9− | 0.3− | 2004 02 23 | 049 | 1.0− | 0.2− | 2006 10 28 | G96 | 0.3− | 0.3− |
| 2000 03 05 | 704 | 0.4+ | 1.0+ | 2006 09 26 | G96 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2000 03 05 | 704 | 0.4+ | 0.4+ | 2006 09 26 | G96 | 0.6+ | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2000 03 05 | 704 | 0.6+ | 0.3− | 2006 09 26 | G96 | 0.4+ | 0.2− | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2000 03 12 | 704 | 0.1− | 1.0+ | 2006 09 26 | G96 | 0.3+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.2− |
| 2000 03 12 | 704 | 0.5+ | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 12 | G96 | 0.4+ | 0.0 |
| 2000 03 12 | 704 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.8− | 0.5+ | 2006 11 12 | G96 | 0.6+ | 0.3− |
| 2003 12 25 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.3− | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.7− |
| 2003 12 25 | 645 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.4+ | 0.4− | | | | |
| 2004 02 23 | 049 | 0.8+ | 0.6− | 2006 10 28 | G96 | 0.0 | 0.1− | | | | |

**2006 UX$_{279}$ = 2004 HJ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.03170 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17961593 | $\omega$ | 217.24221 | | +0.29073098 | +0.95605886 | |
| $a$ | 3.1110439 | $\Omega$ | 69.68710 | | −0.86786975 | +0.28012407 | |
| $e$ | 0.1442899 | $i$ | 2.30850 | | −0.40283692 | +0.08649834 | |
| $P$ | 5.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 16 | 691 | 0.1+ | 0.1− | 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 10 28 | G96 | 0.6+ | 0.3− |
| 2004 04 16 | 691 | 0.1+ | 0.2− | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.6− |
| 2004 04 16 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.0 | 0.2+ |
| 2004 04 22 | 691 | 0.0 | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.2− | 2006 11 01 | 691 | 0.3+ | 0.3+ |
| 2004 04 22 | 691 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 04 22 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.4− | | | | |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 10 28 | G96 | 0.4− | 0.0 | | | | |

**2006 UC$_{280}$ = 1998 YW$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 279.90118 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.24783256 | | $\omega$ | 276.93755 | | −0.61272865 | | −0.78916026 | | | |
| $a$ | 2.5101354 | | $\Omega$ | 210.97496 | | +0.75366218 | | −0.56738158 | | | |
| $e$ | 0.1063037 | | $i$ | 4.71495 | | +0.23781698 | | −0.23516849 | | | |
| $P$ | 3.98 | | $H$ | 17.7 | $G$ | 0.15 | | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 691 | 0.1− | 0.0 | | 2002 11 13 | 291 | 0.1+ | 0.2+ | | 2006 10 28 | G96 | 0.2− | 0.4− | | | |
| 1998 10 12 | 691 | 0.3+ | 0.1− | | 2002 11 13 | 291 | 0.0 | 0.2+ | | 2006 10 28 | G96 | 0.8− | 0.3− | | | |
| 1998 10 12 | 691 | 0.1− | 0.4− | | 2002 11 13 | 291 | 0.0 | 0.3+ | | 2006 10 28 | G96 | 0.3− | 0.7− | | | |
| 1998 12 17 | 950 | 0.3− | 0.7+ | | 2006 10 12 | 691 | 0.1− | 0.0 | | 2006 11 01 | 691 | 0.2+ | 0.1+ | | | |
| 1998 12 17 | 950 | 0.3+ | 0.3+ | | 2006 10 12 | 691 | 0.2− | 0.3+ | | 2006 11 01 | 691 | 0.2+ | 0.3+ | | | |
| 1998 12 17 | 950 | 0.2+ | 0.0 | | 2006 10 12 | 691 | 0.5+ | 0.0 | | 2006 11 01 | 691 | 0.1+ | 0.0 | | | |
| 1998 12 18 | 950 | 0.2+ | 0.0 | | 2006 10 20 | 691 | 0.0 | 0.0 | | 2006 11 12 | G96 | 0.0 | 0.6− | | | |
| 1998 12 18 | 950 | 0.1+ | 0.7− | | 2006 10 20 | 691 | 0.4− | 0.1+ | | 2006 11 12 | G96 | 0.0 | 0.6− | | | |
| 1998 12 18 | 950 | 0.1+ | 1.0− | | 2006 10 20 | 691 | 0.4− | 0.0 | | 2006 11 12 | G96 | 0.8+ | 0.5− | | | |
| 1998 12 18 | 950 | 0.7− | 0.1− | | 2006 10 28 | G96 | 0.3+ | 0.2− | | 2006 11 12 | G96 | 0.4+ | 0.6− | | | |

**2006 UX$_{280}$ = 2004 GV$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 60.94677 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.19129368 | | $\omega$ | 277.53249 | | +0.85822761 | | +0.48952358 | | | |
| $a$ | 2.9831079 | | $\Omega$ | 53.28729 | | −0.36124803 | | +0.78966279 | | | |
| $e$ | 0.0811212 | | $i$ | 11.09837 | | −0.36461654 | | +0.36986397 | | | |
| $P$ | 5.15 | | $H$ | 16.2 | $G$ | 0.15 | | $U$ | 3 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.2− | 0.3+ | | 2006 10 12 | 691 | 0.1− | 0.5+ | | 2006 11 01 | 691 | 0.0 | 0.2+ | | | |
| 2004 04 13 | 691 | 0.5+ | 0.5+ | | 2006 10 12 | 691 | 0.0 | 0.2+ | | 2006 11 11 | G96 | 0.2+ | 0.1+ | | | |
| 2004 04 13 | 691 | 0.1− | 0.5+ | | 2006 10 20 | 691 | 0.3− | 0.3+ | | 2006 11 11 | G96 | 0.4+ | 0.1− | | | |
| 2004 04 20 | 691 | 0.2+ | 0.1+ | | 2006 10 20 | 691 | 0.3− | 0.0 | | 2006 11 11 | G96 | 0.1+ | 0.0 | | | |
| 2004 04 20 | 691 | 0.1+ | 0.1+ | | 2006 10 20 | 691 | (2.0+ | 4.2−) | | 2006 11 11 | G96 | 0.3− | 0.1+ | | | |
| 2004 04 20 | 691 | 0.2+ | 0.2+ | | 2006 10 28 | G96 | 0.6− | 0.4− | | 2006 11 21 | G96 | 0.6+ | 0.2− | | | |
| 2005 08 06 | E12 | 0.6− | 0.2+ | | 2006 10 28 | G96 | 0.1− | 0.1+ | | 2006 11 21 | G96 | 0.1+ | 0.2− | | | |
| 2005 08 06 | E12 | 0.6− | 0.3+ | | 2006 10 28 | G96 | 0.0 | 0.1− | | 2006 11 21 | G96 | 0.3− | 0.0 | | | |
| 2005 08 06 | E12 | 0.7+ | 0.5+ | | 2006 10 28 | G96 | 0.1+ | 0.2+ | | 2006 11 21 | G96 | 0.1− | 0.4− | | | |
| 2005 08 06 | E12 | 0.1− | 0.3+ | | 2006 11 01 | 691 | 0.1− | 0.1+ | | | | | | | | |
| 2006 10 12 | 691 | 0.0 | 0.3+ | | 2006 11 01 | 691 | 0.0 | 0.2+ | | | | | | | | |

**2006 UF$_{281}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 331.26982 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.29899461 | | $\omega$ | 229.39998 | | +0.38804317 | | −0.92156652 | | | |
| $a$ | 2.2149324 | | $\Omega$ | 197.77787 | | +0.85677078 | | +0.36539262 | | | |
| $e$ | 0.1108730 | | $i$ | 2.20216 | | +0.33965618 | | +0.13116167 | | | |
| $P$ | 3.30 | | $H$ | 17.5 | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 14 | 327 | 0.5+ | 0.8+ | | 2006 10 12 | 691 | 0.1− | 0.3− | | 2006 11 11 | 703 | (1.8− | 0.0 | ) | | |
| 1996 10 14 | 327 | 0.4− | 0.3− | | 2006 10 12 | 691 | 0.1− | 0.3− | | 2006 11 11 | 703 | 1.0− | 0.2+ | | | |
| 1996 10 14 | 327 | 0.1− | 0.1− | | 2006 10 20 | 644 | 0.4+ | 0.1+ | | 2006 11 11 | 703 | 0.7− | 0.8− | | | |
| 2001 02 03 | 691 | 0.3− | 0.2− | | 2006 10 20 | 644 | 0.2− | 0.2+ | | 2006 11 11 | 703 | 0.7− | 0.3− | | | |
| 2001 02 03 | 691 | 0.3− | 0.0 | | 2006 10 20 | 644 | 0.1+ | 0.0 | | 2006 11 17 | 703 | 0.6+ | 0.1− | | | |
| 2001 02 03 | 691 | 0.1+ | 0.6+ | | 2006 10 20 | 691 | 0.1− | 0.1− | | 2006 11 17 | 703 | 0.3− | 0.6− | | | |
| 2003 12 22 | 691 | 0.1+ | 0.2− | | 2006 10 20 | 691 | 0.4− | 0.2+ | | 2006 11 17 | 703 | 0.7− | 0.1− | | | |
| 2003 12 22 | 691 | 0.0 | 0.0 | | 2006 10 20 | 691 | 0.4− | 0.0 | | 2006 11 17 | 703 | 0.6+ | 0.2+ | | | |
| 2003 12 22 | 691 | 0.2− | 0.2− | | 2006 10 28 | G96 | 0.2+ | 0.0 | | 2006 11 18 | 704 | (0.9− | 1.7+) | | | |
| 2004 01 13 | 691 | 0.2+ | 0.1− | | 2006 10 28 | G96 | 0.4− | 0.1+ | | 2006 11 18 | 704 | 0.8+ | 0.5− | | | |
| 2004 01 13 | 691 | 0.1+ | 0.0 | | 2006 10 28 | G96 | 0.0 | 0.3− | | 2006 11 18 | 704 | 0.1+ | 0.8+ | | | |
| 2004 01 13 | 691 | 0.4+ | 0.2+ | | 2006 11 01 | 691 | 0.1+ | 0.1+ | | 2006 11 18 | 704 | 0.0 | 1.1+ | | | |
| 2005 06 17 | G96 | 0.0 | 0.0 | | 2006 11 01 | 691 | 0.9+ | 0.5+ | | 2006 11 27 | 703 | 0.2− | 0.7− | | | |
| 2005 06 17 | G96 | 0.6+ | 0.2− | | 2006 11 01 | 691 | 0.0 | 0.1+ | | 2006 11 27 | 703 | 0.5− | 1.3− | | | |
| 2005 06 17 | G96 | 0.0 | 0.4+ | | 2006 11 02 | 703 | 0.0 | 0.0 | | 2006 11 27 | 703 | 0.2+ | 1.0− | | | |
| 2005 06 17 | G96 | 0.5+ | 0.1+ | | 2006 11 02 | 703 | (0.4+ | 1.6+) | | 2006 11 27 | 703 | 0.1− | 0.6− | | | |
| 2006 09 25 | G96 | 0.4+ | 0.2− | | 2006 11 02 | 703 | 0.9+ | 0.1− | | 2006 11 28 | 704 | 1.5+ | 0.5+ | | | |
| 2006 09 25 | G96 | 0.1+ | 0.2− | | 2006 11 02 | 703 | (2.3+ | 1.1+) | | 2006 11 28 | 704 | 1.2− | 0.2+ | | | |
| 2006 09 25 | G96 | 0.1− | 0.3− | | 2006 11 09 | 644 | 0.0 | 0.2+ | | 2006 11 28 | 704 | 0.5− | 0.5+ | | | |
| 2006 09 25 | G96 | 0.1+ | 0.2− | | 2006 11 09 | 644 | 0.1+ | 0.1+ | | 2006 11 28 | 704 | 0.2− | 1.3+ | | | |
| 2006 10 12 | 691 | 0.3− | 0.1− | | 2006 11 09 | 644 | 0.1− | 0.3+ | | 2006 11 28 | 704 | 0.3+ | 0.9+ | | | |

**2006 UH$_{281}$ = 2005 KE$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 108.08683 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.28463245 | | $\omega$ | 226.51015 | | +0.12121348 | | +0.98850552 | | | |
| $a$ | 2.2888277 | | $\Omega$ | 50.67379 | | −0.87368345 | | +0.14945199 | | | |
| $e$ | 0.1147932 | | $i$ | 6.70782 | | −0.47115233 | | −0.02282390 | | | |
| $P$ | 3.46 | | $H$ | 17.1 | $G$ | 0.15 | | $U$ | 4 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 16 | 644 | 0.2+ | 0.2+ | | 2006 09 28 | G96 | 0.5+ | 0.4− | | 2006 10 28 | G96 | 0.3+ | 0.3− | | | |
| 2005 05 16 | 644 | 0.1+ | 0.2+ | | 2006 09 28 | G96 | 0.5+ | 0.3− | | 2006 11 01 | 691 | 0.2+ | 0.0 | | | |
| 2005 05 16 | 644 | 0.4+ | 0.0 | | 2006 10 20 | 691 | 0.2− | 0.1− | | 2006 11 01 | 691 | 0.2+ | 0.1+ | | | |
| 2005 05 21 | 644 | 0.1− | 0.2+ | | 2006 10 20 | 691 | 0.4− | 0.2+ | | 2006 11 01 | 691 | 0.4+ | 0.3+ | | | |
| 2005 05 21 | 644 | 0.3− | 0.1− | | 2006 10 20 | 691 | 0.4− | 0.1+ | | 2006 11 11 | G96 | 0.0 | 0.3− | | | |
| 2005 05 21 | 644 | 0.2− | 0.0 | | 2006 10 28 | G96 | 0.1+ | 0.2+ | | 2006 11 11 | G96 | 0.4− | 0.2− | | | |
| 2006 09 28 | G96 | 0.2+ | 0.4− | | 2006 10 28 | G96 | 0.3− | 0.3+ | | 2006 11 11 | G96 | 0.5− | 0.4− | | | |
| 2006 09 28 | G96 | 0.2+ | 0.2− | | 2006 10 28 | G96 | 0.8+ | 0.3+ | | 2006 11 11 | G96 | 0.7− | 0.2− | | | |

**2006 UK$_{281}$ = 1995 SN$_{72}$ = 2004 FQ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 313.68009 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27333233 | | $\omega$ | 245.88355 | | −0.11001279 | | −0.99371120 | | | |
| $a$ | 2.3514841 | | $\Omega$ | 210.45510 | | +0.92620494 | | −0.09487863 | | | |
| $e$ | 0.1835256 | | $i$ | 2.35896 | | +0.36061281 | | −0.05946514 | | | |
| $P$ | 3.61 | | $H$ | 18.6 | $G$ | 0.15 | | $U$ | 2 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 21 | 691 | 0.4+ | 0.4− | | 2004 03 21 | 291 | 0.2− | 0.1+ | | 2006 10 28 | G96 | 0.2+ | 0.1− | | | |
| 1995 09 21 | 691 | 0.8− | 0.1− | | 2004 03 21 | 291 | 0.0 | 0.1+ | | 2006 10 28 | G96 | 0.2+ | 0.2− | | | |
| 1995 09 21 | 691 | 0.3+ | 0.0 | | 2006 09 25 | G96 | 0.4+ | 0.5− | | 2006 11 01 | 691 | 0.1+ | 0.2+ | | | |
| 1995 09 24 | 691 | 0.0 | 0.3+ | | 2006 09 25 | G96 | 0.6+ | 0.4− | | 2006 11 01 | 691 | 0.2+ | 0.2− | | | |
| 1995 09 24 | 691 | 0.1+ | 0.4+ | | 2006 09 25 | G96 | 0.5+ | 0.7− | | 2006 11 01 | 691 | 0.3+ | 0.0 | | | |
| 1995 09 24 | 691 | 0.3− | 0.4+ | | 2006 09 25 | G96 | 0.3+ | 0.8− | | 2006 11 11 | G96 | 0.2+ | 0.1− | | | |
| 2004 03 17 | 691 | 0.0 | 0.1− | | 2006 10 20 | 691 | 0.4− | 0.2+ | | 2006 11 11 | G96 | 0.4− | 0.2− | | | |
| 2004 03 17 | 691 | 0.0 | 0.1+ | | 2006 10 20 | 691 | 0.4− | 0.0 | | 2006 11 11 | G96 | 0.1− | 0.4− | | | |
| 2004 03 17 | 691 | 0.1− | 0.2− | | 2006 10 20 | 691 | 0.3− | 0.5+ | | 2006 11 11 | G96 | 0.2− | 0.5− | | | |
| 2004 03 21 | 291 | 0.5+ | 0.3+ | | 2006 10 28 | G96 | 0.7+ | 0.1+ | | | | | | | | |

**2006 UN$_{281}$ = 2004 FK$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 111.93000 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.21526113 | | $\omega$ | 231.63400 | | +0.25026698 | | +0.96333810 | | | |
| $a$ | 2.7573526 | | $\Omega$ | 53.13151 | | −0.84633268 | | +0.26617182 | | | |
| $e$ | 0.0299774 | | $i$ | 6.94070 | | −0.47019935 | | +0.03364915 | | | |
| $P$ | 4.58 | | $H$ | 15.7 | $G$ | 0.15 | | $U$ | 1 | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 08 | 644 | 0.6− | 0.3+ | | 2006 10 12 | 691 | 0.1− | 0.1+ | | 2006 11 11 | G96 | 0.3− | 0.1− | | | |
| 2001 10 08 | 644 | 0.4− | 0.0 | | 2006 10 28 | G96 | 0.3+ | 0.2+ | | 2006 11 17 | 703 | 0.9+ | 0.8+ | | | |
| 2001 10 08 | 644 | 0.8− | 0.3+ | | 2006 10 28 | G96 | 0.2+ | 0.2+ | | 2006 11 17 | 703 | 1.5− | 0.6− | | | |
| 2001 10 16 | 644 | 0.3− | 1.0+ | | 2006 10 28 | G96 | 0.1− | 0.0 | | 2006 11 17 | 703 | 0.9+ | 0.4+ | | | |
| 2001 10 16 | 644 | 0.0 | 1.1+ | | 2006 10 28 | G96 | 0.0 | 0.3− | | 2006 11 17 | 703 | 0.3− | 0.4+ | | | |
| 2001 10 16 | 644 | 0.0 | 1.3+ | | 2006 11 01 | 691 | 0.2+ | 0.3+ | | 2006 11 21 | G96 | 0.0 | 0.1− | | | |
| 2004 03 22 | 704 | (0.1+ | 1.6+) | | 2006 11 01 | 691 | 0.0 | 0.2+ | | 2006 11 21 | G96 | 0.2+ | 0.0 | | | |
| 2004 03 22 | 704 | 1.2+ | 0.2+ | | 2006 11 01 | 691 | 0.1+ | 0.3+ | | 2006 11 21 | G96 | 0.1− | 0.1− | | | |
| 2004 03 22 | 704 | 0.7+ | 0.6+ | | 2006 11 11 | 703 | 0.7− | 0.7− | | 2006 11 21 | G96 | 0.3− | 0.1− | | | |
| 2004 03 22 | 704 | 0.0 | 1.0+ | | 2006 11 11 | 703 | 0.6+ | 0.4− | | 2006 11 21 | 704 | (0.5+ | 1.7+) | | | |
| 2004 03 29 | 704 | 0.6+ | 1.1+ | | 2006 11 11 | 703 | 0.2− | 0.6− | | 2006 11 21 | 704 | 0.0 | 0.2+ | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 29 | 704 | 0.3+ | 1.2+ | 2006 11 11 | 703 | (1.6− | 0.1+) | 2006 11 21 | 704 | (0.8+ | 2.0+) |
| 2004 03 29 | 704 | 0.9+ | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.1− | 2006 11 25 | 701 | 0.5+ | 0.1+ |
| 2004 03 29 | 704 | 0.8− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 25 | 701 | 0.1+ | 0.4+ |
| 2005 07 17 | 644 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.2− | 0.1+ | 2006 11 27 | 703 | 0.2− | 1.6− |
| 2005 07 17 | 644 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 27 | 703 | 0.8+ | 0.7+ |
| 2005 07 17 | 644 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.2− | 1.1− |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.2+ | 0.4− |
| 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.2− | | | | |

**2006 UR$_{281}$ = 2005 JW$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.10404 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24425671 | $\omega$ | 116.21154 | | +0.89444235 | | +0.44535830 |
| $a$ | 2.5345744 | $\Omega$ | 217.38015 | | −0.43034152 | | +0.83270775 |
| $e$ | 0.2153836 | $i$ | 3.81175 | | −0.12156913 | | +0.32901944 |
| $P$ | 4.04 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.0 | 0.2+ | 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.5− | 0.3+ |
| 2005 05 04 | G96 | 0.3− | 0.2+ | 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2005 05 04 | G96 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.1+ |
| 2005 05 04 | G96 | 0.7− | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.2− | 0.5− |
| 2005 05 12 | 691 | 0.3+ | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.2+ |
| 2005 05 12 | 691 | 0.4+ | 0.5+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.0 |
| 2005 05 12 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.6+ | 0.1− |
| 2005 06 13 | G96 | 0.2− | 0.3− | 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.3− |
| 2005 06 13 | G96 | 0.6− | 0.5− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 12 | G96 | 0.4+ | 0.1+ |
| 2005 06 13 | G96 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.6+ | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.3− |
| 2005 06 13 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.3− | 0.4+ | | | | |

**2006 UX$_{281}$ = 2004 GC$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.47569 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19888945 | $\omega$ | 118.59217 | | +0.24291356 | | +0.97003519 |
| $a$ | 2.9066643 | $\Omega$ | 165.46384 | | −0.89677840 | | +0.22651736 |
| $e$ | 0.0968238 | $i$ | 1.13526 | | −0.36983985 | | +0.08787269 |
| $P$ | 4.96 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 24 | 691 | 0.0 | 0.4+ | 2005 08 06 | 644 | 0.1− | 0.7+ | 2006 11 12 | 703 | 0.1− | 0.7+ |
| 1999 03 24 | 691 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.3− | 0.6+ | 2006 11 12 | G96 | 0.1− | 0.5− |
| 1999 03 24 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 12 | G96 | 0.3+ | 0.1− |
| 2003 01 29 | 291 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2003 01 29 | 291 | 0.3+ | 0.1− | 2006 10 28 | G96 | 0.1+ | 0.6− | 2006 11 12 | G96 | 0.4+ | 0.2− |
| 2003 01 29 | 291 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.7+ |
| 2004 04 12 | 691 | 0.2+ | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.2+ |
| 2004 04 12 | 691 | 0.2+ | 0.0 | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.5+ |
| 2004 04 12 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.2− | 0.5− |
| 2004 04 19 | 691 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.2− | 0.6+ |
| 2004 04 19 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 16 | 703 | 0.1− | 0.3− |
| 2004 04 19 | 691 | 0.1+ | 0.1+ | 2006 11 01 | 691 | 0.4− | 0.2+ | 2006 11 16 | 703 | 0.9+ | 0.3− |
| 2004 05 28 | 691 | 0.2− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.0 |
| 2004 05 28 | 691 | 0.2− | 0.1+ | 2006 11 12 | 703 | 1.4− | 1.0+ | 2006 12 01 | G96 | 0.8+ | 0.4− |
| 2004 05 28 | 691 | 0.6− | 0.0 | 2006 11 12 | 703 | 1.2− | 0.6+ | 2006 12 01 | G96 | 1.0+ | 0.2− |
| 2005 08 06 | 644 | 0.1− | 0.8+ | 2006 11 12 | 703 | 0.0 | 0.0 | 2006 12 01 | G96 | 0.8+ | 0.8− |

**2006 UD$_{282}$ = 1995 MV$_5$ = 1999 TF$_{333}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 220.52048 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28860497 | $\omega$ | 326.04331 | | −0.99832626 | | +0.01015067 |
| $a$ | 2.2677761 | $\Omega$ | 214.67404 | | +0.00863336 | | −0.94728798 |
| $e$ | 0.0388338 | $i$ | 5.74369 | | −0.05718512 | | −0.32022248 |
| $P$ | 3.42 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 23 | 691 | 0.6− | 0.2+ | 2001 03 19 | 699 | 0.2− | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.2− |
| 1995 06 23 | 691 | 0.3− | 0.0 | 2001 03 19 | 699 | (1.0+ | 1.7+) | 2006 11 01 | 691 | 0.1+ | 0.1+ |
| 1995 06 23 | 691 | 0.2− | 0.1− | 2001 03 19 | 699 | 0.8+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 1995 06 29 | 691 | 0.5+ | 0.0 | 2001 03 19 | 699 | 0.2− | 0.9+ | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 1995 06 29 | 691 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.4− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.1+ |
| 1995 06 29 | 691 | 0.1+ | 0.3+ | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.4− |
| 1999 10 13 | 645 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.3− | 0.2+ | 2006 11 13 | G96 | 0.3− | 0.6− |
| 1999 10 13 | 645 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.2− |
| 1999 10 13 | 645 | 0.1− | 0.0 | 2006 10 20 | 691 | 0.1− | 0.5+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 1999 10 14 | 645 | 0.0 | 0.0 | 2006 10 20 | 691 | 0.0 | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.3− |
| 1999 10 20 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.3+ | 0.3+ | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 1999 10 20 | 691 | 0.0 | 0.4− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.3− | 0.2− |
| 1999 10 20 | 691 | 0.2+ | 0.3− | 2006 10 28 | G96 | 0.0 | 0.4+ | | | | |

**2006 UQ$_{282}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 26.64320 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27380118 | $\omega$ | 268.71112 | | +0.98232530 | | +0.18487882 |
| $a$ | 2.3487989 | $\Omega$ | 80.63424 | | −0.15776830 | | +0.90193112 |
| $e$ | 0.2343509 | $i$ | 1.70006 | | −0.10072824 | | +0.39030767 |
| $P$ | 3.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 05 | 644 | 0.1− | 1.1+ | 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2002 07 05 | 644 | 0.3− | 1.1+ | 2006 10 20 | 691 | 0.4− | 0.3+ | 2006 11 16 | 703 | 0.5− | 0.2− |
| 2002 07 05 | 644 | 0.2− | 1.0+ | 2006 10 28 | G96 | 0.0 | 0.5− | 2006 11 16 | 703 | 0.1+ | 0.0 |
| 2002 08 29 | 644 | 0.2− | 0.3+ | 2006 10 28 | G96 | 0.4− | 0.4− | 2006 11 16 | 703 | 0.2− | 0.3− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 16 | 703 | 0.1− | 0.1− |
| 2002 08 29 | 644 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.1+ | 0.4+ |
| 2004 02 12 | 291 | 0.4+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.3+ |
| 2004 02 12 | 291 | 0.2+ | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.0 |
| 2004 02 12 | 291 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.4− | 0.6− | 2006 11 18 | 704 | 0.9+ | 0.0 |
| 2005 05 14 | G96 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.1− | 0.5− | 2006 11 18 | 704 | 1.4+ | 1.3+ |
| 2005 05 14 | G96 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2005 05 14 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.4+ | 0.4− |
| 2005 05 14 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.8+ | 0.1+ |

**2006 US$_{282}$ = 2001 UB$_{199}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.35630 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20461338 | $\omega$ | 99.43943 | | −0.00324963 | | −0.99997966 |
| $a$ | 2.8522004 | $\Omega$ | 350.74146 | | +0.90357206 | | −0.00058487 |
| $e$ | 0.0883527 | $i$ | 1.95490 | | +0.42842383 | | −0.00635141 |
| $P$ | 4.82 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 19 | 644 | 0.9− | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 10 28 | 691 | 0.1− | 0.1− |
| 2001 10 19 | 644 | 0.6− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.0 |
| 2001 10 19 | 644 | 1.0− | 0.0 | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 2001 10 20 | 291 | 0.3+ | 0.0 | 2006 10 12 | 691 | 0.3− | 0.5+ | 2006 11 01 | 691 | 0.1− | 0.1− |
| 2001 10 20 | 291 | 0.4+ | 0.0 | 2006 10 20 | 691 | 0.7+ | 0.2− | 2006 11 15 | G96 | 0.5+ | 0.3− |
| 2001 10 20 | 291 | 0.1+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 10 28 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.3− |
| 2006 09 28 | G96 | 0.0 | 0.0 | 2006 10 28 | 691 | 0.0 | 0.0 | | | | |

**2006 UT$_{282}$ = 2004 HM$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 291.03584 | | | (2000.0) | | |
| $n$ | 0.21539357 | $\omega$ | 235.10563 | | −0.39738371 | −0.91571017 |
| $a$ | 2.7562222 | $\Omega$ | 238.41631 | | +0.86313265 | −0.35090212 |
| $e$ | 0.1213248 | $i$ | 4.01692 | | +0.31158981 | −0.19581265 |
| $P$ | 4.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 02 10 | 691 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.7+ | 0.0 | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1994 02 10 | 691 | 0.2+ | 0.8+ | 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.2+ |
| 1994 02 10 | 691 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.4+ |
| 2001 11 18 | 645 | 0.0 | 0.1+ | 2006 09 28 | G96 | 0.5+ | 0.1− | 2006 11 11 | 703 | (1.6− | 0.8+) |
| 2001 11 18 | 645 | 0.0 | 0.0 | 2006 10 12 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.4− |
| 2003 01 24 | 644 | 0.7+ | 0.3+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4− | 0.6+ |
| 2003 01 24 | 644 | 0.4+ | 0.2+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.1− |
| 2003 01 24 | 644 | 0.4+ | 0.3− | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.0 | 0.4− |
| 2004 04 28 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.4+ | 0.4− |
| 2004 04 28 | 691 | 0.0 | 0.3+ | 2006 10 28 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.3+ | 0.8− |
| 2004 05 13 | 691 | 0.1+ | 0.1− | 2006 10 28 | 691 | 0.2− | 0.1− | 2006 11 17 | 703 | (2.7− | 1.5−) |
| 2004 05 13 | 691 | 0.1+ | 0.4+ | 2006 10 28 | 691 | 0.4− | 0.1+ | 2006 11 17 | 703 | 0.3+ | 0.5+ |
| 2004 05 13 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | (2.2− | 0.0 ) |

**2006 UW$_{282}$ = 2004 EW$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 310.65563 | | | (2000.0) | | |
| $n$ | 0.27514527 | $\omega$ | 184.73070 | | −0.03816163 | −0.99887861 |
| $a$ | 2.3411434 | $\Omega$ | 267.45819 | | +0.91773147 | −0.02393895 |
| $e$ | 0.1624214 | $i$ | 1.60732 | | +0.39536393 | −0.04084671 |
| $P$ | 3.58 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 12 17 | 691 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.3− |
| 1992 12 17 | 691 | 0.0 | 0.2− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 703 | 1.5− | 0.1+ |
| 1992 12 17 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 1.2− | 0.5− |
| 2004 03 12 | 644 | 0.2− | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.1+ |
| 2004 03 12 | 644 | 0.0 | 0.8+ | 2006 10 28 | 691 | 0.1− | 0.2+ | 2006 11 17 | 703 | 0.7+ | 0.7+ |
| 2004 03 12 | 644 | 0.1+ | 0.8+ | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.5− | 0.3+ |
| 2004 03 18 | 704 | 0.2+ | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2004 03 18 | 704 | (1.8+ | 0.2+) | 2006 11 01 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.9− | 0.1− |
| 2004 03 18 | 704 | 0.3− | 0.7− | 2006 11 08 | 644 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2004 03 18 | 704 | 1.0+ | 0.4+ | 2006 11 08 | 644 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 1.3+ |
| 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.3+ |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 2006 10 12 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.5− | 0.0 | 2006 11 21 | 704 | 0.8− | 0.4− |
| 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.7+ | 0.4+ | | | | |

**2006 UZ$_{282}$ = 1993 FV$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 99.08870 | | | (2000.0) | | |
| $n$ | 0.25494596 | $\omega$ | 253.46586 | | +0.14787469 | +0.98780558 |
| $a$ | 2.4632243 | $\Omega$ | 25.19328 | | −0.85815428 | +0.15263987 |
| $e$ | 0.1287035 | $i$ | 6.57154 | | −0.49163431 | +0.03067908 |
| $P$ | 3.87 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 23 | 691 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.9+ | 0.3− | 2006 10 28 | 691 | 0.3− | 0.3− |
| 1993 03 23 | 691 | 0.4+ | 0.3− | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 10 28 | 691 | 0.2− | 0.3+ |
| 1993 03 23 | 691 | 0.3− | 0.4+ | 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.1+ | 0.9+ |
| 1993 03 24 | 691 | 0.1+ | 0.6− | 2006 10 12 | 691 | 0.6+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2− |
| 1993 03 24 | 691 | 0.2− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.1− | 0.0 |
| 1993 03 24 | 691 | 0.4+ | 0.3+ | 2006 10 20 | 691 | 0.5− | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.0 |
| 1998 09 15 | 691 | 0.2− | 0.2− | 2006 10 20 | 691 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.4− |
| 1998 09 15 | 691 | 0.1+ | 0.0 | 2006 10 20 | 691 | 0.6− | 0.1+ | 2006 11 17 | G96 | 0.4+ | 0.2− |
| 1998 09 15 | 691 | 0.0 | 0.2+ | 2006 10 20 | 691 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.5+ | 0.3− |
| 2006 09 28 | G96 | 0.5+ | 0.4− | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.7− |
| 2006 09 28 | G96 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.1+ | 0.1− | | | | |

**2006 UE$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 267.14911 | | | (2000.0) | | |
| $n$ | 0.23142944 | $\omega$ | 245.69547 | | −0.68776825 | −0.72350378 |
| $a$ | 2.6273846 | $\Omega$ | 247.89506 | | +0.68707909 | −0.62241545 |
| $e$ | 0.0723161 | $i$ | 3.67002 | | +0.23430141 | −0.29856537 |
| $P$ | 4.26 | $H$ | 16.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 09 | 691 | 0.4+ | 0.6+ | 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 15 | G96 | 0.1+ | 0.1− |
| 2004 05 09 | 691 | 0.4+ | 0.2+ | 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.1+ | 0.1+ |
| 2004 05 09 | 691 | 0.3− | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.2+ | 0.3− |
| 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.2+ |
| 2005 07 10 | 691 | 0.1+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.2− |
| 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.0 |
| 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.4− | 0.4+ | 2006 11 27 | G96 | 0.3+ | 0.2+ |

**2006 UF$_{283}$ = 2004 HZ$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 119.46359 | | | (2000.0) | | |
| $n$ | 0.17626075 | $\omega$ | 224.11567 | | −0.14180792 | +0.97176251 |
| $a$ | 3.1503995 | $\Omega$ | 38.89830 | | −0.80455997 | −0.00215322 |
| $e$ | 0.1543950 | $i$ | 17.47800 | | −0.57669209 | −0.23595126 |
| $P$ | 5.59 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 24 | 691 | 0.2− | 0.1− | 2004 04 25 | 703 | 0.7+ | 0.8+ | 2006 10 20 | 691 | 0.5− | 0.3+ |
| 1995 11 24 | 691 | 0.1− | 0.7+ | 2004 05 29 | 691 | 0.1− | 0.3+ | 2006 10 20 | 695 | 0.1− | 0.3+ |
| 1995 11 24 | 691 | 0.1− | 0.0 | 2004 05 29 | 691 | 0.1− | 0.3+ | 2006 10 20 | 691 | 0.3− | 0.1− |
| 2003 01 27 | 645 | 0.1+ | 0.1− | 2004 05 29 | 691 | 0.6+ | 0.4+ | 2006 10 28 | 691 | 0.2− | 0.4+ |
| 2003 01 27 | 645 | 0.1− | 0.0 | 2006 09 25 | G96 | 0.7+ | 0.6− | 2006 10 28 | 691 | 0.2+ | 0.5+ |
| 2004 04 21 | 704 | 0.7+ | 1.2+ | 2006 09 25 | G96 | 0.6+ | 0.4− | 2006 10 28 | 691 | 0.3− | 0.6+ |
| 2004 04 21 | 704 | 0.4+ | 0.7− | 2006 09 25 | G96 | 1.4+ | 0.3− | 2006 11 01 | 691 | 0.1− | 0.6+ |
| 2004 04 21 | 704 | 0.3+ | 0.2+ | 2006 09 25 | G96 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.2− | 0.2+ |
| 2004 04 21 | 704 | 0.0 | 1.0+ | 2006 10 12 | 691 | 0.4− | 0.3+ | 2006 11 01 | 691 | 0.5− | 0.2+ |
| 2004 04 24 | 691 | 0.5+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 2004 04 24 | 691 | 0.5+ | 0.5+ | 2006 10 12 | 691 | 0.5− | 0.2+ | 2006 11 15 | G96 | 0.2+ | 0.5− |
| 2004 04 24 | 691 | 0.5+ | 0.5+ | 2006 10 20 | 695 | 0.0 | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.5− |
| 2004 04 25 | 703 | 0.2− | 0.1− | 2006 10 20 | 695 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2004 04 25 | 703 | 0.2− | 0.1+ | 2006 10 20 | 691 | 0.3+ | 0.1+ | | | | |
| 2004 04 25 | 703 | 0.2+ | 1.2+ | 2006 10 20 | 695 | 0.1− | 0.3+ | | | | |

**2006 UG$_{283}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 141.66847 | | | (2000.0) | | |
| $n$ | 0.25696504 | $\omega$ | 259.39296 | | −0.39103801 | +0.92035453 |
| $a$ | 2.4503043 | $\Omega$ | 347.58270 | | −0.83301180 | −0.35671594 |
| $e$ | 0.0552760 | $i$ | 1.61687 | | −0.39138296 | −0.16031617 |
| $P$ | 3.84 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 24 | 691 | 0.1+ | 0.3+ | 2006 09 27 | G96 | 0.7− | 0.7− | 2006 10 28 | 691 | 0.1− | 0.0 |
| 1998 10 24 | 691 | 0.1− | 0.2− | 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 11 01 | 691 | 0.2+ | 0.3+ |
| 1998 10 24 | 691 | 0.1− | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 01 | 691 | 0.1− | 0.4+ |
| 2000 01 13 | 691 | 0.1+ | 0.4− | 2006 09 27 | G96 | 0.0 | 0.5+ | 2006 11 01 | 691 | 0.4+ | 0.7− |
| 2000 01 13 | 691 | 0.2− | 0.0 | 2006 10 16 | 691 | 0.1+ | 0.5− | 2006 11 15 | G96 | 0.6+ | 0.4− |
| 2000 01 13 | 691 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.3+ |
| 2004 02 11 | 691 | 0.1+ | 0.3+ | 2006 10 16 | 691 | 0.2− | 0.2+ | 2006 11 15 | G96 | 0.4− | 0.6− |
| 2004 02 11 | 691 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.6+ | 0.2− |
| 2004 02 11 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.2− | 0.0 | | | | |

**2006 UF$_{284}$ = 2001 RE$_{154}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 16.61355 | | | (2000.0) | | |
| $n$ | 0.21094696 | $\omega$ | 134.75420 | | +0.99550563 | −0.03648993 |
| $a$ | 2.7948202 | $\Omega$ | 227.54665 | | +0.00647237 | +0.94684441 |
| $e$ | 0.2397012 | $i$ | 6.80223 | | +0.09448099 | +0.31961563 |
| $P$ | 4.67 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 15 | 644 | 0.6− | 0.4+ | 2006 11 01 | 691 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.1− | 0.3− |
| 2001 09 15 | 644 | 0.5− | 0.6+ | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.3− | 0.3− |
| 2001 09 15 | 644 | 0.4− | 1.1+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.4+ | 0.1+ |
| 2001 09 16 | 704 | 0.3− | 0.1− | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 13 | 644 | 0.1− | 0.4+ |
| 2001 09 16 | 704 | 0.5− | 1.0+ | 2006 11 09 | 644 | 0.4+ | 0.0 | 2006 11 17 | 703 | 0.7+ | 0.1− |
| 2001 09 16 | 704 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 2001 09 16 | 704 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.9− | 0.5− |
| 2001 09 16 | 704 | 0.7− | 1.0+ | 2006 11 09 | 644 | 0.4− | 0.3+ | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2001 10 15 | 645 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.8− | 0.0 |
| 2001 10 15 | 645 | 0.1+ | 0.2− | 2006 11 10 | 644 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.3− | 0.8+ |
| 2005 05 19 | G96 | 0.8− | 0.6+ | 2006 11 10 | 644 | 0.5+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 1.0+ |
| 2005 05 19 | G96 | 0.6+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.0 |
| 2005 05 19 | G96 | 0.5+ | 0.7+ | 2006 11 11 | 703 | 0.5− | 0.3− | 2006 11 27 | 703 | 0.6− | 0.2+ |
| 2005 05 19 | G96 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.3+ | 1.5+ | 2006 11 27 | 703 | 0.2+ | 0.4+ |
| 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2+ | 0.4+ | 2006 11 27 | 703 | 0.5− | 0.6− |
| 2006 10 28 | 691 | 0.3+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.9+ | 0.6+ |
| 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.1+ | 0.6− | | | | |
| 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.2− | 1.0− | | | | |

**2006 US$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 106.06640 | | | (2000.0) | | |
| $n$ | 0.23606768 | $\omega$ | 46.46551 | | +0.05276626 | +0.99588748 |
| $a$ | 2.5928558 | $\Omega$ | 226.71455 | | −0.94290415 | +0.02540032 |
| $e$ | 0.1295512 | $i$ | 5.80658 | | −0.32885786 | +0.08696520 |
| $P$ | 4.18 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 688 | 0.0 | 0.2− | 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | (2.2− | 0.8−) |
| 2000 04 04 | 688 | 0.4− | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 1.2− | 1.6− |
| 2001 07 21 | 608 | 0.4− | 1.6+ | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.2+ | 0.1+ |
| 2001 07 21 | 608 | 0.0 | 1.4+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2001 07 21 | 608 | 0.4− | 1.6+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2006 10 28 | 691 | 0.3− | 0.6+ | 2006 11 12 | G96 | 0.0 | 0.1− |
| 2004 02 11 | 644 | 0.6+ | 0.7+ | 2006 10 28 | 691 | 0.1+ | 0.6+ | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2004 02 11 | 644 | 0.3+ | 0.4+ | 2006 11 01 | 691 | 0.4− | 0.0 | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2004 02 17 | 691 | 0.1+ | 0.3+ | 2006 11 01 | 691 | 0.5− | 0.2+ | 2006 11 21 | 704 | 1.4+ | 0.2+ |
| 2004 02 17 | 691 | 0.1+ | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2004 02 17 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.8− | 2006 11 21 | 704 | 1.3+ | 0.3+ |
| 2004 03 11 | 644 | 0.0 | 0.5+ | 2006 11 11 | 703 | 0.1+ | 0.9− | 2006 11 21 | 704 | 0.5+ | 0.1+ |
| 2004 03 11 | 644 | 0.6− | 0.5− | 2006 11 11 | 703 | 1.5+ | 0.4− | | | | |
| 2004 03 11 | 644 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.9− | 0.2− | | | | |

**2006 UT$_{284}$ = 1995 QC$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 29.81870 | | | (2000.0) | | |
| $n$ | 0.18863152 | $\omega$ | 134.20756 | | +0.99074779 | +0.07932063 |
| $a$ | 3.0111094 | $\Omega$ | 221.61131 | | −0.10736886 | +0.95441133 |
| $e$ | 0.1039620 | $i$ | 9.54542 | | +0.08301051 | +0.28776248 |
| $P$ | 5.23 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 25 | 691 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.7− | 2006 11 11 | G96 | 0.2− | 0.0 |
| 1995 08 25 | 691 | 0.2− | 0.0 | 2006 10 20 | 695 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 1995 08 25 | 691 | 0.1+ | 0.1− | 2006 10 20 | 691 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.1− | 0.0 |
| 1995 08 31 | 691 | 0.3− | 0.1+ | 2006 10 20 | 691 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1995 08 31 | 691 | 0.0 | 0.2− | 2006 10 20 | 695 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 1995 08 31 | 691 | 0.5+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.4− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2004 04 22 | 691 | 0.3+ | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.2+ | 0.3− |
| 2004 04 22 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.2+ |
| 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.2+ |
| 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.2+ |

**2006 UW$_{284}$ = 2004 GA$_{83}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 136.85159 | | | (2000.0) | | |
| $n$ | 0.21865624 | $\omega$ | 332.78970 | | −0.26238584 | +0.96489342 |
| $a$ | 2.7287357 | $\Omega$ | 281.99676 | | −0.88316698 | −0.24496701 |
| $e$ | 0.0227903 | $i$ | 0.67897 | | −0.38880554 | −0.09471984 |
| $P$ | 4.51 | $H$ | 17.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 25 | 691 | 0.2− | 0.6+ | 2005 07 07 | 568 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.1− | 0.6− |
| 2001 08 25 | 691 | 0.2− | 0.3+ | 2005 07 08 | 568 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.8+ |
| 2001 08 25 | 691 | 0.3− | 0.6+ | 2005 07 15 | G96 | 0.0 | 0.2− | 2006 11 01 | 691 | 0.0 | 0.4+ |
| 2004 03 29 | 691 | 0.2+ | 0.4+ | 2005 07 15 | G96 | 0.5− | 0.5− | 2006 11 01 | 691 | 0.4− | 0.6+ |
| 2004 03 29 | 691 | 0.1− | 0.4+ | 2005 07 15 | G96 | 0.9− | 0.0 | 2006 11 12 | G96 | 0.0 | 0.0 |
| 2004 03 29 | 691 | 0.1+ | 0.6+ | 2005 07 15 | G96 | 0.1+ | 0.8+ | 2006 11 12 | G96 | 0.9+ | 0.0 |
| 2004 04 14 | 691 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.1− |
| 2004 04 14 | 691 | 0.1+ | 0.5+ | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.0 |
| 2004 04 14 | 691 | 0.3+ | 0.7+ | 2006 09 27 | G96 | 0.3− | 0.5− | 2006 11 27 | G96 | 0.4− | 0.2− |
| 2004 04 23 | 691 | 0.1− | 0.1− | 2006 09 27 | G96 | 0.3− | 0.2+ | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2004 04 23 | 691 | 0.0 | 0.2+ | 2006 10 20 | 695 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.0 | 0.1+ |
| 2004 04 23 | 691 | 0.6+ | 0.2+ | 2006 10 20 | 695 | 0.0 | 0.4+ | 2006 11 27 | G96 | 0.3− | 0.2+ |
| 2005 07 07 | 568 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.0 | 0.5+ | | | | |
| 2005 07 07 | 568 | 0.0 | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.5+ | | | | |

**2006 UY$_{284}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 334.96940 | | | (2000.0) | | |
| $n$ | 0.20436549 | $\omega$ | 13.38602 | | +0.20475957 | −0.97767931 |
| $a$ | 2.8545063 | $\Omega$ | 64.81517 | | +0.89318355 | +0.16695543 |
| $e$ | 0.0518913 | $i$ | 2.98230 | | +0.40037066 | +0.12755018 |
| $P$ | 4.82 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 291 | 0.0 | 0.3+ | 2006 10 28 | G96 | 1.0− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2001 10 23 | 291 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.6− | 2006 11 15 | 703 | (2.1+ | 0.3+) |
| 2001 10 23 | 291 | 0.4− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 15 | 703 | (0.9− | 3.8+) |
| 2001 11 11 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.8− | 0.9+ |
| 2001 11 11 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.4+ |
| 2001 11 11 | 691 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 1.0− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.1− | 0.2− |
| 2006 10 19 | G96 | 0.9+ | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.5+ |
| 2006 10 19 | G96 | 0.2+ | 0.6− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.4− | | | | |
| 2006 10 28 | G96 | 0.6+ | 0.5− | 2006 11 11 | G96 | 0.9+ | 0.3− | | | | |

**2006 UJ$_{285}$ = 2002 RH$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 87.11711 | | | (2000.0) | | |
| $n$ | 0.27694230 | $\omega$ | 225.73485 | | +0.37991850 | +0.92393910 |
| $a$ | 2.3310049 | $\Omega$ | 66.64210 | | −0.83421492 | +0.36310488 |
| $e$ | 0.1717522 | $i$ | 2.79112 | | −0.39968412 | +0.12038019 |
| $P$ | 3.56 | $H$ | 17.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 644 | 0.6− | 0.2+ | 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.1+ |
| 2002 09 15 | 644 | 0.6− | 0.1+ | 2005 04 16 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.5− | 0.2+ |
| 2002 09 15 | 644 | 0.7− | 0.2+ | 2005 04 16 | 691 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.3− |
| 2002 09 16 | 291 | 0.1+ | 0.0 | 2005 05 14 | G96 | 0.9− | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.2+ |
| 2002 09 16 | 291 | 0.1+ | 0.2+ | 2005 05 14 | G96 | 0.7− | 0.1+ | 2006 11 11 | G96 | 0.1− | 0.1− |
| 2002 09 16 | 291 | 0.1+ | 0.1+ | 2005 05 14 | G96 | 0.8− | 0.6+ | 2006 11 14 | 691 | 0.3+ | 0.1+ |
| 2002 09 16 | 644 | 0.1− | 0.1+ | 2005 05 14 | G96 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.5+ | 0.0 |
| 2002 09 16 | 644 | 0.2+ | 0.7− | 2006 10 28 | G96 | 0.4+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2002 09 16 | 644 | 0.3+ | 0.6− | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 21 | G96 | 0.4+ | 0.0 |
| 2005 04 16 | 691 | 0.1− | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2005 04 16 | 691 | 0.4+ | 0.1− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.2+ | 0.1− |
| 2005 04 16 | 691 | 0.3+ | 0.0 | 2006 11 01 | 691 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.2+ | 0.4− |

**2006 UP$_{285}$ = 2004 JX$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.39649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20411453 | $\omega$ | 211.67586 | | +0.22167574 | | −0.96377821 |
| $a$ | 2.8568456 | $\Omega$ | 225.99304 | | +0.93219013 | | +0.25407893 |
| $e$ | 0.0974407 | $i$ | 11.89850 | | +0.28614929 | | −0.08108923 |
| $P$ | 4.83 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 11 07 | 691 | 0.1+ | 0.5− | 2006 10 13 | 691 | 0.1− | 0.9+ | 2006 11 11 | 703 | 0.4+ | 0.9+ |
| 1996 11 07 | 691 | 0.1− | 0.6− | 2006 10 20 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.1− |
| 1996 11 07 | 691 | 0.2+ | 0.1+ | 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.8− | 0.1− |
| 2004 05 13 | 691 | 0.1+ | 0.6+ | 2006 10 20 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.2+ |
| 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 10 28 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.2− | 0.3+ |
| 2004 05 13 | 691 | 0.0 | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.3− | 0.2+ |
| 2004 05 19 | 291 | 0.1+ | 0.5+ | 2006 10 28 | 691 | 0.3− | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2004 05 19 | 291 | 0.6− | 1.1+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.5− | 0.2− |
| 2004 05 19 | 291 | 0.3+ | 0.7+ | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.3− | 0.1− |
| 2006 09 30 | G96 | 0.2+ | 0.3− | 2006 11 01 | 691 | 0.2+ | 0.1+ | 2006 11 13 | G96 | 0.2− | 0.2− |
| 2006 09 30 | G96 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.8− | 0.8+ |
| 2006 09 30 | G96 | 0.2+ | 0.6− | 2006 11 09 | 644 | 0.5+ | 0.5+ | 2006 11 27 | 703 | 1.3+ | 0.3+ |
| 2006 09 30 | G96 | 0.5+ | 0.2− | 2006 11 09 | 644 | 0.3+ | 0.5+ | 2006 11 27 | 703 | 1.5− | 0.7+ |
| 2006 10 13 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.4+ | 0.2+ | 2006 11 27 | 703 | 0.5− | 0.5+ |
| 2006 10 13 | 691 | 0.2− | 0.4+ | 2006 11 11 | 703 | (0.3+ | 2.0+) | | | | |

**2006 UR$_{285}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.51773 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21645510 | $\omega$ | 95.26005 | | +0.81750070 | | +0.57161956 |
| $a$ | 2.7472035 | $\Omega$ | 229.89744 | | −0.55809754 | | +0.75612370 |
| $e$ | 0.1435643 | $i$ | 5.27425 | | −0.14219612 | | +0.31863463 |
| $P$ | 4.55 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 11 | 699 | 0.0 | 0.4− | 2006 10 28 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.3− | 0.5− |
| 2001 09 11 | 699 | (1.4+ | 2.1−) | 2006 10 28 | 691 | 0.1+ | 0.2− | 2006 11 13 | G96 | 0.1+ | 0.4− |
| 2001 09 11 | 699 | 0.2− | 0.9+ | 2006 10 28 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.2+ | 0.3− |
| 2001 09 11 | 699 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.1− | 0.2− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.6− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.4+ |
| 2006 10 13 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2006 10 13 | 691 | 0.2+ | 0.2+ | 2006 11 12 | G96 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 10 13 | 691 | 0.2+ | 0.4− | 2006 11 12 | G96 | 0.2− | 0.1− | | | | |

**2006 UX$_{285}$ = 2005 JA$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.07456 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23710535 | $\omega$ | 281.69518 | | +0.92069860 | | +0.38826576 |
| $a$ | 2.5852853 | $\Omega$ | 55.47015 | | −0.33676584 | | +0.84158572 |
| $e$ | 0.2277585 | $i$ | 2.75132 | | −0.19723810 | | +0.37547726 |
| $P$ | 4.16 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | G96 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2005 05 04 | G96 | 0.4− | 0.3− | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2005 05 04 | G96 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.1− |
| 2005 05 04 | G96 | 0.1+ | 0.5+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 18 | 704 | 1.5+ | 0.8+ |
| 2005 05 13 | G96 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 1.0+ | 0.2− |
| 2005 05 13 | G96 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2005 05 13 | G96 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.8− | 0.3+ | 2006 11 21 | G96 | 0.3− | 0.1− |
| 2005 05 13 | G96 | 0.2+ | 0.1− | 2006 11 11 | 703 | 0.9− | 0.2− | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 1.4− | 0.5− | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 21 | G96 | 0.4− | 0.1− |
| 2006 10 12 | 691 | 0.1− | 0.1− | 2006 11 11 | 703 | 1.1+ | 0.7− | | | | |

**2006 UY$_{285}$ = 2004 KD$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 92.98026 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17879758 | $\omega$ | 83.59207 | | +0.51649609 | | +0.85084363 |
| $a$ | 3.1205294 | $\Omega$ | 218.01182 | | −0.83444323 | | +0.47484491 |
| $e$ | 0.0377160 | $i$ | 9.00795 | | −0.19218816 | | +0.22491648 |
| $P$ | 5.51 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 0.4+ | 0.5− | 2005 08 24 | 644 | 0.2+ | 0.4− | 2006 10 28 | 691 | 0.1− | 0.2+ |
| 2000 09 26 | 699 | 0.4− | 0.3+ | 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 10 28 | 691 | 0.2− | 0.2+ |
| 2000 09 26 | 699 | 0.5− | 0.4+ | 2006 09 25 | G96 | 0.1+ | 0.2− | 2006 11 01 | 691 | 0.1+ | 0.4+ |
| 2000 09 26 | 699 | 0.2+ | 0.8+ | 2006 09 25 | G96 | 0.1− | 0.3+ | 2006 11 01 | 691 | 0.2+ | 0.4+ |
| 2004 05 09 | 691 | 0.0 | 0.4+ | 2006 09 25 | G96 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ |
| 2004 05 09 | 691 | 0.1− | 0.6+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.1+ |
| 2004 05 09 | 691 | 0.5− | 0.2+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.1+ |
| 2004 05 17 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 08 | 644 | 0.2− | 0.2+ |
| 2004 05 17 | 704 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.7− | 0.0 |
| 2004 05 17 | 704 | 0.1+ | 0.7− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.6− |
| 2004 05 17 | 704 | 0.5+ | 0.5− | 2006 10 20 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.8+ | 0.5− |
| 2004 05 21 | 704 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 11 | 703 | 0.3− | 0.2− |
| 2004 05 21 | 704 | 0.1+ | 0.9− | 2006 10 28 | G96 | 0.1− | 0.7+ | 2006 11 12 | G96 | 0.2− | 0.7− |
| 2004 05 21 | 704 | 1.0+ | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2005 08 24 | 644 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.8+ | 0.5− |
| 2005 08 24 | 644 | 0.1+ | 0.6− | 2006 10 28 | 691 | 0.1+ | 0.4+ | 2006 11 12 | G96 | 0.3+ | 0.1− |

**2006 UZ$_{285}$ = 2002 QS$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.83958 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27196098 | $\omega$ | 344.68946 | | +0.62025152 | | −0.78351110 |
| $a$ | 2.3593823 | $\Omega$ | 66.96138 | | +0.72387653 | | +0.55337714 |
| $e$ | 0.1749679 | $i$ | 2.32894 | | +0.30214373 | | +0.28263775 |
| $P$ | 3.62 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 18 | 644 | 0.3+ | 0.4− | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.3+ | 0.0 |
| 2002 08 18 | 644 | 0.5− | 0.7− | 2006 10 28 | G96 | 0.1+ | 0.5− | 2006 11 11 | 644 | 0.0 | 0.3− |
| 2002 08 18 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.0 | 0.5− | 2006 11 11 | 644 | 0.0 | 0.0 |
| 2002 08 30 | 644 | 0.1+ | 0.6+ | 2006 10 28 | 691 | 0.2− | 0.3+ | 2006 11 11 | 644 | 0.1− | 0.6− |
| 2002 08 30 | 644 | 0.2+ | 0.4+ | 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 13 | G96 | 0.3+ | 0.6+ |
| 2002 08 30 | 644 | 0.1− | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.3− |
| 2006 09 26 | G96 | 0.3+ | 0.5− | 2006 11 01 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.5− |
| 2006 09 26 | G96 | 0.1− | 0.3− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.5+ | 0.5− |
| 2006 09 26 | G96 | 0.1− | 0.2− | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.3− | 0.8+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 26 | G96 | 0.2− | 0.3− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 27 | 703 | (0.1+ | 1.7−) |
| 2006 10 18 | 691 | 0.3+ | 0.1+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.7− | 0.1+ |
| 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 27 | 703 | (3.1+ | 0.9+) |
| 2006 10 18 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.1− | | | | |
| 2006 10 28 | G96 | 0.1+ | 0.6− | 2006 11 09 | 644 | 0.2+ | 0.0 | | | | |

**2006 UC$_{286}$ = 2004 FK$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 79.01238 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22156089 | $\omega$ | 102.63388 | | +0.70833653 | | +0.70380272 |
| $a$ | 2.7048342 | $\Omega$ | 212.68104 | | −0.68024913 | | +0.66017393 |
| $e$ | 0.0133397 | $i$ | 5.74460 | | −0.18846880 | | +0.26235875 |
| $P$ | 4.45 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 23 | 691 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 02 | 703 | 0.8− | 0.7+ |
| 1997 10 23 | 691 | 0.1+ | 0.2+ | 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.4− | 0.7+ |
| 1997 10 23 | 691 | 0.3− | 0.0 | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 02 | 703 | 1.1− | 0.9− |
| 2004 03 27 | 704 | 1.4+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 291 | 0.4+ | 0.1− |
| 2004 03 27 | 704 | 0.9− | 0.6+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 11 | 291 | 0.3+ | 0.0 |
| 2004 03 27 | 704 | 1.1+ | 0.7− | 2006 10 28 | G96 | 0.4− | 0.3− | 2006 11 11 | 291 | 0.1+ | 0.0 |
| 2004 03 27 | 704 | 0.5− | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.7− |
| 2004 03 29 | 691 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.2− | 0.5− |
| 2004 03 29 | 691 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.3− |
| 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.7− |
| 2004 04 23 | 691 | 0.3− | 0.0 | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2004 04 23 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.4+ | 1.3+ |
| 2004 04 23 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.1− | 0.0 |
| 2006 10 12 | 691 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.0 | 0.1+ | | | | |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 02 | 703 | 0.5− | 0.0 | | | | |

**2006 UG$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.18583 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29111091 | $\omega$ | 69.79062 | | −0.54325300 | | −0.83919691 |
| $a$ | 2.2547431 | $\Omega$ | 53.13975 | | +0.75815869 | | −0.50314651 |
| $e$ | 0.1426240 | $i$ | 1.79015 | | +0.36065437 | | −0.20637860 |
| $P$ | 3.39 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 807 | 0.6+ | 0.0 | 2006 10 28 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.5+ | 0.2− |
| 2001 03 26 | 807 | 0.8− | 0.4+ | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2001 03 26 | 807 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 21 | G96 | 0.1+ | 0.1+ |
| 2001 03 26 | 807 | 0.5+ | 0.2+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.5− |
| 2004 01 19 | 691 | 0.4− | 0.4− | 2006 11 01 | 691 | 0.7− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2004 01 19 | 691 | 0.4+ | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.2+ | 0.4+ |
| 2004 01 19 | 691 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.5+ | 0.5+ | 2006 11 21 | G96 | 0.4+ | 0.4+ |
| 2004 01 30 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.2+ |
| 2004 01 30 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.6+ | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2004 01 30 | 691 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.3+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2004 02 14 | 691 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.6+ | 0.6− | 2006 11 22 | G96 | 0.2+ | 0.0 |
| 2004 02 14 | 691 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2004 02 14 | 691 | 0.1+ | 0.1+ | 2006 11 12 | G96 | 0.8+ | 0.3− | 2006 11 22 | G96 | 0.2+ | 0.0 |

**2006 UR$_{286}$ = 2004 FF$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.66422 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23293665 | $\omega$ | 180.75874 | | +0.97283201 | | −0.23138511 |
| $a$ | 2.6160387 | $\Omega$ | 192.62782 | | +0.21259259 | | +0.90595523 |
| $e$ | 0.0774363 | $i$ | 2.01021 | | +0.09166389 | | +0.35455050 |
| $P$ | 4.23 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.2− | 0.4− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.5+ | 0.1− |
| 1995 02 03 | 691 | 0.3− | 0.4− | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.8+ | 0.4− |
| 1995 02 03 | 691 | 0.7+ | 1.2+ | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 11 | 703 | (2.1− | 1.5−) |
| 2000 04 13 | 691 | 0.4− | 0.2− | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.2− | 0.7− |
| 2000 04 13 | 691 | 0.3− | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.3− | 0.6− |
| 2000 04 13 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2001 06 28 | 691 | 0.0 | 0.8+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 13 | G96 | 0.7+ | 0.5− |
| 2001 06 28 | 691 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.1+ | 0.5+ |
| 2001 06 28 | 691 | 0.1− | 0.6+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.6+ |
| 2004 03 17 | 691 | 0.5+ | 0.4+ | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.5− |
| 2004 03 17 | 691 | 0.5+ | 0.2+ | 2006 10 28 | 691 | 0.2+ | 0.5+ | 2006 11 24 | G96 | 0.4− | 0.4− |
| 2004 03 17 | 691 | 0.3+ | 0.5+ | 2006 11 01 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 1.0− | 0.5+ |
| 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.8− |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.4+ | 0.5− |
| 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 11 10 | 291 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.1− | 0.5− |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 10 | 291 | 0.2− | 0.3+ | 2006 11 27 | G96 | 0.2− | 0.6− |
| 2006 10 12 | 691 | 0.1− | 0.0 | 2006 11 10 | 291 | 0.1+ | 0.3+ | | | | |

**2006 UX$_{286}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.43675 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24645775 | $\omega$ | 206.86425 | | +0.90084570 | | +0.43368352 |
| $a$ | 2.5194615 | $\Omega$ | 127.42007 | | −0.39367805 | | +0.83534416 |
| $e$ | 0.1676010 | $i$ | 1.43511 | | −0.18301537 | | +0.33781466 |
| $P$ | 4.00 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 07 | 910 | 0.1+ | 1.0− | 2006 10 20 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.3+ | 0.0 |
| 1998 12 07 | 910 | 0.3+ | 0.9− | 2006 10 20 | 644 | 0.5+ | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.1− |
| 1998 12 07 | 910 | 1.1+ | 0.6− | 2006 10 20 | 644 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.3+ | 0.5− |
| 2000 03 09 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 691 | 0.1− | 0.2+ | 2006 11 13 | 644 | 0.2+ | 0.2+ |
| 2000 03 09 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.1+ | 0.6+ |
| 2000 03 09 | 691 | 0.1− | 0.1+ | 2006 10 28 | G96 | 0.4+ | 0.5− | 2006 11 13 | 644 | 0.1+ | 0.0 |
| 2002 10 30 | 608 | 0.2+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2002 10 30 | 608 | 0.0 | 0.2− | 2006 10 28 | G96 | 0.0 | 0.5− | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2002 10 30 | 608 | 0.2+ | 0.5− | 2006 10 28 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2002 12 10 | 644 | 0.7− | 0.5+ | 2006 10 28 | 691 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2002 12 10 | 644 | 0.8− | 0.4+ | 2006 10 28 | 691 | 0.5− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.1+ |
| 2002 12 10 | 644 | 0.7− | 0.1+ | 2006 11 01 | 691 | 0.2− | 0.0 | 2006 11 18 | 704 | 0.7− | 1.2+ |
| 2005 06 10 | 691 | 0.2+ | 0.0 | 2006 11 01 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3+ | 1.0+ |
| 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 11 01 | 691 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4+ | 1.1+ |
| 2005 06 10 | 691 | 0.3+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.9+ | 0.8+ |
| 2005 06 10 | 691 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.0 |
| 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 29 | 704 | 1.4+ | 0.7− |
| 2005 06 10 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.7− | 0.1+ | 2006 11 29 | 704 | 0.9+ | 0.4+ |
| 2006 10 12 | 691 | 0.2+ | 0.1− | 2006 11 11 | 703 | (0.1+ | 1.5+) | 2006 11 29 | 704 | 0.7− | 1.0+ |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2006 10 12 | 691 | 0.2− | 0.3+ | 2006 11 11 | 703 | 0.5− | 0.7+ | | | | |
| 2006 10 20 | 644 | 0.7+ | 0.1− | 2006 11 13 | G96 | 0.4+ | 0.0 | | | | |

**2006 UY$_{286}$ = 2005 JG$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.81714 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30664269 | $\omega$ | 117.52139 | | +0.86038776 | | +0.50763771 |
| $a$ | 2.1779486 | $\Omega$ | 212.03110 | | −0.49244884 | | +0.80529247 |
| $e$ | 0.1329238 | $i$ | 4.88137 | | −0.13125184 | | +0.30628089 |
| $P$ | 3.21 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 23 | 691 | 0.2+ | 0.2− | 2005 05 04 | 568 | 0.2− | 0.5+ | 2006 10 28 | G96 | 0.1− | 0.0 |
| 1998 02 23 | 691 | 0.4− | 0.1+ | 2005 05 05 | 568 | 0.7− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.1+ |
| 1998 02 23 | 691 | 0.0 | 0.3− | 2006 09 25 | G96 | 0.1− | 0.2− | 2006 10 28 | 691 | 0.3+ | 0.3+ |
| 2005 04 05 | G96 | 0.6− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.1− | 2006 10 28 | 691 | 0.1− | 0.5+ |
| 2005 04 05 | G96 | 0.4− | 0.0 | 2006 09 25 | G96 | 0.1− | 0.1− | 2006 11 01 | 691 | 0.3− | 0.2+ |
| 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 09 25 | G96 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.0 |
| 2005 04 05 | G96 | 0.2− | 0.1+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 01 | 691 | 0.1+ | 0.2+ |
| 2005 04 17 | 691 | 0.4+ | 0.4+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.2− |
| 2005 04 17 | 691 | 0.3+ | 0.5+ | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.2− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 17 | 691 | 0.2+ | 0.2+ | 2006 10 28 | G96 | 0.5− | 0.0 | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2005 05 04 | 568 | 0.0 | 0.4+ | 2006 10 28 | G96 | 0.4+ | 0.1+ | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2005 05 04 | 568 | 0.1+ | 0.4+ | 2006 10 28 | G96 | 0.5− | 0.2− | | | | |

**2006 UZ$_{286}$ = 2003 FW$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.03230 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18539816 | $\omega$ | 219.73004 | | +0.91463327 | −0.40414047 | |
| $a$ | 3.0460178 | $\Omega$ | 164.09700 | | +0.38021741 | +0.85080608 | |
| $e$ | 0.2192125 | $i$ | 2.25714 | | +0.13740707 | +0.33585636 | |
| $P$ | 5.32 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 30 | 695 | 0.2+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 17 | 703 | 0.2+ | 0.0 |
| 2003 03 30 | 695 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.3− | 0.1− | 2006 11 17 | 703 | 0.9+ | 0.4+ |
| 2003 03 31 | 691 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 1.1− | 0.7+ |
| 2003 03 31 | 691 | 0.6− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.4− | 1.1+ |
| 2003 03 31 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.6− | 0.4+ |
| 2004 05 09 | 691 | 0.2− | 0.6+ | 2006 11 11 | 703 | 0.8+ | 0.2− | 2006 11 18 | 704 | (1.6+ | 0.3−) |
| 2004 05 09 | 691 | 0.2− | 0.5+ | 2006 11 13 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.6− | 0.2+ |
| 2004 05 09 | 691 | 0.9+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.7+ |
| 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 13 | G96 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2006 10 12 | 691 | 0.4− | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.3− | 0.5+ |
| 2006 10 12 | 691 | 0.5− | 0.3+ | 2006 11 14 | 704 | 0.6+ | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 14 | 704 | 1.3+ | 0.9− | 2006 11 20 | 704 | 0.3+ | 0.1+ |
| 2006 10 20 | 644 | 0.2− | 0.2+ | 2006 11 14 | 704 | 0.5+ | 0.4+ | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 10 20 | 644 | 0.2− | 0.5− | 2006 11 14 | 704 | 0.5+ | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.4− |
| 2006 10 28 | 691 | 0.3− | 0.1− | 2006 11 17 | 704 | 0.1− | 0.2+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 10 28 | 691 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.8+ | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 10 28 | 691 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.6+ | 2006 11 29 | 704 | 0.6+ | 0.3− |
| 2006 11 01 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.5+ | 2006 11 29 | 704 | 0.1− | 0.6− |
| 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.7+ | 0.4+ |
| 2006 11 01 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.2− | | | | |
| 2006 11 09 | 644 | 0.3− | 0.2− | 2006 11 17 | 703 | 0.0 | 0.1+ | | | | |

**2006 UA$_{287}$ = 2004 FT$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.00490 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26633675 | $\omega$ | 288.85987 | | −0.53562593 | −0.84438373 | |
| $a$ | 2.3924819 | $\Omega$ | 193.54310 | | +0.79137970 | −0.49737311 | |
| $e$ | 0.1390615 | $i$ | 2.69227 | | +0.29465749 | −0.19908822 | |
| $P$ | 3.70 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 24 | 699 | 0.1− | 0.1− | 2004 04 15 | 691 | 0.0 | 0.2+ | 2006 10 28 | 691 | 0.4− | 0.3− |
| 2004 03 24 | 699 | 0.6+ | 0.6+ | 2004 04 15 | 691 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ |
| 2004 03 24 | 699 | 1.0− | 0.4+ | 2004 04 15 | 691 | 0.2− | 0.1+ | 2006 11 01 | 691 | 0.2+ | 0.1+ |
| 2004 03 24 | 699 | 0.8− | 0.6− | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 01 | 691 | 0.0 | 0.0 |
| 2004 03 27 | 704 | 0.1+ | 0.5− | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 13 | G96 | 0.2− | 0.7− |
| 2004 03 27 | 704 | 0.2+ | 0.8− | 2006 09 28 | G96 | 0.4− | 0.2− | 2006 11 13 | G96 | 0.2+ | 0.5− |
| 2004 03 27 | 704 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 13 | G96 | 0.0 | 0.3− |
| 2004 03 27 | 704 | 0.4− | 0.9− | 2006 10 12 | 691 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.1− | 0.3− |
| 2004 03 27 | 704 | 0.8− | 1.2+ | 2006 10 12 | 691 | 0.5+ | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.3+ |
| 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2004 03 29 | 691 | 0.3+ | 0.1− | 2006 10 28 | 691 | 0.4+ | 0.4+ | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2004 03 29 | 691 | 0.2+ | 0.1+ | 2006 10 28 | 691 | 0.3− | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.1− |

**2006 UC$_{287}$ = 2005 GJ$_{203}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.45331 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30544887 | $\omega$ | 178.36561 | | +0.99144303 | −0.13028647 | |
| $a$ | 2.1836198 | $\Omega$ | 189.13258 | | +0.11917931 | +0.92882321 | |
| $e$ | 0.1429067 | $i$ | 2.93748 | | +0.05326364 | +0.34686148 | |
| $P$ | 3.23 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 07 | 691 | 0.0 | 0.4+ | 2006 10 20 | 691 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.3+ | 0.7+ |
| 2005 04 07 | 691 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.1+ | 0.8+ |
| 2005 04 07 | 691 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2005 04 11 | 695 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 704 | (0.4− | 3.4+) |
| 2005 04 11 | 695 | 0.1− | 0.1+ | 2006 10 28 | 691 | 0.6+ | 0.7− | 2006 11 18 | 704 | 0.5− | 0.7+ |
| 2005 04 30 | 691 | 0.3+ | 0.2+ | 2006 11 01 | 691 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.1− | 0.7+ |
| 2005 04 30 | 691 | 0.0 | 0.0 | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | (1.2+ | 2.0+) |
| 2005 04 30 | 691 | 0.3+ | 0.3+ | 2006 11 01 | 691 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.5− | 0.9+ |
| 2005 05 17 | G96 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.5− | 0.6− | 2006 11 20 | 704 | (1.7+ | 0.9+) |
| 2005 05 17 | G96 | 0.1− | 0.4− | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.8+ | 0.6− |
| 2005 05 17 | G96 | (2.1− | 0.9−) | 2006 11 02 | 703 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 1.0+ | 0.2+ |
| 2005 05 17 | G96 | 0.2− | 0.0 | 2006 11 02 | 703 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.8+ | 1.0+ |
| 2006 09 30 | G96 | 0.3+ | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.6− | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2006 09 30 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.4+ | 0.9− | 2006 11 23 | G96 | 0.1+ | 0.6− |
| 2006 09 30 | G96 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1− | 0.5− |
| 2006 10 12 | 691 | 0.2− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.7+ | 0.6+ |
| 2006 10 12 | 691 | 0.1+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.4− | 2006 11 28 | 704 | 1.1− | 0.1− |
| 2006 10 12 | 691 | 0.0 | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.5− | 2006 11 28 | 704 | 1.2− | 0.2− |
| 2006 10 20 | 691 | 0.3− | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.1+ |

**2006 UR$_{287}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 253.09243 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19089824 | $\omega$ | 330.24909 | | −0.86066722 | −0.50916784 | |
| $a$ | 2.9872261 | $\Omega$ | 179.14240 | | +0.47004091 | −0.79469740 | |
| $e$ | 0.0657128 | $i$ | 0.85274 | | +0.19573829 | −0.33046051 | |
| $P$ | 5.16 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 03 20 | 809 | 0.8+ | 1.9+ | 2006 09 25 | G96 | 0.2− | 0.9− | 2006 11 01 | 691 | 0.3+ | 0.1+ |
| 1995 09 22 | 691 | 0.4− | 0.2+ | 2006 10 20 | 691 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.7+ | 0.4− |
| 1995 09 22 | 691 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.8− |
| 1995 09 22 | 691 | 0.2+ | 0.2+ | 2006 10 20 | 691 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.0 | 1.0− |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 10 29 | 291 | 0.2− | 0.2+ | 2006 11 13 | G96 | 0.4− | 0.4− |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 10 29 | 291 | 0.0 | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.3− |
| 2006 09 25 | G96 | 0.4+ | 0.1− | 2006 10 29 | 291 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.1+ | 0.7− |
| 2006 09 25 | G96 | 0.7+ | 1.0− | 2006 11 01 | 691 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.3+ | 0.5− |
| 2006 09 25 | G96 | 0.5− | 0.6− | 2006 11 01 | 691 | 0.2− | 0.2+ | 2006 11 21 | G96 | 0.0 | 0.4− |

**2006 UU$_{287}$ = 2005 JP$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 126.26915 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29317865 | $\omega$ | 55.62701 | | −0.28192883 | +0.95916181 | |
| $a$ | 2.2441290 | $\Omega$ | 198.03945 | | −0.90276722 | −0.27328541 | |
| $e$ | 0.0907295 | $i$ | 4.24224 | | −0.32484994 | −0.07296373 | |
| $P$ | 3.36 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 10 | G96 | 0.2− | 0.2+ | 2005 05 11 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.3+ | 0.1+ |
| 2005 03 10 | G96 | 0.5+ | 0.2+ | 2005 05 11 | G96 | 0.1− | 0.1− | 2006 10 29 | 691 | 0.1+ | 0.2− |
| 2005 03 10 | G96 | 0.3− | 0.2− | 2005 05 11 | G96 | 0.0 | 0.3− | 2006 10 29 | 691 | 0.0 | 0.2− |
| 2005 03 10 | G96 | 0.1− | 0.4+ | 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.5− | 0.2+ |
| 2005 04 11 | G96 | 0.2+ | 0.2+ | 2005 05 13 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.3− |
| 2005 04 11 | G96 | 0.0 | 0.2+ | 2005 05 13 | 691 | 0.0 | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.2− |
| 2005 04 11 | G96 | 0.6+ | 0.2+ | 2006 10 20 | 691 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.3− | 0.1− |
| 2005 04 11 | G96 | 0.1− | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.1+ | | | | |
| 2005 05 11 | G96 | 0.2− | 0.0 | 2006 10 20 | 691 | 0.4− | 0.4+ | | | | |

**2006 UC$_{288}$ = 2004 LC$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 157.57578 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18002326 | $\omega$ | 17.51882 | −0.65182207 | | +0.74025790 | |
| $a$ | 3.1063494 | $\Omega$ | 212.39004 | −0.72741632 | | −0.67172031 | |
| $e$ | 0.1216932 | $i$ | 17.91307 | −0.21446090 | | +0.02846150 | |
| $P$ | 5.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 23 | 599 | 0.1− | 0.1− | 2004 06 16 | 691 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.4+ | 0.3+ |
| 2004 04 23 | 599 | 0.5− | 0.1+ | 2004 06 16 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.6− |
| 2004 04 23 | 599 | 0.4− | 0.3− | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.7− |
| 2004 04 23 | 599 | 0.1− | 0.4− | 2006 10 20 | 691 | 0.1− | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 2004 06 09 | 691 | 0.1+ | 0.4+ | 2006 10 20 | 691 | 0.1− | 0.4+ | 2006 11 16 | G96 | 0.0 | 0.0 |
| 2004 06 09 | 691 | 0.4+ | 0.1− | 2006 10 29 | 691 | 0.3+ | 0.1+ | 2006 11 16 | G96 | 0.2+ | 0.2− |
| 2004 06 09 | 691 | 0.1− | 0.2− | 2006 10 29 | 691 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.8− | 0.6− |
| 2004 06 16 | 691 | 0.1− | 0.3− | 2006 10 29 | 691 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.0 |

**2006 UT$_{288}$ = 2005 JC$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.27064 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23434334 | $\omega$ | 284.60323 | +0.97425769 | | −0.04105138 | |
| $a$ | 2.6055593 | $\Omega$ | 78.11732 | +0.13549452 | | +0.89249217 | |
| $e$ | 0.2803143 | $i$ | 13.09240 | −0.18017543 | | +0.44919096 | |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 03 | 691 | 0.3+ | 0.4+ | 2006 10 22 | 703 | 0.5+ | 1.3− | 2006 11 19 | 703 | 0.4− | 0.3− |
| 2005 05 03 | 691 | 0.3+ | 0.1+ | 2006 10 30 | 703 | 0.1+ | 0.4− | 2006 11 19 | 703 | 1.0− | 0.2− |
| 2005 05 03 | 691 | 0.1− | 0.1+ | 2006 10 30 | 703 | 0.1− | 0.2− | 2006 11 19 | 703 | 0.6− | 0.6+ |
| 2005 05 08 | 691 | 0.3− | 0.2+ | 2006 10 30 | 703 | 0.6− | 0.1− | 2006 11 23 | G96 | 0.3+ | 0.0 |
| 2005 05 08 | 691 | 0.1+ | 0.1+ | 2006 10 30 | 703 | 0.0 | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2005 05 08 | 691 | 0.2+ | 0.3+ | 2006 11 01 | 703 | 0.2+ | 0.1− | 2006 11 23 | G96 | 0.1+ | 0.0 |
| 2006 09 19 | 703 | 0.1+ | 0.4+ | 2006 11 01 | 703 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.6+ | 0.1+ |
| 2006 09 19 | 703 | 0.3− | 0.1+ | 2006 11 01 | 703 | 0.6+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2006 09 19 | 703 | 0.6− | 0.5+ | 2006 11 01 | 703 | 0.7− | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.1+ |
| 2006 09 19 | 703 | 0.1+ | 0.0 | 2006 11 13 | 703 | 1.1− | 0.8+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2006 10 17 | 703 | 0.7+ | 0.2+ | 2006 11 13 | 703 | 0.3− | 0.2+ | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 2006 10 17 | 703 | 0.4− | 0.6+ | 2006 11 13 | 703 | 0.6+ | 0.6+ | 2006 11 25 | 704 | 1.6+ | 0.7+ |
| 2006 10 17 | 703 | 0.8− | 0.3− | 2006 11 13 | 703 | 0.1+ | 1.0+ | 2006 11 25 | 704 | 0.7+ | 0.4+ |
| 2006 10 17 | 703 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.1+ | 0.3+ | 2006 11 25 | 704 | 0.9+ | 1.2+ |
| 2006 10 22 | 703 | 2.5− | 0.6− | 2006 11 13 | 644 | 0.4+ | 0.1+ | 2006 11 25 | 704 | 1.5+ | 1.1+ |
| 2006 10 22 | 703 | 1.5− | 1.1− | 2006 11 13 | 644 | 0.2+ | 0.2+ | | | | |
| 2006 10 22 | 703 | 0.5− | 1.5− | 2006 11 19 | 703 | 0.7− | 0.4+ | | | | |

**2006 UJ$_{289}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 68.41689 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22886207 | $\omega$ | 330.05727 | +0.60044984 | | +0.79897056 | |
| $a$ | 2.6469973 | $\Omega$ | 336.79458 | −0.71589942 | | +0.51855850 | |
| $e$ | 0.1405847 | $i$ | 4.84168 | −0.35629764 | | +0.30453757 | |
| $P$ | 4.31 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 03 | 645 | 0.0 | 0.1+ | 2006 10 21 | 691 | 1.5− | 0.5− | 2006 11 10 | 291 | 0.0 | 0.1+ |
| 2000 03 03 | 645 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 10 | 291 | 0.3+ | 0.2+ |
| 2001 07 13 | 644 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.2− | 0.2+ | 2006 11 10 | 291 | 0.1+ | 0.0 |
| 2001 07 13 | 644 | 0.2− | 0.5+ | 2006 10 31 | 691 | 0.2− | 0.2+ | 2006 11 11 | 291 | 0.5− | 0.1+ |
| 2001 07 13 | 644 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 291 | 0.4− | 0.0 |
| 2001 08 11 | 644 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.3− | 0.4− | 2006 11 11 | 291 | 0.2− | 0.1+ |
| 2001 08 11 | 644 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.3+ | 0.2+ | 2006 11 23 | G96 | 0.4+ | 0.2− |
| 2001 08 11 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.0 | 0.1− | 2006 11 23 | G96 | 0.7+ | 0.1− |
| 2006 10 13 | 691 | 0.6+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.7− |
| 2006 10 13 | 691 | 0.4+ | 0.2+ | 2006 11 02 | 691 | 0.3+ | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.1+ |
| 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 02 | 691 | 0.2+ | 0.4− | | | | |
| 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 02 | 691 | 0.6+ | 0.1− | | | | |

**2006 UN$_{291}$ = 2004 DA$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.92869 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26595817 | $\omega$ | 342.39241 | +0.53033689 | | −0.84141472 | |
| $a$ | 2.3947517 | $\Omega$ | 75.46531 | +0.79015693 | | +0.44622145 | |
| $e$ | 0.1534315 | $i$ | 6.15279 | +0.30723738 | | +0.30480763 | |
| $P$ | 3.71 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 17 | 691 | 0.3− | 0.4− | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.6− |
| 1993 04 17 | 691 | 0.5− | 1.5− | 2006 11 10 | 224 | 0.0 | 0.5+ | 2006 11 17 | 704 | 0.1− | 0.0 |
| 1993 04 17 | 691 | 0.0 | 0.0 | 2006 11 10 | 224 | 0.7+ | 0.4− | 2006 11 17 | 704 | 0.5+ | 0.1+ |
| 2004 02 17 | 704 | 1.2+ | 1.3+ | 2006 11 10 | 224 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.2+ |
| 2004 02 17 | 704 | (0.8+ | 2.1+) | 2006 11 11 | 644 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.7+ | 1.1+ |
| 2004 02 17 | 704 | 0.2+ | 0.4+ | 2006 11 11 | 703 | 0.5+ | 1.2+ | 2006 11 17 | 704 | 0.2+ | 0.2− |
| 2004 02 17 | 704 | 1.3+ | 1.0+ | 2006 11 11 | 703 | 1.2− | 0.5− | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2004 02 29 | 691 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2004 02 29 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.3− |
| 2004 02 29 | 691 | 0.1− | 0.3+ | 2006 11 11 | 644 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.6− |
| 2006 10 16 | 703 | 0.5− | 0.1− | 2006 11 11 | 703 | (1.8+ | 1.1+) | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2006 10 16 | 703 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.7− | 2006 11 20 | 704 | 0.2+ | 0.5+ |
| 2006 10 16 | 703 | 0.3− | 0.4+ | 2006 11 11 | 703 | (1.4+ | 1.6+) | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 2006 10 16 | 703 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.7+ | 0.3+ |
| 2006 10 27 | 224 | 0.1+ | 0.5− | 2006 11 11 | 644 | 0.0 | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.7− |
| 2006 10 27 | 224 | 0.4+ | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.6+ | 2006 11 20 | 704 | 0.2+ | 0.8+ |
| 2006 10 27 | 224 | 0.4+ | 0.2+ | 2006 11 14 | 704 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.8− | 0.5− |
| 2006 11 08 | 644 | 0.4− | 0.1− | 2006 11 14 | 704 | 0.6+ | 0.5+ | 2006 11 28 | 704 | 0.7− | 0.6− |
| 2006 11 08 | 644 | 0.4− | 0.0 | 2006 11 14 | 704 | 0.8+ | 1.4+ | 2006 11 28 | 704 | 0.9− | 0.3− |
| 2006 11 08 | 644 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.7− | 2006 11 28 | 704 | 0.7− | 1.0− |
| 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2− | 0.7− | 2006 11 28 | 704 | 0.7− | 0.1− |
| 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.3+ | 0.6− | | | | |

**2006 UZ$_{291}$ = 1995 QT$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.23557 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18404184 | $\omega$ | 192.72657 | −0.44267509 | | −0.88301702 | |
| $a$ | 3.0609648 | $\Omega$ | 283.72560 | +0.83611702 | | −0.34365178 | |
| $e$ | 0.0566185 | $i$ | 9.23778 | +0.32395539 | | −0.31966293 | |
| $P$ | 5.36 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 08 22 | 691 | 0.4+ | 0.2− | 2006 10 21 | 705 | 0.1+ | 0.0 | 2006 10 31 | 705 | 0.0 | 0.1+ |
| 1995 08 22 | 691 | 0.0 | 0.0 | 2006 10 21 | 705 | 0.1+ | 0.1− | 2006 10 31 | 705 | 0.1− | 0.3+ |
| 1995 08 22 | 691 | 0.3+ | 0.1− | 2006 10 22 | 705 | 0.0 | 0.0 | 2006 11 14 | 705 | 0.0 | 0.1− |
| 1995 08 28 | 691 | 0.2− | 0.2− | 2006 10 22 | 705 | 0.0 | 0.1− | 2006 11 14 | 705 | 0.0 | 0.2− |
| 1995 08 28 | 691 | 0.3− | 0.2+ | 2006 10 28 | 705 | 0.0 | 0.1− | | | | |
| 1995 08 28 | 691 | 0.1− | 0.3+ | 2006 10 28 | 705 | 0.1+ | 0.2+ | | | | |

**2006 UH$_{320}$ = 2005 PB$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 111.22093 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19629149 | $\omega$ | 215.96753 | +0.41035644 | | +0.90938217 | |
| $a$ | 2.9322550 | $\Omega$ | 78.34709 | −0.81960243 | | +0.40050415 | |
| $e$ | 0.0833934 | $i$ | 3.98461 | −0.39982427 | | +0.11234100 | |
| $P$ | 5.02 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 691 | 0.2− | 0.0 | 2005 08 04 | 644 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.3− | 0.1− |
| 2001 11 16 | 691 | 0.1− | 0.6+ | 2005 08 04 | 644 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.7+ | 0.3− |
| 2001 11 16 | 691 | 0.2+ | 0.2− | 2005 08 05 | 644 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.2+ |
| 2004 05 19 | 691 | 0.0 | 0.3+ | 2005 08 05 | 644 | 0.3− | 0.1+ | 2006 11 24 | G96 | 0.6+ | 0.1− |
| 2004 05 19 | 691 | 0.2− | 0.2+ | 2005 08 05 | 644 | 0.2+ | 0.3+ | 2006 11 24 | G96 | 0.1− | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 19 | 691 | 0.2− | 0.2+ | 2006 10 19 | 695 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.4− | 0.4+ |
| 2004 05 29 | 291 | 0.2+ | 0.4+ | 2006 10 20 | 695 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.5+ | 0.2+ |
| 2004 05 29 | 291 | 0.2+ | 0.4+ | 2006 10 20 | 695 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2004 05 29 | 291 | 0.6+ | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.2+ | | | | |
| 2005 08 04 | 644 | 0.2− | 0.6+ | 2006 11 23 | 691 | 0.2+ | 0.2+ | | | | |

**2006 UX$_{321}$ = 2002 AA$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.46964 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18077667 | $\omega$ | 299.30454 | | +0.62573032 | | −0.70979614 |
| $a$ | 3.0977126 | $\Omega$ | 108.22197 | | +0.77990607 | | +0.56161582 |
| $e$ | 0.2569609 | $i$ | 19.91205 | | +0.01442542 | | +0.42517892 |
| $P$ | 5.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 1.1+ | 1.1− | 2006 09 22 | 703 | 0.5+ | 0.0 | 2006 11 06 | 644 | 0.1+ | 0.0 |
| 2002 01 09 | 704 | 1.1+ | 1.3− | 2006 09 22 | 703 | 0.1+ | 0.6− | 2006 11 19 | 703 | 0.0 | 0.4+ |
| 2002 01 09 | 704 | 1.3+ | 0.9− | 2006 09 22 | 703 | 0.2+ | 0.4− | 2006 11 19 | 703 | 0.3− | 0.2+ |
| 2002 01 09 | 704 | 0.3− | 0.6− | 2006 10 25 | E12 | 0.3− | 0.0 | 2006 11 19 | 703 | 0.6− | 0.0 |
| 2002 01 15 | 704 | 0.7− | 0.7+ | 2006 10 25 | E12 | 0.3− | 0.4− | 2006 11 19 | 703 | 0.3− | 0.1− |
| 2002 01 15 | 704 | 0.3− | 0.9+ | 2006 10 25 | E12 | 0.2+ | 0.2+ | 2006 11 24 | 703 | 0.2+ | 0.2+ |
| 2002 01 15 | 704 | 1.1− | 0.9+ | 2006 10 25 | E12 | 0.2− | 0.1− | 2006 11 24 | 703 | 0.9− | 0.6+ |
| 2002 01 15 | 704 | 1.0− | 0.9+ | 2006 11 06 | 644 | 0.3+ | 0.1+ | 2006 11 24 | 703 | 0.5− | 0.0 |
| 2006 09 22 | 703 | 0.8+ | 0.1− | 2006 11 06 | 644 | 0.2+ | 0.2+ | 2006 11 24 | 703 | 0.9+ | 0.2+ |

**2006 VF = 2002 RH$_{197}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 311.26488 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27339534 | $\omega$ | 94.18824 | | −0.09077066 | | −0.99587089 |
| $a$ | 2.3511228 | $\Omega$ | 1.02271 | | +0.88064700 | | −0.08090863 |
| $e$ | 0.1107339 | $i$ | 4.38907 | | +0.46499630 | | −0.04117004 |
| $P$ | 3.61 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 13 | 644 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2− | 0.5− | 2006 11 16 | G96 | 0.4+ | 0.2− |
| 2002 09 13 | 644 | 0.3− | 0.4− | 2006 11 15 | G96 | 0.1− | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2002 09 13 | 644 | 0.1+ | 0.6− | 2006 11 15 | G96 | 0.1− | 0.3− | 2006 11 16 | 704 | (0.5− | 3.2−) |
| 2002 09 15 | 644 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2− | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2002 09 15 | 644 | 0.5+ | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.3+ | 1.2− |
| 2002 09 15 | 644 | 0.3− | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.5− | 0.9+ |
| 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 704 | 1.2+ | 1.0− | 2006 11 17 | 704 | 1.2− | 0.5+ |
| 2006 10 19 | 691 | 0.1+ | 0.4− | 2006 11 15 | 704 | 0.4+ | 0.6+ | 2006 11 17 | 704 | 0.1− | 1.0+ |
| 2006 10 19 | 691 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.3− | 0.5− | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2006 11 01 | H07 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2006 11 01 | H07 | 0.1+ | 0.4− | 2006 11 16 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.4+ |
| 2006 11 01 | H07 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.5+ |
| 2006 11 02 | H07 | 0.2− | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.0 | 1.0+ |
| 2006 11 02 | H07 | 0.0 | 0.5− | 2006 11 16 | G96 | 0.3+ | 0.4− | 2006 11 22 | 704 | (0.8− | 2.0+) |
| 2006 11 02 | H07 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.5+ | 0.8− | 2006 11 22 | 704 | 0.1+ | 1.5+ |
| 2006 11 02 | H07 | 0.4− | 0.0 | 2006 11 16 | 704 | (0.3+ | 1.7+) | 2006 11 22 | 704 | 0.1− | 1.2+ |
| 2006 11 11 | 703 | 0.9− | 1.0+ | 2006 11 16 | 704 | (0.3+ | 2.1−) | 2006 11 22 | 704 | (0.4− | 1.8+) |
| 2006 11 11 | 703 | 0.3− | 0.3+ | 2006 11 16 | 704 | 1.3+ | 0.8− | 2006 12 01 | G96 | 0.4− | 0.5− |
| 2006 11 11 | 703 | 0.2− | 0.9+ | 2006 11 16 | 704 | 0.4+ | 0.3− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2006 11 11 | 703 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.2− | 0.5− | 2006 12 01 | G96 | 0.6+ | 0.3− |
| 2006 11 14 | 703 | 0.3+ | 1.1− | 2006 11 16 | G96 | 0.1− | 0.4− | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2006 11 14 | 703 | 0.1+ | 0.6− | 2006 11 16 | 704 | 0.9− | 1.1+ | 2006 12 01 | 704 | 0.2− | 0.0 |
| 2006 11 14 | 703 | 0.6− | 0.8+ | 2006 11 16 | 704 | 1.5− | 0.1− | 2006 12 01 | 704 | 0.2− | 0.5+ |
| 2006 11 14 | 703 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.2+ | 0.5− | 2006 12 01 | 704 | 0.7+ | 0.9+ |
| 2006 11 15 | G96 | 0.2+ | 0.3− | 2006 11 16 | 704 | 0.0 | 0.6− | | | | |

**2006 VK = 2004 EX$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.61896 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27333851 | $\omega$ | 72.98212 | | −0.18048587 | | −0.98318638 |
| $a$ | 2.3514486 | $\Omega$ | 27.46245 | | +0.87799322 | | −0.17375856 |
| $e$ | 0.1581690 | $i$ | 3.44825 | | +0.44334271 | | −0.05614712 |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 26 | 691 | 0.3− | 0.1− | 2006 10 21 | 691 | 0.2− | 0.3+ | 2006 11 02 | 473 | 0.6− | 1.1+ |
| 1993 01 26 | 691 | 0.2+ | 0.4− | 2006 11 02 | 473 | 0.9− | 0.7− | 2006 11 03 | 473 | 0.4− | 1.0+ |
| 1993 01 26 | 691 | 0.2− | 0.2− | 2006 11 02 | 473 | 1.5− | 0.3− | 2006 11 08 | 644 | 0.3+ | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 11 02 | 473 | 0.7+ | 0.4+ | 2006 11 08 | 644 | 0.3+ | 0.1− |
| 2004 03 15 | 691 | 0.1− | 0.3+ | 2006 11 02 | 473 | 0.8− | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 11 02 | 473 | 0.7− | 0.3− | 2006 11 08 | 644 | 0.1+ | 0.4− |
| 2004 03 19 | 704 | 0.3+ | 0.1− | 2006 11 02 | 473 | 1.3+ | 0.8+ | 2006 11 08 | 644 | 0.1+ | 0.0 |
| 2004 03 19 | 704 | 1.4+ | 0.6− | 2006 11 02 | 473 | 0.7+ | 1.2+ | 2006 11 08 | 644 | 0.2+ | 0.1− |
| 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 11 02 | 473 | 0.5− | 0.7+ | 2006 11 10 | 473 | 0.2− | 0.5− |
| 2004 03 19 | 704 | 0.0 | 0.7+ | 2006 11 02 | 473 | 0.4− | 0.6+ | 2006 11 10 | 473 | 0.5+ | 0.2+ |
| 2006 09 25 | G96 | 0.7− | 0.6− | 2006 11 02 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.1− | 1.2− |
| 2006 09 25 | G96 | 0.3− | 0.6− | 2006 11 02 | 691 | 0.5+ | 0.5− | 2006 11 11 | 703 | 0.1− | 0.7− |
| 2006 09 25 | G96 | 0.0 | 0.7− | 2006 11 02 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.4+ | 0.2+ |
| 2006 09 25 | G96 | 0.2− | 0.7− | 2006 11 02 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5+ | 0.7− |
| 2006 10 13 | 691 | 0.3+ | 0.2+ | 2006 11 02 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 1.1− | 0.2− |
| 2006 10 13 | 691 | 0.0 | 0.1+ | 2006 11 02 | 691 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.8− | 1.3− |
| 2006 10 13 | 691 | 0.0 | 0.2+ | 2006 11 02 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.1− | 1.1+ |
| 2006 10 21 | 691 | 0.4+ | 0.1+ | 2006 11 02 | 473 | 0.9− | 1.5+ | 2006 11 19 | 704 | 0.9− | 0.7+ |
| 2006 10 21 | 691 | 0.2+ | 0.3+ | 2006 11 02 | 473 | 0.2− | 1.2+ | | | | |

**2006 VU**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.83405 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27032528 | $\omega$ | 336.99046 | | +0.97297102 | | +0.23089096 |
| $a$ | 2.3688903 | $\Omega$ | 9.66272 | | −0.20789825 | | +0.88352277 |
| $e$ | 0.1991440 | $i$ | 1.39774 | | −0.10052719 | | +0.40752531 |
| $P$ | 3.65 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 26 | 691 | 0.2+ | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.2+ |
| 2001 03 26 | 691 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.0 | 1.3+ |
| 2001 03 26 | 691 | 0.1+ | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.5− | 2006 11 11 | 703 | 0.9− | 0.1+ |
| 2002 08 29 | 644 | 0.2− | 0.9+ | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 11 | 703 | 0.5+ | 0.4− |
| 2002 08 29 | 644 | 0.3− | 0.9+ | 2006 11 02 | G96 | 0.2− | 0.2− | 2006 11 12 | 703 | 0.7− | 0.5+ |
| 2002 08 29 | 644 | 0.4− | 0.6+ | 2006 11 02 | 691 | 0.1− | 0.1− | 2006 11 12 | 703 | 0.6− | 0.3+ |
| 2006 07 22 | G96 | 0.1− | 0.4+ | 2006 11 02 | G96 | 0.1+ | 0.4− | 2006 11 12 | 703 | 0.2+ | 0.4+ |
| 2006 07 22 | G96 | 0.5+ | 0.2− | 2006 11 02 | 691 | 0.2− | 1.3+ | 2006 11 12 | 703 | 1.1− | 0.4+ |
| 2006 07 22 | G96 | 0.5− | 0.3+ | 2006 11 02 | G96 | 0.1+ | 0.5− | 2006 11 12 | G96 | 0.3+ | 0.5− |
| 2006 07 22 | G96 | 0.2− | 0.2+ | 2006 11 02 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2006 10 17 | 691 | 0.1+ | 0.2− | 2006 11 02 | G96 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.5− |
| 2006 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.4− |
| 2006 10 17 | 691 | 0.2+ | 0.3− | 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.3+ | 0.1− |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 08 | 644 | 0.2− | 0.3− | 2006 11 17 | 703 | 1.1− | 0.1+ |
| 2006 10 21 | 691 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.4− | 0.8− |
| 2006 10 21 | 691 | 0.1− | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.2+ |
| 2006 10 27 | 703 | 0.8+ | 1.6− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.0 | 1.0+ |
| 2006 10 27 | 703 | 1.7+ | 1.1− | 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.9+ | 0.9+ |
| 2006 10 27 | 703 | 1.0− | 0.5+ | 2006 11 09 | 644 | 0.0 | 0.2− | 2006 11 22 | 704 | 1.0+ | 0.1− |
| 2006 10 27 | 703 | 0.3+ | 0.9+ | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.6+ |

**2006 VW = 1997 EF$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.71729 | | | (2000.0) | | |
| $n$ | 0.27825137 | $\omega$ | 157.67238 | | +0.93839835 | −0.33678989 |
| $a$ | 2.3236882 | $\Omega$ | 222.26038 | | +0.29711839 | +0.90066634 |
| $e$ | 0.2126119 | $i$ | 6.60363 | | +0.17643470 | +0.27454091 |
| $P$ | 3.54 | $H$ | 16.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 03 | 691 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1− | 0.3− | 2006 11 17 | 704 | 0.4− | 0.1− |
| 1997 03 03 | 691 | 0.4+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.4− | 2006 11 17 | 704 | 0.1+ | 0.5− |
| 1997 03 03 | 691 | 0.4+ | 0.2− | 2006 11 02 | 703 | 0.0 | 1.0− | 2006 11 17 | 704 | 0.6+ | 0.5− |
| 1997 03 10 | 691 | 0.1− | 0.4− | 2006 11 02 | 703 | 0.5+ | 0.3− | 2006 11 18 | 704 | (2.7− | 1.4+) |
| 1997 03 10 | 691 | 0.6− | 0.1− | 2006 11 02 | 703 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.8− | 1.1+ |
| 1997 03 10 | 691 | 0.3− | 0.1+ | 2006 11 02 | 703 | 0.7+ | 0.4− | 2006 11 18 | 704 | 0.4− | 1.5+ |
| 2002 07 28 | 644 | 0.0 | 0.6− | 2006 11 09 | 644 | 0.4+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2002 07 28 | 644 | 0.1− | 0.3− | 2006 11 09 | 644 | 0.1+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2002 07 28 | 644 | 0.1− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2002 08 04 | 644 | 0.9+ | 0.8− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.2− |
| 2002 08 04 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2002 08 04 | 644 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.3− | 0.1− |
| 2005 05 08 | G96 | 0.5+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2005 05 08 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2005 05 08 | G96 | 0.5− | 0.1+ | 2006 11 11 | 703 | 0.3− | 1.0− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 05 08 | G96 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.3+ | 0.5+ |
| 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.5− | 0.4+ |
| 2006 09 27 | G96 | 0.3+ | 0.5− | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2006 09 27 | G96 | 0.3+ | 0.7− | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 29 | 704 | 0.1− | 0.1− |
| 2006 09 27 | G96 | 0.2+ | 0.9+ | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.6+ | 0.2− | | | | |

**2006 VL$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 77.48932 | | | (2000.0) | | |
| $n$ | 0.17444589 | $\omega$ | 273.71622 | | +0.61179043 | +0.78867674 |
| $a$ | 3.1722121 | $\Omega$ | 34.24168 | | −0.67604469 | +0.56125112 |
| $e$ | 0.1296504 | $i$ | 6.20717 | | −0.41070190 | +0.25097047 |
| $P$ | 5.65 | $H$ | 15.7 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 27 | 691 | 0.1+ | 0.1+ | 2005 07 03 | 644 | 0.2+ | 0.0 | 2006 11 01 | G96 | 0.4− | 0.5− |
| 2000 09 27 | 691 | 0.3+ | 0.1+ | 2005 07 03 | 644 | 0.2− | 0.4+ | 2006 11 01 | G96 | 0.3− | 0.2− |
| 2000 09 27 | 691 | 0.1+ | 0.0 | 2005 07 03 | 644 | 0.4− | 0.7+ | 2006 11 02 | 691 | 0.1− | 0.1+ |
| 2000 10 06 | 699 | 0.7− | 0.2− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 02 | 691 | 0.0 | 0.2+ |
| 2000 10 06 | 699 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 02 | 691 | 0.1− | 0.1+ |
| 2000 10 06 | 699 | 1.0− | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.2− | 2006 11 08 | 644 | 0.3+ | 0.5+ |
| 2000 10 06 | 699 | 0.5− | 0.6− | 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 08 | 644 | 0.3+ | 0.3+ |
| 2004 04 24 | 691 | 0.0 | 0.5+ | 2006 10 13 | 691 | 0.1+ | 0.5+ | 2006 11 08 | 644 | 0.2+ | 0.5+ |
| 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2004 04 24 | 691 | 0.1+ | 0.4+ | 2006 10 13 | 691 | 0.2− | 0.3+ | 2006 11 14 | G96 | 0.0 | 0.1− |
| 2004 05 14 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.0 |
| 2004 05 14 | 691 | 0.4+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.5+ | 2006 11 14 | G96 | 0.2− | 0.0 |
| 2004 05 14 | 691 | 0.1+ | 0.2+ | 2006 10 21 | 691 | 0.1− | 0.5+ | | | | |

**2006 VN$_1$ = 2006 OR$_6$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 28.89373 | | | (2000.0) | | |
| $n$ | 0.27708063 | $\omega$ | 338.47975 | | +0.96733414 | +0.25325342 |
| $a$ | 2.3302290 | $\Omega$ | 6.87949 | | −0.21666559 | +0.84905468 |
| $e$ | 0.1948475 | $i$ | 5.40654 | | −0.13160810 | +0.46364734 |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 07 06 | 644 | 0.0 | 0.1− | 2006 07 22 | G96 | 0.2+ | 0.0 | 2006 11 03 | H55 | 0.1− | 0.7− |
| 2002 07 06 | 644 | 0.0 | 0.1− | 2006 07 22 | G96 | 0.6− | 0.6− | 2006 11 03 | H55 | 0.5− | 0.7− |
| 2002 07 06 | 644 | 0.0 | 0.1+ | 2006 07 22 | G96 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.2+ |
| 2002 08 04 | 644 | 0.0 | 0.3+ | 2006 07 22 | G96 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 0.0 |
| 2002 08 04 | 644 | 0.2− | 0.6+ | 2006 10 02 | G96 | 0.3− | 0.2− | 2006 11 11 | 703 | 0.1+ | 0.3− |
| 2002 08 04 | 644 | 0.1− | 0.4+ | 2006 10 02 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 1.0− | 0.2+ |
| 2005 04 12 | G96 | 0.2− | 0.5+ | 2006 10 02 | G96 | 0.4+ | 0.3+ | 2006 11 14 | 703 | (1.7+ | 1.5+) |
| 2005 04 12 | G96 | 0.0 | 0.6+ | 2006 10 02 | G96 | 0.6+ | 0.2− | 2006 11 14 | 703 | (1.6+ | 1.4+) |
| 2005 04 12 | G96 | 0.0 | 0.0 | 2006 10 17 | 691 | 0.2+ | 0.8+ | 2006 11 14 | 703 | 1.0− | 0.9+ |
| 2005 04 12 | G96 | 0.1− | 0.2+ | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 14 | 703 | 1.2− | 1.1+ |
| 2005 04 12 | G96 | 0.1− | 0.0 | 2006 10 17 | 691 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.5+ | 0.1− |
| 2005 04 12 | G96 | 0.1+ | 0.0 | 2006 10 19 | 703 | 1.2+ | 0.6+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 2005 04 12 | G96 | 0.8+ | 0.1+ | 2006 10 19 | 703 | 0.9+ | 1.5− | 2006 11 18 | G96 | 0.8− | 0.3− |
| 2005 04 12 | G96 | 0.1+ | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 18 | G96 | 0.3+ | 0.0 |
| 2005 04 12 | G96 | 0.0 | 0.0 | 2006 10 27 | 703 | 0.3− | 1.0− | 2006 11 19 | 704 | 0.7− | 0.6+ |
| 2005 04 12 | G96 | 0.2+ | 0.2+ | 2006 10 27 | 703 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2005 04 12 | G96 | 0.1+ | 0.2+ | 2006 10 27 | 703 | 1.1+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.0 |
| 2005 04 12 | G96 | 0.2+ | 0.3+ | 2006 10 27 | 703 | 0.3− | 0.8− | 2006 11 19 | 704 | 0.5− | 1.1+ |
| 2006 07 21 | G96 | 0.8+ | 0.9− | 2006 11 02 | H55 | 0.2− | 0.2− | 2006 11 22 | 704 | (1.9+ | 0.8+) |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 11 02 | H55 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2006 07 21 | G96 | 0.0 | 0.2− | 2006 11 02 | H55 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2006 07 21 | G96 | 0.1− | 0.4+ | 2006 11 03 | H55 | 0.6− | 0.8− | 2006 11 22 | 704 | 0.2+ | 0.3− |

**2006 VF$_2$ = 2004 BM$_{143}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 26.72995 | | | (2000.0) | | |
| $n$ | 0.27614203 | $\omega$ | 19.30299 | | +0.97048163 | +0.23361721 |
| $a$ | 2.3355063 | $\Omega$ | 327.00303 | | −0.23320799 | +0.84570075 |
| $e$ | 0.2726606 | $i$ | 6.31508 | | −0.06147709 | +0.47980542 |
| $P$ | 3.57 | $H$ | 16.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 08 29 | 703 | 0.3+ | 0.2+ | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 2004 01 19 | 691 | 0.1− | 0.4+ | 2006 10 23 | 703 | 0.1+ | 0.6+ | 2006 11 13 | G96 | 0.5+ | 0.0 |
| 2004 01 19 | 691 | 0.3+ | 0.5+ | 2006 10 23 | 703 | 0.1− | 0.0 | 2006 11 13 | G96 | 0.5+ | 0.1− |
| 2004 01 30 | 691 | 0.2+ | 0.3− | 2006 10 23 | 703 | 0.5− | 0.4+ | 2006 11 13 | G96 | 0.3+ | 0.4+ |
| 2004 01 30 | 691 | 0.4+ | 0.0 | 2006 10 23 | 703 | 0.0 | 0.5+ | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2004 01 30 | 691 | 0.2+ | 0.2− | 2006 11 02 | G96 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.5+ | 0.6+ |
| 2004 02 14 | 691 | 0.2− | 0.0 | 2006 11 02 | G96 | 0.4+ | 0.1+ | 2006 11 15 | 703 | 0.4+ | 0.8+ |
| 2004 02 14 | 691 | 0.1+ | 0.3+ | 2006 11 02 | G96 | 0.1− | 0.0 | 2006 11 15 | 703 | 0.3+ | 1.1+ |
| 2004 02 14 | 691 | 0.6− | 0.4− | 2006 11 02 | G96 | 0.3+ | 0.2+ | 2006 11 21 | 703 | 1.0− | 0.0 |
| 2006 08 29 | 703 | 0.8− | 1.5+ | 2006 11 11 | 644 | 0.1+ | 0.6+ | 2006 11 21 | 703 | 0.8− | 0.6− |
| 2006 08 29 | 703 | 0.3− | 0.0 | 2006 11 11 | 644 | 0.4+ | 0.6+ | 2006 11 21 | 703 | 0.1+ | 0.0 |
| 2006 08 29 | 703 | 0.2+ | 0.5− | 2006 11 11 | 644 | 0.4+ | 0.8+ | 2006 11 21 | 703 | (1.4− | 6.9−) |

**2006 VH$_2$ = 2002 XH$_{35}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 8.72116 | | | (2000.0) | | |
| $n$ | 0.24015456 | $\omega$ | 303.55889 | | +0.99252265 | −0.07329149 |
| $a$ | 2.5633554 | $\Omega$ | 60.81801 | | +0.10941435 | +0.88867319 |
| $e$ | 0.3155759 | $i$ | 6.41891 | | −0.05410439 | +0.45264590 |
| $P$ | 4.10 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | (1.5+ | 1.7+) | 2006 11 08 | 644 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.2+ | 1.1− |
| 2002 12 05 | 704 | (2.7+ | 0.3+) | 2006 11 09 | 958 | 0.8− | 0.4+ | 2006 11 18 | 704 | 0.4+ | 0.3− |
| 2002 12 05 | 704 | (2.7+ | 1.5−) | 2006 11 09 | 958 | 0.8− | 0.1− | 2006 11 18 | 704 | 0.4+ | 1.0+ |
| 2002 12 05 | 704 | (4.0+ | 1.7−) | 2006 11 09 | 958 | 0.7+ | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.5+ |
| 2002 12 08 | 333 | 0.6+ | 0.8− | 2006 11 10 | 958 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.5+ | 0.8+ |
| 2002 12 08 | 333 | 0.1− | 0.5− | 2006 11 10 | 958 | 0.7+ | 0.1+ | 2006 11 18 | 704 | 1.1+ | 0.4+ |
| 2002 12 08 | 333 | 0.2+ | 0.4− | 2006 11 10 | 958 | 0.2+ | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2002 12 09 | 333 | (3.2− | 1.1+) | 2006 11 11 | 703 | 0.2+ | 0.4+ | 2006 11 21 | 704 | 0.6+ | 1.3+ |
| 2002 12 09 | 333 | 0.5− | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 2006 10 16 | 703 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.8+ | 0.1+ | 2006 11 25 | 683 | 1.2− | 0.3+ |
| 2006 10 16 | 703 | 0.3+ | 1.1− | 2006 11 11 | 703 | 0.2− | 1.4− | 2006 11 25 | 683 | 0.4− | 1.4+ |
| 2006 10 16 | 703 | 0.3− | 0.6+ | 2006 11 15 | G96 | 0.4+ | 0.3− | 2006 11 25 | 683 | 2.2− | 1.1− |
| 2006 10 16 | 703 | 0.3− | 0.0 | 2006 11 15 | G96 | 0.0 | 0.4− | 2006 11 27 | 703 | 0.5+ | 0.9− |
| 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 15 | G96 | 0.2+ | 0.4− | 2006 11 27 | 703 | 0.2− | 0.9− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 11 08 | 644 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.0 | 0.6− | 2006 11 27 | 703 | 2.1− | 0.9+ |
| 2006 11 08 | 644 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.1+ | 2006 11 27 | 703 | 0.7+ | 0.8+ |
| 2006 11 08 | 644 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.1+ | | | | |
| 2006 11 08 | 644 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.4− | 0.9− | | | | |

**2006 VJ$_2$ = 2005 NB$_{98}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.86745 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23733564 | $\omega$ | 165.48369 | | −0.34055753 | −0.93469344 | |
| $a$ | 2.5836127 | $\Omega$ | 304.33092 | | +0.84987770 | −0.25970004 | |
| $e$ | 0.1164922 | $i$ | 7.08306 | | +0.40215478 | −0.24270161 | |
| $P$ | 4.15 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 02 | 691 | 0.1− | 0.2+ | 2006 10 27 | 703 | 0.4− | 0.4− | 2006 11 17 | A55 | 0.2− | 0.4+ |
| 1995 02 02 | 691 | 0.1+ | 0.2+ | 2006 11 02 | 703 | 0.1− | 0.2− | 2006 11 18 | A55 | 0.1+ | 0.1− |
| 1995 02 02 | 691 | 0.1+ | 0.3− | 2006 11 02 | 703 | 0.4− | 0.2− | 2006 11 18 | A55 | 0.7+ | 0.6+ |
| 2004 04 16 | E12 | 0.4− | 0.9+ | 2006 11 02 | 703 | 0.3− | 0.1− | 2006 11 18 | A55 | 0.3+ | 0.4+ |
| 2004 04 16 | E12 | 0.1+ | 0.4+ | 2006 11 02 | 703 | 0.1− | 0.7− | 2006 11 19 | A55 | 0.2+ | 0.0 |
| 2004 04 16 | E12 | 0.5+ | 0.8+ | 2006 11 10 | A55 | 0.5+ | 0.2− | 2006 11 19 | A55 | 0.1+ | 0.1+ |
| 2004 04 16 | E12 | 0.7+ | 0.5+ | 2006 11 10 | A55 | 0.6− | 0.6+ | 2006 11 19 | A55 | 0.0 | 0.2+ |
| 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 11 10 | A55 | 0.3+ | 0.4+ | 2006 11 19 | A55 | 0.2− | 0.1− |
| 2005 07 09 | 691 | 0.1− | 0.1− | 2006 11 10 | A55 | 0.2+ | 0.2+ | 2006 11 19 | A55 | 0.1+ | 0.2+ |
| 2005 07 09 | 691 | 0.1+ | 0.2− | 2006 11 12 | A55 | 0.4− | 0.1+ | 2006 11 22 | 703 | 0.9− | 1.4− |
| 2005 07 16 | 691 | 0.0 | 0.1+ | 2006 11 12 | A55 | 0.1− | 0.2+ | 2006 11 22 | 703 | 0.4− | 0.7+ |
| 2005 07 16 | 691 | 0.2− | 0.1+ | 2006 11 12 | A55 | 0.5− | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.4− |
| 2005 07 16 | 691 | 0.2+ | 0.3+ | 2006 11 14 | A55 | 0.6+ | 0.3+ | 2006 11 22 | 703 | 0.6− | 0.2+ |
| 2006 10 19 | 703 | 0.5+ | 0.5+ | 2006 11 14 | A55 | 0.0 | 0.3+ | 2006 11 23 | A55 | 0.2+ | 0.1− |
| 2006 10 19 | 703 | 0.6− | 0.6− | 2006 11 14 | A55 | 0.5+ | 0.3+ | 2006 11 23 | A55 | 0.8+ | 0.0 |
| 2006 10 19 | 703 | 0.2− | 0.3− | 2006 11 15 | A55 | 0.7− | 0.2+ | 2006 11 23 | A55 | 0.5+ | 0.1− |
| 2006 10 19 | 703 | 0.3− | 0.3+ | 2006 11 15 | A55 | 0.0 | 0.1+ | 2006 11 23 | A55 | 0.9+ | 0.1+ |
| 2006 10 27 | 703 | 0.9+ | 0.0 | 2006 11 15 | A55 | 0.1− | 0.1+ | 2006 11 26 | A55 | 0.2+ | 0.3+ |
| 2006 10 27 | 703 | 0.9− | 0.0 | 2006 11 17 | A55 | 0.5− | 0.2− | 2006 11 26 | A55 | 0.5+ | 0.4+ |
| 2006 10 27 | 703 | (1.4− | 2.3+) | 2006 11 17 | A55 | 0.1− | 0.1+ | 2006 11 26 | A55 | 0.3+ | 0.5+ |

**2006 VK$_2$ = 2000 SS$_{234}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.18440 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18132935 | $\omega$ | 358.92918 | | +0.93028274 | −0.35012093 | |
| $a$ | 3.0914150 | $\Omega$ | 22.54523 | | +0.33865950 | +0.70493007 | |
| $e$ | 0.0568023 | $i$ | 16.59367 | | +0.14100982 | +0.61683784 | |
| $P$ | 5.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 23 | 704 | 0.3− | 0.2+ | 2006 10 19 | D35 | 0.0 | 0.1− | 2006 11 12 | A55 | 0.8− | 0.4+ |
| 2000 09 23 | 704 | 0.5− | 1.3+ | 2006 10 19 | D35 | 0.1− | 0.2+ | 2006 11 12 | A55 | 0.0 | 0.2+ |
| 2000 09 23 | 704 | 0.0 | 0.4+ | 2006 10 27 | 703 | 0.3+ | 0.6− | 2006 11 13 | A55 | 0.0 | 0.1− |
| 2000 09 26 | 645 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.4− | 0.9− | 2006 11 13 | A55 | 0.3+ | 0.1+ |
| 2000 09 26 | 645 | 0.0 | 0.1− | 2006 10 27 | 703 | 0.7+ | 0.8+ | 2006 11 13 | A55 | 0.0 | 0.4− |
| 2000 10 01 | 704 | 0.9+ | 1.1+ | 2006 10 27 | 703 | 0.0 | 0.5− | 2006 11 13 | 104 | 0.3+ | 0.0 |
| 2000 10 01 | 704 | 0.1− | 1.1+ | 2006 11 10 | A55 | 0.0 | 0.0 | 2006 11 13 | 104 | 0.6+ | 0.0 |
| 2000 10 01 | 704 | 0.4− | 1.0+ | 2006 11 10 | A55 | 0.3+ | 0.0 | 2006 11 13 | 104 | 0.1+ | 0.1+ |
| 2000 10 01 | 704 | 0.3− | 1.0+ | 2006 11 10 | A55 | 0.1+ | 0.4+ | 2006 11 21 | 703 | 0.2− | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 10 | A55 | 0.5− | 0.5− | 2006 11 21 | 703 | 0.1− | 0.5+ |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 12 | A55 | 0.1+ | 1.1+ | 2006 11 21 | 703 | 0.5+ | 0.8− |
| 2006 10 19 | D35 | 0.1− | 0.2+ | 2006 11 12 | A55 | 0.0 | 0.2+ | 2006 11 21 | 703 | 1.0− | 0.6− |

**2006 VR$_2$ = 2001 QU$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.28030 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21465295 | $\omega$ | 273.42034 | | +0.89091973 | −0.43300726 | |
| $a$ | 2.7625585 | $\Omega$ | 112.27690 | | +0.45279150 | +0.82345659 | |
| $e$ | 0.2367239 | $i$ | 8.51343 | | +0.03524061 | +0.36663874 | |
| $P$ | 4.59 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 16 | 704 | (1.8− | 0.0 ) | 2001 09 17 | 699 | 0.3− | 0.2+ | 2006 11 05 | 644 | 0.2+ | 0.0 |
| 2001 08 16 | 704 | 0.7+ | 0.7+ | 2001 09 17 | 699 | 0.6+ | 0.0 | 2006 11 05 | 644 | 0.1− | 0.2− |
| 2001 08 16 | 704 | 1.0− | 0.4+ | 2001 09 17 | 699 | 0.2− | 0.1− | 2006 11 05 | 644 | 0.2− | 0.0 |
| 2001 08 19 | 704 | 0.0 | 0.8+ | 2001 09 17 | 699 | 0.0 | 0.8− | 2006 11 09 | 958 | 0.7+ | 0.0 |
| 2001 08 19 | 704 | 0.1+ | 0.4− | 2001 09 25 | 704 | 0.5− | 0.4− | 2006 11 09 | 958 | 0.6+ | 0.0 |
| 2001 08 19 | 704 | 0.3− | 0.7+ | 2001 09 25 | 704 | 0.7− | 0.7− | 2006 11 09 | 958 | 0.9+ | 0.2+ |
| 2001 08 19 | 704 | 0.9+ | 0.9+ | 2001 09 25 | 704 | 0.1+ | 0.6− | 2006 11 13 | 703 | 0.5+ | 0.0 |
| 2001 08 25 | 699 | 0.2+ | 0.6+ | 2001 09 25 | 704 | 0.0 | 1.1− | 2006 11 13 | 703 | 0.1+ | 0.7− |
| 2001 08 25 | 699 | 0.3+ | 0.2+ | 2006 09 18 | 703 | 0.4− | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.5− |
| 2001 08 25 | 699 | 0.2+ | 0.4− | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 11 13 | 703 | 0.9− | 0.3+ |
| 2001 08 25 | 699 | 1.0+ | 0.8+ | 2006 09 18 | 703 | 0.6+ | 0.8− | 2006 11 19 | 703 | 0.5− | 0.2− |
| 2001 09 06 | 644 | 0.5− | 0.6+ | 2006 09 18 | 703 | 0.8+ | 0.2− | 2006 11 19 | 703 | 0.6− | 0.3− |
| 2001 09 06 | 644 | 0.9− | 0.1− | 2006 10 20 | 644 | 0.1− | 0.2− | 2006 11 19 | 703 | 0.8− | 0.1− |
| 2001 09 06 | 644 | 0.2− | 0.3+ | 2006 10 20 | 644 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.0 | 0.5+ |
| 2001 09 11 | 704 | (1.8− | 0.2+) | 2006 10 20 | 644 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 1.1+ |
| 2001 09 11 | 704 | 0.2+ | 0.2− | 2006 10 30 | 703 | 0.5− | 0.3+ | 2006 11 20 | 704 | 0.8+ | 0.7+ |
| 2001 09 11 | 704 | 0.1− | 0.2− | 2006 10 30 | 703 | 0.4− | 0.9+ | 2006 11 20 | 704 | 0.8− | 0.2+ |
| 2001 09 11 | 704 | 0.2+ | 0.7− | 2006 10 30 | 703 | 0.0 | 0.1+ | | | | |
| 2001 09 11 | 704 | 0.2− | 0.2− | 2006 10 30 | 703 | 0.2+ | 0.5− | | | | |

**2006 VV$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.27858 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26716329 | $\omega$ | 144.83924 | | −0.89710438 | −0.43623752 | |
| $a$ | 2.3875448 | $\Omega$ | 10.05669 | | +0.25378984 | −0.63850272 | |
| $e$ | 0.6024462 | $i$ | 23.63370 | | +0.36165516 | −0.63404346 | |
| $P$ | 3.69 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.1− | 0.2− | 2006 11 13 | 850 | 0.4+ | 0.0 | 2006 11 19 | H45 | 0.0 | 0.0 |
| 2002 10 04 | 644 | 0.0 | 0.3− | 2006 11 13 | 850 | 0.6− | 0.4+ | 2006 11 19 | H45 | 0.1+ | 0.0 |
| 2002 10 04 | 644 | 0.3− | 0.3+ | 2006 11 13 | 673 | 0.2+ | 0.2− | 2006 11 20 | H45 | 0.0 | 0.1− |
| 2002 10 28 | 644 | 0.0 | 0.4+ | 2006 11 13 | 673 | 0.2+ | 0.3− | 2006 11 20 | H45 | 0.1+ | 0.1+ |
| 2002 10 30 | 644 | 0.0 | 0.4+ | 2006 11 13 | 673 | 0.2+ | 0.2− | 2006 11 20 | H45 | 0.1− | 0.3− |
| 2002 10 30 | 644 | 0.0 | 0.2− | 2006 11 13 | 673 | 0.2+ | 0.2− | 2006 11 20 | H45 | 0.1− | 0.0 |
| 2002 10 30 | 644 | 0.4+ | 0.4− | 2006 11 14 | 704 | 0.7− | 1.1+ | 2006 11 20 | H45 | 0.1+ | 0.2− |
| 2006 11 11 | 704 | (1.1− | 1.6+) | 2006 11 14 | 704 | 1.0+ | 0.0 | 2006 11 20 | H45 | 0.0 | 0.3+ |
| 2006 11 11 | 704 | 1.4− | 1.4+ | 2006 11 14 | 704 | 0.1− | 0.5+ | 2006 11 22 | H45 | 0.1+ | 0.0 |
| 2006 11 11 | 704 | 0.9− | 0.9+ | 2006 11 16 | J95 | 0.1+ | 0.1− | 2006 11 22 | H45 | 0.1− | 0.1+ |
| 2006 11 11 | 704 | 0.9− | 1.3+ | 2006 11 16 | J95 | 0.1+ | 0.1+ | 2006 11 22 | H45 | 0.1− | 0.1+ |
| 2006 11 11 | 704 | (2.7− | 0.3−) | 2006 11 16 | J95 | 0.1− | 0.1+ | 2006 11 22 | H45 | 0.0 | 0.1− |
| 2006 11 11 | 204 | 0.1+ | 0.3− | 2006 11 17 | 176 | 0.0 | 0.0 | 2006 11 22 | H45 | 0.0 | 0.1− |
| 2006 11 11 | 204 | 0.2+ | 0.4− | 2006 11 17 | 176 | 0.2+ | 0.3− | 2006 11 22 | H45 | 0.1+ | 0.0 |
| 2006 11 11 | 204 | 0.2+ | 0.3− | 2006 11 17 | 176 | 0.3+ | 0.2− | 2006 11 22 | H45 | 0.1− | 0.1+ |
| 2006 11 11 | 176 | 0.1+ | 0.1− | 2006 11 17 | 176 | 0.1+ | 0.3− | 2006 11 22 | H45 | 0.1− | 0.1+ |
| 2006 11 11 | 176 | 0.2+ | 0.2− | 2006 11 17 | 176 | 0.2+ | 0.0 | 2006 11 23 | 151 | 0.8− | 0.3+ |
| 2006 11 11 | 176 | 0.2+ | 0.4− | 2006 11 18 | H98 | 0.6+ | 0.6+ | 2006 11 23 | 151 | 0.8− | 0.3+ |
| 2006 11 11 | 176 | 0.1+ | 0.6− | 2006 11 18 | H98 | 0.2+ | 0.2− | 2006 11 23 | 151 | 0.7− | 0.4+ |
| 2006 11 11 | 176 | 0.5+ | 0.4− | 2006 11 18 | H98 | 0.4− | 0.3− | 2006 11 25 | H45 | 0.2+ | 0.2+ |
| 2006 11 12 | 939 | 0.3+ | 0.4− | 2006 11 18 | G88 | 0.6− | 0.6+ | 2006 11 25 | H45 | 0.2− | 0.1+ |
| 2006 11 12 | 939 | 0.8+ | 0.1− | 2006 11 18 | G88 | 0.0 | 0.3− | 2006 11 25 | H45 | 0.2+ | 0.1+ |
| 2006 11 12 | H36 | (1.8+ | 1.4−) | 2006 11 18 | G88 | 0.1− | 0.5+ | 2006 11 25 | H45 | 0.2− | 0.1+ |
| 2006 11 12 | H36 | 0.6− | 0.2+ | 2006 11 18 | H45 | 0.1+ | 0.0 | 2006 11 25 | H45 | 0.1− | 0.1+ |
| 2006 11 12 | 703 | 0.2+ | 0.2− | 2006 11 18 | H45 | 0.1+ | 0.2− | 2006 11 25 | H45 | 0.1− | 0.1+ |
| 2006 11 12 | 703 | 0.2+ | 0.0 | 2006 11 18 | H45 | 0.0 | 0.1+ | 2006 11 26 | H45 | 0.2+ | 0.2+ |
| 2006 11 12 | 854 | 0.3+ | 0.9− | 2006 11 18 | H45 | 0.1− | 0.0 | 2006 11 26 | H45 | 0.1+ | 0.1− |
| 2006 11 12 | 854 | 0.0 | 0.0 | 2006 11 18 | H45 | 0.1− | 0.1− | 2006 11 26 | H45 | 0.0 | 0.2+ |
| 2006 11 12 | 854 | 0.3+ | 0.6− | 2006 11 18 | H45 | 0.0 | 0.0 | 2006 11 26 | H45 | 0.0 | 0.0 |
| 2006 11 12 | D35 | 0.9− | 0.6+ | 2006 11 18 | H45 | 0.1− | 0.0 | 2006 11 26 | H45 | 0.0 | 0.0 |
| 2006 11 12 | D35 | 0.8− | 0.4+ | 2006 11 18 | H45 | 0.0 | 0.0 | 2006 11 26 | H45 | 0.1+ | 0.1+ |
| 2006 11 12 | D35 | 0.8− | 0.5+ | 2006 11 18 | H45 | 0.1+ | 0.1+ | 2006 11 26 | H45 | 0.0 | 0.0 |
| 2006 11 12 | 300 | 0.6+ | 0.1− | 2006 11 19 | H45 | 0.1− | 0.2− | 2006 12 02 | H45 | 0.1− | 0.2− |
| 2006 11 12 | 300 | 0.4+ | 0.2− | 2006 11 19 | H45 | 0.1+ | 0.0 | 2006 12 02 | H45 | 0.4− | 0.3− |
| 2006 11 12 | 300 | 0.1+ | 0.0 | 2006 11 19 | H45 | 0.1+ | 0.0 | 2006 12 02 | H45 | 0.3+ | 0.3− |
| 2006 11 12 | 300 | 0.3+ | 0.0 | 2006 11 19 | H45 | 0.0 | 0.1− | 2006 12 02 | H45 | 0.4+ | 0.1− |
| 2006 11 12 | 130 | 0.0 | 0.8− | 2006 11 19 | H45 | 0.0 | 0.2− | 2006 12 02 | H45 | 0.2+ | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 11 12 | 130 | 0.1+ | 0.3− | 2006 11 19 | H45 | 0.1− | 0.2− | 2006 12 02 | H45 | 0.2+ | 0.2+ | | |
| 2006 11 12 | 130 | 0.8− | 0.7− | 2006 11 19 | H45 | 0.0 | 0.0 | 2006 12 02 | H45 | 0.2+ | 0.1+ | | |
| 2006 11 13 | 850 | 1.2+ | 0.1+ | 2006 11 19 | H45 | 0.2− | 0.0 | | | | | | |

**2006 VE$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 65.83647 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30558257 | $\omega$ | 271.44238 | | +0.48558183 | | +0.87288130 |
| $a$ | 2.1829829 | $\Omega$ | 27.76968 | | −0.75567776 | | +0.44663508 |
| $e$ | 0.1745700 | $i$ | 5.89327 | | −0.43950132 | | +0.19645698 |
| $P$ | 3.23 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 21 | 291 | 0.4+ | 0.5+ | 2006 10 04 | G96 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1+ |
| 2002 04 21 | 291 | 0.2+ | 1.0+ | 2006 10 12 | 691 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2002 04 21 | 291 | 0.5+ | 0.9+ | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2005 05 09 | G96 | 0.2− | 0.3− | 2006 10 12 | 691 | 0.5− | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 2005 05 09 | G96 | 0.3− | 0.7− | 2006 10 16 | 691 | 0.4− | 0.4+ | 2006 11 13 | 691 | 0.1+ | 0.1+ |
| 2005 05 09 | G96 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.2− | 0.4+ | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 2005 05 09 | G96 | 0.2− | 0.4− | 2006 10 16 | 691 | 0.3+ | 0.4− | 2006 11 22 | 691 | 0.3+ | 0.1− |
| 2006 09 25 | G96 | 0.1+ | 0.0 | 2006 11 01 | 691 | 0.6− | 0.8+ | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2006 09 25 | G96 | 0.5+ | 0.0 | 2006 11 01 | 691 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2006 09 25 | G96 | 0.4+ | 0.4− | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2006 09 25 | G96 | 0.8+ | 0.1− | 2006 11 09 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2006 10 04 | G96 | 0.4+ | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.4− |
| 2006 10 04 | G96 | 0.2+ | 0.3+ | 2006 11 09 | 691 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 10 04 | G96 | 0.6+ | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1− |

**2006 VV$_3$ = 2002 XQ$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.12522 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23951153 | $\omega$ | 130.07032 | | +0.71565261 | | −0.69693305 |
| $a$ | 2.5679413 | $\Omega$ | 274.16600 | | +0.62592719 | | +0.66922981 |
| $e$ | 0.2767510 | $i$ | 2.64956 | | +0.30992984 | | +0.25771258 |
| $P$ | 4.12 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3+ | 0.3+ | 2006 10 27 | 691 | 0.2− | 0.2+ | 2006 11 14 | G96 | 0.3− | 0.3− |
| 2002 12 05 | 704 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.3− | 0.2+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2002 12 05 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 704 | 0.6+ | 0.0 |
| 2002 12 05 | 704 | 0.4− | 0.6+ | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.1+ |
| 2002 12 10 | 704 | 0.5+ | 0.8− | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.6+ | 0.3+ |
| 2002 12 10 | 704 | 0.8− | 0.7− | 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.0 | 0.5+ |
| 2002 12 10 | 704 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.3+ |
| 2006 10 19 | 703 | 0.2− | 0.2− | 2006 11 09 | 644 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.3+ |
| 2006 10 19 | G96 | 0.4+ | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.3− | 0.7− |
| 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 11 | 703 | 0.3+ | 0.4− | 2006 11 16 | 704 | 0.1− | 0.4+ |
| 2006 10 19 | 703 | 1.2+ | 0.0 | 2006 11 11 | 703 | 1.1− | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.0 |
| 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.5− | 0.4− | 2006 11 19 | 704 | 0.1− | 0.1− |
| 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.1+ |
| 2006 10 19 | 703 | 0.8− | 0.7− | 2006 11 13 | 691 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2006 10 27 | 703 | 0.7+ | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.2− | 0.3+ |
| 2006 10 27 | 703 | 0.8− | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 22 | 704 | 0.5+ | 0.9+ |
| 2006 10 27 | 703 | (0.2− | 1.9−) | 2006 11 13 | 644 | 0.4+ | 0.0 | 2006 11 22 | 704 | 0.9− | 1.2+ |
| 2006 10 27 | 703 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.5− | 0.1+ |
| 2006 10 27 | 691 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.1− | 0.1+ |

**2006 VX$_3$ = 2002 XY$_{114}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.17658 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23523807 | $\omega$ | 146.49157 | | +0.87608010 | | −0.43394907 |
| $a$ | 2.5989483 | $\Omega$ | 240.59934 | | +0.37219276 | | +0.88574083 |
| $e$ | 0.0634267 | $i$ | 13.95979 | | +0.30652278 | | +0.16477674 |
| $P$ | 4.19 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 644 | 0.2+ | 0.4+ | 2006 11 09 | 691 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2002 12 05 | 644 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.3− | 0.8+ | 2006 11 24 | G96 | 0.3+ | 0.0 |
| 2002 12 05 | 608 | 0.6+ | 0.5− | 2006 11 11 | 703 | 1.7+ | 0.7− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2002 12 05 | 608 | 0.6− | 0.1+ | 2006 11 11 | 703 | 0.0 | 1.0+ | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2002 12 10 | 644 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.1− | 1.5+ | 2006 11 24 | G96 | 0.2+ | 0.0 |
| 2002 12 10 | 644 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2+ |
| 2002 12 10 | 644 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.2+ |
| 2006 11 09 | 691 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 11 09 | 691 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.1+ | | | | |

**2006 VY$_3$ = 2000 JD$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.25869 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23609281 | $\omega$ | 6.01820 | | +0.74377360 | | −0.66145198 |
| $a$ | 2.5926718 | $\Omega$ | 35.99933 | | +0.60623539 | | +0.60680911 |
| $e$ | 0.0825355 | $i$ | 9.43406 | | +0.28156613 | | +0.44075388 |
| $P$ | 4.17 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 02 | 691 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.6− | 0.1+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2000 05 02 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.7− | 0.2− | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2000 05 02 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.3− | 0.5− |
| 2000 05 09 | 691 | 0.0 | 0.3− | 2006 11 09 | 644 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 2000 05 09 | 691 | 0.4+ | 0.2− | 2006 11 09 | 644 | 0.3− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 2000 05 09 | 691 | 0.2− | 0.1− | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2004 03 21 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.7+ | 1.1− | 2006 11 19 | 704 | 0.3+ | 1.2+ |
| 2004 03 21 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 19 | 704 | (0.5+ | 1.6+) |
| 2004 03 21 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 2006 11 09 | 691 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.2− | 2006 11 22 | 704 | (1.9− | 0.6+) |
| 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.7+ |
| 2006 11 09 | 691 | 0.0 | 0.2+ | 2006 11 14 | G96 | 0.2− | 0.4− | 2006 11 22 | 704 | 1.0+ | 0.4− |
| 2006 11 09 | 644 | 0.4− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− | | | | |

**2006 VN$_4$ = 2000 TM$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 37.05620 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17667737 | $\omega$ | 299.35439 | | +0.95793798 | | +0.22946815 |
| $a$ | 3.1454450 | $\Omega$ | 47.96409 | | −0.10635696 | | +0.84163691 |
| $e$ | 0.2159360 | $i$ | 13.41662 | | −0.26653898 | | +0.48886775 |
| $P$ | 5.58 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 645 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2000 09 26 | 645 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.0 | 0.4+ |
| 2000 10 01 | 704 | 0.8+ | 0.4+ | 2006 11 09 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 1.2+ | 0.0 |
| 2000 10 01 | 704 | 0.5+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.4+ |
| 2000 10 01 | 704 | 0.4+ | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 1.3− | 0.7+ |
| 2000 10 02 | 699 | 0.4+ | 1.6+ | 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.6+ | 0.1+ |
| 2000 10 02 | 699 | 0.1− | 0.5+ | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2000 10 02 | 699 | 1.0− | 1.4+ | 2006 11 11 | 703 | 0.6− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2000 10 02 | 699 | 0.1+ | 0.4− | 2006 11 11 | 703 | 0.6− | 0.3+ | 2006 11 22 | 704 | (1.6+ | 0.7+) |
| 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 11 | 703 | 0.0 | 0.4+ | 2006 11 22 | 704 | 0.7+ | 0.8− |
| 2006 10 31 | G96 | 0.5− | 0.2− | 2006 11 18 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | (2.1+ | 2.0−) |
| 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.2+ | 0.2− | | | | |

**2006 VU$_4$ = 2000 VP$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.31635 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17136348 | $\omega$ | 176.71033 | | +0.44813494 | | −0.88482108 |
| $a$ | 3.2101392 | $\Omega$ | 246.63284 | | +0.81699371 | | +0.46327570 |
| $e$ | 0.1435689 | $i$ | 7.98630 | | +0.36289993 | | +0.04967186 |
| $P$ | 5.75 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.1+ | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.3− | 2006 11 20 | 703 | 0.9− | 0.3− |
| 2000 11 01 | 704 | 0.3+ | 0.3− | 2006 11 10 | 691 | 0.1+ | 0.3− | 2006 11 20 | 704 | 1.1− | 0.2+ |
| 2000 11 01 | 704 | 0.2− | 1.1+ | 2006 11 11 | 703 | 0.9+ | 0.3− | 2006 11 20 | 703 | 0.8− | 0.4− |
| 2000 11 01 | 704 | 0.9+ | 0.7+ | 2006 11 11 | 703 | 0.1− | 0.6+ | 2006 11 20 | 704 | 0.2+ | 1.2+ |
| 2000 11 03 | 704 | 0.3+ | 1.2− | 2006 11 11 | 703 | 0.1− | 0.3+ | 2006 11 20 | 704 | 0.5− | 0.6+ |
| 2000 11 03 | 704 | 1.4− | 1.0− | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2000 11 03 | 704 | 0.2− | 0.2+ | 2006 11 14 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.8− | 0.0 |
| 2000 11 03 | 704 | 0.2− | 1.3+ | 2006 11 14 | 691 | 0.7+ | 0.5+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2005 07 31 | 644 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2005 07 31 | 644 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2− | 1.1+ |
| 2005 07 31 | 644 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2006 10 31 | 691 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 1.2+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2006 10 31 | 691 | 0.0 | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.6− |
| 2006 11 09 | D35 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.3+ | 2006 12 01 | G96 | 0.2− | 0.8− |
| 2006 11 09 | D35 | 0.2− | 0.6− | 2006 11 18 | 704 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.0 | 1.1− |
| 2006 11 09 | D35 | 0.3+ | 0.1− | 2006 11 20 | 703 | (2.3+ | 0.3−) | 2006 12 01 | G96 | 0.1− | 0.6− |
| 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 20 | 703 | 0.1− | 0.2− | | | | |

## 2006 $VD_5$ = 2003 $WH_{163}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 3.46396 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28620807 | $\omega$ | 109.91176 | | +0.96827659 | | +0.24221688 |
| $a$ | 2.2804198 | $\Omega$ | 236.11656 | | −0.24786765 | | +0.89988277 |
| $e$ | 0.0893515 | $i$ | 4.24233 | | −0.03165567 | | +0.36268718 |
| $P$ | 3.44 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 11 19 | 691 | 0.1+ | 0.1− | 2003 12 19 | 691 | 0.3+ | 0.1+ | 2006 09 18 | 703 | 0.3− | 2.0− |
| 2003 11 19 | 691 | 0.1+ | 0.0 | 2006 08 27 | 699 | 0.7− | 0.0 | 2006 11 10 | 291 | 0.1+ | 0.4+ |
| 2003 11 19 | 691 | 0.0 | 0.1− | 2006 08 27 | 699 | 0.2− | 0.0 | 2006 11 10 | 291 | 0.0 | 0.0 |
| 2003 11 30 | 291 | 0.4− | 0.1− | 2006 08 27 | 699 | 0.0 | 1.1+ | 2006 11 10 | 291 | 0.6+ | 0.6+ |
| 2003 11 30 | 291 | 0.2− | 0.0 | 2006 08 27 | 699 | 2.7+ | 2.7− | 2006 11 11 | 291 | 0.4− | 0.2− |
| 2003 11 30 | 291 | 0.1− | 0.0 | 2006 09 13 | 644 | 0.2− | 0.5+ | 2006 11 11 | 291 | 0.1− | 0.4+ |
| 2003 12 01 | 691 | 0.0 | 0.0 | 2006 09 13 | 644 | 0.2− | 0.8+ | 2006 11 11 | 291 | 0.2+ | 0.1− |
| 2003 12 01 | 691 | 0.3+ | 0.0 | 2006 09 13 | 644 | 0.0 | 0.8+ | 2006 11 14 | 291 | 0.1− | 0.2+ |
| 2003 12 01 | 691 | 0.1+ | 0.0 | 2006 09 18 | 703 | 0.7− | 1.1− | 2006 11 14 | 291 | 0.4− | 0.1+ |
| 2003 12 19 | 691 | 0.0 | 0.3− | 2006 09 18 | 703 | 2.2+ | 0.0 | 2006 11 14 | 291 | 0.0 | 0.2+ |
| 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 09 18 | 703 | 2.3− | 1.7− | | | | |

## 2006 $VD_6$ = 2005 $RU_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 302.36244 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17134923 | $\omega$ | 240.80341 | | −0.38114746 | | −0.89652966 |
| $a$ | 3.2103172 | $\Omega$ | 233.36609 | | +0.91543784 | | −0.33185034 |
| $e$ | 0.1004795 | $i$ | 16.33874 | | +0.12922917 | | −0.29344492 |
| $P$ | 5.75 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 26 | 608 | 0.5+ | 1.1− | 2006 11 11 | 703 | 0.4− | 0.7+ | 2006 11 19 | 704 | 0.4+ | 0.9+ |
| 2003 04 26 | 608 | 0.6− | 1.3− | 2006 11 11 | 703 | 1.0− | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2003 04 26 | 608 | 0.1− | 0.5− | 2006 11 11 | 703 | 0.1− | 1.0+ | 2006 11 19 | 704 | 0.1+ | 0.5+ |
| 2005 09 03 | 568 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.3− | 0.9+ | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2005 09 03 | 568 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4− | 0.2− |
| 2005 09 03 | 568 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2005 09 05 | 568 | 0.3− | 0.4− | 2006 11 14 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | 1.3+ | 0.0 |
| 2006 10 21 | 691 | 0.0 | 0.4− | 2006 11 18 | 704 | 1.1− | 0.1− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2006 10 21 | 691 | 0.1+ | 0.4− | 2006 11 18 | 704 | 0.8− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 1.0− |
| 2006 10 21 | 691 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.6+ | 0.3+ | 2006 11 29 | 704 | 0.2+ | 0.9+ |
| 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.0 | 0.4− | 2006 11 29 | 704 | 0.9− | 0.4+ |
| 2006 11 10 | 691 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.9+ | 1.0− | 2006 11 29 | 704 | 0.1− | 0.5− |
| 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.3− | | | | |

## 2006 $VE_6$ = 2001 $YZ_{55}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 322.26274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18841147 | $\omega$ | 29.28944 | | +0.00821669 | | −0.98921471 |
| $a$ | 3.0134535 | $\Omega$ | 60.58633 | | +0.88168107 | | −0.06183105 |
| $e$ | 0.1008859 | $i$ | 9.66474 | | +0.47177429 | | +0.13278244 |
| $P$ | 5.23 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3− | 1.1− | 2006 10 16 | 703 | (2.1− | 0.9+) | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2001 12 18 | 704 | 0.8+ | 0.5− | 2006 10 19 | G96 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.6+ | 0.7− |
| 2001 12 18 | 704 | 0.2− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.6+ | 0.4− |
| 2001 12 18 | 704 | 0.3+ | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2001 12 19 | 704 | 0.2− | 0.2− | 2006 10 19 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.7− |
| 2001 12 19 | 704 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 1.3+ | 1.2+ |
| 2001 12 19 | 704 | 0.1+ | 0.2− | 2006 11 10 | 691 | 0.1− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2001 12 19 | 704 | 0.0 | 0.6− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 1.2+ | 0.4+ |
| 2003 04 10 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.1− | 0.7− | 2006 11 21 | 704 | 0.6− | 1.3+ |
| 2003 04 10 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.2− | 0.5+ | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2003 04 10 | 691 | 0.1− | 0.1+ | 2006 11 11 | 703 | 0.4− | 0.4+ | 2006 11 27 | 703 | 0.5+ | 0.1+ |
| 2006 10 16 | 703 | (2.1+ | 1.1−) | 2006 11 11 | 703 | 1.5− | 1.3+ | 2006 11 27 | 703 | 0.6+ | 0.4− |
| 2006 10 16 | 703 | 1.2+ | 0.9− | 2006 11 14 | 691 | 0.2− | 0.1− | 2006 11 27 | 703 | 0.8− | 0.9+ |
| 2006 10 16 | 703 | 0.2− | 1.4− | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 1.2− | 0.3+ |

## 2006 $VK_6$ = 2002 $TA_{106}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.19672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26594092 | $\omega$ | 248.01490 | | −0.36283963 | | −0.92900185 |
| $a$ | 2.3948552 | $\Omega$ | 223.48027 | | +0.88923827 | | −0.32182649 |
| $e$ | 0.0593179 | $i$ | 6.07493 | | +0.27857262 | | −0.18271089 |
| $P$ | 3.71 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 04 | 644 | 0.0 | 0.3+ | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2002 10 04 | 644 | 0.0 | 0.5+ | 2006 10 17 | 691 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.2− |
| 2002 10 04 | 644 | 0.1− | 0.3+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 17 | 703 | 0.3− | 0.6− |
| 2002 10 05 | 644 | 0.1+ | 0.2− | 2006 10 28 | G96 | 0.2− | 0.3− | 2006 11 17 | 703 | 0.3+ | 1.0− |
| 2002 10 05 | 644 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 17 | 703 | 0.7− | 0.3− |
| 2002 10 05 | 644 | 0.1− | 0.6+ | 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 17 | 703 | 0.1− | 0.0 |
| 2004 02 14 | 644 | 0.3+ | 0.2− | 2006 11 10 | 691 | 0.2− | 0.2+ | 2006 11 17 | 703 | (1.7+ | 0.6−) |
| 2004 02 14 | 644 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 1.4− | 1.0− |
| 2004 02 14 | 644 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 1.1+ | 0.7− |
| 2005 06 04 | 691 | 1.2+ | 0.3− | 2006 11 11 | 703 | 1.5− | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.1− |
| 2005 06 04 | 691 | 0.4− | 0.3+ | 2006 11 11 | 703 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.8+ |
| 2005 06 04 | 691 | 0.8− | 0.2− | 2006 11 11 | 703 | 0.2− | 1.0− | 2006 11 21 | 704 | 0.2+ | 0.8+ |
| 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.3+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 1.2+ |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.1− | 0.6+ |
| 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.8+ | 1.2+ |
| 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.2+ |
| 2006 10 17 | G96 | 0.8+ | 0.5− | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.6− | 1.1− |
| 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.4− | 1.5− |
| 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 29 | 704 | 0.2+ | 1.6− |
| 2006 10 17 | G96 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.0 | 0.2+ | | | | |
| 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.8+ | 0.5+ | | | | |

## 2006 $VV_6$ = 1996 $BY_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.60177 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25903550 | $\omega$ | 331.71136 | | +0.67717766 | | −0.73435397 |
| $a$ | 2.4372301 | $\Omega$ | 75.62407 | | +0.68381292 | | +0.60476719 |
| $e$ | 0.0813160 | $i$ | 2.74660 | | +0.27171733 | | +0.30818970 |
| $P$ | 3.80 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 19 | 691 | 0.1− | 0.3− | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.2− | 0.8+ |
| 1996 01 19 | 691 | 0.2− | 0.5− | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.9+ |
| 1996 01 19 | 691 | 0.3− | 0.2− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.4+ |
| 1996 01 25 | 691 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.4− | 0.6+ |
| 1996 01 25 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | 0.5+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 1996 01 25 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.5+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.4+ |
| 2002 10 31 | 608 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2002 10 31 | 608 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.1− |
| 2002 10 31 | 608 | 0.1+ | 0.6− | 2006 11 10 | 691 | 0.5− | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.4− |
| 2004 03 27 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.2− | 0.2− |
| 2004 03 27 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | (1.5+ | 0.5−) | 2006 11 23 | G96 | 0.2+ | 0.3− |
| 2004 03 27 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 703 | 0.1+ | 1.4− | 2006 11 24 | G96 | 0.6+ | 0.2− |
| 2006 09 28 | G96 | 0.2− | 0.4− | 2006 11 11 | 703 | (1.6+ | 0.4−) | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2006 09 28 | G96 | 0.7+ | 0.4− | 2006 11 11 | 703 | 0.7+ | 0.3+ | 2006 11 24 | G96 | 0.6+ | 0.3− |
| 2006 09 28 | G96 | 0.3− | 0.4− | 2006 11 14 | 691 | 0.8− | 0.3− | 2006 11 24 | G96 | 0.5+ | 0.3− |
| 2006 09 28 | G96 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.0 | 0.2+ |
| 2006 09 28 | G96 | 0.5− | 0.7− | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.7− | 1.0− |
| 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.0 |
| 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 703 | 0.1− | 0.7+ |
| 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.2+ | | | | |
| 2006 10 21 | G96 | 0.4+ | 0.0 | 2006 11 21 | 704 | 0.7− | 1.1+ | | | | |

## 2006 $VK_7$ = 2004 $FK_{155}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 18.48229 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23616401 | $\omega$ | 307.51497 | | +0.96509308 | | −0.25978075 |
| $a$ | 2.5921507 | $\Omega$ | 67.56377 | | +0.25022919 | | +0.87702530 |
| $e$ | 0.1580185 | $i$ | 2.06504 | | +0.07733502 | | +0.40415417 |
| $P$ | 4.17 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 17 | 691 | 0.2+ | 0.2− | 2006 11 11 | 703 | 1.5+ | 1.4− | 2006 11 21 | 448 | 0.2− | 0.0 |
| 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.8+ | 1.4− | 2006 11 22 | 691 | 0.1− | 0.5+ |
| 2004 03 17 | 691 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2004 03 26 | 691 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.4− | 1.3− | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2004 03 26 | 691 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.5+ | 0.4− | 2006 11 22 | 448 | 0.2+ | 0.2− |
| 2004 03 26 | 691 | 0.5− | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 22 | 448 | 0.3+ | 0.0 |
| 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.0 | 2006 11 22 | 448 | 0.1+ | 0.3− |
| 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.4− |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.4− |
| 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.6− |
| 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2006 10 19 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.4+ | 2006 11 27 | 703 | 0.4− | 0.2− |
| 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.1− | 0.6+ | 2006 11 27 | 703 | 1.8− | 0.2− |
| 2006 10 19 | G96 | 0.5+ | 0.0 | 2006 11 18 | 704 | 0.9+ | 0.5+ | 2006 11 27 | 703 | 0.1− | 0.3− |
| 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 1.3+ | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.1− |
| 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.9+ | 1.0+ | 2006 11 29 | 704 | 1.2− | 0.2− |
| 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | (1.3− | 2.6−) | 2006 11 29 | 704 | 0.1+ | 0.2+ |
| 2006 10 31 | G96 | 0.5− | 0.1− | 2006 11 21 | 704 | (3.3+ | 1.0+) | 2006 11 29 | 704 | 1.6− | 0.1+ |
| 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | (2.0+ | 1.6−) | 2006 11 29 | 704 | 0.6+ | 0.3+ |
| 2006 11 10 | 691 | 0.1− | 0.3+ | 2006 11 21 | 448 | 0.3+ | 0.0 | | | | |
| 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 448 | 0.4+ | 0.0 | | | | |

## 2006 $VT_7$ = 1999 $XS_{252}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.58809 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28057101 | $\omega$ | 144.27441 | | +0.95218862 | | −0.29162778 |
| $a$ | 2.3108629 | $\Omega$ | 232.93463 | | +0.24705155 | | +0.91032314 |
| $e$ | 0.1246552 | $i$ | 6.55200 | | +0.17972858 | | +0.29370907 |
| $P$ | 3.51 | $H$ | 19.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 12 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 1999 12 12 | 691 | 0.1+ | 0.5− | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 1999 12 12 | 691 | 0.3− | 0.3− | 2006 11 11 | G96 | 0.3− | 0.7− | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 1999 12 16 | 691 | 0.1+ | 0.3+ | 2006 11 11 | G96 | 0.2+ | 1.0− | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1999 12 16 | 691 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 1999 12 16 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.6− | | | | |
| 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2− | 0.1− | | | | |

## 2006 $VX_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 333.93356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28652076 | $\omega$ | 16.97671 | | +0.36786955 | | −0.92367201 |
| $a$ | 2.2787603 | $\Omega$ | 51.57164 | | +0.83645678 | | +0.27831897 |
| $e$ | 0.0555090 | $i$ | 7.86864 | | +0.40621675 | | +0.26337914 |
| $P$ | 3.44 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 17 | 644 | 0.4− | 0.1− | 2006 10 17 | G96 | 0.4+ | 0.4− | 2006 11 14 | 691 | 0.2+ | 0.0 |
| 2004 01 17 | 644 | 0.0 | 0.3− | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2004 01 17 | 644 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.4− | 0.1− | 2006 11 18 | 691 | 0.6− | 0.1− |
| 2004 01 17 | 644 | 0.1+ | 0.0 | 2006 10 17 | G96 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2004 01 17 | 644 | 0.1+ | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.1− | 1.5+ |
| 2004 01 17 | 644 | 0.0 | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2004 02 13 | 699 | 1.0+ | 0.5− | 2006 10 27 | G96 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 1.0+ |
| 2004 02 13 | 699 | 1.2− | 0.4+ | 2006 10 27 | G96 | 0.4+ | 0.0 | 2006 11 20 | 704 | 0.8− | 0.7+ |
| 2004 02 13 | 699 | 0.8− | 0.4+ | 2006 11 10 | 691 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2004 02 13 | 699 | 0.7+ | 0.3− | 2006 11 10 | 691 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2004 02 13 | 699 | 0.3− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.5− | 0.1+ |
| 2004 02 13 | 699 | 1.2+ | 0.8+ | 2006 11 11 | 703 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.3+ | 0.6+ |
| 2004 02 13 | 699 | 0.9− | 0.9− | 2006 11 11 | 703 | 0.3+ | 1.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2004 02 13 | 699 | 0.6+ | 0.6+ | 2006 11 11 | 703 | 0.3+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2006 09 28 | G96 | 0.3+ | 0.5+ | 2006 11 11 | 703 | 0.9+ | 0.4− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2006 09 28 | G96 | 0.2− | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.1− | | | | |
| 2006 09 28 | G96 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.1− | 0.1− | | | | |

## 2006 $VJ_8$ = 2004 $FK_{61}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 307.79435 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27345851 | $\omega$ | 23.55068 | | −0.31099804 | | −0.94964438 |
| $a$ | 2.3507607 | $\Omega$ | 84.58633 | | +0.86578015 | | −0.29963675 |
| $e$ | 0.1396065 | $i$ | 2.19643 | | +0.39205224 | | −0.09161533 |
| $P$ | 3.60 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 19 | 704 | 0.1+ | 0.6+ | 2004 04 25 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.4− | 0.1− |
| 2004 03 19 | 704 | 1.3− | 1.1− | 2004 04 25 | 691 | 0.1+ | 0.2− | 2006 11 12 | 703 | 0.4+ | 0.5− |
| 2004 03 19 | 704 | 0.2− | 0.2+ | 2004 04 25 | 691 | 0.0 | 0.2− | 2006 11 12 | 703 | 0.5+ | 0.6− |
| 2004 03 19 | 704 | 0.7− | 0.6− | 2006 09 28 | G96 | 0.0 | 0.7+ | 2006 11 12 | 703 | 0.4+ | 0.1− |
| 2004 03 19 | 704 | 0.4− | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.7+ | 0.3+ |
| 2004 03 22 | 704 | 1.2+ | 0.1+ | 2006 09 28 | G96 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.3− | 0.6+ |
| 2004 03 22 | 704 | 0.6+ | 0.5+ | 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 29 | 704 | 1.6+ | 0.7+ |
| 2004 03 22 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.0 | | | | |
| 2004 03 22 | 704 | 0.4+ | 0.5+ | 2006 11 11 | 691 | 0.3− | 0.1− | | | | |

## 2006 $VK_8$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.71123 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26052172 | $\omega$ | 299.03168 | | +0.96083355 | | −0.27033554 |
| $a$ | 2.4279520 | $\Omega$ | 76.70778 | | +0.27103118 | | +0.87078620 |
| $e$ | 0.1806727 | $i$ | 3.59195 | | +0.05780124 | | +0.41067030 |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 02 | 608 | 0.4+ | 0.8− | 2006 11 12 | 703 | 0.6− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2002 10 02 | 608 | 0.3− | 0.0 | 2006 11 12 | 703 | 0.9− | 0.4+ | 2006 11 24 | G96 | 0.6+ | 0.2+ |
| 2002 10 02 | 608 | (0.2− | 2.6+) | 2006 11 12 | 703 | (0.2− | 1.5+) | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 2002 10 15 | 644 | 0.1− | 0.3+ | 2006 11 12 | 703 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.4+ | 0.5− |
| 2002 10 15 | 644 | 0.4+ | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.4− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 29 | 704 | (1.1+ | 1.7+) |
| 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 29 | 704 | 1.0− | 1.4+ |
| 2006 11 11 | 691 | 0.4− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.3− | 2006 11 29 | 704 | 0.3+ | 0.6− |
| 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.4− | 2006 11 29 | 704 | 0.5− | 0.3+ |

**2006 VM$_8$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.47290 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18204939 | $\omega$ | 317.50103 | | +0.28841839 | | −0.95688874 |
| $a$ | 3.0832582 | $\Omega$ | 115.70923 | | +0.88841565 | | +0.25406199 |
| $e$ | 0.1622824 | $i$ | 2.18381 | | +0.35711687 | | +0.14077089 |
| $P$ | 5.41 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 13 | 691 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2002 01 13 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 01 13 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.8− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2002 01 14 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2002 01 14 | 645 | 0.1+ | 0.0 | 2006 11 12 | G96 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2002 01 14 | 645 | 0.1− | 0.1− | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2006 09 28 | G96 | 0.7+ | 0.2− | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2006 09 28 | G96 | 0.3− | 0.5− | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 09 28 | G96 | 0.4− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.2− |

**2006 VJ$_9$ = 2004 EP$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.71061 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22748133 | $\omega$ | 80.69023 | | +0.75734825 | | +0.65282043 |
| $a$ | 2.6576975 | $\Omega$ | 238.55339 | | −0.60615410 | | +0.69380838 |
| $e$ | 0.0544527 | $i$ | 1.06008 | | −0.24290087 | | +0.30406483 |
| $P$ | 4.33 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2− | 0.3+ | 2006 11 13 | G96 | 0.0 | 0.5− |
| 2004 03 15 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.2− | 2006 11 13 | G96 | 0.4− | 0.2− |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2006 11 11 | 703 | 1.1− | 0.5− | 2006 11 17 | 703 | 1.3+ | 0.9− |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 0.2− | 1.1− | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.3+ | 0.6+ | 2006 11 17 | 703 | (2.3− | 1.9−) |
| 2004 03 23 | 691 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.0 | 2006 11 17 | 703 | 0.3− | 0.1+ |
| 2006 10 16 | 691 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.2+ | 2006 11 20 | G96 | 0.2− | 0.3+ |
| 2006 10 16 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.2+ | 0.0 |
| 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.5+ | 2006 11 20 | G96 | 0.0 | 0.2+ |
| 2006 11 01 | 691 | 0.2− | 0.1+ | 2006 11 13 | G96 | 0.0 | 0.5− | 2006 11 20 | G96 | 0.0 | 0.1+ |
| 2006 11 01 | 691 | 0.1− | 0.3+ | 2006 11 13 | G96 | 0.2+ | 0.5− | | | | |

**2006 VB$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 303.03833 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21222349 | $\omega$ | 246.22705 | | −0.57095007 | | −0.81963919 |
| $a$ | 2.7836016 | $\Omega$ | 238.67209 | | +0.77184478 | | −0.51639340 |
| $e$ | 0.2731943 | $i$ | 3.15313 | | +0.27977073 | | −0.24805132 |
| $P$ | 4.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 25 | 699 | 1.3+ | 0.3− | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 21 | G96 | 1.0+ | 0.2+ |
| 2003 03 25 | 699 | 0.8− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.2− |
| 2003 03 25 | 699 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.3+ | 0.1− |
| 2003 03 25 | 699 | 0.3− | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− |
| 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.2− | 0.1− | 2006 12 01 | G96 | 0.2− | 0.1+ |
| 2006 10 13 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.1+ |
| 2006 10 13 | 691 | 0.1− | 0.0 | 2006 11 17 | 703 | 0.8− | 0.2+ | 2006 12 01 | G96 | 0.1+ | 0.7− |
| 2006 11 11 | 703 | 1.3+ | 0.6+ | 2006 11 17 | 703 | 1.1+ | 0.1+ | 2006 12 01 | G96 | (0.9+ | 2.8−) |
| 2006 11 11 | 703 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.7+ | 0.3− | | | | |
| 2006 11 12 | G96 | 0.5− | 0.2− | 2006 11 17 | 703 | 0.5− | 0.5+ | | | | |

**2006 VT$_{10}$ = 2001 UL$_{198}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.44779 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21017227 | $\omega$ | 229.19030 | | −0.21428695 | | −0.97571775 |
| $a$ | 2.8016837 | $\Omega$ | 233.24042 | | +0.91234713 | | −0.18335805 |
| $e$ | 0.0677242 | $i$ | 3.24450 | | +0.34886075 | | −0.11981109 |
| $P$ | 4.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 23 | 691 | 0.9+ | 0.4− | 2005 08 06 | 644 | 0.6+ | 0.5− | 2006 11 14 | 691 | 0.0 | 0.3+ |
| 1992 11 23 | 691 | 0.3+ | 0.2− | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.1− | 0.5+ |
| 1992 11 23 | 691 | 0.6− | 1.7− | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.5+ |
| 2001 10 19 | 644 | 0.7+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.2− | 2006 11 16 | 703 | 0.1− | 1.0+ |
| 2001 10 19 | 644 | 0.6+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.4− | 0.6+ |
| 2001 10 19 | 644 | 0.3+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.4− | 2006 11 16 | 703 | 0.6− | 0.2+ |
| 2001 10 20 | 291 | 0.1− | 0.1− | 2006 11 11 | 703 | 0.6− | 0.4− | 2006 11 16 | 703 | 0.9− | 0.4+ |
| 2001 10 20 | 291 | 0.9− | 0.0 | 2006 11 11 | 703 | (1.9− | 0.5+) | 2006 11 26 | 104 | 0.3− | 0.4− |
| 2001 10 20 | 291 | (2.3− | 0.8−) | 2006 11 11 | 703 | 0.4+ | 0.0 | 2006 11 26 | 104 | 0.0 | 0.2+ |
| 2004 04 21 | 691 | 0.2− | 0.2+ | 2006 11 12 | 703 | 0.0 | 0.4+ | 2006 11 26 | 104 | 0.0 | 0.5+ |
| 2004 04 21 | 691 | 0.2− | 0.1+ | 2006 11 12 | 703 | 0.1− | 1.5+ | 2006 11 27 | 104 | 0.3− | 0.1+ |
| 2004 04 21 | 691 | 0.1− | 0.1+ | 2006 11 12 | 703 | 0.3− | 1.9+ | 2006 11 27 | 104 | 0.4+ | 0.0 |
| 2004 05 21 | 691 | 0.9+ | 0.6+ | 2006 11 12 | 703 | 0.3− | 0.2+ | 2006 11 27 | 104 | 0.1− | 0.6+ |
| 2004 05 21 | 691 | 0.3− | 0.0 | 2006 11 12 | G96 | 0.3+ | 0.1+ | 2006 12 01 | G96 | 0.2+ | 0.1− |
| 2004 05 21 | 691 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.2+ | 0.1+ | 2006 12 01 | G96 | 0.1− | 0.1− |
| 2005 08 06 | 644 | 0.5+ | 0.7− | 2006 11 12 | G96 | 0.3+ | 0.0 | 2006 12 01 | G96 | 0.2+ | 0.2− |
| 2005 08 06 | 644 | 0.7+ | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 12 01 | G96 | 0.1− | 0.3− |

**2006 VD$_{11}$ = 2000 SU$_{158}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 285.08787 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17679283 | $\omega$ | 263.05159 | | −0.67988431 | | −0.71657270 |
| $a$ | 3.1440753 | $\Omega$ | 231.01916 | | +0.72671553 | | −0.62992220 |
| $e$ | 0.1386622 | $i$ | 11.56344 | | +0.09819298 | | −0.29953561 |
| $P$ | 5.57 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 24 | 691 | 0.5+ | 0.5+ | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 16 | 703 | 0.6+ | 0.4− |
| 2000 09 24 | 691 | 0.2+ | 1.1− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 16 | 703 | 0.4+ | 0.2− |
| 2000 09 24 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.4− | 0.6+ |
| 2000 09 26 | 691 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 21 | G96 | 0.2− | 0.5+ |
| 2000 09 26 | 691 | 0.3− | 0.2+ | 2006 11 12 | 703 | (0.1− | 2.9+) | 2006 11 21 | G96 | 0.5− | 0.6+ |
| 2000 09 26 | 691 | 0.4− | 0.4+ | 2006 11 12 | 703 | (1.3+ | 2.3+) | 2006 11 21 | G96 | 0.1− | 0.6+ |
| 2006 10 31 | G96 | 0.5− | 0.3− | 2006 11 12 | 703 | (1.8− | 0.4+) | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 12 | 703 | (0.3+ | 1.8+) | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2006 10 31 | G96 | 0.0 | 0.1+ | 2006 11 16 | 703 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.4− |
| 2006 10 31 | G96 | 0.1+ | 0.0 | 2006 11 16 | 703 | 0.4− | 0.5+ | 2006 12 01 | G96 | 0.7+ | 0.5− |

**2006 VB$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.66662 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21805990 | $\omega$ | 235.84471 | | −0.37567021 | | −0.92621650 |
| $a$ | 2.7337083 | $\Omega$ | 236.25165 | | +0.86227850 | | −0.33685926 |
| $e$ | 0.0646229 | $i$ | 2.17400 | | +0.33962874 | | −0.16925967 |
| $P$ | 4.52 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 13 | 691 | 0.4− | 0.1− | 2005 07 28 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 1994 01 13 | 691 | 0.3+ | 0.0 | 2005 08 05 | 644 | 0.4+ | 0.1+ | 2006 11 12 | 703 | 0.3+ | 0.7+ |
| 1994 01 13 | 691 | 0.0 | 0.2+ | 2005 08 05 | 644 | 0.3+ | 0.1+ | 2006 11 12 | 703 | 0.3+ | 0.2− |
| 2001 09 12 | 691 | 0.3− | 0.0 | 2005 08 05 | 644 | 0.2+ | 0.3+ | 2006 11 12 | 703 | 0.3+ | 0.3− |
| 2001 09 12 | 691 | 0.1+ | 0.8+ | 2006 10 16 | 691 | 0.0 | 0.3+ | 2006 11 12 | 703 | 0.7− | 0.1+ |
| 2001 09 12 | 691 | 0.3− | 0.2+ | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.4− |
| 2001 10 11 | 644 | 0.2− | 0.7− | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.3+ | 0.7+ |
| 2001 10 11 | 644 | 0.3+ | 0.9− | 2006 11 09 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.1− | 1.1+ |
| 2001 10 11 | 644 | 0.7+ | 0.4− | 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.1+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 645 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.4+ | 0.1− |
| 2002 12 31 | 645 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.4− | 0.3− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2004 05 23 | 691 | 0.1− | 0.8+ | 2006 11 11 | 703 | 0.3+ | 0.6− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2004 05 23 | 691 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 1.2+ | 0.9− | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2004 05 23 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2005 07 28 | 644 | 0.0 | 0.5+ | 2006 11 11 | G96 | 0.3− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.2− |
| 2005 07 28 | 644 | 0.4+ | 0.3+ | 2006 11 11 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.1+ |

**2006 VG$_{12}$ = 2004 FC$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.48075 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26252531 | $\omega$ | 355.31478 | | +0.16480282 | | −0.98409652 |
| $a$ | 2.4155828 | $\Omega$ | 85.18897 | | +0.90708454 | | +0.12482659 |
| $e$ | 0.0683397 | $i$ | 3.81426 | | +0.38734696 | | +0.12638181 |
| $P$ | 3.75 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 1.1− | 0.5− | 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 17 | 644 | 0.1+ | 0.6+ |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.2− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 03 20 | 704 | (1.5+ | 0.6+) | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 03 20 | 704 | 0.5+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 03 20 | 704 | 0.9− | 1.3+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2004 03 26 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2004 03 26 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.5− | 0.5− | 2006 11 29 | 704 | 0.3+ | 1.0− |
| 2004 03 26 | 691 | 0.1+ | 0.3− | 2006 11 12 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.6+ | 0.6− |
| 2004 04 13 | 291 | 0.4+ | 0.0 | 2006 11 12 | G96 | 0.0 | 0.6− | 2006 11 29 | 704 | 0.0 | 0.0 |
| 2004 04 13 | 291 | 0.4+ | 0.1+ | 2006 11 12 | G96 | 0.3− | 0.3− | 2006 12 01 | 691 | 0.1+ | 0.2+ |
| 2004 04 13 | 291 | 0.6+ | 0.0 | 2006 11 17 | 644 | 0.3+ | 0.0 | 2006 12 01 | 691 | 0.2− | 0.1+ |
| 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.2− | 0.4+ |

**2006 VP$_{12}$ = 2002 XT$_{30}$**

Epoch 2006 Sep. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.03737 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23529689 | $\omega$ | 84.16099 | | +0.88672885 | | −0.03278088 |
| $a$ | 2.5985151 | $\Omega$ | 277.05494 | | −0.17723248 | | +0.89715992 |
| $e$ | 0.3411823 | $i$ | 27.68719 | | +0.42696673 | | +0.44048779 |
| $P$ | 4.19 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.7+ | 0.9− | 2002 12 07 | 704 | 0.0 | 0.0 | 2006 11 13 | 704 | 0.1− | 0.2+ |
| 2002 12 06 | 704 | 0.3+ | 0.1+ | 2002 12 07 | 704 | 0.1+ | 0.4− | 2006 11 13 | 704 | 0.2+ | 0.5+ |
| 2002 12 06 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 704 | 0.3− | 0.6− | 2006 11 13 | 704 | 0.1+ | 0.2− |
| 2002 12 06 | 704 | 0.6+ | 0.0 | 2006 11 11 | 704 | 0.6+ | 0.2+ | 2006 11 14 | 704 | 0.5− | 1.3− |
| 2002 12 07 | 704 | 0.4− | 1.2+ | 2006 11 11 | 704 | 0.3− | 0.0 | 2006 11 14 | 704 | 0.1+ | 0.3− |
| 2002 12 07 | 704 | 0.9− | 0.6− | 2006 11 11 | 704 | 0.5− | 0.4− | 2006 11 14 | 704 | 0.3+ | 1.7+ |
| 2002 12 07 | 704 | 0.4− | 0.1+ | 2006 11 13 | 704 | 0.0 | 0.2− | 2006 11 14 | 704 | 0.5+ | 0.4+ |

**2006 VZ$_{12}$ = 2002 XU$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 294.49395 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23650452 | $\omega$ | 177.55434 | | −0.16738335 | | −0.91806405 |
| $a$ | 2.5896620 | $\Omega$ | 281.91184 | | +0.89818982 | | +0.00828739 |
| $e$ | 0.1169150 | $i$ | 21.54740 | | +0.40649460 | | −0.39634545 |
| $P$ | 4.17 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 704 | 0.3+ | 0.2− | 2003 01 29 | 644 | 0.5− | 0.1− | 2006 11 13 | 704 | 0.1+ | 0.4+ |
| 2002 12 10 | 704 | 0.7+ | 0.2+ | 2003 01 29 | 644 | 0.2− | 0.1+ | 2006 11 13 | 704 | 0.2+ | 0.5+ |
| 2002 12 10 | 704 | 1.1+ | 0.3+ | 2004 03 29 | E12 | 0.2+ | 0.9+ | 2006 11 13 | 704 | 0.3− | 0.6+ |
| 2002 12 10 | 704 | 0.5+ | 0.4+ | 2004 03 29 | E12 | 0.1+ | 0.0 | 2006 11 13 | 704 | 0.6+ | 0.4+ |
| 2002 12 10 | 704 | 0.7+ | 0.3+ | 2004 03 29 | E12 | 0.2− | 0.2− | 2006 11 13 | 704 | 0.4+ | 0.6+ |
| 2002 12 15 | 704 | (1.4− | 1.7−) | 2004 03 29 | E12 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.3+ | 0.5− |
| 2002 12 15 | 704 | 0.9− | 0.1− | 2006 11 01 | 703 | 0.2− | 1.5− | 2006 11 15 | 704 | 0.3− | 0.2+ |
| 2002 12 15 | 704 | 0.8− | 1.3− | 2006 11 01 | 703 | 1.1− | 0.0 | 2006 11 15 | 704 | 0.6+ | 1.0+ |
| 2002 12 15 | 704 | 1.0− | 0.6− | 2006 11 01 | 703 | 0.2− | 0.4− | 2006 11 15 | 704 | 0.5+ | 0.0 |
| 2003 01 29 | 644 | 0.1− | 0.4+ | 2006 11 01 | 703 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.8− | 0.1+ |

**2006 VK$_{13}$ = 2002 CQ$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 340.17498 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17235218 | $\omega$ | 163.42341 | | +0.25367720 | | −0.96727121 |
| $a$ | 3.1978508 | $\Omega$ | 271.88109 | | +0.88680402 | | +0.23498294 |
| $e$ | 0.1789177 | $i$ | 0.33569 | | +0.38629846 | | +0.09575712 |
| $P$ | 5.72 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 07 | 691 | 0.3+ | 0.4− | 2002 02 12 | 704 | 0.3+ | 0.8+ | 2006 11 14 | 701 | 0.1+ | 0.2+ |
| 2000 10 07 | 691 | 0.1+ | 0.3− | 2002 02 12 | 704 | 0.9+ | 0.8− | 2006 11 14 | 701 | 0.0 | 0.4− |
| 2000 10 07 | 691 | 0.1− | 0.6− | 2002 02 14 | I03 | 0.4− | 0.4+ | 2006 11 14 | 701 | 0.3+ | 0.5+ |
| 2000 10 30 | 691 | 0.3− | 0.2+ | 2002 02 14 | I03 | 0.3+ | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2000 10 30 | 691 | 0.2+ | 0.3+ | 2002 02 14 | I03 | 0.7− | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.3+ |
| 2000 10 30 | 691 | 0.0 | 0.1+ | 2002 03 05 | 691 | (1.7− | 0.6−) | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2002 01 14 | 691 | 0.4+ | 0.4+ | 2002 03 05 | 691 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.3− |
| 2002 01 14 | 691 | 0.1+ | 0.0 | 2002 03 05 | 691 | 0.0 | 1.1− | 2006 11 21 | 704 | 0.3− | 0.0 |
| 2002 01 14 | 691 | 0.2− | 0.3− | 2006 11 10 | 691 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.2+ |
| 2002 02 07 | 291 | 0.4− | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.2− | 0.0 |
| 2002 02 07 | 291 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.1− |
| 2002 02 07 | 291 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2002 02 11 | 704 | (1.1− | 3.9+) | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.3+ | 0.1+ |
| 2002 02 11 | 704 | (1.0− | 3.8+) | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2002 02 11 | 704 | (0.9− | 4.3+) | 2006 11 14 | 701 | 0.2− | 0.3− | 2006 12 01 | G96 | 0.1− | 0.8− |
| 2002 02 11 | 704 | (0.3− | 3.5+) | 2006 11 14 | 701 | 0.3− | 0.2− | 2006 12 01 | G96 | 0.3− | 0.4− |
| 2002 02 11 | 704 | (1.0− | 3.8+) | 2006 11 14 | 701 | 0.0 | 0.5− | 2006 12 01 | G96 | 0.1+ | 0.5− |
| 2002 02 12 | 704 | (1.3+ | 1.5+) | 2006 11 14 | 701 | 0.4− | 0.0 | 2006 12 01 | G96 | 0.0 | 0.7− |
| 2002 02 12 | 704 | 0.7+ | 1.1+ | 2006 11 14 | 701 | 0.2+ | 0.3− | | | | |

**2006 VW$_{13}$ = 1999 NW$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.99357 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30025439 | $\omega$ | 46.69472 | | +0.77456460 | | +0.62874451 |
| $a$ | 2.2087326 | $\Omega$ | 274.22763 | | −0.59843552 | | +0.69330879 |
| $e$ | 0.1926788 | $i$ | 3.95442 | | −0.20475501 | | +0.35214097 |
| $P$ | 3.28 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 07 13 | 704 | 0.2− | 0.5− | 2006 11 13 | 644 | 0.2− | 0.3− | 2006 11 18 | 704 | (1.8+ | 1.3−) |
| 1999 07 13 | 704 | 0.5+ | 0.1− | 2006 11 13 | 644 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.6− |
| 1999 07 13 | 704 | 0.5+ | 0.3− | 2006 11 13 | 644 | 0.3− | 0.3− | 2006 11 18 | 704 | 1.0+ | 0.7+ |
| 1999 07 13 | 704 | 0.7+ | 0.0 | 2006 11 14 | 703 | 0.8+ | 0.6+ | 2006 11 18 | 704 | 0.7+ | 0.1+ |
| 1999 07 16 | 704 | 0.8− | 0.2− | 2006 11 14 | 703 | 0.5− | 0.2− | 2006 11 18 | 704 | 0.2− | 0.5− |
| 1999 07 16 | 704 | 0.2− | 0.3− | 2006 11 14 | 703 | 0.2+ | 0.7− | 2006 11 19 | 704 | 0.3− | 0.2− |
| 1999 07 16 | 704 | 0.1− | 0.8+ | 2006 11 14 | 703 | (1.7− | 0.3+) | 2006 11 19 | 704 | 1.0+ | 0.5+ |
| 1999 07 16 | 704 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.0 | 0.5− | 2006 11 19 | 704 | 0.6− | 0.1− |
| 1999 07 16 | 704 | 0.6− | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.8− | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 1999 07 20 | 699 | 0.2+ | 0.2− | 2006 11 15 | G96 | 0.3+ | 0.6− | 2006 11 19 | 704 | (1.7− | 0.9+) |
| 1999 07 20 | 699 | 0.4− | 0.7− | 2006 11 15 | G96 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.3+ | 0.2+ |
| 1999 07 20 | 699 | 0.8+ | 0.6+ | 2006 11 15 | 704 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.8+ |
| 2006 11 02 | 691 | 0.0 | 0.0 | 2006 11 15 | 704 | 1.0− | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.2− |
| 2006 11 02 | 691 | 0.2+ | 0.0 | 2006 11 15 | 704 | 0.6− | 0.9+ | 2006 11 19 | 704 | 0.6− | 0.3− |
| 2006 11 02 | 691 | 0.1− | 0.1− | 2006 11 15 | 704 | 1.1− | 1.1+ | 2006 11 19 | 704 | 0.4− | 0.5+ |
| 2006 11 11 | 703 | (0.6+ | 1.6−) | 2006 11 16 | 704 | 1.3− | 1.4+ | 2006 11 22 | 704 | 0.4+ | 1.3− |
| 2006 11 11 | 703 | 0.5+ | 1.2+ | 2006 11 16 | 704 | 0.2− | 1.2− | 2006 11 22 | 704 | 0.7+ | 0.2− |
| 2006 11 11 | 703 | (1.9− | 0.0 ) | 2006 11 16 | 704 | 0.5+ | 0.8+ | 2006 11 22 | 704 | 0.4− | 0.3− |
| 2006 11 11 | 703 | 0.9+ | 0.2+ | 2006 11 16 | 704 | 0.2+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.5− |

**2006 VC$_{14}$ = 2001 UT$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.94772 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21350667 | $\omega$ | 312.87547 | | +0.86850083 | | +0.49037895 |
| $a$ | 2.7724374 | $\Omega$ | 18.13962 | | −0.35935591 | | +0.72342591 |
| $e$ | 0.1512348 | $i$ | 13.43802 | | −0.34142296 | | +0.48598708 |
| $P$ | 4.62 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 20 | 704 | 0.4− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 15 | A55 | (7.0+ | 0.2+) |
| 2001 10 20 | 704 | 0.3+ | 0.3+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 17 | A55 | 0.0 | 0.4− |
| 2001 10 20 | 704 | 0.1+ | 1.0− | 2006 11 09 | 644 | 0.4+ | 0.3− | 2006 11 17 | A55 | 0.0 | 0.1− |
| 2001 10 20 | 704 | 0.7− | 0.4− | 2006 11 14 | A55 | 0.1+ | 0.0 | 2006 11 17 | A55 | 0.8+ | 0.1− |
| 2001 10 24 | 704 | 0.1− | 0.6+ | 2006 11 14 | A55 | 0.3+ | 0.3+ | 2006 11 17 | A55 | 0.5+ | 0.3− |
| 2001 10 24 | 704 | 0.3+ | 0.0 | 2006 11 14 | A55 | 0.0 | 0.2+ | 2006 11 23 | A55 | 0.2− | 0.8+ |
| 2001 10 24 | 704 | 0.5+ | 0.8+ | 2006 11 14 | A55 | 0.1+ | 0.6+ | 2006 11 23 | A55 | 0.8− | 0.4+ |
| 2006 10 19 | D35 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.3− | 0.2− | 2006 11 23 | A55 | 0.2− | 0.7+ |
| 2006 10 19 | D35 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.4− | 2006 11 23 | A55 | 0.4− | 0.7+ |
| 2006 10 19 | D35 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 1.0− | 1.1− | 2006 11 25 | A55 | 0.2+ | 0.2− |
| 2006 10 27 | 703 | 0.4+ | 0.5− | 2006 11 15 | 703 | 0.6+ | 0.9− | 2006 11 25 | A55 | 0.4+ | 0.1+ |
| 2006 10 27 | 703 | 1.3− | 0.1+ | 2006 11 15 | A55 | (5.8+ | 0.3+) | 2006 11 25 | A55 | 0.1+ | 0.1− |
| 2006 10 27 | 703 | 0.6− | 0.6+ | 2006 11 15 | A55 | (6.9+ | 0.3+) | | | | |
| 2006 10 27 | 703 | 0.1+ | 0.4− | 2006 11 15 | A55 | (6.8+ | 0.0 ) | | | | |

**2006 VE$_{14}$ = 2005 UR$_{394}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 165.27138 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18075034 | $\omega$ | 271.43159 | | −0.56670677 | | +0.81928711 |
| $a$ | 3.0980135 | $\Omega$ | 323.59801 | | −0.68534539 | | −0.52751930 |
| $e$ | 0.0321599 | $i$ | 8.45413 | | −0.45732388 | | −0.22470427 |
| $P$ | 5.45 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 24 | 644 | 0.2− | 0.1− | 2005 10 31 | G96 | 0.1+ | 0.3− | 2006 11 15 | 703 | 1.5− | 0.2+ |
| 2005 08 24 | 644 | 0.0 | 0.1+ | 2005 10 31 | G96 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.3+ | 0.6+ |
| 2005 08 24 | 644 | 0.5− | 0.1+ | 2005 10 31 | G96 | 0.2+ | 0.4− | 2006 11 15 | A55 | 0.1+ | 0.5− |
| 2005 08 29 | 699 | (1.8+ | 1.1−) | 2005 10 31 | G96 | 0.3− | 0.1− | 2006 11 15 | A55 | 0.6+ | 0.2− |
| 2005 08 29 | 699 | 0.7+ | 0.2+ | 2006 11 14 | A55 | 0.2+ | 0.2− | 2006 11 15 | A55 | 0.2+ | 0.2+ |
| 2005 08 29 | 699 | 0.8+ | 0.4− | 2006 11 14 | A55 | 0.0 | 0.4− | 2006 11 17 | A55 | 0.0 | 1.2+ |
| 2005 08 29 | 699 | 0.9− | 0.2+ | 2006 11 14 | A55 | 0.4+ | 0.1− | 2006 11 17 | A55 | 0.3− | 1.3+ |
| 2005 10 30 | G96 | 0.4+ | 0.0 | 2006 11 14 | A55 | 0.7+ | 0.2− | 2006 11 17 | A55 | (0.8− | 1.9+) |
| 2005 10 30 | G96 | 0.5+ | 0.1+ | 2006 11 14 | A55 | 0.8+ | 0.4+ | 2006 11 27 | A55 | 0.3− | 0.1− |
| 2005 10 30 | G96 | 1.1− | 0.1+ | 2006 11 15 | 703 | 1.2− | 0.2− | 2006 11 27 | A55 | 0.4+ | 1.1− |
| 2005 10 30 | G96 | 0.6+ | 0.4+ | 2006 11 15 | 703 | (0.3− | 2.3−) | 2006 11 27 | A55 | 0.5− | 0.7− |

**2006 VJ$_{15}$ = 2004 EF$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.42655 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26157492 | $\omega$ | 67.34232 | | +0.51243121 | | −0.85871276 |
| $a$ | 2.4214304 | $\Omega$ | 351.82599 | | +0.77393833 | | +0.46443088 |
| $e$ | 0.1621221 | $i$ | 2.08099 | | +0.37206682 | | +0.21660185 |
| $P$ | 3.77 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 06 | 695 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.4− | 0.0 |
| 2000 02 06 | 695 | 0.2− | 0.3+ | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 16 | 704 | (1.8+ | 1.3+) |
| 2000 03 12 | 691 | 0.1− | 0.3− | 2006 11 11 | 703 | 0.7− | 0.3+ | 2006 11 16 | 704 | 0.9+ | 0.7+ |
| 2000 03 12 | 691 | 0.1+ | 0.1− | 2006 11 11 | 703 | 0.1+ | 0.7− | 2006 11 16 | 704 | 0.9+ | 0.1+ |
| 2000 03 12 | 691 | 0.2− | 0.4− | 2006 11 11 | 703 | (2.2− | 0.9−) | 2006 11 19 | 704 | 0.1− | 0.2− |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 1.0+ | 1.1− | 2006 11 19 | 704 | 0.7+ | 0.1+ |
| 2004 03 15 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2004 03 15 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2004 03 23 | 691 | 0.2− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.1+ | 0.2+ |
| 2004 03 23 | 691 | 0.4+ | 0.0 | 2006 11 15 | 704 | 1.4+ | 0.7− | 2006 11 22 | 704 | (1.8− | 0.4+) |
| 2004 03 23 | 691 | 0.2+ | 0.5+ | 2006 11 15 | 704 | 0.9+ | 1.2+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2006 10 21 | 691 | 0.1+ | 0.2− | 2006 11 15 | 704 | (1.4+ | 1.6+) | 2006 11 22 | 704 | 1.3− | 1.2+ |
| 2006 10 21 | 691 | 0.2+ | 0.1− | 2006 11 15 | 704 | (2.0+ | 0.5+) | 2006 11 22 | 704 | 0.4− | 0.9+ |
| 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.2− | 0.1− | | | | |

**2006 VV$_{15}$ = 2004 EL$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.06694 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27139814 | $\omega$ | 151.20384 | | −0.56742019 | | −0.82329991 |
| $a$ | 2.3626432 | $\Omega$ | 333.35877 | | +0.74912903 | | −0.50880716 |
| $e$ | 0.1327022 | $i$ | 1.85899 | | +0.34181871 | | −0.25158006 |
| $P$ | 3.63 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 23 | 691 | 0.6+ | 0.2− | 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 11 09 | 691 | 0.0 | 0.2− |
| 1995 10 23 | 691 | 0.0 | 0.1+ | 2004 03 27 | 291 | 0.0 | 0.2+ | 2006 11 09 | 691 | 0.2+ | 0.1− |
| 1995 10 23 | 691 | 0.2− | 0.0 | 2004 03 27 | 291 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.1− | 0.5− |
| 1995 11 16 | 691 | 0.1+ | 0.0 | 2004 03 27 | 291 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.0 |
| 1995 11 16 | 691 | 0.2− | 0.2+ | 2006 10 21 | 691 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 1995 11 16 | 691 | 0.4− | 0.1+ | 2006 10 21 | 691 | 0.1− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 691 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.6+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ |

**2006 VC$_{16}$ = 2002 QL$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.41193 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27034208 | $\omega$ | 319.88613 | | +0.98388246 | | +0.17422554 |
| $a$ | 2.3687921 | $\Omega$ | 30.15218 | | −0.13652896 | | +0.87731600 |
| $e$ | 0.2056193 | $i$ | 4.59714 | | −0.11547793 | | +0.44717123 |
| $P$ | 3.65 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.2− | 0.2− | 2002 08 30 | 644 | 0.2− | 0.6− | 2006 11 09 | 691 | 0.3− | 0.0 |
| 1995 11 30 | 691 | 0.2+ | 0.1+ | 2002 08 30 | 644 | 0.1+ | 0.6− | 2006 11 09 | 691 | 0.4− | 0.0 |
| 1995 11 30 | 691 | 0.1− | 0.2+ | 2002 09 10 | 608 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.3+ | 0.4+ |
| 2002 08 17 | 608 | 0.1− | 0.1− | 2002 09 10 | 608 | 0.2+ | 0.3− | 2006 11 09 | 644 | 0.7+ | 0.3+ |
| 2002 08 17 | 608 | 0.2− | 0.5+ | 2002 09 10 | 608 | 0.4+ | 1.0+ | 2006 11 09 | 644 | 0.1+ | 0.2+ |
| 2002 08 17 | 608 | 0.0 | 0.8+ | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.0 | 0.5− | 2006 11 13 | 691 | 0.2+ | 0.2− |
| 2002 08 19 | 644 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 13 | 691 | 0.1− | 0.1+ |
| 2002 08 19 | 644 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.5+ | 0.4− | | | | |
| 2002 08 30 | 644 | 0.2+ | 0.4− | 2006 11 09 | 691 | 0.0 | 0.1− | | | | |

**2006 VS$_{16}$ = 1993 TA$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 8.85953 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23048265 | $\omega$ | 108.75795 | | +0.89602197 | | −0.44291351 |
| $a$ | 2.6345749 | $\Omega$ | 277.54205 | | +0.39460668 | | +0.82655264 |
| $e$ | 0.1245382 | $i$ | 1.80243 | | +0.20354409 | | +0.34733032 |
| $P$ | 4.28 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 15 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.2− | 0.2− |
| 1993 10 15 | 691 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 1993 10 15 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 1.1+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 1993 10 24 | 691 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 1993 10 24 | 691 | 0.7+ | 0.2+ | 2006 11 09 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.6− |
| 1993 10 24 | 691 | 0.2− | 0.8− | 2006 11 09 | 691 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.3+ | 0.6− |
| 2006 10 21 | 691 | 0.1− | 0.4+ | 2006 11 09 | 691 | 0.5− | 0.1− | 2006 11 24 | G96 | 0.0 | 0.6− |
| 2006 10 21 | 691 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.5− |
| 2006 10 21 | 691 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.4+ | | | | |

**2006 VV$_{16}$ = 2005 MB$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 321.23546 | | | (2000.0) | | |
| $n$ | 0.30623061 | $\omega$ | 189.91772 | | +0.22818189 | −0.97189730 |
| $a$ | 2.1799021 | $\Omega$ | 246.91069 | | +0.89753200 | +0.23301185 |
| $e$ | 0.0198320 | $i$ | 3.60667 | | +0.37731860 | +0.03348304 |
| $P$ | 3.22 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 27 | G96 | 0.1− | 0.1− | 2006 10 31 | G96 | 0.4− | 0.5− | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2005 06 27 | G96 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.3− | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.2+ |
| 2005 06 27 | G96 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2005 06 27 | G96 | 0.2+ | 0.1− | 2006 11 09 | 691 | 0.1− | 0.7− | 2006 11 18 | 704 | (0.9+ | 1.6−) |
| 2005 06 28 | G96 | 0.2− | 0.3− | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 1.0+ | 0.3+ |
| 2005 06 28 | G96 | 0.4+ | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.0 |
| 2005 06 28 | G96 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2005 06 28 | G96 | 0.1+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2006 10 17 | 691 | 0.1− | 0.1− | 2006 11 09 | 644 | 0.4− | 0.4− | 2006 11 24 | G96 | 0.6− | 0.2− |
| 2006 10 17 | 691 | 0.1− | 0.1+ | 2006 11 13 | 691 | 0.3+ | 0.1+ | 2006 11 24 | G96 | 0.5− | 0.3− |
| 2006 10 17 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.0 | 0.1+ | | | | |
| 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.2+ | | | | |

**2006 VJ$_{17}$ = 2004 DL$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 248.55086 | | | (2000.0) | | |
| $n$ | 0.26713901 | $\omega$ | 157.10554 | | −0.95494911 | −0.29675946 |
| $a$ | 2.3876895 | $\Omega$ | 5.63309 | | +0.26826458 | −0.86673285 |
| $e$ | 0.1170138 | $i$ | 1.43297 | | +0.12691066 | −0.40088400 |
| $P$ | 3.69 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 22 | 695 | 0.0 | 0.6− | 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1− | 0.2− |
| 2004 02 22 | 695 | 0.1− | 0.4− | 2004 03 29 | 691 | 0.1+ | 0.4− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2004 02 26 | 704 | 0.4− | 0.5− | 2006 11 09 | 691 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.4+ | 0.1+ |
| 2004 02 26 | 704 | 0.2− | 0.1+ | 2006 11 09 | 691 | 0.8+ | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2004 02 26 | 704 | 0.2+ | 1.1+ | 2006 11 09 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2004 02 26 | 704 | 1.3+ | 1.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.8− |
| 2004 02 26 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2004 03 29 | 691 | 0.3− | 0.1− | 2006 11 13 | 691 | 0.6− | 0.2+ | | | | |

**2006 VN$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 251.64711 | | | (2000.0) | | |
| $n$ | 0.17884092 | $\omega$ | 115.10346 | | −0.92307893 | −0.36689643 |
| $a$ | 3.1200254 | $\Omega$ | 43.62585 | | +0.26413370 | −0.82279138 |
| $e$ | 0.0596234 | $i$ | 9.62674 | | +0.27956872 | −0.43405224 |
| $P$ | 5.51 | $H$ | 16.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 691 | 0.4− | 0.2+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2006 11 13 | 691 | 0.4+ | 0.1− |
| 2000 11 20 | 691 | 0.1+ | 0.3+ | 2003 04 10 | 691 | 0.9+ | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2000 11 20 | 691 | 0.1+ | 0.0 | 2003 04 10 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2− |
| 2003 03 26 | 691 | 0.2+ | 0.1+ | 2003 04 10 | 691 | 0.5+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2003 03 26 | 691 | 0.5− | 0.2+ | 2006 11 09 | 691 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2003 03 26 | 691 | 0.0 | 0.1+ | 2006 11 09 | 691 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2003 04 01 | 645 | 0.1− | 0.0 | 2006 11 09 | 691 | 0.1− | 0.3− | | | | |

**2006 VQ$_{17}$ = 2005 CD$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.67254 | | | (2000.0) | | |
| $n$ | 0.30073250 | $\omega$ | 35.33229 | | +0.93389283 | +0.35678174 |
| $a$ | 2.2063910 | $\Omega$ | 303.74845 | | −0.33420044 | +0.84767906 |
| $e$ | 0.0189505 | $i$ | 1.61768 | | −0.12709936 | +0.39261559 |
| $P$ | 3.28 | $H$ | 17.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 02 09 | 809 | 0.1+ | 0.0 | 2006 10 21 | G96 | 0.2+ | 0.1+ | 2006 11 01 | G96 | 0.3+ | 0.8− |
| 2005 02 09 | 809 | 0.1− | 0.1− | 2006 10 21 | G96 | 0.0 | 0.1− | 2006 11 09 | 691 | 0.1+ | 0.1+ |
| 2005 02 09 | 809 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.3+ | 2006 11 09 | 691 | 0.3+ | 0.0 |
| 2005 02 09 | 809 | 0.0 | 0.1+ | 2006 10 21 | G96 | 0.1+ | 0.1− | 2006 11 09 | 691 | 0.3+ | 0.0 |
| 2005 02 10 | 809 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.1− |
| 2005 02 10 | 809 | 0.2− | 0.0 | 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 2005 02 10 | 809 | 0.0 | 0.2+ | 2006 10 21 | 691 | 0.5− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.3+ |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.2− | 0.3− |
| 2006 10 13 | 691 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2006 10 13 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.0 | 1.1− | 2006 11 16 | 691 | 0.4− | 0.1+ |

**2006 VZ$_{17}$ = 2004 CD$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 249.77884 | | | (2000.0) | | |
| $n$ | 0.28232543 | $\omega$ | 260.70282 | | −0.90652657 | −0.41981724 |
| $a$ | 2.3012796 | $\Omega$ | 254.46373 | | +0.40312145 | −0.82973153 |
| $e$ | 0.0760344 | $i$ | 2.63577 | | +0.12531028 | −0.36783022 |
| $P$ | 3.49 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 12 | 691 | 0.3− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 16 | 691 | 0.5+ | 0.3+ |
| 2004 02 12 | 691 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2004 02 12 | 691 | 1.3+ | 0.5− | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 1.2− | 0.7− |
| 2004 02 14 | 691 | 0.3− | 0.2+ | 2006 11 09 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.8+ | 1.0+ |
| 2004 02 14 | 691 | 0.2− | 0.0 | 2006 11 09 | 691 | 0.3− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.8+ |
| 2004 02 14 | 691 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 1.4− | 0.9+ |
| 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 13 | 691 | 0.1− | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.2− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 14 | 691 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.5+ | 0.9− |
| 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.4− |
| 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.2+ | | | | |
| 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 16 | 691 | 0.2+ | 0.1− | | | | |

**2006 VJ$_{18}$ = 2004 CG$_{112}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 314.01810 | | | (2000.0) | | |
| $n$ | 0.27663700 | $\omega$ | 183.37925 | | +0.06557712 | −0.99586739 |
| $a$ | 2.3327196 | $\Omega$ | 262.86750 | | +0.91698547 | +0.08497396 |
| $e$ | 0.0799471 | $i$ | 3.63048 | | +0.39349369 | −0.03205585 |
| $P$ | 3.56 | $H$ | 17.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.3+ | 0.2− | 2006 10 19 | G96 | 0.0 | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.3− |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.4− | 0.6− |
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 11 08 | 644 | 0.2+ | 0.4+ | 2006 11 14 | G96 | 0.3+ | 0.4− |
| 2004 02 13 | 699 | 0.2− | 0.5+ | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.3+ | 0.5− |
| 2004 02 13 | 699 | 0.2− | 0.7− | 2006 11 09 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.7− |
| 2004 02 13 | 699 | 0.1− | 0.6+ | 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2004 02 13 | 699 | 0.1− | 0.4− | 2006 11 09 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.4− | 0.9+ |
| 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.7− | 0.5− |
| 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | (0.2− | 1.6−) |
| 2006 10 19 | G96 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.1+ | 0.3+ | | | | |

**2006 VQ$_{18}$ = 2002 TG$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 63.39980 | | (2000.0) | | | |
| $n$ | 0.26904434 | $\omega$ | 60.95806 | | +0.59157009 | +0.79878867 |
| $a$ | 2.3764033 | $\Omega$ | 245.72133 | | −0.77518498 | +0.52618314 |
| $e$ | 0.2213170 | $i$ | 6.89674 | | −0.22165983 | +0.29166411 |
| $P$ | 3.66 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 12 | 644 | 0.3+ | 0.1− | 2002 10 05 | 704 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.1− | 0.0 | |
| 2002 09 12 | 644 | 0.1− | 0.3− | 2002 10 05 | 644 | 0.3− | 0.1+ | 2006 11 13 | 691 | 0.6− | 0.1− | |
| 2002 09 12 | 644 | 0.2− | 0.2− | 2002 10 06 | 644 | 0.1− | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.0 | |
| 2002 10 05 | 704 | 0.2+ | 0.5− | 2002 10 06 | 644 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.4+ | |
| 2002 10 05 | 644 | 0.1− | 0.4+ | 2002 10 06 | 644 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.0 | |
| 2002 10 05 | 704 | 0.7+ | 0.4− | 2006 11 09 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1− | |
| 2002 10 05 | 644 | 0.1− | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.1+ | | | | | |
| 2002 10 05 | 704 | 0.1+ | 0.4+ | 2006 11 09 | 691 | 0.4+ | 0.4− | | | | | |

**2006 VE$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 51.14407 | | (2000.0) | | | |
| $n$ | 0.16907205 | $\omega$ | 295.61106 | | +0.91974192 | +0.35881966 |
| $a$ | 3.2390788 | $\Omega$ | 43.85192 | | −0.22352113 | +0.81203065 |
| $e$ | 0.1048811 | $i$ | 13.27918 | | −0.32266561 | +0.46027673 |
| $P$ | 5.83 | $H$ | 15.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.0 | 0.2+ | 2006 09 25 | G96 | 0.1+ | 0.3− | 2006 11 13 | 691 | 0.2− | 0.1+ | |
| 2000 10 02 | 691 | 0.1− | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.2− | 0.3+ | |
| 2000 10 02 | 691 | 0.0 | 0.2− | 2006 10 12 | 691 | 0.3− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1+ | |
| 2004 05 21 | 691 | 0.1+ | 0.2+ | 2006 10 12 | 691 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.1− | 0.1+ | |
| 2004 05 21 | 691 | 0.0 | 0.0 | 2006 11 01 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.4− | 0.2− | |
| 2004 05 21 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.8− | 0.0 | |
| 2005 07 03 | 644 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 0.5− | 2006 11 19 | 704 | 0.1+ | 1.4− | |
| 2005 07 03 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.2− | 1.5+ | |
| 2005 07 03 | 644 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 0.2+ | 1.3+ | |
| 2006 09 25 | G96 | 0.3+ | 0.2− | 2006 11 09 | 691 | 0.5− | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.7+ | |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.7+ | 0.9+ | |
| 2006 09 25 | G96 | 0.2+ | 0.4− | 2006 11 13 | 691 | 0.1+ | 0.1+ | | | | | |

**2006 VN$_{19}$ = 1998 HA$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 168.84847 | | (2000.0) | | | |
| $n$ | 0.17819438 | $\omega$ | 192.72998 | | −0.54436589 | +0.83021140 |
| $a$ | 3.1275677 | $\Omega$ | 44.44462 | | −0.75381760 | −0.42135994 |
| $e$ | 0.1204475 | $i$ | 9.87289 | | −0.36800109 | −0.36497237 |
| $P$ | 5.53 | $H$ | 15.6 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 1.0− | 1.0+ | 2003 03 23 | 644 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.0 | 0.0 | |
| 1998 04 21 | 704 | 1.5+ | 0.1+ | 2003 03 23 | 644 | 0.2+ | 0.5+ | 2006 11 09 | 691 | 0.0 | 0.6+ | |
| 1998 04 21 | 704 | 0.5− | 0.7− | 2003 03 23 | 644 | 0.2+ | 0.4+ | 2006 11 09 | 691 | 0.1− | 0.1+ | |
| 1998 04 21 | 704 | 0.1− | 0.6+ | 2005 08 27 | 644 | 0.7− | 0.7+ | 2006 11 09 | 691 | 0.4− | 0.2+ | |
| 1998 04 21 | 704 | (4.1− | 0.2−) | 2005 08 27 | 644 | 0.6− | 0.6+ | 2006 11 13 | 691 | 0.4+ | 0.2+ | |
| 1998 04 22 | 704 | 0.3+ | 0.1− | 2005 08 27 | 644 | 0.2− | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.0 | |
| 1998 04 22 | 704 | 0.5− | 0.2+ | 2005 08 27 | 644 | 0.0 | 0.7+ | 2006 11 13 | 691 | 0.1− | 0.2+ | |
| 1998 04 22 | 704 | 0.8− | 1.5− | 2005 08 27 | 644 | 0.3− | 0.7+ | 2006 11 20 | 691 | 0.3− | 0.0 | |
| 1998 04 22 | 704 | 0.7+ | 1.3− | 2005 08 27 | 644 | 0.4− | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.2+ | |
| 1998 05 23 | 691 | 0.0 | 1.5+ | 2006 10 31 | G96 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.2+ | |
| 1998 05 23 | 691 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2+ | | | | | |
| 1998 05 23 | 691 | 1.0+ | 0.6+ | 2006 10 31 | G96 | 0.4− | 0.1− | | | | | |

**2006 VY$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 312.73791 | | (2000.0) | | | |
| $n$ | 0.26912545 | $\omega$ | 48.71239 | | −0.05934366 | −0.99391069 |
| $a$ | 2.3759258 | $\Omega$ | 44.95402 | | +0.87209759 | −0.09687530 |
| $e$ | 0.0736554 | $i$ | 7.55083 | | +0.48572022 | +0.05250434 |
| $P$ | 3.66 | $H$ | 17.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 04 | 645 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.1− | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.2− | |
| 2000 04 04 | 645 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1− | |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.2− | 0.2+ | 2006 11 22 | 704 | (0.8+ | 2.4+) | |
| 2004 01 28 | 645 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.3− | 0.2+ | 2006 11 22 | 704 | 1.2+ | 0.5+ | |
| 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.3+ | 2006 11 22 | 704 | (1.5+ | 1.7+) | |
| 2006 09 28 | G96 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 704 | 0.7+ | 1.0+ | |
| 2006 09 28 | G96 | 0.1+ | 0.5+ | 2006 11 18 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.9+ | |
| 2006 09 28 | G96 | 0.3+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.2− | 2006 11 24 | 703 | 0.0 | 0.9− | |
| 2006 10 17 | G96 | 0.6+ | 1.9− | 2006 11 19 | 704 | 0.5+ | 0.5+ | 2006 11 24 | 703 | 0.8− | 0.8− | |
| 2006 10 17 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.6− | 0.2− | 2006 11 24 | 703 | 0.5− | 0.8− | |
| 2006 10 17 | G96 | 0.1+ | 0.5− | 2006 11 19 | 704 | 1.1− | 0.4+ | 2006 11 24 | 703 | 0.7− | 0.6− | |
| 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.5+ | | | | | |
| 2006 11 09 | 691 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.0 | | | | | |

**2006 VB$_{21}$ = 2001 XG$_{168}$ = 2004 KQ$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 86.35786 | | (2000.0) | | | |
| $n$ | 0.18173020 | $\omega$ | 71.50757 | | +0.70385683 | +0.69895972 |
| $a$ | 3.0868674 | $\Omega$ | 243.92033 | | −0.69326682 | +0.63707231 |
| $e$ | 0.0527402 | $i$ | 8.10628 | | −0.15481174 | +0.32495259 |
| $P$ | 5.42 | $H$ | 15.3 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.2+ | 1.1− | |
| 2001 12 14 | 704 | 0.9+ | 0.2− | 2006 10 31 | G96 | 0.4+ | 0.6− | 2006 11 20 | 704 | 0.1+ | 2.0+ | |
| 2001 12 14 | 704 | 0.2− | 0.2− | 2006 10 31 | G96 | 0.3+ | 0.6− | 2006 11 20 | 704 | 0.4+ | 0.2+ | |
| 2001 12 14 | 704 | 0.1− | 0.6− | 2006 11 09 | D35 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.3+ | |
| 2001 12 17 | 704 | 0.3− | 0.3+ | 2006 11 09 | D35 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.1− | 0.2− | |
| 2001 12 17 | 704 | 0.5− | 0.0 | 2006 11 09 | D35 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.3− | 1.0+ | |
| 2001 12 17 | 704 | 0.9+ | 0.5+ | 2006 11 11 | 703 | 0.5+ | 1.8+ | 2006 11 21 | 704 | 1.4− | 0.4− | |
| 2001 12 17 | 704 | 0.5− | 0.0 | 2006 11 11 | 703 | 1.4− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.7− | |
| 2004 05 16 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.8− | 0.0 | |
| 2004 05 16 | 704 | 0.4+ | 0.9− | 2006 11 11 | 703 | 0.7− | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.0 | |
| 2004 05 16 | 704 | 0.5− | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2− | |
| 2004 05 16 | E12 | 0.2+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2− | |
| 2004 05 16 | E12 | 0.0 | 0.8+ | 2006 11 14 | 691 | 0.1− | 0.2− | 2006 11 25 | 926 | 0.1+ | 0.0 | |
| 2004 05 16 | E12 | 0.4− | 0.5− | 2006 11 18 | 691 | 0.1+ | 0.2− | 2006 11 25 | 926 | 0.2+ | 0.1− | |
| 2004 05 16 | E12 | 1.0+ | 0.7+ | 2006 11 18 | 691 | 0.1+ | 0.0 | 2006 11 25 | 926 | 0.1+ | 0.0 | |
| 2004 05 19 | 704 | (2.3− | 1.0+) | 2006 11 18 | 691 | 0.0 | 0.3+ | 2006 11 25 | 926 | 0.2+ | 0.0 | |
| 2004 05 19 | 704 | 0.6− | 1.0+ | 2006 11 18 | 704 | 0.4+ | 0.5+ | 2006 11 25 | 926 | 0.3+ | 0.0 | |
| 2004 05 19 | 704 | (0.9− | 1.9+) | 2006 11 18 | 704 | 0.6− | 0.6+ | 2006 11 25 | 926 | 0.3+ | 0.0 | |
| 2006 10 31 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.0 | 1.9+ | 2006 11 25 | 926 | 0.2+ | 0.1− | |

**2006 VC$_{21}$ = 1999 TY$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 245.97449 | | (2000.0) | | | |
| $n$ | 0.29042776 | $\omega$ | 133.44151 | | −0.96611395 | −0.25614096 |
| $a$ | 2.2582775 | $\Omega$ | 31.75664 | | +0.21586768 | −0.86948927 |
| $e$ | 0.0893216 | $i$ | 3.47149 | | +0.14150966 | −0.42235083 |
| $P$ | 3.39 | $H$ | 17.5 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 691 | 0.1+ | 0.1− | 2006 11 09 | D35 | 0.1+ | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.2− | |
| 1999 10 06 | 691 | 0.3+ | 0.0 | 2006 11 09 | D35 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.5+ | |
| 1999 10 06 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.5+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.2+ | |
| 1999 10 12 | 691 | 0.5− | 0.0 | 2006 11 10 | 691 | 0.1− | 0.4− | 2006 11 18 | 691 | 0.4− | 0.2+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 691 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.3− | | |
| 1999 10 12 | 691 | 0.4− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1− | 0.3− | | |
| 2006 11 09 | D35 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.3+ | | |

**2006 VD$_{21}$ = 1995 SY$_{8}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 163.99891 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19482077 | $\omega$ | 236.82147 | −0.45012839 | | +0.89295676 | |
| $a$ | 2.9469937 | $\Omega$ | 6.42965 | −0.80833819 | | −0.40577385 | |
| $e$ | 0.0870924 | $i$ | 1.82055 | −0.37943881 | | −0.19487383 | |
| $P$ | 5.06 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 17 | 691 | 0.2− | 0.2− | 2005 08 28 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.5− | | |
| 1995 09 17 | 691 | 0.2+ | 0.2+ | 2005 09 11 | 691 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.1− | 0.1− | | |
| 1995 09 17 | 691 | 0.2+ | 0.3− | 2005 09 11 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 1995 09 22 | 691 | 0.3− | 0.2− | 2005 09 11 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.9+ | 0.0 | | |
| 1995 09 22 | 691 | 0.1− | 0.0 | 2005 10 01 | G96 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.0 | | |
| 1995 09 22 | 691 | 0.1+ | 0.1− | 2005 10 01 | G96 | 0.2− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ | | |
| 2001 11 11 | 291 | 0.4+ | 0.5+ | 2005 10 01 | G96 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.5− | 0.2− | | |
| 2001 11 11 | 291 | 0.3+ | 0.3+ | 2005 10 01 | G96 | 0.0 | 0.3− | 2006 11 14 | 691 | 0.1+ | 0.2− | | |
| 2001 11 11 | 291 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2− | | |
| 2004 06 09 | E12 | 0.3+ | 0.9+ | 2006 10 28 | G96 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.7+ | | |
| 2004 06 09 | E12 | 0.1− | 0.9+ | 2006 10 28 | G96 | 0.3+ | 0.2− | 2006 11 18 | 691 | 0.4+ | 0.3− | | |
| 2004 06 09 | E12 | 0.8+ | 0.9+ | 2006 10 28 | G96 | 0.3− | 0.3− | 2006 11 18 | 691 | 0.9− | 0.2+ | | |
| 2004 06 09 | E12 | 0.1− | 1.4+ | 2006 11 09 | D35 | 0.0 | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.3+ | | |
| 2005 08 28 | 691 | 0.2− | 0.7+ | 2006 11 09 | D35 | 0.5− | 0.4− | 2006 11 22 | 691 | 0.2− | 0.2+ | | |
| 2005 08 28 | 691 | 0.2+ | 0.3+ | 2006 11 09 | D35 | 0.0 | 0.3+ | 2006 11 22 | 691 | 0.3− | 0.2+ | | |

**2006 VP$_{21}$ = 1995 SK$_{30}$ = 2004 HS$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 70.04789 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18431550 | $\omega$ | 257.96191 | +0.64647632 | | +0.76141226 | |
| $a$ | 3.0579343 | $\Omega$ | 52.42223 | −0.67420875 | | +0.59970228 | |
| $e$ | 0.0576496 | $i$ | 3.48414 | −0.35708671 | | +0.24618802 | |
| $P$ | 5.35 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 18 | 691 | 0.1+ | 0.2+ | 2004 04 22 | 691 | 0.6+ | 0.0 | 2006 09 30 | G96 | 0.2− | 0.0 | | |
| 1995 09 18 | 691 | 0.4− | 0.4+ | 2004 04 22 | 691 | 0.1− | 0.0 | 2006 09 30 | G96 | 0.1− | 0.0 | | |
| 1995 09 24 | 691 | 0.6+ | 0.1− | 2004 04 25 | 291 | 0.2+ | 0.4+ | 2006 11 10 | 691 | 0.5− | 0.9+ | | |
| 1995 09 24 | 691 | 0.2− | 0.3− | 2004 04 25 | 291 | 0.0 | 0.8+ | 2006 11 10 | 691 | 0.0 | 1.3+ | | |
| 1995 09 24 | 691 | 0.0 | 0.2+ | 2004 04 25 | 291 | 0.4+ | 0.9+ | 2006 11 10 | 691 | 0.1+ | 0.6+ | | |
| 2001 11 16 | 291 | 0.2− | 0.3− | 2005 07 04 | 735 | 0.0 | 0.1− | 2006 11 14 | G96 | 0.5− | 0.0 | | |
| 2001 11 16 | 291 | 0.1− | 0.2− | 2005 07 04 | 735 | 1.0− | 1.0− | 2006 11 14 | G96 | 0.0 | 0.0 | | |
| 2001 11 16 | 291 | 0.1− | 0.2− | 2006 09 30 | G96 | 0.8− | 0.0 | 2006 11 14 | G96 | 0.4+ | 0.1+ | | |
| 2004 04 22 | 691 | 0.1+ | 0.1+ | 2006 09 30 | G96 | 0.4+ | 0.0 | 2006 11 14 | G96 | 0.3− | 0.1− | | |

**2006 VX$_{21}$ = 2001 WY$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.08987 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18547340 | $\omega$ | 236.84026 | −0.21298557 | | −0.94060120 | |
| $a$ | 3.0451940 | $\Omega$ | 227.86147 | +0.97230731 | | −0.17739715 | |
| $e$ | 0.1526971 | $i$ | 20.88911 | +0.09620622 | | −0.28948166 | |
| $P$ | 5.31 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 17 | 704 | 0.3− | 0.0 | 2006 10 27 | 703 | 1.2− | 0.1− | 2006 11 18 | G96 | 0.1− | 0.4− | | |
| 2001 11 17 | 704 | 0.8− | 0.6+ | 2006 10 27 | 703 | 0.8− | 0.8− | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 2001 11 17 | 704 | 0.5+ | 0.7− | 2006 10 27 | 703 | 1.0+ | 0.9− | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 17 | 704 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2+ | 1.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ | | |
| 2001 11 18 | 704 | 0.8+ | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.3− | 0.2+ | | |
| 2001 11 18 | 704 | 0.2− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.2− | | |
| 2001 11 18 | 704 | 0.1− | 0.6− | 2006 11 13 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.4− | | |
| 2006 10 21 | 691 | 0.0 | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.4− | 0.1− | | |
| 2006 10 21 | 691 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.3− | | |
| 2006 10 21 | 691 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.4− | 0.5− | 2006 11 27 | 691 | 0.3+ | 0.0 | | |
| 2006 10 27 | 703 | 0.5+ | 0.8− | 2006 11 18 | G96 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.0 | | |

**2006 VZ$_{21}$ = 2003 WE$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 141.00505 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.30809339 | $\omega$ | 310.54719 | −0.50177944 | | +0.86392892 | |
| $a$ | 2.1711065 | $\Omega$ | 289.28580 | −0.77923176 | | −0.47302402 | |
| $e$ | 0.1177443 | $i$ | 2.60772 | −0.37551998 | | −0.17284412 | |
| $P$ | 3.20 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 08 | 691 | 0.2+ | 0.7+ | 2003 11 19 | 691 | 0.4+ | 0.1+ | 2006 10 02 | G96 | 0.2− | 0.2− | | |
| 1995 02 08 | 691 | 0.0 | 0.1+ | 2003 11 20 | 695 | 0.1− | 0.3+ | 2006 10 02 | G96 | 0.0 | 0.3− | | |
| 1995 02 08 | 691 | 0.1− | 0.0 | 2003 11 20 | 695 | 0.0 | 0.3+ | 2006 10 02 | G96 | 0.3− | 0.5− | | |
| 1995 02 22 | 691 | 0.1+ | 0.2+ | 2005 04 14 | 703 | 0.8+ | 0.6+ | 2006 11 10 | 691 | 0.2− | 0.0 | | |
| 1995 02 22 | 691 | 0.2− | 0.5− | 2005 04 14 | 703 | 0.4− | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.6+ | | |
| 1995 02 22 | 691 | 0.0 | 0.7− | 2005 04 14 | 703 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | | |
| 1998 01 01 | 691 | 0.1+ | 0.1− | 2005 04 14 | 703 | 0.4− | 0.5+ | 2006 11 13 | 691 | 0.3+ | 0.5− | | |
| 1998 01 01 | 691 | 0.3− | 0.0 | 2005 05 19 | 644 | 0.4+ | 0.1+ | 2006 11 13 | 691 | 0.3− | 0.1− | | |
| 1998 01 01 | 691 | 0.2− | 0.2+ | 2005 05 19 | 644 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.0 | 0.2+ | | |
| 2003 11 19 | 691 | 0.1− | 0.1+ | 2005 05 19 | 644 | 0.1+ | 0.2+ | | | | | | |
| 2003 11 19 | 691 | 0.2+ | 0.2+ | 2006 10 02 | G96 | 0.7− | 0.2− | | | | | | |

**2006 VC$_{22}$ = 1995 WH$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.25061 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17926499 | $\omega$ | 355.27493 | +0.64118627 | | −0.76192474 | |
| $a$ | 3.1151029 | $\Omega$ | 54.81320 | +0.70767529 | | +0.54103428 | |
| $e$ | 0.1356292 | $i$ | 6.41989 | +0.29677577 | | +0.35602330 | |
| $P$ | 5.50 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.3+ | 0.1− | 2006 09 28 | G96 | 0.8− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.2+ | | |
| 1995 11 19 | 691 | 0.1− | 0.4− | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 14 | 691 | 0.1− | 0.1+ | | |
| 1995 11 27 | 691 | 0.4+ | 0.8− | 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.0 | 0.8+ | | |
| 1995 11 27 | 691 | 0.2− | 0.0 | 2006 10 12 | 691 | 0.3− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.1+ | | |
| 1995 11 27 | 691 | 0.2+ | 0.2− | 2006 10 12 | 691 | 0.1− | 0.4+ | 2006 11 27 | G96 | 0.4− | 0.2− | | |
| 2001 12 15 | 645 | 0.1− | 0.0 | 2006 10 12 | 691 | 0.6+ | 0.3− | 2006 11 27 | G96 | 0.2+ | 0.4− | | |
| 2001 12 15 | 645 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.5+ | 2006 11 27 | G96 | 0.3− | 0.2− | | |
| 2006 09 28 | G96 | 0.1− | 0.6− | 2006 11 10 | 691 | 0.1− | 0.5+ | 2006 11 27 | G96 | 0.4− | 0.4− | | |

**2006 VM$_{22}$ = 2000 JM$_{43}$ = 2004 FL$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 232.66543 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23003270 | $\omega$ | 114.28662 | −0.98661465 | | −0.14816394 | |
| $a$ | 2.6380094 | $\Omega$ | 57.25865 | +0.10405061 | | −0.89359289 | |
| $e$ | 0.0091880 | $i$ | 4.64463 | +0.12555874 | | −0.42372066 | |
| $P$ | 4.28 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 07 | 704 | 0.0 | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 17 | 703 | 1.1− | 0.2+ | | |
| 2000 05 07 | 704 | 0.6+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 17 | 703 | 0.6+ | 0.9+ | | |
| 2000 05 07 | 704 | 0.8+ | 0.3+ | 2006 09 27 | G96 | 0.2− | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.6+ | | |
| 2000 05 07 | 704 | 1.0+ | 0.9+ | 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.7+ | | |
| 2000 05 07 | 704 | 0.2+ | 0.7− | 2006 10 17 | G96 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.1− | | |
| 2000 05 10 | 704 | 1.2+ | 0.7+ | 2006 10 17 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.6+ | 0.3− | | |
| 2000 05 10 | 704 | 0.5+ | 0.7+ | 2006 10 17 | G96 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.4− | 1.1− | | |
| 2000 05 10 | 704 | (1.3+ | 2.3+) | 2006 10 17 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.8− | 0.6− | | |
| 2000 05 10 | 704 | 0.2+ | 1.4+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.3− | | |
| 2000 05 10 | 704 | 1.5+ | 1.7+ | 2006 10 27 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | (2.1− | 0.2+) | | |
| 2000 05 28 | 691 | 0.5− | 0.5− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.2− | 0.6− | | |
| 2000 05 28 | 691 | 0.3− | 0.7− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 27 | G96 | 0.1− | 0.7− | | |
| 2000 05 28 | 691 | 0.8− | 0.4− | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 27 | G96 | 0.1− | 0.5− | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 691 | 0.2+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.3− | 0.1− | | |
| 2004 03 16 | 691 | 0.1+ | 0.1− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 27 | G96 | 0.1− | 0.3− | | |
| 2004 03 16 | 691 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.8− | 0.2− | | |
| 2004 03 22 | 704 | 0.5+ | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.2+ | 0.5+ | | |
| 2004 03 22 | 704 | 1.2− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.5+ | | |
| 2004 03 22 | 704 | 0.8− | 0.1− | 2006 11 17 | 703 | 1.4+ | 0.4+ | | | | | | |
| 2004 03 22 | 704 | 0.8− | 0.3+ | 2006 11 17 | 703 | 1.3+ | 0.6− | | | | | | |

**2006 VR$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 212.02099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25691650 | $\omega$ | 127.46884 | | −0.94272012 | +0.33116592 | |
| $a$ | 2.4506129 | $\Omega$ | 71.90197 | | −0.31783096 | −0.85518248 | |
| $e$ | 0.1301223 | $i$ | 2.41780 | | −0.10130285 | −0.39873809 | |
| $P$ | 3.84 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 291 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1− | 0.2+ | | |
| 2004 02 16 | 291 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 18 | G96 | 0.1+ | 0.3− | | |
| 2004 02 16 | 291 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.4+ | 0.2− | | |
| 2006 11 10 | 691 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 18 | G96 | 0.2− | 0.2+ | | |

**2006 VY$_{22}$ = 1998 SE$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.66205 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25530827 | $\omega$ | 175.04078 | | +0.98998041 | +0.14120209 | |
| $a$ | 2.4608934 | $\Omega$ | 176.84141 | | −0.13008947 | +0.91442913 | |
| $e$ | 0.2000766 | $i$ | 0.90426 | | −0.05491372 | +0.37931694 | |
| $P$ | 3.86 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 19 | 645 | 0.1+ | 0.1− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.2− | 0.2+ | | |
| 1998 09 19 | 645 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.4+ | | |
| 1998 09 24 | 691 | 1.8− | 1.1− | 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | (0.2+ | 2.1+) | | |
| 1998 09 24 | 691 | (5.7+ | 3.4+) | 2006 10 17 | G96 | 0.8+ | 0.1− | 2006 11 18 | 704 | (0.6− | 2.3+) | | |
| 1998 09 24 | 691 | 0.3− | 0.3− | 2006 10 17 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | (0.3− | 1.5+) | | |
| 1998 09 25 | 645 | 0.2+ | 0.1+ | 2006 10 17 | G96 | 1.2+ | 0.3+ | 2006 11 18 | G96 | 0.2− | 0.2− | | |
| 1998 09 25 | 645 | 0.2+ | 0.0 | 2006 10 17 | G96 | 0.6+ | 0.0 | 2006 11 18 | G96 | 0.0 | 0.3− | | |
| 2000 02 05 | 691 | 0.0 | 0.4− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.5− | 0.1− | | |
| 2000 02 05 | 691 | 0.2− | 0.5− | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.2− | 0.1− | | |
| 2000 02 05 | 691 | 0.2− | 0.6− | 2006 11 10 | 691 | 0.3− | 0.1+ | | | | | | |
| 2006 09 27 | G96 | 0.8+ | 0.0 | 2006 11 14 | 691 | 0.1− | 0.3+ | | | | | | |

**2006 VT$_{23}$ = 2001 UF$_{194}$ = 2005 NH$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.55107 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21096616 | $\omega$ | 233.41232 | | +0.75560462 | +0.65319870 | |
| $a$ | 2.7946506 | $\Omega$ | 85.75030 | | −0.58422132 | +0.70581749 | |
| $e$ | 0.0842953 | $i$ | 2.81173 | | −0.29622138 | +0.27414070 | |
| $P$ | 4.67 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.5− | 0.1− | 2005 07 02 | 691 | 0.3+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ | | |
| 2001 10 18 | 644 | 0.8− | 0.0 | 2005 07 11 | 691 | 0.3− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1− | | |
| 2001 10 18 | 644 | 0.8− | 0.5− | 2005 07 11 | 691 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.4− | | |
| 2001 10 20 | 704 | 0.3+ | 0.2+ | 2005 07 11 | 691 | 0.1+ | 0.1− | 2006 11 17 | 703 | 0.2+ | 0.3− | | |
| 2001 10 20 | 704 | 0.1+ | 0.5+ | 2006 10 12 | 691 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.1+ | 0.2− | | |
| 2001 10 20 | 704 | 0.3− | 0.8+ | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 703 | 0.8− | 0.2− | | |
| 2001 10 20 | 704 | 1.3+ | 0.7+ | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.1− | 0.4− | | |
| 2002 12 31 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 27 | G96 | 0.0 | 0.6− | | |
| 2002 12 31 | 645 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.3+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2005 07 02 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.1+ | 0.5− | | |
| 2005 07 02 | 691 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.1− | 0.0 | | | | | | |

**2006 VX$_{23}$ = 2001 TG$_{248}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.94112 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21213530 | $\omega$ | 247.37197 | | +0.91745629 | −0.39729701 | |
| $a$ | 2.7843731 | $\Omega$ | 136.02991 | | +0.37508624 | +0.84646422 | |
| $e$ | 0.1079553 | $i$ | 1.70962 | | +0.13260565 | +0.35447625 | |
| $P$ | 4.65 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1− | | |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2− | | |
| 2001 09 12 | 695 | 0.2+ | 0.9+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.1− | | |
| 2001 09 12 | 695 | (0.6+ | 1.9+) | 2006 11 10 | 691 | 0.2+ | 0.5− | 2006 11 17 | 703 | 1.1− | 0.2+ | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.4+ | 2006 11 17 | 703 | 0.7− | 1.2+ | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.9− | 0.3+ | 2006 11 17 | 703 | 0.3+ | 0.4+ | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.1− | 2006 11 17 | 703 | (1.9+ | 2.0+) | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.3− | | | | | | |

**2006 VA$_{24}$ = 2000 QY$_{252}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 324.89176 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18826427 | $\omega$ | 340.29957 | | −0.06152154 | −0.99772401 | |
| $a$ | 3.0150241 | $\Omega$ | 113.21955 | | +0.91972449 | −0.06741109 | |
| $e$ | 0.2163463 | $i$ | 1.72116 | | +0.38771376 | +0.00159425 | |
| $P$ | 5.24 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 29 | I03 | 0.7− | 0.3− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 1.2− | 0.3+ | | |
| 2000 08 29 | I03 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.1+ | 0.8− | | |
| 2000 08 29 | I03 | 1.0+ | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.3+ | 0.4− | | |
| 2000 08 29 | I03 | 0.2− | 0.3− | 2006 11 14 | 691 | 0.3+ | 0.2− | 2006 11 17 | 703 | 0.0 | 0.6− | | |
| 2000 08 30 | I03 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.2+ | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.3+ | | |
| 2000 08 30 | I03 | 0.6− | 0.1− | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 27 | G96 | 0.0 | 0.1− | | |
| 2000 08 30 | I03 | 0.6+ | 0.4+ | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 27 | G96 | 0.2− | 0.1+ | | |
| 2006 11 10 | 691 | 0.4− | 0.7+ | 2006 11 14 | 691 | 0.1− | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.0 | | |

**2006 VE$_{24}$ = 1999 TO$_{246}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.33574 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29181401 | $\omega$ | 151.19333 | | +0.99951938 | −0.01914188 | |
| $a$ | 2.2511199 | $\Omega$ | 209.93342 | | +0.00913296 | +0.93350496 | |
| $e$ | 0.1804070 | $i$ | 2.80098 | | +0.02962416 | +0.35805318 | |
| $P$ | 3.38 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 06 | 704 | 0.2+ | 0.8− | 2005 05 10 | G96 | 0.4+ | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.4− | | |
| 1999 10 06 | 704 | 0.4+ | 0.6− | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.4+ | | |
| 1999 10 06 | 704 | 0.5− | 0.5+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.4+ | 0.2− | | |
| 1999 10 06 | 704 | 0.9+ | 0.0 | 2006 09 27 | G96 | 0.1− | 0.6+ | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 1999 10 06 | 704 | 0.3+ | 0.6+ | 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.1+ | | |
| 1999 10 10 | 691 | 0.0 | 0.1+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.0 | | |
| 1999 10 10 | 691 | 0.1+ | 0.0 | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.0 | | |
| 1999 10 10 | 691 | 0.4− | 0.0 | 2006 10 12 | 691 | 0.0 | 0.2+ | 2006 11 17 | 703 | (1.7− | 0.7−) | | |
| 2005 05 10 | G96 | 0.0 | 0.7+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.8+ | 0.8− | | |
| 2005 05 10 | G96 | 0.8− | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.6− | | |
| 2005 05 10 | G96 | 0.8+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1+ | | | | | | |

**2006 $VL_{24}$ = 1999 $XX_{228}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 1.14725 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26840197 | $\omega$ | 320.57339 | | +0.81707040 | | −0.57391791 |
| $a$ | 2.3801934 | $\Omega$ | 74.53512 | | +0.54231130 | | +0.73274975 |
| $e$ | 0.1130608 | $i$ | 3.26557 | | +0.19568961 | | +0.36564469 |
| $P$ | 3.67 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 09 30 | 691 | 0.1− | 0.4+ | 2006 10 16 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | (2.1− | 0.3−) |
| 1991 09 30 | 691 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | (2.0− | 0.9+) |
| 1991 09 30 | 691 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.1− | 0.2+ | 2006 11 18 | G96 | 0.3− | 0.1− |
| 1999 12 14 | 691 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.4+ | 0.4− | 2006 11 18 | 704 | 0.3− | 1.1− |
| 1999 12 14 | 691 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.0 | 2006 11 18 | G96 | 0.1− | 0.1− |
| 1999 12 14 | 691 | 0.4− | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.5− | 0.9+ |
| 1999 12 18 | 691 | 0.0 | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.2+ |
| 1999 12 18 | 691 | 0.2+ | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.2− |
| 1999 12 18 | 691 | 0.4+ | 0.3+ | 2006 11 17 | 703 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 09 11 | 608 | 0.2− | 0.2− | 2006 11 17 | 703 | 0.8− | 0.2+ | 2006 11 18 | 704 | 0.8− | 0.4− |
| 2002 09 11 | 608 | 0.2+ | 0.0 | 2006 11 17 | 703 | 0.2+ | 0.5+ | 2006 11 21 | 704 | 0.9+ | 0.5− |
| 2002 09 11 | 608 | 0.2− | 0.1+ | 2006 11 17 | 703 | 0.9+ | 0.1− | 2006 11 21 | 704 | 0.3+ | 1.1− |
| 2006 09 19 | 699 | 0.5− | 0.1+ | 2006 11 17 | 703 | 0.7+ | 1.1+ | 2006 11 21 | 704 | 0.5− | 0.9− |
| 2006 09 19 | 699 | 1.1− | 0.7+ | 2006 11 17 | 703 | 0.9− | 0.1+ | 2006 11 21 | 704 | 0.6− | 1.5− |
| 2006 09 19 | 699 | (0.2− | 1.9+) | 2006 11 17 | 703 | 0.5− | 0.1− | 2006 11 29 | 704 | 2.2+ | 0.5+ |
| 2006 09 19 | 699 | 0.2+ | 1.4− | 2006 11 18 | 704 | 1.1+ | 1.3− | 2006 11 29 | 704 | 0.3+ | 0.6+ |
| 2006 10 16 | 691 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.2+ | 1.0− | 2006 11 29 | 704 | 0.5+ | 0.1− |
| 2006 10 16 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3− | 0.7− | 2006 11 29 | 704 | 0.6+ | 0.3+ |

**2006 $VO_{24}$ = 2004 $FD_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.70447 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25340001 | $\omega$ | 249.43093 | | −0.24030298 | | −0.96914874 |
| $a$ | 2.4732326 | $\Omega$ | 214.62004 | | +0.92266768 | | −0.21050368 |
| $e$ | 0.1022979 | $i$ | 5.53714 | | +0.30156065 | | −0.12821432 |
| $P$ | 3.89 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 15 | 644 | 0.7− | 0.6+ | 2004 03 29 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.1− |
| 2002 10 15 | 644 | 0.3− | 0.7+ | 2004 03 29 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2002 10 15 | 644 | 0.1+ | 1.0+ | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2002 10 31 | 644 | 0.2− | 0.6+ | 2004 04 23 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.3+ |
| 2002 10 31 | 644 | 0.0 | 0.4+ | 2004 04 23 | 691 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.0 |
| 2002 10 31 | 644 | 0.3+ | 0.8+ | 2004 04 23 | 691 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.1+ | 0.4− |
| 2004 03 27 | 704 | (1.7+ | 0.5−) | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 15 | G96 | 0.1− | 0.5− |
| 2004 03 27 | 704 | 0.3− | 0.9+ | 2006 09 27 | G96 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.1+ | 0.5− |
| 2004 03 27 | 703 | 1.3+ | 0.2− | 2006 09 27 | G96 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.3− | 0.3− |
| 2004 03 27 | 704 | 0.6+ | 0.1+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 17 | 703 | 0.4− | 0.5− |
| 2004 03 27 | 703 | 0.5+ | 0.3− | 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 17 | 703 | 0.3+ | 1.0− |
| 2004 03 27 | 703 | 0.3+ | 1.0+ | 2006 10 12 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4− | 0.1− |
| 2004 03 27 | 704 | 0.0 | 0.7− | 2006 10 12 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 703 | 0.4+ | 1.2− |
| 2004 03 27 | 703 | (1.4− | 1.8+) | 2006 11 10 | 691 | 0.1− | 0.0 | | | | |

**2006 $VP_{25}$ = 2000 $CZ_{118}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.16295 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26044511 | $\omega$ | 147.97184 | | −0.43775613 | | −0.89898706 |
| $a$ | 2.4284281 | $\Omega$ | 327.98284 | | +0.81929317 | | −0.39251000 |
| $e$ | 0.1228502 | $i$ | 1.49704 | | +0.37030835 | | −0.19431461 |
| $P$ | 3.78 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 695 | 0.4+ | 0.5+ | 2005 08 08 | 807 | 0.1+ | 0.2− | 2006 11 14 | 691 | 0.0 | 0.1+ |
| 2000 02 05 | 695 | 0.2− | 0.6+ | 2005 08 09 | 807 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1− | 0.2− |
| 2000 02 14 | 691 | 0.2− | 0.3− | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.4− | 0.4+ |
| 2000 02 14 | 691 | 0.0 | 0.4− | 2006 10 27 | 691 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.3− | 0.7+ |
| 2000 02 14 | 691 | 0.1− | 0.1− | 2006 10 27 | 691 | 0.4+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2004 03 29 | 691 | 0.1− | 0.2+ | 2006 11 10 | 691 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2004 03 29 | 691 | 0.2+ | 0.3+ | 2006 11 10 | 691 | 0.4+ | 0.5− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.2− | 0.1− |
| 2005 08 08 | 807 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.3+ | | | | |

**2006 $VU_{25}$ = 1993 $RP_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.47525 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23323584 | $\omega$ | 347.27922 | | +0.95941504 | | +0.28199287 |
| $a$ | 2.6138010 | $\Omega$ | 356.34032 | | −0.25637470 | | +0.86975008 |
| $e$ | 0.2347584 | $i$ | 1.50397 | | −0.11745125 | | +0.40498743 |
| $P$ | 4.23 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 15 | 809 | (2.7+ | 1.7−) | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 20 | 734 | 0.4− | 0.2− |
| 1993 09 15 | 809 | (0.6+ | 2.3−) | 2006 11 14 | 691 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.3− | 0.5+ |
| 1993 09 15 | 809 | 0.2+ | 0.9− | 2006 11 14 | 691 | 0.2+ | 0.1− | 2006 11 20 | 734 | 0.0 | 0.2− |
| 1993 09 22 | 809 | 0.5+ | 0.9− | 2006 11 18 | 691 | 0.2− | 0.0 | 2006 11 20 | 734 | 0.2− | 0.2+ |
| 1993 09 22 | 809 | 0.6+ | 1.8− | 2006 11 18 | 691 | 1.0+ | 0.8+ | 2006 11 20 | 734 | 0.3− | 0.1+ |
| 1993 09 22 | 809 | 0.9+ | 1.1− | 2006 11 18 | 691 | 0.3− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2000 02 12 | 645 | 0.1− | 0.2− | 2006 11 18 | 704 | (1.9− | 0.8+) | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2000 02 12 | 645 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.7− | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2005 05 16 | 644 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.5− | 0.8+ | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2005 05 16 | 644 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 1.5− | 1.1+ | 2006 11 22 | 704 | 0.3− | 0.4+ |
| 2005 05 16 | 644 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 1.3− | 0.9+ | 2006 11 22 | 704 | 0.6+ | 0.3+ |
| 2006 10 17 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2006 10 17 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.1− | 0.1+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2006 10 17 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.0 | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2006 10 17 | G96 | 0.4+ | 0.3− | 2006 11 19 | 704 | 0.3− | 0.3+ | 2006 12 01 | G96 | 0.1− | 0.3− |
| 2006 10 28 | G96 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.4− | 0.5− |
| 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 20 | 703 | 0.5− | 0.3− | 2006 12 01 | G96 | 0.6+ | 0.4− |
| 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 20 | 703 | 0.2− | 0.3+ | 2006 12 01 | 704 | 0.9− | 1.0− |
| 2006 11 10 | 691 | 0.4+ | 0.4− | 2006 11 20 | 703 | 0.7+ | 0.5+ | 2006 12 01 | 704 | 0.2+ | 1.2− |
| 2006 11 10 | 691 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.4+ | 0.6+ | 2006 12 01 | 704 | 1.2− | 0.0 |
| 2006 11 10 | 691 | 0.0 | 0.2− | 2006 11 20 | 703 | 0.1+ | 0.0 | 2006 12 01 | 704 | 0.3− | 0.7− |
| 2006 11 13 | 644 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.1+ | 0.6+ | 2006 12 01 | 704 | 1.0− | 0.1− |
| 2006 11 13 | 644 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.4− | 0.8+ | | | | |
| 2006 11 13 | 644 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.1+ | 1.0+ | | | | |

**2006 $VD_{26}$ = 1997 $WA_{28}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.78989 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22191677 | $\omega$ | 8.52118 | | +0.60471681 | | −0.79308980 |
| $a$ | 2.7019417 | $\Omega$ | 44.31109 | | +0.72442415 | | +0.50964565 |
| $e$ | 0.1557581 | $i$ | 5.99684 | | +0.33094899 | | +0.33357139 |
| $P$ | 4.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 691 | 0.1− | 0.2− | 2006 10 17 | G96 | (3.3+ | 0.1−) | 2006 11 18 | 704 | 1.0− | 0.2+ |
| 1997 11 29 | 691 | 0.2− | 0.0 | 2006 10 17 | G96 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3− |
| 1997 11 29 | 691 | 0.0 | 0.1− | 2006 10 17 | G96 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.6+ | 0.1+ |
| 1997 12 05 | 691 | 0.1+ | 0.1− | 2006 10 28 | G96 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 0.4+ |
| 1997 12 05 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.0 | 2006 11 22 | 704 | (1.1− | 2.3+) |
| 1997 12 05 | 691 | 0.3+ | 0.2+ | 2006 10 28 | G96 | 0.3− | 0.1− | 2006 11 22 | 704 | 1.2− | 1.3+ |
| 2004 04 20 | 291 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 1.2+ | 1.0+ |
| 2004 04 20 | 291 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2004 04 20 | 291 | 0.3+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.6+ | 2006 11 25 | 691 | 0.4− | 0.3+ |
| 2006 09 27 | G96 | 0.6− | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.4− | 2006 11 25 | 691 | 0.3− | 0.2+ |
| 2006 09 27 | G96 | 0.4− | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.2+ | 0.9− |
| 2006 09 27 | G96 | 0.1− | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.4− | 2006 11 25 | 691 | 1.2+ | 1.1− |
| 2006 09 27 | G96 | 0.3− | 0.7+ | 2006 11 18 | 704 | 0.4+ | 0.2+ | 2006 11 25 | 691 | 0.2− | 0.2+ |
| 2006 10 17 | G96 | (2.1+ | 0.7+) | 2006 11 18 | 704 | 0.6+ | 0.2+ | 2006 11 25 | 691 | 0.4− | 0.3+ |

**2006 VZ$_{26}$ = 2004 DM$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 225.77493 | | | (2000.0) | | |
| $n$ | 0.26774000 | $\omega$ | 136.12746 | | −0.97779128 | +0.20546470 |
| $a$ | 2.3841151 | $\Omega$ | 55.77288 | | −0.20342290 | −0.88296306 |
| $e$ | 0.1418600 | $i$ | 2.86550 | | −0.05043157 | −0.42209061 |
| $P$ | 3.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 17 | 704 | 0.4− | 1.3+ | 2004 02 18 | 691 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.3+ | 0.6− |
| 2004 02 17 | 704 | 0.8+ | 0.2− | 2004 02 23 | 704 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.3− | 1.0+ |
| 2004 02 17 | 704 | 0.6+ | 0.1+ | 2004 02 23 | 704 | 0.2+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.5− |
| 2004 02 17 | 704 | 0.3+ | 1.1+ | 2004 02 23 | 704 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.6+ |
| 2004 02 17 | 704 | 0.3+ | 0.6− | 2004 02 23 | 704 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.0 | 0.2− |
| 2004 02 18 | 691 | 0.1− | 0.3− | 2004 02 23 | 704 | 0.2− | 0.6+ | | | | |
| 2004 02 18 | 691 | 0.1− | 0.1− | 2006 11 10 | 691 | 0.0 | 0.3− | | | | |

**2006 VF$_{27}$ = 2000 SE$_{325}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.12153 | | | (2000.0) | | |
| $n$ | 0.17375250 | $\omega$ | 332.68876 | | +0.82943437 | −0.55781277 |
| $a$ | 3.1806460 | $\Omega$ | 61.24683 | | +0.51849852 | +0.74899464 |
| $e$ | 0.1655382 | $i$ | 1.94298 | | +0.20784107 | +0.35756389 |
| $P$ | 5.67 | $H$ | 15.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.2+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.0 | 0.0 |
| 2000 09 28 | 691 | 0.3+ | 0.1+ | 2006 09 27 | G96 | 0.4− | 0.2− | 2006 11 14 | 691 | 0.1− | 0.1− |
| 2000 09 28 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2000 10 01 | 704 | 0.1− | 0.9+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2000 10 01 | 704 | 0.0 | 0.7+ | 2006 10 17 | G96 | 0.1− | 0.4− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.4− | 0.5+ | 2006 10 17 | G96 | 0.5+ | 0.4− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.4+ | 0.6+ | 2006 10 17 | G96 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.8+ |
| 2000 11 02 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 2000 11 02 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 19 | 704 | (0.1+ | 1.6+) |
| 2000 11 02 | 691 | 0.4− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 19 | 704 | 0.9+ | 0.0 |
| 2002 02 08 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | (1.6+ | 1.4+) |
| 2002 02 08 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | (1.1+ | 1.7+) |
| 2002 02 08 | 691 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.7+ | 0.6− |
| 2005 12 01 | 695 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.1− | 2006 11 21 | 704 | (1.8+ | 1.5+) |
| 2005 12 01 | 695 | 0.2− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.0 | 0.8+ |

**2006 VV$_{27}$ = 1998 DX$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 269.15271 | | | (2000.0) | | |
| $n$ | 0.19659552 | $\omega$ | 92.02082 | | −0.79295099 | −0.60829588 |
| $a$ | 2.9292311 | $\Omega$ | 50.51478 | | +0.53960661 | −0.72758271 |
| $e$ | 0.0386853 | $i$ | 2.57772 | | +0.28293715 | −0.31717427 |
| $P$ | 5.01 | $H$ | 17.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 24 | 691 | 0.3+ | 0.1+ | 2001 11 16 | 291 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.2− | 0.1− |
| 1998 02 24 | 691 | 0.3− | 0.2+ | 2006 09 27 | G96 | 0.1− | 0.6− | 2006 11 14 | 691 | 0.2− | 0.2+ |
| 1998 02 24 | 691 | 0.3+ | 0.1− | 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 14 | 691 | 0.5− | 0.3− |
| 1998 03 04 | 691 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.8+ | 0.5− | 2006 11 14 | 691 | 0.3− | 0.1+ |
| 1998 03 04 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 1998 03 04 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.3+ |
| 2000 08 30 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.5− | 0.6+ | 2006 11 22 | 691 | 0.0 | 0.5+ |
| 2000 08 30 | 691 | 0.2− | 0.1− | 2006 10 27 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2000 08 30 | 691 | 0.0 | 0.4+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.3− | 0.1+ |
| 2001 11 16 | 291 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.4− | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2001 11 16 | 291 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.6+ | 0.0 | 2006 11 24 | G96 | 0.1− | 0.2− |

**2006 VW$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 297.88982 | | | (2000.0) | | |
| $n$ | 0.22419849 | $\omega$ | 62.06168 | | −0.43763229 | −0.87083577 |
| $a$ | 2.6835782 | $\Omega$ | 55.64615 | | +0.69983549 | −0.48622495 |
| $e$ | 0.1055746 | $i$ | 15.73479 | | +0.56454253 | −0.07232117 |
| $P$ | 4.40 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.2− |
| 2004 05 21 | 691 | 0.3− | 0.3+ | 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2004 05 21 | 691 | 0.4− | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.5− | 0.1− |
| 2004 06 13 | 691 | 0.1+ | 0.2− | 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2004 06 13 | 691 | 0.5+ | 0.5− | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.3− | 0.3+ |
| 2004 06 13 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.0 |
| 2006 10 03 | G96 | 1.2− | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2006 10 03 | G96 | 0.5− | 0.1+ | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.3+ | 0.3+ |
| 2006 10 03 | G96 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2006 10 03 | G96 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− |

**2006 VL$_{28}$ = 2002 SJ$_{25}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.96248 | | | (2000.0) | | |
| $n$ | 0.26553824 | $\omega$ | 31.62159 | | +0.38742184 | −0.91951605 |
| $a$ | 2.3972758 | $\Omega$ | 35.70725 | | +0.82037413 | +0.31105789 |
| $e$ | 0.1320825 | $i$ | 6.52185 | | +0.42058365 | +0.24027741 |
| $P$ | 3.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 28 | 608 | (3.5− | 0.9−) | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.0 | 1.4− |
| 2002 09 28 | 608 | (3.3− | 1.1−) | 2006 11 13 | 691 | 0.2− | 0.3+ | 2006 11 19 | 704 | 0.0 | 0.7+ |
| 2002 09 28 | 608 | (3.6− | 0.8−) | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.9+ | 0.9+ |
| 2002 09 30 | 704 | 0.9+ | 1.1+ | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.2+ |
| 2002 09 30 | 704 | 0.8+ | 0.6− | 2006 11 16 | 704 | 0.1− | 0.7− | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2002 09 30 | 704 | 0.9+ | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.5+ | 2006 11 22 | 704 | 0.1− | 0.5+ |
| 2002 10 11 | 704 | 1.3− | 0.3− | 2006 11 16 | 704 | 0.2+ | 0.5+ | 2006 11 22 | 704 | 0.5− | 0.5− |
| 2002 10 11 | 704 | 1.4− | 0.2+ | 2006 11 16 | 704 | 0.9+ | 0.4− | 2006 11 22 | 704 | 0.3− | 0.0 |
| 2002 10 11 | 704 | 1.1− | 0.3− | 2006 11 16 | 291 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.1− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 16 | 291 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.3+ | 0.3− |
| 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 16 | 291 | 0.1+ | 0.2+ | 2006 11 25 | 691 | 0.1+ | 0.3− |
| 2006 09 27 | 291 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.2+ | 0.0 | 2006 11 27 | 704 | 0.4+ | 1.4− |
| 2006 09 27 | 291 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.2+ | 2006 11 27 | 704 | 0.7+ | 0.3− |
| 2006 09 27 | 291 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 27 | 704 | 0.4− | 0.1+ |
| 2006 09 27 | G96 | 0.5+ | 0.5− | 2006 11 17 | 644 | 0.1− | 0.1+ | 2006 11 28 | 704 | 0.1+ | 1.0+ |
| 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 17 | 644 | 0.5− | 0.2+ | 2006 11 28 | 704 | 0.6− | 2.2− |
| 2006 09 27 | G96 | (1.0+ | 1.8−) | 2006 11 17 | 644 | 0.3− | 0.0 | 2006 11 28 | 704 | 0.5+ | 1.7− |
| 2006 11 10 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 1.1+ | 2006 11 28 | 704 | 0.8− | 0.4− |
| 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 19 | 704 | 0.8− | 1.3+ | | | | |

**2006 VS$_{28}$ = 1999 FF$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 340.80674 | | | (2000.0) | | |
| $n$ | 0.22471403 | $\omega$ | 28.75434 | | +0.27208654 | −0.95456234 |
| $a$ | 2.6794722 | $\Omega$ | 45.75461 | | +0.84721087 | +0.17772567 |
| $e$ | 0.2926539 | $i$ | 9.77083 | | +0.45629228 | +0.23921607 |
| $P$ | 4.39 | $H$ | 17.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.2− | 0.7+ | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.4+ | 0.9+ | 2006 11 22 | 704 | 0.2− | 0.8+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.3− | 0.5+ | 2006 11 22 | 704 | 0.5+ | 0.5+ |
| 1999 03 22 | 645 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.4− | 0.3+ | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2006 11 10 | 691 | 0.0 | 0.2− | 2006 11 16 | 704 | 1.0− | 0.0 | 2006 11 23 | 644 | 0.0 | 0.4− |
| 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.4− | 2006 11 23 | 644 | 0.2+ | 0.0 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 11 13 | 691 | 0.2− | 0.3+ | 2006 11 17 | 691 | 0.2+ | 0.0 | 2006 11 23 | 644 | 0.2− | 0.1− |
| 2006 11 13 | 691 | 0.3− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.2− | 2006 11 25 | 691 | 1.2− | 0.8− |
| 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.3+ | 0.5− | 2006 11 25 | 691 | 0.3− | 0.3− |
| 2006 11 15 | 704 | 0.4− | 0.6+ | 2006 11 19 | 704 | 0.1+ | 0.2+ | 2006 11 25 | 691 | (1.8+ | 0.0 ) |
| 2006 11 15 | 704 | 0.4− | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.3+ | 2006 11 27 | 704 | 0.2+ | 1.0+ |
| 2006 11 15 | 704 | 0.5+ | 0.4− | 2006 11 19 | 704 | 0.4+ | 0.1− | 2006 11 27 | 704 | 0.2+ | 0.8+ |
| 2006 11 16 | 704 | 0.2+ | 1.1+ | 2006 11 19 | 704 | 0.4+ | 0.2− | 2006 11 27 | 704 | 0.3+ | 1.4+ |
| 2006 11 16 | 704 | 1.3+ | 1.0− | 2006 11 21 | 691 | 0.4+ | 0.1− | 2006 11 27 | 704 | 0.3− | 1.1+ |
| 2006 11 16 | 704 | 0.0 | 1.2+ | 2006 11 21 | 691 | 0.4+ | 0.3− | | | | |
| 2006 11 16 | 704 | 1.2+ | 1.0− | 2006 11 21 | 691 | 0.3+ | 0.2− | | | | |

**2006 VW$_{28}$ = 2003 YM$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.93738 | | (2000.0) | | | |
| $n$ | 0.30830779 | $\omega$ | 47.08561 | | +0.99962404 | +0.01049656 |
| $a$ | 2.1700998 | $\Omega$ | 312.29604 | | −0.02014280 | +0.90790697 |
| $e$ | 0.1373801 | $i$ | 1.96245 | | +0.01860244 | +0.41904027 |
| $P$ | 3.20 | $H$ | 16.9 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 18 | 704 | 0.2− | 1.2− | 2006 10 04 | G96 | 1.2− | 0.5− | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2003 12 18 | 704 | 1.4− | 0.4+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2003 12 18 | 704 | 1.1+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.4+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2003 12 18 | 704 | 0.9− | 0.9+ | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.1+ |
| 2003 12 22 | 704 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.0 | 1.2+ |
| 2003 12 22 | 704 | 0.3+ | 0.7+ | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.1− | 0.2− |
| 2003 12 22 | 704 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.9− | 1.2+ |
| 2003 12 22 | 704 | 0.4+ | 0.8− | 2006 11 19 | 704 | 0.1+ | 0.3− | 2006 11 27 | 704 | 0.4+ | 0.4− |
| 2003 12 22 | 704 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.8+ | 0.0 |
| 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.1− | 2006 11 27 | 704 | 0.2+ | 0.1− |
| 2006 10 04 | G96 | 0.6+ | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.3+ | 2006 11 27 | 704 | 0.2− | 0.1+ |
| 2006 10 04 | G96 | 0.5+ | 0.0 | 2006 11 19 | 704 | 0.1− | 0.3− | | | | |

**2006 VR$_{29}$ = 2001 NE$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 23.21219 | | (2000.0) | | | |
| $n$ | 0.22815003 | $\omega$ | 317.27860 | | +0.98374390 | −0.16136398 |
| $a$ | 2.6525019 | $\Omega$ | 52.17559 | | +0.17953107 | +0.87380461 |
| $e$ | 0.2148723 | $i$ | 5.72544 | | +0.00406728 | +0.45872342 |
| $P$ | 4.32 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.2− | 0.4+ | 2006 10 29 | G96 | 0.5− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.2− |
| 2001 07 13 | 644 | 0.3− | 0.4+ | 2006 10 29 | G96 | 0.5− | 0.6− | 2006 11 15 | 703 | 0.5− | 0.1+ |
| 2001 07 13 | 644 | 0.4− | 0.2− | 2006 10 29 | G96 | 0.3+ | 0.3− | 2006 11 15 | 703 | 0.3+ | 0.3− |
| 2001 07 20 | 644 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.5− | 0.4− | 2006 11 15 | 703 | 0.1− | 0.4− |
| 2001 07 20 | 644 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2001 07 20 | 644 | 0.6+ | 0.3− | 2006 11 10 | 691 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.3− | 1.2− |
| 2006 09 27 | G96 | 0.4+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.3+ | 0.1− | 2006 11 22 | 691 | 0.5− | 0.7+ |

**2006 VU$_{29}$ = 1995 WP$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 340.10245 | | (2000.0) | | | |
| $n$ | 0.18060885 | $\omega$ | 17.38888 | | +0.22093357 | −0.96283251 |
| $a$ | 3.0996313 | $\Omega$ | 60.09361 | | +0.87215103 | +0.12374232 |
| $e$ | 0.0927130 | $i$ | 10.32577 | | +0.43650996 | +0.24008624 |
| $P$ | 5.46 | $H$ | 15.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 20 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.5+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.6+ |
| 1995 11 20 | 691 | 0.0 | 0.0 | 2006 10 28 | G96 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.3− |
| 1995 11 20 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.7+ |
| 1995 11 27 | 691 | 0.1− | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.4− |
| 1995 11 27 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.9+ |
| 1995 11 27 | 691 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2006 09 28 | G96 | 0.6− | 0.7− | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.4− | 0.5+ |
| 2006 09 28 | G96 | 0.5+ | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.7+ |
| 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 15 | 703 | 0.5− | 0.4− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 15 | 703 | 0.8− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2006 10 28 | G96 | 0.4− | 0.2− | 2006 11 15 | 703 | 0.5− | 1.1− | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2006 10 28 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.2− | 0.0 | | | | |

**2006 VX$_{29}$ = 2004 GT$_{1}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 273.57807 | | (2000.0) | | | |
| $n$ | 0.25794730 | $\omega$ | 142.94628 | | −0.86895323 | −0.49487173 |
| $a$ | 2.4440799 | $\Omega$ | 7.39698 | | +0.44482010 | −0.78517469 |
| $e$ | 0.1372100 | $i$ | 2.10029 | | +0.21692250 | −0.37229381 |
| $P$ | 3.82 | $H$ | 16.8 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 28 | 691 | 0.1− | 0.5+ | 2004 04 12 | 699 | 0.0 | 0.5+ | 2006 10 20 | G96 | 0.2− | 0.0 |
| 1994 09 28 | 691 | 0.5− | 0.3+ | 2004 04 12 | 699 | (0.3+ | 1.6+) | 2006 11 01 | G96 | 0.1+ | 0.4− |
| 1994 09 28 | 691 | 0.1+ | 0.2+ | 2004 05 19 | 691 | 0.0 | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.1− |
| 2000 03 11 | 699 | 0.5+ | 0.2− | 2004 05 19 | 691 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.4− | 0.3− |
| 2000 03 11 | 699 | 0.3− | 0.0 | 2004 05 19 | 691 | 0.5+ | 0.3+ | 2006 11 01 | G96 | 0.2+ | 0.6− |
| 2000 03 11 | 699 | 0.2− | 0.5+ | 2006 09 28 | G96 | (1.7− | 0.4+) | 2006 11 10 | 691 | 0.1− | 0.0 |
| 2000 03 11 | 699 | 0.2+ | 0.2+ | 2006 09 28 | G96 | 0.3− | 0.0 | 2006 11 10 | 691 | 0.4− | 0.2− |
| 2004 04 11 | 703 | 0.7− | 0.2+ | 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.4+ |
| 2004 04 11 | 703 | 0.6+ | 1.4+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2004 04 11 | 703 | (2.2− | 1.6+) | 2006 10 20 | G96 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.2+ | 0.3+ |
| 2004 04 11 | 703 | 0.3+ | 1.0+ | 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2004 04 12 | 644 | 0.1+ | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2004 04 12 | 644 | 0.5+ | 0.6+ | 2006 10 20 | G96 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2004 04 12 | 644 | 0.3+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1+ | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2004 04 12 | 699 | 0.2+ | 0.5− | 2006 10 20 | G96 | 0.1− | 0.1+ | | | | |
| 2004 04 12 | 699 | 0.1+ | 1.0− | 2006 10 20 | G96 | 0.1+ | 0.3+ | | | | |

**2006 VB$_{30}$ = 2001 YL$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 291.79919 | | (2000.0) | | | |
| $n$ | 0.17654395 | $\omega$ | 74.18301 | | −0.60463206 | −0.69023122 |
| $a$ | 3.1470296 | $\Omega$ | 60.04661 | | +0.43272351 | −0.70363165 |
| $e$ | 0.1059013 | $i$ | 27.30779 | | +0.66870804 | −0.16877017 |
| $P$ | 5.58 | $H$ | 15.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 27 | 645 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.4+ |
| 2000 11 27 | 645 | 0.1− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.6− | 0.4+ |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.3+ | 0.0 | 2006 11 14 | 691 | 0.2− | 0.2+ |
| 2001 12 18 | 645 | 0.0 | 0.1− | 2006 10 19 | G96 | 0.5+ | 0.4+ | 2006 11 14 | 691 | 0.2− | 0.4+ |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 14 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 645 | 0.1− | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.6− | 0.4+ |
| 2003 05 27 | 691 | 1.1+ | 1.2+ | 2006 10 29 | G96 | 0.3− | 0.4+ | 2006 11 19 | 704 | 1.0+ | 0.5+ |
| 2003 05 27 | 691 | (1.9+ | 1.3+) | 2006 10 29 | G96 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.4+ | 0.0 |
| 2003 05 27 | 691 | 0.9+ | 0.9+ | 2006 10 29 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | (2.1+ | 0.3+) |
| 2006 09 28 | G96 | 0.3− | 0.2+ | 2006 10 29 | G96 | 1.2− | 1.0− | | | | |
| 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 10 | 691 | 0.3− | 0.3+ | | | | |

**2006 VH$_{30}$ = 2001 YG$_{134}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 75.13899 | | (2000.0) | | | |
| $n$ | 0.18467293 | $\omega$ | 77.77217 | | +0.85791833 | +0.49692557 |
| $a$ | 3.0539872 | $\Omega$ | 252.30529 | | −0.50836442 | +0.78419513 |
| $e$ | 0.0639857 | $i$ | 7.87569 | | −0.07444299 | +0.37162208 |
| $P$ | 5.34 | $H$ | 15.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.1− | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.9+ |
| 2001 12 17 | 704 | 0.4− | 0.2+ | 2006 11 01 | G96 | 0.4+ | 1.2− | 2006 11 21 | 704 | 0.9− | 1.2+ |
| 2001 12 17 | 704 | 0.7− | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 22 | 691 | 0.5− | 0.1+ |
| 2001 12 17 | 704 | 0.2− | 0.6+ | 2006 11 10 | 691 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 12 17 | 704 | 0.5− | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.3− | 0.1+ |
| 2001 12 23 | 704 | 0.5+ | 0.6− | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.3− |
| 2001 12 23 | 704 | 0.6+ | 0.9− | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2001 12 23 | 704 | 0.0 | 0.9− | 2006 11 14 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.8+ |
| 2001 12 23 | 704 | 0.7+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2005 08 29 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.8− | 0.4− | 2006 12 01 | 691 | 0.2− | 0.2− |
| 2005 08 29 | 644 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.9+ | 1.0+ | 2006 12 01 | 704 | 0.6+ | 0.1− |
| 2005 08 29 | 644 | 0.0 | 0.3− | 2006 11 15 | 703 | (0.2+ | 1.5−) | 2006 12 01 | 691 | 0.5+ | 0.2− |
| 2006 10 20 | G96 | 0.2− | 0.6− | 2006 11 15 | 703 | 0.1− | 0.2− | 2006 12 01 | 704 | 0.8− | 0.2+ |
| 2006 10 20 | G96 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 1.3− | 0.0 |
| 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.3+ |
| 2006 10 20 | G96 | 0.6− | 0.6− | 2006 11 18 | 691 | 0.1− | 0.2− | | | | |
| 2006 11 01 | G96 | 0.6+ | 0.8− | 2006 11 21 | 704 | 1.2+ | 0.7− | | | | |

## 2006 $VU_{30}$ = 2000 $TY_{20}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.98101 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17853885 | $\omega$ | 299.19934 | | +0.96366924 | +0.22405531 | |
| $a$ | 3.1235435 | $\Omega$ | 48.26320 | | −0.12128821 | +0.85208136 | |
| $e$ | 0.2108504 | $i$ | 11.23593 | | −0.23797221 | +0.47302915 | |
| $P$ | 5.52 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 704 | 0.2+ | 0.1+ | 2006 10 20 | G96 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.5− |
| 2000 10 01 | 704 | 0.4− | 0.3+ | 2006 10 20 | G96 | 0.1− | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.4+ |
| 2000 10 01 | 704 | 0.7− | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.4+ |
| 2000 10 05 | 704 | 0.1+ | 1.0+ | 2006 11 01 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.2+ | 0.2+ |
| 2000 10 05 | 704 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2000 10 05 | 704 | 0.5− | 0.7+ | 2006 11 01 | G96 | 0.4− | 0.5− | 2006 11 17 | 691 | 0.1− | 0.4+ |
| 2004 05 21 | 691 | 0.3+ | 0.4+ | 2006 11 01 | G96 | 0.3− | 0.5− | 2006 11 22 | 704 | 1.0+ | 1.4+ |
| 2004 05 21 | 691 | 0.3+ | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 11 22 | 704 | 0.1− | 0.5− |
| 2004 05 21 | 691 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.5− |
| 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 10 | 691 | 0.4− | 0.2+ | 2006 11 27 | 704 | 0.5+ | 0.2+ |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.1− | 0.2+ | 2006 11 27 | 704 | 0.2− | 0.7− |
| 2006 09 27 | G96 | 0.1− | 0.2− | 2006 11 13 | 691 | 0.0 | 0.2− | 2006 11 27 | 704 | 0.3+ | 0.5− |
| 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 13 | 691 | 0.0 | 0.0 | | | | |
| 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.7+ | | | | |

## 2006 $VE_{31}$ = 2000 $CS_{124}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.11193 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26806014 | $\omega$ | 80.20503 | | −0.11988414 | −0.99272080 | |
| $a$ | 2.3822164 | $\Omega$ | 16.69358 | | +0.89439085 | −0.11304099 | |
| $e$ | 0.1703427 | $i$ | 2.30274 | | +0.43092087 | −0.04155901 | |
| $P$ | 3.68 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 03 | 704 | 0.7− | 0.4− | 2006 11 01 | G96 | 0.8+ | 0.3+ | 2006 11 21 | 704 | 1.2− | 0.7− |
| 2000 02 03 | 704 | 0.6+ | 0.7− | 2006 11 01 | G96 | 0.3− | 0.6− | 2006 11 22 | 691 | 0.3+ | 0.0 |
| 2000 02 03 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.4+ | 0.2− |
| 2000 02 03 | 704 | 0.4+ | 0.0 | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.2− | 0.2− |
| 2000 02 03 | 704 | 0.6− | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.3+ | 0.1− |
| 2000 02 11 | 704 | 0.1+ | 0.9+ | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.6+ |
| 2000 02 11 | 704 | 0.0 | 0.4+ | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.3+ | 0.1− |
| 2000 02 11 | 704 | 0.9+ | 0.1+ | 2006 11 14 | 691 | 0.7− | 1.0+ | 2006 11 22 | 704 | 0.3+ | 0.2+ |
| 2000 02 11 | 704 | 0.3− | 0.1− | 2006 11 15 | 704 | 0.3− | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.5− |
| 2002 10 31 | 645 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.4+ | 0.3− | 2006 11 27 | 704 | 0.8+ | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.1− | 0.0 | 2006 11 27 | 704 | 0.4+ | 0.0 |
| 2002 11 08 | 645 | 0.1− | 0.1+ | 2006 11 16 | 704 | 1.0− | 0.6+ | 2006 11 27 | 704 | 0.5+ | 0.2+ |
| 2002 11 08 | 645 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.0 | 0.8+ |
| 2004 04 20 | 691 | 0.3+ | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.9− | 2006 11 28 | 704 | 1.5− | 0.9+ |
| 2004 04 20 | 691 | 0.3+ | 0.6+ | 2006 11 16 | 704 | 0.4− | 0.4− | 2006 11 28 | 704 | 0.4− | 0.4+ |
| 2004 04 20 | 691 | 0.1+ | 0.6+ | 2006 11 18 | 691 | 0.2+ | 0.2− | 2006 11 28 | 704 | 0.7+ | 0.5− |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.3+ | 0.2− | 2006 12 01 | 704 | 0.7+ | 1.0+ |
| 2006 09 27 | G96 | 0.7− | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2− | 2006 12 01 | 704 | 1.0+ | 0.1+ |
| 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | (1.5− | 1.6+) | 2006 12 01 | 704 | 0.1− | 0.2+ |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 1.0− | 0.4+ | 2006 12 01 | 704 | 0.5+ | 1.1− |
| 2006 11 01 | G96 | (1.5− | 0.6+) | 2006 11 21 | 704 | 1.3− | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.6− |

## 2006 $VF_{31}$ = 2000 $VH_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.41549 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17090922 | $\omega$ | 317.17603 | | +0.99541664 | +0.07868684 | |
| $a$ | 3.2158248 | $\Omega$ | 38.41128 | | −0.04506381 | +0.88721876 | |
| $e$ | 0.1797407 | $i$ | 5.01866 | | −0.08435030 | +0.45458910 | |
| $P$ | 5.77 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 01 | 704 | 0.2+ | 0.2+ | 2005 07 29 | E12 | 0.3+ | 0.5+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2000 11 01 | 704 | 0.5− | 0.5− | 2005 07 29 | E12 | 0.6+ | 0.5+ | 2006 11 10 | 691 | 0.3− | 0.3− |
| 2000 11 01 | 704 | 0.4+ | 0.0 | 2005 08 27 | E12 | 0.1− | 1.0− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2000 11 01 | 704 | 0.3− | 0.1+ | 2005 08 27 | E12 | 0.2− | 1.0− | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 2000 11 02 | 704 | 0.1− | 0.5− | 2005 08 27 | E12 | 0.6+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2000 11 02 | 704 | 0.0 | 0.5− | 2005 08 27 | E12 | 0.1+ | 0.7− | 2006 11 17 | 644 | 0.7− | 0.5+ |
| 2000 11 02 | 704 | 0.3+ | 0.1− | 2006 09 27 | 291 | 0.1− | 0.2− | 2006 11 17 | 644 | 0.6− | 0.1+ |
| 2000 11 02 | 704 | 0.4+ | 0.1+ | 2006 09 27 | 291 | 0.3− | 0.1− | 2006 11 17 | 644 | 0.5− | 0.2+ |
| 2000 11 18 | 699 | 1.1− | 0.1+ | 2006 09 27 | 291 | 0.3− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 2000 11 18 | 699 | 0.6+ | 1.4+ | 2006 09 27 | G96 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2000 11 18 | 699 | 0.4+ | 1.3+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.0 | 0.0 |
| 2000 11 18 | 699 | 1.8− | 1.7+ | 2006 09 27 | G96 | 0.4− | 0.1− | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2002 02 08 | 645 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2002 02 08 | 645 | 0.1+ | 0.0 | 2006 10 20 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.0 | 0.1− |
| 2004 04 28 | 691 | 0.3+ | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2004 04 28 | 691 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | (1.6+ | 0.2+) |
| 2004 04 28 | 691 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.2+ | 0.0 |
| 2005 07 17 | 644 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.3− | 0.5− | 2006 11 22 | 704 | 1.2+ | 0.8+ |
| 2005 07 17 | 644 | 0.3− | 0.4+ | 2006 11 01 | G96 | 0.3− | 0.4− | 2006 11 27 | 704 | 1.1+ | 0.3+ |
| 2005 07 17 | 644 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 27 | 704 | 0.1+ | 0.3− |
| 2005 07 29 | E12 | 0.3+ | 0.1+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 27 | 704 | 0.3+ | 0.6+ |
| 2005 07 29 | E12 | 1.3− | 0.8+ | 2006 11 10 | 691 | 0.2− | 0.1+ | | | | |

## 2006 $VG_{31}$ = 2005 $PQ_4$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 12.78495 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23794840 | $\omega$ | 343.26050 | | +0.77813360 | −0.59120505 | |
| $a$ | 2.5791753 | $\Omega$ | 54.90876 | | +0.60188125 | +0.60531152 | |
| $e$ | 0.0415208 | $i$ | 15.02323 | | +0.17957467 | +0.53298644 | |
| $P$ | 4.14 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 27 | 699 | 0.6− | 1.1+ | 2004 03 29 | 691 | 0.1+ | 0.1+ | 2006 11 10 | 691 | 0.1+ | 0.1+ |
| 2000 04 27 | 699 | 1.1+ | 0.8+ | 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 2000 04 27 | 699 | 0.9+ | 0.8+ | 2005 08 07 | E12 | 0.5− | 0.4+ | 2006 11 13 | 691 | 0.2− | 0.2+ |
| 2000 04 27 | 699 | 1.0+ | 0.6+ | 2005 08 07 | E12 | 0.6− | 0.5+ | 2006 11 13 | 691 | 0.3− | 0.2+ |
| 2001 07 22 | 644 | 0.1− | 0.5+ | 2005 08 07 | E12 | 0.6− | 0.5+ | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 2001 07 22 | 644 | 0.0 | 0.3+ | 2005 08 07 | E12 | 0.8+ | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 07 22 | 644 | 0.3− | 0.0 | 2005 08 08 | E12 | 0.3+ | 0.4+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2004 03 29 | 703 | 0.7− | 0.5+ | 2005 08 08 | E12 | 0.3− | 0.7+ | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2004 03 29 | 703 | 0.5+ | 0.1+ | 2005 08 08 | E12 | 0.1+ | 0.5+ | 2006 11 22 | 704 | (0.7+ | 2.4+) |
| 2004 03 29 | 703 | 0.0 | 0.6− | 2005 08 08 | E12 | 0.1− | 0.8+ | 2006 11 22 | 704 | 0.1− | 1.2+ |
| 2004 03 29 | 703 | 0.2− | 0.6+ | 2006 11 10 | 691 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.9+ | 0.4− |
| 2004 03 29 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.5− | 0.9+ |

**2006 VU$_{31}$ = 1999 TH$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.03231 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28689368 | $\omega$ | 101.09638 | | +0.98490068 | | −0.14570793 |
| $a$ | 2.2767852 | $\Omega$ | 267.33077 | | +0.09811112 | | +0.91470472 |
| $e$ | 0.1990891 | $i$ | 5.37010 | | +0.14263541 | | +0.37694095 |
| $P$ | 3.44 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 10 12 | 704 | 0.4+ | 0.3+ | 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.6+ |
| 1999 10 12 | 704 | 0.3− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.1+ | 0.4+ |
| 1999 10 12 | 704 | 0.3− | 0.6+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.1+ | 1.1+ |
| 1999 10 12 | 704 | 0.2− | 0.7+ | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 1999 10 12 | 704 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.1+ |
| 1999 10 13 | 704 | 0.5− | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.2− | 2006 11 17 | 691 | 0.1− | 0.0 |
| 1999 10 13 | 704 | 0.7+ | 0.1− | 2006 11 14 | 703 | 0.4− | 0.6− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 1999 10 13 | 704 | 0.2− | 0.7− | 2006 11 14 | 703 | 0.3+ | 0.3− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 1999 10 13 | 704 | 0.5+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.6− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 1999 10 13 | 704 | 0.3+ | 1.7− | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 1999 10 13 | 704 | 0.1+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 1.0− | 1.3+ |
| 1999 10 13 | 704 | 0.6− | 0.9− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.0 | 0.3− |
| 1999 10 13 | 704 | 0.1− | 0.6+ | 2006 11 15 | 691 | 0.7+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.3+ |
| 2006 10 27 | 703 | 0.4− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 1.1− | 0.1− |
| 2006 10 27 | 703 | 0.2+ | 0.5− | 2006 11 15 | 704 | (0.1− | 1.6+) | 2006 11 22 | 704 | 1.1+ | 0.0 |
| 2006 10 27 | 703 | 0.1− | 0.3− | 2006 11 15 | 704 | 0.3− | 1.1+ | 2006 11 22 | 704 | 0.6+ | 0.5− |
| 2006 10 27 | 703 | 0.4+ | 0.5+ | 2006 11 15 | 704 | 0.5+ | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.4− |
| 2006 11 09 | 644 | 0.2− | 0.1− | 2006 11 15 | 704 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.3− |
| 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.3− | 2006 11 22 | 704 | 0.4− | 0.7− |

**2006 VW$_{31}$ = 2004 JX$_{45}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.44895 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23114649 | $\omega$ | 26.63505 | | −0.54966678 | | −0.83371454 |
| $a$ | 2.6295283 | $\Omega$ | 96.75228 | | +0.75665884 | | −0.52365097 |
| $e$ | 0.0350316 | $i$ | 3.04705 | | +0.35402519 | | −0.17524190 |
| $P$ | 4.26 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.2− | 0.7+ | 2006 10 21 | G96 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.0 | 0.2− |
| 2001 08 21 | 807 | 0.3− | 0.6+ | 2006 10 21 | G96 | 0.0 | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2004 04 21 | 599 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 04 21 | 599 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 2004 04 21 | 599 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2004 04 21 | 599 | 0.2− | 0.5+ | 2006 11 12 | 703 | (1.8+ | 0.4+) | 2006 11 23 | 691 | 0.1− | 0.3+ |
| 2004 05 13 | 691 | 0.1+ | 0.3+ | 2006 11 12 | 703 | 0.5+ | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2004 05 13 | 691 | 0.3+ | 0.0 | 2006 11 12 | 703 | 0.3+ | 0.7+ | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2004 05 13 | 691 | 0.1+ | 0.1− | 2006 11 12 | 703 | (0.2+ | 1.6+) | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2004 05 21 | 691 | 0.2− | 0.2+ | 2006 11 13 | 291 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.1− | 0.4− |
| 2004 05 21 | 691 | 0.1− | 0.3+ | 2006 11 13 | 291 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.5− | 0.9+ |
| 2004 05 21 | 691 | 0.2− | 0.1− | 2006 11 13 | 291 | 0.3− | 0.0 | 2006 11 27 | 703 | 0.8+ | 0.3+ |
| 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 13 | 291 | 0.3− | 0.0 | 2006 11 27 | 703 | 1.1− | 0.2− |
| 2006 09 28 | G96 | 0.4− | 0.4− | 2006 11 13 | 291 | 0.2− | 0.1− | 2006 12 01 | 691 | 0.5+ | 0.2+ |
| 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 13 | 291 | 0.4− | 0.3+ | 2006 12 01 | 691 | 0.3+ | 0.1− |
| 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 15 | 691 | 0.3+ | 0.1+ | 2006 12 01 | 691 | 0.1+ | 0.2− |
| 2006 10 21 | G96 | 0.4+ | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.0 | | | | |
| 2006 10 21 | G96 | 0.4+ | 0.7− | 2006 11 15 | 691 | 0.1− | 0.2+ | | | | |

**2006 VG$_{34}$ = 2001 SB$_{85}$ = 2005 NE$_{52}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.07726 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22041372 | $\omega$ | 207.95382 | | +0.46391484 | | −0.88532855 |
| $a$ | 2.7142112 | $\Omega$ | 214.43236 | | +0.82273556 | | +0.44365778 |
| $e$ | 0.1113511 | $i$ | 3.16791 | | +0.32846495 | | +0.13914428 |
| $P$ | 4.47 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 704 | 0.4+ | 0.4+ | 2006 10 12 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.7− |
| 2001 09 20 | 704 | 0.2− | 0.2− | 2006 10 12 | 691 | 0.4+ | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.2+ |
| 2001 09 20 | 704 | 0.4− | 0.4+ | 2006 10 12 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.5− | 0.0 |
| 2001 09 20 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.6+ | 2006 11 19 | 704 | 1.3− | 0.9+ |
| 2001 09 20 | 704 | 0.3+ | 0.8+ | 2006 11 11 | 703 | 0.3− | 0.2− | 2006 11 19 | 704 | 0.4− | 0.7− |
| 2001 09 22 | 704 | 0.3− | 0.1− | 2006 11 11 | 703 | (1.0− | 1.7−) | 2006 11 19 | 704 | 0.4− | 0.4+ |
| 2001 09 22 | 704 | 0.5− | 0.4+ | 2006 11 11 | 703 | 1.3− | 1.3− | 2006 11 21 | 704 | 0.9+ | 1.0− |
| 2001 09 22 | 704 | 0.3− | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.5− | 2006 11 21 | 704 | 0.7+ | 0.6− |
| 2005 07 08 | 691 | 0.1− | 0.3− | 2006 11 12 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.5− |
| 2005 07 08 | 691 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | (2.7− | 1.8−) |
| 2005 07 08 | 691 | 0.3+ | 0.4− | 2006 11 12 | G96 | 1.0− | 0.2+ | 2006 11 21 | 704 | 0.6− | 1.5− |
| 2005 07 11 | G96 | 1.3− | 0.2+ | 2006 11 14 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2005 07 11 | G96 | 0.0 | 0.4− | 2006 11 14 | 691 | 0.2+ | 0.2+ | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2005 07 11 | G96 | 0.3− | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 11 27 | G96 | 0.5+ | 0.1− |
| 2005 07 11 | G96 | (2.1− | 0.3−) | 2006 11 17 | 703 | 0.7+ | 0.8− | 2006 11 27 | G96 | 0.0 | 0.1− |

**2006 VJ$_{34}$ = 2005 JV$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.93352 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29838324 | $\omega$ | 146.71749 | | +0.99433261 | | +0.09995647 |
| $a$ | 2.2179569 | $\Omega$ | 207.61404 | | −0.10631202 | | +0.93689788 |
| $e$ | 0.2156325 | $i$ | 4.48088 | | +0.00063738 | | +0.33500907 |
| $P$ | 3.30 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 04 | 568 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.7+ |
| 2005 05 04 | 568 | 0.0 | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 17 | 704 | (1.4+ | 2.9+) |
| 2005 05 04 | 568 | 0.1− | 0.2+ | 2006 11 11 | 703 | 0.8− | 0.6− | 2006 11 17 | 703 | 0.2+ | 0.2− |
| 2005 05 05 | 568 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.8+ | 0.7− | 2006 11 17 | 703 | 0.0 | 0.0 |
| 2006 09 25 | G96 | 0.3+ | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.7− | 0.6− |
| 2006 09 25 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | (1.7+ | 1.6−) | 2006 11 17 | 703 | 0.3− | 0.5− |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 14 | 704 | 0.4+ | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.6− |
| 2006 09 25 | G96 | 0.5+ | 0.3− | 2006 11 14 | 704 | 0.9+ | 0.2+ | 2006 11 20 | 704 | 0.1− | 0.3− |
| 2006 11 01 | 691 | 1.2− | 0.7+ | 2006 11 14 | 704 | 0.7+ | 0.2+ | 2006 11 20 | 704 | 0.6− | 0.3+ |
| 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.4− | 2006 11 20 | 704 | 0.0 | 1.0+ |
| 2006 11 01 | 691 | 0.3+ | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 1.1+ | 0.4− |
| 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 15 | G96 | 0.4+ | 0.2+ | 2006 11 23 | G96 | 0.0 | 0.3− |
| 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 15 | G96 | 0.1+ | 0.4− | 2006 11 23 | G96 | 0.1+ | 0.4− |
| 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.6− | 0.3+ | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.0 | 1.1+ | 2006 11 23 | G96 | 0.3+ | 0.2− |

**2006 VK$_{34}$ = 2001 YV$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.14461 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18310128 | $\omega$ | 329.15894 | | +0.64371175 | | −0.76207164 |
| $a$ | 3.0714383 | $\Omega$ | 80.67677 | | +0.71576855 | | +0.56725613 |
| $e$ | 0.0773462 | $i$ | 4.06032 | | +0.27075924 | | +0.31219753 |
| $P$ | 5.38 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2− | 0.2+ | 2005 07 04 | 644 | 0.3− | 0.6+ | 2006 11 11 | 703 | 0.7+ | 0.8− |
| 1995 10 15 | 691 | 0.0 | 0.4+ | 2005 07 04 | 644 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.9+ | 0.9− |
| 1995 10 15 | 691 | 0.2− | 0.2+ | 2005 07 04 | 644 | 0.5− | 0.3+ | 2006 11 11 | 703 | 0.3+ | 0.8− |
| 2001 12 18 | 704 | 0.1+ | 0.1− | 2005 07 27 | 644 | 0.5+ | 0.3+ | 2006 11 14 | 691 | 0.1+ | 0.1+ |
| 2001 12 18 | 704 | 0.3+ | 0.3+ | 2005 07 27 | 644 | 0.1+ | 0.5+ | 2006 11 14 | 691 | 0.2− | 0.1− |
| 2001 12 18 | 704 | 0.2− | 0.5− | 2005 07 27 | 644 | 0.4− | 0.4+ | 2006 11 14 | 691 | 0.1− | 0.1+ |
| 2001 12 18 | 704 | 0.4− | 0.7+ | 2005 09 01 | 644 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.3− | 1.4+ |
| 2001 12 19 | 704 | 0.2+ | 1.0+ | 2005 09 01 | 644 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2001 12 19 | 704 | 0.9+ | 1.3+ | 2005 09 01 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 1.2− | 0.7− |
| 2001 12 19 | 704 | 0.3+ | 0.5+ | 2005 11 06 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.9− |
| 2001 12 19 | 704 | (0.4+ | 1.6+) | 2005 11 06 | G96 | 0.2− | 0.5+ | 2006 11 21 | 704 | 1.1+ | 0.3+ |
| 2003 03 11 | 644 | 0.1+ | 0.5+ | 2005 11 06 | G96 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.1− |
| 2003 03 11 | 644 | 0.5− | 1.1+ | 2005 11 06 | G96 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.4+ | 0.1+ |
| 2003 03 11 | 644 | 0.4+ | 0.8+ | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2003 03 26 | 599 | 0.6− | 0.6+ | 2006 10 19 | 695 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.6+ | 0.3+ |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 599 | 1.3+ | 0.7− | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 22 | 704 | 0.6− | 0.5− |
| 2003 03 26 | 599 | (1.7− | 0.5+) | 2006 10 19 | G96 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.1− | 0.2+ |
| 2003 03 26 | 599 | 1.0+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 22 | 704 | 1.3− | 1.2+ |
| 2003 03 27 | 599 | 0.6− | 1.2+ | 2006 10 20 | 695 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.0 | 0.3+ |
| 2003 03 27 | 599 | 0.0 | 0.9+ | 2006 10 20 | 695 | 0.1− | 0.0 | | | | |
| 2003 03 27 | 599 | 0.2− | 0.9− | 2006 11 11 | 703 | 0.3+ | 0.8− | | | | |

**2006 VP$_{34}$ = 2005 GM$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.49734 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29939054 | $\omega$ | 348.91840 | | +0.89024164 | | +0.45538496 |
| $a$ | 2.2129792 | $\Omega$ | 343.98109 | | −0.41516513 | | +0.80247299 |
| $e$ | 0.1843768 | $i$ | 2.01731 | | −0.18737059 | | +0.38556664 |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | 691 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2005 04 11 | 691 | 0.1− | 0.1− | 2006 10 20 | G96 | 0.2− | 0.0 | 2006 11 19 | 704 | 0.5− | 0.5+ |
| 2005 04 11 | 691 | 0.0 | 0.4− | 2006 10 20 | G96 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.2− | 0.1+ |
| 2005 04 15 | 691 | 0.1+ | 0.4+ | 2006 11 11 | 703 | (1.7− | 0.7+) | 2006 11 22 | 704 | 1.2+ | 0.2− |
| 2005 04 15 | 691 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.1− | 0.7+ | 2006 11 22 | 704 | 0.7+ | 0.7− |
| 2005 04 15 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.3− | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2006 09 28 | G96 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.1− | 1.0+ | 2006 11 22 | 704 | 0.4+ | 0.7− |
| 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 25 | 691 | 0.6− | 0.2− |
| 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.2+ | 0.0 | 2006 11 25 | 691 | 0.3− | 0.2+ |
| 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.2− | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2006 10 20 | G96 | 0.0 | 0.3− | 2006 11 19 | 704 | (0.5− | 1.6−) | | | | |

**2006 VR$_{35}$ = 1999 XL$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 196.11861 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27965538 | $\omega$ | 334.38992 | | −0.85789252 | | +0.51313811 |
| $a$ | 2.3159042 | $\Omega$ | 236.50879 | | −0.46576649 | | −0.79849498 |
| $e$ | 0.1571610 | $i$ | 1.83056 | | −0.21698386 | | −0.31479366 |
| $P$ | 3.52 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.1− | 0.1− | 2005 05 19 | G96 | 0.4+ | 0.6− | 2006 11 14 | 691 | 0.1− | 0.5+ |
| 1999 12 07 | 691 | 0.0 | 0.3− | 2005 07 05 | G96 | 0.2− | 0.0 | 2006 11 14 | 691 | 0.4− | 0.6+ |
| 1999 12 07 | 691 | 0.1+ | 0.0 | 2005 07 05 | G96 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2+ |
| 1999 12 13 | 691 | 0.2+ | 0.2− | 2005 07 05 | G96 | 0.1− | 0.2+ | 2006 11 16 | 703 | (1.7+ | 1.4+) |
| 1999 12 13 | 691 | 0.1− | 0.3− | 2005 07 05 | G96 | 0.1+ | 0.1− | 2006 11 16 | 703 | (0.9+ | 2.4+) |
| 1999 12 13 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 16 | 703 | 0.6− | 1.0+ |
| 2001 05 30 | 691 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.5+ | 0.3− | 2006 11 16 | 703 | 0.2− | 1.3+ |
| 2001 05 30 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.4+ | 0.2− |
| 2001 05 30 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2005 05 19 | G96 | 0.8− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 11 27 | G96 | 0.3+ | 0.1+ |
| 2005 05 19 | G96 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.6− | 2006 11 27 | G96 | 0.0 | 0.1− |
| 2005 05 19 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.1− | 0.2− | | | | |

**2006 VU$_{35}$ = 2004 CP$_{68}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.09597 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28518689 | $\omega$ | 35.66425 | | −0.03869668 | | −0.99791134 |
| $a$ | 2.2858603 | $\Omega$ | 56.60707 | | +0.90182774 | | −0.05717098 |
| $e$ | 0.1023243 | $i$ | 3.55191 | | +0.43035949 | | +0.03007374 |
| $P$ | 3.46 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 09 28 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2004 02 11 | 644 | 0.3+ | 0.3+ | 2006 09 28 | G96 | 0.4− | 0.6− | 2006 11 11 | G96 | 0.3+ | 0.5− |
| 2004 02 11 | 644 | 0.2+ | 0.3+ | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 14 | 691 | 0.6− | 0.3+ |
| 2004 02 13 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 14 | 691 | 0.2− | 0.1− |
| 2004 02 13 | 691 | 0.1− | 0.2− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.0 |
| 2004 02 13 | 691 | 0.2+ | 0.3− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 16 | 703 | 0.8+ | 0.3− |
| 2004 02 16 | 704 | 0.3+ | 0.3− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 703 | 0.2+ | 0.4+ |
| 2004 02 16 | 704 | 0.4− | 1.2+ | 2006 11 11 | G96 | 0.6+ | 0.5− | 2006 11 16 | 703 | 1.2+ | 0.3+ |
| 2004 02 16 | 704 | 0.3− | 0.7+ | 2006 11 11 | G96 | 0.3+ | 0.5− | 2006 11 16 | 703 | 0.6+ | 0.2− |

**2006 VM$_{36}$ = 2001 XJ$_{210}$ = 2005 NH$_{46}$ = 2005 XZ$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 323.94891 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18373491 | $\omega$ | 309.98245 | | +0.12659050 | | −0.98906211 |
| $a$ | 3.0643728 | $\Omega$ | 132.57224 | | +0.93855937 | | +0.09472565 |
| $e$ | 0.1502080 | $i$ | 5.90034 | | +0.32106253 | | +0.11306280 |
| $P$ | 5.36 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.1− | 0.0 | 2005 07 11 | 691 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 2000 09 03 | 645 | 0.1− | 0.0 | 2005 07 11 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.4− | 0.8− |
| 2001 12 11 | 704 | 0.6+ | 0.0 | 2005 12 01 | 695 | 0.0 | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.5− |
| 2001 12 11 | 704 | 0.2+ | 0.3− | 2005 12 01 | 695 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.1+ |
| 2001 12 11 | 704 | 0.8− | 0.5+ | 2005 12 02 | 695 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.2+ | 0.4− |
| 2001 12 11 | 704 | 1.1+ | 0.2− | 2006 10 12 | 644 | 0.2− | 0.4+ | 2006 11 11 | 703 | 0.3− | 0.8− |
| 2001 12 18 | 704 | 0.5+ | 0.3+ | 2006 10 12 | 644 | 0.2+ | 0.2+ | 2006 11 14 | 704 | 0.1+ | 0.0 |
| 2001 12 18 | 704 | 0.0 | 0.6− | 2006 10 12 | 644 | 0.0 | 0.6+ | 2006 11 14 | 704 | 0.1− | 0.5+ |
| 2001 12 18 | 704 | 0.8+ | 0.3− | 2006 10 22 | 703 | 0.6− | 0.7− | 2006 11 14 | 704 | (0.0 | 1.7+) |
| 2003 03 26 | 691 | 0.3− | 0.2− | 2006 10 22 | 703 | 0.0 | 0.5− | 2006 11 14 | 704 | 0.2− | 1.0+ |
| 2003 03 26 | 691 | 0.7− | 0.0 | 2006 10 22 | 703 | 0.5+ | 0.6+ | 2006 11 19 | 703 | 0.0 | 0.3+ |
| 2003 03 26 | 691 | 0.3− | 0.5− | 2006 10 22 | 703 | 0.5− | 0.4+ | 2006 11 19 | 703 | (1.6− | 0.7+) |
| 2003 04 09 | 691 | 0.1+ | 0.5+ | 2006 11 01 | 703 | (0.8− | 1.7+) | 2006 11 19 | 703 | 0.8+ | 1.1− |
| 2003 04 09 | 691 | 0.5+ | 0.2+ | 2006 11 01 | 703 | 1.2+ | 0.9+ | 2006 11 19 | 703 | 1.4− | 0.2+ |
| 2003 04 09 | 691 | 0.5+ | 1.0+ | 2006 11 01 | 703 | (0.0 | 2.7+) | 2006 11 23 | G96 | 0.4− | 0.0 |
| 2005 07 05 | G96 | 0.4− | 0.1− | 2006 11 01 | 703 | (1.7− | 0.4+) | 2006 11 23 | G96 | 0.2− | 0.1+ |
| 2005 07 05 | G96 | 0.3− | 0.2− | 2006 11 08 | 644 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2005 07 05 | G96 | 0.3− | 0.4− | 2006 11 08 | 644 | 0.3− | 0.3+ | 2006 11 23 | G96 | 0.3+ | 0.1+ |
| 2005 07 05 | G96 | 0.7− | 0.6− | 2006 11 08 | 644 | 0.1+ | 0.3+ | | | | |
| 2005 07 11 | 691 | 0.6+ | 0.2+ | 2006 11 09 | 644 | 0.2− | 0.3+ | | | | |

**2006 VV$_{36}$ = 2002 YK$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.46542 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22808488 | $\omega$ | 163.61858 | | +0.44402094 | | −0.89049504 |
| $a$ | 2.6530069 | $\Omega$ | 259.93010 | | +0.81034822 | | +0.44639126 |
| $e$ | 0.1690321 | $i$ | 5.78936 | | +0.38233645 | | +0.08805357 |
| $P$ | 4.32 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 31 | 704 | 0.7+ | 0.7+ | 2006 11 11 | 703 | 0.8− | 0.4+ | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2002 12 31 | 704 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.4− | 0.5− | 2006 11 18 | G96 | 0.5+ | 0.1− |
| 2002 12 31 | 704 | 0.8+ | 0.5+ | 2006 11 11 | 703 | 0.4− | 0.1− | 2006 11 18 | G96 | 0.7+ | 0.1− |
| 2003 01 04 | 704 | 0.1− | 1.0− | 2006 11 11 | 703 | 0.0 | 0.8+ | 2006 11 18 | G96 | 0.5+ | 0.3− |
| 2003 01 04 | 704 | 0.4− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2003 01 04 | 704 | 0.1− | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.7+ | 0.2+ |
| 2003 01 04 | 704 | 0.7− | 0.1− | 2006 11 14 | G96 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.6− | 0.1+ |
| 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 14 | G96 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.5− | 0.2+ |
| 2006 10 04 | G96 | 0.2+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 18 | G96 | 0.4− | 0.0 | | | | |
| 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1+ | | | | |

**2006 VL$_{37}$ = 1996 TR$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.08649 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30157622 | $\omega$ | 356.08641 | | +0.99845989 | | −0.05378898 |
| $a$ | 2.2022738 | $\Omega$ | 7.04021 | | +0.05343446 | | +0.86652537 |
| $e$ | 0.2101748 | $i$ | 6.36450 | | +0.01492024 | | +0.49622629 |
| $P$ | 3.27 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 10 05 | 809 | 1.0− | 0.6− | 2006 11 02 | 703 | 0.7+ | 0.2+ | 2006 11 13 | 644 | 0.0 | 0.4− |
| 1996 10 05 | 809 | 0.7− | 0.6+ | 2006 11 02 | 703 | 0.6+ | 1.0+ | 2006 11 13 | 644 | 0.1+ | 0.6− |
| 1996 10 05 | 809 | 1.5− | 1.0− | 2006 11 02 | 703 | 1.1− | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.2+ |
| 1996 10 06 | 809 | 2.0+ | 0.1− | 2006 11 09 | 644 | 0.3− | 0.6− | 2006 11 14 | 703 | 0.6− | 0.9− |
| 1996 10 06 | 809 | 0.9+ | 0.3+ | 2006 11 09 | 644 | 0.5− | 0.3− | 2006 11 14 | 703 | 0.3+ | 0.2+ |
| 1996 10 06 | 809 | 0.7+ | 0.4+ | 2006 11 09 | 644 | 0.1− | 0.3− | 2006 11 14 | 703 | 0.1+ | 0.4+ |
| 2006 10 19 | 703 | 0.6− | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.1− | 2006 11 22 | 703 | 0.5− | 0.2+ |
| 2006 10 19 | 703 | 0.4+ | 0.3+ | 2006 11 11 | 703 | 0.1− | 0.5+ | 2006 11 22 | 703 | 0.3+ | 0.4− |
| 2006 10 19 | 703 | 0.8− | 0.1− | 2006 11 11 | 703 | 0.5+ | 1.0+ | 2006 11 22 | 703 | 0.1+ | 0.2− |
| 2006 10 19 | 703 | 0.4− | 0.1− | 2006 11 11 | 703 | 0.2+ | 0.9+ | 2006 11 22 | 703 | 0.4+ | 0.9− |
| 2006 11 02 | 703 | 0.9+ | 0.6+ | 2006 11 13 | 644 | 0.4− | 0.7− | | | | |

**2006 VN$_{37}$ = 2001 AP$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.57419 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31385200 | $\omega$ | 358.32874 | | +0.99988179 | +0.01535234 | |
| $a$ | 2.1444674 | $\Omega$ | 0.79308 | | −0.01330294 | +0.89136646 | |
| $e$ | 0.1580087 | $i$ | 3.50304 | | −0.00770982 | +0.45302333 | |
| $P$ | 3.14 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 03 | 704 | 0.7+ | 0.6− | 2006 10 27 | 691 | 0.0 | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.4− |
| 2001 01 03 | 704 | 0.1+ | 0.2+ | 2006 10 27 | 691 | 0.3− | 0.0 | 2006 11 14 | G96 | 0.0 | 0.4− |
| 2001 01 03 | 704 | 0.1− | 0.0 | 2006 10 31 | 691 | 0.1− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− |
| 2001 01 03 | 704 | 1.2+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.3+ | 0.3− |
| 2001 01 04 | 704 | 0.3− | 0.2+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 15 | 704 | 0.1− | 0.1+ |
| 2001 01 04 | 704 | 1.4− | 0.7+ | 2006 11 11 | 703 | 0.6+ | 0.2− | 2006 11 15 | 704 | 0.4+ | 0.2− |
| 2001 01 04 | 704 | 0.4− | 0.6− | 2006 11 11 | 703 | 0.4− | 1.0− | 2006 11 15 | 704 | 0.1− | 0.3+ |
| 2001 01 04 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 0.2− | 0.8− | 2006 11 15 | 704 | 0.2− | 0.7+ |
| 2006 09 30 | G96 | 0.1− | 0.4− | 2006 11 11 | 703 | 0.2− | 0.5− | 2006 11 16 | 704 | (0.6− | 1.9+) |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | (0.0 | 1.9+) |
| 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 13 | 644 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.2+ | 1.0+ |
| 2006 09 30 | G96 | 0.1+ | 0.2− | 2006 11 13 | 644 | 0.1− | 0.4+ | 2006 11 16 | 704 | 0.0 | 0.2− |
| 2006 10 19 | 703 | 0.2− | 0.2− | 2006 11 13 | 644 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 0.6− | 0.4+ |
| 2006 10 19 | 703 | 0.1+ | 0.6+ | 2006 11 13 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.0 | 0.3− |
| 2006 10 19 | 703 | 0.0 | 0.5− | 2006 11 13 | 644 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2006 10 19 | 703 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.1− | 0.1+ |
| 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 1.0+ | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.1+ |
| 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 14 | G96 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.3+ | 0.1+ |
| 2006 10 19 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 703 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.4− | 0.1+ |
| 2006 10 23 | 691 | 0.3− | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.3− | 2006 11 22 | 704 | 0.7− | 0.7+ |
| 2006 10 23 | 691 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.6+ | 0.4− |
| 2006 10 23 | 691 | 0.2− | 0.1+ | 2006 11 14 | G96 | 0.3+ | 0.3− | 2006 11 22 | 704 | 0.5− | 1.0− |
| 2006 10 27 | 691 | 0.1+ | 0.1+ | 2006 11 14 | G96 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.2+ | 1.0+ |

**2006 VR$_{37}$ = 2002 UB$_{45}$ = 2004 FB$_{159}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 350.04461 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25230674 | $\omega$ | 320.87117 | | +0.69406804 | −0.70768579 | |
| $a$ | 2.4803720 | $\Omega$ | 84.73214 | | +0.68932361 | +0.60037860 | |
| $e$ | 0.1318146 | $i$ | 7.62334 | | +0.20761149 | +0.37245987 | |
| $P$ | 3.91 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 704 | 1.1− | 0.1+ | 2006 10 16 | 703 | 0.7− | 0.7− | 2006 11 17 | 704 | 1.1+ | 0.4− |
| 2002 10 31 | 704 | 0.6− | 0.2+ | 2006 10 16 | 703 | 0.0 | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.3− |
| 2002 10 31 | 704 | 0.7− | 1.0+ | 2006 10 16 | 703 | 0.9− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.3− |
| 2002 10 31 | 704 | 1.0− | 1.3+ | 2006 10 16 | 703 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2002 11 05 | 704 | 0.6+ | 1.0− | 2006 11 01 | 703 | 0.1+ | 0.3+ | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2002 11 05 | 704 | 1.1+ | 0.8+ | 2006 11 01 | 703 | 0.7− | 0.4+ | 2006 11 19 | 704 | 0.7+ | 1.0− |
| 2002 11 05 | 704 | 0.7+ | 0.4− | 2006 11 01 | 703 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.5− | 0.9− |
| 2002 11 05 | 704 | 0.0 | 0.1− | 2006 11 01 | 703 | 0.0 | 0.5+ | 2006 11 19 | 704 | 0.1+ | 1.2+ |
| 2003 01 30 | 291 | 0.3− | 0.6− | 2006 11 08 | 644 | 0.3− | 0.8− | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2003 01 30 | 291 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2003 01 30 | 291 | 0.4+ | 0.2+ | 2006 11 08 | 644 | 0.1+ | 0.2− | 2006 11 20 | 704 | 1.2− | 0.3− |
| 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.7+ | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.9+ |
| 2004 03 18 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.6+ | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2004 03 18 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 703 | 0.5− | 0.7− | 2006 11 20 | 704 | 0.2+ | 0.4+ |
| 2004 03 26 | 691 | 0.0 | 0.1+ | 2006 11 14 | 704 | (1.1− | 2.1+) | 2006 11 28 | 704 | 0.0 | 1.1+ |
| 2004 03 26 | 691 | 0.1− | 0.0 | 2006 11 14 | 704 | (0.8− | 2.3+) | 2006 11 28 | 704 | 0.6+ | 1.3+ |
| 2004 03 26 | 691 | 0.0 | 0.2− | 2006 11 14 | 704 | (0.2+ | 2.3+) | 2006 11 28 | 704 | 0.3+ | 0.9+ |
| 2006 09 18 | 703 | 0.8− | 0.4+ | 2006 11 17 | 704 | 0.5+ | 0.8− | 2006 11 28 | 704 | 0.0 | 0.0 |
| 2006 09 18 | 703 | 0.5+ | 0.4− | 2006 11 17 | 704 | 0.3+ | 0.3− | 2006 11 28 | 704 | 0.2+ | 0.1− |
| 2006 09 18 | 703 | 0.6− | 0.5+ | 2006 11 17 | 704 | 0.3− | 0.1− | | | | |
| 2006 09 18 | 703 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.1+ | | | | |

**2006 VZ$_{38}$ = 2001 WR$_{95}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.46185 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.19601387 | $\omega$ | 149.74428 | | +0.74547633 | −0.66638611 | |
| $a$ | 2.9350230 | $\Omega$ | 252.05126 | | +0.60855477 | +0.68902046 | |
| $e$ | 0.1015955 | $i$ | 0.84018 | | +0.27189361 | +0.28492168 | |
| $P$ | 5.03 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 691 | 0.2− | 0.0 | 2002 01 13 | 291 | 0.9− | 0.2+ | 2006 11 12 | G96 | 0.4+ | 0.4− |
| 2001 11 11 | 691 | 0.2− | 0.2− | 2002 01 13 | 291 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.2− | 0.2− |
| 2001 11 11 | 691 | 0.1− | 0.2− | 2002 01 13 | 291 | 0.7+ | 0.3+ | 2006 11 12 | G96 | 0.1+ | 0.4− |
| 2001 11 20 | 691 | 0.2+ | 0.0 | 2006 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.2− | 0.1+ |
| 2001 11 20 | 691 | 0.3+ | 0.1− | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.2− |
| 2001 11 20 | 691 | 0.2+ | 0.1− | 2006 10 13 | 691 | 0.0 | 0.2− | 2006 11 14 | 691 | 0.1+ | 0.0 |
| 2001 11 21 | 704 | 0.3− | 0.0 | 2006 10 21 | 691 | 0.4− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2001 11 21 | 704 | 0.3− | 0.6+ | 2006 10 21 | 691 | 0.2+ | 0.2+ | 2006 11 21 | G96 | 0.5+ | 0.1− |
| 2001 11 21 | 704 | 0.4− | 0.3+ | 2006 10 21 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.1− | 0.5− |
| 2001 11 21 | 704 | 0.0 | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.3− | 2006 11 21 | G96 | 0.2+ | 0.1− |

**2006 VU$_{41}$ = 2002 RE$_{210}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.82582 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26869675 | $\omega$ | 276.12594 | | +0.20941573 | −0.97780647 | |
| $a$ | 2.3784523 | $\Omega$ | 161.78226 | | +0.90490781 | +0.19135771 | |
| $e$ | 0.1646886 | $i$ | 1.15280 | | +0.37052249 | +0.08530378 | |
| $P$ | 3.67 | $H$ | 18.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 16 | 691 | 0.1− | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.5− | 2006 11 17 | 703 | 0.8− | 1.3− |
| 1995 12 16 | 691 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.5− | 0.0 | 2006 11 17 | 703 | 0.2− | 0.0 |
| 1995 12 16 | 691 | 0.4− | 0.8+ | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 17 | 703 | 1.4+ | 0.6+ |
| 2000 02 08 | 691 | 0.2+ | 1.2− | 2006 09 28 | G96 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.4− |
| 2000 02 08 | 691 | 0.2− | 0.1− | 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.5+ | 0.4− |
| 2000 02 08 | 691 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.4− | 0.0 | 2006 11 19 | 704 | (1.7+ | 1.1+) |
| 2002 09 05 | 645 | 0.1+ | 0.1− | 2006 09 28 | G96 | 0.5+ | 0.2− | 2006 11 23 | H07 | (0.0 | 1.9+) |
| 2002 09 05 | 645 | 0.2− | 0.3− | 2006 11 12 | G96 | 0.5+ | 0.6− | 2006 11 23 | H07 | 1.0+ | 0.4+ |
| 2002 09 15 | 291 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.6− | 2006 11 23 | H07 | 0.2− | 0.1+ |
| 2002 09 15 | 291 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.3− |
| 2002 09 15 | 291 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.3+ | 0.4− | 2006 11 27 | G96 | 0.4+ | 1.5− |
| 2002 09 16 | 291 | 0.2+ | 0.3+ | 2006 11 14 | 691 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.3+ | 0.4− |
| 2002 09 16 | 291 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.1− | 0.1− | 2006 11 27 | G96 | 0.2+ | 0.4− |
| 2002 09 16 | 291 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.2− | 0.0 | | | | |
| 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 17 | 703 | 0.3− | 0.3− | | | | |

**2006 VW$_{41}$ = 2002 UF$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.98297 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.25494416 | $\omega$ | 329.91698 | | +0.09434779 | −0.99438048 | |
| $a$ | 2.4632359 | $\Omega$ | 114.63262 | | +0.92359946 | +0.06942508 | |
| $e$ | 0.1915683 | $i$ | 3.02821 | | +0.37156767 | +0.07992255 | |
| $P$ | 3.87 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 03 11 | 691 | 0.0 | 0.3− | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1− | 1.3+ |
| 1992 03 11 | 691 | 0.8− | 0.3− | 2006 10 18 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 1.4+ | 1.3− |
| 1992 03 11 | 691 | 0.5+ | 0.3− | 2006 10 20 | 703 | 1.0+ | 1.5+ | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 10 20 | 703 | (0.8+ | 1.6+) | 2006 11 20 | 704 | 0.1− | 0.3+ |
| 2000 05 04 | 645 | 0.0 | 0.0 | 2006 10 20 | 703 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.4+ | 1.0+ |
| 2002 10 09 | 699 | 0.1+ | 1.1+ | 2006 11 12 | G96 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.2− | 0.1− |
| 2002 10 09 | 699 | 1.1+ | 0.1+ | 2006 11 12 | G96 | 0.3+ | 0.3− | 2006 11 20 | 704 | 0.2− | 0.6+ |
| 2002 10 09 | 699 | 0.7− | 0.9+ | 2006 11 12 | G96 | 0.5+ | 0.5− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 10 09 | 699 | 0.0 | 0.7+ | 2006 11 12 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 10 30 | 644 | 0.2− | 0.1+ | 2006 11 14 | 704 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 10 30 | 644 | 0.7− | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2002 10 30 | 644 | 0.2− | 0.1− | 2006 11 14 | 704 | (0.8+ | 1.6+) | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 10 31 | 608 | 0.1− | 0.5− | 2006 11 14 | 704 | 0.6+ | 1.3− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2002 10 31 | 608 | 0.2− | 0.6− | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.6− | 1.0+ |
| 2002 10 31 | 608 | 0.2− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.1− | 0.2− |
| 2004 04 14 | 691 | 0.2+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.3− | 0.2+ |
| 2004 04 14 | 691 | 0.3+ | 0.5+ | 2006 11 16 | G96 | 0.3+ | 0.3− | 2006 11 29 | 704 | (0.8+ | 1.7+) |
| 2004 04 14 | 691 | 0.2+ | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.5+ | 0.0 |
| 2006 09 30 | G96 | 0.2− | 0.3− | 2006 11 16 | G96 | 0.3+ | 0.5− | 2006 12 01 | 691 | 0.7− | 0.1+ |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.0 | 0.3− | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 18 | 704 | 1.3+ | 0.8+ | 2006 12 01 | 691 | 0.6− | 0.5+ |
| 2006 09 30 | G96 | 0.1− | 0.5− | 2006 11 18 | 704 | 0.6+ | 0.4+ | | | | |
| 2006 10 18 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.2− | | | | |

## 2006 VB$_{42}$ = 2003 DJ$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.20892 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21294192 | $\omega$ | 7.55602 | | +0.03256552 | −0.99158615 | |
| $a$ | 2.7773371 | $\Omega$ | 80.63798 | | +0.91022584 | −0.02235261 | |
| $e$ | 0.1384123 | $i$ | 7.29491 | | +0.41282976 | +0.12750401 | |
| $P$ | 4.63 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 23 | 599 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.3− | 2006 11 24 | 691 | 0.4− | 0.2− |
| 2003 02 23 | 599 | 0.0 | 0.1+ | 2006 11 14 | 704 | 0.6+ | 1.1+ | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2003 02 23 | 599 | 0.1− | 0.1− | 2006 11 14 | 704 | (0.3+ | 2.7+) | 2006 11 24 | 691 | 0.2− | 0.1− |
| 2003 02 23 | 599 | 0.2+ | 0.1+ | 2006 11 14 | 704 | (0.3+ | 2.0+) | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2003 02 24 | 599 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2003 02 24 | 599 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 02 24 | 599 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.1+ | 0.4− |
| 2003 02 24 | 599 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.7− | 0.9− |
| 2006 10 23 | G96 | 0.4+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.2− | 2006 11 29 | 704 | 0.5+ | 0.8+ |
| 2006 10 23 | G96 | 0.6+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 | 2006 11 29 | 704 | 1.0− | 0.2+ |
| 2006 10 23 | G96 | 0.5+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.6− | 2006 11 29 | 704 | 0.5+ | 0.4+ |
| 2006 10 23 | G96 | 0.3+ | 0.0 | 2006 11 20 | 704 | 0.2− | 0.6− | 2006 12 01 | 691 | 0.9+ | 0.4+ |
| 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.6+ | 0.5+ | 2006 12 01 | 691 | 0.2+ | 0.2− |
| 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.9− | 0.7− | 2006 12 01 | 691 | 0.9− | 0.1+ |
| 2006 11 12 | G96 | 0.3− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.8− | | | | |

## 2006 VS$_{42}$ = 1995 YP$_{12}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.45362 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18240731 | $\omega$ | 146.49204 | | +0.89524258 | −0.36374910 | |
| $a$ | 3.0792236 | $\Omega$ | 236.93072 | | +0.31062930 | +0.92356174 | |
| $e$ | 0.2717466 | $i$ | 17.88407 | | +0.31945292 | +0.12132724 | |
| $P$ | 5.40 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 12 19 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.1+ | 0.6− | 2006 11 24 | 703 | 0.5− | 0.3− |
| 1995 12 19 | 691 | 0.0 | 0.0 | 2006 11 17 | 704 | 1.1− | 0.7− | 2006 11 25 | 703 | 0.1+ | 0.3+ |
| 1995 12 26 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.4− | 2006 11 25 | 704 | 0.3+ | 0.3+ |
| 1995 12 26 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1− | 0.7+ | 2006 11 25 | 703 | 0.2− | 0.4+ |
| 1995 12 26 | 691 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.0 | 2006 11 25 | 703 | 0.3− | 0.2+ |
| 2006 10 31 | G96 | 0.4− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.7− | 2006 11 25 | 704 | 1.1− | 0.4− |
| 2006 10 31 | G96 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.4− | 0.4− | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2006 10 31 | G96 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.2+ | 0.6+ | 2006 11 25 | 703 | 0.1+ | 0.5− |
| 2006 10 31 | G96 | 0.1− | 0.3+ | 2006 11 18 | 704 | 1.3+ | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.5− | 1.1− | 2006 11 25 | 704 | 0.3+ | 0.1− |
| 2006 11 12 | G96 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.0 | 0.9+ | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2006 11 12 | G96 | 0.3+ | 0.4− | 2006 11 20 | 704 | 0.5− | 1.0+ | 2006 11 25 | G96 | 0.1+ | 0.4− |
| 2006 11 12 | G96 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.0 | 0.6+ | 2006 11 25 | 704 | 0.2− | 0.6− |
| 2006 11 14 | 704 | (0.0 | 1.7+) | 2006 11 20 | 704 | 0.3− | 0.4+ | 2006 11 29 | 704 | 0.4+ | 0.2+ |
| 2006 11 14 | 704 | 1.0+ | 0.8+ | 2006 11 20 | 704 | 0.1+ | 0.6+ | 2006 11 29 | 704 | 0.3+ | 0.2+ |
| 2006 11 14 | 704 | 0.9+ | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.6+ | 0.0 |
| 2006 11 14 | 704 | 0.3− | 0.4− | 2006 11 22 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 0.4+ | 0.5+ |
| 2006 11 16 | G96 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.4− | 0.6− |
| 2006 11 16 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.3+ | 0.4+ |
| 2006 11 16 | G96 | 0.0 | 0.2− | 2006 11 24 | 703 | 0.2− | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.1+ |
| 2006 11 16 | G96 | 0.2− | 0.2− | 2006 11 24 | 703 | 0.4+ | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.6+ |
| 2006 11 17 | 704 | 0.5+ | 0.5− | 2006 11 24 | 703 | 0.0 | 0.1+ | 2006 12 01 | 704 | 0.4− | 0.5+ |

## 2006 VU$_{42}$ = 2004 FN$_{151}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 158.46842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23941831 | $\omega$ | 255.63957 | | −0.22638985 | +0.97403578 | |
| $a$ | 2.5686079 | $\Omega$ | 1.27830 | | −0.86785605 | −0.20106091 | |
| $e$ | 0.0274226 | $i$ | 3.58237 | | −0.44223694 | −0.10406159 | |
| $P$ | 4.12 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 10 05 | 691 | (1.6+ | 3.1+) | 2004 03 27 | 704 | 0.6+ | 1.0+ | 2005 12 02 | 695 | 0.1− | 0.1+ |
| 1997 10 05 | 691 | 1.1− | 0.4− | 2004 03 27 | 704 | 0.3+ | 1.0+ | 2005 12 02 | 695 | 0.4− | 0.0 |
| 1997 10 05 | 691 | 1.6− | 0.3− | 2004 04 15 | 699 | 0.0 | 0.6+ | 2006 11 12 | G96 | 0.2− | 0.7+ |
| 2004 03 16 | 703 | 0.0 | 0.6− | 2004 04 15 | 699 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.7− | 0.2− |
| 2004 03 16 | 703 | 0.3+ | 1.4+ | 2004 04 15 | 699 | 0.4+ | 0.3+ | 2006 11 12 | G96 | 0.2+ | 0.3− |
| 2004 03 16 | 703 | 0.5− | 1.3+ | 2004 04 15 | 699 | 0.8− | 0.8− | 2006 11 12 | G96 | 0.3+ | 0.2− |
| 2004 03 16 | 691 | 0.2+ | 0.7+ | 2005 07 27 | 644 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.1+ | 0.1− |
| 2004 03 16 | 703 | 0.2+ | 0.4− | 2005 07 27 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 691 | 0.4+ | 0.1− |
| 2004 03 16 | 691 | 0.4+ | 0.4+ | 2005 07 27 | 644 | 0.4− | 0.1− | 2006 11 13 | 691 | 0.0 | 0.2+ |
| 2004 03 16 | 691 | 0.1+ | 0.6+ | 2005 10 25 | G96 | 0.8+ | 1.1− | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2004 03 27 | 704 | 0.3− | 0.2+ | 2005 10 25 | G96 | 0.4− | 0.6− | 2006 11 17 | 691 | 0.1− | 0.4+ |
| 2004 03 27 | 704 | 0.9+ | 0.3− | 2005 10 25 | G96 | 0.8+ | 0.2+ | 2006 11 17 | 691 | 0.3− | 0.3+ |
| 2004 03 27 | 704 | 1.1+ | 0.2+ | 2005 10 25 | G96 | 0.2+ | 0.9+ | | | | |

## 2006 VN$_{43}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.77384 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20950398 | $\omega$ | 315.25467 | | +0.87032271 | −0.42926252 | |
| $a$ | 2.8076386 | $\Omega$ | 71.58133 | | +0.49214709 | +0.74001472 | |
| $e$ | 0.2655223 | $i$ | 14.73980 | | +0.01815549 | +0.51779523 | |
| $P$ | 4.70 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 26 | 691 | 0.6− | 0.4− | 2003 03 03 | 644 | 0.1− | 0.2− | 2006 11 14 | 644 | 0.2− | 0.1− |
| 1992 11 26 | 691 | 0.6+ | 0.2− | 2003 03 03 | 644 | 0.1+ | 0.4+ | 2006 11 14 | 644 | 0.1− | 0.1+ |
| 1992 11 26 | 691 | 0.6+ | 0.5− | 2006 09 30 | 699 | 0.0 | 0.2+ | 2006 11 14 | 644 | 0.2− | 0.0 |
| 2001 08 20 | 644 | 0.1+ | 0.0 | 2006 09 30 | 699 | 0.6− | 0.2+ | 2006 11 17 | 644 | 0.3− | 0.1+ |
| 2001 08 20 | 644 | 0.2− | 0.2+ | 2006 09 30 | 699 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.0 |
| 2001 08 20 | 644 | 0.3− | 0.1− | 2006 09 30 | 699 | 0.3+ | 0.5+ | 2006 11 17 | 644 | 0.2− | 0.0 |
| 2003 01 24 | 644 | 0.5− | 0.1+ | 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.6+ |
| 2003 01 24 | 644 | 0.2− | 0.3+ | 2006 10 12 | 644 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.8+ |
| 2003 01 24 | 644 | 0.3− | 0.2+ | 2006 10 12 | 644 | 0.4− | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.5+ |
| 2003 01 29 | 644 | 0.7+ | 0.4− | 2006 11 13 | 703 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2003 01 29 | 644 | 1.1+ | 0.1− | 2006 11 13 | 703 | 0.5+ | 0.1− | 2006 11 21 | 704 | 0.6− | 0.8+ |
| 2003 01 29 | 644 | 0.2− | 2.8+ | 2006 11 13 | 703 | 0.4+ | 0.1− | | | | |
| 2003 03 03 | 644 | 0.2+ | 0.1+ | 2006 11 13 | 703 | 0.1− | 0.1+ | | | | |

**2006 VQ$_{43}$ = 2001 UU$_{137}$ = 2004 FT$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.70138 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20962176 | $\omega$ | 258.20676 | | +0.65561156 | | +0.74973909 |
| $a$ | 2.8065868 | $\Omega$ | 53.13591 | | −0.64170858 | | +0.61588914 |
| $e$ | 0.0963227 | $i$ | 6.44484 | | −0.39797436 | | +0.24201627 |
| $P$ | 4.70 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 28 | 691 | 0.5+ | 0.7− | 2004 03 18 | 691 | 0.3+ | 0.5+ | 2006 11 18 | 691 | 0.5− | 0.0 |
| 1992 11 28 | 691 | 0.0 | 0.4− | 2004 03 18 | 691 | 0.1− | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 1992 11 28 | 691 | 0.3+ | 0.7− | 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 10 23 | 704 | 0.4+ | 0.2+ | 2004 03 28 | 691 | 0.4+ | 0.5+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 10 23 | 704 | 0.7− | 0.3+ | 2004 03 28 | 691 | 0.2+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.3+ |
| 2001 10 23 | 704 | 0.9− | 0.3+ | 2004 03 28 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.3− | 0.3+ |
| 2001 10 23 | 704 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.5+ | 0.1+ | 2006 11 23 | A94 | 0.1+ | 0.4+ |
| 2001 10 24 | 704 | 1.0− | 1.3+ | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2001 10 24 | 704 | 0.5− | 1.5+ | 2006 11 13 | 691 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2001 10 24 | 704 | 1.0− | 1.3+ | 2006 11 14 | 691 | 0.4− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 12 13 | 645 | 0.1− | 0.0 | 2006 11 14 | 691 | 0.1+ | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2002 12 13 | 645 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2− | | | | |

**2006 VU$_{43}$ = 2001 QT$_{269}$ = 2005 MW$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.63866 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23174822 | $\omega$ | 173.16424 | | +0.22254215 | | −0.96752731 |
| $a$ | 2.6249746 | $\Omega$ | 263.92665 | | +0.88867089 | | +0.25187240 |
| $e$ | 0.1569553 | $i$ | 6.92294 | | +0.40092274 | | −0.02124117 |
| $P$ | 4.25 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 734 | (2.0+ | 0.4−) | 2006 11 14 | 704 | 0.8− | 0.6+ | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2001 08 19 | 734 | 0.2+ | 0.3− | 2006 11 14 | 691 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.4+ | 0.1− |
| 2001 08 19 | 734 | 0.6− | 0.9+ | 2006 11 15 | 704 | 0.4+ | 0.1− | 2006 11 19 | 704 | 1.2+ | 0.1− |
| 2001 08 25 | 704 | 0.4+ | 0.1− | 2006 11 15 | 704 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.1− |
| 2001 08 25 | 704 | 0.3− | 0.9+ | 2006 11 15 | 704 | 0.5+ | 1.0+ | 2006 11 19 | 704 | 0.0 | 0.1+ |
| 2001 08 25 | 704 | 0.3− | 0.0 | 2006 11 15 | 704 | 0.3+ | 0.2− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2005 06 28 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 1.3− | 1.4+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2005 06 28 | 691 | 0.2− | 0.1− | 2006 11 16 | 704 | 1.1+ | 1.1+ | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2005 06 28 | 691 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.4+ | 0.1+ | 2006 11 21 | G96 | 0.3− | 0.4− |
| 2005 07 11 | G96 | 0.1+ | 0.2− | 2006 11 16 | 704 | 1.5+ | 0.6− | 2006 11 22 | 691 | 0.4+ | 0.2+ |
| 2005 07 11 | G96 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2005 07 11 | G96 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.4− | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.2− |
| 2005 07 11 | G96 | 0.4+ | 0.3− | 2006 11 16 | 704 | 0.2− | 1.1+ | 2006 11 22 | 704 | 1.3+ | 1.0+ |
| 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.4− | 0.6+ |
| 2006 11 13 | 691 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.8+ |
| 2006 11 13 | 691 | 0.8− | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 0.0 | 1.0+ |
| 2006 11 14 | 704 | 0.2− | 0.3+ | 2006 11 17 | 691 | 0.7− | 1.4− | 2006 11 22 | 704 | 0.4+ | 0.9+ |
| 2006 11 14 | 691 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2006 11 14 | 691 | 0.2− | 0.3− | 2006 11 18 | 691 | 0.0 | 0.2− | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2006 11 14 | 704 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.2− | 2006 11 25 | 691 | 0.0 | 0.1− |

**2006 VE$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.70554 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30329641 | $\omega$ | 163.00559 | | +0.89905342 | | +0.43759687 |
| $a$ | 2.1939389 | $\Omega$ | 171.00237 | | −0.41175508 | | +0.85633016 |
| $e$ | 0.1932416 | $i$ | 5.34098 | | −0.14886468 | | +0.27424011 |
| $P$ | 3.25 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 05 09 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.7+ | 0.4+ | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2002 05 09 | 644 | 0.0 | 0.2+ | 2006 10 16 | 703 | 0.4+ | 0.8+ | 2006 11 20 | 704 | 1.1+ | 0.6+ |
| 2002 05 09 | 644 | 0.1+ | 0.4+ | 2006 10 16 | 703 | 0.6− | 0.8+ | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2005 03 09 | G96 | 0.1− | 0.3− | 2006 10 16 | 703 | 0.1+ | 0.3− | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2005 03 09 | G96 | 0.3− | 0.2− | 2006 10 30 | 703 | 0.1− | 0.7− | 2006 11 20 | 704 | 0.3− | 1.1+ |
| 2005 03 09 | G96 | 0.5− | 0.3+ | 2006 10 30 | 703 | 1.0+ | 0.4+ | 2006 11 20 | 704 | 0.4+ | 0.0 |
| 2005 03 09 | G96 | 0.4− | 0.5− | 2006 10 30 | 703 | 0.7+ | 0.8− | 2006 11 20 | G96 | 0.1+ | 0.2− |
| 2005 04 11 | G96 | 0.2+ | 0.4− | 2006 10 30 | 703 | 1.4− | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.0 |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.5− | 0.5− | 2006 11 20 | G96 | 0.1− | 0.2− |
| 2005 04 11 | G96 | 0.2+ | 0.2− | 2006 11 13 | 703 | 0.5− | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.2+ |
| 2005 04 11 | G96 | 0.2+ | 0.1− | 2006 11 13 | 703 | 0.5+ | 1.0+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2006 09 16 | 703 | 0.2− | 0.0 | 2006 11 13 | 703 | 0.1+ | 0.2+ | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2006 09 16 | 703 | 1.0− | 2.3− | 2006 11 14 | 704 | 0.7− | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.2− |
| 2006 09 16 | 703 | 0.2+ | 0.4− | 2006 11 14 | 704 | (0.6+ | 2.4+) | 2006 11 20 | G96 | 0.1+ | 0.5− |
| 2006 09 16 | 703 | 0.4+ | 1.1− | 2006 11 14 | 704 | (1.4+ | 1.6+) | 2006 11 23 | G96 | 0.2+ | 0.4− |
| 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.7− | 1.1+ | 2006 11 23 | G96 | 0.2+ | 0.0 |
| 2006 10 03 | G96 | 0.5− | 0.1+ | 2006 11 20 | 704 | 0.7− | 1.2+ | 2006 11 23 | G96 | 0.4+ | 0.4− |
| 2006 10 03 | G96 | 0.3− | 0.0 | 2006 11 20 | G96 | 0.1− | 0.2− | | | | |
| 2006 10 03 | G96 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.1+ | | | | |

**2006 VF$_{44}$ = 1999 AR$_{1}$ = 2003 AD$_{24}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.61487 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23219053 | $\omega$ | 254.27748 | | +0.99324050 | | −0.07769810 |
| $a$ | 2.6216399 | $\Omega$ | 110.11699 | | +0.10418024 | | +0.92432246 |
| $e$ | 0.2134341 | $i$ | 5.26929 | | −0.05118381 | | +0.37361879 |
| $P$ | 4.24 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 08 | 691 | 0.4+ | 0.2+ | 2006 10 30 | 703 | 1.0− | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.1− |
| 1999 01 08 | 691 | 0.7+ | 0.2− | 2006 10 30 | 703 | 0.4− | 0.2− | 2006 11 19 | 704 | 0.3+ | 0.1− |
| 1999 01 08 | 691 | 0.7+ | 0.1− | 2006 10 30 | 703 | 0.6− | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.9+ |
| 1999 01 09 | 691 | 0.5− | 0.1− | 2006 10 30 | 703 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.2+ |
| 1999 01 09 | 691 | 0.3− | 0.1+ | 2006 11 05 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.6− |
| 1999 01 09 | 691 | 0.0 | 0.0 | 2006 11 05 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.0 |
| 1999 01 19 | 691 | 0.4+ | 0.4− | 2006 11 05 | 644 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 1999 01 19 | 691 | 0.1+ | 0.3− | 2006 11 05 | 644 | 0.3− | 0.1− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 1999 01 19 | 691 | 0.6+ | 0.0 | 2006 11 05 | 644 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 1999 01 22 | 691 | 0.7− | 0.1+ | 2006 11 05 | 644 | 0.4+ | 0.2− | 2006 11 20 | 704 | 0.5+ | 0.0 |
| 1999 01 22 | 691 | 0.5− | 0.1+ | 2006 11 13 | 703 | 0.4− | 0.5− | 2006 11 20 | 704 | 0.1− | 0.8− |
| 1999 01 22 | 691 | 1.1− | 0.1+ | 2006 11 13 | 703 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.1− | 0.2+ |
| 2003 01 04 | 704 | 1.2− | 0.8+ | 2006 11 13 | 703 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 0.1+ |
| 2003 01 04 | 704 | 0.2+ | 0.6+ | 2006 11 13 | 703 | 0.8− | 0.2− | 2006 11 22 | G96 | 0.0 | 0.3− |
| 2003 01 04 | 704 | 0.3− | 0.4+ | 2006 11 14 | 704 | (0.1− | 1.9+) | 2006 11 22 | G96 | 0.3+ | 0.4− |
| 2003 01 04 | 704 | (0.8+ | 1.6+) | 2006 11 14 | 704 | 0.2− | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2003 01 08 | 704 | (0.3+ | 2.2+) | 2006 11 14 | 704 | 0.1− | 0.7+ | 2006 11 22 | G96 | 0.0 | 0.4− |
| 2003 01 08 | 704 | 0.5− | 0.8+ | 2006 11 14 | 704 | 0.6− | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2003 01 08 | 704 | 0.7+ | 0.1− | 2006 11 14 | 704 | 0.6− | 0.7+ | 2006 11 24 | 691 | 0.2+ | 0.4− |
| 2003 01 08 | 704 | 1.0+ | 0.8+ | 2006 11 15 | G96 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.3+ | 0.2− |
| 2006 09 19 | 699 | 0.3+ | 1.3+ | 2006 11 15 | G96 | 0.2− | 0.4− | 2006 11 26 | 291 | 0.1− | 0.1+ |
| 2006 09 19 | 699 | 1.2+ | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.4− | 2006 11 26 | 291 | 0.0 | 0.1+ |
| 2006 09 19 | 699 | 0.5+ | 1.1− | 2006 11 15 | G96 | 0.0 | 0.3− | 2006 11 26 | 291 | 0.0 | 0.1− |
| 2006 09 19 | 699 | 1.1− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 1.1+ | 0.4+ |
| 2006 10 20 | 644 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.3− | 0.2+ | 2006 11 28 | 704 | 1.5+ | 0.4+ |
| 2006 10 20 | 644 | 0.4+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.0 | 2006 11 28 | 704 | 1.5+ | 0.0 |
| 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.1+ | 0.3+ | 2006 11 28 | 704 | 0.6+ | 0.5+ |
| 2006 10 20 | 644 | 0.2+ | 0.2+ | 2006 11 17 | 704 | 1.1− | 1.5+ | 2006 11 28 | 704 | 0.7+ | 0.1+ |
| 2006 10 20 | 644 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.3− | | | | |
| 2006 10 20 | 644 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.1+ | | | | |

**2006 VG$_{44}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.78644 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21610671 | $\omega$ | 307.36628 | | +0.91040443 | | −0.37553624 |
| $a$ | 2.7501553 | $\Omega$ | 75.28174 | | +0.41304604 | | +0.80110470 |
| $e$ | 0.2100143 | $i$ | 10.33992 | | +0.02359555 | | +0.46605128 |
| $P$ | 4.56 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 18 | 644 | 0.1+ | 0.2− | 2006 11 13 | 703 | 0.7− | 0.5+ | 2006 11 18 | 704 | 1.1+ | 0.7+ |
| 2001 08 18 | 644 | 0.3+ | 0.2− | 2006 11 13 | 703 | 0.7− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.4+ |
| 2001 08 18 | 644 | 0.1+ | 0.1+ | 2006 11 13 | 703 | 0.7− | 0.1− | 2006 11 18 | 704 | 0.0 | 0.1− |
| 2001 08 26 | 644 | 0.2+ | 0.3+ | 2006 11 14 | 704 | (1.0+ | 2.1+) | 2006 11 18 | 704 | 0.7− | 0.8+ |
| 2001 08 26 | 644 | 0.2− | 0.1− | 2006 11 14 | 704 | (1.0+ | 2.4+) | 2006 11 20 | 704 | 0.2+ | 0.0 |
| 2001 08 26 | 644 | 0.5− | 0.1+ | 2006 11 14 | 704 | 0.3+ | 0.6+ | 2006 11 20 | 704 | 0.4− | 0.4− |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 11 14 | 704 | (0.6+ | 1.7+) | 2006 11 20 | 704 | 0.4+ | 0.3+ |
| 2003 01 29 | 645 | 0.0 | 0.0 | 2006 11 14 | 704 | (0.9+ | 1.5+) | 2006 11 20 | 704 | 0.2+ | 0.4− |
| 2006 09 19 | 699 | 0.0 | 1.0− | 2006 11 16 | 691 | 0.3+ | 0.1+ | 2006 11 20 | 704 | 0.5+ | 0.5− |
| 2006 09 19 | 699 | 0.0 | 1.2+ | 2006 11 16 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2006 09 19 | 699 | 0.4+ | 1.7− | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.3+ |
| 2006 09 19 | 699 | 0.6− | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.8− | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2006 10 30 | 703 | 0.4− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.3+ | 0.3+ |
| 2006 10 30 | 703 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.1− | 0.4− | 2006 11 28 | 704 | 0.4+ | 0.4+ |
| 2006 10 30 | 703 | 1.8− | 1.0+ | 2006 11 16 | G96 | 0.0 | 0.4− | 2006 11 28 | 704 | 0.9+ | 0.0 |
| 2006 10 30 | 703 | 0.5+ | 0.3− | 2006 11 17 | 704 | 0.2− | 0.2− | 2006 11 28 | 704 | 0.5+ | 0.8+ |
| 2006 11 09 | 644 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.3− | 0.4− |
| 2006 11 09 | 644 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.2− | 0.4− | 2006 12 01 | 691 | 0.2+ | 0.0 |
| 2006 11 09 | 644 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.4− | 0.2+ | 2006 12 01 | 691 | 0.0 | 0.5− |
| 2006 11 13 | 703 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.4+ | 0.3+ | | | | |

## 2006 VP$_{44}$ = 2001 UE$_{91}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 312.28243 | | (2000.0) | | | |
| $n$ | 0.20289185 | $\omega$ | 278.20180 | | +0.01402530 | −0.99988552 |
| $a$ | 2.8683115 | $\Omega$ | 170.98875 | | +0.93107356 | +0.01098925 |
| $e$ | 0.0288941 | $i$ | 2.07752 | | +0.36456181 | +0.01040122 |
| $P$ | 4.86 | $H$ | 17.4 | $G$ | 0.15 | $U$ 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 23 | 691 | 1.0+ | 0.1+ | 2001 10 24 | 691 | 0.7− | 0.2+ | 2006 11 02 | 621 | 0.1+ | 0.1− |
| 2001 10 23 | 691 | 0.3+ | 0.1− | 2006 11 01 | 691 | 0.1− | 0.2+ | 2006 11 02 | 621 | 0.1− | 0.1+ |
| 2001 10 23 | 691 | 0.6+ | 0.4+ | 2006 11 01 | 691 | 0.0 | 0.1+ | 2006 11 15 | 621 | 0.5+ | 0.2− |
| 2001 10 24 | 691 | 0.6− | 0.4− | 2006 11 01 | 691 | 0.1− | 0.2− | 2006 11 15 | 621 | 0.5+ | 0.2+ |
| 2001 10 24 | 691 | 0.5− | 0.3− | 2006 11 02 | 621 | 0.4− | 0.3− | 2006 11 15 | 621 | 0.1+ | 0.1− |

## 2006 VE$_{45}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 74.51792 | | (2000.0) | | | |
| $n$ | 0.17500627 | $\omega$ | 41.93219 | | +0.41399578 | +0.90856816 |
| $a$ | 3.1654367 | $\Omega$ | 252.59256 | | −0.84993384 | +0.36388466 |
| $e$ | 0.1548828 | $i$ | 3.35126 | | −0.32591402 | +0.20516299 |
| $P$ | 5.63 | $H$ | 15.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 05 | 691 | 0.2+ | 0.4− | 2006 10 20 | 644 | 0.3+ | 0.1+ | 2006 11 15 | A44 | 0.5− | 0.5− |
| 2005 06 05 | 691 | 0.2+ | 0.5− | 2006 10 20 | 644 | 0.1+ | 0.5+ | 2006 11 15 | A44 | 0.4− | 0.5− |
| 2005 06 05 | 691 | 0.5− | 0.8+ | 2006 10 20 | 644 | 0.0 | 0.2+ | 2006 11 15 | A44 | 0.4− | 0.3− |
| 2005 06 13 | G96 | 0.2− | 0.1+ | 2006 11 09 | A44 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.4+ | 0.0 |
| 2005 06 13 | G96 | 0.2+ | 0.2+ | 2006 11 09 | A44 | 0.6− | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2005 06 13 | G96 | 0.0 | 0.1+ | 2006 11 09 | A44 | 0.1− | 0.6− | 2006 11 17 | 691 | 0.3+ | 0.0 |
| 2006 09 25 | 691 | 0.1− | 0.2+ | 2006 11 10 | A44 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2006 09 25 | 691 | 0.0 | 0.1+ | 2006 11 10 | A44 | 0.5− | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 10 | A44 | 0.3− | 0.7+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2006 10 03 | 691 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2006 10 03 | 691 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.4− | 0.2− |
| 2006 10 03 | 691 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ |

## 2006 VF$_{45}$ = 2002 TT$_{356}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 316.89461 | | (2000.0) | | | |
| $n$ | 0.25885563 | $\omega$ | 149.38123 | | +0.12997134 | −0.99119129 |
| $a$ | 2.4383590 | $\Omega$ | 293.14048 | | +0.90400245 | +0.12900082 |
| $e$ | 0.1907833 | $i$ | 1.58545 | | +0.40729230 | +0.02997700 |
| $P$ | 3.81 | $H$ | 18.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 05 | 691 | 0.0 | 0.2− | 2006 11 09 | A44 | 0.3− | 0.0 | 2006 11 15 | A44 | 1.4− | 1.0+ |
| 2000 02 05 | 691 | 0.3− | 0.2− | 2006 11 09 | A44 | 1.1− | 0.1+ | 2006 11 15 | A44 | 1.2+ | 0.3+ |
| 2000 02 05 | 691 | 0.0 | 0.4− | 2006 11 09 | A44 | 0.6− | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.1+ |
| 2002 10 10 | 645 | 0.1+ | 0.1− | 2006 11 10 | A44 | 0.8− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.3+ |
| 2002 10 10 | 645 | 0.0 | 0.1− | 2006 11 10 | A44 | 0.8− | 0.2+ | 2006 11 17 | 691 | 0.7+ | 0.3+ |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 10 | A44 | 0.9− | 0.7− | 2006 11 20 | 691 | 0.1− | 0.3− |
| 2002 10 11 | 645 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.0 | 0.8+ | 2006 11 20 | 691 | 0.3+ | 0.6− |
| 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.3− | 0.4− |
| 2006 09 25 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.6+ | 0.3+ | | | | |
| 2006 09 25 | 691 | 0.2− | 0.1+ | 2006 11 15 | A44 | 0.4− | 0.3− | | | | |

## 2006 VN$_{45}$ = 2006 VK$_{45}$ = 2001 YF$_{13}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.67368 | | (2000.0) | | | |
| $n$ | 0.18716195 | $\omega$ | 284.10029 | | +0.98624190 | −0.02634935 |
| $a$ | 3.0268508 | $\Omega$ | 77.60133 | | +0.09439305 | +0.90021046 |
| $e$ | 0.1367472 | $i$ | 9.61879 | | −0.13570877 | +0.43465714 |
| $P$ | 5.27 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.1− | 0.9− | 2006 10 16 | 703 | 1.1− | 0.5+ | 2006 11 11 | 703 | 0.1− | 1.2− |
| 2001 12 17 | 704 | 0.6− | 0.6+ | 2006 10 16 | 703 | 0.6− | 0.3− | 2006 11 11 | 703 | 1.0− | 0.5− |
| 2001 12 17 | 704 | 0.4+ | 1.1+ | 2006 10 16 | 703 | 1.2− | 0.0 | 2006 11 11 | 703 | 0.8− | 1.3− |
| 2001 12 17 | 704 | 0.3+ | 0.3+ | 2006 11 01 | 703 | 0.3+ | 0.0 | 2006 11 13 | 104 | 0.6+ | 0.0 |
| 2001 12 17 | 704 | 0.0 | 0.3+ | 2006 11 01 | 703 | 0.4+ | 0.6− | 2006 11 13 | 104 | 0.1+ | 0.2+ |
| 2001 12 19 | 704 | 0.3+ | 0.7− | 2006 11 01 | 703 | 0.2− | 0.5− | 2006 11 13 | 104 | 0.5− | 0.3+ |
| 2001 12 19 | 704 | 0.2+ | 0.3− | 2006 11 01 | 703 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.8+ | 0.2− |
| 2001 12 19 | 704 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.1− |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2006 11 08 | 644 | 0.6+ | 0.0 | 2006 11 17 | G96 | 0.4+ | 0.0 |
| 2001 12 19 | 704 | 0.6− | 0.1− | 2006 11 08 | 644 | 0.9+ | 0.1− | 2006 11 17 | G96 | 0.5+ | 0.0 |
| 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.5− | 0.5+ |
| 2004 04 13 | 691 | 0.3+ | 0.0 | 2006 11 09 | 644 | 0.5+ | 0.2+ | 2006 11 20 | 704 | 0.1+ | 1.1+ |
| 2004 04 13 | 691 | 0.4− | 0.1− | 2006 11 09 | 644 | 0.5+ | 0.0 | 2006 11 20 | 704 | 0.1− | 1.2+ |
| 2006 10 16 | 703 | 1.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.9+ | | | | |

## 2006 VS$_{45}$ = 2001 YQ$_{144}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.11328 | | (2000.0) | | | |
| $n$ | 0.17615380 | $\omega$ | 92.58469 | | +0.89819669 | −0.20108965 |
| $a$ | 3.1516746 | $\Omega$ | 279.22895 | | +0.01844503 | +0.90569517 |
| $e$ | 0.3453036 | $i$ | 23.33024 | | +0.43920666 | +0.37320129 |
| $P$ | 5.60 | $H$ | 15.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 17 | 704 | 0.0 | 0.6− | 2006 10 04 | 704 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.3+ |
| 2001 12 17 | 704 | 0.1+ | 0.4− | 2006 10 14 | 704 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.4+ | 0.1+ |
| 2001 12 17 | 704 | 0.2+ | 0.6− | 2006 10 14 | 704 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.5+ | 0.1+ |
| 2001 12 17 | 704 | 0.0 | 0.3+ | 2006 10 14 | 704 | 0.7+ | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.1+ |
| 2001 12 17 | 704 | 0.4− | 1.0− | 2006 10 14 | 704 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.2− |
| 2001 12 19 | 644 | 0.1+ | 0.6+ | 2006 11 13 | 704 | 0.0 | 0.7+ | 2006 11 18 | 704 | 0.0 | 0.1+ |
| 2001 12 19 | 644 | 0.3− | 0.6+ | 2006 11 13 | 704 | 0.9− | 0.0 | 2006 11 20 | 704 | 0.3+ | 0.4+ |
| 2001 12 19 | 644 | 0.2+ | 0.8+ | 2006 11 13 | 704 | 0.4+ | 0.4− | 2006 11 20 | 704 | 0.4− | 0.1− |
| 2006 10 04 | 704 | 0.5− | 0.1+ | 2006 11 17 | 704 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.2− | 0.1+ |
| 2006 10 04 | 704 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.0 | 0.1+ |
| 2006 10 04 | 704 | 0.4− | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.0 | | | | |

**2006 VY$_{45}$ = 2001 XN$_{162}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 242.21016 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17983841 | $\omega$ | 267.24962 | | −0.95928825 | | −0.14108403 |
| $a$ | 3.1084776 | $\Omega$ | 264.55499 | | +0.22577001 | | −0.90354945 |
| $e$ | 0.1409582 | $i$ | 14.22763 | | −0.16968779 | | −0.40459077 |
| $P$ | 5.48 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4+ | 0.7+ | 2003 03 31 | 644 | 0.0 | 0.0 | 2006 11 17 | A55 | 0.1− | 0.1+ |
| 2001 12 14 | 704 | 0.1+ | 0.1− | 2003 03 31 | 644 | 0.0 | 0.0 | 2006 11 17 | A55 | 0.7− | 0.4− |
| 2001 12 14 | 704 | 1.1+ | 0.4+ | 2003 03 31 | 644 | 0.0 | 0.2− | 2006 11 18 | A55 | 0.2+ | 0.8+ |
| 2001 12 14 | 704 | 0.8+ | 0.6− | 2003 03 31 | 644 | 0.5− | 0.0 | 2006 11 18 | A55 | 0.3+ | 0.3+ |
| 2001 12 17 | 704 | 0.3− | 0.2− | 2003 03 31 | 644 | 0.5+ | 0.3+ | 2006 11 18 | A55 | 0.7+ | 0.0 |
| 2001 12 17 | 704 | 0.8− | 0.3− | 2003 03 31 | 644 | 0.2− | 0.4+ | 2006 11 19 | A55 | 0.4− | 0.2+ |
| 2001 12 17 | 704 | 0.2− | 0.2− | 2006 11 15 | 703 | 1.0− | 0.6− | 2006 11 19 | A55 | 0.4− | 0.1− |
| 2001 12 17 | 704 | 0.2− | 0.1− | 2006 11 15 | 703 | (1.9− | 1.0−) | 2006 11 19 | A55 | 0.3− | 0.0 |
| 2001 12 17 | 704 | 1.0− | 0.0 | 2006 11 15 | 703 | 0.0 | 0.7− | 2006 11 23 | A55 | 0.6+ | 1.1+ |
| 2003 03 23 | 644 | 0.3− | 0.4− | 2006 11 15 | 703 | (0.5− | 2.0−) | 2006 11 23 | A55 | 0.2+ | 0.6+ |
| 2003 03 23 | 644 | 0.2+ | 0.0 | 2006 11 15 | A55 | 0.8− | 0.6− | 2006 11 23 | A55 | (1.7− | 1.9+) |
| 2003 03 23 | 644 | 0.3− | 0.0 | 2006 11 15 | A55 | 0.3− | 0.5− | 2006 11 23 | A55 | 0.3− | 0.5+ |
| 2003 03 23 | 644 | 0.5+ | 0.2+ | 2006 11 15 | A55 | 0.2+ | 0.6− | 2006 11 26 | A55 | 1.2+ | 0.1+ |
| 2003 03 23 | 644 | 0.1− | 0.1+ | 2006 11 15 | A55 | 0.1− | 0.8− | 2006 11 26 | A55 | 0.9+ | 0.7+ |
| 2003 03 23 | 644 | 0.4+ | 0.1− | 2006 11 17 | A55 | 0.2− | 0.0 | 2006 11 26 | A55 | 0.2+ | 0.7+ |

**2006 VK$_{46}$ = 2005 SX$_{260}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 102.40436 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17126565 | $\omega$ | 305.98684 | | +0.45280013 | | +0.89159935 |
| $a$ | 3.2113615 | $\Omega$ | 350.93290 | | −0.80801371 | | +0.40808340 |
| $e$ | 0.0507081 | $i$ | 1.73006 | | −0.37694282 | | +0.19626139 |
| $P$ | 5.75 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 05 | 691 | 0.3+ | 0.0 | 2005 09 29 | G96 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.3− | 0.0 |
| 1999 09 05 | 691 | 0.2− | 0.2− | 2005 09 29 | G96 | 0.3+ | 0.1− | 2006 10 31 | G96 | 0.2− | 0.6− |
| 1999 09 05 | 691 | 0.1+ | 0.2− | 2005 09 29 | G96 | 0.3− | 0.4− | 2006 11 09 | 691 | 0.0 | 0.2+ |
| 2001 12 15 | 645 | 0.1− | 0.0 | 2005 10 29 | G96 | 0.3− | 0.5− | 2006 11 09 | 691 | 0.2− | 0.2+ |
| 2001 12 15 | 645 | 0.1+ | 0.2− | 2005 10 29 | G96 | 0.6− | 0.4− | 2006 11 09 | 691 | 0.2− | 0.3− |
| 2003 03 24 | 691 | 0.0 | 0.3+ | 2005 10 29 | G96 | 0.5− | 0.6− | 2006 11 16 | 691 | 0.7+ | 0.2+ |
| 2003 03 24 | 691 | 0.1− | 0.0 | 2005 10 29 | G96 | 0.2+ | 0.4+ | 2006 11 16 | 691 | 0.3+ | 0.4+ |
| 2003 03 24 | 691 | 0.2+ | 0.1+ | 2006 10 21 | 691 | 0.3− | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2005 09 25 | 691 | 0.1+ | 0.0 | 2006 10 21 | 691 | 0.4− | 0.1+ | 2006 11 24 | G96 | 0.1+ | 0.6− |
| 2005 09 25 | 691 | 0.2+ | 0.2+ | 2006 10 21 | 691 | 0.4− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2005 09 25 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 24 | G96 | 0.3− | 0.0 |
| 2005 09 29 | G96 | 0.2− | 0.6− | 2006 10 31 | G96 | 0.5+ | 0.4− | 2006 11 24 | G96 | 0.1− | 0.1− |

**2006 VX$_{48}$ = 2005 JK$_{178}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.97015 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24363098 | $\omega$ | 272.45165 | | +0.81125382 | | +0.57965049 |
| $a$ | 2.5389123 | $\Omega$ | 52.13359 | | −0.49043794 | | +0.74596279 |
| $e$ | 0.2935825 | $i$ | 5.57056 | | −0.31833610 | | +0.32794028 |
| $P$ | 4.05 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 28 | 691 | 0.3+ | 0.4− | 2005 05 11 | G96 | 0.5− | 0.1− | 2006 11 10 | 691 | 0.3− | 0.3+ |
| 2001 04 28 | 691 | 0.2+ | 0.3− | 2005 05 11 | G96 | 0.5− | 0.3− | 2006 11 10 | 691 | 0.3− | 0.1− |
| 2001 04 28 | 691 | 0.5+ | 0.2− | 2005 05 11 | G96 | 0.2− | 0.4− | 2006 11 15 | 703 | 0.3+ | 0.9− |
| 2001 05 14 | 691 | 0.3− | 0.3+ | 2005 05 11 | G96 | 0.4− | 0.3− | 2006 11 15 | 703 | 0.7+ | 1.0− |
| 2001 05 14 | 691 | 0.4− | 0.4+ | 2005 05 14 | 644 | 0.5− | 0.0 | 2006 11 15 | 703 | 0.4− | 0.3− |
| 2001 05 14 | 691 | 0.3− | 0.0 | 2005 05 14 | 644 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.5− |
| 2005 04 16 | 691 | 0.1− | 0.0 | 2005 05 14 | 644 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2005 04 16 | 691 | 0.1− | 0.2+ | 2006 10 19 | G96 | 0.4+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 2005 04 16 | 691 | 0.1− | 0.4− | 2006 10 19 | G96 | 0.3+ | 0.0 | 2006 11 18 | 691 | 0.2+ | 0.2+ |
| 2005 04 30 | 691 | 0.2+ | 0.2+ | 2006 10 19 | G96 | 1.2− | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2005 04 30 | 691 | 0.8+ | 0.3+ | 2006 10 19 | G96 | 0.2− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2005 04 30 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− |

**2006 VA$_{49}$ = 2001 XF$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.62892 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19126699 | $\omega$ | 219.47740 | | −0.29233752 | | −0.94665161 |
| $a$ | 2.9833854 | $\Omega$ | 247.90099 | | +0.91025260 | | −0.23196582 |
| $e$ | 0.2130196 | $i$ | 8.41606 | | +0.29322172 | | −0.22370201 |
| $P$ | 5.15 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.4+ | 0.0 | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2− |
| 2001 12 14 | 704 | 0.3− | 0.4− | 2006 10 04 | G96 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.3− |
| 2001 12 14 | 704 | 0.3− | 0.3− | 2006 11 01 | G96 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.4+ | 0.4− | 2006 11 01 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.4+ | 0.1− |
| 2001 12 17 | 704 | 0.3− | 0.2+ | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.0 | 0.4+ | 2006 11 10 | 691 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 12 17 | 704 | 0.4− | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2006 10 04 | G96 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.4− | 0.0 | | | | |
| 2006 10 04 | G96 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.1− | | | | |

**2006 VZ$_{49}$ = 2000 TB$_{55}$ = 2003 GV$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.49993 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18417882 | $\omega$ | 254.82659 | | +0.71003382 | | +0.68032789 |
| $a$ | 3.0594469 | $\Omega$ | 61.91603 | | −0.54074035 | | +0.69204847 |
| $e$ | 0.0409608 | $i$ | 11.88341 | | −0.45105637 | | +0.24129418 |
| $P$ | 5.35 | $H$ | 14.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 28 | 691 | 0.0 | 0.1+ | 2005 08 08 | E12 | 0.3+ | 0.5+ | 2006 11 16 | 691 | 0.6− | 0.3− |
| 1993 04 28 | 691 | (3.8− | 6.0−) | 2005 08 08 | E12 | 0.3+ | 0.5− | 2006 11 16 | 691 | 0.2+ | 0.0 |
| 1993 04 28 | 691 | 0.2− | 0.6+ | 2005 09 25 | 703 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1+ |
| 2000 10 01 | 704 | 1.0− | 0.7+ | 2005 09 25 | 703 | 0.9− | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2000 10 01 | 704 | 0.5− | 0.2+ | 2005 09 25 | 703 | 1.2− | 0.7+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2000 10 01 | 704 | 0.3− | 0.6+ | 2005 09 25 | 703 | 0.3− | 0.9− | 2006 11 21 | 704 | 0.0 | 0.8− |
| 2000 10 02 | 699 | 0.5+ | 0.8+ | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.6+ | 0.8− |
| 2000 10 02 | 699 | 0.1+ | 1.0+ | 2006 10 19 | G96 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.1+ |
| 2000 10 02 | 699 | 0.7+ | 1.1+ | 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.8− |
| 2000 10 02 | 699 | 0.5+ | 1.4+ | 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 23 | 703 | 0.7− | 0.7− |
| 2003 04 07 | 049 | 0.7+ | 0.8− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 23 | 703 | 1.1+ | 0.2+ |
| 2003 04 07 | 049 | 0.0 | 0.3+ | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 11 23 | 703 | 0.7+ | 1.2− |
| 2003 04 07 | 049 | 1.0+ | 0.1+ | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 11 23 | 703 | 0.6− | 0.5+ |
| 2003 04 09 | 644 | 0.6+ | 1.1+ | 2006 11 01 | G96 | 0.2− | 0.1− | 2006 11 30 | 691 | 0.3− | 0.0 |
| 2003 04 09 | 644 | 1.0+ | 1.2+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 30 | 691 | 0.2− | 0.3+ |
| 2003 04 09 | 644 | 0.9+ | 0.3+ | 2006 11 10 | 691 | 0.1+ | 0.2+ | 2006 11 30 | 691 | 0.5− | 0.0 |
| 2005 08 08 | E12 | 0.3− | 0.6+ | 2006 11 10 | 691 | 0.2+ | 0.0 | | | | |
| 2005 08 08 | E12 | 1.1+ | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.3+ | | | | |

**2006 VC$_{50}$ = 1995 SC$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 353.02262 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27480565 | $\omega$ | 4.24338 | | +0.62334296 | | −0.78085572 |
| $a$ | 2.3430719 | $\Omega$ | 47.20227 | | +0.71575587 | | +0.54849791 |
| $e$ | 0.2098171 | $i$ | 3.22873 | | +0.31486042 | | +0.29902240 |
| $P$ | 3.59 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.2+ | 0.1+ | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 1995 09 19 | 691 | 0.4+ | 0.2+ | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 16 | 691 | 0.3+ | 0.2− |
| 1995 09 19 | 691 | 0.8− | 0.4+ | 2006 11 01 | G96 | 0.1− | 0.6− | 2006 11 16 | 691 | 0.2+ | 0.2+ |
| 1995 09 24 | 691 | 0.2+ | 0.2− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 21 | 704 | 0.5+ | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 24 | 691 | 0.2− | 0.0 | 2006 11 01 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.4− | 0.6+ | | |
| 1995 09 24 | 691 | 0.0 | 0.1− | 2006 11 10 | 691 | 0.6+ | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.4− | | |
| 2004 03 15 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.6+ | 0.5+ | | |
| 2004 03 15 | 691 | 0.1− | 0.4+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 30 | 691 | 0.2− | 0.2+ | | |
| 2004 03 15 | 691 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.6− | 0.3+ | 2006 11 30 | 691 | 0.0 | 0.3+ | | |
| 2006 10 19 | G96 | 0.5− | 0.3− | 2006 11 15 | 703 | 0.6− | 0.8+ | 2006 11 30 | 691 | 0.2− | 0.2+ | | |
| 2006 10 19 | G96 | 0.3− | 0.7− | 2006 11 15 | 703 | 0.6− | 0.7− | | | | | | |
| 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 15 | 703 | 2.5− | 0.2+ | | | | | | |

### 2006 $VD_{50}$ = 2004 $ED_{113}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.83202 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27303667 | $\omega$ | 354.67698 | | +0.65306285 | −0.75622451 | |
| $a$ | 2.3531813 | $\Omega$ | 54.54305 | | +0.69663070 | +0.57895485 | |
| $e$ | 0.2034257 | $i$ | 2.84400 | | +0.29700940 | +0.30485370 | |
| $P$ | 3.61 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 691 | 0.2− | 0.1− | 2006 11 10 | 691 | 0.1− | 0.3− | 2006 11 18 | 704 | (1.9+ | 0.4−) | | |
| 2004 03 15 | 691 | 0.2− | 0.2− | 2006 11 10 | 691 | 0.1− | 0.5+ | 2006 11 18 | 704 | 1.3+ | 0.2+ | | |
| 2004 03 15 | 691 | 0.1− | 0.1− | 2006 11 15 | 703 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.7+ | 0.1− | | |
| 2004 03 23 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 1.0− | 0.2+ | 2006 11 20 | 691 | (2.4+ | 2.1−) | | |
| 2004 03 23 | 691 | 0.0 | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.3− | | |
| 2004 03 23 | 691 | 0.4+ | 0.1− | 2006 11 15 | 703 | 0.4− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− | | |
| 2006 10 28 | G96 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.4− | 0.5+ | | |
| 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.2− | 2006 12 01 | 704 | 0.0 | 0.5− | | |
| 2006 10 28 | G96 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 704 | (1.7− | 0.1+) | | |
| 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 18 | 704 | (2.3+ | 0.5+) | 2006 12 01 | 704 | 0.5+ | 0.8+ | | |

### 2006 $VF_{50}$ = 2000 $GQ_{145}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.82264 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23501657 | $\omega$ | 353.45001 | | +0.91931637 | −0.39307603 | |
| $a$ | 2.6005810 | $\Omega$ | 29.71781 | | +0.36273442 | +0.82804647 | |
| $e$ | 0.1077665 | $i$ | 2.15861 | | +0.15258162 | +0.39978779 | |
| $P$ | 4.19 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 05 | 691 | 0.3+ | 0.6− | 2006 11 01 | G96 | 0.1− | 0.4− | 2006 11 18 | 704 | 0.2− | 1.1+ | | |
| 1995 02 05 | 691 | 0.6− | 0.4− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 20 | 691 | 0.0 | 0.1+ | | |
| 1995 02 05 | 691 | 0.2− | 0.3− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 20 | 691 | 0.1− | 0.2+ | | |
| 2000 04 11 | 691 | 0.1+ | 0.1+ | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.0 | | |
| 2000 04 11 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1− | | |
| 2000 04 11 | 691 | 0.4+ | 0.0 | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.2− | 0.8+ | | |
| 2000 04 13 | 691 | 0.0 | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.9+ | 0.2+ | | |
| 2000 04 13 | 691 | 0.2− | 0.1+ | 2006 11 15 | 703 | 1.1− | 0.1− | 2006 11 21 | 704 | 0.0 | 1.0+ | | |
| 2000 04 13 | 691 | 0.0 | 0.1+ | 2006 11 15 | 703 | 0.4− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.5+ | | |
| 2004 04 20 | 291 | 0.1+ | 0.4+ | 2006 11 15 | 703 | 0.4+ | 0.0 | 2006 12 01 | 704 | 0.6+ | 0.4+ | | |
| 2004 04 20 | 291 | 0.2+ | 0.3+ | 2006 11 15 | 703 | 0.8− | 0.0 | 2006 12 01 | 704 | 1.0+ | 0.7+ | | |
| 2004 04 20 | 291 | 0.2+ | 0.4+ | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 12 01 | 704 | 0.8+ | 0.1+ | | |
| 2006 09 28 | G96 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.5− | | |
| 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 12 01 | 704 | 0.6− | 0.1+ | | |
| 2006 09 28 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.2+ | | | | | | |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.7− | 0.0 | | | | | | |

### 2006 $VK_{50}$ = 2005 $GS_{167}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 31.38365 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29969655 | $\omega$ | 317.88956 | | +0.99871043 | −0.02175338 | |
| $a$ | 2.2114726 | $\Omega$ | 43.42206 | | +0.03979833 | +0.89644623 | |
| $e$ | 0.1528227 | $i$ | 3.82655 | | −0.03152094 | +0.44261829 | |
| $P$ | 3.29 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 18 | 691 | 0.1− | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.3+ | | |
| 2004 01 18 | 691 | 0.1+ | 0.2− | 2006 11 01 | G96 | 0.3+ | 0.7− | 2006 11 18 | 704 | 0.2+ | 1.1+ | | |
| 2004 01 18 | 691 | 0.0 | 0.2− | 2006 11 01 | G96 | 1.4− | 1.1− | 2006 11 20 | 691 | 0.2− | 0.1+ | | |
| 2005 04 11 | G96 | 0.3+ | 0.6+ | 2006 11 01 | G96 | (0.1− | 1.9−) | 2006 11 20 | 691 | 0.1− | 0.0 | | |
| 2005 04 11 | G96 | 0.1+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.4− | 2006 11 20 | 691 | 0.2− | 0.4− | | |
| 2005 04 11 | G96 | 0.2+ | 0.2− | 2006 11 10 | 691 | 0.4+ | 0.1+ | 2006 11 21 | 704 | 0.5− | 1.2+ | | |
| 2005 04 11 | G96 | 0.1− | 0.0 | 2006 11 10 | 691 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.8+ | 0.2+ | | |
| 2005 04 17 | 691 | 0.4+ | 0.1+ | 2006 11 10 | 691 | 0.3+ | 0.1− | 2006 11 21 | 704 | (2.4− | 0.1+) | | |
| 2005 04 17 | 691 | 0.2− | 0.2+ | 2006 11 15 | 703 | 0.1+ | 1.2+ | 2006 11 21 | 704 | (1.1− | 1.7+) | | |
| 2005 04 17 | 691 | 0.0 | 0.0 | 2006 11 15 | 703 | 0.7− | 1.1− | 2006 11 21 | 704 | 0.5+ | 0.1+ | | |
| 2005 05 09 | G96 | 0.4− | 0.1+ | 2006 11 15 | 703 | 0.6− | 1.2+ | 2006 11 22 | 704 | 1.4+ | 0.6+ | | |
| 2005 05 09 | G96 | 0.2+ | 0.3+ | 2006 11 15 | 703 | (0.6+ | 1.5+) | 2006 11 22 | 704 | 0.6+ | 0.5− | | |
| 2005 05 09 | G96 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.3− | 0.7+ | 2006 11 22 | 704 | 0.9+ | 0.6+ | | |
| 2005 05 09 | G96 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.6− | 0.0 | 2006 11 22 | 704 | 0.4+ | 0.1− | | |
| 2006 09 28 | G96 | 0.3+ | 0.4− | 2006 11 16 | 691 | 0.4− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.3+ | | |
| 2006 09 28 | G96 | 0.2+ | 0.3− | 2006 11 18 | 704 | 1.0+ | 1.2− | 2006 11 24 | 691 | 0.1− | 0.1+ | | |
| 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.1+ | | |

### 2006 $VR_{50}$ = 2005 $JE_{115}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 15.80057 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29505658 | $\omega$ | 321.19951 | | +0.96918215 | −0.21960754 | |
| $a$ | 2.2345969 | $\Omega$ | 51.85113 | | +0.24615084 | +0.84531344 | |
| $e$ | 0.2558792 | $i$ | 8.15974 | | +0.00978358 | +0.48705002 | |
| $P$ | 3.34 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 10 | G96 | 0.2+ | 0.2− | 2006 11 15 | 704 | 0.7− | 0.4− | 2006 11 19 | 704 | 0.1− | 0.5− | | |
| 2005 05 10 | G96 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.1+ | 0.6+ | 2006 11 19 | 704 | 0.2− | 0.1+ | | |
| 2005 05 10 | G96 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.8+ | 2006 11 19 | 704 | 0.2+ | 0.4− | | |
| 2005 05 10 | G96 | 0.0 | 0.1− | 2006 11 16 | 704 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3− | | |
| 2005 05 14 | G96 | 0.3+ | 0.1− | 2006 11 16 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 704 | (0.8− | 3.0+) | | |
| 2005 05 14 | G96 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.5− | 2006 11 22 | 704 | (0.8− | 1.8+) | | |
| 2005 05 14 | G96 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.5+ | 2006 11 22 | 704 | (0.7− | 2.9+) | | |
| 2005 05 14 | G96 | 1.1− | 0.5+ | 2006 11 16 | 704 | 0.3+ | 0.7+ | 2006 11 22 | 704 | (0.8− | 2.6+) | | |
| 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.2− | 0.3− | 2006 11 22 | 704 | (0.8− | 1.8+) | | |
| 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.6− | 0.1− | 2006 11 29 | 704 | (0.4− | 2.2−) | | |
| 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.3− | 1.0+ | 2006 11 29 | 704 | (0.1− | 2.8−) | | |
| 2006 11 15 | 704 | 0.3− | 0.6− | 2006 11 16 | 704 | 0.1+ | 0.1− | 2006 11 29 | 704 | (1.2− | 2.6−) | | |
| 2006 11 15 | 704 | 0.6− | 0.2− | 2006 11 16 | 704 | 0.0 | 0.5− | 2006 11 29 | 704 | 1.0+ | 0.1− | | |
| 2006 11 15 | 704 | 0.7− | 0.3− | 2006 11 16 | 704 | 0.8+ | 0.1+ | | | | | | |
| 2006 11 15 | 704 | 0.3− | 0.6− | 2006 11 19 | 704 | 0.4+ | 0.3+ | | | | | | |

### 2006 $VU_{50}$ = 2000 $SZ_{350}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.18075 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18111760 | $\omega$ | 300.48762 | | +0.95345333 | −0.06555767 | |
| $a$ | 3.0938240 | $\Omega$ | 64.70728 | | +0.21305865 | +0.83718354 | |
| $e$ | 0.2179348 | $i$ | 18.99798 | | −0.21338408 | +0.54297874 | |
| $P$ | 5.44 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 29 | 699 | 0.3+ | 0.3− | 2005 07 28 | E12 | 0.8+ | 0.5+ | 2006 11 16 | 704 | 0.3+ | 1.0+ | | |
| 2000 09 29 | 699 | 0.4+ | 0.5− | 2005 07 28 | E12 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.2+ | 0.4+ | | |
| 2000 09 29 | 699 | 0.6− | 0.4+ | 2005 08 09 | E12 | 0.1− | 0.1− | 2006 11 16 | 704 | 0.2− | 0.6+ | | |
| 2000 09 29 | 699 | 0.3+ | 1.1+ | 2005 08 09 | E12 | 0.0 | 0.6− | 2006 11 16 | 704 | 0.3− | 1.2+ | | |
| 2000 09 30 | 699 | 0.1− | 1.0− | 2005 08 09 | E12 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.2+ | 0.1− | | |
| 2000 09 30 | 699 | 0.6+ | 0.6− | 2005 08 09 | E12 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.5− | 0.2− | | |
| 2000 09 30 | 699 | 0.3+ | 0.5− | 2006 11 10 | 691 | 0.1− | 0.7− | 2006 11 22 | 704 | 0.1+ | 0.5− | | |
| 2000 09 30 | 699 | 0.5− | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.4− | 0.3+ | | |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2006 11 10 | 691 | 0.2− | 0.3− | 2006 11 22 | 704 | 1.3+ | 0.6+ | | |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2006 11 15 | 704 | 0.5+ | 0.2− | 2006 11 27 | 704 | 0.3+ | 0.6+ | | |
| 2005 07 28 | E12 | 0.1+ | 0.1− | 2006 11 15 | 704 | 0.1− | 0.8+ | 2006 11 27 | 704 | 0.1− | 1.0+ | | |
| 2005 07 28 | E12 | 0.9− | 1.2+ | 2006 11 15 | 704 | 0.2− | 0.9+ | 2006 11 27 | 704 | 0.2+ | 0.0 | | |

**2006 VV$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 209.50999 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26351112 | $\omega$ | 312.46116 | | −0.80909770 | | +0.57514773 |
| $a$ | 2.4095545 | $\Omega$ | 262.99781 | | −0.49717877 | | −0.77941044 |
| $e$ | 0.1175068 | $i$ | 6.98426 | | −0.31332759 | | −0.24844408 |
| $P$ | 3.74 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 13 | 644 | 0.4− | 0.7+ | 2002 11 01 | 644 | 0.2− | 1.0+ | 2005 09 11 | 699 | 0.4− | 2.1+ |
| 2001 07 13 | 644 | 0.4− | 0.6+ | 2004 03 29 | 703 | 1.1+ | 1.7+ | 2006 11 10 | 691 | 0.4− | 0.2− |
| 2001 07 13 | 644 | 0.4− | 0.9+ | 2004 03 29 | 703 | 0.3+ | 1.0+ | 2006 11 10 | 691 | 0.1+ | 0.0 |
| 2001 07 27 | 608 | 0.2+ | 0.7− | 2004 03 29 | 703 | 0.5− | 0.1+ | 2006 11 10 | 691 | 0.0 | 0.0 |
| 2001 07 27 | 608 | 0.0 | 0.7− | 2004 03 29 | 703 | 0.6+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2001 07 27 | 608 | 0.2+ | 0.8− | 2005 09 11 | 699 | 0.9− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2002 11 01 | 644 | 0.2+ | 0.9+ | 2005 09 11 | 699 | 0.9+ | 0.8− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 11 01 | 644 | 0.2+ | 0.9+ | 2005 09 11 | 699 | 0.5+ | 0.9+ | | | | |

**2006 VY$_{50}$ = 2005 PD**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 72.98578 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17432349 | $\omega$ | 65.30624 | | +0.70162791 | | +0.57528901 |
| $a$ | 3.1736969 | $\Omega$ | 256.72864 | | −0.70175695 | | +0.66017881 |
| $e$ | 0.2511358 | $i$ | 25.59236 | | +0.12351303 | | +0.48291458 |
| $P$ | 5.65 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 25 | 644 | 0.4+ | 0.3− | 2005 08 02 | 704 | 0.3+ | 0.7+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2005 06 25 | 644 | 0.3+ | 0.1+ | 2005 08 02 | 704 | 0.2− | 0.4− | 2006 11 16 | 691 | 0.0 | 0.2+ |
| 2005 06 25 | 644 | 0.5+ | 0.3− | 2005 08 02 | 704 | 0.3+ | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2005 07 08 | 703 | 0.4− | 1.4+ | 2005 08 02 | 704 | 0.3− | 0.1+ | 2006 11 20 | 691 | 0.4− | 0.1− |
| 2005 07 08 | 703 | 0.0 | 0.2− | 2005 08 02 | 704 | 0.4+ | 0.5− | 2006 11 20 | 691 | 0.3+ | 0.1+ |
| 2005 07 08 | 703 | 0.3+ | 0.4− | 2005 08 02 | 704 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.3− | 0.1− |
| 2005 07 08 | 703 | 2.4− | 0.7− | 2006 11 10 | 691 | 0.1− | 0.6− | 2006 11 24 | 691 | 0.5+ | 1.0− |
| 2005 08 01 | 704 | 0.4+ | 0.3+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.2− | 0.2+ |
| 2005 08 01 | 704 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.1− | 0.4+ | | | | |
| 2005 08 01 | 704 | 0.2+ | 0.4− | 2006 11 16 | 691 | 0.4+ | 0.5+ | | | | |

**2006 VZ$_{50}$ = 1998 WL$_{28}$ = 2005 NM$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.69402 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23688046 | $\omega$ | 118.42816 | | +0.84283824 | | −0.53211988 |
| $a$ | 2.5869213 | $\Omega$ | 273.82536 | | +0.46124907 | | +0.79127326 |
| $e$ | 0.0726182 | $i$ | 4.62474 | | +0.27725980 | | +0.30122262 |
| $P$ | 4.16 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 11 15 | 691 | (2.5− | 2.9−) | 2001 08 14 | 608 | 0.0 | 1.1− | 2006 11 16 | 704 | 0.1− | 0.8+ |
| 1998 11 15 | 691 | 0.1+ | 0.2− | 2002 12 06 | 695 | 0.3− | 0.3+ | 2006 11 16 | 704 | 0.4− | 0.9+ |
| 1998 11 15 | 691 | 0.0 | 0.9− | 2002 12 06 | 695 | 0.7− | 0.1+ | 2006 11 16 | 691 | 0.7+ | 0.7− |
| 1998 11 19 | 691 | 0.4− | 0.5− | 2005 07 04 | G96 | 0.1− | 0.7− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 1998 11 19 | 691 | 0.7− | 0.1− | 2005 07 04 | G96 | 0.1− | 0.3− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 1998 11 19 | 691 | 0.6− | 0.1− | 2005 07 04 | G96 | 0.6− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.5+ |
| 1998 11 23 | 691 | 0.3+ | 0.2− | 2005 07 04 | G96 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.2+ | 0.2− |
| 1998 11 23 | 691 | 0.7+ | 0.1− | 2005 07 10 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.3+ |
| 1998 11 23 | 691 | 0.3+ | 0.5+ | 2005 07 10 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.6+ |
| 2001 07 21 | 691 | 0.2− | 0.5− | 2005 07 10 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.3+ | 0.0 |
| 2001 07 21 | 691 | 0.4+ | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.2+ | 2006 11 24 | 691 | 0.2− | 0.1− |
| 2001 07 21 | 691 | 0.1+ | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2001 08 14 | 608 | 0.1+ | 1.1− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.2− | 0.5+ |
| 2001 08 14 | 608 | 0.4+ | 1.5− | 2006 11 16 | 704 | 0.4− | 0.1− | | | | |

**2006 VA$_{51}$ = 2002 VY$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.62341 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25726346 | $\omega$ | 75.63088 | | +0.95747930 | | +0.28080821 |
| $a$ | 2.4484091 | $\Omega$ | 268.02817 | | −0.28358633 | | +0.87389995 |
| $e$ | 0.1703240 | $i$ | 3.79701 | | −0.05302992 | | +0.39679419 |
| $P$ | 3.83 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 12 | 699 | 1.3+ | 0.4− | 2002 11 12 | 704 | (2.3+ | 0.8+) | 2006 11 10 | 691 | 0.1+ | 0.1− |
| 1998 10 12 | 699 | 0.9− | 0.3− | 2002 11 12 | 704 | 0.0 | 0.5+ | 2006 11 10 | 691 | 0.1− | 0.2+ |
| 1998 10 12 | 699 | 0.6− | 0.5− | 2002 12 28 | 291 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.1− |
| 2002 11 08 | 704 | 0.6+ | 1.0+ | 2002 12 28 | 291 | 0.2− | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2002 11 08 | 704 | 0.3+ | 0.4+ | 2002 12 28 | 291 | 0.2− | 0.4− | 2006 11 16 | 691 | 0.1− | 0.1− |
| 2002 11 08 | 704 | 0.0 | 0.5+ | 2005 02 15 | 809 | 0.1+ | 0.4+ | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2002 11 12 | 704 | 0.1− | 0.3− | 2005 02 15 | 809 | 0.3+ | 0.6+ | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2002 11 12 | 704 | 0.7+ | 0.7+ | 2005 02 15 | 809 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2002 11 12 | 704 | 0.7− | 1.0+ | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.4+ | 0.0 |

**2006 VM$_{51}$ = 1996 GG$_{4}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 304.51557 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25432607 | $\omega$ | 66.35557 | | −0.57081176 | | −0.81827845 |
| $a$ | 2.4672252 | $\Omega$ | 58.62372 | | +0.72143733 | | −0.53924463 |
| $e$ | 0.1601640 | $i$ | 4.55356 | | +0.39204861 | | −0.19908693 |
| $P$ | 3.88 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 04 11 | 691 | 0.9− | 0.0 | 2004 05 28 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 1996 04 11 | 691 | 0.8− | 0.3− | 2004 05 28 | 691 | 0.7+ | 0.5+ | 2006 11 16 | 691 | 0.1+ | 0.1− |
| 1996 04 11 | 691 | 0.8− | 0.2− | 2004 05 28 | 691 | 0.3− | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1996 04 15 | 691 | 0.7+ | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 1996 04 15 | 691 | 1.1+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.1+ | 2006 11 20 | 691 | 1.0+ | 0.1− |
| 1996 04 15 | 691 | 0.5+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2002 12 27 | 644 | 0.3− | 0.3+ | 2006 11 10 | 691 | 0.3+ | 0.2− | 2006 11 24 | 691 | 0.2− | 0.5+ |
| 2002 12 27 | 644 | 0.1− | 1.0+ | 2006 11 10 | 691 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2002 12 27 | 644 | 0.2− | 0.7+ | 2006 11 10 | 691 | 0.2− | 0.3− | 2006 11 24 | 691 | 0.5− | 0.2+ |

**2006 VV$_{51}$ = 1998 KK$_{5}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.38555 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29512914 | $\omega$ | 140.45561 | | +0.06799560 | | −0.99746997 |
| $a$ | 2.2342306 | $\Omega$ | 305.63584 | | +0.90877363 | | +0.07050229 |
| $e$ | 0.1130582 | $i$ | 1.46247 | | +0.41171238 | | +0.00911546 |
| $P$ | 3.34 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 18 | 691 | 0.8+ | 1.2+ | 2006 09 25 | 691 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 1998 05 18 | 691 | 0.3− | 1.4+ | 2006 09 25 | 691 | 0.1− | 0.6+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 1998 05 18 | 691 | 1.2+ | 1.7+ | 2006 10 03 | 691 | 0.6− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 1998 05 27 | 691 | 0.5+ | 0.4+ | 2006 10 03 | 691 | 0.4− | 0.4+ | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 1998 05 27 | 691 | 0.1− | 0.0 | 2006 10 03 | 691 | 0.6− | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.8+ |
| 1998 05 27 | 691 | 0.1+ | 0.8+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2001 02 03 | 691 | 0.1− | 0.3+ | 2006 10 21 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 1.1+ | 0.0 |
| 2001 02 03 | 691 | 0.1− | 0.7+ | 2006 10 21 | 644 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 1.2− | 0.6− |
| 2001 02 03 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 691 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 03 21 | 608 | 0.4+ | 0.8− | 2006 10 29 | 691 | 0.4+ | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2001 03 21 | 608 | 0.3+ | 1.0− | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2001 03 21 | 608 | 0.5+ | 0.8− | 2006 11 10 | A44 | 0.6− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2004 01 31 | 691 | 0.1− | 0.2+ | 2006 11 10 | A44 | 0.9− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.4+ |
| 2004 01 31 | 691 | 0.2− | 0.2+ | 2006 11 10 | A44 | 0.5− | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.1+ |
| 2004 01 31 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2+ | | | | |
| 2006 09 25 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.5− | 0.3+ | | | | |

**2006 VY$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 60.96918 | | | (2000.0) | | |
| $n$ | 0.21768201 | $\omega$ | 352.76793 | | +0.54512613 | +0.83764342 |
| $a$ | 2.7368712 | $\Omega$ | 310.25864 | | −0.76689252 | +0.48160616 |
| $e$ | 0.1795959 | $i$ | 2.59194 | | −0.33869361 | +0.25769945 |
| $P$ | 4.53 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 21 | 807 | 0.4+ | 0.1− | 2006 10 03 | 691 | 0.2+ | 0.2− | 2006 11 11 | 691 | 0.6− | 0.3− |
| 2001 08 21 | 807 | 0.1+ | 0.3+ | 2006 10 03 | 691 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.4− | 0.4+ |
| 2001 08 23 | 691 | 0.0 | 0.2+ | 2006 10 03 | 691 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.5+ |
| 2001 08 23 | 691 | 0.1− | 0.1+ | 2006 10 31 | 691 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.5− | 0.5+ |
| 2001 08 23 | 691 | 0.1− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.2− | 0.5+ |
| 2006 09 25 | 691 | 0.1− | 0.2− | 2006 10 31 | 691 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.1+ |
| 2006 09 25 | 691 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.4+ | 0.2− |
| 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.3− | | | | |

**2006 VV$_{52}$ = 2004 GJ$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 75.66815 | | | (2000.0) | | |
| $n$ | 0.17723497 | $\omega$ | 274.77896 | | +0.63174259 | +0.76150992 |
| $a$ | 3.1388443 | $\Omega$ | 35.75782 | | −0.57578611 | +0.58614779 |
| $e$ | 0.1945637 | $i$ | 14.35980 | | −0.51901026 | +0.27664673 |
| $P$ | 5.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 14 | 691 | 0.2− | 0.1− | 2006 10 04 | G96 | 0.3+ | 0.5− | 2006 11 17 | 691 | 0.0 | 0.2− |
| 2004 04 14 | 691 | 0.1+ | 0.1− | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2004 04 14 | 691 | 0.1− | 0.2+ | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.5+ |
| 2004 04 16 | 644 | 0.4+ | 0.2+ | 2006 10 04 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2004 04 16 | 644 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.5− | 0.3+ |
| 2004 04 16 | 644 | 0.4+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2005 08 05 | E12 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.3− | 0.2+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2005 08 05 | E12 | 0.1− | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2005 08 05 | E12 | 0.0 | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.3+ | 0.2− |
| 2005 08 05 | E12 | 0.0 | 0.4− | 2006 11 15 | 691 | 0.3+ | 0.1− | | | | |

**2006 VD$_{53}$ = 1997 SC$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 335.61173 | | | (2000.0) | | |
| $n$ | 0.22492476 | $\omega$ | 114.95778 | | +0.31345713 | −0.94857804 |
| $a$ | 2.6777983 | $\Omega$ | 316.69689 | | +0.84641482 | +0.30014518 |
| $e$ | 0.1483134 | $i$ | 3.68616 | | +0.43049573 | +0.10056132 |
| $P$ | 4.38 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 27 | 691 | 0.4− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.6− |
| 1997 09 27 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.7+ |
| 1997 09 27 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.1− |
| 1997 10 04 | 691 | 0.3+ | 0.5− | 2006 11 15 | 691 | 0.2− | 0.6− | 2006 11 19 | 704 | 0.5+ | 0.8+ |
| 1997 10 04 | 691 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.4− | 0.9− | 2006 11 22 | 691 | 0.2− | 0.3+ |
| 1997 10 04 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 704 | (0.1− | 1.9+) | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2006 11 09 | 644 | 0.4− | 0.2− | 2006 11 16 | 704 | 0.7− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2006 11 09 | 644 | 0.1+ | 0.7− | 2006 11 16 | 704 | 0.1− | 0.6+ | 2006 11 22 | 704 | (1.5− | 0.1−) |
| 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 16 | 704 | 0.1− | 0.9+ | 2006 11 22 | 704 | 0.3+ | 0.5− |
| 2006 11 11 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 1.0− | 0.5− | 2006 11 22 | 704 | 0.1+ | 0.6+ |
| 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 1.2− | 1.0+ | 2006 11 22 | 704 | 0.4− | 0.6+ |
| 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 1.1+ | 2006 11 22 | 704 | 0.3+ | 0.5− |
| 2006 11 14 | 703 | 1.1− | 0.3− | 2006 11 17 | 691 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.0 | 1.1− |
| 2006 11 14 | 703 | 0.3− | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.2+ | 2006 12 01 | G96 | 0.3+ | 0.7− |
| 2006 11 14 | 703 | 0.7− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.1− | 2006 12 01 | G96 | 0.0 | 0.7− |
| 2006 11 14 | 703 | 0.7+ | 0.6− | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 12 01 | G96 | 0.2− | 0.7− |
| 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 | | | | |
| 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1− | | | | |

**2006 VG$_{53}$ = 1995 WY$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.24507 | | | (2000.0) | | |
| $n$ | 0.18007567 | $\omega$ | 296.31986 | | −0.91985575 | +0.36539913 |
| $a$ | 3.1057467 | $\Omega$ | 265.39257 | | −0.28907570 | −0.87729274 |
| $e$ | 0.0617697 | $i$ | 8.22796 | | −0.26514266 | −0.31119275 |
| $P$ | 5.47 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.0 | 0.1− | 2006 10 31 | 691 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.3− | 0.4− |
| 1995 11 19 | 691 | 0.4+ | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.2− |
| 1995 11 19 | 691 | 0.3+ | 0.1− | 2006 10 31 | 691 | 0.0 | 0.4− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1995 11 24 | 691 | 0.3− | 0.5+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 1995 11 24 | 691 | 0.5− | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 1995 11 24 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2006 10 23 | 691 | 0.1+ | 1.1+ | 2006 11 15 | 691 | 0.3− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2006 10 23 | 691 | 0.0 | 0.4− | 2006 11 15 | 691 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2006 10 23 | 691 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.2− | 0.1− |

**2006 VH$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 307.46279 | | | (2000.0) | | |
| $n$ | 0.29208113 | $\omega$ | 142.83540 | | −0.11687505 | −0.99205849 |
| $a$ | 2.2497472 | $\Omega$ | 313.82416 | | +0.89501400 | −0.08492768 |
| $e$ | 0.0653604 | $i$ | 3.69361 | | +0.43045344 | −0.09277525 |
| $P$ | 3.37 | $H$ | 18.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 644 | 0.6− | 0.9+ | 2006 11 11 | 691 | 0.3+ | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2004 01 16 | 644 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.5− | 0.0 | 2006 11 17 | 691 | 0.4− | 0.0 |
| 2004 01 16 | 644 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.3− |
| 2004 01 28 | 691 | 0.2+ | 0.5− | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2004 01 28 | 691 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2004 01 28 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.2− | 0.3+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2004 02 17 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2004 02 17 | 645 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2006 11 11 | 691 | 0.4+ | 0.1− | 2006 11 17 | 691 | 0.2− | 0.0 | | | | |

**2006 VQ$_{53}$ = 2005 NV$_{78}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 305.56253 | | | (2000.0) | | |
| $n$ | 0.22206259 | $\omega$ | 158.18065 | | −0.24508079 | −0.96796198 |
| $a$ | 2.7007587 | $\Omega$ | 305.96541 | | +0.87922326 | −0.19815898 |
| $e$ | 0.0693789 | $i$ | 3.87060 | | +0.40853625 | −0.15421618 |
| $P$ | 4.44 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 645 | 0.0 | 0.1− | 2005 07 15 | G96 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 2002 12 06 | 645 | 0.0 | 0.1+ | 2005 07 15 | G96 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2005 07 12 | G96 | 0.5+ | 0.3− | 2005 07 15 | G96 | 0.3− | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2005 07 12 | G96 | 0.2− | 0.1− | 2005 07 15 | G96 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.2+ | 0.1+ |
| 2005 07 12 | G96 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2005 07 12 | G96 | 0.4− | 0.1+ | 2006 10 20 | G96 | 0.4− | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2005 07 12 | G96 | 0.4+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2005 07 12 | G96 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2005 07 12 | G96 | 0.4+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.5− | 2006 11 22 | 691 | 0.3− | 0.0 |
| 2005 07 12 | G96 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2+ |

**2006 VF$_{54}$ = 2004 DU$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 270.45311 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27297951 | $\omega$ | 106.43740 | | −0.73957943 | | −0.66995383 |
| $a$ | 2.3535098 | $\Omega$ | 31.58660 | | +0.56077589 | | −0.66648591 |
| $e$ | 0.0555464 | $i$ | 7.09384 | | +0.37222663 | | −0.32704495 |
| $P$ | 3.61 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.2− | 0.1+ |
| 2002 09 05 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 17 | 691 | 0.2− | 0.0 |
| 2002 10 05 | 644 | 0.6− | 1.1+ | 2006 10 23 | 691 | 0.1− | 0.0 | 2006 11 17 | 691 | 0.3− | 0.4+ |
| 2002 10 05 | 644 | 0.6− | 0.7+ | 2006 10 23 | 691 | 0.1+ | 0.5− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2002 10 05 | 644 | 0.4− | 0.7+ | 2006 10 23 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.3− | 0.1− |
| 2004 02 16 | 704 | (1.7− | 0.2−) | 2006 10 31 | 691 | 0.1+ | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2004 02 16 | 704 | 0.4+ | 1.3− | 2006 10 31 | 691 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.4+ | 0.3+ |
| 2004 02 16 | 704 | 0.6− | 0.1− | 2006 10 31 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1+ |
| 2004 02 16 | 704 | 0.2− | 0.4− | 2006 11 11 | 691 | 0.4− | 0.4− | 2006 11 22 | 691 | 0.2+ | 0.2+ |
| 2004 02 19 | 704 | 0.6+ | 0.9+ | 2006 11 11 | 691 | 0.0 | 0.6− | 2006 11 23 | 703 | 1.0+ | 0.2+ |
| 2004 02 19 | 704 | 0.3− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 11 23 | 703 | 0.2+ | 1.1+ |
| 2004 02 19 | 704 | 0.4+ | 1.2+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 23 | 703 | 0.4− | 0.2− |
| 2006 09 30 | G96 | 0.0 | 0.4− | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 23 | 703 | 0.5− | 0.1+ |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.1+ | | | | |

**2006 VS$_{54}$ = 1995 UN$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.72493 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18555914 | $\omega$ | 284.99836 | | +0.99921636 | | +0.00589246 |
| $a$ | 3.0442559 | $\Omega$ | 74.67581 | | +0.01056842 | | +0.91323787 |
| $e$ | 0.1926260 | $i$ | 2.32587 | | −0.03814415 | | +0.40738419 |
| $P$ | 5.31 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 1995 10 20 | 691 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.7− | 0.3− | 2006 11 19 | 691 | 0.2− | 0.1− |
| 1995 10 20 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.4− | 0.3+ |
| 1995 10 26 | 691 | 0.3− | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 1995 10 26 | 691 | 0.3− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 1995 10 26 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2006 10 31 | G96 | 0.5+ | 0.2− | 2006 11 15 | 691 | 0.0 | 0.0 | | | | |
| 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.0 | | | | |

**2006 VT$_{54}$ = 2004 BD$_{135}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.53250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29602882 | $\omega$ | 271.28082 | | −0.62898758 | | −0.77713386 |
| $a$ | 2.2297015 | $\Omega$ | 217.72101 | | +0.72617187 | | −0.57770746 |
| $e$ | 0.0800888 | $i$ | 1.95939 | | +0.27757708 | | −0.24963384 |
| $P$ | 3.33 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 691 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2003 12 22 | 691 | 0.0 | 0.0 | 2004 02 16 | 691 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.2+ |
| 2003 12 22 | 691 | 0.2+ | 0.1− | 2004 02 16 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2003 12 27 | 691 | 0.3− | 0.0 | 2004 02 16 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2003 12 27 | 691 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.0 |
| 2003 12 27 | 691 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2004 01 19 | 699 | 0.1− | 1.0− | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2004 01 19 | 699 | 1.3− | 0.4− | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 01 19 | 699 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2004 01 19 | 699 | 0.4+ | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.8− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.5− | 0.5− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 | | | | |

**2006 VZ$_{54}$ = 2000 SU$_{297}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.86181 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17457499 | $\omega$ | 126.80128 | | +0.98921412 | | +0.08424193 |
| $a$ | 3.1706481 | $\Omega$ | 228.69751 | | −0.11660031 | | +0.94801600 |
| $e$ | 0.2614130 | $i$ | 9.17832 | | +0.08865542 | | +0.30686962 |
| $P$ | 5.65 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 704 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2000 09 28 | 704 | 0.3− | 0.6+ | 2006 10 31 | G96 | 0.4+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2000 09 28 | 704 | 1.4+ | 0.6− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2000 10 03 | 704 | 0.5− | 0.3− | 2006 10 31 | G96 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.3− |
| 2000 10 03 | 704 | 0.7− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 1.3− | 0.7− |
| 2000 10 03 | 704 | 0.2+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.5+ |
| 2000 10 03 | 704 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2006 09 27 | G96 | 0.5− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.4− | | | | |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 11 | G96 | 0.1+ | 0.3− | | | | |

**2006 VB$_{55}$ = 2005 NT$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 19.83672 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17540750 | $\omega$ | 227.63318 | | +0.97903486 | | −0.20345653 |
| $a$ | 3.1606078 | $\Omega$ | 144.10274 | | +0.19145601 | | +0.90271602 |
| $e$ | 0.2291759 | $i$ | 0.95840 | | +0.06953658 | | +0.37909000 |
| $P$ | 5.62 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 01 | 699 | 0.3− | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.4+ |
| 2000 10 01 | 699 | 0.2+ | 1.0+ | 2006 10 17 | G96 | 0.4+ | 1.1− | 2006 11 15 | 691 | 0.4− | 0.0 |
| 2000 10 01 | 699 | 0.2− | 0.2− | 2006 10 17 | G96 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2000 10 01 | 699 | 0.0 | 0.0 | 2006 10 17 | G96 | 0.2+ | 0.6− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2000 10 21 | 691 | 0.1− | 0.1− | 2006 10 17 | G96 | 0.4− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2000 10 21 | 691 | 0.1+ | 0.3− | 2006 11 01 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2000 10 21 | 691 | 0.2+ | 0.3− | 2006 11 01 | G96 | 0.0 | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2005 07 09 | 675 | 0.4− | 0.1+ | 2006 11 01 | G96 | 0.8+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2005 07 09 | 675 | 0.7− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2005 07 09 | 675 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.0 |
| 2005 07 10 | 675 | 0.3+ | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2005 07 10 | 675 | 0.6− | 0.4+ | 2006 11 11 | G96 | 0.3+ | 0.6− | 2006 11 27 | 703 | 0.3+ | 0.5− |
| 2005 07 10 | 675 | 1.0+ | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 27 | 703 | 0.4− | 0.3− |
| 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 11 27 | 703 | 0.7+ | 0.0 |
| 2006 09 28 | G96 | 0.2− | 0.5− | 2006 11 11 | G96 | 0.5+ | 0.5− | 2006 11 27 | 703 | 0.5− | 0.3+ |
| 2006 09 28 | G96 | 0.3+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.1+ | | | | |

**2006 VG$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.82964 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26568393 | $\omega$ | 183.27305 | | +0.68667514 | | −0.72521477 |
| $a$ | 2.3963993 | $\Omega$ | 223.36779 | | +0.66863282 | | +0.65727010 |
| $e$ | 0.2296333 | $i$ | 4.20962 | | +0.28531981 | | +0.20508425 |
| $P$ | 3.71 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 28 | 644 | 0.0 | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2002 08 28 | 644 | 0.1+ | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 25 | 291 | 0.2+ | 0.2+ |
| 2002 08 28 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 25 | 291 | 0.1+ | 0.1+ |
| 2002 09 13 | 644 | 0.4− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 25 | 291 | 0.0 | 0.1+ |
| 2002 09 13 | 644 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 25 | G96 | 0.0 | 0.3− |
| 2002 09 13 | 644 | 0.3− | 0.3+ | 2006 11 18 | 704 | 0.8+ | 0.1+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2004 03 16 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.7− | 0.8+ | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2004 03 16 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.3− |
| 2004 03 16 | 691 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.0 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |
| 2006 09 27 | G96 | 0.8+ | 0.2− | 2006 11 18 | 704 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ | | |
| 2006 09 27 | G96 | 0.6+ | 0.4− | 2006 11 18 | 704 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.1+ | 0.1− | | |
| 2006 10 31 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.7− | 1.1+ | 2006 11 27 | 703 | 0.1− | 0.2− | | |
| 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 18 | 704 | 0.4− | 0.6+ | 2006 11 27 | 703 | 0.1+ | 0.1+ | | |
| 2006 10 31 | G96 | 0.5+ | 0.3− | 2006 11 18 | 704 | (1.9+ | 0.3+) | 2006 11 27 | 703 | 0.2− | 0.6− | | |
| 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.1− | 0.2+ | | |
| 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2+ | 2006 11 29 | 704 | 0.1− | 0.5− | | |
| 2006 11 09 | 644 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.2+ | | |
| 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.0 | 2006 11 29 | 704 | 0.2− | 0.4+ | | |
| 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.5− | 0.3− | 2006 11 29 | 704 | 0.3− | 0.3+ | | |
| 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.9− | 0.7− | 2006 12 01 | 691 | 0.0 | 0.1− | | |
| 2006 11 11 | 703 | 0.6− | 0.1− | 2006 11 21 | 704 | 0.7− | 0.0 | 2006 12 01 | 691 | 0.3− | 0.1− | | |
| 2006 11 11 | 703 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.8− | 0.1− | 2006 12 01 | 691 | 0.1+ | 1.3− | | |
| 2006 11 11 | 703 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1+ | | | | | | |
| 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1− | | | | | | |

### 2006 VJ$_{55}$ = 1999 VD$_{226}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.33406 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28339315 | $\omega$ | 166.67110 | | +0.83227367 | −0.54474781 | |
| $a$ | 2.2954957 | $\Omega$ | 226.82194 | | +0.49481588 | +0.81360572 | |
| $e$ | 0.2186358 | $i$ | 8.10498 | | +0.24995556 | +0.20321307 | |
| $P$ | 3.48 | $H$ | 19.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 09 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.3+ | 0.3+ | | |
| 1999 11 09 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.3− | 2006 11 19 | 691 | 0.4+ | 0.2+ | | |
| 1999 11 09 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.5− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.1− | | |
| 1999 11 17 | 691 | 0.3+ | 0.0 | 2006 11 11 | G96 | 0.7+ | 0.8− | 2006 11 23 | 691 | 0.4− | 0.3+ | | |
| 1999 11 17 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 11 23 | 691 | 0.1− | 0.2− | | |
| 1999 11 17 | 691 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 23 | 691 | 0.1− | 0.1− | | |
| 2006 10 27 | G96 | 0.7+ | 0.3− | 2006 11 11 | G96 | 0.0 | 1.0− | 2006 11 24 | 691 | 0.1− | 0.2+ | | |
| 2006 10 27 | G96 | 0.3− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.4+ | 0.1− | | |
| 2006 10 27 | G96 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.2− | 0.0 | | |
| 2006 10 27 | G96 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2− | | | | | | |

### 2006 VK$_{55}$ = 2002 XP$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.45583 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24277457 | $\omega$ | 45.11304 | | −0.27616185 | −0.95152109 | |
| $a$ | 2.5448797 | $\Omega$ | 61.36274 | | +0.83259009 | −0.30724093 | |
| $e$ | 0.1547538 | $i$ | 8.87678 | | +0.48013371 | −0.01451277 | |
| $P$ | 4.06 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.6+ | 0.4− | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 18 | 691 | 0.2− | 0.1− | | |
| 2002 12 05 | 704 | 0.5+ | 0.5− | 2006 10 19 | G96 | 0.4+ | 0.4− | 2006 11 20 | 704 | 0.2− | 0.1− | | |
| 2002 12 05 | 704 | (2.1+ | 0.8−) | 2006 10 19 | G96 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.7+ | | |
| 2002 12 05 | 704 | 0.6+ | 0.6+ | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.4+ | 0.8− | | |
| 2002 12 06 | 704 | 0.0 | 0.9+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 20 | 704 | 0.5− | 0.1− | | |
| 2002 12 06 | 704 | 0.4− | 0.8− | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.0 | | |
| 2002 12 06 | 704 | 1.0− | 0.9+ | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.0 | 0.1− | | |
| 2002 12 06 | 704 | 0.3− | 0.7− | 2006 11 15 | 691 | 0.1− | 0.4+ | 2006 11 22 | 691 | 0.1+ | 0.0 | | |
| 2006 10 03 | G96 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.5− | | |
| 2006 10 03 | G96 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 2006 10 03 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.3− | | |
| 2006 10 03 | G96 | 0.2− | 0.1− | 2006 11 18 | 691 | 0.2+ | 0.3− | 2006 11 24 | G96 | 0.1− | 0.3− | | |

### 2006 VR$_{55}$ = 2002 XS$_{107}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 23.68005 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23609907 | $\omega$ | 278.16829 | | +0.95663060 | −0.28983693 | |
| $a$ | 2.5926260 | $\Omega$ | 98.68357 | | +0.27754592 | +0.87642242 | |
| $e$ | 0.0664456 | $i$ | 1.69250 | | +0.08846561 | +0.38454948 | |
| $P$ | 4.17 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.9+ | 0.9− | 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.5+ | | |
| 2002 12 05 | 704 | 0.3+ | 0.7− | 2006 10 19 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.9+ | 0.3+ | | |
| 2002 12 05 | 704 | 0.5+ | 0.0 | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.4+ | 0.1+ | | |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 10 19 | G96 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1− | | |
| 2002 12 11 | 704 | 0.7− | 0.5− | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2002 12 11 | 704 | 0.8− | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.0 | | |
| 2003 01 02 | 291 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1− | | |
| 2003 01 02 | 291 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2003 01 02 | 291 | 0.4− | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.0 | | |
| 2005 06 03 | 691 | 0.4+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.3− | 0.6− | | |
| 2005 06 03 | 691 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.8+ | 2006 11 27 | 703 | 0.2+ | 0.6− | | |
| 2005 06 03 | 691 | 0.1+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.5+ | 2006 11 27 | 703 | 0.6− | 1.1+ | | |
| 2005 06 12 | 691 | 0.1+ | 0.2− | 2006 11 18 | 704 | (0.4− | 2.2+) | 2006 11 27 | 703 | (2.1− | 1.3−) | | |
| 2005 06 12 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.6+ | 0.9+ | 2006 11 29 | 704 | 0.5− | 0.9+ | | |
| 2005 06 12 | 691 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.2+ | 0.7− | | |
| 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.4− | 0.7+ | | |
| 2006 09 28 | G96 | 0.0 | 0.7− | 2006 11 19 | 691 | 0.3− | 0.1− | 2006 11 29 | 704 | 0.2+ | 0.3+ | | |
| 2006 09 28 | G96 | 0.4+ | 0.6− | 2006 11 21 | 704 | (2.0+ | 0.3+) | 2006 11 29 | 704 | 0.0 | 0.6+ | | |
| 2006 09 28 | G96 | 0.3+ | 0.7− | 2006 11 21 | 704 | 1.0+ | 0.1− | | | | | | |

### 2006 VZ$_{55}$ = 2004 CT$_{125}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.23797 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27731654 | $\omega$ | 196.41156 | | +0.75488209 | −0.65561671 | |
| $a$ | 2.3289073 | $\Omega$ | 204.58286 | | +0.60646788 | +0.70815281 | |
| $e$ | 0.1138904 | $i$ | 2.46356 | | +0.24969928 | +0.26208076 | |
| $P$ | 3.55 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 30 | 691 | 0.2− | 0.5+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4− | 0.3+ | | |
| 2001 04 30 | 691 | 0.4+ | 0.8+ | 2006 11 11 | G96 | 0.3− | 0.7− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2001 04 30 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.5+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2004 02 12 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.6− | 2006 11 23 | 691 | 0.1− | 0.2− | | |
| 2004 02 12 | 691 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 25 | 291 | 0.5+ | 0.7− | | |
| 2004 02 12 | 691 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 11 25 | 291 | 0.1+ | 0.2+ | | |
| 2004 02 29 | 691 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.3− | 0.2+ | 2006 11 25 | 291 | 0.1+ | 0.0 | | |
| 2004 02 29 | 691 | 0.2+ | 0.3− | 2006 11 15 | 691 | 0.4− | 0.2+ | 2006 11 25 | G96 | 0.2+ | 0.4− | | |
| 2004 02 29 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.7+ | 2006 11 25 | G96 | 0.1− | 0.3− | | |
| 2006 09 28 | G96 | 0.3+ | 0.1+ | 2006 11 18 | 704 | 0.1+ | 0.8+ | 2006 11 25 | G96 | 0.4− | 0.2− | | |
| 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 18 | 704 | 0.6+ | 0.2+ | 2006 11 25 | G96 | 0.0 | 0.4− | | |
| 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.3+ | | |
| 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.0 | | |
| 2006 10 19 | G96 | 0.3+ | 0.6− | 2006 11 19 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.0 | | |
| 2006 10 19 | G96 | 0.3+ | 0.4− | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 12 01 | 691 | 0.1− | 0.4+ | | |
| 2006 10 19 | G96 | 0.1− | 0.5− | 2006 11 21 | 704 | 0.6+ | 0.8+ | 2006 12 01 | 691 | 0.1− | 0.2+ | | |
| 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 1.0− | 0.7− | 2006 12 01 | 691 | 0.4+ | 0.1− | | |
| 2006 11 11 | 691 | 0.3− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.4+ | | | | | | |
| 2006 11 11 | 691 | 0.3− | 0.1− | 2006 11 21 | 704 | 0.3− | 1.1+ | | | | | | |

**2006 VG$_{56}$ = 2005 NG$_{100}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 18.22414 | | (2000.0) | | | |
| $n$ | 0.17675727 | $\omega$ | 236.80195 | | +0.94089602 | −0.33826911 |
| $a$ | 3.1444970 | $\Omega$ | 142.96151 | | +0.31938042 | +0.86942309 |
| $e$ | 0.1776501 | $i$ | 1.61636 | | +0.11274228 | +0.36010762 |
| $P$ | 5.58 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 12 | G96 | 0.6− | 0.1− | 2006 10 19 | 695 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 2005 07 12 | G96 | 0.2− | 0.2− | 2006 10 19 | 695 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2005 07 12 | G96 | 0.4− | 0.1− | 2006 10 20 | 695 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2005 07 12 | G96 | 1.0+ | 0.5+ | 2006 10 21 | G96 | 0.3+ | 0.8− | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2005 07 16 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.0 | 0.6− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2005 07 16 | 691 | 0.1− | 0.1+ | 2006 10 21 | G96 | 0.6+ | 0.6− | 2006 11 23 | 691 | 0.3− | 0.1+ |
| 2005 07 16 | 691 | 0.2+ | 0.1− | 2006 10 21 | G96 | 0.1+ | 0.8− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2006 09 28 | G96 | 0.7− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1+ |

**2006 VQ$_{56}$ = 2001 WM$_{80}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 72.21425 | | (2000.0) | | | |
| $n$ | 0.19701050 | $\omega$ | 232.68955 | | +0.85734419 | +0.51198422 |
| $a$ | 2.9251163 | $\Omega$ | 96.45667 | | −0.45370024 | +0.80046442 |
| $e$ | 0.0716485 | $i$ | 3.07061 | | −0.24313995 | +0.31165504 |
| $P$ | 5.00 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 20 | 704 | 0.3− | 0.7− | 2006 10 21 | G96 | 0.5+ | 0.4− | 2006 11 21 | 704 | (2.2− | 0.6−) |
| 2001 11 20 | 704 | 0.5− | 0.4+ | 2006 10 21 | G96 | 0.3+ | 0.4− | 2006 11 21 | 704 | 0.3− | 0.1+ |
| 2001 11 20 | 704 | 0.1− | 0.4+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.4− | 0.4+ |
| 2001 11 20 | 704 | 0.6− | 0.4+ | 2006 10 21 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.9+ | 0.7− |
| 2001 11 20 | 704 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.5+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2001 11 21 | 704 | 0.8+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2001 11 21 | 704 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2001 11 21 | 704 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.4− | 0.3− | 2006 11 27 | 691 | 0.3− | 0.4+ |
| 2005 07 04 | 644 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2005 07 04 | 644 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2005 07 04 | 644 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.7− | 0.3− | 2006 11 27 | 703 | 0.3+ | 0.6+ |
| 2005 07 18 | 644 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.4− | 2006 11 27 | 703 | 0.4− | 1.4− |
| 2005 07 18 | 644 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.5− | 2006 11 27 | 703 | 0.5− | 0.9− |
| 2005 07 18 | 644 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.2− | 0.5− |
| 2006 09 28 | G96 | 0.3+ | 0.5− | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.4+ | 0.9+ |
| 2006 09 28 | G96 | 0.2+ | 0.5− | 2006 11 19 | 691 | 0.1− | 0.3+ | 2006 12 01 | 691 | 0.2− | 0.2+ |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.3+ | 0.2+ |
| 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.3− | 1.3+ | | | | |

**2006 VX$_{56}$ = 2004 HP$_{40}$ = 2005 NP$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 29.40736 | | (2000.0) | | | |
| $n$ | 0.22211070 | $\omega$ | 157.41969 | | +0.96738416 | −0.24747867 |
| $a$ | 2.7003687 | $\Omega$ | 217.04142 | | +0.21654434 | +0.91864494 |
| $e$ | 0.0522002 | $i$ | 5.14852 | | +0.13143986 | +0.30797042 |
| $P$ | 4.44 | $H$ | 16.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.1+ | 0.1− | 2005 07 11 | 691 | 0.0 | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.0 | 0.7− | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 11 12 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.1− | 0.8− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2004 04 19 | 691 | 0.3+ | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.3− | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2004 04 19 | 691 | 0.3+ | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2004 04 19 | 691 | 0.1+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.3− | 0.1− |
| 2004 04 25 | 691 | 0.4+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2004 04 25 | 691 | 0.5− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2004 04 25 | 691 | 0.1− | 0.6+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 07 06 | 691 | 0.1+ | 0.6+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.4+ |
| 2005 07 06 | 691 | 0.6− | 1.5+ | 2006 11 11 | G96 | 0.7+ | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2005 07 06 | 691 | 0.4+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 1.0− | 2006 12 01 | 691 | 0.3− | 1.7+ |
| 2005 07 11 | 691 | 1.2− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.6− | 2006 12 01 | 691 | 0.1+ | 0.7+ |
| 2005 07 11 | 691 | 0.3+ | 0.7+ | 2006 11 11 | G96 | 0.0 | 0.7− | 2006 12 01 | 691 | 0.3+ | 0.7+ |

**2006 VC$_{57}$ = 1996 RP$_{16}$ = 2005 RK$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 220.49226 | | (2000.0) | | | |
| $n$ | 0.21562673 | $\omega$ | 13.29179 | | −0.94608328 | +0.32389475 |
| $a$ | 2.7542350 | $\Omega$ | 185.61245 | | −0.30108255 | −0.88420644 |
| $e$ | 0.1237867 | $i$ | 2.52831 | | −0.11948104 | −0.33655781 |
| $P$ | 4.57 | $H$ | 17.0 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 13 | 691 | 0.5+ | 0.8− | 1999 04 19 | 691 | 0.2− | 0.2− | 2006 11 11 | 691 | 0.7− | 0.2+ |
| 1996 09 13 | 691 | 0.4+ | 0.6− | 2003 01 25 | 645 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.2− | 0.0 |
| 1996 09 13 | 691 | 0.8+ | 0.2− | 2003 01 25 | 645 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.0 |
| 1996 09 21 | 691 | 0.5− | 0.3− | 2005 09 01 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.3− | 0.1− |
| 1996 09 21 | 691 | 0.6− | 0.3− | 2005 09 01 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.5− | 0.4− |
| 1996 09 21 | 691 | 0.1+ | 0.1− | 2005 09 01 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 1999 04 12 | 691 | 0.2− | 0.3+ | 2005 09 11 | 691 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.1− |
| 1999 04 12 | 691 | 0.4− | 0.4− | 2005 09 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.2+ |
| 1999 04 12 | 691 | 0.0 | 0.4− | 2005 09 11 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 1999 04 19 | 691 | 0.3− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1− | 0.3− |
| 1999 04 19 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.0 | | | | |

**2006 VE$_{57}$ = 2004 FR$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 58.90161 | | (2000.0) | | | |
| $n$ | 0.24666269 | $\omega$ | 137.59198 | | +0.88375830 | +0.46788187 |
| $a$ | 2.5180658 | $\Omega$ | 194.51665 | | −0.43705802 | +0.81951241 |
| $e$ | 0.1386706 | $i$ | 1.73853 | | −0.16718719 | +0.33088665 |
| $P$ | 4.00 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 12 23 | 691 | 0.0 | 0.0 | 2004 03 23 | 291 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 1998 12 23 | 691 | 0.1+ | 0.3− | 2004 03 23 | 291 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 1998 12 23 | 691 | 0.0 | 0.5− | 2004 03 30 | 691 | 1.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2000 03 02 | 691 | 0.1− | 0.7− | 2004 03 30 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2000 03 02 | 691 | 0.3− | 0.8− | 2004 03 30 | 691 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.3+ |
| 2000 03 02 | 691 | 0.2− | 0.4− | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.3+ | 0.6− |
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.1− |
| 2002 11 24 | 644 | 0.1+ | 0.1− | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 21 | 704 | 0.1− | 0.5+ |
| 2002 11 24 | 644 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.9+ | 0.5− |
| 2003 01 03 | 291 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2003 01 03 | 291 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2003 01 03 | 291 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.2− | 0.4+ |
| 2004 02 17 | 691 | 0.7− | 0.4+ | 2006 11 11 | 691 | 0.5− | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2004 02 17 | 691 | 0.2− | 0.7+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2004 03 23 | 291 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | | | |

**2006 VF$_{57}$ = 2005 GM$_{126}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 46.72385 | | (2000.0) | | | |
| $n$ | 0.28394582 | $\omega$ | 118.32315 | | +0.91257808 | +0.40780700 |
| $a$ | 2.2925161 | $\Omega$ | 217.63153 | | −0.39022232 | +0.84669751 |
| $e$ | 0.1921118 | $i$ | 2.80798 | | −0.12217935 | +0.34175544 |
| $P$ | 3.47 | $H$ | 17.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 11 | G96 | 0.0 | 0.5− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 2005 04 11 | G96 | 0.5− | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.3− | 0.2− |
| 2005 04 11 | G96 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2005 04 11 | G96 | 0.5− | 0.5+ | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.5+ | 0.4− |
| 2005 04 12 | G96 | 0.5+ | 0.3− | 2006 11 11 | 691 | 0.4+ | 0.1− | 2006 11 19 | 691 | 0.4− | 0.5− |
| 2005 04 12 | G96 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.4− | 0.6+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2005 04 12 | G96 | 0.2+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.5− | 0.1− |
| 2005 04 12 | G96 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.7+ | 0.6+ |

## 2006 $VK_{57}$ = 1996 $BJ_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 343.81278 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26112990 | $\omega$ | 347.11294 | | +0.46436910 | | −0.88385560 |
| $a$ | 2.4241807 | $\Omega$ | 75.19405 | | +0.81763217 | | +0.40345017 |
| $e$ | 0.1651549 | $i$ | 3.33364 | | +0.34035126 | | +0.23670074 |
| $P$ | 3.77 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 01 18 | 691 | 0.1+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.1− |
| 1996 01 18 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 1996 01 18 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 1996 01 25 | 691 | 0.1− | 0.3+ | 2006 11 11 | 691 | 0.5− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.4− |
| 1996 01 25 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 1996 01 25 | 691 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.5+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2006 09 28 | G96 | 0.5− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2006 09 28 | G96 | 0.4− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.1− | | | | |
| 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.3− | 0.0 | | | | |

## 2006 $VQ_{57}$ = 1998 $SD_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.34479 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25825661 | $\omega$ | 190.05686 | | +0.98538290 | | −0.17035417 |
| $a$ | 2.4421280 | $\Omega$ | 179.75150 | | +0.15763833 | | +0.91163938 |
| $e$ | 0.1998666 | $i$ | 1.13303 | | +0.06458099 | | +0.37402285 |
| $P$ | 3.82 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 23 | 691 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 1998 09 23 | 691 | 0.3+ | 0.1+ | 2006 10 31 | G96 | 0.5+ | 0.5− | 2006 11 23 | 691 | 0.2− | 0.1− |
| 1998 09 23 | 691 | 0.1+ | 0.5− | 2006 10 31 | G96 | 0.8+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 1998 09 27 | 691 | 0.6− | 0.4+ | 2006 11 11 | 691 | 0.5+ | 0.3+ | 2006 11 23 | 691 | 0.4+ | 0.7+ |
| 1998 09 27 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 1998 09 27 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.2− | 0.4− | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2006 09 27 | G96 | 0.4− | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2006 09 27 | G96 | 0.0 | 0.4− | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 27 | 703 | 0.1− | 0.2− |
| 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.0 | 0.0 |
| 2006 09 27 | G96 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 703 | (0.3− | 1.6+) |
| 2006 10 31 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1− | 1.2− | 2006 11 27 | 703 | 0.1− | 0.3+ |

## 2006 $VZ_{57}$ = 1999 $FK_{93}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 337.28281 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21383266 | $\omega$ | 338.58489 | | +0.30005014 | | −0.95026995 |
| $a$ | 2.7696190 | $\Omega$ | 93.87789 | | +0.88690125 | | +0.24570465 |
| $e$ | 0.0793996 | $i$ | 4.79551 | | +0.35124931 | | +0.19135373 |
| $P$ | 4.61 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 1999 03 21 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 1999 03 22 | 645 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 12 01 | 691 | 0.3− | 0.1− |
| 2001 10 10 | 644 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.2− | 0.4− | 2006 12 01 | 691 | 0.0 | 0.5+ |
| 2001 10 10 | 644 | 0.3− | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.0 | 2006 12 01 | 691 | 0.0 | 0.4+ |
| 2001 10 10 | 644 | 0.1+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.0 | | | | |
| 2006 11 11 | 691 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ | | | | |

## 2006 $VF_{58}$ = 2002 $TQ_{323}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 332.09286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26655382 | $\omega$ | 246.14088 | | +0.21234593 | | −0.97715021 |
| $a$ | 2.3911828 | $\Omega$ | 191.61081 | | +0.91254567 | | +0.20169635 |
| $e$ | 0.1717672 | $i$ | 2.65130 | | +0.34952769 | | +0.06705260 |
| $P$ | 3.70 | $H$ | 17.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.6+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2002 10 05 | 645 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.3+ | 2006 11 23 | 691 | 0.3+ | 0.1− |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.8− | 0.8− |
| 2006 09 28 | G96 | 0.4+ | 0.1− | 2006 11 11 | G96 | 0.4+ | 0.5− | 2006 11 29 | 704 | 0.2+ | 0.3+ |
| 2006 09 28 | G96 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 11 29 | 704 | 1.3+ | 0.4+ |
| 2006 09 28 | G96 | 0.5− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 29 | 704 | (1.8+ | 0.7+) |
| 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.5+ | 1.0+ |
| 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.2+ | 2006 11 29 | 704 | 0.5+ | 0.3+ |
| 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.3− | 0.5+ |
| 2006 11 11 | 703 | 0.1− | 1.1− | 2006 11 19 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2006 11 11 | 703 | 0.7− | 1.4− | 2006 11 23 | 691 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.4− | 0.3+ |

## 2006 $VG_{58}$ = 1998 $FV_{86}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 164.40082 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30184067 | $\omega$ | 161.47455 | | −0.51359933 | | +0.84870469 |
| $a$ | 2.2009873 | $\Omega$ | 77.44771 | | −0.80266006 | | −0.42327105 |
| $e$ | 0.1531771 | $i$ | 7.42615 | | −0.30323681 | | −0.31708352 |
| $P$ | 3.27 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 02 26 | 566 | 0.8+ | 0.1+ | 2002 08 20 | 644 | 0.1− | 0.7− | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 1998 02 26 | 566 | 0.4+ | 0.3− | 2002 09 09 | 644 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.4− |
| 1998 02 26 | 566 | 0.4+ | 0.4− | 2002 09 09 | 644 | 0.3− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.3− |
| 1998 03 24 | 704 | 1.0+ | 0.4− | 2002 09 09 | 644 | 0.1− | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 1998 03 24 | 704 | 0.5− | 1.2+ | 2002 09 09 | 644 | 0.0 | 0.4+ | 2006 11 21 | 704 | 0.8− | 0.6+ |
| 1998 03 24 | 704 | 0.8− | 1.8− | 2002 09 09 | 644 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.2+ |
| 1998 03 24 | 704 | (4.0− | 0.4+) | 2002 09 09 | 644 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 1998 03 25 | 704 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.4+ |
| 1998 03 25 | 704 | (0.5+ | 2.0+) | 2006 10 22 | G96 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2− |
| 1998 03 25 | 704 | 1.4− | 0.4− | 2006 10 22 | G96 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 1998 03 25 | 704 | (2.3− | 1.7+) | 2006 10 22 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.5+ |
| 1998 03 25 | 704 | (2.1− | 3.1+) | 2006 11 11 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 02 16 | 699 | 0.8+ | 0.7− | 2006 11 11 | 691 | 1.2+ | 1.3− | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2001 02 16 | 699 | 0.5+ | 1.1+ | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 27 | 703 | 0.9− | 0.1+ |
| 2001 02 16 | 699 | 0.4+ | 1.3+ | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.7− | 0.0 |
| 2001 02 16 | 699 | 2.8− | 0.6− | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.5− | 1.1− |
| 2002 08 13 | 644 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.8− | 0.2− |
| 2002 08 13 | 644 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.1+ |
| 2002 08 13 | 644 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 12 01 | 691 | 0.5− | 0.2+ |
| 2002 08 20 | 644 | 0.0 | 0.6− | 2006 11 15 | 691 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2002 08 20 | 644 | 0.5+ | 0.8− | 2006 11 15 | 691 | 0.0 | 0.0 | | | | |

**2006 VN$_{58}$ = 2005 GQ$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 53.67783 | | (2000.0) | | | |
| $n$ | 0.29277417 | $\omega$ | 219.89594 | | +0.86124453 | +0.50645888 |
| $a$ | 2.2461955 | $\Omega$ | 109.62823 | | −0.45416487 | +0.80407358 |
| $e$ | 0.1749168 | $i$ | 2.55084 | | −0.22801783 | +0.31139216 |
| $P$ | 3.37 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 12 | G96 | 0.6− | 0.1− | 2006 10 22 | G96 | 0.6− | 0.4− | 2006 11 15 | 691 | 0.1− | 0.0 |
| 2005 04 12 | G96 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2005 04 12 | G96 | 0.4− | 0.1− | 2006 10 22 | G96 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2005 04 12 | G96 | 0.2− | 0.5− | 2006 11 11 | 691 | 0.0 | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.3− |
| 2005 04 14 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2005 04 14 | 691 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2005 04 14 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2006 09 28 | G96 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.6− | 2006 12 01 | 691 | 0.1− | 0.3+ |
| 2006 09 28 | G96 | 0.5+ | 0.2+ | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 12 01 | 691 | 0.5− | 0.4+ |
| 2006 09 28 | G96 | 0.3+ | 0.4+ | 2006 11 11 | G96 | 0.5− | 0.3− | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2006 09 28 | G96 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.3− | | | | |
| 2006 10 22 | G96 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.1− | | | | |

**2006 VX$_{58}$ = 2004 DN$_{53}$ = 2005 DM$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 71.16207 | | (2000.0) | | | |
| $n$ | 0.23753518 | $\omega$ | 211.72206 | | +0.69608757 | +0.71648993 |
| $a$ | 2.5821656 | $\Omega$ | 102.43713 | | −0.64849783 | +0.65487641 |
| $e$ | 0.1754221 | $i$ | 2.69245 | | −0.30807897 | +0.24037278 |
| $P$ | 4.15 | $H$ | 16.3 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 11 | 291 | 0.5+ | 0.2+ | 2005 02 18 | 809 | 0.1+ | 0.0 | 2006 11 20 | H45 | 0.5− | 0.6− |
| 2003 01 11 | 291 | 0.2− | 0.2− | 2005 02 18 | 809 | 0.0 | 0.1+ | 2006 11 20 | H45 | 0.1+ | 0.7− |
| 2003 01 11 | 291 | 0.3− | 0.0 | 2006 10 22 | G96 | 0.2+ | 0.5− | 2006 11 20 | H45 | 0.5+ | 0.7− |
| 2004 02 23 | 621 | 0.9+ | 0.7− | 2006 10 22 | G96 | 0.3− | 0.8− | 2006 11 20 | H45 | 0.6+ | 0.7− |
| 2004 02 23 | 621 | 0.3+ | 0.0 | 2006 10 22 | G96 | 0.3+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2004 02 23 | 621 | 0.1+ | 0.3− | 2006 10 22 | G96 | 0.1− | 0.5− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2004 02 23 | 704 | 1.2+ | 1.2+ | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 02 23 | 704 | (0.5− | 1.7+) | 2006 11 11 | 691 | 0.4− | 0.1− | 2006 11 25 | G96 | 0.3+ | 0.1+ |
| 2004 02 23 | 704 | 0.2− | 0.6− | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 25 | G96 | 0.2− | 0.3− |
| 2004 02 23 | 704 | (1.0− | 2.4+) | 2006 11 15 | 691 | 0.7+ | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2004 02 23 | 621 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.2+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2004 02 24 | 621 | 0.5− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 02 24 | 621 | 0.4− | 0.4+ | 2006 11 18 | 185 | 0.5+ | 0.5− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2004 02 26 | 704 | (2.0− | 0.1+) | 2006 11 18 | 185 | 0.1+ | 0.7− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 02 26 | 704 | 0.5− | 0.0 | 2006 11 19 | 185 | 0.3+ | 1.1− | 2006 11 27 | 703 | 0.4+ | 0.2+ |
| 2004 02 26 | 704 | 0.7− | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 703 | 1.5− | 1.1− |
| 2005 02 16 | 809 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.5+ | 2006 11 27 | 703 | 0.2+ | 0.3+ |
| 2005 02 16 | 809 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 703 | 0.1− | 0.4− |
| 2005 02 16 | 809 | 0.1+ | 0.1− | 2006 11 20 | H45 | 0.1− | 0.2− | | | | |
| 2005 02 18 | 809 | 0.0 | 0.1+ | 2006 11 20 | H45 | 0.8− | 0.1− | | | | |

**2006 VZ$_{58}$ = 2001 XT$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 9.53966 | | (2000.0) | | | |
| $n$ | 0.19362857 | $\omega$ | 324.51605 | | +0.80791018 | −0.56411874 |
| $a$ | 2.9590780 | $\Omega$ | 70.70653 | | +0.57375200 | +0.68695697 |
| $e$ | 0.0712804 | $i$ | 10.40390 | | +0.13449827 | +0.45810497 |
| $P$ | 5.09 | $H$ | 16.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.3+ |
| 2001 12 14 | 704 | 0.0 | 1.0− | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2001 12 14 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2001 12 14 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | (1.5+ | 0.4−) | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2001 12 17 | 704 | 0.0 | 0.3− | 2006 11 11 | 703 | 0.2− | 0.7+ | 2006 11 25 | G96 | 0.2+ | 0.4− |
| 2001 12 17 | 704 | 0.4− | 0.0 | 2006 11 11 | 703 | 1.1− | 0.0 | 2006 11 25 | G96 | 0.0 | 0.6− |
| 2001 12 17 | 704 | 0.3+ | 0.1+ | 2006 11 11 | 703 | 1.3+ | 0.2+ | 2006 11 25 | G96 | 0.2− | 0.4− |
| 2001 12 17 | 704 | 0.6− | 1.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 25 | G96 | 0.2+ | 0.6− |
| 2006 10 22 | G96 | 0.4+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 1.0− | 0.3− |
| 2006 10 22 | G96 | 0.1− | 0.3− | 2006 11 15 | 691 | 0.7− | 0.2+ | 2006 11 27 | 703 | 0.7+ | 0.1+ |
| 2006 10 22 | G96 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 703 | 0.4− | 0.2+ |
| 2006 10 22 | G96 | 0.1+ | 0.5− | 2006 11 19 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 703 | 0.4+ | 0.5+ |

**2006 VB$_{59}$ = 2001 SZ$_{331}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 10.51409 | | (2000.0) | | | |
| $n$ | 0.22301677 | $\omega$ | 289.52887 | | +0.85536803 | −0.51481201 |
| $a$ | 2.6930497 | $\Omega$ | 101.49383 | | +0.49457602 | +0.77854231 |
| $e$ | 0.0914004 | $i$ | 3.36787 | | +0.15407820 | +0.35894354 |
| $P$ | 4.42 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 26 | 691 | 0.7− | 0.1− | 2004 04 14 | 691 | 0.4+ | 0.5+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 1995 03 26 | 691 | 0.1− | 0.2− | 2004 04 14 | 691 | 0.4+ | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.0 |
| 1995 03 26 | 691 | 0.2+ | 0.1− | 2004 04 14 | 691 | 0.4+ | 0.9+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 08 21 | 807 | 0.1− | 0.2+ | 2005 06 08 | 691 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 08 21 | 807 | 0.2− | 0.0 | 2005 06 08 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 09 19 | 704 | 0.2− | 1.4+ | 2005 06 08 | 691 | 0.1− | 0.6− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 09 19 | 704 | 0.3+ | 0.7+ | 2005 07 07 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | 0.6+ | 0.5+ | 2005 07 07 | 691 | 0.1+ | 0.2− | 2006 11 29 | 704 | 1.2+ | 0.0 |
| 2001 09 22 | 291 | 0.1− | 0.7+ | 2005 07 07 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.1+ |
| 2001 09 22 | 291 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.6− | 0.5− |
| 2001 09 22 | 291 | 0.2− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.5− | 0.2− |
| 2003 01 10 | 649 | 0.4+ | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2003 01 10 | 649 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.0 |
| 2003 01 10 | 649 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | | | |

**2006 VP$_{59}$ = 2001 SL$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 4.00183 | | (2000.0) | | | |
| $n$ | 0.21216764 | $\omega$ | 173.89304 | | +0.85700991 | −0.51119464 |
| $a$ | 2.7840901 | $\Omega$ | 217.08298 | | +0.46810575 | +0.82498486 |
| $e$ | 0.2612976 | $i$ | 6.18043 | | +0.21543216 | +0.24099797 |
| $P$ | 4.65 | $H$ | 17.0 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 08 14 | 608 | 0.4+ | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.7− | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 1996 08 14 | 608 | 0.7− | 1.3+ | 2006 09 27 | G96 | 0.9− | 0.2− | 2006 11 17 | 704 | 1.0+ | 0.5− |
| 2001 09 16 | 704 | 0.8− | 0.1− | 2006 09 27 | G96 | 0.2− | 0.2− | 2006 11 17 | 704 | 0.0 | 0.2− |
| 2001 09 16 | 704 | 0.3+ | 0.0 | 2006 11 02 | 703 | 1.3− | 0.4− | 2006 11 17 | 704 | 0.3+ | 0.2+ |
| 2001 09 16 | 704 | 0.2− | 0.2− | 2006 11 02 | 703 | 0.1+ | 0.7− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 09 16 | 704 | 0.4+ | 0.6+ | 2006 11 02 | 703 | 0.5− | 0.5− | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 09 16 | 704 | 0.2− | 1.0− | 2006 11 02 | 703 | 0.8+ | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2001 09 18 | 699 | (1.9+ | 0.3+) | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.3+ |
| 2001 09 18 | 699 | 0.2− | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.4− | 2006 11 24 | 691 | 0.2+ | 0.3+ |
| 2001 09 18 | 699 | 0.8+ | 0.3+ | 2006 11 11 | 691 | 0.4− | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.2+ |
| 2001 09 18 | 699 | (1.9+ | 1.5+) | 2006 11 15 | 691 | 0.1+ | 0.1+ | | | | |
| 2006 09 27 | G96 | 0.0 | 0.6− | 2006 11 15 | 691 | 0.0 | 0.1− | | | | |

**2006 VX$_{59}$ = 2003 FE$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 31.61301 | | (2000.0) | | | |
| $n$ | 0.17403778 | $\omega$ | 282.58357 | | +0.94876466 | −0.31070811 |
| $a$ | 3.1771694 | $\Omega$ | 95.54017 | | +0.30768404 | +0.86698890 |
| $e$ | 0.0088419 | $i$ | 3.31174 | | +0.07194556 | +0.38960329 |
| $P$ | 5.66 | $H$ | 15.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 26 | 644 | 0.5+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2003 03 26 | 644 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2003 03 26 | 644 | 0.8+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2003 03 26 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.4+ | 0.1− |
| 2003 03 26 | 691 | 0.3− | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.8− | 2006 11 23 | 691 | 0.3− | 0.2+ |
| 2003 03 26 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2003 03 27 | 152 | 0.7− | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2003 03 27 | 152 | 0.2+ | 0.9− | 2006 11 15 | 691 | 0.0 | 0.1− | | | | |
| 2003 03 28 | 152 | 1.1+ | 1.1− | 2006 11 15 | 691 | 0.1+ | 0.0 | | | | |

**2006 VF$_{60}$ = 2002 TZ$_{352}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 305.41311 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27798951 | $\omega$ | 243.79301 | | −0.19048316 | | −0.97926135 |
| $a$ | 2.3251472 | $\Omega$ | 217.39408 | | +0.93637103 | | −0.16012547 |
| $e$ | 0.0620609 | $i$ | 6.52559 | | +0.29483124 | | −0.12412507 |
| $P$ | 3.55 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 10 | 645 | 0.0 | 0.1− | 2004 02 18 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.3− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1− | 0.6− | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2002 10 11 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.6− | 2006 11 16 | 691 | 0.2− | 0.1+ |
| 2002 10 11 | 645 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.2− | 0.3− | 2006 11 23 | 691 | 0.2− | 0.2− |
| 2002 10 30 | 645 | 0.1− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.6− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2002 10 30 | 645 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2004 02 18 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.3+ | 0.1+ | | | | |
| 2004 02 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2− | | | | |

**2006 VO$_{60}$ = 2004 BJ$_{153}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 251.35389 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27557344 | $\omega$ | 301.47161 | | −0.80693175 | | −0.59054756 |
| $a$ | 2.3387178 | $\Omega$ | 202.33811 | | +0.55101826 | | −0.74614020 |
| $e$ | 0.1092216 | $i$ | 1.61495 | | +0.21269705 | | −0.30745469 |
| $P$ | 3.58 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 03 | 691 | 0.4+ | 0.5+ | 2006 09 25 | G96 | 0.1+ | 0.8+ | 2006 11 11 | G96 | 0.2− | 0.7− |
| 1999 12 03 | 691 | 0.0 | 0.2− | 2006 09 25 | G96 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.4− |
| 1999 12 03 | 691 | 0.4− | 0.3− | 2006 09 25 | G96 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 10 27 | G96 | 0.3+ | 0.1− | 2006 11 15 | 691 | 0.4+ | 0.3+ |
| 2004 01 27 | 691 | 0.0 | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.2− | 2006 11 17 | 691 | 0.1− | 0.2+ |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.1− | 0.3− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2004 02 13 | 691 | 0.1− | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.0 | 2006 11 17 | 691 | 0.4− | 0.1− |
| 2004 02 13 | 691 | 0.3− | 0.1+ | 2006 11 11 | G96 | 0.7+ | 0.5− | 2006 11 23 | 691 | 0.7+ | 0.3+ |
| 2004 02 13 | 691 | 0.3+ | 0.3− | 2006 11 11 | G96 | 0.6− | 0.3− | 2006 11 23 | 691 | 0.6− | 0.3+ |
| 2006 09 25 | G96 | 0.1− | 0.3− | 2006 11 11 | G96 | 0.7+ | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.1− |

**2006 VU$_{60}$ = 2005 NN$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.71329 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28556424 | $\omega$ | 254.84403 | | −0.82969139 | | −0.55677360 |
| $a$ | 2.2838461 | $\Omega$ | 251.30762 | | +0.52706928 | | −0.75763904 |
| $e$ | 0.0842329 | $i$ | 2.43176 | | +0.18387543 | | −0.34056752 |
| $P$ | 3.45 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 691 | 0.6+ | 0.6+ | 2004 03 01 | 691 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.0 |
| 1999 12 16 | 691 | 0.3+ | 0.3+ | 2005 07 06 | 691 | 0.6+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 1999 12 16 | 691 | 0.1+ | 0.8− | 2005 07 06 | 691 | 0.2− | 0.6+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2002 09 05 | 645 | 0.2− | 0.0 | 2005 07 06 | 691 | 0.1− | 0.9− | 2006 11 18 | J75 | 0.5− | 0.2+ |
| 2002 09 05 | 645 | 0.2− | 0.1− | 2005 07 15 | 691 | 0.2+ | 0.0 | 2006 11 18 | J75 | 1.2+ | 1.1+ |
| 2004 02 11 | 644 | 0.1+ | 0.1+ | 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.6− |
| 2004 02 11 | 644 | 0.1+ | 0.3+ | 2005 07 15 | 691 | 0.4+ | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.5− |
| 2004 02 11 | 644 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.5− |
| 2004 03 01 | 691 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.3+ | | | | |
| 2004 03 01 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.5+ | | | | |

**2006 VV$_{60}$ = 2004 FU$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 306.51358 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26912281 | $\omega$ | 55.49410 | | −0.27484411 | | −0.96036551 |
| $a$ | 2.3759413 | $\Omega$ | 50.52736 | | +0.86124384 | | −0.26738501 |
| $e$ | 0.0939465 | $i$ | 3.45076 | | +0.42745732 | | −0.07876133 |
| $P$ | 3.66 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 05 14 | 691 | 0.2+ | 0.5+ | 2006 09 27 | G96 | 0.9− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1997 05 14 | 691 | 0.2+ | 0.5+ | 2006 09 27 | G96 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.2+ |
| 1997 05 14 | 691 | 0.3− | 0.4− | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 18 | J75 | 1.2+ | 0.2+ |
| 2004 03 15 | 691 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 18 | J75 | 0.3+ | 0.2+ |
| 2004 03 15 | 691 | 0.2+ | 0.1− | 2006 09 27 | G96 | 0.2− | 0.4+ | 2006 11 18 | J75 | 1.4+ | 0.1− |
| 2004 03 15 | 691 | 0.0 | 0.1− | 2006 10 28 | G96 | 0.6− | 0.2− | 2006 11 20 | J75 | 0.6− | 0.2− |
| 2004 03 23 | 691 | 0.2+ | 0.3+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 20 | J75 | 0.1+ | 0.7− |
| 2004 03 23 | 691 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 20 | J75 | 0.3− | 0.5− |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.4− |
| 2004 03 27 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.3− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.5− |
| 2004 03 27 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.7+ | 2006 11 23 | 691 | 0.0 | 0.3− |
| 2004 03 27 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 27 | 703 | 0.9− | 1.0− |
| 2006 09 27 | G96 | 0.1+ | 0.4+ | 2006 11 14 | J75 | 0.6+ | 0.2− | 2006 11 27 | 703 | 0.2− | 0.0 |
| 2006 09 27 | G96 | 0.0 | 0.1+ | 2006 11 14 | J75 | (2.8+ | 0.4−) | 2006 11 27 | 703 | 0.2+ | 0.3+ |
| 2006 09 27 | G96 | 0.2+ | 0.5+ | 2006 11 15 | 691 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.1− | 0.4+ |

**2006 VE$_{61}$ = 1993 HX$_{2}$ = 2002 VL$_{132}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 101.01154 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25633844 | $\omega$ | 234.60327 | | +0.38808942 | | +0.91545994 |
| $a$ | 2.4542957 | $\Omega$ | 58.57029 | | −0.79998295 | | +0.39193696 |
| $e$ | 0.1342468 | $i$ | 7.16275 | | −0.45761761 | | +0.09120591 |
| $P$ | 3.84 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 19 | 691 | 0.4− | 0.7− | 2004 02 13 | 691 | 0.1+ | 0.6+ | 2006 11 18 | J75 | 0.7+ | 0.3− |
| 1993 04 19 | 691 | 0.8− | 0.6− | 2004 04 15 | 645 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 1993 04 19 | 691 | 0.0 | 0.7− | 2004 04 15 | 645 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 1993 04 24 | 691 | 0.4− | 0.3− | 2006 10 19 | G96 | 0.6+ | 0.3− | 2006 11 19 | 691 | 0.2− | 0.1− |
| 1993 04 24 | 691 | 0.7+ | 0.5− | 2006 10 19 | G96 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.5− |
| 1993 04 24 | 691 | 0.8− | 0.7− | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.1− | 0.3− |
| 2002 11 04 | 950 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 11 04 | 950 | 0.6− | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.6− |
| 2002 11 04 | 950 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.3+ | 0.2+ | 2006 11 27 | 703 | 0.1− | 0.6+ |
| 2002 11 05 | 950 | 0.5− | 0.1− | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.7− |
| 2002 11 05 | 950 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.5+ | 1.2+ |
| 2002 11 05 | 950 | 1.4+ | 0.2+ | 2006 11 15 | 691 | 0.5− | 0.2+ | 2006 11 27 | 703 | 0.6+ | 3.0− |
| 2004 02 13 | 691 | 0.1+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.5+ | 0.7− |
| 2004 02 13 | 691 | 0.1+ | 0.4+ | 2006 11 18 | J75 | 0.7+ | 0.3− | 2006 11 27 | 703 | 0.7− | 1.0− |

**2006 VS$_{61}$ = 1999 XU$_{147}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 41.49862 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28263143 | $\omega$ | 99.06869 | | +0.93931634 | | +0.32079001 |
| $a$ | 2.2996182 | $\Omega$ | 242.30054 | | −0.34305089 | | +0.87737503 |
| $e$ | 0.2057017 | $i$ | 7.89177 | | −0.00095015 | | +0.35680083 |
| $P$ | 3.49 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 691 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.2− | 0.5− | 2006 11 15 | 703 | 0.3+ | 0.1− |
| 1999 12 07 | 691 | 0.1+ | 0.4− | 2006 10 20 | G96 | 0.5− | 0.3− | 2006 11 15 | 691 | 0.0 | 0.3+ |
| 1999 12 07 | 691 | 0.2+ | 0.2− | 2006 10 20 | G96 | 0.0 | 0.4− | 2006 11 15 | 691 | 0.0 | 0.4+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 13 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.2+ | | |
| 1999 12 13 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.5+ | 0.4+ | | |
| 1999 12 13 | 691 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.2− | 0.1− | | |
| 2002 06 10 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 703 | 0.9+ | 1.3− | 2006 11 23 | 691 | 0.0 | 0.2− | | |
| 2002 06 10 | 644 | 0.2− | 0.4+ | 2006 11 11 | 703 | 1.0− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.3− | | |
| 2002 06 10 | 644 | 0.3− | 0.6+ | 2006 11 11 | 703 | 1.2− | 1.1+ | 2006 11 23 | 691 | 0.3− | 0.1+ | | |
| 2004 01 16 | 644 | 0.0 | 0.1+ | 2006 11 11 | 703 | 0.7− | 0.4+ | 2006 11 27 | 703 | 0.1+ | 0.7− | | |
| 2004 01 16 | 644 | 0.4+ | 0.8+ | 2006 11 14 | J75 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.2+ | | |
| 2004 01 16 | 644 | 0.1− | 0.4+ | 2006 11 14 | J75 | (1.9+ | 0.5+) | 2006 11 27 | 703 | 0.3− | 0.2− | | |
| 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 14 | J75 | 0.6+ | 0.2+ | 2006 11 27 | 703 | 0.4+ | 0.1− | | |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 15 | 703 | 0.2− | 0.7+ | 2006 11 27 | 691 | 0.3+ | 0.2+ | | |
| 2006 10 04 | G96 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.8− | 0.1− | 2006 11 27 | 703 | 0.1+ | 0.8− | | |
| 2006 10 04 | G96 | 0.2− | 0.1+ | 2006 11 15 | 703 | 1.6+ | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.2+ | | |
| 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.1− | 0.4+ | | | | | | |

**2006 VY$_{61}$ = 2000 TW$_6$ = 2005 NJ$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 40.35574 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17874239 | $\omega$ | 326.05623 | | +0.99505478 | | +0.09909982 |
| $a$ | 3.1211719 | $\Omega$ | 28.25872 | | −0.08768599 | | +0.90821517 |
| $e$ | 0.1828311 | $i$ | 0.81375 | | −0.04665998 | | +0.40660107 |
| $P$ | 5.51 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 26 | 699 | 0.7− | 0.8+ | 2005 07 04 | 691 | 0.0 | 0.3− | 2006 10 27 | G96 | 0.5+ | 0.4− | | |
| 2000 09 26 | 699 | 0.3− | 0.4− | 2005 07 04 | 691 | 0.2+ | 0.2− | 2006 10 27 | G96 | 0.3− | 0.5− | | |
| 2000 09 26 | 699 | 0.7− | 0.4+ | 2005 07 09 | 691 | 0.2+ | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 | | |
| 2000 09 26 | 699 | 0.6− | 0.1− | 2005 07 09 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− | | |
| 2000 10 01 | 704 | 0.1+ | 0.1− | 2005 07 09 | 691 | 0.3+ | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2− | | |
| 2000 10 01 | 704 | 0.2+ | 0.0 | 2006 09 27 | G96 | 0.5+ | 0.4− | 2006 11 11 | G96 | 0.1− | 0.5− | | |
| 2000 10 01 | 704 | 0.2− | 0.3+ | 2006 09 27 | G96 | 0.3+ | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.6− | | |
| 2000 10 01 | 704 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.0 | | |
| 2000 10 01 | 704 | 0.9+ | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.7− | 2006 11 11 | G96 | 0.3− | 0.5− | | |
| 2000 10 02 | 704 | 0.5− | 0.1− | 2006 10 19 | G96 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2000 10 02 | 704 | 0.6− | 0.6+ | 2006 10 19 | G96 | 0.1+ | 0.7− | 2006 11 15 | 691 | 0.2− | 0.1+ | | |
| 2000 10 02 | 704 | 0.4+ | 0.5+ | 2006 10 19 | G96 | 0.7− | 1.1− | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2000 10 02 | 704 | 0.1+ | 0.4+ | 2006 10 19 | G96 | 0.7− | 1.3− | 2006 11 23 | 691 | 0.2+ | 0.4+ | | |
| 2000 10 02 | 704 | 0.3+ | 0.8+ | 2006 10 27 | G96 | 0.2− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.4+ | | |
| 2005 07 04 | 691 | 0.8− | 0.2− | 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.3+ | | |

**2006 VJ$_{62}$ = 2005 GU$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 74.55960 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30368577 | $\omega$ | 63.30071 | | +0.65790089 | | +0.75124636 |
| $a$ | 2.1920633 | $\Omega$ | 247.94193 | | −0.70964825 | | +0.59490587 |
| $e$ | 0.1739901 | $i$ | 3.27029 | | −0.25212256 | | +0.28585994 |
| $P$ | 3.25 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 06 | 691 | 0.1+ | 0.5− | 2006 10 29 | G96 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.4+ | | |
| 2005 04 06 | 691 | 0.2− | 0.3+ | 2006 10 29 | G96 | 0.8− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.2+ | | |
| 2005 04 06 | 691 | 0.3+ | 0.5+ | 2006 10 29 | G96 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2005 04 11 | 691 | 0.2− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2005 04 11 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.3− | 2006 11 19 | 691 | 0.4− | 0.0 | | |
| 2005 04 11 | 691 | 0.0 | 0.3− | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2005 04 15 | 691 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2005 04 15 | 691 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.6− | 2006 11 23 | 691 | 0.1+ | 0.1− | | |
| 2005 04 15 | 691 | 0.3+ | 0.1− | 2006 11 11 | G96 | 0.4− | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2006 10 29 | G96 | 0.2+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.3− | | | | | | |

**2006 VV$_{62}$ = 1995 WB$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 356.83321 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18032106 | $\omega$ | 354.31687 | | +0.57969946 | | −0.78099845 |
| $a$ | 3.1029284 | $\Omega$ | 60.03239 | | +0.75776015 | | +0.41187236 |
| $e$ | 0.1658933 | $i$ | 15.55812 | | +0.29957986 | | +0.46947053 |
| $P$ | 5.47 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.1− | 0.2− | 2006 10 19 | G96 | 0.3− | 0.5− | 2006 11 17 | 644 | 0.3− | 0.1+ | | |
| 1995 11 19 | 691 | 0.2− | 0.3− | 2006 10 19 | G96 | 0.1− | 0.5− | 2006 11 17 | 644 | 0.2− | 0.0 | | |
| 1995 11 19 | 691 | 0.2+ | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 17 | 644 | 0.2− | 0.0 | | |
| 1995 11 27 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 18 | 691 | 0.2− | 0.0 | | |
| 1995 11 27 | 691 | 0.1− | 0.2− | 2006 10 28 | G96 | 0.1+ | 0.4− | 2006 11 18 | 691 | 0.1− | 0.1− | | |
| 1995 11 27 | 691 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ | | |
| 2002 01 09 | 645 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 21 | 704 | 1.4+ | 0.5+ | | |
| 2002 01 09 | 645 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.3− | | |
| 2003 04 01 | 645 | 0.0 | 0.1+ | 2006 11 11 | 703 | 1.5+ | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.5+ | | |
| 2003 04 01 | 645 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.0 | | |
| 2006 09 28 | G96 | 0.4+ | 0.0 | 2006 11 11 | 703 | 0.2− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.0 | | |
| 2006 09 28 | G96 | 0.3+ | 0.0 | 2006 11 11 | 703 | 0.7− | 0.3+ | 2006 11 22 | 691 | 0.1− | 0.1− | | |
| 2006 09 28 | G96 | 0.3− | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.6− | 2006 11 27 | 704 | 0.1− | 0.8+ | | |
| 2006 09 28 | G96 | 0.6+ | 0.3+ | 2006 11 15 | 703 | 0.2+ | 0.3+ | 2006 11 27 | 704 | 0.4− | 2.4+ | | |
| 2006 10 19 | G96 | 0.1− | 0.0 | 2006 11 15 | 703 | 1.0− | 0.5− | 2006 11 27 | 704 | 1.4− | 2.1+ | | |
| 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 15 | 703 | 0.4+ | 0.3+ | | | | | | |

**2006 VA$_{63}$ = 2004 FU$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 273.23152 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27888437 | $\omega$ | 266.73217 | | −0.88312592 | | −0.46409768 |
| $a$ | 2.3201707 | $\Omega$ | 245.60645 | | +0.45476346 | | −0.81097419 |
| $e$ | 0.1572420 | $i$ | 4.31801 | | +0.11523368 | | −0.35627826 |
| $P$ | 3.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | 0.9+ | 0.3− | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.0 | | |
| 2004 03 16 | 703 | 0.8− | 0.7− | 2006 09 28 | G96 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.3+ | | |
| 2004 03 16 | 703 | 0.8− | 0.9+ | 2006 09 28 | G96 | 0.1+ | 0.4− | 2006 11 19 | 691 | 0.2+ | 0.1− | | |
| 2004 03 16 | 703 | 0.6− | 0.1+ | 2006 10 29 | G96 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− | | |
| 2004 03 19 | 704 | 0.6+ | 0.0 | 2006 10 29 | G96 | 0.9− | 0.0 | 2006 11 23 | 691 | 0.3− | 0.1+ | | |
| 2004 03 19 | 704 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2004 03 19 | 704 | 0.3− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2004 03 19 | 704 | 0.6+ | 0.2− | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.0 | | |
| 2004 03 19 | 704 | 0.7+ | 0.3− | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 27 | 691 | 0.4+ | 0.2+ | | |
| 2004 04 12 | 703 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2004 04 12 | 703 | (2.5− | 0.1+) | 2006 11 11 | G96 | 0.3+ | 0.5− | 2006 12 01 | 691 | 0.6− | 0.0 | | |
| 2004 04 12 | 703 | 0.2− | 0.3− | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 12 01 | 691 | 0.0 | 0.3+ | | |
| 2004 04 12 | 703 | 0.4− | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.1− | 0.0 | | |
| 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.1− | | | | | | |

**2006 VD$_{63}$ = 1999 XS$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.80864 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28219224 | $\omega$ | 228.81736 | | −0.29929664 | | −0.89944237 |
| $a$ | 2.3020037 | $\Omega$ | 241.32387 | | +0.94744516 | | −0.24061889 |
| $e$ | 0.1687992 | $i$ | 21.28428 | | +0.11300086 | | −0.36483691 |
| $P$ | 3.49 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 11 27 | 691 | 0.5− | 0.3+ | 2006 11 11 | 691 | 0.3− | 0.1+ | 2006 11 21 | 704 | 0.2− | 0.9+ | | |
| 1992 11 27 | 691 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 1.6+ | 1.1+ | | |
| 1992 11 27 | 691 | 0.5+ | 0.3− | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 22 | H07 | 0.2− | 0.3− | | |
| 1999 12 06 | 704 | 0.3− | 1.5+ | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 22 | H07 | 0.2+ | 0.1+ | | |
| 1999 12 06 | 704 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.0 | 0.6− | 2006 11 22 | H07 | 0.0 | 0.4+ | | |
| 1999 12 06 | 704 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.1+ | 0.5− | 2006 11 22 | H07 | 0.2+ | 0.0 | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.7+ | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.0 | 2006 11 23 | H07 | 0.1− | 0.7+ |
| 1999 12 07 | 704 | 0.1− | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.0 | 2006 11 23 | H07 | 0.1− | 0.2+ |
| 1999 12 07 | 704 | 1.2+ | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.4− | 2006 11 23 | H07 | 0.4+ | 0.1− |
| 1999 12 07 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 703 | 0.4− | 0.3− | 2006 11 23 | H07 | 0.4− | 0.6+ |
| 1999 12 08 | 704 | 0.5+ | 0.6− | 2006 11 18 | 704 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.3− | 0.1− |
| 1999 12 08 | 704 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.7− | 0.7+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 1999 12 08 | 704 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.3− | 0.3+ | 2006 11 24 | 691 | 0.1− | 0.2− |
| 1999 12 08 | 704 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.5− | 0.5− |
| 2001 05 22 | 807 | 0.0 | 0.5+ | 2006 11 21 | 704 | 0.7− | 0.8− | 2006 12 01 | G96 | 0.1− | 0.4− |
| 2001 05 22 | 807 | 0.4− | 1.0+ | 2006 11 21 | 704 | 0.6+ | 0.6− | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2006 11 11 | 691 | 0.3+ | 0.1+ | 2006 11 21 | 704 | 0.1+ | 0.4− | 2006 12 01 | G96 | 0.1+ | 0.7− |

### 2006 VG$_{63}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.09411 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26102857 | $\omega$ | 127.56161 | | +0.99148762 | −0.10417719 | |
| $a$ | 2.4248080 | $\Omega$ | 238.54399 | | +0.07031011 | +0.93325271 | |
| $e$ | 0.1493622 | $i$ | 5.25298 | | +0.10958463 | +0.34378263 | |
| $P$ | 3.78 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 26 | 291 | 0.4+ | 0.7+ | 2006 10 28 | G96 | 0.3− | 0.0 | 2006 11 24 | H07 | 0.6− | 0.0 |
| 2001 05 26 | 291 | 0.1− | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 24 | H07 | 0.5− | 0.0 |
| 2001 05 26 | 291 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 24 | H07 | 0.0 | 0.6+ |
| 2002 10 03 | 644 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 24 | H07 | 1.2+ | 0.1+ |
| 2002 10 03 | 644 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.1− | 2006 11 24 | H07 | 1.2− | 1.1− |
| 2002 10 03 | 644 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.5+ | 0.3− | 2006 11 27 | 291 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.1− | 2006 11 27 | 291 | 0.1− | 0.2+ |
| 2002 10 31 | 644 | 0.0 | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 27 | 291 | 0.1− | 0.1+ |
| 2002 10 31 | 644 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2006 10 28 | G96 | 0.4+ | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 24 | H07 | 0.3− | 0.3− | | | | |

### 2006 VJ$_{63}$ = 1995 UQ$_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.89322 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18902288 | $\omega$ | 297.91891 | | +0.99777664 | +0.05169808 | |
| $a$ | 3.0069518 | $\Omega$ | 59.14538 | | −0.02926919 | +0.90688826 | |
| $e$ | 0.0878236 | $i$ | 2.80831 | | −0.05987563 | +0.41818776 | |
| $P$ | 5.21 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 20 | 691 | 0.4− | 0.2− | 2005 08 05 | 644 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.2+ | 0.1+ |
| 1995 10 20 | 691 | 0.4− | 0.1− | 2005 08 05 | 644 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1995 10 20 | 691 | 0.3− | 0.1+ | 2005 08 05 | 644 | 0.2− | 0.3+ | 2006 11 11 | G96 | 0.6− | 0.1− |
| 1995 10 25 | 691 | 0.1+ | 0.4+ | 2005 08 30 | 644 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.1− |
| 1995 10 25 | 691 | 0.2+ | 0.3+ | 2005 08 30 | 644 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.2+ | 0.2− |
| 1995 10 25 | 691 | 0.2+ | 0.5+ | 2005 08 30 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.3− |
| 1998 03 03 | 691 | 0.4+ | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 1998 03 03 | 691 | 0.3+ | 0.5+ | 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.2+ |
| 1998 03 03 | 691 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.3+ | 0.4− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2004 06 11 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 06 11 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.3+ | 0.0 | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2004 06 11 | 691 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.8+ | 0.1− | 2006 11 23 | 691 | 0.3− | 0.2− |
| 2005 07 04 | 644 | 0.3+ | 0.3+ | 2006 10 28 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2005 07 04 | 644 | 0.2− | 0.4+ | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2005 07 04 | 644 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ |

### 2006 VO$_{63}$ = 2002 CO$_{191}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 348.99398 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17847846 | $\omega$ | 8.10305 | | +0.40156563 | −0.91492829 | |
| $a$ | 3.1242481 | $\Omega$ | 58.22942 | | +0.83755515 | +0.34893394 | |
| $e$ | 0.2381738 | $i$ | 2.73965 | | +0.37046783 | +0.20285792 | |
| $P$ | 5.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 691 | 0.9− | 1.6− | 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.5− |
| 2000 10 02 | 691 | 0.6+ | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.2− | 0.9+ |
| 2000 10 02 | 691 | 0.4+ | 0.8+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2002 02 10 | 704 | 0.8− | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2002 02 10 | 704 | 0.1− | 0.9− | 2006 11 11 | G96 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.7− | 0.5+ |
| 2002 02 10 | 704 | 0.8− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.2− |
| 2002 02 10 | 704 | 0.4− | 0.4− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.9+ | 0.2− |
| 2002 02 12 | 704 | 0.6+ | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.3− | 1.6+ |
| 2002 02 12 | 704 | 0.4+ | 0.5+ | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.6− | 0.4− |
| 2002 02 12 | 704 | 1.0+ | 0.9+ | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2006 09 27 | G96 | 0.5− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.3+ | | | | |
| 2006 09 27 | G96 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.7+ | 0.3+ | | | | |

### 2006 VT$_{63}$ = 2005 GC$_{200}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.18546 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23625268 | $\omega$ | 250.00999 | | +0.81061109 | +0.58294536 | |
| $a$ | 2.5915020 | $\Omega$ | 74.29338 | | −0.51339036 | +0.75308997 | |
| $e$ | 0.2271130 | $i$ | 3.30730 | | −0.28167357 | +0.30500854 | |
| $P$ | 4.17 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | 695 | 0.2+ | 0.0 | 2006 09 28 | G96 | 0.2+ | 0.6− | 2006 11 15 | 691 | 0.3− | 0.1− |
| 2005 04 10 | 695 | 0.4+ | 0.3+ | 2006 10 29 | G96 | 0.4− | 0.4− | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2005 04 11 | 695 | 0.1+ | 0.3+ | 2006 10 29 | G96 | 0.1− | 0.7− | 2006 11 19 | 691 | 0.1− | 0.6+ |
| 2005 06 17 | 691 | 0.2− | 0.9+ | 2006 10 29 | G96 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2005 06 17 | 691 | 0.1+ | 0.1− | 2006 10 29 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2005 06 17 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2006 09 28 | G96 | 0.5+ | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2006 09 28 | G96 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.4− | 0.1− |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.3+ | 0.2+ | | | | |

### 2006 VD$_{64}$ = 2004 HC$_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 261.45422 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21543311 | $\omega$ | 321.15173 | | −0.89284143 | −0.45034216 | |
| $a$ | 2.7558850 | $\Omega$ | 192.08575 | | +0.41906008 | −0.82655695 | |
| $e$ | 0.0145545 | $i$ | 1.39896 | | +0.16499346 | −0.33763226 | |
| $P$ | 4.58 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 04 18 | 691 | 0.5− | 0.3+ | 2004 04 28 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 1999 04 18 | 691 | 0.2+ | 0.5− | 2005 09 30 | G96 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.4+ |
| 1999 04 18 | 691 | 0.0 | 0.6− | 2005 09 30 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.4+ | 0.2+ |
| 2004 04 21 | 691 | 0.4− | 0.2− | 2005 09 30 | G96 | 0.4− | 0.3+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2004 04 21 | 691 | 0.2− | 0.1+ | 2005 09 30 | G96 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 04 21 | 691 | 0.3+ | 0.4+ | 2006 11 11 | 691 | 0.3− | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.3+ |
| 2004 04 24 | 291 | 0.1+ | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2004 04 24 | 291 | 0.3+ | 1.0+ | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.9− | 0.7− |
| 2004 04 24 | 291 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.4− |
| 2004 04 28 | 691 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.3+ | 0.2− |
| 2004 04 28 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.1− | | | | |

**2006 VW$_{64}$ = 2003 AE$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.71582 | | (2000.0) | | | |
| $n$ | 0.22904582 | $\omega$ | 144.35818 | | +0.92637132 | −0.36252968 |
| $a$ | 2.6455814 | $\Omega$ | 237.20823 | | +0.31125728 | +0.88949794 |
| $e$ | 0.2160763 | $i$ | 6.97067 | | +0.21202614 | +0.27814679 |
| $P$ | 4.30 | $H$ | 15.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 07 | 704 | 0.5+ | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.1− |
| 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2003 01 07 | 704 | 0.6+ | 0.0 | 2006 11 11 | 703 | 0.0 | 0.8− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.5− | 1.0− | 2006 11 21 | 704 | 0.0 | 0.0 |
| 2003 01 09 | 704 | 0.5− | 0.4− | 2006 11 11 | 703 | 1.0− | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.4+ |
| 2003 01 09 | 704 | 0.4− | 0.2+ | 2006 11 11 | 703 | 0.5− | 0.1− | 2006 11 21 | 704 | 0.4− | 0.2+ |
| 2003 01 09 | 704 | 0.1+ | 0.8− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 0.1+ |
| 2006 08 29 | 703 | 0.4+ | 0.4− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2006 08 29 | 703 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.5+ | 0.2− | 2006 11 24 | G96 | 0.7− | 0.2− |
| 2006 08 29 | 703 | 0.1+ | 1.2+ | 2006 11 17 | 704 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.5+ | 0.2+ |
| 2006 08 29 | 703 | 0.9− | 0.2+ | 2006 11 17 | 704 | 0.7− | 0.8+ | 2006 11 27 | 704 | 0.1+ | 0.1+ |
| 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 17 | 704 | 0.6+ | 0.3+ | 2006 11 27 | 704 | 0.7+ | 1.2+ |
| 2006 09 28 | G96 | 0.4+ | 0.1+ | 2006 11 17 | 704 | 0.7+ | 0.1− | 2006 11 27 | 704 | 0.1− | 0.2− |
| 2006 09 28 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.8+ | 0.9+ | 2006 11 29 | 704 | 0.2− | 0.2+ |
| 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.1− | 0.5+ | 2006 11 29 | 704 | 0.5− | 0.1− |
| 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.7+ | 2006 11 29 | 704 | 0.5+ | 0.2+ |
| 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.4− | 0.0 | 2006 11 29 | 704 | 0.7− | 0.2+ |
| 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 18 | 704 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.1+ | 0.0 |

**2006 VL$_{65}$ = 2001 WT$_{43}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 39.43399 | | (2000.0) | | | |
| $n$ | 0.20250210 | $\omega$ | 293.30251 | | +0.99717561 | −0.05623450 |
| $a$ | 2.8719907 | $\Omega$ | 69.95116 | | +0.07184017 | +0.90748912 |
| $e$ | 0.0838251 | $i$ | 3.03786 | | −0.02190395 | +0.41629458 |
| $P$ | 4.87 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 18 | 704 | 0.2− | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2001 11 18 | 704 | (0.4+ | 2.2+) | 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 |
| 2001 11 18 | 704 | (0.2+ | 1.8+) | 2006 10 28 | G96 | 0.1− | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 11 18 | 704 | 0.9− | 0.4+ | 2006 10 28 | G96 | 0.7− | 0.0 | 2006 11 23 | 691 | 0.5+ | 0.0 |
| 2001 11 20 | 704 | 0.6+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.0 | 0.4− |
| 2001 11 20 | 704 | 0.2+ | 0.5+ | 2006 10 28 | G96 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2001 11 20 | 704 | 1.0+ | 1.1− | 2006 11 11 | 691 | 0.2− | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2001 11 20 | 704 | 0.2− | 1.3− | 2006 11 11 | 691 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.4− |
| 2004 05 14 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2004 05 14 | 691 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.2− |
| 2004 05 14 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.3− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2006 09 27 | G96 | 0.4− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.1+ | | | | |

**2006 VM$_{65}$ = 1999 AD$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 1.02555 | | (2000.0) | | | |
| $n$ | 0.23368244 | $\omega$ | 195.95299 | | +0.72902155 | −0.68441675 |
| $a$ | 2.6104698 | $\Omega$ | 207.24512 | | +0.63038712 | +0.67705514 |
| $e$ | 0.1189341 | $i$ | 1.25976 | | +0.26672019 | +0.27049963 |
| $P$ | 4.22 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 01 07 | 691 | 0.8+ | 0.0 | 2006 10 19 | G96 | 0.6+ | 0.0 | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 1999 01 07 | 691 | 0.2+ | 0.7− | 2006 10 19 | G96 | 0.6+ | 0.5− | 2006 11 19 | 691 | 0.5+ | 0.1+ |
| 1999 01 07 | 691 | 0.3+ | 0.1− | 2006 10 19 | G96 | 0.4− | 0.5− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 1999 01 13 | 691 | 0.4− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 1999 01 13 | 691 | 0.8− | 0.1− | 2006 10 28 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1999 01 13 | 691 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2002 12 04 | 695 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2002 12 04 | 695 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.3+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 2004 04 20 | 691 | 0.6+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2004 04 20 | 691 | 0.2− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.3− | 0.4− |
| 2004 04 20 | 691 | 0.2− | 0.5+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 1.4− | 0.2+ |
| 2006 09 27 | G96 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.3− | 0.3+ | 2006 11 27 | 703 | 0.6− | 0.7+ |
| 2006 09 27 | G96 | 0.0 | 0.6− | 2006 11 15 | 691 | 0.2− | 0.4+ | 2006 11 27 | 703 | 0.1− | 0.5+ |
| 2006 09 27 | G96 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.4+ | | | | |
| 2006 09 27 | G96 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ | | | | |

**2006 VR$_{65}$ = 2000 RR$_{106}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 165.96635 | | (2000.0) | | | |
| $n$ | 0.19709918 | $\omega$ | 179.47726 | | −0.41232975 | +0.90955968 |
| $a$ | 2.9242388 | $\Omega$ | 66.17062 | | −0.83606342 | −0.35518920 |
| $e$ | 0.0714156 | $i$ | 3.24753 | | −0.36191454 | −0.21573553 |
| $P$ | 5.00 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.5− | 0.5− | 2006 11 19 | 691 | 0.3− | 0.0 |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.5− | 0.4+ |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2000 09 05 | 645 | 0.1+ | 0.0 | 2006 11 11 | 691 | 0.2− | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 11 16 | 691 | 0.3+ | 0.3− | 2006 11 11 | 691 | 0.4+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 11 16 | 691 | 0.1− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2001 11 16 | 691 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 10 19 | G96 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.2− | 2006 11 27 | 691 | 0.3+ | 0.4− |
| 2006 10 19 | G96 | 0.5+ | 0.5− | 2006 11 19 | 691 | 0.3− | 0.6+ | | | | |

**2006 VX$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.45045 | | (2000.0) | | | |
| $n$ | 0.27953008 | $\omega$ | 130.52038 | | +0.99501362 | −0.05357076 |
| $a$ | 2.3165962 | $\Omega$ | 232.71677 | | +0.02220424 | +0.94132126 |
| $e$ | 0.1293917 | $i$ | 6.06974 | | +0.09723610 | +0.33323333 |
| $P$ | 3.53 | $H$ | 17.3 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 15 | 644 | 0.1+ | 0.1− | 2006 09 27 | 291 | 0.2− | 0.3− | 2006 11 15 | 691 | 0.5+ | 0.2+ |
| 2002 08 15 | 644 | 0.7− | 0.1− | 2006 09 27 | 291 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.2− | 0.1− |
| 2002 08 15 | 644 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2002 09 04 | 644 | 0.1− | 0.3+ | 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.5+ |
| 2002 09 04 | 644 | 0.0 | 0.3+ | 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 27 | 691 | 0.3− | 0.0 |
| 2002 09 04 | 644 | 0.1+ | 0.0 | 2006 09 27 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.1− | 0.4− |
| 2002 09 13 | 644 | 0.5− | 0.3+ | 2006 11 11 | 691 | 0.4− | 0.1+ | 2006 11 27 | 703 | 0.7+ | 0.1− |
| 2002 09 13 | 644 | 0.4+ | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 27 | 703 | 0.0 | 0.8+ |
| 2002 09 13 | 644 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.1+ | 0.2− | | | | |
| 2006 09 27 | 291 | 0.3− | 0.3− | 2006 11 15 | 691 | 0.4+ | 0.4+ | | | | |

**2006 VY$_{65}$ = 4195 P-L**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 3.26800 | | (2000.0) | | | |
| $n$ | 0.27993692 | $\omega$ | 174.99953 | | +0.85168029 | −0.52371456 |
| $a$ | 2.3143512 | $\Omega$ | 216.60266 | | +0.47970141 | +0.79372528 |
| $e$ | 0.2056047 | $i$ | 1.83299 | | +0.21101481 | +0.30939172 |
| $P$ | 3.52 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 11 21 | 704 | 0.7− | 0.6+ |
| 1960 09 25 | 675 | 0.2+ | 1.2+ | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | (2.4+ | 1.0−) |
| 1960 09 25 | 675 | (0.8− | 3.2+) | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | (1.9+ | 0.2+) |
| 1960 09 26 | 675 | 0.6+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 |
| 1960 09 26 | 675 | 0.4− | 0.5− | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1960 09 28 | 675 | 1.0− | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 28 | 675 | 0.8+ | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.2+ | 2006 11 24 | G96 | 0.0 | 0.3− | | |
| 2006 09 27 | G96 | 0.3− | 0.2− | 2006 11 18 | 704 | 0.3+ | 0.3− | 2006 11 24 | G96 | 0.3− | 0.2− | | |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 18 | 704 | (1.9+ | 1.6+) | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 18 | 704 | 0.8− | 0.2− | 2006 11 24 | G96 | 0.3− | 0.2− | | |
| 2006 09 27 | G96 | 0.0 | 0.1− | 2006 11 18 | 704 | (1.7+ | 0.6+) | 2006 11 27 | 703 | 0.4− | 0.2+ | | |
| 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.1− | 0.2− | 2006 11 29 | 704 | 0.1− | 0.7+ | | |
| 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.2− | 2006 11 29 | 704 | 0.8+ | 0.9+ | | |
| 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.7+ | | |
| 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.0 | | | | | | |

**2006 VA$_{66}$ = 1994 RN$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.65936 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17214356 | $\omega$ | 165.86539 | | +0.82003801 | −0.57135182 | |
| $a$ | 3.2004338 | $\Omega$ | 229.02827 | | +0.52073472 | +0.76887600 | |
| $e$ | 0.1807293 | $i$ | 2.51163 | | +0.23743004 | +0.28703100 | |
| $P$ | 5.73 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 09 12 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.3− | 0.1+ | | |
| 1994 09 12 | 691 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.3− | 0.3− | | |
| 1994 09 12 | 691 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 1994 09 14 | 691 | 1.4+ | 0.3+ | 2006 11 11 | G96 | 0.5− | 0.2− | 2006 11 24 | G96 | (3.0− | 2.8−) | | |
| 1994 09 14 | 691 | 0.9− | 0.0 | 2006 11 11 | G96 | 0.0 | 0.7− | 2006 11 27 | 691 | 0.2+ | 0.1+ | | |
| 1994 09 14 | 691 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.3− | 0.4+ | | |
| 1994 09 28 | 691 | 0.3− | 0.7− | 2006 11 11 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.0 | 0.4+ | | |
| 1994 09 28 | 691 | 0.7+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.1+ | 0.0 | | |
| 1994 09 28 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.2+ | 2006 12 01 | 691 | 0.2+ | 1.4− | | |
| 2000 11 24 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.1− | 2006 12 01 | 691 | 0.1+ | 0.1− | | |
| 2000 11 24 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ | | | | | | |
| 2000 11 24 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2− | 0.0 | | | | | | |

**2006 VJ$_{66}$ = 2001 XE$_{171}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.74699 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18861929 | $\omega$ | 317.87953 | | +0.64161356 | −0.76662335 | |
| $a$ | 3.0112396 | $\Omega$ | 92.19266 | | +0.71021865 | +0.58151218 | |
| $e$ | 0.0749833 | $i$ | 1.42863 | | +0.28969211 | +0.27227232 | |
| $P$ | 5.23 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.0 | | |
| 2001 12 14 | 704 | 0.2− | 0.9+ | 2006 10 28 | G96 | 0.2+ | 0.0 | 2006 11 19 | 691 | 1.0+ | 1.0− | | |
| 2001 12 14 | 704 | 0.5− | 0.5+ | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.1− | | |
| 2001 12 17 | 704 | (0.5+ | 1.9−) | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.0 | | |
| 2001 12 17 | 704 | 0.7+ | 1.4− | 2006 11 11 | 691 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1− | 0.1+ | | |
| 2001 12 17 | 704 | (0.1+ | 2.3−) | 2006 11 11 | 691 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1− | | |
| 2006 09 27 | G96 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.2− | | |
| 2006 09 27 | G96 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 11 24 | G96 | 0.1− | 0.4− | | |
| 2006 09 27 | G96 | 0.5+ | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.3− | | |
| 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.2− | 0.2+ | | |
| 2006 10 19 | G96 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2006 10 19 | G96 | 0.3− | 0.1− | 2006 11 15 | 691 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2006 10 19 | G96 | 0.6− | 0.2− | 2006 11 15 | 691 | 0.1− | 0.1+ | | | | | | |

**2006 VB$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.90678 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26589763 | $\omega$ | 190.85542 | | +0.99520539 | −0.09778460 | |
| $a$ | 2.3951152 | $\Omega$ | 174.75483 | | +0.09136867 | +0.92182082 | |
| $e$ | 0.2014764 | $i$ | 1.31571 | | +0.03489986 | +0.37507939 | |
| $P$ | 3.71 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 17 | 644 | 0.0 | 0.5+ | 2006 10 17 | G96 | 0.1− | 0.7− | 2006 11 15 | G96 | 0.4− | 0.5− | | |
| 2002 08 17 | 644 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.4+ | 0.5− | 2006 11 15 | G96 | 0.1− | 0.5− | | |
| 2002 08 17 | 644 | 0.0 | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.7− | 2006 11 17 | 703 | 0.6− | 0.3− | | |
| 2002 09 14 | 644 | 0.1− | 0.0 | 2006 10 28 | G96 | 0.2+ | 0.5− | 2006 11 17 | 703 | 0.9− | 0.1− | | |
| 2002 09 14 | 644 | 0.2− | 0.1+ | 2006 10 28 | G96 | 0.0 | 0.5− | 2006 11 17 | 703 | (1.7− | 0.2+) | | |
| 2002 09 14 | 644 | 0.3− | 0.1− | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.1+ | 0.3+ | | |
| 2006 07 21 | G96 | 0.0 | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.4− | 2006 11 18 | 704 | 0.1+ | 0.5+ | | |
| 2006 07 21 | G96 | 0.3− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.4− | 1.0+ | | |
| 2006 07 21 | G96 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.6+ | 1.0+ | 2006 11 18 | 704 | 0.1+ | 1.2+ | | |
| 2006 07 21 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 1.2+ | 0.4+ | 2006 11 18 | 704 | 0.5− | 1.5+ | | |
| 2006 10 17 | G96 | 0.2+ | 1.0− | 2006 11 11 | 703 | (1.8+ | 1.3+) | 2006 11 27 | 291 | 0.2+ | 0.0 | | |
| 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 15 | G96 | 0.0 | 0.5− | 2006 11 27 | 291 | 0.0 | 0.1+ | | |
| 2006 10 17 | G96 | 0.6+ | 0.6− | 2006 11 15 | G96 | 0.1+ | 0.6− | 2006 11 27 | 291 | 0.3− | 0.3+ | | |

**2006 VK$_{67}$ = 2005 QR$_{26}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.77415 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.16985230 | $\omega$ | 178.37935 | | −0.42797927 | +0.90154326 | |
| $a$ | 3.2291515 | $\Omega$ | 66.27729 | | −0.82999018 | −0.36417586 | |
| $e$ | 0.0738678 | $i$ | 3.98776 | | −0.35770107 | −0.23365722 | |
| $P$ | 5.80 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 21 | 691 | 0.1+ | 0.3+ | 2005 10 09 | 691 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.6− | | |
| 2003 04 21 | 691 | 0.2+ | 0.3+ | 2006 09 27 | G96 | 0.6+ | 0.5− | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2003 04 21 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.4+ | 0.4− | 2006 11 15 | 691 | 0.1+ | 0.1+ | | |
| 2005 08 27 | 691 | 0.2+ | 0.2− | 2006 09 27 | G96 | 0.6+ | 0.2− | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2005 08 27 | 691 | 0.0 | 0.1− | 2006 09 27 | G96 | 0.1− | 0.3− | 2006 11 15 | 691 | 0.5− | 0.3+ | | |
| 2005 08 27 | 691 | 0.3− | 0.0 | 2006 10 28 | G96 | 0.4+ | 0.4− | 2006 11 19 | 691 | 0.0 | 0.1+ | | |
| 2005 08 28 | 691 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.1− | 0.5− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2005 08 28 | 691 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.0 | | |
| 2005 08 28 | 691 | 0.0 | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2005 09 11 | 691 | 0.8− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.2+ | 0.1+ | | |
| 2005 09 11 | 691 | 0.3− | 0.2+ | 2006 11 11 | 691 | 0.4− | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.1− | | |
| 2005 09 11 | 691 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.3+ | | |
| 2005 10 09 | 691 | 0.3+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.0 | | |
| 2005 10 09 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.1+ | | |

**2006 VR$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 125.28010 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29074128 | $\omega$ | 218.22662 | | +0.12593385 | +0.99144035 | |
| $a$ | 2.2566537 | $\Omega$ | 59.03280 | | −0.90000344 | +0.12878837 | |
| $e$ | 0.1100730 | $i$ | 2.30247 | | −0.41729422 | +0.02143792 | |
| $P$ | 3.39 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 05 02 | 327 | 0.7+ | 0.4+ | 2003 12 19 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1− | 0.7+ | | |
| 1998 05 02 | 327 | 0.6− | 0.3+ | 2003 12 19 | 691 | 0.2− | 0.4+ | 2006 11 19 | 691 | 0.3− | 0.1+ | | |
| 1998 05 02 | 327 | 0.0 | 0.4− | 2006 11 11 | 691 | 0.2− | 0.2− | 2006 11 19 | 691 | 0.0 | 0.0 | | |
| 2002 08 20 | 644 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.1+ | | |
| 2002 08 20 | 644 | 0.5− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.3− | 2006 11 27 | 691 | 0.3− | 0.3+ | | |
| 2002 08 20 | 644 | 0.3+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.3− | 0.0 | | |
| 2003 12 19 | 691 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.1− | | |

**2006 VY$_{67}$ = 1995 WN$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.70842 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18098117 | $\omega$ | 339.83398 | | +0.61986998 | −0.78348053 | |
| $a$ | 3.0953787 | $\Omega$ | 71.83393 | | +0.72612767 | +0.55153655 | |
| $e$ | 0.1587613 | $i$ | 2.64284 | | +0.29748920 | +0.28629649 | |
| $P$ | 5.45 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 19 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 15 | 691 | 0.2− | 0.4+ |
| 1995 11 19 | 691 | 0.4− | 0.4+ | 2006 11 11 | 691 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1− |
| 1995 11 19 | 691 | 0.1− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 27 | H07 | 0.0 | 0.5+ |
| 1995 11 27 | 691 | 0.5+ | 0.2− | 2006 11 11 | G96 | 0.4+ | 0.4− | 2006 11 27 | H07 | 0.3− | 0.2+ |
| 1995 11 27 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1+ | 0.8− | 2006 11 27 | H07 | 0.3+ | 0.1− |
| 1995 11 27 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.8− | | | | |
| 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.2+ | | | | |

**2006 VB$_{68}$ = 2005 QS$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 21.01460 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18936824 | $\omega$ | 325.14996 | | +0.82869700 | −0.52804045 | |
| $a$ | 3.0032947 | $\Omega$ | 67.76959 | | +0.54820839 | +0.69894425 | |
| $e$ | 0.0527863 | $i$ | 11.56422 | | +0.11282214 | +0.48233828 | |
| $P$ | 5.20 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 28 | E12 | 0.0 | 0.7− | 2006 10 28 | G96 | 0.5− | 0.1− | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2005 08 28 | E12 | 0.1+ | 1.0− | 2006 10 28 | G96 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 |
| 2005 08 28 | E12 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.6− | 0.8+ |
| 2005 08 28 | E12 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2005 09 02 | 644 | 0.1+ | 0.6+ | 2006 11 11 | 691 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2005 09 02 | 644 | 0.1− | 0.6+ | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2005 09 02 | 644 | 0.2− | 0.6+ | 2006 11 11 | G96 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2006 10 19 | G96 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1− | 0.5− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2006 10 19 | G96 | 0.0 | 0.3− | 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 15 | 703 | 0.3− | 0.2− | 2006 11 30 | 691 | 0.0 | 0.1− |
| 2006 10 19 | G96 | 0.5− | 0.5+ | 2006 11 15 | 703 | 0.3+ | 1.0+ | 2006 11 30 | 691 | 0.2+ | 0.0 |
| 2006 10 28 | G96 | 0.5+ | 0.4− | 2006 11 15 | 703 | 0.4+ | 1.0− | 2006 11 30 | 691 | 0.2− | 0.1− |
| 2006 10 28 | G96 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.5+ | 0.8+ | | | | |

**2006 VD$_{68}$ = 2002 XF$_{102}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 5.94713 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24502030 | $\omega$ | 329.05567 | | +0.81997276 | −0.57120517 | |
| $a$ | 2.5293058 | $\Omega$ | 65.82360 | | +0.53311687 | +0.73856104 | |
| $e$ | 0.2102277 | $i$ | 2.32468 | | +0.20840123 | +0.35812323 | |
| $P$ | 4.02 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.3− | 0.1+ | 2004 03 29 | 691 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.5− |
| 2002 12 05 | 704 | 0.1+ | 0.3− | 2004 03 29 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.0 |
| 2002 12 05 | 704 | 0.2− | 0.2+ | 2004 03 29 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1− |
| 2002 12 10 | 704 | 0.6+ | 0.0 | 2006 10 28 | G96 | 0.0 | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1− |
| 2002 12 10 | 704 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 12 10 | 704 | 0.3+ | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 12 10 | 704 | 0.3− | 0.1− | 2006 10 28 | G96 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 12 10 | 704 | 0.2+ | 0.5+ | 2006 11 11 | 691 | 0.3+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 12 10 | 704 | 0.7− | 0.6− | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2002 12 10 | 704 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.1− |
| 2002 12 10 | 704 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.4+ | 0.5− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2002 12 10 | 704 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.0 | 0.2+ |
| 2002 12 10 | 704 | 0.0 | 0.6− | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 12 01 | 691 | 0.0 | 0.2+ |

**2006 VG$_{68}$ = 2001 QN$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 56.05881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22974882 | $\omega$ | 92.52199 | | +0.89308641 | +0.44956149 | |
| $a$ | 2.6401820 | $\Omega$ | 240.76292 | | −0.42014269 | +0.81988216 | |
| $e$ | 0.2173639 | $i$ | 1.12041 | | −0.16086263 | +0.35452462 | |
| $P$ | 4.29 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 25 | 608 | 0.4+ | 0.3− | 2001 08 19 | 704 | 0.6+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2001 07 25 | 608 | 0.3+ | 0.2− | 2006 11 11 | 691 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.4− | 0.4− |
| 2001 07 25 | 608 | 0.5+ | 0.2− | 2006 11 11 | 691 | 0.4+ | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2001 08 16 | 704 | 0.5+ | 0.3+ | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 11 27 | 691 | 0.3− | 0.2+ |
| 2001 08 16 | 704 | 0.3− | 0.6− | 2006 11 11 | G96 | 0.0 | 0.7− | 2006 11 27 | 691 | 0.1− | 0.6+ |
| 2001 08 16 | 704 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2001 08 19 | 704 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1+ | 0.4− | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2001 08 19 | 704 | 0.8− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.3− | 0.2+ |
| 2001 08 19 | 704 | 1.0− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.4+ | 2006 12 01 | 691 | 0.1− | 0.1+ |

**2006 VC$_{69}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.46016 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21587124 | $\omega$ | 110.96122 | | +0.98093416 | −0.15902149 | |
| $a$ | 2.7521548 | $\Omega$ | 258.32164 | | +0.10675550 | +0.92126610 | |
| $e$ | 0.3074925 | $i$ | 6.55039 | | +0.16239288 | +0.35493793 | |
| $P$ | 4.57 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 07 19 | 608 | 1.1+ | 0.4− | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.5− | 0.4− |
| 2001 07 19 | 608 | 0.8+ | 1.0− | 2006 11 11 | 703 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2001 07 19 | 608 | 0.6+ | 0.8− | 2006 11 11 | 703 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2001 08 16 | 644 | 0.7− | 0.6+ | 2006 11 11 | 703 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.8+ | 0.2− |
| 2001 08 16 | 644 | 0.9− | 0.8+ | 2006 11 11 | 703 | 0.7− | 0.1+ | 2006 11 22 | 704 | 0.7+ | 0.3+ |
| 2001 08 16 | 644 | 0.9− | 0.8+ | 2006 11 14 | 703 | 0.8+ | 1.0+ | 2006 11 22 | 704 | 0.5+ | 0.0 |
| 2006 10 19 | 703 | 0.5− | 1.0− | 2006 11 14 | 703 | 0.3+ | 0.9− | 2006 11 24 | 703 | 0.2− | 0.2− |
| 2006 10 19 | 703 | 0.3+ | 0.2− | 2006 11 14 | 703 | 0.2− | 0.4+ | 2006 11 24 | 703 | 0.5− | 0.8− |
| 2006 10 19 | 703 | 0.9− | 0.3− | 2006 11 14 | 703 | 0.3+ | 0.7+ | 2006 11 24 | 703 | 0.2+ | 0.6− |
| 2006 10 19 | 703 | 0.7+ | 0.4+ | 2006 11 15 | 704 | 0.5+ | 0.5+ | 2006 11 24 | 703 | 0.0 | 0.0 |
| 2006 10 27 | 703 | 0.5− | 0.2− | 2006 11 15 | 704 | 0.7+ | 0.4+ | 2006 11 28 | 704 | 0.8− | 0.2+ |
| 2006 10 27 | 703 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.2+ | 0.3− | 2006 11 28 | 704 | 0.7+ | 0.9+ |
| 2006 10 27 | 703 | 0.2− | 0.6− | 2006 11 15 | 704 | 0.0 | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.3− |
| 2006 10 27 | 703 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.8− | 0.4+ |
| 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.4− | 0.1− | | | | |
| 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.6− | 0.3− | | | | |

**2006 VD$_{69}$ = 2003 AU$_{86}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.16248 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23504036 | $\omega$ | 181.63306 | | +0.36523550 | −0.91366564 | |
| $a$ | 2.6004055 | $\Omega$ | 246.97547 | | +0.85628002 | +0.40490328 | |
| $e$ | 0.1534209 | $i$ | 11.17558 | | +0.36522260 | −0.03561515 | |
| $P$ | 4.19 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.9+ | 1.3− | 2006 11 15 | 704 | 0.2+ | 0.7− | 2006 11 19 | 704 | 0.3+ | 0.3− |
| 2003 01 01 | 704 | (1.0+ | 2.1−) | 2006 11 15 | 704 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.9+ | 0.4+ |
| 2003 01 01 | 704 | (0.9+ | 2.5−) | 2006 11 15 | 704 | 1.8− | 0.5− | 2006 11 21 | 704 | 0.3− | 1.4+ |
| 2003 01 07 | 704 | 0.6− | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.8− | 2006 11 21 | 704 | 0.1− | 0.4+ |
| 2003 01 07 | 704 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.3+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.7+ |
| 2003 01 07 | 704 | 0.4− | 0.2+ | 2006 11 16 | 704 | 0.7+ | 0.5+ | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2003 01 07 | 704 | 0.4− | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.1− | 0.1− |
| 2006 10 23 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.0 | 2006 11 27 | 704 | 0.5− | 1.2+ |
| 2006 10 23 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 704 | 0.8+ | 0.8− | 2006 11 27 | 704 | 0.6− | 0.8+ |
| 2006 10 23 | 691 | 0.7− | 0.1− | 2006 11 16 | 704 | 0.6− | 0.1− | 2006 11 27 | 704 | 0.8− | 0.7+ |
| 2006 10 27 | 703 | 0.4− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.1− | 2006 11 27 | 704 | 0.5− | 0.6+ |
| 2006 10 27 | 703 | 0.5− | 0.3− | 2006 11 16 | 704 | 0.0 | 0.6− | 2006 11 27 | 185 | 1.7+ | 1.1+ |
| 2006 10 27 | 703 | 0.0 | 0.8+ | 2006 11 16 | 704 | 0.7− | 0.1+ | 2006 11 27 | 185 | 1.7+ | 1.0+ |
| 2006 10 27 | 703 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.4− | 0.3− | 2006 11 27 | 185 | 1.1+ | 0.8+ |
| 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.4+ | 2006 12 01 | G96 | 0.2− | 0.9− |
| 2006 11 09 | 644 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.6+ | 0.8− | 2006 12 01 | G96 | 0.3− | 0.7− |
| 2006 11 09 | 644 | 0.4− | 0.2− | 2006 11 16 | 704 | 1.5− | 0.4+ | 2006 12 01 | G96 | 0.2− | 0.8− |
| 2006 11 09 | 644 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.1+ | 0.7− | 2006 12 01 | G96 | 0.2− | 0.6− |
| 2006 11 09 | 644 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.4+ | 0.4+ |
| 2006 11 09 | 644 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.0 | 0.5− | 2006 12 01 | 704 | 0.4+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 11 11 | 703 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.0 | 0.4− | 2006 12 01 | 704 | 1.7+ | 0.4+ | | |
| 2006 11 11 | 703 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.2− | 0.4+ | 2006 12 01 | 704 | 0.1− | 0.5− | | |
| 2006 11 11 | 703 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.6+ | 1.3+ | | |
| 2006 11 11 | 703 | 0.4− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.4+ | | | | | | |

**2006 VY$_{69}$ = 2002 XY$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 55.11187 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23153077 | $\omega$ | 266.62860 | | +0.90176982 | +0.36300942 | |
| $a$ | 2.6266179 | $\Omega$ | 71.97995 | | −0.22792279 | +0.86056368 | |
| $e$ | 0.1893503 | $i$ | 14.28215 | | −0.36723615 | +0.35728743 | |
| $P$ | 4.26 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.4+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1− | 0.8+ | | |
| 2002 12 11 | 704 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.8− | 0.3+ | | |
| 2002 12 11 | 704 | 0.1− | 0.7− | 2006 11 17 | 704 | 1.1+ | 0.2+ | 2006 11 27 | 691 | 0.2− | 0.0 | | |
| 2002 12 11 | 704 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2002 12 12 | 644 | 0.3− | 0.2− | 2006 11 17 | 704 | 1.4− | 0.8− | 2006 11 27 | 691 | 1.5+ | 1.0− | | |
| 2002 12 12 | 644 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.1+ | 1.0+ | 2006 12 01 | 704 | 0.7+ | 0.2− | | |
| 2002 12 12 | 644 | 0.0 | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.7+ | 2006 12 01 | 704 | 0.3− | 0.6+ | | |
| 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.5− | 0.4+ | 2006 12 01 | 691 | 0.2− | 0.1+ | | |
| 2006 11 11 | 691 | 0.2+ | 0.2− | 2006 11 18 | 704 | 0.6+ | 0.2− | 2006 12 01 | 704 | 0.3− | 0.5+ | | |
| 2006 11 11 | 691 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.0 | 0.7− | 2006 12 01 | 704 | 0.9+ | 0.1− | | |
| 2006 11 15 | 703 | 0.4− | 0.3− | 2006 11 19 | 691 | 0.3− | 0.1+ | 2006 12 01 | 691 | 0.4− | 0.1+ | | |
| 2006 11 15 | 703 | 0.5− | 0.7+ | 2006 11 19 | 691 | 0.4− | 0.1− | 2006 12 01 | 704 | 0.6+ | 0.3+ | | |
| 2006 11 15 | 703 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.3− | 0.1+ | 2006 12 01 | 691 | 0.2− | 0.1− | | |
| 2006 11 15 | 703 | 0.7− | 0.2− | 2006 11 21 | 704 | 0.3+ | 0.5+ | | | | | | |
| 2006 11 15 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.4+ | | | | | | |

**2006 VB$_{70}$ = 2000 AC$_{77}$ = 2004 FR$_{37}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.23068 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27824955 | $\omega$ | 206.88779 | | +0.28460131 | −0.95813060 | |
| $a$ | 2.3236983 | $\Omega$ | 226.59558 | | +0.88713964 | +0.27565592 | |
| $e$ | 0.2023617 | $i$ | 2.47945 | | +0.36329788 | +0.07745691 | |
| $P$ | 3.54 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 05 | 704 | 0.4− | 0.1+ | 2006 09 27 | G96 | 0.4+ | 0.5− | 2006 11 18 | 704 | 0.2+ | 0.5+ | | |
| 2000 01 05 | 704 | 0.7+ | 0.1+ | 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.3− | 0.2+ | | |
| 2000 01 05 | 704 | 0.6− | 0.7− | 2006 10 28 | G96 | 0.1− | 0.2− | 2006 11 21 | 704 | 0.3− | 0.2− | | |
| 2000 01 05 | 704 | 0.6+ | 0.3− | 2006 10 28 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.5+ | 0.0 | | |
| 2000 01 05 | 704 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2000 01 06 | 704 | 0.1− | 0.4− | 2006 10 28 | G96 | 0.5− | 0.5− | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2000 01 06 | 704 | 0.1− | 0.7− | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 | | |
| 2000 01 06 | 704 | 0.5− | 1.5− | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.2− | | |
| 2004 03 17 | 691 | 0.1− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.4− | 0.3− | | |
| 2004 03 17 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.3+ | 2006 11 24 | G96 | 1.6+ | 1.9− | | |
| 2004 03 17 | 691 | 0.2− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.3+ | 2006 12 01 | 704 | 0.1+ | 0.1− | | |
| 2004 03 19 | 704 | 1.3+ | 0.4− | 2006 11 15 | 691 | 0.0 | 0.3+ | 2006 12 01 | 704 | 0.2− | 0.6+ | | |
| 2004 03 19 | 704 | (1.7+ | 0.6+) | 2006 11 17 | 704 | 0.0 | 1.1+ | 2006 12 01 | 704 | 0.5− | 0.1+ | | |
| 2004 03 19 | 704 | (1.5− | 0.6−) | 2006 11 17 | 704 | 0.2+ | 0.1− | 2006 12 01 | 691 | 0.2− | 0.1− | | |
| 2004 03 19 | 704 | 1.0+ | 0.3− | 2006 11 17 | 704 | 0.3+ | 0.4+ | 2006 12 01 | 704 | 0.1− | 0.5− | | |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 11 17 | 704 | 0.9− | 0.6+ | 2006 12 01 | 691 | 0.0 | 0.1− | | |
| 2004 03 23 | 691 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | 2006 12 01 | 704 | 0.1− | 0.2+ | | |
| 2004 03 23 | 691 | 0.1− | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.8+ | 2006 12 01 | 691 | 0.0 | 0.1− | | |
| 2006 09 27 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.0 | 0.2+ | | | | | | |
| 2006 09 27 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.1+ | 0.1+ | | | | | | |

**2006 VJ$_{70}$ = 1999 XP$_{250}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 119.92857 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28892663 | $\omega$ | 155.65405 | | +0.20099346 | +0.97939651 | |
| $a$ | 2.2660927 | $\Omega$ | 125.93529 | | −0.90268124 | +0.19294659 | |
| $e$ | 0.1311051 | $i$ | 1.38701 | | −0.38048417 | +0.05961622 | |
| $P$ | 3.41 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 691 | 0.2+ | 0.4− | 2006 10 31 | G96 | 0.5− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.0 | | |
| 1999 12 05 | 691 | 0.6+ | 0.2− | 2006 10 31 | G96 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.3+ | | |
| 1999 12 05 | 691 | 0.2+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.3− | 0.2− | | |
| 1999 12 12 | 691 | 0.2+ | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.0 | 0.4− | | |
| 1999 12 12 | 691 | 0.6− | 0.4+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.5− | | |
| 1999 12 12 | 691 | 0.2− | 0.6− | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.4− | 0.2− | | |
| 2003 12 19 | 691 | 0.2+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.6+ | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2003 12 19 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.1+ | 0.5+ | 2006 11 27 | 691 | 0.1− | 0.1+ | | |
| 2003 12 19 | 691 | 0.4− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.4− | 0.0 | | |
| 2004 01 31 | 691 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.0 | 0.4+ | 2006 12 01 | 691 | 0.1+ | 0.4− | | |
| 2004 01 31 | 691 | 0.0 | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.2+ | 2006 12 01 | 691 | 0.2+ | 0.2− | | |
| 2004 01 31 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.3+ | 2006 12 01 | 691 | 0.0 | 0.1+ | | |
| 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 | | | | | | |

**2006 VO$_{70}$ = 2001 UR$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.06545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20638162 | $\omega$ | 327.36307 | | −0.07766925 | −0.99667777 | |
| $a$ | 2.8358856 | $\Omega$ | 127.07986 | | +0.92117580 | −0.08114626 | |
| $e$ | 0.1066011 | $i$ | 1.76078 | | +0.38131696 | −0.00697909 | |
| $P$ | 4.78 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 691 | 0.2− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.1− | | |
| 2001 10 21 | 691 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.3+ | 0.2+ | | |
| 2001 10 21 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.1+ | 0.3− | | |
| 2001 10 24 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.4− | 0.3− | | |
| 2001 10 24 | 691 | 0.1+ | 0.4− | 2006 11 15 | 691 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.1+ | 0.3− | | |
| 2001 10 24 | 691 | 0.2+ | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.1− | | |
| 2003 03 12 | 291 | 0.1+ | 0.6− | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.6− | 0.2+ | | |
| 2003 03 12 | 291 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.9+ | 0.0 | | |
| 2003 03 12 | 291 | 0.1+ | 0.6+ | 2006 11 16 | 691 | 0.3+ | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.2+ | | |
| 2006 10 31 | G96 | 0.4− | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.6− | 0.2+ | | |
| 2006 10 31 | G96 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.6− | 2006 11 27 | 691 | 0.1+ | 0.0 | | |
| 2006 10 31 | G96 | 0.0 | 0.3− | 2006 11 20 | 691 | 0.1+ | 0.2− | | | | | | |

**2006 VU$_{70}$ = 2004 BT$_{6}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 274.45509 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31272191 | $\omega$ | 63.28582 | | −0.78493720 | −0.61405811 | |
| $a$ | 2.1496307 | $\Omega$ | 78.71714 | | +0.53436124 | −0.73834400 | |
| $e$ | 0.0889599 | $i$ | 4.82576 | | +0.31357879 | −0.27889205 | |
| $P$ | 3.15 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2004 01 16 | 691 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.3− | 2006 11 23 | 691 | 0.0 | 0.2+ | | |
| 2004 01 16 | 691 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.2− | | |
| 2004 01 18 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.4+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.3− | | |
| 2004 01 18 | 691 | 0.0 | 0.2− | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.1− | 0.6− | | |
| 2004 01 18 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.4− | 0.1− | 2006 11 24 | G96 | 0.5+ | 0.2− | | |
| 2004 01 19 | 691 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.3− | | |
| 2004 01 19 | 691 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.2+ | | |
| 2004 01 19 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1+ | 2006 12 01 | 691 | 1.0− | 0.1+ | | |
| 2006 10 31 | G96 | 0.4− | 0.2− | 2006 11 19 | 691 | 0.3− | 0.1− | 2006 12 01 | 691 | 0.4+ | 0.0 | | |
| 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.1− | | | | | | |

**2006 VD$_{71}$ = 1999 TA$_{148}$ = 2005 GN$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.74220 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28932272 | $\omega$ | 277.66470 | | +0.99512366 | | +0.08413175 |
| $a$ | 2.2640240 | $\Omega$ | 77.51961 | | −0.05596176 | | +0.91140888 |
| $e$ | 0.1771709 | $i$ | 3.02270 | | −0.08122309 | | +0.40280977 |
| $P$ | 3.41 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 14 | 704 | 0.4− | 1.0− | 2005 04 10 | G96 | 0.6− | 0.6+ | 2006 11 15 | G96 | 0.1+ | 0.2− |
| 1999 09 14 | 704 | 0.1+ | 0.5− | 2005 04 10 | G96 | 0.5− | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.3− |
| 1999 09 14 | 704 | 0.1− | 0.0 | 2005 04 16 | 691 | 0.4+ | 0.4+ | 2006 11 15 | G96 | 0.3− | 0.3− |
| 1999 09 14 | 704 | 0.3+ | 0.0 | 2005 04 16 | 691 | 0.2+ | 0.4+ | 2006 11 17 | 703 | 0.1+ | 0.5− |
| 1999 09 14 | 703 | 0.3+ | 0.2+ | 2005 04 16 | 691 | 0.3+ | 0.2+ | 2006 11 17 | 703 | 1.2+ | 0.2+ |
| 1999 09 14 | 703 | 1.6− | 0.0 | 2006 10 15 | D35 | 0.1+ | 0.5+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 1999 09 14 | 703 | 0.5− | 0.1+ | 2006 10 15 | D35 | 0.1− | 0.5+ | 2006 11 17 | 703 | 0.2+ | 0.4+ |
| 1999 09 14 | 703 | 1.7− | 0.7+ | 2006 10 15 | D35 | 0.1+ | 0.6+ | 2006 11 18 | 704 | 0.1+ | 0.1− |
| 1999 10 07 | 704 | 0.1− | 1.3+ | 2006 10 22 | 691 | 0.4− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 1999 10 07 | 704 | 0.7+ | 1.0+ | 2006 10 22 | 691 | 0.3− | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.1− |
| 1999 10 07 | 704 | 0.6+ | 0.9+ | 2006 10 22 | 691 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.3+ | 0.1− |
| 1999 10 08 | 704 | 0.4+ | 0.5− | 2006 11 02 | 703 | 0.2− | 0.6− | 2006 11 18 | 704 | 1.0+ | 0.6− |
| 1999 10 08 | 704 | 0.1− | 0.4− | 2006 11 02 | 703 | 0.2− | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.4− |
| 1999 10 08 | 704 | 1.2+ | 0.2+ | 2006 11 02 | 703 | 0.7− | 0.3− | 2006 11 18 | 704 | 0.4+ | 0.0 |
| 2003 12 21 | 691 | 0.2+ | 0.3+ | 2006 11 02 | 703 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.1+ |
| 2003 12 21 | 691 | 0.2+ | 0.4− | 2006 11 08 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.2+ | 1.1− |
| 2003 12 21 | 691 | 0.2− | 0.5+ | 2006 11 08 | 644 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.6− | 0.4+ |
| 2004 01 13 | 691 | 0.2+ | 0.0 | 2006 11 08 | 644 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.6− | 0.7+ |
| 2004 01 13 | 691 | 0.5− | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.8+ | 0.3+ |
| 2004 01 13 | 691 | 0.3+ | 0.1− | 2006 11 11 | 644 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.4+ | 1.2+ |
| 2005 04 10 | G96 | 0.2+ | 0.3+ | 2006 11 11 | 644 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.7− | 0.4+ |
| 2005 04 10 | G96 | 0.6− | 0.6+ | 2006 11 15 | G96 | 0.4− | 0.1− | | | | |

**2006 VZ$_{71}$ = 2005 NN$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.05897 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21340463 | $\omega$ | 209.98989 | | +0.99435817 | | +0.08022135 |
| $a$ | 2.7733211 | $\Omega$ | 145.19794 | | −0.05558466 | | +0.95129845 |
| $e$ | 0.0461009 | $i$ | 6.98421 | | −0.09034473 | | +0.29765045 |
| $P$ | 4.62 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 10 | 691 | 0.3+ | 0.2− | 2005 09 29 | G96 | 0.2+ | 0.4+ | 2006 11 15 | 703 | 1.2− | 0.1− |
| 2005 07 10 | 691 | 0.0 | 0.2+ | 2005 09 29 | G96 | 0.2− | 0.3− | 2006 11 15 | 703 | 1.1− | 0.5− |
| 2005 07 10 | 691 | 0.2+ | 0.2+ | 2005 09 29 | G96 | 0.2− | 0.2− | 2006 11 15 | 703 | 0.2− | 0.8+ |
| 2005 07 11 | G96 | 0.8− | 0.7− | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 11 24 | G96 | 0.4+ | 0.0 |
| 2005 07 11 | G96 | 1.0− | 0.4− | 2006 11 11 | G96 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 07 11 | G96 | 0.1− | 0.2− | 2006 11 11 | G96 | 1.0+ | 0.2− | 2006 11 24 | G96 | 0.0 | 0.1+ |
| 2005 07 11 | G96 | 0.3− | 0.5+ | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 11 24 | G96 | 0.4+ | 0.1+ |
| 2005 09 29 | G96 | 0.1+ | 0.1+ | 2006 11 15 | 703 | 0.1− | 0.7+ | | | | |

**2006 VD$_{72}$ = 2001 XU$_{216}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.10929 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19205619 | $\omega$ | 210.39238 | | +0.09031641 | | −0.99576952 |
| $a$ | 2.9752070 | $\Omega$ | 234.43092 | | +0.91786554 | | +0.08981634 |
| $e$ | 0.2010952 | $i$ | 1.19133 | | +0.38647871 | | +0.01939308 |
| $P$ | 5.13 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 704 | 1.2+ | 0.5− | 2006 10 27 | G96 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.3− | 0.2+ |
| 2001 12 14 | 704 | 1.4+ | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2001 12 14 | 704 | 0.5+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2001 12 18 | 704 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2001 12 18 | 704 | 0.9− | 0.2+ | 2006 11 11 | G96 | 0.3− | 0.6− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2001 12 18 | 704 | 0.0 | 0.8+ | 2006 11 11 | G96 | 0.3+ | 0.4− | 2006 11 23 | 691 | 0.2+ | 0.2− |
| 2001 12 18 | 691 | 0.4− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2001 12 18 | 691 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2001 12 18 | 691 | (2.3− | 1.1+) | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.4+ | 0.3− | | | | |

**2006 VS$_{72}$ = 2003 FZ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 200.06417 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18499638 | $\omega$ | 328.15102 | | −0.81664327 | | +0.56116491 |
| $a$ | 3.0504265 | $\Omega$ | 246.57338 | | −0.49386475 | | −0.80037687 |
| $e$ | 0.0165819 | $i$ | 8.45179 | | −0.29864926 | | −0.21092846 |
| $P$ | 5.33 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 28 | 699 | 0.6+ | 0.6+ | 2006 11 15 | 703 | 1.1− | 0.2− | 2006 11 22 | 701 | 0.6+ | 0.3− |
| 2003 03 28 | 699 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.6+ | 2006 11 22 | 701 | 0.8+ | 0.4− |
| 2003 03 28 | 699 | 0.8− | 0.5− | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 22 | 701 | 0.2− | 0.3− |
| 2003 03 28 | 699 | 0.8− | 1.0− | 2006 11 15 | 703 | 1.0− | 0.2− | 2006 11 22 | 701 | 0.0 | 0.4− |
| 2003 03 31 | 644 | 0.3+ | 0.3+ | 2006 11 15 | 691 | 0.3+ | 0.1− | 2006 11 22 | 701 | 0.1+ | 0.0 |
| 2003 03 31 | 644 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 23 | 701 | 0.2+ | 0.0 |
| 2003 03 31 | 644 | 0.3+ | 0.4+ | 2006 11 16 | 704 | (0.0 | 1.7+) | 2006 11 23 | 701 | 0.6+ | 0.0 |
| 2006 09 28 | G96 | 0.1− | 0.5+ | 2006 11 16 | 704 | 0.4− | 0.2+ | 2006 11 23 | 701 | 0.7+ | 0.2+ |
| 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.5+ | 2006 11 24 | 701 | 0.1+ | 0.1− |
| 2006 09 28 | G96 | 0.1− | 0.0 | 2006 11 18 | 704 | 0.7+ | 0.5− | 2006 11 24 | 701 | 0.7− | 0.1+ |
| 2006 09 28 | G96 | 0.2− | 0.3+ | 2006 11 18 | 704 | 0.4− | 0.4+ | 2006 11 24 | 701 | 0.4− | 0.1− |
| 2006 10 19 | G96 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.4+ | 0.0 | 2006 11 24 | 701 | 0.2− | 1.1− |
| 2006 10 19 | G96 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.8− | 1.4+ | 2006 11 24 | 701 | 0.0 | 0.1− |
| 2006 10 19 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.3− | 0.1+ | 2006 11 24 | 701 | 0.3+ | 0.5+ |
| 2006 10 19 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 11 24 | 701 | 0.4− | 0.1− |
| 2006 10 29 | G96 | 0.1+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 10 29 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2+ | 0.3− | 2006 11 27 | 703 | 0.9+ | 1.2+ |
| 2006 10 29 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.5− | 2006 11 27 | 703 | 0.3+ | 0.0 |
| 2006 10 29 | G96 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.9− | 0.4+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 19 | 704 | 0.6− | 0.2+ | 2006 11 27 | 703 | 1.0− | 0.5− |
| 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.8+ | 0.4+ | 2006 11 27 | 703 | 0.5+ | 0.0 |
| 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.8+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2006 11 11 | G96 | 0.2+ | 0.8− | 2006 11 20 | 704 | 0.5+ | 0.8+ | 2006 11 27 | 701 | 0.6− | 0.2− |
| 2006 11 11 | G96 | 0.3− | 0.6− | 2006 11 21 | 701 | 0.2+ | 0.1− | 2006 11 27 | 701 | 0.4− | 0.1− |
| 2006 11 11 | G96 | 0.1− | 0.7− | 2006 11 21 | 701 | 0.2− | 0.5− | 2006 11 27 | 701 | 0.6− | 0.4− |
| 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 21 | 701 | 0.1+ | 0.2− | 2006 11 27 | 701 | 0.0 | 0.0 |
| 2006 11 15 | 703 | 0.2− | 0.4− | 2006 11 22 | 701 | 0.4− | 0.3− | | | | |

**2006 VA$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.44441 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29031573 | $\omega$ | 87.86693 | | +0.56430325 | | −0.82448604 |
| $a$ | 2.2588584 | $\Omega$ | 327.66320 | | +0.72258066 | | +0.51801055 |
| $e$ | 0.1477086 | $i$ | 4.52980 | | +0.39929816 | | +0.22778903 |
| $P$ | 3.39 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 31 | 691 | 0.4+ | 0.0 | 2006 10 27 | 703 | (1.0− | 2.2−) | 2006 11 14 | 703 | 1.2− | 0.9− |
| 2004 01 31 | 691 | 0.2+ | 0.1− | 2006 10 27 | 703 | (0.4− | 1.7−) | 2006 11 16 | 704 | 0.7+ | 0.6− |
| 2004 01 31 | 691 | 0.0 | 0.1− | 2006 10 27 | 703 | 1.3− | 0.2+ | 2006 11 16 | 704 | 0.4− | 0.2− |
| 2004 02 11 | 291 | 0.1− | 0.2+ | 2006 11 02 | 703 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2004 02 11 | 291 | 0.2− | 0.2+ | 2006 11 02 | 703 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.6− |
| 2004 02 11 | 291 | 0.1− | 0.1+ | 2006 11 02 | 703 | 0.5− | 0.8+ | 2006 11 22 | 703 | 0.3− | 0.0 |
| 2004 02 11 | 691 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.8− | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.3+ |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.6+ | 0.8+ | 2006 11 22 | 703 | 0.3+ | 0.2− |
| 2004 02 11 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.5+ | 0.2− | 2006 11 22 | 703 | 0.3− | 0.1+ |
| 2005 02 18 | 809 | 0.0 | 0.2+ | 2006 11 11 | 703 | 1.1+ | 0.0 | 2006 11 22 | 703 | 0.2+ | 0.0 |
| 2005 02 18 | 809 | 0.1− | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.4− | 2006 11 22 | 703 | 0.0 | 0.2+ |
| 2005 02 18 | 809 | 0.3+ | 0.4+ | 2006 11 13 | 644 | 0.1+ | 0.2+ | 2006 11 22 | 703 | 0.3+ | 0.2+ |
| 2006 10 19 | 703 | 1.3+ | 1.1+ | 2006 11 13 | 644 | 0.2+ | 0.3− | 2006 11 22 | 703 | 0.2+ | 0.4+ |
| 2006 10 19 | 703 | 0.2+ | 0.1− | 2006 11 13 | 644 | 0.3+ | 0.2− | 2006 11 23 | 703 | 0.2+ | 0.1− |
| 2006 10 19 | 703 | 0.0 | 0.4− | 2006 11 14 | 703 | 0.7− | 0.5+ | 2006 11 23 | 703 | 0.5− | 0.3− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 19 | 703 | 0.3− | 0.5+ | 2006 11 14 | 703 | 0.9+ | 0.6+ | 2006 11 23 | 703 | 0.6− | 0.3− | | |
| 2006 10 27 | 703 | (2.6− | 1.6−) | 2006 11 14 | 703 | 0.4− | 0.1+ | 2006 11 23 | 703 | 0.3− | 0.7− | | |

**2006 VE$_{73}$ = 2005 QQ$_{105}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 68.31473 | | (2000.0) | | | |
| $n$ | 0.17529440 | $\omega$ | 259.92813 | | +0.94603844 | +0.31867738 |
| $a$ | 3.1619672 | $\Omega$ | 81.47043 | | −0.26914291 | +0.87373050 |
| $e$ | 0.1140831 | $i$ | 3.40797 | | −0.18048091 | +0.36747754 |
| $P$ | 5.62 | $H$ | 15.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 27 | 644 | 0.5− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.5+ | | |
| 2005 08 27 | 644 | 0.2− | 0.5− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.4+ | 0.0 | | |
| 2005 08 27 | 644 | 0.3− | 0.6− | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 19 | 691 | 0.1− | 0.1− | | |
| 2005 08 28 | 699 | 0.7+ | 0.8+ | 2006 11 11 | G96 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2− | | |
| 2005 08 28 | 699 | 0.5− | 0.2+ | 2006 11 11 | G96 | 0.5− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.1− | | |
| 2005 08 28 | 699 | 0.8+ | 0.4+ | 2006 11 11 | G96 | 0.6− | 0.3− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2005 08 28 | 699 | (1.8+ | 2.2+) | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1− | 0.2+ | | |
| 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.2+ | 0.3− | | | | | | |

**2006 VG$_{73}$ = 2005 JG$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 22.86813 | | (2000.0) | | | |
| $n$ | 0.23599179 | $\omega$ | 119.43674 | | +0.99846209 | +0.03041747 |
| $a$ | 2.5934116 | $\Omega$ | 238.85558 | | −0.04549512 | +0.92731915 |
| $e$ | 0.3522752 | $i$ | 3.10434 | | +0.03168029 | +0.37303347 |
| $P$ | 4.18 | $H$ | 16.6 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 07 | 691 | 0.1− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 21 | 704 | (2.3+ | 0.8−) | | |
| 2005 05 07 | 691 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.7− | 0.5− | 2006 11 21 | 704 | 0.5+ | 0.9+ | | |
| 2005 05 07 | 691 | 0.1+ | 0.2− | 2006 11 15 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | (0.1+ | 3.5+) | | |
| 2005 05 10 | G96 | 0.2− | 0.4+ | 2006 11 15 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | (0.7− | 3.2+) | | |
| 2005 05 10 | G96 | 0.3+ | 0.4+ | 2006 11 17 | 704 | 0.7− | 0.2− | 2006 11 21 | 704 | (3.3− | 3.9+) | | |
| 2005 05 10 | G96 | 0.3+ | 0.5+ | 2006 11 17 | 704 | 0.4− | 0.1+ | 2006 11 22 | 704 | 1.3+ | 0.3− | | |
| 2005 05 10 | G96 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.8− | 0.5− | 2006 11 22 | 704 | 0.3+ | 0.3+ | | |
| 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 704 | 0.2− | 0.8+ | 2006 11 22 | 704 | 0.1− | 0.5− | | |
| 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 1.5+ | 1.2− | 2006 11 22 | 704 | 0.4− | 0.1+ | | |
| 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.5− | 0.3− | 2006 11 23 | 691 | 0.0 | 0.1+ | | |
| 2006 11 11 | G96 | 0.3+ | 0.2− | 2006 11 18 | 704 | 0.2+ | 0.4− | 2006 11 23 | 691 | 0.1− | 0.0 | | |
| 2006 11 11 | G96 | 0.2− | 0.2− | 2006 11 18 | 704 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2006 11 11 | G96 | 0.3− | 0.0 | 2006 11 18 | 704 | 0.2+ | 0.0 | | | | | | |

**2006 VL$_{73}$ = 2001 KF$_{23}$ = 2005 LV$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 129.40565 | | (2000.0) | | | |
| $n$ | 0.26441719 | $\omega$ | 28.65831 | | +0.05810109 | +0.99367050 |
| $a$ | 2.4040468 | $\Omega$ | 244.81350 | | −0.93500605 | +0.02041578 |
| $e$ | 0.0972238 | $i$ | 6.09875 | | −0.34983989 | +0.11046327 |
| $P$ | 3.73 | $H$ | 16.0 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 05 17 | 704 | 0.6− | 0.8+ | 2002 10 31 | 644 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.3− | 0.2+ | | |
| 2001 05 17 | 704 | 0.4− | 0.2+ | 2002 10 31 | 644 | 1.0+ | 0.9+ | 2006 11 15 | 703 | 0.8+ | 0.2+ | | |
| 2001 05 17 | 704 | 1.5+ | 0.4− | 2002 10 31 | 644 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.2+ | 0.0 | | |
| 2001 05 17 | 704 | 0.2− | 1.0+ | 2004 02 11 | 644 | 1.1+ | 0.7+ | 2006 11 15 | 691 | 0.1− | 0.1+ | | |
| 2001 05 22 | 807 | 0.4− | 0.2+ | 2004 02 11 | 644 | 1.0+ | 0.6+ | 2006 11 19 | 691 | 0.2− | 0.0 | | |
| 2001 05 22 | 807 | 0.4− | 0.2+ | 2004 02 11 | 644 | 0.9+ | 0.9+ | 2006 11 19 | 691 | 0.1− | 0.2− | | |
| 2001 05 24 | 704 | 0.0 | 0.5+ | 2005 06 05 | 691 | 0.2+ | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.1− | | |
| 2001 05 24 | 704 | 0.2+ | 0.1− | 2005 06 05 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 704 | 0.8+ | 0.2− | | |
| 2001 05 24 | 704 | 0.5− | 0.2− | 2005 06 05 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 1.2+ | 0.4− | | |
| 2001 05 24 | 704 | 0.3− | 0.7+ | 2005 06 10 | 691 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.8− | 1.3+ | | |
| 2001 05 24 | 704 | 0.4− | 0.1− | 2005 06 10 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.4+ | 0.2− | | |
| 2001 05 25 | 557 | 0.7+ | 0.3− | 2005 06 10 | 691 | 0.2− | 0.3+ | 2006 11 21 | 704 | 0.0 | 0.4− | | |
| 2001 05 25 | 557 | 0.4+ | 0.7− | 2006 09 28 | G96 | 0.2+ | 0.4− | 2006 11 21 | 704 | 0.6+ | 0.8+ | | |
| 2001 05 26 | 704 | 1.0− | 0.7− | 2006 09 28 | G96 | 0.2+ | 0.7− | 2006 11 21 | 704 | 0.3− | 0.5+ | | |
| 2001 05 26 | 704 | 0.5− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.1− | 0.7+ | | |
| 2001 05 26 | 704 | 0.4+ | 0.0 | 2006 09 28 | G96 | 0.0 | 0.7− | 2006 11 23 | 691 | 0.1− | 0.0 | | |
| 2001 05 26 | 704 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 16 | 644 | 0.3− | 0.0 | 2006 11 11 | G96 | 0.3− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2002 10 16 | 644 | 0.5− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.5− | 2006 12 01 | 691 | 0.1− | 0.3+ | | |
| 2002 10 16 | 644 | 0.3− | 0.1− | 2006 11 11 | G96 | 0.2− | 0.1+ | 2006 12 01 | 691 | 0.2− | 0.4+ | | |
| 2002 10 31 | 644 | 0.0 | 1.1+ | 2006 11 15 | 703 | (2.7− | 0.2+) | 2006 12 01 | 691 | 0.2− | 0.0 | | |
| 2002 10 31 | 644 | 0.1− | 0.2− | 2006 11 15 | 703 | (1.0+ | 2.1+) | | | | | | |
| 2002 10 31 | 644 | 1.0+ | 1.2+ | 2006 11 15 | 703 | (1.7+ | 1.7+) | | | | | | |

**2006 VM$_{73}$ = 2005 LS$_{39}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 66.46145 | | (2000.0) | | | |
| $n$ | 0.24262739 | $\omega$ | 73.85900 | | +0.72471012 | +0.68380400 |
| $a$ | 2.5459088 | $\Omega$ | 242.91075 | | −0.66301941 | +0.65846844 |
| $e$ | 0.2352698 | $i$ | 5.47186 | | −0.18761796 | +0.31437463 |
| $P$ | 4.06 | $H$ | 16.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 01 | 691 | 0.0 | 0.0 | 2006 10 29 | G96 | 0.1+ | 0.4+ | 2006 11 20 | 704 | 0.5+ | 1.0− | | |
| 2005 06 01 | 691 | 0.1+ | 0.0 | 2006 10 29 | G96 | 0.4− | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.3+ | | |
| 2005 06 01 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.1− | 0.0 | | |
| 2005 06 13 | G96 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1+ | | |
| 2005 06 13 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.1− | 0.2− | 2006 11 27 | 703 | 0.2− | 0.7− | | |
| 2005 06 13 | G96 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2005 06 13 | G96 | 0.3− | 0.1+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 27 | 703 | 0.1+ | 0.2− | | |
| 2005 06 15 | 691 | 0.0 | 0.5− | 2006 11 15 | 691 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.7− | 0.5− | | |
| 2005 06 15 | 691 | 0.1+ | 0.7+ | 2006 11 15 | 691 | 0.7− | 0.3+ | 2006 11 27 | 691 | 0.3− | 0.4+ | | |
| 2005 06 15 | 691 | 0.0 | 0.2+ | 2006 11 19 | 691 | 0.3+ | 0.1− | 2006 11 27 | 703 | 0.1− | 0.8+ | | |
| 2005 07 04 | 644 | 0.3− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2+ | | |
| 2005 07 04 | 644 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.3+ | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.0 | | |
| 2005 07 04 | 644 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.2− | 1.1− | 2006 12 01 | 691 | 0.2− | 0.0 | | |
| 2006 10 29 | G96 | 0.1− | 0.1− | 2006 11 20 | 704 | 0.5+ | 1.0− | 2006 12 01 | 691 | 0.1+ | 0.1+ | | |
| 2006 10 29 | G96 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.7+ | 0.4+ | | | | | | |

**2006 VU$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 351.93003 | | (2000.0) | | | |
| $n$ | 0.26659331 | $\omega$ | 278.48236 | | +0.47294343 | −0.88088721 |
| $a$ | 2.3909466 | $\Omega$ | 143.27262 | | +0.82039226 | +0.43237956 |
| $e$ | 0.1294009 | $i$ | 1.82385 | | +0.32137371 | +0.19257633 |
| $P$ | 3.70 | $H$ | 17.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 02 | 691 | 0.0 | 0.1− | 2000 02 11 | 691 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.0 | 0.3+ | | |
| 1991 11 02 | 691 | 0.4− | 0.2+ | 2000 02 27 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.1+ | 0.4+ | | |
| 1991 11 02 | 691 | 0.3+ | 0.1+ | 2000 02 27 | 691 | 0.2− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1− | | |
| 2000 02 02 | 691 | 0.3+ | 0.0 | 2000 02 27 | 691 | 0.1+ | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2000 02 02 | 691 | 0.1− | 0.3− | 2004 03 17 | 691 | 0.3+ | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.0 | | |
| 2000 02 02 | 691 | 0.0 | 0.3− | 2004 03 17 | 691 | 0.1− | 0.5+ | 2006 11 25 | 691 | 0.0 | 0.3− | | |
| 2000 02 11 | 691 | 0.1− | 0.0 | 2004 03 17 | 691 | 0.2+ | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.0 | | |
| 2000 02 11 | 691 | 0.1− | 0.3− | 2006 11 11 | 691 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.2− | 0.1+ | | |

**2006 VW$_{73}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 98.16450 | | (2000.0) | | | |
| $n$ | 0.22557172 | $\omega$ | 46.53312 | | +0.37522025 | +0.90398408 |
| $a$ | 2.6726758 | $\Omega$ | 246.54934 | | −0.90183873 | +0.30490878 |
| $e$ | 0.2561967 | $i$ | 12.91177 | | −0.21423508 | +0.29973891 |
| $P$ | 4.37 | $H$ | 15.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 14 | 644 | 0.3− | 0.2+ | 2001 09 21 | 699 | 0.1− | 0.5− | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 08 14 | 644 | 0.6− | 0.0 | 2001 09 29 | 644 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.4+ | 0.5− |
| 2001 08 14 | 644 | 0.6− | 0.2− | 2001 09 29 | 644 | 0.2+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.4− |
| 2001 08 21 | 644 | 0.1+ | 0.1− | 2001 09 29 | 644 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.2+ | 0.4− |
| 2001 08 21 | 644 | 0.3+ | 0.1− | 2001 10 06 | 644 | 0.8− | 1.0− | 2006 11 15 | 691 | 0.1− | 0.3+ |
| 2001 08 21 | 644 | 0.3+ | 0.1− | 2001 10 06 | 644 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.3+ |
| 2001 09 10 | 699 | 0.1+ | 0.6+ | 2001 10 06 | 644 | 0.6− | 1.2− | 2006 11 15 | 691 | 0.3− | 0.0 |
| 2001 09 10 | 699 | 1.0+ | 0.1+ | 2001 10 06 | 644 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2001 09 10 | 699 | 0.4+ | 0.4+ | 2001 10 06 | 644 | 0.4− | 0.6− | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2001 09 10 | 699 | 0.3+ | 0.4− | 2001 10 06 | 644 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2001 09 21 | 699 | 0.1+ | 0.5+ | 2001 10 26 | 644 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.6− | 0.2− |
| 2001 09 21 | 699 | 0.6− | 0.6− | 2001 10 26 | 644 | 0.2− | 0.4+ | | | | |
| 2001 09 21 | 699 | 0.5+ | 0.9+ | 2001 10 26 | 644 | 0.0 | 0.4+ | | | | |

**2006 VA$_{74}$ = 2004 GN$_{67}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.73393 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21542200 | $\omega$ | 322.88693 | | +0.84990840 | | −0.47643015 |
| $a$ | 2.7559797 | $\Omega$ | 67.02788 | | +0.52279717 | | +0.70902471 |
| $e$ | 0.1836013 | $i$ | 14.15165 | | +0.06586985 | | +0.51990218 |
| $P$ | 4.58 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 608 | 0.7− | 0.4− | 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.1+ | 0.6+ |
| 2001 09 29 | 608 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2001 09 29 | 608 | 0.3− | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.2− | 0.1+ |
| 2001 11 18 | 608 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2001 11 18 | 608 | 0.7+ | 0.6+ | 2006 11 18 | 704 | 0.5− | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.5+ |
| 2001 11 18 | 608 | 0.2− | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.6− | 0.8− |
| 2004 04 13 | 691 | 0.4− | 0.2− | 2006 11 18 | 704 | 0.7+ | 0.4+ | 2006 11 28 | 704 | 1.1+ | 0.2+ |
| 2004 04 13 | 691 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.6− | 0.5− | 2006 11 30 | 691 | 0.2− | 0.0 |
| 2004 04 13 | 691 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 11 30 | 691 | 0.1− | 0.0 |
| 2004 04 20 | 691 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 11 30 | 691 | 0.4+ | 0.7+ |
| 2004 04 20 | 691 | 0.3+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.5− |
| 2004 04 20 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.8− | 0.5+ | 2006 12 01 | 704 | 0.7+ | 0.2− |
| 2006 11 11 | G96 | 0.2− | 0.4− | 2006 11 21 | 704 | 0.4+ | 0.7+ | 2006 12 01 | 704 | 0.0 | 0.2− |
| 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.8+ | 0.3− | 2006 12 01 | 704 | 0.2− | 0.5− |
| 2006 11 11 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | 0.2− | 0.2+ | 2006 12 01 | 704 | 0.3+ | 0.1− |

**2006 VC$_{74}$ = 2005 NC$_{47}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.63854 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22072221 | $\omega$ | 302.41057 | | +0.74845308 | | −0.66060870 |
| $a$ | 2.7116816 | $\Omega$ | 99.00654 | | +0.62660173 | | +0.67555403 |
| $e$ | 0.1408170 | $i$ | 3.39160 | | +0.21722857 | | +0.32744908 |
| $P$ | 4.47 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 16 | 644 | 0.3− | 0.2+ | 2005 08 08 | 807 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2001 10 16 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.0 | 2006 11 27 | 691 | 0.6− | 1.0− |
| 2001 10 16 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2005 07 07 | 691 | 0.2+ | 0.0 | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 30 | 291 | 0.7− | 0.0 |
| 2005 07 07 | 691 | 0.1+ | 0.3− | 2006 11 15 | 691 | 0.4+ | 0.2+ | 2006 11 30 | 291 | 0.1− | 0.2+ |
| 2005 07 07 | 691 | 0.0 | 0.2− | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 30 | 291 | 0.2− | 0.1+ |
| 2005 07 11 | 691 | 0.1+ | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2005 07 11 | 691 | 0.4− | 0.1+ | 2006 11 19 | 691 | 0.3+ | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.1− |
| 2005 07 11 | 691 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.8+ | 0.2− | 2006 12 01 | 691 | 0.3+ | 0.1− |
| 2005 08 08 | 807 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.3+ | | | | |

**2006 VE$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.54932 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22470235 | $\omega$ | 225.14571 | | −0.12907315 | | −0.98963296 |
| $a$ | 2.6795651 | $\Omega$ | 232.37307 | | +0.93076020 | | −0.09899441 |
| $e$ | 0.1358282 | $i$ | 4.56112 | | +0.34209001 | | −0.10405152 |
| $P$ | 4.39 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 12 05 | 691 | 0.3+ | 0.6− | 2003 02 19 | 644 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 1997 12 05 | 691 | (0.2+ | 2.3−) | 2003 02 24 | 599 | 1.4+ | 0.9+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 1997 12 05 | 691 | 0.1+ | 0.8− | 2003 02 24 | 599 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.2− | 0.2+ |
| 2003 01 28 | 645 | 0.1− | 0.1− | 2003 02 24 | 599 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2003 01 28 | 645 | 0.0 | 0.1− | 2003 02 24 | 599 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2003 01 28 | 608 | 0.2+ | 0.4− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2003 01 28 | 608 | 0.3+ | 0.1− | 2006 11 11 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2003 01 28 | 608 | 0.2− | 0.5− | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 12 01 | 691 | 0.6− | 0.4+ |
| 2003 02 19 | 644 | 0.5− | 0.5+ | 2006 11 15 | 691 | 0.5+ | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2003 02 19 | 644 | 0.3− | 0.6+ | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 12 01 | 691 | 0.2+ | 0.4− |

**2006 VG$_{74}$ = 2001 SW$_{211}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 22.64356 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21936883 | $\omega$ | 202.94215 | | +0.89889563 | | −0.43816141 |
| $a$ | 2.7228231 | $\Omega$ | 183.04516 | | +0.40516571 | | +0.83216009 |
| $e$ | 0.1073302 | $i$ | 1.19296 | | +0.16681543 | | +0.33988845 |
| $P$ | 4.49 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.1− | 0.5+ | 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 09 19 | 704 | (0.9+ | 1.6+) | 2006 11 11 | 691 | (0.7− | 1.6+) | 2006 11 19 | 691 | 0.2− | 0.1− |
| 2001 09 19 | 704 | 1.0− | 0.7+ | 2006 11 11 | 691 | 0.3− | 0.2+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2001 09 19 | 704 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.4+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2001 09 21 | 704 | (0.1+ | 1.7+) | 2006 11 15 | 691 | 0.4− | 0.3+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2001 09 21 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.3+ | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2001 09 21 | 704 | 0.5+ | 1.4+ | 2006 11 15 | 691 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2001 10 15 | 645 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1+ |

**2006 VE$_{75}$ = 2000 EH$_{207}$ = 2004 HD$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 314.73242 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26805545 | $\omega$ | 85.15049 | | −0.40584160 | | −0.91370215 |
| $a$ | 2.3822442 | $\Omega$ | 28.82197 | | +0.82031582 | | −0.37429999 |
| $e$ | 0.1637757 | $i$ | 2.49654 | | +0.40295726 | | −0.15826527 |
| $P$ | 3.68 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 05 | 704 | 1.1− | 0.5− | 2002 10 10 | 291 | 0.1− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.2− |
| 2000 03 05 | 704 | 0.5+ | 0.6− | 2002 10 10 | 291 | 0.4− | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.0 |
| 2000 03 05 | 704 | 0.3− | 1.5+ | 2004 04 16 | 691 | 0.1− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2000 03 08 | 704 | 0.5+ | 1.6+ | 2004 04 16 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2000 03 08 | 704 | 0.2− | 0.3+ | 2004 04 16 | 691 | 0.1+ | 0.5+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2000 03 08 | 704 | 0.4+ | 0.7+ | 2004 04 22 | 691 | 0.2+ | 0.5+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2000 03 08 | 704 | 1.1+ | 1.2− | 2004 04 22 | 691 | 0.1− | 0.4+ | 2006 11 21 | 704 | 1.4+ | 2.1− |
| 2002 10 10 | 644 | 0.4− | 0.7+ | 2004 04 22 | 691 | 0.7+ | 0.3+ | 2006 11 21 | 704 | 0.4+ | 0.4− |
| 2002 10 10 | 644 | 0.6− | 0.7+ | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.2− |
| 2002 10 10 | 644 | 0.5− | 0.7+ | 2006 11 11 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.6− | 0.2− |
| 2002 10 10 | 291 | 0.2− | 0.7+ | 2006 11 11 | 691 | 0.2− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.1+ |

**2006 VF$_{75}$ = 2003 JG$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 277.74692 | | (2000.0) | | | |
| $n$ | 0.19109640 | $\omega$ | 101.77963 | | −0.95855331 | −0.25951229 |
| $a$ | 2.9851607 | $\Omega$ | 63.27339 | | +0.18185553 | −0.87501395 |
| $e$ | 0.1461176 | $i$ | 7.56570 | | +0.21932652 | −0.40866119 |
| $P$ | 5.16 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 11 | 691 | 0.4− | 0.1+ | 2003 05 05 | 699 | 1.3− | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.2− |
| 2003 04 11 | 691 | 0.1− | 0.4+ | 2003 05 05 | 291 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.0 |
| 2003 04 11 | 691 | 0.2− | 0.3+ | 2003 05 05 | 699 | (1.9− | 1.3+) | 2006 11 16 | 691 | 0.1+ | 0.3+ |
| 2003 05 01 | 704 | 0.3− | 0.5− | 2003 05 05 | 699 | 0.7− | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.6+ |
| 2003 05 01 | 704 | 1.1− | 1.0− | 2003 05 05 | 699 | 0.1+ | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2003 05 01 | 704 | (0.5− | 1.7−) | 2006 11 11 | 691 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.4+ | 0.2+ |
| 2003 05 05 | 291 | 0.6+ | 0.5− | 2006 11 11 | 691 | 0.2− | 0.4− | | | | |
| 2003 05 05 | 291 | 0.5+ | 0.1+ | 2006 11 11 | 691 | 0.7− | 0.4− | | | | |

**2006 VN$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 234.63667 | | (2000.0) | | | |
| $n$ | 0.28551669 | $\omega$ | 294.23325 | | −0.95207923 | +0.28807019 |
| $a$ | 2.2840997 | $\Omega$ | 262.64036 | | −0.22930128 | −0.89464011 |
| $e$ | 0.1176617 | $i$ | 5.94760 | | −0.20240073 | −0.34151815 |
| $P$ | 3.45 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 15 | 683 | 0.8− | 0.5− | 2005 08 06 | 644 | 0.8+ | 0.0 | 2006 11 16 | 691 | 0.3− | 0.1− |
| 2004 03 15 | 683 | 1.2+ | 0.3− | 2005 08 06 | 644 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 2004 03 15 | 683 | 0.0 | 1.2+ | 2005 08 06 | 644 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.2− |
| 2004 03 23 | 683 | 1.0− | 1.0− | 2005 08 24 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2004 03 23 | 683 | 0.3− | 1.6− | 2005 08 24 | 644 | 0.5− | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2004 03 23 | 683 | 1.0+ | 2.3+ | 2005 08 24 | 644 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2005 07 30 | 644 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2005 07 30 | 644 | 0.4− | 0.1− | 2006 11 11 | 691 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.2− |
| 2005 07 30 | 644 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |

**2006 VS$_{75}$ = 1998 WH$_{45}$ = 2002 YG$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 281.60281 | | (2000.0) | | | |
| $n$ | 0.24039800 | $\omega$ | 242.33325 | | −0.92643458 | −0.37409204 |
| $a$ | 2.5616246 | $\Omega$ | 275.67296 | | +0.35858648 | −0.84285620 |
| $e$ | 0.1622038 | $i$ | 2.42591 | | +0.11460673 | −0.38684438 |
| $P$ | 4.10 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 02 03 | 691 | 0.6+ | 0.3+ | 2002 12 31 | 704 | 0.2+ | 0.7− | 2006 11 11 | 691 | 0.2− | 0.1+ |
| 1995 02 03 | 691 | 0.1− | 0.1+ | 2002 12 31 | 704 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.1− | 0.0 |
| 1995 02 03 | 691 | 0.1− | 0.3+ | 2002 12 31 | 704 | 0.2− | 0.4+ | 2006 11 11 | 691 | 0.1+ | 0.1− |
| 1998 11 18 | 950 | 0.0 | 0.2+ | 2003 01 04 | 704 | 0.0 | 0.7+ | 2006 11 16 | 691 | 1.1− | 0.7− |
| 1998 11 18 | 950 | 0.0 | 0.1+ | 2003 01 04 | 704 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.1− |
| 1998 11 18 | 950 | 0.1− | 0.1+ | 2003 01 04 | 704 | 0.0 | 1.2+ | 2006 11 16 | 691 | 0.3+ | 0.3− |
| 1998 11 19 | 950 | 0.1− | 0.2+ | 2003 01 04 | 704 | 0.6− | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 1998 11 19 | 950 | 0.2− | 0.2+ | 2005 08 31 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.0 |
| 1998 11 19 | 950 | 0.0 | 0.2+ | 2005 08 31 | 691 | 0.0 | 0.4+ | 2006 11 20 | 691 | 0.3+ | 0.0 |
| 2001 08 23 | 691 | 0.1− | 0.1+ | 2005 08 31 | 691 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.3+ | 0.1+ |
| 2001 08 23 | 691 | 0.0 | 0.3+ | 2005 09 13 | 691 | 0.2+ | 0.0 | 2006 11 24 | 691 | 0.2+ | 0.2+ |
| 2001 08 23 | 691 | 0.1− | 0.4+ | 2005 09 13 | 691 | 0.2− | 0.0 | 2006 11 24 | 691 | 0.2− | 0.2− |
| 2002 12 31 | 704 | 0.2− | 0.8− | 2005 09 13 | 691 | 0.1+ | 0.0 | | | | |

**2006 VP$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 257.34509 | | (2000.0) | | | |
| $n$ | 0.21389586 | $\omega$ | 60.93058 | | −0.85262288 | −0.51384511 |
| $a$ | 2.7690734 | $\Omega$ | 88.00262 | | +0.44033050 | −0.80429774 |
| $e$ | 0.0147054 | $i$ | 5.44628 | | +0.28132414 | −0.29844319 |
| $P$ | 4.61 | $H$ | 16.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 08 05 | 644 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.3− |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2005 08 05 | 644 | 0.2− | 0.4+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 09 01 | 644 | 0.5+ | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2005 09 01 | 644 | 0.3− | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2003 01 26 | 644 | 0.1+ | 0.4+ | 2005 09 01 | 644 | 0.1− | 0.8+ | 2006 11 23 | 691 | 0.4− | 0.3+ |
| 2003 01 26 | 644 | 0.4+ | 0.3+ | 2006 10 18 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2003 01 26 | 644 | 0.1− | 0.2− | 2006 10 18 | 691 | 0.1− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2004 04 26 | 691 | 0.1− | 0.2+ | 2006 10 18 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2004 04 26 | 691 | 0.2+ | 0.3+ | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2004 04 26 | 691 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.4+ | 0.2+ |
| 2005 08 05 | 644 | 0.2− | 0.6+ | 2006 11 12 | G96 | 0.2+ | 0.0 | | | | |

**2006 VH$_{78}$ = 2004 HX$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 205.60545 | | (2000.0) | | | |
| $n$ | 0.22976606 | $\omega$ | 141.74720 | | −0.84703512 | +0.47975079 |
| $a$ | 2.6400499 | $\Omega$ | 68.39928 | | −0.52782065 | −0.70834373 |
| $e$ | 0.1856366 | $i$ | 14.24873 | | −0.06274439 | −0.51777249 |
| $P$ | 4.29 | $H$ | 16.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 695 | 0.1+ | 0.4− | 2004 04 21 | 703 | 0.6− | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.4− |
| 2002 12 06 | 695 | 0.2+ | 0.5− | 2004 04 21 | 703 | 1.0− | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.3+ |
| 2004 03 27 | 699 | 0.3+ | 1.3+ | 2004 04 21 | 703 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 2004 03 27 | 699 | 0.4+ | 0.0 | 2004 04 21 | 703 | 0.8− | 0.3− | 2006 11 16 | 691 | 0.4− | 0.6+ |
| 2004 03 27 | 699 | 0.2+ | 0.3− | 2006 10 23 | G96 | 0.4+ | 0.5− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2004 03 27 | 699 | 0.2− | 0.2− | 2006 10 23 | G96 | 0.6− | 0.7− | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2004 04 16 | 704 | 0.5+ | 0.1− | 2006 10 23 | G96 | 0.1− | 0.9− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2004 04 16 | 704 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2004 04 16 | 704 | 1.0+ | 0.9− | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2004 04 16 | 704 | 0.3+ | 0.1− | 2006 11 12 | G96 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 04 16 | 704 | 0.2+ | 0.4+ | 2006 11 12 | G96 | 0.4+ | 0.3− | | | | |

**2006 VS$_{78}$ = 2001 SV$_{296}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 42.79588 | | (2000.0) | | | |
| $n$ | 0.21975470 | $\omega$ | 158.82911 | | +0.98590930 | +0.16655335 |
| $a$ | 2.7196349 | $\Omega$ | 191.61613 | | −0.16243764 | +0.93094808 |
| $e$ | 0.1222403 | $i$ | 4.43874 | | −0.03996089 | +0.32495485 |
| $P$ | 4.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 03 27 | 691 | 0.4+ | 0.0 | 2001 09 23 | 704 | 0.7+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.1+ |
| 1995 03 27 | 691 | 0.2− | 0.7+ | 2006 10 22 | G96 | 0.3+ | 0.5− | 2006 11 16 | 691 | 0.1− | 0.1+ |
| 1995 03 27 | 691 | 0.0 | 0.4− | 2006 10 22 | G96 | 0.3− | 0.6− | 2006 11 16 | G96 | 0.3− | 0.4− |
| 2001 09 20 | 704 | 0.2+ | 1.1+ | 2006 10 22 | G96 | 0.4− | 0.6− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2001 09 20 | 704 | 0.5+ | 0.5− | 2006 10 22 | G96 | (0.3+ | 3.3−) | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2001 09 20 | 704 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.1− | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2001 09 20 | 704 | 0.3− | 1.3+ | 2006 11 12 | G96 | 0.1− | 0.4− | 2006 11 20 | 691 | 0.2− | 0.2+ |
| 2001 09 23 | 704 | 0.2− | 0.5− | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.2+ | 0.2+ |
| 2001 09 23 | 704 | 0.5− | 0.1+ | 2006 11 12 | G96 | 0.2+ | 0.6− | 2006 11 24 | 691 | 0.2− | 0.2+ |
| 2001 09 23 | 704 | 0.7− | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.4+ | 0.4+ |

**2006 VT$_{78}$ = 1999 VA$_{175}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.21327 | | (2000.0) | | +0.84827028 | −0.52713112 |
| $n$ | 0.28186599 | $\omega$ | 179.34642 | | +0.48543739 | +0.81227549 |
| $a$ | 2.3037796 | $\Omega$ | 212.62660 | | +0.21163193 | +0.24968239 |
| $e$ | 0.2442731 | $i$ | 5.39559 | | | |
| $P$ | 3.50 | $H$ | 18.1 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 691 | 0.4+ | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.3− | 2006 11 20 | 704 | 0.4− | 0.0 |
| 1999 11 04 | 691 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 20 | 704 | 0.7− | 0.5− |
| 1999 11 04 | 691 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.0 | 0.6− | 2006 11 20 | 704 | 1.0+ | 0.5+ |
| 1999 11 09 | 691 | 0.4− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.3+ | 0.1+ |
| 1999 11 09 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.4+ | 2006 11 28 | 704 | 0.6+ | 0.5+ |
| 1999 11 09 | 691 | 0.3− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 28 | 704 | 1.4+ | 0.3− |
| 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.8− | 2006 11 28 | 704 | 0.6+ | 0.6− |
| 2006 09 27 | G96 | 0.1+ | 0.1− | 2006 11 17 | 704 | 0.4− | 0.4+ | 2006 11 28 | 704 | 0.1+ | 0.4− |
| 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.1+ | 2006 11 29 | 704 | 0.0 | 0.1+ |
| 2006 09 27 | G96 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.9+ | 0.3− |
| 2006 11 09 | 644 | 0.7− | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.2− | 2006 11 29 | 704 | (1.8− | 0.8+) |
| 2006 11 09 | 644 | 0.4− | 0.6+ | 2006 11 20 | 691 | 0.2− | 0.0 | 2006 11 29 | 704 | 1.0+ | 0.1+ |
| 2006 11 09 | 644 | 0.3− | 0.3− | 2006 11 20 | 704 | 0.3− | 0.6+ | | | | |
| 2006 11 12 | G96 | 0.3− | 0.4− | 2006 11 20 | 704 | (1.8− | 1.3+) | | | | |

**2006 VG$_{79}$ = 2004 CS$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 332.99485 | | (2000.0) | | +0.34761241 | −0.93448981 |
| $n$ | 0.27997339 | $\omega$ | 329.73218 | | +0.87513402 | +0.29395546 |
| $a$ | 2.3141502 | $\Omega$ | 99.83417 | | +0.33660965 | +0.20079589 |
| $e$ | 0.0169403 | $i$ | 4.46902 | | | |
| $P$ | 3.52 | $H$ | 18.1 | $G$ 0.15 | $U$ 3 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 16 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.1− | 0.3− |
| 1999 12 16 | 691 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.4− |
| 1999 12 16 | 691 | 0.0 | 0.0 | 2006 10 23 | G96 | 0.4− | 0.4− | 2006 11 16 | G96 | 0.1+ | 0.3− |
| 2004 02 11 | 691 | 1.0+ | 0.1− | 2006 11 12 | G96 | 0.4+ | 0.2− | 2006 11 16 | G96 | 0.3+ | 0.1− |
| 2004 02 11 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.3+ | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.3+ |
| 2004 02 11 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.3+ |
| 2004 02 18 | 691 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.4− | 2006 11 20 | 691 | 0.3+ | 0.5+ |
| 2004 02 18 | 691 | 0.4− | 0.4+ | 2006 11 16 | 691 | 0.5− | 0.3+ | 2006 11 24 | 691 | 0.1+ | 0.5− |
| 2004 02 18 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.3+ | 2006 11 24 | 691 | 0.3− | 0.5− |
| 2006 10 23 | G96 | 0.5− | 0.2− | 2006 11 16 | 691 | 0.3− | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.0 |

**2006 VM$_{79}$ = 1995 WN$_{39}$ = 2004 BH$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 84.09061 | | (2000.0) | | +0.49739554 | +0.86319532 |
| $n$ | 0.26946036 | $\omega$ | 204.99831 | | −0.78062101 | +0.48886132 |
| $a$ | 2.3739567 | $\Omega$ | 94.93472 | | −0.37845543 | +0.12612870 |
| $e$ | 0.1796659 | $i$ | 4.98388 | | | |
| $P$ | 3.66 | $H$ | 17.4 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 05 08 | 691 | 0.1− | 0.4+ | 2004 01 16 | 691 | 0.6+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.2+ |
| 1994 05 08 | 691 | 0.9+ | 0.4+ | 2004 01 16 | 691 | 0.8+ | 0.5+ | 2006 10 22 | G96 | 0.6− | 0.0 |
| 1994 05 08 | 691 | 0.7− | 0.3+ | 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 10 22 | G96 | 0.6− | 0.1+ |
| 1995 11 23 | 691 | 0.0 | 0.0 | 2004 01 27 | 691 | 0.1− | 0.0 | 2006 11 12 | G96 | 0.1− | 0.2+ |
| 1995 11 23 | 691 | 0.1− | 0.1+ | 2004 01 27 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.5− | 0.1− |
| 1995 11 23 | 691 | 0.2+ | 0.2+ | 2005 05 13 | 691 | 0.1− | 0.3+ | 2006 11 12 | G96 | 0.4− | 0.2+ |
| 1995 11 30 | 691 | 0.7− | 0.1− | 2005 05 13 | 691 | 0.0 | 0.3+ | 2006 11 12 | G96 | 0.3− | 0.1+ |
| 1995 11 30 | 691 | (34.8+ | 13.9+) | 2005 05 13 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.7+ |
| 1995 11 30 | 691 | 0.0 | 0.0 | 2005 06 16 | G96 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.3− | 0.4+ |
| 1998 06 02 | 691 | 0.2+ | 1.7+ | 2005 06 16 | G96 | 0.4− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.5+ |
| 1998 06 02 | 691 | 0.0 | 0.4+ | 2005 06 16 | G96 | 0.4− | 0.8+ | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 1998 06 02 | 691 | 0.2+ | 0.5+ | 2005 06 16 | G96 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2004 01 16 | 691 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.6− | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.6+ |

**2006 VO$_{79}$ = 2005 NB$_{30}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 323.83411 | | (2000.0) | | +0.00964716 | −0.99945111 |
| $n$ | 0.23643973 | $\omega$ | 313.68110 | | +0.93000686 | −0.00267758 |
| $a$ | 2.5901351 | $\Omega$ | 135.73632 | | +0.36741553 | +0.03301992 |
| $e$ | 0.1515275 | $i$ | 2.60254 | | | |
| $P$ | 4.17 | $H$ | 16.7 | $G$ 0.15 | $U$ 1 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 08 10 | 691 | 0.1+ | 0.2+ | 2006 10 03 | G96 | 0.4− | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 1997 08 10 | 691 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.0 | 0.4+ |
| 1997 08 10 | 691 | 0.5− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.7− | 2006 11 20 | 704 | (1.6+ | 0.9−) |
| 2004 05 23 | 691 | 0.4+ | 0.6+ | 2006 10 22 | G96 | 0.3+ | 0.2− | 2006 11 20 | 704 | 0.8+ | 0.3+ |
| 2004 05 23 | 691 | 0.2+ | 0.4+ | 2006 10 22 | G96 | 0.3− | 0.4− | 2006 11 20 | 704 | 0.4+ | 0.6− |
| 2004 05 23 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.2− | 0.5− | 2006 11 20 | 704 | 1.3+ | 1.5− |
| 2005 07 04 | 691 | 0.5− | 0.2− | 2006 11 12 | G96 | 0.4− | 0.2− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2005 07 04 | 691 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.6− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.2− |
| 2005 07 04 | 691 | 0.1− | 0.5+ | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2005 07 09 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.6− | 0.5− | 2006 11 29 | 704 | 0.3− | 0.6+ |
| 2005 07 09 | 691 | 0.8+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.4+ | 2006 11 29 | 704 | 0.8+ | 1.0+ |
| 2005 07 09 | 691 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.3+ | 2006 11 29 | 704 | 0.8− | 0.3+ |
| 2006 10 03 | G96 | 0.0 | 0.5− | 2006 11 16 | 691 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.5+ | 0.2+ |
| 2006 10 03 | G96 | 0.2− | 0.4− | 2006 11 20 | 691 | 0.0 | 0.4+ | | | | |

**2006 VT$_{79}$ = 2005 JX$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 30.17366 | | (2000.0) | | +0.99909825 | −0.01323001 |
| $n$ | 0.29567218 | $\omega$ | 154.43152 | | −0.00044977 | +0.94686123 |
| $a$ | 2.2314941 | $\Omega$ | 206.42126 | | +0.04245557 | +0.32137014 |
| $e$ | 0.1161743 | $i$ | 5.20201 | | | |
| $P$ | 3.33 | $H$ | 17.0 | $G$ 0.15 | $U$ 2 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 12 03 | 691 | 0.0 | 0.5+ | 2006 09 28 | G96 | 0.3− | 0.4+ | 2006 11 17 | 704 | 0.0 | 0.0 |
| 1996 12 03 | 691 | 0.2+ | 0.4+ | 2006 09 28 | G96 | 0.1− | 0.3+ | 2006 11 17 | 704 | 0.1− | 0.6+ |
| 1996 12 03 | 691 | 0.5− | 0.6+ | 2006 09 28 | G96 | 0.3− | 0.2+ | 2006 11 17 | 704 | 0.0 | 0.4− |
| 2005 05 08 | G96 | 0.3− | 0.5+ | 2006 09 28 | G96 | 0.1− | 0.6+ | 2006 11 17 | 704 | 0.6− | 0.6+ |
| 2005 05 08 | G96 | 0.1− | 0.0 | 2006 10 22 | G96 | 0.1− | 0.5− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2005 05 08 | G96 | 0.7− | 0.2+ | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.2− | 0.2− |
| 2005 05 08 | G96 | 1.3+ | 0.7− | 2006 10 22 | G96 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.1− | 0.4− |
| 2005 05 10 | G96 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.0 | 2006 11 24 | 691 | 0.2+ | 0.2− |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.5− | 0.2− |
| 2005 05 10 | G96 | 0.6+ | 0.7+ | 2006 11 12 | G96 | 0.1− | 0.4− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2005 05 10 | G96 | 0.2− | 0.0 | 2006 11 12 | G96 | 0.4+ | 0.1− | 2006 11 28 | 704 | 0.2+ | 0.1+ |
| 2006 09 28 | G96 | 0.1+ | 0.3+ | 2006 11 12 | G96 | 0.3+ | 0.2− | 2006 11 28 | 704 | 0.3+ | 0.9− |
| 2006 09 28 | G96 | 0.6+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.3− | 0.1− |
| 2006 09 28 | G96 | 0.2− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 11 28 | 704 | 0.4+ | 0.3+ |
| 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.7+ | 0.7− |

**2006 VN$_{81}$ = 1994 TJ$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.96765 | | (2000.0) | | −0.18798252 | −0.98140737 |
| $n$ | 0.17290151 | $\omega$ | 252.01690 | | +0.92874218 | −0.16477988 |
| $a$ | 3.1910739 | $\Omega$ | 208.90454 | | +0.31953174 | −0.09842340 |
| $e$ | 0.1895117 | $i$ | 4.59920 | | | |
| $P$ | 5.70 | $H$ | 16.1 | $G$ 0.15 | $U$ 4 | |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 11 | 691 | 0.5− | 0.5+ | 2000 10 19 | 691 | 0.1+ | 0.2− | 2006 11 12 | D35 | 0.0 | 0.1+ |
| 1994 10 11 | 691 | 0.9− | 0.8+ | 2000 10 19 | 691 | 0.0 | 0.2− | 2006 11 12 | D35 | 0.3+ | 0.4+ |
| 1994 10 11 | 691 | 0.4− | 0.5+ | 2006 11 02 | G96 | 0.6− | 0.1− | 2006 11 12 | D35 | 0.0 | 0.0 |
| 1994 10 12 | 691 | (4.4+ | 0.3+) | 2006 11 02 | G96 | 0.0 | 0.4− | 2006 11 16 | G96 | 0.1− | 0.3− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 12 | 691 | 0.5− | 0.4− | 2006 11 02 | G96 | 0.1+ | 0.2− | 2006 11 16 | G96 | 0.2− | 0.1− |
| 1994 10 12 | 691 | 0.9− | 0.4+ | 2006 11 02 | G96 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 1994 10 13 | 691 | 0.5− | 0.8− | 2006 11 12 | G96 | 0.3− | 0.5+ | 2006 11 16 | G96 | 0.0 | 0.1− |
| 1994 10 13 | 691 | 0.4− | 0.6− | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 18 | 691 | 0.1+ | 0.2+ |
| 1994 10 13 | 691 | 0.3− | 0.4− | 2006 11 12 | G96 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2000 10 19 | 691 | 0.1+ | 0.2− | 2006 11 12 | G96 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1+ |

**2006 VY$_{82}$ = 2001 WW$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 203.47878 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19642990 | $\omega$ | 262.09176 | | −0.92647576 | | +0.37608755 |
| $a$ | 2.9308774 | $\Omega$ | 299.99880 | | −0.33853097 | | −0.84922625 |
| $e$ | 0.0365051 | $i$ | 0.93760 | | −0.16443678 | | −0.37063854 |
| $P$ | 5.02 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 31 | 691 | 0.6+ | 0.2− | 2005 08 24 | 644 | 0.6− | 0.4+ | 2006 11 16 | 691 | 0.2− | 0.2+ |
| 2000 08 31 | 691 | 0.1− | 0.2− | 2005 08 24 | 644 | 0.5− | 0.1− | 2006 11 16 | 691 | 0.4+ | 0.3+ |
| 2000 08 31 | 691 | 0.0 | 0.2− | 2006 10 17 | G96 | 0.3+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.4+ |
| 2001 11 19 | 704 | 0.8− | 0.3+ | 2006 10 17 | G96 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.7− | 0.0 |
| 2001 11 19 | 704 | 0.9− | 0.6+ | 2006 10 17 | G96 | 0.3+ | 0.8− | 2006 11 24 | G96 | 0.3+ | 0.2+ |
| 2001 11 19 | 704 | 0.8+ | 0.8+ | 2006 10 17 | G96 | 0.1+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2001 11 21 | 704 | 0.4− | 1.0− | 2006 10 17 | 691 | 0.8− | 1.2− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2001 11 21 | 704 | 0.6− | 0.6+ | 2006 10 17 | 691 | 0.0 | 0.3+ | 2006 11 27 | G96 | 0.1+ | 0.1+ |
| 2001 11 21 | 704 | 0.6+ | 0.1+ | 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 27 | G96 | 0.4+ | 0.2+ |
| 2001 11 21 | 704 | 0.3+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.1+ | 2006 11 27 | G96 | 0.1+ | 0.3− |
| 2001 11 21 | 704 | 0.2− | 0.1− | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 27 | G96 | 0.1− | 0.4− |
| 2005 06 17 | G96 | 0.0 | 0.3+ | 2006 10 31 | G96 | 0.4+ | 0.2+ | 2006 12 01 | G96 | 0.0 | 0.2− |
| 2005 06 17 | G96 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.4+ | 0.5− |
| 2005 06 17 | G96 | 0.2+ | 0.4+ | 2006 11 13 | 691 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.6− |
| 2005 06 17 | G96 | 0.4− | 0.7+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 12 01 | G96 | 0.6− | 0.5− |
| 2005 08 24 | 644 | 0.4− | 0.6+ | 2006 11 13 | 691 | 0.1+ | 0.1+ | | | | |

**2006 VB$_{83}$ = 1995 WD$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 96.06722 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27225435 | $\omega$ | 335.21631 | | +0.20836836 | | +0.97777000 |
| $a$ | 2.3576871 | $\Omega$ | 306.80202 | | −0.89239628 | | +0.18026648 |
| $e$ | 0.1998700 | $i$ | 1.67601 | | −0.40026429 | | +0.10709722 |
| $P$ | 3.62 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 16 | 691 | 0.1− | 0.1− | 1997 02 14 | 691 | 0.3− | 0.4− | 2006 11 24 | G96 | 0.1− | 0.1− |
| 1995 11 16 | 691 | 0.4− | 0.0 | 2006 11 13 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 1995 11 16 | 691 | 0.5− | 0.1− | 2006 11 13 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.5− |
| 1995 11 21 | 691 | 0.7+ | 0.4− | 2006 11 13 | 691 | 0.0 | 0.5+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 1995 11 21 | 691 | 0.4+ | 0.8− | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.5+ |
| 1995 11 21 | 691 | 0.5+ | 0.2− | 2006 11 16 | 691 | 0.0 | 0.4+ | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 1997 02 14 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.2− | 0.7+ | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 1997 02 14 | 691 | 0.0 | 0.2+ | 2006 11 24 | G96 | 0.3− | 0.2+ | | | | |

**2006 VB$_{84}$ = 1998 TK$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.40738 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24283327 | $\omega$ | 38.89148 | | −0.27217451 | | +0.96189864 |
| $a$ | 2.5444696 | $\Omega$ | 215.33654 | | −0.89366153 | | −0.26267198 |
| $e$ | 0.1116938 | $i$ | 2.56896 | | −0.35677739 | | −0.07585807 |
| $P$ | 4.06 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 14 | 691 | 0.9− | 0.3− | 1998 12 09 | 691 | 0.2+ | 0.0 | 2006 11 13 | G96 | 1.1− | 0.4− |
| 1998 10 14 | 691 | 0.2− | 0.1+ | 2006 10 16 | 691 | 0.3+ | 0.2+ | 2006 11 15 | 691 | 0.3− | 0.4+ |
| 1998 10 14 | 691 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.3− | 0.0 |
| 1998 10 18 | 691 | 0.5+ | 0.2+ | 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.1− |
| 1998 10 18 | 691 | 0.7+ | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.0 |
| 1998 12 09 | 691 | 0.4− | 0.5+ | 2006 11 13 | G96 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.0 | 0.2− |
| 1998 12 09 | 691 | 0.1+ | 0.5− | 2006 11 13 | G96 | 0.2+ | 0.2+ | 2006 11 17 | 691 | 0.1− | 0.0 |

**2006 VP$_{84}$ = 2002 UY$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.74139 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25588085 | $\omega$ | 117.59452 | | +0.96608393 | | −0.23353618 |
| $a$ | 2.4572208 | $\Omega$ | 256.08217 | | +0.17817509 | | +0.91172419 |
| $e$ | 0.2535501 | $i$ | 6.51866 | | +0.18691033 | | +0.33796427 |
| $P$ | 3.85 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 30 | 608 | 0.2+ | 0.4− | 2006 11 15 | 703 | 0.0 | 0.4− | 2006 11 21 | 704 | 1.0− | 0.9− |
| 2002 10 30 | 608 | 0.1+ | 1.1− | 2006 11 15 | 703 | 0.2+ | 0.6− | 2006 11 21 | 704 | 0.2+ | 0.2− |
| 2002 10 30 | 608 | 0.4− | 1.4− | 2006 11 15 | 703 | 0.4+ | 1.3− | 2006 11 22 | 691 | 0.4+ | 0.1+ |
| 2002 10 31 | 644 | 0.1− | 0.9+ | 2006 11 15 | 703 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.4+ | 0.0 |
| 2002 10 31 | 644 | 0.1− | 1.0+ | 2006 11 16 | 704 | 0.0 | 0.2+ | 2006 11 22 | 704 | (1.7+ | 0.2+) |
| 2002 10 31 | 644 | 0.3+ | 1.0+ | 2006 11 16 | 704 | 0.3− | 0.9+ | 2006 11 22 | 691 | 0.7− | 0.5+ |
| 2006 10 27 | 703 | 0.5+ | 0.5+ | 2006 11 16 | 704 | 0.4− | 1.1− | 2006 11 22 | 704 | 1.0+ | 0.3+ |
| 2006 10 27 | 703 | 0.9+ | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.6+ | 2006 11 22 | 704 | 1.1+ | 0.4− |
| 2006 10 27 | 703 | 0.5− | 0.6− | 2006 11 18 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.7+ |
| 2006 10 27 | 703 | 0.6+ | 0.3− | 2006 11 18 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 1.1+ | 0.1+ |
| 2006 11 13 | 691 | 0.7− | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.3− |
| 2006 11 13 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.4− | 0.1+ | 2006 11 27 | 704 | 0.1+ | 0.7− |
| 2006 11 13 | 691 | 0.6− | 0.2+ | 2006 11 21 | 704 | 1.0− | 0.3− | 2006 11 27 | 704 | 0.2+ | 0.5− |

**2006 VQ$_{84}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.82648 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30126764 | $\omega$ | 139.31189 | | +0.71710647 | | −0.69430901 |
| $a$ | 2.2037774 | $\Omega$ | 264.77244 | | +0.62258312 | | +0.67733132 |
| $e$ | 0.1466517 | $i$ | 3.49873 | | +0.31328673 | | +0.24322269 |
| $P$ | 3.27 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 22 | 691 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.1− | 0.2+ |
| 2003 12 22 | 691 | 0.1+ | 0.2− | 2006 10 27 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.3− | 0.3+ |
| 2003 12 22 | 691 | 0.0 | 0.2− | 2006 10 27 | 691 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.2+ |
| 2003 12 27 | 691 | 0.2+ | 0.1− | 2006 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.0 |
| 2003 12 27 | 691 | 0.1− | 0.5+ | 2006 11 13 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 704 | 0.0 | 0.2− |
| 2003 12 27 | 691 | 0.3− | 0.2− | 2006 11 13 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2004 01 15 | 691 | 0.4− | 0.0 | 2006 11 15 | 704 | 0.5+ | 0.4− | 2006 11 22 | 704 | 0.2− | 0.1− |
| 2004 01 15 | 691 | 0.0 | 0.1− | 2006 11 15 | 704 | 0.5− | 0.0 | 2006 11 22 | 704 | 0.7− | 0.4− |
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.7+ | 0.5− | 2006 11 24 | 703 | 1.7+ | 1.2− |
| 2004 01 28 | 291 | 0.2+ | 0.1+ | 2006 11 15 | 704 | 0.4− | 0.1− | 2006 11 24 | 703 | 0.1+ | 0.5− |
| 2004 01 28 | 291 | 0.2+ | 0.1+ | 2006 11 16 | 704 | (0.1+ | 1.8+) | 2006 11 24 | 703 | 1.2− | 0.0 |
| 2004 01 28 | 291 | 0.2− | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.4+ | 2006 11 24 | 703 | 0.7+ | 0.3+ |
| 2004 01 28 | 291 | 0.2+ | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.5+ | 2006 11 28 | 704 | 0.6+ | 0.7− |
| 2004 01 28 | 291 | 0.2+ | 0.1− | 2006 11 16 | 704 | 0.4+ | 0.9+ | 2006 11 28 | 704 | 0.7− | 0.2+ |
| 2004 01 28 | 291 | 0.2− | 0.0 | 2006 11 17 | 691 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4+ | 0.1− |
| 2006 10 04 | G96 | 0.1− | 0.3− | 2006 11 17 | 691 | 0.1− | 0.2− | 2006 11 28 | 704 | 0.7− | 0.5+ |
| 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1− | 2006 11 28 | 704 | 0.2− | 0.4+ |
| 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.4− | 0.4+ | | | | |
| 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.0 | 0.6+ | | | | |

**2006 VG$_{85}$ = 2001 TA$_{215}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.47623 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20967857 | $\omega$ | 170.36593 | | −0.19990456 | | −0.97376197 |
| $a$ | 2.8060798 | $\Omega$ | 291.10322 | | +0.89102518 | | −0.13449968 |
| $e$ | 0.1224858 | $i$ | 6.69384 | | +0.40756877 | | −0.18356867 |
| $P$ | 4.70 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 07 05 | 691 | 0.3− | 0.1+ | 2003 04 01 | 691 | 0.1+ | 0.7+ | 2006 11 16 | 704 | 0.5− | 1.0+ |
| 2000 07 05 | 691 | 0.0 | 0.5+ | 2003 04 01 | 691 | 0.3+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.0 |
| 2000 07 05 | 691 | 0.4− | 0.5+ | 2005 07 30 | 599 | 1.4− | 0.9+ | 2006 11 19 | 704 | 0.0 | 0.3+ |
| 2001 10 13 | 644 | 0.0 | 0.4+ | 2005 07 30 | 599 | 0.5+ | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.1+ |
| 2001 10 13 | 644 | 0.0 | 0.5+ | 2005 07 30 | 599 | 0.7+ | 0.3− | 2006 11 19 | 704 | 1.2− | 0.9+ |
| 2001 10 13 | 644 | 0.0 | 0.1− | 2005 07 31 | 599 | 0.5+ | 0.3+ | 2006 11 22 | 704 | (0.5+ | 1.6+) |
| 2001 10 18 | 704 | 0.2− | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.3− | 2006 11 22 | 704 | 1.2+ | 0.3− |
| 2001 10 18 | 704 | 0.7+ | 1.3+ | 2006 11 13 | 691 | 0.3+ | 0.1− | 2006 11 22 | 704 | 0.1− | 0.4+ |
| 2001 10 18 | 704 | 0.2− | 0.9− | 2006 11 13 | 691 | 0.1+ | 0.0 | 2006 11 22 | 704 | 0.2− | 0.9+ |
| 2001 10 18 | 704 | 0.6− | 0.1+ | 2006 11 15 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 1.5− | 0.3+ |
| 2003 02 28 | 608 | (0.7+ | 2.6+) | 2006 11 15 | 704 | 0.7− | 0.8+ | 2006 11 27 | 704 | 0.6+ | 0.0 |
| 2003 02 28 | 608 | (0.8+ | 1.6+) | 2006 11 15 | 704 | 0.1+ | 0.1+ | 2006 11 27 | 704 | 0.1− | 0.4+ |
| 2003 02 28 | 608 | (0.8+ | 2.0+) | 2006 11 16 | 704 | 0.3− | 1.2− | 2006 11 27 | 704 | 0.5− | 0.1+ |
| 2003 04 01 | 691 | 0.4+ | 0.4+ | 2006 11 16 | 704 | 0.2+ | 0.1− | | | | |

**2006 VL$_{85}$ = 2005 NT$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 358.07670 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18392363 | $\omega$ | 148.35625 | | +0.53677588 | | −0.80015263 |
| $a$ | 3.0622763 | $\Omega$ | 267.86910 | | +0.70740241 | | +0.59968640 |
| $e$ | 0.2937955 | $i$ | 15.53448 | | +0.45984071 | | +0.01148882 |
| $P$ | 5.36 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 08 07 | 608 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 0.4+ | 0.5− |
| 2000 08 07 | 608 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.4+ | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2000 08 07 | 608 | 0.2− | 0.1+ | 2006 11 13 | 691 | 0.2+ | 0.5+ | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2002 01 04 | 608 | 0.4+ | 0.9− | 2006 11 15 | 704 | 0.5− | 0.1− | 2006 11 22 | 704 | 0.1+ | 0.7+ |
| 2002 01 04 | 608 | 0.2− | 0.3− | 2006 11 15 | 704 | 0.5− | 0.1+ | 2006 11 22 | 704 | (3.8+ | 0.4+) |
| 2002 01 04 | 608 | 0.2− | 0.8− | 2006 11 15 | 704 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2002 01 10 | 644 | 0.1+ | 0.5+ | 2006 11 15 | 704 | 0.0 | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.6+ |
| 2002 01 10 | 644 | 0.1+ | 0.7+ | 2006 11 15 | 704 | 1.1− | 0.0 | 2006 11 25 | 691 | 0.2− | 0.3+ |
| 2002 01 10 | 644 | 0.4+ | 0.9+ | 2006 11 15 | 704 | 0.4− | 0.6− | 2006 11 25 | 691 | 0.4− | 1.5− |
| 2002 02 08 | 644 | 0.1+ | 0.8+ | 2006 11 15 | 704 | (1.1− | 1.6+) | 2006 11 25 | 691 | 0.2− | 0.3+ |
| 2002 02 08 | 644 | 0.2+ | 0.8+ | 2006 11 15 | 704 | 0.7− | 0.4+ | 2006 11 27 | 704 | 0.3+ | 0.4+ |
| 2002 02 08 | 644 | 0.3+ | 1.0+ | 2006 11 15 | 704 | 0.3− | 0.5+ | 2006 11 27 | 704 | 0.2+ | 0.1+ |
| 2005 07 05 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 1.3+ | 0.4+ | 2006 11 27 | 704 | 0.5+ | 0.5+ |
| 2005 07 05 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 704 | 1.1+ | 0.4− | 2006 11 29 | 704 | 0.4+ | 0.3− |
| 2005 07 05 | 691 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.7− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.8− |
| 2005 07 09 | 691 | 0.1− | 0.3+ | 2006 11 16 | 704 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.5+ | 0.1+ |
| 2005 07 09 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.3− | 2006 11 29 | 704 | 0.5− | 1.4− |
| 2005 07 09 | 691 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.4+ | 0.5− | | | | |

**2006 VO$_{85}$ = 2001 YH$_{36}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 329.54716 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19047616 | $\omega$ | 37.56468 | | +0.09533066 | | −0.99345443 |
| $a$ | 2.9916374 | $\Omega$ | 47.06006 | | +0.89119001 | | +0.05700963 |
| $e$ | 0.2183525 | $i$ | 4.93146 | | +0.44350021 | | +0.09898587 |
| $P$ | 5.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 16 | 703 | 0.6− | 0.6− |
| 2001 12 18 | 704 | 0.0 | 0.3− | 2006 10 16 | 691 | 0.0 | 0.2+ | 2006 11 16 | 703 | 0.8− | 0.1− |
| 2001 12 18 | 704 | 0.3+ | 0.2+ | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.3− | 0.3− |
| 2001 12 18 | 704 | 0.0 | 0.0 | 2006 10 16 | 691 | 0.2− | 0.1− | 2006 11 18 | 704 | 0.8+ | 0.5+ |
| 2001 12 18 | 704 | 0.1+ | 0.0 | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 18 | 704 | 0.0 | 1.4+ |
| 2001 12 19 | 704 | 0.1+ | 0.3− | 2006 10 31 | G96 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.2+ | 0.6+ |
| 2001 12 19 | 704 | 0.0 | 0.6− | 2006 10 31 | G96 | 0.0 | 0.5− | 2006 11 21 | 704 | 0.2− | 0.3+ |
| 2001 12 19 | 704 | 0.6− | 0.1+ | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 21 | 704 | (0.4+ | 1.7+) |
| 2001 12 19 | 704 | 0.4+ | 0.1− | 2006 11 09 | 644 | 0.1+ | 0.4+ | 2006 11 21 | 704 | 0.9− | 0.9+ |
| 2001 12 19 | 704 | 0.1− | 0.7+ | 2006 11 09 | 644 | 0.5− | 0.3+ | 2006 11 21 | 704 | 0.5+ | 0.2+ |
| 2006 10 12 | 691 | 0.1+ | 0.5− | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 12 01 | G96 | 0.3− | 0.5− |
| 2006 10 12 | 691 | 0.2+ | 0.1+ | 2006 11 14 | 691 | 0.4+ | 0.0 | 2006 12 01 | G96 | 0.4− | 0.6− |
| 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.0 | 0.7− |
| 2006 10 16 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.2− | 0.6− |
| 2006 10 16 | 691 | 0.1+ | 0.3− | 2006 11 16 | 703 | 0.3− | 0.1− | | | | |

**2006 VT$_{86}$ = 2003 CQ$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.06567 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22007370 | $\omega$ | 327.22848 | | +0.56737444 | | −0.81643040 |
| $a$ | 2.7170061 | $\Omega$ | 87.98605 | | +0.77675519 | | +0.48733882 |
| $e$ | 0.1597794 | $i$ | 6.16737 | | +0.27338180 | | +0.30974550 |
| $P$ | 4.48 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 02 01 | 704 | 0.1+ | 0.2+ | 2006 11 14 | 704 | 1.0+ | 0.5+ | 2006 11 18 | 704 | (1.9− | 1.2+) |
| 2003 02 01 | 704 | 0.3− | 0.5+ | 2006 11 14 | 704 | 0.1− | 1.2− | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2003 02 01 | 704 | (0.3− | 1.8+) | 2006 11 14 | 704 | 0.1+ | 0.9− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2003 02 01 | 704 | 0.9+ | 0.3− | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2003 02 02 | 644 | 0.6− | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2003 02 02 | 644 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2003 02 02 | 644 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.4− | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 2003 04 26 | 645 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.2− | 0.3− | 2006 11 29 | 704 | 0.3− | 0.4− |
| 2003 04 26 | 645 | 0.0 | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.4− | 2006 11 29 | 704 | 0.2− | 0.3− |
| 2006 10 23 | G96 | 0.0 | 0.3− | 2006 11 16 | G96 | 0.2+ | 0.5− | 2006 11 29 | 704 | 0.2+ | 0.7− |
| 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 17 | 704 | 0.1+ | 1.2+ | 2006 11 29 | 704 | 0.7+ | 0.1− |
| 2006 10 23 | G96 | 0.2+ | 0.2− | 2006 11 17 | 704 | 0.6− | 0.7+ | 2006 11 29 | 704 | 0.5+ | 0.5− |
| 2006 10 23 | G96 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.2+ | 0.8+ | 2006 12 01 | 691 | 0.4− | 0.2+ |
| 2006 11 09 | 644 | 0.1+ | 0.3− | 2006 11 17 | 704 | 0.1+ | 1.0+ | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2006 11 09 | 644 | 0.3− | 0.1+ | 2006 11 18 | 704 | 1.2− | 0.6+ | 2006 12 01 | 691 | 0.3− | 0.4− |
| 2006 11 09 | 644 | 0.3+ | 0.1− | 2006 11 18 | 704 | 0.3− | 0.5+ | | | | |
| 2006 11 14 | 704 | 0.4− | 0.9− | 2006 11 18 | 704 | 0.7+ | 1.0+ | | | | |

**2006 VF$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 310.11236 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25216259 | $\omega$ | 96.50972 | | −0.29695605 | | −0.95461961 |
| $a$ | 2.4813171 | $\Omega$ | 10.84759 | | +0.82130733 | | −0.26750530 |
| $e$ | 0.2102843 | $i$ | 6.94941 | | +0.48710509 | | −0.13092864 |
| $P$ | 3.91 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 16 | 644 | 0.6− | 0.0 | 2006 10 27 | 703 | 0.1− | 0.8− | 2006 11 22 | 703 | (1.1− | 2.3+) |
| 2002 10 16 | 644 | 0.7− | 0.3+ | 2006 10 27 | 703 | 1.0− | 0.1− | 2006 11 22 | 703 | 0.2+ | 0.5+ |
| 2002 10 16 | 644 | 0.9− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.0 | 2006 11 22 | 703 | 0.6+ | 0.3+ |
| 2002 10 31 | 644 | 0.4+ | 0.3+ | 2006 11 14 | 703 | (1.5+ | 2.7−) | 2006 11 22 | 703 | 0.4− | 0.1− |
| 2002 10 31 | 644 | 1.0+ | 0.4− | 2006 11 14 | 703 | (0.5+ | 1.8+) | 2006 11 22 | 703 | 0.5− | 0.6− |
| 2002 10 31 | 644 | 0.3− | 0.8+ | 2006 11 14 | 703 | 0.6+ | 0.2− | 2006 11 22 | 703 | (0.0 | 2.2−) |
| 2002 10 31 | 644 | 0.2+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.1− | 2006 11 22 | 703 | (0.6− | 2.0−) |
| 2002 10 31 | 644 | 0.5+ | 0.0 | 2006 11 15 | G96 | 0.4+ | 0.1− | 2006 11 23 | 703 | 0.7− | 0.7+ |
| 2002 10 31 | 644 | 0.3+ | 0.6− | 2006 11 15 | G96 | 0.3+ | 0.2− | 2006 11 23 | 703 | 0.4− | 0.2− |
| 2006 10 27 | 703 | 1.1+ | 0.3+ | 2006 11 15 | G96 | 0.0 | 0.2− | 2006 11 23 | 703 | 0.6+ | 0.2− |
| 2006 10 27 | 703 | 0.2+ | 0.6+ | 2006 11 22 | 703 | 0.4− | 0.1− | 2006 11 23 | 703 | 0.9− | 0.3+ |

**2006 VO$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 136.76772 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.29480330 | $\omega$ | 311.23957 | | −0.25341741 | | +0.96532287 |
| $a$ | 2.2358765 | $\Omega$ | 303.97486 | | −0.86338314 | | −0.25493691 |
| $e$ | 0.1504069 | $i$ | 4.33617 | | −0.43629024 | | −0.05620430 |
| $P$ | 3.34 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 12 27 | 691 | 0.2+ | 0.5+ | 2002 08 08 | 699 | 0.6+ | 0.8+ | 2006 11 14 | 703 | (0.2− | 2.1−) |
| 2000 12 27 | 691 | 0.2− | 0.7+ | 2002 08 27 | 644 | 0.0 | 0.6+ | 2006 11 14 | 703 | (1.8+ | 0.6−) |
| 2000 12 27 | 691 | 0.0 | 0.5+ | 2002 08 27 | 644 | 0.4− | 0.4+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |
| 2001 02 11 | 209 | 0.2+ | 0.5+ | 2002 08 27 | 644 | 0.4− | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2001 02 11 | 209 | 1.4+ | 0.3+ | 2005 08 04 | 644 | 0.3+ | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.2+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 02 11 | 209 | 1.2+ | 0.1+ | 2005 08 04 | 644 | 0.1+ | 0.9+ | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2002 08 08 | 699 | 0.5− | 0.4+ | 2005 08 04 | 644 | 0.1− | 0.5+ | 2006 12 01 | G96 | 0.0 | 0.1− |
| 2002 08 08 | 699 | 0.3− | 0.8+ | 2006 11 14 | 703 | 0.9+ | 1.3− | 2006 12 01 | G96 | 0.3− | 0.6− |
| 2002 08 08 | 699 | 1.1− | 0.8+ | 2006 11 14 | 703 | 0.6− | 0.1− | 2006 12 01 | G96 | 0.0 | 0.9− |

**2006 VR$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 43.56876 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28252715 | $\omega$ | 333.39297 | | +0.92567028 | | +0.37825227 |
| $a$ | 2.3001841 | $\Omega$ | 4.40315 | | −0.32670085 | | +0.80948181 |
| $e$ | 0.1758358 | $i$ | 5.77852 | | −0.19079069 | | +0.44907061 |
| $P$ | 3.49 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 05 | 691 | 0.0 | 0.1+ | 2006 10 19 | 703 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 1994 03 05 | 691 | 0.2− | 0.7− | 2006 10 19 | 703 | 1.0− | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.9+ |
| 1994 03 05 | 691 | 0.3− | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.6+ | 0.3− |
| 2001 03 16 | 691 | 0.0 | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.5+ | 0.5+ |
| 2001 03 16 | 691 | 0.1− | 0.3+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.7+ | 0.4+ |
| 2001 03 16 | 691 | 0.3+ | 0.3+ | 2006 11 14 | 703 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2002 06 20 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.7− | 0.3− | 2006 11 20 | G96 | 0.0 | 0.2− |
| 2002 06 20 | 644 | 0.2− | 0.3− | 2006 11 14 | 703 | (1.9− | 0.6−) | 2006 11 20 | G96 | 0.1+ | 0.3− |
| 2002 06 20 | 644 | 0.1− | 0.5+ | 2006 11 14 | 703 | 0.8− | 0.6+ | 2006 11 20 | G96 | 0.0 | 0.3− |
| 2002 07 06 | 644 | 0.1− | 0.2− | 2006 11 16 | 704 | 1.1+ | 0.3+ | 2006 11 20 | G96 | 0.0 | 0.4− |
| 2002 07 06 | 644 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.5+ | 0.5− | 2006 11 20 | G96 | 0.2− | 0.3− |
| 2002 07 06 | 644 | 0.0 | 0.2− | 2006 11 16 | 704 | 1.1+ | 0.0 | 2006 11 20 | G96 | 0.1− | 0.3− |
| 2002 07 27 | 644 | 0.1− | 0.5− | 2006 11 16 | 704 | 0.4+ | 0.6+ | 2006 11 20 | G96 | 0.2+ | 0.2− |
| 2002 07 27 | 644 | 0.0 | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.1+ | 2006 11 20 | G96 | 0.3+ | 0.4− |
| 2002 07 27 | 644 | 0.1+ | 0.4− | 2006 11 16 | 704 | 1.0− | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.1+ |
| 2002 08 11 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2002 08 11 | 644 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.5+ | 0.7+ | 2006 11 21 | G96 | 0.2+ | 0.1+ |
| 2002 08 11 | 644 | 0.3+ | 0.2− | 2006 11 16 | 704 | 0.7− | 0.2− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2005 05 01 | 644 | 0.4+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2005 05 01 | 644 | 0.2+ | 0.6+ | 2006 11 17 | 691 | 0.1+ | 0.1− | 2006 11 22 | G96 | 0.1+ | 0.0 |
| 2005 05 01 | 644 | 0.5+ | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.0 |
| 2006 10 19 | 703 | 0.6− | 0.6+ | 2006 11 19 | 691 | 0.2− | 0.1− | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2006 10 19 | 703 | 0.6− | 0.2− | 2006 11 19 | 691 | 0.1− | 0.1− | | | | |

**2006 VT$_{87}$ = 2005 ED$_{267}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 51.27686 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30448267 | $\omega$ | 355.21668 | | +0.84061353 | | +0.54108699 |
| $a$ | 2.1882369 | $\Omega$ | 331.98270 | | −0.49520426 | | +0.74955025 |
| $e$ | 0.1910308 | $i$ | 2.97350 | | −0.21941203 | | +0.38131258 |
| $P$ | 3.24 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 03 13 | 691 | 0.2+ | 0.3+ | 2006 11 14 | 703 | 0.4− | 0.4− | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 03 13 | 691 | 0.2− | 0.1− | 2006 11 14 | 703 | 0.3+ | 1.1− | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2005 03 13 | 691 | 0.5+ | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2005 03 17 | G96 | 0.7− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 24 | 703 | (1.8− | 0.8+) |
| 2005 03 17 | G96 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 24 | 703 | 0.4− | 0.3+ |
| 2005 03 17 | G96 | 0.4− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 24 | 703 | 0.5− | 0.1− |
| 2005 03 17 | G96 | 0.5− | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 24 | 703 | 1.1− | 0.3− |
| 2006 10 23 | 691 | 0.1+ | 0.4+ | 2006 11 17 | 691 | 0.0 | 0.1+ | 2006 12 01 | G96 | 0.5− | 0.2− |
| 2006 10 23 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.3− | 0.1− | 2006 12 01 | G96 | 0.5+ | 0.7− |
| 2006 10 23 | 691 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.1+ | 0.2+ | 2006 12 01 | G96 | 0.5+ | 0.0 |
| 2006 11 14 | 703 | 0.2+ | 1.1− | 2006 11 19 | 704 | 0.3− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.8− |
| 2006 11 14 | 703 | 0.3+ | 0.5+ | 2006 11 19 | 704 | 0.4− | 0.2+ | | | | |

**2006 VZ$_{88}$ = 2004 DQ$_2$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.73289 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26739516 | $\omega$ | 222.53037 | | +0.93357205 | | +0.34047377 |
| $a$ | 2.3861644 | $\Omega$ | 117.24609 | | −0.28557371 | | +0.89535246 |
| $e$ | 0.1220589 | $i$ | 7.23048 | | −0.21654302 | | +0.28709158 |
| $P$ | 3.69 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 04 | 691 | 0.2− | 0.4− | 2004 02 16 | 291 | 0.1+ | 0.3+ | 2006 11 14 | 683 | 0.2+ | 0.1− |
| 2000 02 04 | 691 | 0.2+ | 0.3− | 2004 02 17 | 291 | 0.4− | 0.4+ | 2006 11 14 | 683 | 1.3− | 0.3+ |
| 2000 02 04 | 691 | 0.1+ | 0.2− | 2004 02 17 | 291 | 0.5+ | 0.1− | 2006 11 14 | 683 | (1.8+ | 0.3−) |
| 2002 10 16 | 644 | 0.0 | 0.8+ | 2004 02 17 | 291 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.4− |
| 2002 10 16 | 644 | 0.2+ | 0.9+ | 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.5− | 1.0− |
| 2002 10 16 | 644 | 0.1+ | 0.7+ | 2005 07 11 | G96 | 0.1+ | 0.1− | 2006 11 15 | 703 | 0.6+ | 0.5− |
| 2002 10 28 | 644 | 0.7− | 0.5+ | 2005 07 11 | G96 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.7+ | 0.3+ |
| 2002 10 28 | 644 | 0.8− | 0.6+ | 2005 07 11 | G96 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2002 10 28 | 644 | 0.7− | 0.8+ | 2006 10 01 | 703 | 0.6+ | 0.3− | 2006 11 21 | G96 | 0.1+ | 0.0 |
| 2004 02 16 | 291 | 0.2+ | 0.4+ | 2006 10 01 | 703 | 0.5+ | 0.2− | 2006 11 21 | G96 | 0.2+ | 0.0 |
| 2004 02 16 | 291 | 0.1− | 0.3+ | 2006 10 01 | 703 | 0.2− | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 |

**2006 VB$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 4.26470 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20490972 | $\omega$ | 305.61140 | | +0.73864690 | | −0.64990128 |
| $a$ | 2.8494498 | $\Omega$ | 95.63881 | | +0.66190257 | | +0.64899931 |
| $e$ | 0.1394142 | $i$ | 10.36026 | | +0.12761559 | | +0.39551008 |
| $P$ | 4.81 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 644 | 0.4− | 0.1+ | 2006 11 14 | 704 | 0.6− | 1.1+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2001 10 15 | 644 | 0.1− | 0.0 | 2006 11 14 | 704 | 0.4− | 0.7− | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2001 10 15 | 644 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.7+ | 0.5+ | 2006 11 23 | 683 | 0.2+ | 0.8+ |
| 2001 10 23 | 644 | 0.3− | 0.1− | 2006 11 15 | 703 | 0.9− | 1.0− | 2006 11 23 | 683 | 0.4− | 1.0+ |
| 2001 10 23 | 644 | 0.9− | 0.1+ | 2006 11 15 | 703 | 1.1+ | 0.4− | 2006 11 25 | 683 | (2.4− | 2.7−) |
| 2001 10 23 | 644 | 0.4− | 0.2− | 2006 11 15 | 703 | 0.5− | 0.1+ | 2006 11 25 | 683 | (1.1− | 2.1−) |
| 2001 11 04 | 209 | 0.0 | 0.4+ | 2006 11 17 | 704 | 0.2+ | 0.7− | 2006 11 25 | 683 | (0.3− | 1.7−) |
| 2001 11 04 | 209 | 0.2+ | 0.5− | 2006 11 17 | 704 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 0.2+ | 0.6− |
| 2001 11 04 | 209 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.0 | 0.2+ | 2006 11 28 | 704 | 0.1− | 0.2− |
| 2001 11 12 | 645 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.2− | 0.1+ | 2006 11 28 | 704 | 0.4− | 0.1+ |
| 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.2− | 0.0 | 2006 11 28 | 704 | 0.2− | 1.2− |
| 2006 11 14 | 704 | 0.4+ | 0.3+ | 2006 11 22 | G96 | 0.2+ | 0.0 | 2006 11 28 | 704 | 0.6+ | 0.7+ |

**2006 VH$_{89}$ = 1997 WX$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 9.31342 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22099097 | $\omega$ | 149.15756 | | +0.88423043 | | −0.44994910 |
| $a$ | 2.7094825 | $\Omega$ | 238.09561 | | +0.39277297 | | +0.86145905 |
| $e$ | 0.3043552 | $i$ | 8.48289 | | +0.25271714 | | +0.23544450 |
| $P$ | 4.46 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 29 | 704 | 1.2− | 1.5− | 2006 11 15 | 691 | 0.2+ | 0.1− | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 1997 11 29 | 704 | 0.5+ | 0.1− | 2006 11 17 | 704 | 0.5+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 1997 11 29 | 704 | 0.9+ | 0.0 | 2006 11 17 | 704 | 0.8− | 0.5+ | 2006 11 21 | 704 | 0.2+ | 0.1− |
| 1997 11 29 | 704 | 0.8+ | 1.7+ | 2006 11 17 | 704 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.2− |
| 1997 12 04 | 704 | 1.5− | 0.4+ | 2006 11 19 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 1997 12 04 | 704 | 0.5+ | 1.2− | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.1− |
| 1997 12 04 | 704 | 0.0 | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 11 27 | 704 | (0.1− | 1.6+) |
| 1997 12 04 | 704 | (4.2− | 2.1+) | 2006 11 20 | 704 | 0.4+ | 0.3− | 2006 11 27 | 704 | 0.4− | 0.7+ |
| 2006 11 14 | 704 | 0.2− | 0.1− | 2006 11 20 | 704 | 0.2+ | 0.4+ | 2006 11 27 | 704 | (2.4− | 0.5−) |
| 2006 11 14 | 704 | 0.5− | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.6+ | 2006 11 29 | 704 | 0.1− | 0.2− |
| 2006 11 14 | 704 | 0.4− | 0.1+ | 2006 11 20 | 704 | 0.4+ | 0.3− | 2006 11 29 | 704 | 0.6+ | 0.4− |
| 2006 11 14 | 704 | 0.9− | 0.1+ | 2006 11 20 | 704 | 0.6− | 0.3− | 2006 11 29 | 704 | 0.1− | 0.1+ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.2− | 2006 11 29 | 704 | 0.0 | 0.2+ | |
| 2006 11 15 | 691 | 0.2+ | 0.2− | 2006 11 21 | 704 | 0.5+ | 0.0 | 2006 11 29 | 704 | 0.0 | 0.0 | |

**2006 VQ$_{89}$ = 2004 CK$_{89}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 116.09804 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26798034 | $\omega$ | 250.44340 | | +0.24646155 | | +0.96852139 |
| $a$ | 2.3826894 | $\Omega$ | 33.88600 | | −0.86401381 | | +0.23592712 |
| $e$ | 0.1255144 | $i$ | 3.59622 | | −0.43901804 | | +0.07940218 |
| $P$ | 3.68 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 24 | 291 | 0.2+ | 0.4+ | 2004 02 11 | 691 | 0.2− | 0.1− | 2006 11 15 | G96 | 0.1− | 0.4+ | |
| 2001 04 24 | 291 | 0.5+ | 0.3+ | 2004 02 11 | 691 | 0.4− | 0.3+ | 2006 11 15 | G96 | 0.4+ | 0.3+ | |
| 2001 04 24 | 291 | 0.3+ | 0.5+ | 2004 02 18 | 691 | 0.0 | 0.5+ | 2006 11 15 | G96 | 0.1− | 0.0 | |
| 2001 04 24 | 608 | 0.6− | 1.3+ | 2004 02 18 | 691 | 0.1− | 0.4+ | 2006 11 15 | G96 | 0.1− | 0.3+ | |
| 2001 04 24 | 608 | 0.3− | 1.4+ | 2004 02 18 | 691 | 0.0 | 0.2+ | 2006 11 15 | 291 | 0.3+ | 0.4+ | |
| 2001 04 24 | 608 | 0.1− | 1.3+ | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 11 15 | 291 | 0.2+ | 0.2− | |
| 2001 05 26 | 291 | 0.5+ | 0.6+ | 2004 03 18 | 645 | 0.1+ | 0.0 | 2006 11 15 | 291 | (0.3− | 1.6+) | |
| 2001 05 29 | 644 | 0.0 | 0.7+ | 2004 03 18 | 645 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.0 | 0.4+ | |
| 2001 05 29 | 644 | 0.3+ | 0.6+ | 2004 03 18 | 645 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.5+ | 0.1+ | |
| 2001 05 29 | 644 | 0.1+ | 0.0 | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1− | |
| 2002 10 30 | 644 | 0.5− | 0.6+ | 2004 04 15 | 645 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.2− | 0.4+ | |
| 2002 10 30 | 644 | 0.7− | 1.3+ | 2006 11 14 | 691 | 0.1− | 0.3+ | 2006 11 22 | 691 | 0.3− | 0.3+ | |
| 2002 10 30 | 644 | 0.1− | 1.0+ | 2006 11 14 | 691 | 0.3− | 0.5+ | 2006 11 22 | 691 | 0.4− | 0.2− | |
| 2004 02 11 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.5+ | | | | | |

**2006 VA$_{90}$ = 2005 NB$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 357.27925 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21953110 | $\omega$ | 156.69612 | | +0.62278788 | | −0.77964421 |
| $a$ | 2.7214813 | $\Omega$ | 254.71934 | | +0.70672130 | | +0.59649785 |
| $e$ | 0.1119337 | $i$ | 3.89337 | | +0.33567880 | | +0.19064425 |
| $P$ | 4.49 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 06 18 | G96 | 0.2+ | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.4+ | 0.1+ | |
| 2005 06 18 | G96 | 0.8+ | 0.2− | 2006 11 10 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4+ | |
| 2005 06 18 | G96 | 0.2+ | 0.5− | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 21 | 704 | 0.4− | 0.5+ | |
| 2005 06 18 | G96 | 0.2+ | 0.4− | 2006 11 10 | 691 | 0.4− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 | |
| 2005 07 10 | 691 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.0 | |
| 2005 07 10 | 691 | 0.3− | 0.2+ | 2006 11 14 | 691 | 1.0+ | 0.6+ | 2006 11 23 | 691 | 0.1− | 0.0 | |
| 2005 07 10 | 691 | 0.1− | 0.2− | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.1− | 0.0 | |
| 2005 07 11 | G96 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.4+ | 0.8− | 2006 11 27 | 703 | 0.5+ | 0.6+ | |
| 2005 07 11 | G96 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.7− | 0.2+ | 2006 11 27 | 703 | (1.0+ | 2.3+) | |
| 2005 07 11 | G96 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1− | |
| 2005 07 11 | G96 | 0.4− | 0.5+ | 2006 11 15 | 703 | 1.3− | 0.4+ | 2006 11 27 | 703 | 0.5+ | 0.8+ | |
| 2006 09 28 | G96 | 0.2− | 0.9− | 2006 11 19 | 691 | 0.2− | 0.1− | 2006 11 27 | 703 | (0.5− | 1.6+) | |
| 2006 09 28 | G96 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1− | |
| 2006 09 28 | G96 | 0.1+ | 0.7− | 2006 11 19 | 691 | 0.0 | 0.1− | | | | | |

**2006 VE$_{90}$ = 2004 FZ$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.24250 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23580743 | $\omega$ | 13.34952 | | +0.96742490 | | −0.25314465 |
| $a$ | 2.5947631 | $\Omega$ | 1.32273 | | +0.22061042 | | +0.83793013 |
| $e$ | 0.2043238 | $i$ | 6.50986 | | +0.12417773 | | +0.48351927 |
| $P$ | 4.18 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 27 | 691 | 0.2− | 0.1− | 2006 11 02 | 703 | 0.2− | 0.3+ | 2006 11 15 | 704 | 0.6+ | 0.3− | |
| 2000 03 27 | 691 | 0.4+ | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.1+ | 2006 11 15 | 704 | 0.7− | 0.9+ | |
| 2000 03 27 | 691 | 0.2− | 0.0 | 2006 11 13 | 644 | 0.2+ | 0.2+ | 2006 11 15 | 704 | 0.7− | 0.6+ | |
| 2004 03 28 | 291 | 0.1− | 0.1+ | 2006 11 13 | 644 | 0.3+ | 0.5+ | 2006 11 15 | 704 | 0.6− | 0.3− | |
| 2004 03 28 | 291 | 0.2+ | 0.2+ | 2006 11 13 | 644 | 0.1− | 0.1+ | 2006 11 20 | G96 | 0.2+ | 0.0 | |
| 2004 03 28 | 291 | 0.3+ | 0.1+ | 2006 11 13 | 644 | 0.5+ | 0.0 | 2006 11 20 | G96 | 0.4+ | 0.1− | |
| 2004 03 29 | 691 | 0.1− | 0.1− | 2006 11 13 | 644 | 0.0 | 0.3+ | 2006 11 20 | G96 | 0.1+ | 0.1− | |
| 2004 03 29 | 691 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.2− | 2006 11 20 | G96 | 0.2+ | 0.2− | |
| 2004 03 29 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.1+ | 0.1− | 2006 11 29 | 704 | 0.4− | 0.6− | |
| 2006 11 02 | 703 | 0.1− | 1.4− | 2006 11 14 | 703 | 0.7+ | 0.2+ | 2006 11 29 | 704 | 0.6− | 0.0 | |
| 2006 11 02 | 703 | 0.5− | 0.4− | 2006 11 14 | 703 | 0.6− | 0.6+ | 2006 11 29 | 704 | 0.3+ | 0.3+ | |
| 2006 11 02 | 703 | 0.6+ | 0.2− | 2006 11 15 | 704 | (0.1− | 1.6+) | | | | | |

**2006 VF$_{90}$ = 2004 EQ$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.75713 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23865929 | $\omega$ | 329.40900 | | +0.99494387 | | −0.09013228 |
| $a$ | 2.5740511 | $\Omega$ | 35.84534 | | +0.10042021 | | +0.88588611 |
| $e$ | 0.2335068 | $i$ | 4.33893 | | +0.00157273 | | +0.45506261 |
| $P$ | 4.13 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.1− | 0.1− | 2006 11 14 | 703 | 1.3− | 0.7− | 2006 11 22 | 691 | 0.1+ | 0.4− | |
| 2000 05 05 | 645 | 0.0 | 0.1− | 2006 11 14 | 703 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.0 | 0.4− | |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 703 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.0 | 0.0 | |
| 2004 03 15 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.6+ | 2006 11 22 | 704 | (1.9− | 1.3+) | |
| 2004 03 15 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.0 | 0.1+ | |
| 2004 03 23 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.0 | 0.7+ | 2006 11 22 | 704 | 0.5+ | 0.4− | |
| 2004 03 23 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.3+ | 2006 11 22 | 704 | 0.1+ | 0.4− | |
| 2004 03 23 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.9+ | 2006 11 24 | 691 | 0.1+ | 0.5− | |
| 2004 04 13 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.4− | |
| 2004 04 13 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.0 | 0.7+ | 2006 11 24 | 691 | 0.2+ | 0.4− | |
| 2004 04 13 | 691 | 0.1+ | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 704 | 0.7− | 0.4+ | |
| 2006 09 27 | G96 | 0.3+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.2+ | 2006 11 27 | 704 | 0.3− | 0.4+ | |
| 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.2+ | 2006 11 27 | 704 | 0.4− | 0.0 | |
| 2006 09 27 | G96 | 0.2− | 0.6− | 2006 11 19 | 704 | 0.3+ | 0.1+ | 2006 11 27 | 704 | 0.5− | 0.1+ | |
| 2006 09 27 | G96 | 0.1− | 0.4− | 2006 11 19 | 704 | 0.3− | 0.7+ | | | | | |
| 2006 11 14 | 703 | 0.2+ | 0.5− | 2006 11 19 | 704 | 0.1− | 1.3+ | | | | | |

**2006 VC$_{92}$ = 1999 XD$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.63287 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28153688 | $\omega$ | 154.10713 | | +0.41646917 | | −0.90373987 |
| $a$ | 2.3055746 | $\Omega$ | 271.14561 | | +0.81597792 | | +0.41959996 |
| $e$ | 0.0887174 | $i$ | 5.68467 | | +0.40091579 | | +0.08479459 |
| $P$ | 3.50 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 05 | 703 | (3.1+ | 0.4+) | 2006 10 27 | 703 | 0.5− | 0.7− | 2006 11 17 | 691 | 0.0 | 0.0 | |
| 1999 12 05 | 703 | 1.1− | 0.2− | 2006 10 27 | 703 | 0.1− | 2.6+ | 2006 11 19 | 691 | 0.0 | 0.0 | |
| 1999 12 05 | 703 | (4.2− | 1.7−) | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 19 | 691 | 0.2− | 0.1− | |
| 1999 12 05 | 703 | 0.2+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.1− | |
| 1999 12 13 | 703 | 0.1+ | 0.6− | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | (0.7− | 2.6+) | |
| 1999 12 13 | 703 | (1.4− | 2.3+) | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | (1.6− | 0.6+) | |
| 1999 12 13 | 703 | 0.9+ | 1.5− | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.1+ | |
| 1999 12 13 | 703 | 0.3+ | 0.3− | 2006 11 15 | 691 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.1− | 0.7+ | |
| 2002 08 16 | 644 | 0.3− | 0.6+ | 2006 11 15 | 704 | 0.0 | 0.3− | 2006 11 19 | 704 | 0.6− | 0.1− | |
| 2002 08 16 | 644 | 0.3− | 0.8+ | 2006 11 15 | 704 | 0.0 | 0.5+ | 2006 11 22 | 704 | 0.4+ | 0.7+ | |
| 2002 08 16 | 644 | 0.2− | 0.8+ | 2006 11 15 | 704 | 0.3− | 0.8− | 2006 11 22 | 704 | 0.3− | 0.8− | |
| 2004 01 29 | 699 | 0.8− | 0.6+ | 2006 11 16 | 704 | 1.0+ | 0.4− | 2006 11 22 | 704 | 0.1− | 0.6+ | |
| 2004 01 29 | 699 | 1.1+ | 1.2− | 2006 11 16 | 704 | 1.3+ | 0.9+ | 2006 11 22 | 704 | (0.1+ | 1.6−) | |
| 2004 01 29 | 699 | 0.1+ | 0.3+ | 2006 11 16 | 704 | 0.5+ | 0.1− | 2006 11 22 | 704 | (0.3+ | 1.7+) | |
| 2004 01 29 | 699 | 0.7− | 0.6+ | 2006 11 16 | 704 | 1.4+ | 0.3+ | 2006 12 01 | G96 | 0.0 | 0.5− | |
| 2004 02 17 | 691 | 0.0 | 0.3+ | 2006 11 16 | 704 | 0.7+ | 0.5+ | 2006 12 01 | G96 | 0.0 | 0.3− | |
| 2004 02 17 | 691 | 0.4+ | 0.1+ | 2006 11 16 | 704 | 0.9+ | 0.2+ | 2006 12 01 | G96 | 0.4− | 0.8− | |
| 2004 02 17 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.5+ | 0.3− | 2006 12 01 | G96 | 0.3− | 0.7− | |
| 2006 10 27 | 703 | 0.6+ | 0.3− | 2006 11 17 | 691 | 0.1− | 0.3+ | | | | | |
| 2006 10 27 | 703 | 1.0− | 0.3+ | 2006 11 17 | 691 | 0.2− | 0.1+ | | | | | |

**2006 VW$_{92}$ = 2003 YZ$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 318.96099 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30149573 | $\omega$ | 351.34142 | | +0.11564103 | −0.98670007 | |
| $a$ | 2.2026658 | $\Omega$ | 91.96110 | | +0.91803494 | +0.06225739 | |
| $e$ | 0.0396575 | $i$ | 6.56349 | | +0.37926112 | +0.15015658 | |
| $P$ | 3.27 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 14 | 291 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.3+ | 0.6− | 2006 11 20 | 704 | 0.7+ | 0.4− |
| 2003 12 14 | 291 | 0.1− | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.9− | 2006 11 24 | 691 | 0.3+ | 0.1− |
| 2003 12 14 | 291 | 0.0 | 0.2− | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2003 12 27 | 704 | 0.6− | 0.9+ | 2006 11 16 | 691 | 0.2− | 0.2+ | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2003 12 27 | 704 | 0.5+ | 0.8+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 691 | 0.3− | 0.1+ |
| 2003 12 27 | 704 | 0.5+ | 1.1+ | 2006 11 17 | 704 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2003 12 27 | 704 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.3+ | 1.0− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2003 12 29 | 691 | 0.0 | 0.2− | 2006 11 17 | 704 | 0.5− | 0.5+ | 2006 11 28 | 704 | 0.0 | 0.0 |
| 2003 12 29 | 691 | 0.0 | 0.3− | 2006 11 17 | 704 | 1.3+ | 1.3+ | 2006 11 28 | 704 | 0.6− | 0.1+ |
| 2003 12 29 | 691 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.4+ | 2006 11 28 | 704 | 0.4− | 0.3− |
| 2006 11 15 | G96 | 0.4+ | 0.7− | 2006 11 20 | 704 | 0.1− | 0.0 | 2006 11 28 | 704 | 0.4− | 0.3+ |
| 2006 11 15 | G96 | 0.8− | 0.5− | 2006 11 20 | 704 | 0.5− | 0.7− | | | | |

**2006 VZ$_{92}$ = 1998 HW$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 67.76222 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27929015 | $\omega$ | 218.53566 | | +0.59523830 | +0.79112164 | |
| $a$ | 2.3179228 | $\Omega$ | 88.43779 | | −0.69793476 | +0.59582853 | |
| $e$ | 0.2388075 | $i$ | 8.09579 | | −0.39821908 | +0.13825672 | |
| $P$ | 3.53 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.2− | 0.5− | 2002 08 20 | 644 | 0.0 | 0.4+ | 2006 11 15 | G96 | 0.4− | 0.2− |
| 1998 04 21 | 704 | (0.1+ | 3.8−) | 2002 08 20 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.1− | 0.1+ |
| 1998 04 21 | 704 | 1.0+ | 0.8+ | 2003 12 28 | 691 | 0.0 | 0.1+ | 2006 11 15 | G96 | 0.0 | 0.2− |
| 1998 04 21 | 704 | (5.4− | 1.8−) | 2003 12 28 | 691 | 0.5+ | 0.3+ | 2006 11 15 | G96 | 0.3+ | 0.2+ |
| 1998 04 23 | 704 | 0.4+ | 0.9− | 2003 12 28 | 691 | 0.2− | 0.3+ | 2006 11 15 | G96 | 0.2+ | 0.4− |
| 1998 04 23 | 704 | 0.8− | 0.1+ | 2003 12 28 | 691 | 0.0 | 0.2− | 2006 11 15 | G96 | 0.0 | 0.0 |
| 1998 04 23 | 704 | (1.1− | 2.4−) | 2003 12 28 | 691 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.0 | 0.0 |
| 1998 04 23 | 704 | (3.6− | 0.3−) | 2003 12 28 | 691 | 0.3+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2− |
| 1999 12 16 | 691 | 0.6− | 0.0 | 2005 03 18 | 703 | 0.9− | 0.6+ | 2006 11 16 | 691 | 0.1− | 0.3− |
| 1999 12 16 | 691 | 0.7− | 0.3− | 2005 03 18 | 703 | 0.7+ | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 1999 12 16 | 691 | 0.8− | 0.1− | 2005 03 18 | 703 | 0.6− | 0.0 | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 1999 12 31 | 691 | 0.4+ | 0.2− | 2005 03 18 | 703 | 2.1− | 0.7− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 1999 12 31 | 691 | 0.5+ | 0.4− | 2005 04 04 | 703 | 0.2+ | 0.9+ | 2006 11 27 | 691 | 0.2− | 0.2+ |
| 1999 12 31 | 691 | 0.8+ | 0.0 | 2005 04 04 | 703 | 1.5+ | 1.1+ | 2006 11 27 | 691 | 0.3+ | 0.3+ |
| 2002 08 13 | 644 | 0.1+ | 0.1+ | 2005 04 04 | 703 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2002 08 13 | 644 | 0.0 | 0.0 | 2005 04 04 | 703 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.5− | 0.5+ |
| 2002 08 13 | 644 | 0.1+ | 0.4+ | 2006 11 15 | G96 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.2+ | 0.4+ |
| 2002 08 20 | 644 | 0.3+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.0 | 2006 12 01 | 691 | 0.1− | 0.1− |

**2006 VE$_{94}$ = 2005 NL$_{27}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.01604 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22297174 | $\omega$ | 185.68164 | | +0.18558829 | −0.98028075 | |
| $a$ | 2.6934123 | $\Omega$ | 253.63680 | | +0.90430595 | +0.19741077 | |
| $e$ | 0.2808013 | $i$ | 4.05634 | | +0.38443170 | +0.00886734 | |
| $P$ | 4.42 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | (2.1− | 1.8−) | 2006 09 18 | 703 | 0.3+ | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 08 23 | 699 | 1.5− | 0.3+ | 2006 09 18 | 703 | 0.4− | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2001 08 23 | 699 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2001 08 23 | 699 | 0.7+ | 0.6+ | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2003 03 26 | 699 | 1.4+ | 0.9− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2003 03 26 | 699 | 0.1+ | 0.6+ | 2006 11 15 | 703 | 0.8− | 0.5− | 2006 11 24 | 691 | 0.1+ | 0.1− |
| 2003 03 26 | 699 | 0.8+ | 0.4− | 2006 11 15 | 703 | 0.3− | 0.2− | 2006 11 28 | 704 | 0.3− | 1.5+ |
| 2003 03 26 | 699 | 1.3− | 0.8+ | 2006 11 15 | 703 | 0.3− | 0.5− | 2006 11 28 | 704 | 0.1+ | 1.0+ |
| 2003 04 01 | 691 | (0.7+ | 1.8+) | 2006 11 15 | 703 | 0.3+ | 0.1− | 2006 11 28 | 704 | 0.4+ | 1.0+ |
| 2003 04 01 | 691 | 0.2− | 1.2+ | 2006 11 16 | 704 | 0.2+ | 0.5− | 2006 11 28 | 704 | 0.8+ | 1.8+ |
| 2003 04 01 | 691 | 0.7+ | 0.7+ | 2006 11 16 | 704 | 0.4− | 0.4+ | 2006 11 28 | 704 | 1.1− | 0.7+ |
| 2005 07 05 | G96 | 0.0 | 0.7+ | 2006 11 16 | 704 | 1.1− | 0.3+ | 2006 12 01 | 704 | 0.1+ | 0.1+ |
| 2005 07 05 | G96 | 0.3− | 0.6+ | 2006 11 16 | 691 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.3+ | 0.3+ |
| 2005 07 05 | G96 | 0.5− | 0.5+ | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 12 01 | 704 | 0.3− | 0.0 |
| 2005 07 05 | G96 | 0.2− | 0.6+ | 2006 11 16 | 691 | 1.4− | 0.8+ | 2006 12 01 | 704 | 0.0 | 0.3+ |
| 2005 07 08 | 691 | 0.3+ | 0.5+ | 2006 11 18 | 704 | 0.6+ | 0.1+ | 2006 12 01 | 704 | 0.2+ | 0.4+ |
| 2005 07 08 | 691 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.0 | 2006 12 01 | 691 | 0.7+ | 0.7− |
| 2005 07 08 | 691 | 0.6− | 0.9+ | 2006 11 18 | 704 | 0.5+ | 0.5− | 2006 12 01 | 691 | 0.3− | 0.3− |
| 2006 09 18 | 703 | 0.1− | 0.9+ | 2006 11 18 | 704 | 0.4+ | 0.2− | 2006 12 01 | 691 | 0.3− | 0.3+ |
| 2006 09 18 | 703 | 0.1+ | 0.6− | 2006 11 18 | 704 | 0.5+ | 0.4+ | | | | |

**2006 VJ$_{94}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.73051 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18352964 | $\omega$ | 333.04625 | | +0.86359977 | −0.49150068 | |
| $a$ | 3.0666572 | $\Omega$ | 56.83813 | | +0.48339274 | +0.74385358 | |
| $e$ | 0.1812728 | $i$ | 7.71287 | | +0.14327213 | +0.45288955 | |
| $P$ | 5.37 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 17 | 691 | 0.0 | 0.4+ | 2005 07 18 | 644 | 0.6+ | 0.9+ | 2006 11 18 | 704 | 0.5− | 0.6+ |
| 1998 04 17 | 691 | (4.7+ | 3.3−) | 2005 07 18 | 644 | 0.4+ | 1.1+ | 2006 11 18 | 704 | 0.2+ | 0.2+ |
| 1998 04 17 | 691 | 0.1− | 0.3+ | 2005 07 29 | E12 | 0.5+ | 0.6+ | 2006 11 18 | 704 | 0.1+ | 0.9+ |
| 2000 11 27 | 645 | 0.2− | 0.0 | 2005 07 29 | E12 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.0 |
| 2000 11 27 | 645 | 0.2− | 0.1− | 2005 07 29 | E12 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.3+ | 0.0 |
| 2001 12 19 | 644 | 0.4+ | 0.2+ | 2005 07 29 | E12 | 1.7− | 0.1+ | 2006 11 20 | 691 | 0.3+ | 0.1− |
| 2001 12 19 | 644 | 0.4+ | 0.1+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 0.5+ |
| 2001 12 19 | 644 | 0.0 | 0.0 | 2006 09 27 | G96 | 0.5+ | 0.2− | 2006 11 21 | 704 | 0.4+ | 0.0 |
| 2002 01 13 | 644 | 0.7− | 0.5+ | 2006 09 27 | G96 | 0.6+ | 0.3− | 2006 11 21 | 704 | (3.1+ | 0.2+) |
| 2002 01 13 | 644 | 0.4− | 0.4+ | 2006 09 27 | G96 | 0.4+ | 0.2− | 2006 11 21 | 704 | 0.0 | 0.2+ |
| 2002 01 13 | 644 | 0.6− | 0.4+ | 2006 11 01 | G96 | 0.1+ | 0.7− | 2006 11 21 | 704 | 0.3+ | 0.5− |
| 2002 01 13 | 644 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.4+ | 0.6− | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 01 13 | 644 | 0.6− | 0.5+ | 2006 11 01 | G96 | 0.1+ | 0.7− | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 01 13 | 644 | 0.0 | 0.4+ | 2006 11 01 | G96 | 0.0 | 0.6− | 2006 11 24 | 691 | 0.2+ | 0.2+ |
| 2003 04 01 | 645 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.3+ | 0.0 | 2006 11 27 | 704 | 0.2− | 0.2+ |
| 2003 04 01 | 645 | 0.3− | 0.1+ | 2006 11 15 | 703 | 0.2+ | 0.3− | 2006 11 27 | 704 | 0.3− | 1.0+ |
| 2003 04 01 | 645 | 0.2− | 0.1+ | 2006 11 15 | 703 | 0.1+ | 0.3− | 2006 11 27 | 704 | 0.7+ | 0.2− |
| 2003 04 01 | 645 | 0.1− | 0.1+ | 2006 11 15 | 703 | 0.9− | 0.4+ | 2006 11 27 | 704 | 0.9+ | 0.6− |
| 2003 04 10 | 691 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.1− | 2006 11 30 | 691 | 0.0 | 0.2+ |
| 2003 04 10 | 691 | 0.3− | 0.3+ | 2006 11 16 | 691 | 0.2+ | 0.4+ | 2006 11 30 | 691 | 0.3− | 0.0 |
| 2003 04 10 | 691 | 0.4− | 0.1+ | 2006 11 16 | 691 | 0.3+ | 0.1− | 2006 11 30 | 691 | 0.1− | 0.1+ |
| 2005 07 18 | 644 | 0.6+ | 0.9+ | 2006 11 18 | 704 | 0.6− | 0.6+ | | | | |

**2006 VL$_{94}$ = 2004 JA$_{53}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.26899 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17333154 | $\omega$ | 304.18353 | | +0.99114754 | +0.02562342 | |
| $a$ | 3.1857937 | $\Omega$ | 54.68518 | | +0.04004560 | +0.87780229 | |
| $e$ | 0.2221754 | $i$ | 9.18633 | | −0.12658163 | +0.47833730 | |
| $P$ | 5.69 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 03 31 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.5+ |
| 2003 03 31 | 645 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.4+ | 0.2− | 2006 11 16 | 691 | 0.4+ | 0.3+ |
| 2004 05 09 | 691 | 0.5+ | 0.4+ | 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.4+ | 0.3+ |
| 2004 05 09 | 691 | 0.1− | 0.4+ | 2006 09 28 | G96 | 0.4+ | 0.5− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2004 05 09 | 691 | 0.2+ | 0.2+ | 2006 11 10 | 691 | 0.4+ | 0.6+ | 2006 11 20 | 691 | 0.6+ | 0.0 |
| 2004 05 19 | 691 | 0.1+ | 0.0 | 2006 11 10 | 691 | 0.3+ | 0.2− | 2006 11 21 | 704 | 0.6− | 0.3− |
| 2004 05 19 | 691 | 0.6+ | 0.5+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 1.2− | 0.5+ |
| 2004 05 19 | 691 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.7− | 0.9+ | 2006 11 21 | 704 | 0.2− | 0.3− |
| 2005 07 10 | E12 | 0.2− | 0.6+ | 2006 11 15 | 703 | 0.3− | 0.1+ | 2006 11 24 | 691 | 1.3− | 0.1− |
| 2005 07 10 | E12 | 0.0 | 0.7+ | 2006 11 15 | 703 | 0.5− | 1.4+ | 2006 11 24 | 691 | 1.8− | 0.7− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 10 | E12 | 0.2− | 0.3+ | 2006 11 15 | 703 | 0.1− | 0.5+ | 2006 11 24 | 691 | 0.2+ | 0.4+ | | |
| 2005 07 10 | E12 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.2+ | 0.4+ | | | | | | |

**2006 VU$_{94}$ = 2005 JU$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 26.38355 | | | (2000.0) | | |
| $n$ | 0.38479478 | $\omega$ | 303.99704 | | +0.74789170 | −0.51767313 |
| $a$ | 1.8720464 | $\Omega$ | 90.63037 | | +0.65763704 | +0.66304545 |
| $e$ | 0.1035170 | $i$ | 24.55484 | | −0.09039653 | +0.54072660 |
| $P$ | 2.56 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 09 | 703 | 0.1+ | 0.6− | 2005 05 12 | G96 | 0.4+ | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2005 05 09 | 703 | 0.1+ | 0.1+ | 2005 05 12 | G96 | 0.6+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2005 05 09 | 703 | 0.4+ | 0.8+ | 2006 11 15 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2005 05 09 | 703 | 0.6− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.2− | 0.1− |
| 2005 05 09 | 703 | 1.6− | 0.2− | 2006 11 15 | G96 | 0.4− | 0.0 | 2006 11 25 | G96 | 0.4− | 0.1− |
| 2005 05 09 | 703 | 1.0+ | 0.6− | 2006 11 15 | G96 | 0.0 | 0.3+ | 2006 11 25 | G96 | 0.6+ | 0.2+ |
| 2005 05 09 | 703 | 0.3− | 0.3− | 2006 11 16 | G96 | 0.5+ | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2005 05 09 | 703 | 1.0− | 0.4+ | 2006 11 16 | G96 | 0.3+ | 0.0 | 2006 11 25 | G96 | 0.1+ | 0.0 |
| 2005 05 12 | G96 | 0.4+ | 0.0 | 2006 11 16 | G96 | 0.1+ | 0.2− | | | | |
| 2005 05 12 | G96 | 0.5+ | 0.2+ | 2006 11 16 | G96 | 0.1− | 0.1+ | | | | |

**2006 VX$_{94}$ = 2004 FG$_{146}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 122.11680 | | | (2000.0) | | |
| $n$ | 0.22215761 | $\omega$ | 210.09751 | | +0.30534551 | +0.94318435 |
| $a$ | 2.6999885 | $\Omega$ | 77.94768 | | −0.84476217 | +0.33180781 |
| $e$ | 0.0418278 | $i$ | 7.69950 | | −0.43947809 | +0.01751720 |
| $P$ | 4.44 | $H$ | 16.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 31 | 691 | 0.0 | 0.0 | 2005 07 05 | 644 | 0.3− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2004 03 31 | 691 | 0.1+ | 0.6− | 2005 07 05 | 644 | 0.1− | 0.6+ | 2006 11 19 | 691 | 0.4+ | 0.1+ |
| 2004 03 31 | 691 | 0.2+ | 0.2− | 2006 10 31 | G96 | (0.0 | 1.8−) | 2006 11 23 | 691 | 0.5− | 0.7− |
| 2004 04 01 | 291 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2004 04 01 | 291 | 0.3− | 0.0 | 2006 10 31 | G96 | 0.3+ | 0.3− | 2006 11 23 | 691 | 0.5+ | 0.2+ |
| 2004 04 01 | 291 | 0.4− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2004 04 23 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2004 04 23 | 691 | 0.2+ | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2004 04 23 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2004 04 25 | 291 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2004 04 25 | 291 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.2− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2004 04 25 | 291 | 0.3+ | 0.0 | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2005 07 05 | 644 | 0.0 | 0.5+ | 2006 11 19 | 691 | 0.2− | 0.0 | | | | |

**2006 VB$_{95}$ = 2001 XJ$_{264}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 324.27403 | | | (2000.0) | | |
| $n$ | 0.18726089 | $\omega$ | 149.62764 | | +0.28202639 | −0.94706722 |
| $a$ | 3.0257845 | $\Omega$ | 283.62307 | | +0.84544772 | +0.32090125 |
| $e$ | 0.0297162 | $i$ | 9.08027 | | +0.45351876 | −0.00927699 |
| $P$ | 5.26 | $H$ | 15.8 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 14 | 644 | 0.0 | 1.0+ | 2006 10 19 | 703 | 0.3+ | 0.3− | 2006 11 17 | 360 | 0.4− | 0.0 |
| 2001 12 14 | 644 | 0.4+ | 1.1+ | 2006 10 27 | 703 | 0.7− | 0.9− | 2006 11 17 | 360 | 0.6− | 0.1+ |
| 2001 12 14 | 644 | 0.2− | 1.0+ | 2006 10 27 | 703 | 0.7− | 0.5+ | 2006 11 17 | 360 | 0.4+ | 0.2− |
| 2001 12 17 | 704 | 0.3+ | 1.0− | 2006 10 27 | 703 | 0.5+ | 0.5− | 2006 11 21 | 360 | 0.8+ | 0.1+ |
| 2001 12 17 | 704 | 0.5+ | 1.3− | 2006 10 27 | 703 | 0.2− | 0.0 | 2006 11 21 | 360 | 0.8− | 0.3+ |
| 2001 12 17 | 704 | 0.9− | 0.0 | 2006 11 12 | 360 | 0.1− | 0.3− | 2006 11 21 | 360 | 0.7+ | 0.2+ |
| 2001 12 17 | 704 | 0.1− | 0.0 | 2006 11 12 | 360 | 0.6+ | 0.2− | 2006 11 21 | 360 | 0.5+ | 0.1+ |
| 2001 12 17 | 704 | 0.1− | 0.7− | 2006 11 12 | 360 | 0.3+ | 0.0 | 2006 11 22 | 703 | 0.1− | 0.0 |
| 2006 10 19 | 703 | 0.5− | 0.4+ | 2006 11 17 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.5+ | 0.3− |
| 2006 10 19 | 703 | 0.2− | 0.3+ | 2006 11 17 | 644 | 0.2+ | 0.1+ | 2006 11 22 | 703 | 0.4− | 0.4− |
| 2006 10 19 | 703 | 0.4− | 0.6+ | 2006 11 17 | 644 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.2+ | 0.0 |

**2006 VV$_{95}$ = 2005 GM$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 54.89754 | | | (2000.0) | | |
| $n$ | 0.30842595 | $\omega$ | 290.50999 | | +0.89004375 | +0.44478864 |
| $a$ | 2.1695456 | $\Omega$ | 43.24429 | | −0.34469681 | +0.80006331 |
| $e$ | 0.1582555 | $i$ | 8.38672 | | −0.29833913 | +0.40256896 |
| $P$ | 3.20 | $H$ | 17.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 10 | G96 | 0.4− | 0.0 | 2005 04 16 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.6+ | 0.5+ |
| 2005 04 10 | G96 | 0.3− | 0.1+ | 2006 09 28 | G96 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.2+ | 0.9− |
| 2005 04 10 | G96 | 0.2− | 0.1+ | 2006 09 28 | G96 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.5− | 0.5+ |
| 2005 04 10 | G96 | 0.3− | 0.0 | 2006 09 28 | G96 | 0.1+ | 0.3+ | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2005 04 11 | G96 | 0.0 | 0.3− | 2006 09 28 | G96 | 0.2− | 0.2+ | 2006 11 21 | 704 | 0.6+ | 0.6+ |
| 2005 04 11 | G96 | 0.2− | 0.1− | 2006 11 13 | 691 | 0.4− | 0.1− | 2006 11 22 | 704 | 0.9+ | 0.8+ |
| 2005 04 11 | G96 | 0.2− | 0.0 | 2006 11 13 | 691 | 0.3− | 0.5− | 2006 11 22 | 704 | 0.5+ | 0.2+ |
| 2005 04 11 | G96 | 0.1− | 0.3+ | 2006 11 13 | 691 | 0.1+ | 0.6− | 2006 11 22 | 704 | 1.1− | 1.1+ |
| 2005 04 16 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | 0.2+ | 1.1+ | | | | |
| 2005 04 16 | 691 | 0.2+ | 0.0 | 2006 11 19 | 704 | 0.9+ | 0.1− | | | | |

**2006 VZ$_{95}$ = 2003 AX$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 267.51382 | | | (2000.0) | | |
| $n$ | 0.21304429 | $\omega$ | 283.01817 | | −0.85067396 | −0.51781160 |
| $a$ | 2.7764474 | $\Omega$ | 225.88299 | | +0.51786706 | −0.79578588 |
| $e$ | 0.2585777 | $i$ | 7.25731 | | +0.09037436 | −0.31399998 |
| $P$ | 4.63 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.6+ | 0.4+ | 2006 09 28 | G96 | (2.0+ | 0.5+) | 2006 11 10 | 691 | 0.1+ | 0.5+ |
| 2003 01 01 | 704 | 0.4− | 0.4+ | 2006 09 28 | G96 | 0.0 | 0.5− | 2006 11 10 | 691 | 0.2− | 0.5+ |
| 2003 01 01 | 704 | 0.2− | 0.6+ | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.1+ | 0.4+ |
| 2003 01 05 | 704 | 0.1− | 0.6− | 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 17 | 691 | 0.4+ | 0.3− |
| 2003 01 05 | 704 | 0.1+ | 0.3− | 2006 10 29 | 691 | 0.1+ | 0.2− | 2006 11 17 | 691 | 0.1− | 0.1− |
| 2003 01 05 | 704 | 1.4+ | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.4− |
| 2003 01 05 | 704 | 0.2− | 0.1− | 2006 10 29 | 691 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2003 01 05 | 704 | 1.1− | 0.7− | 2006 11 10 | 691 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.2− |

**2006 VY$_{96}$ = 2003 AY$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.39679 | | | (2000.0) | | |
| $n$ | 0.23121498 | $\omega$ | 340.79279 | | +0.51837078 | −0.81589006 |
| $a$ | 2.6290090 | $\Omega$ | 77.22637 | | +0.81494637 | +0.38054305 |
| $e$ | 0.0809202 | $i$ | 15.22765 | | +0.25914118 | +0.43532792 |
| $P$ | 4.26 | $H$ | 16.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 07 | 645 | 0.0 | 0.0 | 2003 01 13 | 704 | 0.3+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.3+ |
| 2002 11 07 | 645 | 0.0 | 0.0 | 2003 01 13 | 704 | 0.4+ | 0.2− | 2006 11 17 | 691 | 0.2− | 0.1+ |
| 2003 01 10 | 704 | 0.4− | 0.5+ | 2003 01 13 | 704 | 0.7+ | 0.1− | 2006 11 17 | 691 | 0.2− | 0.2+ |
| 2003 01 10 | 704 | 0.6− | 0.6− | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 25 | 691 | 0.2− | 0.1− |
| 2003 01 10 | 704 | 0.3− | 0.2+ | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 25 | 691 | 0.4+ | 0.1− |
| 2003 01 10 | 704 | 0.5− | 0.9+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.0 | 0.2− |

**2006 VL$_{97}$ = 2001 UL$_{186}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 3.27518 | | | (2000.0) | | |
| $n$ | 0.20979489 | $\omega$ | 26.11955 | | +0.76800600 | −0.63985260 |
| $a$ | 2.8050425 | $\Omega$ | 13.76796 | | +0.56551594 | +0.65738785 |
| $e$ | 0.0659117 | $i$ | 6.63176 | | +0.30059690 | +0.39803249 |
| $P$ | 4.70 | $H$ | 16.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 291 | 0.0 | 0.2+ | 2006 11 11 | 691 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2001 10 17 | 291 | 0.1+ | 0.1+ | 2006 11 11 | 691 | 0.1− | 0.2− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2001 10 17 | 291 | 0.1− | 0.1− | 2006 11 17 | 691 | 0.2− | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.1+ |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2001 10 21 | 704 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.3+ | 2006 11 22 | G96 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.2− |
| 2001 10 21 | 704 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.1− |
| 2001 10 21 | 704 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.3+ | 0.0 |
| 2004 05 14 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− | 2006 11 22 | G96 | 0.4− | 0.3− |
| 2004 05 14 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.2+ | 0.0 | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2004 05 14 | 691 | 0.2+ | 0.1+ | 2006 11 21 | G96 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.4+ | 0.4− |
| 2006 10 04 | G96 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.1− | 2006 11 24 | 291 | 0.1− | 0.1+ |
| 2006 10 04 | G96 | 0.3+ | 0.3− | 2006 11 21 | G96 | 0.0 | 0.3+ | 2006 11 24 | 291 | 0.1+ | 0.0 |
| 2006 10 04 | G96 | 0.4+ | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.3+ | 2006 11 24 | 291 | 0.1+ | 0.2− |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.2− | 0.2+ | | | | |
| 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.0 | 0.4+ | | | | |

**2006 VO$_{97}$ = 2005 NO$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.66021 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21339136 | $\omega$ | 32.23659 | | +0.93494938 | | +0.34926911 |
| $a$ | 2.7734361 | $\Omega$ | 307.19456 | | −0.33984066 | | +0.83124418 |
| $e$ | 0.0808050 | $i$ | 4.48528 | | −0.10187235 | | +0.43248606 |
| $P$ | 4.62 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 28 | 644 | 0.3− | 0.3+ | 2005 07 02 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 691 | 0.8− | 0.8+ |
| 2001 09 28 | 644 | 0.2− | 0.4+ | 2005 07 07 | 691 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.1− | 0.5− |
| 2001 09 28 | 644 | 0.1− | 0.6+ | 2005 07 07 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.2− | 0.2− |
| 2003 01 05 | 291 | 0.5+ | 0.1+ | 2005 07 07 | 691 | 0.1− | 0.0 | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2003 01 05 | 291 | 0.3+ | 0.2+ | 2006 11 11 | 691 | 0.4+ | 0.6− | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2003 01 05 | 291 | 0.5− | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.5+ | 0.1+ |
| 2005 07 02 | 691 | 0.0 | 0.1+ | 2006 11 11 | 691 | 0.4+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2005 07 02 | 691 | 0.3− | 0.3+ | 2006 11 17 | 691 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.2+ |

**2006 VO$_{99}$ = 2001 YG$_{51}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 338.14846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18618194 | $\omega$ | 350.19252 | | +0.39216376 | | −0.91184415 |
| $a$ | 3.0374631 | $\Omega$ | 76.63753 | | +0.85221946 | | +0.31043342 |
| $e$ | 0.1858719 | $i$ | 7.17035 | | +0.34630851 | | +0.26864723 |
| $P$ | 5.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2− | 0.0 | 2001 12 19 | 704 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.2+ | 0.2− | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 11 | G96 | 0.4− | 0.4− |
| 2001 12 18 | 704 | 0.1− | 0.5− | 2006 10 21 | G96 | 0.0 | 0.0 | 2006 11 11 | G96 | 0.4− | 0.1− |
| 2001 12 18 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 11 11 | 644 | 0.1+ | 0.9+ |
| 2001 12 18 | 704 | 0.2− | 0.1− | 2006 10 21 | G96 | 0.3− | 0.3− | 2006 11 11 | 644 | 0.3+ | 0.1+ |
| 2001 12 19 | 704 | 0.6+ | 0.5+ | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 11 | 644 | 0.6+ | 0.6+ |
| 2001 12 19 | 704 | 0.3+ | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.5+ | 2006 11 17 | G96 | 0.4+ | 0.5− |
| 2001 12 19 | 704 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2001 12 19 | 704 | 0.0 | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.5− |

**2006 VE$_{100}$ = 2003 HQ$_{57}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 219.29667 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17331293 | $\omega$ | 97.68297 | | −0.94291611 | | +0.33295236 |
| $a$ | 3.1860218 | $\Omega$ | 101.76532 | | −0.30837780 | | −0.86474196 |
| $e$ | 0.1128567 | $i$ | 0.42176 | | −0.12574712 | | −0.37598414 |
| $P$ | 5.69 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 03 | 691 | 0.2+ | 0.5+ | 2003 04 24 | 691 | 0.5+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.1+ |
| 2000 11 03 | 691 | 0.3− | 0.4− | 2003 04 24 | 691 | 0.4+ | 0.5+ | 2006 11 18 | 691 | 0.3− | 0.2+ |
| 2000 11 03 | 691 | 0.0 | 0.4+ | 2003 05 06 | 691 | 0.1− | 0.5+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2003 03 24 | 291 | 0.0 | 0.1− | 2003 05 06 | 691 | 0.0 | 0.0 | 2006 11 22 | 691 | 0.1− | 0.3− |
| 2003 03 24 | 291 | 0.6− | 0.3− | 2003 05 06 | 691 | 0.3− | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2003 03 24 | 291 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.5− | 0.5− | 2006 11 24 | G96 | 0.0 | 0.4+ |
| 2003 04 06 | 691 | 0.3− | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.1+ |
| 2003 04 06 | 691 | 0.1− | 0.1+ | 2006 11 11 | G96 | 0.2+ | 0.6− | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2003 04 06 | 691 | 0.2+ | 1.0− | 2006 11 11 | G96 | 0.0 | 0.8− | 2006 11 24 | G96 | 0.2− | 0.3+ |
| 2003 04 24 | 691 | 0.5+ | 0.3+ | 2006 11 18 | 691 | 0.2+ | 0.4+ | | | | |

**2006 VR$_{100}$ = 2005 NY$_{92}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.82145 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20103037 | $\omega$ | 256.70351 | | +0.42817014 | | −0.90348019 |
| $a$ | 2.8859907 | $\Omega$ | 167.88695 | | +0.86142714 | | +0.40140581 |
| $e$ | 0.0971049 | $i$ | 5.42695 | | +0.27315492 | | +0.15032269 |
| $P$ | 4.90 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 07 | 691 | 0.2− | 1.4+ | 2005 07 05 | 644 | 0.3− | 0.3+ | 2006 11 09 | 644 | 0.2− | 0.1− |
| 1991 10 07 | 691 | 0.1+ | 0.4− | 2005 07 15 | 691 | 0.0 | 0.4+ | 2006 11 11 | 703 | 0.5+ | 0.4+ |
| 1991 10 07 | 691 | 0.0 | 0.6− | 2005 07 15 | 691 | (0.3+ | 2.0+) | 2006 11 11 | 703 | 0.2+ | 0.7+ |
| 2001 10 24 | 644 | 0.1+ | 1.2+ | 2005 07 15 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 1.1− | 0.0 |
| 2001 10 24 | 644 | 0.2+ | 0.9+ | 2006 10 03 | G96 | 0.0 | 0.4− | 2006 11 11 | 703 | 0.4− | 0.4− |
| 2001 10 24 | 644 | 0.4+ | 0.7+ | 2006 10 03 | G96 | 0.1+ | 0.6− | 2006 11 11 | 644 | 0.4+ | 0.3− |
| 2001 11 20 | 699 | 0.4− | 0.1− | 2006 10 03 | G96 | 0.1+ | 0.6− | 2006 11 11 | 644 | 0.5+ | 0.1− |
| 2001 11 20 | 699 | 0.7− | 0.3+ | 2006 10 03 | G96 | 0.1+ | 0.5− | 2006 11 11 | 644 | 0.4+ | 0.4+ |
| 2001 11 20 | 699 | 0.9− | 0.7+ | 2006 10 16 | 703 | 0.8+ | 1.3− | 2006 11 18 | G96 | 0.1− | 0.4− |
| 2001 11 20 | 699 | 0.6− | 0.4+ | 2006 10 16 | 703 | 0.0 | 0.8+ | 2006 11 18 | G96 | 0.0 | 0.5− |
| 2003 02 09 | 644 | 0.4+ | 0.5+ | 2006 10 16 | 703 | 0.4− | 0.5− | 2006 11 18 | G96 | 0.1+ | 0.5− |
| 2003 02 09 | 644 | 0.0 | 0.8+ | 2006 10 16 | 703 | 0.3− | 1.1− | 2006 11 18 | G96 | 0.2+ | 0.3− |
| 2003 02 09 | 644 | 0.2+ | 0.8+ | 2006 11 01 | 703 | 0.6+ | 0.6+ | 2006 11 20 | 704 | 0.3− | 0.7+ |
| 2003 02 22 | 644 | 0.1+ | 0.7+ | 2006 11 01 | 703 | 0.1− | 0.6− | 2006 11 20 | 704 | 0.3+ | 0.6+ |
| 2003 02 22 | 644 | 0.4+ | 0.5+ | 2006 11 01 | 703 | 0.7− | 0.5+ | 2006 11 20 | 704 | 0.1− | 0.6− |
| 2003 02 22 | 644 | 0.1+ | 0.7+ | 2006 11 01 | 703 | 0.3+ | 0.1− | 2006 11 20 | 704 | 0.5+ | 0.7+ |
| 2005 07 05 | 644 | 0.0 | 0.7+ | 2006 11 09 | 644 | 0.0 | 0.1− | | | | |
| 2005 07 05 | 644 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.1− | 0.4− | | | | |

**2006 VX$_{100}$ = 1995 WB$_{41}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.11349 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27031159 | $\omega$ | 336.09289 | | +0.61612155 | | −0.77638280 |
| $a$ | 2.3689702 | $\Omega$ | 75.60368 | | +0.74295076 | | +0.51686968 |
| $e$ | 0.1197166 | $i$ | 7.87770 | | +0.26156910 | | +0.36065979 |
| $P$ | 3.65 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 26 | 691 | 0.2− | 0.2− | 2006 10 20 | 644 | 0.3− | 0.3− | 2006 11 11 | 703 | 0.9+ | 0.4+ |
| 1995 11 26 | 691 | 0.1+ | 0.3+ | 2006 10 20 | 644 | 0.1+ | 0.3+ | 2006 11 11 | 703 | 0.2+ | 0.8− |
| 1995 11 26 | 691 | 0.2− | 0.1+ | 2006 11 09 | 644 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.3− | 0.2− |
| 1995 11 27 | 691 | 0.3+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3− | 2006 11 17 | G96 | 0.3− | 0.0 |
| 1995 11 27 | 691 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.2+ | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 1995 11 27 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.4− | 0.3+ | 2006 11 17 | G96 | 0.0 | 0.2− |
| 2006 10 20 | 644 | 0.2+ | 0.2− | 2006 11 11 | 703 | 0.0 | 0.5+ | | | | |

**2006 VB$_{101}$ = 1996 TG$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 354.98867 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30074636 | $\omega$ | 206.48951 | | +0.80096354 | | −0.59835037 |
| $a$ | 2.2063232 | $\Omega$ | 190.34006 | | +0.56784855 | | +0.77024336 |
| $e$ | 0.1266547 | $i$ | 6.66701 | | +0.18975097 | | +0.22068530 |
| $P$ | 3.28 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 04 26 | 691 | 0.5− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.5+ | 1.2− |
| 1995 04 26 | 691 | 0.4+ | 0.7− | 2006 09 30 | G96 | 0.3+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.1− |
| 1996 10 03 | 327 | 1.4+ | 0.0 | 2006 09 30 | G96 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.2− |
| 1996 10 03 | 327 | 0.3+ | 0.9− | 2006 10 21 | G96 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 1996 10 03 | 327 | 0.2+ | 0.8− | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.0 | 0.0 |
| 1996 10 05 | 327 | 0.3− | 0.7+ | 2006 10 21 | G96 | 0.0 | 0.2− | 2006 11 18 | G96 | 0.2− | 0.1+ |
| 1996 10 05 | 327 | 0.4− | 0.8+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 23 | G96 | 0.1− | 0.1+ |
| 1996 10 05 | 327 | 1.3− | 0.2+ | 2006 11 08 | 644 | 0.2− | 0.3+ | 2006 11 23 | G96 | 0.0 | 0.1+ |
| 2005 05 10 | 691 | 0.1− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.2+ | 2006 11 23 | G96 | 0.3− | 0.1+ |
| 2005 05 10 | 691 | 0.1+ | 0.0 | 2006 11 08 | 644 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2005 05 10 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3+ | | | | |
| 2006 09 30 | G96 | 0.4+ | 0.4− | 2006 11 11 | 703 | 0.1− | 0.1+ | | | | |

**2006 VG$_{101}$ = 1991 TY$_{16}$ = 2002 TX$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 351.95079 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26913243 | $\omega$ | 346.68190 | | +0.49175322 | −0.86878872 | |
| $a$ | 2.3758847 | $\Omega$ | 73.83548 | | +0.80433134 | +0.42764376 | |
| $e$ | 0.1597248 | $i$ | 3.47282 | | +0.33351143 | +0.24965372 | |
| $P$ | 3.66 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 01 | 691 | 0.0 | 0.5+ | 2002 10 03 | 704 | 0.4− | 0.1+ | 2006 11 21 | 704 | 0.1− | 0.4− |
| 1991 10 01 | 691 | 0.8+ | 0.7+ | 2002 10 03 | 704 | 0.1+ | 0.1+ | 2006 11 21 | 704 | 0.8+ | 0.0 |
| 1991 10 01 | 691 | 1.1− | 0.5− | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 25 | 691 | 0.1+ | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.1− | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.2− | 0.2+ | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2002 10 01 | 608 | 0.3− | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.7− | 2006 12 01 | 704 | 0.7− | 0.5− |
| 2002 10 01 | 608 | 0.1+ | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.3+ |
| 2002 10 01 | 608 | 0.3+ | 0.6+ | 2006 11 17 | 691 | 0.1− | 0.1+ | 2006 12 01 | 704 | 0.3+ | 0.6− |
| 2002 10 03 | 704 | (0.4− | 2.2−) | 2006 11 21 | 704 | 0.2− | 0.5+ | 2006 12 01 | 704 | 0.2− | 0.6+ |

**2006 VM$_{101}$ = 2004 FC$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.16587 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26436855 | $\omega$ | 301.08700 | | +0.41759898 | −0.90730926 | |
| $a$ | 2.4043417 | $\Omega$ | 124.15148 | | +0.85252396 | +0.37258587 | |
| $e$ | 0.1736721 | $i$ | 3.39449 | | +0.31434692 | +0.19485810 | |
| $P$ | 3.73 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 18 | 691 | 0.0 | 0.2− | 2006 11 02 | 703 | 0.8− | 0.3− | 2006 11 17 | 704 | 0.9− | 0.5− |
| 2004 03 18 | 691 | 0.2− | 0.1+ | 2006 11 02 | 703 | (0.1− | 1.8−) | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2004 03 18 | 691 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.0 | 0.7+ | 2006 11 17 | G96 | 0.1+ | 0.5− |
| 2004 03 26 | 691 | 0.2+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 17 | 704 | 0.9− | 0.8− |
| 2004 03 26 | 691 | 0.0 | 0.2− | 2006 11 09 | 644 | 0.0 | 0.5− | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2004 03 26 | 691 | 0.2− | 0.2+ | 2006 11 09 | 644 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.4− |
| 2006 10 16 | 703 | 0.4+ | 0.8+ | 2006 11 11 | 703 | 0.1+ | 1.5+ | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2006 10 16 | 703 | 0.2+ | 0.3+ | 2006 11 11 | 703 | 1.1+ | 1.0+ | 2006 11 18 | G96 | 0.2+ | 0.4− |
| 2006 10 16 | 703 | 0.5− | 0.3− | 2006 11 11 | 703 | 1.3+ | 0.7− | 2006 11 18 | G96 | 0.5+ | 0.4− |
| 2006 10 16 | 703 | (0.3+ | 1.7−) | 2006 11 11 | 703 | (0.7+ | 1.5+) | 2006 11 18 | G96 | 0.3+ | 0.4− |
| 2006 10 21 | G96 | 0.1− | 0.7− | 2006 11 11 | 644 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.8− | 0.8+ |
| 2006 10 21 | G96 | 0.3+ | 0.5− | 2006 11 11 | 644 | 0.5+ | 0.1+ | 2006 11 20 | 704 | 0.5− | 0.8+ |
| 2006 10 21 | G96 | 0.4− | 0.2− | 2006 11 11 | 644 | 0.2+ | 0.2− | 2006 11 20 | 704 | 0.3− | 0.9+ |
| 2006 10 21 | G96 | 0.0 | 0.6− | 2006 11 17 | 704 | 0.7− | 0.2+ | 2006 11 20 | 704 | 0.0 | 1.2+ |
| 2006 11 02 | 703 | 0.6+ | 0.2− | 2006 11 17 | 704 | 0.5− | 0.3− | 2006 11 20 | 704 | 0.6− | 0.2+ |

**2006 VZ$_{102}$ = 2005 GL$_{173}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.42612 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.29210217 | $\omega$ | 275.16245 | | +0.83465243 | +0.53089971 | |
| $a$ | 2.2496391 | $\Omega$ | 52.85400 | | −0.40367476 | +0.77077360 | |
| $e$ | 0.2165876 | $i$ | 10.60030 | | −0.37470256 | +0.35221237 | |
| $P$ | 3.37 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.2− | 0.2+ | 2006 11 12 | G96 | 0.5+ | 0.0 | 2006 11 17 | 691 | 0.2− | 0.2− |
| 2005 04 14 | 691 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.4− | 0.1− | 2006 11 25 | 691 | 0.1− | 0.4− |
| 2005 04 14 | 691 | 0.1+ | 0.2+ | 2006 11 12 | G96 | 0.5− | 0.3+ | 2006 11 25 | 691 | 0.3+ | 0.6+ |
| 2005 04 18 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2005 04 18 | 691 | 0.3+ | 0.1− | 2006 11 17 | 691 | 0.1− | 0.1− | | | | |
| 2005 04 18 | 691 | 0.0 | 0.2+ | 2006 11 17 | 691 | 0.3+ | 0.2+ | | | | |

**2006 VQ$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 84.61237 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26225146 | $\omega$ | 126.78306 | | +0.65816218 | +0.75284808 | |
| $a$ | 2.4172641 | $\Omega$ | 184.39367 | | −0.71498033 | +0.62230342 | |
| $e$ | 0.1546771 | $i$ | 4.87147 | | −0.23585097 | +0.21437871 | |
| $P$ | 3.76 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 25 | 699 | 0.4− | 1.2+ | 2001 05 15 | 699 | 0.9+ | 0.3− | 2002 11 02 | 608 | 0.3− | 0.2− |
| 1998 09 25 | 699 | 0.2− | 1.5+ | 2001 05 15 | 699 | 0.1+ | 1.1− | 2006 11 12 | D35 | 0.3+ | 0.2− |
| 1998 09 25 | 699 | 0.3− | 0.6+ | 2001 05 15 | 699 | 0.7− | 0.0 | 2006 11 12 | D35 | 0.3+ | 0.2+ |
| 1998 10 01 | 691 | 0.5+ | 0.2+ | 2001 05 15 | 699 | 0.4− | 1.2+ | 2006 11 12 | D35 | 0.5+ | 0.3+ |
| 1998 10 01 | 691 | 0.2+ | 0.1+ | 2002 10 18 | 644 | 0.2− | 0.9+ | 2006 11 17 | G96 | 0.0 | 0.3− |
| 1998 10 01 | 691 | 0.1+ | 0.3+ | 2002 10 18 | 644 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.2− | 0.2− |
| 1998 10 15 | 691 | 0.1+ | 0.3− | 2002 10 18 | 644 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1− |
| 1998 10 15 | 691 | 0.3− | 0.9− | 2002 11 02 | 608 | 0.6− | 0.2− | 2006 11 17 | G96 | 0.2− | 0.1− |
| 1998 10 15 | 691 | 0.2− | 0.6− | 2002 11 02 | 608 | 0.4− | 0.1− | | | | |

**2006 VL$_{107}$ = 2003 AJ$_{29}$ = 2005 NF$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 315.03506 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22837999 | $\omega$ | 145.73558 | | −0.21592820 | −0.97597219 | |
| $a$ | 2.6507210 | $\Omega$ | 316.71384 | | +0.88602623 | −0.18328170 | |
| $e$ | 0.1397884 | $i$ | 2.44178 | | +0.41028348 | −0.11783932 | |
| $P$ | 4.32 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 04 | 704 | 0.5− | 0.1− | 2005 07 03 | G96 | 0.7− | 0.7− | 2006 11 17 | 691 | 0.1− | 0.8+ |
| 2003 01 04 | 704 | 0.2− | 0.1+ | 2005 07 12 | G96 | 0.3+ | 0.4+ | 2006 11 19 | 704 | 0.2− | 0.2− |
| 2003 01 04 | 704 | 0.2− | 0.4+ | 2005 07 12 | G96 | 0.5− | 0.1− | 2006 11 19 | 704 | 0.5+ | 0.3+ |
| 2003 01 08 | 704 | (1.9+ | 0.5−) | 2005 07 12 | G96 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.8+ | 0.5+ |
| 2003 01 08 | 704 | 0.1+ | 0.4− | 2005 07 12 | G96 | 0.2+ | 0.4+ | 2006 11 19 | 704 | 1.6+ | 0.2+ |
| 2003 01 08 | 704 | 0.6+ | 0.5− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 22 | 704 | 0.6− | 1.3+ |
| 2003 01 08 | 704 | 0.8+ | 0.4− | 2006 10 04 | G96 | 0.0 | 0.4− | 2006 11 22 | 704 | 0.4− | 0.3+ |
| 2003 01 09 | 704 | 0.7− | 0.0 | 2006 10 04 | G96 | 0.5+ | 0.5− | 2006 11 22 | 704 | 0.4+ | 0.8+ |
| 2003 01 09 | 704 | 0.2+ | 0.8+ | 2006 10 04 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.4+ | 0.0 |
| 2003 01 09 | 704 | 0.0 | 0.6+ | 2006 11 13 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.5− | 0.3+ |
| 2003 01 09 | 704 | 0.3+ | 0.6+ | 2006 11 13 | 691 | 0.1− | 0.2− | 2006 11 25 | 691 | 0.1− | 0.5− |
| 2005 07 03 | G96 | 0.7+ | 0.3+ | 2006 11 13 | 691 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.4− | 0.2− |
| 2005 07 03 | G96 | 0.8− | 0.4+ | 2006 11 17 | 691 | 0.2+ | 0.2− | 2006 11 25 | 691 | 0.4− | 0.5− |
| 2005 07 03 | G96 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.1+ | 0.1+ | | | | |

**2006 VM$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.67303 | | (2000.0) | | | |
| $n$ | 0.21043602 | $\omega$ | 109.67754 | | +0.98994009 | −0.08356993 |
| $a$ | 2.7993422 | $\Omega$ | 255.24721 | | +0.03608216 | +0.92935820 |
| $e$ | 0.2096918 | $i$ | 6.78025 | | +0.13680896 | +0.35959617 |
| $P$ | 4.68 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 29 | 644 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.3+ | 1.0+ |
| 2001 09 29 | 644 | 0.2− | 0.3+ | 2006 11 13 | 691 | 0.2+ | 0.0 | 2006 11 22 | 704 | 0.1+ | 0.1+ |
| 2001 09 29 | 644 | 0.0 | 0.1+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.7− | 0.1− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.2− | 2006 11 22 | 704 | 0.3− | 0.3− |
| 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.5− | 0.1− | 2006 11 25 | 691 | 0.2+ | 0.1− |
| 2006 10 20 | G96 | 0.2− | 0.5− | 2006 11 17 | 691 | 0.3+ | 0.1− | 2006 11 25 | 691 | 0.2− | 0.5+ |
| 2006 10 20 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.0 | 1.3− | 2006 11 25 | 691 | 0.2+ | 0.1+ |
| 2006 10 20 | G96 | 0.3+ | 0.6− | 2006 11 19 | 704 | 0.3− | 0.8+ | | | | |
| 2006 10 20 | G96 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.6− | 0.7+ | | | | |

**2006 VA$_{109}$ = 2000 EA$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 291.32724 | | (2000.0) | | | |
| $n$ | 0.26414083 | $\omega$ | 106.47115 | | −0.69005430 | −0.72260465 |
| $a$ | 2.4057234 | $\Omega$ | 27.30169 | | +0.62543743 | −0.62375598 |
| $e$ | 0.2044211 | $i$ | 5.10782 | | +0.36421571 | −0.29794462 |
| $P$ | 3.73 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 03 09 | 704 | 0.7+ | 0.1− | 2006 10 23 | 691 | 0.1+ | 0.0 | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2000 03 09 | 704 | 0.1− | 0.4+ | 2006 10 23 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 691 | 0.3− | 0.1− |
| 2000 03 09 | 704 | 0.8− | 0.6− | 2006 10 23 | 691 | 0.2− | 0.2+ | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2000 03 12 | 704 | 0.6− | 0.5− | 2006 11 13 | 691 | 0.0 | 0.5− | 2006 11 25 | 691 | 0.1− | 0.3+ |
| 2000 03 12 | 704 | 0.2+ | 0.2− | 2006 11 13 | 691 | 0.0 | 0.4− | 2006 11 25 | 691 | 0.1+ | 0.2+ |
| 2000 03 12 | 704 | 0.3− | 0.2+ | 2006 11 13 | 691 | 0.5+ | 0.2− | | | | |
| 2000 03 12 | 704 | 0.8+ | 0.7+ | 2006 11 17 | 691 | 0.3− | 0.1+ | | | | |

**2006 VQ$_{110}$ = 2004 GB$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 359.86812 | | (2000.0) | | | |
| $n$ | 0.23591387 | $\omega$ | 26.71106 | | +0.61841794 | −0.78433156 |
| $a$ | 2.5939826 | $\Omega$ | 25.18028 | | +0.69893282 | +0.52055913 |
| $e$ | 0.0127225 | $i$ | 6.58870 | | +0.35923832 | +0.33740510 |
| $P$ | 4.18 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.2+ | 0.1− | 2004 04 20 | 691 | 0.1− | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 2004 04 13 | 691 | 0.0 | 0.1− | 2006 11 13 | 691 | 0.4− | 0.4+ | 2006 11 17 | 691 | 0.3+ | 0.4+ |
| 2004 04 13 | 691 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.3+ | 0.6− | 2006 11 25 | 691 | 0.2+ | 0.0 |
| 2004 04 20 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.4− | 0.2+ | 2006 11 25 | 691 | 0.3− | 0.0 |
| 2004 04 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.2− | 2006 11 25 | 691 | 0.0 | 0.2− |

**2006 VS$_{110}$ = 2001 FM$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 226.05811 | | (2000.0) | | | |
| $n$ | 0.29527201 | $\omega$ | 156.32050 | | −0.97440792 | +0.20865096 |
| $a$ | 2.2335098 | $\Omega$ | 36.04349 | | −0.22218372 | −0.83752898 |
| $e$ | 0.1032274 | $i$ | 8.17120 | | −0.03411158 | −0.50498514 |
| $P$ | 3.34 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 03 19 | 704 | 0.7− | 0.8− | 2001 03 26 | 704 | 0.2+ | 0.4− | 2006 11 13 | 691 | 0.6− | 0.4+ |
| 2001 03 19 | 704 | 1.1− | 0.6+ | 2001 03 26 | 704 | 0.5+ | 0.6+ | 2006 11 13 | 691 | 0.3+ | 0.2+ |
| 2001 03 19 | 704 | 0.0 | 0.8+ | 2004 02 09 | 644 | 0.2− | 0.6+ | 2006 11 17 | 691 | 0.1− | 0.4− |
| 2001 03 26 | 704 | 0.1+ | 0.1+ | 2004 02 09 | 644 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.1+ | 0.4− |
| 2001 03 26 | 704 | 0.3+ | 0.2− | 2004 02 09 | 644 | 0.3+ | 0.3− | 2006 11 17 | 691 | 0.3+ | 0.2− |
| 2001 03 26 | 704 | 0.6+ | 0.7− | 2006 11 13 | 691 | 0.1+ | 0.4+ | | | | |

**2006 VK$_{111}$ = 2001 VF$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 293.83838 | | (2000.0) | | | |
| $n$ | 0.20035754 | $\omega$ | 83.78651 | | −0.58911522 | −0.80062162 |
| $a$ | 2.8924482 | $\Omega$ | 42.93252 | | +0.66331761 | −0.55640602 |
| $e$ | 0.0633565 | $i$ | 9.23470 | | +0.46146832 | −0.22230015 |
| $P$ | 4.92 | $H$ | 16.6 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 07 | 691 | 0.1− | 0.2+ | 2001 11 19 | 704 | 0.6+ | 0.3− | 2006 11 13 | 691 | 0.2+ | 0.5− |
| 1991 11 07 | 691 | 0.1− | 0.4+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 13 | 691 | 0.1− | 0.0 |
| 1991 11 07 | 691 | 0.2− | 0.2+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.1+ | 0.7+ |
| 2001 11 12 | 704 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.0 | 0.6− | 2006 11 17 | 691 | 0.0 | 0.1− |
| 2001 11 12 | 704 | 0.1− | 0.4− | 2006 09 28 | G96 | 1.1− | 0.4− | 2006 11 17 | 691 | 0.1− | 0.7+ |
| 2001 11 12 | 704 | 0.0 | 0.3+ | 2006 09 28 | G96 | 0.2− | 0.3+ | 2006 11 25 | 691 | 0.2− | 0.3− |
| 2001 11 19 | 704 | 0.1− | 0.9− | 2006 09 28 | G96 | 0.6− | 0.1+ | 2006 11 25 | 691 | 0.2− | 0.2− |
| 2001 11 19 | 704 | 0.1− | 0.2+ | 2006 11 13 | 691 | 0.4+ | 0.4− | 2006 11 25 | 691 | 0.3+ | 0.3− |

**2006 VT$_{111}$ = 2004 DU$_{3}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 306.15077 | | (2000.0) | | | |
| $n$ | 0.27990165 | $\omega$ | 69.53023 | | −0.26135617 | −0.96198035 |
| $a$ | 2.3145456 | $\Omega$ | 35.91988 | | +0.82757294 | −0.26560171 |
| $e$ | 0.0623590 | $i$ | 7.76758 | | +0.49680578 | −0.06363595 |
| $P$ | 3.52 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 16 | 704 | 0.3− | 0.4+ | 2006 10 20 | G96 | 0.1− | 0.2− | 2006 11 22 | 704 | 0.0 | 0.6+ |
| 2004 02 16 | 704 | 0.1− | 0.2+ | 2006 10 20 | G96 | 0.2− | 0.3− | 2006 11 22 | 704 | 1.3+ | 0.9+ |
| 2004 02 16 | 704 | 1.1+ | 0.2+ | 2006 11 13 | 691 | 0.4+ | 0.4− | 2006 11 22 | 704 | 0.2− | 0.0 |
| 2004 02 16 | 704 | 0.3+ | 0.4+ | 2006 11 13 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.9+ | 0.3+ |
| 2004 02 16 | 704 | 0.4+ | 0.5+ | 2006 11 13 | 691 | 0.4+ | 0.3− | 2006 11 25 | 691 | 1.0− | 0.3+ |
| 2004 02 17 | 691 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | (2.1− | 0.3+) |
| 2004 02 17 | 691 | 0.0 | 0.1− | 2006 11 17 | 691 | 0.0 | 0.7+ | 2006 11 25 | 691 | 0.7− | 0.5+ |
| 2004 02 17 | 691 | 0.1− | 0.2− | 2006 11 17 | 691 | 0.1+ | 0.2− | 2006 11 27 | 704 | 0.4+ | 0.2− |
| 2006 09 28 | G96 | 0.3− | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.6− | 2006 11 27 | 704 | (1.0+ | 1.6−) |
| 2006 09 28 | G96 | 0.1− | 0.2+ | 2006 11 21 | G96 | 0.2− | 0.5− | 2006 11 27 | 704 | 0.5+ | 1.1− |
| 2006 09 28 | G96 | 0.5+ | 0.1+ | 2006 11 21 | G96 | 0.0 | 0.5− | 2006 11 27 | 704 | 0.8+ | 0.7− |
| 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.3− | 0.6− | | | | |
| 2006 10 20 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.3− | | | | |

**2006 VU$_{111}$ = 1999 GV$_{58}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 216.33006 | | (2000.0) | | | |
| $n$ | 0.21740455 | $\omega$ | 188.07854 | | −0.85590549 | +0.51564639 |
| $a$ | 2.7391993 | $\Omega$ | 23.09207 | | −0.46870153 | −0.74151112 |
| $e$ | 0.2099493 | $i$ | 5.73224 | | −0.21850551 | −0.42926688 |
| $P$ | 4.53 | $H$ | 15.7 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 699 | 0.7+ | 0.6+ | 2005 08 27 | 691 | 0.5− | 0.3+ | 2006 11 13 | 691 | 0.3− | 0.1+ |
| 1999 03 22 | 699 | 1.1+ | 0.6+ | 2005 08 27 | 691 | 0.0 | 0.4+ | 2006 11 13 | 691 | 0.1− | 0.3+ |
| 1999 03 22 | 699 | 0.3+ | 1.0+ | 2005 08 27 | 691 | 0.4− | 0.3+ | 2006 11 13 | G96 | 0.1+ | 0.1− |
| 1999 04 12 | 704 | 0.8+ | 0.3+ | 2005 10 06 | G96 | 0.2− | 0.4+ | 2006 11 13 | G96 | 0.2+ | 0.1− |
| 1999 04 12 | 704 | 0.2− | 0.4+ | 2005 10 06 | G96 | 0.2+ | 0.7+ | 2006 11 13 | G96 | 0.1+ | 0.0 |
| 1999 04 12 | 704 | 0.1− | 0.6+ | 2005 10 06 | G96 | 0.1− | 0.4+ | 2006 11 13 | G96 | 0.0 | 0.2+ |
| 1999 04 12 | 704 | 0.8+ | 0.7+ | 2005 10 29 | G96 | 0.6+ | 0.1+ | 2006 11 17 | 691 | 0.2+ | 0.3+ |
| 1999 04 12 | 704 | 1.6− | 0.7+ | 2005 10 29 | G96 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 1999 04 17 | 703 | 0.4− | 0.4+ | 2005 10 29 | G96 | 0.5− | 0.0 | 2006 11 17 | 691 | 0.2+ | 0.1− |
| 1999 04 17 | 703 | 0.7+ | 0.7− | 2005 10 29 | G96 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 1999 04 17 | 703 | 0.1− | 0.4+ | 2005 12 01 | G96 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.1− | 0.5− |
| 1999 04 17 | 703 | 0.8+ | 0.4+ | 2005 12 01 | G96 | 0.0 | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 13 | 691 | 0.1+ | 0.3+ | 2005 12 01 | G96 | 0.3+ | 0.1− | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2001 10 13 | 691 | 0.4− | 0.1− | 2005 12 01 | G96 | 0.1+ | 0.3− | 2006 11 25 | 691 | 0.0 | 0.3− |
| 2001 10 13 | 691 | 0.1+ | 0.2+ | 2006 11 13 | 691 | 0.1+ | 0.5+ | 2006 11 25 | 691 | 0.2− | 0.5− |

**2006 VY$_{111}$ = 1992 SE$_{10}$ = 1999 VN$_{219}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 287.82731 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28991546 | $\omega$ | 114.23617 | | −0.59516420 | | −0.80346454 |
| $a$ | 2.2609370 | $\Omega$ | 12.32239 | | +0.70949576 | | −0.53412617 |
| $e$ | 0.0796485 | $i$ | 4.02427 | | +0.37735307 | | −0.26297142 |
| $P$ | 3.40 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1992 09 27 | 691 | 0.0 | 0.7− | 2001 03 30 | 691 | 0.4+ | 0.3+ | 2006 11 13 | 691 | 0.1− | 0.2+ |
| 1992 09 27 | 691 | 0.2− | 0.3+ | 2001 03 30 | 691 | 0.4+ | 0.2+ | 2006 11 13 | 691 | 0.2+ | 0.0 |
| 1992 09 27 | 691 | (2.6− | 0.2−) | 2001 03 30 | 691 | 0.5− | 0.1+ | 2006 11 17 | 691 | 0.2− | 0.4+ |
| 1992 09 29 | 691 | 0.2− | 0.6+ | 2006 10 04 | G96 | 0.2+ | 0.6+ | 2006 11 17 | 691 | 0.1− | 0.1− |
| 1992 09 29 | 691 | 0.6− | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.1+ | 2006 11 17 | 691 | 0.2− | 0.1− |
| 1992 09 29 | 691 | 0.2+ | 0.3+ | 2006 10 04 | G96 | 0.3− | 0.2− | 2006 11 21 | G96 | 0.1+ | 0.4− |
| 1999 11 04 | 691 | 0.3+ | 0.2− | 2006 10 04 | G96 | 0.1+ | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.4− |
| 1999 11 04 | 691 | 0.2+ | 0.0 | 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 21 | G96 | 0.1− | 0.2− |
| 1999 11 04 | 691 | 0.3+ | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.3− | 2006 11 25 | 691 | 0.0 | 0.1+ |
| 1999 11 13 | 691 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.2− | 0.1− |
| 1999 11 13 | 691 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.0 | 0.5− | 2006 11 25 | 691 | 0.0 | 0.0 |
| 1999 11 13 | 691 | 0.1+ | 0.1+ | 2006 11 13 | 691 | 0.1− | 0.4+ | | | | |

**2006 VC$_{112}$ = 1999 XQ$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 336.60340 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27951831 | $\omega$ | 265.88285 | | +0.43832938 | | −0.89880147 |
| $a$ | 2.3166613 | $\Omega$ | 158.11783 | | +0.82969668 | | +0.40255247 |
| $e$ | 0.2016716 | $i$ | 0.74167 | | +0.34564544 | | +0.17351492 |
| $P$ | 3.53 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 12 07 | 704 | 0.6− | 0.2− | 2006 10 27 | G96 | 0.3+ | 0.5− | 2006 11 17 | 703 | 0.7− | 0.3− |
| 1999 12 07 | 704 | 0.1+ | 0.6− | 2006 10 27 | G96 | 0.6+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.9+ |
| 1999 12 07 | 704 | 0.6+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.9+ |
| 1999 12 08 | 704 | (0.2− | 2.3−) | 2006 11 09 | 644 | 0.4− | 0.2+ | 2006 11 18 | 704 | 0.0 | 0.7+ |
| 1999 12 08 | 704 | 0.0 | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.3+ | 2006 11 18 | 704 | 1.0+ | 0.2− |
| 1999 12 08 | 704 | 0.0 | 0.4+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 26 | 621 | 0.0 | 0.2− |
| 2006 09 26 | G96 | 0.4+ | 0.0 | 2006 11 11 | G96 | 0.2+ | 0.3− | 2006 11 26 | 621 | 0.1+ | 0.0 |
| 2006 09 26 | G96 | 0.2− | 0.2− | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 26 | 621 | 0.0 | 0.2+ |
| 2006 09 26 | G96 | 0.3+ | 0.2− | 2006 11 11 | G96 | 0.2+ | 0.2− | 2006 11 27 | 703 | 0.1+ | 0.1− |
| 2006 09 26 | G96 | 0.3+ | 0.1− | 2006 11 13 | 644 | 0.0 | 0.1+ | 2006 11 27 | 703 | 0.5− | 0.1+ |
| 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 13 | 644 | 0.0 | 0.3+ | 2006 11 27 | 703 | 0.1+ | 0.4− |
| 2006 10 16 | 691 | 0.3− | 0.1+ | 2006 11 13 | 644 | 0.2− | 0.3+ | 2006 11 27 | 621 | 0.1+ | 0.2− |
| 2006 10 16 | 691 | 0.1+ | 0.0 | 2006 11 17 | 703 | 0.6− | 0.5+ | 2006 11 27 | 621 | 0.4+ | 0.3− |
| 2006 10 27 | G96 | 0.4+ | 0.5− | 2006 11 17 | 703 | 0.8− | 0.2− | 2006 11 28 | 621 | 0.4+ | 0.3− |
| 2006 10 27 | G96 | 0.1+ | 0.2− | 2006 11 17 | 703 | 0.1+ | 0.1+ | | | | |

**2006 VQ$_{112}$ = 2004 BU$_{125}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.14786 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28992002 | $\omega$ | 6.95975 | | +0.96869053 | | +0.24703369 |
| $a$ | 2.2609133 | $\Omega$ | 338.68864 | | −0.23094211 | | +0.85998024 |
| $e$ | 0.2523800 | $i$ | 3.90628 | | −0.09112843 | | +0.44655162 |
| $P$ | 3.40 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.1+ | 0.1− | 2006 11 13 | 691 | 0.1− | 0.4− | 2006 11 22 | 704 | 1.3+ | 0.9+ |
| 2004 01 16 | 691 | 0.4− | 0.1+ | 2006 11 13 | 691 | 0.1+ | 0.4− | 2006 11 22 | 704 | 0.6+ | 0.1+ |
| 2004 01 16 | 691 | 0.3+ | 0.0 | 2006 11 17 | 691 | 0.1− | 0.3+ | 2006 11 25 | 691 | 0.3− | 0.4− |
| 2004 01 27 | 691 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.4+ | 0.5+ | 2006 11 25 | 691 | 0.2+ | 0.3− |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1− | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2004 01 27 | 691 | 0.2+ | 0.2− | 2006 11 22 | 704 | 1.0− | 1.3+ | | | | |
| 2006 11 13 | 691 | 0.0 | 0.2− | 2006 11 22 | 704 | 1.4− | 0.9+ | | | | |

**2006 VW$_{112}$ = 2001 SM$_{337}$ = 2003 BJ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.62117 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22315026 | $\omega$ | 78.02414 | | +0.12809620 | | −0.99174303 |
| $a$ | 2.6919756 | $\Omega$ | 4.62929 | | +0.87801940 | | +0.11054617 |
| $e$ | 0.1280366 | $i$ | 4.32983 | | +0.46116516 | | +0.06500239 |
| $P$ | 4.42 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 291 | 0.4− | 0.2− | 2003 02 01 | 704 | 0.5+ | 0.3− | 2006 11 19 | 704 | 0.3+ | 0.9+ |
| 2001 09 20 | 291 | 0.2− | 0.1+ | 2003 02 01 | 704 | 0.5− | 0.7+ | 2006 11 19 | 704 | 0.2− | 0.7+ |
| 2001 09 20 | 291 | 0.1+ | 0.2− | 2003 02 01 | 704 | 0.8− | 1.5+ | 2006 11 22 | 704 | 0.3+ | 0.6− |
| 2001 09 21 | 704 | 0.3− | 0.4+ | 2003 02 01 | 704 | 0.6+ | 0.1+ | 2006 11 22 | 704 | 0.5+ | 1.2+ |
| 2001 09 21 | 704 | 0.1+ | 0.4+ | 2006 11 13 | 691 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.5− | 1.0+ |
| 2001 09 21 | 704 | 0.7+ | 0.5+ | 2006 11 13 | 691 | 1.2+ | 0.8+ | 2006 11 22 | 704 | 0.2− | 0.2+ |
| 2001 09 21 | 704 | 0.0 | 0.5− | 2006 11 13 | 691 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.5− |
| 2001 09 21 | 704 | 1.3+ | 0.7+ | 2006 11 17 | 691 | 0.2− | 0.3− | 2006 11 25 | 691 | 0.2− | 0.5− |
| 2003 01 27 | 699 | 0.8+ | 0.1− | 2006 11 17 | 691 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.0 | 0.3− |
| 2003 01 27 | 699 | 0.1− | 0.3− | 2006 11 17 | 691 | 0.0 | 0.1− | 2006 11 25 | 691 | 0.1− | 0.2− |
| 2003 01 27 | 699 | 0.1− | 1.3− | 2006 11 19 | 704 | 0.2+ | 0.3+ | | | | |
| 2003 01 27 | 699 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.5− | 0.7+ | | | | |

**2006 VT$_{113}$ = 2002 XB$_{44}$ = 2005 LG$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 87.96874 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24466437 | $\omega$ | 276.30046 | | +0.55897004 | | +0.82825401 |
| $a$ | 2.5317582 | $\Omega$ | 27.79839 | | −0.72351182 | | +0.51036097 |
| $e$ | 0.2219742 | $i$ | 4.83917 | | −0.40507178 | | +0.23135897 |
| $P$ | 4.03 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.0 | 1.2+ | 2005 06 10 | 428 | 0.6− | 0.6+ | 2006 11 19 | 704 | 0.6+ | 0.2− |
| 2002 12 06 | 704 | 0.3+ | 0.9+ | 2005 06 10 | 428 | 0.3− | 0.6+ | 2006 11 19 | 704 | 1.2+ | 1.8+ |
| 2002 12 06 | 704 | 0.5− | 1.5+ | 2005 06 16 | 428 | 0.2+ | 0.3− | 2006 11 19 | 704 | 0.1− | 0.7+ |
| 2002 12 06 | 704 | 0.7− | 1.6+ | 2005 06 16 | 428 | 0.8+ | 0.3− | 2006 11 19 | 704 | 0.4− | 0.3+ |
| 2002 12 10 | 644 | 0.2− | 0.1− | 2006 11 13 | G96 | 0.2− | 0.5− | 2006 11 19 | 704 | 0.1− | 0.5− |
| 2002 12 10 | 644 | 0.0 | 0.0 | 2006 11 13 | G96 | 0.3− | 0.3− | 2006 11 22 | 704 | 0.8+ | 0.5+ |
| 2002 12 10 | 644 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.2− | 0.2− | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2002 12 14 | 704 | (2.5+ | 1.5+) | 2006 11 13 | G96 | 0.6− | 0.0 | 2006 11 22 | 704 | 0.5− | 0.2− |
| 2002 12 14 | 704 | (3.2+ | 1.1+) | 2006 11 16 | 704 | 1.0− | 0.3+ | 2006 11 25 | 691 | 0.0 | 0.5− |
| 2002 12 14 | 704 | (5.8+ | 0.1+) | 2006 11 16 | 704 | 0.5+ | 0.8− | 2006 11 25 | 691 | 0.0 | 0.4− |
| 2005 01 21 | 809 | 0.6− | 0.3− | 2006 11 16 | 704 | 0.5− | 0.4− | 2006 11 25 | 691 | 0.1− | 0.4− |
| 2005 01 21 | 809 | 0.4− | 0.3− | 2006 11 16 | 704 | 0.0 | 0.0 | | | | |
| 2005 01 21 | 809 | 0.6+ | 0.0 | 2006 11 19 | 704 | 2.6+ | 0.1− | | | | |

**2006 VT$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 48.42386 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21875410 | $\omega$ | 87.08076 | | +0.84613440 | | +0.49557463 |
| $a$ | 2.7279218 | $\Omega$ | 243.13825 | | −0.53290561 | | +0.79237340 |
| $e$ | 0.2371970 | $i$ | 12.69958 | | +0.00825744 | | +0.35573892 |
| $P$ | 4.51 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 17 | 644 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.3− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.1− |
| 2001 08 17 | 644 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2001 08 17 | 644 | 0.0 | 0.3+ | 2006 11 14 | 691 | 0.0 | 0.1− | 2006 11 22 | 691 | 0.4− | 0.3− |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2001 09 18 | 645 | 0.0 | 0.0 | 2006 11 14 | 691 | 0.6+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2006 11 10 | 691 | 0.2+ | 0.5+ | 2006 11 18 | 691 | 0.3− | 0.1− | | | | |

**2006 VD$_{117}$ = 2001 SG$_{183}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 67.23511 | | | (2000.0) | | |
| $n$ | 0.22737185 | $\omega$ | 318.52800 | | +0.86485397 | +0.50196556 |
| $a$ | 2.6585506 | $\Omega$ | 11.34922 | | −0.44978441 | +0.78151895 |
| $e$ | 0.0751896 | $i$ | 2.22137 | | −0.22298338 | +0.37048443 |
| $P$ | 4.33 | $H$ | 16.9 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 04 24 | 691 | 0.0 | 0.2− | 2001 09 21 | 704 | 0.9− | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1− |
| 2000 04 24 | 691 | 0.3− | 0.2− | 2001 09 21 | 704 | 1.0− | 0.4+ | 2006 11 18 | 691 | 0.0 | 0.2+ |
| 2000 04 24 | 691 | 0.2+ | 0.0 | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2001 09 19 | 704 | 0.2− | 0.4+ | 2004 03 26 | 691 | 0.1+ | 0.6+ | 2006 11 22 | 691 | 0.3− | 0.4+ |
| 2001 09 19 | 704 | 0.3+ | 0.6+ | 2004 03 26 | 691 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2001 09 19 | 704 | 0.3+ | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.2− | 2006 11 22 | 691 | 0.3− | 0.2+ |
| 2001 09 21 | 704 | 0.0 | 0.4+ | 2006 11 14 | 691 | 0.1+ | 0.4− | | | | |
| 2001 09 21 | 704 | 0.3+ | 0.7+ | 2006 11 14 | 691 | 0.3+ | 0.5− | | | | |

**2006 VQ$_{117}$ = 1995 SQ$_{77}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 13.29034 | | | (2000.0) | | |
| $n$ | 0.27395899 | $\omega$ | 331.96085 | | +0.96657173 | −0.25511837 |
| $a$ | 2.3478968 | $\Omega$ | 42.84489 | | +0.24170985 | +0.87339935 |
| $e$ | 0.2076729 | $i$ | 2.15475 | | +0.08553032 | +0.41483513 |
| $P$ | 3.60 | $H$ | 18.9 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 19 | 691 | 0.9− | 1.4− | 2006 09 27 | G96 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.4+ | 0.2− |
| 1995 09 19 | 691 | 0.2+ | 0.4+ | 2006 09 27 | G96 | 0.1− | 0.1+ | 2006 11 14 | 691 | 0.0 | 0.3− |
| 1995 09 19 | 691 | 0.1+ | 0.4+ | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 11 18 | 691 | 0.2− | 0.2− |
| 1995 09 25 | 691 | 0.6+ | 0.1+ | 2006 09 27 | G96 | 0.7+ | 1.0− | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 1995 09 25 | 691 | 0.5+ | 0.2+ | 2006 10 28 | G96 | 0.7− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.0 |
| 1995 09 25 | 691 | 0.5+ | 0.1+ | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.1+ |
| 1995 09 30 | 691 | 0.3− | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 1995 09 30 | 691 | 0.4− | 0.2− | 2006 10 28 | G96 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.0 | 0.4+ |
| 1995 09 30 | 691 | 0.4− | 0.1+ | 2006 11 14 | 691 | 0.3− | 0.1+ | | | | |

**2006 VT$_{119}$ = 2006 VT$_{26}$ = 2001 TT$_{222}$ = 2004 HX$_{75}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 74.70216 | | | (2000.0) | | |
| $n$ | 0.21330937 | $\omega$ | 185.64764 | | +0.83611839 | +0.54849802 |
| $a$ | 2.7741468 | $\Omega$ | 141.08529 | | −0.50281659 | +0.77179114 |
| $e$ | 0.0715161 | $i$ | 0.68231 | | −0.21927497 | +0.32169607 |
| $P$ | 4.62 | $H$ | 16.6 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 05 27 | 691 | 0.3− | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.4+ | 2006 11 18 | 691 | 0.4− | 0.2+ |
| 1995 05 27 | 691 | (4.0+ | 2.9+) | 2005 07 27 | 644 | 0.5− | 0.8− | 2006 11 18 | 691 | 0.1− | 0.0 |
| 1995 05 27 | 691 | 0.0 | 0.0 | 2005 07 27 | 644 | 0.1− | 0.1− | 2006 11 18 | 691 | 0.1− | 0.4+ |
| 2001 10 14 | 291 | 0.2− | 0.1− | 2005 07 27 | 644 | 0.1− | 0.3− | 2006 11 22 | 691 | 0.3− | 0.4+ |
| 2001 10 14 | 291 | 0.0 | 0.4− | 2005 09 29 | G96 | 0.5+ | 0.1− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2001 10 14 | 291 | 0.3+ | 0.4− | 2005 09 29 | G96 | 0.4+ | 0.2+ | 2006 11 22 | 691 | 0.9+ | 0.4− |
| 2001 10 18 | 644 | 0.7+ | 0.8+ | 2005 09 29 | G96 | 0.2− | 0.5− | 2006 11 23 | G96 | 0.2− | 0.1− |
| 2001 10 18 | 644 | 0.5+ | 1.1+ | 2005 09 29 | G96 | 0.7+ | 0.6+ | 2006 11 23 | G96 | 0.0 | 0.0 |
| 2001 10 18 | 644 | 0.4+ | 1.0+ | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 23 | G96 | 0.1− | 0.0 |
| 2004 04 26 | 568 | 0.5+ | 0.2+ | 2006 09 27 | G96 | 0.2− | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1− |
| 2004 04 26 | 568 | 0.6+ | 0.1+ | 2006 09 27 | G96 | 0.5+ | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.2− |
| 2004 04 26 | 568 | 0.5+ | 0.1+ | 2006 09 27 | G96 | 0.3− | 0.7− | 2006 11 24 | G96 | 0.0 | 0.1− |
| 2004 04 27 | 568 | 0.3+ | 0.1+ | 2006 11 10 | 691 | 0.1− | 0.5+ | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 06 30 | 691 | 0.4− | 0.0 | 2006 11 10 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 06 30 | 691 | 0.0 | 0.1+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.1− |
| 2005 06 30 | 691 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.6− | 0.0 | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2005 07 11 | 691 | 0.1+ | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.2− | 2006 11 24 | G96 | 0.5+ | 0.0 |
| 2005 07 11 | 691 | 0.1+ | 0.1+ | 2006 11 14 | 691 | 0.3− | 0.0 | 2006 11 24 | G96 | 0.4+ | 0.1− |

**2006 VJ$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 179.52714 | | | (2000.0) | | |
| $n$ | 0.28653641 | $\omega$ | 324.35409 | | −0.80159858 | +0.58887281 |
| $a$ | 2.2786774 | $\Omega$ | 252.04762 | | −0.52027837 | −0.77219728 |
| $e$ | 0.0534755 | $i$ | 6.23317 | | −0.29453377 | −0.23862140 |
| $P$ | 3.44 | $H$ | 16.4 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 15 | 699 | 0.8+ | 0.1+ | 2004 01 16 | 644 | 0.4− | 0.4+ | 2006 10 27 | 703 | 0.5+ | 0.2− |
| 2001 04 15 | 699 | 0.4+ | 0.7− | 2004 01 16 | 644 | 0.3− | 0.4+ | 2006 11 09 | 644 | 0.1+ | 0.0 |
| 2001 04 15 | 699 | 0.5− | 1.5+ | 2004 01 16 | 644 | 0.5− | 0.8+ | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2001 04 15 | 699 | 0.8+ | 0.1− | 2005 01 17 | 809 | 0.2− | 0.5+ | 2006 11 09 | 644 | 0.4+ | 0.1+ |
| 2002 08 03 | 599 | 0.2+ | 0.3+ | 2005 01 17 | 809 | 0.1− | 0.3+ | 2006 11 14 | G96 | 0.2− | 0.5− |
| 2002 08 03 | 599 | 1.0− | 0.7+ | 2005 01 17 | 809 | 0.2− | 0.4+ | 2006 11 14 | G96 | 0.0 | 0.3− |
| 2002 08 03 | 599 | 0.0 | 0.4+ | 2006 10 04 | G96 | 0.4+ | 0.4+ | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 08 03 | 599 | 0.5+ | 0.4− | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.4− |
| 2002 08 16 | 644 | 0.4+ | 1.1+ | 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.1+ | 0.6+ |
| 2002 08 16 | 644 | 0.2+ | 1.0+ | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 19 | 704 | 0.7− | 0.5+ |
| 2002 08 16 | 644 | 0.1+ | 1.2+ | 2006 10 19 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.2− | 0.8+ |
| 2002 09 04 | 644 | 0.3− | 0.0 | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 19 | 704 | 0.3+ | 0.8+ |
| 2002 09 04 | 644 | 0.3− | 0.2+ | 2006 10 19 | G96 | 1.0− | 0.4− | 2006 11 19 | 704 | 0.4− | 0.8+ |
| 2002 09 04 | 644 | 0.1− | 0.1+ | 2006 10 19 | G96 | 0.3+ | 0.2+ | 2006 11 22 | 704 | 1.1+ | 0.4+ |
| 2002 09 13 | 644 | 0.3− | 1.0− | 2006 10 27 | 703 | 0.1− | 0.0 | 2006 11 22 | 704 | 0.2+ | 0.2− |
| 2002 09 13 | 644 | 0.6− | 0.9− | 2006 10 27 | 703 | 2.0− | 0.2+ | 2006 11 22 | 704 | 0.4+ | 0.4− |
| 2002 09 13 | 644 | 0.1+ | 0.7− | 2006 10 27 | 703 | 0.8− | 0.3+ | 2006 11 22 | 704 | 1.2+ | 0.2+ |

**2006 VK$_{120}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 17.92132 | | | (2000.0) | | |
| $n$ | 0.22384831 | $\omega$ | 111.05074 | | +0.96101093 | −0.26584681 |
| $a$ | 2.6863762 | $\Omega$ | 264.42866 | | +0.21674589 | +0.89502561 |
| $e$ | 0.0814862 | $i$ | 4.38224 | | +0.17169509 | +0.35812655 |
| $P$ | 4.40 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 12 08 | 691 | 0.2− | 0.4+ | 2006 10 19 | 703 | 0.3− | 1.3− | 2006 11 16 | 704 | 0.3− | 0.0 |
| 1993 12 08 | 691 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2001 08 23 | 699 | 0.7− | 0.1+ | 2006 10 19 | G96 | 0.1+ | 0.2− | 2006 11 16 | 704 | 0.4− | 0.4+ |
| 2001 08 23 | 699 | 0.3+ | 0.9+ | 2006 10 19 | 703 | 0.6+ | 0.4+ | 2006 11 16 | 704 | 0.3− | 0.2+ |
| 2001 08 23 | 699 | 0.1− | 0.9+ | 2006 10 19 | G96 | 0.1− | 0.3− | 2006 11 19 | 704 | 0.9+ | 0.1+ |
| 2001 08 23 | 699 | 0.1− | 0.3− | 2006 10 19 | G96 | 0.2+ | 0.2− | 2006 11 19 | 704 | 0.1+ | 0.2+ |
| 2006 10 04 | G96 | 0.1− | 0.6− | 2006 10 19 | 703 | (2.1− | 0.7+) | 2006 11 19 | 704 | 0.3− | 1.1+ |
| 2006 10 04 | G96 | 0.2+ | 0.7− | 2006 10 19 | 703 | 1.4− | 1.0+ | 2006 11 19 | 704 | 0.3+ | 0.5− |
| 2006 10 04 | G96 | 0.4− | 0.3− | 2006 10 27 | 703 | 0.4− | 0.1+ | 2006 11 22 | 704 | (2.3+ | 0.4−) |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 27 | 703 | 1.1+ | 0.2− | 2006 11 22 | 704 | (0.6− | 2.6−) |
| 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 14 | G96 | 0.1− | 0.3+ | 2006 11 22 | 704 | 1.1+ | 0.9− |
| 2006 10 04 | G96 | 0.8− | 0.5− | 2006 11 14 | G96 | 0.0 | 0.0 | 2006 11 22 | 704 | 1.2+ | 0.7− |
| 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 14 | G96 | 0.1+ | 0.1+ | | | | |
| 2006 10 04 | G96 | 0.1− | 0.4− | 2006 11 14 | G96 | 0.2+ | 0.2+ | | | | |

**2006 VZ$_{120}$ = 2004 GM$_{81}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 208.15800 | | | (2000.0) | | |
| $n$ | 0.23694362 | $\omega$ | 151.20374 | | −0.92170272 | +0.38417966 |
| $a$ | 2.5864616 | $\Omega$ | 51.48898 | | −0.36771839 | −0.82141637 |
| $e$ | 0.0838226 | $i$ | 3.92583 | | −0.12347988 | −0.42152241 |
| $P$ | 4.16 | $H$ | 16.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 13 | 691 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.2− | 0.1+ |
| 2004 04 13 | 691 | 0.2− | 0.1− | 2006 09 27 | G96 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.3− | 0.3+ |
| 2004 04 13 | 691 | 0.1− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 22 | 691 | 0.2− | 0.1+ |
| 2004 04 22 | 704 | 0.6+ | 0.2− | 2006 11 14 | 691 | 0.4+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2004 04 22 | 704 | 0.9+ | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.0 | 2006 11 22 | 691 | (2.4+ | 1.8−) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2004 04 22 | 704 | 0.4+ | 0.9+ | 2006 11 14 | 691 | 0.0 | 0.3− | |
| 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.0 | |

**2006 VD$_{121}$ = 2002 TG$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.46394 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26224863 | $\omega$ | 126.04547 | | +0.62602315 | −0.77454830 | |
| $a$ | 2.4172815 | $\Omega$ | 284.94503 | | +0.68199421 | +0.60001606 | |
| $e$ | 0.0900518 | $i$ | 5.36800 | | +0.37812553 | +0.20013908 | |
| $P$ | 3.76 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 24 | 691 | 0.4− | 0.0 | 2002 10 05 | 704 | 0.1− | 0.7− | 2006 11 19 | 704 | 0.4+ | 0.2+ |
| 1998 09 24 | 691 | 0.1+ | 0.1+ | 2002 10 05 | 704 | 0.7− | 0.6+ | 2006 11 19 | 704 | 0.0 | 0.6+ |
| 1998 09 24 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | 0.3− | 0.1+ | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2002 10 04 | 644 | 0.1− | 0.2− | 2006 11 14 | 703 | 0.2+ | 0.3+ | 2006 11 25 | G96 | 0.2− | 0.1− |
| 2002 10 04 | 644 | 0.2− | 0.2− | 2006 11 14 | 703 | 0.1− | 0.3+ | 2006 11 25 | G96 | 0.1− | 0.0 |
| 2002 10 04 | 644 | 0.1− | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.8− | 2006 11 25 | G96 | 0.0 | 0.1− |
| 2002 10 05 | 704 | 1.1+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.0 | | | | |
| 2002 10 05 | 704 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.2− | | | | |

**2006 VY$_{122}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 0.95500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22960461 | $\omega$ | 184.72237 | | +0.68388537 | −0.71714019 | |
| $a$ | 2.6412873 | $\Omega$ | 222.21708 | | +0.67575587 | +0.69196262 | |
| $e$ | 0.1819006 | $i$ | 11.52093 | | +0.27505418 | +0.08305230 | |
| $P$ | 4.29 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 01 | 608 | 0.0 | 0.7− | 2006 11 14 | 704 | 0.9+ | 0.7+ | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2002 12 01 | 608 | 0.2− | 1.0− | 2006 11 14 | 704 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1− | 0.4− |
| 2002 12 01 | 608 | 0.2− | 1.0− | 2006 11 14 | 704 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.1− | 0.5− |
| 2002 12 08 | 644 | 0.3+ | 0.2+ | 2006 11 17 | 704 | 0.2− | 0.3+ | 2006 11 25 | 704 | 0.8− | 0.2+ |
| 2002 12 08 | 644 | 0.5− | 0.4− | 2006 11 17 | 704 | 0.6− | 0.2+ | 2006 11 25 | 704 | 0.8+ | 0.7+ |
| 2002 12 08 | 644 | 0.0 | 0.1+ | 2006 11 17 | 704 | (1.8− | 0.4+) | 2006 11 25 | 704 | 0.3+ | 0.5− |
| 2004 04 16 | 691 | 0.5− | 0.1− | 2006 11 17 | 704 | 0.9− | 0.1− | 2006 11 25 | 704 | 1.4+ | 0.5− |
| 2004 04 16 | 691 | 0.0 | 0.1+ | 2006 11 17 | 704 | 0.2− | 0.3+ | 2006 11 25 | 703 | 0.1− | 0.6− |
| 2004 04 16 | 691 | 0.4+ | 0.2− | 2006 11 18 | 704 | 2.3+ | 0.4− | 2006 11 25 | 703 | 0.3− | 0.2− |
| 2004 05 13 | 691 | 0.2+ | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.6+ | 2006 11 25 | 703 | 0.5− | 0.1− |
| 2004 05 13 | 691 | 0.1− | 0.4+ | 2006 11 18 | 704 | 0.7− | 1.2+ | 2006 11 25 | 703 | 0.7− | 0.2+ |
| 2004 05 13 | 691 | 0.1+ | 0.5+ | 2006 11 18 | 704 | 0.8+ | 1.9+ | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 11 20 | 704 | 0.3+ | 0.6− | 2006 11 28 | 704 | 0.3+ | 0.0 |
| 2006 09 28 | G96 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.0 | 0.8+ | 2006 11 28 | 704 | 0.4+ | 0.1+ |
| 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 20 | 704 | 0.1+ | 0.8+ | 2006 11 28 | 704 | 0.2+ | 0.0 |
| 2006 10 21 | D35 | 0.1− | 0.2+ | 2006 11 20 | 704 | 0.2− | 1.8+ | 2006 11 28 | 704 | 0.2+ | 1.1− |
| 2006 10 21 | D35 | 0.1+ | 0.2− | 2006 11 20 | 704 | 0.5− | 1.1+ | 2006 11 30 | 683 | 0.4− | 1.0− |
| 2006 10 21 | D35 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.5− | 2006 11 30 | 683 | 1.6− | 0.2+ |

**2006 VL$_{123}$ = 2005 JY$_{116}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 42.39238 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28053704 | $\omega$ | 301.98379 | | +0.97230537 | +0.21528590 | |
| $a$ | 2.3110495 | $\Omega$ | 45.76402 | | −0.14747505 | +0.86709160 | |
| $e$ | 0.1607784 | $i$ | 7.29392 | | −0.18131015 | +0.44922615 | |
| $P$ | 3.51 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 13 | 644 | 0.0 | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2002 08 13 | 644 | 0.1+ | 0.1+ | 2006 10 20 | G96 | 0.3+ | 0.2− | 2006 11 22 | 691 | 0.2+ | 0.2− |
| 2002 08 13 | 644 | 0.1− | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2005 05 10 | G96 | 0.2− | 0.1+ | 2006 11 14 | 691 | 0.1+ | 0.1− | 2006 11 22 | 704 | 0.7− | 0.8− |
| 2005 05 10 | G96 | 0.4− | 0.0 | 2006 11 14 | 691 | 0.2− | 0.0 | 2006 11 22 | 704 | 0.1− | 0.1− |
| 2005 05 10 | G96 | 0.3− | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 11 22 | 704 | (0.2+ | 2.3−) |
| 2005 05 10 | G96 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.2− | 2006 11 22 | 704 | (0.6− | 1.7+) |
| 2005 05 16 | 691 | 0.2− | 0.4− | 2006 11 18 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 704 | 0.2− | 1.2+ |
| 2005 05 16 | 691 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 0.6+ | 0.2+ | 2006 11 27 | 704 | 0.4− | 0.9+ |
| 2005 05 16 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 1.1− | 0.5+ | 2006 11 27 | 704 | 0.2+ | 0.3− |
| 2006 10 20 | G96 | 0.5+ | 0.1− | 2006 11 19 | 704 | 0.1+ | 0.2+ | | | | |
| 2006 10 20 | G96 | 0.0 | 0.1− | 2006 11 19 | 704 | 0.1− | 0.0 | | | | |

**2006 VS$_{123}$ = 2001 QL$_{299}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.08706 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24046209 | $\omega$ | 20.86586 | | +0.84824403 | −0.52955192 | |
| $a$ | 2.5611694 | $\Omega$ | 11.11863 | | +0.48019771 | +0.76302917 | |
| $e$ | 0.0791704 | $i$ | 2.24013 | | +0.22336565 | +0.37062279 | |
| $P$ | 4.10 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.3− | 0.7+ | 2006 09 28 | G96 | 0.1− | 0.5− | 2006 11 22 | H07 | 0.4− | 0.5+ |
| 2001 08 19 | 807 | 0.1− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 11 22 | H07 | 0.1+ | 0.4+ |
| 2001 08 20 | 807 | 0.2− | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.1− | 2006 11 22 | H07 | 0.6+ | 0.1+ |
| 2001 08 20 | 807 | 0.1− | 0.5+ | 2006 09 28 | G96 | 0.2− | 0.1+ | 2006 11 22 | H07 | 0.6− | 0.4+ |
| 2004 03 29 | 691 | 0.3+ | 0.2+ | 2006 11 14 | 691 | 0.0 | 0.3+ | 2006 11 23 | H07 | 0.3− | 0.2− |
| 2004 03 29 | 691 | 0.2+ | 0.0 | 2006 11 14 | 691 | 0.0 | 0.2+ | 2006 11 23 | H07 | 0.3− | 0.5− |
| 2004 03 29 | 691 | 0.2+ | 0.1− | 2006 11 14 | 691 | 0.3+ | 0.5+ | 2006 11 23 | H07 | 0.4+ | 0.5− |
| 2004 04 23 | 291 | 0.1+ | 0.1+ | 2006 11 18 | 691 | 0.1+ | 0.0 | 2006 11 23 | H07 | 0.1− | 0.3− |
| 2004 04 23 | 291 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.3− | 0.2− | | | | |
| 2004 04 23 | 291 | 0.5− | 0.2+ | 2006 11 18 | 691 | 0.1− | 0.2+ | | | | |

**2006 VO$_{124}$ = 2005 JM$_{131}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.29737 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.31144321 | $\omega$ | 232.91027 | | +0.31006166 | +0.94600863 | |
| $a$ | 2.1555105 | $\Omega$ | 55.41444 | | −0.83179087 | +0.31806786 | |
| $e$ | 0.0916115 | $i$ | 6.59092 | | −0.46041906 | +0.06245412 | |
| $P$ | 3.16 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 05 13 | G96 | 0.0 | 0.0 | 2005 05 16 | 644 | 0.1− | 0.3+ | 2006 11 18 | 691 | 0.1+ | 0.1+ |
| 2005 05 13 | G96 | 0.0 | 0.1− | 2006 11 14 | 691 | 0.1+ | 0.2+ | 2006 11 22 | 691 | 0.0 | 0.0 |
| 2005 05 13 | G96 | 0.1+ | 0.3− | 2006 11 14 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1− |
| 2005 05 13 | G96 | 0.1− | 0.2− | 2006 11 14 | 691 | 0.2+ | 0.1− | 2006 11 22 | 691 | 0.1− | 0.1+ |
| 2005 05 16 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− | | | | |
| 2005 05 16 | 644 | 0.0 | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.2− | | | | |

**2006 VE$_{126}$ = 2001 YG$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 301.95695 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18034889 | $\omega$ | 230.56629 | | −0.12396070 | −0.98690046 | |
| $a$ | 3.1026091 | $\Omega$ | 226.88190 | | +0.94832890 | −0.08719812 | |
| $e$ | 0.1367184 | $i$ | 8.13195 | | +0.29207197 | −0.13573495 | |
| $P$ | 5.47 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2+ | 1.0+ | 2006 09 25 | 691 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2001 12 18 | 704 | 0.2− | 0.2− | 2006 09 25 | 691 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.8− | 0.6+ | 2006 10 03 | 691 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2001 12 20 | 704 | 0.3+ | 1.0− | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2001 12 20 | 704 | 0.5− | 0.1+ | 2006 10 03 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 12 20 | 704 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.0 | 0.7+ |
| 2001 12 20 | 704 | 0.5+ | 0.5− | 2006 10 21 | 644 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.2− | 0.3+ |
| 2001 12 20 | 704 | 0.6+ | 0.2+ | 2006 10 21 | 644 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2006 09 25 | 691 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.3+ | 0.5− | | | | |

**2006 VY$_{126}$ = 2006 VB$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 35.81407 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22143353 | $\omega$ | 333.33488 | | +0.96846339 | | +0.24868917 |
| $a$ | 2.7058713 | $\Omega$ | 12.29404 | | −0.21390845 | | +0.86126995 |
| $e$ | 0.2175733 | $i$ | 4.10519 | | −0.12775692 | | +0.44313404 |
| $P$ | 4.45 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 11 08 | 910 | 0.0 | 0.2− | 2001 08 23 | 699 | 1.8− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 1997 11 08 | 910 | 0.0 | 0.3− | 2004 03 15 | 691 | 0.0 | 0.6+ | 2006 11 15 | 704 | 0.2− | 0.7− |
| 1997 11 08 | 910 | 0.2+ | 0.3− | 2004 03 15 | 691 | 0.4+ | 0.2− | 2006 11 15 | 704 | 0.9+ | 0.6− |
| 2001 07 27 | 699 | 0.3− | 1.2+ | 2004 03 15 | 691 | 0.1− | 0.2+ | 2006 11 15 | 704 | 0.6− | 0.5− |
| 2001 07 27 | 699 | 0.5+ | 0.0 | 2006 10 04 | G96 | 0.0 | 0.2− | 2006 11 15 | 704 | 0.2+ | 0.7+ |
| 2001 07 27 | 699 | 0.2− | 0.1+ | 2006 10 04 | G96 | 0.3− | 0.1− | 2006 11 16 | 704 | 0.1− | 0.2+ |
| 2001 07 27 | 699 | 0.8+ | 0.5+ | 2006 10 04 | G96 | 0.2− | 0.1− | 2006 11 16 | 704 | 0.0 | 0.6+ |
| 2001 08 23 | 699 | 0.9+ | 0.5+ | 2006 10 04 | G96 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.2− | 0.0 |
| 2001 08 23 | 699 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.6+ | 2006 11 16 | 704 | 0.2− | 0.6− |
| 2001 08 23 | 699 | 0.5− | 0.6− | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 16 | 704 | 0.0 | 0.2+ |

**2006 VW$_{127}$ = 1995 EC$_{7}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 142.98274 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30598674 | $\omega$ | 259.11018 | | −0.29816671 | | +0.95446870 |
| $a$ | 2.1810602 | $\Omega$ | 353.51977 | | −0.84049200 | | −0.26714465 |
| $e$ | 0.1486062 | $i$ | 4.71648 | | −0.45240448 | | −0.13275256 |
| $P$ | 3.22 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 12 | 691 | 0.1+ | 0.0 | 1995 03 08 | 691 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1993 10 12 | 691 | 0.1− | 0.3− | 1995 03 08 | 691 | 0.3− | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.4+ |
| 1993 10 12 | 691 | 0.0 | 0.2+ | 1995 03 27 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.2− | 0.5− |
| 1995 03 02 | 691 | 0.2+ | 0.4+ | 1995 03 27 | 691 | 0.1− | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.0 |
| 1995 03 02 | 691 | 0.1+ | 0.1+ | 1995 03 27 | 691 | 0.0 | 0.2− | 2006 11 22 | 691 | 0.4+ | 0.3+ |
| 1995 03 02 | 691 | 0.3+ | 0.2− | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.2+ | 0.4+ |
| 1995 03 08 | 691 | 0.0 | 0.6− | 2006 11 15 | 691 | 0.3− | 0.1− | 2006 11 22 | 691 | 0.1− | 0.5− |

**2006 VA$_{128}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 80.22113 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25547536 | $\omega$ | 286.53191 | | +0.60646556 | | +0.79344543 |
| $a$ | 2.4598202 | $\Omega$ | 21.05837 | | −0.66399000 | | +0.54096938 |
| $e$ | 0.1462125 | $i$ | 8.22728 | | −0.43739777 | | +0.27892021 |
| $P$ | 3.86 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 31 | 699 | 1.7− | 1.1− | 2006 11 15 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2002 10 31 | 699 | 0.1+ | 0.9+ | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.1− | 0.1− |
| 2002 10 31 | 699 | 0.5+ | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 10 31 | 699 | 1.1+ | 0.2− | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 11 21 | G96 | 0.3+ | 0.0 |
| 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 21 | G96 | 0.0 | 0.2− | 2006 11 21 | G96 | 0.1− | 0.0 |
| 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 21 | G96 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.2− |

**2006 VN$_{128}$ = 2001 XJ$_{263}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.94286 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19483358 | $\omega$ | 41.84106 | | +0.82259651 | | +0.55940970 |
| $a$ | 2.9468646 | $\Omega$ | 283.86703 | | −0.54559574 | | +0.72597531 |
| $e$ | 0.1954038 | $i$ | 6.02835 | | −0.16018823 | | +0.40002581 |
| $P$ | 5.06 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 11 | 691 | 0.3+ | 0.0 | 2006 11 14 | 703 | (0.4− | 2.0−) | 2006 11 17 | 691 | 0.2+ | 0.0 |
| 2001 11 11 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | (2.6+ | 0.6−) | 2006 11 17 | 691 | 0.2+ | 0.1+ |
| 2001 11 11 | 691 | 0.1− | 0.1− | 2006 11 14 | 703 | 0.8− | 0.2− | 2006 11 17 | 691 | 0.0 | 0.0 |
| 2001 12 14 | 644 | 0.3− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2001 12 14 | 644 | 0.4− | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2001 12 14 | 644 | 0.2− | 0.1+ | 2006 11 15 | 691 | 1.3− | 0.7− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2001 12 15 | 704 | 0.3− | 0.6− | 2006 11 16 | 704 | 1.3+ | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2001 12 15 | 704 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.3+ | 0.1+ | 2006 11 22 | 691 | 0.1− | 0.0 |
| 2001 12 15 | 704 | 0.3+ | 0.9+ | 2006 11 16 | 704 | (2.2+ | 0.2+) | 2006 11 22 | 691 | 0.2+ | 0.1− |
| 2006 11 14 | 703 | (2.4− | 4.0−) | 2006 11 16 | 704 | 0.7+ | 0.8+ | | | | |

**2006 VE$_{129}$ = 2001 XC$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 28.74000 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18992666 | $\omega$ | 101.17000 | | +0.97455119 | | +0.10845897 |
| $a$ | 2.9974050 | $\Omega$ | 252.83076 | | −0.17035789 | | +0.92716163 |
| $e$ | 0.2358630 | $i$ | 11.84883 | | +0.14569892 | | +0.35861953 |
| $P$ | 5.19 | $H$ | 15.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 10 | 704 | 0.2+ | 0.1+ | 2006 11 11 | 644 | 0.4+ | 0.1− | 2006 11 15 | 704 | 0.6+ | 1.2+ |
| 2001 12 10 | 704 | 0.6+ | 0.0 | 2006 11 11 | 644 | 0.2+ | 0.1− | 2006 11 19 | 704 | 1.0+ | 0.4− |
| 2001 12 10 | 704 | 0.5+ | 0.3− | 2006 11 11 | 644 | 0.3+ | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.2+ |
| 2001 12 14 | 704 | 0.5− | 0.2+ | 2006 11 14 | 703 | (3.9+ | 3.7+) | 2006 11 19 | 704 | 0.2− | 0.3− |
| 2001 12 14 | 704 | 0.4− | 0.0 | 2006 11 14 | 703 | 0.3+ | 0.2− | 2006 11 19 | 704 | 0.4+ | 0.2− |
| 2001 12 14 | 704 | 0.3− | 0.1− | 2006 11 14 | 703 | 0.5− | 0.6− | 2006 11 22 | 704 | 0.6− | 0.3+ |
| 2001 12 14 | 704 | (2.2− | 0.0 ) | 2006 11 14 | 703 | 0.8− | 1.2− | 2006 11 22 | 704 | 0.3− | 0.8+ |
| 2006 10 22 | 644 | 0.1− | 0.3+ | 2006 11 15 | 704 | 0.2+ | 0.5− | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2006 10 22 | 644 | 0.4− | 0.1+ | 2006 11 15 | 704 | 0.3− | 1.1+ | 2006 11 22 | 704 | 0.5− | 0.7− |
| 2006 10 22 | 644 | 0.1+ | 0.2− | 2006 11 15 | 704 | 0.2+ | 0.4+ | 2006 11 22 | 704 | 0.5− | 0.2+ |

**2006 VJ$_{129}$ = 1995 SQ$_{82}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 334.83821 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27178664 | $\omega$ | 48.00548 | | +0.25490853 | | −0.96605808 |
| $a$ | 2.3603912 | $\Omega$ | 27.31066 | | +0.85800681 | | +0.20600290 |
| $e$ | 0.2047895 | $i$ | 5.23642 | | +0.44592147 | | +0.15586725 |
| $P$ | 3.63 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 09 27 | 691 | 0.5+ | 0.3+ | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 19 | 704 | 0.2− | 0.3− |
| 1995 09 27 | 691 | 0.6+ | 0.2+ | 2006 11 15 | 704 | 0.9− | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 1995 09 27 | 691 | 0.4+ | 0.1+ | 2006 11 15 | 704 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.1− | 0.3+ |
| 1995 09 29 | 691 | 0.5− | 0.1− | 2006 11 15 | 704 | 0.7− | 1.0+ | 2006 11 19 | 704 | 0.2+ | 0.4+ |
| 1995 09 29 | 691 | 0.6− | 0.0 | 2006 11 15 | 704 | 0.3+ | 1.3+ | 2006 11 19 | 704 | 0.3− | 0.7− |
| 1995 09 29 | 691 | 0.6− | 0.0 | 2006 11 16 | 704 | 1.0+ | 0.6+ | 2006 11 21 | G96 | 0.3− | 0.0 |
| 2000 01 07 | 691 | 0.1− | 0.4− | 2006 11 16 | 704 | 0.7− | 1.4+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 2000 01 07 | 691 | 0.2− | 0.2+ | 2006 11 16 | 704 | 0.6− | 1.3− | 2006 11 21 | G96 | 0.0 | 0.0 |
| 2000 01 07 | 691 | 0.0 | 0.2− | 2006 11 16 | 704 | 0.0 | 1.2+ | 2006 11 21 | G96 | 0.0 | 0.1− |
| 2004 04 12 | 691 | 0.1− | 0.7+ | 2006 11 17 | 704 | 0.1+ | 0.1+ | 2006 11 22 | 704 | 0.1+ | 0.2− |
| 2004 04 12 | 691 | 0.1+ | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.7+ | 2006 11 22 | 704 | 1.0+ | 1.0− |
| 2004 04 12 | 691 | 0.5+ | 0.3+ | 2006 11 17 | 704 | 0.4+ | 0.1− | 2006 11 22 | 704 | 0.3+ | 0.4+ |
| 2006 09 30 | G96 | 0.1− | 0.2− | 2006 11 17 | 704 | 0.3− | 0.2− | 2006 11 22 | 704 | 1.3+ | 0.7− |
| 2006 09 30 | G96 | 0.2− | 0.1− | 2006 11 17 | 704 | 0.8− | 1.1− | 2006 11 22 | 704 | 0.5+ | 0.1+ |
| 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.0 | 0.1+ | 2006 11 27 | 704 | 0.1− | 0.4+ |
| 2006 09 30 | G96 | 0.3− | 0.3− | 2006 11 18 | 704 | 0.3− | 0.4+ | 2006 11 27 | 704 | 0.2− | 0.4+ |
| 2006 10 20 | G96 | 0.3− | 0.1− | 2006 11 18 | 704 | 0.3+ | 0.3− | 2006 11 27 | 704 | 0.4+ | 0.1+ |
| 2006 10 20 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.2+ | 0.7− | 2006 11 27 | 704 | 0.0 | 0.0 |
| 2006 10 20 | G96 | 0.1− | 0.1− | 2006 11 18 | 704 | 0.3− | 0.5− | | | | |

**2006 VM$_{129}$ = 2001 YB$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 184.00627 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18304799 | $\omega$ | 309.54305 | | −0.79947989 | | +0.58263411 |
| $a$ | 3.0720344 | $\Omega$ | 266.57747 | | −0.49637706 | | −0.77783324 |
| $e$ | 0.0513168 | $i$ | 8.42090 | | −0.33829234 | | −0.23561183 |
| $P$ | 5.38 | $H$ | 14.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.7+ | 0.6+ | 2003 03 10 | 699 | 0.0 | 0.5− | 2006 11 14 | 703 | 0.1+ | 0.6− |
| 2001 12 18 | 704 | 0.4− | 1.2+ | 2005 07 31 | 644 | 0.1+ | 0.8+ | 2006 11 14 | 703 | 0.1+ | 0.7− |
| 2001 12 18 | 704 | 0.1+ | 0.6+ | 2005 07 31 | 644 | 0.3− | 0.4+ | 2006 11 15 | 704 | (0.1− | 1.8−) |
| 2001 12 18 | 704 | (0.5+ | 2.3+) | 2005 07 31 | 644 | 0.6− | 0.7+ | 2006 11 15 | 704 | 0.2− | 0.6− |
| 2001 12 18 | 704 | (0.1− | 1.6+) | 2006 10 19 | 703 | 0.1− | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.7− |
| 2001 12 19 | 704 | 0.6+ | 0.6+ | 2006 10 19 | 703 | 0.1− | 0.5− | 2006 11 19 | 704 | 1.4+ | 0.2+ |
| 2001 12 19 | 704 | 0.7− | 0.5+ | 2006 10 19 | 703 | 0.6− | 0.1− | 2006 11 19 | 704 | (1.9+ | 2.6+) |
| 2001 12 19 | 704 | 0.0 | 0.4+ | 2006 10 19 | 703 | 0.1− | 0.6− | 2006 11 19 | 704 | 0.1− | 0.0 |
| 2001 12 19 | 704 | 0.2− | 0.7− | 2006 11 09 | 644 | 0.1+ | 0.0 | 2006 11 19 | 704 | 0.7+ | 0.9+ |
| 2001 12 19 | 704 | 0.1− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.4− | 2006 11 22 | 703 | 0.8− | 0.3+ |
| 2003 03 10 | 699 | 0.2+ | 1.0+ | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 22 | 703 | 0.2− | 0.3− |
| 2003 03 10 | 699 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.2+ | 0.2+ | 2006 11 22 | 703 | 0.7− | 0.3− |
| 2003 03 10 | 699 | (2.1+ | 0.3−) | 2006 11 14 | 703 | (1.7− | 0.7+) | 2006 11 22 | 703 | 0.4+ | 0.1− |

## 2006 VU$_{129}$ = 2000 SG$_{216}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 69.25929 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17970243 | $\omega$ | 240.56508 | | +0.76100786 | | +0.64797848 |
| $a$ | 3.1100455 | $\Omega$ | 79.02690 | | −0.58354973 | | +0.70492670 |
| $e$ | 0.1669073 | $i$ | 1.83751 | | −0.28343737 | | +0.28844797 |
| $P$ | 5.48 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.2− | 0.4+ | 2000 10 01 | 704 | 1.0+ | 0.3+ | 2005 07 16 | 291 | 0.4− | 0.1+ |
| 1993 04 21 | 691 | 0.1+ | 0.4+ | 2000 10 01 | 704 | 0.1− | 0.6− | 2005 11 06 | G96 | 0.7− | 0.1+ |
| 1993 04 21 | 691 | 0.5− | 0.2+ | 2000 10 02 | 684 | 0.3+ | 0.5− | 2005 11 06 | G96 | 0.4− | 0.1+ |
| 1995 11 14 | 691 | (2.4+ | 5.4−) | 2000 10 02 | 684 | 0.3− | 0.8− | 2005 11 06 | G96 | 0.2− | 0.3− |
| 1995 11 14 | 691 | 0.5− | 0.1− | 2000 10 03 | 684 | 0.2− | 0.3− | 2005 11 06 | G96 | 0.5− | 0.3− |
| 1995 11 14 | 691 | 0.1− | 0.1+ | 2000 10 03 | 684 | 0.3− | 0.2− | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 2000 08 31 | 691 | 0.7+ | 0.1+ | 2003 01 28 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.0 |
| 2000 08 31 | 691 | 0.9+ | 0.2+ | 2003 01 28 | 645 | 0.1− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1+ |
| 2000 08 31 | 691 | 1.0+ | 0.1− | 2004 04 25 | 291 | 0.4+ | 0.5+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2000 09 26 | 704 | 0.2− | 0.9+ | 2004 04 25 | 291 | 0.5+ | 0.2+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2000 09 26 | 704 | 0.5− | 0.4+ | 2004 04 25 | 291 | 0.6+ | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2000 09 26 | 704 | 0.5− | 1.2+ | 2004 05 21 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2000 09 26 | 704 | 0.5+ | 0.8− | 2004 05 21 | 691 | 0.5+ | 0.4− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2000 10 01 | 704 | 0.5− | 1.0+ | 2004 05 21 | 691 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.7− | 0.3+ |
| 2000 10 01 | 704 | 0.2− | 0.0 | 2005 07 16 | 291 | 0.6− | 0.1+ | | | | |
| 2000 10 01 | 704 | 0.6− | 1.8+ | 2005 07 16 | 291 | 0.5− | 0.2+ | | | | |

## 2006 VX$_{130}$ = 2004 FY$_{151}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 75.46666 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24352124 | $\omega$ | 184.40775 | | +0.69504349 | | +0.71531783 |
| $a$ | 2.5396751 | $\Omega$ | 129.64380 | | −0.65673421 | | +0.67261335 |
| $e$ | 0.1469249 | $i$ | 5.39157 | | −0.29259993 | | +0.18950380 |
| $P$ | 4.05 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 24 | 644 | 0.1− | 0.2+ | 2004 03 17 | 691 | 0.1+ | 0.1+ | 2006 11 19 | 704 | 0.7+ | 0.8− |
| 2002 11 24 | 644 | 0.0 | 0.2+ | 2004 03 26 | 691 | 0.7− | 0.3− | 2006 11 19 | 704 | 0.0 | 0.0 |
| 2002 11 24 | 644 | 0.1− | 0.7+ | 2004 03 26 | 691 | 0.1− | 0.3+ | 2006 11 19 | 704 | 0.1− | 0.3− |
| 2004 02 29 | 691 | 0.2+ | 0.1+ | 2004 03 26 | 691 | 0.1− | 0.4+ | 2006 11 22 | G96 | 0.1+ | 0.5− |
| 2004 02 29 | 691 | 0.2+ | 0.1− | 2006 11 15 | 703 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2004 02 29 | 691 | 0.2+ | 0.0 | 2006 11 15 | 703 | 0.3+ | 0.2− | 2006 11 22 | G96 | 0.3− | 0.1− |
| 2004 03 17 | 691 | 0.3+ | 0.1+ | 2006 11 15 | 703 | 0.0 | 1.0+ | 2006 11 22 | G96 | 0.1+ | 0.4− |
| 2004 03 17 | 691 | 0.1− | 0.6− | 2006 11 15 | 703 | 0.4− | 0.3+ | | | | |

## 2006 VY$_{130}$ = 1994 FH

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 346.55907 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21551960 | $\omega$ | 216.45940 | | +0.46486393 | | −0.88341017 |
| $a$ | 2.7551476 | $\Omega$ | 205.99281 | | +0.84084702 | | +0.46138722 |
| $e$ | 0.2114779 | $i$ | 7.74468 | | +0.27726848 | | +0.08190422 |
| $P$ | 4.57 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 03 16 | 691 | 0.0 | 0.3+ | 2006 11 17 | 704 | 0.0 | 0.8+ | 2006 11 22 | G96 | 0.3+ | 0.3− |
| 1994 03 16 | 691 | 0.8− | 0.4+ | 2006 11 17 | 704 | 0.0 | 0.8+ | 2006 11 22 | G96 | 0.2− | 1.3− |
| 1994 03 16 | 691 | 0.3+ | 0.3− | 2006 11 17 | 704 | 0.4+ | 0.5− | 2006 11 22 | 683 | (2.6+ | 2.7−) |
| 1994 03 18 | 691 | 0.3+ | 0.2− | 2006 11 17 | 704 | 0.8− | 0.1+ | 2006 11 22 | 683 | (2.4+ | 2.2−) |
| 1994 03 18 | 691 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.3− | 0.0 | 2006 11 22 | 683 | (1.6+ | 1.1−) |
| 2006 10 22 | G96 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.4− | 0.2− | 2006 11 25 | 683 | 0.3+ | 1.1− |
| 2006 10 22 | G96 | 0.2+ | 0.2− | 2006 11 20 | 691 | 0.4− | 0.1− | 2006 11 25 | 683 | 0.4+ | 1.5− |
| 2006 10 22 | G96 | 0.0 | 0.3− | 2006 11 20 | 704 | 0.6+ | 0.4+ | 2006 11 25 | 683 | 0.2+ | 1.2− |
| 2006 10 22 | G96 | 0.2− | 0.3− | 2006 11 20 | 704 | 0.9+ | 0.1+ | 2006 11 28 | 704 | 0.4+ | 1.1+ |
| 2006 11 15 | 703 | 0.3+ | 1.2+ | 2006 11 20 | 704 | 0.2− | 0.3− | 2006 11 28 | 704 | 0.7+ | 0.9+ |
| 2006 11 15 | 703 | 0.1+ | 0.2+ | 2006 11 20 | 704 | 0.3+ | 0.3+ | 2006 11 28 | 704 | 0.3+ | 0.0 |
| 2006 11 15 | 703 | 0.6+ | 0.0 | 2006 11 20 | 704 | 0.8− | 0.2− | 2006 11 28 | 704 | 0.4− | 0.7+ |
| 2006 11 15 | 703 | 0.1+ | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.6− | 2006 11 28 | 704 | 0.6+ | 1.1+ |
| 2006 11 17 | 704 | 0.3+ | 1.1+ | 2006 11 22 | G96 | 0.1+ | 0.4− | | | | |

## 2006 VN$_{131}$ = 1998 QS$_{102}$ = 2005 JX$_{89}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 54.74430 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25852753 | $\omega$ | 236.18333 | | +0.82074853 | | +0.57028027 |
| $a$ | 2.4404216 | $\Omega$ | 89.02452 | | −0.51228891 | | +0.76098218 |
| $e$ | 0.2264500 | $i$ | 1.94556 | | −0.25284763 | | +0.30933241 |
| $P$ | 3.81 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 08 26 | 809 | 1.2+ | 1.0+ | 2005 05 12 | G96 | 0.2+ | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− |
| 1998 08 26 | 809 | 0.3+ | 0.6− | 2005 05 12 | G96 | 0.3+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.3− |
| 1998 08 26 | 809 | 0.7+ | 0.7+ | 2005 06 13 | G96 | 0.1− | 0.2+ | 2006 11 15 | 691 | 0.2+ | 0.0 |
| 1998 08 27 | 809 | 1.3− | 0.1− | 2005 06 13 | G96 | 0.3− | 0.6+ | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 1998 08 27 | 809 | 1.3− | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.5+ | 2006 11 15 | 691 | 0.1+ | 0.3+ |
| 1998 08 27 | 809 | 0.2− | 0.0 | 2005 06 13 | G96 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2005 05 11 | G96 | 0.5+ | 0.2+ | 2006 10 21 | G96 | 0.1− | 0.6− | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2005 05 11 | G96 | 0.2+ | 0.2+ | 2006 10 21 | G96 | 0.4+ | 0.2− | 2006 11 19 | 691 | 0.0 | 0.0 |
| 2005 05 11 | G96 | 0.1− | 0.6+ | 2006 10 21 | G96 | 0.1− | 0.7− | 2006 11 27 | 691 | 0.3− | 0.4+ |
| 2005 05 11 | G96 | 0.2+ | 0.3+ | 2006 10 21 | G96 | 0.5− | 1.6− | 2006 11 27 | 691 | 0.1− | 0.5+ |
| 2005 05 12 | G96 | 0.1− | 0.2− | 2006 10 31 | G96 | 0.0 | 0.6− | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2005 05 12 | G96 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.0 | 0.9− | | | | |

## 2006 VB$_{132}$ = 2000 GH$_{59}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 267.31224 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25224827 | $\omega$ | 55.60602 | | −0.93912206 | | −0.34257393 |
| $a$ | 2.4807552 | $\Omega$ | 104.34789 | | +0.30564207 | | −0.86795590 |
| $e$ | 0.1722415 | $i$ | 1.55689 | | +0.15694801 | | −0.35957706 |
| $P$ | 3.91 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 10 17 | 691 | 0.4+ | 0.2+ | 2000 04 30 | 691 | 0.3− | 0.4− | 2006 11 15 | 691 | 0.5+ | 0.2+ |
| 1998 10 17 | 691 | 0.6− | 0.6− | 2000 04 30 | 691 | 0.4− | 0.1− | 2006 11 15 | 691 | 0.1− | 0.1+ |
| 1998 10 17 | 691 | 0.3+ | 0.2+ | 2000 04 30 | 691 | 0.5− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.1+ |
| 2000 04 05 | 704 | 0.4+ | 0.3− | 2004 05 09 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.2+ | 0.1+ |
| 2000 04 05 | 704 | 0.6+ | 0.0 | 2004 05 09 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.5− | 0.2+ |
| 2000 04 05 | 704 | 0.2− | 0.0 | 2004 05 09 | 691 | 0.0 | 0.2+ | 2006 11 27 | 703 | 0.7− | 0.4− |
| 2000 04 05 | 704 | 0.6+ | 0.6− | 2006 10 21 | G96 | 0.9+ | 0.6− | 2006 11 27 | 703 | (1.7+ | 0.4−) |
| 2000 04 05 | 704 | 0.0 | 0.7+ | 2006 10 21 | G96 | 0.3+ | 0.5− | 2006 11 27 | 703 | 1.1− | 1.1− |
| 2000 04 06 | 704 | 0.3+ | 0.4− | 2006 10 21 | G96 | 0.1+ | 0.2− | 2006 11 27 | 703 | 0.6− | 0.2+ |

2000 04 06 704 0.7+ 0.5+ 2006 10 21 G96 0.5+ 0.0
2000 04 06 704 1.4+ 0.2+ 2006 11 15 691 0.1+ 0.2+

### 2006 VK$_{132}$ = 2004 GM$_{69}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 133.87767 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21093387 | $\omega$ | 181.27215 | | +0.01855021 | | +0.99597778 |
| $a$ | 2.7949358 | $\Omega$ | 89.79565 | | −0.91654831 | | +0.05197098 |
| $e$ | 0.0613513 | $i$ | 5.02899 | | −0.39949354 | | −0.07298820 |
| $P$ | 4.67 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

2004 04 13 691 0.1− 0.2+ 2004 04 20 691 0.1+ 0.1− 2006 11 19 691 0.6+ 0.2−
2004 04 13 691 0.4+ 0.3− 2006 11 15 691 0.0 0.2− 2006 11 19 691 0.7− 0.0
2004 04 13 691 0.4− 0.1− 2006 11 15 691 0.1+ 0.1− 2006 11 27 691 0.0 0.1+
2004 04 20 691 0.1− 0.2+ 2006 11 15 691 0.1− 0.4+ 2006 11 27 691 0.2− 0.0
2004 04 20 691 0.1+ 0.1+ 2006 11 19 691 0.1+ 0.1+ 2006 11 27 691 0.1+ 0.0

### 2006 VW$_{132}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 279.01259 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27587950 | $\omega$ | 274.41208 | | −0.65399280 | | −0.75401885 |
| $a$ | 2.3369877 | $\Omega$ | 216.66932 | | +0.72837226 | | −0.60574460 |
| $e$ | 0.0659253 | $i$ | 5.88473 | | +0.20437041 | | −0.25402568 |
| $P$ | 3.57 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

2001 05 22 691 0.0 0.3+ 2006 09 28 G96 0.1− 0.8− 2006 11 19 691 0.3+ 0.2+
2001 05 22 691 0.1− 0.3+ 2006 09 28 G96 0.2+ 0.7− 2006 11 19 691 0.2+ 0.5+
2001 05 22 691 0.1+ 0.1+ 2006 09 28 G96 0.3+ 0.6− 2006 11 19 691 0.2+ 0.5+
2004 02 24 097 0.6+ 0.9+ 2006 09 28 G96 0.0 0.6− 2006 11 24 691 0.4− 0.2+
2005 06 04 691 0.2− 0.3+ 2006 11 15 691 0.1+ 0.0 2006 11 24 691 0.3− 0.3+
2005 06 04 691 0.1− 0.4+ 2006 11 15 691 0.0 0.1− 2006 11 24 691 0.3− 0.1−
2005 06 04 691 0.1+ 0.0 2006 11 15 691 0.0 0.1+

### 2006 VP$_{133}$ = 2003 GD$_{15}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 325.30895 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21922471 | $\omega$ | 67.42053 | | −0.23425687 | | −0.96758488 |
| $a$ | 2.7240164 | $\Omega$ | 36.53714 | | +0.82357751 | | −0.24908565 |
| $e$ | 0.2405747 | $i$ | 9.11934 | | +0.51656927 | | −0.04166348 |
| $P$ | 4.50 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

2003 04 04 691 0.1+ 0.0 2006 11 15 704 1.3+ 0.7+ 2006 11 19 704 0.2+ 0.1+
2003 04 04 691 0.5− 0.2+ 2006 11 15 704 0.7+ 0.3− 2006 11 19 704 1.0− 0.4−
2003 04 04 691 0.0 0.3− 2006 11 15 704 0.8− 0.5− 2006 11 19 704 0.2+ 0.4−
2003 04 05 699 0.9+ 0.2+ 2006 11 16 704 0.4− 0.5+ 2006 11 22 704 0.2− 0.4+
2003 04 05 699 0.4+ 0.1− 2006 11 16 704 0.8− 0.4− 2006 11 22 704 0.6− 0.1+
2003 04 05 699 0.1− 0.0 2006 11 16 704 0.7+ 0.3− 2006 11 22 704 0.9+ 0.7+
2003 04 05 699 0.4+ 0.5+ 2006 11 19 704 0.1+ 0.2− 2006 11 22 704 (1.0+ 3.0−)
2006 11 15 704 0.1+ 0.5+ 2006 11 19 704 0.2− 0.2− 2006 11 22 704 0.0 0.3−

### 2006 VF$_{134}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.32477 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26332836 | $\omega$ | 283.49197 | | +0.55767388 | | −0.82964058 |
| $a$ | 2.4106693 | $\Omega$ | 132.58119 | | +0.77475612 | | +0.50884484 |
| $e$ | 0.1784954 | $i$ | 2.05384 | | +0.29791407 | | +0.22972471 |
| $P$ | 3.74 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

2000 02 03 691 0.2+ 0.2− 2004 02 26 695 0.1+ 0.2+ 2006 11 15 G96 0.1+ 0.1−
2000 02 03 691 0.1− 0.2− 2004 02 26 695 0.1+ 0.3+ 2006 11 15 G96 0.3+ 0.1−
2000 02 03 691 0.2− 0.2− 2006 09 30 G96 0.3− 0.4− 2006 11 17 703 0.8− 0.4+
2000 02 14 691 1.0+ 0.4+ 2006 09 30 G96 0.3+ 0.2− 2006 11 17 703 0.4− 0.1−
2000 02 14 691 0.5− 0.1− 2006 09 30 G96 0.3+ 0.3− 2006 11 17 703 1.0− 0.5−
2000 02 14 691 0.3− 0.1+ 2006 09 30 G96 0.3− 0.4− 2006 11 17 703 1.0− 0.6−
2000 02 27 691 0.1− 0.1+ 2006 10 16 691 0.0 0.3+ 2006 11 23 G96 0.0 0.4−
2000 02 27 691 0.0 0.1− 2006 10 16 691 0.2+ 0.5+ 2006 11 23 G96 0.1− 0.2−
2000 02 27 691 0.0 0.0 2006 10 16 691 0.4+ 0.3+ 2006 11 23 G96 0.0 0.1−
2002 09 05 645 0.0 0.0 2006 11 15 G96 0.3+ 0.0 2006 11 23 G96 0.1− 0.4−
2002 09 05 645 0.0 0.0 2006 11 15 G96 0.2+ 0.1−

### 2006 VR$_{134}$ = 2004 CV$_{38}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.77808 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27316497 | $\omega$ | 209.75264 | | +0.15361809 | | +0.98055479 |
| $a$ | 2.3524444 | $\Omega$ | 69.31444 | | −0.87887352 | | +0.19207395 |
| $e$ | 0.0831716 | $i$ | 7.50064 | | −0.45164458 | | −0.04024792 |
| $P$ | 3.61 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

2001 03 02 691 0.7+ 0.3+ 2004 02 13 699 0.7+ 0.9+ 2006 11 19 691 0.0 0.4+
2001 03 02 691 0.5+ 0.6+ 2004 02 13 699 0.1+ 0.3− 2006 11 23 691 0.2+ 0.2+
2001 03 02 691 0.7+ 0.6+ 2004 02 17 645 0.0 0.1− 2006 11 23 691 0.0 0.4−
2001 04 27 608 1.4− 0.6− 2004 02 17 645 0.0 0.1− 2006 11 23 691 0.2+ 0.1+
2001 04 27 608 1.6− 0.9− 2006 09 28 G96 0.7+ 0.1− 2006 11 24 G96 0.3+ 0.1−
2001 04 27 608 1.7− 0.8− 2006 09 28 G96 0.1+ 0.1− 2006 11 24 G96 0.2+ 0.0
2002 10 15 644 0.3− 0.1+ 2006 09 28 G96 0.2+ 0.1+ 2006 11 24 G96 0.1+ 0.0
2002 10 15 644 0.0 0.1+ 2006 09 28 G96 0.1+ 0.0 2006 11 24 G96 0.0 0.2−
2002 10 15 644 0.3− 0.9+ 2006 11 15 703 1.1+ 1.1− 2006 11 27 691 0.7− 0.7−
2004 02 10 106 0.2− 0.2− 2006 11 15 703 0.7+ 0.3− 2006 11 27 691 0.1+ 0.1+
2004 02 10 106 0.3+ 0.2+ 2006 11 15 703 0.5+ 0.7+ 2006 11 27 691 0.3+ 0.2+
2004 02 10 106 0.2− 0.1− 2006 11 15 703 0.2+ 0.8− 2006 12 01 691 0.0 0.3+
2004 02 13 699 0.5− 0.7+ 2006 11 19 691 0.1− 0.2+ 2006 12 01 691 0.2+ 0.3+
2004 02 13 699 0.5+ 1.2+ 2006 11 19 691 1.3− 0.5− 2006 12 01 691 0.0 0.5+

### 2006 VT$_{134}$ = 2000 AW$_{89}$ = 2005 NS$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 309.37457 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27659101 | $\omega$ | 200.74740 | | −0.45876294 | | −0.88445683 |
| $a$ | 2.3329782 | $\Omega$ | 276.64372 | | +0.82685718 | | −0.38979519 |
| $e$ | 0.1752504 | $i$ | 4.92529 | | +0.32533640 | | −0.25650698 |
| $P$ | 3.56 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

2000 01 05 704 0.1+ 0.5+ 2004 03 17 703 1.0− 1.1+ 2006 11 16 704 0.2− 0.0
2000 01 05 704 0.6+ 0.0 2005 07 02 691 0.1+ 0.5+ 2006 11 16 704 0.1+ 0.9−
2000 01 05 704 0.2− 1.4+ 2005 07 02 691 0.0 0.0 2006 11 19 704 0.3− 0.1−
2000 01 05 704 0.0 0.6− 2005 07 02 691 0.0 0.4− 2006 11 19 704 0.9− 0.4+
2000 01 06 704 0.6− 0.0 2005 07 15 G96 0.1− 0.3+ 2006 11 19 704 0.6+ 0.1+
2000 01 06 704 0.0 1.0− 2005 07 15 G96 0.0 0.5+ 2006 11 19 704 0.1− 0.0
2000 01 06 704 0.5− 0.4− 2005 07 15 G96 0.5− 0.6+ 2006 11 19 704 0.0 0.5+
2000 01 07 704 0.1+ 1.1− 2005 07 15 G96 0.4− 0.4+ 2006 11 22 704 (0.8− 2.4+)
2000 01 07 704 0.0 0.1− 2006 11 15 704 0.3+ 0.3+ 2006 11 22 704 0.6− 1.0+
2000 01 07 704 0.5− 0.6− 2006 11 15 704 0.2+ 0.8+ 2006 11 22 704 0.8+ 0.3+
2000 01 07 704 0.4+ 1.0− 2006 11 15 704 0.1+ 0.0 2006 11 27 704 0.2− 0.2+
2004 03 17 703 2.1+ 0.3+ 2006 11 16 704 0.5+ 1.5+ 2006 11 27 704 0.2− 0.3+
2004 03 17 703 0.5− 1.9+ 2006 11 16 704 0.5+ 0.5+ 2006 11 27 704 0.8− 0.4+
2004 03 17 703 0.7+ 0.8+ 2006 11 16 704 0.3+ 0.4+

### 2006 VS$_{135}$ = 2002 UN$_{42}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 121.45131 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26923356 | $\omega$ | 228.09521 | | +0.06146067 | | +0.99779878 |
| $a$ | 2.3752897 | $\Omega$ | 45.44704 | | −0.90509047 | | +0.06623350 |
| $e$ | 0.1722361 | $i$ | 2.00275 | | −0.42075387 | | +0.00327524 |
| $P$ | 3.66 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 10 13 | 691 | 0.4− | 0.4+ | 2004 01 27 | 691 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.1− | 0.4+ |
| 1991 10 13 | 691 | 0.5− | 0.6− | 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 1991 10 13 | 691 | 1.3+ | 0.4− | 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2002 10 30 | 291 | 0.2− | 0.2+ | 2005 02 09 | 809 | 0.3+ | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.7− |
| 2002 10 30 | 291 | 0.7− | 0.2− | 2005 02 09 | 809 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2− |
| 2002 10 30 | 291 | 0.4− | 0.3+ | 2005 02 09 | 809 | 0.3+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2002 11 04 | 291 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.6− |
| 2002 11 04 | 291 | 0.4+ | 0.2+ | 2006 11 15 | 691 | 0.0 | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.4− |
| 2002 11 04 | 291 | 0.0 | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.3+ | 2006 11 27 | 691 | 0.2+ | 0.5− |

**2006 VC$_{136}$ = 2001 SS$_{226}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 83.30122 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21237052 | $\omega$ | 170.47406 | | +0.38587044 | | +0.92150807 |
| $a$ | 2.7823167 | $\Omega$ | 122.21202 | | −0.84980453 | | +0.37355945 |
| $e$ | 0.2012166 | $i$ | 2.97395 | | −0.35907698 | | +0.10618950 |
| $P$ | 4.64 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 19 | 704 | 0.4− | 0.4+ | 2001 10 14 | 645 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.6− | 0.4− |
| 2001 09 19 | 704 | 1.1− | 0.1− | 2002 12 04 | 695 | 0.1+ | 0.1− | 2006 11 15 | G96 | 0.8+ | 0.4− |
| 2001 09 19 | 704 | 0.3− | 0.8+ | 2002 12 04 | 695 | 0.0 | 0.1− | 2006 11 15 | G96 | 0.4− | 0.7− |
| 2001 09 19 | 704 | 0.4+ | 1.1+ | 2004 02 11 | 291 | 1.1+ | 0.4+ | 2006 11 15 | G96 | 0.5+ | 0.4− |
| 2001 09 19 | 704 | 1.1+ | 0.6− | 2004 02 11 | 291 | 0.6− | 0.4+ | 2006 11 17 | G96 | 0.5− | 0.3− |
| 2001 09 21 | 704 | 0.1− | 0.5+ | 2004 02 11 | 291 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.0 |
| 2001 09 21 | 704 | 1.5− | 0.1+ | 2006 09 30 | G96 | 0.3− | 0.2− | 2006 11 17 | G96 | 0.4+ | 0.1− |
| 2001 09 21 | 704 | 0.2− | 0.2+ | 2006 09 30 | G96 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.1− |
| 2001 09 21 | 704 | (0.2+ | 2.1+) | 2006 09 30 | G96 | 0.2+ | 0.1− | | | | |
| 2001 10 14 | 645 | 0.0 | 0.0 | 2006 09 30 | G96 | 0.0 | 0.2− | | | | |

**2006 VR$_{136}$ = 1998 AZ$_2$ = 2003 YE$_{109}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 173.55952 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.31573631 | $\omega$ | 264.68343 | | −0.60232996 | | +0.79820215 |
| $a$ | 2.1359268 | $\Omega$ | 328.27473 | | −0.72584071 | | −0.55208551 |
| $e$ | 0.1021422 | $i$ | 0.92422 | | −0.33219554 | | −0.24098737 |
| $P$ | 3.12 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 20 | 691 | 0.2+ | 0.6− | 2003 12 22 | 704 | 0.5+ | 0.3+ | 2006 10 29 | G96 | 0.3− | 0.0 |
| 1993 09 20 | 691 | 0.0 | 0.6+ | 2003 12 22 | 704 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.3− | 0.1+ |
| 1993 09 20 | 691 | 0.0 | 0.3− | 2003 12 22 | 704 | 0.5− | 0.4+ | 2006 11 15 | 691 | 0.1− | 0.2+ |
| 1998 01 02 | 691 | 0.4− | 0.1+ | 2003 12 25 | 691 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.0 | 0.4+ |
| 1998 01 02 | 691 | 0.0 | 0.1− | 2003 12 25 | 691 | 0.4− | 0.0 | 2006 11 18 | 691 | 0.1− | 1.4− |
| 1998 01 02 | 691 | 0.5− | 0.5− | 2003 12 25 | 691 | 0.4− | 0.0 | 2006 11 18 | 691 | 0.3− | 0.4+ |
| 1998 01 06 | 691 | 0.1+ | 0.1+ | 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 11 18 | 691 | 0.1− | 0.1+ |
| 1998 01 06 | 691 | 0.6+ | 0.2+ | 2006 09 27 | G96 | 0.4+ | 0.3− | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 1998 01 06 | 691 | 0.0 | 0.2− | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2000 11 28 | 691 | 0.2− | 0.3− | 2006 09 27 | G96 | 0.2+ | 0.1+ | 2006 11 19 | 691 | 0.3+ | 0.3+ |
| 2000 11 28 | 691 | 0.4+ | 0.3− | 2006 10 29 | G96 | 0.1− | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.1+ |
| 2000 11 28 | 691 | 0.5+ | 0.0 | 2006 10 29 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2003 12 22 | 704 | (0.1− | 1.8+) | 2006 10 29 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.1+ |

**2006 VW$_{136}$ = 2004 HP$_{46}$ = 2005 OT$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 109.71133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20905792 | $\omega$ | 235.24357 | | +0.42411888 | | +0.90511913 |
| $a$ | 2.8116309 | $\Omega$ | 59.87786 | | −0.81924994 | | +0.39744948 |
| $e$ | 0.0819329 | $i$ | 1.96824 | | −0.38594394 | | +0.15097440 |
| $P$ | 4.71 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 16 | 691 | 0.2+ | 0.2− | 2005 07 28 | 644 | 0.5− | 0.7+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 2001 11 16 | 691 | 0.1− | 0.1+ | 2005 07 28 | 644 | 0.3− | 1.1+ | 2006 11 19 | 691 | 0.1− | 0.3+ |
| 2001 11 16 | 691 | 0.2− | 0.3+ | 2005 07 28 | 644 | 0.4− | 0.6+ | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2004 04 22 | 691 | 0.5+ | 0.2− | 2005 08 04 | 644 | 0.3− | 0.5+ | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2004 04 22 | 691 | 0.3+ | 0.0 | 2005 08 04 | 644 | 0.2− | 0.9+ | 2006 11 23 | 691 | 0.2− | 0.2+ |
| 2004 04 22 | 691 | 0.4+ | 0.1+ | 2005 08 04 | 644 | 0.0 | 0.7+ | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2004 04 25 | 291 | 0.0 | 0.7+ | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2004 04 25 | 291 | 0.1− | 0.8+ | 2006 11 15 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2004 04 25 | 291 | 0.3− | 0.8+ | 2006 11 15 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.1− | 0.3+ |

**2006 VD$_{137}$ = 1999 FJ$_{85}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 320.58052 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.22312433 | $\omega$ | 208.80313 | | −0.06602992 | | −0.99540197 |
| $a$ | 2.6921842 | $\Omega$ | 245.05643 | | +0.92952117 | | −0.03607596 |
| $e$ | 0.0612372 | $i$ | 4.38904 | | +0.36280910 | | −0.08873245 |
| $P$ | 4.42 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 645 | 0.1− | 0.0 | 2006 11 11 | G96 | 0.5− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.3− |
| 1999 03 21 | 645 | 0.1+ | 0.1− | 2006 11 15 | 691 | 0.3+ | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.2− |
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.4+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 1999 03 22 | 645 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.1+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2006 11 11 | G96 | 0.8+ | 0.3− | 2006 11 19 | 691 | 0.3− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2006 11 11 | G96 | 0.5− | 0.4− | 2006 11 19 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2006 11 11 | G96 | 0.1− | 0.6− | 2006 11 19 | 691 | 0.1− | 0.1− | | | | |

**2006 VE$_{137}$ = 1994 TS$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 81.72023 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17454717 | $\omega$ | 289.73618 | | +0.70156460 | | +0.71253307 |
| $a$ | 3.1709850 | $\Omega$ | 24.82584 | | −0.64438482 | | +0.64043839 |
| $e$ | 0.1690641 | $i$ | 1.39003 | | −0.30426192 | | +0.28659256 |
| $P$ | 5.65 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 10 02 | 691 | 0.2+ | 0.1− | 2004 05 19 | 691 | 0.4+ | 0.4+ | 2005 10 29 | G96 | 0.3+ | 0.5+ |
| 1994 10 02 | 691 | 0.1+ | 0.0 | 2004 05 19 | 691 | 0.4+ | 0.2+ | 2005 10 29 | G96 | 0.1− | 0.1+ |
| 1994 10 02 | 691 | 0.1+ | 0.1− | 2005 07 28 | 644 | 0.4− | 0.1+ | 2006 11 15 | 691 | 0.2− | 0.1− |
| 1994 10 11 | 691 | 0.3− | 0.1+ | 2005 07 28 | 644 | 0.1− | 0.4+ | 2006 11 15 | 691 | 0.6+ | 0.2+ |
| 1994 10 11 | 691 | 0.1+ | 0.1− | 2005 07 28 | 644 | 0.2+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1+ |
| 1994 10 11 | 691 | 0.0 | 0.1− | 2005 08 04 | 644 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.1+ | 0.6+ |
| 2004 04 25 | 691 | 0.1− | 0.2+ | 2005 08 04 | 644 | 0.2− | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.5+ |
| 2004 04 25 | 691 | 0.2− | 0.1− | 2005 08 04 | 644 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 2004 04 25 | 691 | 0.1− | 0.1− | 2005 08 27 | 644 | 0.1− | 0.0 | 2006 11 22 | 691 | 0.5− | 0.4− |
| 2004 05 10 | 291 | 0.1+ | 0.0 | 2005 08 27 | 644 | 0.5− | 0.1+ | 2006 11 22 | 691 | 0.2− | 0.2+ |
| 2004 05 10 | 291 | 0.0 | 0.3+ | 2005 08 27 | 644 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.3− | 0.3+ |
| 2004 05 10 | 291 | 0.3− | 0.1+ | 2005 10 29 | G96 | 0.4+ | 0.5+ | | | | |
| 2004 05 19 | 691 | 0.3+ | 0.2+ | 2005 10 29 | G96 | 0.0 | 0.2− | | | | |

**2006 VU$_{137}$ = 2002 TR$_{12}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 50.64191 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26753782 | $\omega$ | 250.44811 | | +0.85762153 | | +0.51146278 |
| $a$ | 2.3853161 | $\Omega$ | 78.75766 | | −0.44890813 | | +0.79551541 |
| $e$ | 0.2483882 | $i$ | 3.14259 | | −0.25093185 | | +0.32490160 |
| $P$ | 3.68 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 01 | 699 | 0.7+ | 1.0− | 2005 05 10 | 807 | 0.2− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 10 01 | 699 | 1.5+ | 0.2+ | 2005 05 10 | 807 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1+ | 0.2+ |
| 2002 10 01 | 699 | 0.3+ | 0.5+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.1− | 0.2− |
| 2002 10 01 | 699 | 0.1− | 0.4− | 2006 11 15 | 691 | 0.3+ | 0.2− | 2006 11 24 | G96 | 0.7+ | 0.1+ |
| 2002 10 03 | 704 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.1− | 0.4+ | 2006 11 24 | G96 | 0.1− | 0.2− |
| 2002 10 03 | 704 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.2− | 2006 11 24 | G96 | 0.0 | 0.6− |
| 2002 10 03 | 704 | 0.7− | 0.7+ | 2006 11 19 | 691 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2002 10 03 | 704 | 1.5− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ | | | | |

### 2006 VW$_{137}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.14233 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27382078 | $\omega$ | 276.52410 | +0.97588446 | | +0.20339247 | |
| $a$ | 2.3486869 | $\Omega$ | 71.76251 | −0.15229136 | | +0.89449074 | |
| $e$ | 0.1912089 | $i$ | 4.78658 | −0.15638688 | | +0.39814297 | |
| $P$ | 3.60 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 19 | 644 | 0.1− | 0.7+ | 2005 06 13 | G96 | 0.4− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.4+ |
| 2002 08 19 | 644 | 0.3− | 0.6+ | 2005 06 13 | G96 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.1− | 0.8+ |
| 2002 08 19 | 644 | 0.0 | 0.8+ | 2005 06 13 | G96 | 0.4− | 0.2− | 2006 11 23 | 691 | 1.0+ | 0.5+ |
| 2002 08 26 | 644 | 0.6− | 0.2+ | 2005 06 13 | G96 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 08 26 | 644 | 0.3− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.9− | 2006 11 23 | 691 | 0.3− | 0.6+ |
| 2002 08 26 | 644 | 0.5− | 0.2+ | 2006 10 31 | G96 | 0.2− | 0.6− | 2006 11 24 | H07 | 0.4+ | 0.6+ |
| 2002 09 08 | 608 | 0.2− | 0.6+ | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 24 | H07 | 0.2+ | 0.5+ |
| 2002 09 08 | 608 | 0.4− | 1.0+ | 2006 10 31 | G96 | 0.2+ | 0.5− | 2006 11 24 | H07 | 0.0 | 0.3+ |
| 2002 09 08 | 608 | 0.1+ | 1.2+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 27 | 691 | 0.0 | 0.3− |
| 2004 03 18 | 291 | 0.3− | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.2− | 1.1+ |
| 2004 03 18 | 291 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2004 03 18 | 291 | 0.7+ | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.5− | 1.4− |
| 2005 05 08 | 691 | 0.2+ | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.0 | 2006 12 01 | 691 | 0.3− | 0.0 |
| 2005 05 08 | 691 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.4+ | 0.2+ | 2006 12 01 | 691 | 0.5− | 0.3− |
| 2005 05 08 | 691 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.6− | 0.0 | | | | |

### 2006 VC$_{138}$ = 2000 YK$_{23}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 178.82094 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.31266086 | $\omega$ | 112.48183 | −0.65530519 | | +0.75516577 | |
| $a$ | 2.1499105 | $\Omega$ | 116.56363 | −0.69995340 | | −0.59845791 | |
| $e$ | 0.0964017 | $i$ | 1.10914 | −0.28397244 | | −0.26753090 | |
| $P$ | 3.15 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 09 03 | 691 | 0.1− | 0.9+ | 2000 12 30 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1− |
| 1999 09 03 | 691 | 0.1− | 0.1+ | 2002 07 04 | 291 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 1999 09 03 | 691 | 0.3− | 0.4+ | 2002 07 04 | 291 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.3− | 0.0 |
| 2000 12 28 | 691 | 0.2− | 0.1+ | 2002 07 04 | 291 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2000 12 28 | 691 | 0.1− | 0.3+ | 2006 11 15 | 691 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.3− | 0.2− |
| 2000 12 28 | 691 | 0.0 | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.5+ | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2000 12 30 | 691 | 0.1+ | 0.4+ | 2006 11 15 | 691 | 0.5− | 0.6− | 2006 11 27 | 691 | 0.6+ | 0.2− |
| 2000 12 30 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.2− |

### 2006 VH$_{138}$ = 2001 YY$_{40}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 280.08999 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.19076143 | $\omega$ | 77.05287 | −0.83583214 | | −0.52206825 | |
| $a$ | 2.9886542 | $\Omega$ | 71.24475 | +0.40796987 | | −0.79763614 | |
| $e$ | 0.1318695 | $i$ | 10.32978 | +0.36734889 | | −0.30202870 | |
| $P$ | 5.17 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.3− | 0.1− | 2003 03 26 | 644 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2001 12 18 | 704 | 0.3+ | 0.4+ | 2003 03 26 | 644 | 0.0 | 0.3− | 2006 11 21 | 704 | 1.2− | 0.3+ |
| 2001 12 18 | 704 | 0.5− | 0.0 | 2003 03 26 | 644 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.3− | 0.1− |
| 2001 12 18 | 704 | 0.5+ | 0.3+ | 2003 05 02 | 691 | 0.1− | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.5+ |
| 2001 12 18 | 704 | 0.4+ | 0.3+ | 2003 05 02 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 0.0 | 2003 05 02 | 691 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.2− | 0.0 | 2006 10 31 | G96 | 0.1+ | 0.4− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.1− | 0.5− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2001 12 19 | 704 | 0.6+ | 0.2+ | 2006 10 31 | G96 | 0.4+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2001 12 19 | 704 | 0.4+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2001 12 19 | 704 | 0.3− | 0.5− | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.2− | 0.4− |
| 2001 12 19 | 704 | 0.7− | 0.5− | 2006 11 15 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2001 12 19 | 704 | 0.0 | 0.3− | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2001 12 19 | 704 | 0.4− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.3− |
| 2001 12 19 | 704 | 0.2− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.0 | | | | |

### 2006 VS$_{138}$ = 2005 QJ$_{22}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 313.02738 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17738935 | $\omega$ | 18.93797 | −0.28617084 | | −0.95714567 | |
| $a$ | 3.1370229 | $\Omega$ | 87.71010 | +0.87326505 | | −0.27963446 | |
| $e$ | 0.0896093 | $i$ | 2.55136 | +0.39435316 | | −0.07534409 | |
| $P$ | 5.56 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 05 | 691 | 0.0 | 0.0 | 2005 08 28 | 291 | 0.3− | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.1+ |
| 2002 01 05 | 691 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 01 05 | 691 | 0.1+ | 0.1+ | 2006 10 21 | G96 | 0.1− | 0.6− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2003 04 25 | 691 | 0.0 | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.2− | 2006 11 23 | 691 | 0.2+ | 0.0 |
| 2003 04 25 | 691 | 0.2− | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.1− | 0.0 |
| 2003 04 25 | 691 | 0.5+ | 0.5− | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2005 08 27 | 291 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2005 08 27 | 291 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.4− | 0.6− | 2006 11 24 | G96 | 0.2− | 0.0 |
| 2005 08 27 | 291 | 0.2+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 27 | 703 | 1.2+ | 0.5+ |
| 2005 08 27 | 291 | 0.4− | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 703 | 0.8+ | 0.3− |
| 2005 08 27 | 291 | 0.0 | 0.0 | 2006 11 15 | 691 | 0.2− | 0.1+ | 2006 11 27 | 703 | 1.0− | 1.2− |
| 2005 08 27 | 291 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2005 08 28 | 291 | 0.1− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.1+ | 2006 12 01 | 691 | 0.5+ | 0.3+ |
| 2005 08 28 | 291 | 0.4− | 0.3+ | 2006 11 19 | 691 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.2− | 0.1+ |

### 2006 VU$_{138}$ = 2005 TU$_{107}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 131.38624 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.17988064 | $\omega$ | 184.35353 | +0.06689191 | | +0.99710604 | |
| $a$ | 3.1079911 | $\Omega$ | 89.48480 | −0.91433280 | | +0.07575180 | |
| $e$ | 0.1352892 | $i$ | 2.07035 | −0.39940081 | | −0.00641969 | |
| $P$ | 5.48 | $H$ | 15.5 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 01 03 | 691 | 0.0 | 0.3+ | 2005 10 11 | 691 | 0.1− | 0.8+ | 2006 11 19 | 691 | 0.1+ | 0.1+ |
| 1997 01 03 | 691 | 0.1− | 0.2− | 2005 10 11 | 691 | 0.3− | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.2+ |
| 1997 01 03 | 691 | 0.1+ | 0.2− | 2005 10 11 | 691 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2005 08 26 | 699 | 1.1+ | 0.3+ | 2006 10 28 | G96 | 0.1+ | 0.2− | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2005 08 26 | 699 | 0.5− | 0.9− | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 24 | G96 | 0.2− | 0.3− |
| 2005 08 26 | 699 | 0.9− | 0.9− | 2006 10 28 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 08 26 | 699 | 0.7+ | 0.2+ | 2006 10 28 | G96 | 0.3+ | 0.6− | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2005 10 06 | G96 | 0.1+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2005 10 06 | G96 | 0.0 | 0.1− | 2006 11 15 | 691 | 0.0 | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2005 10 06 | G96 | 0.2− | 0.2− | 2006 11 15 | 691 | 0.2− | 0.2− | | | | |
| 2005 10 06 | G96 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.4− | 0.0 | | | | |

### 2006 VW$_{138}$ = 2004 GW$_{84}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.10699 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.18747478 | $\omega$ | 238.59614 | +0.60250711 | | +0.77751567 | |
| $a$ | 3.0234827 | $\Omega$ | 69.53255 | −0.65132067 | | +0.60945634 | |
| $e$ | 0.1792529 | $i$ | 11.08649 | −0.46126627 | | +0.15502372 | |
| $P$ | 5.26 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 30 | 691 | 0.0 | 0.0 | 2005 09 01 | E12 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.2− | 0.3+ |
| 2004 03 30 | 691 | 0.2− | 0.3− | 2005 09 01 | E12 | 0.7− | 0.0 | 2006 11 15 | 691 | 0.2− | 0.2− |
| 2004 03 30 | 691 | 0.0 | 0.0 | 2005 09 01 | E12 | 0.9+ | 0.0 | 2006 11 15 | 691 | 0.0 | 0.1+ |
| 2004 04 14 | 691 | 0.2+ | 0.1+ | 2005 09 01 | E12 | 0.9+ | 1.5− | 2006 11 19 | 691 | 0.5− | 0.2− |
| 2004 04 14 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.4+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2004 04 14 | 691 | 0.3+ | 0.2+ | 2006 10 22 | G96 | 0.7+ | 0.0 | 2006 11 19 | 691 | 0.3− | 0.2− |
| 2004 04 23 | 691 | 0.0 | 0.3− | 2006 10 22 | G96 | 0.0 | 0.3− | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 04 23 | 691 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.3+ | 0.4+ | 2006 11 23 | 691 | 0.2+ | 0.1− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 04 23 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.1− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2005 09 01 | 644 | 0.6− | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 09 01 | 644 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2005 09 01 | 644 | 0.5− | 0.6+ | 2006 10 31 | G96 | 0.3+ | 0.4− | 2006 11 27 | 691 | 0.4+ | 0.2+ |

**2006 VG$_{139}$ = 2003 BR$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.48148 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22514461 | $\omega$ | 181.01525 | | +0.38129117 | −0.90606366 | |
| $a$ | 2.6760549 | $\Omega$ | 246.59141 | | +0.84957382 | +0.42168619 | |
| $e$ | 0.1497526 | $i$ | 11.53333 | | +0.36447409 | −0.03506277 | |
| $P$ | 4.38 | $H$ | 15.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 699 | 0.8− | 1.0+ | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2001 08 24 | 699 | 0.3− | 0.4− | 2006 11 15 | 691 | 0.0 | 0.2− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2001 08 24 | 699 | 1.2+ | 0.1− | 2006 11 15 | 691 | 0.1+ | 0.1− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2001 08 24 | 699 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.1− | 0.2− |
| 2003 01 25 | 644 | 0.0 | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.3+ | 2006 11 27 | 691 | 0.0 | 0.6+ |
| 2003 01 25 | 644 | 0.2+ | 0.3− | 2006 11 18 | 704 | 0.3+ | 0.6+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2003 01 25 | 644 | 0.2+ | 0.4− | 2006 11 18 | 704 | 0.5− | 0.2+ | 2006 12 01 | 704 | 0.4+ | 0.2− |
| 2003 01 28 | 704 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 12 01 | 704 | 1.4+ | 0.2− |
| 2003 01 28 | 704 | 0.3+ | 0.1+ | 2006 11 19 | 691 | 0.2+ | 0.0 | 2006 12 01 | 704 | 0.1+ | 0.4− |
| 2003 01 28 | 704 | 0.6− | 0.2− | 2006 11 19 | 691 | 0.1+ | 0.1− | 2006 12 01 | 691 | 0.3− | 0.2+ |
| 2003 01 28 | 704 | 0.4+ | 1.2+ | 2006 11 21 | 704 | 0.1+ | 0.1− | 2006 12 01 | 704 | 0.2+ | 0.5− |
| 2006 09 18 | 703 | 0.1− | 0.4+ | 2006 11 21 | 704 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 0.3− | 0.1+ |
| 2006 09 18 | 703 | 0.1− | 0.6− | 2006 11 21 | 704 | 1.2− | 0.2− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2006 09 18 | 703 | 0.6− | 0.8+ | 2006 11 21 | 704 | 0.2− | 0.4+ | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2006 09 18 | 703 | 0.6− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.2− | | | | |

**2006 VW$_{139}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 34.19653 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18486273 | $\omega$ | 281.93571 | | +0.99436427 | −0.08995443 | |
| $a$ | 3.0518966 | $\Omega$ | 83.24415 | | +0.10498915 | +0.90905170 | |
| $e$ | 0.1989798 | $i$ | 3.23885 | | −0.01473020 | +0.40685773 | |
| $P$ | 5.33 | $H$ | 17.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 03 | 645 | 0.0 | 0.0 | 2000 09 23 | 691 | 0.3+ | 0.3+ | 2006 11 19 | 691 | 0.3− | 0.1− |
| 2000 09 03 | 645 | 0.0 | 0.0 | 2005 07 11 | 691 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.2− | 0.1+ |
| 2000 09 05 | 645 | 0.0 | 0.0 | 2005 07 11 | 691 | 0.1+ | 0.5− | 2006 11 19 | 691 | 0.2− | 0.0 |
| 2000 09 05 | 645 | 0.1− | 0.1+ | 2005 07 11 | 691 | 0.0 | 0.2− | 2006 11 27 | 691 | 0.0 | 0.4− |
| 2000 09 23 | 699 | 0.2− | 0.3+ | 2006 11 15 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.1+ | 0.4− |
| 2000 09 23 | 699 | 1.0− | 0.6− | 2006 11 15 | 691 | 0.2+ | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.3− |
| 2000 09 23 | 699 | 0.7+ | 0.8+ | 2006 11 15 | 691 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2000 09 23 | 691 | 0.4+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.5− | 2006 12 01 | 691 | 0.3+ | 0.0 |
| 2000 09 23 | 699 | 0.4− | 0.9+ | 2006 11 15 | 691 | 0.3− | 0.2+ | 2006 12 01 | 691 | 0.6+ | 0.3+ |
| 2000 09 23 | 691 | 0.2+ | 0.2− | 2006 11 15 | 691 | 0.2− | 0.1− | | | | |

**2006 VM$_{140}$ = 2001 XB$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.97269 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.20329769 | $\omega$ | 351.39779 | | +0.40743951 | −0.88521870 | |
| $a$ | 2.8644929 | $\Omega$ | 74.30891 | | +0.85113449 | +0.27900155 | |
| $e$ | 0.0763578 | $i$ | 13.48232 | | +0.33100319 | +0.37221765 | |
| $P$ | 4.85 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 11 19 | 699 | 0.6+ | 0.5+ | 2001 12 14 | 704 | 0.4− | 0.8− | 2006 11 19 | 691 | 0.1− | 0.1+ |
| 2001 11 19 | 699 | 0.2+ | 0.5+ | 2001 12 14 | 704 | 0.2− | 0.2+ | 2006 11 19 | 691 | 0.1− | 0.2+ |
| 2001 11 19 | 699 | 0.1− | 1.3− | 2001 12 14 | 704 | 0.2− | 0.6+ | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2001 11 19 | 699 | 0.7− | 0.3+ | 2001 12 14 | 704 | 0.4− | 0.5+ | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2001 12 11 | 704 | 0.2+ | 0.2+ | 2006 11 15 | 691 | 0.2− | 0.2− | 2006 11 24 | G96 | 0.0 | 0.0 |
| 2001 12 11 | 704 | 1.0+ | 0.7+ | 2006 11 15 | 691 | 0.0 | 0.3+ | 2006 11 24 | G96 | 0.6− | 0.5− |
| 2001 12 11 | 704 | 0.5− | 0.7− | 2006 11 15 | 691 | 0.3+ | 0.1− | | | | |
| 2001 12 11 | 704 | 0.4+ | 0.7− | 2006 11 19 | 691 | 0.0 | 0.1− | | | | |

**2006 VD$_{141}$ = 2003 AP$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.05351 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22045174 | $\omega$ | 6.99844 | | +0.38181167 | −0.92197185 | |
| $a$ | 2.7138991 | $\Omega$ | 60.57380 | | +0.84433214 | +0.31946572 | |
| $e$ | 0.0722624 | $i$ | 4.26090 | | +0.37592963 | +0.21888254 | |
| $P$ | 4.47 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 05 | 704 | 0.3− | 0.1− | 2006 09 28 | G96 | 0.3+ | 0.2+ | 2006 11 19 | J75 | 1.0− | 0.1+ |
| 2003 01 05 | 704 | 0.4+ | 0.5− | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.3− | 0.7+ |
| 2003 01 05 | 704 | 0.5+ | 1.2− | 2006 10 27 | G96 | 0.3+ | 0.4− | 2006 11 19 | 704 | 0.8− | 0.4− |
| 2003 01 09 | 704 | 0.9− | 0.7+ | 2006 10 27 | G96 | 0.2− | 0.2− | 2006 11 19 | 704 | 0.6+ | 0.0 |
| 2003 01 09 | 704 | 0.4+ | 0.1− | 2006 10 27 | G96 | 0.2+ | 0.4− | 2006 11 19 | 704 | 0.2+ | 0.5− |
| 2003 01 09 | 704 | 0.7− | 0.9− | 2006 11 10 | 691 | 0.0 | 0.2+ | 2006 11 19 | 704 | 0.8+ | 0.1+ |
| 2003 01 09 | 704 | 0.2+ | 1.3+ | 2006 11 10 | 691 | 0.2− | 0.0 | 2006 11 20 | J75 | 0.0 | 0.6− |
| 2003 02 04 | 644 | 0.0 | 0.2+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 20 | J75 | 0.6− | 0.1+ |
| 2003 02 04 | 644 | 0.3+ | 0.1+ | 2006 11 13 | J75 | (0.1+ | 2.1+) | 2006 11 20 | J75 | 0.1+ | 0.0 |
| 2003 02 04 | 644 | 0.0 | 0.2+ | 2006 11 13 | J75 | 0.2+ | 0.1+ | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2006 09 28 | G96 | 0.2+ | 0.2− | 2006 11 13 | J75 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.7+ | 0.0 |
| 2006 09 28 | G96 | 0.2− | 0.3+ | 2006 11 19 | J75 | 0.8+ | 0.6+ | 2006 11 21 | 704 | 0.0 | 1.2+ |
| 2006 09 28 | G96 | 0.0 | 0.3− | 2006 11 19 | J75 | 0.3− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.0 |

**2006 VF$_{143}$ = 2002 TJ$_{149}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 345.37299 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26716014 | $\omega$ | 10.28467 | | +0.45497323 | −0.88937444 | |
| $a$ | 2.3875636 | $\Omega$ | 52.66666 | | +0.81296334 | +0.39426840 | |
| $e$ | 0.1525504 | $i$ | 3.23433 | | +0.36344183 | +0.23144227 | |
| $P$ | 3.69 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 05 | 645 | 0.1+ | 0.0 | 2006 09 28 | G96 | (0.0 | 1.6−) | 2006 11 14 | 691 | 0.1− | 0.0 |
| 2002 09 05 | 645 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 10 05 | 644 | 0.0 | 0.9+ | 2006 09 28 | G96 | 0.3+ | 0.3− | 2006 11 20 | 691 | 0.1− | 0.2+ |
| 2002 10 05 | 644 | 0.1− | 0.4+ | 2006 10 28 | G96 | 0.1− | 0.3− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2002 10 05 | 644 | 0.1+ | 0.3+ | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2002 10 06 | 644 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2002 10 06 | 644 | 0.5− | 0.4+ | 2006 10 28 | G96 | 0.2+ | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2002 10 06 | 644 | 0.7− | 0.2+ | 2006 11 14 | 691 | 0.3− | 0.2− | | | | |
| 2006 09 28 | G96 | 0.0 | 0.1+ | 2006 11 14 | 691 | 0.1− | 0.1− | | | | |

**2006 VT$_{146}$ = 1997 EW$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 248.08163 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.28285664 | $\omega$ | 348.55444 | | −0.97278125 | −0.23170893 | |
| $a$ | 2.2983975 | $\Omega$ | 178.04141 | | +0.21846840 | −0.92103385 | |
| $e$ | 0.1132117 | $i$ | 4.63130 | | +0.07725413 | −0.31306170 | |
| $P$ | 3.48 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 03 05 | 691 | 0.2+ | 0.2− | 2004 02 11 | 644 | 0.1− | 0.3+ | 2006 11 15 | G96 | 0.2− | 0.0 |
| 1997 03 05 | 691 | 0.3− | 0.5− | 2004 02 11 | 644 | 0.2+ | 0.4+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 1997 03 12 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.0 | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 1997 03 12 | 691 | 0.1− | 0.3+ | 2006 10 23 | G96 | 0.4− | 0.5− | 2006 11 20 | 691 | 0.0 | 0.3− |
| 1997 03 12 | 691 | 0.4+ | 0.7+ | 2006 10 23 | G96 | 0.1− | 0.2− | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2002 10 08 | 291 | 0.2− | 0.4+ | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2002 10 08 | 291 | 0.1− | 0.0 | 2006 11 15 | G96 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 10 08 | 291 | 0.1− | 0.7+ | 2006 11 15 | G96 | 1.3− | 0.4+ | | | | |
| 2004 02 11 | 644 | 0.1+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.2− | | | | |

**2006 VT$_{148}$ = 1993 RL$_1$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 36.07074 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30899255 | $\omega$ | 356.33143 | | +0.96002203 | +0.27918816 | |
| $a$ | 2.1668925 | $\Omega$ | 347.40050 | | −0.25440022 | +0.83994995 | |
| $e$ | 0.1741690 | $i$ | 5.33712 | | −0.11678287 | +0.46533649 | |
| $P$ | 3.19 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 09 14 | 809 | (4.0+ | 4.1+) | 1993 09 20 | 691 | 0.1+ | 0.1+ | 2006 11 09 | 644 | 0.5− | 0.3+ | |
| 1993 09 14 | 809 | (2.0+ | 3.6+) | 2005 04 10 | 691 | 0.4+ | 0.6+ | 2006 11 09 | 644 | 0.6+ | 0.5+ | |
| 1993 09 14 | 809 | (3.6+ | 2.8+) | 2005 04 10 | 691 | 0.9− | 0.6− | 2006 11 09 | 644 | 0.2− | 0.3+ | |
| 1993 09 15 | 691 | 0.3+ | 0.2+ | 2005 04 10 | 691 | 0.6+ | 0.2+ | 2006 11 15 | G96 | 0.2− | 0.2− | |
| 1993 09 15 | 691 | 0.2+ | 0.2+ | 2006 11 02 | 703 | 0.4+ | 0.1− | 2006 11 15 | G96 | 0.2+ | 0.1− | |
| 1993 09 15 | 691 | 0.2+ | 0.1+ | 2006 11 02 | 703 | 0.7− | 0.2− | 2006 11 15 | G96 | 0.1− | 0.5− | |
| 1993 09 19 | 809 | 1.4+ | 1.2− | 2006 11 02 | 703 | 0.0 | 0.3− | 2006 11 15 | G96 | 0.2− | 0.3− | |
| 1993 09 19 | 809 | (2.4− | 0.1+) | 2006 11 02 | 703 | 0.7+ | 0.3− | 2006 11 21 | 703 | 0.0 | 0.2− | |
| 1993 09 19 | 809 | 1.5− | 0.7+ | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 21 | 703 | 0.3+ | 1.1+ | |
| 1993 09 20 | 691 | 0.5− | 0.4− | 2006 11 09 | 644 | 0.3− | 0.4+ | 2006 11 21 | 703 | 0.2− | 0.6− | |
| 1993 09 20 | 691 | 0.3− | 0.0 | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 21 | 703 | 0.1+ | 0.4+ | |

**2006 WD = 2002 XZ$_{88}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 327.18088 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23562446 | $\omega$ | 212.77920 | | +0.01062798 | −0.98092074 | |
| $a$ | 2.5961063 | $\Omega$ | 237.31574 | | +0.95991848 | +0.06438257 | |
| $e$ | 0.1476792 | $i$ | 13.33455 | | +0.28007776 | −0.18343769 | |
| $P$ | 4.18 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 704 | 0.3− | 0.1− | 2006 11 11 | 691 | 0.4− | 0.3+ | 2006 11 17 | H07 | 0.1− | 0.1+ | |
| 2002 12 14 | 704 | 0.1− | 0.2+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 18 | 704 | 0.0 | 0.6+ | |
| 2002 12 14 | 704 | 0.3− | 0.3− | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 18 | 704 | 0.1+ | 0.3− | |
| 2002 12 14 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.0 | 0.3+ | 2006 11 18 | 704 | 0.1+ | 0.0 | |
| 2002 12 14 | 704 | 0.0 | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.5− | 2006 11 18 | 704 | 0.1+ | 0.2+ | |
| 2002 12 15 | 704 | 0.7+ | 0.2+ | 2006 11 11 | 703 | 0.4− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.3− | |
| 2002 12 15 | 704 | 0.1− | 0.2− | 2006 11 11 | 703 | 0.3− | 0.7− | 2006 11 21 | 704 | 0.0 | 0.3+ | |
| 2002 12 15 | 704 | 0.6+ | 0.1− | 2006 11 15 | 703 | 0.1− | 0.4− | 2006 11 21 | 704 | 0.2− | 0.3− | |
| 2002 12 15 | 704 | 0.3+ | 0.0 | 2006 11 15 | 703 | 0.1+ | 0.4− | 2006 11 21 | 704 | 0.4− | 0.6+ | |
| 2002 12 15 | 704 | 0.1+ | 0.2− | 2006 11 15 | 703 | 0.8− | 0.2+ | 2006 11 21 | 704 | 0.3− | 0.2+ | |
| 2002 12 15 | 704 | 1.1− | 0.3− | 2006 11 15 | 703 | 0.5+ | 0.4− | 2006 11 24 | 691 | 0.0 | 0.2− | |
| 2002 12 15 | 704 | 0.2+ | 0.5+ | 2006 11 16 | 691 | 0.3+ | 0.2− | 2006 11 24 | 691 | 0.1− | 0.1− | |
| 2002 12 15 | 704 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.2+ | 0.0 | |
| 2002 12 15 | 704 | 0.3+ | 0.7+ | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 29 | 704 | 0.1+ | 0.3+ | |
| 2004 05 16 | 691 | 0.1− | 0.1− | 2006 11 16 | H07 | 0.1− | 0.4+ | 2006 11 29 | 704 | 0.8+ | 0.2+ | |
| 2004 05 16 | 691 | 0.0 | 0.2− | 2006 11 16 | H07 | 0.4+ | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.4+ | |
| 2004 05 16 | 691 | 0.1+ | 0.2− | 2006 11 16 | H07 | 0.2+ | 0.0 | 2006 11 29 | 704 | 0.3+ | 0.4+ | |
| 2006 10 19 | G96 | 0.2− | 0.0 | 2006 11 17 | 704 | 0.5− | 0.1+ | 2006 11 29 | 704 | 0.4+ | 0.1+ | |
| 2006 10 19 | G96 | 0.2− | 0.1− | 2006 11 17 | 704 | (0.2+ | 2.0+) | 2006 12 01 | G96 | 0.1− | 0.7− | |
| 2006 10 19 | G96 | 0.1+ | 0.5− | 2006 11 17 | 704 | (0.0 | 1.8+) | 2006 12 01 | G96 | 0.0 | 0.5− | |
| 2006 10 28 | G96 | 0.3− | 0.0 | 2006 11 17 | 704 | 0.3+ | 0.8+ | 2006 12 01 | G96 | 0.3− | 0.5− | |
| 2006 10 28 | G96 | 0.4− | 0.3+ | 2006 11 17 | H07 | 0.2+ | 0.3+ | 2006 12 01 | G96 | 0.1+ | 0.5− | |
| 2006 10 28 | G96 | 0.4− | 0.0 | 2006 11 17 | H07 | 0.1− | 0.2− | | | | | |

**2006 WL = 2002 XL$_{77}$ = 2004 FT$_{160}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 7.25545 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23028379 | $\omega$ | 6.44128 | | +0.93817826 | −0.34527298 | |
| $a$ | 2.6360914 | $\Omega$ | 13.83455 | | +0.31280919 | +0.81514719 | |
| $e$ | 0.1118771 | $i$ | 5.91936 | | +0.14822940 | +0.46510389 | |
| $P$ | 4.28 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 11 | 704 | 0.0 | 0.1+ | 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.4− | |
| 2002 12 11 | 704 | (2.5+ | 0.6+) | 2006 10 13 | 691 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.4+ | 0.3− | |
| 2002 12 11 | 704 | 0.2+ | 0.3+ | 2006 11 01 | G96 | 0.3+ | 0.5− | 2006 11 17 | 704 | (0.6− | 1.7+) | |
| 2002 12 11 | 704 | 0.1− | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.4− | |
| 2002 12 14 | 704 | 0.2+ | 0.9− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 17 | 704 | 0.8+ | 0.6+ | |
| 2002 12 14 | 704 | 0.2− | 0.2− | 2006 11 01 | G96 | 0.0 | 0.4− | 2006 11 17 | G96 | 0.1− | 0.3− | |
| 2002 12 14 | 704 | 0.1− | 0.5+ | 2006 11 01 | G96 | 0.0 | 0.1− | 2006 11 17 | 704 | 0.7+ | 0.8− | |
| 2004 03 18 | 704 | 0.7+ | 0.5+ | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.2− | |
| 2004 03 18 | 704 | 0.9+ | 0.4+ | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 17 | G96 | 0.0 | 0.2− | |
| 2004 03 18 | 704 | 0.3+ | 0.2− | 2006 11 01 | G96 | 0.4+ | 0.1− | 2006 11 17 | G96 | 0.4+ | 0.2− | |
| 2004 03 29 | 691 | 0.1− | 0.4+ | 2006 11 01 | G96 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.3+ | 0.2− | |
| 2004 03 29 | 691 | 0.1− | 0.4− | 2006 11 01 | G96 | 0.2+ | 0.3− | 2006 11 17 | 408 | (0.8+ | 1.9+) | |
| 2004 03 29 | 691 | 0.1− | 0.1+ | 2006 11 01 | G96 | 0.0 | 0.0 | 2006 11 17 | 408 | (0.3+ | 1.8+) | |
| 2006 07 21 | G96 | 0.2+ | 0.2+ | 2006 11 01 | G96 | 0.1+ | 0.3− | 2006 11 18 | 291 | 0.2− | 0.1+ | |
| 2006 07 21 | G96 | 0.4− | 0.2+ | 2006 11 08 | 644 | 0.0 | 0.1− | 2006 11 18 | 291 | 0.1− | 0.3+ | |
| 2006 07 21 | G96 | 0.0 | 0.4+ | 2006 11 08 | 644 | 0.1+ | 0.1+ | 2006 11 18 | 291 | 0.2− | 0.2+ | |
| 2006 07 21 | G96 | 0.3+ | 0.3+ | 2006 11 08 | 644 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.5− | |
| 2006 08 28 | 703 | 0.2+ | 0.6− | 2006 11 14 | 703 | 2.4+ | 0.7+ | 2006 11 18 | G96 | 0.0 | 0.3− | |
| 2006 08 28 | 703 | 0.2+ | 0.1+ | 2006 11 14 | 703 | 1.0− | 0.2− | 2006 11 18 | G96 | 0.3+ | 0.4− | |
| 2006 08 28 | 703 | 1.3− | 0.8− | 2006 11 14 | 703 | 0.9− | 0.6− | 2006 11 18 | G96 | 0.3+ | 0.2− | |
| 2006 08 28 | 703 | 1.5− | 1.8+ | 2006 11 14 | 703 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.6+ | 0.0 | |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.7− | 0.1+ | 2006 11 22 | 704 | 0.0 | 0.3+ | |
| 2006 09 30 | G96 | 0.1+ | 0.1− | 2006 11 14 | 703 | 0.2− | 0.1+ | 2006 11 22 | 704 | 0.3+ | 0.0 | |
| 2006 09 30 | G96 | 0.3− | 0.5− | 2006 11 14 | 703 | 0.3− | 0.8− | 2006 11 22 | 704 | 1.4+ | 0.1+ | |
| 2006 09 30 | G96 | 0.1− | 0.3− | 2006 11 14 | 703 | 1.0− | 1.0− | 2006 11 24 | 408 | 0.3− | 0.7+ | |
| 2006 09 30 | G96 | 0.5− | 0.3− | 2006 11 16 | 704 | 0.3+ | 0.4− | 2006 11 24 | 408 | 0.3− | 0.7+ | |
| 2006 09 30 | G96 | 0.2+ | 0.1− | 2006 11 16 | 704 | 1.3− | 1.3+ | 2006 11 25 | 408 | 0.2− | 0.0 | |
| 2006 09 30 | G96 | 0.2− | 0.2− | 2006 11 16 | 704 | 1.3− | 0.5+ | 2006 11 25 | 408 | 0.2− | 0.5+ | |
| 2006 09 30 | G96 | 0.0 | 0.3− | 2006 11 16 | 408 | (1.7+ | 0.7−) | | | | | |
| 2006 10 13 | 691 | 0.0 | 0.4+ | 2006 11 16 | 408 | 0.9+ | 0.3− | | | | | |

**2006 WT**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 10.30821 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.37726822 | $\omega$ | 154.08896 | | +0.86451056 | −0.41312441 | |
| $a$ | 1.8968627 | $\Omega$ | 233.33899 | | +0.37635451 | +0.90958688 | |
| $e$ | 0.0457485 | $i$ | 20.90763 | | +0.33313478 | +0.04449637 | |
| $P$ | 2.61 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 28 | 691 | 0.0 | 0.5+ | 2006 11 17 | 644 | 0.1+ | 0.1− | 2006 11 20 | 704 | 0.8− | 0.8+ | |
| 2000 05 28 | 691 | 0.3− | 1.1+ | 2006 11 17 | 644 | 0.1+ | 0.1+ | 2006 11 20 | 704 | 0.5+ | 1.3+ | |
| 2000 05 28 | 691 | 0.7− | 0.2+ | 2006 11 17 | 644 | 0.1+ | 0.0 | 2006 11 20 | 704 | 0.4− | 0.5+ | |
| 2000 06 11 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.2− | 0.8+ | 2006 11 24 | 691 | 0.1+ | 0.5+ | |
| 2000 06 11 | 691 | 0.4+ | 0.0 | 2006 11 18 | 704 | 0.0 | 1.3+ | 2006 11 24 | 691 | 0.0 | 0.1+ | |
| 2000 06 11 | 691 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.0+ | 1.1+ | 2006 11 24 | 691 | 0.1− | 0.1+ | |
| 2003 07 26 | 644 | 0.2− | 0.3+ | 2006 11 18 | 704 | 1.3+ | 1.0− | 2006 11 25 | 704 | 0.1− | 0.3+ | |
| 2003 07 26 | 644 | 0.3− | 0.4+ | 2006 11 18 | 704 | 0.1− | 0.3− | 2006 11 25 | 704 | 0.8+ | 0.1− | |
| 2003 07 26 | 644 | 0.3− | 0.4+ | 2006 11 18 | 704 | 1.4+ | 0.4+ | 2006 11 25 | 683 | 0.3− | 1.9− | |
| 2005 04 10 | E12 | 0.9+ | 0.4+ | 2006 11 18 | 704 | 0.0 | 1.4+ | 2006 11 25 | 704 | 0.6+ | 0.0 | |
| 2005 04 10 | E12 | 0.1− | 0.2+ | 2006 11 18 | 704 | 0.4+ | 0.4+ | 2006 11 25 | 704 | 0.7+ | 0.9− | |
| 2005 04 10 | E12 | 0.8− | 0.4+ | 2006 11 18 | 704 | 0.3+ | 0.4+ | 2006 11 25 | 683 | 0.5− | 2.3− | |
| 2005 04 10 | E12 | 0.6+ | 0.9+ | 2006 11 18 | 704 | 0.2+ | 0.2− | 2006 11 25 | 704 | 0.5− | 1.6+ | |
| 2006 11 02 | 703 | 0.1+ | 0.6− | 2006 11 20 | 691 | 0.1− | 0.2+ | 2006 11 25 | 683 | 0.3− | 1.3− | |
| 2006 11 02 | 703 | 0.4− | 0.2− | 2006 11 20 | 691 | 0.0 | 0.2+ | 2006 11 25 | 704 | 0.6− | 1.1+ | |
| 2006 11 02 | 703 | 0.9− | 0.5− | 2006 11 20 | 691 | 0.1+ | 0.3+ | 2006 11 25 | 704 | 0.6− | 0.2− | |
| 2006 11 02 | 703 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.1+ | 2006 11 28 | 704 | 0.6+ | 0.2+ | |
| 2006 11 17 | 704 | 0.8+ | 0.0 | 2006 11 20 | 704 | 0.2+ | 0.2+ | 2006 11 28 | 704 | 0.0 | 0.5− | |
| 2006 11 17 | 704 | 0.1− | 0.5− | 2006 11 20 | 691 | 0.3− | 0.4+ | 2006 11 28 | 704 | 0.9+ | 0.3− | |
| 2006 11 17 | 704 | 0.5+ | 0.1− | 2006 11 20 | 704 | 0.4− | 0.2− | 2006 11 28 | 704 | 0.2− | 0.0 | |
| 2006 11 17 | 704 | 1.0− | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.3+ | | | | | |

**2006 WA$_1$ = 1999 VT$_{140}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 339.75608 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28572450 | $\omega$ | 85.64214 | | +0.45570840 | | −0.89012531 |
| $a$ | 2.2829920 | $\Omega$ | 337.24677 | | +0.81398253 | | +0.41790725 |
| $e$ | 0.1541655 | $i$ | 0.38595 | | +0.36022532 | | +0.18174285 |
| $P$ | 3.45 | $H$ | 18.1 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 10 | 691 | 0.2+ | 0.3− | 2006 10 17 | 691 | 0.2− | 0.0 | 2006 11 18 | 926 | 0.1− | 0.3+ |
| 1999 11 10 | 691 | 0.2+ | 0.0 | 2006 10 31 | G96 | 0.3− | 0.0 | 2006 11 18 | 926 | 0.1− | 0.5+ |
| 1999 11 10 | 691 | 0.2+ | 0.1− | 2006 10 31 | G96 | 0.4− | 0.1+ | 2006 11 18 | 926 | 0.3− | 0.3+ |
| 1999 11 15 | 691 | 0.1− | 0.4− | 2006 10 31 | G96 | 0.1+ | 0.3+ | 2006 11 18 | 926 | 0.0 | 0.3+ |
| 1999 11 15 | 691 | 0.0 | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.2+ | 2006 11 21 | 704 | 0.0 | 0.5− |
| 1999 11 15 | 691 | 0.1+ | 0.3− | 2006 11 10 | 691 | 0.0 | 0.3− | 2006 11 21 | 704 | 0.2+ | 0.4− |
| 2004 02 12 | 691 | 0.3+ | 0.0 | 2006 11 10 | 691 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.2− | 0.4− |
| 2004 02 12 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.0 | 0.3+ |
| 2004 02 12 | 691 | 0.1− | 0.1− | 2006 11 17 | 926 | 0.1− | 0.4+ | 2006 11 22 | 691 | 0.2+ | 0.0 |
| 2004 02 29 | 691 | 0.1− | 0.0 | 2006 11 17 | 926 | 0.0 | 0.5+ | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2004 02 29 | 691 | 0.1− | 0.1+ | 2006 11 17 | 926 | 0.0 | 0.3+ | 2006 11 25 | 926 | 0.2− | 0.0 |
| 2004 02 29 | 691 | 0.0 | 0.2− | 2006 11 17 | 926 | 0.1− | 0.5+ | 2006 11 25 | 926 | 0.2− | 0.0 |
| 2006 09 27 | G96 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.1− | 0.2+ | 2006 11 25 | 926 | 0.0 | 0.1+ |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 18 | 691 | 0.1− | 0.1+ | 2006 11 25 | 926 | 0.1− | 0.2+ |
| 2006 09 27 | G96 | 0.6− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.2+ | 2006 11 25 | 926 | 0.1− | 0.1+ |
| 2006 09 27 | G96 | 0.2− | 0.1+ | 2006 11 18 | 926 | 0.1− | 0.1+ | 2006 11 25 | 926 | 0.1− | 0.1+ |
| 2006 10 17 | 691 | 0.1+ | 0.4+ | 2006 11 18 | 926 | 0.2− | 0.2+ | | | | |
| 2006 10 17 | 691 | 0.2+ | 0.1− | 2006 11 18 | 926 | 0.0 | 0.1+ | | | | |

**2006 WK$_2$ = 2001 BH$_{14}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 58.70233 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30345158 | $\omega$ | 167.41272 | | +0.75976764 | | +0.64961488 |
| $a$ | 2.1931909 | $\Omega$ | 152.01557 | | −0.60149891 | | +0.71827091 |
| $e$ | 0.2122412 | $i$ | 3.35405 | | −0.24688500 | | +0.24917345 |
| $P$ | 3.25 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 01 21 | 691 | 0.1+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.5− | 0.0 |
| 2001 01 21 | 691 | 0.0 | 0.4+ | 2006 11 16 | 691 | 0.7− | 0.1− | 2006 11 24 | 691 | 0.1− | 0.0 |
| 2001 01 21 | 691 | 0.2+ | 0.1− | 2006 11 16 | 691 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2001 01 23 | 691 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.3− | 2006 11 28 | 704 | 0.1+ | 0.0 |
| 2001 01 23 | 691 | 0.1− | 0.3− | 2006 11 20 | 704 | 1.1+ | 0.1+ | 2006 11 28 | 704 | 0.2− | 0.0 |
| 2001 01 23 | 691 | 0.2− | 0.1+ | 2006 11 20 | 704 | 0.6+ | 1.1+ | 2006 11 28 | 704 | 0.2− | 0.1− |
| 2006 11 12 | G96 | 0.4− | 0.1− | 2006 11 20 | 704 | 1.2+ | 1.1+ | 2006 11 28 | 704 | 0.1+ | 0.2− |
| 2006 11 12 | G96 | 0.5+ | 0.1− | 2006 11 20 | 704 | 1.3+ | 0.1+ | 2006 11 28 | 704 | 0.1+ | 0.1− |
| 2006 11 12 | G96 | 0.2− | 0.1− | 2006 11 20 | 704 | 1.2+ | 0.6+ | | | | |

**2006 WH$_4$ = 2002 TF$_{339}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.49322 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26527938 | $\omega$ | 338.54435 | | +0.27202871 | | −0.96033258 |
| $a$ | 2.3988351 | $\Omega$ | 95.62943 | | +0.89160785 | | +0.22755941 |
| $e$ | 0.1823262 | $i$ | 3.53338 | | +0.36198870 | | +0.16117707 |
| $P$ | 3.72 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1991 11 08 | 691 | 0.4− | 0.7+ | 2002 11 08 | 645 | 0.1+ | 0.1− | 2006 11 20 | H55 | 0.2− | 0.2− |
| 1991 11 08 | 691 | 0.2+ | 0.3+ | 2002 11 08 | 645 | 0.1+ | 0.2− | 2006 11 20 | H55 | 0.3− | 0.1− |
| 1991 11 08 | 691 | 0.4− | 0.9+ | 2006 11 11 | 691 | 0.1+ | 0.1− | 2006 11 21 | H55 | 0.2− | 0.0 |
| 2002 10 05 | 645 | 0.1− | 0.0 | 2006 11 11 | 691 | 0.2+ | 0.1+ | 2006 11 21 | H55 | 0.2− | 0.0 |
| 2002 10 05 | 645 | 0.0 | 0.1− | 2006 11 11 | 691 | 0.0 | 0.3− | 2006 11 21 | H55 | 0.1− | 0.1+ |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.1− | 2006 11 21 | H55 | 0.3− | 0.0 |
| 2002 10 10 | 645 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.4− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 19 | 691 | 0.1− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2002 10 31 | 645 | 0.0 | 0.1− | 2006 11 20 | H55 | 0.2− | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.0 |

**2006 WR$_4$ = 2002 GJ$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 316.86175 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.35460234 | $\omega$ | 40.17753 | | +0.00484468 | | −0.95449086 |
| $a$ | 1.9768558 | $\Omega$ | 51.72044 | | +0.79200356 | | −0.17839258 |
| $e$ | 0.0879088 | $i$ | 22.32593 | | +0.61049725 | | +0.23900478 |
| $P$ | 2.78 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 04 11 | 644 | 0.7+ | 0.1+ | 2003 10 25 | 699 | 2.8− | 0.2− | 2006 11 22 | 703 | 0.3− | 0.1− |
| 2002 04 11 | 644 | 0.4+ | 0.2+ | 2003 10 25 | 699 | 0.2− | 0.5− | 2006 11 22 | 703 | 0.4− | 1.2− |
| 2002 04 11 | 644 | 0.7+ | 0.0 | 2003 10 25 | 699 | 0.5+ | 0.5+ | 2006 11 22 | 703 | (1.8− | 3.0−) |
| 2002 04 15 | 699 | 0.3+ | 0.5+ | 2003 10 25 | 699 | 0.2− | 0.2− | 2006 11 22 | 703 | 0.8− | 0.0 |
| 2002 04 15 | 699 | 0.3+ | 0.1+ | 2003 11 23 | 699 | 0.8− | 0.8+ | 2006 11 22 | 703 | 0.6+ | 0.1− |
| 2002 04 15 | 699 | 0.3+ | 0.3+ | 2003 11 23 | 699 | 0.1− | 0.0 | 2006 11 22 | 703 | 0.3− | 0.5+ |
| 2002 04 15 | 699 | 0.7− | 0.7+ | 2003 11 23 | 699 | 0.3− | 0.4+ | 2006 11 22 | 703 | 0.3− | 0.3+ |
| 2002 05 12 | 644 | 0.3+ | 0.5+ | 2003 11 23 | 699 | 0.8+ | 0.1− | 2006 11 22 | 470 | 0.1− | 0.1− |
| 2002 05 12 | 644 | 0.8+ | 0.3+ | 2005 05 19 | 644 | 0.5+ | 1.0+ | 2006 11 22 | 470 | 0.1− | 0.0 |
| 2002 05 12 | 644 | 0.3+ | 0.4+ | 2005 05 19 | 644 | 0.3+ | 0.7+ | 2006 11 22 | 470 | 0.0 | 0.2− |
| 2003 10 18 | 699 | 0.8+ | 0.1− | 2005 05 19 | 644 | 0.2+ | 0.8+ | 2006 11 22 | 470 | 0.3+ | 0.2− |
| 2003 10 18 | 699 | 0.7− | 0.0 | 2006 10 28 | 291 | 0.0 | 0.5+ | 2006 11 22 | 470 | 0.2+ | 0.2− |
| 2003 10 18 | 699 | 0.7+ | 1.4+ | 2006 10 28 | 291 | 0.1− | 0.4+ | 2006 11 22 | 143 | 0.2+ | 0.0 |
| 2003 10 18 | 699 | 0.5− | 0.6+ | 2006 10 28 | 291 | 0.0 | 0.3+ | 2006 11 22 | 143 | 0.5+ | 0.0 |

**2006 WR$_7$ = 2005 NJ$_{99}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 76.83133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21422610 | $\omega$ | 158.46105 | | +0.80750246 | | +0.58954537 |
| $a$ | 2.7662268 | $\Omega$ | 165.36501 | | −0.55178031 | | +0.76657976 |
| $e$ | 0.0644611 | $i$ | 4.40176 | | −0.20851443 | | +0.25454219 |
| $P$ | 4.60 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 13 | 691 | 0.6+ | 0.0 | 2005 07 10 | 691 | 0.1− | 0.2+ | 2006 11 20 | 691 | 0.0 | 0.1− |
| 1999 03 13 | 691 | 0.3− | 0.1− | 2005 07 15 | 691 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.7− | 0.7− |
| 1999 03 13 | 691 | 0.2− | 0.3− | 2005 07 15 | 691 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.5+ | 0.7+ |
| 2001 10 25 | 691 | 0.1− | 0.2+ | 2005 07 15 | 691 | 0.4+ | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2001 10 25 | 691 | 0.3− | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.2+ | 2006 11 24 | 691 | 0.5− | 0.0 |
| 2001 10 25 | 691 | 0.1+ | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.0 | 0.4+ |
| 2004 04 19 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2004 04 19 | 691 | 0.1− | 0.4+ | 2006 11 18 | G96 | 0.2− | 0.1− | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2004 04 19 | 691 | 0.2− | 0.5+ | 2006 11 18 | G96 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.2+ | 0.1− |
| 2005 07 10 | 691 | 0.0 | 0.1− | 2006 11 18 | G96 | 0.1+ | 0.2+ | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2005 07 10 | 691 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.6+ | 0.1+ | | | | |

**2006 WY$_7$ = 2001 QF$_{204}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.31559 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21812386 | $\omega$ | 112.77711 | | +0.92995812 | | −0.34804052 |
| $a$ | 2.7331739 | $\Omega$ | 267.75738 | | +0.27856043 | | +0.87735329 |
| $e$ | 0.2121292 | $i$ | 6.81162 | | +0.23996246 | | +0.33033164 |
| $P$ | 4.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 23 | 699 | 0.8+ | 0.0 | 2006 10 19 | 703 | 0.8− | 0.1+ | 2006 11 17 | 704 | 0.6+ | 0.8+ |
| 2001 08 23 | 699 | 0.8+ | 0.2+ | 2006 10 19 | 703 | 0.8+ | 0.9− | 2006 11 19 | 704 | 0.3+ | 0.6+ |
| 2001 08 23 | 699 | 0.7− | 0.1+ | 2006 10 19 | 703 | 0.8− | 1.3− | 2006 11 19 | 704 | 0.2− | 0.2+ |
| 2001 08 23 | 699 | 0.9+ | 0.7− | 2006 11 16 | 704 | 0.7+ | 0.7+ | 2006 11 19 | 704 | 0.7+ | 0.9− |
| 2001 08 25 | 704 | 0.2− | 0.2− | 2006 11 16 | 704 | 0.1− | 1.0− | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2001 08 25 | 704 | 0.3− | 0.5+ | 2006 11 16 | 704 | 0.1+ | 0.4+ | 2006 11 19 | 704 | 0.4− | 0.6+ |
| 2001 08 25 | 704 | 0.9− | 0.4− | 2006 11 16 | 704 | 0.7− | 0.2− | 2006 11 22 | 704 | 0.5− | 0.6− |
| 2001 08 25 | 704 | 0.5− | 0.1+ | 2006 11 16 | 704 | 0.1− | 0.7+ | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2001 08 25 | 704 | 0.6− | 0.1+ | 2006 11 17 | 691 | 0.1− | 0.1− | 2006 11 22 | 704 | 0.4− | 0.4+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.4− | 0.7+ |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 704 | 0.6− | 0.2− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.1+ | 0.3− | 2006 11 25 | 691 | 0.3+ | 0.3− |
| 2001 09 20 | 645 | 0.0 | 0.0 | 2006 11 17 | 704 | 0.2+ | 0.0 | 2006 11 25 | 691 | 0.2+ | 0.5+ |
| 2006 10 19 | 703 | 0.6− | 0.8− | 2006 11 17 | 704 | 0.6− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.0 |

**2006 WC$_8$ = 1999 VC$_{223}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 317.07584 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27751247 | $\omega$ | 219.98040 | | +0.00542075 | | −0.95505911 |
| $a$ | 2.3278110 | $\Omega$ | 231.84409 | | +0.98648718 | | +0.05363829 |
| $e$ | 0.2272649 | $i$ | 22.14157 | | +0.16374876 | | −0.29152192 |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 11 04 | 704 | 0.5− | 0.2− | 2006 09 25 | 703 | 0.3+ | 0.2− | 2006 11 18 | 704 | 1.9− | 1.0+ |
| 1999 11 04 | 704 | 0.4+ | 1.0− | 2006 09 25 | 703 | 1.7+ | 0.4− | 2006 11 18 | 704 | 0.3− | 1.4+ |
| 1999 11 04 | 704 | 0.5+ | 1.3− | 2006 10 19 | 703 | 1.0− | 1.0+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 1999 11 16 | 703 | 0.1+ | 0.5− | 2006 10 19 | 703 | 0.1− | 0.4+ | 2006 11 19 | 704 | 0.0 | 0.2+ |
| 1999 11 16 | 703 | 0.7− | 0.3+ | 2006 10 19 | 703 | 0.2+ | 0.6+ | 2006 11 19 | 704 | 0.3+ | 0.7+ |
| 1999 11 16 | 703 | 0.0 | 0.2− | 2006 10 19 | 703 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.2− | 0.3+ |
| 1999 11 16 | 703 | 0.6− | 0.3− | 2006 11 11 | 703 | 0.1+ | 0.8− | 2006 11 19 | 704 | 0.0 | 0.5+ |
| 2004 03 19 | E12 | 0.8+ | 0.5− | 2006 11 11 | 703 | 0.1+ | 0.5+ | 2006 11 21 | 704 | 1.1+ | 0.2+ |
| 2004 03 19 | E12 | 0.8− | 0.0 | 2006 11 11 | 703 | 0.0 | 0.1+ | 2006 11 21 | 704 | 0.0 | 0.3− |
| 2004 03 19 | E12 | 0.3− | 0.1+ | 2006 11 11 | 703 | 0.3+ | 0.9− | 2006 11 21 | 704 | 0.4− | 0.3+ |
| 2004 03 19 | E12 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.9+ | 0.0 | 2006 11 21 | 704 | 0.5+ | 0.5+ |
| 2004 03 19 | E12 | 0.1− | 0.8+ | 2006 11 16 | 704 | (0.0 | 1.8−) | 2006 11 21 | 704 | 0.8− | 0.5− |
| 2004 03 19 | E12 | 0.6− | 0.5− | 2006 11 16 | 704 | 0.3+ | 0.2− | 2006 11 27 | 703 | 0.7− | 1.3− |
| 2004 03 19 | E12 | 0.4+ | 0.7+ | 2006 11 16 | 704 | 0.8+ | 0.6− | 2006 11 27 | 703 | 0.8− | 1.3− |
| 2004 03 19 | E12 | 0.6+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.6− | 2006 11 27 | 703 | 1.0− | 0.4− |
| 2004 03 19 | E12 | 0.2+ | 0.7+ | 2006 11 17 | G96 | 0.4+ | 0.4− | 2006 11 27 | 703 | 0.1− | 1.4− |
| 2004 03 19 | E12 | 0.4+ | 0.2+ | 2006 11 17 | G96 | 0.3+ | 0.4− | 2006 11 28 | 704 | 0.8+ | 0.7+ |
| 2004 03 19 | E12 | 0.3− | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.5− | 2006 11 28 | 704 | 0.9+ | 0.5− |
| 2004 03 19 | E12 | 0.0 | 0.1− | 2006 11 18 | 704 | 0.0 | 1.5+ | 2006 11 28 | 704 | 0.1− | 1.5+ |
| 2006 09 25 | 703 | 0.1+ | 0.9+ | 2006 11 18 | 704 | 0.0 | 0.8+ | 2006 11 28 | 704 | 0.2+ | 1.1+ |
| 2006 09 25 | 703 | 0.0 | 0.7− | 2006 11 18 | 704 | 0.9− | 0.3+ | | | | |

**2006 WF$_8$ = 2001 UH$_{110}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 57.63806 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.20454007 | $\omega$ | 198.88056 | | +0.86106130 | | +0.50695264 |
| $a$ | 2.8528818 | $\Omega$ | 130.59320 | | −0.45956111 | | +0.80919997 |
| $e$ | 0.0806782 | $i$ | 2.99342 | | −0.21766262 | | +0.29697548 |
| $P$ | 4.82 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 21 | 704 | 1.2− | 1.0+ | 2001 10 23 | 704 | 0.0 | 0.7+ | 2006 09 30 | G96 | 0.5+ | 0.4− |
| 2001 10 21 | 704 | 0.4+ | 0.5− | 2001 10 23 | 704 | 0.3− | 0.1+ | 2006 09 30 | G96 | 0.3+ | 0.1− |
| 2001 10 21 | 704 | 0.2− | 0.1+ | 2001 10 23 | 704 | 0.4− | 0.3− | 2006 09 30 | G96 | 0.5+ | 0.0 |
| 2001 10 21 | 704 | (1.6− | 0.1+) | 2001 10 24 | 704 | 0.0 | 0.3+ | 2006 10 16 | 703 | 0.2+ | 0.7− |
| 2001 10 21 | 704 | 0.1− | 1.0− | 2001 10 24 | 704 | 0.3+ | 0.8− | 2006 10 16 | 703 | 0.6− | 0.0 |
| 2001 10 21 | 704 | 0.4− | 0.2− | 2001 10 24 | 704 | 1.4+ | 0.4+ | 2006 10 16 | 703 | 0.4+ | 0.7− |
| 2001 10 21 | 704 | 0.8− | 0.8+ | 2001 10 24 | 704 | 1.0+ | 0.1+ | 2006 10 16 | 703 | 0.3− | 0.3− |
| 2001 10 21 | 704 | 0.6− | 0.3+ | 2001 10 24 | 704 | 0.1+ | 0.1− | 2006 11 16 | G96 | 0.2+ | 0.1− |
| 2001 10 21 | 704 | 0.4− | 0.4− | 2005 06 08 | 691 | 0.2− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.5− |
| 2001 10 21 | 704 | 0.1+ | 0.0 | 2005 06 08 | 691 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.4+ | 0.4− |
| 2001 10 21 | 704 | 0.5− | 0.4+ | 2005 06 08 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3+ | 0.7− |
| 2001 10 21 | 704 | 0.3+ | 0.6+ | 2005 07 03 | G96 | 0.3+ | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.5+ |
| 2001 10 21 | 704 | (0.9− | 2.1+) | 2005 07 03 | G96 | 0.3− | 0.1+ | 2006 11 17 | 703 | 0.9− | 0.6+ |
| 2001 10 21 | 704 | 0.9+ | 0.4+ | 2005 07 03 | G96 | 0.4− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.0 |
| 2001 10 21 | 704 | 0.1− | 0.9+ | 2005 07 03 | G96 | 1.1+ | 0.7− | 2006 11 17 | 703 | 1.3+ | 0.9− |
| 2001 10 23 | 704 | 0.8− | 0.7+ | 2006 09 30 | G96 | 0.1− | 0.2− | | | | |

**2006 WK$_8$ = 1994 AB$_6$ = 2005 NP$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 53.05556 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21659704 | $\omega$ | 237.95220 | | +0.96404065 | | +0.23807373 |
| $a$ | 2.7460032 | $\Omega$ | 108.04434 | | −0.18200153 | | +0.91526373 |
| $e$ | 0.0500961 | $i$ | 7.13480 | | −0.19365190 | | +0.32498184 |
| $P$ | 4.55 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 06 | 691 | 0.3+ | 0.5− | 2004 04 16 | 291 | 0.4+ | 0.3+ | 2006 11 16 | 704 | (1.5+ | 0.6+) |
| 1994 01 06 | 691 | 0.8− | 0.0 | 2005 07 02 | 691 | 0.2− | 0.1− | 2006 11 17 | 704 | (1.9− | 0.6+) |
| 1994 01 06 | 691 | 0.8+ | 0.9+ | 2005 07 02 | 691 | 0.4+ | 0.2+ | 2006 11 17 | 704 | 0.4+ | 1.1+ |
| 1994 01 19 | 691 | 0.7− | 0.1− | 2005 07 02 | 691 | 0.2− | 0.2+ | 2006 11 17 | 704 | (0.5− | 1.6+) |
| 1994 01 19 | 691 | 0.1− | 0.1+ | 2005 07 11 | 691 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.9+ | 0.1+ |
| 1994 01 19 | 691 | 0.6+ | 0.2− | 2005 07 11 | 691 | 0.2− | 0.2+ | 2006 11 19 | 703 | 0.5+ | 0.2+ |
| 2001 09 18 | 699 | 0.8+ | 0.4+ | 2005 07 11 | 691 | 0.1− | 0.0 | 2006 11 19 | 703 | 1.1− | 0.1− |
| 2001 09 18 | 699 | 0.0 | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 | 2006 11 19 | 703 | (2.3− | 0.2−) |
| 2001 09 18 | 699 | 0.8− | 0.4+ | 2006 10 20 | 644 | 0.5− | 0.0 | 2006 11 19 | 703 | (1.8− | 0.8+) |
| 2001 09 18 | 699 | 1.0− | 1.1+ | 2006 10 20 | 644 | 0.7− | 0.2+ | 2006 11 22 | G96 | 0.0 | 0.2+ |
| 2001 09 25 | 644 | 0.2+ | 0.1+ | 2006 11 14 | 704 | 0.4+ | 0.5+ | 2006 11 22 | G96 | 0.2− | 0.1+ |
| 2001 09 25 | 644 | 0.0 | 0.3+ | 2006 11 14 | 704 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.0 | 0.0 |
| 2001 09 25 | 644 | 0.4− | 0.3+ | 2006 11 14 | 704 | 0.8− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.1− |
| 2004 04 16 | 291 | 0.2− | 0.4+ | 2006 11 16 | 704 | (0.5+ | 1.9+) | | | | |
| 2004 04 16 | 291 | 0.2+ | 0.5+ | 2006 11 16 | 704 | 0.6+ | 1.1+ | | | | |

**2006 WM$_8$ = 2001 YT$_{50}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.68548 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19170326 | $\omega$ | 342.34004 | | +0.49076767 | | −0.85877307 |
| $a$ | 2.9788574 | $\Omega$ | 78.04660 | | +0.81644795 | | +0.39429420 |
| $e$ | 0.1691624 | $i$ | 8.65133 | | +0.30423647 | | +0.32717106 |
| $P$ | 5.14 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.0 | 0.5− | 2006 11 12 | G96 | 0.2+ | 0.3− | 2006 11 20 | 704 | 0.3− | 0.5− |
| 2001 12 18 | 704 | 0.1− | 0.2− | 2006 11 12 | G96 | 0.0 | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.2+ |
| 2001 12 18 | 704 | 1.2− | 0.3+ | 2006 11 12 | G96 | 0.1− | 0.2− | 2006 11 24 | 691 | 1.0+ | 0.2+ |
| 2001 12 19 | 704 | 1.4− | 0.8− | 2006 11 12 | G96 | 0.3− | 0.3− | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2001 12 19 | 704 | 0.7+ | 0.2− | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1+ |
| 2001 12 19 | 704 | 0.7+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2001 12 19 | 704 | 1.1+ | 1.0+ | 2006 11 16 | 691 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.0 |
| 2001 12 19 | 704 | 0.2+ | 0.1− | 2006 11 17 | 704 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1− | 0.1− |
| 2006 10 31 | G96 | 0.1+ | 0.1+ | 2006 11 17 | 704 | 0.2+ | 0.2+ | 2006 12 01 | 691 | 0.1+ | 0.1− |
| 2006 10 31 | G96 | 0.3+ | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.6− | 2006 12 01 | 691 | 0.1− | 0.2+ |
| 2006 10 31 | G96 | 0.1+ | 0.0 | 2006 11 20 | 704 | 1.1− | 0.0 | 2006 12 01 | 691 | 0.1− | 0.0 |
| 2006 10 31 | G96 | 0.2+ | 0.1− | 2006 11 20 | 704 | 0.9− | 0.2+ | | | | |

**2006 WR$_8$ = 2003 BD$_4$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 292.68758 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21274596 | $\omega$ | 290.55339 | | −0.53606360 | | −0.84405231 |
| $a$ | 2.7790424 | $\Omega$ | 191.89533 | | +0.79842140 | | −0.50133777 |
| $e$ | 0.0161654 | $i$ | 4.04591 | | +0.27415158 | | −0.19035791 |
| $P$ | 4.63 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 23 | 809 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2003 01 23 | 809 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.3+ | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2003 01 23 | 809 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2003 01 24 | 809 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.6− | 0.5− | 2006 11 24 | 691 | 0.1− | 0.1− |
| 2003 01 24 | 809 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.4+ | 0.1− |
| 2003 01 24 | 809 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− | 2006 11 24 | 691 | 0.3+ | 0.1− |

**2006 WK$_9$ = 1998 HX$_{145}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 164.67265 | | (2000.0) | | | |
| $n$ | 0.29409254 | $\omega$ | 141.65836 | | −0.42931528 | +0.89683179 |
| $a$ | 2.2394776 | $\Omega$ | 102.68706 | | −0.85327137 | −0.36405025 |
| $e$ | 0.1831560 | $i$ | 6.27798 | | −0.29600060 | −0.25131684 |
| $P$ | 3.35 | $H$ | 16.8 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 04 21 | 704 | 0.8− | 0.1+ | 2005 05 20 | G96 | 0.4− | 0.2− | 2006 11 16 | 691 | 0.1+ | 0.0 | |
| 1998 04 21 | 704 | 1.4+ | 1.1− | 2005 05 20 | G96 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.0 | 0.3− | |
| 1998 04 21 | 704 | 1.7− | 0.9− | 2005 05 20 | G96 | 0.4− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.5− | |
| 1998 04 21 | 704 | 0.4− | 0.8− | 2005 06 17 | G96 | 0.2+ | 0.0 | 2006 11 17 | G96 | 0.3+ | 0.3− | |
| 1998 04 23 | 704 | 1.1+ | 0.6− | 2005 06 17 | G96 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.5− | 1.2− | |
| 1998 04 23 | 704 | 1.0− | 0.1+ | 2005 06 17 | G96 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.1− | 0.6− | |
| 1998 04 23 | 704 | 0.0 | 0.9+ | 2005 06 17 | G96 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.5+ | 0.0 | |
| 1998 04 23 | 704 | 0.6+ | 0.3+ | 2005 07 02 | 691 | 0.1+ | 0.0 | 2006 11 17 | G96 | 0.2− | 0.2− | |
| 2004 01 30 | 691 | 0.2+ | 0.0 | 2005 07 02 | 691 | 0.1− | 0.2− | 2006 11 17 | G96 | 0.2+ | 0.2− | |
| 2004 01 30 | 691 | 0.4− | 0.1− | 2005 07 02 | 691 | 0.0 | 0.2− | 2006 11 17 | G96 | 0.0 | 0.1+ | |
| 2004 01 30 | 691 | 0.0 | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | | | | | |

**2006 WY$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 37.93920 | | (2000.0) | | | |
| $n$ | 0.29253711 | $\omega$ | 252.51057 | | +0.95821536 | +0.26979674 |
| $a$ | 2.2474088 | $\Omega$ | 91.75625 | | −0.21282899 | +0.89443729 |
| $e$ | 0.1679179 | $i$ | 5.45633 | | −0.19112078 | +0.35663939 |
| $P$ | 3.37 | $H$ | 17.1 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 08 | 691 | 0.1− | 0.2+ | 2006 09 16 | 703 | 0.5− | 0.1+ | 2006 11 27 | 691 | 0.3− | 0.5+ | |
| 1994 01 08 | 691 | 0.4+ | 0.2− | 2006 09 16 | 703 | 0.2+ | 0.8+ | 2006 11 27 | 691 | 0.5− | 0.2− | |
| 1994 01 08 | 691 | 0.3− | 0.0 | 2006 11 16 | G96 | 0.5+ | 0.7− | 2006 11 28 | 704 | 0.3+ | 0.8− | |
| 1999 09 08 | 703 | 1.1− | 1.2+ | 2006 11 16 | G96 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.5+ | 0.3− | |
| 1999 09 08 | 703 | 1.4+ | 1.1+ | 2006 11 16 | G96 | 0.1+ | 0.4− | 2006 11 28 | 704 | 0.4− | 0.7− | |
| 1999 09 08 | 703 | 0.3− | 0.1+ | 2006 11 16 | G96 | 0.4+ | 0.4− | 2006 11 28 | 704 | 0.2+ | 0.0 | |
| 1999 09 08 | 703 | 0.5− | 1.2− | 2006 11 17 | 704 | 0.1− | 0.3+ | 2006 11 28 | 704 | 0.6− | 0.7+ | |
| 2005 04 07 | 691 | 0.1− | 0.3+ | 2006 11 17 | 704 | 1.3+ | 1.2+ | 2006 12 01 | 691 | 0.0 | 0.1+ | |
| 2005 04 07 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 704 | 0.1− | 0.3+ | 2006 12 01 | 691 | 0.1+ | 0.2+ | |
| 2005 04 07 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 704 | 0.8+ | 0.3+ | 2006 12 01 | 691 | 0.3− | 0.3− | |
| 2006 09 16 | 703 | 1.0− | 0.3− | 2006 11 17 | 704 | 0.6+ | 1.1+ | | | | | |
| 2006 09 16 | 703 | 0.8+ | 1.0− | 2006 11 27 | 691 | 0.0 | 0.2+ | | | | | |

**2006 WN$_{10}$ = 2000 AO$_9$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 327.67416 | | (2000.0) | | | |
| $n$ | 0.27627872 | $\omega$ | 89.92906 | | +0.05952287 | −0.99821808 |
| $a$ | 2.3347359 | $\Omega$ | 356.64981 | | +0.88484273 | +0.05471183 |
| $e$ | 0.2095025 | $i$ | 4.12729 | | +0.46207182 | +0.02381760 |
| $P$ | 3.57 | $H$ | 17.1 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 02 | 704 | 0.2+ | 1.3− | 2006 10 27 | 703 | 0.6− | 0.9− | 2006 11 19 | 704 | 0.7− | 1.1+ | |
| 2000 01 02 | 704 | 0.1− | 0.1− | 2006 10 27 | 703 | (2.2− | 1.4−) | 2006 11 19 | 704 | 0.6− | 0.7+ | |
| 2000 01 02 | 704 | 0.6− | 0.9− | 2006 10 27 | 703 | 1.1− | 0.1− | 2006 11 19 | 704 | 0.4− | 0.2− | |
| 2000 01 04 | 704 | 0.8− | 0.9− | 2006 10 27 | 703 | (1.7− | 0.7−) | 2006 11 22 | 704 | 0.2+ | 0.3+ | |
| 2000 01 04 | 704 | 0.5+ | 0.0 | 2006 11 16 | 704 | 0.3+ | 0.8+ | 2006 11 22 | 704 | 0.3+ | 0.5+ | |
| 2000 01 04 | 704 | 0.4+ | 1.1− | 2006 11 16 | 704 | 0.3+ | 0.5+ | 2006 11 22 | 704 | 0.7+ | 0.3+ | |
| 2000 01 04 | 704 | 0.2− | 0.4− | 2006 11 16 | 704 | 0.6+ | 1.1+ | 2006 11 22 | 704 | 0.4+ | 0.8+ | |
| 2004 03 31 | 291 | 0.2− | 0.4+ | 2006 11 16 | 704 | 0.8− | 1.4+ | 2006 11 22 | 704 | 0.7+ | 0.6+ | |
| 2004 03 31 | 291 | 0.5+ | 0.4+ | 2006 11 16 | 704 | 0.4+ | 0.8+ | 2006 11 25 | 691 | 0.1+ | 0.0 | |
| 2004 03 31 | 291 | 0.3+ | 0.2+ | 2006 11 17 | 691 | 0.2+ | 0.1− | 2006 11 25 | 691 | 0.0 | 0.2− | |
| 2006 10 04 | G96 | 1.0+ | 0.0 | 2006 11 17 | 691 | 0.2− | 0.1− | 2006 11 25 | 691 | 0.0 | 0.0 | |
| 2006 10 04 | G96 | 0.3+ | 0.2− | 2006 11 17 | 691 | 0.2− | 0.0 | 2006 11 27 | 704 | 0.1− | 0.4− | |
| 2006 10 04 | G96 | 0.5+ | 0.1+ | 2006 11 19 | 704 | 1.2− | 1.0+ | 2006 11 27 | 704 | 0.2− | 0.3− | |
| 2006 10 04 | G96 | 0.6+ | 0.0 | 2006 11 19 | 704 | 0.3− | 0.7+ | 2006 11 27 | 704 | 0.4− | 1.4− | |

**2006 WC$_{11}$ = 2004 BX$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.12443 | | (2000.0) | | | |
| $n$ | 0.30208995 | $\omega$ | 120.36681 | | +0.54297743 | −0.83882364 |
| $a$ | 2.1997764 | $\Omega$ | 296.69551 | | +0.75453658 | +0.50792442 |
| $e$ | 0.1261558 | $i$ | 2.52603 | | +0.36857844 | +0.19592776 |
| $P$ | 3.26 | $H$ | 17.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.1− | 0.3− | 2006 10 04 | G96 | 0.1+ | 0.5− | 2006 11 18 | 691 | 0.2− | 0.0 | |
| 2004 01 16 | 691 | 0.1− | 0.4− | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.2− | 0.1− | |
| 2004 01 16 | 691 | 0.1− | 0.2− | 2006 11 10 | 691 | 0.3− | 0.0 | 2006 11 19 | 704 | 1.3+ | 0.2− | |
| 2004 01 21 | 704 | 0.3+ | 1.2+ | 2006 11 10 | 691 | 0.3− | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.8+ | |
| 2004 01 21 | 704 | 0.1+ | 0.2+ | 2006 11 10 | 691 | 0.3− | 0.1+ | 2006 11 19 | 704 | 0.1− | 0.2+ | |
| 2004 01 21 | 704 | 0.2+ | 0.6+ | 2006 11 16 | 704 | (2.2− | 1.9+) | 2006 11 19 | 704 | 0.2− | 0.5+ | |
| 2004 01 21 | 704 | 0.5+ | 0.2+ | 2006 11 16 | 704 | 0.2− | 0.4+ | 2006 11 19 | 704 | 0.5+ | 0.4− | |
| 2004 01 21 | 704 | 0.3− | 0.3+ | 2006 11 16 | 704 | 1.4+ | 0.1− | 2006 11 21 | G96 | 0.5− | 0.3− | |
| 2004 01 27 | 691 | 0.1+ | 0.0 | 2006 11 16 | 704 | 0.5+ | 0.1− | 2006 11 21 | G96 | 0.4− | 0.2− | |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 11 16 | 704 | 0.9+ | 1.5− | 2006 11 21 | G96 | 0.4− | 0.4− | |
| 2004 01 27 | 691 | 0.2− | 0.1+ | 2006 11 16 | 704 | 0.3+ | 0.6+ | 2006 11 21 | G96 | 0.0 | 0.4− | |
| 2004 02 13 | 691 | 0.1− | 0.1− | 2006 11 16 | 704 | 1.1+ | 0.8− | 2006 11 27 | 704 | 0.5− | 0.2+ | |
| 2004 02 13 | 691 | 0.4+ | 0.0 | 2006 11 17 | 644 | 0.2− | 0.1+ | 2006 11 27 | 704 | 0.4+ | 0.1+ | |
| 2004 02 13 | 691 | 0.1− | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.3+ | 2006 11 27 | 704 | 0.2+ | 0.6+ | |
| 2006 10 04 | G96 | 0.2+ | 0.2− | 2006 11 17 | 644 | 0.2+ | 0.6+ | | | | | |
| 2006 10 04 | G96 | 0.1+ | 0.3− | 2006 11 18 | 691 | 0.1− | 0.0 | | | | | |

**2006 WE$_{11}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 20.21383 | | (2000.0) | | | |
| $n$ | 0.17740470 | $\omega$ | 357.13209 | | +0.85873808 | −0.50521993 |
| $a$ | 3.1368419 | $\Omega$ | 33.65552 | | +0.47315080 | +0.71769656 |
| $e$ | 0.0428163 | $i$ | 8.88188 | | +0.19671611 | +0.47923322 |
| $P$ | 5.56 | $H$ | 15.3 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 30 | 699 | 0.5− | 1.3+ | 2003 03 26 | 691 | 0.6+ | 0.5+ | 2006 11 16 | 704 | 0.0 | 0.9+ | |
| 2000 09 30 | 699 | 0.1− | 0.2+ | 2003 03 26 | 691 | 0.8+ | 0.6+ | 2006 11 17 | G96 | 0.1+ | 0.1− | |
| 2000 09 30 | 699 | 1.7+ | 2.4+ | 2003 04 20 | 699 | 0.5− | 0.5+ | 2006 11 17 | G96 | 0.0 | 0.0 | |
| 2000 09 30 | 699 | 0.9− | 0.7+ | 2003 04 20 | 699 | 1.0− | 0.4+ | 2006 11 17 | G96 | 0.3+ | 0.2− | |
| 2000 10 07 | 699 | 2.0− | 1.2+ | 2003 04 20 | 699 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.1+ | 0.1− | |
| 2000 10 07 | 699 | 0.6− | 0.5+ | 2003 04 20 | 699 | 0.2− | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.2+ | |
| 2000 10 07 | 699 | 0.4− | 0.7+ | 2005 07 29 | 644 | 0.3− | 0.2+ | 2006 11 17 | 644 | 0.2+ | 0.5− | |
| 2000 10 07 | 699 | 0.3− | 1.1+ | 2005 07 29 | 644 | 0.4− | 0.1+ | 2006 11 17 | 644 | 0.0 | 0.2+ | |
| 2001 12 15 | 645 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.1− | 0.2+ | 2006 11 19 | 704 | 0.1+ | 1.5+ | |
| 2001 12 15 | 645 | 0.0 | 0.1+ | 2005 07 29 | 644 | 0.4− | 0.4+ | 2006 11 19 | 704 | 0.5− | 0.4− | |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.9− | 0.7+ | |
| 2001 12 18 | 645 | 0.0 | 0.0 | 2005 07 29 | 644 | 0.2− | 0.1+ | 2006 11 19 | 704 | 1.5− | 0.0 | |
| 2001 12 19 | 645 | 0.0 | 0.0 | 2005 09 13 | 703 | 0.4+ | 0.9+ | 2006 11 22 | 704 | 0.2+ | 0.3− | |
| 2001 12 19 | 645 | 0.1− | 0.0 | 2005 09 13 | 703 | 0.7− | 0.3− | 2006 11 22 | 704 | 1.1+ | 0.4+ | |
| 2002 01 21 | 699 | 1.0− | 0.7− | 2005 09 13 | 703 | 0.2− | 0.1− | 2006 11 22 | 704 | 1.0+ | 1.1− | |
| 2002 01 21 | 699 | 0.4+ | 0.1+ | 2005 09 13 | 703 | 0.3− | 0.4− | 2006 11 22 | 704 | 0.2− | 0.8− | |
| 2002 01 21 | 699 | 0.4+ | 0.1+ | 2006 11 16 | 704 | (1.5− | 1.4+) | 2006 11 22 | 704 | 0.2+ | 0.7− | |
| 2002 01 21 | 699 | 0.2+ | 0.2+ | 2006 11 16 | 704 | 0.2+ | 1.1+ | | | | | |
| 2003 03 26 | 691 | 0.8+ | 0.9+ | 2006 11 16 | 704 | 0.2+ | 1.1+ | | | | | |

**2006 WF$_{11}$ = 1998 BC$_{18}$ = 2003 YE$_{32}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 353.60734 | | (2000.0) | | | |
| $n$ | 0.31395922 | $\omega$ | 71.69167 | | +0.65780832 | −0.75284329 |
| $a$ | 2.1439791 | $\Omega$ | 337.12748 | | +0.66710643 | +0.59635503 |
| $e$ | 0.0962267 | $i$ | 3.34779 | | +0.34965300 | +0.27854561 |
| $P$ | 3.14 | $H$ | 17.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 22 | 691 | 0.4+ | 0.2− | 2003 12 22 | 704 | 0.8− | 1.2+ | 2006 11 22 | 704 | 0.3+ | 1.4+ |
| 1998 01 22 | 691 | 0.8+ | 0.0 | 2003 12 22 | 704 | (2.2− | 0.7+) | 2006 11 22 | 704 | 0.3− | 0.2− |
| 1998 01 22 | 691 | 0.2− | 0.4+ | 2003 12 22 | 704 | (1.8− | 0.0 ) | 2006 11 27 | 704 | 0.1− | 0.7− |
| 1998 01 28 | 691 | 0.4− | 0.2− | 2006 11 16 | 704 | (0.5+ | 1.7−) | 2006 11 27 | 704 | 0.8− | 0.4+ |
| 1998 01 28 | 691 | 0.4− | 0.1− | 2006 11 16 | 704 | 0.8+ | 0.4− | 2006 11 27 | 704 | 0.2+ | 0.2+ |
| 1998 01 28 | 691 | 0.3− | 0.0 | 2006 11 16 | 704 | 0.8− | 1.0− | 2006 11 27 | 704 | 0.2+ | 1.0+ |
| 2003 12 18 | 704 | 0.8+ | 0.1− | 2006 11 16 | 704 | 0.3− | 0.6− | 2006 11 28 | 704 | 0.3− | 0.3+ |
| 2003 12 18 | 704 | 0.5− | 0.4+ | 2006 11 19 | 704 | 0.9+ | 1.0− | 2006 11 28 | 704 | 0.1− | 0.1+ |
| 2003 12 18 | 704 | 0.3+ | 0.3+ | 2006 11 19 | 704 | 0.8− | 1.3− | 2006 11 28 | 704 | 0.1− | 0.2+ |
| 2003 12 18 | 704 | 0.9+ | 0.1− | 2006 11 19 | 704 | 1.3− | 0.2+ | 2006 11 29 | 704 | 0.9+ | 0.4− |
| 2003 12 19 | 704 | 0.5− | 1.0− | 2006 11 19 | 704 | 0.8+ | 0.3+ | 2006 11 29 | 704 | 0.7− | 0.0 |
| 2003 12 19 | 704 | 1.0+ | 0.5− | 2006 11 19 | 704 | 1.1+ | 0.2+ | 2006 11 29 | 704 | 0.8+ | 0.2− |
| 2003 12 19 | 704 | (0.4+ | 1.6−) | 2006 11 22 | 704 | 0.4+ | 0.2− | 2006 11 29 | 704 | 0.4− | 0.8+ |
| 2003 12 22 | 704 | 1.0− | 0.2+ | 2006 11 22 | 704 | 0.3+ | 0.1− | 2006 11 29 | 704 | 0.7− | 0.7+ |

**2006 WM$_{11}$ = 2005 RV$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.25265 | | (2000.0) | | | |
| $n$ | 0.17146428 | $\omega$ | 93.60138 | | +0.93120518 | +0.11384392 |
| $a$ | 3.2088810 | $\Omega$ | 260.08934 | | −0.23031488 | +0.92007486 |
| $e$ | 0.1112251 | $i$ | 20.57946 | | +0.28251013 | +0.37483572 |
| $P$ | 5.75 | $H$ | 14.4 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 08 31 | 644 | 0.3− | 0.8− | 2005 09 29 | 703 | 0.4− | 0.7− | 2006 11 16 | 704 | 0.3− | 0.9− |
| 2005 08 31 | 644 | 0.3− | 0.7− | 2005 09 29 | 703 | 0.8− | 0.8− | 2006 11 19 | 704 | 0.4− | 1.2+ |
| 2005 08 31 | 644 | 0.4− | 0.7− | 2005 09 29 | 703 | 0.0 | 0.8− | 2006 11 19 | 704 | 0.5− | 0.1− |
| 2005 09 14 | 704 | 0.7+ | 1.5+ | 2006 11 12 | G96 | 0.0 | 0.6− | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 2005 09 14 | 704 | 1.1− | 0.9+ | 2006 11 12 | G96 | 0.3− | 0.5− | 2006 11 19 | 704 | 1.0+ | 0.1+ |
| 2005 09 14 | 704 | 0.6+ | 0.8+ | 2006 11 12 | G96 | 0.1− | 0.5− | 2006 11 22 | 704 | 0.9+ | 0.1+ |
| 2005 09 14 | 704 | 0.2+ | 1.3+ | 2006 11 12 | G96 | 0.2− | 0.6− | 2006 11 22 | 704 | 0.1+ | 0.2+ |
| 2005 09 14 | 704 | 0.9+ | 0.5+ | 2006 11 15 | 704 | 0.2− | 0.5− | 2006 11 22 | 704 | 0.5− | 0.8− |
| 2005 09 18 | 644 | 0.4+ | 0.1+ | 2006 11 15 | 704 | 0.4+ | 0.5+ | 2006 11 22 | 704 | 0.6− | 0.1− |
| 2005 09 18 | 644 | 0.3+ | 0.4− | 2006 11 15 | 704 | 1.3+ | 1.3+ | 2006 11 22 | 704 | 0.3− | 1.3− |
| 2005 09 18 | 644 | 0.1− | 0.3− | 2006 11 16 | 704 | 1.0− | 1.4+ | | | | |
| 2005 09 29 | 703 | 0.4+ | 0.1− | 2006 11 16 | 704 | 0.1+ | 1.0+ | | | | |

**2006 WR$_{11}$ = 2000 WG$_{112}$ = 2002 GF$_{49}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 317.31916 | | (2000.0) | | | |
| $n$ | 0.16410865 | $\omega$ | 103.83754 | | −0.51912592 | −0.85426614 |
| $a$ | 3.3040636 | $\Omega$ | 17.51606 | | +0.74518519 | −0.46794389 |
| $e$ | 0.2925322 | $i$ | 5.17735 | | +0.41857773 | −0.22640201 |
| $P$ | 6.01 | $H$ | 15.5 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 20 | 704 | 1.0+ | 0.0 | 2002 04 12 | 691 | 0.1− | 0.9− | 2006 11 16 | 704 | 0.4− | 0.3+ |
| 2000 11 20 | 704 | 0.2− | 0.6+ | 2002 04 12 | 704 | 0.9− | 0.1+ | 2006 11 16 | 704 | 0.2+ | 0.3+ |
| 2000 11 20 | 704 | 2.0− | 0.5− | 2002 04 12 | 691 | 0.5+ | 0.3− | 2006 11 17 | G96 | 0.1+ | 0.3− |
| 2000 11 20 | 704 | 0.5− | 0.9+ | 2002 04 12 | 704 | 0.4− | 0.5− | 2006 11 17 | G96 | 0.1− | 0.4− |
| 2000 11 30 | 704 | 0.0 | 0.8+ | 2002 04 12 | 691 | 0.2− | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.4− |
| 2000 11 30 | 704 | 0.3+ | 0.3− | 2002 04 14 | 704 | 0.7− | 0.6+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2000 11 30 | 704 | 1.0+ | 0.1+ | 2002 04 14 | 704 | 0.6− | 0.5+ | 2006 11 21 | G96 | 0.2− | 0.2− |
| 2002 04 04 | 644 | 0.2− | 1.0+ | 2002 04 14 | 704 | 0.2− | 0.8+ | 2006 11 21 | G96 | 0.1+ | 0.3− |
| 2002 04 04 | 644 | 0.3+ | 1.2+ | 2002 04 14 | 704 | 0.6+ | 0.8+ | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2002 04 04 | 644 | 0.3+ | 0.9+ | 2002 04 14 | 704 | 0.7− | 0.6+ | 2006 11 21 | G96 | 0.2− | 0.3− |
| 2002 04 08 | 644 | 0.0 | 0.2− | 2006 10 20 | G96 | 0.1+ | 0.1+ | 2006 11 27 | 704 | 0.3+ | 0.3− |
| 2002 04 08 | 644 | 0.1− | 0.1+ | 2006 10 20 | G96 | 0.1− | 0.1+ | 2006 11 27 | 704 | 1.3+ | 0.7+ |
| 2002 04 08 | 644 | 0.4+ | 0.0 | 2006 10 20 | G96 | 0.2− | 0.0 | 2006 11 27 | 704 | 0.2+ | 0.5+ |
| 2002 04 12 | 704 | 0.9+ | 0.1− | 2006 10 20 | G96 | 0.1+ | 0.1+ | | | | |
| 2002 04 12 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 704 | 1.5− | 0.6− | | | | |

**2006 WR$_{12}$ = 2001 UA$_{70}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 311.31383 | | (2000.0) | | | |
| $n$ | 0.21428969 | $\omega$ | 265.86829 | | −0.39812905 | −0.91661061 |
| $a$ | 2.7656796 | $\Omega$ | 207.68153 | | +0.86959668 | −0.36451576 |
| $e$ | 0.1190238 | $i$ | 4.48255 | | +0.29205287 | −0.16417444 |
| $P$ | 4.60 | $H$ | 17.2 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 17 | 291 | 0.3+ | 0.1− | 2006 11 16 | G96 | 0.4− | 0.3+ | 2006 11 18 | 691 | 0.1− | 0.4− |
| 2001 10 17 | 291 | 0.5− | 0.1− | 2006 11 16 | G96 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.0 |
| 2001 10 17 | 291 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.2− | 0.2− | 2006 11 22 | 691 | 0.1+ | 0.2+ |
| 2001 10 21 | 291 | 0.1+ | 0.2+ | 2006 11 16 | G96 | 0.2+ | 0.2− | 2006 11 22 | 691 | 0.1− | 0.2− |
| 2001 10 21 | 291 | 0.0 | 0.1− | 2006 11 18 | 691 | 0.0 | 0.1+ | | | | |
| 2001 10 21 | 291 | 0.2+ | 0.2+ | 2006 11 18 | 691 | 0.2+ | 0.3+ | | | | |

**2006 WK$_{16}$ = 2002 TQ$_{218}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 2.57637 | | (2000.0) | | | |
| $n$ | 0.26646590 | $\omega$ | 128.79787 | | +0.79505852 | −0.59962608 |
| $a$ | 2.3917087 | $\Omega$ | 268.23281 | | +0.52433015 | +0.75512301 |
| $e$ | 0.1139390 | $i$ | 5.23927 | | +0.30489318 | +0.26502417 |
| $P$ | 3.70 | $H$ | 16.5 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 704 | 0.5+ | 0.5+ | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.1− | 0.4+ |
| 2002 10 05 | 704 | 0.1+ | 0.0 | 2006 10 04 | G96 | 0.3− | 0.3− | 2006 11 19 | 704 | 0.3− | 0.8+ |
| 2002 10 05 | 704 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.1− | 2006 11 22 | 704 | 0.2− | 1.1− |
| 2002 10 05 | 704 | 0.1− | 0.0 | 2006 10 20 | G96 | 0.2+ | 0.1+ | 2006 11 22 | 704 | 0.9+ | 0.2+ |
| 2002 10 05 | 704 | 0.5− | 0.3− | 2006 10 20 | G96 | 0.1+ | 0.2− | 2006 11 22 | 704 | 0.3+ | 0.5+ |
| 2002 10 09 | 704 | 0.2− | 0.3+ | 2006 10 20 | G96 | 0.4+ | 0.2− | 2006 11 22 | 704 | 0.1− | 0.4− |
| 2002 10 09 | 704 | 0.2− | 0.4− | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 25 | 691 | 0.0 | 0.2− |
| 2002 10 09 | 704 | 0.2+ | 0.1+ | 2006 11 17 | 691 | 0.0 | 0.2− | 2006 11 25 | 691 | 0.0 | 0.0 |
| 2006 10 04 | G96 | 0.2+ | 0.4− | 2006 11 17 | 691 | 0.1− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2006 10 04 | G96 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.8− | 1.0+ | | | | |

**2006 WY$_{16}$ = 1993 TK$_{10}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 0.98056 | | (2000.0) | | | |
| $n$ | 0.30670280 | $\omega$ | 26.96613 | | +0.82012007 | −0.57207418 |
| $a$ | 2.1776641 | $\Omega$ | 7.95909 | | +0.50872963 | +0.71974401 |
| $e$ | 0.1749485 | $i$ | 4.79905 | | +0.26191073 | +0.39331881 |
| $P$ | 3.21 | $H$ | 17.8 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 13 | 691 | 0.3− | 0.4+ | 2004 01 18 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 704 | 0.2− | 0.5+ |
| 1993 10 13 | 691 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.3+ | 0.0 | 2006 11 21 | G96 | 0.1+ | 0.5− |
| 1993 10 13 | 691 | 0.2− | 0.2− | 2006 11 17 | 691 | 0.0 | 0.1+ | 2006 11 21 | G96 | 0.1+ | 0.2− |
| 1993 10 24 | 691 | 0.6+ | 0.3+ | 2006 11 17 | 691 | 0.2− | 0.4+ | 2006 11 21 | G96 | 0.3− | 0.2− |
| 1993 10 24 | 691 | 0.5+ | 0.0 | 2006 11 17 | 644 | 0.3+ | 0.1+ | 2006 11 21 | G96 | 0.1− | 0.3− |
| 1993 10 24 | 691 | 0.2− | 0.3− | 2006 11 17 | 644 | 0.3+ | 0.1+ | 2006 11 22 | 704 | 0.1− | 0.3− |
| 1993 11 09 | 691 | 0.1+ | 0.3+ | 2006 11 17 | 644 | 0.3− | 0.2− | 2006 11 22 | 704 | 0.8+ | 0.1− |
| 1993 11 09 | 691 | 0.1− | 0.2− | 2006 11 19 | 704 | 0.6− | 1.0+ | 2006 11 22 | 704 | 0.1− | 0.1+ |
| 1993 11 09 | 691 | 0.2− | 0.1− | 2006 11 19 | 704 | 0.1− | 0.5+ | 2006 11 22 | 704 | 0.2+ | 0.9− |
| 2004 01 18 | 691 | 0.0 | 0.0 | 2006 11 19 | 704 | 0.3+ | 0.3+ | 2006 11 22 | 704 | 0.2+ | 1.3− |
| 2004 01 18 | 691 | 0.1− | 0.1− | 2006 11 19 | 704 | 1.0− | 0.4− | | | | |

**2006 WJ$_{17}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 355.18636 | | | (2000.0) | | |
| $n$ | 0.26331796 | $\omega$ | 336.77876 | | +0.71889142 | −0.65777996 |
| $a$ | 2.4107327 | $\Omega$ | 66.34039 | | +0.67004090 | +0.56965068 |
| $e$ | 0.1978924 | $i$ | 14.20515 | | +0.18504142 | +0.49277138 |
| $P$ | 3.74 | $H$ | 16.6 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 30 | 608 | 0.3− | 0.1+ | 2006 11 17 | 704 | 0.3+ | 0.5− | 2006 11 20 | 704 | 0.0 | 1.4+ |
| 2002 09 30 | 608 | 0.7− | 0.1+ | 2006 11 17 | 704 | 0.5+ | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.1+ |
| 2002 09 30 | 608 | 0.6− | 0.3− | 2006 11 17 | 704 | 0.4+ | 0.3− | 2006 11 21 | 704 | 0.1− | 0.3+ |
| 2002 10 07 | 644 | 0.5+ | 0.6+ | 2006 11 18 | 704 | 0.6+ | 0.4+ | 2006 11 21 | 704 | 0.0 | 0.1− |
| 2002 10 07 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.0 | 0.3+ |
| 2002 10 07 | 644 | 0.3+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.3− | 2006 11 21 | 704 | 0.6+ | 0.1− |
| 2002 10 22 | 644 | 0.2+ | 0.0 | 2006 11 18 | 704 | 0.3+ | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2002 10 22 | 644 | 0.2+ | 0.1+ | 2006 11 18 | 704 | 0.5+ | 0.7+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2002 10 22 | 644 | 0.1+ | 0.5− | 2006 11 18 | 704 | 0.0 | 0.4− | 2006 11 23 | 691 | 0.1− | 0.0 |
| 2006 10 16 | 703 | 0.8+ | 2.1− | 2006 11 18 | 704 | 0.1− | 0.3+ | 2006 11 27 | 703 | 0.4− | 0.7− |
| 2006 10 16 | 703 | 0.2− | 0.7+ | 2006 11 18 | 704 | 0.9+ | 0.4− | 2006 11 27 | 703 | 0.1− | 0.0 |
| 2006 10 16 | 703 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.9− | 0.1+ | 2006 11 27 | 703 | 0.3+ | 0.0 |
| 2006 10 16 | 703 | 0.0 | 0.2− | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.5+ | 1.0− |
| 2006 11 12 | G96 | 0.0 | 0.5− | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 11 29 | 704 | 0.0 | 0.3− |
| 2006 11 12 | G96 | 0.4+ | 0.6− | 2006 11 19 | 691 | 0.4+ | 1.4+ | 2006 11 29 | 704 | 0.2− | 0.1− |
| 2006 11 12 | G96 | 0.3+ | 0.6− | 2006 11 20 | 704 | 0.3− | 0.3+ | 2006 11 29 | 704 | 0.3+ | 0.1+ |
| 2006 11 12 | G96 | 0.1+ | 0.6− | 2006 11 20 | 704 | 0.2− | 0.1+ | 2006 12 01 | 691 | 1.2− | 0.0 |
| 2006 11 17 | 704 | 0.4+ | 0.1− | 2006 11 20 | 704 | 0.3− | 0.2− | 2006 12 01 | 691 | 0.1− | 0.5− |
| 2006 11 17 | 704 | 0.5+ | 0.5− | 2006 11 20 | 704 | 0.0 | 0.5+ | 2006 12 01 | 691 | 0.0 | 0.2− |

**2006 WF$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 280.79834 | | | (2000.0) | | |
| $n$ | 0.21914869 | $\omega$ | 229.16659 | | −0.79619152 | −0.59051463 |
| $a$ | 2.7246463 | $\Omega$ | 274.23272 | | +0.58725978 | −0.70180156 |
| $e$ | 0.1546692 | $i$ | 7.59452 | | +0.14561942 | −0.39845582 |
| $P$ | 4.50 | $H$ | 16.1 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 14 | 608 | 0.7+ | 0.2− | 2003 01 27 | 699 | 1.1+ | 0.5− | 2006 11 17 | G96 | 0.0 | 0.3− |
| 2003 01 14 | 608 | 0.3+ | 0.1− | 2003 01 27 | 699 | 0.2− | 1.3+ | 2006 11 17 | G96 | 0.2+ | 0.1− |
| 2003 01 14 | 608 | 0.0 | 0.3− | 2003 01 27 | 699 | 0.0 | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2003 01 26 | 699 | 0.8− | 0.1+ | 2003 01 27 | 699 | 0.2− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− |
| 2003 01 26 | 699 | 0.1− | 0.4+ | 2003 02 03 | 644 | 0.1+ | 0.3− | 2006 11 19 | 704 | 0.6+ | 0.1+ |
| 2003 01 26 | 699 | 1.0− | 0.1− | 2003 02 03 | 644 | 0.4+ | 0.7− | 2006 11 19 | 704 | 0.2+ | 0.6+ |
| 2003 01 26 | 699 | (2.5+ | 0.7−) | 2003 02 03 | 644 | 0.2− | 0.3− | 2006 11 19 | 704 | 1.1− | 0.0 |

**2006 WN$_{20}$ = 2000 TS$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.07132 | | | (2000.0) | | |
| $n$ | 0.17973945 | $\omega$ | 229.21774 | | +0.93580285 | −0.31434698 |
| $a$ | 3.1096185 | $\Omega$ | 148.13304 | | +0.33705039 | +0.93045788 |
| $e$ | 0.2104987 | $i$ | 17.59123 | | −0.10329597 | +0.18823950 |
| $P$ | 5.48 | $H$ | 15.0 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 10 02 | 699 | 0.1− | 1.1+ | 2006 11 01 | 703 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.3− |
| 2000 10 02 | 699 | 0.7+ | 0.9+ | 2006 11 01 | 703 | 0.4+ | 0.3− | 2006 11 18 | 291 | 0.3− | 0.1+ |
| 2000 10 02 | 699 | 0.8+ | 0.2+ | 2006 11 17 | 703 | 0.2− | 0.2+ | 2006 11 18 | 291 | 0.2− | 0.2+ |
| 2000 10 02 | 699 | 0.6− | 0.0 | 2006 11 17 | 703 | 0.3− | 0.3+ | 2006 11 18 | 291 | 0.2− | 0.1+ |
| 2000 10 06 | 608 | 0.2− | 0.7− | 2006 11 17 | 703 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.6+ | 0.0 |
| 2000 10 06 | 608 | 0.1− | 0.6− | 2006 11 17 | 703 | 0.7− | 0.2− | 2006 11 23 | 703 | 0.9+ | 0.1+ |
| 2000 10 06 | 608 | 0.5− | 0.9− | 2006 11 18 | G96 | 0.2+ | 0.4− | 2006 11 23 | 703 | 0.7+ | 0.9+ |
| 2006 11 01 | 703 | 0.1− | 0.4− | 2006 11 18 | G96 | 0.2+ | 0.3− | 2006 11 23 | 703 | 0.6+ | 0.4+ |
| 2006 11 01 | 703 | 0.0 | 1.1− | 2006 11 18 | G96 | 0.0 | 0.4− | | | | |

**2006 WO$_{20}$ = 2005 NO$_{65}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 193.98600 | | | (2000.0) | | |
| $n$ | 0.28697448 | $\omega$ | 83.49846 | | −0.73598361 | +0.67571188 |
| $a$ | 2.2763578 | $\Omega$ | 138.99930 | | −0.64356201 | −0.67916914 |
| $e$ | 0.1435125 | $i$ | 3.64703 | | −0.21013345 | −0.28660555 |
| $P$ | 3.43 | $H$ | 17.8 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 17 | 699 | 1.0+ | 0.6+ | 2005 07 06 | 691 | 0.2− | 0.1+ | 2006 11 17 | G96 | 0.6− | 0.1− |
| 2001 04 17 | 699 | 1.3− | 0.8− | 2006 11 17 | G96 | 0.6+ | 0.5− | 2006 11 17 | G96 | 0.6− | 0.0 |
| 2001 04 17 | 699 | 0.1− | 0.8+ | 2006 11 17 | G96 | 0.4− | 0.3− | 2006 11 17 | G96 | 0.4+ | 0.1+ |
| 2001 04 17 | 699 | 0.8+ | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.3− | 0.5− |
| 2002 10 11 | 645 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.1− | 2006 11 18 | G96 | 0.4− | 0.2− |
| 2002 10 11 | 645 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1− | 0.2+ |
| 2004 01 27 | 691 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.1+ | 2006 11 18 | G96 | 0.3− | 0.4− |
| 2004 01 27 | 691 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.2+ | 0.3− | 2006 11 20 | 691 | 0.3− | 0.1− |
| 2004 01 27 | 691 | 0.1+ | 0.3+ | 2006 11 17 | G96 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.3− | 0.0 |
| 2005 07 01 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.7− | 2006 11 20 | 691 | 0.4+ | 0.3+ |
| 2005 07 01 | 691 | 0.0 | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.1+ | 2006 11 24 | 691 | 0.3+ | 0.1− |
| 2005 07 01 | 691 | 0.1− | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 11 24 | 691 | 0.0 | 0.9+ |
| 2005 07 06 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.4− | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2005 07 06 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 1.1+ | 0.1− | | | | |

**2006 WQ$_{21}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 176.63279 | | | (2000.0) | | |
| $n$ | 0.17478855 | $\omega$ | 150.46017 | | −0.45643096 | +0.87288765 |
| $a$ | 3.1680648 | $\Omega$ | 91.90587 | | −0.84643638 | −0.36623387 |
| $e$ | 0.0247827 | $i$ | 9.93567 | | −0.27425580 | −0.32239711 |
| $P$ | 5.64 | $H$ | 15.1 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 24 | 291 | 0.3− | 0.1− | 2003 04 01 | 645 | 0.1− | 0.0 | 2005 10 05 | 703 | 0.8− | 0.7+ |
| 2001 12 24 | 291 | 0.2− | 0.2+ | 2003 04 01 | 645 | 0.1− | 0.0 | 2005 10 05 | 703 | (3.0− | 0.4−) |
| 2001 12 24 | 291 | 0.2− | 0.7+ | 2003 04 01 | 645 | 0.0 | 0.1− | 2005 10 05 | 703 | 0.9− | 0.3+ |
| 2001 12 24 | 291 | 0.2+ | 0.4+ | 2003 04 01 | 645 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.4− |
| 2001 12 24 | 291 | 0.2+ | 0.4+ | 2005 08 29 | 644 | 0.1− | 0.5+ | 2006 11 17 | G96 | 0.1− | 0.3− |
| 2001 12 24 | 291 | 0.1− | 0.4+ | 2005 08 29 | 644 | 0.0 | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.3− |
| 2002 01 04 | 691 | 0.2+ | 0.3− | 2005 08 29 | 644 | 0.2+ | 0.5+ | 2006 11 17 | G96 | 0.2− | 0.3− |
| 2002 01 04 | 691 | 0.3+ | 0.4− | 2005 09 13 | 703 | 0.5+ | 0.9+ | 2006 11 18 | 691 | 0.2+ | 0.5− |
| 2002 01 04 | 691 | 0.0 | 0.3− | 2005 09 13 | 703 | (0.6− | 1.5+) | 2006 11 18 | 691 | 0.1+ | 0.3− |
| 2003 03 26 | 644 | 0.5+ | 0.2+ | 2005 09 13 | 703 | 0.6− | 0.4+ | 2006 11 18 | 691 | (0.4+ | 1.7−) |
| 2003 03 26 | 644 | 0.5+ | 0.5+ | 2005 09 13 | 703 | 0.5+ | 0.9− | | | | |
| 2003 03 26 | 644 | 0.8+ | 0.4+ | 2005 10 05 | 703 | 0.8+ | 1.3− | | | | |

**2006 WF$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 48.81901 | | | (2000.0) | | |
| $n$ | 0.26558194 | $\omega$ | 218.23865 | | +0.94176934 | +0.32992521 |
| $a$ | 2.3970128 | $\Omega$ | 122.37780 | | −0.28646708 | +0.88836571 |
| $e$ | 0.1832256 | $i$ | 4.41147 | | −0.17608840 | +0.31930504 |
| $P$ | 3.71 | $H$ | 17.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 06 19 | 696 | 0.1+ | 0.5− | 2005 05 16 | G96 | 0.1+ | 0.1+ | 2006 11 18 | G96 | 0.2+ | 0.1− |
| 1998 06 19 | 696 | 0.1+ | 0.6− | 2005 05 16 | G96 | 0.1− | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.1+ |
| 2002 10 08 | 699 | 0.5− | 1.0+ | 2005 05 16 | G96 | 0.2+ | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.0 |
| 2002 10 08 | 699 | 0.3+ | 0.4+ | 2005 05 16 | G96 | 0.2− | 0.0 | 2006 12 01 | G96 | 0.1+ | 0.3− |
| 2002 10 08 | 699 | 0.4+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 12 01 | G96 | 0.4− | 0.2− |
| 2002 10 08 | 699 | 0.5− | 0.9− | 2006 11 17 | G96 | 0.1+ | 0.3− | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2002 10 15 | 644 | 0.2+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.0 |
| 2002 10 15 | 644 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.0 | 0.2− | | | | |
| 2002 10 15 | 644 | 0.1− | 0.1− | 2006 11 18 | G96 | 0.2− | 0.1− | | | | |

**2006 WK$_{22}$ = 1995 VA$_{19}$ = 2000 SS$_{314}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 19.39593 | | (2000.0) | | | |
| $n$ | 0.18128850 | $\omega$ | 137.28081 | | +0.84714337 | −0.46936688 |
| $a$ | 3.0918795 | $\Omega$ | 252.30413 | | +0.38899934 | +0.86714623 |
| $e$ | 0.2210116 | $i$ | 15.15643 | | +0.36197739 | +0.16658977 |
| $P$ | 5.44 | $H$ | 15.3 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 14 | 327 | 0.1− | 0.2+ | 2000 10 04 | 704 | 1.0+ | 0.3+ | 2006 11 20 | G96 | 0.1− | 0.1− |
| 1995 11 14 | 327 | 0.4− | 0.1− | 2000 10 04 | 704 | 0.2+ | 0.3+ | 2006 11 20 | G96 | 0.2+ | 0.1− |
| 1995 11 14 | 327 | 0.1− | 0.0 | 2000 10 04 | 704 | 0.1+ | 0.1− | 2006 11 20 | G96 | 0.6+ | 0.2− |
| 1995 11 14 | 327 | 0.1− | 0.1+ | 2000 10 04 | 704 | 0.2− | 0.5− | 2006 11 22 | 291 | 0.1− | 0.2+ |
| 1995 11 15 | 327 | 0.7+ | 0.6+ | 2006 11 17 | 691 | 0.0 | 0.0 | 2006 11 22 | 291 | 0.1− | 0.2+ |
| 1995 11 15 | 327 | 0.0 | 0.1+ | 2006 11 17 | 691 | 0.1+ | 0.0 | 2006 11 22 | 291 | 0.1− | 0.1+ |
| 1995 11 15 | 327 | 0.0 | 0.1− | 2006 11 17 | 691 | (2.2+ | 1.8−) | 2006 12 01 | 704 | (1.9+ | 0.2+) |
| 2000 09 28 | 704 | 0.6− | 0.1+ | 2006 11 18 | G96 | 0.1− | 0.4− | 2006 12 01 | 704 | 0.0 | 0.2+ |
| 2000 09 28 | 704 | 0.7− | 0.3+ | 2006 11 18 | G96 | 0.1+ | 0.4− | 2006 12 01 | 704 | 0.1+ | 0.1− |
| 2000 09 28 | 704 | 0.5+ | 0.4− | 2006 11 18 | G96 | 0.1− | 0.5− | 2006 12 01 | 704 | 0.2+ | 0.5− |
| 2000 09 28 | 704 | 0.2− | 0.3− | 2006 11 18 | G96 | 0.1+ | 0.4− | | | | |
| 2000 09 28 | 704 | 0.1− | 0.0 | 2006 11 20 | G96 | 0.1− | 0.1− | | | | |

**2006 WW$_{23}$ = 2003 AP$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 346.97698 | | (2000.0) | | | |
| $n$ | 0.23857359 | $\omega$ | 228.40292 | | +0.35544165 | −0.93428604 |
| $a$ | 2.5746674 | $\Omega$ | 200.82633 | | +0.87912307 | +0.34424984 |
| $e$ | 0.2143623 | $i$ | 4.47877 | | +0.31749625 | +0.09274503 |
| $P$ | 4.13 | $H$ | 16.7 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 01 | 704 | 0.3+ | 0.0 | 2004 04 22 | 691 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.0 | 0.1+ |
| 2003 01 01 | 704 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2003 01 01 | 704 | 0.9+ | 0.6− | 2006 11 17 | G96 | 0.2− | 0.1− | 2006 11 29 | 704 | 0.0 | 0.2+ |
| 2003 01 07 | 704 | 0.4− | 0.2+ | 2006 11 17 | G96 | 0.7− | 0.1+ | 2006 11 29 | 704 | (1.9+ | 0.3+) |
| 2003 01 07 | 704 | 0.3+ | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.1+ | 2006 11 29 | 704 | 0.1+ | 0.3− |
| 2003 01 07 | 704 | 1.3− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.0 | 2006 11 29 | 704 | 0.1− | 0.2+ |
| 2003 01 07 | 704 | 0.2+ | 0.2− | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 11 29 | 704 | 0.2+ | 0.3+ |
| 2004 04 22 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.0 | 0.1+ | | | | |
| 2004 04 22 | 691 | 0.2+ | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.0 | | | | |

**2006 WV$_{24}$ = 2004 FQ$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 241.36111 | | (2000.0) | | | |
| $n$ | 0.26420281 | $\omega$ | 325.97089 | | −0.99789660 | −0.03666232 |
| $a$ | 2.4053471 | $\Omega$ | 212.05630 | | +0.05179379 | −0.94686709 |
| $e$ | 0.0497382 | $i$ | 5.78120 | | −0.03898438 | −0.31952870 |
| $P$ | 3.73 | $H$ | 16.5 | $G$ | 0.15 | $U$ 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 04 21 | 691 | 0.2− | 0.3+ | 2004 03 26 | 699 | 0.8− | 0.3+ | 2005 08 24 | 644 | 0.4− | 0.3+ |
| 1993 04 21 | 691 | 0.4− | 0.7+ | 2004 03 26 | 699 | 0.3+ | 0.8+ | 2005 08 24 | 644 | 0.2− | 0.0 |
| 1993 04 21 | 691 | 1.0+ | 0.8+ | 2004 03 26 | 699 | 0.3+ | 0.3+ | 2005 09 12 | 691 | 0.2+ | 0.4+ |
| 2002 10 16 | 644 | 0.3− | 1.9+ | 2004 03 26 | 699 | 0.6+ | 0.3− | 2005 09 12 | 691 | 0.3− | 0.7+ |
| 2002 10 16 | 644 | 0.4− | 1.7+ | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2005 09 12 | 691 | 0.1+ | 0.4+ |
| 2002 10 16 | 644 | 0.0 | 1.9+ | 2004 04 13 | 691 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.2+ |
| 2002 10 31 | 644 | 0.0 | 0.5+ | 2004 04 13 | 691 | 0.2+ | 0.2+ | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2002 10 31 | 644 | 0.2+ | 0.8+ | 2005 07 15 | 691 | 0.2− | 0.2+ | 2006 11 17 | G96 | 0.1− | 0.0 |
| 2002 10 31 | 644 | 0.5+ | 0.6+ | 2005 07 15 | 691 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.1− | 0.1− |
| 2004 03 19 | 704 | 0.7− | 1.1+ | 2005 07 15 | 691 | 0.1− | 0.1+ | 2006 11 18 | 691 | 0.0 | 0.4+ |
| 2004 03 19 | 704 | 0.2+ | 0.7+ | 2005 07 29 | 644 | 0.2− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.5+ |
| 2004 03 19 | 704 | 0.8− | 0.5− | 2005 07 29 | 644 | 0.0 | 0.0 | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2004 03 19 | 704 | 0.7+ | 0.3− | 2005 07 29 | 644 | 0.2+ | 0.1+ | | | | |
| 2004 03 19 | 704 | 0.4+ | 1.4+ | 2005 08 24 | 644 | 0.3− | 0.4+ | | | | |

**2006 WW$_{26}$ = 1998 SM$_{90}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 102.32664 | | (2000.0) | | | |
| $n$ | 0.26283479 | $\omega$ | 210.01130 | | +0.31547623 | +0.94645546 |
| $a$ | 2.4136863 | $\Omega$ | 78.45075 | | −0.85612058 | +0.31502852 |
| $e$ | 0.1667742 | $i$ | 4.01109 | | −0.40930711 | +0.07056265 |
| $P$ | 3.75 | $H$ | 16.1 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 09 26 | 704 | 0.6+ | 1.5− | 2002 11 22 | 644 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.2+ | 0.3− |
| 1998 09 26 | 704 | 0.2− | 0.9− | 2002 11 22 | 644 | 0.2+ | 0.4+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 1998 09 26 | 704 | 0.3− | 0.3− | 2002 11 22 | 644 | 0.1+ | 0.5+ | 2006 11 11 | 691 | 0.1− | 0.2− |
| 1998 09 26 | 704 | 0.3+ | 0.3+ | 2003 12 29 | 291 | 0.6− | 0.1+ | 2006 11 11 | 691 | 0.4− | 0.7− |
| 1998 09 27 | 704 | 0.1+ | 0.6+ | 2003 12 29 | 291 | 0.2− | 0.2+ | 2006 11 11 | 691 | 0.2+ | 0.4− |
| 1998 09 27 | 704 | 1.3− | 1.3+ | 2003 12 29 | 291 | 0.5− | 0.3+ | 2006 11 18 | 704 | 0.4+ | 1.3+ |
| 1998 09 27 | 704 | 0.4+ | 1.2+ | 2004 02 17 | 691 | 0.5+ | 0.1− | 2006 11 18 | 704 | 1.1+ | 0.1+ |
| 1998 09 27 | 704 | (0.7+ | 2.8+) | 2004 02 17 | 691 | 0.4+ | 0.1+ | 2006 11 18 | 704 | 0.6− | 0.1− |
| 2002 10 08 | 699 | 1.3− | 0.0 | 2004 02 17 | 691 | 0.5+ | 0.0 | 2006 11 19 | 691 | 0.1− | 0.2− |
| 2002 10 08 | 699 | 0.9+ | 0.3+ | 2006 10 21 | G96 | 0.1+ | 0.3− | 2006 11 19 | 691 | 0.2+ | 0.1− |
| 2002 10 08 | 699 | 0.6+ | 0.6+ | 2006 10 21 | G96 | 0.3+ | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.2− |
| 2002 10 08 | 699 | 0.5+ | 0.6− | 2006 10 21 | G96 | 0.3+ | 0.6− | 2006 11 27 | 703 | 0.5+ | 1.0− |
| 2002 10 31 | 608 | 0.7− | 0.8+ | 2006 10 21 | G96 | 0.0 | 0.3− | 2006 11 27 | 703 | 0.3+ | 1.3+ |
| 2002 10 31 | 608 | 0.8− | 0.7+ | 2006 10 31 | G96 | 0.1− | 0.3− | 2006 11 27 | 703 | 0.3+ | 1.3+ |
| 2002 10 31 | 608 | 0.6− | 1.0+ | 2006 10 31 | G96 | 0.2− | 0.2− | 2006 11 27 | 703 | 0.9− | 1.1+ |

**2006 WC$_{27}$ = 2002 FU$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 316.85697 | | (2000.0) | | | |
| $n$ | 0.17875682 | $\omega$ | 45.09331 | | −0.36118148 | −0.88856111 |
| $a$ | 3.1210038 | $\Omega$ | 68.01571 | | +0.74633237 | −0.45730864 |
| $e$ | 0.1967959 | $i$ | 17.76029 | | +0.55904913 | +0.03644120 |
| $P$ | 5.51 | $H$ | 15.7 | $G$ | 0.15 | $U$ 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 03 19 | 644 | 0.1− | 0.2− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2002 03 19 | 644 | 0.4− | 0.5− | 2006 11 11 | 691 | 0.2− | 0.2− | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2002 03 19 | 644 | 0.4+ | 0.2− | 2006 11 11 | 691 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2002 03 20 | 644 | 0.0 | 0.1− | 2006 11 15 | 703 | 2.4− | 2.1− | 2006 11 27 | 691 | 0.1+ | 0.2− |
| 2002 03 20 | 644 | 0.1+ | 0.4− | 2006 11 15 | 703 | 0.7+ | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2002 03 20 | 644 | 0.2− | 0.0 | 2006 11 15 | 703 | 0.4+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2003 05 28 | 691 | 0.4+ | 0.2+ | 2006 11 15 | 703 | 0.6− | 0.9− | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2003 05 28 | 691 | 0.4+ | 0.5+ | 2006 11 18 | 704 | (0.7+ | 1.7+) | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2003 05 28 | 691 | 0.1− | 0.5+ | 2006 11 18 | 704 | 0.5+ | 0.5+ | 2006 12 01 | 704 | 0.7+ | 0.4+ |
| 2006 10 23 | G96 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.8+ | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.4+ |
| 2006 10 23 | G96 | 0.1− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.3+ | 2006 12 01 | 704 | 0.7+ | 0.7+ |
| 2006 10 23 | G96 | 0.3− | 0.2− | 2006 11 19 | 691 | 0.2+ | 0.2+ | 2006 12 01 | 704 | 0.5+ | 0.8− |
| 2006 10 23 | G96 | 0.3− | 0.4− | 2006 11 19 | 691 | 0.0 | 0.2+ | 2006 12 01 | 704 | 0.1+ | 0.4+ |

**2006 WC$_{28}$ = 2003 AW$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 264.84304 | | (2000.0) | | | |
| $n$ | 0.23618391 | $\omega$ | 90.28406 | | −0.97349890 | −0.21283511 |
| $a$ | 2.5920050 | $\Omega$ | 77.42844 | | +0.16042069 | −0.89629169 |
| $e$ | 0.1865572 | $i$ | 4.91789 | | +0.16298801 | −0.38905324 |
| $P$ | 4.17 | $H$ | 16.2 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 10 20 | 809 | (1.1+ | 2.9−) | 2006 10 31 | G96 | 0.2+ | 0.2+ | 2006 11 24 | H07 | 0.9− | 0.5+ |
| 1993 10 20 | 809 | 0.0 | 1.4− | 2006 10 31 | G96 | 0.1+ | 0.1− | 2006 11 24 | H07 | 0.2− | 0.1+ |
| 1993 10 20 | 809 | 0.9+ | 0.2− | 2006 11 11 | 691 | 0.2+ | 0.1− | 2006 11 24 | H07 | 0.2− | 0.7+ |
| 2003 01 04 | 704 | 0.8+ | 0.1− | 2006 11 11 | 691 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.3− | 0.5− |
| 2003 01 04 | 704 | 0.8− | 0.7− | 2006 11 11 | 691 | 0.2+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.5− |
| 2003 01 04 | 704 | 0.7+ | 0.4− | 2006 11 19 | 691 | 0.4+ | 0.1+ | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2003 01 04 | 704 | (1.8+ | 0.5−) | 2006 11 19 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.2− | 0.6− |
| 2003 01 08 | 704 | 0.4− | 1.2− | 2006 11 19 | 691 | 0.1+ | 0.2+ | 2006 11 27 | 291 | 0.2+ | 0.3+ |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 01 08 | 704 | 0.8− | 0.4+ | 2006 11 22 | H07 | 0.2+ | 0.2+ | 2006 11 27 | 291 | 0.2− | 0.2+ | 2006 11 22 | G96 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.7− | 2006 11 27 | 291 | 0.6− | 0.3+ |
| 2003 01 08 | 704 | 0.1− | 0.5− | 2006 11 22 | H07 | 0.6+ | 0.2+ | 2006 11 27 | 291 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.1− | 0.4− | 2006 11 27 | 291 | 0.6+ | 0.1− |
| 2003 01 08 | 704 | 0.5+ | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.8− | 2006 11 30 | 291 | 0.1− | 0.2− |
| 2006 09 28 | G96 | 1.4− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.6+ | 0.3− | 2006 11 30 | 291 | 1.1+ | 0.7+ |
| 2006 09 28 | G96 | 1.1− | 0.3+ | 2006 11 23 | 691 | 0.2+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.3− | 2006 11 30 | 291 | 1.0− | 0.6− |
| 2006 09 28 | G96 | 1.2− | 0.1+ | 2006 11 23 | H07 | 0.5+ | 0.0 | 2006 12 01 | 691 | 0.2− | 0.2− | 2006 11 22 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.3− | 2006 12 01 | 291 | 0.3+ | 0.1+ |
| 2006 09 28 | G96 | 1.3− | 0.1− | 2006 11 23 | H07 | 0.1+ | 0.4+ | 2006 12 01 | 691 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.3− | 2006 12 01 | 291 | 0.0 | 0.1− |
| 2006 10 31 | G96 | 0.0 | 0.1− | 2006 11 23 | H07 | 0.4− | 0.3− | 2006 12 01 | 691 | 0.2− | 0.3− | | | | | | | | | | | | |
| 2006 10 31 | G96 | 0.1− | 0.1+ | 2006 11 23 | H07 | 0.1− | 0.3+ | | | | | | | | | | | | | | | | |

**2006 WD$_{28}$ = 2005 NU$_5$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 27.79620 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18534686 | $\omega$ | 236.91602 | | +0.96595257 | | −0.25782926 |
| $a$ | 3.0465798 | $\Omega$ | 138.01415 | | +0.24677038 | | +0.89327659 |
| $e$ | 0.1381994 | $i$ | 1.83674 | | +0.07771756 | | +0.36821326 |
| $P$ | 5.32 | $H$ | 15.8 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 04 | 691 | 0.1+ | 0.6− | 2005 07 05 | G96 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.6− | 0.8+ | 2004 01 29 | 704 | 0.6+ | 0.1+ | 2004 01 30 | 704 | 0.5+ | 0.4− | 2006 11 18 | D35 | 0.6− | 0.2− |
| 1997 02 04 | 691 | 0.2+ | 0.2− | 2005 07 05 | G96 | 0.4+ | 0.4+ | 2006 11 18 | 704 | 0.2− | 0.8+ | 2004 01 29 | 699 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 11 18 | D35 | 0.1− | 0.1+ |
| 1997 02 04 | 691 | 0.3+ | 0.7− | 2005 07 27 | 644 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1+ | 2004 01 29 | 704 | 0.8− | 0.4− | 2005 06 08 | 691 | 0.9+ | 0.1+ | 2006 11 18 | D35 | 0.0 | 0.2+ |
| 2000 09 02 | 699 | 0.3+ | 0.2+ | 2005 07 27 | 644 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.2+ | 2004 01 29 | 699 | 0.0 | 0.6− | 2005 06 08 | 691 | 0.2− | 0.0 | 2006 11 24 | D35 | 0.1+ | 0.0 |
| 2000 09 02 | 699 | 0.8− | 0.4+ | 2005 07 27 | 644 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.3+ | 2004 01 29 | 704 | 0.6+ | 0.8+ | 2005 06 08 | 691 | 0.2− | 0.1− | 2006 11 24 | D35 | 0.1+ | 0.1+ |
| 2000 09 02 | 699 | 0.8− | 1.0− | 2006 09 28 | G96 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3+ | 0.4+ | 2004 01 29 | 699 | 0.6+ | 0.2+ | 2005 06 09 | 291 | 0.1− | 0.1− | 2006 11 24 | D35 | 0.1− | 0.0 |
| 2000 09 02 | 699 | 1.9− | 0.7+ | 2006 09 28 | G96 | 0.1+ | 0.0 | 2006 11 21 | 704 | 0.0 | 0.6+ | 2004 01 29 | 704 | 0.1+ | 0.8+ | 2005 06 09 | 291 | 0.0 | 0.1+ | 2006 11 27 | D35 | 0.0 | 0.0 |
| 2003 01 30 | 291 | 0.0 | 0.8+ | 2006 09 28 | G96 | 0.3− | 0.0 | 2006 11 21 | 704 | 0.6+ | 0.5− | 2004 01 29 | 704 | 0.6− | 0.7− | 2005 06 09 | 291 | 0.2− | 0.1+ | 2006 11 27 | D35 | 0.2+ | 0.0 |
| 2003 01 30 | 291 | 1.0− | 0.6+ | 2006 09 28 | G96 | 0.4− | 0.1− | 2006 11 21 | 704 | (1.1− | 1.6+) | 2004 01 29 | 699 | 0.8− | 0.7− | 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 11 27 | D35 | 0.3+ | 0.1− |
| 2003 01 30 | 291 | 0.1− | 0.9+ | 2006 10 21 | G96 | 0.1+ | 0.0 | 2006 11 22 | H07 | 0.0 | 0.7+ | 2004 01 30 | 704 | 0.1− | 1.1+ | 2005 06 10 | 691 | 0.2− | 0.4− | | | | |
| 2004 04 21 | 691 | 0.2+ | 0.6+ | 2006 10 21 | G96 | 0.2+ | 0.0 | 2006 11 22 | H07 | 0.1− | 0.6− | 2004 01 30 | 704 | 0.1− | 0.5− | 2005 06 10 | 691 | 0.1− | 0.1+ | | | | |
| 2004 04 21 | 691 | 0.3+ | 0.5+ | 2006 10 31 | G96 | 0.1+ | 0.0 | 2006 11 22 | H07 | 0.1+ | 0.5+ | | | | | | | | | | | | |
| 2004 04 21 | 691 | 0.5+ | 0.1+ | 2006 10 31 | G96 | 0.1− | 0.2+ | 2006 11 22 | H07 | 0.1+ | 0.4+ | | | | | | | | | | | | |
| 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 10 31 | G96 | 0.2+ | 0.1+ | 2006 11 23 | H07 | 0.2− | 0.5+ | | | | | | | | | | | | |
| 2004 05 21 | 691 | 0.1+ | 0.4+ | 2006 10 31 | G96 | 0.3+ | 0.2+ | 2006 11 23 | H07 | 0.1− | 1.0+ | | | | | | | | | | | | |
| 2004 05 21 | 691 | 0.3− | 0.4+ | 2006 11 12 | G96 | 0.3+ | 0.4+ | 2006 11 23 | H07 | 0.8+ | 0.3+ | | | | | | | | | | | | |
| 2004 06 13 | 691 | 0.2+ | 0.1− | 2006 11 12 | G96 | 0.2− | 0.0 | 2006 11 23 | H07 | 0.4− | 0.1− | | | | | | | | | | | | |
| 2004 06 13 | 691 | 0.2− | 0.2− | 2006 11 12 | G96 | 0.3− | 0.2− | 2006 11 29 | 704 | 0.9+ | 0.4+ | | | | | | | | | | | | |
| 2004 06 13 | 691 | 0.4+ | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.0 | 2006 11 29 | 704 | 0.9− | 0.7+ | | | | | | | | | | | | |
| 2005 07 03 | G96 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.8− | 0.1− | 2006 11 29 | 704 | 0.1+ | 1.5− | | | | | | | | | | | | |
| 2005 07 03 | G96 | 0.6− | 0.3+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 29 | 704 | 0.0 | 1.0+ | | | | | | | | | | | | |
| 2005 07 03 | G96 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.0 | | | | | | | | | | | | |
| 2005 07 03 | G96 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.8− | 0.6+ | 2006 12 01 | G96 | 0.3+ | 0.2+ | | | | | | | | | | | | |
| 2005 07 05 | G96 | 0.1+ | 0.3+ | 2006 11 18 | 704 | 0.1− | 0.3+ | 2006 12 01 | G96 | 0.3+ | 0.2+ | | | | | | | | | | | | |
| 2005 07 05 | G96 | 0.4+ | 0.2+ | 2006 11 18 | 704 | 0.2− | 0.1+ | 2006 12 01 | G96 | 0.1+ | 0.1+ | | | | | | | | | | | | |

**2006 WQ$_{29}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 143.51076 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.48659433 | $\omega$ | 136.44900 | | −0.35955530 | | +0.92402571 |
| $a$ | 1.6008772 | $\Omega$ | 112.08995 | | −0.88996650 | | −0.29770760 |
| $e$ | 0.3932148 | $i$ | 8.06428 | | −0.28049886 | | −0.23988886 |
| $P$ | 2.03 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 6 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 03 | 644 | 0.4+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.3− | 2006 11 23 | G96 | 0.2+ | 0.6− | 2006 11 22 | G96 | 0.4+ | 0.2− | 2006 11 23 | G96 | 0.2+ | 0.7− | 2006 11 27 | 291 | 0.6− | 0.3+ |
| 2002 12 03 | 644 | 0.3− | 0.2− | 2006 11 22 | G96 | 0.1+ | 0.4− | 2006 11 23 | 291 | 0.3+ | 1.0+ | 2006 11 22 | G96 | 0.3+ | 0.3− | 2006 11 23 | G96 | 0.1− | 0.4− | 2006 11 27 | 291 | 0.6+ | 0.1− |
| 2002 12 03 | 644 | 0.1− | 0.1+ | 2006 11 22 | G96 | 0.2− | 0.2− | 2006 11 23 | 291 | 0.1− | 0.2+ | 2006 11 22 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.2+ | 0.8− | 2006 11 30 | 291 | 0.1− | 0.2− |
| 2006 11 22 | G96 | 0.3+ | 0.1− | 2006 11 22 | G96 | 0.2+ | 0.2− | 2006 11 23 | 291 | 1.1− | 0.6+ | 2006 11 22 | G96 | 0.1− | 0.1+ | 2006 11 23 | G96 | 0.6+ | 0.3− | 2006 11 30 | 291 | 1.1+ | 0.7+ |
| 2006 11 22 | G96 | 0.1+ | 0.1+ | 2006 11 22 | G96 | 0.1− | 0.7− | 2006 11 24 | G96 | 0.1+ | 0.4− | 2006 11 22 | G96 | 0.4− | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.3− | 2006 11 30 | 291 | 1.0− | 0.6− |
| 2006 11 22 | G96 | 0.1− | 0.1− | 2006 11 22 | G96 | 0.4− | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.0 | 2006 11 23 | G96 | 0.1+ | 0.3− | 2006 12 01 | 291 | 0.3+ | 0.1+ |
| 2006 11 22 | G96 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.3+ | 0.2+ | 2006 11 24 | G96 | 0.2+ | 0.4− | 2006 11 22 | G96 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.0 | 0.3− | 2006 12 01 | 291 | 0.0 | 0.1− |
| 2006 11 22 | G96 | 0.0 | 0.1− | 2006 11 23 | H55 | 0.6− | 0.5− | 2006 11 24 | G96 | 0.3+ | 0.3− | | | | | | | | | | | | |
| 2006 11 22 | G96 | 0.1− | 0.3− | 2006 11 23 | H55 | 0.6+ | 1.0+ | 2006 11 26 | 291 | 0.0 | 0.4+ | | | | | | | | | | | | |
| 2006 11 22 | G96 | 0.2+ | 0.2− | 2006 11 23 | H55 | 0.4+ | 0.3− | 2006 11 26 | 291 | 0.4+ | 1.4− | | | | | | | | | | | | |
| 2006 11 22 | G96 | 0.2+ | 0.0 | 2006 11 23 | G96 | 0.2− | 0.4− | 2006 11 26 | 291 | 0.5− | 1.0+ | | | | | | | | | | | | |
| 2006 11 22 | G96 | 0.6+ | 0.3− | 2006 11 23 | G96 | 0.0 | 0.1− | 2006 11 27 | 291 | 0.2− | 0.1+ | | | | | | | | | | | | |

**2006 WN$_{30}$ = 2004 BB$_{111}$ = 2005 LE$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 2.71427 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30150645 | $\omega$ | 204.60997 | | +0.72033021 | | −0.69237859 |
| $a$ | 2.2026136 | $\Omega$ | 199.39847 | | +0.65536838 | | +0.69904177 |
| $e$ | 0.1874848 | $i$ | 7.20712 | | +0.22719305 | | +0.17875258 |
| $P$ | 3.27 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 29 | 704 | 0.6+ | 0.1+ | 2004 01 30 | 704 | 0.5+ | 0.4− | 2006 11 18 | D35 | 0.6− | 0.2− | 2004 03 15 | 691 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 2004 01 29 | 699 | 0.1− | 0.3+ | 2004 01 30 | 704 | 0.1+ | 0.1+ | 2006 11 18 | D35 | 0.1− | 0.1+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2004 01 29 | 704 | 0.8− | 0.4− | 2005 06 08 | 691 | 0.9+ | 0.1+ | 2006 11 18 | D35 | 0.0 | 0.2+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.3+ |
| 2004 01 29 | 699 | 0.0 | 0.6− | 2005 06 08 | 691 | 0.2− | 0.0 | 2006 11 24 | D35 | 0.1+ | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.4− | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2004 01 29 | 704 | 0.6+ | 0.8+ | 2005 06 08 | 691 | 0.2− | 0.1− | 2006 11 24 | D35 | 0.1+ | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− | | | | |
| 2004 01 29 | 699 | 0.6+ | 0.2+ | 2005 06 09 | 291 | 0.1− | 0.1− | 2006 11 24 | D35 | 0.1− | 0.0 | 2004 03 23 | 691 | 0.2+ | 0.9+ | 2006 11 16 | G96 | 0.2− | 0.5− | | | | |
| 2004 01 29 | 704 | 0.1+ | 0.8+ | 2005 06 09 | 291 | 0.0 | 0.1+ | 2006 11 27 | D35 | 0.0 | 0.0 | | | | | | | | | | | | |
| 2004 01 29 | 704 | 0.6− | 0.7− | 2005 06 09 | 291 | 0.2− | 0.1+ | 2006 11 27 | D35 | 0.2+ | 0.0 | | | | | | | | | | | | |
| 2004 01 29 | 699 | 0.8− | 0.7− | 2005 06 10 | 691 | 0.2+ | 0.1+ | 2006 11 27 | D35 | 0.3+ | 0.1− | | | | | | | | | | | | |
| 2004 01 30 | 704 | 0.1− | 1.1+ | 2005 06 10 | 691 | 0.2− | 0.4− | | | | | | | | | | | | | | | | |
| 2004 01 30 | 704 | 0.1− | 0.5− | 2005 06 10 | 691 | 0.1− | 0.1+ | | | | | | | | | | | | | | | | |

**2006 WN$_{31}$ = 2004 EJ$_{113}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 319.10090 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27413439 | $\omega$ | 331.52249 | | −0.01675055 | | −0.99891464 |
| $a$ | 2.3468952 | $\Omega$ | 119.40765 | | +0.92655623 | | −0.03184481 |
| $e$ | 0.1489880 | $i$ | 2.85972 | | +0.37578314 | | +0.03399203 |
| $P$ | 3.60 | $H$ | 18.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 01 29 | 691 | 0.1+ | 0.5− | 2006 09 30 | G96 | 0.5− | 0.7− | 2006 11 16 | G96 | 0.1− | 0.4− | 2004 03 15 | 691 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.4+ |
| 1993 01 29 | 691 | 1.6− | 0.6− | 2006 09 30 | G96 | 0.8− | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.6+ | 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 1993 01 29 | 691 | 1.0+ | 0.4− | 2006 09 30 | G96 | 0.5− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.1+ | 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.3+ |
| 2004 03 15 | 691 | 0.4+ | 0.1− | 2006 09 30 | G96 | 0.2− | 0.4− | 2006 11 23 | 691 | 0.1+ | 0.4+ | 2004 03 23 | 691 | 0.1+ | 0.4+ | 2006 11 16 | 691 | 0.4− | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.1− |
| 2004 03 15 | 691 | 0.1+ | 0.2+ | 2006 11 16 | 691 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ | 2004 03 23 | 691 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.2− | 0.2− | | | | |
| 2004 03 15 | 691 | 0.0 | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.3+ | 2004 03 23 | 691 | 0.2+ | 0.9+ | 2006 11 16 | G96 | 0.2− | 0.5− | | | | |

**2006 WM$_{32}$ = 2000 AH$_{223}$ = 2002 UR$_{54}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 149.17604 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26507068 | $\omega$ | 149.29983 | | −0.32245947 | | +0.94095201 |
| $a$ | 2.4000940 | $\Omega$ | 101.72016 | | −0.88845485 | | −0.26327779 |
| $e$ | 0.0709113 | $i$ | 6.04406 | | −0.32660047 | | −0.21282414 |
| $P$ | 3.72 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 01 09 | 691 | 0.1+ | 0.1− | 2002 10 29 | 645 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.0 | 2000 01 09 | 691 | 0.3+ | 0.1− | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 2000 01 09 | 691 | 0.4+ | 0.1+ | 2002 10 30 | 645 | 0.0 | 0.0 | 2006 11 23 | 691 | 0.2− | 0.1+ | 2000 01 12 | 691 | 0.5− | 0.1− | 2002 11 07 | 645 | 0.1− | 0.0 | 2006 11 23 | 691 | 0.0 | 0.1− |
| 2000 01 12 | 691 | 0.2− | 0.2− | 2002 11 07 | 645 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.3− | 0.0 | 2000 01 12 | 691 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2002 10 29 | 645 | 0.1+ | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.3− | | | | | | | | | | | | |

**2006 WF$_{33}$ = 2002 RV$_{222}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 47.11219 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26734300 | $\omega$ | 223.40845 | | +0.84903595 | +0.52414896 | |
| $a$ | 2.3864747 | $\Omega$ | 104.86898 | | −0.46402761 | +0.79985578 | |
| $e$ | 0.2400423 | $i$ | 3.93794 | | −0.25261896 | +0.29240143 | |
| $P$ | 3.69 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 09 15 | 608 | 0.3− | 0.6− | 2005 04 18 | 691 | 0.0 | 0.2− | 2006 11 16 | G96 | 0.2+ | 0.4− |
| 2002 09 15 | 608 | 0.2− | 0.6− | 2005 04 18 | 691 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.6− | 0.6− |
| 2002 09 15 | 608 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.3− | 0.7− | 2006 11 20 | 691 | 0.1− | 0.0 |
| 2002 09 16 | 644 | 0.2+ | 0.7+ | 2006 10 23 | G96 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2002 09 16 | 644 | 0.1+ | 0.6+ | 2006 10 23 | G96 | 0.0 | 0.6− | 2006 11 20 | 691 | 0.1+ | 0.2+ |
| 2002 09 16 | 644 | 0.2+ | 0.5+ | 2006 10 23 | G96 | 0.2− | 0.5− | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2005 04 02 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.2+ | 0.1+ | 2006 11 27 | 691 | 0.2− | 0.3+ |
| 2005 04 02 | 691 | 0.2− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 27 | 691 | 0.2+ | 0.3+ |
| 2005 04 02 | 691 | 0.4+ | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.2− | | | | |
| 2005 04 18 | 691 | 0.0 | 0.4+ | 2006 11 16 | G96 | 0.1+ | 0.4− | | | | |

**2006 WM$_{33}$ = 2004 FF$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.06469 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23634240 | $\omega$ | 205.91930 | | +0.87825976 | +0.47584985 | |
| $a$ | 2.5908461 | $\Omega$ | 125.58569 | | −0.42801885 | +0.82628709 | |
| $e$ | 0.0655775 | $i$ | 3.32642 | | −0.21321270 | +0.30135787 | |
| $P$ | 4.17 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 05 05 | 645 | 0.0 | 0.1+ | 2006 10 22 | G96 | 0.2+ | 0.5− | 2006 11 16 | 691 | 0.2+ | 0.1+ |
| 2000 05 05 | 645 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.3− | 0.4− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2004 03 18 | 691 | 0.1+ | 0.1− | 2006 10 22 | G96 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.1+ | 0.3+ |
| 2004 03 18 | 691 | 0.1− | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2004 03 18 | 691 | 0.2− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.8− | 2006 11 24 | 691 | 0.3− | 0.3− |
| 2004 03 23 | 691 | 0.3− | 0.2+ | 2006 11 12 | G96 | 0.2− | 0.6− | 2006 11 24 | 691 | 0.2− | 0.1− |
| 2004 03 23 | 691 | 0.2+ | 0.3− | 2006 11 12 | G96 | 0.0 | 0.3− | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2004 03 23 | 691 | 0.4+ | 0.1− | 2006 11 16 | 691 | 0.1− | 0.0 | | | | |
| 2006 10 22 | G96 | 0.7+ | 0.4− | 2006 11 16 | 691 | 0.2+ | 0.6+ | | | | |

**2006 WU$_{33}$ = 1999 FD$_{16}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 288.36501 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21816680 | $\omega$ | 300.59471 | | −0.53168219 | −0.84694255 | |
| $a$ | 2.7328152 | $\Omega$ | 181.52706 | | +0.79547204 | −0.49874593 | |
| $e$ | 0.0371678 | $i$ | 3.30720 | | +0.29075468 | −0.18423033 | |
| $P$ | 4.52 | $H$ | 17.6 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 21 | 691 | 1.0+ | 0.6+ | 2003 02 01 | 645 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.4+ | 0.1+ |
| 1999 03 21 | 691 | 0.8+ | 0.0 | 2006 11 16 | 691 | 0.6− | 0.4− | 2006 11 24 | 691 | 0.2− | 0.5+ |
| 1999 03 22 | 691 | 0.4− | 0.3− | 2006 11 16 | 691 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 1999 03 22 | 691 | 0.7− | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.6− | 2006 11 24 | 691 | 0.4+ | 0.3+ |
| 1999 03 22 | 691 | 0.5− | 0.2− | 2006 11 20 | 691 | 0.2+ | 0.1+ | | | | |
| 2003 02 01 | 645 | 0.2+ | 0.2+ | 2006 11 20 | 691 | 0.2− | 0.3+ | | | | |

**2006 WY$_{33}$ = 2001 QV$_{144}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.92585 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.22727121 | $\omega$ | 231.44268 | | +0.91234924 | −0.40875431 | |
| $a$ | 2.6593353 | $\Omega$ | 152.66096 | | +0.38959580 | +0.84936687 | |
| $e$ | 0.1323271 | $i$ | 2.89705 | | +0.12583311 | +0.33390993 | |
| $P$ | 4.34 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 24 | 691 | 0.2− | 0.2+ | 2006 10 22 | G96 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2001 08 24 | 691 | 0.3− | 0.1− | 2006 11 12 | G96 | 0.2+ | 0.1− | 2006 11 20 | 691 | 0.0 | 0.2− |
| 2001 08 24 | 691 | 0.3− | 0.2− | 2006 11 12 | G96 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2001 08 25 | 691 | 0.0 | 0.1− | 2006 11 12 | G96 | 0.1+ | 0.0 | 2006 11 20 | 691 | 0.2+ | 0.0 |
| 2001 08 25 | 691 | 0.2+ | 0.1+ | 2006 11 12 | G96 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.5+ | 0.1+ |
| 2001 08 25 | 691 | 0.5+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.4− | 0.1− |
| 2006 10 22 | G96 | 0.0 | 0.3− | 2006 11 16 | 691 | 0.2+ | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.2+ |
| 2006 10 22 | G96 | 0.0 | 0.5− | 2006 11 16 | 691 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.1− | 0.1− |
| 2006 10 22 | G96 | 0.2− | 0.1− | 2006 11 20 | 691 | 0.3− | 0.2− | | | | |

**2006 WJ$_{35}$ = 2004 JB$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 258.43729 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23402668 | $\omega$ | 18.40801 | | −0.96562984 | −0.25565577 | |
| $a$ | 2.6079092 | $\Omega$ | 146.66678 | | +0.22646815 | −0.91608488 | |
| $e$ | 0.1315484 | $i$ | 4.89558 | | +0.12755859 | −0.30891524 | |
| $P$ | 4.21 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 15 | 704 | (0.6+ | 1.6+) | 2005 08 27 | 644 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2004 05 15 | 704 | 0.8− | 0.8+ | 2005 10 06 | G96 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.4− | 0.2− |
| 2004 05 15 | 704 | 0.6+ | 0.7+ | 2005 10 06 | G96 | 0.2− | 0.2− | 2006 11 20 | 691 | 0.3− | 0.2− |
| 2004 05 15 | 704 | 0.5+ | 0.7+ | 2005 10 06 | G96 | 0.3+ | 0.0 | 2006 11 20 | 691 | 0.4− | 0.5+ |
| 2004 05 18 | 704 | 0.3+ | 0.2+ | 2005 10 06 | G96 | 0.2+ | 0.4− | 2006 11 24 | 691 | 0.0 | 0.2+ |
| 2004 05 18 | 704 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.2+ | 0.3− | 2006 11 24 | 691 | 0.2+ | 0.1+ |
| 2004 05 18 | 704 | 0.3+ | 0.3− | 2006 10 23 | G96 | 0.2+ | 0.5− | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2004 05 18 | 704 | 0.7− | 0.3− | 2006 10 23 | G96 | 0.1+ | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2004 05 18 | 704 | 0.0 | 0.4− | 2006 10 23 | G96 | 0.6+ | 0.5− | 2006 11 24 | G96 | 0.4+ | 0.1− |
| 2005 08 27 | 644 | 0.4− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.6+ | 0.2− |
| 2005 08 27 | 644 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.1+ | | | | |

**2006 WX$_{35}$ = 2004 BF$_{129}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.51946 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30229992 | $\omega$ | 288.34341 | | +0.62513966 | −0.77802050 | |
| $a$ | 2.1987576 | $\Omega$ | 122.80274 | | +0.74118548 | +0.56671771 | |
| $e$ | 0.1576899 | $i$ | 4.25236 | | +0.24463131 | +0.27113674 | |
| $P$ | 3.26 | $H$ | 18.8 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 16 | 691 | 0.2− | 0.0 | 2006 10 23 | G96 | 0.2+ | 0.1+ | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2004 01 16 | 691 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.3− | 0.4− | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2004 01 16 | 691 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2+ | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.1− |
| 2004 01 27 | 691 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.5− | 0.3+ | 2006 11 24 | G96 | 0.1+ | 0.4− |
| 2004 01 27 | 691 | 0.1+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1− | 2006 11 24 | G96 | 0.3− | 0.4− |
| 2004 01 27 | 691 | 0.1− | 0.0 | 2006 11 20 | 691 | 0.3− | 0.1− | 2006 11 24 | G96 | 0.1− | 0.3− |
| 2006 10 23 | G96 | 0.0 | 0.3+ | 2006 11 20 | 691 | 0.1− | 0.3+ | 2006 11 24 | G96 | (1.9− | 1.5−) |
| 2006 10 23 | G96 | 0.1+ | 0.8− | 2006 11 20 | 691 | 0.6+ | 0.2− | | | | |

**2006 WV$_{37}$ = 2001 TA$_{156}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.46629 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.21438779 | $\omega$ | 197.29346 | | +0.88268457 | −0.46954547 | |
| $a$ | 2.7648358 | $\Omega$ | 190.77699 | | +0.44277779 | +0.84505131 | |
| $e$ | 0.0705437 | $i$ | 6.10137 | | +0.15753023 | +0.25576421 | |
| $P$ | 4.60 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 22 | 645 | 0.0 | 0.1+ | 2001 10 17 | 691 | 0.1+ | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.4+ |
| 1999 03 22 | 645 | 0.1+ | 0.1+ | 2001 10 17 | 691 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.3− | 0.4+ |
| 2001 09 23 | 691 | 0.4− | 0.2− | 2001 11 12 | 645 | 0.1− | 0.0 | 2006 11 22 | G96 | 0.1− | 0.5− |
| 2001 09 23 | 691 | 0.1− | 0.0 | 2001 11 12 | 645 | 0.1+ | 0.0 | 2006 11 22 | G96 | 0.0 | 0.1− |
| 2001 09 23 | 691 | 0.1− | 0.3− | 2006 10 23 | G96 | 0.0 | 0.0 | 2006 11 22 | G96 | 0.1− | 0.3− |
| 2001 10 14 | 691 | 0.0 | 0.2+ | 2006 10 23 | G96 | 0.3− | 0.7− | 2006 11 22 | G96 | 0.0 | 0.4− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 14 | 691 | 0.1+ | 0.4+ | 2006 10 23 | G96 | 0.4− | 0.2− | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2001 10 14 | 691 | 0.3− | 0.2+ | 2006 10 23 | G96 | 0.0 | 0.3+ | 2006 11 24 | 691 | 0.5+ | 0.1− |
| 2001 10 17 | 691 | 0.2+ | 0.1+ | 2006 11 16 | 691 | 0.2− | 0.3− | 2006 11 24 | 691 | 0.4+ | 0.1− |

**2006 WE$_{38}$ = 2005 NT$_{93}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 19.30441 | | (2000.0) | | | |
| $n$ | 0.21239071 | $\omega$ | 261.43477 | | +0.93084313 | −0.35785265 |
| $a$ | 2.7821404 | $\Omega$ | 119.50483 | | +0.35970990 | +0.86168155 |
| $e$ | 0.0941527 | $i$ | 4.87602 | | +0.06434175 | +0.35978659 |
| $P$ | 4.64 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 06 | 691 | 0.0 | 0.1− | 2005 07 15 | G96 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.2+ |
| 2005 07 06 | 691 | 0.1+ | 0.1+ | 2005 07 15 | G96 | 0.4− | 0.1− | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2005 07 06 | 691 | 0.1+ | 0.1+ | 2006 10 23 | G96 | 0.1+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.0 |
| 2005 07 15 | 691 | 0.0 | 0.1− | 2006 10 23 | G96 | 0.1+ | 0.5− | 2006 11 20 | 691 | 0.4− | 0.2+ |
| 2005 07 15 | 691 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2005 07 15 | 691 | 0.0 | 0.1+ | 2006 10 23 | G96 | 0.5+ | 0.3− | 2006 11 24 | G96 | 0.7+ | 0.3− |
| 2005 07 15 | G96 | 0.1− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 24 | G96 | 0.6+ | 0.3− |
| 2005 07 15 | G96 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.0 | 0.1+ | 2006 11 24 | G96 | 0.1− | 0.5− |

**2006 WR$_{39}$ = 2001 XY$_{124}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 357.07807 | | (2000.0) | | | |
| $n$ | 0.20134109 | $\omega$ | 307.21767 | | +0.56431758 | −0.82369633 |
| $a$ | 2.8830208 | $\Omega$ | 108.33791 | | +0.77472318 | +0.50518756 |
| $e$ | 0.0971299 | $i$ | 3.34638 | | +0.28521862 | +0.25750706 |
| $P$ | 4.90 | $H$ | 16.7 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 01 28 | 691 | 0.3+ | 0.1+ | 2001 12 17 | 704 | 0.6+ | 0.2+ | 2006 11 20 | 691 | 0.3− | 0.1− |
| 1998 01 28 | 691 | 0.4− | 0.0 | 2001 12 17 | 704 | 1.0− | 0.1− | 2006 11 20 | 691 | 0.4− | 0.1+ |
| 1998 01 28 | 691 | 0.1+ | 0.1− | 2001 12 17 | 704 | 0.4− | 0.1+ | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2001 12 14 | 704 | 0.4+ | 0.6− | 2006 11 16 | 691 | 0.1− | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.2+ |
| 2001 12 14 | 704 | 0.5− | 0.4+ | 2006 11 16 | 691 | 0.6+ | 0.0 | 2006 11 24 | 691 | 0.1+ | 0.0 |
| 2001 12 14 | 704 | 0.8+ | 0.2+ | 2006 11 16 | 691 | 0.1− | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.1− |

**2006 WT$_{39}$ = 2002 VK$_{18}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 31.60055 | | (2000.0) | | | |
| $n$ | 0.25615414 | $\omega$ | 140.87482 | | +0.99126408 | −0.11238899 |
| $a$ | 2.4554728 | $\Omega$ | 225.72742 | | +0.08317423 | +0.93883041 |
| $e$ | 0.1341456 | $i$ | 5.53178 | | +0.10235996 | +0.32552448 |
| $P$ | 3.85 | $H$ | 16.9 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 02 | 608 | 0.6− | 0.4− | 2006 09 27 | G96 | 0.0 | 0.2− | 2006 10 29 | G96 | 0.1+ | 0.3− |
| 2002 11 02 | 608 | 0.2− | 0.0 | 2006 09 27 | G96 | 0.1+ | 0.3− | 2006 11 16 | 691 | 0.0 | 0.1+ |
| 2002 11 02 | 608 | 0.6− | 0.4− | 2006 09 27 | G96 | 0.3− | 0.1− | 2006 11 16 | 691 | 0.1+ | 0.0 |
| 2002 11 06 | 704 | 0.6+ | 1.3+ | 2006 09 27 | G96 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.3+ | 0.1+ |
| 2002 11 06 | 704 | 0.0 | 1.2+ | 2006 10 19 | G96 | 0.2− | 0.5− | 2006 11 20 | 691 | 0.4− | 0.1− |
| 2002 11 06 | 704 | 0.2+ | 0.4+ | 2006 10 19 | G96 | 0.4− | 0.8− | 2006 11 20 | 691 | 0.4− | 0.2− |
| 2002 11 06 | 704 | 0.5− | 1.4+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 20 | 691 | 0.2− | 0.1− |
| 2002 11 06 | 704 | 0.3+ | 0.2+ | 2006 10 19 | G96 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.2− | 0.4+ |
| 2004 03 16 | 691 | 0.3+ | 0.1+ | 2006 10 29 | G96 | 0.4+ | 0.3+ | 2006 11 24 | 691 | 0.2+ | 0.1− |
| 2004 03 16 | 691 | 0.2− | 0.0 | 2006 10 29 | G96 | 0.7+ | 0.1− | 2006 11 24 | 691 | 0.2+ | 0.2− |
| 2004 03 16 | 691 | 0.0 | 0.1+ | 2006 10 29 | G96 | 0.4+ | 0.8− | | | | |

**2006 WY$_{39}$ = 2005 NE$_{66}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 112.30911 | | (2000.0) | | | |
| $n$ | 0.26904303 | $\omega$ | 75.77593 | | +0.17535433 | +0.98275968 |
| $a$ | 2.3764110 | $\Omega$ | 204.55768 | | −0.94888738 | +0.15284428 |
| $e$ | 0.2271915 | $i$ | 8.10595 | | −0.26241876 | +0.10402898 |
| $P$ | 3.66 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 02 | 703 | 0.1− | 0.6− | 2006 11 20 | 691 | 0.2− | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.1+ |
| 2005 07 02 | 703 | 0.4− | 0.5− | 2006 11 20 | 691 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2005 07 02 | 703 | 0.4− | 0.2− | 2006 11 20 | 691 | 0.4− | 0.0 | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2005 07 02 | 703 | 0.8− | 0.6− | 2006 11 21 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.1− |
| 2005 07 11 | 691 | 0.3+ | 0.2+ | 2006 11 21 | G96 | 0.4− | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2005 07 11 | 691 | 0.0 | 0.2+ | 2006 11 21 | G96 | 0.4+ | 0.2− | 2006 11 24 | G96 | 0.5+ | 0.2− |
| 2005 07 11 | 691 | 0.1+ | 0.0 | 2006 11 21 | G96 | 0.0 | 0.4− | 2006 11 24 | G96 | 0.0 | 0.2− |
| 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 24 | 691 | 0.1− | 0.2+ | 2006 11 24 | G96 | 0.4− | 0.5− |
| 2006 11 16 | 691 | 0.2+ | 0.3− | 2006 11 24 | 691 | 0.0 | 0.3− | | | | |
| 2006 11 16 | 691 | 0.1+ | 0.4+ | 2006 11 24 | 691 | 0.3+ | 0.5+ | | | | |

**2006 WJ$_{42}$ = 2002 AF$_{79}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 294.08875 | | (2000.0) | | | |
| $n$ | 0.17851233 | $\omega$ | 35.43106 | | −0.50594587 | −0.84734349 |
| $a$ | 3.1238529 | $\Omega$ | 85.47047 | | +0.74937321 | −0.52441778 |
| $e$ | 0.0825296 | $i$ | 9.31352 | | +0.42715170 | −0.08363611 |
| $P$ | 5.52 | $H$ | 16.4 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 11 30 | 691 | 0.0 | 0.0 | 2002 01 14 | 704 | 0.6+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.4− |
| 1995 11 30 | 691 | 0.2− | 0.4− | 2002 01 14 | 704 | 0.6+ | 0.4+ | 2006 11 16 | G96 | 0.2− | 0.4− |
| 1995 11 30 | 691 | 0.3+ | 0.4− | 2003 05 02 | 691 | 0.0 | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.4− |
| 2001 11 17 | 691 | 0.1+ | 0.2− | 2003 05 02 | 691 | 0.1+ | 0.3+ | 2006 11 16 | G96 | 0.1+ | 0.0 |
| 2001 11 17 | 691 | 0.0 | 0.2− | 2003 05 02 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2001 11 17 | 691 | 0.4+ | 0.2− | 2005 09 01 | 644 | 0.3+ | 0.7+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2002 01 08 | 704 | 0.9− | 0.5+ | 2005 09 01 | 644 | 0.2+ | 0.7+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2002 01 08 | 704 | 0.2+ | 0.8+ | 2005 09 01 | 644 | 0.1+ | 0.9+ | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2002 01 08 | 704 | 0.1− | 1.2+ | 2006 11 16 | 691 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.3− | 0.4+ |
| 2002 01 14 | 704 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.0 | 0.3+ | 2006 11 27 | 691 | 0.2− | 0.2− |
| 2002 01 14 | 704 | 0.4+ | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.1+ | | | | |

**2006 WR$_{42}$ = 2003 BE$_{56}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 307.24738 | | (2000.0) | | | |
| $n$ | 0.22923983 | $\omega$ | 11.26547 | | −0.61924341 | −0.77942048 |
| $a$ | 2.6440885 | $\Omega$ | 117.06805 | | +0.71185400 | −0.60837325 |
| $e$ | 0.2713448 | $i$ | 6.12985 | | +0.33136307 | −0.14961855 |
| $P$ | 4.30 | $H$ | 18.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 03 20 | 645 | 0.0 | 0.0 | 2003 01 30 | 699 | 0.1+ | 0.6− | 2006 11 24 | 691 | 1.0− | 1.0+ |
| 1999 03 20 | 645 | 0.0 | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.1− |
| 2003 01 28 | 608 | 0.3− | 0.6− | 2006 11 16 | 691 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.3+ | 0.0 |
| 2003 01 28 | 608 | 0.1− | 0.2− | 2006 11 16 | 691 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.3+ | 0.1− |
| 2003 01 28 | 608 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.7+ | 0.5− | 2006 11 24 | G96 | 0.3+ | 0.3− |
| 2003 01 30 | 699 | 0.6+ | 0.1+ | 2006 11 22 | G96 | 0.0 | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 01 30 | 699 | 0.5− | 0.5+ | 2006 11 22 | G96 | 0.4+ | 0.4− | 2006 11 24 | G96 | 0.2+ | 0.5− |
| 2003 01 30 | 699 | 0.1+ | 0.6+ | 2006 11 22 | G96 | 0.7+ | 0.4− | | | | |

**2006 WL$_{43}$ = 2001 YZ$_{34}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.47054 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.18929301 | $\omega$ | 295.30645 | | +0.97296662 | | −0.14557573 |
| $a$ | 3.0040904 | $\Omega$ | 73.48308 | | +0.21160296 | | +0.87294373 |
| $e$ | 0.0972898 | $i$ | 10.77794 | | −0.09252102 | | +0.46559311 |
| $P$ | 5.21 | $H$ | 15.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 12 18 | 704 | 0.2− | 0.0 | 2006 10 20 | 703 | 0.3− | 1.1− | 2006 11 16 | G96 | 0.1+ | 0.2− |
| 2001 12 18 | 704 | 0.7− | 0.3+ | 2006 10 20 | 703 | 0.1+ | 0.8− | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2001 12 18 | 704 | 0.1− | 0.2− | 2006 10 20 | 703 | 0.3+ | 1.2+ | 2006 11 23 | 691 | 0.2− | 0.1+ |
| 2001 12 18 | 704 | 0.1+ | 0.3+ | 2006 11 16 | 691 | 0.1− | 0.1+ | 2006 11 23 | 691 | 0.2+ | 0.1+ |
| 2001 12 19 | 704 | 0.9+ | 0.1− | 2006 11 16 | 691 | 0.3− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.1− |
| 2001 12 19 | 704 | 0.6+ | 0.0 | 2006 11 16 | 691 | 0.1− | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.4− | 0.6− | 2006 11 16 | G96 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2001 12 19 | 704 | 0.2− | 0.3+ | 2006 11 16 | G96 | 0.6+ | 0.2− | | | | |
| 2006 10 20 | 703 | (2.0+ | 0.0 ) | 2006 11 16 | G96 | 0.2+ | 0.4− | | | | |

**2006 WT$_{43}$ = 2001 TQ$_{230}$ = 2005 OK$_{23}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 44.93133 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21319940 | $\omega$ | 158.33497 | | +0.99846309 | | +0.04406265 |
| $a$ | 2.7751006 | $\Omega$ | 199.23127 | | −0.05227723 | | +0.95017792 |
| $e$ | 0.0339512 | $i$ | 5.85743 | | +0.01839969 | | +0.30857804 |
| $P$ | 4.62 | $H$ | 16.5 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 291 | 0.2+ | 0.1+ | 2005 07 30 | 644 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.6− | 0.4− |
| 2001 10 15 | 291 | 0.3− | 0.1+ | 2005 08 06 | 644 | 0.1+ | 0.1+ | 2006 11 16 | G96 | 0.4− | 0.3− |
| 2001 10 15 | 291 | 0.1+ | 0.2+ | 2005 08 06 | 644 | 0.1+ | 0.0 | 2006 11 16 | G96 | 0.2− | 0.4− |
| 2001 10 18 | 644 | 0.2− | 0.4+ | 2005 08 06 | 644 | 0.1+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.3+ |
| 2001 10 18 | 644 | 0.3− | 0.2− | 2006 10 19 | 695 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.6+ | 0.2− |
| 2001 10 18 | 644 | 0.1− | 0.1− | 2006 10 19 | 695 | 0.3− | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2004 05 21 | 691 | 0.2+ | 0.2+ | 2006 10 22 | G96 | 0.3− | 0.5− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2004 05 21 | 691 | 0.2+ | 0.3+ | 2006 10 22 | G96 | 0.3− | 0.4− | 2006 11 27 | 691 | 0.3+ | 0.0 |
| 2004 05 21 | 691 | 0.1− | 0.4+ | 2006 10 22 | G96 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.1− | 0.7+ |
| 2005 07 30 | 644 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.3− | 0.5− | | | | |
| 2005 07 30 | 644 | 0.1− | 0.0 | 2006 11 16 | G96 | 0.3− | 0.3− | | | | |

**2006 WZ$_{43}$ = 2002 TA$_{202}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.47243 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25730071 | $\omega$ | 216.27389 | | +0.67904393 | | −0.73395836 |
| $a$ | 2.4481728 | $\Omega$ | 190.98194 | | +0.68995269 | | +0.64474124 |
| $e$ | 0.1778104 | $i$ | 4.30466 | | +0.25072819 | | +0.21357399 |
| $P$ | 3.83 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 291 | 0.5− | 0.1+ | 2006 10 19 | 695 | 0.1− | 0.3− | 2006 11 16 | G96 | 0.4− | 0.2− |
| 2002 10 05 | 291 | 0.0 | 0.2+ | 2006 11 16 | 691 | 0.1+ | 0.2+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 10 05 | 291 | 0.3+ | 0.2+ | 2006 11 16 | 691 | 0.4+ | 0.1+ | 2006 11 20 | 691 | 0.1+ | 0.1− |
| 2002 10 08 | 291 | 0.3+ | 0.2− | 2006 11 16 | 691 | 0.2+ | 0.3+ | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 10 08 | 291 | 0.0 | 0.1− | 2006 11 16 | G96 | 0.4− | 0.1− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2002 10 08 | 291 | 0.1− | 0.2− | 2006 11 16 | G96 | 0.4− | 0.2− | 2006 11 24 | 691 | 0.4− | 0.2− |
| 2006 10 19 | 695 | 0.1− | 0.1− | 2006 11 16 | G96 | 0.4− | 0.1− | 2006 11 24 | 691 | 0.2− | 0.1+ |

**2006 WJ$_{44}$ = 2000 DM$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 290.86838 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.26273647 | $\omega$ | 309.03675 | | −0.57246368 | | −0.81990497 |
| $a$ | 2.4142884 | $\Omega$ | 175.86990 | | +0.77711759 | | −0.54505209 |
| $e$ | 0.0894681 | $i$ | 5.11224 | | +0.26148346 | | −0.17514014 |
| $P$ | 3.75 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 29 | 704 | 0.2+ | 0.1− | 2006 10 23 | G96 | 0.2− | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2000 02 29 | 704 | 0.7+ | 0.3− | 2006 10 23 | G96 | 0.3+ | 0.3+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2000 02 29 | 704 | 0.3+ | 0.2+ | 2006 10 23 | G96 | 0.2+ | 0.4+ | 2006 11 20 | 691 | 0.2+ | 0.2+ |
| 2000 03 03 | 704 | 0.2− | 0.6+ | 2006 10 23 | G96 | 0.1+ | 0.4+ | 2006 11 24 | 691 | 0.1− | 0.2− |
| 2000 03 03 | 704 | 0.1− | 1.6− | 2006 11 16 | 691 | 0.1− | 0.4+ | 2006 11 24 | 691 | 0.5− | 0.2− |
| 2000 03 03 | 704 | 0.5− | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.3− | 0.1− |
| 2000 03 03 | 704 | 0.4− | 1.0+ | 2006 11 16 | 691 | 0.3+ | 0.5− | | | | |

**2006 WM$_{44}$ = 2003 AJ$_{87}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 300.30435 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23273351 | $\omega$ | 308.45026 | | −0.64826659 | | −0.76140664 |
| $a$ | 2.6175608 | $\Omega$ | 181.96968 | | +0.72450283 | | −0.61553550 |
| $e$ | 0.2196532 | $i$ | 5.37227 | | +0.23419239 | | −0.20341083 |
| $P$ | 4.23 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 08 19 | 807 | 0.4− | 0.4− | 2003 01 07 | 704 | 0.2− | 0.2+ | 2006 11 20 | 704 | 0.5+ | 0.3+ |
| 2001 08 19 | 807 | 0.4+ | 0.1− | 2003 01 07 | 704 | 0.6+ | 0.1− | 2006 11 20 | 691 | 0.1+ | 0.1+ |
| 2001 08 21 | 691 | 0.5+ | 0.2+ | 2003 01 07 | 704 | 0.2+ | 0.3+ | 2006 11 20 | 704 | 0.7+ | 0.1− |
| 2001 08 21 | 691 | 0.1− | 0.0 | 2006 10 23 | G96 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.6+ | 1.4+ |
| 2001 08 21 | 691 | 0.4− | 0.1− | 2006 10 23 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.4+ |
| 2003 01 01 | 704 | 0.2− | 0.1− | 2006 10 23 | G96 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.2− | 0.0 |
| 2003 01 01 | 704 | 0.0 | 0.3− | 2006 10 23 | G96 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.0 | 0.0 |
| 2003 01 01 | 704 | 0.2+ | 0.3+ | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.1− | 0.1+ |
| 2003 01 01 | 704 | 0.2− | 0.4− | 2006 11 16 | 691 | 0.1+ | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2003 01 01 | 704 | 0.7− | 0.3− | 2006 11 16 | 691 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.2+ | 0.3− |
| 2003 01 07 | 704 | 0.2− | 0.1+ | 2006 11 20 | 691 | 0.8− | 0.3− | 2006 11 24 | G96 | 0.9+ | 0.1+ |
| 2003 01 07 | 704 | 0.4+ | 0.2+ | 2006 11 20 | 691 | 0.2+ | 0.1+ | 2006 11 24 | G96 | 0.4+ | 0.2− |

**2006 WW$_{49}$ = 2002 AG$_{200}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 341.29694 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.19247284 | $\omega$ | 184.55680 | | +0.18609407 | | −0.96834515 |
| $a$ | 2.9709117 | $\Omega$ | 254.78521 | | +0.90681626 | | +0.23445309 |
| $e$ | 0.0592049 | $i$ | 9.92775 | | +0.37822382 | | −0.08567041 |
| $P$ | 5.12 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 01 09 | 704 | 0.2+ | 0.1− | 2005 11 04 | G96 | 0.0 | 0.1− | 2006 11 16 | 691 | 0.1− | 0.3− |
| 2002 01 09 | 704 | 0.1+ | 0.6+ | 2005 11 04 | G96 | 0.0 | 0.0 | 2006 11 20 | 691 | 0.2− | 0.0 |
| 2002 01 09 | 704 | 0.0 | 0.6+ | 2005 11 04 | G96 | 0.0 | 0.1+ | 2006 11 20 | 691 | 0.2+ | 0.1− |
| 2002 01 09 | 704 | 0.1− | 0.4− | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 20 | 691 | 0.3+ | 0.2− |
| 2002 01 13 | 704 | 0.0 | 1.0− | 2006 11 10 | 691 | 0.1+ | 0.1− | 2006 11 24 | 691 | 0.3+ | 0.1− |
| 2002 01 13 | 704 | 0.1− | 0.3+ | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 24 | 691 | 0.0 | 0.3+ |
| 2002 01 13 | 704 | (0.7− | 2.2+) | 2006 11 16 | 691 | 1.0− | 0.7+ | 2006 11 24 | 691 | 0.3+ | 0.0 |
| 2005 11 04 | G96 | 0.1− | 0.1+ | 2006 11 16 | 691 | 0.1+ | 0.2− | | | | |

**2006 WY$_{50}$ = 2003 AF$_{15}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 16.77684 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22966418 | $\omega$ | 137.26407 | +0.87978626 | | −0.43518980 | |
| $a$ | 2.6408306 | $\Omega$ | 249.45978 | +0.36205113 | | +0.87417285 | |
| $e$ | 0.1574117 | $i$ | 11.78620 | +0.30805050 | | +0.21548006 | |
| $P$ | 4.29 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 01 14 | 691 | 0.1− | 0.0 | 2006 10 29 | 704 | 1.0− | 0.1− | 2006 11 21 | 704 | 0.1− | 0.4− |
| 1994 01 14 | 691 | 0.1+ | 0.4+ | 2006 10 29 | 704 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.3− | 0.2− |
| 1994 01 14 | 691 | 0.0 | 0.0 | 2006 10 29 | 704 | 0.1+ | 1.4− | 2006 11 21 | 704 | 0.6− | 0.2− |
| 2001 06 28 | 699 | 0.3+ | 0.1− | 2006 11 10 | 691 | 0.0 | 0.0 | 2006 11 21 | 704 | 0.2− | 0.3− |
| 2001 06 28 | 699 | 0.7+ | 2.0+ | 2006 11 10 | 691 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.2− |
| 2001 06 28 | 699 | 1.2+ | 1.9+ | 2006 11 10 | 691 | 0.3+ | 0.2+ | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2001 06 28 | 699 | 1.3+ | 1.1+ | 2006 11 15 | 703 | 0.3− | 0.3− | 2006 11 23 | 691 | 0.1− | 0.1− |
| 2001 07 19 | 699 | 1.0+ | 1.5+ | 2006 11 15 | 703 | 1.2− | 1.5− | 2006 11 24 | 703 | 0.5− | 0.7− |
| 2001 07 19 | 699 | 0.8− | 0.2+ | 2006 11 15 | 703 | 0.3+ | 1.5− | 2006 11 24 | 703 | 1.0− | 0.2− |
| 2001 07 19 | 699 | 0.1+ | 0.5− | 2006 11 15 | 703 | 1.6+ | 0.6− | 2006 11 24 | 703 | 0.5+ | 1.1− |
| 2001 07 19 | 699 | 0.9− | 0.6− | 2006 11 16 | 691 | 0.0 | 0.1+ | 2006 11 24 | 703 | 0.6− | 0.3− |
| 2001 09 20 | 645 | 0.1− | 0.1− | 2006 11 16 | 691 | 0.3− | 0.2− | 2006 11 27 | 691 | 0.1− | 0.2+ |
| 2001 09 20 | 645 | 0.1− | 0.0 | 2006 11 16 | 691 | 0.1+ | 0.1+ | 2006 11 27 | 691 | 0.1− | 0.1+ |
| 2003 01 03 | 704 | 0.2+ | 0.9+ | 2006 11 18 | 704 | 1.7+ | 1.6− | 2006 11 27 | 691 | 0.2− | 0.1+ |
| 2003 01 03 | 704 | 0.5+ | 0.6+ | 2006 11 18 | 704 | 1.0+ | 0.8− | 2006 12 01 | 704 | 1.3+ | 1.9+ |
| 2003 01 03 | 704 | 0.1− | 0.1+ | 2006 11 18 | 704 | 0.9+ | 0.5− | 2006 12 01 | 704 | 0.1+ | 1.4+ |
| 2003 01 03 | 704 | 0.9+ | 0.6+ | 2006 11 18 | 704 | 0.5+ | 0.2+ | 2006 12 01 | 691 | 0.2− | 0.4+ |
| 2003 01 05 | 704 | 0.1+ | 0.2+ | 2006 11 18 | 704 | 0.5+ | 0.3− | 2006 12 01 | 704 | 1.1+ | 1.3+ |
| 2003 01 05 | 704 | 0.4− | 0.3+ | 2006 11 20 | 691 | 0.2− | 0.1− | 2006 12 01 | 704 | 0.4+ | 1.4+ |
| 2003 01 05 | 704 | 0.0 | 0.1− | 2006 11 20 | 691 | 0.0 | 0.1− | 2006 12 01 | 691 | 0.2− | 0.3+ |
| 2006 10 29 | 704 | 0.3− | 0.6− | 2006 11 20 | 691 | 0.1− | 0.1− | 2006 12 01 | 704 | 1.1+ | 1.7+ |
| 2006 10 29 | 704 | 0.5+ | 0.7− | 2006 11 21 | 704 | 0.5− | 0.3− | 2006 12 01 | 691 | 0.3− | 0.2+ |

**2006 WX$_{51}$ = 2005 NZ$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 60.34902 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22150994 | $\omega$ | 195.93537 | +0.94427809 | | +0.32826325 | |
| $a$ | 2.7052490 | $\Omega$ | 144.87172 | −0.29722398 | | +0.88188933 | |
| $e$ | 0.0972334 | $i$ | 2.40317 | −0.14141004 | | +0.33839983 | |
| $P$ | 4.45 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 03 | G96 | 0.1− | 0.7+ | 2005 07 04 | 691 | 0.8+ | 0.8− | 2006 11 20 | 691 | 0.1+ | 0.3− |
| 2005 07 03 | G96 | 0.0 | 0.6+ | 2006 11 16 | G96 | 0.4− | 0.4+ | 2006 11 24 | 691 | 0.1+ | 0.3+ |
| 2005 07 03 | G96 | 0.3+ | 0.8+ | 2006 11 16 | G96 | 0.0 | 0.2+ | 2006 11 24 | 691 | 0.5− | 0.2− |
| 2005 07 03 | G96 | 0.1− | 0.3+ | 2006 11 16 | G96 | 0.0 | 0.2− | 2006 11 24 | 691 | 0.3+ | 0.1− |
| 2005 07 04 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1+ | 0.0 | | | | |
| 2005 07 04 | 691 | 0.6− | 0.1+ | 2006 11 20 | 691 | 0.1− | 0.1+ | | | | |

**2006 WH$_{52}$ = 2002 TZ$_{155}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 349.18036 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26239042 | $\omega$ | 83.91248 | +0.52677923 | | −0.84996785 | |
| $a$ | 2.4164106 | $\Omega$ | 334.29492 | +0.77273322 | | +0.48261562 | |
| $e$ | 0.1704473 | $i$ | 1.00870 | +0.35410028 | | +0.21127428 | |
| $P$ | 3.76 | $H$ | 18.5 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 10 05 | 291 | 0.0 | 0.1− | 2006 11 01 | G96 | 0.1+ | 0.4− | 2006 11 20 | 691 | 0.0 | 0.1+ |
| 2002 10 05 | 291 | 0.1+ | 0.1− | 2006 11 01 | G96 | 0.2+ | 0.0 | 2006 11 20 | 691 | 0.0 | 0.5+ |
| 2002 10 05 | 291 | 0.1+ | 0.0 | 2006 11 01 | G96 | 0.2− | 0.6− | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2002 10 06 | 644 | 0.5− | 0.6+ | 2006 11 16 | 691 | 0.0 | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2002 10 06 | 644 | 0.2− | 0.2+ | 2006 11 16 | 691 | 0.2− | 0.1+ | 2006 11 24 | 691 | 0.0 | 0.2− |
| 2002 10 06 | 644 | 0.3− | 0.5+ | 2006 11 16 | 691 | 0.1− | 0.2+ | | | | |
| 2006 11 01 | G96 | 0.4+ | 0.7− | 2006 11 20 | 691 | 0.1+ | 0.1− | | | | |

**2006 WA$_{58}$ = 2002 XJ$_{111}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 52.51058 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23894108 | $\omega$ | 39.46080 | +0.96058254 | | +0.27280781 | |
| $a$ | 2.5720268 | $\Omega$ | 304.62786 | −0.26864912 | | +0.86153124 | |
| $e$ | 0.0771204 | $i$ | 3.72447 | −0.07147616 | | +0.42818199 | |
| $P$ | 4.12 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 06 | 704 | 0.1− | 1.0+ | 2003 01 27 | 291 | 0.3+ | 0.5− | 2006 11 17 | 691 | 0.1− | 0.2− |
| 2002 12 06 | 704 | 0.2− | 0.8+ | 2003 01 27 | 291 | 0.1+ | 0.0 | 2006 11 23 | 703 | 0.7+ | 0.5+ |
| 2002 12 06 | 704 | 0.1+ | 0.1+ | 2003 01 27 | 291 | 0.4− | 0.1+ | 2006 11 23 | 703 | 0.4+ | 0.8+ |
| 2002 12 06 | 704 | 0.2− | 0.4+ | 2006 10 19 | 691 | 0.3+ | 0.0 | 2006 11 23 | 703 | 0.3+ | 0.1+ |
| 2002 12 11 | 704 | 1.2+ | 0.1− | 2006 10 19 | 691 | 0.3+ | 0.1+ | 2006 11 23 | 703 | 0.2+ | 0.2− |
| 2002 12 11 | 704 | 0.3+ | 0.0 | 2006 10 19 | 691 | 0.4− | 0.0 | 2006 11 25 | 691 | 0.0 | 0.3− |
| 2002 12 11 | 704 | 0.2− | 0.8+ | 2006 11 17 | 691 | 0.3− | 0.1+ | 2006 11 25 | 691 | 0.1+ | 0.1+ |
| 2002 12 11 | 704 | 0.9− | 0.5− | 2006 11 17 | 691 | 0.3− | 0.0 | 2006 11 25 | 691 | 0.0 | 0.4− |

**2006 WD$_{60}$ = 2006 OR$_{4}$ = 1999 TT$_{288}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.89505 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.28335406 | $\omega$ | 156.06989 | +0.87897361 | | +0.47681593 | |
| $a$ | 2.2957068 | $\Omega$ | 175.43298 | −0.45082796 | | +0.83580401 | |
| $e$ | 0.3014981 | $i$ | 5.19420 | −0.15543343 | | +0.27217316 | |
| $P$ | 3.48 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 06 03 | 691 | 0.8− | 1.1+ | 2006 07 22 | G96 | 0.0 | 0.3− | 2006 11 01 | 703 | 0.6− | 0.0 |
| 1995 06 03 | 691 | 0.1+ | 1.0+ | 2006 07 22 | G96 | 0.1− | 1.2− | 2006 11 01 | 703 | 0.5− | 0.7+ |
| 1995 06 03 | 691 | 1.1+ | 0.6− | 2006 07 22 | G96 | 0.8− | 0.6− | 2006 11 01 | 703 | 0.4− | 0.5− |
| 1999 10 10 | 704 | 0.9+ | 0.1+ | 2006 07 22 | G96 | 0.1− | 0.2− | 2006 11 09 | 644 | 0.2+ | 0.6+ |
| 1999 10 10 | 704 | 0.8+ | 0.2− | 2006 07 22 | G96 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.3+ | 0.3+ |
| 1999 10 10 | 704 | 0.7+ | 0.2+ | 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.3+ |
| 1999 10 10 | 704 | 0.3+ | 0.1+ | 2006 07 22 | G96 | 0.4− | 0.4− | 2006 11 11 | 703 | 0.8+ | 0.3− |
| 1999 10 19 | 704 | 0.2− | 0.2+ | 2006 07 22 | G96 | 0.2+ | 0.2+ | 2006 11 11 | 703 | 0.4+ | 0.8+ |
| 1999 10 19 | 704 | 0.4− | 0.2− | 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 11 11 | 703 | 0.0 | 0.3− |
| 1999 10 19 | 704 | 1.9− | 0.6+ | 2006 08 28 | 703 | 0.8+ | 1.0+ | 2006 11 11 | 703 | 0.0 | 0.7+ |
| 1999 10 19 | 704 | 0.5− | 0.6− | 2006 08 28 | 703 | 0.3+ | 0.1− | 2006 11 14 | 704 | 0.4+ | 0.2+ |
| 2005 05 09 | G96 | 0.0 | 0.6− | 2006 08 28 | 703 | 0.9+ | 1.1+ | 2006 11 14 | 704 | 0.1+ | 0.1+ |
| 2005 05 09 | G96 | 0.2− | 0.5− | 2006 08 28 | 703 | 1.0+ | 0.3+ | 2006 11 14 | 704 | 0.7− | 1.6+ |
| 2005 05 09 | G96 | 0.0 | 0.1+ | 2006 10 03 | G96 | 0.2+ | 0.0 | 2006 11 17 | 704 | 0.6− | 0.3− |
| 2005 05 09 | G96 | 0.1− | 0.1− | 2006 10 03 | G96 | 0.1− | 0.0 | 2006 11 17 | 704 | 0.3− | 0.2− |
| 2006 07 21 | G96 | 0.1+ | 0.5− | 2006 10 03 | G96 | 0.4+ | 0.1− | 2006 11 17 | 704 | 0.3− | 1.2+ |
| 2006 07 21 | G96 | 0.1− | 0.3− | 2006 10 03 | G96 | 0.1− | 0.1− | 2006 11 17 | 704 | 0.8− | 0.7+ |
| 2006 07 21 | G96 | 0.2− | 0.2− | 2006 10 22 | 703 | 0.9− | 0.4− | 2006 11 23 | G96 | 0.2− | 0.0 |
| 2006 07 21 | G96 | 0.0 | 0.3− | 2006 10 22 | 703 | 0.1+ | 0.8− | 2006 11 23 | G96 | 0.3− | 0.2+ |
| 2006 07 22 | G96 | 0.0 | 0.7− | 2006 10 22 | 703 | 0.7+ | 0.1+ | 2006 11 23 | G96 | 0.2+ | 0.1+ |
| 2006 07 22 | G96 | 0.8− | 0.3+ | 2006 10 22 | 703 | 1.8+ | 0.8+ | 2006 11 23 | G96 | 0.5− | 0.3− |
| 2006 07 22 | G96 | 0.0 | 0.8− | 2006 11 01 | 703 | 0.2− | 0.4− | | | | |

**2006 WN$_{61}$ = 2004 CM$_{76}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 97.47469 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.24501976 | $\omega$ | 107.10964 | +0.35546631 | | +0.93468226 | |
| $a$ | 2.5293095 | $\Omega$ | 183.71816 | −0.87715018 | | +0.33226070 | |
| $e$ | 0.1252842 | $i$ | 3.15935 | −0.32287963 | | +0.12637998 | |
| $P$ | 4.02 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 02 11 | 644 | 0.3− | 0.1− | 2006 11 01 | 691 | 0.1+ | 0.0 | 2006 11 11 | 703 | 0.6− | 1.1+ |
| 2004 02 11 | 644 | 0.1− | 0.0 | 2006 11 01 | 691 | 0.2+ | 0.2+ | 2006 11 17 | 703 | 0.1+ | 0.0 |
| 2004 02 11 | 644 | 0.4− | 0.1+ | 2006 11 01 | 691 | 0.0 | 0.0 | 2006 11 17 | 703 | 0.6− | 0.1+ |
| 2004 02 17 | 704 | 0.5− | 0.7− | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 17 | 703 | 0.2− | 0.2+ |
| 2004 02 17 | 704 | 0.8+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.2+ | 2006 11 17 | 703 | 0.3− | 0.4+ |
| 2004 02 17 | 704 | 0.5+ | 0.8+ | 2006 11 09 | 644 | 0.3+ | 0.1+ | 2006 11 23 | G96 | 0.5+ | 0.1− |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 10 16 | 691 | 0.1+ | 0.1+ | 2006 11 11 | 703 | 1.2− | 1.2− | 2006 11 23 | G96 | 0.5+ | 0.1− |
| 2006 10 16 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.7− | 2006 11 23 | G96 | 0.6+ | 0.0 |
| 2006 10 16 | 691 | 0.4− | 0.1+ | 2006 11 11 | 703 | 1.0+ | 1.1− | 2006 11 23 | G96 | 0.6+ | 0.1− |

**2006 WX$_{61}$ = 2002 XX$_{103}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 326.67931 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23194298 | $\omega$ | 5.05942 | | +0.17708490 | | −0.98381818 |
| $a$ | 2.6235050 | $\Omega$ | 74.74254 | | +0.90198794 | | +0.15115216 |
| $e$ | 0.1894678 | $i$ | 1.61875 | | +0.39377492 | | +0.09620196 |
| $P$ | 4.25 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.0 | 2006 10 28 | 691 | 0.0 | 0.3+ | 2006 11 17 | 703 | 0.9− | 0.1− |
| 2002 12 05 | 704 | 0.1− | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1− | 2006 11 17 | 703 | 0.4+ | 0.2+ |
| 2002 12 05 | 704 | 0.2+ | 0.1− | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 18 | 704 | 0.9+ | 1.7+ |
| 2002 12 05 | 704 | 0.6+ | 0.4+ | 2006 11 09 | 644 | 0.2+ | 0.1− | 2006 11 18 | 704 | 1.5+ | 0.8+ |
| 2002 12 05 | 704 | 0.1− | 0.6+ | 2006 11 09 | 644 | 0.2− | 0.1+ | 2006 11 18 | 704 | 0.8+ | 1.0+ |
| 2002 12 10 | 704 | 0.0 | 0.1+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 18 | 704 | 0.1− | 1.1+ |
| 2002 12 10 | 704 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.3− | 0.2+ | 2006 11 18 | 704 | 1.0+ | 0.8+ |
| 2002 12 10 | 704 | 0.5− | 0.4− | 2006 11 09 | 644 | 0.1− | 0.1− | 2006 11 21 | G96 | 0.1− | 0.3− |
| 2006 10 12 | 691 | 0.1+ | 0.0 | 2006 11 09 | 644 | 0.2− | 0.0 | 2006 11 21 | G96 | 0.4− | 0.3− |
| 2006 10 12 | 691 | 0.0 | 0.2− | 2006 11 11 | 703 | 0.6− | 0.6+ | 2006 11 21 | 704 | 0.3+ | 0.3+ |
| 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.3− | 0.6− | 2006 11 21 | G96 | 0.0 | 0.4− |
| 2006 10 20 | 691 | 0.0 | 0.1− | 2006 11 11 | 703 | 0.2− | 0.4− | 2006 11 21 | G96 | 0.1− | 0.4− |
| 2006 10 20 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | (3.1+ | 0.1+) | 2006 11 21 | 704 | 0.2+ | 0.5− |
| 2006 10 20 | 691 | 0.0 | 0.1+ | 2006 11 13 | G96 | 0.1− | 0.3− | 2006 11 21 | 704 | 0.0 | 0.1+ |
| 2006 10 28 | 704 | 1.5− | 1.0+ | 2006 11 13 | G96 | 0.2− | 0.1− | 2006 11 21 | 704 | 0.0 | 0.6+ |
| 2006 10 28 | 704 | 1.5− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.5− | 2006 11 21 | 704 | 0.1− | 0.3− |
| 2006 10 28 | 704 | 1.0− | 2.5+ | 2006 11 13 | G96 | 0.0 | 0.8− | 2006 11 27 | 703 | 0.6− | 0.7− |
| 2006 10 28 | G96 | 0.2− | 0.2− | 2006 11 13 | G96 | 0.3+ | 0.5− | 2006 11 27 | 703 | 0.4− | 0.5− |
| 2006 10 28 | 704 | 0.3− | 0.7− | 2006 11 13 | G96 | 0.4− | 0.2− | 2006 11 27 | 703 | 0.8− | 0.8− |
| 2006 10 28 | G96 | 0.2+ | 0.4− | 2006 11 13 | G96 | 0.3+ | 0.3− | 2006 11 27 | 703 | 0.5− | 0.1− |
| 2006 10 28 | G96 | 0.1+ | 0.3− | 2006 11 13 | G96 | 0.4+ | 0.5− | | | | |
| 2006 10 28 | G96 | 0.0 | 0.2− | 2006 11 17 | 703 | 1.1+ | 0.6− | | | | |

**2006 WH$_{66}$ = 2002 XF$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 32.36846 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24368217 | $\omega$ | 227.21225 | | +0.99909917 | | −0.01590920 |
| $a$ | 2.5385568 | $\Omega$ | 133.65765 | | +0.02911549 | | +0.93143288 |
| $e$ | 0.1843297 | $i$ | 3.11717 | | −0.03087276 | | +0.36356524 |
| $P$ | 4.04 | $H$ | 16.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 10 | 644 | 0.6+ | 0.4+ | 2006 11 17 | 704 | 0.0 | 0.9− | 2006 11 20 | 704 | 1.1− | 0.7+ |
| 2002 12 10 | 644 | 0.2+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.4− | 2006 11 20 | 704 | 0.5+ | 1.2+ |
| 2002 12 10 | 644 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.4+ | 0.3− | 2006 11 20 | 704 | 0.2+ | 1.0+ |
| 2002 12 11 | 704 | 0.9− | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.3− | 2006 11 24 | 691 | 0.3+ | 0.2− |
| 2002 12 11 | 704 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1− | 0.3− | 2006 11 24 | 703 | 0.7− | 1.3+ |
| 2002 12 11 | 704 | 0.5− | 1.2− | 2006 11 17 | G96 | 0.3+ | 0.1− | 2006 11 24 | 703 | 0.1+ | 0.8+ |
| 2006 10 21 | D35 | 0.0 | 0.3+ | 2006 11 17 | G96 | 0.1+ | 0.1− | 2006 11 24 | 703 | 0.8+ | 0.7+ |
| 2006 10 21 | D35 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.1− | 2006 11 24 | 691 | 0.1+ | 0.1+ |
| 2006 10 21 | D35 | 0.1− | 0.2+ | 2006 11 17 | G96 | 0.2+ | 0.1− | 2006 11 24 | 703 | 0.6− | 0.1− |
| 2006 11 02 | G96 | 0.1+ | 0.1− | 2006 11 17 | G96 | 0.2+ | 0.2− | 2006 11 24 | 691 | 0.2+ | 0.0 |
| 2006 11 02 | G96 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.5+ | 0.2− | 2006 12 01 | G96 | 0.0 | 0.3− |
| 2006 11 02 | G96 | 0.3+ | 0.1+ | 2006 11 17 | G96 | 0.3+ | 0.2− | 2006 12 01 | G96 | 0.1+ | 0.2− |
| 2006 11 02 | G96 | 0.3− | 0.0 | 2006 11 17 | G96 | 0.1+ | 0.0 | 2006 12 01 | G96 | 0.3− | 0.1− |
| 2006 11 17 | 704 | 0.5− | 1.2+ | 2006 11 20 | 691 | 0.2− | 0.2− | 2006 12 01 | G96 | 0.1− | 0.2− |
| 2006 11 17 | 704 | 1.0− | 0.9− | 2006 11 20 | 691 | 0.2− | 0.0 | | | | |
| 2006 11 17 | 704 | 0.3− | 0.8− | 2006 11 20 | 691 | 0.1− | 0.1− | | | | |

**2006 WW$_{68}$ = 2002 PK$_{19}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 11.01971 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28477446 | $\omega$ | 226.41784 | | +0.87507152 | | −0.48370276 |
| $a$ | 2.2880667 | $\Omega$ | 162.48856 | | +0.45857248 | | +0.81752499 |
| $e$ | 0.1720909 | $i$ | 3.19626 | | +0.15479375 | | +0.31254524 |
| $P$ | 3.46 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 08 06 | 644 | 0.1− | 0.0 | 2004 03 20 | 691 | 0.5+ | 0.5+ | 2006 11 18 | G96 | 0.2− | 0.3− |
| 2002 08 06 | 644 | 0.1− | 0.1+ | 2006 11 17 | G96 | 0.2− | 0.2− | 2006 11 18 | G96 | 0.1− | 0.2− |
| 2002 08 06 | 644 | 0.3+ | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.2− | 2006 11 20 | 704 | 0.2+ | 0.3+ |
| 2002 08 07 | 644 | 0.1+ | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.3− | 2006 11 20 | 704 | 0.1− | 0.2− |
| 2002 08 07 | 644 | 0.2− | 0.4+ | 2006 11 17 | G96 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2002 08 07 | 644 | 0.4− | 0.1+ | 2006 11 17 | G96 | 0.3− | 0.3− | 2006 11 22 | 691 | 0.0 | 0.2+ |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.1− | 0.1− | 2006 11 22 | 691 | 0.2+ | 0.3+ |
| 2004 02 12 | 691 | 0.0 | 0.0 | 2006 11 17 | G96 | 0.2+ | 0.0 | 2006 11 22 | 691 | 0.1+ | 0.3+ |
| 2004 02 12 | 691 | 0.1− | 0.0 | 2006 11 17 | G96 | 0.2− | 0.0 | 2006 11 29 | 704 | 0.6− | 0.4+ |
| 2004 03 20 | 691 | 0.3− | 0.2+ | 2006 11 18 | G96 | 0.0 | 0.2− | 2006 11 29 | 704 | 0.2− | 0.5− |
| 2004 03 20 | 691 | 0.1+ | 0.3− | 2006 11 18 | G96 | 0.2+ | 0.1− | 2006 11 29 | 704 | 0.6+ | 0.0 |

**2006 WK$_{70}$ = 2004 HJ$_{42}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 128.42978 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21032604 | $\omega$ | 225.23650 | | −0.04203119 | | +0.99261926 |
| $a$ | 2.8003180 | $\Omega$ | 42.74543 | | −0.86281171 | | +0.02134771 |
| $e$ | 0.1096950 | $i$ | 9.64819 | | −0.50377507 | | −0.11937872 |
| $P$ | 4.69 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.5− | 0.7+ | 2006 09 27 | G96 | 0.7− | 0.5− | 2006 11 09 | 691 | 0.0 | 0.0 |
| 2001 10 18 | 644 | 0.3− | 1.0+ | 2006 09 27 | G96 | 0.6− | 0.7− | 2006 11 18 | 691 | 0.0 | 0.1+ |
| 2001 10 18 | 644 | 0.5− | 0.6+ | 2006 10 21 | 691 | 0.1− | 0.2− | 2006 11 18 | 691 | 0.1− | 0.2+ |
| 2004 04 20 | 704 | 0.8+ | 0.5+ | 2006 10 21 | 691 | 0.2− | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.3+ |
| 2004 04 20 | 704 | 0.1+ | 0.6− | 2006 10 21 | 691 | 0.3− | 0.0 | 2006 11 20 | 691 | 0.5+ | 0.0 |
| 2004 04 20 | 704 | 0.3+ | 0.3− | 2006 10 31 | G96 | 0.1+ | 0.3− | 2006 11 20 | 691 | 0.0 | 0.1− |
| 2004 04 26 | 691 | 0.1+ | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− | 2006 11 20 | 691 | 0.4+ | 0.1+ |
| 2004 04 26 | 691 | 0.1− | 0.2+ | 2006 10 31 | G96 | 0.3+ | 0.6− | 2006 11 26 | 448 | 0.3+ | 0.2− |
| 2004 04 26 | 691 | 0.1− | 0.3+ | 2006 10 31 | G96 | 0.1+ | 0.2− | 2006 11 26 | 448 | 0.0 | 0.6− |
| 2006 09 27 | G96 | 0.5− | 0.4− | 2006 11 09 | 691 | 0.0 | 0.2− | 2006 11 26 | 448 | 0.4+ | 0.2− |
| 2006 09 27 | G96 | 0.4− | 0.4− | 2006 11 09 | 691 | 0.0 | 0.4+ | | | | |

**2006 WY$_{70}$ = 2005 NA$_{74}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 355.45543 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23055249 | $\omega$ | 123.46531 | | +0.67955897 | | −0.73243277 |
| $a$ | 2.6340428 | $\Omega$ | 283.66705 | | +0.65802794 | | +0.63370111 |
| $e$ | 0.0164913 | $i$ | 2.46170 | | +0.32434369 | | +0.24892799 |
| $P$ | 4.27 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 09 | 691 | 0.2+ | 0.1− | 2006 10 19 | 695 | 0.1+ | 0.1+ | 2006 11 09 | 691 | 0.0 | 0.4+ |
| 2005 07 09 | 691 | 0.0 | 0.0 | 2006 10 19 | 695 | 0.3+ | 0.1+ | 2006 11 18 | 691 | 0.2− | 0.1− |
| 2005 07 09 | 691 | 0.2− | 0.3+ | 2006 10 19 | 695 | 0.0 | 0.2+ | 2006 11 18 | 691 | 0.0 | 0.1− |
| 2005 07 15 | G96 | 0.2+ | 0.1− | 2006 10 23 | 691 | 0.2− | 0.0 | 2006 11 18 | 691 | 0.4+ | 0.2+ |
| 2005 07 15 | G96 | 0.5− | 0.4− | 2006 10 23 | 691 | 0.2− | 0.3− | 2006 11 20 | 691 | 0.1− | 0.1− |
| 2005 07 15 | G96 | 0.2+ | 0.0 | 2006 10 23 | 691 | 0.3+ | 0.2− | 2006 11 20 | 691 | 0.0 | 0.2+ |
| 2005 07 15 | G96 | 0.0 | 0.2− | 2006 11 09 | 691 | 0.2− | 0.0 | 2006 11 20 | 691 | 0.1− | 0.1+ |
| 2006 10 19 | 695 | 0.0 | 0.0 | 2006 11 09 | 691 | 0.2+ | 0.4− | | | | |

**2006 WW$_{81}$ = 2002 RT$_{123}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 30.38722 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.27831828 | $\omega$ | 288.13676 | +0.98341009 | | −0.10511880 | |
| $a$ | 2.3233157 | $\Omega$ | 78.09873 | +0.15882699 | | +0.89267087 | |
| $e$ | 0.1428221 | $i$ | 8.68956 | −0.08762753 | | +0.43827931 | |
| $P$ | 3.54 | $H$ | 17.5 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.5+ | 0.4− | 2006 11 24 | G96 | 0.1+ | 0.0 |
| 2001 04 16 | 645 | 0.0 | 0.0 | 2006 11 12 | G96 | 0.2− | 0.4− | 2006 11 24 | G96 | 0.3− | 0.2− |
| 2002 09 09 | 644 | 0.0 | 0.2− | 2006 11 12 | G96 | 0.7+ | 0.1+ | 2006 11 24 | G96 | 0.4− | 0.1− |
| 2002 09 09 | 644 | 0.1+ | 0.6− | 2006 11 18 | 691 | 0.4− | 1.1+ | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2002 09 09 | 644 | 0.3+ | 0.3− | 2006 11 18 | 691 | 0.0 | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.1+ |
| 2002 09 10 | 644 | 0.2− | 0.4+ | 2006 11 18 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2002 09 10 | 644 | 0.1+ | 0.2+ | 2006 11 18 | 691 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.2− | 0.0 |
| 2002 09 10 | 644 | 0.2− | 0.5+ | 2006 11 18 | 691 | 0.1+ | 0.1+ | 2006 12 01 | 691 | 0.2+ | 0.1+ |
| 2006 10 21 | D35 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.1+ | 0.2− | 2006 12 01 | 691 | 0.0 | 0.2− |
| 2006 10 21 | D35 | 0.2+ | 0.2+ | 2006 11 22 | 691 | 0.1− | 0.1− | 2006 12 01 | 691 | 0.0 | 0.1− |
| 2006 10 21 | D35 | 0.0 | 0.1+ | 2006 11 22 | 691 | 0.0 | 0.1− | | | | |
| 2006 11 12 | G96 | 0.0 | 0.4− | 2006 11 22 | 691 | 0.0 | 0.1− | | | | |

**2006 WM$_{86}$ = 2003 EU$_{38}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 328.65000 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.22580585 | $\omega$ | 214.71286 | −0.21641402 | | −0.96670429 | |
| $a$ | 2.6708280 | $\Omega$ | 248.12348 | +0.92576680 | | −0.15877728 | |
| $e$ | 0.3089848 | $i$ | 8.46201 | +0.31003355 | | −0.20068031 | |
| $P$ | 4.36 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 15 | 645 | 0.0 | 0.1+ | 2006 11 16 | 704 | 0.9− | 0.7+ | 2006 11 23 | 691 | 0.3+ | 0.2− |
| 2001 10 15 | 645 | 0.0 | 0.0 | 2006 11 16 | 704 | 0.6− | 0.7+ | 2006 11 27 | 691 | 0.1+ | 0.1− |
| 2003 03 08 | 699 | 0.6− | 0.4+ | 2006 11 18 | 704 | 1.1− | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.3− |
| 2003 03 08 | 699 | 0.1− | 0.3− | 2006 11 18 | 704 | 0.7− | 1.3+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2003 03 08 | 699 | 0.2− | 0.3− | 2006 11 18 | 704 | 0.2− | 0.0 | 2006 11 30 | A24 | 0.1+ | 0.8− |
| 2003 03 08 | 699 | 0.2+ | 0.2+ | 2006 11 18 | 704 | 1.3− | 0.0 | 2006 12 01 | A24 | 0.3+ | 0.2+ |
| 2003 03 10 | 704 | 0.2+ | 0.3− | 2006 11 21 | 704 | 0.1− | 0.6− | 2006 12 01 | 704 | 0.2+ | 0.1+ |
| 2003 03 10 | 704 | 0.3− | 0.4− | 2006 11 21 | 704 | 0.2+ | 0.2− | 2006 12 01 | 704 | 0.3+ | 0.2− |
| 2003 03 10 | 704 | 0.2− | 0.1+ | 2006 11 21 | 704 | 0.3+ | 0.4− | 2006 12 01 | 704 | 1.0+ | 0.2+ |
| 2003 03 10 | 704 | 1.0+ | 0.8+ | 2006 11 21 | 704 | 0.6+ | 0.2− | 2006 12 01 | 704 | 0.4+ | 0.0 |
| 2006 11 16 | 704 | 0.8− | 0.4+ | 2006 11 21 | 704 | 0.5+ | 0.5− | 2006 12 01 | 704 | 0.9+ | 0.1+ |
| 2006 11 16 | 704 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.7− | 0.9+ | | | | |
| 2006 11 16 | 704 | 0.4− | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.1− | | | | |

**2006 WM$_{89}$ = 2004 KF$_{2}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 85.37839 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.21505580 | $\omega$ | 274.32816 | +0.88371701 | | +0.44750332 | |
| $a$ | 2.7591074 | $\Omega$ | 59.14146 | −0.34046596 | | +0.81562048 | |
| $e$ | 0.0547952 | $i$ | 9.18720 | −0.32113421 | | +0.36674789 | |
| $P$ | 4.58 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 16 | 691 | 0.3− | 0.2+ | 2004 05 19 | 691 | 0.1+ | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.1− |
| 2004 05 16 | 691 | 0.1− | 0.0 | 2006 11 18 | 691 | 0.1− | 0.1+ | 2006 11 22 | 691 | 0.1+ | 0.2− |
| 2004 05 16 | 691 | 0.2+ | 0.0 | 2006 11 18 | 691 | 0.3+ | 0.2− | 2006 11 26 | 691 | 0.2+ | 0.0 |
| 2004 05 19 | 691 | 0.1+ | 0.0 | 2006 11 18 | 691 | 0.2− | 0.1+ | 2006 11 26 | 691 | 0.4− | 0.3− |
| 2004 05 19 | 691 | 0.0 | 0.3− | 2006 11 22 | 691 | 0.1+ | 0.3+ | 2006 11 26 | 691 | 0.1− | 0.3+ |

**2006 WF$_{92}$ = 2004 AO$_{22}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 127.98870 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.26950967 | $\omega$ | 119.30419 | −0.07132018 | | +0.99733647 | |
| $a$ | 2.3736671 | $\Omega$ | 146.59537 | −0.92450184 | | −0.06034645 | |
| $e$ | 0.1662753 | $i$ | 1.59012 | −0.37444597 | | −0.04096668 | |
| $P$ | 3.66 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 02 10 | 691 | 0.0 | 0.4− | 2006 10 19 | 695 | 0.1− | 0.1+ | 2006 11 24 | G96 | 0.7+ | 0.4− |
| 1997 02 10 | 691 | 0.0 | 0.1− | 2006 10 19 | 695 | 0.0 | 0.0 | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 1997 02 10 | 691 | 0.4− | 0.5− | 2006 10 21 | G96 | 0.1+ | 0.5− | 2006 11 24 | G96 | 0.4+ | 0.3− |
| 2001 04 16 | 699 | 0.1+ | 0.5+ | 2006 10 21 | G96 | 0.0 | 0.5− | 2006 11 24 | G96 | 0.2+ | 0.2− |
| 2001 04 16 | 699 | 1.1+ | 0.9+ | 2006 10 21 | G96 | 0.5+ | 0.3− | 2006 11 25 | 291 | 0.1− | 0.2+ |
| 2001 04 16 | 699 | 0.1+ | 0.5− | 2006 10 21 | G96 | 0.2− | 0.2− | 2006 11 25 | 291 | 0.1− | 0.2+ |
| 2001 04 16 | 699 | 0.5− | 1.2+ | 2006 11 11 | G96 | 0.1− | 0.4− | 2006 11 25 | 291 | 0.4− | 0.2− |
| 2002 10 10 | 644 | 0.0 | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.6− | 2006 11 25 | G96 | 0.4+ | 0.4− |
| 2002 10 10 | 644 | 0.1− | 0.3+ | 2006 11 11 | G96 | 0.1+ | 0.6− | 2006 11 25 | G96 | 0.1+ | 0.3− |
| 2002 10 10 | 644 | 0.2− | 0.4+ | 2006 11 11 | G96 | 0.4+ | 0.4− | 2006 11 25 | G96 | 0.0 | 0.2− |
| 2004 01 15 | 691 | 0.1− | 0.1+ | 2006 11 19 | 691 | 0.4− | 0.1+ | 2006 11 25 | G96 | 0.4+ | 0.0 |
| 2004 01 15 | 691 | 0.0 | 0.1+ | 2006 11 19 | 691 | 0.3− | 0.4+ | 2006 11 27 | 691 | 0.1+ | 0.3+ |
| 2004 01 15 | 691 | 0.3− | 0.4+ | 2006 11 19 | 691 | 0.1− | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.3− |
| 2004 01 27 | 691 | 0.2+ | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.1+ | 0.0 |
| 2004 01 27 | 691 | 0.5+ | 0.1+ | 2006 11 23 | 691 | 0.3+ | 0.0 | | | | |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.0 | | | | |

**2006 WB$_{94}$ = 2005 NJ$_{11}$ = 2005 NQ$_{121}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 71.37354 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.23121480 | $\omega$ | 186.14732 | +0.84945961 | | +0.52696419 | |
| $a$ | 2.6290103 | $\Omega$ | 142.01249 | −0.48222746 | | +0.79605835 | |
| $e$ | 0.0676004 | $i$ | 2.51096 | −0.21418460 | | +0.29765726 | |
| $P$ | 4.26 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 07 03 | G96 | 0.9+ | 0.3− | 2005 07 15 | 691 | 0.4− | 0.0 | 2006 11 19 | 691 | 0.1+ | 0.2− |
| 2005 07 03 | G96 | 0.9− | 0.1− | 2006 10 22 | G96 | 0.0 | 0.9− | 2006 11 19 | 691 | 0.0 | 0.1− |
| 2005 07 03 | G96 | 1.0+ | 0.0 | 2006 10 22 | G96 | 0.1+ | 0.6− | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2005 07 03 | G96 | 0.4+ | 0.2+ | 2006 10 22 | G96 | 0.4+ | 0.6− | 2006 11 23 | 691 | 0.1− | 0.2+ |
| 2005 07 06 | 691 | 0.2− | 0.1+ | 2006 10 22 | G96 | 0.4− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2005 07 06 | 691 | 0.3+ | 0.0 | 2006 11 15 | 691 | 0.4− | 0.2− | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2005 07 06 | 691 | 0.1− | 0.1+ | 2006 11 15 | 691 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2005 07 15 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.4+ | 1.4+ | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 07 15 | 691 | 0.1− | 0.1− | 2006 11 19 | 691 | 0.1− | 0.5− | | | | |

**2006 WK$_{94}$ = 2004 JK$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 284.16145 | | (2000.0) | **P** | | **Q** | |
| $n$ | 0.20844911 | $\omega$ | 322.21524 | −0.57809783 | | −0.81588356 | |
| $a$ | 2.8171028 | $\Omega$ | 163.09150 | +0.75809890 | | −0.54234790 | |
| $e$ | 0.0165635 | $i$ | 2.30571 | +0.30180948 | | −0.20048133 | |
| $P$ | 4.73 | $H$ | 16.3 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 10 18 | 644 | 0.2− | 0.3+ | 2004 06 13 | 691 | 0.1+ | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.2− |
| 2001 10 18 | 644 | 0.0 | 0.2+ | 2006 09 28 | G96 | 0.5− | 0.3− | 2006 11 19 | 691 | 0.3+ | 0.0 |
| 2001 10 18 | 644 | 0.0 | 0.4+ | 2006 09 28 | G96 | 0.7− | 0.1− | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 05 13 | 691 | 0.0 | 0.1− | 2006 09 28 | G96 | 0.3− | 0.5− | 2006 11 19 | 691 | 0.4+ | 0.1+ |
| 2004 05 13 | 691 | 0.0 | 0.0 | 2006 09 28 | G96 | 0.5− | 0.5− | 2006 11 23 | 691 | 0.2+ | 0.3+ |
| 2004 05 13 | 691 | 0.2+ | 0.1+ | 2006 11 11 | 691 | 0.4+ | 0.1+ | 2006 11 23 | 691 | 0.0 | 0.1+ |
| 2004 05 21 | 691 | 0.3− | 0.3+ | 2006 11 11 | 691 | 0.1+ | 0.0 | 2006 11 23 | 691 | 0.7− | 0.5− |
| 2004 05 21 | 691 | 0.1+ | 0.1− | 2006 11 11 | 691 | 0.2− | 0.1+ | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2004 05 21 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.0 | 0.3+ |
| 2004 06 13 | 691 | 0.2+ | 0.1+ | 2006 11 11 | G96 | 0.4+ | 0.3− | 2006 11 27 | 691 | 0.3− | 0.3+ |
| 2004 06 13 | 691 | 0.2+ | 0.3+ | 2006 11 11 | G96 | 0.0 | 0.5− | | | | |

**2006 WU$_{94}$ = 2004 AP$_{20}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 40.83662 | | (2000.0) | | | |
| $n$ | 0.28540794 | $\omega$ | 243.68237 | | +0.94161247 | +0.33311002 |
| $a$ | 2.2846799 | $\Omega$ | 96.82735 | | −0.28862902 | +0.87355745 |
| $e$ | 0.1850088 | $i$ | 2.83026 | | −0.17337599 | +0.35487334 |
| $P$ | 3.45 | $H$ | 17.4 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 01 15 | 691 | 0.5− | 0.0 | 2005 05 11 | G96 | 0.4+ | 0.0 | 2006 11 23 | 691 | 0.1+ | 0.1+ |
| 2004 01 15 | 691 | 0.3+ | 0.1+ | 2005 05 11 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1+ | 0.0 |
| 2004 01 15 | 691 | 0.3− | 0.0 | 2006 11 19 | 691 | 0.3− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.1− |
| 2004 01 27 | 691 | 0.1+ | 0.1− | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 11 27 | 691 | 0.0 | 0.1− |
| 2004 01 27 | 691 | 0.3+ | 0.1− | 2006 11 19 | 691 | 0.1+ | 0.2− | 2006 11 27 | 691 | 0.1+ | 0.1+ |
| 2004 01 27 | 691 | 0.2+ | 0.1+ | 2006 11 19 | 704 | (1.6− | 0.7−) | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2005 05 11 | G96 | 1.0− | 0.4− | 2006 11 19 | 704 | (1.8− | 1.0−) | | | | |
| 2005 05 11 | G96 | 0.3+ | 0.1− | 2006 11 19 | 704 | 0.4− | 0.6− | | | | |

**2006 WG$_{95}$ = 2004 JT$_{48}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 290.01225 | | (2000.0) | | | |
| $n$ | 0.24443716 | $\omega$ | 275.44083 | | −0.67691946 | −0.73400842 |
| $a$ | 2.5333269 | $\Omega$ | 217.35557 | | +0.70606274 | −0.62646071 |
| $e$ | 0.1747365 | $i$ | 5.18925 | | +0.20797945 | −0.26225680 |
| $P$ | 4.03 | $H$ | 17.6 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 05 13 | 691 | 0.3+ | 0.4− | 2006 10 19 | G96 | 0.1+ | 0.1+ | 2006 11 19 | 691 | 0.0 | 0.2+ |
| 2004 05 13 | 691 | 0.1− | 0.4+ | 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 19 | 691 | 0.2− | 0.3+ |
| 2004 05 13 | 691 | 0.0 | 0.3+ | 2006 11 11 | 691 | 0.1− | 0.6+ | 2006 11 23 | 691 | 0.0 | 0.2+ |
| 2004 05 21 | 691 | 0.1+ | 0.3− | 2006 11 11 | 691 | 0.1− | 0.2+ | 2006 11 23 | 691 | 0.1− | 0.4− |
| 2004 05 21 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− | 2006 11 23 | 691 | 0.2− | 0.1− |
| 2004 05 21 | 691 | 0.2− | 0.1+ | 2006 11 11 | G96 | 0.3+ | 0.3− | 2006 11 27 | 691 | 0.3+ | 0.1− |
| 2006 10 19 | G96 | 0.1− | 0.4− | 2006 11 11 | G96 | 0.3− | 0.7− | 2006 11 27 | 691 | 0.5+ | 0.2− |
| 2006 10 19 | G96 | 0.2− | 0.0 | 2006 11 11 | G96 | 0.3+ | 0.2+ | 2006 11 27 | 691 | 0.0 | 0.2− |
| 2006 10 19 | G96 | 0.2+ | 0.1− | 2006 11 19 | 691 | 0.3− | 0.2+ | | | | |

**2006 WY$_{100}$ = 2004 FA$_{13}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 298.60444 | | (2000.0) | | | |
| $n$ | 0.27684376 | $\omega$ | 195.14078 | | −0.52022271 | −0.85071120 |
| $a$ | 2.3315580 | $\Omega$ | 286.25815 | | +0.79147389 | −0.44715278 |
| $e$ | 0.1773215 | $i$ | 4.49421 | | +0.32083861 | −0.27630571 |
| $P$ | 3.56 | $H$ | 16.7 | $G$ | 0.15 | $U$ 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 03 16 | 703 | (1.9− | 0.4−) | 2004 03 27 | 703 | 0.2− | 0.3− | 2006 11 19 | 704 | 0.8+ | 0.1− |
| 2004 03 16 | 703 | 0.6− | 0.6− | 2006 11 09 | 644 | 0.2− | 0.4− | 2006 11 22 | 704 | 0.3− | 0.1+ |
| 2004 03 16 | 703 | 0.4− | 0.4− | 2006 11 09 | 644 | 0.4− | 0.0 | 2006 11 22 | 704 | 0.3− | 0.2− |
| 2004 03 16 | 703 | (0.0 | 1.6−) | 2006 11 09 | 644 | 0.1− | 0.3+ | 2006 11 22 | 704 | 0.3− | 0.2+ |
| 2004 03 17 | 704 | 0.7− | 0.1+ | 2006 11 14 | 703 | (1.2− | 1.8−) | 2006 11 22 | 704 | 0.3− | 0.3+ |
| 2004 03 17 | 704 | 0.1− | 0.9− | 2006 11 14 | 703 | (1.7+ | 0.7−) | 2006 11 22 | 704 | 0.6+ | 0.4+ |
| 2004 03 17 | 704 | 0.1+ | 0.7− | 2006 11 14 | 703 | 0.0 | 0.1+ | 2006 11 25 | 691 | 0.1− | 0.1− |
| 2004 03 17 | 704 | 0.7− | 0.2+ | 2006 11 14 | 703 | 0.5+ | 0.6− | 2006 11 25 | 691 | 0.1− | 0.0 |
| 2004 03 27 | 703 | 0.8+ | 0.9+ | 2006 11 19 | 704 | 0.2+ | 0.3− | 2006 11 25 | 691 | 0.0 | 0.2+ |
| 2004 03 27 | 703 | 0.9+ | 1.0+ | 2006 11 19 | 704 | 0.6+ | 0.1+ | | | | |
| 2004 03 27 | 703 | 0.9+ | 0.6+ | 2006 11 19 | 704 | 0.1− | 0.3− | | | | |

**2006 WR$_{101}$ = 2005 GJ$_{174}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 24.37309 | | (2000.0) | | | |
| $n$ | 0.29011426 | $\omega$ | 200.54981 | | +0.99505289 | +0.09253600 |
| $a$ | 2.2599040 | $\Omega$ | 154.06004 | | −0.07563709 | +0.94156376 |
| $e$ | 0.1752797 | $i$ | 4.74045 | | −0.06441093 | +0.32387464 |
| $P$ | 3.40 | $H$ | 17.1 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 04 14 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.0 | 0.2+ | 2006 11 19 | 703 | 0.1+ | 0.3+ |
| 2005 04 14 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 703 | 0.6− | 1.1+ |
| 2005 04 14 | 691 | 0.0 | 0.0 | 2006 11 11 | 703 | 0.2− | 0.4− | 2006 11 20 | 704 | 0.9+ | 0.1− |
| 2005 04 18 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.3− | 0.5− | 2006 11 20 | 704 | 0.9− | 0.8− |
| 2005 04 18 | 691 | 0.1− | 0.0 | 2006 11 11 | 703 | 0.5− | 0.1− | 2006 11 20 | 704 | 1.0− | 1.4+ |
| 2005 04 18 | 691 | 0.3+ | 0.1− | 2006 11 11 | 644 | 0.4+ | 0.2+ | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2006 11 01 | 703 | 1.4+ | 0.7− | 2006 11 11 | 703 | 0.5− | 1.1− | 2006 11 23 | G96 | 0.3+ | 0.5− |
| 2006 11 01 | 703 | 0.2− | 0.4+ | 2006 11 11 | 644 | 0.1− | 0.3+ | 2006 11 23 | G96 | 0.5+ | 0.6− |
| 2006 11 01 | 703 | 0.2− | 0.3+ | 2006 11 11 | 644 | 0.0 | 0.1+ | 2006 11 23 | G96 | 0.6+ | 0.3− |
| 2006 11 01 | 703 | 0.1− | 0.2− | 2006 11 19 | 703 | 0.1+ | 0.1+ | 2006 11 23 | G96 | 0.1+ | 0.5− |
| 2006 11 09 | 644 | 0.4+ | 0.3+ | 2006 11 19 | 703 | 0.4− | 0.1+ | | | | |

**2006 WY$_{101}$ = 2002 XJ$_{107}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 345.70826 | | (2000.0) | | | |
| $n$ | 0.23091795 | $\omega$ | 332.66342 | | +0.58838558 | −0.77597243 |
| $a$ | 2.6312630 | $\Omega$ | 80.42505 | | +0.77758112 | +0.46591578 |
| $e$ | 0.1495389 | $i$ | 13.32769 | | +0.22174313 | +0.42519322 |
| $P$ | 4.27 | $H$ | 16.2 | $G$ | 0.15 | $U$ 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 05 | 704 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.7+ | 1.1− | 2006 11 19 | 703 | 0.2− | 0.6+ |
| 2002 12 05 | 704 | 0.2− | 0.1− | 2006 10 22 | 703 | 0.9+ | 0.0 | 2006 11 19 | 703 | 0.6− | 0.3+ |
| 2002 12 05 | 704 | 0.1− | 0.0 | 2006 10 22 | 703 | 1.2+ | 0.7− | 2006 11 20 | 704 | 1.2+ | 0.3+ |
| 2002 12 05 | 704 | 0.5− | 0.3+ | 2006 11 01 | 703 | 0.3+ | 0.8− | 2006 11 20 | 704 | 0.0 | 0.8+ |
| 2002 12 05 | 704 | 0.9− | 0.0 | 2006 11 01 | 703 | 0.1+ | 0.5− | 2006 11 20 | 704 | 0.2+ | 0.1− |
| 2002 12 11 | 704 | 0.1+ | 1.1− | 2006 11 01 | 703 | 0.7− | 0.4+ | 2006 11 20 | 704 | 0.8− | 0.3+ |
| 2002 12 11 | 704 | 0.5+ | 0.0 | 2006 11 01 | 703 | 0.3− | 0.2− | 2006 11 20 | 704 | 1.0− | 0.7+ |
| 2002 12 11 | 704 | 1.1+ | 1.1+ | 2006 11 13 | 703 | 0.2− | 0.4− | 2006 11 25 | G96 | 0.1− | 0.1− |
| 2006 09 18 | 703 | 0.6− | 0.6+ | 2006 11 13 | 703 | 0.2+ | 0.6− | 2006 11 25 | G96 | 0.1+ | 0.2− |
| 2006 09 18 | 703 | (0.0 | 2.3+) | 2006 11 13 | 703 | 0.7− | 0.6− | 2006 11 25 | G96 | 0.3+ | 0.1− |
| 2006 09 18 | 703 | 0.1+ | 0.0 | 2006 11 13 | 703 | 1.4− | 0.3− | 2006 11 25 | G96 | 0.4+ | 0.2− |
| 2006 09 18 | 703 | 0.2+ | 0.9+ | 2006 11 19 | 703 | 0.1− | 0.7− | | | | |
| 2006 10 22 | 703 | 0.9+ | 0.9+ | 2006 11 19 | 703 | 0.1− | 1.1+ | | | | |

**2006 WO$_{102}$ = 2000 SM$_{324}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | P | Q |
|---|---|---|---|---|---|---|
| $M$ | 195.16751 | | (2000.0) | | | |
| $n$ | 0.18762162 | $\omega$ | 176.52948 | | −0.69406907 | +0.71987810 |
| $a$ | 3.0219049 | $\Omega$ | 49.51730 | | −0.66071202 | −0.63332660 |
| $e$ | 0.0949090 | $i$ | 0.49764 | | −0.28588066 | −0.28402981 |
| $P$ | 5.25 | $H$ | 15.9 | $G$ | 0.15 | $U$ 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 09 28 | 691 | 0.2− | 0.1+ | 2005 08 31 | 691 | 0.8+ | 0.3+ | 2006 11 11 | 691 | 0.0 | 0.1− |
| 2000 09 28 | 691 | 0.0 | 0.0 | 2005 08 31 | 691 | 0.5− | 0.7+ | 2006 11 11 | 691 | 0.2+ | 0.1− |
| 2000 09 28 | 691 | 0.2+ | 0.0 | 2005 08 31 | 691 | 0.2− | 0.2+ | 2006 11 11 | G96 | 0.6+ | 0.4− |
| 2000 10 01 | 704 | 0.2+ | 0.5− | 2005 09 14 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.2− | 0.4− |
| 2000 10 01 | 704 | 0.1− | 0.2+ | 2005 09 14 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.2− |
| 2000 10 01 | 704 | 0.1+ | 0.2+ | 2005 09 14 | 691 | 0.0 | 0.1+ | 2006 11 11 | G96 | 0.3− | 0.0 |
| 2003 01 28 | 291 | 0.2+ | 1.5+ | 2005 10 08 | 291 | 0.2+ | 0.4+ | 2006 11 19 | 691 | 0.0 | 0.5+ |
| 2003 01 28 | 291 | 0.1− | 0.8+ | 2005 10 08 | 291 | 0.0 | 0.6+ | 2006 11 19 | 691 | 0.1+ | 0.0 |
| 2003 01 28 | 291 | 0.4+ | 0.6+ | 2005 10 08 | 291 | 0.1+ | 0.5+ | 2006 11 19 | 691 | 0.1+ | 0.1− |
| 2003 03 26 | 644 | 0.7+ | 1.1+ | 2005 10 13 | 291 | 1.2− | 0.6+ | 2006 11 23 | 691 | 0.1+ | 0.1− |
| 2003 03 26 | 644 | 0.7+ | 0.7+ | 2005 10 13 | 291 | 0.6− | 1.1+ | 2006 11 23 | 691 | 0.2− | 0.0 |
| 2003 03 26 | 644 | 0.7+ | 0.4+ | 2005 10 13 | 291 | 0.9− | 0.5+ | 2006 11 23 | 691 | 0.0 | 0.2− |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 04 01 | 645 | 0.1+ | 0.2+ | 2006 10 28 | G96 | 0.2− | 0.4− | 2006 11 27 | 691 | 0.1− | 0.4+ |
| 2003 04 01 | 645 | 0.1+ | 0.1+ | 2006 10 28 | G96 | 0.2+ | 0.9− | 2006 11 27 | 691 | 0.2− | 1.0− |
| 2005 08 10 | 807 | 0.3+ | 0.0 | 2006 10 28 | G96 | 0.5− | 0.3− | 2006 11 27 | 691 | 0.0 | 0.2+ |
| 2005 08 10 | 807 | 0.1+ | 0.2− | 2006 11 11 | 691 | 0.1+ | 0.4− | | | | |

**2006 WJ$_{103}$ = 2004 ER$_{108}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 66.02774 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24735103 | $\omega$ | 90.38627 | | +0.93883334 | | +0.34363345 |
| $a$ | 2.5133921 | $\Omega$ | 249.51544 | | −0.32475349 | | +0.86167545 |
| $e$ | 0.0639343 | $i$ | 1.37871 | | −0.11457373 | | +0.37340523 |
| $P$ | 3.98 | $H$ | 17.2 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 02 12 | 645 | 0.1+ | 0.0 | 2004 03 23 | 691 | 0.1+ | 0.2+ | 2006 11 19 | 691 | 0.4+ | 0.3− |
| 2000 02 12 | 645 | 0.1− | 0.1− | 2004 04 13 | 691 | 0.2− | 0.5+ | 2006 11 23 | 691 | 0.1− | 0.1+ |
| 2000 03 15 | 691 | 0.6− | 0.4− | 2004 04 13 | 691 | 0.2− | 0.2+ | 2006 11 23 | 691 | 0.0 | 0.0 |
| 2000 03 15 | 691 | 0.2+ | 0.6− | 2004 04 13 | 691 | 0.0 | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.3− |
| 2000 03 15 | 691 | 0.4− | 0.1− | 2005 07 03 | G96 | 0.0 | 0.3− | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2004 03 15 | 691 | 0.2+ | 0.1+ | 2005 07 03 | G96 | 0.1+ | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.2+ |
| 2004 03 15 | 691 | 0.3+ | 0.0 | 2005 07 03 | G96 | 0.5− | 0.4+ | 2006 11 27 | 691 | 0.1− | 0.0 |
| 2004 03 15 | 691 | 0.3+ | 0.3+ | 2005 07 03 | G96 | 0.5+ | 0.1− | 2006 12 01 | 691 | 0.6− | 0.2+ |
| 2004 03 23 | 691 | 0.4+ | 0.3+ | 2006 11 19 | 691 | 0.0 | 0.0 | 2006 12 01 | 691 | 0.4+ | 0.4+ |
| 2004 03 23 | 691 | 0.2− | 0.3+ | 2006 11 19 | 691 | 0.1+ | 0.3− | 2006 12 01 | 691 | 0.4− | 0.1− |

**2006 WA$_{106}$ = 1997 RX$_5$ = 2000 HJ$_{40}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 359.48705 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23871385 | $\omega$ | 328.25853 | | +0.61876430 | | −0.78230647 |
| $a$ | 2.5736588 | $\Omega$ | 83.41630 | | +0.73499633 | | +0.54433610 |
| $e$ | 0.0239476 | $i$ | 4.13350 | | +0.27732859 | | +0.30281148 |
| $P$ | 4.13 | $H$ | 16.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 09 02 | 608 | 0.3− | 0.8+ | 2006 09 28 | G96 | 0.0 | 0.1− | 2006 11 23 | 691 | 0.4− | 0.1+ |
| 1997 09 02 | 608 | 0.5− | 0.7+ | 2006 09 28 | G96 | 0.3− | 0.2− | 2006 11 23 | 691 | 0.3+ | 0.0 |
| 1997 09 03 | 608 | 0.3− | 0.7+ | 2006 09 28 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.5+ | 0.1− |
| 1997 09 03 | 608 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2000 04 30 | 691 | 0.2− | 0.8+ | 2006 10 31 | G96 | 0.3+ | 0.0 | 2006 11 24 | G96 | 0.0 | 0.3− |
| 2000 04 30 | 691 | 0.0 | 0.0 | 2006 10 31 | G96 | 0.1− | 0.2− | 2006 11 24 | G96 | 0.1+ | 0.2− |
| 2000 04 30 | 691 | 0.1+ | 0.3+ | 2006 10 31 | G96 | 0.2− | 0.3− | 2006 11 24 | G96 | 0.1+ | 0.3− |
| 2000 05 05 | 691 | (2.4+ | 1.0+) | 2006 11 15 | 691 | 0.2− | 0.3+ | 2006 11 24 | G96 | 0.0 | 0.4− |
| 2000 05 05 | 691 | 0.2+ | 0.0 | 2006 11 15 | 691 | 0.2+ | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2000 05 05 | 691 | 0.5+ | 0.3+ | 2006 11 15 | 691 | 0.4− | 0.2+ | 2006 11 27 | 691 | 0.2+ | 0.2+ |
| 2002 12 08 | 291 | 0.2+ | 0.2− | 2006 11 19 | 691 | 0.2− | 0.0 | 2006 11 27 | 691 | 0.2+ | 0.1+ |
| 2002 12 08 | 291 | 0.2− | 0.0 | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2002 12 08 | 291 | 0.1+ | 0.3+ | 2006 11 19 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 691 | 0.1− | 0.1+ |
| 2006 09 28 | G96 | 0.2+ | 0.1+ | 2006 11 23 | 691 | 0.1− | 0.1+ | 2006 12 01 | 691 | 0.2− | 0.2− |

**2006 WK$_{127}$ = 2003 YZ$_7$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 312.12227 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28162290 | $\omega$ | 348.45564 | | −0.03839515 | | −0.88538242 |
| $a$ | 2.3051051 | $\Omega$ | 102.40420 | | +0.95041994 | | −0.17552974 |
| $e$ | 0.3092640 | $i$ | 28.31691 | | +0.30858995 | | +0.43045010 |
| $P$ | 3.50 | $H$ | 16.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 12 19 | 704 | 0.0 | 0.1− | 2006 10 24 | E12 | 0.5+ | 0.0 | 2006 11 25 | I77 | 0.3+ | 0.2− |
| 2003 12 19 | 704 | 0.4+ | 0.3+ | 2006 10 24 | E12 | 0.0 | 0.5− | 2006 11 25 | I77 | 0.3+ | 0.1+ |
| 2003 12 19 | 704 | 0.1+ | 0.2− | 2006 10 24 | E12 | 0.6+ | 0.2− | 2006 11 25 | 673 | 0.0 | 1.1− |
| 2003 12 19 | 704 | 0.5+ | 0.1− | 2006 11 13 | E12 | 1.8− | 0.0 | 2006 11 25 | 673 | 0.4− | 0.3− |
| 2003 12 20 | H36 | 0.0 | 0.1− | 2006 11 13 | E12 | 0.2+ | 0.9+ | 2006 11 25 | 673 | 0.4− | 0.4− |
| 2003 12 20 | H36 | 0.5+ | 0.5− | 2006 11 13 | E12 | 0.1− | 0.4− | 2006 11 25 | 673 | 0.1− | 0.5− |
| 2003 12 20 | H36 | 0.1− | 0.2− | 2006 11 13 | E12 | 0.2− | 0.2+ | 2006 11 25 | F84 | 0.3− | 0.1− |
| 2003 12 21 | 854 | 0.2+ | 0.1− | 2006 11 13 | E12 | 1.4− | 0.1+ | 2006 11 25 | F84 | 0.2+ | 0.2+ |
| 2003 12 21 | 854 | (2.1+ | 1.1−) | 2006 11 13 | E12 | 0.4+ | 0.9+ | 2006 11 25 | E12 | 0.0 | 0.1+ |
| 2003 12 21 | 854 | 1.2+ | 0.3+ | 2006 11 24 | E12 | 0.1+ | 0.6+ | 2006 11 25 | E12 | 0.8+ | 1.2+ |
| 2003 12 21 | 704 | 0.5− | 0.1− | 2006 11 24 | E12 | 0.0 | 0.4+ | 2006 11 25 | E12 | 0.0 | 0.5+ |
| 2003 12 21 | 704 | 1.5− | 0.3− | 2006 11 24 | E12 | 0.8+ | 0.6+ | 2006 11 26 | F84 | 0.4− | 0.1− |
| 2003 12 21 | 704 | 0.9− | 0.6+ | 2006 11 24 | E12 | 0.2+ | 0.7+ | 2006 11 26 | F84 | 0.3+ | 0.5− |
| 2006 10 01 | E12 | 0.1− | 0.2+ | 2006 11 24 | E12 | 0.4− | 0.2+ | 2006 11 27 | 854 | 0.3− | 0.6+ |
| 2006 10 01 | E12 | 0.2− | 0.2− | 2006 11 24 | E12 | 0.4+ | 0.5− | 2006 11 27 | 854 | 0.2− | 2.1− |
| 2006 10 01 | E12 | 0.9+ | 0.1− | 2006 11 24 | E12 | 0.2− | 0.2+ | 2006 11 27 | 854 | 0.6− | 0.5+ |
| 2006 10 01 | E12 | 0.6+ | 0.2− | 2006 11 24 | E12 | 0.4+ | 0.5− | 2006 11 27 | F84 | 0.4+ | 0.4− |
| 2006 10 24 | E12 | 0.4− | 0.1− | 2006 11 25 | I77 | 0.5+ | 0.2+ | 2006 11 27 | F84 | 0.0 | 0.0 |

**2006 WS$_{127}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 281.78763 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.17959027 | $\omega$ | 90.38281 | | −0.45357353 | | −0.88687420 |
| $a$ | 3.1113403 | $\Omega$ | 27.14123 | | +0.72170382 | | −0.42337311 |
| $e$ | 0.0538981 | $i$ | 11.10863 | | +0.52289067 | | −0.18495774 |
| $P$ | 5.49 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 10 15 | 691 | 0.2+ | 0.4− | 2006 10 11 | 691 | 0.0 | 0.1+ | 2006 11 17 | G96 | 0.0 | 0.0 |
| 1995 10 15 | 691 | 0.3+ | 0.2+ | 2006 10 11 | 691 | 0.1− | 0.1− | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 1995 10 15 | 691 | 0.1− | 0.4− | 2006 10 31 | 691 | 0.1− | 0.4+ | 2006 11 17 | G96 | 0.3− | 0.1+ |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.3− | 0.2+ | 2006 11 17 | G96 | 0.2− | 0.5+ |
| 2002 12 11 | 645 | 0.0 | 0.0 | 2006 10 31 | 691 | 0.2− | 0.3+ | 2006 11 17 | G96 | 0.2− | 0.1+ |
| 2006 09 28 | G96 | 0.1− | 0.1+ | 2006 11 16 | 408 | 0.3+ | 0.9− | 2006 11 17 | 408 | 0.8+ | 0.2− |
| 2006 09 28 | G96 | 0.9+ | 0.1+ | 2006 11 16 | 408 | 0.2+ | 0.7− | 2006 11 17 | 408 | 1.1+ | 0.5− |
| 2006 09 28 | G96 | 0.1+ | 0.1+ | 2006 11 17 | G96 | 0.4− | 0.1− | 2006 11 24 | 408 | 0.1+ | 0.3+ |
| 2006 09 28 | G96 | 0.3+ | 0.1− | 2006 11 17 | G96 | 0.1+ | 0.2− | 2006 11 24 | 408 | 0.0 | 0.1− |
| 2006 10 11 | 691 | 0.3− | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.3− | | | | |

**2006 WU$_{130}$ = 1996 RP$_{33}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 63.06794 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.21058671 | $\omega$ | 169.18221 | | +0.84529394 | | +0.51657749 |
| $a$ | 2.7980066 | $\Omega$ | 158.00656 | | −0.51338575 | | +0.85602947 |
| $e$ | 0.1149365 | $i$ | 21.37208 | | −0.14803115 | | −0.01900625 |
| $P$ | 4.68 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 09 10 | 809 | 0.1− | 0.2+ | 2006 10 21 | 703 | 0.7+ | 0.2− | 2006 11 18 | 703 | 0.5+ | 0.0 |
| 1996 09 12 | 809 | 0.1+ | 0.2− | 2006 10 21 | 703 | 0.9− | 0.2+ | 2006 11 24 | 703 | 0.4− | 0.1− |
| 2006 10 10 | 644 | 0.2− | 0.2+ | 2006 10 21 | 703 | 0.6+ | 0.7+ | 2006 11 24 | 703 | 0.1− | 0.6− |
| 2006 10 10 | 644 | 0.2− | 0.2− | 2006 11 18 | 703 | (0.1− | 2.1+) | 2006 11 24 | 703 | 1.2+ | 0.3− |
| 2006 10 10 | 644 | 0.7+ | 0.3− | 2006 11 18 | 703 | 1.4− | 0.5− | 2006 11 24 | 703 | 0.3+ | 0.4− |
| 2006 10 21 | 703 | 0.4− | 0.1+ | 2006 11 18 | 703 | 0.4− | 1.4+ | | | | |

**2006 WZ$_{130}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 291.62811 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24125383 | $\omega$ | 298.63463 | | −0.67499935 | | −0.72621245 |
| $a$ | 2.5555629 | $\Omega$ | 196.08189 | | +0.72522606 | | −0.68554362 |
| $e$ | 0.1899209 | $i$ | 28.07081 | | −0.13573148 | | −0.05143371 |
| $P$ | 4.09 | $H$ | 15.6 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 12 14 | 608 | 0.3− | 0.1+ | 2006 10 28 | 703 | 0.9− | 1.5+ | 2006 11 18 | 703 | 0.7+ | 0.3+ |
| 2002 12 14 | 608 | 0.0 | 0.1− | 2006 10 28 | 703 | 1.0+ | 0.5− | 2006 11 24 | 703 | 0.2− | 0.1− |
| 2002 12 14 | 608 | 0.3+ | 0.1+ | 2006 10 28 | 703 | 0.2+ | 0.1− | 2006 11 24 | 703 | 0.6− | 0.6− |
| 2006 10 20 | 703 | 0.0 | 0.0 | 2006 10 28 | 703 | 0.1− | 0.3+ | 2006 11 24 | 703 | 0.5− | 0.3− |
| 2006 10 20 | 703 | 0.8+ | 0.5− | 2006 11 18 | 703 | 0.1+ | 0.2+ | 2006 11 24 | 703 | 0.7+ | 0.6+ |
| 2006 10 20 | 703 | 0.4− | 0.1+ | 2006 11 18 | 703 | 0.3− | 0.2− | | | | |
| 2006 10 20 | 703 | 0.2− | 0.4− | 2006 11 18 | 703 | 0.3− | 0.4− | | | | |

**2006 WE$_{185}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 298.93881 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18644647 | $\omega$ | 271.35581 | | −0.65177595 | −0.69581718 | |
| $a$ | 3.0345894 | $\Omega$ | 224.68007 | | +0.74446520 | −0.66292560 | |
| $e$ | 0.1973224 | $i$ | 25.40915 | | −0.14477458 | −0.27634780 | |
| $P$ | 5.29 | $H$ | 15.0 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 11 30 | 645 | 0.0 | 0.1− | 2006 10 22 | 703 | 0.2+ | 0.3+ | 2006 11 27 | A13 | 0.3− | 0.1+ |
| 2000 11 30 | 645 | 0.1+ | 0.2− | 2006 10 22 | 703 | 1.0− | 0.3+ | 2006 11 27 | A13 | 0.0 | 0.0 |
| 2005 11 21 | 291 | 0.2− | 0.4+ | 2006 11 15 | 703 | 0.3+ | 0.4− | 2006 12 01 | A13 | 0.3+ | 0.2+ |
| 2005 11 21 | 291 | 0.1+ | 0.5+ | 2006 11 15 | 703 | 0.9− | 0.7− | 2006 12 01 | A13 | 0.4− | 0.1+ |
| 2005 11 21 | 291 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.0 | 2006 12 01 | A13 | 0.4− | 0.1− |
| 2006 10 22 | 703 | 1.0+ | 0.5− | 2006 11 15 | 703 | 0.2− | 0.5− | 2006 12 01 | A13 | 0.9+ | 0.0 |
| 2006 10 22 | 703 | 1.4+ | 1.3+ | 2006 11 27 | A13 | 0.2− | 1.2+ | | | | |

**2176 P-L = 2006 UJ$_{262}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 14.46737 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.23752712 | $\omega$ | 73.15401 | | +0.78452154 | −0.61960292 | |
| $a$ | 2.5822240 | $\Omega$ | 325.12169 | | +0.55109672 | +0.71504093 | |
| $e$ | 0.2832545 | $i$ | 2.49196 | | +0.28428568 | +0.32374170 | |
| $P$ | 4.15 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.3− | 0.7− | 1960 10 22 | 675 | 0.6− | 0.8+ | 2006 10 28 | G96 | 0.4− | 0.2− |
| 1960 09 24 | 675 | 0.5− | 0.6+ | 2003 01 01 | 291 | 0.4− | 0.4+ | 2006 10 28 | G96 | 0.0 | 0.3+ |
| 1960 09 26 | 675 | 0.9+ | 0.3+ | 2003 01 01 | 291 | 0.1− | 0.1− | 2006 10 29 | G96 | 0.0 | 0.2+ |
| 1960 09 28 | 675 | 0.5+ | 0.1+ | 2003 01 01 | 291 | 0.5+ | 0.1− | 2006 10 29 | G96 | 0.2+ | 0.4− |
| 1960 09 28 | 675 | 0.5− | 0.3− | 2006 10 28 | G96 | 0.0 | 0.3− | 2006 10 29 | G96 | 0.0 | 0.3− |
| 1960 09 29 | 675 | 0.2+ | 0.2− | 2006 10 28 | G96 | 0.4+ | 0.2− | 2006 10 29 | G96 | 0.5− | 0.2− |

**2619 P-L = 2004 HV$_{46}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 24.97645 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.17168392 | $\omega$ | 332.70371 | | +0.95884203 | +0.28285150 | |
| $a$ | 3.2061436 | $\Omega$ | 10.95237 | | −0.23078733 | +0.82732255 | |
| $e$ | 0.0457896 | $i$ | 7.51221 | | −0.16540607 | +0.48531683 | |
| $P$ | 5.74 | $H$ | 14.8 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.6− | 0.6+ | 2004 04 14 | 699 | 0.9− | 0.1− | 2006 09 25 | G96 | 0.2− | 0.2− |
| 1960 09 24 | 675 | 0.7− | 1.1+ | 2004 04 22 | 691 | 0.6+ | 0.6+ | 2006 09 25 | G96 | 0.0 | 0.3− |
| 1960 09 26 | 675 | 1.0+ | 0.9+ | 2004 04 22 | 691 | 0.5+ | 0.5+ | 2006 09 25 | G96 | 0.2+ | 0.4− |
| 1960 09 26 | 675 | 0.3+ | 0.7+ | 2004 04 22 | 691 | 0.4+ | 0.4+ | 2006 10 17 | 703 | 0.3− | 0.8+ |
| 1960 09 28 | 675 | 0.7− | 0.5+ | 2004 04 25 | 704 | 0.7+ | 1.1+ | 2006 10 17 | 703 | 0.3+ | 0.6+ |
| 1960 09 29 | 675 | (2.5− | 0.3+) | 2004 04 25 | 704 | 0.6+ | 0.1+ | 2006 10 17 | 703 | 0.9+ | 0.3+ |
| 1960 09 29 | 675 | 1.6− | 0.6+ | 2004 04 25 | 704 | 1.4− | 0.9+ | 2006 10 17 | 703 | 1.4+ | 1.4+ |
| 2000 10 01 | 699 | 0.1− | 1.2+ | 2004 04 25 | 704 | 0.0 | 1.3+ | 2006 10 19 | 644 | 0.4+ | 0.0 |
| 2000 10 01 | 699 | 1.0− | 0.9+ | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 19 | 644 | 0.1+ | 0.1+ |
| 2000 10 01 | 699 | 1.6− | 0.2− | 2006 09 14 | 691 | 0.1+ | 0.1− | 2006 10 19 | G96 | 0.1+ | 0.3− |
| 2000 10 01 | 699 | 1.1− | 0.1− | 2006 09 14 | 691 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.3− | 0.4− |
| 2001 11 24 | 704 | 0.5+ | 0.3− | 2006 09 16 | 644 | 0.1+ | 0.0 | 2006 10 19 | G96 | 0.0 | 0.4− |
| 2001 11 24 | 704 | 0.1− | 0.9+ | 2006 09 16 | 644 | 0.1− | 0.2+ | 2006 10 19 | 644 | 0.4− | 0.5+ |
| 2001 11 24 | 704 | 0.9+ | 0.5+ | 2006 09 16 | 644 | 0.4+ | 0.3+ | 2006 10 19 | G96 | 0.2+ | 0.1− |
| 2001 12 09 | 704 | 0.8+ | 0.6+ | 2006 09 17 | 704 | 0.4+ | 0.2− | 2006 10 20 | 644 | 0.2− | 0.0 |
| 2001 12 09 | 704 | 0.0 | 0.0 | 2006 09 17 | 704 | 0.1+ | 0.9− | 2006 10 20 | 644 | 0.0 | 0.1− |
| 2001 12 09 | 704 | 0.2− | 0.1− | 2006 09 17 | 704 | 0.2+ | 0.3− | 2006 10 20 | 644 | 0.3− | 0.1− |
| 2001 12 09 | 704 | 0.5− | 0.2+ | 2006 09 17 | 704 | 0.0 | 0.5+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 12 09 | 704 | 0.1− | 0.1− | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 20 | 644 | 0.0 | 0.0 |
| 2001 12 17 | 704 | 0.4− | 0.1+ | 2006 09 18 | 691 | 0.1− | 0.1+ | 2006 10 20 | 644 | 0.1− | 0.1+ |
| 2001 12 17 | 704 | 0.9− | 0.3+ | 2006 09 18 | 691 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.0 | 0.2− |
| 2001 12 17 | 704 | 0.5− | 0.6+ | 2006 09 18 | 699 | 0.0 | 0.1+ | 2006 10 31 | G96 | 0.3+ | 0.4− |
| 2001 12 17 | 704 | 0.5− | 0.5+ | 2006 09 18 | 699 | 0.5+ | 0.2+ | 2006 10 31 | G96 | 0.0 | 0.5− |
| 2003 01 26 | 608 | 0.0 | 0.6+ | 2006 09 18 | 699 | (0.2− | 2.4+) | 2006 10 31 | G96 | 0.2+ | 0.2− |
| 2003 01 26 | 608 | 0.2+ | 1.0+ | 2006 09 18 | 699 | 0.7− | 0.6+ | 2006 11 15 | G96 | 0.2+ | 0.2− |
| 2003 01 26 | 608 | 0.1− | 1.1+ | 2006 09 25 | 691 | 0.1− | 0.1+ | 2006 11 15 | G96 | 0.1+ | 0.0 |
| 2004 04 14 | 699 | 0.1+ | 0.4− | 2006 09 25 | 691 | 0.3− | 0.2+ | 2006 11 15 | G96 | 0.1− | 0.3− |
| 2004 04 14 | 699 | 0.2+ | 0.2+ | 2006 09 25 | 691 | 0.0 | 0.0 | 2006 11 15 | G96 | 0.1− | 0.2− |
| 2004 04 14 | 699 | (1.1+ | 1.6+) | 2006 09 25 | G96 | 0.0 | 0.4− | | | | |

**2724 P-L = 1999 TH$_{325}$ = 2006 QT$_{31}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 342.19723 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27795036 | $\omega$ | 206.79643 | | +0.96064482 | −0.27710521 | |
| $a$ | 2.3253655 | $\Omega$ | 169.23761 | | +0.26980728 | +0.91424375 | |
| $e$ | 0.2253833 | $i$ | 5.94623 | | +0.06607238 | +0.29558597 | |
| $P$ | 3.55 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.3− | 0.2+ | 2006 08 18 | 704 | 0.2− | 0.3− | 2006 09 18 | 699 | 0.6− | 0.2+ |
| 1960 09 24 | 675 | 0.2− | 0.6− | 2006 08 18 | 699 | 0.2− | 0.1+ | 2006 09 18 | 699 | 1.0+ | 0.4+ |
| 1960 09 26 | 675 | 0.2− | 0.4+ | 2006 08 18 | 704 | (2.3− | 2.4−) | 2006 09 18 | 699 | 0.4− | 0.2+ |
| 1960 09 26 | 675 | 0.4+ | 0.4+ | 2006 08 18 | 699 | 0.2− | 0.6+ | 2006 09 18 | 699 | 0.2− | 0.0 |
| 1960 09 28 | 675 | 0.4− | 0.2+ | 2006 08 22 | 644 | 0.2+ | 0.1− | 2006 09 18 | 699 | 1.0− | 0.3+ |
| 1960 09 28 | 675 | 0.2+ | 0.2− | 2006 08 22 | 644 | 0.1+ | 0.1− | 2006 09 20 | 704 | 0.2+ | 0.1− |
| 1960 09 29 | 675 | 0.5+ | 0.6+ | 2006 08 22 | 644 | 0.0 | 0.0 | 2006 09 20 | 704 | 0.5+ | 1.1+ |
| 1960 09 29 | 675 | 0.4+ | 0.1+ | 2006 08 24 | 704 | 0.3+ | 0.4+ | 2006 09 20 | 704 | 0.9+ | 0.9+ |
| 1999 09 03 | 691 | 0.2+ | 0.5− | 2006 08 24 | 704 | 0.2+ | 0.2− | 2006 09 20 | 704 | 0.5− | 0.8+ |
| 1999 09 03 | 691 | 0.2+ | 0.6− | 2006 08 24 | 704 | 0.2+ | 0.4+ | 2006 09 20 | 704 | 0.5− | 0.0 |
| 1999 09 03 | 691 | 0.3+ | 0.6− | 2006 08 24 | 704 | 0.1− | 0.2+ | 2006 09 25 | 699 | 0.1− | 0.3− |
| 1999 09 04 | 699 | 0.5− | 1.1+ | 2006 08 24 | 704 | 0.0 | 0.6+ | 2006 09 25 | 699 | 0.9− | 0.9+ |
| 1999 09 04 | 699 | 0.6− | 0.0 | 2006 08 25 | 704 | 0.9+ | 0.3+ | 2006 09 25 | 699 | 0.4− | 0.0 |
| 1999 09 04 | 699 | (2.4− | 0.5+) | 2006 08 25 | 704 | 0.2+ | 0.2+ | 2006 09 25 | 699 | 0.2+ | 0.0 |
| 1999 09 14 | 704 | 0.0 | 1.0+ | 2006 08 25 | 704 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.2+ | 0.3− |
| 1999 09 14 | 704 | 0.8+ | 0.7+ | 2006 08 25 | 704 | 0.4+ | 0.8+ | 2006 09 26 | G96 | 0.1− | 0.3− |
| 1999 09 14 | 704 | 0.6+ | 1.7− | 2006 08 28 | 699 | 0.4− | 0.4− | 2006 09 26 | G96 | 0.5− | 0.7− |
| 1999 10 02 | 704 | 0.1− | 0.4+ | 2006 08 28 | 703 | 0.3− | 0.7− | 2006 09 26 | G96 | 0.2+ | 0.1+ |
| 1999 10 02 | 704 | 0.2− | 0.3+ | 2006 08 28 | 703 | 1.2− | 0.1+ | 2006 09 27 | 704 | (1.7+ | 0.1+) |
| 1999 10 02 | 704 | 0.5+ | 0.2− | 2006 08 28 | 699 | 0.6− | 0.4+ | 2006 09 27 | 704 | 1.5+ | 0.4− |
| 1999 10 02 | 704 | 0.3+ | 0.0 | 2006 08 28 | 703 | 0.4− | 0.5− | 2006 09 27 | 704 | 0.3− | 0.9− |
| 1999 10 02 | 704 | 0.4− | 0.5+ | 2006 08 28 | 703 | 0.6− | 0.4+ | 2006 09 27 | 704 | (0.1+ | 1.5−) |
| 1999 10 07 | 703 | 0.6− | 0.1+ | 2006 08 28 | 699 | 0.0 | 0.1− | 2006 09 27 | 704 | 0.2− | 0.0 |
| 1999 10 07 | 703 | 0.2− | 0.2− | 2006 08 28 | 699 | 0.3− | 0.7+ | 2006 10 09 | 644 | 0.1+ | 0.4− |
| 1999 10 07 | 703 | 0.4− | 0.7− | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 1999 10 07 | 703 | 1.0+ | 0.0 | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 10 09 | 644 | 0.2+ | 0.1+ |
| 1999 10 07 | 704 | 0.4− | 1.5+ | 2006 08 29 | 691 | 0.0 | 0.0 | 2006 10 22 | G96 | 0.0 | 0.4− |
| 1999 10 07 | 704 | 0.1− | 0.4+ | 2006 08 30 | 704 | 0.1− | 0.1+ | 2006 10 22 | G96 | 0.0 | 0.3− |
| 1999 10 07 | 704 | 0.5− | 0.8+ | 2006 08 30 | 704 | 0.3− | 0.4− | 2006 10 22 | G96 | 0.0 | 0.5− |
| 1999 10 15 | 704 | 0.0 | 0.2− | 2006 08 30 | 704 | 0.8+ | 0.2+ | 2006 10 22 | G96 | 0.1− | 0.3− |
| 1999 10 15 | 704 | 0.5− | 0.1− | 2006 08 30 | 704 | 0.2− | 0.6+ | 2006 11 17 | G96 | 0.1− | 0.4− |
| 1999 10 15 | 704 | 0.4− | 0.6+ | 2006 09 01 | 704 | 0.5+ | 0.4+ | 2006 11 17 | G96 | 0.0 | 0.1− |
| 1999 10 15 | 704 | 0.4+ | 0.2+ | 2006 09 01 | 704 | 0.8+ | 0.1+ | 2006 11 17 | G96 | 0.1+ | 0.2− |
| 1999 10 15 | 704 | 0.1− | 0.8+ | 2006 09 01 | 704 | 0.4+ | 0.2− | 2006 11 17 | G96 | 0.3− | 0.2− |
| 2005 04 02 | 691 | 0.2+ | 0.4+ | 2006 09 01 | 704 | 0.1+ | 0.6+ | 2006 11 27 | G96 | 0.2− | 0.3− |
| 2005 04 02 | 691 | 0.1− | 0.1+ | 2006 09 14 | 703 | 0.7− | 0.4− | 2006 11 27 | G96 | 0.4+ | 0.0 |
| 2005 04 02 | 691 | 0.1− | 0.4− | 2006 09 14 | 703 | 0.5− | 0.6− | 2006 11 27 | G96 | 0.4+ | 0.3− |
| 2006 08 18 | 699 | 0.6+ | 1.0− | 2006 09 14 | 703 | 0.9− | 0.4− | 2006 11 27 | G96 | 0.1− | 0.0 |
| 2006 08 18 | 704 | (1.6+ | 0.2+) | 2006 09 14 | 703 | 0.3+ | 1.3− | | | | |
| 2006 08 18 | 699 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.9+ | 0.0 | | | | |

**2761 P-L = 1989 VB$_3$ = 1996 QR$_3$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 272.79634 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.27280105 | $\omega$ | 179.81888 | | +0.99522208 | +0.09724106 | |
| $a$ | 2.3545361 | $\Omega$ | 174.57723 | | −0.08969686 | +0.94612265 | |
| $e$ | 0.2443048 | $i$ | 5.33452 | | −0.03856803 | +0.30886260 | |
| $P$ | 3.61 | $H$ | 16.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.8− | 1.6+ | 2000 11 01 | 704 | 0.7+ | 0.4+ | 2002 04 04 | 691 | 0.2− | 0.1+ |
| 1960 09 24 | 675 | 1.0+ | 0.4+ | 2000 11 01 | 704 | 0.6+ | 0.4− | 2002 04 04 | 691 | 0.5+ | 0.3+ |
| 1960 09 26 | 675 | 0.4− | 0.3+ | 2000 11 01 | 704 | 0.4+ | 0.8+ | 2002 04 04 | 691 | 0.1+ | 0.5+ |
| 1960 09 26 | 675 | 0.1− | 0.3− | 2000 11 01 | 704 | 0.2+ | 0.7+ | 2005 01 17 | 704 | 0.4+ | 0.1+ |
| 1960 09 28 | 675 | 0.6− | 1.6+ | 2000 11 27 | 704 | 1.2+ | 0.6− | 2005 01 17 | 704 | 0.4− | 0.7− |
| 1960 09 29 | 675 | 0.2− | 0.2+ | 2000 11 27 | 704 | 1.0+ | 0.5− | 2005 01 17 | 704 | 0.6− | 0.7+ |
| 1960 09 29 | 675 | 0.5+ | 0.8+ | 2000 11 27 | 704 | 0.4+ | 1.4− | 2005 01 17 | 691 | 0.4− | 0.5− |
| 1989 11 03 | 809 | 1.4− | 0.2+ | 2000 11 27 | 704 | 0.1− | 0.9− | 2005 01 17 | 691 | 0.2− | 0.6− |
| 1989 11 03 | 809 | 1.6− | 0.8+ | 2000 11 27 | 704 | 0.7+ | 0.8− | 2005 01 17 | 691 | 0.4− | 0.3− |
| 1989 11 03 | 809 | 1.0− | 0.1+ | 2000 11 27 | 704 | 0.7+ | 0.4− | 2005 02 09 | 699 | 0.3− | 0.9− |
| 1996 05 17 | 691 | 0.8− | 0.9+ | 2000 11 27 | 704 | 0.6+ | 0.6− | 2005 02 09 | 699 | 0.1− | 0.0 |
| 1996 05 17 | 691 | 0.6− | 1.5+ | 2000 11 27 | 704 | 0.8− | 0.2+ | 2005 02 09 | 699 | 0.1+ | 0.2+ |
| 1996 05 17 | 691 | (2.1+ | 4.9−) | 2000 11 27 | 704 | 0.0 | 0.5− | 2005 02 09 | 699 | 0.4− | 0.3+ |
| 1996 08 18 | 010 | 0.3− | 0.1− | 2000 11 27 | 704 | 0.9+ | 0.0 | 2006 03 26 | G96 | 0.1+ | 0.2− |
| 1996 08 18 | 010 | 1.2− | 0.9− | 2000 12 20 | 704 | 0.2+ | 1.3+ | 2006 03 26 | G96 | 0.0 | 0.3− |
| 1996 08 18 | 010 | 0.3− | 0.1− | 2000 12 20 | 704 | 0.1− | 0.1+ | 2006 03 26 | G96 | 0.1+ | 0.4− |
| 1996 08 20 | 010 | 1.0+ | 0.4+ | 2000 12 20 | 704 | 0.3+ | 0.4− | 2006 03 26 | G96 | 0.6+ | 0.1− |
| 1996 08 20 | 010 | 0.1− | 0.1+ | 2002 03 13 | 291 | 0.1− | 0.3+ | 2006 04 09 | 691 | 0.0 | 0.2+ |
| 1996 08 20 | 010 | 0.3+ | 0.4+ | 2002 03 13 | 291 | 0.1− | 0.3+ | 2006 04 09 | 691 | 0.2+ | 0.4+ |
| 2000 11 01 | 704 | 0.0 | 0.7+ | 2002 03 13 | 291 | 0.3− | 0.2+ | 2006 04 09 | 691 | 0.4+ | 0.2+ |

### 2770 P-L = 1976 $UU_6$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 170.09110 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30905689 | $\omega$ | 316.01758 | | +0.91744386 | | +0.39668992 |
| $a$ | 2.1665918 | $\Omega$ | 20.67052 | | −0.33692900 | | +0.81548488 |
| $e$ | 0.2095067 | $i$ | 4.96642 | | −0.21160248 | | +0.42145168 |
| $P$ | 3.19 | $H$ | 16.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 1.4+ | 0.2+ | 1960 10 26 | 675 | 0.2+ | 0.0 | 2005 12 02 | 691 | 0.1− | 0.0 |
| 1960 09 26 | 675 | 0.3+ | 0.2+ | 1976 10 22 | 381 | 0.7− | 0.3− | 2005 12 29 | 704 | 0.2+ | 1.1+ |
| 1960 09 28 | 675 | 1.2− | 0.8− | 1976 10 22 | 381 | 0.5+ | 0.7+ | 2005 12 29 | 704 | 0.4+ | 0.5− |
| 1960 09 29 | 675 | 1.1− | 0.5+ | 1976 10 24 | 381 | (5.1+ | 1.8+) | 2005 12 29 | 704 | 0.1− | 0.4− |
| 1960 10 22 | 675 | 0.3− | 0.1− | 2005 12 02 | 691 | 0.1− | 0.0 | 2005 12 29 | 704 | 0.5+ | 0.1+ |
| 1960 10 25 | 675 | 1.0+ | 0.3− | 2005 12 02 | 691 | 0.1− | 0.0 | | | | |

### 4290 P-L = 2002 $NL_{41}$ = 2006 $VC_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 39.91163 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27974758 | $\omega$ | 356.77302 | | +0.92790675 | | +0.37223510 |
| $a$ | 2.3153953 | $\Omega$ | 341.33200 | | −0.34058151 | | +0.82374797 |
| $e$ | 0.1610293 | $i$ | 3.71487 | | −0.15163540 | | +0.42764508 |
| $P$ | 3.52 | $H$ | 17.1 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.8+ | 0.2+ | 2006 10 04 | G96 | 0.0 | 0.1− | 2006 11 14 | 703 | 1.0− | 0.4− |
| 1960 09 26 | 675 | 1.2+ | 1.4− | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 11 14 | G96 | 0.1+ | 0.2− |
| 1960 09 28 | 675 | 0.7− | 1.3− | 2006 10 19 | G96 | 0.1+ | 0.4− | 2006 11 14 | 703 | 1.1− | 0.1+ |
| 2002 07 05 | 644 | 0.3− | 0.1+ | 2006 10 19 | G96 | 0.0 | 0.4− | 2006 11 14 | G96 | 0.1+ | 0.5− |
| 2002 07 05 | 644 | 0.2+ | 0.3+ | 2006 10 19 | G96 | 0.3+ | 0.2− | 2006 11 14 | G96 | 0.2+ | 0.3− |
| 2002 07 05 | 644 | 0.6− | 0.6+ | 2006 10 19 | G96 | 0.2+ | 0.3− | 2006 11 14 | 703 | 0.2− | 0.2− |
| 2002 07 14 | 644 | 0.4− | 0.6+ | 2006 10 31 | 691 | 0.3+ | 0.3− | 2006 11 14 | G96 | 0.2+ | 0.5− |
| 2002 07 14 | 644 | 0.9− | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.4+ | 2006 11 16 | 704 | 0.3+ | 0.7+ |
| 2002 07 14 | 644 | 0.1− | 0.8+ | 2006 10 31 | 691 | 0.0 | 0.2+ | 2006 11 16 | 704 | 0.2− | 1.3+ |
| 2002 07 15 | 644 | 0.4+ | 1.0+ | 2006 11 08 | 644 | 0.2+ | 0.0 | 2006 11 16 | 704 | 0.9+ | 0.6+ |
| 2002 07 15 | 644 | 0.0 | 1.0+ | 2006 11 08 | 644 | 0.0 | 0.0 | 2006 11 19 | 704 | (1.9+ | 0.7+) |
| 2002 07 15 | 644 | 0.2+ | 1.1+ | 2006 11 08 | 644 | 0.2+ | 0.2+ | 2006 11 19 | 704 | 0.6+ | 0.6+ |
| 2002 08 29 | 644 | 0.1− | 0.0 | 2006 11 09 | 644 | 0.2− | 0.5+ | 2006 11 19 | 704 | 1.2− | 1.1− |
| 2002 08 29 | 644 | 0.1− | 0.1+ | 2006 11 09 | 644 | 0.2− | 0.3+ | 2006 11 19 | 704 | 1.2+ | 0.4+ |
| 2002 08 29 | 644 | 0.2− | 0.1− | 2006 11 09 | 644 | 0.1− | 0.0 | 2006 11 19 | 704 | 0.4− | 0.0 |
| 2004 01 27 | 691 | 0.4+ | 0.5+ | 2006 11 11 | 703 | 0.6− | 1.4+ | 2006 11 22 | 703 | 0.7− | 0.1+ |
| 2004 01 27 | 691 | 0.0 | 0.3+ | 2006 11 11 | 703 | (1.5− | 0.5−) | 2006 11 22 | 703 | 0.5+ | 0.6− |
| 2004 01 27 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.9− | 2006 11 22 | 703 | 0.5− | 0.1+ |
| 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 11 11 | 703 | 1.4− | 0.2+ | 2006 11 22 | 703 | 1.2+ | 0.8+ |
| 2006 10 04 | G96 | 0.0 | 0.3− | 2006 11 14 | 703 | 0.6− | 0.9+ | | | | |

### 4803 P-L = 2006 $PM_{24}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 335.66448 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.25597431 | $\omega$ | 348.20217 | | +0.98611671 | | −0.16571690 |
| $a$ | 2.4566227 | $\Omega$ | 21.34544 | | +0.15461572 | | +0.89311262 |
| $e$ | 0.1843828 | $i$ | 1.66415 | | +0.06056243 | | +0.41819583 |
| $P$ | 3.85 | $H$ | 17.3 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.6− | 0.4− | 2006 08 12 | 644 | 0.2− | 0.4+ | 2006 08 28 | 703 | 0.7+ | 0.8+ |
| 1960 09 24 | 675 | 1.1− | 0.3+ | 2006 08 12 | 644 | 0.1− | 0.1+ | 2006 08 28 | 703 | 0.6+ | 1.2− |
| 1960 09 26 | 675 | 0.4+ | 0.7− | 2006 08 12 | 644 | 0.0 | 0.2+ | 2006 10 20 | G96 | 0.0 | 0.2− |
| 1960 09 26 | 675 | 0.2− | 0.1+ | 2006 08 20 | 644 | 0.2+ | 0.2+ | 2006 10 20 | G96 | 0.1+ | 0.5− |
| 1960 09 27 | 675 | 0.1+ | 0.1− | 2006 08 20 | 644 | 0.3− | 0.2+ | 2006 10 20 | G96 | 0.2+ | 0.3− |
| 1960 09 27 | 675 | 1.0+ | 0.3+ | 2006 08 20 | 644 | 0.2− | 0.4+ | 2006 10 20 | G96 | 0.4+ | 0.5− |
| 1960 09 28 | 675 | 0.6+ | 0.5+ | 2006 08 28 | 703 | 0.8+ | 0.6− | | | | |
| 1960 09 28 | 675 | 0.5− | 0.6+ | 2006 08 28 | 703 | 1.8− | 0.1− | | | | |

### 6508 P-L = 2006 $UJ_{90}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 49.93541 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.30176413 | $\omega$ | 305.79219 | | +0.90926195 | | +0.41303559 |
| $a$ | 2.2013595 | $\Omega$ | 29.90993 | | −0.34081250 | | +0.80973897 |
| $e$ | 0.1082553 | $i$ | 5.91924 | | −0.23893418 | | +0.41680258 |
| $P$ | 3.27 | $H$ | 17.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.6− | 0.1− | 2006 10 17 | 691 | 0.2+ | 0.4− | 2006 11 14 | 703 | 0.6+ | 1.0− |
| 1960 09 24 | 675 | 0.2− | 0.8+ | 2006 10 21 | 691 | 0.0 | 0.1+ | 2006 11 14 | 703 | 0.6− | 0.9+ |
| 1960 09 26 | 675 | 1.2− | 0.1− | 2006 10 21 | 691 | 0.4− | 0.4+ | 2006 11 15 | 704 | 0.5+ | 0.2− |
| 1960 09 26 | 675 | 0.7+ | 0.3+ | 2006 10 21 | 691 | 0.1− | 0.0 | 2006 11 15 | 704 | (1.7+ | 0.4+) |
| 1960 09 28 | 675 | 0.1+ | 0.1− | 2006 10 27 | 691 | 0.1− | 0.1− | 2006 11 15 | 704 | 0.3− | 1.0+ |
| 1960 09 28 | 675 | 1.1+ | 0.6− | 2006 10 27 | 691 | 0.1− | 0.0 | 2006 11 15 | 704 | 0.6+ | 1.1+ |
| 2006 09 27 | G96 | 0.2+ | 0.3− | 2006 10 27 | 691 | 0.1+ | 0.1− | 2006 11 19 | 704 | 0.5− | 0.2− |
| 2006 09 27 | G96 | 0.5+ | 0.1+ | 2006 11 09 | 644 | 0.4+ | 0.0 | 2006 11 19 | 704 | 0.5+ | 0.4+ |
| 2006 09 27 | G96 | 0.1+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.3+ | 2006 11 19 | 704 | 0.6+ | 0.3+ |
| 2006 09 27 | G96 | 0.2+ | 0.1− | 2006 11 09 | 644 | 0.0 | 0.1+ | 2006 11 19 | 704 | 0.6− | 0.1− |
| 2006 10 17 | 691 | 0.1− | 0.0 | 2006 11 14 | 703 | 0.9− | 0.6− | | | | |
| 2006 10 17 | 691 | 0.1+ | 0.0 | 2006 11 14 | 703 | 0.3+ | 1.0− | | | | |

### 6822 P-L = 2006 $SU_{110}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 20.56036 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.23618737 | $\omega$ | 194.33569 | | +0.94616553 | | +0.31928040 |
| $a$ | 2.5919797 | $\Omega$ | 146.89267 | | −0.28655409 | | +0.90267943 |
| $e$ | 0.2208674 | $i$ | 5.58997 | | −0.15052425 | | +0.28849588 |
| $P$ | 4.17 | $H$ | 16.6 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 09 24 | 675 | 0.3− | 0.4+ | 2006 08 24 | 644 | 0.1− | 0.4+ | 2006 10 01 | 704 | 0.1− | 0.2+ |
| 1960 09 24 | 675 | 0.3− | 0.4+ | 2006 09 06 | 644 | 0.7+ | 0.1− | 2006 10 04 | G96 | 0.4+ | 0.5− |
| 1960 09 26 | 675 | 0.7− | 1.5+ | 2006 09 06 | 644 | 0.1− | 0.1− | 2006 10 04 | G96 | 0.1+ | 0.5− |
| 1960 09 26 | 675 | 0.4+ | 0.0 | 2006 09 06 | 644 | 0.3+ | 0.1+ | 2006 10 04 | G96 | 0.3+ | 0.4− |
| 1960 09 27 | 675 | 0.8+ | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.2− | 2006 10 04 | G96 | 0.1− | 0.6− |
| 1960 09 27 | 675 | 0.2− | 0.9+ | 2006 09 20 | 644 | 0.0 | 0.4+ | 2006 10 16 | 703 | 0.0 | 1.0− |
| 1960 09 28 | 675 | 1.4− | 0.1+ | 2006 09 20 | 644 | 0.1+ | 0.2− | 2006 10 16 | 703 | 0.5− | 0.7− |
| 1960 09 28 | 675 | 0.4+ | 0.2+ | 2006 09 25 | 699 | 0.6− | 0.4− | 2006 10 16 | 703 | 0.1+ | 0.5− |
| 2002 11 11 | 704 | 0.2+ | 0.5− | 2006 09 25 | 699 | 0.3− | 0.1+ | 2006 10 16 | 703 | 0.2+ | 0.9− |
| 2002 11 11 | 704 | 0.2− | 0.4− | 2006 09 25 | 699 | 0.8− | 1.2+ | 2006 10 19 | 644 | 0.0 | 0.3− |
| 2002 11 11 | 704 | 0.6+ | 0.6+ | 2006 09 25 | 699 | 0.5− | 0.5+ | 2006 10 19 | 644 | 0.1+ | 0.3− |
| 2002 11 23 | 644 | 0.1+ | 0.4+ | 2006 09 26 | 703 | (0.6+ | 1.9−) | 2006 10 19 | 644 | 0.1− | 0.4− |
| 2002 11 23 | 644 | 0.1+ | 0.2+ | 2006 09 26 | 703 | 0.0 | 0.8+ | 2006 10 22 | 703 | 0.3− | 1.3+ |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 11 23 | 644 | 0.0 | 0.6+ | 2006 09 26 | 703 | 0.6− | 0.1+ | 2006 10 22 | 703 | 0.5+ | 0.0 | | |
| 2004 02 12 | 691 | 0.3+ | 0.5+ | 2006 09 26 | 703 | 0.7− | 0.8+ | 2006 10 22 | 703 | 0.1− | 1.3+ | | |
| 2004 02 12 | 691 | 0.1− | 0.3+ | 2006 09 29 | 699 | 0.0 | 1.5+ | 2006 10 22 | 703 | 0.1− | 0.8+ | | |
| 2004 02 12 | 691 | 0.0 | 0.2+ | 2006 09 29 | 699 | 0.6+ | 0.1− | 2006 10 28 | 703 | 0.6− | 0.4+ | | |
| 2005 04 15 | 691 | 0.0 | 0.8+ | 2006 09 29 | 699 | 1.1+ | 0.9+ | 2006 10 28 | 703 | 0.6− | 0.5+ | | |
| 2005 04 15 | 691 | 0.5+ | 0.7+ | 2006 09 29 | 699 | 0.3+ | 0.8− | 2006 10 28 | 703 | 1.2− | 0.3− | | |
| 2005 04 15 | 691 | 0.1+ | 0.5+ | 2006 10 01 | 704 | 0.6+ | 0.1− | 2006 10 28 | 703 | 0.6− | 0.3+ | | |
| 2006 08 24 | 644 | 0.1+ | 0.2− | 2006 10 01 | 704 | 0.7− | 0.9+ | | | | | | |
| 2006 08 24 | 644 | 0.0 | 0.3− | 2006 10 01 | 704 | 0.9+ | 0.2+ | | | | | | |

### 1146 T-2 = 2006 $UP_{192}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.91759 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30001249 | $\omega$ | 358.88754 | | +0.99774150 | −0.06616388 | |
| $a$ | 2.2099197 | $\Omega$ | 4.95100 | | +0.06261827 | +0.85375937 | |
| $e$ | 0.1654645 | $i$ | 7.71525 | | +0.02430747 | +0.51644679 | |
| $P$ | 3.29 | $H$ | 16.9 | $G$ | 0.15 | $U$ | 3 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.3− | 0.5+ | 2006 08 28 | 703 | 1.1+ | 0.1+ | 2006 10 19 | 644 | 0.4− | 0.1+ | | |
| 1973 09 19 | 675 | 0.9− | 0.0 | 2006 08 28 | 703 | 0.7− | 0.3+ | 2006 10 19 | 644 | 0.1+ | 0.0 | | |
| 1973 09 20 | 675 | (2.9− | 0.6+) | 2006 08 28 | 703 | 0.5− | 0.0 | 2006 10 22 | 644 | 0.2+ | 0.0 | | |
| 1973 09 24 | 675 | 0.4− | 1.4− | 2006 09 16 | 703 | 0.3− | 0.1+ | 2006 10 22 | 644 | 0.1+ | 0.3+ | | |
| 1973 09 24 | 675 | 0.2+ | 0.1− | 2006 09 16 | 703 | 1.0− | 0.5+ | 2006 10 22 | 644 | 0.1+ | 0.2+ | | |
| 1973 09 25 | 675 | 2.2− | 0.5− | 2006 09 16 | 703 | 0.3− | 0.7+ | 2006 11 13 | 644 | 0.0 | 0.1+ | | |
| 1973 09 29 | 675 | 1.0+ | 0.1− | 2006 09 16 | 703 | 0.4− | 0.2+ | 2006 11 13 | 644 | 0.1+ | 0.3+ | | |
| 1973 09 29 | 675 | 0.7+ | 0.3− | 2006 10 02 | G96 | 0.2− | 0.2+ | 2006 11 13 | 644 | 0.3+ | 0.1+ | | |
| 1973 09 30 | 675 | 0.2− | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.0 | | |
| 1973 09 30 | 675 | 0.3+ | 0.7+ | 2006 10 02 | G96 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.3+ | 0.1+ | | |
| 1973 10 04 | 675 | 2.2+ | 1.8− | 2006 10 02 | G96 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.1− | 0.4+ | | |
| 1973 10 04 | 675 | 0.9+ | 1.4− | 2006 10 11 | 644 | 0.1− | 0.3+ | 2006 11 15 | 703 | 0.0 | 0.2− | | |
| 1973 10 05 | 675 | 0.4+ | 1.5+ | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 11 17 | 644 | 0.2− | 0.1+ | | |
| 1973 10 05 | 675 | 0.2− | 0.5+ | 2006 10 11 | 644 | 0.1− | 0.0 | 2006 11 17 | 644 | 0.2− | 0.1− | | |
| 2005 03 17 | G96 | 0.2− | 0.3− | 2006 10 19 | 703 | 0.9+ | 0.1+ | 2006 11 17 | 644 | 0.1+ | 0.1+ | | |
| 2005 03 17 | G96 | 0.1+ | 0.1− | 2006 10 19 | 703 | 0.1− | 0.2− | 2006 11 22 | 703 | 0.0 | 0.3− | | |
| 2005 03 17 | G96 | 0.1− | 0.2− | 2006 10 19 | 703 | 0.5+ | 0.4− | 2006 11 22 | 703 | 0.0 | 0.7− | | |
| 2005 03 17 | G96 | 0.2− | 0.2− | 2006 10 19 | 703 | 0.3− | 0.1− | 2006 11 22 | 703 | 0.5+ | 0.9− | | |
| 2006 08 28 | 703 | 0.3− | 0.1− | 2006 10 19 | 644 | 0.4− | 0.3+ | 2006 11 22 | 703 | 0.8+ | 0.7− | | |

### 1250 T-2 = 2006 $UL_{105}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.90500 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.24175805 | $\omega$ | 108.43894 | | +0.27421940 | +0.96165765 | |
| $a$ | 2.5520084 | $\Omega$ | 177.46485 | | −0.91477268 | +0.26221652 | |
| $e$ | 0.1731796 | $i$ | 5.54791 | | −0.29663896 | +0.08035585 | |
| $P$ | 4.08 | $H$ | 15.7 | $G$ | 0.15 | $U$ | 5 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 2.5− | 1.0− | 1973 10 04 | 675 | 0.8− | 1.4+ | 2006 10 21 | G96 | 0.4+ | 0.5− | | |
| 1973 09 19 | 675 | 0.1− | 0.2− | 1973 10 04 | 675 | 1.3− | 2.4+ | 2006 11 09 | 644 | 0.5− | 0.9+ | | |
| 1973 09 20 | 675 | 1.5− | 0.2+ | 1973 10 05 | 675 | 1.0+ | 0.0 | 2006 11 09 | 644 | 0.5− | 0.1+ | | |
| 1973 09 24 | 675 | 0.9+ | 1.0− | 1973 10 05 | 675 | 1.6+ | 0.4− | 2006 11 09 | 644 | 0.7− | 0.8+ | | |
| 1973 09 24 | 675 | 0.6− | 1.3− | 2006 10 18 | 691 | 0.1− | 0.2− | 2006 11 18 | G96 | 0.1+ | 0.1+ | | |
| 1973 09 25 | 675 | 0.4+ | 0.5− | 2006 10 18 | 691 | 0.3+ | 0.0 | 2006 11 18 | G96 | 0.1− | 0.4+ | | |
| 1973 09 29 | 675 | 0.0 | 0.2− | 2006 10 18 | 691 | 0.0 | 0.3− | 2006 11 18 | G96 | 0.4− | 0.0 | | |
| 1973 09 29 | 675 | 1.3+ | 0.6− | 2006 10 21 | G96 | 0.4+ | 0.4− | 2006 11 18 | G96 | 0.3− | 0.0 | | |
| 1973 09 30 | 675 | 1.4+ | 1.2+ | 2006 10 21 | G96 | 0.4+ | 0.1− | | | | | | |
| 1973 09 30 | 675 | 0.0 | 0.3+ | 2006 10 21 | G96 | 0.5+ | 0.1− | | | | | | |

### 1312 T-2 = 2006 $QK_{144}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 352.28338 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.18095547 | $\omega$ | 28.61631 | | +0.84672056 | −0.53177267 | |
| $a$ | 3.0956718 | $\Omega$ | 3.64332 | | +0.42375744 | +0.65497014 | |
| $e$ | 0.1778210 | $i$ | 15.32697 | | +0.32170473 | +0.53687238 | |
| $P$ | 5.45 | $H$ | 15.2 | $G$ | 0.15 | $U$ | 2 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 2.0+ | 1.2− | 2006 07 22 | G96 | 0.1+ | 0.4+ | 2006 09 25 | 704 | 0.8− | 0.0 | | |
| 1973 09 19 | 675 | 2.0+ | 0.4− | 2006 07 22 | G96 | 0.3− | 0.6+ | 2006 10 19 | 703 | 0.2+ | 0.2− | | |
| 1973 09 24 | 675 | 0.6− | 0.4− | 2006 08 12 | 644 | 0.2− | 0.6+ | 2006 10 19 | 703 | 1.2− | 0.7+ | | |
| 1973 09 24 | 675 | 0.6+ | 2.3− | 2006 08 12 | 644 | 0.5− | 0.2+ | 2006 10 19 | 703 | 0.1− | 0.1− | | |
| 1973 09 25 | 675 | 1.1+ | 1.0− | 2006 08 12 | 644 | 0.5− | 0.5+ | 2006 10 19 | 703 | 0.0 | 0.0 | | |
| 1973 09 25 | 675 | (3.5+ | 1.6−) | 2006 08 28 | 703 | 0.4− | 0.2− | 2006 10 19 | 703 | 0.3− | 0.3+ | | |
| 1973 09 25 | 675 | 2.2+ | 2.2− | 2006 08 28 | 703 | 0.6− | 0.5+ | 2006 10 19 | 703 | 0.4− | 0.0 | | |
| 1973 09 29 | 675 | 0.3− | 0.2− | 2006 08 28 | 703 | 0.7− | 1.0+ | 2006 10 19 | 703 | 0.1+ | 0.1+ | | |
| 1973 09 29 | 675 | 1.9+ | 0.2− | 2006 08 28 | 703 | 0.7+ | 0.1+ | 2006 10 19 | 703 | 0.1− | 0.2+ | | |
| 1973 09 30 | 675 | 0.1− | 0.1− | 2006 09 01 | 224 | 0.1+ | 0.5+ | 2006 10 22 | 644 | 0.3− | 0.5+ | | |
| 1973 09 30 | 675 | 1.6+ | 0.6+ | 2006 09 01 | 224 | 0.1+ | 0.3+ | 2006 10 22 | 644 | 0.1− | 0.2+ | | |
| 1973 10 04 | 675 | 0.2− | 1.0− | 2006 09 01 | 224 | 0.4+ | 0.4+ | 2006 10 22 | 644 | 0.3− | 0.3+ | | |
| 1973 10 04 | 675 | 1.0− | 1.7− | 2006 09 16 | 703 | 0.1− | 0.1+ | 2006 10 27 | 703 | 0.5− | 0.3− | | |
| 1973 10 05 | 675 | (3.4− | 3.0−) | 2006 09 16 | 703 | 0.9− | 0.2+ | 2006 10 27 | 703 | 0.1+ | 0.2− | | |
| 1973 10 05 | 675 | 0.1− | 1.8− | 2006 09 16 | 703 | 0.1− | 0.7+ | 2006 10 27 | 703 | 0.1− | 0.0 | | |
| 1995 11 17 | 327 | 0.4− | 0.3− | 2006 09 16 | 703 | 0.4− | 0.0 | 2006 10 27 | 703 | 0.1− | 0.3− | | |
| 1995 11 17 | 327 | 0.2+ | 0.5+ | 2006 09 20 | 699 | 0.0 | 0.2+ | 2006 11 15 | 703 | 0.2− | 0.6+ | | |
| 1995 11 17 | 327 | 0.4+ | 1.1+ | 2006 09 20 | 699 | 0.1+ | 0.0 | 2006 11 15 | 703 | 0.4− | 0.4− | | |
| 2002 12 11 | 645 | 0.2− | 0.2− | 2006 09 20 | 699 | 0.3− | 0.5+ | 2006 11 15 | 703 | 0.2+ | 0.3− | | |
| 2002 12 11 | 645 | 0.1− | 0.1− | 2006 09 20 | 699 | 1.0+ | 0.6+ | 2006 11 15 | 703 | 0.3+ | 0.6+ | | |
| 2006 07 22 | G96 | 0.3− | 0.1+ | 2006 09 25 | 704 | (0.1+ | 3.0+) | | | | | | |
| 2006 07 22 | G96 | 0.2− | 0.3+ | 2006 09 25 | 704 | (0.5+ | 2.8+) | | | | | | |

### 1453 T-2 = 2006 $RB_{60}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 17.42528 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.26925436 | $\omega$ | 357.05911 | | +0.95142018 | +0.30765199 | |
| $a$ | 2.3751674 | $\Omega$ | 345.00567 | | −0.28151407 | +0.85310703 | |
| $e$ | 0.2647870 | $i$ | 2.71235 | | −0.12469752 | +0.42137708 | |
| $P$ | 3.66 | $H$ | 18.3 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 1.3+ | 1.5− | 1973 09 30 | 675 | 0.7− | 1.9+ | 2006 09 19 | 691 | 0.3− | 0.1+ | | |
| 1973 09 19 | 675 | 0.9+ | 0.7− | 1973 10 04 | 675 | 1.2+ | 1.6− | 2006 09 19 | 691 | 0.1− | 0.2+ | | |
| 1973 09 20 | 675 | 0.0 | 0.9+ | 1973 10 04 | 675 | 0.8+ | 0.6− | 2006 09 19 | 691 | 0.3− | 0.0 | | |
| 1973 09 24 | 675 | 1.8− | 1.3− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 17 | 703 | 0.7+ | 0.7+ | | |
| 1973 09 24 | 675 | 1.7− | 0.3+ | 2006 09 15 | 691 | 0.2+ | 0.2+ | 2006 10 17 | 703 | 0.1+ | 0.2+ | | |
| 1973 09 25 | 675 | (3.4− | 1.6−) | 2006 09 15 | 691 | 0.1+ | 0.1+ | 2006 10 17 | 703 | 0.5+ | 0.3− | | |
| 1973 09 25 | 675 | 1.7− | 0.9− | 2006 09 18 | 699 | 0.8− | 0.0 | 2006 10 17 | 703 | 0.2− | 1.5− | | |
| 1973 09 29 | 675 | 1.3+ | 0.2− | 2006 09 18 | 699 | 0.6− | 0.7+ | 2006 10 19 | 683 | 0.4+ | 0.5− | | |
| 1973 09 29 | 675 | 0.0 | 0.6− | 2006 09 18 | 699 | 0.2− | 0.2+ | 2006 10 19 | 683 | 0.4− | 0.1+ | | |
| 1973 09 30 | 675 | 1.8+ | 1.6+ | 2006 09 18 | 699 | 0.3+ | 0.0 | | | | | | |

### 1531 T-2 = 2006 $TL_{37}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 29.74532 | | (2000.0) | | **P** | **Q** | |
| $n$ | 0.30008211 | $\omega$ | 117.40873 | | +0.95260196 | +0.30384304 | |
| $a$ | 2.2095779 | $\Omega$ | 224.90719 | | −0.28613767 | +0.87798297 | |
| $e$ | 0.2000913 | $i$ | 1.22805 | | −0.10331865 | +0.36989905 | |
| $P$ | 3.28 | $H$ | 18.0 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 1.2+ | 1.6− | 2002 05 06 | 291 | 0.0 | 0.4+ | 2006 11 09 | J95 | 0.7− | 0.3+ | | |
| 1973 09 20 | 675 | 0.6− | 0.3+ | 2002 05 06 | 291 | 0.2+ | 0.9+ | 2006 11 09 | J95 | 0.7+ | 0.1+ | | |
| 1973 09 24 | 675 | 0.4− | 0.4− | 2006 10 12 | 691 | 0.2− | 0.2+ | 2006 11 11 | 703 | 0.1+ | 0.5+ | | |
| 1973 09 24 | 675 | 0.8− | 0.6− | 2006 10 12 | 691 | 0.1− | 0.2+ | 2006 11 11 | G96 | 0.1− | 0.3− | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 25 | 675 | 0.7− | 1.4− | 2006 10 12 | 691 | 0.2− | 0.1+ | 2006 11 11 | 703 | 0.6− | 0.6+ | |
| 1973 09 25 | 675 | 1.2− | 1.0− | 2006 10 16 | 691 | 0.2+ | 0.0 | 2006 11 11 | G96 | 0.1+ | 0.3− | |
| 1973 09 29 | 675 | 0.3+ | 0.8− | 2006 10 16 | 691 | 0.3− | 0.3+ | 2006 11 11 | G96 | 0.3+ | 0.4− | |
| 1973 09 29 | 675 | 1.5+ | 0.2− | 2006 10 16 | 691 | 0.3− | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.3− | |
| 1973 09 30 | 675 | 0.9+ | 1.0+ | 2006 10 20 | 691 | 0.4− | 0.4+ | 2006 11 11 | 703 | 0.3+ | 0.9− | |
| 1973 09 30 | 675 | 0.2+ | 0.5+ | 2006 10 20 | 691 | 0.4− | 0.2+ | 2006 11 11 | 703 | 1.4− | 0.5+ | |
| 1973 10 04 | 675 | (2.6+ | 3.5−) | 2006 10 20 | 691 | (0.3+ | 1.6+) | 2006 11 17 | 703 | 0.4− | 0.3+ | |
| 1973 10 04 | 675 | (3.4+ | 2.7−) | 2006 10 28 | 691 | 0.4+ | 0.1+ | 2006 11 17 | 703 | 0.4− | 0.3+ | |
| 1973 10 05 | 675 | (2.9+ | 2.4−) | 2006 10 28 | 691 | 0.0 | 0.1+ | 2006 11 17 | 703 | 0.3− | 0.2+ | |
| 1973 10 05 | 675 | 1.7+ | 1.2− | 2006 10 28 | 691 | 0.3+ | 0.3+ | 2006 11 17 | 703 | 0.4+ | 0.1− | |
| 1996 09 17 | 691 | 0.5− | 0.2+ | 2006 11 01 | 691 | (0.3+ | 1.8−) | 2006 11 21 | G96 | 0.2− | 0.1− | |
| 1996 09 17 | 691 | 0.1− | 0.2+ | 2006 11 01 | 691 | 0.2+ | 0.4+ | 2006 11 21 | G96 | 0.2− | 0.4− | |
| 1996 09 17 | 691 | 0.4+ | 0.3+ | 2006 11 01 | 691 | 0.1+ | 0.4+ | 2006 11 21 | G96 | 0.2− | 1.2− | |
| 2002 05 06 | 291 | 0.2+ | 0.4+ | 2006 11 09 | J95 | 0.5+ | 0.7− | 2006 11 21 | G96 | 0.2− | 0.2− | |

### 3079 T-2 = 2006 TN$_7$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 55.26854 | | (2000.0) | | +0.56167446 | +0.82717747 |
| $n$ | 0.24025627 | $\omega$ | 279.78135 | | −0.74173784 | +0.51270119 |
| $a$ | 2.5626319 | $\Omega$ | 24.41504 | | −0.36653346 | +0.23003244 |
| $e$ | 0.2307431 | $i$ | 2.39852 | | | |
| $P$ | 4.10 | $H$ | 16.4 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 1.4− | 2.2− | 2005 06 14 | G96 | 0.2− | 0.3+ | 2006 10 16 | 691 | 0.1+ | 0.1+ | |
| 1973 09 19 | 675 | 0.4− | 1.0+ | 2005 06 14 | G96 | 0.5− | 0.4+ | 2006 10 16 | 691 | 0.0 | 0.0 | |
| 1973 09 19 | 675 | 0.4+ | 0.1− | 2005 06 14 | G96 | 0.3− | 0.5+ | 2006 10 19 | 644 | 0.8− | 0.2+ | |
| 1973 09 19 | 675 | 1.6− | 1.6+ | 2005 06 14 | G96 | 0.1− | 0.4+ | 2006 10 19 | 644 | 0.5− | 0.3− | |
| 1973 09 20 | 675 | 0.8+ | 0.1+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 19 | 644 | 0.3+ | 0.2+ | |
| 1973 09 24 | 675 | 0.6− | 0.4+ | 2006 09 26 | G96 | 0.1+ | 0.1+ | 2006 10 20 | 691 | 0.4− | 0.3+ | |
| 1973 09 24 | 675 | (3.1− | 1.4+) | 2006 09 26 | G96 | 0.1− | 0.2+ | 2006 10 20 | 691 | 0.3− | 0.2+ | |
| 1973 09 25 | 675 | 0.1− | 0.1+ | 2006 09 26 | G96 | 0.1− | 0.1+ | 2006 10 20 | 691 | 0.3− | 0.1+ | |
| 1973 09 25 | 675 | 0.4+ | 0.1+ | 2006 10 04 | G96 | 0.2− | 0.3− | 2006 10 20 | 644 | 0.1− | 0.0 | |
| 1973 09 29 | 675 | 1.1+ | 0.2− | 2006 10 04 | G96 | 0.1− | 0.0 | 2006 10 20 | 644 | 0.0 | 0.5+ | |
| 1973 09 29 | 675 | (2.9+ | 1.9−) | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 20 | 644 | 0.2− | 0.1+ | |
| 1973 09 30 | 675 | 0.7+ | 1.1+ | 2006 10 04 | G96 | 0.1− | 0.1− | 2006 10 21 | 644 | 0.2+ | 0.2+ | |
| 1973 09 30 | 675 | 0.1− | 0.2− | 2006 10 11 | 644 | 0.1− | 0.4+ | 2006 10 21 | 644 | 0.1− | 0.1− | |
| 1973 10 04 | 675 | 1.0+ | 1.1− | 2006 10 11 | 644 | 0.2− | 0.2+ | 2006 10 21 | 644 | 0.1+ | 0.5+ | |
| 1973 10 04 | 675 | 1.5+ | 0.2+ | 2006 10 11 | 644 | 0.1− | 0.2+ | 2006 10 27 | G96 | 0.3− | 0.1− | |
| 1973 10 05 | 675 | 0.0 | 0.4− | 2006 10 12 | 691 | 0.1+ | 0.2+ | 2006 10 27 | G96 | 0.1+ | 0.0 | |
| 1973 10 05 | 675 | 0.9− | 2.0− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 10 27 | G96 | 0.0 | 0.2− | |
| 2001 04 24 | 608 | 0.4+ | 0.1+ | 2006 10 12 | 691 | 0.1+ | 0.1− | 2006 10 27 | G96 | 0.1− | 0.4− | |
| 2001 04 24 | 608 | 0.0 | 0.5− | 2006 10 13 | 734 | 0.1+ | 0.1− | 2006 11 09 | 644 | 0.6− | 0.3− | |
| 2001 04 24 | 608 | 0.4+ | 0.0 | 2006 10 13 | 734 | 0.2− | 0.4+ | 2006 11 09 | 644 | 0.0 | 0.2− | |
| 2005 04 02 | G96 | 0.0 | 0.1− | 2006 10 13 | 734 | 0.0 | 0.4− | 2006 11 09 | 644 | 0.0 | 0.0 | |
| 2005 04 02 | G96 | 0.2+ | 0.3− | 2006 10 13 | 734 | 0.2+ | 0.0 | 2006 11 11 | 703 | 1.0− | 0.8+ | |
| 2005 04 02 | G96 | 0.2+ | 0.2− | 2006 10 13 | 734 | 0.2− | 0.5− | 2006 11 11 | 703 | 0.1− | 0.8− | |
| 2005 04 02 | G96 | 0.1− | 0.1− | 2006 10 13 | 734 | 1.0+ | 0.2− | 2006 11 11 | 703 | 0.7+ | 0.1− | |
| 2005 04 18 | 703 | 0.2+ | 0.5− | 2006 10 13 | 734 | 0.1− | 0.3− | 2006 11 11 | 703 | (2.6+ | 0.2+) | |
| 2005 04 18 | 703 | (0.7+ | 1.7−) | 2006 10 14 | 734 | 0.1+ | 0.1+ | 2006 11 13 | G96 | 0.1+ | 0.5− | |
| 2005 04 18 | 703 | 0.6− | 0.1− | 2006 10 14 | 734 | 0.3+ | 0.1− | 2006 11 13 | G96 | 0.2+ | 0.3− | |
| 2005 04 18 | 703 | 0.1+ | 0.5+ | 2006 10 14 | 734 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.3+ | 0.4− | |
| 2005 05 12 | G96 | 0.1+ | 0.1− | 2006 10 14 | 734 | 0.3− | 0.1+ | 2006 11 27 | 691 | 0.4+ | 0.1− | |
| 2005 05 12 | G96 | 0.1+ | 0.3+ | 2006 10 14 | 734 | 0.1+ | 0.3− | 2006 11 27 | 691 | 0.4+ | 0.1+ | |
| 2005 05 12 | G96 | 0.2+ | 0.1+ | 2006 10 14 | 734 | 0.2+ | 0.0 | 2006 11 27 | 691 | 0.4+ | 0.2+ | |
| 2005 05 12 | G96 | 0.0 | 0.1− | 2006 10 16 | 691 | 0.0 | 0.0 | | | | | |

### 3103 T-2 = 2006 QF$_{168}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 25.37481 | | (2000.0) | | +0.70146907 | +0.71181657 |
| $n$ | 0.17812600 | $\omega$ | 305.63515 | | −0.56053214 | +0.58175489 |
| $a$ | 3.1283680 | $\Omega$ | 9.17161 | | −0.44016458 | +0.39354597 |
| $e$ | 0.1505557 | $i$ | 12.85886 | | | |
| $P$ | 5.53 | $H$ | 14.6 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 1.2− | 0.4− | 2001 10 14 | 704 | (1.5− | 1.5+) | 2006 09 20 | 644 | 0.5− | 0.5+ | |
| 1973 09 19 | 675 | 0.8− | 0.8− | 2001 10 14 | 704 | (1.2− | 1.5+) | 2006 09 20 | 644 | 0.6− | 0.2+ | |
| 1973 09 20 | 675 | 0.1+ | 0.2− | 2001 11 12 | 704 | 0.1+ | 0.2− | 2006 09 21 | 699 | 0.7− | 1.0+ | |
| 1973 09 24 | 675 | 0.0 | 2.4− | 2001 11 12 | 704 | 0.0 | 0.2+ | 2006 09 21 | 699 | 0.4+ | 0.1+ | |
| 1973 09 24 | 675 | 1.9+ | 1.1− | 2001 11 12 | 704 | 0.2+ | 0.1+ | 2006 09 21 | 699 | (0.4− | 1.5+) | |
| 1973 09 25 | 675 | (1.5+ | 4.0−) | 2001 11 12 | 704 | 0.6− | 0.3+ | 2006 09 21 | 699 | 0.4− | 0.2− | |
| 1973 09 25 | 675 | (2.3+ | 3.5−) | 2001 11 12 | 704 | 0.1+ | 0.6+ | 2006 09 26 | 704 | 0.6− | 0.2+ | |
| 1973 09 29 | 675 | 1.3+ | 2.2− | 2004 02 17 | 704 | 0.3+ | 0.1+ | 2006 09 26 | 704 | 0.3− | 0.6+ | |
| 1973 09 29 | 675 | (2.3+ | 3.6−) | 2004 02 17 | 704 | 0.7+ | 0.8+ | 2006 09 26 | 704 | 0.2+ | 0.3− | |
| 1973 09 30 | 675 | (1.8+ | 2.7−) | 2004 02 17 | 704 | 0.4− | 0.2+ | 2006 09 30 | 703 | 0.4− | 0.3+ | |
| 1973 09 30 | 675 | (1.3+ | 3.0−) | 2006 08 30 | 699 | 0.1− | 0.3+ | 2006 09 30 | 703 | 0.7− | 0.8+ | |
| 1973 10 04 | 675 | 2.3+ | 2.3− | 2006 08 30 | 699 | 0.1− | 1.2+ | 2006 09 30 | 703 | 0.1− | 0.8− | |
| 1973 10 04 | 675 | 1.9+ | 1.6− | 2006 08 30 | 699 | (1.5+ | 1.9+) | 2006 09 30 | 703 | 0.5− | 0.7+ | |
| 1973 10 05 | 675 | (3.0+ | 2.3−) | 2006 09 12 | 704 | 0.3+ | 0.7+ | 2006 10 09 | 644 | 0.2− | 0.4+ | |
| 1973 10 05 | 675 | 2.5+ | 0.3+ | 2006 09 12 | 704 | 0.5− | 1.1+ | 2006 10 09 | 644 | 0.2− | 0.6+ | |
| 2001 10 14 | 704 | 0.2− | 0.9+ | 2006 09 12 | 704 | 0.9− | 0.7+ | 2006 10 09 | 644 | 0.9− | 0.3+ | |
| 2001 10 14 | 704 | 1.0− | 0.9+ | 2006 09 12 | 704 | 0.5+ | 0.8+ | | | | | |
| 2001 10 14 | 704 | 0.7− | 1.2+ | 2006 09 20 | 644 | 0.3− | 0.1+ | | | | | |

### 3367 T-2 = 2006 QV$_{25}$

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 10.11213 | | (2000.0) | | +0.96274102 | +0.26453135 |
| $n$ | 0.17929085 | $\omega$ | 197.71084 | | −0.23405030 | +0.91909440 |
| $a$ | 3.1148033 | $\Omega$ | 146.78667 | | −0.13546283 | +0.29204221 |
| $e$ | 0.1410295 | $i$ | 5.88372 | | | |
| $P$ | 5.50 | $H$ | 15.2 | $G$ 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.7− | 0.8− | 2006 08 16 | 644 | 0.3+ | 0.0 | 2006 09 19 | 704 | 1.0− | 0.8− | |
| 1973 09 19 | 675 | 1.1+ | 1.2− | 2006 08 18 | 691 | 0.3− | 0.6+ | 2006 09 19 | 704 | 0.4− | 0.5− | |
| 1973 09 20 | 675 | 0.4− | 1.3− | 2006 08 18 | 691 | 0.2− | 0.6+ | 2006 09 19 | 704 | 0.2+ | 0.5− | |
| 1973 09 24 | 675 | 0.8+ | 1.5− | 2006 08 18 | 691 | 0.2− | 0.8+ | 2006 09 19 | 704 | (2.6+ | 1.2+) | |
| 1973 09 24 | 675 | 0.2+ | 0.6− | 2006 08 22 | 644 | 0.2+ | 0.3+ | 2006 09 19 | 704 | 1.5+ | 0.2+ | |
| 1973 09 25 | 675 | 2.3+ | 1.4− | 2006 08 22 | 644 | 0.1− | 0.2+ | 2006 09 20 | 644 | 0.1− | 0.1+ | |
| 1973 09 25 | 675 | 2.3+ | 1.9− | 2006 08 22 | 644 | 0.1− | 0.3+ | 2006 09 20 | 644 | 0.0 | 0.2+ | |
| 1973 09 29 | 675 | 0.1− | 0.1+ | 2006 08 27 | 691 | 0.3− | 0.1− | 2006 09 20 | 644 | 0.2− | 0.4+ | |
| 1973 09 29 | 675 | 0.7− | 2.0+ | 2006 08 27 | 691 | 0.1− | 0.0 | 2006 09 22 | 704 | 0.9− | 1.0+ | |
| 1973 10 04 | 675 | 1.5− | 0.1+ | 2006 08 27 | 691 | 0.2− | 0.0 | 2006 09 22 | 704 | 0.2+ | 0.9+ | |
| 1973 10 04 | 675 | 1.2− | 0.2+ | 2006 08 28 | 704 | 0.6+ | 0.7− | 2006 09 22 | 704 | (0.4+ | 1.6+) | |
| 1998 03 05 | 691 | 0.2− | 0.1− | 2006 08 28 | 704 | 0.0 | 0.3− | 2006 09 25 | 699 | 0.4+ | 0.8+ | |
| 1998 03 05 | 691 | 0.0 | 0.0 | 2006 08 28 | 704 | 0.4− | 0.5+ | 2006 09 25 | 699 | 0.1+ | 0.1+ | |
| 1998 03 05 | 691 | 0.2− | 0.0 | 2006 08 28 | 704 | 1.1+ | 0.6− | 2006 09 25 | 699 | 0.6− | 0.5+ | |
| 2000 06 23 | 691 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.3+ | 0.7− | 2006 09 25 | 699 | 0.5+ | 0.5+ | |
| 2000 06 23 | 691 | 0.1− | 0.0 | 2006 09 12 | 703 | 0.5− | 0.3+ | 2006 09 26 | 704 | 0.1+ | 0.8+ | |
| 2000 06 23 | 691 | 0.1− | 0.1− | 2006 09 12 | 703 | 0.3− | 0.2− | 2006 09 26 | 704 | 0.4+ | 1.1+ | |
| 2000 08 01 | 704 | 0.2− | 1.0+ | 2006 09 12 | 703 | 0.3+ | 1.4− | 2006 09 26 | 704 | 0.0 | 0.0 | |
| 2000 08 01 | 704 | 0.2+ | 0.2− | 2006 09 16 | 704 | 0.3− | 0.9− | 2006 09 26 | 704 | 0.0 | 0.3+ | |
| 2000 08 01 | 704 | 0.5+ | 0.7− | 2006 09 16 | 704 | (0.0 | 1.6+) | 2006 09 26 | 704 | 0.7− | 0.2− | |
| 2000 08 01 | 704 | 0.9+ | 0.1− | 2006 09 16 | 704 | (1.7+ | 0.5−) | 2006 09 30 | 703 | 0.5− | 0.1+ | |
| 2001 11 20 | 608 | 0.3+ | 0.8+ | 2006 09 16 | 704 | 0.9− | 0.7+ | 2006 09 30 | 703 | 0.4− | 1.0+ | |
| 2001 11 20 | 608 | 0.5+ | 0.7− | 2006 09 16 | 704 | 0.2− | 0.2+ | 2006 09 30 | 703 | 0.7− | 0.4+ | |
| 2001 11 20 | 608 | 0.5+ | 0.8− | 2006 09 16 | 704 | 0.1− | 0.4− | 2006 10 03 | G96 | 0.3+ | 0.2− | |
| 2001 12 11 | 704 | 0.6− | 1.1+ | 2006 09 16 | 704 | 0.1+ | 0.3− | 2006 10 03 | G96 | 0.2+ | 0.2− | |
| 2001 12 11 | 704 | 0.2− | 1.4+ | 2006 09 16 | 704 | 0.3+ | 0.0 | 2006 10 03 | G96 | 0.1+ | 0.1− | |
| 2001 12 11 | 704 | (0.7+ | 1.7+) | 2006 09 16 | 704 | 1.1+ | 0.4+ | 2006 10 03 | G96 | 0.5+ | 0.0 | |
| 2001 12 11 | 704 | (0.1− | 2.0+) | 2006 09 16 | 704 | 0.5− | 1.4+ | 2006 10 16 | 703 | 0.3− | 0.4− | |
| 2003 01 30 | 644 | 0.1− | 0.7+ | 2006 09 16 | 704 | 0.2− | 1.3+ | 2006 10 16 | 703 | 0.7− | 1.0− | |
| 2003 01 30 | 644 | 0.4+ | 0.7+ | 2006 09 16 | 704 | 0.4− | 0.6+ | 2006 10 16 | 703 | 0.2− | 0.3+ | |
| 2003 01 30 | 644 | 0.3+ | 0.6+ | 2006 09 16 | 704 | 1.4− | 0.8+ | 2006 10 16 | 703 | 0.2− | 0.2− | |
| 2004 04 16 | 691 | 0.3+ | 0.4+ | 2006 09 18 | 703 | 0.7− | 0.4+ | 2006 10 20 | 644 | 0.3+ | 0.3+ | |
| 2004 04 16 | 691 | 0.4+ | 0.4+ | 2006 09 18 | 703 | 0.2− | 0.1− | 2006 10 20 | 644 | 0.4+ | 0.4+ | |
| 2004 04 16 | 691 | 0.5+ | 0.4+ | 2006 09 18 | 703 | 0.6+ | 0.3+ | 2006 10 20 | 644 | 0.2+ | 0.5+ | |
| 2004 04 21 | 691 | 0.0 | 0.5+ | 2006 09 18 | 703 | 0.1+ | 0.5− | 2006 10 23 | 644 | 0.5+ | 0.2+ | |
| 2004 04 21 | 691 | 0.1+ | 0.5+ | 2006 09 18 | 699 | 0.6+ | 0.4+ | 2006 10 23 | 644 | 0.2− | 0.2+ | |
| 2004 04 21 | 691 | 0.1+ | 0.8+ | 2006 09 18 | 699 | 0.4− | 0.0 | 2006 10 23 | 644 | 0.5+ | 0.3+ | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 08 16 | 644 | 0.4+ | 0.1+ | 2006 09 18 | 699 | 0.2+ | 0.4+ | | | | | | |
| 2006 08 16 | 644 | 0.1+ | 0.3+ | 2006 09 18 | 699 | 0.2+ | 0.1− | | | | | | |

**3418 T-2 = 2006 TP$_{61}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 93.35856 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.24101939 | $\omega$ | 247.56514 | | +0.13633306 | | +0.98993409 |
| $a$ | 2.5572198 | $\Omega$ | 30.34707 | | −0.87902382 | | +0.13856904 |
| $e$ | 0.1544221 | $i$ | 4.31310 | | −0.45687024 | | +0.02879428 |
| $P$ | 4.09 | $H$ | 16.0 | $G$ | 0.15 | $U$ | 0 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1973 09 19 | 675 | 0.5− | 0.0 | 2005 03 11 | G96 | 0.1− | 0.2+ | 2006 10 29 | 691 | 0.0 | 0.0 | | |
| 1973 09 19 | 675 | (0.1− | 2.9−) | 2005 03 11 | G96 | 0.2+ | 0.2− | 2006 11 09 | 644 | 0.0 | 0.4+ | | |
| 1973 09 20 | 675 | 0.5+ | 1.1+ | 2005 03 11 | G96 | 0.3− | 0.3+ | 2006 11 09 | 691 | 0.2− | 0.4+ | | |
| 1973 09 20 | 675 | 0.8− | 2.0− | 2005 03 11 | G96 | 0.2+ | 0.1+ | 2006 11 09 | 691 | 0.2− | 0.3+ | | |
| 1973 09 24 | 675 | 0.4+ | 0.6− | 2005 06 26 | 644 | 0.2+ | 0.6+ | 2006 11 09 | 644 | 0.1+ | 0.0 | | |
| 1973 09 24 | 675 | 0.4+ | 0.2− | 2005 06 26 | 644 | 0.1+ | 0.7+ | 2006 11 09 | 691 | 0.2− | 0.4+ | | |
| 1973 09 24 | 675 | 1.2+ | 1.3+ | 2005 06 26 | 644 | 0.5+ | 0.4− | 2006 11 09 | 644 | 0.0 | 0.2+ | | |
| 1973 09 24 | 675 | 1.4+ | 0.3+ | 2006 10 12 | 691 | 0.1− | 0.1+ | 2006 11 11 | 691 | 0.2+ | 0.0 | | |
| 1973 09 25 | 675 | 0.3− | 0.8− | 2006 10 12 | 691 | 0.0 | 0.0 | 2006 11 11 | 691 | 0.1− | 0.2+ | | |
| 1973 09 25 | 675 | 0.3+ | 1.0− | 2006 10 12 | 691 | 0.5+ | 0.3− | 2006 11 11 | 691 | 0.2− | 0.2+ | | |
| 1973 09 25 | 675 | 0.4− | 1.8− | 2006 10 17 | 104 | 0.8+ | 0.4− | 2006 11 13 | 691 | 0.1− | 0.4+ | | |
| 1973 09 25 | 675 | 0.1− | 0.9− | 2006 10 17 | 104 | 0.0 | 0.5+ | 2006 11 13 | 691 | 0.0 | 0.4+ | | |
| 1973 09 29 | 675 | 0.1+ | 1.8− | 2006 10 17 | 104 | 0.4+ | 0.0 | 2006 11 13 | 691 | 0.2− | 0.4+ | | |
| 1973 09 29 | 675 | 0.6+ | 1.0− | 2006 10 17 | 104 | 0.1− | 0.6+ | 2006 11 17 | 703 | 0.8+ | 0.4+ | | |
| 1973 09 30 | 675 | 0.9+ | 1.5− | 2006 10 17 | 104 | 0.5+ | 0.2+ | 2006 11 17 | 703 | 0.6+ | 0.1+ | | |
| 1973 09 30 | 675 | (0.7− | 3.5−) | 2006 10 17 | 104 | 0.3− | 0.5+ | 2006 11 17 | 703 | 1.3− | 0.9+ | | |
| 1973 10 04 | 675 | 2.0+ | 2.4− | 2006 10 20 | 691 | 0.2− | 0.1+ | 2006 11 17 | 703 | (2.6− | 2.2+) | | |
| 1973 10 04 | 675 | (4.5+ | 3.6−) | 2006 10 20 | 691 | 0.4− | 0.0 | 2006 11 21 | 704 | 0.1+ | 0.3− | | |
| 1973 10 05 | 675 | (0.2− | 3.0−) | 2006 10 20 | 691 | 0.2− | 0.0 | 2006 11 21 | 704 | 0.3− | 1.0− | | |
| 1973 10 05 | 675 | 1.0+ | 1.7− | 2006 10 21 | 644 | 0.1− | 0.5+ | 2006 11 21 | 704 | 0.0 | 0.7− | | |
| 2004 02 17 | 645 | 0.0 | 0.2− | 2006 10 21 | 644 | 0.6+ | 0.2+ | 2006 11 21 | 704 | 1.4− | 0.7− | | |
| 2004 02 17 | 645 | 0.1− | 0.2− | 2006 10 21 | 644 | 0.1+ | 0.3+ | 2006 11 22 | 691 | 0.2− | 0.1− | | |
| 2005 02 11 | 809 | 0.4− | 0.2+ | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.0 | 0.3+ | | |
| 2005 02 11 | 809 | 0.2− | 0.3+ | 2006 10 29 | 691 | 0.1+ | 0.1− | 2006 11 22 | 691 | 0.2− | 0.1+ | | |

**1366 T-3 = 2006 RP$_{9}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 344.64691 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.16920297 | $\omega$ | 24.11300 | | +0.96852994 | | −0.24677758 |
| $a$ | 3.2374077 | $\Omega$ | 350.00912 | | +0.18699600 | | +0.80740249 |
| $e$ | 0.1227583 | $i$ | 10.76760 | | +0.16426275 | | +0.53591234 |
| $P$ | 5.83 | $H$ | 15.4 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 2.1− | 1.6+ | 2006 09 03 | 152 | (2.0+ | 0.0 ) | 2006 09 25 | 699 | 0.1− | 0.7+ | | |
| 1977 10 11 | 675 | 0.5+ | 0.1− | 2006 09 13 | 644 | 0.5− | 0.1− | 2006 09 25 | 699 | (0.5+ | 3.0+) | | |
| 1977 10 11 | 675 | 0.9− | 2.3+ | 2006 09 13 | 644 | 0.7− | 0.1− | 2006 09 25 | 699 | 0.7+ | 0.7− | | |
| 1977 10 11 | 675 | 0.5+ | 1.4+ | 2006 09 13 | 644 | 0.1− | 0.2+ | 2006 09 25 | 699 | 1.3− | 0.4+ | | |
| 1977 10 12 | 675 | 0.9− | 0.8− | 2006 09 14 | 644 | 0.2− | 0.2+ | 2006 10 01 | 703 | 0.8− | 0.0 | | |
| 1977 10 12 | 675 | 0.1− | 0.6+ | 2006 09 14 | 644 | 0.5− | 0.2− | 2006 10 01 | 703 | 0.1− | 0.3+ | | |
| 1977 10 16 | 675 | (10.0− | 8.0+) | 2006 09 14 | 644 | 0.2− | 0.2− | 2006 10 01 | 703 | 1.0− | 0.6− | | |
| 1977 10 16 | 675 | 0.7+ | 1.3− | 2006 09 15 | 691 | 0.1+ | 0.2+ | 2006 10 01 | 703 | 0.2+ | 1.3+ | | |
| 1977 10 16 | 675 | (2.5− | 0.3−) | 2006 09 15 | 691 | 0.2+ | 0.1+ | 2006 10 16 | 703 | 1.3+ | 1.2− | | |
| 1977 10 16 | 675 | 0.6+ | 2.2− | 2006 09 15 | 691 | 0.2+ | 0.0 | 2006 10 16 | 703 | 0.6− | 0.0 | | |
| 1977 10 17 | 675 | 0.4− | 0.1+ | 2006 09 17 | 704 | (1.6+ | 0.7−) | 2006 10 16 | 703 | 0.2+ | 0.2− | | |
| 1977 10 17 | 675 | 1.6+ | 1.7− | 2006 09 17 | 704 | 0.3+ | 0.6− | 2006 10 16 | 703 | (1.8− | 0.2−) | | |
| 1977 10 17 | 675 | 0.7− | 0.7− | 2006 09 17 | 704 | 0.4− | 1.1− | 2006 10 20 | G96 | 0.2+ | 0.0 | | |
| 1977 10 17 | 675 | 1.5+ | 0.2+ | 2006 09 17 | 704 | 1.2+ | 0.7+ | 2006 10 20 | G96 | 0.4− | 0.1+ | | |
| 2006 08 28 | 703 | 0.9+ | 0.4+ | 2006 09 19 | 699 | 0.8− | 0.8+ | 2006 10 20 | G96 | 0.2− | 0.1− | | |
| 2006 08 28 | 703 | 0.7+ | 0.6− | 2006 09 19 | 699 | 0.5+ | 0.4+ | 2006 10 20 | G96 | 0.2− | 0.1+ | | |
| 2006 08 28 | 703 | 0.6− | 0.8+ | 2006 09 19 | 699 | 0.4+ | 1.0− | 2006 11 14 | G96 | 0.0 | 0.3+ | | |
| 2006 08 28 | 703 | 0.9+ | 0.3− | 2006 09 19 | 699 | (0.8− | 1.6−) | 2006 11 14 | G96 | 0.7− | 0.2− | | |
| 2006 09 03 | 152 | (1.9+ | 0.6+) | 2006 09 20 | 704 | 0.0 | 0.0 | 2006 11 14 | G96 | 0.7− | 0.2+ | | |
| 2006 09 03 | 152 | 0.4− | 0.4− | 2006 09 20 | 704 | 0.6− | 1.1− | 2006 11 14 | G96 | 0.3− | 0.6+ | | |
| 2006 09 03 | 152 | 0.8+ | 0.7− | 2006 09 20 | 704 | 0.1+ | 0.4+ | | | | | | |
| 2006 09 03 | 152 | (1.1+ | 2.3−) | 2006 09 20 | 704 | 1.0+ | 1.2+ | | | | | | |

**2145 T-3 = 2005 QO$_{179}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 82.40827 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.28073628 | $\omega$ | 143.63622 | | +0.90673428 | | −0.41995973 |
| $a$ | 2.3099559 | $\Omega$ | 241.23838 | | +0.37587010 | | +0.84602246 |
| $e$ | 0.1775748 | $i$ | 2.50395 | | +0.19119260 | | +0.32845064 |
| $P$ | 3.51 | $H$ | 17.7 | $G$ | 0.15 | $U$ | 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | 0.1− | 0.8− | 2005 08 26 | 699 | 0.6+ | 0.8+ | 2005 09 23 | 703 | 1.0− | 0.9− | | |
| 1977 10 11 | 675 | 0.3− | 2.1− | 2005 08 26 | 699 | 0.5+ | 0.3+ | 2005 10 01 | 703 | 1.0− | 0.0 | | |
| 1977 10 11 | 675 | 0.7+ | 0.6+ | 2005 08 31 | 691 | 0.1− | 0.1− | 2005 10 01 | 703 | 0.9+ | 0.3− | | |
| 1977 10 12 | 675 | 0.2+ | 1.7+ | 2005 08 31 | 691 | 0.1+ | 0.0 | 2005 10 01 | 703 | 0.5− | 1.9− | | |
| 1977 10 12 | 675 | 0.5− | 0.9+ | 2005 08 31 | 691 | 0.3− | 0.1+ | 2005 10 01 | 703 | 0.7− | 0.2− | | |
| 1977 10 16 | 675 | 1.2+ | 0.8− | 2005 09 09 | 704 | 0.1+ | 0.8+ | 2005 10 30 | G96 | 0.2− | 0.0 | | |
| 1977 10 16 | 675 | 0.2− | 1.2− | 2005 09 09 | 704 | 0.4− | 0.1− | 2005 10 30 | G96 | 0.2− | 0.0 | | |
| 1977 10 17 | 675 | 1.0− | 0.2+ | 2005 09 09 | 704 | 0.8+ | 0.4− | 2005 10 30 | G96 | 0.3− | 0.0 | | |
| 1977 10 17 | 675 | 0.2− | 0.4+ | 2005 09 09 | 704 | 0.4+ | 1.3+ | 2005 10 30 | G96 | 0.2+ | 0.0 | | |
| 1977 10 21 | 675 | 0.2+ | 0.1+ | 2005 09 09 | 704 | 0.6− | 0.4− | 2005 12 04 | G96 | 0.2− | 1.0+ | | |
| 1977 10 21 | 675 | 0.3+ | 0.6+ | 2005 09 23 | 703 | 0.0 | 0.4+ | 2005 12 04 | G96 | 0.0 | 0.3+ | | |
| 2005 08 26 | 699 | 0.5+ | 0.1+ | 2005 09 23 | 703 | 0.0 | 0.6− | 2005 12 04 | G96 | 0.7+ | 0.4+ | | |
| 2005 08 26 | 699 | 1.0+ | 0.7+ | 2005 09 23 | 703 | 0.5+ | 0.0 | 2005 12 04 | G96 | 0.2− | 0.1+ | | |

**3488 T-3 = 2005 JZ$_{9}$ = 2006 RF$_{60}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $M$ | 13.14406 | | (2000.0) | | **P** | | **Q** |
| $n$ | 0.27209029 | $\omega$ | 140.99712 | | +0.99379066 | | +0.11113546 |
| $a$ | 2.3586347 | $\Omega$ | 212.62331 | | −0.10442384 | | +0.91486074 |
| $e$ | 0.2008165 | $i$ | 0.57276 | | −0.03841607 | | +0.38817360 |
| $P$ | 3.62 | $H$ | 17.9 | $G$ | 0.15 | $U$ | 1 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | (3.4+ | 0.9−) | 2006 08 30 | 699 | (1.7+ | 0.2−) | 2006 10 19 | 644 | 0.1+ | 0.2− | | |
| 1977 10 11 | 675 | (3.3+ | 1.6+) | 2006 08 30 | 699 | 0.9+ | 0.6+ | 2006 10 19 | 644 | 0.1− | 0.4− | | |
| 1977 10 11 | 675 | 0.7+ | 0.3− | 2006 09 15 | 691 | 0.2+ | 0.3+ | 2006 10 19 | 644 | 0.1− | 0.1− | | |
| 1977 10 12 | 675 | 2.1+ | 0.8+ | 2006 09 15 | 691 | 0.1+ | 0.0 | 2006 10 21 | 703 | 0.2− | 0.6− | | |
| 1977 10 12 | 675 | (4.2+ | 0.4+) | 2006 09 15 | 691 | 0.1− | 0.1+ | 2006 10 21 | 703 | 0.2+ | 0.8− | | |
| 1977 10 16 | 675 | 0.5+ | 0.2+ | 2006 09 18 | 699 | 1.1+ | 0.6− | 2006 10 21 | 703 | 0.8− | 0.5+ | | |
| 1977 10 16 | 675 | 1.1+ | 0.8− | 2006 09 18 | 699 | 1.1+ | 0.3+ | 2006 10 21 | 703 | 0.3− | 0.2+ | | |
| 1977 10 17 | 675 | 0.5− | 1.0− | 2006 09 18 | 699 | 0.7+ | 0.5+ | 2006 10 21 | 644 | 0.1+ | 0.2+ | | |
| 1977 10 17 | 675 | 1.7− | 1.5− | 2006 09 18 | 699 | 0.7+ | 1.1+ | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 1977 10 21 | 675 | 0.1+ | 0.2+ | 2006 09 28 | 699 | 0.1+ | 0.9− | 2006 10 21 | 644 | 0.1− | 0.2+ | | |
| 1977 10 21 | 675 | 0.7− | 1.2+ | 2006 09 28 | 699 | 0.0 | 0.5− | 2006 10 27 | 691 | 0.3− | 0.5+ | | |
| 1995 09 17 | 691 | 1.0− | 0.2+ | 2006 09 28 | 699 | 0.2+ | 0.3+ | 2006 10 27 | 691 | 0.1− | 0.3+ | | |
| 1995 09 17 | 691 | 0.0 | 0.4− | 2006 09 28 | 699 | 0.1+ | 0.4− | 2006 10 27 | 691 | 0.1+ | 0.1+ | | |
| 1995 09 17 | 691 | 0.1− | 0.5− | 2006 09 30 | 691 | 0.3− | 0.2+ | 2006 10 27 | G96 | 0.0 | 0.4− | | |
| 1995 09 20 | 809 | 1.3+ | 0.0 | 2006 09 30 | 691 | 0.3− | 0.1+ | 2006 10 27 | G96 | 0.1+ | 0.5− | | |
| 1995 09 22 | 809 | 1.4+ | 0.3− | 2006 09 30 | 691 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.3− | 0.3− | | |
| 1999 12 05 | 691 | 0.1+ | 0.1+ | 2006 10 16 | 701 | 0.2− | 0.2− | 2006 10 27 | G96 | 0.2+ | 0.4− | | |
| 1999 12 05 | 691 | 0.0 | 0.3− | 2006 10 16 | 701 | 0.1+ | 0.2− | 2006 10 28 | 691 | 0.2− | 0.2+ | | |
| 1999 12 05 | 691 | 0.1− | 0.5− | 2006 10 16 | 701 | 0.1+ | 0.3− | 2006 10 28 | 691 | 0.3− | 0.0 | | |
| 2004 01 16 | 691 | 0.0 | 0.1+ | 2006 10 16 | 701 | 0.8+ | 0.0 | 2006 10 28 | 691 | 0.2− | 0.1+ | | |
| 2004 01 16 | 691 | 0.1− | 0.1− | 2006 10 16 | 701 | 0.3+ | 0.2− | 2006 10 31 | 691 | 0.0 | 0.4+ | | |
| 2004 01 16 | 691 | 0.1− | 0.3+ | 2006 10 16 | 701 | 0.3+ | 0.1+ | 2006 10 31 | 691 | 0.0 | 0.3+ | | |
| 2004 01 27 | 691 | 0.0 | 0.1+ | 2006 10 16 | 701 | 0.2+ | 0.3− | 2006 10 31 | 691 | 0.1+ | 0.3+ | | |
| 2004 01 27 | 691 | 0.1− | 0.1+ | 2006 10 16 | 701 | 0.0 | 0.1− | 2006 11 01 | 691 | 0.0 | 0.2+ | | |
| 2004 01 27 | 691 | 0.2+ | 0.1− | 2006 10 19 | 701 | (1.6+ | 0.2+) | 2006 11 01 | 691 | 0.2+ | 0.0 | | |
| 2005 05 04 | 568 | 0.8+ | 0.9+ | 2006 10 19 | 701 | 0.6− | 0.1− | 2006 11 01 | 691 | 0.1− | 0.1+ | | |
| 2005 05 04 | 568 | 0.6+ | 0.8+ | 2006 10 19 | 701 | 0.8− | 0.1− | 2006 11 11 | G96 | 0.0 | 0.7− | | |
| 2005 05 04 | 568 | 0.6+ | 0.9+ | 2006 10 19 | 701 | 0.2+ | 0.8+ | 2006 11 11 | G96 | 0.2− | 0.5− | | |
| 2005 05 05 | 568 | 0.5+ | 0.5+ | 2006 10 19 | 701 | 0.1+ | 0.0 | 2006 11 11 | G96 | 0.0 | 0.7− | | |
| 2006 08 30 | 699 | 1.0+ | 0.2− | 2006 10 19 | 701 | 0.4− | 0.1+ | 2006 11 11 | G96 | 0.2− | 0.9− | | |
| 2006 08 30 | 699 | 0.3+ | 1.1+ | 2006 10 19 | 701 | 0.1+ | 0.2− | | | | | | |

**3494 T-3 = 2006 OQ$_4$ = 2006 UK$_{208}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 27.20533 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27272091 | | $\omega$ | 209.16860 | | +0.94308050 | | +0.33245186 | | | |
| $a$ | 2.3549974 | | $\Omega$ | 131.41109 | | −0.30284072 | | +0.86925540 | | | |
| $e$ | 0.2332365 | | $i$ | 0.66132 | | −0.13742878 | | +0.36588361 | | | |
| $P$ | 3.61 | | $H$ | 17.4 | $G$ | 0.15 | | $U$ 1 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.1− | 1.1+ | 2006 07 22 | G96 | 0.2− | 0.1+ | 2006 10 27 | G96 | 0.0 | 0.3− | | | | | |
| 1977 10 11 | 675 | 1.4+ | 0.9− | 2006 07 22 | G96 | 0.1− | 0.2+ | 2006 10 31 | 691 | 0.1− | 0.6+ | | | | | |
| 1977 10 12 | 675 | 1.5+ | 0.3+ | 2006 07 22 | G96 | 0.6+ | 0.2+ | 2006 10 31 | 691 | 0.3+ | 0.1+ | | | | | |
| 1977 10 12 | 675 | 0.5+ | 0.5+ | 2006 10 04 | G96 | 0.1+ | 0.1− | 2006 10 31 | 691 | 0.2+ | 0.4+ | | | | | |
| 1977 10 16 | 675 | (0.6+ | 2.9+) | 2006 10 04 | G96 | 0.2− | 0.0 | 2006 11 11 | 703 | 0.2− | 0.3− | | | | | |
| 1977 10 16 | 675 | 1.4− | 1.5− | 2006 10 04 | G96 | 0.6+ | 0.4− | 2006 11 11 | G96 | 0.4+ | 0.1− | | | | | |
| 1977 10 17 | 675 | 1.5− | 2.2− | 2006 10 04 | G96 | 0.1+ | 0.0 | 2006 11 11 | 703 | (0.0 | 1.7+) | | | | | |
| 1977 10 17 | 675 | 0.6+ | 0.2− | 2006 10 15 | 691 | 0.2− | 0.1− | 2006 11 11 | G96 | 0.1− | 0.2− | | | | | |
| 1999 12 27 | 691 | 0.1+ | 0.2− | 2006 10 15 | 691 | 0.1+ | 0.1− | 2006 11 11 | G96 | 0.3+ | 0.2− | | | | | |
| 1999 12 27 | 691 | 0.0 | 0.3− | 2006 10 15 | 691 | 0.1+ | 0.2+ | 2006 11 11 | G96 | 0.0 | 0.0 | | | | | |
| 1999 12 27 | 691 | 0.0 | 0.4− | 2006 10 21 | 644 | 0.1− | 0.3+ | 2006 11 11 | 703 | 0.3− | 0.3− | | | | | |
| 2002 06 29 | 644 | 0.1− | 0.1+ | 2006 10 21 | 644 | 0.6− | 0.1− | 2006 11 11 | 703 | 0.0 | 0.4+ | | | | | |
| 2002 06 29 | 644 | 0.1+ | 0.2+ | 2006 10 21 | 644 | 0.0 | 0.2+ | 2006 11 13 | G96 | 0.1+ | 0.6− | | | | | |
| 2002 06 29 | 644 | 0.2− | 0.3+ | 2006 10 23 | 691 | 0.5− | 0.1− | 2006 11 13 | G96 | 0.1+ | 0.4− | | | | | |
| 2002 07 14 | 644 | 0.2+ | 0.8− | 2006 10 23 | 691 | 0.6− | 0.0 | 2006 11 13 | G96 | 0.2− | 0.3− | | | | | |
| 2002 07 14 | 644 | 0.2+ | 0.3− | 2006 10 23 | 691 | 1.0+ | 0.4+ | 2006 11 13 | G96 | 0.2− | 0.1+ | | | | | |
| 2002 07 14 | 644 | 0.1+ | 1.0− | 2006 10 27 | 691 | 0.3− | 0.2+ | 2006 11 22 | G96 | 0.2+ | 0.2− | | | | | |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.2+ | 0.1− | 2006 11 22 | G96 | 0.2− | 0.2− | | | | | |
| 2006 07 21 | G96 | 0.1+ | 0.0 | 2006 10 27 | 691 | 0.0 | 0.4+ | 2006 11 22 | G96 | 0.1− | 0.2− | | | | | |
| 2006 07 21 | G96 | 0.2− | 0.0 | 2006 10 27 | G96 | 0.0 | 0.1− | 2006 11 22 | G96 | 0.5− | 0.6− | | | | | |
| 2006 07 21 | G96 | 0.3− | 0.1+ | 2006 10 27 | 691 | 0.2− | 0.1− | | | | | | | | | |
| 2006 07 22 | G96 | 0.2+ | 0.3− | 2006 10 27 | G96 | 0.3− | 0.2− | | | | | | | | | |

**3807 T-3 = 2006 VL$_{62}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 355.45627 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27412728 | | $\omega$ | 353.35139 | | +0.66883553 | | −0.74204888 | | | |
| $a$ | 2.3469358 | | $\Omega$ | 54.66028 | | +0.68457959 | | +0.59119251 | | | |
| $e$ | 0.1203950 | | $i$ | 3.16035 | | +0.28984448 | | +0.31599822 | | | |
| $P$ | 3.60 | | $H$ | 16.7 | $G$ | 0.15 | | $U$ 5 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 07 | 675 | 0.4+ | 0.3− | 2006 11 15 | 691 | 0.1− | 0.5+ | 2006 11 20 | 704 | 0.4+ | 0.5− | | | | | |
| 1977 10 11 | 675 | 1.2− | 0.8+ | 2006 11 15 | 691 | 0.1+ | 0.0 | 2006 11 20 | 704 | 1.4− | 0.7+ | | | | | |
| 1977 10 11 | 675 | (2.6− | 2.6+) | 2006 11 16 | 704 | 0.4+ | 0.5+ | 2006 11 23 | 691 | 0.1+ | 0.0 | | | | | |
| 1977 10 12 | 675 | 0.2+ | 0.4− | 2006 11 16 | 704 | 0.1− | 0.1− | 2006 11 23 | 691 | 0.2+ | 0.0 | | | | | |
| 1977 10 12 | 675 | 1.0+ | 1.6− | 2006 11 16 | 704 | 0.7− | 0.0 | 2006 11 23 | 691 | 0.2+ | 0.0 | | | | | |
| 1977 10 16 | 675 | 1.2+ | 1.8+ | 2006 11 16 | 704 | 1.1− | 0.5− | 2006 11 27 | 691 | 0.1+ | 0.1− | | | | | |
| 1977 10 16 | 675 | 0.0 | 0.5+ | 2006 11 16 | 704 | 0.5− | 0.2+ | 2006 11 27 | 703 | 0.2+ | 0.1+ | | | | | |
| 1977 10 17 | 675 | 0.5− | 1.1− | 2006 11 16 | 704 | 0.5− | 0.5+ | 2006 11 27 | 703 | 0.7− | 0.1+ | | | | | |
| 1977 10 17 | 675 | 0.8− | 0.2− | 2006 11 16 | 704 | 0.4− | 0.1+ | 2006 11 27 | 691 | 0.0 | 0.2− | | | | | |
| 1977 10 21 | 675 | (3.5+ | 0.6+) | 2006 11 16 | 704 | 0.0 | 0.4+ | 2006 11 27 | 703 | 0.1+ | 0.4+ | | | | | |
| 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.1− | 0.1− | 2006 11 27 | 691 | 0.1+ | 0.1− | | | | | |
| 2006 11 11 | 691 | 0.1+ | 0.2+ | 2006 11 17 | 644 | 0.0 | 0.0 | 2006 11 27 | 703 | 1.1− | 0.6− | | | | | |
| 2006 11 11 | 691 | 0.0 | 0.0 | 2006 11 17 | 644 | 0.3− | 0.0 | 2006 12 01 | 691 | 0.2− | 0.6− | | | | | |
| 2006 11 11 | G96 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.0 | 0.1+ | 2006 12 01 | 691 | 0.0 | 0.2− | | | | | |
| 2006 11 11 | G96 | 0.3− | 0.6− | 2006 11 19 | 691 | 0.2+ | 0.1+ | 2006 12 01 | 704 | 1.4+ | 0.1+ | | | | | |
| 2006 11 11 | G96 | 0.0 | 0.3− | 2006 11 19 | 691 | 0.1− | 0.0 | 2006 12 01 | 691 | 0.2+ | 0.3− | | | | | |
| 2006 11 11 | G96 | 0.0 | 0.4− | 2006 11 19 | 704 | 1.4− | 0.6− | 2006 12 01 | 704 | 0.2− | 0.2+ | | | | | |
| 2006 11 15 | 703 | 0.3− | 0.8+ | 2006 11 19 | 704 | 1.4− | 0.3+ | 2006 12 01 | 704 | 1.5+ | 0.2+ | | | | | |
| 2006 11 15 | 703 | (1.5− | 2.7+) | 2006 11 19 | 704 | 0.8− | 0.8+ | 2006 12 01 | 704 | 1.0+ | 0.1− | | | | | |
| 2006 11 15 | 703 | (0.7+ | 4.4+) | 2006 11 20 | 704 | 0.9+ | 1.1+ | 2006 12 01 | 704 | 1.1+ | 0.1+ | | | | | |
| 2006 11 15 | 691 | 0.2+ | 0.0 | 2006 11 20 | 704 | 0.4+ | 0.3− | | | | | | | | | |
| 2006 11 15 | 703 | 0.0 | 0.4+ | 2006 11 20 | 704 | 0.2+ | 0.2+ | | | | | | | | | |

**4150 T-3 = 2006 SA$_{55}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 352.49358 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.27184811 | | $\omega$ | 342.43435 | | +0.93472852 | | −0.34648555 | | | |
| $a$ | 2.3600353 | | $\Omega$ | 38.13342 | | +0.33945739 | | +0.80487927 | | | |
| $e$ | 0.2284577 | | $i$ | 7.34405 | | +0.10512505 | | +0.48178536 | | | |
| $P$ | 3.63 | | $H$ | 17.7 | $G$ | 0.15 | | $U$ 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.6+ | 0.4− | 2006 09 25 | 699 | 0.1+ | 0.6− | 2006 10 02 | G96 | 0.2− | 0.1− | | | | | |
| 1977 10 11 | 675 | 1.1+ | 1.4− | 2006 09 25 | 699 | 1.3+ | 0.6− | 2006 10 02 | G96 | 0.2+ | 0.1− | | | | | |
| 1977 10 12 | 675 | (1.4+ | 2.8−) | 2006 09 29 | 699 | 0.6− | 1.1+ | 2006 10 03 | G96 | 0.1+ | 0.3− | | | | | |
| 1977 10 12 | 675 | 0.6− | 0.8− | 2006 09 29 | 699 | 1.0+ | 1.2+ | 2006 10 03 | G96 | 0.0 | 0.4− | | | | | |
| 1977 10 16 | 675 | 0.4− | 0.1+ | 2006 09 29 | 699 | 0.9+ | 0.6+ | 2006 10 03 | G96 | 0.2− | 0.4− | | | | | |
| 1977 10 16 | 675 | 1.3+ | 0.6− | 2006 09 29 | 699 | 0.2+ | 0.8+ | 2006 10 03 | G96 | 0.2− | 0.1− | | | | | |
| 1977 10 17 | 675 | 1.6+ | 0.3− | 2006 10 01 | 704 | 0.1+ | 1.2+ | 2006 10 16 | 703 | 0.5− | 0.4− | | | | | |
| 1977 10 17 | 675 | 0.7− | 1.7− | 2006 10 01 | 704 | 1.0− | 0.5+ | 2006 10 16 | 703 | 0.0 | 0.2− | | | | | |
| 1977 10 21 | 675 | (2.2+ | 3.3−) | 2006 10 01 | 704 | 0.7− | 0.8+ | 2006 10 16 | 703 | 0.4+ | 0.1− | | | | | |
| 1977 10 21 | 675 | (1.3+ | 4.7−) | 2006 10 01 | 704 | 0.2− | 0.3+ | 2006 10 16 | 703 | 0.1− | 0.1+ | | | | | |
| 2006 09 18 | 703 | 0.3+ | 0.4+ | 2006 10 01 | 704 | 0.0 | 0.7+ | 2006 10 22 | 703 | 0.2+ | 1.0+ | | | | | |
| 2006 09 18 | 703 | 1.1+ | 0.7+ | 2006 10 02 | 691 | 0.0 | 0.1− | 2006 10 22 | 703 | 1.3− | 0.5+ | | | | | |
| 2006 09 18 | 703 | (0.3+ | 2.0−) | 2006 10 02 | 691 | 0.2− | 0.0 | 2006 10 22 | 703 | 0.1− | 0.9+ | | | | | |
| 2006 09 18 | 703 | 0.1+ | 1.1− | 2006 10 02 | 691 | 0.2− | 0.1+ | 2006 10 22 | 703 | 0.5− | 0.0 | | | | | |
| 2006 09 21 | 699 | 0.0 | 0.1− | 2006 10 02 | G96 | 0.3− | 0.3− | 2006 11 14 | G96 | 0.2− | 0.3+ | | | | | |
| 2006 09 21 | 699 | 0.4+ | 0.2+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.4− | 0.0 | | | | | |
| 2006 09 21 | 699 | 0.1− | 0.6+ | 2006 10 02 | G96 | 0.1− | 0.3− | 2006 11 14 | G96 | 0.4+ | 0.7+ | | | | | |
| 2006 09 21 | 699 | 0.1− | 0.1− | 2006 10 02 | G96 | 0.1+ | 0.3− | 2006 11 14 | G96 | 0.0 | 0.0 | | | | | |
| 2006 09 25 | 699 | 0.5− | 0.4− | 2006 10 02 | G96 | 0.0 | 0.2− | | | | | | | | | |
| 2006 09 25 | 699 | 0.4− | 1.4− | 2006 10 02 | G96 | 0.0 | 0.2+ | | | | | | | | | |

**4192 T-3 = 2006 HF$_{152}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 311.65274 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.23075727 | | $\omega$ | 288.35271 | | +0.87935973 | | +0.45790476 | | | |
| $a$ | 2.6324843 | | $\Omega$ | 44.64338 | | −0.33563770 | | +0.79060100 | | | |
| $e$ | 0.2109224 | | $i$ | 10.70897 | | −0.33774814 | | +0.40653818 | | | |
| $P$ | 4.27 | | $H$ | 16.4 | $G$ | 0.15 | | $U$ 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 1.3+ | 0.6+ | 2006 04 19 | G96 | 0.3− | 0.0 | 2006 05 04 | 691 | 0.2+ | 0.1− | | | | | |
| 1977 10 11 | 675 | 0.6− | 0.4+ | 2006 04 26 | 691 | 0.1− | 0.2− | 2006 05 04 | 691 | 0.1+ | 0.2− | | | | | |
| 1977 10 12 | 675 | 0.8− | 1.4− | 2006 04 26 | 691 | 0.2+ | 0.1+ | 2006 05 04 | 691 | 0.1− | 0.2− | | | | | |
| 1977 10 12 | 675 | 0.7− | 0.2− | 2006 04 26 | 691 | 0.1+ | 0.4+ | 2006 05 20 | 691 | 0.1+ | 0.0 | | | | | |
| 1977 10 16 | 675 | 0.7− | 0.3+ | 2006 04 26 | 691 | 0.1+ | 0.2+ | 2006 05 20 | 691 | 0.0 | 0.0 | | | | | |
| 1977 10 16 | 675 | 0.7− | 0.4+ | 2006 04 26 | 691 | 0.2− | 0.1+ | 2006 05 20 | 691 | 0.4+ | 0.2− | | | | | |
| 1977 10 17 | 675 | 1.7+ | 0.1+ | 2006 04 26 | 691 | 0.5− | 0.1+ | 2006 06 02 | 691 | 0.0 | 0.0 | | | | | |
| 1977 10 17 | 675 | 0.4− | 1.8− | 2006 04 30 | 691 | 0.1+ | 0.1− | 2006 06 02 | 691 | 0.1+ | 0.0 | | | | | |
| 1977 10 21 | 675 | 0.6+ | 1.1+ | 2006 04 30 | 691 | 0.2+ | 0.1− | 2006 06 02 | 691 | 0.1− | 0.1+ | | | | | |
| 1977 10 21 | 675 | 0.3+ | 0.4+ | 2006 04 30 | 691 | (1.8− | 3.8−) | 2006 06 02 | G96 | 0.4+ | 1.0+ | | | | | |
| 2006 04 19 | G96 | 0.8− | 0.0 | 2006 05 04 | 691 | 0.3− | 0.1+ | 2006 06 02 | G96 | 0.6− | 0.7− | | | | | |
| 2006 04 19 | G96 | 0.1− | 0.2+ | 2006 05 04 | 691 | 0.2+ | 0.3+ | 2006 06 02 | G96 | 0.1+ | 0.0 | | | | | |
| 2006 04 19 | G96 | 0.6+ | 0.3+ | 2006 05 04 | 691 | 0.0 | 0.4− | 2006 06 02 | G96 | 0.8− | 0.1+ | | | | | |

**5020 T-3 = 2005 QJ$_{180}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $M$ | 48.62227 | | | (2000.0) | | **P** | | **Q** | | | |
| $n$ | 0.17564423 | | $\omega$ | 255.40082 | | +0.90130766 | | −0.41692876 | | | |
| $a$ | 3.1577673 | | $\Omega$ | 129.09786 | | +0.43229429 | | +0.84838438 | | | |
| $e$ | 0.1971946 | | $i$ | 8.71105 | | +0.02767940 | | +0.32621213 | | | |
| $P$ | 5.61 | | $H$ | 15.3 | $G$ | 0.15 | | $U$ 3 | | | |

Residuals in seconds of arc

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.7+ | 0.0 | 2000 11 27 | 704 | (0.4− | 2.1+) | 2005 09 13 | 703 | 0.5− | 0.1− | | | | | |
| 1977 10 11 | 675 | 0.6+ | 1.9− | 2005 08 27 | 699 | 0.9+ | 0.0 | 2005 09 13 | 703 | 0.3− | 0.3+ | | | | | |
| 1977 10 12 | 675 | 0.1+ | 2.4− | 2005 08 27 | 699 | 0.5− | 1.2+ | 2005 09 13 | 703 | 0.4+ | 0.1+ | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 12 | 675 | 0.6+ | 1.2− | 2005 08 27 | 699 | 0.2− | 0.6+ | 2005 09 28 | 644 | 0.1+ | 0.4+ |
| 1977 10 16 | 675 | (0.2+ | 2.8−) | 2005 08 27 | 699 | (0.6− | 1.8+) | 2005 09 28 | 644 | 0.0 | 0.3+ |
| 1977 10 16 | 675 | (1.5− | 3.4−) | 2005 09 03 | 703 | 0.9− | 0.1− | 2005 09 28 | 644 | 0.0 | 0.2+ |
| 1977 10 17 | 675 | (1.5− | 3.7−) | 2005 09 03 | 703 | 0.1+ | 1.5− | 2005 10 08 | 699 | 0.4− | 1.0+ |
| 1977 10 17 | 675 | (0.5− | 4.7−) | 2005 09 03 | 703 | 0.1− | 1.1+ | 2005 10 08 | 699 | 0.1− | 0.2+ |
| 2000 11 27 | 704 | 0.3+ | 0.6+ | 2005 09 03 | 703 | 0.3− | 0.6+ | 2005 10 08 | 699 | 0.9+ | 0.3+ |
| 2000 11 27 | 704 | 0.7− | 1.3+ | 2005 09 13 | 703 | 0.2− | 0.0 | 2005 10 08 | 699 | 0.7− | 0.4+ |

**5084 T-3 = 2006 SQ$_{349}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 359.27583 | | (2000.0) | | | |
| $n$ | 0.27229673 | $\omega$ | 264.31666 | | +0.95009711 | −0.29700517 |
| $a$ | 2.3574425 | $\Omega$ | 112.93171 | | +0.31113938 | +0.88011190 |
| $e$ | 0.2466578 | $i$ | 5.94647 | | +0.02253358 | +0.37039299 |
| $P$ | 3.62 | $H$ | 16.8 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.4+ | 0.6− | 2006 09 29 | 699 | 0.6− | 0.6+ | 2006 10 17 | 703 | 0.0 | 1.3+ |
| 1977 10 11 | 675 | 0.1− | 0.6+ | 2006 09 29 | 699 | 0.2− | 0.8+ | 2006 10 17 | 703 | 0.6+ | 0.8+ |
| 1977 10 12 | 675 | 0.4− | 0.3− | 2006 10 01 | 704 | 0.2+ | 0.2+ | 2006 10 28 | 703 | 0.0 | 0.7+ |
| 1977 10 12 | 675 | 0.1− | 1.7− | 2006 10 01 | 704 | 0.2− | 0.5+ | 2006 10 28 | 703 | 0.3+ | 0.7+ |
| 1977 10 16 | 675 | 0.5+ | 1.9− | 2006 10 01 | 704 | 0.0 | 0.3− | 2006 10 28 | 703 | 0.1+ | 0.2+ |
| 1977 10 16 | 675 | 1.6+ | 1.4− | 2006 10 01 | 704 | 0.1− | 0.2− | 2006 10 28 | 703 | 0.1− | 1.1+ |
| 1977 10 17 | 675 | (2.7+ | 1.8−) | 2006 10 01 | 704 | 0.2+ | 0.0 | 2006 11 10 | 704 | 0.3+ | 0.2− |
| 1977 10 17 | 675 | 1.2+ | 2.1− | 2006 10 11 | 644 | 0.4− | 0.7+ | 2006 11 10 | 704 | 0.2+ | 0.4− |
| 1977 10 21 | 675 | 0.3+ | 0.4− | 2006 10 11 | 644 | 0.0 | 0.7+ | 2006 11 10 | 704 | 0.1− | 0.1+ |
| 1977 10 21 | 675 | 0.1+ | 1.2− | 2006 10 11 | 644 | 0.2− | 0.6+ | 2006 11 10 | 704 | 0.1+ | 0.5− |
| 1977 10 22 | 675 | 0.4+ | 1.0− | 2006 10 16 | 703 | 0.6+ | 0.1− | 2006 11 10 | 704 | 0.3+ | 1.3− |
| 2006 09 16 | 699 | 0.2− | 0.7+ | 2006 10 16 | 703 | 0.1+ | 0.5− | 2006 11 16 | 703 | 0.7− | 0.2− |
| 2006 09 16 | 699 | 0.7− | 0.5+ | 2006 10 16 | 703 | 0.2+ | 0.0 | 2006 11 16 | 703 | 0.6− | 0.4+ |
| 2006 09 16 | 699 | 0.2− | 1.1+ | 2006 10 16 | 703 | 0.3− | 0.7+ | 2006 11 16 | 703 | 0.5− | 0.3− |
| 2006 09 16 | 699 | 0.5− | 0.4+ | 2006 10 17 | 703 | 0.1− | 0.5+ | 2006 11 16 | 703 | 0.9− | 0.2+ |
| 2006 09 29 | 699 | 1.2− | 0.5+ | 2006 10 17 | 703 | 0.0 | 0.4+ | | | | |

**5684 T-3 = 2006 UM$_{182}$**

Epoch 2006 Sept. 22.0 TT = JDT 2454000.5 MPC

| | | | | | **P** | **Q** |
|---|---|---|---|---|---|---|
| $M$ | 41.76486 | | (2000.0) | | | |
| $n$ | 0.30715732 | $\omega$ | 218.38782 | | +0.82718019 | +0.55517638 |
| $a$ | 2.1755153 | $\Omega$ | 107.67460 | | −0.49041183 | +0.78871323 |
| $e$ | 0.2367869 | $i$ | 5.23313 | | −0.27435229 | +0.26402769 |
| $P$ | 3.21 | $H$ | 17.0 | $G$ | 0.15 | $U$ 4 |

Residuals in seconds of arc

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1977 10 11 | 675 | 0.6− | 0.4− | 2006 10 22 | 703 | 0.5− | 0.1− | 2006 11 14 | 704 | 0.3+ | 0.7+ |
| 1977 10 11 | 675 | 0.5− | 0.2− | 2006 10 22 | 703 | 0.5− | 0.3+ | 2006 11 14 | 704 | 0.6− | 0.7+ |
| 1977 10 12 | 675 | 0.5− | 0.5− | 2006 10 22 | 703 | 0.4− | 0.2+ | 2006 11 17 | 704 | 0.3− | 0.5+ |
| 1977 10 12 | 675 | 0.5+ | 1.5− | 2006 10 22 | 703 | 1.2− | 0.1− | 2006 11 17 | 704 | 1.2+ | 1.5+ |
| 1977 10 16 | 675 | (3.1+ | 0.9−) | 2006 10 31 | A50 | 0.2− | 1.0+ | 2006 11 17 | 704 | 0.6+ | 0.3+ |
| 1977 10 16 | 675 | (2.8+ | 2.7−) | 2006 11 01 | 703 | 0.2+ | 0.7− | 2006 11 18 | G96 | 0.2− | 0.6− |
| 1977 10 17 | 675 | 0.6+ | 1.1− | 2006 11 01 | 703 | 0.4− | 0.6+ | 2006 11 18 | G96 | 0.1− | 0.7− |
| 1977 10 17 | 675 | 0.9+ | 0.5+ | 2006 11 01 | 703 | 0.1+ | 0.1− | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 1977 10 21 | 675 | 0.5+ | 0.9+ | 2006 11 01 | 703 | 0.4− | 0.5− | 2006 11 18 | G96 | 0.3+ | 0.5− |
| 1977 10 21 | 675 | 0.2+ | 0.1− | 2006 11 08 | 644 | 0.0 | 1.2+ | 2006 11 19 | 704 | 1.0+ | 0.9− |
| 2000 12 30 | 691 | 0.0 | 0.1− | 2006 11 08 | 644 | 0.4− | 0.0 | 2006 11 19 | 704 | 0.1+ | 0.3+ |
| 2000 12 30 | 691 | 0.1− | 0.3− | 2006 11 08 | 644 | 0.3− | 0.1− | 2006 11 19 | 704 | 0.7+ | 0.2− |
| 2000 12 30 | 691 | 0.0 | 0.0 | 2006 11 09 | 644 | 0.2+ | 0.2− | 2006 11 19 | 704 | 1.0− | 0.1+ |
| 2006 10 16 | 703 | 0.0 | 0.9+ | 2006 11 09 | 644 | 0.1− | 0.2− | 2006 11 20 | 704 | 0.0 | 0.2− |
| 2006 10 16 | 703 | 0.5− | 0.1+ | 2006 11 09 | 644 | 0.0 | 0.5− | 2006 11 20 | 704 | 0.8+ | 0.2− |
| 2006 10 16 | 703 | 0.7− | 0.7+ | 2006 11 14 | 704 | 0.4+ | 0.4− | 2006 11 20 | 704 | 0.0 | 0.3− |
| 2006 10 16 | 703 | (1.7− | 0.3−) | 2006 11 14 | 704 | 0.5+ | 1.0+ | | | | |

| Object | $H$ | $G$ | Epoch | $M$ | $\omega$ | $\Omega$ | $i$ | $e$ | $a$ | Obs. | Opp. | & Arc | rms | Perts | $U$ | Computer | Ref. | Object |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | 3.34 | 0.12 | 20060922 | 172.89682 | 73.19343 | 80.40883 | 10.58673 | 0.0799048 | 2.7655600 | 6063 | 94 | 1802–2006 | 0.61 | M-v | 0 | MPC | *24219* | (1) |
| (623) | 10.97 | 0.15 | 20060922 | 347.62710 | 124.14436 | 308.40561 | 14.13544 | 0.1142382 | 2.4610059 | 471 | 22 | 1909–2006 | 0.55 | M-v | 0 | MPC | 77282 | (623) |
| (987) | 9.3 | 0.15 | 20060922 | 46.02881 | 16.32385 | 322.98145 | 8.88261 | 0.2293093 | 3.1497743 | 695 | 28 | 1952–2006 | 0.56 | M-v | 0 | MPC | 77283 | (987) |
| (1165) | 10.3 | 0.15 | 20060922 | 226.93253 | 97.80267 | 203.88556 | 12.81282 | 0.2141364 | 3.1222368 | 672 | 27 | 1909–2006 | 0.59 | M-v | 0 | MPC | *28814* | (1165) |
| (1210) | 9.91 | 0.15 | 20060922 | 131.73877 | 166.07058 | 106.97647 | 11.25121 | 0.0539973 | 3.0133029 | 507 | 24 | 1904–2006 | 0.57 | M-v | 0 | MPC | *35406* | (1210) |
| (1230) | 12.8 | 0.15 | 20060922 | 53.83669 | 184.89605 | 200.73547 | 10.49352 | 0.1790317 | 2.5723676 | 624 | 15 | 1931–2006 | 0.55 | M-v | 0 | MPC | *34277* | (1230) |
| (1232) | 10.2 | 0.15 | 20060922 | 206.90173 | 336.20657 | 262.07124 | 10.27890 | 0.1252727 | 3.1934860 | 751 | 27 | 1930–2006 | 0.54 | M-v | 0 | MPC | *27886* | (1232) |
| (1255) | 10.2 | 0.15 | 20060922 | 28.76032 | 134.92956 | 237.72076 | 8.53907 | 0.1701060 | 3.1487405 | 717 | 26 | 1905–2006 | 0.62 | M-v | 0 | MPC | 77283 | (1255) |
| (1282) | 10.0 | 0.15 | 20060922 | 25.00361 | 81.10923 | 324.46506 | 18.06076 | 0.1257516 | 3.1157993 | 524 | 24 | 1933–2006 | 0.61 | M-v | 0 | MPC | *35055* | (1282) |
| (1318) | 11.9 | 0.15 | 20060922 | 244.91878 | 196.29481 | 358.43137 | 24.64824 | 0.2033288 | 2.3080677 | 570 | 17 | 1934–2006 | 0.61 | M-v | 0 | MPC | 77283 | (1318) |
| (1338) | 12.3 | 0.15 | 20060922 | 26.16550 | 109.98832 | 325.75205 | 4.81452 | 0.1125916 | 2.2638897 | 607 | 22 | 1934–2006 | 0.58 | M-v | 0 | MPC | *27886* | (1338) |
| (1447) | 11.3 | 0.15 | 20060922 | 30.40005 | 62.47223 | 35.73683 | 4.79006 | 0.0405131 | 2.5347605 | 737 | 28 | 1938–2006 | 0.56 | M-v | 0 | MPC | *30247* | (1447) |
| (1451) | 12.6 | 0.15 | 20060922 | 295.72423 | 51.56742 | 175.40101 | 5.11047 | 0.1177471 | 2.2029133 | 768 | 18 | 1938–2006 | 0.56 | M-v | 0 | MPC | *29887* | (1451) |
| (1521) | 11.5 | 0.15 | 20060922 | 24.35339 | 48.59935 | 12.71119 | 15.05578 | 0.1406185 | 2.8489424 | 550 | 15 | 1938–2006 | 0.53 | M-v | 0 | MPC | *31412* | (1521) |
| (1545) | 11.8 | 0.15 | 20060922 | 313.41617 | 87.79490 | 52.53360 | 2.95561 | 0.2378410 | 2.7718996 | 691 | 27 | 1906–2006 | 0.63 | M-v | 0 | MPC | *29578* | (1545) |
| (1667) | 12.1 | 0.15 | 20060922 | 217.10375 | 195.83816 | 80.93057 | 4.61661 | 0.1555422 | 2.1898841 | 782 | 27 | 1930–2006 | 0.56 | M-v | 0 | MPC | *25037* | (1667) |
| (1687) | 10.25 | 0.15 | 20060922 | 79.06956 | 317.32811 | 93.69634 | 2.64101 | 0.1826544 | 3.1508540 | 779 | 34 | 1909–2006 | 0.65 | M-v | 0 | MPC | *25409* | (1687) |
| (1704) | 13.3 | 0.15 | 20060922 | 317.20560 | 280.89609 | 259.66431 | 0.96953 | 0.0870653 | 2.2226260 | 772 | 24 | 1924–2006 | 0.58 | M-v | 0 | MPC | *25037* | (1704) |
| (1895) | 11.8 | 0.15 | 20060922 | 17.07417 | 53.65287 | 45.71028 | 1.82447 | 0.1590335 | 3.1812151 | 738 | 18 | 1937–2006 | 0.53 | M-v | 0 | MPC | *29579* | (1895) |
| (1903) | 10.5 | 0.15 | 20060922 | 321.56849 | 347.01865 | 135.44527 | 10.98809 | 0.0507146 | 3.0014374 | 712 | 21 | 1940–2006 | 0.56 | M-v | 0 | MPC | *32039* | (1903) |
| (1906) | 12.7 | 0.15 | 20060922 | 96.63399 | 14.55911 | 354.99156 | 6.47215 | 0.1352864 | 2.3733036 | 748 | 16 | 1972–2006 | 0.58 | M-v | 0 | MPC | *32506* | (1906) |
| (2015) | 12.4 | 0.15 | 20060922 | 267.26470 | 273.96830 | 344.68407 | 11.91469 | 0.1042003 | 2.3350385 | 413 | 16 | 1954–2006 | 0.56 | M-v | 0 | MPC | *34277* | (2015) |
| (2017) | 12.78 | 0.15 | 20060922 | 203.46236 | 136.32130 | 171.43690 | 4.86046 | 0.1856158 | 2.2518003 | 653 | 22 | 1903–2006 | 0.63 | M-v | 0 | MPC | *29887* | (2017) |
| (2049) | 14.9 | 0.15 | 20060922 | 73.24526 | 141.85421 | 200.15413 | 24.42034 | 0.0842231 | 1.9491733 | 299 | 13 | 1973–2006 | 0.56 | M-v | 0 | MPC | 2607 | (2049) |
| (2086) | 12.4 | 0.15 | 20060922 | 14.26950 | 295.13108 | 135.26331 | 6.47551 | 0.1124422 | 2.4014539 | 544 | 19 | 1931–2006 | 0.62 | M-v | 0 | MPC | *29887* | (2086) |
| (2166) | 14.3 | 0.15 | 20060922 | 198.58033 | 136.23544 | 164.05669 | 5.13078 | 0.2169213 | 2.3465440 | 534 | 18 | 1929–2006 | 0.62 | M-v | 0 | MPC | *31270* | (2166) |
| (2167) | 12.1 | 0.15 | 20060922 | 314.01228 | 274.04356 | 253.09306 | 6.03364 | 0.1818180 | 2.5443759 | 641 | 16 | 1971–2006 | 0.56 | M-v | 0 | MPC | *34571* | (2167) |
| (2200) | 13.4 | 0.15 | 20060922 | 276.56669 | 210.48722 | 345.69050 | 4.59179 | 0.1485595 | 2.4046909 | 536 | 21 | 1955–2006 | 0.53 | M-v | 0 | MPC | *29073* | (2200) |
| (2221) | 12.8 | 0.15 | 20060922 | 94.60275 | 81.67183 | 246.07287 | 13.78684 | 0.1386587 | 2.5914370 | 452 | 13 | 1976–2006 | 0.51 | M-v | 0 | MPC | *38747* | (2221) |
| (2308) | 11.8 | 0.15 | 20060922 | 228.65537 | 233.31350 | 34.48275 | 14.18495 | 0.1741775 | 2.5473822 | 500 | 18 | 1967–2006 | 0.61 | M-v | 0 | MPC | 3854 | (2308) |
| (2379) | 10.90 | 0.15 | 20060922 | 154.27745 | 177.64108 | 151.25505 | 0.46741 | 0.2762641 | 3.1646802 | 773 | 22 | 1941–2006 | 0.59 | M-v | 0 | MPC | *32506* | (2379) |
| (2383) | 13.4 | 0.15 | 20060922 | 249.73764 | 184.59682 | 14.56828 | 3.57043 | 0.1047980 | 2.2180215 | 703 | 19 | 1928–2006 | 0.59 | M-v | 0 | MPC | *29580* | (2383) |
| (2408) | 12.5 | 0.15 | 20060922 | 249.33240 | 103.15978 | 164.51831 | 17.69096 | 0.2442636 | 2.6359621 | 375 | 15 | 1943–2006 | 0.66 | M-v | 0 | MPC | *35408* | (2408) |
| (2422) | 13.7 | 0.15 | 20060922 | 295.16200 | 52.03599 | 160.13339 | 6.40666 | 0.1986801 | 2.3282179 | 582 | 16 | 1943–2006 | 0.63 | M-v | 0 | MPC | *33063* | (2422) |
| (2457) | 12.7 | 0.15 | 20060922 | 236.10152 | 78.04525 | 140.78654 | 6.26691 | 0.0637121 | 2.6407273 | 584 | 19 | 1956–2006 | 0.58 | M-v | 0 | MPC | *34278* | (2457) |
| (2462) | 14.1 | 0.15 | 20060922 | 322.74689 | 53.50910 | 99.81654 | 2.98648 | 0.1401308 | 2.4091595 | 491 | 13 | 1960–2006 | 0.58 | M-v | 0 | MPC | 596 | (2462) |
| (2465) | 12.0 | 0.15 | 20060922 | 203.67059 | 6.17483 | 294.20296 | 3.86155 | 0.0767680 | 2.7519313 | 588 | 19 | 1949–2006 | 0.60 | M-v | 0 | MPC | *35408* | (2465) |
| (2480) | 12.8 | 0.15 | 20060922 | 15.08940 | 13.49905 | 35.28172 | 2.92036 | 0.1206356 | 2.2257135 | 576 | 20 | 1959–2006 | 0.63 | M-v | 0 | MPC | 77284 | (2480) |
| (2521) | 11.7 | 0.15 | 20060922 | 322.99485 | 246.71755 | 281.46311 | 7.73313 | 0.0887832 | 2.7939292 | 626 | 15 | 1960–2006 | 0.54 | M-v | 0 | MPC | *35055* | (2521) |
| (2609) | 13.3 | 0.15 | 20060922 | 309.90365 | 245.21811 | 304.00670 | 5.71443 | 0.0878639 | 2.2211938 | 500 | 16 | 1954–2006 | 0.58 | M-v | 0 | MPC | *30890* | (2609) |
| (2636) | 11.0 | 0.15 | 20060922 | 178.22008 | 151.69417 | 98.91011 | 10.46425 | 0.0706574 | 3.0078782 | 458 | 15 | 1956–2006 | 0.63 | M-v | 0 | MPC | *35408* | (2636) |
| (2646) | 11.6 | 0.15 | 20060922 | 17.28176 | 40.51988 | 352.53342 | 9.67911 | 0.0982889 | 3.0125815 | 532 | 19 | 1943–2006 | 0.64 | M-v | 0 | MPC | *35408* | (2646) |
| (2654) | 12.5 | 0.15 | 20060922 | 123.06572 | 33.75242 | 206.88029 | 7.46090 | 0.0953962 | 3.0471634 | 571 | 16 | 1968–2006 | 0.59 | M-v | 0 | MPC | *34571* | (2654) |
| (2691) | 13.4 | 0.15 | 20060922 | 220.38132 | 276.86083 | 320.02339 | 3.59139 | 0.1130454 | 2.2444108 | 678 | 16 | 1950–2006 | 0.55 | M-v | 0 | MPC | *33737* | (2691) |
| (2748) | 12.7 | 0.15 | 20060922 | 41.05304 | 348.86675 | 350.55691 | 4.22850 | 0.1341728 | 2.8068941 | 562 | 19 | 1949–2006 | 0.60 | M-v | 0 | MPC | 596 | (2748) |
| (2852) | 12.3 | 0.15 | 20060922 | 121.07872 | 255.69374 | 110.15787 | 1.70127 | 0.0874772 | 2.7840182 | 782 | 18 | 1949–2006 | 0.60 | M-v | 0 | MPC | *33330* | (2852) |
| (2874) | 13.2 | 0.15 | 20060922 | 26.37859 | 322.35720 | 79.25552 | 4.89483 | 0.1346793 | 2.2447017 | 571 | 17 | 1954–2006 | 0.59 | M-v | 0 | MPC | *32039* | (2874) |
| (2904) | 11.6 | 0.15 | 20060922 | 332.08892 | 331.93514 | 79.71552 | 15.38139 | 0.1393014 | 2.6031822 | 365 | 13 | 1960–2006 | 0.65 | M-v | 1 | MPC | 13522 | (2904) |
| (2924) | 12.2 | 0.15 | 20060922 | 214.83943 | 196.54460 | 110.82564 | 3.13932 | 0.0518002 | 2.8860455 | 573 | 18 | 1954–2006 | 0.59 | M-v | 0 | MPC | 2608 | (2924) |
| (2941) | 13.9 | 0.15 | 20060922 | 9.08071 | 64.49827 | 10.47508 | 3.24251 | 0.0898594 | 2.1515993 | 606 | 15 | 1930–2006 | 0.61 | M-v | 0 | MPC | *31412* | (2941) |
| (2966) | 13.4 | 0.15 | 20060922 | 210.16365 | 197.51504 | 46.56472 | 2.54716 | 0.1396970 | 2.4480831 | 650 | 13 | 1977–2006 | 0.58 | M-v | 0 | MPC | *38748* | (2966) |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (3014) | 13.0 | 0.15 | 20060922 | 181.90828 | 180.46996 | 140.80191 | 0.98718 | 0.2273699 | 2.3638761 | 615 | 18 | 1950–2006 | 0.57 | M-v | 0 | MPC | *32296* | (3014) |
| (3020) | 12.2 | 0.15 | 20060922 | 151.47873 | 195.46163 | 141.96640 | 6.27178 | 0.0624416 | 2.7606220 | 553 | 15 | 1931–2006 | 0.56 | M-v | 0 | MPC | *35409* | (3020) |
| (3025) | 11.6 | 0.15 | 20060922 | 22.32379 | 117.62662 | 293.61255 | 21.01127 | 0.0873626 | 3.1990574 | 314 | 13 | 1927–2006 | 0.55 | M-v | 0 | MPC | *36057* | (3025) |
| (3067) | 13.0 | 0.15 | 20060922 | 3.01295 | 94.90549 | 350.64818 | 4.52328 | 0.1380788 | 2.2455755 | 508 | 15 | 1962–2006 | 0.59 | M-v | 0 | MPC | *29074* | (3067) |
| (3077) | 12.7 | 0.15 | 20060922 | 3.85816 | 117.35369 | 297.56073 | 1.47391 | 0.0557655 | 2.2408485 | 585 | 16 | 1942–2006 | 0.61 | M-v | 0 | MPC | *36497* | (3077) |
| (3227) | 12.5 | 0.15 | 20060922 | 218.89779 | 331.35912 | 154.47840 | 3.90964 | 0.1374620 | 2.4457010 | 652 | 19 | 1947–2006 | 0.57 | M-v | 0 | MPC | 12096 | (3227) |
| (3263) | 13.0 | 0.15 | 20060922 | 10.32643 | 9.28276 | 78.51389 | 7.74395 | 0.0678655 | 2.4144665 | 526 | 15 | 1932–2006 | 0.57 | M-v | 0 | MPC | *33331* | (3263) |
| (3296) | 12.2 | 0.15 | 20060922 | 43.82035 | 269.08308 | 113.14357 | 13.92867 | 0.1958726 | 2.6542910 | 512 | 15 | 1971–2006 | 0.56 | M-v | 0 | MPC | *38010* | (3296) |
| (3320) | 13.3 | 0.15 | 20060922 | 276.97261 | 348.68139 | 218.35953 | 4.06761 | 0.0478827 | 2.4586589 | 578 | 15 | 1978–2006 | 0.54 | M-v | 0 | MPC | *34278* | (3320) |
| (3422) | 12.4 | 0.15 | 20060922 | 129.77718 | 200.01295 | 111.98072 | 13.94023 | 0.1512153 | 2.6913483 | 408 | 15 | 1978–2006 | 0.56 | M-v | 0 | MPC | 1400 | (3422) |
| (3427) | 13.6 | 0.15 | 20060922 | 57.11597 | 76.25757 | 310.19750 | 2.60105 | 0.1353306 | 2.2806396 | 617 | 16 | 1954–2006 | 0.56 | M-v | 0 | MPC | *33331* | (3427) |
| (3436) | 12.1 | 0.15 | 20060922 | 104.33082 | 137.67665 | 188.48333 | 1.73783 | 0.0566837 | 2.8639734 | 580 | 18 | 1971–2006 | 0.60 | M-v | 0 | MPC | 1400 | (3436) |
| (3449) | 12.4 | 0.15 | 20060922 | 68.13446 | 333.70968 | 81.53254 | 2.04738 | 0.1616182 | 3.0756288 | 566 | 16 | 1978–2006 | 0.57 | M-v | 0 | MPC | 2609 | (3449) |
| (3507) | 11.3 | 0.15 | 20060922 | 209.44889 | 184.95171 | 88.40190 | 3.24852 | 0.1531735 | 3.1377499 | 692 | 18 | 1965–2006 | 0.56 | M-v | 0 | MPC | *32507* | (3507) |
| (3530) | 13.9 | 0.15 | 20060922 | 156.57614 | 75.99760 | 262.84291 | 1.17193 | 0.2256742 | 2.3995857 | 471 | 15 | 1975–2006 | 0.59 | M-v | 0 | MPC | *40287* | (3530) |
| (3546) | 12.7 | 0.15 | 20060922 | 200.69314 | 250.32204 | 335.31459 | 7.03679 | 0.0238110 | 2.6947063 | 624 | 15 | 1979–2006 | 0.60 | M-v | 0 | MPC | 596 | (3546) |
| (3692) | 13.7 | 0.15 | 20060922 | 152.16022 | 8.43346 | 219.75451 | 11.37413 | 0.1464086 | 2.7255743 | 461 | 13 | 1951–2006 | 0.60 | M-v | 0 | MPC | *40287* | (3692) |
| (3729) | 12.1 | 0.15 | 20060922 | 198.02275 | 312.16994 | 4.92474 | 13.43547 | 0.1929734 | 2.6236818 | 644 | 13 | 1953–2006 | 0.59 | M-v | 0 | MPC | 4876 | (3729) |
| (3753) | 15.1 | 0.15 | 20060922 | 261.34726 | 43.74300 | 126.29700 | 19.80930 | 0.5147881 | 0.9977405 | 412 | 24 | 1973–2006 | 0.61 | M-v | 3 | MPC | 04057 | (3753) |
| (3766) | 11.7 | 0.15 | 20060922 | 20.15964 | 352.74106 | 129.10880 | 1.47039 | 0.1119044 | 3.2322091 | 573 | 18 | 1915–2006 | 0.61 | M-v | 0 | MPC | *32736* | (3766) |
| (3775) | 12.8 | 0.15 | 20060922 | 52.56976 | 314.40308 | 30.44758 | 8.25365 | 0.2317137 | 2.7870323 | 455 | 16 | 1931–2006 | 0.58 | M-v | 0 | MPC | 596 | (3775) |
| (3911) | 11.4 | 0.15 | 20060922 | 164.16625 | 134.94644 | 210.58381 | 10.74263 | 0.1019416 | 3.0347862 | 555 | 21 | 1940–2006 | 0.62 | M-v | 0 | MPC | *29889* | (3911) |
| (3934) | 13.1 | 0.15 | 20060922 | 171.80218 | 94.80031 | 157.68001 | 13.13631 | 0.1403313 | 2.5961149 | 504 | 12 | 1980–2006 | 0.55 | M-v | 0 | MPC | *39509* | (3934) |
| (3939) | 11.4 | 0.15 | 20060922 | 184.00857 | 254.29255 | 32.59480 | 24.74081 | 0.0981884 | 3.1135123 | 346 | 16 | 1953–2006 | 0.54 | M-v | 0 | MPC | *36057* | (3939) |
| (3974) | 11.8 | 0.15 | 20060922 | 308.85051 | 158.88445 | 21.41301 | 13.40748 | 0.1074981 | 2.6011984 | 584 | 16 | 1954–2006 | 0.54 | M-v | 0 | MPC | 3855 | (3974) |
| (3982) | 13.2 | 0.15 | 20060922 | 149.65345 | 50.67023 | 252.00561 | 5.29998 | 0.2184256 | 2.2591556 | 803 | 16 | 1930–2006 | 0.53 | M-v | 0 | MPC | *32296* | (3982) |
| (4024) | 12.9 | 0.15 | 20060922 | 8.02053 | 75.38140 | 54.53874 | 7.77178 | 0.1539475 | 2.2817460 | 450 | 19 | 1931–2006 | 0.60 | M-v | 0 | MPC | *29583* | (4024) |
| (4081) | 12.8 | 0.15 | 20060922 | 144.20158 | 49.84993 | 253.88980 | 1.80000 | 0.0923757 | 2.3789499 | 679 | 18 | 1953–2006 | 0.57 | M-v | 0 | MPC | *33063* | (4081) |
| (4106) | 12.0 | 0.15 | 20060922 | 259.00219 | 191.11657 | 44.97357 | 9.73810 | 0.1800079 | 2.7533218 | 552 | 16 | 1930–2006 | 0.54 | M-v | 0 | MPC | 3855 | (4106) |
| (4124) | 12.5 | 0.15 | 20060922 | 29.57272 | 113.23186 | 331.07767 | 3.59989 | 0.0328465 | 2.7862186 | 622 | 15 | 1956–2006 | 0.56 | M-v | 0 | MPC | *31412* | (4124) |
| (4151) | 12.0 | 0.15 | 20060922 | 7.93339 | 69.23317 | 67.20572 | 1.01348 | 0.1390332 | 3.1510021 | 655 | 18 | 1968–2006 | 0.55 | M-v | 0 | MPC | *32737* | (4151) |
| (4173) | 13.1 | 0.15 | 20060922 | 354.59962 | 17.86978 | 107.32988 | 4.14313 | 0.1200254 | 2.3590004 | 496 | 16 | 1954–2006 | 0.60 | M-v | 0 | MPC | *33063* | (4173) |
| (4188) | 12.7 | 0.15 | 20060922 | 112.96743 | 228.07681 | 136.38917 | 6.11832 | 0.1509670 | 2.3350022 | 610 | 19 | 1954–2006 | 0.56 | M-v | 0 | MPC | *27694* | (4188) |
| (4200) | 13.5 | 0.15 | 20060922 | 347.61877 | 240.39144 | 242.36856 | 7.79636 | 0.2244805 | 2.7259457 | 384 | 15 | 1953–2006 | 0.63 | M-v | 0 | MPC | *35410* | (4200) |
| (4303) | 14.1 | 0.15 | 20060922 | 85.03853 | 15.03040 | 32.55443 | 2.41795 | 0.1322053 | 2.1723754 | 535 | 13 | 1973–2006 | 0.55 | M-v | 0 | MPC | *38011* | (4303) |
| (4315) | 12.4 | 0.15 | 20060922 | 142.96275 | 266.42488 | 28.59293 | 16.67539 | 0.2933491 | 2.9784476 | 337 | 13 | 1978–2006 | 0.55 | M-v | 0 | MPC | *35674* | (4315) |
| (4321) | 12.9 | 0.15 | 20060922 | 53.28518 | 245.15287 | 135.18595 | 2.40904 | 0.2862779 | 3.0628692 | 466 | 13 | 1978–2006 | 0.59 | M-v | 0 | MPC | 4876 | (4321) |
| (4442) | 12.7 | 0.15 | 20060922 | 191.92857 | 264.09098 | 286.97585 | 15.10020 | 0.2481440 | 2.9986435 | 321 | 12 | 1978–2006 | 0.55 | M-v | 0 | MPC | *35410* | (4442) |
| (4447) | 12.6 | 0.15 | 20060922 | 158.05692 | 192.44106 | 147.84927 | 2.69250 | 0.0763914 | 2.8544482 | 629 | 19 | 1974–2006 | 0.58 | M-v | 0 | MPC | *32040* | (4447) |
| (4518) | 13.8 | 0.15 | 20060922 | 176.52925 | 97.48549 | 168.07953 | 6.99770 | 0.0991049 | 2.3170883 | 577 | 13 | 1952–2006 | 0.59 | M-v | 0 | MPC | *38011* | (4518) |
| (4566) | 12.3 | 0.15 | 20060922 | 95.04618 | 120.49015 | 252.85340 | 10.77316 | 0.2150919 | 2.8329822 | 529 | 13 | 1981–2006 | 0.54 | M-v | 0 | MPC | 4877 | (4566) |
| (4585) | 12.8 | 0.15 | 20060922 | 210.09034 | 184.65432 | 83.09372 | 10.55826 | 0.2377918 | 2.7337567 | 536 | 16 | 1972–2006 | 0.61 | M-v | 0 | MPC | *35410* | (4585) |
| (4589) | 13.8 | 0.15 | 20060922 | 70.38829 | 151.63379 | 200.16681 | 2.26837 | 0.1858829 | 2.4340839 | 373 | 13 | 1933–2006 | 0.62 | M-v | 0 | MPC | 13523 | (4589) |
| (4621) | 13.4 | 0.15 | 20060922 | 162.29081 | 105.18611 | 193.64197 | 3.04416 | 0.2109984 | 2.3869807 | 634 | 15 | 1964–2006 | 0.53 | M-v | 0 | MPC | *24373* | (4621) |
| (4664) | 12.6 | 0.15 | 20060922 | 98.52547 | 5.22349 | 335.43631 | 1.50139 | 0.0701893 | 2.8837893 | 642 | 16 | 1951–2006 | 0.54 | M-v | 0 | MPC | *35410* | (4664) |
| (4666) | 13.0 | 0.15 | 20060922 | 236.35999 | 41.52491 | 230.33595 | 24.53114 | 0.2330119 | 2.3395040 | 328 | 13 | 1986–2006 | 0.59 | M-v | 1 | MPC | *40287* | (4666) |
| (4696) | 12.3 | 0.15 | 20060922 | 183.32592 | 133.76702 | 178.76655 | 1.88892 | 0.0592378 | 2.8546003 | 695 | 15 | 1951–2006 | 0.57 | M-v | 0 | MPC | *35674* | (4696) |
| (4713) | 12.8 | 0.15 | 20060922 | 201.97606 | 152.43449 | 101.49565 | 22.67039 | 0.0736063 | 1.9264819 | 374 | 12 | 1976–2006 | 0.50 | M-v | 1 | MPC | 597 | (4713) |
| (4757) | 12.9 | 0.15 | 20060922 | 261.81221 | 93.32289 | 86.62022 | 0.17634 | 0.0832780 | 3.9480726 | 494 | 16 | 1951–2006 | 0.58 | M-v | 0 | MPC | *38011* | (4757) |
| (4766) | 12.2 | 0.15 | 20060922 | 314.64221 | 357.66830 | 96.61495 | 14.23017 | 0.1386638 | 2.5904889 | 420 | 13 | 1981–2006 | 0.58 | M-v | 0 | MPC | 597 | (4766) |
| (4768) | 11.3 | 0.15 | 20060922 | 52.71883 | 26.89497 | 320.66338 | 20.04817 | 0.2328237 | 3.1823491 | 434 | 13 | 1981–2006 | 0.61 | M-v | 0 | MPC | 4877 | (4768) |
| (4787) | 13.7 | 0.15 | 20060922 | 320.66790 | 9.34964 | 349.67347 | 5.04631 | 0.1126569 | 2.2573688 | 441 | 16 | 1954–2006 | 0.63 | M-v | 1 | MPC | *27892* | (4787) |
| (4798) | 13.4 | 0.15 | 20060922 | 184.74298 | 160.89615 | 93.64365 | 3.65893 | 0.1098029 | 2.1975013 | 628 | 16 | 1954–2006 | 0.57 | M-v | 0 | MPC | *33331* | (4798) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (4870) | 11.3 | 0.15 | 20060922 | 308.83801 | 349.45953 | 83.60666 | 9.73966 | 0.0779911 | 3.2132570 | 492 | 15 | 1931–2006 | 0.56 | M-v | 0 | MPC | 3855 | (4870) |
| (4893) | 11.8 | 0.15 | 20060922 | 273.27529 | 104.84506 | 151.32787 | 13.74575 | 0.0859270 | 3.1490399 | 555 | 13 | 1951–2006 | 0.55 | M-v | 0 | MPC | 8362 | (4893) |
| (4949) | 13.6 | 0.15 | 20060922 | 92.36727 | 275.35693 | 108.76156 | 4.80983 | 0.1693836 | 2.2718134 | 548 | 12 | 1978–2006 | 0.55 | M-v | 0 | MPC | *38748* | (4949) |
| (4956) | 13.5 | 0.15 | 20060922 | 90.34136 | 201.47571 | 169.43449 | 24.22155 | 0.2037291 | 2.4443726 | 465 | 13 | 1978–2006 | 0.56 | M-v | 0 | MPC | 8362 | (4956) |
| (4983) | 13.2 | 0.15 | 20060922 | 243.87327 | 252.94939 | 306.24209 | 1.89637 | 0.0282801 | 2.3223177 | 662 | 15 | 1977–2006 | 0.57 | M-v | 0 | MPC | *31413* | (4983) |
| (5001) | 12.8 | 0.15 | 20060922 | 164.16730 | 150.55205 | 170.03551 | 13.69080 | 0.1728114 | 2.6625857 | 551 | 15 | 1952–2006 | 0.56 | M-v | 0 | MPC | *34279* | (5001) |
| (5011) | 17.1 | 0.15 | 20060922 | 304.38921 | 105.55603 | 10.93530 | 7.40571 | 0.4997472 | 1.6352537 | 247 | 11 | 1960–2006 | 0.51 | M-v | 2 | MPC | 65990 | (5011) |
| (5016) | 13.0 | 0.15 | 20060922 | 212.37976 | 97.34167 | 187.31844 | 3.64570 | 0.1315143 | 2.2956322 | 638 | 13 | 1976–2006 | 0.53 | M-v | 0 | MPC | *38011* | (5016) |
| (5053) | 13.1 | 0.15 | 20060922 | 297.70663 | 11.69856 | 150.29663 | 11.48819 | 0.1662137 | 2.3997770 | 478 | 15 | 1979–2006 | 0.58 | M-v | 0 | MPC | *33331* | (5053) |
| (5114) | 12.6 | 0.15 | 20060922 | 189.25442 | 213.76382 | 24.51007 | 4.16685 | 0.0122550 | 2.4709898 | 555 | 13 | 1986–2006 | 0.61 | M-v | 0 | MPC | *38012* | (5114) |
| (5168) | 13.0 | 0.15 | 20060922 | 258.88228 | 201.65358 | 339.12343 | 23.46382 | 0.2054399 | 2.3405150 | 385 | 13 | 1979–2006 | 0.54 | M-v | 1 | MPC | *38012* | (5168) |
| (5212) | 11.6 | 0.15 | 20060922 | 5.43235 | 225.75953 | 230.38370 | 11.37708 | 0.0831533 | 3.0269712 | 575 | 12 | 1979–2006 | 0.56 | M-v | 0 | MPC | 6176 | (5212) |
| (5265) | 13.1 | 0.15 | 20060922 | 177.69401 | 63.43966 | 175.86270 | 5.76728 | 0.1083695 | 3.1771236 | 468 | 15 | 1960–2006 | 0.61 | M-v | 0 | MPC | 18124 | (5265) |
| (5275) | 13.6 | 0.15 | 20060922 | 67.57721 | 108.48401 | 236.22353 | 6.05597 | 0.2542381 | 2.1995594 | 488 | 13 | 1952–2006 | 0.60 | M-v | 0 | MPC | *35411* | (5275) |
| (5279) | 13.3 | 0.15 | 20060922 | 215.65445 | 192.63420 | 101.09056 | 13.53404 | 0.2878585 | 2.4783120 | 425 | 13 | 1930–2006 | 0.62 | M-v | 1 | MPC | 14338 | (5279) |
| (5280) | 13.1 | 0.15 | 20060922 | 195.12686 | 41.67336 | 195.80608 | 12.86212 | 0.2075894 | 2.5893914 | 416 | 12 | 1979–2006 | 0.48 | M-v | 0 | MPC | 597 | (5280) |
| (5357) | 10.9 | 0.15 | 20060922 | 31.15050 | 117.81449 | 302.17151 | 9.10534 | 0.1082199 | 2.9861349 | 514 | 15 | 1950–2006 | 0.58 | M-v | 0 | MPC | *35411* | (5357) |
| (5382) | 12.4 | 0.15 | 20060922 | 262.92222 | 10.34614 | 169.18828 | 12.76763 | 0.0907589 | 2.6299064 | 521 | 15 | 1952–2006 | 0.58 | M-v | 0 | MPC | *33538* | (5382) |
| (5388) | 13.4 | 0.15 | 20060922 | 18.99347 | 68.33298 | 359.56776 | 12.58195 | 0.1455133 | 2.6841268 | 416 | 10 | 1979–2006 | 0.56 | M-v | 0 | MPC | 1401 | (5388) |
| (5467) | 12.9 | 0.15 | 20060922 | 345.19265 | 139.32710 | 339.30218 | 8.74949 | 0.1703531 | 2.8083147 | 448 | 10 | 1988–2006 | 0.52 | M-v | 0 | MPC | 18124 | (5467) |
| (5480) | 11.4 | 0.15 | 20060922 | 166.44596 | 164.64182 | 120.76159 | 6.67137 | 0.0879691 | 3.1378969 | 638 | 15 | 1953–2006 | 0.56 | M-v | 0 | MPC | *36058* | (5480) |
| (5506) | 13.2 | 0.15 | 20060922 | 279.01586 | 134.11025 | 18.80423 | 5.24492 | 0.1677619 | 2.3764557 | 559 | 13 | 1971–2006 | 0.57 | M-v | 0 | MPC | *38012* | (5506) |
| (5508) | 12.0 | 0.15 | 20060922 | 351.52049 | 69.55083 | 36.69100 | 6.76752 | 0.2266663 | 2.8415864 | 452 | 13 | 1969–2006 | 0.58 | M-v | 0 | MPC | 3856 | (5508) |
| (5544) | 13.0 | 0.15 | 20060922 | 17.39873 | 121.37118 | 9.53313 | 13.14186 | 0.1021214 | 2.6892265 | 329 | 12 | 1976–2006 | 0.55 | M-v | 0 | MPC | 3856 | (5544) |
| (5646) | 14.3 | 0.15 | 20060922 | 41.74296 | 335.63856 | 14.21732 | 7.91132 | 0.4364513 | 2.1432280 | 277 | 12 | 1990–2006 | 0.65 | M-v | 1 | MPC | *38012* | (5646) |
| (5704) | 11.8 | 0.15 | 20060922 | 284.33212 | 31.95983 | 152.14047 | 11.64957 | 0.1098301 | 3.2208005 | 475 | 13 | 1950–2006 | 0.57 | M-v | 0 | MPC | 7418 | (5704) |
| (5733) | 11.9 | 0.15 | 20060922 | 71.69578 | 336.26288 | 80.34121 | 1.97808 | 0.1650230 | 3.1971824 | 601 | 16 | 1976–2006 | 0.56 | M-v | 0 | MPC | *38012* | (5733) |
| (5770) | 12.2 | 0.15 | 20060922 | 116.19232 | 252.58048 | 62.78773 | 0.38188 | 0.1740499 | 3.2177057 | 533 | 15 | 1964–2006 | 0.59 | M-v | 0 | MPC | *36059* | (5770) |
| (5810) | 13.8 | 0.15 | 20060922 | 255.11669 | 102.26223 | 157.90472 | 5.06380 | 0.2293925 | 2.4338284 | 485 | 13 | 1985–2006 | 0.55 | M-v | 0 | MPC | 1401 | (5810) |
| (5819) | 13.6 | 0.15 | 20060922 | 47.83801 | 277.46507 | 151.68923 | 5.61256 | 0.1630300 | 2.5286201 | 545 | 12 | 1981–2006 | 0.54 | M-v | 0 | MPC | *34279* | (5819) |
| (5828) | 16.3 | 0.15 | 20060922 | 357.07918 | 152.65152 | 125.51184 | 30.08889 | 0.6956872 | 1.6975681 | 202 | 12 | 1991–2006 | 0.52 | M-v | 2 | MPC | 23408 | (5828) |
| (6001) | 12.6 | 0.15 | 20060922 | 120.21873 | 182.32430 | 129.75271 | 3.00482 | 0.0524014 | 2.8556823 | 504 | 13 | 1988–2006 | 0.61 | M-v | 0 | MPC | 2610 | (6001) |
| (6065) | 13.0 | 0.15 | 20060922 | 116.71241 | 47.81898 | 271.75703 | 23.84002 | 0.2080292 | 2.3426468 | 349 | 12 | 1987–2006 | 0.53 | M-v | 1 | MPC | *38012* | (6065) |
| (6086) | 12.4 | 0.15 | 20060922 | 83.23952 | 323.23969 | 65.47973 | 8.93836 | 0.1688539 | 2.7207688 | 569 | 13 | 1960–2006 | 0.56 | M-v | 0 | MPC | 3856 | (6086) |
| (6153) | 11.5 | 0.15 | 20060922 | 81.06359 | 192.53100 | 198.84765 | 17.38695 | 0.2806320 | 2.8399054 | 510 | 12 | 1990–2006 | 0.54 | M-v | 0 | MPC | 3856 | (6153) |
| (6203) | 13.1 | 0.15 | 20060922 | 92.86048 | 54.30379 | 235.86635 | 0.94266 | 0.0450076 | 3.1524361 | 585 | 15 | 1950–2006 | 0.57 | M-v | 0 | MPC | *35675* | (6203) |
| (6234) | 13.9 | 0.15 | 20060922 | 28.54559 | 280.71580 | 348.34682 | 4.00962 | 0.1827269 | 2.2616361 | 507 | 13 | 1975–2006 | 0.55 | M-v | 0 | MPC | *34571* | (6234) |
| (6256) | 15.6 | 0.15 | 20060922 | 342.28516 | 108.02790 | 328.51584 | 4.18284 | 0.1727403 | 2.4363003 | 255 | 10 | 1960–2006 | 0.65 | M-v | 1 | MPC | 12097 | (6256) |
| (6269) | 13.5 | 0.15 | 20060922 | 144.42886 | 183.61008 | 157.96860 | 6.21033 | 0.1321367 | 2.3950957 | 452 | 12 | 1990–2006 | 0.56 | M-v | 0 | MPC | *38748* | (6269) |
| (6281) | 13.0 | 0.15 | 20060922 | 133.15800 | 280.83811 | 19.10773 | 12.62279 | 0.1762995 | 2.5890636 | 680 | 15 | 1972–2006 | 0.55 | M-v | 0 | MPC | 12097 | (6281) |
| (6285) | 15.0 | 0.15 | 20060922 | 311.43103 | 292.16075 | 218.65858 | 1.98260 | 0.1874980 | 2.6823780 | 306 | 12 | 1950–2006 | 0.59 | M-v | 0 | MPC | 2610 | (6285) |
| (6318) | 15.8 | 0.15 | 20060922 | 350.01919 | 12.09116 | 71.25157 | 25.95135 | 0.4649876 | 2.5098369 | 228 | 7 | 1974–2006 | 0.61 | M-v | 1 | MPC | *25052* | (6318) |
| (6320) | 13.2 | 0.15 | 20060922 | 191.62382 | 348.27540 | 317.36221 | 2.32148 | 0.1739117 | 2.4404626 | 432 | 13 | 1974–2006 | 0.55 | M-v | 0 | MPC | 598 | (6320) |
| (6376) | 12.8 | 0.15 | 20060922 | 222.99151 | 123.09587 | 159.94454 | 16.32102 | 0.2578725 | 2.5723988 | 431 | 12 | 1971–2006 | 0.59 | M-v | 0 | MPC | 3856 | (6376) |
| (6445) | 12.6 | 0.15 | 20060922 | 17.55468 | 339.91316 | 125.73844 | 13.94543 | 0.1141685 | 2.6274299 | 500 | 12 | 1982–2006 | 0.55 | M-v | 0 | MPC | 2610 | (6445) |
| (6450) | 12.6 | 0.15 | 20060922 | 239.42104 | 149.66762 | 129.42868 | 8.48663 | 0.2471048 | 2.5357900 | 396 | 12 | 1979–2006 | 0.58 | M-v | 0 | MPC | *38013* | (6450) |
| (6463) | 11.9 | 0.15 | 20060922 | 103.65960 | 78.46127 | 287.43114 | 11.94634 | 0.1851208 | 2.6120368 | 438 | 15 | 1954–2006 | 0.57 | M-v | 0 | MPC | 1401 | (6463) |
| (6504) | 13.8 | 0.15 | 20060922 | 45.15490 | 32.92580 | 10.83611 | 6.08937 | 0.1638463 | 2.4206915 | 397 | 13 | 1955–2006 | 0.60 | M-v | 0 | MPC | 13523 | (6504) |
| (6532) | 11.7 | 0.15 | 20060922 | 142.79116 | 234.26443 | 103.01845 | 5.08689 | 0.1094118 | 3.1702997 | 563 | 16 | 1984–2006 | 0.58 | M-v | 0 | MPC | *38013* | (6532) |
| (6709) | 13.7 | 0.15 | 20060922 | 3.60719 | 342.92399 | 99.00105 | 1.82746 | 0.1613613 | 2.3487276 | 527 | 12 | 1955–2006 | 0.60 | M-v | 0 | MPC | *38748* | (6709) |
| (6726) | 13.7 | 0.15 | 20060922 | 37.02180 | 145.92967 | 277.77749 | 4.30027 | 0.0940016 | 2.2871205 | 462 | 12 | 1953–2006 | 0.58 | M-v | 0 | MPC | *38013* | (6726) |
| (6734) | 11.2 | 0.15 | 20060922 | 110.89118 | 308.92354 | 58.53731 | 11.36398 | 0.1181825 | 2.9935155 | 449 | 15 | 1970–2006 | 0.58 | M-v | 0 | MPC | *36059* | (6734) |
| (6737) | 13.3 | 0.15 | 20060922 | 338.37557 | 67.04032 | 53.50169 | 0.81263 | 0.1240751 | 2.3282459 | 605 | 12 | 1977–2006 | 0.53 | M-v | 0 | MPC | *38748* | (6737) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (6797) | 12.1 | 0.15 | 20060922 | 121.23608 | 7.45566 | 321.97004 | 1.13395 | 0.0698133 | 2.9171311 | 691 | 15 | 1985–2006 | 0.52 | M-v | 0 | MPC | 3856 | (6797) |
| (6824) | 12.9 | 0.15 | 20060922 | 59.46139 | 282.82694 | 118.01602 | 2.00090 | 0.1966695 | 3.1182281 | 675 | 13 | 1988–2006 | 0.59 | M-v | 0 | MPC | 6176 | (6824) |
| (6866) | 11.9 | 0.15 | 20060922 | 162.33822 | 163.45788 | 111.64910 | 11.05266 | 0.0505536 | 3.0228727 | 510 | 16 | 1940–2006 | 0.58 | M-v | 0 | MPC | *36059* | (6866) |
| (6893) | 13.2 | 0.15 | 20060922 | 21.95727 | 104.92116 | 314.62488 | 5.78418 | 0.0913724 | 2.3859576 | 452 | 12 | 1983–2006 | 0.57 | M-v | 0 | MPC | *39510* | (6893) |
| (6901) | 13.9 | 0.15 | 20060922 | 31.86281 | 124.61781 | 285.38473 | 23.14347 | 0.1118496 | 1.9427075 | 228 | 9 | 1989–2006 | 0.58 | M-v | 1 | MPC | *38013* | (6901) |
| (7045) | 14.2 | 0.15 | 20060922 | 277.87622 | 189.17289 | 352.79435 | 4.82700 | 0.1302180 | 2.3951807 | 445 | 13 | 1974–2006 | 0.57 | M-v | 0 | MPC | *38749* | (7045) |
| (7242) | 14.6 | 0.15 | 20060922 | 17.52550 | 261.84615 | 118.06378 | 4.50820 | 0.1494796 | 2.1664412 | 312 | 13 | 1954–2006 | 0.58 | M-v | 0 | MPC | *35412* | (7242) |
| (7280) | 14.6 | 0.15 | 20060922 | 148.97154 | 165.98782 | 174.56309 | 1.83126 | 0.2429108 | 2.5723432 | 245 | 12 | 1951–2006 | 0.59 | M-v | 0 | MPC | 18124 | (7280) |
| (7353) | 12.0 | 0.15 | 20060922 | 76.39006 | 15.35805 | 316.83381 | 14.36094 | 0.1753477 | 2.5683788 | 426 | 13 | 1985–2006 | 0.57 | M-v | 0 | MPC | *38749* | (7353) |
| (7370) | 13.0 | 0.15 | 20060922 | 258.39730 | 211.98960 | 50.54597 | 4.01753 | 0.0324389 | 2.6730770 | 520 | 15 | 1978–2006 | 0.57 | M-v | 0 | MPC | *35412* | (7370) |
| (7377) | 15.5 | 0.15 | 20060922 | 150.38175 | 337.01438 | 320.78905 | 4.67362 | 0.1702174 | 2.2222606 | 283 | 13 | 1975–2006 | 0.52 | M-v | 0 | MPC | 12098 | (7377) |
| (7449) | 13.8 | 0.15 | 20060922 | 60.56556 | 26.09406 | 335.86581 | 6.26688 | 0.1969052 | 2.2223478 | 394 | 12 | 1949–2006 | 0.64 | M-v | 1 | MPC | *29076* | (7449) |
| (7465) | 15.5 | 0.15 | 20060922 | 17.62748 | 193.70633 | 190.83598 | 2.47759 | 0.1662250 | 2.2483026 | 323 | 11 | 1989–2006 | 0.62 | M-v | 0 | MPC | 77286 | (7465) |
| (7467) | 15.2 | 0.15 | 20060922 | 289.39860 | 41.49877 | 69.15242 | 15.90319 | 0.1266304 | 1.6540634 | 541 | 11 | 1978–2006 | 0.53 | M-v | 1 | MPC | 73858 | (7467) |
| (7502) | 12.5 | 0.15 | 20060922 | 52.41431 | 193.18695 | 196.49901 | 1.83462 | 0.0722630 | 2.8356125 | 544 | 12 | 1991–2006 | 0.56 | M-v | 0 | MPC | 3856 | (7502) |
| (7514) | 13.5 | 0.15 | 20060922 | 200.69183 | 173.43687 | 45.02396 | 3.76155 | 0.2031177 | 2.3650582 | 452 | 12 | 1986–2006 | 0.56 | M-v | 0 | MPC | 12098 | (7514) |
| (7573) | 12.8 | 0.15 | 20060922 | 44.55132 | 296.16188 | 91.94159 | 2.55819 | 0.1688272 | 3.1021477 | 465 | 15 | 1978–2006 | 0.56 | M-v | 0 | MPC | *35412* | (7573) |
| (7656) | 14.0 | 0.15 | 20060922 | 175.37090 | 272.65414 | 50.01310 | 1.51105 | 0.2051803 | 3.0357308 | 439 | 13 | 1972–2006 | 0.59 | M-v | 0 | MPC | 43316 | (7656) |
| (7688) | 14.4 | 0.15 | 20060922 | 148.22525 | 305.98306 | 21.59349 | 7.36956 | 0.1541448 | 2.2826887 | 510 | 13 | 1953–2006 | 0.51 | M-v | 0 | MPC | 13524 | (7688) |
| (7845) | 12.7 | 0.15 | 20060922 | 304.29778 | 26.36236 | 119.50697 | 16.06180 | 0.2176945 | 3.1825523 | 208 | 13 | 1951–2006 | 0.55 | M-v | 0 | MPC | 7419 | (7845) |
| (7861) | 14.6 | 0.15 | 20060922 | 159.45503 | 345.02911 | 309.19122 | 1.95662 | 0.1743675 | 2.4376118 | 535 | 13 | 1981–2006 | 0.58 | M-v | 0 | MPC | *39510* | (7861) |
| (7887) | 12.0 | 0.15 | 20060922 | 26.76605 | 102.42180 | 295.25148 | 13.76196 | 0.1000792 | 2.5790281 | 483 | 12 | 1973–2006 | 0.53 | M-v | 0 | MPC | 1401 | (7887) |
| (7970) | 14.6 | 0.15 | 20060922 | 104.93629 | 289.51725 | 348.27626 | 4.15585 | 0.2422643 | 2.5778496 | 388 | 12 | 1960–2006 | 0.56 | M-v | 0 | MPC | 77287 | (7970) |
| (8045) | 11.8 | 0.15 | 20060922 | 237.74415 | 247.67009 | 295.61440 | 11.98879 | 0.1352518 | 2.6004268 | 365 | 12 | 1970–2006 | 0.54 | M-v | 0 | MPC | *38014* | (8045) |
| (8056) | 13.7 | 0.15 | 20060922 | 39.34309 | 58.67019 | 358.14870 | 6.98095 | 0.2087003 | 2.5624472 | 432 | 10 | 1952–2006 | 0.61 | M-v | 0 | MPC | *34279* | (8056) |
| (8268) | 13.7 | 0.15 | 20060922 | 287.79519 | 11.99467 | 125.52957 | 5.24064 | 0.0479911 | 2.7563982 | 504 | 15 | 1980–2006 | 0.59 | M-v | 0 | MPC | 18124 | (8268) |
| (8275) | 14.4 | 0.15 | 20060922 | 245.01454 | 87.85950 | 87.02463 | 3.81887 | 0.0940006 | 2.1500147 | 368 | 12 | 1949–2006 | 0.58 | M-v | 1 | MPC | *36060* | (8275) |
| (8317) | 10.7 | 0.15 | 20060922 | 2.08474 | 113.21403 | 208.18139 | 0.94758 | 0.0464105 | 5.2645675 | 464 | 15 | 1960–2006 | 0.59 | M-v | 0 | MPC | 41500 | (8317) |
| (8323) | 13.4 | 0.15 | 20060922 | 6.34635 | 307.70700 | 132.16241 | 9.80427 | 0.2994288 | 2.6970291 | 381 | 10 | 1952–2006 | 0.59 | M-v | 0 | MPC | 15994 | (8323) |
| (8369) | 11.6 | 0.15 | 20060922 | 106.64013 | 0.53158 | 19.32017 | 15.60622 | 0.1237815 | 2.5630555 | 373 | 12 | 1953–2006 | 0.56 | M-v | 1 | MPC | *31358* | (8369) |
| (8397) | 12.3 | 0.15 | 20060922 | 57.51732 | 143.34206 | 249.90844 | 12.95552 | 0.1756877 | 2.5843683 | 444 | 12 | 1972–2006 | 0.51 | M-v | 0 | MPC | 13524 | (8397) |
| (8418) | 13.1 | 0.15 | 20060922 | 170.92776 | 309.26101 | 347.19286 | 3.10039 | 0.1117839 | 2.7520555 | 478 | 13 | 1986–2006 | 0.55 | M-v | 0 | MPC | 3857 | (8418) |
| (8430) | 14.1 | 0.15 | 20060922 | 220.34784 | 106.46609 | 78.91513 | 3.66625 | 0.1010760 | 2.8088589 | 446 | 13 | 1978–2006 | 0.58 | M-v | 0 | MPC | 18124 | (8430) |
| (8450) | 12.8 | 0.15 | 20060922 | 111.64896 | 33.56485 | 343.03293 | 4.88048 | 0.0896375 | 2.7486184 | 480 | 13 | 1959–2006 | 0.54 | M-v | 0 | MPC | 3857 | (8450) |
| (8468) | 14.0 | 0.15 | 20060922 | 58.55589 | 179.33941 | 132.95130 | 2.81868 | 0.1788528 | 3.1863516 | 280 | 12 | 1977–2006 | 0.68 | M-v | 0 | MPC | 3857 | (8468) |
| (8527) | 14.2 | 0.15 | 20060922 | 101.41601 | 285.31244 | 6.43069 | 7.41852 | 0.1829557 | 2.2597747 | 461 | 12 | 1955–2006 | 0.56 | M-v | 0 | MPC | *31502* | (8527) |
| (8536) | 12.8 | 0.15 | 20060922 | 132.27692 | 274.84074 | 4.34591 | 8.51527 | 0.0808507 | 3.0140375 | 457 | 10 | 1972–2006 | 0.49 | M-v | 0 | MPC | 25664 | (8536) |
| (8541) | 15.1 | 0.15 | 20060922 | 356.55122 | 272.53541 | 124.08634 | 2.77675 | 0.0495100 | 2.1799878 | 349 | 11 | 1954–2006 | 0.53 | M-v | 0 | MPC | 53555 | (8541) |
| (8560) | 12.3 | 0.15 | 20060922 | 99.85053 | 332.96432 | 350.54127 | 13.40159 | 0.0708258 | 2.9580600 | 404 | 10 | 1990–2006 | 0.54 | M-v | 0 | MPC | 3857 | (8560) |
| (8656) | 13.4 | 0.15 | 20060922 | 351.83446 | 315.78910 | 124.10747 | 3.97543 | 0.1230104 | 2.9187569 | 417 | 11 | 1951–2006 | 0.61 | M-v | 0 | MPC | 77287 | (8656) |
| (8747) | 12.1 | 0.15 | 20060922 | 74.36141 | 153.80868 | 194.00297 | 12.23529 | 0.1421372 | 3.0503798 | 496 | 12 | 1971–2006 | 0.58 | M-v | 0 | MPC | 3857 | (8747) |
| (8777) | 13.8 | 0.15 | 20060922 | 305.34349 | 53.51920 | 139.48083 | 9.87923 | 0.1312696 | 2.7560952 | 509 | 16 | 1976–2006 | 0.61 | M-v | 0 | MPC | *35413* | (8777) |
| (8802) | 13.5 | 0.15 | 20060922 | 28.52675 | 211.82212 | 169.30969 | 9.94436 | 0.1183054 | 3.1104071 | 330 | 10 | 1981–2006 | 0.69 | M-v | 0 | MPC | 25664 | (8802) |
| (8932) | 13.0 | 0.15 | 20060922 | 335.62948 | 267.72370 | 217.00953 | 1.30549 | 0.0673451 | 2.9329281 | 640 | 12 | 1989–2006 | 0.52 | M-v | 0 | MPC | 3857 | (8932) |
| (8936) | 14.6 | 0.15 | 20060922 | 113.37869 | 222.31645 | 110.25376 | 3.51434 | 0.1214746 | 2.2081436 | 559 | 10 | 1984–2006 | 0.54 | M-v | 0 | MPC | 12098 | (8936) |
| (8939) | 13.3 | 0.15 | 20060922 | 8.16915 | 77.14305 | 18.00529 | 1.76906 | 0.0792100 | 2.9198924 | 569 | 13 | 1985–2006 | 0.55 | M-v | 0 | MPC | 4877 | (8939) |
| (8959) | 15.3 | 0.15 | 20060922 | 112.35604 | 227.21048 | 57.38014 | 2.13178 | 0.2061064 | 2.3044152 | 330 | 13 | 1960–2006 | 0.60 | M-v | 0 | MPC | 10821 | (8959) |
| (8963) | 13.1 | 0.15 | 20060922 | 145.65722 | 9.01790 | 203.76974 | 0.37376 | 0.1180011 | 3.2120100 | 477 | 10 | 1960–2006 | 0.55 | M-v | 0 | MPC | 23409 | (8963) |
| (8968) | 12.8 | 0.15 | 20060922 | 127.15669 | 141.05800 | 198.32774 | 9.68523 | 0.1195250 | 3.0119860 | 589 | 13 | 1955–2006 | 0.58 | M-v | 0 | MPC | 6176 | (8968) |
| (9032) | 14.5 | 0.15 | 20060922 | 232.21916 | 45.35764 | 107.79430 | 5.13751 | 0.1004333 | 2.2873009 | 394 | 13 | 1973–2006 | 0.63 | M-v | 0 | MPC | *36060* | (9032) |
| (9072) | 11.4 | 0.15 | 20060922 | 121.20062 | 13.59766 | 290.47658 | 15.18479 | 0.0677646 | 3.2120728 | 361 | 12 | 1991–2006 | 0.54 | M-v | 0 | MPC | 4878 | (9072) |
| (9107) | 13.2 | 0.15 | 20060922 | 349.13260 | 11.08053 | 126.36813 | 6.80344 | 0.2010281 | 2.8682325 | 436 | 10 | 1990–2006 | 0.52 | M-v | 0 | MPC | 23409 | (9107) |
| (9124) | 13.8 | 0.15 | 20060922 | 46.82698 | 39.27106 | 6.78479 | 1.39086 | 0.0614959 | 2.8691299 | 477 | 10 | 1981–2006 | 0.59 | M-v | 0 | MPC | 23409 | (9124) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (9135) | 15.1 | 0.15 | 20060922 | 110.11055 | 228.94733 | 45.93026 | 6.46184 | 0.1323492 | 2.3099296 | 286 | 10 | 1960–2006 | 0.62 | M-v | 0 | MPC | 31792 | (9135) |
| (9182) | 13.9 | 0.15 | 20060922 | 13.06776 | 156.95098 | 271.17511 | 3.72680 | 0.0895113 | 2.2858661 | 522 | 10 | 1991–2006 | 0.55 | M-v | 0 | MPC | 13524 | (9182) |
| (9222) | 11.5 | 0.15 | 20060922 | 249.57956 | 107.40293 | 101.91077 | 17.36932 | 0.1746906 | 3.1320549 | 334 | 10 | 1995–2006 | 0.54 | M-v | 0 | MPC | 23409 | (9222) |
| (9277) | 14.4 | 0.15 | 20060922 | 36.26115 | 37.55144 | 1.38859 | 7.10089 | 0.1205679 | 2.3596305 | 434 | 13 | 1953–2006 | 0.56 | M-v | 0 | MPC | *32599* | (9277) |
| (9329) | 14.1 | 0.15 | 20060922 | 193.10505 | 20.77837 | 243.90761 | 5.98626 | 0.0911553 | 2.2894338 | 453 | 10 | 1990–2006 | 0.55 | M-v | 0 | MPC | 13524 | (9329) |
| (9353) | 14.5 | 0.15 | 20060922 | 16.16831 | 31.96364 | 27.34837 | 2.98298 | 0.1833110 | 2.3825637 | 443 | 13 | 1954–2006 | 0.59 | M-v | 0 | MPC | *32618* | (9353) |
| (9357) | 13.4 | 0.15 | 20060922 | 71.62909 | 148.28165 | 242.37591 | 0.99905 | 0.0818317 | 2.8968546 | 551 | 12 | 1990–2006 | 0.52 | M-v | 0 | MPC | 23409 | (9357) |
| (9366) | 14.1 | 0.15 | 20060922 | 100.69099 | 227.72122 | 98.25774 | 7.72899 | 0.2046634 | 2.2594856 | 423 | 10 | 1978–2006 | 0.58 | M-v | 0 | MPC | 25664 | (9366) |
| (9420) | 14.4 | 0.15 | 20060922 | 320.39712 | 335.15050 | 197.67195 | 4.77869 | 0.0897770 | 2.2698915 | 462 | 12 | 1978–2006 | 0.57 | M-v | 0 | MPC | *38015* | (9420) |
| (9434) | 15.0 | 0.15 | 20060922 | 186.69636 | 220.39559 | 54.14773 | 2.72214 | 0.1416837 | 2.2725193 | 306 | 10 | 1978–2006 | 0.62 | M-v | 0 | MPC | 14339 | (9434) |
| (9453) | 13.2 | 0.15 | 20060922 | 73.46767 | 191.48054 | 158.36340 | 10.44909 | 0.0892174 | 2.9820018 | 402 | 12 | 1979–2006 | 0.60 | M-v | 0 | MPC | 3858 | (9453) |
| (9469) | 15.5 | 0.15 | 20060922 | 96.53243 | 78.78625 | 214.15480 | 2.75399 | 0.1727063 | 2.3582815 | 237 | 10 | 1973–2006 | 0.64 | M-v | 0 | MPC | 12098 | (9469) |
| (9476) | 14.0 | 0.15 | 20060922 | 66.68357 | 96.79061 | 204.27393 | 4.47884 | 0.1097635 | 2.4527370 | 545 | 9 | 1979–2006 | 0.55 | M-v | 0 | MPC | 77288 | (9476) |
| (9491) | 15.3 | 0.15 | 20060922 | 222.50408 | 262.90190 | 350.56764 | 5.05188 | 0.1336538 | 2.2141949 | 290 | 9 | 1971–2006 | 0.55 | M-v | 1 | MPC | *38015* | (9491) |
| (9498) | 15.6 | 0.15 | 20060922 | 105.77404 | 63.02258 | 214.18653 | 1.75761 | 0.2079590 | 2.3562562 | 239 | 9 | 1973–2006 | 0.65 | M-v | 0 | MPC | 10821 | (9498) |
| (9527) | 15.1 | 0.15 | 20060922 | 355.24373 | 164.07798 | 273.98260 | 1.06340 | 0.1199191 | 2.4261516 | 351 | 10 | 1977–2006 | 0.63 | M-v | 0 | MPC | *39510* | (9527) |
| (9542) | 13.2 | 0.15 | 20060922 | 83.59325 | 307.55075 | 49.13611 | 8.30607 | 0.1165971 | 2.3990463 | 468 | 13 | 1964–2006 | 0.56 | M-v | 0 | MPC | *32874* | (9542) |
| (9577) | 15.4 | 0.15 | 20060922 | 181.55536 | 270.55925 | 308.79647 | 1.83487 | 0.1258107 | 2.4169893 | 291 | 9 | 1989–2006 | 0.59 | M-v | 0 | MPC | *38015* | (9577) |
| (9596) | 14.3 | 0.15 | 20060922 | 198.92570 | 251.49439 | 43.38160 | 3.95383 | 0.1865412 | 2.2513173 | 464 | 12 | 1971–2006 | 0.52 | M-v | 0 | MPC | *32888* | (9596) |
| (9633) | 12.4 | 0.15 | 20060922 | 248.18131 | 116.25260 | 171.67194 | 10.53814 | 0.1316930 | 3.0419882 | 553 | 13 | 1982–2006 | 0.60 | M-v | 0 | MPC | 9658 | (9633) |
| (9637) | 14.4 | 0.15 | 20060922 | 59.90848 | 240.16904 | 152.14943 | 0.86405 | 0.2328676 | 2.3895043 | 434 | 12 | 1972–2006 | 0.62 | M-v | 0 | MPC | *32897* | (9637) |
| (9638) | 14.5 | 0.15 | 20060922 | 171.26474 | 83.42732 | 147.57438 | 0.69906 | 0.1619699 | 2.4027334 | 430 | 10 | 1994–2006 | 0.59 | M-v | 0 | MPC | 13524 | (9638) |
| (9639) | 14.2 | 0.15 | 20060922 | 44.64620 | 152.96075 | 233.27136 | 2.31962 | 0.0572352 | 2.3991100 | 514 | 10 | 1994–2006 | 0.52 | M-v | 0 | MPC | 77288 | (9639) |
| (9651) | 14.6 | 0.15 | 20060922 | 83.81167 | 358.23099 | 304.36814 | 1.76817 | 0.1938667 | 2.4505020 | 401 | 10 | 1990–2006 | 0.55 | M-v | 0 | MPC | 12098 | (9651) |
| (9660) | 12.9 | 0.15 | 20060922 | 282.90803 | 148.31671 | 65.58041 | 2.05032 | 0.1151024 | 3.1906525 | 544 | 12 | 1979–2006 | 0.56 | M-v | 0 | MPC | 8363 | (9660) |
| (9679) | 15.6 | 0.15 | 20060922 | 59.28214 | 158.52571 | 190.88362 | 1.26241 | 0.1686479 | 2.4316771 | 149 | 9 | 1960–2004 | 0.65 | M-v | 1 | MPC | 77288 | (9679) |
| (9686) | 15.3 | 0.15 | 20060922 | 157.26708 | 305.51434 | 27.81261 | 2.32761 | 0.1144480 | 2.2787803 | 380 | 12 | 1953–2006 | 0.52 | M-v | 0 | MPC | 9658 | (9686) |
| (9722) | 15.4 | 0.15 | 20060922 | 343.03377 | 93.06174 | 20.68189 | 1.24773 | 0.1748775 | 2.4088226 | 402 | 10 | 1951–2006 | 0.64 | M-v | 0 | MPC | 14997 | (9722) |
| (9728) | 14.6 | 0.15 | 20060922 | 86.39461 | 31.58733 | 272.56897 | 7.22775 | 0.1853861 | 2.4788119 | 250 | 12 | 1954–2006 | 0.55 | M-v | 0 | MPC | 13524 | (9728) |
| (9737) | 13.6 | 0.15 | 20060922 | 112.97236 | 57.14163 | 230.92122 | 11.33450 | 0.1776760 | 2.4583999 | 421 | 12 | 1982–2006 | 0.57 | M-v | 0 | MPC | *38749* | (9737) |
| (9766) | 14.2 | 0.15 | 20060922 | 327.30207 | 58.40591 | 53.22741 | 1.27813 | 0.0828473 | 2.4508501 | 509 | 12 | 1954–2006 | 0.52 | M-v | 0 | MPC | 14339 | (9766) |
| (9777) | 14.0 | 0.15 | 20060922 | 110.24508 | 178.57178 | 115.63606 | 3.27156 | 0.2334478 | 2.3967959 | 367 | 10 | 1990–2006 | 0.55 | M-v | 0 | MPC | 9658 | (9777) |
| (9885) | 13.7 | 0.15 | 20060922 | 50.86548 | 253.09541 | 198.36299 | 6.11326 | 0.0666460 | 2.3581925 | 514 | 13 | 1985–2006 | 0.55 | M-v | 0 | MPC | 15994 | (9885) |
| (9973) | 14.2 | 0.15 | 20060922 | 9.72341 | 104.40076 | 297.23603 | 1.49853 | 0.1715750 | 2.5314211 | 291 | 13 | 1949–2006 | 0.58 | M-v | 1 | MPC | *40288* | (9973) |
| (9997) | 13.7 | 0.15 | 20060922 | 11.41607 | 90.42978 | 335.60169 | 2.46208 | 0.1141320 | 2.5460955 | 524 | 12 | 1969–2006 | 0.54 | M-v | 0 | MPC | 599 | (9997) |
| (10001) | 13.9 | 0.15 | 20060922 | 17.16172 | 357.96306 | 40.31446 | 7.42583 | 0.1344171 | 2.3769534 | 384 | 12 | 1954–2006 | 0.56 | M-v | 1 | MPC | *38016* | (10001) |
| (10023) | 14.0 | 0.15 | 20060922 | 50.28880 | 266.99662 | 124.66005 | 1.93243 | 0.1783792 | 2.4344665 | 507 | 15 | 1950–2006 | 0.54 | M-v | 0 | MPC | *33863* | (10023) |
| (10062) | 14.3 | 0.15 | 20060922 | 70.65645 | 23.56850 | 303.14412 | 1.63264 | 0.1778371 | 2.6609562 | 469 | 10 | 1988–2006 | 0.56 | M-v | 0 | MPC | 18125 | (10062) |
| (10063) | 12.8 | 0.15 | 20060922 | 247.70328 | 80.06078 | 124.41065 | 2.99218 | 0.0373818 | 3.9851578 | 328 | 13 | 1981–2006 | 0.63 | M-v | 0 | MPC | 12098 | (10063) |
| (10076) | 13.6 | 0.15 | 20060922 | 37.19062 | 6.42626 | 328.06384 | 20.21633 | 0.3155031 | 2.6008455 | 168 | 9 | 1989–2006 | 0.58 | M-v | 1 | MPC | 57626 | (10076) |
| (10102) | 14.7 | 0.15 | 20060922 | 292.83646 | 44.93201 | 140.31361 | 1.82101 | 0.1319894 | 2.4222578 | 380 | 10 | 1981–2006 | 0.53 | M-v | 0 | MPC | 18125 | (10102) |
| (10165) | 17.1 | 0.15 | 20060922 | 30.13537 | 348.37293 | 312.48777 | 23.89256 | 0.5037418 | 1.2346389 | 235 | 7 | 1995–2006 | 0.57 | M-v | 2 | MPC | 04059 | (10165) |
| (10171) | 12.5 | 0.15 | 20060922 | 295.74636 | 142.02998 | 350.51933 | 15.08436 | 0.1246943 | 2.6208275 | 319 | 10 | 1980–2006 | 0.59 | M-v | 1 | MPC | 77289 | (10171) |
| (10191) | 13.2 | 0.15 | 20060922 | 85.90479 | 21.16224 | 309.80313 | 10.20780 | 0.0562494 | 2.6781934 | 418 | 10 | 1978–2006 | 0.55 | M-v | 0 | MPC | *33903* | (10191) |
| (10214) | 13.9 | 0.15 | 20060922 | 319.26981 | 240.69856 | 179.66973 | 5.24544 | 0.2114581 | 2.7234028 | 430 | 10 | 1979–2006 | 0.59 | M-v | 0 | MPC | 600 | (10214) |
| (10224) | 14.1 | 0.15 | 20060922 | 188.33803 | 187.76040 | 126.51613 | 3.42680 | 0.1661036 | 2.4307700 | 376 | 12 | 1982–2006 | 0.62 | M-v | 0 | MPC | 600 | (10224) |
| (10305) | 13.6 | 0.15 | 20060922 | 122.36421 | 224.77290 | 127.04237 | 5.65123 | 0.1289695 | 2.5586392 | 511 | 10 | 1982–2006 | 0.56 | M-v | 0 | MPC | 18125 | (10305) |
| (10589) | 14.3 | 0.15 | 20060922 | 28.58830 | 126.92768 | 260.54290 | 7.93654 | 0.2267608 | 2.7348681 | 323 | 10 | 1994–2006 | 0.59 | M-v | 0 | MPC | 14997 | (10589) |
| (10591) | 14.1 | 0.15 | 20060922 | 78.37247 | 308.09064 | 83.79663 | 3.95057 | 0.0160964 | 2.6245428 | 423 | 10 | 1995–2006 | 0.62 | M-v | 0 | MPC | 18125 | (10591) |
| (10592) | 14.4 | 0.15 | 20060922 | 49.15890 | 274.59023 | 80.64571 | 2.60513 | 0.1037919 | 2.7476062 | 503 | 10 | 1992–2006 | 0.58 | M-v | 0 | MPC | 18125 | (10592) |
| (10662) | 13.7 | 0.15 | 20060922 | 97.48580 | 193.86216 | 130.38945 | 4.18240 | 0.0981281 | 2.7627896 | 497 | 13 | 1973–2006 | 0.63 | M-v | 0 | MPC | 2611 | (10662) |
| (10679) | 14.0 | 0.15 | 20060922 | 265.47313 | 359.51148 | 120.24863 | 11.28148 | 0.0495564 | 2.9967975 | 350 | 10 | 1979–2006 | 0.56 | M-v | 0 | MPC | 18125 | (10679) |
| (10754) | 14.5 | 0.15 | 20060922 | 25.71255 | 166.02379 | 178.74340 | 1.89679 | 0.0935890 | 2.1518839 | 566 | 10 | 1987–2006 | 0.54 | M-v | 0 | MPC | 7419 | (10754) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (10839) | 14.3 | 0.15 | 20060922 | 10.79918 | 262.64251 | 173.57972 | 10.42820 | 0.2131771 | 2.6981292 | 376 | 12 | 1952–2006 | 0.61 | M-v | 0 | MPC | *34780* | (10839) |
| (11088) | 14.9 | 0.15 | 20060922 | 77.66144 | 187.93651 | 120.56461 | 0.57388 | 0.1581759 | 2.1646370 | 392 | 10 | 1993–2006 | 0.55 | M-v | 0 | MPC | 73861 | (11088) |
| (11153) | 13.3 | 0.15 | 20060922 | 346.60301 | 118.15184 | 313.24814 | 6.85420 | 0.2095687 | 2.7701408 | 346 | 10 | 1987–2006 | 0.59 | M-v | 0 | MPC | 77290 | (11153) |
| (11174) | 15.1 | 0.15 | 20060922 | 144.92499 | 178.81173 | 86.95367 | 3.06374 | 0.0941729 | 2.2116689 | 314 | 10 | 1976–2006 | 0.53 | M-v | 0 | MPC | 9659 | (11174) |
| (11189) | 14.8 | 0.15 | 20060922 | 83.81708 | 5.34544 | 9.94730 | 7.38484 | 0.1366325 | 2.3004912 | 415 | 12 | 1951–2006 | 0.54 | M-v | 0 | MPC | *35260* | (11189) |
| (11293) | 14.1 | 0.15 | 20060922 | 183.25405 | 224.87825 | 78.13071 | 5.14562 | 0.1389747 | 2.3144664 | 524 | 10 | 1991–2006 | 0.54 | M-v | 0 | MPC | 14340 | (11293) |
| (11299) | 13.9 | 0.15 | 20060922 | 111.18655 | 241.04600 | 29.57628 | 4.41127 | 0.0457441 | 2.7366855 | 475 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 77290 | (11299) |
| (11305) | 14.0 | 0.15 | 20060922 | 118.00847 | 301.98544 | 61.45596 | 3.36608 | 0.0863827 | 2.3146858 | 544 | 10 | 1991–2006 | 0.51 | M-v | 0 | MPC | 14997 | (11305) |
| (11355) | 13.4 | 0.15 | 20060922 | 113.88037 | 226.24783 | 95.56535 | 7.18105 | 0.0559110 | 2.7780123 | 429 | 9 | 1976–2006 | 0.57 | M-v | 0 | MPC | 1403 | (11355) |
| (11357) | 14.4 | 0.15 | 20060922 | 241.00234 | 125.02265 | 355.75552 | 1.22797 | 0.0632377 | 2.9729364 | 230 | 10 | 1960–2006 | 0.57 | M-v | 0 | MPC | 18126 | (11357) |
| (11365) | 14.4 | 0.15 | 20060922 | 10.43453 | 177.72920 | 231.64459 | 2.85994 | 0.1424691 | 2.1836694 | 525 | 10 | 1988–2006 | 0.53 | M-v | 0 | MPC | 77290 | (11365) |
| (11369) | 14.8 | 0.15 | 20060922 | 349.36327 | 233.58462 | 227.27311 | 3.39222 | 0.1139626 | 2.3181797 | 358 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | *38016* | (11369) |
| (11446) | 13.0 | 0.15 | 20060922 | 89.12901 | 162.98644 | 214.45658 | 0.87891 | 0.1992621 | 3.0588170 | 592 | 15 | 1978–2006 | 0.57 | M-v | 0 | MPC | *35818* | (11446) |
| (11500) | 18.4 | 0.15 | 20060922 | 286.61108 | 289.28321 | 234.55041 | 10.30977 | 0.3558710 | 1.0803842 | 218 | 6 | 1989–2006 | 0.59 | M-v | 2 | MPC | *35833* | (11500) |
| (11517) | 13.4 | 0.15 | 20060922 | 339.57774 | 119.15936 | 342.71793 | 0.59954 | 0.1526549 | 3.1103361 | 420 | 10 | 1991–2006 | 0.58 | M-v | 0 | MPC | 77290 | (11517) |
| (11606) | 16.9 | 0.15 | 20060922 | 329.73268 | 30.25283 | 335.65343 | 5.84863 | 0.1646769 | 2.4435302 | 58 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 53557 | (11606) |
| (11617) | 12.0 | 0.15 | 20060922 | 29.72583 | 78.30965 | 10.02685 | 13.03167 | 0.1119782 | 3.0824587 | 503 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 6177 | (11617) |
| (11619) | 13.2 | 0.15 | 20060922 | 144.79552 | 157.62145 | 124.42843 | 6.93695 | 0.1317766 | 2.5308940 | 486 | 10 | 1992–2006 | 0.57 | M-v | 0 | MPC | 15994 | (11619) |
| (11662) | 13.5 | 0.15 | 20060922 | 15.78933 | 39.01669 | 53.13284 | 5.07759 | 0.1438541 | 3.0989801 | 504 | 9 | 1978–2006 | 0.59 | M-v | 0 | MPC | 6177 | (11662) |
| (11707) | 14.5 | 0.15 | 20060922 | 25.65596 | 64.04666 | 310.14419 | 3.60352 | 0.1618804 | 2.2165677 | 414 | 11 | 1986–2006 | 0.57 | M-v | 0 | MPC | 77290 | (11707) |
| (11764) | 14.6 | 0.15 | 20060922 | 20.78216 | 19.57063 | 16.46082 | 4.70731 | 0.0690481 | 2.1952139 | 412 | 9 | 1960–2006 | 0.59 | M-v | 0 | MPC | *35901* | (11764) |
| (11784) | 13.2 | 0.15 | 20060922 | 106.53553 | 183.08303 | 171.81915 | 2.33835 | 0.2186361 | 3.1498321 | 472 | 16 | 1954–2006 | 0.59 | M-v | 0 | MPC | *36214* | (11784) |
| (11821) | 13.1 | 0.15 | 20060922 | 337.17728 | 94.71691 | 12.49074 | 9.61167 | 0.0532062 | 3.0697742 | 334 | 10 | 1978–2006 | 0.52 | M-v | 0 | MPC | 25665 | (11821) |
| (11826) | 13.6 | 0.15 | 20060922 | 86.06491 | 12.50736 | 18.05755 | 1.73331 | 0.2045496 | 3.1791247 | 330 | 12 | 1976–2006 | 0.59 | M-v | 0 | MPC | *36226* | (11826) |
| (11844) | 12.7 | 0.15 | 20060922 | 141.21790 | 260.06336 | 41.23885 | 1.33495 | 0.1593553 | 3.1820980 | 492 | 15 | 1952–2006 | 0.54 | M-v | 0 | MPC | *36231* | (11844) |
| (11892) | 15.1 | 0.15 | 20060922 | 324.69314 | 79.73253 | 9.51503 | 4.06672 | 0.0686215 | 2.2210544 | 346 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 53557 | (11892) |
| (11908) | 13.6 | 0.15 | 20060922 | 258.02541 | 142.42049 | 68.66693 | 2.38980 | 0.0589581 | 3.0496730 | 416 | 10 | 1992–2006 | 0.59 | M-v | 0 | MPC | 25665 | (11908) |
| (11952) | 14.2 | 0.15 | 20060922 | 257.66473 | 166.46132 | 2.59072 | 6.75922 | 0.0852836 | 2.2202444 | 544 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 47645 | (11952) |
| (12007) | 15.3 | 0.15 | 20060922 | 192.78410 | 154.72418 | 33.46230 | 6.36435 | 0.0995347 | 2.2600921 | 314 | 9 | 1991–2006 | 0.53 | M-v | 0 | MPC | 7420 | (12007) |
| (12025) | 14.5 | 0.15 | 20060922 | 224.81932 | 189.02426 | 333.71374 | 3.18921 | 0.1050204 | 2.3254142 | 296 | 10 | 1958–2006 | 0.56 | M-v | 0 | MPC | *36279* | (12025) |
| (12057) | 15.2 | 0.15 | 20060922 | 279.42464 | 135.05563 | 0.19481 | 2.35591 | 0.0519791 | 2.1560310 | 343 | 10 | 1949–2006 | 0.55 | M-v | 1 | MPC | 9659 | (12057) |
| (12120) | 15.0 | 0.15 | 20060922 | 30.20945 | 356.92700 | 21.04470 | 4.30944 | 0.0131963 | 2.1619844 | 294 | 9 | 1992–2006 | 0.58 | M-v | 1 | MPC | *36306* | (12120) |
| (12134) | 13.5 | 0.15 | 20060922 | 347.07045 | 91.15809 | 12.91558 | 22.24380 | 0.0799061 | 3.1593202 | 221 | 10 | 1960–2006 | 0.59 | M-v | 0 | MPC | 7420 | (12134) |
| (12152) | 15.4 | 0.15 | 20060922 | 133.42203 | 52.82751 | 216.02041 | 1.76793 | 0.0197256 | 2.2388005 | 314 | 10 | 1971–2006 | 0.67 | M-v | 0 | MPC | *36315* | (12152) |
| (12202) | 15.3 | 0.15 | 20060922 | 267.94448 | 311.53275 | 232.90218 | 5.00702 | 0.0812880 | 2.2125874 | 257 | 9 | 1979–2006 | 0.63 | M-v | 1 | MPC | 13525 | (12202) |
| (12225) | 14.2 | 0.15 | 20060922 | 188.33957 | 115.78519 | 153.85220 | 4.76287 | 0.1939793 | 2.2131280 | 514 | 10 | 1985–2006 | 0.55 | M-v | 0 | MPC | *36666* | (12225) |
| (12260) | 13.5 | 0.15 | 20060922 | 131.36490 | 56.18220 | 305.76001 | 0.85785 | 0.1249679 | 2.9362625 | 508 | 12 | 1979–2006 | 0.55 | M-v | 0 | MPC | 4878 | (12260) |
| (12264) | 13.8 | 0.15 | 20060922 | 194.49939 | 319.91346 | 287.21673 | 5.56431 | 0.1075050 | 2.2825288 | 497 | 9 | 1990–2006 | 0.53 | M-v | 0 | MPC | 12099 | (12264) |
| (12316) | 12.4 | 0.15 | 20060922 | 151.83431 | 93.44184 | 216.15718 | 7.96957 | 0.1220437 | 3.0921148 | 567 | 10 | 1950–2006 | 0.56 | M-v | 0 | MPC | 25665 | (12316) |
| (12322) | 15.1 | 0.15 | 20060922 | 53.78988 | 339.79277 | 5.60968 | 5.93697 | 0.2038538 | 2.2471432 | 150 | 10 | 1982–2006 | 0.61 | M-v | 1 | MPC | 33742 | (12322) |
| (12334) | 13.8 | 0.15 | 20060922 | 20.72542 | 278.34830 | 148.83315 | 5.43410 | 0.1394361 | 2.2653778 | 505 | 12 | 1990–2006 | 0.58 | M-v | 0 | MPC | *36695* | (12334) |
| (12363) | 13.1 | 0.15 | 20060922 | 238.25960 | 138.73295 | 99.97429 | 2.61239 | 0.1232688 | 3.1692476 | 447 | 10 | 1989–2006 | 0.57 | M-v | 0 | MPC | 25665 | (12363) |
| (12411) | 13.7 | 0.15 | 20060922 | 306.38514 | 185.11943 | 276.15320 | 5.71491 | 0.0791457 | 2.3257492 | 565 | 10 | 1991–2006 | 0.54 | M-v | 0 | MPC | 53558 | (12411) |
| (12447) | 14.2 | 0.15 | 20060922 | 218.94641 | 192.59976 | 86.54768 | 5.40128 | 0.2080743 | 2.1639169 | 481 | 10 | 1979–2006 | 0.53 | M-v | 1 | MPC | 13525 | (12447) |
| (12452) | 15.0 | 0.15 | 20060922 | 33.79464 | 192.20502 | 252.03329 | 2.08252 | 0.0900516 | 2.1721356 | 361 | 9 | 1979–2006 | 0.52 | M-v | 0 | MPC | 13525 | (12452) |
| (12460) | 14.9 | 0.15 | 20060922 | 71.97108 | 234.39419 | 96.99521 | 7.56299 | 0.1599224 | 2.2803868 | 288 | 9 | 1994–2006 | 0.61 | M-v | 0 | MPC | 10821 | (12460) |
| (12483) | 13.5 | 0.15 | 20060922 | 239.23673 | 231.41124 | 38.22883 | 12.00414 | 0.1277858 | 2.9100838 | 247 | 9 | 1955–2006 | 0.59 | M-v | 0 | MPC | 6178 | (12483) |
| (12512) | 14.6 | 0.15 | 20060922 | 93.92703 | 84.08748 | 224.59972 | 5.07229 | 0.1910410 | 2.2696557 | 365 | 10 | 1985–2006 | 0.53 | M-v | 0 | MPC | 33742 | (12512) |
| (12552) | 12.3 | 0.15 | 20060922 | 0.14626 | 193.61187 | 324.11741 | 13.54782 | 0.0772759 | 3.1206724 | 455 | 9 | 1979–2006 | 0.56 | M-v | 0 | MPC | 8364 | (12552) |
| (12561) | 12.5 | 0.15 | 20060922 | 317.91493 | 155.51344 | 43.17558 | 0.76754 | 0.1308378 | 3.1069703 | 646 | 12 | 1990–2006 | 0.54 | M-v | 0 | MPC | 9659 | (12561) |
| (12582) | 13.6 | 0.15 | 20060922 | 299.82457 | 61.87341 | 70.51325 | 2.66255 | 0.1159089 | 2.2512700 | 596 | 12 | 1982–2006 | 0.55 | M-v | 0 | MPC | 12099 | (12582) |
| (12717) | 14.8 | 0.15 | 20060922 | 237.02356 | 54.70222 | 168.13318 | 5.22664 | 0.1646379 | 2.2158098 | 337 | 9 | 1991–2006 | 0.55 | M-v | 1 | MPC | 12099 | (12717) |
| (12722) | 14.6 | 0.15 | 20060922 | 182.77775 | 38.52340 | 191.35272 | 3.34119 | 0.1463652 | 2.3100248 | 418 | 12 | 1987–2006 | 0.58 | M-v | 0 | MPC | *37044* | (12722) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (12743) | 12.0 | 0.15 | 20060922 | 288.29102 | 267.70138 | 295.86333 | 20.43811 | 0.0585939 | 3.1876801 | 331 | 10 | 1981–2006 | 0.52 | M-v | 0 | MPC | 8364 | (12743) |
| (12769) | 13.7 | 0.15 | 20060922 | 228.99691 | 79.77346 | 129.04855 | 6.02918 | 0.1358155 | 2.2597339 | 578 | 9 | 1994–2006 | 0.53 | M-v | 0 | MPC | 9660 | (12769) |
| (12785) | 14.0 | 0.15 | 20060922 | 177.63278 | 261.24909 | 339.45316 | 7.31976 | 0.0810560 | 2.2938567 | 365 | 9 | 1995–2006 | 0.58 | M-v | 0 | MPC | 12099 | (12785) |
| (12800) | 14.0 | 0.15 | 20060922 | 348.10047 | 44.81899 | 1.72902 | 0.88441 | 0.1845274 | 2.3950775 | 490 | 10 | 1980–2006 | 0.57 | M-v | 0 | MPC | 77291 | (12800) |
| (12825) | 15.1 | 0.15 | 20060922 | 205.48900 | 265.38203 | 275.34842 | 1.30484 | 0.1491935 | 2.3562574 | 210 | 9 | 1995–2006 | 0.51 | M-v | 0 | MPC | 10821 | (12825) |
| (12840) | 14.3 | 0.15 | 20060922 | 221.32589 | 82.76012 | 110.69282 | 5.36090 | 0.1388213 | 2.3460791 | 447 | 9 | 1983–2006 | 0.58 | M-v | 0 | MPC | *37074* | (12840) |
| (12897) | 14.5 | 0.15 | 20060922 | 348.05314 | 135.24552 | 22.56502 | 3.97749 | 0.0880256 | 2.2171070 | 411 | 9 | 1987–2006 | 0.50 | M-v | 1 | MPC | *37091* | (12897) |
| (12947) | 14.3 | 0.15 | 20060922 | 9.37496 | 102.34065 | 336.40313 | 5.45726 | 0.1100448 | 2.2161250 | 421 | 9 | 1971–2006 | 0.61 | M-v | 0 | MPC | 12099 | (12947) |
| (12992) | 14.9 | 0.15 | 20060922 | 155.24107 | 325.70930 | 355.62458 | 2.45552 | 0.1879258 | 2.2052671 | 297 | 12 | 1972–2006 | 0.57 | M-v | 0 | MPC | *37485* | (12992) |
| (12999) | 13.9 | 0.15 | 20060922 | 98.24788 | 211.02218 | 152.43046 | 5.76652 | 0.1893528 | 2.2733144 | 558 | 9 | 1957–2006 | 0.56 | M-v | 0 | MPC | 13525 | (12999) |
| (13026) | 13.8 | 0.15 | 20060922 | 341.94503 | 146.00347 | 328.23670 | 24.36338 | 0.2297193 | 2.3462892 | 214 | 7 | 1989–2006 | 0.60 | M-v | 1 | MPC | *37494* | (13026) |
| (13068) | 14.4 | 0.15 | 20060922 | 169.91804 | 101.72684 | 193.09763 | 11.66708 | 0.1688170 | 2.2769939 | 401 | 9 | 1991–2006 | 0.53 | M-v | 0 | MPC | 13525 | (13068) |
| (13071) | 13.9 | 0.15 | 20060922 | 66.37689 | 313.67886 | 33.12152 | 7.39299 | 0.1387824 | 2.3551609 | 395 | 9 | 1982–2006 | 0.58 | M-v | 1 | MPC | 12099 | (13071) |
| (13072) | 14.2 | 0.15 | 20060922 | 35.69405 | 55.34095 | 352.48174 | 8.28351 | 0.1070659 | 2.3374277 | 493 | 10 | 1982–2006 | 0.50 | M-v | 0 | MPC | 38161 | (13072) |
| (13073) | 13.8 | 0.15 | 20060922 | 176.25643 | 330.72231 | 343.16013 | 7.94103 | 0.2206954 | 2.2615218 | 384 | 10 | 1981–2006 | 0.56 | M-v | 0 | MPC | 13525 | (13073) |
| (13074) | 13.9 | 0.15 | 20060922 | 109.74241 | 335.06758 | 3.81083 | 5.18518 | 0.1557220 | 2.3115626 | 489 | 12 | 1963–2006 | 0.57 | M-v | 1 | MPC | *37506* | (13074) |
| (13077) | 14.7 | 0.15 | 20060922 | 162.30471 | 39.60134 | 191.88058 | 4.11498 | 0.1003834 | 2.4124665 | 315 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 77292 | (13077) |
| (13104) | 15.4 | 0.15 | 20060922 | 136.27439 | 349.86378 | 269.14098 | 1.42865 | 0.1731936 | 2.4482285 | 218 | 10 | 1993–2006 | 0.60 | M-v | 0 | MPC | 14340 | (13104) |
| (13105) | 15.5 | 0.15 | 20060922 | 287.56197 | 232.92869 | 241.90752 | 2.82540 | 0.1393109 | 2.3947157 | 185 | 7 | 1993–2006 | 0.59 | M-v | 0 | MPC | *37515* | (13105) |
| (13128) | 14.2 | 0.15 | 20060922 | 190.77954 | 90.21453 | 134.85469 | 6.02258 | 0.1740961 | 2.3828760 | 305 | 9 | 1982–2006 | 0.58 | M-v | 0 | MPC | 14340 | (13128) |
| (13130) | 13.6 | 0.15 | 20060922 | 121.39010 | 77.84482 | 175.55549 | 7.82512 | 0.1675607 | 2.4467045 | 461 | 10 | 1990–2006 | 0.60 | M-v | 0 | MPC | 12099 | (13130) |
| (13132) | 13.8 | 0.15 | 20060922 | 276.82976 | 223.39574 | 304.36958 | 5.93207 | 0.0754449 | 2.3759819 | 404 | 10 | 1979–2006 | 0.54 | M-v | 0 | MPC | 14340 | (13132) |
| (13188) | 14.9 | 0.15 | 20060922 | 301.69665 | 224.50683 | 335.00442 | 1.90693 | 0.0861741 | 2.1939957 | 322 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 14998 | (13188) |
| (13209) | 14.4 | 0.15 | 20060922 | 312.01818 | 35.52068 | 88.57577 | 2.55238 | 0.1246263 | 2.3235562 | 372 | 9 | 1988–2006 | 0.60 | M-v | 0 | MPC | *37542* | (13209) |
| (13214) | 14.1 | 0.15 | 20060922 | 154.00433 | 52.42104 | 168.47416 | 2.30301 | 0.1219930 | 2.4766629 | 354 | 10 | 1977–2006 | 0.63 | M-v | 0 | MPC | 13526 | (13214) |
| (13283) | 14.5 | 0.15 | 20060922 | 89.08451 | 8.51428 | 294.96163 | 0.38157 | 0.1880125 | 2.4019855 | 398 | 10 | 1991–2006 | 0.58 | M-v | 0 | MPC | 12099 | (13283) |
| (13286) | 13.6 | 0.15 | 20060922 | 205.20501 | 264.03915 | 326.14991 | 6.26532 | 0.0721665 | 2.3611252 | 516 | 8 | 1987–2006 | 0.53 | M-v | 0 | MPC | 14998 | (13286) |
| (13299) | 13.9 | 0.15 | 20060922 | 213.03065 | 78.22726 | 175.70098 | 5.05451 | 0.1141150 | 2.2987010 | 499 | 9 | 1983–2006 | 0.55 | M-v | 0 | MPC | 13526 | (13299) |
| (13302) | 14.4 | 0.15 | 20060922 | 351.61527 | 223.50989 | 268.06296 | 4.83319 | 0.0805085 | 2.2654818 | 386 | 9 | 1978–2006 | 0.54 | M-v | 0 | MPC | 14998 | (13302) |
| (13305) | 14.8 | 0.15 | 20060922 | 124.15266 | 49.36670 | 225.71645 | 4.91677 | 0.0850771 | 2.4133704 | 271 | 9 | 1989–2006 | 0.55 | M-v | 0 | MPC | 13526 | (13305) |
| (13320) | 14.4 | 0.15 | 20060922 | 112.39543 | 229.50215 | 115.15828 | 3.77902 | 0.1784311 | 2.3144193 | 396 | 12 | 1977–2006 | 0.61 | M-v | 1 | MPC | 13526 | (13320) |
| (13346) | 14.6 | 0.15 | 20060922 | 144.02662 | 44.07836 | 229.36238 | 1.37195 | 0.1829133 | 2.3865886 | 352 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 12100 | (13346) |
| (13348) | 12.5 | 0.15 | 20060922 | 254.04267 | 233.11528 | 32.85411 | 1.23524 | 0.1407988 | 3.1553440 | 591 | 12 | 1979–2006 | 0.55 | M-v | 0 | MPC | 30235 | (13348) |
| (13394) | 14.1 | 0.15 | 20060922 | 5.19824 | 25.95736 | 5.26315 | 7.56121 | 0.1445040 | 2.2548461 | 402 | 9 | 1982–2006 | 0.53 | M-v | 1 | MPC | 57629 | (13394) |
| (13439) | 15.7 | 0.15 | 20060922 | 310.30234 | 115.70922 | 353.21473 | 6.64220 | 0.1458448 | 2.3111216 | 205 | 7 | 1960–2006 | 0.63 | M-v | 0 | MPC | *37607* | (13439) |
| (13467) | 14.8 | 0.15 | 20060922 | 172.97491 | 39.56409 | 212.07523 | 3.99221 | 0.1152881 | 2.3264605 | 403 | 10 | 1977–2006 | 0.62 | M-v | 0 | MPC | 12100 | (13467) |
| (13484) | 14.6 | 0.15 | 20060922 | 215.80798 | 283.40299 | 333.16951 | 6.57763 | 0.1181670 | 2.2089983 | 312 | 9 | 1981–2006 | 0.58 | M-v | 1 | MPC | *38312* | (13484) |
| (13527) | 14.7 | 0.15 | 20060922 | 159.38686 | 167.43006 | 118.79738 | 3.04421 | 0.1428475 | 2.2951655 | 399 | 9 | 1981–2006 | 0.53 | M-v | 0 | MPC | 12100 | (13527) |
| (13572) | 15.2 | 0.15 | 20060922 | 333.07519 | 322.21023 | 117.25820 | 3.30835 | 0.1748753 | 2.3784132 | 222 | 7 | 1993–2006 | 0.61 | M-v | 0 | MPC | 62181 | (13572) |
| (13594) | 14.3 | 0.15 | 20060922 | 153.89589 | 283.92189 | 359.88359 | 2.04803 | 0.2258879 | 2.3566252 | 334 | 9 | 1994–2006 | 0.65 | M-v | 1 | MPC | 15994 | (13594) |
| (13600) | 14.6 | 0.15 | 20060922 | 215.09289 | 162.46502 | 107.10730 | 1.91148 | 0.0507658 | 2.3107271 | 476 | 10 | 1991–2006 | 0.56 | M-v | 0 | MPC | 15994 | (13600) |
| (13603) | 14.5 | 0.15 | 20060922 | 112.49199 | 118.94993 | 172.11077 | 2.36096 | 0.1816275 | 2.4069889 | 411 | 10 | 1979–2006 | 0.59 | M-v | 0 | MPC | 10822 | (13603) |
| (13605) | 13.7 | 0.15 | 20060922 | 125.79618 | 349.60106 | 331.42758 | 5.31514 | 0.1335308 | 2.3793912 | 428 | 10 | 1993–2006 | 0.60 | M-v | 0 | MPC | 13526 | (13605) |
| (13607) | 14.0 | 0.15 | 20060922 | 271.76939 | 202.40650 | 21.36639 | 6.61824 | 0.0595212 | 2.3312705 | 456 | 9 | 1993–2006 | 0.59 | M-v | 0 | MPC | *38345* | (13607) |
| (13608) | 13.5 | 0.15 | 20060922 | 192.55843 | 233.94962 | 55.43905 | 7.09744 | 0.1460062 | 2.3481239 | 525 | 10 | 1976–2006 | 0.50 | M-v | 0 | MPC | 14998 | (13608) |
| (13629) | 14.8 | 0.15 | 20060922 | 334.74554 | 262.89046 | 223.02151 | 2.32931 | 0.1631934 | 2.3282896 | 328 | 12 | 1977–2006 | 0.57 | M-v | 0 | MPC | *38351* | (13629) |
| (13630) | 14.5 | 0.15 | 20060922 | 357.69605 | 158.29559 | 232.59968 | 1.65354 | 0.1963596 | 2.3866901 | 329 | 10 | 1991–2006 | 0.53 | M-v | 0 | MPC | 33742 | (13630) |
| (13657) | 13.9 | 0.15 | 20060922 | 98.12135 | 298.63925 | 1.27772 | 2.30764 | 0.1971503 | 2.4210075 | 438 | 10 | 1979–2006 | 0.55 | M-v | 0 | MPC | 13526 | (13657) |
| (13662) | 15.0 | 0.15 | 20060922 | 195.56153 | 276.13015 | 1.76426 | 6.11624 | 0.0821387 | 2.2812057 | 409 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 14340 | (13662) |
| (13663) | 14.6 | 0.15 | 20060922 | 36.37922 | 64.73218 | 286.74388 | 1.60110 | 0.1996262 | 2.4291009 | 405 | 9 | 1994–2006 | 0.53 | M-v | 0 | MPC | 12100 | (13663) |
| (13693) | 14.0 | 0.15 | 20060922 | 123.22290 | 45.01500 | 230.24136 | 1.72543 | 0.1846663 | 2.5912254 | 431 | 9 | 1971–2006 | 0.53 | M-v | 0 | MPC | 15994 | (13693) |
| (13724) | 13.8 | 0.15 | 20060922 | 188.07742 | 338.66902 | 263.13065 | 1.32753 | 0.1936917 | 2.3427521 | 507 | 10 | 1954–2006 | 0.53 | M-v | 0 | MPC | 14998 | (13724) |
| (13752) | 14.8 | 0.15 | 20060922 | 68.90194 | 314.44959 | 4.81630 | 7.11041 | 0.1885059 | 2.4328895 | 296 | 9 | 1979–2006 | 0.62 | M-v | 0 | MPC | 12100 | (13752) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (13781) | 14.9 | 0.15 | 20060922 | 60.42208 | 52.85793 | 283.19845 | 0.34094 | 0.1763352 | 2.4788791 | 291 | 10 | 1986–2006 | 0.57 | M-v | 0 | MPC | 13526 | (13781) |
| (13783) | 13.8 | 0.15 | 20060922 | 45.54296 | 110.72841 | 265.61371 | 5.16026 | 0.2133536 | 2.4198344 | 267 | 9 | 1979–2006 | 0.56 | M-v | 1 | MPC | 13526 | (13783) |
| (13816) | 14.4 | 0.15 | 20060922 | 311.44245 | 238.78882 | 235.14872 | 12.90488 | 0.1286463 | 2.5450541 | 379 | 11 | 1987–2006 | 0.59 | M-v | 0 | MPC | 13526 | (13816) |
| (13832) | 10.5 | 0.15 | 20060922 | 255.92223 | 118.28428 | 86.25119 | 16.16602 | 0.1150080 | 3.3692272 | 428 | 15 | 1955–2006 | 0.52 | M-v | 0 | MPC | *38409* | (13832) |
| (13880) | 13.6 | 0.15 | 20060922 | 204.36324 | 74.73897 | 134.37874 | 3.84718 | 0.1416960 | 2.4259615 | 592 | 9 | 1960–2006 | 0.56 | M-v | 0 | MPC | 14340 | (13880) |
| (13918) | 12.6 | 0.15 | 20060922 | 97.65893 | 354.84548 | 310.46558 | 10.17880 | 0.2166627 | 2.6199476 | 469 | 12 | 1950–2006 | 0.57 | M-v | 0 | MPC | *39028* | (13918) |
| (13943) | 13.4 | 0.15 | 20060922 | 271.87675 | 166.43941 | 49.12693 | 23.75503 | 0.0755059 | 2.2808397 | 248 | 9 | 1981–2006 | 0.56 | M-v | 1 | MPC | *39035* | (13943) |
| (13946) | 14.4 | 0.15 | 20060922 | 103.44149 | 204.91417 | 127.80654 | 3.08625 | 0.2147141 | 2.4081824 | 346 | 12 | 1990–2006 | 0.58 | M-v | 1 | MPC | 14340 | (13946) |
| (13948) | 13.8 | 0.15 | 20060922 | 134.46391 | 319.21571 | 358.91673 | 12.40147 | 0.2312687 | 2.4039285 | 405 | 10 | 1979–2006 | 0.57 | M-v | 0 | MPC | 14998 | (13948) |
| (13966) | 14.7 | 0.15 | 20060922 | 155.62470 | 187.84285 | 138.45650 | 1.42563 | 0.1953738 | 2.2721928 | 406 | 10 | 1970–2006 | 0.51 | M-v | 0 | MPC | 14340 | (13966) |
| (13976) | 14.0 | 0.15 | 20060922 | 112.29426 | 151.64649 | 129.72039 | 11.24001 | 0.2309722 | 2.5526999 | 308 | 9 | 1992–2006 | 0.57 | M-v | 1 | MPC | 14340 | (13976) |
| (13992) | 14.0 | 0.15 | 20060922 | 179.10265 | 229.46760 | 36.25279 | 7.33640 | 0.0997420 | 2.3717530 | 383 | 9 | 1976–2006 | 0.56 | M-v | 0 | MPC | 14340 | (13992) |
| (13994) | 14.0 | 0.15 | 20060922 | 48.51952 | 315.38424 | 50.50097 | 7.72272 | 0.1281104 | 2.3989877 | 304 | 9 | 1991–2006 | 0.57 | M-v | 1 | MPC | 13527 | (13994) |
| (13995) | 14.9 | 0.15 | 20060922 | 105.58931 | 212.31751 | 102.40260 | 2.42390 | 0.1704062 | 2.4127106 | 269 | 10 | 1979–2006 | 0.60 | M-v | 0 | MPC | 13527 | (13995) |
| (14004) | 13.9 | 0.15 | 20060922 | 59.89416 | 313.85560 | 359.19356 | 14.12555 | 0.2443308 | 2.6135600 | 158 | 8 | 1993–2006 | 0.55 | M-v | 1 | MPC | 77294 | (14004) |
| (14073) | 14.5 | 0.15 | 20060922 | 247.42338 | 20.70035 | 164.15753 | 5.23384 | 0.1511573 | 2.4590216 | 436 | 10 | 1982–2006 | 0.55 | M-v | 0 | MPC | 14998 | (14073) |
| (14120) | 13.6 | 0.15 | 20060922 | 2.12824 | 211.85254 | 223.15668 | 5.99252 | 0.0892428 | 2.3837904 | 512 | 9 | 1980–2006 | 0.54 | M-v | 0 | MPC | 14340 | (14120) |
| (14131) | 14.5 | 0.15 | 20060922 | 78.55378 | 337.92815 | 42.50461 | 5.00594 | 0.1534226 | 2.3154328 | 370 | 9 | 1976–2006 | 0.58 | M-v | 1 | MPC | *39088* | (14131) |
| (14150) | 13.9 | 0.15 | 20060922 | 225.11701 | 120.23767 | 79.02716 | 3.50717 | 0.1398755 | 2.4296430 | 532 | 10 | 1985–2006 | 0.60 | M-v | 0 | MPC | 14998 | (14150) |
| (14151) | 14.5 | 0.15 | 20060922 | 19.73254 | 248.88922 | 132.71566 | 3.41531 | 0.1880044 | 2.4627022 | 296 | 10 | 1993–2006 | 0.57 | M-v | 1 | MPC | 33743 | (14151) |
| (14157) | 14.2 | 0.15 | 20060922 | 201.78666 | 279.21307 | 6.37983 | 8.88298 | 0.1450178 | 2.2622719 | 379 | 10 | 1981–2006 | 0.51 | M-v | 0 | MPC | 14998 | (14157) |
| (14161) | 14.3 | 0.15 | 20060922 | 105.56424 | 251.15039 | 68.07539 | 1.84591 | 0.1353438 | 2.3929780 | 366 | 9 | 1990–2006 | 0.59 | M-v | 0 | MPC | 77294 | (14161) |
| (14162) | 13.3 | 0.15 | 20060922 | 49.75601 | 341.34495 | 54.37642 | 13.64508 | 0.2500025 | 2.3933783 | 390 | 9 | 1961–2006 | 0.51 | M-v | 0 | MPC | *39097* | (14162) |
| (14173) | 14.0 | 0.15 | 20060922 | 52.40774 | 321.87743 | 63.60656 | 5.36183 | 0.0751806 | 2.3957502 | 416 | 12 | 1950–2006 | 0.55 | M-v | 0 | MPC | *39101* | (14173) |
| (14196) | 13.4 | 0.15 | 20060922 | 229.45483 | 186.13788 | 114.26977 | 7.28146 | 0.2186046 | 2.2650883 | 484 | 10 | 1987–2006 | 0.54 | M-v | 0 | MPC | 15994 | (14196) |
| (14229) | 13.5 | 0.15 | 20060922 | 152.14275 | 314.70364 | 5.61689 | 4.27916 | 0.1765061 | 2.3050867 | 477 | 10 | 1983–2006 | 0.53 | M-v | 0 | MPC | 13527 | (14229) |
| (14240) | 14.6 | 0.15 | 20060922 | 47.88689 | 344.51555 | 33.56256 | 7.41100 | 0.1181019 | 2.3406817 | 349 | 10 | 1984–2006 | 0.58 | M-v | 1 | MPC | 35429 | (14240) |
| (14266) | 13.3 | 0.15 | 20060922 | 115.67052 | 342.72571 | 293.64326 | 8.29702 | 0.1859385 | 2.5510902 | 414 | 11 | 1985–2006 | 0.57 | M-v | 0 | MPC | 14340 | (14266) |
| (14296) | 14.9 | 0.15 | 20060922 | 165.18649 | 155.28953 | 135.60427 | 3.22735 | 0.1625994 | 2.3752633 | 327 | 13 | 1971–2006 | 0.62 | M-v | 0 | MPC | 14340 | (14296) |
| (14298) | 14.4 | 0.15 | 20060922 | 138.92778 | 279.02216 | 357.54463 | 4.45633 | 0.1305919 | 2.5353269 | 421 | 11 | 1973–2006 | 0.63 | M-v | 0 | MPC | 15994 | (14298) |
| (14304) | 13.5 | 0.15 | 20060922 | 272.29215 | 106.14140 | 24.91712 | 16.32390 | 0.1213715 | 2.5676734 | 492 | 8 | 1971–2006 | 0.52 | M-v | 0 | MPC | 77294 | (14304) |
| (14306) | 14.0 | 0.15 | 20060922 | 189.41331 | 138.30535 | 56.01456 | 9.28783 | 0.1107228 | 2.5746707 | 367 | 9 | 1977–2006 | 0.57 | M-v | 1 | MPC | 14341 | (14306) |
| (14311) | 14.9 | 0.15 | 20060922 | 340.44689 | 235.13109 | 206.28196 | 7.74444 | 0.2237291 | 2.4657597 | 312 | 9 | 1971–2006 | 0.58 | M-v | 1 | MPC | *39792* | (14311) |
| (14344) | 14.9 | 0.15 | 20060922 | 1.50358 | 144.11742 | 295.70636 | 1.79194 | 0.1350993 | 2.3898638 | 325 | 9 | 1985–2006 | 0.65 | M-v | 0 | MPC | 38161 | (14344) |
| (14365) | 14.0 | 0.15 | 20060922 | 112.56418 | 264.10041 | 12.59603 | 4.97698 | 0.2308112 | 2.6780400 | 441 | 13 | 1978–2006 | 0.57 | M-v | 0 | MPC | *39808* | (14365) |
| (14373) | 13.9 | 0.15 | 20060922 | 227.45430 | 247.56456 | 0.77591 | 1.69560 | 0.1427951 | 2.4119128 | 522 | 13 | 1970–2006 | 0.53 | M-v | 0 | MPC | *39811* | (14373) |
| (14378) | 13.7 | 0.15 | 20060922 | 76.07821 | 72.13900 | 232.82110 | 2.29446 | 0.1615176 | 2.5885183 | 256 | 12 | 1981–2006 | 0.55 | M-v | 0 | MPC | *39812* | (14378) |
| (14383) | 13.8 | 0.15 | 20060922 | 140.41672 | 6.91947 | 324.87324 | 5.97291 | 0.1349262 | 2.3716485 | 491 | 10 | 1989–2006 | 0.56 | M-v | 0 | MPC | 14341 | (14383) |
| (14431) | 14.7 | 0.15 | 20060922 | 354.87545 | 11.51672 | 73.38078 | 3.30902 | 0.0913586 | 2.4507161 | 288 | 10 | 1990–2006 | 0.51 | M-v | 0 | MPC | 77294 | (14431) |
| (14476) | 12.6 | 0.15 | 20060922 | 43.88791 | 226.67004 | 129.27814 | 13.68313 | 0.1904764 | 2.6890188 | 372 | 10 | 1982–2006 | 0.56 | M-v | 0 | MPC | 13527 | (14476) |
| (14485) | 14.2 | 0.15 | 20060922 | 84.27789 | 69.00845 | 297.12144 | 1.24382 | 0.2319428 | 2.3858700 | 440 | 9 | 1972–2006 | 0.57 | M-v | 0 | MPC | *39843* | (14485) |
| (14526) | 15.4 | 0.15 | 20060922 | 119.95007 | 246.69305 | 70.51033 | 2.87939 | 0.2217727 | 2.4108393 | 210 | 10 | 1990–2006 | 0.54 | M-v | 1 | MPC | 14341 | (14526) |
| (14528) | 14.9 | 0.15 | 20060922 | 154.61937 | 225.79773 | 100.73235 | 2.13464 | 0.2485451 | 2.3405182 | 401 | 10 | 1993–2006 | 0.59 | M-v | 0 | MPC | 14341 | (14528) |
| (14533) | 14.1 | 0.15 | 20060922 | 64.44347 | 147.29495 | 183.41801 | 9.26470 | 0.1848583 | 2.5723167 | 203 | 12 | 1984–2006 | 0.63 | M-v | 1 | MPC | *39856* | (14533) |
| (14563) | 14.8 | 0.15 | 20060922 | 115.32637 | 123.04192 | 130.46094 | 4.76534 | 0.1897974 | 2.2516021 | 410 | 10 | 1989–2006 | 0.58 | M-v | 0 | MPC | 31794 | (14563) |
| (14567) | 14.4 | 0.15 | 20060922 | 138.41522 | 75.06284 | 195.48587 | 6.05203 | 0.1080454 | 2.2754679 | 321 | 9 | 1977–2006 | 0.57 | M-v | 0 | MPC | 10822 | (14567) |
| (14586) | 13.6 | 0.15 | 20060922 | 243.25235 | 82.30127 | 43.00982 | 7.45980 | 0.2187939 | 2.5510314 | 272 | 7 | 1990–2006 | 0.56 | M-v | 1 | MPC | *39871* | (14586) |
| (14589) | 14.9 | 0.15 | 20060922 | 320.39056 | 282.53362 | 183.95077 | 5.42865 | 0.1921130 | 2.4394282 | 288 | 9 | 1977–2006 | 0.61 | M-v | 0 | MPC | *39872* | (14589) |
| (14596) | 14.5 | 0.15 | 20060922 | 19.63091 | 252.78113 | 172.77963 | 9.06875 | 0.2170289 | 2.3784173 | 285 | 9 | 1980–2006 | 0.55 | M-v | 0 | MPC | *39875* | (14596) |
| (14606) | 14.3 | 0.15 | 20060922 | 82.51172 | 180.22942 | 155.10722 | 6.37286 | 0.1252831 | 2.4001508 | 269 | 10 | 1979–2006 | 0.61 | M-v | 0 | MPC | 13527 | (14606) |
| (14620) | 14.3 | 0.15 | 20060922 | 283.17269 | 74.22527 | 84.59614 | 3.13035 | 0.0983687 | 2.4429524 | 357 | 10 | 1977–2006 | 0.57 | M-v | 0 | MPC | 15994 | (14620) |
| (14668) | 12.5 | 0.15 | 20060922 | 85.36981 | 86.10699 | 257.94828 | 11.30150 | 0.2271383 | 2.5914728 | 511 | 12 | 1955–2006 | 0.53 | M-v | 0 | MPC | *39895* | (14668) |
| (14672) | 12.6 | 0.15 | 20060922 | 304.78379 | 156.89308 | 21.28048 | 10.63571 | 0.0362038 | 3.0263137 | 382 | 9 | 1976–2006 | 0.59 | M-v | 0 | MPC | 6178 | (14672) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (14681) | 13.8 | 0.15 | 20060922 | 179.65887 | 5.14211 | 297.11259 | 0.94009 | 0.1723727 | 3.0985408 | 342 | 10 | 1993–2006 | 0.62 | M-v | 0 | MPC | 27570 | (14681) |
| (14683) | 14.5 | 0.15 | 20060922 | 155.41255 | 50.71869 | 222.21803 | 5.00277 | 0.1569612 | 2.2766263 | 356 | 10 | 1977–2006 | 0.57 | M-v | 0 | MPC | 12100 | (14683) |
| (14746) | 14.4 | 0.15 | 20060922 | 118.97667 | 50.99111 | 290.51333 | 2.18476 | 0.1860041 | 2.4121466 | 438 | 9 | 1960–2006 | 0.60 | M-v | 0 | MPC | 15995 | (14746) |
| (14809) | 14.5 | 0.15 | 20060922 | 322.78435 | 133.42733 | 4.37574 | 5.80108 | 0.1352972 | 2.4134298 | 344 | 9 | 1981–2006 | 0.59 | M-v | 1 | MPC | 14998 | (14809) |
| (14810) | 15.4 | 0.15 | 20060922 | 187.99056 | 140.48287 | 162.55671 | 1.31443 | 0.1101717 | 2.4072536 | 316 | 12 | 1978–2006 | 0.60 | M-v | 0 | MPC | 7 | (14810) |
| (14870) | 13.4 | 0.15 | 20060922 | 145.89858 | 186.88694 | 142.81823 | 4.23746 | 0.2227781 | 2.3886225 | 579 | 9 | 1990–2006 | 0.54 | M-v | 0 | MPC | 13527 | (14870) |
| (14901) | 12.8 | 0.15 | 20060922 | 110.33754 | 107.69972 | 188.54246 | 12.31963 | 0.1719411 | 2.6956694 | 523 | 9 | 1987–2006 | 0.55 | M-v | 0 | MPC | 18126 | (14901) |
| (14909) | 13.0 | 0.15 | 20060922 | 76.02761 | 142.69311 | 157.84984 | 13.45096 | 0.1604034 | 2.5774000 | 405 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 13527 | (14909) |
| (14915) | 13.9 | 0.15 | 20060922 | 352.29717 | 259.06542 | 185.48766 | 14.81040 | 0.1045201 | 2.5921786 | 381 | 11 | 1972–2006 | 0.61 | M-v | 0 | MPC | 77295 | (14915) |
| (14932) | 14.6 | 0.15 | 20060922 | 240.57286 | 182.32638 | 315.47061 | 4.91651 | 0.1651777 | 2.6249579 | 236 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 42 | (14932) |
| (14983) | 14.4 | 0.15 | 20060922 | 79.98663 | 157.99272 | 194.00882 | 3.91265 | 0.2947300 | 2.5792494 | 492 | 9 | 1996–2006 | 0.55 | M-v | 1 | MPC | 14998 | (14983) |
| (14999) | 12.3 | 0.15 | 20060922 | 50.27008 | 304.06908 | 66.84126 | 13.94475 | 0.1887564 | 2.6373815 | 455 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 15995 | (14999) |
| (15018) | 14.1 | 0.15 | 20060922 | 41.08649 | 50.87209 | 15.08888 | 10.58909 | 0.2241700 | 2.3433163 | 312 | 7 | 1973–2006 | 0.53 | M-v | 0 | MPC | 38162 | (15018) |
| (15021) | 15.2 | 0.15 | 20060922 | 41.17481 | 25.16251 | 38.97476 | 2.64812 | 0.1814005 | 2.3527854 | 256 | 10 | 1971–2006 | 0.56 | M-v | 0 | MPC | 38162 | (15021) |
| (15068) | 13.5 | 0.15 | 20060922 | 25.06137 | 95.00646 | 347.05877 | 1.74305 | 0.2175833 | 3.9904805 | 186 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 47650 | (15068) |
| (15107) | 14.3 | 0.15 | 20060922 | 223.05197 | 13.99130 | 266.15628 | 4.59131 | 0.1761638 | 2.2721903 | 415 | 10 | 1991–2006 | 0.53 | M-v | 0 | MPC | 14999 | (15107) |
| (15109) | 14.5 | 0.15 | 20060922 | 208.59018 | 33.70947 | 218.51847 | 6.66142 | 0.0815336 | 2.3651479 | 349 | 9 | 1976–2006 | 0.56 | M-v | 0 | MPC | 14999 | (15109) |
| (15151) | 13.8 | 0.15 | 20060922 | 182.29919 | 301.82014 | 18.40255 | 2.23134 | 0.2316258 | 2.3589250 | 416 | 12 | 1971–2006 | 0.60 | M-v | 0 | MPC | 15995 | (15151) |
| (15154) | 13.1 | 0.15 | 20060922 | 125.72566 | 173.68733 | 73.27851 | 15.27152 | 0.1252625 | 2.6547314 | 344 | 9 | 1983–2006 | 0.58 | M-v | 0 | MPC | 14999 | (15154) |
| (15157) | 13.8 | 0.15 | 20060922 | 98.24465 | 281.95793 | 31.43285 | 15.05717 | 0.1370873 | 2.5847816 | 323 | 9 | 1993–2006 | 0.51 | M-v | 0 | MPC | 15995 | (15157) |
| (15166) | 12.1 | 0.15 | 20060922 | 67.63162 | 161.10252 | 170.48291 | 13.69873 | 0.1742179 | 2.6645810 | 399 | 9 | 1988–2006 | 0.56 | M-v | 1 | MPC | 14341 | (15166) |
| (15167) | 13.6 | 0.15 | 20060922 | 275.55069 | 22.28722 | 143.09495 | 7.23712 | 0.0841720 | 2.4707563 | 398 | 9 | 1990–2006 | 0.55 | M-v | 0 | MPC | 15995 | (15167) |
| (15207) | 13.2 | 0.15 | 20060922 | 203.38590 | 101.74800 | 150.10265 | 7.84928 | 0.1511115 | 2.5938624 | 546 | 13 | 1979–2006 | 0.54 | M-v | 0 | MPC | 825 | (15207) |
| (15217) | 15.7 | 0.15 | 20060922 | 235.75747 | 114.98700 | 135.71912 | 1.91113 | 0.1409658 | 2.4094452 | 98 | 8 | 1977–2005 | 0.69 | M-v | 1 | MPC | 18126 | (15217) |
| (15219) | 15.7 | 0.15 | 20060922 | 259.43104 | 10.81685 | 212.02918 | 0.63200 | 0.1361393 | 2.4120805 | 160 | 9 | 1977–2006 | 0.66 | M-v | 0 | MPC | 828 | (15219) |
| (15220) | 13.6 | 0.15 | 20060922 | 67.21384 | 344.66521 | 40.37235 | 8.65336 | 0.2437852 | 2.5299843 | 389 | 12 | 1977–2006 | 0.53 | M-v | 1 | MPC | 829 | (15220) |
| (15240) | 15.3 | 0.15 | 20060922 | 180.26317 | 15.00504 | 223.42128 | 4.14356 | 0.1591918 | 2.4443318 | 182 | 9 | 1989–2006 | 0.55 | M-v | 0 | MPC | 15995 | (15240) |
| (15248) | 13.8 | 0.15 | 20060922 | 64.85360 | 347.77619 | 36.90911 | 1.20496 | 0.2078680 | 2.5645397 | 561 | 12 | 1989–2006 | 0.59 | M-v | 0 | MPC | 14999 | (15248) |
| (15263) | 14.2 | 0.15 | 20060922 | 2.26041 | 116.36428 | 26.56036 | 2.97615 | 0.1115527 | 2.4053554 | 403 | 10 | 1974–2006 | 0.53 | M-v | 0 | MPC | 18126 | (15263) |
| (15264) | 14.9 | 0.15 | 20060922 | 2.73752 | 126.34537 | 336.87204 | 2.29460 | 0.1288562 | 2.4283414 | 320 | 12 | 1988–2006 | 0.59 | M-v | 0 | MPC | 842 | (15264) |
| (15265) | 14.5 | 0.15 | 20060922 | 28.75468 | 23.31878 | 65.04083 | 11.49823 | 0.2008684 | 2.4261994 | 207 | 10 | 1949–2006 | 0.62 | M-v | 1 | MPC | 842 | (15265) |
| (15293) | 14.3 | 0.15 | 20060922 | 333.46772 | 36.43414 | 59.60912 | 4.17241 | 0.1516946 | 2.3841475 | 372 | 9 | 1954–2006 | 0.63 | M-v | 0 | MPC | 850 | (15293) |
| (15296) | 15.3 | 0.15 | 20060922 | 305.57859 | 62.47280 | 114.29815 | 2.29048 | 0.1283086 | 2.3877645 | 176 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 851 | (15296) |
| (15305) | 12.9 | 0.15 | 20060922 | 33.55381 | 291.79172 | 83.99631 | 7.52499 | 0.2625744 | 2.7587719 | 403 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 15995 | (15305) |
| (15333) | 13.4 | 0.15 | 20060922 | 5.79853 | 357.78327 | 65.48963 | 14.21524 | 0.2307575 | 2.5871260 | 329 | 12 | 1953–2006 | 0.56 | M-v | 0 | MPC | 861 | (15333) |
| (15356) | 13.2 | 0.15 | 20060922 | 124.13061 | 175.24908 | 151.28753 | 15.70067 | 0.1314463 | 2.5844133 | 438 | 10 | 1988–2006 | 0.52 | M-v | 0 | MPC | 18126 | (15356) |
| (15359) | 14.2 | 0.15 | 20060922 | 325.98654 | 269.26233 | 140.14281 | 4.85973 | 0.0385366 | 2.7548411 | 262 | 10 | 1991–2006 | 0.62 | M-v | 0 | MPC | 868 | (15359) |
| (15380) | 14.4 | 0.15 | 20060922 | 39.98924 | 339.07685 | 23.87150 | 2.77321 | 0.0839993 | 2.6728181 | 308 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 38162 | (15380) |
| (15437) | 14.9 | 0.15 | 20060922 | 267.98507 | 267.11733 | 300.75437 | 1.66216 | 0.1366143 | 2.4093108 | 287 | 9 | 1990–2006 | 0.53 | M-v | 0 | MPC | 18126 | (15437) |
| (15445) | 12.9 | 0.15 | 20060922 | 340.07217 | 336.22562 | 84.42063 | 13.10555 | 0.1778641 | 2.6648929 | 385 | 10 | 1954–2006 | 0.59 | M-v | 0 | MPC | 14341 | (15445) |
| (15449) | 13.4 | 0.15 | 20060922 | 217.12931 | 275.78794 | 252.30813 | 12.21786 | 0.1354618 | 2.6195890 | 363 | 9 | 1981–2006 | 0.58 | M-v | 0 | MPC | 14341 | (15449) |
| (15471) | 13.6 | 0.15 | 20060922 | 240.84727 | 77.25557 | 115.12164 | 12.75377 | 0.0767172 | 2.5853769 | 293 | 10 | 1976–2006 | 0.59 | M-v | 0 | MPC | 18126 | (15471) |
| (15492) | 14.6 | 0.15 | 20060922 | 93.68675 | 45.66700 | 341.54914 | 2.13515 | 0.1843847 | 2.4266473 | 447 | 10 | 1980–2006 | 0.52 | M-v | 0 | MPC | 14999 | (15492) |
| (15494) | 13.1 | 0.15 | 20060922 | 44.38790 | 309.46130 | 45.95831 | 15.09190 | 0.1351064 | 2.6648440 | 372 | 9 | 1958–2006 | 0.58 | M-v | 0 | MPC | 77296 | (15494) |
| (15561) | 13.8 | 0.15 | 20060922 | 129.68000 | 178.55969 | 160.09117 | 10.45223 | 0.2426202 | 2.3989453 | 449 | 10 | 1982–2006 | 0.60 | M-v | 1 | MPC | 14999 | (15561) |
| (15563) | 14.6 | 0.15 | 20060922 | 316.76520 | 104.31329 | 12.98264 | 2.32066 | 0.1556151 | 2.4421298 | 269 | 10 | 1992–2006 | 0.57 | M-v | 0 | MPC | 14999 | (15563) |
| (15621) | 12.6 | 0.15 | 20060922 | 144.65424 | 146.09654 | 109.92048 | 15.99864 | 0.1529060 | 2.6312994 | 390 | 12 | 1975–2006 | 0.57 | M-v | 0 | MPC | 944 | (15621) |
| (15627) | 14.1 | 0.15 | 20060922 | 134.36008 | 232.37306 | 67.67964 | 4.30443 | 0.1244210 | 2.5891105 | 428 | 9 | 1993–2006 | 0.60 | M-v | 0 | MPC | 18126 | (15627) |
| (15668) | 13.7 | 0.15 | 20060922 | 227.27748 | 85.14210 | 61.26234 | 12.95074 | 0.1315533 | 2.5887611 | 237 | 9 | 1977–2006 | 0.65 | M-v | 1 | MPC | 14342 | (15668) |
| (15736) | 13.8 | 0.15 | 20060922 | 4.48233 | 17.28193 | 86.43430 | 6.33667 | 0.1589278 | 2.4656204 | 485 | 12 | 1951–2006 | 0.58 | M-v | 0 | MPC | 1688 | (15736) |
| (15744) | 14.0 | 0.15 | 20060922 | 97.69674 | 80.78583 | 289.93109 | 4.16447 | 0.1322674 | 2.7083094 | 409 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 1690 | (15744) |
| (15763) | 13.3 | 0.15 | 20060922 | 4.10223 | 352.55637 | 76.98216 | 9.73418 | 0.0753707 | 2.7290254 | 367 | 9 | 1992–2006 | 0.60 | M-v | 0 | MPC | 18127 | (15763) |
| (15815) | 14.7 | 0.15 | 20060922 | 134.20226 | 10.13831 | 331.24586 | 11.17611 | 0.2749185 | 2.3363455 | 244 | 9 | 1987–2006 | 0.53 | M-v | 1 | MPC | 14999 | (15815) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (15935) | 14.0 | 0.15 | 20060922 | 159.71908 | 38.12797 | 272.97721 | 3.86065 | 0.0761890 | 2.6453103 | 346 | 9 | 1996–2006 | 0.57 | M-v | 0 | MPC | 23410 | (15935) |
| (16027) | 14.2 | 0.15 | 20060922 | 198.93817 | 86.89249 | 97.33681 | 11.16804 | 0.0422053 | 2.7405830 | 303 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 14999 | (16027) |
| (16055) | 13.4 | 0.15 | 20060922 | 315.51240 | 223.59687 | 261.19452 | 8.06550 | 0.1015588 | 2.7706023 | 353 | 10 | 1976–2006 | 0.57 | M-v | 0 | MPC | 1774 | (16055) |
| (16109) | 14.6 | 0.15 | 20060922 | 132.00676 | 169.78305 | 94.70082 | 4.81289 | 0.1406916 | 2.2979442 | 363 | 9 | 1991–2006 | 0.63 | M-v | 0 | MPC | 8365 | (16109) |
| (16127) | 15.4 | 0.15 | 20060922 | 284.96762 | 54.99033 | 120.94340 | 2.63804 | 0.0909875 | 2.2578052 | 284 | 10 | 1989–2006 | 0.61 | M-v | 1 | MPC | 1796 | (16127) |
| (16129) | 15.1 | 0.15 | 20060922 | 54.90227 | 72.61641 | 262.11630 | 4.20193 | 0.2071736 | 2.3109706 | 313 | 8 | 1997–2006 | 0.56 | M-v | 0 | MPC | 77297 | (16129) |
| (16132) | 14.1 | 0.15 | 20060922 | 124.37939 | 324.46414 | 286.49968 | 1.74657 | 0.1410584 | 2.4345408 | 353 | 9 | 1978–2006 | 0.52 | M-v | 0 | MPC | 12101 | (16132) |
| (16136) | 15.1 | 0.15 | 20060922 | 211.20716 | 34.82026 | 166.44754 | 3.03176 | 0.0796617 | 2.2853517 | 353 | 9 | 1989–2006 | 0.57 | M-v | 0 | MPC | 10822 | (16136) |
| (16161) | 13.8 | 0.15 | 20060922 | 121.19864 | 186.91031 | 110.41514 | 11.54166 | 0.2428926 | 2.4599006 | 327 | 10 | 1989–2006 | 0.62 | M-v | 1 | MPC | 13528 | (16161) |
| (16165) | 14.9 | 0.15 | 20060922 | 13.93594 | 249.56061 | 184.32030 | 2.70955 | 0.1284812 | 2.2648801 | 389 | 12 | 1985–2006 | 0.58 | M-v | 0 | MPC | 1807 | (16165) |
| (16167) | 15.1 | 0.15 | 20060922 | 74.54680 | 184.44605 | 164.84907 | 3.77092 | 0.1936836 | 2.3266377 | 226 | 10 | 1991–2006 | 0.58 | M-v | 1 | MPC | 38162 | (16167) |
| (16232) | 12.7 | 0.15 | 20060922 | 312.86864 | 259.54380 | 251.80884 | 7.94096 | 0.1136285 | 3.9466209 | 258 | 9 | 1995–2006 | 0.50 | M-v | 0 | MPC | 70186 | (16232) |
| (16339) | 14.7 | 0.15 | 20060922 | 112.51112 | 60.27712 | 272.37374 | 4.04976 | 0.1589053 | 3.1261855 | 213 | 10 | 1977–2006 | 0.58 | M-v | 0 | MPC | 41502 | (16339) |
| (16344) | 13.8 | 0.15 | 20060922 | 96.78707 | 93.55004 | 221.01763 | 8.20635 | 0.1505687 | 2.8159768 | 414 | 9 | 1977–2006 | 0.60 | M-v | 0 | MPC | 18127 | (16344) |
| (16387) | 14.5 | 0.15 | 20060922 | 155.44754 | 307.20343 | 358.10149 | 8.21795 | 0.0303657 | 2.6881487 | 329 | 9 | 1981–2006 | 0.59 | M-v | 0 | MPC | 2818 | (16387) |
| (16390) | 14.4 | 0.15 | 20060922 | 34.02169 | 359.69848 | 349.62514 | 5.00055 | 0.1663997 | 3.1405911 | 239 | 13 | 1981–2006 | 0.58 | M-v | 0 | MPC | 2819 | (16390) |
| (16403) | 12.7 | 0.15 | 20060922 | 95.56382 | 351.50469 | 34.50694 | 10.76165 | 0.2055206 | 2.3194088 | 632 | 9 | 1980–2006 | 0.48 | M-v | 1 | MPC | 2823 | (16403) |
| (16438) | 14.5 | 0.15 | 20060922 | 22.25561 | 116.17967 | 311.01336 | 4.60694 | 0.0566763 | 2.7339895 | 371 | 9 | 1987–2006 | 0.55 | M-v | 0 | MPC | 2833 | (16438) |
| (16457) | 12.7 | 0.15 | 20060922 | 35.52082 | 59.48336 | 35.98016 | 10.38804 | 0.0618456 | 3.0218841 | 347 | 12 | 1952–2006 | 0.62 | M-v | 0 | MPC | 2839 | (16457) |
| (16464) | 14.3 | 0.15 | 20060922 | 223.51644 | 329.97317 | 189.02229 | 9.16749 | 0.1325403 | 2.3473853 | 344 | 10 | 1983–2006 | 0.58 | M-v | 0 | MPC | 12101 | (16464) |
| (16465) | 16.0 | 0.15 | 20060922 | 271.66710 | 112.47549 | 29.77900 | 24.27331 | 0.2121739 | 1.8258414 | 252 | 6 | 1990–2006 | 0.46 | M-v | 1 | MPC | 2842 | (16465) |
| (16480) | 14.2 | 0.15 | 20060922 | 194.65458 | 226.04236 | 37.77020 | 2.72327 | 0.1899377 | 2.3793404 | 581 | 10 | 1990–2006 | 0.57 | M-v | 0 | MPC | 13528 | (16480) |
| (16481) | 13.5 | 0.15 | 20060922 | 346.11310 | 308.94037 | 148.00644 | 2.37777 | 0.1867289 | 2.9089624 | 444 | 8 | 1990–2006 | 0.60 | M-v | 0 | MPC | 23410 | (16481) |
| (16527) | 12.8 | 0.15 | 20060922 | 239.26182 | 38.65568 | 155.84737 | 12.83445 | 0.1558482 | 2.5882951 | 267 | 12 | 1954–2006 | 0.58 | M-v | 0 | MPC | 2859 | (16527) |
| (16533) | 14.0 | 0.15 | 20060922 | 265.64962 | 100.56594 | 132.91998 | 14.51474 | 0.1306060 | 2.5826536 | 414 | 10 | 1991–2006 | 0.53 | M-v | 0 | MPC | 25665 | (16533) |
| (16543) | 14.0 | 0.15 | 20060922 | 35.16567 | 83.07480 | 333.22515 | 7.38083 | 0.1274350 | 2.3201263 | 438 | 9 | 1986–2006 | 0.54 | M-v | 0 | MPC | 38162 | (16543) |
| (16549) | 13.1 | 0.15 | 20060922 | 36.23796 | 129.01036 | 307.50072 | 6.85270 | 0.2065144 | 2.7773264 | 422 | 12 | 1951–2006 | 0.54 | M-v | 0 | MPC | 2866 | (16549) |
| (16593) | 13.2 | 0.15 | 20060922 | 116.56022 | 312.68766 | 43.77970 | 13.17933 | 0.1229547 | 2.6530361 | 442 | 10 | 1955–2006 | 0.56 | M-v | 0 | MPC | 2879 | (16593) |
| (16597) | 13.6 | 0.15 | 20060922 | 93.64279 | 85.34307 | 286.49563 | 5.12408 | 0.0858067 | 2.7224576 | 445 | 12 | 1982–2006 | 0.60 | M-v | 0 | MPC | 2880 | (16597) |
| (16601) | 13.8 | 0.15 | 20060922 | 163.72275 | 122.87091 | 138.54726 | 6.84666 | 0.0999147 | 2.3945750 | 450 | 10 | 1954–2006 | 0.55 | M-v | 0 | MPC | 14999 | (16601) |
| (16605) | 14.1 | 0.15 | 20060922 | 173.26099 | 255.93234 | 31.71085 | 5.92979 | 0.1123111 | 2.3582604 | 478 | 9 | 1951–2006 | 0.57 | M-v | 0 | MPC | 14342 | (16605) |
| (16619) | 14.0 | 0.15 | 20060922 | 47.46255 | 188.90306 | 236.92160 | 1.01335 | 0.0908377 | 2.8320109 | 505 | 12 | 1986–2006 | 0.57 | M-v | 0 | MPC | 2886 | (16619) |
| (16630) | 12.8 | 0.15 | 20060922 | 57.09225 | 117.34018 | 292.78424 | 9.20471 | 0.1299589 | 3.0755785 | 388 | 10 | 1988–2006 | 0.51 | M-v | 0 | MPC | 27570 | (16630) |
| (16689) | 12.7 | 0.15 | 20060922 | 329.41972 | 295.47770 | 141.41326 | 11.60354 | 0.1567805 | 3.1562184 | 445 | 9 | 1994–2006 | 0.58 | M-v | 0 | MPC | 23410 | (16689) |
| (16715) | 14.3 | 0.15 | 20060922 | 69.59406 | 38.74009 | 242.90158 | 9.37107 | 0.1829111 | 3.1623961 | 188 | 10 | 1988–2006 | 0.60 | M-v | 0 | MPC | 41502 | (16715) |
| (16739) | 13.3 | 0.15 | 20060922 | 54.96398 | 179.42137 | 171.72455 | 12.02490 | 0.1314738 | 2.6507994 | 373 | 10 | 1988–2006 | 0.61 | M-v | 0 | MPC | 14999 | (16739) |
| (16774) | 12.9 | 0.15 | 20060922 | 144.28956 | 82.87821 | 269.14561 | 13.37277 | 0.2905501 | 2.6454325 | 373 | 9 | 1996–2006 | 0.52 | M-v | 0 | MPC | 25665 | (16774) |
| (16777) | 14.0 | 0.15 | 20060922 | 226.06034 | 10.06848 | 144.65883 | 1.59412 | 0.1878802 | 3.0458238 | 378 | 12 | 1982–2006 | 0.60 | M-v | 0 | MPC | 2931 | (16777) |
| (16778) | 13.6 | 0.15 | 20060922 | 270.49963 | 10.34487 | 90.43503 | 10.40922 | 0.0546395 | 3.0832554 | 291 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 18127 | (16778) |
| (16789) | 13.4 | 0.15 | 20060922 | 32.48128 | 25.05417 | 336.57997 | 10.30458 | 0.1495407 | 2.9317168 | 297 | 10 | 1990–2006 | 0.59 | M-v | 0 | MPC | 77298 | (16789) |
| (16791) | 12.9 | 0.15 | 20060922 | 34.20926 | 297.24080 | 111.94808 | 14.30399 | 0.2021622 | 2.9277952 | 399 | 9 | 1997–2006 | 0.54 | M-v | 0 | MPC | 18127 | (16791) |
| (16806) | 14.0 | 0.15 | 20060922 | 311.23530 | 340.20146 | 32.02644 | 5.51613 | 0.1646756 | 2.1693797 | 428 | 10 | 1981–2006 | 0.60 | M-v | 1 | MPC | 2939 | (16806) |
| (16833) | 12.1 | 0.15 | 20060922 | 216.15965 | 241.63248 | 354.00733 | 12.80302 | 0.1288347 | 2.7025962 | 421 | 9 | 1990–2006 | 0.58 | M-v | 0 | MPC | 73869 | (16833) |
| (16847) | 13.1 | 0.15 | 20060922 | 59.04889 | 152.27067 | 257.78698 | 14.94132 | 0.1826078 | 2.5918172 | 365 | 12 | 1951–2006 | 0.59 | M-v | 1 | MPC | 2952 | (16847) |
| (16926) | 13.2 | 0.15 | 20060922 | 38.65743 | 281.40343 | 138.74344 | 2.66168 | 0.0647500 | 2.8520734 | 585 | 10 | 1983–2006 | 0.54 | M-v | 0 | MPC | 23410 | (16926) |
| (16979) | 13.8 | 0.15 | 20060922 | 189.73458 | 122.45282 | 116.95962 | 11.97403 | 0.2276129 | 2.6745873 | 307 | 9 | 1982–2006 | 0.59 | M-v | 0 | MPC | 18127 | (16979) |
| (17009) | 13.3 | 0.15 | 20060922 | 213.42974 | 36.65349 | 223.06988 | 5.46823 | 0.1792773 | 2.5618324 | 558 | 10 | 1991–2006 | 0.52 | M-v | 0 | MPC | 18127 | (17009) |
| (17034) | 14.0 | 0.15 | 20060922 | 149.25440 | 328.65535 | 4.90487 | 8.33432 | 0.1546713 | 2.5661366 | 263 | 10 | 1955–2006 | 0.54 | M-v | 1 | MPC | 3008 | (17034) |
| (17038) | 15.1 | 0.15 | 20060922 | 203.07025 | 39.53496 | 247.56829 | 5.93591 | 0.0852599 | 2.6200374 | 431 | 10 | 1982–2006 | 0.57 | M-v | 0 | MPC | 23410 | (17038) |
| (17052) | 12.8 | 0.15 | 20060922 | 131.20078 | 56.19400 | 272.75378 | 1.85333 | 0.1599844 | 2.6162230 | 490 | 12 | 1984–2006 | 0.52 | M-v | 0 | MPC | 3013 | (17052) |
| (17055) | 14.0 | 0.15 | 20060922 | 238.17186 | 54.63101 | 178.35953 | 14.76654 | 0.0855248 | 2.6028034 | 339 | 9 | 1978–2006 | 0.58 | M-v | 0 | MPC | 18127 | (17055) |
| (17060) | 13.6 | 0.15 | 20060922 | 238.69758 | 280.44468 | 340.96589 | 12.21893 | 0.1522323 | 2.5462931 | 403 | 13 | 1950–2006 | 0.58 | M-v | 0 | MPC | 3015 | (17060) |
| (17066) | 14.4 | 0.15 | 20060922 | 300.52541 | 3.49786 | 165.73257 | 5.70848 | 0.0716824 | 2.5929230 | 415 | 10 | 1978–2006 | 0.60 | M-v | 0 | MPC | 3017 | (17066) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (17103) | 14.3 | 0.15 | 20060922 | 45.60586 | 216.93317 | 166.84890 | 1.99830 | 0.0821066 | 2.8382355 | 438 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 18127 | (17103) |
| (17111) | 12.6 | 0.15 | 20060922 | 45.65872 | 82.74781 | 265.53139 | 8.59929 | 0.1228588 | 3.0255067 | 571 | 10 | 1979–2006 | 0.52 | M-v | 0 | MPC | 77298 | (17111) |
| (17115) | 14.6 | 0.15 | 20060922 | 81.42096 | 350.54927 | 349.75388 | 1.60287 | 0.0651733 | 2.9040626 | 381 | 12 | 1981–2006 | 0.56 | M-v | 0 | MPC | 3031 | (17115) |
| (17147) | 13.9 | 0.15 | 20060922 | 52.97225 | 226.79879 | 127.47684 | 2.99585 | 0.0895389 | 2.8972817 | 482 | 10 | 1993–2006 | 0.58 | M-v | 0 | MPC | 18127 | (17147) |
| (17149) | 13.4 | 0.15 | 20060922 | 146.82721 | 283.68058 | 11.57226 | 3.40634 | 0.0715000 | 2.7614154 | 344 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 3040 | (17149) |
| (17166) | 14.2 | 0.15 | 20060922 | 47.71577 | 322.63385 | 39.39849 | 4.66480 | 0.0705649 | 3.0890610 | 354 | 9 | 1997–2006 | 0.58 | M-v | 0 | MPC | 25666 | (17166) |
| (17181) | 16.3 | 0.15 | 20060922 | 297.34008 | 36.39710 | 113.86300 | 10.67439 | 0.6679711 | 2.3820221 | 94 | 5 | 1955–2006 | 0.55 | M-v | 1 | MPC | 66006 | (17181) |
| (17215) | 15.5 | 0.15 | 20060922 | 268.83159 | 330.95659 | 172.12599 | 6.43990 | 0.1167364 | 2.3023219 | 331 | 9 | 1995–2006 | 0.58 | M-v | 0 | MPC | 12101 | (17215) |
| (17225) | 14.2 | 0.15 | 20060922 | 178.88530 | 40.52098 | 248.74131 | 5.87692 | 0.1195705 | 2.3394910 | 528 | 9 | 1951–2006 | 0.56 | M-v | 0 | MPC | 13528 | (17225) |
| (17275) | 13.6 | 0.15 | 20060922 | 331.64254 | 259.08064 | 251.63559 | 11.96898 | 0.1035741 | 2.5399431 | 349 | 13 | 1977–2006 | 0.51 | M-v | 0 | MPC | 41502 | (17275) |
| (17315) | 13.1 | 0.15 | 20060922 | 270.02910 | 123.89831 | 346.51837 | 9.24294 | 0.0591216 | 3.0795084 | 403 | 9 | 1971–2006 | 0.56 | M-v | 0 | MPC | 18127 | (17315) |
| (17339) | 15.6 | 0.15 | 20060922 | 1.63677 | 300.04009 | 151.71205 | 2.50153 | 0.0406754 | 2.7500558 | 194 | 9 | 1973–2006 | 0.55 | M-v | 0 | MPC | 3092 | (17339) |
| (17362) | 13.3 | 0.15 | 20060922 | 75.73828 | 105.32196 | 210.40277 | 7.61956 | 0.2835449 | 3.1013696 | 269 | 9 | 1978–2006 | 0.57 | M-v | 0 | MPC | 4030 | (17362) |
| (17421) | 12.0 | 0.15 | 20060922 | 279.17263 | 216.32445 | 32.15391 | 16.91284 | 0.0990796 | 5.1550096 | 204 | 10 | 1988–2006 | 0.59 | M-v | 0 | MPC | 57634 | (17421) |
| (17443) | 13.6 | 0.15 | 20060922 | 303.52353 | 248.69633 | 199.57186 | 15.05281 | 0.0732794 | 3.1778697 | 351 | 9 | 1989–2006 | 0.53 | M-v | 0 | MPC | 25666 | (17443) |
| (17445) | 12.6 | 0.15 | 20060922 | 52.10007 | 47.61252 | 311.88962 | 15.16494 | 0.2614806 | 3.1675076 | 331 | 9 | 1977–2006 | 0.56 | M-v | 0 | MPC | 4053 | (17445) |
| (17458) | 13.9 | 0.15 | 20060922 | 353.20615 | 61.58991 | 9.80875 | 1.43123 | 0.1054894 | 3.0037027 | 417 | 14 | 1985–2006 | 0.54 | M-v | 0 | MPC | 4056 | (17458) |
| (17487) | 13.1 | 0.15 | 20060922 | 244.64292 | 208.16234 | 28.93397 | 13.64296 | 0.1250941 | 2.6847950 | 347 | 12 | 1981–2006 | 0.52 | M-v | 0 | MPC | 4065 | (17487) |
| (17534) | 14.2 | 0.15 | 20060922 | 68.97115 | 268.26141 | 83.55500 | 1.69376 | 0.1686217 | 2.9712758 | 346 | 12 | 1990–2006 | 0.59 | M-v | 0 | MPC | 4078 | (17534) |
| (17537) | 13.1 | 0.15 | 20060922 | 122.29470 | 272.46153 | 48.13333 | 2.75040 | 0.0877844 | 2.9328140 | 496 | 12 | 1975–2006 | 0.55 | M-v | 0 | MPC | 4079 | (17537) |
| (17538) | 14.2 | 0.15 | 20060922 | 313.37353 | 333.76165 | 155.69947 | 2.08209 | 0.1069745 | 2.8932685 | 277 | 10 | 1993–2006 | 0.64 | M-v | 0 | MPC | 23410 | (17538) |
| (17565) | 13.8 | 0.15 | 20060922 | 257.25748 | 270.57243 | 0.30039 | 14.82504 | 0.1210849 | 2.6138836 | 323 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 4087 | (17565) |
| (17578) | 13.3 | 0.15 | 20060922 | 249.39991 | 269.35888 | 341.66285 | 9.93250 | 0.0974918 | 2.8746569 | 384 | 9 | 1989–2006 | 0.57 | M-v | 0 | MPC | 7421 | (17578) |
| (17584) | 13.8 | 0.15 | 20060922 | 292.27695 | 111.69771 | 82.81839 | 8.44798 | 0.1574646 | 2.4686585 | 389 | 10 | 1977–2006 | 0.55 | M-v | 0 | MPC | 18128 | (17584) |
| (17603) | 12.9 | 0.15 | 20060922 | 140.29848 | 326.00847 | 20.59109 | 16.59772 | 0.2379539 | 2.7880475 | 234 | 13 | 1955–2006 | 0.60 | M-v | 0 | MPC | 4098 | (17603) |
| (17610) | 12.9 | 0.15 | 20060922 | 50.74631 | 174.82012 | 196.10852 | 10.10524 | 0.0994515 | 2.9819395 | 454 | 12 | 1954–2006 | 0.50 | M-v | 0 | MPC | 4100 | (17610) |
| (17618) | 12.6 | 0.15 | 20060922 | 311.66674 | 95.49130 | 45.93479 | 10.84684 | 0.0542129 | 3.0044874 | 443 | 10 | 1982–2006 | 0.55 | M-v | 0 | MPC | 25666 | (17618) |
| (17620) | 12.8 | 0.15 | 20060922 | 329.88976 | 36.53715 | 70.67360 | 10.38366 | 0.0548279 | 3.0534511 | 434 | 9 | 1995–2006 | 0.56 | M-v | 0 | MPC | 25666 | (17620) |
| (17626) | 12.0 | 0.15 | 20060922 | 18.59278 | 102.03892 | 311.59256 | 12.90533 | 0.0921781 | 3.1616310 | 372 | 9 | 1985–2006 | 0.54 | M-v | 0 | MPC | 23411 | (17626) |
| (17670) | 14.4 | 0.15 | 20060922 | 69.87894 | 138.81816 | 255.00352 | 2.40400 | 0.0867646 | 2.7860048 | 342 | 9 | 1993–2006 | 0.52 | M-v | 0 | MPC | 23411 | (17670) |
| (17671) | 14.2 | 0.15 | 20060922 | 285.27085 | 238.45350 | 282.16759 | 10.06555 | 0.0808632 | 2.8855918 | 304 | 9 | 1996–2006 | 0.53 | M-v | 0 | MPC | 25666 | (17671) |
| (17681) | 14.4 | 0.15 | 20060922 | 322.78657 | 7.45829 | 68.24454 | 24.38236 | 0.0299775 | 1.8253142 | 366 | 7 | 1988–2006 | 0.49 | M-v | 1 | MPC | 4121 | (17681) |
| (17690) | 14.0 | 0.15 | 20060922 | 292.06783 | 2.66321 | 120.56525 | 3.76751 | 0.1962140 | 3.1089367 | 294 | 9 | 1979–2006 | 0.55 | M-v | 0 | MPC | 4124 | (17690) |
| (17725) | 13.0 | 0.15 | 20060922 | 40.64574 | 86.40149 | 336.53645 | 11.48253 | 0.1668456 | 2.6890711 | 274 | 10 | 1974–2006 | 0.55 | M-v | 0 | MPC | 4134 | (17725) |
| (17751) | 13.2 | 0.15 | 20060922 | 323.83414 | 147.90031 | 349.53666 | 8.49015 | 0.1139619 | 2.7313814 | 452 | 10 | 1980–2006 | 0.57 | M-v | 0 | MPC | 18128 | (17751) |
| (17787) | 14.0 | 0.15 | 20060922 | 131.56871 | 237.31941 | 346.40511 | 5.21734 | 0.1068417 | 3.2165490 | 203 | 9 | 1960–2006 | 0.67 | M-v | 0 | MPC | 23411 | (17787) |
| (17790) | 13.8 | 0.15 | 20060922 | 22.17989 | 206.75278 | 188.19984 | 12.01883 | 0.0682130 | 2.9718806 | 402 | 9 | 1993–2006 | 0.60 | M-v | 0 | MPC | 43317 | (17790) |
| (17858) | 14.7 | 0.15 | 20060922 | 65.71131 | 128.44742 | 207.58837 | 5.06735 | 0.2243464 | 2.2990706 | 349 | 12 | 1980–2006 | 0.56 | M-v | 0 | MPC | 4174 | (17858) |
| (17859) | 12.4 | 0.15 | 20060922 | 148.91105 | 225.68084 | 65.01928 | 10.41506 | 0.0562479 | 3.0670175 | 478 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 4174 | (17859) |
| (17888) | 12.9 | 0.15 | 20060922 | 223.94987 | 130.37453 | 147.83450 | 14.12729 | 0.1627186 | 2.5615815 | 362 | 9 | 1979–2006 | 0.55 | M-v | 0 | MPC | 23411 | (17888) |
| (18013) | 14.1 | 0.15 | 20060922 | 95.72293 | 341.47166 | 22.11890 | 4.09739 | 0.1196566 | 2.7758158 | 413 | 10 | 1991–2006 | 0.56 | M-v | 0 | MPC | 23411 | (18013) |
| (18017) | 13.5 | 0.15 | 20060922 | 230.56547 | 13.48142 | 233.54143 | 9.63160 | 0.2396716 | 2.7196890 | 453 | 12 | 1981–2006 | 0.55 | M-v | 0 | MPC | 4221 | (18017) |
| (18039) | 13.1 | 0.15 | 20060922 | 14.35297 | 141.58934 | 277.44452 | 8.09063 | 0.0751562 | 3.0737442 | 316 | 10 | 1984–2006 | 0.52 | M-v | 0 | MPC | 25666 | (18039) |
| (18050) | 13.2 | 0.15 | 20060922 | 244.85154 | 17.10932 | 215.28326 | 8.96320 | 0.0332287 | 2.9909094 | 497 | 9 | 1989–2006 | 0.49 | M-v | 0 | MPC | 4230 | (18050) |
| (18080) | 14.3 | 0.15 | 20060922 | 112.24834 | 0.78807 | 279.71502 | 3.35253 | 0.2035027 | 2.6917760 | 350 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 14999 | (18080) |
| (18122) | 13.4 | 0.15 | 20060922 | 2.66494 | 10.72185 | 32.23162 | 2.32574 | 0.1161252 | 2.9275625 | 595 | 10 | 1976–2006 | 0.51 | M-v | 0 | MPC | 77300 | (18122) |
| (18137) | 11.4 | 0.15 | 20060922 | 74.93269 | 210.97974 | 218.95273 | 7.64623 | 0.0151098 | 5.1523513 | 450 | 15 | 1953–2006 | 0.55 | M-v | 0 | MPC | 4255 | (18137) |
| (18186) | 14.0 | 0.15 | 20060922 | 198.52963 | 97.35729 | 103.56946 | 2.37782 | 0.0906733 | 2.9656322 | 365 | 10 | 1990–2006 | 0.55 | M-v | 0 | MPC | 41502 | (18186) |
| (18187) | 12.9 | 0.15 | 20060922 | 109.40678 | 212.03729 | 83.10807 | 2.57882 | 0.2702908 | 2.8753982 | 532 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 77300 | (18187) |
| (18206) | 13.8 | 0.15 | 20060922 | 242.21444 | 308.91874 | 300.46655 | 12.35769 | 0.0849644 | 2.8868930 | 317 | 9 | 1960–2006 | 0.55 | M-v | 0 | MPC | 4275 | (18206) |
| (18245) | 14.6 | 0.15 | 20060922 | 11.29392 | 209.44906 | 171.48171 | 16.77220 | 0.0090446 | 3.0846591 | 213 | 9 | 1973–2006 | 0.70 | M-v | 0 | MPC | 23411 | (18245) |
| (18264) | 14.6 | 0.15 | 20060922 | 355.55696 | 183.87659 | 227.73063 | 9.19883 | 0.1109719 | 3.0809870 | 182 | 9 | 1973–2006 | 0.60 | M-v | 0 | MPC | 23411 | (18264) |
| (18324) | 13.5 | 0.15 | 20060922 | 105.19989 | 331.86689 | 255.41618 | 7.81185 | 0.3085486 | 3.0165214 | 226 | 9 | 1984–2006 | 0.60 | M-v | 0 | MPC | 18128 | (18324) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (18337) | 14.0 | 0.15 | 20060922 | 17.83437 | 245.43551 | 162.87987 | 0.94513 | 0.2034513 | 3.1829726 | 247 | 10 | 1988–2006 | 0.55 | M-v | 0 | MPC | 5164 | (18337) |
| (18366) | 12.9 | 0.15 | 20060922 | 5.31236 | 271.10486 | 174.23011 | 4.95998 | 0.1602676 | 3.0943241 | 433 | 9 | 1962–2006 | 0.59 | M-v | 0 | MPC | 27570 | (18366) |
| (18404) | 12.8 | 0.15 | 20060922 | 349.28330 | 141.78055 | 25.55303 | 9.89147 | 0.1698428 | 2.7641081 | 328 | 10 | 1991–2006 | 0.55 | M-v | 1 | MPC | 5183 | (18404) |
| (18412) | 14.6 | 0.15 | 20060922 | 225.10232 | 240.26952 | 301.29267 | 11.71574 | 0.0891629 | 3.0372667 | 200 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 5185 | (18412) |
| (18413) | 14.4 | 0.15 | 20060922 | 103.41632 | 340.05294 | 335.66209 | 11.20590 | 0.1167779 | 3.0551676 | 241 | 10 | 1973–2006 | 0.58 | M-v | 0 | MPC | 5186 | (18413) |
| (18438) | 14.5 | 0.15 | 20060922 | 67.11946 | 14.24572 | 58.89969 | 6.00958 | 0.0202003 | 2.7184751 | 258 | 9 | 1978–2006 | 0.55 | M-v | 0 | MPC | 25666 | (18438) |
| (18440) | 14.9 | 0.15 | 20060922 | 108.69560 | 162.01463 | 128.56522 | 6.51094 | 0.2754291 | 3.0460506 | 167 | 9 | 1993–2006 | 0.59 | M-v | 0 | MPC | 5193 | (18440) |
| (18441) | 14.2 | 0.15 | 20060922 | 91.54508 | 18.08964 | 297.84506 | 10.05734 | 0.0887781 | 3.0946384 | 198 | 9 | 1994–2006 | 0.61 | M-v | 0 | MPC | 5193 | (18441) |
| (18447) | 14.8 | 0.15 | 20060922 | 45.79537 | 218.28671 | 150.43955 | 2.13346 | 0.0335866 | 3.1014878 | 246 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 5195 | (18447) |
| (18462) | 14.7 | 0.15 | 20060922 | 53.99347 | 204.75694 | 162.71044 | 2.30701 | 0.0898842 | 2.9021579 | 328 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 23412 | (18462) |
| (18482) | 12.7 | 0.15 | 20060922 | 15.26309 | 294.55048 | 109.16480 | 10.37962 | 0.0866234 | 3.1723993 | 357 | 10 | 1954–2006 | 0.60 | M-v | 0 | MPC | 5205 | (18482) |
| (18483) | 12.2 | 0.15 | 20060922 | 47.58729 | 268.77682 | 100.22347 | 10.80123 | 0.2419907 | 3.1385658 | 348 | 12 | 1955–2006 | 0.55 | M-v | 0 | MPC | 5205 | (18483) |
| (18515) | 13.8 | 0.15 | 20060922 | 92.87574 | 11.59946 | 2.71254 | 11.76436 | 0.1237317 | 2.7032736 | 336 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 5214 | (18515) |
| (18518) | 14.8 | 0.15 | 20060922 | 54.68280 | 23.75441 | 45.54036 | 8.15887 | 0.0617318 | 2.7008234 | 407 | 9 | 1996–2006 | 0.52 | M-v | 0 | MPC | 23412 | (18518) |
| (18537) | 13.6 | 0.15 | 20060922 | 77.45675 | 299.41302 | 122.92606 | 10.28527 | 0.1594345 | 2.7744243 | 306 | 10 | 1993–2006 | 0.61 | M-v | 0 | MPC | 23412 | (18537) |
| (18553) | 13.6 | 0.15 | 20060922 | 152.25063 | 248.45925 | 18.02210 | 1.03195 | 0.1279657 | 3.1203075 | 414 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 38163 | (18553) |
| (18565) | 14.1 | 0.15 | 20060922 | 343.02575 | 282.09538 | 203.06689 | 4.96331 | 0.1264256 | 3.0974216 | 281 | 10 | 1993–2006 | 0.55 | M-v | 0 | MPC | 5229 | (18565) |
| (18577) | 14.3 | 0.15 | 20060922 | 137.07176 | 273.59189 | 319.23444 | 5.61841 | 0.1426696 | 2.2279954 | 311 | 9 | 1979–2006 | 0.55 | M-v | 1 | MPC | 7421 | (18577) |
| (18579) | 14.5 | 0.15 | 20060922 | 112.13094 | 187.31369 | 133.23917 | 0.80630 | 0.1488388 | 2.6015534 | 505 | 12 | 1955–2006 | 0.55 | M-v | 0 | MPC | 5233 | (18579) |
| (18604) | 15.7 | 0.15 | 20060922 | 123.89417 | 120.59699 | 159.85515 | 5.82338 | 0.1543705 | 2.2279059 | 205 | 9 | 1955–2006 | 0.59 | M-v | 0 | MPC | 30236 | (18604) |
| (18659) | 14.2 | 0.15 | 20060922 | 191.51486 | 161.39414 | 135.63551 | 2.18815 | 0.0516630 | 2.7591075 | 373 | 9 | 1977–2006 | 0.60 | M-v | 0 | MPC | 25666 | (18659) |
| (18668) | 14.1 | 0.15 | 20060922 | 105.18284 | 78.39829 | 309.40443 | 1.48077 | 0.0723989 | 2.7649312 | 410 | 9 | 1977–2006 | 0.54 | M-v | 0 | MPC | 25666 | (18668) |
| (18683) | 13.5 | 0.15 | 20060922 | 149.59086 | 333.20190 | 293.31763 | 7.20376 | 0.1843414 | 3.1157895 | 428 | 9 | 1984–2006 | 0.53 | M-v | 0 | MPC | 5264 | (18683) |
| (18696) | 13.5 | 0.15 | 20060922 | 27.43613 | 194.38596 | 201.62353 | 10.72631 | 0.1139205 | 2.9928348 | 316 | 10 | 1990–2006 | 0.58 | M-v | 1 | MPC | 47656 | (18696) |
| (18721) | 14.0 | 0.15 | 20060922 | 142.21722 | 141.57305 | 106.28626 | 7.19904 | 0.0569309 | 3.2046604 | 322 | 9 | 1997–2006 | 0.58 | M-v | 0 | MPC | 23412 | (18721) |
| (18745) | 12.6 | 0.15 | 20060922 | 69.95968 | 237.28413 | 166.19756 | 14.99227 | 0.1051060 | 2.6001953 | 334 | 9 | 1955–2006 | 0.52 | M-v | 0 | MPC | 18128 | (18745) |
| (18799) | 13.8 | 0.15 | 20060922 | 192.76710 | 203.19584 | 70.11084 | 10.19300 | 0.2431165 | 2.7422909 | 321 | 10 | 1978–2006 | 0.57 | M-v | 0 | MPC | 41503 | (18799) |
| (18850) | 12.8 | 0.15 | 20060922 | 293.69956 | 227.65533 | 292.54643 | 1.35491 | 0.0862344 | 3.1156538 | 518 | 10 | 1978–2006 | 0.56 | M-v | 0 | MPC | 25667 | (18850) |
| (18875) | 14.1 | 0.15 | 20060922 | 287.68537 | 153.52908 | 32.44824 | 2.94945 | 0.1131212 | 3.1079711 | 405 | 10 | 1978–2006 | 0.58 | M-v | 0 | MPC | 5321 | (18875) |
| (18902) | 13.5 | 0.15 | 20060922 | 129.75324 | 343.94612 | 341.18708 | 8.79206 | 0.1559957 | 2.7720451 | 396 | 9 | 1980–2006 | 0.56 | M-v | 0 | MPC | 5329 | (18902) |
| (18903) | 13.3 | 0.15 | 20060922 | 173.41380 | 148.31591 | 164.78627 | 9.29643 | 0.1991912 | 2.5575423 | 354 | 12 | 1980–2006 | 0.56 | M-v | 0 | MPC | 5329 | (18903) |
| (18931) | 14.6 | 0.15 | 20060922 | 37.49479 | 282.60306 | 118.94372 | 8.28806 | 0.2746939 | 2.9241919 | 253 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 23412 | (18931) |
| (18971) | 11.7 | 0.15 | 20060922 | 298.11905 | 42.56521 | 189.97410 | 14.01880 | 0.1187662 | 5.2176870 | 132 | 12 | 1982–2006 | 0.57 | M-v | 0 | MPC | 5349 | (18971) |
| (18973) | 15.1 | 0.15 | 20060922 | 6.14576 | 342.31218 | 114.24239 | 5.72401 | 0.0443522 | 2.7393636 | 243 | 9 | 1996–2006 | 0.56 | M-v | 0 | MPC | 25667 | (18973) |
| (18989) | 12.6 | 0.15 | 20060922 | 20.38857 | 187.06165 | 227.44617 | 10.84252 | 0.1703918 | 2.9789710 | 304 | 10 | 1954–2006 | 0.56 | M-v | 0 | MPC | 5354 | (18989) |
| (19005) | 14.6 | 0.15 | 20060922 | 144.92663 | 74.18648 | 224.80083 | 1.17697 | 0.0451209 | 2.8648600 | 273 | 10 | 1976–2006 | 0.55 | M-v | 0 | MPC | 5359 | (19005) |
| (19024) | 13.3 | 0.15 | 20060922 | 55.97048 | 335.30962 | 21.73534 | 2.91093 | 0.1361662 | 3.0752524 | 365 | 10 | 1989–2006 | 0.57 | M-v | 0 | MPC | 23412 | (19024) |
| (19042) | 14.2 | 0.15 | 20060922 | 4.91409 | 204.33920 | 199.39716 | 3.64817 | 0.0860002 | 3.1736496 | 232 | 10 | 1960–2006 | 0.53 | M-v | 0 | MPC | 23412 | (19042) |
| (19069) | 14.0 | 0.15 | 20060922 | 30.93994 | 160.97817 | 239.07658 | 9.50280 | 0.0852290 | 3.0572022 | 292 | 9 | 1973–2006 | 0.63 | M-v | 0 | MPC | 25667 | (19069) |
| (19070) | 13.4 | 0.15 | 20060922 | 178.41114 | 266.48669 | 329.30324 | 12.16105 | 0.0261562 | 3.0727650 | 166 | 9 | 1973–2006 | 0.55 | M-v | 0 | MPC | 5377 | (19070) |
| (19080) | 14.3 | 0.15 | 20060922 | 129.47018 | 281.79203 | 288.96082 | 20.66659 | 0.2808487 | 2.3169979 | 281 | 9 | 1970–2006 | 0.53 | M-v | 1 | MPC | 6443 | (19080) |
| (19087) | 14.1 | 0.15 | 20060922 | 350.54151 | 67.26543 | 35.39250 | 1.53092 | 0.1328400 | 3.1250134 | 388 | 13 | 1978–2006 | 0.59 | M-v | 0 | MPC | 6445 | (19087) |
| (19095) | 14.8 | 0.15 | 20060922 | 356.02866 | 262.10279 | 151.62622 | 3.96917 | 0.1613238 | 2.9856369 | 194 | 9 | 1979–2006 | 0.54 | M-v | 0 | MPC | 23412 | (19095) |
| (19201) | 13.4 | 0.15 | 20060922 | 50.05375 | 301.80979 | 73.57498 | 2.41512 | 0.0361077 | 3.1495652 | 341 | 12 | 1989–2006 | 0.61 | M-v | 0 | MPC | 6478 | (19201) |
| (19218) | 14.1 | 0.15 | 20060922 | 29.12056 | 225.88636 | 190.39287 | 1.64497 | 0.0783331 | 2.8946387 | 411 | 9 | 1990–2006 | 0.57 | M-v | 0 | MPC | 6482 | (19218) |
| (19277) | 14.3 | 0.15 | 20060922 | 1.02729 | 325.61439 | 117.59951 | 7.60576 | 0.1476356 | 3.0748650 | 222 | 9 | 1989–2006 | 0.61 | M-v | 0 | MPC | 27571 | (19277) |
| (19280) | 13.5 | 0.15 | 20060922 | 297.45147 | 197.60310 | 306.71633 | 8.08782 | 0.0314850 | 3.1697227 | 328 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 43317 | (19280) |
| (19341) | 13.2 | 0.15 | 20060922 | 337.89148 | 99.66137 | 62.98902 | 6.62254 | 0.0211042 | 2.8333128 | 365 | 9 | 1997–2006 | 0.55 | M-v | 0 | MPC | 25667 | (19341) |
| (19348) | 15.0 | 0.15 | 20060922 | 135.21905 | 8.24698 | 350.05296 | 1.80174 | 0.0414288 | 2.8846932 | 282 | 9 | 1997–2006 | 0.56 | M-v | 0 | MPC | 25667 | (19348) |
| (19351) | 12.9 | 0.15 | 20060922 | 328.79758 | 160.84821 | 9.69391 | 12.70057 | 0.0763868 | 2.9109849 | 326 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 6521 | (19351) |
| (19360) | 14.6 | 0.15 | 20060922 | 308.87070 | 11.56071 | 149.96912 | 0.64371 | 0.1057308 | 3.1106090 | 237 | 12 | 1977–2006 | 0.55 | M-v | 0 | MPC | 6524 | (19360) |
| (19477) | 14.3 | 0.15 | 20060922 | 169.54047 | 220.31143 | 79.64617 | 3.23900 | 0.0815937 | 2.9302455 | 507 | 10 | 1990–2006 | 0.54 | M-v | 0 | MPC | 47658 | (19477) |
| (19482) | 13.8 | 0.15 | 20060922 | 146.32030 | 211.75302 | 52.90254 | 11.17660 | 0.1670190 | 3.1810644 | 219 | 9 | 1981–2006 | 0.57 | M-v | 0 | MPC | 6562 | (19482) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (19494) | 13.4 | 0.15 | 20060922 | 270.24427 | 94.03789 | 85.70342 | 12.02074 | 0.0472658 | 2.9936748 | 360 | 9 | 1982–2006 | 0.56 | M-v | 0 | MPC | 25667 | (19494) |
| (19501) | 12.2 | 0.15 | 20060922 | 140.43179 | 195.33386 | 91.81951 | 16.84738 | 0.1133163 | 3.1375183 | 422 | 12 | 1977–2006 | 0.58 | M-v | 0 | MPC | 6567 | (19501) |
| (19503) | 13.1 | 0.15 | 20060922 | 270.21739 | 78.43351 | 83.60823 | 15.19932 | 0.1620243 | 3.0516758 | 386 | 12 | 1982–2006 | 0.53 | M-v | 0 | MPC | 6568 | (19503) |
| (19506) | 14.2 | 0.15 | 20060922 | 323.03295 | 52.35768 | 138.08681 | 20.72619 | 0.1574617 | 2.8458173 | 197 | 10 | 1992–2006 | 0.60 | M-v | 0 | MPC | 25667 | (19506) |
| (19520) | 13.3 | 0.15 | 20060922 | 230.14299 | 234.98310 | 350.31655 | 13.11825 | 0.1191465 | 2.6061505 | 397 | 9 | 1989–2006 | 0.50 | M-v | 1 | MPC | 6574 | (19520) |
| (19537) | 14.6 | 0.15 | 20060922 | 105.93344 | 296.85096 | 83.23400 | 27.13718 | 0.0597050 | 1.9607638 | 239 | 7 | 1990–2006 | 0.55 | M-v | 1 | MPC | 6579 | (19537) |
| (19545) | 13.8 | 0.15 | 20060922 | 5.72208 | 49.22295 | 261.76535 | 5.43444 | 0.1438386 | 2.2361721 | 419 | 10 | 1955–2006 | 0.56 | M-v | 0 | MPC | 6581 | (19545) |
| (19632) | 13.9 | 0.15 | 20060922 | 85.12654 | 328.71238 | 32.01328 | 8.10027 | 0.2021138 | 3.1746556 | 349 | 9 | 1982–2006 | 0.54 | M-v | 0 | MPC | 6608 | (19632) |
| (19646) | 12.8 | 0.15 | 20060922 | 24.43847 | 158.24222 | 293.25574 | 14.27392 | 0.1024497 | 3.0213295 | 405 | 10 | 1984–2006 | 0.52 | M-v | 0 | MPC | 6613 | (19646) |
| (19671) | 13.2 | 0.15 | 20060922 | 328.98849 | 12.58573 | 127.97446 | 4.48802 | 0.0600346 | 3.0028038 | 571 | 10 | 1982–2006 | 0.55 | M-v | 0 | MPC | 25667 | (19671) |
| (19686) | 12.8 | 0.15 | 20060922 | 34.28825 | 190.90698 | 254.42134 | 8.58671 | 0.0678087 | 3.0590702 | 487 | 9 | 1989–2006 | 0.54 | M-v | 0 | MPC | 25667 | (19686) |
| (19696) | 12.8 | 0.15 | 20060922 | 34.66509 | 155.00286 | 255.78878 | 16.62475 | 0.1273712 | 3.1916120 | 241 | 10 | 1954–2006 | 0.49 | M-v | 0 | MPC | 27571 | (19696) |
| (19697) | 13.9 | 0.15 | 20060922 | 141.23885 | 297.20356 | 349.14488 | 0.50630 | 0.1148395 | 3.2364669 | 334 | 10 | 1993–2006 | 0.57 | M-v | 0 | MPC | 47658 | (19697) |
| (19713) | 13.3 | 0.15 | 20060922 | 232.43539 | 56.96936 | 157.90236 | 5.47128 | 0.0934818 | 3.1395791 | 435 | 9 | 1980–2006 | 0.58 | M-v | 0 | MPC | 25667 | (19713) |
| (19726) | 12.6 | 0.15 | 20060922 | 183.62923 | 270.27567 | 18.18566 | 16.90708 | 0.0719777 | 2.9823603 | 302 | 10 | 1953–2006 | 0.57 | M-v | 0 | MPC | 23412 | (19726) |
| (19748) | 11.5 | 0.15 | 20060922 | 218.69566 | 309.26999 | 314.72733 | 27.13715 | 0.1860849 | 3.2087683 | 345 | 12 | 1979–2006 | 0.53 | M-v | 0 | MPC | 6644 | (19748) |
| (19767) | 13.3 | 0.15 | 20060922 | 78.60338 | 72.15744 | 306.12704 | 10.29663 | 0.0635818 | 2.7530918 | 359 | 10 | 1954–2006 | 0.52 | M-v | 0 | MPC | 6650 | (19767) |
| (19774) | 12.2 | 0.15 | 20060922 | 252.52533 | 300.16287 | 280.16580 | 11.06672 | 0.2356944 | 2.6580871 | 565 | 13 | 1951–2006 | 0.54 | M-v | 0 | MPC | 38163 | (19774) |
| (19779) | 14.0 | 0.15 | 20060922 | 191.63311 | 312.44671 | 0.33390 | 4.43020 | 0.2002303 | 2.5452460 | 359 | 10 | 1988–2006 | 0.55 | M-v | 0 | MPC | 25667 | (19779) |
| (19797) | 13.8 | 0.15 | 20060922 | 23.03311 | 194.66542 | 209.84076 | 17.03618 | 0.1822921 | 3.1486550 | 297 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 25667 | (19797) |
| (19801) | 14.6 | 0.15 | 20060922 | 114.74225 | 116.15765 | 211.83592 | 1.41278 | 0.0770152 | 2.8692524 | 228 | 9 | 1981–2006 | 0.59 | M-v | 1 | MPC | 6660 | (19801) |
| (19819) | 14.0 | 0.15 | 20060922 | 56.97066 | 305.15754 | 24.80887 | 3.64204 | 0.1067259 | 3.2341561 | 317 | 10 | 1992–2006 | 0.55 | M-v | 0 | MPC | 25667 | (19819) |
| (19826) | 14.4 | 0.15 | 20060922 | 285.27700 | 271.84440 | 228.33771 | 2.81727 | 0.0674992 | 3.0788932 | 292 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 6668 | (19826) |
| (19836) | 14.1 | 0.15 | 20060922 | 63.01605 | 259.26547 | 78.52695 | 7.16251 | 0.1182189 | 3.1957602 | 323 | 9 | 1997–2006 | 0.54 | M-v | 0 | MPC | 23412 | (19836) |
| (19862) | 13.3 | 0.15 | 20060922 | 51.99350 | 21.17621 | 23.20504 | 10.73475 | 0.2303248 | 3.1485197 | 294 | 9 | 1960–2006 | 0.52 | M-v | 0 | MPC | 23412 | (19862) |
| (19888) | 13.8 | 0.15 | 20060922 | 45.15598 | 202.02601 | 196.78012 | 9.80302 | 0.0788187 | 3.0441459 | 303 | 9 | 1973–2006 | 0.57 | M-v | 0 | MPC | 6685 | (19888) |
| (19893) | 14.8 | 0.15 | 20060922 | 311.03225 | 26.57676 | 100.95830 | 2.20653 | 0.1396401 | 3.0613518 | 226 | 9 | 1973–2006 | 0.60 | M-v | 0 | MPC | 6686 | (19893) |
| (19943) | 14.4 | 0.15 | 20060922 | 311.30883 | 3.52847 | 165.50118 | 6.39807 | 0.0939933 | 3.0323740 | 245 | 9 | 1981–2006 | 0.65 | M-v | 0 | MPC | 23413 | (19943) |
| (19950) | 14.2 | 0.15 | 20060922 | 69.80946 | 198.53319 | 185.60119 | 11.61986 | 0.1330903 | 3.0550003 | 177 | 9 | 1981–2006 | 0.55 | M-v | 0 | MPC | 7682 | (19950) |
| (20018) | 14.1 | 0.15 | 20060922 | 176.22232 | 265.14965 | 31.43149 | 5.33699 | 0.1568134 | 2.3058245 | 587 | 10 | 1983–2006 | 0.52 | M-v | 0 | MPC | 14342 | (20018) |
| (20060) | 13.1 | 0.15 | 20060922 | 133.58437 | 46.82701 | 317.58576 | 9.71598 | 0.1236206 | 3.0652850 | 399 | 9 | 1988–2006 | 0.55 | M-v | 0 | MPC | 7715 | (20060) |
| (20065) | 16.2 | 0.15 | 20060922 | 217.77172 | 300.42943 | 215.11352 | 2.14855 | 0.0068651 | 2.1841373 | 260 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 7717 | (20065) |
| (20086) | 16.9 | 0.15 | 20060922 | 52.69354 | 56.08415 | 239.63258 | 22.41178 | 0.6164284 | 3.1899705 | 193 | 3 | 1994–2006 | 0.68 | M-v | 1 | MPC | 7723 | (20086) |
| (20101) | 12.7 | 0.15 | 20060922 | 118.63695 | 255.71532 | 84.62612 | 8.49194 | 0.0406869 | 3.1405745 | 419 | 9 | 1994–2006 | 0.53 | M-v | 0 | MPC | 27571 | (20101) |
| (20130) | 13.6 | 0.15 | 20060922 | 159.43059 | 7.55724 | 309.93938 | 8.52586 | 0.0816726 | 3.0680771 | 323 | 9 | 1996–2006 | 0.54 | M-v | 0 | MPC | 47659 | (20130) |
| (20194) | 14.3 | 0.15 | 20060922 | 14.84624 | 325.25693 | 136.07332 | 2.66403 | 0.0478045 | 2.9091787 | 383 | 12 | 1983–2006 | 0.60 | M-v | 0 | MPC | 25667 | (20194) |
| (20207) | 14.0 | 0.15 | 20060922 | 217.61223 | 268.14593 | 18.02139 | 10.14218 | 0.0831038 | 2.9829638 | 318 | 8 | 1992–2006 | 0.58 | M-v | 0 | MPC | 27571 | (20207) |
| (20221) | 14.8 | 0.15 | 20060922 | 294.76193 | 111.81491 | 64.70486 | 1.82060 | 0.0933042 | 3.1012774 | 226 | 9 | 1994–2006 | 0.58 | M-v | 0 | MPC | 7763 | (20221) |
| (20232) | 15.5 | 0.15 | 20060922 | 105.04056 | 344.32324 | 299.31365 | 3.98864 | 0.1035535 | 2.1422388 | 298 | 10 | 1989–2006 | 0.50 | M-v | 0 | MPC | 7766 | (20232) |
| (20234) | 15.3 | 0.15 | 20060922 | 278.72239 | 210.36264 | 311.77494 | 0.50874 | 0.0647115 | 2.1726211 | 539 | 8 | 1993–2006 | 0.54 | M-v | 1 | MPC | 77301 | (20234) |
| (20237) | 14.6 | 0.15 | 20060922 | 77.82934 | 1.30559 | 335.27552 | 3.66225 | 0.0671375 | 2.1498524 | 374 | 9 | 1993–2006 | 0.57 | M-v | 1 | MPC | 7768 | (20237) |
| (20357) | 14.5 | 0.15 | 20060922 | 220.20511 | 199.21884 | 112.13918 | 7.50778 | 0.0224972 | 2.7537847 | 271 | 7 | 1994–2006 | 0.60 | M-v | 0 | MPC | 70189 | (20357) |
| (20364) | 13.0 | 0.15 | 20060922 | 111.89727 | 241.75776 | 137.64177 | 2.74797 | 0.1275607 | 2.9305231 | 535 | 12 | 1974–2006 | 0.56 | M-v | 0 | MPC | 7810 | (20364) |
| (20365) | 13.1 | 0.15 | 20060922 | 177.68225 | 273.08885 | 42.33325 | 10.12572 | 0.0914805 | 3.0667821 | 389 | 9 | 1981–2006 | 0.59 | M-v | 0 | MPC | 7811 | (20365) |
| (20399) | 14.1 | 0.15 | 20060922 | 186.44277 | 35.32624 | 231.97032 | 4.34538 | 0.0980952 | 3.1726236 | 238 | 12 | 1951–2006 | 0.54 | M-v | 0 | MPC | 7822 | (20399) |
| (20410) | 13.0 | 0.15 | 20060922 | 269.51417 | 294.78703 | 302.08555 | 3.71531 | 0.1052789 | 3.1126077 | 438 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 30236 | (20410) |
| (20411) | 13.5 | 0.15 | 20060922 | 256.90536 | 25.13625 | 210.54314 | 15.44003 | 0.0402792 | 3.1444534 | 316 | 9 | 1993–2006 | 0.59 | M-v | 0 | MPC | 27571 | (20411) |
| (20514) | 14.1 | 0.15 | 20060922 | 104.69502 | 3.80121 | 3.98866 | 3.22041 | 0.1275299 | 3.0571906 | 363 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 27571 | (20514) |
| (20518) | 13.2 | 0.15 | 20060922 | 127.82601 | 325.77101 | 7.93024 | 10.64035 | 0.1082058 | 3.2051324 | 329 | 10 | 1985–2006 | 0.57 | M-v | 0 | MPC | 43317 | (20518) |
| (20616) | 14.8 | 0.15 | 20060922 | 148.35597 | 112.99542 | 121.13033 | 8.16775 | 0.0938481 | 2.2340286 | 383 | 10 | 1988–2006 | 0.52 | M-v | 0 | MPC | 31795 | (20616) |
| (20635) | 12.0 | 0.15 | 20060922 | 47.30485 | 236.17204 | 172.13743 | 21.94422 | 0.0645090 | 3.2140713 | 374 | 13 | 1955–2006 | 0.52 | M-v | 0 | MPC | 7896 | (20635) |
| (20645) | 13.0 | 0.15 | 20060922 | 3.65691 | 322.62726 | 173.84597 | 10.99159 | 0.0240453 | 3.0089943 | 311 | 9 | 1997–2006 | 0.51 | M-v | 0 | MPC | 23413 | (20645) |
| (20655) | 13.7 | 0.15 | 20060922 | 150.24994 | 149.02880 | 189.33566 | 10.05171 | 0.1181552 | 3.1314333 | 316 | 9 | 1997–2006 | 0.58 | M-v | 0 | MPC | 47660 | (20655) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (20657) | 14.1 | 0.15 | 20060922 | 101.76902 | 255.72985 | 124.83985 | 15.03796 | 0.1854606 | 3.1030002 | 183 | 10 | 1982–2006 | 0.54 | M-v | 0 | MPC | 47660 | (20657) |
| (20667) | 13.8 | 0.15 | 20060922 | 42.19575 | 24.22369 | 61.52000 | 1.69277 | 0.1379986 | 3.1741868 | 398 | 9 | 1990–2006 | 0.56 | M-v | 0 | MPC | 27572 | (20667) |
| (20669) | 13.7 | 0.15 | 20060922 | 133.72553 | 134.15491 | 215.18149 | 6.58933 | 0.0263457 | 3.0409637 | 345 | 12 | 1986–2006 | 0.54 | M-v | 0 | MPC | 7906 | (20669) |
| (20676) | 13.0 | 0.15 | 20060922 | 359.11741 | 19.62326 | 106.74490 | 23.57678 | 0.0902370 | 3.2120125 | 295 | 9 | 1990–2006 | 0.52 | M-v | 0 | MPC | 47660 | (20676) |
| (20696) | 14.2 | 0.15 | 20060922 | 321.73621 | 347.76313 | 170.91082 | 0.97215 | 0.1044253 | 3.1578879 | 279 | 10 | 1989–2006 | 0.61 | M-v | 0 | MPC | 7915 | (20696) |
| (20728) | 14.3 | 0.15 | 20060922 | 36.83269 | 202.62495 | 176.03142 | 4.76297 | 0.1757214 | 2.2185485 | 350 | 13 | 1956–2006 | 0.58 | M-v | 0 | MPC | 7925 | (20728) |
| (20773) | 14.6 | 0.15 | 20060922 | 61.74146 | 156.09872 | 164.93025 | 5.77471 | 0.1990865 | 3.1175924 | 233 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 41503 | (20773) |
| (20796) | 14.8 | 0.15 | 20060922 | 354.70124 | 196.81699 | 281.27088 | 2.28451 | 0.0918036 | 2.8949607 | 376 | 9 | 1992–2006 | 0.51 | M-v | 0 | MPC | 23413 | (20796) |
| (20807) | 13.5 | 0.15 | 20060922 | 53.54892 | 235.84496 | 143.18328 | 11.43964 | 0.1169733 | 3.0471758 | 385 | 9 | 1997–2006 | 0.61 | M-v | 0 | MPC | 25668 | (20807) |
| (20823) | 14.7 | 0.15 | 20060922 | 62.61829 | 308.53165 | 45.76825 | 5.70660 | 0.1642268 | 3.1100859 | 178 | 10 | 1978–2006 | 0.61 | M-v | 0 | MPC | 41503 | (20823) |
| (20826) | 13.5 | 0.15 | 20060922 | 172.35976 | 198.14989 | 347.62569 | 31.95862 | 0.6263366 | 2.4331270 | 396 | 7 | 1953–2006 | 0.42 | M-v | 1 | MPC | 35430 | (20826) |
| (20841) | 13.8 | 0.15 | 20060922 | 29.81550 | 146.79480 | 245.81368 | 7.50200 | 0.0585220 | 3.1380296 | 260 | 9 | 1978–2006 | 0.59 | M-v | 0 | MPC | 43318 | (20841) |
| (20842) | 13.7 | 0.15 | 20060922 | 95.00845 | 101.15943 | 210.22489 | 22.17151 | 0.1045110 | 3.2260007 | 221 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 7959 | (20842) |
| (20851) | 14.9 | 0.15 | 20060922 | 359.22457 | 220.71569 | 270.70848 | 0.78712 | 0.1004176 | 2.8636134 | 340 | 10 | 1992–2006 | 0.56 | M-v | 0 | MPC | 7962 | (20851) |
| (20884) | 13.9 | 0.15 | 20060922 | 145.20146 | 196.82631 | 129.76280 | 3.04744 | 0.0712261 | 2.8900126 | 421 | 9 | 1997–2006 | 0.57 | M-v | 0 | MPC | 23413 | (20884) |
| (20898) | 11.0 | 0.15 | 20060922 | 212.42786 | 234.87205 | 293.29007 | 45.49429 | 0.4647307 | 4.2287315 | 359 | 12 | 1951–2006 | 0.53 | M-v | 0 | MPC | 7975 | (20898) |
| (20913) | 14.3 | 0.15 | 20060922 | 340.20481 | 255.67930 | 231.91651 | 4.62943 | 0.0705163 | 3.1459548 | 227 | 9 | 1960–2006 | 0.58 | M-v | 0 | MPC | 7979 | (20913) |
| (20953) | 13.6 | 0.15 | 20060922 | 9.25794 | 115.19762 | 2.65124 | 21.76145 | 0.1889179 | 3.1350493 | 218 | 7 | 1977–2006 | 0.53 | M-v | 0 | MPC | 7991 | (20953) |
| (20956) | 15.2 | 0.15 | 20060922 | 232.65043 | 161.63910 | 10.15703 | 3.95651 | 0.0785553 | 2.1696713 | 252 | 9 | 1977–2006 | 0.61 | M-v | 1 | MPC | 7992 | (20956) |
| (20979) | 15.8 | 0.15 | 20060922 | 193.15802 | 229.74045 | 323.36561 | 4.91822 | 0.0624932 | 2.2486761 | 222 | 9 | 1981–2006 | 0.56 | M-v | 1 | MPC | 8603 | (20979) |
| (20985) | 12.6 | 0.15 | 20060922 | 31.90658 | 34.87880 | 354.17317 | 15.66303 | 0.2505468 | 3.0686747 | 305 | 10 | 1953–2006 | 0.54 | M-v | 0 | MPC | 8605 | (20985) |
| (20990) | 15.1 | 0.15 | 20060922 | 59.10098 | 67.51760 | 294.99332 | 3.06570 | 0.1428164 | 2.1700390 | 422 | 9 | 1976–2006 | 0.59 | M-v | 1 | MPC | 8607 | (20990) |
| (21032) | 14.8 | 0.15 | 20060922 | 264.29526 | 325.83312 | 190.60565 | 2.28847 | 0.0809204 | 2.2223659 | 520 | 9 | 1989–2006 | 0.52 | M-v | 0 | MPC | 8621 | (21032) |
| (21038) | 13.6 | 0.15 | 20060922 | 272.44081 | 255.98080 | 331.54437 | 5.51213 | 0.1043669 | 3.1920669 | 232 | 10 | 1990–2006 | 0.57 | M-v | 0 | MPC | 30237 | (21038) |
| (21097) | 14.0 | 0.15 | 20060922 | 79.17455 | 299.74114 | 67.85855 | 2.72020 | 0.1835630 | 2.9844604 | 377 | 9 | 1992–2006 | 0.51 | M-v | 0 | MPC | 8641 | (21097) |
| (21128) | 12.0 | 0.15 | 20060922 | 173.93655 | 273.10991 | 317.58605 | 7.87834 | 0.1018935 | 3.9891153 | 368 | 10 | 1977–2006 | 0.57 | M-v | 0 | MPC | 8650 | (21128) |
| (21175) | 15.3 | 0.15 | 20060922 | 175.86692 | 225.17743 | 4.54611 | 3.08990 | 0.1370472 | 2.2816078 | 363 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 8665 | (21175) |
| (21188) | 14.7 | 0.15 | 20060922 | 161.41461 | 203.40114 | 71.93096 | 5.54866 | 0.1399787 | 2.2689532 | 470 | 9 | 1994–2006 | 0.57 | M-v | 0 | MPC | 8669 | (21188) |
| (21206) | 14.3 | 0.15 | 20060922 | 68.80802 | 327.28311 | 87.89125 | 2.74408 | 0.0561804 | 2.9361201 | 303 | 10 | 1994–2006 | 0.57 | M-v | 0 | MPC | 27572 | (21206) |
| (21222) | 13.1 | 0.15 | 20060922 | 79.78840 | 87.01992 | 316.63945 | 21.08683 | 0.1118220 | 3.2292769 | 231 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 8679 | (21222) |
| (21242) | 13.7 | 0.15 | 20060922 | 32.90188 | 149.19714 | 237.00583 | 23.44230 | 0.2825670 | 2.3399989 | 301 | 12 | 1976–2006 | 0.55 | M-v | 1 | MPC | 8686 | (21242) |
| (21262) | 13.8 | 0.15 | 20060922 | 311.15328 | 48.74219 | 180.90472 | 8.38316 | 0.2407411 | 3.1403946 | 270 | 9 | 1996–2006 | 0.58 | M-v | 0 | MPC | 31795 | (21262) |
| (21287) | 16.4 | 0.15 | 20060922 | 251.09564 | 149.68167 | 5.17984 | 1.53394 | 0.0855614 | 2.2093192 | 206 | 7 | 1996–2006 | 0.59 | M-v | 1 | MPC | 8699 | (21287) |
| (21288) | 14.9 | 0.15 | 20060922 | 318.94340 | 199.84491 | 220.64718 | 3.48431 | 0.1219437 | 2.2461064 | 268 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 8700 | (21288) |
| (21306) | 14.3 | 0.15 | 20060922 | 43.96562 | 349.98839 | 75.03952 | 14.71401 | 0.1475604 | 2.7811858 | 270 | 9 | 1954–2006 | 0.55 | M-v | 0 | MPC | 8705 | (21306) |
| (21312) | 15.2 | 0.15 | 20060922 | 111.37950 | 76.24591 | 203.99696 | 1.74052 | 0.2182145 | 2.3283147 | 299 | 10 | 1994–2006 | 0.53 | M-v | 0 | MPC | 33744 | (21312) |
| (21329) | 15.1 | 0.15 | 20060922 | 135.66243 | 271.68551 | 318.28333 | 7.24418 | 0.1760484 | 2.3815982 | 229 | 10 | 1979–2006 | 0.56 | M-v | 0 | MPC | 8712 | (21329) |
| (21341) | 13.9 | 0.15 | 20060922 | 122.96028 | 133.20513 | 126.92832 | 6.69154 | 0.0911815 | 2.3907325 | 403 | 8 | 1997–2006 | 0.59 | M-v | 0 | MPC | 73877 | (21341) |
| (21409) | 15.6 | 0.15 | 20060922 | 132.50186 | 44.56354 | 193.67362 | 5.56608 | 0.1235416 | 2.2763880 | 364 | 9 | 1974–2006 | 0.55 | M-v | 0 | MPC | 8738 | (21409) |
| (21424) | 15.5 | 0.15 | 20060922 | 344.25116 | 4.15738 | 64.21276 | 4.42010 | 0.0967422 | 2.1818081 | 279 | 7 | 1993–2006 | 0.61 | M-v | 1 | MPC | 8744 | (21424) |
| (21436) | 15.8 | 0.15 | 20060922 | 270.18206 | 177.85873 | 320.45114 | 3.73537 | 0.0847871 | 2.1867978 | 311 | 7 | 1996–2006 | 0.54 | M-v | 1 | MPC | 8748 | (21436) |
| (21440) | 15.9 | 0.15 | 20060922 | 80.89379 | 170.99488 | 127.41155 | 4.04805 | 0.0740755 | 2.2604003 | 251 | 9 | 1994–2006 | 0.57 | M-v | 0 | MPC | 33744 | (21440) |
| (21495) | 14.3 | 0.15 | 20060922 | 98.91264 | 215.32524 | 93.12321 | 8.87762 | 0.1679737 | 2.2696876 | 317 | 10 | 1950–2006 | 0.61 | M-v | 0 | MPC | 8768 | (21495) |
| (21497) | 15.7 | 0.15 | 20060922 | 206.48838 | 100.93136 | 98.13090 | 6.32627 | 0.0680343 | 2.2395195 | 251 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 8769 | (21497) |
| (21618) | 15.8 | 0.15 | 20060922 | 65.21614 | 198.51798 | 114.26247 | 2.62335 | 0.2007193 | 2.1619384 | 267 | 9 | 1995–2006 | 0.53 | M-v | 0 | MPC | 8808 | (21618) |
| (21704) | 15.3 | 0.15 | 20060922 | 40.23048 | 141.57076 | 308.69059 | 0.32602 | 0.0304506 | 2.9804007 | 305 | 10 | 1991–2006 | 0.54 | M-v | 0 | MPC | 27572 | (21704) |
| (21706) | 14.1 | 0.15 | 20060922 | 2.75100 | 219.51054 | 236.34602 | 0.26072 | 0.1402996 | 3.1865919 | 302 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 8837 | (21706) |
| (21715) | 14.4 | 0.15 | 20060922 | 96.62630 | 18.89304 | 269.95444 | 7.59648 | 0.0659753 | 2.2577018 | 368 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 8840 | (21715) |
| (21767) | 13.8 | 0.15 | 20060922 | 83.71359 | 62.22022 | 319.80416 | 7.61980 | 0.1648944 | 3.1476462 | 260 | 9 | 1982–2006 | 0.56 | M-v | 0 | MPC | 8856 | (21767) |
| (21793) | 13.9 | 0.15 | 20060922 | 89.37078 | 273.79577 | 104.16928 | 10.02769 | 0.1552024 | 3.0475745 | 272 | 9 | 1996–2006 | 0.58 | M-v | 0 | MPC | 47661 | (21793) |
| (21798) | 14.1 | 0.15 | 20060922 | 359.91676 | 267.72261 | 118.57463 | 6.50355 | 0.1638948 | 2.2454945 | 374 | 8 | 1979–2006 | 0.57 | M-v | 0 | MPC | 73879 | (21798) |
| (21814) | 14.2 | 0.15 | 20060922 | 230.01145 | 321.82368 | 231.63941 | 3.95378 | 0.0743464 | 2.2489485 | 534 | 9 | 1989–2006 | 0.54 | M-v | 0 | MPC | 8871 | (21814) |
| (21826) | 15.7 | 0.15 | 20060922 | 55.44377 | 253.82784 | 66.93690 | 1.77524 | 0.1568683 | 2.2595727 | 279 | 10 | 1991–2006 | 0.54 | M-v | 0 | MPC | 77303 | (21826) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (21836) | 13.4 | 0.15 | 20060922 | 192.36509 | 150.09591 | 139.54647 | 11.10203 | 0.0823892 | 3.0224980 | 341 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 23413 | (21836) |
| (21842) | 12.7 | 0.15 | 20060922 | 231.99395 | 116.61847 | 125.52128 | 16.40265 | 0.1860864 | 3.1068374 | 347 | 9 | 1987–2006 | 0.51 | M-v | 0 | MPC | 25668 | (21842) |
| (21844) | 13.9 | 0.15 | 20060922 | 345.51075 | 229.53810 | 285.55834 | 2.67534 | 0.0526343 | 2.9775577 | 352 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 27572 | (21844) |
| (21855) | 13.8 | 0.15 | 20060922 | 229.17085 | 132.76775 | 89.13590 | 2.88505 | 0.0959073 | 3.2118186 | 474 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 47661 | (21855) |
| (21914) | 14.5 | 0.15 | 20060922 | 124.75580 | 30.63822 | 243.39960 | 5.51997 | 0.1885931 | 2.3017057 | 317 | 9 | 1970–2006 | 0.59 | M-v | 0 | MPC | 8905 | (21914) |
| (21920) | 14.4 | 0.15 | 20060922 | 283.93057 | 280.55581 | 290.23552 | 10.42304 | 0.1134789 | 3.0752520 | 169 | 9 | 1995–2006 | 0.59 | M-v | 0 | MPC | 23413 | (21920) |
| (21945) | 15.0 | 0.15 | 20060922 | 226.79940 | 56.06084 | 118.10523 | 5.54926 | 0.1075040 | 2.2987396 | 388 | 10 | 1990–2006 | 0.57 | M-v | 0 | MPC | 8915 | (21945) |
| (21964) | 13.4 | 0.15 | 20060922 | 21.62303 | 256.94758 | 201.84878 | 13.70642 | 0.0453127 | 3.2102128 | 290 | 12 | 1987–2006 | 0.58 | M-v | 0 | MPC | 8920 | (21964) |
| (21982) | 14.6 | 0.15 | 20060922 | 313.53477 | 263.05976 | 230.35843 | 3.17718 | 0.1425509 | 2.2640101 | 336 | 10 | 1980–2006 | 0.53 | M-v | 0 | MPC | 8926 | (21982) |
| (21992) | 14.3 | 0.15 | 20060922 | 178.00753 | 243.27882 | 34.33907 | 4.35926 | 0.0908201 | 2.1570659 | 579 | 10 | 1976–2006 | 0.56 | M-v | 0 | MPC | 8929 | (21992) |
| (22000) | 13.8 | 0.15 | 20060922 | 289.01927 | 104.98695 | 87.54789 | 3.08314 | 0.0659452 | 3.1825486 | 361 | 10 | 1991–2006 | 0.56 | M-v | 0 | MPC | 25668 | (22000) |
| (22020) | 13.9 | 0.15 | 20060922 | 282.73313 | 102.12417 | 99.36619 | 2.50174 | 0.1085890 | 3.2036934 | 395 | 10 | 1996–2006 | 0.56 | M-v | 0 | MPC | 25668 | (22020) |
| (22028) | 14.8 | 0.15 | 20060922 | 109.02698 | 308.79868 | 334.54299 | 5.32294 | 0.1797835 | 2.2967763 | 329 | 9 | 1981–2006 | 0.54 | M-v | 0 | MPC | 8941 | (22028) |
| (22058) | 12.3 | 0.15 | 20060922 | 224.66950 | 97.46247 | 120.55640 | 7.65214 | 0.0799103 | 4.0137245 | 339 | 12 | 1979–2006 | 0.58 | M-v | 0 | MPC | 8949 | (22058) |
| (22063) | 14.8 | 0.15 | 20060922 | 164.66230 | 119.57192 | 106.76442 | 6.11729 | 0.0857603 | 2.3046246 | 334 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 8951 | (22063) |
| (22092) | 13.0 | 0.15 | 20060922 | 191.54689 | 324.73757 | 137.41476 | 14.37011 | 0.1030421 | 2.5545148 | 315 | 9 | 1960–2005 | 0.58 | M-v | 0 | MPC | 8960 | (22092) |
| (22132) | 14.5 | 0.15 | 20060922 | 30.54554 | 285.50916 | 148.63663 | 2.65050 | 0.0826939 | 2.9419007 | 324 | 10 | 1992–2006 | 0.55 | M-v | 0 | MPC | 25668 | (22132) |
| (22157) | 14.4 | 0.15 | 20060922 | 317.79636 | 289.26399 | 221.22434 | 0.39618 | 0.1172635 | 3.1259094 | 357 | 9 | 1994–2006 | 0.51 | M-v | 0 | MPC | 8980 | (22157) |
| (22251) | 15.7 | 0.15 | 20060922 | 100.93533 | 110.95602 | 165.56801 | 5.92448 | 0.1709552 | 2.2790116 | 288 | 7 | 1978–2006 | 0.56 | M-v | 0 | MPC | 9940 | (22251) |
| (22265) | 15.6 | 0.15 | 20060922 | 152.99945 | 316.05225 | 320.05855 | 2.90354 | 0.1580131 | 2.2331308 | 302 | 10 | 1979–2006 | 0.63 | M-v | 1 | MPC | 9944 | (22265) |
| (22267) | 15.5 | 0.15 | 20060922 | 31.82048 | 356.84979 | 6.38352 | 6.23051 | 0.1978873 | 2.2394650 | 255 | 8 | 1981–2006 | 0.65 | M-v | 1 | MPC | 9944 | (22267) |
| (22269) | 14.7 | 0.15 | 20060922 | 347.98735 | 73.75664 | 354.20582 | 5.39484 | 0.0842762 | 2.2266186 | 447 | 8 | 1981–2006 | 0.58 | M-v | 0 | MPC | 53563 | (22269) |
| (22315) | 16.1 | 0.15 | 20060922 | 161.26428 | 20.71157 | 201.32328 | 4.17213 | 0.1356177 | 2.2779224 | 163 | 9 | 1991–2006 | 0.59 | M-v | 1 | MPC | 9960 | (22315) |
| (22345) | 13.6 | 0.15 | 20060922 | 79.76464 | 170.15190 | 197.32900 | 16.75649 | 0.1764258 | 2.6525828 | 429 | 9 | 1975–2006 | 0.49 | M-v | 0 | MPC | 18128 | (22345) |
| (22351) | 14.6 | 0.15 | 20060922 | 53.10875 | 260.34875 | 71.41945 | 6.93165 | 0.2096728 | 2.2766185 | 412 | 9 | 1978–2006 | 0.51 | M-v | 0 | MPC | 9971 | (22351) |
| (22375) | 14.9 | 0.15 | 20060922 | 30.79407 | 272.68306 | 103.25178 | 3.00102 | 0.1397454 | 2.1630256 | 248 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 9978 | (22375) |
| (22381) | 14.9 | 0.15 | 20060922 | 159.13625 | 243.38218 | 14.17501 | 3.68700 | 0.1935456 | 2.2756069 | 377 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 9980 | (22381) |
| (22402) | 15.7 | 0.15 | 20060922 | 94.59063 | 204.77633 | 79.38836 | 3.53496 | 0.1263668 | 2.1865962 | 292 | 10 | 1954–2006 | 0.55 | M-v | 0 | MPC | 9986 | (22402) |
| (22438) | 14.0 | 0.15 | 20060922 | 271.96493 | 90.95931 | 154.80851 | 0.62002 | 0.1086819 | 3.2106085 | 273 | 9 | 1996–2006 | 0.60 | M-v | 0 | MPC | 31796 | (22438) |
| (22439) | 13.8 | 0.15 | 20060922 | 334.06180 | 91.74885 | 70.35055 | 2.46632 | 0.1154933 | 3.2251551 | 357 | 10 | 1994–2006 | 0.48 | M-v | 0 | MPC | 47662 | (22439) |
| (22442) | 16.0 | 0.15 | 20060922 | 51.10825 | 355.28482 | 0.39018 | 0.87966 | 0.0277345 | 2.1912116 | 386 | 7 | 1996–2006 | 0.60 | M-v | 1 | MPC | 9999 | (22442) |
| (22443) | 16.0 | 0.15 | 20060922 | 42.08870 | 34.15529 | 315.54307 | 0.85587 | 0.1584357 | 2.1987634 | 186 | 8 | 1991–2006 | 0.56 | M-v | 0 | MPC | 77303 | (22443) |
| (22452) | 14.4 | 0.15 | 20060922 | 112.52539 | 259.09688 | 101.91604 | 4.91386 | 0.2300662 | 2.6854592 | 382 | 9 | 1987–2006 | 0.53 | M-v | 0 | MPC | 23413 | (22452) |
| (22531) | 15.1 | 0.15 | 20060922 | 48.82278 | 352.21550 | 356.58989 | 6.77549 | 0.1924251 | 2.2119316 | 233 | 7 | 1986–2006 | 0.64 | M-v | 1 | MPC | 10026 | (22531) |
| (22535) | 15.3 | 0.15 | 20060922 | 23.04875 | 205.33711 | 174.72019 | 3.82243 | 0.1954059 | 2.1955657 | 274 | 9 | 1983–2006 | 0.60 | M-v | 0 | MPC | 10028 | (22535) |
| (22538) | 14.9 | 0.15 | 20060922 | 47.92609 | 330.57306 | 29.54213 | 7.60981 | 0.1480658 | 2.2006551 | 218 | 9 | 1986–2006 | 0.61 | M-v | 1 | MPC | 10029 | (22538) |
| (22540) | 14.2 | 0.15 | 20060922 | 325.83842 | 324.35606 | 166.27227 | 2.21193 | 0.0340934 | 2.8750745 | 377 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 23413 | (22540) |
| (22558) | 16.2 | 0.15 | 20060922 | 269.18770 | 76.97628 | 72.89935 | 0.77380 | 0.0493740 | 2.2014394 | 251 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 10036 | (22558) |
| (22679) | 15.2 | 0.15 | 20060922 | 174.62781 | 67.83105 | 167.99393 | 4.02371 | 0.1941449 | 2.3397762 | 270 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 10075 | (22679) |
| (22692) | 13.4 | 0.15 | 20060922 | 45.44050 | 77.85179 | 356.27364 | 16.54915 | 0.1714488 | 3.3732362 | 231 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 10079 | (22692) |
| (22696) | 14.2 | 0.15 | 20060922 | 112.58763 | 268.65470 | 40.52174 | 7.12010 | 0.1394009 | 2.3527779 | 403 | 9 | 1980–2006 | 0.52 | M-v | 0 | MPC | 10080 | (22696) |
| (22701) | 14.3 | 0.15 | 20060922 | 240.41196 | 247.64036 | 6.71035 | 3.78844 | 0.1260986 | 2.2108833 | 379 | 9 | 1988–2006 | 0.56 | M-v | 0 | MPC | 13528 | (22701) |
| (22713) | 13.9 | 0.15 | 20060922 | 263.88736 | 155.70201 | 83.25130 | 5.95734 | 0.0736447 | 3.2132364 | 321 | 9 | 1996–2006 | 0.61 | M-v | 0 | MPC | 30237 | (22713) |
| (22756) | 16.5 | 0.15 | 20060922 | 77.63775 | 40.65726 | 325.57971 | 0.86091 | 0.1565818 | 2.4009624 | 136 | 9 | 1992–2006 | 0.48 | M-v | 1 | MPC | 10100 | (22756) |
| (22767) | 14.6 | 0.15 | 20060922 | 122.47308 | 198.14052 | 147.80783 | 3.14508 | 0.1992789 | 2.4336921 | 499 | 9 | 1982–2006 | 0.59 | M-v | 0 | MPC | 18128 | (22767) |
| (22791) | 15.8 | 0.15 | 20060922 | 54.47899 | 240.27594 | 105.74913 | 2.79108 | 0.2008150 | 2.1662035 | 288 | 9 | 1995–2006 | 0.55 | M-v | 1 | MPC | 10110 | (22791) |
| (22807) | 15.3 | 0.15 | 20060922 | 83.52894 | 318.18787 | 16.11672 | 2.07301 | 0.2434500 | 2.1739239 | 341 | 12 | 1991–2006 | 0.58 | M-v | 1 | MPC | 10115 | (22807) |
| (22905) | 15.0 | 0.15 | 20060922 | 236.10707 | 329.09146 | 205.59206 | 4.76411 | 0.0964866 | 2.2246157 | 374 | 9 | 1988–2006 | 0.56 | M-v | 0 | MPC | 10148 | (22905) |
| (22931) | 14.0 | 0.15 | 20060922 | 325.04862 | 166.07364 | 348.95613 | 1.93446 | 0.1331818 | 3.0866098 | 413 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 27572 | (22931) |
| (22962) | 14.8 | 0.15 | 20060922 | 59.45609 | 304.59231 | 130.12793 | 3.05854 | 0.0436681 | 3.0953866 | 190 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 27572 | (22962) |
| (23036) | 14.5 | 0.15 | 20060922 | 144.70149 | 271.14701 | 19.43697 | 3.12786 | 0.1453450 | 2.1434363 | 510 | 9 | 1974–2006 | 0.52 | M-v | 1 | MPC | 10190 | (23036) |
| (23065) | 13.5 | 0.15 | 20060922 | 226.55361 | 116.82967 | 161.09374 | 1.99025 | 0.1466112 | 3.1020933 | 271 | 9 | 1981–2006 | 0.57 | M-v | 0 | MPC | 27573 | (23065) |
| (23105) | 13.7 | 0.15 | 20060922 | 112.50282 | 41.07818 | 335.53447 | 6.03203 | 0.1751192 | 3.1946152 | 283 | 9 | 1987–2006 | 0.54 | M-v | 0 | MPC | 10212 | (23105) |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (23112) | 14.5 | 0.15 | 20060922 | 188.99524 | 189.41068 | 34.21656 | 9.88958 | 0.2101825 | 2.3225401 | 402 | 9 | 1995–2006 | 0.47 | M-v | 0 | MPC | 10214 | (23112) |
| (23153) | 14.2 | 0.15 | 20060922 | 222.41028 | 338.84152 | 298.61320 | 5.63995 | 0.1618489 | 2.2674212 | 383 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 15000 | (23153) |
| (23175) | 13.6 | 0.15 | 20060922 | 105.72085 | 304.29001 | 47.16604 | 7.19832 | 0.1259041 | 2.4397066 | 459 | 9 | 1990–2006 | 0.54 | M-v | 0 | MPC | 15000 | (23175) |
| (23198) | 14.2 | 0.15 | 20060922 | 150.08802 | 231.89537 | 72.04911 | 3.07063 | 0.0556818 | 2.8504312 | 318 | 9 | 1981–2006 | 0.60 | M-v | 0 | MPC | 23413 | (23198) |
| (23207) | 14.2 | 0.15 | 20060922 | 31.34368 | 47.52904 | 349.76566 | 2.98898 | 0.2276359 | 3.1471546 | 264 | 9 | 1994–2006 | 0.58 | M-v | 0 | MPC | 10242 | (23207) |
| (23295) | 15.4 | 0.15 | 20060922 | 199.27785 | 295.56504 | 231.82396 | 8.96622 | 0.1067660 | 2.3119263 | 278 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 10267 | (23295) |
| (23330) | 16.3 | 0.15 | 20060922 | 353.98377 | 185.65528 | 211.13046 | 7.05621 | 0.0966222 | 2.1998713 | 209 | 7 | 1996–2006 | 0.56 | M-v | 1 | MPC | 77305 | (23330) |
| (23360) | 15.2 | 0.15 | 20060922 | 174.03081 | 355.91004 | 276.44427 | 1.79261 | 0.1439880 | 2.3782837 | 271 | 9 | 1971–2006 | 0.58 | M-v | 0 | MPC | 15000 | (23360) |
| (23362) | 17.2 | 0.15 | 20060922 | 204.67658 | 4.99919 | 189.51572 | 5.41604 | 0.1254026 | 2.2406580 | 46 | 6 | 1971–2006 | 0.73 | M-v | 1 | MPC | 10286 | (23362) |
| (23366) | 15.9 | 0.15 | 20060922 | 221.51677 | 164.13240 | 306.50457 | 2.03776 | 0.1726074 | 2.4011312 | 204 | 7 | 1973–2006 | 0.59 | M-v | 0 | MPC | 10287 | (23366) |
| (23384) | 13.4 | 0.15 | 20060922 | 318.46099 | 228.41537 | 296.33835 | 10.04309 | 0.1566920 | 3.0233984 | 300 | 7 | 1973–2006 | 0.58 | M-v | 0 | MPC | 43318 | (23384) |
| (23404) | 14.5 | 0.15 | 20060922 | 271.84745 | 244.29892 | 172.95885 | 21.73850 | 0.2476948 | 2.2820267 | 266 | 9 | 1972–2006 | 0.58 | M-v | 1 | MPC | 11074 | (23404) |
| (23407) | 16.2 | 0.15 | 20060922 | 342.92863 | 137.23854 | 311.96204 | 1.95759 | 0.0821941 | 2.1532222 | 219 | 9 | 1977–2006 | 0.60 | M-v | 0 | MPC | 11075 | (23407) |
| (23423) | 15.7 | 0.15 | 20060922 | 155.45246 | 352.49324 | 275.77268 | 5.76644 | 0.0880094 | 2.2311874 | 207 | 9 | 1981–2006 | 0.60 | M-v | 0 | MPC | 11080 | (23423) |
| (23426) | 15.8 | 0.15 | 20060922 | 258.06787 | 225.57883 | 272.95078 | 3.82473 | 0.0586850 | 2.2408294 | 174 | 7 | 1981–2006 | 0.58 | M-v | 1 | MPC | 11081 | (23426) |
| (23438) | 14.8 | 0.15 | 20060922 | 153.61592 | 273.75250 | 13.28343 | 8.22535 | 0.2386488 | 2.3039773 | 364 | 10 | 1984–2006 | 0.64 | M-v | 0 | MPC | 11084 | (23438) |
| (23450) | 15.4 | 0.15 | 20060922 | 27.78244 | 126.62847 | 277.51286 | 6.70127 | 0.0841919 | 2.1724409 | 270 | 9 | 1988–2006 | 0.58 | M-v | 0 | MPC | 33745 | (23450) |
| (23454) | 13.6 | 0.15 | 20060922 | 32.18338 | 356.33245 | 73.79404 | 9.04443 | 0.1437958 | 2.6745863 | 400 | 10 | 1983–2006 | 0.58 | M-v | 0 | MPC | 11090 | (23454) |
| (23456) | 14.4 | 0.15 | 20060922 | 269.19101 | 150.64168 | 35.36643 | 3.33341 | 0.1739211 | 2.3733602 | 568 | 16 | 1951–2006 | 0.57 | M-v | 0 | MPC | 11091 | (23456) |
| (23479) | 12.1 | 0.15 | 20060922 | 346.79137 | 306.92144 | 129.31241 | 15.51068 | 0.2086886 | 3.1172073 | 378 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 23413 | (23479) |
| (23491) | 14.0 | 0.15 | 20060922 | 110.71589 | 148.66506 | 177.68613 | 4.36456 | 0.1429618 | 2.3177368 | 614 | 10 | 1949–2006 | 0.60 | M-v | 0 | MPC | 11102 | (23491) |
| (23494) | 14.7 | 0.15 | 20060922 | 71.55519 | 145.06198 | 168.25231 | 2.41431 | 0.2298055 | 2.3607546 | 465 | 10 | 1953–2006 | 0.54 | M-v | 0 | MPC | 11103 | (23494) |
| (23510) | 15.5 | 0.15 | 20060922 | 33.77661 | 42.50427 | 307.06209 | 5.67010 | 0.2163866 | 2.2616925 | 203 | 7 | 1992–2006 | 0.60 | M-v | 1 | MPC | 11108 | (23510) |
| (23545) | 14.2 | 0.15 | 20060922 | 20.04240 | 160.71913 | 255.23702 | 3.15557 | 0.0932051 | 2.1782022 | 495 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 11120 | (23545) |
| (23554) | 14.4 | 0.15 | 20060922 | 124.94191 | 310.37938 | 308.93637 | 1.51975 | 0.1891311 | 2.4277016 | 262 | 9 | 1989–2006 | 0.59 | M-v | 0 | MPC | 11123 | (23554) |
| (23577) | 14.6 | 0.15 | 20060922 | 225.39464 | 149.85945 | 133.37623 | 2.11892 | 0.1664107 | 3.3371455 | 202 | 12 | 1992–2006 | 0.50 | M-v | 0 | MPC | 11130 | (23577) |
| (23584) | 15.1 | 0.15 | 20060922 | 180.09966 | 253.73474 | 356.80434 | 5.52722 | 0.1097371 | 2.2471318 | 324 | 9 | 1974–2006 | 0.53 | M-v | 0 | MPC | 11132 | (23584) |
| (23586) | 15.6 | 0.15 | 20060922 | 170.56574 | 4.92233 | 177.35667 | 1.84853 | 0.0686731 | 2.4202330 | 346 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 11133 | (23586) |
| (23592) | 13.5 | 0.15 | 20060922 | 21.00112 | 206.15718 | 211.99204 | 9.84382 | 0.0945053 | 2.9864982 | 343 | 9 | 1990–2006 | 0.61 | M-v | 0 | MPC | 23413 | (23592) |
| (23615) | 14.8 | 0.15 | 20060922 | 229.72245 | 244.40124 | 26.57324 | 22.68169 | 0.1002322 | 1.9604280 | 299 | 9 | 1974–2006 | 0.50 | M-v | 0 | MPC | 11142 | (23615) |
| (23625) | 16.0 | 0.15 | 20060922 | 303.22402 | 46.77119 | 46.35704 | 6.88692 | 0.1111573 | 2.2423160 | 283 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 11145 | (23625) |
| (23629) | 15.2 | 0.15 | 20060922 | 18.40735 | 298.24502 | 100.20349 | 7.05143 | 0.1680946 | 2.2379912 | 188 | 9 | 1989–2006 | 0.63 | M-v | 1 | MPC | 11147 | (23629) |
| (23632) | 15.0 | 0.15 | 20060922 | 358.15817 | 300.40165 | 118.30820 | 7.92038 | 0.1233798 | 2.2566609 | 255 | 7 | 1996–2006 | 0.59 | M-v | 0 | MPC | 11148 | (23632) |
| (23649) | 15.7 | 0.15 | 20060922 | 135.67633 | 306.71888 | 290.53910 | 0.43701 | 0.1506602 | 2.3888359 | 206 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 11153 | (23649) |
| (23650) | 15.9 | 0.15 | 20060922 | 219.21154 | 22.84799 | 136.99279 | 5.39508 | 0.0910761 | 2.3504848 | 162 | 7 | 1994–2006 | 0.49 | M-v | 0 | MPC | 11153 | (23650) |
| (23713) | 16.4 | 0.15 | 20060922 | 152.85780 | 197.64849 | 10.46893 | 6.31088 | 0.0932536 | 2.2926304 | 137 | 9 | 1984–2006 | 0.60 | M-v | 1 | MPC | 11172 | (23713) |
| (23717) | 15.2 | 0.15 | 20060922 | 64.87067 | 80.92952 | 247.25110 | 4.57155 | 0.1546505 | 2.2570670 | 381 | 9 | 1982–2006 | 0.56 | M-v | 0 | MPC | 33745 | (23717) |
| (23730) | 15.9 | 0.15 | 20060922 | 338.76387 | 44.40166 | 16.23690 | 3.87715 | 0.1375973 | 2.2280750 | 278 | 8 | 1991–2006 | 0.53 | M-v | 0 | MPC | 53564 | (23730) |
| (23743) | 15.5 | 0.15 | 20060922 | 100.66104 | 207.62877 | 92.34805 | 6.24423 | 0.1476552 | 2.2886423 | 181 | 9 | 1994–2006 | 0.59 | M-v | 0 | MPC | 11184 | (23743) |
| (23745) | 16.1 | 0.15 | 20060922 | 117.36166 | 205.14788 | 100.72378 | 6.06978 | 0.1672518 | 2.2403137 | 153 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 11185 | (23745) |
| (23754) | 15.5 | 0.15 | 20060922 | 132.49068 | 10.68478 | 231.16236 | 3.73954 | 0.1865356 | 2.3205941 | 243 | 9 | 1994–2006 | 0.50 | M-v | 0 | MPC | 11188 | (23754) |
| (23755) | 15.4 | 0.15 | 20060922 | 123.97280 | 196.15996 | 73.62966 | 2.97876 | 0.1362595 | 2.2996409 | 250 | 10 | 1991–2006 | 0.61 | M-v | 0 | MPC | 11188 | (23755) |
| (23771) | 14.6 | 0.15 | 20060922 | 95.24278 | 245.38456 | 64.72535 | 4.21267 | 0.2113444 | 2.3450317 | 294 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 11193 | (23771) |
| (23851) | 15.0 | 0.15 | 20060922 | 114.68842 | 146.36224 | 130.82895 | 3.05180 | 0.1654040 | 2.3957733 | 277 | 10 | 1976–2006 | 0.56 | M-v | 0 | MPC | 11218 | (23851) |
| (23857) | 13.8 | 0.15 | 20060922 | 164.20963 | 251.04856 | 349.94906 | 8.10841 | 0.1680815 | 2.3782644 | 403 | 10 | 1975–2006 | 0.54 | M-v | 0 | MPC | 11220 | (23857) |
| (23885) | 13.7 | 0.15 | 20060922 | 255.81798 | 104.14724 | 25.57562 | 14.59270 | 0.0503807 | 2.5330677 | 390 | 10 | 1956–2006 | 0.51 | M-v | 1 | MPC | 11230 | (23885) |
| (23907) | 14.8 | 0.15 | 20060922 | 50.11149 | 340.28267 | 42.69278 | 3.11388 | 0.2053689 | 2.3980005 | 218 | 9 | 1972–2006 | 0.56 | M-v | 1 | MPC | 11237 | (23907) |
| (23932) | 15.3 | 0.15 | 20060922 | 318.49202 | 122.48090 | 13.15835 | 6.86967 | 0.0722544 | 2.3859661 | 175 | 9 | 1956–2006 | 0.59 | M-v | 1 | MPC | 18128 | (23932) |
| (23945) | 13.6 | 0.15 | 20060922 | 332.91954 | 179.32949 | 337.03469 | 23.65925 | 0.1114913 | 3.1442580 | 177 | 7 | 1996–2006 | 0.55 | M-v | 1 | MPC | 11250 | (23945) |
| (23986) | 13.1 | 0.15 | 20060922 | 40.00864 | 150.81133 | 260.15123 | 16.32959 | 0.2076520 | 3.1079168 | 216 | 7 | 1980–2006 | 0.44 | M-v | 0 | MPC | 11263 | (23986) |
| (24010) | 15.9 | 0.15 | 20060922 | 338.45041 | 151.11321 | 260.62690 | 5.60492 | 0.1184946 | 2.2455664 | 161 | 8 | 1996–2006 | 0.43 | M-v | 0 | MPC | 77306 | (24010) |
| (24048) | 14.4 | 0.15 | 20060922 | 279.29184 | 203.19904 | 208.21439 | 13.74332 | 0.1339069 | 2.4409809 | 334 | 10 | 1987–2006 | 0.59 | M-v | 1 | MPC | 11285 | (24048) |
| (24059) | 15.2 | 0.15 | 20060922 | 343.80454 | 50.23661 | 36.34049 | 6.70177 | 0.0842494 | 2.2002200 | 320 | 8 | 1991–2006 | 0.59 | M-v | 0 | MPC | 77306 | (24059) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (24060) | 15.5 | 0.15 | 20060922 | 303.56811 | 320.15823 | 136.27828 | 6.67332 | 0.0572727 | 2.2574316 | 249 | 7 | 1989–2006 | 0.60 | M-v | 0 | MPC | 11289 | (24060) |
| (24070) | 15.5 | 0.15 | 20060922 | 226.33515 | 42.35144 | 114.84108 | 3.58709 | 0.0992170 | 2.3415322 | 218 | 9 | 1992–2006 | 0.53 | M-v | 0 | MPC | 11292 | (24070) |
| (24078) | 15.8 | 0.15 | 20060922 | 203.24670 | 64.01898 | 140.60553 | 3.43578 | 0.0535513 | 2.2498209 | 258 | 8 | 1992–2006 | 0.56 | M-v | 1 | MPC | 33746 | (24078) |
| (24081) | 15.3 | 0.15 | 20060922 | 221.66247 | 43.15550 | 128.72340 | 4.28726 | 0.0806022 | 2.3237115 | 263 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 11296 | (24081) |
| (24089) | 15.6 | 0.15 | 20060922 | 62.36923 | 289.42340 | 49.68507 | 4.64415 | 0.2331671 | 2.2385995 | 302 | 9 | 1989–2006 | 0.55 | M-v | 0 | MPC | 31798 | (24089) |
| (24119) | 16.0 | 0.15 | 20060922 | 64.16186 | 263.59732 | 44.90747 | 3.96501 | 0.1208348 | 2.3352541 | 225 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 11309 | (24119) |
| (24129) | 15.5 | 0.15 | 20060922 | 14.55029 | 144.64968 | 234.40260 | 1.27128 | 0.1546599 | 2.2858009 | 368 | 8 | 1997–2006 | 0.52 | M-v | 0 | MPC | 11313 | (24129) |
| (24130) | 16.8 | 0.15 | 20060922 | 129.67402 | 235.39102 | 48.72401 | 3.62952 | 0.1162251 | 2.2363309 | 110 | 7 | 1993–2006 | 0.58 | M-v | 1 | MPC | 11313 | (24130) |
| (24143) | 16.0 | 0.15 | 20060922 | 59.67260 | 330.34045 | 9.72149 | 4.17618 | 0.2451559 | 2.1731383 | 174 | 9 | 1992–2006 | 0.57 | M-v | 1 | MPC | 11317 | (24143) |
| (24158) | 15.8 | 0.15 | 20060922 | 315.13383 | 97.79099 | 329.74894 | 5.11536 | 0.0934465 | 2.3089332 | 222 | 7 | 1995–2006 | 0.50 | M-v | 0 | MPC | 11322 | (24158) |
| (24165) | 15.2 | 0.15 | 20060922 | 64.62995 | 256.23194 | 90.89515 | 5.05248 | 0.2138007 | 2.2627810 | 237 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 33746 | (24165) |
| (24175) | 15.0 | 0.15 | 20060922 | 193.07673 | 335.21742 | 217.35495 | 5.55299 | 0.1277465 | 2.3700852 | 373 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 11327 | (24175) |
| (24202) | 15.8 | 0.15 | 20060922 | 124.56225 | 73.24885 | 259.72113 | 1.55575 | 0.2121252 | 2.1411062 | 372 | 9 | 1980–2006 | 0.57 | M-v | 1 | MPC | 11337 | (24202) |
| (24203) | 15.4 | 0.15 | 20060922 | 63.73163 | 33.75131 | 265.37647 | 4.59163 | 0.2020792 | 2.3432751 | 276 | 8 | 1994–2006 | 0.53 | M-v | 0 | MPC | 73886 | (24203) |
| (24252) | 14.5 | 0.15 | 20060922 | 190.99381 | 211.44422 | 15.34834 | 5.55959 | 0.2013427 | 2.2743325 | 478 | 10 | 1970–2006 | 0.52 | M-v | 0 | MPC | 11352 | (24252) |
| (24257) | 14.6 | 0.15 | 20060922 | 188.07068 | 206.73654 | 7.94178 | 5.47903 | 0.0927059 | 2.3255754 | 395 | 8 | 1991–2006 | 0.55 | M-v | 0 | MPC | 77307 | (24257) |
| (24259) | 14.5 | 0.15 | 20060922 | 43.93379 | 167.08459 | 173.26248 | 23.78848 | 0.1782539 | 2.3296455 | 304 | 9 | 1995–2006 | 0.59 | M-v | 1 | MPC | 11355 | (24259) |
| (24288) | 15.1 | 0.15 | 20060922 | 40.85355 | 317.56238 | 34.74863 | 6.56227 | 0.2189901 | 2.3085275 | 241 | 8 | 1994–2006 | 0.58 | M-v | 0 | MPC | 33746 | (24288) |
| (24344) | 15.4 | 0.15 | 20060922 | 18.50411 | 278.18617 | 108.54261 | 3.31891 | 0.1430311 | 2.2583684 | 223 | 8 | 1997–2006 | 0.55 | M-v | 0 | MPC | 77307 | (24344) |
| (24352) | 14.7 | 0.15 | 20060922 | 158.63423 | 59.72825 | 190.78866 | 6.66677 | 0.0811526 | 2.3184724 | 311 | 9 | 1992–2006 | 0.61 | M-v | 0 | MPC | 11384 | (24352) |
| (24430) | 14.3 | 0.15 | 20060922 | 98.87596 | 94.74416 | 185.39436 | 7.87552 | 0.2586317 | 2.5692088 | 263 | 12 | 1968–2006 | 0.59 | M-v | 1 | MPC | 11407 | (24430) |
| (24455) | 12.8 | 0.15 | 20060922 | 262.61311 | 59.31103 | 61.92030 | 11.72744 | 0.0543295 | 3.0519016 | 449 | 9 | 1987–2006 | 0.55 | M-v | 0 | MPC | 11414 | (24455) |
| (24514) | 14.2 | 0.15 | 20060922 | 253.67876 | 166.11733 | 82.63771 | 0.44642 | 0.2417373 | 3.2639902 | 221 | 10 | 1992–2006 | 0.53 | M-v | 0 | MPC | 27573 | (24514) |
| (24527) | 15.8 | 0.15 | 20060922 | 26.00728 | 34.67962 | 335.43594 | 6.89998 | 0.1326588 | 2.1852165 | 204 | 7 | 1996–2006 | 0.52 | M-v | 1 | MPC | 11436 | (24527) |
| (24543) | 14.6 | 0.15 | 20060922 | 48.39656 | 243.76770 | 60.62656 | 7.81669 | 0.1994596 | 2.4195048 | 308 | 9 | 1994–2006 | 0.50 | M-v | 0 | MPC | 11441 | (24543) |
| (24553) | 15.2 | 0.15 | 20060922 | 105.97973 | 264.20534 | 11.06067 | 4.65702 | 0.1758228 | 2.4357593 | 244 | 9 | 1960–2006 | 0.62 | M-v | 0 | MPC | 11443 | (24553) |
| (24584) | 16.1 | 0.15 | 20060922 | 74.00270 | 252.39816 | 43.67702 | 2.79177 | 0.1105983 | 2.3684741 | 276 | 9 | 1973–2006 | 0.59 | M-v | 0 | MPC | 11453 | (24584) |
| (24621) | 16.1 | 0.15 | 20060922 | 136.05317 | 116.86373 | 144.96820 | 3.44416 | 0.1624891 | 2.4008173 | 165 | 9 | 1971–2006 | 0.57 | M-v | 0 | MPC | 12353 | (24621) |
| (24627) | 13.7 | 0.15 | 20060922 | 85.14499 | 78.57496 | 289.83608 | 9.52715 | 0.1432299 | 3.0657944 | 236 | 13 | 1976–2006 | 0.56 | M-v | 0 | MPC | 12355 | (24627) |
| (24628) | 14.0 | 0.15 | 20060922 | 157.42381 | 34.38795 | 271.38782 | 8.80867 | 0.0540729 | 3.0546455 | 215 | 12 | 1981–2006 | 0.60 | M-v | 0 | MPC | 12355 | (24628) |
| (24629) | 16.5 | 0.15 | 20060922 | 252.68489 | 282.95523 | 228.39860 | 6.13811 | 0.0359173 | 2.2357459 | 146 | 7 | 1981–2006 | 0.60 | M-v | 1 | MPC | 12356 | (24629) |
| (24631) | 15.0 | 0.15 | 20060922 | 304.03364 | 163.45355 | 298.32864 | 2.22300 | 0.1682865 | 3.0962926 | 191 | 9 | 1979–2006 | 0.58 | M-v | 0 | MPC | 12356 | (24631) |
| (24636) | 15.3 | 0.15 | 20060922 | 16.48902 | 21.13374 | 33.70148 | 4.38313 | 0.1701804 | 2.2941219 | 292 | 7 | 1981–2006 | 0.66 | M-v | 1 | MPC | 35430 | (24636) |
| (24670) | 15.5 | 0.15 | 20060922 | 45.46258 | 325.42467 | 35.12977 | 1.93851 | 0.2220203 | 2.3266746 | 271 | 9 | 1977–2006 | 0.63 | M-v | 1 | MPC | 12369 | (24670) |
| (24672) | 14.5 | 0.15 | 20060922 | 43.91762 | 287.76030 | 34.60895 | 16.36429 | 0.2091856 | 2.5765653 | 347 | 8 | 1989–2006 | 0.55 | M-v | 0 | MPC | 77307 | (24672) |
| (24682) | 14.5 | 0.15 | 20060922 | 322.32800 | 56.28497 | 125.40080 | 24.67917 | 0.3711421 | 2.2403322 | 132 | 7 | 1990–2006 | 0.58 | M-v | 1 | MPC | 15000 | (24682) |
| (24683) | 14.1 | 0.15 | 20060922 | 277.74552 | 336.45548 | 155.62837 | 25.03277 | 0.1903348 | 2.3068099 | 266 | 10 | 1955–2006 | 0.61 | M-v | 1 | MPC | 12373 | (24683) |
| (24700) | 14.6 | 0.15 | 20060922 | 26.78261 | 261.01447 | 83.50882 | 15.74427 | 0.1649380 | 2.5397937 | 329 | 10 | 1990–2006 | 0.59 | M-v | 0 | MPC | 12379 | (24700) |
| (24701) | 12.5 | 0.15 | 20060922 | 314.77013 | 37.05802 | 94.59686 | 15.53812 | 0.1667287 | 3.9473856 | 149 | 7 | 1990–2006 | 0.62 | M-v | 0 | MPC | 12379 | (24701) |
| (24704) | 14.7 | 0.15 | 20060922 | 144.47179 | 331.55748 | 315.76072 | 4.76752 | 0.1514794 | 2.2969283 | 372 | 10 | 1977–2006 | 0.51 | M-v | 0 | MPC | 12380 | (24704) |
| (24758) | 14.5 | 0.15 | 20060922 | 21.03081 | 352.23627 | 58.38654 | 5.84819 | 0.1321494 | 2.2722461 | 437 | 9 | 1985–2006 | 0.57 | M-v | 0 | MPC | 12398 | (24758) |
| (24768) | 15.1 | 0.15 | 20060922 | 233.10616 | 88.85968 | 91.35811 | 3.42629 | 0.1318737 | 2.3962714 | 358 | 12 | 1954–2006 | 0.58 | M-v | 0 | MPC | 12402 | (24768) |
| (24779) | 13.2 | 0.15 | 20060922 | 60.77152 | 170.24947 | 140.08689 | 16.06809 | 0.2290885 | 2.5969515 | 473 | 9 | 1980–2006 | 0.49 | M-v | 0 | MPC | 12405 | (24779) |
| (24802) | 15.1 | 0.15 | 20060922 | 122.18908 | 84.08811 | 202.36429 | 2.67750 | 0.1528346 | 2.4079556 | 219 | 9 | 1994–2006 | 0.64 | M-v | 0 | MPC | 12412 | (24802) |
| (24825) | 14.5 | 0.15 | 20060922 | 79.96846 | 77.75985 | 302.65239 | 3.55251 | 0.1845916 | 2.2376918 | 467 | 9 | 1955–2006 | 0.55 | M-v | 0 | MPC | 12419 | (24825) |
| (24830) | 14.8 | 0.15 | 20060922 | 110.22013 | 59.89335 | 271.55329 | 2.94495 | 0.1886830 | 2.2550139 | 422 | 9 | 1995–2006 | 0.53 | M-v | 0 | MPC | 12421 | (24830) |
| (24833) | 15.6 | 0.15 | 20060922 | 45.31307 | 8.01721 | 350.83345 | 7.08368 | 0.1301174 | 2.3014803 | 157 | 7 | 1988–2006 | 0.60 | M-v | 1 | MPC | 12422 | (24833) |
| (24834) | 15.7 | 0.15 | 20060922 | 276.57684 | 308.46418 | 160.03497 | 7.09288 | 0.0652998 | 2.3323504 | 191 | 7 | 1995–2006 | 0.57 | M-v | 1 | MPC | 12422 | (24834) |
| (24886) | 15.8 | 0.15 | 20060922 | 210.30375 | 122.10642 | 56.89646 | 3.11044 | 0.1654901 | 2.3368419 | 190 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 12439 | (24886) |
| (24901) | 15.7 | 0.15 | 20060922 | 23.03774 | 242.95600 | 134.78461 | 10.11658 | 0.0770847 | 2.3008724 | 153 | 8 | 1997–2006 | 0.55 | M-v | 0 | MPC | 77308 | (24901) |
| (24902) | 15.0 | 0.15 | 20060922 | 1.69694 | 5.73506 | 33.24248 | 5.51745 | 0.1242889 | 2.2901537 | 392 | 9 | 1985–2006 | 0.53 | M-v | 0 | MPC | 12445 | (24902) |
| (24909) | 14.7 | 0.15 | 20060922 | 322.38262 | 109.20207 | 328.30922 | 7.35874 | 0.0778484 | 2.3207305 | 346 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 12447 | (24909) |
| (24912) | 15.3 | 0.15 | 20060922 | 134.34704 | 347.43100 | 277.18615 | 6.00721 | 0.0845160 | 2.3558803 | 222 | 9 | 1973–2006 | 0.60 | M-v | 0 | MPC | 12448 | (24912) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (24914) | 15.6 | 0.15 | 20060922 | 171.77804 | 204.25700 | 32.04175 | 6.89256 | 0.0671532 | 2.3651634 | 317 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 12449 | (24914) |
| (24916) | 16.4 | 0.15 | 20060922 | 186.31877 | 158.42418 | 2.63661 | 2.45021 | 0.1141719 | 2.4431481 | 134 | 10 | 1991–2006 | 0.67 | M-v | 1 | MPC | 12450 | (24916) |
| (24923) | 15.2 | 0.15 | 20060922 | 202.75381 | 197.46637 | 9.78023 | 4.24568 | 0.1107117 | 2.3198777 | 305 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 12452 | (24923) |
| (24938) | 14.1 | 0.15 | 20060922 | 43.07930 | 299.60406 | 51.95570 | 8.42941 | 0.1252092 | 2.4479366 | 450 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 35430 | (24938) |
| (24939) | 13.9 | 0.15 | 20060922 | 71.36092 | 281.65446 | 58.76486 | 13.68842 | 0.2581225 | 2.4226158 | 382 | 9 | 1955–2006 | 0.57 | M-v | 0 | MPC | 12457 | (24939) |
| (24973) | 13.8 | 0.15 | 20060922 | 184.99470 | 131.10677 | 92.50600 | 15.31730 | 0.1398385 | 3.0630488 | 193 | 10 | 1993–2006 | 0.54 | M-v | 0 | MPC | 41504 | (24973) |
| (24989) | 14.8 | 0.15 | 20060922 | 75.05202 | 152.74205 | 199.97457 | 9.25449 | 0.1571074 | 2.3048670 | 347 | 9 | 1981–2006 | 0.57 | M-v | 1 | MPC | 12475 | (24989) |
| (24992) | 14.3 | 0.15 | 20060922 | 87.62962 | 37.34689 | 298.11259 | 7.23050 | 0.2109524 | 2.3163410 | 278 | 9 | 1977–2006 | 0.60 | M-v | 0 | MPC | 12476 | (24992) |
| (25000) | 12.6 | 0.15 | 20060922 | 334.83916 | 5.90968 | 142.34135 | 14.96981 | 0.0983554 | 3.1631098 | 426 | 12 | 1982–2006 | 0.54 | M-v | 0 | MPC | 12478 | (25000) |
| (25006) | 15.6 | 0.15 | 20060922 | 29.89774 | 324.26319 | 36.80597 | 1.25036 | 0.2109814 | 2.4245273 | 251 | 9 | 1993–2006 | 0.62 | M-v | 1 | MPC | 12480 | (25006) |
| (25022) | 15.6 | 0.15 | 20060922 | 133.25961 | 323.19245 | 327.01482 | 4.99590 | 0.1972890 | 2.3124953 | 317 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 12486 | (25022) |
| (25023) | 16.1 | 0.15 | 20060922 | 123.60604 | 266.47169 | 26.57781 | 3.89015 | 0.1880267 | 2.3261925 | 198 | 10 | 1977–2006 | 0.64 | M-v | 1 | MPC | 12486 | (25023) |
| (25032) | 15.0 | 0.15 | 20060922 | 151.42305 | 148.85122 | 120.11432 | 5.34664 | 0.1365714 | 2.3233339 | 304 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 77308 | (25032) |
| (25037) | 15.0 | 0.15 | 20060922 | 208.81301 | 1.30944 | 277.33008 | 4.78627 | 0.2546323 | 2.1988013 | 277 | 9 | 1994–2006 | 0.50 | M-v | 0 | MPC | 12491 | (25037) |
| (25047) | 15.7 | 0.15 | 20060922 | 126.06884 | 299.47435 | 348.81667 | 6.64529 | 0.1165321 | 2.3551575 | 254 | 7 | 1997–2005 | 0.54 | M-v | 0 | MPC | 77309 | (25047) |
| (25050) | 14.1 | 0.15 | 20060922 | 184.57394 | 141.06515 | 118.54912 | 5.28680 | 0.1398037 | 2.2905361 | 326 | 9 | 1983–2006 | 0.57 | M-v | 0 | MPC | 12495 | (25050) |
| (25089) | 15.7 | 0.15 | 20060922 | 156.63742 | 285.15743 | 350.55174 | 3.19222 | 0.1071034 | 2.3196783 | 252 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 12508 | (25089) |
| (25095) | 14.5 | 0.15 | 20060922 | 60.82699 | 21.73240 | 311.27525 | 5.58159 | 0.1460882 | 2.4263436 | 274 | 9 | 1987–2006 | 0.57 | M-v | 1 | MPC | 12509 | (25095) |
| (25096) | 15.6 | 0.15 | 20060922 | 75.47242 | 105.42364 | 249.35131 | 3.63325 | 0.2259213 | 2.3616679 | 222 | 9 | 1969–2006 | 0.58 | M-v | 1 | MPC | 12510 | (25096) |
| (25120) | 15.3 | 0.15 | 20060922 | 17.41858 | 89.55173 | 252.98892 | 2.69350 | 0.1802783 | 2.5181651 | 296 | 9 | 1990–2006 | 0.60 | M-v | 1 | MPC | 33746 | (25120) |
| (25143) | 19.2 | 0.15 | 20060922 | 193.30714 | 162.76617 | 69.09548 | 1.62223 | 0.2800828 | 1.3239271 | 875 | 3 | 1998–2004 | 0.52 | M-v | 0 | MPC | 66019 | (25143) |
| (25160) | 15.2 | 0.15 | 20060922 | 90.81499 | 173.82250 | 167.43779 | 2.27007 | 0.2349246 | 2.3536679 | 305 | 9 | 1991–2006 | 0.61 | M-v | 1 | MPC | 12532 | (25160) |
| (25165) | 15.5 | 0.15 | 20060922 | 80.35802 | 20.07079 | 306.68375 | 6.95073 | 0.2370068 | 2.3961419 | 92 | 9 | 1996–2006 | 0.56 | M-v | 1 | MPC | 12534 | (25165) |
| (25169) | 15.4 | 0.15 | 20060922 | 32.91893 | 257.62438 | 98.80891 | 2.79572 | 0.1901258 | 2.4770281 | 297 | 9 | 1990–2006 | 0.59 | M-v | 1 | MPC | 12535 | (25169) |
| (25207) | 15.4 | 0.15 | 20060922 | 101.17773 | 271.74732 | 29.81656 | 2.36577 | 0.2145591 | 2.4191367 | 187 | 7 | 1997–2006 | 0.60 | M-v | 1 | MPC | 12548 | (25207) |
| (25265) | 15.0 | 0.15 | 20060922 | 98.06775 | 309.74591 | 12.76663 | 2.48815 | 0.2231365 | 2.3987469 | 230 | 10 | 1993–2006 | 0.55 | M-v | 0 | MPC | 12568 | (25265) |
| (25266) | 15.7 | 0.15 | 20060922 | 94.57645 | 140.63532 | 168.96704 | 1.14473 | 0.1831586 | 2.4441711 | 131 | 9 | 1993–2006 | 0.57 | M-v | 0 | MPC | 12569 | (25266) |
| (25274) | 14.2 | 0.15 | 20060922 | 111.47380 | 60.08651 | 220.32953 | 12.99657 | 0.1447244 | 2.5668286 | 369 | 9 | 1981–2006 | 0.55 | M-v | 0 | MPC | 12571 | (25274) |
| (25275) | 14.3 | 0.15 | 20060922 | 30.95563 | 320.28254 | 97.50257 | 7.98151 | 0.1107034 | 2.3656172 | 301 | 12 | 1987–2006 | 0.56 | M-v | 0 | MPC | 12572 | (25275) |
| (25318) | 14.8 | 0.15 | 20060922 | 19.69497 | 99.32239 | 332.93719 | 21.13967 | 0.0712175 | 1.9279651 | 151 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 12586 | (25318) |
| (25320) | 14.5 | 0.15 | 20060922 | 187.92261 | 270.37996 | 354.02166 | 22.32641 | 0.1024229 | 1.9258040 | 236 | 9 | 1989–2006 | 0.51 | M-v | 1 | MPC | 12587 | (25320) |
| (25369) | 15.5 | 0.15 | 20060922 | 338.54216 | 109.87267 | 311.63200 | 3.76832 | 0.1283977 | 2.2473504 | 283 | 9 | 1989–2006 | 0.50 | M-v | 0 | MPC | 12606 | (25369) |
| (25395) | 14.6 | 0.15 | 20060922 | 17.83139 | 193.22355 | 208.92342 | 3.13343 | 0.1507038 | 2.2675781 | 393 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 35430 | (25395) |
| (25415) | 14.9 | 0.15 | 20060922 | 29.34964 | 328.29409 | 52.95720 | 2.97353 | 0.0533722 | 2.3324843 | 309 | 10 | 1989–2006 | 0.60 | M-v | 0 | MPC | 12623 | (25415) |
| (25418) | 15.9 | 0.15 | 20060922 | 276.43269 | 43.37293 | 66.41324 | 3.27136 | 0.1551192 | 2.3576554 | 258 | 7 | 1993–2006 | 0.54 | M-v | 0 | MPC | 12624 | (25418) |
| (25423) | 16.6 | 0.15 | 20060922 | 287.85092 | 50.80240 | 49.24460 | 4.28754 | 0.1402133 | 2.3088860 | 213 | 7 | 1992–2006 | 0.53 | M-v | 0 | MPC | 12626 | (25423) |
| (25431) | 16.4 | 0.15 | 20060922 | 264.50304 | 326.66227 | 138.82261 | 2.12574 | 0.0669858 | 2.3478365 | 134 | 9 | 1981–2006 | 0.54 | M-v | 0 | MPC | 12628 | (25431) |
| (25433) | 15.4 | 0.15 | 20060922 | 281.92819 | 61.72050 | 71.79885 | 4.49744 | 0.0658099 | 2.3034117 | 306 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 35431 | (25433) |
| (25435) | 15.0 | 0.15 | 20060922 | 351.55362 | 211.64035 | 211.76567 | 4.97387 | 0.1874194 | 2.2981983 | 279 | 7 | 1978–2006 | 0.56 | M-v | 0 | MPC | 12629 | (25435) |
| (25436) | 13.7 | 0.15 | 20060922 | 290.89150 | 323.11047 | 193.63430 | 5.19762 | 0.0721749 | 2.2580002 | 514 | 9 | 1975–2006 | 0.56 | M-v | 0 | MPC | 12629 | (25436) |
| (25437) | 13.8 | 0.15 | 20060922 | 226.40210 | 98.21663 | 94.44309 | 7.77425 | 0.0494372 | 2.3150929 | 466 | 10 | 1953–2006 | 0.55 | M-v | 0 | MPC | 12630 | (25437) |
| (25441) | 15.0 | 0.15 | 20060922 | 43.41865 | 294.79128 | 81.51250 | 4.16471 | 0.1725985 | 2.2462256 | 245 | 7 | 1982–2006 | 0.57 | M-v | 1 | MPC | 12631 | (25441) |
| (25456) | 15.2 | 0.15 | 20060922 | 50.32976 | 205.20088 | 189.23506 | 4.79012 | 0.0204705 | 2.2771382 | 323 | 10 | 1994–2006 | 0.56 | M-v | 0 | MPC | 12637 | (25456) |
| (25468) | 14.3 | 0.15 | 20060922 | 32.49926 | 283.02671 | 109.63605 | 7.38295 | 0.1159802 | 2.3504660 | 341 | 10 | 1979–2006 | 0.55 | M-v | 0 | MPC | 12641 | (25468) |
| (25477) | 16.4 | 0.15 | 20060922 | 285.79389 | 113.77720 | 345.95593 | 2.06035 | 0.0668929 | 2.3493847 | 214 | 7 | 1977–2006 | 0.51 | M-v | 0 | MPC | 12644 | (25477) |
| (25511) | 15.0 | 0.15 | 20060922 | 358.12137 | 349.69009 | 65.40604 | 4.51846 | 0.0767807 | 2.3061027 | 259 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 12656 | (25511) |
| (25513) | 14.8 | 0.15 | 20060922 | 310.84576 | 69.38261 | 75.10621 | 5.09876 | 0.0460666 | 2.2410026 | 423 | 9 | 1987–2006 | 0.53 | M-v | 0 | MPC | 12656 | (25513) |
| (25515) | 15.3 | 0.15 | 20060922 | 260.18369 | 94.89283 | 68.25657 | 4.14026 | 0.0649050 | 2.3171003 | 284 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 12657 | (25515) |
| (25517) | 14.2 | 0.15 | 20060922 | 110.16228 | 27.11683 | 299.16414 | 2.63007 | 0.1303038 | 2.2778097 | 450 | 9 | 1978–2006 | 0.51 | M-v | 0 | MPC | 12657 | (25517) |
| (25521) | 14.9 | 0.15 | 20060922 | 68.62040 | 16.04645 | 318.34922 | 3.00446 | 0.1817723 | 2.3450413 | 198 | 10 | 1991–2006 | 0.59 | M-v | 1 | MPC | 38163 | (25521) |
| (25531) | 14.7 | 0.15 | 20060922 | 29.16612 | 341.05275 | 34.24836 | 9.00395 | 0.1686593 | 2.3167880 | 288 | 9 | 1981–2006 | 0.57 | M-v | 1 | MPC | 12662 | (25531) |
| (25537) | 13.6 | 0.15 | 20060922 | 146.62496 | 191.62311 | 106.75285 | 8.56645 | 0.0275782 | 2.2529302 | 395 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 38164 | (25537) |
| (25542) | 15.4 | 0.15 | 20060922 | 268.01000 | 221.21362 | 245.35921 | 6.17444 | 0.0944788 | 2.4429922 | 251 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 12666 | (25542) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (25570) | 15.6 | 0.15 | 20060922 | 122.48725 | 236.84885 | 44.21211 | 7.60553 | 0.1041761 | 2.3598062 | 243 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 12675 | (25570) |
| (25599) | 13.6 | 0.15 | 20060922 | 198.91871 | 156.00831 | 93.79351 | 6.91301 | 0.1489005 | 2.3225591 | 406 | 10 | 1983–2006 | 0.54 | M-v | 0 | MPC | 12684 | (25599) |
| (25606) | 15.3 | 0.15 | 20060922 | 152.49111 | 206.04298 | 55.34270 | 7.90332 | 0.0874527 | 2.3357357 | 317 | 9 | 1995–2006 | 0.53 | M-v | 0 | MPC | 12686 | (25606) |
| (25616) | 14.5 | 0.15 | 20060922 | 9.18575 | 289.35190 | 84.00678 | 7.17778 | 0.1721405 | 2.4059249 | 294 | 8 | 1994–2006 | 0.53 | M-v | 0 | MPC | 77310 | (25616) |
| (25626) | 14.6 | 0.15 | 20060922 | 134.30268 | 186.82396 | 79.50695 | 3.85742 | 0.1779566 | 2.4044930 | 346 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 77310 | (25626) |
| (25628) | 14.9 | 0.15 | 20060922 | 107.23843 | 261.60421 | 71.92022 | 0.73464 | 0.1619216 | 2.2911723 | 455 | 9 | 1988–2006 | 0.53 | M-v | 0 | MPC | 12693 | (25628) |
| (25629) | 15.5 | 0.15 | 20060922 | 26.93089 | 121.80880 | 269.11283 | 4.90509 | 0.0881821 | 2.2379546 | 195 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 12693 | (25629) |
| (25674) | 15.1 | 0.15 | 20060922 | 274.42305 | 319.47886 | 179.15947 | 3.67401 | 0.1039278 | 2.2878024 | 396 | 10 | 1951–2006 | 0.55 | M-v | 0 | MPC | 12708 | (25674) |
| (25689) | 14.6 | 0.15 | 20060922 | 60.55579 | 163.19099 | 226.56477 | 2.17541 | 0.1399945 | 2.2709682 | 431 | 9 | 1978–2006 | 0.56 | M-v | 0 | MPC | 12713 | (25689) |
| (25718) | 15.2 | 0.15 | 20060922 | 57.84010 | 138.40150 | 210.91097 | 10.92014 | 0.1149696 | 2.2922549 | 222 | 9 | 1988–2006 | 0.59 | M-v | 1 | MPC | 12723 | (25718) |
| (25721) | 15.5 | 0.15 | 20060922 | 162.56314 | 43.42954 | 196.22798 | 6.83618 | 0.0735985 | 2.3664392 | 209 | 9 | 1991–2006 | 0.58 | M-v | 1 | MPC | 12724 | (25721) |
| (25725) | 15.3 | 0.15 | 20060922 | 27.71146 | 207.68679 | 188.00540 | 6.03007 | 0.1856830 | 2.3003823 | 269 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 12725 | (25725) |
| (25759) | 15.3 | 0.15 | 20060922 | 81.30814 | 349.22239 | 328.21832 | 1.79737 | 0.1980180 | 2.4456475 | 175 | 9 | 1993–2006 | 0.50 | M-v | 0 | MPC | 12737 | (25759) |
| (25830) | 14.5 | 0.15 | 20060922 | 46.43977 | 184.40617 | 150.76584 | 14.75997 | 0.1790098 | 2.5590129 | 319 | 9 | 1981–2006 | 0.53 | M-v | 0 | MPC | 12760 | (25830) |
| (25868) | 13.7 | 0.15 | 20060922 | 136.67605 | 162.62045 | 143.64780 | 12.54644 | 0.1266587 | 2.5565643 | 400 | 13 | 1955–2006 | 0.57 | M-v | 0 | MPC | 12771 | (25868) |
| (25869) | 11.5 | 0.15 | 20060922 | 325.29309 | 254.28136 | 250.32972 | 16.99220 | 0.1441512 | 3.9726319 | 336 | 10 | 1992–2006 | 0.52 | M-v | 0 | MPC | 50352 | (25869) |
| (25871) | 13.2 | 0.15 | 20060922 | 226.56153 | 310.54403 | 278.07102 | 12.07163 | 0.1187193 | 2.6343511 | 465 | 12 | 1986–2006 | 0.54 | M-v | 0 | MPC | 12772 | (25871) |
| (25893) | 12.0 | 0.15 | 20060922 | 107.82419 | 244.49414 | 100.05174 | 23.38313 | 0.0978918 | 3.1884021 | 343 | 12 | 1976–2006 | 0.57 | M-v | 0 | MPC | 12779 | (25893) |
| (25949) | 15.8 | 0.15 | 20060922 | 112.43850 | 205.47185 | 67.34219 | 3.39068 | 0.2038531 | 2.3536969 | 221 | 9 | 1973–2006 | 0.67 | M-v | 0 | MPC | 12796 | (25949) |
| (25964) | 15.2 | 0.15 | 20060922 | 144.41278 | 14.68909 | 207.87428 | 5.85269 | 0.1655382 | 2.4155035 | 273 | 9 | 1979–2006 | 0.54 | M-v | 0 | MPC | 12800 | (25964) |
| (25974) | 15.7 | 0.15 | 20060922 | 160.63896 | 44.05924 | 206.53748 | 1.54482 | 0.2869834 | 2.3265284 | 230 | 9 | 1994–2006 | 0.52 | M-v | 0 | MPC | 12803 | (25974) |
| (25981) | 15.7 | 0.15 | 20060922 | 124.27311 | 258.74950 | 28.40807 | 7.02587 | 0.1399165 | 2.3412109 | 193 | 9 | 1976–2006 | 0.56 | M-v | 0 | MPC | 12806 | (25981) |
| (25995) | 14.6 | 0.15 | 20060922 | 86.11298 | 150.49046 | 148.31433 | 3.19423 | 0.2209464 | 2.3753379 | 400 | 10 | 1991–2006 | 0.57 | M-v | 0 | MPC | 12810 | (25995) |
| (26004) | 15.8 | 0.15 | 20060922 | 74.41168 | 95.71274 | 212.30520 | 1.70885 | 0.1979712 | 2.3745394 | 305 | 9 | 1991–2006 | 0.50 | M-v | 0 | MPC | 12813 | (26004) |
| (26008) | 15.1 | 0.15 | 20060922 | 93.03352 | 285.99473 | 31.97947 | 5.37641 | 0.2186105 | 2.3125718 | 239 | 9 | 1981–2006 | 0.57 | M-v | 1 | MPC | 12814 | (26008) |
| (26016) | 15.7 | 0.15 | 20060922 | 3.08238 | 242.90710 | 169.42728 | 3.22188 | 0.1515742 | 2.3091247 | 247 | 7 | 1960–2006 | 0.58 | M-v | 0 | MPC | 12816 | (26016) |
| (26022) | 15.5 | 0.15 | 20060922 | 219.25428 | 205.31711 | 332.09596 | 2.15253 | 0.0725801 | 2.3117048 | 262 | 7 | 1960–2006 | 0.60 | M-v | 1 | MPC | 12818 | (26022) |
| (26045) | 15.8 | 0.15 | 20060922 | 183.93184 | 105.71888 | 181.46988 | 1.43204 | 0.1505571 | 2.1657050 | 384 | 9 | 1973–2006 | 0.56 | M-v | 0 | MPC | 12825 | (26045) |
| (26048) | 15.6 | 0.15 | 20060922 | 146.42580 | 323.92618 | 317.27467 | 2.44464 | 0.2287438 | 2.3352659 | 273 | 9 | 1973–2006 | 0.58 | M-v | 0 | MPC | 12826 | (26048) |
| (26054) | 15.0 | 0.15 | 20060922 | 81.87373 | 324.20713 | 29.95496 | 7.38130 | 0.1341416 | 2.3419223 | 330 | 9 | 1973–2006 | 0.57 | M-v | 0 | MPC | 12828 | (26054) |
| (26059) | 15.0 | 0.15 | 20060922 | 84.14483 | 66.24268 | 281.06598 | 4.46747 | 0.1916290 | 2.3230658 | 314 | 9 | 1977–2006 | 0.57 | M-v | 0 | MPC | 12829 | (26059) |
| (26070) | 16.6 | 0.15 | 20060922 | 268.22334 | 38.59328 | 82.04762 | 5.55665 | 0.0645819 | 2.3560400 | 94 | 7 | 1977–2006 | 0.64 | M-v | 1 | MPC | 12832 | (26070) |
| (26082) | 15.2 | 0.15 | 20060922 | 129.53046 | 34.23837 | 276.25410 | 2.63934 | 0.1993142 | 2.4463883 | 338 | 9 | 1978–2006 | 0.57 | M-v | 1 | MPC | 13883 | (26082) |
| (26083) | 14.4 | 0.15 | 20060922 | 123.96824 | 6.26559 | 294.44717 | 3.71100 | 0.1736504 | 2.4567929 | 394 | 12 | 1981–2006 | 0.58 | M-v | 1 | MPC | 13883 | (26083) |
| (26103) | 15.0 | 0.15 | 20060922 | 123.98070 | 188.26209 | 124.41102 | 4.63694 | 0.1815039 | 2.4263554 | 262 | 9 | 1975–2006 | 0.52 | M-v | 0 | MPC | 13889 | (26103) |
| (26107) | 14.6 | 0.15 | 20060922 | 13.72198 | 143.79434 | 276.94857 | 1.47754 | 0.1430639 | 2.6057430 | 387 | 10 | 1991–2006 | 0.53 | M-v | 0 | MPC | 13891 | (26107) |
| (26125) | 13.0 | 0.15 | 20060922 | 23.50273 | 194.93443 | 164.08713 | 9.21930 | 0.2854381 | 2.7454482 | 434 | 8 | 1992–2006 | 0.54 | M-v | 0 | MPC | 77311 | (26125) |
| (26132) | 15.2 | 0.15 | 20060922 | 110.37634 | 317.28376 | 330.67673 | 2.07946 | 0.1781645 | 2.4467233 | 194 | 9 | 1990–2006 | 0.60 | M-v | 1 | MPC | 13898 | (26132) |
| (26133) | 13.9 | 0.15 | 20060922 | 207.91431 | 287.46937 | 285.71995 | 2.60340 | 0.0851087 | 2.3981436 | 571 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 13898 | (26133) |
| (26134) | 15.2 | 0.15 | 20060922 | 147.88916 | 85.37158 | 172.21667 | 6.25294 | 0.0991760 | 2.4264912 | 241 | 10 | 1993–2006 | 0.56 | M-v | 0 | MPC | 13899 | (26134) |
| (26167) | 13.9 | 0.15 | 20060922 | 296.23429 | 220.34219 | 265.48724 | 22.62147 | 0.1566358 | 2.3249446 | 167 | 9 | 1986–2006 | 0.57 | M-v | 1 | MPC | 13909 | (26167) |
| (26200) | 14.3 | 0.15 | 20060922 | 269.81447 | 9.00522 | 213.80608 | 5.24342 | 0.1347578 | 2.2495522 | 439 | 10 | 1981–2006 | 0.53 | M-v | 0 | MPC | 13918 | (26200) |
| (26203) | 14.0 | 0.15 | 20060922 | 132.04464 | 74.24628 | 225.03762 | 5.72876 | 0.1343679 | 2.4580067 | 382 | 9 | 1995–2006 | 0.56 | M-v | 0 | MPC | 13919 | (26203) |
| (26212) | 14.7 | 0.15 | 20060922 | 76.49980 | 52.55741 | 303.20883 | 2.81026 | 0.2257995 | 2.5731224 | 524 | 10 | 1989–2006 | 0.57 | M-v | 1 | MPC | 13922 | (26212) |
| (26235) | 14.6 | 0.15 | 20060922 | 131.70197 | 359.03329 | 288.35681 | 6.01433 | 0.0994088 | 2.3351262 | 219 | 8 | 1995–2006 | 0.57 | M-v | 1 | MPC | 77311 | (26235) |
| (26242) | 15.8 | 0.15 | 20060922 | 98.97293 | 59.37529 | 299.59362 | 2.69376 | 0.2020055 | 2.3020290 | 299 | 9 | 1977–2006 | 0.54 | M-v | 1 | MPC | 41504 | (26242) |
| (26245) | 15.0 | 0.15 | 20060922 | 8.58691 | 226.32758 | 178.76147 | 13.16994 | 0.1902783 | 2.4177346 | 244 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 13933 | (26245) |
| (26247) | 15.3 | 0.15 | 20060922 | 64.71802 | 62.64733 | 290.19055 | 2.24624 | 0.1521026 | 2.3786860 | 192 | 9 | 1994–2006 | 0.54 | M-v | 1 | MPC | 13934 | (26247) |
| (26249) | 14.8 | 0.15 | 20060922 | 98.96605 | 268.72774 | 98.14861 | 2.33578 | 0.2209313 | 2.2952835 | 413 | 10 | 1977–2006 | 0.56 | M-v | 1 | MPC | 13934 | (26249) |
| (26266) | 15.3 | 0.15 | 20060922 | 167.51412 | 11.67189 | 213.76483 | 6.13581 | 0.0787736 | 2.4287339 | 271 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 13939 | (26266) |
| (26267) | 15.3 | 0.15 | 20060922 | 174.67009 | 126.53851 | 170.68459 | 2.62214 | 0.1794772 | 2.2542395 | 352 | 9 | 1994–2006 | 0.50 | M-v | 0 | MPC | 13940 | (26267) |
| (26279) | 15.7 | 0.15 | 20060922 | 85.80724 | 113.24138 | 237.22885 | 1.90593 | 0.2345379 | 2.3676791 | 232 | 9 | 1987–2006 | 0.50 | M-v | 0 | MPC | 13944 | (26279) |
| (26284) | 14.5 | 0.15 | 20060922 | 150.01518 | 105.73656 | 153.60933 | 7.18912 | 0.0813499 | 2.4110492 | 304 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 13945 | (26284) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (26297) | 13.8 | 0.15 | 20060922 | 186.33452 | 250.16359 | 10.73829 | 6.98923 | 0.1015650 | 2.3420674 | 407 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 38164 | (26297) |
| (26307) | 15.2 | 0.15 | 20060922 | 186.17885 | 158.28141 | 120.08309 | 5.35178 | 0.1824346 | 2.2954137 | 304 | 9 | 1993–2006 | 0.60 | M-v | 0 | MPC | 13953 | (26307) |
| (26319) | 13.9 | 0.15 | 20060922 | 34.50808 | 200.10034 | 227.48266 | 6.06876 | 0.0873584 | 2.3943814 | 414 | 9 | 1986–2006 | 0.60 | M-v | 0 | MPC | 13956 | (26319) |
| (26391) | 13.9 | 0.15 | 20060922 | 183.91182 | 7.78161 | 243.14772 | 3.55900 | 0.1190833 | 2.2337248 | 492 | 10 | 1952–2006 | 0.52 | M-v | 0 | MPC | 13979 | (26391) |
| (26399) | 15.5 | 0.15 | 20060922 | 211.66229 | 113.59308 | 108.07267 | 4.36209 | 0.1186768 | 2.2551764 | 221 | 9 | 1995–2006 | 0.60 | M-v | 0 | MPC | 13982 | (26399) |
| (26401) | 15.3 | 0.15 | 20060922 | 1.23735 | 338.98169 | 83.45205 | 7.95303 | 0.0768221 | 2.3100061 | 289 | 9 | 1986–2006 | 0.52 | M-v | 0 | MPC | 13982 | (26401) |
| (26411) | 14.7 | 0.15 | 20060922 | 286.36961 | 258.23843 | 211.77406 | 6.01899 | 0.0984307 | 2.3925290 | 323 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 13986 | (26411) |
| (26424) | 15.8 | 0.15 | 20060922 | 292.65104 | 313.99996 | 160.72385 | 3.59608 | 0.1260723 | 2.3226443 | 255 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 13990 | (26424) |
| (26433) | 14.7 | 0.15 | 20060922 | 194.49985 | 44.88164 | 220.90208 | 6.69867 | 0.1193034 | 2.2635446 | 464 | 9 | 1994–2006 | 0.53 | M-v | 0 | MPC | 13993 | (26433) |
| (26435) | 15.4 | 0.15 | 20060922 | 286.90084 | 353.26590 | 143.38810 | 4.24242 | 0.1502922 | 2.2966962 | 322 | 9 | 1983–2006 | 0.56 | M-v | 0 | MPC | 13993 | (26435) |
| (26438) | 15.5 | 0.15 | 20060922 | 314.69098 | 3.41252 | 123.98024 | 3.87854 | 0.1020990 | 2.2490831 | 328 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 13994 | (26438) |
| (26447) | 15.1 | 0.15 | 20060922 | 136.03018 | 230.89689 | 43.61269 | 3.16077 | 0.1764575 | 2.4673102 | 274 | 9 | 1982–2006 | 0.54 | M-v | 0 | MPC | 13997 | (26447) |
| (26457) | 15.7 | 0.15 | 20060922 | 260.50959 | 3.71876 | 207.63139 | 6.00022 | 0.1575355 | 2.2346382 | 282 | 9 | 1992–2006 | 0.58 | M-v | 1 | MPC | 14000 | (26457) |
| (26500) | 13.7 | 0.15 | 20060922 | 140.76569 | 101.72554 | 133.60107 | 14.73169 | 0.1447827 | 2.6061893 | 428 | 10 | 1988–2006 | 0.54 | M-v | 0 | MPC | 14014 | (26500) |
| (26542) | 14.6 | 0.15 | 20060922 | 72.08456 | 61.55691 | 327.46830 | 4.58369 | 0.2028873 | 2.2710984 | 457 | 9 | 1974–2006 | 0.54 | M-v | 0 | MPC | 14026 | (26542) |
| (26551) | 15.2 | 0.15 | 20060922 | 123.64423 | 95.22674 | 175.89030 | 2.78358 | 0.0854044 | 2.5642757 | 332 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 14029 | (26551) |
| (26567) | 14.2 | 0.15 | 20060922 | 92.52285 | 143.78994 | 185.23232 | 1.46213 | 0.2034829 | 2.5550669 | 468 | 12 | 1952–2006 | 0.55 | M-v | 0 | MPC | 14034 | (26567) |
| (26569) | 14.2 | 0.15 | 20060922 | 56.98047 | 214.80712 | 131.65042 | 14.05279 | 0.1924618 | 2.4817124 | 265 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 14035 | (26569) |
| (26575) | 14.4 | 0.15 | 20060922 | 128.17150 | 185.13379 | 123.42782 | 3.61985 | 0.1908464 | 2.4426591 | 348 | 10 | 1982–2006 | 0.54 | M-v | 0 | MPC | 14037 | (26575) |
| (26596) | 15.7 | 0.15 | 20060922 | 121.17462 | 240.39746 | 30.91399 | 12.44979 | 0.0851825 | 2.5773069 | 179 | 12 | 1952–2006 | 0.57 | M-v | 0 | MPC | 14043 | (26596) |
| (26638) | 13.4 | 0.15 | 20060922 | 7.53905 | 148.45576 | 238.31230 | 21.23516 | 0.1098118 | 2.6579461 | 230 | 9 | 1953–2006 | 0.53 | M-v | 0 | MPC | 14055 | (26638) |
| (26644) | 14.0 | 0.15 | 20060922 | 351.34936 | 7.30980 | 65.43562 | 14.30553 | 0.1523681 | 2.6009984 | 314 | 11 | 1985–2006 | 0.60 | M-v | 0 | MPC | 77313 | (26644) |
| (26673) | 15.0 | 0.15 | 20060922 | 181.83188 | 244.31223 | 303.13961 | 9.76608 | 0.1736858 | 2.3810686 | 167 | 7 | 1997–2006 | 0.48 | M-v | 0 | MPC | 14066 | (26673) |
| (26684) | 17.0 | 0.15 | 20060922 | 7.09676 | 65.70489 | 351.32818 | 5.77785 | 0.1409299 | 2.1643173 | 107 | 7 | 1994–2004 | 0.58 | M-v | 1 | MPC | 14069 | (26684) |
| (26699) | 15.6 | 0.15 | 20060922 | 81.66762 | 131.41895 | 174.76503 | 5.26178 | 0.1793971 | 2.3451356 | 275 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 14073 | (26699) |
| (26707) | 15.8 | 0.15 | 20060922 | 123.57069 | 147.11629 | 134.46382 | 3.78324 | 0.1427809 | 2.3687335 | 189 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 14075 | (26707) |
| (26708) | 16.3 | 0.15 | 20060922 | 191.82473 | 12.75714 | 201.29223 | 3.51211 | 0.0959373 | 2.2340711 | 117 | 7 | 1996–2006 | 0.52 | M-v | 1 | MPC | 14076 | (26708) |
| (26716) | 15.6 | 0.15 | 20060922 | 171.59270 | 19.20579 | 258.47013 | 2.85433 | 0.1462515 | 2.2553717 | 351 | 9 | 1981–2006 | 0.54 | M-v | 0 | MPC | 14078 | (26716) |
| (26721) | 14.8 | 0.15 | 20060922 | 104.69604 | 320.14100 | 21.79779 | 5.69684 | 0.2273211 | 2.2998426 | 398 | 10 | 1977–2006 | 0.59 | M-v | 1 | MPC | 14079 | (26721) |
| (26732) | 16.0 | 0.15 | 20060922 | 113.53018 | 57.52084 | 266.68217 | 2.37765 | 0.1019436 | 2.2852102 | 230 | 9 | 1978–2006 | 0.59 | M-v | 0 | MPC | 14083 | (26732) |
| (26756) | 15.8 | 0.15 | 20060922 | 227.92604 | 12.77227 | 160.24263 | 2.86673 | 0.1228538 | 2.3403124 | 244 | 9 | 1995–2006 | 0.59 | M-v | 0 | MPC | 14089 | (26756) |
| (26770) | 15.8 | 0.15 | 20060922 | 105.14446 | 299.62935 | 38.88472 | 2.70813 | 0.0543971 | 2.2947055 | 260 | 9 | 1960–2006 | 0.58 | M-v | 0 | MPC | 14093 | (26770) |
| (26794) | 14.3 | 0.15 | 20060922 | 221.87959 | 44.22429 | 145.36965 | 6.20201 | 0.0879570 | 2.4513494 | 454 | 9 | 1977–2006 | 0.55 | M-v | 0 | MPC | 14459 | (26794) |
| (26801) | 15.1 | 0.15 | 20060922 | 181.36971 | 285.20999 | 318.76848 | 4.02884 | 0.0788444 | 2.4491195 | 250 | 9 | 1979–2006 | 0.58 | M-v | 0 | MPC | 14462 | (26801) |
| (26810) | 14.5 | 0.15 | 20060922 | 244.34374 | 18.27928 | 163.29963 | 1.61598 | 0.1243006 | 2.4172794 | 488 | 9 | 1985–2006 | 0.60 | M-v | 0 | MPC | 14465 | (26810) |
| (26815) | 14.0 | 0.15 | 20060922 | 151.67156 | 289.56108 | 351.72434 | 4.34727 | 0.0937823 | 2.4284358 | 407 | 9 | 1986–2006 | 0.54 | M-v | 0 | MPC | 14466 | (26815) |
| (26827) | 14.3 | 0.15 | 20060922 | 35.24074 | 349.89314 | 58.14885 | 4.64520 | 0.2255760 | 2.5598966 | 312 | 10 | 1989–2006 | 0.53 | M-v | 0 | MPC | 14470 | (26827) |
| (26835) | 15.6 | 0.15 | 20060922 | 61.14429 | 183.08039 | 204.92075 | 1.31930 | 0.1478842 | 2.4238600 | 220 | 9 | 1990–2006 | 0.59 | M-v | 0 | MPC | 14472 | (26835) |
| (26846) | 13.8 | 0.15 | 20060922 | 8.23824 | 257.21921 | 176.25860 | 6.24614 | 0.0993771 | 2.4145546 | 516 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 14475 | (26846) |
| (26856) | 15.0 | 0.15 | 20060922 | 280.75811 | 313.87184 | 230.03838 | 2.55417 | 0.1237182 | 2.3109901 | 359 | 9 | 1991–2006 | 0.53 | M-v | 0 | MPC | 14479 | (26856) |
| (26857) | 14.8 | 0.15 | 20060922 | 254.67355 | 6.33258 | 164.37451 | 6.15194 | 0.2583935 | 2.3642409 | 389 | 9 | 1991–2006 | 0.59 | M-v | 1 | MPC | 14479 | (26857) |
| (26859) | 14.9 | 0.15 | 20060922 | 188.17581 | 247.58819 | 55.90700 | 4.49484 | 0.1520620 | 2.3232987 | 410 | 9 | 1993–2006 | 0.52 | M-v | 0 | MPC | 14480 | (26859) |
| (26862) | 16.2 | 0.15 | 20060922 | 174.76862 | 54.24481 | 224.32394 | 1.10249 | 0.1603441 | 2.3808050 | 206 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 14481 | (26862) |
| (26865) | 15.1 | 0.15 | 20060922 | 252.01001 | 308.32670 | 249.27642 | 4.25293 | 0.0474537 | 2.3572007 | 335 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 14482 | (26865) |
| (26867) | 15.2 | 0.15 | 20060922 | 239.11815 | 211.21560 | 324.69526 | 1.93453 | 0.1624265 | 2.4017517 | 264 | 9 | 1993–2006 | 0.60 | M-v | 1 | MPC | 14482 | (26867) |
| (26883) | 15.1 | 0.15 | 20060922 | 199.79920 | 207.93001 | 18.51062 | 1.25002 | 0.2180853 | 2.3717360 | 297 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 14487 | (26883) |
| (26890) | 14.5 | 0.15 | 20060922 | 31.62223 | 289.62284 | 142.42154 | 5.55143 | 0.1982849 | 2.4831388 | 394 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 14489 | (26890) |
| (26902) | 14.2 | 0.15 | 20060922 | 261.37647 | 137.67498 | 66.64633 | 9.45813 | 0.0769616 | 2.2971801 | 315 | 9 | 1995–2006 | 0.54 | M-v | 1 | MPC | 14492 | (26902) |
| (26934) | 14.4 | 0.15 | 20060922 | 167.60425 | 292.93939 | 357.17604 | 6.92169 | 0.0827199 | 2.2412359 | 295 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 14502 | (26934) |
| (26966) | 14.0 | 0.15 | 20060922 | 87.43241 | 3.01570 | 340.23889 | 8.04743 | 0.1526147 | 2.5535758 | 397 | 10 | 1953–2006 | 0.53 | M-v | 1 | MPC | 14512 | (26966) |
| (26975) | 15.7 | 0.15 | 20060922 | 84.27838 | 172.60309 | 164.25133 | 2.28320 | 0.2004788 | 2.5897328 | 259 | 10 | 1995–2006 | 0.61 | M-v | 1 | MPC | 14515 | (26975) |
| (26981) | 14.8 | 0.15 | 20060922 | 23.60199 | 127.21947 | 244.13192 | 1.57960 | 0.1115477 | 2.6916495 | 240 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 14517 | (26981) |
| (26983) | 15.0 | 0.15 | 20060922 | 33.86169 | 167.89927 | 240.58623 | 3.52660 | 0.2901014 | 2.5805761 | 280 | 9 | 1993–2006 | 0.58 | M-v | 1 | MPC | 33748 | (26983) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (26996) | 14.6 | 0.15 | 20060922 | 68.77844 | 32.58422 | 324.23221 | 2.10345 | 0.1723262 | 2.5965757 | 443 | 8 | 1997–2006 | 0.57 | M-v | 0 | MPC | 77313 | (26996) |
| (27011) | 14.5 | 0.15 | 20060922 | 102.46906 | 124.28753 | 166.03926 | 2.82610 | 0.1305887 | 2.2125678 | 372 | 9 | 1982–2006 | 0.53 | M-v | 0 | MPC | 31799 | (27011) |
| (27044) | 14.8 | 0.15 | 20060922 | 214.49508 | 283.46061 | 335.28900 | 4.58677 | 0.1369445 | 2.2744692 | 348 | 9 | 1990–2006 | 0.57 | M-v | 0 | MPC | 14538 | (27044) |
| (27062) | 14.1 | 0.15 | 20060922 | 283.18558 | 123.29430 | 20.22340 | 1.62713 | 0.1203297 | 2.4028261 | 428 | 8 | 1991–2006 | 0.55 | M-v | 0 | MPC | 77313 | (27062) |
| (27065) | 13.5 | 0.15 | 20060922 | 328.42574 | 105.61485 | 59.22174 | 4.63903 | 0.0717332 | 2.2948259 | 461 | 9 | 1976–2006 | 0.50 | M-v | 0 | MPC | 14546 | (27065) |
| (27105) | 14.5 | 0.15 | 20060922 | 150.32567 | 244.79293 | 61.04182 | 7.75180 | 0.1436075 | 2.3426186 | 251 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 14559 | (27105) |
| (27107) | 15.5 | 0.15 | 20060922 | 62.01075 | 146.13264 | 265.96862 | 2.38775 | 0.1225338 | 2.3601740 | 303 | 9 | 1983–2006 | 0.53 | M-v | 0 | MPC | 14559 | (27107) |
| (27119) | 14.5 | 0.15 | 20060922 | 64.53834 | 291.32544 | 64.16015 | 4.51413 | 0.1179613 | 2.5246071 | 295 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 14563 | (27119) |
| (27137) | 13.5 | 0.15 | 20060922 | 142.93033 | 262.54692 | 44.39757 | 6.96919 | 0.1341631 | 2.3959583 | 462 | 9 | 1983–2006 | 0.55 | M-v | 0 | MPC | 14569 | (27137) |
| (27149) | 13.5 | 0.15 | 20060922 | 81.16741 | 269.95058 | 72.40546 | 6.09920 | 0.1078347 | 2.5383968 | 437 | 13 | 1949–2006 | 0.57 | M-v | 0 | MPC | 14573 | (27149) |
| (27162) | 13.4 | 0.15 | 20060922 | 59.97489 | 80.39350 | 323.35800 | 5.63283 | 0.0455934 | 2.3675946 | 418 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 14577 | (27162) |
| (27168) | 14.2 | 0.15 | 20060922 | 4.55854 | 203.63093 | 164.62964 | 6.34047 | 0.0345177 | 2.7362363 | 387 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 14579 | (27168) |
| (27170) | 14.9 | 0.15 | 20060922 | 92.79214 | 91.25868 | 274.65389 | 1.44849 | 0.1818355 | 2.4579229 | 381 | 9 | 1986–2006 | 0.55 | M-v | 0 | MPC | 14579 | (27170) |
| (27181) | 13.0 | 0.15 | 20060922 | 74.07670 | 246.10928 | 120.89567 | 16.07859 | 0.1933015 | 2.5709153 | 396 | 10 | 1988–2006 | 0.55 | M-v | 0 | MPC | 14583 | (27181) |
| (27200) | 14.3 | 0.15 | 20060922 | 79.75374 | 183.96397 | 205.25262 | 13.67863 | 0.2227290 | 2.4670626 | 363 | 9 | 1996–2006 | 0.55 | M-v | 1 | MPC | 14589 | (27200) |
| (27246) | 16.1 | 0.15 | 20060922 | 269.26646 | 316.85833 | 179.11752 | 4.27066 | 0.0918192 | 2.2745178 | 200 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 14602 | (27246) |
| (27257) | 14.6 | 0.15 | 20060922 | 264.75907 | 100.31741 | 119.10627 | 6.78394 | 0.1290437 | 2.2871166 | 315 | 9 | 1987–2006 | 0.57 | M-v | 0 | MPC | 14606 | (27257) |
| (27262) | 14.0 | 0.15 | 20060922 | 195.84475 | 195.50135 | 23.70636 | 7.15060 | 0.0494715 | 2.3186956 | 474 | 8 | 1995–2006 | 0.55 | M-v | 0 | MPC | 77314 | (27262) |
| (27280) | 14.5 | 0.15 | 20060922 | 319.94489 | 59.86566 | 94.02443 | 3.94681 | 0.0299365 | 2.2758148 | 372 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 14613 | (27280) |
| (27288) | 15.0 | 0.15 | 20060922 | 201.45292 | 136.35522 | 135.68015 | 7.17116 | 0.1383070 | 2.2832860 | 334 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 14616 | (27288) |
| (27290) | 13.6 | 0.15 | 20060922 | 186.05326 | 106.63064 | 140.11944 | 11.52227 | 0.1839134 | 2.4121934 | 387 | 9 | 1990–2006 | 0.57 | M-v | 0 | MPC | 14616 | (27290) |
| (27294) | 13.9 | 0.15 | 20060922 | 246.63242 | 246.87212 | 296.78170 | 10.60317 | 0.1496319 | 2.4118361 | 358 | 10 | 1985–2006 | 0.55 | M-v | 0 | MPC | 14618 | (27294) |
| (27296) | 14.3 | 0.15 | 20060922 | 349.78323 | 211.29304 | 299.97372 | 6.27164 | 0.0941658 | 2.2493806 | 315 | 7 | 1994–2006 | 0.56 | M-v | 1 | MPC | 14618 | (27296) |
| (27300) | 13.6 | 0.15 | 20060922 | 336.59815 | 38.95539 | 135.98441 | 9.71069 | 0.0687580 | 2.2707395 | 445 | 9 | 1986–2006 | 0.59 | M-v | 0 | MPC | 41504 | (27300) |
| (27303) | 14.7 | 0.15 | 20060922 | 7.80311 | 242.78751 | 197.88554 | 5.58436 | 0.1082715 | 2.2754311 | 260 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 38165 | (27303) |
| (27315) | 14.3 | 0.15 | 20060922 | 172.57931 | 65.42410 | 131.31145 | 6.21099 | 0.0998314 | 2.6186799 | 351 | 9 | 1993–2006 | 0.53 | M-v | 0 | MPC | 38165 | (27315) |
| (27320) | 15.6 | 0.15 | 20060922 | 216.75261 | 354.68119 | 227.60564 | 0.63527 | 0.1336865 | 2.3879695 | 262 | 10 | 1991–2006 | 0.60 | M-v | 0 | MPC | 14626 | (27320) |
| (27325) | 13.7 | 0.15 | 20060922 | 201.96854 | 264.93752 | 282.46078 | 3.55938 | 0.1601428 | 2.5367976 | 521 | 10 | 1954–2006 | 0.54 | M-v | 0 | MPC | 14627 | (27325) |
| (27347) | 15.3 | 0.15 | 20060922 | 207.87097 | 162.49377 | 124.25549 | 5.99418 | 0.0897267 | 2.2776031 | 315 | 9 | 1994–2006 | 0.59 | M-v | 0 | MPC | 14634 | (27347) |
| (27356) | 15.8 | 0.15 | 20060922 | 158.35384 | 268.02823 | 55.05286 | 1.67727 | 0.0886877 | 2.3009214 | 267 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 14637 | (27356) |
| (27357) | 14.4 | 0.15 | 20060922 | 110.00668 | 160.24680 | 144.31063 | 4.05323 | 0.2026777 | 2.4836058 | 258 | 7 | 1984–2005 | 0.58 | M-v | 1 | MPC | 77314 | (27357) |
| (27387) | 14.3 | 0.15 | 20060922 | 128.09027 | 186.86837 | 137.56094 | 3.91699 | 0.0473967 | 2.4020156 | 332 | 10 | 1990–2006 | 0.54 | M-v | 0 | MPC | 14646 | (27387) |
| (27388) | 13.8 | 0.15 | 20060922 | 59.01396 | 108.65295 | 193.20927 | 12.17238 | 0.1503391 | 2.6909313 | 371 | 9 | 1996–2006 | 0.53 | M-v | 0 | MPC | 14646 | (27388) |
| (27396) | 11.4 | 0.15 | 20060922 | 171.09285 | 318.49519 | 169.95121 | 22.76510 | 0.0818598 | 3.1967350 | 461 | 9 | 1982–2006 | 0.60 | M-v | 0 | MPC | 14649 | (27396) |
| (27403) | 14.3 | 0.15 | 20060922 | 110.57219 | 178.05225 | 67.08308 | 11.47113 | 0.0769493 | 2.6993163 | 164 | 9 | 1993–2006 | 0.63 | M-v | 0 | MPC | 14651 | (27403) |
| (27425) | 15.1 | 0.15 | 20060922 | 76.93051 | 94.18163 | 303.83573 | 6.67362 | 0.1074302 | 2.3130260 | 219 | 10 | 1976–2006 | 0.58 | M-v | 1 | MPC | 14657 | (27425) |
| (27426) | 15.1 | 0.15 | 20060922 | 187.96936 | 291.93149 | 284.79935 | 13.68641 | 0.0647735 | 2.4765274 | 159 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 14657 | (27426) |
| (27427) | 13.0 | 0.15 | 20060922 | 83.28593 | 187.35376 | 93.41346 | 9.86434 | 0.0942166 | 2.7672141 | 398 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 14658 | (27427) |
| (27428) | 13.9 | 0.15 | 20060922 | 1.36185 | 344.19959 | 93.63978 | 9.55668 | 0.0593660 | 2.4612185 | 362 | 9 | 1995–2006 | 0.58 | M-v | 0 | MPC | 14658 | (27428) |
| (27429) | 14.2 | 0.15 | 20060922 | 30.01198 | 14.27294 | 49.25031 | 4.96496 | 0.0751311 | 2.4437406 | 377 | 10 | 1981–2006 | 0.58 | M-v | 0 | MPC | 14658 | (27429) |
| (27431) | 14.2 | 0.15 | 20060922 | 185.02102 | 79.84406 | 141.17787 | 4.96159 | 0.1251274 | 2.5637497 | 470 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 14659 | (27431) |
| (27432) | 15.0 | 0.15 | 20060922 | 44.55003 | 156.09984 | 194.23225 | 3.64533 | 0.2151959 | 2.6118826 | 154 | 10 | 1976–2006 | 0.59 | M-v | 0 | MPC | 27573 | (27432) |
| (27439) | 15.1 | 0.15 | 20060922 | 333.92840 | 300.75667 | 137.39696 | 3.60071 | 0.0845327 | 2.5159916 | 276 | 10 | 1993–2006 | 0.60 | M-v | 0 | MPC | 38165 | (27439) |
| (27446) | 15.1 | 0.15 | 20060922 | 82.08965 | 234.10583 | 127.53596 | 7.47667 | 0.1130998 | 2.4435100 | 183 | 9 | 1992–2006 | 0.58 | M-v | 1 | MPC | 14663 | (27446) |
| (27447) | 14.2 | 0.15 | 20060922 | 324.71485 | 158.05246 | 339.38866 | 5.91908 | 0.0524745 | 2.3826447 | 361 | 9 | 1979–2006 | 0.59 | M-v | 0 | MPC | 14664 | (27447) |
| (27467) | 14.4 | 0.15 | 20060922 | 34.64950 | 154.54130 | 205.44349 | 12.18597 | 0.2079991 | 2.6827975 | 152 | 9 | 1988–2006 | 0.60 | M-v | 0 | MPC | 14670 | (27467) |
| (27475) | 14.4 | 0.15 | 20060922 | 254.61951 | 16.65336 | 106.76960 | 14.12179 | 0.1248251 | 2.6180367 | 185 | 7 | 1996–2006 | 0.61 | M-v | 0 | MPC | 14672 | (27475) |
| (27480) | 15.0 | 0.15 | 20060922 | 349.87937 | 338.20768 | 142.46980 | 9.00816 | 0.1900474 | 2.3396827 | 286 | 9 | 1989–2006 | 0.58 | M-v | 0 | MPC | 14674 | (27480) |
| (27482) | 14.0 | 0.15 | 20060922 | 307.00619 | 279.42235 | 173.54458 | 14.49965 | 0.0745390 | 2.5942316 | 282 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 14674 | (27482) |
| (27489) | 14.4 | 0.15 | 20060922 | 79.38700 | 109.55644 | 208.96139 | 13.98922 | 0.1360162 | 2.6379794 | 228 | 9 | 1996–2006 | 0.58 | M-v | 0 | MPC | 14677 | (27489) |
| (27494) | 13.3 | 0.15 | 20060922 | 216.28690 | 353.53077 | 194.18176 | 13.39380 | 0.0888374 | 2.5964698 | 449 | 8 | 1993–2006 | 0.56 | M-v | 0 | MPC | 77314 | (27494) |
| (27501) | 14.2 | 0.15 | 20060922 | 22.74234 | 264.90103 | 100.96562 | 12.60187 | 0.1038668 | 2.6530015 | 174 | 7 | 1996–2006 | 0.50 | M-v | 0 | MPC | 14681 | (27501) |
| (27503) | 14.7 | 0.15 | 20060922 | 53.83904 | 198.99097 | 116.17780 | 3.03330 | 0.0597391 | 2.7219777 | 236 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 14681 | (27503) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (27515) | 14.9 | 0.15 | 20060922 | 57.75752 | 183.19845 | 205.61501 | 2.32890 | 0.1804212 | 2.4603636 | 283 | 9 | 1982–2006 | 0.62 | M-v | 0 | MPC | 14685 | (27515) |
| (27536) | 13.5 | 0.15 | 20060922 | 54.78064 | 52.70011 | 291.23530 | 4.76418 | 0.0913688 | 2.6163378 | 347 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 14691 | (27536) |
| (27551) | 14.7 | 0.15 | 20060922 | 56.53852 | 68.29024 | 303.66779 | 2.37993 | 0.0431185 | 2.5797106 | 339 | 10 | 1993–2006 | 0.56 | M-v | 0 | MPC | 14695 | (27551) |
| (27568) | 14.4 | 0.15 | 20060922 | 147.37242 | 77.33227 | 174.12500 | 22.25589 | 0.0272450 | 1.9634881 | 319 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 14700 | (27568) |
| (27618) | 15.6 | 0.15 | 20060922 | 174.45090 | 149.46322 | 119.61684 | 6.51254 | 0.1545564 | 2.2712940 | 182 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 14715 | (27618) |
| (27623) | 13.4 | 0.15 | 20060922 | 75.06820 | 12.30862 | 307.16952 | 12.78510 | 0.1585968 | 2.6360413 | 230 | 9 | 1995–2006 | 0.55 | M-v | 1 | MPC | 14716 | (27623) |
| (27635) | 15.9 | 0.15 | 20060922 | 82.41383 | 178.67815 | 195.24778 | 2.42602 | 0.2017359 | 2.4151663 | 239 | 9 | 1960–2006 | 0.51 | M-v | 0 | MPC | 14719 | (27635) |
| (27648) | 15.4 | 0.15 | 20060922 | 122.41014 | 320.36268 | 30.82317 | 3.33946 | 0.1438221 | 2.3229461 | 350 | 10 | 1973–2006 | 0.60 | M-v | 1 | MPC | 14723 | (27648) |
| (27650) | 14.3 | 0.15 | 20060922 | 209.52588 | 350.65286 | 213.14126 | 14.20632 | 0.1004102 | 2.5415172 | 299 | 9 | 1973–2006 | 0.58 | M-v | 0 | MPC | 14723 | (27650) |
| (27653) | 14.7 | 0.15 | 20060922 | 54.87263 | 318.78270 | 56.19152 | 6.44711 | 0.2038800 | 2.5408519 | 241 | 9 | 1977–2006 | 0.59 | M-v | 0 | MPC | 14724 | (27653) |
| (27658) | 13.7 | 0.15 | 20060922 | 46.50355 | 320.66811 | 11.28759 | 9.43409 | 0.2973970 | 2.7660344 | 346 | 8 | 1978–2006 | 0.63 | M-v | 0 | MPC | 77314 | (27658) |
| (27660) | 12.9 | 0.15 | 20060922 | 329.00631 | 339.17670 | 88.37355 | 9.32183 | 0.2106766 | 2.7931407 | 281 | 9 | 1978–2006 | 0.55 | M-v | 0 | MPC | 15128 | (27660) |
| (27668) | 14.0 | 0.15 | 20060922 | 32.63805 | 270.83949 | 120.29903 | 15.17147 | 0.2110490 | 2.6542527 | 262 | 9 | 1979–2006 | 0.53 | M-v | 0 | MPC | 15130 | (27668) |
| (27671) | 16.0 | 0.15 | 20060922 | 105.23206 | 107.51475 | 180.58203 | 2.76204 | 0.0775166 | 2.6587432 | 127 | 7 | 1979–2006 | 0.56 | M-v | 0 | MPC | 15131 | (27671) |
| (27672) | 15.2 | 0.15 | 20060922 | 358.59340 | 95.42266 | 349.31799 | 7.31645 | 0.1756464 | 2.4770138 | 157 | 10 | 1955–2006 | 0.61 | M-v | 1 | MPC | 15131 | (27672) |
| (27678) | 14.2 | 0.15 | 20060922 | 275.18655 | 237.06219 | 233.92167 | 7.91108 | 0.0982630 | 2.7464450 | 284 | 9 | 1977–2006 | 0.61 | M-v | 0 | MPC | 15132 | (27678) |
| (27697) | 14.8 | 0.15 | 20060922 | 74.23163 | 3.35852 | 331.30999 | 10.70855 | 0.1012091 | 2.7434496 | 171 | 10 | 1978–2006 | 0.57 | M-v | 0 | MPC | 15138 | (27697) |
| (27729) | 14.5 | 0.15 | 20060922 | 200.05740 | 148.42216 | 138.72112 | 7.11824 | 0.1179538 | 2.3565092 | 261 | 10 | 1990–2006 | 0.62 | M-v | 0 | MPC | 15146 | (27729) |
| (27746) | 14.9 | 0.15 | 20060922 | 73.35150 | 223.96519 | 153.87755 | 2.97406 | 0.1797954 | 2.4512618 | 267 | 9 | 1990–2006 | 0.60 | M-v | 1 | MPC | 15151 | (27746) |
| (27777) | 15.4 | 0.15 | 20060922 | 286.52034 | 4.13614 | 137.95928 | 2.66219 | 0.1219201 | 2.4677818 | 234 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 15161 | (27777) |
| (27780) | 14.7 | 0.15 | 20060922 | 230.23063 | 201.20239 | 357.55198 | 9.46432 | 0.1267216 | 2.4759778 | 213 | 9 | 1992–2006 | 0.62 | M-v | 1 | MPC | 15162 | (27780) |
| (27785) | 14.7 | 0.15 | 20060922 | 58.21374 | 11.33247 | 318.42138 | 3.05115 | 0.2212038 | 2.7000577 | 207 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 15164 | (27785) |
| (27786) | 13.5 | 0.15 | 20060922 | 41.81620 | 69.59779 | 312.65616 | 11.45186 | 0.1859347 | 2.6665340 | 368 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 15164 | (27786) |
| (27795) | 14.9 | 0.15 | 20060922 | 242.04827 | 183.85453 | 51.01055 | 4.72841 | 0.0999923 | 2.3343756 | 369 | 9 | 1991–2006 | 0.50 | M-v | 0 | MPC | 15166 | (27795) |
| (27814) | 15.9 | 0.15 | 20060922 | 44.83008 | 36.85144 | 3.95067 | 7.49491 | 0.3480207 | 2.5671457 | 151 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 15172 | (27814) |
| (27822) | 14.0 | 0.15 | 20060922 | 56.99276 | 209.58385 | 192.41980 | 14.25314 | 0.1825791 | 2.5405390 | 390 | 9 | 1993–2006 | 0.51 | M-v | 1 | MPC | 15174 | (27822) |
| (27823) | 15.8 | 0.15 | 20060922 | 79.02435 | 221.05397 | 143.36286 | 4.50339 | 0.2239950 | 2.5505305 | 261 | 9 | 1993–2006 | 0.54 | M-v | 1 | MPC | 15174 | (27823) |
| (27824) | 15.3 | 0.15 | 20060922 | 85.59493 | 200.62083 | 133.21946 | 5.67956 | 0.2184007 | 2.5738092 | 270 | 8 | 1993–2005 | 0.61 | M-v | 1 | MPC | 15175 | (27824) |
| (27831) | 13.2 | 0.15 | 20060922 | 22.51078 | 275.34605 | 160.15728 | 12.86331 | 0.1650150 | 2.6510217 | 386 | 10 | 1982–2006 | 0.57 | M-v | 0 | MPC | 15177 | (27831) |
| (27835) | 13.6 | 0.15 | 20060922 | 177.69614 | 261.31717 | 329.54156 | 15.26924 | 0.0600174 | 3.0984573 | 276 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 15178 | (27835) |
| (27852) | 14.6 | 0.15 | 20060922 | 315.83582 | 228.76664 | 261.08607 | 9.42789 | 0.0932321 | 2.4805997 | 244 | 9 | 1994–2006 | 0.62 | M-v | 0 | MPC | 15182 | (27852) |
| (27857) | 13.7 | 0.15 | 20060922 | 141.05910 | 99.30993 | 115.36390 | 10.29832 | 0.1653629 | 2.7385477 | 332 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 15184 | (27857) |
| (27859) | 14.2 | 0.15 | 20060922 | 257.29659 | 165.03005 | 313.45635 | 11.43416 | 0.0874309 | 2.6428652 | 144 | 7 | 1995–2006 | 0.62 | M-v | 1 | MPC | 15185 | (27859) |
| (27861) | 13.1 | 0.15 | 20060922 | 341.24305 | 121.20168 | 313.87621 | 12.22801 | 0.1712345 | 2.5769076 | 291 | 9 | 1991–2006 | 0.54 | M-v | 1 | MPC | 15185 | (27861) |
| (27865) | 13.8 | 0.15 | 20060922 | 95.06060 | 46.61242 | 267.12535 | 13.21740 | 0.1142292 | 2.7342723 | 291 | 10 | 1995–2006 | 0.54 | M-v | 0 | MPC | 15186 | (27865) |
| (27866) | 14.7 | 0.15 | 20060922 | 166.02302 | 184.09296 | 25.22563 | 4.81737 | 0.0430134 | 2.7284729 | 289 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 15186 | (27866) |
| (27867) | 12.9 | 0.15 | 20060922 | 20.39814 | 219.67660 | 222.00496 | 11.57356 | 0.1282607 | 2.6170047 | 473 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 15187 | (27867) |
| (27870) | 15.3 | 0.15 | 20060922 | 127.68907 | 337.63634 | 283.49983 | 3.18811 | 0.1666742 | 2.3764261 | 175 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 77315 | (27870) |
| (27881) | 14.7 | 0.15 | 20060922 | 168.64794 | 228.39890 | 12.98220 | 1.93987 | 0.0625147 | 2.5212584 | 382 | 9 | 1996–2006 | 0.53 | M-v | 0 | MPC | 15190 | (27881) |
| (27893) | 14.0 | 0.15 | 20060922 | 74.13593 | 232.83447 | 81.08610 | 4.57737 | 0.2140240 | 2.6718976 | 296 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 77315 | (27893) |
| (27898) | 14.4 | 0.15 | 20060922 | 49.20499 | 315.54605 | 33.80417 | 2.46570 | 0.0928743 | 2.7304300 | 305 | 10 | 1994–2006 | 0.56 | M-v | 0 | MPC | 15196 | (27898) |
| (27908) | 14.3 | 0.15 | 20060922 | 313.55676 | 230.49354 | 226.97983 | 4.13478 | 0.0769699 | 2.8481901 | 383 | 10 | 1991–2006 | 0.52 | M-v | 0 | MPC | 15198 | (27908) |
| (27926) | 15.7 | 0.15 | 20060922 | 235.23344 | 262.64174 | 1.37963 | 6.31388 | 0.1550672 | 2.2413673 | 169 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 15202 | (27926) |
| (27936) | 15.2 | 0.15 | 20060922 | 267.67855 | 35.40078 | 201.29902 | 1.23936 | 0.0947672 | 3.0337761 | 144 | 9 | 1997–2006 | 0.58 | M-v | 0 | MPC | 27573 | (27936) |
| (27937) | 14.4 | 0.15 | 20060922 | 211.13582 | 207.09509 | 81.00680 | 3.37113 | 0.2148949 | 2.2921874 | 354 | 9 | 1987–2006 | 0.54 | M-v | 0 | MPC | 15205 | (27937) |
| (27940) | 15.0 | 0.15 | 20060922 | 82.31873 | 5.93481 | 309.86506 | 1.33028 | 0.2043649 | 2.5799203 | 176 | 9 | 1991–2006 | 0.58 | M-v | 1 | MPC | 77315 | (27940) |
| (27942) | 15.6 | 0.15 | 20060922 | 195.31889 | 115.59604 | 153.05287 | 3.06599 | 0.1966417 | 2.3433741 | 207 | 7 | 1994–2006 | 0.62 | M-v | 0 | MPC | 15207 | (27942) |
| (27943) | 15.7 | 0.15 | 20060922 | 170.20520 | 154.79400 | 149.92406 | 2.81722 | 0.0766215 | 2.3229625 | 200 | 9 | 1994–2006 | 0.59 | M-v | 0 | MPC | 15207 | (27943) |
| (27954) | 14.2 | 0.15 | 20060922 | 78.47440 | 359.33849 | 353.36428 | 15.36967 | 0.1421976 | 2.5396360 | 297 | 9 | 1993–2006 | 0.59 | M-v | 1 | MPC | 15211 | (27954) |
| (27960) | 14.1 | 0.15 | 20060922 | 89.78643 | 299.19823 | 336.58663 | 12.25682 | 0.1655128 | 2.6892031 | 293 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 15213 | (27960) |
| (27970) | 14.9 | 0.15 | 20060922 | 71.07553 | 79.66657 | 252.84923 | 0.88461 | 0.0618607 | 2.6660065 | 346 | 9 | 1995–2006 | 0.58 | M-v | 0 | MPC | 15215 | (27970) |
| (27976) | 13.9 | 0.15 | 20060922 | 30.29541 | 199.97745 | 235.81276 | 2.72918 | 0.1530658 | 2.5836353 | 427 | 7 | 1989–2006 | 0.53 | M-v | 1 | MPC | 15217 | (27976) |
| (27981) | 14.3 | 0.15 | 20060922 | 16.15778 | 71.45494 | 23.73957 | 4.05736 | 0.1680267 | 2.5871428 | 471 | 7 | 1976–2006 | 0.52 | M-v | 0 | MPC | 15219 | (27981) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (27984) | 15.9 | 0.15 | 20060922 | 3.10753 | 236.05359 | 154.33447 | 3.90685 | 0.2043140 | 2.7401591 | 163 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 15219 | (27984) |
| (27993) | 13.5 | 0.15 | 20060922 | 175.97042 | 19.16940 | 256.25752 | 1.82315 | 0.0073095 | 2.6294098 | 530 | 9 | 1989–2006 | 0.54 | M-v | 0 | MPC | 15222 | (27993) |
| (27995) | 14.6 | 0.15 | 20060922 | 51.21929 | 232.01923 | 71.37924 | 3.46610 | 0.2716912 | 2.1227040 | 467 | 10 | 1975–2006 | 0.51 | M-v | 1 | MPC | 73894 | (27995) |
| (28035) | 15.6 | 0.15 | 20060922 | 340.59505 | 357.39242 | 64.09536 | 3.81868 | 0.0712719 | 2.1919958 | 233 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 31799 | (28035) |
| (28114) | 14.4 | 0.15 | 20060922 | 290.31122 | 187.24197 | 8.38991 | 7.02150 | 0.0408148 | 2.2852917 | 379 | 9 | 1991–2006 | 0.53 | M-v | 0 | MPC | 15263 | (28114) |
| (28119) | 14.9 | 0.15 | 20060922 | 256.36884 | 156.31917 | 41.68728 | 4.26810 | 0.0760737 | 2.3579025 | 320 | 10 | 1987–2006 | 0.58 | M-v | 0 | MPC | 15265 | (28119) |
| (28132) | 14.7 | 0.15 | 20060922 | 296.48056 | 121.33507 | 37.86938 | 6.85700 | 0.0382504 | 2.3525375 | 278 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 38166 | (28132) |
| (28171) | 14.9 | 0.15 | 20060922 | 23.86188 | 77.62295 | 353.65644 | 1.96573 | 0.1860468 | 2.4136250 | 290 | 10 | 1983–2006 | 0.71 | M-v | 0 | MPC | 15284 | (28171) |
| (28175) | 15.2 | 0.15 | 20060922 | 332.07990 | 260.54027 | 184.77249 | 1.81491 | 0.1385022 | 2.5254547 | 271 | 9 | 1992–2006 | 0.62 | M-v | 1 | MPC | 15285 | (28175) |
| (28224) | 14.9 | 0.15 | 20060922 | 82.97103 | 228.56506 | 163.18221 | 2.54061 | 0.2151890 | 2.4074083 | 463 | 10 | 1990–2006 | 0.52 | M-v | 0 | MPC | 15300 | (28224) |
| (28225) | 13.8 | 0.15 | 20060922 | 54.35734 | 285.68091 | 53.85512 | 4.78701 | 0.1443024 | 2.6274930 | 350 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 15300 | (28225) |
| (28231) | 13.4 | 0.15 | 20060922 | 304.85396 | 157.84484 | 327.89448 | 21.92346 | 0.0327904 | 2.5838978 | 230 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 15302 | (28231) |
| (28237) | 15.1 | 0.15 | 20060922 | 88.76786 | 123.00348 | 172.57114 | 2.55656 | 0.0350333 | 2.6973414 | 247 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 15304 | (28237) |
| (28241) | 14.0 | 0.15 | 20060922 | 334.76486 | 37.92605 | 60.22355 | 5.24073 | 0.0557578 | 2.6179393 | 300 | 9 | 1987–2006 | 0.57 | M-v | 0 | MPC | 15305 | (28241) |
| (28244) | 14.6 | 0.15 | 20060922 | 110.47407 | 222.66026 | 127.84137 | 5.84087 | 0.1133744 | 2.5170701 | 331 | 10 | 1989–2006 | 0.59 | M-v | 0 | MPC | 15306 | (28244) |
| (28248) | 14.0 | 0.15 | 20060922 | 63.22707 | 40.99293 | 324.24523 | 2.49837 | 0.2107438 | 2.5966403 | 531 | 10 | 1993–2006 | 0.57 | M-v | 0 | MPC | 15307 | (28248) |
| (28254) | 14.2 | 0.15 | 20060922 | 1.48275 | 183.65385 | 296.00966 | 3.04248 | 0.1369765 | 2.4380278 | 393 | 7 | 1979–2006 | 0.53 | M-v | 1 | MPC | 41505 | (28254) |
| (28286) | 13.5 | 0.15 | 20060922 | 29.70519 | 280.33986 | 76.70801 | 8.56285 | 0.0242195 | 2.7382666 | 313 | 9 | 1988–2006 | 0.58 | M-v | 0 | MPC | 15318 | (28286) |
| (28301) | 13.3 | 0.15 | 20060922 | 207.40491 | 254.10879 | 276.34729 | 6.35128 | 0.1627141 | 2.7944022 | 398 | 10 | 1976–2006 | 0.58 | M-v | 0 | MPC | 15322 | (28301) |
| (28303) | 13.2 | 0.15 | 20060922 | 219.39883 | 314.70224 | 280.20877 | 11.00797 | 0.0534531 | 2.5833126 | 362 | 10 | 1989–2006 | 0.54 | M-v | 0 | MPC | 15323 | (28303) |
| (28317) | 15.1 | 0.15 | 20060922 | 354.56937 | 167.78534 | 238.81743 | 1.65326 | 0.0824994 | 2.6558582 | 287 | 10 | 1991–2006 | 0.56 | M-v | 0 | MPC | 15326 | (28317) |
| (28344) | 14.1 | 0.15 | 20060922 | 358.33993 | 139.74413 | 319.98122 | 4.55448 | 0.1703864 | 2.5744276 | 364 | 9 | 1978–2006 | 0.59 | M-v | 0 | MPC | 57639 | (28344) |
| (28366) | 14.3 | 0.15 | 20060922 | 329.82185 | 313.03435 | 141.46682 | 5.31385 | 0.1921125 | 2.7023570 | 282 | 9 | 1992–2006 | 0.61 | M-v | 0 | MPC | 15340 | (28366) |
| (28377) | 13.3 | 0.15 | 20060922 | 344.87546 | 242.82494 | 223.94503 | 11.95442 | 0.1392603 | 2.6797844 | 417 | 9 | 1988–2006 | 0.54 | M-v | 0 | MPC | 15343 | (28377) |
| (28411) | 16.1 | 0.15 | 20060922 | 75.26577 | 132.26357 | 156.46026 | 6.84315 | 0.1452634 | 2.3354084 | 186 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 15354 | (28411) |
| (28418) | 16.8 | 0.15 | 20060922 | 254.26958 | 109.99010 | 40.04391 | 0.41759 | 0.1451986 | 2.2995023 | 163 | 9 | 1994–2006 | 0.47 | M-v | 0 | MPC | 15357 | (28418) |
| (28423) | 13.6 | 0.15 | 20060922 | 130.21218 | 219.45357 | 145.67342 | 3.37946 | 0.0723059 | 3.2155197 | 287 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 30238 | (28423) |
| (28428) | 15.3 | 0.15 | 20060922 | 89.76508 | 320.04356 | 347.27994 | 1.79370 | 0.1481905 | 2.2750285 | 342 | 10 | 1978–2006 | 0.57 | M-v | 0 | MPC | 33749 | (28428) |
| (28444) | 14.7 | 0.15 | 20060922 | 242.83769 | 111.39626 | 131.91861 | 6.74706 | 0.1520623 | 2.2646241 | 305 | 10 | 1977–2006 | 0.52 | M-v | 0 | MPC | 15365 | (28444) |
| (28447) | 15.0 | 0.15 | 20060922 | 311.38436 | 54.76427 | 126.30032 | 4.06019 | 0.1224803 | 2.2723273 | 258 | 9 | 1995–2006 | 0.61 | M-v | 1 | MPC | 15367 | (28447) |
| (28450) | 14.9 | 0.15 | 20060922 | 332.76696 | 353.69192 | 157.08640 | 4.29058 | 0.0946400 | 2.2374620 | 290 | 10 | 1987–2006 | 0.53 | M-v | 0 | MPC | 15368 | (28450) |
| (28456) | 13.7 | 0.15 | 20060922 | 174.17204 | 214.26049 | 19.52151 | 7.34985 | 0.1428757 | 2.5438641 | 453 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 15370 | (28456) |
| (28461) | 13.3 | 0.15 | 20060922 | 170.15461 | 25.54665 | 239.96516 | 6.85346 | 0.1384822 | 2.4799271 | 420 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 15371 | (28461) |
| (28463) | 15.4 | 0.15 | 20060922 | 322.77977 | 88.73253 | 60.95646 | 7.59227 | 0.0610462 | 2.3665351 | 189 | 9 | 1982–2006 | 0.61 | M-v | 1 | MPC | 15372 | (28463) |
| (28465) | 14.1 | 0.15 | 20060922 | 237.33201 | 44.88407 | 186.34840 | 1.99467 | 0.1793150 | 2.3847318 | 520 | 10 | 1994–2006 | 0.57 | M-v | 0 | MPC | 15372 | (28465) |
| (28470) | 15.6 | 0.15 | 20060922 | 150.57541 | 129.69794 | 132.02760 | 2.62682 | 0.1757403 | 2.4679503 | 171 | 9 | 1992–2006 | 0.53 | M-v | 0 | MPC | 15374 | (28470) |
| (28485) | 15.0 | 0.15 | 20060922 | 231.26565 | 56.54881 | 188.85581 | 5.62298 | 0.1803702 | 2.3385230 | 387 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 15379 | (28485) |
| (28491) | 13.6 | 0.15 | 20060922 | 201.58906 | 48.44855 | 150.02382 | 14.03459 | 0.1966891 | 2.5824342 | 408 | 9 | 1988–2006 | 0.59 | M-v | 0 | MPC | 15381 | (28491) |
| (28495) | 14.2 | 0.15 | 20060922 | 294.24236 | 241.68793 | 330.24391 | 11.16354 | 0.0940908 | 2.2736621 | 244 | 7 | 1990–2006 | 0.55 | M-v | 1 | MPC | 15383 | (28495) |
| (28503) | 14.6 | 0.15 | 20060922 | 153.16479 | 276.21455 | 11.12551 | 2.31046 | 0.1910616 | 2.4092380 | 402 | 10 | 1993–2006 | 0.53 | M-v | 0 | MPC | 15385 | (28503) |
| (28521) | 16.2 | 0.15 | 20060922 | 231.37011 | 339.07334 | 242.20340 | 2.02868 | 0.0822780 | 2.3604270 | 168 | 9 | 1991–2006 | 0.51 | M-v | 1 | MPC | 15391 | (28521) |
| (28532) | 14.6 | 0.15 | 20060922 | 117.85509 | 158.73993 | 187.09669 | 5.60468 | 0.2763618 | 2.3547775 | 303 | 10 | 1976–2006 | 0.51 | M-v | 1 | MPC | 15394 | (28532) |
| (28539) | 14.4 | 0.15 | 20060922 | 74.27711 | 267.39933 | 40.31815 | 2.38043 | 0.2854268 | 2.6417099 | 258 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 15396 | (28539) |
| (28550) | 14.0 | 0.15 | 20060922 | 188.54238 | 99.51100 | 176.64963 | 5.86644 | 0.1280318 | 2.4149451 | 529 | 10 | 1995–2006 | 0.54 | M-v | 0 | MPC | 15399 | (28550) |
| (28551) | 14.7 | 0.15 | 20060922 | 231.78414 | 210.69643 | 30.76993 | 2.70807 | 0.1706006 | 2.3813903 | 340 | 9 | 1989–2006 | 0.55 | M-v | 0 | MPC | 15400 | (28551) |
| (28552) | 13.5 | 0.15 | 20060922 | 122.75841 | 276.68595 | 351.62220 | 6.49833 | 0.1671454 | 2.6317213 | 398 | 10 | 1993–2006 | 0.57 | M-v | 0 | MPC | 15400 | (28552) |
| (28556) | 14.2 | 0.15 | 20060922 | 89.25457 | 189.15500 | 146.07794 | 2.74165 | 0.1662614 | 2.5256742 | 424 | 10 | 1993–2006 | 0.54 | M-v | 1 | MPC | 15401 | (28556) |
| (28559) | 14.3 | 0.15 | 20060922 | 180.78739 | 273.13522 | 355.97555 | 6.07636 | 0.1224874 | 2.4557898 | 417 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 15402 | (28559) |
| (28564) | 14.9 | 0.15 | 20060922 | 194.12118 | 145.79635 | 163.51571 | 4.76203 | 0.1841162 | 2.3006839 | 383 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 15404 | (28564) |
| (28567) | 14.7 | 0.15 | 20060922 | 156.87959 | 267.13830 | 354.58485 | 14.17502 | 0.1475130 | 2.5331793 | 305 | 8 | 1993–2005 | 0.58 | M-v | 0 | MPC | 41505 | (28567) |
| (28580) | 15.2 | 0.15 | 20060922 | 313.13921 | 350.87672 | 186.31997 | 6.18056 | 0.0766579 | 2.3228488 | 270 | 9 | 1991–2006 | 0.56 | M-v | 1 | MPC | 15409 | (28580) |
| (28583) | 14.8 | 0.15 | 20060922 | 190.66822 | 155.44188 | 66.46807 | 5.82342 | 0.1903461 | 2.5512930 | 242 | 10 | 1989–2006 | 0.56 | M-v | 1 | MPC | 15410 | (28583) |
| (28598) | 15.4 | 0.15 | 20060922 | 213.33759 | 110.46706 | 152.35257 | 5.98047 | 0.0729171 | 2.3940363 | 204 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 15415 | (28598) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (28602) | 14.7 | 0.15 | 20060922 | 76.78072 | 324.62766 | 340.92829 | 2.96584 | 0.0447118 | 2.6352803 | 245 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 15416 | (28602) |
| (28603) | 14.1 | 0.15 | 20060922 | 244.89254 | 172.14297 | 358.14883 | 2.54188 | 0.1013048 | 2.5213010 | 450 | 9 | 1990–2006 | 0.55 | M-v | 0 | MPC | 15416 | (28603) |
| (28625) | 14.9 | 0.15 | 20060922 | 155.44820 | 198.81135 | 131.91628 | 4.01018 | 0.0581075 | 2.3369063 | 336 | 9 | 1993–2006 | 0.57 | M-v | 0 | MPC | 15423 | (28625) |
| (28626) | 15.0 | 0.15 | 20060922 | 253.02810 | 124.79831 | 41.23855 | 5.36375 | 0.1163867 | 2.4875030 | 350 | 9 | 1992–2006 | 0.51 | M-v | 0 | MPC | 15424 | (28626) |
| (28641) | 13.5 | 0.15 | 20060922 | 125.89360 | 334.32073 | 248.22117 | 6.98337 | 0.1589755 | 2.7955749 | 343 | 9 | 1981–2006 | 0.50 | M-v | 0 | MPC | 15428 | (28641) |
| (28646) | 15.2 | 0.15 | 20060922 | 170.66823 | 23.45252 | 298.47055 | 2.19534 | 0.1274373 | 2.3364550 | 403 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 15429 | (28646) |
| (28654) | 15.4 | 0.15 | 20060922 | 91.98102 | 69.79424 | 239.18414 | 1.31641 | 0.1814858 | 2.6264082 | 144 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 77316 | (28654) |
| (28681) | 14.6 | 0.15 | 20060922 | 143.42173 | 1.43567 | 317.39672 | 1.43308 | 0.1621931 | 2.4870634 | 426 | 9 | 1993–2006 | 0.53 | M-v | 0 | MPC | 15441 | (28681) |
| (28686) | 14.8 | 0.15 | 20060922 | 223.44876 | 344.07178 | 211.00938 | 1.46205 | 0.0813490 | 2.5567543 | 431 | 10 | 1993–2006 | 0.55 | M-v | 0 | MPC | 15442 | (28686) |
| (28720) | 14.4 | 0.15 | 20060922 | 193.21654 | 88.21396 | 148.57414 | 3.48084 | 0.1515747 | 2.5392124 | 354 | 9 | 1996–2006 | 0.54 | M-v | 0 | MPC | 15453 | (28720) |
| (28725) | 14.4 | 0.15 | 20060922 | 251.79357 | 158.53659 | 28.06469 | 8.62452 | 0.1508632 | 2.4366965 | 310 | 9 | 1990–2006 | 0.54 | M-v | 1 | MPC | 15455 | (28725) |
| (28726) | 14.7 | 0.15 | 20060922 | 64.62278 | 274.47256 | 41.27297 | 3.99585 | 0.0729228 | 2.6737725 | 279 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 15455 | (28726) |
| (28728) | 14.8 | 0.15 | 20060922 | 242.89336 | 26.96741 | 103.74323 | 8.57842 | 0.1741686 | 2.6697358 | 193 | 7 | 1989–2006 | 0.63 | M-v | 0 | MPC | 15456 | (28728) |
| (28737) | 14.2 | 0.15 | 20060922 | 231.77251 | 105.80257 | 129.50910 | 6.79684 | 0.0961104 | 2.4383249 | 251 | 9 | 1992–2006 | 0.59 | M-v | 1 | MPC | 15459 | (28737) |
| (28748) | 14.0 | 0.15 | 20060922 | 218.28371 | 213.18654 | 66.12886 | 5.80049 | 0.1926635 | 2.4028459 | 541 | 10 | 1978–2006 | 0.55 | M-v | 0 | MPC | 15462 | (28748) |
| (28767) | 15.7 | 0.15 | 20060922 | 61.53809 | 302.95743 | 100.57369 | 2.40809 | 0.1773695 | 2.4017143 | 198 | 10 | 1988–2006 | 0.58 | M-v | 0 | MPC | 15468 | (28767) |
| (28785) | 14.1 | 0.15 | 20060922 | 119.53470 | 172.52509 | 135.46330 | 1.17741 | 0.0416851 | 2.5853475 | 439 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 15473 | (28785) |
| (28798) | 13.7 | 0.15 | 20060922 | 60.38452 | 354.12190 | 2.32525 | 8.40081 | 0.1321818 | 2.5947691 | 292 | 9 | 1991–2005 | 0.59 | M-v | 1 | MPC | 77316 | (28798) |
| (28806) | 14.2 | 0.15 | 20060922 | 259.34011 | 321.15735 | 199.73975 | 12.90446 | 0.0899354 | 2.5486083 | 329 | 9 | 1996–2006 | 0.54 | M-v | 0 | MPC | 38166 | (28806) |
| (28808) | 14.7 | 0.15 | 20060922 | 38.38268 | 31.12395 | 344.98506 | 4.26951 | 0.0580051 | 2.6026919 | 254 | 10 | 1991–2006 | 0.58 | M-v | 0 | MPC | 77316 | (28808) |
| (28828) | 14.6 | 0.15 | 20060922 | 347.89922 | 119.36434 | 351.39153 | 3.70603 | 0.1434392 | 2.4297037 | 307 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 15486 | (28828) |
| (28831) | 14.7 | 0.15 | 20060922 | 345.43652 | 149.78256 | 239.40449 | 3.82896 | 0.0319334 | 2.7563003 | 310 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 15487 | (28831) |
| (28837) | 14.8 | 0.15 | 20060922 | 54.72204 | 112.77070 | 250.13214 | 3.18356 | 0.1048431 | 2.6351977 | 321 | 12 | 1988–2006 | 0.56 | M-v | 0 | MPC | 15488 | (28837) |
| (28840) | 13.7 | 0.15 | 20060922 | 286.80301 | 79.99079 | 73.19411 | 4.75526 | 0.1028633 | 2.5228160 | 356 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 15489 | (28840) |
| (28846) | 13.9 | 0.15 | 20060922 | 115.42331 | 48.08274 | 260.37010 | 8.68555 | 0.1028011 | 2.6236232 | 283 | 10 | 1954–2006 | 0.53 | M-v | 0 | MPC | 15491 | (28846) |
| (28849) | 13.5 | 0.15 | 20060922 | 79.47189 | 314.81085 | 0.20715 | 12.57212 | 0.1637820 | 2.6679082 | 298 | 8 | 1997–2006 | 0.63 | M-v | 1 | MPC | 77316 | (28849) |
| (28851) | 14.2 | 0.15 | 20060922 | 328.65369 | 302.13404 | 183.66394 | 5.29958 | 0.0425818 | 2.4847513 | 445 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 15492 | (28851) |
| (28857) | 13.2 | 0.15 | 20060922 | 140.29521 | 2.71403 | 258.60446 | 11.28994 | 0.2165510 | 2.6430988 | 301 | 10 | 1950–2006 | 0.56 | M-v | 0 | MPC | 15494 | (28857) |
| (28860) | 14.3 | 0.15 | 20060922 | 92.14292 | 339.44607 | 327.79482 | 1.98884 | 0.0463051 | 2.6819707 | 362 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 15494 | (28860) |
| (28874) | 15.3 | 0.15 | 20060922 | 24.98024 | 222.95958 | 224.15383 | 1.83209 | 0.1563173 | 2.4278959 | 313 | 10 | 1979–2006 | 0.58 | M-v | 0 | MPC | 15498 | (28874) |
| (28897) | 13.1 | 0.15 | 20060922 | 264.99860 | 353.00889 | 213.32356 | 13.79767 | 0.0953485 | 2.5820591 | 501 | 9 | 1976–2006 | 0.57 | M-v | 0 | MPC | 15505 | (28897) |
| (28898) | 13.4 | 0.15 | 20060922 | 57.49851 | 192.19214 | 193.92539 | 14.64093 | 0.0932951 | 2.6239531 | 451 | 9 | 1995–2006 | 0.50 | M-v | 0 | MPC | 15505 | (28898) |
| (28901) | 13.0 | 0.15 | 20060922 | 88.59121 | 73.39340 | 236.03989 | 12.33747 | 0.2507196 | 2.8620824 | 371 | 12 | 1954–2006 | 0.54 | M-v | 0 | MPC | 15506 | (28901) |
| (28906) | 14.0 | 0.15 | 20060922 | 315.19706 | 200.28529 | 299.87387 | 8.91309 | 0.0192901 | 2.6358026 | 347 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 15507 | (28906) |
| (28909) | 13.4 | 0.15 | 20060922 | 269.94627 | 228.88821 | 305.32621 | 11.23546 | 0.0926632 | 2.6686821 | 376 | 7 | 1997–2006 | 0.60 | M-v | 1 | MPC | 15508 | (28909) |
| (28934) | 14.4 | 0.15 | 20060922 | 60.88916 | 223.59320 | 178.54374 | 2.40874 | 0.0879249 | 2.8801530 | 347 | 9 | 1993–2006 | 0.59 | M-v | 0 | MPC | 23414 | (28934) |
| (28974) | 14.7 | 0.15 | 20060922 | 104.30526 | 72.50443 | 194.15970 | 7.32478 | 0.2444495 | 2.6086104 | 153 | 8 | 1971–2006 | 0.58 | M-v | 1 | MPC | 77316 | (28974) |
| (28981) | 14.2 | 0.15 | 20060922 | 50.47209 | 257.95904 | 91.88464 | 4.50563 | 0.3365920 | 2.6037154 | 281 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 15529 | (28981) |
| (28994) | 15.0 | 0.15 | 20060922 | 41.20475 | 198.43838 | 142.18258 | 5.11856 | 0.2373545 | 2.6996296 | 259 | 8 | 1979–2006 | 0.55 | M-v | 0 | MPC | 77317 | (28994) |
| (29010) | 14.3 | 0.15 | 20060922 | 181.15193 | 225.80221 | 352.44594 | 12.93152 | 0.1261850 | 2.5771093 | 289 | 9 | 1960–2006 | 0.57 | M-v | 0 | MPC | 15537 | (29010) |
| (29013) | 15.5 | 0.15 | 20060922 | 75.47121 | 129.20835 | 201.16166 | 8.87639 | 0.1233405 | 2.5755103 | 75 | 6 | 1960–2004 | 0.65 | M-v | 2 | MPC | 15538 | (29013) |
| (29020) | 14.5 | 0.15 | 20060922 | 170.53206 | 33.43192 | 205.03014 | 4.18765 | 0.1819080 | 2.5686656 | 381 | 8 | 1960–2006 | 0.55 | M-v | 0 | MPC | 77317 | (29020) |
| (29031) | 15.3 | 0.15 | 20060922 | 292.50276 | 299.25958 | 234.58166 | 1.31115 | 0.1433628 | 2.3594052 | 263 | 9 | 1971–2006 | 0.51 | M-v | 0 | MPC | 15543 | (29031) |
| (29053) | 13.5 | 0.15 | 20060922 | 313.82862 | 67.63738 | 72.69560 | 2.30907 | 0.0683598 | 3.9284663 | 102 | 9 | 1973–2006 | 0.66 | M-v | 0 | MPC | 35432 | (29053) |
| (29070) | 14.5 | 0.15 | 20060922 | 84.65315 | 261.40818 | 57.02968 | 5.82619 | 0.0450815 | 2.5587552 | 205 | 9 | 1977–2006 | 0.60 | M-v | 0 | MPC | 15554 | (29070) |
| (29076) | 13.5 | 0.15 | 20060922 | 123.94260 | 7.95905 | 318.28357 | 12.57836 | 0.1716742 | 2.5648042 | 346 | 10 | 1972–2006 | 0.53 | M-v | 1 | MPC | 16171 | (29076) |
| (29096) | 16.1 | 0.15 | 20060922 | 283.42280 | 294.74218 | 252.95597 | 1.47989 | 0.1337346 | 2.4118424 | 112 | 7 | 1981–2006 | 0.63 | M-v | 1 | MPC | 16178 | (29096) |
| (29102) | 13.9 | 0.15 | 20060922 | 104.66244 | 134.21175 | 170.44850 | 12.71365 | 0.0240704 | 2.7360363 | 259 | 9 | 1951–2006 | 0.60 | M-v | 0 | MPC | 16179 | (29102) |
| (29115) | 14.2 | 0.15 | 20060922 | 176.61062 | 303.02894 | 281.69409 | 4.11121 | 0.0594673 | 2.7515967 | 301 | 10 | 1969–2006 | 0.58 | M-v | 0 | MPC | 16183 | (29115) |
| (29117) | 13.9 | 0.15 | 20060922 | 34.11962 | 187.96847 | 187.32102 | 4.71722 | 0.1263430 | 2.7305849 | 447 | 10 | 1981–2006 | 0.61 | M-v | 0 | MPC | 16184 | (29117) |
| (29128) | 13.7 | 0.15 | 20060922 | 87.79992 | 59.48950 | 283.57002 | 9.96300 | 0.1886645 | 2.5359513 | 358 | 9 | 1976–2006 | 0.54 | M-v | 1 | MPC | 16188 | (29128) |
| (29130) | 14.4 | 0.15 | 20060922 | 233.56993 | 198.92348 | 358.14154 | 0.40168 | 0.1812276 | 2.6764274 | 277 | 10 | 1986–2006 | 0.55 | M-v | 0 | MPC | 16188 | (29130) |
| (29142) | 14.6 | 0.15 | 20060922 | 248.45528 | 133.03725 | 90.71816 | 2.61669 | 0.1454182 | 2.4295813 | 321 | 9 | 1988–2006 | 0.55 | M-v | 1 | MPC | 16192 | (29142) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (29166) | 14.4 | 0.15 | 20060922 | 344.57427 | 279.66612 | 192.04211 | 13.32944 | 0.1273384 | 2.5652837 | 272 | 9 | 1989–2006 | 0.58 | M-v | 1 | MPC | 16200 | (29166) |
| (29186) | 13.7 | 0.15 | 20060922 | 342.14540 | 99.48642 | 52.43719 | 7.30059 | 0.0521467 | 2.4097683 | 348 | 10 | 1953–2006 | 0.58 | M-v | 0 | MPC | 16206 | (29186) |
| (29204) | 14.4 | 0.15 | 20060922 | 294.86918 | 2.54576 | 184.52535 | 9.18288 | 0.0591675 | 2.5527857 | 297 | 9 | 1991–2006 | 0.58 | M-v | 1 | MPC | 16211 | (29204) |
| (29205) | 13.8 | 0.15 | 20060922 | 69.91010 | 210.25808 | 148.49149 | 5.80071 | 0.0694429 | 2.7393997 | 374 | 9 | 1987–2006 | 0.58 | M-v | 0 | MPC | 16211 | (29205) |
| (29216) | 12.6 | 0.15 | 20060922 | 212.05338 | 78.64437 | 86.99398 | 10.85047 | 0.0484713 | 2.9849999 | 469 | 9 | 1991–2006 | 0.53 | M-v | 0 | MPC | 16215 | (29216) |
| (29227) | 14.1 | 0.15 | 20060922 | 305.54561 | 215.52488 | 346.72089 | 2.46377 | 0.1894471 | 2.3843448 | 447 | 9 | 1992–2006 | 0.53 | M-v | 0 | MPC | 16218 | (29227) |
| (29236) | 15.4 | 0.15 | 20060922 | 334.12889 | 278.50817 | 235.28264 | 0.60846 | 0.1206418 | 2.4012790 | 271 | 10 | 1992–2006 | 0.61 | M-v | 1 | MPC | 16221 | (29236) |
| (29240) | 13.9 | 0.15 | 20060922 | 113.80822 | 74.83277 | 211.10748 | 10.85377 | 0.1674991 | 2.5862625 | 287 | 10 | 1971–2006 | 0.58 | M-v | 0 | MPC | 41505 | (29240) |
| (29244) | 13.1 | 0.15 | 20060922 | 128.58207 | 7.57547 | 310.17732 | 13.16567 | 0.1595910 | 2.6033497 | 340 | 10 | 1971–2006 | 0.52 | M-v | 1 | MPC | 16223 | (29244) |
| (29245) | 14.7 | 0.15 | 20060922 | 86.50234 | 102.12938 | 252.45666 | 1.72492 | 0.1198152 | 2.6248907 | 334 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 16223 | (29245) |
| (29247) | 14.2 | 0.15 | 20060922 | 49.33274 | 138.04645 | 230.80220 | 1.64491 | 0.0864423 | 2.6832408 | 348 | 10 | 1988–2006 | 0.60 | M-v | 0 | MPC | 16224 | (29247) |
| (29248) | 15.3 | 0.15 | 20060922 | 349.53873 | 232.58737 | 180.31022 | 5.60743 | 0.0570703 | 2.7347400 | 195 | 9 | 1981–2006 | 0.54 | M-v | 0 | MPC | 16224 | (29248) |
| (29266) | 13.3 | 0.15 | 20060922 | 343.84613 | 339.67019 | 55.81199 | 10.63142 | 0.1541692 | 3.0376000 | 444 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 16230 | (29266) |
| (29287) | 15.5 | 0.15 | 20060922 | 208.25164 | 229.03502 | 0.71903 | 1.93705 | 0.1585818 | 2.3824690 | 305 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 16236 | (29287) |
| (29292) | 13.4 | 0.15 | 20060922 | 245.06448 | 169.45036 | 89.89801 | 25.54537 | 0.1996137 | 2.3478403 | 351 | 10 | 1983–2006 | 0.60 | M-v | 1 | MPC | 16238 | (29292) |
| (29294) | 15.0 | 0.15 | 20060922 | 213.07319 | 140.72269 | 147.23121 | 2.98341 | 0.0779343 | 2.3863990 | 243 | 9 | 1993–2006 | 0.59 | M-v | 0 | MPC | 16238 | (29294) |
| (29295) | 15.8 | 0.15 | 20060922 | 175.46320 | 115.27554 | 199.11704 | 1.18776 | 0.1414751 | 2.4053893 | 209 | 9 | 1993–2006 | 0.53 | M-v | 0 | MPC | 16239 | (29295) |
| (29299) | 13.3 | 0.15 | 20060922 | 21.90047 | 12.51727 | 47.81275 | 10.97395 | 0.0738597 | 2.5738793 | 413 | 9 | 1993–2006 | 0.53 | M-v | 0 | MPC | 16240 | (29299) |
| (29302) | 15.6 | 0.15 | 20060922 | 103.85690 | 274.91486 | 35.34043 | 4.01368 | 0.1559954 | 2.5722045 | 159 | 9 | 1993–2006 | 0.55 | M-v | 1 | MPC | 16241 | (29302) |
| (29306) | 13.7 | 0.15 | 20060922 | 261.70979 | 86.06962 | 52.16403 | 13.50861 | 0.1106645 | 2.6475331 | 339 | 9 | 1987–2006 | 0.58 | M-v | 0 | MPC | 16242 | (29306) |
| (29310) | 14.3 | 0.15 | 20060922 | 351.57405 | 20.28819 | 58.47964 | 7.03047 | 0.2483234 | 2.6272030 | 275 | 8 | 1993–2006 | 0.58 | M-v | 0 | MPC | 38167 | (29310) |
| (29344) | 14.2 | 0.15 | 20060922 | 199.12514 | 73.40246 | 141.52303 | 12.13113 | 0.1481903 | 2.6633302 | 237 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 16254 | (29344) |
| (29349) | 13.8 | 0.15 | 20060922 | 156.48264 | 263.76926 | 61.65859 | 2.42974 | 0.0872274 | 2.5358466 | 421 | 10 | 1993–2006 | 0.56 | M-v | 0 | MPC | 16255 | (29349) |
| (29351) | 14.6 | 0.15 | 20060922 | 352.96341 | 322.38414 | 75.08173 | 6.13992 | 0.1615910 | 2.7605768 | 194 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 16256 | (29351) |
| (29353) | 14.3 | 0.15 | 20060922 | 15.00518 | 55.90683 | 312.71626 | 10.13893 | 0.1200553 | 2.9773795 | 224 | 10 | 1983–2006 | 0.62 | M-v | 0 | MPC | 16256 | (29353) |
| (29372) | 13.5 | 0.15 | 20060922 | 266.67735 | 207.68716 | 26.40304 | 13.78253 | 0.1362655 | 2.3761242 | 357 | 9 | 1990–2006 | 0.57 | M-v | 1 | MPC | 41506 | (29372) |
| (29375) | 14.8 | 0.15 | 20060922 | 295.26269 | 333.07327 | 191.16076 | 1.80895 | 0.1516746 | 2.4485515 | 187 | 9 | 1992–2006 | 0.57 | M-v | 1 | MPC | 16263 | (29375) |
| (29387) | 14.5 | 0.15 | 20060922 | 282.74987 | 30.92875 | 149.27002 | 2.99600 | 0.1299448 | 2.4568772 | 312 | 10 | 1993–2006 | 0.54 | M-v | 0 | MPC | 16267 | (29387) |
| (29389) | 14.7 | 0.15 | 20060922 | 187.88276 | 297.40916 | 294.85856 | 0.66895 | 0.1233578 | 2.5746785 | 383 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 16268 | (29389) |
| (29392) | 14.0 | 0.15 | 20060922 | 148.79843 | 192.89964 | 93.09885 | 14.24711 | 0.1386266 | 2.5655063 | 286 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 35432 | (29392) |
| (29396) | 13.7 | 0.15 | 20060922 | 359.63492 | 332.58715 | 149.40772 | 13.13745 | 0.1319456 | 2.6089318 | 329 | 9 | 1990–2006 | 0.62 | M-v | 0 | MPC | 16270 | (29396) |
| (29417) | 13.1 | 0.15 | 20060922 | 266.36316 | 306.40804 | 243.70457 | 8.29690 | 0.1902471 | 2.7827122 | 374 | 9 | 1996–2006 | 0.54 | M-v | 0 | MPC | 16277 | (29417) |
| (29432) | 14.4 | 0.15 | 20060922 | 215.72051 | 215.80349 | 45.10046 | 2.78993 | 0.1259128 | 3.0832892 | 208 | 10 | 1981–2006 | 0.57 | M-v | 0 | MPC | 16282 | (29432) |
| (29449) | 14.6 | 0.15 | 20060922 | 329.12037 | 279.42227 | 156.04293 | 13.38679 | 0.1508134 | 2.6397081 | 121 | 7 | 1997–2006 | 0.61 | M-v | 1 | MPC | 16287 | (29449) |
| (29453) | 14.5 | 0.15 | 20060922 | 199.75669 | 305.97405 | 345.83299 | 5.55297 | 0.1492255 | 2.4000377 | 204 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 16288 | (29453) |
| (29457) | 14.8 | 0.15 | 20060922 | 149.16047 | 133.87454 | 191.46503 | 2.23079 | 0.1928947 | 2.4287741 | 379 | 9 | 1982–2006 | 0.52 | M-v | 0 | MPC | 16289 | (29457) |
| (29461) | 15.3 | 0.15 | 20060922 | 176.82641 | 300.34933 | 353.00533 | 2.11854 | 0.1889113 | 2.4455692 | 339 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 16291 | (29461) |
| (29469) | 14.3 | 0.15 | 20060922 | 271.26403 | 237.72538 | 264.79396 | 1.22888 | 0.1384247 | 2.6994425 | 323 | 9 | 1990–2006 | 0.56 | M-v | 0 | MPC | 16293 | (29469) |
| (29470) | 13.0 | 0.15 | 20060922 | 208.51397 | 194.44558 | 57.36153 | 13.72743 | 0.1401602 | 2.5921860 | 401 | 9 | 1984–2006 | 0.54 | M-v | 0 | MPC | 16293 | (29470) |
| (29476) | 14.6 | 0.15 | 20060922 | 345.52160 | 348.85127 | 43.05220 | 10.20512 | 0.1067782 | 2.7357947 | 287 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 16295 | (29476) |
| (29478) | 14.0 | 0.15 | 20060922 | 223.08343 | 189.59850 | 55.26914 | 8.60782 | 0.0227458 | 2.5555399 | 370 | 7 | 1997–2006 | 0.60 | M-v | 1 | MPC | 16296 | (29478) |
| (29481) | 13.5 | 0.15 | 20060922 | 19.17787 | 174.47057 | 228.34823 | 3.42823 | 0.0822746 | 2.6826200 | 485 | 9 | 1996–2006 | 0.59 | M-v | 0 | MPC | 16297 | (29481) |
| (29491) | 14.7 | 0.15 | 20060922 | 8.82543 | 61.30919 | 358.12979 | 2.36343 | 0.0819424 | 2.6329542 | 225 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 16300 | (29491) |
| (29492) | 13.0 | 0.15 | 20060922 | 352.60778 | 28.05629 | 82.22327 | 11.17725 | 0.0961568 | 2.6265163 | 385 | 9 | 1977–2006 | 0.57 | M-v | 0 | MPC | 16300 | (29492) |
| (29494) | 13.6 | 0.15 | 20060922 | 340.18452 | 212.87538 | 250.49907 | 3.48374 | 0.0913214 | 2.6454112 | 383 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 16301 | (29494) |
| (29496) | 13.4 | 0.15 | 20060922 | 207.88541 | 324.21669 | 248.36102 | 4.96278 | 0.0897976 | 2.6942896 | 348 | 9 | 1995–2006 | 0.53 | M-v | 0 | MPC | 16302 | (29496) |
| (29512) | 13.7 | 0.15 | 20060922 | 297.30071 | 7.96973 | 127.81245 | 6.55379 | 0.0817614 | 2.7832124 | 325 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 16306 | (29512) |
| (29514) | 13.5 | 0.15 | 20060922 | 219.76189 | 241.25015 | 293.67730 | 15.31347 | 0.1696576 | 2.9347549 | 282 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 16307 | (29514) |
| (29516) | 13.4 | 0.15 | 20060922 | 240.63579 | 38.63885 | 103.66354 | 11.66115 | 0.0633444 | 2.9815965 | 411 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 16307 | (29516) |
| (29543) | 13.7 | 0.15 | 20060922 | 319.55814 | 322.91506 | 91.87920 | 10.49958 | 0.0992003 | 2.8000668 | 195 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 16315 | (29543) |
| (29589) | 13.4 | 0.15 | 20060922 | 316.34800 | 139.21360 | 325.47462 | 9.77021 | 0.1192910 | 2.9176175 | 311 | 7 | 1995–2006 | 0.60 | M-v | 0 | MPC | 16331 | (29589) |
| (29598) | 13.3 | 0.15 | 20060922 | 250.82030 | 73.84464 | 63.86382 | 2.82517 | 0.0857048 | 3.1204186 | 371 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 43318 | (29598) |
| (29601) | 13.7 | 0.15 | 20060922 | 265.87280 | 48.80834 | 91.91370 | 10.69286 | 0.2599987 | 3.0694782 | 272 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 16334 | (29601) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (29602) | 14.3 | 0.15 | 20060922 | 204.78187 | 345.17676 | 234.24935 | 5.28195 | 0.0738184 | 2.2329165 | 531 | 9 | 1971–2006 | 0.58 | M-v | 0 | MPC | 16335 | (29602) |
| (29603) | 11.1 | 0.15 | 20060922 | 214.57460 | 187.73534 | 113.55226 | 33.34900 | 0.0333580 | 5.1800106 | 197 | 12 | 1976–2006 | 0.52 | M-v | 0 | MPC | 16335 | (29603) |
| (29606) | 14.4 | 0.15 | 20060922 | 215.62420 | 50.43297 | 155.10552 | 23.87559 | 0.2084198 | 2.3279479 | 297 | 10 | 1987–2006 | 0.53 | M-v | 1 | MPC | 16336 | (29606) |
| (29622) | 13.6 | 0.15 | 20060922 | 321.66554 | 121.51066 | 35.31995 | 6.92419 | 0.1285243 | 2.3375260 | 473 | 7 | 1993–2006 | 0.53 | M-v | 0 | MPC | 16342 | (29622) |
| (29627) | 14.9 | 0.15 | 20060922 | 301.39595 | 333.63809 | 211.96573 | 1.82554 | 0.1688176 | 2.3404487 | 377 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 16344 | (29627) |
| (29635) | 14.7 | 0.15 | 20060922 | 332.94087 | 118.52665 | 12.54119 | 6.34514 | 0.1056781 | 2.4045904 | 231 | 7 | 1996–2006 | 0.63 | M-v | 1 | MPC | 16347 | (29635) |
| (29656) | 15.3 | 0.15 | 20060922 | 339.12904 | 291.19599 | 178.18799 | 2.89307 | 0.1511065 | 2.4445079 | 198 | 9 | 1979–2006 | 0.63 | M-v | 0 | MPC | 16354 | (29656) |
| (29670) | 13.2 | 0.15 | 20060922 | 102.61079 | 350.22860 | 292.04299 | 12.25449 | 0.1601259 | 2.6375195 | 340 | 13 | 1983–2006 | 0.61 | M-v | 0 | MPC | 16359 | (29670) |
| (29671) | 14.7 | 0.15 | 20060922 | 353.66928 | 15.75792 | 110.73287 | 3.29393 | 0.1267078 | 2.3910990 | 294 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 16360 | (29671) |
| (29672) | 15.0 | 0.15 | 20060922 | 247.90437 | 145.37122 | 71.49586 | 3.68881 | 0.1278204 | 2.4320220 | 223 | 9 | 1992–2006 | 0.60 | M-v | 1 | MPC | 16360 | (29672) |
| (29677) | 13.8 | 0.15 | 20060922 | 315.00770 | 111.78283 | 61.82703 | 6.32715 | 0.0681448 | 2.4282222 | 442 | 9 | 1992–2006 | 0.53 | M-v | 0 | MPC | 16361 | (29677) |
| (29680) | 13.6 | 0.15 | 20060922 | 251.86420 | 310.87692 | 296.78138 | 6.16577 | 0.0814111 | 2.3200291 | 373 | 10 | 1979–2006 | 0.54 | M-v | 0 | MPC | 16362 | (29680) |
| (29694) | 14.1 | 0.15 | 20060922 | 268.64861 | 284.96346 | 227.17547 | 1.40414 | 0.1459763 | 2.6722782 | 331 | 10 | 1982–2006 | 0.53 | M-v | 0 | MPC | 16367 | (29694) |
| (29701) | 13.8 | 0.15 | 20060922 | 323.69704 | 258.45819 | 228.52820 | 17.53996 | 0.1992425 | 2.5347626 | 188 | 9 | 1991–2006 | 0.55 | M-v | 1 | MPC | 16369 | (29701) |
| (29702) | 14.6 | 0.15 | 20060922 | 172.95117 | 320.31674 | 232.48146 | 4.83654 | 0.0696477 | 2.7404264 | 281 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 16370 | (29702) |
| (29705) | 14.0 | 0.15 | 20060922 | 12.10919 | 100.80187 | 348.47932 | 3.99851 | 0.1082391 | 2.5869667 | 429 | 9 | 1987–2006 | 0.57 | M-v | 0 | MPC | 16371 | (29705) |
| (29720) | 15.3 | 0.15 | 20060922 | 73.62957 | 212.24834 | 123.82983 | 2.86898 | 0.1174119 | 2.6641797 | 195 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 16375 | (29720) |
| (29723) | 13.8 | 0.15 | 20060922 | 155.30836 | 183.54244 | 123.65244 | 13.72676 | 0.2206729 | 2.4654543 | 370 | 9 | 1989–2006 | 0.51 | M-v | 0 | MPC | 16376 | (29723) |
| (29732) | 13.6 | 0.15 | 20060922 | 327.04807 | 157.67399 | 5.84855 | 5.63565 | 0.0601941 | 2.4797309 | 463 | 9 | 1995–2006 | 0.53 | M-v | 0 | MPC | 16379 | (29732) |
| (29733) | 13.7 | 0.15 | 20060922 | 276.08662 | 133.59356 | 77.61037 | 5.54783 | 0.0866919 | 2.4461619 | 508 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 16379 | (29733) |
| (29742) | 12.4 | 0.15 | 20060922 | 85.56452 | 239.31926 | 100.66340 | 16.07762 | 0.1644768 | 2.5659383 | 395 | 9 | 1988–2006 | 0.50 | M-v | 0 | MPC | 16382 | (29742) |
| (29755) | 13.9 | 0.15 | 20060922 | 88.80974 | 271.39062 | 116.61406 | 5.75243 | 0.1172829 | 2.5206601 | 380 | 10 | 1989–2006 | 0.56 | M-v | 1 | MPC | 16386 | (29755) |
| (29758) | 13.0 | 0.15 | 20060922 | 344.44388 | 6.41626 | 99.86975 | 15.22656 | 0.1088259 | 2.5906627 | 326 | 9 | 1982–2006 | 0.58 | M-v | 0 | MPC | 16387 | (29758) |
| (29767) | 13.2 | 0.15 | 20060922 | 186.89202 | 130.42439 | 82.20961 | 7.25206 | 0.1067551 | 2.7142466 | 351 | 9 | 1995–2006 | 0.56 | M-v | 0 | MPC | 16389 | (29767) |
| (29784) | 13.8 | 0.15 | 20060922 | 331.31953 | 353.01400 | 120.39798 | 3.12497 | 0.0896947 | 2.5901734 | 361 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 16395 | (29784) |
| (29787) | 14.2 | 0.15 | 20060922 | 88.94786 | 337.50859 | 16.26080 | 3.56537 | 0.1556206 | 2.6146445 | 412 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 16396 | (29787) |
| (29789) | 13.4 | 0.15 | 20060922 | 23.46651 | 87.48703 | 300.22071 | 13.39480 | 0.1247593 | 2.6253767 | 307 | 9 | 1989–2006 | 0.54 | M-v | 0 | MPC | 16397 | (29789) |
| (29798) | 13.0 | 0.15 | 20060922 | 181.03830 | 86.75367 | 166.96061 | 12.68410 | 0.1342036 | 2.6720750 | 452 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 41506 | (29798) |
| (29802) | 14.9 | 0.15 | 20060922 | 259.95684 | 348.67547 | 132.10297 | 6.77566 | 0.0373435 | 2.7228160 | 225 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 16401 | (29802) |
| (29810) | 14.4 | 0.15 | 20060922 | 35.76701 | 241.55621 | 158.21496 | 13.64705 | 0.2321801 | 2.5222580 | 228 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 16403 | (29810) |
| (29811) | 14.3 | 0.15 | 20060922 | 261.21260 | 272.43435 | 227.52295 | 10.52729 | 0.1479928 | 2.6934803 | 300 | 10 | 1991–2006 | 0.51 | M-v | 0 | MPC | 16404 | (29811) |
| (29825) | 15.1 | 0.15 | 20060922 | 34.01529 | 301.91805 | 95.59539 | 1.09806 | 0.1427333 | 2.5901819 | 223 | 9 | 1995–2006 | 0.53 | M-v | 0 | MPC | 16408 | (29825) |
| (29832) | 14.5 | 0.15 | 20060922 | 299.22609 | 58.82114 | 91.07130 | 5.14529 | 0.1084976 | 2.6142968 | 250 | 10 | 1991–2006 | 0.58 | M-v | 1 | MPC | 16411 | (29832) |
| (29841) | 15.2 | 0.15 | 20060922 | 33.36176 | 37.68810 | 24.22250 | 2.20784 | 0.0671216 | 2.6547336 | 318 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 16413 | (29841) |
| (29856) | 13.2 | 0.15 | 20060922 | 210.95208 | 4.77569 | 213.89421 | 6.72389 | 0.0829210 | 2.7476449 | 415 | 9 | 1983–2006 | 0.55 | M-v | 0 | MPC | 16418 | (29856) |
| (29872) | 14.4 | 0.15 | 20060922 | 330.56270 | 117.51488 | 7.01406 | 3.93748 | 0.1473283 | 2.6702965 | 377 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 16423 | (29872) |
| (29874) | 14.5 | 0.15 | 20060922 | 317.18930 | 4.00269 | 158.71410 | 8.04378 | 0.1332285 | 2.5873248 | 292 | 9 | 1992–2006 | 0.60 | M-v | 1 | MPC | 16424 | (29874) |
| (29892) | 13.0 | 0.15 | 20060922 | 106.81731 | 215.21215 | 154.18140 | 9.47941 | 0.0697343 | 2.5657638 | 404 | 10 | 1980–2006 | 0.55 | M-v | 0 | MPC | 16430 | (29892) |
| (29893) | 13.9 | 0.15 | 20060922 | 350.61064 | 21.88384 | 46.53704 | 13.94347 | 0.1624935 | 2.6761600 | 269 | 8 | 1995–2006 | 0.57 | M-v | 0 | MPC | 77318 | (29893) |
| (29899) | 14.2 | 0.15 | 20060922 | 33.40503 | 263.64730 | 136.39904 | 4.77398 | 0.0913123 | 2.7224437 | 342 | 9 | 1994–2006 | 0.57 | M-v | 0 | MPC | 16432 | (29899) |
| (29900) | 13.8 | 0.15 | 20060922 | 74.35885 | 91.77628 | 207.81556 | 10.57086 | 0.0941838 | 2.9931215 | 375 | 9 | 1988–2006 | 0.60 | M-v | 0 | MPC | 16432 | (29900) |
| (29907) | 14.2 | 0.15 | 20060922 | 259.00472 | 183.83922 | 43.67583 | 13.58087 | 0.1024458 | 2.5461086 | 383 | 10 | 1953–2006 | 0.54 | M-v | 0 | MPC | 16435 | (29907) |
| (29908) | 12.9 | 0.15 | 20060922 | 246.96121 | 318.59054 | 268.33304 | 13.58519 | 0.0697308 | 2.6321997 | 467 | 9 | 1978–2006 | 0.55 | M-v | 0 | MPC | 16435 | (29908) |
| (29912) | 13.5 | 0.15 | 20060922 | 325.38503 | 319.38904 | 172.05099 | 13.40197 | 0.1141303 | 2.6812849 | 367 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 16436 | (29912) |
| (29920) | 13.5 | 0.15 | 20060922 | 63.55910 | 88.85135 | 216.50044 | 9.63494 | 0.0569871 | 3.0363590 | 357 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 16439 | (29920) |
| (29921) | 13.9 | 0.15 | 20060922 | 308.49365 | 313.15316 | 217.41236 | 14.32205 | 0.0689866 | 2.6264531 | 374 | 9 | 1988–2006 | 0.53 | M-v | 0 | MPC | 16439 | (29921) |
| (29947) | 12.5 | 0.15 | 20060922 | 326.25584 | 30.16147 | 120.69902 | 18.12700 | 0.1299358 | 2.6379365 | 317 | 10 | 1982–2006 | 0.54 | M-v | 0 | MPC | 16448 | (29947) |
| (29960) | 13.8 | 0.15 | 20060922 | 359.99297 | 241.64110 | 139.25246 | 10.77702 | 0.1152329 | 3.0156148 | 267 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 41506 | (29960) |
| (29974) | 13.8 | 0.15 | 20060922 | 331.77913 | 358.35320 | 120.33493 | 10.43906 | 0.0905466 | 2.7552119 | 283 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 16456 | (29974) |
| (29977) | 10.9 | 0.15 | 20060922 | 243.62919 | 154.88860 | 133.93594 | 23.95847 | 0.0879730 | 5.2479048 | 208 | 12 | 1991–2006 | 0.52 | M-v | 0 | MPC | 16457 | (29977) |
| (29985) | 13.4 | 0.15 | 20060922 | 186.09499 | 103.24888 | 116.75839 | 18.15285 | 0.2221848 | 2.5628432 | 309 | 10 | 1988–2006 | 0.53 | M-v | 0 | MPC | 16460 | (29985) |
| (29998) | 15.2 | 0.15 | 20060922 | 324.28074 | 235.93118 | 17.11666 | 2.86388 | 0.1174513 | 2.1391193 | 419 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 57640 | (29998) |
| (30008) | 15.3 | 0.15 | 20060922 | 202.76979 | 58.25426 | 204.33958 | 1.92844 | 0.1859288 | 2.3638583 | 386 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 16467 | (30008) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (30010) | 13.0 | 0.15 | 20060922 | 93.73733 | 278.66830 | 350.45038 | 11.94829 | 0.1901379 | 2.6573330 | 342 | 9 | 1954–2006 | 0.53 | M-v | 0 | MPC | 77318 | (30010) |
| (30013) | 15.5 | 0.15 | 20060922 | 182.90289 | 330.45143 | 310.02732 | 2.87258 | 0.2108900 | 2.3717305 | 231 | 7 | 1979–2006 | 0.59 | M-v | 0 | MPC | 16470 | (30013) |
| (30016) | 13.4 | 0.15 | 20060922 | 179.25499 | 213.81713 | 63.02236 | 3.46250 | 0.1533221 | 2.4652911 | 473 | 9 | 1977–2006 | 0.53 | M-v | 0 | MPC | 16471 | (30016) |
| (30022) | 15.7 | 0.15 | 20060922 | 250.23658 | 61.23802 | 149.83871 | 3.02663 | 0.1202867 | 2.3767822 | 188 | 9 | 1982–2006 | 0.62 | M-v | 1 | MPC | 16473 | (30022) |
| (30023) | 15.8 | 0.15 | 20060922 | 248.09890 | 50.95186 | 163.60654 | 2.93805 | 0.1314234 | 2.4058878 | 214 | 9 | 1992–2006 | 0.57 | M-v | 1 | MPC | 16473 | (30023) |
| (30027) | 15.9 | 0.15 | 20060922 | 150.61131 | 95.90545 | 136.68097 | 1.96810 | 0.1309703 | 2.5754017 | 122 | 7 | 1996–2006 | 0.49 | M-v | 0 | MPC | 16475 | (30027) |
| (30028) | 14.8 | 0.15 | 20060922 | 151.78769 | 156.90587 | 133.86865 | 2.07723 | 0.1744403 | 2.4162166 | 402 | 9 | 1990–2006 | 0.55 | M-v | 0 | MPC | 16475 | (30028) |
| (30041) | 15.1 | 0.15 | 20060922 | 100.82600 | 102.63798 | 176.00494 | 13.61120 | 0.1086501 | 2.6043943 | 96 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 16479 | (30041) |
| (30046) | 15.1 | 0.15 | 20060922 | 208.92017 | 102.85832 | 179.45954 | 0.47421 | 0.1948267 | 2.3630109 | 293 | 9 | 1971–2006 | 0.56 | M-v | 0 | MPC | 16481 | (30046) |
| (30049) | 14.7 | 0.15 | 20060922 | 239.29656 | 204.23221 | 347.37675 | 4.93811 | 0.1746790 | 2.4650963 | 263 | 9 | 1990–2006 | 0.57 | M-v | 1 | MPC | 38167 | (30049) |
| (30064) | 15.4 | 0.15 | 20060922 | 171.39196 | 19.74697 | 196.68138 | 4.75855 | 0.1382606 | 2.6051106 | 124 | 8 | 1990–2006 | 0.60 | M-v | 0 | MPC | 77318 | (30064) |
| (30082) | 14.6 | 0.15 | 20060922 | 234.81184 | 188.51555 | 82.12352 | 7.65293 | 0.1613437 | 2.2954339 | 256 | 9 | 1991–2006 | 0.50 | M-v | 0 | MPC | 16493 | (30082) |
| (30088) | 14.8 | 0.15 | 20060922 | 138.24203 | 178.80758 | 126.07258 | 3.58740 | 0.1720712 | 2.4562023 | 320 | 9 | 1996–2006 | 0.58 | M-v | 0 | MPC | 16494 | (30088) |
| (30092) | 14.9 | 0.15 | 20060922 | 222.18706 | 151.60223 | 96.10133 | 3.56749 | 0.1345328 | 2.3926418 | 287 | 10 | 1990–2006 | 0.55 | M-v | 0 | MPC | 41506 | (30092) |
| (30098) | 14.5 | 0.15 | 20060922 | 234.31399 | 167.91775 | 82.25548 | 3.09491 | 0.1829689 | 2.3794577 | 342 | 9 | 1978–2006 | 0.53 | M-v | 0 | MPC | 16498 | (30098) |
| (30100) | 13.7 | 0.15 | 20060922 | 142.08946 | 179.75337 | 117.10109 | 16.42080 | 0.1822403 | 2.5292753 | 227 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 41506 | (30100) |
| (30103) | 16.2 | 0.15 | 20060922 | 231.59160 | 7.00320 | 233.43109 | 2.15317 | 0.1274364 | 2.3696416 | 191 | 9 | 1994–2006 | 0.54 | M-v | 1 | MPC | 16500 | (30103) |
| (30106) | 13.4 | 0.15 | 20060922 | 110.91322 | 228.41126 | 71.29272 | 9.80567 | 0.1794319 | 2.5572979 | 281 | 10 | 1976–2006 | 0.52 | M-v | 0 | MPC | 16501 | (30106) |
| (30112) | 13.6 | 0.15 | 20060922 | 166.19672 | 305.33068 | 30.15774 | 7.66133 | 0.1479736 | 2.3140447 | 386 | 10 | 1980–2006 | 0.58 | M-v | 0 | MPC | 16503 | (30112) |
| (30115) | 13.9 | 0.15 | 20060922 | 178.33251 | 259.46802 | 49.81191 | 12.92148 | 0.2113125 | 2.3429184 | 335 | 9 | 1976–2006 | 0.56 | M-v | 0 | MPC | 16504 | (30115) |
| (30116) | 13.5 | 0.15 | 20060922 | 222.59587 | 150.37786 | 115.56379 | 12.47872 | 0.1271126 | 2.3549387 | 377 | 9 | 1986–2006 | 0.50 | M-v | 0 | MPC | 16504 | (30116) |
| (30136) | 15.0 | 0.15 | 20060922 | 91.39345 | 203.37974 | 101.05828 | 5.58976 | 0.1811404 | 2.6371916 | 131 | 9 | 1996–2006 | 0.60 | M-v | 1 | MPC | 16511 | (30136) |
| (30142) | 15.6 | 0.15 | 20060922 | 199.23573 | 275.29748 | 25.43541 | 6.83956 | 0.1829265 | 2.3554074 | 175 | 7 | 1990–2006 | 0.54 | M-v | 0 | MPC | 16513 | (30142) |
| (30166) | 14.5 | 0.15 | 20060922 | 155.91336 | 314.64017 | 11.49452 | 6.66387 | 0.1043477 | 2.3949045 | 439 | 9 | 1996–2006 | 0.56 | M-v | 0 | MPC | 16522 | (30166) |
| (30170) | 14.9 | 0.15 | 20060922 | 13.97275 | 293.26058 | 93.25628 | 2.53387 | 0.0695879 | 2.6118182 | 214 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 38167 | (30170) |
| (30186) | 14.2 | 0.15 | 20060922 | 160.00804 | 232.30111 | 18.05223 | 8.75109 | 0.1906497 | 2.6301766 | 372 | 9 | 1993–2006 | 0.57 | M-v | 0 | MPC | 16529 | (30186) |
| (30189) | 13.5 | 0.15 | 20060922 | 131.30883 | 93.04913 | 219.87839 | 10.84419 | 0.1792997 | 2.5750630 | 526 | 10 | 1983–2006 | 0.54 | M-v | 0 | MPC | 16530 | (30189) |
| (30200) | 14.8 | 0.15 | 20060922 | 271.38136 | 75.97993 | 135.92890 | 3.01997 | 0.1628810 | 2.3660418 | 245 | 9 | 1994–2006 | 0.51 | M-v | 1 | MPC | 16534 | (30200) |
| (30202) | 14.4 | 0.15 | 20060922 | 119.63434 | 177.87914 | 104.44537 | 3.24004 | 0.0698272 | 2.6187430 | 356 | 10 | 1976–2006 | 0.53 | M-v | 0 | MPC | 16535 | (30202) |
| (30203) | 15.2 | 0.15 | 20060922 | 266.80791 | 221.42909 | 335.28852 | 1.80687 | 0.1192365 | 2.4144851 | 244 | 10 | 1992–2006 | 0.51 | M-v | 0 | MPC | 16535 | (30203) |
| (30206) | 14.4 | 0.15 | 20060922 | 87.50444 | 109.63323 | 167.05185 | 5.80032 | 0.0728130 | 2.7582381 | 192 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 16536 | (30206) |
| (30212) | 13.4 | 0.15 | 20060922 | 94.93920 | 239.54029 | 74.62609 | 11.61678 | 0.1747496 | 2.6872377 | 302 | 8 | 1997–2006 | 0.57 | M-v | 0 | MPC | 77318 | (30212) |
| (30217) | 14.1 | 0.15 | 20060922 | 47.04964 | 234.40922 | 201.20028 | 12.05418 | 0.0278093 | 2.4176668 | 394 | 9 | 1996–2006 | 0.51 | M-v | 0 | MPC | 16540 | (30217) |
| (30223) | 13.3 | 0.15 | 20060922 | 106.29395 | 103.70282 | 169.75366 | 7.55486 | 0.1950766 | 2.8047604 | 388 | 9 | 1995–2006 | 0.62 | M-v | 0 | MPC | 16542 | (30223) |
| (30248) | 14.1 | 0.15 | 20060922 | 93.25825 | 51.06215 | 232.52775 | 5.27691 | 0.1960606 | 2.7992937 | 327 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 16550 | (30248) |
| (30258) | 14.0 | 0.15 | 20060922 | 187.41936 | 95.43584 | 130.62124 | 14.56723 | 0.1026399 | 2.6046069 | 223 | 10 | 1979–2006 | 0.50 | M-v | 0 | MPC | 16553 | (30258) |
| (30266) | 14.4 | 0.15 | 20060922 | 72.76101 | 312.03313 | 48.77403 | 14.20184 | 0.1799106 | 2.5841166 | 247 | 9 | 1976–2006 | 0.61 | M-v | 0 | MPC | 16556 | (30266) |
| (30267) | 14.8 | 0.15 | 20060922 | 59.65079 | 125.12883 | 228.68229 | 0.42766 | 0.0497401 | 2.6179644 | 374 | 8 | 1997–2006 | 0.54 | M-v | 0 | MPC | 77318 | (30267) |
| (30275) | 14.3 | 0.15 | 20060922 | 67.00084 | 265.13786 | 104.94070 | 2.18924 | 0.1766009 | 2.5933198 | 304 | 9 | 1991–2006 | 0.56 | M-v | 1 | MPC | 41507 | (30275) |
| (30293) | 14.3 | 0.15 | 20060922 | 46.81279 | 26.15232 | 294.95992 | 4.79293 | 0.0568310 | 2.7235953 | 272 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 38167 | (30293) |
| (30304) | 14.5 | 0.15 | 20060922 | 290.65359 | 349.61774 | 146.81887 | 14.39576 | 0.1005352 | 2.5273986 | 184 | 10 | 1980–2006 | 0.56 | M-v | 0 | MPC | 16568 | (30304) |
| (30306) | 14.4 | 0.15 | 20060922 | 120.38928 | 253.83866 | 77.22844 | 2.01541 | 0.0301848 | 2.5286541 | 382 | 10 | 1973–2006 | 0.55 | M-v | 0 | MPC | 16569 | (30306) |
| (30327) | 14.1 | 0.15 | 20060922 | 62.45143 | 148.65265 | 182.41838 | 5.09406 | 0.1211714 | 2.7421607 | 344 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 77318 | (30327) |
| (30341) | 14.8 | 0.15 | 20060922 | 82.70408 | 99.17596 | 304.63802 | 5.37960 | 0.1042281 | 2.3885573 | 301 | 7 | 1992–2006 | 0.53 | M-v | 1 | MPC | 16580 | (30341) |
| (30343) | 14.7 | 0.15 | 20060922 | 294.42997 | 202.97238 | 359.43147 | 2.29205 | 0.1568926 | 2.3636726 | 327 | 9 | 1994–2006 | 0.52 | M-v | 0 | MPC | 16581 | (30343) |
| (30345) | 13.1 | 0.15 | 20060922 | 76.04712 | 306.20249 | 48.78827 | 14.35427 | 0.1609336 | 2.6339853 | 348 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 41507 | (30345) |
| (30363) | 14.5 | 0.15 | 20060922 | 247.92112 | 112.08642 | 109.03546 | 3.28962 | 0.1558813 | 2.4432437 | 249 | 10 | 1990–2006 | 0.59 | M-v | 1 | MPC | 41507 | (30363) |
| (30375) | 15.0 | 0.15 | 20060922 | 135.65589 | 351.24732 | 331.11027 | 3.32065 | 0.1628940 | 2.5186895 | 256 | 9 | 1993–2006 | 0.49 | M-v | 0 | MPC | 16591 | (30375) |
| (30385) | 13.4 | 0.15 | 20060922 | 77.79322 | 191.26941 | 141.67413 | 7.89921 | 0.0888572 | 2.7152534 | 468 | 10 | 1990–2006 | 0.58 | M-v | 0 | MPC | 16594 | (30385) |
| (30392) | 13.7 | 0.15 | 20060922 | 143.05941 | 14.08338 | 249.03100 | 12.74014 | 0.2240671 | 2.7038679 | 277 | 9 | 1987–2006 | 0.58 | M-v | 0 | MPC | 16596 | (30392) |
| (30397) | 13.9 | 0.15 | 20060922 | 68.90712 | 280.62794 | 100.97403 | 6.91212 | 0.3362361 | 2.6053347 | 315 | 9 | 1980–2006 | 0.57 | M-v | 1 | MPC | 16598 | (30397) |
| (30404) | 16.2 | 0.15 | 20060922 | 64.82802 | 124.00894 | 213.71798 | 1.17051 | 0.0995060 | 2.6781114 | 135 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 16600 | (30404) |
| (30418) | 14.3 | 0.15 | 20060922 | 81.50672 | 267.53225 | 77.37249 | 12.17219 | 0.2142096 | 2.6848980 | 174 | 10 | 1953–2006 | 0.53 | M-v | 0 | MPC | 16604 | (30418) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (30432) | 12.6 | 0.15 | 20060922 | 270.76637 | 290.88385 | 247.25387 | 11.44447 | 0.1285245 | 2.6321497 | 343 | 9 | 1991–2006 | 0.52 | M-v | 0 | MPC | 16608 | (30432) |
| (30447) | 13.9 | 0.15 | 20060922 | 146.73833 | 61.28621 | 154.63381 | 3.57999 | 0.1147197 | 2.9453750 | 396 | 9 | 1979–2006 | 0.59 | M-v | 0 | MPC | 16612 | (30447) |
| (30450) | 14.4 | 0.15 | 20060922 | 201.91309 | 246.59003 | 284.90406 | 8.82801 | 0.0451094 | 2.9648236 | 256 | 9 | 1992–2006 | 0.49 | M-v | 0 | MPC | 16613 | (30450) |
| (30453) | 12.5 | 0.15 | 20060922 | 140.11176 | 299.92553 | 308.83521 | 12.77841 | 0.1308442 | 2.8686344 | 427 | 9 | 1986–2006 | 0.52 | M-v | 0 | MPC | 16614 | (30453) |
| (30464) | 14.0 | 0.15 | 20060922 | 156.07022 | 40.04773 | 268.42109 | 2.02314 | 0.0860086 | 2.6167032 | 399 | 10 | 1989–2006 | 0.51 | M-v | 0 | MPC | 16617 | (30464) |
| (30489) | 13.1 | 0.15 | 20060922 | 306.15726 | 3.31902 | 67.20245 | 9.20169 | 0.0385984 | 3.0966695 | 457 | 9 | 1979–2006 | 0.53 | M-v | 0 | MPC | 16625 | (30489) |
| (30522) | 13.2 | 0.15 | 20060922 | 354.54670 | 266.25865 | 146.54190 | 14.08151 | 0.3433699 | 2.7791980 | 336 | 9 | 1987–2006 | 0.58 | M-v | 0 | MPC | 16635 | (30522) |
| (30547) | 14.6 | 0.15 | 20060922 | 31.36056 | 241.67573 | 112.33254 | 15.11501 | 0.0678782 | 2.6747108 | 137 | 7 | 1996–2006 | 0.49 | M-v | 0 | MPC | 16642 | (30547) |
| (30549) | 14.9 | 0.15 | 20060922 | 37.46006 | 242.34242 | 149.51928 | 4.66828 | 0.2398762 | 2.5671647 | 189 | 9 | 1993–2006 | 0.57 | M-v | 1 | MPC | 16642 | (30549) |
| (30554) | 14.8 | 0.15 | 20060922 | 123.93634 | 215.06376 | 152.06204 | 6.81965 | 0.1507767 | 2.3937571 | 253 | 9 | 1986–2006 | 0.55 | M-v | 1 | MPC | 16644 | (30554) |
| (30569) | 14.4 | 0.15 | 20060922 | 69.17897 | 23.73522 | 284.15524 | 2.79756 | 0.1975463 | 2.6608296 | 190 | 9 | 1979–2006 | 0.57 | M-v | 0 | MPC | 16648 | (30569) |
| (30574) | 16.2 | 0.15 | 20060922 | 185.10912 | 203.83858 | 53.23070 | 3.32462 | 0.1629922 | 2.3885181 | 138 | 9 | 1993–2006 | 0.57 | M-v | 0 | MPC | 16650 | (30574) |
| (30581) | 13.1 | 0.15 | 20060922 | 28.85341 | 88.27653 | 286.01357 | 9.95566 | 0.1057150 | 2.6463341 | 335 | 9 | 1976–2006 | 0.57 | M-v | 0 | MPC | 16652 | (30581) |
| (30582) | 15.2 | 0.15 | 20060922 | 81.79563 | 200.68119 | 116.70760 | 3.04232 | 0.1139061 | 2.5439583 | 180 | 9 | 1973–2006 | 0.56 | M-v | 0 | MPC | 16652 | (30582) |
| (30587) | 13.6 | 0.15 | 20060922 | 49.06725 | 18.35297 | 357.79304 | 14.02132 | 0.1919812 | 2.5778282 | 322 | 9 | 1993–2006 | 0.52 | M-v | 0 | MPC | 16654 | (30587) |
| (30593) | 14.2 | 0.15 | 20060922 | 0.67048 | 265.68819 | 112.16920 | 6.20989 | 0.0771130 | 2.7716443 | 228 | 9 | 1994–2006 | 0.58 | M-v | 0 | MPC | 16655 | (30593) |
| (30606) | 13.0 | 0.15 | 20060922 | 55.24307 | 58.72545 | 7.64584 | 14.97303 | 0.1094072 | 2.5504430 | 359 | 9 | 1960–2006 | 0.49 | M-v | 1 | MPC | 16659 | (30606) |
| (30624) | 15.8 | 0.15 | 20060922 | 150.77085 | 334.80130 | 308.11003 | 1.44260 | 0.1882174 | 2.4159772 | 154 | 7 | 1960–2006 | 0.57 | M-v | 1 | MPC | 16664 | (30624) |
| (30631) | 15.2 | 0.15 | 20060922 | 92.19985 | 95.98615 | 195.38053 | 9.00054 | 0.1245309 | 2.7487765 | 105 | 7 | 1960–2006 | 0.59 | M-v | 0 | MPC | 16666 | (30631) |
| (30634) | 15.9 | 0.15 | 20060922 | 105.08354 | 112.13675 | 224.17704 | 0.84869 | 0.1626094 | 2.5573169 | 209 | 10 | 1960–2006 | 0.46 | M-v | 0 | MPC | 16667 | (30634) |
| (30638) | 14.9 | 0.15 | 20060922 | 252.45806 | 272.63356 | 212.61450 | 4.97593 | 0.0261020 | 2.7581821 | 173 | 7 | 1960–2006 | 0.56 | M-v | 0 | MPC | 16668 | (30638) |
| (30641) | 15.7 | 0.15 | 20060922 | 319.95017 | 181.27077 | 238.10764 | 2.91109 | 0.0764112 | 2.7605674 | 105 | 7 | 1960–2006 | 0.54 | M-v | 0 | MPC | 16669 | (30641) |
| (30642) | 15.7 | 0.15 | 20060922 | 73.72222 | 339.52839 | 12.74475 | 6.10375 | 0.2590454 | 2.5638294 | 108 | 6 | 1960–2005 | 0.52 | M-v | 1 | MPC | 41508 | (30642) |
| (30649) | 15.8 | 0.15 | 20060922 | 252.15064 | 114.43641 | 126.31678 | 2.01375 | 0.0969776 | 2.2752176 | 129 | 9 | 1960–2006 | 0.64 | M-v | 1 | MPC | 16671 | (30649) |
| (30667) | 13.9 | 0.15 | 20060922 | 26.63919 | 234.42843 | 193.87058 | 10.64584 | 0.2774551 | 2.5344220 | 193 | 10 | 1969–2006 | 0.55 | M-v | 1 | MPC | 16677 | (30667) |
| (30675) | 14.5 | 0.15 | 20060922 | 50.32293 | 200.40299 | 175.75534 | 2.92563 | 0.1598887 | 2.7671102 | 375 | 9 | 1973–2006 | 0.60 | M-v | 0 | MPC | 16680 | (30675) |
| (30693) | 13.9 | 0.15 | 20060922 | 20.26282 | 163.78327 | 238.54777 | 7.26753 | 0.2209811 | 2.7774713 | 330 | 10 | 1973–2006 | 0.56 | M-v | 0 | MPC | 16686 | (30693) |
| (30712) | 14.1 | 0.15 | 20060922 | 275.75974 | 356.64574 | 135.30475 | 4.80605 | 0.1807431 | 2.8489815 | 328 | 10 | 1977–2006 | 0.60 | M-v | 0 | MPC | 16692 | (30712) |
| (30737) | 14.6 | 0.15 | 20060922 | 165.69677 | 239.21974 | 299.91221 | 4.94963 | 0.0786943 | 3.1998701 | 103 | 7 | 1981–2006 | 0.63 | M-v | 1 | MPC | 18523 | (30737) |
| (30746) | 14.9 | 0.15 | 20060922 | 141.47615 | 302.01868 | 312.56717 | 1.76122 | 0.1451013 | 2.7618439 | 183 | 9 | 1978–2006 | 0.57 | M-v | 0 | MPC | 18526 | (30746) |
| (30753) | 15.0 | 0.15 | 20060922 | 318.63105 | 279.38891 | 191.33566 | 12.14613 | 0.1495137 | 2.7046757 | 148 | 8 | 1981–2006 | 0.74 | M-v | 0 | MPC | 41508 | (30753) |
| (30761) | 15.3 | 0.15 | 20060922 | 148.32013 | 211.24228 | 41.57026 | 1.67947 | 0.1466565 | 2.7589923 | 188 | 9 | 1977–2006 | 0.61 | M-v | 0 | MPC | 18530 | (30761) |
| (30762) | 14.9 | 0.15 | 20060922 | 21.47128 | 78.99948 | 16.74053 | 1.93230 | 0.1693949 | 2.6605885 | 258 | 12 | 1977–2006 | 0.57 | M-v | 0 | MPC | 18531 | (30762) |
| (30782) | 13.8 | 0.15 | 20060922 | 181.93976 | 302.57110 | 244.41774 | 7.73197 | 0.0473363 | 2.9921966 | 217 | 9 | 1988–2006 | 0.61 | M-v | 0 | MPC | 18537 | (30782) |
| (30794) | 14.1 | 0.15 | 20060922 | 84.71776 | 180.98435 | 194.95645 | 13.24625 | 0.1743148 | 2.6205839 | 321 | 9 | 1971–2006 | 0.56 | M-v | 1 | MPC | 18540 | (30794) |
| (30799) | 14.3 | 0.15 | 20060922 | 248.43660 | 13.10766 | 225.36922 | 10.03487 | 0.2175079 | 2.3979209 | 409 | 9 | 1989–2006 | 0.55 | M-v | 1 | MPC | 18542 | (30799) |
| (30801) | 14.9 | 0.15 | 20060922 | 95.20113 | 257.82196 | 61.34405 | 3.72069 | 0.2667685 | 2.5481133 | 256 | 10 | 1981–2006 | 0.61 | M-v | 1 | MPC | 18543 | (30801) |
| (30837) | 13.6 | 0.15 | 20060922 | 321.28162 | 331.07672 | 130.24933 | 15.37112 | 0.1519403 | 3.1277699 | 307 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 18555 | (30837) |
| (30843) | 14.0 | 0.15 | 20060922 | 131.51722 | 200.58342 | 89.37120 | 16.84178 | 0.3249595 | 2.7102773 | 234 | 9 | 1991–2006 | 0.63 | M-v | 0 | MPC | 18557 | (30843) |
| (30849) | 13.2 | 0.15 | 20060922 | 9.73831 | 105.48312 | 344.15558 | 11.27988 | 0.0771590 | 2.7669156 | 368 | 7 | 1991–2006 | 0.50 | M-v | 0 | MPC | 18559 | (30849) |
| (30853) | 13.7 | 0.15 | 20060922 | 4.56113 | 65.06497 | 23.32684 | 8.60852 | 0.2883960 | 2.8542486 | 263 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 18561 | (30853) |
| (30860) | 15.6 | 0.15 | 20060922 | 323.23641 | 182.56334 | 339.58903 | 2.18040 | 0.1462840 | 2.4049700 | 184 | 9 | 1992–2006 | 0.57 | M-v | 1 | MPC | 18563 | (30860) |
| (30861) | 14.4 | 0.15 | 20060922 | 212.60578 | 79.19063 | 96.26535 | 2.01763 | 0.1216737 | 3.1427606 | 221 | 12 | 1990–2006 | 0.61 | M-v | 0 | MPC | 18563 | (30861) |
| (30881) | 15.4 | 0.15 | 20060922 | 182.82830 | 317.51196 | 326.40301 | 1.63579 | 0.1808191 | 2.5811223 | 213 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 18569 | (30881) |
| (30883) | 14.9 | 0.15 | 20060922 | 180.89885 | 53.20172 | 225.14463 | 1.14961 | 0.1692704 | 2.6074645 | 286 | 10 | 1991–2006 | 0.55 | M-v | 0 | MPC | 18570 | (30883) |
| (30886) | 13.2 | 0.15 | 20060922 | 86.31734 | 293.94880 | 71.84820 | 13.99877 | 0.2097463 | 2.6865950 | 336 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 18571 | (30886) |
| (30896) | 14.2 | 0.15 | 20060922 | 231.78815 | 238.42588 | 296.76220 | 2.79413 | 0.0680650 | 2.9951840 | 207 | 9 | 1993–2006 | 0.62 | M-v | 0 | MPC | 18575 | (30896) |
| (30897) | 13.9 | 0.15 | 20060922 | 339.56715 | 82.14728 | 331.88926 | 8.80746 | 0.1228795 | 2.9928393 | 207 | 9 | 1993–2006 | 0.53 | M-v | 0 | MPC | 18575 | (30897) |
| (30907) | 14.8 | 0.15 | 20060922 | 148.58915 | 53.92796 | 156.50409 | 1.41049 | 0.1053363 | 3.1042567 | 146 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 18578 | (30907) |
| (30921) | 15.3 | 0.15 | 20060922 | 126.65949 | 57.00416 | 290.86100 | 1.50833 | 0.2085343 | 2.4452868 | 322 | 10 | 1993–2006 | 0.54 | M-v | 0 | MPC | 18583 | (30921) |
| (30925) | 12.8 | 0.15 | 20060922 | 58.62172 | 153.81166 | 174.74883 | 15.34214 | 0.1227658 | 2.6058717 | 387 | 8 | 1993–2006 | 0.55 | M-v | 0 | MPC | 38168 | (30925) |
| (30931) | 14.7 | 0.15 | 20060922 | 335.78396 | 14.43146 | 107.07594 | 4.51508 | 0.1328642 | 2.5675994 | 181 | 7 | 1993–2006 | 0.62 | M-v | 1 | MPC | 18586 | (30931) |
| (30935) | 14.7 | 0.15 | 20060922 | 252.70175 | 230.66388 | 294.20850 | 27.81102 | 0.1174023 | 1.9036368 | 206 | 6 | 1994–2005 | 0.58 | M-v | 1 | MPC | 77319 | (30935) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (30944) | 13.5 | 0.15 | 20060922 | 174.38325 | 139.18542 | 68.00027 | 10.86201 | 0.2291807 | 2.9326429 | 312 | 9 | 1979–2006 | 0.60 | M-v | 1 | MPC | 18590 | (30944) |
| (30947) | 13.2 | 0.15 | 20060922 | 33.00008 | 29.35521 | 65.67188 | 13.62522 | 0.1397910 | 2.6860774 | 393 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 18592 | (30947) |
| (30974) | 14.0 | 0.15 | 20060922 | 109.14235 | 208.97792 | 52.24665 | 8.81963 | 0.1767467 | 2.7892894 | 301 | 9 | 1995–2006 | 0.55 | M-v | 0 | MPC | 18600 | (30974) |
| (30978) | 14.1 | 0.15 | 20060922 | 30.93682 | 209.99238 | 161.23319 | 8.15935 | 0.1298946 | 2.7989202 | 303 | 9 | 1995–2006 | 0.55 | M-v | 0 | MPC | 18602 | (30978) |
| (30984) | 14.1 | 0.15 | 20060922 | 210.65410 | 108.66954 | 42.13328 | 1.04428 | 0.1483572 | 3.2029155 | 275 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 18604 | (30984) |
| (30985) | 14.6 | 0.15 | 20060922 | 149.70866 | 163.50045 | 54.09367 | 2.77774 | 0.0953010 | 3.0971666 | 286 | 9 | 1993–2006 | 0.52 | M-v | 0 | MPC | 18604 | (30985) |
| (30990) | 14.7 | 0.15 | 20060922 | 197.87807 | 115.56835 | 98.04234 | 2.44659 | 0.1536218 | 2.9812520 | 244 | 7 | 1995–2006 | 0.61 | M-v | 1 | MPC | 18606 | (30990) |
| (30999) | 13.9 | 0.15 | 20060922 | 20.56822 | 38.95236 | 12.41805 | 1.62784 | 0.1264819 | 2.9859405 | 359 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 18609 | (30999) |
| (31000) | 13.0 | 0.15 | 20060922 | 76.72205 | 323.34766 | 38.80561 | 11.27833 | 0.0531416 | 3.0043876 | 401 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 18609 | (31000) |
| (31002) | 13.0 | 0.15 | 20060922 | 261.30616 | 101.80143 | 56.74653 | 14.10742 | 0.0476289 | 3.0962717 | 368 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 18610 | (31002) |
| (31009) | 13.2 | 0.15 | 20060922 | 0.21375 | 352.79855 | 60.82042 | 12.98632 | 0.1072004 | 3.1063286 | 328 | 7 | 1996–2006 | 0.59 | M-v | 0 | MPC | 18613 | (31009) |
| (31021) | 14.9 | 0.15 | 20060922 | 288.23434 | 95.01387 | 133.24764 | 1.48341 | 0.1704263 | 2.3572032 | 363 | 9 | 1990–2006 | 0.53 | M-v | 0 | MPC | 41508 | (31021) |
| (31043) | 15.9 | 0.15 | 20060922 | 148.92634 | 146.05641 | 105.76655 | 8.89618 | 0.1708327 | 2.6170218 | 100 | 7 | 1994–2006 | 0.59 | M-v | 1 | MPC | 18624 | (31043) |
| (31046) | 13.8 | 0.15 | 20060922 | 144.82134 | 31.84353 | 311.06233 | 7.94545 | 0.0780003 | 2.5717772 | 369 | 10 | 1988–2006 | 0.57 | M-v | 0 | MPC | 18625 | (31046) |
| (31047) | 13.8 | 0.15 | 20060922 | 206.59179 | 327.33983 | 316.05163 | 12.91578 | 0.1481923 | 2.5437222 | 285 | 9 | 1995–2006 | 0.56 | M-v | 1 | MPC | 18626 | (31047) |
| (31053) | 14.9 | 0.15 | 20060922 | 28.73977 | 293.50048 | 159.90309 | 4.01513 | 0.0487857 | 2.6352477 | 297 | 10 | 1994–2006 | 0.61 | M-v | 0 | MPC | 18628 | (31053) |
| (31063) | 15.0 | 0.15 | 20060922 | 20.88725 | 341.67363 | 30.92593 | 3.16100 | 0.1946046 | 2.8789159 | 226 | 9 | 1991–2006 | 0.58 | M-v | 1 | MPC | 18631 | (31063) |
| (31067) | 14.6 | 0.15 | 20060922 | 246.07167 | 242.77514 | 275.84546 | 3.10455 | 0.0300187 | 2.8162068 | 341 | 9 | 1996–2006 | 0.54 | M-v | 0 | MPC | 18633 | (31067) |
| (31078) | 13.1 | 0.15 | 20060922 | 204.85928 | 330.97595 | 277.09662 | 12.45476 | 0.1751844 | 2.8536216 | 298 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 18636 | (31078) |
| (31082) | 13.7 | 0.15 | 20060922 | 24.06733 | 111.69158 | 283.70736 | 8.44470 | 0.1020086 | 2.9588149 | 202 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 18637 | (31082) |
| (31086) | 15.1 | 0.15 | 20060922 | 281.90087 | 71.68237 | 55.98345 | 1.95457 | 0.2268094 | 3.0782725 | 205 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 18639 | (31086) |
| (31087) | 13.7 | 0.15 | 20060922 | 356.65951 | 70.45819 | 340.06967 | 10.10027 | 0.1115243 | 3.0068916 | 255 | 7 | 1997–2006 | 0.61 | M-v | 0 | MPC | 18639 | (31087) |
| (31095) | 13.5 | 0.15 | 20060922 | 341.00295 | 124.38864 | 313.43196 | 9.76100 | 0.0864847 | 3.0192253 | 220 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 18642 | (31095) |
| (31162) | 14.7 | 0.15 | 20060922 | 265.38119 | 147.32193 | 39.37628 | 1.85923 | 0.1356418 | 2.6073782 | 251 | 7 | 1995–2005 | 0.61 | M-v | 1 | MPC | 18665 | (31162) |
| (31168) | 14.2 | 0.15 | 20060922 | 94.38295 | 186.59056 | 173.10576 | 4.25184 | 0.0985580 | 2.5978473 | 448 | 9 | 1979–2006 | 0.53 | M-v | 0 | MPC | 18667 | (31168) |
| (31187) | 13.9 | 0.15 | 20060922 | 29.51884 | 355.37157 | 84.34956 | 13.09865 | 0.1561994 | 2.6419945 | 236 | 7 | 1984–2006 | 0.56 | M-v | 1 | MPC | 18674 | (31187) |
| (31195) | 13.7 | 0.15 | 20060922 | 213.44848 | 273.78863 | 236.50736 | 8.09145 | 0.0516010 | 2.9799479 | 229 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 18676 | (31195) |
| (31196) | 14.7 | 0.15 | 20060922 | 353.54758 | 303.61791 | 184.27343 | 1.12101 | 0.1484500 | 2.6249129 | 344 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 18676 | (31196) |
| (31202) | 13.3 | 0.15 | 20060922 | 21.56234 | 8.98857 | 102.43584 | 14.09152 | 0.1257787 | 2.5951610 | 338 | 13 | 1955–2006 | 0.54 | M-v | 0 | MPC | 18679 | (31202) |
| (31227) | 11.9 | 0.15 | 20060922 | 251.56088 | 342.39822 | 295.89168 | 12.78010 | 0.1470027 | 2.6278585 | 462 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 18688 | (31227) |
| (31228) | 14.7 | 0.15 | 20060922 | 0.69452 | 311.58468 | 126.47241 | 5.77726 | 0.0838998 | 2.7742391 | 217 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 18688 | (31228) |
| (31229) | 14.4 | 0.15 | 20060922 | 38.21739 | 272.05731 | 154.03366 | 11.45478 | 0.1746785 | 2.6768569 | 213 | 9 | 1996–2006 | 0.56 | M-v | 0 | MPC | 18688 | (31229) |
| (31233) | 14.0 | 0.15 | 20060922 | 314.84637 | 11.52051 | 69.56583 | 11.04359 | 0.0675220 | 2.9847301 | 321 | 9 | 1996–2006 | 0.50 | M-v | 0 | MPC | 18689 | (31233) |
| (31240) | 14.2 | 0.15 | 20060922 | 341.24518 | 103.48288 | 3.08177 | 7.32974 | 0.1856657 | 2.7896461 | 286 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 18692 | (31240) |
| (31241) | 14.0 | 0.15 | 20060922 | 334.78518 | 301.82312 | 111.55010 | 13.69820 | 0.0200355 | 3.0441657 | 202 | 10 | 1983–2006 | 0.58 | M-v | 0 | MPC | 18692 | (31241) |
| (31249) | 14.6 | 0.15 | 20060922 | 176.16171 | 87.08667 | 96.94143 | 1.57725 | 0.2688338 | 3.2413655 | 176 | 9 | 1992–2006 | 0.61 | M-v | 0 | MPC | 18695 | (31249) |
| (31262) | 14.1 | 0.15 | 20060922 | 3.33801 | 263.85716 | 192.27540 | 4.62219 | 0.1226644 | 2.7639193 | 296 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 18700 | (31262) |
| (31269) | 13.8 | 0.15 | 20060922 | 15.28607 | 98.60432 | 17.76559 | 8.09885 | 0.1338021 | 2.7228683 | 381 | 9 | 1971–2006 | 0.50 | M-v | 0 | MPC | 18702 | (31269) |
| (31273) | 14.1 | 0.15 | 20060922 | 254.15348 | 318.52121 | 162.12417 | 10.56256 | 0.0898863 | 3.0581353 | 319 | 9 | 1995–2006 | 0.56 | M-v | 0 | MPC | 18704 | (31273) |
| (31276) | 14.3 | 0.15 | 20060922 | 36.86603 | 138.62510 | 274.55461 | 0.96157 | 0.0591602 | 2.8281057 | 273 | 7 | 1977–2006 | 0.56 | M-v | 0 | MPC | 18705 | (31276) |
| (31291) | 14.3 | 0.15 | 20060922 | 187.65560 | 51.70742 | 138.74061 | 2.69181 | 0.1468923 | 3.1509171 | 340 | 10 | 1992–2006 | 0.59 | M-v | 0 | MPC | 18711 | (31291) |
| (31294) | 13.3 | 0.15 | 20060922 | 351.32537 | 56.71090 | 10.21849 | 9.70595 | 0.0734090 | 3.0055017 | 257 | 7 | 1996–2006 | 0.61 | M-v | 0 | MPC | 18712 | (31294) |
| (31299) | 14.1 | 0.15 | 20060922 | 273.35269 | 344.45610 | 130.62208 | 5.74827 | 0.2110538 | 3.0093765 | 209 | 7 | 1993–2006 | 0.61 | M-v | 0 | MPC | 41508 | (31299) |
| (31308) | 13.6 | 0.15 | 20060922 | 244.33667 | 257.10331 | 261.53042 | 6.68506 | 0.1031055 | 3.0470249 | 241 | 9 | 1987–2006 | 0.63 | M-v | 0 | MPC | 18718 | (31308) |
| (31329) | 13.7 | 0.15 | 20060922 | 303.58568 | 53.44097 | 21.23283 | 6.24344 | 0.0693187 | 3.1743331 | 381 | 9 | 1984–2006 | 0.59 | M-v | 0 | MPC | 18725 | (31329) |
| (31332) | 14.0 | 0.15 | 20060922 | 260.19046 | 125.35816 | 32.65479 | 1.67888 | 0.1919007 | 3.0266750 | 292 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 18726 | (31332) |
| (31334) | 13.8 | 0.15 | 20060922 | 229.67317 | 15.90448 | 146.28512 | 1.43516 | 0.1322455 | 3.1768197 | 389 | 10 | 1994–2006 | 0.56 | M-v | 0 | MPC | 18727 | (31334) |
| (31337) | 13.4 | 0.15 | 20060922 | 312.60775 | 278.90589 | 157.65788 | 10.19400 | 0.0848584 | 3.0530024 | 404 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 18728 | (31337) |
| (31365) | 14.0 | 0.15 | 20060922 | 144.31323 | 219.22744 | 69.49064 | 8.04685 | 0.2087895 | 2.4214429 | 247 | 9 | 1993–2006 | 0.55 | M-v | 1 | MPC | 18740 | (31365) |
| (31402) | 12.4 | 0.15 | 20060922 | 196.48378 | 313.47800 | 305.87920 | 16.49226 | 0.1789886 | 2.5349383 | 346 | 9 | 1989–2006 | 0.50 | M-v | 0 | MPC | 18753 | (31402) |
| (31421) | 13.1 | 0.15 | 20060922 | 290.79129 | 84.14993 | 73.19038 | 22.90856 | 0.0403102 | 2.6336099 | 222 | 9 | 1980–2006 | 0.57 | M-v | 1 | MPC | 18760 | (31421) |
| (31442) | 14.4 | 0.15 | 20060922 | 326.31728 | 229.65786 | 304.20881 | 1.83271 | 0.1267933 | 2.4345078 | 383 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 18767 | (31442) |
| (31461) | 14.1 | 0.15 | 20060922 | 253.22986 | 135.90656 | 65.70504 | 6.87411 | 0.1416114 | 2.5617395 | 262 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 18773 | (31461) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (31518) | 13.4 | 0.15 | 20060922 | 158.84082 | 107.20550 | 156.17524 | 13.00110 | 0.1512097 | 2.6459287 | 308 | 10 | 1987–2006 | 0.58 | M-v | 0 | MPC | 18792 | (31518) |
| (31527) | 13.2 | 0.15 | 20060922 | 263.05446 | 101.94602 | 68.05170 | 15.68106 | 0.1994326 | 2.6449538 | 273 | 9 | 1982–2006 | 0.53 | M-v | 0 | MPC | 18795 | (31527) |
| (31553) | 15.7 | 0.15 | 20060922 | 145.53387 | 337.81029 | 336.94607 | 0.48385 | 0.0871628 | 2.6107518 | 208 | 9 | 1979–2006 | 0.54 | M-v | 0 | MPC | 18804 | (31553) |
| (31567) | 14.8 | 0.15 | 20060922 | 311.65052 | 342.07225 | 168.92980 | 4.38110 | 0.1125017 | 2.6023148 | 340 | 7 | 1995–2006 | 0.56 | M-v | 1 | MPC | 18808 | (31567) |
| (31588) | 14.9 | 0.15 | 20060922 | 122.52845 | 169.92394 | 121.53851 | 5.35079 | 0.0344716 | 2.7900344 | 199 | 10 | 1971–2006 | 0.62 | M-v | 0 | MPC | 18815 | (31588) |
| (31601) | 13.0 | 0.15 | 20060922 | 169.98352 | 311.58611 | 358.46562 | 14.72123 | 0.1304569 | 2.5938017 | 263 | 10 | 1988–2006 | 0.64 | M-v | 0 | MPC | 18819 | (31601) |
| (31605) | 13.8 | 0.15 | 20060922 | 124.82464 | 295.78978 | 28.55365 | 7.04927 | 0.1158300 | 2.6870043 | 334 | 10 | 1955–2006 | 0.58 | M-v | 0 | MPC | 18821 | (31605) |
| (31624) | 13.1 | 0.15 | 20060922 | 335.06245 | 100.21559 | 38.96255 | 12.68148 | 0.1265901 | 2.5984265 | 499 | 10 | 1955–2006 | 0.56 | M-v | 0 | MPC | 18828 | (31624) |
| (31676) | 14.4 | 0.15 | 20060922 | 13.33700 | 200.05771 | 225.85284 | 3.26480 | 0.0901148 | 2.7976954 | 256 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 18847 | (31676) |
| (31686) | 14.0 | 0.15 | 20060922 | 285.15272 | 67.48610 | 76.75948 | 3.83792 | 0.1107722 | 2.7559476 | 298 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 18851 | (31686) |
| (31695) | 13.1 | 0.15 | 20060922 | 263.45093 | 127.94033 | 56.78097 | 14.37491 | 0.1473190 | 2.7188252 | 397 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 41509 | (31695) |
| (31696) | 14.2 | 0.15 | 20060922 | 35.53026 | 204.71557 | 209.82692 | 3.05397 | 0.0643053 | 2.7363111 | 383 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 18855 | (31696) |
| (31697) | 14.4 | 0.15 | 20060922 | 151.32204 | 236.06621 | 53.86633 | 4.48189 | 0.0661819 | 2.7908488 | 274 | 10 | 1991–2006 | 0.58 | M-v | 0 | MPC | 18855 | (31697) |
| (31719) | 14.3 | 0.15 | 20060922 | 283.00393 | 353.97330 | 197.44314 | 2.43051 | 0.1429140 | 2.6730574 | 429 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 18863 | (31719) |
| (31727) | 14.8 | 0.15 | 20060922 | 344.58148 | 350.29651 | 154.02399 | 3.84235 | 0.0439083 | 2.5926263 | 247 | 9 | 1994–2006 | 0.58 | M-v | 0 | MPC | 18866 | (31727) |
| (31742) | 13.9 | 0.15 | 20060922 | 252.30358 | 103.00301 | 121.11890 | 14.96518 | 0.1470780 | 2.6447599 | 340 | 9 | 1983–2006 | 0.59 | M-v | 0 | MPC | 18872 | (31742) |
| (31763) | 13.7 | 0.15 | 20060922 | 257.57991 | 329.57046 | 157.06297 | 2.17964 | 0.1034625 | 2.9174166 | 438 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 38168 | (31763) |
| (31772) | 14.4 | 0.15 | 20060922 | 233.15388 | 331.54795 | 225.19025 | 8.68200 | 0.0736570 | 2.8451400 | 224 | 7 | 1994–2006 | 0.59 | M-v | 0 | MPC | 18881 | (31772) |
| (31773) | 13.6 | 0.15 | 20060922 | 354.47344 | 314.37473 | 78.41184 | 9.99170 | 0.1005489 | 3.0567779 | 371 | 9 | 1985–2006 | 0.59 | M-v | 0 | MPC | 18882 | (31773) |
| (31782) | 13.2 | 0.15 | 20060922 | 254.80829 | 58.50348 | 115.44234 | 16.86283 | 0.2761654 | 2.7969445 | 325 | 9 | 1982–2006 | 0.57 | M-v | 0 | MPC | 18885 | (31782) |
| (31794) | 13.6 | 0.15 | 20060922 | 53.27471 | 287.23675 | 124.49886 | 8.97084 | 0.1761314 | 2.7656891 | 414 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 18889 | (31794) |
| (31797) | 13.5 | 0.15 | 20060922 | 213.76362 | 233.94761 | 5.07182 | 9.09767 | 0.1002433 | 2.7640356 | 279 | 9 | 1971–2006 | 0.55 | M-v | 0 | MPC | 18890 | (31797) |
| (31800) | 13.3 | 0.15 | 20060922 | 147.74629 | 311.44887 | 266.68485 | 14.04122 | 0.2080360 | 3.1112292 | 267 | 9 | 1990–2006 | 0.52 | M-v | 0 | MPC | 38168 | (31800) |
| (31802) | 14.3 | 0.15 | 20060922 | 344.36489 | 7.69079 | 94.86396 | 3.67949 | 0.0515194 | 2.7622299 | 305 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 18892 | (31802) |
| (31809) | 12.6 | 0.15 | 20060922 | 331.51164 | 117.24333 | 324.94913 | 15.71688 | 0.1062782 | 3.1659761 | 318 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 18894 | (31809) |
| (31828) | 12.3 | 0.15 | 20060922 | 258.87122 | 106.90191 | 128.79086 | 15.50773 | 0.2373621 | 3.0883252 | 311 | 13 | 1980–2006 | 0.56 | M-v | 0 | MPC | 18901 | (31828) |
| (31834) | 14.0 | 0.15 | 20060922 | 128.00675 | 345.39374 | 265.86992 | 8.69124 | 0.1525589 | 2.5690173 | 259 | 9 | 1976–2006 | 0.55 | M-v | 0 | MPC | 18903 | (31834) |
| (31838) | 14.1 | 0.15 | 20060922 | 150.55693 | 18.48410 | 273.16260 | 5.81103 | 0.1198646 | 2.3970713 | 353 | 9 | 1953–2006 | 0.56 | M-v | 0 | MPC | 18904 | (31838) |
| (31841) | 13.9 | 0.15 | 20060922 | 172.98315 | 8.62122 | 303.64974 | 6.40087 | 0.1383895 | 2.3058090 | 435 | 9 | 1976–2006 | 0.52 | M-v | 0 | MPC | 18905 | (31841) |
| (31845) | 16.1 | 0.15 | 20060922 | 290.76520 | 150.49885 | 148.92820 | 2.72033 | 0.2641353 | 2.1220767 | 174 | 8 | 1979–2006 | 0.59 | M-v | 1 | MPC | 18907 | (31845) |
| (31846) | 16.0 | 0.15 | 20060922 | 169.71695 | 137.28966 | 164.80996 | 3.22292 | 0.1771713 | 2.3432696 | 164 | 10 | 1994–2006 | 0.56 | M-v | 0 | MPC | 18907 | (31846) |
| (31848) | 14.1 | 0.15 | 20060922 | 285.61157 | 157.90057 | 27.06629 | 13.40855 | 0.1685051 | 2.4020292 | 237 | 7 | 1990–2006 | 0.45 | M-v | 1 | MPC | 18908 | (31848) |
| (31871) | 13.6 | 0.15 | 20060922 | 163.45720 | 206.17531 | 52.51287 | 10.45256 | 0.2417189 | 2.5588551 | 286 | 10 | 1992–2006 | 0.57 | M-v | 0 | MPC | 18917 | (31871) |
| (31872) | 15.8 | 0.15 | 20060922 | 266.41785 | 199.29734 | 13.56039 | 3.09515 | 0.1350204 | 2.3351099 | 145 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 18917 | (31872) |
| (31886) | 15.8 | 0.15 | 20060922 | 228.11461 | 127.36881 | 147.63763 | 3.60660 | 0.1486275 | 2.3279811 | 157 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 18922 | (31886) |
| (31887) | 13.0 | 0.15 | 20060922 | 94.00736 | 206.13628 | 68.00684 | 13.09074 | 0.1451856 | 2.6787468 | 338 | 10 | 1984–2006 | 0.57 | M-v | 0 | MPC | 18922 | (31887) |
| (31894) | 14.2 | 0.15 | 20060922 | 233.16564 | 120.12709 | 144.51539 | 5.97990 | 0.2169191 | 2.3555411 | 334 | 9 | 1990–2006 | 0.58 | M-v | 1 | MPC | 18925 | (31894) |
| (31934) | 14.8 | 0.15 | 20060922 | 236.32550 | 171.99268 | 96.14465 | 3.39432 | 0.1914896 | 2.3514568 | 288 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 18942 | (31934) |
| (31936) | 14.9 | 0.15 | 20060922 | 145.99158 | 348.06818 | 283.22339 | 2.51257 | 0.1662694 | 2.6114769 | 273 | 9 | 1995–2006 | 0.56 | M-v | 0 | MPC | 18942 | (31936) |
| (31981) | 14.9 | 0.15 | 20060922 | 211.30013 | 203.69079 | 89.84187 | 3.12985 | 0.2003974 | 2.3863227 | 298 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 41509 | (31981) |
| (31999) | 14.3 | 0.15 | 20060922 | 44.31446 | 167.79260 | 218.53232 | 13.79621 | 0.1640245 | 2.5580567 | 254 | 8 | 1996–2006 | 0.58 | M-v | 1 | MPC | 77320 | (31999) |
| (32009) | 13.8 | 0.15 | 20060922 | 151.81035 | 249.23105 | 65.85193 | 8.20110 | 0.1589381 | 2.5150657 | 531 | 9 | 1981–2006 | 0.55 | M-v | 0 | MPC | 18970 | (32009) |
| (32019) | 15.4 | 0.15 | 20060922 | 174.82305 | 3.10029 | 259.74715 | 2.03754 | 0.0884426 | 2.5559809 | 175 | 8 | 1994–2005 | 0.53 | M-v | 0 | MPC | 18974 | (32019) |
| (32020) | 13.4 | 0.15 | 20060922 | 33.20159 | 319.60520 | 58.64270 | 14.02093 | 0.1785214 | 2.6320255 | 352 | 11 | 1990–2006 | 0.57 | M-v | 0 | MPC | 18974 | (32020) |
| (32048) | 15.0 | 0.15 | 20060922 | 269.66990 | 286.73771 | 301.76467 | 1.49374 | 0.1706162 | 2.3710400 | 307 | 10 | 1993–2006 | 0.54 | M-v | 0 | MPC | 18984 | (32048) |
| (32057) | 15.7 | 0.15 | 20060922 | 150.52763 | 38.43617 | 277.48123 | 1.73075 | 0.1212870 | 2.4668579 | 249 | 9 | 1994–2006 | 0.57 | M-v | 0 | MPC | 18987 | (32057) |
| (32089) | 15.4 | 0.15 | 20060922 | 259.51620 | 70.37936 | 171.66943 | 1.29124 | 0.1473635 | 2.3932932 | 239 | 10 | 1960–2006 | 0.65 | M-v | 0 | MPC | 18999 | (32089) |
| (32102) | 14.7 | 0.15 | 20060922 | 97.66206 | 153.73779 | 152.04887 | 2.76489 | 0.1679349 | 2.6892848 | 299 | 8 | 1995–2006 | 0.55 | M-v | 0 | MPC | 77320 | (32102) |
| (32114) | 13.8 | 0.15 | 20060922 | 345.41447 | 310.07247 | 96.90304 | 13.91535 | 0.1614705 | 2.6963246 | 200 | 9 | 1975–2006 | 0.61 | M-v | 0 | MPC | 19007 | (32114) |
| (32117) | 14.5 | 0.15 | 20060922 | 113.05928 | 103.62647 | 177.89147 | 7.58149 | 0.2002635 | 2.7935562 | 273 | 7 | 1996–2006 | 0.62 | M-v | 0 | MPC | 19008 | (32117) |
| (32139) | 13.8 | 0.15 | 20060922 | 124.85906 | 85.41112 | 249.00501 | 11.67257 | 0.2051928 | 2.6736186 | 315 | 10 | 1952–2006 | 0.47 | M-v | 0 | MPC | 19016 | (32139) |
| (32144) | 13.3 | 0.15 | 20060922 | 58.59332 | 109.58321 | 301.10024 | 6.59329 | 0.2237912 | 2.7624875 | 379 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 19017 | (32144) |
| (32153) | 13.4 | 0.15 | 20060922 | 129.49556 | 146.18492 | 157.60107 | 10.76741 | 0.1969257 | 2.7624770 | 376 | 10 | 1991–2006 | 0.56 | M-v | 0 | MPC | 19020 | (32153) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (32165) | 15.1 | 0.15 | 20060922 | 32.09933 | 274.90134 | 147.27377 | 8.02627 | 0.2144558 | 2.7712600 | 167 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 19024 | (32165) |
| (32187) | 15.1 | 0.15 | 20060922 | 57.45303 | 178.84423 | 230.07722 | 1.01870 | 0.1690113 | 2.6891273 | 263 | 10 | 1992–2006 | 0.55 | M-v | 0 | MPC | 19031 | (32187) |
| (32191) | 14.0 | 0.15 | 20060922 | 192.10442 | 39.03617 | 227.97185 | 0.84790 | 0.0596033 | 2.6581321 | 410 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 19033 | (32191) |
| (32192) | 14.0 | 0.15 | 20060922 | 15.78702 | 314.24721 | 117.74817 | 8.45047 | 0.1474784 | 2.7818494 | 307 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 19033 | (32192) |
| (32199) | 14.2 | 0.15 | 20060922 | 34.55800 | 170.58182 | 246.77967 | 8.64033 | 0.2133612 | 2.7832141 | 223 | 7 | 1982–2006 | 0.58 | M-v | 0 | MPC | 19035 | (32199) |
| (32201) | 14.7 | 0.15 | 20060922 | 46.98744 | 301.09676 | 52.15066 | 2.61180 | 0.0964744 | 2.9206457 | 237 | 9 | 1994–2006 | 0.51 | M-v | 0 | MPC | 19036 | (32201) |
| (32205) | 12.9 | 0.15 | 20060922 | 8.53716 | 80.31012 | 308.75909 | 18.20653 | 0.2451371 | 3.1057762 | 274 | 9 | 1951–2006 | 0.54 | M-v | 0 | MPC | 19037 | (32205) |
| (32207) | 14.4 | 0.15 | 20060922 | 23.16274 | 216.76489 | 210.82672 | 2.10906 | 0.0564427 | 2.6974302 | 334 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 19038 | (32207) |
| (32208) | 14.1 | 0.15 | 20060922 | 62.25138 | 105.02331 | 269.35779 | 4.02239 | 0.0119571 | 2.7335487 | 262 | 10 | 1992–2006 | 0.59 | M-v | 0 | MPC | 19038 | (32208) |
| (32209) | 12.9 | 0.15 | 20060922 | 105.35261 | 75.11843 | 280.56220 | 12.84649 | 0.2733666 | 2.6691851 | 351 | 10 | 1957–2006 | 0.48 | M-v | 0 | MPC | 19039 | (32209) |
| (32214) | 14.4 | 0.15 | 20060922 | 136.82151 | 90.14489 | 239.50350 | 1.85849 | 0.0744740 | 2.6435396 | 304 | 9 | 1983–2006 | 0.54 | M-v | 0 | MPC | 19040 | (32214) |
| (32217) | 14.1 | 0.15 | 20060922 | 156.59252 | 299.55963 | 19.18524 | 1.84532 | 0.1560105 | 2.6289911 | 295 | 9 | 1996–2006 | 0.53 | M-v | 0 | MPC | 19041 | (32217) |
| (32218) | 13.1 | 0.15 | 20060922 | 272.05278 | 256.38832 | 328.90488 | 14.05017 | 0.0431144 | 2.5611613 | 371 | 10 | 1978–2006 | 0.51 | M-v | 0 | MPC | 19042 | (32218) |
| (32235) | 13.8 | 0.15 | 20060922 | 93.11118 | 348.42004 | 255.32748 | 6.62634 | 0.1749701 | 3.1428520 | 237 | 9 | 1997–2006 | 0.56 | M-v | 0 | MPC | 19047 | (32235) |
| (32237) | 14.1 | 0.15 | 20060922 | 335.84224 | 168.19326 | 250.04477 | 8.80141 | 0.0797324 | 2.9958021 | 279 | 10 | 1979–2006 | 0.56 | M-v | 0 | MPC | 19048 | (32237) |
| (32247) | 13.7 | 0.15 | 20060922 | 338.51860 | 228.10257 | 258.10066 | 4.07417 | 0.1098848 | 2.7578165 | 440 | 10 | 1978–2006 | 0.55 | M-v | 0 | MPC | 19051 | (32247) |
| (32249) | 13.0 | 0.15 | 20060922 | 31.61922 | 135.51128 | 236.89396 | 9.84466 | 0.0913539 | 2.9964431 | 408 | 8 | 1998–2006 | 0.58 | M-v | 0 | MPC | 43319 | (32249) |
| (32266) | 13.6 | 0.15 | 20060922 | 287.05120 | 40.42112 | 78.19426 | 11.00990 | 0.0191620 | 2.9929505 | 379 | 9 | 1996–2006 | 0.59 | M-v | 0 | MPC | 19058 | (32266) |
| (32288) | 13.3 | 0.15 | 20060922 | 42.74703 | 105.62076 | 314.60636 | 9.87867 | 0.1777274 | 2.7972476 | 362 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 19065 | (32288) |
| (32291) | 13.9 | 0.15 | 20060922 | 302.11299 | 199.16857 | 335.17614 | 13.00629 | 0.1094875 | 2.6362293 | 296 | 9 | 1977–2006 | 0.55 | M-v | 0 | MPC | 19066 | (32291) |
| (32292) | 14.1 | 0.15 | 20060922 | 47.57249 | 4.49190 | 26.54165 | 1.79809 | 0.1267108 | 2.8544757 | 318 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 19066 | (32292) |
| (32293) | 14.3 | 0.15 | 20060922 | 24.26568 | 189.26803 | 170.16165 | 10.47641 | 0.1074157 | 3.0655379 | 195 | 10 | 1993–2006 | 0.56 | M-v | 0 | MPC | 19066 | (32293) |
| (32300) | 14.7 | 0.15 | 20060922 | 301.40820 | 286.83239 | 174.47076 | 3.71605 | 0.0844802 | 3.0576426 | 208 | 7 | 1971–2006 | 0.63 | M-v | 0 | MPC | 19069 | (32300) |
| (32312) | 13.5 | 0.15 | 20060922 | 290.20069 | 152.92367 | 319.60432 | 9.97915 | 0.0972660 | 2.9651143 | 217 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 19073 | (32312) |
| (32315) | 14.3 | 0.15 | 20060922 | 143.83156 | 79.05134 | 191.54938 | 1.69578 | 0.0211803 | 2.8971675 | 251 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 19074 | (32315) |
| (32317) | 14.2 | 0.15 | 20060922 | 81.33471 | 334.80005 | 329.79123 | 10.31306 | 0.0655805 | 3.0165564 | 193 | 9 | 1979–2006 | 0.60 | M-v | 0 | MPC | 19074 | (32317) |
| (32320) | 14.1 | 0.15 | 20060922 | 102.79162 | 120.07688 | 152.44490 | 10.79876 | 0.0816665 | 3.0961377 | 319 | 9 | 1993–2006 | 0.61 | M-v | 0 | MPC | 19075 | (32320) |
| (32324) | 13.7 | 0.15 | 20060922 | 41.97195 | 298.33695 | 70.68585 | 10.83480 | 0.1127065 | 2.9726320 | 229 | 9 | 1994–2006 | 0.57 | M-v | 0 | MPC | 19076 | (32324) |
| (32330) | 13.4 | 0.15 | 20060922 | 349.80965 | 3.38145 | 71.19293 | 9.80373 | 0.1289702 | 3.0055503 | 233 | 7 | 1990–2006 | 0.60 | M-v | 0 | MPC | 19078 | (32330) |
| (32331) | 13.1 | 0.15 | 20060922 | 6.39484 | 259.12941 | 118.43755 | 10.78322 | 0.1464356 | 3.1864993 | 302 | 9 | 1997–2006 | 0.58 | M-v | 0 | MPC | 19078 | (32331) |
| (32335) | 14.0 | 0.15 | 20060922 | 131.30395 | 311.88476 | 307.32478 | 2.51660 | 0.0351547 | 3.0535083 | 308 | 10 | 1991–2006 | 0.56 | M-v | 0 | MPC | 19080 | (32335) |
| (32340) | 14.0 | 0.15 | 20060922 | 39.92877 | 161.52455 | 286.05572 | 4.16605 | 0.1168225 | 2.6945039 | 374 | 10 | 1987–2006 | 0.50 | M-v | 0 | MPC | 19081 | (32340) |
| (32343) | 13.6 | 0.15 | 20060922 | 343.51845 | 161.82079 | 325.61217 | 8.48775 | 0.0955110 | 2.7730052 | 338 | 9 | 1979–2006 | 0.53 | M-v | 0 | MPC | 19082 | (32343) |
| (32347) | 13.8 | 0.15 | 20060922 | 230.02089 | 158.99861 | 34.26482 | 11.07004 | 0.0503589 | 2.9629483 | 199 | 7 | 1993–2006 | 0.63 | M-v | 1 | MPC | 19083 | (32347) |
| (32348) | 12.7 | 0.15 | 20060922 | 267.06802 | 141.20474 | 73.27439 | 9.87130 | 0.1276132 | 2.7089783 | 496 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 19084 | (32348) |
| (32352) | 14.0 | 0.15 | 20060922 | 332.72456 | 36.66888 | 83.50322 | 3.68140 | 0.1355455 | 2.8969479 | 340 | 9 | 1996–2006 | 0.60 | M-v | 0 | MPC | 19085 | (32352) |
| (32353) | 12.8 | 0.15 | 20060922 | 157.90926 | 259.75946 | 320.79594 | 10.54042 | 0.0918891 | 3.1432439 | 365 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 19085 | (32353) |
| (32362) | 14.3 | 0.15 | 20060922 | 259.14893 | 327.87285 | 153.31825 | 10.39915 | 0.0495036 | 3.0471772 | 204 | 9 | 1993–2006 | 0.57 | M-v | 0 | MPC | 19088 | (32362) |
| (32367) | 14.0 | 0.15 | 20060922 | 183.42093 | 123.22489 | 120.57675 | 5.05275 | 0.0822613 | 2.8915868 | 243 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 19090 | (32367) |
| (32368) | 13.8 | 0.15 | 20060922 | 24.23546 | 358.00432 | 35.07493 | 10.65053 | 0.1164157 | 3.0505437 | 260 | 7 | 1992–2006 | 0.66 | M-v | 0 | MPC | 19090 | (32368) |
| (32375) | 14.2 | 0.15 | 20060922 | 259.94824 | 310.15453 | 203.29863 | 9.06519 | 0.0198208 | 2.9683763 | 240 | 10 | 1993–2006 | 0.60 | M-v | 0 | MPC | 19092 | (32375) |
| (32381) | 14.4 | 0.15 | 20060922 | 179.65116 | 221.36146 | 26.23921 | 7.36561 | 0.0327426 | 2.8142595 | 206 | 10 | 1977–2006 | 0.61 | M-v | 0 | MPC | 19094 | (32381) |
| (32389) | 15.1 | 0.15 | 20060922 | 91.99736 | 188.83326 | 86.11890 | 2.75720 | 0.1393854 | 3.1077443 | 163 | 9 | 1993–2006 | 0.70 | M-v | 0 | MPC | 19096 | (32389) |
| (32399) | 14.5 | 0.15 | 20060922 | 350.44463 | 191.49164 | 230.44751 | 1.00921 | 0.0749625 | 2.9146007 | 290 | 10 | 1981–2006 | 0.55 | M-v | 0 | MPC | 19100 | (32399) |
| (32404) | 13.2 | 0.15 | 20060922 | 119.88651 | 100.93471 | 261.14021 | 14.06597 | 0.0967657 | 2.6588309 | 325 | 9 | 1987–2006 | 0.50 | M-v | 0 | MPC | 19101 | (32404) |
| (32406) | 14.1 | 0.15 | 20060922 | 252.04600 | 233.47993 | 337.53543 | 0.99750 | 0.0540860 | 2.8047694 | 435 | 9 | 1989–2006 | 0.51 | M-v | 0 | MPC | 19102 | (32406) |
| (32413) | 13.4 | 0.15 | 20060922 | 139.36168 | 354.37342 | 276.08826 | 9.01826 | 0.0629917 | 2.9891435 | 349 | 9 | 1989–2006 | 0.55 | M-v | 0 | MPC | 19105 | (32413) |
| (32417) | 13.8 | 0.15 | 20060922 | 176.02055 | 269.48769 | 326.12032 | 8.55410 | 0.0411697 | 3.0419057 | 225 | 9 | 1990–2006 | 0.60 | M-v | 0 | MPC | 19106 | (32417) |
| (32429) | 13.8 | 0.15 | 20060922 | 165.39367 | 347.50034 | 223.09994 | 8.02291 | 0.0452891 | 3.2378569 | 319 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 19110 | (32429) |
| (32445) | 12.8 | 0.15 | 20060922 | 239.17358 | 340.43463 | 283.26591 | 10.82058 | 0.1510962 | 2.6287640 | 402 | 10 | 1987–2006 | 0.52 | M-v | 0 | MPC | 19115 | (32445) |
| (32453) | 12.9 | 0.15 | 20060922 | 269.78282 | 141.70265 | 11.58410 | 10.87161 | 0.0685949 | 3.0714631 | 336 | 7 | 1981–2006 | 0.58 | M-v | 0 | MPC | 19118 | (32453) |
| (32454) | 14.5 | 0.15 | 20060922 | 63.64547 | 50.40874 | 245.86933 | 4.07028 | 0.0992653 | 3.2240778 | 231 | 10 | 1994–2006 | 0.66 | M-v | 0 | MPC | 19118 | (32454) |
| (32462) | 14.2 | 0.15 | 20060922 | 311.31895 | 301.54621 | 166.71474 | 0.89870 | 0.1497212 | 3.1619674 | 346 | 10 | 1978–2006 | 0.52 | M-v | 0 | MPC | 19121 | (32462) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (32466) | 13.3 | 0.15 | 20060922 | 252.12484 | 221.28008 | 31.66284 | 16.10689 | 0.2460504 | 2.6392438 | 440 | 9 | 1996–2006 | 0.56 | M-v | 0 | MPC | 19122 | (32466) |
| (32472) | 13.8 | 0.15 | 20060922 | 46.44135 | 310.46901 | 62.74899 | 11.03342 | 0.0807721 | 3.0438081 | 203 | 9 | 1993–2006 | 0.60 | M-v | 0 | MPC | 19124 | (32472) |
| (32478) | 11.7 | 0.15 | 20060922 | 271.78779 | 276.64375 | 341.10963 | 9.65801 | 0.1668300 | 5.2386808 | 137 | 10 | 1987–2006 | 0.55 | M-v | 0 | MPC | 19126 | (32478) |
| (32479) | 12.7 | 0.15 | 20060922 | 189.52444 | 20.21196 | 314.09868 | 14.19366 | 0.1910620 | 2.5722979 | 503 | 9 | 1995–2006 | 0.50 | M-v | 1 | MPC | 19127 | (32479) |
| (32489) | 13.7 | 0.15 | 20060922 | 50.44535 | 331.19308 | 59.02908 | 10.16810 | 0.0318328 | 3.0001800 | 282 | 7 | 1995–2006 | 0.62 | M-v | 0 | MPC | 19130 | (32489) |
| (32509) | 12.9 | 0.15 | 20060922 | 104.44414 | 355.82510 | 262.37973 | 12.51340 | 0.1298402 | 2.7623358 | 281 | 9 | 1987–2006 | 0.52 | M-v | 0 | MPC | 19136 | (32509) |
| (32531) | 13.3 | 0.15 | 20060922 | 343.90105 | 91.39604 | 337.44132 | 12.26190 | 0.1512279 | 2.6877865 | 309 | 10 | 1988–2006 | 0.59 | M-v | 0 | MPC | 19144 | (32531) |
| (32538) | 16.0 | 0.15 | 20060922 | 17.20406 | 184.22325 | 208.41356 | 1.21618 | 0.1472760 | 2.6346550 | 117 | 7 | 1993–2006 | 0.48 | M-v | 0 | MPC | 19146 | (32538) |
| (32539) | 13.5 | 0.15 | 20060922 | 0.90645 | 288.93775 | 118.19361 | 14.25910 | 0.2150119 | 2.7565262 | 197 | 9 | 1986–2006 | 0.55 | M-v | 0 | MPC | 19146 | (32539) |
| (32544) | 14.8 | 0.15 | 20060922 | 2.53103 | 137.04983 | 337.95879 | 6.60140 | 0.1004520 | 2.4041054 | 305 | 9 | 1988–2006 | 0.54 | M-v | 1 | MPC | 19148 | (32544) |
| (32549) | 15.4 | 0.15 | 20060922 | 86.57158 | 218.69365 | 121.96826 | 0.99559 | 0.1604193 | 2.5629203 | 193 | 9 | 1960–2006 | 0.49 | M-v | 0 | MPC | 19150 | (32549) |
| (32565) | 13.6 | 0.15 | 20060922 | 24.41777 | 224.92879 | 195.50149 | 13.14491 | 0.1646552 | 2.5641997 | 401 | 10 | 1989–2006 | 0.55 | M-v | 0 | MPC | 19156 | (32565) |
| (32577) | 13.5 | 0.15 | 20060922 | 27.07659 | 189.10106 | 237.53969 | 12.45671 | 0.1305858 | 2.5417148 | 298 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 19161 | (32577) |
| (32598) | 14.5 | 0.15 | 20060922 | 163.22631 | 96.88161 | 111.50776 | 1.64886 | 0.0107130 | 2.7785552 | 241 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 19169 | (32598) |
| (32605) | 14.3 | 0.15 | 20060922 | 79.57920 | 208.56405 | 49.24448 | 5.49622 | 0.2141137 | 2.9967589 | 292 | 10 | 1979–2006 | 0.54 | M-v | 0 | MPC | 19171 | (32605) |
| (32616) | 14.5 | 0.15 | 20060922 | 18.90770 | 335.60126 | 31.40416 | 6.31175 | 0.0575952 | 2.7351796 | 189 | 9 | 1995–2006 | 0.60 | M-v | 0 | MPC | 19174 | (32616) |
| (32635) | 14.4 | 0.15 | 20060922 | 49.00811 | 67.74583 | 337.23579 | 0.51772 | 0.2088738 | 2.5800792 | 383 | 9 | 1972–2006 | 0.55 | M-v | 1 | MPC | 19181 | (32635) |
| (32637) | 14.4 | 0.15 | 20060922 | 24.88246 | 206.33336 | 211.09725 | 8.27585 | 0.1489152 | 2.5686535 | 280 | 10 | 1960–2006 | 0.57 | M-v | 0 | MPC | 19182 | (32637) |
| (32656) | 15.5 | 0.15 | 20060922 | 74.99800 | 149.07546 | 167.58574 | 3.66798 | 0.1902175 | 2.7444257 | 120 | 7 | 1960–2006 | 0.57 | M-v | 1 | MPC | 19188 | (32656) |
| (32657) | 14.5 | 0.15 | 20060922 | 235.49705 | 149.91586 | 10.74900 | 2.40656 | 0.0244566 | 2.7496714 | 229 | 9 | 1960–2006 | 0.53 | M-v | 0 | MPC | 19189 | (32657) |
| (32677) | 15.2 | 0.15 | 20060922 | 101.68741 | 230.46551 | 69.36165 | 3.06577 | 0.0436672 | 2.9402224 | 191 | 9 | 1960–2006 | 0.59 | M-v | 0 | MPC | 19195 | (32677) |
| (32680) | 13.8 | 0.15 | 20060922 | 5.10670 | 76.55185 | 348.61309 | 8.84671 | 0.1582233 | 3.0253817 | 307 | 7 | 1971–2006 | 0.59 | M-v | 0 | MPC | 19196 | (32680) |
| (32688) | 15.3 | 0.15 | 20060922 | 293.33302 | 77.23229 | 120.02530 | 3.27987 | 0.0628899 | 2.5249419 | 249 | 10 | 1971–2006 | 0.64 | M-v | 0 | MPC | 19198 | (32688) |
| (32701) | 14.9 | 0.15 | 20060922 | 19.96575 | 72.55635 | 7.84626 | 0.80786 | 0.1200093 | 2.5232542 | 404 | 10 | 1973–2006 | 0.60 | M-v | 0 | MPC | 27573 | (32701) |
| (32703) | 13.9 | 0.15 | 20060922 | 122.03573 | 0.07403 | 342.39885 | 4.18638 | 0.1086441 | 2.7358421 | 403 | 10 | 1973–2006 | 0.58 | M-v | 0 | MPC | 19204 | (32703) |
| (32706) | 14.4 | 0.15 | 20060922 | 246.91126 | 138.85142 | 29.03301 | 1.98563 | 0.0251391 | 2.7773256 | 301 | 9 | 1973–2006 | 0.55 | M-v | 0 | MPC | 19205 | (32706) |
| (32712) | 13.6 | 0.15 | 20060922 | 142.39133 | 305.08279 | 28.62505 | 8.68058 | 0.0407493 | 2.7287244 | 403 | 9 | 1973–2006 | 0.61 | M-v | 0 | MPC | 19207 | (32712) |
| (32715) | 13.7 | 0.15 | 20060922 | 273.89042 | 251.95219 | 293.25927 | 7.74725 | 0.2036960 | 2.7472645 | 357 | 9 | 1973–2006 | 0.57 | M-v | 0 | MPC | 19208 | (32715) |
| (32729) | 14.4 | 0.15 | 20060922 | 344.92513 | 34.24597 | 113.63024 | 9.99651 | 0.2257423 | 2.7802011 | 237 | 7 | 1977–2006 | 0.52 | M-v | 0 | MPC | 19213 | (32729) |
| (32740) | 14.4 | 0.15 | 20060922 | 67.00058 | 143.27507 | 242.49448 | 11.47064 | 0.1511196 | 2.7502813 | 167 | 7 | 1978–2006 | 0.49 | M-v | 0 | MPC | 21174 | (32740) |
| (32750) | 14.7 | 0.15 | 20060922 | 262.01978 | 292.08904 | 256.11276 | 3.77262 | 0.1709071 | 3.0766980 | 222 | 9 | 1976–2006 | 0.64 | M-v | 0 | MPC | 21177 | (32750) |
| (32752) | 15.5 | 0.15 | 20060922 | 312.77800 | 191.06784 | 335.24549 | 11.90859 | 0.1874997 | 2.6737289 | 81 | 9 | 1981–2006 | 0.74 | M-v | 1 | MPC | 21177 | (32752) |
| (32754) | 14.5 | 0.15 | 20060922 | 311.09059 | 115.78539 | 341.93825 | 10.65136 | 0.1086863 | 3.1073249 | 123 | 7 | 1981–2006 | 0.54 | M-v | 0 | MPC | 21178 | (32754) |
| (32757) | 14.9 | 0.15 | 20060922 | 179.19028 | 35.39781 | 185.37722 | 8.52223 | 0.1221840 | 3.1426121 | 233 | 10 | 1981–2006 | 0.64 | M-v | 0 | MPC | 21179 | (32757) |
| (32778) | 14.5 | 0.15 | 20060922 | 340.66938 | 180.54303 | 304.93157 | 8.41438 | 0.0997596 | 2.8118551 | 223 | 7 | 1988–2006 | 0.58 | M-v | 1 | MPC | 21186 | (32778) |
| (32800) | 14.9 | 0.15 | 20060922 | 334.44811 | 117.96985 | 306.13083 | 22.00097 | 0.0702597 | 1.8977526 | 250 | 7 | 1989–2006 | 0.56 | M-v | 1 | MPC | 21193 | (32800) |
| (32809) | 14.5 | 0.15 | 20060922 | 69.55864 | 335.43273 | 357.52627 | 8.43054 | 0.0883875 | 2.9940271 | 189 | 9 | 1990–2006 | 0.60 | M-v | 1 | MPC | 21196 | (32809) |
| (32828) | 13.8 | 0.15 | 20060922 | 205.34393 | 12.65426 | 171.79709 | 16.08254 | 0.1132448 | 3.1345408 | 178 | 9 | 1992–2006 | 0.61 | M-v | 0 | MPC | 21202 | (32828) |
| (32837) | 14.4 | 0.15 | 20060922 | 236.83244 | 135.13197 | 42.99304 | 6.61502 | 0.1374384 | 3.0864451 | 221 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 21205 | (32837) |
| (32860) | 15.0 | 0.15 | 20060922 | 266.81744 | 99.46135 | 61.95031 | 2.82016 | 0.0570265 | 2.9358770 | 166 | 7 | 1993–2006 | 0.61 | M-v | 0 | MPC | 21212 | (32860) |
| (32863) | 14.2 | 0.15 | 20060922 | 344.90196 | 6.47995 | 78.06796 | 3.22465 | 0.0284144 | 2.9361428 | 203 | 7 | 1993–2006 | 0.61 | M-v | 0 | MPC | 21214 | (32863) |
| (32864) | 13.5 | 0.15 | 20060922 | 98.58587 | 267.93757 | 31.37659 | 10.26971 | 0.0920239 | 3.0350727 | 284 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 21214 | (32864) |
| (32868) | 14.3 | 0.15 | 20060922 | 214.86942 | 271.55633 | 242.03133 | 1.49398 | 0.1380941 | 3.0642700 | 234 | 10 | 1993–2006 | 0.56 | M-v | 0 | MPC | 21215 | (32868) |
| (32873) | 15.1 | 0.15 | 20060922 | 140.08525 | 150.34145 | 158.40328 | 2.50400 | 0.0703276 | 2.9279594 | 196 | 9 | 1993–2006 | 0.62 | M-v | 0 | MPC | 21217 | (32873) |
| (32899) | 12.8 | 0.15 | 20060922 | 98.52229 | 2.00961 | 293.36748 | 13.39332 | 0.1503396 | 3.0750031 | 306 | 10 | 1977–2006 | 0.52 | M-v | 0 | MPC | 21225 | (32899) |
| (32901) | 14.5 | 0.15 | 20060922 | 219.34148 | 257.39093 | 324.36042 | 6.23021 | 0.0455755 | 3.0132262 | 245 | 9 | 1994–2006 | 0.59 | M-v | 0 | MPC | 21226 | (32901) |
| (32927) | 16.9 | 0.15 | 20060922 | 66.32218 | 153.99243 | 153.96825 | 1.17370 | 0.2039169 | 2.9900334 | 63 | 5 | 1994–2006 | 0.32 | M-v | 0 | MPC | 21234 | (32927) |
| (32928) | 15.5 | 0.15 | 20060922 | 69.71472 | 8.39375 | 302.66702 | 17.40315 | 0.0715937 | 1.9313897 | 278 | 7 | 1976–2006 | 0.60 | M-v | 1 | MPC | 21234 | (32928) |
| (32931) | 13.9 | 0.15 | 20060922 | 349.46380 | 75.47319 | 346.10428 | 8.70561 | 0.1484049 | 3.0360774 | 148 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 21235 | (32931) |
| (32932) | 14.8 | 0.15 | 20060922 | 78.39108 | 121.01838 | 181.36148 | 3.49694 | 0.2454173 | 2.9887939 | 222 | 7 | 1994–2006 | 0.52 | M-v | 0 | MPC | 21236 | (32932) |
| (32941) | 15.1 | 0.15 | 20060922 | 12.64747 | 2.56507 | 24.97223 | 11.20356 | 0.1548955 | 3.0500516 | 87 | 7 | 1993–2006 | 0.50 | M-v | 0 | MPC | 21239 | (32941) |
| (32943) | 13.8 | 0.15 | 20060922 | 58.83245 | 300.34042 | 71.65299 | 10.96338 | 0.0960245 | 3.0425581 | 204 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 21239 | (32943) |
| (32945) | 14.0 | 0.15 | 20060922 | 285.06105 | 79.88450 | 66.54928 | 11.58708 | 0.0827478 | 3.0866705 | 169 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 21240 | (32945) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (32950) | 14.2 | 0.15 | 20060922 | 188.11414 | 227.13393 | 27.09892 | 26.76502 | 0.1633849 | 3.1801618 | 221 | 8 | 1996–2006 | 0.55 | M-v | 0 | MPC | 47667 | (32950) |
| (32999) | 13.4 | 0.15 | 20060922 | 300.69496 | 239.68986 | 320.36492 | 16.11149 | 0.0292451 | 2.8553338 | 275 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 21257 | (32999) |
| (33009) | 16.0 | 0.15 | 20060922 | 275.27216 | 126.36400 | 26.79042 | 1.12098 | 0.1246238 | 3.1525119 | 121 | 7 | 1994–2006 | 0.51 | M-v | 0 | MPC | 21260 | (33009) |
| (33111) | 14.7 | 0.15 | 20060922 | 266.41325 | 130.88293 | 74.42514 | 6.02977 | 0.0969901 | 2.7352421 | 380 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 21294 | (33111) |
| (33133) | 15.0 | 0.15 | 20060922 | 341.78570 | 353.21536 | 162.68221 | 4.19388 | 0.1492324 | 2.6782896 | 297 | 9 | 1985–2006 | 0.56 | M-v | 0 | MPC | 21302 | (33133) |
| (33143) | 14.6 | 0.15 | 20060922 | 305.95640 | 14.25480 | 127.07289 | 3.05657 | 0.0080232 | 2.8686732 | 307 | 9 | 1990–2006 | 0.60 | M-v | 0 | MPC | 21306 | (33143) |
| (33145) | 15.4 | 0.15 | 20060922 | 1.90842 | 251.17913 | 217.28842 | 3.72600 | 0.0622942 | 2.7519603 | 150 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 21307 | (33145) |
| (33170) | 14.8 | 0.15 | 20060922 | 261.68953 | 181.40510 | 46.02588 | 4.14650 | 0.2213739 | 2.7886300 | 215 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 43319 | (33170) |
| (33181) | 14.2 | 0.15 | 20060922 | 194.34404 | 227.02864 | 77.70631 | 3.19762 | 0.0794390 | 2.6984577 | 334 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 21319 | (33181) |
| (33203) | 13.4 | 0.15 | 20060922 | 332.94633 | 292.54211 | 173.67113 | 1.96559 | 0.0299070 | 2.9118228 | 340 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 21327 | (33203) |
| (33204) | 14.5 | 0.15 | 20060922 | 224.60694 | 312.45928 | 193.41062 | 13.54149 | 0.1036808 | 3.1391184 | 199 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 21328 | (33204) |
| (33213) | 14.8 | 0.15 | 20060922 | 16.17279 | 2.35266 | 101.29836 | 4.12914 | 0.1606510 | 2.7405638 | 236 | 9 | 1973–2006 | 0.61 | M-v | 0 | MPC | 21331 | (33213) |
| (33214) | 12.9 | 0.15 | 20060922 | 79.95474 | 63.05077 | 3.96749 | 21.94659 | 0.0541325 | 2.6734871 | 273 | 7 | 1991–2006 | 0.52 | M-v | 0 | MPC | 21331 | (33214) |
| (33219) | 15.1 | 0.15 | 20060922 | 335.85167 | 219.30833 | 281.99034 | 6.69930 | 0.1602759 | 2.7776248 | 177 | 9 | 1993–2006 | 0.62 | M-v | 1 | MPC | 21334 | (33219) |
| (33222) | 14.4 | 0.15 | 20060922 | 276.71748 | 271.09333 | 309.43156 | 8.36991 | 0.1299360 | 2.7827112 | 274 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 21334 | (33222) |
| (33224) | 14.2 | 0.15 | 20060922 | 285.84552 | 148.23197 | 327.02133 | 8.27817 | 0.0652052 | 3.0583046 | 195 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 21335 | (33224) |
| (33227) | 14.9 | 0.15 | 20060922 | 45.36454 | 277.04498 | 142.37358 | 3.46642 | 0.2089569 | 2.7907601 | 324 | 7 | 1991–2006 | 0.52 | M-v | 0 | MPC | 21336 | (33227) |
| (33244) | 14.6 | 0.15 | 20060922 | 214.16394 | 278.18014 | 218.79202 | 15.25201 | 0.1019280 | 3.2246038 | 161 | 7 | 1960–2006 | 0.63 | M-v | 0 | MPC | 21342 | (33244) |
| (33247) | 14.9 | 0.15 | 20060922 | 352.10940 | 285.50463 | 226.46927 | 5.07674 | 0.1676376 | 2.7181055 | 306 | 6 | 1998–2006 | 0.60 | M-v | 1 | MPC | 21343 | (33247) |
| (33255) | 14.6 | 0.15 | 20060922 | 181.67769 | 337.39081 | 214.52431 | 8.61471 | 0.1784924 | 3.1799749 | 255 | 9 | 1995–2006 | 0.55 | M-v | 0 | MPC | 21346 | (33255) |
| (33258) | 14.5 | 0.15 | 20060922 | 326.85440 | 117.68030 | 7.49001 | 2.16145 | 0.1705301 | 2.8639978 | 161 | 7 | 1993–2006 | 0.60 | M-v | 0 | MPC | 21347 | (33258) |
| (33266) | 14.0 | 0.15 | 20060922 | 26.67231 | 176.70631 | 233.69740 | 9.12741 | 0.0832825 | 2.9858319 | 253 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 21350 | (33266) |
| (33269) | 15.2 | 0.15 | 20060922 | 306.82527 | 7.04286 | 92.52276 | 3.51306 | 0.0812701 | 2.2156148 | 336 | 7 | 1994–2006 | 0.56 | M-v | 1 | MPC | 21351 | (33269) |
| (33277) | 13.4 | 0.15 | 20060922 | 257.68883 | 110.39171 | 72.86347 | 11.06865 | 0.0468700 | 2.9855722 | 307 | 9 | 1993–2006 | 0.60 | M-v | 0 | MPC | 21354 | (33277) |
| (33283) | 14.5 | 0.15 | 20060922 | 191.40899 | 84.31689 | 155.33691 | 1.64688 | 0.0880903 | 3.0865689 | 259 | 9 | 1997–2006 | 0.59 | M-v | 0 | MPC | 21356 | (33283) |
| (33285) | 13.6 | 0.15 | 20060922 | 205.42079 | 132.33975 | 93.68963 | 10.76506 | 0.0384250 | 3.0536836 | 313 | 9 | 1992–2006 | 0.60 | M-v | 0 | MPC | 21357 | (33285) |
| (33288) | 13.4 | 0.15 | 20060922 | 222.81934 | 316.64043 | 228.50222 | 21.62008 | 0.0881240 | 3.1500032 | 282 | 9 | 1995–2006 | 0.55 | M-v | 0 | MPC | 41511 | (33288) |
| (33289) | 13.2 | 0.15 | 20060922 | 0.54419 | 269.12820 | 150.91351 | 15.59322 | 0.1841415 | 3.1684933 | 333 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 47667 | (33289) |
| (33290) | 12.8 | 0.15 | 20060922 | 100.23215 | 254.59484 | 74.52815 | 17.10593 | 0.1323256 | 3.1581213 | 331 | 7 | 1994–2006 | 0.59 | M-v | 0 | MPC | 21358 | (33290) |
| (33294) | 14.0 | 0.15 | 20060922 | 235.10359 | 203.88188 | 63.96837 | 16.37755 | 0.2499299 | 2.8815081 | 187 | 9 | 1993–2006 | 0.63 | M-v | 1 | MPC | 21360 | (33294) |
| (33298) | 13.9 | 0.15 | 20060922 | 302.41659 | 69.68402 | 93.75699 | 11.70193 | 0.0409843 | 2.9780862 | 310 | 9 | 1996–2006 | 0.60 | M-v | 0 | MPC | 21361 | (33298) |
| (33304) | 13.6 | 0.15 | 20060922 | 100.32061 | 194.81824 | 134.39120 | 11.64577 | 0.0358901 | 3.1127407 | 236 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 21364 | (33304) |
| (33305) | 12.8 | 0.15 | 20060922 | 354.05615 | 231.25970 | 178.25145 | 15.35186 | 0.0429506 | 3.2068265 | 287 | 9 | 1994–2006 | 0.59 | M-v | 0 | MPC | 21364 | (33305) |
| (33313) | 14.4 | 0.15 | 20060922 | 281.49301 | 98.01081 | 136.38390 | 17.91639 | 0.0966992 | 2.8079872 | 147 | 9 | 1997–2006 | 0.61 | M-v | 0 | MPC | 21367 | (33313) |
| (33329) | 14.4 | 0.15 | 20060922 | 266.40883 | 52.14570 | 152.19665 | 5.26140 | 0.1105452 | 2.2953993 | 460 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 21372 | (33329) |
| (33345) | 13.7 | 0.15 | 20060922 | 239.47831 | 79.52384 | 98.32304 | 5.18673 | 0.1802179 | 2.5495524 | 477 | 9 | 1990–2006 | 0.55 | M-v | 0 | MPC | 21378 | (33345) |
| (33346) | 14.8 | 0.15 | 20060922 | 201.00182 | 116.86020 | 80.04216 | 14.15080 | 0.1123366 | 2.5725123 | 235 | 9 | 1976–2006 | 0.58 | M-v | 1 | MPC | 21379 | (33346) |
| (33356) | 14.4 | 0.15 | 20060922 | 85.04931 | 20.92522 | 302.77819 | 22.33545 | 0.0374393 | 1.9485103 | 204 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 21383 | (33356) |
| (33370) | 13.7 | 0.15 | 20060922 | 72.15932 | 4.55613 | 333.02570 | 31.17437 | 0.1417788 | 2.6988207 | 192 | 9 | 1954–2006 | 0.57 | M-v | 1 | MPC | 21387 | (33370) |
| (33407) | 14.5 | 0.15 | 20060922 | 221.49634 | 8.43674 | 191.04441 | 13.00582 | 0.0706842 | 2.6748137 | 282 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 41511 | (33407) |
| (33435) | 15.2 | 0.15 | 20060922 | 159.43517 | 25.18487 | 268.21886 | 1.28175 | 0.1861171 | 2.6512009 | 320 | 9 | 1994–2006 | 0.51 | M-v | 0 | MPC | 21410 | (33435) |
| (33484) | 15.0 | 0.15 | 20060922 | 207.46912 | 122.47603 | 164.96495 | 2.43644 | 0.1757357 | 2.6016425 | 264 | 9 | 1994–2006 | 0.61 | M-v | 0 | MPC | 21427 | (33484) |
| (33493) | 12.7 | 0.15 | 20060922 | 6.10342 | 336.21805 | 100.87869 | 9.43521 | 0.0702787 | 2.6581472 | 368 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 21431 | (33493) |
| (33521) | 14.0 | 0.15 | 20060922 | 114.03597 | 222.55695 | 141.09689 | 13.74675 | 0.1991798 | 2.5976731 | 218 | 9 | 1992–2006 | 0.53 | M-v | 0 | MPC | 21441 | (33521) |
| (33524) | 14.4 | 0.15 | 20060922 | 98.55427 | 293.54603 | 35.48963 | 2.62486 | 0.0783099 | 2.7582003 | 312 | 10 | 1973–2006 | 0.57 | M-v | 0 | MPC | 21442 | (33524) |
| (33531) | 15.1 | 0.15 | 20060922 | 39.12931 | 39.60832 | 221.07467 | 3.19351 | 0.1457069 | 2.2521531 | 290 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 21444 | (33531) |
| (33537) | 14.3 | 0.15 | 20060922 | 302.59022 | 205.58250 | 288.19758 | 0.81660 | 0.0619114 | 2.7233290 | 306 | 10 | 1994–2006 | 0.57 | M-v | 0 | MPC | 21446 | (33537) |
| (33546) | 13.8 | 0.15 | 20060922 | 27.09804 | 264.25003 | 101.80456 | 14.74444 | 0.2196991 | 2.9796422 | 174 | 10 | 1991–2006 | 0.54 | M-v | 0 | MPC | 21450 | (33546) |
| (33554) | 13.8 | 0.15 | 20060922 | 56.91395 | 60.20599 | 251.85271 | 4.48431 | 0.2421173 | 3.0883923 | 330 | 8 | 1994–2006 | 0.52 | M-v | 0 | MPC | 73897 | (33554) |
| (33568) | 14.7 | 0.15 | 20060922 | 213.73879 | 326.47423 | 260.68346 | 4.19231 | 0.0262397 | 2.7569054 | 210 | 7 | 1996–2006 | 0.64 | M-v | 0 | MPC | 21458 | (33568) |
| (33596) | 14.5 | 0.15 | 20060922 | 184.84411 | 125.86714 | 158.73213 | 1.81097 | 0.0228902 | 2.7076785 | 386 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 21469 | (33596) |
| (33604) | 15.1 | 0.15 | 20060922 | 125.25875 | 105.69659 | 146.96489 | 2.17605 | 0.0516842 | 3.0236858 | 223 | 9 | 1995–2006 | 0.55 | M-v | 0 | MPC | 21472 | (33604) |
| (33619) | 14.5 | 0.15 | 20060922 | 198.03202 | 129.25754 | 165.22698 | 4.64709 | 0.0949901 | 2.6099128 | 279 | 9 | 1979–2006 | 0.54 | M-v | 0 | MPC | 21477 | (33619) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (33641) | 13.3 | 0.15 | 20060922 | 198.37539 | 170.28659 | 100.92271 | 13.93579 | 0.1314701 | 2.6891845 | 375 | 9 | 1955–2006 | 0.56 | M-v | 0 | MPC | 21485 | (33641) |
| (33665) | 13.6 | 0.15 | 20060922 | 3.75572 | 284.87552 | 99.35218 | 11.13122 | 0.1324532 | 3.0005923 | 236 | 9 | 1995–2006 | 0.60 | M-v | 0 | MPC | 21494 | (33665) |
| (33673) | 13.1 | 0.15 | 20060922 | 1.03289 | 347.82390 | 99.26190 | 17.90994 | 0.1608704 | 2.7727511 | 286 | 10 | 1977–2006 | 0.51 | M-v | 0 | MPC | 21496 | (33673) |
| (33699) | 14.4 | 0.15 | 20060922 | 234.38843 | 118.92931 | 98.36404 | 1.80041 | 0.0114721 | 2.7902601 | 313 | 10 | 1994–2006 | 0.54 | M-v | 0 | MPC | 21505 | (33699) |
| (33711) | 15.2 | 0.15 | 20060922 | 8.15794 | 340.62703 | 129.59879 | 15.50099 | 0.0616489 | 2.6752358 | 169 | 9 | 1991–2006 | 0.63 | M-v | 0 | MPC | 21510 | (33711) |
| (33725) | 14.1 | 0.15 | 20060922 | 154.16124 | 340.07509 | 293.89048 | 9.82770 | 0.0557129 | 3.0415079 | 237 | 7 | 1997–2006 | 0.62 | M-v | 0 | MPC | 21515 | (33725) |
| (33728) | 14.0 | 0.15 | 20060922 | 134.13020 | 335.47468 | 286.56398 | 12.59985 | 0.0837610 | 3.1218043 | 185 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 21516 | (33728) |
| (33734) | 14.2 | 0.15 | 20060922 | 286.99692 | 347.79052 | 123.88186 | 5.77066 | 0.1044244 | 3.1646419 | 271 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 21518 | (33734) |
| (33748) | 13.3 | 0.15 | 20060922 | 103.86124 | 296.03337 | 32.79552 | 6.55130 | 0.0853347 | 3.1873796 | 546 | 9 | 1991–2006 | 0.51 | M-v | 0 | MPC | 47668 | (33748) |
| (33751) | 14.0 | 0.15 | 20060922 | 144.91046 | 159.34581 | 112.70562 | 2.58510 | 0.1099604 | 3.2419643 | 279 | 9 | 1993–2006 | 0.59 | M-v | 0 | MPC | 21524 | (33751) |
| (33763) | 13.4 | 0.15 | 20060922 | 294.09640 | 197.41059 | 359.04025 | 10.49998 | 0.0697980 | 2.9476323 | 334 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 21529 | (33763) |
| (33764) | 13.1 | 0.15 | 20060922 | 228.77480 | 13.54088 | 194.84351 | 0.27230 | 0.1018274 | 3.2133310 | 411 | 10 | 1993–2006 | 0.59 | M-v | 0 | MPC | 21529 | (33764) |
| (33770) | 13.5 | 0.15 | 20060922 | 0.60286 | 279.49978 | 175.56295 | 4.81726 | 0.1002329 | 3.0578157 | 422 | 9 | 1989–2006 | 0.57 | M-v | 0 | MPC | 21531 | (33770) |
| (33781) | 13.6 | 0.15 | 20060922 | 226.46115 | 141.55970 | 87.13328 | 2.78608 | 0.1157405 | 3.0410275 | 466 | 9 | 1989–2006 | 0.55 | M-v | 0 | MPC | 21535 | (33781) |
| (33783) | 13.9 | 0.15 | 20060922 | 149.85834 | 233.18762 | 54.91434 | 1.85968 | 0.1455864 | 3.1246391 | 358 | 9 | 1994–2006 | 0.58 | M-v | 0 | MPC | 21536 | (33783) |
| (33792) | 12.9 | 0.15 | 20060922 | 226.55916 | 64.04744 | 155.78898 | 17.16474 | 0.1688243 | 3.1231097 | 370 | 9 | 1997–2006 | 0.56 | M-v | 0 | MPC | 21538 | (33792) |
| (33795) | 13.5 | 0.15 | 20060922 | 161.77748 | 290.94035 | 41.24556 | 11.01349 | 0.0710094 | 3.0223004 | 313 | 7 | 1986–2006 | 0.57 | M-v | 0 | MPC | 21539 | (33795) |
| (33824) | 16.6 | 0.15 | 20060922 | 216.48568 | 292.83962 | 305.69518 | 1.81935 | 0.1283245 | 2.3666561 | 166 | 9 | 1991–2006 | 0.57 | M-v | 1 | MPC | 21550 | (33824) |
| (33825) | 14.1 | 0.15 | 20060922 | 125.83566 | 218.97444 | 116.91777 | 5.93419 | 0.1802295 | 2.2940261 | 272 | 9 | 1991–2006 | 0.59 | M-v | 1 | MPC | 21550 | (33825) |
| (33865) | 16.6 | 0.15 | 20060922 | 79.70112 | 254.07404 | 82.94041 | 26.84348 | 0.1368302 | 1.8848212 | 175 | 7 | 1990–2006 | 0.61 | M-v | 1 | MPC | 21564 | (33865) |
| (33880) | 14.4 | 0.15 | 20060922 | 275.73249 | 61.58106 | 133.48980 | 7.82649 | 0.2290246 | 2.4232193 | 183 | 9 | 1982–2006 | 0.58 | M-v | 1 | MPC | 21570 | (33880) |
| (33899) | 14.0 | 0.15 | 20060922 | 69.96726 | 304.63380 | 72.60610 | 14.64387 | 0.1457535 | 2.5748794 | 273 | 9 | 1993–2006 | 0.60 | M-v | 1 | MPC | 21576 | (33899) |
| (33911) | 13.2 | 0.15 | 20060922 | 36.70183 | 269.51160 | 151.68448 | 15.34544 | 0.1721149 | 2.6090427 | 319 | 8 | 1997–2006 | 0.52 | M-v | 0 | MPC | 77321 | (33911) |
| (33924) | 14.4 | 0.15 | 20060922 | 204.48368 | 171.16477 | 125.69034 | 3.69804 | 0.1133839 | 2.5268921 | 433 | 9 | 1971–2006 | 0.58 | M-v | 0 | MPC | 21584 | (33924) |
| (33937) | 13.8 | 0.15 | 20060922 | 110.26794 | 79.08295 | 277.43948 | 10.09543 | 0.2132159 | 2.6873306 | 288 | 9 | 1996–2006 | 0.51 | M-v | 0 | MPC | 21589 | (33937) |
| (33970) | 14.2 | 0.15 | 20060922 | 52.03753 | 187.72513 | 150.55440 | 9.65804 | 0.0976573 | 2.9946187 | 197 | 9 | 1986–2006 | 0.57 | M-v | 0 | MPC | 21601 | (33970) |
| (33973) | 14.2 | 0.15 | 20060922 | 63.40214 | 282.06527 | 106.02576 | 10.05503 | 0.1749799 | 2.7866782 | 305 | 9 | 1996–2006 | 0.61 | M-v | 0 | MPC | 21602 | (33973) |
| (33975) | 14.8 | 0.15 | 20060922 | 192.39998 | 196.00801 | 64.20631 | 4.46114 | 0.0505630 | 2.7033934 | 230 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 21602 | (33975) |
| (33996) | 14.9 | 0.15 | 20060922 | 42.28425 | 139.55743 | 245.58689 | 0.73437 | 0.1876260 | 2.8716455 | 197 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 47668 | (33996) |
| (34001) | 13.5 | 0.15 | 20060922 | 26.15088 | 75.87162 | 319.55210 | 23.13123 | 0.1558249 | 2.9630957 | 212 | 7 | 1974–2006 | 0.48 | M-v | 0 | MPC | 21611 | (34001) |
| (34007) | 14.8 | 0.15 | 20060922 | 137.14969 | 52.51149 | 260.76295 | 2.76560 | 0.2044390 | 2.6729565 | 306 | 9 | 1994–2006 | 0.50 | M-v | 0 | MPC | 21613 | (34007) |
| (34049) | 15.1 | 0.15 | 20060922 | 9.35817 | 203.51167 | 227.24417 | 5.65289 | 0.1405623 | 2.8035949 | 214 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 21627 | (34049) |
| (34051) | 14.5 | 0.15 | 20060922 | 39.04089 | 156.27885 | 172.59863 | 12.80983 | 0.2145222 | 3.0561563 | 111 | 7 | 1990–2006 | 0.57 | M-v | 0 | MPC | 21628 | (34051) |
| (34059) | 13.9 | 0.15 | 20060922 | 47.49398 | 119.58050 | 212.90595 | 10.33836 | 0.1424891 | 3.0809356 | 245 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 21630 | (34059) |
| (34060) | 12.5 | 0.15 | 20060922 | 93.99313 | 61.09097 | 294.13031 | 7.81899 | 0.1693179 | 2.8132812 | 537 | 9 | 1953–2006 | 0.53 | M-v | 0 | MPC | 21631 | (34060) |
| (34066) | 13.8 | 0.15 | 20060922 | 48.03850 | 266.48292 | 90.09152 | 2.39893 | 0.1313068 | 3.1284781 | 413 | 9 | 1997–2006 | 0.56 | M-v | 0 | MPC | 21634 | (34066) |
| (34070) | 14.2 | 0.15 | 20060922 | 317.92577 | 278.37298 | 125.26829 | 11.17560 | 0.1504351 | 3.1690606 | 201 | 7 | 1996–2006 | 0.61 | M-v | 0 | MPC | 21635 | (34070) |
| (34107) | 14.7 | 0.15 | 20060922 | 68.91007 | 194.97718 | 83.22702 | 2.52741 | 0.1705450 | 3.0786952 | 163 | 9 | 1994–2006 | 0.58 | M-v | 0 | MPC | 21647 | (34107) |
| (34126) | 14.9 | 0.15 | 20060922 | 97.31003 | 195.32687 | 179.16549 | 1.04718 | 0.1659647 | 2.7565191 | 335 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 21654 | (34126) |
| (34129) | 15.0 | 0.15 | 20060922 | 91.93150 | 10.62978 | 328.82801 | 1.17842 | 0.0717571 | 2.8683231 | 247 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 21655 | (34129) |
| (34133) | 15.0 | 0.15 | 20060922 | 5.63951 | 85.43757 | 331.35366 | 2.16082 | 0.0327412 | 2.9247740 | 219 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 21656 | (34133) |
| (34140) | 15.2 | 0.15 | 20060922 | 108.78765 | 43.50004 | 316.86970 | 11.21051 | 0.1558873 | 2.6822383 | 139 | 7 | 1981–2006 | 0.54 | M-v | 1 | MPC | 21659 | (34140) |
| (34143) | 15.6 | 0.15 | 20060922 | 188.99012 | 176.55768 | 134.35033 | 2.32819 | 0.1016634 | 2.5498813 | 237 | 10 | 1976–2006 | 0.57 | M-v | 0 | MPC | 21660 | (34143) |
| (34147) | 14.8 | 0.15 | 20060922 | 32.98593 | 136.67203 | 318.54587 | 3.29791 | 0.0671145 | 2.6371321 | 283 | 9 | 1977–2006 | 0.51 | M-v | 0 | MPC | 21661 | (34147) |
| (34162) | 14.3 | 0.15 | 20060922 | 3.30563 | 293.71899 | 138.60990 | 2.84457 | 0.0442984 | 2.8929799 | 236 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 21666 | (34162) |
| (34165) | 14.5 | 0.15 | 20060922 | 123.31439 | 250.76692 | 39.07396 | 2.34704 | 0.0953175 | 2.9377642 | 329 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 21667 | (34165) |
| (34177) | 14.8 | 0.15 | 20060922 | 12.10655 | 275.77383 | 127.77224 | 3.02982 | 0.0918697 | 2.9258244 | 236 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 21671 | (34177) |
| (34179) | 15.5 | 0.15 | 20060922 | 41.37153 | 176.66491 | 172.67990 | 2.34831 | 0.1385538 | 3.0196691 | 178 | 9 | 1979–2006 | 0.54 | M-v | 0 | MPC | 21671 | (34179) |
| (34185) | 13.8 | 0.15 | 20060922 | 281.51778 | 330.33197 | 149.81644 | 10.96892 | 0.0967384 | 3.0066557 | 383 | 10 | 1982–2006 | 0.62 | M-v | 0 | MPC | 21673 | (34185) |
| (34188) | 15.3 | 0.15 | 20060922 | 145.94513 | 80.87968 | 228.99138 | 0.98429 | 0.1237656 | 2.7223967 | 294 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 21674 | (34188) |
| (34194) | 15.3 | 0.15 | 20060922 | 174.03466 | 141.41130 | 137.61131 | 5.31936 | 0.0513631 | 2.7576911 | 130 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 21676 | (34194) |
| (34196) | 13.7 | 0.15 | 20060922 | 157.33613 | 337.43812 | 356.10052 | 8.76999 | 0.2127281 | 2.6148629 | 214 | 9 | 1979–2006 | 0.60 | M-v | 1 | MPC | 21676 | (34196) |
| (34201) | 13.8 | 0.15 | 20060922 | 356.85592 | 60.25194 | 356.28471 | 9.54780 | 0.1077580 | 2.9729990 | 177 | 7 | 1995–2006 | 0.65 | M-v | 0 | MPC | 21678 | (34201) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (34210) | 12.9 | 0.15 | 20060922 | 315.29348 | 315.24713 | 138.12354 | 11.13451 | 0.2062085 | 3.1308260 | 307 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 21681 | (34210) |
| (34213) | 15.2 | 0.15 | 20060922 | 44.36699 | 116.40574 | 220.83866 | 9.71868 | 0.1249984 | 3.0111006 | 194 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 21682 | (34213) |
| (34221) | 12.9 | 0.15 | 20060922 | 337.40735 | 130.31023 | 296.69982 | 8.11313 | 0.0257394 | 2.9648838 | 319 | 9 | 1990–2006 | 0.58 | M-v | 0 | MPC | 41511 | (34221) |
| (34222) | 14.8 | 0.15 | 20060922 | 332.20567 | 261.08420 | 174.76597 | 10.36782 | 0.1124250 | 3.0013423 | 146 | 10 | 1990–2006 | 0.63 | M-v | 0 | MPC | 21685 | (34222) |
| (34236) | 14.2 | 0.15 | 20060922 | 349.68006 | 30.96943 | 57.59850 | 2.84829 | 0.0423639 | 2.8862079 | 261 | 7 | 1981–2006 | 0.58 | M-v | 0 | MPC | 21689 | (34236) |
| (34241) | 14.3 | 0.15 | 20060922 | 88.77144 | 214.57116 | 78.29334 | 5.52771 | 0.1691411 | 3.0708545 | 265 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 21691 | (34241) |
| (34244) | 13.7 | 0.15 | 20060922 | 81.78266 | 271.53673 | 78.14930 | 7.03265 | 0.1029363 | 2.9193962 | 321 | 9 | 1980–2006 | 0.53 | M-v | 0 | MPC | 21692 | (34244) |
| (34255) | 14.1 | 0.15 | 20060922 | 351.99811 | 41.99507 | 19.77268 | 10.89008 | 0.1277665 | 3.0651569 | 190 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 21696 | (34255) |
| (34257) | 13.6 | 0.15 | 20060922 | 189.16757 | 307.88128 | 246.34109 | 7.73094 | 0.0430204 | 3.0454558 | 314 | 9 | 1990–2006 | 0.61 | M-v | 0 | MPC | 41511 | (34257) |
| (34258) | 14.4 | 0.15 | 20060922 | 333.24762 | 276.85503 | 225.01297 | 7.88857 | 0.0925912 | 2.7632576 | 248 | 9 | 1996–2006 | 0.57 | M-v | 0 | MPC | 21697 | (34258) |
| (34264) | 14.5 | 0.15 | 20060922 | 316.72698 | 154.53008 | 311.68672 | 9.17156 | 0.0321279 | 3.0216300 | 171 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 21699 | (34264) |
| (34265) | 14.4 | 0.15 | 20060922 | 349.79005 | 295.31699 | 89.01689 | 6.74120 | 0.1694862 | 3.2075688 | 132 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 21699 | (34265) |
| (34268) | 14.6 | 0.15 | 20060922 | 203.01919 | 306.28049 | 299.73596 | 5.93638 | 0.0758814 | 2.8021507 | 281 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 21700 | (34268) |
| (34273) | 15.3 | 0.15 | 20060922 | 137.35154 | 289.10602 | 44.11058 | 3.20396 | 0.0836121 | 2.6695267 | 225 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 21702 | (34273) |
| (34277) | 14.4 | 0.15 | 20060922 | 103.16363 | 285.01655 | 34.40216 | 2.58616 | 0.0952471 | 2.9428700 | 277 | 9 | 1995–2006 | 0.58 | M-v | 0 | MPC | 21703 | (34277) |
| (34281) | 14.3 | 0.15 | 20060922 | 338.69445 | 90.15573 | 50.09447 | 5.79870 | 0.1446464 | 2.8036160 | 290 | 9 | 1987–2006 | 0.52 | M-v | 0 | MPC | 21705 | (34281) |
| (34282) | 14.3 | 0.15 | 20060922 | 196.83171 | 156.58493 | 108.83663 | 4.59630 | 0.0507829 | 2.7988197 | 367 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 21705 | (34282) |
| (34308) | 14.5 | 0.15 | 20060922 | 94.01626 | 233.15882 | 124.66415 | 7.60726 | 0.0528510 | 2.7524898 | 214 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 21714 | (34308) |
| (34349) | 13.6 | 0.15 | 20060922 | 48.51801 | 316.18738 | 68.16976 | 6.04243 | 0.1181980 | 3.0856449 | 348 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 21726 | (34349) |
| (34361) | 13.7 | 0.15 | 20060922 | 8.20965 | 157.14301 | 227.24915 | 11.86310 | 0.0535082 | 3.1297936 | 284 | 9 | 1995–2006 | 0.56 | M-v | 0 | MPC | 21731 | (34361) |
| (34364) | 14.1 | 0.15 | 20060922 | 89.63680 | 11.09072 | 282.56389 | 7.89328 | 0.0450574 | 3.1713461 | 235 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 21732 | (34364) |
| (34375) | 13.4 | 0.15 | 20060922 | 99.52314 | 141.87272 | 219.13700 | 16.41229 | 0.1275150 | 2.8520462 | 347 | 9 | 1976–2006 | 0.53 | M-v | 0 | MPC | 21736 | (34375) |
| (34376) | 13.4 | 0.15 | 20060922 | 58.75383 | 77.07845 | 310.80755 | 9.58041 | 0.1117108 | 2.9976332 | 387 | 9 | 1997–2006 | 0.52 | M-v | 0 | MPC | 21737 | (34376) |
| (34377) | 13.6 | 0.15 | 20060922 | 259.25328 | 312.09977 | 324.64265 | 11.77997 | 0.1275544 | 2.5953323 | 287 | 6 | 1991–2006 | 0.61 | M-v | 1 | MPC | 70195 | (34377) |
| (34389) | 13.9 | 0.15 | 20060922 | 56.59852 | 322.79163 | 13.05238 | 2.40865 | 0.1258091 | 3.1385294 | 282 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 62196 | (34389) |
| (34393) | 14.3 | 0.15 | 20060922 | 77.39036 | 213.95407 | 90.23940 | 2.85145 | 0.1374959 | 3.1205101 | 253 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 21743 | (34393) |
| (34405) | 13.8 | 0.15 | 20060922 | 273.43572 | 259.81928 | 332.06903 | 8.20722 | 0.0936085 | 2.6194333 | 236 | 9 | 1990–2006 | 0.53 | M-v | 0 | MPC | 47668 | (34405) |
| (34410) | 14.2 | 0.15 | 20060922 | 131.32285 | 251.60262 | 83.90271 | 5.42582 | 0.0751934 | 2.7978319 | 272 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 21748 | (34410) |
| (34426) | 13.8 | 0.15 | 20060922 | 297.10468 | 353.50778 | 124.72007 | 1.83846 | 0.1291620 | 3.1354440 | 260 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 43320 | (34426) |
| (34449) | 14.8 | 0.15 | 20060922 | 95.10413 | 133.68659 | 136.68463 | 2.18025 | 0.1232786 | 3.2172062 | 247 | 9 | 1992–2006 | 0.51 | M-v | 0 | MPC | 21761 | (34449) |
| (34453) | 15.2 | 0.15 | 20060922 | 29.36549 | 276.53863 | 151.48707 | 2.40160 | 0.0530091 | 2.8925931 | 245 | 10 | 1991–2006 | 0.52 | M-v | 0 | MPC | 21762 | (34453) |
| (34463) | 13.6 | 0.15 | 20060922 | 63.51609 | 27.16211 | 328.90204 | 12.47434 | 0.1933234 | 3.0707319 | 229 | 7 | 1989–2006 | 0.46 | M-v | 1 | MPC | 21766 | (34463) |
| (34465) | 15.2 | 0.15 | 20060922 | 3.52432 | 109.48442 | 349.95802 | 6.11438 | 0.0720160 | 2.8571644 | 176 | 9 | 1993–2006 | 0.59 | M-v | 0 | MPC | 21767 | (34465) |
| (34469) | 15.0 | 0.15 | 20060922 | 85.82821 | 146.31944 | 207.36311 | 1.35336 | 0.0888381 | 2.9407908 | 232 | 9 | 1990–2006 | 0.50 | M-v | 0 | MPC | 21768 | (34469) |
| (34470) | 14.1 | 0.15 | 20060922 | 121.38335 | 255.43736 | 35.37268 | 9.03723 | 0.0528591 | 3.0756658 | 231 | 7 | 1995–2006 | 0.61 | M-v | 0 | MPC | 21768 | (34470) |
| (34471) | 14.2 | 0.15 | 20060922 | 168.12431 | 105.27925 | 177.21421 | 2.04494 | 0.1214661 | 2.8645660 | 357 | 10 | 1990–2006 | 0.57 | M-v | 0 | MPC | 21769 | (34471) |
| (34478) | 15.1 | 0.15 | 20060922 | 50.30750 | 307.38407 | 103.23906 | 3.41526 | 0.0293326 | 2.9059429 | 240 | 9 | 1997–2006 | 0.55 | M-v | 0 | MPC | 21771 | (34478) |
| (34489) | 13.7 | 0.15 | 20060922 | 190.03838 | 239.76449 | 333.40579 | 9.75914 | 0.0611070 | 3.0945692 | 190 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 21775 | (34489) |
| (34493) | 14.0 | 0.15 | 20060922 | 8.02833 | 137.54081 | 282.13032 | 8.52385 | 0.0859172 | 3.0670637 | 281 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 21776 | (34493) |
| (34496) | 14.8 | 0.15 | 20060922 | 120.81152 | 332.40745 | 9.88218 | 1.78104 | 0.0349605 | 2.8588323 | 328 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 21777 | (34496) |
| (34504) | 14.8 | 0.15 | 20060922 | 291.62304 | 87.87441 | 91.03120 | 3.08365 | 0.0066925 | 2.8805329 | 348 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 21780 | (34504) |
| (34520) | 13.5 | 0.15 | 20060922 | 13.60394 | 343.62348 | 74.11857 | 9.82314 | 0.0623817 | 3.0061902 | 242 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 21785 | (34520) |
| (34524) | 15.8 | 0.15 | 20060922 | 353.51180 | 132.72387 | 348.52104 | 0.28253 | 0.0793175 | 2.7705966 | 169 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 21787 | (34524) |
| (34530) | 13.7 | 0.15 | 20060922 | 76.07541 | 276.33935 | 85.60025 | 11.70228 | 0.1324235 | 2.9603567 | 238 | 9 | 1990–2006 | 0.64 | M-v | 1 | MPC | 21789 | (34530) |
| (34533) | 14.2 | 0.15 | 20060922 | 351.86584 | 349.03606 | 94.75110 | 10.66123 | 0.0890080 | 3.0551602 | 200 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 21790 | (34533) |
| (34539) | 15.6 | 0.15 | 20060922 | 248.85500 | 18.44333 | 223.98667 | 1.12347 | 0.0174595 | 2.7252512 | 253 | 10 | 1990–2006 | 0.57 | M-v | 0 | MPC | 21791 | (34539) |
| (34541) | 15.1 | 0.15 | 20060922 | 177.68535 | 35.10332 | 216.69733 | 3.49486 | 0.0323032 | 3.0006271 | 156 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 21792 | (34541) |
| (34551) | 14.3 | 0.15 | 20060922 | 166.60808 | 318.39005 | 6.33850 | 8.90828 | 0.1278467 | 2.6296843 | 242 | 9 | 1974–2006 | 0.57 | M-v | 0 | MPC | 21795 | (34551) |
| (34552) | 15.0 | 0.15 | 20060922 | 278.39003 | 154.25675 | 324.31895 | 1.85075 | 0.1032025 | 3.0907939 | 204 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 21795 | (34552) |
| (34555) | 15.1 | 0.15 | 20060922 | 47.25091 | 218.78350 | 128.36913 | 3.15296 | 0.0626266 | 3.1072238 | 158 | 9 | 1995–2006 | 0.60 | M-v | 0 | MPC | 21796 | (34555) |
| (34564) | 13.9 | 0.15 | 20060922 | 297.87593 | 245.55537 | 318.16656 | 11.96444 | 0.1730190 | 2.7632899 | 277 | 7 | 1993–2006 | 0.52 | M-v | 1 | MPC | 41512 | (34564) |
| (34568) | 13.5 | 0.15 | 20060922 | 11.34569 | 69.03587 | 4.25637 | 9.83679 | 0.1168318 | 3.0121623 | 313 | 7 | 1953–2006 | 0.50 | M-v | 0 | MPC | 21801 | (34568) |
| (34576) | 14.5 | 0.15 | 20060922 | 220.82224 | 172.67790 | 59.75879 | 7.03086 | 0.0832920 | 2.9047813 | 256 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 21804 | (34576) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (34591) | 14.7 | 0.15 | 20060922 | 216.47333 | 154.73895 | 40.81616 | 1.32235 | 0.1210172 | 3.1539858 | 243 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 21808 | (34591) |
| (34592) | 15.1 | 0.15 | 20060922 | 91.03479 | 260.72941 | 62.95552 | 2.14852 | 0.1015494 | 3.0816316 | 124 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 21808 | (34592) |
| (34600) | 14.2 | 0.15 | 20060922 | 2.48521 | 17.90227 | 23.31207 | 15.65486 | 0.0798099 | 3.0468713 | 141 | 7 | 1995–2006 | 0.62 | M-v | 1 | MPC | 21810 | (34600) |
| (34603) | 13.5 | 0.15 | 20060922 | 357.92334 | 330.64773 | 92.92484 | 14.03723 | 0.1711800 | 3.1313057 | 273 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 47669 | (34603) |
| (34611) | 14.1 | 0.15 | 20060922 | 195.12057 | 196.13248 | 19.99423 | 1.91432 | 0.1129636 | 3.1741176 | 188 | 10 | 1992–2006 | 0.58 | M-v | 0 | MPC | 21814 | (34611) |
| (34637) | 13.8 | 0.15 | 20060922 | 236.66062 | 246.75440 | 321.93358 | 3.64175 | 0.1001104 | 3.0129530 | 297 | 10 | 1994–2006 | 0.56 | M-v | 0 | MPC | 47669 | (34637) |
| (34669) | 12.4 | 0.15 | 20060922 | 49.88835 | 228.19881 | 127.34593 | 24.29774 | 0.2906207 | 3.0516789 | 459 | 9 | 1989–2006 | 0.55 | M-v | 0 | MPC | 21832 | (34669) |
| (34692) | 15.0 | 0.15 | 20060922 | 89.88944 | 234.04520 | 112.89807 | 7.16175 | 0.2545053 | 2.3058824 | 199 | 9 | 1977–2006 | 0.51 | M-v | 0 | MPC | 21838 | (34692) |
| (34696) | 13.8 | 0.15 | 20060922 | 268.78842 | 207.22183 | 291.02498 | 13.37548 | 0.1311935 | 2.5367590 | 309 | 10 | 1992–2006 | 0.52 | M-v | 0 | MPC | 21839 | (34696) |
| (34716) | 15.5 | 0.15 | 20060922 | 60.22955 | 110.24940 | 263.06202 | 2.16814 | 0.1003331 | 2.5305576 | 142 | 9 | 1987–2006 | 0.49 | M-v | 0 | MPC | 21847 | (34716) |
| (34725) | 13.7 | 0.15 | 20060922 | 178.08991 | 246.93248 | 317.77223 | 3.96208 | 0.0966054 | 2.7343191 | 357 | 9 | 1989–2006 | 0.57 | M-v | 0 | MPC | 21849 | (34725) |
| (34740) | 14.1 | 0.15 | 20060922 | 65.16408 | 183.66729 | 195.65782 | 3.31924 | 0.1137578 | 2.6881303 | 347 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 21855 | (34740) |
| (34754) | 13.7 | 0.15 | 20060922 | 29.15025 | 186.31155 | 240.30364 | 7.74472 | 0.1646939 | 2.5548975 | 361 | 10 | 1985–2006 | 0.56 | M-v | 0 | MPC | 21860 | (34754) |
| (34775) | 14.5 | 0.15 | 20060922 | 179.05493 | 303.31983 | 226.12253 | 8.73881 | 0.0311618 | 3.2182245 | 175 | 7 | 1998–2006 | 0.64 | M-v | 0 | MPC | 21867 | (34775) |
| (34777) | 12.7 | 0.15 | 20060922 | 331.12841 | 196.64233 | 284.62906 | 34.30162 | 0.4087338 | 2.8598843 | 160 | 7 | 1983–2006 | 0.49 | M-v | 1 | MPC | 66027 | (34777) |
| (34796) | 14.8 | 0.15 | 20060922 | 286.91484 | 31.60483 | 45.61039 | 3.72440 | 0.1405179 | 3.0521416 | 202 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 21875 | (34796) |
| (34799) | 15.6 | 0.15 | 20060922 | 141.34698 | 211.41419 | 93.23598 | 5.07229 | 0.1195908 | 2.5251038 | 162 | 9 | 1977–2006 | 0.56 | M-v | 0 | MPC | 21876 | (34799) |
| (34811) | 15.0 | 0.15 | 20060922 | 329.25144 | 143.28304 | 28.18589 | 14.27901 | 0.1105893 | 2.5752796 | 285 | 9 | 1978–2006 | 0.56 | M-v | 0 | MPC | 21880 | (34811) |
| (34814) | 14.2 | 0.15 | 20060922 | 329.15064 | 137.35325 | 345.28560 | 9.18426 | 0.1162694 | 2.6976189 | 289 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 21881 | (34814) |
| (34815) | 14.8 | 0.15 | 20060922 | 12.60744 | 223.99698 | 211.24974 | 5.08492 | 0.0898995 | 2.5971426 | 293 | 9 | 1976–2006 | 0.55 | M-v | 0 | MPC | 21882 | (34815) |
| (34819) | 14.6 | 0.15 | 20060922 | 97.85084 | 52.51633 | 248.25014 | 4.27214 | 0.0357226 | 2.7041162 | 260 | 8 | 1997–2006 | 0.57 | M-v | 0 | MPC | 77322 | (34819) |
| (34834) | 13.6 | 0.15 | 20060922 | 70.46201 | 36.32626 | 198.85411 | 15.24337 | 0.0405545 | 3.4005137 | 165 | 9 | 1992–2006 | 0.65 | M-v | 0 | MPC | 21888 | (34834) |
| (34843) | 14.0 | 0.15 | 20060922 | 74.64600 | 23.02933 | 330.40786 | 5.19032 | 0.0319350 | 2.7505872 | 274 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 21892 | (34843) |
| (34859) | 15.0 | 0.15 | 20060922 | 314.17604 | 328.12919 | 196.13121 | 6.71386 | 0.1616069 | 2.6892238 | 299 | 9 | 1996–2006 | 0.55 | M-v | 0 | MPC | 21897 | (34859) |
| (34861) | 13.5 | 0.15 | 20060922 | 278.69239 | 132.17641 | 77.56899 | 9.59650 | 0.0715116 | 2.5202289 | 370 | 9 | 1981–2006 | 0.55 | M-v | 0 | MPC | 21898 | (34861) |
| (34866) | 14.1 | 0.15 | 20060922 | 334.65126 | 191.60625 | 297.18657 | 12.96942 | 0.1306569 | 2.6026120 | 228 | 8 | 1979–2006 | 0.56 | M-v | 1 | MPC | 41512 | (34866) |
| (34874) | 15.1 | 0.15 | 20060922 | 106.81362 | 285.54784 | 5.38007 | 1.46167 | 0.0809862 | 2.8466851 | 248 | 10 | 1991–2006 | 0.51 | M-v | 0 | MPC | 21902 | (34874) |
| (34883) | 14.0 | 0.15 | 20060922 | 328.96396 | 319.90325 | 72.29927 | 22.97388 | 0.0341934 | 3.1316798 | 170 | 7 | 1990–2006 | 0.60 | M-v | 0 | MPC | 21905 | (34883) |
| (34898) | 13.8 | 0.15 | 20060922 | 303.74222 | 335.05600 | 152.64395 | 1.55694 | 0.1528754 | 3.1821675 | 316 | 9 | 1960–2006 | 0.55 | M-v | 0 | MPC | 21910 | (34898) |
| (34908) | 14.6 | 0.15 | 20060922 | 238.87164 | 35.14390 | 232.40982 | 14.31266 | 0.0429044 | 2.6956323 | 237 | 9 | 1960–2006 | 0.55 | M-v | 0 | MPC | 21913 | (34908) |
| (34917) | 15.3 | 0.15 | 20060922 | 80.16381 | 252.63483 | 138.69218 | 3.17564 | 0.1904302 | 2.7149442 | 286 | 7 | 1960–2006 | 0.58 | M-v | 0 | MPC | 21916 | (34917) |
| (34936) | 15.3 | 0.15 | 20060922 | 217.28004 | 144.76631 | 117.74533 | 3.91902 | 0.0468531 | 2.7030668 | 304 | 9 | 1960–2006 | 0.61 | M-v | 0 | MPC | 21921 | (34936) |
| (34952) | 15.1 | 0.15 | 20060922 | 225.97702 | 136.81460 | 52.31518 | 2.96774 | 0.2491851 | 3.0679192 | 170 | 10 | 1971–2006 | 0.58 | M-v | 0 | MPC | 21926 | (34952) |
| (34961) | 13.1 | 0.15 | 20060922 | 53.74507 | 17.56463 | 1.22239 | 8.96864 | 0.1652792 | 2.7650886 | 332 | 9 | 1971–2006 | 0.58 | M-v | 0 | MPC | 21929 | (34961) |
| (34963) | 15.0 | 0.15 | 20060922 | 187.40860 | 45.34586 | 179.32677 | 9.14579 | 0.0967877 | 2.7696485 | 240 | 9 | 1973–2006 | 0.62 | M-v | 0 | MPC | 21930 | (34963) |
| (34967) | 14.2 | 0.15 | 20060922 | 17.71921 | 216.17735 | 166.03539 | 8.55861 | 0.2366288 | 2.7877731 | 214 | 9 | 1973–2006 | 0.74 | M-v | 1 | MPC | 41512 | (34967) |
| (34968) | 15.2 | 0.15 | 20060922 | 36.72000 | 247.75722 | 135.45144 | 1.83046 | 0.1538113 | 3.0617733 | 194 | 7 | 1973–2006 | 0.63 | M-v | 0 | MPC | 21932 | (34968) |
| (34977) | 14.4 | 0.15 | 20060922 | 220.92667 | 212.08600 | 337.09942 | 10.79272 | 0.1760968 | 2.5592778 | 279 | 9 | 1977–2006 | 0.58 | M-v | 1 | MPC | 21935 | (34977) |
| (34978) | 13.6 | 0.15 | 20060922 | 299.55810 | 192.89004 | 299.77954 | 8.25160 | 0.0403906 | 3.1745619 | 266 | 9 | 1977–2006 | 0.56 | M-v | 0 | MPC | 21935 | (34978) |
| (34984) | 13.1 | 0.15 | 20060922 | 188.16962 | 171.82594 | 27.98721 | 19.15181 | 0.0768603 | 3.2190031 | 255 | 7 | 1977–2006 | 0.63 | M-v | 0 | MPC | 21937 | (34984) |
| (34992) | 14.4 | 0.15 | 20060922 | 85.77423 | 293.26364 | 53.29886 | 8.66840 | 0.1554137 | 2.5357606 | 306 | 10 | 1977–2006 | 0.57 | M-v | 1 | MPC | 38169 | (34992) |
| (34997) | 13.1 | 0.15 | 20060922 | 127.99240 | 193.72524 | 109.16420 | 14.83899 | 0.1588614 | 2.6989823 | 331 | 10 | 1978–2006 | 0.57 | M-v | 0 | MPC | 24070 | (34997) |
| (35030) | 15.7 | 0.15 | 20060922 | 314.92257 | 277.33909 | 188.80521 | 3.04098 | 0.2743948 | 3.0672781 | 100 | 7 | 1981–2006 | 0.56 | M-v | 0 | MPC | 24079 | (35030) |
| (35033) | 15.3 | 0.15 | 20060922 | 311.93159 | 22.52256 | 86.86931 | 1.67700 | 0.2110207 | 3.0772034 | 183 | 7 | 1981–2006 | 0.53 | M-v | 0 | MPC | 24080 | (35033) |
| (35098) | 13.8 | 0.15 | 20060922 | 306.08162 | 113.52299 | 28.68327 | 7.89856 | 0.0989171 | 3.1966914 | 223 | 7 | 1991–2006 | 0.59 | M-v | 0 | MPC | 24102 | (35098) |
| (35124) | 13.6 | 0.15 | 20060922 | 26.90250 | 215.87295 | 136.86275 | 13.25064 | 0.0214855 | 3.1473324 | 219 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 24111 | (35124) |
| (35154) | 15.0 | 0.15 | 20060922 | 129.47441 | 262.49756 | 63.96537 | 3.37590 | 0.1053196 | 2.8927011 | 235 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 43320 | (35154) |
| (35165) | 12.9 | 0.15 | 20060922 | 150.72652 | 337.83752 | 332.44123 | 21.12182 | 0.0178696 | 3.1535063 | 301 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 24124 | (35165) |
| (35167) | 14.2 | 0.15 | 20060922 | 200.04878 | 265.69044 | 338.83823 | 1.11476 | 0.0941771 | 3.1987544 | 261 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 24125 | (35167) |
| (35188) | 13.9 | 0.15 | 20060922 | 37.59832 | 89.72197 | 320.84430 | 3.72185 | 0.1916795 | 2.5841045 | 452 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 24133 | (35188) |
| (35200) | 14.5 | 0.15 | 20060922 | 87.13456 | 51.52550 | 327.91309 | 14.61033 | 0.1143591 | 2.9805078 | 193 | 7 | 1994–2006 | 0.61 | M-v | 0 | MPC | 24137 | (35200) |
| (35215) | 14.0 | 0.15 | 20060922 | 238.43159 | 235.60388 | 27.42909 | 2.31046 | 0.0522662 | 2.9316172 | 403 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 24142 | (35215) |
| (35239) | 15.3 | 0.15 | 20060922 | 83.68439 | 156.08604 | 212.34275 | 1.40400 | 0.0832396 | 2.8880934 | 225 | 7 | 1993–2006 | 0.58 | M-v | 1 | MPC | 24150 | (35239) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (35244) | 16.0 | 0.15 | 20060922 | 237.65148 | 269.87186 | 326.79359 | 1.15091 | 0.0584162 | 2.8928446 | 90 | 7 | 1995–2006 | 0.46 | M-v | 0 | MPC | 24151 | (35244) |
| (35249) | 14.8 | 0.15 | 20060922 | 348.22913 | 61.19103 | 72.04700 | 2.98401 | 0.0480160 | 2.9409769 | 300 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 24152 | (35249) |
| (35253) | 14.6 | 0.15 | 20060922 | 47.53338 | 61.25424 | 314.22414 | 10.03613 | 0.0882585 | 3.2025144 | 136 | 5 | 1996–2005 | 0.63 | M-v | 1 | MPC | 24154 | (35253) |
| (35256) | 13.7 | 0.15 | 20060922 | 2.71980 | 303.56107 | 137.16889 | 12.52614 | 0.1177314 | 3.1652818 | 232 | 9 | 1996–2006 | 0.61 | M-v | 0 | MPC | 24154 | (35256) |
| (35286) | 14.1 | 0.15 | 20060922 | 190.52232 | 177.25397 | 113.38005 | 12.98900 | 0.1647505 | 2.6328215 | 250 | 9 | 1994–2006 | 0.52 | M-v | 0 | MPC | 24164 | (35286) |
| (35305) | 15.7 | 0.15 | 20060922 | 12.37524 | 63.97961 | 28.65257 | 2.20585 | 0.0272876 | 2.8906172 | 166 | 9 | 1995–2006 | 0.56 | M-v | 0 | MPC | 24170 | (35305) |
| (35307) | 16.1 | 0.15 | 20060922 | 58.97942 | 127.56683 | 257.13351 | 2.01764 | 0.1631699 | 2.8013814 | 122 | 7 | 1991–2006 | 0.49 | M-v | 0 | MPC | 24170 | (35307) |
| (35310) | 13.4 | 0.15 | 20060922 | 56.64340 | 93.07862 | 311.03185 | 16.04828 | 0.0993069 | 2.8782086 | 301 | 9 | 1983–2006 | 0.51 | M-v | 0 | MPC | 24171 | (35310) |
| (35311) | 13.3 | 0.15 | 20060922 | 35.41167 | 76.33569 | 303.38516 | 8.87669 | 0.1007191 | 3.0407786 | 243 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 24172 | (35311) |
| (35329) | 15.1 | 0.15 | 20060922 | 291.69603 | 23.27799 | 111.74054 | 5.29539 | 0.1049673 | 3.0590615 | 205 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 24177 | (35329) |
| (35332) | 14.6 | 0.15 | 20060922 | 261.91749 | 136.11392 | 83.78657 | 0.89353 | 0.1127590 | 3.0246493 | 207 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 24178 | (35332) |
| (35338) | 14.6 | 0.15 | 20060922 | 212.41971 | 163.88379 | 75.60290 | 1.99726 | 0.0840711 | 3.1992716 | 300 | 9 | 1997–2006 | 0.60 | M-v | 0 | MPC | 24180 | (35338) |
| (35340) | 13.9 | 0.15 | 20060922 | 331.33234 | 234.76464 | 208.23124 | 4.06596 | 0.1460118 | 3.2107245 | 336 | 7 | 1977–2006 | 0.53 | M-v | 0 | MPC | 24180 | (35340) |
| (35343) | 14.4 | 0.15 | 20060922 | 223.50353 | 63.16213 | 155.90990 | 1.44307 | 0.1341457 | 3.1814333 | 238 | 10 | 1993–2006 | 0.59 | M-v | 0 | MPC | 24182 | (35343) |
| (35348) | 13.4 | 0.15 | 20060922 | 237.95920 | 185.09439 | 60.98320 | 18.65377 | 0.1562302 | 3.1170747 | 241 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 47670 | (35348) |
| (35375) | 14.3 | 0.15 | 20060922 | 19.44451 | 325.02425 | 101.37125 | 0.87778 | 0.1105106 | 2.6085758 | 431 | 9 | 1974–2006 | 0.57 | M-v | 0 | MPC | 41512 | (35375) |
| (35420) | 13.9 | 0.15 | 20060922 | 44.93084 | 225.82159 | 163.11787 | 10.92833 | 0.1493934 | 2.8783175 | 343 | 8 | 1998–2006 | 0.60 | M-v | 0 | MPC | 77322 | (35420) |
| (35431) | 14.1 | 0.15 | 20060922 | 102.80651 | 221.27937 | 135.52348 | 5.40628 | 0.1088399 | 2.7247122 | 216 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 24212 | (35431) |
| (35513) | 15.0 | 0.15 | 20060922 | 106.74509 | 88.00157 | 256.36597 | 0.99805 | 0.1000892 | 2.8896122 | 267 | 10 | 1990–2006 | 0.54 | M-v | 0 | MPC | 24243 | (35513) |
| (35538) | 14.2 | 0.15 | 20060922 | 23.88553 | 65.87334 | 26.37336 | 11.29879 | 0.1362387 | 2.7541989 | 245 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 24252 | (35538) |
| (35555) | 14.5 | 0.15 | 20060922 | 27.25869 | 353.85817 | 53.52698 | 3.07695 | 0.0467993 | 2.8861157 | 248 | 9 | 1981–2006 | 0.68 | M-v | 0 | MPC | 24259 | (35555) |
| (35591) | 15.1 | 0.15 | 20060922 | 255.79987 | 103.43160 | 145.96422 | 4.77253 | 0.1087394 | 2.8061960 | 171 | 10 | 1993–2006 | 0.60 | M-v | 0 | MPC | 47670 | (35591) |
| (35614) | 14.6 | 0.15 | 20060922 | 118.85041 | 142.69769 | 148.16941 | 1.38386 | 0.1686783 | 3.2122832 | 296 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 24280 | (35614) |
| (35616) | 14.2 | 0.15 | 20060922 | 185.92771 | 127.55831 | 169.22569 | 2.01711 | 0.0944999 | 2.9347185 | 292 | 9 | 1997–2006 | 0.58 | M-v | 0 | MPC | 24281 | (35616) |
| (35621) | 14.0 | 0.15 | 20060922 | 15.16148 | 346.82515 | 82.03127 | 13.41043 | 0.0850032 | 2.9905294 | 173 | 7 | 1956–2006 | 0.60 | M-v | 0 | MPC | 24283 | (35621) |
| (35624) | 13.9 | 0.15 | 20060922 | 343.59735 | 82.64464 | 79.41289 | 15.40111 | 0.1277314 | 2.7984262 | 251 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 24284 | (35624) |
| (35654) | 13.4 | 0.15 | 20060922 | 183.26768 | 184.55493 | 96.28074 | 5.89847 | 0.2019761 | 3.1162186 | 402 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 43321 | (35654) |
| (35656) | 13.0 | 0.15 | 20060922 | 164.34866 | 4.16816 | 329.82989 | 13.98691 | 0.0994232 | 3.1175109 | 321 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 47670 | (35656) |
| (35670) | 19.5 | 0.15 | 20060922 | 188.38917 | 169.50946 | 271.51024 | 7.10222 | 0.5940041 | 2.1247832 | 106 | 3 | 1998–2002 | 0.60 | M-v | 1 | MPC | 24299 | (35670) |
| (35688) | 12.6 | 0.15 | 20060922 | 256.87667 | 49.33745 | 113.26910 | 10.71324 | 0.0631292 | 2.7628459 | 286 | 9 | 1977–2006 | 0.56 | M-v | 0 | MPC | 24306 | (35688) |
| (35756) | 13.5 | 0.15 | 20060922 | 205.85173 | 169.89766 | 126.82232 | 9.24179 | 0.1606569 | 2.5482147 | 324 | 9 | 1982–2006 | 0.53 | M-v | 0 | MPC | 24330 | (35756) |
| (35768) | 14.4 | 0.15 | 20060922 | 97.02510 | 204.10076 | 88.23975 | 3.43608 | 0.0501852 | 2.9116337 | 363 | 9 | 1976–2006 | 0.56 | M-v | 0 | MPC | 41512 | (35768) |
| (35917) | 14.8 | 0.15 | 20060922 | 257.16133 | 134.59911 | 60.07387 | 9.78878 | 0.0799074 | 2.7586573 | 175 | 7 | 1997–2006 | 0.54 | M-v | 1 | MPC | 24389 | (35917) |
| (35941) | 14.6 | 0.15 | 20060922 | 168.43772 | 180.51213 | 152.63952 | 12.99490 | 0.1790619 | 2.6810496 | 253 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 24397 | (35941) |
| (36013) | 15.0 | 0.15 | 20060922 | 219.91728 | 315.87409 | 334.02551 | 9.18636 | 0.1489293 | 2.7495072 | 164 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 24421 | (36013) |
| (36040) | 15.0 | 0.15 | 20060922 | 143.52957 | 6.00689 | 311.31517 | 3.32715 | 0.0306507 | 2.9965489 | 247 | 9 | 1994–2006 | 0.52 | M-v | 0 | MPC | 24431 | (36040) |
| (36054) | 15.3 | 0.15 | 20060922 | 160.53572 | 263.25142 | 36.96338 | 0.87899 | 0.1892510 | 3.0338794 | 202 | 9 | 1971–2006 | 0.61 | M-v | 0 | MPC | 24436 | (36054) |
| (36077) | 14.5 | 0.15 | 20060922 | 98.55687 | 200.54170 | 102.99578 | 2.25946 | 0.1277611 | 3.2282986 | 251 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 24443 | (36077) |
| (36082) | 13.8 | 0.15 | 20060922 | 301.29582 | 144.75063 | 341.41658 | 14.67549 | 0.0168168 | 3.1791880 | 136 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 24445 | (36082) |
| (36096) | 13.8 | 0.15 | 20060922 | 211.61404 | 260.27830 | 341.05024 | 15.02170 | 0.0383387 | 3.2328962 | 293 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 24450 | (36096) |
| (36109) | 14.6 | 0.15 | 20060922 | 78.64134 | 170.29014 | 156.51894 | 5.32629 | 0.1295617 | 3.2264324 | 210 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 24454 | (36109) |
| (36117) | 13.2 | 0.15 | 20060922 | 108.01903 | 204.27777 | 160.81502 | 11.36023 | 0.1182992 | 2.9879789 | 434 | 9 | 1994–2006 | 0.52 | M-v | 0 | MPC | 24457 | (36117) |
| (36134) | 14.6 | 0.15 | 20060922 | 219.60490 | 339.42529 | 321.15569 | 9.16830 | 0.2261777 | 2.7752050 | 193 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 24463 | (36134) |
| (36138) | 13.4 | 0.15 | 20060922 | 325.96635 | 0.92404 | 134.41383 | 3.97107 | 0.0460469 | 3.0680127 | 443 | 9 | 1992–2006 | 0.51 | M-v | 0 | MPC | 24464 | (36138) |
| (36146) | 14.2 | 0.15 | 20060922 | 127.32602 | 294.23935 | 359.14394 | 2.82299 | 0.1804509 | 3.1882135 | 182 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 24467 | (36146) |
| (36149) | 14.9 | 0.15 | 20060922 | 194.29525 | 306.95189 | 309.15981 | 2.91658 | 0.1868341 | 3.0048751 | 207 | 10 | 1994–2006 | 0.57 | M-v | 0 | MPC | 24468 | (36149) |
| (36150) | 13.1 | 0.15 | 20060922 | 325.92739 | 356.53896 | 143.01871 | 15.33767 | 0.1000841 | 3.1179269 | 292 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 24468 | (36150) |
| (36152) | 13.5 | 0.15 | 20060922 | 219.59523 | 343.90754 | 273.62566 | 9.45878 | 0.0494056 | 2.9734256 | 370 | 9 | 1989–2006 | 0.55 | M-v | 0 | MPC | 24469 | (36152) |
| (36154) | 12.8 | 0.15 | 20060922 | 295.23594 | 261.47692 | 280.89621 | 15.63465 | 0.1407463 | 3.0027493 | 295 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 24470 | (36154) |
| (36157) | 13.7 | 0.15 | 20060922 | 189.28134 | 335.47635 | 330.96686 | 9.26219 | 0.0924610 | 2.9775039 | 294 | 7 | 1978–2006 | 0.52 | M-v | 0 | MPC | 24471 | (36157) |
| (36168) | 13.6 | 0.15 | 20060922 | 76.32771 | 261.36873 | 123.97509 | 10.45646 | 0.1006627 | 3.0675134 | 299 | 9 | 1977–2006 | 0.54 | M-v | 0 | MPC | 24474 | (36168) |
| (36172) | 14.8 | 0.15 | 20060922 | 303.99703 | 7.71084 | 187.86436 | 1.70122 | 0.0866479 | 2.9236660 | 260 | 9 | 1977–2006 | 0.55 | M-v | 0 | MPC | 24476 | (36172) |
| (36177) | 13.5 | 0.15 | 20060922 | 54.32166 | 45.95048 | 343.75237 | 8.60420 | 0.0560628 | 3.0802947 | 321 | 9 | 1994–2006 | 0.54 | M-v | 0 | MPC | 24477 | (36177) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (36196) | 13.3 | 0.15 | 20060922 | 20.59022 | 71.58103 | 44.74797 | 10.46053 | 0.0583946 | 2.9856995 | 254 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 24484 | (36196) |
| (36198) | 13.1 | 0.15 | 20060922 | 331.25401 | 115.42165 | 44.17359 | 10.52448 | 0.0376728 | 3.0096263 | 318 | 7 | 1955–2006 | 0.53 | M-v | 0 | MPC | 24485 | (36198) |
| (36200) | 13.5 | 0.15 | 20060922 | 91.12388 | 199.93169 | 155.78579 | 16.15710 | 0.1655502 | 3.2026435 | 280 | 9 | 1996–2006 | 0.56 | M-v | 0 | MPC | 24486 | (36200) |
| (36203) | 13.0 | 0.15 | 20060922 | 266.50493 | 149.39505 | 51.37532 | 13.30443 | 0.0499984 | 3.1521304 | 329 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 24487 | (36203) |
| (36205) | 12.7 | 0.15 | 20060922 | 299.78177 | 84.72399 | 76.70102 | 12.75682 | 0.0600760 | 3.2414041 | 335 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 24487 | (36205) |
| (36210) | 13.1 | 0.15 | 20060922 | 227.44204 | 229.25603 | 25.63725 | 11.36858 | 0.0477010 | 2.9857734 | 280 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 24489 | (36210) |
| (36215) | 12.2 | 0.15 | 20060922 | 261.04117 | 164.37729 | 34.45369 | 10.85971 | 0.1683718 | 3.2062293 | 358 | 8 | 1993–2006 | 0.56 | M-v | 0 | MPC | 70196 | (36215) |
| (36216) | 13.5 | 0.15 | 20060922 | 276.77432 | 92.36985 | 97.29093 | 2.87175 | 0.1161322 | 3.2047826 | 372 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 24491 | (36216) |
| (36221) | 13.8 | 0.15 | 20060922 | 203.38335 | 57.75034 | 173.55045 | 5.06951 | 0.0656954 | 3.2337293 | 320 | 10 | 1991–2006 | 0.58 | M-v | 0 | MPC | 24493 | (36221) |
| (36243) | 13.2 | 0.15 | 20060922 | 207.17078 | 61.36046 | 205.09098 | 11.43032 | 0.0567259 | 3.0857956 | 412 | 9 | 1997–2006 | 0.53 | M-v | 0 | MPC | 24501 | (36243) |
| (36251) | 13.7 | 0.15 | 20060922 | 246.70445 | 89.44945 | 164.48009 | 2.04867 | 0.0557345 | 2.9471354 | 339 | 10 | 1992–2006 | 0.55 | M-v | 0 | MPC | 24504 | (36251) |
| (36254) | 13.0 | 0.15 | 20060922 | 9.30550 | 74.32025 | 32.06417 | 11.94521 | 0.0434365 | 3.0666343 | 311 | 7 | 1994–2006 | 0.59 | M-v | 0 | MPC | 24504 | (36254) |
| (36258) | 15.8 | 0.15 | 20060922 | 199.27375 | 34.26630 | 181.20611 | 2.02084 | 0.1603633 | 2.3445909 | 275 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 24506 | (36258) |
| (36286) | 16.1 | 0.15 | 20060922 | 128.05725 | 184.90633 | 130.60327 | 3.96238 | 0.1329959 | 2.3947691 | 165 | 9 | 1996–2006 | 0.60 | M-v | 1 | MPC | 24516 | (36286) |
| (36290) | 14.5 | 0.15 | 20060922 | 24.47597 | 225.33701 | 151.32979 | 6.77271 | 0.2852051 | 2.5551125 | 190 | 10 | 1977–2006 | 0.59 | M-v | 1 | MPC | 24517 | (36290) |
| (36301) | 14.9 | 0.15 | 20060922 | 182.47852 | 313.17498 | 350.58554 | 2.53000 | 0.1714646 | 2.4290771 | 224 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 41512 | (36301) |
| (36302) | 14.9 | 0.15 | 20060922 | 80.12952 | 346.34985 | 320.46330 | 3.95599 | 0.0955476 | 2.7352348 | 283 | 9 | 1978–2006 | 0.56 | M-v | 0 | MPC | 77322 | (36302) |
| (36304) | 14.6 | 0.15 | 20060922 | 144.34048 | 102.21948 | 203.36758 | 3.38792 | 0.1785416 | 2.5794027 | 372 | 9 | 1976–2006 | 0.59 | M-v | 0 | MPC | 41512 | (36304) |
| (36305) | 16.2 | 0.15 | 20060922 | 265.94792 | 73.95368 | 146.18023 | 1.61094 | 0.1341208 | 2.4145907 | 171 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 24522 | (36305) |
| (36347) | 15.7 | 0.15 | 20060922 | 110.49244 | 151.48216 | 177.91469 | 2.12359 | 0.2023013 | 2.7243400 | 185 | 9 | 1995–2006 | 0.47 | M-v | 0 | MPC | 24537 | (36347) |
| (36348) | 13.8 | 0.15 | 20060922 | 350.35228 | 281.97726 | 122.00993 | 16.63132 | 0.2624800 | 3.0878619 | 145 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 24538 | (36348) |
| (36350) | 14.6 | 0.15 | 20060922 | 58.76039 | 104.34045 | 289.51824 | 8.75486 | 0.2089295 | 2.7700495 | 212 | 7 | 1976–2006 | 0.57 | M-v | 0 | MPC | 24538 | (36350) |
| (36352) | 15.0 | 0.15 | 20060922 | 99.32774 | 177.95790 | 128.51527 | 3.17552 | 0.0563855 | 2.8583804 | 253 | 9 | 1991–2006 | 0.53 | M-v | 0 | MPC | 24539 | (36352) |
| (36357) | 14.8 | 0.15 | 20060922 | 347.46001 | 72.48161 | 258.81770 | 2.65616 | 0.1611913 | 2.1610898 | 301 | 7 | 1978–2006 | 0.57 | M-v | 1 | MPC | 24541 | (36357) |
| (36379) | 13.0 | 0.15 | 20060922 | 28.59849 | 89.21871 | 299.01448 | 8.43817 | 0.3086171 | 2.9118102 | 295 | 10 | 1983–2006 | 0.54 | M-v | 0 | MPC | 24549 | (36379) |
| (36415) | 14.6 | 0.15 | 20060922 | 204.18320 | 225.37739 | 74.95813 | 5.80998 | 0.2549505 | 2.5939713 | 200 | 10 | 1991–2006 | 0.56 | M-v | 0 | MPC | 24563 | (36415) |
| (36477) | 14.6 | 0.15 | 20060922 | 359.62245 | 282.99472 | 119.23111 | 2.23999 | 0.1839732 | 3.1193273 | 276 | 9 | 1992–2006 | 0.51 | M-v | 0 | MPC | 24584 | (36477) |
| (36494) | 13.7 | 0.15 | 20060922 | 38.03745 | 258.74318 | 150.50514 | 12.31213 | 0.1960656 | 2.8614257 | 257 | 9 | 1995–2006 | 0.61 | M-v | 0 | MPC | 24590 | (36494) |
| (36507) | 15.0 | 0.15 | 20060922 | 111.76768 | 154.40362 | 149.40239 | 12.59770 | 0.0311342 | 2.9502240 | 166 | 8 | 1998–2006 | 0.63 | M-v | 0 | MPC | 43321 | (36507) |
| (36518) | 15.0 | 0.15 | 20060922 | 5.80049 | 257.46226 | 167.53067 | 2.25858 | 0.0609205 | 2.9092966 | 172 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 24598 | (36518) |
| (36521) | 13.6 | 0.15 | 20060922 | 298.70758 | 202.76510 | 345.13274 | 13.33311 | 0.1825430 | 2.6613761 | 293 | 10 | 1955–2006 | 0.52 | M-v | 0 | MPC | 24599 | (36521) |
| (36551) | 13.5 | 0.15 | 20060922 | 241.59853 | 5.71928 | 139.77769 | 9.80998 | 0.0419792 | 3.1797311 | 285 | 9 | 1997–2006 | 0.56 | M-v | 0 | MPC | 24609 | (36551) |
| (36553) | 13.8 | 0.15 | 20060922 | 40.47452 | 291.66390 | 149.46078 | 13.53402 | 0.1197002 | 2.7872531 | 256 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 24610 | (36553) |
| (36556) | 15.2 | 0.15 | 20060922 | 130.35148 | 254.08157 | 82.35550 | 5.99688 | 0.1666371 | 2.7709031 | 232 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 24611 | (36556) |
| (36587) | 12.6 | 0.15 | 20060922 | 30.15076 | 27.72285 | 57.96680 | 14.57659 | 0.1225134 | 3.0093221 | 342 | 10 | 1958–2006 | 0.49 | M-v | 0 | MPC | 24622 | (36587) |
| (36590) | 15.4 | 0.15 | 20060922 | 62.83194 | 76.08528 | 279.23891 | 0.98949 | 0.0843336 | 2.8336902 | 206 | 10 | 1991–2006 | 0.57 | M-v | 0 | MPC | 24624 | (36590) |
| (36591) | 15.3 | 0.15 | 20060922 | 72.78579 | 334.81473 | 46.79763 | 3.68881 | 0.0920316 | 2.7275529 | 234 | 7 | 1996–2006 | 0.51 | M-v | 0 | MPC | 24624 | (36591) |
| (36593) | 15.0 | 0.15 | 20060922 | 88.72976 | 242.21273 | 122.75696 | 5.70634 | 0.0699299 | 2.7349979 | 168 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 24625 | (36593) |
| (36595) | 15.2 | 0.15 | 20060922 | 104.11228 | 240.93718 | 119.68142 | 2.55807 | 0.2893160 | 2.7424484 | 237 | 7 | 1991–2006 | 0.47 | M-v | 0 | MPC | 24625 | (36595) |
| (36598) | 14.9 | 0.15 | 20060922 | 87.97468 | 219.79790 | 102.55406 | 2.14000 | 0.1385241 | 2.9851225 | 256 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 24626 | (36598) |
| (36600) | 14.3 | 0.15 | 20060922 | 53.97244 | 352.51264 | 27.86987 | 2.04895 | 0.0749114 | 2.9369859 | 241 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 24627 | (36600) |
| (36641) | 14.2 | 0.15 | 20060922 | 0.67280 | 274.71845 | 142.25941 | 14.77367 | 0.1953779 | 2.9890568 | 234 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 24641 | (36641) |
| (36647) | 14.6 | 0.15 | 20060922 | 11.88377 | 275.52848 | 102.29650 | 11.44125 | 0.1082716 | 3.0784733 | 158 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 24643 | (36647) |
| (36648) | 15.2 | 0.15 | 20060922 | 1.37332 | 271.48370 | 132.61252 | 6.69151 | 0.1118895 | 3.0306284 | 195 | 10 | 1990–2006 | 0.54 | M-v | 0 | MPC | 24643 | (36648) |
| (36656) | 14.1 | 0.15 | 20060922 | 349.24038 | 284.80688 | 131.20359 | 7.58040 | 0.1892219 | 3.0887098 | 220 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 24645 | (36656) |
| (36658) | 15.4 | 0.15 | 20060922 | 233.65331 | 159.05628 | 97.67782 | 3.79671 | 0.0424503 | 2.6434574 | 262 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 24646 | (36658) |
| (36663) | 14.8 | 0.15 | 20060922 | 347.24368 | 85.22844 | 348.62606 | 20.71554 | 0.3070254 | 3.0887762 | 103 | 5 | 1973–2006 | 0.63 | M-v | 0 | MPC | 24648 | (36663) |
| (36694) | 13.7 | 0.15 | 20060922 | 50.16142 | 127.44103 | 236.55966 | 9.28655 | 0.1002241 | 2.9771762 | 195 | 9 | 1993–2006 | 0.59 | M-v | 0 | MPC | 24658 | (36694) |
| (36708) | 14.7 | 0.15 | 20060922 | 222.29960 | 143.34265 | 240.49647 | 6.52396 | 0.1222511 | 2.3536020 | 246 | 6 | 1996–2006 | 0.59 | M-v | 1 | MPC | 24663 | (36708) |
| (36718) | 12.8 | 0.15 | 20060922 | 339.60109 | 205.81213 | 252.12266 | 9.59832 | 0.1917092 | 3.0485136 | 308 | 8 | 1998–2006 | 0.53 | M-v | 0 | MPC | 47672 | (36718) |
| (36721) | 13.2 | 0.15 | 20060922 | 68.31052 | 28.24294 | 300.01628 | 8.52186 | 0.1879625 | 3.0849875 | 335 | 9 | 1951–2006 | 0.57 | M-v | 0 | MPC | 24668 | (36721) |
| (36735) | 12.7 | 0.15 | 20060922 | 28.00578 | 165.62714 | 245.01086 | 14.40795 | 0.2119978 | 3.0911894 | 347 | 10 | 1987–2006 | 0.53 | M-v | 0 | MPC | 24674 | (36735) |
| (36742) | 14.4 | 0.15 | 20060922 | 57.78367 | 290.62209 | 94.50618 | 2.56576 | 0.1783067 | 3.0936628 | 317 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 24676 | (36742) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (36754) | 14.8 | 0.15 | 20060922 | 195.90706 | 311.84642 | 353.42588 | 5.79500 | 0.1192333 | 2.6576170 | 220 | 9 | 1978–2006 | 0.56 | M-v | 0 | MPC | 24681 | (36754) |
| (36771) | 15.0 | 0.15 | 20060922 | 239.89605 | 278.31551 | 312.43281 | 20.79446 | 0.1412273 | 1.8638264 | 233 | 7 | 1984–2006 | 0.51 | M-v | 1 | MPC | 24686 | (36771) |
| (36772) | 11.8 | 0.15 | 20060922 | 178.57346 | 297.33568 | 262.79619 | 13.33972 | 0.1663896 | 3.1416803 | 441 | 10 | 1953–2006 | 0.52 | M-v | 0 | MPC | 24687 | (36772) |
| (36819) | 14.5 | 0.15 | 20060922 | 200.89406 | 139.86038 | 130.55441 | 5.00129 | 0.0365897 | 2.7849744 | 263 | 9 | 1994–2006 | 0.60 | M-v | 0 | MPC | 24703 | (36819) |
| (36824) | 14.5 | 0.15 | 20060922 | 25.84856 | 16.80469 | 71.29682 | 7.66321 | 0.1857876 | 2.9122252 | 205 | 7 | 1992–2006 | 0.52 | M-v | 0 | MPC | 24704 | (36824) |
| (36833) | 14.3 | 0.15 | 20060922 | 258.15521 | 292.05475 | 203.32425 | 8.44716 | 0.0749601 | 3.2172263 | 166 | 9 | 1992–2006 | 0.60 | M-v | 0 | MPC | 24707 | (36833) |
| (36852) | 13.3 | 0.15 | 20060922 | 322.41304 | 74.22223 | 58.33623 | 8.31291 | 0.1964629 | 3.0665926 | 271 | 9 | 1976–2006 | 0.56 | M-v | 0 | MPC | 24714 | (36852) |
| (36866) | 15.9 | 0.15 | 20060922 | 118.41084 | 221.83216 | 213.02317 | 1.43950 | 0.0317014 | 2.5439096 | 199 | 6 | 1979–2006 | 0.58 | M-v | 1 | MPC | 41513 | (36866) |
| (36867) | 15.0 | 0.15 | 20060922 | 1.59970 | 220.24918 | 200.76362 | 1.62065 | 0.1823893 | 3.1343095 | 151 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 87298 | (36867) |
| (36873) | 15.0 | 0.15 | 20060922 | 94.27069 | 157.07308 | 213.55876 | 1.33415 | 0.1046195 | 2.8706478 | 225 | 9 | 1992–2006 | 0.50 | M-v | 0 | MPC | 24721 | (36873) |
| (36886) | 14.3 | 0.15 | 20060922 | 107.30482 | 187.57799 | 102.97685 | 11.74368 | 0.0657724 | 3.0705474 | 178 | 10 | 1990–2006 | 0.67 | M-v | 0 | MPC | 24726 | (36886) |
| (36914) | 15.3 | 0.15 | 20060922 | 286.76626 | 340.93308 | 135.16014 | 1.79669 | 0.1464553 | 3.1621650 | 172 | 7 | 1992–2006 | 0.52 | M-v | 0 | MPC | 24736 | (36914) |
| (36930) | 14.1 | 0.15 | 20060922 | 39.44517 | 338.55589 | 62.99396 | 11.25727 | 0.0947905 | 3.0033406 | 203 | 7 | 1995–2006 | 0.60 | M-v | 1 | MPC | 24741 | (36930) |
| (36937) | 15.0 | 0.15 | 20060922 | 343.39245 | 342.45184 | 135.71753 | 2.15532 | 0.1577796 | 2.9925127 | 196 | 7 | 1995–2006 | 0.49 | M-v | 0 | MPC | 24743 | (36937) |
| (36944) | 15.6 | 0.15 | 20060922 | 347.77358 | 148.93183 | 347.20833 | 6.62375 | 0.0828451 | 2.7393458 | 147 | 7 | 1996–2006 | 0.62 | M-v | 1 | MPC | 24745 | (36944) |
| (36953) | 15.2 | 0.15 | 20060922 | 22.79603 | 319.63380 | 115.22658 | 3.27068 | 0.0445407 | 2.9157263 | 173 | 9 | 1997–2006 | 0.53 | M-v | 0 | MPC | 24748 | (36953) |
| (36993) | 14.6 | 0.15 | 20060922 | 93.00869 | 236.19559 | 80.74962 | 12.21357 | 0.0875087 | 2.9805978 | 250 | 9 | 1996–2006 | 0.53 | M-v | 0 | MPC | 24760 | (36993) |
| (37009) | 14.5 | 0.15 | 20060922 | 293.11706 | 69.54578 | 31.01746 | 16.47430 | 0.0499782 | 3.1133135 | 145 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 24765 | (37009) |
| (37030) | 14.5 | 0.15 | 20060922 | 66.07962 | 327.85859 | 54.79479 | 2.67603 | 0.1630695 | 2.9884491 | 248 | 7 | 1995–2006 | 0.51 | M-v | 1 | MPC | 24772 | (37030) |
| (37036) | 13.5 | 0.15 | 20060922 | 343.53778 | 226.24886 | 221.29671 | 15.48024 | 0.0815543 | 3.0998957 | 287 | 9 | 1978–2006 | 0.62 | M-v | 0 | MPC | 24774 | (37036) |
| (37037) | 15.2 | 0.15 | 20060922 | 61.24735 | 317.82454 | 102.88822 | 3.21874 | 0.0610542 | 2.8330333 | 255 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 24775 | (37037) |
| (37050) | 14.1 | 0.15 | 20060922 | 73.43904 | 269.16747 | 60.19001 | 1.84875 | 0.1817601 | 3.1478349 | 262 | 9 | 1993–2006 | 0.57 | M-v | 0 | MPC | 24778 | (37050) |
| (37058) | 15.3 | 0.15 | 20060922 | 190.23806 | 125.07634 | 188.67229 | 4.88625 | 0.0267680 | 2.7633863 | 171 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 24781 | (37058) |
| (37061) | 14.9 | 0.15 | 20060922 | 41.23997 | 336.65484 | 100.08873 | 3.40700 | 0.0818178 | 2.9183839 | 248 | 9 | 1992–2006 | 0.51 | M-v | 0 | MPC | 24782 | (37061) |
| (37065) | 14.0 | 0.15 | 20060922 | 63.77934 | 319.34945 | 38.13269 | 1.55514 | 0.2164017 | 3.1174392 | 315 | 9 | 1972–2006 | 0.54 | M-v | 0 | MPC | 24783 | (37065) |
| (37091) | 14.0 | 0.15 | 20060922 | 88.33075 | 111.65338 | 246.04060 | 8.40146 | 0.1047615 | 3.0076187 | 229 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 24792 | (37091) |
| (37097) | 13.8 | 0.15 | 20060922 | 30.16994 | 17.37990 | 40.20402 | 10.26593 | 0.1116788 | 3.0755406 | 260 | 10 | 1976–2006 | 0.56 | M-v | 0 | MPC | 24794 | (37097) |
| (37120) | 15.0 | 0.15 | 20060922 | 22.47311 | 221.54659 | 211.18703 | 8.65872 | 0.1055236 | 2.9945702 | 198 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 24801 | (37120) |
| (37121) | 15.5 | 0.15 | 20060922 | 85.80861 | 229.47849 | 223.17457 | 8.42604 | 0.0308409 | 2.6377797 | 120 | 6 | 1995–2006 | 0.55 | M-v | 0 | MPC | 70197 | (37121) |
| (37123) | 14.7 | 0.15 | 20060922 | 342.68058 | 287.15103 | 179.12340 | 2.09415 | 0.1246497 | 3.0813060 | 242 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 24802 | (37123) |
| (37124) | 14.6 | 0.15 | 20060922 | 325.09552 | 131.89948 | 342.80208 | 0.53241 | 0.1313577 | 3.1428336 | 204 | 7 | 1978–2006 | 0.50 | M-v | 0 | MPC | 24802 | (37124) |
| (37126) | 15.2 | 0.15 | 20060922 | 154.41612 | 215.46455 | 121.64234 | 4.08016 | 0.0952696 | 2.8058317 | 231 | 9 | 1997–2006 | 0.60 | M-v | 0 | MPC | 24803 | (37126) |
| (37139) | 14.5 | 0.15 | 20060922 | 95.76663 | 72.58660 | 293.83633 | 1.73963 | 0.1252755 | 2.9722103 | 285 | 9 | 1992–2006 | 0.53 | M-v | 0 | MPC | 24807 | (37139) |
| (37157) | 14.1 | 0.15 | 20060922 | 296.36562 | 113.37437 | 26.99706 | 4.98824 | 0.1027349 | 3.1891725 | 186 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 24812 | (37157) |
| (37160) | 12.5 | 0.15 | 20060922 | 87.70920 | 318.59724 | 23.58841 | 12.32394 | 0.1089054 | 3.1367942 | 335 | 9 | 1989–2006 | 0.59 | M-v | 0 | MPC | 24813 | (37160) |
| (37166) | 13.9 | 0.15 | 20060922 | 27.06026 | 336.09591 | 69.92695 | 18.45054 | 0.1222246 | 3.1091702 | 182 | 7 | 1995–2006 | 0.62 | M-v | 0 | MPC | 24815 | (37166) |
| (37193) | 15.5 | 0.15 | 20060922 | 179.32373 | 11.81609 | 286.21242 | 4.63881 | 0.0432730 | 2.8809376 | 219 | 9 | 1992–2006 | 0.56 | M-v | 0 | MPC | 24824 | (37193) |
| (37195) | 14.3 | 0.15 | 20060922 | 209.27351 | 232.17527 | 341.62247 | 5.75976 | 0.1324836 | 3.2350419 | 274 | 10 | 1991–2006 | 0.55 | M-v | 0 | MPC | 47672 | (37195) |
| (37201) | 14.6 | 0.15 | 20060922 | 105.28755 | 12.17200 | 9.28099 | 1.87498 | 0.0963166 | 2.9219349 | 300 | 9 | 1979–2006 | 0.57 | M-v | 0 | MPC | 24826 | (37201) |
| (37204) | 13.5 | 0.15 | 20060922 | 9.16840 | 42.46241 | 86.34934 | 11.43347 | 0.0668049 | 2.9667871 | 302 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 24827 | (37204) |
| (37224) | 13.9 | 0.15 | 20060922 | 205.46182 | 147.62496 | 151.82423 | 15.70852 | 0.1569714 | 2.6758699 | 265 | 9 | 1995–2006 | 0.59 | M-v | 0 | MPC | 24833 | (37224) |
| (37236) | 14.5 | 0.15 | 20060922 | 201.00131 | 141.42192 | 122.46196 | 10.79146 | 0.0377072 | 2.9744387 | 238 | 9 | 1997–2006 | 0.56 | M-v | 0 | MPC | 24837 | (37236) |
| (37237) | 13.6 | 0.15 | 20060922 | 290.76647 | 15.54680 | 142.94468 | 12.44822 | 0.2340225 | 3.2160434 | 193 | 9 | 1991–2006 | 0.60 | M-v | 1 | MPC | 24837 | (37237) |
| (37272) | 13.4 | 0.15 | 20060922 | 70.45836 | 325.34396 | 55.97106 | 23.01519 | 0.0801502 | 3.1923022 | 277 | 9 | 1988–2006 | 0.50 | M-v | 0 | MPC | 24847 | (37272) |
| (37284) | 13.8 | 0.15 | 20060922 | 61.58518 | 294.74284 | 109.67546 | 11.71596 | 0.1407369 | 3.0601946 | 252 | 9 | 1995–2006 | 0.51 | M-v | 0 | MPC | 24850 | (37284) |
| (37309) | 12.7 | 0.15 | 20060922 | 145.33823 | 282.75549 | 17.55973 | 15.04319 | 0.1305187 | 2.6423257 | 298 | 9 | 1988–2006 | 0.50 | M-v | 0 | MPC | 24857 | (37309) |
| (37316) | 14.2 | 0.15 | 20060922 | 345.77442 | 258.87133 | 181.16233 | 7.60972 | 0.2115349 | 2.7966526 | 333 | 9 | 1996–2006 | 0.57 | M-v | 0 | MPC | 24860 | (37316) |
| (37342) | 13.8 | 0.15 | 20060922 | 261.89247 | 319.72131 | 217.99024 | 7.00642 | 0.1323331 | 2.5721958 | 277 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 24870 | (37342) |
| (37346) | 14.2 | 0.15 | 20060922 | 102.32614 | 290.87559 | 344.86790 | 1.15356 | 0.0309430 | 2.8961273 | 326 | 10 | 1991–2006 | 0.52 | M-v | 0 | MPC | 24872 | (37346) |
| (37349) | 14.0 | 0.15 | 20060922 | 3.70244 | 334.81742 | 131.72636 | 12.79956 | 0.1403344 | 2.6331737 | 219 | 7 | 1994–2006 | 0.64 | M-v | 0 | MPC | 24873 | (37349) |
| (37361) | 14.7 | 0.15 | 20060922 | 327.08152 | 277.81877 | 158.56972 | 2.39696 | 0.0363755 | 2.8939420 | 286 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 24877 | (37361) |
| (37370) | 13.7 | 0.15 | 20060922 | 37.97941 | 130.06701 | 258.78877 | 2.02027 | 0.1671990 | 2.8061434 | 386 | 10 | 1982–2006 | 0.55 | M-v | 0 | MPC | 24880 | (37370) |
| (37371) | 13.4 | 0.15 | 20060922 | 151.91056 | 51.67119 | 236.43731 | 15.21462 | 0.2794897 | 2.6632680 | 351 | 10 | 1987–2006 | 0.53 | M-v | 0 | MPC | 24880 | (37371) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (37375) | 13.6 | 0.15 | 20060922 | 123.46608 | 227.57809 | 59.90910 | 16.64888 | 0.2178730 | 2.8565685 | 299 | 9 | 1996–2006 | 0.54 | M-v | 0 | MPC | 24881 | (37375) |
| (37379) | 15.0 | 0.15 | 20060922 | 350.97882 | 228.06157 | 163.34499 | 11.53200 | 0.1654938 | 3.0385733 | 146 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 24883 | (37379) |
| (37385) | 13.5 | 0.15 | 20060922 | 89.77473 | 190.18929 | 76.99640 | 15.77136 | 0.0475230 | 3.2271651 | 197 | 7 | 1978–2006 | 0.64 | M-v | 0 | MPC | 24884 | (37385) |
| (37398) | 14.6 | 0.15 | 20060922 | 144.83512 | 175.95413 | 70.92309 | 7.47833 | 0.0116068 | 3.0359749 | 224 | 9 | 1993–2006 | 0.61 | M-v | 0 | MPC | 24889 | (37398) |
| (37401) | 13.2 | 0.15 | 20060922 | 317.88795 | 327.90996 | 100.50732 | 15.91476 | 0.0822071 | 3.0902612 | 266 | 9 | 1996–2006 | 0.58 | M-v | 0 | MPC | 24889 | (37401) |
| (37413) | 14.9 | 0.15 | 20060922 | 230.19223 | 117.09219 | 148.47186 | 5.32504 | 0.1186323 | 2.7251983 | 277 | 9 | 1995–2006 | 0.64 | M-v | 0 | MPC | 24893 | (37413) |
| (37445) | 15.2 | 0.15 | 20060922 | 246.35961 | 317.40171 | 295.71610 | 7.19747 | 0.1350653 | 2.3943296 | 173 | 9 | 1960–2006 | 0.64 | M-v | 1 | MPC | 24903 | (37445) |
| (37456) | 15.9 | 0.15 | 20060922 | 72.08497 | 30.63768 | 355.52637 | 2.12575 | 0.0763041 | 2.7196434 | 127 | 7 | 1960–2006 | 0.54 | M-v | 1 | MPC | 24906 | (37456) |
| (37467) | 15.1 | 0.15 | 20060922 | 3.12023 | 52.44401 | 53.14809 | 3.08047 | 0.0398902 | 2.7131947 | 190 | 9 | 1960–2006 | 0.55 | M-v | 0 | MPC | 24909 | (37467) |
| (37508) | 14.4 | 0.15 | 20060922 | 149.83092 | 91.77160 | 156.00712 | 9.46069 | 0.1097215 | 2.7772962 | 224 | 9 | 1973–2006 | 0.62 | M-v | 0 | MPC | 24922 | (37508) |
| (37522) | 15.2 | 0.15 | 20060922 | 183.78729 | 282.35316 | 6.00028 | 1.79939 | 0.0371499 | 2.7727052 | 246 | 10 | 1977–2006 | 0.58 | M-v | 0 | MPC | 24927 | (37522) |
| (37523) | 14.1 | 0.15 | 20060922 | 223.32319 | 106.18003 | 135.36719 | 3.51410 | 0.2138767 | 3.1054014 | 332 | 9 | 1977–2006 | 0.61 | M-v | 0 | MPC | 24927 | (37523) |
| (37526) | 14.6 | 0.15 | 20060922 | 264.60290 | 96.34116 | 115.02037 | 7.61624 | 0.0831573 | 2.7736218 | 252 | 9 | 1977–2006 | 0.57 | M-v | 0 | MPC | 24928 | (37526) |
| (37532) | 14.0 | 0.15 | 20060922 | 52.05046 | 313.67763 | 68.20513 | 18.22568 | 0.2263693 | 3.1103964 | 129 | 7 | 1978–2006 | 0.55 | M-v | 0 | MPC | 26191 | (37532) |
| (37564) | 13.1 | 0.15 | 20060922 | 29.66106 | 47.51512 | 8.45268 | 13.60572 | 0.1926686 | 3.1907659 | 273 | 7 | 1988–2006 | 0.59 | M-v | 0 | MPC | 26202 | (37564) |
| (37628) | 13.8 | 0.15 | 20060922 | 105.68486 | 319.35457 | 24.69044 | 22.28400 | 0.0636520 | 3.2504093 | 237 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 26225 | (37628) |
| (37659) | 15.2 | 0.15 | 20060922 | 105.74951 | 208.52193 | 173.76128 | 1.74780 | 0.1164901 | 2.9464726 | 168 | 9 | 1992–2006 | 0.63 | M-v | 0 | MPC | 26236 | (37659) |
| (37662) | 14.8 | 0.15 | 20060922 | 97.80342 | 326.05518 | 63.24691 | 2.84020 | 0.0754482 | 2.9269019 | 263 | 9 | 1994–2006 | 0.52 | M-v | 0 | MPC | 26237 | (37662) |
| (37698) | 14.8 | 0.15 | 20060922 | 133.56993 | 126.67562 | 224.07059 | 1.24606 | 0.0712806 | 2.8883651 | 288 | 10 | 1993–2006 | 0.51 | M-v | 0 | MPC | 26248 | (37698) |
| (37704) | 14.1 | 0.15 | 20060922 | 223.26088 | 194.05751 | 65.30857 | 1.16668 | 0.0468355 | 3.1483808 | 311 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 26250 | (37704) |
| (37731) | 16.2 | 0.15 | 20060922 | 112.72580 | 167.22125 | 288.68894 | 0.21691 | 0.1362331 | 2.5314149 | 265 | 6 | 1996–2006 | 0.65 | M-v | 1 | MPC | 77323 | (37731) |
| (37764) | 13.6 | 0.15 | 20060922 | 189.03451 | 275.09101 | 17.35103 | 9.57496 | 0.0864399 | 3.0604435 | 287 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 26271 | (37764) |
| (37772) | 12.9 | 0.15 | 20060922 | 336.68616 | 53.93122 | 44.49439 | 22.68160 | 0.0883187 | 3.2280896 | 177 | 8 | 1997–2006 | 0.64 | M-v | 0 | MPC | 66031 | (37772) |
| (37776) | 16.1 | 0.15 | 20060922 | 92.63478 | 122.94262 | 189.13853 | 6.49345 | 0.1289607 | 2.3868980 | 125 | 9 | 1990–2006 | 0.62 | M-v | 0 | MPC | 38169 | (37776) |
| (37779) | 14.9 | 0.15 | 20060922 | 287.56752 | 43.11156 | 158.94840 | 2.05560 | 0.0452000 | 3.0586874 | 132 | 9 | 1994–2006 | 0.57 | M-v | 0 | MPC | 26277 | (37779) |
| (37977) | 12.6 | 0.15 | 20060922 | 26.71261 | 183.90382 | 204.64615 | 20.16292 | 0.1931264 | 3.1370904 | 362 | 8 | 1998–2006 | 0.57 | M-v | 0 | MPC | 77323 | (37977) |
| (38039) | 14.1 | 0.15 | 20060922 | 219.08467 | 87.20604 | 159.88425 | 1.76771 | 0.1355920 | 3.2166554 | 256 | 7 | 1984–2006 | 0.59 | M-v | 0 | MPC | 26370 | (38039) |
| (38041) | 14.4 | 0.15 | 20060922 | 214.36315 | 148.95389 | 135.67582 | 5.56763 | 0.1359826 | 3.1931747 | 267 | 10 | 1992–2006 | 0.60 | M-v | 0 | MPC | 47673 | (38041) |
| (38047) | 14.1 | 0.15 | 20060922 | 137.19963 | 314.45898 | 277.70763 | 17.34103 | 0.0415266 | 1.9254915 | 279 | 7 | 1976–2006 | 0.56 | M-v | 1 | MPC | 26373 | (38047) |
| (38091) | 15.8 | 0.15 | 20060922 | 71.96934 | 224.53792 | 65.06269 | 9.35917 | 0.4008924 | 2.1699417 | 139 | 7 | 1980–2006 | 0.60 | M-v | 1 | MPC | 26390 | (38091) |
| (38252) | 14.4 | 0.15 | 20060922 | 344.45292 | 323.28684 | 139.63625 | 1.33529 | 0.1570520 | 3.2076785 | 210 | 9 | 1989–2006 | 0.56 | M-v | 0 | MPC | 26447 | (38252) |
| (38253) | 15.2 | 0.15 | 20060922 | 67.15890 | 68.80799 | 1.23558 | 1.53131 | 0.0601261 | 2.9445619 | 204 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 26447 | (38253) |
| (38262) | 15.1 | 0.15 | 20060922 | 66.28728 | 87.24645 | 295.78551 | 4.05112 | 0.1645878 | 3.1794538 | 155 | 7 | 1993–2006 | 0.53 | M-v | 0 | MPC | 26450 | (38262) |
| (38263) | 14.3 | 0.15 | 20060922 | 22.86002 | 217.84886 | 211.17372 | 5.27474 | 0.1249300 | 3.1956255 | 315 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 26451 | (38263) |
| (38285) | 15.1 | 0.15 | 20060922 | 120.52455 | 186.01682 | 188.99090 | 1.76811 | 0.0771588 | 2.8957221 | 182 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 26458 | (38285) |
| (38293) | 14.1 | 0.15 | 20060922 | 39.45903 | 290.61803 | 142.21385 | 3.44555 | 0.1058113 | 3.0894038 | 183 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 26461 | (38293) |
| (38301) | 13.7 | 0.15 | 20060922 | 162.59167 | 2.87125 | 334.50390 | 1.39074 | 0.0290012 | 2.9490848 | 341 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 26464 | (38301) |
| (38312) | 14.0 | 0.15 | 20060922 | 65.54591 | 143.29001 | 247.66583 | 8.47061 | 0.0966953 | 3.1622499 | 213 | 7 | 1993–2006 | 0.48 | M-v | 0 | MPC | 26468 | (38312) |
| (38349) | 14.0 | 0.15 | 20060922 | 92.96840 | 234.73623 | 155.83879 | 11.00783 | 0.1227413 | 2.9735292 | 282 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 26481 | (38349) |
| (38365) | 14.1 | 0.15 | 20060922 | 39.52925 | 317.93630 | 86.38539 | 2.55847 | 0.1940282 | 3.2001536 | 290 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 26487 | (38365) |
| (38378) | 14.5 | 0.15 | 20060922 | 88.22168 | 153.50312 | 194.12892 | 1.46618 | 0.1772340 | 3.1854585 | 248 | 9 | 1993–2006 | 0.52 | M-v | 0 | MPC | 26491 | (38378) |
| (38395) | 13.2 | 0.15 | 20060922 | 347.96363 | 261.40818 | 167.41699 | 10.28931 | 0.0663222 | 3.5104024 | 255 | 9 | 1995–2006 | 0.61 | M-v | 0 | MPC | 62199 | (38395) |
| (38397) | 13.7 | 0.15 | 20060922 | 92.13523 | 92.74072 | 272.60916 | 4.83974 | 0.1486225 | 3.1191188 | 322 | 9 | 1990–2006 | 0.51 | M-v | 0 | MPC | 26497 | (38397) |
| (38401) | 14.1 | 0.15 | 20060922 | 125.69432 | 46.54220 | 312.61579 | 7.84395 | 0.0275678 | 2.9952211 | 190 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 26499 | (38401) |
| (38450) | 14.0 | 0.15 | 20060922 | 281.81968 | 322.61666 | 210.59341 | 0.38124 | 0.1531859 | 3.1892767 | 291 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 26514 | (38450) |
| (38452) | 13.9 | 0.15 | 20060922 | 98.71912 | 277.94834 | 70.89621 | 2.04205 | 0.1927311 | 3.2031277 | 373 | 9 | 1976–2006 | 0.55 | M-v | 0 | MPC | 26515 | (38452) |
| (38456) | 13.7 | 0.15 | 20060922 | 79.82820 | 238.25936 | 142.61064 | 1.68847 | 0.1736156 | 3.1971671 | 391 | 9 | 1996–2006 | 0.48 | M-v | 0 | MPC | 26517 | (38456) |
| (38461) | 14.8 | 0.15 | 20060922 | 25.96180 | 187.53749 | 255.24816 | 0.28423 | 0.0574289 | 3.1669487 | 270 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 26519 | (38461) |
| (38463) | 14.8 | 0.15 | 20060922 | 150.08286 | 179.96312 | 135.74278 | 2.45854 | 0.1674363 | 3.0575631 | 215 | 10 | 1993–2006 | 0.56 | M-v | 0 | MPC | 47674 | (38463) |
| (38469) | 13.8 | 0.15 | 20060922 | 287.06692 | 258.14295 | 12.97249 | 28.71480 | 0.1769666 | 2.6760492 | 117 | 6 | 1998–2006 | 0.64 | M-v | 1 | MPC | 26522 | (38469) |
| (38472) | 13.8 | 0.15 | 20060922 | 243.83482 | 234.34148 | 2.50664 | 9.08536 | 0.0379753 | 3.0960438 | 281 | 7 | 1991–2006 | 0.64 | M-v | 0 | MPC | 26523 | (38472) |
| (38495) | 14.3 | 0.15 | 20060922 | 197.10307 | 345.37872 | 325.55824 | 2.33356 | 0.0284468 | 2.9462183 | 283 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 26531 | (38495) |
| (38496) | 14.8 | 0.15 | 20060922 | 81.64152 | 118.43160 | 253.59275 | 2.53756 | 0.1103099 | 3.2006967 | 214 | 7 | 1993–2006 | 0.54 | M-v | 0 | MPC | 26531 | (38496) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (38503) | 14.3 | 0.15 | 20060922 | 146.08232 | 33.14847 | 289.09010 | 11.77932 | 0.1416377 | 3.0969422 | 180 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 26534 | (38503) |
| (38514) | 13.6 | 0.15 | 20060922 | 344.39606 | 100.17129 | 60.70184 | 10.34333 | 0.0471654 | 3.0172876 | 225 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 26537 | (38514) |
| (38516) | 12.4 | 0.15 | 20060922 | 200.12746 | 81.84221 | 204.41631 | 17.00203 | 0.1898168 | 3.1195141 | 326 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 26538 | (38516) |
| (38523) | 14.0 | 0.15 | 20060922 | 8.08995 | 82.46789 | 24.95029 | 9.87374 | 0.0418960 | 3.0894158 | 243 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 26540 | (38523) |
| (38528) | 13.4 | 0.15 | 20060922 | 212.47538 | 28.98992 | 252.34293 | 8.65606 | 0.0655480 | 3.0664407 | 267 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 47674 | (38528) |
| (38541) | 13.8 | 0.15 | 20060922 | 157.97363 | 34.72530 | 280.66109 | 3.99456 | 0.1463878 | 3.1391335 | 382 | 9 | 1987–2006 | 0.55 | M-v | 0 | MPC | 26547 | (38541) |
| (38547) | 14.3 | 0.15 | 20060922 | 172.73546 | 117.09010 | 210.93186 | 1.76787 | 0.2280972 | 3.0548739 | 293 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 26549 | (38547) |
| (38554) | 13.7 | 0.15 | 20060922 | 328.64451 | 239.36429 | 262.43139 | 4.44671 | 0.0606344 | 3.2287164 | 418 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 26552 | (38554) |
| (38556) | 13.5 | 0.15 | 20060922 | 93.58701 | 201.54624 | 178.52675 | 8.17750 | 0.0780713 | 3.1703763 | 358 | 9 | 1993–2006 | 0.56 | M-v | 0 | MPC | 26552 | (38556) |
| (38559) | 13.8 | 0.15 | 20060922 | 120.60214 | 79.02197 | 257.65815 | 14.15629 | 0.1012444 | 3.1831299 | 296 | 9 | 1987–2006 | 0.55 | M-v | 0 | MPC | 26554 | (38559) |
| (38567) | 13.8 | 0.15 | 20060922 | 267.14592 | 218.17518 | 6.97604 | 5.12067 | 0.0957340 | 3.1417010 | 291 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 26556 | (38567) |
| (38571) | 14.2 | 0.15 | 20060922 | 229.09494 | 270.07052 | 346.44590 | 4.42815 | 0.1089760 | 3.1261066 | 227 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 26557 | (38571) |
| (38577) | 12.8 | 0.15 | 20060922 | 235.34950 | 201.33139 | 39.53910 | 23.03982 | 0.0358518 | 3.2226228 | 326 | 7 | 1992–2006 | 0.50 | M-v | 0 | MPC | 26560 | (38577) |
| (38587) | 13.4 | 0.15 | 20060922 | 297.47486 | 336.14732 | 245.59270 | 10.10806 | 0.1126905 | 3.1658161 | 299 | 9 | 1997–2006 | 0.57 | M-v | 0 | MPC | 31800 | (38587) |
| (38588) | 15.4 | 0.15 | 20060922 | 273.44238 | 311.13974 | 200.41662 | 6.23581 | 0.0454989 | 2.3307675 | 295 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 26564 | (38588) |
| (38622) | 13.2 | 0.15 | 20060922 | 299.36497 | 333.29021 | 225.25417 | 15.88179 | 0.0383385 | 3.2441954 | 196 | 9 | 1996–2006 | 0.54 | M-v | 0 | MPC | 30238 | (38622) |
| (38858) | 12.7 | 0.15 | 20060922 | 288.75643 | 221.58497 | 280.45171 | 13.57522 | 0.1388122 | 3.0987510 | 289 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 26664 | (38858) |
| (38887) | 14.0 | 0.15 | 20060922 | 310.47151 | 226.38519 | 246.12961 | 12.13152 | 0.2079469 | 3.0612764 | 138 | 8 | 1992–2006 | 0.51 | M-v | 1 | MPC | 26676 | (38887) |
| (38902) | 15.7 | 0.15 | 20060922 | 23.31488 | 124.20922 | 5.47325 | 21.85751 | 0.0468740 | 2.6901094 | 91 | 5 | 1991–2004 | 0.79 | M-v | 1 | MPC | 70199 | (38902) |
| (38981) | 13.7 | 0.15 | 20060922 | 156.26782 | 22.35788 | 223.10529 | 20.52231 | 0.0187315 | 3.2297843 | 255 | 9 | 1994–2006 | 0.53 | M-v | 0 | MPC | 26709 | (38981) |
| (39022) | 14.7 | 0.15 | 20060922 | 118.83278 | 198.33482 | 146.04073 | 3.51029 | 0.2269151 | 2.8826710 | 178 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 26723 | (39022) |
| (39103) | 14.2 | 0.15 | 20060922 | 24.63220 | 280.43538 | 151.74892 | 3.62491 | 0.0903566 | 3.0664159 | 301 | 10 | 1992–2006 | 0.60 | M-v | 0 | MPC | 26749 | (39103) |
| (39126) | 13.5 | 0.15 | 20060922 | 70.14564 | 273.95818 | 106.24772 | 9.34828 | 0.1428727 | 3.0842192 | 157 | 9 | 1995–2006 | 0.58 | M-v | 0 | MPC | 26756 | (39126) |
| (39167) | 15.4 | 0.15 | 20060922 | 324.55393 | 326.52547 | 165.05963 | 1.07513 | 0.1169949 | 3.1147266 | 172 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 26769 | (39167) |
| (39168) | 15.3 | 0.15 | 20060922 | 43.79859 | 272.59098 | 168.33954 | 2.37455 | 0.0715465 | 2.9255353 | 215 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 26769 | (39168) |
| (39194) | 13.2 | 0.15 | 20060922 | 213.59388 | 306.69129 | 244.70379 | 16.74495 | 0.0267059 | 3.2525008 | 245 | 8 | 1998–2006 | 0.54 | M-v | 0 | MPC | 41513 | (39194) |
| (39199) | 12.8 | 0.15 | 20060922 | 303.95507 | 233.43801 | 283.61698 | 21.12093 | 0.0867730 | 3.1582805 | 177 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 26779 | (39199) |
| (39219) | 15.3 | 0.15 | 20060922 | 168.61207 | 104.72612 | 231.87685 | 2.27617 | 0.0918638 | 2.7861337 | 152 | 10 | 1995–2006 | 0.53 | M-v | 0 | MPC | 26785 | (39219) |
| (39249) | 13.7 | 0.15 | 20060922 | 262.79297 | 276.26176 | 283.75181 | 14.43764 | 0.0672627 | 3.2080890 | 173 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 26794 | (39249) |
| (39259) | 14.4 | 0.15 | 20060922 | 75.51067 | 232.34012 | 146.70583 | 16.06748 | 0.0811022 | 2.9703109 | 121 | 9 | 1992–2006 | 0.65 | M-v | 1 | MPC | 26797 | (39259) |
| (39260) | 14.0 | 0.15 | 20060922 | 330.72951 | 353.57345 | 134.89158 | 11.78513 | 0.1755730 | 3.1443517 | 133 | 7 | 1989–2006 | 0.51 | M-v | 0 | MPC | 26797 | (39260) |
| (39266) | 12.5 | 0.15 | 20060922 | 102.00856 | 190.51937 | 105.25754 | 7.03652 | 0.2524815 | 3.9720438 | 327 | 9 | 1994–2006 | 0.50 | M-v | 0 | MPC | 26799 | (39266) |
| (39267) | 13.8 | 0.15 | 20060922 | 167.28534 | 186.96056 | 139.17867 | 11.01348 | 0.0411617 | 3.0449641 | 192 | 9 | 1992–2006 | 0.62 | M-v | 0 | MPC | 26799 | (39267) |
| (39282) | 12.2 | 0.15 | 20060922 | 123.92307 | 358.95866 | 278.60973 | 6.87420 | 0.1844045 | 3.9693914 | 374 | 10 | 1979–2006 | 0.55 | M-v | 0 | MPC | 26803 | (39282) |
| (39287) | 12.7 | 0.15 | 20060922 | 252.99226 | 6.59683 | 47.89145 | 5.23322 | 0.0406462 | 5.0672851 | 91 | 10 | 1991–2006 | 0.60 | M-v | 0 | MPC | 26805 | (39287) |
| (39310) | 14.8 | 0.15 | 20060922 | 303.92329 | 69.91323 | 17.72247 | 2.14023 | 0.0390858 | 2.9311073 | 272 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 26812 | (39310) |
| (39313) | 14.6 | 0.15 | 20060922 | 292.77190 | 191.20497 | 340.06916 | 1.53151 | 0.0139992 | 2.5975185 | 312 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 26813 | (39313) |
| (39315) | 13.4 | 0.15 | 20060922 | 305.89661 | 311.72357 | 132.06727 | 14.50618 | 0.0651552 | 3.2129192 | 250 | 9 | 1997–2006 | 0.55 | M-v | 0 | MPC | 26814 | (39315) |
| (39339) | 14.8 | 0.15 | 20060922 | 312.42843 | 22.04031 | 88.36971 | 2.55202 | 0.1420498 | 3.1655731 | 128 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 26822 | (39339) |
| (39344) | 14.6 | 0.15 | 20060922 | 1.73585 | 283.90263 | 138.14782 | 16.45431 | 0.1773684 | 3.1176645 | 173 | 8 | 1994–2006 | 0.60 | M-v | 0 | MPC | 26823 | (39344) |
| (39358) | 14.1 | 0.15 | 20060922 | 99.84991 | 44.61532 | 309.89241 | 8.77469 | 0.1026293 | 2.9927586 | 185 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 26828 | (39358) |
| (39405) | 13.3 | 0.15 | 20060922 | 62.66095 | 66.50314 | 246.83254 | 1.75039 | 0.2233620 | 3.9645103 | 285 | 9 | 1971–2006 | 0.51 | M-v | 0 | MPC | 26843 | (39405) |
| (39423) | 15.4 | 0.15 | 20060922 | 25.83177 | 264.23432 | 151.16901 | 4.25829 | 0.1480932 | 3.0483848 | 116 | 7 | 1973–2006 | 0.71 | M-v | 0 | MPC | 26849 | (39423) |
| (39427) | 11.9 | 0.15 | 20060922 | 93.67939 | 242.40725 | 68.63204 | 3.87480 | 0.1889229 | 3.9846616 | 341 | 10 | 1973–2006 | 0.60 | M-v | 0 | MPC | 26851 | (39427) |
| (39433) | 14.2 | 0.15 | 20060922 | 93.61214 | 13.34270 | 349.99067 | 14.32386 | 0.0951631 | 3.1300621 | 143 | 7 | 1977–2006 | 0.58 | M-v | 0 | MPC | 26852 | (39433) |
| (39437) | 13.7 | 0.15 | 20060922 | 311.05750 | 271.03626 | 215.08787 | 11.91077 | 0.0966623 | 3.1741692 | 222 | 9 | 1960–2006 | 0.63 | M-v | 0 | MPC | 26854 | (39437) |
| (39443) | 13.6 | 0.15 | 20060922 | 41.08066 | 25.65597 | 17.41127 | 25.06049 | 0.1189208 | 3.1570685 | 157 | 7 | 1977–2006 | 0.67 | M-v | 1 | MPC | 26856 | (39443) |
| (39460) | 13.7 | 0.15 | 20060922 | 327.12033 | 124.27085 | 35.86181 | 17.17771 | 0.1554192 | 3.1283672 | 221 | 7 | 1977–2006 | 0.59 | M-v | 0 | MPC | 26862 | (39460) |
| (39530) | 13.6 | 0.15 | 20060922 | 337.15368 | 295.55613 | 204.78335 | 11.68730 | 0.1626668 | 3.2131541 | 254 | 7 | 1990–2006 | 0.57 | M-v | 0 | MPC | 27893 | (39530) |
| (39539) | 13.0 | 0.15 | 20060922 | 12.26441 | 125.81867 | 16.42831 | 9.14684 | 0.0754036 | 3.0557968 | 372 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 27897 | (39539) |
| (39543) | 12.7 | 0.15 | 20060922 | 41.96811 | 45.68272 | 340.50505 | 8.55327 | 0.1524136 | 2.7844873 | 353 | 10 | 1976–2006 | 0.58 | M-v | 0 | MPC | 27898 | (39543) |
| (39557) | 17.5 | 0.15 | 20060922 | 44.98005 | 239.24570 | 58.89240 | 5.56601 | 0.4260207 | 2.2643398 | 134 | 4 | 1992–2006 | 0.47 | M-v | 2 | MPC | 27903 | (39557) |
| (39563) | 15.2 | 0.15 | 20060922 | 357.66505 | 316.28249 | 129.26032 | 25.27584 | 0.0782104 | 1.9315481 | 107 | 7 | 1992–2006 | 0.69 | M-v | 1 | MPC | 27905 | (39563) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (39625) | 14.5 | 0.15 | 20060922 | 103.36457 | 143.86159 | 197.48942 | 1.20504 | 0.1172284 | 3.0173591 | 185 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 27926 | (39625) |
| (39654) | 14.9 | 0.15 | 20060922 | 47.65826 | 95.38180 | 250.91911 | 4.07238 | 0.1926505 | 2.3350991 | 219 | 10 | 1984–2006 | 0.57 | M-v | 0 | MPC | 27935 | (39654) |
| (39675) | 15.0 | 0.15 | 20060922 | 302.36013 | 88.24801 | 108.46808 | 8.44884 | 0.0332386 | 3.0209530 | 116 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 27942 | (39675) |
| (39698) | 15.5 | 0.15 | 20060922 | 73.68990 | 128.69779 | 147.72810 | 4.15769 | 0.1411511 | 2.2452488 | 293 | 9 | 1994–2006 | 0.56 | M-v | 0 | MPC | 27950 | (39698) |
| (39741) | 15.8 | 0.15 | 20060922 | 32.46684 | 126.14260 | 225.83228 | 6.33664 | 0.3492552 | 2.1829771 | 135 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 27965 | (39741) |
| (39787) | 15.8 | 0.15 | 20060922 | 78.09102 | 277.74107 | 101.95859 | 24.01671 | 0.1118498 | 1.9233984 | 119 | 7 | 1997–2006 | 0.60 | M-v | 1 | MPC | 27980 | (39787) |
| (39819) | 14.1 | 0.15 | 20060922 | 46.87494 | 156.92074 | 305.40895 | 12.59602 | 0.1023943 | 2.5764077 | 278 | 6 | 1994–2006 | 0.55 | M-v | 1 | MPC | 27992 | (39819) |
| (39858) | 14.7 | 0.15 | 20060922 | 271.29387 | 305.63916 | 349.09236 | 11.62761 | 0.1536928 | 2.5473315 | 224 | 7 | 1994–2006 | 0.60 | M-v | 1 | MPC | 28006 | (39858) |
| (39902) | 15.2 | 0.15 | 20060922 | 5.42698 | 332.64416 | 331.20013 | 4.37480 | 0.2371189 | 2.3841059 | 240 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 28023 | (39902) |
| (39941) | 12.9 | 0.15 | 20060922 | 45.80813 | 104.48908 | 329.69719 | 7.22577 | 0.0801751 | 2.7638722 | 465 | 9 | 1991–2006 | 0.49 | M-v | 0 | MPC | 28039 | (39941) |
| (39961) | 16.1 | 0.15 | 20060922 | 355.16095 | 299.45252 | 283.63119 | 1.82812 | 0.2585174 | 2.5929060 | 212 | 5 | 1995–2006 | 0.58 | M-v | 2 | MPC | 28047 | (39961) |
| (39966) | 16.1 | 0.15 | 20060922 | 342.24865 | 36.19759 | 216.03109 | 3.97328 | 0.2402340 | 2.5480619 | 124 | 7 | 1982–2006 | 0.61 | M-v | 0 | MPC | 28049 | (39966) |
| (40022) | 13.4 | 0.15 | 20060922 | 17.64214 | 327.53697 | 84.28378 | 13.68930 | 0.1757607 | 2.9451251 | 221 | 10 | 1955–2006 | 0.58 | M-v | 0 | MPC | 28069 | (40022) |
| (40034) | 13.1 | 0.15 | 20060922 | 232.74968 | 82.72072 | 87.62580 | 18.04100 | 0.2286335 | 3.0989409 | 220 | 10 | 1990–2006 | 0.52 | M-v | 0 | MPC | 28074 | (40034) |
| (40058) | 15.1 | 0.15 | 20060922 | 73.46109 | 172.13392 | 113.36616 | 6.22377 | 0.2301359 | 2.3798136 | 229 | 12 | 1950–2006 | 0.59 | M-v | 0 | MPC | 28083 | (40058) |
| (40097) | 12.9 | 0.15 | 20060922 | 49.51969 | 292.63789 | 148.74053 | 14.70352 | 0.0814670 | 3.1857518 | 332 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 28097 | (40097) |
| (40116) | 14.1 | 0.15 | 20060922 | 193.12450 | 167.97474 | 139.11761 | 11.37928 | 0.0832958 | 3.0916230 | 103 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 28104 | (40116) |
| (40270) | 14.6 | 0.15 | 20060922 | 239.04624 | 315.43659 | 232.72243 | 18.60907 | 0.0785054 | 1.9741662 | 280 | 7 | 1978–2006 | 0.52 | M-v | 1 | MPC | 28158 | (40270) |
| (40286) | 15.6 | 0.15 | 20060922 | 50.26995 | 181.54675 | 109.75549 | 4.83648 | 0.1410226 | 2.1969814 | 284 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 28165 | (40286) |
| (40325) | 14.4 | 0.15 | 20060922 | 50.25485 | 208.39620 | 97.19362 | 12.16190 | 0.0187698 | 3.1919827 | 179 | 7 | 1998–2006 | 0.64 | M-v | 0 | MPC | 28178 | (40325) |
| (40329) | 17.7 | 0.15 | 20060922 | 34.23113 | 110.97314 | 211.64663 | 2.51200 | 0.4527028 | 2.2667376 | 291 | 3 | 1999–2006 | 0.54 | M-v | 1 | MPC | 28180 | (40329) |
| (40355) | 16.5 | 0.15 | 20060922 | 83.52633 | 188.48770 | 106.12785 | 5.59720 | 0.1782056 | 2.1776656 | 191 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 28190 | (40355) |
| (40374) | 16.0 | 0.15 | 20060922 | 105.33009 | 156.07555 | 110.30048 | 7.54609 | 0.0943539 | 2.1950273 | 270 | 7 | 1997–2006 | 0.55 | M-v | 1 | MPC | 28196 | (40374) |
| (40382) | 15.1 | 0.15 | 20060922 | 64.79670 | 69.93754 | 235.47476 | 3.82741 | 0.2017282 | 2.1985204 | 239 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 57643 | (40382) |
| (40435) | 14.6 | 0.15 | 20060922 | 107.06900 | 24.03972 | 341.56880 | 1.85820 | 0.1868281 | 3.0664889 | 181 | 7 | 1978–2006 | 0.50 | M-v | 0 | MPC | 28218 | (40435) |
| (40439) | 14.3 | 0.15 | 20060922 | 52.46544 | 272.04034 | 147.93667 | 0.53654 | 0.1880241 | 3.1365311 | 342 | 7 | 1996–2006 | 0.47 | M-v | 0 | MPC | 28220 | (40439) |
| (40546) | 14.3 | 0.15 | 20060922 | 78.80922 | 87.58251 | 301.20290 | 9.63551 | 0.1042001 | 3.1458710 | 186 | 7 | 1993–2006 | 0.51 | M-v | 0 | MPC | 28258 | (40546) |
| (40608) | 15.8 | 0.15 | 20060922 | 20.79864 | 142.38005 | 142.86608 | 7.76200 | 0.1096837 | 2.3750385 | 191 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 28279 | (40608) |
| (40679) | 13.8 | 0.15 | 20060922 | 18.77894 | 155.47868 | 304.90865 | 8.67284 | 0.0530050 | 3.0916355 | 225 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 28304 | (40679) |
| (40758) | 13.7 | 0.15 | 20060922 | 139.59239 | 129.18854 | 216.92128 | 8.02797 | 0.1586832 | 3.0400543 | 287 | 10 | 1992–2006 | 0.47 | M-v | 0 | MPC | 28332 | (40758) |
| (40812) | 15.0 | 0.15 | 20060922 | 191.33523 | 126.57147 | 183.65093 | 3.31386 | 0.1071189 | 3.0600998 | 122 | 10 | 1991–2006 | 0.57 | M-v | 0 | MPC | 28354 | (40812) |
| (40813) | 14.2 | 0.15 | 20060922 | 43.70603 | 73.19217 | 15.18417 | 11.21216 | 0.0586169 | 3.0877235 | 163 | 7 | 1996–2006 | 0.61 | M-v | 0 | MPC | 28354 | (40813) |
| (40825) | 15.1 | 0.15 | 20060922 | 39.60915 | 125.93762 | 136.33912 | 7.28042 | 0.1035462 | 2.4207615 | 247 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 28358 | (40825) |
| (40840) | 13.4 | 0.15 | 20060922 | 57.21428 | 21.64922 | 55.17812 | 11.94700 | 0.1114006 | 3.0571532 | 274 | 7 | 1994–2006 | 0.51 | M-v | 0 | MPC | 28363 | (40840) |
| (40864) | 14.0 | 0.15 | 20060922 | 56.09050 | 78.66317 | 349.56883 | 9.51456 | 0.0869651 | 3.0788762 | 244 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 28372 | (40864) |
| (40884) | 15.8 | 0.15 | 20060922 | 322.53098 | 331.03293 | 324.33397 | 0.36023 | 0.1513017 | 2.5371962 | 181 | 8 | 1994–2006 | 0.66 | M-v | 0 | MPC | 28379 | (40884) |
| (40917) | 14.4 | 0.15 | 20060922 | 354.85531 | 198.33813 | 274.32640 | 3.99065 | 0.1186419 | 3.1204892 | 251 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 28390 | (40917) |
| (40930) | 13.9 | 0.15 | 20060922 | 191.91065 | 347.61084 | 315.73042 | 9.04628 | 0.0363748 | 3.0538322 | 155 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 28395 | (40930) |
| (40935) | 14.7 | 0.15 | 20060922 | 55.44796 | 71.35927 | 359.82626 | 4.39559 | 0.1104060 | 3.1883443 | 240 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 28397 | (40935) |
| (40939) | 13.9 | 0.15 | 20060922 | 327.81732 | 114.20697 | 59.85068 | 11.61465 | 0.0609653 | 3.0626199 | 143 | 7 | 1978–2006 | 0.63 | M-v | 0 | MPC | 28398 | (40939) |
| (40963) | 14.1 | 0.15 | 20060922 | 216.45588 | 91.00672 | 163.74889 | 5.30410 | 0.0406739 | 3.2393930 | 246 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 28406 | (40963) |
| (40974) | 14.7 | 0.15 | 20060922 | 320.43270 | 217.04629 | 291.01320 | 7.14379 | 0.0836672 | 3.1660936 | 125 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 28409 | (40974) |
| (40975) | 14.1 | 0.15 | 20060922 | 2.60644 | 183.48905 | 295.92100 | 7.87214 | 0.1348253 | 3.1436258 | 250 | 7 | 1989–2006 | 0.49 | M-v | 0 | MPC | 28410 | (40975) |
| (40985) | 13.9 | 0.15 | 20060922 | 315.70933 | 27.06397 | 140.33374 | 2.29964 | 0.1078943 | 3.1881501 | 262 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 28413 | (40985) |
| (41015) | 12.9 | 0.15 | 20060922 | 281.49918 | 326.74920 | 230.05935 | 14.82149 | 0.1085714 | 3.1381859 | 235 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 70200 | (41015) |
| (41026) | 14.2 | 0.15 | 20060922 | 95.79813 | 72.92698 | 315.00644 | 10.13089 | 0.0871892 | 3.0155034 | 134 | 7 | 1996–2006 | 0.48 | M-v | 0 | MPC | 28429 | (41026) |
| (41036) | 13.8 | 0.15 | 20060922 | 346.14371 | 5.62694 | 135.85269 | 7.43839 | 0.0739172 | 3.2064080 | 290 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 28432 | (41036) |
| (41053) | 14.8 | 0.15 | 20060922 | 350.71315 | 112.63772 | 25.29533 | 11.97790 | 0.1245362 | 3.1636288 | 159 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 28439 | (41053) |
| (41092) | 14.2 | 0.15 | 20060922 | 22.41693 | 64.11868 | 40.99100 | 5.87778 | 0.1213387 | 3.1950739 | 216 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 28454 | (41092) |
| (41126) | 15.4 | 0.15 | 20060922 | 13.34981 | 134.16349 | 325.30330 | 0.26069 | 0.1680269 | 3.1985267 | 158 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 28467 | (41126) |
| (41153) | 14.7 | 0.15 | 20060922 | 297.82471 | 256.97109 | 300.00784 | 1.43758 | 0.0781014 | 3.1224423 | 210 | 9 | 1996–2006 | 0.53 | M-v | 0 | MPC | 28475 | (41153) |
| (41218) | 13.6 | 0.15 | 20060922 | 343.42827 | 147.69712 | 6.22374 | 10.90109 | 0.1212569 | 3.1661059 | 267 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 28497 | (41218) |
| (41351) | 12.9 | 0.15 | 20060922 | 216.86262 | 150.25246 | 51.98007 | 5.84929 | 0.0184084 | 3.9324371 | 289 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 28544 | (41351) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (41406) | 12.7 | 0.15 | 20060922 | 226.28341 | 57.26618 | 221.60348 | 22.09385 | 0.2009209 | 3.1268940 | 220 | 9 | 1997–2006 | 0.59 | M-v | 0 | MPC | 28565 | (41406) |
| (41438) | 13.2 | 0.15 | 20060922 | 323.15975 | 56.64603 | 61.58929 | 14.17903 | 0.1056190 | 2.4713639 | 306 | 12 | 1977–2006 | 0.56 | M-v | 0 | MPC | 28576 | (41438) |
| (41446) | 14.4 | 0.15 | 20060922 | 96.26691 | 184.16230 | 156.55922 | 9.79924 | 0.1600505 | 2.7737512 | 297 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 28579 | (41446) |
| (41465) | 14.1 | 0.15 | 20060922 | 157.73884 | 356.98039 | 306.93351 | 3.76495 | 0.2487024 | 2.5961789 | 298 | 9 | 1983–2006 | 0.54 | M-v | 0 | MPC | 28586 | (41465) |
| (41499) | 15.0 | 0.15 | 20060922 | 103.84206 | 264.60291 | 12.64604 | 4.47570 | 0.1317041 | 3.1141105 | 208 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 28599 | (41499) |
| (41567) | 13.8 | 0.15 | 20060922 | 147.91735 | 78.07053 | 169.41490 | 7.62637 | 0.0080538 | 3.1696551 | 357 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 28625 | (41567) |
| (41576) | 14.0 | 0.15 | 20060922 | 33.47884 | 229.66524 | 113.05561 | 17.55125 | 0.2624322 | 3.1395000 | 145 | 9 | 1994–2006 | 0.60 | M-v | 0 | MPC | 28629 | (41576) |
| (41578) | 15.8 | 0.15 | 20060922 | 77.96567 | 310.39273 | 15.79388 | 19.69708 | 0.0798201 | 1.9813832 | 218 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 28629 | (41578) |
| (41584) | 15.7 | 0.15 | 20060922 | 352.24994 | 320.54713 | 136.16001 | 2.83928 | 0.0345921 | 2.8665567 | 135 | 7 | 1976–2006 | 0.64 | M-v | 0 | MPC | 28632 | (41584) |
| (41585) | 13.1 | 0.15 | 20060922 | 280.63394 | 26.14180 | 100.71385 | 6.28642 | 0.1201021 | 3.1410872 | 264 | 7 | 1989–2006 | 0.59 | M-v | 0 | MPC | 28632 | (41585) |
| (41660) | 15.1 | 0.15 | 20060922 | 228.66211 | 136.10346 | 70.49745 | 23.95389 | 0.0300333 | 1.9613728 | 200 | 6 | 1992–2006 | 0.51 | M-v | 1 | MPC | 28659 | (41660) |
| (41685) | 15.0 | 0.15 | 20060922 | 251.43817 | 162.86902 | 57.19872 | 22.56146 | 0.0405767 | 1.9165515 | 166 | 7 | 1991–2006 | 0.54 | M-v | 1 | MPC | 28669 | (41685) |
| (41795) | 13.9 | 0.15 | 20060922 | 317.69667 | 348.40543 | 172.06773 | 9.63176 | 0.1573398 | 3.0454317 | 269 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 28707 | (41795) |
| (41799) | 13.4 | 0.15 | 20060922 | 336.64212 | 262.27389 | 214.90611 | 23.87294 | 0.2765177 | 3.2054862 | 163 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 28709 | (41799) |
| (41818) | 14.1 | 0.15 | 20060922 | 191.75330 | 268.42709 | 120.74557 | 10.08406 | 0.2852448 | 2.5343547 | 114 | 6 | 1998–2006 | 0.54 | M-v | 1 | MPC | 70201 | (41818) |
| (41834) | 14.7 | 0.15 | 20060922 | 341.27964 | 292.96865 | 203.45548 | 1.55718 | 0.1582938 | 3.1115841 | 167 | 7 | 1978–2006 | 0.55 | M-v | 0 | MPC | 28720 | (41834) |
| (41856) | 14.4 | 0.15 | 20060922 | 51.80651 | 350.56289 | 72.83208 | 2.27006 | 0.0361363 | 2.9866143 | 245 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 28728 | (41856) |
| (41899) | 12.2 | 0.15 | 20060922 | 105.36132 | 236.69030 | 90.47135 | 16.81086 | 0.0140709 | 3.1209689 | 324 | 9 | 1977–2006 | 0.55 | M-v | 0 | MPC | 28741 | (41899) |
| (42068) | 13.2 | 0.15 | 20060922 | 199.76832 | 281.51183 | 11.18160 | 8.65618 | 0.0795823 | 3.4287446 | 254 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 28796 | (42068) |
| (42073) | 14.3 | 0.15 | 20060922 | 340.59313 | 91.63665 | 47.35731 | 19.82156 | 0.1833216 | 3.2368903 | 132 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 28797 | (42073) |
| (42083) | 14.8 | 0.15 | 20060922 | 280.46270 | 297.19459 | 254.78245 | 0.31042 | 0.0653946 | 3.2283860 | 153 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 28800 | (42083) |
| (42089) | 13.5 | 0.15 | 20060922 | 320.10657 | 36.15549 | 155.38206 | 10.85910 | 0.1537558 | 3.1493827 | 116 | 10 | 1957–2006 | 0.63 | M-v | 0 | MPC | 28802 | (42089) |
| (42123) | 14.9 | 0.15 | 20060922 | 13.28266 | 76.79697 | 35.97943 | 4.95101 | 0.1317545 | 3.1544747 | 156 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 28813 | (42123) |
| (42137) | 14.7 | 0.15 | 20060922 | 287.09325 | 222.67984 | 347.29943 | 1.37550 | 0.1399936 | 3.2290115 | 211 | 9 | 1995–2006 | 0.56 | M-v | 0 | MPC | 28818 | (42137) |
| (42151) | 13.7 | 0.15 | 20060922 | 221.40270 | 142.45090 | 142.79366 | 11.80455 | 0.1098407 | 3.1912844 | 141 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 28822 | (42151) |
| (42163) | 15.5 | 0.15 | 20060922 | 102.83670 | 167.69533 | 91.03840 | 4.38382 | 0.1853221 | 2.4350999 | 253 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 28826 | (42163) |
| (42175) | 14.3 | 0.15 | 20060922 | 327.66713 | 155.06719 | 14.50683 | 5.22647 | 0.0956868 | 3.1651381 | 165 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 28829 | (42175) |
| (42183) | 14.5 | 0.15 | 20060922 | 288.98801 | 150.57801 | 61.50234 | 6.21178 | 0.0752698 | 3.1727040 | 105 | 7 | 1996–2006 | 0.60 | M-v | 0 | MPC | 28832 | (42183) |
| (42190) | 13.0 | 0.15 | 20060922 | 191.49099 | 189.75089 | 40.39431 | 9.26307 | 0.1005018 | 3.9518768 | 222 | 7 | 1997–2006 | 0.50 | M-v | 0 | MPC | 28834 | (42190) |
| (42249) | 15.6 | 0.15 | 20060922 | 109.39219 | 57.31771 | 220.78244 | 3.76112 | 0.0821244 | 2.4285978 | 259 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 28851 | (42249) |
| (42261) | 13.9 | 0.15 | 20060922 | 47.14913 | 30.58023 | 329.22629 | 12.31719 | 0.2130947 | 2.5949596 | 137 | 10 | 1983–2006 | 0.58 | M-v | 1 | MPC | 28855 | (42261) |
| (42264) | 12.9 | 0.15 | 20060922 | 124.87826 | 309.89238 | 29.74835 | 15.21190 | 0.1329595 | 2.5379420 | 454 | 10 | 1976–2006 | 0.44 | M-v | 1 | MPC | 28856 | (42264) |
| (42268) | 14.4 | 0.15 | 20060922 | 17.29473 | 216.27633 | 222.40821 | 9.34806 | 0.1946294 | 2.7325839 | 282 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 28858 | (42268) |
| (42269) | 13.2 | 0.15 | 20060922 | 49.73312 | 56.13018 | 332.56817 | 13.87148 | 0.1577870 | 2.6106427 | 356 | 10 | 1989–2006 | 0.53 | M-v | 0 | MPC | 28859 | (42269) |
| (42286) | 16.4 | 0.15 | 20060922 | 222.71317 | 150.81163 | 55.90694 | 24.06840 | 0.3918607 | 1.4195854 | 166 | 5 | 1975–2006 | 0.52 | M-v | 2 | MPC | 73903 | (42286) |
| (42291) | 13.1 | 0.15 | 20060922 | 305.92145 | 218.21869 | 269.06627 | 11.67994 | 0.0998751 | 2.7471428 | 226 | 9 | 1982–2006 | 0.54 | M-v | 0 | MPC | 28867 | (42291) |
| (42304) | 14.1 | 0.15 | 20060922 | 109.35993 | 199.73248 | 67.23392 | 23.39031 | 0.0634000 | 3.1965972 | 198 | 9 | 1995–2006 | 0.59 | M-v | 0 | MPC | 28871 | (42304) |
| (42306) | 14.5 | 0.15 | 20060922 | 100.98501 | 271.64773 | 90.10535 | 13.61951 | 0.1350881 | 2.7348730 | 181 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 28872 | (42306) |
| (42308) | 14.3 | 0.15 | 20060922 | 82.60805 | 305.22362 | 341.02466 | 8.17364 | 0.0344439 | 3.0521558 | 203 | 9 | 1990–2006 | 0.57 | M-v | 0 | MPC | 28873 | (42308) |
| (42310) | 14.1 | 0.15 | 20060922 | 18.39315 | 303.74765 | 147.69732 | 15.82814 | 0.1628989 | 2.6111527 | 224 | 9 | 1996–2006 | 0.59 | M-v | 0 | MPC | 28873 | (42310) |
| (42323) | 15.7 | 0.15 | 20060922 | 346.44669 | 264.11977 | 134.77607 | 2.43580 | 0.1657840 | 3.0793201 | 159 | 7 | 1995–2006 | 0.59 | M-v | 0 | MPC | 28877 | (42323) |
| (42371) | 13.5 | 0.15 | 20060922 | 303.44313 | 230.64069 | 310.69161 | 7.72226 | 0.0236197 | 2.9930999 | 212 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 28893 | (42371) |
| (42410) | 16.3 | 0.15 | 20060922 | 135.19933 | 267.58101 | 183.25812 | 2.35103 | 0.1362845 | 2.4684629 | 166 | 6 | 1971–2006 | 0.62 | M-v | 1 | MPC | 73903 | (42410) |
| (42434) | 13.6 | 0.15 | 20060922 | 11.69673 | 101.67692 | 7.62866 | 14.78551 | 0.1015301 | 3.1248911 | 183 | 7 | 1977–2006 | 0.63 | M-v | 0 | MPC | 28913 | (42434) |
| (42517) | 13.5 | 0.15 | 20060922 | 212.98770 | 219.61745 | 233.90835 | 23.44235 | 0.2625538 | 2.3232275 | 240 | 7 | 1993–2006 | 0.50 | M-v | 1 | MPC | 30793 | (42517) |
| (42547) | 14.2 | 0.15 | 20060922 | 265.89381 | 141.21858 | 99.24481 | 2.62540 | 0.1194706 | 3.2245845 | 151 | 10 | 1992–2006 | 0.59 | M-v | 0 | MPC | 30803 | (42547) |
| (42553) | 15.9 | 0.15 | 20060922 | 159.52593 | 244.18734 | 169.30419 | 5.96475 | 0.1037169 | 2.4719760 | 171 | 6 | 1996–2006 | 0.64 | M-v | 1 | MPC | 30806 | (42553) |
| (42605) | 16.5 | 0.15 | 20060922 | 122.49283 | 139.43402 | 54.02734 | 0.99260 | 0.1200510 | 2.2946976 | 149 | 7 | 1995–2006 | 0.46 | M-v | 0 | MPC | 30823 | (42605) |
| (42631) | 15.7 | 0.15 | 20060922 | 73.30570 | 95.92921 | 256.08200 | 2.14853 | 0.1775460 | 2.1699484 | 246 | 8 | 1997–2006 | 0.57 | M-v | 1 | MPC | 77324 | (42631) |
| (42648) | 15.5 | 0.15 | 20060922 | 68.86795 | 286.20025 | 23.52930 | 2.76382 | 0.2206044 | 2.2952743 | 391 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 30839 | (42648) |
| (42720) | 14.3 | 0.15 | 20060922 | 350.88850 | 31.41262 | 298.87889 | 12.80809 | 0.2846693 | 2.5657861 | 212 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 30866 | (42720) |
| (42746) | 15.1 | 0.15 | 20060922 | 293.85034 | 59.76031 | 151.82678 | 0.92814 | 0.1001425 | 3.2284953 | 94 | 9 | 1992–2006 | 0.53 | M-v | 0 | MPC | 30874 | (42746) |
| (42789) | 14.5 | 0.15 | 20060922 | 66.20796 | 69.44740 | 313.08304 | 5.44883 | 0.1347080 | 2.4483833 | 337 | 9 | 1982–2006 | 0.56 | M-v | 0 | MPC | 30888 | (42789) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (42797) | 13.0 | 0.15 | 20060922 | 36.81404 | 61.66886 | 325.50213 | 14.28275 | 0.1329451 | 2.6171029 | 489 | 10 | 1989–2006 | 0.53 | M-v | 0 | MPC | 30891 | (42797) |
| (42812) | 13.5 | 0.15 | 20060922 | 277.73951 | 9.44861 | 130.20582 | 9.17313 | 0.1636753 | 2.8017931 | 294 | 9 | 1980–2006 | 0.56 | M-v | 0 | MPC | 30897 | (42812) |
| (42822) | 16.1 | 0.15 | 20060922 | 68.16537 | 45.10436 | 279.09972 | 3.90965 | 0.2093019 | 2.1696441 | 112 | 7 | 1980–2006 | 0.61 | M-v | 1 | MPC | 30901 | (42822) |
| (42823) | 15.8 | 0.15 | 20060922 | 57.89738 | 200.23013 | 122.63701 | 1.96586 | 0.1649753 | 2.1867714 | 206 | 9 | 1995–2006 | 0.57 | M-v | 0 | MPC | 30902 | (42823) |
| (42826) | 15.9 | 0.15 | 20060922 | 80.30772 | 172.40127 | 123.82985 | 6.94573 | 0.1060761 | 2.1861407 | 224 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 30903 | (42826) |
| (42841) | 15.7 | 0.15 | 20060922 | 103.10646 | 55.47439 | 220.24271 | 4.27997 | 0.1846105 | 2.1848838 | 239 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 30908 | (42841) |
| (42869) | 15.0 | 0.15 | 20060922 | 188.12170 | 285.39399 | 265.21835 | 3.39838 | 0.0951871 | 2.1984616 | 410 | 7 | 1998–2006 | 0.47 | M-v | 0 | MPC | 30919 | (42869) |
| (42881) | 15.4 | 0.15 | 20060922 | 87.92000 | 50.79828 | 223.73023 | 5.24672 | 0.2328373 | 2.2246700 | 287 | 7 | 1972–2006 | 0.56 | M-v | 0 | MPC | 30923 | (42881) |
| (42883) | 15.2 | 0.15 | 20060922 | 219.32639 | 260.75993 | 279.02735 | 3.79256 | 0.0397327 | 2.1944767 | 310 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 30924 | (42883) |
| (42887) | 15.4 | 0.15 | 20060922 | 92.79474 | 55.78473 | 282.57375 | 2.86300 | 0.2416025 | 2.1413333 | 248 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 30925 | (42887) |
| (42894) | 15.7 | 0.15 | 20060922 | 116.23993 | 124.08400 | 136.33108 | 1.70741 | 0.1618150 | 2.2245667 | 336 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 30928 | (42894) |
| (42897) | 16.0 | 0.15 | 20060922 | 352.74858 | 38.10870 | 350.40303 | 2.38855 | 0.0669616 | 2.2602722 | 195 | 8 | 1994–2006 | 0.56 | M-v | 1 | MPC | 77324 | (42897) |
| (42901) | 15.3 | 0.15 | 20060922 | 118.04468 | 44.33054 | 246.91989 | 4.15442 | 0.1916854 | 2.1639383 | 212 | 7 | 1994–2006 | 0.54 | M-v | 1 | MPC | 30931 | (42901) |
| (42943) | 16.5 | 0.15 | 20060922 | 65.81125 | 185.24333 | 105.04612 | 3.80304 | 0.2296219 | 2.2743450 | 180 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 30947 | (42943) |
| (42956) | 16.0 | 0.15 | 20060922 | 57.84552 | 130.35345 | 174.72532 | 5.03869 | 0.2475164 | 2.2726705 | 166 | 7 | 1992–2006 | 0.60 | M-v | 0 | MPC | 30952 | (42956) |
| (43046) | 15.4 | 0.15 | 20060922 | 42.09597 | 72.99661 | 277.88372 | 3.05023 | 0.1762779 | 2.2798648 | 221 | 8 | 1994–2006 | 0.55 | M-v | 0 | MPC | 30985 | (43046) |
| (43052) | 16.3 | 0.15 | 20060922 | 50.43610 | 264.75215 | 54.98068 | 2.81423 | 0.1643044 | 2.3234408 | 232 | 10 | 1992–2006 | 0.58 | M-v | 0 | MPC | 30987 | (43052) |
| (43066) | 15.3 | 0.15 | 20060922 | 51.93294 | 203.37447 | 115.44575 | 5.10267 | 0.1745932 | 2.2991887 | 278 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 30992 | (43066) |
| (43072) | 15.0 | 0.15 | 20060922 | 84.65402 | 195.87705 | 91.49232 | 7.04199 | 0.1584577 | 2.2957265 | 302 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 30994 | (43072) |
| (43081) | 15.1 | 0.15 | 20060922 | 88.00488 | 239.54950 | 75.81943 | 5.78143 | 0.1938140 | 2.1950134 | 279 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 30997 | (43081) |
| (43157) | 14.0 | 0.15 | 20060922 | 167.14404 | 273.31527 | 260.25408 | 12.58029 | 0.0160882 | 2.4547792 | 307 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 31026 | (43157) |
| (43200) | 15.5 | 0.15 | 20060922 | 48.18111 | 253.00133 | 83.63417 | 8.68221 | 0.1880007 | 2.3060423 | 165 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 31040 | (43200) |
| (43208) | 12.4 | 0.15 | 20060922 | 161.72009 | 241.71266 | 61.19636 | 17.57304 | 0.2185030 | 3.1081383 | 390 | 10 | 1950–2006 | 0.51 | M-v | 0 | MPC | 31043 | (43208) |
| (43223) | 15.0 | 0.15 | 20060922 | 42.89089 | 55.14024 | 338.87042 | 3.32377 | 0.1010294 | 2.3107311 | 356 | 10 | 1981–2006 | 0.59 | M-v | 0 | MPC | 31049 | (43223) |
| (43270) | 14.7 | 0.15 | 20060922 | 71.36381 | 142.49827 | 149.83690 | 12.41407 | 0.2534581 | 2.6651815 | 206 | 9 | 1979–2006 | 0.55 | M-v | 0 | MPC | 31063 | (43270) |
| (43274) | 15.2 | 0.15 | 20060922 | 232.76776 | 69.72797 | 143.68461 | 2.46620 | 0.1295294 | 2.4275606 | 312 | 9 | 1991–2006 | 0.56 | M-v | 1 | MPC | 31064 | (43274) |
| (43284) | 14.7 | 0.15 | 20060922 | 311.82251 | 27.55850 | 162.53169 | 9.06435 | 0.1353070 | 2.2965056 | 258 | 9 | 1993–2006 | 0.59 | M-v | 1 | MPC | 31068 | (43284) |
| (43287) | 13.8 | 0.15 | 20060922 | 131.50453 | 159.00173 | 108.11818 | 14.62948 | 0.1364246 | 2.5752475 | 291 | 10 | 1976–2006 | 0.55 | M-v | 0 | MPC | 31069 | (43287) |
| (43294) | 13.9 | 0.15 | 20060922 | 198.81017 | 107.67144 | 104.02979 | 15.98418 | 0.1906192 | 2.5444710 | 233 | 9 | 1988–2006 | 0.53 | M-v | 1 | MPC | 31072 | (43294) |
| (43314) | 14.4 | 0.15 | 20060922 | 57.45317 | 316.85297 | 48.62149 | 10.39709 | 0.1843104 | 2.5706420 | 211 | 9 | 1993–2006 | 0.59 | M-v | 1 | MPC | 31079 | (43314) |
| (43316) | 15.0 | 0.15 | 20060922 | 285.40210 | 268.60869 | 290.75304 | 5.72975 | 0.0969074 | 2.3576812 | 271 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 31080 | (43316) |
| (43319) | 14.3 | 0.15 | 20060922 | 263.68084 | 162.93452 | 61.25779 | 15.38913 | 0.1267179 | 2.4221659 | 224 | 10 | 1974–2006 | 0.58 | M-v | 1 | MPC | 31081 | (43319) |
| (43325) | 13.6 | 0.15 | 20060922 | 177.04470 | 139.62672 | 72.16313 | 9.41018 | 0.1960928 | 2.7187147 | 373 | 9 | 1983–2006 | 0.58 | M-v | 0 | MPC | 31083 | (43325) |
| (43334) | 15.5 | 0.15 | 20060922 | 69.29154 | 265.27674 | 145.91124 | 17.81974 | 0.0722500 | 1.9158338 | 239 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 31086 | (43334) |
| (43340) | 14.7 | 0.15 | 20060922 | 191.97293 | 21.20701 | 257.14492 | 5.46107 | 0.1076889 | 2.7802817 | 296 | 9 | 1996–2006 | 0.57 | M-v | 0 | MPC | 47677 | (43340) |
| (43413) | 16.1 | 0.15 | 20060922 | 32.01325 | 340.12172 | 17.86444 | 6.13517 | 0.1465730 | 2.1298289 | 162 | 7 | 1992–2006 | 0.57 | M-v | 1 | MPC | 31114 | (43413) |
| (43472) | 13.2 | 0.15 | 20060922 | 292.41493 | 237.28123 | 322.11370 | 7.73930 | 0.1955063 | 3.1862760 | 167 | 9 | 1990–2006 | 0.53 | M-v | 0 | MPC | 31134 | (43472) |
| (43492) | 15.6 | 0.15 | 20060922 | 73.39299 | 163.53536 | 123.87347 | 7.83267 | 0.1110704 | 2.3129082 | 174 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 31140 | (43492) |
| (43557) | 15.3 | 0.15 | 20060922 | 129.15479 | 126.05167 | 121.79570 | 3.06273 | 0.1687282 | 2.3762567 | 237 | 7 | 1991–2006 | 0.49 | M-v | 0 | MPC | 31159 | (43557) |
| (43570) | 14.4 | 0.15 | 20060922 | 44.21336 | 152.24221 | 208.12898 | 24.42680 | 0.2351251 | 2.3187457 | 289 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 31163 | (43570) |
| (43598) | 14.1 | 0.15 | 20060922 | 46.66638 | 119.35247 | 271.76301 | 12.40860 | 0.1732668 | 2.6169503 | 250 | 10 | 1982–2006 | 0.56 | M-v | 1 | MPC | 31172 | (43598) |
| (43599) | 13.9 | 0.15 | 20060922 | 233.45877 | 54.92889 | 125.56523 | 4.57127 | 0.1280207 | 2.6743911 | 279 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 31172 | (43599) |
| (43604) | 13.2 | 0.15 | 20060922 | 89.88948 | 96.92224 | 282.74990 | 13.18352 | 0.1609881 | 2.5843933 | 222 | 10 | 1951–2006 | 0.57 | M-v | 1 | MPC | 31174 | (43604) |
| (43610) | 15.0 | 0.15 | 20060922 | 177.32357 | 41.72478 | 208.88335 | 1.26925 | 0.1362076 | 3.0731158 | 124 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 31176 | (43610) |
| (43616) | 14.8 | 0.15 | 20060922 | 334.05126 | 135.71761 | 26.94537 | 4.44118 | 0.1374524 | 2.7960064 | 108 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 31178 | (43616) |
| (43618) | 14.2 | 0.15 | 20060922 | 274.61617 | 129.48304 | 67.22508 | 0.05223 | 0.0888597 | 3.0777147 | 244 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 31178 | (43618) |
| (43641) | 14.7 | 0.15 | 20060922 | 327.51503 | 191.46949 | 343.01201 | 4.34930 | 0.1929143 | 2.9429887 | 174 | 7 | 1994–2006 | 0.57 | M-v | 1 | MPC | 31185 | (43641) |
| (43651) | 14.9 | 0.15 | 20060922 | 248.60074 | 114.95150 | 151.23695 | 3.38103 | 0.1971597 | 3.0214317 | 121 | 9 | 1995–2006 | 0.51 | M-v | 0 | MPC | 31189 | (43651) |
| (43657) | 14.6 | 0.15 | 20060922 | 281.75100 | 101.60230 | 96.40826 | 6.29217 | 0.0881320 | 3.1150110 | 121 | 7 | 1977–2006 | 0.63 | M-v | 0 | MPC | 31190 | (43657) |
| (43740) | 15.7 | 0.15 | 20060922 | 83.42483 | 11.40891 | 272.65457 | 4.72606 | 0.1690473 | 2.2673372 | 210 | 7 | 1981–2006 | 0.57 | M-v | 0 | MPC | 32052 | (43740) |
| (43742) | 14.3 | 0.15 | 20060922 | 130.84143 | 56.51078 | 207.58823 | 11.40264 | 0.1060501 | 2.7621750 | 229 | 7 | 1981–2006 | 0.61 | M-v | 0 | MPC | 32053 | (43742) |
| (43773) | 13.9 | 0.15 | 20060922 | 301.56300 | 158.48633 | 290.42890 | 6.20029 | 0.1976113 | 2.7858653 | 256 | 7 | 1989–2006 | 0.58 | M-v | 0 | MPC | 32064 | (43773) |
| (43798) | 16.1 | 0.15 | 20060922 | 100.81968 | 291.91092 | 307.49416 | 1.37825 | 0.2001652 | 2.3299125 | 147 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 32071 | (43798) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (43818) | 14.0 | 0.15 | 20060922 | 285.83577 | 302.28442 | 246.76712 | 2.44402 | 0.1390872 | 3.9596373 | 128 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 32078 | (43818) |
| (43820) | 14.8 | 0.15 | 20060922 | 316.81863 | 162.57381 | 289.54556 | 3.60926 | 0.1469099 | 2.2403749 | 342 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 32078 | (43820) |
| (43823) | 13.7 | 0.15 | 20060922 | 9.80209 | 162.35029 | 222.65085 | 7.08813 | 0.2629368 | 2.7517361 | 340 | 9 | 1983–2006 | 0.55 | M-v | 0 | MPC | 32079 | (43823) |
| (43826) | 14.3 | 0.15 | 20060922 | 19.08620 | 144.29110 | 240.65330 | 7.00622 | 0.1127591 | 2.2927308 | 350 | 8 | 1991–2006 | 0.58 | M-v | 0 | MPC | 32080 | (43826) |
| (43851) | 15.7 | 0.15 | 20060922 | 12.75869 | 233.39599 | 182.97989 | 5.36112 | 0.3390535 | 2.6049208 | 109 | 7 | 1993–2006 | 0.57 | M-v | 1 | MPC | 32089 | (43851) |
| (43887) | 15.6 | 0.15 | 20060922 | 340.30957 | 251.57825 | 327.15313 | 11.76199 | 0.1263851 | 2.5838116 | 132 | 6 | 1995–2006 | 0.66 | M-v | 1 | MPC | 70203 | (43887) |
| (43905) | 15.4 | 0.15 | 20060922 | 15.41831 | 145.85683 | 235.24625 | 1.47855 | 0.2183355 | 2.3669120 | 227 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 32106 | (43905) |
| (43917) | 16.5 | 0.15 | 20060922 | 47.78642 | 231.98149 | 85.53448 | 7.26781 | 0.1573741 | 2.4087564 | 194 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 32110 | (43917) |
| (43933) | 15.0 | 0.15 | 20060922 | 57.88481 | 261.19441 | 147.90012 | 3.91402 | 0.0644808 | 2.6527225 | 177 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 32115 | (43933) |
| (43937) | 15.8 | 0.15 | 20060922 | 182.64002 | 144.28957 | 39.09933 | 6.91761 | 0.1228436 | 2.2775808 | 241 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 32117 | (43937) |
| (43953) | 15.1 | 0.15 | 20060922 | 37.44985 | 254.65199 | 164.97494 | 4.88883 | 0.1187774 | 2.2217883 | 334 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 32123 | (43953) |
| (44024) | 14.0 | 0.15 | 20060922 | 117.96624 | 24.66179 | 285.25874 | 4.38135 | 0.3047603 | 2.5942436 | 332 | 9 | 1983–2006 | 0.56 | M-v | 0 | MPC | 32148 | (44024) |
| (44025) | 14.0 | 0.15 | 20060922 | 28.04944 | 258.87424 | 106.61668 | 6.49295 | 0.0923923 | 2.7622001 | 286 | 9 | 1994–2006 | 0.57 | M-v | 0 | MPC | 32148 | (44025) |
| (44037) | 16.2 | 0.15 | 20060922 | 68.83196 | 165.79888 | 141.41201 | 6.20732 | 0.1906715 | 2.2658705 | 169 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 32152 | (44037) |
| (44038) | 15.6 | 0.15 | 20060922 | 93.19717 | 292.36543 | 15.92715 | 4.88654 | 0.1794350 | 2.2174156 | 196 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 32152 | (44038) |
| (44046) | 16.4 | 0.15 | 20060922 | 123.52398 | 138.40364 | 145.43275 | 4.23746 | 0.1181219 | 2.2140241 | 113 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 32155 | (44046) |
| (44049) | 15.2 | 0.15 | 20060922 | 19.48431 | 230.05242 | 115.07943 | 8.09170 | 0.1826616 | 2.3467015 | 233 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 32156 | (44049) |
| (44051) | 15.1 | 0.15 | 20060922 | 127.47449 | 144.67736 | 106.07323 | 6.13235 | 0.1694615 | 2.2418372 | 337 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 32157 | (44051) |
| (44052) | 15.3 | 0.15 | 20060922 | 90.19373 | 117.56984 | 157.19227 | 5.32913 | 0.1462118 | 2.3452258 | 300 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 32158 | (44052) |
| (44054) | 16.0 | 0.15 | 20060922 | 307.47833 | 354.78519 | 111.53964 | 3.12376 | 0.0525170 | 2.1562159 | 191 | 9 | 1990–2006 | 0.54 | M-v | 1 | MPC | 32158 | (44054) |
| (44056) | 15.9 | 0.15 | 20060922 | 143.23280 | 229.94768 | 27.80901 | 2.39900 | 0.1028369 | 2.2127459 | 197 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 32160 | (44056) |
| (44059) | 15.4 | 0.15 | 20060922 | 104.26242 | 335.67319 | 317.75264 | 4.08381 | 0.1739027 | 2.2289060 | 360 | 9 | 1991–2006 | 0.60 | M-v | 0 | MPC | 32161 | (44059) |
| (44064) | 14.7 | 0.15 | 20060922 | 22.52867 | 183.80351 | 223.35807 | 3.05444 | 0.0860814 | 2.1471035 | 278 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 32163 | (44064) |
| (44069) | 15.4 | 0.15 | 20060922 | 81.66124 | 77.26711 | 270.04137 | 1.30688 | 0.1183895 | 2.1730420 | 297 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 32165 | (44069) |
| (44071) | 14.6 | 0.15 | 20060922 | 266.21059 | 214.14136 | 291.73169 | 2.61501 | 0.0580452 | 2.1882072 | 421 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 32166 | (44071) |
| (44077) | 15.2 | 0.15 | 20060922 | 130.73282 | 187.22332 | 46.02780 | 4.86978 | 0.1263083 | 2.2881231 | 300 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32168 | (44077) |
| (44078) | 15.9 | 0.15 | 20060922 | 122.94334 | 101.72514 | 150.15752 | 4.46751 | 0.1294041 | 2.2761920 | 140 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 32169 | (44078) |
| (44083) | 15.2 | 0.15 | 20060922 | 78.31106 | 180.55242 | 126.40168 | 5.92947 | 0.0975862 | 2.2593155 | 272 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 32171 | (44083) |
| (44086) | 15.2 | 0.15 | 20060922 | 200.16887 | 57.55997 | 126.00764 | 3.80196 | 0.0828897 | 2.2111338 | 286 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 32172 | (44086) |
| (44087) | 15.6 | 0.15 | 20060922 | 113.83153 | 343.21936 | 255.55110 | 5.89150 | 0.1095302 | 2.2934923 | 278 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 32173 | (44087) |
| (44088) | 15.7 | 0.15 | 20060922 | 117.19426 | 278.81048 | 330.46284 | 6.38702 | 0.1320714 | 2.2774729 | 200 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32173 | (44088) |
| (44089) | 15.0 | 0.15 | 20060922 | 171.37045 | 343.53282 | 255.45445 | 3.32929 | 0.0477887 | 2.1923252 | 201 | 7 | 1994–2006 | 0.51 | M-v | 0 | MPC | 32173 | (44089) |
| (44090) | 15.2 | 0.15 | 20060922 | 145.02843 | 3.32048 | 244.40881 | 3.88137 | 0.0612948 | 2.2265115 | 139 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32174 | (44090) |
| (44091) | 15.0 | 0.15 | 20060922 | 66.56677 | 86.51053 | 248.30991 | 5.49211 | 0.1717720 | 2.2257945 | 255 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 32174 | (44091) |
| (44092) | 15.2 | 0.15 | 20060922 | 114.70093 | 15.79240 | 245.37684 | 4.33621 | 0.1489081 | 2.2733721 | 193 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32174 | (44092) |
| (44093) | 15.7 | 0.15 | 20060922 | 89.95445 | 35.98927 | 228.27165 | 6.33986 | 0.1134254 | 2.3069324 | 220 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 32175 | (44093) |
| (44095) | 14.6 | 0.15 | 20060922 | 81.02375 | 55.26625 | 253.57412 | 5.72992 | 0.2041855 | 2.2677871 | 380 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 32176 | (44095) |
| (44098) | 14.7 | 0.15 | 20060922 | 328.45693 | 162.06662 | 295.43519 | 3.41028 | 0.0514869 | 2.1680185 | 381 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32177 | (44098) |
| (44106) | 16.3 | 0.15 | 20060922 | 56.85746 | 219.72953 | 102.32145 | 4.20543 | 0.1470005 | 2.2880187 | 155 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 32181 | (44106) |
| (44113) | 15.3 | 0.15 | 20060922 | 266.73043 | 37.30348 | 117.14499 | 5.11438 | 0.0757244 | 2.1958821 | 336 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 32184 | (44113) |
| (44118) | 14.3 | 0.15 | 20060922 | 79.14467 | 139.26586 | 168.48806 | 24.18326 | 0.1443595 | 2.2956011 | 359 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 32186 | (44118) |
| (44121) | 15.6 | 0.15 | 20060922 | 83.94316 | 257.16882 | 52.96986 | 4.09189 | 0.1557646 | 2.2561846 | 258 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 32187 | (44121) |
| (44134) | 15.9 | 0.15 | 20060922 | 84.34328 | 16.80308 | 278.39382 | 2.20103 | 0.2301412 | 2.3157458 | 258 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32193 | (44134) |
| (44139) | 15.6 | 0.15 | 20060922 | 76.48840 | 328.78980 | 343.11467 | 1.29526 | 0.0402214 | 2.2672349 | 311 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 32195 | (44139) |
| (44141) | 15.4 | 0.15 | 20060922 | 192.61709 | 102.40953 | 79.81866 | 5.12022 | 0.0971286 | 2.2736536 | 244 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 32196 | (44141) |
| (44142) | 16.0 | 0.15 | 20060922 | 74.19066 | 126.46974 | 185.24024 | 3.62010 | 0.2516164 | 2.3165585 | 222 | 9 | 1981–2006 | 0.55 | M-v | 0 | MPC | 32196 | (44142) |
| (44143) | 15.3 | 0.15 | 20060922 | 89.22648 | 299.25331 | 347.16293 | 4.02462 | 0.1351635 | 2.3111335 | 251 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 32196 | (44143) |
| (44148) | 15.0 | 0.15 | 20060922 | 157.04004 | 108.89673 | 129.33116 | 6.81991 | 0.1407142 | 2.2453300 | 239 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 32198 | (44148) |
| (44150) | 14.3 | 0.15 | 20060922 | 105.84147 | 220.90995 | 92.61923 | 7.28358 | 0.1007028 | 2.2142969 | 365 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32199 | (44150) |
| (44153) | 15.7 | 0.15 | 20060922 | 94.48421 | 108.68291 | 162.26829 | 7.16621 | 0.0929829 | 2.3176993 | 229 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 32200 | (44153) |
| (44160) | 15.3 | 0.15 | 20060922 | 195.93665 | 113.19656 | 115.63456 | 4.80040 | 0.1180377 | 2.1827611 | 398 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32203 | (44160) |
| (44166) | 14.7 | 0.15 | 20060922 | 49.28402 | 288.85685 | 103.95370 | 4.72274 | 0.1302541 | 2.1986334 | 426 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32205 | (44166) |
| (44174) | 15.6 | 0.15 | 20060922 | 215.24331 | 43.37195 | 139.35231 | 2.23184 | 0.1400395 | 2.2378672 | 252 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32209 | (44174) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (44175) | 14.3 | 0.15 | 20060922 | 349.88971 | 318.05743 | 102.06732 | 5.51387 | 0.1798715 | 2.2370027 | 365 | 6 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32209 | (44175) |
| (44179) | 15.7 | 0.15 | 20060922 | 57.67523 | 78.97496 | 251.91517 | 4.88295 | 0.1625745 | 2.3209546 | 265 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32211 | (44179) |
| (44180) | 14.5 | 0.15 | 20060922 | 185.01306 | 41.50040 | 216.51795 | 3.57850 | 0.1194266 | 2.2031772 | 579 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 32211 | (44180) |
| (44202) | 14.9 | 0.15 | 20060922 | 94.18104 | 348.59720 | 289.22501 | 11.55649 | 0.1731029 | 2.3798805 | 170 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 32219 | (44202) |
| (44278) | 15.1 | 0.15 | 20060922 | 339.65615 | 160.52759 | 280.66219 | 12.07291 | 0.1765280 | 2.4133092 | 182 | 7 | 1995–2006 | 0.64 | M-v | 1 | MPC | 32247 | (44278) |
| (44523) | 14.2 | 0.15 | 20060922 | 193.79243 | 55.38741 | 119.01066 | 10.43631 | 0.0177858 | 2.7344085 | 248 | 9 | 1989–2006 | 0.58 | M-v | 0 | MPC | 32330 | (44523) |
| (44549) | 12.6 | 0.15 | 20060922 | 358.79541 | 324.54471 | 159.74247 | 4.45330 | 0.0833785 | 3.9705105 | 250 | 9 | 1984–2006 | 0.55 | M-v | 0 | MPC | 32339 | (44549) |
| (44591) | 15.3 | 0.15 | 20060922 | 140.50761 | 110.43078 | 116.48424 | 7.58805 | 0.1025232 | 2.2003823 | 265 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 32352 | (44591) |
| (44593) | 15.2 | 0.15 | 20060922 | 14.21469 | 137.98270 | 233.18824 | 20.67038 | 0.2359120 | 2.2967545 | 235 | 7 | 1992–2006 | 0.50 | M-v | 1 | MPC | 32353 | (44593) |
| (44596) | 16.4 | 0.15 | 20060922 | 24.31535 | 220.90008 | 137.22880 | 6.78678 | 0.1975052 | 2.2456992 | 160 | 8 | 1991–2006 | 0.56 | M-v | 1 | MPC | 77326 | (44596) |
| (44599) | 15.6 | 0.15 | 20060922 | 82.90926 | 168.05819 | 170.35788 | 3.33060 | 0.1777772 | 2.1769837 | 232 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 32355 | (44599) |
| (44609) | 15.2 | 0.15 | 20060922 | 347.18307 | 69.29249 | 356.35880 | 4.78489 | 0.0829099 | 2.2035601 | 376 | 6 | 1998–2006 | 0.53 | M-v | 0 | MPC | 32359 | (44609) |
| (44611) | 15.8 | 0.15 | 20060922 | 328.56357 | 201.60478 | 255.50191 | 1.70624 | 0.0781723 | 2.1982841 | 232 | 8 | 1996–2006 | 0.54 | M-v | 0 | MPC | 77326 | (44611) |
| (44612) | 15.9 | 0.15 | 20060922 | 71.31346 | 189.56436 | 141.56048 | 1.11941 | 0.1774396 | 2.1980669 | 243 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 32360 | (44612) |
| (44616) | 16.2 | 0.15 | 20060922 | 58.25498 | 198.83877 | 84.13105 | 3.43106 | 0.2080022 | 2.3274869 | 148 | 6 | 1998–2006 | 0.56 | M-v | 0 | MPC | 73906 | (44616) |
| (44617) | 15.5 | 0.15 | 20060922 | 0.76869 | 36.54719 | 9.94801 | 4.80452 | 0.1433436 | 2.2444108 | 219 | 6 | 1994–2006 | 0.52 | M-v | 1 | MPC | 32362 | (44617) |
| (44621) | 15.5 | 0.15 | 20060922 | 53.36548 | 80.68282 | 252.21912 | 1.71350 | 0.1284664 | 2.1982837 | 212 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32363 | (44621) |
| (44629) | 15.3 | 0.15 | 20060922 | 252.77347 | 25.79803 | 128.10156 | 6.03855 | 0.0834444 | 2.2084121 | 248 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32366 | (44629) |
| (44632) | 15.2 | 0.15 | 20060922 | 114.48384 | 288.50001 | 335.01974 | 3.44764 | 0.1281233 | 2.2388418 | 303 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 32367 | (44632) |
| (44638) | 16.0 | 0.15 | 20060922 | 111.10293 | 105.34251 | 148.82191 | 5.06653 | 0.0801238 | 2.2700772 | 128 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32370 | (44638) |
| (44640) | 15.7 | 0.15 | 20060922 | 97.10848 | 12.18211 | 296.55240 | 7.10329 | 0.1438582 | 2.2100841 | 173 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32370 | (44640) |
| (44642) | 15.6 | 0.15 | 20060922 | 307.99857 | 273.20551 | 178.41433 | 5.78350 | 0.0774200 | 2.2167566 | 155 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 32371 | (44642) |
| (44650) | 16.0 | 0.15 | 20060922 | 314.14711 | 322.02982 | 142.99865 | 3.92061 | 0.0702052 | 2.2100775 | 169 | 7 | 1991–2006 | 0.62 | M-v | 1 | MPC | 32374 | (44650) |
| (44653) | 16.0 | 0.15 | 20060922 | 87.16069 | 177.40501 | 103.02789 | 2.59166 | 0.1503108 | 2.2302655 | 213 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 32375 | (44653) |
| (44654) | 15.5 | 0.15 | 20060922 | 49.73929 | 68.79408 | 245.41161 | 3.43555 | 0.2232749 | 2.2524506 | 193 | 7 | 1982–2006 | 0.57 | M-v | 0 | MPC | 32375 | (44654) |
| (44659) | 15.5 | 0.15 | 20060922 | 201.91928 | 193.24476 | 330.63265 | 7.00999 | 0.0379971 | 2.2802157 | 205 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 32376 | (44659) |
| (44661) | 15.3 | 0.15 | 20060922 | 185.58549 | 255.67138 | 338.07777 | 5.48977 | 0.1317720 | 2.1493297 | 255 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32377 | (44661) |
| (44662) | 16.3 | 0.15 | 20060922 | 353.70088 | 265.18692 | 161.51200 | 1.70576 | 0.0587784 | 2.1836646 | 134 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 32377 | (44662) |
| (44664) | 14.9 | 0.15 | 20060922 | 62.62217 | 315.56794 | 27.70787 | 2.66392 | 0.1336813 | 2.1942856 | 272 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 32378 | (44664) |
| (44665) | 15.4 | 0.15 | 20060922 | 281.53463 | 48.67190 | 45.03309 | 3.36184 | 0.1161075 | 2.2841047 | 213 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 32379 | (44665) |
| (44670) | 16.2 | 0.15 | 20060922 | 124.24583 | 144.03446 | 137.08946 | 3.23583 | 0.1074298 | 2.1837115 | 105 | 9 | 1993–2006 | 0.58 | M-v | 1 | MPC | 32380 | (44670) |
| (44671) | 16.3 | 0.15 | 20060922 | 27.38820 | 190.49887 | 153.27870 | 8.25051 | 0.1174701 | 2.2683034 | 175 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32380 | (44671) |
| (44672) | 15.2 | 0.15 | 20060922 | 95.78197 | 157.87496 | 136.74145 | 6.15706 | 0.1337625 | 2.2089486 | 237 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 32381 | (44672) |
| (44674) | 15.3 | 0.15 | 20060922 | 294.78311 | 339.67280 | 137.60627 | 2.77840 | 0.0550340 | 2.1919137 | 256 | 7 | 1993–2006 | 0.53 | M-v | 1 | MPC | 32382 | (44674) |
| (44675) | 15.0 | 0.15 | 20060922 | 158.98420 | 308.95355 | 281.95909 | 2.31834 | 0.1062611 | 2.2120714 | 240 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 32382 | (44675) |
| (44677) | 15.8 | 0.15 | 20060922 | 292.21506 | 127.86665 | 339.54422 | 5.36949 | 0.0559449 | 2.2163683 | 255 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32383 | (44677) |
| (44690) | 15.1 | 0.15 | 20060922 | 160.72398 | 327.92747 | 296.02499 | 4.83349 | 0.1322603 | 2.1740713 | 345 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 32388 | (44690) |
| (44695) | 15.0 | 0.15 | 20060922 | 324.94343 | 324.42392 | 102.48440 | 9.97881 | 0.0944113 | 2.2591617 | 295 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32390 | (44695) |
| (44696) | 15.3 | 0.15 | 20060922 | 32.61071 | 253.98916 | 113.41751 | 8.81373 | 0.1626274 | 2.2288426 | 219 | 9 | 1986–2006 | 0.61 | M-v | 1 | MPC | 32391 | (44696) |
| (44697) | 15.3 | 0.15 | 20060922 | 136.68604 | 105.67333 | 132.50090 | 7.16408 | 0.1382298 | 2.2562766 | 226 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32391 | (44697) |
| (44704) | 14.8 | 0.15 | 20060922 | 238.21823 | 342.67151 | 165.52059 | 11.47415 | 0.1093268 | 2.3189430 | 259 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 32394 | (44704) |
| (44710) | 15.9 | 0.15 | 20060922 | 63.45010 | 205.62918 | 86.07353 | 4.21522 | 0.1419007 | 2.3170825 | 229 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32396 | (44710) |
| (44711) | 14.6 | 0.15 | 20060922 | 138.47109 | 281.30657 | 307.59431 | 5.32798 | 0.2358738 | 2.2536043 | 384 | 7 | 1997–2006 | 0.49 | M-v | 0 | MPC | 32396 | (44711) |
| (44712) | 15.4 | 0.15 | 20060922 | 77.22625 | 6.81224 | 347.32000 | 3.85715 | 0.1719276 | 2.1912757 | 276 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 32397 | (44712) |
| (44713) | 16.0 | 0.15 | 20060922 | 82.98526 | 245.76816 | 111.29709 | 1.73337 | 0.0059040 | 2.1778449 | 376 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32397 | (44713) |
| (44722) | 16.8 | 0.15 | 20060922 | 139.78610 | 276.79001 | 14.66398 | 2.59080 | 0.1634889 | 2.1506125 | 185 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32401 | (44722) |
| (44725) | 16.1 | 0.15 | 20060922 | 37.13935 | 140.14369 | 217.11209 | 5.71492 | 0.1371052 | 2.2672045 | 259 | 8 | 1991–2006 | 0.57 | M-v | 0 | MPC | 77326 | (44725) |
| (44739) | 16.2 | 0.15 | 20060922 | 121.12780 | 28.97189 | 290.43342 | 4.55084 | 0.2018919 | 2.1580879 | 264 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 32408 | (44739) |
| (44754) | 15.6 | 0.15 | 20060922 | 100.50466 | 308.87269 | 356.43714 | 5.29687 | 0.1965830 | 2.2187670 | 234 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 32413 | (44754) |
| (44755) | 16.2 | 0.15 | 20060922 | 101.05013 | 272.06123 | 17.46658 | 3.37045 | 0.0697297 | 2.2572909 | 129 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 32414 | (44755) |
| (44756) | 15.6 | 0.15 | 20060922 | 266.34807 | 243.89985 | 241.17748 | 6.27862 | 0.0519060 | 2.2367094 | 173 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 32414 | (44756) |
| (44758) | 15.3 | 0.15 | 20060922 | 168.46880 | 351.04522 | 242.30762 | 4.34017 | 0.1308463 | 2.2095468 | 270 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32414 | (44758) |
| (44764) | 14.9 | 0.15 | 20060922 | 36.21872 | 74.16517 | 331.30747 | 3.69607 | 0.1070234 | 2.1766726 | 408 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32417 | (44764) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (44768) | 14.8 | 0.15 | 20060922 | 225.51376 | 246.13624 | 301.69403 | 5.39924 | 0.1049915 | 2.2084334 | 362 | 7 | 1988–2006 | 0.53 | M-v | 0 | MPC | 32418 | (44768) |
| (44769) | 16.7 | 0.15 | 20060922 | 114.31701 | 290.44805 | 352.29960 | 3.46458 | 0.1541333 | 2.2029439 | 90 | 7 | 1998–2006 | 0.49 | M-v | 1 | MPC | 32419 | (44769) |
| (44770) | 15.4 | 0.15 | 20060922 | 123.63499 | 32.38864 | 197.97230 | 5.10727 | 0.1945344 | 2.2901131 | 227 | 7 | 1992–2006 | 0.49 | M-v | 0 | MPC | 32419 | (44770) |
| (44779) | 15.1 | 0.15 | 20060922 | 212.71308 | 305.08770 | 233.88158 | 6.56124 | 0.0454529 | 2.2736874 | 190 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32422 | (44779) |
| (44782) | 15.6 | 0.15 | 20060922 | 112.03566 | 193.90175 | 83.15695 | 5.48176 | 0.1577285 | 2.2810250 | 247 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32423 | (44782) |
| (44783) | 15.0 | 0.15 | 20060922 | 156.32495 | 96.35340 | 138.92603 | 7.55152 | 0.0748807 | 2.2995577 | 236 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 32423 | (44783) |
| (44788) | 15.0 | 0.15 | 20060922 | 332.66857 | 154.55556 | 289.09235 | 4.40166 | 0.1124063 | 2.2494174 | 259 | 8 | 1987–2006 | 0.58 | M-v | 0 | MPC | 77326 | (44788) |
| (44801) | 16.2 | 0.15 | 20060922 | 79.08291 | 304.51027 | 351.98457 | 3.64221 | 0.1607090 | 2.2926685 | 230 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32430 | (44801) |
| (44802) | 15.8 | 0.15 | 20060922 | 40.28487 | 301.12457 | 24.00713 | 4.35399 | 0.1821191 | 2.3428602 | 186 | 7 | 1981–2006 | 0.49 | M-v | 0 | MPC | 32430 | (44802) |
| (44808) | 15.7 | 0.15 | 20060922 | 111.95005 | 304.96803 | 316.14225 | 5.33986 | 0.1334652 | 2.2767595 | 152 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 32432 | (44808) |
| (44812) | 15.6 | 0.15 | 20060922 | 205.51551 | 272.41730 | 284.32197 | 4.67547 | 0.1013462 | 2.2235806 | 227 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32433 | (44812) |
| (44813) | 15.4 | 0.15 | 20060922 | 63.14517 | 196.09754 | 103.93766 | 6.63830 | 0.1407699 | 2.3047171 | 233 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 32434 | (44813) |
| (44814) | 15.5 | 0.15 | 20060922 | 56.30850 | 217.05654 | 118.69061 | 8.76953 | 0.1703838 | 2.2630103 | 186 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 32434 | (44814) |
| (44815) | 15.8 | 0.15 | 20060922 | 318.97914 | 324.87036 | 129.57217 | 4.83451 | 0.2032963 | 2.2549910 | 212 | 7 | 1989–2006 | 0.58 | M-v | 0 | MPC | 77326 | (44815) |
| (44817) | 15.5 | 0.15 | 20060922 | 111.40355 | 194.75881 | 82.98391 | 4.92919 | 0.1583832 | 2.2370652 | 188 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32435 | (44817) |
| (44830) | 16.7 | 0.15 | 20060922 | 54.47928 | 184.79426 | 173.67335 | 6.79699 | 0.2127318 | 2.2300382 | 110 | 7 | 1991–2005 | 0.55 | M-v | 1 | MPC | 32439 | (44830) |
| (44840) | 15.4 | 0.15 | 20060922 | 69.66247 | 191.66956 | 112.09208 | 7.19553 | 0.1567388 | 2.3045050 | 186 | 7 | 1998–2006 | 0.63 | M-v | 1 | MPC | 32442 | (44840) |
| (44841) | 15.7 | 0.15 | 20060922 | 61.85693 | 212.30135 | 92.93084 | 8.22534 | 0.1683757 | 2.3150242 | 109 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 32443 | (44841) |
| (44849) | 15.5 | 0.15 | 20060922 | 59.82036 | 262.51902 | 62.85010 | 3.22215 | 0.1527543 | 2.2691868 | 334 | 8 | 1991–2006 | 0.55 | M-v | 0 | MPC | 77326 | (44849) |
| (44850) | 15.9 | 0.15 | 20060922 | 77.76283 | 117.78000 | 218.60003 | 3.22573 | 0.1858673 | 2.2342180 | 222 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 32445 | (44850) |
| (44858) | 16.2 | 0.15 | 20060922 | 59.95845 | 258.02416 | 105.89695 | 2.91482 | 0.1633657 | 2.2048679 | 144 | 7 | 1991–2006 | 0.52 | M-v | 1 | MPC | 32448 | (44858) |
| (44875) | 14.6 | 0.15 | 20060922 | 138.36284 | 310.36799 | 287.15108 | 5.85180 | 0.0788505 | 2.3156839 | 240 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 32454 | (44875) |
| (44876) | 15.8 | 0.15 | 20060922 | 55.99469 | 326.23238 | 356.19177 | 6.58268 | 0.1410672 | 2.2887752 | 100 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 32454 | (44876) |
| (44877) | 15.2 | 0.15 | 20060922 | 100.14967 | 358.99985 | 270.59287 | 6.09469 | 0.0940591 | 2.3216046 | 202 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32455 | (44877) |
| (44888) | 15.0 | 0.15 | 20060922 | 68.61644 | 6.76587 | 348.76072 | 3.79471 | 0.2165737 | 2.2224433 | 287 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 32458 | (44888) |
| (44890) | 15.2 | 0.15 | 20060922 | 126.06832 | 189.90022 | 57.99861 | 3.61003 | 0.1672456 | 2.3148878 | 397 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32459 | (44890) |
| (44893) | 16.0 | 0.15 | 20060922 | 66.38371 | 267.67837 | 53.48748 | 5.34866 | 0.2543259 | 2.2725297 | 172 | 7 | 1992–2006 | 0.66 | M-v | 1 | MPC | 32460 | (44893) |
| (44894) | 15.3 | 0.15 | 20060922 | 67.84135 | 108.18239 | 233.51315 | 4.94920 | 0.1224517 | 2.2584574 | 224 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 32461 | (44894) |
| (44903) | 15.6 | 0.15 | 20060922 | 44.48549 | 174.43998 | 205.62229 | 2.80501 | 0.1569046 | 2.2385697 | 196 | 7 | 1982–2006 | 0.55 | M-v | 1 | MPC | 32464 | (44903) |
| (44906) | 15.6 | 0.15 | 20060922 | 171.39963 | 300.56275 | 294.54646 | 3.14730 | 0.0888205 | 2.2674845 | 324 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32465 | (44906) |
| (44907) | 13.7 | 0.15 | 20060922 | 16.42034 | 115.61851 | 261.22771 | 18.93561 | 0.0408548 | 2.2977681 | 253 | 7 | 1998–2006 | 0.48 | M-v | 0 | MPC | 32466 | (44907) |
| (44911) | 14.9 | 0.15 | 20060922 | 50.32062 | 76.60537 | 278.05207 | 3.46805 | 0.1474254 | 2.2961607 | 276 | 8 | 1997–2006 | 0.56 | M-v | 1 | MPC | 32467 | (44911) |
| (44912) | 14.9 | 0.15 | 20060922 | 23.45091 | 68.58053 | 320.33109 | 3.16913 | 0.1070466 | 2.2968222 | 314 | 5 | 1999–2006 | 0.56 | M-v | 0 | MPC | 32467 | (44912) |
| (44917) | 15.9 | 0.15 | 20060922 | 69.03738 | 91.19951 | 234.26570 | 5.90758 | 0.1411704 | 2.2854123 | 194 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 32469 | (44917) |
| (44930) | 15.7 | 0.15 | 20060922 | 127.02726 | 9.86782 | 242.54291 | 6.11183 | 0.1101778 | 2.3566331 | 221 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 32474 | (44930) |
| (44933) | 14.8 | 0.15 | 20060922 | 128.36255 | 336.40348 | 254.77259 | 7.20566 | 0.1437807 | 2.3235868 | 292 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 32476 | (44933) |
| (44934) | 16.0 | 0.15 | 20060922 | 30.44211 | 1.96453 | 354.17326 | 6.82376 | 0.1562557 | 2.2760075 | 102 | 7 | 1994–2006 | 0.54 | M-v | 1 | MPC | 32476 | (44934) |
| (44936) | 15.5 | 0.15 | 20060922 | 150.84574 | 301.53635 | 350.58515 | 2.51996 | 0.1085363 | 2.1901261 | 412 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 32477 | (44936) |
| (44957) | 15.5 | 0.15 | 20060922 | 113.59490 | 279.71533 | 318.84509 | 4.22444 | 0.1538705 | 2.3448864 | 281 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 32485 | (44957) |
| (44959) | 16.5 | 0.15 | 20060922 | 81.64349 | 219.44524 | 81.91033 | 1.81443 | 0.1747329 | 2.2587084 | 187 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 32486 | (44959) |
| (44963) | 16.7 | 0.15 | 20060922 | 68.35089 | 104.53092 | 215.85108 | 5.53532 | 0.1418135 | 2.2794559 | 117 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32487 | (44963) |
| (44965) | 15.6 | 0.15 | 20060922 | 254.91004 | 287.78912 | 199.42955 | 6.64940 | 0.0597762 | 2.3000485 | 195 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 32488 | (44965) |
| (44978) | 15.5 | 0.15 | 20060922 | 296.41892 | 217.75325 | 225.40751 | 8.87150 | 0.1408117 | 2.3237721 | 254 | 7 | 1995–2006 | 0.50 | M-v | 0 | MPC | 32492 | (44978) |
| (44984) | 15.4 | 0.15 | 20060922 | 73.90384 | 338.43151 | 336.82443 | 1.68574 | 0.1142814 | 2.2888130 | 287 | 8 | 1992–2006 | 0.56 | M-v | 0 | MPC | 77326 | (44984) |
| (44986) | 15.6 | 0.15 | 20060922 | 52.78866 | 278.19603 | 43.72381 | 7.53199 | 0.1357384 | 2.3197703 | 257 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32495 | (44986) |
| (44989) | 16.2 | 0.15 | 20060922 | 351.99408 | 185.49515 | 142.67739 | 1.73301 | 0.2065999 | 2.4211335 | 106 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 32496 | (44989) |
| (44997) | 16.3 | 0.15 | 20060922 | 67.35511 | 224.14464 | 105.99686 | 2.96668 | 0.1905205 | 2.2414254 | 134 | 9 | 1991–2006 | 0.52 | M-v | 0 | MPC | 32498 | (44997) |
| (45003) | 15.8 | 0.15 | 20060922 | 243.43172 | 316.87986 | 158.95350 | 4.60946 | 0.0558477 | 2.4041681 | 111 | 7 | 1995–2006 | 0.49 | M-v | 0 | MPC | 32500 | (45003) |
| (45005) | 16.4 | 0.15 | 20060922 | 110.38406 | 186.23901 | 105.58719 | 8.75865 | 0.1067169 | 2.2540296 | 122 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 32501 | (45005) |
| (45018) | 15.3 | 0.15 | 20060922 | 11.96032 | 164.26493 | 227.62061 | 2.58448 | 0.2164975 | 2.2968897 | 234 | 8 | 1997–2006 | 0.59 | M-v | 0 | MPC | 01914 | (45018) |
| (45033) | 14.7 | 0.15 | 20060922 | 183.59780 | 302.40531 | 206.42073 | 10.52211 | 0.1193873 | 2.5271809 | 221 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 32510 | (45033) |
| (45038) | 15.4 | 0.15 | 20060922 | 42.81446 | 273.41716 | 62.66310 | 7.39309 | 0.1426951 | 2.3311137 | 298 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 32512 | (45038) |
| (45045) | 14.8 | 0.15 | 20060922 | 45.08708 | 75.26998 | 273.02901 | 22.57856 | 0.2729449 | 2.3188527 | 183 | 7 | 1991–2006 | 0.47 | M-v | 1 | MPC | 32514 | (45045) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (45055) | 15.2 | 0.15 | 20060922 | 57.95599 | 93.03647 | 242.74220 | 4.32554 | 0.1333380 | 2.2768895 | 305 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32518 | (45055) |
| (45056) | 15.6 | 0.15 | 20060922 | 34.45827 | 284.94046 | 77.77009 | 5.56337 | 0.2225723 | 2.2713505 | 155 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 32519 | (45056) |
| (45065) | 14.4 | 0.15 | 20060922 | 195.15331 | 226.29833 | 296.94761 | 8.82522 | 0.0773714 | 2.5824972 | 298 | 7 | 1985–2006 | 0.55 | M-v | 1 | MPC | 32522 | (45065) |
| (45072) | 15.2 | 0.15 | 20060922 | 60.36944 | 175.06680 | 191.05696 | 7.87243 | 0.2118350 | 2.2169514 | 285 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 32525 | (45072) |
| (45077) | 15.5 | 0.15 | 20060922 | 48.51624 | 155.59643 | 186.32473 | 6.50903 | 0.1331517 | 2.3244951 | 287 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 32526 | (45077) |
| (45083) | 14.7 | 0.15 | 20060922 | 154.84523 | 9.52926 | 252.14313 | 6.53239 | 0.1058395 | 2.2601655 | 286 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 32529 | (45083) |
| (45085) | 15.3 | 0.15 | 20060922 | 39.30251 | 280.72013 | 83.22026 | 6.29518 | 0.1466752 | 2.2693430 | 183 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 32529 | (45085) |
| (45086) | 14.7 | 0.15 | 20060922 | 210.73138 | 185.41273 | 48.58693 | 5.59478 | 0.1088815 | 2.2199944 | 442 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 32530 | (45086) |
| (45093) | 15.9 | 0.15 | 20060922 | 35.00608 | 72.21423 | 263.06975 | 2.25740 | 0.1846144 | 2.3399649 | 167 | 7 | 1981–2006 | 0.52 | M-v | 0 | MPC | 32532 | (45093) |
| (45102) | 15.1 | 0.15 | 20060922 | 51.31966 | 34.11156 | 253.96058 | 6.57595 | 0.1767789 | 2.4608360 | 161 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32535 | (45102) |
| (45121) | 14.6 | 0.15 | 20060922 | 171.71147 | 222.04388 | 285.59663 | 10.99193 | 0.1894800 | 2.6575275 | 272 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 32541 | (45121) |
| (45138) | 15.6 | 0.15 | 20060922 | 53.30861 | 279.63146 | 60.12611 | 4.89672 | 0.1991034 | 2.3054268 | 214 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 32548 | (45138) |
| (45147) | 15.6 | 0.15 | 20060922 | 79.70492 | 224.92455 | 68.99762 | 7.24491 | 0.2056439 | 2.2975587 | 241 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 32551 | (45147) |
| (45149) | 14.7 | 0.15 | 20060922 | 94.82078 | 15.27135 | 283.14397 | 6.21386 | 0.1396170 | 2.2623280 | 269 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 32551 | (45149) |
| (45152) | 15.1 | 0.15 | 20060922 | 125.04620 | 285.14960 | 331.85678 | 22.44189 | 0.2032021 | 2.2723311 | 160 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 32553 | (45152) |
| (45158) | 16.0 | 0.15 | 20060922 | 42.41270 | 352.34102 | 20.45822 | 5.61224 | 0.2538586 | 2.2336756 | 149 | 7 | 1996–2006 | 0.47 | M-v | 1 | MPC | 32555 | (45158) |
| (45161) | 15.1 | 0.15 | 20060922 | 114.08739 | 356.86461 | 273.07570 | 11.73762 | 0.1383367 | 2.3158648 | 107 | 7 | 1995–2006 | 0.52 | M-v | 1 | MPC | 32556 | (45161) |
| (45162) | 14.4 | 0.15 | 20060922 | 98.16822 | 18.44459 | 269.37819 | 9.16803 | 0.0114257 | 2.3376696 | 255 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 32556 | (45162) |
| (45174) | 15.6 | 0.15 | 20060922 | 59.25304 | 182.07380 | 149.16788 | 8.62364 | 0.1945162 | 2.2864938 | 290 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 32560 | (45174) |
| (45181) | 16.0 | 0.15 | 20060922 | 80.15332 | 232.18412 | 80.72162 | 4.20723 | 0.1047072 | 2.3049300 | 196 | 7 | 1992–2006 | 0.53 | M-v | 0 | MPC | 32563 | (45181) |
| (45196) | 15.3 | 0.15 | 20060922 | 49.45038 | 83.48664 | 287.01688 | 7.17153 | 0.1048341 | 2.2521042 | 174 | 6 | 1998–2006 | 0.60 | M-v | 1 | MPC | 32568 | (45196) |
| (45215) | 15.0 | 0.15 | 20060922 | 58.66021 | 28.25061 | 316.35662 | 5.83894 | 0.2089672 | 2.2717369 | 194 | 9 | 1954–2006 | 0.50 | M-v | 1 | MPC | 32574 | (45215) |
| (45242) | 15.2 | 0.15 | 20060922 | 344.90875 | 181.59020 | 202.65562 | 6.03621 | 0.1355386 | 2.3652535 | 150 | 7 | 1977–2006 | 0.48 | M-v | 0 | MPC | 32582 | (45242) |
| (45308) | 14.8 | 0.15 | 20060922 | 22.52110 | 266.05137 | 113.97952 | 10.07128 | 0.2307036 | 2.3369105 | 165 | 7 | 1993–2006 | 0.53 | M-v | 1 | MPC | 32603 | (45308) |
| (45324) | 15.2 | 0.15 | 20060922 | 356.95370 | 274.63469 | 114.02050 | 7.55483 | 0.1080506 | 2.3478071 | 229 | 7 | 1997–2006 | 0.50 | M-v | 0 | MPC | 32608 | (45324) |
| (45375) | 14.8 | 0.15 | 20060922 | 30.38516 | 76.08424 | 276.17867 | 11.93039 | 0.2817828 | 2.3786138 | 188 | 7 | 1991–2006 | 0.49 | M-v | 1 | MPC | 32625 | (45375) |
| (45405) | 15.0 | 0.15 | 20060922 | 25.91338 | 215.38677 | 183.88053 | 4.82709 | 0.2267041 | 2.3252161 | 330 | 6 | 1997–2006 | 0.57 | M-v | 1 | MPC | 32635 | (45405) |
| (45416) | 15.5 | 0.15 | 20060922 | 32.99080 | 297.14319 | 106.98630 | 6.39825 | 0.1581652 | 2.1868100 | 178 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 32639 | (45416) |
| (45448) | 14.5 | 0.15 | 20060922 | 28.89533 | 199.04246 | 152.40948 | 11.75052 | 0.1283884 | 2.3447915 | 368 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 32649 | (45448) |
| (45472) | 16.0 | 0.15 | 20060922 | 47.39292 | 200.35476 | 114.35347 | 3.17870 | 0.2236227 | 2.3524335 | 126 | 7 | 1997–2006 | 0.60 | M-v | 1 | MPC | 32658 | (45472) |
| (45653) | 13.2 | 0.15 | 20060922 | 225.28891 | 149.39124 | 169.69191 | 10.14033 | 0.0604553 | 3.4838564 | 303 | 6 | 1996–2006 | 0.61 | M-v | 0 | MPC | 32716 | (45653) |
| (45747) | 14.6 | 0.15 | 20060922 | 60.08210 | 110.24418 | 236.84154 | 9.45751 | 0.0397632 | 2.6557596 | 244 | 8 | 1997–2006 | 0.52 | M-v | 0 | MPC | 77327 | (45747) |
| (45874) | 15.3 | 0.15 | 20060922 | 79.50950 | 217.11275 | 169.01572 | 23.15499 | 0.0956520 | 1.9570145 | 145 | 7 | 1996–2006 | 0.61 | M-v | 1 | MPC | 32793 | (45874) |
| (45876) | 14.4 | 0.15 | 20060922 | 166.84575 | 134.59570 | 97.66480 | 4.53374 | 0.1010790 | 2.1880995 | 282 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 32794 | (45876) |
| (45890) | 15.2 | 0.15 | 20060922 | 259.42408 | 250.28985 | 259.90355 | 0.21725 | 0.0350485 | 2.1402392 | 264 | 8 | 1990–2006 | 0.50 | M-v | 1 | MPC | 32799 | (45890) |
| (45905) | 15.5 | 0.15 | 20060922 | 204.80206 | 317.61701 | 247.73423 | 4.84449 | 0.1065077 | 2.1860007 | 119 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 32804 | (45905) |
| (45907) | 14.8 | 0.15 | 20060922 | 185.29273 | 67.11375 | 122.99106 | 4.97719 | 0.0811804 | 2.3119841 | 288 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 32805 | (45907) |
| (45911) | 15.6 | 0.15 | 20060922 | 149.26049 | 124.56189 | 118.43954 | 4.03167 | 0.1614257 | 2.2151863 | 235 | 7 | 1997–2006 | 0.51 | M-v | 0 | MPC | 32806 | (45911) |
| (45926) | 15.8 | 0.15 | 20060922 | 117.35714 | 149.08947 | 92.50918 | 6.99986 | 0.0906933 | 2.2779829 | 219 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 32811 | (45926) |
| (45931) | 15.0 | 0.15 | 20060922 | 208.07386 | 255.54830 | 283.14460 | 6.74743 | 0.0236670 | 2.2116550 | 239 | 9 | 1988–2006 | 0.55 | M-v | 0 | MPC | 32813 | (45931) |
| (45957) | 15.1 | 0.15 | 20060922 | 157.22365 | 88.26005 | 72.28865 | 3.15548 | 0.1432377 | 2.4341345 | 227 | 7 | 1995–2006 | 0.62 | M-v | 1 | MPC | 32821 | (45957) |
| (45967) | 15.8 | 0.15 | 20060922 | 153.12913 | 265.24552 | 300.03951 | 3.37125 | 0.0913903 | 2.2979889 | 133 | 7 | 1994–2006 | 0.52 | M-v | 1 | MPC | 32825 | (45967) |
| (45971) | 16.6 | 0.15 | 20060922 | 98.92348 | 313.96686 | 301.98147 | 4.37036 | 0.1111924 | 2.2897274 | 126 | 7 | 1998–2006 | 0.65 | M-v | 1 | MPC | 32826 | (45971) |
| (45974) | 15.4 | 0.15 | 20060922 | 254.83123 | 330.74021 | 153.95870 | 7.59744 | 0.0748739 | 2.2723115 | 221 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 32827 | (45974) |
| (45979) | 15.2 | 0.15 | 20060922 | 124.29547 | 331.78581 | 239.28123 | 8.81736 | 0.1631299 | 2.3983435 | 195 | 7 | 1992–2006 | 0.58 | M-v | 1 | MPC | 32828 | (45979) |
| (45992) | 15.6 | 0.15 | 20060922 | 220.48269 | 11.92658 | 163.53130 | 3.68880 | 0.0414668 | 2.2031290 | 147 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 32833 | (45992) |
| (45993) | 16.0 | 0.15 | 20060922 | 170.72546 | 73.73839 | 130.00187 | 7.42686 | 0.0565779 | 2.2741711 | 158 | 7 | 1996–2006 | 0.60 | M-v | 1 | MPC | 32833 | (45993) |
| (46023) | 15.2 | 0.15 | 20060922 | 50.51146 | 233.94595 | 106.00286 | 7.99476 | 0.1572394 | 2.2510449 | 164 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 04081 | (46023) |
| (46030) | 15.5 | 0.15 | 20060922 | 80.98350 | 159.43096 | 116.23559 | 3.22520 | 0.1905762 | 2.3845514 | 281 | 9 | 1991–2006 | 0.62 | M-v | 0 | MPC | 32844 | (46030) |
| (46032) | 15.9 | 0.15 | 20060922 | 62.06199 | 249.21625 | 69.33575 | 3.20641 | 0.0119650 | 2.2804224 | 143 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 32845 | (46032) |
| (46059) | 15.3 | 0.15 | 20060922 | 107.43691 | 26.96359 | 276.03678 | 7.08602 | 0.1600205 | 2.2725210 | 179 | 7 | 1995–2006 | 0.57 | M-v | 1 | MPC | 32852 | (46059) |
| (46075) | 14.9 | 0.15 | 20060922 | 94.43180 | 323.69043 | 288.61091 | 7.77788 | 0.0911923 | 2.3695578 | 177 | 7 | 1977–2006 | 0.57 | M-v | 0 | MPC | 32857 | (46075) |
| (46098) | 15.8 | 0.15 | 20060922 | 263.44991 | 244.55476 | 266.11020 | 4.90795 | 0.0611784 | 2.1786355 | 108 | 6 | 1998–2006 | 0.61 | M-v | 1 | MPC | 32864 | (46098) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (46118) | 15.5 | 0.15 | 20060922 | 159.50240 | 308.14101 | 295.09595 | 5.22360 | 0.1063694 | 2.2578994 | 170 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 32870 | (46118) |
| (46120) | 15.4 | 0.15 | 20060922 | 66.70275 | 145.74454 | 163.72662 | 8.00561 | 0.2682291 | 2.3820486 | 211 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 32871 | (46120) |
| (46128) | 15.3 | 0.15 | 20060922 | 67.02992 | 4.59751 | 317.24568 | 5.23329 | 0.1804076 | 2.3466691 | 272 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 32873 | (46128) |
| (46163) | 15.0 | 0.15 | 20060922 | 39.48747 | 4.26604 | 334.46503 | 10.62879 | 0.1017590 | 2.3848822 | 195 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 32884 | (46163) |
| (46167) | 16.6 | 0.15 | 20060922 | 93.67683 | 266.93992 | 12.49252 | 3.19064 | 0.0245133 | 2.3405723 | 147 | 9 | 1994–2006 | 0.48 | M-v | 0 | MPC | 32885 | (46167) |
| (46180) | 15.5 | 0.15 | 20060922 | 243.13113 | 247.46616 | 242.46805 | 5.78317 | 0.1076298 | 2.3000929 | 202 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 32888 | (46180) |
| (46207) | 15.3 | 0.15 | 20060922 | 296.52515 | 37.14625 | 61.88897 | 7.11684 | 0.1498330 | 2.2614675 | 258 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 32896 | (46207) |
| (46210) | 15.4 | 0.15 | 20060922 | 40.96895 | 155.44950 | 199.94014 | 7.36054 | 0.1297394 | 2.3383056 | 239 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 32897 | (46210) |
| (46238) | 15.2 | 0.15 | 20060922 | 58.46029 | 24.95482 | 315.58082 | 5.81052 | 0.1442044 | 2.3350598 | 244 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 32906 | (46238) |
| (46281) | 15.1 | 0.15 | 20060922 | 39.94046 | 132.54656 | 231.86603 | 6.01329 | 0.1246371 | 2.3485367 | 191 | 7 | 1995–2006 | 0.60 | M-v | 1 | MPC | 32919 | (46281) |
| (46310) | 15.3 | 0.15 | 20060922 | 15.50928 | 264.24672 | 122.38931 | 3.64562 | 0.0917987 | 2.6697728 | 233 | 9 | 1995–2006 | 0.53 | M-v | 0 | MPC | 32928 | (46310) |
| (46318) | 14.1 | 0.15 | 20060922 | 57.68964 | 356.94377 | 10.47994 | 3.35731 | 0.1960576 | 2.7068198 | 362 | 9 | 1974–2006 | 0.56 | M-v | 0 | MPC | 32931 | (46318) |
| (46319) | 14.3 | 0.15 | 20060922 | 50.37509 | 16.16617 | 20.53881 | 2.95808 | 0.0923795 | 2.6523899 | 347 | 9 | 1990–2006 | 0.51 | M-v | 0 | MPC | 32931 | (46319) |
| (46336) | 14.0 | 0.15 | 20060922 | 69.11711 | 58.15448 | 276.30383 | 4.07556 | 0.0641876 | 2.7347250 | 317 | 9 | 1996–2006 | 0.57 | M-v | 0 | MPC | 32937 | (46336) |
| (46337) | 14.4 | 0.15 | 20060922 | 174.39597 | 101.59492 | 189.80224 | 9.30323 | 0.0744293 | 2.5703555 | 283 | 10 | 1983–2006 | 0.49 | M-v | 0 | MPC | 32938 | (46337) |
| (46349) | 14.5 | 0.15 | 20060922 | 251.74807 | 155.72683 | 6.58457 | 2.76368 | 0.0511480 | 2.7207305 | 365 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 32942 | (46349) |
| (46361) | 13.4 | 0.15 | 20060922 | 154.99029 | 50.41341 | 254.04128 | 7.24336 | 0.1687527 | 2.6011368 | 393 | 10 | 1988–2006 | 0.50 | M-v | 0 | MPC | 32947 | (46361) |
| (46365) | 15.5 | 0.15 | 20060922 | 338.59802 | 7.37147 | 135.21339 | 3.69294 | 0.0852808 | 2.5635289 | 252 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 43321 | (46365) |
| (46372) | 13.6 | 0.15 | 20060922 | 110.40465 | 51.64316 | 312.86962 | 2.30348 | 0.1712890 | 2.5554099 | 399 | 9 | 1984–2006 | 0.54 | M-v | 0 | MPC | 32950 | (46372) |
| (46375) | 14.1 | 0.15 | 20060922 | 122.19317 | 197.41770 | 143.64856 | 5.70205 | 0.1367891 | 2.6092812 | 281 | 9 | 1995–2006 | 0.54 | M-v | 0 | MPC | 32951 | (46375) |
| (46423) | 15.9 | 0.15 | 20060922 | 117.74082 | 140.77099 | 102.59495 | 1.52757 | 0.1289208 | 2.1921230 | 261 | 9 | 1990–2006 | 0.52 | M-v | 0 | MPC | 32966 | (46423) |
| (46437) | 15.4 | 0.15 | 20060922 | 39.00938 | 260.78443 | 83.18510 | 3.59833 | 0.2580770 | 2.3228210 | 179 | 8 | 1988–2006 | 0.55 | M-v | 0 | MPC | 57644 | (46437) |
| (46438) | 15.7 | 0.15 | 20060922 | 61.81333 | 197.27467 | 110.67808 | 7.92904 | 0.1672086 | 2.2306787 | 148 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 32971 | (46438) |
| (46463) | 15.7 | 0.15 | 20060922 | 141.89354 | 40.26435 | 206.63243 | 3.63552 | 0.1534912 | 2.1976518 | 131 | 7 | 1960–2006 | 0.57 | M-v | 1 | MPC | 32978 | (46463) |
| (46498) | 15.4 | 0.15 | 20060922 | 145.69405 | 327.70700 | 254.97497 | 4.65643 | 0.1121346 | 2.1817449 | 226 | 7 | 1977–2006 | 0.57 | M-v | 1 | MPC | 32990 | (46498) |
| (46533) | 16.2 | 0.15 | 20060922 | 19.10895 | 169.88316 | 250.57781 | 0.97391 | 0.1066264 | 2.2107366 | 249 | 7 | 1981–2006 | 0.58 | M-v | 0 | MPC | 34067 | (46533) |
| (46556) | 15.1 | 0.15 | 20060922 | 247.72669 | 191.19501 | 16.00516 | 4.75377 | 0.0760775 | 2.1958416 | 510 | 7 | 1990–2006 | 0.57 | M-v | 1 | MPC | 34074 | (46556) |
| (46558) | 15.9 | 0.15 | 20060922 | 219.14302 | 352.43827 | 203.17423 | 6.45138 | 0.1355175 | 2.2444299 | 139 | 7 | 1991–2006 | 0.57 | M-v | 1 | MPC | 34075 | (46558) |
| (46582) | 15.6 | 0.15 | 20060922 | 38.66976 | 70.98393 | 335.19170 | 6.33804 | 0.1415608 | 2.2208240 | 137 | 7 | 1992–2006 | 0.61 | M-v | 1 | MPC | 34083 | (46582) |
| (46589) | 15.1 | 0.15 | 20060922 | 65.44247 | 162.05248 | 232.58681 | 4.90827 | 0.1789964 | 2.2359523 | 427 | 7 | 1992–2006 | 0.52 | M-v | 1 | MPC | 34085 | (46589) |
| (46592) | 14.7 | 0.15 | 20060922 | 22.39913 | 292.92256 | 112.96956 | 5.53306 | 0.1270006 | 2.2822138 | 299 | 7 | 1992–2006 | 0.60 | M-v | 0 | MPC | 34086 | (46592) |
| (46598) | 13.6 | 0.15 | 20060922 | 346.51321 | 90.84188 | 3.48364 | 21.04293 | 0.2865108 | 2.3305642 | 181 | 7 | 1988–2006 | 0.50 | M-v | 1 | MPC | 34088 | (46598) |
| (46601) | 15.3 | 0.15 | 20060922 | 118.27409 | 129.73307 | 104.22472 | 4.20986 | 0.0223098 | 2.4815058 | 149 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 34089 | (46601) |
| (46621) | 15.2 | 0.15 | 20060922 | 300.33334 | 78.83728 | 36.46436 | 5.79123 | 0.1124047 | 2.2487420 | 389 | 7 | 1994–2006 | 0.60 | M-v | 0 | MPC | 34096 | (46621) |
| (46624) | 16.1 | 0.15 | 20060922 | 315.66729 | 302.31926 | 176.43385 | 0.88340 | 0.1747722 | 2.2643810 | 181 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 34097 | (46624) |
| (46648) | 15.9 | 0.15 | 20060922 | 123.15387 | 111.06861 | 140.48849 | 5.20825 | 0.0956251 | 2.3308964 | 167 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 34105 | (46648) |
| (46649) | 14.4 | 0.15 | 20060922 | 95.10697 | 323.92069 | 30.83490 | 5.26266 | 0.1435374 | 2.2519587 | 429 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 34105 | (46649) |
| (46658) | 16.0 | 0.15 | 20060922 | 330.74310 | 343.16205 | 76.19675 | 3.11229 | 0.1699043 | 2.3873949 | 246 | 7 | 1971–2006 | 0.59 | M-v | 0 | MPC | 34108 | (46658) |
| (46681) | 15.1 | 0.15 | 20060922 | 9.04355 | 350.03742 | 62.06979 | 5.65289 | 0.1267603 | 2.2551570 | 300 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 34115 | (46681) |
| (46684) | 16.2 | 0.15 | 20060922 | 73.54924 | 218.88836 | 136.18120 | 4.94855 | 0.1471614 | 2.2509143 | 107 | 6 | 1997–2006 | 0.52 | M-v | 1 | MPC | 77327 | (46684) |
| (46685) | 14.7 | 0.15 | 20060922 | 238.50592 | 66.55509 | 69.31229 | 6.51319 | 0.1208632 | 2.3492469 | 270 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 34116 | (46685) |
| (46688) | 15.6 | 0.15 | 20060922 | 105.59791 | 100.79720 | 173.82838 | 2.18843 | 0.2073067 | 2.3678326 | 286 | 9 | 1991–2006 | 0.49 | M-v | 0 | MPC | 34118 | (46688) |
| (46689) | 15.1 | 0.15 | 20060922 | 232.19914 | 38.93747 | 131.50577 | 6.17229 | 0.0715009 | 2.2986912 | 325 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 34118 | (46689) |
| (46691) | 15.7 | 0.15 | 20060922 | 227.76417 | 120.68747 | 50.71510 | 1.40295 | 0.1493926 | 2.3334465 | 325 | 7 | 1997–2006 | 0.50 | M-v | 0 | MPC | 34119 | (46691) |
| (46693) | 14.8 | 0.15 | 20060922 | 174.19132 | 172.26655 | 64.50694 | 7.48917 | 0.0626852 | 2.3240593 | 343 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 34120 | (46693) |
| (46695) | 16.0 | 0.15 | 20060922 | 112.91205 | 132.19040 | 119.71758 | 5.54651 | 0.0960551 | 2.3995897 | 203 | 7 | 1991–2006 | 0.50 | M-v | 0 | MPC | 34120 | (46695) |
| (46699) | 15.0 | 0.15 | 20060922 | 210.47295 | 92.90838 | 73.47919 | 5.10532 | 0.1518705 | 2.3865121 | 253 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 34121 | (46699) |
| (46701) | 15.1 | 0.15 | 20060922 | 225.26546 | 8.14825 | 148.58547 | 5.77304 | 0.0627362 | 2.3541174 | 223 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 34122 | (46701) |
| (46702) | 15.2 | 0.15 | 20060922 | 327.88207 | 296.37077 | 147.21630 | 6.04951 | 0.1395533 | 2.2949878 | 202 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 34123 | (46702) |
| (46703) | 15.4 | 0.15 | 20060922 | 46.20479 | 252.20309 | 133.36298 | 6.48696 | 0.1273702 | 2.2847368 | 279 | 7 | 1997–2006 | 0.59 | M-v | 1 | MPC | 34123 | (46703) |
| (46706) | 16.0 | 0.15 | 20060922 | 338.24614 | 166.00994 | 277.20809 | 1.89156 | 0.1438795 | 2.2795682 | 168 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 34124 | (46706) |
| (46709) | 14.6 | 0.15 | 20060922 | 106.17169 | 269.29794 | 23.66890 | 8.08427 | 0.1085176 | 2.4410267 | 251 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 34125 | (46709) |
| (46747) | 16.0 | 0.15 | 20060922 | 225.83652 | 109.50556 | 69.68425 | 5.00485 | 0.0630764 | 2.1834070 | 169 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 34137 | (46747) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (46753) | 15.8 | 0.15 | 20060922 | 116.66413 | 258.66300 | 355.25010 | 3.46139 | 0.1667422 | 2.2735898 | 157 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34139 | (46753) |
| (46754) | 16.1 | 0.15 | 20060922 | 222.48641 | 236.08310 | 353.91134 | 1.23446 | 0.0973859 | 2.1339003 | 215 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 34139 | (46754) |
| (46762) | 15.1 | 0.15 | 20060922 | 121.95156 | 247.06739 | 70.98663 | 4.34833 | 0.1562478 | 2.1818771 | 379 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 34142 | (46762) |
| (46765) | 14.1 | 0.15 | 20060922 | 181.78671 | 319.98078 | 282.67764 | 4.47848 | 0.0365770 | 2.1775558 | 399 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 34144 | (46765) |
| (46769) | 16.3 | 0.15 | 20060922 | 119.47586 | 185.66286 | 122.70329 | 3.52858 | 0.1540464 | 2.2080397 | 198 | 7 | 1998–2006 | 0.67 | M-v | 0 | MPC | 34145 | (46769) |
| (46770) | 16.0 | 0.15 | 20060922 | 51.57962 | 214.22599 | 168.23299 | 5.65926 | 0.0878405 | 2.1771449 | 160 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 34146 | (46770) |
| (46772) | 15.4 | 0.15 | 20060922 | 222.37596 | 38.70105 | 162.06080 | 4.28944 | 0.0590285 | 2.2038399 | 341 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 34146 | (46772) |
| (46773) | 15.0 | 0.15 | 20060922 | 124.23683 | 159.80767 | 107.29480 | 5.76501 | 0.2774210 | 2.2525531 | 211 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 34147 | (46773) |
| (46775) | 16.1 | 0.15 | 20060922 | 82.75487 | 263.81631 | 67.14815 | 7.16404 | 0.2054414 | 2.2424016 | 106 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 34148 | (46775) |
| (46778) | 15.4 | 0.15 | 20060922 | 193.15305 | 167.27347 | 82.14376 | 2.89194 | 0.1220033 | 2.1662438 | 374 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 34149 | (46778) |
| (46782) | 15.5 | 0.15 | 20060922 | 168.13706 | 270.04449 | 357.38694 | 3.42592 | 0.0941190 | 2.1989645 | 357 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 34150 | (46782) |
| (46786) | 15.6 | 0.15 | 20060922 | 206.33161 | 58.09036 | 152.28988 | 8.36846 | 0.0679758 | 2.2196238 | 225 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 34152 | (46786) |
| (46788) | 14.8 | 0.15 | 20060922 | 205.88263 | 233.65862 | 340.33726 | 3.62841 | 0.0767078 | 2.1967695 | 429 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 34153 | (46788) |
| (46789) | 15.4 | 0.15 | 20060922 | 124.73648 | 169.67813 | 99.25051 | 6.14712 | 0.1267441 | 2.2601888 | 151 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 34154 | (46789) |
| (46794) | 14.7 | 0.15 | 20060922 | 120.36614 | 132.75103 | 121.30824 | 6.12703 | 0.1153170 | 2.3072475 | 281 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 34156 | (46794) |
| (46796) | 14.2 | 0.15 | 20060922 | 131.75876 | 154.47537 | 96.54551 | 8.05919 | 0.0821452 | 2.3043115 | 281 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 34157 | (46796) |
| (46800) | 14.5 | 0.15 | 20060922 | 121.86579 | 191.25975 | 167.25380 | 3.44571 | 0.1568599 | 2.1542786 | 522 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 34158 | (46800) |
| (46801) | 16.2 | 0.15 | 20060922 | 223.83546 | 47.05872 | 147.83115 | 5.18877 | 0.1265081 | 2.2147652 | 143 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 34159 | (46801) |
| (46803) | 15.7 | 0.15 | 20060922 | 211.00528 | 147.88902 | 50.03205 | 6.76200 | 0.0802965 | 2.2426742 | 223 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 34160 | (46803) |
| (46809) | 15.2 | 0.15 | 20060922 | 148.29941 | 50.36895 | 229.27823 | 3.98648 | 0.1468644 | 2.2460225 | 327 | 7 | 1998–2006 | 0.63 | M-v | 1 | MPC | 34162 | (46809) |
| (46810) | 14.8 | 0.15 | 20060922 | 139.50945 | 179.21871 | 90.39310 | 7.47286 | 0.1712747 | 2.2746983 | 238 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 34162 | (46810) |
| (46812) | 15.7 | 0.15 | 20060922 | 249.98153 | 75.30295 | 89.48774 | 4.91941 | 0.0714101 | 2.2334040 | 253 | 8 | 1994–2006 | 0.55 | M-v | 0 | MPC | 34163 | (46812) |
| (46814) | 15.7 | 0.15 | 20060922 | 121.20596 | 98.22750 | 155.08802 | 3.25741 | 0.1864450 | 2.3230914 | 220 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34164 | (46814) |
| (46815) | 15.3 | 0.15 | 20060922 | 136.21598 | 140.01472 | 98.17271 | 3.31896 | 0.2028405 | 2.3209806 | 247 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 34164 | (46815) |
| (46816) | 14.4 | 0.15 | 20060922 | 92.48873 | 31.07097 | 265.38726 | 12.31855 | 0.2071996 | 2.3424900 | 209 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34164 | (46816) |
| (46818) | 14.8 | 0.15 | 20060922 | 54.90177 | 100.25803 | 260.96374 | 21.52613 | 0.3311546 | 2.3353902 | 190 | 7 | 1979–2006 | 0.47 | M-v | 1 | MPC | 34165 | (46818) |
| (46819) | 14.2 | 0.15 | 20060922 | 112.72239 | 183.33713 | 100.60368 | 6.49787 | 0.1795061 | 2.3298694 | 386 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 34165 | (46819) |
| (46821) | 14.6 | 0.15 | 20060922 | 119.13562 | 169.32710 | 95.35023 | 12.31982 | 0.1766637 | 2.3472045 | 269 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 34166 | (46821) |
| (46824) | 15.4 | 0.15 | 20060922 | 117.89347 | 333.60228 | 265.37694 | 5.40943 | 0.0842118 | 2.4059171 | 187 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 34167 | (46824) |
| (46825) | 14.8 | 0.15 | 20060922 | 100.45885 | 139.63373 | 151.14314 | 5.95488 | 0.0502058 | 2.4124494 | 350 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34167 | (46825) |
| (46826) | 15.3 | 0.15 | 20060922 | 71.74299 | 134.86149 | 162.74330 | 8.11592 | 0.1172114 | 2.4374613 | 301 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 34168 | (46826) |
| (46830) | 14.5 | 0.15 | 20060922 | 45.97186 | 31.86707 | 332.21044 | 6.10996 | 0.2051399 | 2.3954154 | 307 | 7 | 1987–2006 | 0.57 | M-v | 1 | MPC | 34169 | (46830) |
| (46837) | 15.0 | 0.15 | 20060922 | 299.53659 | 332.95440 | 147.89332 | 6.88906 | 0.0704804 | 2.3354134 | 355 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 34172 | (46837) |
| (46843) | 15.5 | 0.15 | 20060922 | 50.90833 | 311.56265 | 33.44305 | 3.72979 | 0.2051583 | 2.4014666 | 293 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 34174 | (46843) |
| (46854) | 14.3 | 0.15 | 20060922 | 200.88453 | 37.85106 | 160.33089 | 10.72686 | 0.1355007 | 2.3884871 | 365 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34178 | (46854) |
| (46862) | 14.0 | 0.15 | 20060922 | 198.63851 | 287.36172 | 218.79859 | 12.30927 | 0.0982957 | 2.5437313 | 270 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34180 | (46862) |
| (46865) | 16.0 | 0.15 | 20060922 | 5.58497 | 159.49675 | 227.10958 | 11.53330 | 0.1876693 | 2.4596710 | 258 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 34181 | (46865) |
| (46930) | 14.5 | 0.15 | 20060922 | 261.11108 | 261.83391 | 174.29885 | 5.67557 | 0.1732873 | 2.6336904 | 279 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 34204 | (46930) |
| (46965) | 14.3 | 0.15 | 20060922 | 15.83672 | 12.54411 | 29.95327 | 5.05744 | 0.0817575 | 2.4327682 | 362 | 7 | 1960–2006 | 0.55 | M-v | 1 | MPC | 34217 | (46965) |
| (47049) | 12.6 | 0.15 | 20060922 | 334.32511 | 184.57978 | 290.88891 | 13.29712 | 0.1129860 | 2.5761365 | 395 | 9 | 1989–2006 | 0.51 | M-v | 1 | MPC | 34244 | (47049) |
| (47092) | 13.9 | 0.15 | 20060922 | 200.16661 | 292.07712 | 285.17587 | 10.74369 | 0.0256843 | 2.6293161 | 268 | 9 | 1989–2006 | 0.61 | M-v | 0 | MPC | 34258 | (47092) |
| (47133) | 13.6 | 0.15 | 20060922 | 5.24034 | 213.83852 | 237.89318 | 13.35944 | 0.1513148 | 2.5232653 | 264 | 10 | 1983–2006 | 0.54 | M-v | 0 | MPC | 34273 | (47133) |
| (47134) | 13.4 | 0.15 | 20060922 | 339.00539 | 220.06152 | 252.09610 | 13.01710 | 0.1385097 | 2.5647091 | 277 | 9 | 1979–2006 | 0.53 | M-v | 1 | MPC | 34273 | (47134) |
| (47135) | 15.8 | 0.15 | 20060922 | 46.88578 | 260.07087 | 158.87417 | 23.80946 | 0.0785842 | 1.9067335 | 151 | 7 | 1983–2006 | 0.61 | M-v | 1 | MPC | 34274 | (47135) |
| (47152) | 16.0 | 0.15 | 20060922 | 50.44286 | 39.99648 | 353.03058 | 4.32201 | 0.0651361 | 2.1528596 | 205 | 6 | 1998–2005 | 0.66 | M-v | 1 | MPC | 34280 | (47152) |
| (47156) | 16.3 | 0.15 | 20060922 | 354.73053 | 322.42946 | 95.59590 | 5.27998 | 0.1181397 | 2.2004164 | 96 | 6 | 1998–2006 | 0.66 | M-v | 1 | MPC | 34281 | (47156) |
| (47162) | 15.3 | 0.15 | 20060922 | 200.69227 | 165.96379 | 36.77904 | 6.47133 | 0.1042090 | 2.2261162 | 277 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 34283 | (47162) |
| (47163) | 14.6 | 0.15 | 20060922 | 12.94578 | 330.95704 | 71.05503 | 7.31922 | 0.0954048 | 2.2517893 | 307 | 7 | 1989–2006 | 0.52 | M-v | 0 | MPC | 34284 | (47163) |
| (47166) | 15.9 | 0.15 | 20060922 | 128.62030 | 231.73324 | 29.43107 | 8.72879 | 0.1714559 | 2.2653180 | 174 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 34285 | (47166) |
| (47170) | 15.7 | 0.15 | 20060922 | 271.53761 | 176.36560 | 348.48485 | 2.72492 | 0.0526132 | 2.1814427 | 213 | 6 | 1998–2005 | 0.65 | M-v | 1 | MPC | 34287 | (47170) |
| (47176) | 15.2 | 0.15 | 20060922 | 208.11208 | 206.89367 | 346.46225 | 4.73422 | 0.0736214 | 2.2823809 | 253 | 7 | 1992–2006 | 0.59 | M-v | 1 | MPC | 34289 | (47176) |
| (47177) | 16.1 | 0.15 | 20060922 | 271.91748 | 240.11965 | 273.22033 | 4.91010 | 0.0689535 | 2.1950804 | 195 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 34289 | (47177) |
| (47187) | 15.3 | 0.15 | 20060922 | 285.64466 | 285.62177 | 194.08010 | 5.10206 | 0.0537363 | 2.2683587 | 272 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 34293 | (47187) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (47189) | 15.7 | 0.15 | 20060922 | 246.95564 | 313.45347 | 231.53292 | 5.95766 | 0.1399132 | 2.2062537 | 221 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 34294 | (47189) |
| (47191) | 17.1 | 0.15 | 20060922 | 9.31974 | 352.35587 | 70.79544 | 3.02194 | 0.1749152 | 2.2275615 | 87 | 8 | 1991–2006 | 0.48 | M-v | 1 | MPC | 34295 | (47191) |
| (47200) | 15.9 | 0.15 | 20060922 | 235.35781 | 270.84977 | 256.87419 | 1.96950 | 0.1067635 | 2.2957333 | 202 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 34297 | (47200) |
| (47201) | 14.8 | 0.15 | 20060922 | 144.39312 | 249.64359 | 15.00897 | 5.55529 | 0.0942846 | 2.2985176 | 352 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 34298 | (47201) |
| (47206) | 15.7 | 0.15 | 20060922 | 93.18109 | 258.28926 | 17.64624 | 7.43819 | 0.1169876 | 2.2994722 | 125 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34299 | (47206) |
| (47213) | 14.9 | 0.15 | 20060922 | 210.14297 | 260.50642 | 317.31340 | 3.96614 | 0.1225417 | 2.2194675 | 321 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 34301 | (47213) |
| (47217) | 16.4 | 0.15 | 20060922 | 242.49029 | 40.51953 | 138.23049 | 2.29725 | 0.1020549 | 2.2128236 | 225 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 34303 | (47217) |
| (47218) | 16.2 | 0.15 | 20060922 | 230.92366 | 131.63984 | 30.14803 | 4.39032 | 0.0432512 | 2.2621842 | 171 | 7 | 1992–2006 | 0.53 | M-v | 1 | MPC | 34303 | (47218) |
| (47222) | 15.0 | 0.15 | 20060922 | 48.65330 | 292.48561 | 87.23369 | 7.18336 | 0.1245808 | 2.2448625 | 219 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 34304 | (47222) |
| (47223) | 14.1 | 0.15 | 20060922 | 276.18773 | 69.11961 | 113.19908 | 8.44426 | 0.1290920 | 2.2382010 | 416 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 34305 | (47223) |
| (47225) | 16.2 | 0.15 | 20060922 | 85.45922 | 350.49634 | 348.62295 | 4.44263 | 0.2346203 | 2.2056152 | 154 | 5 | 1998–2004 | 0.68 | M-v | 2 | MPC | 34306 | (47225) |
| (47226) | 14.7 | 0.15 | 20060922 | 330.03245 | 67.06975 | 57.29697 | 6.62993 | 0.0467835 | 2.2043047 | 500 | 7 | 1986–2006 | 0.57 | M-v | 0 | MPC | 34306 | (47226) |
| (47228) | 16.0 | 0.15 | 20060922 | 325.65512 | 24.19113 | 53.25244 | 4.34598 | 0.1163177 | 2.3149277 | 223 | 6 | 1994–2006 | 0.55 | M-v | 0 | MPC | 34307 | (47228) |
| (47230) | 16.2 | 0.15 | 20060922 | 29.33064 | 336.57890 | 47.29530 | 4.21087 | 0.1306174 | 2.2592824 | 129 | 6 | 1997–2006 | 0.53 | M-v | 1 | MPC | 34308 | (47230) |
| (47232) | 15.2 | 0.15 | 20060922 | 43.34831 | 284.41221 | 61.77297 | 7.39334 | 0.1768496 | 2.3083511 | 167 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 34308 | (47232) |
| (47240) | 15.5 | 0.15 | 20060922 | 262.98591 | 217.43546 | 280.37475 | 2.10499 | 0.1104846 | 2.3334056 | 352 | 7 | 1976–2006 | 0.54 | M-v | 0 | MPC | 34312 | (47240) |
| (47245) | 15.7 | 0.15 | 20060922 | 139.74530 | 194.50172 | 33.46474 | 4.98654 | 0.0746992 | 2.3398324 | 179 | 7 | 1992–2006 | 0.49 | M-v | 1 | MPC | 34314 | (47245) |
| (47246) | 15.2 | 0.15 | 20060922 | 127.41883 | 229.90508 | 39.51876 | 7.51782 | 0.1333932 | 2.2539698 | 237 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34314 | (47246) |
| (47247) | 15.8 | 0.15 | 20060922 | 101.24267 | 230.07136 | 47.99320 | 6.49182 | 0.1633001 | 2.2868087 | 214 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 34315 | (47247) |
| (47260) | 16.0 | 0.15 | 20060922 | 97.27188 | 121.33024 | 210.10707 | 5.72509 | 0.1439284 | 2.1937512 | 138 | 5 | 1998–2004 | 0.59 | M-v | 1 | MPC | 34319 | (47260) |
| (47261) | 15.6 | 0.15 | 20060922 | 269.00148 | 84.83329 | 74.05160 | 1.26428 | 0.1229640 | 2.2242790 | 352 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 34320 | (47261) |
| (47262) | 16.1 | 0.15 | 20060922 | 108.74475 | 263.06356 | 32.66717 | 6.23586 | 0.1241590 | 2.2242875 | 77 | 7 | 1991–2006 | 0.63 | M-v | 1 | MPC | 34320 | (47262) |
| (47267) | 15.8 | 0.15 | 20060922 | 266.63548 | 179.00573 | 285.99082 | 0.56347 | 0.1512396 | 2.4225921 | 205 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 34322 | (47267) |
| (47278) | 15.9 | 0.15 | 20060922 | 297.95392 | 179.10617 | 288.00558 | 1.23440 | 0.0431421 | 2.2562672 | 265 | 6 | 1998–2006 | 0.51 | M-v | 0 | MPC | 34326 | (47278) |
| (47283) | 15.6 | 0.15 | 20060922 | 115.46014 | 189.20037 | 63.09375 | 7.68107 | 0.0773082 | 2.3508913 | 234 | 7 | 1992–2006 | 0.53 | M-v | 1 | MPC | 34327 | (47283) |
| (47285) | 15.2 | 0.15 | 20060922 | 123.02337 | 188.20851 | 89.15821 | 6.75196 | 0.0872577 | 2.2982629 | 224 | 7 | 1996–2006 | 0.60 | M-v | 0 | MPC | 34328 | (47285) |
| (47293) | 15.4 | 0.15 | 20060922 | 36.10487 | 253.61607 | 67.46539 | 3.29349 | 0.2323052 | 2.3762009 | 211 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 34331 | (47293) |
| (47294) | 14.7 | 0.15 | 20060922 | 350.60431 | 335.20804 | 79.79235 | 4.91360 | 0.1267274 | 2.2992030 | 353 | 7 | 1992–2006 | 0.50 | M-v | 0 | MPC | 34331 | (47294) |
| (47297) | 14.9 | 0.15 | 20060922 | 36.52395 | 266.88002 | 79.28322 | 3.14680 | 0.0591825 | 2.3470405 | 434 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 34332 | (47297) |
| (47301) | 15.0 | 0.15 | 20060922 | 88.03273 | 346.27110 | 307.39233 | 4.61702 | 0.1131053 | 2.2949669 | 254 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 34334 | (47301) |
| (47302) | 15.2 | 0.15 | 20060922 | 162.26091 | 20.12061 | 215.72974 | 5.96041 | 0.0741754 | 2.3129195 | 322 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 47678 | (47302) |
| (47305) | 15.7 | 0.15 | 20060922 | 133.83925 | 86.02683 | 136.37994 | 2.77654 | 0.1377021 | 2.4324294 | 217 | 9 | 1993–2006 | 0.53 | M-v | 1 | MPC | 34336 | (47305) |
| (47306) | 15.2 | 0.15 | 20060922 | 206.33691 | 71.56428 | 95.11466 | 5.98348 | 0.0381062 | 2.3803904 | 322 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 34336 | (47306) |
| (47309) | 15.2 | 0.15 | 20060922 | 117.52098 | 317.06225 | 347.29745 | 1.49279 | 0.1270430 | 2.2415763 | 365 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 34337 | (47309) |
| (47311) | 14.8 | 0.15 | 20060922 | 263.91160 | 344.56349 | 140.80934 | 2.71140 | 0.1691467 | 2.3860605 | 377 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 34338 | (47311) |
| (47325) | 15.9 | 0.15 | 20060922 | 50.86404 | 274.82756 | 95.95970 | 2.06911 | 0.1020307 | 2.2295023 | 189 | 8 | 1971–2006 | 0.57 | M-v | 1 | MPC | 34343 | (47325) |
| (47327) | 15.0 | 0.15 | 20060922 | 76.57776 | 260.96307 | 79.07293 | 8.82360 | 0.1830474 | 2.2343844 | 227 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 34344 | (47327) |
| (47329) | 15.3 | 0.15 | 20060922 | 297.83453 | 2.30197 | 108.04501 | 7.50248 | 0.0749218 | 2.3267558 | 261 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 34345 | (47329) |
| (47332) | 15.3 | 0.15 | 20060922 | 358.83693 | 156.05324 | 260.42292 | 5.40306 | 0.1071972 | 2.3704641 | 271 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 34346 | (47332) |
| (47341) | 15.6 | 0.15 | 20060922 | 82.41832 | 282.20078 | 33.17795 | 3.10259 | 0.1585034 | 2.2639014 | 171 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 34349 | (47341) |
| (47345) | 15.7 | 0.15 | 20060922 | 3.26534 | 354.07443 | 74.04633 | 4.09190 | 0.0994941 | 2.2496296 | 245 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 34351 | (47345) |
| (47352) | 16.5 | 0.15 | 20060922 | 101.36453 | 121.24825 | 209.22149 | 2.06892 | 0.1715628 | 2.2170908 | 135 | 9 | 1991–2006 | 0.55 | M-v | 1 | MPC | 34353 | (47352) |
| (47354) | 14.9 | 0.15 | 20060922 | 148.31923 | 2.56606 | 248.86624 | 5.33240 | 0.1338784 | 2.3282861 | 278 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 34354 | (47354) |
| (47355) | 15.3 | 0.15 | 20060922 | 229.37490 | 70.25364 | 80.13780 | 2.36290 | 0.1303816 | 2.4101180 | 149 | 7 | 1991–2006 | 0.54 | M-v | 1 | MPC | 34354 | (47355) |
| (47357) | 15.2 | 0.15 | 20060922 | 198.62862 | 91.56398 | 76.65211 | 7.41414 | 0.0272957 | 2.4142650 | 162 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 34355 | (47357) |
| (47361) | 16.4 | 0.15 | 20060922 | 337.22683 | 312.74927 | 106.85667 | 3.40326 | 0.1870259 | 2.3381225 | 128 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 34356 | (47361) |
| (47366) | 15.5 | 0.15 | 20060922 | 338.26106 | 230.83001 | 190.10706 | 1.79567 | 0.1975096 | 2.3606032 | 292 | 8 | 1995–2006 | 0.55 | M-v | 0 | MPC | 34357 | (47366) |
| (47367) | 15.0 | 0.15 | 20060922 | 20.56579 | 258.65156 | 113.31103 | 5.67544 | 0.2194020 | 2.3580903 | 213 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 34358 | (47367) |
| (47377) | 14.1 | 0.15 | 20060922 | 55.50124 | 212.84152 | 108.57657 | 14.59755 | 0.1948756 | 2.4398539 | 298 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 34361 | (47377) |
| (47378) | 14.8 | 0.15 | 20060922 | 347.54290 | 146.65082 | 268.64218 | 2.56221 | 0.1543730 | 2.3175145 | 281 | 8 | 1990–2006 | 0.56 | M-v | 0 | MPC | 34361 | (47378) |
| (47379) | 14.0 | 0.15 | 20060922 | 221.44553 | 256.80331 | 273.37158 | 5.72064 | 0.1243984 | 2.3946360 | 334 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 34362 | (47379) |
| (47382) | 14.2 | 0.15 | 20060922 | 111.05910 | 174.47109 | 76.56466 | 7.37651 | 0.1042027 | 2.4598294 | 360 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 34363 | (47382) |
| (47383) | 16.0 | 0.15 | 20060922 | 9.85091 | 344.91116 | 72.23914 | 7.55944 | 0.1627084 | 2.2781745 | 143 | 7 | 1992–2006 | 0.56 | M-v | 1 | MPC | 34363 | (47383) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (47389) | 14.9 | 0.15 | 20060922 | 272.93602 | 222.15994 | 271.96135 | 5.09282 | 0.0985712 | 2.2802775 | 325 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 34365 | (47389) |
| (47402) | 15.7 | 0.15 | 20060922 | 75.67617 | 298.62244 | 33.12833 | 4.17465 | 0.1853403 | 2.2498941 | 127 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 34370 | (47402) |
| (47409) | 14.5 | 0.15 | 20060922 | 282.76224 | 142.26459 | 335.60191 | 6.92142 | 0.0695564 | 2.3700354 | 220 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 34372 | (47409) |
| (47411) | 16.0 | 0.15 | 20060922 | 12.92402 | 310.73721 | 107.52272 | 6.77661 | 0.1462793 | 2.2535592 | 128 | 8 | 1995–2006 | 0.57 | M-v | 1 | MPC | 77329 | (47411) |
| (47438) | 14.4 | 0.15 | 20060922 | 353.50157 | 62.15163 | 63.96205 | 6.57567 | 0.0997050 | 2.2426539 | 407 | 10 | 1991–2006 | 0.52 | M-v | 0 | MPC | 34383 | (47438) |
| (47443) | 15.1 | 0.15 | 20060922 | 42.04437 | 342.27623 | 357.67543 | 4.83077 | 0.2654368 | 2.3455156 | 207 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 34384 | (47443) |
| (47449) | 15.6 | 0.15 | 20060922 | 59.24384 | 175.25855 | 191.78919 | 5.29360 | 0.1814903 | 2.2801218 | 173 | 5 | 1998–2004 | 0.69 | M-v | 1 | MPC | 77329 | (47449) |
| (47452) | 15.2 | 0.15 | 20060922 | 89.27329 | 242.38697 | 43.20042 | 6.51348 | 0.0922436 | 2.3883465 | 293 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 34387 | (47452) |
| (47463) | 14.9 | 0.15 | 20060922 | 302.56415 | 113.09507 | 0.17126 | 6.46858 | 0.1009568 | 2.3700437 | 351 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 34390 | (47463) |
| (47466) | 15.0 | 0.15 | 20060922 | 315.05964 | 310.78427 | 164.78165 | 23.16340 | 0.2657884 | 2.3113266 | 211 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 34391 | (47466) |
| (47473) | 14.7 | 0.15 | 20060922 | 349.22018 | 331.64667 | 83.84783 | 3.41693 | 0.2083611 | 2.3513449 | 299 | 6 | 1991–2006 | 0.55 | M-v | 0 | MPC | 34394 | (47473) |
| (47474) | 14.5 | 0.15 | 20060922 | 162.09676 | 261.97768 | 282.98334 | 14.23948 | 0.1154359 | 2.5491085 | 158 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 34394 | (47474) |
| (47476) | 15.0 | 0.15 | 20060922 | 8.88658 | 308.66646 | 71.72428 | 7.76928 | 0.1107480 | 2.3689158 | 187 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 34395 | (47476) |
| (47477) | 15.4 | 0.15 | 20060922 | 291.48856 | 61.80588 | 61.65536 | 7.10590 | 0.0533892 | 2.3591684 | 239 | 7 | 1982–2006 | 0.53 | M-v | 0 | MPC | 34395 | (47477) |
| (47496) | 15.1 | 0.15 | 20060922 | 73.43716 | 257.96694 | 97.68091 | 2.09279 | 0.1672491 | 2.2950697 | 227 | 7 | 1994–2006 | 0.54 | M-v | 1 | MPC | 34400 | (47496) |
| (47498) | 14.6 | 0.15 | 20060922 | 271.20521 | 246.55580 | 269.53743 | 5.78705 | 0.0609748 | 2.3138033 | 301 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 34401 | (47498) |
| (47503) | 16.1 | 0.15 | 20060922 | 359.11170 | 310.52423 | 79.70386 | 2.28598 | 0.1962740 | 2.3835024 | 179 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 34402 | (47503) |
| (47518) | 16.1 | 0.15 | 20060922 | 112.90128 | 228.41249 | 103.95756 | 4.54056 | 0.1727558 | 2.2022323 | 230 | 10 | 1989–2006 | 0.57 | M-v | 1 | MPC | 34407 | (47518) |
| (47535) | 15.6 | 0.15 | 20060922 | 35.88062 | 329.37777 | 73.11257 | 2.97982 | 0.1399986 | 2.1990809 | 249 | 8 | 1994–2006 | 0.62 | M-v | 1 | MPC | 34413 | (47535) |
| (47541) | 14.7 | 0.15 | 20060922 | 200.65532 | 47.76399 | 146.45331 | 8.75703 | 0.0613441 | 2.4388650 | 262 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 34415 | (47541) |
| (47542) | 14.7 | 0.15 | 20060922 | 7.64184 | 219.37145 | 160.81197 | 7.21517 | 0.1180986 | 2.4125589 | 259 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 34415 | (47542) |
| (47562) | 14.5 | 0.15 | 20060922 | 245.57637 | 10.11070 | 139.75982 | 11.30640 | 0.0510464 | 2.3638668 | 329 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 34422 | (47562) |
| (47573) | 15.3 | 0.15 | 20060922 | 22.06184 | 219.21545 | 169.14993 | 5.83724 | 0.0386164 | 2.3110607 | 193 | 6 | 1997–2006 | 0.60 | M-v | 1 | MPC | 34426 | (47573) |
| (47578) | 14.9 | 0.15 | 20060922 | 247.76681 | 256.63000 | 227.47519 | 8.73394 | 0.1275890 | 2.4517701 | 175 | 7 | 1995–2006 | 0.48 | M-v | 0 | MPC | 34427 | (47578) |
| (47579) | 14.7 | 0.15 | 20060922 | 274.23227 | 315.60316 | 163.00435 | 6.65415 | 0.0619311 | 2.3895939 | 385 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 34427 | (47579) |
| (47739) | 14.9 | 0.15 | 20060922 | 257.69784 | 255.35326 | 184.60819 | 4.68069 | 0.1950895 | 2.6309396 | 180 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 34479 | (47739) |
| (47809) | 15.7 | 0.15 | 20060922 | 14.01559 | 320.06421 | 88.03758 | 3.29964 | 0.2033067 | 2.3675131 | 168 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 77329 | (47809) |
| (47953) | 15.5 | 0.15 | 20060922 | 98.68342 | 315.26217 | 27.85591 | 1.99818 | 0.0938490 | 2.8329255 | 204 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 34547 | (47953) |
| (47992) | 15.4 | 0.15 | 20060922 | 159.43623 | 143.82651 | 54.39866 | 3.28885 | 0.1595531 | 2.3801226 | 282 | 7 | 1992–2006 | 0.52 | M-v | 0 | MPC | 34560 | (47992) |
| (48004) | 15.1 | 0.15 | 20060922 | 140.82637 | 63.46936 | 156.00625 | 2.46222 | 0.1618235 | 2.3598129 | 271 | 10 | 1976–2006 | 0.57 | M-v | 1 | MPC | 34564 | (48004) |
| (48005) | 15.0 | 0.15 | 20060922 | 183.64349 | 62.29701 | 135.92016 | 7.82004 | 0.0661702 | 2.3344249 | 203 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 34564 | (48005) |
| (48009) | 15.4 | 0.15 | 20060922 | 197.04874 | 80.22763 | 76.92679 | 3.02926 | 0.1478304 | 2.3577726 | 267 | 7 | 1994–2006 | 0.65 | M-v | 0 | MPC | 34566 | (48009) |
| (48011) | 15.3 | 0.15 | 20060922 | 164.02622 | 328.39459 | 228.72307 | 11.68933 | 0.1069974 | 2.3302179 | 197 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 34567 | (48011) |
| (48020) | 15.8 | 0.15 | 20060922 | 247.02742 | 241.46646 | 297.07225 | 2.79091 | 0.0375160 | 2.1732508 | 157 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 34569 | (48020) |
| (48031) | 15.8 | 0.15 | 20060922 | 210.07293 | 291.06708 | 278.74221 | 3.69040 | 0.0799436 | 2.1762728 | 143 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 34573 | (48031) |
| (48033) | 16.1 | 0.15 | 20060922 | 135.75308 | 137.32401 | 134.16347 | 3.08386 | 0.0306350 | 2.2161042 | 146 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 34573 | (48033) |
| (48036) | 15.8 | 0.15 | 20060922 | 176.32973 | 211.08188 | 337.67605 | 4.67161 | 0.0876280 | 2.3351761 | 150 | 7 | 1995–2006 | 0.57 | M-v | 1 | MPC | 34574 | (48036) |
| (48043) | 15.2 | 0.15 | 20060922 | 196.18564 | 40.80655 | 177.44543 | 6.21003 | 0.0713470 | 2.3233532 | 281 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 34576 | (48043) |
| (48051) | 16.0 | 0.15 | 20060922 | 164.46493 | 1.40675 | 232.13917 | 3.50381 | 0.0858097 | 2.2331636 | 95 | 7 | 1991–2006 | 0.57 | M-v | 1 | MPC | 34579 | (48051) |
| (48055) | 16.2 | 0.15 | 20060922 | 202.61718 | 105.62071 | 132.38270 | 2.42953 | 0.0817079 | 2.1628994 | 212 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 34580 | (48055) |
| (48059) | 16.1 | 0.15 | 20060922 | 84.91583 | 233.21676 | 39.74506 | 2.97635 | 0.1853934 | 2.4390032 | 250 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 34581 | (48059) |
| (48076) | 15.7 | 0.15 | 20060922 | 273.26750 | 292.13905 | 210.00353 | 1.40839 | 0.1450924 | 2.2228080 | 305 | 10 | 1976–2006 | 0.53 | M-v | 0 | MPC | 34587 | (48076) |
| (48077) | 15.6 | 0.15 | 20060922 | 228.38034 | 257.80556 | 294.28077 | 6.39418 | 0.0657247 | 2.2253170 | 193 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 34587 | (48077) |
| (48083) | 15.8 | 0.15 | 20060922 | 158.64101 | 330.11937 | 214.07732 | 1.90695 | 0.1273558 | 2.4285318 | 154 | 9 | 1991–2006 | 0.56 | M-v | 1 | MPC | 34589 | (48083) |
| (48096) | 16.3 | 0.15 | 20060922 | 123.93907 | 178.77158 | 71.40669 | 1.80858 | 0.0912066 | 2.3970810 | 196 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 34593 | (48096) |
| (48097) | 15.8 | 0.15 | 20060922 | 183.98443 | 221.51898 | 297.40448 | 3.95299 | 0.1353892 | 2.4549727 | 142 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 34594 | (48097) |
| (48102) | 14.8 | 0.15 | 20060922 | 110.15043 | 136.72707 | 148.82199 | 6.84176 | 0.1146437 | 2.3191760 | 281 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 34595 | (48102) |
| (48103) | 16.1 | 0.15 | 20060922 | 294.02940 | 332.57546 | 152.56392 | 7.97476 | 0.0713123 | 2.2133858 | 146 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 34596 | (48103) |
| (48107) | 15.0 | 0.15 | 20060922 | 153.39608 | 217.54949 | 80.83290 | 3.89946 | 0.1704047 | 2.2110149 | 321 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 34597 | (48107) |
| (48115) | 14.9 | 0.15 | 20060922 | 71.78490 | 106.40920 | 215.96985 | 3.29932 | 0.2030458 | 2.3353263 | 291 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 34599 | (48115) |
| (48116) | 15.6 | 0.15 | 20060922 | 94.43703 | 103.50134 | 188.85459 | 6.41156 | 0.1168160 | 2.3662516 | 267 | 9 | 1983–2006 | 0.51 | M-v | 0 | MPC | 34600 | (48116) |
| (48118) | 15.1 | 0.15 | 20060922 | 107.91262 | 164.94926 | 98.76583 | 7.68155 | 0.1122520 | 2.3985164 | 196 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 34600 | (48118) |
| (48120) | 15.3 | 0.15 | 20060922 | 159.54384 | 97.27818 | 114.48445 | 7.29579 | 0.0689002 | 2.3914169 | 197 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 34601 | (48120) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (48121) | 14.3 | 0.15 | 20060922 | 41.05593 | 215.00084 | 126.08797 | 12.80329 | 0.1127966 | 2.3957279 | 353 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 34601 | (48121) |
| (48129) | 15.2 | 0.15 | 20060922 | 51.14199 | 188.98333 | 170.02605 | 3.63275 | 0.1844276 | 2.3259625 | 266 | 7 | 1995–2006 | 0.60 | M-v | 1 | MPC | 34604 | (48129) |
| (48133) | 15.9 | 0.15 | 20060922 | 186.41763 | 44.83428 | 129.41383 | 5.87916 | 0.1548401 | 2.3869586 | 169 | 7 | 1996–2006 | 0.52 | M-v | 1 | MPC | 34605 | (48133) |
| (48134) | 15.1 | 0.15 | 20060922 | 126.17175 | 125.39772 | 138.87063 | 7.21141 | 0.1075776 | 2.3601415 | 183 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 34605 | (48134) |
| (48149) | 16.2 | 0.15 | 20060922 | 284.89328 | 315.75045 | 172.79389 | 6.32291 | 0.0218513 | 2.2158097 | 89 | 5 | 1998–2004 | 0.68 | M-v | 1 | MPC | 34610 | (48149) |
| (48161) | 15.1 | 0.15 | 20060922 | 133.71262 | 45.45781 | 216.41480 | 7.46990 | 0.1068596 | 2.3939760 | 236 | 8 | 1995–2006 | 0.55 | M-v | 1 | MPC | 34613 | (48161) |
| (48163) | 14.6 | 0.15 | 20060922 | 187.14859 | 216.59536 | 4.19691 | 6.58903 | 0.0527898 | 2.3369501 | 237 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 34614 | (48163) |
| (48174) | 15.2 | 0.15 | 20060922 | 302.87817 | 42.86107 | 33.78091 | 7.30724 | 0.0808098 | 2.3764895 | 180 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 34617 | (48174) |
| (48207) | 15.2 | 0.15 | 20060922 | 166.44911 | 329.66044 | 196.16603 | 8.44345 | 0.1035108 | 2.5675082 | 136 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 34627 | (48207) |
| (48246) | 12.9 | 0.15 | 20060922 | 343.36976 | 349.05858 | 342.45778 | 7.14768 | 0.2718160 | 3.1475140 | 254 | 9 | 1983–2006 | 0.53 | M-v | 0 | MPC | 34638 | (48246) |
| (48265) | 15.0 | 0.15 | 20060922 | 110.24651 | 197.20600 | 72.51088 | 2.20173 | 0.1455635 | 3.2397870 | 191 | 9 | 1994–2006 | 0.60 | M-v | 0 | MPC | 34644 | (48265) |
| (48268) | 13.5 | 0.15 | 20060922 | 126.33347 | 206.51276 | 120.15940 | 14.34853 | 0.1932703 | 2.6504933 | 289 | 9 | 1979–2006 | 0.51 | M-v | 0 | MPC | 34645 | (48268) |
| (48318) | 15.7 | 0.15 | 20060922 | 115.01300 | 126.51772 | 139.29629 | 7.86772 | 0.1108373 | 2.2595171 | 169 | 7 | 1991–2006 | 0.58 | M-v | 1 | MPC | 34659 | (48318) |
| (48325) | 16.2 | 0.15 | 20060922 | 6.71001 | 355.74190 | 17.21495 | 3.06332 | 0.1885579 | 2.3486427 | 155 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 34661 | (48325) |
| (48351) | 16.1 | 0.15 | 20060922 | 64.10964 | 171.04401 | 207.32006 | 3.80594 | 0.0667327 | 2.1872033 | 124 | 7 | 1960–2006 | 0.49 | M-v | 1 | MPC | 34668 | (48351) |
| (48363) | 15.9 | 0.15 | 20060922 | 8.11316 | 208.14905 | 181.85978 | 7.37554 | 0.1712850 | 2.3648001 | 133 | 7 | 1973–2006 | 0.70 | M-v | 1 | MPC | 34672 | (48363) |
| (48377) | 15.4 | 0.15 | 20060922 | 44.74010 | 258.54559 | 66.56812 | 5.84790 | 0.2555399 | 2.3501515 | 142 | 7 | 1977–2006 | 0.67 | M-v | 1 | MPC | 34676 | (48377) |
| (48380) | 14.7 | 0.15 | 20060922 | 280.95092 | 91.75954 | 74.81753 | 10.79206 | 0.0556834 | 2.5317358 | 131 | 10 | 1955–2006 | 0.62 | M-v | 0 | MPC | 34677 | (48380) |
| (48385) | 15.5 | 0.15 | 20060922 | 239.16209 | 248.84705 | 260.04093 | 5.00404 | 0.2354279 | 2.5523208 | 232 | 9 | 1978–2006 | 0.54 | M-v | 1 | MPC | 35670 | (48385) |
| (48387) | 15.5 | 0.15 | 20060922 | 90.88673 | 43.41780 | 262.80525 | 5.64455 | 0.1076103 | 2.4082857 | 111 | 7 | 1979–2006 | 0.53 | M-v | 1 | MPC | 35671 | (48387) |
| (48421) | 14.8 | 0.15 | 20060922 | 96.63196 | 331.78532 | 36.12511 | 6.36784 | 0.2612490 | 2.2721772 | 312 | 7 | 1988–2006 | 0.57 | M-v | 1 | MPC | 35683 | (48421) |
| (48426) | 15.0 | 0.15 | 20060922 | 327.96685 | 221.13575 | 245.40723 | 5.95690 | 0.0752794 | 2.3668858 | 208 | 9 | 1989–2006 | 0.61 | M-v | 0 | MPC | 35685 | (48426) |
| (48430) | 14.7 | 0.15 | 20060922 | 313.03650 | 24.87125 | 36.57724 | 13.86815 | 0.1157653 | 2.6335666 | 260 | 7 | 1989–2006 | 0.62 | M-v | 1 | MPC | 35686 | (48430) |
| (48440) | 15.2 | 0.15 | 20060922 | 41.07748 | 313.25596 | 110.25291 | 6.60283 | 0.1392763 | 2.2361634 | 273 | 7 | 1989–2006 | 0.58 | M-v | 1 | MPC | 35689 | (48440) |
| (48457) | 14.9 | 0.15 | 20060922 | 165.28918 | 290.43877 | 329.01547 | 6.29155 | 0.0752146 | 2.3385409 | 225 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 35695 | (48457) |
| (48460) | 15.5 | 0.15 | 20060922 | 42.65991 | 325.49272 | 28.45686 | 6.85722 | 0.1563089 | 2.3745468 | 224 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 35696 | (48460) |
| (48463) | 14.4 | 0.15 | 20060922 | 349.16666 | 121.18409 | 326.32024 | 6.55971 | 0.0741516 | 2.3390846 | 366 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 35698 | (48463) |
| (48469) | 13.5 | 0.15 | 20060922 | 63.76385 | 7.04173 | 21.19445 | 24.66693 | 0.2177586 | 2.3284994 | 289 | 7 | 1991–2006 | 0.53 | M-v | 1 | MPC | 35700 | (48469) |
| (48473) | 15.7 | 0.15 | 20060922 | 167.27293 | 128.19033 | 103.25209 | 3.27591 | 0.1602297 | 2.3745332 | 192 | 7 | 1991–2006 | 0.50 | M-v | 0 | MPC | 35701 | (48473) |
| (48477) | 14.9 | 0.15 | 20060922 | 66.40281 | 142.34897 | 241.25570 | 23.62082 | 0.2090003 | 2.3338531 | 135 | 7 | 1991–2006 | 0.64 | M-v | 1 | MPC | 35702 | (48477) |
| (48479) | 15.0 | 0.15 | 20060922 | 339.82428 | 18.84359 | 68.42367 | 6.39976 | 0.2250075 | 2.4022054 | 263 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 35703 | (48479) |
| (48481) | 15.4 | 0.15 | 20060922 | 87.47019 | 278.26910 | 58.97556 | 7.34215 | 0.1176206 | 2.3766194 | 189 | 7 | 1991–2006 | 0.58 | M-v | 1 | MPC | 35704 | (48481) |
| (48485) | 14.5 | 0.15 | 20060922 | 128.83600 | 74.41276 | 143.80265 | 14.20883 | 0.1017693 | 2.5854282 | 138 | 7 | 1992–2006 | 0.58 | M-v | 1 | MPC | 35705 | (48485) |
| (48490) | 14.4 | 0.15 | 20060922 | 201.10269 | 335.73381 | 214.24685 | 6.66705 | 0.1360921 | 2.5659216 | 371 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 35706 | (48490) |
| (48495) | 15.2 | 0.15 | 20060922 | 307.36341 | 24.81771 | 144.71480 | 5.79552 | 0.1390102 | 2.2977983 | 224 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 35708 | (48495) |
| (48497) | 15.3 | 0.15 | 20060922 | 202.89719 | 73.07521 | 110.46111 | 2.27994 | 0.1439655 | 2.4012144 | 244 | 7 | 1993–2006 | 0.66 | M-v | 0 | MPC | 35709 | (48497) |
| (48503) | 15.4 | 0.15 | 20060922 | 166.30897 | 213.42027 | 20.81858 | 7.00640 | 0.0774592 | 2.4201379 | 93 | 7 | 1993–2006 | 0.49 | M-v | 0 | MPC | 35712 | (48503) |
| (48504) | 14.9 | 0.15 | 20060922 | 13.82353 | 37.60898 | 37.46792 | 5.75450 | 0.0888650 | 2.3435636 | 311 | 7 | 1993–2006 | 0.61 | M-v | 0 | MPC | 35712 | (48504) |
| (48507) | 14.5 | 0.15 | 20060922 | 344.81585 | 307.15120 | 160.87272 | 6.84796 | 0.0624933 | 2.3443182 | 394 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 35713 | (48507) |
| (48509) | 15.3 | 0.15 | 20060922 | 208.44861 | 102.42062 | 114.10518 | 3.45118 | 0.1141438 | 2.3934953 | 197 | 7 | 1993–2006 | 0.59 | M-v | 0 | MPC | 35714 | (48509) |
| (48525) | 14.0 | 0.15 | 20060922 | 193.94246 | 171.84182 | 25.34603 | 9.83806 | 0.1911883 | 2.4410406 | 406 | 7 | 1993–2006 | 0.53 | M-v | 0 | MPC | 35719 | (48525) |
| (48565) | 15.8 | 0.15 | 20060922 | 321.38536 | 111.72659 | 14.79241 | 0.76406 | 0.1151583 | 2.1984587 | 288 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 35732 | (48565) |
| (48571) | 15.2 | 0.15 | 20060922 | 220.34390 | 159.50204 | 35.48832 | 3.83434 | 0.1217604 | 2.2649745 | 320 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 35734 | (48571) |
| (48572) | 15.5 | 0.15 | 20060922 | 11.72016 | 354.32332 | 74.34904 | 4.96582 | 0.0476487 | 2.2242658 | 316 | 8 | 1994–2006 | 0.54 | M-v | 0 | MPC | 35735 | (48572) |
| (48586) | 15.1 | 0.15 | 20060922 | 84.12666 | 117.61517 | 163.91809 | 6.28757 | 0.1124645 | 2.4652620 | 198 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 35740 | (48586) |
| (48592) | 15.3 | 0.15 | 20060922 | 189.23329 | 58.99561 | 160.99980 | 2.97791 | 0.1270724 | 2.4450614 | 265 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 35742 | (48592) |
| (48597) | 15.5 | 0.15 | 20060922 | 265.73243 | 161.18062 | 343.46365 | 3.68651 | 0.2027828 | 2.5804529 | 222 | 10 | 1960–2006 | 0.55 | M-v | 0 | MPC | 35744 | (48597) |
| (48626) | 14.9 | 0.15 | 20060922 | 55.11481 | 9.63004 | 333.75407 | 6.01470 | 0.1289094 | 2.3232217 | 186 | 7 | 1995–2006 | 0.62 | M-v | 1 | MPC | 35753 | (48626) |
| (48628) | 14.6 | 0.15 | 20060922 | 15.19702 | 335.81602 | 83.94258 | 8.02609 | 0.1062762 | 2.2778151 | 250 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 35754 | (48628) |
| (48635) | 14.8 | 0.15 | 20060922 | 103.92932 | 41.85262 | 288.00492 | 5.25150 | 0.1559789 | 2.2662648 | 332 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 35756 | (48635) |
| (48637) | 15.9 | 0.15 | 20060922 | 69.53931 | 209.67105 | 168.19648 | 4.12348 | 0.1420329 | 2.2533293 | 236 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 35757 | (48637) |
| (48640) | 14.9 | 0.15 | 20060922 | 45.19832 | 128.52536 | 265.53365 | 3.41216 | 0.1123832 | 2.2921522 | 225 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 35758 | (48640) |
| (48641) | 14.9 | 0.15 | 20060922 | 284.62209 | 179.84934 | 334.32253 | 6.45178 | 0.0522455 | 2.3089575 | 249 | 10 | 1953–2006 | 0.65 | M-v | 1 | MPC | 35758 | (48641) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (48642) | 15.8 | 0.15 | 20060922 | 15.39957 | 26.84584 | 26.08324 | 7.07354 | 0.1217480 | 2.3095292 | 238 | 7 | 1995–2006 | 0.57 | M-v | 1 | MPC | 35759 | (48642) |
| (48650) | 14.4 | 0.15 | 20060922 | 42.14887 | 58.73040 | 6.70628 | 0.85515 | 0.1207471 | 2.2762329 | 438 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 35762 | (48650) |
| (48651) | 15.4 | 0.15 | 20060922 | 259.73479 | 152.65676 | 352.59923 | 2.04487 | 0.1589847 | 2.3772389 | 197 | 7 | 1995–2006 | 0.49 | M-v | 0 | MPC | 35762 | (48651) |
| (48653) | 14.9 | 0.15 | 20060922 | 341.33637 | 88.11564 | 7.36435 | 2.72857 | 0.1080288 | 2.3443568 | 352 | 7 | 1995–2006 | 0.61 | M-v | 0 | MPC | 35763 | (48653) |
| (48654) | 17.1 | 0.15 | 20060922 | 107.28745 | 51.00941 | 178.84022 | 0.93182 | 0.1442822 | 2.4369097 | 95 | 7 | 1995–2006 | 0.49 | M-v | 0 | MPC | 35763 | (48654) |
| (48661) | 15.0 | 0.15 | 20060922 | 47.21725 | 150.35521 | 258.18754 | 3.99124 | 0.1071941 | 2.3137855 | 285 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 35765 | (48661) |
| (48662) | 15.0 | 0.15 | 20060922 | 68.43551 | 341.86075 | 42.35489 | 3.45839 | 0.1244415 | 2.3113659 | 384 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 35766 | (48662) |
| (48675) | 15.4 | 0.15 | 20060922 | 349.06357 | 86.62290 | 337.67477 | 0.74325 | 0.1705361 | 2.3952557 | 201 | 6 | 1995–2006 | 0.52 | M-v | 0 | MPC | 35770 | (48675) |
| (48678) | 15.8 | 0.15 | 20060922 | 286.36365 | 227.81446 | 251.82922 | 6.27808 | 0.0204388 | 2.4623926 | 146 | 9 | 1988–2006 | 0.56 | M-v | 0 | MPC | 35771 | (48678) |
| (48680) | 14.8 | 0.15 | 20060922 | 24.75021 | 116.90160 | 277.02299 | 7.02245 | 0.1183732 | 2.4009679 | 185 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 35772 | (48680) |
| (48686) | 14.5 | 0.15 | 20060922 | 169.56100 | 228.81461 | 335.79900 | 10.90775 | 0.2019920 | 2.5891991 | 296 | 7 | 1996–2006 | 0.50 | M-v | 0 | MPC | 35774 | (48686) |
| (48725) | 14.9 | 0.15 | 20060922 | 287.26742 | 178.75184 | 309.92545 | 4.79108 | 0.0952828 | 2.2782146 | 289 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 35789 | (48725) |
| (48730) | 15.7 | 0.15 | 20060922 | 319.33612 | 335.20244 | 140.43644 | 2.53495 | 0.0803596 | 2.2636944 | 323 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 35790 | (48730) |
| (48732) | 15.7 | 0.15 | 20060922 | 36.17543 | 39.44239 | 359.22784 | 4.90659 | 0.1055582 | 2.2465218 | 225 | 7 | 1997–2006 | 0.59 | M-v | 1 | MPC | 35791 | (48732) |
| (48746) | 16.4 | 0.15 | 20060922 | 25.45515 | 187.46691 | 199.91756 | 1.94083 | 0.2051419 | 2.3303526 | 145 | 6 | 1997–2006 | 0.59 | M-v | 1 | MPC | 35796 | (48746) |
| (48748) | 15.3 | 0.15 | 20060922 | 261.34287 | 170.59173 | 26.42205 | 7.37359 | 0.0651583 | 2.2928590 | 300 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 35796 | (48748) |
| (48750) | 15.3 | 0.15 | 20060922 | 295.45421 | 248.02844 | 218.54497 | 5.82729 | 0.0615546 | 2.4027719 | 237 | 9 | 1993–2006 | 0.58 | M-v | 0 | MPC | 35797 | (48750) |
| (48752) | 15.1 | 0.15 | 20060922 | 95.69454 | 309.02870 | 349.85030 | 6.01313 | 0.1443152 | 2.4242448 | 159 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 35798 | (48752) |
| (48755) | 15.9 | 0.15 | 20060922 | 204.04804 | 133.04689 | 58.54084 | 2.69824 | 0.1177152 | 2.4158029 | 216 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 35799 | (48755) |
| (48759) | 15.1 | 0.15 | 20060922 | 0.16565 | 56.04392 | 66.80116 | 6.98016 | 0.1601621 | 2.2525586 | 234 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 35800 | (48759) |
| (48833) | 13.1 | 0.15 | 20060922 | 320.20600 | 179.90530 | 267.88949 | 16.48512 | 0.1510181 | 2.7592644 | 257 | 7 | 1997–2006 | 0.50 | M-v | 0 | MPC | 35827 | (48833) |
| (48846) | 15.7 | 0.15 | 20060922 | 188.61796 | 45.16072 | 174.87873 | 2.91297 | 0.1085229 | 2.2202176 | 183 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 35831 | (48846) |
| (48849) | 15.1 | 0.15 | 20060922 | 112.57517 | 251.42608 | 24.33958 | 5.62765 | 0.1523556 | 2.2475899 | 124 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 35832 | (48849) |
| (48851) | 14.8 | 0.15 | 20060922 | 121.31862 | 301.44268 | 355.02604 | 2.94155 | 0.1842445 | 2.2221748 | 423 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 35833 | (48851) |
| (48859) | 16.1 | 0.15 | 20060922 | 119.47252 | 231.88161 | 91.16843 | 4.58481 | 0.1474907 | 2.1866437 | 182 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 35836 | (48859) |
| (48862) | 15.2 | 0.15 | 20060922 | 124.19385 | 53.04037 | 238.69610 | 1.69185 | 0.1789925 | 2.2263369 | 286 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 35838 | (48862) |
| (48863) | 15.6 | 0.15 | 20060922 | 156.99536 | 25.64170 | 269.96337 | 2.75431 | 0.1618465 | 2.1697862 | 291 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 35838 | (48863) |
| (48868) | 15.8 | 0.15 | 20060922 | 111.17671 | 88.34627 | 193.28509 | 6.16911 | 0.1426875 | 2.2749581 | 162 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 35841 | (48868) |
| (48875) | 15.4 | 0.15 | 20060922 | 225.91943 | 330.26877 | 275.78944 | 1.69411 | 0.1204090 | 2.1472370 | 433 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 35844 | (48875) |
| (48877) | 16.1 | 0.15 | 20060922 | 171.24856 | 83.12858 | 116.12383 | 6.53467 | 0.1030882 | 2.2751331 | 189 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 35845 | (48877) |
| (48878) | 12.9 | 0.15 | 20060922 | 289.91619 | 343.95196 | 132.58641 | 16.07802 | 0.1530881 | 3.0418915 | 321 | 10 | 1993–2006 | 0.52 | M-v | 0 | MPC | 35845 | (48878) |
| (48882) | 16.3 | 0.15 | 20060922 | 137.62728 | 146.66923 | 125.62581 | 6.78633 | 0.1526191 | 2.2305635 | 65 | 7 | 1991–2006 | 0.61 | M-v | 1 | MPC | 35847 | (48882) |
| (48888) | 15.6 | 0.15 | 20060922 | 106.55401 | 79.05897 | 212.80629 | 4.04067 | 0.1819723 | 2.2930616 | 134 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 35849 | (48888) |
| (48891) | 15.0 | 0.15 | 20060922 | 217.59325 | 338.14386 | 241.65194 | 4.13798 | 0.1075377 | 2.2050460 | 356 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 35850 | (48891) |
| (48894) | 16.1 | 0.15 | 20060922 | 147.98926 | 159.88633 | 171.89459 | 4.68547 | 0.1643610 | 2.1564453 | 293 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 35852 | (48894) |
| (48899) | 14.9 | 0.15 | 20060922 | 53.65681 | 242.33292 | 98.87708 | 12.49684 | 0.2562913 | 2.3755559 | 183 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 35853 | (48899) |
| (48900) | 14.2 | 0.15 | 20060922 | 132.20076 | 221.87574 | 82.11403 | 7.93111 | 0.2291187 | 2.2596434 | 378 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 35853 | (48900) |
| (48903) | 14.4 | 0.15 | 20060922 | 228.37196 | 260.13389 | 322.43081 | 2.98589 | 0.0915970 | 2.2251861 | 424 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 35855 | (48903) |
| (48906) | 15.3 | 0.15 | 20060922 | 75.69331 | 211.97741 | 86.28325 | 7.24660 | 0.1324219 | 2.3901698 | 231 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 35856 | (48906) |
| (48910) | 15.8 | 0.15 | 20060922 | 73.14365 | 195.72699 | 103.74875 | 3.38423 | 0.2127990 | 2.3958181 | 166 | 10 | 1991–2006 | 0.63 | M-v | 0 | MPC | 35857 | (48910) |
| (48911) | 15.1 | 0.15 | 20060922 | 65.44193 | 232.04992 | 94.65125 | 7.26789 | 0.2213522 | 2.3385282 | 213 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 35857 | (48911) |
| (48920) | 16.7 | 0.15 | 20060922 | 63.43751 | 158.75441 | 141.64151 | 1.63493 | 0.1913477 | 2.4362137 | 135 | 7 | 1979–2006 | 0.61 | M-v | 0 | MPC | 35861 | (48920) |
| (48921) | 15.2 | 0.15 | 20060922 | 248.03125 | 94.85572 | 135.79943 | 4.95793 | 0.0604772 | 2.2200911 | 300 | 7 | 1998–2006 | 0.50 | M-v | 1 | MPC | 35861 | (48921) |
| (48924) | 15.7 | 0.15 | 20060922 | 64.78151 | 324.32076 | 43.93753 | 7.51979 | 0.1261702 | 2.3327127 | 303 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 35862 | (48924) |
| (48926) | 15.2 | 0.15 | 20060922 | 78.63480 | 242.27273 | 138.58869 | 7.12296 | 0.1154772 | 2.2897333 | 258 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 35863 | (48926) |
| (48927) | 15.1 | 0.15 | 20060922 | 187.88457 | 256.85648 | 341.98034 | 0.36658 | 0.1043584 | 2.3119621 | 333 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 35863 | (48927) |
| (48928) | 15.2 | 0.15 | 20060922 | 104.68411 | 67.37207 | 202.05397 | 13.14582 | 0.2011165 | 2.4021011 | 257 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 35864 | (48928) |
| (48930) | 16.3 | 0.15 | 20060922 | 29.65811 | 17.94224 | 344.22931 | 4.12593 | 0.2244211 | 2.4206564 | 105 | 7 | 1995–2006 | 0.59 | M-v | 1 | MPC | 35865 | (48930) |
| (48935) | 14.7 | 0.15 | 20060922 | 102.59823 | 39.78228 | 310.63551 | 6.44625 | 0.1399065 | 2.2969334 | 293 | 10 | 1950–2006 | 0.55 | M-v | 1 | MPC | 35866 | (48935) |
| (48938) | 15.6 | 0.15 | 20060922 | 267.22300 | 300.22512 | 238.92815 | 3.70396 | 0.0765356 | 2.2945262 | 187 | 7 | 1960–2006 | 0.60 | M-v | 1 | MPC | 35867 | (48938) |
| (48939) | 15.5 | 0.15 | 20060922 | 61.12155 | 218.49346 | 131.00486 | 6.69280 | 0.1440393 | 2.3549503 | 176 | 7 | 1992–2006 | 0.61 | M-v | 1 | MPC | 35868 | (48939) |
| (48943) | 16.1 | 0.15 | 20060922 | 154.52991 | 20.83830 | 278.52656 | 6.84450 | 0.1280345 | 2.2644967 | 230 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 35869 | (48943) |
| (48944) | 16.1 | 0.15 | 20060922 | 55.21413 | 246.43085 | 149.70542 | 2.24136 | 0.2494936 | 2.3221210 | 194 | 7 | 1991–2006 | 0.52 | M-v | 0 | MPC | 35869 | (48944) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (48951) | 15.7 | 0.15 | 20060922 | 56.72944 | 249.73018 | 134.52379 | 5.03473 | 0.1776151 | 2.3318394 | 175 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 35871 | (48951) |
| (48952) | 14.8 | 0.15 | 20060922 | 348.66764 | 302.06929 | 162.89318 | 7.85106 | 0.1296217 | 2.3060570 | 290 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 35872 | (48952) |
| (48957) | 14.6 | 0.15 | 20060922 | 292.93960 | 231.30295 | 307.72187 | 5.06628 | 0.0769858 | 2.2500758 | 290 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 35874 | (48957) |
| (48961) | 15.3 | 0.15 | 20060922 | 41.07886 | 129.59583 | 222.61086 | 3.26968 | 0.0720880 | 2.4216551 | 357 | 7 | 1991–2006 | 0.49 | M-v | 1 | MPC | 35876 | (48961) |
| (48962) | 16.4 | 0.15 | 20060922 | 88.25741 | 204.27183 | 107.91017 | 3.92981 | 0.1862141 | 2.3741965 | 104 | 7 | 1998–2006 | 0.68 | M-v | 1 | MPC | 35876 | (48962) |
| (48963) | 14.6 | 0.15 | 20060922 | 76.66526 | 65.06183 | 304.10467 | 6.11970 | 0.1322732 | 2.3199606 | 266 | 7 | 1977–2006 | 0.60 | M-v | 1 | MPC | 35876 | (48963) |
| (48969) | 15.0 | 0.15 | 20060922 | 51.26059 | 107.96660 | 283.65591 | 3.94661 | 0.1438613 | 2.3413120 | 192 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 35879 | (48969) |
| (48973) | 16.5 | 0.15 | 20060922 | 64.81845 | 283.17025 | 109.34926 | 4.07477 | 0.2491120 | 2.3242700 | 173 | 7 | 1991–2006 | 0.52 | M-v | 0 | MPC | 35880 | (48973) |
| (48975) | 14.7 | 0.15 | 20060922 | 21.36606 | 143.09803 | 259.08126 | 2.94832 | 0.2233755 | 2.3969620 | 266 | 7 | 1987–2006 | 0.59 | M-v | 1 | MPC | 35881 | (48975) |
| (48977) | 14.5 | 0.15 | 20060922 | 218.09526 | 35.46068 | 200.86242 | 6.93558 | 0.0794034 | 2.2845497 | 375 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 35882 | (48977) |
| (48983) | 14.9 | 0.15 | 20060922 | 107.47291 | 299.31308 | 344.31354 | 3.90109 | 0.1707022 | 2.3935247 | 227 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 35884 | (48983) |
| (48984) | 15.0 | 0.15 | 20060922 | 29.15972 | 348.78430 | 53.60213 | 3.37382 | 0.2086625 | 2.3771377 | 155 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 35885 | (48984) |
| (48988) | 14.9 | 0.15 | 20060922 | 107.52553 | 292.77615 | 351.04240 | 1.89707 | 0.2118126 | 2.3868463 | 254 | 7 | 1993–2006 | 0.54 | M-v | 0 | MPC | 35886 | (48988) |
| (48993) | 14.1 | 0.15 | 20060922 | 139.20424 | 356.48666 | 298.51735 | 6.37254 | 0.1303344 | 2.3258579 | 409 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 35888 | (48993) |
| (48996) | 14.9 | 0.15 | 20060922 | 312.59084 | 346.80277 | 176.29692 | 5.62944 | 0.0393402 | 2.2702313 | 443 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35889 | (48996) |
| (48997) | 13.9 | 0.15 | 20060922 | 134.69781 | 355.90741 | 316.73508 | 6.45155 | 0.1483292 | 2.3053821 | 392 | 10 | 1935–2006 | 0.56 | M-v | 1 | MPC | 35889 | (48997) |
| (49003) | 15.5 | 0.15 | 20060922 | 34.13371 | 211.74187 | 181.30014 | 1.02624 | 0.1870359 | 2.3919201 | 265 | 7 | 1995–2006 | 0.56 | M-v | 1 | MPC | 35892 | (49003) |
| (49004) | 14.7 | 0.15 | 20060922 | 329.42054 | 339.18372 | 158.07432 | 6.82127 | 0.0357023 | 2.2852850 | 425 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35892 | (49004) |
| (49005) | 14.7 | 0.15 | 20060922 | 281.07210 | 314.84199 | 202.75439 | 6.57544 | 0.0612797 | 2.3109591 | 279 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 35893 | (49005) |
| (49008) | 14.9 | 0.15 | 20060922 | 93.05169 | 4.07639 | 269.11287 | 6.71531 | 0.1268398 | 2.4359098 | 176 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35894 | (49008) |
| (49012) | 14.5 | 0.15 | 20060922 | 129.43377 | 45.06045 | 241.58675 | 6.07891 | 0.1128891 | 2.3510867 | 378 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 35895 | (49012) |
| (49014) | 14.7 | 0.15 | 20060922 | 173.44480 | 14.09426 | 223.39536 | 12.13534 | 0.0737587 | 2.3720749 | 171 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 35896 | (49014) |
| (49020) | 15.5 | 0.15 | 20060922 | 161.95169 | 353.28237 | 259.32958 | 6.00379 | 0.1243360 | 2.3548825 | 216 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 35898 | (49020) |
| (49024) | 14.6 | 0.15 | 20060922 | 191.56748 | 301.40086 | 263.84111 | 7.77454 | 0.1270310 | 2.3932976 | 203 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 35900 | (49024) |
| (49029) | 14.7 | 0.15 | 20060922 | 322.49417 | 66.99431 | 24.23343 | 3.47997 | 0.1506471 | 2.4272690 | 380 | 7 | 1987–2006 | 0.50 | M-v | 0 | MPC | 35902 | (49029) |
| (49039) | 14.2 | 0.15 | 20060922 | 242.57350 | 89.26021 | 107.26455 | 7.41294 | 0.0573540 | 2.3490851 | 300 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 35906 | (49039) |
| (49043) | 14.9 | 0.15 | 20060922 | 335.81806 | 313.39451 | 178.42153 | 24.30909 | 0.2194456 | 2.3350454 | 189 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 35907 | (49043) |
| (49046) | 15.4 | 0.15 | 20060922 | 115.45142 | 224.36114 | 41.87907 | 2.98945 | 0.1698161 | 2.3956047 | 254 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 35908 | (49046) |
| (49048) | 15.3 | 0.15 | 20060922 | 311.65574 | 146.27917 | 357.16645 | 5.33524 | 0.1198429 | 2.3351557 | 214 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 35909 | (49048) |
| (49054) | 14.6 | 0.15 | 20060922 | 306.21920 | 119.82643 | 8.34087 | 9.75307 | 0.1471951 | 2.3669057 | 262 | 10 | 1975–2006 | 0.66 | M-v | 0 | MPC | 35911 | (49054) |
| (49059) | 14.5 | 0.15 | 20060922 | 310.69056 | 332.07219 | 140.76850 | 8.25371 | 0.0632785 | 2.3848284 | 288 | 9 | 1993–2006 | 0.54 | M-v | 0 | MPC | 35913 | (49059) |
| (49062) | 15.4 | 0.15 | 20060922 | 16.71265 | 91.07495 | 317.02393 | 5.34325 | 0.1398390 | 2.4001550 | 185 | 7 | 1995–2006 | 0.59 | M-v | 1 | MPC | 35914 | (49062) |
| (49064) | 15.7 | 0.15 | 20060922 | 127.87089 | 148.93983 | 134.24452 | 3.44704 | 0.0928623 | 2.3809635 | 238 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 35914 | (49064) |
| (49069) | 15.5 | 0.15 | 20060922 | 319.05685 | 215.31259 | 284.36811 | 3.86254 | 0.0403368 | 2.3223249 | 275 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 35916 | (49069) |
| (49071) | 14.7 | 0.15 | 20060922 | 318.40169 | 281.00223 | 194.02253 | 6.69426 | 0.0670251 | 2.3775026 | 347 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 35917 | (49071) |
| (49073) | 15.8 | 0.15 | 20060922 | 21.91611 | 275.73249 | 154.07088 | 2.50649 | 0.1787325 | 2.3601936 | 142 | 7 | 1995–2006 | 0.59 | M-v | 0 | MPC | 35918 | (49073) |
| (49080) | 14.8 | 0.15 | 20060922 | 324.74763 | 111.64806 | 34.41541 | 7.40110 | 0.1251368 | 2.3048823 | 261 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 35920 | (49080) |
| (49087) | 15.4 | 0.15 | 20060922 | 65.93305 | 159.56577 | 226.88282 | 2.01216 | 0.0869717 | 2.3433392 | 320 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 35923 | (49087) |
| (49103) | 15.7 | 0.15 | 20060922 | 110.98787 | 175.62531 | 106.39807 | 3.46749 | 0.2031205 | 2.4105715 | 178 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 35929 | (49103) |
| (49105) | 15.6 | 0.15 | 20060922 | 149.48090 | 207.73150 | 62.58518 | 2.99041 | 0.2007106 | 2.3587254 | 254 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 35930 | (49105) |
| (49120) | 15.5 | 0.15 | 20060922 | 152.07652 | 77.45271 | 173.25201 | 2.02529 | 0.1768089 | 2.3689307 | 306 | 10 | 1979–2006 | 0.56 | M-v | 0 | MPC | 35936 | (49120) |
| (49121) | 14.7 | 0.15 | 20060922 | 92.14990 | 248.76171 | 81.93735 | 5.51826 | 0.1934325 | 2.3468879 | 198 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 35936 | (49121) |
| (49134) | 15.0 | 0.15 | 20060922 | 340.37125 | 277.25740 | 161.25151 | 1.57321 | 0.1528180 | 2.4192024 | 278 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 35941 | (49134) |
| (49139) | 15.1 | 0.15 | 20060922 | 16.60543 | 199.27943 | 216.43645 | 5.04750 | 0.1450955 | 2.4197097 | 309 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 35943 | (49139) |
| (49143) | 14.9 | 0.15 | 20060922 | 307.85647 | 124.37190 | 6.05845 | 7.84523 | 0.0476475 | 2.3897499 | 247 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 35945 | (49143) |
| (49145) | 15.6 | 0.15 | 20060922 | 340.06016 | 92.82433 | 2.57598 | 1.71000 | 0.0741839 | 2.4160441 | 241 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 35945 | (49145) |
| (49152) | 14.9 | 0.15 | 20060922 | 205.13492 | 214.70252 | 356.67724 | 5.57968 | 0.0595539 | 2.3905948 | 276 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 35948 | (49152) |
| (49156) | 13.9 | 0.15 | 20060922 | 251.42803 | 215.93826 | 340.95928 | 6.74169 | 0.0513801 | 2.3294102 | 419 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 35949 | (49156) |
| (49158) | 15.5 | 0.15 | 20060922 | 68.25174 | 168.20674 | 188.79319 | 1.94022 | 0.2113329 | 2.3742582 | 196 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 35950 | (49158) |
| (49167) | 16.1 | 0.15 | 20060922 | 114.12524 | 247.07090 | 47.81287 | 3.69522 | 0.1337555 | 2.3836504 | 133 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 35954 | (49167) |
| (49168) | 15.7 | 0.15 | 20060922 | 19.42615 | 59.27571 | 25.67535 | 7.23832 | 0.1672219 | 2.3414289 | 126 | 7 | 1991–2006 | 0.58 | M-v | 1 | MPC | 35955 | (49168) |
| (49169) | 15.8 | 0.15 | 20060922 | 123.27170 | 227.65384 | 56.87493 | 2.14702 | 0.1768234 | 2.3905706 | 178 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35955 | (49169) |
| (49170) | 14.3 | 0.15 | 20060922 | 206.66115 | 198.31403 | 41.51705 | 5.17183 | 0.0286315 | 2.3466576 | 347 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 35955 | (49170) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (49171) | 15.6 | 0.15 | 20060922 | 348.90827 | 350.17426 | 76.49557 | 3.14455 | 0.1526587 | 2.4406442 | 209 | 7 | 1992–2006 | 0.60 | M-v | 1 | MPC | 35956 | (49171) |
| (49180) | 14.6 | 0.15 | 20060922 | 98.48389 | 208.00616 | 114.42513 | 4.91580 | 0.1868643 | 2.3920621 | 352 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35959 | (49180) |
| (49183) | 14.8 | 0.15 | 20060922 | 217.80812 | 151.48887 | 46.43693 | 6.58684 | 0.0743992 | 2.4412660 | 319 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 35960 | (49183) |
| (49186) | 15.6 | 0.15 | 20060922 | 269.14349 | 342.21956 | 179.83279 | 2.86584 | 0.1132261 | 2.4043841 | 271 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 35962 | (49186) |
| (49187) | 15.7 | 0.15 | 20060922 | 38.00092 | 64.63027 | 352.66464 | 4.33369 | 0.0924633 | 2.3250322 | 197 | 9 | 1988–2006 | 0.60 | M-v | 1 | MPC | 35962 | (49187) |
| (49188) | 15.6 | 0.15 | 20060922 | 346.24837 | 137.89133 | 314.87061 | 2.11247 | 0.1276887 | 2.3788017 | 195 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 35962 | (49188) |
| (49190) | 15.5 | 0.15 | 20060922 | 313.74146 | 329.74134 | 147.42707 | 1.60193 | 0.1398331 | 2.3971994 | 241 | 7 | 1995–2006 | 0.63 | M-v | 0 | MPC | 35963 | (49190) |
| (49191) | 15.6 | 0.15 | 20060922 | 158.31133 | 223.90380 | 28.23805 | 4.00006 | 0.2502282 | 2.3548392 | 220 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 35963 | (49191) |
| (49193) | 14.7 | 0.15 | 20060922 | 305.87102 | 189.07062 | 313.09193 | 4.81919 | 0.0566691 | 2.3608301 | 278 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 35964 | (49193) |
| (49197) | 15.8 | 0.15 | 20060922 | 107.69231 | 179.37304 | 106.50882 | 3.17022 | 0.1687035 | 2.4147845 | 164 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 35966 | (49197) |
| (49209) | 14.8 | 0.15 | 20060922 | 107.90810 | 159.59152 | 150.80354 | 2.73589 | 0.2239463 | 2.3718620 | 333 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 35970 | (49209) |
| (49214) | 14.1 | 0.15 | 20060922 | 212.47378 | 226.45426 | 13.70412 | 6.24112 | 0.0571266 | 2.3455659 | 406 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35972 | (49214) |
| (49217) | 15.4 | 0.15 | 20060922 | 66.38868 | 291.65475 | 29.21995 | 7.01101 | 0.1556664 | 2.4583115 | 195 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 35973 | (49217) |
| (49222) | 14.9 | 0.15 | 20060922 | 28.84676 | 4.13847 | 63.69181 | 3.28127 | 0.1916525 | 2.3751222 | 290 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 35975 | (49222) |
| (49223) | 14.5 | 0.15 | 20060922 | 124.76713 | 260.36279 | 40.68921 | 6.71641 | 0.2163531 | 2.3580314 | 393 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35975 | (49223) |
| (49229) | 14.3 | 0.15 | 20060922 | 178.83753 | 264.63508 | 345.09269 | 6.06288 | 0.0932035 | 2.3992686 | 335 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 35978 | (49229) |
| (49231) | 16.6 | 0.15 | 20060922 | 42.26891 | 83.16040 | 318.76066 | 1.79722 | 0.1860206 | 2.3902393 | 133 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 35979 | (49231) |
| (49232) | 15.3 | 0.15 | 20060922 | 313.72068 | 199.11894 | 268.01834 | 5.41918 | 0.1027033 | 2.4541518 | 191 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 35979 | (49232) |
| (49235) | 14.8 | 0.15 | 20060922 | 349.36092 | 313.49292 | 19.96227 | 12.73997 | 0.3158752 | 2.6034800 | 156 | 7 | 1997–2006 | 0.70 | M-v | 1 | MPC | 35980 | (49235) |
| (49236) | 15.7 | 0.15 | 20060922 | 336.64618 | 83.27871 | 32.70841 | 2.82796 | 0.1599173 | 2.3680204 | 205 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35981 | (49236) |
| (49246) | 14.9 | 0.15 | 20060922 | 16.79673 | 343.20684 | 68.62269 | 3.07628 | 0.1433392 | 2.4405819 | 303 | 7 | 1988–2006 | 0.53 | M-v | 0 | MPC | 35985 | (49246) |
| (49247) | 15.8 | 0.15 | 20060922 | 280.27306 | 339.86983 | 121.96009 | 7.78588 | 0.1786482 | 2.5887847 | 85 | 7 | 1977–2006 | 0.64 | M-v | 0 | MPC | 35985 | (49247) |
| (49255) | 16.0 | 0.15 | 20060922 | 354.76756 | 194.72601 | 238.85510 | 1.72538 | 0.1793169 | 2.4519944 | 160 | 7 | 1992–2006 | 0.54 | M-v | 1 | MPC | 35988 | (49255) |
| (49271) | 14.5 | 0.15 | 20060922 | 226.50383 | 104.77731 | 114.02431 | 7.50719 | 0.0546888 | 2.3329858 | 336 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 35994 | (49271) |
| (49280) | 15.0 | 0.15 | 20060922 | 352.91237 | 315.31537 | 71.15625 | 14.07351 | 0.1599301 | 2.5442814 | 241 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 35997 | (49280) |
| (49283) | 14.4 | 0.15 | 20060922 | 169.56152 | 82.52256 | 161.14060 | 6.97253 | 0.0790696 | 2.4722875 | 347 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 35998 | (49283) |
| (49291) | 14.1 | 0.15 | 20060922 | 275.57424 | 27.08993 | 65.87883 | 15.36998 | 0.1641469 | 2.6395677 | 226 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 36001 | (49291) |
| (49302) | 14.8 | 0.15 | 20060922 | 316.35821 | 131.92674 | 345.60314 | 3.95593 | 0.1451885 | 2.4394969 | 221 | 10 | 1990–2006 | 0.56 | M-v | 0 | MPC | 36005 | (49302) |
| (49304) | 15.5 | 0.15 | 20060922 | 324.13506 | 87.80949 | 39.02529 | 2.88005 | 0.1107052 | 2.3985773 | 306 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36006 | (49304) |
| (49307) | 15.3 | 0.15 | 20060922 | 15.33555 | 123.35406 | 226.42786 | 5.91165 | 0.1184907 | 2.5549053 | 252 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36007 | (49307) |
| (49309) | 14.8 | 0.15 | 20060922 | 357.97559 | 325.77581 | 129.60153 | 2.84525 | 0.1719391 | 2.4078005 | 315 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36008 | (49309) |
| (49325) | 14.2 | 0.15 | 20060922 | 169.79914 | 19.41709 | 249.13953 | 8.20433 | 0.0831751 | 2.4675950 | 362 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36013 | (49325) |
| (49328) | 13.9 | 0.15 | 20060922 | 16.75417 | 115.23669 | 266.90778 | 11.24069 | 0.1668169 | 2.5939965 | 268 | 6 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36014 | (49328) |
| (49339) | 14.4 | 0.15 | 20060922 | 14.75816 | 146.98366 | 275.23781 | 11.52962 | 0.1553386 | 2.4368379 | 253 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36018 | (49339) |
| (49349) | 14.5 | 0.15 | 20060922 | 85.91093 | 34.13660 | 250.74303 | 14.24104 | 0.1168115 | 2.6368873 | 265 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36021 | (49349) |
| (49350) | 14.4 | 0.15 | 20060922 | 74.90014 | 295.37985 | 76.22785 | 6.92850 | 0.0855784 | 2.4113255 | 344 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36022 | (49350) |
| (49352) | 13.8 | 0.15 | 20060922 | 175.45583 | 222.16767 | 69.32907 | 6.79178 | 0.0991047 | 2.3579384 | 522 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36023 | (49352) |
| (49357) | 15.1 | 0.15 | 20060922 | 49.66483 | 248.96728 | 58.83208 | 15.92093 | 0.1330827 | 2.5961666 | 231 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36025 | (49357) |
| (49360) | 14.7 | 0.15 | 20060922 | 354.60320 | 338.56025 | 87.55974 | 7.42079 | 0.0875934 | 2.4811705 | 274 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 36026 | (49360) |
| (49367) | 12.7 | 0.15 | 20060922 | 336.51333 | 163.94029 | 278.12133 | 12.92218 | 0.1247510 | 2.5761164 | 418 | 7 | 1983–2006 | 0.52 | M-v | 0 | MPC | 57647 | (49367) |
| (49368) | 14.0 | 0.15 | 20060922 | 3.37877 | 124.76198 | 279.93773 | 11.84710 | 0.2612377 | 2.5710580 | 226 | 7 | 1981–2006 | 0.56 | M-v | 1 | MPC | 36029 | (49368) |
| (49369) | 14.5 | 0.15 | 20060922 | 333.15412 | 214.83743 | 246.72183 | 11.12830 | 0.2035160 | 2.5563991 | 134 | 7 | 1998–2006 | 0.68 | M-v | 1 | MPC | 36029 | (49369) |
| (49372) | 15.0 | 0.15 | 20060922 | 233.14695 | 251.76387 | 234.47285 | 11.87600 | 0.1178308 | 2.6441356 | 164 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 36030 | (49372) |
| (49379) | 13.7 | 0.15 | 20060922 | 344.87971 | 106.24826 | 322.80392 | 9.88635 | 0.1469430 | 2.5349545 | 198 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36032 | (49379) |
| (49383) | 15.1 | 0.15 | 20060922 | 172.96530 | 118.69869 | 74.60246 | 4.90032 | 0.0504432 | 2.6193469 | 184 | 7 | 1996–2006 | 0.61 | M-v | 1 | MPC | 36034 | (49383) |
| (49384) | 14.1 | 0.15 | 20060922 | 275.24394 | 79.58506 | 56.17416 | 12.80874 | 0.1400200 | 2.6028553 | 273 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36034 | (49384) |
| (49389) | 12.8 | 0.15 | 20060922 | 111.70975 | 338.86245 | 290.20750 | 15.81072 | 0.2465606 | 2.7503710 | 351 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36036 | (49389) |
| (49392) | 14.2 | 0.15 | 20060922 | 243.24966 | 97.42641 | 37.87054 | 8.56223 | 0.1085701 | 2.7856903 | 288 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 36037 | (49392) |
| (49395) | 14.2 | 0.15 | 20060922 | 14.20340 | 92.83180 | 279.50837 | 11.98241 | 0.2008716 | 2.5444066 | 129 | 7 | 1953–2006 | 0.55 | M-v | 1 | MPC | 36038 | (49395) |
| (49396) | 14.2 | 0.15 | 20060922 | 358.37466 | 40.89576 | 47.38956 | 10.04318 | 0.0824268 | 2.4728395 | 374 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36038 | (49396) |
| (49400) | 13.6 | 0.15 | 20060922 | 275.99419 | 103.21263 | 40.75503 | 14.65604 | 0.1056234 | 2.5735055 | 288 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36040 | (49400) |
| (49419) | 14.2 | 0.15 | 20060922 | 336.79321 | 22.27922 | 51.60866 | 13.45040 | 0.1540617 | 2.5674787 | 360 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 36047 | (49419) |
| (49423) | 15.3 | 0.15 | 20060922 | 359.56047 | 291.45612 | 83.12818 | 6.34148 | 0.2791236 | 2.5568640 | 227 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 36048 | (49423) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (49441) | 16.1 | 0.15 | 20060922 | 344.86980 | 203.46498 | 229.17231 | 5.55117 | 0.1821839 | 2.5499762 | 94 | 7 | 1993–2006 | 0.62 | M-v | 1 | MPC | 36055 | (49441) |
| (49448) | 14.7 | 0.15 | 20060922 | 251.59482 | 130.19146 | 46.12246 | 9.32438 | 0.2094164 | 2.5446607 | 310 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36057 | (49448) |
| (49477) | 14.8 | 0.15 | 20060922 | 44.97353 | 206.87475 | 228.09690 | 1.78601 | 0.1498889 | 2.4446040 | 331 | 9 | 1953–2006 | 0.54 | M-v | 0 | MPC | 36067 | (49477) |
| (49484) | 14.0 | 0.15 | 20060922 | 280.62983 | 14.96019 | 107.72517 | 12.81935 | 0.1349802 | 2.6597311 | 330 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36070 | (49484) |
| (49488) | 13.9 | 0.15 | 20060922 | 225.41346 | 304.51246 | 267.51458 | 10.41210 | 0.1339907 | 2.5778344 | 307 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36071 | (49488) |
| (49496) | 13.5 | 0.15 | 20060922 | 257.57321 | 61.04028 | 65.35064 | 4.64763 | 0.0442612 | 2.7851528 | 356 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 36074 | (49496) |
| (49525) | 13.4 | 0.15 | 20060922 | 160.40167 | 162.63454 | 98.37353 | 14.42886 | 0.1382745 | 2.6847614 | 304 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 36085 | (49525) |
| (49527) | 14.7 | 0.15 | 20060922 | 295.99220 | 11.89538 | 95.09789 | 4.52632 | 0.1743432 | 2.6704355 | 255 | 7 | 1980–2006 | 0.58 | M-v | 0 | MPC | 36086 | (49527) |
| (49536) | 14.7 | 0.15 | 20060922 | 322.66115 | 245.46289 | 208.02358 | 1.83265 | 0.1405851 | 2.6257160 | 226 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 36089 | (49536) |
| (49548) | 13.4 | 0.15 | 20060922 | 239.97960 | 86.33624 | 85.70270 | 4.28897 | 0.2298512 | 2.6687087 | 436 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36093 | (49548) |
| (49564) | 13.6 | 0.15 | 20060922 | 204.90507 | 339.54601 | 247.65032 | 12.95560 | 0.0912682 | 2.6158054 | 270 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36098 | (49564) |
| (49575) | 14.2 | 0.15 | 20060922 | 321.42877 | 25.70840 | 87.54216 | 14.89924 | 0.1140624 | 2.5853326 | 248 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 36102 | (49575) |
| (49645) | 13.6 | 0.15 | 20060922 | 12.64244 | 57.49446 | 34.28780 | 7.77392 | 0.1641924 | 2.6621078 | 398 | 7 | 1972–2006 | 0.51 | M-v | 0 | MPC | 36128 | (49645) |
| (49671) | 12.5 | 0.15 | 20060922 | 41.04352 | 124.11392 | 291.75014 | 9.58625 | 0.1086367 | 2.9948593 | 373 | 9 | 1954–2006 | 0.50 | M-v | 0 | MPC | 36138 | (49671) |
| (49676) | 16.0 | 0.15 | 20060922 | 104.77077 | 228.10679 | 107.03515 | 4.30996 | 0.1985433 | 2.1618706 | 245 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 36140 | (49676) |
| (49679) | 14.9 | 0.15 | 20060922 | 189.23473 | 111.76609 | 96.91078 | 3.84161 | 0.0484865 | 2.2368644 | 287 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 36141 | (49679) |
| (49680) | 15.1 | 0.15 | 20060922 | 103.25439 | 232.56753 | 29.27538 | 7.50851 | 0.0920068 | 2.3230812 | 332 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36142 | (49680) |
| (49682) | 16.4 | 0.15 | 20060922 | 346.91523 | 250.13879 | 212.63539 | 1.98952 | 0.0183351 | 2.1454696 | 164 | 7 | 1998–2006 | 0.63 | M-v | 1 | MPC | 36143 | (49682) |
| (49683) | 15.7 | 0.15 | 20060922 | 290.92691 | 125.17278 | 22.34143 | 4.23991 | 0.1088807 | 2.2099088 | 213 | 7 | 1976–2006 | 0.64 | M-v | 1 | MPC | 36143 | (49683) |
| (49687) | 15.8 | 0.15 | 20060922 | 192.88656 | 312.16796 | 269.67171 | 2.42175 | 0.0801025 | 2.2254903 | 138 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36144 | (49687) |
| (49688) | 14.6 | 0.15 | 20060922 | 167.08453 | 337.19299 | 310.58005 | 3.45968 | 0.1112207 | 2.1738283 | 347 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36145 | (49688) |
| (49692) | 15.0 | 0.15 | 20060922 | 142.07913 | 90.50308 | 176.73334 | 4.54428 | 0.2124365 | 2.3066747 | 302 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36146 | (49692) |
| (49694) | 15.4 | 0.15 | 20060922 | 44.19308 | 145.27754 | 205.73023 | 21.52358 | 0.2133155 | 2.2716826 | 143 | 6 | 1998–2006 | 0.60 | M-v | 1 | MPC | 36147 | (49694) |
| (49699) | 13.4 | 0.15 | 20060922 | 264.49358 | 100.45612 | 54.09991 | 23.28395 | 0.2719613 | 2.3374797 | 322 | 7 | 1990–2006 | 0.44 | M-v | 0 | MPC | 36149 | (49699) |
| (49700) | 15.4 | 0.15 | 20060922 | 199.26475 | 257.38375 | 4.62417 | 3.61911 | 0.0593555 | 2.1722741 | 396 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36149 | (49700) |
| (49701) | 16.2 | 0.15 | 20060922 | 347.67978 | 214.93982 | 241.91406 | 1.05538 | 0.0911197 | 2.2108459 | 235 | 7 | 1981–2006 | 0.61 | M-v | 0 | MPC | 36150 | (49701) |
| (49702) | 14.9 | 0.15 | 20060922 | 241.41436 | 116.41233 | 64.75929 | 7.46148 | 0.1701184 | 2.3110867 | 294 | 7 | 1992–2006 | 0.51 | M-v | 0 | MPC | 36150 | (49702) |
| (49703) | 15.4 | 0.15 | 20060922 | 26.33217 | 327.43602 | 62.57979 | 6.01636 | 0.1803629 | 2.2594778 | 195 | 6 | 1997–2006 | 0.58 | M-v | 1 | MPC | 57647 | (49703) |
| (49704) | 16.2 | 0.15 | 20060922 | 140.06697 | 0.34501 | 303.37856 | 2.19804 | 0.0497927 | 2.1667310 | 197 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36151 | (49704) |
| (49705) | 15.0 | 0.15 | 20060922 | 169.63419 | 355.63566 | 259.73198 | 6.13010 | 0.0859632 | 2.2837007 | 355 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 36152 | (49705) |
| (49706) | 14.5 | 0.15 | 20060922 | 267.75672 | 62.48351 | 84.78365 | 7.98564 | 0.1388940 | 2.3372920 | 445 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 36152 | (49706) |
| (49707) | 14.9 | 0.15 | 20060922 | 56.37506 | 6.18447 | 48.29641 | 5.16116 | 0.1208452 | 2.1681671 | 464 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 36153 | (49707) |
| (49719) | 15.2 | 0.15 | 20060922 | 359.17375 | 173.56378 | 306.37199 | 2.25908 | 0.0992887 | 2.1616272 | 351 | 7 | 1992–2006 | 0.52 | M-v | 0 | MPC | 36158 | (49719) |
| (49724) | 15.6 | 0.15 | 20060922 | 199.35406 | 157.94889 | 50.24323 | 4.62817 | 0.1072870 | 2.2904570 | 302 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 36160 | (49724) |
| (49729) | 15.4 | 0.15 | 20060922 | 44.33568 | 128.85512 | 246.92953 | 6.15229 | 0.0326038 | 2.2818428 | 143 | 7 | 1992–2006 | 0.55 | M-v | 1 | MPC | 36162 | (49729) |
| (49730) | 15.8 | 0.15 | 20060922 | 206.64440 | 277.53436 | 357.81569 | 3.79915 | 0.0636210 | 2.1055882 | 325 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36162 | (49730) |
| (49738) | 16.2 | 0.15 | 20060922 | 244.33247 | 283.39327 | 314.76453 | 1.01983 | 0.0960572 | 2.1350087 | 283 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36165 | (49738) |
| (49742) | 16.1 | 0.15 | 20060922 | 10.79825 | 54.43124 | 22.99778 | 5.29846 | 0.0257792 | 2.1804719 | 240 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36167 | (49742) |
| (49744) | 15.7 | 0.15 | 20060922 | 116.68426 | 164.48928 | 77.19582 | 3.37380 | 0.1704296 | 2.3808430 | 252 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36167 | (49744) |
| (49748) | 15.8 | 0.15 | 20060922 | 138.47882 | 24.55630 | 282.38016 | 1.55482 | 0.1792895 | 2.1565908 | 244 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36169 | (49748) |
| (49752) | 16.2 | 0.15 | 20060922 | 291.30975 | 153.93758 | 26.21081 | 3.55401 | 0.0498191 | 2.1844101 | 207 | 9 | 1991–2006 | 0.57 | M-v | 1 | MPC | 36170 | (49752) |
| (49754) | 15.1 | 0.15 | 20060922 | 286.10416 | 69.26333 | 61.57832 | 7.60863 | 0.0549470 | 2.3226606 | 245 | 7 | 1994–2006 | 0.60 | M-v | 0 | MPC | 36171 | (49754) |
| (49757) | 15.7 | 0.15 | 20060922 | 76.83002 | 260.60866 | 57.41558 | 6.33207 | 0.1545672 | 2.2582389 | 152 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 36172 | (49757) |
| (49758) | 15.3 | 0.15 | 20060922 | 96.62703 | 201.04655 | 77.42718 | 10.39513 | 0.1793408 | 2.3360589 | 211 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 36172 | (49758) |
| (49761) | 15.1 | 0.15 | 20060922 | 223.61355 | 162.75253 | 18.55658 | 7.35628 | 0.0324088 | 2.3003742 | 255 | 7 | 1994–2006 | 0.57 | M-v | 1 | MPC | 36173 | (49761) |
| (49766) | 15.1 | 0.15 | 20060922 | 196.39341 | 279.74096 | 356.24925 | 1.35906 | 0.1226093 | 2.1445944 | 428 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36175 | (49766) |
| (49767) | 14.7 | 0.15 | 20060922 | 233.48016 | 161.10335 | 52.03800 | 7.86837 | 0.1042981 | 2.1949327 | 386 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36175 | (49767) |
| (49770) | 14.8 | 0.15 | 20060922 | 94.22083 | 197.89963 | 93.75435 | 5.84954 | 0.1848708 | 2.3199984 | 313 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 36177 | (49770) |
| (49771) | 15.6 | 0.15 | 20060922 | 256.26953 | 16.65078 | 142.50611 | 1.86332 | 0.0794862 | 2.3164124 | 248 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 36177 | (49771) |
| (49775) | 15.2 | 0.15 | 20060922 | 91.99912 | 131.08502 | 165.33868 | 3.34688 | 0.1137678 | 2.3383227 | 276 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 36179 | (49775) |
| (49776) | 15.4 | 0.15 | 20060922 | 55.12886 | 310.29039 | 68.04398 | 2.60548 | 0.0981185 | 2.2365885 | 294 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 36179 | (49776) |
| (49777) | 15.6 | 0.15 | 20060922 | 173.32255 | 341.99615 | 237.82548 | 4.46945 | 0.0664791 | 2.3560951 | 184 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 36180 | (49777) |
| (49779) | 15.0 | 0.15 | 20060922 | 295.46419 | 26.62689 | 95.11369 | 6.72113 | 0.1069834 | 2.2912090 | 298 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 36180 | (49779) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (49786) | 16.2 | 0.15 | 20060922 | 85.23528 | 0.78271 | 337.23520 | 4.59856 | 0.1346097 | 2.2188805 | 137 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36183 | (49786) |
| (49787) | 14.9 | 0.15 | 20060922 | 325.46708 | 208.50828 | 250.49895 | 24.43503 | 0.2295954 | 2.2786598 | 150 | 7 | 1983–2006 | 0.51 | M-v | 1 | MPC | 36183 | (49787) |
| (49788) | 15.8 | 0.15 | 20060922 | 284.29925 | 318.58832 | 178.15163 | 6.49967 | 0.0548776 | 2.2869417 | 192 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 36183 | (49788) |
| (49789) | 14.6 | 0.15 | 20060922 | 236.11358 | 22.68810 | 147.15843 | 3.11866 | 0.1230465 | 2.4504748 | 392 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36184 | (49789) |
| (49790) | 15.6 | 0.15 | 20060922 | 263.21153 | 42.35353 | 112.24462 | 2.51709 | 0.1665917 | 2.2771645 | 402 | 7 | 1980–2006 | 0.54 | M-v | 0 | MPC | 36184 | (49790) |
| (49794) | 15.6 | 0.15 | 20060922 | 153.86243 | 158.38136 | 161.61444 | 2.29231 | 0.2030830 | 2.2218657 | 476 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36186 | (49794) |
| (49795) | 15.3 | 0.15 | 20060922 | 339.63110 | 322.56208 | 150.27296 | 3.75306 | 0.1530444 | 2.2896364 | 245 | 7 | 1985–2006 | 0.60 | M-v | 1 | MPC | 36186 | (49795) |
| (49797) | 14.6 | 0.15 | 20060922 | 282.38429 | 263.91492 | 300.84011 | 4.26183 | 0.1364956 | 2.2655769 | 318 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36187 | (49797) |
| (49800) | 15.6 | 0.15 | 20060922 | 318.50805 | 270.87471 | 179.22884 | 2.48095 | 0.1388655 | 2.3986449 | 293 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 36188 | (49800) |
| (49805) | 14.6 | 0.15 | 20060922 | 342.56998 | 325.53252 | 107.86396 | 12.79502 | 0.1199341 | 2.3301770 | 201 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36190 | (49805) |
| (49808) | 14.3 | 0.15 | 20060922 | 341.20715 | 328.92815 | 105.94366 | 13.01396 | 0.1058865 | 2.3864100 | 188 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36192 | (49808) |
| (49810) | 15.4 | 0.15 | 20060922 | 188.12057 | 336.16827 | 248.10716 | 4.34387 | 0.1204647 | 2.2835735 | 331 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36192 | (49810) |
| (49812) | 16.1 | 0.15 | 20060922 | 312.99592 | 221.45812 | 251.48982 | 6.06844 | 0.0783733 | 2.2696256 | 105 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 36193 | (49812) |
| (49813) | 15.9 | 0.15 | 20060922 | 68.40991 | 276.99220 | 70.59649 | 4.13141 | 0.1893893 | 2.2344979 | 148 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 36193 | (49813) |
| (49816) | 14.9 | 0.15 | 20060922 | 242.83102 | 336.40316 | 220.54721 | 4.01918 | 0.0841433 | 2.2574917 | 382 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36195 | (49816) |
| (49818) | 15.7 | 0.15 | 20060922 | 274.86541 | 291.64823 | 213.02324 | 1.57174 | 0.1614453 | 2.3221656 | 235 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 36196 | (49818) |
| (49820) | 14.8 | 0.15 | 20060922 | 216.94427 | 309.30911 | 259.65000 | 5.45464 | 0.1153932 | 2.2923503 | 363 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36196 | (49820) |
| (49824) | 14.8 | 0.15 | 20060922 | 124.98502 | 238.27305 | 87.96365 | 5.20566 | 0.0996643 | 2.2153350 | 361 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36198 | (49824) |
| (49825) | 15.3 | 0.15 | 20060922 | 258.19407 | 86.84176 | 85.77179 | 5.38667 | 0.0807659 | 2.3000799 | 186 | 7 | 1978–2006 | 0.63 | M-v | 1 | MPC | 36198 | (49825) |
| (49826) | 15.6 | 0.15 | 20060922 | 171.16212 | 100.75325 | 127.76218 | 2.90656 | 0.0776853 | 2.3615961 | 277 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36199 | (49826) |
| (49827) | 15.0 | 0.15 | 20060922 | 116.78557 | 69.28506 | 235.46699 | 4.20056 | 0.1665687 | 2.2830376 | 208 | 7 | 1991–2006 | 0.67 | M-v | 1 | MPC | 36199 | (49827) |
| (49831) | 15.8 | 0.15 | 20060922 | 266.85003 | 20.49340 | 119.02586 | 3.42500 | 0.1339567 | 2.3861557 | 182 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 36200 | (49831) |
| (49832) | 13.9 | 0.15 | 20060922 | 197.92973 | 146.10533 | 112.04172 | 8.82667 | 0.1306137 | 2.2682241 | 348 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36201 | (49832) |
| (49837) | 14.5 | 0.15 | 20060922 | 49.93404 | 266.24060 | 95.39668 | 9.17739 | 0.2048837 | 2.3055874 | 220 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 36202 | (49837) |
| (49842) | 15.1 | 0.15 | 20060922 | 267.99605 | 80.08091 | 101.53658 | 8.03675 | 0.0672965 | 2.2928466 | 261 | 7 | 1955–2006 | 0.55 | M-v | 1 | MPC | 36204 | (49842) |
| (49848) | 14.3 | 0.15 | 20060922 | 81.03942 | 36.08711 | 296.58089 | 6.03768 | 0.1307703 | 2.3591037 | 275 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 36206 | (49848) |
| (49851) | 14.8 | 0.15 | 20060922 | 344.26242 | 54.47019 | 22.27724 | 5.80277 | 0.1060462 | 2.3136686 | 300 | 7 | 1995–2006 | 0.61 | M-v | 0 | MPC | 36208 | (49851) |
| (49858) | 14.9 | 0.15 | 20060922 | 219.83875 | 95.30054 | 77.14272 | 6.67599 | 0.2943423 | 2.4621738 | 236 | 7 | 1991–2006 | 0.51 | M-v | 1 | MPC | 36210 | (49858) |
| (49863) | 15.7 | 0.15 | 20060922 | 111.11961 | 56.79329 | 291.40787 | 2.04719 | 0.1687771 | 2.1768060 | 276 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 57648 | (49863) |
| (49867) | 14.9 | 0.15 | 20060922 | 9.91956 | 352.73273 | 34.52503 | 10.46050 | 0.2230827 | 2.3662106 | 177 | 7 | 1995–2006 | 0.59 | M-v | 1 | MPC | 36213 | (49867) |
| (49875) | 15.9 | 0.15 | 20060922 | 209.16936 | 174.73906 | 17.10540 | 7.23136 | 0.0758449 | 2.3421182 | 186 | 7 | 1995–2006 | 0.61 | M-v | 1 | MPC | 36217 | (49875) |
| (49876) | 14.1 | 0.15 | 20060922 | 152.46951 | 320.36673 | 290.42537 | 11.41123 | 0.1743679 | 2.3347390 | 271 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36217 | (49876) |
| (49877) | 14.9 | 0.15 | 20060922 | 216.83214 | 233.46996 | 336.09234 | 9.62650 | 0.1147038 | 2.3373586 | 304 | 9 | 1991–2006 | 0.55 | M-v | 1 | MPC | 36217 | (49877) |
| (49881) | 16.3 | 0.15 | 20060922 | 197.28924 | 80.98766 | 115.18751 | 1.51721 | 0.1578010 | 2.3566276 | 182 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 36219 | (49881) |
| (49884) | 15.2 | 0.15 | 20060922 | 220.63750 | 140.05291 | 39.21882 | 7.48864 | 0.0612348 | 2.3404010 | 306 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 36220 | (49884) |
| (49885) | 16.2 | 0.15 | 20060922 | 145.07415 | 214.16381 | 72.06501 | 5.29219 | 0.1909686 | 2.2103582 | 177 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36220 | (49885) |
| (49886) | 14.5 | 0.15 | 20060922 | 260.90843 | 201.86396 | 318.62899 | 1.59216 | 0.1496186 | 2.3735957 | 498 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36221 | (49886) |
| (49901) | 15.1 | 0.15 | 20060922 | 114.66984 | 285.76507 | 88.53365 | 6.60857 | 0.0730633 | 2.1972432 | 339 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 36226 | (49901) |
| (49907) | 14.2 | 0.15 | 20060922 | 285.42183 | 114.08060 | 63.30717 | 7.38084 | 0.0469783 | 2.3228471 | 367 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36228 | (49907) |
| (49908) | 14.1 | 0.15 | 20060922 | 273.90495 | 259.99359 | 283.62939 | 7.99073 | 0.1104976 | 2.2467241 | 309 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 36228 | (49908) |
| (49910) | 14.4 | 0.15 | 20060922 | 302.68390 | 185.27053 | 325.24737 | 4.06685 | 0.1323550 | 2.2787217 | 289 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 57648 | (49910) |
| (49912) | 15.2 | 0.15 | 20060922 | 237.20696 | 144.85388 | 46.20415 | 6.14950 | 0.1287748 | 2.3413840 | 270 | 10 | 1991–2006 | 0.58 | M-v | 1 | MPC | 36230 | (49912) |
| (49913) | 15.1 | 0.15 | 20060922 | 28.89939 | 86.86405 | 347.49367 | 3.92803 | 0.1055805 | 2.2271917 | 236 | 7 | 1977–2006 | 0.52 | M-v | 0 | MPC | 36230 | (49913) |
| (49914) | 16.2 | 0.15 | 20060922 | 342.94761 | 352.68908 | 56.48047 | 3.35627 | 0.1897896 | 2.3633579 | 148 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 36231 | (49914) |
| (49915) | 14.7 | 0.15 | 20060922 | 15.59526 | 107.63161 | 323.09042 | 4.60311 | 0.1248175 | 2.2632905 | 256 | 7 | 1980–2006 | 0.53 | M-v | 0 | MPC | 36231 | (49915) |
| (49920) | 14.6 | 0.15 | 20060922 | 271.93172 | 74.62924 | 72.14051 | 9.41421 | 0.1325346 | 2.3755576 | 332 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 36233 | (49920) |
| (49922) | 15.4 | 0.15 | 20060922 | 345.46251 | 310.32365 | 80.38122 | 9.47653 | 0.1669997 | 2.4182070 | 165 | 7 | 1997–2006 | 0.49 | M-v | 0 | MPC | 36233 | (49922) |
| (49924) | 14.0 | 0.15 | 20060922 | 345.98272 | 79.20055 | 46.54305 | 5.99744 | 0.0934361 | 2.2463413 | 342 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 36234 | (49924) |
| (49926) | 15.8 | 0.15 | 20060922 | 28.22669 | 336.58808 | 45.97473 | 5.63828 | 0.2084354 | 2.3260849 | 195 | 7 | 1994–2006 | 0.59 | M-v | 1 | MPC | 36235 | (49926) |
| (49933) | 15.4 | 0.15 | 20060922 | 9.87852 | 345.39889 | 75.76697 | 6.95390 | 0.1828055 | 2.3054551 | 195 | 7 | 1993–2006 | 0.58 | M-v | 1 | MPC | 36238 | (49933) |
| (49950) | 15.0 | 0.15 | 20060922 | 143.10430 | 225.75686 | 44.36194 | 7.24843 | 0.0924033 | 2.3650674 | 261 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36243 | (49950) |
| (49954) | 15.7 | 0.15 | 20060922 | 273.45054 | 34.47444 | 103.89217 | 3.39087 | 0.1035397 | 2.3809242 | 177 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 36245 | (49954) |
| (49956) | 14.5 | 0.15 | 20060922 | 281.18418 | 325.80781 | 225.71351 | 9.64623 | 0.1673963 | 2.3116346 | 306 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36246 | (49956) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (49959) | 15.1 | 0.15 | 20060922 | 80.70390 | 251.50585 | 98.67844 | 5.86465 | 0.1798661 | 2.2857344 | 282 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 36247 | (49959) |
| (49960) | 16.1 | 0.15 | 20060922 | 315.63603 | 354.02622 | 96.76345 | 5.26718 | 0.0779761 | 2.3793388 | 152 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 36247 | (49960) |
| (49961) | 16.5 | 0.15 | 20060922 | 94.08288 | 247.28414 | 91.46404 | 4.34791 | 0.1522126 | 2.2888486 | 127 | 7 | 1995–2006 | 0.48 | M-v | 0 | MPC | 36248 | (49961) |
| (49963) | 15.8 | 0.15 | 20060922 | 49.82282 | 227.72247 | 92.65550 | 5.69651 | 0.2043795 | 2.4417601 | 186 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36248 | (49963) |
| (49974) | 14.8 | 0.15 | 20060922 | 192.59323 | 268.25244 | 330.80910 | 1.71689 | 0.1903143 | 2.3717630 | 356 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36252 | (49974) |
| (49977) | 15.7 | 0.15 | 20060922 | 200.16835 | 115.01290 | 97.91589 | 5.89407 | 0.0689575 | 2.3670355 | 176 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 36253 | (49977) |
| (49978) | 14.2 | 0.15 | 20060922 | 41.80290 | 344.48611 | 13.06203 | 25.75944 | 0.2220680 | 2.3379790 | 220 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 36253 | (49978) |
| (49981) | 14.3 | 0.15 | 20060922 | 192.69420 | 142.42755 | 130.53790 | 8.39719 | 0.1500807 | 2.2818316 | 326 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36254 | (49981) |
| (49984) | 15.0 | 0.15 | 20060922 | 108.38860 | 162.16282 | 131.48230 | 6.66507 | 0.1170076 | 2.4419938 | 178 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36255 | (49984) |
| (49985) | 15.4 | 0.15 | 20060922 | 20.35869 | 292.37973 | 125.70023 | 5.85737 | 0.1206876 | 2.3014775 | 237 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 36255 | (49985) |
| (49990) | 14.9 | 0.15 | 20060922 | 260.44924 | 67.89055 | 91.51142 | 6.45710 | 0.0575243 | 2.3524478 | 247 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36257 | (49990) |
| (49991) | 15.4 | 0.15 | 20060922 | 37.25530 | 186.29517 | 123.67550 | 6.39739 | 0.2083419 | 2.5805217 | 188 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36257 | (49991) |
| (50002) | 13.8 | 0.15 | 20060922 | 226.29008 | 227.78097 | 322.34856 | 4.33085 | 0.0473216 | 2.3356438 | 271 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36261 | (50002) |
| (50005) | 14.5 | 0.15 | 20060922 | 179.14005 | 307.46015 | 264.48120 | 8.12513 | 0.1532076 | 2.3834049 | 229 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36262 | (50005) |
| (50015) | 14.5 | 0.15 | 20060922 | 158.08625 | 153.11847 | 93.08618 | 7.24317 | 0.0894785 | 2.4240587 | 305 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36265 | (50015) |
| (50016) | 15.6 | 0.15 | 20060922 | 116.20870 | 277.43250 | 49.98361 | 2.18638 | 0.0703909 | 2.3005345 | 323 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36265 | (50016) |
| (50018) | 15.2 | 0.15 | 20060922 | 119.36132 | 222.81488 | 66.19153 | 6.79318 | 0.1082175 | 2.4013000 | 223 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36266 | (50018) |
| (50023) | 14.8 | 0.15 | 20060922 | 143.29568 | 298.46291 | 318.71734 | 2.21985 | 0.1184513 | 2.4256831 | 253 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36268 | (50023) |
| (50035) | 15.3 | 0.15 | 20060922 | 40.70795 | 255.69171 | 147.21749 | 3.07510 | 0.1086611 | 2.2879680 | 293 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 36272 | (50035) |
| (50045) | 14.9 | 0.15 | 20060922 | 183.60729 | 120.06376 | 103.42359 | 5.93259 | 0.1406678 | 2.4584171 | 313 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36275 | (50045) |
| (50060) | 14.9 | 0.15 | 20060922 | 278.08784 | 117.26217 | 96.30448 | 6.21685 | 0.1032894 | 2.2705410 | 321 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36281 | (50060) |
| (50063) | 15.3 | 0.15 | 20060922 | 143.28191 | 190.30935 | 106.46093 | 9.36992 | 0.0974997 | 2.2364083 | 245 | 9 | 1991–2006 | 0.55 | M-v | 1 | MPC | 36282 | (50063) |
| (50064) | 15.0 | 0.15 | 20060922 | 106.65954 | 159.59698 | 117.87115 | 7.92818 | 0.1071937 | 2.3768175 | 264 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36282 | (50064) |
| (50065) | 15.0 | 0.15 | 20060922 | 270.12964 | 347.94231 | 141.49057 | 5.39714 | 0.1651609 | 2.3824769 | 318 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 36282 | (50065) |
| (50066) | 15.7 | 0.15 | 20060922 | 351.78417 | 323.39778 | 144.15188 | 5.64240 | 0.0895730 | 2.2347586 | 240 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 36283 | (50066) |
| (50068) | 15.0 | 0.15 | 20060922 | 212.91157 | 68.52776 | 146.27928 | 5.33506 | 0.1755116 | 2.3468994 | 233 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 36283 | (50068) |
| (50069) | 15.0 | 0.15 | 20060922 | 43.25947 | 234.46102 | 114.42153 | 7.51531 | 0.1362333 | 2.3530887 | 190 | 7 | 1997–2006 | 0.62 | M-v | 0 | MPC | 36283 | (50069) |
| (50075) | 15.2 | 0.15 | 20060922 | 304.79902 | 287.56477 | 195.45615 | 2.00605 | 0.1656185 | 2.3443152 | 219 | 8 | 1995–2006 | 0.52 | M-v | 0 | MPC | 36285 | (50075) |
| (50077) | 15.5 | 0.15 | 20060922 | 10.09701 | 171.90942 | 276.63402 | 2.44959 | 0.0334316 | 2.2709842 | 268 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 36286 | (50077) |
| (50081) | 15.0 | 0.15 | 20060922 | 328.61044 | 213.68485 | 268.98293 | 4.16102 | 0.0787707 | 2.2994460 | 301 | 7 | 1992–2006 | 0.53 | M-v | 0 | MPC | 36287 | (50081) |
| (50082) | 15.0 | 0.15 | 20060922 | 256.95263 | 62.54409 | 133.81157 | 7.08946 | 0.0551957 | 2.3091523 | 229 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 36288 | (50082) |
| (50085) | 14.8 | 0.15 | 20060922 | 74.30234 | 72.90067 | 287.46205 | 5.61530 | 0.1602474 | 2.2945553 | 329 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36289 | (50085) |
| (50086) | 14.4 | 0.15 | 20060922 | 98.04225 | 50.79675 | 288.55496 | 6.18261 | 0.1543536 | 2.3021789 | 286 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 36289 | (50086) |
| (50090) | 14.6 | 0.15 | 20060922 | 257.25063 | 26.33455 | 137.02394 | 13.60665 | 0.1480136 | 2.4319988 | 259 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 36290 | (50090) |
| (50093) | 14.9 | 0.15 | 20060922 | 35.53930 | 55.48794 | 72.09117 | 4.44220 | 0.1069025 | 2.1819847 | 298 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 36292 | (50093) |
| (50100) | 15.7 | 0.15 | 20060922 | 30.71193 | 291.73982 | 101.47624 | 9.82256 | 0.1427907 | 2.2448135 | 121 | 7 | 1991–2006 | 0.54 | M-v | 1 | MPC | 36294 | (50100) |
| (50105) | 14.4 | 0.15 | 20060922 | 294.35951 | 267.65760 | 233.94116 | 5.55440 | 0.0837533 | 2.3215333 | 337 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 36296 | (50105) |
| (50112) | 13.8 | 0.15 | 20060922 | 183.28771 | 350.15837 | 256.87161 | 6.65111 | 0.1577541 | 2.3741068 | 411 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36298 | (50112) |
| (50121) | 15.3 | 0.15 | 20060922 | 287.48947 | 240.98517 | 240.12756 | 6.48367 | 0.0654172 | 2.3888598 | 213 | 7 | 1997–2006 | 0.50 | M-v | 0 | MPC | 36302 | (50121) |
| (50124) | 15.1 | 0.15 | 20060922 | 302.15745 | 352.42978 | 164.03391 | 7.18659 | 0.0380303 | 2.2944014 | 296 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36303 | (50124) |
| (50125) | 15.9 | 0.15 | 20060922 | 37.57318 | 265.41684 | 169.15503 | 3.66791 | 0.1244975 | 2.2377743 | 262 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 36303 | (50125) |
| (50126) | 15.4 | 0.15 | 20060922 | 3.43112 | 146.11505 | 261.39773 | 5.64545 | 0.1703547 | 2.3569429 | 147 | 7 | 1995–2006 | 0.56 | M-v | 1 | MPC | 36303 | (50126) |
| (50132) | 14.3 | 0.15 | 20060922 | 8.18032 | 272.54234 | 145.13033 | 4.52726 | 0.0523235 | 2.3560831 | 391 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 36306 | (50132) |
| (50133) | 15.5 | 0.15 | 20060922 | 33.55036 | 259.03121 | 149.11336 | 6.82776 | 0.1147239 | 2.3041439 | 234 | 7 | 1993–2006 | 0.57 | M-v | 1 | MPC | 36306 | (50133) |
| (50141) | 15.8 | 0.15 | 20060922 | 92.85360 | 216.12437 | 158.59497 | 5.04223 | 0.1646322 | 2.2438899 | 300 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36309 | (50141) |
| (50145) | 15.6 | 0.15 | 20060922 | 26.79879 | 86.28535 | 322.24937 | 3.68123 | 0.0786699 | 2.2820828 | 219 | 7 | 1995–2006 | 0.60 | M-v | 1 | MPC | 36311 | (50145) |
| (50148) | 14.9 | 0.15 | 20060922 | 258.38779 | 95.69592 | 84.08953 | 7.49861 | 0.0799649 | 2.3893739 | 288 | 7 | 1998–2006 | 0.63 | M-v | 1 | MPC | 36311 | (50148) |
| (50151) | 16.2 | 0.15 | 20060922 | 310.48151 | 267.11612 | 204.30805 | 5.01020 | 0.1802275 | 2.3647676 | 147 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 36312 | (50151) |
| (50159) | 14.8 | 0.15 | 20060922 | 282.57105 | 223.92444 | 287.93175 | 5.58344 | 0.0702559 | 2.4009084 | 243 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36315 | (50159) |
| (50164) | 15.1 | 0.15 | 20060922 | 44.88942 | 314.24088 | 78.62243 | 6.22702 | 0.1933127 | 2.3225390 | 229 | 7 | 1994–2006 | 0.53 | M-v | 1 | MPC | 36317 | (50164) |
| (50166) | 14.3 | 0.15 | 20060922 | 212.60735 | 328.43625 | 259.50162 | 11.53854 | 0.1109711 | 2.3532119 | 207 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 36318 | (50166) |
| (50167) | 14.9 | 0.15 | 20060922 | 282.11472 | 181.93709 | 272.41001 | 5.92553 | 0.0734413 | 2.3835059 | 202 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 36318 | (50167) |
| (50171) | 14.1 | 0.15 | 20060922 | 69.50556 | 188.60076 | 95.47417 | 12.81858 | 0.1525057 | 2.5412385 | 265 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 36319 | (50171) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (50177) | 15.4 | 0.15 | 20060922 | 0.82814 | 163.98328 | 248.66943 | 6.23589 | 0.1022811 | 2.3473024 | 118 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 36321 | (50177) |
| (50185) | 14.1 | 0.15 | 20060922 | 195.04282 | 109.16456 | 101.49433 | 22.21329 | 0.2643255 | 2.3826752 | 213 | 7 | 1997–2006 | 0.50 | M-v | 1 | MPC | 36324 | (50185) |
| (50186) | 16.1 | 0.15 | 20060922 | 24.11368 | 212.49744 | 187.88029 | 6.02828 | 0.1043908 | 2.2912265 | 147 | 6 | 1995–2004 | 0.60 | M-v | 1 | MPC | 36324 | (50186) |
| (50187) | 15.2 | 0.15 | 20060922 | 237.52475 | 26.04842 | 162.77448 | 9.50680 | 0.1374122 | 2.3210005 | 191 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 36325 | (50187) |
| (50188) | 16.4 | 0.15 | 20060922 | 310.35374 | 287.18875 | 169.05716 | 7.15701 | 0.0650486 | 2.3874853 | 125 | 7 | 1993–2006 | 0.59 | M-v | 0 | MPC | 36325 | (50188) |
| (50195) | 14.8 | 0.15 | 20060922 | 153.81869 | 43.65845 | 245.09624 | 9.61615 | 0.1739952 | 2.3577021 | 289 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36327 | (50195) |
| (50198) | 14.1 | 0.15 | 20060922 | 179.82495 | 284.99359 | 274.95290 | 12.85435 | 0.1317117 | 2.5491565 | 286 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36329 | (50198) |
| (50202) | 15.0 | 0.15 | 20060922 | 189.65306 | 258.10113 | 285.08502 | 13.32881 | 0.1410275 | 2.6051768 | 170 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36330 | (50202) |
| (50203) | 14.2 | 0.15 | 20060922 | 112.18925 | 31.59382 | 259.39650 | 12.46880 | 0.1558005 | 2.5513826 | 313 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36331 | (50203) |
| (50209) | 15.8 | 0.15 | 20060922 | 114.76716 | 62.21118 | 248.68254 | 1.58282 | 0.1909358 | 2.2587839 | 183 | 10 | 1992–2006 | 0.53 | M-v | 0 | MPC | 36333 | (50209) |
| (50211) | 14.3 | 0.15 | 20060922 | 72.29010 | 167.28289 | 120.93766 | 8.23387 | 0.2232575 | 2.5542904 | 393 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36333 | (50211) |
| (50217) | 15.2 | 0.15 | 20060922 | 306.96686 | 235.64749 | 273.37527 | 6.32011 | 0.0538775 | 2.3454698 | 258 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36336 | (50217) |
| (50231) | 14.4 | 0.15 | 20060922 | 204.97742 | 247.48812 | 291.20095 | 13.64106 | 0.1286568 | 2.5785775 | 253 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36340 | (50231) |
| (50234) | 15.2 | 0.15 | 20060922 | 104.47266 | 9.19517 | 287.84399 | 5.61621 | 0.1200970 | 2.4100502 | 203 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36341 | (50234) |
| (50239) | 14.1 | 0.15 | 20060922 | 107.01816 | 181.06358 | 113.87453 | 5.97070 | 0.1064628 | 2.4743542 | 386 | 9 | 1992–2006 | 0.52 | M-v | 0 | MPC | 36343 | (50239) |
| (50242) | 15.4 | 0.15 | 20060922 | 189.08048 | 289.46781 | 278.67790 | 0.41700 | 0.1274735 | 2.4420837 | 243 | 9 | 1991–2006 | 0.50 | M-v | 0 | MPC | 36344 | (50242) |
| (50248) | 15.3 | 0.15 | 20060922 | 62.86675 | 309.73830 | 32.33149 | 7.44609 | 0.1264435 | 2.3837725 | 152 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 36347 | (50248) |
| (50258) | 14.0 | 0.15 | 20060922 | 124.79107 | 299.89481 | 316.93100 | 14.52419 | 0.1530858 | 2.5480541 | 232 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 36350 | (50258) |
| (50262) | 15.4 | 0.15 | 20060922 | 328.18787 | 125.98726 | 330.57161 | 1.82352 | 0.1847748 | 2.3612171 | 209 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 36352 | (50262) |
| (50269) | 14.8 | 0.15 | 20060922 | 149.62043 | 321.59228 | 311.00704 | 6.50391 | 0.0988970 | 2.3197223 | 307 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36354 | (50269) |
| (50270) | 16.2 | 0.15 | 20060922 | 344.59826 | 345.60414 | 125.80455 | 3.71069 | 0.0987150 | 2.3108299 | 168 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 36354 | (50270) |
| (50274) | 15.7 | 0.15 | 20060922 | 269.37973 | 196.33769 | 341.52174 | 1.94260 | 0.0824743 | 2.3545417 | 237 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 36356 | (50274) |
| (50276) | 13.7 | 0.15 | 20060922 | 138.78505 | 118.55635 | 120.76762 | 15.38255 | 0.0607060 | 2.5873942 | 293 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36357 | (50276) |
| (50286) | 15.8 | 0.15 | 20060922 | 355.19893 | 237.46925 | 176.73337 | 1.06336 | 0.1741294 | 2.3803829 | 171 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 36360 | (50286) |
| (50289) | 14.5 | 0.15 | 20060922 | 125.40380 | 95.51456 | 171.30462 | 5.04175 | 0.1654551 | 2.5283805 | 292 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36361 | (50289) |
| (50303) | 14.9 | 0.15 | 20060922 | 36.54815 | 99.07942 | 330.70267 | 4.62951 | 0.1780802 | 2.2806444 | 270 | 7 | 1964–2006 | 0.58 | M-v | 0 | MPC | 36366 | (50303) |
| (50324) | 14.1 | 0.15 | 20060922 | 185.42055 | 80.88722 | 167.68172 | 6.32267 | 0.0992077 | 2.4482951 | 461 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 36373 | (50324) |
| (50335) | 14.1 | 0.15 | 20060922 | 313.13256 | 68.58351 | 68.29285 | 9.89904 | 0.0904442 | 2.4142211 | 348 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36378 | (50335) |
| (50337) | 16.1 | 0.15 | 20060922 | 312.12267 | 329.57225 | 167.37365 | 2.24970 | 0.1624241 | 2.3461075 | 133 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 36379 | (50337) |
| (50353) | 14.4 | 0.15 | 20060922 | 254.50130 | 254.30480 | 279.39246 | 4.33971 | 0.1638085 | 2.4363825 | 346 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 36384 | (50353) |
| (50357) | 15.5 | 0.15 | 20060922 | 316.43271 | 201.75412 | 268.20503 | 2.14076 | 0.1266066 | 2.4125016 | 232 | 8 | 1989–2006 | 0.58 | M-v | 0 | MPC | 36386 | (50357) |
| (50359) | 15.0 | 0.15 | 20060922 | 292.46888 | 307.02569 | 165.83614 | 6.74318 | 0.0561763 | 2.3795966 | 296 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36386 | (50359) |
| (50361) | 15.1 | 0.15 | 20060922 | 267.23479 | 351.47993 | 151.69885 | 7.03777 | 0.0622524 | 2.4575737 | 291 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 36387 | (50361) |
| (50369) | 14.3 | 0.15 | 20060922 | 84.16106 | 128.78655 | 138.21700 | 13.76994 | 0.1309353 | 2.6614638 | 271 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 36390 | (50369) |
| (50372) | 14.5 | 0.15 | 20060922 | 134.84949 | 266.06300 | 335.36078 | 14.39399 | 0.1626390 | 2.6027027 | 215 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 36391 | (50372) |
| (50373) | 16.1 | 0.15 | 20060922 | 260.58686 | 201.80580 | 340.41700 | 4.88466 | 0.1653473 | 2.3906343 | 189 | 7 | 1994–2006 | 0.50 | M-v | 0 | MPC | 36392 | (50373) |
| (50381) | 13.7 | 0.15 | 20060922 | 35.22795 | 202.41083 | 133.85198 | 13.27356 | 0.1808816 | 2.5907683 | 344 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36395 | (50381) |
| (50383) | 14.5 | 0.15 | 20060922 | 114.71968 | 235.48796 | 28.49721 | 6.72708 | 0.1175633 | 2.6082248 | 196 | 7 | 1990–2006 | 0.54 | M-v | 0 | MPC | 36395 | (50383) |
| (50396) | 15.4 | 0.15 | 20060922 | 306.87861 | 349.40979 | 153.92795 | 6.69083 | 0.1246094 | 2.3902218 | 203 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36400 | (50396) |
| (50400) | 15.1 | 0.15 | 20060922 | 247.89137 | 179.02732 | 325.81893 | 8.15536 | 0.0951029 | 2.5284308 | 189 | 7 | 1998–2006 | 0.65 | M-v | 1 | MPC | 36402 | (50400) |
| (50403) | 12.8 | 0.15 | 20060922 | 93.45011 | 308.20468 | 42.19189 | 23.33640 | 0.1968243 | 2.3154970 | 332 | 7 | 1998–2006 | 0.48 | M-v | 0 | MPC | 36403 | (50403) |
| (50432) | 16.1 | 0.15 | 20060922 | 304.07330 | 333.76756 | 170.42282 | 2.70994 | 0.1353240 | 2.3383722 | 176 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 36413 | (50432) |
| (50438) | 14.9 | 0.15 | 20060922 | 48.25008 | 162.96560 | 167.28725 | 1.97327 | 0.1439454 | 2.5249252 | 311 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36415 | (50438) |
| (50449) | 15.5 | 0.15 | 20060922 | 345.28389 | 257.46217 | 172.09895 | 2.67250 | 0.1557400 | 2.3982595 | 185 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 36419 | (50449) |
| (50465) | 15.4 | 0.15 | 20060922 | 233.64275 | 7.28539 | 166.29285 | 6.17521 | 0.1123822 | 2.4902383 | 227 | 7 | 1994–2006 | 0.52 | M-v | 0 | MPC | 36424 | (50465) |
| (50469) | 16.2 | 0.15 | 20060922 | 317.74606 | 278.21530 | 206.04854 | 1.70483 | 0.1610775 | 2.3712722 | 144 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 36426 | (50469) |
| (50488) | 14.9 | 0.15 | 20060922 | 118.57672 | 276.97051 | 30.73895 | 6.54259 | 0.1367353 | 2.4195088 | 252 | 9 | 1960–2006 | 0.59 | M-v | 1 | MPC | 36432 | (50488) |
| (50490) | 15.7 | 0.15 | 20060922 | 287.45264 | 159.22499 | 355.69342 | 12.41155 | 0.0991197 | 2.3801025 | 104 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 36433 | (50490) |
| (50494) | 14.5 | 0.15 | 20060922 | 110.97701 | 156.95810 | 95.38738 | 3.69281 | 0.1626234 | 2.6224077 | 275 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36434 | (50494) |
| (50496) | 15.0 | 0.15 | 20060922 | 218.10478 | 83.41537 | 16.32030 | 3.35742 | 0.0336056 | 2.7054114 | 181 | 7 | 1996–2006 | 0.65 | M-v | 0 | MPC | 36435 | (50496) |
| (50506) | 14.6 | 0.15 | 20060922 | 103.02553 | 274.82686 | 37.38691 | 7.36860 | 0.1271623 | 2.4614093 | 313 | 9 | 1990–2006 | 0.54 | M-v | 0 | MPC | 36438 | (50506) |
| (50509) | 15.3 | 0.15 | 20060922 | 15.71412 | 318.04807 | 100.33773 | 5.35518 | 0.1337408 | 2.3651494 | 202 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 36439 | (50509) |
| (50514) | 14.7 | 0.15 | 20060922 | 48.74735 | 269.49550 | 76.95200 | 4.65674 | 0.1846741 | 2.5212825 | 193 | 7 | 1998–2006 | 0.51 | M-v | 1 | MPC | 36441 | (50514) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (50526) | 16.6 | 0.15 | 20060922 | 39.56463 | 206.64480 | 153.43667 | 2.64747 | 0.2228888 | 2.4229674 | 95 | 7 | 1996–2006 | 0.47 | M-v | 0 | MPC | 36444 | (50526) |
| (50528) | 14.0 | 0.15 | 20060922 | 136.46247 | 260.81905 | 345.47823 | 13.13729 | 0.1321899 | 2.5818172 | 252 | 7 | 1993–2006 | 0.53 | M-v | 0 | MPC | 36445 | (50528) |
| (50544) | 15.3 | 0.15 | 20060922 | 3.68336 | 41.71305 | 29.10658 | 7.24428 | 0.1596814 | 2.3391812 | 263 | 7 | 1982–2006 | 0.59 | M-v | 1 | MPC | 36451 | (50544) |
| (50547) | 15.4 | 0.15 | 20060922 | 5.69057 | 43.02144 | 21.42398 | 3.05660 | 0.1529604 | 2.3636354 | 191 | 7 | 1993–2006 | 0.60 | M-v | 1 | MPC | 36452 | (50547) |
| (50548) | 15.5 | 0.15 | 20060922 | 264.51997 | 85.46768 | 70.71978 | 2.25313 | 0.1279854 | 2.4383537 | 224 | 7 | 1996–2006 | 0.50 | M-v | 0 | MPC | 36452 | (50548) |
| (50562) | 14.6 | 0.15 | 20060922 | 180.98558 | 174.28268 | 133.02527 | 7.13200 | 0.1261645 | 2.2977927 | 373 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36458 | (50562) |
| (50570) | 16.5 | 0.15 | 20060922 | 357.94321 | 255.17526 | 209.66304 | 1.34610 | 0.1677715 | 2.3307138 | 203 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 36461 | (50570) |
| (50591) | 15.3 | 0.15 | 20060922 | 322.63098 | 320.73613 | 175.81301 | 2.25880 | 0.1449735 | 2.3633116 | 302 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36469 | (50591) |
| (50595) | 14.7 | 0.15 | 20060922 | 334.93922 | 180.81408 | 216.91232 | 2.84637 | 0.1262890 | 2.6224226 | 305 | 7 | 1997–2006 | 0.51 | M-v | 1 | MPC | 36471 | (50595) |
| (50602) | 14.5 | 0.15 | 20060922 | 7.00945 | 111.23985 | 311.40910 | 5.98282 | 0.1065584 | 2.4091859 | 307 | 9 | 1993–2006 | 0.53 | M-v | 0 | MPC | 36474 | (50602) |
| (50603) | 14.8 | 0.15 | 20060922 | 302.33183 | 293.48517 | 124.04633 | 5.96658 | 0.0459109 | 2.7132629 | 250 | 7 | 1995–2006 | 0.60 | M-v | 0 | MPC | 36474 | (50603) |
| (50611) | 15.9 | 0.15 | 20060922 | 294.71460 | 268.38470 | 231.54184 | 0.48266 | 0.1322215 | 2.4121737 | 177 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 36477 | (50611) |
| (50644) | 15.6 | 0.15 | 20060922 | 314.17481 | 47.93069 | 70.93098 | 3.25571 | 0.1521597 | 2.4126728 | 232 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36488 | (50644) |
| (50664) | 15.1 | 0.15 | 20060922 | 2.18268 | 192.13558 | 269.73067 | 7.11711 | 0.1363465 | 2.3666394 | 228 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 36495 | (50664) |
| (50666) | 13.8 | 0.15 | 20060922 | 326.20055 | 346.56042 | 110.48177 | 7.00522 | 0.1253719 | 2.4475698 | 393 | 8 | 1992–2006 | 0.53 | M-v | 0 | MPC | 36496 | (50666) |
| (50669) | 14.7 | 0.15 | 20060922 | 33.78844 | 353.24749 | 59.37169 | 9.64951 | 0.1698220 | 2.3931883 | 206 | 7 | 1987–2006 | 0.54 | M-v | 1 | MPC | 36497 | (50669) |
| (50709) | 16.0 | 0.15 | 20060922 | 325.11049 | 230.56916 | 228.77920 | 1.18012 | 0.1587497 | 2.4206227 | 220 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 36511 | (50709) |
| (50721) | 14.3 | 0.15 | 20060922 | 331.19770 | 3.51605 | 81.43070 | 9.50977 | 0.1575218 | 2.4881904 | 304 | 7 | 1998–2006 | 0.51 | M-v | 1 | MPC | 36515 | (50721) |
| (50724) | 15.1 | 0.15 | 20060922 | 238.34276 | 281.86037 | 220.39621 | 4.64399 | 0.1959013 | 2.5718131 | 237 | 9 | 1993–2006 | 0.49 | M-v | 0 | MPC | 36516 | (50724) |
| (50725) | 14.7 | 0.15 | 20060922 | 251.23339 | 256.78198 | 204.10386 | 15.08786 | 0.0981843 | 2.6139277 | 176 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36517 | (50725) |
| (50729) | 14.9 | 0.15 | 20060922 | 277.09318 | 265.37765 | 269.70926 | 1.29604 | 0.1442983 | 2.4128074 | 291 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36518 | (50729) |
| (50748) | 14.4 | 0.15 | 20060922 | 85.29698 | 157.97338 | 141.11327 | 14.25554 | 0.1550158 | 2.6249953 | 198 | 10 | 1980–2006 | 0.57 | M-v | 1 | MPC | 36524 | (50748) |
| (50750) | 13.7 | 0.15 | 20060922 | 49.89081 | 270.96199 | 58.28571 | 13.06397 | 0.2164047 | 2.6154114 | 240 | 7 | 1993–2006 | 0.51 | M-v | 0 | MPC | 77332 | (50750) |
| (50751) | 14.6 | 0.15 | 20060922 | 132.47423 | 214.50397 | 46.38286 | 15.59595 | 0.1197440 | 2.5544041 | 209 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36525 | (50751) |
| (50808) | 14.8 | 0.15 | 20060922 | 308.87565 | 154.16396 | 337.92872 | 5.06104 | 0.2354342 | 2.3972694 | 226 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 36545 | (50808) |
| (50819) | 14.1 | 0.15 | 20060922 | 319.16461 | 284.42371 | 136.12943 | 15.35082 | 0.0446571 | 2.5958882 | 176 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 36549 | (50819) |
| (50846) | 14.8 | 0.15 | 20060922 | 317.08024 | 12.41514 | 68.46718 | 10.16223 | 0.0471089 | 2.5518106 | 171 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 36558 | (50846) |
| (50855) | 14.7 | 0.15 | 20060922 | 85.49350 | 80.82941 | 212.48880 | 10.07638 | 0.1797500 | 2.6180322 | 224 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 36561 | (50855) |
| (50865) | 14.1 | 0.15 | 20060922 | 81.50821 | 249.13608 | 97.75993 | 6.87462 | 0.0578907 | 2.4498472 | 260 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36564 | (50865) |
| (50872) | 14.3 | 0.15 | 20060922 | 41.66377 | 150.68184 | 244.05424 | 1.71861 | 0.1628888 | 2.4105849 | 376 | 7 | 1983–2006 | 0.53 | M-v | 0 | MPC | 36567 | (50872) |
| (50873) | 14.9 | 0.15 | 20060922 | 218.56958 | 331.20038 | 197.25712 | 8.80205 | 0.1345270 | 2.5793066 | 209 | 7 | 1992–2006 | 0.61 | M-v | 1 | MPC | 36567 | (50873) |
| (50875) | 15.8 | 0.15 | 20060922 | 13.60070 | 149.54650 | 210.50937 | 2.50419 | 0.0980443 | 2.6652377 | 159 | 7 | 1997–2006 | 0.51 | M-v | 0 | MPC | 36568 | (50875) |
| (50888) | 15.6 | 0.15 | 20060922 | 315.87685 | 125.66611 | 22.76399 | 2.62969 | 0.1520208 | 2.3706275 | 226 | 9 | 1994–2006 | 0.63 | M-v | 0 | MPC | 36573 | (50888) |
| (50927) | 13.8 | 0.15 | 20060922 | 88.92583 | 66.76797 | 208.93009 | 13.18443 | 0.0136158 | 2.7315871 | 402 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 36588 | (50927) |
| (50943) | 14.6 | 0.15 | 20060922 | 238.81558 | 110.15359 | 36.41458 | 11.65392 | 0.0640690 | 2.6457258 | 266 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36593 | (50943) |
| (50948) | 15.5 | 0.15 | 20060922 | 227.03049 | 124.98174 | 36.06437 | 13.45177 | 0.1097266 | 2.6331643 | 232 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36595 | (50948) |
| (50962) | 15.5 | 0.15 | 20060922 | 336.73503 | 40.43397 | 51.15601 | 8.02335 | 0.0730087 | 2.4371395 | 202 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 36600 | (50962) |
| (50964) | 14.0 | 0.15 | 20060922 | 161.16975 | 175.23269 | 71.08291 | 14.32289 | 0.1052551 | 2.5843791 | 348 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36601 | (50964) |
| (50969) | 14.3 | 0.15 | 20060922 | 294.64062 | 29.40069 | 101.68204 | 7.05789 | 0.0862458 | 2.4790216 | 413 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36603 | (50969) |
| (50993) | 13.5 | 0.15 | 20060922 | 14.28511 | 279.66906 | 88.34481 | 11.75082 | 0.1863662 | 2.6590463 | 210 | 8 | 1996–2006 | 0.53 | M-v | 0 | MPC | 77333 | (50993) |
| (50995) | 14.1 | 0.15 | 20060922 | 355.95846 | 92.65255 | 354.95221 | 4.97542 | 0.1293055 | 2.4479753 | 385 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36612 | (50995) |
| (51000) | 14.4 | 0.15 | 20060922 | 205.97225 | 284.42176 | 220.03663 | 10.76681 | 0.1495857 | 2.6913278 | 218 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36614 | (51000) |
| (51003) | 15.2 | 0.15 | 20060922 | 298.88907 | 241.95320 | 221.57274 | 10.14142 | 0.1325089 | 2.5382915 | 312 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 36615 | (51003) |
| (51021) | 15.8 | 0.15 | 20060922 | 334.28572 | 47.41941 | 68.60923 | 3.46792 | 0.1427916 | 2.4144663 | 190 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36622 | (51021) |
| (51025) | 15.3 | 0.15 | 20060922 | 263.75178 | 256.72818 | 206.28167 | 14.78582 | 0.0980790 | 2.6490670 | 156 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 36623 | (51025) |
| (51034) | 13.6 | 0.15 | 20060922 | 271.62325 | 84.79906 | 50.28387 | 22.95964 | 0.0399405 | 2.5858551 | 318 | 7 | 1989–2006 | 0.55 | M-v | 0 | MPC | 36626 | (51034) |
| (51046) | 13.1 | 0.15 | 20060922 | 302.07607 | 9.18540 | 87.16696 | 15.72125 | 0.0314481 | 2.6441431 | 362 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36630 | (51046) |
| (51047) | 14.4 | 0.15 | 20060922 | 279.34664 | 75.38544 | 65.45586 | 13.13000 | 0.0664538 | 2.5506489 | 200 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 36631 | (51047) |
| (51049) | 13.8 | 0.15 | 20060922 | 287.83704 | 24.51344 | 116.61814 | 12.43084 | 0.0909731 | 2.5255157 | 361 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36631 | (51049) |
| (51064) | 15.0 | 0.15 | 20060922 | 255.63922 | 107.13018 | 33.12931 | 5.41607 | 0.1910536 | 2.5796759 | 343 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36636 | (51064) |
| (51077) | 14.6 | 0.15 | 20060922 | 294.98513 | 346.79752 | 117.03827 | 14.80700 | 0.0502392 | 2.5651949 | 177 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36641 | (51077) |
| (51080) | 15.5 | 0.15 | 20060922 | 340.80762 | 234.04240 | 260.84012 | 8.38983 | 0.0409814 | 2.3189192 | 212 | 7 | 1995–2006 | 0.48 | M-v | 0 | MPC | 36641 | (51080) |
| (51092) | 13.5 | 0.15 | 20060922 | 234.67622 | 21.48064 | 144.25826 | 15.77311 | 0.0707811 | 2.6180925 | 401 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36645 | (51092) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (51093) | 14.5 | 0.15 | 20060922 | 225.24117 | 315.75729 | 221.63952 | 8.28598 | 0.1389029 | 2.6007079 | 360 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36645 | (51093) |
| (51102) | 15.3 | 0.15 | 20060922 | 241.51737 | 111.95512 | 43.40352 | 3.03015 | 0.1383884 | 2.5992738 | 290 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36649 | (51102) |
| (51109) | 14.7 | 0.15 | 20060922 | 313.84267 | 69.83246 | 27.34154 | 7.53375 | 0.1814356 | 2.5318428 | 233 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 36652 | (51109) |
| (51112) | 15.7 | 0.15 | 20060922 | 280.78833 | 195.11131 | 219.98454 | 21.09492 | 0.0811878 | 1.9462299 | 164 | 7 | 1982–2006 | 0.52 | M-v | 1 | MPC | 36653 | (51112) |
| (51131) | 13.9 | 0.15 | 20060922 | 268.65105 | 30.01692 | 100.00502 | 15.90856 | 0.0440804 | 2.6458502 | 282 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 36660 | (51131) |
| (51137) | 15.3 | 0.15 | 20060922 | 1.36533 | 19.54946 | 59.49537 | 8.88597 | 0.1985797 | 2.4306702 | 155 | 7 | 1998–2006 | 0.65 | M-v | 1 | MPC | 36662 | (51137) |
| (51183) | 13.4 | 0.15 | 20060922 | 322.93310 | 351.78432 | 96.43630 | 10.16277 | 0.1341432 | 2.5723550 | 264 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 36678 | (51183) |
| (51187) | 14.7 | 0.15 | 20060922 | 190.95930 | 330.24857 | 242.64373 | 8.78105 | 0.1452692 | 2.5852361 | 327 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 36679 | (51187) |
| (51191) | 15.2 | 0.15 | 20060922 | 297.29299 | 250.68755 | 228.42118 | 13.71196 | 0.2121280 | 2.5430674 | 222 | 7 | 1998–2006 | 0.49 | M-v | 1 | MPC | 36680 | (51191) |
| (51217) | 15.0 | 0.15 | 20060922 | 319.52450 | 222.39102 | 260.16232 | 9.52235 | 0.1511718 | 2.4332920 | 176 | 7 | 1990–2006 | 0.49 | M-v | 0 | MPC | 36689 | (51217) |
| (51219) | 14.9 | 0.15 | 20060922 | 205.80668 | 231.41027 | 296.94149 | 5.50669 | 0.1798383 | 2.6511048 | 221 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36690 | (51219) |
| (51220) | 14.4 | 0.15 | 20060922 | 320.32580 | 197.59334 | 251.10072 | 12.46481 | 0.1156056 | 2.5467084 | 270 | 7 | 1998–2006 | 0.50 | M-v | 1 | MPC | 36690 | (51220) |
| (51235) | 13.6 | 0.15 | 20060922 | 224.45500 | 285.12543 | 249.58025 | 12.50381 | 0.0366045 | 2.6534358 | 357 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 36696 | (51235) |
| (51245) | 14.5 | 0.15 | 20060922 | 224.28451 | 135.55289 | 58.76540 | 10.57405 | 0.1228155 | 2.5668762 | 315 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36700 | (51245) |
| (51253) | 14.1 | 0.15 | 20060922 | 229.85481 | 302.67287 | 214.16268 | 11.10927 | 0.2101938 | 2.6473646 | 252 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36703 | (51253) |
| (51256) | 14.4 | 0.15 | 20060922 | 182.69848 | 131.83467 | 82.04175 | 12.87241 | 0.0506536 | 2.7028480 | 228 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36704 | (51256) |
| (51261) | 14.9 | 0.15 | 20060922 | 238.19393 | 286.59551 | 231.31035 | 2.02265 | 0.1309893 | 2.6716764 | 418 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36706 | (51261) |
| (51263) | 13.0 | 0.15 | 20060922 | 257.67314 | 228.24017 | 172.48185 | 21.70705 | 0.0134402 | 3.1297962 | 270 | 7 | 1999–2006 | 0.65 | M-v | 0 | MPC | 36706 | (51263) |
| (51276) | 13.6 | 0.15 | 20060922 | 168.35206 | 285.33168 | 274.11157 | 11.76950 | 0.1319526 | 2.7063370 | 261 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36710 | (51276) |
| (51315) | 14.7 | 0.15 | 20060922 | 334.34338 | 355.33223 | 70.38694 | 15.69472 | 0.1858676 | 2.6007750 | 219 | 7 | 1996–2006 | 0.53 | M-v | 1 | MPC | 36723 | (51315) |
| (51321) | 14.2 | 0.15 | 20060922 | 228.58598 | 125.90154 | 88.74314 | 15.35587 | 0.0517764 | 2.5505348 | 230 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36725 | (51321) |
| (51323) | 14.5 | 0.15 | 20060922 | 241.40871 | 97.66128 | 55.94631 | 6.93722 | 0.1161263 | 2.6770025 | 313 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 36726 | (51323) |
| (51342) | 14.7 | 0.15 | 20060922 | 147.29648 | 355.49829 | 336.16842 | 2.73306 | 0.1273626 | 2.6701723 | 220 | 9 | 1987–2006 | 0.53 | M-v | 0 | MPC | 36733 | (51342) |
| (51379) | 14.7 | 0.15 | 20060922 | 98.80752 | 223.66628 | 58.17991 | 5.19753 | 0.1314505 | 2.2278853 | 324 | 9 | 1991–2006 | 0.51 | M-v | 0 | MPC | 36747 | (51379) |
| (51382) | 14.9 | 0.15 | 20060922 | 138.20386 | 326.41440 | 269.78016 | 9.19876 | 0.2076456 | 2.3658998 | 152 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 36749 | (51382) |
| (51389) | 15.0 | 0.15 | 20060922 | 122.17765 | 145.15452 | 86.50124 | 8.12461 | 0.1035115 | 2.3466134 | 137 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 36751 | (51389) |
| (51394) | 14.5 | 0.15 | 20060922 | 77.49265 | 184.15930 | 85.48704 | 10.61833 | 0.2218534 | 2.4079912 | 165 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36753 | (51394) |
| (51397) | 15.4 | 0.15 | 20060922 | 162.17522 | 186.58073 | 60.01435 | 3.10460 | 0.1162485 | 2.3322770 | 293 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36754 | (51397) |
| (51399) | 15.2 | 0.15 | 20060922 | 103.43308 | 179.84769 | 82.10238 | 7.30426 | 0.1083383 | 2.3970973 | 235 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 36754 | (51399) |
| (51403) | 15.8 | 0.15 | 20060922 | 163.48887 | 236.80256 | 0.11897 | 6.03535 | 0.1210589 | 2.2746208 | 159 | 7 | 1992–2006 | 0.53 | M-v | 0 | MPC | 36756 | (51403) |
| (51410) | 15.9 | 0.15 | 20060922 | 145.59783 | 162.66801 | 134.24414 | 5.86017 | 0.1496462 | 2.1964880 | 148 | 7 | 1994–2006 | 0.62 | M-v | 0 | MPC | 36758 | (51410) |
| (51425) | 15.4 | 0.15 | 20060922 | 120.55310 | 173.57294 | 85.20783 | 5.32735 | 0.1507399 | 2.3638385 | 252 | 9 | 1995–2006 | 0.60 | M-v | 0 | MPC | 36763 | (51425) |
| (51426) | 16.5 | 0.15 | 20060922 | 146.92083 | 52.67185 | 190.63766 | 2.33711 | 0.1303576 | 2.3464091 | 140 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 36763 | (51426) |
| (51431) | 15.4 | 0.15 | 20060922 | 113.48764 | 223.06309 | 41.21797 | 3.63852 | 0.1519593 | 2.4245325 | 245 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 36765 | (51431) |
| (51444) | 15.7 | 0.15 | 20060922 | 131.12024 | 282.44100 | 320.13262 | 2.58164 | 0.1404411 | 2.4058930 | 100 | 7 | 1997–2006 | 0.61 | M-v | 1 | MPC | 36770 | (51444) |
| (51452) | 15.9 | 0.15 | 20060922 | 175.40991 | 54.74396 | 179.24662 | 3.04432 | 0.0938084 | 2.2407904 | 106 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 36772 | (51452) |
| (51454) | 15.4 | 0.15 | 20060922 | 167.38039 | 349.11360 | 245.84674 | 4.61603 | 0.0998041 | 2.2729538 | 108 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 36773 | (51454) |
| (51455) | 16.1 | 0.15 | 20060922 | 122.41586 | 308.12140 | 295.07724 | 4.26703 | 0.1796193 | 2.4031546 | 117 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 36773 | (51455) |
| (51456) | 16.5 | 0.15 | 20060922 | 132.45275 | 66.91950 | 231.50012 | 2.70890 | 0.1892143 | 2.2386312 | 169 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36774 | (51456) |
| (51478) | 15.1 | 0.15 | 20060922 | 87.65468 | 279.41537 | 30.22488 | 7.25881 | 0.1307534 | 2.3002218 | 191 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36781 | (51478) |
| (51482) | 15.4 | 0.15 | 20060922 | 134.49382 | 202.84262 | 131.18184 | 4.82181 | 0.1948380 | 2.1616834 | 302 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 36783 | (51482) |
| (51492) | 15.2 | 0.15 | 20060922 | 50.50360 | 308.14792 | 43.82690 | 7.70309 | 0.1433997 | 2.3371757 | 195 | 7 | 1994–2006 | 0.61 | M-v | 1 | MPC | 36786 | (51492) |
| (51495) | 14.6 | 0.15 | 20060922 | 187.65361 | 309.10239 | 293.50446 | 6.30256 | 0.1491784 | 2.2466125 | 241 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36787 | (51495) |
| (51501) | 16.0 | 0.15 | 20060922 | 172.98783 | 167.48529 | 130.54268 | 2.69310 | 0.1521525 | 2.1915470 | 242 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 36789 | (51501) |
| (51507) | 15.6 | 0.15 | 20060922 | 145.68091 | 221.25184 | 51.69502 | 8.55833 | 0.1428693 | 2.2676081 | 185 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 36791 | (51507) |
| (51510) | 14.5 | 0.15 | 20060922 | 51.73016 | 198.96583 | 131.32788 | 10.38931 | 0.0903365 | 2.3873035 | 299 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36792 | (51510) |
| (51511) | 15.4 | 0.15 | 20060922 | 88.28991 | 198.97034 | 98.63936 | 6.78183 | 0.1302049 | 2.4021351 | 238 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 36792 | (51511) |
| (51513) | 14.4 | 0.15 | 20060922 | 110.58367 | 201.45811 | 93.02061 | 8.90887 | 0.1246060 | 2.3431618 | 190 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36793 | (51513) |
| (51516) | 14.3 | 0.15 | 20060922 | 99.27890 | 344.18519 | 297.75629 | 10.26001 | 0.2555920 | 2.3780042 | 175 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 36794 | (51516) |
| (51519) | 15.4 | 0.15 | 20060922 | 129.95348 | 68.48124 | 218.94125 | 5.34398 | 0.1305116 | 2.2639261 | 171 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36795 | (51519) |
| (51521) | 15.0 | 0.15 | 20060922 | 80.60610 | 291.51015 | 54.17527 | 7.45416 | 0.2108533 | 2.2544295 | 148 | 7 | 1992–2006 | 0.61 | M-v | 1 | MPC | 36795 | (51521) |
| (51525) | 15.5 | 0.15 | 20060922 | 141.09565 | 267.64048 | 31.57494 | 9.15875 | 0.2085468 | 2.2877954 | 253 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 36797 | (51525) |
| (51528) | 16.7 | 0.15 | 20060922 | 85.43375 | 105.72559 | 192.13811 | 3.09568 | 0.1437182 | 2.3908065 | 130 | 7 | 1991–2006 | 0.52 | M-v | 0 | MPC | 36798 | (51528) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (51549) | 15.6 | 0.15 | 20060922 | 119.98271 | 265.58837 | 40.26647 | 4.64386 | 0.1190099 | 2.2943808 | 173 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 36805 | (51549) |
| (51561) | 14.6 | 0.15 | 20060922 | 67.67812 | 190.54304 | 132.59526 | 10.03579 | 0.2240631 | 2.4363066 | 160 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36809 | (51561) |
| (51562) | 15.6 | 0.15 | 20060922 | 124.73543 | 189.79622 | 100.57332 | 7.80216 | 0.1126651 | 2.3336597 | 174 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 36809 | (51562) |
| (51563) | 15.7 | 0.15 | 20060922 | 157.24353 | 118.87035 | 114.08294 | 3.17252 | 0.1381725 | 2.3977359 | 188 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36809 | (51563) |
| (51572) | 15.1 | 0.15 | 20060922 | 154.55656 | 342.26085 | 274.66713 | 5.96229 | 0.0869794 | 2.3168313 | 212 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 36813 | (51572) |
| (51574) | 14.7 | 0.15 | 20060922 | 182.17924 | 15.10822 | 266.61712 | 6.04829 | 0.1397206 | 2.2082813 | 287 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36813 | (51574) |
| (51586) | 16.0 | 0.15 | 20060922 | 117.31761 | 224.22033 | 57.49979 | 2.93898 | 0.1750303 | 2.3977390 | 168 | 7 | 1998–2006 | 0.64 | M-v | 0 | MPC | 36818 | (51586) |
| (51595) | 15.4 | 0.15 | 20060922 | 77.47256 | 313.96665 | 43.39771 | 6.99354 | 0.2591370 | 2.3067911 | 182 | 7 | 1994–2006 | 0.58 | M-v | 1 | MPC | 36820 | (51595) |
| (51597) | 15.3 | 0.15 | 20060922 | 132.89189 | 298.84012 | 333.36111 | 4.34558 | 0.1183835 | 2.3403927 | 166 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 36821 | (51597) |
| (51601) | 15.6 | 0.15 | 20060922 | 121.43110 | 43.78549 | 223.14434 | 7.38223 | 0.0967413 | 2.4220561 | 199 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 36822 | (51601) |
| (51603) | 15.1 | 0.15 | 20060922 | 114.56511 | 267.11204 | 61.83340 | 6.17047 | 0.1794915 | 2.3227760 | 256 | 7 | 1991–2006 | 0.48 | M-v | 0 | MPC | 36823 | (51603) |
| (51606) | 15.8 | 0.15 | 20060922 | 77.74685 | 271.28658 | 67.57107 | 1.62857 | 0.1527217 | 2.3680318 | 113 | 7 | 1991–2006 | 0.57 | M-v | 1 | MPC | 36824 | (51606) |
| (51611) | 16.5 | 0.15 | 20060922 | 86.05908 | 16.15405 | 251.24522 | 1.59757 | 0.1157710 | 2.5347264 | 175 | 9 | 1990–2006 | 0.55 | M-v | 0 | MPC | 36826 | (51611) |
| (51615) | 15.2 | 0.15 | 20060922 | 175.18166 | 204.53301 | 48.57006 | 6.87591 | 0.0962484 | 2.3244105 | 156 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 36827 | (51615) |
| (51621) | 14.5 | 0.15 | 20060922 | 137.34992 | 349.45768 | 255.85531 | 7.86133 | 0.0840917 | 2.4421726 | 158 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 36829 | (51621) |
| (51623) | 14.5 | 0.15 | 20060922 | 189.63673 | 299.11894 | 289.82590 | 4.51453 | 0.1150309 | 2.3392802 | 341 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 36830 | (51623) |
| (51626) | 15.6 | 0.15 | 20060922 | 196.94768 | 56.88456 | 183.53480 | 2.84660 | 0.0786987 | 2.2848957 | 291 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 36831 | (51626) |
| (51628) | 14.8 | 0.15 | 20060922 | 39.70301 | 183.86191 | 156.25488 | 6.65883 | 0.1282242 | 2.3987185 | 217 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36832 | (51628) |
| (51633) | 15.6 | 0.15 | 20060922 | 198.43773 | 157.50148 | 39.53996 | 7.80156 | 0.0553917 | 2.3613080 | 207 | 7 | 1995–2006 | 0.61 | M-v | 1 | MPC | 36834 | (51633) |
| (51638) | 15.3 | 0.15 | 20060922 | 129.00122 | 83.93921 | 165.78488 | 3.38218 | 0.1636492 | 2.4506004 | 140 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 36835 | (51638) |
| (51640) | 16.0 | 0.15 | 20060922 | 216.85787 | 12.31715 | 171.56612 | 6.13288 | 0.0434704 | 2.3400236 | 142 | 7 | 1994–2006 | 0.59 | M-v | 1 | MPC | 36836 | (51640) |
| (51643) | 15.5 | 0.15 | 20060922 | 53.89620 | 347.98975 | 315.21625 | 4.39747 | 0.1244112 | 2.5393543 | 158 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 36837 | (51643) |
| (51650) | 15.5 | 0.15 | 20060922 | 93.03107 | 271.59119 | 49.64215 | 8.20956 | 0.1417414 | 2.3889880 | 191 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36839 | (51650) |
| (51651) | 16.0 | 0.15 | 20060922 | 105.26544 | 110.76337 | 203.97306 | 2.18592 | 0.0864263 | 2.3227128 | 146 | 9 | 1977–2006 | 0.53 | M-v | 0 | MPC | 36839 | (51651) |
| (51657) | 14.4 | 0.15 | 20060922 | 79.08464 | 13.41954 | 287.99925 | 4.88695 | 0.1994607 | 2.4607156 | 285 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 36841 | (51657) |
| (51662) | 15.2 | 0.15 | 20060922 | 31.41051 | 254.12005 | 65.56445 | 10.16234 | 0.2627084 | 2.5963611 | 175 | 7 | 1996–2006 | 0.60 | M-v | 1 | MPC | 36843 | (51662) |
| (51679) | 14.4 | 0.15 | 20060922 | 48.88304 | 265.79939 | 82.54200 | 7.21051 | 0.1377474 | 2.4482180 | 317 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36848 | (51679) |
| (51687) | 14.8 | 0.15 | 20060922 | 202.13350 | 145.05160 | 89.42145 | 7.69278 | 0.0700777 | 2.3002750 | 291 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 36851 | (51687) |
| (51688) | 15.4 | 0.15 | 20060922 | 152.60730 | 97.49436 | 154.43683 | 4.68238 | 0.0651362 | 2.4053208 | 166 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 36851 | (51688) |
| (51701) | 14.9 | 0.15 | 20060922 | 94.91025 | 290.33967 | 44.47419 | 8.34303 | 0.0232321 | 2.3092703 | 251 | 7 | 1981–2006 | 0.55 | M-v | 0 | MPC | 36855 | (51701) |
| (51710) | 15.6 | 0.15 | 20060922 | 159.74887 | 266.43735 | 338.30464 | 3.55240 | 0.1780348 | 2.3562145 | 182 | 9 | 1991–2006 | 0.52 | M-v | 0 | MPC | 36858 | (51710) |
| (51713) | 15.1 | 0.15 | 20060922 | 28.43884 | 254.47028 | 95.61636 | 3.06556 | 0.1626531 | 2.5187242 | 299 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36859 | (51713) |
| (51718) | 14.8 | 0.15 | 20060922 | 20.04126 | 278.55469 | 74.18112 | 8.81224 | 0.2667504 | 2.5514517 | 254 | 9 | 1992–2006 | 0.55 | M-v | 1 | MPC | 36861 | (51718) |
| (51724) | 14.6 | 0.15 | 20060922 | 95.50815 | 156.90747 | 117.51831 | 12.28034 | 0.1124280 | 2.5294898 | 244 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 36862 | (51724) |
| (51728) | 15.2 | 0.15 | 20060922 | 209.77773 | 78.06568 | 142.90199 | 6.89637 | 0.1913945 | 2.2734585 | 188 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36864 | (51728) |
| (51733) | 14.5 | 0.15 | 20060922 | 245.30596 | 318.51156 | 216.09358 | 12.68962 | 0.0729194 | 2.3552150 | 194 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 36865 | (51733) |
| (51739) | 15.1 | 0.15 | 20060922 | 173.62091 | 138.16524 | 79.00141 | 3.59152 | 0.1278796 | 2.4264186 | 227 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 36867 | (51739) |
| (51742) | 15.4 | 0.15 | 20060922 | 147.27199 | 167.69520 | 99.53403 | 8.08359 | 0.1435855 | 2.3400473 | 195 | 8 | 1991–2006 | 0.54 | M-v | 0 | MPC | 73912 | (51742) |
| (51758) | 15.6 | 0.15 | 20060922 | 182.22908 | 189.19921 | 80.91337 | 6.83290 | 0.1111420 | 2.3140245 | 234 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36872 | (51758) |
| (51766) | 14.0 | 0.15 | 20060922 | 106.83819 | 347.25997 | 267.49785 | 13.66965 | 0.0965131 | 2.6776140 | 199 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 36875 | (51766) |
| (51787) | 15.5 | 0.15 | 20060922 | 180.68152 | 296.74873 | 290.30652 | 10.88389 | 0.1524236 | 2.4638028 | 171 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 36882 | (51787) |
| (51800) | 15.0 | 0.15 | 20060922 | 350.13360 | 120.96937 | 252.26205 | 4.87444 | 0.0368708 | 2.7061844 | 223 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 36886 | (51800) |
| (51818) | 13.8 | 0.15 | 20060922 | 243.79795 | 162.28190 | 340.84258 | 12.69797 | 0.1905332 | 2.5894653 | 220 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 36892 | (51818) |
| (51842) | 14.9 | 0.15 | 20060922 | 126.07262 | 261.87163 | 338.37134 | 12.47589 | 0.1424185 | 2.6943734 | 200 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 36900 | (51842) |
| (51846) | 13.6 | 0.15 | 20060922 | 153.12398 | 277.79354 | 310.85884 | 12.04054 | 0.1161407 | 2.6086565 | 330 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 36901 | (51846) |
| (51887) | 14.4 | 0.15 | 20060922 | 25.82469 | 45.61292 | 16.50706 | 4.21867 | 0.1292792 | 2.5230843 | 341 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 36916 | (51887) |
| (51917) | 13.1 | 0.15 | 20060922 | 182.77497 | 262.40973 | 0.30022 | 18.40365 | 0.1167210 | 2.5632830 | 327 | 7 | 1997–2006 | 0.49 | M-v | 1 | MPC | 36926 | (51917) |
| (51925) | 15.3 | 0.15 | 20060922 | 26.36148 | 212.68312 | 182.70713 | 3.96165 | 0.2259593 | 2.5585702 | 150 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 36929 | (51925) |
| (51931) | 14.8 | 0.15 | 20060922 | 112.65314 | 344.61095 | 257.22510 | 8.00935 | 0.0954396 | 2.7724690 | 205 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 36932 | (51931) |
| (51936) | 14.7 | 0.15 | 20060922 | 202.38965 | 271.31370 | 211.65393 | 6.19488 | 0.0948543 | 2.9746532 | 210 | 7 | 1997–2006 | 0.62 | M-v | 0 | MPC | 36933 | (51936) |
| (51941) | 16.0 | 0.15 | 20060922 | 270.36351 | 327.71307 | 155.68210 | 6.08219 | 0.2677921 | 2.7060918 | 156 | 7 | 1990–2006 | 0.61 | M-v | 0 | MPC | 36935 | (51941) |
| (51992) | 13.4 | 0.15 | 20060922 | 106.81843 | 333.05712 | 42.17635 | 10.40168 | 0.1710476 | 2.5600084 | 322 | 9 | 1979–2006 | 0.52 | M-v | 1 | MPC | 36953 | (51992) |
| (52002) | 12.7 | 0.15 | 20060922 | 52.49791 | 229.74237 | 74.77874 | 11.39467 | 0.0877639 | 2.9992406 | 233 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 36956 | (52002) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (52022) | 16.3 | 0.15 | 20060922 | 92.98631 | 139.04218 | 120.85831 | 3.09114 | 0.2080504 | 2.3290899 | 107 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 36963 | (52022) |
| (52033) | 16.2 | 0.15 | 20060922 | 41.30470 | 234.34990 | 118.08949 | 2.10182 | 0.2097124 | 2.3818429 | 129 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 36966 | (52033) |
| (52036) | 15.8 | 0.15 | 20060922 | 83.46858 | 353.43435 | 334.13249 | 1.04531 | 0.2383664 | 2.2834250 | 187 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 36967 | (52036) |
| (52041) | 14.7 | 0.15 | 20060922 | 311.59557 | 266.43836 | 165.61213 | 7.61153 | 0.0376830 | 2.4103631 | 269 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 36969 | (52041) |
| (52046) | 16.4 | 0.15 | 20060922 | 75.51634 | 210.59756 | 119.55113 | 3.00667 | 0.2009830 | 2.2518531 | 99 | 6 | 1998–2005 | 0.50 | M-v | 1 | MPC | 36970 | (52046) |
| (52049) | 16.0 | 0.15 | 20060922 | 90.43770 | 131.52513 | 120.54398 | 3.14994 | 0.1708258 | 2.3733995 | 136 | 7 | 1994–2006 | 0.59 | M-v | 0 | MPC | 36971 | (52049) |
| (52097) | 15.1 | 0.15 | 20060922 | 79.88472 | 299.70637 | 23.67160 | 4.83127 | 0.0218853 | 2.4349136 | 286 | 7 | 1960–2006 | 0.60 | M-v | 1 | MPC | 36985 | (52097) |
| (52113) | 13.5 | 0.15 | 20060922 | 176.87308 | 246.41903 | 298.49707 | 9.46100 | 0.0495621 | 2.9677950 | 301 | 7 | 1960–2006 | 0.56 | M-v | 0 | MPC | 36990 | (52113) |
| (52118) | 16.1 | 0.15 | 20060922 | 0.20361 | 123.83756 | 313.11782 | 2.33592 | 0.1666123 | 2.4295458 | 104 | 7 | 1960–2006 | 0.61 | M-v | 1 | MPC | 36992 | (52118) |
| (52128) | 15.7 | 0.15 | 20060922 | 145.57867 | 296.95955 | 339.25540 | 2.36587 | 0.1637463 | 2.2967270 | 172 | 7 | 1960–2006 | 0.57 | M-v | 1 | MPC | 36995 | (52128) |
| (52136) | 14.9 | 0.15 | 20060922 | 155.80281 | 338.78153 | 2.63629 | 2.89084 | 0.2098206 | 2.6925951 | 221 | 9 | 1960–2006 | 0.55 | M-v | 0 | MPC | 36998 | (52136) |
| (52144) | 15.8 | 0.15 | 20060922 | 148.82809 | 166.41305 | 85.74257 | 2.58352 | 0.1081315 | 2.3046328 | 259 | 9 | 1960–2006 | 0.56 | M-v | 0 | MPC | 37001 | (52144) |
| (52195) | 16.1 | 0.15 | 20060922 | 85.20003 | 69.27057 | 227.56204 | 3.83839 | 0.2200067 | 2.3416857 | 109 | 9 | 1977–2006 | 0.64 | M-v | 0 | MPC | 37018 | (52195) |
| (52217) | 14.2 | 0.15 | 20060922 | 110.13385 | 201.79591 | 62.85898 | 10.85379 | 0.0651047 | 2.5740538 | 295 | 7 | 1977–2006 | 0.59 | M-v | 0 | MPC | 37025 | (52217) |
| (52230) | 15.2 | 0.15 | 20060922 | 188.79120 | 312.24957 | 305.69207 | 6.87350 | 0.1367818 | 2.4295281 | 177 | 7 | 1978–2006 | 0.55 | M-v | 0 | MPC | 38540 | (52230) |
| (52242) | 13.8 | 0.15 | 20060922 | 275.42737 | 194.87459 | 354.00403 | 12.55036 | 0.1866721 | 2.6821720 | 306 | 7 | 1981–2006 | 0.58 | M-v | 1 | MPC | 38544 | (52242) |
| (52244) | 14.3 | 0.15 | 20060922 | 191.55572 | 275.50539 | 259.68114 | 8.13819 | 0.0403623 | 3.1729272 | 170 | 7 | 1981–2006 | 0.56 | M-v | 0 | MPC | 38545 | (52244) |
| (52249) | 15.1 | 0.15 | 20060922 | 145.82700 | 260.63100 | 346.59178 | 7.48905 | 0.0802650 | 2.7569965 | 205 | 7 | 1981–2006 | 0.62 | M-v | 0 | MPC | 38547 | (52249) |
| (52251) | 15.1 | 0.15 | 20060922 | 167.95202 | 354.81511 | 279.43530 | 7.74237 | 0.0672823 | 2.4404962 | 173 | 7 | 1981–2006 | 0.58 | M-v | 0 | MPC | 38547 | (52251) |
| (52257) | 14.9 | 0.15 | 20060922 | 198.36139 | 349.69603 | 184.24627 | 11.33858 | 0.1218521 | 3.1669997 | 104 | 10 | 1981–2006 | 0.62 | M-v | 0 | MPC | 38549 | (52257) |
| (52281) | 15.2 | 0.15 | 20060922 | 86.66327 | 267.81963 | 74.20627 | 3.71881 | 0.2212067 | 2.5424155 | 213 | 10 | 1981–2006 | 0.63 | M-v | 1 | MPC | 38558 | (52281) |
| (52290) | 14.2 | 0.15 | 20060922 | 340.94601 | 265.18847 | 76.42439 | 16.50996 | 0.2869330 | 3.1074376 | 114 | 7 | 1990–2006 | 0.62 | M-v | 1 | MPC | 38561 | (52290) |
| (52292) | 14.6 | 0.15 | 20060922 | 331.98184 | 31.22659 | 6.47715 | 10.16124 | 0.1420532 | 3.0666868 | 139 | 6 | 1990–2006 | 0.61 | M-v | 1 | MPC | 73912 | (52292) |
| (52303) | 15.1 | 0.15 | 20060922 | 131.72527 | 64.94276 | 280.84963 | 1.16273 | 0.1672179 | 2.2877287 | 402 | 7 | 1991–2006 | 0.52 | M-v | 1 | MPC | 38566 | (52303) |
| (52305) | 15.2 | 0.15 | 20060922 | 83.50838 | 21.25303 | 5.01608 | 6.80389 | 0.1231391 | 2.3117018 | 307 | 7 | 1991–2006 | 0.58 | M-v | 1 | MPC | 38567 | (52305) |
| (52312) | 15.3 | 0.15 | 20060922 | 86.20975 | 215.30237 | 91.42374 | 3.35355 | 0.0898553 | 2.9100857 | 236 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 38570 | (52312) |
| (52317) | 14.5 | 0.15 | 20060922 | 40.29171 | 273.17385 | 135.65750 | 22.81947 | 0.3349600 | 2.3770834 | 280 | 7 | 1992–2006 | 0.58 | M-v | 1 | MPC | 38572 | (52317) |
| (52324) | 16.5 | 0.15 | 20060922 | 331.77528 | 268.16367 | 202.84968 | 3.15018 | 0.1352168 | 2.4403832 | 113 | 10 | 1992–2006 | 0.59 | M-v | 0 | MPC | 38574 | (52324) |
| (52350) | 15.8 | 0.15 | 20060922 | 272.56058 | 39.27945 | 106.57247 | 3.27731 | 0.1211478 | 2.3855588 | 196 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 38584 | (52350) |
| (52357) | 15.2 | 0.15 | 20060922 | 215.57102 | 332.27621 | 270.67840 | 3.05081 | 0.0552865 | 2.3546330 | 251 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 38586 | (52357) |
| (52358) | 15.6 | 0.15 | 20060922 | 258.82566 | 297.14545 | 311.52586 | 1.99472 | 0.1597928 | 2.3095606 | 246 | 7 | 1993–2006 | 0.51 | M-v | 0 | MPC | 38586 | (52358) |
| (52360) | 14.5 | 0.15 | 20060922 | 178.78610 | 317.61066 | 199.96709 | 14.44350 | 0.1267691 | 3.1325581 | 170 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 38587 | (52360) |
| (52366) | 14.3 | 0.15 | 20060922 | 166.48546 | 194.14169 | 10.39740 | 18.19627 | 0.0949765 | 3.0834446 | 217 | 7 | 1993–2006 | 0.54 | M-v | 0 | MPC | 38589 | (52366) |
| (52375) | 14.7 | 0.15 | 20060922 | 123.42117 | 199.87048 | 44.55948 | 6.98803 | 0.1230980 | 3.1011642 | 138 | 9 | 1990–2006 | 0.59 | M-v | 0 | MPC | 38592 | (52375) |
| (52385) | 14.2 | 0.15 | 20060922 | 139.04189 | 25.83208 | 299.42192 | 23.60185 | 0.1941796 | 2.4544495 | 209 | 7 | 1993–2006 | 0.51 | M-v | 1 | MPC | 38595 | (52385) |
| (52392) | 14.5 | 0.15 | 20060922 | 93.53086 | 319.92069 | 330.45233 | 2.23086 | 0.2713322 | 2.5829331 | 219 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 38598 | (52392) |
| (52393) | 15.3 | 0.15 | 20060922 | 45.64038 | 54.66568 | 344.43337 | 4.65016 | 0.1700814 | 2.5468586 | 236 | 7 | 1991–2006 | 0.58 | M-v | 1 | MPC | 38599 | (52393) |
| (52397) | 15.6 | 0.15 | 20060922 | 41.91169 | 74.84498 | 269.24628 | 1.74743 | 0.1714256 | 2.6135557 | 159 | 9 | 1993–2006 | 0.51 | M-v | 0 | MPC | 38600 | (52397) |
| (52398) | 15.0 | 0.15 | 20060922 | 3.61075 | 94.71248 | 332.58995 | 2.94739 | 0.1349484 | 2.5746656 | 289 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 38600 | (52398) |
| (52399) | 15.2 | 0.15 | 20060922 | 37.05379 | 20.49662 | 359.37955 | 7.67346 | 0.2032761 | 2.5767801 | 140 | 9 | 1991–2006 | 0.59 | M-v | 1 | MPC | 38601 | (52399) |
| (52400) | 15.6 | 0.15 | 20060922 | 341.11305 | 199.11293 | 243.13347 | 1.08476 | 0.0990556 | 2.5804409 | 164 | 9 | 1993–2006 | 0.50 | M-v | 0 | MPC | 38601 | (52400) |
| (52401) | 13.6 | 0.15 | 20060922 | 17.62769 | 23.33290 | 53.44026 | 10.90215 | 0.1537683 | 2.5377907 | 217 | 7 | 1993–2006 | 0.61 | M-v | 0 | MPC | 38602 | (52401) |
| (52408) | 14.4 | 0.15 | 20060922 | 288.41701 | 347.89228 | 151.54194 | 4.63322 | 0.2033886 | 2.6186286 | 220 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 38604 | (52408) |
| (52413) | 14.2 | 0.15 | 20060922 | 242.57027 | 3.22737 | 149.16669 | 5.51012 | 0.0470029 | 2.7675212 | 340 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 38606 | (52413) |
| (52415) | 14.7 | 0.15 | 20060922 | 293.11644 | 339.81185 | 140.84944 | 10.15472 | 0.2251236 | 2.7605810 | 235 | 7 | 1994–2006 | 0.62 | M-v | 1 | MPC | 38607 | (52415) |
| (52423) | 14.4 | 0.15 | 20060922 | 121.16412 | 222.71201 | 93.53627 | 27.68677 | 0.1652076 | 2.3288373 | 219 | 7 | 1994–2006 | 0.59 | M-v | 1 | MPC | 38609 | (52423) |
| (52456) | 15.0 | 0.15 | 20060922 | 268.77325 | 55.50279 | 87.67228 | 6.97711 | 0.1721433 | 2.5777138 | 207 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 38621 | (52456) |
| (52459) | 14.8 | 0.15 | 20060922 | 227.78096 | 264.21223 | 266.94043 | 13.05019 | 0.0715099 | 2.6361019 | 172 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 38622 | (52459) |
| (52461) | 15.4 | 0.15 | 20060922 | 160.29144 | 0.81736 | 226.82769 | 1.49026 | 0.1442421 | 2.6842055 | 303 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 38622 | (52461) |
| (52469) | 15.4 | 0.15 | 20060922 | 129.00332 | 355.46153 | 351.32794 | 4.46427 | 0.1561573 | 2.1974493 | 278 | 7 | 1995–2006 | 0.57 | M-v | 1 | MPC | 38625 | (52469) |
| (52488) | 16.2 | 0.15 | 20060922 | 298.00270 | 75.93532 | 94.33164 | 8.52918 | 0.1337523 | 2.3082666 | 114 | 7 | 1995–2006 | 0.51 | M-v | 1 | MPC | 38632 | (52488) |
| (52489) | 16.1 | 0.15 | 20060922 | 64.43107 | 67.31917 | 331.35048 | 3.08436 | 0.1296708 | 2.3237730 | 237 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 38632 | (52489) |
| (52492) | 16.7 | 0.15 | 20060922 | 315.48201 | 310.25901 | 177.37591 | 2.15002 | 0.1540005 | 2.3876492 | 119 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 38633 | (52492) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (52502) | 16.1 | 0.15 | 20060922 | 298.91909 | 158.73722 | 354.90414 | 2.47676 | 0.1288370 | 2.4212845 | 163 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 38637 | (52502) |
| (52504) | 16.5 | 0.15 | 20060922 | 277.00675 | 207.16488 | 326.82902 | 0.69200 | 0.1261495 | 2.4373772 | 119 | 9 | 1990–2006 | 0.55 | M-v | 1 | MPC | 38637 | (52504) |
| (52511) | 12.0 | 0.15 | 20060922 | 317.46977 | 98.46805 | 123.29019 | 9.40395 | 0.0651761 | 5.2418628 | 157 | 9 | 1990–2006 | 0.55 | M-v | 0 | MPC | 38639 | (52511) |
| (52519) | 14.7 | 0.15 | 20060922 | 107.00416 | 236.13045 | 56.46639 | 14.39246 | 0.0484295 | 2.6113810 | 199 | 7 | 1996–2006 | 0.51 | M-v | 0 | MPC | 38643 | (52519) |
| (52549) | 14.1 | 0.15 | 20060922 | 244.89153 | 6.19325 | 122.56307 | 10.28822 | 0.0519656 | 3.1639780 | 213 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 38653 | (52549) |
| (52568) | 15.1 | 0.15 | 20060922 | 58.82016 | 198.57058 | 176.58361 | 2.12162 | 0.2365911 | 2.3795757 | 181 | 9 | 1996–2006 | 0.57 | M-v | 1 | MPC | 38660 | (52568) |
| (52571) | 15.6 | 0.15 | 20060922 | 112.55027 | 264.35653 | 91.00114 | 5.76689 | 0.1684339 | 2.3507544 | 183 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 38661 | (52571) |
| (52575) | 15.5 | 0.15 | 20060922 | 197.52678 | 316.98551 | 228.64001 | 10.14177 | 0.1238174 | 2.5602069 | 122 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 38662 | (52575) |
| (52583) | 14.9 | 0.15 | 20060922 | 2.16782 | 293.50150 | 137.07306 | 12.64003 | 0.1205070 | 2.5127155 | 203 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 38664 | (52583) |
| (52588) | 15.6 | 0.15 | 20060922 | 200.66082 | 174.75195 | 114.58483 | 2.34542 | 0.0575657 | 2.4133034 | 306 | 7 | 1990–2006 | 0.51 | M-v | 0 | MPC | 38667 | (52588) |
| (52591) | 15.1 | 0.15 | 20060922 | 64.25586 | 345.82496 | 300.47328 | 12.99504 | 0.3080459 | 2.6316416 | 163 | 7 | 1997–2006 | 0.44 | M-v | 0 | MPC | 38668 | (52591) |
| (52595) | 15.5 | 0.15 | 20060922 | 136.48303 | 251.77889 | 21.38794 | 3.42951 | 0.0730149 | 2.6475682 | 194 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 38670 | (52595) |
| (52599) | 15.5 | 0.15 | 20060922 | 15.53067 | 74.63557 | 305.05525 | 2.64260 | 0.1096965 | 2.6673384 | 127 | 7 | 1979–2006 | 0.51 | M-v | 0 | MPC | 38671 | (52599) |
| (52604) | 15.1 | 0.15 | 20060922 | 32.83608 | 356.90727 | 28.67714 | 6.48566 | 0.1214611 | 2.6412017 | 219 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 38673 | (52604) |
| (52607) | 14.3 | 0.15 | 20060922 | 318.23041 | 122.54435 | 48.25049 | 11.22209 | 0.0286519 | 2.5148248 | 391 | 7 | 1997–2006 | 0.51 | M-v | 1 | MPC | 38674 | (52607) |
| (52611) | 14.5 | 0.15 | 20060922 | 101.42286 | 319.59563 | 39.25058 | 14.31450 | 0.2025713 | 2.5412265 | 409 | 7 | 1997–2006 | 0.55 | M-v | 1 | MPC | 38676 | (52611) |
| (52614) | 15.1 | 0.15 | 20060922 | 90.80316 | 209.13524 | 82.87559 | 6.75403 | 0.0650031 | 2.7005913 | 216 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 38677 | (52614) |
| (52618) | 14.5 | 0.15 | 20060922 | 354.17846 | 264.00062 | 205.64963 | 14.68778 | 0.1661800 | 2.5809206 | 350 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 38679 | (52618) |
| (52619) | 15.2 | 0.15 | 20060922 | 142.20428 | 2.11020 | 283.53976 | 8.24059 | 0.0581362 | 2.5267568 | 264 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 38679 | (52619) |
| (52621) | 13.2 | 0.15 | 20060922 | 290.05525 | 129.39937 | 49.63516 | 14.13515 | 0.1131284 | 2.5721682 | 405 | 9 | 1989–2006 | 0.56 | M-v | 1 | MPC | 38680 | (52621) |
| (52626) | 14.5 | 0.15 | 20060922 | 303.08447 | 247.98056 | 269.82633 | 9.23737 | 0.1620799 | 2.6457065 | 184 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 38683 | (52626) |
| (52629) | 15.1 | 0.15 | 20060922 | 327.65741 | 38.55857 | 65.90756 | 2.74800 | 0.2254548 | 2.7146406 | 167 | 7 | 1994–2006 | 0.62 | M-v | 0 | MPC | 38684 | (52629) |
| (52630) | 14.3 | 0.15 | 20060922 | 248.69910 | 70.91674 | 85.33543 | 4.92845 | 0.0344740 | 2.7246868 | 305 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 38684 | (52630) |
| (52631) | 14.1 | 0.15 | 20060922 | 3.67630 | 102.59081 | 308.15693 | 5.09960 | 0.2999260 | 2.6578785 | 213 | 6 | 1997–2006 | 0.59 | M-v | 0 | MPC | 38685 | (52631) |
| (52632) | 13.9 | 0.15 | 20060922 | 81.48390 | 283.39027 | 85.83749 | 16.74258 | 0.1847822 | 2.6051750 | 239 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 38685 | (52632) |
| (52633) | 15.7 | 0.15 | 20060922 | 30.65508 | 317.79265 | 57.00991 | 2.80059 | 0.2070995 | 2.6935200 | 153 | 7 | 1993–2006 | 0.67 | M-v | 0 | MPC | 38686 | (52633) |
| (52635) | 14.7 | 0.15 | 20060922 | 325.87629 | 163.31119 | 262.32231 | 4.80614 | 0.0646351 | 2.7663697 | 294 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 38687 | (52635) |
| (52636) | 14.2 | 0.15 | 20060922 | 54.74732 | 155.84750 | 234.62490 | 21.12593 | 0.0685161 | 2.6207786 | 235 | 7 | 1997–2006 | 0.51 | M-v | 1 | MPC | 38687 | (52636) |
| (52641) | 15.4 | 0.15 | 20060922 | 348.18364 | 117.10912 | 314.45458 | 1.24140 | 0.0604498 | 2.6865790 | 223 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 38689 | (52641) |
| (52642) | 15.2 | 0.15 | 20060922 | 108.92489 | 157.71537 | 184.48623 | 2.15074 | 0.0278730 | 2.6016839 | 285 | 7 | 1992–2006 | 0.54 | M-v | 1 | MPC | 38690 | (52642) |
| (52643) | 14.4 | 0.15 | 20060922 | 50.10570 | 332.21485 | 36.49460 | 4.63687 | 0.1175922 | 2.7019160 | 381 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 38690 | (52643) |
| (52650) | 14.1 | 0.15 | 20060922 | 128.67531 | 313.86700 | 298.26773 | 8.50001 | 0.1938260 | 2.9785707 | 290 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 38693 | (52650) |
| (52651) | 13.2 | 0.15 | 20060922 | 138.59191 | 186.14784 | 51.26501 | 11.76302 | 0.1346156 | 3.1340928 | 381 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 38693 | (52651) |
| (52653) | 14.1 | 0.15 | 20060922 | 300.98876 | 32.92602 | 73.26127 | 3.68406 | 0.0706975 | 2.8345937 | 371 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 38694 | (52653) |
| (52654) | 13.6 | 0.15 | 20060922 | 144.90456 | 289.55127 | 322.77718 | 9.49223 | 0.0512202 | 2.9826620 | 344 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 38695 | (52654) |
| (52659) | 14.2 | 0.15 | 20060922 | 38.65357 | 267.25639 | 122.61478 | 7.20769 | 0.0308741 | 2.7892399 | 254 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 38697 | (52659) |
| (52664) | 15.2 | 0.15 | 20060922 | 46.72148 | 229.42365 | 116.12949 | 3.16579 | 0.0821140 | 2.8691793 | 178 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 38699 | (52664) |
| (52665) | 14.2 | 0.15 | 20060922 | 170.82817 | 256.18296 | 316.92638 | 8.61596 | 0.1360301 | 2.9994134 | 156 | 7 | 1998–2006 | 0.48 | M-v | 0 | MPC | 38699 | (52665) |
| (52668) | 13.0 | 0.15 | 20060922 | 176.50128 | 223.31968 | 329.88037 | 8.28973 | 0.0533708 | 3.0802325 | 411 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 38700 | (52668) |
| (52669) | 13.3 | 0.15 | 20060922 | 88.09576 | 245.64754 | 46.64832 | 14.11347 | 0.1823917 | 3.1481224 | 302 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 38701 | (52669) |
| (52671) | 14.2 | 0.15 | 20060922 | 292.43726 | 172.59900 | 314.24608 | 13.03832 | 0.1596540 | 2.8658847 | 217 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 38702 | (52671) |
| (52684) | 14.1 | 0.15 | 20060922 | 246.73923 | 23.07120 | 189.98725 | 3.20587 | 0.0311740 | 2.7982499 | 379 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 38707 | (52684) |
| (52687) | 14.6 | 0.15 | 20060922 | 62.45176 | 310.02926 | 1.45936 | 14.51058 | 0.0365568 | 3.1248221 | 178 | 7 | 1998–2006 | 0.64 | M-v | 0 | MPC | 38708 | (52687) |
| (52694) | 14.7 | 0.15 | 20060922 | 206.60225 | 57.78294 | 177.42227 | 0.51079 | 0.0853673 | 2.8973448 | 325 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 38711 | (52694) |
| (52705) | 13.4 | 0.15 | 20060922 | 269.82541 | 68.29241 | 50.16289 | 7.96004 | 0.0670245 | 3.0930040 | 475 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 38716 | (52705) |
| (52713) | 12.8 | 0.15 | 20060922 | 224.85384 | 251.42471 | 253.33791 | 7.08078 | 0.0711634 | 3.1721951 | 455 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 38720 | (52713) |
| (52715) | 14.8 | 0.15 | 20060922 | 153.15474 | 294.91984 | 289.06155 | 3.94914 | 0.1230764 | 3.1935755 | 145 | 10 | 1987–2006 | 0.63 | M-v | 0 | MPC | 38721 | (52715) |
| (52717) | 15.4 | 0.15 | 20060922 | 182.61975 | 52.83343 | 146.88678 | 1.55037 | 0.0884910 | 3.1379333 | 184 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 38722 | (52717) |
| (52718) | 14.7 | 0.15 | 20060922 | 137.08615 | 67.54263 | 189.24840 | 18.42854 | 0.1629822 | 3.1259848 | 183 | 9 | 1991–2006 | 0.61 | M-v | 0 | MPC | 38722 | (52718) |
| (52724) | 13.1 | 0.15 | 20060922 | 271.31108 | 24.14442 | 108.73353 | 14.34430 | 0.1009946 | 2.9886889 | 373 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 38724 | (52724) |
| (52726) | 13.4 | 0.15 | 20060922 | 240.19053 | 166.38512 | 61.04442 | 17.65722 | 0.0361318 | 2.8492401 | 304 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 38725 | (52726) |
| (52739) | 14.0 | 0.15 | 20060922 | 201.25259 | 64.90230 | 154.37143 | 11.22561 | 0.1897050 | 3.0560273 | 236 | 9 | 1973–2006 | 0.58 | M-v | 0 | MPC | 38730 | (52739) |
| (52740) | 13.2 | 0.15 | 20060922 | 200.53756 | 125.39805 | 70.94914 | 12.49896 | 0.1140304 | 3.1252245 | 311 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 38730 | (52740) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (52744) | 13.8 | 0.15 | 20060922 | 224.58427 | 95.91757 | 50.81020 | 11.55869 | 0.0495422 | 3.1599534 | 349 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 38732 | (52744) |
| (52751) | 12.8 | 0.15 | 20060922 | 142.72258 | 202.02616 | 76.62266 | 22.90346 | 0.0426515 | 3.1455946 | 256 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 38735 | (52751) |
| (52752) | 16.1 | 0.15 | 20060922 | 170.71927 | 166.51468 | 102.46776 | 5.69040 | 0.2253418 | 2.2246263 | 132 | 7 | 1992–2006 | 0.56 | M-v | 1 | MPC | 38735 | (52752) |
| (52756) | 16.2 | 0.15 | 20060922 | 314.60409 | 214.56160 | 289.77828 | 1.06680 | 0.0551085 | 2.2383378 | 189 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 38737 | (52756) |
| (52759) | 15.5 | 0.15 | 20060922 | 6.88466 | 67.40437 | 310.08772 | 5.00216 | 0.2362398 | 2.4042506 | 197 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 38738 | (52759) |
| (52770) | 15.8 | 0.15 | 20060922 | 100.48314 | 13.86743 | 331.01814 | 3.47222 | 0.1629611 | 2.3073907 | 195 | 9 | 1991–2006 | 0.62 | M-v | 1 | MPC | 38743 | (52770) |
| (52771) | 16.0 | 0.15 | 20060922 | 112.21085 | 19.65827 | 342.56987 | 4.49199 | 0.1709817 | 2.2572477 | 282 | 7 | 1996–2006 | 0.48 | M-v | 1 | MPC | 38743 | (52771) |
| (52780) | 15.3 | 0.15 | 20060922 | 85.48982 | 244.38958 | 121.72113 | 7.27699 | 0.1273620 | 2.3022775 | 279 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 38746 | (52780) |
| (52792) | 15.7 | 0.15 | 20060922 | 79.38219 | 29.86190 | 350.13087 | 6.55978 | 0.1220817 | 2.3081206 | 216 | 7 | 1977–2006 | 0.63 | M-v | 1 | MPC | 38750 | (52792) |
| (52812) | 15.5 | 0.15 | 20060922 | 80.98587 | 325.74117 | 42.23050 | 11.59664 | 0.2661879 | 2.3613656 | 139 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 38758 | (52812) |
| (52814) | 16.0 | 0.15 | 20060922 | 107.26171 | 233.72474 | 77.81465 | 3.88616 | 0.2570237 | 2.3545442 | 203 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 38759 | (52814) |
| (52819) | 15.1 | 0.15 | 20060922 | 126.08507 | 184.23605 | 131.63418 | 5.82076 | 0.1605873 | 2.3225952 | 244 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 38761 | (52819) |
| (52820) | 16.1 | 0.15 | 20060922 | 212.60958 | 209.89060 | 74.62679 | 2.44941 | 0.2022163 | 2.2140176 | 254 | 7 | 1981–2006 | 0.53 | M-v | 0 | MPC | 38762 | (52820) |
| (52825) | 16.0 | 0.15 | 20060922 | 170.83666 | 136.70759 | 165.92239 | 2.76357 | 0.1715953 | 2.2460127 | 248 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 38763 | (52825) |
| (52830) | 15.9 | 0.15 | 20060922 | 79.32703 | 9.77088 | 313.25726 | 4.50795 | 0.2413451 | 2.3938563 | 102 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 38765 | (52830) |
| (52833) | 15.9 | 0.15 | 20060922 | 167.29063 | 5.96438 | 284.79153 | 4.75473 | 0.1601632 | 2.2829670 | 214 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 38766 | (52833) |
| (52840) | 15.2 | 0.15 | 20060922 | 114.44401 | 116.19792 | 259.53148 | 2.22919 | 0.0703822 | 2.2617175 | 363 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 38769 | (52840) |
| (52857) | 15.5 | 0.15 | 20060922 | 122.95558 | 197.32527 | 143.25333 | 7.02791 | 0.1571380 | 2.2989725 | 188 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 38776 | (52857) |
| (52867) | 15.1 | 0.15 | 20060922 | 187.60347 | 274.59335 | 32.36986 | 6.22613 | 0.1742848 | 2.2355959 | 283 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 38780 | (52867) |
| (52873) | 16.0 | 0.15 | 20060922 | 249.35913 | 166.19335 | 33.42360 | 7.12442 | 0.0502432 | 2.3956464 | 117 | 7 | 1998–2006 | 0.64 | M-v | 1 | MPC | 38783 | (52873) |
| (52886) | 16.1 | 0.15 | 20060922 | 88.74633 | 157.38979 | 188.41000 | 3.61901 | 0.1968147 | 2.3481567 | 226 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 38787 | (52886) |
| (52889) | 16.2 | 0.15 | 20060922 | 199.03420 | 357.78200 | 249.61776 | 6.39732 | 0.0856318 | 2.3407137 | 224 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 38788 | (52889) |
| (52895) | 15.3 | 0.15 | 20060922 | 37.13619 | 330.42411 | 94.31449 | 4.98158 | 0.1141352 | 2.3585725 | 135 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 38791 | (52895) |
| (52896) | 15.1 | 0.15 | 20060922 | 94.20236 | 201.48516 | 132.56899 | 3.18603 | 0.2059581 | 2.3782510 | 295 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 38791 | (52896) |
| (52899) | 15.7 | 0.15 | 20060922 | 206.20978 | 182.61911 | 97.85166 | 5.35934 | 0.0699993 | 2.2853689 | 255 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 38792 | (52899) |
| (52923) | 15.4 | 0.15 | 20060922 | 198.91760 | 170.44037 | 117.71773 | 3.00741 | 0.1340786 | 2.2518163 | 281 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 38802 | (52923) |
| (52929) | 15.5 | 0.15 | 20060922 | 55.02764 | 19.93802 | 13.35698 | 6.83127 | 0.1168909 | 2.3662815 | 161 | 7 | 1971–2006 | 0.55 | M-v | 1 | MPC | 38804 | (52929) |
| (52930) | 14.6 | 0.15 | 20060922 | 116.13152 | 186.98090 | 149.74251 | 5.27857 | 0.2689272 | 2.3142067 | 332 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 38804 | (52930) |
| (52950) | 15.0 | 0.15 | 20060922 | 294.73023 | 182.86422 | 17.30691 | 3.63292 | 0.0941854 | 2.2886175 | 336 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 38812 | (52950) |
| (52959) | 16.2 | 0.15 | 20060922 | 57.58828 | 56.45156 | 355.73347 | 2.50772 | 0.1516991 | 2.3487566 | 163 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 38815 | (52959) |
| (52961) | 16.0 | 0.15 | 20060922 | 72.88815 | 168.93615 | 208.96913 | 1.61832 | 0.1545636 | 2.3656579 | 177 | 7 | 1995–2006 | 0.47 | M-v | 1 | MPC | 38816 | (52961) |
| (52967) | 15.4 | 0.15 | 20060922 | 176.36879 | 217.50338 | 31.36367 | 4.23934 | 0.1683710 | 2.4239048 | 211 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 38818 | (52967) |
| (52973) | 15.1 | 0.15 | 20060922 | 153.65960 | 278.00430 | 51.26433 | 7.28611 | 0.1419719 | 2.2906800 | 359 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 38820 | (52973) |
| (52974) | 15.5 | 0.15 | 20060922 | 220.17746 | 149.48866 | 131.52303 | 3.72748 | 0.1839114 | 2.2452762 | 286 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 38821 | (52974) |
| (52978) | 15.7 | 0.15 | 20060922 | 24.01422 | 312.99802 | 107.59867 | 5.48672 | 0.1312351 | 2.4104795 | 135 | 9 | 1953–2006 | 0.58 | M-v | 1 | MPC | 38822 | (52978) |
| (52983) | 14.2 | 0.15 | 20060922 | 83.28487 | 260.37323 | 88.17543 | 24.24419 | 0.2614515 | 2.3874581 | 211 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 38824 | (52983) |
| (52987) | 14.8 | 0.15 | 20060922 | 138.51798 | 50.28205 | 280.63708 | 4.80134 | 0.1836523 | 2.2906152 | 247 | 10 | 1953–2006 | 0.54 | M-v | 1 | MPC | 38826 | (52987) |
| (53000) | 14.8 | 0.15 | 20060922 | 312.82408 | 164.46056 | 344.47685 | 6.10838 | 0.0562037 | 2.3643441 | 296 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 38831 | (53000) |
| (53003) | 16.0 | 0.15 | 20060922 | 61.31110 | 254.51577 | 163.27372 | 6.81862 | 0.0899763 | 2.3152419 | 123 | 9 | 1993–2006 | 0.57 | M-v | 1 | MPC | 38833 | (53003) |
| (53008) | 13.6 | 0.15 | 20060922 | 49.94094 | 293.16073 | 107.11343 | 13.91212 | 0.1952534 | 2.4242379 | 388 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 38834 | (53008) |
| (53010) | 14.6 | 0.15 | 20060922 | 177.49094 | 325.84339 | 322.00942 | 4.06626 | 0.1656577 | 2.3123549 | 351 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 38835 | (53010) |
| (53021) | 15.2 | 0.15 | 20060922 | 156.12080 | 307.30038 | 340.13040 | 2.72709 | 0.1517671 | 2.3586987 | 231 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 38840 | (53021) |
| (53023) | 15.3 | 0.15 | 20060922 | 166.35338 | 254.57390 | 65.79989 | 5.84305 | 0.1833675 | 2.2838071 | 297 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 38841 | (53023) |
| (53031) | 13.6 | 0.15 | 20060922 | 170.98993 | 166.87855 | 66.84527 | 15.42260 | 0.1329731 | 2.5359319 | 323 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 38845 | (53031) |
| (53038) | 15.1 | 0.15 | 20060922 | 46.86793 | 224.26769 | 186.52628 | 2.10500 | 0.1751911 | 2.3933657 | 345 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 38848 | (53038) |
| (53040) | 15.1 | 0.15 | 20060922 | 354.56624 | 180.85449 | 280.63868 | 4.84965 | 0.0701930 | 2.4215730 | 165 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 38849 | (53040) |
| (53052) | 14.5 | 0.15 | 20060922 | 51.75601 | 240.70187 | 117.27210 | 15.08760 | 0.1477894 | 2.5887841 | 191 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 38854 | (53052) |
| (53058) | 15.6 | 0.15 | 20060922 | 207.41513 | 170.37377 | 65.71976 | 7.06546 | 0.0765957 | 2.4315144 | 182 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 38856 | (53058) |
| (53059) | 14.1 | 0.15 | 20060922 | 310.39124 | 340.81270 | 109.30095 | 15.00716 | 0.0707942 | 2.6263315 | 317 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 38856 | (53059) |
| (53061) | 14.9 | 0.15 | 20060922 | 123.27335 | 169.38456 | 101.42659 | 3.70651 | 0.0381226 | 2.6673696 | 270 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 38857 | (53061) |
| (53069) | 14.7 | 0.15 | 20060922 | 289.40090 | 20.85444 | 87.18061 | 13.08650 | 0.1461634 | 2.6239670 | 216 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 38861 | (53069) |
| (53070) | 13.9 | 0.15 | 20060922 | 162.42956 | 283.57062 | 331.68080 | 12.94812 | 0.1107242 | 2.5825459 | 287 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 38861 | (53070) |
| (53074) | 13.9 | 0.15 | 20060922 | 158.45197 | 221.21536 | 66.23932 | 12.54731 | 0.1804620 | 2.4034679 | 223 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 38863 | (53074) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (53086) | 13.9 | 0.15 | 20060922 | 34.22791 | 229.03830 | 147.02014 | 14.04660 | 0.2084171 | 2.5310113 | 164 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 38867 | (53086) |
| (53089) | 13.6 | 0.15 | 20060922 | 342.57834 | 320.67814 | 89.44403 | 14.84098 | 0.0619001 | 2.5833030 | 299 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 38868 | (53089) |
| (53091) | 13.8 | 0.15 | 20060922 | 224.43613 | 88.86727 | 101.92469 | 16.03462 | 0.0783562 | 2.5974204 | 195 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 38869 | (53091) |
| (53092) | 14.2 | 0.15 | 20060922 | 100.39539 | 28.32762 | 323.37075 | 7.12151 | 0.1609720 | 2.4840576 | 363 | 10 | 1980–2006 | 0.53 | M-v | 1 | MPC | 38870 | (53092) |
| (53096) | 14.8 | 0.15 | 20060922 | 36.44144 | 88.60229 | 294.98028 | 12.25048 | 0.1823968 | 2.5518348 | 160 | 7 | 1977–2006 | 0.58 | M-v | 0 | MPC | 38872 | (53096) |
| (53097) | 14.0 | 0.15 | 20060922 | 19.17626 | 255.76246 | 117.59504 | 13.74863 | 0.2087980 | 2.6084476 | 235 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 38872 | (53097) |
| (53102) | 14.9 | 0.15 | 20060922 | 299.19624 | 16.18921 | 98.74060 | 14.17583 | 0.1466785 | 2.6062167 | 180 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 38874 | (53102) |
| (53108) | 14.7 | 0.15 | 20060922 | 57.61475 | 350.53934 | 28.42081 | 3.11292 | 0.1486783 | 2.5401138 | 302 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 38876 | (53108) |
| (53109) | 13.7 | 0.15 | 20060922 | 32.07512 | 279.24401 | 126.52056 | 27.62049 | 0.1276947 | 2.5492121 | 284 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38877 | (53109) |
| (53111) | 14.8 | 0.15 | 20060922 | 328.82157 | 317.07349 | 103.39389 | 11.31918 | 0.0673778 | 2.6583818 | 158 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 38878 | (53111) |
| (53114) | 14.2 | 0.15 | 20060922 | 69.58228 | 253.86387 | 121.88609 | 13.53340 | 0.1052537 | 2.5780801 | 248 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 38879 | (53114) |
| (53122) | 14.7 | 0.15 | 20060922 | 114.35635 | 229.44268 | 67.41568 | 16.09366 | 0.0563531 | 2.6914571 | 199 | 9 | 1991–2006 | 0.51 | M-v | 0 | MPC | 38882 | (53122) |
| (53123) | 14.0 | 0.15 | 20060922 | 182.98801 | 125.79554 | 107.33182 | 14.42564 | 0.1546203 | 2.7266020 | 170 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 38882 | (53123) |
| (53131) | 14.8 | 0.15 | 20060922 | 354.42010 | 304.27904 | 126.40666 | 5.66909 | 0.0465642 | 2.6153089 | 208 | 7 | 1999–2006 | 0.62 | M-v | 0 | MPC | 38885 | (53131) |
| (53136) | 14.9 | 0.15 | 20060922 | 345.65153 | 344.46724 | 108.85331 | 7.21663 | 0.1887843 | 2.5638320 | 240 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 38888 | (53136) |
| (53137) | 15.7 | 0.15 | 20060922 | 228.69170 | 47.07288 | 146.72890 | 4.14672 | 0.1942449 | 2.6942871 | 157 | 7 | 1999–2006 | 0.48 | M-v | 0 | MPC | 38888 | (53137) |
| (53141) | 14.1 | 0.15 | 20060922 | 212.21019 | 152.01120 | 74.75219 | 5.70364 | 0.0246213 | 2.7245903 | 378 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 38890 | (53141) |
| (53144) | 15.7 | 0.15 | 20060922 | 341.63813 | 23.29556 | 71.91051 | 4.75441 | 0.0570118 | 2.5534883 | 130 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 38891 | (53144) |
| (53146) | 13.9 | 0.15 | 20060922 | 128.40906 | 125.35242 | 140.19882 | 8.33273 | 0.1790109 | 2.7678657 | 365 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 38892 | (53146) |
| (53147) | 13.7 | 0.15 | 20060922 | 241.87960 | 218.35256 | 11.87292 | 16.01128 | 0.2410190 | 2.6605169 | 309 | 7 | 1999–2006 | 0.58 | M-v | 1 | MPC | 38892 | (53147) |
| (53155) | 15.6 | 0.15 | 20060922 | 201.42643 | 84.56322 | 109.15021 | 5.21676 | 0.0386753 | 2.6769550 | 173 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 38896 | (53155) |
| (53162) | 14.0 | 0.15 | 20060922 | 351.55537 | 321.48190 | 124.81905 | 23.08018 | 0.1064079 | 2.5705184 | 288 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 38899 | (53162) |
| (53164) | 14.6 | 0.15 | 20060922 | 235.21497 | 297.43446 | 328.84022 | 14.84877 | 0.2130808 | 2.5561260 | 366 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 38899 | (53164) |
| (53175) | 15.0 | 0.15 | 20060922 | 320.00189 | 336.52692 | 97.10708 | 3.09141 | 0.0300162 | 2.7118366 | 206 | 10 | 1991–2006 | 0.54 | M-v | 0 | MPC | 38905 | (53175) |
| (53179) | 14.2 | 0.15 | 20060922 | 255.62384 | 228.59268 | 32.22394 | 10.48637 | 0.2047558 | 2.4538806 | 225 | 7 | 1999–2006 | 0.63 | M-v | 1 | MPC | 38907 | (53179) |
| (53181) | 14.6 | 0.15 | 20060922 | 265.85931 | 158.96492 | 19.49935 | 12.23947 | 0.0697522 | 2.5888812 | 283 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 38908 | (53181) |
| (53185) | 13.7 | 0.15 | 20060922 | 327.97715 | 324.18771 | 125.62520 | 14.49319 | 0.1141828 | 2.6374578 | 379 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 38909 | (53185) |
| (53189) | 13.9 | 0.15 | 20060922 | 115.48008 | 194.80861 | 83.75215 | 10.40295 | 0.1173897 | 2.7724332 | 235 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 38911 | (53189) |
| (53191) | 14.3 | 0.15 | 20060922 | 163.54757 | 215.22198 | 92.50878 | 14.47840 | 0.1829883 | 2.5480737 | 224 | 7 | 1999–2006 | 0.58 | M-v | 1 | MPC | 38911 | (53191) |
| (53195) | 13.8 | 0.15 | 20060922 | 166.15528 | 224.40311 | 84.61199 | 5.76628 | 0.2513347 | 2.5740140 | 343 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38913 | (53195) |
| (53200) | 14.6 | 0.15 | 20060922 | 19.21784 | 162.92740 | 236.35214 | 4.61423 | 0.2016168 | 2.5768902 | 241 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38916 | (53200) |
| (53201) | 14.5 | 0.15 | 20060922 | 163.38075 | 33.09240 | 220.08902 | 7.06234 | 0.1619784 | 2.7163006 | 323 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 38916 | (53201) |
| (53204) | 14.8 | 0.15 | 20060922 | 197.31514 | 103.94822 | 155.51805 | 15.27455 | 0.0936611 | 2.5843766 | 220 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 38917 | (53204) |
| (53216) | 14.1 | 0.15 | 20060922 | 203.67384 | 156.09744 | 95.08257 | 18.71347 | 0.1471830 | 2.5446948 | 240 | 7 | 1999–2006 | 0.58 | M-v | 1 | MPC | 38923 | (53216) |
| (53228) | 14.5 | 0.15 | 20060922 | 310.41112 | 49.67456 | 28.23514 | 8.04781 | 0.0705847 | 2.7431010 | 249 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 38927 | (53228) |
| (53234) | 14.4 | 0.15 | 20060922 | 257.44704 | 315.78342 | 261.80033 | 10.41410 | 0.2080878 | 2.5901371 | 254 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 38929 | (53234) |
| (53235) | 14.2 | 0.15 | 20060922 | 228.15360 | 291.19359 | 290.04169 | 4.67527 | 0.1104062 | 2.6400160 | 356 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 38930 | (53235) |
| (53238) | 14.5 | 0.15 | 20060922 | 152.62618 | 181.93602 | 93.44921 | 30.60968 | 0.0536495 | 2.6044537 | 233 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38931 | (53238) |
| (53241) | 14.5 | 0.15 | 20060922 | 238.62502 | 136.90574 | 107.07132 | 14.58075 | 0.1177334 | 2.5714312 | 220 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 38932 | (53241) |
| (53247) | 13.7 | 0.15 | 20060922 | 21.02406 | 75.19835 | 329.29924 | 11.65654 | 0.1854311 | 2.6452153 | 399 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 38935 | (53247) |
| (53248) | 14.1 | 0.15 | 20060922 | 129.51367 | 145.33797 | 113.96441 | 8.43468 | 0.0362245 | 2.8555931 | 368 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38936 | (53248) |
| (53249) | 15.3 | 0.15 | 20060922 | 170.53239 | 110.43203 | 142.17086 | 5.63388 | 0.1137135 | 2.7216329 | 121 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 38936 | (53249) |
| (53253) | 14.6 | 0.15 | 20060922 | 355.93938 | 20.01850 | 47.75049 | 2.48639 | 0.0733880 | 2.6754719 | 294 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 38937 | (53253) |
| (53263) | 14.2 | 0.15 | 20060922 | 71.24947 | 277.96116 | 14.81674 | 9.18654 | 0.1206290 | 3.0446142 | 288 | 7 | 1990–2006 | 0.55 | M-v | 0 | MPC | 38942 | (53263) |
| (53267) | 14.2 | 0.15 | 20060922 | 152.78077 | 142.49454 | 176.00960 | 1.32626 | 0.0751008 | 2.6456939 | 408 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 38943 | (53267) |
| (53278) | 15.1 | 0.15 | 20060922 | 238.75805 | 319.00475 | 179.21064 | 8.02948 | 0.1719011 | 2.7938651 | 207 | 9 | 1992–2006 | 0.57 | M-v | 0 | MPC | 38949 | (53278) |
| (53284) | 14.2 | 0.15 | 20060922 | 98.62716 | 44.70684 | 321.89024 | 6.97231 | 0.2125255 | 2.5568980 | 460 | 9 | 1968–2006 | 0.50 | M-v | 1 | MPC | 38952 | (53284) |
| (53285) | 14.9 | 0.15 | 20060922 | 150.34848 | 306.74437 | 287.27231 | 2.70215 | 0.1198695 | 2.9180577 | 285 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 38952 | (53285) |
| (53289) | 14.2 | 0.15 | 20060922 | 339.56407 | 4.67339 | 133.89221 | 7.09966 | 0.1856563 | 2.5532684 | 373 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 38954 | (53289) |
| (53290) | 14.6 | 0.15 | 20060922 | 156.86677 | 112.98920 | 134.48956 | 4.73452 | 0.0562760 | 2.8783358 | 283 | 7 | 1999–2006 | 0.64 | M-v | 0 | MPC | 38955 | (53290) |
| (53295) | 13.7 | 0.15 | 20060922 | 255.68351 | 197.95711 | 67.22318 | 16.12401 | 0.1560163 | 2.5380829 | 307 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 38956 | (53295) |
| (53296) | 14.8 | 0.15 | 20060922 | 293.54955 | 109.81774 | 15.70331 | 3.28373 | 0.1002809 | 2.7049293 | 333 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 38957 | (53296) |
| (53299) | 14.7 | 0.15 | 20060922 | 139.95399 | 124.86866 | 138.06293 | 2.74602 | 0.0192073 | 2.8315808 | 330 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 38959 | (53299) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (53301) | 15.5 | 0.15 | 20060922 | 244.45658 | 307.40940 | 306.66204 | 3.50932 | 0.2028597 | 2.5796126 | 340 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 38959 | (53301) |
| (53302) | 14.0 | 0.15 | 20060922 | 242.09817 | 225.98883 | 11.25836 | 15.20867 | 0.0813583 | 2.5977128 | 330 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 38960 | (53302) |
| (53305) | 13.9 | 0.15 | 20060922 | 240.42928 | 328.86899 | 253.42985 | 7.72967 | 0.1085448 | 2.6652189 | 421 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38961 | (53305) |
| (53308) | 14.1 | 0.15 | 20060922 | 246.90212 | 275.68142 | 319.11311 | 6.12756 | 0.1817962 | 2.6041927 | 458 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 38963 | (53308) |
| (53318) | 14.6 | 0.15 | 20060922 | 291.94822 | 292.17047 | 246.83038 | 11.63658 | 0.1116329 | 2.6945052 | 339 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 38967 | (53318) |
| (53320) | 14.1 | 0.15 | 20060922 | 63.31692 | 225.18059 | 85.72024 | 10.64484 | 0.1187253 | 3.0832084 | 265 | 7 | 1999–2006 | 0.63 | M-v | 0 | MPC | 38968 | (53320) |
| (53323) | 14.0 | 0.15 | 20060922 | 85.57685 | 250.08858 | 56.54666 | 10.49720 | 0.0439497 | 2.9862469 | 404 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38970 | (53323) |
| (53324) | 14.1 | 0.15 | 20060922 | 109.53508 | 37.66122 | 240.51254 | 10.62449 | 0.1229353 | 2.9700643 | 366 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38971 | (53324) |
| (53331) | 13.3 | 0.15 | 20060922 | 186.26102 | 152.49935 | 37.47507 | 11.45142 | 0.0321255 | 2.9976890 | 494 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 38974 | (53331) |
| (53338) | 14.4 | 0.15 | 20060922 | 94.63110 | 150.56311 | 186.88492 | 2.03240 | 0.0606427 | 2.8417416 | 340 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38978 | (53338) |
| (53344) | 14.0 | 0.15 | 20060922 | 267.31168 | 327.34202 | 237.46620 | 11.99746 | 0.1129758 | 2.6887900 | 431 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 38981 | (53344) |
| (53345) | 14.6 | 0.15 | 20060922 | 278.82692 | 281.98194 | 244.57910 | 4.84096 | 0.1682668 | 2.7397248 | 221 | 7 | 1999–2006 | 0.63 | M-v | 1 | MPC | 38982 | (53345) |
| (53348) | 14.0 | 0.15 | 20060922 | 326.89801 | 90.13266 | 76.29894 | 14.39977 | 0.0931073 | 2.6195843 | 391 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 38983 | (53348) |
| (53353) | 14.0 | 0.15 | 20060922 | 145.79548 | 187.08041 | 58.73792 | 14.36187 | 0.1181076 | 2.9448211 | 391 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 38985 | (53353) |
| (53354) | 13.6 | 0.15 | 20060922 | 28.21321 | 262.91911 | 68.66983 | 6.86842 | 0.1633199 | 3.1143132 | 334 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 38986 | (53354) |
| (53363) | 14.0 | 0.15 | 20060922 | 343.02159 | 39.51244 | 82.14647 | 13.16043 | 0.1308738 | 2.6353766 | 230 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 38990 | (53363) |
| (53368) | 13.0 | 0.15 | 20060922 | 228.88018 | 49.11744 | 211.02984 | 12.90757 | 0.1569681 | 2.7141267 | 365 | 9 | 1986–2006 | 0.56 | M-v | 0 | MPC | 38992 | (53368) |
| (53373) | 15.6 | 0.15 | 20060922 | 283.29064 | 339.95161 | 198.50344 | 12.13466 | 0.2040621 | 2.6786296 | 146 | 7 | 1999–2006 | 0.61 | M-v | 1 | MPC | 38994 | (53373) |
| (53377) | 14.2 | 0.15 | 20060922 | 123.95822 | 167.82157 | 122.97164 | 3.00946 | 0.0359319 | 2.8481470 | 348 | 7 | 1999–2006 | 0.63 | M-v | 0 | MPC | 38996 | (53377) |
| (53383) | 13.9 | 0.15 | 20060922 | 74.55259 | 133.59701 | 150.39417 | 11.24248 | 0.1814303 | 3.1492638 | 250 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 38998 | (53383) |
| (53388) | 13.9 | 0.15 | 20060922 | 76.77781 | 285.40922 | 114.52426 | 14.06919 | 0.1566958 | 2.6902080 | 299 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 39000 | (53388) |
| (53390) | 14.2 | 0.15 | 20060922 | 292.66843 | 33.12078 | 146.23071 | 13.09979 | 0.1060818 | 2.6939642 | 217 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 39001 | (53390) |
| (53395) | 15.2 | 0.15 | 20060922 | 167.52638 | 101.01611 | 131.22214 | 6.25084 | 0.0700956 | 2.9160283 | 163 | 7 | 1999–2006 | 0.64 | M-v | 0 | MPC | 39003 | (53395) |
| (53401) | 13.5 | 0.15 | 20060922 | 49.50478 | 97.88326 | 229.42642 | 14.90573 | 0.0313828 | 3.0539734 | 400 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 39005 | (53401) |
| (53403) | 13.7 | 0.15 | 20060922 | 350.79224 | 301.90666 | 86.30044 | 16.23639 | 0.0128565 | 2.9855624 | 265 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39006 | (53403) |
| (53404) | 14.4 | 0.15 | 20060922 | 293.26030 | 172.84017 | 63.09539 | 9.12941 | 0.1867535 | 2.5322310 | 346 | 7 | 1999–2006 | 0.63 | M-v | 1 | MPC | 39007 | (53404) |
| (53407) | 14.1 | 0.15 | 20060922 | 327.48568 | 174.93784 | 228.53410 | 9.67779 | 0.1095207 | 3.0658565 | 393 | 7 | 1990–2006 | 0.60 | M-v | 0 | MPC | 39008 | (53407) |
| (53411) | 14.2 | 0.15 | 20060922 | 260.78732 | 295.91938 | 251.65387 | 11.26293 | 0.1146900 | 2.6960877 | 233 | 7 | 1999–2006 | 0.58 | M-v | 1 | MPC | 39010 | (53411) |
| (53412) | 13.6 | 0.15 | 20060922 | 255.00857 | 97.74799 | 151.17756 | 26.20622 | 0.3003576 | 2.6779104 | 204 | 10 | 1991–2006 | 0.52 | M-v | 0 | MPC | 39010 | (53412) |
| (53423) | 12.9 | 0.15 | 20060922 | 171.23937 | 227.05494 | 67.73963 | 12.12759 | 0.1141403 | 3.0668403 | 330 | 10 | 1977–2006 | 0.54 | M-v | 0 | MPC | 39014 | (53423) |
| (53441) | 16.6 | 0.15 | 20060922 | 298.03060 | 283.32840 | 226.30759 | 2.77442 | 0.1201052 | 2.2779593 | 119 | 7 | 1995–2006 | 0.51 | M-v | 1 | MPC | 39022 | (53441) |
| (53442) | 15.6 | 0.15 | 20060922 | 240.76044 | 322.85759 | 249.89926 | 2.86191 | 0.0978305 | 2.2555586 | 261 | 9 | 1992–2006 | 0.55 | M-v | 1 | MPC | 39022 | (53442) |
| (53447) | 15.6 | 0.15 | 20060922 | 333.96144 | 44.49785 | 48.66179 | 6.01228 | 0.1527849 | 2.2876395 | 180 | 7 | 1992–2006 | 0.62 | M-v | 1 | MPC | 39024 | (53447) |
| (53455) | 15.8 | 0.15 | 20060922 | 187.49641 | 155.56395 | 109.92957 | 7.26318 | 0.0981506 | 2.2829478 | 200 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39027 | (53455) |
| (53459) | 15.6 | 0.15 | 20060922 | 216.65536 | 146.97514 | 101.81827 | 6.98522 | 0.1077938 | 2.2108468 | 335 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39028 | (53459) |
| (53467) | 15.1 | 0.15 | 20060922 | 187.17551 | 300.98671 | 298.99801 | 5.63138 | 0.0944377 | 2.3947356 | 179 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 39031 | (53467) |
| (53475) | 16.4 | 0.15 | 20060922 | 72.35037 | 106.59591 | 285.75891 | 4.11926 | 0.1719023 | 2.2103600 | 163 | 7 | 1992–2006 | 0.55 | M-v | 1 | MPC | 39034 | (53475) |
| (53480) | 15.2 | 0.15 | 20060922 | 252.91088 | 251.58474 | 311.84977 | 4.59870 | 0.1645852 | 2.3291129 | 210 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 39036 | (53480) |
| (53482) | 14.7 | 0.15 | 20060922 | 204.31018 | 312.19417 | 298.08779 | 5.39395 | 0.0912769 | 2.3156330 | 241 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39036 | (53482) |
| (53486) | 15.0 | 0.15 | 20060922 | 83.06812 | 244.57689 | 104.15522 | 7.09317 | 0.1129109 | 2.3302597 | 222 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39038 | (53486) |
| (53489) | 14.9 | 0.15 | 20060922 | 161.46875 | 184.94201 | 122.51480 | 6.48069 | 0.1874172 | 2.2832151 | 230 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 39039 | (53489) |
| (53490) | 14.9 | 0.15 | 20060922 | 249.78992 | 112.35212 | 105.18375 | 7.14544 | 0.1055901 | 2.3144511 | 318 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 39039 | (53490) |
| (53493) | 15.5 | 0.15 | 20060922 | 213.25936 | 261.30052 | 331.02323 | 2.31415 | 0.0480828 | 2.3468371 | 258 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 39040 | (53493) |
| (53502) | 14.5 | 0.15 | 20060922 | 208.92430 | 113.77236 | 117.59532 | 9.25701 | 0.0720404 | 2.4071926 | 343 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 39044 | (53502) |
| (53504) | 14.9 | 0.15 | 20060922 | 296.76013 | 33.05769 | 117.89079 | 7.60382 | 0.0536011 | 2.3622097 | 276 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 39045 | (53504) |
| (53510) | 14.9 | 0.15 | 20060922 | 112.72994 | 330.56080 | 282.85532 | 12.55398 | 0.1585984 | 2.5840880 | 133 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 39047 | (53510) |
| (53514) | 15.6 | 0.15 | 20060922 | 323.49005 | 359.51304 | 136.74857 | 5.57725 | 0.1115939 | 2.3263900 | 200 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 39048 | (53514) |
| (53519) | 15.8 | 0.15 | 20060922 | 333.47861 | 297.98959 | 145.53333 | 9.61643 | 0.2116181 | 2.3675863 | 171 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 39050 | (53519) |
| (53521) | 15.0 | 0.15 | 20060922 | 194.47286 | 285.34030 | 291.64670 | 7.59038 | 0.0826407 | 2.4745479 | 195 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39051 | (53521) |
| (53534) | 15.3 | 0.15 | 20060922 | 255.19553 | 102.09480 | 96.19551 | 3.40790 | 0.1424229 | 2.3942797 | 270 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 39056 | (53534) |
| (53536) | 15.0 | 0.15 | 20060922 | 171.03990 | 20.75586 | 292.52697 | 4.25093 | 0.1738760 | 2.2079418 | 275 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 39057 | (53536) |
| (53537) | 14.3 | 0.15 | 20060922 | 190.55448 | 244.48754 | 358.52307 | 4.83273 | 0.0789707 | 2.4493132 | 404 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39058 | (53537) |
| (53541) | 15.1 | 0.15 | 20060922 | 61.64963 | 199.34422 | 118.08666 | 13.16521 | 0.1879878 | 2.4411542 | 129 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 39060 | (53541) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (53544) | 15.2 | 0.15 | 20060922 | 219.83841 | 262.91941 | 313.25419 | 1.95645 | 0.1153117 | 2.3934577 | 282 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 39061 | (53544) |
| (53553) | 14.8 | 0.15 | 20060922 | 250.43919 | 103.53796 | 105.51594 | 5.99999 | 0.1135215 | 2.3598896 | 322 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 39064 | (53553) |
| (53556) | 15.7 | 0.15 | 20060922 | 10.03971 | 146.33636 | 254.45874 | 3.74638 | 0.1133857 | 2.3522177 | 125 | 6 | 1998–2006 | 0.59 | M-v | 1 | MPC | 39065 | (53556) |
| (53557) | 15.2 | 0.15 | 20060922 | 152.94179 | 180.89156 | 134.93856 | 5.96973 | 0.2013138 | 2.2606314 | 259 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39065 | (53557) |
| (53558) | 15.4 | 0.15 | 20060922 | 154.15637 | 106.27828 | 174.02055 | 2.38443 | 0.1943949 | 2.3800875 | 279 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 39066 | (53558) |
| (53561) | 16.1 | 0.15 | 20060922 | 163.10995 | 10.04082 | 290.64915 | 4.95039 | 0.1021302 | 2.3026073 | 235 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 39066 | (53561) |
| (53564) | 15.4 | 0.15 | 20060922 | 283.89967 | 220.42196 | 313.12715 | 3.95914 | 0.0274962 | 2.3276590 | 243 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 39067 | (53564) |
| (53565) | 15.6 | 0.15 | 20060922 | 255.73939 | 13.06227 | 168.84248 | 1.21830 | 0.1233340 | 2.3921489 | 197 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 39068 | (53565) |
| (53566) | 15.4 | 0.15 | 20060922 | 216.23791 | 122.40541 | 156.30011 | 6.34489 | 0.0948797 | 2.2327467 | 281 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39068 | (53566) |
| (53568) | 14.9 | 0.15 | 20060922 | 118.42015 | 87.61134 | 150.94557 | 13.29357 | 0.1321623 | 2.6637021 | 150 | 7 | 1996–2006 | 0.51 | M-v | 0 | MPC | 39069 | (53568) |
| (53577) | 16.1 | 0.15 | 20060922 | 303.89520 | 228.47343 | 277.31546 | 4.80424 | 0.1744935 | 2.3449458 | 120 | 7 | 1994–2006 | 0.52 | M-v | 1 | MPC | 39072 | (53577) |
| (53582) | 15.6 | 0.15 | 20060922 | 321.99331 | 228.57669 | 288.73777 | 6.51633 | 0.0493456 | 2.2879576 | 172 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 39074 | (53582) |
| (53586) | 15.7 | 0.15 | 20060922 | 227.05123 | 22.37462 | 243.09044 | 1.37126 | 0.1553999 | 2.3031472 | 249 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 39076 | (53586) |
| (53588) | 14.6 | 0.15 | 20060922 | 131.17838 | 279.11186 | 330.61746 | 26.54183 | 0.0944234 | 2.5874893 | 195 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 39077 | (53588) |
| (53591) | 16.0 | 0.15 | 20060922 | 318.47488 | 183.60108 | 318.42122 | 1.79035 | 0.0805050 | 2.3109435 | 183 | 9 | 1975–2006 | 0.56 | M-v | 0 | MPC | 39078 | (53591) |
| (53599) | 14.0 | 0.15 | 20060922 | 106.78182 | 282.09114 | 320.46418 | 12.09847 | 0.1098449 | 2.7039583 | 185 | 7 | 1979–2006 | 0.61 | M-v | 0 | MPC | 39082 | (53599) |
| (53604) | 15.3 | 0.15 | 20060922 | 288.19326 | 186.40933 | 19.18395 | 1.10372 | 0.1313657 | 2.2695975 | 249 | 7 | 1991–2006 | 0.51 | M-v | 1 | MPC | 39083 | (53604) |
| (53608) | 14.8 | 0.15 | 20060922 | 208.33081 | 275.53854 | 345.93860 | 4.46229 | 0.0950231 | 2.3187199 | 329 | 7 | 1998–2006 | 0.48 | M-v | 0 | MPC | 39085 | (53608) |
| (53618) | 15.6 | 0.15 | 20060922 | 244.89821 | 45.41920 | 144.61808 | 5.45239 | 0.1584810 | 2.4322303 | 205 | 7 | 1995–2006 | 0.55 | M-v | 1 | MPC | 39090 | (53618) |
| (53619) | 14.6 | 0.15 | 20060922 | 114.01892 | 355.80069 | 353.94944 | 14.24692 | 0.0884626 | 2.3553206 | 299 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 39090 | (53619) |
| (53623) | 16.0 | 0.15 | 20060922 | 206.48673 | 138.70239 | 114.35914 | 3.06941 | 0.1934522 | 2.3613652 | 234 | 7 | 1979–2006 | 0.57 | M-v | 0 | MPC | 39092 | (53623) |
| (53627) | 14.6 | 0.15 | 20060922 | 74.30208 | 156.84921 | 149.39244 | 4.27335 | 0.2382533 | 2.5332143 | 290 | 7 | 1996–2006 | 0.48 | M-v | 0 | MPC | 73912 | (53627) |
| (53637) | 16.5 | 0.15 | 20060922 | 21.77143 | 49.41237 | 35.63852 | 0.34914 | 0.1794316 | 2.3117995 | 121 | 7 | 1993–2006 | 0.46 | M-v | 0 | MPC | 39098 | (53637) |
| (53638) | 15.0 | 0.15 | 20060922 | 158.37069 | 222.54459 | 101.26680 | 1.46835 | 0.1564150 | 2.3624020 | 398 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 39098 | (53638) |
| (53643) | 16.0 | 0.15 | 20060922 | 104.07763 | 198.03130 | 125.30326 | 3.45868 | 0.0934485 | 2.4094297 | 173 | 7 | 1997–2006 | 0.59 | M-v | 1 | MPC | 39100 | (53643) |
| (53646) | 14.9 | 0.15 | 20060922 | 104.89859 | 194.46708 | 141.09656 | 6.35601 | 0.1692684 | 2.3512859 | 272 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 39101 | (53646) |
| (53647) | 15.6 | 0.15 | 20060922 | 193.44647 | 255.96733 | 15.91671 | 2.15450 | 0.1930258 | 2.3539405 | 328 | 7 | 1994–2006 | 0.61 | M-v | 0 | MPC | 39101 | (53647) |
| (53649) | 16.3 | 0.15 | 20060922 | 283.31401 | 328.20180 | 181.32982 | 2.36758 | 0.1532595 | 2.3951064 | 163 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39102 | (53649) |
| (53653) | 15.2 | 0.15 | 20060922 | 162.05017 | 148.95863 | 144.51381 | 2.61950 | 0.2117518 | 2.3932611 | 347 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 39103 | (53653) |
| (53665) | 15.7 | 0.15 | 20060922 | 257.79950 | 243.43958 | 336.98180 | 3.91141 | 0.1347424 | 2.3381645 | 193 | 7 | 1994–2006 | 0.52 | M-v | 1 | MPC | 39108 | (53665) |
| (53688) | 15.1 | 0.15 | 20060922 | 219.73053 | 173.57675 | 98.54924 | 4.72495 | 0.1520701 | 2.2711420 | 312 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39116 | (53688) |
| (53695) | 15.3 | 0.15 | 20060922 | 178.45096 | 227.06746 | 79.59699 | 5.00991 | 0.1636908 | 2.2886863 | 296 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39119 | (53695) |
| (53697) | 15.7 | 0.15 | 20060922 | 297.22333 | 118.20534 | 48.92170 | 5.18765 | 0.1219994 | 2.3263284 | 213 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39119 | (53697) |
| (53702) | 15.0 | 0.15 | 20060922 | 157.31218 | 300.60606 | 23.30805 | 6.35548 | 0.1630905 | 2.3012200 | 307 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 39121 | (53702) |
| (53704) | 15.5 | 0.15 | 20060922 | 310.47568 | 28.87886 | 119.65838 | 7.14991 | 0.0566048 | 2.3393722 | 176 | 8 | 1993–2006 | 0.65 | M-v | 1 | MPC | 39122 | (53704) |
| (53707) | 14.7 | 0.15 | 20060922 | 95.86820 | 280.04094 | 13.94661 | 9.39699 | 0.1993876 | 2.5837449 | 145 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 39123 | (53707) |
| (53708) | 16.0 | 0.15 | 20060922 | 68.94227 | 319.31908 | 37.52753 | 5.90115 | 0.0131851 | 2.4318475 | 101 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 39123 | (53708) |
| (53709) | 15.5 | 0.15 | 20060922 | 176.66674 | 188.15083 | 108.10727 | 6.46859 | 0.1265978 | 2.3472690 | 176 | 9 | 1996–2006 | 0.57 | M-v | 0 | MPC | 39124 | (53709) |
| (53711) | 16.1 | 0.15 | 20060922 | 327.98069 | 305.91442 | 176.02261 | 3.24139 | 0.1116255 | 2.3347187 | 153 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 39124 | (53711) |
| (53718) | 16.4 | 0.15 | 20060922 | 278.11764 | 193.30150 | 6.98544 | 2.31947 | 0.1560681 | 2.3380001 | 131 | 7 | 1994–2006 | 0.58 | M-v | 1 | MPC | 39127 | (53718) |
| (53723) | 15.4 | 0.15 | 20060922 | 148.30920 | 199.41206 | 129.25371 | 7.38876 | 0.1322735 | 2.2956547 | 197 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39129 | (53723) |
| (53726) | 15.2 | 0.15 | 20060922 | 153.20451 | 203.39625 | 60.23697 | 9.15164 | 0.0393327 | 2.4821430 | 191 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 39130 | (53726) |
| (53731) | 14.6 | 0.15 | 20060922 | 235.53693 | 207.24254 | 9.82005 | 6.73192 | 0.0362369 | 2.4049109 | 413 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39132 | (53731) |
| (53734) | 14.7 | 0.15 | 20060922 | 64.96038 | 60.72681 | 347.34515 | 6.53478 | 0.1337266 | 2.3345627 | 298 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39133 | (53734) |
| (53746) | 16.5 | 0.15 | 20060922 | 261.56750 | 307.25847 | 248.19586 | 0.50173 | 0.1260876 | 2.3877250 | 134 | 7 | 1998–2006 | 0.50 | M-v | 1 | MPC | 39138 | (53746) |
| (53747) | 16.0 | 0.15 | 20060922 | 289.84963 | 338.01616 | 237.54542 | 1.36353 | 0.1724699 | 2.2894208 | 209 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 39139 | (53747) |
| (53762) | 15.6 | 0.15 | 20060922 | 222.11310 | 203.75230 | 12.41875 | 6.19682 | 0.0786757 | 2.4105302 | 203 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39144 | (53762) |
| (53771) | 16.2 | 0.15 | 20060922 | 314.01979 | 2.45025 | 255.17412 | 3.32243 | 0.1930307 | 2.1634455 | 259 | 6 | 1991–2006 | 0.59 | M-v | 1 | MPC | 70204 | (53771) |
| (53779) | 14.7 | 0.15 | 20060922 | 177.74373 | 19.31534 | 199.22365 | 14.16598 | 0.1370080 | 2.5701843 | 181 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 39151 | (53779) |
| (53780) | 15.2 | 0.15 | 20060922 | 120.46918 | 41.33432 | 214.40111 | 12.49638 | 0.1296121 | 2.6400747 | 168 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39151 | (53780) |
| (53786) | 14.4 | 0.15 | 20060922 | 127.47552 | 63.60611 | 271.54766 | 2.95763 | 0.1919002 | 2.4575668 | 454 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 39154 | (53786) |
| (53801) | 15.3 | 0.15 | 20060922 | 148.83844 | 202.19440 | 87.08648 | 7.68773 | 0.1199806 | 2.4116917 | 232 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39161 | (53801) |
| (53810) | 15.2 | 0.15 | 20060922 | 139.19973 | 73.09344 | 156.44094 | 7.25986 | 0.1419549 | 2.6856344 | 183 | 7 | 1979–2006 | 0.61 | M-v | 0 | MPC | 39164 | (53810) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (53811) | 15.6 | 0.15 | 20060922 | 35.26217 | 17.04658 | 68.02430 | 7.08464 | 0.0633608 | 2.3184051 | 180 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 39164 | (53811) |
| (53815) | 14.5 | 0.15 | 20060922 | 275.79329 | 54.10009 | 142.80357 | 6.47366 | 0.1756924 | 2.3949191 | 252 | 7 | 1996–2006 | 0.55 | M-v | 1 | MPC | 39166 | (53815) |
| (53816) | 14.3 | 0.15 | 20060922 | 176.04398 | 51.03991 | 161.20966 | 8.11298 | 0.1311320 | 2.6607015 | 367 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39167 | (53816) |
| (53822) | 15.6 | 0.15 | 20060922 | 176.75029 | 345.42947 | 294.69873 | 1.94106 | 0.1820488 | 2.4443904 | 328 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 39169 | (53822) |
| (53824) | 15.7 | 0.15 | 20060922 | 334.79778 | 66.40986 | 78.13206 | 6.68394 | 0.0509172 | 2.2934803 | 197 | 9 | 1983–2006 | 0.57 | M-v | 0 | MPC | 39170 | (53824) |
| (53825) | 15.5 | 0.15 | 20060922 | 232.09565 | 2.38319 | 178.73532 | 6.05675 | 0.1235050 | 2.5220631 | 187 | 7 | 1994–2006 | 0.45 | M-v | 1 | MPC | 39170 | (53825) |
| (53829) | 15.3 | 0.15 | 20060922 | 273.04743 | 102.28682 | 78.92058 | 11.30578 | 0.0596622 | 2.3323041 | 190 | 7 | 1995–2006 | 0.57 | M-v | 1 | MPC | 39172 | (53829) |
| (53834) | 14.6 | 0.15 | 20060922 | 113.52107 | 181.27590 | 69.56752 | 11.67617 | 0.2122311 | 2.6562456 | 89 | 6 | 1998–2006 | 0.61 | M-v | 1 | MPC | 73913 | (53834) |
| (53835) | 14.5 | 0.15 | 20060922 | 59.69343 | 172.93338 | 119.08339 | 14.62264 | 0.1780679 | 2.6687879 | 270 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39174 | (53835) |
| (53842) | 17.1 | 0.15 | 20060922 | 6.19199 | 265.12504 | 180.47159 | 1.97243 | 0.1731816 | 2.3691467 | 92 | 7 | 1995–2006 | 0.50 | M-v | 0 | MPC | 39176 | (53842) |
| (53843) | 13.7 | 0.15 | 20060922 | 201.65798 | 218.43782 | 72.66962 | 10.03384 | 0.0769168 | 2.3590381 | 364 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 39176 | (53843) |
| (53859) | 15.4 | 0.15 | 20060922 | 359.33510 | 268.19429 | 130.96919 | 12.96409 | 0.0333779 | 2.5729581 | 161 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 39183 | (53859) |
| (53860) | 15.8 | 0.15 | 20060922 | 13.34661 | 321.57444 | 112.99028 | 3.06185 | 0.0970702 | 2.4034195 | 100 | 7 | 1998–2006 | 0.64 | M-v | 1 | MPC | 39183 | (53860) |
| (53863) | 15.2 | 0.15 | 20060922 | 269.00997 | 82.54034 | 89.13077 | 3.19005 | 0.1434181 | 2.4316124 | 284 | 9 | 1994–2006 | 0.62 | M-v | 0 | MPC | 39184 | (53863) |
| (53865) | 15.0 | 0.15 | 20060922 | 64.76451 | 332.11333 | 15.12168 | 5.65088 | 0.1305272 | 2.5586294 | 231 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39185 | (53865) |
| (53868) | 15.0 | 0.15 | 20060922 | 268.39090 | 112.60696 | 80.51619 | 3.23396 | 0.1178799 | 2.3966325 | 242 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39186 | (53868) |
| (53869) | 15.4 | 0.15 | 20060922 | 66.58297 | 223.41114 | 88.30330 | 5.12925 | 0.0868937 | 2.6651664 | 141 | 7 | 1996–2006 | 0.64 | M-v | 1 | MPC | 39187 | (53869) |
| (53870) | 14.2 | 0.15 | 20060922 | 98.94151 | 291.31325 | 51.65951 | 7.24974 | 0.1375951 | 2.4720020 | 330 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39187 | (53870) |
| (53884) | 15.5 | 0.15 | 20060922 | 303.27644 | 50.89340 | 96.63952 | 3.66192 | 0.0493890 | 2.4232766 | 241 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 39193 | (53884) |
| (53898) | 14.7 | 0.15 | 20060922 | 324.03171 | 222.78069 | 279.81552 | 6.41676 | 0.0656457 | 2.3793797 | 207 | 7 | 1998–2006 | 0.63 | M-v | 1 | MPC | 39198 | (53898) |
| (53902) | 16.6 | 0.15 | 20060922 | 51.24741 | 242.13295 | 154.69608 | 1.31193 | 0.1886274 | 2.4088106 | 120 | 7 | 1996–2006 | 0.54 | M-v | 1 | MPC | 39200 | (53902) |
| (53903) | 15.5 | 0.15 | 20060922 | 67.64906 | 279.85887 | 126.82776 | 5.88599 | 0.0869165 | 2.3641012 | 191 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39200 | (53903) |
| (53907) | 14.7 | 0.15 | 20060922 | 122.11169 | 195.31240 | 165.16730 | 6.94914 | 0.1449099 | 2.3065087 | 343 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39201 | (53907) |
| (53909) | 15.0 | 0.15 | 20060922 | 236.90644 | 260.19484 | 342.69313 | 1.50057 | 0.1709763 | 2.4122857 | 298 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 39202 | (53909) |
| (53915) | 15.2 | 0.15 | 20060922 | 244.08623 | 109.22821 | 129.62794 | 7.12629 | 0.0617396 | 2.3835346 | 159 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 39205 | (53915) |
| (53926) | 14.8 | 0.15 | 20060922 | 43.21246 | 0.27160 | 31.27090 | 8.47558 | 0.0705325 | 2.4732174 | 214 | 9 | 1990–2006 | 0.54 | M-v | 0 | MPC | 39209 | (53926) |
| (53929) | 14.5 | 0.15 | 20060922 | 142.94323 | 231.73331 | 17.79665 | 12.67516 | 0.1195590 | 2.6391822 | 253 | 7 | 1993–2006 | 0.51 | M-v | 0 | MPC | 39210 | (53929) |
| (53931) | 15.7 | 0.15 | 20060922 | 296.93035 | 305.62837 | 229.85432 | 1.54172 | 0.1477123 | 2.3686081 | 180 | 7 | 1995–2006 | 0.50 | M-v | 1 | MPC | 39211 | (53931) |
| (53939) | 14.6 | 0.15 | 20060922 | 46.82528 | 150.31452 | 205.63034 | 8.36103 | 0.1117617 | 2.5993966 | 249 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 39214 | (53939) |
| (53940) | 16.3 | 0.15 | 20060922 | 258.57865 | 283.21370 | 200.53115 | 2.65986 | 0.1299058 | 2.5999524 | 127 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 39214 | (53940) |
| (53942) | 15.0 | 0.15 | 20060922 | 45.84117 | 124.61313 | 221.46994 | 1.40465 | 0.1082136 | 2.6483934 | 252 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 39215 | (53942) |
| (53949) | 15.6 | 0.15 | 20060922 | 260.57467 | 169.63711 | 4.85596 | 3.00121 | 0.1357697 | 2.4732806 | 225 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 39218 | (53949) |
| (53957) | 14.7 | 0.15 | 20060922 | 38.42604 | 349.87783 | 21.20422 | 4.00743 | 0.1014530 | 2.5695793 | 179 | 9 | 1971–2006 | 0.57 | M-v | 0 | MPC | 39221 | (53957) |
| (53965) | 16.4 | 0.15 | 20060922 | 8.64829 | 16.81373 | 56.34639 | 1.85681 | 0.0962495 | 2.4599768 | 122 | 7 | 1998–2006 | 0.49 | M-v | 1 | MPC | 39224 | (53965) |
| (53966) | 15.7 | 0.15 | 20060922 | 94.76155 | 157.10886 | 193.26941 | 3.91950 | 0.1660476 | 2.5106420 | 288 | 7 | 1997–2006 | 0.52 | M-v | 1 | MPC | 39224 | (53966) |
| (53970) | 15.8 | 0.15 | 20060922 | 301.66905 | 148.43561 | 18.16732 | 1.57867 | 0.1270185 | 2.3872841 | 112 | 7 | 1994–2006 | 0.57 | M-v | 1 | MPC | 39226 | (53970) |
| (53982) | 15.1 | 0.15 | 20060922 | 309.74560 | 57.38513 | 38.91925 | 5.34107 | 0.0264268 | 2.5965200 | 300 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 39231 | (53982) |
| (53985) | 14.5 | 0.15 | 20060922 | 140.22193 | 289.66658 | 47.54077 | 5.16535 | 0.1044320 | 2.4356026 | 477 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39232 | (53985) |
| (53993) | 14.8 | 0.15 | 20060922 | 89.92964 | 285.14622 | 36.59200 | 10.62130 | 0.2377501 | 2.5263075 | 195 | 6 | 1998–2005 | 0.56 | M-v | 1 | MPC | 77336 | (53993) |
| (54001) | 15.8 | 0.15 | 20060922 | 302.60128 | 68.60635 | 68.09245 | 7.24745 | 0.0892100 | 2.4557176 | 108 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 39238 | (54001) |
| (54006) | 14.6 | 0.15 | 20060922 | 64.03592 | 239.68433 | 65.20340 | 12.23990 | 0.1465209 | 2.7423495 | 185 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 39240 | (54006) |
| (54023) | 15.2 | 0.15 | 20060922 | 109.50065 | 32.12400 | 341.75367 | 4.50574 | 0.0664631 | 2.3615787 | 318 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39248 | (54023) |
| (54025) | 14.8 | 0.15 | 20060922 | 150.48372 | 174.45210 | 75.04070 | 4.22032 | 0.1112180 | 2.6158990 | 292 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 39249 | (54025) |
| (54036) | 14.9 | 0.15 | 20060922 | 328.95332 | 331.41471 | 142.22032 | 7.01111 | 0.0914789 | 2.4585831 | 255 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39253 | (54036) |
| (54044) | 14.4 | 0.15 | 20060922 | 105.55086 | 58.60774 | 222.32380 | 12.18200 | 0.1651280 | 2.6903550 | 247 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 39257 | (54044) |
| (54045) | 16.1 | 0.15 | 20060922 | 179.70789 | 171.63754 | 138.35060 | 3.36619 | 0.1785784 | 2.3704596 | 216 | 10 | 1990–2006 | 0.58 | M-v | 0 | MPC | 39257 | (54045) |
| (54047) | 14.5 | 0.15 | 20060922 | 334.65294 | 251.55050 | 192.18919 | 11.93972 | 0.1044728 | 2.5656286 | 289 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39258 | (54047) |
| (54049) | 14.0 | 0.15 | 20060922 | 10.75810 | 270.34391 | 150.57919 | 9.60386 | 0.0450084 | 2.5332799 | 325 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 39259 | (54049) |
| (54054) | 15.5 | 0.15 | 20060922 | 147.55225 | 295.94936 | 307.35401 | 2.71925 | 0.0389926 | 2.6335974 | 276 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 39261 | (54054) |
| (54075) | 14.2 | 0.15 | 20060922 | 242.68821 | 270.26545 | 326.10523 | 7.64447 | 0.1872799 | 2.3848583 | 247 | 9 | 1990–2006 | 0.55 | M-v | 1 | MPC | 39269 | (54075) |
| (54082) | 15.4 | 0.15 | 20060922 | 319.29215 | 76.11551 | 52.55884 | 5.93570 | 0.0478499 | 2.3979431 | 185 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 39272 | (54082) |
| (54084) | 14.7 | 0.15 | 20060922 | 176.10608 | 176.35200 | 125.56412 | 6.63377 | 0.1264025 | 2.4323481 | 272 | 7 | 1984–2006 | 0.56 | M-v | 0 | MPC | 39273 | (54084) |
| (54087) | 14.8 | 0.15 | 20060922 | 357.43966 | 177.08389 | 268.42193 | 6.09213 | 0.0914094 | 2.3799531 | 253 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 39274 | (54087) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (54097) | 15.6 | 0.15 | 20060922 | 212.32086 | 130.64933 | 80.09583 | 7.13021 | 0.1645638 | 2.5698627 | 247 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39278 | (54097) |
| (54098) | 14.6 | 0.15 | 20060922 | 36.68751 | 180.34847 | 209.75385 | 11.66073 | 0.2099326 | 2.5689140 | 155 | 7 | 1999–2006 | 0.64 | M-v | 1 | MPC | 39278 | (54098) |
| (54100) | 14.7 | 0.15 | 20060922 | 209.80344 | 166.91881 | 45.28642 | 15.35012 | 0.1379313 | 2.5738161 | 229 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 39279 | (54100) |
| (54103) | 16.5 | 0.15 | 20060922 | 39.67432 | 202.22234 | 221.23649 | 1.99013 | 0.1843896 | 2.4413016 | 190 | 7 | 1990–2006 | 0.56 | M-v | 0 | MPC | 39280 | (54103) |
| (54104) | 15.6 | 0.15 | 20060922 | 232.90266 | 93.35689 | 84.34613 | 2.00895 | 0.1088193 | 2.5529546 | 245 | 7 | 1996–2006 | 0.53 | M-v | 1 | MPC | 39280 | (54104) |
| (54121) | 14.8 | 0.15 | 20060922 | 14.09262 | 31.60305 | 26.96172 | 4.71027 | 0.0731777 | 2.5297833 | 203 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39287 | (54121) |
| (54128) | 14.9 | 0.15 | 20060922 | 288.60870 | 359.16327 | 137.10335 | 13.53586 | 0.1058913 | 2.5177869 | 260 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 39290 | (54128) |
| (54129) | 14.4 | 0.15 | 20060922 | 101.48954 | 177.67802 | 111.63516 | 15.35151 | 0.0561714 | 2.6804678 | 235 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 39290 | (54129) |
| (54130) | 13.8 | 0.15 | 20060922 | 130.92953 | 168.57623 | 92.02427 | 17.06742 | 0.1925335 | 2.6697919 | 223 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39291 | (54130) |
| (54132) | 15.5 | 0.15 | 20060922 | 73.22090 | 276.10363 | 52.12381 | 3.35943 | 0.1082234 | 2.6703653 | 177 | 7 | 1997–2006 | 0.66 | M-v | 0 | MPC | 39291 | (54132) |
| (54138) | 14.3 | 0.15 | 20060922 | 182.76850 | 92.36209 | 95.14294 | 11.04107 | 0.0963029 | 2.7036801 | 205 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 39293 | (54138) |
| (54140) | 13.6 | 0.15 | 20060922 | 54.99708 | 234.28234 | 127.38645 | 15.89242 | 0.1304724 | 2.6301985 | 351 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 39294 | (54140) |
| (54143) | 15.3 | 0.15 | 20060922 | 22.70768 | 343.28117 | 70.98979 | 14.40205 | 0.1417936 | 2.5429335 | 123 | 7 | 1999–2006 | 0.58 | M-v | 1 | MPC | 39295 | (54143) |
| (54148) | 14.3 | 0.15 | 20060922 | 150.39386 | 159.63609 | 117.03883 | 13.89375 | 0.0146659 | 2.5949141 | 273 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 39297 | (54148) |
| (54157) | 15.5 | 0.15 | 20060922 | 322.56828 | 77.42080 | 52.13182 | 3.48235 | 0.1253299 | 2.4429894 | 203 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39301 | (54157) |
| (54160) | 15.1 | 0.15 | 20060922 | 45.41684 | 249.41937 | 95.78754 | 3.07022 | 0.0911328 | 2.7178012 | 197 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 39302 | (54160) |
| (54163) | 14.0 | 0.15 | 20060922 | 42.76623 | 293.71326 | 58.36482 | 11.44874 | 0.1320536 | 2.7390862 | 239 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 39303 | (54163) |
| (54166) | 15.3 | 0.15 | 20060922 | 167.68246 | 89.22850 | 214.61532 | 2.84671 | 0.0600109 | 2.4742003 | 270 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 39305 | (54166) |
| (54172) | 16.2 | 0.15 | 20060922 | 8.73119 | 354.93248 | 45.60865 | 4.46226 | 0.0780462 | 2.6202865 | 129 | 7 | 1976–2006 | 0.53 | M-v | 0 | MPC | 39307 | (54172) |
| (54175) | 16.3 | 0.15 | 20060922 | 44.69953 | 10.40644 | 40.43298 | 1.72194 | 0.1762349 | 2.4470271 | 165 | 9 | 1990–2006 | 0.56 | M-v | 0 | MPC | 39308 | (54175) |
| (54179) | 15.6 | 0.15 | 20060922 | 221.24424 | 107.06288 | 115.21616 | 3.44701 | 0.0838051 | 2.5190368 | 198 | 7 | 1996–2006 | 0.56 | M-v | 1 | MPC | 39309 | (54179) |
| (54180) | 15.6 | 0.15 | 20060922 | 320.12133 | 172.85443 | 223.76878 | 1.18132 | 0.0523724 | 2.7550089 | 180 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39310 | (54180) |
| (54181) | 14.6 | 0.15 | 20060922 | 3.97703 | 348.47075 | 59.73644 | 14.60881 | 0.0656305 | 2.6108327 | 270 | 7 | 1999–2006 | 0.65 | M-v | 0 | MPC | 39310 | (54181) |
| (54191) | 15.4 | 0.15 | 20060922 | 151.29884 | 148.64534 | 95.25143 | 4.18473 | 0.0431969 | 2.6692672 | 193 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39314 | (54191) |
| (54199) | 15.0 | 0.15 | 20060922 | 299.90655 | 84.93202 | 101.94955 | 13.76231 | 0.0585941 | 2.3536103 | 154 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39317 | (54199) |
| (54202) | 14.7 | 0.15 | 20060922 | 347.10318 | 336.96336 | 96.68803 | 15.31472 | 0.0611349 | 2.5630461 | 148 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 39318 | (54202) |
| (54203) | 14.9 | 0.15 | 20060922 | 318.42238 | 299.69907 | 115.03373 | 10.94591 | 0.0115596 | 2.7219755 | 165 | 7 | 1991–2006 | 0.61 | M-v | 0 | MPC | 39319 | (54203) |
| (54214) | 15.9 | 0.15 | 20060922 | 260.04398 | 224.50170 | 222.34450 | 3.12474 | 0.0640569 | 2.7820221 | 94 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 39322 | (54214) |
| (54243) | 15.6 | 0.15 | 20060922 | 272.18174 | 321.34839 | 233.65714 | 11.21589 | 0.1067851 | 2.4045351 | 189 | 7 | 1998–2006 | 0.63 | M-v | 1 | MPC | 39333 | (54243) |
| (54255) | 15.8 | 0.15 | 20060922 | 236.60501 | 310.76827 | 301.92332 | 2.85704 | 0.0834486 | 2.3965557 | 278 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 39338 | (54255) |
| (54258) | 15.9 | 0.15 | 20060922 | 215.77818 | 289.52644 | 247.87084 | 12.51537 | 0.2320206 | 2.6146464 | 104 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 39339 | (54258) |
| (54263) | 15.6 | 0.15 | 20060922 | 232.69570 | 258.23236 | 277.19456 | 3.27199 | 0.1810343 | 2.5895145 | 257 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39342 | (54263) |
| (54269) | 15.5 | 0.15 | 20060922 | 155.19164 | 4.91917 | 300.27323 | 2.30570 | 0.1095237 | 2.5277503 | 335 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 39344 | (54269) |
| (54278) | 14.6 | 0.15 | 20060922 | 201.95685 | 286.66634 | 278.44383 | 7.57840 | 0.1522589 | 2.5990374 | 155 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 39347 | (54278) |
| (54285) | 14.3 | 0.15 | 20060922 | 112.23008 | 227.10099 | 44.68060 | 3.55572 | 0.0484656 | 2.7294451 | 211 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 39350 | (54285) |
| (54287) | 13.8 | 0.15 | 20060922 | 99.01099 | 19.31194 | 266.05294 | 12.30520 | 0.1558590 | 2.7727080 | 183 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 39351 | (54287) |
| (54288) | 14.2 | 0.15 | 20060922 | 137.16592 | 83.94011 | 219.14410 | 11.91772 | 0.1910321 | 2.6192988 | 425 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 39351 | (54288) |
| (54291) | 14.3 | 0.15 | 20060922 | 144.61081 | 204.01127 | 69.10241 | 15.82310 | 0.0453387 | 2.6417349 | 220 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39352 | (54291) |
| (54300) | 16.4 | 0.15 | 20060922 | 331.39243 | 87.46564 | 52.09327 | 2.81294 | 0.1565613 | 2.3967134 | 119 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 39356 | (54300) |
| (54301) | 14.7 | 0.15 | 20060922 | 235.45367 | 125.98580 | 72.68208 | 6.46075 | 0.1172715 | 2.5521377 | 247 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 39357 | (54301) |
| (54303) | 13.9 | 0.15 | 20060922 | 51.03796 | 276.62815 | 110.15877 | 13.07981 | 0.0983816 | 2.5677566 | 270 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 39357 | (54303) |
| (54304) | 14.3 | 0.15 | 20060922 | 222.97562 | 75.92694 | 93.80077 | 14.36565 | 0.1125144 | 2.6580746 | 267 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39358 | (54304) |
| (54307) | 15.6 | 0.15 | 20060922 | 1.38329 | 24.64087 | 80.71963 | 4.71513 | 0.2014919 | 2.3633613 | 109 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 39359 | (54307) |
| (54310) | 14.4 | 0.15 | 20060922 | 261.52546 | 352.16421 | 164.23143 | 15.51357 | 0.0478290 | 2.6220135 | 264 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39360 | (54310) |
| (54316) | 14.2 | 0.15 | 20060922 | 49.26201 | 117.64807 | 241.47324 | 13.03083 | 0.1948465 | 2.6218090 | 193 | 7 | 1999–2006 | 0.62 | M-v | 1 | MPC | 39362 | (54316) |
| (54317) | 14.4 | 0.15 | 20060922 | 344.68551 | 6.78777 | 63.88311 | 15.48668 | 0.0812946 | 2.6141626 | 170 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 39363 | (54317) |
| (54319) | 15.1 | 0.15 | 20060922 | 192.53114 | 22.09325 | 213.45818 | 10.20101 | 0.0857067 | 2.5902288 | 245 | 7 | 1997–2006 | 0.51 | M-v | 1 | MPC | 39363 | (54319) |
| (54327) | 14.7 | 0.15 | 20060922 | 230.78626 | 108.22128 | 120.71026 | 5.64738 | 0.1826091 | 2.5463360 | 174 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 39367 | (54327) |
| (54333) | 15.6 | 0.15 | 20060922 | 25.62687 | 307.24370 | 58.92497 | 6.96935 | 0.0621624 | 2.7050848 | 173 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 39369 | (54333) |
| (54336) | 14.7 | 0.15 | 20060922 | 60.06442 | 143.29847 | 232.28877 | 12.82189 | 0.1942801 | 2.6010811 | 330 | 7 | 1997–2006 | 0.55 | M-v | 1 | MPC | 39370 | (54336) |
| (54343) | 13.9 | 0.15 | 20060922 | 39.26044 | 285.78866 | 68.49017 | 5.75168 | 0.0711910 | 2.7583122 | 220 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 39373 | (54343) |
| (54344) | 14.0 | 0.15 | 20060922 | 49.49011 | 330.74206 | 71.95309 | 14.99090 | 0.1449376 | 2.5596324 | 247 | 7 | 1999–2006 | 0.61 | M-v | 1 | MPC | 39373 | (54344) |
| (54360) | 14.2 | 0.15 | 20060922 | 239.33002 | 351.24019 | 186.85198 | 5.17775 | 0.2086912 | 2.5939903 | 310 | 9 | 1983–2006 | 0.56 | M-v | 0 | MPC | 39380 | (54360) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (54362) | 15.1 | 0.15 | 20060922 | 171.12163 | 166.77892 | 94.23928 | 13.78295 | 0.1300198 | 2.6373592 | 163 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 39381 | (54362) |
| (54364) | 14.5 | 0.15 | 20060922 | 300.23542 | 314.05426 | 157.69784 | 15.37794 | 0.0899206 | 2.6567636 | 220 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 39381 | (54364) |
| (54367) | 16.0 | 0.15 | 20060922 | 227.66227 | 33.63459 | 220.78076 | 10.39906 | 0.1572566 | 2.4634586 | 173 | 7 | 1996–2006 | 0.59 | M-v | 1 | MPC | 39382 | (54367) |
| (54371) | 15.9 | 0.15 | 20060922 | 320.35301 | 51.96886 | 115.74535 | 3.00386 | 0.0953098 | 2.3635306 | 161 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 39384 | (54371) |
| (54373) | 15.5 | 0.15 | 20060922 | 281.45261 | 11.21635 | 124.92850 | 14.62723 | 0.0995915 | 2.5316320 | 189 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 39385 | (54373) |
| (54377) | 14.7 | 0.15 | 20060922 | 304.18283 | 260.71359 | 191.69781 | 14.13147 | 0.0819361 | 2.6222979 | 177 | 7 | 1993–2006 | 0.60 | M-v | 1 | MPC | 39386 | (54377) |
| (54385) | 14.8 | 0.15 | 20060922 | 246.51882 | 9.28619 | 137.90437 | 12.56453 | 0.1268119 | 2.6251641 | 123 | 7 | 1998–2006 | 0.65 | M-v | 0 | MPC | 39389 | (54385) |
| (54387) | 14.4 | 0.15 | 20060922 | 59.38351 | 181.52633 | 180.31282 | 15.43639 | 0.1257147 | 2.6155090 | 325 | 7 | 1999–2006 | 0.53 | M-v | 1 | MPC | 39390 | (54387) |
| (54391) | 13.5 | 0.15 | 20060922 | 24.99205 | 261.54916 | 122.89382 | 17.99318 | 0.1707823 | 2.7194073 | 281 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 39392 | (54391) |
| (54394) | 14.6 | 0.15 | 20060922 | 289.48124 | 357.18061 | 140.82123 | 13.79536 | 0.1231766 | 2.5770235 | 267 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 39393 | (54394) |
| (54398) | 15.1 | 0.15 | 20060922 | 12.46353 | 252.39641 | 129.94631 | 4.45303 | 0.0903123 | 2.6475443 | 225 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 39395 | (54398) |
| (54399) | 15.3 | 0.15 | 20060922 | 4.35339 | 314.05396 | 142.80404 | 7.35322 | 0.0691742 | 2.4029824 | 208 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39395 | (54399) |
| (54403) | 15.4 | 0.15 | 20060922 | 226.36918 | 275.29686 | 261.01916 | 11.04409 | 0.1621580 | 2.6372903 | 207 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 39397 | (54403) |
| (54407) | 15.5 | 0.15 | 20060922 | 43.64156 | 223.37526 | 161.22356 | 3.94672 | 0.0102778 | 2.5839381 | 227 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 39398 | (54407) |
| (54410) | 14.9 | 0.15 | 20060922 | 264.34496 | 113.85727 | 114.47741 | 3.65231 | 0.1613795 | 2.4168032 | 251 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 39399 | (54410) |
| (54411) | 14.6 | 0.15 | 20060922 | 95.65718 | 76.36841 | 254.78399 | 10.29307 | 0.1868243 | 2.8554298 | 308 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 39400 | (54411) |
| (54413) | 13.8 | 0.15 | 20060922 | 161.62331 | 161.58989 | 124.05685 | 16.88646 | 0.1722439 | 2.6145023 | 322 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39401 | (54413) |
| (54416) | 14.8 | 0.15 | 20060922 | 223.92590 | 141.20343 | 93.85034 | 4.57991 | 0.0657223 | 2.5313950 | 181 | 9 | 1991–2006 | 0.58 | M-v | 0 | MPC | 39402 | (54416) |
| (54419) | 14.5 | 0.15 | 20060922 | 306.40771 | 77.11463 | 128.09722 | 13.19108 | 0.1903467 | 2.4011507 | 375 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39404 | (54419) |
| (54430) | 13.7 | 0.15 | 20060922 | 80.18569 | 118.55091 | 251.86419 | 12.89163 | 0.1273398 | 2.5662442 | 327 | 7 | 1997–2006 | 0.50 | M-v | 0 | MPC | 39409 | (54430) |
| (54433) | 14.2 | 0.15 | 20060922 | 125.22693 | 39.66120 | 208.61776 | 9.89675 | 0.0536678 | 2.9757576 | 389 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 39410 | (54433) |
| (54438) | 14.3 | 0.15 | 20060922 | 253.72834 | 297.03341 | 306.76504 | 3.97608 | 0.2007302 | 2.5536819 | 366 | 7 | 1999–2006 | 0.63 | M-v | 0 | MPC | 39412 | (54438) |
| (54439) | 14.4 | 0.15 | 20060922 | 257.95162 | 89.73142 | 155.64696 | 16.51554 | 0.1919123 | 2.5382169 | 338 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39413 | (54439) |
| (54441) | 13.8 | 0.15 | 20060922 | 208.27180 | 153.19444 | 140.69074 | 13.54890 | 0.2166745 | 2.5463057 | 280 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 39413 | (54441) |
| (54447) | 14.8 | 0.15 | 20060922 | 184.17726 | 158.58623 | 108.07368 | 16.06719 | 0.0849530 | 2.6269828 | 228 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 39416 | (54447) |
| (54453) | 14.4 | 0.15 | 20060922 | 24.96913 | 46.47387 | 329.18043 | 9.29979 | 0.1177647 | 2.9780440 | 296 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39418 | (54453) |
| (54457) | 13.8 | 0.15 | 20060922 | 323.47525 | 23.76114 | 124.40127 | 18.49113 | 0.1221422 | 2.5907884 | 328 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 39420 | (54457) |
| (54459) | 14.5 | 0.15 | 20060922 | 189.18661 | 306.32640 | 280.61743 | 3.30491 | 0.0870941 | 2.7761044 | 325 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 39421 | (54459) |
| (54472) | 14.4 | 0.15 | 20060922 | 95.91699 | 155.76385 | 127.08699 | 3.05540 | 0.0530510 | 2.9281250 | 282 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 39427 | (54472) |
| (54479) | 14.2 | 0.15 | 20060922 | 55.41324 | 219.21291 | 98.48394 | 12.34249 | 0.1003269 | 2.9869928 | 220 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 39430 | (54479) |
| (54484) | 15.3 | 0.15 | 20060922 | 216.86747 | 150.51458 | 103.63803 | 5.71629 | 0.2028195 | 2.5623447 | 134 | 9 | 1994–2006 | 0.59 | M-v | 1 | MPC | 39432 | (54484) |
| (54485) | 14.3 | 0.15 | 20060922 | 200.37351 | 111.91580 | 146.82088 | 15.53678 | 0.0951949 | 2.6763628 | 229 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 39432 | (54485) |
| (54490) | 14.1 | 0.15 | 20060922 | 146.44263 | 66.87390 | 199.35007 | 8.84667 | 0.1132574 | 2.7842481 | 370 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 39434 | (54490) |
| (54493) | 14.5 | 0.15 | 20060922 | 109.65151 | 100.76927 | 197.88885 | 10.31757 | 0.1224715 | 2.8425921 | 225 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39436 | (54493) |
| (54499) | 14.4 | 0.15 | 20060922 | 127.86364 | 27.66934 | 242.36290 | 11.87292 | 0.0867912 | 2.8519223 | 232 | 7 | 1996–2006 | 0.49 | M-v | 0 | MPC | 39439 | (54499) |
| (54503) | 13.7 | 0.15 | 20060922 | 53.28623 | 7.89284 | 316.65622 | 15.25245 | 0.0891510 | 3.1598672 | 177 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 39440 | (54503) |
| (54510) | 14.3 | 0.15 | 20060922 | 264.05533 | 306.25269 | 258.05398 | 1.75727 | 0.0452308 | 2.6208198 | 437 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 39444 | (54510) |
| (54513) | 12.4 | 0.15 | 20060922 | 352.31038 | 290.01021 | 105.83378 | 15.91099 | 0.1302509 | 3.1667246 | 353 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 39445 | (54513) |
| (54518) | 13.3 | 0.15 | 20060922 | 293.86183 | 310.12103 | 135.42422 | 20.34654 | 0.0566320 | 3.1685869 | 280 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 39447 | (54518) |
| (54522) | 15.2 | 0.15 | 20060922 | 99.74444 | 322.80361 | 324.99574 | 8.97868 | 0.0761016 | 3.0082480 | 245 | 9 | 1990–2006 | 0.60 | M-v | 0 | MPC | 77337 | (54522) |
| (54529) | 14.4 | 0.15 | 20060922 | 113.40146 | 290.81528 | 336.10688 | 8.80182 | 0.0919460 | 3.0772517 | 141 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 39452 | (54529) |
| (54531) | 13.6 | 0.15 | 20060922 | 208.62902 | 191.16165 | 88.07366 | 14.53382 | 0.1430457 | 2.6177841 | 299 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 39452 | (54531) |
| (54534) | 14.7 | 0.15 | 20060922 | 76.75668 | 341.88311 | 299.61310 | 3.86436 | 0.1214395 | 3.1062153 | 212 | 6 | 1999–2006 | 0.65 | M-v | 0 | MPC | 39454 | (54534) |
| (54541) | 14.5 | 0.15 | 20060922 | 287.68918 | 210.22540 | 24.88046 | 7.92627 | 0.1266690 | 2.4645564 | 300 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 39456 | (54541) |
| (54543) | 13.9 | 0.15 | 20060922 | 346.73649 | 18.08165 | 128.05763 | 14.36895 | 0.1112557 | 2.5596558 | 326 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 39457 | (54543) |
| (54546) | 15.2 | 0.15 | 20060922 | 162.17477 | 304.72572 | 281.93251 | 2.66691 | 0.0902219 | 3.0729146 | 242 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 39458 | (54546) |
| (54550) | 14.3 | 0.15 | 20060922 | 240.87877 | 201.15045 | 306.40151 | 8.21622 | 0.0376281 | 3.0481904 | 285 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39459 | (54550) |
| (54551) | 13.2 | 0.15 | 20060922 | 203.19588 | 203.84781 | 321.42637 | 14.34251 | 0.1721980 | 3.1447297 | 263 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 39460 | (54551) |
| (54554) | 13.7 | 0.15 | 20060922 | 231.54116 | 146.78156 | 80.87138 | 10.85517 | 0.1460037 | 2.7935326 | 320 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39461 | (54554) |
| (54557) | 13.6 | 0.15 | 20060922 | 353.89842 | 85.31882 | 321.96786 | 7.87939 | 0.0211262 | 3.0694247 | 267 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 39462 | (54557) |
| (54558) | 13.8 | 0.15 | 20060922 | 66.53213 | 138.70091 | 195.37442 | 9.92945 | 0.0653367 | 3.0202378 | 221 | 10 | 1990–2006 | 0.56 | M-v | 0 | MPC | 39463 | (54558) |
| (54559) | 14.0 | 0.15 | 20060922 | 81.01772 | 333.12899 | 329.59441 | 11.13162 | 0.0408406 | 3.1302105 | 261 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39463 | (54559) |
| (54561) | 14.7 | 0.15 | 20060922 | 51.87264 | 165.32347 | 144.39916 | 24.12282 | 0.0833394 | 3.1285017 | 134 | 7 | 1999–2006 | 0.63 | M-v | 0 | MPC | 39464 | (54561) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (54564) | 14.0 | 0.15 | 20060922 | 124.29893 | 357.32646 | 266.97725 | 7.28705 | 0.0571848 | 3.0318520 | 371 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 39465 | (54564) |
| (54565) | 14.3 | 0.15 | 20060922 | 108.51211 | 276.64683 | 354.94677 | 12.32850 | 0.0829679 | 3.1088490 | 216 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 39466 | (54565) |
| (54570) | 14.3 | 0.15 | 20060922 | 123.32469 | 49.20916 | 201.86274 | 12.22597 | 0.0169617 | 3.0498544 | 302 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 39468 | (54570) |
| (54576) | 13.7 | 0.15 | 20060922 | 238.64962 | 250.59820 | 259.71409 | 7.76895 | 0.0905401 | 3.0557394 | 256 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39470 | (54576) |
| (54585) | 14.6 | 0.15 | 20060922 | 206.31185 | 176.49295 | 71.52307 | 6.36998 | 0.2096199 | 2.6607165 | 216 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39474 | (54585) |
| (54586) | 14.4 | 0.15 | 20060922 | 299.84362 | 292.83975 | 140.56255 | 16.94485 | 0.0870485 | 3.1799695 | 134 | 9 | 1994–2006 | 0.64 | M-v | 0 | MPC | 39474 | (54586) |
| (54589) | 14.7 | 0.15 | 20060922 | 239.24308 | 218.40974 | 23.60490 | 3.15904 | 0.1744477 | 2.5655853 | 253 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39475 | (54589) |
| (54590) | 13.7 | 0.15 | 20060922 | 255.64559 | 36.78552 | 114.12208 | 3.72750 | 0.0994963 | 2.9979987 | 328 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39476 | (54590) |
| (54591) | 14.9 | 0.15 | 20060922 | 264.53387 | 101.46022 | 137.09411 | 6.39125 | 0.1465816 | 2.5458144 | 271 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 39476 | (54591) |
| (54592) | 13.5 | 0.15 | 20060922 | 176.72885 | 175.60088 | 29.97824 | 9.73960 | 0.0301667 | 3.1657038 | 232 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 39477 | (54592) |
| (54595) | 14.0 | 0.15 | 20060922 | 162.35372 | 120.71564 | 110.24986 | 14.90239 | 0.2363267 | 2.8878476 | 208 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 39478 | (54595) |
| (54596) | 12.5 | 0.15 | 20060922 | 220.56274 | 154.30647 | 147.25064 | 5.34583 | 0.0717542 | 5.1001510 | 146 | 10 | 1976–2006 | 0.49 | M-v | 0 | MPC | 39478 | (54596) |
| (54602) | 14.1 | 0.15 | 20060922 | 142.65965 | 297.60308 | 297.36887 | 10.70267 | 0.1360442 | 3.0636816 | 192 | 7 | 1994–2006 | 0.47 | M-v | 0 | MPC | 39480 | (54602) |
| (54605) | 13.9 | 0.15 | 20060922 | 257.49154 | 284.83389 | 305.57881 | 11.52707 | 0.2324182 | 2.6095664 | 306 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 39481 | (54605) |
| (54606) | 13.3 | 0.15 | 20060922 | 200.19663 | 289.44363 | 277.66185 | 9.04494 | 0.0554504 | 3.0053019 | 300 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39482 | (54606) |
| (54607) | 13.3 | 0.15 | 20060922 | 211.69139 | 310.76386 | 272.27134 | 9.32956 | 0.0846267 | 2.8928316 | 308 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 39482 | (54607) |
| (54608) | 13.6 | 0.15 | 20060922 | 117.02258 | 282.80684 | 349.22187 | 11.07322 | 0.1715736 | 3.0853051 | 262 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 39483 | (54608) |
| (54609) | 14.1 | 0.15 | 20060922 | 65.04101 | 326.87844 | 343.12225 | 16.25735 | 0.1048502 | 3.1163589 | 127 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 39483 | (54609) |
| (54619) | 14.0 | 0.15 | 20060922 | 291.45408 | 350.95169 | 109.20579 | 11.79560 | 0.0630963 | 3.1254387 | 171 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 39487 | (54619) |
| (54641) | 14.8 | 0.15 | 20060922 | 273.91158 | 223.85687 | 342.23452 | 5.05809 | 0.1562361 | 2.6212221 | 262 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 39495 | (54641) |
| (54650) | 12.3 | 0.15 | 20060922 | 121.40901 | 289.01051 | 337.35855 | 21.08224 | 0.0188491 | 3.2237240 | 260 | 7 | 1991–2006 | 0.52 | M-v | 0 | MPC | 39497 | (54650) |
| (54658) | 13.4 | 0.15 | 20060922 | 216.60914 | 136.99708 | 43.30087 | 10.18424 | 0.0373189 | 3.0749007 | 302 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39500 | (54658) |
| (54673) | 14.1 | 0.15 | 20060922 | 326.21119 | 156.03907 | 40.00112 | 6.65943 | 0.1938997 | 2.7966257 | 208 | 10 | 1986–2006 | 0.62 | M-v | 1 | MPC | 39505 | (54673) |
| (54688) | 15.5 | 0.15 | 20060922 | 138.92902 | 318.59278 | 329.74540 | 4.85294 | 0.2164522 | 2.2297782 | 251 | 7 | 1994–2006 | 0.46 | M-v | 0 | MPC | 39511 | (54688) |
| (54692) | 16.0 | 0.15 | 20060922 | 136.47336 | 234.71269 | 35.94417 | 3.65742 | 0.2248037 | 2.3179818 | 137 | 7 | 1991–2006 | 0.51 | M-v | 1 | MPC | 39512 | (54692) |
| (54695) | 14.5 | 0.15 | 20060922 | 193.71074 | 271.77598 | 26.05434 | 5.37592 | 0.1941881 | 2.1807517 | 273 | 7 | 1995–2006 | 0.50 | M-v | 1 | MPC | 39513 | (54695) |
| (54702) | 15.9 | 0.15 | 20060922 | 141.12447 | 161.86185 | 161.86215 | 1.25999 | 0.1910038 | 2.1844045 | 270 | 9 | 1976–2006 | 0.52 | M-v | 1 | MPC | 39515 | (54702) |
| (54710) | 15.9 | 0.15 | 20060922 | 126.58268 | 233.35961 | 41.16759 | 2.68312 | 0.1904201 | 2.4231873 | 154 | 7 | 1997–2006 | 0.50 | M-v | 0 | MPC | 39518 | (54710) |
| (54712) | 15.6 | 0.15 | 20060922 | 132.86511 | 45.86007 | 234.14885 | 4.67167 | 0.1719438 | 2.3908715 | 290 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 39518 | (54712) |
| (54719) | 15.8 | 0.15 | 20060922 | 67.42872 | 143.78314 | 229.14925 | 2.79767 | 0.1521600 | 2.2749168 | 215 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 39521 | (54719) |
| (54720) | 16.8 | 0.15 | 20060922 | 217.29289 | 135.75291 | 119.20612 | 4.49760 | 0.1218517 | 2.2010701 | 227 | 7 | 1995–2006 | 0.59 | M-v | 1 | MPC | 39521 | (54720) |
| (54723) | 14.3 | 0.15 | 20060922 | 45.42191 | 156.62865 | 168.97175 | 13.40123 | 0.2706803 | 2.5797608 | 235 | 7 | 1993–2006 | 0.59 | M-v | 0 | MPC | 39522 | (54723) |
| (54728) | 15.0 | 0.15 | 20060922 | 34.60240 | 142.92159 | 205.50385 | 4.41204 | 0.3515189 | 2.5963268 | 196 | 7 | 1989–2006 | 0.51 | M-v | 0 | MPC | 39524 | (54728) |
| (54729) | 14.6 | 0.15 | 20060922 | 61.16621 | 219.50853 | 127.05222 | 6.85062 | 0.2299304 | 2.5540567 | 146 | 9 | 1995–2006 | 0.63 | M-v | 1 | MPC | 39524 | (54729) |
| (54730) | 14.6 | 0.15 | 20060922 | 90.78308 | 37.61811 | 255.90059 | 15.29254 | 0.1875091 | 2.5799362 | 216 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 39524 | (54730) |
| (54735) | 16.4 | 0.15 | 20060922 | 245.23461 | 249.12098 | 310.42821 | 2.98537 | 0.1016109 | 2.2512312 | 181 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 39526 | (54735) |
| (54736) | 16.6 | 0.15 | 20060922 | 136.10070 | 345.72254 | 290.58617 | 4.36095 | 0.1295838 | 2.3835212 | 113 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 39526 | (54736) |
| (54738) | 15.9 | 0.15 | 20060922 | 202.10160 | 184.83331 | 70.09822 | 3.84703 | 0.1968084 | 2.2595974 | 162 | 7 | 1994–2006 | 0.55 | M-v | 1 | MPC | 39527 | (54738) |
| (54740) | 14.9 | 0.15 | 20060922 | 187.19912 | 160.08299 | 72.35517 | 24.84022 | 0.1081146 | 2.3209306 | 162 | 7 | 1994–2006 | 0.52 | M-v | 1 | MPC | 39527 | (54740) |
| (54743) | 15.9 | 0.15 | 20060922 | 163.79408 | 175.56959 | 98.07760 | 5.68845 | 0.0176092 | 2.2939621 | 105 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 39528 | (54743) |
| (54746) | 14.5 | 0.15 | 20060922 | 80.64820 | 72.34280 | 202.80440 | 12.33797 | 0.1260244 | 2.6037370 | 273 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 39529 | (54746) |
| (54759) | 14.7 | 0.15 | 20060922 | 43.51577 | 137.35809 | 245.60314 | 12.68234 | 0.1754083 | 2.5474199 | 234 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39533 | (54759) |
| (54768) | 14.8 | 0.15 | 20060922 | 43.73807 | 101.50885 | 208.35538 | 8.32337 | 0.1669362 | 2.7706370 | 235 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 39536 | (54768) |
| (54771) | 14.5 | 0.15 | 20060922 | 94.33664 | 11.65960 | 279.00619 | 13.10493 | 0.0875977 | 2.6064997 | 141 | 7 | 1997–2006 | 0.59 | M-v | 1 | MPC | 39537 | (54771) |
| (54775) | 15.7 | 0.15 | 20060922 | 98.76242 | 59.59049 | 239.94661 | 5.77727 | 0.0745717 | 2.5235575 | 208 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 39539 | (54775) |
| (54779) | 14.8 | 0.15 | 20060922 | 111.61587 | 47.44359 | 280.16503 | 5.25682 | 0.1387341 | 2.4370410 | 291 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 39540 | (54779) |
| (54785) | 16.9 | 0.15 | 20060922 | 117.39314 | 61.55933 | 269.17801 | 6.48916 | 0.1400568 | 2.3154194 | 141 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 39542 | (54785) |
| (54790) | 14.7 | 0.15 | 20060922 | 14.53553 | 295.17387 | 114.53677 | 14.56671 | 0.1726238 | 2.5881647 | 227 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 39544 | (54790) |
| (54794) | 15.4 | 0.15 | 20060922 | 76.66579 | 93.22788 | 271.48740 | 4.63582 | 0.0648448 | 2.4176136 | 201 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 39546 | (54794) |
| (54796) | 15.2 | 0.15 | 20060922 | 150.13502 | 224.51393 | 43.28238 | 4.88163 | 0.1636684 | 2.4413912 | 191 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39546 | (54796) |
| (54799) | 14.9 | 0.15 | 20060922 | 5.12240 | 248.26774 | 140.96428 | 9.14794 | 0.3124672 | 2.7661989 | 224 | 6 | 1983–2006 | 0.57 | M-v | 0 | MPC | 39548 | (54799) |
| (54800) | 15.2 | 0.15 | 20060922 | 48.39934 | 45.65529 | 336.68433 | 1.72091 | 0.2552830 | 2.5728127 | 241 | 7 | 1993–2006 | 0.58 | M-v | 1 | MPC | 39548 | (54800) |
| (54809) | 14.4 | 0.15 | 20060922 | 54.64728 | 109.41623 | 223.75637 | 12.74193 | 0.1252894 | 2.6452210 | 136 | 7 | 1996–2006 | 0.59 | M-v | 1 | MPC | 39552 | (54809) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (54810) | 14.6 | 0.15 | 20060922 | 188.91185 | 74.68993 | 148.11032 | 9.46404 | 0.2051585 | 2.4295341 | 240 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 39552 | (54810) |
| (54820) | 14.6 | 0.15 | 20060922 | 32.27445 | 211.12736 | 138.42332 | 10.06476 | 0.2235211 | 2.6742458 | 340 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 39555 | (54820) |
| (54823) | 15.7 | 0.15 | 20060922 | 71.03913 | 273.01414 | 119.22825 | 3.04294 | 0.1951883 | 2.3967121 | 227 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39556 | (54823) |
| (54826) | 15.1 | 0.15 | 20060922 | 49.76231 | 94.70336 | 301.21590 | 5.84326 | 0.1288883 | 2.4344730 | 195 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 39557 | (54826) |
| (54832) | 15.3 | 0.15 | 20060922 | 72.57278 | 46.62854 | 288.35796 | 3.64155 | 0.0667483 | 2.5318300 | 216 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39559 | (54832) |
| (54833) | 15.6 | 0.15 | 20060922 | 139.46706 | 231.45663 | 31.00293 | 2.39817 | 0.0715905 | 2.5202424 | 181 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 39559 | (54833) |
| (54835) | 14.9 | 0.15 | 20060922 | 335.71325 | 165.25073 | 260.63095 | 13.24769 | 0.0953789 | 2.6367857 | 168 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39560 | (54835) |
| (54845) | 15.0 | 0.15 | 20060922 | 160.76963 | 1.24831 | 324.95659 | 6.60761 | 0.1331511 | 2.3200114 | 357 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 39563 | (54845) |
| (54858) | 14.9 | 0.15 | 20060922 | 103.79112 | 144.55691 | 111.17678 | 15.39287 | 0.0544237 | 2.7164318 | 144 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 39569 | (54858) |
| (54865) | 14.2 | 0.15 | 20060922 | 25.97015 | 260.32205 | 80.97620 | 9.81742 | 0.1947903 | 2.7502033 | 153 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 39572 | (54865) |
| (54867) | 14.2 | 0.15 | 20060922 | 274.94612 | 1.85408 | 115.05548 | 16.01471 | 0.0227045 | 2.6969128 | 277 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39572 | (54867) |
| (54877) | 15.4 | 0.15 | 20060922 | 266.84341 | 188.05173 | 21.57997 | 7.30957 | 0.0476836 | 2.2818228 | 238 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39576 | (54877) |
| (54889) | 16.2 | 0.15 | 20060922 | 267.47177 | 155.25146 | 67.76795 | 4.03778 | 0.1145578 | 2.2548690 | 190 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39581 | (54889) |
| (54896) | 13.7 | 0.15 | 20060922 | 44.94620 | 45.95986 | 328.34462 | 21.86923 | 0.0661840 | 2.6042053 | 302 | 7 | 1995–2006 | 0.47 | M-v | 0 | MPC | 39584 | (54896) |
| (54905) | 15.3 | 0.15 | 20060922 | 217.96330 | 238.80156 | 309.15969 | 10.79443 | 0.1525875 | 2.5330568 | 80 | 7 | 1997–2006 | 0.54 | M-v | 1 | MPC | 39588 | (54905) |
| (54916) | 15.5 | 0.15 | 20060922 | 132.57616 | 353.68822 | 357.09569 | 7.41983 | 0.0898589 | 2.3031646 | 173 | 7 | 1998–2006 | 0.48 | M-v | 1 | MPC | 39592 | (54916) |
| (54917) | 15.2 | 0.15 | 20060922 | 10.67724 | 343.25935 | 64.58922 | 7.43012 | 0.1443830 | 2.5540943 | 142 | 8 | 1996–2006 | 0.54 | M-v | 1 | MPC | 39592 | (54917) |
| (54929) | 14.0 | 0.15 | 20060922 | 93.29723 | 56.37790 | 309.65394 | 11.54528 | 0.1987879 | 2.5535438 | 280 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 39596 | (54929) |
| (54939) | 14.6 | 0.15 | 20060922 | 97.57821 | 351.38447 | 8.05747 | 2.99166 | 0.1164608 | 2.5330861 | 396 | 9 | 1991–2006 | 0.51 | M-v | 0 | MPC | 39601 | (54939) |
| (54952) | 14.9 | 0.15 | 20060922 | 0.72377 | 335.48058 | 101.37750 | 3.17001 | 0.0909041 | 2.5513699 | 273 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 39606 | (54952) |
| (54962) | 14.6 | 0.15 | 20060922 | 348.80376 | 46.25956 | 15.06784 | 3.94581 | 0.0856166 | 2.6936964 | 289 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 39609 | (54962) |
| (54968) | 14.5 | 0.15 | 20060922 | 46.23883 | 343.72333 | 16.04698 | 14.72463 | 0.1235416 | 2.6136524 | 169 | 8 | 1993–2006 | 0.54 | M-v | 0 | MPC | 39612 | (54968) |
| (54970) | 15.8 | 0.15 | 20060922 | 315.95022 | 22.56875 | 93.99893 | 18.89512 | 0.1220096 | 2.5413512 | 134 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 39612 | (54970) |
| (54982) | 15.4 | 0.15 | 20060922 | 7.87850 | 276.69224 | 97.39717 | 7.39936 | 0.0495727 | 2.7366302 | 114 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 39617 | (54982) |
| (54988) | 15.8 | 0.15 | 20060922 | 63.83882 | 267.98049 | 153.09416 | 3.66758 | 0.0766700 | 2.3475601 | 216 | 9 | 1993–2006 | 0.55 | M-v | 0 | MPC | 39619 | (54988) |
| (54991) | 14.1 | 0.15 | 20060922 | 6.88503 | 51.49211 | 334.78039 | 5.61053 | 0.3305421 | 2.7827392 | 204 | 8 | 1950–2006 | 0.52 | M-v | 0 | MPC | 39620 | (54991) |
| (54997) | 13.8 | 0.15 | 20060922 | 56.79846 | 5.47203 | 339.11872 | 11.69391 | 0.2021424 | 2.6662009 | 289 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39622 | (54997) |
| (55000) | 15.7 | 0.15 | 20060922 | 74.69761 | 243.81375 | 123.80648 | 1.73850 | 0.1674784 | 2.5337444 | 245 | 9 | 1991–2006 | 0.49 | M-v | 1 | MPC | 39624 | (55000) |
| (55015) | 13.8 | 0.15 | 20060922 | 61.77661 | 254.70530 | 119.79835 | 7.38470 | 0.1988572 | 2.6292840 | 303 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 39630 | (55015) |
| (55022) | 15.9 | 0.15 | 20060922 | 34.10422 | 25.86675 | 25.47135 | 2.46194 | 0.1689901 | 2.4413850 | 168 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 39633 | (55022) |
| (55031) | 15.9 | 0.15 | 20060922 | 355.84883 | 103.54613 | 1.12497 | 2.14804 | 0.1394004 | 2.4305418 | 180 | 10 | 1990–2006 | 0.53 | M-v | 0 | MPC | 39636 | (55031) |
| (55045) | 14.8 | 0.15 | 20060922 | 273.88962 | 273.71916 | 233.54191 | 2.56430 | 0.1248642 | 2.5862723 | 224 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 39641 | (55045) |
| (55049) | 13.9 | 0.15 | 20060922 | 43.99862 | 253.69457 | 150.38597 | 12.72158 | 0.1618254 | 2.6382758 | 229 | 7 | 1999–2006 | 0.57 | M-v | 1 | MPC | 39643 | (55049) |
| (55055) | 15.1 | 0.15 | 20060922 | 33.14238 | 75.38577 | 287.87921 | 3.91524 | 0.1780892 | 2.7276005 | 254 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 39646 | (55055) |
| (55070) | 15.1 | 0.15 | 20060922 | 190.41421 | 205.59591 | 30.54060 | 2.78666 | 0.1197433 | 2.6065496 | 351 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 39652 | (55070) |
| (55076) | 14.4 | 0.15 | 20060922 | 34.42335 | 228.37862 | 190.30015 | 13.65023 | 0.1543694 | 2.6000680 | 455 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 39655 | (55076) |
| (55078) | 14.2 | 0.15 | 20060922 | 41.41124 | 289.78543 | 109.23461 | 13.57925 | 0.1830345 | 2.5687842 | 263 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 39656 | (55078) |
| (55120) | 14.4 | 0.15 | 20060922 | 36.21035 | 158.86337 | 169.56169 | 10.02870 | 0.0950819 | 3.0237409 | 256 | 9 | 1990–2006 | 0.57 | M-v | 0 | MPC | 39672 | (55120) |
| (55126) | 15.5 | 0.15 | 20060922 | 350.98269 | 247.20803 | 185.85008 | 2.55202 | 0.1850559 | 2.6501988 | 217 | 9 | 1980–2006 | 0.55 | M-v | 0 | MPC | 39674 | (55126) |
| (55131) | 15.5 | 0.15 | 20060922 | 14.34220 | 153.18397 | 271.41204 | 3.84175 | 0.0986853 | 2.5744245 | 233 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 39676 | (55131) |
| (55147) | 13.9 | 0.15 | 20060922 | 309.08407 | 161.72419 | 9.37355 | 12.83844 | 0.1741970 | 2.5864606 | 319 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 39683 | (55147) |
| (55158) | 14.7 | 0.15 | 20060922 | 243.64623 | 231.91915 | 211.17417 | 8.09285 | 0.1128232 | 3.1154435 | 81 | 7 | 1971–2006 | 0.63 | M-v | 0 | MPC | 39687 | (55158) |
| (55172) | 13.9 | 0.15 | 20060922 | 42.19662 | 225.37088 | 170.97551 | 14.37606 | 0.1042314 | 2.6290841 | 380 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 39692 | (55172) |
| (55173) | 14.7 | 0.15 | 20060922 | 326.38922 | 291.19916 | 162.18759 | 10.51457 | 0.0671112 | 2.7257343 | 223 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 39693 | (55173) |
| (55215) | 15.2 | 0.15 | 20060922 | 110.37659 | 231.19248 | 90.11079 | 1.43711 | 0.0559124 | 2.5954999 | 248 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 39709 | (55215) |
| (55223) | 15.1 | 0.15 | 20060922 | 23.28275 | 350.61054 | 84.50593 | 3.48206 | 0.1498507 | 2.5876836 | 262 | 7 | 1991–2006 | 0.59 | M-v | 0 | MPC | 39712 | (55223) |
| (55236) | 14.2 | 0.15 | 20060922 | 270.88392 | 64.33306 | 72.98368 | 7.69849 | 0.0396559 | 2.7965671 | 345 | 9 | 1978–2006 | 0.55 | M-v | 0 | MPC | 39718 | (55236) |
| (55263) | 16.4 | 0.15 | 20060922 | 51.03912 | 281.40148 | 73.32617 | 4.33698 | 0.0952759 | 2.6767868 | 110 | 7 | 1997–2006 | 0.62 | M-v | 0 | MPC | 39728 | (55263) |
| (55267) | 11.6 | 0.15 | 20060922 | 114.37802 | 20.39023 | 15.67019 | 17.30454 | 0.0289709 | 5.1811189 | 208 | 10 | 1989–2006 | 0.56 | M-v | 0 | MPC | 39729 | (55267) |
| (55269) | 14.1 | 0.15 | 20060922 | 313.48518 | 57.09489 | 41.57030 | 10.20204 | 0.0770840 | 2.7350183 | 286 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 39730 | (55269) |
| (55273) | 14.6 | 0.15 | 20060922 | 214.27134 | 356.90617 | 214.03840 | 4.71226 | 0.0619595 | 2.6367054 | 252 | 10 | 1991–2006 | 0.55 | M-v | 0 | MPC | 39731 | (55273) |
| (55295) | 15.0 | 0.15 | 20060922 | 45.95462 | 304.56797 | 83.93606 | 3.42529 | 0.1239921 | 2.6188055 | 213 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 39740 | (55295) |
| (55302) | 13.9 | 0.15 | 20060922 | 48.66385 | 276.51887 | 69.71990 | 5.46686 | 0.0808399 | 2.7770917 | 297 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 39742 | (55302) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (55314) | 14.4 | 0.15 | 20060922 | 333.64519 | 45.55895 | 43.21999 | 7.95357 | 0.1287125 | 2.7931323 | 291 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 39748 | (55314) |
| (55321) | 15.4 | 0.15 | 20060922 | 36.11946 | 168.91671 | 194.88775 | 1.94860 | 0.0569947 | 2.7173297 | 222 | 7 | 1997–2006 | 0.49 | M-v | 0 | MPC | 39751 | (55321) |
| (55323) | 15.4 | 0.15 | 20060922 | 289.16502 | 245.23339 | 235.00774 | 6.18918 | 0.1309104 | 2.7479263 | 191 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 39752 | (55323) |
| (55336) | 15.0 | 0.15 | 20060922 | 307.52359 | 190.65120 | 271.04452 | 2.71818 | 0.1798233 | 2.7314402 | 285 | 9 | 1992–2006 | 0.50 | M-v | 0 | MPC | 39757 | (55336) |
| (55337) | 15.8 | 0.15 | 20060922 | 358.81410 | 116.07575 | 286.90792 | 2.05153 | 0.0733830 | 2.7074074 | 153 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 39758 | (55337) |
| (55369) | 15.2 | 0.15 | 20060922 | 280.62184 | 131.79212 | 72.00418 | 3.17026 | 0.1560746 | 2.4112895 | 151 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 39769 | (55369) |
| (55373) | 16.4 | 0.15 | 20060922 | 282.45829 | 76.54574 | 129.19996 | 2.71500 | 0.1518830 | 2.4130009 | 184 | 9 | 1992–2006 | 0.58 | M-v | 0 | MPC | 39771 | (55373) |
| (55378) | 14.3 | 0.15 | 20060922 | 206.42097 | 117.89833 | 143.04587 | 5.88572 | 0.0883381 | 2.5539872 | 350 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 39773 | (55378) |
| (55390) | 14.2 | 0.15 | 20060922 | 349.59332 | 59.88646 | 319.12863 | 9.03652 | 0.1084201 | 3.0685549 | 172 | 9 | 1992–2006 | 0.55 | M-v | 0 | MPC | 39778 | (55390) |
| (55392) | 14.6 | 0.15 | 20060922 | 45.82063 | 292.52179 | 59.83870 | 2.91696 | 0.0790043 | 2.8434396 | 370 | 10 | 1982–2006 | 0.51 | M-v | 0 | MPC | 39779 | (55392) |
| (55393) | 14.5 | 0.15 | 20060922 | 43.22621 | 284.01094 | 72.44698 | 3.11229 | 0.0856680 | 2.8363620 | 381 | 10 | 1991–2006 | 0.58 | M-v | 0 | MPC | 39779 | (55393) |
| (55407) | 14.8 | 0.15 | 20060922 | 197.26234 | 207.65810 | 336.75651 | 9.45106 | 0.0342070 | 3.0582555 | 133 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 39785 | (55407) |
| (55432) | 13.5 | 0.15 | 20060922 | 211.38524 | 105.39924 | 71.75424 | 10.64153 | 0.0043046 | 3.0751279 | 348 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 39794 | (55432) |
| (55434) | 15.6 | 0.15 | 20060922 | 306.99846 | 296.14928 | 161.40793 | 2.36795 | 0.0267276 | 2.8682733 | 231 | 9 | 1991–2006 | 0.57 | M-v | 0 | MPC | 39795 | (55434) |
| (55464) | 15.3 | 0.15 | 20060922 | 241.54951 | 140.55519 | 86.61329 | 11.65986 | 0.0614690 | 2.5598979 | 195 | 7 | 1999–2006 | 0.55 | M-v | 1 | MPC | 39805 | (55464) |
| (55472) | 14.1 | 0.15 | 20060922 | 42.20569 | 335.28639 | 42.33435 | 15.92793 | 0.1547692 | 2.6353657 | 217 | 9 | 1991–2006 | 0.59 | M-v | 1 | MPC | 39808 | (55472) |
| (55473) | 14.6 | 0.15 | 20060922 | 44.92885 | 313.23208 | 91.27666 | 11.21794 | 0.1716383 | 2.5528465 | 234 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 39809 | (55473) |
| (55480) | 14.7 | 0.15 | 20060922 | 219.14573 | 156.41506 | 83.54038 | 9.97406 | 0.1630327 | 2.5757963 | 130 | 7 | 1994–2006 | 0.64 | M-v | 1 | MPC | 39811 | (55480) |
| (55485) | 15.1 | 0.15 | 20060922 | 0.32435 | 29.23858 | 334.47226 | 9.18809 | 0.0392537 | 3.0652307 | 155 | 7 | 1990–2006 | 0.50 | M-v | 0 | MPC | 39813 | (55485) |
| (55486) | 15.2 | 0.15 | 20060922 | 241.15784 | 117.60503 | 131.92135 | 6.96249 | 0.0973236 | 2.4529666 | 225 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 39814 | (55486) |
| (55490) | 15.1 | 0.15 | 20060922 | 252.46121 | 66.31559 | 173.58531 | 2.52093 | 0.1329234 | 2.4620005 | 266 | 9 | 1992–2006 | 0.59 | M-v | 0 | MPC | 39815 | (55490) |
| (55504) | 15.1 | 0.15 | 20060922 | 24.73833 | 146.47553 | 224.05328 | 7.79197 | 0.0166508 | 2.9362482 | 235 | 9 | 1994–2006 | 0.47 | M-v | 0 | MPC | 39821 | (55504) |
| (55508) | 14.3 | 0.15 | 20060922 | 323.95221 | 283.11661 | 115.80992 | 13.08665 | 0.0769666 | 3.0430220 | 184 | 7 | 1994–2006 | 0.59 | M-v | 0 | MPC | 39823 | (55508) |
| (55528) | 13.8 | 0.15 | 20060922 | 66.73502 | 312.54058 | 73.05716 | 14.28932 | 0.1623090 | 2.6002261 | 276 | 9 | 1991–2006 | 0.58 | M-v | 1 | MPC | 39830 | (55528) |
| (55532) | 16.3 | 0.15 | 20060922 | 308.21428 | 132.28795 | 81.57976 | 38.47656 | 0.6962421 | 1.7946321 | 253 | 6 | 1953–2006 | 0.46 | M-v | 2 | MPC | 39831 | (55532) |
| (55534) | 15.1 | 0.15 | 20060922 | 183.11999 | 144.38146 | 43.59362 | 1.11474 | 0.1199836 | 3.2135858 | 175 | 9 | 1995–2006 | 0.48 | M-v | 0 | MPC | 39832 | (55534) |
| (55543) | 14.5 | 0.15 | 20060922 | 160.90840 | 197.84991 | 94.29062 | 13.89368 | 0.1609783 | 2.6874359 | 175 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 39835 | (55543) |
| (55556) | 13.8 | 0.15 | 20060922 | 124.96420 | 202.70530 | 69.54198 | 10.01505 | 0.1680417 | 3.0338600 | 249 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 39840 | (55556) |
| (55558) | 13.0 | 0.15 | 20060922 | 138.74649 | 344.20670 | 269.35402 | 11.23534 | 0.1401237 | 3.2332544 | 175 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 39840 | (55558) |
| (55576) | 7.8 | 0.15 | 20060922 | 10.21338 | 239.34999 | 315.53277 | 13.33647 | 0.3983925 | 25.2616514 | 74 | 8 | 1987–2004 | 0.57 | M-v | 1 | MPC | 39846 | (55576) |
| (55581) | 16.1 | 0.15 | 20060922 | 336.63839 | 211.68715 | 218.91671 | 4.20393 | 0.0788281 | 2.1891173 | 130 | 7 | 1995–2006 | 0.57 | M-v | 1 | MPC | 39847 | (55581) |
| (55587) | 14.6 | 0.15 | 20060922 | 33.34111 | 346.43212 | 36.74414 | 7.32118 | 0.1351671 | 2.3742609 | 247 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 39850 | (55587) |
| (55600) | 14.5 | 0.15 | 20060922 | 236.20028 | 103.01347 | 41.86097 | 13.41797 | 0.1119563 | 2.6917928 | 269 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 39854 | (55600) |
| (55606) | 14.8 | 0.15 | 20060922 | 63.89761 | 9.73186 | 306.32096 | 4.85400 | 0.2355313 | 2.3818290 | 156 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 39856 | (55606) |
| (55609) | 16.4 | 0.15 | 20060922 | 18.83296 | 186.40021 | 193.75824 | 4.76459 | 0.2190402 | 2.4025919 | 140 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 39857 | (55609) |
| (55623) | 14.3 | 0.15 | 20060922 | 129.91015 | 82.92289 | 159.91409 | 15.31061 | 0.0947483 | 2.5222914 | 151 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 39862 | (55623) |
| (55628) | 15.6 | 0.15 | 20060922 | 238.36631 | 308.18615 | 233.41002 | 1.55593 | 0.1491590 | 2.3706958 | 213 | 7 | 1995–2006 | 0.52 | M-v | 1 | MPC | 39864 | (55628) |
| (55642) | 15.5 | 0.15 | 20060922 | 2.82973 | 201.28809 | 237.00986 | 3.57007 | 0.1346151 | 2.5700509 | 162 | 7 | 1960–2006 | 0.57 | M-v | 0 | MPC | 39868 | (55642) |
| (55665) | 15.6 | 0.15 | 20060922 | 47.88330 | 280.10461 | 133.50352 | 1.84682 | 0.1863469 | 2.4174576 | 172 | 7 | 1960–2006 | 0.54 | M-v | 0 | MPC | 39876 | (55665) |
| (55673) | 15.4 | 0.15 | 20060922 | 164.30300 | 315.70802 | 272.64725 | 2.40550 | 0.1707745 | 2.5850161 | 210 | 7 | 1971–2006 | 0.51 | M-v | 0 | MPC | 39878 | (55673) |
| (55677) | 14.3 | 0.15 | 20060922 | 353.55063 | 54.11413 | 358.45375 | 7.35180 | 0.2245046 | 2.7778963 | 275 | 7 | 1971–2006 | 0.58 | M-v | 0 | MPC | 39879 | (55677) |
| (55687) | 15.7 | 0.15 | 20060922 | 167.23366 | 274.64944 | 341.44010 | 1.59174 | 0.1997757 | 2.3386594 | 271 | 7 | 1973–2006 | 0.63 | M-v | 0 | MPC | 39883 | (55687) |
| (55697) | 16.4 | 0.15 | 20060922 | 344.35781 | 245.63661 | 146.03732 | 3.93534 | 0.1545778 | 2.5692680 | 109 | 7 | 1973–2006 | 0.60 | M-v | 1 | MPC | 39887 | (55697) |
| (55711) | 15.8 | 0.15 | 20060922 | 12.22108 | 357.63003 | 40.00585 | 4.06465 | 0.0467535 | 2.5577486 | 185 | 7 | 1977–2006 | 0.65 | M-v | 1 | MPC | 39892 | (55711) |
| (55717) | 16.6 | 0.15 | 20060922 | 201.97795 | 170.85190 | 125.22054 | 5.82910 | 0.1613039 | 2.2846836 | 184 | 7 | 1977–2006 | 0.63 | M-v | 1 | MPC | 39895 | (55717) |
| (55722) | 14.4 | 0.15 | 20060922 | 60.03406 | 113.27573 | 242.94237 | 5.49158 | 0.2535051 | 2.7663701 | 255 | 7 | 1978–2006 | 0.55 | M-v | 0 | MPC | 41955 | (55722) |
| (55723) | 14.6 | 0.15 | 20060922 | 145.72600 | 333.89303 | 272.73354 | 8.80486 | 0.0592002 | 2.9840399 | 133 | 7 | 1979–2006 | 0.61 | M-v | 0 | MPC | 41956 | (55723) |
| (55724) | 14.8 | 0.15 | 20060922 | 122.15182 | 127.07344 | 201.85529 | 3.48117 | 0.2015682 | 2.6225044 | 280 | 7 | 1979–2006 | 0.55 | M-v | 0 | MPC | 41956 | (55724) |
| (55730) | 14.3 | 0.15 | 20060922 | 61.12108 | 35.52845 | 332.45135 | 12.23062 | 0.1468812 | 2.7132881 | 237 | 7 | 1981–2006 | 0.58 | M-v | 1 | MPC | 41959 | (55730) |
| (55738) | 13.8 | 0.15 | 20060922 | 115.70629 | 306.25806 | 41.16435 | 11.90163 | 0.1324922 | 2.2789280 | 274 | 10 | 1988–2006 | 0.58 | M-v | 1 | MPC | 41962 | (55738) |
| (55739) | 14.8 | 0.15 | 20060922 | 53.38956 | 192.22876 | 186.47845 | 15.64077 | 0.2974104 | 2.5526162 | 130 | 7 | 1989–2006 | 0.62 | M-v | 1 | MPC | 41963 | (55739) |
| (55751) | 13.9 | 0.15 | 20060922 | 101.72192 | 45.64819 | 277.15917 | 8.96685 | 0.1862383 | 2.7454554 | 281 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 41968 | (55751) |
| (55796) | 16.1 | 0.15 | 20060922 | 68.19236 | 10.14655 | 12.29364 | 2.96254 | 0.1687703 | 2.6500926 | 167 | 7 | 1992–2006 | 0.54 | M-v | 1 | MPC | 41986 | (55796) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (55799) | 14.0 | 0.15 | 20060922 | 354.72781 | 359.17976 | 77.33618 | 5.08321 | 0.0406486 | 2.7471415 | 289 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 41987 | (55799) |
| (55802) | 13.3 | 0.15 | 20060922 | 312.55948 | 286.50115 | 158.24060 | 20.81009 | 0.1185695 | 3.1707591 | 174 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 41989 | (55802) |
| (55827) | 15.7 | 0.15 | 20060922 | 247.51596 | 38.14985 | 90.54010 | 2.80874 | 0.1224424 | 3.1323623 | 105 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 41997 | (55827) |
| (55840) | 14.0 | 0.15 | 20060922 | 25.13290 | 122.41303 | 299.32180 | 10.58808 | 0.1773775 | 2.6485909 | 268 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 42001 | (55840) |
| (55853) | 13.4 | 0.15 | 20060922 | 345.90053 | 142.64961 | 355.40949 | 13.51036 | 0.1083146 | 2.6354046 | 332 | 7 | 1996–2006 | 0.49 | M-v | 0 | MPC | 42007 | (55853) |
| (55856) | 15.2 | 0.15 | 20060922 | 53.94976 | 290.35891 | 58.03214 | 2.80568 | 0.0929155 | 2.8898901 | 249 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 42008 | (55856) |
| (55857) | 14.2 | 0.15 | 20060922 | 313.17418 | 144.17583 | 281.98769 | 7.47229 | 0.1239514 | 3.0879894 | 184 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 42008 | (55857) |
| (55876) | 14.9 | 0.15 | 20060922 | 61.89511 | 338.09242 | 54.75812 | 3.78961 | 0.0366168 | 2.6154849 | 277 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 42016 | (55876) |
| (55879) | 15.1 | 0.15 | 20060922 | 94.24182 | 316.95357 | 42.53521 | 5.04463 | 0.1892321 | 2.5800993 | 348 | 7 | 1997–2006 | 0.52 | M-v | 1 | MPC | 42017 | (55879) |
| (55885) | 16.0 | 0.15 | 20060922 | 308.50536 | 79.46468 | 85.04987 | 4.28591 | 0.1264441 | 2.5927942 | 107 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 42020 | (55885) |
| (55887) | 14.1 | 0.15 | 20060922 | 37.28321 | 307.96500 | 99.40921 | 5.62202 | 0.1339745 | 2.6252621 | 353 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 42020 | (55887) |
| (55888) | 14.2 | 0.15 | 20060922 | 65.83244 | 295.04584 | 83.74095 | 6.68221 | 0.1351942 | 2.6290578 | 335 | 7 | 1997–2006 | 0.61 | M-v | 1 | MPC | 42021 | (55888) |
| (55893) | 13.7 | 0.15 | 20060922 | 9.62193 | 288.74104 | 108.92929 | 16.42261 | 0.2482917 | 2.7528561 | 128 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 42023 | (55893) |
| (55901) | 14.6 | 0.15 | 20060922 | 26.56055 | 326.65966 | 106.76953 | 5.67917 | 0.2148153 | 2.5926390 | 227 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 42026 | (55901) |
| (55902) | 14.3 | 0.15 | 20060922 | 330.78289 | 222.88483 | 245.51351 | 11.20148 | 0.1318820 | 2.6581759 | 202 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 42027 | (55902) |
| (55903) | 14.8 | 0.15 | 20060922 | 309.72447 | 311.78468 | 129.19669 | 18.47949 | 0.1144388 | 2.9409627 | 154 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42027 | (55903) |
| (55908) | 16.1 | 0.15 | 20060922 | 306.85381 | 164.87871 | 283.86455 | 0.90419 | 0.0591481 | 2.9171657 | 135 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 42029 | (55908) |
| (55910) | 14.1 | 0.15 | 20060922 | 166.25449 | 73.74376 | 135.81649 | 10.79965 | 0.0775920 | 3.1165771 | 185 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42030 | (55910) |
| (55911) | 14.2 | 0.15 | 20060922 | 170.67134 | 227.99880 | 75.18866 | 5.45813 | 0.0467559 | 2.7904213 | 387 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 42030 | (55911) |
| (55917) | 14.4 | 0.15 | 20060922 | 110.19264 | 296.80423 | 346.68795 | 10.71882 | 0.1217523 | 3.0815156 | 232 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 42032 | (55917) |
| (55919) | 13.7 | 0.15 | 20060922 | 316.17582 | 99.25273 | 336.24770 | 10.13703 | 0.0820853 | 3.0107476 | 230 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42033 | (55919) |
| (55930) | 13.8 | 0.15 | 20060922 | 233.51865 | 233.54547 | 7.11290 | 14.97853 | 0.0996792 | 2.8528341 | 313 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42038 | (55930) |
| (55931) | 14.3 | 0.15 | 20060922 | 136.49128 | 87.56533 | 164.51093 | 9.63930 | 0.0160198 | 3.1197500 | 275 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 42038 | (55931) |
| (55933) | 15.5 | 0.15 | 20060922 | 204.70881 | 133.21050 | 94.05695 | 4.05316 | 0.2529760 | 3.0370625 | 160 | 9 | 1992–2006 | 0.49 | M-v | 0 | MPC | 42039 | (55933) |
| (55935) | 14.7 | 0.15 | 20060922 | 265.55871 | 52.79349 | 159.38795 | 9.52371 | 0.0773837 | 2.7577028 | 247 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42040 | (55935) |
| (55937) | 14.0 | 0.15 | 20060922 | 22.90596 | 60.77648 | 332.61267 | 9.11433 | 0.1045345 | 2.9810161 | 283 | 7 | 1990–2006 | 0.56 | M-v | 0 | MPC | 42041 | (55937) |
| (55938) | 13.8 | 0.15 | 20060922 | 293.38803 | 128.47898 | 328.35493 | 8.34784 | 0.0193938 | 3.1021264 | 194 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 42041 | (55938) |
| (55939) | 14.1 | 0.15 | 20060922 | 279.38778 | 276.46061 | 225.93817 | 8.73109 | 0.1182334 | 2.9935797 | 259 | 7 | 1990–2006 | 0.60 | M-v | 0 | MPC | 42042 | (55939) |
| (55943) | 13.7 | 0.15 | 20060922 | 270.57995 | 59.35798 | 57.98362 | 21.10830 | 0.1046792 | 3.1845699 | 199 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42043 | (55943) |
| (55945) | 14.0 | 0.15 | 20060922 | 70.94721 | 294.31107 | 29.41739 | 11.10667 | 0.1491404 | 3.1347517 | 319 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 42044 | (55945) |
| (55947) | 12.9 | 0.15 | 20060922 | 118.64374 | 209.58742 | 64.48699 | 21.63246 | 0.0296908 | 3.1983375 | 267 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 42045 | (55947) |
| (55948) | 14.0 | 0.15 | 20060922 | 33.04734 | 322.49570 | 27.60763 | 11.56001 | 0.0170406 | 3.1739590 | 189 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 42046 | (55948) |
| (55951) | 15.1 | 0.15 | 20060922 | 107.21430 | 153.15177 | 124.04923 | 2.00809 | 0.1071999 | 3.2046303 | 139 | 9 | 1976–2006 | 0.53 | M-v | 0 | MPC | 42047 | (55951) |
| (55952) | 14.9 | 0.15 | 20060922 | 224.73415 | 123.38279 | 41.63714 | 2.14142 | 0.1474552 | 3.1184679 | 182 | 9 | 1990–2006 | 0.61 | M-v | 0 | MPC | 42047 | (55952) |
| (55953) | 14.8 | 0.15 | 20060922 | 186.59365 | 298.73816 | 261.30708 | 3.58141 | 0.1016885 | 3.1616032 | 184 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 42047 | (55953) |
| (55959) | 14.6 | 0.15 | 20060922 | 232.80866 | 308.79724 | 201.71570 | 23.33169 | 0.1421912 | 3.1965624 | 94 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42050 | (55959) |
| (55961) | 13.5 | 0.15 | 20060922 | 133.53770 | 220.05839 | 32.45791 | 16.18132 | 0.0469664 | 3.2017769 | 318 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42050 | (55961) |
| (55967) | 13.2 | 0.15 | 20060922 | 163.42546 | 171.62555 | 82.68794 | 18.52052 | 0.0706589 | 3.1860012 | 187 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 42052 | (55967) |
| (55977) | 15.9 | 0.15 | 20060922 | 80.11869 | 242.68192 | 74.70926 | 2.34094 | 0.1916954 | 2.3874147 | 116 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 42056 | (55977) |
| (55989) | 14.7 | 0.15 | 20060922 | 53.00785 | 81.78305 | 292.20431 | 5.39816 | 0.1411349 | 2.3867859 | 218 | 7 | 1987–2006 | 0.52 | M-v | 0 | MPC | 42060 | (55989) |
| (55994) | 14.6 | 0.15 | 20060922 | 188.69732 | 232.51403 | 82.84809 | 3.15796 | 0.1230326 | 3.1862182 | 149 | 10 | 1994–2006 | 0.54 | M-v | 0 | MPC | 42062 | (55994) |
| (56017) | 16.4 | 0.15 | 20060922 | 45.02679 | 255.94383 | 157.17059 | 1.58312 | 0.1830884 | 2.4018604 | 177 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 42071 | (56017) |
| (56024) | 15.3 | 0.15 | 20060922 | 27.27135 | 24.46146 | 43.90441 | 6.20654 | 0.1729136 | 2.4079244 | 160 | 7 | 1983–2006 | 0.58 | M-v | 1 | MPC | 42073 | (56024) |
| (56026) | 14.5 | 0.15 | 20060922 | 55.72478 | 240.27027 | 151.73767 | 7.60820 | 0.1730063 | 2.4035623 | 317 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 42074 | (56026) |
| (56063) | 14.1 | 0.15 | 20060922 | 289.44083 | 77.31085 | 134.38582 | 8.39221 | 0.1658961 | 2.4103584 | 409 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 42089 | (56063) |
| (56066) | 15.6 | 0.15 | 20060922 | 69.52205 | 131.73022 | 277.37402 | 0.57129 | 0.1712897 | 2.4049751 | 343 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42091 | (56066) |
| (56088) | 13.8 | 0.15 | 20060922 | 302.00207 | 82.14194 | 43.08837 | 13.25893 | 0.1578392 | 2.6186199 | 230 | 7 | 1995–2006 | 0.50 | M-v | 1 | MPC | 42100 | (56088) |
| (56095) | 14.0 | 0.15 | 20060922 | 260.44825 | 339.67095 | 158.27012 | 9.67391 | 0.0974065 | 2.7691347 | 240 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 42103 | (56095) |
| (56098) | 14.8 | 0.15 | 20060922 | 20.44262 | 119.91538 | 283.08271 | 2.70435 | 0.1513999 | 2.5801358 | 164 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42105 | (56098) |
| (56099) | 14.4 | 0.15 | 20060922 | 33.38797 | 249.10017 | 163.43034 | 14.56909 | 0.1061549 | 2.5999060 | 357 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 42105 | (56099) |
| (56111) | 13.9 | 0.15 | 20060922 | 273.56980 | 40.76168 | 104.62145 | 22.59834 | 0.0309914 | 2.6861970 | 271 | 7 | 1990–2006 | 0.55 | M-v | 0 | MPC | 42110 | (56111) |
| (56115) | 14.7 | 0.15 | 20060922 | 300.08325 | 322.88419 | 146.75282 | 30.02464 | 0.1822986 | 2.6542900 | 136 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42112 | (56115) |
| (56117) | 14.4 | 0.15 | 20060922 | 173.79426 | 99.25636 | 208.56497 | 12.97215 | 0.1812363 | 2.5766071 | 305 | 10 | 1982–2006 | 0.53 | M-v | 0 | MPC | 42113 | (56117) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (56121) | 14.9 | 0.15 | 20060922 | 236.44951 | 103.80228 | 108.29671 | 11.69665 | 0.0731070 | 2.5616157 | 155 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 42115 | (56121) |
| (56129) | 15.1 | 0.15 | 20060922 | 12.66099 | 61.22600 | 347.36045 | 10.01808 | 0.0807116 | 2.6321725 | 208 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 42118 | (56129) |
| (56152) | 14.2 | 0.15 | 20060922 | 49.35288 | 112.53189 | 283.76105 | 11.39412 | 0.1759604 | 2.5126175 | 306 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 42129 | (56152) |
| (56153) | 14.6 | 0.15 | 20060922 | 112.97380 | 47.42710 | 284.79401 | 4.43563 | 0.1630808 | 2.5970099 | 267 | 7 | 1997–2006 | 0.54 | M-v | 1 | MPC | 42129 | (56153) |
| (56154) | 13.8 | 0.15 | 20060922 | 187.13459 | 227.92564 | 43.43754 | 13.53248 | 0.1304683 | 2.5637969 | 383 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 42130 | (56154) |
| (56162) | 14.4 | 0.15 | 20060922 | 357.05343 | 260.54463 | 152.96553 | 22.08711 | 0.0321721 | 2.6715800 | 281 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42133 | (56162) |
| (56163) | 16.2 | 0.15 | 20060922 | 290.31401 | 198.64739 | 346.00418 | 0.66347 | 0.0570525 | 2.5778726 | 136 | 7 | 1993–2006 | 0.61 | M-v | 1 | MPC | 42134 | (56163) |
| (56166) | 16.3 | 0.15 | 20060922 | 8.92824 | 231.92179 | 185.54339 | 3.93525 | 0.2067013 | 2.6240967 | 68 | 7 | 1997–2006 | 0.49 | M-v | 0 | MPC | 42135 | (56166) |
| (56168) | 15.1 | 0.15 | 20060922 | 246.97419 | 332.29849 | 247.93965 | 2.27490 | 0.0325847 | 2.6302253 | 311 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42135 | (56168) |
| (56169) | 15.2 | 0.15 | 20060922 | 264.32212 | 265.16219 | 314.70609 | 5.17056 | 0.0965079 | 2.4783678 | 292 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 42136 | (56169) |
| (56170) | 14.8 | 0.15 | 20060922 | 37.40298 | 148.31271 | 204.32441 | 2.09772 | 0.1196250 | 2.9114448 | 303 | 9 | 1991–2006 | 0.54 | M-v | 0 | MPC | 42136 | (56170) |
| (56175) | 14.2 | 0.15 | 20060922 | 205.07578 | 239.75727 | 19.86490 | 12.91753 | 0.1334008 | 2.6594280 | 265 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 42139 | (56175) |
| (56176) | 14.1 | 0.15 | 20060922 | 2.20566 | 4.57439 | 56.46570 | 7.91150 | 0.0396773 | 2.7319318 | 301 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42139 | (56176) |
| (56185) | 14.0 | 0.15 | 20060922 | 226.26817 | 232.97111 | 37.04769 | 14.79875 | 0.1359004 | 2.5898859 | 234 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 42143 | (56185) |
| (56198) | 14.4 | 0.15 | 20060922 | 223.38640 | 49.06405 | 196.81879 | 12.58321 | 0.1379374 | 2.6917463 | 320 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 42149 | (56198) |
| (56203) | 13.8 | 0.15 | 20060922 | 224.27984 | 220.06651 | 47.25353 | 15.29255 | 0.0594536 | 2.5979905 | 292 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 42151 | (56203) |
| (56213) | 14.2 | 0.15 | 20060922 | 30.85984 | 247.86342 | 187.31490 | 11.52881 | 0.0462943 | 2.6408342 | 322 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 42155 | (56213) |
| (56215) | 14.0 | 0.15 | 20060922 | 212.92439 | 257.68610 | 35.70171 | 15.55420 | 0.2366304 | 2.6421540 | 347 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42156 | (56215) |
| (56227) | 13.6 | 0.15 | 20060922 | 40.43629 | 182.63267 | 220.93740 | 4.64601 | 0.0677960 | 2.7424642 | 297 | 7 | 1999–2006 | 0.62 | M-v | 0 | MPC | 42161 | (56227) |
| (56233) | 14.3 | 0.15 | 20060922 | 337.40603 | 225.18365 | 227.60292 | 16.59155 | 0.1141588 | 2.7909186 | 242 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42164 | (56233) |
| (56234) | 14.6 | 0.15 | 20060922 | 110.89217 | 247.72966 | 68.85281 | 3.11119 | 0.0134933 | 2.8349066 | 288 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 42164 | (56234) |
| (56237) | 15.0 | 0.15 | 20060922 | 338.46821 | 256.67289 | 214.96621 | 2.65817 | 0.0360832 | 2.7456300 | 313 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 42166 | (56237) |
| (56238) | 15.0 | 0.15 | 20060922 | 280.88277 | 99.11568 | 127.31703 | 4.37422 | 0.1580274 | 2.5847600 | 241 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 42166 | (56238) |
| (56239) | 14.7 | 0.15 | 20060922 | 54.74054 | 252.80148 | 94.80637 | 3.51413 | 0.0675052 | 2.9485363 | 350 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 42167 | (56239) |
| (56248) | 15.2 | 0.15 | 20060922 | 308.63341 | 82.94543 | 109.48516 | 5.98111 | 0.2406043 | 2.5677249 | 226 | 7 | 1999–2006 | 0.60 | M-v | 1 | MPC | 42170 | (56248) |
| (56252) | 14.8 | 0.15 | 20060922 | 300.43311 | 126.21415 | 33.99979 | 11.40819 | 0.1149879 | 2.6484403 | 260 | 7 | 1992–2006 | 0.56 | M-v | 1 | MPC | 42172 | (56252) |
| (56256) | 14.6 | 0.15 | 20060922 | 253.41349 | 59.63713 | 171.68584 | 10.73872 | 0.0981496 | 2.6312019 | 317 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 42174 | (56256) |
| (56259) | 14.7 | 0.15 | 20060922 | 240.20232 | 155.79975 | 81.45806 | 12.67078 | 0.1379400 | 2.6467194 | 130 | 7 | 1999–2006 | 0.60 | M-v | 1 | MPC | 42175 | (56259) |
| (56263) | 14.0 | 0.15 | 20060922 | 282.14017 | 66.54853 | 77.45613 | 18.14568 | 0.0794703 | 2.8089234 | 205 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42177 | (56263) |
| (56264) | 14.2 | 0.15 | 20060922 | 36.82026 | 227.48393 | 124.84327 | 11.71799 | 0.1200659 | 3.0180783 | 192 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 42177 | (56264) |
| (56266) | 14.3 | 0.15 | 20060922 | 81.02152 | 172.26852 | 126.69964 | 12.10462 | 0.0732767 | 3.0502563 | 294 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 42178 | (56266) |
| (56272) | 14.5 | 0.15 | 20060922 | 60.50628 | 242.80115 | 82.73252 | 13.44701 | 0.1800852 | 3.0630827 | 248 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 42180 | (56272) |
| (56273) | 14.3 | 0.15 | 20060922 | 9.41838 | 21.88194 | 93.45814 | 17.00287 | 0.1311225 | 2.5604358 | 179 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 42181 | (56273) |
| (56281) | 14.6 | 0.15 | 20060922 | 217.86685 | 196.64503 | 38.52198 | 14.02382 | 0.1517350 | 2.6961295 | 218 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 42184 | (56281) |
| (56282) | 14.6 | 0.15 | 20060922 | 306.28441 | 293.87435 | 236.76938 | 12.61371 | 0.1250085 | 2.6779526 | 278 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 42184 | (56282) |
| (56287) | 14.1 | 0.15 | 20060922 | 117.53044 | 177.79565 | 122.95894 | 14.96682 | 0.1035034 | 2.9426910 | 135 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42186 | (56287) |
| (56296) | 14.7 | 0.15 | 20060922 | 319.69887 | 105.78647 | 265.48241 | 6.38654 | 0.2424525 | 2.3591885 | 238 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 42189 | (56296) |
| (56298) | 13.9 | 0.15 | 20060922 | 121.08521 | 129.61769 | 144.92259 | 16.93185 | 0.2093907 | 3.1426161 | 251 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42190 | (56298) |
| (56306) | 13.9 | 0.15 | 20060922 | 101.97137 | 358.73094 | 332.73755 | 15.93480 | 0.0906205 | 3.1468089 | 260 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42192 | (56306) |
| (56312) | 13.3 | 0.15 | 20060922 | 107.13403 | 279.77884 | 18.71092 | 10.87111 | 0.0883297 | 3.2539529 | 270 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 42195 | (56312) |
| (56323) | 12.9 | 0.15 | 20060922 | 183.03874 | 234.61244 | 28.68135 | 18.06047 | 0.1174912 | 3.2025208 | 325 | 10 | 1954–2006 | 0.52 | M-v | 0 | MPC | 42199 | (56323) |
| (56324) | 12.9 | 0.15 | 20060922 | 166.63480 | 267.13132 | 66.16339 | 10.76124 | 0.1306679 | 2.9791836 | 333 | 10 | 1955–2006 | 0.56 | M-v | 0 | MPC | 42199 | (56324) |
| (56331) | 14.5 | 0.15 | 20060922 | 76.88960 | 257.07335 | 110.46900 | 10.58851 | 0.1070688 | 2.3023605 | 268 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 42202 | (56331) |
| (56332) | 15.5 | 0.15 | 20060922 | 65.26633 | 173.00661 | 232.83113 | 1.33848 | 0.1149854 | 2.2398205 | 350 | 7 | 1997–2006 | 0.54 | M-v | 1 | MPC | 42202 | (56332) |
| (56340) | 14.7 | 0.15 | 20060922 | 231.88895 | 153.99244 | 64.02517 | 7.32128 | 0.0306558 | 2.3061723 | 300 | 7 | 1981–2006 | 0.59 | M-v | 1 | MPC | 42206 | (56340) |
| (56342) | 17.5 | 0.15 | 20060922 | 130.44649 | 229.04396 | 54.78516 | 8.18115 | 0.1466766 | 2.2579028 | 60 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 42206 | (56342) |
| (56354) | 15.2 | 0.15 | 20060922 | 97.58006 | 239.13515 | 135.54594 | 5.43061 | 0.1754957 | 2.2229367 | 239 | 7 | 1992–2006 | 0.58 | M-v | 1 | MPC | 42211 | (56354) |
| (56396) | 14.4 | 0.15 | 20060922 | 223.15040 | 274.42461 | 9.82486 | 9.29124 | 0.2196705 | 2.3119416 | 305 | 7 | 1987–2006 | 0.53 | M-v | 0 | MPC | 42230 | (56396) |
| (56450) | 14.5 | 0.15 | 20060922 | 156.47342 | 180.65650 | 112.27821 | 13.33209 | 0.2129814 | 2.5544847 | 246 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 42256 | (56450) |
| (56451) | 15.0 | 0.15 | 20060922 | 127.76867 | 320.92976 | 32.57049 | 3.42076 | 0.1853298 | 2.4303334 | 442 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 42256 | (56451) |
| (56452) | 15.5 | 0.15 | 20060922 | 158.75333 | 169.92507 | 155.59717 | 2.88683 | 0.1693185 | 2.3822505 | 365 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 42257 | (56452) |
| (56463) | 14.8 | 0.15 | 20060922 | 117.38274 | 9.87143 | 331.15712 | 5.90274 | 0.1298630 | 2.4310801 | 369 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 42263 | (56463) |
| (56492) | 15.5 | 0.15 | 20060922 | 242.53622 | 129.71679 | 139.91787 | 10.66019 | 0.2514060 | 2.4048854 | 211 | 7 | 1992–2006 | 0.52 | M-v | 1 | MPC | 42276 | (56492) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (56516) | 15.6 | 0.15 | 20060922 | 174.10445 | 190.84538 | 123.55562 | 7.06916 | 0.1393163 | 2.4420298 | 176 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 42286 | (56516) |
| (56522) | 15.5 | 0.15 | 20060922 | 159.47464 | 88.12371 | 227.25275 | 5.10368 | 0.1185782 | 2.4457661 | 309 | 7 | 1992–2006 | 0.53 | M-v | 0 | MPC | 42289 | (56522) |
| (56537) | 15.1 | 0.15 | 20060922 | 49.47662 | 323.61352 | 67.17765 | 5.82991 | 0.2281374 | 2.5737820 | 250 | 7 | 1997–2006 | 0.58 | M-v | 1 | MPC | 42296 | (56537) |
| (56567) | 16.2 | 0.15 | 20060922 | 271.90737 | 152.78946 | 72.25817 | 3.66288 | 0.0898725 | 2.3769929 | 222 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 42308 | (56567) |
| (56572) | 14.1 | 0.15 | 20060922 | 179.65661 | 349.93957 | 252.17558 | 12.61520 | 0.0958306 | 2.5688907 | 307 | 7 | 1996–2006 | 0.48 | M-v | 0 | MPC | 42310 | (56572) |
| (56576) | 15.3 | 0.15 | 20060922 | 179.36128 | 358.41112 | 304.08552 | 6.31930 | 0.1269794 | 2.4315600 | 176 | 7 | 1993–2006 | 0.53 | M-v | 1 | MPC | 42312 | (56576) |
| (56592) | 14.1 | 0.15 | 20060922 | 44.12193 | 132.75751 | 233.36021 | 9.23478 | 0.2535407 | 2.7079792 | 288 | 7 | 1983–2006 | 0.53 | M-v | 0 | MPC | 42320 | (56592) |
| (56613) | 14.3 | 0.15 | 20060922 | 96.90233 | 46.80759 | 296.03772 | 6.58517 | 0.2000339 | 2.5681881 | 407 | 7 | 1996–2006 | 0.50 | M-v | 0 | MPC | 42330 | (56613) |
| (56616) | 13.9 | 0.15 | 20060922 | 165.27579 | 354.41258 | 299.63499 | 11.43938 | 0.1702186 | 2.4473510 | 324 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 42331 | (56616) |
| (56629) | 16.1 | 0.15 | 20060922 | 206.76809 | 126.38972 | 165.29636 | 1.19550 | 0.1630166 | 2.4269907 | 160 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42336 | (56629) |
| (56638) | 15.7 | 0.15 | 20060922 | 262.71180 | 157.37961 | 86.67310 | 3.44798 | 0.1535044 | 2.3659555 | 243 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 42340 | (56638) |
| (56640) | 15.2 | 0.15 | 20060922 | 117.35704 | 51.49199 | 298.84349 | 1.18285 | 0.1678495 | 2.5322944 | 350 | 7 | 1997–2006 | 0.51 | M-v | 0 | MPC | 42341 | (56640) |
| (56648) | 14.7 | 0.15 | 20060922 | 76.26492 | 260.14272 | 94.10867 | 10.48866 | 0.0851530 | 2.6027434 | 146 | 7 | 1999–2006 | 0.61 | M-v | 1 | MPC | 42345 | (56648) |
| (56650) | 15.4 | 0.15 | 20060922 | 152.64271 | 187.72845 | 148.09699 | 15.29370 | 0.1453355 | 2.4724310 | 169 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 42345 | (56650) |
| (56665) | 14.6 | 0.15 | 20060922 | 125.87807 | 231.03692 | 76.33022 | 27.93961 | 0.1021738 | 2.5834282 | 133 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 62205 | (56665) |
| (56671) | 15.9 | 0.15 | 20060922 | 211.07809 | 187.29168 | 95.86673 | 7.02272 | 0.1236285 | 2.4169028 | 93 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 42354 | (56671) |
| (56686) | 14.3 | 0.15 | 20060922 | 157.22013 | 79.61030 | 224.12337 | 13.44646 | 0.1280028 | 2.6200788 | 276 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 42359 | (56686) |
| (56687) | 13.8 | 0.15 | 20060922 | 171.34379 | 65.97717 | 244.07974 | 12.59069 | 0.0475808 | 2.5822895 | 398 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 42359 | (56687) |
| (56703) | 13.9 | 0.15 | 20060922 | 173.21428 | 21.91521 | 261.10943 | 9.87583 | 0.1804509 | 2.6593378 | 327 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 42367 | (56703) |
| (56706) | 14.9 | 0.15 | 20060922 | 278.05874 | 169.33485 | 40.53024 | 7.13449 | 0.0210323 | 2.4122029 | 240 | 7 | 1996–2006 | 0.54 | M-v | 1 | MPC | 42369 | (56706) |
| (56709) | 14.8 | 0.15 | 20060922 | 47.16527 | 286.81439 | 98.20696 | 8.64655 | 0.1815566 | 2.7782271 | 215 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42370 | (56709) |
| (56711) | 14.6 | 0.15 | 20060922 | 117.09920 | 231.29556 | 104.79917 | 13.89977 | 0.1961994 | 2.6895068 | 268 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 42370 | (56711) |
| (56720) | 13.6 | 0.15 | 20060922 | 54.47809 | 21.91642 | 323.71827 | 10.15003 | 0.1438295 | 2.9973095 | 335 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 42373 | (56720) |
| (56721) | 15.7 | 0.15 | 20060922 | 275.74789 | 65.32306 | 157.01892 | 5.82105 | 0.0561755 | 2.3743923 | 177 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 42374 | (56721) |
| (56727) | 14.1 | 0.15 | 20060922 | 315.38148 | 278.15732 | 143.89949 | 14.83028 | 0.0682337 | 3.0924949 | 229 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 42376 | (56727) |
| (56729) | 14.2 | 0.15 | 20060922 | 332.03037 | 281.98880 | 134.45795 | 10.01805 | 0.0307591 | 3.0021955 | 186 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42377 | (56729) |
| (56736) | 16.2 | 0.15 | 20060922 | 232.16931 | 50.33286 | 205.19673 | 2.35717 | 0.1220387 | 2.5525671 | 181 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42380 | (56736) |
| (56741) | 15.1 | 0.15 | 20060922 | 13.99970 | 230.41088 | 141.14220 | 2.08198 | 0.1250655 | 2.9962485 | 247 | 6 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42382 | (56741) |
| (56742) | 14.9 | 0.15 | 20060922 | 13.12684 | 71.55507 | 304.34576 | 8.43071 | 0.1308486 | 2.9855210 | 263 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42382 | (56742) |
| (56743) | 14.5 | 0.15 | 20060922 | 136.45384 | 43.91638 | 289.37036 | 11.03728 | 0.0704055 | 2.6250694 | 203 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 42383 | (56743) |
| (56749) | 14.1 | 0.15 | 20060922 | 69.66830 | 25.08510 | 271.20941 | 9.31893 | 0.0814048 | 3.0882186 | 195 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 42385 | (56749) |
| (56750) | 14.2 | 0.15 | 20060922 | 228.79610 | 305.51737 | 298.24740 | 12.46061 | 0.1644104 | 2.6022817 | 257 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42385 | (56750) |
| (56754) | 16.0 | 0.15 | 20060922 | 189.94098 | 43.00989 | 255.86373 | 1.13481 | 0.1744303 | 2.5278592 | 151 | 7 | 1996–2006 | 0.43 | M-v | 1 | MPC | 42387 | (56754) |
| (56757) | 14.8 | 0.15 | 20060922 | 192.10339 | 159.98388 | 119.74286 | 4.70176 | 0.2254626 | 2.5851778 | 207 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 42388 | (56757) |
| (56759) | 14.8 | 0.15 | 20060922 | 145.04177 | 171.10274 | 126.31796 | 3.27620 | 0.1866684 | 2.6886007 | 178 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 42389 | (56759) |
| (56763) | 14.6 | 0.15 | 20060922 | 287.83338 | 132.30117 | 98.88605 | 9.44921 | 0.2255968 | 2.3796807 | 220 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 42390 | (56763) |
| (56769) | 14.0 | 0.15 | 20060922 | 180.12095 | 132.56312 | 154.94863 | 13.84766 | 0.1611971 | 2.6501902 | 260 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 42393 | (56769) |
| (56771) | 15.0 | 0.15 | 20060922 | 66.97553 | 145.27781 | 223.13324 | 7.84117 | 0.0809037 | 2.7841766 | 181 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 42394 | (56771) |
| (56783) | 14.5 | 0.15 | 20060922 | 169.93448 | 18.30549 | 256.99070 | 11.66743 | 0.1165157 | 2.7556185 | 228 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 62205 | (56783) |
| (56786) | 15.2 | 0.15 | 20060922 | 242.96766 | 289.29839 | 314.35073 | 13.27798 | 0.0576859 | 2.5505016 | 143 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 42400 | (56786) |
| (56798) | 15.3 | 0.15 | 20060922 | 134.26985 | 19.37486 | 332.47333 | 9.88289 | 0.0548902 | 2.5909093 | 167 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 42404 | (56798) |
| (56805) | 14.7 | 0.15 | 20060922 | 161.94117 | 281.07221 | 308.52445 | 9.72058 | 0.1062934 | 3.0172575 | 163 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 42406 | (56805) |
| (56808) | 15.5 | 0.15 | 20060922 | 84.04822 | 320.08845 | 0.12718 | 1.63418 | 0.0651278 | 2.8700618 | 174 | 7 | 1996–2006 | 0.61 | M-v | 0 | MPC | 42407 | (56808) |
| (56810) | 15.6 | 0.15 | 20060922 | 44.41766 | 197.16981 | 144.24268 | 11.22486 | 0.0553042 | 2.9791800 | 115 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 42408 | (56810) |
| (56815) | 13.6 | 0.15 | 20060922 | 246.15155 | 81.86390 | 38.83891 | 11.18320 | 0.0052955 | 3.1464431 | 325 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 42410 | (56815) |
| (56818) | 14.5 | 0.15 | 20060922 | 52.06740 | 351.10214 | 343.64198 | 8.92014 | 0.0814276 | 3.0700059 | 204 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 42411 | (56818) |
| (56825) | 15.9 | 0.15 | 20060922 | 175.07271 | 356.89443 | 303.34211 | 2.92798 | 0.0639766 | 2.6191934 | 134 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 42414 | (56825) |
| (56835) | 14.8 | 0.15 | 20060922 | 293.06128 | 229.53300 | 317.71783 | 11.65904 | 0.0958874 | 2.5866259 | 235 | 7 | 1999–2006 | 0.62 | M-v | 1 | MPC | 42418 | (56835) |
| (56837) | 14.3 | 0.15 | 20060922 | 105.10258 | 295.45613 | 328.81553 | 10.13408 | 0.1628467 | 3.0208937 | 175 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 42418 | (56837) |
| (56838) | 14.6 | 0.15 | 20060922 | 99.10392 | 0.34375 | 335.12331 | 3.73653 | 0.0749077 | 2.8101600 | 290 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42419 | (56838) |
| (56841) | 14.3 | 0.15 | 20060922 | 206.11517 | 212.15245 | 318.92876 | 9.38968 | 0.0412181 | 3.0680125 | 189 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 42420 | (56841) |
| (56845) | 15.2 | 0.15 | 20060922 | 151.55339 | 173.94814 | 151.92868 | 4.39584 | 0.2110883 | 2.6593395 | 189 | 7 | 1982–2006 | 0.56 | M-v | 1 | MPC | 42421 | (56845) |
| (56848) | 15.1 | 0.15 | 20060922 | 226.68339 | 209.78130 | 24.49410 | 4.73110 | 0.2140776 | 2.6295858 | 115 | 7 | 1999–2006 | 0.61 | M-v | 1 | MPC | 42422 | (56848) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (56854) | 15.0 | 0.15 | 20060922 | 158.32720 | 238.47927 | 326.13485 | 10.50665 | 0.0250321 | 3.1521230 | 157 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 42424 | (56854) |
| (56855) | 14.0 | 0.15 | 20060922 | 71.87793 | 351.26489 | 336.57884 | 10.91673 | 0.0709370 | 2.9881666 | 164 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 42424 | (56855) |
| (56861) | 14.9 | 0.15 | 20060922 | 55.39240 | 15.61144 | 311.45878 | 10.02153 | 0.1472609 | 3.0575601 | 124 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 42426 | (56861) |
| (56863) | 14.5 | 0.15 | 20060922 | 104.95110 | 17.58386 | 288.55822 | 4.26036 | 0.1099862 | 2.9381403 | 184 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42427 | (56863) |
| (56864) | 13.3 | 0.15 | 20060922 | 348.05396 | 244.37005 | 173.40907 | 26.67356 | 0.2080224 | 3.1125541 | 201 | 9 | 1997–2006 | 0.57 | M-v | 0 | MPC | 42427 | (56864) |
| (56868) | 13.2 | 0.15 | 20060922 | 72.82916 | 131.09358 | 165.49921 | 23.51416 | 0.1421940 | 3.1777181 | 227 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 42429 | (56868) |
| (56874) | 13.9 | 0.15 | 20060922 | 273.88660 | 313.88984 | 164.14184 | 27.85152 | 0.1552868 | 3.1152945 | 206 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 42430 | (56874) |
| (56878) | 14.9 | 0.15 | 20060922 | 98.83932 | 357.03891 | 302.63092 | 4.25251 | 0.1002999 | 3.0206560 | 207 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42432 | (56878) |
| (56884) | 14.4 | 0.15 | 20060922 | 51.58610 | 7.81614 | 298.68146 | 9.88071 | 0.0659388 | 3.2109186 | 118 | 6 | 1998–2006 | 0.63 | M-v | 1 | MPC | 97302 | (56884) |
| (56886) | 15.4 | 0.15 | 20060922 | 138.89700 | 334.55943 | 313.54319 | 2.86331 | 0.0701038 | 2.8058585 | 161 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42435 | (56886) |
| (56890) | 14.4 | 0.15 | 20060922 | 316.12186 | 221.55835 | 212.52374 | 8.32718 | 0.0652612 | 3.0079840 | 342 | 7 | 1993–2006 | 0.54 | M-v | 0 | MPC | 42436 | (56890) |
| (56891) | 14.3 | 0.15 | 20060922 | 289.25034 | 197.66843 | 3.45409 | 12.93726 | 0.1065491 | 2.6881039 | 294 | 7 | 1976–2006 | 0.52 | M-v | 0 | MPC | 42437 | (56891) |
| (56895) | 14.7 | 0.15 | 20060922 | 61.86285 | 155.34404 | 170.87734 | 9.64643 | 0.1103859 | 3.0045675 | 155 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 42438 | (56895) |
| (56898) | 15.5 | 0.15 | 20060922 | 233.50260 | 257.87774 | 249.68800 | 8.10267 | 0.0359096 | 3.0858723 | 172 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 42439 | (56898) |
| (56899) | 14.3 | 0.15 | 20060922 | 4.65756 | 196.07014 | 273.48029 | 10.02760 | 0.0740197 | 2.6435955 | 251 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42440 | (56899) |
| (56905) | 15.0 | 0.15 | 20060922 | 290.47735 | 240.65538 | 318.53017 | 10.53304 | 0.1807970 | 2.5859086 | 195 | 7 | 1999–2006 | 0.58 | M-v | 1 | MPC | 42442 | (56905) |
| (56910) | 13.6 | 0.15 | 20060922 | 276.22031 | 15.36621 | 100.91732 | 10.82636 | 0.0582240 | 3.0652875 | 226 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42443 | (56910) |
| (56913) | 14.7 | 0.15 | 20060922 | 121.71418 | 285.04618 | 350.50459 | 10.00482 | 0.0729799 | 2.9798820 | 139 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 42445 | (56913) |
| (56916) | 16.1 | 0.15 | 20060922 | 5.90887 | 33.10944 | 326.34614 | 6.15281 | 0.1226685 | 3.2167834 | 210 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 42446 | (56916) |
| (56919) | 14.7 | 0.15 | 20060922 | 35.46737 | 273.00781 | 72.29967 | 11.80555 | 0.0972566 | 3.0724754 | 208 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 42447 | (56919) |
| (56922) | 13.5 | 0.15 | 20060922 | 0.82757 | 173.62294 | 224.23362 | 8.96262 | 0.0782141 | 3.0649772 | 310 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 42448 | (56922) |
| (56923) | 14.0 | 0.15 | 20060922 | 124.11152 | 325.08639 | 305.31218 | 10.62992 | 0.0823809 | 3.0328261 | 160 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 42448 | (56923) |
| (56930) | 13.4 | 0.15 | 20060922 | 90.40511 | 19.35147 | 303.93789 | 9.71707 | 0.1096261 | 2.9805011 | 320 | 7 | 1998–2006 | 0.66 | M-v | 1 | MPC | 42451 | (56930) |
| (56935) | 14.0 | 0.15 | 20060922 | 64.36555 | 28.59974 | 296.67533 | 6.91864 | 0.1180967 | 3.1410224 | 312 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 42453 | (56935) |
| (56942) | 13.3 | 0.15 | 20060922 | 9.37892 | 85.19004 | 303.29902 | 8.19155 | 0.0868635 | 3.1726688 | 287 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 42456 | (56942) |
| (56944) | 13.9 | 0.15 | 20060922 | 64.81657 | 185.83996 | 134.13034 | 7.96443 | 0.1012954 | 3.1752865 | 212 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 42457 | (56944) |
| (56949) | 14.1 | 0.15 | 20060922 | 92.98382 | 15.29599 | 276.87079 | 14.70434 | 0.2148107 | 3.0903957 | 241 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 42458 | (56949) |
| (56952) | 13.9 | 0.15 | 20060922 | 80.30110 | 235.17444 | 105.11648 | 13.12988 | 0.0645125 | 2.9353038 | 185 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 42459 | (56952) |
| (56957) | 13.4 | 0.15 | 20060922 | 216.01539 | 299.13397 | 319.05545 | 11.94666 | 0.0808813 | 2.7873283 | 316 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 42461 | (56957) |
| (56963) | 14.4 | 0.15 | 20060922 | 195.47457 | 233.63879 | 8.51593 | 0.51883 | 0.1708660 | 2.8680433 | 210 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 42463 | (56963) |
| (56965) | 14.9 | 0.15 | 20060922 | 171.31528 | 184.80696 | 27.21873 | 11.47441 | 0.0529912 | 3.2104644 | 178 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 42464 | (56965) |
| (56971) | 14.0 | 0.15 | 20060922 | 44.19653 | 273.60062 | 80.21938 | 2.57745 | 0.2108424 | 3.1522217 | 357 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 42467 | (56971) |
| (56973) | 14.5 | 0.15 | 20060922 | 73.13952 | 105.54152 | 215.65612 | 9.74232 | 0.0503632 | 3.1758455 | 167 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 42467 | (56973) |
| (56988) | 14.0 | 0.15 | 20060922 | 352.21473 | 46.97326 | 8.28984 | 9.06384 | 0.0504864 | 3.0007706 | 133 | 7 | 1990–2006 | 0.62 | M-v | 0 | MPC | 42473 | (56988) |
| (56990) | 13.9 | 0.15 | 20060922 | 165.32271 | 211.37920 | 44.64416 | 7.29574 | 0.0294634 | 2.9189846 | 162 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 42474 | (56990) |
| (56991) | 14.0 | 0.15 | 20060922 | 212.30740 | 282.95077 | 263.18022 | 9.33361 | 0.0662056 | 3.0954070 | 128 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 42474 | (56991) |
| (57000) | 13.1 | 0.15 | 20060922 | 93.15006 | 316.38343 | 346.28727 | 16.75740 | 0.1133503 | 3.2459147 | 286 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 42477 | (57000) |
| (57002) | 15.1 | 0.15 | 20060922 | 177.30945 | 229.97678 | 320.01500 | 5.18212 | 0.0533138 | 3.2233770 | 89 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 42478 | (57002) |
| (57003) | 13.9 | 0.15 | 20060922 | 265.41032 | 53.65356 | 108.86175 | 12.37439 | 0.0971789 | 3.0997890 | 276 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42478 | (57003) |
| (57005) | 14.1 | 0.15 | 20060922 | 276.54382 | 73.54808 | 59.00137 | 11.14575 | 0.0517201 | 3.0040051 | 245 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 42479 | (57005) |
| (57006) | 13.6 | 0.15 | 20060922 | 334.92168 | 13.42371 | 45.12946 | 11.63182 | 0.0991279 | 3.1229814 | 237 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 42479 | (57006) |
| (57010) | 14.7 | 0.15 | 20060922 | 236.26450 | 198.73097 | 45.03266 | 11.23113 | 0.1782495 | 2.7862978 | 278 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42480 | (57010) |
| (57015) | 14.2 | 0.15 | 20060922 | 285.22825 | 156.28246 | 37.38784 | 13.23766 | 0.1191626 | 2.6990544 | 310 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 42482 | (57015) |
| (57019) | 14.2 | 0.15 | 20060922 | 319.37030 | 139.55363 | 49.72924 | 13.86669 | 0.1123035 | 2.6021419 | 224 | 7 | 1992–2006 | 0.54 | M-v | 1 | MPC | 42484 | (57019) |
| (57021) | 13.2 | 0.15 | 20060922 | 205.54862 | 97.80020 | 96.86996 | 16.17567 | 0.1282123 | 3.2202042 | 165 | 7 | 1980–2006 | 0.65 | M-v | 1 | MPC | 42484 | (57021) |
| (57023) | 12.9 | 0.15 | 20060922 | 102.66605 | 302.70093 | 51.65071 | 7.63425 | 0.1888214 | 2.9630939 | 301 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 42485 | (57023) |
| (57025) | 13.4 | 0.15 | 20060922 | 102.81523 | 217.50508 | 70.50104 | 16.65476 | 0.1874469 | 3.2302451 | 209 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42486 | (57025) |
| (57032) | 14.1 | 0.15 | 20060922 | 201.33581 | 95.19621 | 115.61873 | 2.03488 | 0.1353429 | 3.2192320 | 236 | 10 | 1991–2006 | 0.52 | M-v | 0 | MPC | 42488 | (57032) |
| (57034) | 13.3 | 0.15 | 20060922 | 171.97216 | 207.95918 | 53.62722 | 17.61452 | 0.0547706 | 3.1785781 | 346 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 42489 | (57034) |
| (57042) | 17.1 | 0.15 | 20060922 | 340.26531 | 94.39800 | 338.16747 | 7.24289 | 0.0710957 | 2.1917475 | 78 | 6 | 1996–2004 | 0.66 | M-v | 1 | MPC | 42491 | (57042) |
| (57053) | 14.6 | 0.15 | 20060922 | 54.35219 | 78.17687 | 303.74800 | 11.03536 | 0.1601569 | 2.5499033 | 331 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 42495 | (57053) |
| (57063) | 15.1 | 0.15 | 20060922 | 23.46430 | 245.73807 | 142.87949 | 3.20758 | 0.2381715 | 2.5928120 | 144 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 42499 | (57063) |
| (57072) | 15.1 | 0.15 | 20060922 | 344.12615 | 309.71913 | 79.29163 | 6.96535 | 0.0630027 | 2.7275008 | 167 | 7 | 1991–2006 | 0.50 | M-v | 0 | MPC | 42502 | (57072) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (57086) | 13.9 | 0.15 | 20060922 | 6.10167 | 310.34583 | 122.94147 | 8.55215 | 0.1718914 | 2.5823918 | 298 | 7 | 1982–2006 | 0.59 | M-v | 0 | MPC | 42509 | (57086) |
| (57095) | 15.6 | 0.15 | 20060922 | 68.76076 | 180.32754 | 193.83196 | 3.06781 | 0.2107811 | 2.5438196 | 218 | 7 | 1997–2006 | 0.49 | M-v | 1 | MPC | 42512 | (57095) |
| (57111) | 13.3 | 0.15 | 20060922 | 15.84356 | 108.81816 | 294.14934 | 12.69046 | 0.1913162 | 2.7051467 | 292 | 7 | 1996–2006 | 0.59 | M-v | 0 | MPC | 42520 | (57111) |
| (57114) | 15.6 | 0.15 | 20060922 | 76.75285 | 41.58969 | 313.01133 | 3.03313 | 0.2275594 | 2.5856922 | 233 | 7 | 1997–2006 | 0.50 | M-v | 1 | MPC | 42521 | (57114) |
| (57121) | 15.1 | 0.15 | 20060922 | 34.25224 | 7.92289 | 26.57015 | 4.23671 | 0.2264841 | 2.5869779 | 125 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 42524 | (57121) |
| (57123) | 15.4 | 0.15 | 20060922 | 135.96716 | 357.90674 | 342.97198 | 6.61284 | 0.1524152 | 2.3445059 | 256 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 42525 | (57123) |
| (57128) | 13.8 | 0.15 | 20060922 | 0.29087 | 180.01404 | 262.70092 | 11.04921 | 0.1392064 | 2.5821779 | 267 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42527 | (57128) |
| (57129) | 14.9 | 0.15 | 20060922 | 317.85638 | 228.63465 | 240.59526 | 21.17399 | 0.0690686 | 2.5878101 | 222 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 42528 | (57129) |
| (57134) | 14.9 | 0.15 | 20060922 | 328.02231 | 128.33827 | 322.41346 | 8.08080 | 0.0842788 | 2.6291949 | 182 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 42530 | (57134) |
| (57138) | 15.4 | 0.15 | 20060922 | 72.37935 | 283.01748 | 104.91691 | 6.31479 | 0.1235804 | 2.4640394 | 164 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 42531 | (57138) |
| (57139) | 14.6 | 0.15 | 20060922 | 0.64006 | 44.34793 | 350.82820 | 5.86164 | 0.0496986 | 2.7027496 | 253 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 42531 | (57139) |
| (57151) | 14.8 | 0.15 | 20060922 | 18.11740 | 204.16170 | 226.32516 | 3.27788 | 0.1916978 | 2.5907039 | 328 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 42535 | (57151) |
| (57162) | 15.5 | 0.15 | 20060922 | 34.01112 | 305.46684 | 108.46038 | 5.74242 | 0.1893217 | 2.5368325 | 202 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42540 | (57162) |
| (57164) | 14.9 | 0.15 | 20060922 | 1.47070 | 303.29868 | 127.43546 | 8.53632 | 0.1769113 | 2.5733981 | 293 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 42541 | (57164) |
| (57169) | 14.5 | 0.15 | 20060922 | 343.89429 | 124.43615 | 320.29803 | 5.14303 | 0.0796585 | 2.6124428 | 322 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 42543 | (57169) |
| (57170) | 15.6 | 0.15 | 20060922 | 31.58890 | 358.37787 | 51.20216 | 1.92815 | 0.1476789 | 2.5759024 | 168 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 42544 | (57170) |
| (57173) | 14.4 | 0.15 | 20060922 | 20.68318 | 246.93549 | 168.50861 | 12.65069 | 0.1690211 | 2.6492429 | 257 | 7 | 1988–2006 | 0.56 | M-v | 0 | MPC | 42545 | (57173) |
| (57176) | 14.0 | 0.15 | 20060922 | 328.44034 | 174.26361 | 353.62591 | 11.75933 | 0.0990150 | 2.3431244 | 338 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 42546 | (57176) |
| (57184) | 14.4 | 0.15 | 20060922 | 64.55309 | 197.08093 | 189.82234 | 11.74247 | 0.1680046 | 2.6153381 | 364 | 7 | 1999–2006 | 0.52 | M-v | 1 | MPC | 42550 | (57184) |
| (57201) | 14.5 | 0.15 | 20060922 | 346.18079 | 63.38331 | 332.78473 | 5.92734 | 0.0739347 | 2.7844850 | 280 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 42558 | (57201) |
| (57220) | 14.3 | 0.15 | 20060922 | 37.40869 | 5.76335 | 9.98265 | 17.47598 | 0.1016361 | 2.7185473 | 272 | 7 | 1992–2006 | 0.52 | M-v | 0 | MPC | 42566 | (57220) |
| (57231) | 14.2 | 0.15 | 20060922 | 121.16420 | 252.34334 | 47.28293 | 5.87196 | 0.0574969 | 2.7942914 | 367 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 42571 | (57231) |
| (57236) | 13.3 | 0.15 | 20060922 | 81.78536 | 331.20819 | 17.69609 | 12.32174 | 0.1721227 | 2.7095075 | 391 | 7 | 1974–2006 | 0.52 | M-v | 0 | MPC | 42574 | (57236) |
| (57248) | 14.0 | 0.15 | 20060922 | 355.28811 | 103.72953 | 320.47324 | 28.34986 | 0.3291674 | 2.6362983 | 133 | 5 | 1989–2006 | 0.50 | M-v | 1 | MPC | 42580 | (57248) |
| (57249) | 13.3 | 0.15 | 20060922 | 101.02952 | 316.95226 | 332.86439 | 14.45378 | 0.1290290 | 2.8483614 | 243 | 7 | 1976–2006 | 0.54 | M-v | 0 | MPC | 42580 | (57249) |
| (57260) | 15.3 | 0.15 | 20060922 | 6.40044 | 193.20712 | 246.89163 | 10.77897 | 0.2147702 | 2.5855443 | 119 | 7 | 1989–2006 | 0.53 | M-v | 1 | MPC | 42585 | (57260) |
| (57267) | 15.0 | 0.15 | 20060922 | 27.08490 | 332.83101 | 79.52513 | 3.86499 | 0.1725192 | 2.5395152 | 176 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 42587 | (57267) |
| (57269) | 14.0 | 0.15 | 20060922 | 292.00521 | 294.39034 | 173.94791 | 21.65169 | 0.0985547 | 2.6977807 | 217 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 42588 | (57269) |
| (57271) | 13.9 | 0.15 | 20060922 | 322.36258 | 134.00769 | 278.07876 | 8.39363 | 0.0693581 | 2.9813677 | 260 | 7 | 1992–2006 | 0.52 | M-v | 0 | MPC | 42589 | (57271) |
| (57273) | 14.2 | 0.15 | 20060922 | 88.49881 | 40.37543 | 314.79293 | 8.08539 | 0.1101476 | 2.6117314 | 318 | 7 | 1997–2006 | 0.54 | M-v | 1 | MPC | 42590 | (57273) |
| (57297) | 14.5 | 0.15 | 20060922 | 18.05498 | 208.73668 | 237.75394 | 9.80456 | 0.1363585 | 2.5109425 | 231 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 42599 | (57297) |
| (57298) | 14.8 | 0.15 | 20060922 | 45.17266 | 103.19069 | 289.63982 | 10.84657 | 0.0306174 | 2.5851850 | 172 | 7 | 1993–2006 | 0.49 | M-v | 1 | MPC | 42600 | (57298) |
| (57299) | 15.0 | 0.15 | 20060922 | 302.22200 | 231.93124 | 235.63333 | 10.73289 | 0.1119831 | 2.7670401 | 213 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 66040 | (57299) |
| (57302) | 14.8 | 0.15 | 20060922 | 23.76126 | 66.11353 | 328.18244 | 4.39843 | 0.1469868 | 2.7967202 | 206 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 42601 | (57302) |
| (57305) | 13.5 | 0.15 | 20060922 | 312.37738 | 22.07143 | 51.28222 | 10.58717 | 0.0551587 | 3.0381782 | 434 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 42603 | (57305) |
| (57306) | 14.9 | 0.15 | 20060922 | 120.73483 | 39.56629 | 271.00485 | 2.89535 | 0.0805458 | 2.7062114 | 180 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 42603 | (57306) |
| (57307) | 13.9 | 0.15 | 20060922 | 341.26994 | 359.45284 | 53.72859 | 10.80486 | 0.0848352 | 2.9968519 | 325 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42604 | (57307) |
| (57324) | 15.6 | 0.15 | 20060922 | 291.25785 | 155.14352 | 335.54044 | 3.26458 | 0.0540763 | 2.6433618 | 131 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 42611 | (57324) |
| (57330) | 14.5 | 0.15 | 20060922 | 7.29689 | 241.32548 | 180.20736 | 14.64239 | 0.0808422 | 2.6721423 | 280 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 42613 | (57330) |
| (57344) | 14.4 | 0.15 | 20060922 | 20.53537 | 317.62450 | 92.48698 | 4.31064 | 0.0928610 | 2.7287322 | 220 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 42619 | (57344) |
| (57346) | 15.4 | 0.15 | 20060922 | 96.34070 | 267.43809 | 92.93362 | 6.89119 | 0.1358942 | 2.4763494 | 136 | 7 | 1994–2006 | 0.53 | M-v | 1 | MPC | 42620 | (57346) |
| (57349) | 14.0 | 0.15 | 20060922 | 65.99066 | 309.22189 | 83.26798 | 14.83048 | 0.1660622 | 2.5542411 | 173 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 42621 | (57349) |
| (57355) | 14.7 | 0.15 | 20060922 | 340.61152 | 228.92459 | 211.31210 | 11.73123 | 0.0776331 | 2.7902550 | 246 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 42623 | (57355) |
| (57361) | 15.0 | 0.15 | 20060922 | 285.02243 | 316.81595 | 162.88568 | 5.89599 | 0.0595633 | 2.7638949 | 177 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 42626 | (57361) |
| (57378) | 14.8 | 0.15 | 20060922 | 311.15494 | 261.13631 | 219.85002 | 9.69228 | 0.1277612 | 2.6852903 | 219 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 42633 | (57378) |
| (57393) | 15.0 | 0.15 | 20060922 | 77.22264 | 246.79318 | 130.50447 | 2.79759 | 0.1084248 | 2.6373525 | 338 | 9 | 1991–2006 | 0.51 | M-v | 0 | MPC | 42639 | (57393) |
| (57397) | 15.1 | 0.15 | 20060922 | 340.01713 | 94.11009 | 350.36530 | 3.54963 | 0.0801591 | 2.6818516 | 210 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 42641 | (57397) |
| (57403) | 13.4 | 0.15 | 20060922 | 293.26789 | 58.42660 | 100.22061 | 13.27008 | 0.1075578 | 2.6607231 | 242 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 42644 | (57403) |
| (57414) | 14.8 | 0.15 | 20060922 | 53.25583 | 29.97534 | 3.73171 | 7.42224 | 0.1972988 | 2.5702696 | 350 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 42648 | (57414) |
| (57415) | 15.2 | 0.15 | 20060922 | 348.33453 | 226.82560 | 204.00714 | 4.38324 | 0.1454709 | 2.7354518 | 230 | 7 | 1994–2006 | 0.49 | M-v | 0 | MPC | 42649 | (57415) |
| (57421) | 14.9 | 0.15 | 20060922 | 5.03646 | 208.79232 | 196.44460 | 7.91506 | 0.2219827 | 2.7682462 | 202 | 7 | 1989–2006 | 0.55 | M-v | 1 | MPC | 42651 | (57421) |
| (57430) | 14.9 | 0.15 | 20060922 | 311.38929 | 115.96267 | 60.59228 | 3.37415 | 0.1169823 | 2.4554625 | 372 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 42655 | (57430) |
| (57434) | 15.5 | 0.15 | 20060922 | 193.59845 | 207.30745 | 93.72211 | 3.18828 | 0.2258716 | 2.3178079 | 327 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 42657 | (57434) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (57442) | 16.0 | 0.15 | 20060922 | 226.69179 | 115.74663 | 139.09333 | 5.53898 | 0.0774826 | 2.4453860 | 187 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 42660 | (57442) |
| (57448) | 14.8 | 0.15 | 20060922 | 7.86836 | 15.27609 | 39.41783 | 7.09945 | 0.0689610 | 2.7425356 | 241 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 42663 | (57448) |
| (57449) | 14.2 | 0.15 | 20060922 | 313.09187 | 35.89020 | 37.75244 | 11.45353 | 0.1030674 | 2.9698444 | 344 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 42663 | (57449) |
| (57456) | 14.0 | 0.15 | 20060922 | 325.18807 | 300.04612 | 107.61559 | 8.34460 | 0.1391359 | 3.1251308 | 206 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 42666 | (57456) |
| (57457) | 14.1 | 0.15 | 20060922 | 315.75531 | 318.75122 | 122.13059 | 5.14707 | 0.1303498 | 3.0124305 | 368 | 9 | 1990–2006 | 0.54 | M-v | 0 | MPC | 42667 | (57457) |
| (57465) | 14.2 | 0.15 | 20060922 | 353.32319 | 224.99384 | 249.60671 | 12.92975 | 0.0789458 | 2.6689600 | 270 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 42671 | (57465) |
| (57467) | 13.9 | 0.15 | 20060922 | 59.24523 | 106.81682 | 270.63058 | 11.78819 | 0.1993683 | 2.7274829 | 279 | 7 | 1987–2006 | 0.55 | M-v | 0 | MPC | 42671 | (57467) |
| (57469) | 15.2 | 0.15 | 20060922 | 292.45897 | 346.37873 | 185.51554 | 5.12640 | 0.1931095 | 2.5834747 | 274 | 7 | 1999–2006 | 0.54 | M-v | 1 | MPC | 42672 | (57469) |
| (57472) | 15.3 | 0.15 | 20060922 | 27.46175 | 154.51496 | 246.81887 | 2.59153 | 0.1678151 | 2.6269543 | 183 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 42674 | (57472) |
| (57482) | 15.4 | 0.15 | 20060922 | 253.75122 | 314.28017 | 195.32913 | 6.59671 | 0.0370494 | 2.7943440 | 164 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 42678 | (57482) |
| (57494) | 14.8 | 0.15 | 20060922 | 56.36828 | 333.38953 | 23.33278 | 2.97158 | 0.0334560 | 2.6579820 | 288 | 7 | 1997–2006 | 0.63 | M-v | 0 | MPC | 42682 | (57494) |
| (57507) | 15.1 | 0.15 | 20060922 | 26.27509 | 291.25071 | 85.87870 | 3.19585 | 0.1103063 | 2.8531040 | 274 | 7 | 1996–2006 | 0.50 | M-v | 0 | MPC | 42688 | (57507) |
| (57514) | 15.3 | 0.15 | 20060922 | 83.18549 | 152.80312 | 228.10253 | 14.43736 | 0.1361622 | 2.5525346 | 269 | 7 | 1997–2006 | 0.55 | M-v | 1 | MPC | 42691 | (57514) |
| (57523) | 14.9 | 0.15 | 20060922 | 52.14124 | 228.78522 | 172.01003 | 15.41929 | 0.1120584 | 2.6430892 | 239 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 42695 | (57523) |
| (57526) | 13.5 | 0.15 | 20060922 | 36.85171 | 14.45893 | 6.18304 | 16.83352 | 0.2577325 | 2.7993427 | 153 | 7 | 1982–2006 | 0.54 | M-v | 0 | MPC | 42696 | (57526) |
| (57528) | 14.2 | 0.15 | 20060922 | 26.73303 | 342.21010 | 68.29852 | 14.92212 | 0.0935333 | 2.6223855 | 166 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 42697 | (57528) |
| (57534) | 13.7 | 0.15 | 20060922 | 312.92833 | 32.79164 | 30.75221 | 12.07908 | 0.1405544 | 3.1424083 | 185 | 6 | 1998–2006 | 0.60 | M-v | 1 | MPC | 42699 | (57534) |
| (57539) | 14.3 | 0.15 | 20060922 | 50.33513 | 183.48376 | 232.28633 | 13.02889 | 0.1436663 | 2.5656198 | 303 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 42701 | (57539) |
| (57547) | 14.2 | 0.15 | 20060922 | 296.37522 | 76.47809 | 71.99342 | 12.48019 | 0.0742699 | 2.6311935 | 137 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 42704 | (57547) |
| (57552) | 14.0 | 0.15 | 20060922 | 10.18337 | 13.60576 | 1.02613 | 8.82728 | 0.0538060 | 3.0015145 | 204 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 77339 | (57552) |
| (57563) | 15.0 | 0.15 | 20060922 | 43.05149 | 354.39589 | 41.23236 | 14.01895 | 0.1638800 | 2.6316099 | 167 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 42710 | (57563) |
| (57567) | 15.1 | 0.15 | 20060922 | 250.77151 | 250.94501 | 223.16092 | 2.56802 | 0.1580378 | 3.1825359 | 147 | 7 | 1990–2006 | 0.56 | M-v | 0 | MPC | 42712 | (57567) |
| (57571) | 14.8 | 0.15 | 20060922 | 291.75500 | 331.38794 | 113.83559 | 3.98326 | 0.1644383 | 3.0779084 | 180 | 7 | 1990–2006 | 0.58 | M-v | 0 | MPC | 42713 | (57571) |
| (57573) | 15.2 | 0.15 | 20060922 | 326.42720 | 351.85157 | 83.74607 | 3.21108 | 0.0439903 | 2.8717932 | 207 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 42714 | (57573) |
| (57576) | 15.9 | 0.15 | 20060922 | 42.74873 | 327.82964 | 95.29779 | 2.50198 | 0.1011036 | 2.5891236 | 213 | 7 | 1991–2006 | 0.46 | M-v | 0 | MPC | 42715 | (57576) |
| (57588) | 15.0 | 0.15 | 20060922 | 338.62424 | 174.29145 | 245.23760 | 1.02652 | 0.0656246 | 2.9054080 | 244 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 42720 | (57588) |
| (57592) | 14.5 | 0.15 | 20060922 | 21.13717 | 302.09302 | 131.20129 | 2.24701 | 0.0544300 | 2.6550152 | 390 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 42722 | (57592) |
| (57593) | 15.6 | 0.15 | 20060922 | 16.76637 | 218.34110 | 171.61100 | 1.59193 | 0.1350250 | 2.8548159 | 175 | 10 | 1991–2006 | 0.50 | M-v | 0 | MPC | 42723 | (57593) |
| (57598) | 15.5 | 0.15 | 20060922 | 264.95871 | 182.90975 | 337.45520 | 4.08984 | 0.1340462 | 2.7773590 | 149 | 6 | 1999–2006 | 0.54 | M-v | 1 | MPC | 42725 | (57598) |
| (57599) | 16.1 | 0.15 | 20060922 | 104.06292 | 129.20561 | 255.02488 | 1.92073 | 0.0796242 | 2.4575938 | 230 | 7 | 1993–2006 | 0.50 | M-v | 1 | MPC | 42726 | (57599) |
| (57603) | 14.4 | 0.15 | 20060922 | 151.30237 | 31.24504 | 276.89141 | 12.52129 | 0.1339315 | 2.5366261 | 179 | 7 | 1994–2006 | 0.52 | M-v | 1 | MPC | 42727 | (57603) |
| (57614) | 13.7 | 0.15 | 20060922 | 245.58385 | 202.89158 | 282.23523 | 9.49657 | 0.0934791 | 3.0527961 | 255 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42732 | (57614) |
| (57625) | 14.1 | 0.15 | 20060922 | 85.72906 | 272.57651 | 71.75871 | 13.47680 | 0.0415395 | 2.7126799 | 197 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 42736 | (57625) |
| (57627) | 14.4 | 0.15 | 20060922 | 8.25627 | 101.97778 | 282.30542 | 9.03122 | 0.0716710 | 2.9653953 | 136 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 97303 | (57627) |
| (57630) | 14.3 | 0.15 | 20060922 | 3.75654 | 351.46732 | 63.21574 | 10.26264 | 0.1544753 | 2.7684906 | 266 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 42737 | (57630) |
| (57636) | 14.9 | 0.15 | 20060922 | 281.53739 | 201.61970 | 253.89069 | 9.64659 | 0.0402565 | 3.0677510 | 229 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42739 | (57636) |
| (57637) | 14.9 | 0.15 | 20060922 | 190.25945 | 334.87003 | 325.73302 | 5.02113 | 0.1307389 | 2.4500276 | 200 | 7 | 1990–2006 | 0.50 | M-v | 0 | MPC | 42740 | (57637) |
| (57649) | 14.2 | 0.15 | 20060922 | 257.97424 | 271.57132 | 245.55331 | 10.39178 | 0.1420371 | 2.6869374 | 225 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 42744 | (57649) |
| (57651) | 14.7 | 0.15 | 20060922 | 261.44552 | 36.13715 | 132.79250 | 5.74908 | 0.0952866 | 2.7420925 | 171 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 42745 | (57651) |
| (57662) | 15.0 | 0.15 | 20060922 | 341.27009 | 300.44230 | 124.76000 | 2.91126 | 0.0521448 | 2.9320000 | 212 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 42749 | (57662) |
| (57676) | 15.4 | 0.15 | 20060922 | 178.98031 | 115.14296 | 112.37496 | 6.48214 | 0.0470751 | 2.8413586 | 123 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 42754 | (57676) |
| (57677) | 15.2 | 0.15 | 20060922 | 264.46849 | 23.47942 | 178.87883 | 4.30471 | 0.1814677 | 2.5781147 | 206 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 42755 | (57677) |
| (57683) | 15.4 | 0.15 | 20060922 | 84.47712 | 205.84126 | 138.67285 | 2.98040 | 0.2174562 | 2.6994049 | 268 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 42757 | (57683) |
| (57690) | 15.4 | 0.15 | 20060922 | 321.60865 | 297.65134 | 138.99197 | 3.75395 | 0.1260130 | 2.9283720 | 155 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 42760 | (57690) |
| (57697) | 15.6 | 0.15 | 20060922 | 116.39265 | 147.63256 | 143.38150 | 2.62998 | 0.0655216 | 2.8366086 | 198 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 42763 | (57697) |
| (57704) | 15.3 | 0.15 | 20060922 | 237.88164 | 76.02822 | 69.48566 | 1.79306 | 0.1412423 | 3.0888881 | 153 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 42765 | (57704) |
| (57712) | 14.9 | 0.15 | 20060922 | 164.66198 | 161.94688 | 136.56630 | 2.83565 | 0.1692509 | 2.5917326 | 223 | 9 | 1991–2006 | 0.55 | M-v | 0 | MPC | 42768 | (57712) |
| (57717) | 15.0 | 0.15 | 20060922 | 181.47316 | 154.94188 | 126.74747 | 5.70757 | 0.1756153 | 2.5470861 | 217 | 9 | 1991–2006 | 0.56 | M-v | 1 | MPC | 42770 | (57717) |
| (57722) | 15.4 | 0.15 | 20060922 | 225.60871 | 30.75671 | 159.88320 | 3.73650 | 0.0732685 | 2.8113414 | 177 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 42772 | (57722) |
| (57725) | 15.4 | 0.15 | 20060922 | 352.31874 | 261.50089 | 151.58738 | 2.91370 | 0.0662710 | 2.9117371 | 180 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 42773 | (57725) |
| (57728) | 14.9 | 0.15 | 20060922 | 280.44190 | 76.79774 | 94.02625 | 4.33685 | 0.0370593 | 2.7139007 | 158 | 7 | 1994–2006 | 0.57 | M-v | 1 | MPC | 42774 | (57728) |
| (57735) | 14.9 | 0.15 | 20060922 | 110.63886 | 229.61199 | 74.50160 | 3.13410 | 0.0418927 | 2.8671553 | 144 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 42777 | (57735) |
| (57739) | 15.0 | 0.15 | 20060922 | 117.80870 | 246.07254 | 74.75445 | 8.03295 | 0.0806803 | 2.7583138 | 220 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 42778 | (57739) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (57744) | 16.1 | 0.15 | 20060922 | 224.22676 | 349.48110 | 239.41866 | 1.08544 | 0.0355868 | 2.6360973 | 105 | 7 | 1992–2006 | 0.49 | M-v | 0 | MPC | 42780 | (57744) |
| (57751) | 14.4 | 0.15 | 20060922 | 19.56605 | 339.50689 | 88.36931 | 16.35124 | 0.1555007 | 2.5976185 | 125 | 7 | 1994–2006 | 0.60 | M-v | 1 | MPC | 42782 | (57751) |
| (57756) | 14.1 | 0.15 | 20060922 | 312.36455 | 313.05032 | 126.61800 | 11.47138 | 0.0940292 | 2.9770508 | 217 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 42783 | (57756) |
| (57764) | 14.9 | 0.15 | 20060922 | 77.87211 | 228.59682 | 66.85595 | 13.55165 | 0.0588848 | 3.1575003 | 205 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 42787 | (57764) |
| (57768) | 15.1 | 0.15 | 20060922 | 319.34008 | 166.87720 | 265.89553 | 3.55759 | 0.0806102 | 3.0176615 | 134 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 42788 | (57768) |
| (57769) | 14.6 | 0.15 | 20060922 | 100.05072 | 242.20575 | 104.91163 | 4.20312 | 0.2339116 | 2.6694561 | 334 | 9 | 1974–2006 | 0.58 | M-v | 0 | MPC | 42788 | (57769) |
| (57771) | 13.6 | 0.15 | 20060922 | 242.49724 | 189.27248 | 76.56250 | 15.14006 | 0.1617232 | 2.5331056 | 198 | 7 | 1999–2006 | 0.53 | M-v | 1 | MPC | 42789 | (57771) |
| (57774) | 14.6 | 0.15 | 20060922 | 211.50868 | 304.76963 | 275.20689 | 8.59256 | 0.1011165 | 2.7294834 | 141 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 42790 | (57774) |
| (57777) | 14.1 | 0.15 | 20060922 | 134.01382 | 204.85412 | 42.12452 | 11.26937 | 0.0498166 | 3.0495116 | 218 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 42791 | (57777) |
| (57779) | 14.5 | 0.15 | 20060922 | 121.42264 | 12.57767 | 302.74191 | 12.43745 | 0.1342325 | 2.6414148 | 245 | 7 | 1996–2006 | 0.52 | M-v | 1 | MPC | 42792 | (57779) |
| (57785) | 14.9 | 0.15 | 20060922 | 315.37456 | 97.76150 | 14.12956 | 5.02277 | 0.0553988 | 2.8423063 | 150 | 6 | 1998–2006 | 0.62 | M-v | 0 | MPC | 42794 | (57785) |
| (57790) | 14.2 | 0.15 | 20060922 | 119.35414 | 237.04849 | 103.98776 | 15.87435 | 0.0979770 | 2.6204829 | 193 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 42796 | (57790) |
| (57791) | 14.4 | 0.15 | 20060922 | 60.34870 | 251.86466 | 112.14419 | 13.59876 | 0.1938023 | 2.7646710 | 168 | 7 | 1997–2006 | 0.55 | M-v | 1 | MPC | 42796 | (57791) |
| (57792) | 14.8 | 0.15 | 20060922 | 168.88691 | 176.83459 | 130.05063 | 14.62437 | 0.1771924 | 2.5553024 | 191 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 42796 | (57792) |
| (57795) | 15.0 | 0.15 | 20060922 | 30.33229 | 274.90569 | 134.42567 | 13.86954 | 0.1032037 | 2.7285488 | 192 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 42797 | (57795) |
| (57798) | 15.7 | 0.15 | 20060922 | 169.74873 | 321.41635 | 292.33219 | 3.72905 | 0.0940810 | 2.7808686 | 103 | 7 | 1991–2006 | 0.57 | M-v | 1 | MPC | 42798 | (57798) |
| (57800) | 14.5 | 0.15 | 20060922 | 221.60471 | 126.00794 | 31.77101 | 7.80402 | 0.1103685 | 3.1752054 | 152 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 42799 | (57800) |
| (57801) | 15.3 | 0.15 | 20060922 | 284.97395 | 75.93969 | 24.72846 | 1.39561 | 0.0646650 | 3.0539184 | 159 | 9 | 1990–2006 | 0.53 | M-v | 0 | MPC | 42799 | (57801) |
| (57807) | 14.6 | 0.15 | 20060922 | 34.11822 | 5.71929 | 57.02109 | 14.40105 | 0.1524286 | 2.5783536 | 178 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 42801 | (57807) |
| (57809) | 13.9 | 0.15 | 20060922 | 278.30529 | 65.72210 | 70.80916 | 18.01126 | 0.1109517 | 2.8995755 | 158 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 42802 | (57809) |
| (57819) | 15.0 | 0.15 | 20060922 | 353.99568 | 221.46133 | 190.89647 | 7.60603 | 0.0993375 | 2.9406128 | 185 | 9 | 1994–2006 | 0.58 | M-v | 0 | MPC | 77339 | (57819) |
| (57823) | 15.1 | 0.15 | 20060922 | 253.39936 | 173.29466 | 54.63990 | 9.33596 | 0.1446837 | 2.5687216 | 181 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 42807 | (57823) |
| (57824) | 14.5 | 0.15 | 20060922 | 313.54434 | 304.60199 | 133.70793 | 9.89293 | 0.0855167 | 2.9947546 | 227 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42807 | (57824) |
| (57827) | 14.8 | 0.15 | 20060922 | 284.89433 | 157.00666 | 30.64686 | 6.98602 | 0.0855982 | 2.6858250 | 192 | 7 | 1999–2006 | 0.57 | M-v | 1 | MPC | 42808 | (57827) |
| (57831) | 13.7 | 0.15 | 20060922 | 118.11380 | 310.99477 | 46.63474 | 5.95775 | 0.2537484 | 2.5575472 | 281 | 9 | 1983–2006 | 0.52 | M-v | 0 | MPC | 42809 | (57831) |
| (57837) | 14.0 | 0.15 | 20060922 | 128.28158 | 183.90867 | 114.20540 | 10.90085 | 0.0581069 | 2.9813665 | 217 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 42811 | (57837) |
| (57846) | 14.0 | 0.15 | 20060922 | 260.08474 | 38.55425 | 114.74969 | 11.15903 | 0.0431120 | 2.9732129 | 153 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 42814 | (57846) |
| (57856) | 15.4 | 0.15 | 20060922 | 263.03489 | 98.08886 | 89.38900 | 12.74054 | 0.1050718 | 2.7514544 | 97 | 7 | 1997–2006 | 0.63 | M-v | 1 | MPC | 42817 | (57856) |
| (57865) | 15.5 | 0.15 | 20060922 | 133.12628 | 218.14571 | 72.04649 | 3.22495 | 0.0402358 | 2.8768713 | 103 | 9 | 1994–2006 | 0.47 | M-v | 0 | MPC | 42820 | (57865) |
| (57881) | 14.0 | 0.15 | 20060922 | 112.71873 | 250.36669 | 88.73006 | 15.39762 | 0.1335129 | 2.6457538 | 240 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 42824 | (57881) |
| (57882) | 14.8 | 0.15 | 20060922 | 174.11772 | 186.99674 | 86.69305 | 13.44250 | 0.1185310 | 2.7173216 | 112 | 7 | 1999–2006 | 0.57 | M-v | 1 | MPC | 42824 | (57882) |
| (57884) | 13.4 | 0.15 | 20060922 | 273.32494 | 358.96815 | 121.77697 | 20.22855 | 0.1219304 | 3.0906328 | 175 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 42825 | (57884) |
| (57886) | 14.3 | 0.15 | 20060922 | 180.04006 | 198.36344 | 25.35250 | 7.42516 | 0.0211793 | 2.9862860 | 184 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 42826 | (57886) |
| (57889) | 13.8 | 0.15 | 20060922 | 238.76653 | 42.06928 | 116.72567 | 28.07105 | 0.1342105 | 3.1511465 | 103 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 42826 | (57889) |
| (57909) | 16.1 | 0.15 | 20060922 | 75.29253 | 106.52879 | 4.25557 | 13.59231 | 0.1128130 | 2.5709663 | 90 | 6 | 1996–2006 | 0.67 | M-v | 1 | MPC | 42833 | (57909) |
| (57966) | 16.5 | 0.15 | 20060922 | 105.40395 | 93.84582 | 158.30023 | 5.82004 | 0.1429479 | 2.2233551 | 102 | 7 | 1979–2006 | 0.53 | M-v | 1 | MPC | 42847 | (57966) |
| (57971) | 16.9 | 0.15 | 20060922 | 11.98238 | 344.75383 | 35.19135 | 3.76441 | 0.2774776 | 2.3411287 | 96 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 42849 | (57971) |
| (57972) | 16.5 | 0.15 | 20060922 | 66.97584 | 228.83526 | 100.90845 | 7.58399 | 0.1593783 | 2.2707803 | 115 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 42849 | (57972) |
| (57987) | 15.4 | 0.15 | 20060922 | 43.24113 | 358.73020 | 298.59584 | 9.31843 | 0.0600876 | 2.5540258 | 128 | 7 | 1998–2006 | 0.49 | M-v | 1 | MPC | 42853 | (57987) |
| (57992) | 15.4 | 0.15 | 20060922 | 35.91616 | 209.92115 | 124.83621 | 3.55663 | 0.1798505 | 2.4199393 | 158 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 42854 | (57992) |
| (57995) | 15.5 | 0.15 | 20060922 | 17.73768 | 39.52865 | 15.33968 | 3.50463 | 0.1057712 | 2.3530041 | 230 | 9 | 1991–2006 | 0.57 | M-v | 1 | MPC | 42855 | (57995) |
| (58006) | 16.3 | 0.15 | 20060922 | 303.20130 | 171.65804 | 285.69262 | 11.33540 | 0.1364544 | 2.4598241 | 101 | 6 | 1992–2006 | 0.58 | M-v | 1 | MPC | 42858 | (58006) |
| (58010) | 16.2 | 0.15 | 20060922 | 342.27364 | 44.18885 | 70.12049 | 5.26056 | 0.2520347 | 2.4190917 | 105 | 7 | 1992–2006 | 0.59 | M-v | 1 | MPC | 42859 | (58010) |
| (58022) | 14.3 | 0.15 | 20060922 | 286.82021 | 93.72066 | 95.65687 | 12.47882 | 0.2018722 | 2.4355837 | 176 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 42863 | (58022) |
| (58029) | 15.2 | 0.15 | 20060922 | 145.46389 | 5.34979 | 270.85918 | 7.67772 | 0.1172095 | 2.3864339 | 231 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 42865 | (58029) |
| (58049) | 16.7 | 0.15 | 20060922 | 341.63246 | 179.26201 | 309.52060 | 6.30747 | 0.0456154 | 2.3431101 | 105 | 7 | 1998–2006 | 0.63 | M-v | 1 | MPC | 42871 | (58049) |
| (58055) | 15.4 | 0.15 | 20060922 | 82.11468 | 84.11586 | 294.23432 | 7.23032 | 0.2219438 | 2.3906254 | 183 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 42873 | (58055) |
| (58057) | 15.0 | 0.15 | 20060922 | 326.00981 | 357.26013 | 89.05256 | 6.44048 | 0.1958806 | 2.7028277 | 186 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 42874 | (58057) |
| (58063) | 15.1 | 0.15 | 20060922 | 232.52816 | 274.26026 | 224.73669 | 3.80904 | 0.1286280 | 3.2106690 | 121 | 7 | 1960–2006 | 0.57 | M-v | 0 | MPC | 42876 | (58063) |
| (58064) | 16.1 | 0.15 | 20060922 | 339.90571 | 110.58961 | 327.95388 | 2.29438 | 0.1042434 | 2.5751903 | 98 | 7 | 1960–2006 | 0.55 | M-v | 1 | MPC | 42876 | (58064) |
| (58079) | 15.0 | 0.15 | 20060922 | 334.92930 | 280.40989 | 144.19950 | 3.94315 | 0.0687177 | 2.7886791 | 252 | 7 | 1973–2006 | 0.61 | M-v | 0 | MPC | 42881 | (58079) |
| (58106) | 14.4 | 0.15 | 20060922 | 114.59885 | 13.07276 | 285.33270 | 9.36441 | 0.0696043 | 2.9690073 | 151 | 7 | 1979–2006 | 0.58 | M-v | 0 | MPC | 43532 | (58106) |
| (58113) | 17.2 | 0.15 | 20060922 | 206.53743 | 276.54161 | 292.09272 | 5.10592 | 0.1171788 | 2.2344821 | 63 | 7 | 1981–2006 | 0.59 | M-v | 0 | MPC | 43534 | (58113) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (58185) | 15.7 | 0.15 | 20060922 | 100.48833 | 6.06145 | 359.22087 | 5.16370 | 0.2032651 | 2.2989989 | 254 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 43561 | (58185) |
| (58189) | 16.6 | 0.15 | 20060922 | 47.43057 | 198.34059 | 117.12385 | 2.35624 | 0.1854358 | 2.4244094 | 148 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 43562 | (58189) |
| (58196) | 15.4 | 0.15 | 20060922 | 195.88025 | 319.98963 | 190.83950 | 26.05891 | 0.2656523 | 2.5744458 | 76 | 7 | 1992–2006 | 0.52 | M-v | 1 | MPC | 43565 | (58196) |
| (58204) | 15.8 | 0.15 | 20060922 | 325.12307 | 275.38490 | 163.68649 | 12.08214 | 0.2253033 | 3.0383203 | 100 | 7 | 1971–2006 | 0.51 | M-v | 0 | MPC | 43567 | (58204) |
| (58219) | 14.0 | 0.15 | 20060922 | 112.52648 | 315.15194 | 55.38872 | 15.28127 | 0.1246245 | 2.6496690 | 326 | 7 | 1992–2006 | 0.58 | M-v | 1 | MPC | 43573 | (58219) |
| (58221) | 14.5 | 0.15 | 20060922 | 5.25097 | 327.97385 | 142.43296 | 9.88097 | 0.1124557 | 2.7725333 | 204 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 43574 | (58221) |
| (58254) | 17.1 | 0.15 | 20060922 | 43.66791 | 107.85184 | 238.61672 | 2.39129 | 0.2030156 | 2.1531736 | 91 | 8 | 1990–2006 | 0.60 | M-v | 1 | MPC | 97303 | (58254) |
| (58307) | 14.6 | 0.15 | 20060922 | 355.15493 | 240.94009 | 163.92264 | 12.06403 | 0.0863319 | 3.1597968 | 135 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 66041 | (58307) |
| (58321) | 15.1 | 0.15 | 20060922 | 61.84427 | 202.25485 | 168.93878 | 0.42559 | 0.2217988 | 3.0697433 | 265 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 43611 | (58321) |
| (58323) | 14.6 | 0.15 | 20060922 | 37.46878 | 193.97437 | 174.72030 | 2.20281 | 0.2219701 | 3.1372748 | 208 | 7 | 1994–2006 | 0.58 | M-v | 0 | MPC | 43612 | (58323) |
| (58354) | 16.5 | 0.15 | 20060922 | 337.18285 | 295.38999 | 133.72447 | 3.29780 | 0.1699589 | 2.6274799 | 96 | 7 | 1993–2006 | 0.57 | M-v | 1 | MPC | 43623 | (58354) |
| (58404) | 13.9 | 0.15 | 20060922 | 30.19684 | 129.43693 | 254.25515 | 12.69151 | 0.2267397 | 3.0848230 | 318 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 43638 | (58404) |
| (58412) | 14.8 | 0.15 | 20060922 | 330.09152 | 49.40088 | 95.72579 | 11.42928 | 0.1751078 | 3.0799053 | 213 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 43641 | (58412) |
| (58435) | 16.7 | 0.15 | 20060922 | 94.72223 | 219.93799 | 139.96382 | 3.69966 | 0.0534607 | 2.4573437 | 92 | 7 | 1996–2006 | 0.52 | M-v | 1 | MPC | 43650 | (58435) |
| (58490) | 15.3 | 0.15 | 20060922 | 301.20585 | 161.29131 | 317.58221 | 1.08380 | 0.0430250 | 2.8641411 | 175 | 9 | 1991–2006 | 0.53 | M-v | 0 | MPC | 43670 | (58490) |
| (58506) | 14.8 | 0.15 | 20060922 | 44.90568 | 57.54852 | 16.70052 | 21.88359 | 0.0520395 | 2.6969031 | 123 | 7 | 1996–2006 | 0.63 | M-v | 1 | MPC | 43675 | (58506) |
| (58515) | 15.2 | 0.15 | 20060922 | 344.49591 | 339.16270 | 80.42560 | 11.85064 | 0.0806635 | 2.9372149 | 126 | 7 | 1996–2006 | 0.58 | M-v | 1 | MPC | 43679 | (58515) |
| (58518) | 14.1 | 0.15 | 20060922 | 263.04631 | 178.81213 | 333.53403 | 7.84927 | 0.1901730 | 3.0795811 | 254 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 43680 | (58518) |
| (58519) | 14.3 | 0.15 | 20060922 | 297.13746 | 359.47326 | 101.59028 | 15.78642 | 0.1463302 | 3.0762945 | 138 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 43680 | (58519) |
| (58526) | 15.8 | 0.15 | 20060922 | 174.04738 | 272.49816 | 317.92114 | 1.98008 | 0.0587840 | 3.1089126 | 75 | 7 | 1997–2006 | 0.47 | M-v | 0 | MPC | 43683 | (58526) |
| (58532) | 17.0 | 0.15 | 20060922 | 49.24739 | 241.45524 | 124.87505 | 4.64403 | 0.2492889 | 2.2366601 | 100 | 7 | 1996–2006 | 0.48 | M-v | 1 | MPC | 43684 | (58532) |
| (58535) | 15.1 | 0.15 | 20060922 | 346.51795 | 206.23933 | 199.60764 | 6.68665 | 0.1328083 | 3.1588603 | 169 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 43685 | (58535) |
| (58541) | 14.9 | 0.15 | 20060922 | 264.76921 | 143.87614 | 22.65884 | 1.59535 | 0.1179369 | 3.1201197 | 264 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 43687 | (58541) |
| (58542) | 14.9 | 0.15 | 20060922 | 157.75296 | 142.56153 | 160.74937 | 0.73737 | 0.1198912 | 3.1013837 | 265 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 43688 | (58542) |
| (58555) | 16.5 | 0.15 | 20060922 | 333.48775 | 261.21677 | 203.34133 | 5.52641 | 0.1954952 | 2.2845552 | 127 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 43692 | (58555) |
| (58604) | 14.9 | 0.15 | 20060922 | 353.29480 | 34.71789 | 37.89190 | 8.89258 | 0.2855872 | 2.6948120 | 177 | 6 | 1997–2006 | 0.54 | M-v | 0 | MPC | 43710 | (58604) |
| (58652) | 15.1 | 0.15 | 20060922 | 349.70367 | 255.20533 | 234.37796 | 10.52256 | 0.3076135 | 2.6340261 | 236 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 43730 | (58652) |
| (58662) | 15.2 | 0.15 | 20060922 | 74.76593 | 50.94063 | 342.80387 | 1.46538 | 0.1519764 | 2.5862210 | 301 | 7 | 1989–2006 | 0.51 | M-v | 1 | MPC | 43734 | (58662) |
| (58688) | 13.4 | 0.15 | 20060922 | 349.84549 | 140.32281 | 314.78987 | 10.56742 | 0.2825739 | 2.7377113 | 254 | 6 | 1996–2006 | 0.53 | M-v | 0 | MPC | 43745 | (58688) |
| (58693) | 14.7 | 0.15 | 20060922 | 236.92868 | 137.54322 | 120.74286 | 7.66623 | 0.0884466 | 2.6977109 | 304 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 43747 | (58693) |
| (58705) | 15.6 | 0.15 | 20060922 | 322.19798 | 41.99772 | 114.96704 | 9.71333 | 0.2111438 | 2.7197430 | 83 | 7 | 1992–2006 | 0.65 | M-v | 1 | MPC | 43753 | (58705) |
| (58719) | 14.9 | 0.15 | 20060922 | 78.59543 | 341.93674 | 26.16442 | 5.23666 | 0.1727147 | 2.7406008 | 270 | 7 | 1996–2006 | 0.49 | M-v | 0 | MPC | 43759 | (58719) |
| (58720) | 14.9 | 0.15 | 20060922 | 278.67325 | 82.38840 | 144.66289 | 9.55352 | 0.1775895 | 2.7128076 | 210 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 43759 | (58720) |
| (58732) | 14.0 | 0.15 | 20060922 | 327.01713 | 138.50401 | 357.30859 | 11.95175 | 0.0813615 | 2.7950613 | 254 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 43763 | (58732) |
| (58757) | 15.1 | 0.15 | 20060922 | 22.68677 | 300.89275 | 162.62441 | 5.18231 | 0.1746535 | 2.6836930 | 231 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 43773 | (58757) |
| (58767) | 15.3 | 0.15 | 20060922 | 30.17063 | 316.32359 | 135.17178 | 3.50048 | 0.1332490 | 2.7224944 | 254 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 43778 | (58767) |
| (58772) | 14.9 | 0.15 | 20060922 | 257.52759 | 78.60730 | 140.72890 | 4.64536 | 0.0358388 | 2.8094189 | 239 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 43780 | (58772) |
| (58773) | 15.1 | 0.15 | 20060922 | 12.28416 | 262.22333 | 176.07548 | 2.17395 | 0.0160445 | 2.8815586 | 236 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 43781 | (58773) |
| (58781) | 14.6 | 0.15 | 20060922 | 324.42037 | 241.27269 | 201.66035 | 9.02687 | 0.0460218 | 3.0882779 | 194 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 43784 | (58781) |
| (58798) | 13.6 | 0.15 | 20060922 | 200.47693 | 333.30957 | 241.04420 | 9.27080 | 0.0545451 | 3.0037269 | 246 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 43792 | (58798) |
| (58801) | 14.7 | 0.15 | 20060922 | 301.96824 | 256.44908 | 215.42923 | 9.15446 | 0.0557208 | 2.9860237 | 198 | 7 | 1998–2006 | 0.64 | M-v | 0 | MPC | 43793 | (58801) |
| (58803) | 16.2 | 0.15 | 20060922 | 97.74485 | 263.06662 | 206.86477 | 21.58196 | 0.1252348 | 2.5492779 | 182 | 6 | 1994–2006 | 0.62 | M-v | 1 | MPC | 70205 | (58803) |
| (58804) | 14.3 | 0.15 | 20060922 | 330.27489 | 262.33160 | 231.32584 | 14.28785 | 0.2404882 | 2.7937995 | 195 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 43794 | (58804) |
| (58805) | 14.9 | 0.15 | 20060922 | 251.95063 | 279.50203 | 229.86892 | 10.40197 | 0.0585777 | 3.0536010 | 173 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 43795 | (58805) |
| (58811) | 15.1 | 0.15 | 20060922 | 333.60991 | 358.37713 | 153.19971 | 12.85978 | 0.1613084 | 2.7436917 | 91 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 43797 | (58811) |
| (58813) | 13.4 | 0.15 | 20060922 | 152.62794 | 170.56585 | 32.04939 | 23.07112 | 0.0959772 | 3.2161892 | 215 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 43798 | (58813) |
| (58814) | 14.3 | 0.15 | 20060922 | 348.62566 | 310.29106 | 80.09785 | 16.74157 | 0.0350263 | 3.1250076 | 253 | 7 | 1990–2006 | 0.54 | M-v | 0 | MPC | 43798 | (58814) |
| (58818) | 13.9 | 0.15 | 20060922 | 306.77887 | 45.47127 | 62.67549 | 10.43633 | 0.0576474 | 3.0663349 | 280 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 43799 | (58818) |
| (58820) | 15.8 | 0.15 | 20060922 | 91.16695 | 85.46108 | 43.79871 | 13.98337 | 0.1055289 | 2.5478989 | 195 | 6 | 1994–2006 | 0.66 | M-v | 1 | MPC | 43800 | (58820) |
| (58839) | 14.6 | 0.15 | 20060922 | 359.33920 | 252.79087 | 226.37419 | 6.74124 | 0.1772002 | 2.8017455 | 211 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 43809 | (58839) |
| (58859) | 13.4 | 0.15 | 20060922 | 3.04145 | 45.04272 | 17.00900 | 10.51550 | 0.1291693 | 3.0489881 | 346 | 6 | 1998–2006 | 0.56 | M-v | 0 | MPC | 43817 | (58859) |
| (58865) | 13.8 | 0.15 | 20060922 | 22.28332 | 276.62692 | 83.11468 | 11.23313 | 0.1102710 | 3.2023763 | 165 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 43820 | (58865) |
| (58868) | 14.6 | 0.15 | 20060922 | 248.63052 | 153.42786 | 77.90515 | 17.50323 | 0.0547710 | 2.8501601 | 273 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 43822 | (58868) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (58870) | 15.0 | 0.15 | 20060922 | 152.63965 | 178.50571 | 114.42698 | 6.43743 | 0.2502825 | 3.0467100 | 121 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 43823 | (58870) |
| (58873) | 13.6 | 0.15 | 20060922 | 159.64629 | 153.38468 | 86.44210 | 16.20235 | 0.0932793 | 3.1491001 | 160 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 43823 | (58873) |
| (58903) | 16.3 | 0.15 | 20060922 | 115.97633 | 113.32464 | 172.70897 | 2.95223 | 0.1835860 | 2.2929288 | 121 | 7 | 1991–2006 | 0.50 | M-v | 0 | MPC | 43834 | (58903) |
| (58923) | 14.0 | 0.15 | 20060922 | 233.98766 | 298.56510 | 227.40539 | 22.33665 | 0.1708713 | 3.1027829 | 116 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 43841 | (58923) |
| (58932) | 15.4 | 0.15 | 20060922 | 169.59548 | 11.73862 | 288.71601 | 5.96024 | 0.1989933 | 2.2395184 | 196 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 43844 | (58932) |
| (58936) | 16.5 | 0.15 | 20060922 | 157.54196 | 154.02131 | 93.46843 | 3.22750 | 0.1206959 | 2.3389858 | 149 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 43846 | (58936) |
| (58939) | 17.1 | 0.15 | 20060922 | 44.84644 | 64.95273 | 268.27217 | 1.04862 | 0.2188492 | 2.4348425 | 187 | 7 | 1979–2006 | 0.58 | M-v | 1 | MPC | 43846 | (58939) |
| (58944) | 16.5 | 0.15 | 20060922 | 179.51824 | 333.40255 | 332.92246 | 3.81045 | 0.0650821 | 2.2333323 | 211 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 43848 | (58944) |
| (58946) | 15.7 | 0.15 | 20060922 | 30.31388 | 168.90760 | 238.32896 | 4.74019 | 0.1498505 | 2.3690052 | 244 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 43849 | (58946) |
| (58948) | 14.4 | 0.15 | 20060922 | 355.07247 | 226.12782 | 203.81836 | 5.59215 | 0.0657782 | 2.4005808 | 393 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 43850 | (58948) |
| (58964) | 14.6 | 0.15 | 20060922 | 212.23909 | 293.51216 | 9.99598 | 11.82171 | 0.2794729 | 3.0561358 | 192 | 7 | 1991–2006 | 0.64 | M-v | 0 | MPC | 43856 | (58964) |
| (58968) | 15.2 | 0.15 | 20060922 | 228.50145 | 223.53689 | 346.02817 | 4.62946 | 0.0823264 | 2.3132700 | 392 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 43857 | (58968) |
| (58979) | 16.1 | 0.15 | 20060922 | 21.42170 | 134.99602 | 293.75804 | 2.74439 | 0.2156087 | 2.3668037 | 179 | 7 | 1993–2006 | 0.51 | M-v | 0 | MPC | 43861 | (58979) |
| (58982) | 16.4 | 0.15 | 20060922 | 86.39839 | 317.58637 | 54.76049 | 3.82611 | 0.2688631 | 2.3206103 | 200 | 7 | 1991–2006 | 0.48 | M-v | 0 | MPC | 43862 | (58982) |
| (58983) | 16.2 | 0.15 | 20060922 | 19.76149 | 180.41775 | 226.16038 | 1.09988 | 0.1557618 | 2.4081053 | 151 | 7 | 1996–2006 | 0.55 | M-v | 1 | MPC | 43862 | (58983) |
| (58991) | 15.8 | 0.15 | 20060922 | 359.24520 | 29.92128 | 29.27602 | 1.71638 | 0.2154080 | 2.4228558 | 188 | 7 | 1991–2006 | 0.53 | M-v | 1 | MPC | 43865 | (58991) |
| (58994) | 16.0 | 0.15 | 20060922 | 36.61838 | 193.51937 | 231.47174 | 1.31031 | 0.1943755 | 2.3408619 | 162 | 7 | 1995–2006 | 0.60 | M-v | 0 | MPC | 43866 | (58994) |
| (58999) | 16.2 | 0.15 | 20060922 | 3.09084 | 18.34441 | 44.32545 | 7.84246 | 0.0846981 | 2.3984287 | 244 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 43868 | (58999) |
| (59002) | 15.9 | 0.15 | 20060922 | 209.19220 | 159.06691 | 39.97563 | 1.22241 | 0.0992326 | 2.4338173 | 256 | 7 | 1960–2006 | 0.56 | M-v | 0 | MPC | 43869 | (59002) |
| (59007) | 15.7 | 0.15 | 20060922 | 94.07365 | 291.56174 | 85.39851 | 4.20289 | 0.1843120 | 2.2961971 | 246 | 7 | 1993–2006 | 0.52 | M-v | 1 | MPC | 43871 | (59007) |
| (59014) | 16.9 | 0.15 | 20060922 | 21.55298 | 331.62268 | 83.53959 | 3.26534 | 0.1985724 | 2.4119460 | 118 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 43874 | (59014) |
| (59020) | 15.8 | 0.15 | 20060922 | 292.04502 | 223.08640 | 211.49152 | 7.07927 | 0.0804817 | 2.5378624 | 188 | 7 | 1990–2006 | 0.54 | M-v | 0 | MPC | 43876 | (59020) |
| (59026) | 16.7 | 0.15 | 20060922 | 14.06471 | 264.24760 | 159.77401 | 2.43003 | 0.1829019 | 2.4020555 | 105 | 7 | 1996–2006 | 0.62 | M-v | 0 | MPC | 43878 | (59026) |
| (59105) | 16.0 | 0.15 | 20060922 | 42.81396 | 250.07655 | 142.90756 | 1.72061 | 0.1923782 | 2.4219720 | 134 | 7 | 1996–2006 | 0.47 | M-v | 0 | MPC | 43907 | (59105) |
| (59107) | 15.9 | 0.15 | 20060922 | 194.20777 | 274.98583 | 286.52832 | 4.14798 | 0.1210332 | 2.6961077 | 122 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 43907 | (59107) |
| (59118) | 16.6 | 0.15 | 20060922 | 358.15853 | 295.23837 | 162.12403 | 1.24281 | 0.1136738 | 2.4184528 | 185 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 43912 | (59118) |
| (59166) | 16.5 | 0.15 | 20060922 | 308.51526 | 208.42008 | 193.88961 | 2.90286 | 0.1688144 | 2.6459933 | 95 | 7 | 1993–2006 | 0.51 | M-v | 0 | MPC | 43930 | (59166) |
| (59175) | 14.6 | 0.15 | 20060922 | 92.90577 | 76.59603 | 135.71813 | 14.23990 | 0.1356610 | 3.0744930 | 127 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 43934 | (59175) |
| (59182) | 15.5 | 0.15 | 20060922 | 274.40258 | 328.51118 | 115.23243 | 9.85192 | 0.1287605 | 2.7446606 | 135 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 43936 | (59182) |
| (59293) | 14.5 | 0.15 | 20060922 | 223.49231 | 57.37622 | 149.87971 | 6.08992 | 0.1108798 | 2.6823186 | 188 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 43985 | (59293) |
| (59296) | 14.1 | 0.15 | 20060922 | 180.74000 | 299.80941 | 276.49539 | 15.23707 | 0.1313030 | 2.7539849 | 192 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 43986 | (59296) |
| (59369) | 14.9 | 0.15 | 20060922 | 137.19134 | 126.83115 | 82.87451 | 3.25917 | 0.1273820 | 2.9662144 | 142 | 7 | 1994–2006 | 0.59 | M-v | 1 | MPC | 44018 | (59369) |
| (59382) | 17.0 | 0.15 | 20060922 | 292.30332 | 6.26097 | 186.34145 | 2.04299 | 0.0976580 | 2.5921926 | 78 | 7 | 1999–2006 | 0.52 | M-v | 1 | MPC | 44024 | (59382) |
| (59386) | 15.1 | 0.15 | 20060922 | 240.79824 | 14.78438 | 192.72780 | 17.83652 | 0.2428641 | 2.7028329 | 154 | 7 | 1999–2006 | 0.63 | M-v | 0 | MPC | 44025 | (59386) |
| (59391) | 15.1 | 0.15 | 20060922 | 227.70830 | 359.43296 | 183.18146 | 3.28561 | 0.0275415 | 2.7050547 | 286 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 44027 | (59391) |
| (59403) | 14.6 | 0.15 | 20060922 | 228.95874 | 209.51869 | 29.21445 | 13.02293 | 0.1334088 | 2.6552031 | 254 | 7 | 1999–2006 | 0.62 | M-v | 0 | MPC | 44034 | (59403) |
| (59429) | 15.6 | 0.15 | 20060922 | 251.37272 | 358.97234 | 259.22515 | 2.11128 | 0.1738836 | 2.5598153 | 207 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 44046 | (59429) |
| (59437) | 15.1 | 0.15 | 20060922 | 275.58879 | 96.69096 | 55.41031 | 8.20808 | 0.0249593 | 2.7502347 | 169 | 7 | 1992–2006 | 0.61 | M-v | 0 | MPC | 44049 | (59437) |
| (59439) | 14.3 | 0.15 | 20060922 | 158.88899 | 283.48930 | 11.10185 | 12.65340 | 0.1702345 | 2.6862424 | 201 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 44050 | (59439) |
| (59453) | 15.3 | 0.15 | 20060922 | 306.10753 | 173.42520 | 21.04225 | 4.40937 | 0.0968137 | 2.5406764 | 222 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 44056 | (59453) |
| (59470) | 15.5 | 0.15 | 20060922 | 324.40847 | 175.35023 | 353.65716 | 3.61403 | 0.0154403 | 2.5721638 | 164 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 44063 | (59470) |
| (59478) | 15.0 | 0.15 | 20060922 | 165.26438 | 280.55335 | 50.41986 | 4.40840 | 0.2282155 | 2.6646968 | 225 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44067 | (59478) |
| (59480) | 13.8 | 0.15 | 20060922 | 265.10639 | 63.87240 | 44.20901 | 10.52574 | 0.0713617 | 2.9708335 | 341 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 44068 | (59480) |
| (59505) | 14.4 | 0.15 | 20060922 | 309.71160 | 12.95125 | 84.67315 | 7.31697 | 0.1153701 | 2.7759629 | 267 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 44078 | (59505) |
| (59513) | 14.9 | 0.15 | 20060922 | 136.66050 | 204.57157 | 125.09987 | 7.00490 | 0.0509215 | 2.7367935 | 227 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 44081 | (59513) |
| (59535) | 14.5 | 0.15 | 20060922 | 239.96224 | 44.77287 | 218.20816 | 13.12143 | 0.0648040 | 2.5951331 | 296 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 44091 | (59535) |
| (59536) | 15.8 | 0.15 | 20060922 | 305.15254 | 286.62290 | 254.76700 | 1.20347 | 0.1255975 | 2.6054924 | 165 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 44092 | (59536) |
| (59538) | 15.7 | 0.15 | 20060922 | 264.62947 | 142.84260 | 90.06628 | 3.20744 | 0.1034111 | 2.5980246 | 194 | 7 | 1999–2006 | 0.64 | M-v | 0 | MPC | 44093 | (59538) |
| (59581) | 14.6 | 0.15 | 20060922 | 257.58709 | 15.17937 | 232.11296 | 12.67698 | 0.1257002 | 2.6158911 | 241 | 7 | 1999–2006 | 0.57 | M-v | 1 | MPC | 44112 | (59581) |
| (59589) | 15.0 | 0.15 | 20060922 | 257.54598 | 166.96577 | 74.51494 | 8.60885 | 0.0727590 | 2.6233114 | 303 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44116 | (59589) |
| (59592) | 15.0 | 0.15 | 20060922 | 317.68636 | 286.15644 | 225.54100 | 12.73757 | 0.1171812 | 2.6821433 | 287 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44117 | (59592) |
| (59600) | 14.7 | 0.15 | 20060922 | 145.62487 | 225.80274 | 110.66233 | 6.02378 | 0.0521843 | 2.7159989 | 370 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44121 | (59600) |
| (59612) | 16.4 | 0.15 | 20060922 | 67.64641 | 60.90887 | 108.25253 | 4.58312 | 0.1330401 | 2.3244113 | 247 | 7 | 1990–2006 | 0.67 | M-v | 1 | MPC | 70205 | (59612) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (59614) | 15.8 | 0.15 | 20060922 | 271.47511 | 82.24148 | 129.45233 | 3.83146 | 0.1234635 | 2.6165291 | 193 | 7 | 1999–2006 | 0.60 | M-v | 1 | MPC | 44128 | (59614) |
| (59616) | 14.4 | 0.15 | 20060922 | 7.92837 | 276.40484 | 191.82944 | 12.21023 | 0.1227981 | 2.6091997 | 340 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44129 | (59616) |
| (59624) | 14.7 | 0.15 | 20060922 | 274.15157 | 0.65494 | 208.24438 | 13.20283 | 0.1033113 | 2.6423321 | 215 | 7 | 1999–2006 | 0.61 | M-v | 1 | MPC | 44133 | (59624) |
| (59640) | 14.8 | 0.15 | 20060922 | 226.00845 | 167.57382 | 114.51050 | 16.12247 | 0.1173335 | 2.6237082 | 217 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 44141 | (59640) |
| (59652) | 15.1 | 0.15 | 20060922 | 179.62614 | 179.32128 | 116.64306 | 11.43038 | 0.0700188 | 2.6807339 | 177 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 44146 | (59652) |
| (59667) | 14.6 | 0.15 | 20060922 | 171.95204 | 215.35752 | 112.63257 | 13.56175 | 0.1761941 | 2.6782688 | 269 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 44153 | (59667) |
| (59669) | 14.9 | 0.15 | 20060922 | 336.21651 | 35.42789 | 112.70391 | 12.84115 | 0.1300825 | 2.6393799 | 196 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44154 | (59669) |
| (59697) | 15.5 | 0.15 | 20060922 | 322.21873 | 15.98778 | 149.02367 | 5.39091 | 0.1710269 | 2.6103830 | 164 | 7 | 1999–2006 | 0.60 | M-v | 1 | MPC | 44165 | (59697) |
| (59700) | 14.2 | 0.15 | 20060922 | 153.74480 | 94.36017 | 226.68518 | 8.42860 | 0.1084654 | 2.7401479 | 284 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 44166 | (59700) |
| (59723) | 14.2 | 0.15 | 20060922 | 252.31337 | 358.40783 | 239.62879 | 17.13056 | 0.1368192 | 2.6237374 | 324 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44175 | (59723) |
| (59727) | 15.4 | 0.15 | 20060922 | 266.12161 | 341.49555 | 228.85997 | 14.96504 | 0.1069905 | 2.6998895 | 108 | 7 | 1999–2006 | 0.61 | M-v | 1 | MPC | 44176 | (59727) |
| (59736) | 14.6 | 0.15 | 20060922 | 237.36083 | 85.33790 | 150.34558 | 15.86684 | 0.0869432 | 2.7134751 | 161 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 44179 | (59736) |
| (59742) | 14.5 | 0.15 | 20060922 | 153.91486 | 200.65537 | 110.55782 | 10.79278 | 0.1410592 | 2.7911397 | 189 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 44182 | (59742) |
| (59767) | 12.7 | 0.15 | 20060922 | 100.42452 | 33.76383 | 308.37220 | 8.53692 | 0.0985087 | 3.0622586 | 357 | 7 | 1999–2006 | 0.49 | M-v | 0 | MPC | 44190 | (59767) |
| (59780) | 14.2 | 0.15 | 20060922 | 79.27601 | 285.71075 | 114.57071 | 10.83817 | 0.1033414 | 2.9656752 | 291 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 44195 | (59780) |
| (59782) | 15.1 | 0.15 | 20060922 | 194.70647 | 190.75181 | 118.19773 | 14.18456 | 0.1739638 | 2.6927061 | 161 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 44196 | (59782) |
| (59798) | 14.4 | 0.15 | 20060922 | 68.08392 | 332.31423 | 24.04695 | 21.98898 | 0.0333085 | 3.0924943 | 130 | 5 | 1999–2006 | 0.71 | M-v | 0 | MPC | 44202 | (59798) |
| (59810) | 14.9 | 0.15 | 20060922 | 23.07578 | 145.00780 | 299.45935 | 4.19649 | 0.1370393 | 3.1060079 | 219 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 44206 | (59810) |
| (59811) | 13.7 | 0.15 | 20060922 | 124.50985 | 327.96997 | 334.98943 | 7.59062 | 0.1135016 | 3.1714457 | 317 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44207 | (59811) |
| (59815) | 13.4 | 0.15 | 20060922 | 254.61263 | 178.32183 | 353.82910 | 9.70214 | 0.0622625 | 3.2320686 | 196 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 44209 | (59815) |
| (59817) | 14.4 | 0.15 | 20060922 | 61.22209 | 221.17867 | 181.67583 | 17.56900 | 0.0960024 | 3.1192879 | 206 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44209 | (59817) |
| (59821) | 16.6 | 0.15 | 20060922 | 174.58809 | 8.44175 | 242.31243 | 3.82574 | 0.1105436 | 2.1598169 | 146 | 7 | 1990–2006 | 0.57 | M-v | 1 | MPC | 44211 | (59821) |
| (59822) | 14.5 | 0.15 | 20060922 | 58.12592 | 269.53982 | 153.48739 | 9.27992 | 0.1270564 | 3.0880298 | 254 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 44211 | (59822) |
| (59825) | 14.7 | 0.15 | 20060922 | 83.33565 | 218.31379 | 172.77154 | 5.34436 | 0.2208963 | 3.0889211 | 256 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 44213 | (59825) |
| (59837) | 14.9 | 0.15 | 20060922 | 206.58889 | 300.36769 | 282.68078 | 8.90445 | 0.0492371 | 3.0874872 | 190 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44218 | (59837) |
| (59840) | 13.3 | 0.15 | 20060922 | 30.17222 | 75.68990 | 331.64045 | 8.27009 | 0.0779160 | 3.0900646 | 409 | 7 | 1999–2006 | 0.49 | M-v | 0 | MPC | 44219 | (59840) |
| (59852) | 15.3 | 0.15 | 20060922 | 65.47517 | 96.37218 | 326.88077 | 8.62006 | 0.0208170 | 2.9786637 | 248 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 44224 | (59852) |
| (59860) | 15.2 | 0.15 | 20060922 | 96.94928 | 252.81895 | 98.39606 | 3.07307 | 0.1948173 | 3.1612155 | 202 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44227 | (59860) |
| (59861) | 14.3 | 0.15 | 20060922 | 96.49754 | 246.58633 | 102.36241 | 4.87862 | 0.1463969 | 3.1768868 | 263 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 44227 | (59861) |
| (59867) | 13.6 | 0.15 | 20060922 | 146.51413 | 356.62494 | 323.39536 | 14.66052 | 0.0699655 | 3.0476079 | 296 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 44230 | (59867) |
| (59870) | 14.5 | 0.15 | 20060922 | 125.12923 | 122.89453 | 219.08107 | 8.81420 | 0.1033840 | 3.0693243 | 223 | 7 | 1999–2006 | 0.49 | M-v | 0 | MPC | 44231 | (59870) |
| (59871) | 14.8 | 0.15 | 20060922 | 56.97589 | 50.78814 | 348.14438 | 9.68642 | 0.1324717 | 3.0729896 | 223 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 44231 | (59871) |
| (59890) | 13.7 | 0.15 | 20060922 | 249.19808 | 293.74225 | 237.63496 | 7.65538 | 0.0510434 | 3.1908484 | 333 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 44238 | (59890) |
| (59903) | 13.6 | 0.15 | 20060922 | 322.04540 | 263.34417 | 167.38525 | 15.59271 | 0.0868202 | 3.3988145 | 290 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 44243 | (59903) |
| (59905) | 13.6 | 0.15 | 20060922 | 7.57638 | 312.63683 | 124.45141 | 6.75560 | 0.1234875 | 3.1525814 | 337 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 44244 | (59905) |
| (59908) | 13.8 | 0.15 | 20060922 | 13.46169 | 129.69085 | 284.64671 | 2.55531 | 0.0600257 | 3.2232595 | 310 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44245 | (59908) |
| (59915) | 12.4 | 0.15 | 20060922 | 283.99722 | 168.33869 | 350.21775 | 19.38276 | 0.0782369 | 3.1232619 | 318 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44249 | (59915) |
| (59924) | 13.7 | 0.15 | 20060922 | 49.04019 | 280.90301 | 142.08283 | 11.80412 | 0.0926945 | 3.0533706 | 258 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 44252 | (59924) |
| (59931) | 13.5 | 0.15 | 20060922 | 4.88967 | 336.61954 | 125.27884 | 10.68483 | 0.0583689 | 3.0682629 | 280 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 44255 | (59931) |
| (59942) | 13.6 | 0.15 | 20060922 | 30.66210 | 136.80587 | 308.75805 | 9.16033 | 0.0698137 | 3.0666447 | 256 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 44258 | (59942) |
| (59945) | 14.1 | 0.15 | 20060922 | 169.11405 | 320.12239 | 297.33802 | 9.94593 | 0.0806435 | 3.2459877 | 197 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 44259 | (59945) |
| (59946) | 14.5 | 0.15 | 20060922 | 204.92347 | 325.95262 | 310.53057 | 15.74504 | 0.0025265 | 3.0476422 | 164 | 7 | 1991–2006 | 0.59 | M-v | 0 | MPC | 44260 | (59946) |
| (59956) | 13.6 | 0.15 | 20060922 | 160.76311 | 269.88073 | 52.86869 | 10.99186 | 0.1107641 | 2.9754001 | 237 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44263 | (59956) |
| (59965) | 14.8 | 0.15 | 20060922 | 88.23524 | 307.98638 | 66.23912 | 10.72316 | 0.1002252 | 3.1208437 | 178 | 7 | 1999–2006 | 0.48 | M-v | 0 | MPC | 44266 | (59965) |
| (59967) | 13.6 | 0.15 | 20060922 | 109.43607 | 217.01540 | 118.58011 | 15.00673 | 0.0839883 | 3.1877101 | 190 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 44267 | (59967) |
| (59982) | 13.3 | 0.15 | 20060922 | 54.04204 | 322.08592 | 109.44520 | 11.72806 | 0.0842186 | 2.9853747 | 386 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44272 | (59982) |
| (59983) | 13.3 | 0.15 | 20060922 | 71.81541 | 350.61259 | 58.06728 | 11.22659 | 0.0960463 | 2.9663524 | 317 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44272 | (59983) |
| (59986) | 14.4 | 0.15 | 20060922 | 194.08781 | 33.30599 | 208.36009 | 23.29640 | 0.0776939 | 3.1980011 | 237 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44274 | (59986) |
| (60000) | 14.8 | 0.15 | 20060922 | 10.63861 | 272.91529 | 192.72145 | 9.29190 | 0.0331888 | 3.1256322 | 197 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 44279 | (60000) |
| (60003) | 16.5 | 0.15 | 20060922 | 87.46841 | 325.70619 | 34.15080 | 3.57025 | 0.1724601 | 2.1534673 | 182 | 7 | 1996–2006 | 0.55 | M-v | 1 | MPC | 44280 | (60003) |
| (60048) | 16.2 | 0.15 | 20060922 | 76.12572 | 6.44902 | 316.81066 | 3.07737 | 0.1628546 | 2.2246929 | 169 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 44296 | (60048) |
| (60052) | 13.8 | 0.15 | 20060922 | 154.09757 | 357.51655 | 307.24932 | 8.45719 | 0.0705730 | 3.0580239 | 289 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 44298 | (60052) |
| (60054) | 15.4 | 0.15 | 20060922 | 131.70476 | 339.44171 | 286.92884 | 3.91012 | 0.1533265 | 2.1980409 | 286 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 44299 | (60054) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (60059) | 15.8 | 0.15 | 20060922 | 88.75645 | 29.52905 | 243.42456 | 4.67820 | 0.1499684 | 2.2866831 | 204 | 7 | 1992–2006 | 0.60 | M-v | 0 | MPC | 44301 | (60059) |
| (60078) | 14.4 | 0.15 | 20060922 | 289.11857 | 4.71704 | 175.43310 | 10.28379 | 0.0307258 | 3.1226787 | 227 | 10 | 1980–2006 | 0.57 | M-v | 0 | MPC | 44307 | (60078) |
| (60092) | 14.5 | 0.15 | 20060922 | 201.25727 | 338.47238 | 295.09865 | 1.71695 | 0.0544347 | 3.0327502 | 292 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 44312 | (60092) |
| (60095) | 14.9 | 0.15 | 20060922 | 207.92314 | 192.91148 | 56.27470 | 4.16003 | 0.1148085 | 3.1538726 | 203 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44313 | (60095) |
| (60101) | 15.0 | 0.15 | 20060922 | 173.28113 | 102.44300 | 214.18221 | 1.50645 | 0.1094223 | 3.0559960 | 161 | 9 | 1993–2006 | 0.60 | M-v | 0 | MPC | 44315 | (60101) |
| (60117) | 14.6 | 0.15 | 20060922 | 202.49193 | 304.61165 | 308.82918 | 9.30711 | 0.0649736 | 3.0981886 | 239 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 44320 | (60117) |
| (60118) | 16.8 | 0.15 | 20060922 | 32.89335 | 227.45370 | 140.52906 | 4.88182 | 0.1391642 | 2.2350149 | 115 | 9 | 1989–2006 | 0.66 | M-v | 0 | MPC | 44321 | (60118) |
| (60135) | 14.6 | 0.15 | 20060922 | 354.71081 | 56.88623 | 47.55205 | 1.27050 | 0.1317595 | 3.2017167 | 257 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 44326 | (60135) |
| (60145) | 17.6 | 0.15 | 20060922 | 120.68052 | 110.47858 | 164.25178 | 2.17588 | 0.1093290 | 2.2915763 | 70 | 8 | 1991–2006 | 0.46 | M-v | 0 | MPC | 77340 | (60145) |
| (60153) | 14.1 | 0.15 | 20060922 | 152.64027 | 19.85229 | 270.19158 | 4.20718 | 0.1422132 | 3.1589823 | 348 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44333 | (60153) |
| (60158) | 13.7 | 0.15 | 20060922 | 156.29181 | 57.21800 | 235.23653 | 15.05715 | 0.0359720 | 3.2585589 | 278 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 44335 | (60158) |
| (60163) | 14.9 | 0.15 | 20060922 | 170.23131 | 61.18229 | 194.92985 | 5.02728 | 0.1143031 | 3.1982783 | 121 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44336 | (60163) |
| (60166) | 15.7 | 0.15 | 20060922 | 144.55465 | 207.04583 | 79.56481 | 2.69072 | 0.1367067 | 3.2404259 | 70 | 7 | 1997–2006 | 0.45 | M-v | 0 | MPC | 44337 | (60166) |
| (60170) | 15.7 | 0.15 | 20060922 | 214.91579 | 248.04338 | 261.60324 | 6.48777 | 0.0404775 | 2.3598160 | 226 | 7 | 1993–2006 | 0.50 | M-v | 0 | MPC | 44339 | (60170) |
| (60176) | 16.2 | 0.15 | 20060922 | 21.95559 | 341.43447 | 66.34197 | 8.56260 | 0.1421714 | 2.2476878 | 162 | 7 | 1991–2006 | 0.54 | M-v | 1 | MPC | 44341 | (60176) |
| (60190) | 14.2 | 0.15 | 20060922 | 206.95836 | 239.73922 | 63.72274 | 10.30877 | 0.0215455 | 3.1036319 | 296 | 7 | 1991–2006 | 0.62 | M-v | 0 | MPC | 44347 | (60190) |
| (60202) | 13.8 | 0.15 | 20060922 | 176.38466 | 68.74769 | 228.55278 | 11.30602 | 0.1680187 | 3.1638172 | 285 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 44351 | (60202) |
| (60203) | 17.3 | 0.15 | 20060922 | 20.69555 | 105.46157 | 267.88519 | 0.86440 | 0.1427638 | 2.2857269 | 158 | 7 | 1997–2006 | 0.49 | M-v | 0 | MPC | 44352 | (60203) |
| (60206) | 17.1 | 0.15 | 20060922 | 79.92860 | 79.36354 | 230.95753 | 4.65378 | 0.1530145 | 2.2809192 | 135 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 44353 | (60206) |
| (60208) | 13.9 | 0.15 | 20060922 | 146.40536 | 66.03731 | 231.66434 | 4.49724 | 0.1473423 | 3.1781875 | 315 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 44354 | (60208) |
| (60212) | 14.3 | 0.15 | 20060922 | 123.24786 | 326.26732 | 32.96816 | 7.95830 | 0.0129575 | 3.1426845 | 277 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 44355 | (60212) |
| (60213) | 15.7 | 0.15 | 20060922 | 138.95513 | 339.29742 | 238.82891 | 5.48999 | 0.0629463 | 2.3754546 | 195 | 7 | 1992–2006 | 0.56 | M-v | 1 | MPC | 44356 | (60213) |
| (60237) | 16.5 | 0.15 | 20060922 | 52.04943 | 45.44222 | 272.34803 | 4.52373 | 0.1328679 | 2.3466388 | 161 | 7 | 1996–2006 | 0.60 | M-v | 1 | MPC | 44363 | (60237) |
| (60244) | 16.9 | 0.15 | 20060922 | 355.84143 | 200.52015 | 203.07487 | 7.68533 | 0.1218056 | 2.2840390 | 148 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 44365 | (60244) |
| (60245) | 16.0 | 0.15 | 20060922 | 10.59750 | 157.58662 | 231.33828 | 6.11227 | 0.0619711 | 2.3194097 | 164 | 7 | 1994–2006 | 0.54 | M-v | 1 | MPC | 44366 | (60245) |
| (60259) | 15.4 | 0.15 | 20060922 | 151.07948 | 2.65655 | 254.64425 | 3.58248 | 0.1875670 | 2.2871805 | 228 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 44370 | (60259) |
| (60260) | 16.4 | 0.15 | 20060922 | 261.87490 | 198.54531 | 277.80864 | 5.38956 | 0.0643867 | 2.3785896 | 139 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 44370 | (60260) |
| (60266) | 13.3 | 0.15 | 20060922 | 176.29793 | 203.41532 | 63.88710 | 12.59695 | 0.0635118 | 3.3868228 | 266 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 44373 | (60266) |
| (60268) | 13.7 | 0.15 | 20060922 | 78.54337 | 302.97670 | 39.35810 | 13.45869 | 0.0619234 | 3.2425600 | 247 | 5 | 1999–2005 | 0.60 | M-v | 0 | MPC | 44374 | (60268) |
| (60275) | 15.4 | 0.15 | 20060922 | 14.49999 | 102.74734 | 282.35937 | 5.57299 | 0.1436292 | 2.3491038 | 254 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 44376 | (60275) |
| (60278) | 16.5 | 0.15 | 20060922 | 254.63719 | 287.99814 | 256.90987 | 3.17147 | 0.1062230 | 2.3313766 | 197 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 44377 | (60278) |
| (60291) | 16.1 | 0.15 | 20060922 | 38.05399 | 211.64545 | 107.19249 | 7.38726 | 0.1528862 | 2.4849938 | 132 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 44381 | (60291) |
| (60300) | 13.3 | 0.15 | 20060922 | 87.47375 | 34.32152 | 303.39881 | 22.88468 | 0.2064275 | 2.3160391 | 231 | 7 | 1993–2006 | 0.53 | M-v | 1 | MPC | 44384 | (60300) |
| (60301) | 15.7 | 0.15 | 20060922 | 236.93938 | 86.86360 | 82.21229 | 6.54221 | 0.0646088 | 2.4017819 | 220 | 7 | 1991–2006 | 0.58 | M-v | 1 | MPC | 44385 | (60301) |
| (60304) | 16.3 | 0.15 | 20060922 | 35.19316 | 57.59292 | 329.96294 | 5.87653 | 0.1313621 | 2.2744399 | 134 | 7 | 1997–2006 | 0.60 | M-v | 1 | MPC | 44386 | (60304) |
| (60309) | 15.3 | 0.15 | 20060922 | 175.65657 | 261.11601 | 37.14952 | 6.39895 | 0.1932429 | 2.2005071 | 441 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 44387 | (60309) |
| (60323) | 16.0 | 0.15 | 20060922 | 132.47034 | 220.03662 | 103.78235 | 4.56238 | 0.1914978 | 2.2416409 | 193 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 44391 | (60323) |
| (60330) | 16.0 | 0.15 | 20060922 | 259.00555 | 116.81999 | 33.25764 | 2.54602 | 0.1454650 | 2.3795720 | 197 | 7 | 1991–2006 | 0.50 | M-v | 0 | MPC | 44393 | (60330) |
| (60336) | 15.0 | 0.15 | 20060922 | 109.91889 | 128.12149 | 104.54891 | 11.47960 | 0.2205907 | 2.5945224 | 238 | 7 | 1990–2006 | 0.51 | M-v | 1 | MPC | 44395 | (60336) |
| (60345) | 15.4 | 0.15 | 20060922 | 0.86752 | 161.37112 | 229.56111 | 6.28449 | 0.1191901 | 2.3532485 | 240 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 44397 | (60345) |
| (60350) | 16.4 | 0.15 | 20060922 | 264.39702 | 337.22493 | 237.36740 | 2.03623 | 0.1052560 | 2.2579615 | 165 | 7 | 1995–2006 | 0.49 | M-v | 1 | MPC | 44399 | (60350) |
| (60366) | 15.6 | 0.15 | 20060922 | 267.94099 | 57.52678 | 155.65664 | 5.26175 | 0.1145218 | 2.2496348 | 196 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 44404 | (60366) |
| (60377) | 13.0 | 0.15 | 20060922 | 163.85281 | 244.96210 | 38.42151 | 14.39933 | 0.1313265 | 3.1649881 | 425 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 44408 | (60377) |
| (60392) | 15.7 | 0.15 | 20060922 | 55.77128 | 94.37835 | 316.71983 | 5.40701 | 0.1528672 | 2.2687501 | 163 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 44413 | (60392) |
| (60400) | 15.1 | 0.15 | 20060922 | 36.19563 | 7.67460 | 343.43914 | 6.40440 | 0.1422765 | 2.3941220 | 195 | 7 | 1998–2006 | 0.65 | M-v | 1 | MPC | 44416 | (60400) |
| (60404) | 16.8 | 0.15 | 20060922 | 36.15730 | 292.13471 | 118.84191 | 1.45882 | 0.1283176 | 2.2767942 | 96 | 7 | 1995–2006 | 0.50 | M-v | 0 | MPC | 44417 | (60404) |
| (60406) | 15.7 | 0.15 | 20060922 | 70.13044 | 263.87023 | 143.10699 | 4.15059 | 0.1410167 | 2.2558183 | 247 | 7 | 1992–2006 | 0.60 | M-v | 0 | MPC | 44418 | (60406) |
| (60431) | 14.4 | 0.15 | 20060922 | 222.89848 | 154.89192 | 79.41068 | 8.71750 | 0.1376169 | 2.4288784 | 307 | 7 | 1999–2006 | 0.55 | M-v | 1 | MPC | 44426 | (60431) |
| (60441) | 16.3 | 0.15 | 20060922 | 260.57577 | 74.19395 | 89.00423 | 2.30736 | 0.1178439 | 2.4178003 | 155 | 7 | 1991–2006 | 0.48 | M-v | 0 | MPC | 44430 | (60441) |
| (60451) | 15.1 | 0.15 | 20060922 | 168.38488 | 38.34139 | 154.58090 | 18.03814 | 0.0866087 | 2.6607046 | 226 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 44434 | (60451) |
| (60452) | 16.8 | 0.15 | 20060922 | 329.16248 | 258.74741 | 195.30196 | 6.45191 | 0.2477323 | 2.3569556 | 93 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 44434 | (60452) |
| (60459) | 15.6 | 0.15 | 20060922 | 265.11284 | 196.58759 | 230.52205 | 5.35526 | 0.0852126 | 2.5744932 | 88 | 7 | 1996–2006 | 0.53 | M-v | 1 | MPC | 44436 | (60459) |
| (60460) | 15.1 | 0.15 | 20060922 | 62.13521 | 173.49949 | 123.49160 | 5.66682 | 0.0900786 | 2.7608092 | 201 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 44436 | (60460) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (60466) | 15.9 | 0.15 | 20060922 | 136.66929 | 177.99574 | 164.14473 | 3.04127 | 0.1924749 | 2.3565891 | 216 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 44438 | (60466) |
| (60471) | 15.6 | 0.15 | 20060922 | 151.66460 | 278.02433 | 349.67105 | 1.82794 | 0.1696863 | 2.4641966 | 209 | 7 | 1990–2006 | 0.58 | M-v | 0 | MPC | 44440 | (60471) |
| (60482) | 17.6 | 0.15 | 20060922 | 52.98878 | 259.27957 | 153.97235 | 5.89313 | 0.1705902 | 2.2760642 | 82 | 7 | 1995–2006 | 0.57 | M-v | 1 | MPC | 44443 | (60482) |
| (60484) | 16.2 | 0.15 | 20060922 | 316.23973 | 358.00424 | 136.84953 | 2.77686 | 0.1094847 | 2.3512331 | 142 | 7 | 1993–2006 | 0.55 | M-v | 1 | MPC | 44444 | (60484) |
| (60500) | 16.8 | 0.15 | 20060922 | 339.13266 | 10.00630 | 107.59482 | 3.06746 | 0.1195999 | 2.3105198 | 141 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 44449 | (60500) |
| (60519) | 15.0 | 0.15 | 20060922 | 192.97889 | 248.12991 | 14.81894 | 2.04241 | 0.1755122 | 2.4473730 | 404 | 7 | 1997–2006 | 0.61 | M-v | 0 | MPC | 44455 | (60519) |
| (60523) | 16.6 | 0.15 | 20060922 | 287.83567 | 235.60293 | 301.65451 | 1.69999 | 0.1360551 | 2.3633378 | 153 | 7 | 1994–2006 | 0.46 | M-v | 1 | MPC | 44457 | (60523) |
| (60531) | 15.7 | 0.15 | 20060922 | 35.79576 | 199.07524 | 125.39751 | 11.59559 | 0.2125356 | 2.6266774 | 177 | 7 | 1991–2006 | 0.60 | M-v | 0 | MPC | 44460 | (60531) |
| (60532) | 14.8 | 0.15 | 20060922 | 207.08032 | 124.62071 | 63.79211 | 28.07393 | 0.0790051 | 2.5964406 | 204 | 7 | 1996–2006 | 0.60 | M-v | 1 | MPC | 44460 | (60532) |
| (60533) | 14.8 | 0.15 | 20060922 | 36.28527 | 216.97983 | 153.68034 | 8.49180 | 0.0842525 | 2.5786268 | 184 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 44460 | (60533) |
| (60535) | 15.9 | 0.15 | 20060922 | 247.53299 | 25.67601 | 181.44171 | 1.28152 | 0.1270966 | 2.4001648 | 238 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 44461 | (60535) |
| (60536) | 16.8 | 0.15 | 20060922 | 299.16183 | 284.95148 | 246.31685 | 1.45671 | 0.1160931 | 2.3460387 | 159 | 7 | 1998–2006 | 0.47 | M-v | 1 | MPC | 44461 | (60536) |
| (60538) | 14.9 | 0.15 | 20060922 | 57.23948 | 157.45130 | 194.54629 | 4.96074 | 0.2724569 | 2.5289506 | 112 | 7 | 1996–2006 | 0.49 | M-v | 1 | MPC | 44462 | (60538) |
| (60542) | 15.7 | 0.15 | 20060922 | 199.31910 | 154.02178 | 116.13221 | 2.58899 | 0.1682226 | 2.4060487 | 290 | 7 | 1990–2006 | 0.58 | M-v | 0 | MPC | 44463 | (60542) |
| (60554) | 15.0 | 0.15 | 20060922 | 204.77613 | 281.20944 | 216.26683 | 11.90884 | 0.1325899 | 2.6866185 | 144 | 7 | 1996–2006 | 0.67 | M-v | 0 | MPC | 44468 | (60554) |
| (60556) | 14.5 | 0.15 | 20060922 | 131.30608 | 283.74573 | 341.02750 | 13.79880 | 0.0899285 | 2.5988322 | 264 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 44468 | (60556) |
| (60565) | 14.9 | 0.15 | 20060922 | 260.67329 | 335.09329 | 160.50121 | 7.97170 | 0.1415553 | 2.5545910 | 325 | 9 | 1990–2006 | 0.57 | M-v | 0 | MPC | 44471 | (60565) |
| (60575) | 15.5 | 0.15 | 20060922 | 79.48244 | 243.46721 | 46.08421 | 3.30202 | 0.1628193 | 2.6186516 | 282 | 7 | 1992–2006 | 0.49 | M-v | 0 | MPC | 44475 | (60575) |
| (60596) | 15.6 | 0.15 | 20060922 | 347.33723 | 207.37998 | 245.52504 | 1.71729 | 0.1412308 | 2.3900541 | 208 | 7 | 1995–2006 | 0.59 | M-v | 1 | MPC | 44482 | (60596) |
| (60597) | 14.8 | 0.15 | 20060922 | 140.41978 | 60.41362 | 195.99148 | 11.76388 | 0.2002958 | 2.6220655 | 284 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 44482 | (60597) |
| (60600) | 16.0 | 0.15 | 20060922 | 183.76729 | 110.76898 | 120.21250 | 13.99982 | 0.1360984 | 2.5659150 | 160 | 7 | 1990–2006 | 0.57 | M-v | 1 | MPC | 44483 | (60600) |
| (60603) | 16.3 | 0.15 | 20060922 | 188.90412 | 320.23010 | 322.85605 | 4.09391 | 0.2060250 | 2.3874953 | 189 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 44484 | (60603) |
| (60609) | 15.1 | 0.15 | 20060922 | 197.83578 | 26.10098 | 133.81177 | 14.34207 | 0.0592915 | 2.6202720 | 158 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 44486 | (60609) |
| (60619) | 16.8 | 0.15 | 20060922 | 61.69452 | 315.82913 | 43.82534 | 0.93295 | 0.1271243 | 2.5191006 | 81 | 7 | 1996–2006 | 0.49 | M-v | 1 | MPC | 44489 | (60619) |
| (60621) | 6.7 | 0.15 | 20060922 | 20.88521 | 143.93617 | 3.90805 | 5.86051 | 0.4061291 | 55.7992645 | 36 | 4 | 2000–2003 | 0.34 | M-v | 3 | MPC | 44489 | (60621) |
| (60631) | 15.0 | 0.15 | 20060922 | 91.20698 | 245.44657 | 26.06713 | 10.53530 | 0.1140538 | 2.7177346 | 234 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 44493 | (60631) |
| (60636) | 14.5 | 0.15 | 20060922 | 50.49345 | 164.62256 | 181.15016 | 15.32485 | 0.1488177 | 2.6095659 | 234 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 77340 | (60636) |
| (60640) | 15.3 | 0.15 | 20060922 | 53.19977 | 231.21720 | 79.78996 | 3.60812 | 0.0478153 | 2.6907757 | 252 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 44496 | (60640) |
| (60641) | 14.7 | 0.15 | 20060922 | 73.09059 | 173.83250 | 126.22260 | 4.97515 | 0.1284324 | 2.6999852 | 289 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 44496 | (60641) |
| (60643) | 16.1 | 0.15 | 20060922 | 268.32119 | 130.82538 | 57.98788 | 7.19099 | 0.1969557 | 2.4046857 | 111 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 44497 | (60643) |
| (60649) | 15.3 | 0.15 | 20060922 | 166.70962 | 208.27003 | 39.20830 | 6.72974 | 0.0509977 | 2.5476543 | 198 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 44499 | (60649) |
| (60656) | 15.2 | 0.15 | 20060922 | 84.53811 | 171.12112 | 154.28175 | 14.50053 | 0.0772071 | 2.5643516 | 243 | 7 | 1992–2006 | 0.55 | M-v | 1 | MPC | 44502 | (60656) |
| (60658) | 16.7 | 0.15 | 20060922 | 332.86157 | 346.25478 | 124.07890 | 2.05253 | 0.1412693 | 2.4150638 | 226 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 44502 | (60658) |
| (60665) | 15.5 | 0.15 | 20060922 | 99.99590 | 358.82548 | 338.20480 | 1.88714 | 0.1993830 | 2.4548480 | 280 | 7 | 1982–2006 | 0.56 | M-v | 1 | MPC | 44505 | (60665) |
| (60666) | 15.5 | 0.15 | 20060922 | 318.91483 | 331.08061 | 123.53797 | 13.91546 | 0.1635162 | 2.4277982 | 177 | 7 | 1993–2006 | 0.66 | M-v | 1 | MPC | 44505 | (60666) |
| (60677) | 16.3 | 0.15 | 20060922 | 194.30603 | 77.40876 | 218.74449 | 1.43755 | 0.2145089 | 2.3812492 | 236 | 7 | 1990–2006 | 0.54 | M-v | 0 | MPC | 44509 | (60677) |
| (60697) | 15.8 | 0.15 | 20060922 | 347.96302 | 60.07586 | 35.29210 | 6.27551 | 0.2479369 | 2.3845702 | 238 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 44518 | (60697) |
| (60708) | 15.4 | 0.15 | 20060922 | 70.27712 | 310.52945 | 10.75979 | 2.08493 | 0.0886208 | 2.6611103 | 249 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 44522 | (60708) |
| (60718) | 16.7 | 0.15 | 20060922 | 289.02600 | 86.51028 | 57.29204 | 0.76194 | 0.1136872 | 2.4809052 | 113 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 44525 | (60718) |
| (60722) | 15.4 | 0.15 | 20060922 | 153.55985 | 21.21823 | 209.81425 | 12.92633 | 0.1272458 | 2.6843926 | 200 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 44527 | (60722) |
| (60748) | 14.2 | 0.15 | 20060922 | 190.09297 | 356.42077 | 232.10851 | 7.81202 | 0.0850431 | 2.5794914 | 409 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 44538 | (60748) |
| (60762) | 15.5 | 0.15 | 20060922 | 147.42890 | 245.58161 | 56.39717 | 3.04946 | 0.1902527 | 2.4525856 | 301 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 44543 | (60762) |
| (60766) | 14.5 | 0.15 | 20060922 | 214.14487 | 1.45830 | 177.18590 | 13.27598 | 0.1057545 | 2.6398105 | 426 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 44545 | (60766) |
| (60769) | 15.8 | 0.15 | 20060922 | 181.87407 | 146.03490 | 146.23158 | 7.44072 | 0.1930844 | 2.4565227 | 189 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 44546 | (60769) |
| (60779) | 14.8 | 0.15 | 20060922 | 96.14567 | 223.37006 | 81.20358 | 8.34025 | 0.1112973 | 2.6480558 | 185 | 7 | 1993–2006 | 0.50 | M-v | 0 | MPC | 44550 | (60779) |
| (60780) | 15.7 | 0.15 | 20060922 | 245.61196 | 118.79160 | 133.93023 | 6.98268 | 0.0931711 | 2.3799728 | 212 | 7 | 1994–2006 | 0.51 | M-v | 0 | MPC | 44550 | (60780) |
| (60790) | 15.9 | 0.15 | 20060922 | 291.22058 | 335.40921 | 210.51483 | 2.01633 | 0.0999497 | 2.3986257 | 214 | 7 | 1990–2006 | 0.58 | M-v | 1 | MPC | 44553 | (60790) |
| (60799) | 16.0 | 0.15 | 20060922 | 216.14079 | 322.09547 | 229.61684 | 2.38503 | 0.0532423 | 2.5937834 | 249 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 44557 | (60799) |
| (60803) | 15.6 | 0.15 | 20060922 | 307.18985 | 37.09024 | 40.35111 | 3.64640 | 0.1563911 | 2.6446980 | 226 | 7 | 1976–2006 | 0.55 | M-v | 0 | MPC | 44559 | (60803) |
| (60814) | 16.4 | 0.15 | 20060922 | 288.60291 | 175.55443 | 21.24623 | 2.58591 | 0.1537421 | 2.3710920 | 79 | 7 | 1994–2006 | 0.62 | M-v | 1 | MPC | 44563 | (60814) |
| (60823) | 15.8 | 0.15 | 20060922 | 92.37878 | 259.68569 | 63.59104 | 3.87561 | 0.1349771 | 2.6132877 | 186 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 44566 | (60823) |
| (60829) | 16.5 | 0.15 | 20060922 | 298.33482 | 91.08491 | 59.88899 | 3.44523 | 0.1339745 | 2.4453979 | 99 | 9 | 1992–2006 | 0.54 | M-v | 0 | MPC | 44569 | (60829) |
| (60833) | 15.1 | 0.15 | 20060922 | 146.53789 | 2.65866 | 217.20700 | 8.26924 | 0.0898913 | 2.7589690 | 180 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 44570 | (60833) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (60841) | 14.9 | 0.15 | 20060922 | 31.33053 | 288.98362 | 58.81063 | 8.85342 | 0.2016002 | 2.7811276 | 183 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 44574 | (60841) |
| (60850) | 15.5 | 0.15 | 20060922 | 205.41776 | 79.95000 | 105.38737 | 2.41402 | 0.0978764 | 2.6263624 | 246 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 44578 | (60850) |
| (60852) | 16.4 | 0.15 | 20060922 | 221.34568 | 159.56695 | 75.86372 | 6.07366 | 0.0829976 | 2.4809135 | 149 | 7 | 1992–2006 | 0.54 | M-v | 1 | MPC | 44579 | (60852) |
| (60872) | 14.8 | 0.15 | 20060922 | 45.10815 | 167.38854 | 171.84870 | 8.41242 | 0.2231245 | 2.7995907 | 226 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 44585 | (60872) |
| (60877) | 16.5 | 0.15 | 20060922 | 290.41085 | 90.28972 | 76.15445 | 2.31194 | 0.1309613 | 2.4273337 | 110 | 7 | 1992–2006 | 0.54 | M-v | 1 | MPC | 44587 | (60877) |
| (60880) | 15.5 | 0.15 | 20060922 | 101.64570 | 186.53405 | 176.14997 | 2.34001 | 0.1795239 | 2.5210019 | 310 | 7 | 1997–2006 | 0.48 | M-v | 1 | MPC | 44589 | (60880) |
| (60882) | 16.0 | 0.15 | 20060922 | 303.28640 | 269.97316 | 283.40879 | 4.24393 | 0.1117278 | 2.3302877 | 143 | 7 | 1996–2006 | 0.60 | M-v | 1 | MPC | 44590 | (60882) |
| (60883) | 15.1 | 0.15 | 20060922 | 51.25979 | 268.39733 | 76.05667 | 10.27557 | 0.1989082 | 2.7421460 | 156 | 7 | 1991–2006 | 0.61 | M-v | 1 | MPC | 44590 | (60883) |
| (60893) | 14.7 | 0.15 | 20060922 | 116.57919 | 350.47360 | 311.69224 | 3.16753 | 0.0382695 | 2.5780478 | 265 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 44594 | (60893) |
| (60896) | 14.4 | 0.15 | 20060922 | 80.22386 | 323.34354 | 352.53365 | 11.50543 | 0.1957275 | 2.6983109 | 260 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 44595 | (60896) |
| (60899) | 15.2 | 0.15 | 20060922 | 187.13356 | 337.33389 | 300.79237 | 5.55457 | 0.1219211 | 2.4729218 | 291 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 44597 | (60899) |
| (60914) | 16.6 | 0.15 | 20060922 | 272.63418 | 130.84975 | 25.34445 | 1.74416 | 0.0750496 | 2.5410820 | 133 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 44604 | (60914) |
| (60919) | 15.8 | 0.15 | 20060922 | 250.86580 | 215.49033 | 343.86001 | 0.30452 | 0.0407347 | 2.5158875 | 218 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 44606 | (60919) |
| (60931) | 15.3 | 0.15 | 20060922 | 106.86710 | 294.89333 | 349.25455 | 8.66209 | 0.1081369 | 2.7026602 | 245 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 44611 | (60931) |
| (60932) | 15.5 | 0.15 | 20060922 | 132.26897 | 26.20567 | 278.76280 | 8.33668 | 0.0633900 | 2.5481688 | 193 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 44612 | (60932) |
| (60946) | 16.2 | 0.15 | 20060922 | 202.90682 | 141.49770 | 82.78809 | 5.18366 | 0.1939226 | 2.5867961 | 197 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 44618 | (60946) |
| (60952) | 15.3 | 0.15 | 20060922 | 193.99306 | 326.97638 | 227.18019 | 13.29063 | 0.0922342 | 2.6244484 | 158 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 44620 | (60952) |
| (60957) | 15.4 | 0.15 | 20060922 | 212.27298 | 313.78624 | 230.18851 | 13.47055 | 0.0316720 | 2.5614664 | 199 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 44622 | (60957) |
| (60975) | 14.8 | 0.15 | 20060922 | 244.22210 | 286.79806 | 222.03131 | 13.63206 | 0.0417794 | 2.6927490 | 240 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 44629 | (60975) |
| (60986) | 15.9 | 0.15 | 20060922 | 142.28384 | 49.10681 | 255.05511 | 2.33509 | 0.1789211 | 2.5842010 | 266 | 7 | 1991–2006 | 0.50 | M-v | 0 | MPC | 44634 | (60986) |
| (61000) | 16.0 | 0.15 | 20060922 | 144.60853 | 70.88811 | 239.59379 | 1.56677 | 0.1392953 | 2.5748581 | 419 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 44639 | (61000) |
| (61013) | 15.1 | 0.15 | 20060922 | 174.64801 | 43.59721 | 208.93308 | 3.98701 | 0.0975469 | 2.6103043 | 286 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 44644 | (61013) |
| (61017) | 15.6 | 0.15 | 20060922 | 9.12657 | 2.59754 | 57.56739 | 5.23345 | 0.1217176 | 2.5438088 | 94 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 44645 | (61017) |
| (61037) | 16.4 | 0.15 | 20060922 | 84.03167 | 212.61088 | 107.82242 | 4.44702 | 0.0257063 | 2.6644334 | 137 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 44653 | (61037) |
| (61041) | 15.5 | 0.15 | 20060922 | 119.62166 | 202.05498 | 136.89709 | 5.93434 | 0.2645102 | 2.5591865 | 201 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 44654 | (61041) |
| (61049) | 16.1 | 0.15 | 20060922 | 275.90985 | 7.48434 | 116.41265 | 5.08302 | 0.0802249 | 2.6424255 | 118 | 9 | 1991–2006 | 0.59 | M-v | 0 | MPC | 44657 | (61049) |
| (61055) | 15.5 | 0.15 | 20060922 | 177.84599 | 355.40152 | 205.26420 | 9.15253 | 0.1313296 | 2.7197746 | 156 | 7 | 1996–2006 | 0.50 | M-v | 0 | MPC | 44659 | (61055) |
| (61076) | 14.5 | 0.15 | 20060922 | 157.38890 | 181.38309 | 83.92207 | 14.14033 | 0.1215613 | 2.6567506 | 201 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44667 | (61076) |
| (61099) | 15.3 | 0.15 | 20060922 | 184.40649 | 180.37587 | 135.29420 | 4.51812 | 0.2635923 | 2.5542749 | 204 | 7 | 1994–2006 | 0.54 | M-v | 1 | MPC | 44676 | (61099) |
| (61115) | 14.5 | 0.15 | 20060922 | 75.06465 | 123.19303 | 256.39004 | 12.09870 | 0.1569801 | 2.7445994 | 205 | 7 | 1987–2006 | 0.54 | M-v | 0 | MPC | 44683 | (61115) |
| (61126) | 14.3 | 0.15 | 20060922 | 114.84463 | 12.18200 | 342.20010 | 3.38427 | 0.2383657 | 2.6658755 | 286 | 7 | 1994–2006 | 0.48 | M-v | 0 | MPC | 44688 | (61126) |
| (61129) | 15.7 | 0.15 | 20060922 | 304.42459 | 78.20117 | 108.68267 | 3.21566 | 0.1507900 | 2.3922590 | 231 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 44689 | (61129) |
| (61160) | 14.5 | 0.15 | 20060922 | 76.10692 | 89.05309 | 324.60364 | 10.32427 | 0.0169172 | 2.5813946 | 211 | 7 | 1996–2006 | 0.58 | M-v | 0 | MPC | 44702 | (61160) |
| (61166) | 14.3 | 0.15 | 20060922 | 305.89857 | 215.14872 | 302.95204 | 13.03819 | 0.1872615 | 2.6485223 | 201 | 7 | 1951–2006 | 0.60 | M-v | 1 | MPC | 44704 | (61166) |
| (61172) | 13.8 | 0.15 | 20060922 | 244.72580 | 330.25174 | 288.84569 | 14.42615 | 0.0617123 | 2.5619370 | 310 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 44706 | (61172) |
| (61186) | 15.4 | 0.15 | 20060922 | 93.68664 | 224.71264 | 127.66864 | 8.77106 | 0.2211868 | 2.7735236 | 185 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 44712 | (61186) |
| (61213) | 16.4 | 0.15 | 20060922 | 300.52699 | 66.26427 | 271.19969 | 3.05113 | 0.2141278 | 2.1848826 | 93 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 73914 | (61213) |
| (61221) | 15.9 | 0.15 | 20060922 | 225.46101 | 157.07272 | 120.54553 | 2.91640 | 0.1662775 | 2.4768906 | 111 | 7 | 1999–2006 | 0.49 | M-v | 1 | MPC | 44726 | (61221) |
| (61248) | 15.6 | 0.15 | 20060922 | 183.22186 | 326.59448 | 344.02891 | 5.11532 | 0.1671775 | 2.5216468 | 116 | 7 | 1991–2006 | 0.55 | M-v | 1 | MPC | 44737 | (61248) |
| (61290) | 13.8 | 0.15 | 20060922 | 20.14156 | 150.77885 | 288.42285 | 8.26351 | 0.1386111 | 2.8013742 | 273 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 44752 | (61290) |
| (61325) | 14.8 | 0.15 | 20060922 | 51.16028 | 9.69875 | 333.91181 | 9.97116 | 0.0928936 | 2.9554096 | 163 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 44767 | (61325) |
| (61333) | 15.7 | 0.15 | 20060922 | 175.07060 | 169.07596 | 136.42658 | 3.81045 | 0.1073658 | 2.6082226 | 162 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 44770 | (61333) |
| (61338) | 14.6 | 0.15 | 20060922 | 297.80887 | 282.61370 | 167.60944 | 11.12944 | 0.0722559 | 3.1375635 | 233 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 44772 | (61338) |
| (61339) | 15.3 | 0.15 | 20060922 | 51.08691 | 202.65015 | 103.41465 | 7.00674 | 0.1478687 | 3.0879703 | 142 | 7 | 1990–2006 | 0.56 | M-v | 0 | MPC | 44772 | (61339) |
| (61355) | 14.4 | 0.15 | 20060922 | 359.71082 | 324.86068 | 86.28909 | 11.71158 | 0.1332621 | 3.0462868 | 202 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 44778 | (61355) |
| (61359) | 15.3 | 0.15 | 20060922 | 129.14628 | 160.81507 | 196.07919 | 2.13738 | 0.0564861 | 2.5666102 | 209 | 7 | 1996–2006 | 0.49 | M-v | 0 | MPC | 44780 | (61359) |
| (61360) | 15.2 | 0.15 | 20060922 | 30.82916 | 123.71035 | 284.45307 | 4.64743 | 0.0580971 | 2.7377897 | 208 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 44780 | (61360) |
| (61366) | 15.2 | 0.15 | 20060922 | 33.31145 | 253.65554 | 162.44371 | 4.84712 | 0.1070290 | 2.7512037 | 241 | 7 | 1971–2006 | 0.59 | M-v | 0 | MPC | 44783 | (61366) |
| (61388) | 15.5 | 0.15 | 20060922 | 158.15565 | 334.17384 | 0.21726 | 2.87121 | 0.1721309 | 2.6212084 | 163 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 44791 | (61388) |
| (61405) | 16.2 | 0.15 | 20060922 | 171.31123 | 148.13721 | 167.40615 | 2.20693 | 0.0439340 | 2.6958857 | 128 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 44798 | (61405) |
| (61408) | 14.8 | 0.15 | 20060922 | 269.20436 | 257.28074 | 328.04889 | 11.28082 | 0.0245441 | 2.5499956 | 145 | 7 | 1996–2006 | 0.56 | M-v | 1 | MPC | 44799 | (61408) |
| (61467) | 14.0 | 0.15 | 20060922 | 323.56454 | 324.23037 | 108.36347 | 12.77809 | 0.1514541 | 3.1242449 | 137 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 44822 | (61467) |
| (61480) | 15.1 | 0.15 | 20060922 | 87.01025 | 319.12901 | 328.88573 | 9.88305 | 0.0830793 | 3.0402215 | 151 | 7 | 1990–2006 | 0.59 | M-v | 0 | MPC | 44828 | (61480) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (61499) | 14.8 | 0.15 | 20060922 | 61.53600 | 333.46946 | 19.47613 | 1.81594 | 0.0878269 | 2.9421862 | 117 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 44834 | (61499) |
| (61508) | 14.6 | 0.15 | 20060922 | 136.37467 | 190.52616 | 112.23968 | 4.60478 | 0.0721940 | 2.7932874 | 173 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44837 | (61508) |
| (61509) | 14.8 | 0.15 | 20060922 | 286.40122 | 209.78338 | 346.04176 | 15.06384 | 0.0805594 | 2.6289027 | 178 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 44838 | (61509) |
| (61511) | 14.3 | 0.15 | 20060922 | 255.27307 | 243.70554 | 350.63398 | 13.48283 | 0.0514352 | 2.6057002 | 174 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44839 | (61511) |
| (61534) | 15.5 | 0.15 | 20060922 | 90.10124 | 300.57916 | 80.51460 | 7.54983 | 0.0668562 | 2.7458718 | 124 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 44847 | (61534) |
| (61548) | 14.6 | 0.15 | 20060922 | 196.29693 | 67.36041 | 132.59197 | 10.35819 | 0.0370215 | 3.0587118 | 173 | 7 | 1993–2006 | 0.57 | M-v | 0 | MPC | 44853 | (61548) |
| (61556) | 15.6 | 0.15 | 20060922 | 239.16511 | 301.23080 | 306.70787 | 4.32860 | 0.0573051 | 2.6220466 | 123 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 44856 | (61556) |
| (61570) | 15.2 | 0.15 | 20060922 | 241.15375 | 30.16998 | 194.91902 | 2.19211 | 0.0424639 | 2.7231811 | 257 | 7 | 1999–2006 | 0.65 | M-v | 0 | MPC | 44861 | (61570) |
| (61590) | 15.1 | 0.15 | 20060922 | 12.55692 | 177.82745 | 280.88289 | 4.05590 | 0.0800832 | 2.7151546 | 194 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 44868 | (61590) |
| (61591) | 14.3 | 0.15 | 20060922 | 53.96916 | 167.16305 | 184.06917 | 11.11449 | 0.1183700 | 2.9751493 | 165 | 7 | 1999–2006 | 0.62 | M-v | 0 | MPC | 77341 | (61591) |
| (61606) | 15.5 | 0.15 | 20060922 | 224.36760 | 5.17427 | 269.43862 | 2.52395 | 0.1787639 | 2.5694320 | 238 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 44874 | (61606) |
| (61608) | 15.4 | 0.15 | 20060922 | 104.53299 | 116.12544 | 216.81199 | 3.08293 | 0.1117394 | 2.8067111 | 186 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 44875 | (61608) |
| (61613) | 14.7 | 0.15 | 20060922 | 137.23361 | 272.09039 | 77.87596 | 3.51054 | 0.0910571 | 2.6825966 | 342 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 44877 | (61613) |
| (61619) | 14.6 | 0.15 | 20060922 | 30.86140 | 215.72692 | 151.94420 | 11.99306 | 0.1795854 | 3.0917302 | 160 | 9 | 1978–2006 | 0.55 | M-v | 0 | MPC | 44880 | (61619) |
| (61625) | 14.4 | 0.15 | 20060922 | 206.04334 | 241.75561 | 17.14650 | 13.39065 | 0.0262979 | 2.7825513 | 287 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 44882 | (61625) |
| (61627) | 14.0 | 0.15 | 20060922 | 82.88065 | 180.05165 | 137.84495 | 10.91987 | 0.0644061 | 3.0604386 | 244 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 44883 | (61627) |
| (61653) | 15.9 | 0.15 | 20060922 | 178.13925 | 146.17399 | 147.52284 | 4.19673 | 0.0594102 | 2.7096499 | 125 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 44892 | (61653) |
| (61655) | 14.9 | 0.15 | 20060922 | 67.43679 | 170.44703 | 171.05319 | 10.29120 | 0.0069576 | 2.9600985 | 106 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 44893 | (61655) |
| (61666) | 13.9 | 0.15 | 20060922 | 17.35300 | 95.24499 | 297.41826 | 8.33484 | 0.1148200 | 3.0845510 | 302 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 44897 | (61666) |
| (61672) | 13.7 | 0.15 | 20060922 | 50.38764 | 129.92169 | 240.11885 | 5.00331 | 0.1059844 | 2.9890075 | 244 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 44900 | (61672) |
| (61674) | 14.0 | 0.15 | 20060922 | 324.32736 | 219.20074 | 278.46466 | 6.54557 | 0.1175194 | 2.8561868 | 336 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 44901 | (61674) |
| (61708) | 14.9 | 0.15 | 20060922 | 36.29176 | 306.58013 | 82.98585 | 2.66557 | 0.1519898 | 2.9980287 | 210 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 44914 | (61708) |
| (61718) | 14.6 | 0.15 | 20060922 | 21.93329 | 334.88118 | 115.34817 | 5.46575 | 0.0311358 | 2.7969256 | 259 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 44919 | (61718) |
| (61725) | 14.2 | 0.15 | 20060922 | 345.24115 | 345.51505 | 152.78418 | 9.83780 | 0.0960459 | 2.7553311 | 261 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 44922 | (61725) |
| (61737) | 14.8 | 0.15 | 20060922 | 98.48648 | 3.25745 | 275.69752 | 8.75746 | 0.0766619 | 2.9791167 | 163 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 44926 | (61737) |
| (61744) | 14.6 | 0.15 | 20060922 | 51.91327 | 67.59507 | 250.06915 | 9.91225 | 0.0269315 | 3.0873857 | 148 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 44928 | (61744) |
| (61746) | 15.2 | 0.15 | 20060922 | 259.18932 | 28.94710 | 185.92887 | 16.79760 | 0.0848603 | 2.6371988 | 187 | 7 | 1999–2006 | 0.67 | M-v | 1 | MPC | 44929 | (61746) |
| (61748) | 14.8 | 0.15 | 20060922 | 301.68299 | 260.20221 | 243.77380 | 7.79269 | 0.0977076 | 2.7861162 | 209 | 5 | 1999–2005 | 0.56 | M-v | 0 | MPC | 44930 | (61748) |
| (61755) | 15.5 | 0.15 | 20060922 | 185.92576 | 354.61633 | 291.98575 | 8.76769 | 0.0979324 | 2.6644600 | 92 | 7 | 1998–2006 | 0.62 | M-v | 1 | MPC | 44932 | (61755) |
| (61760) | 15.3 | 0.15 | 20060922 | 66.14949 | 96.10585 | 309.83273 | 7.79807 | 0.0658138 | 2.7292221 | 245 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 44935 | (61760) |
| (61761) | 15.1 | 0.15 | 20060922 | 299.45054 | 344.87301 | 199.48720 | 9.12671 | 0.0645625 | 2.6543148 | 236 | 7 | 1999–2006 | 0.61 | M-v | 1 | MPC | 44935 | (61761) |
| (61764) | 14.9 | 0.15 | 20060922 | 126.42214 | 64.71758 | 269.97241 | 4.33850 | 0.0717589 | 2.7442611 | 207 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44936 | (61764) |
| (61786) | 14.7 | 0.15 | 20060922 | 355.77790 | 301.98952 | 175.49684 | 12.84663 | 0.1658144 | 2.7423050 | 178 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 44944 | (61786) |
| (61789) | 14.4 | 0.15 | 20060922 | 335.08080 | 234.32950 | 241.82798 | 4.08563 | 0.1536830 | 3.2045042 | 257 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 44945 | (61789) |
| (61807) | 15.4 | 0.15 | 20060922 | 194.37169 | 208.47506 | 88.40439 | 3.20846 | 0.0423905 | 2.5988536 | 188 | 7 | 1994–2006 | 0.51 | M-v | 0 | MPC | 44951 | (61807) |
| (61822) | 14.4 | 0.15 | 20060922 | 7.02469 | 335.71827 | 43.99991 | 9.84298 | 0.1365327 | 3.1081138 | 195 | 7 | 1995–2006 | 0.50 | M-v | 0 | MPC | 44957 | (61822) |
| (61823) | 15.1 | 0.15 | 20060922 | 331.95282 | 347.48131 | 59.88785 | 2.84884 | 0.1780696 | 3.1711582 | 146 | 6 | 1996–2006 | 0.54 | M-v | 0 | MPC | 44957 | (61823) |
| (61832) | 15.1 | 0.15 | 20060922 | 308.46845 | 234.44134 | 318.02379 | 4.67179 | 0.0662160 | 2.5513907 | 221 | 7 | 1999–2006 | 0.66 | M-v | 1 | MPC | 44961 | (61832) |
| (61848) | 14.9 | 0.15 | 20060922 | 21.30784 | 278.78513 | 97.72434 | 2.54166 | 0.1012585 | 3.0527747 | 219 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 44966 | (61848) |
| (61856) | 15.2 | 0.15 | 20060922 | 67.07726 | 91.33195 | 315.27471 | 1.11615 | 0.0911665 | 2.7693420 | 320 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 44969 | (61856) |
| (61865) | 15.1 | 0.15 | 20060922 | 125.04079 | 147.50229 | 151.87827 | 2.76900 | 0.0413339 | 2.8854618 | 131 | 7 | 1994–2006 | 0.60 | M-v | 0 | MPC | 44972 | (61865) |
| (61870) | 16.0 | 0.15 | 20060922 | 92.72453 | 217.04025 | 163.18215 | 3.34322 | 0.1066655 | 2.7452341 | 143 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 44974 | (61870) |
| (61882) | 14.8 | 0.15 | 20060922 | 93.57861 | 338.06438 | 52.81978 | 9.30562 | 0.0341219 | 2.9913234 | 221 | 7 | 1990–2006 | 0.47 | M-v | 0 | MPC | 44978 | (61882) |
| (61900) | 16.0 | 0.15 | 20060922 | 335.61322 | 289.67521 | 216.42828 | 1.33812 | 0.1496507 | 2.6948963 | 180 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 44985 | (61900) |
| (61901) | 15.8 | 0.15 | 20060922 | 30.45557 | 46.48556 | 58.43679 | 1.63336 | 0.0199745 | 2.6365235 | 176 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 44985 | (61901) |
| (61906) | 15.2 | 0.15 | 20060922 | 186.75332 | 153.21296 | 131.14477 | 7.19950 | 0.0209032 | 2.7809029 | 198 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 44987 | (61906) |
| (61912) | 15.5 | 0.15 | 20060922 | 49.46216 | 279.13938 | 146.55641 | 9.00704 | 0.0485422 | 2.7277919 | 129 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 44989 | (61912) |
| (61918) | 14.8 | 0.15 | 20060922 | 240.52687 | 305.80360 | 274.94687 | 11.00141 | 0.1156398 | 2.7121562 | 185 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 44991 | (61918) |
| (61926) | 14.0 | 0.15 | 20060922 | 24.71373 | 205.10217 | 191.64351 | 9.53403 | 0.0906047 | 3.0573397 | 297 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 44994 | (61926) |
| (61935) | 13.7 | 0.15 | 20060922 | 341.20515 | 327.19873 | 121.52548 | 5.98216 | 0.1421952 | 3.1879077 | 305 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 44998 | (61935) |
| (61947) | 14.0 | 0.15 | 20060922 | 326.03803 | 220.93542 | 230.65714 | 9.74661 | 0.0844413 | 2.9756189 | 223 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 45002 | (61947) |
| (61960) | 13.8 | 0.15 | 20060922 | 358.68609 | 180.03495 | 233.23423 | 7.67504 | 0.1214578 | 3.0521021 | 265 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 45007 | (61960) |
| (61963) | 14.4 | 0.15 | 20060922 | 188.50527 | 27.19268 | 248.15478 | 5.51780 | 0.0443157 | 2.7569186 | 248 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 45009 | (61963) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (61967) | 15.2 | 0.15 | 20060922 | 89.35597 | 66.10695 | 310.17161 | 4.89063 | 0.0646390 | 2.8097556 | 260 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 45011 | (61967) |
| (61970) | 14.9 | 0.15 | 20060922 | 156.91064 | 344.25954 | 255.67784 | 8.50000 | 0.0354583 | 3.0506952 | 204 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45012 | (61970) |
| (61975) | 14.4 | 0.15 | 20060922 | 192.20004 | 340.08413 | 243.57545 | 8.69961 | 0.0183871 | 2.9900270 | 212 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 45014 | (61975) |
| (61988) | 15.2 | 0.15 | 20060922 | 160.56591 | 349.01144 | 335.47613 | 10.16352 | 0.0550904 | 2.7192545 | 214 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 45019 | (61988) |
| (61993) | 14.9 | 0.15 | 20060922 | 167.67766 | 339.11565 | 337.49408 | 4.76509 | 0.0591425 | 2.7316179 | 304 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45022 | (61993) |
| (61997) | 15.5 | 0.15 | 20060922 | 252.43403 | 318.19576 | 308.38665 | 5.02467 | 0.2275715 | 2.5299926 | 155 | 7 | 1999–2006 | 0.63 | M-v | 1 | MPC | 45023 | (61997) |
| (62008) | 13.6 | 0.15 | 20060922 | 326.56568 | 79.80391 | 53.19384 | 6.36537 | 0.1162074 | 3.1482712 | 325 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 45027 | (62008) |
| (62010) | 13.7 | 0.15 | 20060922 | 91.32963 | 69.56576 | 263.06501 | 8.77855 | 0.0716097 | 2.9772148 | 267 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 45028 | (62010) |
| (62012) | 13.9 | 0.15 | 20060922 | 78.58263 | 8.28912 | 315.18743 | 8.90740 | 0.0774117 | 3.0860874 | 116 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 45029 | (62012) |
| (62016) | 13.8 | 0.15 | 20060922 | 78.96737 | 98.44394 | 251.24188 | 9.09592 | 0.1218113 | 2.9763676 | 256 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45031 | (62016) |
| (62017) | 14.1 | 0.15 | 20060922 | 58.98325 | 353.59939 | 339.89244 | 13.49410 | 0.1364016 | 3.1358861 | 183 | 7 | 1994–2006 | 0.61 | M-v | 0 | MPC | 45031 | (62017) |
| (62031) | 15.8 | 0.15 | 20060922 | 292.14628 | 72.16872 | 126.10397 | 4.27437 | 0.0164440 | 2.7547967 | 158 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 45037 | (62031) |
| (62036) | 13.2 | 0.15 | 20060922 | 146.12232 | 230.02743 | 66.11640 | 17.40544 | 0.0821144 | 3.1696797 | 321 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 45039 | (62036) |
| (62039) | 14.0 | 0.15 | 20060922 | 46.30472 | 109.35210 | 256.25123 | 5.18095 | 0.1901428 | 3.0657269 | 233 | 6 | 1994–2005 | 0.69 | M-v | 1 | MPC | 77341 | (62039) |
| (62043) | 14.8 | 0.15 | 20060922 | 332.09161 | 250.21688 | 170.56880 | 8.72106 | 0.0922850 | 3.2262395 | 225 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 45043 | (62043) |
| (62051) | 14.4 | 0.15 | 20060922 | 10.41582 | 18.98704 | 13.75092 | 9.68845 | 0.0822687 | 3.0917720 | 193 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 45046 | (62051) |
| (62054) | 14.7 | 0.15 | 20060922 | 15.21331 | 10.22079 | 356.88457 | 5.15906 | 0.1440274 | 3.2236972 | 203 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45047 | (62054) |
| (62056) | 14.3 | 0.15 | 20060922 | 56.46696 | 168.14490 | 184.05091 | 9.52863 | 0.0778496 | 3.0856693 | 236 | 9 | 1992–2006 | 0.60 | M-v | 0 | MPC | 45048 | (62056) |
| (62058) | 15.5 | 0.15 | 20060922 | 51.13555 | 25.51922 | 45.38881 | 4.15556 | 0.0849599 | 2.7783006 | 257 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 45049 | (62058) |
| (62066) | 15.1 | 0.15 | 20060922 | 158.09569 | 201.92499 | 125.56965 | 3.04266 | 0.0498981 | 2.6938371 | 301 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 45052 | (62066) |
| (62070) | 13.4 | 0.15 | 20060922 | 188.62633 | 197.12424 | 69.37671 | 10.42756 | 0.0156380 | 3.0768138 | 309 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 45054 | (62070) |
| (62080) | 14.8 | 0.15 | 20060922 | 47.93853 | 210.39588 | 229.41155 | 11.92681 | 0.0515576 | 2.6960151 | 251 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 45058 | (62080) |
| (62084) | 14.6 | 0.15 | 20060922 | 51.61788 | 325.46109 | 19.23140 | 9.27145 | 0.0767134 | 3.1609022 | 265 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45060 | (62084) |
| (62086) | 14.6 | 0.15 | 20060922 | 135.82096 | 33.53683 | 289.30678 | 4.50310 | 0.0444771 | 2.7911405 | 215 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 45061 | (62086) |
| (62102) | 15.3 | 0.15 | 20060922 | 127.58482 | 49.15927 | 58.02518 | 2.87208 | 0.1536844 | 2.4372806 | 311 | 6 | 1993–2006 | 0.61 | M-v | 0 | MPC | 70206 | (62102) |
| (62108) | 13.8 | 0.15 | 20060922 | 154.04872 | 334.23094 | 247.34317 | 22.12013 | 0.0872856 | 3.1769833 | 222 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 45070 | (62108) |
| (62110) | 13.7 | 0.15 | 20060922 | 237.94884 | 358.14416 | 272.82673 | 15.14914 | 0.0912152 | 2.6037273 | 303 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 45071 | (62110) |
| (62112) | 13.7 | 0.15 | 20060922 | 14.11538 | 165.91149 | 274.93594 | 11.48687 | 0.1477346 | 2.8970192 | 259 | 7 | 1976–2006 | 0.56 | M-v | 0 | MPC | 45072 | (62112) |
| (62119) | 14.0 | 0.15 | 20060922 | 48.90006 | 83.02895 | 285.66687 | 9.37205 | 0.1471156 | 3.0439293 | 290 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 45075 | (62119) |
| (62125) | 14.2 | 0.15 | 20060922 | 63.05790 | 22.29890 | 313.64729 | 11.29392 | 0.1296365 | 3.1280354 | 200 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 45078 | (62125) |
| (62134) | 14.9 | 0.15 | 20060922 | 57.52558 | 337.03177 | 357.40113 | 10.27274 | 0.1001228 | 3.1417625 | 130 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 45081 | (62134) |
| (62143) | 14.4 | 0.15 | 20060922 | 288.02668 | 268.61239 | 263.45904 | 11.67084 | 0.0756477 | 2.7340558 | 177 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 45084 | (62143) |
| (62147) | 15.4 | 0.15 | 20060922 | 239.43910 | 255.67009 | 274.57729 | 7.67230 | 0.0857298 | 3.0638707 | 122 | 6 | 1999–2006 | 0.57 | M-v | 1 | MPC | 45086 | (62147) |
| (62149) | 13.3 | 0.15 | 20060922 | 31.27529 | 96.28340 | 292.72002 | 9.11425 | 0.1710151 | 3.0624758 | 370 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 45087 | (62149) |
| (62150) | 14.4 | 0.15 | 20060922 | 287.11685 | 181.03767 | 326.81816 | 13.33647 | 0.0792481 | 3.0476179 | 149 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 45087 | (62150) |
| (62187) | 15.2 | 0.15 | 20060922 | 173.31281 | 214.25949 | 87.83820 | 6.42290 | 0.1052949 | 2.7494871 | 225 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 45102 | (62187) |
| (62199) | 14.6 | 0.15 | 20060922 | 6.60589 | 6.69141 | 33.34085 | 10.59680 | 0.0885229 | 3.0681171 | 175 | 6 | 1998–2006 | 0.54 | M-v | 0 | MPC | 45106 | (62199) |
| (62219) | 15.3 | 0.15 | 20060922 | 2.91729 | 16.05186 | 17.62943 | 3.62602 | 0.1180501 | 3.1609415 | 137 | 6 | 1994–2006 | 0.55 | M-v | 0 | MPC | 45114 | (62219) |
| (62231) | 15.2 | 0.15 | 20060922 | 110.28295 | 227.05762 | 158.17249 | 6.52257 | 0.0909482 | 2.7264423 | 206 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 45118 | (62231) |
| (62236) | 14.5 | 0.15 | 20060922 | 38.62854 | 296.69624 | 52.35174 | 6.42539 | 0.1500423 | 3.1878200 | 196 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 45120 | (62236) |
| (62245) | 16.1 | 0.15 | 20060922 | 26.17548 | 121.59029 | 339.25098 | 1.20652 | 0.0231351 | 2.7148374 | 158 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 45123 | (62245) |
| (62262) | 14.4 | 0.15 | 20060922 | 355.70729 | 56.29505 | 48.70470 | 13.32062 | 0.1127478 | 2.9469774 | 152 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 45129 | (62262) |
| (62294) | 15.4 | 0.15 | 20060922 | 75.51263 | 16.21984 | 38.25337 | 6.57185 | 0.0305055 | 2.7581277 | 188 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 45141 | (62294) |
| (62303) | 14.5 | 0.15 | 20060922 | 291.40142 | 49.53746 | 65.40493 | 5.36148 | 0.0480183 | 3.1957819 | 219 | 6 | 1999–2006 | 0.55 | M-v | 0 | MPC | 45145 | (62303) |
| (62306) | 14.9 | 0.15 | 20060922 | 174.30225 | 170.59057 | 159.42292 | 5.41054 | 0.0369519 | 2.7021680 | 249 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 45146 | (62306) |
| (62315) | 14.8 | 0.15 | 20060922 | 177.41265 | 245.43946 | 66.16172 | 5.60339 | 0.1040057 | 2.7318966 | 262 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 45150 | (62315) |
| (62324) | 14.3 | 0.15 | 20060922 | 336.24709 | 13.13088 | 99.74445 | 4.26904 | 0.0795118 | 3.0246186 | 221 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 45154 | (62324) |
| (62327) | 14.6 | 0.15 | 20060922 | 87.48715 | 130.59214 | 200.05205 | 11.91650 | 0.0123151 | 3.1324455 | 141 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 45155 | (62327) |
| (62331) | 15.2 | 0.15 | 20060922 | 339.76169 | 91.45425 | 36.58755 | 2.41518 | 0.0204917 | 2.8417068 | 298 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 45157 | (62331) |
| (62337) | 15.5 | 0.15 | 20060922 | 23.62004 | 4.55823 | 64.20734 | 3.93863 | 0.0849048 | 2.9613581 | 157 | 7 | 1990–2006 | 0.51 | M-v | 0 | MPC | 45159 | (62337) |
| (62349) | 13.9 | 0.15 | 20060922 | 351.63718 | 193.64210 | 267.34337 | 9.19403 | 0.0693281 | 2.9707815 | 288 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 45163 | (62349) |
| (62352) | 14.1 | 0.15 | 20060922 | 355.44270 | 151.73026 | 262.66763 | 8.32063 | 0.0916337 | 3.1722944 | 246 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 97305 | (62352) |
| (62364) | 14.3 | 0.15 | 20060922 | 49.06940 | 330.04934 | 26.39350 | 10.80700 | 0.0701606 | 3.1521280 | 200 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 45169 | (62364) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (62380) | 13.7 | 0.15 | 20060922 | 298.29336 | 309.18959 | 204.73072 | 22.46934 | 0.1450076 | 3.0698757 | 220 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 45175 | (62380) |
| (62389) | 14.2 | 0.15 | 20060922 | 311.32109 | 286.31768 | 252.73276 | 12.31741 | 0.1101358 | 2.7039054 | 328 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 45179 | (62389) |
| (62391) | 14.7 | 0.15 | 20060922 | 66.80171 | 77.71246 | 259.56431 | 8.23943 | 0.1237276 | 3.0999725 | 158 | 7 | 1997–2006 | 0.50 | M-v | 0 | MPC | 45179 | (62391) |
| (62397) | 13.8 | 0.15 | 20060922 | 355.40165 | 277.66824 | 215.22743 | 14.22161 | 0.0988732 | 2.8588565 | 309 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45182 | (62397) |
| (62412) | 14.2 | 0.15 | 20060922 | 301.76903 | 162.10505 | 329.70774 | 4.76361 | 0.0905607 | 3.1473001 | 283 | 6 | 1999–2006 | 0.54 | M-v | 0 | MPC | 45188 | (62412) |
| (62413) | 13.9 | 0.15 | 20060922 | 159.96016 | 255.99513 | 22.24465 | 14.18251 | 0.0284841 | 3.0528717 | 257 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 45188 | (62413) |
| (62416) | 14.7 | 0.15 | 20060922 | 218.67618 | 323.54179 | 295.92436 | 8.97326 | 0.2145035 | 2.7344842 | 135 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 45190 | (62416) |
| (62434) | 13.9 | 0.15 | 20060922 | 190.61751 | 330.10681 | 252.69536 | 11.22208 | 0.1108357 | 3.1031561 | 149 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 45196 | (62434) |
| (62450) | 14.6 | 0.15 | 20060922 | 50.05099 | 16.93609 | 22.15161 | 2.64002 | 0.0685628 | 2.9764955 | 254 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 45201 | (62450) |
| (62451) | 15.7 | 0.15 | 20060922 | 273.10548 | 231.71140 | 355.32554 | 5.72347 | 0.1353891 | 2.6043541 | 142 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 45201 | (62451) |
| (62469) | 16.0 | 0.15 | 20060922 | 11.93133 | 50.45170 | 68.22679 | 1.30508 | 0.0229425 | 2.7199521 | 203 | 7 | 1996–2006 | 0.51 | M-v | 0 | MPC | 45208 | (62469) |
| (62473) | 14.5 | 0.15 | 20060922 | 20.54721 | 357.63509 | 70.04246 | 11.22132 | 0.0844286 | 2.9895655 | 179 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 45210 | (62473) |
| (62474) | 14.8 | 0.15 | 20060922 | 168.90879 | 181.25130 | 111.79820 | 9.26672 | 0.1966727 | 2.7995448 | 189 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 45210 | (62474) |
| (62476) | 14.0 | 0.15 | 20060922 | 233.66199 | 151.09175 | 87.10892 | 12.83709 | 0.0498141 | 2.8576259 | 259 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 45211 | (62476) |
| (62501) | 15.7 | 0.15 | 20060922 | 62.45172 | 200.66404 | 234.95405 | 0.84556 | 0.0457783 | 2.7648603 | 201 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 45221 | (62501) |
| (62506) | 14.2 | 0.15 | 20060922 | 59.83918 | 291.91215 | 50.83435 | 11.97274 | 0.1266386 | 3.0561929 | 191 | 7 | 1995–2006 | 0.60 | M-v | 0 | MPC | 45223 | (62506) |
| (62512) | 14.9 | 0.15 | 20060922 | 282.18529 | 267.12038 | 199.50455 | 8.81800 | 0.0670772 | 3.1657375 | 145 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 45224 | (62512) |
| (62518) | 14.9 | 0.15 | 20060922 | 294.40879 | 148.90292 | 27.63717 | 9.16562 | 0.0791119 | 2.7531818 | 228 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 45226 | (62518) |
| (62523) | 15.8 | 0.15 | 20060922 | 198.72490 | 146.80631 | 140.08239 | 4.28112 | 0.0667943 | 2.6976109 | 109 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 45228 | (62523) |
| (62527) | 15.5 | 0.15 | 20060922 | 41.14827 | 294.37415 | 146.85780 | 5.04400 | 0.0371895 | 2.7753319 | 168 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 45229 | (62527) |
| (62528) | 14.8 | 0.15 | 20060922 | 72.54171 | 314.86064 | 22.54123 | 11.47594 | 0.1060866 | 3.0437442 | 164 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 45229 | (62528) |
| (62532) | 15.2 | 0.15 | 20060922 | 27.78706 | 302.31978 | 139.55008 | 3.56117 | 0.0254303 | 2.8017355 | 222 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 45231 | (62532) |
| (62538) | 15.5 | 0.15 | 20060922 | 49.70490 | 277.55384 | 147.51043 | 7.22267 | 0.0497830 | 2.8475394 | 152 | 7 | 1993–2006 | 0.62 | M-v | 0 | MPC | 45233 | (62538) |
| (62565) | 15.5 | 0.15 | 20060922 | 156.36602 | 42.89874 | 275.80758 | 1.49150 | 0.0901075 | 2.7811898 | 213 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 45242 | (62565) |
| (62580) | 14.2 | 0.15 | 20060922 | 18.06133 | 129.74425 | 262.28215 | 8.95084 | 0.1067260 | 2.9905898 | 164 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45247 | (62580) |
| (62587) | 14.8 | 0.15 | 20060922 | 239.50634 | 294.78028 | 223.07330 | 8.61570 | 0.0439932 | 3.1741707 | 154 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 45249 | (62587) |
| (62588) | 15.2 | 0.15 | 20060922 | 287.61181 | 252.92445 | 235.69839 | 4.28674 | 0.0948367 | 3.1378560 | 153 | 6 | 1994–2006 | 0.55 | M-v | 0 | MPC | 45250 | (62588) |
| (62598) | 14.4 | 0.15 | 20060922 | 239.91121 | 314.07772 | 324.85893 | 12.93539 | 0.1777005 | 2.5983777 | 220 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45253 | (62598) |
| (62611) | 14.7 | 0.15 | 20060922 | 77.02380 | 233.65536 | 94.22378 | 9.43228 | 0.0663758 | 3.0395876 | 201 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 45258 | (62611) |
| (62616) | 15.5 | 0.15 | 20060922 | 299.61231 | 77.76465 | 89.69809 | 3.23135 | 0.0053108 | 2.8862178 | 196 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 45259 | (62616) |
| (62618) | 14.0 | 0.15 | 20060922 | 19.36680 | 325.25858 | 79.55673 | 14.48748 | 0.0874795 | 2.9892270 | 128 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45260 | (62618) |
| (62620) | 14.8 | 0.15 | 20060922 | 16.37965 | 254.17859 | 143.30829 | 17.11959 | 0.1401073 | 3.0834221 | 164 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 45261 | (62620) |
| (62633) | 14.2 | 0.15 | 20060922 | 65.26850 | 277.64482 | 49.98643 | 17.62763 | 0.1056520 | 3.1193273 | 204 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 45265 | (62633) |
| (62635) | 16.1 | 0.15 | 20060922 | 350.53104 | 294.09365 | 135.07610 | 16.89914 | 0.1918711 | 3.1357759 | 106 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 45265 | (62635) |
| (62640) | 14.0 | 0.15 | 20060922 | 82.58523 | 322.33034 | 52.50927 | 15.59554 | 0.0104947 | 2.8451615 | 298 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 45267 | (62640) |
| (62643) | 13.8 | 0.15 | 20060922 | 358.20463 | 288.38819 | 115.28713 | 17.24226 | 0.1137057 | 3.1006532 | 111 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 45269 | (62643) |
| (62644) | 14.8 | 0.15 | 20060922 | 50.39596 | 235.10696 | 123.69010 | 14.98190 | 0.1020612 | 3.0498118 | 93 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 45269 | (62644) |
| (62662) | 15.1 | 0.15 | 20060922 | 338.28048 | 82.21749 | 22.08953 | 12.87593 | 0.0931319 | 2.9363598 | 126 | 6 | 1998–2006 | 0.54 | M-v | 0 | MPC | 45275 | (62662) |
| (62664) | 15.0 | 0.15 | 20060922 | 12.12262 | 169.15275 | 286.70213 | 5.03005 | 0.0512358 | 2.7638980 | 121 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 45275 | (62664) |
| (62666) | 13.9 | 0.15 | 20060922 | 67.77046 | 98.73296 | 263.77005 | 9.38811 | 0.1774781 | 3.1241935 | 213 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 45276 | (62666) |
| (62672) | 13.8 | 0.15 | 20060922 | 112.58066 | 234.70602 | 56.06841 | 10.56977 | 0.0537318 | 3.0960663 | 133 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 45278 | (62672) |
| (62680) | 15.1 | 0.15 | 20060922 | 125.65079 | 80.27888 | 205.48549 | 9.58247 | 0.0276469 | 3.1298599 | 111 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 45280 | (62680) |
| (62688) | 14.1 | 0.15 | 20060922 | 90.96301 | 227.18158 | 89.72701 | 11.95032 | 0.0584432 | 3.0930501 | 197 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 45283 | (62688) |
| (62701) | 14.8 | 0.15 | 20060922 | 332.25085 | 243.30734 | 210.66255 | 21.14629 | 0.1942857 | 3.1091440 | 121 | 7 | 1983–2006 | 0.61 | M-v | 0 | MPC | 45287 | (62701) |
| (62726) | 13.4 | 0.15 | 20060922 | 79.44142 | 204.80563 | 106.38772 | 28.68344 | 0.0934227 | 3.3407438 | 179 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 45296 | (62726) |
| (62729) | 14.5 | 0.15 | 20060922 | 27.72700 | 273.48535 | 113.02672 | 11.98379 | 0.0798220 | 3.1063105 | 155 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 45298 | (62729) |
| (62733) | 13.8 | 0.15 | 20060922 | 274.60330 | 59.10877 | 106.34085 | 17.39024 | 0.1568185 | 3.0567366 | 272 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 45299 | (62733) |
| (62739) | 15.3 | 0.15 | 20060922 | 68.33944 | 275.63832 | 62.05158 | 6.15097 | 0.1031510 | 3.1616400 | 119 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 45302 | (62739) |
| (62769) | 15.9 | 0.15 | 20060922 | 148.19743 | 200.61003 | 139.72608 | 7.13706 | 0.0733474 | 2.7767341 | 86 | 7 | 1995–2006 | 0.60 | M-v | 1 | MPC | 45314 | (62769) |
| (62780) | 15.2 | 0.15 | 20060922 | 221.76827 | 202.46384 | 54.37127 | 13.65976 | 0.2075344 | 2.7936135 | 264 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 45317 | (62780) |
| (62784) | 14.1 | 0.15 | 20060922 | 69.34942 | 263.37356 | 71.79362 | 11.83001 | 0.1467935 | 3.1775294 | 158 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45319 | (62784) |
| (62791) | 14.7 | 0.15 | 20060922 | 337.68784 | 305.04799 | 151.33380 | 6.58452 | 0.1157829 | 3.1893719 | 213 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 45321 | (62791) |
| (62806) | 15.8 | 0.15 | 20060922 | 91.31581 | 323.01009 | 66.13022 | 3.09603 | 0.0903872 | 2.8552112 | 189 | 7 | 1990–2006 | 0.52 | M-v | 0 | MPC | 45327 | (62806) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (62829) | 14.2 | 0.15 | 20060922 | 63.74303 | 266.26738 | 89.84656 | 5.96463 | 0.1582385 | 3.1196762 | 183 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 45335 | (62829) |
| (62836) | 14.1 | 0.15 | 20060922 | 296.87388 | 237.09370 | 5.69605 | 8.69736 | 0.2277867 | 2.5449307 | 209 | 7 | 1982–2006 | 0.54 | M-v | 1 | MPC | 45338 | (62836) |
| (62859) | 15.1 | 0.15 | 20060922 | 274.44235 | 112.22253 | 66.47831 | 5.85893 | 0.0905619 | 3.1056644 | 193 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 45346 | (62859) |
| (62905) | 14.4 | 0.15 | 20060922 | 332.85872 | 43.38760 | 84.61250 | 11.84356 | 0.0547123 | 2.9840608 | 136 | 7 | 1998–2006 | 0.63 | M-v | 0 | MPC | 45361 | (62905) |
| (62910) | 13.3 | 0.15 | 20060922 | 337.86612 | 6.78442 | 91.69059 | 11.11899 | 0.0769149 | 3.1654742 | 291 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 45362 | (62910) |
| (62918) | 15.6 | 0.15 | 20060922 | 6.74193 | 249.02001 | 189.58435 | 1.38242 | 0.0698388 | 3.0535038 | 141 | 7 | 1999–2006 | 0.48 | M-v | 0 | MPC | 45366 | (62918) |
| (62920) | 14.7 | 0.15 | 20060922 | 301.34995 | 34.38206 | 94.59185 | 2.91241 | 0.0915296 | 3.1789541 | 192 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 45366 | (62920) |
| (62932) | 13.9 | 0.15 | 20060922 | 263.80046 | 95.17941 | 94.57204 | 9.08974 | 0.0904031 | 3.0894216 | 208 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 45371 | (62932) |
| (62936) | 14.2 | 0.15 | 20060922 | 239.30918 | 151.86684 | 41.18971 | 7.65496 | 0.0883390 | 3.1474261 | 274 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 45372 | (62936) |
| (62947) | 14.2 | 0.15 | 20060922 | 30.09264 | 7.37343 | 60.14966 | 11.04276 | 0.1392489 | 3.0624565 | 244 | 7 | 1992–2006 | 0.50 | M-v | 0 | MPC | 45376 | (62947) |
| (62965) | 15.6 | 0.15 | 20060922 | 141.38485 | 11.06391 | 303.21108 | 1.02389 | 0.0899860 | 2.8784676 | 143 | 7 | 1995–2006 | 0.45 | M-v | 0 | MPC | 45382 | (62965) |
| (62973) | 15.5 | 0.15 | 20060922 | 353.45656 | 349.74951 | 111.56402 | 6.65403 | 0.0165000 | 2.9856653 | 132 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 45385 | (62973) |
| (62974) | 14.0 | 0.15 | 20060922 | 285.38190 | 266.29390 | 266.82105 | 8.32622 | 0.0759530 | 3.0195575 | 142 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 45385 | (62974) |
| (62985) | 15.1 | 0.15 | 20060922 | 186.65517 | 19.76951 | 220.37473 | 4.72883 | 0.0781255 | 3.1381386 | 153 | 7 | 1999–2006 | 0.51 | M-v | 0 | MPC | 45388 | (62985) |
| (62988) | 14.5 | 0.15 | 20060922 | 195.61122 | 348.40613 | 202.67077 | 10.95004 | 0.0436843 | 3.2029606 | 182 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45389 | (62988) |
| (62990) | 14.4 | 0.15 | 20060922 | 288.61553 | 80.48080 | 80.73761 | 15.29464 | 0.1225552 | 3.0443786 | 146 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 45390 | (62990) |
| (62992) | 15.1 | 0.15 | 20060922 | 93.46156 | 244.05728 | 129.75224 | 1.31435 | 0.0994664 | 3.0133958 | 248 | 9 | 1971–2006 | 0.54 | M-v | 0 | MPC | 45391 | (62992) |
| (62996) | 17.1 | 0.15 | 20060922 | 261.62155 | 26.66872 | 55.12607 | 6.18077 | 0.0973104 | 2.2145976 | 153 | 7 | 1990–2006 | 0.65 | M-v | 1 | MPC | 45392 | (62996) |
| (63015) | 13.9 | 0.15 | 20060922 | 250.00666 | 103.17797 | 95.14439 | 18.39266 | 0.0380880 | 3.1993298 | 207 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 45399 | (63015) |
| (63027) | 15.1 | 0.15 | 20060922 | 233.83574 | 57.94787 | 64.47460 | 5.40969 | 0.0660182 | 2.1787514 | 232 | 7 | 1990–2006 | 0.56 | M-v | 0 | MPC | 45403 | (63027) |
| (63028) | 14.1 | 0.15 | 20060922 | 76.96305 | 282.82366 | 78.65336 | 10.94200 | 0.0756732 | 3.1151623 | 210 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 45404 | (63028) |
| (63029) | 13.8 | 0.15 | 20060922 | 302.06386 | 79.92580 | 80.63375 | 16.77504 | 0.0389868 | 3.0725928 | 197 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 45404 | (63029) |
| (63031) | 14.9 | 0.15 | 20060922 | 83.48116 | 253.89173 | 116.62015 | 11.75798 | 0.1203568 | 2.9833402 | 177 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 45405 | (63031) |
| (63034) | 15.8 | 0.15 | 20060922 | 24.70162 | 68.95003 | 22.81536 | 12.16000 | 0.1262140 | 3.1042434 | 141 | 7 | 1991–2006 | 0.57 | M-v | 1 | MPC | 45406 | (63034) |
| (63046) | 14.9 | 0.15 | 20060922 | 20.96919 | 124.79075 | 298.78106 | 0.74583 | 0.0996348 | 3.1617383 | 226 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 45410 | (63046) |
| (63049) | 15.7 | 0.15 | 20060922 | 89.31951 | 344.04492 | 52.04457 | 2.58424 | 0.1175830 | 2.9304952 | 243 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 45411 | (63049) |
| (63050) | 14.2 | 0.15 | 20060922 | 336.32603 | 6.39777 | 72.47194 | 11.21002 | 0.0897353 | 3.3903182 | 212 | 6 | 1999–2006 | 0.50 | M-v | 0 | MPC | 45411 | (63050) |
| (63077) | 15.4 | 0.15 | 20060922 | 208.66048 | 279.90829 | 348.33157 | 3.24659 | 0.0555506 | 2.7808078 | 125 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 45420 | (63077) |
| (63080) | 14.1 | 0.15 | 20060922 | 280.91019 | 134.16139 | 4.75487 | 15.86883 | 0.0481043 | 3.2401205 | 162 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 45421 | (63080) |
| (63087) | 13.3 | 0.15 | 20060922 | 32.16528 | 324.61455 | 86.88503 | 20.94277 | 0.0049929 | 3.1189640 | 353 | 7 | 1976–2006 | 0.51 | M-v | 0 | MPC | 45424 | (63087) |
| (63088) | 14.5 | 0.15 | 20060922 | 193.38800 | 183.69343 | 44.75879 | 6.65254 | 0.1251553 | 3.2280797 | 182 | 7 | 1994–2006 | 0.50 | M-v | 0 | MPC | 45425 | (63088) |
| (63098) | 15.0 | 0.15 | 20060922 | 348.99843 | 325.40978 | 142.88205 | 13.02199 | 0.1023616 | 3.0477539 | 153 | 7 | 1999–2006 | 0.64 | M-v | 0 | MPC | 45428 | (63098) |
| (63118) | 13.2 | 0.15 | 20060922 | 277.55044 | 60.83774 | 105.88130 | 17.46888 | 0.1716263 | 3.1192303 | 231 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 45435 | (63118) |
| (63124) | 13.8 | 0.15 | 20060922 | 314.80161 | 30.30895 | 122.25784 | 10.54590 | 0.0696763 | 3.0102524 | 246 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 45437 | (63124) |
| (63132) | 15.3 | 0.15 | 20060922 | 334.22551 | 27.42641 | 83.80504 | 3.02323 | 0.0341895 | 3.0654275 | 146 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 45440 | (63132) |
| (63138) | 14.0 | 0.15 | 20060922 | 342.52265 | 353.36108 | 99.44513 | 10.16386 | 0.0815728 | 3.1401327 | 102 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 45442 | (63138) |
| (63141) | 14.0 | 0.15 | 20060922 | 0.33460 | 274.88730 | 149.65575 | 15.08579 | 0.1764556 | 3.1869546 | 275 | 6 | 1999–2006 | 0.57 | M-v | 0 | MPC | 45442 | (63141) |
| (63148) | 14.0 | 0.15 | 20060922 | 110.89195 | 343.23554 | 12.98884 | 9.57710 | 0.0694650 | 2.9747682 | 180 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 45445 | (63148) |
| (63149) | 13.8 | 0.15 | 20060922 | 27.85916 | 359.36613 | 47.96371 | 15.34759 | 0.0399340 | 3.2133881 | 193 | 6 | 1999–2005 | 0.62 | M-v | 0 | MPC | 45445 | (63149) |
| (63156) | 14.8 | 0.15 | 20060922 | 99.00615 | 263.39511 | 84.06563 | 10.48689 | 0.0954198 | 3.1212304 | 154 | 7 | 1999–2006 | 0.49 | M-v | 0 | MPC | 45448 | (63156) |
| (63161) | 15.6 | 0.15 | 20060922 | 313.47051 | 194.96397 | 355.48995 | 7.51062 | 0.1967448 | 3.1006084 | 79 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 45449 | (63161) |
| (63162) | 14.1 | 0.15 | 20060922 | 57.07314 | 296.20022 | 84.28270 | 17.45760 | 0.1589454 | 3.1573838 | 161 | 6 | 1998–2006 | 0.50 | M-v | 0 | MPC | 45450 | (63162) |
| (63166) | 14.4 | 0.15 | 20060922 | 37.56682 | 304.82453 | 105.64693 | 11.15267 | 0.1100472 | 3.0401080 | 121 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 45451 | (63166) |
| (63177) | 14.5 | 0.15 | 20060922 | 10.95157 | 345.49312 | 115.81832 | 13.86401 | 0.1424323 | 3.2183325 | 174 | 7 | 1991–2006 | 0.48 | M-v | 0 | MPC | 45455 | (63177) |
| (63181) | 13.8 | 0.15 | 20060922 | 211.53476 | 138.32339 | 99.39882 | 10.59632 | 0.1311208 | 3.2245125 | 163 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45456 | (63181) |
| (63183) | 14.8 | 0.15 | 20060922 | 315.70591 | 42.47368 | 106.40651 | 6.32624 | 0.0797484 | 3.1948638 | 177 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 45457 | (63183) |
| (63200) | 13.9 | 0.15 | 20060922 | 210.71455 | 141.64471 | 73.18889 | 23.48095 | 0.0300246 | 3.2476180 | 183 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 45462 | (63200) |
| (63201) | 15.3 | 0.15 | 20060922 | 324.28231 | 99.97835 | 75.98430 | 2.15356 | 0.0732785 | 3.1146866 | 171 | 9 | 1991–2006 | 0.51 | M-v | 0 | MPC | 45462 | (63201) |
| (63208) | 15.4 | 0.15 | 20060922 | 8.60540 | 349.04987 | 132.98835 | 12.43073 | 0.0635370 | 3.1138723 | 114 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 45464 | (63208) |
| (63212) | 15.6 | 0.15 | 20060922 | 156.79780 | 6.41572 | 163.98550 | 6.57330 | 0.1148636 | 2.4534598 | 278 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 45466 | (63212) |
| (63221) | 14.3 | 0.15 | 20060922 | 141.66226 | 253.01753 | 95.26410 | 18.30375 | 0.1461195 | 2.9942645 | 174 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 45468 | (63221) |
| (63224) | 14.1 | 0.15 | 20060922 | 186.15450 | 276.97674 | 25.45416 | 13.56138 | 0.0491281 | 3.2003877 | 223 | 7 | 1993–2006 | 0.59 | M-v | 0 | MPC | 45469 | (63224) |
| (63233) | 16.4 | 0.15 | 20060922 | 175.29541 | 54.30711 | 159.50223 | 6.73929 | 0.1286081 | 2.2006781 | 136 | 7 | 1995–2006 | 0.49 | M-v | 1 | MPC | 45472 | (63233) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (63264) | 16.6 | 0.15 | 20060922 | 118.38149 | 115.20354 | 127.16693 | 7.71422 | 0.0776223 | 2.3226109 | 197 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 45482 | (63264) |
| (63268) | 16.3 | 0.15 | 20060922 | 41.80295 | 206.31670 | 124.58803 | 7.76348 | 0.1666749 | 2.2336342 | 133 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 45483 | (63268) |
| (63298) | 15.9 | 0.15 | 20060922 | 100.03341 | 200.38668 | 72.98485 | 5.48705 | 0.2243191 | 2.4105907 | 192 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 45492 | (63298) |
| (63308) | 16.1 | 0.15 | 20060922 | 102.28440 | 204.51776 | 74.74168 | 3.34194 | 0.1472562 | 2.3877085 | 181 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 45496 | (63308) |
| (63310) | 15.4 | 0.15 | 20060922 | 125.22231 | 123.29554 | 102.95073 | 6.11723 | 0.0721180 | 2.4789555 | 181 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 45496 | (63310) |
| (63330) | 15.7 | 0.15 | 20060922 | 334.02512 | 268.34360 | 157.21167 | 6.74118 | 0.0540533 | 2.2426636 | 142 | 7 | 1994–2006 | 0.57 | M-v | 1 | MPC | 45502 | (63330) |
| (63346) | 16.3 | 0.15 | 20060922 | 103.04749 | 161.58910 | 107.48631 | 6.71573 | 0.0842087 | 2.3689186 | 217 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 45507 | (63346) |
| (63348) | 16.1 | 0.15 | 20060922 | 143.30692 | 94.10658 | 126.24594 | 7.39831 | 0.0874796 | 2.3868258 | 126 | 6 | 1996–2006 | 0.56 | M-v | 1 | MPC | 62207 | (63348) |
| (63353) | 16.1 | 0.15 | 20060922 | 254.45581 | 234.74013 | 286.30897 | 5.60434 | 0.0279758 | 2.2600046 | 147 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 45509 | (63353) |
| (63361) | 16.4 | 0.15 | 20060922 | 57.77021 | 226.64566 | 130.20238 | 3.04435 | 0.1342172 | 2.2965953 | 157 | 6 | 1997–2005 | 0.62 | M-v | 1 | MPC | 45512 | (63361) |
| (63367) | 16.5 | 0.15 | 20060922 | 59.33625 | 240.95697 | 69.58116 | 7.72581 | 0.2314938 | 2.5419808 | 127 | 7 | 1997–2006 | 0.54 | M-v | 0 | MPC | 45513 | (63367) |
| (63380) | 15.8 | 0.15 | 20060922 | 59.90569 | 345.90390 | 315.05058 | 4.63363 | 0.0898314 | 2.4592305 | 152 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 45518 | (63380) |
| (63382) | 16.8 | 0.15 | 20060922 | 222.92724 | 133.80135 | 90.27065 | 4.83107 | 0.1277075 | 2.2266865 | 128 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 45518 | (63382) |
| (63386) | 15.0 | 0.15 | 20060922 | 240.42434 | 254.93534 | 198.10839 | 21.44521 | 0.1013115 | 2.5410214 | 142 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 45519 | (63386) |
| (63396) | 16.1 | 0.15 | 20060922 | 129.61051 | 59.10380 | 236.21113 | 4.24350 | 0.2275421 | 2.3794886 | 197 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 45522 | (63396) |
| (63414) | 15.5 | 0.15 | 20060922 | 151.12364 | 159.56731 | 97.58550 | 8.20413 | 0.1169474 | 2.3529005 | 203 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 45527 | (63414) |
| (63415) | 15.3 | 0.15 | 20060922 | 44.16334 | 187.85134 | 138.22275 | 7.36174 | 0.2479244 | 2.5429939 | 190 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 45528 | (63415) |
| (63420) | 14.8 | 0.15 | 20060922 | 80.29377 | 254.76988 | 101.49221 | 22.27056 | 0.2806142 | 2.3469458 | 124 | 7 | 1980–2006 | 0.58 | M-v | 1 | MPC | 45529 | (63420) |
| (63433) | 15.2 | 0.15 | 20060922 | 58.99355 | 88.91391 | 250.27477 | 12.13136 | 0.1066383 | 2.6351431 | 144 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 45533 | (63433) |
| (63436) | 15.3 | 0.15 | 20060922 | 65.26407 | 30.44244 | 322.00056 | 3.00522 | 0.2848960 | 2.5976021 | 182 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 45534 | (63436) |
| (63442) | 13.8 | 0.15 | 20060922 | 45.30088 | 118.48848 | 257.26860 | 26.81685 | 0.1561966 | 2.5861365 | 158 | 6 | 1998–2006 | 0.54 | M-v | 0 | MPC | 77341 | (63442) |
| (63445) | 16.5 | 0.15 | 20060922 | 63.76800 | 37.87379 | 269.51296 | 4.21207 | 0.1705850 | 2.6621521 | 116 | 7 | 1993–2006 | 0.43 | M-v | 0 | MPC | 45537 | (63445) |
| (63447) | 15.4 | 0.15 | 20060922 | 127.57339 | 78.47474 | 255.70867 | 3.88089 | 0.2343819 | 2.3807214 | 216 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 45538 | (63447) |
| (63450) | 14.7 | 0.15 | 20060922 | 12.78821 | 78.82087 | 325.77539 | 22.65034 | 0.1715828 | 2.5510624 | 137 | 7 | 1981–2006 | 0.53 | M-v | 1 | MPC | 45539 | (63450) |
| (63451) | 15.1 | 0.15 | 20060922 | 39.93398 | 78.56047 | 302.67919 | 10.83266 | 0.1517466 | 2.5259155 | 183 | 7 | 1999–2006 | 0.62 | M-v | 0 | MPC | 45539 | (63451) |
| (63472) | 15.7 | 0.15 | 20060922 | 30.65830 | 260.71290 | 135.34325 | 4.29775 | 0.2289776 | 2.5576819 | 183 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 45547 | (63472) |
| (63481) | 15.6 | 0.15 | 20060922 | 60.78649 | 136.72413 | 233.88028 | 2.55373 | 0.1129113 | 2.6074961 | 191 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 45550 | (63481) |
| (63486) | 15.7 | 0.15 | 20060922 | 27.80743 | 293.19780 | 44.83230 | 8.80361 | 0.1658052 | 2.7669684 | 179 | 7 | 1999–2006 | 0.47 | M-v | 0 | MPC | 45552 | (63486) |
| (63507) | 15.4 | 0.15 | 20060922 | 125.31447 | 63.48614 | 276.85676 | 1.96169 | 0.2616916 | 2.3700913 | 187 | 7 | 1994–2006 | 0.44 | M-v | 0 | MPC | 45560 | (63507) |
| (63509) | 14.5 | 0.15 | 20060922 | 316.12012 | 342.67033 | 106.41966 | 11.78398 | 0.0795141 | 2.7358762 | 170 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 45560 | (63509) |
| (63510) | 14.9 | 0.15 | 20060922 | 328.49276 | 317.87645 | 130.56775 | 5.09125 | 0.2168949 | 2.6156814 | 221 | 7 | 1995–2006 | 0.55 | M-v | 1 | MPC | 45561 | (63510) |
| (63541) | 15.4 | 0.15 | 20060922 | 345.79397 | 254.47123 | 211.27810 | 13.21227 | 0.0816248 | 2.5252268 | 163 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 45571 | (63541) |
| (63569) | 14.5 | 0.15 | 20060922 | 14.78894 | 285.72075 | 167.11312 | 13.67184 | 0.2078015 | 2.5689073 | 276 | 7 | 1986–2006 | 0.52 | M-v | 0 | MPC | 45581 | (63569) |
| (63593) | 15.9 | 0.15 | 20060922 | 130.33364 | 194.36412 | 163.39562 | 6.59357 | 0.1401987 | 2.3584783 | 192 | 7 | 1996–2006 | 0.56 | M-v | 1 | MPC | 45593 | (63593) |
| (63599) | 14.9 | 0.15 | 20060922 | 226.97698 | 237.42857 | 280.91884 | 5.74235 | 0.0348887 | 2.7405744 | 201 | 7 | 1999–2006 | 0.48 | M-v | 0 | MPC | 45595 | (63599) |
| (63602) | 14.9 | 0.15 | 20060922 | 64.60468 | 323.76203 | 23.60327 | 14.11485 | 0.2027463 | 2.6802479 | 256 | 7 | 1995–2006 | 0.55 | M-v | 1 | MPC | 45596 | (63602) |
| (63603) | 14.3 | 0.15 | 20060922 | 36.39677 | 305.65223 | 90.16453 | 7.02591 | 0.2101663 | 2.6926903 | 316 | 7 | 1988–2006 | 0.58 | M-v | 0 | MPC | 45597 | (63603) |
| (63613) | 14.1 | 0.15 | 20060922 | 109.27441 | 89.58240 | 218.10361 | 10.93619 | 0.0992085 | 2.7745036 | 419 | 7 | 1992–2006 | 0.59 | M-v | 0 | MPC | 45602 | (63613) |
| (63616) | 14.5 | 0.15 | 20060922 | 43.82991 | 211.87427 | 201.15518 | 13.85045 | 0.1205644 | 2.6710799 | 312 | 7 | 1995–2006 | 0.50 | M-v | 0 | MPC | 45604 | (63616) |
| (63690) | 15.1 | 0.15 | 20060922 | 251.80854 | 264.66301 | 185.27720 | 9.28040 | 0.1057739 | 2.9673360 | 137 | 7 | 1976–2006 | 0.74 | M-v | 0 | MPC | 45635 | (63690) |
| (63707) | 14.6 | 0.15 | 20060922 | 32.23529 | 195.89145 | 222.83250 | 15.03659 | 0.1021856 | 2.6535980 | 241 | 7 | 1995–2006 | 0.55 | M-v | 1 | MPC | 45642 | (63707) |
| (63729) | 15.8 | 0.15 | 20060922 | 143.29327 | 151.99050 | 162.11356 | 2.95213 | 0.2326711 | 2.4323959 | 338 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 45651 | (63729) |
| (63735) | 15.2 | 0.15 | 20060922 | 66.68765 | 331.23526 | 354.64246 | 9.34924 | 0.2079552 | 2.7444562 | 167 | 7 | 1960–2006 | 0.55 | M-v | 0 | MPC | 45653 | (63735) |
| (63752) | 15.2 | 0.15 | 20060922 | 14.71910 | 198.08671 | 189.57995 | 8.23344 | 0.0455554 | 2.7302709 | 196 | 7 | 1992–2006 | 0.57 | M-v | 0 | MPC | 45660 | (63752) |
| (63779) | 15.8 | 0.15 | 20060922 | 342.43072 | 205.87195 | 226.05000 | 1.34834 | 0.0768757 | 2.6648020 | 113 | 7 | 1995–2006 | 0.44 | M-v | 0 | MPC | 45671 | (63779) |
| (63783) | 15.6 | 0.15 | 20060922 | 336.99350 | 124.56437 | 286.81886 | 3.18505 | 0.0622792 | 2.7879665 | 168 | 7 | 1994–2006 | 0.52 | M-v | 0 | MPC | 45673 | (63783) |
| (63792) | 16.4 | 0.15 | 20060922 | 260.80092 | 344.69158 | 166.18341 | 13.32162 | 0.1681649 | 2.6062902 | 173 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 45677 | (63792) |
| (63802) | 16.7 | 0.15 | 20060922 | 52.99808 | 344.94163 | 71.74225 | 1.74586 | 0.1109652 | 2.4406678 | 171 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 45680 | (63802) |
| (63804) | 16.3 | 0.15 | 20060922 | 359.86176 | 275.24101 | 148.49843 | 4.10261 | 0.2239973 | 2.6701511 | 97 | 6 | 1995–2005 | 0.62 | M-v | 0 | MPC | 45680 | (63804) |
| (63830) | 14.6 | 0.15 | 20060922 | 39.88449 | 341.28743 | 5.58215 | 8.03044 | 0.0711441 | 2.8512851 | 306 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 45690 | (63830) |
| (63846) | 15.4 | 0.15 | 20060922 | 220.48886 | 261.32587 | 297.89929 | 6.14789 | 0.1413560 | 2.5779904 | 174 | 7 | 1991–2006 | 0.58 | M-v | 0 | MPC | 45699 | (63846) |
| (63854) | 16.1 | 0.15 | 20060922 | 1.05166 | 284.01427 | 130.24170 | 2.72079 | 0.2387067 | 2.7572372 | 89 | 7 | 1994–2006 | 0.52 | M-v | 0 | MPC | 45702 | (63854) |
| (63857) | 16.5 | 0.15 | 20060922 | 5.94745 | 232.30124 | 162.97176 | 5.59046 | 0.0695000 | 2.7427235 | 146 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 45703 | (63857) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (63880) | 14.6 | 0.15 | 20060922 | 21.36211 | 246.08944 | 159.67328 | 8.19534 | 0.2312865 | 2.7883272 | 287 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 45711 | (63880) |
| (63882) | 13.7 | 0.15 | 20060922 | 295.01163 | 42.95876 | 74.30780 | 15.24403 | 0.1107547 | 2.6878068 | 216 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 45712 | (63882) |
| (63889) | 14.8 | 0.15 | 20060922 | 85.23360 | 185.02640 | 111.26749 | 3.11985 | 0.0610095 | 2.8747897 | 239 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 45715 | (63889) |
| (63890) | 16.4 | 0.15 | 20060922 | 48.90409 | 255.34396 | 127.28303 | 3.71847 | 0.0992356 | 2.5396254 | 69 | 7 | 1996–2006 | 0.66 | M-v | 1 | MPC | 45716 | (63890) |
| (63925) | 15.1 | 0.15 | 20060922 | 339.75861 | 54.16228 | 30.35757 | 8.20765 | 0.1662854 | 2.7309859 | 181 | 6 | 1997–2006 | 0.55 | M-v | 0 | MPC | 45729 | (63925) |
| (63926) | 14.7 | 0.15 | 20060922 | 12.81276 | 4.11191 | 36.92855 | 9.00702 | 0.1590888 | 2.7373009 | 200 | 7 | 1993–2006 | 0.60 | M-v | 0 | MPC | 45730 | (63926) |
| (63953) | 14.7 | 0.15 | 20060922 | 66.77707 | 168.10025 | 151.32106 | 2.56478 | 0.0659214 | 2.8909583 | 307 | 7 | 1994–2006 | 0.50 | M-v | 0 | MPC | 45741 | (63953) |
| (63989) | 14.4 | 0.15 | 20060922 | 12.14512 | 205.36719 | 240.25886 | 12.83641 | 0.1281612 | 2.6851496 | 264 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 45755 | (63989) |
| (63990) | 14.5 | 0.15 | 20060922 | 34.30883 | 88.38210 | 264.16935 | 9.54635 | 0.1245891 | 2.9664999 | 200 | 7 | 1995–2006 | 0.60 | M-v | 0 | MPC | 45755 | (63990) |
| (64026) | 14.8 | 0.15 | 20060922 | 112.90381 | 84.33606 | 221.17044 | 11.47343 | 0.0617116 | 2.7160948 | 276 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 45769 | (64026) |
| (64040) | 15.2 | 0.15 | 20060922 | 180.56009 | 174.97642 | 31.41574 | 5.96781 | 0.0936444 | 2.8692773 | 268 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 45774 | (64040) |
| (64049) | 15.7 | 0.15 | 20060922 | 256.38610 | 13.43210 | 143.70654 | 3.43888 | 0.1224840 | 2.7682861 | 172 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 45777 | (64049) |
| (64051) | 14.9 | 0.15 | 20060922 | 109.64278 | 195.60763 | 69.06859 | 2.95369 | 0.0548168 | 2.9652437 | 215 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 45778 | (64051) |
| (64067) | 14.1 | 0.15 | 20060922 | 133.08546 | 346.97457 | 294.69586 | 11.00256 | 0.1733000 | 2.6835879 | 260 | 7 | 1990–2006 | 0.55 | M-v | 0 | MPC | 45785 | (64067) |
| (64081) | 15.8 | 0.15 | 20060922 | 77.01720 | 287.87519 | 81.53115 | 0.65897 | 0.0974632 | 2.6324674 | 291 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 45791 | (64081) |
| (64090) | 14.5 | 0.15 | 20060922 | 48.51322 | 269.66905 | 119.93753 | 10.59891 | 0.1397991 | 2.6959904 | 224 | 7 | 1983–2006 | 0.58 | M-v | 0 | MPC | 45795 | (64090) |
| (64113) | 15.3 | 0.15 | 20060922 | 263.41037 | 267.46590 | 216.16415 | 9.87297 | 0.2310870 | 3.0808235 | 202 | 7 | 1990–2006 | 0.60 | M-v | 0 | MPC | 45805 | (64113) |
| (64115) | 14.1 | 0.15 | 20060922 | 81.62312 | 135.02738 | 224.92541 | 12.17823 | 0.1886915 | 2.7000370 | 319 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 45806 | (64115) |
| (64139) | 14.7 | 0.15 | 20060922 | 319.41681 | 271.42272 | 261.34959 | 12.05447 | 0.1577747 | 2.6130768 | 197 | 7 | 1999–2006 | 0.60 | M-v | 1 | MPC | 45815 | (64139) |
| (64156) | 14.9 | 0.15 | 20060922 | 22.20584 | 51.04044 | 48.34690 | 13.47359 | 0.1299142 | 2.7152107 | 298 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 45821 | (64156) |
| (64158) | 14.0 | 0.15 | 20060922 | 47.50828 | 331.57802 | 50.09041 | 11.65445 | 0.1583750 | 2.9164718 | 238 | 7 | 1999–2006 | 0.48 | M-v | 0 | MPC | 45822 | (64158) |
| (64172) | 15.6 | 0.15 | 20060922 | 287.00683 | 247.66886 | 212.22179 | 1.70358 | 0.0296807 | 2.8888302 | 177 | 7 | 1991–2006 | 0.52 | M-v | 0 | MPC | 45827 | (64172) |
| (64186) | 14.6 | 0.15 | 20060922 | 77.87157 | 209.25939 | 103.36137 | 2.85064 | 0.1170291 | 2.8643166 | 304 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 45833 | (64186) |
| (64189) | 16.7 | 0.15 | 20060922 | 278.54920 | 214.06061 | 5.46236 | 1.01287 | 0.1335424 | 2.3913256 | 129 | 7 | 1997–2006 | 0.41 | M-v | 0 | MPC | 45835 | (64189) |
| (64191) | 16.2 | 0.15 | 20060922 | 246.30243 | 123.04298 | 19.69461 | 2.14158 | 0.0136614 | 2.8802115 | 134 | 7 | 1991–2006 | 0.48 | M-v | 0 | MPC | 45835 | (64191) |
| (64204) | 15.5 | 0.15 | 20060922 | 208.45053 | 333.13977 | 234.77170 | 8.43384 | 0.1025603 | 2.7291315 | 189 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 45841 | (64204) |
| (64206) | 15.2 | 0.15 | 20060922 | 91.64521 | 337.16219 | 334.96211 | 2.52484 | 0.0784417 | 2.7950870 | 246 | 7 | 1994–2006 | 0.56 | M-v | 0 | MPC | 45842 | (64206) |
| (64215) | 13.6 | 0.15 | 20060922 | 355.58764 | 73.60361 | 53.94615 | 13.62196 | 0.1292531 | 2.6752627 | 360 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45846 | (64215) |
| (64217) | 14.5 | 0.15 | 20060922 | 352.57969 | 357.62122 | 52.96537 | 3.87886 | 0.2020857 | 2.9898872 | 305 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45847 | (64217) |
| (64227) | 14.8 | 0.15 | 20060922 | 78.32728 | 88.79046 | 241.63650 | 8.77891 | 0.2160159 | 2.7586266 | 259 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 45851 | (64227) |
| (64238) | 14.8 | 0.15 | 20060922 | 333.38159 | 257.49448 | 159.38354 | 12.43338 | 0.0505933 | 2.9307333 | 218 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45855 | (64238) |
| (64245) | 14.1 | 0.15 | 20060922 | 48.09808 | 284.70652 | 117.25790 | 13.94009 | 0.0764455 | 2.6149546 | 241 | 7 | 1996–2006 | 0.51 | M-v | 0 | MPC | 45857 | (64245) |
| (64251) | 14.6 | 0.15 | 20060922 | 310.30648 | 276.38816 | 259.69780 | 13.93276 | 0.0997266 | 2.5687043 | 182 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 45860 | (64251) |
| (64268) | 16.3 | 0.15 | 20060922 | 345.61073 | 7.41951 | 71.57453 | 3.72391 | 0.0605973 | 2.6961892 | 60 | 7 | 1993–2006 | 0.64 | M-v | 0 | MPC | 45866 | (64268) |
| (64269) | 15.0 | 0.15 | 20060922 | 304.13227 | 95.31738 | 84.40240 | 12.13512 | 0.1639659 | 2.5604604 | 152 | 7 | 1999–2006 | 0.60 | M-v | 1 | MPC | 45866 | (64269) |
| (64285) | 15.4 | 0.15 | 20060922 | 79.33783 | 173.48156 | 177.12674 | 1.93591 | 0.0939701 | 2.7347397 | 231 | 7 | 1992–2006 | 0.51 | M-v | 0 | MPC | 45871 | (64285) |
| (64286) | 15.6 | 0.15 | 20060922 | 348.06867 | 208.56623 | 225.30022 | 11.11449 | 0.0274674 | 2.6763514 | 158 | 7 | 1991–2006 | 0.55 | M-v | 0 | MPC | 45872 | (64286) |
| (64291) | 15.7 | 0.15 | 20060922 | 343.24533 | 32.82407 | 88.60918 | 4.73261 | 0.0487949 | 2.7055096 | 128 | 7 | 1999–2006 | 0.52 | M-v | 0 | MPC | 45873 | (64291) |
| (64298) | 15.8 | 0.15 | 20060922 | 64.47959 | 258.12538 | 157.32418 | 4.52861 | 0.0623326 | 2.6195683 | 122 | 7 | 1995–2006 | 0.58 | M-v | 1 | MPC | 45876 | (64298) |
| (64309) | 14.2 | 0.15 | 20060922 | 132.27756 | 89.05360 | 147.32197 | 10.89518 | 0.0404897 | 2.9749525 | 187 | 9 | 1995–2006 | 0.58 | M-v | 0 | MPC | 45881 | (64309) |
| (64332) | 16.3 | 0.15 | 20060922 | 355.32744 | 147.36069 | 299.49432 | 1.05004 | 0.0334129 | 2.6272777 | 153 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 45889 | (64332) |
| (64333) | 15.3 | 0.15 | 20060922 | 247.18744 | 287.66566 | 219.96690 | 4.25678 | 0.0532467 | 2.8862310 | 175 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 45889 | (64333) |
| (64348) | 14.7 | 0.15 | 20060922 | 167.01283 | 135.98794 | 47.81287 | 6.85472 | 0.1016445 | 3.2224520 | 179 | 9 | 1987–2006 | 0.57 | M-v | 0 | MPC | 45895 | (64348) |
| (64350) | 15.9 | 0.15 | 20060922 | 283.30650 | 58.37850 | 74.82253 | 3.15649 | 0.0793935 | 2.8620741 | 148 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 45896 | (64350) |
| (64356) | 15.6 | 0.15 | 20060922 | 255.71055 | 134.56558 | 22.29870 | 2.02927 | 0.0183705 | 2.8403313 | 193 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 45899 | (64356) |
| (64357) | 15.1 | 0.15 | 20060922 | 204.07185 | 154.92366 | 79.85231 | 15.35194 | 0.1173878 | 2.6172045 | 129 | 7 | 1994–2006 | 0.53 | M-v | 1 | MPC | 45899 | (64357) |
| (64367) | 15.6 | 0.15 | 20060922 | 325.37556 | 269.85046 | 154.20985 | 2.20665 | 0.1247182 | 3.0494450 | 193 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 45903 | (64367) |
| (64373) | 15.6 | 0.15 | 20060922 | 182.03040 | 38.38687 | 198.19413 | 4.71433 | 0.0325709 | 2.7745215 | 135 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 45905 | (64373) |
| (64386) | 15.9 | 0.15 | 20060922 | 269.81442 | 278.35814 | 210.46311 | 2.22084 | 0.2753379 | 3.0566818 | 71 | 5 | 1995–2006 | 0.63 | M-v | 1 | MPC | 45909 | (64386) |
| (64398) | 15.0 | 0.15 | 20060922 | 349.33239 | 322.39944 | 72.95423 | 12.06002 | 0.0182545 | 3.0906195 | 166 | 7 | 1990–2006 | 0.59 | M-v | 0 | MPC | 45914 | (64398) |
| (64423) | 16.0 | 0.15 | 20060922 | 328.23519 | 256.82488 | 230.15536 | 2.33154 | 0.0218009 | 2.6794113 | 101 | 9 | 1992–2006 | 0.53 | M-v | 0 | MPC | 45922 | (64423) |
| (64424) | 14.8 | 0.15 | 20060922 | 22.01877 | 128.93136 | 269.11884 | 3.25870 | 0.0761374 | 2.8021468 | 220 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45922 | (64424) |
| (64431) | 14.5 | 0.15 | 20060922 | 83.62627 | 68.49021 | 280.77091 | 12.52198 | 0.0760658 | 2.7254980 | 105 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 45925 | (64431) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (64438) | 14.6 | 0.15 | 20060922 | 237.83812 | 272.16165 | 236.14944 | 12.70313 | 0.1752825 | 3.1574387 | 146 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 45927 | (64438) |
| (64445) | 15.9 | 0.15 | 20060922 | 203.55286 | 239.32861 | 46.33054 | 1.67720 | 0.0369407 | 2.5442253 | 195 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 45930 | (64445) |
| (64469) | 16.2 | 0.15 | 20060922 | 47.00136 | 43.20135 | 328.97081 | 0.80122 | 0.1023865 | 2.8170947 | 105 | 7 | 1996–2006 | 0.49 | M-v | 0 | MPC | 45939 | (64469) |
| (64490) | 14.7 | 0.15 | 20060922 | 260.31844 | 288.06579 | 243.51608 | 7.06541 | 0.0255370 | 2.7476366 | 177 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 45947 | (64490) |
| (64495) | 14.7 | 0.15 | 20060922 | 286.75859 | 66.39771 | 45.20938 | 26.38781 | 0.2610084 | 3.0976289 | 116 | 5 | 1990–2006 | 0.60 | M-v | 1 | MPC | 45949 | (64495) |
| (64579) | 15.1 | 0.15 | 20060922 | 0.41536 | 21.05611 | 106.10039 | 13.83784 | 0.1369690 | 2.7608851 | 201 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 45977 | (64579) |
| (64593) | 14.8 | 0.15 | 20060922 | 294.59590 | 240.32026 | 290.59834 | 8.50587 | 0.1771827 | 2.7461333 | 143 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 45982 | (64593) |
| (64595) | 14.6 | 0.15 | 20060922 | 356.88977 | 341.51636 | 50.69252 | 11.80145 | 0.0890413 | 3.0995642 | 180 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 45983 | (64595) |
| (64627) | 15.1 | 0.15 | 20060922 | 17.18268 | 3.52868 | 25.91544 | 12.59729 | 0.0686431 | 2.9857819 | 84 | 7 | 1993–2006 | 0.59 | M-v | 0 | MPC | 45994 | (64627) |
| (64637) | 15.1 | 0.15 | 20060922 | 166.36661 | 156.92616 | 75.46708 | 12.32123 | 0.0913646 | 3.0212105 | 160 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 45997 | (64637) |
| (64644) | 15.3 | 0.15 | 20060922 | 79.17974 | 245.35540 | 80.31358 | 11.50346 | 0.0247039 | 2.9969161 | 151 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 45999 | (64644) |
| (64647) | 15.4 | 0.15 | 20060922 | 284.82419 | 295.77696 | 250.26582 | 2.33355 | 0.1083112 | 2.7236212 | 214 | 7 | 1999–2006 | 0.62 | M-v | 0 | MPC | 46000 | (64647) |
| (64649) | 15.6 | 0.15 | 20060922 | 241.58363 | 133.21248 | 91.95338 | 8.01985 | 0.0476163 | 2.7073629 | 150 | 7 | 1999–2006 | 0.63 | M-v | 0 | MPC | 46001 | (64649) |
| (64651) | 14.6 | 0.15 | 20060922 | 65.51595 | 278.67455 | 112.69073 | 16.33759 | 0.0836916 | 2.7521162 | 159 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 46002 | (64651) |
| (64682) | 14.7 | 0.15 | 20060922 | 59.68084 | 270.77689 | 101.70503 | 10.73281 | 0.1943965 | 2.7284868 | 188 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 46013 | (64682) |
| (64688) | 14.4 | 0.15 | 20060922 | 296.55417 | 332.16634 | 135.19485 | 7.87337 | 0.0788788 | 3.0083472 | 141 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 46015 | (64688) |
| (64708) | 14.4 | 0.15 | 20060922 | 294.07377 | 199.22345 | 274.06567 | 9.06048 | 0.0390165 | 2.9813361 | 132 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 46022 | (64708) |
| (64731) | 14.2 | 0.15 | 20060922 | 242.00754 | 91.98492 | 88.50196 | 10.38242 | 0.0297699 | 3.1738392 | 166 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 46031 | (64731) |
| (64748) | 15.6 | 0.15 | 20060922 | 252.34982 | 42.48666 | 131.38617 | 3.32869 | 0.2034516 | 3.0824427 | 129 | 7 | 1996–2006 | 0.48 | M-v | 0 | MPC | 46036 | (64748) |
| (64787) | 16.0 | 0.15 | 20060922 | 264.79628 | 343.82231 | 231.12814 | 0.99281 | 0.0724582 | 2.6077515 | 125 | 7 | 1999–2006 | 0.55 | M-v | 1 | MPC | 46049 | (64787) |
| (64796) | 15.5 | 0.15 | 20060922 | 43.17078 | 285.22734 | 110.68077 | 10.01450 | 0.1716057 | 2.7719117 | 128 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 46052 | (64796) |
| (64802) | 15.7 | 0.15 | 20060922 | 303.28336 | 57.27464 | 125.75195 | 7.20066 | 0.0363469 | 2.6657654 | 105 | 7 | 1999–2006 | 0.63 | M-v | 1 | MPC | 46053 | (64802) |
| (64809) | 14.5 | 0.15 | 20060922 | 138.48851 | 238.54229 | 114.46958 | 15.71136 | 0.1271744 | 2.6108885 | 121 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 46056 | (64809) |
| (64847) | 15.6 | 0.15 | 20060922 | 143.56086 | 221.41529 | 97.82066 | 6.27354 | 0.0871158 | 2.7805920 | 81 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 46068 | (64847) |
| (64866) | 15.7 | 0.15 | 20060922 | 192.80604 | 359.48785 | 283.90733 | 2.65203 | 0.0398342 | 2.6715983 | 158 | 7 | 1997–2006 | 0.56 | M-v | 0 | MPC | 46074 | (64866) |
| (64899) | 14.4 | 0.15 | 20060922 | 339.16997 | 8.94867 | 103.50955 | 18.18210 | 0.0350543 | 2.9198240 | 145 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 46085 | (64899) |
| (64914) | 15.5 | 0.15 | 20060922 | 242.21015 | 126.72526 | 57.93761 | 7.32270 | 0.0598374 | 3.1106526 | 69 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 46090 | (64914) |
| (64934) | 14.0 | 0.15 | 20060922 | 322.68967 | 333.33827 | 150.59593 | 18.90272 | 0.0815005 | 3.1102192 | 177 | 6 | 1999–2005 | 0.61 | M-v | 0 | MPC | 46096 | (64934) |
| (64938) | 14.8 | 0.15 | 20060922 | 257.62242 | 349.20817 | 198.36783 | 0.68140 | 0.1337241 | 3.0691467 | 201 | 10 | 1992–2006 | 0.52 | M-v | 0 | MPC | 46097 | (64938) |
| (64946) | 15.7 | 0.15 | 20060922 | 314.32301 | 125.40263 | 35.29549 | 8.14389 | 0.1853769 | 2.7567252 | 138 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 46100 | (64946) |
| (64956) | 15.1 | 0.15 | 20060922 | 250.16746 | 324.50027 | 292.35945 | 17.05852 | 0.2528636 | 2.6041215 | 128 | 7 | 1994–2006 | 0.51 | M-v | 1 | MPC | 46103 | (64956) |
| (64958) | 14.3 | 0.15 | 20060922 | 262.58771 | 285.76543 | 209.15364 | 15.63454 | 0.2067848 | 3.1577147 | 128 | 7 | 1992–2006 | 0.50 | M-v | 0 | MPC | 46104 | (64958) |
| (64977) | 14.6 | 0.15 | 20060922 | 274.80591 | 347.53878 | 164.24328 | 11.24162 | 0.1817323 | 3.1723046 | 117 | 7 | 1993–2006 | 0.49 | M-v | 0 | MPC | 46110 | (64977) |
| (64987) | 15.2 | 0.15 | 20060922 | 196.89086 | 173.65092 | 124.19818 | 7.98645 | 0.1016855 | 2.7418827 | 157 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 46113 | (64987) |
| (65009) | 15.5 | 0.15 | 20060922 | 64.97722 | 286.45201 | 126.40088 | 12.50604 | 0.0647201 | 2.6741968 | 82 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 46120 | (65009) |
| (65011) | 15.7 | 0.15 | 20060922 | 317.60574 | 41.35289 | 120.18183 | 10.07030 | 0.0627527 | 2.7301343 | 139 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 46120 | (65011) |
| (65028) | 15.2 | 0.15 | 20060922 | 201.50179 | 144.12515 | 111.31763 | 11.41649 | 0.0497729 | 2.9807360 | 145 | 7 | 1998–2006 | 0.62 | M-v | 0 | MPC | 46126 | (65028) |
| (65060) | 15.2 | 0.15 | 20060922 | 134.93642 | 228.75604 | 89.56180 | 3.25208 | 0.0537988 | 3.0130121 | 218 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 46136 | (65060) |
| (65077) | 15.0 | 0.15 | 20060922 | 196.14911 | 180.76554 | 73.15455 | 9.13379 | 0.0875716 | 3.1957750 | 111 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 46141 | (65077) |
| (65081) | 14.4 | 0.15 | 20060922 | 217.71461 | 92.89272 | 135.60432 | 11.72614 | 0.0541692 | 3.1190942 | 218 | 6 | 1999–2005 | 0.59 | M-v | 0 | MPC | 46143 | (65081) |
| (65116) | 15.0 | 0.15 | 20060922 | 184.34103 | 143.96915 | 100.70381 | 2.29549 | 0.0395841 | 3.2695120 | 190 | 7 | 1997–2006 | 0.49 | M-v | 0 | MPC | 46154 | (65116) |
| (65123) | 15.0 | 0.15 | 20060922 | 296.18611 | 74.18176 | 96.08370 | 11.53484 | 0.0386419 | 2.9665982 | 121 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 46157 | (65123) |
| (65128) | 14.9 | 0.15 | 20060922 | 246.47392 | 132.89391 | 54.41909 | 8.03640 | 0.0579705 | 3.2290271 | 91 | 7 | 1997–2006 | 0.60 | M-v | 0 | MPC | 46158 | (65128) |
| (65138) | 15.5 | 0.15 | 20060922 | 357.13985 | 330.97404 | 150.75510 | 2.35654 | 0.0565188 | 2.9971882 | 170 | 9 | 1971–2006 | 0.55 | M-v | 0 | MPC | 46161 | (65138) |
| (65141) | 13.5 | 0.15 | 20060922 | 182.29294 | 122.25501 | 166.10784 | 22.68088 | 0.0379337 | 3.1903208 | 294 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 46162 | (65141) |
| (65145) | 13.5 | 0.15 | 20060922 | 57.13629 | 219.38016 | 136.40029 | 10.01887 | 0.0172281 | 3.4728219 | 143 | 7 | 1999–2006 | 0.63 | M-v | 0 | MPC | 46163 | (65145) |
| (65146) | 14.3 | 0.15 | 20060922 | 126.48787 | 217.82535 | 96.64962 | 10.59464 | 0.0663942 | 3.1717153 | 109 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 46164 | (65146) |
| (65160) | 15.6 | 0.15 | 20060922 | 203.22754 | 277.75173 | 17.27471 | 3.02591 | 0.0843582 | 2.7765851 | 129 | 7 | 1998–2006 | 0.52 | M-v | 0 | MPC | 46168 | (65160) |
| (65170) | 14.5 | 0.15 | 20060922 | 354.15245 | 316.06517 | 134.79030 | 16.01849 | 0.0506724 | 3.1928063 | 94 | 6 | 1996–2005 | 0.63 | M-v | 1 | MPC | 46171 | (65170) |
| (65212) | 16.9 | 0.15 | 20060922 | 266.93309 | 352.56854 | 136.76205 | 28.49705 | 0.0512637 | 1.9831291 | 112 | 6 | 1991–2006 | 0.59 | M-v | 1 | MPC | 46183 | (65212) |
| (65237) | 15.4 | 0.15 | 20060922 | 251.92381 | 135.06798 | 128.52057 | 5.12205 | 0.2380079 | 3.0496411 | 129 | 9 | 1991–2006 | 0.56 | M-v | 0 | MPC | 46190 | (65237) |
| (65347) | 16.2 | 0.15 | 20060922 | 73.29751 | 89.35453 | 192.73548 | 5.48384 | 0.0918186 | 2.3697602 | 170 | 7 | 1994–2006 | 0.49 | M-v | 0 | MPC | 46219 | (65347) |
| (65428) | 14.4 | 0.15 | 20060922 | 351.06834 | 146.43873 | 271.75420 | 12.74602 | 0.1526805 | 2.5339995 | 196 | 8 | 1971–2006 | 0.52 | M-v | 1 | MPC | 46244 | (65428) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (65430) | 16.1 | 0.15 | 20060922 | 0.97699 | 124.48927 | 303.04381 | 12.54407 | 0.1411157 | 2.4250941 | 152 | 7 | 1992–2006 | 0.56 | M-v | 1 | MPC | 46245 | (65430) |
| (65436) | 15.9 | 0.15 | 20060922 | 15.74888 | 324.68453 | 121.53171 | 5.88738 | 0.1662788 | 2.3429535 | 116 | 7 | 1995–2006 | 0.49 | M-v | 1 | MPC | 46247 | (65436) |
| (65444) | 15.7 | 0.15 | 20060922 | 99.22482 | 220.92425 | 110.93372 | 7.53043 | 0.1565592 | 2.3197519 | 112 | 7 | 1995–2006 | 0.50 | M-v | 1 | MPC | 46249 | (65444) |
| (65460) | 15.2 | 0.15 | 20060922 | 270.62627 | 338.03704 | 144.98961 | 10.77576 | 0.1171042 | 2.6663828 | 147 | 7 | 1995–2006 | 0.60 | M-v | 0 | MPC | 46254 | (65460) |
| (65471) | 14.7 | 0.15 | 20060922 | 162.88087 | 237.05513 | 323.90686 | 8.30915 | 0.1113532 | 3.2010916 | 110 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 46256 | (65471) |
| (65477) | 14.9 | 0.15 | 20060922 | 193.05105 | 62.30037 | 124.73561 | 10.85946 | 0.0841982 | 2.9836713 | 189 | 7 | 1999–2006 | 0.63 | M-v | 0 | MPC | 46258 | (65477) |
| (65482) | 15.0 | 0.15 | 20060922 | 295.21748 | 10.35123 | 167.92875 | 11.46420 | 0.1476358 | 2.6181304 | 191 | 7 | 1999–2006 | 0.64 | M-v | 1 | MPC | 46259 | (65482) |
| (65504) | 15.4 | 0.15 | 20060922 | 97.41653 | 49.47582 | 268.84013 | 5.78713 | 0.1376637 | 2.4276788 | 188 | 9 | 1960–2006 | 0.54 | M-v | 1 | MPC | 46266 | (65504) |
| (65532) | 15.2 | 0.15 | 20060922 | 94.43761 | 4.72008 | 3.94097 | 2.07041 | 0.0643553 | 2.9054527 | 203 | 7 | 1960–2006 | 0.60 | M-v | 0 | MPC | 46276 | (65532) |
| (65535) | 16.2 | 0.15 | 20060922 | 1.23794 | 345.58165 | 90.91355 | 3.24291 | 0.1755228 | 2.4277483 | 142 | 7 | 1960–2006 | 0.58 | M-v | 1 | MPC | 46277 | (65535) |
| (65536) | 14.8 | 0.15 | 20060922 | 62.23183 | 312.85077 | 44.67573 | 5.63380 | 0.1278937 | 2.9296679 | 180 | 7 | 1960–2006 | 0.61 | M-v | 0 | MPC | 46278 | (65536) |
| (65543) | 15.5 | 0.15 | 20060922 | 256.57725 | 269.73758 | 299.98471 | 3.17407 | 0.0531490 | 2.7524867 | 116 | 7 | 1971–2006 | 0.64 | M-v | 1 | MPC | 46281 | (65543) |
| (65552) | 16.6 | 0.15 | 20060922 | 294.49769 | 301.86377 | 32.28334 | 0.79072 | 0.1481888 | 2.1110073 | 214 | 6 | 1973–2006 | 0.66 | M-v | 1 | MPC | 46284 | (65552) |
| (65570) | 15.9 | 0.15 | 20060922 | 5.23531 | 15.05752 | 15.80249 | 7.57479 | 0.0456285 | 2.7872814 | 129 | 7 | 1973–2006 | 0.62 | M-v | 0 | MPC | 46290 | (65570) |
| (65585) | 14.4 | 0.15 | 20060922 | 49.80047 | 11.58121 | 330.00284 | 13.24083 | 0.1362124 | 3.0829858 | 117 | 7 | 1973–2006 | 0.66 | M-v | 1 | MPC | 46295 | (65585) |
| (65633) | 13.9 | 0.15 | 20060922 | 193.59508 | 170.52993 | 55.50048 | 15.26363 | 0.1444794 | 3.1794291 | 178 | 7 | 1977–2006 | 0.59 | M-v | 1 | MPC | 46312 | (65633) |
| (65773) | 15.4 | 0.15 | 20060922 | 319.50459 | 157.39686 | 269.17795 | 9.33340 | 0.0817654 | 2.9696449 | 106 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 48443 | (65773) |
| (65787) | 16.2 | 0.15 | 20060922 | 222.77769 | 222.17790 | 309.42727 | 1.54748 | 0.1354079 | 2.3853936 | 167 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 48447 | (65787) |
| (65795) | 15.9 | 0.15 | 20060922 | 263.27706 | 96.10150 | 14.70921 | 0.69602 | 0.1695387 | 3.1964308 | 73 | 5 | 1995–2006 | 0.46 | M-v | 0 | MPC | 48450 | (65795) |
| (65800) | 15.8 | 0.15 | 20060922 | 352.46009 | 316.79202 | 65.63779 | 7.10907 | 0.1299025 | 2.3969664 | 202 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 48452 | (65800) |
| (65805) | 14.9 | 0.15 | 20060922 | 120.28560 | 225.03598 | 47.07683 | 3.54909 | 0.1060264 | 2.6211311 | 213 | 7 | 1996–2006 | 0.61 | M-v | 0 | MPC | 48453 | (65805) |
| (65814) | 14.6 | 0.15 | 20060922 | 42.25868 | 70.04455 | 9.28143 | 22.15377 | 0.0459817 | 2.6465204 | 165 | 7 | 1996–2006 | 0.56 | M-v | 1 | MPC | 48456 | (65814) |
| (65898) | 15.1 | 0.15 | 20060922 | 328.65178 | 27.99259 | 144.02654 | 14.25767 | 0.1038853 | 2.7126657 | 163 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 48485 | (65898) |
| (65910) | 16.2 | 0.15 | 20060922 | 205.38410 | 177.12458 | 331.47423 | 3.92348 | 0.1942168 | 3.1319184 | 76 | 7 | 1990–2006 | 0.65 | M-v | 0 | MPC | 48490 | (65910) |
| (65922) | 16.4 | 0.15 | 20060922 | 316.01761 | 228.15590 | 214.64349 | 3.76617 | 0.0114854 | 2.1977504 | 116 | 9 | 1993–2006 | 0.57 | M-v | 1 | MPC | 48494 | (65922) |
| (65947) | 15.4 | 0.15 | 20060922 | 235.43992 | 302.75581 | 313.26592 | 5.74793 | 0.2509269 | 2.8322425 | 144 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 48504 | (65947) |
| (65966) | 16.3 | 0.15 | 20060922 | 143.05571 | 162.57681 | 55.82942 | 5.54196 | 0.0798229 | 2.3053227 | 258 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 48511 | (65966) |
| (66078) | 13.6 | 0.15 | 20060922 | 293.99385 | 240.78635 | 340.11700 | 16.49518 | 0.0497773 | 3.1423534 | 215 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 48552 | (66078) |
| (66104) | 16.6 | 0.15 | 20060922 | 24.85455 | 312.43134 | 37.98863 | 5.08107 | 0.2352601 | 2.4878350 | 210 | 7 | 1992–2006 | 0.46 | M-v | 1 | MPC | 48561 | (66104) |
| (66120) | 15.8 | 0.15 | 20060922 | 13.98582 | 304.50244 | 133.87505 | 3.07249 | 0.2076168 | 2.3948735 | 129 | 7 | 1992–2006 | 0.59 | M-v | 1 | MPC | 48566 | (66120) |
| (66146) | 14.7 | 0.15 | 20060922 | 277.80793 | 84.56223 | 102.31940 | 5.40997 | 0.4838067 | 0.7872713 | 559 | 10 | 1982–2006 | 0.46 | M-v | 3 | MPC | 04096 | (66146) |
| (66175) | 16.0 | 0.15 | 20060922 | 99.62443 | 194.12235 | 167.10817 | 2.69696 | 0.2166948 | 2.3699543 | 224 | 7 | 1997–2006 | 0.54 | M-v | 1 | MPC | 48585 | (66175) |
| (66181) | 16.2 | 0.15 | 20060922 | 24.44384 | 53.89380 | 36.50056 | 3.22010 | 0.1376756 | 2.3816496 | 118 | 7 | 1994–2006 | 0.52 | M-v | 0 | MPC | 48587 | (66181) |
| (66182) | 15.3 | 0.15 | 20060922 | 352.09087 | 330.05545 | 64.41461 | 2.03102 | 0.0260266 | 2.5620614 | 186 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 48587 | (66182) |
| (66184) | 15.3 | 0.15 | 20060922 | 81.81601 | 273.64337 | 107.31796 | 4.25382 | 0.1945420 | 2.3097739 | 189 | 7 | 1977–2006 | 0.58 | M-v | 1 | MPC | 48588 | (66184) |
| (66187) | 13.0 | 0.15 | 20060922 | 330.01855 | 175.05878 | 308.21268 | 7.68153 | 0.1534437 | 4.0083833 | 322 | 9 | 1990–2006 | 0.54 | M-v | 0 | MPC | 48589 | (66187) |
| (66190) | 15.9 | 0.15 | 20060922 | 30.18918 | 107.65425 | 312.59231 | 5.36358 | 0.1213270 | 2.4615552 | 183 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 48590 | (66190) |
| (66202) | 14.1 | 0.15 | 20060922 | 79.62460 | 348.88613 | 331.34528 | 14.36147 | 0.1156118 | 2.5995797 | 284 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 48595 | (66202) |
| (66213) | 15.8 | 0.15 | 20060922 | 222.98987 | 244.81126 | 325.51243 | 1.51766 | 0.1402906 | 2.6508262 | 87 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 48599 | (66213) |
| (66214) | 14.8 | 0.15 | 20060922 | 292.02089 | 357.41143 | 116.77281 | 12.55776 | 0.1268768 | 2.6656731 | 128 | 7 | 1999–2006 | 0.60 | M-v | 1 | MPC | 48599 | (66214) |
| (66237) | 14.8 | 0.15 | 20060922 | 307.04627 | 300.68308 | 147.86605 | 4.94446 | 0.0788087 | 2.7568566 | 175 | 7 | 1994–2006 | 0.60 | M-v | 0 | MPC | 48608 | (66237) |
| (66241) | 16.2 | 0.15 | 20060922 | 170.78299 | 231.89073 | 22.22555 | 3.76853 | 0.0618954 | 2.7790979 | 70 | 7 | 1994–2006 | 0.53 | M-v | 1 | MPC | 48610 | (66241) |
| (66274) | 15.7 | 0.15 | 20060922 | 297.74545 | 286.25212 | 250.38513 | 10.21271 | 0.2315021 | 2.6525196 | 188 | 7 | 1999–2006 | 0.63 | M-v | 1 | MPC | 48624 | (66274) |
| (66389) | 16.2 | 0.15 | 20060922 | 129.28308 | 61.10388 | 200.34460 | 1.04656 | 0.0159064 | 2.9067934 | 128 | 7 | 1999–2006 | 0.48 | M-v | 0 | MPC | 48673 | (66389) |
| (66392) | 15.8 | 0.15 | 20060922 | 312.69355 | 299.69389 | 249.36387 | 2.09485 | 0.1061506 | 2.5928850 | 172 | 7 | 1999–2006 | 0.54 | M-v | 1 | MPC | 48677 | (66392) |
| (66563) | 16.4 | 0.15 | 20060922 | 30.18726 | 49.73538 | 327.87999 | 3.50462 | 0.1334369 | 2.1932886 | 154 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 48739 | (66563) |
| (66593) | 15.7 | 0.15 | 20060922 | 134.89539 | 286.70364 | 328.60536 | 4.53810 | 0.1313164 | 2.2060313 | 138 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 48750 | (66593) |
| (66667) | 16.0 | 0.15 | 20060922 | 86.18222 | 102.19174 | 204.15653 | 3.52255 | 0.1688827 | 2.2295200 | 225 | 7 | 1998–2006 | 0.48 | M-v | 1 | MPC | 48777 | (66667) |
| (66692) | 17.1 | 0.15 | 20060922 | 198.73242 | 225.74843 | 354.81715 | 2.71590 | 0.1507473 | 2.2163583 | 80 | 7 | 1998–2006 | 0.57 | M-v | 0 | MPC | 48787 | (66692) |
| (66720) | 16.9 | 0.15 | 20060922 | 66.18116 | 325.14544 | 9.89535 | 8.16137 | 0.1872073 | 2.2364154 | 56 | 6 | 1998–2005 | 0.54 | M-v | 1 | MPC | 48796 | (66720) |
| (66731) | 14.3 | 0.15 | 20060922 | 262.00229 | 17.84676 | 208.90645 | 10.38280 | 0.0497037 | 2.9866699 | 225 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 48800 | (66731) |
| (66762) | 14.7 | 0.15 | 20060922 | 249.47550 | 300.58576 | 341.19459 | 14.98897 | 0.3016444 | 2.7791611 | 129 | 7 | 1997–2006 | 0.52 | M-v | 1 | MPC | 48811 | (66762) |
| (66822) | 15.4 | 0.15 | 20060922 | 177.52984 | 126.64072 | 158.28226 | 0.86253 | 0.1426816 | 3.1499419 | 116 | 6 | 1999–2006 | 0.46 | M-v | 0 | MPC | 48830 | (66822) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (66972) | 16.1 | 0.15 | 20060922 | 239.61519 | 304.62347 | 221.01184 | 5.55995 | 0.0540562 | 2.3544391 | 175 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 48885 | (66972) |
| (67019) | 15.2 | 0.15 | 20060922 | 114.96290 | 3.34515 | 262.05505 | 5.44321 | 0.0953625 | 2.3978505 | 121 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 48901 | (67019) |
| (67040) | 14.6 | 0.15 | 20060922 | 112.27319 | 198.36198 | 41.28252 | 8.64636 | 0.2038387 | 2.5689271 | 190 | 7 | 1994–2006 | 0.51 | M-v | 1 | MPC | 48908 | (67040) |
| (67073) | 15.2 | 0.15 | 20060922 | 44.21854 | 292.43296 | 44.22775 | 2.89391 | 0.2522563 | 2.3321925 | 222 | 8 | 1995–2006 | 0.61 | M-v | 1 | MPC | 48919 | (67073) |
| (67134) | 12.9 | 0.15 | 20060922 | 328.27202 | 62.15336 | 115.36363 | 17.07082 | 0.0523398 | 3.2240295 | 277 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 48939 | (67134) |
| (67174) | 15.3 | 0.15 | 20060922 | 205.85181 | 211.79587 | 350.35016 | 2.02269 | 0.1388461 | 2.4387795 | 159 | 7 | 1998–2006 | 0.48 | M-v | 0 | MPC | 48953 | (67174) |
| (67180) | 14.6 | 0.15 | 20060922 | 242.11224 | 252.51501 | 329.26438 | 4.41250 | 0.1444245 | 2.3372471 | 404 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 48955 | (67180) |
| (67196) | 16.0 | 0.15 | 20060922 | 263.56694 | 78.88915 | 341.69498 | 2.79854 | 0.0921703 | 2.6379021 | 99 | 7 | 1996–2006 | 0.61 | M-v | 0 | MPC | 48960 | (67196) |
| (67203) | 13.8 | 0.15 | 20060922 | 241.08551 | 87.68999 | 119.23069 | 4.17788 | 0.1025125 | 4.0095331 | 60 | 6 | 1996–2005 | 0.70 | M-v | 1 | MPC | 48963 | (67203) |
| (67219) | 14.4 | 0.15 | 20060922 | 55.28409 | 49.69357 | 277.63789 | 2.36440 | 0.2682984 | 2.5973680 | 226 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 48967 | (67219) |
| (67223) | 15.4 | 0.15 | 20060922 | 239.11452 | 125.61068 | 111.49983 | 7.37483 | 0.0801109 | 2.2950161 | 218 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 48969 | (67223) |
| (67230) | 14.5 | 0.15 | 20060922 | 252.08857 | 136.55348 | 101.09933 | 24.57148 | 0.1669169 | 2.3562420 | 167 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 48971 | (67230) |
| (67252) | 15.7 | 0.15 | 20060922 | 206.27366 | 351.99379 | 278.80504 | 6.08090 | 0.0873151 | 2.3847739 | 224 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 48977 | (67252) |
| (67262) | 14.9 | 0.15 | 20060922 | 134.64360 | 209.10777 | 65.61851 | 3.03896 | 0.0592252 | 2.5340943 | 304 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 48980 | (67262) |
| (67264) | 15.5 | 0.15 | 20060922 | 253.05920 | 316.00877 | 247.29435 | 4.64811 | 0.1290890 | 2.3944303 | 180 | 7 | 1998–2006 | 0.48 | M-v | 1 | MPC | 48981 | (67264) |
| (67269) | 14.6 | 0.15 | 20060922 | 324.98306 | 26.21391 | 78.96269 | 14.07155 | 0.1228815 | 2.4616515 | 238 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 48982 | (67269) |
| (67273) | 14.3 | 0.15 | 20060922 | 88.11310 | 223.78860 | 92.82949 | 14.40508 | 0.1765612 | 2.5737987 | 143 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 48984 | (67273) |
| (67275) | 15.1 | 0.15 | 20060922 | 29.44616 | 332.43685 | 49.35845 | 3.02634 | 0.1159079 | 2.5285691 | 127 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 48985 | (67275) |
| (67280) | 15.5 | 0.15 | 20060922 | 57.94484 | 161.19356 | 163.08262 | 15.37643 | 0.1413955 | 2.6699954 | 189 | 7 | 1991–2006 | 0.59 | M-v | 0 | MPC | 48986 | (67280) |
| (67288) | 14.8 | 0.15 | 20060922 | 16.19096 | 147.49370 | 206.40449 | 11.24395 | 0.1079176 | 2.7082651 | 223 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 48989 | (67288) |
| (67297) | 15.9 | 0.15 | 20060922 | 244.53505 | 157.27219 | 102.24554 | 5.98850 | 0.1995869 | 2.3541068 | 133 | 7 | 1996–2006 | 0.46 | M-v | 0 | MPC | 48992 | (67297) |
| (67303) | 14.9 | 0.15 | 20060922 | 61.32428 | 308.77446 | 46.60300 | 15.29837 | 0.1590008 | 2.5744769 | 116 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 48994 | (67303) |
| (67317) | 15.9 | 0.15 | 20060922 | 303.67947 | 272.11801 | 207.67122 | 7.84981 | 0.0520826 | 2.5402935 | 87 | 7 | 1996–2006 | 0.55 | M-v | 1 | MPC | 48998 | (67317) |
| (67329) | 15.8 | 0.15 | 20060922 | 52.03477 | 284.55444 | 49.37844 | 15.44535 | 0.1709044 | 2.6159612 | 168 | 6 | 1992–2006 | 0.56 | M-v | 1 | MPC | 49002 | (67329) |
| (67330) | 15.3 | 0.15 | 20060922 | 299.73212 | 38.66108 | 102.62097 | 15.14953 | 0.0527775 | 2.4375808 | 125 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 49002 | (67330) |
| (67341) | 14.7 | 0.15 | 20060922 | 216.47550 | 223.81654 | 271.46808 | 3.39596 | 0.0457101 | 2.7785914 | 179 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 49005 | (67341) |
| (67344) | 14.8 | 0.15 | 20060922 | 247.82402 | 126.32022 | 50.98325 | 5.87738 | 0.1106133 | 2.5720261 | 145 | 7 | 1993–2006 | 0.54 | M-v | 0 | MPC | 49007 | (67344) |
| (67346) | 15.0 | 0.15 | 20060922 | 290.70647 | 265.59208 | 249.44101 | 10.12651 | 0.2053778 | 2.4082819 | 200 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 49007 | (67346) |
| (67349) | 14.3 | 0.15 | 20060922 | 104.46711 | 159.58078 | 126.05874 | 10.05896 | 0.1385908 | 2.7535292 | 311 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 49008 | (67349) |
| (67351) | 15.9 | 0.15 | 20060922 | 170.50154 | 124.16912 | 106.79730 | 3.66260 | 0.0602736 | 2.6154071 | 173 | 7 | 1993–2006 | 0.59 | M-v | 0 | MPC | 49009 | (67351) |
| (67362) | 14.9 | 0.15 | 20060922 | 103.33992 | 182.95923 | 127.85049 | 13.48959 | 0.1207032 | 2.6609741 | 132 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 49012 | (67362) |
| (67437) | 14.1 | 0.15 | 20060922 | 69.44976 | 121.62755 | 209.93013 | 11.38338 | 0.1106456 | 3.0716938 | 233 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 49041 | (67437) |
| (67451) | 13.9 | 0.15 | 20060922 | 323.68284 | 186.69298 | 328.09763 | 12.00391 | 0.1380860 | 2.7073155 | 249 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 49046 | (67451) |
| (67482) | 15.4 | 0.15 | 20060922 | 79.67076 | 52.15343 | 270.01004 | 9.20530 | 0.1033642 | 2.9721556 | 167 | 7 | 1990–2006 | 0.55 | M-v | 0 | MPC | 49059 | (67482) |
| (67484) | 14.7 | 0.15 | 20060922 | 333.81738 | 230.37230 | 286.16875 | 10.67739 | 0.1151305 | 2.6583047 | 241 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 49059 | (67484) |
| (67527) | 15.3 | 0.15 | 20060922 | 159.23441 | 34.13136 | 220.47532 | 1.33605 | 0.0563642 | 2.9542174 | 133 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 49077 | (67527) |
| (67551) | 15.2 | 0.15 | 20060922 | 242.75548 | 204.85502 | 359.93671 | 14.96672 | 0.0765964 | 2.8512716 | 150 | 6 | 1995–2005 | 0.64 | M-v | 1 | MPC | 49086 | (67551) |
| (67575) | 15.0 | 0.15 | 20060922 | 58.93856 | 318.72261 | 20.53112 | 10.89683 | 0.1091175 | 3.1343890 | 151 | 7 | 1998–2006 | 0.47 | M-v | 0 | MPC | 49095 | (67575) |
| (67629) | 14.0 | 0.15 | 20060922 | 96.17181 | 289.84288 | 353.52994 | 13.36910 | 0.0335093 | 3.1056111 | 104 | 7 | 1998–2006 | 0.66 | M-v | 0 | MPC | 49118 | (67629) |
| (67694) | 14.5 | 0.15 | 20060922 | 116.19526 | 352.01157 | 269.97709 | 14.16173 | 0.0585439 | 3.0793494 | 101 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 49141 | (67694) |
| (67709) | 14.6 | 0.15 | 20060922 | 202.88507 | 142.97932 | 124.04226 | 12.43266 | 0.1580426 | 2.6798020 | 154 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 49146 | (67709) |
| (67916) | 15.0 | 0.15 | 20060922 | 158.01990 | 9.72415 | 282.42484 | 4.21776 | 0.1212849 | 3.2125887 | 144 | 7 | 1999–2006 | 0.62 | M-v | 0 | MPC | 49219 | (67916) |
| (67932) | 13.7 | 0.15 | 20060922 | 257.95865 | 281.84234 | 260.65732 | 15.58853 | 0.1419415 | 3.1598179 | 170 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 49224 | (67932) |
| (67965) | 13.7 | 0.15 | 20060922 | 9.05568 | 300.44449 | 144.83210 | 14.41709 | 0.1323214 | 3.0653189 | 189 | 7 | 1999–2006 | 0.60 | M-v | 0 | MPC | 49235 | (67965) |
| (67979) | 14.3 | 0.15 | 20060922 | 356.19054 | 24.36066 | 90.60826 | 12.98514 | 0.0259467 | 3.1175122 | 162 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 49240 | (67979) |
| (67997) | 13.6 | 0.15 | 20060922 | 313.15634 | 233.96391 | 306.07349 | 12.56156 | 0.1931879 | 3.1230002 | 190 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 49246 | (67997) |
| (68026) | 14.2 | 0.15 | 20060922 | 275.29012 | 100.56753 | 104.63565 | 3.00442 | 0.1321168 | 3.2197001 | 252 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 49256 | (68026) |
| (68060) | 14.0 | 0.15 | 20060922 | 298.89626 | 80.44331 | 121.87457 | 17.74146 | 0.0775882 | 3.1166285 | 171 | 7 | 1989–2006 | 0.48 | M-v | 0 | MPC | 49267 | (68060) |
| (68070) | 13.4 | 0.15 | 20060922 | 298.37171 | 78.26024 | 82.92990 | 16.36269 | 0.0492363 | 3.1404603 | 166 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 49271 | (68070) |
| (68137) | 14.3 | 0.15 | 20060922 | 278.98132 | 95.96989 | 125.59224 | 17.05591 | 0.0494116 | 3.1096141 | 139 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 49293 | (68137) |
| (68212) | 13.8 | 0.15 | 20060922 | 288.13818 | 115.68188 | 119.51729 | 12.30443 | 0.1605830 | 3.1635355 | 194 | 7 | 1999–2006 | 0.54 | M-v | 0 | MPC | 49318 | (68212) |
| (68216) | 16.4 | 0.15 | 20060922 | 330.59176 | 48.65366 | 18.26571 | 17.98123 | 0.3271253 | 1.3201807 | 318 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04096 | (68216) |
| (68277) | 15.8 | 0.15 | 20060922 | 120.54336 | 216.92327 | 28.78169 | 6.96268 | 0.0865573 | 2.4232906 | 156 | 7 | 1995–2006 | 0.51 | M-v | 1 | MPC | 49337 | (68277) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (68301) | 15.0 | 0.15 | 20060922 | 101.36100 | 215.62640 | 81.56010 | 8.26969 | 0.1245208 | 2.3258442 | 138 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 49345 | (68301) |
| (68318) | 15.1 | 0.15 | 20060922 | 71.78323 | 1.03410 | 303.31807 | 6.74246 | 0.0804879 | 2.3513984 | 84 | 8 | 1976–2006 | 0.62 | M-v | 1 | MPC | 04096 | (68318) |
| (68334) | 15.5 | 0.15 | 20060922 | 183.44461 | 299.14167 | 277.66904 | 5.14983 | 0.1265313 | 2.3328012 | 167 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 49354 | (68334) |
| (68343) | 15.4 | 0.15 | 20060922 | 110.77359 | 38.49617 | 233.36695 | 15.25583 | 0.2143164 | 2.5428423 | 152 | 7 | 1998–2006 | 0.47 | M-v | 1 | MPC | 49357 | (68343) |
| (68344) | 15.4 | 0.15 | 20060922 | 197.62444 | 330.05317 | 265.94613 | 6.39647 | 0.1364523 | 2.2753663 | 167 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 49357 | (68344) |
| (68351) | 14.8 | 0.15 | 20060922 | 28.78036 | 43.86577 | 337.46433 | 9.71025 | 0.1157240 | 2.5496079 | 79 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 49360 | (68351) |
| (68356) | 16.0 | 0.15 | 20060922 | 247.54333 | 290.17882 | 319.95745 | 5.75173 | 0.1606788 | 2.2001855 | 128 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 49361 | (68356) |
| (68357) | 15.5 | 0.15 | 20060922 | 181.17658 | 337.05562 | 259.83747 | 11.40815 | 0.0861214 | 2.5205641 | 149 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 49362 | (68357) |
| (68358) | 14.6 | 0.15 | 20060922 | 32.04335 | 138.14375 | 238.68234 | 10.26583 | 0.1329245 | 2.5933351 | 110 | 7 | 1999–2006 | 0.54 | M-v | 1 | MPC | 49362 | (68358) |
| (68362) | 14.7 | 0.15 | 20060922 | 338.57860 | 79.59380 | 2.72439 | 14.96493 | 0.0974734 | 2.5377694 | 112 | 6 | 1998–2005 | 0.62 | M-v | 1 | MPC | 49363 | (68362) |
| (68364) | 15.8 | 0.15 | 20060922 | 32.35399 | 156.12520 | 231.60709 | 1.66961 | 0.1788778 | 2.5345047 | 102 | 7 | 1998–2006 | 0.44 | M-v | 0 | MPC | 49364 | (68364) |
| (68376) | 15.9 | 0.15 | 20060922 | 65.48634 | 175.43652 | 123.87276 | 12.52491 | 0.0894150 | 2.7417968 | 134 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 49368 | (68376) |
| (68393) | 15.9 | 0.15 | 20060922 | 337.40524 | 258.44264 | 174.37697 | 11.88222 | 0.1860146 | 2.7186577 | 111 | 5 | 1995–2006 | 0.56 | M-v | 0 | MPC | 49374 | (68393) |
| (68404) | 14.3 | 0.15 | 20060922 | 26.42838 | 169.74677 | 204.98542 | 11.82318 | 0.3161360 | 2.6770544 | 114 | 7 | 1996–2006 | 0.52 | M-v | 1 | MPC | 49378 | (68404) |
| (68405) | 16.9 | 0.15 | 20060922 | 35.52246 | 226.65269 | 134.97181 | 10.23938 | 0.0975130 | 2.6958150 | 80 | 7 | 1991–2006 | 0.61 | M-v | 1 | MPC | 49378 | (68405) |
| (68408) | 14.7 | 0.15 | 20060922 | 131.99404 | 36.18079 | 276.36451 | 7.57059 | 0.1253190 | 2.5697916 | 181 | 7 | 1993–2006 | 0.48 | M-v | 0 | MPC | 49379 | (68408) |
| (68411) | 14.7 | 0.15 | 20060922 | 251.63799 | 310.53652 | 242.65113 | 7.69240 | 0.1499309 | 2.5402808 | 159 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 49380 | (68411) |
| (68415) | 15.2 | 0.15 | 20060922 | 158.46881 | 19.21816 | 274.71006 | 14.16374 | 0.1126035 | 2.5548617 | 147 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 49381 | (68415) |
| (68419) | 15.0 | 0.15 | 20060922 | 322.10114 | 309.96711 | 137.07060 | 5.71107 | 0.1398135 | 2.7532176 | 281 | 7 | 1994–2006 | 0.52 | M-v | 0 | MPC | 49383 | (68419) |
| (68433) | 15.5 | 0.15 | 20060922 | 59.80264 | 105.65046 | 240.55248 | 3.24091 | 0.0995714 | 2.7307200 | 134 | 7 | 1993–2006 | 0.45 | M-v | 0 | MPC | 49388 | (68433) |
| (68434) | 14.8 | 0.15 | 20060922 | 112.91308 | 218.63151 | 102.54029 | 5.41997 | 0.1516419 | 2.6770663 | 266 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 49389 | (68434) |
| (68436) | 15.8 | 0.15 | 20060922 | 283.15612 | 242.99514 | 229.39057 | 6.79965 | 0.1142982 | 2.7518356 | 101 | 7 | 1997–2006 | 0.59 | M-v | 0 | MPC | 49390 | (68436) |
| (68444) | 11.2 | 0.15 | 20060922 | 305.23999 | 85.55879 | 123.38480 | 30.00066 | 0.0281322 | 5.2560583 | 161 | 9 | 1994–2006 | 0.55 | M-v | 0 | MPC | 49392 | (68444) |
| (68459) | 15.9 | 0.15 | 20060922 | 323.47301 | 121.92082 | 307.58062 | 4.12727 | 0.1436155 | 2.7395226 | 124 | 6 | 1994–2006 | 0.48 | M-v | 0 | MPC | 49397 | (68459) |
| (68471) | 14.7 | 0.15 | 20060922 | 110.00555 | 66.81501 | 241.68733 | 7.30626 | 0.1373095 | 2.7254274 | 260 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 49401 | (68471) |
| (68476) | 14.9 | 0.15 | 20060922 | 16.44227 | 203.18033 | 190.92220 | 13.48362 | 0.2419071 | 2.6382706 | 69 | 5 | 1997–2004 | 0.56 | M-v | 1 | MPC | 49402 | (68476) |
| (68478) | 15.5 | 0.15 | 20060922 | 305.77842 | 201.44989 | 326.55597 | 3.86611 | 0.0875866 | 2.5406324 | 127 | 7 | 1993–2006 | 0.52 | M-v | 1 | MPC | 49403 | (68478) |
| (68479) | 14.7 | 0.15 | 20060922 | 177.46780 | 280.02809 | 42.13522 | 12.50863 | 0.0240647 | 2.5753316 | 196 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 49403 | (68479) |
| (68481) | 15.6 | 0.15 | 20060922 | 185.08208 | 316.52579 | 308.56521 | 3.70479 | 0.1456529 | 2.5446932 | 140 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 49404 | (68481) |
| (68487) | 15.5 | 0.15 | 20060922 | 270.21873 | 315.36031 | 200.98310 | 12.22003 | 0.1144657 | 2.6531572 | 81 | 7 | 1997–2006 | 0.62 | M-v | 0 | MPC | 49406 | (68487) |
| (68495) | 15.0 | 0.15 | 20060922 | 216.63024 | 281.52177 | 255.96697 | 7.81714 | 0.0981252 | 2.7578799 | 175 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 49409 | (68495) |
| (68496) | 14.6 | 0.15 | 20060922 | 40.30914 | 340.85107 | 61.69507 | 10.93164 | 0.2065524 | 2.6691102 | 281 | 7 | 1988–2006 | 0.51 | M-v | 0 | MPC | 49409 | (68496) |
| (68503) | 15.4 | 0.15 | 20060922 | 260.19556 | 283.85103 | 220.98040 | 8.55348 | 0.0320948 | 2.9233326 | 163 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 49412 | (68503) |
| (68516) | 16.3 | 0.15 | 20060922 | 336.97389 | 277.98853 | 140.39889 | 7.77362 | 0.0800611 | 2.9611438 | 85 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 49416 | (68516) |
| (68525) | 16.0 | 0.15 | 20060922 | 13.48421 | 177.12101 | 305.52264 | 2.53233 | 0.0727482 | 2.5810599 | 138 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 49419 | (68525) |
| (68528) | 14.6 | 0.15 | 20060922 | 67.49885 | 280.51352 | 26.64531 | 10.27240 | 0.0772003 | 3.0181831 | 237 | 7 | 1990–2006 | 0.57 | M-v | 0 | MPC | 49420 | (68528) |
| (68529) | 15.6 | 0.15 | 20060922 | 123.23145 | 333.08853 | 348.01613 | 2.53873 | 0.0907605 | 2.6678230 | 179 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 49420 | (68529) |
| (68531) | 16.2 | 0.15 | 20060922 | 312.30559 | 40.94087 | 112.01936 | 10.87668 | 0.1536040 | 2.7087312 | 92 | 7 | 1990–2006 | 0.62 | M-v | 1 | MPC | 49421 | (68531) |
| (68532) | 15.1 | 0.15 | 20060922 | 53.36359 | 291.26244 | 112.06876 | 15.06455 | 0.1135501 | 2.6683029 | 169 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 49421 | (68532) |
| (68542) | 16.1 | 0.15 | 20060922 | 271.83403 | 316.62327 | 255.55213 | 1.57795 | 0.1408325 | 2.5763259 | 109 | 7 | 1999–2006 | 0.57 | M-v | 1 | MPC | 49424 | (68542) |
| (68553) | 14.9 | 0.15 | 20060922 | 351.05534 | 71.63313 | 329.18452 | 18.20534 | 0.1092388 | 1.9308595 | 273 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 49428 | (68553) |
| (68574) | 15.9 | 0.15 | 20060922 | 231.79984 | 348.05798 | 271.59899 | 3.77869 | 0.1041795 | 2.5661740 | 132 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 49435 | (68574) |
| (68938) | 16.2 | 0.15 | 20060922 | 40.43325 | 320.89356 | 20.86286 | 2.66955 | 0.2040706 | 2.4265258 | 212 | 7 | 1997–2006 | 0.49 | M-v | 0 | MPC | 49548 | (68938) |
| (68976) | 17.3 | 0.15 | 20060922 | 43.59881 | 229.42627 | 102.13216 | 1.92287 | 0.2695979 | 2.4180332 | 117 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 49561 | (68976) |
| (68978) | 15.6 | 0.15 | 20060922 | 109.54858 | 224.11826 | 82.17807 | 6.68428 | 0.1090868 | 2.2469299 | 103 | 7 | 1998–2006 | 0.63 | M-v | 1 | MPC | 49561 | (68978) |
| (69003) | 14.5 | 0.15 | 20060922 | 316.38535 | 195.73715 | 259.71180 | 31.87590 | 0.1481415 | 2.6519703 | 96 | 7 | 1989–2006 | 0.47 | M-v | 1 | MPC | 49569 | (69003) |
| (69010) | 16.0 | 0.15 | 20060922 | 206.90778 | 357.44440 | 214.70770 | 7.40143 | 0.0650254 | 2.3516449 | 149 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 49572 | (69010) |
| (69026) | 14.3 | 0.15 | 20060922 | 280.49996 | 227.57338 | 266.14982 | 6.72512 | 0.1400962 | 2.5757347 | 285 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 49577 | (69026) |
| (69048) | 15.9 | 0.15 | 20060922 | 153.20155 | 239.71402 | 56.51340 | 3.11450 | 0.1254492 | 2.3597148 | 196 | 7 | 1997–2006 | 0.63 | M-v | 0 | MPC | 49583 | (69048) |
| (69049) | 15.0 | 0.15 | 20060922 | 274.97876 | 72.58693 | 80.87094 | 15.86515 | 0.0315996 | 2.5526695 | 125 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 49583 | (69049) |
| (69050) | 15.0 | 0.15 | 20060922 | 99.54787 | 5.83642 | 285.47765 | 10.94715 | 0.1462988 | 2.5437795 | 102 | 7 | 1985–2006 | 0.55 | M-v | 1 | MPC | 49584 | (69050) |
| (69055) | 15.3 | 0.15 | 20060922 | 218.47396 | 62.66021 | 102.28429 | 6.16292 | 0.1392905 | 3.0461897 | 118 | 7 | 1996–2006 | 0.62 | M-v | 0 | MPC | 49585 | (69055) |
| (69057) | 15.1 | 0.15 | 20060922 | 305.66196 | 10.54575 | 115.81570 | 7.57129 | 0.1522230 | 2.5279810 | 111 | 7 | 1998–2006 | 0.64 | M-v | 1 | MPC | 49586 | (69057) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (69063) | 15.3 | 0.15 | 20060922 | 52.03139 | 193.91759 | 137.25783 | 13.42381 | 0.2892837 | 2.4300750 | 132 | 7 | 1979–2006 | 0.63 | M-v | 1 | MPC | 49587 | (69063) |
| (69065) | 15.0 | 0.15 | 20060922 | 195.55049 | 25.52214 | 153.59047 | 13.55689 | 0.0927734 | 3.0820805 | 102 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 49588 | (69065) |
| (69072) | 15.3 | 0.15 | 20060922 | 33.85595 | 272.29918 | 141.13239 | 22.20332 | 0.0626446 | 2.5520156 | 93 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 49590 | (69072) |
| (69090) | 15.6 | 0.15 | 20060922 | 58.99882 | 332.94805 | 87.65725 | 8.09726 | 0.0647471 | 2.4153204 | 135 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 49595 | (69090) |
| (69107) | 15.1 | 0.15 | 20060922 | 151.60343 | 216.80389 | 119.51362 | 8.91107 | 0.2093211 | 2.5538395 | 101 | 7 | 1996–2006 | 0.53 | M-v | 1 | MPC | 49600 | (69107) |
| (69108) | 14.1 | 0.15 | 20060922 | 25.19492 | 217.77626 | 159.42072 | 22.51810 | 0.0932195 | 3.1523006 | 108 | 7 | 1994–2006 | 0.61 | M-v | 0 | MPC | 49601 | (69108) |
| (69114) | 14.1 | 0.15 | 20060922 | 301.08960 | 313.50070 | 133.60845 | 22.67800 | 0.0708808 | 3.1905530 | 208 | 9 | 1997–2006 | 0.53 | M-v | 0 | MPC | 49602 | (69114) |
| (69115) | 16.5 | 0.15 | 20060922 | 237.35057 | 16.01444 | 139.26614 | 1.38054 | 0.1667254 | 3.1250048 | 74 | 5 | 1992–2006 | 0.50 | M-v | 1 | MPC | 49602 | (69115) |
| (69122) | 14.8 | 0.15 | 20060922 | 300.03097 | 297.73780 | 160.11724 | 8.69721 | 0.0270254 | 3.1064087 | 88 | 7 | 1998–2006 | 0.64 | M-v | 0 | MPC | 49604 | (69122) |
| (69182) | 15.8 | 0.15 | 20060922 | 319.82106 | 232.26254 | 185.89295 | 13.36137 | 0.1586054 | 2.5956691 | 207 | 7 | 1960–2006 | 0.55 | M-v | 0 | MPC | 49621 | (69182) |
| (69209) | 15.2 | 0.15 | 20060922 | 176.16763 | 218.71974 | 38.56403 | 7.49122 | 0.0762493 | 2.3394802 | 243 | 7 | 1973–2006 | 0.65 | M-v | 0 | MPC | 49629 | (69209) |
| (69226) | 16.3 | 0.15 | 20060922 | 65.24573 | 259.29110 | 119.53775 | 6.94855 | 0.2317778 | 2.3216290 | 134 | 7 | 1977–2006 | 0.57 | M-v | 0 | MPC | 49634 | (69226) |
| (69537) | 15.6 | 0.15 | 20060922 | 357.66307 | 298.44084 | 292.30379 | 1.41499 | 0.1847689 | 2.7632531 | 124 | 7 | 1993–2006 | 0.67 | M-v | 1 | MPC | 50927 | (69537) |
| (69694) | 15.6 | 0.15 | 20060922 | 336.46742 | 93.66855 | 184.96760 | 12.42214 | 0.1124519 | 2.5138376 | 207 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 50987 | (69694) |
| (69701) | 16.3 | 0.15 | 20060922 | 103.94714 | 147.85027 | 237.22889 | 20.18292 | 0.1106614 | 1.7155718 | 133 | 5 | 1998–2005 | 0.61 | M-v | 1 | MPC | 50990 | (69701) |
| (69889) | 16.6 | 0.15 | 20060922 | 351.94324 | 205.51931 | 226.75281 | 1.92100 | 0.1085253 | 2.4264436 | 127 | 7 | 1992–2006 | 0.58 | M-v | 0 | MPC | 51064 | (69889) |
| (70139) | 14.6 | 0.15 | 20060922 | 22.32778 | 171.23181 | 121.84144 | 3.45726 | 0.1436839 | 2.3285726 | 414 | 7 | 1991–2006 | 0.54 | M-v | 0 | MPC | 51159 | (70139) |
| (70184) | 14.3 | 0.15 | 20060922 | 169.33880 | 13.56912 | 195.91992 | 7.00065 | 0.0908712 | 2.1956620 | 463 | 7 | 1992–2006 | 0.50 | M-v | 0 | MPC | 51178 | (70184) |
| (70527) | 15.5 | 0.15 | 20060922 | 311.93495 | 358.02364 | 304.76553 | 3.50651 | 0.1826297 | 2.5363093 | 177 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 70208 | (70527) |
| (70598) | 15.0 | 0.15 | 20060922 | 307.63355 | 338.28287 | 326.97971 | 13.87493 | 0.2514842 | 2.5447694 | 94 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 51343 | (70598) |
| (70659) | 15.3 | 0.15 | 20060922 | 332.45455 | 14.41620 | 247.96831 | 11.96487 | 0.2475387 | 2.5391443 | 116 | 6 | 1991–2006 | 0.63 | M-v | 1 | MPC | 51365 | (70659) |
| (71554) | 16.3 | 0.15 | 20060922 | 325.53655 | 281.94480 | 174.35143 | 5.99785 | 0.1055314 | 2.4472435 | 168 | 7 | 1992–2006 | 0.51 | M-v | 0 | MPC | 51694 | (71554) |
| (71737) | 15.2 | 0.15 | 20060922 | 282.66512 | 211.06909 | 278.20752 | 17.72220 | 0.0806800 | 1.9597442 | 122 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 51757 | (71737) |
| (72440) | 13.1 | 0.15 | 20060922 | 315.74830 | 106.99405 | 94.00102 | 17.23555 | 0.0715230 | 3.2057116 | 189 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 52014 | (72440) |
| (72531) | 13.8 | 0.15 | 20060922 | 327.02811 | 336.53504 | 255.27628 | 6.57516 | 0.2231516 | 3.0384486 | 312 | 6 | 1999–2006 | 0.60 | M-v | 0 | MPC | 52045 | (72531) |
| (72919) | 15.6 | 0.15 | 20060922 | 306.51641 | 354.66296 | 97.83819 | 4.95689 | 0.0661431 | 2.8010657 | 128 | 8 | 1992–2006 | 0.52 | M-v | 0 | MPC | 52174 | (72919) |
| (73075) | 16.7 | 0.15 | 20060922 | 333.85663 | 66.03564 | 26.00506 | 21.97086 | 0.1177990 | 1.9389008 | 167 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 52229 | (73075) |
| (73088) | 15.9 | 0.15 | 20060922 | 22.16675 | 269.79411 | 69.73592 | 3.41796 | 0.1325398 | 2.2084559 | 315 | 7 | 1960–2006 | 0.53 | M-v | 0 | MPC | 52234 | (73088) |
| (73167) | 16.7 | 0.15 | 20060922 | 82.59483 | 17.99696 | 233.87370 | 7.71213 | 0.1464900 | 2.1975758 | 84 | 6 | 1996–2006 | 0.56 | M-v | 1 | MPC | 52259 | (73167) |
| (73511) | 13.2 | 0.15 | 20060922 | 61.15836 | 182.25641 | 104.04530 | 15.93710 | 0.0927231 | 3.1345771 | 121 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 52365 | (73511) |
| (73580) | 16.7 | 0.15 | 20060922 | 9.48166 | 312.69573 | 346.50313 | 4.14178 | 0.1846085 | 2.2202117 | 122 | 7 | 1960–2006 | 0.55 | M-v | 1 | MPC | 52387 | (73580) |
| (73710) | 16.6 | 0.15 | 20060922 | 270.23306 | 149.99270 | 63.08977 | 2.93324 | 0.1635039 | 2.4204971 | 85 | 7 | 1992–2006 | 0.45 | M-v | 0 | MPC | 53899 | (73710) |
| (73795) | 12.3 | 0.15 | 20060922 | 15.94328 | 343.67100 | 171.76639 | 22.48053 | 0.0640570 | 5.1846568 | 103 | 7 | 1995–2006 | 0.58 | M-v | 0 | MPC | 53927 | (73795) |
| (73988) | 15.3 | 0.15 | 20060922 | 89.63847 | 160.52144 | 110.81594 | 6.56247 | 0.0722205 | 2.2604084 | 224 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 53992 | (73988) |
| (74006) | 14.7 | 0.15 | 20060922 | 152.22361 | 221.90326 | 22.11341 | 8.93531 | 0.1169702 | 3.1443662 | 139 | 7 | 1976–2006 | 0.64 | M-v | 0 | MPC | 53999 | (74006) |
| (74175) | 15.5 | 0.15 | 20060922 | 174.47352 | 355.95559 | 174.72985 | 12.47399 | 0.1800569 | 2.5547900 | 134 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 54060 | (74175) |
| (74213) | 14.6 | 0.15 | 20060922 | 144.87814 | 59.98361 | 202.13588 | 14.03977 | 0.2032166 | 2.3838522 | 323 | 7 | 1983–2006 | 0.55 | M-v | 0 | MPC | 54075 | (74213) |
| (74350) | 13.7 | 0.15 | 20060922 | 325.20944 | 127.40689 | 270.47553 | 13.99287 | 0.1286594 | 2.6008994 | 279 | 7 | 1981–2006 | 0.58 | M-v | 1 | MPC | 54126 | (74350) |
| (74470) | 13.8 | 0.15 | 20060922 | 59.12230 | 186.59777 | 58.90580 | 6.14586 | 0.1063433 | 3.1284934 | 326 | 7 | 1991–2006 | 0.57 | M-v | 0 | MPC | 54168 | (74470) |
| (74491) | 14.0 | 0.15 | 20060922 | 125.58523 | 280.68316 | 17.55116 | 22.30950 | 0.0707222 | 2.6040190 | 244 | 6 | 1999–2006 | 0.62 | M-v | 1 | MPC | 54177 | (74491) |
| (74502) | 13.6 | 0.15 | 20060922 | 39.90451 | 25.49493 | 12.74612 | 13.64182 | 0.1736259 | 2.6025503 | 341 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 54180 | (74502) |
| (74556) | 16.0 | 0.15 | 20060922 | 127.03252 | 147.41891 | 102.91102 | 6.09304 | 0.1132973 | 2.1603715 | 250 | 7 | 1992–2006 | 0.56 | M-v | 1 | MPC | 54203 | (74556) |
| (74758) | 15.9 | 0.15 | 20060922 | 2.88562 | 69.66147 | 321.15395 | 8.76359 | 0.1657761 | 2.2627804 | 125 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 54278 | (74758) |
| (74770) | 16.0 | 0.15 | 20060922 | 23.82465 | 136.55795 | 250.94014 | 6.42893 | 0.0560067 | 2.1969238 | 79 | 5 | 1999–2006 | 0.64 | M-v | 1 | MPC | 54283 | (74770) |
| (74799) | 16.2 | 0.15 | 20060922 | 24.61628 | 269.93038 | 70.11525 | 6.48538 | 0.1987524 | 2.2747454 | 100 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 54293 | (74799) |
| (74873) | 15.8 | 0.15 | 20060922 | 2.66092 | 314.17031 | 67.40143 | 6.64658 | 0.1756531 | 2.2831987 | 187 | 6 | 1999–2006 | 0.60 | M-v | 1 | MPC | 54320 | (74873) |
| (75077) | 15.4 | 0.15 | 20060922 | 338.22345 | 83.13368 | 326.71779 | 3.32923 | 0.2506824 | 2.3079828 | 277 | 7 | 1992–2006 | 0.53 | M-v | 1 | MPC | 54396 | (75077) |
| (75233) | 15.5 | 0.15 | 20060922 | 332.09980 | 15.27394 | 50.08366 | 5.08579 | 0.1519512 | 2.3289016 | 279 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 54455 | (75233) |
| (75289) | 16.5 | 0.15 | 20060922 | 77.83957 | 76.50992 | 249.19288 | 6.19643 | 0.2208391 | 2.2285660 | 251 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 54479 | (75289) |
| (75295) | 15.7 | 0.15 | 20060922 | 239.00678 | 62.76078 | 109.50517 | 7.70518 | 0.0451383 | 2.3213416 | 131 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 54481 | (75295) |
| (75312) | 15.5 | 0.15 | 20060922 | 263.05402 | 126.30529 | 33.84286 | 4.66240 | 0.1135154 | 2.2727965 | 252 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 54489 | (75312) |
| (75361) | 16.0 | 0.15 | 20060922 | 339.58431 | 175.07114 | 207.66192 | 1.29031 | 0.1857604 | 2.3923523 | 250 | 7 | 1994–2006 | 0.50 | M-v | 0 | MPC | 54507 | (75361) |
| (75434) | 15.4 | 0.15 | 20060922 | 20.23387 | 110.71383 | 279.68033 | 6.97126 | 0.1340219 | 2.2780773 | 157 | 5 | 1999–2006 | 0.53 | M-v | 0 | MPC | 54538 | (75434) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (75474) | 15.8 | 0.15 | 20060922 | 283.58781 | 33.15436 | 89.84463 | 8.24924 | 0.1091700 | 2.3999635 | 198 | 7 | 1993–2006 | 0.57 | M-v | 1 | MPC | 54553 | (75474) |
| (75535) | 15.4 | 0.15 | 20060922 | 263.19380 | 91.97665 | 91.44775 | 5.31635 | 0.0660688 | 2.3063823 | 249 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 54575 | (75535) |
| (75584) | 14.5 | 0.15 | 20060922 | 321.61536 | 174.91398 | 287.94322 | 4.09388 | 0.1346260 | 2.3093459 | 258 | 6 | 1999–2006 | 0.58 | M-v | 0 | MPC | 54592 | (75584) |
| (75734) | 14.3 | 0.15 | 20060922 | 123.76208 | 198.75134 | 115.82732 | 7.64803 | 0.1519728 | 2.1642265 | 457 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 54648 | (75734) |
| (75852) | 14.2 | 0.15 | 20060922 | 102.15087 | 289.27899 | 340.24660 | 14.67857 | 0.1053169 | 2.5918881 | 202 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 54691 | (75852) |
| (76006) | 16.3 | 0.15 | 20060922 | 181.76210 | 349.36828 | 245.05520 | 1.25049 | 0.1645834 | 2.4715817 | 142 | 7 | 1992–2006 | 0.53 | M-v | 1 | MPC | 54747 | (76006) |
| (76151) | 13.6 | 0.15 | 20060922 | 173.16524 | 109.51539 | 126.56361 | 14.20337 | 0.1014944 | 2.6051904 | 290 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 54798 | (76151) |
| (76207) | 16.2 | 0.15 | 20060922 | 35.54428 | 254.98345 | 162.76138 | 1.97067 | 0.2125647 | 2.3358745 | 132 | 7 | 1991–2006 | 0.51 | M-v | 0 | MPC | 54819 | (76207) |
| (76282) | 14.3 | 0.15 | 20060922 | 117.69170 | 211.08759 | 19.79502 | 14.71270 | 0.2260370 | 2.7097896 | 142 | 7 | 1993–2006 | 0.47 | M-v | 0 | MPC | 54848 | (76282) |
| (76463) | 16.1 | 0.15 | 20060922 | 218.56267 | 60.06687 | 93.78177 | 8.38826 | 0.1489794 | 2.6207535 | 117 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 54914 | (76463) |
| (76499) | 14.2 | 0.15 | 20060922 | 39.88612 | 190.82200 | 177.59370 | 5.61567 | 0.2052511 | 2.5418319 | 132 | 7 | 1981–2006 | 0.51 | M-v | 1 | MPC | 54927 | (76499) |
| (76590) | 14.4 | 0.15 | 20060922 | 235.35421 | 357.34923 | 155.71503 | 11.26865 | 0.0452867 | 2.6456833 | 309 | 7 | 1999–2006 | 0.56 | M-v | 0 | MPC | 54962 | (76590) |
| (76650) | 13.8 | 0.15 | 20060922 | 9.71951 | 183.14583 | 104.72516 | 18.97423 | 0.1755868 | 3.1242762 | 135 | 7 | 1998–2006 | 0.65 | M-v | 0 | MPC | 54984 | (76650) |
| (76665) | 14.5 | 0.15 | 20060922 | 208.06817 | 2.27062 | 149.24534 | 25.59336 | 0.0621622 | 2.7081016 | 163 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 54990 | (76665) |
| (76737) | 15.0 | 0.15 | 20060922 | 193.35846 | 352.21873 | 213.62873 | 8.63143 | 0.1156526 | 2.6517822 | 304 | 7 | 1999–2006 | 0.58 | M-v | 0 | MPC | 55016 | (76737) |
| (76814) | 14.2 | 0.15 | 20060922 | 26.26827 | 118.37446 | 274.66656 | 15.63644 | 0.1062187 | 2.8546303 | 195 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 55043 | (76814) |
| (76961) | 17.0 | 0.15 | 20060922 | 267.20656 | 346.93056 | 121.37357 | 2.26185 | 0.2153148 | 2.2414324 | 126 | 5 | 1994–2006 | 0.52 | M-v | 0 | MPC | 55098 | (76961) |
| (77010) | 14.5 | 0.15 | 20060922 | 323.50033 | 343.28532 | 331.90590 | 20.29986 | 0.3182425 | 2.5752680 | 138 | 7 | 1990–2006 | 0.54 | M-v | 1 | MPC | 55116 | (77010) |
| (77151) | 16.1 | 0.15 | 20060922 | 199.03416 | 102.22016 | 121.85781 | 2.71585 | 0.1153398 | 2.2239145 | 141 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 55162 | (77151) |
| (77478) | 14.8 | 0.15 | 20060922 | 352.95618 | 5.15476 | 56.49948 | 8.72828 | 0.2095192 | 2.3074173 | 204 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 55273 | (77478) |
| (77484) | 14.9 | 0.15 | 20060922 | 67.91001 | 221.94166 | 81.44658 | 16.34165 | 0.2452349 | 2.5609667 | 271 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 55276 | (77484) |
| (77552) | 16.4 | 0.15 | 20060922 | 178.61788 | 71.70216 | 131.19048 | 3.12646 | 0.1414187 | 2.3824571 | 60 | 7 | 1995–2006 | 0.51 | M-v | 1 | MPC | 55298 | (77552) |
| (77592) | 15.1 | 0.15 | 20060922 | 67.79589 | 269.96488 | 83.87787 | 7.09362 | 0.1416951 | 2.3445355 | 125 | 7 | 1983–2006 | 0.52 | M-v | 1 | MPC | 55311 | (77592) |
| (77650) | 16.5 | 0.15 | 20060922 | 228.41426 | 71.33373 | 89.52293 | 3.22910 | 0.1663286 | 2.3504864 | 68 | 6 | 1997–2006 | 0.53 | M-v | 1 | MPC | 55330 | (77650) |
| (77860) | 13.4 | 0.15 | 20060922 | 196.84741 | 236.30027 | 77.69502 | 3.28008 | 0.0615829 | 5.1142646 | 115 | 7 | 1990–2006 | 0.53 | M-v | 0 | MPC | 55409 | (77860) |
| (78089) | 15.7 | 0.15 | 20060922 | 144.83718 | 115.04506 | 112.75049 | 3.97766 | 0.1094903 | 2.1895260 | 278 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 55485 | (78089) |
| (78096) | 15.7 | 0.15 | 20060922 | 221.43111 | 96.76997 | 28.59248 | 4.94576 | 0.0412347 | 2.2397506 | 276 | 7 | 1996–2006 | 0.54 | M-v | 0 | MPC | 55488 | (78096) |
| (78129) | 17.5 | 0.15 | 20060922 | 106.54911 | 330.97708 | 271.69301 | 2.46856 | 0.1894649 | 2.3107195 | 72 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 55497 | (78129) |
| (78298) | 16.1 | 0.15 | 20060922 | 64.23234 | 253.34624 | 59.49624 | 3.21007 | 0.2103979 | 2.3990107 | 184 | 7 | 1991–2006 | 0.62 | M-v | 0 | MPC | 55550 | (78298) |
| (78489) | 16.7 | 0.15 | 20060922 | 38.18622 | 255.05766 | 86.49204 | 2.77835 | 0.2329039 | 2.4185813 | 133 | 6 | 1991–2006 | 0.54 | M-v | 0 | MPC | 77345 | (78489) |
| (78608) | 14.2 | 0.15 | 20060922 | 10.04000 | 343.32959 | 28.32708 | 23.19679 | 0.1625345 | 2.4473430 | 238 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 55647 | (78608) |
| (78919) | 15.9 | 0.15 | 20060922 | 310.18682 | 101.92795 | 251.10540 | 4.25569 | 0.2025527 | 2.3615955 | 133 | 7 | 1985–2006 | 0.57 | M-v | 1 | MPC | 55747 | (78919) |
| (79062) | 15.6 | 0.15 | 20060922 | 27.35547 | 58.10195 | 304.42247 | 1.12901 | 0.1145430 | 2.1730287 | 180 | 9 | 1977–2006 | 0.53 | M-v | 1 | MPC | 55793 | (79062) |
| (79086) | 14.5 | 0.15 | 20060922 | 126.39137 | 302.36029 | 343.44523 | 33.10724 | 0.2776279 | 2.7761667 | 128 | 7 | 1977–2005 | 0.57 | M-v | 1 | MPC | 58143 | (79086) |
| (79148) | 16.2 | 0.15 | 20060922 | 266.71531 | 312.31278 | 148.65733 | 4.74895 | 0.1706734 | 2.7892570 | 95 | 5 | 1992–2006 | 0.57 | M-v | 0 | MPC | 58168 | (79148) |
| (79164) | 16.0 | 0.15 | 20060922 | 220.92371 | 151.00437 | 37.07429 | 1.79427 | 0.1235899 | 2.4101489 | 167 | 7 | 1991–2006 | 0.48 | M-v | 1 | MPC | 58174 | (79164) |
| (79276) | 16.9 | 0.15 | 20060922 | 232.59832 | 107.60037 | 52.54874 | 3.16896 | 0.1344884 | 2.3494628 | 113 | 6 | 1995–2006 | 0.44 | M-v | 1 | MPC | 58215 | (79276) |
| (79292) | 16.4 | 0.15 | 20060922 | 217.40666 | 247.83868 | 353.69866 | 3.04346 | 0.0777808 | 2.2418169 | 132 | 7 | 1995–2006 | 0.45 | M-v | 1 | MPC | 58221 | (79292) |
| (79309) | 16.1 | 0.15 | 20060922 | 337.38506 | 353.09343 | 73.05671 | 7.17942 | 0.1562899 | 2.3807364 | 95 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 58226 | (79309) |
| (79310) | 17.2 | 0.15 | 20060922 | 255.70288 | 146.56992 | 4.70420 | 2.61130 | 0.1355877 | 2.4541532 | 101 | 6 | 1996–2006 | 0.52 | M-v | 1 | MPC | 58226 | (79310) |
| (79323) | 15.2 | 0.15 | 20060922 | 41.18329 | 54.92969 | 300.12833 | 2.47358 | 0.0879478 | 2.7692589 | 189 | 6 | 1996–2006 | 0.49 | M-v | 0 | MPC | 58231 | (79323) |
| (79381) | 16.7 | 0.15 | 20060922 | 242.93493 | 339.28793 | 184.04233 | 6.39913 | 0.0504459 | 2.3594266 | 89 | 7 | 1991–2006 | 0.46 | M-v | 1 | MPC | 58253 | (79381) |
| (79401) | 16.0 | 0.15 | 20060922 | 213.20120 | 335.22966 | 234.22195 | 2.22946 | 0.1309755 | 2.3617730 | 160 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 58260 | (79401) |
| (79404) | 15.2 | 0.15 | 20060922 | 346.03636 | 25.27844 | 42.68665 | 10.02297 | 0.1753756 | 2.3763408 | 170 | 6 | 1997–2006 | 0.67 | M-v | 1 | MPC | 58261 | (79404) |
| (79416) | 15.7 | 0.15 | 20060922 | 193.59891 | 98.85179 | 125.32933 | 2.94774 | 0.1649719 | 2.4025516 | 137 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 58265 | (79416) |
| (79422) | 15.8 | 0.15 | 20060922 | 321.71675 | 282.95864 | 169.42006 | 14.42393 | 0.1444214 | 2.5426891 | 91 | 7 | 1997–2006 | 0.61 | M-v | 1 | MPC | 58268 | (79422) |
| (79439) | 14.4 | 0.15 | 20060922 | 123.62084 | 97.70310 | 164.37426 | 2.81428 | 0.1826583 | 3.9426513 | 148 | 7 | 1996–2006 | 0.55 | M-v | 0 | MPC | 58274 | (79439) |
| (79452) | 15.7 | 0.15 | 20060922 | 260.63147 | 222.41616 | 228.48205 | 7.97705 | 0.1675359 | 2.8726606 | 84 | 4 | 1997–2004 | 0.67 | M-v | 2 | MPC | 58278 | (79452) |
| (79649) | 16.4 | 0.15 | 20060922 | 91.67184 | 37.81979 | 305.51930 | 0.90766 | 0.0971901 | 2.3457727 | 147 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 58361 | (79649) |
| (79651) | 16.7 | 0.15 | 20060922 | 154.10755 | 236.03630 | 58.87965 | 2.28189 | 0.0601348 | 2.3333344 | 116 | 7 | 1991–2006 | 0.57 | M-v | 1 | MPC | 58362 | (79651) |
| (79662) | 15.9 | 0.15 | 20060922 | 287.17216 | 79.86203 | 54.02473 | 1.31906 | 0.1660254 | 2.4455557 | 269 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 58366 | (79662) |
| (79739) | 15.9 | 0.15 | 20060922 | 17.58488 | 123.80355 | 289.19507 | 4.75832 | 0.1049111 | 2.4213381 | 168 | 7 | 1992–2006 | 0.55 | M-v | 0 | MPC | 58397 | (79739) |
| (79863) | 15.1 | 0.15 | 20060922 | 15.89662 | 278.64779 | 144.60094 | 11.52889 | 0.1960339 | 2.4829476 | 166 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 58445 | (79863) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (79876) | 16.1 | 0.15 | 20060922 | 281.04494 | 189.41194 | 289.31032 | 1.29256 | 0.0109169 | 2.6652081 | 143 | 7 | 1998–2006 | 0.51 | M-v | 0 | MPC | 58450 | (79876) |
| (79887) | 14.8 | 0.15 | 20060922 | 174.96305 | 97.83848 | 131.55992 | 15.68429 | 0.1001410 | 2.6965811 | 118 | 8 | 1996–2006 | 0.54 | M-v | 0 | MPC | 77346 | (79887) |
| (79933) | 14.8 | 0.15 | 20060922 | 281.46864 | 321.08647 | 157.56732 | 14.04055 | 0.1273229 | 2.6865638 | 182 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 58472 | (79933) |
| (80098) | 16.2 | 0.15 | 20060922 | 65.88651 | 254.99955 | 89.84618 | 1.44197 | 0.2997339 | 2.1782830 | 167 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 58541 | (80098) |
| (80135) | 15.9 | 0.15 | 20060922 | 295.46294 | 287.36626 | 184.32083 | 7.68506 | 0.0642543 | 2.2790616 | 207 | 6 | 1995–2006 | 0.58 | M-v | 0 | MPC | 58555 | (80135) |
| (80145) | 17.1 | 0.15 | 20060922 | 344.36487 | 258.08033 | 174.48573 | 1.92465 | 0.2135009 | 2.2674591 | 109 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 58558 | (80145) |
| (80185) | 16.0 | 0.15 | 20060922 | 317.21439 | 64.49112 | 45.40580 | 6.25264 | 0.1241661 | 2.2714355 | 115 | 5 | 1999–2006 | 0.66 | M-v | 1 | MPC | 58574 | (80185) |
| (80188) | 16.2 | 0.15 | 20060922 | 10.18247 | 348.21375 | 60.51105 | 7.23414 | 0.1221638 | 2.2792015 | 98 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 58575 | (80188) |
| (80195) | 16.2 | 0.15 | 20060922 | 7.37959 | 51.32934 | 352.53025 | 4.28175 | 0.1123206 | 2.2493038 | 146 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 58578 | (80195) |
| (80209) | 17.3 | 0.15 | 20060922 | 332.66875 | 221.12875 | 206.54750 | 1.45068 | 0.1886771 | 2.3126537 | 101 | 7 | 1992–2006 | 0.50 | M-v | 1 | MPC | 58584 | (80209) |
| (80228) | 17.2 | 0.15 | 20060922 | 302.76573 | 170.40920 | 285.42563 | 1.37337 | 0.2180228 | 2.3521029 | 140 | 4 | 1999–2006 | 0.45 | M-v | 0 | MPC | 58590 | (80228) |
| (80245) | 15.8 | 0.15 | 20060922 | 344.10826 | 149.54482 | 287.23008 | 5.29450 | 0.0932456 | 2.2887603 | 173 | 6 | 1999–2006 | 0.60 | M-v | 0 | MPC | 58596 | (80245) |
| (80259) | 16.9 | 0.15 | 20060922 | 27.07087 | 68.88468 | 340.29525 | 0.94266 | 0.2005280 | 2.2292708 | 124 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 58601 | (80259) |
| (80288) | 16.3 | 0.15 | 20060922 | 270.67858 | 80.80611 | 53.62743 | 7.20663 | 0.0434693 | 2.3138553 | 108 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 77346 | (80288) |
| (80296) | 17.1 | 0.15 | 20060922 | 332.33251 | 328.40755 | 111.72424 | 1.09215 | 0.1418847 | 2.3046121 | 75 | 6 | 1978–2006 | 0.60 | M-v | 1 | MPC | 58617 | (80296) |
| (80297) | 17.2 | 0.15 | 20060922 | 289.97102 | 236.94771 | 233.28165 | 1.36233 | 0.1673986 | 2.3527789 | 156 | 5 | 1997–2006 | 0.51 | M-v | 0 | MPC | 58617 | (80297) |
| (80306) | 17.2 | 0.15 | 20060922 | 331.50335 | 12.58881 | 93.71532 | 5.78429 | 0.1143454 | 2.2700336 | 43 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 58621 | (80306) |
| (80328) | 15.6 | 0.15 | 20060922 | 27.00195 | 95.45550 | 280.78255 | 5.77969 | 0.1415746 | 2.3423243 | 159 | 6 | 1999–2006 | 0.54 | M-v | 1 | MPC | 58629 | (80328) |
| (80335) | 16.0 | 0.15 | 20060922 | 344.82970 | 117.39631 | 307.42757 | 3.95513 | 0.2108085 | 2.3223162 | 124 | 5 | 1995–2006 | 0.60 | M-v | 1 | MPC | 58632 | (80335) |
| (80353) | 16.7 | 0.15 | 20060922 | 312.67077 | 123.35503 | 355.20845 | 3.77085 | 0.1162341 | 2.2667630 | 106 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 58639 | (80353) |
| (80368) | 16.0 | 0.15 | 20060922 | 180.12936 | 308.99341 | 299.96782 | 6.90164 | 0.0833498 | 2.3503330 | 115 | 7 | 1998–2006 | 0.56 | M-v | 0 | MPC | 58645 | (80368) |
| (80378) | 16.6 | 0.15 | 20060922 | 353.25116 | 262.81308 | 130.53427 | 3.21318 | 0.1811687 | 2.3442139 | 111 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 97316 | (80378) |
| (80389) | 15.3 | 0.15 | 20060922 | 349.66627 | 116.37800 | 292.95427 | 5.19779 | 0.2615413 | 2.3174455 | 142 | 5 | 1992–2006 | 0.54 | M-v | 1 | MPC | 58652 | (80389) |
| (80419) | 15.9 | 0.15 | 20060922 | 346.66976 | 81.55108 | 355.91258 | 6.80680 | 0.0774893 | 2.3211511 | 128 | 5 | 1997–2005 | 0.65 | M-v | 1 | MPC | 58666 | (80419) |
| (80436) | 16.3 | 0.15 | 20060922 | 344.98928 | 270.54274 | 138.08432 | 7.38113 | 0.1057012 | 2.3307564 | 79 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 58672 | (80436) |
| (80439) | 16.7 | 0.15 | 20060922 | 349.68971 | 235.68876 | 162.67598 | 2.88972 | 0.1872749 | 2.3528678 | 126 | 5 | 1999–2006 | 0.47 | M-v | 0 | MPC | 58673 | (80439) |
| (80447) | 16.4 | 0.15 | 20060922 | 259.41945 | 79.18539 | 97.80081 | 2.91274 | 0.1495525 | 2.3526935 | 154 | 7 | 1991–2006 | 0.49 | M-v | 0 | MPC | 58676 | (80447) |
| (80450) | 15.6 | 0.15 | 20060922 | 346.83670 | 21.00084 | 18.45839 | 11.51642 | 0.2318418 | 2.3815395 | 166 | 6 | 1984–2006 | 0.51 | M-v | 1 | MPC | 58678 | (80450) |
| (80468) | 16.2 | 0.15 | 20060922 | 328.26011 | 327.60153 | 95.17830 | 4.50870 | 0.1663473 | 2.3802400 | 120 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 58685 | (80468) |
| (80470) | 16.3 | 0.15 | 20060922 | 338.56191 | 6.66205 | 76.94926 | 3.35850 | 0.1892777 | 2.3237478 | 88 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 58686 | (80470) |
| (80479) | 15.4 | 0.15 | 20060922 | 2.33619 | 138.12341 | 310.74812 | 5.13205 | 0.1177026 | 2.2749533 | 232 | 6 | 1996–2006 | 0.52 | M-v | 0 | MPC | 58689 | (80479) |
| (80509) | 15.4 | 0.15 | 20060922 | 233.53248 | 285.53193 | 295.65848 | 2.80576 | 0.0760491 | 2.3119224 | 184 | 7 | 1976–2006 | 0.52 | M-v | 1 | MPC | 58702 | (80509) |
| (80521) | 14.9 | 0.15 | 20060922 | 43.74562 | 10.86102 | 39.01752 | 2.80042 | 0.1268059 | 2.2736505 | 317 | 7 | 1978–2006 | 0.55 | M-v | 1 | MPC | 58707 | (80521) |
| (80530) | 17.1 | 0.15 | 20060922 | 317.50420 | 253.85595 | 185.67590 | 3.13727 | 0.2099012 | 2.3506630 | 136 | 5 | 1995–2006 | 0.50 | M-v | 0 | MPC | 58712 | (80530) |
| (80533) | 15.3 | 0.15 | 20060922 | 216.39773 | 287.17195 | 258.40811 | 6.41390 | 0.0548524 | 2.3450623 | 120 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 58713 | (80533) |
| (80553) | 16.3 | 0.15 | 20060922 | 231.28897 | 29.03959 | 154.98340 | 2.71936 | 0.1135518 | 2.4056949 | 111 | 7 | 1997–2006 | 0.53 | M-v | 1 | MPC | 58720 | (80553) |
| (80556) | 15.3 | 0.15 | 20060922 | 257.07843 | 218.70681 | 306.23940 | 6.01325 | 0.0690278 | 2.3998808 | 186 | 6 | 1989–2006 | 0.54 | M-v | 1 | MPC | 58722 | (80556) |
| (80570) | 15.6 | 0.15 | 20060922 | 241.73422 | 65.17887 | 149.86805 | 7.31827 | 0.1814980 | 2.3199429 | 203 | 6 | 1998–2005 | 0.62 | M-v | 1 | MPC | 58727 | (80570) |
| (80604) | 16.1 | 0.15 | 20060922 | 357.75475 | 133.30617 | 278.14818 | 2.54498 | 0.1085423 | 2.3059096 | 112 | 5 | 1995–2006 | 0.65 | M-v | 1 | MPC | 58742 | (80604) |
| (80609) | 15.2 | 0.15 | 20060922 | 338.12829 | 64.99467 | 19.76088 | 2.68683 | 0.1666604 | 2.3872163 | 251 | 6 | 1998–2006 | 0.51 | M-v | 0 | MPC | 58743 | (80609) |
| (80625) | 14.9 | 0.15 | 20060922 | 309.79268 | 214.41861 | 230.51124 | 8.15098 | 0.2267568 | 2.3948978 | 166 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 58751 | (80625) |
| (80666) | 15.3 | 0.15 | 20060922 | 333.95848 | 16.47330 | 48.78250 | 7.26870 | 0.2272676 | 2.4095648 | 256 | 5 | 1976–2006 | 0.57 | M-v | 1 | MPC | 58766 | (80666) |
| (80690) | 17.3 | 0.15 | 20060922 | 308.39938 | 155.52889 | 317.91194 | 0.72590 | 0.1404066 | 2.3651865 | 64 | 7 | 1995–2006 | 0.48 | M-v | 0 | MPC | 58775 | (80690) |
| (80708) | 16.3 | 0.15 | 20060922 | 352.35659 | 224.65152 | 177.98919 | 6.22305 | 0.1291846 | 2.4115913 | 151 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 58783 | (80708) |
| (80907) | 16.2 | 0.15 | 20060922 | 291.47413 | 144.29399 | 329.84477 | 4.34795 | 0.1345482 | 2.4555758 | 96 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 58863 | (80907) |
| (80910) | 16.1 | 0.15 | 20060922 | 188.62072 | 241.78753 | 355.41207 | 3.49548 | 0.1667411 | 2.4792784 | 123 | 5 | 1997–2005 | 0.60 | M-v | 1 | MPC | 58864 | (80910) |
| (80978) | 16.9 | 0.15 | 20060922 | 316.63598 | 232.96605 | 211.23240 | 0.84933 | 0.1548545 | 2.4227138 | 116 | 5 | 1993–2006 | 0.54 | M-v | 0 | MPC | 58891 | (80978) |
| (80985) | 14.7 | 0.15 | 20060922 | 129.47276 | 328.71443 | 339.43179 | 7.60645 | 0.0851062 | 2.4307616 | 279 | 6 | 1999–2005 | 0.59 | M-v | 1 | MPC | 58893 | (80985) |
| (81017) | 15.6 | 0.15 | 20060922 | 147.84278 | 162.77949 | 158.69056 | 1.64346 | 0.1806433 | 2.3976604 | 306 | 7 | 1996–2006 | 0.59 | M-v | 0 | MPC | 58906 | (81017) |
| (81049) | 16.0 | 0.15 | 20060922 | 177.92501 | 141.31532 | 140.51666 | 1.67583 | 0.1738636 | 2.4276640 | 265 | 6 | 1990–2006 | 0.57 | M-v | 0 | MPC | 58920 | (81049) |
| (81051) | 16.3 | 0.15 | 20060922 | 251.67775 | 342.83517 | 147.61139 | 3.05544 | 0.0372835 | 2.5851035 | 116 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 58921 | (81051) |
| (81061) | 15.3 | 0.15 | 20060922 | 109.40796 | 150.48717 | 161.17483 | 1.19694 | 0.1191034 | 2.5271008 | 203 | 7 | 1997–2006 | 0.54 | M-v | 1 | MPC | 58925 | (81061) |
| (81133) | 15.5 | 0.15 | 20060922 | 250.62804 | 25.16084 | 101.43938 | 8.71069 | 0.1460809 | 2.5936746 | 141 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 58954 | (81133) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (81137) | 15.5 | 0.15 | 20060922 | 324.26083 | 358.79299 | 101.18970 | 7.23970 | 0.0895901 | 2.4530841 | 134 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 58955 | (81137) |
| (81157) | 16.0 | 0.15 | 20060922 | 276.07890 | 48.31565 | 38.79065 | 3.01868 | 0.0229585 | 2.6285047 | 96 | 5 | 1996–2006 | 0.52 | M-v | 0 | MPC | 87322 | (81157) |
| (81169) | 15.8 | 0.15 | 20060922 | 222.40856 | 200.89450 | 24.86006 | 1.45688 | 0.1093730 | 2.4180598 | 162 | 6 | 1998–2005 | 0.58 | M-v | 1 | MPC | 58968 | (81169) |
| (81233) | 14.7 | 0.15 | 20060922 | 22.73549 | 31.67258 | 27.63343 | 7.38529 | 0.1374185 | 2.4100626 | 311 | 7 | 1987–2006 | 0.59 | M-v | 0 | MPC | 58992 | (81233) |
| (81253) | 15.0 | 0.15 | 20060922 | 127.13640 | 132.14557 | 134.36465 | 5.12759 | 0.0666470 | 2.6073444 | 272 | 7 | 1998–2006 | 0.58 | M-v | 0 | MPC | 59001 | (81253) |
| (81325) | 15.2 | 0.15 | 20060922 | 22.00205 | 271.11931 | 146.57521 | 2.62720 | 0.1674368 | 2.4124804 | 138 | 7 | 1992–2006 | 0.58 | M-v | 1 | MPC | 59030 | (81325) |
| (81414) | 15.6 | 0.15 | 20060922 | 190.88122 | 35.38575 | 225.59938 | 5.64483 | 0.1165282 | 2.4280890 | 155 | 4 | 1992–2004 | 0.54 | M-v | 1 | MPC | 59068 | (81414) |
| (81427) | 15.1 | 0.15 | 20060922 | 164.29147 | 89.26973 | 136.04976 | 4.50077 | 0.1081255 | 2.6414045 | 157 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 59074 | (81427) |
| (81464) | 14.9 | 0.15 | 20060922 | 129.83390 | 197.10657 | 68.95044 | 7.69768 | 0.1120198 | 2.6398924 | 203 | 7 | 1996–2006 | 0.67 | M-v | 0 | MPC | 59090 | (81464) |
| (81466) | 15.4 | 0.15 | 20060922 | 261.63567 | 12.08214 | 156.26257 | 12.45876 | 0.0950057 | 2.5247250 | 170 | 7 | 1998–2006 | 0.64 | M-v | 1 | MPC | 59091 | (81466) |
| (81488) | 15.4 | 0.15 | 20060922 | 293.41007 | 116.25112 | 346.81121 | 4.58535 | 0.1413133 | 2.5358030 | 164 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 59101 | (81488) |
| (81506) | 15.6 | 0.15 | 20060922 | 178.85324 | 125.62825 | 108.27965 | 7.24443 | 0.0524290 | 2.5959822 | 128 | 7 | 1998–2006 | 0.59 | M-v | 1 | MPC | 59109 | (81506) |
| (81546) | 16.2 | 0.15 | 20060922 | 140.39087 | 214.82625 | 38.27204 | 4.33459 | 0.0721354 | 2.6701279 | 99 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 59126 | (81546) |
| (81548) | 15.4 | 0.15 | 20060922 | 213.27758 | 35.66853 | 165.81768 | 5.73884 | 0.0685625 | 2.5560010 | 213 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 59127 | (81548) |
| (81591) | 15.5 | 0.15 | 20060922 | 241.21624 | 315.26720 | 215.15363 | 6.50240 | 0.1080719 | 2.5816042 | 272 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 59146 | (81591) |
| (81668) | 16.2 | 0.15 | 20060922 | 170.99320 | 79.21201 | 142.74882 | 3.99822 | 0.1278664 | 2.6449528 | 129 | 7 | 1994–2006 | 0.50 | M-v | 0 | MPC | 59176 | (81668) |
| (81674) | 15.7 | 0.15 | 20060922 | 143.88857 | 23.55998 | 227.77314 | 5.17775 | 0.0525453 | 2.7039401 | 135 | 7 | 1997–2006 | 0.52 | M-v | 0 | MPC | 59179 | (81674) |
| (81714) | 15.2 | 0.15 | 20060922 | 224.18385 | 210.87980 | 346.62375 | 3.30379 | 0.0590181 | 2.5646757 | 137 | 7 | 1971–2006 | 0.58 | M-v | 1 | MPC | 59196 | (81714) |
| (81746) | 15.2 | 0.15 | 20060922 | 177.45861 | 254.65980 | 330.52538 | 2.84634 | 0.1627358 | 2.6586864 | 250 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 59210 | (81746) |
| (81753) | 14.0 | 0.15 | 20060922 | 186.97416 | 156.10584 | 73.76791 | 16.11292 | 0.1410782 | 2.6271380 | 245 | 7 | 1999–2006 | 0.57 | M-v | 1 | MPC | 59213 | (81753) |
| (81864) | 15.4 | 0.15 | 20060922 | 137.04302 | 95.21619 | 141.77083 | 2.14263 | 0.0983140 | 2.7593050 | 144 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 59256 | (81864) |
| (81901) | 14.8 | 0.15 | 20060922 | 76.15570 | 125.83281 | 185.07624 | 13.33127 | 0.2404990 | 2.8651086 | 142 | 7 | 1981–2006 | 0.60 | M-v | 0 | MPC | 59270 | (81901) |
| (81960) | 14.5 | 0.15 | 20060922 | 48.97732 | 193.46108 | 145.25060 | 5.12322 | 0.1617738 | 3.0879576 | 205 | 8 | 1998–2006 | 0.57 | M-v | 0 | MPC | 59294 | (81960) |
| (81978) | 14.0 | 0.15 | 20060922 | 50.96795 | 152.88659 | 179.36264 | 11.49576 | 0.2424642 | 3.0509563 | 119 | 8 | 1998–2006 | 0.55 | M-v | 1 | MPC | 59300 | (81978) |
| (81994) | 13.9 | 0.15 | 20060922 | 50.10796 | 314.94294 | 353.59765 | 12.82452 | 0.1488101 | 3.1208164 | 180 | 5 | 2000–2006 | 0.59 | M-v | 0 | MPC | 59307 | (81994) |
| (81997) | 15.1 | 0.15 | 20060922 | 31.73987 | 202.99680 | 125.94238 | 6.17547 | 0.1154272 | 3.2018602 | 112 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 59307 | (81997) |
| (82036) | 14.7 | 0.15 | 20060922 | 101.84391 | 61.03438 | 215.92875 | 4.57609 | 0.0937204 | 3.1534930 | 179 | 7 | 1993–2006 | 0.51 | M-v | 0 | MPC | 59321 | (82036) |
| (82046) | 14.5 | 0.15 | 20060922 | 97.32656 | 233.48505 | 49.95961 | 5.99861 | 0.1137141 | 3.1092742 | 235 | 7 | 1999–2006 | 0.61 | M-v | 0 | MPC | 59325 | (82046) |
| (82094) | 14.4 | 0.15 | 20060922 | 212.72502 | 60.21825 | 141.53017 | 26.30995 | 0.1786335 | 2.2937421 | 218 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 77347 | (82094) |
| (82109) | 15.7 | 0.15 | 20060922 | 197.36995 | 172.52051 | 359.69173 | 2.82102 | 0.1119691 | 2.3752203 | 77 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 59348 | (82109) |
| (82129) | 16.0 | 0.15 | 20060922 | 210.54307 | 130.97414 | 69.45013 | 7.96758 | 0.0666177 | 2.2777225 | 111 | 4 | 1992–2006 | 0.52 | M-v | 1 | MPC | 59356 | (82129) |
| (82133) | 15.7 | 0.15 | 20060922 | 258.97529 | 143.68346 | 353.36100 | 24.05636 | 0.1981503 | 2.2687732 | 95 | 5 | 1992–2006 | 0.50 | M-v | 1 | MPC | 59357 | (82133) |
| (82146) | 16.3 | 0.15 | 20060922 | 157.38051 | 333.45194 | 308.78006 | 5.61764 | 0.2137966 | 2.2608510 | 127 | 7 | 1997–2006 | 0.51 | M-v | 1 | MPC | 59362 | (82146) |
| (82207) | 14.6 | 0.15 | 20060922 | 15.57297 | 193.94832 | 140.10670 | 15.37601 | 0.2601070 | 2.6659761 | 234 | 7 | 1971–2006 | 0.56 | M-v | 0 | MPC | 59384 | (82207) |
| (82293) | 16.6 | 0.15 | 20060922 | 162.76994 | 84.01624 | 152.06247 | 2.07660 | 0.1383854 | 2.3754593 | 121 | 7 | 1992–2006 | 0.53 | M-v | 0 | MPC | 59413 | (82293) |
| (82308) | 16.1 | 0.15 | 20060922 | 165.16085 | 20.60652 | 255.59675 | 5.82449 | 0.1078260 | 2.3042172 | 98 | 7 | 1994–2006 | 0.60 | M-v | 1 | MPC | 59418 | (82308) |
| (82333) | 14.8 | 0.15 | 20060922 | 26.94311 | 98.52863 | 264.16520 | 10.21002 | 0.1732508 | 2.7112398 | 178 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 59427 | (82333) |
| (82348) | 14.3 | 0.15 | 20060922 | 26.78396 | 108.48304 | 271.16482 | 10.27188 | 0.2049618 | 2.6324314 | 152 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 59432 | (82348) |
| (82493) | 14.7 | 0.15 | 20060922 | 358.10120 | 267.11087 | 127.44967 | 10.10072 | 0.0899159 | 2.7288361 | 83 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 59484 | (82493) |
| (82519) | 14.7 | 0.15 | 20060922 | 29.09368 | 340.41875 | 62.34077 | 13.19785 | 0.1801686 | 2.5452787 | 121 | 7 | 1996–2006 | 0.64 | M-v | 1 | MPC | 59494 | (82519) |
| (82660) | 16.0 | 0.15 | 20060922 | 121.26774 | 274.04509 | 35.48010 | 6.71016 | 0.1520268 | 2.4610660 | 122 | 6 | 1990–2005 | 0.65 | M-v | 1 | MPC | 59548 | (82660) |
| (82682) | 15.8 | 0.15 | 20060922 | 153.59735 | 142.29724 | 117.52961 | 4.01499 | 0.0573611 | 2.5805631 | 165 | 7 | 1995–2006 | 0.56 | M-v | 0 | MPC | 59556 | (82682) |
| (82714) | 15.7 | 0.15 | 20060922 | 22.38395 | 217.55696 | 151.50912 | 6.25283 | 0.0595581 | 2.6870627 | 102 | 5 | 1991–2006 | 0.56 | M-v | 1 | MPC | 59569 | (82714) |
| (82784) | 14.4 | 0.15 | 20060922 | 310.03206 | 283.61520 | 167.75683 | 9.28697 | 0.0785468 | 2.7340621 | 201 | 7 | 1996–2006 | 0.57 | M-v | 0 | MPC | 59596 | (82784) |
| (82838) | 16.7 | 0.15 | 20060922 | 180.80257 | 91.87359 | 158.49031 | 2.72403 | 0.1622749 | 2.4411725 | 135 | 6 | 1994–2005 | 0.60 | M-v | 1 | MPC | 59618 | (82838) |
| (82855) | 15.4 | 0.15 | 20060922 | 14.51958 | 350.06883 | 16.13372 | 4.67217 | 0.1395655 | 2.7430430 | 161 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 04100 | (82855) |
| (82886) | 15.1 | 0.15 | 20060922 | 91.27482 | 339.15670 | 318.73859 | 9.44877 | 0.2034743 | 2.7328442 | 128 | 7 | 1996–2006 | 0.60 | M-v | 0 | MPC | 59637 | (82886) |
| (83005) | 15.2 | 0.15 | 20060922 | 18.70369 | 239.84577 | 122.41937 | 6.37611 | 0.0726658 | 2.7415953 | 82 | 6 | 1995–2006 | 0.59 | M-v | 1 | MPC | 59686 | (83005) |
| (83028) | 14.5 | 0.15 | 20060922 | 353.95307 | 314.27097 | 86.89335 | 5.86091 | 0.1087856 | 2.7638208 | 192 | 6 | 1997–2006 | 0.64 | M-v | 0 | MPC | 59695 | (83028) |
| (83044) | 15.3 | 0.15 | 20060922 | 137.46102 | 315.76552 | 317.78477 | 10.16769 | 0.1296251 | 2.6696948 | 133 | 5 | 1999–2005 | 0.62 | M-v | 1 | MPC | 59702 | (83044) |
| (83056) | 14.9 | 0.15 | 20060922 | 222.47823 | 91.45224 | 355.22441 | 9.40201 | 0.0690926 | 3.0728388 | 99 | 7 | 1991–2006 | 0.50 | M-v | 0 | MPC | 59707 | (83056) |
| (83060) | 15.8 | 0.15 | 20060922 | 20.95844 | 200.62878 | 176.28965 | 15.07007 | 0.1106360 | 2.6548630 | 77 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 59708 | (83060) |
| (83076) | 15.1 | 0.15 | 20060922 | 318.01530 | 55.11054 | 10.38930 | 2.11375 | 0.0579197 | 2.7719765 | 165 | 5 | 1997–2006 | 0.55 | M-v | 0 | MPC | 59714 | (83076) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (83080) | 15.7 | 0.15 | 20060922 | 340.20696 | 257.16605 | 124.63553 | 6.92795 | 0.0689110 | 2.7978577 | 120 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 59715 | (83080) |
| (83089) | 15.4 | 0.15 | 20060922 | 1.77971 | 144.05576 | 239.12603 | 5.39309 | 0.0739624 | 2.7584278 | 86 | 5 | 1960–2006 | 0.51 | M-v | 1 | MPC | 59718 | (83089) |
| (83109) | 14.8 | 0.15 | 20060922 | 304.60506 | 17.78657 | 67.98315 | 1.37599 | 0.0392650 | 2.7763180 | 278 | 6 | 1997–2006 | 0.52 | M-v | 0 | MPC | 59726 | (83109) |
| (83214) | 15.4 | 0.15 | 20060922 | 249.79551 | 334.72952 | 177.41472 | 4.62651 | 0.0493935 | 2.6636092 | 177 | 7 | 1995–2006 | 0.55 | M-v | 0 | MPC | 59767 | (83214) |
| (83296) | 15.8 | 0.15 | 20060922 | 43.71057 | 324.48937 | 15.90868 | 5.35744 | 0.0613554 | 2.7321754 | 103 | 5 | 1992–2006 | 0.51 | M-v | 1 | MPC | 59801 | (83296) |
| (83300) | 15.2 | 0.15 | 20060922 | 152.19166 | 141.73447 | 88.04969 | 4.50855 | 0.0483341 | 2.7417132 | 145 | 7 | 1995–2006 | 0.50 | M-v | 0 | MPC | 59803 | (83300) |
| (83320) | 15.9 | 0.15 | 20060922 | 97.28345 | 125.05294 | 143.12492 | 2.61392 | 0.0489936 | 2.8478428 | 120 | 6 | 1992–2006 | 0.53 | M-v | 0 | MPC | 77347 | (83320) |
| (83340) | 15.8 | 0.15 | 20060922 | 71.41473 | 203.45142 | 112.20216 | 4.21896 | 0.0608914 | 2.7664841 | 104 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 59817 | (83340) |
| (83356) | 15.3 | 0.15 | 20060922 | 150.94793 | 100.20373 | 143.66863 | 11.31618 | 0.0678731 | 2.7262559 | 171 | 7 | 1996–2006 | 0.56 | M-v | 0 | MPC | 59822 | (83356) |
| (83380) | 15.9 | 0.15 | 20060922 | 96.86195 | 298.67675 | 350.45034 | 3.90773 | 0.0432137 | 2.7667511 | 73 | 6 | 1992–2006 | 0.44 | M-v | 0 | MPC | 59833 | (83380) |
| (83440) | 14.6 | 0.15 | 20060922 | 38.91082 | 322.45339 | 50.51753 | 9.36330 | 0.0183633 | 2.7587771 | 162 | 6 | 1999–2006 | 0.61 | M-v | 0 | MPC | 59858 | (83440) |
| (83657) | 13.7 | 0.15 | 20060922 | 9.44536 | 121.09519 | 258.89332 | 14.16208 | 0.1750200 | 2.9466305 | 240 | 6 | 2000–2006 | 0.53 | M-v | 1 | MPC | 59945 | (83657) |
| (83730) | 13.8 | 0.15 | 20060922 | 40.40526 | 300.08454 | 46.75124 | 11.72987 | 0.1841785 | 2.9896242 | 235 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 59973 | (83730) |
| (83812) | 14.9 | 0.15 | 20060922 | 144.36690 | 297.23495 | 335.11170 | 10.64049 | 0.0797430 | 2.6759119 | 132 | 6 | 1999–2006 | 0.58 | M-v | 0 | MPC | 60000 | (83812) |
| (83817) | 14.5 | 0.15 | 20060922 | 269.66015 | 355.25273 | 109.00750 | 10.02406 | 0.0643126 | 2.9857969 | 121 | 7 | 1993–2006 | 0.63 | M-v | 0 | MPC | 60001 | (83817) |
| (83846) | 15.0 | 0.15 | 20060922 | 61.16898 | 169.65500 | 152.22610 | 10.42026 | 0.0801399 | 2.9380852 | 101 | 7 | 1999–2006 | 0.66 | M-v | 0 | MPC | 60013 | (83846) |
| (83884) | 14.5 | 0.15 | 20060922 | 138.94046 | 118.28954 | 145.32558 | 13.89784 | 0.1666110 | 2.7364827 | 120 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 60027 | (83884) |
| (83891) | 15.7 | 0.15 | 20060922 | 83.30997 | 54.36476 | 225.79124 | 6.92763 | 0.1363566 | 3.0468896 | 92 | 6 | 1990–2006 | 0.56 | M-v | 0 | MPC | 60029 | (83891) |
| (83949) | 15.8 | 0.15 | 20060922 | 277.32395 | 179.41577 | 34.29516 | 1.95701 | 0.0235427 | 2.5123263 | 190 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 60050 | (83949) |
| (83952) | 14.8 | 0.15 | 20060922 | 113.48146 | 46.69184 | 208.43766 | 5.06729 | 0.1183987 | 3.1655181 | 181 | 7 | 1998–2006 | 0.54 | M-v | 0 | MPC | 60051 | (83952) |
| (83967) | 13.8 | 0.15 | 20060922 | 352.53181 | 336.60262 | 55.66884 | 13.71861 | 0.2009994 | 2.8658535 | 170 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 60056 | (83967) |
| (83968) | 13.5 | 0.15 | 20060922 | 358.95695 | 340.29571 | 49.88395 | 12.36331 | 0.1025753 | 3.0644716 | 272 | 6 | 2000–2006 | 0.54 | M-v | 0 | MPC | 60056 | (83968) |
| (84106) | 16.1 | 0.15 | 20060922 | 20.82082 | 85.35712 | 274.98568 | 1.59480 | 0.1795673 | 2.4099561 | 155 | 7 | 1976–2006 | 0.47 | M-v | 0 | MPC | 60103 | (84106) |
| (84113) | 16.6 | 0.15 | 20060922 | 347.94190 | 93.38318 | 325.96371 | 2.02407 | 0.1550352 | 2.3411293 | 129 | 6 | 1977–2006 | 0.59 | M-v | 1 | MPC | 60105 | (84113) |
| (84129) | 15.7 | 0.15 | 20060922 | 249.40826 | 117.77025 | 16.15532 | 6.35796 | 0.0724897 | 2.3712487 | 128 | 6 | 1973–2006 | 0.49 | M-v | 1 | MPC | 60111 | (84129) |
| (84154) | 16.3 | 0.15 | 20060922 | 28.24695 | 177.00142 | 177.86415 | 1.14043 | 0.1857648 | 2.4072496 | 186 | 7 | 1991–2006 | 0.47 | M-v | 0 | MPC | 60119 | (84154) |
| (84191) | 15.9 | 0.15 | 20060922 | 287.42350 | 205.83221 | 294.84925 | 5.17205 | 0.1229219 | 2.2784589 | 119 | 6 | 1999–2006 | 0.56 | M-v | 1 | MPC | 60135 | (84191) |
| (84199) | 16.5 | 0.15 | 20060922 | 49.56747 | 222.53799 | 103.15313 | 7.78017 | 0.1461227 | 2.4061548 | 77 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 60137 | (84199) |
| (84206) | 15.8 | 0.15 | 20060922 | 354.82723 | 11.67735 | 42.53255 | 7.64156 | 0.1068800 | 2.3256988 | 119 | 5 | 1999–2006 | 0.56 | M-v | 0 | MPC | 60139 | (84206) |
| (84207) | 15.1 | 0.15 | 20060922 | 27.83656 | 332.64487 | 17.94068 | 12.28202 | 0.2676451 | 2.4264695 | 191 | 7 | 1998–2006 | 0.52 | M-v | 1 | MPC | 60140 | (84207) |
| (84218) | 17.0 | 0.15 | 20060922 | 354.35513 | 33.47691 | 13.56905 | 3.51505 | 0.1221935 | 2.4006619 | 140 | 6 | 1993–2006 | 0.53 | M-v | 1 | MPC | 60143 | (84218) |
| (84225) | 16.5 | 0.15 | 20060922 | 293.25518 | 101.65500 | 8.18123 | 4.56625 | 0.1466866 | 2.3642291 | 115 | 5 | 1995–2006 | 0.53 | M-v | 0 | MPC | 60145 | (84225) |
| (84236) | 16.3 | 0.15 | 20060922 | 16.90396 | 231.77092 | 122.12905 | 5.55361 | 0.1306344 | 2.5124198 | 134 | 7 | 1993–2006 | 0.59 | M-v | 1 | MPC | 60149 | (84236) |
| (84246) | 16.4 | 0.15 | 20060922 | 347.26568 | 19.06930 | 56.07847 | 5.57819 | 0.1306493 | 2.3649632 | 101 | 6 | 1991–2006 | 0.59 | M-v | 1 | MPC | 60152 | (84246) |
| (84347) | 15.1 | 0.15 | 20060922 | 108.36712 | 41.36347 | 260.26975 | 6.08547 | 0.1471769 | 2.3106876 | 90 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 60190 | (84347) |
| (84351) | 16.5 | 0.15 | 20060922 | 348.47516 | 119.58859 | 309.69027 | 2.30450 | 0.0643493 | 2.3656628 | 93 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 60191 | (84351) |
| (84406) | 17.7 | 0.15 | 20060922 | 339.15504 | 138.69682 | 272.59718 | 1.20829 | 0.1576293 | 2.4534735 | 76 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 60210 | (84406) |
| (84447) | 15.8 | 0.15 | 20060922 | 285.18775 | 344.93368 | 121.96937 | 10.34309 | 0.0243803 | 2.5161919 | 90 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 60224 | (84447) |
| (84466) | 15.8 | 0.15 | 20060922 | 278.26356 | 294.32506 | 171.43026 | 5.42664 | 0.1000934 | 2.6020935 | 160 | 5 | 1993–2006 | 0.57 | M-v | 0 | MPC | 60230 | (84466) |
| (84476) | 16.3 | 0.15 | 20060922 | 232.14961 | 166.20915 | 324.25714 | 8.33602 | 0.1244201 | 2.7055462 | 141 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 60235 | (84476) |
| (84479) | 14.5 | 0.15 | 20060922 | 77.73869 | 257.96529 | 76.83471 | 14.92396 | 0.1154148 | 2.5261333 | 133 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 60236 | (84479) |
| (84517) | 15.9 | 0.15 | 20060922 | 258.30166 | 246.73653 | 238.39980 | 5.79644 | 0.1486783 | 2.6088726 | 96 | 6 | 1997–2006 | 0.56 | M-v | 0 | MPC | 60250 | (84517) |
| (84637) | 14.8 | 0.15 | 20060922 | 261.45281 | 220.08790 | 258.64956 | 12.88860 | 0.1026493 | 2.6252150 | 102 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 60291 | (84637) |
| (84669) | 15.9 | 0.15 | 20060922 | 207.77528 | 321.01663 | 201.78850 | 9.13975 | 0.0363367 | 2.7282340 | 66 | 6 | 1991–2006 | 0.53 | M-v | 1 | MPC | 60301 | (84669) |
| (84672) | 14.4 | 0.15 | 20060922 | 17.80719 | 141.53950 | 240.33145 | 12.98062 | 0.1547976 | 2.5827401 | 166 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 60302 | (84672) |
| (84674) | 15.1 | 0.15 | 20060922 | 290.93040 | 119.39274 | 334.72324 | 4.46395 | 0.1803723 | 2.6804028 | 167 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 60303 | (84674) |
| (84701) | 16.7 | 0.15 | 20060922 | 275.67057 | 237.48793 | 232.03645 | 6.83146 | 0.1290747 | 2.6673448 | 67 | 5 | 1993–2006 | 0.49 | M-v | 1 | MPC | 60312 | (84701) |
| (84756) | 16.0 | 0.15 | 20060922 | 279.98461 | 148.76710 | 38.57199 | 7.94258 | 0.1260824 | 2.2826978 | 115 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 60328 | (84756) |
| (84758) | 16.4 | 0.15 | 20060922 | 166.90433 | 322.22064 | 318.82826 | 4.70227 | 0.1424633 | 2.2903296 | 144 | 7 | 1997–2006 | 0.59 | M-v | 1 | MPC | 60329 | (84758) |
| (84772) | 14.8 | 0.15 | 20060922 | 218.08904 | 206.35615 | 288.31303 | 7.69955 | 0.1558141 | 3.0630664 | 79 | 7 | 1995–2006 | 0.63 | M-v | 0 | MPC | 60333 | (84772) |
| (84775) | 15.7 | 0.15 | 20060922 | 329.98946 | 312.21121 | 87.71109 | 7.69323 | 0.0593187 | 2.7790865 | 77 | 5 | 2000–2006 | 0.54 | M-v | 0 | MPC | 60334 | (84775) |
| (84855) | 15.1 | 0.15 | 20060922 | 42.14840 | 323.67314 | 75.75133 | 5.69392 | 0.0443944 | 2.4850931 | 121 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 60360 | (84855) |
| (84868) | 15.2 | 0.15 | 20060922 | 167.96055 | 151.73512 | 142.07078 | 6.22582 | 0.2123307 | 2.5911329 | 179 | 9 | 1992–2006 | 0.63 | M-v | 1 | MPC | 60364 | (84868) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (84870) | 14.7 | 0.15 | 20060922 | 136.11827 | 77.10960 | 174.77787 | 16.17781 | 0.1512085 | 3.1141140 | 132 | 7 | 1998–2006 | 0.59 | M-v | 0 | MPC | 60364 | (84870) |
| (85105) | 15.7 | 0.15 | 20060922 | 111.03179 | 111.96300 | 210.92315 | 12.15607 | 0.1905656 | 2.5296474 | 184 | 6 | 1977–2005 | 0.66 | M-v | 1 | MPC | 60445 | (85105) |
| (85182) | 17.1 | 0.15 | 20060922 | 252.24133 | 241.07632 | 341.44559 | 3.19023 | 0.7804421 | 2.2139829 | 208 | 6 | 1991–2006 | 0.66 | M-v | 0 | MPC | 62603 | (85182) |
| (85184) | 18.5 | 0.15 | 20060922 | 221.85381 | 322.67435 | 226.44757 | 33.87638 | 0.1846966 | 1.3741316 | 64 | 5 | 1978–2006 | 0.57 | M-v | 2 | MPC | 62604 | (85184) |
| (85270) | 16.6 | 0.15 | 20060922 | 128.69655 | 97.37259 | 298.03416 | 11.60745 | 0.1273206 | 2.5196246 | 140 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 62633 | (85270) |
| (85339) | 16.2 | 0.15 | 20060922 | 244.64486 | 256.14387 | 206.73142 | 4.25998 | 0.0649402 | 3.2148198 | 40 | 5 | 1995–2006 | 0.42 | M-v | 0 | MPC | 62658 | (85339) |
| (85368) | 15.4 | 0.15 | 20060922 | 282.68054 | 85.49522 | 82.57705 | 1.53073 | 0.2114975 | 2.4178791 | 182 | 6 | 1996–2006 | 0.54 | M-v | 1 | MPC | 62666 | (85368) |
| (85438) | 16.1 | 0.15 | 20060922 | 352.77297 | 13.78848 | 115.24129 | 5.00553 | 0.0768461 | 2.1967797 | 105 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 62690 | (85438) |
| (85471) | 16.6 | 0.15 | 20060922 | 260.10470 | 104.55254 | 67.28534 | 25.49583 | 0.2298734 | 2.3531824 | 89 | 6 | 1986–2006 | 0.53 | M-v | 1 | MPC | 62702 | (85471) |
| (85607) | 14.9 | 0.15 | 20060922 | 197.21698 | 3.81829 | 166.93523 | 5.61664 | 0.0978006 | 3.1606942 | 110 | 7 | 1998–2006 | 0.60 | M-v | 0 | MPC | 62755 | (85607) |
| (85770) | 20.6 | 0.15 | 20060922 | 74.74352 | 234.37667 | 18.40368 | 33.17849 | 0.3449375 | 0.9987333 | 369 | 10 | 1990–2006 | 0.54 | M-v | 3 | MPC | 89997 | (85770) |
| (85966) | 15.1 | 0.15 | 20060922 | 122.84803 | 284.87055 | 161.08350 | 10.97986 | 0.1159791 | 2.3337121 | 284 | 7 | 1993–2006 | 0.67 | M-v | 0 | MPC | 62899 | (85966) |
| (86265) | 14.1 | 0.15 | 20060922 | 342.63747 | 267.87975 | 217.53801 | 9.77227 | 0.1200201 | 3.1839499 | 198 | 6 | 1999–2006 | 0.55 | M-v | 0 | MPC | 63020 | (86265) |
| (86365) | 16.1 | 0.15 | 20060922 | 278.14079 | 178.79272 | 320.19591 | 7.48265 | 0.1865531 | 2.3726660 | 75 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 63057 | (86365) |
| (86415) | 16.3 | 0.15 | 20060922 | 253.36333 | 176.01789 | 64.51641 | 2.29355 | 0.1145882 | 2.2234675 | 136 | 7 | 1994–2006 | 0.51 | M-v | 1 | MPC | 63075 | (86415) |
| (86492) | 15.8 | 0.15 | 20060922 | 283.05519 | 56.09031 | 138.06596 | 7.13231 | 0.0652587 | 2.3246606 | 129 | 7 | 1993–2006 | 0.62 | M-v | 1 | MPC | 63104 | (86492) |
| (86510) | 16.6 | 0.15 | 20060922 | 214.03514 | 49.46258 | 191.35141 | 2.81472 | 0.1507913 | 2.3938187 | 110 | 7 | 1996–2005 | 0.55 | M-v | 1 | MPC | 63110 | (86510) |
| (86573) | 16.9 | 0.15 | 20060922 | 252.92016 | 214.38801 | 327.47432 | 2.24409 | 0.1180047 | 2.4441688 | 78 | 9 | 1992–2006 | 0.50 | M-v | 1 | MPC | 63135 | (86573) |
| (86586) | 16.6 | 0.15 | 20060922 | 314.79229 | 329.97084 | 144.96575 | 2.81501 | 0.1537577 | 2.4264646 | 86 | 6 | 1996–2006 | 0.58 | M-v | 0 | MPC | 63141 | (86586) |
| (86613) | 16.2 | 0.15 | 20060922 | 19.79962 | 223.24718 | 190.82873 | 0.58348 | 0.2042615 | 2.3638205 | 189 | 7 | 1991–2006 | 0.47 | M-v | 1 | MPC | 63151 | (86613) |
| (86618) | 17.0 | 0.15 | 20060922 | 318.49444 | 82.33857 | 14.73101 | 2.52152 | 0.1484484 | 2.4558625 | 85 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 63153 | (86618) |
| (86649) | 15.7 | 0.15 | 20060922 | 307.30440 | 229.13864 | 287.42525 | 2.69284 | 0.0853131 | 2.3402182 | 184 | 7 | 1993–2006 | 0.60 | M-v | 0 | MPC | 63165 | (86649) |
| (86666) | 16.8 | 0.15 | 20060922 | 285.17338 | 258.76408 | 187.04191 | 29.01708 | 0.4268993 | 1.4629016 | 227 | 5 | 2000–2006 | 0.52 | M-v | 3 | MPC | 04101 | (86666) |
| (86667) | 17.4 | 0.15 | 20060922 | 208.35819 | 172.40020 | 208.40353 | 14.28478 | 0.5947382 | 0.8592696 | 269 | 6 | 1988–2005 | 0.59 | M-v | 4 | MPC | 77348 | (86667) |
| (86695) | 16.1 | 0.15 | 20060922 | 230.66229 | 347.59808 | 233.81157 | 9.81123 | 0.1582736 | 2.4478560 | 132 | 5 | 1998–2005 | 0.57 | M-v | 2 | MPC | 63184 | (86695) |
| (86714) | 16.7 | 0.15 | 20060922 | 248.25825 | 324.01681 | 246.26022 | 1.36748 | 0.0766398 | 2.3836054 | 107 | 8 | 1994–2006 | 0.45 | M-v | 0 | MPC | 63192 | (86714) |
| (86806) | 16.5 | 0.15 | 20060922 | 257.67193 | 74.16989 | 129.19758 | 3.69565 | 0.1263874 | 2.4041822 | 49 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 63233 | (86806) |
| (86920) | 15.7 | 0.15 | 20060922 | 155.63736 | 142.35755 | 161.20169 | 4.37690 | 0.1429027 | 2.4868421 | 105 | 4 | 1996–2004 | 0.57 | M-v | 2 | MPC | 63279 | (86920) |
| (87030) | 15.8 | 0.15 | 20060922 | 147.06990 | 305.11110 | 41.26540 | 2.80889 | 0.2329537 | 2.4312348 | 187 | 7 | 1996–2006 | 0.66 | M-v | 1 | MPC | 63324 | (87030) |
| (87141) | 15.1 | 0.15 | 20060922 | 136.11049 | 73.07514 | 296.99555 | 14.57029 | 0.0808591 | 2.5607312 | 134 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 63366 | (87141) |
| (87165) | 14.3 | 0.15 | 20060922 | 0.29178 | 71.67880 | 325.16760 | 6.79408 | 0.0972282 | 2.9686990 | 287 | 6 | 2000–2006 | 0.56 | M-v | 0 | MPC | 63375 | (87165) |
| (87188) | 15.0 | 0.15 | 20060922 | 64.08958 | 234.46377 | 148.78845 | 5.30392 | 0.1248064 | 2.7343493 | 174 | 7 | 1994–2006 | 0.55 | M-v | 0 | MPC | 63386 | (87188) |
| (87228) | 13.3 | 0.15 | 20060922 | 316.24233 | 150.43097 | 293.64957 | 9.66314 | 0.0474184 | 2.9942061 | 333 | 7 | 1998–2006 | 0.53 | M-v | 0 | MPC | 63400 | (87228) |
| (87303) | 13.8 | 0.15 | 20060922 | 20.07304 | 71.47388 | 301.24988 | 12.34313 | 0.2799567 | 3.1770067 | 204 | 6 | 2000–2006 | 0.51 | M-v | 0 | MPC | 97317 | (87303) |
| (87311) | 16.5 | 0.15 | 20060922 | 128.74620 | 343.30862 | 191.53709 | 7.68596 | 0.5124634 | 1.5896137 | 186 | 9 | 1982–2006 | 0.59 | M-v | 3 | MPC | 04101 | (87311) |
| (87332) | 15.6 | 0.15 | 20060922 | 121.95104 | 138.23360 | 154.31115 | 1.22595 | 0.0784051 | 2.8945356 | 119 | 7 | 1995–2006 | 0.53 | M-v | 0 | MPC | 63445 | (87332) |
| (87380) | 14.1 | 0.15 | 20060922 | 24.14867 | 93.13394 | 2.80122 | 15.12398 | 0.0890103 | 2.6687536 | 187 | 7 | 1994–2006 | 0.50 | M-v | 0 | MPC | 63463 | (87380) |
| (87439) | 14.4 | 0.15 | 20060922 | 65.43754 | 199.21702 | 103.50589 | 6.57691 | 0.1266131 | 3.1227498 | 77 | 5 | 1999–2006 | 0.62 | M-v | 0 | MPC | 63485 | (87439) |
| (87535) | 14.9 | 0.15 | 20060922 | 91.11349 | 225.36392 | 108.47281 | 4.58601 | 0.1752908 | 2.8883233 | 131 | 7 | 1999–2006 | 0.55 | M-v | 0 | MPC | 63521 | (87535) |
| (87595) | 13.4 | 0.15 | 20060922 | 3.59811 | 212.12418 | 326.18539 | 13.60020 | 0.1191707 | 2.5374665 | 322 | 5 | 1998–2006 | 0.50 | M-v | 2 | MPC | 63542 | (87595) |
| (87650) | 14.1 | 0.15 | 20060922 | 327.82242 | 190.68698 | 240.78338 | 11.11741 | 0.0643070 | 3.0810013 | 165 | 6 | 2000–2006 | 0.52 | M-v | 0 | MPC | 63565 | (87650) |
| (87654) | 14.8 | 0.15 | 20060922 | 49.59256 | 116.36446 | 212.37863 | 8.95784 | 0.0928843 | 3.0455876 | 149 | 6 | 1999–2006 | 0.49 | M-v | 0 | MPC | 63567 | (87654) |
| (87765) | 14.0 | 0.15 | 20060922 | 56.72907 | 99.45128 | 236.13753 | 21.00171 | 0.1604380 | 3.1118631 | 156 | 6 | 1999–2006 | 0.53 | M-v | 0 | MPC | 63608 | (87765) |
| (87768) | 14.6 | 0.15 | 20060922 | 4.82059 | 131.11627 | 229.29878 | 14.20539 | 0.0630911 | 3.2089303 | 89 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 63609 | (87768) |
| (87819) | 14.6 | 0.15 | 20060922 | 37.64015 | 265.41181 | 107.11462 | 11.92765 | 0.1266812 | 3.0842709 | 182 | 6 | 2000–2006 | 0.59 | M-v | 0 | MPC | 63628 | (87819) |
| (87859) | 13.1 | 0.15 | 20060922 | 302.22602 | 78.39062 | 70.42054 | 17.09059 | 0.1890966 | 3.1200424 | 238 | 7 | 1989–2006 | 0.58 | M-v | 0 | MPC | 63642 | (87859) |
| (87898) | 14.6 | 0.15 | 20060922 | 116.44845 | 15.94335 | 265.74578 | 8.14966 | 0.0381451 | 3.1697359 | 124 | 6 | 2000–2006 | 0.48 | M-v | 0 | MPC | 63656 | (87898) |
| (87920) | 14.2 | 0.15 | 20060922 | 105.16492 | 5.02703 | 274.03761 | 13.82404 | 0.0567922 | 3.1071819 | 115 | 6 | 2000–2006 | 0.60 | M-v | 0 | MPC | 63664 | (87920) |
| (87975) | 14.1 | 0.15 | 20060922 | 146.57261 | 133.95266 | 115.25921 | 11.09224 | 0.0476978 | 3.0655181 | 167 | 6 | 2000–2006 | 0.61 | M-v | 0 | MPC | 63682 | (87975) |
| (88005) | 14.1 | 0.15 | 20060922 | 18.40775 | 17.70009 | 51.42213 | 13.71735 | 0.0311842 | 3.0604646 | 185 | 6 | 2000–2006 | 0.62 | M-v | 1 | MPC | 63693 | (88005) |
| (88071) | 14.4 | 0.15 | 20060922 | 23.26757 | 242.11909 | 127.70747 | 22.50451 | 0.1786010 | 3.3843680 | 122 | 6 | 1999–2006 | 0.52 | M-v | 0 | MPC | 63715 | (88071) |
| (88124) | 14.4 | 0.15 | 20060922 | 44.89902 | 279.19996 | 90.62768 | 22.63381 | 0.2768233 | 3.1342482 | 110 | 6 | 1998–2006 | 0.55 | M-v | 0 | MPC | 87325 | (88124) |
| (88228) | 13.6 | 0.15 | 20060922 | 84.77750 | 121.24088 | 270.90983 | 11.96158 | 0.0945991 | 3.2190800 | 159 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 63770 | (88228) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (88361) | 15.2 | 0.15 | 20060922 | 15.44340 | 263.06564 | 116.90983 | 15.27996 | 0.2182584 | 2.7171526 | 141 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 63819 | (88361) |
| (88492) | 14.5 | 0.15 | 20060922 | 34.87860 | 113.98326 | 275.42797 | 11.95858 | 0.1645803 | 2.6780395 | 191 | 6 | 1997–2006 | 0.49 | M-v | 0 | MPC | 63874 | (88492) |
| (88521) | 14.1 | 0.15 | 20060922 | 26.55095 | 347.21587 | 44.33012 | 14.39962 | 0.1909281 | 2.8659235 | 179 | 6 | 1999–2006 | 0.58 | M-v | 1 | MPC | 63886 | (88521) |
| (88526) | 17.0 | 0.15 | 20060922 | 340.54360 | 121.13932 | 301.09768 | 1.17362 | 0.0751016 | 2.6427973 | 89 | 6 | 1997–2006 | 0.42 | M-v | 0 | MPC | 63888 | (88526) |
| (88533) | 15.1 | 0.15 | 20060922 | 50.38643 | 283.44179 | 128.63328 | 12.30988 | 0.1590657 | 2.6570330 | 152 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 63891 | (88533) |
| (88550) | 14.1 | 0.15 | 20060922 | 37.87065 | 125.90122 | 258.13252 | 5.86235 | 0.1791141 | 2.7484433 | 272 | 7 | 1987–2006 | 0.51 | M-v | 0 | MPC | 63897 | (88550) |
| (88581) | 15.2 | 0.15 | 20060922 | 245.05875 | 265.67938 | 276.13127 | 6.30854 | 0.1402486 | 2.6091361 | 95 | 7 | 1993–2006 | 0.58 | M-v | 1 | MPC | 63910 | (88581) |
| (88604) | 13.2 | 0.15 | 20060922 | 299.89134 | 186.78635 | 286.54472 | 11.77797 | 0.1089193 | 2.6675717 | 406 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 63919 | (88604) |
| (88669) | 15.8 | 0.15 | 20060922 | 25.43367 | 29.11275 | 350.55228 | 5.47381 | 0.0541651 | 2.6945126 | 78 | 6 | 1999–2006 | 0.50 | M-v | 1 | MPC | 63947 | (88669) |
| (88683) | 16.0 | 0.15 | 20060922 | 202.37597 | 165.54827 | 109.03896 | 5.44269 | 0.1105169 | 2.3507956 | 115 | 5 | 1998–2005 | 0.62 | M-v | 1 | MPC | 63952 | (88683) |
| (88720) | 15.4 | 0.15 | 20060922 | 269.39465 | 336.73194 | 184.49084 | 9.71603 | 0.0287446 | 2.6317019 | 129 | 5 | 1999–2005 | 0.64 | M-v | 1 | MPC | 63967 | (88720) |
| (88803) | 15.6 | 0.15 | 20060922 | 307.62643 | 312.22175 | 189.97929 | 15.03891 | 0.0528450 | 2.5387904 | 131 | 5 | 1999–2005 | 0.64 | M-v | 1 | MPC | 64001 | (88803) |
| (88827) | 15.5 | 0.15 | 20060922 | 332.08139 | 303.63530 | 222.29083 | 2.01921 | 0.1204757 | 2.4203880 | 222 | 7 | 1993–2006 | 0.54 | M-v | 1 | MPC | 64010 | (88827) |
| (88829) | 15.4 | 0.15 | 20060922 | 322.67511 | 164.06270 | 281.82583 | 0.97352 | 0.0157167 | 2.7708323 | 204 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 64011 | (88829) |
| (88845) | 14.4 | 0.15 | 20060922 | 301.71765 | 231.11309 | 190.55816 | 15.43479 | 0.0706259 | 3.1673579 | 113 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 64017 | (88845) |
| (88877) | 15.4 | 0.15 | 20060922 | 279.67776 | 222.64817 | 346.37585 | 1.89391 | 0.1427875 | 2.4670418 | 215 | 7 | 1980–2006 | 0.51 | M-v | 0 | MPC | 64029 | (88877) |
| (88888) | 15.6 | 0.15 | 20060922 | 13.39940 | 340.50545 | 61.83556 | 14.84048 | 0.1514007 | 2.7110146 | 98 | 6 | 1997–2006 | 0.65 | M-v | 0 | MPC | 64034 | (88888) |
| (88960) | 14.6 | 0.15 | 20060922 | 28.20802 | 108.46933 | 279.23301 | 3.26711 | 0.0813753 | 2.7998663 | 196 | 6 | 2000–2006 | 0.52 | M-v | 0 | MPC | 64061 | (88960) |
| (88964) | 15.6 | 0.15 | 20060922 | 260.06887 | 271.87059 | 223.33044 | 5.51572 | 0.0163119 | 2.7811803 | 174 | 5 | 1999–2006 | 0.51 | M-v | 0 | MPC | 87325 | (88964) |
| (88970) | 15.6 | 0.15 | 20060922 | 17.66511 | 160.34590 | 209.50359 | 6.14126 | 0.0794181 | 2.8633778 | 155 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 64065 | (88970) |
| (89002) | 14.7 | 0.15 | 20060922 | 311.03116 | 195.04433 | 222.33375 | 19.90006 | 0.0417787 | 3.1217344 | 105 | 5 | 2000–2006 | 0.64 | M-v | 0 | MPC | 64079 | (89002) |
| (89072) | 15.3 | 0.15 | 20060922 | 14.65616 | 307.20552 | 57.41672 | 13.00527 | 0.0680177 | 2.9313687 | 78 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 64106 | (89072) |
| (89103) | 15.0 | 0.15 | 20060922 | 12.60384 | 355.90663 | 57.69028 | 12.16864 | 0.1567606 | 2.6636206 | 86 | 6 | 1995–2005 | 0.65 | M-v | 1 | MPC | 64117 | (89103) |
| (89185) | 15.1 | 0.15 | 20060922 | 35.59422 | 227.12199 | 147.81513 | 5.00442 | 0.0847066 | 2.8000922 | 136 | 7 | 1994–2006 | 0.61 | M-v | 0 | MPC | 64149 | (89185) |
| (89197) | 15.2 | 0.15 | 20060922 | 309.09842 | 55.60742 | 44.66546 | 2.63306 | 0.0314260 | 2.8758834 | 213 | 7 | 1994–2006 | 0.51 | M-v | 0 | MPC | 64153 | (89197) |
| (89215) | 15.2 | 0.15 | 20060922 | 120.20778 | 99.76240 | 212.69905 | 2.59432 | 0.0613301 | 2.7225766 | 168 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 64160 | (89215) |
| (89248) | 15.3 | 0.15 | 20060922 | 205.25207 | 129.99408 | 47.62388 | 10.42252 | 0.0862718 | 2.9625051 | 73 | 5 | 1991–2006 | 0.51 | M-v | 1 | MPC | 64172 | (89248) |
| (89252) | 15.8 | 0.15 | 20060922 | 68.03460 | 112.38155 | 244.07475 | 0.66195 | 0.0818462 | 2.7701972 | 141 | 6 | 1998–2005 | 0.51 | M-v | 1 | MPC | 64173 | (89252) |
| (89254) | 14.8 | 0.15 | 20060922 | 346.71655 | 313.06868 | 129.43007 | 10.36566 | 0.1163003 | 2.7476826 | 177 | 6 | 1999–2006 | 0.53 | M-v | 0 | MPC | 64174 | (89254) |
| (89277) | 14.1 | 0.15 | 20060922 | 45.39725 | 358.68529 | 42.56320 | 22.90426 | 0.0429225 | 2.5541272 | 115 | 6 | 1997–2005 | 0.63 | M-v | 1 | MPC | 64182 | (89277) |
| (89306) | 15.8 | 0.15 | 20060922 | 132.54718 | 261.66289 | 67.96159 | 3.10580 | 0.1559469 | 2.6260708 | 156 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 64193 | (89306) |
| (89349) | 14.1 | 0.15 | 20060922 | 13.63290 | 325.23319 | 54.86173 | 12.36122 | 0.0873067 | 3.0483646 | 193 | 6 | 2000–2006 | 0.50 | M-v | 0 | MPC | 64209 | (89349) |
| (89371) | 14.8 | 0.15 | 20060922 | 62.15150 | 198.05374 | 132.80271 | 17.02781 | 0.0466950 | 3.0878065 | 124 | 6 | 2000–2006 | 0.54 | M-v | 0 | MPC | 64219 | (89371) |
| (89372) | 15.4 | 0.15 | 20060922 | 287.52607 | 95.96713 | 111.79507 | 22.36599 | 0.0563502 | 2.5973186 | 111 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 64219 | (89372) |
| (89421) | 15.5 | 0.15 | 20060922 | 81.53839 | 232.29675 | 144.41569 | 4.87130 | 0.2215092 | 2.6289179 | 174 | 7 | 1995–2006 | 0.51 | M-v | 1 | MPC | 64235 | (89421) |
| (89457) | 14.7 | 0.15 | 20060922 | 66.39807 | 201.98712 | 125.45435 | 2.91862 | 0.0736757 | 2.9778726 | 161 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 64246 | (89457) |
| (89562) | 13.9 | 0.15 | 20060922 | 268.91530 | 225.31964 | 285.76351 | 25.01309 | 0.1558147 | 3.1755358 | 127 | 5 | 1999–2005 | 0.63 | M-v | 1 | MPC | 64283 | (89562) |
| (89580) | 15.8 | 0.15 | 20060922 | 118.17856 | 115.34016 | 176.58961 | 1.81974 | 0.0815960 | 2.9071368 | 97 | 7 | 1999–2006 | 0.44 | M-v | 0 | MPC | 64289 | (89580) |
| (89638) | 14.1 | 0.15 | 20060922 | 349.60792 | 290.17159 | 119.46232 | 16.63701 | 0.1220541 | 3.1398672 | 89 | 6 | 2000–2006 | 0.54 | M-v | 1 | MPC | 64306 | (89638) |
| (89639) | 16.1 | 0.15 | 20060922 | 231.64225 | 281.09309 | 352.23682 | 0.93376 | 0.1618043 | 2.4280600 | 152 | 7 | 1997–2006 | 0.53 | M-v | 0 | MPC | 64307 | (89639) |
| (89733) | 13.9 | 0.15 | 20060922 | 54.69149 | 258.55418 | 69.50823 | 23.06682 | 0.1449989 | 3.1456717 | 133 | 6 | 2000–2006 | 0.57 | M-v | 0 | MPC | 77348 | (89733) |
| (89737) | 14.2 | 0.15 | 20060922 | 305.20888 | 23.11738 | 120.53612 | 10.29373 | 0.0525911 | 3.0439022 | 154 | 5 | 2000–2005 | 0.62 | M-v | 1 | MPC | 64338 | (89737) |
| (89749) | 15.3 | 0.15 | 20060922 | 240.78922 | 305.47187 | 303.28025 | 8.47929 | 0.0943913 | 2.7050991 | 116 | 7 | 1981–2006 | 0.46 | M-v | 0 | MPC | 64342 | (89749) |
| (89777) | 13.8 | 0.15 | 20060922 | 297.57997 | 206.16059 | 309.09163 | 20.84499 | 0.0739089 | 3.1387205 | 112 | 6 | 1999–2006 | 0.56 | M-v | 1 | MPC | 64351 | (89777) |
| (89799) | 15.1 | 0.15 | 20060922 | 140.42638 | 204.31796 | 132.30956 | 13.80286 | 0.1444876 | 2.7439361 | 74 | 7 | 1999–2006 | 0.67 | M-v | 0 | MPC | 64359 | (89799) |
| (89804) | 13.7 | 0.15 | 20060922 | 143.09229 | 340.21756 | 304.11147 | 5.49350 | 0.0915539 | 3.2235146 | 148 | 6 | 2000–2006 | 0.58 | M-v | 0 | MPC | 64361 | (89804) |
| (89927) | 13.8 | 0.15 | 20060922 | 23.51461 | 53.34448 | 228.54006 | 2.17165 | 0.0343827 | 5.2818053 | 64 | 4 | 1997–2004 | 0.53 | M-v | 1 | MPC | 04102 | (89927) |
| (89972) | 15.7 | 0.15 | 20060922 | 345.88877 | 199.23039 | 224.08695 | 8.19613 | 0.2415299 | 2.5411710 | 154 | 5 | 1996–2006 | 0.56 | M-v | 2 | MPC | 64414 | (89972) |
| (89978) | 15.4 | 0.15 | 20060922 | 247.64820 | 185.71614 | 243.33690 | 0.93391 | 0.0718186 | 2.9065300 | 126 | 8 | 1997–2006 | 0.62 | M-v | 0 | MPC | 04102 | (89978) |
| (90003) | 15.8 | 0.15 | 20060922 | 2.43394 | 289.66217 | 94.18892 | 7.08780 | 0.1332918 | 2.4736322 | 111 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 64425 | (90003) |
| (90038) | 15.3 | 0.15 | 20060922 | 194.28124 | 44.75773 | 163.33640 | 8.04252 | 0.1385198 | 2.4109308 | 178 | 7 | 1994–2006 | 0.51 | M-v | 0 | MPC | 64436 | (90038) |
| (90053) | 15.1 | 0.15 | 20060922 | 217.57126 | 51.51499 | 50.31870 | 10.58698 | 0.2018880 | 3.1381387 | 70 | 4 | 1993–2004 | 0.61 | M-v | 1 | MPC | 64441 | (90053) |
| (90071) | 15.9 | 0.15 | 20060922 | 305.85314 | 48.48828 | 89.40630 | 6.99399 | 0.1135591 | 2.4319488 | 126 | 6 | 1992–2006 | 0.62 | M-v | 0 | MPC | 64447 | (90071) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (90103) | 15.6 | 0.15 | 20060922 | 5.04191 | 302.60444 | 68.63464 | 6.28911 | 0.0868383 | 2.7021083 | 113 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 64458 | (90103) |
| (90133) | 15.4 | 0.15 | 20060922 | 251.06067 | 104.59345 | 36.86575 | 5.57101 | 0.1131368 | 2.7733588 | 100 | 6 | 1992–2006 | 0.53 | M-v | 0 | MPC | 64467 | (90133) |
| (90137) | 15.3 | 0.15 | 20060922 | 180.70080 | 113.54033 | 52.75362 | 10.78561 | 0.1749783 | 3.1326505 | 88 | 5 | 1996–2006 | 0.62 | M-v | 1 | MPC | 64468 | (90137) |
| (90146) | 15.0 | 0.15 | 20060922 | 350.53596 | 332.28730 | 91.85575 | 8.42585 | 0.1759175 | 2.5807865 | 100 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 64471 | (90146) |
| (90157) | 16.2 | 0.15 | 20060922 | 68.22321 | 307.60876 | 97.61633 | 2.91776 | 0.0387303 | 2.3298994 | 86 | 7 | 1993–2006 | 0.50 | M-v | 1 | MPC | 64475 | (90157) |
| (90175) | 15.5 | 0.15 | 20060922 | 179.43700 | 262.48364 | 317.08204 | 8.84810 | 0.0803630 | 2.8484086 | 104 | 6 | 2000–2006 | 0.55 | M-v | 0 | MPC | 64480 | (90175) |
| (90189) | 15.1 | 0.15 | 20060922 | 185.69429 | 156.58139 | 186.75176 | 5.42476 | 0.2170563 | 2.1466672 | 158 | 8 | 1992–2006 | 0.65 | M-v | 1 | MPC | 64485 | (90189) |
| (90218) | 14.1 | 0.15 | 20060922 | 205.78615 | 221.11811 | 337.15448 | 17.40197 | 0.2470706 | 3.1227616 | 185 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 64494 | (90218) |
| (90240) | 15.3 | 0.15 | 20060922 | 245.17653 | 216.80977 | 8.29214 | 12.46313 | 0.2222095 | 2.6932944 | 111 | 6 | 1996–2005 | 0.63 | M-v | 1 | MPC | 64501 | (90240) |
| (90242) | 15.0 | 0.15 | 20060922 | 175.30937 | 63.69624 | 147.67817 | 10.17303 | 0.0669961 | 3.0747784 | 90 | 7 | 1998–2006 | 0.61 | M-v | 0 | MPC | 64502 | (90242) |
| (90245) | 14.2 | 0.15 | 20060922 | 223.65493 | 35.82405 | 127.40117 | 18.45697 | 0.0930094 | 3.1873107 | 96 | 8 | 1986–2006 | 0.68 | M-v | 0 | MPC | 64503 | (90245) |
| (90252) | 15.0 | 0.15 | 20060922 | 67.20645 | 167.01946 | 142.09539 | 10.00122 | 0.0538751 | 3.1672593 | 87 | 6 | 2000–2006 | 0.59 | M-v | 0 | MPC | 64505 | (90252) |
| (90259) | 15.6 | 0.15 | 20060922 | 277.67780 | 276.98695 | 291.73826 | 6.27577 | 0.1553195 | 2.5729149 | 126 | 7 | 1996–2006 | 0.62 | M-v | 1 | MPC | 64507 | (90259) |
| (90264) | 14.7 | 0.15 | 20060922 | 74.47641 | 198.75536 | 125.20982 | 12.00373 | 0.0914742 | 3.0648329 | 108 | 7 | 1992–2006 | 0.53 | M-v | 0 | MPC | 64509 | (90264) |
| (90267) | 14.3 | 0.15 | 20060922 | 211.88889 | 46.56839 | 119.30231 | 10.53000 | 0.0421630 | 3.1702431 | 126 | 7 | 1997–2006 | 0.62 | M-v | 0 | MPC | 64510 | (90267) |
| (90343) | 15.9 | 0.15 | 20060922 | 183.64949 | 340.83688 | 303.79312 | 1.95923 | 0.0357272 | 2.7661364 | 103 | 7 | 1994–2006 | 0.63 | M-v | 0 | MPC | 64533 | (90343) |
| (90414) | 16.1 | 0.15 | 20060922 | 241.17797 | 154.74389 | 336.75909 | 6.34368 | 0.0639193 | 2.3879512 | 121 | 6 | 1991–2006 | 0.49 | M-v | 1 | MPC | 64553 | (90414) |
| (90429) | 17.4 | 0.15 | 20060922 | 234.72765 | 117.16114 | 40.71658 | 1.87369 | 0.1300744 | 2.4368727 | 89 | 5 | 1991–2006 | 0.47 | M-v | 1 | MPC | 64557 | (90429) |
| (90479) | 15.0 | 0.15 | 20060922 | 18.85736 | 29.93509 | 338.90685 | 13.67570 | 0.1050764 | 2.5916113 | 107 | 5 | 1998–2006 | 0.55 | M-v | 2 | MPC | 64574 | (90479) |
| (90496) | 16.6 | 0.15 | 20060922 | 334.87652 | 255.95684 | 172.73402 | 4.65444 | 0.2062634 | 2.3422041 | 151 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 64579 | (90496) |
| (90614) | 15.0 | 0.15 | 20060922 | 26.71075 | 6.36996 | 32.23189 | 5.34702 | 0.1214220 | 2.7367935 | 197 | 7 | 1960–2006 | 0.51 | M-v | 0 | MPC | 64616 | (90614) |
| (90726) | 16.1 | 0.15 | 20060922 | 232.19425 | 37.33879 | 324.29056 | 5.95544 | 0.1422640 | 2.2462825 | 150 | 6 | 1992–2006 | 0.57 | M-v | 1 | MPC | 66446 | (90726) |
| (91595) | 15.0 | 0.15 | 20060922 | 136.21771 | 18.44681 | 54.21174 | 3.48890 | 0.1966005 | 2.8056195 | 187 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 66795 | (91595) |
| (91624) | 14.5 | 0.15 | 20060922 | 4.32819 | 236.98978 | 222.88758 | 7.41776 | 0.0206248 | 3.1975229 | 101 | 5 | 1999–2005 | 0.61 | M-v | 0 | MPC | 66808 | (91624) |
| (91639) | 15.4 | 0.15 | 20060922 | 262.94502 | 284.62556 | 339.37989 | 10.86904 | 0.2116093 | 2.6739163 | 61 | 5 | 1998–2005 | 0.68 | M-v | 2 | MPC | 66813 | (91639) |
| (91655) | 15.5 | 0.15 | 20060922 | 165.40214 | 77.94526 | 310.90113 | 4.79257 | 0.1425093 | 2.8030133 | 112 | 5 | 1994–2006 | 0.62 | M-v | 1 | MPC | 66819 | (91655) |
| (91710) | 13.8 | 0.15 | 20060922 | 66.68335 | 219.73466 | 181.44936 | 15.15494 | 0.0234265 | 3.1514364 | 158 | 6 | 1999–2006 | 0.57 | M-v | 0 | MPC | 66842 | (91710) |
| (91737) | 14.3 | 0.15 | 20060922 | 149.99944 | 71.19755 | 240.41139 | 8.18823 | 0.0612001 | 3.1729108 | 95 | 5 | 1999–2006 | 0.54 | M-v | 0 | MPC | 66853 | (91737) |
| (91790) | 13.9 | 0.15 | 20060922 | 30.49208 | 212.23035 | 225.84315 | 8.35894 | 0.0710557 | 3.1156585 | 264 | 7 | 1997–2006 | 0.48 | M-v | 0 | MPC | 66873 | (91790) |
| (91840) | 15.7 | 0.15 | 20060922 | 159.13055 | 173.43770 | 134.19126 | 0.62070 | 0.1890405 | 3.0996769 | 98 | 5 | 1997–2005 | 0.46 | M-v | 0 | MPC | 66890 | (91840) |
| (92203) | 16.0 | 0.15 | 20060922 | 169.26743 | 201.66975 | 119.08380 | 2.64683 | 0.0806338 | 3.1614133 | 49 | 7 | 1994–2006 | 0.46 | M-v | 1 | MPC | 67030 | (92203) |
| (92281) | 14.1 | 0.15 | 20060922 | 343.47966 | 314.73067 | 159.80189 | 3.25844 | 0.1610038 | 3.9894797 | 89 | 7 | 1997–2006 | 0.58 | M-v | 0 | MPC | 67058 | (92281) |
| (92287) | 13.3 | 0.15 | 20060922 | 310.30020 | 136.65715 | 351.21538 | 8.10721 | 0.0893406 | 3.9711532 | 151 | 6 | 1997–2005 | 0.64 | M-v | 0 | MPC | 67060 | (92287) |
| (92610) | 15.5 | 0.15 | 20060922 | 281.03909 | 233.48734 | 344.66509 | 4.12767 | 0.0803400 | 2.5547607 | 114 | 7 | 1999–2006 | 0.59 | M-v | 1 | MPC | 67189 | (92610) |
| (92926) | 15.2 | 0.15 | 20060922 | 77.52222 | 276.39021 | 197.22268 | 9.02064 | 0.1486383 | 2.5460918 | 208 | 6 | 1996–2006 | 0.63 | M-v | 2 | MPC | 67319 | (92926) |
| (92955) | 13.9 | 0.15 | 20060922 | 312.33896 | 255.76365 | 344.56638 | 12.02328 | 0.0754533 | 2.5298051 | 257 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 67333 | (92955) |
| (92958) | 13.9 | 0.15 | 20060922 | 292.01154 | 267.48625 | 354.72123 | 11.20118 | 0.1447624 | 2.5368995 | 243 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 67335 | (92958) |
| (92992) | 15.9 | 0.15 | 20060922 | 241.38726 | 351.87941 | 343.19046 | 6.57459 | 0.1359905 | 2.4131965 | 143 | 6 | 1991–2006 | 0.58 | M-v | 1 | MPC | 67352 | (92992) |
| (93062) | 16.3 | 0.15 | 20060922 | 195.81214 | 348.59117 | 57.93045 | 5.66946 | 0.1903949 | 2.3742039 | 123 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 67382 | (93062) |
| (93240) | 14.9 | 0.15 | 20060922 | 285.63037 | 238.64780 | 30.38341 | 14.79157 | 0.0767841 | 2.5196086 | 167 | 5 | 1992–2006 | 0.52 | M-v | 2 | MPC | 67456 | (93240) |
| (93258) | 15.1 | 0.15 | 20060922 | 114.12161 | 168.30495 | 278.62637 | 8.01350 | 0.1191223 | 2.5384694 | 117 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 67464 | (93258) |
| (93282) | 15.9 | 0.15 | 20060922 | 103.92069 | 304.00385 | 154.73888 | 3.52042 | 0.1187434 | 2.5265160 | 223 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 67474 | (93282) |
| (93378) | 15.0 | 0.15 | 20060922 | 293.14099 | 186.84984 | 58.48347 | 13.39609 | 0.1144028 | 2.5932487 | 134 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 67510 | (93378) |
| (93413) | 15.7 | 0.15 | 20060922 | 116.23261 | 116.28116 | 324.39669 | 3.03610 | 0.0930238 | 2.5418615 | 201 | 6 | 1996–2006 | 0.57 | M-v | 1 | MPC | 67524 | (93413) |
| (93475) | 14.0 | 0.15 | 20060922 | 309.75501 | 86.97412 | 47.63748 | 16.61286 | 0.1812789 | 3.0580876 | 149 | 6 | 2000–2006 | 0.61 | M-v | 0 | MPC | 67546 | (93475) |
| (93739) | 14.7 | 0.15 | 20060922 | 285.54338 | 254.00451 | 21.21610 | 11.46701 | 0.1229204 | 2.5335471 | 141 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 67646 | (93739) |
| (93822) | 15.0 | 0.15 | 20060922 | 182.97138 | 308.84934 | 358.92626 | 7.99710 | 0.1404125 | 2.7772762 | 90 | 4 | 2000–2004 | 0.62 | M-v | 1 | MPC | 67676 | (93822) |
| (93832) | 13.8 | 0.15 | 20060922 | 112.05485 | 289.34473 | 45.30084 | 15.71945 | 0.0109122 | 3.0875099 | 167 | 6 | 2000–2006 | 0.52 | M-v | 0 | MPC | 67679 | (93832) |
| (93991) | 13.6 | 0.15 | 20060922 | 295.95029 | 199.81022 | 330.90904 | 12.02304 | 0.1147644 | 3.2471847 | 129 | 5 | 1999–2005 | 0.60 | M-v | 0 | MPC | 67736 | (93991) |
| (94083) | 13.8 | 0.15 | 20060922 | 281.37404 | 105.40082 | 79.05263 | 2.45753 | 0.0819586 | 3.2643932 | 171 | 6 | 1999–2006 | 0.52 | M-v | 0 | MPC | 67769 | (94083) |
| (94097) | 14.2 | 0.15 | 20060922 | 332.59665 | 16.12387 | 152.69651 | 2.39021 | 0.0429056 | 2.9324908 | 214 | 7 | 1997–2006 | 0.62 | M-v | 0 | MPC | 67773 | (94097) |
| (94486) | 16.1 | 0.15 | 20060922 | 232.90703 | 234.12401 | 89.78366 | 4.86971 | 0.2246587 | 2.2525023 | 89 | 5 | 1998–2004 | 0.68 | M-v | 1 | MPC | 67917 | (94486) |
| (94558) | 15.0 | 0.15 | 20060922 | 239.87974 | 204.84795 | 53.49846 | 7.25691 | 0.1100569 | 2.4745057 | 195 | 7 | 1989–2006 | 0.56 | M-v | 0 | MPC | 67945 | (94558) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (94906) | 15.2 | 0.15 | 20060922 | 266.13180 | 312.90893 | 266.14945 | 6.87123 | 0.2513664 | 2.6767419 | 129 | 5 | 2000–2005 | 0.66 | M-v | 1 | MPC | 68072 | (94906) |
| (95247) | 14.1 | 0.15 | 20060922 | 215.48142 | 257.63681 | 347.82243 | 16.56857 | 0.0994966 | 3.2312857 | 197 | 6 | 1998–2005 | 0.67 | M-v | 0 | MPC | 68197 | (95247) |
| (95336) | 15.7 | 0.15 | 20060922 | 0.17020 | 248.28909 | 297.47070 | 7.63664 | 0.1266523 | 2.5948952 | 131 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 68228 | (95336) |
| (95409) | 15.3 | 0.15 | 20060922 | 179.62189 | 325.49989 | 330.23440 | 2.63375 | 0.0805649 | 3.0460058 | 83 | 5 | 1999–2006 | 0.63 | M-v | 0 | MPC | 68252 | (95409) |
| (95480) | 15.8 | 0.15 | 20060922 | 97.71881 | 161.42502 | 292.98785 | 6.14158 | 0.2019010 | 2.5357176 | 138 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 68275 | (95480) |
| (95589) | 14.2 | 0.15 | 20060922 | 238.89380 | 255.58075 | 334.60920 | 9.32049 | 0.0684002 | 3.1853659 | 132 | 7 | 1996–2006 | 0.75 | M-v | 1 | MPC | 68310 | (95589) |
| (95711) | 14.4 | 0.15 | 20060922 | 315.40650 | 79.23377 | 108.49544 | 22.96376 | 0.3412843 | 2.3429114 | 95 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 68346 | (95711) |
| (95713) | 15.4 | 0.15 | 20060922 | 276.47082 | 197.94702 | 2.01824 | 9.82974 | 0.1771399 | 2.6512759 | 215 | 7 | 1996–2006 | 0.57 | M-v | 1 | MPC | 68347 | (95713) |
| (95810) | 15.1 | 0.15 | 20060922 | 251.76581 | 113.85973 | 111.81161 | 8.20526 | 0.0960459 | 2.7749601 | 128 | 7 | 1998–2006 | 0.56 | M-v | 1 | MPC | 68378 | (95810) |
| (95920) | 14.6 | 0.15 | 20060922 | 143.79058 | 217.42421 | 107.44062 | 9.24566 | 0.2105199 | 3.1611797 | 81 | 9 | 1996–2006 | 0.58 | M-v | 0 | MPC | 68413 | (95920) |
| (96045) | 13.9 | 0.15 | 20060922 | 88.26628 | 298.37418 | 85.09430 | 11.74219 | 0.0913230 | 3.0694056 | 121 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 68452 | (96045) |
| (96392) | 14.4 | 0.15 | 20060922 | 277.34912 | 328.57134 | 351.51837 | 7.93913 | 0.2060683 | 2.4388452 | 222 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 70582 | (96392) |
| (96631) | 18.3 | 0.15 | 20060922 | 33.66770 | 303.61963 | 19.76411 | 1.77282 | 0.2592614 | 1.6991728 | 179 | 7 | 1986–2006 | 0.47 | M-v | 1 | MPC | 70678 | (96631) |
| (98501) | 15.7 | 0.15 | 20060922 | 295.94182 | 277.39691 | 50.98842 | 6.63220 | 0.1420132 | 2.3355108 | 118 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 71429 | (98501) |
| (98715) | 13.8 | 0.15 | 20060922 | 333.72084 | 96.66435 | 17.05179 | 13.19380 | 0.1118686 | 3.2306535 | 188 | 6 | 1999–2006 | 0.53 | M-v | 0 | MPC | 71513 | (98715) |
| (98935) | 12.6 | 0.15 | 20060922 | 271.70732 | 295.66544 | 321.82970 | 22.75767 | 0.2989647 | 3.1424204 | 171 | 6 | 1999–2006 | 0.58 | M-v | 1 | MPC | 71595 | (98935) |
| (99167) | 13.2 | 0.15 | 20060922 | 310.63003 | 121.51230 | 75.68150 | 17.28385 | 0.1744858 | 3.4097536 | 138 | 7 | 1998–2006 | 0.66 | M-v | 1 | MPC | 71679 | (99167) |
| (99474) | 16.0 | 0.15 | 20060922 | 50.37674 | 230.33120 | 22.58531 | 3.78622 | 0.1524787 | 2.2383699 | 108 | 4 | 1999–2005 | 0.60 | M-v | 2 | MPC | 04102 | (99474) |
| (99523) | 14.8 | 0.15 | 20060922 | 254.48299 | 67.54901 | 213.42671 | 2.70718 | 0.2328478 | 2.8839526 | 121 | 7 | 1992–2006 | 0.60 | M-v | 0 | MPC | 71808 | (99523) |
| (99600) | 15.0 | 0.15 | 20060922 | 250.43425 | 49.59629 | 200.05071 | 0.71727 | 0.1499162 | 3.1304960 | 123 | 7 | 1998–2006 | 0.48 | M-v | 0 | MPC | 71835 | (99600) |
| (99693) | 14.5 | 0.15 | 20060922 | 227.14826 | 277.27466 | 46.79383 | 10.85838 | 0.1117082 | 2.9616970 | 89 | 5 | 2001–2006 | 0.70 | M-v | 1 | MPC | 71866 | (99693) |
| (99861) | 15.1 | 0.15 | 20060922 | 194.97588 | 325.54809 | 109.20769 | 3.25097 | 0.0492111 | 2.8627424 | 139 | 9 | 1983–2006 | 0.59 | M-v | 0 | MPC | 71921 | (99861) |
| (99902) | 17.0 | 0.15 | 20060922 | 355.78592 | 328.35355 | 60.03956 | 1.23699 | 0.2229567 | 2.3747591 | 130 | 7 | 1973–2006 | 0.46 | M-v | 0 | MPC | 71934 | (99902) |
| (99907) | 17.9 | 0.15 | 20060922 | 218.47282 | 2.80835 | 225.62898 | 28.79270 | 0.5947600 | 0.7285335 | 308 | 8 | 1989–2004 | 0.68 | M-v | 0 | MPC | 74505 | (99907) |
| (99959) | 14.5 | 0.15 | 20060922 | 76.40856 | 282.02106 | 40.12937 | 2.83296 | 0.1606882 | 2.5188360 | 191 | 8 | 1978–2006 | 0.55 | M-v | 3 | MPC | 77921 | (99959) |
| (100030) | 15.1 | 0.15 | 20060922 | 5.32287 | 246.35420 | 187.67567 | 6.63622 | 0.3138875 | 3.0068016 | 92 | 5 | 1990–2006 | 0.55 | M-v | 0 | MPC | 77948 | (100030) |
| (100031) | 14.7 | 0.15 | 20060922 | 346.49258 | 311.05628 | 172.23434 | 21.84108 | 0.3967758 | 3.0609605 | 70 | 5 | 1991–2006 | 0.55 | M-v | 0 | MPC | 77948 | (100031) |
| (100169) | 16.5 | 0.15 | 20060922 | 16.04815 | 277.96070 | 148.29598 | 4.97398 | 0.2158713 | 2.5852575 | 96 | 5 | 1993–2006 | 0.59 | M-v | 1 | MPC | 77997 | (100169) |
| (100377) | 13.4 | 0.15 | 20060922 | 4.85119 | 163.00696 | 254.63167 | 12.47687 | 0.2022923 | 3.0868999 | 211 | 6 | 1995–2006 | 0.54 | M-v | 0 | MPC | 78064 | (100377) |
| (100432) | 15.8 | 0.15 | 20060922 | 174.85982 | 193.13423 | 63.66834 | 6.99127 | 0.1484461 | 2.5512920 | 87 | 7 | 1996–2006 | 0.64 | M-v | 1 | MPC | 78081 | (100432) |
| (100487) | 16.2 | 0.15 | 20060922 | 104.46844 | 34.57691 | 226.54818 | 4.22771 | 0.1534874 | 2.2568826 | 119 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 78100 | (100487) |
| (100606) | 15.0 | 0.15 | 20060922 | 23.77308 | 96.26956 | 255.42107 | 10.89309 | 0.1967729 | 2.7062713 | 128 | 5 | 1997–2006 | 0.47 | M-v | 0 | MPC | 78142 | (100606) |
| (100643) | 15.7 | 0.15 | 20060922 | 14.62173 | 17.26770 | 72.29021 | 6.47013 | 0.2244468 | 2.6285317 | 115 | 5 | 1997–2006 | 0.69 | M-v | 1 | MPC | 78154 | (100643) |
| (100646) | 14.8 | 0.15 | 20060922 | 32.35542 | 14.25106 | 50.53539 | 3.79510 | 0.1520646 | 2.6143880 | 214 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 78156 | (100646) |
| (100688) | 15.5 | 0.15 | 20060922 | 325.07203 | 173.92930 | 281.26202 | 6.96188 | 0.2721862 | 2.7843269 | 115 | 5 | 1997–2006 | 0.50 | M-v | 1 | MPC | 78174 | (100688) |
| (100704) | 14.8 | 0.15 | 20060922 | 343.32617 | 120.68462 | 352.72137 | 12.43479 | 0.1244691 | 2.6588830 | 168 | 5 | 1998–2006 | 0.54 | M-v | 0 | MPC | 78180 | (100704) |
| (100716) | 15.1 | 0.15 | 20060922 | 345.92773 | 144.53379 | 331.40122 | 6.19072 | 0.2685112 | 2.7259962 | 136 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 78184 | (100716) |
| (100881) | 16.3 | 0.15 | 20060922 | 112.73816 | 236.22000 | 16.50694 | 5.23628 | 0.2094451 | 2.3238964 | 150 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 78245 | (100881) |
| (100925) | 15.4 | 0.15 | 20060922 | 41.40718 | 276.12149 | 63.01708 | 3.83174 | 0.2479372 | 2.3473728 | 199 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 78262 | (100925) |
| (101351) | 15.8 | 0.15 | 20060922 | 50.08641 | 129.26684 | 356.73242 | 1.25308 | 0.1155504 | 3.2521956 | 113 | 8 | 1992–2006 | 0.49 | M-v | 0 | MPC | 78416 | (101351) |
| (101455) | 15.8 | 0.15 | 20060922 | 316.82760 | 338.21871 | 98.69697 | 23.92430 | 0.0895858 | 1.9290684 | 108 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 78454 | (101455) |
| (101514) | 15.9 | 0.15 | 20060922 | 125.50319 | 37.89692 | 246.44709 | 20.38516 | 0.0533755 | 1.9201019 | 77 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 78473 | (101514) |
| (101847) | 16.0 | 0.15 | 20060922 | 243.11050 | 115.51519 | 121.15659 | 11.96812 | 0.0968044 | 2.6530806 | 47 | 7 | 1994–2006 | 0.62 | M-v | 1 | MPC | 78621 | (101847) |
| (102012) | 15.8 | 0.15 | 20060922 | 34.59142 | 341.91482 | 8.97615 | 6.87576 | 0.1994715 | 2.2421632 | 126 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 78688 | (102012) |
| (102024) | 16.7 | 0.15 | 20060922 | 30.63959 | 356.75615 | 350.57251 | 1.19552 | 0.1751795 | 2.2639265 | 138 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 78693 | (102024) |
| (102036) | 16.6 | 0.15 | 20060922 | 45.68869 | 78.02651 | 274.99513 | 5.32655 | 0.1295320 | 2.2181990 | 91 | 5 | 1999–2006 | 0.52 | M-v | 0 | MPC | 78697 | (102036) |
| (102059) | 16.5 | 0.15 | 20060922 | 31.94865 | 136.13526 | 237.64344 | 6.37497 | 0.2082665 | 2.2045264 | 83 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 78705 | (102059) |
| (102109) | 16.8 | 0.15 | 20060922 | 51.15493 | 318.10011 | 7.21725 | 3.59989 | 0.2734573 | 2.2323520 | 82 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 78724 | (102109) |
| (102125) | 16.6 | 0.15 | 20060922 | 66.17059 | 147.92371 | 163.06204 | 5.77914 | 0.1803093 | 2.2347034 | 87 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 78731 | (102125) |
| (102247) | 16.4 | 0.15 | 20060922 | 355.29392 | 182.32964 | 217.95160 | 4.05210 | 0.1074975 | 2.2849212 | 153 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 78777 | (102247) |
| (102297) | 16.0 | 0.15 | 20060922 | 155.08658 | 6.86306 | 216.93700 | 11.74488 | 0.1209473 | 2.3458945 | 104 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 78794 | (102297) |
| (102408) | 16.1 | 0.15 | 20060922 | 73.46740 | 50.77454 | 215.89605 | 5.81666 | 0.1247723 | 2.3483879 | 115 | 7 | 1992–2006 | 0.56 | M-v | 0 | MPC | 78835 | (102408) |
| (102527) | 16.2 | 0.15 | 20060922 | 23.74968 | 149.44152 | 208.78967 | 6.75715 | 0.1410542 | 2.2916361 | 193 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 78876 | (102527) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (102539) | 14.3 | 0.15 | 20060922 | 329.74122 | 78.20840 | 7.35721 | 20.97105 | 0.2314037 | 2.3424870 | 270 | 5 | 1999–2006 | 0.53 | M-v | 0 | MPC | 78882 | (102539) |
| (102602) | 16.4 | 0.15 | 20060922 | 5.72693 | 156.77181 | 224.32667 | 0.14118 | 0.2481386 | 2.2934898 | 224 | 6 | 1997–2006 | 0.49 | M-v | 1 | MPC | 78906 | (102602) |
| (102645) | 16.4 | 0.15 | 20060922 | 10.40552 | 145.36569 | 229.24155 | 4.78353 | 0.1586126 | 2.2882399 | 153 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 78924 | (102645) |
| (102716) | 16.5 | 0.15 | 20060922 | 68.14603 | 283.92470 | 30.48714 | 4.40314 | 0.1578600 | 2.2638797 | 78 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 78950 | (102716) |
| (102777) | 15.1 | 0.15 | 20060922 | 243.98332 | 328.80177 | 17.26504 | 12.65546 | 0.1860981 | 2.6026272 | 81 | 5 | 1998–2006 | 0.72 | M-v | 2 | MPC | 78969 | (102777) |
| (102886) | 16.6 | 0.15 | 20060922 | 40.05358 | 237.56961 | 115.20836 | 0.97497 | 0.2108571 | 2.2775733 | 65 | 5 | 1999–2006 | 0.47 | M-v | 0 | MPC | 79006 | (102886) |
| (103030) | 15.3 | 0.15 | 20060922 | 80.09514 | 106.25462 | 6.84998 | 3.63102 | 0.1498260 | 2.9760504 | 97 | 5 | 1994–2006 | 0.64 | M-v | 1 | MPC | 79065 | (103030) |
| (103035) | 16.5 | 0.15 | 20060922 | 350.11510 | 157.54508 | 290.46055 | 2.41997 | 0.1179715 | 2.2366072 | 157 | 5 | 1999–2006 | 0.54 | M-v | 0 | MPC | 79067 | (103035) |
| (103048) | 15.2 | 0.15 | 20060922 | 333.13127 | 105.99270 | 36.28924 | 8.70448 | 0.1606098 | 2.2029554 | 209 | 4 | 1999–2006 | 0.53 | M-v | 2 | MPC | 79072 | (103048) |
| (103051) | 16.5 | 0.15 | 20060922 | 25.73148 | 132.06308 | 297.74227 | 6.93974 | 0.0534192 | 2.2172732 | 70 | 6 | 1997–2006 | 0.52 | M-v | 1 | MPC | 79074 | (103051) |
| (103060) | 14.5 | 0.15 | 20060922 | 351.59841 | 315.87946 | 91.80780 | 25.06302 | 0.1954893 | 2.3006624 | 109 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 79078 | (103060) |
| (103064) | 16.9 | 0.15 | 20060922 | 87.87958 | 245.01817 | 55.78540 | 3.27913 | 0.0760786 | 2.2599797 | 112 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 79079 | (103064) |
| (103102) | 15.9 | 0.15 | 20060922 | 269.28809 | 104.98136 | 73.64238 | 7.70559 | 0.1055024 | 2.3168934 | 103 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 79095 | (103102) |
| (103111) | 15.7 | 0.15 | 20060922 | 12.03179 | 69.57703 | 16.76206 | 2.87837 | 0.0950912 | 2.2554584 | 199 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 79100 | (103111) |
| (103125) | 15.0 | 0.15 | 20060922 | 317.05110 | 118.02178 | 2.84532 | 5.88581 | 0.1018958 | 2.2852611 | 227 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 79106 | (103125) |
| (103217) | 14.9 | 0.15 | 20060922 | 12.57824 | 330.24231 | 56.77508 | 27.18207 | 0.2330394 | 2.3253319 | 105 | 6 | 1977–2006 | 0.50 | M-v | 1 | MPC | 79142 | (103217) |
| (103218) | 16.3 | 0.15 | 20060922 | 59.18503 | 300.70051 | 79.78254 | 2.31130 | 0.0921972 | 2.2854899 | 124 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 79142 | (103218) |
| (103236) | 16.3 | 0.15 | 20060922 | 21.86724 | 275.81012 | 90.57654 | 7.60369 | 0.1728859 | 2.3070589 | 116 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 79148 | (103236) |
| (103269) | 15.7 | 0.15 | 20060922 | 326.80033 | 24.29911 | 103.43060 | 4.82901 | 0.1409883 | 2.2790414 | 152 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 79162 | (103269) |
| (103295) | 15.4 | 0.15 | 20060922 | 265.98095 | 221.07036 | 276.58464 | 5.23497 | 0.1995961 | 2.3983431 | 171 | 5 | 1999–2006 | 0.54 | M-v | 0 | MPC | 79171 | (103295) |
| (103299) | 15.0 | 0.15 | 20060922 | 330.33053 | 16.48747 | 111.64782 | 5.51255 | 0.1504075 | 2.3032617 | 258 | 5 | 1999–2006 | 0.58 | M-v | 0 | MPC | 79173 | (103299) |
| (103367) | 14.9 | 0.15 | 20060922 | 73.86441 | 64.46825 | 265.68843 | 20.66471 | 0.2636785 | 2.2936845 | 122 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 79201 | (103367) |
| (103373) | 14.8 | 0.15 | 20060922 | 323.70309 | 226.51080 | 238.84518 | 4.52711 | 0.1274090 | 2.3294938 | 232 | 5 | 1999–2006 | 0.53 | M-v | 0 | MPC | 79204 | (103373) |
| (103424) | 15.9 | 0.15 | 20060922 | 340.00199 | 152.07290 | 301.23004 | 2.37961 | 0.1165647 | 2.2848622 | 118 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 79225 | (103424) |
| (103486) | 16.4 | 0.15 | 20060922 | 354.18983 | 170.47025 | 291.43748 | 2.10211 | 0.0831589 | 2.2721081 | 98 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 79247 | (103486) |
| (103524) | 15.6 | 0.15 | 20060922 | 328.31595 | 89.64897 | 56.89903 | 4.91295 | 0.0929469 | 2.2326252 | 192 | 4 | 1999–2005 | 0.57 | M-v | 2 | MPC | 79264 | (103524) |
| (103537) | 13.1 | 0.15 | 20060922 | 281.13135 | 68.84344 | 85.41085 | 6.60501 | 0.1424261 | 3.9279844 | 106 | 6 | 2000–2006 | 0.55 | M-v | 0 | MPC | 79269 | (103537) |
| (103582) | 15.7 | 0.15 | 20060922 | 22.74841 | 249.68418 | 122.19952 | 6.65280 | 0.2438300 | 2.3420524 | 92 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 79286 | (103582) |
| (103669) | 15.8 | 0.15 | 20060922 | 278.00899 | 176.85382 | 321.43218 | 4.22315 | 0.1350572 | 2.4298208 | 154 | 6 | 1995–2006 | 0.57 | M-v | 1 | MPC | 79319 | (103669) |
| (103714) | 15.8 | 0.15 | 20060922 | 332.82440 | 30.91593 | 62.54899 | 3.20631 | 0.1772587 | 2.3878450 | 101 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 79336 | (103714) |
| (103807) | 15.9 | 0.15 | 20060922 | 186.03646 | 217.06258 | 346.45235 | 6.92897 | 0.1686316 | 2.5457434 | 115 | 6 | 1992–2006 | 0.46 | M-v | 1 | MPC | 79368 | (103807) |
| (103990) | 14.0 | 0.15 | 20060922 | 139.32634 | 90.57725 | 336.64770 | 21.78731 | 0.0430456 | 3.1588097 | 141 | 5 | 1998–2006 | 0.59 | M-v | 0 | MPC | 79435 | (103990) |
| (104058) | 15.5 | 0.15 | 20060922 | 340.50121 | 30.53163 | 79.94810 | 7.48577 | 0.0631329 | 2.3454124 | 100 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 79461 | (104058) |
| (104118) | 16.0 | 0.15 | 20060922 | 300.89000 | 268.80237 | 154.91381 | 5.25117 | 0.0353280 | 2.5537633 | 112 | 7 | 1992–2006 | 0.50 | M-v | 0 | MPC | 79484 | (104118) |
| (104122) | 15.6 | 0.15 | 20060922 | 180.27900 | 52.01201 | 169.05854 | 6.14871 | 0.1529348 | 2.5526512 | 164 | 6 | 1996–2006 | 0.54 | M-v | 1 | MPC | 79485 | (104122) |
| (104362) | 16.2 | 0.15 | 20060922 | 0.00402 | 47.76279 | 53.32827 | 2.86917 | 0.1621310 | 2.3478442 | 107 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 79575 | (104362) |
| (104508) | 15.8 | 0.15 | 20060922 | 173.89942 | 42.93745 | 209.69674 | 5.06193 | 0.0317882 | 2.5148927 | 105 | 6 | 1993–2006 | 0.61 | M-v | 0 | MPC | 79630 | (104508) |
| (104686) | 15.6 | 0.15 | 20060922 | 190.50874 | 294.28065 | 279.97179 | 5.09519 | 0.0934586 | 2.5618082 | 109 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 79700 | (104686) |
| (105229) | 14.2 | 0.15 | 20060922 | 14.11131 | 207.13490 | 174.58048 | 17.58669 | 0.2012726 | 3.1020180 | 152 | 7 | 1999–2006 | 0.56 | M-v | 1 | MPC | 79909 | (105229) |
| (105340) | 14.2 | 0.15 | 20060922 | 52.77186 | 162.61404 | 179.66349 | 15.43842 | 0.2267715 | 3.0596562 | 111 | 5 | 1993–2006 | 0.44 | M-v | 0 | MPC | 79951 | (105340) |
| (105461) | 14.7 | 0.15 | 20060922 | 67.28673 | 341.14923 | 343.14996 | 10.53432 | 0.1529232 | 3.0625996 | 71 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 79997 | (105461) |
| (105538) | 14.1 | 0.15 | 20060922 | 21.36095 | 84.50454 | 286.04338 | 12.68182 | 0.1315792 | 3.1559638 | 209 | 6 | 2000–2006 | 0.56 | M-v | 0 | MPC | 80026 | (105538) |
| (105573) | 14.0 | 0.15 | 20060922 | 341.23115 | 273.60368 | 185.94562 | 8.40655 | 0.2571190 | 3.0950727 | 208 | 5 | 2000–2006 | 0.58 | M-v | 0 | MPC | 80041 | (105573) |
| (105649) | 14.1 | 0.15 | 20060922 | 349.29372 | 29.32419 | 31.60755 | 28.02571 | 0.2181052 | 3.1645617 | 199 | 5 | 2000–2006 | 0.61 | M-v | 0 | MPC | 80071 | (105649) |
| (105670) | 14.5 | 0.15 | 20060922 | 63.38778 | 274.27027 | 29.87952 | 16.69547 | 0.1502556 | 3.2453776 | 166 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 80079 | (105670) |
| (105698) | 14.5 | 0.15 | 20060922 | 72.10269 | 287.06928 | 8.76103 | 10.93149 | 0.1656384 | 3.1808141 | 129 | 6 | 1998–2006 | 0.59 | M-v | 0 | MPC | 80089 | (105698) |
| (105714) | 15.2 | 0.15 | 20060922 | 34.48585 | 232.60222 | 126.49177 | 6.00571 | 0.1779668 | 3.1738320 | 95 | 6 | 1998–2006 | 0.51 | M-v | 0 | MPC | 80095 | (105714) |
| (105875) | 14.3 | 0.15 | 20060922 | 57.37556 | 122.02809 | 220.51846 | 24.60616 | 0.1209819 | 3.1786651 | 106 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 80158 | (105875) |
| (106026) | 14.0 | 0.15 | 20060922 | 355.81447 | 173.65452 | 219.17424 | 14.18112 | 0.0614507 | 3.2026241 | 147 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 80212 | (106026) |
| (106132) | 15.2 | 0.15 | 20060922 | 34.04008 | 267.34471 | 45.79942 | 11.16546 | 0.2013382 | 3.2300777 | 89 | 6 | 1999–2006 | 0.63 | M-v | 0 | MPC | 80248 | (106132) |
| (106593) | 14.4 | 0.15 | 20060922 | 60.03739 | 2.02681 | 358.99067 | 5.97984 | 0.1380240 | 3.1834217 | 117 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 80419 | (106593) |
| (106661) | 14.3 | 0.15 | 20060922 | 25.77990 | 260.36729 | 116.94248 | 10.54952 | 0.2400889 | 3.1754403 | 143 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 80444 | (106661) |
| (106676) | 13.6 | 0.15 | 20060922 | 31.08043 | 137.28199 | 245.83184 | 26.47825 | 0.1863075 | 3.1462157 | 129 | 5 | 1989–2006 | 0.55 | M-v | 1 | MPC | 80449 | (106676) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (106742) | 15.5 | 0.15 | 20060922 | 117.87934 | 74.89693 | 28.74230 | 5.93334 | 0.0786059 | 2.5435930 | 113 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 80474 | (106742) |
| (106880) | 14.0 | 0.15 | 20060922 | 19.56977 | 329.64956 | 105.68188 | 16.31572 | 0.2662987 | 3.1697543 | 118 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 80527 | (106880) |
| (107282) | 15.3 | 0.15 | 20060922 | 63.31172 | 157.24914 | 325.47852 | 4.27448 | 0.0630468 | 2.9104030 | 127 | 6 | 1996–2006 | 0.59 | M-v | 1 | MPC | 80676 | (107282) |
| (107493) | 16.0 | 0.15 | 20060922 | 117.83314 | 98.61628 | 162.38920 | 2.69235 | 0.2203770 | 2.3422682 | 184 | 6 | 1994–2006 | 0.52 | M-v | 1 | MPC | 80752 | (107493) |
| (107698) | 14.8 | 0.15 | 20060922 | 23.08464 | 88.09792 | 84.74377 | 2.39208 | 0.0526716 | 3.0692734 | 142 | 7 | 1995–2006 | 0.60 | M-v | 0 | MPC | 80826 | (107698) |
| (107748) | 15.9 | 0.15 | 20060922 | 170.21223 | 349.70048 | 163.62111 | 4.90287 | 0.0768089 | 2.4667633 | 87 | 3 | 2001–2005 | 0.48 | M-v | 2 | MPC | 80844 | (107748) |
| (108194) | 15.4 | 0.15 | 20060922 | 35.65582 | 192.46391 | 127.23599 | 21.19643 | 0.2770975 | 2.6127559 | 104 | 5 | 2001–2006 | 0.57 | M-v | 0 | MPC | 81002 | (108194) |
| (108195) | 14.6 | 0.15 | 20060922 | 78.22637 | 112.15128 | 158.87730 | 28.28462 | 0.1978223 | 2.6438523 | 124 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 81002 | (108195) |
| (108251) | 15.2 | 0.15 | 20060922 | 50.65541 | 90.56391 | 224.22558 | 6.34944 | 0.3124689 | 2.5499007 | 154 | 6 | 1997–2006 | 0.48 | M-v | 0 | MPC | 81023 | (108251) |
| (108359) | 15.7 | 0.15 | 20060922 | 36.04504 | 208.76990 | 95.25914 | 7.31699 | 0.1522046 | 2.6570375 | 60 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 81060 | (108359) |
| (108426) | 15.4 | 0.15 | 20060922 | 112.57112 | 102.06302 | 129.19485 | 10.17859 | 0.1601966 | 2.5815120 | 167 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 81083 | (108426) |
| (108450) | 15.7 | 0.15 | 20060922 | 37.76794 | 236.12104 | 69.13110 | 12.10118 | 0.1897099 | 2.6781982 | 70 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 81092 | (108450) |
| (108513) | 15.9 | 0.15 | 20060922 | 96.05030 | 244.08091 | 2.27793 | 2.50195 | 0.0836760 | 2.5861886 | 143 | 7 | 1992–2006 | 0.56 | M-v | 1 | MPC | 81113 | (108513) |
| (108530) | 15.0 | 0.15 | 20060922 | 41.27124 | 228.93816 | 94.70313 | 13.54671 | 0.2760924 | 2.6999314 | 80 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 81120 | (108530) |
| (108566) | 15.5 | 0.15 | 20060922 | 16.16700 | 222.28729 | 132.10111 | 14.47134 | 0.2587378 | 2.7295988 | 89 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 81133 | (108566) |
| (108599) | 15.4 | 0.15 | 20060922 | 64.84326 | 86.86735 | 211.24390 | 12.49727 | 0.1725963 | 2.7288401 | 172 | 5 | 1997–2006 | 0.51 | M-v | 0 | MPC | 81145 | (108599) |
| (108655) | 14.6 | 0.15 | 20060922 | 356.81574 | 228.88116 | 156.43644 | 9.93507 | 0.2783308 | 2.7635029 | 199 | 5 | 1997–2006 | 0.48 | M-v | 0 | MPC | 81165 | (108655) |
| (108666) | 14.4 | 0.15 | 20060922 | 16.50123 | 210.06531 | 166.83895 | 14.27996 | 0.2508815 | 2.6985425 | 165 | 5 | 2001–2006 | 0.53 | M-v | 0 | MPC | 81170 | (108666) |
| (108917) | 15.4 | 0.15 | 20060922 | 63.92579 | 127.14136 | 160.20821 | 17.12532 | 0.1042424 | 2.7741862 | 99 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 81269 | (108917) |
| (109134) | 14.5 | 0.15 | 20060922 | 357.27495 | 238.05273 | 133.03655 | 13.60942 | 0.1450599 | 2.8088134 | 115 | 5 | 2001–2006 | 0.54 | M-v | 0 | MPC | 81356 | (109134) |
| (109192) | 15.4 | 0.15 | 20060922 | 41.11842 | 49.22455 | 340.12590 | 3.21952 | 0.2171509 | 2.6980009 | 176 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 81381 | (109192) |
| (109204) | 14.4 | 0.15 | 20060922 | 346.44173 | 119.25166 | 322.61687 | 9.27831 | 0.1857609 | 2.7414793 | 248 | 5 | 1996–2006 | 0.55 | M-v | 0 | MPC | 81388 | (109204) |
| (109272) | 14.5 | 0.15 | 20060922 | 346.75583 | 116.27164 | 231.18073 | 8.49692 | 0.0807302 | 3.0449274 | 117 | 4 | 2001–2005 | 0.49 | M-v | 1 | MPC | 04104 | (109272) |
| (109281) | 14.7 | 0.15 | 20060922 | 329.27325 | 159.57022 | 315.12817 | 12.26143 | 0.2656644 | 2.6010755 | 178 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 81422 | (109281) |
| (109300) | 14.2 | 0.15 | 20060922 | 352.42825 | 214.02820 | 223.60388 | 6.63489 | 0.3026759 | 2.6440930 | 182 | 7 | 1997–2006 | 0.62 | M-v | 0 | MPC | 81429 | (109300) |
| (109372) | 15.7 | 0.15 | 20060922 | 7.35262 | 136.15596 | 288.74632 | 1.81509 | 0.1181079 | 2.5623388 | 112 | 6 | 1993–2006 | 0.52 | M-v | 1 | MPC | 81458 | (109372) |
| (109441) | 14.9 | 0.15 | 20060922 | 78.51096 | 67.02096 | 279.53512 | 15.35707 | 0.2091818 | 2.6511884 | 167 | 6 | 1997–2006 | 0.48 | M-v | 1 | MPC | 81487 | (109441) |
| (109573) | 15.8 | 0.15 | 20060922 | 22.87558 | 110.65454 | 292.10568 | 4.64181 | 0.2687924 | 2.6309260 | 83 | 5 | 1997–2006 | 0.45 | M-v | 1 | MPC | 81539 | (109573) |
| (109627) | 15.2 | 0.15 | 20060922 | 30.07208 | 234.44361 | 131.83308 | 13.35378 | 0.1607107 | 2.9113271 | 113 | 5 | 2001–2006 | 0.55 | M-v | 0 | MPC | 81559 | (109627) |
| (109649) | 16.0 | 0.15 | 20060922 | 42.01725 | 111.44945 | 271.17744 | 4.77960 | 0.1633781 | 2.6317125 | 96 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 81567 | (109649) |
| (109657) | 14.1 | 0.15 | 20060922 | 26.11325 | 122.80388 | 284.49431 | 9.76990 | 0.1331690 | 2.6266814 | 216 | 5 | 2001–2006 | 0.58 | M-v | 0 | MPC | 81570 | (109657) |
| (109679) | 15.8 | 0.15 | 20060922 | 159.64571 | 151.53225 | 95.49097 | 1.69071 | 0.2066809 | 2.5498394 | 152 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 81579 | (109679) |
| (109684) | 16.6 | 0.15 | 20060922 | 103.37271 | 288.33042 | 22.43868 | 3.17384 | 0.1476560 | 2.5821316 | 72 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 81581 | (109684) |
| (109711) | 15.2 | 0.15 | 20060922 | 14.72989 | 14.65336 | 18.68936 | 5.73880 | 0.0624587 | 2.7412912 | 196 | 5 | 2001–2006 | 0.53 | M-v | 0 | MPC | 81591 | (109711) |
| (109751) | 15.1 | 0.15 | 20060922 | 12.39745 | 190.35031 | 235.58390 | 8.26019 | 0.1201685 | 2.6583893 | 89 | 4 | 1997–2005 | 0.58 | M-v | 1 | MPC | 81607 | (109751) |
| (109798) | 15.5 | 0.15 | 20060922 | 2.26629 | 238.40127 | 178.79012 | 7.04144 | 0.2678294 | 2.7697763 | 123 | 5 | 1994–2005 | 0.59 | M-v | 1 | MPC | 81629 | (109798) |
| (109818) | 15.8 | 0.15 | 20060922 | 221.67874 | 31.69902 | 165.85178 | 4.25891 | 0.0658498 | 2.5721081 | 120 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 81636 | (109818) |
| (109890) | 15.1 | 0.15 | 20060922 | 68.55023 | 297.15684 | 34.75219 | 4.59549 | 0.2084244 | 2.7969287 | 108 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 81662 | (109890) |
| (109893) | 16.2 | 0.15 | 20060922 | 12.82749 | 254.53679 | 172.26036 | 2.39349 | 0.2793781 | 2.6585523 | 92 | 7 | 1994–2006 | 0.57 | M-v | 1 | MPC | 81663 | (109893) |
| (109905) | 15.5 | 0.15 | 20060922 | 38.46925 | 102.35198 | 289.35048 | 3.45250 | 0.1409112 | 2.6334711 | 181 | 5 | 1997–2006 | 0.50 | M-v | 1 | MPC | 81668 | (109905) |
| (109962) | 14.2 | 0.15 | 20060922 | 257.67809 | 209.15278 | 125.93282 | 5.42751 | 0.1655160 | 3.9692251 | 62 | 6 | 2000–2006 | 0.55 | M-v | 0 | MPC | 81691 | (109962) |
| (110024) | 14.4 | 0.15 | 20060922 | 49.88555 | 291.12154 | 74.46797 | 8.74686 | 0.2289999 | 2.7856449 | 260 | 5 | 2001–2006 | 0.54 | M-v | 0 | MPC | 81719 | (110024) |
| (110174) | 16.1 | 0.15 | 20060922 | 61.34912 | 188.60246 | 160.95452 | 6.39578 | 0.0292807 | 2.7361389 | 67 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 81781 | (110174) |
| (110189) | 14.0 | 0.15 | 20060922 | 331.83662 | 42.19636 | 85.57478 | 9.90875 | 0.2348811 | 2.7599265 | 265 | 6 | 1998–2006 | 0.56 | M-v | 0 | MPC | 81786 | (110189) |
| (110196) | 16.6 | 0.15 | 20060922 | 93.23791 | 313.48639 | 342.85663 | 1.17955 | 0.0534896 | 2.7307919 | 68 | 6 | 1992–2006 | 0.46 | M-v | 0 | MPC | 81789 | (110196) |
| (110198) | 14.0 | 0.15 | 20060922 | 320.09002 | 295.89293 | 1.30370 | 10.49684 | 0.0779796 | 3.5664133 | 111 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 81789 | (110198) |
| (110199) | 15.9 | 0.15 | 20060922 | 345.12471 | 243.61759 | 162.56874 | 3.50331 | 0.0389767 | 2.7694244 | 89 | 6 | 1997–2006 | 0.52 | M-v | 0 | MPC | 81790 | (110199) |
| (110201) | 15.0 | 0.15 | 20060922 | 328.16350 | 277.02293 | 163.18664 | 21.90594 | 0.0478687 | 2.6979628 | 63 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 81790 | (110201) |
| (110333) | 14.7 | 0.15 | 20060922 | 17.44038 | 339.70880 | 49.68022 | 18.59765 | 0.1456434 | 2.8103849 | 172 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 81844 | (110333) |
| (110344) | 14.8 | 0.15 | 20060922 | 288.80533 | 192.04158 | 209.29756 | 3.19352 | 0.1979164 | 3.0679330 | 62 | 6 | 1996–2006 | 0.53 | M-v | 0 | MPC | 81848 | (110344) |
| (110362) | 14.5 | 0.15 | 20060922 | 52.36479 | 353.35908 | 291.33095 | 10.94710 | 0.0964512 | 2.9655958 | 140 | 5 | 2001–2006 | 0.55 | M-v | 0 | MPC | 81854 | (110362) |
| (110369) | 14.6 | 0.15 | 20060922 | 344.91837 | 168.88121 | 278.94563 | 10.87436 | 0.1550775 | 2.6949961 | 93 | 5 | 1997–2006 | 0.64 | M-v | 1 | MPC | 81857 | (110369) |
| (110370) | 14.9 | 0.15 | 20060922 | 3.52231 | 161.73624 | 256.25632 | 11.22050 | 0.1427395 | 2.7465409 | 68 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 81857 | (110370) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (110385) | 14.9 | 0.15 | 20060922 | 276.67381 | 280.95645 | 209.04702 | 8.44451 | 0.1012016 | 2.7746361 | 121 | 5 | 2001–2006 | 0.54 | M-v | 0 | MPC | 81862 | (110385) |
| (110411) | 14.7 | 0.15 | 20060922 | 37.75455 | 5.96032 | 27.74752 | 14.89318 | 0.1008269 | 2.6340699 | 102 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 81872 | (110411) |
| (110433) | 15.9 | 0.15 | 20060922 | 7.65422 | 164.71453 | 293.05095 | 1.96867 | 0.1629729 | 2.6161113 | 99 | 4 | 1997–2005 | 0.65 | M-v | 2 | MPC | 97320 | (110433) |
| (110449) | 14.9 | 0.15 | 20060922 | 116.26753 | 10.59018 | 287.17325 | 8.19938 | 0.2647429 | 2.7496306 | 156 | 4 | 2001–2005 | 0.63 | M-v | 1 | MPC | 81887 | (110449) |
| (110471) | 14.9 | 0.15 | 20060922 | 11.82259 | 157.68026 | 263.07434 | 3.81771 | 0.1523542 | 2.7342112 | 192 | 5 | 1997–2006 | 0.52 | M-v | 0 | MPC | 81897 | (110471) |
| (110543) | 14.4 | 0.15 | 20060922 | 91.02802 | 287.09898 | 0.13758 | 3.91359 | 0.0872991 | 2.9125075 | 217 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 81927 | (110543) |
| (110550) | 14.3 | 0.15 | 20060922 | 359.51320 | 209.43926 | 257.85091 | 13.81175 | 0.0587256 | 2.5930421 | 170 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 81930 | (110550) |
| (110561) | 13.9 | 0.15 | 20060922 | 85.11588 | 104.86322 | 264.88783 | 15.56606 | 0.2686537 | 2.7238294 | 178 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 81935 | (110561) |
| (110603) | 14.9 | 0.15 | 20060922 | 334.76459 | 179.84356 | 284.43041 | 7.79368 | 0.0763826 | 2.6517688 | 97 | 4 | 1998–2005 | 0.57 | M-v | 2 | MPC | 81952 | (110603) |
| (110606) | 14.5 | 0.15 | 20060922 | 329.20926 | 39.24720 | 70.26440 | 12.64932 | 0.1556691 | 2.6536051 | 112 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 81953 | (110606) |
| (110636) | 14.9 | 0.15 | 20060922 | 39.98834 | 12.79176 | 6.26897 | 14.80002 | 0.1112099 | 2.7750286 | 85 | 5 | 1973–2006 | 0.65 | M-v | 1 | MPC | 81963 | (110636) |
| (110657) | 15.3 | 0.15 | 20060922 | 42.43345 | 60.91635 | 311.35872 | 4.64822 | 0.0579601 | 2.8033503 | 166 | 5 | 2001–2006 | 0.57 | M-v | 0 | MPC | 81971 | (110657) |
| (110669) | 16.2 | 0.15 | 20060922 | 130.67311 | 298.25102 | 345.09402 | 3.07774 | 0.1305805 | 2.6381360 | 72 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 81975 | (110669) |
| (110738) | 15.7 | 0.15 | 20060922 | 333.79275 | 277.62726 | 154.69149 | 10.02042 | 0.1131383 | 2.9238994 | 89 | 6 | 1994–2006 | 0.54 | M-v | 0 | MPC | 81998 | (110738) |
| (110759) | 15.0 | 0.15 | 20060922 | 26.96840 | 8.68049 | 29.83206 | 12.27425 | 0.1740190 | 2.6619319 | 108 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 82006 | (110759) |
| (110787) | 14.4 | 0.15 | 20060922 | 82.62394 | 241.96299 | 95.44856 | 7.79076 | 0.1105038 | 2.7325486 | 132 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 82017 | (110787) |
| (110844) | 14.4 | 0.15 | 20060922 | 25.30631 | 97.63397 | 202.94221 | 15.62618 | 0.1532164 | 3.2187129 | 92 | 7 | 1993–2006 | 0.58 | M-v | 0 | MPC | 82038 | (110844) |
| (110852) | 15.7 | 0.15 | 20060922 | 59.78048 | 301.54980 | 51.15912 | 6.11060 | 0.1006728 | 2.7673763 | 79 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 82042 | (110852) |
| (110874) | 15.6 | 0.15 | 20060922 | 114.63351 | 211.85074 | 57.20421 | 3.64497 | 0.1331648 | 2.8638523 | 124 | 6 | 1998–2006 | 0.55 | M-v | 0 | MPC | 82049 | (110874) |
| (110885) | 16.0 | 0.15 | 20060922 | 8.15402 | 203.24144 | 143.99279 | 1.71791 | 0.3067839 | 3.0611890 | 146 | 6 | 1999–2006 | 0.47 | M-v | 1 | MPC | 82053 | (110885) |
| (110906) | 15.3 | 0.15 | 20060922 | 28.47900 | 352.01638 | 68.82865 | 3.35445 | 0.0633130 | 2.7115087 | 190 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 82061 | (110906) |
| (110909) | 15.7 | 0.15 | 20060922 | 77.63058 | 259.58977 | 85.73808 | 12.24838 | 0.2173260 | 2.6489075 | 85 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 82062 | (110909) |
| (110992) | 16.3 | 0.15 | 20060922 | 41.23365 | 81.43946 | 326.32659 | 2.49276 | 0.0765533 | 2.6477892 | 84 | 5 | 1994–2006 | 0.58 | M-v | 1 | MPC | 82091 | (110992) |
| (110996) | 14.8 | 0.15 | 20060922 | 343.02731 | 167.09811 | 278.97643 | 13.73182 | 0.1663469 | 2.7059279 | 91 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 82093 | (110996) |
| (111004) | 14.6 | 0.15 | 20060922 | 7.78701 | 258.06765 | 105.45897 | 16.00484 | 0.1709028 | 2.8467758 | 101 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 82095 | (111004) |
| (111046) | 14.6 | 0.15 | 20060922 | 45.10032 | 283.96175 | 66.21487 | 10.77978 | 0.1346135 | 2.9761919 | 147 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 82111 | (111046) |
| (111058) | 15.0 | 0.15 | 20060922 | 3.52580 | 8.86538 | 39.82690 | 2.41422 | 0.1058518 | 2.9348581 | 123 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 82116 | (111058) |
| (111060) | 14.7 | 0.15 | 20060922 | 347.13638 | 332.44427 | 87.09338 | 8.82411 | 0.1383738 | 2.9998603 | 172 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 82117 | (111060) |
| (111061) | 14.1 | 0.15 | 20060922 | 9.09968 | 101.98052 | 255.66384 | 14.85849 | 0.2494114 | 3.1155207 | 142 | 5 | 1994–2006 | 0.53 | M-v | 0 | MPC | 82117 | (111061) |
| (111224) | 15.3 | 0.15 | 20060922 | 66.79044 | 245.71238 | 87.50411 | 3.81941 | 0.0679929 | 2.7897259 | 115 | 5 | 2001–2006 | 0.55 | M-v | 0 | MPC | 82175 | (111224) |
| (111303) | 14.9 | 0.15 | 20060922 | 19.93254 | 169.33792 | 226.69872 | 4.46115 | 0.1202136 | 2.9259521 | 91 | 5 | 2001–2006 | 0.41 | M-v | 0 | MPC | 82203 | (111303) |
| (111351) | 14.0 | 0.15 | 20060922 | 26.85870 | 69.22280 | 262.10080 | 21.28434 | 0.2177647 | 3.1127233 | 76 | 6 | 2000–2006 | 0.48 | M-v | 0 | MPC | 82220 | (111351) |
| (111356) | 15.0 | 0.15 | 20060922 | 98.76850 | 111.75078 | 232.44845 | 8.43639 | 0.2365860 | 2.7248336 | 159 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 82221 | (111356) |
| (111432) | 15.1 | 0.15 | 20060922 | 15.93051 | 157.75430 | 233.43557 | 10.02127 | 0.1235266 | 2.9787880 | 100 | 6 | 2000–2006 | 0.54 | M-v | 0 | MPC | 82246 | (111432) |
| (111495) | 15.1 | 0.15 | 20060922 | 16.56615 | 298.17437 | 81.10134 | 10.76726 | 0.0870749 | 3.0807683 | 80 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 82266 | (111495) |
| (111532) | 15.1 | 0.15 | 20060922 | 102.75582 | 355.42669 | 337.31147 | 10.37707 | 0.2912501 | 2.7374507 | 113 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 82279 | (111532) |
| (111538) | 14.5 | 0.15 | 20060922 | 347.69296 | 10.89292 | 48.53951 | 11.47395 | 0.0919168 | 2.9746311 | 205 | 5 | 2001–2006 | 0.53 | M-v | 0 | MPC | 82281 | (111538) |
| (111664) | 15.9 | 0.15 | 20060922 | 185.64066 | 128.67024 | 87.11377 | 23.40210 | 0.0425288 | 1.9176787 | 97 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 82323 | (111664) |
| (111679) | 16.7 | 0.15 | 20060922 | 292.02263 | 74.19050 | 43.47229 | 22.43648 | 0.0699564 | 1.9086719 | 75 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 82329 | (111679) |
| (111772) | 16.2 | 0.15 | 20060922 | 119.27349 | 283.82607 | 16.78408 | 20.14875 | 0.0641823 | 1.9284270 | 114 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 82360 | (111772) |
| (111781) | 15.6 | 0.15 | 20060922 | 284.37780 | 246.74732 | 320.36246 | 6.66900 | 0.1617492 | 2.7883896 | 51 | 5 | 1998–2006 | 0.58 | M-v | 0 | MPC | 82363 | (111781) |
| (111822) | 15.5 | 0.15 | 20060922 | 271.87647 | 251.93509 | 49.56260 | 7.93854 | 0.1953399 | 2.5750503 | 83 | 5 | 1998–2006 | 0.72 | M-v | 1 | MPC | 82376 | (111822) |
| (111824) | 15.8 | 0.15 | 20060922 | 238.24518 | 113.47359 | 52.54497 | 22.87448 | 0.0447007 | 1.9689284 | 230 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 82377 | (111824) |
| (112046) | 14.5 | 0.15 | 20060922 | 18.63844 | 53.96228 | 71.95040 | 11.10451 | 0.0152575 | 3.1250192 | 61 | 5 | 1999–2006 | 0.81 | M-v | 1 | MPC | 82449 | (112046) |
| (112493) | 15.4 | 0.15 | 20060922 | 7.06100 | 310.28204 | 142.84861 | 13.38266 | 0.3392194 | 2.1168180 | 93 | 8 | 1995–2006 | 0.52 | M-v | 1 | MPC | 82593 | (112493) |
| (112677) | 16.6 | 0.15 | 20060922 | 57.89911 | 151.16999 | 158.38167 | 7.91118 | 0.1214283 | 2.3550278 | 118 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 82653 | (112677) |
| (112702) | 17.5 | 0.15 | 20060922 | 120.72974 | 55.43560 | 210.27170 | 6.20757 | 0.1019654 | 2.2761885 | 63 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 82661 | (112702) |
| (112705) | 16.7 | 0.15 | 20060922 | 48.12907 | 276.55071 | 58.00827 | 3.25854 | 0.2199100 | 2.3173530 | 75 | 5 | 1999–2006 | 0.41 | M-v | 0 | MPC | 82662 | (112705) |
| (112826) | 15.7 | 0.15 | 20060922 | 20.01289 | 215.33272 | 162.76486 | 2.39382 | 0.1694989 | 2.3523811 | 162 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 82699 | (112826) |
| (112855) | 15.7 | 0.15 | 20060922 | 42.32497 | 169.99759 | 169.35589 | 5.70777 | 0.1276444 | 2.3776596 | 161 | 7 | 1991–2006 | 0.53 | M-v | 0 | MPC | 82707 | (112855) |
| (112935) | 15.5 | 0.15 | 20060922 | 16.36402 | 325.29341 | 52.63868 | 3.02809 | 0.2332059 | 2.3881238 | 122 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 82730 | (112935) |
| (112973) | 16.0 | 0.15 | 20060922 | 64.69946 | 245.65468 | 80.53667 | 3.14456 | 0.1417664 | 2.3396742 | 98 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 82742 | (112973) |
| (113028) | 15.5 | 0.15 | 20060922 | 70.00835 | 274.54293 | 10.07319 | 6.93222 | 0.2771493 | 2.3943239 | 212 | 5 | 1999–2006 | 0.58 | M-v | 0 | MPC | 82760 | (113028) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (113455) | 17.2 | 0.15 | 20060922 | 35.02591 | 234.44590 | 124.29581 | 2.61345 | 0.2033555 | 2.3926681 | 73 | 5 | 2000–2006 | 0.49 | M-v | 0 | MPC | 82903 | (113455) |
| (113728) | 15.8 | 0.15 | 20060922 | 18.62562 | 326.12315 | 32.72159 | 8.44760 | 0.2331485 | 2.3916857 | 160 | 6 | 1999–2006 | 0.50 | M-v | 1 | MPC | 82997 | (113728) |
| (113956) | 15.4 | 0.15 | 20060922 | 352.05627 | 237.20731 | 148.27525 | 14.29183 | 0.1788835 | 2.5724370 | 103 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 83075 | (113956) |
| (114192) | 16.5 | 0.15 | 20060922 | 357.14863 | 178.89407 | 264.38561 | 3.80316 | 0.2479277 | 2.4244963 | 91 | 5 | 1992–2006 | 0.50 | M-v | 1 | MPC | 83152 | (114192) |
| (114500) | 14.8 | 0.15 | 20060922 | 324.12187 | 77.97107 | 36.72763 | 14.44474 | 0.1858128 | 2.6716627 | 89 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 83252 | (114500) |
| (114516) | 14.8 | 0.15 | 20060922 | 4.84972 | 218.78614 | 154.01804 | 13.80399 | 0.1828481 | 2.6473705 | 140 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 83257 | (114516) |
| (114606) | 15.1 | 0.15 | 20060922 | 324.53406 | 13.99495 | 108.45727 | 12.67867 | 0.0204360 | 2.6689031 | 90 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 83288 | (114606) |
| (114626) | 14.2 | 0.15 | 20060922 | 240.77901 | 330.77155 | 201.04939 | 10.01214 | 0.1586364 | 3.1380430 | 158 | 7 | 1994–2006 | 0.52 | M-v | 0 | MPC | 83295 | (114626) |
| (115216) | 16.4 | 0.15 | 20060922 | 279.72433 | 293.65599 | 192.91375 | 21.90438 | 0.0788965 | 1.9239355 | 145 | 5 | 1998–2006 | 0.53 | M-v | 0 | MPC | 83493 | (115216) |
| (115473) | 16.4 | 0.15 | 20060922 | 63.99375 | 288.49141 | 64.34925 | 24.23873 | 0.0708046 | 1.9192988 | 130 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 83583 | (115473) |
| (115509) | 15.4 | 0.15 | 20060922 | 321.66052 | 235.28614 | 90.07746 | 11.26772 | 0.2812438 | 2.3872699 | 86 | 7 | 1995–2006 | 0.64 | M-v | 1 | MPC | 83595 | (115509) |
| (116242) | 16.1 | 0.15 | 20060922 | 25.72276 | 330.58626 | 12.63293 | 5.13899 | 0.1868464 | 2.2449500 | 159 | 7 | 1996–2006 | 0.50 | M-v | 1 | MPC | 83832 | (116242) |
| (116258) | 15.7 | 0.15 | 20060922 | 14.42090 | 302.97328 | 84.25993 | 7.49276 | 0.1772432 | 2.2202082 | 116 | 7 | 1995–2006 | 0.64 | M-v | 1 | MPC | 83837 | (116258) |
| (116395) | 15.6 | 0.15 | 20060922 | 24.78786 | 298.35261 | 69.85374 | 8.54314 | 0.1594676 | 2.2569258 | 86 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 83877 | (116395) |
| (116407) | 14.9 | 0.15 | 20060922 | 167.87280 | 285.73041 | 166.64465 | 11.50012 | 0.0689633 | 3.0854433 | 122 | 7 | 1995–2006 | 0.59 | M-v | 0 | MPC | 83880 | (116407) |
| (116509) | 14.8 | 0.15 | 20060922 | 195.43377 | 327.29134 | 254.93228 | 23.46753 | 0.1647474 | 2.3846124 | 101 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 83911 | (116509) |
| (116560) | 15.7 | 0.15 | 20060922 | 156.73112 | 117.54663 | 123.80616 | 11.68795 | 0.0926933 | 2.5272338 | 95 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 83927 | (116560) |
| (116720) | 16.6 | 0.15 | 20060922 | 183.16929 | 261.61622 | 333.29313 | 0.94111 | 0.1492551 | 2.4309643 | 61 | 5 | 1998–2006 | 0.38 | M-v | 0 | MPC | 83975 | (116720) |
| (116762) | 15.1 | 0.15 | 20060922 | 137.56758 | 55.68394 | 172.09226 | 8.92603 | 0.1451986 | 3.0381966 | 105 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 83990 | (116762) |
| (116857) | 15.8 | 0.15 | 20060922 | 208.13705 | 40.69807 | 152.88090 | 2.43876 | 0.0161574 | 2.6688855 | 92 | 6 | 1993–2006 | 0.57 | M-v | 0 | MPC | 84021 | (116857) |
| (116862) | 16.2 | 0.15 | 20060922 | 193.37333 | 152.29010 | 102.83061 | 8.58560 | 0.0832563 | 2.3060726 | 60 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 84022 | (116862) |
| (116985) | 15.2 | 0.15 | 20060922 | 273.53313 | 72.87091 | 77.93731 | 13.05697 | 0.0268698 | 2.6161444 | 65 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 84060 | (116985) |
| (117039) | 14.5 | 0.15 | 20060922 | 344.13601 | 18.74799 | 52.30385 | 12.85355 | 0.1635425 | 2.7238939 | 150 | 5 | 2001–2006 | 0.53 | M-v | 0 | MPC | 84076 | (117039) |
| (117050) | 14.6 | 0.15 | 20060922 | 147.25061 | 111.46313 | 134.84521 | 5.70076 | 0.0928191 | 3.1087074 | 79 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 84080 | (117050) |
| (117081) | 15.3 | 0.15 | 20060922 | 119.45762 | 93.38747 | 188.75615 | 3.84352 | 0.0621303 | 3.1165107 | 81 | 6 | 1992–2006 | 0.59 | M-v | 0 | MPC | 84089 | (117081) |
| (117692) | 16.0 | 0.15 | 20060922 | 2.26537 | 334.90623 | 47.13804 | 22.73517 | 0.0700451 | 1.9572884 | 178 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 84267 | (117692) |
| (117740) | 17.1 | 0.15 | 20060922 | 207.10862 | 280.77885 | 223.18817 | 6.64952 | 0.0668735 | 2.2489575 | 52 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 84282 | (117740) |
| (117766) | 15.4 | 0.15 | 20060922 | 30.32522 | 186.51639 | 141.06317 | 15.00491 | 0.2605455 | 2.6450642 | 112 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 84289 | (117766) |
| (117797) | 16.1 | 0.15 | 20060922 | 111.29888 | 20.34270 | 254.41500 | 5.44222 | 0.0801395 | 2.2056699 | 123 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 84297 | (117797) |
| (117937) | 15.7 | 0.15 | 20060922 | 84.19614 | 102.32772 | 263.17362 | 3.78387 | 0.2510685 | 2.5582878 | 185 | 4 | 1960–2005 | 0.56 | M-v | 1 | MPC | 84340 | (117937) |
| (118489) | 15.8 | 0.15 | 20060922 | 302.78181 | 84.55464 | 46.14338 | 3.33011 | 0.1174371 | 2.3803662 | 178 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 87954 | (118489) |
| (119165) | 15.5 | 0.15 | 20060922 | 109.91199 | 163.93866 | 140.05824 | 7.08368 | 0.1248649 | 2.4843514 | 75 | 5 | 1996–2005 | 0.46 | M-v | 2 | MPC | 88204 | (119165) |
| (119208) | 16.5 | 0.15 | 20060922 | 115.90059 | 61.54399 | 228.70746 | 2.21879 | 0.1668162 | 2.5749724 | 81 | 5 | 1997–2006 | 0.41 | M-v | 1 | MPC | 88221 | (119208) |
| (119301) | 16.0 | 0.15 | 20060922 | 192.40221 | 190.84381 | 18.60466 | 1.38468 | 0.0462609 | 2.7364796 | 104 | 5 | 1999–2006 | 0.45 | M-v | 0 | MPC | 88258 | (119301) |
| (119417) | 15.2 | 0.15 | 20060922 | 326.24765 | 159.12007 | 287.13907 | 3.11775 | 0.0758220 | 2.7749161 | 192 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 88304 | (119417) |
| (119436) | 14.7 | 0.15 | 20060922 | 329.96034 | 218.74670 | 252.44885 | 9.56058 | 0.1306069 | 2.6680386 | 99 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 88310 | (119436) |
| (119482) | 16.4 | 0.15 | 20060922 | 147.32392 | 102.53212 | 188.24002 | 3.48292 | 0.2377151 | 2.5297814 | 77 | 5 | 1996–2005 | 0.56 | M-v | 1 | MPC | 88328 | (119482) |
| (119521) | 15.0 | 0.15 | 20060922 | 141.30153 | 220.94452 | 96.08755 | 2.47787 | 0.1866218 | 2.6007484 | 267 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 88343 | (119521) |
| (119638) | 15.2 | 0.15 | 20060922 | 122.54457 | 95.99389 | 311.38756 | 5.53039 | 0.1318237 | 2.4605027 | 200 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 88387 | (119638) |
| (119797) | 15.3 | 0.15 | 20060922 | 350.59747 | 89.10417 | 117.21075 | 5.59707 | 0.1922647 | 2.5760256 | 197 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 88442 | (119797) |
| (119855) | 14.5 | 0.15 | 20060922 | 249.26673 | 104.29412 | 105.26216 | 5.94011 | 0.0917272 | 3.0903527 | 86 | 7 | 1992–2006 | 0.54 | M-v | 0 | MPC | 88461 | (119855) |
| (119942) | 14.0 | 0.15 | 20060922 | 118.17684 | 65.67534 | 229.90716 | 4.03933 | 0.1285248 | 3.9864905 | 109 | 5 | 2002–2006 | 0.56 | M-v | 0 | MPC | 88489 | (119942) |
| (119944) | 13.6 | 0.15 | 20060922 | 129.58611 | 231.95062 | 46.94217 | 5.41260 | 0.1181993 | 3.9502785 | 119 | 5 | 2002–2006 | 0.49 | M-v | 0 | MPC | 88490 | (119944) |
| (120050) | 16.0 | 0.15 | 20060922 | 79.48827 | 34.03400 | 343.32580 | 1.71162 | 0.2116024 | 2.4018002 | 153 | 6 | 1996–2006 | 0.47 | M-v | 1 | MPC | 88525 | (120050) |
| (120253) | 15.9 | 0.15 | 20060922 | 133.13253 | 326.53481 | 333.26730 | 7.37623 | 0.1253187 | 2.6405858 | 73 | 5 | 1992–2005 | 0.56 | M-v | 1 | MPC | 88590 | (120253) |
| (120287) | 14.1 | 0.15 | 20060922 | 57.20471 | 57.27422 | 241.56327 | 1.46203 | 0.2078546 | 3.9686192 | 167 | 5 | 2002–2006 | 0.41 | M-v | 0 | MPC | 88600 | (120287) |
| (120824) | 15.5 | 0.15 | 20060922 | 330.65829 | 98.06592 | 145.93996 | 11.98411 | 0.1998545 | 2.6189319 | 106 | 4 | 1998–2006 | 0.68 | M-v | 1 | MPC | 90523 | (120824) |
| (123486) | 15.0 | 0.15 | 20060922 | 27.27972 | 177.38236 | 207.56336 | 8.05117 | 0.0799838 | 3.2321693 | 78 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 91544 | (123486) |
| (124975) | 15.1 | 0.15 | 20060922 | 97.31260 | 34.15339 | 275.11969 | 6.00462 | 0.0112847 | 2.8022833 | 58 | 5 | 2001–2006 | 0.49 | M-v | 0 | MPC | 92133 | (124975) |
| (125721) | 15.2 | 0.15 | 20060922 | 33.05427 | 122.97113 | 286.69534 | 7.19757 | 0.1475106 | 2.7461095 | 102 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 92434 | (125721) |
| (126307) | 14.2 | 0.15 | 20060922 | 284.50761 | 254.96825 | 320.00233 | 11.92394 | 0.2625599 | 2.9021867 | 137 | 5 | 2002–2006 | 0.52 | M-v | 1 | MPC | 92654 | (126307) |
| (126565) | 14.7 | 0.15 | 20060922 | 289.97720 | 89.60063 | 115.59908 | 2.49334 | 0.0736640 | 2.9832177 | 108 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 92754 | (126565) |
| (127498) | 16.2 | 0.15 | 20060922 | 25.76273 | 36.50243 | 51.02248 | 3.23854 | 0.0845874 | 2.2118210 | 142 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 93061 | (127498) |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (128307) | 15.9 | 0.15 | 20060922 | 204.74019 | 244.09951 | 323.53579 | 3.38263 | 0.1214595 | 2.3977399 | 96 | 5 | 1994–2006 | 0.55 | M-v | 1 | MPC | 93325 | (128307) | |
| (129219) | 16.1 | 0.15 | 20060922 | 290.41266 | 287.45461 | 182.17385 | 7.74441 | 0.0513448 | 2.9022782 | 66 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 93605 | (129219) | |
| (129241) | 14.7 | 0.15 | 20060922 | 63.66761 | 338.64784 | 339.23901 | 1.94280 | 0.2392193 | 3.9521253 | 92 | 5 | 2002–2006 | 0.46 | M-v | 0 | MPC | 93611 | (129241) | |
| (133825) | 16.3 | 0.15 | 20060922 | 339.30249 | 91.42006 | 271.36956 | 4.95772 | 0.2094913 | 2.3020389 | 78 | 3 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04105 | (133825) | |
| (134380) | 13.7 | 0.15 | 20060922 | 309.49423 | 300.76480 | 198.63393 | 26.53834 | 0.3307450 | 3.1794585 | 127 | 5 | 1995–2006 | 0.55 | M-v | 0 | MPC | 02398 | (134380) | |
| (135141) | 14.5 | 0.15 | 20060922 | 254.64126 | 128.84074 | 323.57100 | 8.61034 | 0.0507858 | 3.0069211 | 161 | 5 | 1993–2006 | 0.66 | M-v | 0 | MPC | 02673 | (135141) | |
| (135157) | 16.3 | 0.15 | 20060922 | 178.03730 | 314.15930 | 283.56347 | 6.15591 | 0.1435278 | 2.5413938 | 50 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 02680 | (135157) | |
| (135174) | 15.9 | 0.15 | 20060922 | 75.29488 | 259.46221 | 128.97257 | 3.81312 | 0.1413626 | 2.3912914 | 95 | 5 | 1993–2006 | 0.49 | M-v | 1 | MPC | 02686 | (135174) | |
| 1978 $VL_4$ | 16.6 | 0.15 | 20060922 | 338.88321 | 202.42660 | 230.18139 | 4.09592 | 0.2313307 | 2.3044416 | 79 | 4 | 1978–2006 | 0.55 | M-v | 2 | MPC | *40289* | 1978 $VL_4$ | |
| 1979 $MC_4$ | 17.1 | 0.15 | 20060922 | 9.08651 | 93.21546 | 252.59227 | 5.56821 | 0.2312844 | 2.2395315 | 74 | 2 | 1979–2006 | 0.52 | M-v | 3 | MPC | 03136 | 1979 $MC_4$ | |
| 1980 $FG_4$ | 14.1 | 0.15 | 20060922 | 290.90413 | 94.15342 | 354.99768 | 30.03228 | 0.4026075 | 2.7891761 | 109 | 4 | 1980–2006 | 0.53 | M-v | 1 | MPC | 04105 | 1980 $FG_4$ | |
| 1980 $RG_1$ | 16.4 | 0.15 | 20060922 | 13.69224 | 113.07919 | 236.59908 | 4.50412 | 0.4701180 | 2.6478311 | 165 | 5 | 1980–2006 | 0.49 | M-v | 1 | MPC | 04105 | 1980 $RG_1$ | |
| 1981 $DA_3$ | 14.5 | 0.15 | 20060922 | 89.49896 | 253.68349 | 277.66857 | 7.45366 | 0.1426048 | 3.9714597 | 25 | 3 | 1981–2004 | 0.56 | M-v | 3 | MPC | 66047 | 1981 $DA_3$ | |
| 1981 $EB_4$ | 15.0 | 0.15 | 20060922 | 202.06926 | 259.37704 | 306.35266 | 8.46591 | 0.0930844 | 3.1293513 | 30 | 4 | 1981–2006 | 0.84 | M-v | 1 | MPC | 87326 | 1981 $EB_4$ | |
| 1981 $EN_{10}$ | 15.0 | 0.15 | 20060922 | 260.39429 | 296.15451 | 342.61540 | 14.25079 | 0.2787999 | 2.6464854 | 76 | 6 | 1981–2006 | 0.57 | M-v | 1 | MPC | 97321 | 1981 $EN_{10}$ | |
| 1981 $EA_{17}$ | 15.6 | 0.15 | 20060922 | 111.83114 | 309.99983 | 323.34428 | 5.13071 | 0.0822756 | 2.4790498 | 62 | 4 | 1981–2006 | 0.49 | M-v | 2 | MPC | 60451 | 1981 $EA_{17}$ | |
| 1981 $EB_{32}$ | 15.0 | 0.15 | 20060922 | 259.37744 | 279.15858 | 252.60457 | 8.22197 | 0.0255337 | 3.0962658 | 61 | 4 | 1981–2006 | 0.74 | M-v | 2 | MPC | 87326 | 1981 $EB_{32}$ | |
| 1981 $EH_{32}$ | 15.6 | 0.15 | 20060922 | 260.41926 | 14.77947 | 226.53253 | 10.89992 | 0.0750544 | 3.0176089 | 30 | 3 | 1981–2004 | 0.64 | M-v | 3 | MPC | *40290* | 1981 $EH_{32}$ | |
| 1981 $EA_{33}$ | 15.6 | 0.15 | 20060922 | 291.11927 | 145.29193 | 337.55318 | 12.35487 | 0.1491172 | 2.7170729 | 62 | 5 | 1981–2006 | 0.64 | M-v | 2 | MPC | 43322 | 1981 $EA_{33}$ | |
| 1981 $EO_{33}$ | 15.8 | 0.15 | 20060922 | 190.68711 | 354.18998 | 190.37881 | 15.67203 | 0.1526927 | 2.7670729 | 89 | 3 | 1981–2006 | 0.68 | M-v | 2 | MPC | 66048 | 1981 $EO_{33}$ | |
| 1981 $EA_{37}$ | 16.4 | 0.15 | 20060922 | 194.07616 | 171.08485 | 343.77782 | 7.39543 | 0.0969246 | 2.4919573 | 33 | 4 | 1981–2006 | 0.58 | M-v | 3 | MPC | 04105 | 1981 $EA_{37}$ | |
| 1981 UA | 15.4 | 0.15 | 20060922 | 6.69811 | 21.48120 | 17.56980 | 27.01185 | 0.3313828 | 2.3277382 | 26 | 5 | 1981–2006 | 0.69 | M-v | 1 | MPC | 14343 | 1981 UA | |
| 1981 $UW_{27}$ | 16.1 | 0.15 | 20060922 | 3.53604 | 4.36461 | 17.55125 | 5.44839 | 0.3028459 | 2.3301850 | 125 | 4 | 1981–2006 | 0.50 | M-v | 2 | MPC | 04105 | 1981 $UW_{27}$ | |
| 1989 DA | 19.0 | 0.15 | 20060922 | 197.13874 | 139.44770 | 349.34680 | 6.48699 | 0.5454812 | 2.1590761 | 30 | 3 | 1989–2006 | 0.77 | M-v | 1 | MPC | 77349 | 1989 DA | |
| 1989 RY | 15.2 | 0.15 | 20060922 | 43.31279 | 140.86903 | 232.75723 | 5.71791 | 0.3163846 | 2.5544623 | 43 | 3 | 1989–2006 | 0.65 | M-v | 3 | MPC | 43322 | 1989 RY | |
| 1989 $SF_3$ | 15.7 | 0.15 | 20060922 | 32.11135 | 302.25022 | 53.08371 | 4.16283 | 0.3142531 | 2.5927828 | 71 | 5 | 1989–2006 | 0.78 | M-v | 1 | MPC | 77349 | 1989 $SF_3$ | |
| 1989 $SC_{14}$ | 15.7 | 0.15 | 20060922 | 325.37290 | 113.68855 | 279.08520 | 10.21469 | 0.2033691 | 2.6539829 | 63 | 3 | 1989–2006 | 0.55 | M-v | 3 | MPC | 04105 | 1989 $SC_{14}$ | |
| 1989 $TY_6$ | 16.5 | 0.15 | 20060922 | 38.84096 | 320.44625 | 50.21714 | 6.78061 | 0.1798313 | 2.2287257 | 62 | 5 | 1989–2006 | 0.77 | M-v | 1 | MPC | 66048 | 1989 $TY_6$ | |
| 1989 $UV_7$ | 13.0 | 0.15 | 20060922 | 231.84798 | 196.54763 | 96.15709 | 18.47990 | 0.1269312 | 5.2050078 | 28 | 4 | 1989–2004 | 0.79 | M-v | 2 | MPC | 47682 | 1989 $UV_7$ | |
| 1990 $QZ_{19}$ | 15.5 | 0.15 | 20060922 | 88.80300 | 125.76777 | 196.04692 | 8.74885 | 0.1784505 | 2.9152594 | 68 | 9 | 1985–2006 | 0.49 | M-v | 1 | MPC | 97321 | 1990 $QZ_{19}$ | |
| 1991 $BQ_1$ | 15.3 | 0.15 | 20060922 | 328.29979 | 344.74027 | 119.53099 | 6.59372 | 0.2198848 | 2.5333485 | 51 | 6 | 1991–2006 | 0.53 | M-v | 1 | MPC | 66049 | 1991 $BQ_1$ | |
| 1991 $TQ_{15}$ | 16.6 | 0.15 | 20060922 | 92.60436 | 166.07542 | 172.31810 | 3.80797 | 0.2575381 | 2.3434941 | 45 | 6 | 1991–2006 | 0.67 | M-v | 1 | MPC | 88647 | 1991 $TQ_{15}$ | |
| 1991 $VN_7$ | 15.5 | 0.15 | 20060922 | 273.39600 | 307.53596 | 62.00484 | 5.83742 | 0.1364287 | 3.1232681 | 45 | 3 | 1991–2004 | 0.63 | M-v | 4 | MPC | 41517 | 1991 $VN_7$ | |
| 1991 $VB_8$ | 16.0 | 0.15 | 20060922 | 353.08969 | 150.65819 | 212.67056 | 9.83994 | 0.1231584 | 2.9762587 | 76 | 5 | 1991–2006 | 0.57 | M-v | 2 | MPC | 04105 | 1991 $VB_8$ | |
| 1992 DC | 17.4 | 0.15 | 20060922 | 263.12035 | 153.20182 | 351.34741 | 10.34298 | 0.4578602 | 2.4822709 | 63 | 3 | 1992–2006 | 0.48 | M-v | 1 | MPC | *27729* | 1992 DC | |
| 1992 $DK_7$ | 16.3 | 0.15 | 20060922 | 343.18597 | 329.57539 | 147.66199 | 3.81235 | 0.1972202 | 2.4205339 | 48 | 6 | 1992–2006 | 0.60 | M-v | 1 | MPC | 87327 | 1992 $DK_7$ | |
| 1992 $DS_8$ | 16.4 | 0.15 | 20060922 | 175.78229 | 299.27122 | 248.83596 | 2.48248 | 0.1693044 | 2.5629710 | 23 | 4 | 1992–2006 | 0.36 | M-v | 3 | MPC | 88647 | 1992 $DS_8$ | |
| 1992 $DX_{10}$ | 16.4 | 0.15 | 20060922 | 320.91237 | 179.70075 | 279.35690 | 2.18758 | 0.1135842 | 2.4679291 | 56 | 6 | 1992–2006 | 0.58 | M-v | 1 | MPC | 87327 | 1992 $DX_{10}$ | |
| 1992 $SS_4$ | 17.0 | 0.15 | 20060922 | 56.99523 | 276.16370 | 21.27152 | 8.88094 | 0.1516278 | 2.7820237 | 37 | 5 | 1992–2006 | 0.38 | M-v | 0 | MPC | 28930 | 1992 $SS_4$ | |
| 1992 $SM_6$ | 16.2 | 0.15 | 20060922 | 50.24344 | 352.10486 | 2.94833 | 9.18877 | 0.0558232 | 2.7011223 | 54 | 4 | 1992–2006 | 0.47 | M-v | 1 | MPC | 87327 | 1992 $SM_6$ | |
| 1993 $BQ_9$ | 17.4 | 0.15 | 20060922 | 103.00674 | 214.34897 | 82.22982 | 2.43436 | 0.1814000 | 2.3696575 | 21 | 4 | 1993–2006 | 0.51 | M-v | 2 | MPC | 62210 | 1993 $BQ_9$ | |
| 1993 $BB_{10}$ | 17.5 | 0.15 | 20060922 | 256.23925 | 76.44612 | 44.62632 | 1.72782 | 0.1380122 | 2.3894764 | 62 | 6 | 1993–2006 | 0.48 | M-v | 0 | MPC | 57656 | 1993 $BB_{10}$ | |
| 1993 $BG_{11}$ | 17.7 | 0.15 | 20060922 | 328.27133 | 3.92547 | 93.94277 | 4.26535 | 0.1745049 | 2.3268885 | 24 | 4 | 1993–2006 | 0.47 | M-v | 3 | MPC | 3117 | 1993 $BG_{11}$ | |
| 1993 $FG_3$ | 17.8 | 0.15 | 20060922 | 280.77241 | 260.64668 | 225.80382 | 1.70417 | 0.1624931 | 2.3818800 | 35 | 5 | 1993–2006 | 0.46 | M-v | 1 | MPC | 93680 | 1993 $FG_3$ | |
| 1993 $FX_4$ | 15.3 | 0.15 | 20060922 | 75.13500 | 99.32579 | 168.71272 | 10.20962 | 0.1970515 | 3.1851913 | 42 | 6 | 1993–2006 | 0.66 | M-v | 1 | MPC | 04106 | 1993 $FX_4$ | |
| 1993 $FG_9$ | 15.4 | 0.15 | 20060922 | 172.32497 | 33.74540 | 164.61306 | 10.61860 | 0.0234658 | 3.0681562 | 37 | 6 | 1993–2006 | 0.58 | M-v | 0 | MPC | 77351 | 1993 $FG_9$ | |
| 1993 $FH_9$ | 15.9 | 0.15 | 20060922 | 213.93949 | 75.48190 | 91.92043 | 2.52421 | 0.1024593 | 3.0361570 | 28 | 3 | 1993–2006 | 0.42 | M-v | 3 | MPC | 68492 | 1993 $FH_9$ | |
| 1993 $FD_{14}$ | 16.2 | 0.15 | 20060922 | 153.65971 | 302.32247 | 168.22407 | 11.56365 | 0.1501809 | 2.5782032 | 28 | 4 | 1993–2006 | 0.60 | M-v | 3 | MPC | 12841 | 1993 $FD_{14}$ | |
| 1993 $FH_{17}$ | 15.0 | 0.15 | 20060922 | 9.97551 | 319.03026 | 157.99140 | 8.92949 | 0.2646480 | 2.7857948 | 105 | 4 | 1993–2006 | 0.52 | M-v | 1 | MPC | 89998 | 1993 $FH_{17}$ | |
| 1993 $FA_{19}$ | 15.1 | 0.15 | 20060922 | 78.43422 | 138.22653 | 132.87438 | 5.97919 | 0.1362427 | 3.1686990 | 49 | 6 | 1993–2006 | 0.62 | M-v | 1 | MPC | 77351 | 1993 $FA_{19}$ | |
| 1993 $FC_{23}$ | 16.3 | 0.15 | 20060922 | 204.31863 | 258.92399 | 327.03715 | 1.74688 | 0.1371404 | 2.3947237 | 102 | 7 | 1993–2006 | 0.55 | M-v | 1 | MPC | 87327 | 1993 $FC_{23}$ | |
| 1993 $FC_{26}$ | 16.8 | 0.15 | 20060922 | 244.33979 | 223.79732 | 323.06896 | 2.04670 | 0.1594735 | 2.3783640 | 86 | 5 | 1971–2006 | 0.62 | M-v | 1 | MPC | 62210 | 1993 $FC_{26}$ | |
| 1993 $FT_{27}$ | 15.4 | 0.15 | 20060922 | 113.78690 | 270.67915 | 324.22360 | 4.37700 | 0.1079668 | 3.1434999 | 61 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 04106 | 1993 $FT_{27}$ | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1993 $FK_{31}$ | 16.5 | 0.15 | 20060922 | 210.79955 | 144.06308 | 46.53500 | 4.36362 | 0.0799480 | 2.4183096 | 65 | 3 | 1993–2006 | 0.46 | M-v | 4 | MPC | 68492 | 1993 $FK_{31}$ |
| 1993 $FN_{33}$ | 15.5 | 0.15 | 20060922 | 300.40859 | 176.90655 | 38.08053 | 4.87928 | 0.1383569 | 2.7966300 | 29 | 4 | 1993–2004 | 0.62 | M-v | 1 | MPC | 47686 | 1993 $FN_{33}$ |
| 1993 $FW_{33}$ | 17.1 | 0.15 | 20060922 | 225.27317 | 144.79968 | 62.80272 | 3.43287 | 0.1305918 | 2.3853416 | 74 | 4 | 1993–2006 | 0.49 | M-v | 1 | MPC | 87327 | 1993 $FW_{33}$ |
| 1993 $FX_{33}$ | 15.7 | 0.15 | 20060922 | 173.99666 | 53.04095 | 147.49837 | 4.96787 | 0.0945813 | 3.0776149 | 28 | 5 | 1993–2006 | 0.52 | M-v | 1 | MPC | 87327 | 1993 $FX_{33}$ |
| 1993 $FB_{35}$ | 16.4 | 0.15 | 20060922 | 274.03288 | 9.61113 | 135.47300 | 1.90105 | 0.3398841 | 2.9247761 | 78 | 5 | 1993–2006 | 0.60 | M-v | 3 | MPC | 57656 | 1993 $FB_{35}$ |
| 1993 $FL_{35}$ | 17.2 | 0.15 | 20060922 | 334.25369 | 83.11779 | 41.74068 | 3.13199 | 0.1276543 | 2.3346929 | 30 | 5 | 1993–2006 | 0.64 | M-v | 1 | MPC | 87327 | 1993 $FL_{35}$ |
| 1993 $FV_{35}$ | 17.0 | 0.15 | 20060922 | 225.74283 | 55.33776 | 156.39628 | 2.75457 | 0.1720441 | 2.3825736 | 50 | 4 | 1993–2006 | 0.50 | M-v | 1 | MPC | 87327 | 1993 $FV_{35}$ |
| 1993 $FA_{38}$ | 16.1 | 0.15 | 20060922 | 41.11553 | 190.35381 | 17.81712 | 12.22743 | 0.1302285 | 2.6376044 | 20 | 3 | 1993–2003 | 0.25 | M-v | 3 | MPC | 47686 | 1993 $FA_{38}$ |
| 1993 $FV_{42}$ | 15.5 | 0.15 | 20060922 | 169.51968 | 30.18147 | 186.78293 | 10.48627 | 0.0979203 | 3.0533104 | 38 | 6 | 1993–2006 | 0.55 | M-v | 0 | MPC | 88648 | 1993 $FV_{42}$ |
| 1993 $FT_{45}$ | 15.2 | 0.15 | 20060922 | 247.48214 | 42.47935 | 178.57510 | 12.76498 | 0.0318587 | 2.8676713 | 32 | 5 | 1993–2006 | 0.80 | M-v | 1 | MPC | 97322 | 1993 $FT_{45}$ |
| 1993 $FD_{48}$ | 16.8 | 0.15 | 20060922 | 212.27292 | 158.64798 | 17.73825 | 2.36060 | 0.1399559 | 2.4260731 | 74 | 4 | 1993–2006 | 0.37 | M-v | 3 | MPC | 66050 | 1993 $FD_{48}$ |
| 1993 $FT_{51}$ | 16.4 | 0.15 | 20060922 | 161.75958 | 165.19899 | 53.62245 | 3.23619 | 0.1501348 | 2.4462070 | 39 | 4 | 1993–2006 | 0.44 | M-v | 1 | MPC | 62210 | 1993 $FT_{51}$ |
| 1993 $FT_{57}$ | 14.9 | 0.15 | 20060922 | 265.85029 | 319.18504 | 218.99490 | 2.12535 | 0.1331782 | 3.9425528 | 34 | 4 | 1993–2006 | 0.36 | M-v | 0 | MPC | 93680 | 1993 $FT_{57}$ |
| 1993 $FZ_{60}$ | 15.7 | 0.15 | 20060922 | 145.73021 | 20.88672 | 189.05388 | 4.48480 | 0.1016164 | 3.1187189 | 26 | 3 | 1993–2006 | 0.44 | M-v | 4 | MPC | 68493 | 1993 $FZ_{60}$ |
| 1993 $FC_{61}$ | 16.8 | 0.15 | 20060922 | 287.10518 | 39.82987 | 93.16354 | 2.21066 | 0.1303433 | 2.3785513 | 44 | 4 | 1993–2006 | 0.63 | M-v | 1 | MPC | 84419 | 1993 $FC_{61}$ |
| 1993 $FB_{80}$ | 16.0 | 0.15 | 20060922 | 10.67522 | 190.01382 | 18.58245 | 7.26147 | 0.1992660 | 2.6786474 | 66 | 5 | 1993–2006 | 0.56 | M-v | 1 | MPC | 01962 | 1993 $FB_{80}$ |
| 1993 $FG_{81}$ | 16.8 | 0.15 | 20060922 | 290.50165 | 5.66490 | 125.90761 | 1.83991 | 0.1267849 | 2.3736201 | 58 | 5 | 1993–2006 | 0.64 | M-v | 1 | MPC | 62211 | 1993 $FG_{81}$ |
| 1993 MJ | 17.7 | 0.15 | 20060922 | 354.64486 | 84.81034 | 247.34251 | 5.11247 | 0.1807818 | 2.2104852 | 47 | 4 | 1993–2006 | 0.38 | M-v | 1 | MPC | 01962 | 1993 MJ |
| 1993 $ME_{1}$ | 15.7 | 0.15 | 20060922 | 39.50169 | 359.57381 | 252.14393 | 23.08601 | 0.4878711 | 2.6314485 | 60 | 3 | 1993–2006 | 0.70 | M-v | 2 | MPC | 03136 | 1993 $ME_{1}$ |
| 1993 $OE_{6}$ | 15.7 | 0.15 | 20060922 | 47.66963 | 235.14305 | 121.44136 | 7.52431 | 0.2161997 | 2.5470325 | 24 | 4 | 1993–2005 | 0.68 | M-v | 2 | MPC | 60460 | 1993 $OE_{6}$ |
| 1993 $OX_{7}$ | 16.2 | 0.15 | 20060922 | 29.03822 | 232.51621 | 127.91034 | 6.85533 | 0.3586595 | 2.5824428 | 48 | 6 | 1993–2005 | 0.57 | M-v | 0 | MPC | 87328 | 1993 $OX_{7}$ |
| 1993 $OJ_{9}$ | 15.8 | 0.15 | 20060922 | 342.98408 | 205.38098 | 131.64379 | 5.33826 | 0.1740429 | 2.6623927 | 38 | 5 | 1993–2005 | 0.72 | M-v | 2 | MPC | 38174 | 1993 $OJ_{9}$ |
| 1993 PG | 14.7 | 0.15 | 20060922 | 238.61506 | 226.02961 | 301.63822 | 16.92065 | 0.0405042 | 3.2345492 | 50 | 5 | 1993–2006 | 0.64 | M-v | 1 | MPC | 47687 | 1993 PG |
| 1993 $RR_{2}$ | 15.5 | 0.15 | 20060922 | 13.32025 | 161.96179 | 154.96194 | 11.35789 | 0.4858925 | 2.6644770 | 177 | 7 | 1993–2006 | 0.52 | M-v | 1 | MPC | 04106 | 1993 $RR_{2}$ |
| 1993 $RN_{14}$ | 15.3 | 0.15 | 20060922 | 101.64639 | 24.28956 | 340.71205 | 5.22287 | 0.1982909 | 3.1900980 | 49 | 4 | 1993–2005 | 0.74 | M-v | 2 | MPC | 71941 | 1993 $RN_{14}$ |
| 1993 $TX_{5}$ | 16.2 | 0.15 | 20060922 | 289.62324 | 232.12862 | 230.63563 | 5.96766 | 0.1474944 | 2.6645178 | 36 | 4 | 1993–2006 | 0.45 | M-v | 1 | MPC | 66051 | 1993 $TX_{5}$ |
| 1993 $TN_{6}$ | 16.7 | 0.15 | 20060922 | 340.05631 | 92.11731 | 269.73219 | 2.04931 | 0.2068637 | 2.7090524 | 57 | 5 | 1993–2006 | 0.46 | M-v | 0 | MPC | 04106 | 1993 $TN_{6}$ |
| 1993 $TA_{8}$ | 16.5 | 0.15 | 20060922 | 322.91615 | 336.14876 | 0.49981 | 6.60331 | 0.1185934 | 2.7792592 | 22 | 3 | 1993–2005 | 0.37 | M-v | 4 | MPC | 74535 | 1993 $TA_{8}$ |
| 1993 $TX_{9}$ | 17.1 | 0.15 | 20060922 | 299.64818 | 82.48811 | 296.99417 | 2.70609 | 0.1099105 | 2.7682332 | 31 | 4 | 1993–2005 | 0.38 | M-v | 1 | MPC | 87328 | 1993 $TX_{9}$ |
| 1993 $TR_{10}$ | 16.3 | 0.15 | 20060922 | 145.32078 | 45.74219 | 223.07316 | 8.07412 | 0.1556573 | 2.5816643 | 37 | 5 | 1993–2006 | 0.48 | M-v | 1 | MPC | 84420 | 1993 $TR_{10}$ |
| 1993 $TS_{10}$ | 15.1 | 0.15 | 20060922 | 159.81460 | 314.43579 | 11.89355 | 6.91908 | 0.1396042 | 2.4795282 | 175 | 6 | 1993–2006 | 0.58 | M-v | 2 | MPC | 97322 | 1993 $TS_{10}$ |
| 1993 $TG_{11}$ | 15.8 | 0.15 | 20060922 | 96.45384 | 103.31862 | 242.24890 | 2.51727 | 0.2045710 | 2.5417821 | 157 | 6 | 1993–2006 | 0.50 | M-v | 1 | MPC | 97322 | 1993 $TG_{11}$ |
| 1993 $TG_{15}$ | 15.5 | 0.15 | 20060922 | 141.67144 | 170.41733 | 192.57833 | 13.82096 | 0.1398172 | 3.1088425 | 42 | 3 | 1993–2004 | 0.75 | M-v | 3 | MPC | 73923 | 1993 $TG_{15}$ |
| 1993 $TC_{17}$ | 16.9 | 0.15 | 20060922 | 292.17403 | 174.08180 | 194.59867 | 9.65863 | 0.2828549 | 2.7782933 | 22 | 3 | 1993–2006 | 0.40 | M-v | 3 | MPC | 93681 | 1993 $TC_{17}$ |
| 1993 $TQ_{22}$ | 17.0 | 0.15 | 20060922 | 260.99667 | 354.15394 | 28.90296 | 4.98871 | 0.1935007 | 2.2921691 | 29 | 3 | 1993–2005 | 0.71 | M-v | 4 | MPC | 34684 | 1993 $TQ_{22}$ |
| 1993 $TS_{24}$ | 14.9 | 0.15 | 20060922 | 171.31077 | 145.00122 | 179.75778 | 8.65040 | 0.1560203 | 3.1114453 | 71 | 5 | 1993–2004 | 0.67 | M-v | 1 | MPC | 73923 | 1993 $TS_{24}$ |
| 1993 $TB_{27}$ | 14.8 | 0.15 | 20060922 | 14.41533 | 334.12390 | 44.60424 | 5.72685 | 0.2154230 | 2.6287519 | 136 | 3 | 1993–2006 | 0.53 | M-v | 3 | MPC | 04106 | 1993 $TB_{27}$ |
| 1993 $TV_{29}$ | 16.7 | 0.15 | 20060922 | 186.00344 | 224.03448 | 155.23431 | 5.54110 | 0.2528508 | 2.9887515 | 24 | 4 | 1993–2005 | 0.78 | M-v | 1 | MPC | 71942 | 1993 $TV_{29}$ |
| 1993 $TO_{34}$ | 16.9 | 0.15 | 20060922 | 48.77678 | 212.49558 | 134.31977 | 4.15673 | 0.1888524 | 2.1643974 | 32 | 4 | 1993–2006 | 0.70 | M-v | 1 | MPC | 87328 | 1993 $TO_{34}$ |
| 1993 $TL_{41}$ | 15.4 | 0.15 | 20060922 | 294.40563 | 192.29637 | 174.89363 | 5.41191 | 0.0594838 | 2.7844676 | 38 | 3 | 1993–2005 | 0.56 | M-v | 4 | MPC | 37041 | 1993 $TL_{41}$ |
| 1993 $TZ_{46}$ | 17.8 | 0.15 | 20060922 | 66.66798 | 220.43089 | 125.13585 | 2.61291 | 0.2055142 | 2.1478772 | 44 | 8 | 1993–2006 | 0.53 | M-v | 1 | MPC | 87328 | 1993 $TZ_{46}$ |
| 1993 YT | 14.4 | 0.15 | 20060922 | 278.83448 | 76.46903 | 89.18776 | 26.99041 | 0.2891940 | 2.6931774 | 147 | 4 | 1993–2006 | 0.57 | M-v | 1 | MPC | 50370 | 1993 YT |
| 1994 $AE_{5}$ | 17.8 | 0.15 | 20060922 | 222.27235 | 58.53282 | 334.61475 | 1.54011 | 0.2175745 | 2.3820702 | 25 | 4 | 1994–2006 | 0.49 | M-v | 2 | MPC | 47690 | 1994 $AE_{5}$ |
| 1994 $AD_{8}$ | 15.9 | 0.15 | 20060922 | 36.04959 | 78.42860 | 122.51396 | 7.52142 | 0.0558287 | 2.4420739 | 45 | 4 | 1994–2006 | 0.64 | M-v | 3 | MPC | 01962 | 1994 $AD_{8}$ |
| 1994 $AY_{8}$ | 16.3 | 0.15 | 20060922 | 302.46614 | 324.11930 | 126.08899 | 3.45502 | 0.0444633 | 2.7573335 | 62 | 6 | 1994–2006 | 0.42 | M-v | 1 | MPC | 84421 | 1994 $AY_{8}$ |
| 1994 $AZ_{9}$ | 15.8 | 0.15 | 20060922 | 130.60641 | 174.80751 | 47.65092 | 2.68211 | 0.0171086 | 2.8544128 | 41 | 7 | 1994–2006 | 0.54 | M-v | 1 | MPC | 62212 | 1994 $AZ_{9}$ |
| 1994 $AA_{10}$ | 16.3 | 0.15 | 20060922 | 358.70767 | 78.89910 | 334.70699 | 4.54625 | 0.1495632 | 2.7082407 | 74 | 4 | 1993–2006 | 0.57 | M-v | 0 | MPC | 47690 | 1994 $AA_{10}$ |
| 1994 $AG_{13}$ | 15.7 | 0.15 | 20060922 | 133.12852 | 264.89532 | 79.09224 | 4.53253 | 0.1391256 | 2.6131176 | 82 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 97323 | 1994 $AG_{13}$ |
| 1994 $BG_{2}$ | 16.2 | 0.15 | 20060922 | 327.82754 | 351.11211 | 120.17075 | 4.92203 | 0.0832319 | 2.6767212 | 54 | 5 | 1994–2006 | 0.64 | M-v | 0 | MPC | 50370 | 1994 $BG_{2}$ |
| 1994 $CB_{5}$ | 16.6 | 0.15 | 20060922 | 297.46995 | 46.36982 | 149.12834 | 4.56713 | 0.1609401 | 2.6493792 | 50 | 5 | 1994–2006 | 0.39 | M-v | 1 | MPC | 89999 | 1994 $CB_{5}$ |
| 1994 $CU_{17}$ | 16.3 | 0.15 | 20060922 | 124.30056 | 109.89747 | 58.67438 | 3.34273 | 0.1105310 | 2.4082662 | 64 | 4 | 1994–2005 | 0.74 | M-v | 1 | MPC | 77353 | 1994 $CU_{17}$ |
| 1994 EE | 16.8 | 0.15 | 20060922 | 4.13769 | 255.61277 | 144.83597 | 4.82120 | 0.1226738 | 2.2615441 | 50 | 5 | 1994–2006 | 0.60 | M-v | 1 | MPC | 99875 | 1994 EE |
| 1994 $EU_{4}$ | 17.4 | 0.15 | 20060922 | 200.36044 | 14.36919 | 165.03218 | 6.52708 | 0.0527825 | 2.3044144 | 40 | 4 | 1994–2006 | 0.27 | M-v | 1 | MPC | 87328 | 1994 $EU_{4}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1994 $GA_2$ | 16.1 | 0.15 | 20060922 | 134.63961 | 196.59170 | 135.69764 | 3.64106 | 0.0744020 | 2.7349402 | 29 | 3 | 1994–2005 | 0.76 | M-v | 5 | MPC | 88648 | 1994 $GA_2$ |
| 1994 $GW_2$ | 17.0 | 0.15 | 20060922 | 78.33783 | 270.51403 | 17.10667 | 20.56643 | 0.0959379 | 1.9907814 | 84 | 4 | 1994–2006 | 0.49 | M-v | 2 | MPC | 77353 | 1994 $GW_2$ |
| 1994 $GT_4$ | 15.3 | 0.15 | 20060922 | 4.29341 | 319.50101 | 16.78300 | 10.07440 | 0.0894670 | 3.0218099 | 45 | 5 | 1994–2006 | 0.64 | M-v | 1 | MPC | 04106 | 1994 $GT_4$ |
| 1994 $GD_5$ | 17.2 | 0.15 | 20060922 | 119.41850 | 220.30268 | 10.93312 | 1.12798 | 0.1425807 | 2.3770561 | 68 | 4 | 1994–2006 | 0.50 | M-v | 2 | MPC | 74536 | 1994 $GD_5$ |
| 1994 $GL_8$ | 16.7 | 0.15 | 20060922 | 95.49942 | 2.72341 | 299.25158 | 4.68373 | 0.1692046 | 2.3236042 | 50 | 6 | 1994–2006 | 0.57 | M-v | 1 | MPC | 77353 | 1994 $GL_8$ |
| 1994 $HL_1$ | 17.1 | 0.15 | 20060922 | 122.68145 | 62.05661 | 188.51431 | 1.75369 | 0.1979453 | 2.3608653 | 54 | 6 | 1994–2006 | 0.36 | M-v | 1 | MPC | 84422 | 1994 $HL_1$ |
| 1994 $JH_2$ | 15.4 | 0.15 | 20060922 | 11.43300 | 266.25335 | 51.15675 | 16.13151 | 0.2269893 | 2.4589292 | 69 | 5 | 1994–2006 | 0.43 | M-v | 1 | MPC | 04106 | 1994 $JH_2$ |
| 1994 $JY_3$ | 16.6 | 0.15 | 20060922 | 154.64278 | 356.64004 | 224.31656 | 7.21118 | 0.0658906 | 2.9701826 | 29 | 4 | 1994–2006 | 0.30 | M-v | 1 | MPC | 74537 | 1994 $JY_3$ |
| 1994 $JE_5$ | 16.4 | 0.15 | 20060922 | 186.61883 | 255.50875 | 200.99499 | 2.20076 | 0.1045627 | 2.4739854 | 33 | 4 | 1994–2005 | 0.60 | M-v | 1 | MPC | 55807 | 1994 $JE_5$ |
| 1994 $JU_6$ | 17.4 | 0.15 | 20060922 | 92.40062 | 204.91755 | 69.21465 | 3.54381 | 0.1477025 | 2.3881617 | 30 | 3 | 1994–2006 | 0.44 | M-v | 3 | MPC | 87328 | 1994 $JU_6$ |
| 1994 $LT_3$ | 16.5 | 0.15 | 20060922 | 155.15106 | 162.39711 | 65.44161 | 3.22494 | 0.0810929 | 2.3669469 | 46 | 5 | 1994–2006 | 0.55 | M-v | 1 | MPC | 84422 | 1994 $LT_3$ |
| 1994 $PQ_3$ | 16.4 | 0.15 | 20060922 | 70.50738 | 174.95212 | 154.10213 | 3.61268 | 0.2396886 | 3.1110115 | 42 | 3 | 1994–2005 | 0.57 | M-v | 2 | MPC | 89999 | 1994 $PQ_3$ |
| 1994 $PO_6$ | 15.8 | 0.15 | 20060922 | 256.80825 | 159.43714 | 257.83915 | 1.33182 | 0.2068241 | 2.5980320 | 47 | 4 | 1994–2005 | 0.83 | M-v | 1 | MPC | 57658 | 1994 $PO_6$ |
| 1994 $PP_9$ | 16.3 | 0.15 | 20060922 | 67.23345 | 218.53991 | 138.36722 | 2.47919 | 0.1907123 | 2.4084974 | 44 | 6 | 1992–2006 | 0.77 | M-v | 1 | MPC | 62212 | 1994 $PP_9$ |
| 1994 $PU_{15}$ | 17.0 | 0.15 | 20060922 | 151.86354 | 309.80192 | 323.94111 | 1.84414 | 0.2461638 | 2.3696711 | 41 | 3 | 1994–2005 | 0.52 | M-v | 3 | MPC | 84423 | 1994 $PU_{15}$ |
| 1994 $PW_{24}$ | 16.3 | 0.15 | 20060922 | 309.51513 | 348.95183 | 334.37946 | 3.12506 | 0.1861094 | 2.6237953 | 41 | 5 | 1994–2005 | 0.57 | M-v | 1 | MPC | 55808 | 1994 $PW_{24}$ |
| 1994 $PP_{32}$ | 15.6 | 0.15 | 20060922 | 127.90237 | 88.26481 | 203.71974 | 4.98478 | 0.1736841 | 3.0515654 | 64 | 7 | 1994–2006 | 0.66 | M-v | 0 | MPC | 97323 | 1994 $PP_{32}$ |
| 1994 $PY_{36}$ | 15.5 | 0.15 | 20060922 | 33.90792 | 12.13997 | 322.15514 | 3.88074 | 0.1565732 | 3.1998023 | 43 | 5 | 1977–2006 | 0.60 | M-v | 1 | MPC | 13541 | 1994 $PY_{36}$ |
| 1994 $PW_{38}$ | 16.2 | 0.15 | 20060922 | 21.09881 | 119.97001 | 188.54721 | 0.71735 | 0.1613274 | 2.5232259 | 148 | 7 | 1993–2006 | 0.55 | M-v | 2 | MPC | 04106 | 1994 $PW_{38}$ |
| 1994 $RY_2$ | 15.0 | 0.15 | 20060922 | 101.41814 | 296.55292 | 317.96129 | 4.54594 | 0.1509072 | 3.1963600 | 90 | 4 | 1994–2006 | 0.63 | M-v | 2 | MPC | 66053 | 1994 $RY_2$ |
| 1994 $RS_4$ | 15.8 | 0.15 | 20060922 | 287.65233 | 37.42980 | 126.24727 | 3.49087 | 0.0287235 | 3.0712754 | 47 | 5 | 1994–2006 | 0.44 | M-v | 0 | MPC | 66053 | 1994 $RS_4$ |
| 1994 $SK_1$ | 15.4 | 0.15 | 20060922 | 278.71114 | 80.10439 | 55.09852 | 2.91019 | 0.2662258 | 3.2565420 | 120 | 4 | 1994–2006 | 0.46 | M-v | 3 | MPC | 47693 | 1994 $SK_1$ |
| 1994 $SX_2$ | 17.2 | 0.15 | 20060922 | 217.73000 | 270.50795 | 285.86148 | 1.27310 | 0.1379299 | 2.4353673 | 27 | 4 | 1994–2006 | 0.54 | M-v | 1 | MPC | 62212 | 1994 $SX_2$ |
| 1994 $SC_3$ | 15.6 | 0.15 | 20060922 | 248.26628 | 198.42262 | 356.80691 | 11.15432 | 0.1021995 | 3.0709019 | 45 | 4 | 1994–2005 | 0.52 | M-v | 1 | MPC | 97323 | 1994 $SC_3$ |
| 1994 $SC_4$ | 16.6 | 0.15 | 20060922 | 21.37605 | 278.24305 | 181.38761 | 1.02386 | 0.2967844 | 3.0756416 | 59 | 4 | 1994–2005 | 0.53 | M-v | 1 | MPC | 93685 | 1994 $SC_4$ |
| 1994 $SW_4$ | 16.6 | 0.15 | 20060922 | 294.28478 | 295.64403 | 23.33365 | 2.30833 | 0.0868822 | 2.6997116 | 49 | 4 | 1994–2006 | 0.48 | M-v | 0 | MPC | 04106 | 1994 $SW_4$ |
| 1994 $SV_5$ | 16.4 | 0.15 | 20060922 | 50.04063 | 240.62842 | 152.07176 | 1.96365 | 0.1668293 | 3.1078014 | 58 | 3 | 1994–2005 | 0.32 | M-v | 3 | MPC | 89999 | 1994 $SV_5$ |
| 1994 $SM_8$ | 16.7 | 0.15 | 20060922 | 349.98438 | 351.69957 | 5.89510 | 6.93558 | 0.2396460 | 2.5408485 | 86 | 4 | 1994–2006 | 0.56 | M-v | 3 | MPC | 04106 | 1994 $SM_8$ |
| 1994 $SD_{12}$ | 17.7 | 0.15 | 20060922 | 227.15054 | 280.09421 | 14.09465 | 8.72922 | 0.1508600 | 2.2832718 | 26 | 4 | 1994–2004 | 0.56 | M-v | 1 | MPC | 47693 | 1994 $SD_{12}$ |
| 1994 $SE_{12}$ | 17.4 | 0.15 | 20060922 | 34.10570 | 111.58899 | 155.80844 | 1.92132 | 0.0365451 | 2.6187202 | 30 | 5 | 1994–2005 | 0.40 | M-v | 1 | MPC | 47693 | 1994 $SE_{12}$ |
| 1994 $TS_6$ | 16.9 | 0.15 | 20060922 | 228.45807 | 39.72489 | 94.38402 | 1.26531 | 0.1235066 | 2.5476115 | 40 | 5 | 1994–2006 | 0.45 | M-v | 2 | MPC | 87329 | 1994 $TS_6$ |
| 1994 $TD_8$ | 17.1 | 0.15 | 20060922 | 316.60706 | 34.34961 | 29.97150 | 3.10900 | 0.2169299 | 2.5260520 | 72 | 5 | 1994–2006 | 0.34 | M-v | 2 | MPC | 04106 | 1994 $TD_8$ |
| 1994 $TD_9$ | 16.7 | 0.15 | 20060922 | 127.40146 | 89.43625 | 190.14425 | 2.29968 | 0.1619402 | 2.4541638 | 51 | 4 | 1994–2006 | 0.35 | M-v | 1 | MPC | 84427 | 1994 $TD_9$ |
| 1994 $TC_{13}$ | 16.9 | 0.15 | 20060922 | 318.84760 | 148.79635 | 351.94885 | 4.80073 | 0.1293246 | 2.4015737 | 39 | 3 | 1994–2006 | 0.38 | M-v | 3 | MPC | 97324 | 1994 $TC_{13}$ |
| 1994 $UV_3$ | 17.5 | 0.15 | 20060922 | 339.06293 | 230.02900 | 236.58338 | 1.32055 | 0.1639747 | 2.4539506 | 41 | 6 | 1994–2006 | 0.41 | M-v | 1 | MPC | 87329 | 1994 $UV_3$ |
| 1994 $UB_6$ | 16.3 | 0.15 | 20060922 | 269.60239 | 118.94499 | 264.37014 | 2.88801 | 0.2280259 | 2.6659047 | 46 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 77354 | 1994 $UB_6$ |
| 1994 $UE_7$ | 15.9 | 0.15 | 20060922 | 85.75920 | 338.49872 | 359.07947 | 2.57174 | 0.2532489 | 3.1344501 | 72 | 3 | 1994–2005 | 0.44 | M-v | 3 | MPC | 88650 | 1994 $UE_7$ |
| 1994 $UN_7$ | 15.9 | 0.15 | 20060922 | 59.06365 | 85.06603 | 249.80987 | 4.30739 | 0.2585787 | 3.2039312 | 54 | 5 | 1994–2006 | 0.43 | M-v | 0 | MPC | 84428 | 1994 $UN_7$ |
| 1994 $UP_7$ | 15.3 | 0.15 | 20060922 | 230.81075 | 19.03946 | 230.89797 | 8.96634 | 0.0699806 | 3.0265537 | 54 | 7 | 1994–2006 | 0.47 | M-v | 1 | MPC | 97324 | 1994 $UP_7$ |
| 1994 $UU_9$ | 17.4 | 0.15 | 20060922 | 8.02732 | 323.26464 | 356.51999 | 3.61109 | 0.2648852 | 2.5686240 | 75 | 4 | 1994–2006 | 0.53 | M-v | 2 | MPC | 04106 | 1994 $UU_9$ |
| 1994 $UG_{10}$ | 16.8 | 0.15 | 20060922 | 239.45975 | 314.18019 | 264.28885 | 2.72197 | 0.1317381 | 2.4120503 | 52 | 7 | 1994–2006 | 0.46 | M-v | 1 | MPC | 89999 | 1994 $UG_{10}$ |
| 1994 $UY_{10}$ | 15.4 | 0.15 | 20060922 | 313.49611 | 186.81704 | 295.47918 | 3.59437 | 0.0399844 | 3.1741899 | 56 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 04106 | 1994 $UY_{10}$ |
| 1994 $VH_4$ | 17.3 | 0.15 | 20060922 | 356.06701 | 77.79682 | 263.56582 | 2.64211 | 0.2234185 | 2.5666326 | 35 | 3 | 1994–2006 | 0.36 | M-v | 3 | MPC | 04106 | 1994 $VH_4$ |
| 1994 $VA_5$ | 17.2 | 0.15 | 20060922 | 314.11200 | 156.88323 | 356.37613 | 3.20802 | 0.1393181 | 2.4201904 | 23 | 2 | 1994–2005 | 0.35 | M-v | 4 | MPC | 89999 | 1994 $VA_5$ |
| 1994 $VK_7$ | 17.0 | 0.15 | 20060922 | 328.78498 | 319.03899 | 98.38960 | 5.39898 | 0.2310007 | 2.5398214 | 101 | 6 | 1990–2006 | 0.56 | M-v | 2 | MPC | 50371 | 1994 $VK_7$ |
| 1994 $VW_7$ | 15.4 | 0.15 | 20060922 | 332.06044 | 338.56773 | 33.26289 | 17.90729 | 0.1649513 | 2.5771784 | 73 | 6 | 1994–2006 | 0.61 | M-v | 2 | MPC | 04106 | 1994 $VW_7$ |
| 1994 WF | 15.4 | 0.15 | 20060922 | 46.98321 | 286.91519 | 99.52806 | 6.33481 | 0.2012222 | 3.1799779 | 52 | 4 | 1994–2006 | 0.46 | M-v | 2 | MPC | 04106 | 1994 WF |
| 1994 $WB_7$ | 17.1 | 0.15 | 20060922 | 164.14636 | 130.17422 | 158.04030 | 6.84814 | 0.0982916 | 2.4358098 | 42 | 6 | 1994–2005 | 0.37 | M-v | 0 | MPC | 89999 | 1994 $WB_7$ |
| 1994 $WX_7$ | 17.1 | 0.15 | 20060922 | 78.31884 | 279.51777 | 155.66651 | 4.78621 | 0.2076316 | 2.3677063 | 48 | 4 | 1994–2005 | 0.58 | M-v | 1 | MPC | 97324 | 1994 $WX_7$ |
| 1994 $XV_2$ | 16.7 | 0.15 | 20060922 | 150.93302 | 295.00108 | 138.62274 | 3.32545 | 0.0271627 | 2.8535054 | 18 | 4 | 1994–2004 | 0.34 | M-v | 0 | MPC | 12847 | 1994 $XV_2$ |
| 1995 $BZ_5$ | 17.5 | 0.15 | 20060922 | 87.30651 | 198.14043 | 346.75358 | 2.91619 | 0.0973490 | 2.2944735 | 24 | 3 | 1995–2004 | 0.38 | M-v | 4 | MPC | 70211 | 1995 $BZ_5$ |
| 1995 $BO_7$ | 15.6 | 0.15 | 20060922 | 216.03370 | 323.57734 | 321.87828 | 10.04973 | 0.1912158 | 2.4727654 | 94 | 7 | 1995–2006 | 0.46 | M-v | 1 | MPC | 97324 | 1995 $BO_7$ |
| 1995 $BW_7$ | 18.5 | 0.15 | 20060922 | 208.61780 | 329.87804 | 104.57236 | 2.69660 | 0.1320735 | 2.2482160 | 17 | 4 | 1995–2004 | 0.48 | M-v | 1 | MPC | 27582 | 1995 $BW_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 $BY_{8}$ | 16.2 | 0.15 | 20060922 | 10.31986 | 133.65647 | 93.34093 | 3.29256 | 0.0288553 | 2.9689380 | 32 | 4 | 1995–2006 | 0.32 | M-v | 0 | MPC | 99877 | 1995 $BY_{8}$ |
| 1995 $BU_{9}$ | 17.4 | 0.15 | 20060922 | 333.81465 | 311.13786 | 119.63816 | 4.38608 | 0.2458670 | 2.5740731 | 37 | 3 | 1995–2006 | 0.56 | M-v | 4 | MPC | 50371 | 1995 $BU_{9}$ |
| 1995 $BM_{10}$ | 16.5 | 0.15 | 20060922 | 308.97006 | 133.49227 | 328.09078 | 5.11520 | 0.2658820 | 2.5800376 | 107 | 4 | 1995–2006 | 0.52 | M-v | 2 | MPC | 50371 | 1995 $BM_{10}$ |
| 1995 $BT_{10}$ | 17.7 | 0.15 | 20060922 | 143.70555 | 148.90553 | 109.58104 | 4.23093 | 0.1609512 | 2.1484758 | 42 | 5 | 1995–2006 | 0.42 | M-v | 1 | MPC | 84429 | 1995 $BT_{10}$ |
| 1995 $BW_{10}$ | 16.0 | 0.15 | 20060922 | 295.96736 | 129.54363 | 329.95516 | 6.89232 | 0.1690395 | 2.6143040 | 40 | 4 | 1995–2006 | 0.57 | M-v | 3 | MPC | 39909 | 1995 $BW_{10}$ |
| 1995 $BS_{14}$ | 17.4 | 0.15 | 20060922 | 33.06081 | 275.65713 | 306.68265 | 5.09159 | 0.1933658 | 2.3312250 | 31 | 5 | 1995–2006 | 0.68 | M-v | 1 | MPC | 01963 | 1995 $BS_{14}$ |
| 1995 CU | 16.2 | 0.15 | 20060922 | 326.52718 | 47.15180 | 52.13080 | 5.87462 | 0.2210488 | 2.5589498 | 69 | 4 | 1979–2006 | 0.53 | M-v | 2 | MPC | 50372 | 1995 CU |
| 1995 $CO_{2}$ | 17.0 | 0.15 | 20060922 | 83.41072 | 115.72198 | 306.19070 | 9.06069 | 0.2254540 | 3.1410849 | 25 | 3 | 1995–2006 | 0.32 | M-v | 1 | MPC | 03137 | 1995 $CO_{2}$ |
| 1995 $CS_{2}$ | 16.5 | 0.15 | 20060922 | 313.79062 | 138.82496 | 292.35061 | 3.46374 | 0.1586778 | 2.6246213 | 58 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 39909 | 1995 $CS_{2}$ |
| 1995 $CJ_{4}$ | 16.2 | 0.15 | 20060922 | 280.01814 | 172.92076 | 244.21312 | 1.46445 | 0.0834398 | 2.7264567 | 44 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 62213 | 1995 $CJ_{4}$ |
| 1995 $CH_{5}$ | 17.1 | 0.15 | 20060922 | 341.45727 | 325.77464 | 147.23481 | 5.39789 | 0.1309162 | 2.5263138 | 22 | 4 | 1995–2006 | 0.59 | M-v | 5 | MPC | 60464 | 1995 $CH_{5}$ |
| 1995 $CQ_{6}$ | 16.0 | 0.15 | 20060922 | 278.66022 | 34.85272 | 221.93547 | 1.62497 | 0.1453189 | 3.1674847 | 49 | 4 | 1995–2006 | 0.40 | M-v | 0 | MPC | 97324 | 1995 $CQ_{6}$ |
| 1995 $CC_{10}$ | 17.4 | 0.15 | 20060922 | 351.99853 | 246.14199 | 42.91982 | 2.36512 | 0.0144003 | 2.2711416 | 38 | 7 | 1995–2006 | 0.43 | M-v | 0 | MPC | 73925 | 1995 $CC_{10}$ |
| 1995 $DH_{1}$ | 16.1 | 0.15 | 20060922 | 351.32692 | 219.68123 | 221.69098 | 3.68684 | 0.1477555 | 2.5834118 | 51 | 6 | 1995–2006 | 0.61 | M-v | 1 | MPC | 66053 | 1995 $DH_{1}$ |
| 1995 $DL_{5}$ | 16.7 | 0.15 | 20060922 | 348.40253 | 222.94405 | 200.61705 | 1.59228 | 0.1498037 | 2.5818836 | 57 | 6 | 1995–2006 | 0.44 | M-v | 1 | MPC | 87329 | 1995 $DL_{5}$ |
| 1995 $DK_{8}$ | 16.3 | 0.15 | 20060922 | 77.80091 | 146.67954 | 157.98641 | 5.55678 | 0.0988037 | 2.7214728 | 38 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 62213 | 1995 $DK_{8}$ |
| 1995 $FT_{3}$ | 17.0 | 0.15 | 20060922 | 164.40994 | 27.29691 | 149.02782 | 4.52657 | 0.1093572 | 2.7892605 | 26 | 3 | 1995–2006 | 0.27 | M-v | 2 | MPC | 87329 | 1995 $FT_{3}$ |
| 1995 $FE_{7}$ | 16.1 | 0.15 | 20060922 | 125.22150 | 175.22850 | 91.21980 | 4.65901 | 0.1539780 | 2.7459467 | 58 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 87329 | 1995 $FE_{7}$ |
| 1995 $FO_{7}$ | 16.0 | 0.15 | 20060922 | 275.31729 | 47.71272 | 56.09443 | 5.79179 | 0.0762408 | 2.7184006 | 42 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 50372 | 1995 $FO_{7}$ |
| 1995 $FK_{9}$ | 15.8 | 0.15 | 20060922 | 306.88968 | 221.19214 | 28.90169 | 14.32295 | 0.0890431 | 3.2133010 | 27 | 3 | 1995–2003 | 0.30 | M-v | 2 | MPC | 12848 | 1995 $FK_{9}$ |
| 1995 $FT_{9}$ | 13.2 | 0.15 | 20060922 | 295.44891 | 84.81153 | 169.26121 | 14.24641 | 0.0946201 | 5.2473760 | 34 | 3 | 1995–2006 | 0.30 | M-v | 2 | MPC | 99878 | 1995 $FT_{9}$ |
| 1995 $FK_{10}$ | 16.8 | 0.15 | 20060922 | 159.65986 | 181.51230 | 66.50069 | 4.76899 | 0.0403381 | 2.7007822 | 27 | 3 | 1995–2006 | 0.34 | M-v | 3 | MPC | 87329 | 1995 $FK_{10}$ |
| 1995 $FW_{17}$ | 16.4 | 0.15 | 20060922 | 123.86259 | 34.22186 | 119.48046 | 3.20651 | 0.0997269 | 2.9189685 | 35 | 4 | 1995–2005 | 0.49 | M-v | 3 | MPC | 74541 | 1995 $FW_{17}$ |
| 1995 $FZ_{19}$ | 16.0 | 0.15 | 20060922 | 341.53912 | 177.59076 | 12.13567 | 6.21743 | 0.1077518 | 3.2168225 | 19 | 4 | 1995–2004 | 0.36 | M-v | 1 | MPC | 19253 | 1995 $FZ_{19}$ |
| 1995 $GU_{1}$ | 15.6 | 0.15 | 20060922 | 232.02853 | 2.96874 | 174.97526 | 12.50677 | 0.0855865 | 2.6869628 | 60 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 87330 | 1995 $GU_{1}$ |
| 1995 $GU_{2}$ | 15.8 | 0.15 | 20060922 | 302.89048 | 86.79350 | 28.78124 | 13.86794 | 0.2115698 | 2.6307032 | 78 | 4 | 1995–2006 | 0.46 | M-v | 2 | MPC | 47696 | 1995 $GU_{2}$ |
| 1995 $GW_{6}$ | 16.5 | 0.15 | 20060922 | 145.01276 | 244.52475 | 58.06413 | 5.85723 | 0.1041622 | 2.6439233 | 21 | 4 | 1995–2005 | 0.37 | M-v | 2 | MPC | 99878 | 1995 $GW_{6}$ |
| 1995 $HY_{1}$ | 15.6 | 0.15 | 20060922 | 85.95657 | 179.38345 | 162.64559 | 11.24740 | 0.2667181 | 2.7595211 | 96 | 6 | 1995–2005 | 0.43 | M-v | 1 | MPC | 04106 | 1995 $HY_{1}$ |
| 1995 $HT_{2}$ | 16.1 | 0.15 | 20060922 | 58.21329 | 251.64925 | 82.30278 | 5.15696 | 0.1063986 | 2.7845518 | 52 | 6 | 1995–2006 | 0.43 | M-v | 0 | MPC | 93690 | 1995 $HT_{2}$ |
| 1995 $MX_{3}$ | 16.2 | 0.15 | 20060922 | 42.57791 | 201.37714 | 106.79543 | 12.42460 | 0.1400429 | 2.9203197 | 39 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 87330 | 1995 $MX_{3}$ |
| 1995 $MC_{5}$ | 17.3 | 0.15 | 20060922 | 148.04255 | 32.81909 | 195.01271 | 8.69542 | 0.0703833 | 2.2410539 | 61 | 3 | 1995–2006 | 0.34 | M-v | 2 | MPC | 74542 | 1995 $MC_{5}$ |
| 1995 $MC_{7}$ | 17.0 | 0.15 | 20060922 | 311.87313 | 6.58003 | 277.62960 | 13.19113 | 0.0172214 | 2.5153789 | 21 | 3 | 1995–2004 | 0.24 | M-v | 3 | MPC | 49639 | 1995 $MC_{7}$ |
| 1995 $OC_{1}$ | 17.0 | 0.15 | 20060922 | 221.14083 | 104.80623 | 195.70994 | 10.49176 | 0.1824866 | 2.6468565 | 63 | 4 | 1991–2004 | 0.63 | M-v | 1 | MPC | 04106 | 1995 $OC_{1}$ |
| 1995 $OJ_{2}$ | 15.8 | 0.15 | 20060922 | 293.51693 | 245.30468 | 160.44059 | 13.43643 | 0.1306229 | 3.1023139 | 40 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 04106 | 1995 $OJ_{2}$ |
| 1995 $OX_{3}$ | 17.3 | 0.15 | 20060922 | 39.38885 | 177.03294 | 140.67847 | 3.35385 | 0.1783430 | 2.3460773 | 46 | 3 | 1995–2006 | 0.27 | M-v | 2 | MPC | 74543 | 1995 $OX_{3}$ |
| 1995 $OD_{4}$ | 16.9 | 0.15 | 20060922 | 172.27348 | 76.95748 | 321.12542 | 4.02129 | 0.2741311 | 2.6380600 | 67 | 4 | 1995–2005 | 0.49 | M-v | 2 | MPC | 71945 | 1995 $OD_{4}$ |
| 1995 $OO_{5}$ | 18.8 | 0.15 | 20060922 | 120.85511 | 197.99921 | 129.45789 | 1.20315 | 0.2954460 | 2.2294985 | 40 | 2 | 1995–2005 | 0.41 | M-v | 3 | MPC | 88651 | 1995 $OO_{5}$ |
| 1995 $OW_{7}$ | 16.8 | 0.15 | 20060922 | 194.96172 | 352.44215 | 270.58582 | 6.56208 | 0.1189778 | 2.1926217 | 56 | 6 | 1995–2006 | 0.44 | M-v | 1 | MPC | 87330 | 1995 $OW_{7}$ |
| 1995 $OZ_{9}$ | 15.6 | 0.15 | 20060922 | 42.63402 | 159.94324 | 164.10267 | 10.47275 | 0.0846986 | 3.0043598 | 64 | 5 | 1995–2006 | 0.54 | M-v | 0 | MPC | 74543 | 1995 $OZ_{9}$ |
| 1995 $OD_{11}$ | 17.8 | 0.15 | 20060922 | 348.07303 | 61.65849 | 328.38571 | 5.21771 | 0.1321109 | 2.3412885 | 42 | 3 | 1995–2006 | 0.35 | M-v | 2 | MPC | 87330 | 1995 $OD_{11}$ |
| 1995 $OB_{13}$ | 17.5 | 0.15 | 20060922 | 326.66554 | 97.43487 | 322.53326 | 4.86110 | 0.0819903 | 2.3246438 | 35 | 4 | 1995–2006 | 0.35 | M-v | 0 | MPC | 87330 | 1995 $OB_{13}$ |
| 1995 $OV_{17}$ | 16.3 | 0.15 | 20060922 | 271.96824 | 244.26690 | 193.98982 | 7.00486 | 0.1573147 | 3.0872705 | 40 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 62214 | 1995 $OV_{17}$ |
| 1995 $QB_{4}$ | 16.3 | 0.15 | 20060922 | 265.11624 | 259.83895 | 347.94817 | 12.81219 | 0.0441130 | 2.7442404 | 21 | 3 | 1995–2004 | 0.41 | M-v | 2 | MPC | 71946 | 1995 $QB_{4}$ |
| 1995 $QZ_{4}$ | 16.8 | 0.15 | 20060922 | 116.83355 | 329.87685 | 288.14591 | 5.71818 | 0.1930355 | 2.2932919 | 62 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 77355 | 1995 $QZ_{4}$ |
| 1995 $QM_{14}$ | 17.7 | 0.15 | 20060922 | 82.64454 | 87.06360 | 201.20359 | 5.88527 | 0.1067453 | 2.3523926 | 45 | 3 | 1995–2006 | 0.33 | M-v | 2 | MPC | 99878 | 1995 $QM_{14}$ |
| 1995 $QN_{14}$ | 15.9 | 0.15 | 20060922 | 339.76855 | 204.33686 | 196.31561 | 9.58204 | 0.0859389 | 3.0926652 | 46 | 3 | 1995–2006 | 0.28 | M-v | 1 | MPC | 21974 | 1995 $QN_{14}$ |
| 1995 $QQ_{14}$ | 17.3 | 0.15 | 20060922 | 241.65436 | 293.82007 | 207.59867 | 3.97887 | 0.1246532 | 2.3725706 | 28 | 4 | 1995–2006 | 0.39 | M-v | 2 | MPC | 16728 | 1995 $QQ_{14}$ |
| 1995 $QC_{16}$ | 16.5 | 0.15 | 20060922 | 258.63115 | 171.82514 | 296.13137 | 10.09024 | 0.1229274 | 2.3400312 | 35 | 3 | 1995–2006 | 0.74 | M-v | 3 | MPC | 64642 | 1995 $QC_{16}$ |
| 1995 $SK_{1}$ | 16.0 | 0.15 | 20060922 | 213.96584 | 292.74130 | 350.20493 | 4.39893 | 0.0349490 | 2.7706885 | 46 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 97325 | 1995 $SK_{1}$ |
| 1995 $ST_{8}$ | 17.3 | 0.15 | 20060922 | 71.17523 | 268.62097 | 355.38208 | 6.06838 | 0.0864397 | 2.3913736 | 34 | 4 | 1995–2006 | 0.28 | M-v | 1 | MPC | 74544 | 1995 $ST_{8}$ |
| 1995 $ST_{10}$ | 17.0 | 0.15 | 20060922 | 101.16463 | 287.52535 | 8.52184 | 6.53671 | 0.1273597 | 2.3214863 | 63 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 57660 | 1995 $ST_{10}$ |
| 1995 $SE_{11}$ | 17.5 | 0.15 | 20060922 | 143.21109 | 213.43146 | 14.27034 | 6.61161 | 0.0602410 | 2.3754467 | 41 | 4 | 1995–2006 | 0.33 | M-v | 1 | MPC | 99879 | 1995 $SE_{11}$ |
| 1995 $SN_{11}$ | 16.1 | 0.15 | 20060922 | 76.31225 | 120.61200 | 222.90844 | 0.84810 | 0.1727638 | 2.2815889 | 101 | 5 | 1995–2006 | 0.52 | M-v | 2 | MPC | 87330 | 1995 $SN_{11}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 $SA_{12}$ | 17.3 | 0.15 | 20060922 | 27.26137 | 95.39355 | 212.59040 | 0.60791 | 0.1952079 | 2.3842534 | 93 | 5 | 1995–2006 | 0.43 | M-v | 1 | MPC | 04107 | 1995 $SA_{12}$ |
| 1995 $SV_{12}$ | 16.4 | 0.15 | 20060922 | 93.40106 | 146.46404 | 175.28219 | 3.08518 | 0.0618609 | 2.9404957 | 37 | 4 | 1995–2006 | 0.41 | M-v | 1 | MPC | 84432 | 1995 $SV_{12}$ |
| 1995 $SF_{13}$ | 16.2 | 0.15 | 20060922 | 35.98878 | 193.50421 | 171.60224 | 1.17664 | 0.0922129 | 2.9910797 | 63 | 6 | 1995–2006 | 0.51 | M-v | 0 | MPC | 88651 | 1995 $SF_{13}$ |
| 1995 $SG_{13}$ | 17.1 | 0.15 | 20060922 | 119.01612 | 56.23464 | 163.68072 | 0.15540 | 0.1594327 | 2.3799067 | 47 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 74544 | 1995 $SG_{13}$ |
| 1995 $SN_{15}$ | 15.4 | 0.15 | 20060922 | 205.82068 | 219.26946 | 333.65362 | 2.93041 | 0.1032116 | 2.9811234 | 46 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 87330 | 1995 $SN_{15}$ |
| 1995 $SA_{16}$ | 15.8 | 0.15 | 20060922 | 53.11389 | 107.69687 | 174.99109 | 14.03280 | 0.1539672 | 3.1216648 | 42 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 03138 | 1995 $SA_{16}$ |
| 1995 $SA_{17}$ | 16.0 | 0.15 | 20060922 | 356.81006 | 114.33563 | 280.66083 | 0.03932 | 0.1944867 | 3.0473459 | 86 | 4 | 1995–2006 | 0.41 | M-v | 1 | MPC | 04107 | 1995 $SA_{17}$ |
| 1995 $SX_{17}$ | 16.0 | 0.15 | 20060922 | 285.72567 | 90.73144 | 18.86284 | 16.12872 | 0.2110946 | 3.1056687 | 41 | 4 | 1995–2006 | 0.49 | M-v | 0 | MPC | 62214 | 1995 $SX_{17}$ |
| 1995 $SL_{18}$ | 17.5 | 0.15 | 20060922 | 298.30335 | 84.54208 | 356.06009 | 2.38096 | 0.1707104 | 2.3919070 | 32 | 3 | 1995–2006 | 0.51 | M-v | 2 | MPC | 04107 | 1995 $SL_{18}$ |
| 1995 $SC_{19}$ | 17.3 | 0.15 | 20060922 | 39.29023 | 283.28540 | 3.90721 | 0.93477 | 0.1719129 | 2.4173906 | 45 | 5 | 1991–2006 | 0.47 | M-v | 1 | MPC | 03138 | 1995 $SC_{19}$ |
| 1995 $SH_{19}$ | 15.8 | 0.15 | 20060922 | 60.78975 | 113.70811 | 186.00600 | 0.57184 | 0.1082480 | 3.1227764 | 61 | 5 | 1995–2006 | 0.37 | M-v | 0 | MPC | 04107 | 1995 $SH_{19}$ |
| 1995 $SC_{20}$ | 17.2 | 0.15 | 20060922 | 357.57046 | 218.05349 | 178.40690 | 1.02535 | 0.1861905 | 2.3567185 | 92 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 87330 | 1995 $SC_{20}$ |
| 1995 $SM_{20}$ | 14.8 | 0.15 | 20060922 | 314.51987 | 32.49435 | 19.29009 | 11.79668 | 0.0749245 | 3.1592793 | 79 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 03138 | 1995 $SM_{20}$ |
| 1995 $SW_{21}$ | 16.5 | 0.15 | 20060922 | 272.83142 | 100.61782 | 28.82334 | 4.29146 | 0.0414443 | 2.3291271 | 68 | 5 | 1995–2006 | 0.44 | M-v | 0 | MPC | 66054 | 1995 $SW_{21}$ |
| 1995 $SO_{24}$ | 17.2 | 0.15 | 20060922 | 136.65681 | 55.91679 | 33.47411 | 4.34757 | 0.1018935 | 2.6318285 | 22 | 2 | 1995–2006 | 0.31 | M-v | 5 | MPC | 99879 | 1995 $SO_{24}$ |
| 1995 $SY_{24}$ | 16.6 | 0.15 | 20060922 | 311.38221 | 311.50563 | 102.57599 | 2.58417 | 0.1830833 | 3.1579412 | 30 | 4 | 1995–2001 | 0.62 | M-v | 1 | MPC | 25683 | 1995 $SY_{24}$ |
| 1995 $SU_{27}$ | 16.6 | 0.15 | 20060922 | 27.11998 | 255.07190 | 174.85580 | 0.62646 | 0.0609989 | 2.9174337 | 45 | 5 | 1995–2006 | 0.37 | M-v | 2 | MPC | 97325 | 1995 $SU_{27}$ |
| 1995 $SX_{27}$ | 15.2 | 0.15 | 20060922 | 357.58604 | 31.31674 | 17.73850 | 15.37862 | 0.1383362 | 3.0533988 | 54 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 87330 | 1995 $SX_{27}$ |
| 1995 $SG_{29}$ | 18.2 | 0.15 | 20060922 | 54.98040 | 278.25098 | 358.29819 | 2.30967 | 0.1621888 | 2.3752688 | 28 | 4 | 1995–2006 | 0.33 | M-v | 1 | MPC | 04107 | 1995 $SG_{29}$ |
| 1995 $SH_{30}$ | 16.4 | 0.15 | 20060922 | 245.87493 | 59.70986 | 171.43244 | 5.24666 | 0.1326698 | 2.7783463 | 33 | 5 | 1994–2005 | 0.29 | M-v | 0 | MPC | 04107 | 1995 $SH_{30}$ |
| 1995 $SO_{31}$ | 15.9 | 0.15 | 20060922 | 345.30981 | 108.67588 | 260.94710 | 9.46024 | 0.2014622 | 3.0913080 | 40 | 3 | 1995–2006 | 0.56 | M-v | 2 | MPC | 04107 | 1995 $SO_{31}$ |
| 1995 $SS_{32}$ | 18.1 | 0.15 | 20060922 | 194.98681 | 24.54179 | 166.81949 | 6.69913 | 0.0571846 | 2.3168282 | 25 | 3 | 1995–2006 | 0.41 | M-v | 3 | MPC | 88652 | 1995 $SS_{32}$ |
| 1995 $SY_{33}$ | 16.7 | 0.15 | 20060922 | 306.99620 | 36.19921 | 356.46512 | 9.10258 | 0.0931836 | 3.1738836 | 29 | 4 | 1995–2004 | 0.37 | M-v | 0 | MPC | 25683 | 1995 $SY_{33}$ |
| 1995 $SA_{34}$ | 16.1 | 0.15 | 20060922 | 0.98850 | 174.65336 | 167.99416 | 2.99185 | 0.1579860 | 3.1332863 | 86 | 5 | 1995–2006 | 0.53 | M-v | 0 | MPC | 04107 | 1995 $SA_{34}$ |
| 1995 $SN_{34}$ | 15.4 | 0.15 | 20060922 | 39.33928 | 303.81375 | 359.73222 | 11.05485 | 0.0505714 | 3.1371631 | 52 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 66054 | 1995 $SN_{34}$ |
| 1995 $SU_{34}$ | 16.1 | 0.15 | 20060922 | 147.25356 | 260.37220 | 3.34327 | 2.81960 | 0.1441888 | 2.9720421 | 40 | 4 | 1995–2006 | 0.32 | M-v | 3 | MPC | 84432 | 1995 $SU_{34}$ |
| 1995 $SX_{34}$ | 16.2 | 0.15 | 20060922 | 129.37108 | 289.75473 | 6.81333 | 1.59806 | 0.0807704 | 2.9519663 | 34 | 3 | 1995–2005 | 0.46 | M-v | 5 | MPC | 01964 | 1995 $SX_{34}$ |
| 1995 $SD_{36}$ | 17.9 | 0.15 | 20060922 | 320.03251 | 357.12486 | 10.50628 | 1.32672 | 0.1932791 | 2.4265458 | 22 | 3 | 1995–2005 | 0.33 | M-v | 3 | MPC | 1900 | 1995 $SD_{36}$ |
| 1995 $SO_{36}$ | 15.4 | 0.15 | 20060922 | 304.33371 | 276.96167 | 208.32226 | 12.19755 | 0.0481093 | 2.8772898 | 51 | 5 | 1995–2005 | 0.73 | M-v | 1 | MPC | 87330 | 1995 $SO_{36}$ |
| 1995 $SF_{37}$ | 17.6 | 0.15 | 20060922 | 311.06818 | 124.39755 | 341.71461 | 2.70056 | 0.1465821 | 2.3134794 | 54 | 5 | 1995–2006 | 0.52 | M-v | 0 | MPC | 66054 | 1995 $SF_{37}$ |
| 1995 $SM_{38}$ | 17.0 | 0.15 | 20060922 | 44.16743 | 315.70108 | 347.07956 | 6.45833 | 0.1395988 | 2.3717310 | 63 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04107 | 1995 $SM_{38}$ |
| 1995 $SU_{38}$ | 16.7 | 0.15 | 20060922 | 129.08714 | 350.02700 | 311.56621 | 0.98902 | 0.0917125 | 2.9362221 | 44 | 3 | 1995–2005 | 0.34 | M-v | 4 | MPC | 90000 | 1995 $SU_{38}$ |
| 1995 $SW_{38}$ | 16.1 | 0.15 | 20060922 | 26.37774 | 98.74600 | 196.81891 | 13.09184 | 0.2687952 | 3.1870591 | 43 | 3 | 1995–2006 | 0.36 | M-v | 2 | MPC | 04107 | 1995 $SW_{38}$ |
| 1995 $SX_{39}$ | 16.0 | 0.15 | 20060922 | 356.54304 | 314.18441 | 10.25029 | 3.57992 | 0.1031019 | 3.1749481 | 33 | 4 | 1995–2005 | 0.66 | M-v | 1 | MPC | 77356 | 1995 $SX_{39}$ |
| 1995 $SL_{40}$ | 17.6 | 0.15 | 20060922 | 239.32430 | 122.42008 | 4.47197 | 2.65748 | 0.0995949 | 2.3612620 | 33 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 04107 | 1995 $SL_{40}$ |
| 1995 $SB_{41}$ | 16.9 | 0.15 | 20060922 | 52.66493 | 104.03752 | 178.77131 | 15.90338 | 0.2169367 | 3.1424172 | 22 | 3 | 1995–2006 | 0.20 | M-v | 1 | MPC | 74545 | 1995 $SB_{41}$ |
| 1995 $SU_{41}$ | 16.7 | 0.15 | 20060922 | 300.14413 | 29.18363 | 69.93120 | 1.90282 | 0.1655926 | 3.0756288 | 47 | 5 | 1990–2006 | 0.46 | M-v | 0 | MPC | 62214 | 1995 $SU_{41}$ |
| 1995 $SY_{41}$ | 17.0 | 0.15 | 20060922 | 247.07252 | 344.29100 | 152.39168 | 3.05424 | 0.1428458 | 2.3712786 | 38 | 3 | 1995–2006 | 0.42 | M-v | 3 | MPC | 74545 | 1995 $SY_{41}$ |
| 1995 $SJ_{42}$ | 17.0 | 0.15 | 20060922 | 29.44768 | 240.97136 | 148.04482 | 2.42847 | 0.2309708 | 2.3141520 | 75 | 4 | 1995–2006 | 0.40 | M-v | 2 | MPC | 50373 | 1995 $SJ_{42}$ |
| 1995 $SF_{43}$ | 17.0 | 0.15 | 20060922 | 135.61103 | 135.63245 | 96.21504 | 2.38993 | 0.1373818 | 2.3610925 | 51 | 5 | 1995–2006 | 0.38 | M-v | 1 | MPC | 87331 | 1995 $SF_{43}$ |
| 1995 $SP_{48}$ | 15.8 | 0.15 | 20060922 | 46.91139 | 296.39927 | 135.58699 | 2.88884 | 0.0714553 | 2.8489163 | 46 | 4 | 1995–2006 | 0.43 | M-v | 1 | MPC | 97325 | 1995 $SP_{48}$ |
| 1995 $SZ_{48}$ | 17.5 | 0.15 | 20060922 | 50.08940 | 228.60104 | 169.18197 | 6.01208 | 0.0798804 | 2.8634437 | 24 | 3 | 1995–2005 | 0.34 | M-v | 3 | MPC | 84434 | 1995 $SZ_{48}$ |
| 1995 $SE_{50}$ | 17.2 | 0.15 | 20060922 | 45.21304 | 86.42207 | 208.50147 | 4.49306 | 0.2367911 | 2.3871327 | 59 | 5 | 1995–2006 | 0.42 | M-v | 1 | MPC | 60469 | 1995 $SE_{50}$ |
| 1995 $ST_{51}$ | 16.3 | 0.15 | 20060922 | 75.27318 | 303.29801 | 14.09892 | 4.59473 | 0.0655656 | 3.0537555 | 30 | 3 | 1995–2006 | 0.34 | M-v | 2 | MPC | 84434 | 1995 $ST_{51}$ |
| 1995 $SX_{51}$ | 15.7 | 0.15 | 20060922 | 15.06807 | 0.44687 | 16.04334 | 8.91111 | 0.1906097 | 3.0686160 | 68 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 03139 | 1995 $SX_{51}$ |
| 1995 $SQ_{52}$ | 18.1 | 0.15 | 20060922 | 52.70286 | 35.81800 | 240.95985 | 0.59446 | 0.1765362 | 2.4162350 | 37 | 5 | 1995–2006 | 0.31 | M-v | 1 | MPC | 04107 | 1995 $SQ_{52}$ |
| 1995 $SJ_{57}$ | 17.6 | 0.15 | 20060922 | 240.69636 | 254.96366 | 229.79910 | 1.36555 | 0.1659664 | 2.3820417 | 48 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 04107 | 1995 $SJ_{57}$ |
| 1995 $ST_{58}$ | 16.0 | 0.15 | 20060922 | 262.78977 | 158.03153 | 309.20115 | 1.88035 | 0.0385914 | 3.0766894 | 27 | 5 | 1995–2006 | 0.44 | M-v | 0 | MPC | 73926 | 1995 $ST_{58}$ |
| 1995 $SW_{62}$ | 18.2 | 0.15 | 20060922 | 70.67220 | 156.89022 | 148.69563 | 2.93374 | 0.2354897 | 2.3320704 | 38 | 5 | 1995–2006 | 0.46 | M-v | 0 | MPC | 74546 | 1995 $SW_{62}$ |
| 1995 $SL_{63}$ | 18.0 | 0.15 | 20060922 | 44.40192 | 81.01885 | 328.59660 | 0.80042 | 0.2055762 | 2.2797782 | 31 | 3 | 1995–2004 | 0.55 | M-v | 3 | MPC | 47698 | 1995 $SL_{63}$ |
| 1995 $SN_{63}$ | 19.0 | 0.15 | 20060922 | 68.95511 | 18.43388 | 282.22443 | 0.60678 | 0.1812056 | 2.3549372 | 25 | 3 | 1995–2006 | 0.41 | M-v | 4 | MPC | 93695 | 1995 $SN_{63}$ |
| 1995 $SZ_{63}$ | 15.8 | 0.15 | 20060922 | 6.68107 | 268.86212 | 72.49299 | 1.99617 | 0.1938084 | 3.1381214 | 70 | 6 | 1995–2006 | 0.45 | M-v | 1 | MPC | 03139 | 1995 $SZ_{63}$ |
| 1995 $SC_{64}$ | 17.0 | 0.15 | 20060922 | 264.48002 | 173.27571 | 298.10544 | 0.25008 | 0.1614115 | 3.1757802 | 36 | 6 | 1995–2006 | 0.30 | M-v | 0 | MPC | 04107 | 1995 $SC_{64}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 $SY_{66}$ | 16.9 | 0.15 | 20060922 | 303.99072 | 56.89584 | 23.75776 | 0.53533 | 0.1802313 | 3.0864449 | 50 | 3 | 1995–2006 | 0.40 | M-v | 4 | MPC | 93695 | 1995 $SY_{66}$ |
| 1995 $SM_{67}$ | 16.3 | 0.15 | 20060922 | 292.91992 | 86.08548 | 331.52369 | 2.49256 | 0.0540601 | 3.1331475 | 28 | 4 | 1995–2006 | 0.36 | M-v | 1 | MPC | 03139 | 1995 $SM_{67}$ |
| 1995 $SZ_{68}$ | 16.1 | 0.15 | 20060922 | 96.53463 | 301.43194 | 9.60710 | 3.34646 | 0.2009755 | 2.2863702 | 116 | 6 | 1988–2006 | 0.47 | M-v | 1 | MPC | 87331 | 1995 $SZ_{68}$ |
| 1995 $SM_{70}$ | 15.8 | 0.15 | 20060922 | 27.72528 | 176.80048 | 191.02710 | 2.65679 | 0.1831327 | 3.0098997 | 84 | 6 | 1995–2006 | 0.44 | M-v | 0 | MPC | 84434 | 1995 $SM_{70}$ |
| 1995 $SV_{74}$ | 16.8 | 0.15 | 20060922 | 244.99537 | 13.11305 | 140.97377 | 2.67822 | 0.1048409 | 2.3392421 | 77 | 7 | 1995–2006 | 0.43 | M-v | 1 | MPC | 87331 | 1995 $SV_{74}$ |
| 1995 $SN_{77}$ | 15.8 | 0.15 | 20060922 | 21.98883 | 159.63011 | 238.68401 | 9.00300 | 0.0640112 | 2.9151910 | 52 | 6 | 1995–2006 | 0.37 | M-v | 0 | MPC | 87331 | 1995 $SN_{77}$ |
| 1995 $SC_{79}$ | 15.7 | 0.15 | 20060922 | 251.22425 | 112.68639 | 350.42564 | 10.52985 | 0.0779930 | 3.1123267 | 29 | 2 | 1995–2006 | 0.32 | M-v | 4 | MPC | 03139 | 1995 $SC_{79}$ |
| 1995 $SN_{79}$ | 16.8 | 0.15 | 20060922 | 60.73941 | 71.09515 | 314.61720 | 1.04691 | 0.0808199 | 2.8658232 | 35 | 3 | 1995–2005 | 0.36 | M-v | 3 | MPC | 88652 | 1995 $SN_{79}$ |
| 1995 $SO_{81}$ | 18.2 | 0.15 | 20060922 | 59.61662 | 259.57726 | 27.16632 | 0.69473 | 0.2056547 | 2.3613511 | 36 | 5 | 1995–2006 | 0.33 | M-v | 1 | MPC | 34690 | 1995 $SO_{81}$ |
| 1995 $SX_{85}$ | 16.2 | 0.15 | 20060922 | 2.36270 | 190.03648 | 180.92663 | 10.45550 | 0.1149303 | 3.0934178 | 47 | 4 | 1995–2006 | 0.46 | M-v | 0 | MPC | 04107 | 1995 $SX_{85}$ |
| 1995 $SA_{87}$ | 18.4 | 0.15 | 20060922 | 353.89954 | 1.95271 | 34.16889 | 0.66745 | 0.2083182 | 2.3398038 | 63 | 3 | 1995–2006 | 0.40 | M-v | 2 | MPC | 37049 | 1995 $SA_{87}$ |
| 1995 $SN_{88}$ | 18.2 | 0.15 | 20060922 | 269.36914 | 171.97489 | 308.93116 | 0.94347 | 0.1329105 | 2.3757963 | 32 | 4 | 1995–2006 | 0.24 | M-v | 1 | MPC | 84435 | 1995 $SN_{88}$ |
| 1995 $TN_{1}$ | 16.5 | 0.15 | 20060922 | 137.65995 | 283.40096 | 1.55198 | 4.08225 | 0.0224755 | 2.2949689 | 66 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 87331 | 1995 $TN_{1}$ |
| 1995 $TZ_{2}$ | 15.5 | 0.15 | 20060922 | 90.56884 | 307.19870 | 6.13503 | 9.87402 | 0.0751696 | 2.9930379 | 25 | 4 | 1993–2006 | 0.38 | M-v | 0 | MPC | 84435 | 1995 $TZ_{2}$ |
| 1995 $TD_{3}$ | 17.3 | 0.15 | 20060922 | 16.17130 | 335.57693 | 1.46118 | 3.60486 | 0.1976172 | 2.3805278 | 71 | 3 | 1995–2006 | 0.46 | M-v | 2 | MPC | 04107 | 1995 $TD_{3}$ |
| 1995 $TE_{4}$ | 15.7 | 0.15 | 20060922 | 321.72729 | 254.36913 | 207.21380 | 4.73519 | 0.1178908 | 3.0264850 | 31 | 3 | 1995–2006 | 0.38 | M-v | 3 | MPC | 60469 | 1995 $TE_{4}$ |
| 1995 $TL_{4}$ | 17.4 | 0.15 | 20060922 | 123.44938 | 52.31995 | 210.34727 | 1.97477 | 0.0538289 | 2.3551664 | 49 | 4 | 1995–2006 | 0.35 | M-v | 1 | MPC | 01964 | 1995 $TL_{4}$ |
| 1995 $TU_{7}$ | 16.7 | 0.15 | 20060922 | 334.67544 | 145.66550 | 242.20432 | 1.64024 | 0.1653441 | 2.4107654 | 104 | 6 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04107 | 1995 $TU_{7}$ |
| 1995 $TZ_{8}$ | 19.1 | 0.15 | 20060922 | 76.45757 | 150.37813 | 167.11441 | 3.88185 | 0.1720429 | 2.3014294 | 30 | 3 | 1995–2005 | 0.29 | M-v | 3 | MPC | 03139 | 1995 $TZ_{8}$ |
| 1995 $TG_{9}$ | 17.2 | 0.15 | 20060922 | 235.29888 | 181.14191 | 166.45928 | 8.39219 | 0.1678865 | 2.5836946 | 26 | 3 | 1995–2006 | 0.29 | M-v | 2 | MPC | 01964 | 1995 $TG_{9}$ |
| 1995 $TM_{9}$ | 17.5 | 0.15 | 20060922 | 201.44962 | 168.33667 | 334.86446 | 1.98268 | 0.1284480 | 2.4399250 | 18 | 2 | 1995–2006 | 0.29 | M-v | 5 | MPC | 03139 | 1995 $TM_{9}$ |
| 1995 $TB_{11}$ | 16.6 | 0.15 | 20060922 | 259.58994 | 350.19991 | 287.08209 | 11.50375 | 0.1183797 | 2.6279502 | 29 | 3 | 1995–2006 | 0.39 | M-v | 2 | MPC | 93696 | 1995 $TB_{11}$ |
| 1995 UA | 16.9 | 0.15 | 20060922 | 19.86776 | 117.37128 | 261.69684 | 1.76744 | 0.2332586 | 2.3422819 | 35 | 2 | 1995–2002 | 0.65 | M-v | 5 | MPC | 71948 | 1995 UA |
| 1995 $UB_{2}$ | 16.6 | 0.15 | 20060922 | 297.63740 | 297.67001 | 204.16182 | 22.94171 | 0.2278244 | 2.3236558 | 42 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 66055 | 1995 $UB_{2}$ |
| 1995 $UG_{2}$ | 16.6 | 0.15 | 20060922 | 347.12240 | 325.03485 | 30.42828 | 2.14451 | 0.1884516 | 2.4190543 | 41 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 04107 | 1995 $UG_{2}$ |
| 1995 $UM_{2}$ | 17.2 | 0.15 | 20060922 | 83.19446 | 243.77547 | 74.63602 | 6.16807 | 0.2005653 | 2.3237211 | 56 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 87331 | 1995 $UM_{2}$ |
| 1995 $UQ_{8}$ | 14.7 | 0.15 | 20060922 | 357.99799 | 242.65078 | 158.40637 | 15.56292 | 0.1753147 | 3.0933343 | 44 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 4329 | 1995 $UQ_{8}$ |
| 1995 $UV_{10}$ | 16.9 | 0.15 | 20060922 | 330.52404 | 192.14042 | 255.64848 | 1.62141 | 0.1473667 | 2.3259324 | 56 | 6 | 1993–2006 | 0.58 | M-v | 0 | MPC | 77356 | 1995 $UV_{10}$ |
| 1995 $UD_{11}$ | 16.9 | 0.15 | 20060922 | 23.47859 | 80.28491 | 234.45821 | 1.68944 | 0.1472223 | 2.4003582 | 51 | 3 | 1995–2006 | 0.45 | M-v | 3 | MPC | 04107 | 1995 $UD_{11}$ |
| 1995 $UB_{12}$ | 17.1 | 0.15 | 20060922 | 114.85311 | 109.76608 | 333.73269 | 1.02731 | 0.0644208 | 2.6961248 | 49 | 5 | 1993–2006 | 0.39 | M-v | 1 | MPC | 04107 | 1995 $UB_{12}$ |
| 1995 $UO_{12}$ | 17.1 | 0.15 | 20060922 | 125.87077 | 250.88193 | 18.46986 | 6.81142 | 0.2171301 | 2.3166196 | 22 | 4 | 1995–2006 | 0.53 | M-v | 2 | MPC | 87331 | 1995 $UO_{12}$ |
| 1995 $UT_{13}$ | 17.6 | 0.15 | 20060922 | 203.12400 | 210.47304 | 15.33402 | 0.55379 | 0.1457289 | 2.2958081 | 51 | 6 | 1995–2006 | 0.46 | M-v | 1 | MPC | 90000 | 1995 $UT_{13}$ |
| 1995 $UK_{16}$ | 16.5 | 0.15 | 20060922 | 55.99392 | 54.64898 | 114.62923 | 3.27838 | 0.1375791 | 2.6993789 | 38 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 99880 | 1995 $UK_{16}$ |
| 1995 $UX_{16}$ | 17.2 | 0.15 | 20060922 | 32.45700 | 207.97285 | 152.33511 | 2.80921 | 0.1963328 | 2.3592797 | 55 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 77356 | 1995 $UX_{16}$ |
| 1995 $UR_{17}$ | 16.6 | 0.15 | 20060922 | 331.57010 | 159.45175 | 274.47596 | 2.30776 | 0.1011694 | 3.0330387 | 43 | 3 | 1995–2006 | 0.37 | M-v | 3 | MPC | 46327 | 1995 $UR_{17}$ |
| 1995 $UW_{17}$ | 17.7 | 0.15 | 20060922 | 270.25266 | 174.07115 | 297.13013 | 1.69935 | 0.1446691 | 2.3799685 | 51 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 87331 | 1995 $UW_{17}$ |
| 1995 $UD_{18}$ | 17.6 | 0.15 | 20060922 | 30.81649 | 316.17998 | 324.71992 | 1.98501 | 0.1790759 | 2.4300635 | 34 | 3 | 1995–2006 | 0.42 | M-v | 2 | MPC | 03140 | 1995 $UD_{18}$ |
| 1995 $UE_{18}$ | 17.7 | 0.15 | 20060922 | 358.73360 | 180.83743 | 223.38375 | 2.64019 | 0.1945060 | 2.3415847 | 46 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 62215 | 1995 $UE_{18}$ |
| 1995 $UR_{18}$ | 16.8 | 0.15 | 20060922 | 160.54155 | 291.45335 | 358.33621 | 3.30635 | 0.1391872 | 2.2439866 | 71 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 97326 | 1995 $UR_{18}$ |
| 1995 $UB_{22}$ | 16.2 | 0.15 | 20060922 | 108.95408 | 237.86775 | 18.60835 | 3.34155 | 0.1559367 | 3.1182635 | 31 | 4 | 1993–2006 | 0.27 | M-v | 3 | MPC | 74548 | 1995 $UB_{22}$ |
| 1995 $UM_{23}$ | 16.9 | 0.15 | 20060922 | 16.87561 | 124.42095 | 284.16258 | 2.41469 | 0.0961478 | 3.0238550 | 44 | 8 | 1995–2006 | 0.39 | M-v | 0 | MPC | 87331 | 1995 $UM_{23}$ |
| 1995 $UT_{23}$ | 16.4 | 0.15 | 20060922 | 81.87825 | 82.55358 | 235.85643 | 4.85945 | 0.2327088 | 2.3230530 | 93 | 4 | 1995–2006 | 0.43 | M-v | 0 | MPC | 87331 | 1995 $UT_{23}$ |
| 1995 $UN_{24}$ | 17.3 | 0.15 | 20060922 | 23.38267 | 148.02710 | 210.12527 | 10.71020 | 0.2206218 | 2.3716126 | 56 | 3 | 1995–2006 | 0.43 | M-v | 2 | MPC | 38178 | 1995 $UN_{24}$ |
| 1995 $UX_{25}$ | 15.9 | 0.15 | 20060922 | 150.70489 | 43.24294 | 142.67535 | 3.23078 | 0.0555662 | 3.2166589 | 47 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 04107 | 1995 $UX_{25}$ |
| 1995 $US_{30}$ | 17.1 | 0.15 | 20060922 | 344.69320 | 299.51412 | 89.34073 | 2.57824 | 0.1824534 | 2.3999014 | 80 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 77356 | 1995 $US_{30}$ |
| 1995 $UZ_{30}$ | 15.6 | 0.15 | 20060922 | 222.16459 | 50.79727 | 121.26066 | 2.99735 | 0.0828405 | 3.1607463 | 68 | 7 | 1995–2006 | 0.43 | M-v | 1 | MPC | 87331 | 1995 $UZ_{30}$ |
| 1995 $UG_{33}$ | 15.5 | 0.15 | 20060922 | 310.99349 | 336.75675 | 88.77097 | 5.66322 | 0.1680625 | 3.1720517 | 66 | 5 | 1995–2006 | 0.56 | M-v | 0 | MPC | 04107 | 1995 $UG_{33}$ |
| 1995 $UK_{36}$ | 16.5 | 0.15 | 20060922 | 308.82352 | 64.78568 | 49.89593 | 12.21828 | 0.2567713 | 3.0908612 | 42 | 3 | 1995–2006 | 0.51 | M-v | 3 | MPC | 28947 | 1995 $UK_{36}$ |
| 1995 $UC_{38}$ | 16.8 | 0.15 | 20060922 | 182.05871 | 168.56308 | 20.45024 | 3.16295 | 0.1121351 | 2.3917865 | 40 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 12849 | 1995 $UC_{38}$ |
| 1995 $UF_{39}$ | 15.9 | 0.15 | 20060922 | 47.75065 | 102.95984 | 327.95041 | 1.17390 | 0.0762163 | 2.8700299 | 67 | 6 | 1993–2006 | 0.42 | M-v | 0 | MPC | 97326 | 1995 $UF_{39}$ |
| 1995 $UO_{40}$ | 15.7 | 0.15 | 20060922 | 359.20669 | 162.33136 | 205.54846 | 5.71819 | 0.2379912 | 3.1080921 | 76 | 3 | 1995–2006 | 0.41 | M-v | 2 | MPC | 04107 | 1995 $UO_{40}$ |
| 1995 $UF_{42}$ | 16.9 | 0.15 | 20060922 | 84.13748 | 51.79878 | 217.10831 | 5.51006 | 0.0856755 | 2.4002631 | 62 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 04107 | 1995 $UF_{42}$ |
| 1995 $UF_{43}$ | 17.1 | 0.15 | 20060922 | 197.93756 | 345.69223 | 25.62198 | 5.28495 | 0.0717995 | 2.6647768 | 31 | 3 | 1995–2006 | 0.31 | M-v | 3 | MPC | 93698 | 1995 $UF_{43}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 $UQ_{43}$ | 17.5 | 0.15 | 20060922 | 336.96235 | 220.26779 | 165.26680 | 2.56752 | 0.2136207 | 2.4137854 | 51 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 03140 | 1995 $UQ_{43}$ |
| 1995 $UC_{50}$ | 17.7 | 0.15 | 20060922 | 38.07094 | 168.44712 | 222.13347 | 1.06665 | 0.1894890 | 2.3004337 | 73 | 6 | 1992–2006 | 0.52 | M-v | 1 | MPC | 62215 | 1995 $UC_{50}$ |
| 1995 $UP_{50}$ | 17.0 | 0.15 | 20060922 | 322.37901 | 0.40653 | 90.29659 | 3.17496 | 0.1524163 | 2.3672311 | 85 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 60471 | 1995 $UP_{50}$ |
| 1995 $UR_{50}$ | 17.6 | 0.15 | 20060922 | 27.02903 | 169.15820 | 169.33573 | 3.41769 | 0.1424229 | 2.4004933 | 39 | 3 | 1995–2006 | 0.39 | M-v | 2 | MPC | 03140 | 1995 $UR_{50}$ |
| 1995 $UT_{55}$ | 17.2 | 0.15 | 20060922 | 268.08840 | 182.98350 | 354.74571 | 2.81649 | 0.0923799 | 2.2734815 | 80 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 87331 | 1995 $UT_{55}$ |
| 1995 $UO_{57}$ | 17.9 | 0.15 | 20060922 | 101.89247 | 80.23177 | 198.75754 | 6.21869 | 0.1811111 | 2.3290760 | 34 | 4 | 1995–2006 | 0.41 | M-v | 1 | MPC | 99880 | 1995 $UO_{57}$ |
| 1995 $UB_{58}$ | 17.5 | 0.15 | 20060922 | 148.48940 | 249.17557 | 320.91238 | 0.93158 | 0.1175355 | 2.4015138 | 50 | 6 | 1995–2006 | 0.44 | M-v | 1 | MPC | 74549 | 1995 $UB_{58}$ |
| 1995 $UU_{59}$ | 17.6 | 0.15 | 19951010 | 274.58057 | 273.56332 | 207.95567 | 6.89683 | 0.1078555 | 2.6380994 | 9 | 1 | 9 days | 0.15 | | E | MPC | 66055 | 1995 $UU_{59}$ |
| 1995 $UN_{65}$ | 16.4 | 0.15 | 20060922 | 343.52080 | 296.70461 | 70.07307 | 5.29996 | 0.1840161 | 3.1896484 | 29 | 3 | 1995–2006 | 0.51 | M-v | 3 | MPC | 04108 | 1995 $UN_{65}$ |
| 1995 $UB_{66}$ | 17.8 | 0.15 | 20060922 | 283.66945 | 121.97525 | 8.23388 | 1.42490 | 0.1256620 | 2.3456395 | 42 | 3 | 1995–2006 | 0.31 | M-v | 2 | MPC | 60472 | 1995 $UB_{66}$ |
| 1995 $UC_{66}$ | 17.0 | 0.15 | 20060922 | 287.20897 | 267.53487 | 26.36042 | 3.28687 | 0.1323756 | 2.6141218 | 23 | 3 | 1995–2006 | 0.36 | M-v | 3 | MPC | 99881 | 1995 $UC_{66}$ |
| 1995 $UC_{69}$ | 17.6 | 0.15 | 20060922 | 177.45594 | 295.21379 | 261.79918 | 0.28639 | 0.1108258 | 2.3878068 | 34 | 6 | 1995–2006 | 0.31 | M-v | 1 | MPC | 47699 | 1995 $UC_{69}$ |
| 1995 $UX_{76}$ | 17.7 | 0.15 | 20060922 | 324.27218 | 240.29643 | 209.33034 | 3.49685 | 0.0694777 | 2.3222399 | 23 | 4 | 1995–2006 | 0.30 | M-v | 1 | MPC | 73927 | 1995 $UX_{76}$ |
| 1995 $UF_{80}$ | 16.2 | 0.15 | 20060922 | 329.49083 | 192.77442 | 24.53370 | 12.94540 | 0.1648794 | 2.7042825 | 26 | 3 | 1995–2004 | 0.37 | M-v | 3 | MPC | 33006 | 1995 $UF_{80}$ |
| 1995 $UR_{81}$ | 17.2 | 0.15 | 20060922 | 30.89302 | 10.62816 | 349.13429 | 3.71770 | 0.2339894 | 2.3362707 | 48 | 3 | 1995–2004 | 0.53 | M-v | 2 | MPC | 66055 | 1995 $UR_{81}$ |
| 1995 $UK_{82}$ | 16.2 | 0.15 | 20060922 | 39.15016 | 276.64052 | 73.83296 | 9.78878 | 0.0539877 | 3.1399941 | 21 | 3 | 1995–2006 | 0.38 | M-v | 3 | MPC | 74549 | 1995 $UK_{82}$ |
| 1995 $VQ_{2}$ | 17.0 | 0.15 | 20060922 | 11.75394 | 286.95011 | 45.27959 | 1.96863 | 0.1932917 | 2.4068701 | 49 | 3 | 1995–2006 | 0.43 | M-v | 3 | MPC | 03140 | 1995 $VQ_{2}$ |
| 1995 $VV_{3}$ | 15.7 | 0.15 | 20060922 | 267.74641 | 43.05220 | 82.85859 | 6.51330 | 0.0970263 | 3.1339442 | 39 | 4 | 1995–2006 | 0.41 | M-v | 0 | MPC | 87331 | 1995 $VV_{3}$ |
| 1995 $VX_{3}$ | 14.8 | 0.15 | 20060922 | 324.09967 | 347.33933 | 62.63747 | 11.40840 | 0.0656564 | 3.1623889 | 71 | 4 | 1995–2006 | 0.61 | M-v | 1 | MPC | 25684 | 1995 $VX_{3}$ |
| 1995 $VV_{4}$ | 16.6 | 0.15 | 20060922 | 264.85070 | 159.65210 | 82.17730 | 5.58706 | 0.0186651 | 2.8097360 | 24 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | 99881 | 1995 $VV_{4}$ |
| 1995 $VW_{4}$ | 17.0 | 0.15 | 20060922 | 47.66125 | 244.22446 | 135.91158 | 2.67434 | 0.2557525 | 2.3072379 | 79 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 62215 | 1995 $VW_{4}$ |
| 1995 $VJ_{6}$ | 16.6 | 0.15 | 20060922 | 121.34323 | 329.51011 | 59.19416 | 2.92753 | 0.0670669 | 2.8334634 | 25 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 97326 | 1995 $VJ_{6}$ |
| 1995 $VS_{6}$ | 16.6 | 0.15 | 20060922 | 203.26710 | 107.88869 | 67.19933 | 2.05547 | 0.1262250 | 2.4311380 | 48 | 3 | 1995–2006 | 0.49 | M-v | 3 | MPC | 68507 | 1995 $VS_{6}$ |
| 1995 $VV_{7}$ | 17.0 | 0.15 | 20060922 | 14.60043 | 313.13279 | 56.55729 | 2.24361 | 0.2000989 | 2.3783978 | 94 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 93699 | 1995 $VV_{7}$ |
| 1995 $VC_{8}$ | 17.6 | 0.15 | 20060922 | 94.55647 | 231.24534 | 59.71611 | 1.97938 | 0.1750627 | 2.3724707 | 34 | 4 | 1995–2006 | 0.30 | M-v | 1 | MPC | 99881 | 1995 $VC_{8}$ |
| 1995 $VQ_{8}$ | 17.6 | 0.15 | 20060922 | 300.69416 | 269.62004 | 214.58732 | 0.76311 | 0.1272629 | 2.3611566 | 41 | 5 | 1995–2006 | 0.34 | M-v | 0 | MPC | 62215 | 1995 $VQ_{8}$ |
| 1995 $VR_{8}$ | 17.4 | 0.15 | 20060922 | 167.79971 | 323.18337 | 230.81653 | 5.86026 | 0.1144155 | 2.4517936 | 26 | 5 | 1995–2006 | 0.23 | M-v | 1 | MPC | 88653 | 1995 $VR_{8}$ |
| 1995 $VS_{9}$ | 17.6 | 0.15 | 20060922 | 300.93956 | 161.10670 | 21.79744 | 2.32084 | 0.0367861 | 2.2380125 | 39 | 5 | 1995–2005 | 0.45 | M-v | 1 | MPC | 84436 | 1995 $VS_{9}$ |
| 1995 $VX_{10}$ | 17.6 | 0.15 | 20060922 | 28.73255 | 297.70921 | 84.67855 | 3.73067 | 0.2311594 | 2.3326052 | 27 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 37052 | 1995 $VX_{10}$ |
| 1995 $VC_{11}$ | 17.0 | 0.15 | 20060922 | 342.16509 | 247.85967 | 186.20268 | 4.80704 | 0.1862576 | 2.3509849 | 42 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 50374 | 1995 $VC_{11}$ |
| 1995 $VL_{11}$ | 16.6 | 0.15 | 20060922 | 171.27442 | 295.48854 | 80.71651 | 5.89056 | 0.1271541 | 2.7178513 | 21 | 3 | 1995–2004 | 0.38 | M-v | 3 | MPC | 74550 | 1995 $VL_{11}$ |
| 1995 $VT_{13}$ | 16.8 | 0.15 | 20060922 | 22.15498 | 183.79785 | 191.71190 | 5.81406 | 0.1367280 | 2.3540693 | 62 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 38178 | 1995 $VT_{13}$ |
| 1995 $VJ_{15}$ | 14.9 | 0.15 | 20060922 | 243.17807 | 276.94076 | 235.24044 | 14.61383 | 0.0787877 | 3.1780189 | 51 | 3 | 1995–2006 | 0.49 | M-v | 2 | MPC | 46327 | 1995 $VJ_{15}$ |
| 1995 $VZ_{16}$ | 17.7 | 0.15 | 20060922 | 44.57625 | 76.30670 | 238.36774 | 6.03764 | 0.1146331 | 2.4198762 | 38 | 5 | 1995–2006 | 0.40 | M-v | 1 | MPC | 77357 | 1995 $VZ_{16}$ |
| 1995 $VA_{18}$ | 16.6 | 0.15 | 20060922 | 86.03855 | 311.94362 | 237.87641 | 7.40995 | 0.1423350 | 2.6080772 | 33 | 4 | 1995–2005 | 0.41 | M-v | 1 | MPC | 64644 | 1995 $VA_{18}$ |
| 1995 $VF_{18}$ | 17.3 | 0.15 | 20060922 | 256.35395 | 25.98215 | 236.52643 | 4.40023 | 0.1784512 | 2.2049357 | 36 | 4 | 1995–2005 | 0.62 | M-v | 2 | MPC | 18142 | 1995 $VF_{18}$ |
| 1995 $VH_{18}$ | 17.3 | 0.15 | 20060922 | 0.69499 | 83.09166 | 245.86239 | 1.39243 | 0.2105475 | 2.4523262 | 58 | 5 | 1995–2006 | 0.27 | M-v | 1 | MPC | 04108 | 1995 $VH_{18}$ |
| 1995 $WR_{1}$ | 14.9 | 0.15 | 20060922 | 20.07066 | 6.58164 | 58.37276 | 24.74979 | 0.2250945 | 2.3144196 | 121 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 87332 | 1995 $WR_{1}$ |
| 1995 $WO_{4}$ | 15.8 | 0.15 | 20060922 | 35.06252 | 316.14269 | 97.61926 | 4.73839 | 0.1982492 | 2.3150666 | 116 | 6 | 1995–2006 | 0.50 | M-v | 1 | MPC | 87332 | 1995 $WO_{4}$ |
| 1995 $WQ_{5}$ | 16.8 | 0.15 | 20060922 | 22.72982 | 284.03582 | 88.81748 | 21.10006 | 0.4131527 | 2.3478387 | 94 | 4 | 1995–2006 | 0.65 | M-v | 1 | MPC | 66056 | 1995 $WQ_{5}$ |
| 1995 $WH_{8}$ | 16.8 | 0.15 | 20060922 | 42.15546 | 349.65544 | 62.77575 | 7.00998 | 0.0884195 | 2.3000611 | 55 | 4 | 1995–2005 | 0.69 | M-v | 1 | MPC | 87332 | 1995 $WH_{8}$ |
| 1995 $WH_{12}$ | 17.7 | 0.15 | 20060922 | 321.59213 | 302.06845 | 113.42160 | 4.38804 | 0.1944510 | 2.4138704 | 40 | 6 | 1991–2006 | 0.54 | M-v | 1 | MPC | 66056 | 1995 $WH_{12}$ |
| 1995 $WM_{12}$ | 16.0 | 0.15 | 20060922 | 54.06747 | 184.51378 | 147.88080 | 4.37098 | 0.1777292 | 3.1082530 | 45 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 84437 | 1995 $WM_{12}$ |
| 1995 $WB_{15}$ | 16.1 | 0.15 | 20060922 | 346.65302 | 108.29729 | 24.91744 | 5.39666 | 0.0742480 | 2.8823233 | 44 | 6 | 1995–2006 | 0.44 | M-v | 1 | MPC | 90000 | 1995 $WB_{15}$ |
| 1995 $WL_{15}$ | 16.2 | 0.15 | 20060922 | 6.47050 | 177.69827 | 224.13016 | 3.29134 | 0.1568986 | 3.0542880 | 65 | 5 | 1995–2006 | 0.37 | M-v | 0 | MPC | 84437 | 1995 $WL_{15}$ |
| 1995 $WK_{16}$ | 16.1 | 0.15 | 20060922 | 337.50878 | 123.31078 | 33.31207 | 12.87175 | 0.1055971 | 2.8768547 | 28 | 3 | 1995–2005 | 0.33 | M-v | 3 | MPC | 93700 | 1995 $WK_{16}$ |
| 1995 $WY_{17}$ | 16.3 | 0.15 | 20060922 | 339.82686 | 346.91414 | 9.16663 | 2.44714 | 0.1349477 | 2.4434910 | 39 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 03140 | 1995 $WY_{17}$ |
| 1995 $WK_{18}$ | 15.5 | 0.15 | 20060922 | 174.60628 | 334.99006 | 245.95217 | 4.36630 | 0.0820750 | 3.1103575 | 52 | 7 | 1990–2006 | 0.40 | M-v | 1 | MPC | 87332 | 1995 $WK_{18}$ |
| 1995 $WX_{21}$ | 17.0 | 0.15 | 20060922 | 54.79798 | 187.60335 | 94.86807 | 5.55525 | 0.0897568 | 2.4653503 | 41 | 5 | 1995–2006 | 0.60 | M-v | 1 | MPC | 04108 | 1995 $WX_{21}$ |
| 1995 $WA_{23}$ | 17.4 | 0.15 | 20060922 | 70.35650 | 43.88544 | 222.53606 | 5.43597 | 0.0938361 | 2.4313323 | 25 | 4 | 1995–2006 | 0.39 | M-v | 2 | MPC | 99882 | 1995 $WA_{23}$ |
| 1995 $WV_{24}$ | 16.5 | 0.15 | 20060922 | 43.03652 | 38.99993 | 271.58313 | 5.42930 | 0.1346244 | 2.4186826 | 61 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 93700 | 1995 $WV_{24}$ |
| 1995 $WG_{26}$ | 17.2 | 0.15 | 20060922 | 251.15309 | 254.50706 | 287.38413 | 3.83093 | 0.0736325 | 2.3361628 | 48 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 87332 | 1995 $WG_{26}$ |
| 1995 $WX_{26}$ | 15.8 | 0.15 | 20060922 | 340.59844 | 172.11064 | 27.79639 | 9.27561 | 0.2122004 | 2.7676256 | 73 | 3 | 1995–2004 | 0.62 | M-v | 3 | MPC | 28948 | 1995 $WX_{26}$ |

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| 1995 $WF_{31}$ | 17.1 | 0.15 | 20060922 | 322.87173 | 35.58107 | 60.55794 | 10.19822 | 0.2483268 | 2.3760986 | 62 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 62216 | 1995 $WF_{31}$ |
| 1995 $WK_{38}$ | 16.1 | 0.15 | 20060922 | 56.19528 | 278.84909 | 30.02761 | 9.63917 | 0.0609262 | 3.1734623 | 34 | 3 | 1995–2006 | 0.30 | M-v | 2 | MPC | 60474 | 1995 $WK_{38}$ |
| 1995 $WL_{38}$ | 17.6 | 0.15 | 20060922 | 47.76271 | 106.37938 | 277.66743 | 1.68387 | 0.2313651 | 2.3066612 | 37 | 3 | 1995–2006 | 0.58 | M-v | 3 | MPC | 37054 | 1995 $WL_{38}$ |
| 1995 $WW_{38}$ | 16.8 | 0.15 | 20060922 | 4.36547 | 135.79280 | 303.98711 | 2.04774 | 0.2099902 | 3.0102625 | 25 | 4 | 1995–2006 | 0.44 | M-v | 0 | MPC | 87332 | 1995 $WW_{38}$ |
| 1995 $XC_3$ | 18.0 | 0.15 | 20060922 | 140.19235 | 325.24237 | 136.16026 | 4.11256 | 0.1383249 | 2.6774333 | 15 | 3 | 1995–2004 | 0.28 | M-v | 3 | MPC | 11475 | 1995 $XC_3$ |
| 1995 $XJ_3$ | 16.7 | 0.15 | 20060922 | 251.81553 | 288.70348 | 132.19313 | 4.10731 | 0.1271586 | 2.5261017 | 43 | 4 | 1995–2005 | 0.54 | M-v | 3 | MPC | 55813 | 1995 $XJ_3$ |
| 1995 $XB_4$ | 16.2 | 0.15 | 20060922 | 263.82061 | 68.97906 | 216.88481 | 8.09147 | 0.1495681 | 2.7360938 | 33 | 4 | 1995–2004 | 0.42 | M-v | 1 | MPC | 73927 | 1995 $XB_4$ |
| 1995 $XC_4$ | 14.8 | 0.15 | 20060922 | 0.14207 | 286.00806 | 84.14336 | 11.57369 | 0.1387601 | 3.1983022 | 59 | 4 | 1993–2006 | 0.50 | M-v | 1 | MPC | 30250 | 1995 $XC_4$ |
| 1995 $XD_5$ | 17.2 | 0.15 | 20060922 | 66.18874 | 110.60101 | 217.33181 | 6.50658 | 0.1690237 | 2.3662107 | 54 | 4 | 1995–2006 | 0.42 | M-v | 0 | MPC | 77357 | 1995 $XD_5$ |
| 1995 $YS_1$ | 17.8 | 0.15 | 20060922 | 45.98311 | 124.27583 | 240.24226 | 2.02130 | 0.3237975 | 1.9507915 | 109 | 5 | 1992–2006 | 0.45 | M-v | 1 | MPC | 77357 | 1995 $YS_1$ |
| 1995 $YZ_2$ | 14.0 | 0.15 | 20060922 | 174.34767 | 237.73119 | 290.37282 | 24.96356 | 0.2293159 | 2.5759968 | 116 | 4 | 1995–2006 | 0.53 | M-v | 2 | MPC | 04108 | 1995 $YZ_2$ |
| 1995 $YK_6$ | 17.0 | 0.15 | 20060922 | 271.91453 | 330.51355 | 210.92171 | 2.58741 | 0.1605207 | 2.3270193 | 59 | 7 | 1995–2006 | 0.47 | M-v | 1 | MPC | 87332 | 1995 $YK_6$ |
| 1995 $YE_7$ | 17.1 | 0.15 | 20060922 | 5.19056 | 212.82578 | 187.57352 | 2.91646 | 0.1434552 | 2.3699198 | 68 | 5 | 1991–2006 | 0.47 | M-v | 0 | MPC | 62216 | 1995 $YE_7$ |
| 1995 $YT_8$ | 17.7 | 0.15 | 20060922 | 300.45697 | 355.94069 | 87.35987 | 2.12675 | 0.1885625 | 2.4182970 | 32 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 62216 | 1995 $YT_8$ |
| 1995 $YX_{10}$ | 15.7 | 0.15 | 20060922 | 6.79984 | 126.51887 | 287.86655 | 12.91848 | 0.2761393 | 3.1559619 | 27 | 4 | 1995–2006 | 0.33 | M-v | 0 | MPC | 88654 | 1995 $YX_{10}$ |
| 1995 $YV_{11}$ | 15.6 | 0.15 | 20060922 | 351.72538 | 295.36712 | 170.99420 | 2.70996 | 0.0589787 | 3.1197931 | 47 | 5 | 1995–2006 | 0.41 | M-v | 0 | MPC | 97327 | 1995 $YV_{11}$ |
| 1996 $AK_6$ | 15.9 | 0.15 | 20060922 | 127.96180 | 241.83910 | 52.26789 | 3.09923 | 0.1693048 | 2.4291356 | 73 | 7 | 1996–2006 | 0.52 | M-v | 1 | MPC | 90001 | 1996 $AK_6$ |
| 1996 $AO_6$ | 15.4 | 0.15 | 20060922 | 226.54940 | 249.04639 | 342.55855 | 4.45898 | 0.1178066 | 3.1661332 | 40 | 4 | 1996–2005 | 0.46 | M-v | 1 | MPC | 90001 | 1996 $AO_6$ |
| 1996 $AT_6$ | 17.2 | 0.15 | 20060922 | 200.16975 | 262.34857 | 341.28942 | 4.76377 | 0.1207046 | 2.4091395 | 17 | 3 | 1996–2005 | 0.25 | M-v | 3 | MPC | 37055 | 1996 $AT_6$ |
| 1996 $AK_8$ | 14.4 | 0.15 | 20060922 | 174.87172 | 0.85079 | 300.12482 | 24.19884 | 0.1884129 | 3.0795549 | 50 | 4 | 1996–2006 | 0.48 | M-v | 2 | MPC | 73928 | 1996 $AK_8$ |
| 1996 $AP_8$ | 14.9 | 0.15 | 20060922 | 152.52012 | 41.07359 | 284.67698 | 8.46799 | 0.0247162 | 3.0607706 | 54 | 4 | 1995–2006 | 0.47 | M-v | 1 | MPC | 97327 | 1996 $AP_8$ |
| 1996 $AR_{10}$ | 17.4 | 0.15 | 20060922 | 1.69778 | 234.58818 | 158.17148 | 2.28703 | 0.1868731 | 2.4351249 | 103 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 77357 | 1996 $AR_{10}$ |
| 1996 $AC_{11}$ | 17.5 | 0.15 | 20060922 | 278.44215 | 8.37559 | 177.89035 | 2.26657 | 0.1606029 | 2.3807180 | 65 | 7 | 1994–2006 | 0.53 | M-v | 1 | MPC | 87332 | 1996 $AC_{11}$ |
| 1996 $AZ_{13}$ | 17.6 | 0.15 | 20060922 | 21.42263 | 109.21042 | 358.90601 | 6.00769 | 0.0735659 | 2.3369678 | 46 | 4 | 1994–2005 | 0.39 | M-v | 2 | MPC | 04108 | 1996 $AZ_{13}$ |
| 1996 $BM_{10}$ | 16.0 | 0.15 | 20060922 | 89.88734 | 303.64791 | 348.41361 | 12.68128 | 0.1476160 | 2.5391815 | 23 | 3 | 1996–2006 | 0.41 | M-v | 3 | MPC | 60477 | 1996 $BM_{10}$ |
| 1996 $BA_{11}$ | 15.4 | 0.15 | 20060922 | 343.46713 | 191.00790 | 277.28863 | 8.98968 | 0.0367515 | 3.1805544 | 33 | 6 | 1996–2006 | 0.61 | M-v | 1 | MPC | 97327 | 1996 $BA_{11}$ |
| 1996 $BJ_{12}$ | 15.4 | 0.15 | 20060922 | 257.12006 | 140.76194 | 105.13110 | 6.89827 | 0.0098256 | 3.0525509 | 42 | 4 | 1996–2005 | 0.61 | M-v | 1 | MPC | 71951 | 1996 $BJ_{12}$ |
| 1996 $EB_5$ | 16.1 | 0.15 | 20060922 | 111.03504 | 135.17549 | 162.63644 | 2.98791 | 0.2005919 | 2.5391496 | 103 | 7 | 1993–2006 | 0.53 | M-v | 1 | MPC | 87332 | 1996 $EB_5$ |
| 1996 $EH_5$ | 18.0 | 0.15 | 20060922 | 22.22842 | 106.81277 | 7.26315 | 1.67426 | 0.1303343 | 2.3425550 | 32 | 2 | 1996–2005 | 0.33 | M-v | 5 | MPC | 90001 | 1996 $EH_5$ |
| 1996 $EX_5$ | 15.3 | 0.15 | 20060922 | 59.96055 | 192.36356 | 152.06217 | 3.47016 | 0.2056286 | 2.5199085 | 72 | 5 | 1996–2006 | 0.53 | M-v | 4 | MPC | 66056 | 1996 $EX_5$ |
| 1996 $EA_7$ | 16.1 | 0.15 | 20060922 | 256.99124 | 88.06658 | 351.13645 | 14.94049 | 0.1135316 | 2.6104698 | 40 | 4 | 1996–2004 | 0.45 | M-v | 3 | MPC | 99883 | 1996 $EA_7$ |
| 1996 $ED_7$ | 17.7 | 0.15 | 20060922 | 19.66098 | 254.40390 | 160.60655 | 1.57641 | 0.1795039 | 2.4262533 | 32 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 87332 | 1996 $ED_7$ |
| 1996 $EX_8$ | 15.4 | 0.15 | 20060922 | 73.13883 | 254.07936 | 141.30140 | 5.84748 | 0.1669003 | 3.1341928 | 59 | 5 | 1996–2006 | 0.62 | M-v | 1 | MPC | 93702 | 1996 $EX_8$ |
| 1996 $FZ_8$ | 16.2 | 0.15 | 20060922 | 299.87379 | 74.07222 | 110.91101 | 2.92352 | 0.1080612 | 2.3971385 | 69 | 5 | 1992–2006 | 0.56 | M-v | 1 | MPC | 90001 | 1996 $FZ_8$ |
| 1996 $GV_7$ | 16.0 | 0.15 | 20060922 | 163.64901 | 278.23763 | 76.09787 | 2.68975 | 0.1110983 | 3.1694478 | 31 | 3 | 1996–2006 | 0.24 | M-v | 3 | MPC | 93703 | 1996 $GV_7$ |
| 1996 $GB_8$ | 16.9 | 0.15 | 20060922 | 10.10845 | 26.98920 | 73.01142 | 2.50815 | 0.1366796 | 2.4171708 | 77 | 7 | 1996–2006 | 0.55 | M-v | 1 | MPC | 87332 | 1996 $GB_8$ |
| 1996 $GW_9$ | 16.3 | 0.15 | 20060922 | 265.55548 | 40.24294 | 187.68124 | 5.04861 | 0.1071785 | 3.2338388 | 22 | 4 | 1996–2004 | 0.32 | M-v | 1 | MPC | 73928 | 1996 $GW_9$ |
| 1996 $GF_{10}$ | 17.0 | 0.15 | 20060922 | 12.62369 | 312.36737 | 140.73009 | 1.84802 | 0.1605609 | 2.4205350 | 73 | 5 | 1996–2006 | 0.43 | M-v | 1 | MPC | 97327 | 1996 $GF_{10}$ |
| 1996 $HR_1$ | 17.2 | 0.15 | 20060922 | 4.12538 | 73.62487 | 168.97453 | 5.02660 | 0.0852161 | 2.2495243 | 34 | 3 | 1996–2006 | 0.34 | M-v | 2 | MPC | 99883 | 1996 $HR_1$ |
| 1996 $HV_{14}$ | 16.6 | 0.15 | 20060922 | 258.73365 | 266.63737 | 38.06640 | 18.03941 | 0.1005409 | 3.0864267 | 28 | 3 | 1996–2006 | 0.59 | M-v | 2 | MPC | 93704 | 1996 $HV_{14}$ |
| 1996 $HF_{26}$ | 16.7 | 0.15 | 20060922 | 271.20542 | 96.25795 | 84.98031 | 2.87549 | 0.1809944 | 2.4782473 | 37 | 5 | 1992–2005 | 0.52 | M-v | 1 | MPC | 90001 | 1996 $HF_{26}$ |
| 1996 $JZ_{13}$ | 15.8 | 0.15 | 20060922 | 127.44567 | 119.18908 | 61.23695 | 9.89948 | 0.1096645 | 2.7614977 | 40 | 3 | 1996–2005 | 0.71 | M-v | 3 | MPC | 74552 | 1996 $JZ_{13}$ |
| 1996 $JR_{14}$ | 15.8 | 0.15 | 20060922 | 307.54982 | 84.80375 | 127.42908 | 2.56097 | 0.1488522 | 3.1829936 | 21 | 3 | 1996–2006 | 0.38 | M-v | 3 | MPC | 97327 | 1996 $JR_{14}$ |
| 1996 $JR_{16}$ | 17.4 | 0.15 | 20060922 | 265.26256 | 296.71081 | 208.83530 | 13.77444 | 0.0695878 | 2.5549139 | 31 | 4 | 1996–2006 | 0.31 | M-v | 2 | MPC | 66057 | 1996 $JR_{16}$ |
| 1996 OR | 16.1 | 0.15 | 20060922 | 269.19483 | 135.70220 | 252.37211 | 9.08647 | 0.2964583 | 3.0780962 | 67 | 3 | 1996–2006 | 0.50 | M-v | 2 | MPC | 39916 | 1996 OR |
| 1996 $RQ_6$ | 16.7 | 0.15 | 20060922 | 314.64700 | 176.89736 | 225.28045 | 0.55773 | 0.2288112 | 2.9639923 | 29 | 4 | 1996–2006 | 0.61 | M-v | 2 | MPC | 04108 | 1996 $RQ_6$ |
| 1996 $RW_6$ | 16.6 | 0.15 | 20060922 | 63.35429 | 58.79200 | 347.26707 | 2.55438 | 0.0988602 | 2.6705750 | 41 | 3 | 1996–2005 | 0.50 | M-v | 3 | MPC | 88655 | 1996 $RW_6$ |
| 1996 $RD_8$ | 17.3 | 0.15 | 20060922 | 45.05601 | 117.05875 | 199.61940 | 1.50228 | 0.0401683 | 2.8830985 | 35 | 5 | 1996–2006 | 0.30 | M-v | 1 | MPC | 62217 | 1996 $RD_8$ |
| 1996 $RA_{12}$ | 15.9 | 0.15 | 20060922 | 283.32920 | 257.97957 | 118.83989 | 2.97268 | 0.1662862 | 3.0825070 | 26 | 4 | 1996–2005 | 0.42 | M-v | 1 | MPC | 39917 | 1996 $RA_{12}$ |
| 1996 $RX_{12}$ | 17.2 | 0.15 | 20060922 | 189.26650 | 350.25800 | 164.82931 | 0.80985 | 0.1820197 | 2.2494201 | 60 | 5 | 1996–2006 | 0.65 | M-v | 1 | MPC | 74553 | 1996 $RX_{12}$ |
| 1996 $RE_{14}$ | 13.9 | 0.15 | 20060922 | 220.94803 | 267.79185 | 174.77700 | 6.21579 | 0.0373882 | 5.2396486 | 32 | 3 | 1996–2003 | 0.43 | M-v | 3 | MPC | 47704 | 1996 $RE_{14}$ |
| 1996 $RV_{15}$ | 16.4 | 0.15 | 20060922 | 321.47530 | 2.61783 | 303.72630 | 0.87064 | 0.1607301 | 3.1515632 | 26 | 4 | 1996–2006 | 0.32 | M-v | 1 | MPC | 01965 | 1996 $RV_{15}$ |
| 1996 $RQ_{31}$ | 13.9 | 0.15 | 20060922 | 224.89907 | 307.56600 | 141.06680 | 2.90078 | 0.0637564 | 5.1537216 | 29 | 5 | 1996–2006 | 0.34 | M-v | 0 | MPC | 73929 | 1996 $RQ_{31}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 $SN_{7}$ | 15.8 | 0.15 | 20060922 | 97.48665 | 48.33442 | 286.71493 | 10.21527 | 0.1991012 | 2.7482708 | 58 | 3 | 1996–2006 | 0.50 | M-v | 3 | MPC | 97328 | 1996 $SN_{7}$ |
| 1996 $TY_{15}$ | 15.1 | 0.15 | 20060922 | 335.48831 | 83.75767 | 202.18871 | 15.48023 | 0.2279146 | 3.1398286 | 57 | 4 | 1996–2006 | 0.54 | M-v | 1 | MPC | 99884 | 1996 $TY_{15}$ |
| 1996 $TZ_{16}$ | 15.9 | 0.15 | 20060922 | 117.82006 | 221.25315 | 320.33097 | 8.91334 | 0.0772396 | 3.0905641 | 27 | 4 | 1996–2005 | 0.32 | M-v | 0 | MPC | 77359 | 1996 $TZ_{16}$ |
| 1996 $TJ_{20}$ | 17.2 | 0.15 | 20060922 | 349.84614 | 46.93481 | 5.06223 | 5.14832 | 0.1237756 | 2.2072864 | 50 | 4 | 1996–2006 | 0.41 | M-v | 1 | MPC | 62217 | 1996 $TJ_{20}$ |
| 1996 $TL_{27}$ | 15.1 | 0.15 | 20060922 | 138.15009 | 165.25850 | 43.00364 | 12.69041 | 0.1269634 | 3.0035515 | 61 | 5 | 1996–2006 | 0.71 | M-v | 1 | MPC | 66058 | 1996 $TL_{27}$ |
| 1996 $TK_{28}$ | 17.8 | 0.15 | 20060922 | 67.62012 | 9.27462 | 38.87506 | 14.38235 | 0.1703536 | 2.7010798 | 29 | 2 | 1996–2005 | 0.56 | M-v | 4 | MPC | 88656 | 1996 $TK_{28}$ |
| 1996 $TL_{30}$ | 16.4 | 0.15 | 20060922 | 116.07296 | 291.06523 | 48.33793 | 2.47639 | 0.0632811 | 2.7521007 | 59 | 4 | 1996–2006 | 0.36 | M-v | 1 | MPC | 97328 | 1996 $TL_{30}$ |
| 1996 $TL_{36}$ | 16.9 | 0.15 | 20060922 | 13.81650 | 338.98063 | 331.71607 | 7.69946 | 0.1693240 | 2.2603731 | 44 | 5 | 1996–2006 | 0.35 | M-v | 1 | MPC | 04108 | 1996 $TL_{36}$ |
| 1996 $TC_{42}$ | 16.4 | 0.15 | 20060922 | 303.27286 | 222.72475 | 112.43898 | 3.55607 | 0.1738316 | 2.3407745 | 39 | 5 | 1995–2006 | 0.71 | M-v | 2 | MPC | 01966 | 1996 $TC_{42}$ |
| 1996 $TR_{46}$ | 16.0 | 0.15 | 20060922 | 55.26856 | 75.16758 | 222.67078 | 10.60629 | 0.1019166 | 2.9982987 | 22 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 62218 | 1996 $TR_{46}$ |
| 1996 $TX_{51}$ | 16.4 | 0.15 | 20060922 | 29.09720 | 356.06947 | 353.40040 | 8.65135 | 0.2170646 | 2.8523502 | 26 | 3 | 1996–2006 | 0.72 | M-v | 4 | MPC | 21990 | 1996 $TX_{51}$ |
| 1996 $TK_{66}$ | 6.4 | 0.15 | 20060922 | 130.47673 | 200.87397 | 44.55238 | 3.32014 | 0.0160008 | 42.5100891 | 21 | 5 | 1996–2006 | 0.58 | M-v | 4 | MPC | 8383 | 1996 $TK_{66}$ |
| 1996 $UZ_{2}$ | 16.0 | 0.15 | 20060922 | 122.51424 | 282.24326 | 36.55521 | 2.71113 | 0.0723095 | 2.7796904 | 60 | 4 | 1994–2005 | 0.34 | M-v | 1 | MPC | 04108 | 1996 $UZ_{2}$ |
| 1996 $VM_{9}$ | 15.3 | 0.15 | 20060922 | 25.87591 | 185.60933 | 155.12979 | 7.39466 | 0.1297027 | 2.9877290 | 96 | 4 | 1996–2006 | 0.45 | M-v | 3 | MPC | 21991 | 1996 $VM_{9}$ |
| 1996 $VW_{9}$ | 16.9 | 0.15 | 20060922 | 72.28094 | 160.95924 | 148.30514 | 6.23073 | 0.1917919 | 2.2226840 | 56 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 77359 | 1996 $VW_{9}$ |
| 1996 $VY_{9}$ | 16.3 | 0.15 | 20060922 | 6.90176 | 307.31489 | 83.34587 | 12.58811 | 0.1736794 | 2.9185587 | 37 | 3 | 1996–2006 | 0.47 | M-v | 4 | MPC | 21991 | 1996 $VY_{9}$ |
| 1996 $VC_{10}$ | 16.0 | 0.15 | 20060922 | 244.46920 | 47.79554 | 88.33795 | 12.87624 | 0.0121211 | 2.9930346 | 31 | 4 | 1996–2006 | 0.35 | M-v | 2 | MPC | 84442 | 1996 $VC_{10}$ |
| 1996 $VU_{10}$ | 15.5 | 0.15 | 20060922 | 46.04881 | 303.98041 | 352.02904 | 10.96586 | 0.1325965 | 2.9917510 | 36 | 3 | 1996–2006 | 0.35 | M-v | 2 | MPC | 04108 | 1996 $VU_{10}$ |
| 1996 $VV_{10}$ | 17.2 | 0.15 | 20060922 | 99.86627 | 287.65262 | 293.99431 | 6.01936 | 0.0668774 | 2.3117147 | 34 | 4 | 1996–2006 | 0.44 | M-v | 1 | MPC | 04108 | 1996 $VV_{10}$ |
| 1996 $VT_{11}$ | 17.8 | 0.15 | 20060922 | 354.23380 | 194.24117 | 153.90663 | 5.97609 | 0.1545908 | 2.2879887 | 44 | 3 | 1996–2006 | 0.38 | M-v | 3 | MPC | 03141 | 1996 $VT_{11}$ |
| 1996 $VX_{11}$ | 15.5 | 0.15 | 20060922 | 354.49148 | 15.44220 | 13.17906 | 10.83914 | 0.0508365 | 2.9597661 | 83 | 4 | 1996–2006 | 0.45 | M-v | 2 | MPC | 04108 | 1996 $VX_{11}$ |
| 1996 $VD_{14}$ | 17.3 | 0.15 | 20060922 | 197.16501 | 218.82309 | 207.22501 | 1.73756 | 0.1741266 | 2.4455683 | 27 | 4 | 1996–2006 | 0.45 | M-v | 3 | MPC | 01966 | 1996 $VD_{14}$ |
| 1996 $VE_{14}$ | 17.8 | 0.15 | 20060922 | 82.13886 | 332.15647 | 213.86160 | 0.72445 | 0.1272064 | 2.4400431 | 26 | 4 | 1996–2003 | 0.51 | M-v | 1 | MPC | 93707 | 1996 $VE_{14}$ |
| 1996 $VM_{15}$ | 17.4 | 0.15 | 20060922 | 46.22675 | 63.53681 | 222.16451 | 4.97182 | 0.1125091 | 2.3044822 | 34 | 3 | 1996–2006 | 0.41 | M-v | 3 | MPC | 03141 | 1996 $VM_{15}$ |
| 1996 $VT_{15}$ | 16.6 | 0.15 | 20060922 | 225.34433 | 277.63849 | 221.98679 | 7.72770 | 0.0390793 | 3.0347748 | 28 | 4 | 1996–2006 | 0.38 | M-v | 3 | MPC | 73930 | 1996 $VT_{15}$ |
| 1996 $VL_{16}$ | 16.3 | 0.15 | 20060922 | 204.05146 | 149.87506 | 108.35358 | 1.07020 | 0.0156900 | 2.7628797 | 49 | 5 | 1996–2006 | 0.43 | M-v | 0 | MPC | 97329 | 1996 $VL_{16}$ |
| 1996 $VO_{17}$ | 15.5 | 0.15 | 20060922 | 23.35660 | 339.12609 | 50.33915 | 16.11337 | 0.0860887 | 2.8768102 | 71 | 8 | 1991–2006 | 0.48 | M-v | 1 | MPC | 87333 | 1996 $VO_{17}$ |
| 1996 $VX_{17}$ | 17.9 | 0.15 | 20060922 | 67.66357 | 127.18836 | 178.83257 | 1.46614 | 0.0162802 | 2.2581874 | 50 | 4 | 1996–2006 | 0.34 | M-v | 0 | MPC | 84443 | 1996 $VX_{17}$ |
| 1996 $VY_{17}$ | 16.5 | 0.15 | 20060922 | 30.08911 | 350.57670 | 62.88740 | 4.18976 | 0.0851818 | 2.8107134 | 36 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 87334 | 1996 $VY_{17}$ |
| 1996 $VM_{19}$ | 16.4 | 0.15 | 20060922 | 41.45200 | 340.59377 | 67.25668 | 3.43144 | 0.0397859 | 2.7931699 | 54 | 6 | 1991–2006 | 0.34 | M-v | 0 | MPC | 04108 | 1996 $VM_{19}$ |
| 1996 $VR_{19}$ | 17.4 | 0.15 | 20060922 | 326.83153 | 349.97185 | 61.22818 | 4.99583 | 0.1783664 | 2.2552182 | 39 | 3 | 1996–2006 | 0.39 | M-v | 2 | MPC | 55817 | 1996 $VR_{19}$ |
| 1996 $VE_{20}$ | 15.3 | 0.15 | 20060922 | 22.19626 | 234.96539 | 98.08271 | 12.37031 | 0.0881961 | 3.0367258 | 32 | 3 | 1996–2006 | 0.54 | M-v | 2 | MPC | 47706 | 1996 $VE_{20}$ |
| 1996 $VZ_{25}$ | 17.8 | 0.15 | 20060922 | 355.23950 | 179.61566 | 180.48543 | 6.91589 | 0.1437895 | 2.2747910 | 35 | 4 | 1996–2006 | 0.30 | M-v | 1 | MPC | 03141 | 1996 $VZ_{25}$ |
| 1996 $VH_{26}$ | 15.7 | 0.15 | 20060922 | 90.63115 | 205.67053 | 97.23140 | 11.03056 | 0.0751501 | 2.9324699 | 29 | 4 | 1996–2006 | 0.35 | M-v | 3 | MPC | 87334 | 1996 $VH_{26}$ |
| 1996 $VS_{27}$ | 16.2 | 0.15 | 20060922 | 74.91612 | 170.88480 | 94.94151 | 2.03636 | 0.1248288 | 3.0719389 | 45 | 8 | 1993–2006 | 0.46 | M-v | 0 | MPC | 87334 | 1996 $VS_{27}$ |
| 1996 $VW_{27}$ | 17.2 | 0.15 | 20060922 | 235.01039 | 32.98225 | 114.04519 | 1.41237 | 0.1208859 | 3.0178251 | 24 | 4 | 1996–2006 | 0.31 | M-v | 1 | MPC | 62218 | 1996 $VW_{27}$ |
| 1996 $VB_{36}$ | 17.8 | 0.15 | 20060922 | 337.19627 | 123.83676 | 305.09195 | 5.08790 | 0.1227614 | 2.2059880 | 39 | 3 | 1996–2006 | 0.39 | M-v | 2 | MPC | 87334 | 1996 $VB_{36}$ |
| 1996 $VJ_{36}$ | 16.3 | 0.15 | 20060922 | 352.32348 | 334.15044 | 13.67882 | 9.16658 | 0.1346779 | 3.0568112 | 50 | 4 | 1996–2006 | 0.55 | M-v | 2 | MPC | 04108 | 1996 $VJ_{36}$ |
| 1996 $WL_{3}$ | 16.6 | 0.15 | 20060922 | 56.63418 | 339.39300 | 0.62406 | 5.63869 | 0.2321947 | 2.2047122 | 68 | 6 | 1991–2006 | 0.48 | M-v | 1 | MPC | 77359 | 1996 $WL_{3}$ |
| 1996 $XR_{3}$ | 16.9 | 0.15 | 20060922 | 150.01461 | 230.62490 | 341.58218 | 5.47987 | 0.1066477 | 2.2881736 | 43 | 5 | 1996–2006 | 0.38 | M-v | 1 | MPC | 74555 | 1996 $XR_{3}$ |
| 1996 $XS_{3}$ | 15.4 | 0.15 | 20060922 | 278.54947 | 99.85509 | 7.31978 | 7.69723 | 0.0254594 | 2.9759686 | 58 | 4 | 1996–2006 | 0.42 | M-v | 2 | MPC | 41528 | 1996 $XS_{3}$ |
| 1996 $XT_{3}$ | 17.2 | 0.15 | 20060922 | 215.81051 | 98.20096 | 47.37718 | 21.94390 | 0.0999161 | 1.8783740 | 33 | 5 | 1995–2006 | 0.69 | M-v | 1 | MPC | 77359 | 1996 $XT_{3}$ |
| 1996 $XX_{3}$ | 18.2 | 0.15 | 20060922 | 252.70323 | 25.96102 | 57.42363 | 5.03970 | 0.1940032 | 2.3392371 | 24 | 2 | 1996–2005 | 0.42 | M-v | 5 | MPC | 74556 | 1996 $XX_{3}$ |
| 1996 $XP_{6}$ | 15.6 | 0.15 | 20060922 | 328.10915 | 341.62809 | 21.11469 | 10.28654 | 0.0643192 | 3.1169056 | 48 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 04108 | 1996 $XP_{6}$ |
| 1996 $XL_{7}$ | 16.5 | 0.15 | 20060922 | 319.10576 | 287.71291 | 141.10428 | 3.34333 | 0.0619012 | 2.9870197 | 27 | 3 | 1996–2006 | 0.37 | M-v | 3 | MPC | 84443 | 1996 $XL_{7}$ |
| 1996 $XZ_{7}$ | 17.1 | 0.15 | 20060922 | 314.08438 | 318.38600 | 87.22643 | 7.41912 | 0.1013214 | 2.2891723 | 33 | 3 | 1996–2006 | 0.54 | M-v | 3 | MPC | 55817 | 1996 $XZ_{7}$ |
| 1996 $XS_{10}$ | 15.7 | 0.15 | 20060922 | 116.05859 | 216.57933 | 20.51266 | 9.60921 | 0.0395894 | 3.0627397 | 69 | 4 | 1996–2006 | 0.60 | M-v | 2 | MPC | 66059 | 1996 $XS_{10}$ |
| 1996 $XO_{12}$ | 15.4 | 0.15 | 20060922 | 321.98601 | 1.80907 | 23.97067 | 11.24993 | 0.0779917 | 3.0663152 | 68 | 4 | 1996–2006 | 0.55 | M-v | 2 | MPC | 04108 | 1996 $XO_{12}$ |
| 1996 $XM_{14}$ | 16.1 | 0.15 | 20060922 | 334.82155 | 315.93748 | 95.75479 | 8.90493 | 0.2576361 | 3.0475367 | 66 | 3 | 1996–2006 | 0.60 | M-v | 3 | MPC | 30252 | 1996 $XM_{14}$ |
| 1996 $XB_{16}$ | 18.4 | 0.15 | 20060922 | 198.35712 | 153.57971 | 281.97564 | 0.96711 | 0.1601340 | 2.4372627 | 26 | 3 | 1996–2006 | 0.37 | M-v | 3 | MPC | 93708 | 1996 $XB_{16}$ |
| 1996 $XA_{20}$ | 17.7 | 0.15 | 20060922 | 251.27416 | 298.81860 | 133.18112 | 2.95787 | 0.1781298 | 2.3652410 | 17 | 3 | 1996–2003 | 0.26 | M-v | 2 | MPC | 93709 | 1996 $XA_{20}$ |
| 1996 $XT_{23}$ | 17.1 | 0.15 | 20060922 | 329.67616 | 324.20144 | 13.85537 | 6.49877 | 0.1321447 | 2.3438309 | 40 | 3 | 1996–2005 | 0.54 | M-v | 3 | MPC | 52423 | 1996 $XT_{23}$ |
| 1996 $XW_{24}$ | 15.7 | 0.15 | 20060922 | 352.16790 | 10.83971 | 37.28345 | 13.14768 | 0.1001766 | 2.9296845 | 68 | 5 | 1991–2006 | 0.50 | M-v | 2 | MPC | 33010 | 1996 $XW_{24}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 $XV_{29}$ | 16.3 | 0.15 | 20060922 | 116.96191 | 271.46378 | 64.63669 | 6.63969 | 0.0454929 | 2.7907802 | 33 | 3 | 1996–2005 | 0.51 | M-v | 3 | MPC | 93709 | 1996 $XV_{29}$ |
| 1996 $XY_{35}$ | 17.3 | 0.15 | 20060922 | 52.96015 | 121.42110 | 176.05175 | 6.72838 | 0.1350219 | 2.2860803 | 50 | 6 | 1995–2006 | 0.57 | M-v | 1 | MPC | 77360 | 1996 $XY_{35}$ |
| 1996 $YF_{1}$ | 17.0 | 0.15 | 20060922 | 274.36071 | 75.53818 | 77.30108 | 8.97725 | 0.3720774 | 2.2818513 | 128 | 3 | 1996–2006 | 0.50 | M-v | 1 | MPC | 66059 | 1996 $YF_{1}$ |
| 1997 AB | 16.2 | 0.15 | 20060922 | 28.24339 | 332.36277 | 98.38028 | 8.21477 | 0.1749380 | 2.8544480 | 52 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 87334 | 1997 AB |
| 1997 $AA_{5}$ | 16.4 | 0.15 | 20060922 | 250.14272 | 52.24050 | 79.18232 | 2.94995 | 0.1706477 | 2.3332718 | 26 | 4 | 1997–2006 | 0.51 | M-v | 2 | MPC | 97329 | 1997 $AA_{5}$ |
| 1997 $AG_{6}$ | 16.2 | 0.15 | 20060922 | 306.13780 | 137.91242 | 294.42412 | 6.08172 | 0.0926931 | 2.3108988 | 84 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 62218 | 1997 $AG_{6}$ |
| 1997 $AC_{14}$ | 15.5 | 0.15 | 20060922 | 27.90067 | 319.03042 | 117.26440 | 12.19151 | 0.1673311 | 2.8694457 | 50 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 87334 | 1997 $AC_{14}$ |
| 1997 $AS_{14}$ | 16.7 | 0.15 | 20060922 | 308.65074 | 322.40570 | 112.07662 | 10.05770 | 0.1473179 | 2.2994430 | 74 | 4 | 1997–2006 | 0.43 | M-v | 1 | MPC | 62218 | 1997 $AS_{14}$ |
| 1997 $AW_{14}$ | 17.0 | 0.15 | 20060922 | 237.99646 | 41.72113 | 115.98138 | 3.88287 | 0.1676184 | 2.3144463 | 66 | 5 | 1994–2006 | 0.45 | M-v | 1 | MPC | 57664 | 1997 $AW_{14}$ |
| 1997 $AM_{18}$ | 14.8 | 0.15 | 20060922 | 343.82586 | 265.62756 | 131.07363 | 17.74449 | 0.2037881 | 3.1001085 | 66 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 43328 | 1997 $AM_{18}$ |
| 1997 $BR_{4}$ | 15.0 | 0.15 | 20060922 | 327.37571 | 220.80282 | 142.34748 | 18.59607 | 0.1554512 | 3.3394328 | 39 | 6 | 1991–2006 | 0.60 | M-v | 1 | MPC | 77360 | 1997 $BR_{4}$ |
| 1997 $BT_{4}$ | 16.0 | 0.15 | 20060922 | 227.86324 | 302.47720 | 274.70143 | 2.42618 | 0.0661804 | 3.0223305 | 51 | 5 | 1997–2005 | 0.50 | M-v | 0 | MPC | 90002 | 1997 $BT_{4}$ |
| 1997 $BS_{8}$ | 15.6 | 0.15 | 20060922 | 286.41797 | 215.84770 | 301.92329 | 8.07700 | 0.0077731 | 2.9998915 | 32 | 3 | 1997–2005 | 0.74 | M-v | 3 | MPC | 26870 | 1997 $BS_{8}$ |
| 1997 CL | 15.9 | 0.15 | 20060922 | 105.67282 | 25.92537 | 307.66853 | 9.29103 | 0.1005711 | 3.0053774 | 28 | 4 | 1997–2005 | 0.29 | M-v | 1 | MPC | 28959 | 1997 CL |
| 1997 $CC_{6}$ | 16.1 | 0.15 | 20060922 | 299.84257 | 2.13038 | 126.15037 | 8.01503 | 0.3250784 | 3.0397177 | 48 | 5 | 1997–2006 | 0.72 | M-v | 1 | MPC | 47709 | 1997 $CC_{6}$ |
| 1997 $CL_{7}$ | 17.2 | 0.15 | 20060922 | 20.66849 | 112.06356 | 319.09571 | 4.32649 | 0.1577313 | 2.2074909 | 52 | 5 | 1997–2006 | 0.43 | M-v | 1 | MPC | 87334 | 1997 $CL_{7}$ |
| 1997 $CU_{7}$ | 17.2 | 0.15 | 20060922 | 260.93287 | 273.22851 | 190.61342 | 2.15491 | 0.1225995 | 2.3610814 | 44 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 04109 | 1997 $CU_{7}$ |
| 1997 $CC_{11}$ | 17.5 | 0.15 | 20060922 | 231.69830 | 118.07502 | 317.33444 | 1.88729 | 0.1582043 | 2.4348885 | 26 | 3 | 1997–2005 | 0.30 | M-v | 3 | MPC | 93711 | 1997 $CC_{11}$ |
| 1997 $CR_{11}$ | 16.6 | 0.15 | 20060922 | 103.11793 | 127.53065 | 312.32562 | 10.77265 | 0.1691966 | 2.6874947 | 40 | 4 | 1995–2006 | 0.60 | M-v | 1 | MPC | 93711 | 1997 $CR_{11}$ |
| 1997 $CY_{11}$ | 15.9 | 0.15 | 20060922 | 336.75620 | 87.30694 | 335.51902 | 9.28251 | 0.1732728 | 3.0782621 | 34 | 4 | 1997–2006 | 0.47 | M-v | 1 | MPC | 70214 | 1997 $CY_{11}$ |
| 1997 $CP_{16}$ | 17.4 | 0.15 | 20060922 | 150.42484 | 142.56508 | 105.53416 | 0.43478 | 0.0751113 | 2.3203076 | 61 | 5 | 1997–2006 | 0.43 | M-v | 0 | MPC | 68512 | 1997 $CP_{16}$ |
| 1997 $CS_{17}$ | 16.2 | 0.15 | 20060922 | 350.28891 | 219.20042 | 142.24472 | 7.61270 | 0.1508348 | 2.3973097 | 100 | 6 | 1997–2006 | 0.58 | M-v | 1 | MPC | 04109 | 1997 $CS_{17}$ |
| 1997 $CG_{19}$ | 17.1 | 0.15 | 20060922 | 242.41267 | 130.84300 | 359.54558 | 2.28755 | 0.1464327 | 2.3664662 | 62 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 57664 | 1997 $CG_{19}$ |
| 1997 $CH_{23}$ | 15.8 | 0.15 | 20060922 | 281.83196 | 312.36304 | 130.33782 | 2.58637 | 0.2043386 | 3.1770727 | 58 | 5 | 1995–2006 | 0.55 | M-v | 0 | MPC | 87334 | 1997 $CH_{23}$ |
| 1997 $CZ_{23}$ | 17.8 | 0.15 | 20060922 | 232.85355 | 54.51561 | 112.73431 | 1.49238 | 0.0203993 | 2.3074749 | 41 | 5 | 1997–2006 | 0.34 | M-v | 1 | MPC | 62218 | 1997 $CZ_{23}$ |
| 1997 $CG_{25}$ | 14.6 | 0.15 | 20060922 | 93.66030 | 328.54954 | 331.93675 | 16.00016 | 0.0905508 | 3.2259595 | 71 | 7 | 1997–2006 | 0.61 | M-v | 1 | MPC | 97329 | 1997 $CG_{25}$ |
| 1997 $CO_{25}$ | 17.2 | 0.15 | 20060922 | 332.69198 | 79.67409 | 49.02999 | 2.92158 | 0.0664264 | 2.9440452 | 31 | 2 | 1997–2005 | 0.31 | M-v | 4 | MPC | 88658 | 1997 $CO_{25}$ |
| 1997 $ED_{4}$ | 15.4 | 0.15 | 20060922 | 335.54162 | 270.22502 | 176.26328 | 13.65360 | 0.1876436 | 3.1178512 | 46 | 6 | 1997–2006 | 0.52 | M-v | 0 | MPC | 90002 | 1997 $ED_{4}$ |
| 1997 $EM_{4}$ | 17.7 | 0.15 | 20060922 | 150.93499 | 88.97533 | 158.95090 | 1.77665 | 0.1399867 | 2.3954617 | 41 | 5 | 1997–2006 | 0.40 | M-v | 0 | MPC | 87334 | 1997 $EM_{4}$ |
| 1997 $EK_{5}$ | 16.5 | 0.15 | 20060922 | 328.07332 | 97.86246 | 174.91352 | 3.45628 | 0.0596196 | 2.6974106 | 44 | 4 | 1997–2006 | 0.41 | M-v | 0 | MPC | 99885 | 1997 $EK_{5}$ |
| 1997 $ER_{6}$ | 15.8 | 0.15 | 20060922 | 284.87778 | 44.01165 | 216.61942 | 7.55894 | 0.0644076 | 2.7768830 | 35 | 5 | 1995–2004 | 0.45 | M-v | 0 | MPC | 74557 | 1997 $ER_{6}$ |
| 1997 $EB_{9}$ | 16.3 | 0.15 | 20060922 | 265.25388 | 239.61766 | 353.85978 | 6.47126 | 0.1231036 | 2.2284305 | 62 | 5 | 1997–2006 | 0.61 | M-v | 1 | MPC | 97329 | 1997 $EB_{9}$ |
| 1997 $EA_{10}$ | 16.0 | 0.15 | 20060922 | 165.09390 | 108.55802 | 332.82846 | 14.91911 | 0.1163962 | 2.6004488 | 43 | 4 | 1997–2005 | 0.55 | M-v | 3 | MPC | 73931 | 1997 $EA_{10}$ |
| 1997 $EB_{10}$ | 17.7 | 0.15 | 20060922 | 262.08814 | 215.08088 | 308.54617 | 2.53376 | 0.0297438 | 2.2996468 | 25 | 5 | 1997–2006 | 0.28 | M-v | 1 | MPC | 87334 | 1997 $EB_{10}$ |
| 1997 $EF_{11}$ | 17.5 | 0.15 | 20060922 | 348.01190 | 182.51529 | 227.55719 | 5.80480 | 0.2218653 | 2.3016366 | 79 | 3 | 1997–2006 | 0.45 | M-v | 2 | MPC | *40315* | 1997 $EF_{11}$ |
| 1997 $EB_{12}$ | 16.2 | 0.15 | 20060922 | 340.22337 | 120.74818 | 281.54831 | 4.67199 | 0.2333800 | 3.0928306 | 89 | 3 | 1997–2006 | 0.57 | M-v | 3 | MPC | 47710 | 1997 $EB_{12}$ |
| 1997 $ES_{12}$ | 17.8 | 0.15 | 20060922 | 310.37213 | 195.60393 | 280.24541 | 4.92190 | 0.0403728 | 2.2942528 | 22 | 4 | 1997–2006 | 0.27 | M-v | 1 | MPC | 84444 | 1997 $ES_{12}$ |
| 1997 $EF_{15}$ | 15.8 | 0.15 | 20060922 | 40.42842 | 25.05159 | 358.62302 | 24.90158 | 0.1101224 | 3.1651179 | 33 | 2 | 1997–2005 | 0.45 | M-v | 3 | MPC | 88658 | 1997 $EF_{15}$ |
| 1997 $EC_{20}$ | 16.5 | 0.15 | 20060922 | 120.67183 | 196.42087 | 179.16388 | 2.11802 | 0.0728582 | 2.8834500 | 21 | 4 | 1997–2005 | 0.38 | M-v | 1 | MPC | 60484 | 1997 $EC_{20}$ |
| 1997 $ES_{24}$ | 15.5 | 0.15 | 20060922 | 25.26721 | 265.96814 | 124.46691 | 10.60240 | 0.1360612 | 3.1079032 | 65 | 6 | 1997–2006 | 0.51 | M-v | 0 | MPC | 87334 | 1997 $ES_{24}$ |
| 1997 $EJ_{26}$ | 16.9 | 0.15 | 20060922 | 123.09582 | 269.49219 | 354.03183 | 6.24303 | 0.0810576 | 2.4059067 | 27 | 3 | 1997–2006 | 0.34 | M-v | 2 | MPC | 37062 | 1997 $EJ_{26}$ |
| 1997 $EQ_{26}$ | 17.1 | 0.15 | 20060922 | 111.88813 | 282.00841 | 2.81839 | 2.66034 | 0.1631578 | 2.4076315 | 35 | 4 | 1997–2006 | 0.35 | M-v | 1 | MPC | 87334 | 1997 $EQ_{26}$ |
| 1997 $ED_{27}$ | 15.3 | 0.15 | 20060922 | 266.93314 | 347.28381 | 145.72035 | 22.10943 | 0.0928804 | 3.1916387 | 43 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 87334 | 1997 $ED_{27}$ |
| 1997 $ER_{28}$ | 17.5 | 0.15 | 20060922 | 89.79151 | 161.00676 | 348.41562 | 2.52465 | 0.1137189 | 2.6693483 | 28 | 4 | 1997–2006 | 0.32 | M-v | 1 | MPC | 01967 | 1997 $ER_{28}$ |
| 1997 $EZ_{30}$ | 17.9 | 0.15 | 20060922 | 267.62121 | 180.41357 | 351.54054 | 2.04480 | 0.1676187 | 2.2999769 | 30 | 3 | 1997–2006 | 0.61 | M-v | 3 | MPC | 60484 | 1997 $EZ_{30}$ |
| 1997 $EH_{32}$ | 16.2 | 0.15 | 20060922 | 77.29650 | 19.96817 | 1.57157 | 2.90597 | 0.0830277 | 3.0601750 | 31 | 5 | 1997–2005 | 0.42 | M-v | 1 | MPC | 93712 | 1997 $EH_{32}$ |
| 1997 $EJ_{32}$ | 16.0 | 0.15 | 20060922 | 39.56085 | 99.14376 | 1.12616 | 3.70578 | 0.0406746 | 2.9317856 | 56 | 4 | 1997–2005 | 0.57 | M-v | 1 | MPC | 70214 | 1997 $EJ_{32}$ |
| 1997 $EM_{32}$ | 16.9 | 0.15 | 20060922 | 32.04643 | 45.04756 | 2.74672 | 5.67946 | 0.1976832 | 2.2792857 | 82 | 5 | 1995–2004 | 0.51 | M-v | 1 | MPC | 41528 | 1997 $EM_{32}$ |
| 1997 $EQ_{44}$ | 17.0 | 0.15 | 20060922 | 224.41244 | 227.96001 | 326.78710 | 5.23052 | 0.1697153 | 2.3235629 | 54 | 4 | 1997–2006 | 0.49 | M-v | 1 | MPC | 87334 | 1997 $EQ_{44}$ |
| 1997 $EN_{58}$ | 17.7 | 0.15 | 20060922 | 203.44631 | 153.97784 | 15.54480 | 2.26620 | 0.1520988 | 2.4179622 | 60 | 6 | 1997–2006 | 0.43 | M-v | 1 | MPC | 57665 | 1997 $EN_{58}$ |
| 1997 GU | 16.6 | 0.15 | 20060922 | 189.35167 | 227.89392 | 12.41552 | 1.61105 | 0.2073660 | 2.3621332 | 59 | 6 | 1993–2006 | 0.56 | M-v | 1 | MPC | 97329 | 1997 GU |
| 1997 $GP_{1}$ | 14.8 | 0.15 | 20060922 | 214.35520 | 64.95462 | 159.85604 | 18.17907 | 0.0692922 | 3.1068508 | 43 | 4 | 1997–2004 | 0.64 | M-v | 1 | MPC | 46331 | 1997 $GP_{1}$ |
| 1997 $GP_{2}$ | 17.2 | 0.15 | 20060922 | 124.77997 | 351.65431 | 186.54273 | 5.75559 | 0.1021246 | 2.5479012 | 49 | 4 | 1995–2005 | 0.46 | M-v | 3 | MPC | 74558 | 1997 $GP_{2}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 $GT_4$ | 16.2 | 0.15 | 20060922 | 312.99543 | 290.25574 | 15.37329 | 6.11939 | 0.0950294 | 2.6681035 | 37 | 3 | 1997–2005 | 0.53 | M-v | 3 | MPC | 52425 | 1997 $GT_4$ |
| 1997 $GR_7$ | 14.5 | 0.15 | 20060922 | 277.08490 | 120.33047 | 39.36528 | 27.53088 | 0.1731896 | 3.1928844 | 27 | 4 | 1997–2006 | 0.67 | M-v | 2 | MPC | 84444 | 1997 $GR_7$ |
| 1997 $GB_9$ | 16.4 | 0.15 | 20060922 | 220.63015 | 293.51644 | 267.25636 | 1.37571 | 0.1062485 | 2.3501809 | 64 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 87335 | 1997 $GB_9$ |
| 1997 $GC_{10}$ | 17.2 | 0.15 | 20060922 | 164.36624 | 59.63211 | 180.08513 | 4.84502 | 0.1831817 | 2.3999847 | 42 | 5 | 1997–2006 | 0.67 | M-v | 1 | MPC | 87335 | 1997 $GC_{10}$ |
| 1997 $GC_{12}$ | 17.5 | 0.15 | 20060922 | 251.82543 | 341.65075 | 201.11259 | 1.59609 | 0.1549905 | 2.3219437 | 79 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 62219 | 1997 $GC_{12}$ |
| 1997 $GO_{12}$ | 17.1 | 0.15 | 20060922 | 166.02957 | 176.16654 | 57.66958 | 2.04819 | 0.1219713 | 2.3987641 | 61 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 87335 | 1997 $GO_{12}$ |
| 1997 $GS_{14}$ | 16.0 | 0.15 | 20060922 | 211.33723 | 307.31687 | 343.04272 | 5.31650 | 0.1440660 | 2.2497446 | 97 | 8 | 1991–2006 | 0.58 | M-v | 1 | MPC | 97330 | 1997 $GS_{14}$ |
| 1997 $GB_{15}$ | 16.4 | 0.15 | 20060922 | 229.28393 | 196.49935 | 281.11020 | 1.57123 | 0.1521437 | 2.4521096 | 60 | 6 | 1997–2006 | 0.48 | M-v | 1 | MPC | 04109 | 1997 $GB_{15}$ |
| 1997 $GS_{15}$ | 17.6 | 0.15 | 20060922 | 272.56477 | 181.91832 | 22.82117 | 4.15709 | 0.1778310 | 2.2655977 | 23 | 2 | 1997–2005 | 0.43 | M-v | 4 | MPC | 88658 | 1997 $GS_{15}$ |
| 1997 $GB_{17}$ | 16.1 | 0.15 | 20060922 | 106.12864 | 19.07236 | 208.58488 | 3.80422 | 0.1461463 | 2.5237524 | 123 | 5 | 1997–2006 | 0.59 | M-v | 2 | MPC | 04109 | 1997 $GB_{17}$ |
| 1997 $GJ_{20}$ | 16.8 | 0.15 | 20060922 | 211.62702 | 142.71001 | 13.00639 | 1.66976 | 0.1235830 | 2.4271746 | 40 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 04109 | 1997 $GJ_{20}$ |
| 1997 $GB_{25}$ | 17.2 | 0.15 | 20060922 | 122.05072 | 94.93426 | 189.95304 | 2.17094 | 0.1770613 | 2.3941419 | 37 | 4 | 1997–2006 | 0.43 | M-v | 2 | MPC | 84445 | 1997 $GB_{25}$ |
| 1997 $GF_{30}$ | 16.0 | 0.15 | 20060922 | 242.69269 | 53.35636 | 167.78696 | 0.29956 | 0.1370817 | 3.0774778 | 57 | 6 | 1997–2006 | 0.52 | M-v | 1 | MPC | 90002 | 1997 $GF_{30}$ |
| 1997 $GD_{31}$ | 15.8 | 0.15 | 20060922 | 269.01407 | 16.14437 | 153.58206 | 1.56285 | 0.1184717 | 3.1337875 | 63 | 6 | 1994–2006 | 0.45 | M-v | 1 | MPC | 90002 | 1997 $GD_{31}$ |
| 1997 $HK_2$ | 17.5 | 0.15 | 20060922 | 351.31841 | 228.91124 | 66.94894 | 10.66264 | 0.2784795 | 2.7281736 | 29 | 3 | 1997–2006 | 0.32 | M-v | 1 | MPC | 99886 | 1997 $HK_2$ |
| 1997 $HL_2$ | 16.9 | 0.15 | 20060922 | 166.38130 | 82.44506 | 136.60402 | 3.22660 | 0.1372999 | 2.4557887 | 37 | 4 | 1993–2006 | 0.33 | M-v | 1 | MPC | 62219 | 1997 $HL_2$ |
| 1997 $HR_3$ | 16.8 | 0.15 | 20060922 | 359.73939 | 341.54748 | 115.13526 | 3.79114 | 0.1705217 | 2.3115250 | 67 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 87335 | 1997 $HR_3$ |
| 1997 $HJ_{14}$ | 16.5 | 0.15 | 20060922 | 1.69766 | 93.08272 | 209.77033 | 3.30872 | 0.1505080 | 2.5958731 | 46 | 5 | 1997–2005 | 0.59 | M-v | 1 | MPC | 93713 | 1997 $HJ_{14}$ |
| 1997 $JH_4$ | 17.3 | 0.15 | 20060922 | 271.96514 | 211.77175 | 53.36819 | 5.31112 | 0.1336150 | 2.2137318 | 29 | 4 | 1997–2005 | 0.59 | M-v | 2 | MPC | 93713 | 1997 $JH_4$ |
| 1997 $JL_{12}$ | 16.3 | 0.15 | 20060922 | 206.88266 | 118.00872 | 63.76631 | 3.25878 | 0.1919439 | 2.4193209 | 87 | 6 | 1991–2006 | 0.56 | M-v | 1 | MPC | 62219 | 1997 $JL_{12}$ |
| 1997 $JS_{17}$ | 16.9 | 0.15 | 20060922 | 248.84687 | 65.98879 | 173.23242 | 3.35693 | 0.1753287 | 2.2917223 | 79 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 90002 | 1997 $JS_{17}$ |
| 1997 $JB_{18}$ | 16.6 | 0.15 | 20060922 | 217.75114 | 104.11446 | 118.59248 | 2.37976 | 0.1858795 | 2.3616343 | 94 | 4 | 1997–2006 | 0.57 | M-v | 1 | MPC | 87335 | 1997 $JB_{18}$ |
| 1997 $KY_1$ | 17.7 | 0.15 | 20060922 | 215.01935 | 145.95360 | 117.57317 | 11.34904 | 0.2370391 | 2.3261941 | 24 | 2 | 1997–2004 | 0.60 | M-v | 3 | MPC | 64647 | 1997 $KY_1$ |
| 1997 $KN_2$ | 17.4 | 0.15 | 20060922 | 356.83417 | 101.61354 | 171.25858 | 3.46902 | 0.1623154 | 2.7388547 | 28 | 3 | 1997–2006 | 0.39 | M-v | 2 | MPC | 99886 | 1997 $KN_2$ |
| 1997 $KM_4$ | 14.8 | 0.15 | 20060922 | 299.33349 | 4.88399 | 160.64961 | 16.04001 | 0.1192722 | 3.1382593 | 77 | 4 | 1997–2005 | 0.59 | M-v | 1 | MPC | 90002 | 1997 $KM_4$ |
| 1997 $LK_{10}$ | 14.3 | 0.15 | 20060922 | 276.84411 | 128.26818 | 66.23700 | 18.95714 | 0.1075576 | 3.1339857 | 65 | 4 | 1997–2006 | 0.61 | M-v | 2 | MPC | 93714 | 1997 $LK_{10}$ |
| 1997 $LR_{16}$ | 15.8 | 0.15 | 20060922 | 46.74378 | 151.94622 | 79.66258 | 13.31656 | 0.0832051 | 2.6944876 | 23 | 4 | 1997–2003 | 0.32 | M-v | 1 | MPC | 66061 | 1997 $LR_{16}$ |
| 1997 MX | 15.6 | 0.15 | 20060922 | 44.87465 | 242.32649 | 131.18522 | 6.83186 | 0.2766693 | 2.5435214 | 97 | 6 | 1997–2006 | 0.60 | M-v | 1 | MPC | 62219 | 1997 MX |
| 1997 $MC_6$ | 15.9 | 0.15 | 20060922 | 43.43152 | 105.68304 | 176.34060 | 12.56225 | 0.0248492 | 2.7147195 | 72 | 5 | 1993–2006 | 0.51 | M-v | 0 | MPC | 04109 | 1997 $MC_6$ |
| 1997 $ND_2$ | 15.0 | 0.15 | 20060922 | 143.55871 | 320.54208 | 256.69457 | 12.14785 | 0.2243702 | 2.5798122 | 64 | 6 | 1997–2006 | 0.44 | M-v | 1 | MPC | 57666 | 1997 $ND_2$ |
| 1997 $NE_2$ | 16.2 | 0.15 | 20060922 | 73.51551 | 59.82986 | 221.01291 | 8.27077 | 0.1798270 | 2.6305573 | 58 | 3 | 1997–2006 | 0.46 | M-v | 2 | MPC | 74559 | 1997 $NE_2$ |
| 1997 $NS_2$ | 16.1 | 0.15 | 20060922 | 317.16246 | 126.52798 | 280.85574 | 6.39852 | 0.2481415 | 2.6928679 | 109 | 3 | 1997–2006 | 0.46 | M-v | 2 | MPC | 04109 | 1997 $NS_2$ |
| 1997 $NT_5$ | 17.7 | 0.15 | 20060922 | 260.01734 | 348.13455 | 270.51360 | 2.95722 | 0.2577710 | 2.2925586 | 26 | 3 | 1997–2004 | 0.51 | M-v | 2 | MPC | 64647 | 1997 $NT_5$ |
| 1997 $OF_2$ | 15.8 | 0.15 | 20060922 | 80.26585 | 31.93447 | 287.21557 | 3.68548 | 0.2027663 | 2.5627204 | 53 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 62220 | 1997 $OF_2$ |
| 1997 PP | 16.2 | 0.15 | 20060922 | 25.11407 | 278.37694 | 23.70622 | 4.86016 | 0.3722059 | 2.7038584 | 141 | 4 | 1997–2006 | 0.41 | M-v | 1 | MPC | 03142 | 1997 PP |
| 1997 PW | 15.0 | 0.15 | 20060922 | 68.38187 | 121.93196 | 190.34789 | 2.55218 | 0.2739304 | 3.9206158 | 86 | 4 | 1997–2006 | 0.43 | M-v | 0 | MPC | 93714 | 1997 PW |
| 1997 $PT_2$ | 16.7 | 0.15 | 20060922 | 75.48936 | 289.13190 | 28.93297 | 4.85617 | 0.1820523 | 2.5931794 | 62 | 4 | 1992–2006 | 0.45 | M-v | 1 | MPC | 47714 | 1997 $PT_2$ |
| 1997 $PZ_3$ | 16.1 | 0.15 | 20060922 | 272.65319 | 164.24768 | 172.55834 | 10.27255 | 0.1067342 | 2.9842990 | 24 | 4 | 1997–2006 | 0.34 | M-v | 1 | MPC | 84446 | 1997 $PZ_3$ |
| 1997 $PD_4$ | 15.3 | 0.15 | 20060922 | 81.94275 | 359.39211 | 307.29600 | 7.10940 | 0.1870215 | 2.5840289 | 28 | 4 | 1997–2006 | 0.65 | M-v | 2 | MPC | 50379 | 1997 $PD_4$ |
| 1997 $QJ_1$ | 16.3 | 0.15 | 20060922 | 66.32234 | 143.49083 | 186.49064 | 3.30518 | 0.1977644 | 2.5843146 | 32 | 5 | 1997–2006 | 0.44 | M-v | 1 | MPC | 74559 | 1997 $QJ_1$ |
| 1997 $QP_2$ | 17.2 | 0.15 | 20060922 | 335.01336 | 52.18639 | 329.50854 | 28.40116 | 0.0833608 | 1.7126588 | 165 | 4 | 1997–2006 | 0.50 | M-v | 2 | MPC | 04109 | 1997 $QP_2$ |
| 1997 $RG_5$ | 16.2 | 0.15 | 20060922 | 342.30276 | 81.50514 | 338.68843 | 11.83642 | 0.2620877 | 2.6632028 | 39 | 3 | 1997–2006 | 0.43 | M-v | 1 | MPC | 66061 | 1997 $RG_5$ |
| 1997 $SS_2$ | 17.0 | 0.15 | 20060922 | 166.26699 | 348.72762 | 10.93737 | 2.14904 | 0.2284169 | 2.3939453 | 39 | 5 | 1995–2006 | 0.39 | M-v | 1 | MPC | 97330 | 1997 $SS_2$ |
| 1997 $SZ_6$ | 17.2 | 0.15 | 20060922 | 307.24929 | 176.50028 | 356.48697 | 4.55410 | 0.0653842 | 2.4408871 | 35 | 4 | 1997–2005 | 0.44 | M-v | 3 | MPC | 90003 | 1997 $SZ_6$ |
| 1997 $SP_8$ | 16.6 | 0.15 | 20060922 | 90.25963 | 313.23771 | 327.85736 | 3.11188 | 0.0652426 | 2.7216489 | 28 | 4 | 1997–2006 | 0.40 | M-v | 0 | MPC | 62220 | 1997 $SP_8$ |
| 1997 $ST_9$ | 16.4 | 0.15 | 20060922 | 210.61036 | 302.77347 | 208.72959 | 2.57946 | 0.0635301 | 2.7301859 | 55 | 5 | 1997–2006 | 0.44 | M-v | 1 | MPC | 04109 | 1997 $ST_9$ |
| 1997 $SA_{13}$ | 16.5 | 0.15 | 20060922 | 252.55175 | 319.15136 | 172.91644 | 12.94995 | 0.1122335 | 2.6674821 | 31 | 3 | 1997–2006 | 0.50 | M-v | 3 | MPC | 60491 | 1997 $SA_{13}$ |
| 1997 $SW_{17}$ | 16.8 | 0.15 | 20060922 | 58.76129 | 296.83130 | 20.37868 | 11.94500 | 0.2197721 | 2.6886012 | 28 | 4 | 1997–2006 | 0.62 | M-v | 1 | MPC | 47715 | 1997 $SW_{17}$ |
| 1997 $SO_{19}$ | 16.0 | 0.15 | 20060922 | 303.11010 | 291.66000 | 352.74677 | 8.90459 | 0.0858663 | 3.0916120 | 31 | 4 | 1997–2006 | 0.39 | M-v | 1 | MPC | 47715 | 1997 $SO_{19}$ |
| 1997 $ST_{20}$ | 16.2 | 0.15 | 20060922 | 322.69463 | 81.28629 | 22.48659 | 12.79004 | 0.1213716 | 2.6514156 | 31 | 4 | 1997–2006 | 0.47 | M-v | 1 | MPC | 50379 | 1997 $ST_{20}$ |
| 1997 $SP_{23}$ | 18.3 | 0.15 | 20060922 | 85.29332 | 35.02067 | 331.27863 | 0.63001 | 0.1564176 | 2.5504498 | 30 | 3 | 1997–2005 | 0.24 | M-v | 3 | MPC | 90003 | 1997 $SP_{23}$ |
| 1997 $SB_{26}$ | 16.2 | 0.15 | 20060922 | 241.30151 | 31.29175 | 355.34009 | 9.86231 | 0.1112842 | 3.0042170 | 30 | 3 | 1997–2005 | 0.20 | M-v | 3 | MPC | 99887 | 1997 $SB_{26}$ |
| 1997 $SO_{30}$ | 17.1 | 0.15 | 20060922 | 191.60696 | 239.15786 | 20.57419 | 5.01220 | 0.0722599 | 2.5557331 | 41 | 4 | 1997–2005 | 0.44 | M-v | 2 | MPC | 90003 | 1997 $SO_{30}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1997 $SL_{31}$ | 16.4 | 0.15 | 20060922 | 191.48293 | 216.76812 | 176.93687 | 0.74179 | 0.1689062 | 3.1525250 | 31 | 5 | 1992–2005 | 0.29 | M-v | 0 | MPC | 04109 | 1997 $SL_{31}$ |
| 1997 $SO_{34}$ | 16.2 | 0.15 | 20060922 | 356.59171 | 328.28908 | 3.82830 | 3.92380 | 0.2059495 | 2.7842416 | 54 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 04109 | 1997 $SO_{34}$ |
| 1997 $TP_5$ | 16.6 | 0.15 | 20060922 | 66.72090 | 312.30754 | 52.22747 | 3.30664 | 0.2531139 | 2.5713069 | 75 | 4 | 1997–2005 | 0.58 | M-v | 2 | MPC | 90003 | 1997 $TP_5$ |
| 1997 $TZ_5$ | 15.5 | 0.15 | 20060922 | 291.58498 | 253.07858 | 43.25397 | 6.15090 | 0.1333000 | 3.1136246 | 46 | 5 | 1997–2005 | 0.49 | M-v | 0 | MPC | 93716 | 1997 $TZ_5$ |
| 1997 $TG_6$ | 16.2 | 0.15 | 20060922 | 352.04262 | 201.28743 | 156.92867 | 5.55217 | 0.0319542 | 2.7788416 | 48 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 60492 | 1997 $TG_6$ |
| 1997 $TM_6$ | 17.0 | 0.15 | 20060922 | 331.00780 | 341.72968 | 107.65353 | 3.61317 | 0.0347239 | 2.6200942 | 26 | 4 | 1997–2006 | 0.50 | M-v | 0 | MPC | 87336 | 1997 $TM_6$ |
| 1997 $TE_9$ | 16.2 | 0.15 | 20060922 | 351.44161 | 147.80902 | 223.83755 | 4.72104 | 0.0680893 | 2.7704792 | 57 | 8 | 1992–2006 | 0.39 | M-v | 0 | MPC | 77362 | 1997 $TE_9$ |
| 1997 $TY_{10}$ | 16.8 | 0.15 | 20060922 | 77.47247 | 122.57430 | 185.21748 | 2.88607 | 0.0637192 | 2.6330629 | 49 | 5 | 1997–2006 | 0.41 | M-v | 1 | MPC | 47716 | 1997 $TY_{10}$ |
| 1997 $TQ_{11}$ | 15.3 | 0.15 | 20060922 | 48.41335 | 189.18273 | 157.74012 | 2.20589 | 0.2137851 | 4.0109580 | 40 | 3 | 1997–2006 | 0.37 | M-v | 2 | MPC | 97331 | 1997 $TQ_{11}$ |
| 1997 $TC_{12}$ | 16.6 | 0.15 | 20060922 | 295.92295 | 141.69134 | 297.97063 | 1.71013 | 0.1699591 | 2.7801558 | 54 | 6 | 1994–2006 | 0.51 | M-v | 0 | MPC | 62220 | 1997 $TC_{12}$ |
| 1997 $TS_{12}$ | 17.0 | 0.15 | 20060922 | 62.77985 | 90.95315 | 329.13446 | 1.28309 | 0.1625615 | 2.5172203 | 93 | 4 | 1997–2006 | 0.62 | M-v | 3 | MPC | 97331 | 1997 $TS_{12}$ |
| 1997 $TT_{18}$ | 15.0 | 0.15 | 20060922 | 48.29390 | 10.16225 | 340.60889 | 13.20596 | 0.1751641 | 2.5944652 | 43 | 5 | 1997–2006 | 0.61 | M-v | 1 | MPC | 62220 | 1997 $TT_{18}$ |
| 1997 $TU_{20}$ | 16.9 | 0.15 | 20060922 | 41.58344 | 53.63006 | 297.93973 | 1.13093 | 0.2231462 | 2.6386132 | 27 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 62220 | 1997 $TU_{20}$ |
| 1997 $TU_{21}$ | 16.6 | 0.15 | 20060922 | 269.48160 | 219.08664 | 208.25962 | 1.36888 | 0.0525380 | 2.8666698 | 29 | 5 | 1994–2006 | 0.32 | M-v | 0 | MPC | 77362 | 1997 $TU_{21}$ |
| 1997 $TY_{23}$ | 16.7 | 0.15 | 20060922 | 33.98817 | 118.21215 | 210.57122 | 8.48861 | 0.2068263 | 2.7339416 | 68 | 4 | 1997–2006 | 0.38 | M-v | 0 | MPC | 74562 | 1997 $TY_{23}$ |
| 1997 $TW_{24}$ | 16.1 | 0.15 | 20060922 | 15.56237 | 104.72254 | 276.09055 | 7.12687 | 0.2915515 | 2.6793147 | 67 | 6 | 1984–2006 | 0.55 | M-v | 0 | MPC | 47716 | 1997 $TW_{24}$ |
| 1997 $UN_1$ | 17.5 | 0.15 | 20060922 | 225.72268 | 80.48153 | 286.06710 | 4.10268 | 0.1657486 | 2.2765472 | 56 | 4 | 1997–2004 | 0.58 | M-v | 2 | MPC | 71959 | 1997 $UN_1$ |
| 1997 $UH_9$ | 18.7 | 0.15 | 20060922 | 86.16945 | 180.85596 | 42.44592 | 25.49245 | 0.4747812 | 0.8300492 | 269 | 4 | 1997–2006 | 0.57 | M-v | 3 | MPC | 70215 | 1997 $UH_9$ |
| 1997 $US_{12}$ | 17.0 | 0.15 | 20060922 | 337.59149 | 59.67901 | 24.46719 | 2.41744 | 0.0668305 | 2.6528321 | 32 | 3 | 1997–2006 | 0.39 | M-v | 3 | MPC | 19300 | 1997 $US_{12}$ |
| 1997 $UT_{15}$ | 16.9 | 0.15 | 20060922 | 68.68861 | 271.93452 | 31.47615 | 7.34805 | 0.2166938 | 2.7009099 | 43 | 5 | 1997–2006 | 0.36 | M-v | 1 | MPC | 77363 | 1997 $UT_{15}$ |
| 1997 $UP_{17}$ | 16.1 | 0.15 | 20060922 | 11.86170 | 309.83841 | 62.90813 | 6.57622 | 0.0529685 | 2.7483990 | 41 | 4 | 1997–2006 | 0.59 | M-v | 1 | MPC | 60492 | 1997 $UP_{17}$ |
| 1997 $UG_{18}$ | 16.2 | 0.15 | 20060922 | 67.09330 | 249.67713 | 65.98439 | 5.96833 | 0.0568744 | 2.7471733 | 34 | 5 | 1995–2006 | 0.54 | M-v | 0 | MPC | 16768 | 1997 $UG_{18}$ |
| 1997 $US_{20}$ | 16.4 | 0.15 | 20060922 | 38.88339 | 83.80509 | 351.25390 | 4.63871 | 0.2121941 | 2.5446277 | 102 | 6 | 1993–2006 | 0.50 | M-v | 2 | MPC | 90003 | 1997 $US_{20}$ |
| 1997 $VX_1$ | 15.7 | 0.15 | 20060922 | 348.95337 | 330.10569 | 52.99545 | 15.23173 | 0.1676239 | 2.7757311 | 55 | 5 | 1997–2006 | 0.40 | M-v | 1 | MPC | 16012 | 1997 $VX_1$ |
| 1997 $VD_2$ | 15.8 | 0.15 | 20060922 | 99.87711 | 44.21790 | 340.13949 | 2.98941 | 0.1682414 | 2.5192635 | 187 | 6 | 1997–2006 | 0.53 | M-v | 2 | MPC | 97332 | 1997 $VD_2$ |
| 1997 $WS_1$ | 16.6 | 0.15 | 20060922 | 66.43312 | 333.88566 | 47.25269 | 2.58851 | 0.2135950 | 2.5820320 | 143 | 4 | 1997–2006 | 0.49 | M-v | 2 | MPC | 97332 | 1997 $WS_1$ |
| 1997 $WH_4$ | 16.9 | 0.15 | 20060922 | 214.81754 | 350.42446 | 220.64557 | 2.54778 | 0.0507245 | 2.6421706 | 34 | 4 | 1997–2005 | 0.37 | M-v | 0 | MPC | 88659 | 1997 $WH_4$ |
| 1997 $WZ_5$ | 15.6 | 0.15 | 20060922 | 184.69876 | 293.09510 | 195.31874 | 3.00079 | 0.0156757 | 2.9838039 | 36 | 4 | 1997–2005 | 0.41 | M-v | 1 | MPC | 88659 | 1997 $WZ_5$ |
| 1997 $WB_7$ | 16.1 | 0.15 | 20060922 | 334.58299 | 165.52604 | 289.66395 | 7.76648 | 0.2501461 | 2.7560587 | 44 | 3 | 1997–2006 | 0.52 | M-v | 2 | MPC | 47718 | 1997 $WB_7$ |
| 1997 $WO_9$ | 16.6 | 0.15 | 20060922 | 285.64462 | 61.46527 | 83.08330 | 4.74160 | 0.1552773 | 2.6988723 | 56 | 3 | 1997–2006 | 0.38 | M-v | 3 | MPC | 43330 | 1997 $WO_9$ |
| 1997 $WG_{11}$ | 15.9 | 0.15 | 20060922 | 247.89219 | 153.31671 | 230.76595 | 2.44369 | 0.1482215 | 3.0650360 | 63 | 5 | 1997–2006 | 0.50 | M-v | 0 | MPC | 01968 | 1997 $WG_{11}$ |
| 1997 $WU_{18}$ | 18.1 | 0.15 | 20060922 | 105.68069 | 348.22550 | 135.00896 | 1.75740 | 0.1336573 | 2.3588411 | 35 | 4 | 1997–2006 | 0.47 | M-v | 1 | MPC | 01968 | 1997 $WU_{18}$ |
| 1997 $WZ_{24}$ | 16.7 | 0.15 | 20060922 | 236.10995 | 83.40780 | 224.40107 | 5.87032 | 0.1316371 | 2.3703220 | 62 | 4 | 1997–2005 | 0.67 | M-v | 1 | MPC | 73933 | 1997 $WZ_{24}$ |
| 1997 $WU_{30}$ | 15.6 | 0.15 | 20060922 | 329.05204 | 359.13120 | 49.92326 | 9.55889 | 0.2855820 | 2.7829709 | 73 | 4 | 1997–2006 | 0.56 | M-v | 1 | MPC | 62221 | 1997 $WU_{30}$ |
| 1997 $WK_{36}$ | 15.4 | 0.15 | 20060922 | 337.10197 | 335.83126 | 65.67030 | 10.77023 | 0.2945022 | 2.7778075 | 107 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 04109 | 1997 $WK_{36}$ |
| 1997 $XR_2$ | 20.8 | 0.15 | 20060922 | 28.12229 | 84.58382 | 250.84642 | 7.17328 | 0.2011989 | 1.0769748 | 158 | 2 | 1997–2006 | 0.59 | M-v | 3 | MPC | 01968 | 1997 $XR_2$ |
| 1997 $XV_{11}$ | 18.4 | 0.15 | 20060922 | 107.37525 | 270.20400 | 241.31861 | 44.26945 | 0.3177592 | 1.8670146 | 56 | 2 | 1997–2006 | 0.46 | M-v | 4 | MPC | 99888 | 1997 $XV_{11}$ |
| 1997 $YN_3$ | 16.9 | 0.15 | 20060922 | 354.98798 | 50.21185 | 24.87866 | 1.49574 | 0.3033925 | 2.7056246 | 25 | 3 | 1997–2006 | 0.39 | M-v | 4 | MPC | 24957 | 1997 $YN_3$ |
| 1997 $YY_{15}$ | 18.1 | 0.15 | 20060922 | 205.11558 | 103.74349 | 327.15432 | 1.09777 | 0.1916945 | 2.3007408 | 26 | 3 | 1997–2006 | 0.61 | M-v | 4 | MPC | 71961 | 1997 $YY_{15}$ |
| 1997 $YO_{17}$ | 16.7 | 0.15 | 20060922 | 301.96344 | 201.57964 | 315.53050 | 4.13298 | 0.0520739 | 2.7170361 | 35 | 5 | 1997–2006 | 0.40 | M-v | 1 | MPC | 93717 | 1997 $YO_{17}$ |
| 1997 $YW_{19}$ | 14.2 | 0.15 | 20060922 | 299.01099 | 241.20810 | 259.97738 | 22.31279 | 0.3269912 | 2.7439470 | 51 | 6 | 1997–2006 | 0.63 | M-v | 1 | MPC | 87337 | 1997 $YW_{19}$ |
| 1998 $AU_4$ | 16.1 | 0.15 | 20060922 | 320.99562 | 50.67691 | 344.50869 | 2.54129 | 0.1963461 | 2.9415755 | 55 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 04109 | 1998 $AU_4$ |
| 1998 $AO_{11}$ | 16.6 | 0.15 | 20060922 | 26.29631 | 169.42236 | 103.58311 | 4.01551 | 0.2378271 | 2.2979886 | 32 | 5 | 1998–2004 | 0.61 | M-v | 1 | MPC | 73933 | 1998 $AO_{11}$ |
| 1998 $BF_5$ | 14.9 | 0.15 | 20060922 | 137.83587 | 71.62714 | 132.99441 | 17.02762 | 0.1810559 | 3.1183557 | 58 | 4 | 1998–2006 | 0.67 | M-v | 1 | MPC | 60494 | 1998 $BF_5$ |
| 1998 $BZ_5$ | 16.4 | 0.15 | 20060922 | 207.97382 | 23.81671 | 115.99693 | 2.82395 | 0.0410799 | 3.0862239 | 28 | 4 | 1998–2006 | 0.42 | M-v | 3 | MPC | 03143 | 1998 $BZ_5$ |
| 1998 $BH_6$ | 16.7 | 0.15 | 20060922 | 356.81548 | 190.74042 | 69.54340 | 2.11456 | 0.1628765 | 2.3928227 | 69 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 01968 | 1998 $BH_6$ |
| 1998 $BE_{17}$ | 15.7 | 0.15 | 20060922 | 39.57682 | 274.16656 | 130.68072 | 4.63592 | 0.1022864 | 2.7814403 | 68 | 6 | 1998–2006 | 0.54 | M-v | 1 | MPC | 90004 | 1998 $BE_{17}$ |
| 1998 $BS_{17}$ | 17.9 | 0.15 | 20060922 | 167.43549 | 127.10085 | 118.19133 | 3.21942 | 0.1540179 | 2.1734661 | 29 | 5 | 1998–2006 | 0.26 | M-v | 2 | MPC | 57667 | 1998 $BS_{17}$ |
| 1998 $BB_{20}$ | 17.2 | 0.15 | 20060922 | 47.81565 | 120.32468 | 292.74901 | 2.75957 | 0.0912428 | 2.6793075 | 31 | 3 | 1998–2005 | 0.44 | M-v | 4 | MPC | 88660 | 1998 $BB_{20}$ |
| 1998 $BE_{20}$ | 15.6 | 0.15 | 20060922 | 344.69937 | 203.43455 | 299.18664 | 10.75000 | 0.1332257 | 2.6514258 | 73 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 97333 | 1998 $BE_{20}$ |
| 1998 $BF_{20}$ | 16.1 | 0.15 | 20060922 | 2.94023 | 297.16198 | 119.80404 | 5.35427 | 0.0601816 | 2.7976696 | 28 | 3 | 1998–2006 | 0.26 | M-v | 3 | MPC | 84448 | 1998 $BF_{20}$ |
| 1998 $BO_{20}$ | 16.9 | 0.15 | 20060922 | 315.11549 | 115.24521 | 300.46589 | 4.09415 | 0.1360486 | 2.1573423 | 142 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 04109 | 1998 $BO_{20}$ |
| 1998 $BB_{21}$ | 15.9 | 0.15 | 20060922 | 286.11353 | 234.36205 | 300.13910 | 5.63026 | 0.0560943 | 2.7163003 | 47 | 6 | 1998–2006 | 0.54 | M-v | 1 | MPC | 93718 | 1998 $BB_{21}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $BG_{21}$ | 15.7 | 0.15 | 20060922 | 204.08013 | 316.31960 | 298.49522 | 11.88138 | 0.1014074 | 2.7300867 | 46 | 6 | 1998–2006 | 0.46 | M-v | 1 | MPC | 93718 | 1998 $BG_{21}$ |
| 1998 $BL_{24}$ | 15.7 | 0.15 | 20060922 | 50.19724 | 49.98800 | 320.02087 | 4.55544 | 0.2077031 | 2.7892636 | 98 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 90004 | 1998 $BL_{24}$ |
| 1998 $BJ_{27}$ | 16.8 | 0.15 | 20060922 | 12.92256 | 119.47219 | 324.68787 | 1.68402 | 0.0678577 | 2.7278428 | 57 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 90004 | 1998 $BJ_{27}$ |
| 1998 $BN_{31}$ | 14.9 | 0.15 | 20060922 | 257.70891 | 123.90166 | 315.23233 | 9.38939 | 0.1067202 | 3.0893232 | 59 | 4 | 1997–2004 | 0.64 | M-v | 1 | MPC | 62222 | 1998 $BN_{31}$ |
| 1998 $BW_{45}$ | 15.5 | 0.15 | 20060922 | 74.75940 | 63.71369 | 315.83517 | 5.91965 | 0.2733533 | 2.6665225 | 193 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 97333 | 1998 $BW_{45}$ |
| 1998 $BG_{46}$ | 15.6 | 0.15 | 20060922 | 346.86794 | 112.63106 | 255.05421 | 6.99517 | 0.1010280 | 3.0112542 | 45 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 77364 | 1998 $BG_{46}$ |
| 1998 CC | 16.5 | 0.15 | 20060922 | 145.30947 | 185.09614 | 71.30821 | 4.00832 | 0.1514265 | 2.1803239 | 72 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 77364 | 1998 CC |
| 1998 CT | 16.6 | 0.15 | 20060922 | 33.92139 | 289.99145 | 95.05002 | 8.06249 | 0.2682618 | 2.7256328 | 59 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 47723 | 1998 CT |
| 1998 $CH_4$ | 14.9 | 0.15 | 20060922 | 164.58287 | 25.07121 | 169.90238 | 5.25902 | 0.0816775 | 3.1191355 | 69 | 5 | 1998–2006 | 0.57 | M-v | 2 | MPC | 77364 | 1998 $CH_4$ |
| 1998 $DD_1$ | 15.8 | 0.15 | 20060922 | 338.00090 | 151.23017 | 312.16723 | 1.83215 | 0.1440802 | 2.7759476 | 52 | 6 | 1998–2006 | 0.45 | M-v | 0 | MPC | 87337 | 1998 $DD_1$ |
| 1998 $DM_1$ | 17.1 | 0.15 | 20060922 | 231.63311 | 336.42263 | 184.12424 | 1.21155 | 0.0650242 | 2.1853191 | 58 | 6 | 1996–2006 | 0.63 | M-v | 1 | MPC | 87337 | 1998 $DM_1$ |
| 1998 $DG_8$ | 15.6 | 0.15 | 20060922 | 223.13264 | 294.99087 | 306.74209 | 3.28067 | 0.0114314 | 2.7808329 | 67 | 8 | 1993–2006 | 0.56 | M-v | 1 | MPC | 90004 | 1998 $DG_8$ |
| 1998 $DZ_{17}$ | 17.7 | 0.15 | 20060922 | 293.95273 | 255.90280 | 146.19106 | 6.11382 | 0.1296256 | 2.2812758 | 29 | 3 | 1998–2006 | 0.37 | M-v | 2 | MPC | 93719 | 1998 $DZ_{17}$ |
| 1998 $DX_{18}$ | 16.2 | 0.15 | 20060922 | 286.82838 | 170.79626 | 8.21536 | 2.64279 | 0.0550041 | 2.7723444 | 62 | 5 | 1998–2005 | 0.58 | M-v | 1 | MPC | 90004 | 1998 $DX_{18}$ |
| 1998 $DO_{19}$ | 17.4 | 0.15 | 20060922 | 205.91290 | 297.05648 | 140.87856 | 6.95968 | 0.2300869 | 2.3222518 | 30 | 3 | 1998–2005 | 0.48 | M-v | 2 | MPC | 73934 | 1998 $DO_{19}$ |
| 1998 $DD_{23}$ | 15.9 | 0.15 | 20060922 | 226.06573 | 250.17591 | 327.02495 | 2.79585 | 0.0337064 | 2.8078635 | 35 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 90004 | 1998 $DD_{23}$ |
| 1998 $DD_{26}$ | 16.1 | 0.15 | 20060922 | 100.71547 | 220.26819 | 111.01225 | 3.20918 | 0.0699912 | 2.8725007 | 49 | 4 | 1995–2005 | 0.43 | M-v | 1 | MPC | 84448 | 1998 $DD_{26}$ |
| 1998 $DO_{28}$ | 15.9 | 0.15 | 20060922 | 247.11103 | 109.86642 | 147.32696 | 5.85077 | 0.0351855 | 2.7189338 | 81 | 4 | 1998–2004 | 0.56 | M-v | 0 | MPC | 73934 | 1998 $DO_{28}$ |
| 1998 $DE_{31}$ | 16.7 | 0.15 | 20060922 | 150.24599 | 328.38318 | 359.38986 | 5.99776 | 0.0719810 | 2.7387945 | 33 | 5 | 1998–2006 | 0.37 | M-v | 0 | MPC | 93719 | 1998 $DE_{31}$ |
| 1998 $DW_{36}$ | 16.9 | 0.15 | 20060922 | 110.89910 | 97.50426 | 117.85848 | 2.23907 | 0.1764391 | 2.3398886 | 63 | 3 | 1998–2006 | 0.67 | M-v | 3 | MPC | 04109 | 1998 $DW_{36}$ |
| 1998 $EC_5$ | 15.4 | 0.15 | 20060922 | 35.21614 | 331.78872 | 325.52405 | 8.28455 | 0.0557109 | 3.1717435 | 49 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 04109 | 1998 $EC_5$ |
| 1998 $ET_5$ | 16.3 | 0.15 | 20060922 | 162.71373 | 239.09289 | 358.02651 | 5.93776 | 0.1214016 | 2.1944417 | 79 | 7 | 1996–2006 | 0.51 | M-v | 0 | MPC | 57667 | 1998 $ET_5$ |
| 1998 $EW_8$ | 17.2 | 0.15 | 20060922 | 131.94021 | 234.75717 | 7.21586 | 4.82751 | 0.1265762 | 2.2403235 | 82 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 47724 | 1998 $EW_8$ |
| 1998 $EH_9$ | 14.7 | 0.15 | 20060922 | 249.03499 | 122.22999 | 139.04590 | 32.85374 | 0.2601771 | 2.7916756 | 78 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 50381 | 1998 $EH_9$ |
| 1998 $EX_9$ | 16.9 | 0.15 | 20060922 | 179.66762 | 46.31924 | 176.70521 | 4.50782 | 0.1221596 | 2.2022021 | 43 | 4 | 1998–2006 | 0.42 | M-v | 1 | MPC | 62222 | 1998 $EX_9$ |
| 1998 $EC_{10}$ | 15.4 | 0.15 | 20060922 | 266.74198 | 202.38505 | 320.11242 | 7.15547 | 0.2319824 | 2.8913318 | 74 | 4 | 1998–2006 | 0.73 | M-v | 1 | MPC | 87338 | 1998 $EC_{10}$ |
| 1998 FM | 15.8 | 0.15 | 20060922 | 172.72850 | 203.47394 | 48.92966 | 2.76279 | 0.1800647 | 3.0229255 | 45 | 5 | 1998–2006 | 0.50 | M-v | 0 | MPC | 03143 | 1998 FM |
| 1998 FT | 17.9 | 0.15 | 20060922 | 87.20504 | 266.35805 | 41.49304 | 3.90882 | 0.1303958 | 2.2336689 | 21 | 3 | 1998–2006 | 0.35 | M-v | 3 | MPC | 1018 | 1998 FT |
| 1998 FY | 17.2 | 0.15 | 20060922 | 69.65596 | 220.39888 | 70.32865 | 3.27487 | 0.1568361 | 2.3022757 | 72 | 7 | 1998–2006 | 0.45 | M-v | 0 | MPC | 87338 | 1998 FY |
| 1998 $FH_1$ | 16.1 | 0.15 | 20060922 | 321.66261 | 300.58544 | 152.77148 | 9.29460 | 0.0155060 | 2.9229127 | 31 | 4 | 1998–2005 | 0.41 | M-v | 0 | MPC | 88661 | 1998 $FH_1$ |
| 1998 $FS_{38}$ | 16.5 | 0.15 | 20060922 | 148.83403 | 252.79958 | 353.70650 | 6.50994 | 0.1415589 | 2.2196883 | 46 | 6 | 1998–2005 | 0.66 | M-v | 1 | MPC | 93720 | 1998 $FS_{38}$ |
| 1998 $FD_{39}$ | 16.5 | 0.15 | 20060922 | 265.06676 | 353.55788 | 186.02200 | 6.20869 | 0.2256632 | 2.8783808 | 42 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 93720 | 1998 $FD_{39}$ |
| 1998 $FV_{39}$ | 16.6 | 0.15 | 20060922 | 1.63777 | 297.54660 | 224.77104 | 3.34851 | 0.1483101 | 2.6468778 | 42 | 4 | 1996–2005 | 0.64 | M-v | 2 | MPC | 47726 | 1998 $FV_{39}$ |
| 1998 $FO_{41}$ | 15.0 | 0.15 | 20060922 | 5.29170 | 299.51006 | 179.76338 | 25.90497 | 0.2069141 | 2.7174545 | 78 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 90005 | 1998 $FO_{41}$ |
| 1998 $FA_{47}$ | 16.8 | 0.15 | 20060922 | 135.35471 | 22.89800 | 183.48709 | 2.06201 | 0.1576821 | 2.3071616 | 103 | 3 | 1998–2006 | 0.66 | M-v | 3 | MPC | 74567 | 1998 $FA_{47}$ |
| 1998 $FD_{47}$ | 14.7 | 0.15 | 20060922 | 177.33446 | 205.16070 | 353.29720 | 11.09869 | 0.1864038 | 3.1492386 | 72 | 4 | 1998–2006 | 0.65 | M-v | 2 | MPC | 50382 | 1998 $FD_{47}$ |
| 1998 $FC_{50}$ | 16.9 | 0.15 | 20060922 | 91.58220 | 25.59016 | 176.68695 | 6.54412 | 0.0514992 | 2.3870688 | 31 | 3 | 1998–2003 | 0.58 | M-v | 3 | MPC | 93720 | 1998 $FC_{50}$ |
| 1998 $FS_{59}$ | 15.7 | 0.15 | 20060922 | 253.81071 | 156.70335 | 105.60445 | 3.15449 | 0.1891519 | 2.7525433 | 60 | 7 | 1995–2006 | 0.61 | M-v | 1 | MPC | 97334 | 1998 $FS_{59}$ |
| 1998 $FQ_{61}$ | 16.4 | 0.15 | 20060922 | 141.99085 | 215.61014 | 353.56175 | 5.48178 | 0.1843854 | 2.3004520 | 93 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 04110 | 1998 $FQ_{61}$ |
| 1998 $FN_{67}$ | 16.0 | 0.15 | 20060922 | 299.93395 | 116.05238 | 72.02867 | 3.85409 | 0.1997202 | 2.7838172 | 38 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 03143 | 1998 $FN_{67}$ |
| 1998 $FB_{73}$ | 16.5 | 0.15 | 20060922 | 221.12773 | 155.02636 | 25.46535 | 6.01083 | 0.1469286 | 2.2159752 | 77 | 5 | 1996–2006 | 0.63 | M-v | 1 | MPC | 12121 | 1998 $FB_{73}$ |
| 1998 $FE_{74}$ | 15.7 | 0.15 | 20060922 | 308.81057 | 54.87165 | 134.78799 | 2.91198 | 0.1633872 | 2.7455498 | 77 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 97334 | 1998 $FE_{74}$ |
| 1998 $FD_{88}$ | 16.4 | 0.15 | 20060922 | 256.87038 | 105.23012 | 25.36828 | 6.11314 | 0.0619977 | 2.1985599 | 126 | 5 | 1998–2006 | 0.50 | M-v | 2 | MPC | 57668 | 1998 $FD_{88}$ |
| 1998 $FP_{119}$ | 16.7 | 0.15 | 20060922 | 130.26005 | 67.53285 | 123.61233 | 1.11575 | 0.1584455 | 2.3180872 | 88 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 04110 | 1998 $FP_{119}$ |
| 1998 $FA_{122}$ | 15.7 | 0.15 | 20060922 | 222.24560 | 28.01883 | 172.13492 | 12.30594 | 0.2682508 | 3.0034321 | 74 | 3 | 1998–2004 | 0.71 | M-v | 2 | MPC | 50384 | 1998 $FA_{122}$ |
| 1998 $FM_{127}$ | 16.2 | 0.15 | 20060922 | 139.86814 | 118.40508 | 26.76033 | 6.40816 | 0.1484530 | 2.3692657 | 32 | 4 | 1998–2005 | 0.70 | M-v | 1 | MPC | 74569 | 1998 $FM_{127}$ |
| 1998 $FV_{128}$ | 15.7 | 0.15 | 20060922 | 212.32085 | 180.20603 | 359.46895 | 12.72816 | 0.2212947 | 3.0383661 | 55 | 3 | 1998–2006 | 0.65 | M-v | 2 | MPC | 87338 | 1998 $FV_{128}$ |
| 1998 $GV_2$ | 14.2 | 0.15 | 20060922 | 255.39847 | 83.79564 | 34.75821 | 26.78496 | 0.2145709 | 3.0323533 | 43 | 4 | 1998–2006 | 0.70 | M-v | 1 | MPC | 47728 | 1998 $GV_2$ |
| 1998 HP | 18.0 | 0.15 | 20060922 | 132.34378 | 113.44279 | 120.98677 | 3.13090 | 0.1791577 | 2.2962531 | 36 | 4 | 1998–2006 | 0.37 | M-v | 1 | MPC | 77365 | 1998 HP |
| 1998 $HA_1$ | 17.0 | 0.15 | 20060922 | 16.09273 | 193.76105 | 127.13776 | 4.55643 | 0.2212807 | 2.3841883 | 79 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 04110 | 1998 $HA_1$ |
| 1998 $HY_1$ | 17.5 | 0.15 | 20060922 | 69.95233 | 25.08949 | 246.30789 | 3.35855 | 0.2179929 | 2.3677145 | 52 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 47728 | 1998 $HY_1$ |
| 1998 $HZ_4$ | 17.1 | 0.15 | 20060922 | 162.16572 | 230.76974 | 7.87244 | 5.67032 | 0.0982772 | 2.1926865 | 44 | 4 | 1996–2006 | 0.33 | M-v | 0 | MPC | 35446 | 1998 $HZ_4$ |
| 1998 $HE_5$ | 17.3 | 0.15 | 20060922 | 126.73791 | 302.76803 | 262.80226 | 2.59890 | 0.1200322 | 2.3290176 | 45 | 3 | 1998–2006 | 0.58 | M-v | 3 | MPC | 04110 | 1998 $HE_5$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $HF_5$ | 16.1 | 0.15 | 20060922 | 219.63610 | 287.40710 | 227.47048 | 4.61484 | 0.1336019 | 3.1310991 | 32 | 5 | 1998–2006 | 0.42 | M-v | 0 | MPC | 47728 | 1998 $HF_5$ |
| 1998 $HV_5$ | 16.4 | 0.15 | 20060922 | 316.72953 | 155.67378 | 105.15289 | 3.64366 | 0.1555687 | 2.6151134 | 41 | 4 | 1998–2006 | 0.64 | M-v | 3 | MPC | 01969 | 1998 $HV_5$ |
| 1998 $HJ_6$ | 17.0 | 0.15 | 20060922 | 141.61329 | 40.74399 | 178.47142 | 5.50904 | 0.1213485 | 2.2981515 | 50 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 88661 | 1998 $HJ_6$ |
| 1998 $HA_7$ | 16.9 | 0.15 | 20060922 | 132.16403 | 29.06928 | 181.74589 | 24.41671 | 0.2090491 | 2.3261165 | 84 | 4 | 1998–2006 | 0.62 | M-v | 1 | MPC | 87339 | 1998 $HA_7$ |
| 1998 $HS_7$ | 15.8 | 0.15 | 20060922 | 331.63991 | 96.35597 | 60.11237 | 14.54220 | 0.4462012 | 2.7467461 | 90 | 3 | 1998–2006 | 0.56 | M-v | 2 | MPC | 66068 | 1998 $HS_7$ |
| 1998 $HF_9$ | 16.5 | 0.15 | 20060922 | 332.58502 | 6.19297 | 127.30745 | 10.05500 | 0.2792911 | 2.8407616 | 28 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 28990 | 1998 $HF_9$ |
| 1998 $HY_{11}$ | 17.5 | 0.15 | 20060922 | 179.09963 | 115.65719 | 56.85578 | 1.76800 | 0.1339837 | 2.2575174 | 58 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 77366 | 1998 $HY_{11}$ |
| 1998 $HG_{12}$ | 17.2 | 0.15 | 20060922 | 17.49099 | 358.30324 | 303.06602 | 1.81388 | 0.2014477 | 2.4203724 | 53 | 6 | 1995–2006 | 0.41 | M-v | 1 | MPC | 04110 | 1998 $HG_{12}$ |
| 1998 $HE_{14}$ | 16.2 | 0.15 | 20060922 | 345.92363 | 343.84913 | 178.15817 | 9.36114 | 0.0881105 | 2.7457760 | 44 | 4 | 1995–2004 | 0.54 | M-v | 1 | MPC | 47729 | 1998 $HE_{14}$ |
| 1998 $HN_{25}$ | 17.3 | 0.15 | 20060922 | 143.02698 | 29.78778 | 121.88494 | 2.81211 | 0.1446638 | 2.3777391 | 54 | 4 | 1998–2005 | 0.57 | M-v | 1 | MPC | 71965 | 1998 $HN_{25}$ |
| 1998 $HG_{29}$ | 17.1 | 0.15 | 20060922 | 229.18197 | 209.53489 | 342.26090 | 4.18239 | 0.2272953 | 2.1795524 | 45 | 3 | 1998–2006 | 0.57 | M-v | 3 | MPC | 23456 | 1998 $HG_{29}$ |
| 1998 $HM_{31}$ | 17.6 | 0.15 | 20060922 | 161.97438 | 96.21889 | 79.24795 | 7.23492 | 0.1484514 | 2.3413401 | 29 | 3 | 1998–2005 | 0.51 | M-v | 3 | MPC | 74570 | 1998 $HM_{31}$ |
| 1998 $HV_{35}$ | 17.0 | 0.15 | 20060922 | 163.43653 | 103.39384 | 97.04868 | 2.50568 | 0.1508509 | 2.2791545 | 93 | 6 | 1998–2006 | 0.63 | M-v | 1 | MPC | 87339 | 1998 $HV_{35}$ |
| 1998 $HJ_{42}$ | 16.0 | 0.15 | 20060922 | 180.19588 | 53.99132 | 155.07819 | 5.94405 | 0.1286253 | 3.1634835 | 30 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 87339 | 1998 $HJ_{42}$ |
| 1998 $HG_{49}$ | 22.0 | 0.15 | 20060922 | 344.81603 | 324.08652 | 44.91754 | 4.19546 | 0.1129416 | 1.2009971 | 60 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 04110 | 1998 $HG_{49}$ |
| 1998 $HS_{59}$ | 16.3 | 0.15 | 20060922 | 294.24477 | 351.59670 | 216.19646 | 0.99000 | 0.1648133 | 2.7805634 | 43 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 97335 | 1998 $HS_{59}$ |
| 1998 $HU_{67}$ | 16.9 | 0.15 | 20060922 | 123.08907 | 232.30499 | 338.37012 | 2.62766 | 0.1858846 | 2.3451717 | 82 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 74571 | 1998 $HU_{67}$ |
| 1998 $HF_{88}$ | 16.5 | 0.15 | 20060922 | 49.26698 | 10.57419 | 262.48562 | 1.61876 | 0.1844606 | 2.4076472 | 58 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 04110 | 1998 $HF_{88}$ |
| 1998 $HG_{99}$ | 16.2 | 0.15 | 20060922 | 98.30867 | 114.83464 | 103.54498 | 2.20167 | 0.1336556 | 2.3910319 | 88 | 6 | 1995–2006 | 0.67 | M-v | 1 | MPC | 04110 | 1998 $HG_{99}$ |
| 1998 $HE_{108}$ | 15.5 | 0.15 | 20060922 | 206.94280 | 79.04464 | 121.51684 | 7.30041 | 0.1259609 | 3.0819370 | 51 | 3 | 1998–2006 | 0.72 | M-v | 2 | MPC | 50385 | 1998 $HE_{108}$ |
| 1998 $HO_{113}$ | 15.3 | 0.15 | 20060922 | 251.12466 | 36.02275 | 146.64483 | 6.06149 | 0.1839360 | 2.9750154 | 84 | 6 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87339 | 1998 $HO_{113}$ |
| 1998 $HN_{122}$ | 16.7 | 0.15 | 20060922 | 147.73550 | 141.21118 | 101.26386 | 8.23948 | 0.2122859 | 2.2730457 | 33 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 50386 | 1998 $HN_{122}$ |
| 1998 $HO_{144}$ | 15.1 | 0.15 | 20060922 | 138.15066 | 157.93932 | 100.72146 | 2.82520 | 0.1337936 | 3.1939157 | 50 | 5 | 1998–2006 | 0.52 | M-v | 0 | MPC | 04110 | 1998 $HO_{144}$ |
| 1998 $HB_{146}$ | 16.5 | 0.15 | 20060922 | 132.35793 | 143.25566 | 134.52765 | 5.32280 | 0.1824693 | 2.2533496 | 37 | 7 | 1994–2006 | 0.61 | M-v | 1 | MPC | 57669 | 1998 $HB_{146}$ |
| 1998 $HS_{154}$ | 15.5 | 0.15 | 20060922 | 307.05153 | 203.03972 | 352.77572 | 11.47745 | 0.0811260 | 2.7435154 | 29 | 3 | 1995–2002 | 0.67 | M-v | 3 | MPC | 22049 | 1998 $HS_{154}$ |
| 1998 $JL_4$ | 16.8 | 0.15 | 20060922 | 139.98995 | 66.25075 | 173.55210 | 3.94293 | 0.1534568 | 2.2948710 | 82 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 87339 | 1998 $JL_4$ |
| 1998 KF | 15.3 | 0.15 | 20060922 | 109.67087 | 71.46963 | 267.78318 | 3.78670 | 0.1998912 | 3.0178366 | 121 | 7 | 1998–2006 | 0.57 | M-v | 1 | MPC | 97335 | 1998 KF |
| 1998 $KF_5$ | 17.8 | 0.15 | 20060922 | 220.56802 | 263.26663 | 287.36779 | 2.48329 | 0.1491155 | 2.2057477 | 39 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 84451 | 1998 $KF_5$ |
| 1998 $KL_{11}$ | 15.7 | 0.15 | 20060922 | 253.15273 | 292.87487 | 197.37359 | 17.78339 | 0.1832735 | 3.1781018 | 38 | 4 | 1998–2006 | 0.45 | M-v | 0 | MPC | 60498 | 1998 $KL_{11}$ |
| 1998 $KB_{17}$ | 15.3 | 0.15 | 20060922 | 120.25987 | 256.87759 | 30.66603 | 10.98969 | 0.0480931 | 3.1268597 | 35 | 5 | 1998–2006 | 0.70 | M-v | 1 | MPC | 87339 | 1998 $KB_{17}$ |
| 1998 $KF_{43}$ | 15.6 | 0.15 | 20060922 | 89.09343 | 240.68257 | 114.23943 | 12.45647 | 0.1270092 | 3.0659095 | 34 | 3 | 1998–2005 | 0.38 | M-v | 2 | MPC | 90005 | 1998 $KF_{43}$ |
| 1998 $KO_{43}$ | 16.4 | 0.15 | 20060922 | 105.61454 | 186.62963 | 98.97294 | 7.70439 | 0.1079794 | 2.3521670 | 32 | 6 | 1997–2006 | 0.71 | M-v | 1 | MPC | 66069 | 1998 $KO_{43}$ |
| 1998 $KC_{46}$ | 16.5 | 0.15 | 20060922 | 128.61597 | 151.50136 | 93.17863 | 5.68169 | 0.2077741 | 2.3223262 | 86 | 6 | 1992–2006 | 0.64 | M-v | 1 | MPC | 77367 | 1998 $KC_{46}$ |
| 1998 $KJ_{61}$ | 16.9 | 0.15 | 20060922 | 110.24850 | 123.75749 | 133.32156 | 6.11444 | 0.2082668 | 2.3415605 | 99 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 77367 | 1998 $KJ_{61}$ |
| 1998 $MP_1$ | 16.3 | 0.15 | 20060922 | 354.75932 | 351.71348 | 176.82518 | 4.68849 | 0.0602548 | 2.7743546 | 37 | 3 | 1998–2004 | 0.53 | M-v | 4 | MPC | 38186 | 1998 $MP_1$ |
| 1998 $MA_6$ | 15.2 | 0.15 | 20060922 | 326.62846 | 243.66655 | 245.70598 | 11.74323 | 0.0659895 | 2.9730735 | 49 | 5 | 1998–2005 | 0.67 | M-v | 1 | MPC | 90005 | 1998 $MA_6$ |
| 1998 $MG_{17}$ | 16.2 | 0.15 | 20060922 | 264.35636 | 46.11457 | 304.70803 | 10.39627 | 0.1938330 | 2.7246490 | 54 | 3 | 1996–2003 | 0.55 | M-v | 3 | MPC | 57670 | 1998 $MG_{17}$ |
| 1998 $MO_{17}$ | 16.9 | 0.15 | 20060922 | 43.31401 | 48.78556 | 134.02235 | 2.87140 | 0.1617857 | 2.7193200 | 41 | 3 | 1998–2006 | 0.41 | M-v | 2 | MPC | 99890 | 1998 $MO_{17}$ |
| 1998 $MQ_{24}$ | 16.3 | 0.15 | 20060922 | 36.50678 | 44.35678 | 304.38819 | 5.87832 | 0.1420391 | 2.3771740 | 82 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 62223 | 1998 $MQ_{24}$ |
| 1998 $MT_{30}$ | 15.6 | 0.15 | 20060922 | 214.32836 | 296.58668 | 292.39999 | 6.01842 | 0.1029065 | 3.2170464 | 48 | 6 | 1996–2006 | 0.50 | M-v | 0 | MPC | 66069 | 1998 $MT_{30}$ |
| 1998 $MO_{33}$ | 15.8 | 0.15 | 20060922 | 69.83949 | 237.38615 | 102.69695 | 7.04582 | 0.2632958 | 2.3532834 | 68 | 4 | 1998–2006 | 0.39 | M-v | 1 | MPC | 87340 | 1998 $MO_{33}$ |
| 1998 $MF_{41}$ | 16.4 | 0.15 | 20060922 | 156.29381 | 8.47808 | 292.90541 | 8.35712 | 0.2016472 | 2.2347106 | 85 | 6 | 1978–2006 | 0.65 | M-v | 1 | MPC | 97336 | 1998 $MF_{41}$ |
| 1998 $MF_{47}$ | 16.2 | 0.15 | 20060922 | 118.84442 | 352.84198 | 277.91800 | 4.48668 | 0.1797175 | 2.3426653 | 39 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 87340 | 1998 $MF_{47}$ |
| 1998 NR | 16.3 | 0.15 | 20060922 | 39.38234 | 186.49612 | 103.65762 | 11.79274 | 0.2364458 | 2.4695042 | 59 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04110 | 1998 NR |
| 1998 $NK_1$ | 17.0 | 0.15 | 20060922 | 160.19868 | 242.18207 | 300.58761 | 4.01457 | 0.0473162 | 2.4618926 | 54 | 6 | 1991–2006 | 0.55 | M-v | 1 | MPC | 04110 | 1998 $NK_1$ |
| 1998 $OS_1$ | 16.1 | 0.15 | 20060922 | 120.66849 | 333.85415 | 299.79380 | 4.49551 | 0.1447130 | 2.3549696 | 56 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 57670 | 1998 $OS_1$ |
| 1998 $OV_1$ | 16.5 | 0.15 | 20060922 | 311.17580 | 180.48735 | 130.68491 | 3.07932 | 0.1565218 | 2.6625670 | 49 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 01969 | 1998 $OV_1$ |
| 1998 $OL_3$ | 16.6 | 0.15 | 20060922 | 28.34616 | 79.13682 | 274.99374 | 6.63233 | 0.1155028 | 2.3995595 | 43 | 3 | 1998–2006 | 0.44 | M-v | 4 | MPC | 47733 | 1998 $OL_3$ |
| 1998 $OT_9$ | 16.5 | 0.15 | 20060922 | 76.02978 | 34.62230 | 313.73371 | 3.40828 | 0.2779545 | 2.3494637 | 32 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 84451 | 1998 $OT_9$ |
| 1998 $OT_{11}$ | 16.6 | 0.15 | 20060922 | 36.48842 | 181.67721 | 197.69769 | 1.71760 | 0.2385399 | 2.3865032 | 97 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 62224 | 1998 $OT_{11}$ |
| 1998 $OO_{13}$ | 15.7 | 0.15 | 20060922 | 347.02986 | 197.85921 | 141.09102 | 7.55122 | 0.1619504 | 2.5534374 | 99 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04110 | 1998 $OO_{13}$ |
| 1998 $QY_2$ | 16.4 | 0.15 | 20060922 | 80.41756 | 152.06383 | 147.16815 | 12.80786 | 0.1884362 | 2.4047023 | 38 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 88662 | 1998 $QY_2$ |
| 1998 $QZ_2$ | 16.3 | 0.15 | 20060922 | 28.74394 | 210.72992 | 143.43445 | 13.21449 | 0.2694375 | 2.4402182 | 50 | 5 | 1998–2006 | 0.65 | M-v | 2 | MPC | 66070 | 1998 $QZ_2$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $QZ_{5}$ | 15.9 | 0.15 | 20060922 | 359.41855 | 6.15132 | 5.14435 | 5.12696 | 0.2690903 | 2.5339460 | 167 | 3 | 1998–2006 | 0.59 | M-v | 2 | MPC | 04110 | 1998 $QZ_{5}$ |
| 1998 $QY_{12}$ | 15.5 | 0.15 | 20060922 | 300.33622 | 95.91905 | 297.35909 | 4.30151 | 0.3398716 | 2.5897228 | 38 | 3 | 1998–2004 | 0.63 | M-v | 2 | MPC | 60499 | 1998 $QY_{12}$ |
| 1998 $QS_{15}$ | 17.4 | 0.15 | 20060922 | 67.84307 | 111.19011 | 165.03543 | 27.96951 | 0.2705507 | 1.8900351 | 59 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 46342 | 1998 $QS_{15}$ |
| 1998 $QA_{16}$ | 16.8 | 0.15 | 20060922 | 86.97221 | 315.88512 | 331.79498 | 19.70335 | 0.0593344 | 1.8787005 | 78 | 4 | 1998–2006 | 0.68 | M-v | 2 | MPC | 77368 | 1998 $QA_{16}$ |
| 1998 $QZ_{18}$ | 14.7 | 0.15 | 20060922 | 203.55942 | 337.27476 | 295.41019 | 7.37685 | 0.2557797 | 3.1089352 | 57 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 73938 | 1998 $QZ_{18}$ |
| 1998 $QJ_{23}$ | 16.4 | 0.15 | 20060922 | 114.94132 | 290.96485 | 351.60222 | 5.32527 | 0.2342304 | 2.3561860 | 41 | 6 | 1991–2006 | 0.58 | M-v | 1 | MPC | 77368 | 1998 $QJ_{23}$ |
| 1998 $QD_{24}$ | 16.5 | 0.15 | 20060922 | 101.06360 | 97.52200 | 249.95886 | 3.66452 | 0.1947665 | 2.3070048 | 52 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 87340 | 1998 $QD_{24}$ |
| 1998 $QS_{24}$ | 16.1 | 0.15 | 20060922 | 267.41846 | 42.83465 | 318.47531 | 8.43073 | 0.2281087 | 2.7342293 | 37 | 3 | 1998–2003 | 0.66 | M-v | 3 | MPC | 55832 | 1998 $QS_{24}$ |
| 1998 $QZ_{27}$ | 15.2 | 0.15 | 20060922 | 211.74463 | 119.42605 | 171.15364 | 9.00474 | 0.1959413 | 3.1073850 | 44 | 4 | 1998–2004 | 0.47 | M-v | 1 | MPC | 49650 | 1998 $QZ_{27}$ |
| 1998 $QR_{28}$ | 17.6 | 0.15 | 20060922 | 15.70588 | 97.02448 | 251.56903 | 4.06751 | 0.2000619 | 2.4759182 | 45 | 4 | 1998–2006 | 0.47 | M-v | 3 | MPC | 37084 | 1998 $QR_{28}$ |
| 1998 $QX_{29}$ | 15.1 | 0.15 | 20060922 | 232.67048 | 41.69906 | 308.01203 | 14.07181 | 0.1546867 | 2.8572973 | 75 | 3 | 1998–2005 | 0.50 | M-v | 3 | MPC | 57671 | 1998 $QX_{29}$ |
| 1998 $QD_{33}$ | 16.7 | 0.15 | 20060922 | 334.87286 | 87.06416 | 263.20300 | 3.12381 | 0.2412483 | 2.5738986 | 28 | 3 | 1998–2004 | 0.54 | M-v | 3 | MPC | 35449 | 1998 $QD_{33}$ |
| 1998 $QE_{36}$ | 15.8 | 0.15 | 20060922 | 83.84498 | 2.95882 | 315.34285 | 5.88899 | 0.1366902 | 2.3832091 | 96 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 62224 | 1998 $QE_{36}$ |
| 1998 $QP_{36}$ | 16.9 | 0.15 | 20060922 | 327.00600 | 74.72036 | 282.21731 | 3.27811 | 0.3745055 | 2.5944172 | 34 | 1 | 99 days | 0.69 | M-v | 5 | MPC | 50388 | 1998 $QP_{36}$ |
| 1998 $QY_{44}$ | 15.9 | 0.15 | 20060922 | 343.99562 | 151.93096 | 218.22349 | 4.23953 | 0.2081270 | 2.5283643 | 153 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04110 | 1998 $QY_{44}$ |
| 1998 $QK_{47}$ | 15.4 | 0.15 | 20060922 | 353.06972 | 139.80806 | 169.07499 | 4.13059 | 0.2048326 | 2.6053240 | 51 | 3 | 1998–2005 | 0.58 | M-v | 3 | MPC | 35450 | 1998 $QK_{47}$ |
| 1998 $QA_{59}$ | 17.0 | 0.15 | 20060922 | 34.47176 | 69.89632 | 346.64644 | 3.64753 | 0.1393557 | 2.3436681 | 59 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 87340 | 1998 $QA_{59}$ |
| 1998 $QK_{59}$ | 16.9 | 0.15 | 20060922 | 88.95069 | 294.94625 | 19.93134 | 1.51089 | 0.1941355 | 2.3893576 | 37 | 4 | 1998–2005 | 0.68 | M-v | 2 | MPC | 84453 | 1998 $QK_{59}$ |
| 1998 $QB_{60}$ | 16.2 | 0.15 | 20060922 | 230.21577 | 141.42597 | 168.28254 | 10.15456 | 0.0966029 | 3.0164480 | 28 | 3 | 1996–2003 | 0.46 | M-v | 3 | MPC | 88663 | 1998 $QB_{60}$ |
| 1998 $QE_{61}$ | 16.8 | 0.15 | 20060922 | 13.34869 | 26.93396 | 323.48784 | 13.95339 | 0.2544362 | 2.4766334 | 78 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 62225 | 1998 $QE_{61}$ |
| 1998 $QK_{62}$ | 17.5 | 0.15 | 20060922 | 12.49881 | 116.51455 | 236.55713 | 4.02291 | 0.2415819 | 2.4783237 | 98 | 3 | 1998–2006 | 0.53 | M-v | 2 | MPC | 50388 | 1998 $QK_{62}$ |
| 1998 $QA_{75}$ | 15.2 | 0.15 | 20060922 | 145.89313 | 165.71756 | 205.85972 | 14.87066 | 0.2709591 | 3.1459981 | 25 | 2 | 1998–2004 | 0.88 | M-v | 3 | MPC | 74578 | 1998 $QA_{75}$ |
| 1998 $QM_{77}$ | 15.5 | 0.15 | 20060922 | 22.26336 | 115.04956 | 289.94857 | 9.30027 | 0.2459833 | 2.4100711 | 71 | 4 | 1998–2006 | 0.63 | M-v | 2 | MPC | 66071 | 1998 $QM_{77}$ |
| 1998 $QO_{79}$ | 16.8 | 0.15 | 20060922 | 302.26197 | 117.34726 | 209.32989 | 6.99243 | 0.3244758 | 2.6812259 | 15 | 2 | 1998–2006 | 0.69 | M-v | 5 | MPC | 03144 | 1998 $QO_{79}$ |
| 1998 $QY_{82}$ | 15.2 | 0.15 | 20060922 | 336.70623 | 128.88601 | 233.39561 | 14.83676 | 0.1404705 | 2.5450075 | 88 | 5 | 1998–2006 | 0.60 | M-v | 2 | MPC | 04111 | 1998 $QY_{82}$ |
| 1998 $QV_{83}$ | 16.5 | 0.15 | 20060922 | 73.19122 | 55.02566 | 266.63825 | 8.47309 | 0.2348732 | 2.3960866 | 40 | 4 | 1998–2006 | 0.67 | M-v | 2 | MPC | 74578 | 1998 $QV_{83}$ |
| 1998 $QY_{83}$ | 15.7 | 0.15 | 20060922 | 340.95473 | 71.70575 | 249.95531 | 11.68654 | 0.2761571 | 2.6060524 | 74 | 3 | 1998–2006 | 0.60 | M-v | 2 | MPC | 04111 | 1998 $QY_{83}$ |
| 1998 $QA_{85}$ | 16.4 | 0.15 | 20060922 | 346.08819 | 115.04130 | 246.18022 | 4.52054 | 0.2617255 | 2.5357928 | 103 | 3 | 1998–2006 | 0.62 | M-v | 3 | MPC | 04111 | 1998 $QA_{85}$ |
| 1998 $QC_{86}$ | 15.4 | 0.15 | 20060922 | 346.31445 | 110.57164 | 225.22810 | 14.25530 | 0.1685368 | 2.5833544 | 99 | 4 | 1998–2006 | 0.61 | M-v | 2 | MPC | 04111 | 1998 $QC_{86}$ |
| 1998 $QO_{88}$ | 15.6 | 0.15 | 20060922 | 330.41035 | 98.05791 | 285.78510 | 10.23345 | 0.2153018 | 2.5387654 | 100 | 4 | 1998–2006 | 0.69 | M-v | 2 | MPC | 04111 | 1998 $QO_{88}$ |
| 1998 $QQ_{89}$ | 16.5 | 0.15 | 20060922 | 75.85660 | 54.92890 | 289.46840 | 7.55249 | 0.1367268 | 2.3773903 | 43 | 5 | 1994–2006 | 0.73 | M-v | 2 | MPC | 66071 | 1998 $QQ_{89}$ |
| 1998 $QG_{96}$ | 15.6 | 0.15 | 20060922 | 305.84760 | 101.41800 | 248.25044 | 9.85692 | 0.2036755 | 2.6646142 | 29 | 3 | 1998–2006 | 0.67 | M-v | 3 | MPC | 99891 | 1998 $QG_{96}$ |
| 1998 $QX_{96}$ | 16.3 | 0.15 | 20060922 | 112.96903 | 70.90061 | 224.91512 | 6.16786 | 0.1397053 | 2.3585875 | 49 | 5 | 1998–2006 | 0.73 | M-v | 1 | MPC | 62225 | 1998 $QX_{96}$ |
| 1998 $QY_{96}$ | 15.1 | 0.15 | 20060922 | 303.48429 | 115.11691 | 321.86419 | 29.77608 | 0.3580301 | 2.5455514 | 141 | 3 | 1998–2006 | 0.57 | M-v | 3 | MPC | 04111 | 1998 $QY_{96}$ |
| 1998 $QY_{106}$ | 16.8 | 0.15 | 20060922 | 104.52497 | 272.46577 | 68.32250 | 4.10732 | 0.1853580 | 2.3193810 | 58 | 7 | 1991–2006 | 0.52 | M-v | 1 | MPC | 84454 | 1998 $QY_{106}$ |
| 1998 $RS_{1}$ | 16.2 | 0.15 | 20060922 | 289.58641 | 35.42542 | 293.07691 | 8.23629 | 0.1591422 | 2.7775966 | 35 | 4 | 1998–2005 | 0.65 | M-v | 1 | MPC | 66071 | 1998 $RS_{1}$ |
| 1998 $RR_{2}$ | 17.3 | 0.15 | 20060922 | 294.06106 | 30.29413 | 357.78692 | 2.94943 | 0.4156385 | 2.6564065 | 76 | 1 | 65 days | 0.47 | M-v | 5 | MPC | *33350* | 1998 $RR_{2}$ |
| 1998 $RW_{2}$ | 18.2 | 0.15 | 20060922 | 333.04861 | 37.21656 | 346.39176 | 0.87453 | 0.1288540 | 2.5336707 | 30 | 4 | 1998–2006 | 0.34 | M-v | 1 | MPC | 04111 | 1998 $RW_{2}$ |
| 1998 $RJ_{3}$ | 17.0 | 0.15 | 20060922 | 23.49425 | 331.16113 | 347.89041 | 17.98891 | 0.0557827 | 1.9286652 | 56 | 5 | 1982–2006 | 0.68 | M-v | 2 | MPC | 04111 | 1998 $RJ_{3}$ |
| 1998 $RR_{4}$ | 15.8 | 0.15 | 20060922 | 259.63824 | 230.40539 | 162.20164 | 17.28866 | 0.2575974 | 2.7240265 | 45 | 3 | 1998–2006 | 0.67 | M-v | 3 | MPC | 01970 | 1998 $RR_{4}$ |
| 1998 $RR_{6}$ | 15.5 | 0.15 | 20060922 | 332.75254 | 19.34881 | 346.96597 | 13.30068 | 0.1620834 | 2.5815537 | 112 | 4 | 1998–2006 | 0.67 | M-v | 2 | MPC | 04111 | 1998 $RR_{6}$ |
| 1998 $RZ_{6}$ | 16.3 | 0.15 | 20060922 | 248.29861 | 185.28384 | 163.87468 | 6.12069 | 0.0719782 | 2.8066076 | 33 | 5 | 1994–2006 | 0.47 | M-v | 0 | MPC | 01970 | 1998 $RZ_{6}$ |
| 1998 $RC_{9}$ | 16.5 | 0.15 | 20060922 | 105.85198 | 293.88136 | 343.46138 | 4.32943 | 0.1311724 | 2.4081131 | 62 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 57673 | 1998 $RC_{9}$ |
| 1998 $RO_{10}$ | 17.5 | 0.15 | 20060922 | 338.96739 | 148.39076 | 170.15806 | 4.69549 | 0.0680838 | 2.6530319 | 32 | 4 | 1998–2005 | 0.42 | M-v | 1 | MPC | 46343 | 1998 $RO_{10}$ |
| 1998 $RW_{10}$ | 16.6 | 0.15 | 20060922 | 155.19509 | 77.02767 | 170.42173 | 6.40681 | 0.0984636 | 2.3945557 | 32 | 3 | 1998–2006 | 0.42 | M-v | 3 | MPC | 19342 | 1998 $RW_{10}$ |
| 1998 $RS_{12}$ | 18.7 | 0.15 | 20060922 | 1.75035 | 17.65188 | 324.89830 | 0.15712 | 0.2650541 | 2.5469339 | 32 | 4 | 1994–2006 | 0.49 | M-v | 3 | MPC | 03145 | 1998 $RS_{12}$ |
| 1998 $RM_{14}$ | 15.1 | 0.15 | 20060922 | 98.55110 | 225.92274 | 160.26300 | 5.12229 | 0.0873733 | 3.2424796 | 44 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 84456 | 1998 $RM_{14}$ |
| 1998 $RP_{15}$ | 17.1 | 0.15 | 20060922 | 67.39254 | 256.07506 | 0.99329 | 2.91730 | 0.0461090 | 2.5835218 | 28 | 3 | 1998–2005 | 0.48 | M-v | 2 | MPC | 99892 | 1998 $RP_{15}$ |
| 1998 $RS_{15}$ | 17.2 | 0.15 | 20060922 | 210.48957 | 75.49222 | 234.74403 | 3.63257 | 0.1826127 | 2.1751680 | 55 | 4 | 1995–2004 | 0.67 | M-v | 2 | MPC | 66071 | 1998 $RS_{15}$ |
| 1998 $RA_{16}$ | 15.8 | 0.15 | 20060922 | 76.80283 | 231.00947 | 106.63108 | 3.35376 | 0.1874130 | 2.3976738 | 152 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 66071 | 1998 $RA_{16}$ |
| 1998 $RH_{20}$ | 16.0 | 0.15 | 20060922 | 265.92257 | 148.10801 | 199.45870 | 7.29345 | 0.2290403 | 2.7695018 | 47 | 4 | 1998–2006 | 0.76 | M-v | 2 | MPC | 01970 | 1998 $RH_{20}$ |
| 1998 $RH_{21}$ | 16.8 | 0.15 | 20060922 | 348.52528 | 18.53169 | 344.21289 | 5.73963 | 0.1186934 | 2.5311777 | 62 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 04111 | 1998 $RH_{21}$ |
| 1998 $RM_{22}$ | 16.6 | 0.15 | 20060922 | 55.89707 | 6.16564 | 338.70934 | 4.34988 | 0.2008989 | 2.4027599 | 59 | 4 | 1998–2006 | 0.66 | M-v | 2 | MPC | 62226 | 1998 $RM_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $RB_{23}$ | 15.8 | 0.15 | 20060922 | 34.28683 | 329.86043 | 30.34385 | 3.56671 | 0.2349265 | 2.4250472 | 133 | 4 | 1993–2006 | 0.56 | M-v | 2 | MPC | 41542 | 1998 $RB_{23}$ |
| 1998 $RN_{26}$ | 16.3 | 0.15 | 20060922 | 328.39037 | 238.06270 | 155.75916 | 11.75732 | 0.2893050 | 2.5339871 | 105 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 04111 | 1998 $RN_{26}$ |
| 1998 $RR_{27}$ | 16.2 | 0.15 | 20060922 | 4.13371 | 107.69711 | 220.63546 | 5.35188 | 0.1454866 | 2.5489718 | 63 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 04111 | 1998 $RR_{27}$ |
| 1998 $RU_{31}$ | 16.5 | 0.15 | 19980904 | 340.69972 | 189.43539 | 194.56514 | 9.83669 | 0.3006378 | 3.0252773 | 19 | 1 | 55 days | 0.85 | | | MPC | | 1998 $RU_{31}$ |
| 1998 $RA_{32}$ | 16.4 | 0.15 | 20060922 | 347.44395 | 25.28382 | 289.37169 | 3.64148 | 0.2232991 | 2.6102904 | 50 | 3 | 1998–2005 | 0.63 | M-v | 3 | MPC | 47739 | 1998 $RA_{32}$ |
| 1998 $RB_{41}$ | 16.5 | 0.15 | 20060922 | 11.18975 | 355.63839 | 342.25673 | 9.32501 | 0.1449789 | 2.5224926 | 149 | 3 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04111 | 1998 $RB_{41}$ |
| 1998 $RE_{43}$ | 16.9 | 0.15 | 20060922 | 1.58788 | 6.88430 | 324.87114 | 4.16837 | 0.2894289 | 2.5489336 | 75 | 3 | 1998–2006 | 0.59 | M-v | 3 | MPC | 04111 | 1998 $RE_{43}$ |
| 1998 $RX_{43}$ | 16.4 | 0.15 | 20060922 | 26.44798 | 3.53807 | 349.21214 | 8.36056 | 0.2494279 | 2.4638790 | 91 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 04111 | 1998 $RX_{43}$ |
| 1998 $RV_{46}$ | 16.5 | 0.15 | 20060922 | 99.09992 | 32.79818 | 306.37778 | 4.28435 | 0.2307367 | 2.3342173 | 123 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 90006 | 1998 $RV_{46}$ |
| 1998 $RL_{47}$ | 15.8 | 0.15 | 20060922 | 52.80049 | 59.25667 | 271.64749 | 3.67822 | 0.0940248 | 2.4526202 | 122 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 62227 | 1998 $RL_{47}$ |
| 1998 $RE_{48}$ | 16.8 | 0.15 | 20060922 | 185.85534 | 21.40759 | 302.19472 | 2.96056 | 0.1326717 | 2.2056794 | 49 | 7 | 1995–2005 | 0.70 | M-v | 1 | MPC | 93727 | 1998 $RE_{48}$ |
| 1998 $RH_{48}$ | 17.3 | 0.15 | 20060922 | 343.77788 | 122.43009 | 244.28443 | 2.27992 | 0.2466728 | 2.5459457 | 85 | 4 | 1990–2006 | 0.62 | M-v | 2 | MPC | 04111 | 1998 $RH_{48}$ |
| 1998 $RX_{48}$ | 16.7 | 0.15 | 20060922 | 52.68150 | 139.70238 | 184.92877 | 3.97504 | 0.1518436 | 2.4548958 | 88 | 5 | 1998–2006 | 0.61 | M-v | 1 | MPC | 04111 | 1998 $RX_{48}$ |
| 1998 $RB_{49}$ | 17.1 | 0.15 | 20060922 | 354.24823 | 173.82022 | 180.85661 | 5.17727 | 0.2564375 | 2.5365999 | 161 | 5 | 1994–2006 | 0.55 | M-v | 2 | MPC | 04111 | 1998 $RB_{49}$ |
| 1998 $RB_{51}$ | 15.5 | 0.15 | 20060922 | 154.96859 | 55.99039 | 338.69154 | 9.78532 | 0.1291459 | 3.0493822 | 61 | 3 | 1998–2006 | 0.67 | M-v | 2 | MPC | 99892 | 1998 $RB_{51}$ |
| 1998 $RE_{51}$ | 16.3 | 0.15 | 20060922 | 106.66186 | 105.56915 | 230.13738 | 3.59375 | 0.1951855 | 2.3277709 | 94 | 6 | 1998–2006 | 0.66 | M-v | 1 | MPC | 97338 | 1998 $RE_{51}$ |
| 1998 $RH_{53}$ | 17.4 | 0.15 | 20060922 | 31.00956 | 35.73678 | 351.45345 | 1.94869 | 0.2001946 | 2.4083795 | 55 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 66072 | 1998 $RH_{53}$ |
| 1998 $RX_{56}$ | 16.8 | 0.15 | 20060922 | 114.80274 | 100.79602 | 193.20096 | 4.68379 | 0.2156895 | 2.3684861 | 67 | 6 | 1991–2006 | 0.71 | M-v | 1 | MPC | 87341 | 1998 $RX_{56}$ |
| 1998 $RR_{58}$ | 16.7 | 0.15 | 20060922 | 34.11916 | 16.97524 | 333.12595 | 2.28813 | 0.2278639 | 2.4564136 | 77 | 4 | 1995–2006 | 0.60 | M-v | 2 | MPC | 47741 | 1998 $RR_{58}$ |
| 1998 $RY_{59}$ | 16.1 | 0.15 | 20060922 | 52.12452 | 90.19905 | 319.09509 | 4.05282 | 0.1587149 | 2.3359681 | 61 | 4 | 1998–2006 | 0.62 | M-v | 1 | MPC | 90006 | 1998 $RY_{59}$ |
| 1998 $RJ_{63}$ | 14.4 | 0.15 | 20060922 | 9.05635 | 257.67536 | 91.36226 | 4.10338 | 0.2442319 | 3.9795301 | 94 | 4 | 1998–2006 | 0.49 | M-v | 1 | MPC | 03145 | 1998 $RJ_{63}$ |
| 1998 $RD_{64}$ | 16.4 | 0.15 | 20060922 | 316.67348 | 12.24097 | 24.42432 | 4.41903 | 0.2417007 | 2.5687392 | 74 | 5 | 1994–2006 | 0.64 | M-v | 2 | MPC | 04111 | 1998 $RD_{64}$ |
| 1998 $RK_{64}$ | 16.2 | 0.15 | 20060922 | 282.06067 | 3.16164 | 13.45842 | 1.83475 | 0.2491635 | 2.6930141 | 57 | 2 | 1998–2004 | 0.58 | M-v | 4 | MPC | 77372 | 1998 $RK_{64}$ |
| 1998 $RE_{66}$ | 16.1 | 0.15 | 20060922 | 337.22756 | 7.52075 | 357.36119 | 14.02502 | 0.1914102 | 2.5735171 | 74 | 3 | 1998–2006 | 0.60 | M-v | 3 | MPC | 04111 | 1998 $RE_{66}$ |
| 1998 $RY_{69}$ | 17.3 | 0.15 | 20060922 | 359.42510 | 345.16344 | 18.27599 | 4.22483 | 0.2677800 | 2.5171364 | 171 | 3 | 1998–2006 | 0.54 | M-v | 2 | MPC | 04111 | 1998 $RY_{69}$ |
| 1998 $RE_{70}$ | 15.8 | 0.15 | 20060922 | 331.18811 | 156.49962 | 150.08329 | 5.42960 | 0.3283587 | 2.6648923 | 75 | 4 | 1998–2006 | 0.64 | M-v | 2 | MPC | 01971 | 1998 $RE_{70}$ |
| 1998 $RG_{70}$ | 17.0 | 0.15 | 20060922 | 120.88946 | 211.66445 | 122.12820 | 3.62693 | 0.1794947 | 2.3060978 | 57 | 5 | 1991–2005 | 0.67 | M-v | 2 | MPC | 04111 | 1998 $RG_{70}$ |
| 1998 $RH_{70}$ | 16.1 | 0.15 | 20060922 | 14.70945 | 316.06098 | 91.29429 | 3.78931 | 0.1924092 | 2.4143123 | 79 | 3 | 1998–2006 | 0.52 | M-v | 2 | MPC | 41544 | 1998 $RH_{70}$ |
| 1998 $RN_{74}$ | 16.4 | 0.15 | 20060922 | 315.06250 | 227.80026 | 196.94068 | 11.99849 | 0.2800456 | 2.5469631 | 74 | 4 | 1998–2006 | 0.70 | M-v | 2 | MPC | 50391 | 1998 $RN_{74}$ |
| 1998 $RD_{78}$ | 16.7 | 0.15 | 20060922 | 28.04943 | 251.32479 | 123.15993 | 3.00913 | 0.1948435 | 2.4433628 | 60 | 4 | 1998–2006 | 0.61 | M-v | 3 | MPC | 66073 | 1998 $RD_{78}$ |
| 1998 $RR_{78}$ | 15.6 | 0.15 | 20060922 | 30.38626 | 332.78018 | 34.01077 | 7.21522 | 0.1569305 | 2.4462784 | 150 | 5 | 1994–2006 | 0.51 | M-v | 2 | MPC | 62228 | 1998 $RR_{78}$ |
| 1998 $RP_{79}$ | 14.5 | 0.15 | 20060922 | 167.42668 | 171.32381 | 21.46265 | 15.40247 | 0.0445190 | 2.5358184 | 210 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04111 | 1998 $RP_{79}$ |
| 1998 $RT_{80}$ | 17.5 | 0.15 | 20060922 | 175.84560 | 347.35447 | 355.70723 | 2.27311 | 0.2017240 | 2.1934317 | 26 | 4 | 1998–2005 | 0.36 | M-v | 0 | MPC | 64654 | 1998 $RT_{80}$ |
| 1998 $SM_{2}$ | 16.5 | 0.15 | 20060922 | 268.34447 | 65.80364 | 27.14822 | 20.45132 | 0.1237713 | 1.9716180 | 67 | 4 | 1998–2006 | 0.69 | M-v | 2 | MPC | 77373 | 1998 $SM_{2}$ |
| 1998 $SV_{4}$ | 18.1 | 0.15 | 20060922 | 110.45564 | 359.48383 | 177.26469 | 53.29677 | 0.6420102 | 0.8164793 | 206 | 4 | 1998–2006 | 0.58 | M-v | 3 | MPC | 04112 | 1998 $SV_{4}$ |
| 1998 $SN_{5}$ | 16.9 | 0.15 | 20060922 | 210.50586 | 246.04827 | 171.35309 | 4.55831 | 0.0517731 | 2.7634267 | 29 | 6 | 1996–2006 | 0.61 | M-v | 1 | MPC | 01971 | 1998 $SN_{5}$ |
| 1998 $SB_{7}$ | 17.4 | 0.15 | 20060922 | 155.75749 | 92.63137 | 179.37882 | 6.34609 | 0.1009097 | 2.3402903 | 27 | 3 | 1998–2005 | 0.35 | M-v | 3 | MPC | 88668 | 1998 $SB_{7}$ |
| 1998 $SP_{8}$ | 17.6 | 0.15 | 20060922 | 29.78468 | 353.92343 | 49.38475 | 0.17157 | 0.1284033 | 2.3944923 | 45 | 5 | 1998–2006 | 0.43 | M-v | 0 | MPC | 87341 | 1998 $SP_{8}$ |
| 1998 $SC_{9}$ | 15.9 | 0.15 | 20060922 | 84.08399 | 301.04922 | 15.82469 | 6.78969 | 0.1179974 | 2.4282238 | 131 | 5 | 1993–2006 | 0.58 | M-v | 2 | MPC | 66073 | 1998 $SC_{9}$ |
| 1998 $SJ_{11}$ | 16.7 | 0.15 | 20060922 | 106.99366 | 220.03445 | 114.89499 | 5.60761 | 0.1515330 | 2.3390532 | 43 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 87341 | 1998 $SJ_{11}$ |
| 1998 $SW_{12}$ | 14.8 | 0.15 | 20060922 | 334.09400 | 303.64468 | 50.05904 | 32.41753 | 0.3037591 | 2.6078661 | 53 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 77373 | 1998 $SW_{12}$ |
| 1998 $SH_{13}$ | 17.6 | 0.15 | 20060922 | 339.13094 | 355.47281 | 31.29110 | 7.97745 | 0.2609331 | 2.5344061 | 28 | 3 | 1998–2006 | 0.64 | M-v | 3 | MPC | 37098 | 1998 $SH_{13}$ |
| 1998 $SA_{15}$ | 19.4 | 0.15 | 20060922 | 335.58075 | 331.06405 | 114.38553 | 7.09116 | 0.5587395 | 1.9162828 | 39 | 3 | 1998–2006 | 0.66 | M-v | 1 | MPC | 03146 | 1998 $SA_{15}$ |
| 1998 $SD_{15}$ | 18.9 | 0.15 | 20060922 | 63.59180 | 35.80493 | 183.98793 | 26.79322 | 0.3449940 | 0.9325066 | 132 | 3 | 1998–2006 | 0.71 | M-v | 4 | MPC | 47743 | 1998 $SD_{15}$ |
| 1998 $SL_{16}$ | 16.7 | 0.15 | 20060922 | 358.00154 | 348.70524 | 10.40399 | 11.45395 | 0.1588294 | 2.5342306 | 107 | 3 | 1998–2006 | 0.63 | M-v | 3 | MPC | 04112 | 1998 $SL_{16}$ |
| 1998 $SP_{18}$ | 17.6 | 0.15 | 20060922 | 37.68961 | 266.58735 | 172.20222 | 7.11145 | 0.0808307 | 2.3112728 | 29 | 5 | 1993–2005 | 0.41 | M-v | 1 | MPC | 04112 | 1998 $SP_{18}$ |
| 1998 $SO_{19}$ | 17.4 | 0.15 | 20060922 | 39.74106 | 147.70461 | 187.68831 | 2.46471 | 0.1908856 | 2.4475126 | 55 | 4 | 1998–2006 | 0.42 | M-v | 2 | MPC | 77373 | 1998 $SO_{19}$ |
| 1998 $SO_{20}$ | 17.0 | 0.15 | 20060922 | 66.43765 | 54.58872 | 352.21174 | 4.35917 | 0.1879974 | 2.3064728 | 101 | 5 | 1977–2005 | 0.51 | M-v | 0 | MPC | 90007 | 1998 $SO_{20}$ |
| 1998 $ST_{20}$ | 17.2 | 0.15 | 20060922 | 254.40233 | 284.18862 | 166.39756 | 2.76403 | 0.1475831 | 2.5895798 | 57 | 8 | 1994–2006 | 0.49 | M-v | 0 | MPC | 87342 | 1998 $ST_{20}$ |
| 1998 $SY_{20}$ | 17.1 | 0.15 | 20060922 | 251.97494 | 274.72895 | 191.71929 | 4.95970 | 0.1617979 | 2.5889763 | 40 | 5 | 1996–2006 | 0.47 | M-v | 0 | MPC | 04112 | 1998 $SY_{20}$ |
| 1998 $SB_{21}$ | 17.9 | 0.15 | 20060922 | 89.61170 | 171.67049 | 217.06729 | 0.29654 | 0.1239698 | 2.2983999 | 58 | 4 | 1998–2005 | 0.52 | M-v | 1 | MPC | 97338 | 1998 $SB_{21}$ |
| 1998 $SH_{21}$ | 16.9 | 0.15 | 20060922 | 201.61788 | 191.71351 | 28.38293 | 2.63989 | 0.1605242 | 2.3891781 | 61 | 6 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87342 | 1998 $SH_{21}$ |
| 1998 $SD_{27}$ | 17.0 | 0.15 | 20060922 | 36.80017 | 158.86405 | 215.35818 | 1.84470 | 0.2471449 | 2.4306943 | 69 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 62228 | 1998 $SD_{27}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $ST_{27}$ | 19.5 | 0.15 | 20060922 | 146.69697 | 322.42211 | 197.61161 | 21.04991 | 0.5300228 | 0.8193281 | 297 | 3 | 1998–2004 | 0.57 | M-v | 0 | MPC | 70219 | 1998 $ST_{27}$ |
| 1998 $SP_{29}$ | 16.6 | 0.15 | 20060922 | 338.41779 | 287.25886 | 89.87787 | 2.34862 | 0.1866103 | 2.5576499 | 123 | 6 | 1990–2006 | 0.53 | M-v | 1 | MPC | 04112 | 1998 $SP_{29}$ |
| 1998 $SR_{30}$ | 16.8 | 0.15 | 20060922 | 189.25172 | 239.98360 | 163.51875 | 2.17978 | 0.0649312 | 2.9209974 | 22 | 4 | 1998–2006 | 0.31 | M-v | 0 | MPC | 01971 | 1998 $SR_{30}$ |
| 1998 $SN_{31}$ | 16.6 | 0.15 | 20060922 | 45.89616 | 192.99432 | 170.87760 | 6.36868 | 0.0929083 | 2.3879503 | 34 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 62228 | 1998 $SN_{31}$ |
| 1998 $ST_{31}$ | 17.0 | 0.15 | 20060922 | 351.72381 | 183.10105 | 167.32375 | 12.23418 | 0.1133649 | 2.5330828 | 42 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 03146 | 1998 $ST_{31}$ |
| 1998 $SC_{33}$ | 17.2 | 0.15 | 20060922 | 329.90105 | 66.22808 | 354.97373 | 18.03119 | 0.1060850 | 1.8970622 | 54 | 4 | 1998–2006 | 0.61 | M-v | 1 | MPC | 01971 | 1998 $SC_{33}$ |
| 1998 $SL_{34}$ | 16.0 | 0.15 | 20060922 | 347.43658 | 343.14751 | 20.16562 | 14.45232 | 0.2014456 | 2.5424286 | 71 | 5 | 1994–2006 | 0.55 | M-v | 2 | MPC | 04112 | 1998 $SL_{34}$ |
| 1998 $SZ_{34}$ | 16.9 | 0.15 | 20060922 | 330.47756 | 26.95262 | 1.92182 | 15.84842 | 0.2336842 | 2.5561676 | 44 | 3 | 1998–2006 | 0.74 | M-v | 3 | MPC | 04112 | 1998 $SZ_{34}$ |
| 1998 $SY_{35}$ | 16.8 | 0.15 | 20060922 | 41.02930 | 155.64779 | 227.27074 | 1.73344 | 0.1976918 | 2.3993174 | 46 | 5 | 1996–2006 | 0.61 | M-v | 1 | MPC | 62228 | 1998 $SY_{35}$ |
| 1998 $SE_{36}$ | 19.6 | 0.15 | 20060922 | 182.36400 | 27.09407 | 199.30409 | 11.67513 | 0.0990542 | 1.3414241 | 112 | 3 | 1998–2006 | 0.50 | M-v | 2 | MPC | 66073 | 1998 $SE_{36}$ |
| 1998 $SA_{38}$ | 17.4 | 0.15 | 20060922 | 5.95529 | 114.47904 | 264.99355 | 0.43182 | 0.1905366 | 2.4568589 | 73 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 37101 | 1998 $SA_{38}$ |
| 1998 $SG_{39}$ | 16.8 | 0.15 | 20060922 | 211.52103 | 206.91840 | 358.07985 | 2.84873 | 0.1634763 | 2.3699014 | 68 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 87342 | 1998 $SG_{39}$ |
| 1998 $SL_{40}$ | 17.9 | 0.15 | 20060922 | 328.09083 | 44.08324 | 0.60436 | 7.17853 | 0.2312250 | 2.5260897 | 43 | 4 | 1994–2006 | 0.39 | M-v | 3 | MPC | 47744 | 1998 $SL_{40}$ |
| 1998 $SQ_{41}$ | 16.4 | 0.15 | 20060922 | 257.55151 | 309.32947 | 355.35867 | 1.87330 | 0.1120158 | 2.9410658 | 36 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 55841 | 1998 $SQ_{41}$ |
| 1998 $SX_{41}$ | 17.3 | 0.15 | 20060922 | 37.84752 | 57.16571 | 305.83266 | 0.38870 | 0.1929607 | 2.4131007 | 53 | 4 | 1998–2006 | 0.49 | M-v | 1 | MPC | 66073 | 1998 $SX_{41}$ |
| 1998 $SC_{42}$ | 16.2 | 0.15 | 20060922 | 23.18682 | 30.84765 | 19.76125 | 6.48715 | 0.0994639 | 2.4150427 | 65 | 6 | 1996–2006 | 0.66 | M-v | 1 | MPC | 87342 | 1998 $SC_{42}$ |
| 1998 $SM_{42}$ | 16.4 | 0.15 | 20060922 | 190.82609 | 342.71509 | 203.63233 | 1.52298 | 0.1190560 | 2.4786332 | 95 | 4 | 1998–2006 | 0.52 | M-v | 3 | MPC | 04112 | 1998 $SM_{42}$ |
| 1998 $SV_{43}$ | 14.9 | 0.15 | 20060922 | 161.20715 | 61.02042 | 299.29099 | 14.93020 | 0.2473398 | 3.1325001 | 29 | 3 | 1998–2005 | 0.56 | M-v | 3 | MPC | 30283 | 1998 $SV_{43}$ |
| 1998 $SX_{44}$ | 16.7 | 0.15 | 20060922 | 355.90938 | 159.84135 | 183.44220 | 4.90071 | 0.2482705 | 2.5582935 | 81 | 3 | 1998–2006 | 0.66 | M-v | 3 | MPC | 04112 | 1998 $SX_{44}$ |
| 1998 $SY_{44}$ | 16.1 | 0.15 | 20060922 | 33.64820 | 74.47748 | 38.00536 | 0.46415 | 0.0986394 | 3.2636404 | 18 | 3 | 1998–2006 | 0.31 | M-v | 4 | MPC | 93729 | 1998 $SY_{44}$ |
| 1998 $ST_{47}$ | 16.4 | 0.15 | 20060922 | 5.93846 | 52.12230 | 228.34612 | 1.55658 | 0.1609924 | 2.7209878 | 55 | 6 | 1996–2005 | 0.51 | M-v | 0 | MPC | 73940 | 1998 $ST_{47}$ |
| 1998 $SY_{47}$ | 17.2 | 0.15 | 20060922 | 331.85664 | 281.30655 | 207.87204 | 4.52476 | 0.1828290 | 2.3937758 | 45 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 87342 | 1998 $SY_{47}$ |
| 1998 $SH_{48}$ | 17.7 | 0.15 | 20060922 | 300.09061 | 69.41549 | 359.64316 | 2.07628 | 0.1940736 | 2.5828648 | 50 | 4 | 1998–2006 | 0.42 | M-v | 2 | MPC | 04112 | 1998 $SH_{48}$ |
| 1998 $SW_{48}$ | 16.3 | 0.15 | 20060922 | 122.29163 | 216.33687 | 6.70917 | 4.22605 | 0.1971846 | 2.5974746 | 65 | 4 | 1998–2006 | 0.42 | M-v | 2 | MPC | 87342 | 1998 $SW_{48}$ |
| 1998 $SR_{50}$ | 16.9 | 0.15 | 20060922 | 40.18954 | 20.77027 | 2.41312 | 2.68672 | 0.1915838 | 2.4211607 | 42 | 4 | 1992–2006 | 0.65 | M-v | 2 | MPC | 47745 | 1998 $SR_{50}$ |
| 1998 $SS_{50}$ | 17.2 | 0.15 | 20060922 | 82.73756 | 318.70751 | 2.28234 | 2.61347 | 0.2279365 | 2.4190027 | 27 | 6 | 1993–2006 | 0.48 | M-v | 1 | MPC | 62228 | 1998 $SS_{50}$ |
| 1998 $SY_{50}$ | 17.5 | 0.15 | 20060922 | 345.77845 | 6.59137 | 356.17225 | 1.38407 | 0.1331035 | 2.5852387 | 33 | 4 | 1998–2006 | 0.34 | M-v | 2 | MPC | 03146 | 1998 $SY_{50}$ |
| 1998 $SP_{51}$ | 17.2 | 0.15 | 20060922 | 85.23354 | 47.14948 | 338.12985 | 1.74355 | 0.1985187 | 2.3276240 | 65 | 2 | 1998–2005 | 0.51 | M-v | 3 | MPC | 90007 | 1998 $SP_{51}$ |
| 1998 $SW_{56}$ | 16.9 | 0.15 | 20060922 | 40.91382 | 2.72553 | 15.96065 | 5.52039 | 0.2306004 | 2.4010843 | 45 | 3 | 1998–2004 | 0.76 | M-v | 4 | MPC | 41546 | 1998 $SW_{56}$ |
| 1998 $SG_{63}$ | 17.2 | 0.15 | 20060922 | 72.72366 | 304.62890 | 81.62009 | 4.31798 | 0.1855874 | 2.3242958 | 43 | 4 | 1998–2005 | 0.77 | M-v | 2 | MPC | 84467 | 1998 $SG_{63}$ |
| 1998 $SX_{64}$ | 16.4 | 0.15 | 20060922 | 73.79480 | 295.74480 | 77.08255 | 4.08305 | 0.1979701 | 2.3644469 | 72 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 87342 | 1998 $SX_{64}$ |
| 1998 $SM_{68}$ | 17.0 | 0.15 | 20060922 | 33.91561 | 120.33524 | 269.08671 | 5.50975 | 0.1541832 | 2.3843695 | 63 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 47746 | 1998 $SM_{68}$ |
| 1998 $SV_{70}$ | 16.8 | 0.15 | 20060922 | 31.69329 | 17.02601 | 33.46765 | 5.06805 | 0.1469084 | 2.3924778 | 36 | 4 | 1996–2004 | 0.72 | M-v | 1 | MPC | 47746 | 1998 $SV_{70}$ |
| 1998 $SA_{72}$ | 16.2 | 0.15 | 20060922 | 342.31802 | 199.28688 | 124.24821 | 2.80157 | 0.1530224 | 2.6666562 | 24 | 2 | 2002–2003 | 0.48 | M-v | 4 | MPC | 01971 | 1998 $SA_{72}$ |
| 1998 $SN_{72}$ | 15.8 | 0.15 | 20060922 | 43.38241 | 339.24155 | 45.00642 | 3.97125 | 0.1948179 | 2.4106054 | 51 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87342 | 1998 $SN_{72}$ |
| 1998 $SD_{74}$ | 17.1 | 0.15 | 20060922 | 37.60661 | 318.45727 | 46.56505 | 5.32782 | 0.2083599 | 2.4477364 | 34 | 4 | 1998–2006 | 0.62 | M-v | 3 | MPC | 93731 | 1998 $SD_{74}$ |
| 1998 $SA_{77}$ | 14.1 | 0.15 | 20060922 | 7.17681 | 96.33307 | 254.46821 | 5.09030 | 0.3076116 | 3.9765533 | 103 | 4 | 1990–2006 | 0.53 | M-v | 2 | MPC | 04112 | 1998 $SA_{77}$ |
| 1998 $SU_{77}$ | 15.9 | 0.15 | 20060922 | 22.69592 | 314.17956 | 78.16579 | 3.66613 | 0.1922164 | 2.4147107 | 89 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 62229 | 1998 $SU_{77}$ |
| 1998 $SN_{78}$ | 16.3 | 0.15 | 20060922 | 140.75190 | 90.60515 | 219.76246 | 5.99029 | 0.1336767 | 2.3070389 | 83 | 3 | 1998–2005 | 0.58 | M-v | 3 | MPC | 90007 | 1998 $SN_{78}$ |
| 1998 $SV_{79}$ | 15.1 | 0.15 | 20060922 | 177.07286 | 118.80492 | 192.46986 | 0.40900 | 0.1895861 | 3.1962321 | 81 | 7 | 1996–2006 | 0.51 | M-v | 0 | MPC | 97339 | 1998 $SV_{79}$ |
| 1998 $SE_{83}$ | 17.2 | 0.15 | 20060922 | 339.85257 | 97.82706 | 266.03395 | 0.98091 | 0.2394757 | 2.5639721 | 57 | 4 | 1998–2006 | 0.60 | M-v | 3 | MPC | 04112 | 1998 $SE_{83}$ |
| 1998 $SQ_{83}$ | 16.5 | 0.15 | 20060922 | 92.55974 | 326.47984 | 0.63643 | 2.91515 | 0.1867523 | 2.3719041 | 51 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 84469 | 1998 $SQ_{83}$ |
| 1998 $ST_{86}$ | 15.0 | 0.15 | 20060922 | 148.07276 | 34.19170 | 333.10607 | 4.46804 | 0.1674983 | 3.1757822 | 92 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 01971 | 1998 $ST_{86}$ |
| 1998 $SU_{91}$ | 15.9 | 0.15 | 20060922 | 197.02010 | 322.41201 | 330.00684 | 4.17926 | 0.1973260 | 2.2322644 | 110 | 4 | 1998–2006 | 0.62 | M-v | 2 | MPC | 97339 | 1998 $SU_{91}$ |
| 1998 $SS_{92}$ | 16.3 | 0.15 | 20060922 | 20.47466 | 36.84541 | 3.25567 | 6.27475 | 0.1276425 | 2.4161646 | 55 | 4 | 1998–2006 | 0.57 | M-v | 3 | MPC | 62229 | 1998 $SS_{92}$ |
| 1998 $SF_{93}$ | 16.9 | 0.15 | 20060922 | 33.68549 | 180.51496 | 190.63436 | 4.30835 | 0.1420130 | 2.4330089 | 29 | 3 | 1998–2004 | 0.62 | M-v | 3 | MPC | 60512 | 1998 $SF_{93}$ |
| 1998 $SS_{96}$ | 14.9 | 0.15 | 20060922 | 214.72106 | 318.80272 | 22.53084 | 9.43682 | 0.0732308 | 2.9986094 | 44 | 4 | 1996–2006 | 0.68 | M-v | 1 | MPC | 97339 | 1998 $SS_{96}$ |
| 1998 $SC_{97}$ | 15.3 | 0.15 | 20060922 | 121.43769 | 252.17324 | 165.92213 | 6.82871 | 0.1726577 | 3.1318084 | 66 | 5 | 1995–2006 | 0.52 | M-v | 0 | MPC | 01971 | 1998 $SC_{97}$ |
| 1998 $SB_{99}$ | 17.0 | 0.15 | 20060922 | 69.68918 | 130.19554 | 217.47875 | 1.53121 | 0.1958134 | 2.3942976 | 42 | 4 | 1998–2006 | 0.68 | M-v | 3 | MPC | 39957 | 1998 $SB_{99}$ |
| 1998 $SW_{99}$ | 16.5 | 0.15 | 20060922 | 152.24940 | 344.84732 | 313.00082 | 3.93038 | 0.2586838 | 2.2960796 | 63 | 5 | 1997–2005 | 0.55 | M-v | 1 | MPC | 90008 | 1998 $SW_{99}$ |
| 1998 $SX_{99}$ | 16.5 | 0.15 | 20060922 | 312.06606 | 142.82736 | 270.82693 | 3.26614 | 0.2294347 | 2.5642126 | 90 | 4 | 1998–2006 | 0.62 | M-v | 3 | MPC | 04112 | 1998 $SX_{99}$ |
| 1998 $SS_{101}$ | 15.8 | 0.15 | 20060922 | 2.84341 | 337.03306 | 2.68917 | 5.83624 | 0.2210212 | 2.5544252 | 163 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04112 | 1998 $SS_{101}$ |
| 1998 $SY_{101}$ | 16.7 | 0.15 | 20060922 | 8.63768 | 1.65942 | 11.22903 | 7.88113 | 0.2175700 | 2.4902680 | 101 | 4 | 1996–2006 | 0.53 | M-v | 2 | MPC | 47748 | 1998 $SY_{101}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $SB_{104}$ | 16.7 | 0.15 | 20060922 | 288.07309 | 296.82568 | 154.10419 | 5.30414 | 0.2833175 | 2.5595029 | 47 | 5 | 1990–2006 | 0.56 | M-v | 1 | MPC | 04112 | 1998 $SB_{104}$ |
| 1998 $SA_{105}$ | 15.5 | 0.15 | 20060922 | 169.62976 | 305.27903 | 48.61998 | 5.54442 | 0.2439093 | 3.1172490 | 31 | 3 | 1998–2006 | 0.65 | M-v | 3 | MPC | 99894 | 1998 $SA_{105}$ |
| 1998 $SF_{106}$ | 16.5 | 0.15 | 20060922 | 58.43823 | 10.81145 | 24.94552 | 6.91016 | 0.1089434 | 2.3467109 | 52 | 4 | 1998–2005 | 0.67 | M-v | 1 | MPC | 88670 | 1998 $SF_{106}$ |
| 1998 $SP_{111}$ | 16.5 | 0.15 | 20060922 | 120.38758 | 318.86399 | 22.26890 | 5.12912 | 0.1655359 | 2.3086034 | 110 | 4 | 1998–2005 | 0.49 | M-v | 1 | MPC | 90008 | 1998 $SP_{111}$ |
| 1998 $SP_{114}$ | 16.1 | 0.15 | 20060922 | 15.49169 | 256.10463 | 50.25411 | 4.57199 | 0.2830675 | 2.5714503 | 82 | 3 | 1998–2006 | 0.59 | M-v | 2 | MPC | 04112 | 1998 $SP_{114}$ |
| 1998 $SU_{115}$ | 16.8 | 0.15 | 20060922 | 116.69859 | 353.58769 | 342.86948 | 2.46072 | 0.2296648 | 2.3183600 | 96 | 4 | 1998–2005 | 0.50 | M-v | 2 | MPC | 90008 | 1998 $SU_{115}$ |
| 1998 $SL_{116}$ | 15.7 | 0.15 | 20060922 | 334.60399 | 353.54386 | 355.68212 | 7.54139 | 0.1959601 | 2.6202565 | 83 | 4 | 1998–2005 | 0.62 | M-v | 2 | MPC | 53591 | 1998 $SL_{116}$ |
| 1998 $SF_{118}$ | 16.2 | 0.15 | 20060922 | 1.66954 | 151.40372 | 209.62552 | 5.59569 | 0.1257275 | 2.5383927 | 110 | 4 | 1998–2006 | 0.52 | M-v | 3 | MPC | 77375 | 1998 $SF_{118}$ |
| 1998 $SU_{119}$ | 15.8 | 0.15 | 20060922 | 330.00077 | 10.36939 | 21.37858 | 14.94665 | 0.2160720 | 2.5562578 | 114 | 4 | 1998–2006 | 0.62 | M-v | 2 | MPC | 04112 | 1998 $SU_{119}$ |
| 1998 $SF_{120}$ | 14.7 | 0.15 | 20060922 | 206.76272 | 290.17123 | 7.50623 | 12.46890 | 0.1580531 | 3.1701221 | 39 | 3 | 1998–2004 | 0.64 | M-v | 2 | MPC | 71972 | 1998 $SF_{120}$ |
| 1998 $SR_{121}$ | 15.7 | 0.15 | 20060922 | 12.61357 | 348.09740 | 3.08125 | 11.37326 | 0.1676004 | 2.5290726 | 159 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04112 | 1998 $SR_{121}$ |
| 1998 $SW_{121}$ | 16.3 | 0.15 | 20060922 | 105.96638 | 26.49776 | 326.33687 | 2.69186 | 0.1821919 | 2.3247015 | 96 | 5 | 1998–2005 | 0.58 | M-v | 1 | MPC | 97340 | 1998 $SW_{121}$ |
| 1998 $SQ_{122}$ | 17.0 | 0.15 | 20060922 | 344.59342 | 144.66744 | 214.32285 | 3.63958 | 0.2782209 | 2.5728106 | 72 | 3 | 1998–2006 | 0.57 | M-v | 3 | MPC | 04112 | 1998 $SQ_{122}$ |
| 1998 $SO_{124}$ | 14.9 | 0.15 | 20060922 | 189.03359 | 167.34256 | 188.27374 | 10.21505 | 0.2952274 | 3.0529200 | 93 | 4 | 1997–2003 | 0.60 | M-v | 2 | MPC | 74588 | 1998 $SO_{124}$ |
| 1998 $SE_{125}$ | 16.9 | 0.15 | 20060922 | 51.57303 | 173.43072 | 162.44741 | 4.24890 | 0.2292648 | 2.4525586 | 50 | 5 | 1994–2006 | 0.63 | M-v | 1 | MPC | 77375 | 1998 $SE_{125}$ |
| 1998 $SJ_{125}$ | 16.3 | 0.15 | 20060922 | 7.22484 | 312.75247 | 35.94973 | 8.96924 | 0.1849555 | 2.5370478 | 111 | 6 | 1994–2006 | 0.57 | M-v | 2 | MPC | 04112 | 1998 $SJ_{125}$ |
| 1998 $SS_{125}$ | 15.8 | 0.15 | 20060922 | 347.03834 | 175.82929 | 161.07621 | 8.09556 | 0.2062632 | 2.6037333 | 73 | 5 | 1995–2006 | 0.62 | M-v | 2 | MPC | 01972 | 1998 $SS_{125}$ |
| 1998 $SB_{137}$ | 16.4 | 0.15 | 20060922 | 85.47373 | 247.04776 | 98.93635 | 4.50688 | 0.2470220 | 2.3642625 | 61 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87343 | 1998 $SB_{137}$ |
| 1998 $SD_{140}$ | 16.2 | 0.15 | 20060922 | 359.12969 | 29.65000 | 352.68074 | 6.55590 | 0.2247169 | 2.5142375 | 126 | 5 | 1996–2006 | 0.53 | M-v | 2 | MPC | 04113 | 1998 $SD_{140}$ |
| 1998 $SW_{148}$ | 17.0 | 0.15 | 20060922 | 68.28613 | 355.48748 | 19.04054 | 2.53654 | 0.2163382 | 2.3526379 | 35 | 4 | 1996–2006 | 0.64 | M-v | 2 | MPC | 93733 | 1998 $SW_{148}$ |
| 1998 $SS_{151}$ | 16.1 | 0.15 | 20060922 | 44.66905 | 296.79384 | 71.42570 | 4.53059 | 0.1119343 | 2.4083610 | 56 | 4 | 1998–2006 | 0.53 | M-v | 3 | MPC | 97340 | 1998 $SS_{151}$ |
| 1998 $SC_{152}$ | 16.3 | 0.15 | 20060922 | 98.44766 | 262.39049 | 41.01956 | 1.83754 | 0.1826440 | 2.4006704 | 46 | 7 | 1997–2006 | 0.54 | M-v | 1 | MPC | 57678 | 1998 $SC_{152}$ |
| 1998 $SF_{152}$ | 16.8 | 0.15 | 20060922 | 61.51901 | 350.32918 | 27.09276 | 1.57290 | 0.1991386 | 2.3684366 | 48 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 90008 | 1998 $SF_{152}$ |
| 1998 $SL_{152}$ | 17.1 | 0.15 | 20060922 | 37.28412 | 102.62129 | 278.08490 | 1.19622 | 0.2286962 | 2.4172639 | 46 | 3 | 1998–2006 | 0.60 | M-v | 3 | MPC | 60513 | 1998 $SL_{152}$ |
| 1998 $SX_{153}$ | 17.0 | 0.15 | 20060922 | 304.81148 | 245.99465 | 161.16250 | 11.62012 | 0.2030498 | 2.5815202 | 47 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04113 | 1998 $SX_{153}$ |
| 1998 $ST_{154}$ | 16.5 | 0.15 | 20060922 | 107.39859 | 359.78497 | 334.44676 | 3.71836 | 0.2327025 | 2.3376684 | 129 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 90008 | 1998 $ST_{154}$ |
| 1998 $SQ_{161}$ | 15.5 | 0.15 | 20060922 | 348.63731 | 351.38511 | 33.31088 | 4.47715 | 0.1605078 | 2.5288572 | 183 | 5 | 1994–2006 | 0.48 | M-v | 2 | MPC | 62231 | 1998 $SQ_{161}$ |
| 1998 $SX_{162}$ | 16.8 | 0.15 | 20060922 | 76.06298 | 359.39184 | 2.80940 | 1.10551 | 0.1997832 | 2.3737625 | 57 | 6 | 1998–2006 | 0.59 | M-v | 1 | MPC | 97340 | 1998 $SX_{162}$ |
| 1998 $SX_{167}$ | 16.8 | 0.15 | 20060922 | 42.54012 | 304.75344 | 66.74616 | 3.08956 | 0.2509845 | 2.4198852 | 41 | 5 | 1998–2006 | 0.49 | M-v | 2 | MPC | 66076 | 1998 $SX_{167}$ |
| 1998 $SF_{170}$ | 16.8 | 0.15 | 20060922 | 44.20430 | 118.31557 | 261.10677 | 6.30540 | 0.1509164 | 2.4014690 | 43 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 77376 | 1998 $SF_{170}$ |
| 1998 $SN_{172}$ | 16.6 | 0.15 | 20060922 | 142.58225 | 55.54119 | 341.67623 | 3.01401 | 0.1371110 | 3.0784498 | 21 | 4 | 1993–2006 | 0.34 | M-v | 0 | MPC | 04113 | 1998 $SN_{172}$ |
| 1998 $TB_{2}$ | 16.4 | 0.15 | 20060922 | 32.30089 | 44.96880 | 324.40511 | 2.60639 | 0.1641368 | 2.4570135 | 79 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62231 | 1998 $TB_{2}$ |
| 1998 $TE_{3}$ | 16.3 | 0.15 | 20060922 | 359.77583 | 3.21899 | 337.78682 | 18.20274 | 0.0605653 | 1.9629363 | 115 | 3 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04113 | 1998 $TE_{3}$ |
| 1998 $TE_{7}$ | 16.5 | 0.15 | 20060922 | 221.80022 | 42.17625 | 18.63605 | 1.42970 | 0.2235681 | 2.7702721 | 56 | 3 | 1998–2005 | 0.60 | M-v | 3 | MPC | 55846 | 1998 $TE_{7}$ |
| 1998 $TL_{7}$ | 16.1 | 0.15 | 20060922 | 58.49167 | 307.24051 | 38.35722 | 3.12310 | 0.1973253 | 2.4394756 | 90 | 6 | 1997–2006 | 0.57 | M-v | 1 | MPC | 66076 | 1998 $TL_{7}$ |
| 1998 $TU_{8}$ | 16.3 | 0.15 | 20060922 | 252.58574 | 245.96122 | 174.10589 | 1.20192 | 0.0828855 | 2.7190543 | 33 | 5 | 1998–2005 | 0.44 | M-v | 0 | MPC | 16858 | 1998 $TU_{8}$ |
| 1998 $TS_{9}$ | 16.5 | 0.15 | 20060922 | 202.48220 | 151.09012 | 34.40690 | 5.76137 | 0.1194972 | 2.5313084 | 72 | 3 | 1998–2006 | 0.42 | M-v | 3 | MPC | 74589 | 1998 $TS_{9}$ |
| 1998 $TF_{11}$ | 16.1 | 0.15 | 20060922 | 232.63560 | 41.93451 | 19.67511 | 6.23108 | 0.0850544 | 2.7381538 | 31 | 4 | 1998–2005 | 0.45 | M-v | 1 | MPC | 03146 | 1998 $TF_{11}$ |
| 1998 $TO_{11}$ | 15.5 | 0.15 | 20060922 | 27.03328 | 328.55269 | 19.48851 | 2.35308 | 0.2864999 | 3.9620832 | 59 | 4 | 1998–2006 | 0.32 | M-v | 0 | MPC | 04113 | 1998 $TO_{11}$ |
| 1998 $TD_{14}$ | 16.6 | 0.15 | 20060922 | 166.58823 | 233.35275 | 9.44084 | 2.86466 | 0.1421315 | 2.4075711 | 30 | 4 | 1998–2006 | 0.40 | M-v | 1 | MPC | 93734 | 1998 $TD_{14}$ |
| 1998 $TP_{15}$ | 15.2 | 0.15 | 20060922 | 190.65670 | 319.43270 | 222.62772 | 12.76284 | 0.1000802 | 2.5612692 | 74 | 4 | 1998–2006 | 0.57 | M-v | 3 | MPC | 66076 | 1998 $TP_{15}$ |
| 1998 $TX_{15}$ | 16.8 | 0.15 | 20060922 | 134.08768 | 323.37415 | 319.62497 | 1.94071 | 0.2178686 | 2.3961736 | 58 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 97341 | 1998 $TX_{15}$ |
| 1998 $TF_{16}$ | 16.5 | 0.15 | 20060922 | 139.58772 | 291.82565 | 3.15205 | 2.53546 | 0.1858264 | 2.3695251 | 76 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 97341 | 1998 $TF_{16}$ |
| 1998 $TM_{16}$ | 16.6 | 0.15 | 20060922 | 62.45642 | 338.64113 | 3.09114 | 3.13785 | 0.2055556 | 2.4331972 | 22 | 3 | 1998–2006 | 0.39 | M-v | 3 | MPC | 66076 | 1998 $TM_{16}$ |
| 1998 $TV_{17}$ | 17.0 | 0.15 | 20060922 | 349.23733 | 282.26834 | 86.37798 | 1.19525 | 0.1685416 | 2.5305848 | 79 | 4 | 1998–2006 | 0.54 | M-v | 3 | MPC | 04113 | 1998 $TV_{17}$ |
| 1998 $TW_{18}$ | 16.2 | 0.15 | 20060922 | 24.28154 | 169.33871 | 203.78608 | 4.72288 | 0.1946630 | 2.4700359 | 133 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 87344 | 1998 $TW_{18}$ |
| 1998 $TJ_{19}$ | 17.6 | 0.15 | 20060922 | 115.75088 | 322.10336 | 19.29618 | 25.17714 | 0.2468108 | 2.3086905 | 52 | 2 | 1998–2005 | 0.56 | M-v | 3 | MPC | 88673 | 1998 $TJ_{19}$ |
| 1998 $TC_{20}$ | 17.2 | 0.15 | 20060922 | 194.56075 | 74.96824 | 324.22635 | 0.57128 | 0.1611079 | 2.9650355 | 29 | 4 | 1998–2005 | 0.47 | M-v | 2 | MPC | 68529 | 1998 $TC_{20}$ |
| 1998 $TY_{24}$ | 16.4 | 0.15 | 20060922 | 216.66419 | 226.03126 | 114.14118 | 0.28282 | 0.1441782 | 3.0116832 | 27 | 3 | 1998–2006 | 0.76 | M-v | 5 | MPC | 52447 | 1998 $TY_{24}$ |
| 1998 $TZ_{25}$ | 16.7 | 0.15 | 20060922 | 1.03183 | 116.47941 | 233.28033 | 1.08119 | 0.1497732 | 2.5874113 | 88 | 4 | 1998–2006 | 0.46 | M-v | 3 | MPC | 04113 | 1998 $TZ_{25}$ |
| 1998 $TC_{26}$ | 17.8 | 0.15 | 20060922 | 151.80563 | 302.41630 | 34.77268 | 7.11610 | 0.1462213 | 2.2850125 | 24 | 3 | 1997–2005 | 0.43 | M-v | 3 | MPC | 88673 | 1998 $TC_{26}$ |
| 1998 $TB_{28}$ | 17.6 | 0.15 | 20060922 | 3.95707 | 66.71921 | 17.47475 | 2.53738 | 0.1520285 | 2.3714031 | 42 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 50396 | 1998 $TB_{28}$ |
| 1998 $TS_{31}$ | 16.7 | 0.15 | 20060922 | 14.49989 | 229.76445 | 171.05146 | 6.88065 | 0.1779736 | 2.4518184 | 56 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 39968 | 1998 $TS_{31}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $TT_{35}$ | 18.0 | 0.15 | 20060922 | 7.38920 | 323.07835 | 26.10264 | 2.90960 | 0.0973244 | 2.5284999 | 32 | 6 | 1994–2006 | 0.46 | M-v | 1 | MPC | 04113 | 1998 $TT_{35}$ |
| 1998 $TQ_{36}$ | 17.4 | 0.15 | 20060922 | 350.78299 | 306.63481 | 54.20467 | 3.15838 | 0.2537672 | 2.5778111 | 62 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 04113 | 1998 $TQ_{36}$ |
| 1998 $UH_{1}$ | 16.6 | 0.15 | 20060922 | 68.33982 | 21.02811 | 295.15876 | 18.42523 | 0.0621163 | 1.9088407 | 91 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 77377 | 1998 $UH_{1}$ |
| 1998 $US_{1}$ | 17.8 | 0.15 | 20060922 | 150.58329 | 64.85787 | 212.50097 | 8.79549 | 0.3776961 | 2.3341118 | 47 | 4 | 1987–2005 | 0.53 | M-v | 1 | MPC | 84479 | 1998 $US_{1}$ |
| 1998 $UA_{2}$ | 16.4 | 0.15 | 20060922 | 316.38936 | 39.23951 | 15.34479 | 12.38373 | 0.2580044 | 2.5662994 | 63 | 3 | 1998–2006 | 0.69 | M-v | 3 | MPC | 04113 | 1998 $UA_{2}$ |
| 1998 $UG_{2}$ | 16.8 | 0.15 | 20060922 | 42.42397 | 351.22791 | 359.64362 | 2.94190 | 0.2718897 | 2.4579664 | 64 | 4 | 1998–2006 | 0.66 | M-v | 3 | MPC | 50396 | 1998 $UG_{2}$ |
| 1998 $UP_{2}$ | 16.7 | 0.15 | 20060922 | 16.11503 | 331.88205 | 25.17323 | 10.97245 | 0.0609593 | 2.5415073 | 53 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 39969 | 1998 $UP_{2}$ |
| 1998 $UR_{2}$ | 16.1 | 0.15 | 20060922 | 330.17311 | 193.60877 | 226.93379 | 5.48895 | 0.2182774 | 2.5308902 | 162 | 5 | 1990–2006 | 0.56 | M-v | 3 | MPC | 47753 | 1998 $UR_{2}$ |
| 1998 $UG_{3}$ | 17.0 | 0.15 | 20060922 | 60.59390 | 86.96777 | 277.63401 | 0.86969 | 0.2203670 | 2.4088588 | 44 | 5 | 1994–2006 | 0.69 | M-v | 3 | MPC | 62232 | 1998 $UG_{3}$ |
| 1998 $US_{3}$ | 16.5 | 0.15 | 20060922 | 337.96732 | 199.13716 | 175.18365 | 6.46370 | 0.3480769 | 2.5389749 | 153 | 4 | 1990–2006 | 0.63 | M-v | 2 | MPC | 04113 | 1998 $US_{3}$ |
| 1998 $UB_{5}$ | 17.3 | 0.15 | 20060922 | 23.96004 | 328.10890 | 90.52831 | 2.87563 | 0.1481411 | 2.4032739 | 33 | 5 | 1992–2006 | 0.50 | M-v | 1 | MPC | 47753 | 1998 $UB_{5}$ |
| 1998 $UK_{5}$ | 17.2 | 0.15 | 20060922 | 340.86103 | 196.17298 | 187.50344 | 7.08539 | 0.1818714 | 2.5588260 | 91 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 04113 | 1998 $UK_{5}$ |
| 1998 $UP_{5}$ | 15.6 | 0.15 | 20060922 | 171.48002 | 45.80909 | 46.91293 | 12.90128 | 0.2748245 | 2.9273916 | 75 | 3 | 1998–2005 | 0.59 | M-v | 2 | MPC | 57679 | 1998 $UP_{5}$ |
| 1998 $UY_{8}$ | 17.5 | 0.15 | 20060922 | 99.60022 | 51.52456 | 311.69930 | 1.38838 | 0.2205163 | 2.3318864 | 44 | 4 | 1991–2005 | 0.51 | M-v | 3 | MPC | 04113 | 1998 $UY_{8}$ |
| 1998 $UG_{10}$ | 14.2 | 0.15 | 20060922 | 59.43990 | 206.12916 | 221.52918 | 15.09848 | 0.1038298 | 3.4486547 | 91 | 4 | 1998–2004 | 0.55 | M-v | 1 | MPC | 73942 | 1998 $UG_{10}$ |
| 1998 $UY_{14}$ | 16.0 | 0.15 | 20060922 | 292.39361 | 222.32754 | 193.61606 | 3.86417 | 0.2359958 | 2.6384136 | 75 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 77377 | 1998 $UY_{14}$ |
| 1998 $UZ_{17}$ | 15.9 | 0.15 | 20060922 | 317.49945 | 181.12247 | 223.43365 | 12.27257 | 0.2399042 | 2.5764028 | 80 | 3 | 1998–2006 | 0.74 | M-v | 3 | MPC | 04113 | 1998 $UZ_{17}$ |
| 1998 $UR_{18}$ | 15.5 | 0.15 | 20060922 | 353.37218 | 141.67956 | 254.84307 | 6.47477 | 0.2220974 | 2.5413140 | 191 | 3 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04113 | 1998 $UR_{18}$ |
| 1998 $UT_{19}$ | 16.4 | 0.15 | 20060922 | 358.16349 | 303.79782 | 38.66284 | 13.42172 | 0.3488109 | 2.5587424 | 90 | 3 | 1998–2006 | 0.62 | M-v | 2 | MPC | 04113 | 1998 $UT_{19}$ |
| 1998 $UG_{21}$ | 16.1 | 0.15 | 20060922 | 35.90788 | 137.11379 | 269.20197 | 5.62812 | 0.1944340 | 2.4038085 | 54 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 87344 | 1998 $UG_{21}$ |
| 1998 $UN_{27}$ | 15.4 | 0.15 | 20060922 | 276.54223 | 245.67721 | 84.21810 | 6.39636 | 0.2806065 | 2.8445492 | 63 | 4 | 1998–2005 | 0.71 | M-v | 1 | MPC | 55848 | 1998 $UN_{27}$ |
| 1998 $UD_{28}$ | 14.3 | 0.15 | 20060922 | 181.09534 | 330.70732 | 35.56332 | 28.62288 | 0.1504332 | 3.1248456 | 39 | 4 | 1996–2005 | 0.67 | M-v | 1 | MPC | 73942 | 1998 $UD_{28}$ |
| 1998 $UP_{34}$ | 15.6 | 0.15 | 20060922 | 344.73638 | 310.10554 | 67.50595 | 6.77594 | 0.2502301 | 2.5421718 | 138 | 5 | 1990–2006 | 0.59 | M-v | 2 | MPC | 04113 | 1998 $UP_{34}$ |
| 1998 $UH_{37}$ | 16.8 | 0.15 | 20060922 | 59.82669 | 197.12690 | 201.20584 | 1.71340 | 0.2192111 | 2.3591618 | 27 | 2 | 1998–2005 | 0.59 | M-v | 4 | MPC | 88674 | 1998 $UH_{37}$ |
| 1998 $UP_{40}$ | 16.0 | 0.15 | 20060922 | 349.40421 | 110.05122 | 357.11766 | 4.17746 | 0.1475868 | 2.3950281 | 47 | 5 | 1998–2006 | 0.67 | M-v | 1 | MPC | 87344 | 1998 $UP_{40}$ |
| 1998 $UR_{40}$ | 16.6 | 0.15 | 20060922 | 286.04048 | 200.92384 | 237.17328 | 3.92110 | 0.2273690 | 2.6087027 | 54 | 4 | 1998–2006 | 0.69 | M-v | 1 | MPC | 04113 | 1998 $UR_{40}$ |
| 1998 $UB_{42}$ | 17.1 | 0.15 | 20060922 | 334.12299 | 198.55677 | 191.18596 | 5.10560 | 0.2640834 | 2.5624779 | 83 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 04113 | 1998 $UB_{42}$ |
| 1998 $UE_{42}$ | 16.6 | 0.15 | 20060922 | 345.32098 | 333.94537 | 58.48117 | 3.35654 | 0.2744645 | 2.5325577 | 125 | 5 | 1994–2006 | 0.54 | M-v | 2 | MPC | 04114 | 1998 $UE_{42}$ |
| 1998 $UL_{44}$ | 16.5 | 0.15 | 20060922 | 10.48745 | 316.95941 | 47.90220 | 2.93100 | 0.2437111 | 2.5191358 | 169 | 7 | 1990–2006 | 0.49 | M-v | 2 | MPC | 77377 | 1998 $UL_{44}$ |
| 1998 $UA_{45}$ | 17.8 | 0.15 | 20060922 | 169.73044 | 287.68888 | 8.69065 | 5.15684 | 0.1714792 | 2.2719018 | 37 | 2 | 1998–2005 | 0.31 | M-v | 3 | MPC | 88675 | 1998 $UA_{45}$ |
| 1998 $UP_{45}$ | 17.3 | 0.15 | 20060922 | 20.78109 | 105.29786 | 290.54674 | 0.34294 | 0.1946094 | 2.4552589 | 50 | 6 | 1994–2006 | 0.44 | M-v | 1 | MPC | 53593 | 1998 $UP_{45}$ |
| 1998 $UX_{48}$ | 16.6 | 0.15 | 20060922 | 43.31326 | 321.09976 | 46.19326 | 7.03724 | 0.1647933 | 2.4265982 | 76 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 62233 | 1998 $UX_{48}$ |
| 1998 $UH_{49}$ | 16.2 | 0.15 | 20060922 | 5.53810 | 199.08022 | 210.65462 | 6.96203 | 0.2215459 | 2.4769152 | 64 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | 62233 | 1998 $UH_{49}$ |
| 1998 VN | 20.5 | 0.15 | 20060922 | 256.74985 | 245.72275 | 228.07037 | 12.03871 | 0.3449389 | 1.3875441 | 106 | 3 | 1998–2006 | 0.57 | M-v | 1 | MPC | 64657 | 1998 VN |
| 1998 $VM_{2}$ | 16.4 | 0.15 | 20060922 | 56.00962 | 338.17409 | 25.16229 | 1.70527 | 0.2025089 | 2.4334467 | 35 | 4 | 1994–2006 | 0.59 | M-v | 3 | MPC | 62233 | 1998 $VM_{2}$ |
| 1998 $VA_{7}$ | 16.0 | 0.15 | 20060922 | 3.09047 | 23.87609 | 48.63052 | 9.93440 | 0.1919625 | 2.4203012 | 84 | 6 | 1998–2006 | 0.60 | M-v | 1 | MPC | 87345 | 1998 $VA_{7}$ |
| 1998 $VL_{17}$ | 16.5 | 0.15 | 20060922 | 63.27473 | 327.75400 | 45.39034 | 3.33008 | 0.1929563 | 2.3963514 | 61 | 5 | 1996–2006 | 0.60 | M-v | 1 | MPC | 87345 | 1998 $VL_{17}$ |
| 1998 $VW_{18}$ | 16.3 | 0.15 | 20060922 | 286.05653 | 193.43989 | 254.82204 | 3.53593 | 0.2737737 | 2.6103131 | 53 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04114 | 1998 $VW_{18}$ |
| 1998 $VN_{20}$ | 15.6 | 0.15 | 20060922 | 315.81133 | 5.35759 | 56.66043 | 5.16721 | 0.1284347 | 2.5631108 | 165 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 62233 | 1998 $VN_{20}$ |
| 1998 $VS_{25}$ | 16.6 | 0.15 | 20060922 | 21.68603 | 350.38725 | 64.06709 | 2.15102 | 0.1778419 | 2.4310577 | 66 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 87345 | 1998 $VS_{25}$ |
| 1998 $VF_{27}$ | 16.4 | 0.15 | 20060922 | 78.96397 | 277.05684 | 78.68471 | 3.60064 | 0.1874432 | 2.3916906 | 41 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 90009 | 1998 $VF_{27}$ |
| 1998 $VW_{28}$ | 16.0 | 0.15 | 20060922 | 61.96582 | 87.64929 | 297.80639 | 4.18818 | 0.2370759 | 2.3906189 | 101 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 87345 | 1998 $VW_{28}$ |
| 1998 $VE_{34}$ | 16.7 | 0.15 | 20060922 | 301.92950 | 140.74693 | 292.21248 | 4.43170 | 0.3220606 | 2.6001741 | 60 | 3 | 1998–2006 | 0.65 | M-v | 3 | MPC | 37135 | 1998 $VE_{34}$ |
| 1998 $VY_{40}$ | 16.3 | 0.15 | 20060922 | 245.04194 | 174.55664 | 222.74393 | 1.25543 | 0.0929910 | 2.8316308 | 24 | 3 | 1998–2005 | 0.31 | M-v | 3 | MPC | 88676 | 1998 $VY_{40}$ |
| 1998 $VC_{42}$ | 17.1 | 0.15 | 20060922 | 3.07547 | 197.26822 | 241.35354 | 1.51636 | 0.2231389 | 2.4317905 | 44 | 8 | 1992–2006 | 0.50 | M-v | 1 | MPC | 66078 | 1998 $VC_{42}$ |
| 1998 $VL_{42}$ | 16.8 | 0.15 | 20060922 | 247.37656 | 159.77094 | 38.60998 | 3.11751 | 0.1167636 | 2.4054470 | 40 | 5 | 1996–2005 | 0.52 | M-v | 2 | MPC | 97342 | 1998 $VL_{42}$ |
| 1998 $VM_{42}$ | 17.2 | 0.15 | 20060922 | 336.15650 | 338.70145 | 39.49719 | 2.22484 | 0.0772295 | 2.5969223 | 47 | 5 | 1998–2006 | 0.36 | M-v | 1 | MPC | 04114 | 1998 $VM_{42}$ |
| 1998 $VV_{42}$ | 17.2 | 0.15 | 20060922 | 69.18975 | 344.46610 | 47.67525 | 5.80836 | 0.1510228 | 2.3593894 | 39 | 3 | 1998–2005 | 0.53 | M-v | 2 | MPC | 88676 | 1998 $VV_{42}$ |
| 1998 $VC_{43}$ | 17.8 | 0.15 | 20060922 | 340.22453 | 157.15990 | 208.59621 | 1.34273 | 0.1892545 | 2.6009564 | 29 | 2 | 1998–2002 | 0.49 | M-v | 3 | MPC | 47756 | 1998 $VC_{43}$ |
| 1998 $VC_{47}$ | 17.0 | 0.15 | 20060922 | 300.61697 | 92.46083 | 53.74451 | 2.13790 | 0.1328611 | 2.4447213 | 33 | 7 | 1992–2006 | 0.55 | M-v | 1 | MPC | 87345 | 1998 $VC_{47}$ |
| 1998 $VR_{47}$ | 16.3 | 0.15 | 20060922 | 46.66873 | 74.38278 | 228.71785 | 10.61090 | 0.2828323 | 2.5540420 | 69 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 04114 | 1998 $VR_{47}$ |
| 1998 $VK_{48}$ | 14.5 | 0.15 | 20060922 | 53.46998 | 258.56249 | 74.65742 | 4.73652 | 0.2286972 | 3.9766878 | 70 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 97342 | 1998 $VK_{48}$ |
| 1998 $VL_{48}$ | 17.2 | 0.15 | 20060922 | 160.02862 | 223.16407 | 65.60712 | 7.36348 | 0.1054925 | 2.3903778 | 32 | 4 | 1998–2005 | 0.67 | M-v | 1 | MPC | 87345 | 1998 $VL_{48}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $VY_{49}$ | 16.6 | 0.15 | 20060922 | 306.37499 | 32.76436 | 39.31359 | 4.38787 | 0.2526019 | 2.5834562 | 64 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 62234 | 1998 $VY_{49}$ |
| 1998 $VF_{55}$ | 15.6 | 0.15 | 20060922 | 344.54248 | 186.52644 | 211.56245 | 4.47666 | 0.1071255 | 2.5604498 | 227 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 62234 | 1998 $VF_{55}$ |
| 1998 $VL_{55}$ | 15.6 | 0.15 | 20060922 | 205.72007 | 327.51075 | 52.38638 | 11.95599 | 0.0540414 | 3.0341660 | 25 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 01973 | 1998 $VL_{55}$ |
| 1998 $VY_{56}$ | 17.1 | 0.15 | 20060922 | 27.81926 | 305.33384 | 79.25158 | 2.53218 | 0.2574165 | 2.4641927 | 53 | 4 | 1990–2006 | 0.52 | M-v | 2 | MPC | 50398 | 1998 $VY_{56}$ |
| 1998 WO | 15.9 | 0.15 | 20060922 | 311.01141 | 18.34393 | 32.67178 | 14.11943 | 0.2393146 | 2.6058393 | 56 | 3 | 1998–2004 | 0.65 | M-v | 3 | MPC | 37139 | 1998 WO |
| 1998 $WC_2$ | 18.4 | 0.15 | 20060922 | 317.44295 | 269.60500 | 209.10825 | 26.59437 | 0.5636584 | 2.5496848 | 47 | 3 | 1998–2006 | 0.59 | M-v | 2 | MPC | 43338 | 1998 $WC_2$ |
| 1998 $WT_6$ | 17.0 | 0.15 | 20060922 | 322.47632 | 215.25109 | 228.84283 | 2.07266 | 0.1879860 | 2.5343149 | 98 | 4 | 1990–2006 | 0.51 | M-v | 3 | MPC | 47757 | 1998 $WT_6$ |
| 1998 $WR_7$ | 16.1 | 0.15 | 20060922 | 340.77626 | 125.04913 | 252.64653 | 11.84685 | 0.2271903 | 2.5739175 | 96 | 3 | 1998–2006 | 0.63 | M-v | 2 | MPC | 04114 | 1998 $WR_7$ |
| 1998 $WL_8$ | 16.3 | 0.15 | 20060922 | 302.46795 | 51.55674 | 68.32832 | 4.31428 | 0.2588504 | 2.5558897 | 152 | 4 | 1991–2006 | 0.54 | M-v | 2 | MPC | 47757 | 1998 $WL_8$ |
| 1998 $WT_{11}$ | 16.7 | 0.15 | 20060922 | 311.52822 | 237.59064 | 207.55771 | 5.35268 | 0.2505103 | 2.5615502 | 97 | 4 | 1998–2006 | 0.51 | M-v | 3 | MPC | 62234 | 1998 $WT_{11}$ |
| 1998 $WT_{12}$ | 16.8 | 0.15 | 20060922 | 313.36715 | 46.55869 | 29.05956 | 6.30242 | 0.2709109 | 2.5720570 | 86 | 3 | 1998–2006 | 0.54 | M-v | 2 | MPC | 41555 | 1998 $WT_{12}$ |
| 1998 $WR_{16}$ | 15.8 | 0.15 | 20060922 | 1.82289 | 315.23227 | 62.74164 | 3.29012 | 0.1748467 | 2.5496226 | 184 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04114 | 1998 $WR_{16}$ |
| 1998 $WL_{22}$ | 17.5 | 0.15 | 20060922 | 158.57071 | 128.64908 | 234.00827 | 3.87773 | 0.2479961 | 2.2349296 | 28 | 3 | 1998–2006 | 0.49 | M-v | 2 | MPC | 99898 | 1998 $WL_{22}$ |
| 1998 $WV_{25}$ | 16.9 | 0.15 | 20060922 | 12.58912 | 119.48443 | 222.21537 | 9.02100 | 0.0970393 | 2.5875634 | 29 | 4 | 1998–2006 | 0.32 | M-v | 3 | MPC | 99899 | 1998 $WV_{25}$ |
| 1998 $WL_{27}$ | 17.0 | 0.15 | 20060922 | 335.63647 | 175.72195 | 228.65063 | 12.77319 | 0.2324907 | 2.5459503 | 57 | 3 | 1998–2006 | 0.56 | M-v | 3 | MPC | 41556 | 1998 $WL_{27}$ |
| 1998 $WV_{28}$ | 16.4 | 0.15 | 20060922 | 313.17931 | 191.32763 | 237.43036 | 3.76075 | 0.1821934 | 2.5590622 | 80 | 4 | 1998–2006 | 0.57 | M-v | 3 | MPC | 62235 | 1998 $WV_{28}$ |
| 1998 $WV_{29}$ | 17.1 | 0.15 | 20060922 | 323.94001 | 170.06552 | 243.84505 | 4.94446 | 0.3116509 | 2.5653944 | 71 | 3 | 1998–2006 | 0.58 | M-v | 2 | MPC | 04114 | 1998 $WV_{29}$ |
| 1998 $WF_{30}$ | 17.8 | 0.15 | 20060922 | 45.68602 | 25.97323 | 36.67600 | 1.78779 | 0.1728980 | 2.3680414 | 27 | 3 | 1998–2005 | 0.35 | M-v | 2 | MPC | 88678 | 1998 $WF_{30}$ |
| 1998 $WR_{30}$ | 17.2 | 0.15 | 20060922 | 278.20982 | 284.64509 | 65.01885 | 2.95326 | 0.0816769 | 2.8633195 | 24 | 3 | 1998–2006 | 0.42 | M-v | 3 | MPC | 01973 | 1998 $WR_{30}$ |
| 1998 $WG_{31}$ | 16.0 | 0.15 | 20060922 | 292.80158 | 34.98076 | 92.06540 | 22.63591 | 0.0859678 | 1.8970519 | 102 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87345 | 1998 $WG_{31}$ |
| 1998 $WR_{32}$ | 16.8 | 0.15 | 20060922 | 42.23650 | 339.18443 | 67.20971 | 4.33056 | 0.1677413 | 2.4078330 | 43 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 93739 | 1998 $WR_{32}$ |
| 1998 $WO_{34}$ | 16.7 | 0.15 | 19981123 | 257.04153 | 293.34594 | 234.87548 | 11.33594 | 0.0670286 | 2.6254509 | 9 | 1 | 27 days | 0.14 | | | MPC | | 1998 $WO_{34}$ |
| 1998 $WD_{35}$ | 16.6 | 0.15 | 20060922 | 231.77009 | 349.18620 | 35.85044 | 2.61776 | 0.0933722 | 2.8887794 | 41 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 01973 | 1998 $WD_{35}$ |
| 1998 $WK_{36}$ | 16.4 | 0.15 | 20060922 | 65.34223 | 288.52332 | 47.21970 | 6.38631 | 0.2017047 | 2.4497603 | 38 | 6 | 1997–2006 | 0.53 | M-v | 1 | MPC | 73942 | 1998 $WK_{36}$ |
| 1998 $WY_{37}$ | 13.8 | 0.15 | 20060922 | 86.82859 | 242.72821 | 51.76902 | 3.45327 | 0.2069110 | 3.9900963 | 97 | 4 | 1998–2006 | 0.42 | M-v | 0 | MPC | 97342 | 1998 $WY_{37}$ |
| 1998 $WD_{38}$ | 16.9 | 0.15 | 20060922 | 245.46859 | 336.42111 | 55.87520 | 2.89284 | 0.0783345 | 2.8398910 | 27 | 3 | 1998–2006 | 0.28 | M-v | 4 | MPC | 99899 | 1998 $WD_{38}$ |
| 1998 $WG_{38}$ | 16.6 | 0.15 | 20060922 | 121.05655 | 32.19215 | 219.58615 | 1.98786 | 0.1272792 | 2.5656488 | 44 | 4 | 1998–2006 | 0.32 | M-v | 2 | MPC | 60520 | 1998 $WG_{38}$ |
| 1998 $WM_{38}$ | 17.0 | 0.15 | 20060922 | 283.81603 | 300.96693 | 60.21442 | 4.29271 | 0.1048645 | 2.8010039 | 27 | 4 | 1998–2006 | 0.36 | M-v | 1 | MPC | 99899 | 1998 $WM_{38}$ |
| 1998 $WH_{39}$ | 17.2 | 0.15 | 20060922 | 344.04479 | 239.11047 | 199.31853 | 2.34428 | 0.0967101 | 2.4802840 | 52 | 7 | 1990–2006 | 0.48 | M-v | 1 | MPC | 87346 | 1998 $WH_{39}$ |
| 1998 $WJ_{39}$ | 16.8 | 0.15 | 20060922 | 136.31061 | 327.37898 | 114.37399 | 2.09534 | 0.1336886 | 3.1097703 | 23 | 3 | 1998–2006 | 0.40 | M-v | 3 | MPC | 87346 | 1998 $WJ_{39}$ |
| 1998 $WF_{41}$ | 16.8 | 0.15 | 20060922 | 320.79556 | 35.83084 | 42.83278 | 4.37814 | 0.2405985 | 2.5478553 | 101 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04114 | 1998 $WF_{41}$ |
| 1998 $WU_{41}$ | 15.6 | 0.15 | 20060922 | 298.77604 | 315.26879 | 61.44407 | 8.50957 | 0.2365059 | 2.7068987 | 33 | 3 | 1998–2004 | 0.60 | M-v | 3 | MPC | 50399 | 1998 $WU_{41}$ |
| 1998 $WL_{43}$ | 16.9 | 0.15 | 20060922 | 45.51519 | 270.45553 | 62.84076 | 4.96804 | 0.0734303 | 2.5555404 | 32 | 4 | 1998–2006 | 0.50 | M-v | 3 | MPC | 74595 | 1998 $WL_{43}$ |
| 1998 $WD_{44}$ | 17.6 | 0.15 | 20060922 | 348.75506 | 330.39153 | 81.42488 | 2.40880 | 0.2232996 | 2.5230758 | 67 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 47759 | 1998 $WD_{44}$ |
| 1998 XM | 16.2 | 0.15 | 20060922 | 340.70640 | 129.83430 | 253.97981 | 3.60782 | 0.0972318 | 2.6292509 | 88 | 4 | 1998–2006 | 0.49 | M-v | 3 | MPC | 04114 | 1998 XM |
| 1998 $XO_1$ | 16.8 | 0.15 | 20060922 | 322.96342 | 292.54830 | 193.03492 | 2.22843 | 0.1253717 | 2.4449739 | 37 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 93740 | 1998 $XO_1$ |
| 1998 $XJ_2$ | 17.0 | 0.15 | 20060922 | 307.66047 | 224.42665 | 241.33860 | 5.68737 | 0.1090698 | 2.5171426 | 55 | 4 | 1998–2006 | 0.35 | M-v | 2 | MPC | 84486 | 1998 $XJ_2$ |
| 1998 $XK_2$ | 16.1 | 0.15 | 20060922 | 347.77525 | 85.01542 | 239.75353 | 7.08357 | 0.1047188 | 2.7288660 | 37 | 3 | 1998–2005 | 0.62 | M-v | 3 | MPC | 47759 | 1998 $XK_2$ |
| 1998 $XO_2$ | 16.1 | 0.15 | 20060922 | 334.46474 | 153.16320 | 249.54034 | 2.82476 | 0.1583695 | 2.6011177 | 95 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 66079 | 1998 $XO_2$ |
| 1998 $XV_3$ | 15.5 | 0.15 | 20060922 | 357.62988 | 118.00268 | 278.23226 | 3.30249 | 0.2662519 | 2.5407698 | 198 | 3 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04114 | 1998 $XV_3$ |
| 1998 $XK_6$ | 13.5 | 0.15 | 20060922 | 242.40579 | 181.33170 | 229.30011 | 13.16858 | 0.0790738 | 5.2474578 | 32 | 5 | 1998–2005 | 0.35 | M-v | 0 | MPC | 88679 | 1998 $XK_6$ |
| 1998 $XT_6$ | 16.9 | 0.15 | 20060922 | 319.24880 | 178.06039 | 236.34416 | 9.31346 | 0.1666516 | 2.5879685 | 31 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 47759 | 1998 $XT_6$ |
| 1998 $XW_6$ | 16.7 | 0.15 | 20060922 | 3.38499 | 109.94179 | 232.69423 | 6.68304 | 0.2030150 | 2.6076701 | 79 | 3 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04114 | 1998 $XW_6$ |
| 1998 $XH_7$ | 17.0 | 0.15 | 20060922 | 3.63175 | 25.07714 | 91.15415 | 3.35539 | 0.1318314 | 2.3791106 | 83 | 5 | 1992–2006 | 0.60 | M-v | 1 | MPC | 87346 | 1998 $XH_7$ |
| 1998 $XQ_7$ | 16.2 | 0.15 | 20060922 | 274.28157 | 111.12769 | 232.88387 | 9.79280 | 0.1557094 | 2.8908032 | 22 | 3 | 1998–2003 | 0.35 | M-v | 3 | MPC | 33062 | 1998 $XQ_7$ |
| 1998 $XU_8$ | 15.9 | 0.15 | 20060922 | 272.91887 | 31.13645 | 72.82102 | 6.23696 | 0.1628320 | 2.6350340 | 44 | 4 | 1998–2006 | 0.68 | M-v | 1 | MPC | 68532 | 1998 $XU_8$ |
| 1998 $XL_9$ | 15.8 | 0.15 | 20060922 | 270.32601 | 40.91444 | 50.84712 | 5.70078 | 0.1849534 | 2.6373383 | 136 | 4 | 1998–2006 | 0.64 | M-v | 1 | MPC | 04114 | 1998 $XL_9$ |
| 1998 $XD_{10}$ | 16.4 | 0.15 | 20060922 | 107.62123 | 246.36489 | 75.21150 | 7.35653 | 0.1224186 | 2.4289752 | 36 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 87346 | 1998 $XD_{10}$ |
| 1998 $XH_{10}$ | 15.0 | 0.15 | 20060922 | 126.53783 | 43.29548 | 68.60936 | 10.26009 | 0.1066859 | 3.0387379 | 48 | 5 | 1998–2006 | 0.56 | M-v | 0 | MPC | 01973 | 1998 $XH_{10}$ |
| 1998 $XM_{10}$ | 15.3 | 0.15 | 20060922 | 17.10005 | 311.68244 | 88.30894 | 7.92643 | 0.2086750 | 2.4799469 | 138 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62235 | 1998 $XM_{10}$ |
| 1998 $XS_{10}$ | 15.5 | 0.15 | 20060922 | 342.79205 | 305.86535 | 121.57099 | 5.08964 | 0.2248684 | 2.5939072 | 130 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 43339 | 1998 $XS_{10}$ |
| 1998 $XC_{11}$ | 16.1 | 0.15 | 20060922 | 311.70031 | 154.89764 | 308.48701 | 4.46856 | 0.3039518 | 2.6066984 | 117 | 3 | 1998–2006 | 0.52 | M-v | 2 | MPC | 39985 | 1998 $XC_{11}$ |
| 1998 $XW_{11}$ | 15.9 | 0.15 | 20060922 | 356.60944 | 295.23800 | 98.03903 | 10.48048 | 0.3222450 | 2.5436258 | 88 | 3 | 1998–2006 | 0.49 | M-v | 2 | MPC | 50400 | 1998 $XW_{11}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1998 $XP_{14}$ | 16.8 | 0.15 | 20060922 | 18.41867 | 339.45680 | 101.14836 | 4.77912 | 0.1774935 | 2.4186763 | 72 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 87346 | 1998 $XP_{14}$ |
| 1998 $XH_{18}$ | 15.7 | 0.15 | 20060922 | 352.67544 | 310.68270 | 239.70454 | 11.68706 | 0.0043133 | 3.2397522 | 20 | 3 | 1998–2004 | 0.36 | M-v | 3 | MPC | 68532 | 1998 $XH_{18}$ |
| 1998 $XL_{18}$ | 16.9 | 0.15 | 20060922 | 310.47090 | 164.18084 | 235.63354 | 3.46136 | 0.1511463 | 2.6428097 | 42 | 4 | 1998–2006 | 0.46 | M-v | 3 | MPC | 04114 | 1998 $XL_{18}$ |
| 1998 $XO_{18}$ | 16.1 | 0.15 | 20060922 | 339.95688 | 332.72141 | 71.18987 | 6.49098 | 0.1729273 | 2.5592289 | 133 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62235 | 1998 $XO_{18}$ |
| 1998 $XV_{19}$ | 16.0 | 0.15 | 20060922 | 2.38070 | 311.18953 | 63.68568 | 8.00194 | 0.1462676 | 2.5546500 | 123 | 4 | 1998–2006 | 0.52 | M-v | 3 | MPC | 77380 | 1998 $XV_{19}$ |
| 1998 $XY_{19}$ | 15.2 | 0.15 | 20060922 | 131.87101 | 338.82885 | 65.94274 | 6.60173 | 0.0507181 | 3.2568974 | 41 | 5 | 1995–2004 | 0.51 | M-v | 1 | MPC | 71976 | 1998 $XY_{19}$ |
| 1998 $XU_{20}$ | 16.0 | 0.15 | 20060922 | 19.05881 | 287.50606 | 114.82157 | 3.45650 | 0.2329785 | 2.5262408 | 88 | 8 | 1991–2006 | 0.58 | M-v | 2 | MPC | 62236 | 1998 $XU_{20}$ |
| 1998 $XW_{23}$ | 16.4 | 0.15 | 20060922 | 240.99751 | 84.12358 | 106.30322 | 2.45928 | 0.2224643 | 2.6176571 | 43 | 4 | 1995–2006 | 0.40 | M-v | 2 | MPC | 87346 | 1998 $XW_{23}$ |
| 1998 $XP_{24}$ | 16.2 | 0.15 | 20060922 | 297.56941 | 167.66675 | 293.07522 | 10.40148 | 0.0667768 | 2.6466039 | 49 | 5 | 1998–2006 | 0.49 | M-v | 2 | MPC | 84488 | 1998 $XP_{24}$ |
| 1998 $XS_{33}$ | 14.9 | 0.15 | 20060922 | 69.10695 | 315.09000 | 13.93741 | 2.65229 | 0.1757007 | 2.5180959 | 95 | 8 | 1992–2006 | 0.65 | M-v | 3 | MPC | 62236 | 1998 $XS_{33}$ |
| 1998 $XF_{46}$ | 15.1 | 0.15 | 20060922 | 17.61637 | 30.21582 | 359.71334 | 4.35127 | 0.1903457 | 2.5316588 | 78 | 5 | 1998–2006 | 0.56 | M-v | 3 | MPC | 62236 | 1998 $XF_{46}$ |
| 1998 $XE_{63}$ | 15.2 | 0.15 | 20060922 | 30.58532 | 103.24841 | 261.75125 | 13.07913 | 0.2843086 | 2.4875955 | 74 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 87346 | 1998 $XE_{63}$ |
| 1998 $YZ_{2}$ | 16.4 | 0.15 | 20060922 | 28.37655 | 194.12473 | 226.50559 | 1.79093 | 0.1921161 | 2.4390816 | 76 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 90010 | 1998 $YZ_{2}$ |
| 1998 $YK_{6}$ | 15.4 | 0.15 | 20060922 | 0.59002 | 291.53555 | 95.95273 | 9.78291 | 0.1586406 | 2.5865785 | 129 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 66080 | 1998 $YK_{6}$ |
| 1998 $YE_{8}$ | 15.6 | 0.15 | 20060922 | 283.39832 | 8.53733 | 85.29643 | 7.76449 | 0.2783183 | 2.6449534 | 65 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 04114 | 1998 $YE_{8}$ |
| 1998 $YG_{9}$ | 17.0 | 0.15 | 20060922 | 31.47036 | 352.99060 | 71.67067 | 2.36367 | 0.1644419 | 2.4226486 | 83 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 90010 | 1998 $YG_{9}$ |
| 1998 $YF_{11}$ | 15.4 | 0.15 | 20060922 | 244.93194 | 75.79882 | 108.95532 | 3.37039 | 0.1319740 | 2.6350127 | 51 | 7 | 1995–2006 | 0.47 | M-v | 0 | MPC | 04114 | 1998 $YF_{11}$ |
| 1998 $YN_{11}$ | 15.1 | 0.15 | 20060922 | 17.13348 | 116.77068 | 261.01490 | 10.41457 | 0.1913106 | 2.5806309 | 120 | 4 | 1998–2006 | 0.43 | M-v | 2 | MPC | 62236 | 1998 $YN_{11}$ |
| 1998 $YY_{11}$ | 15.3 | 0.15 | 20060922 | 338.35603 | 136.59090 | 284.97806 | 30.22949 | 0.2481866 | 2.5780733 | 65 | 3 | 1998–2006 | 0.56 | M-v | 2 | MPC | 43340 | 1998 $YY_{11}$ |
| 1998 $YK_{12}$ | 16.2 | 0.15 | 20060922 | 30.84187 | 121.42269 | 280.40722 | 18.65182 | 0.0827009 | 1.9056998 | 79 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 57683 | 1998 $YK_{12}$ |
| 1998 $YR_{13}$ | 16.0 | 0.15 | 20060922 | 318.17834 | 174.16019 | 249.33958 | 15.76286 | 0.0990175 | 2.5791623 | 38 | 4 | 1998–2006 | 0.67 | M-v | 2 | MPC | 93742 | 1998 $YR_{13}$ |
| 1998 $YA_{16}$ | 15.9 | 0.15 | 20060922 | 22.02117 | 260.13660 | 129.05413 | 4.22677 | 0.2906370 | 2.5383338 | 73 | 3 | 1998–2006 | 0.44 | M-v | 3 | MPC | 47761 | 1998 $YA_{16}$ |
| 1998 $YT_{16}$ | 17.0 | 0.15 | 20060922 | 25.06699 | 254.42119 | 126.72415 | 5.32693 | 0.0684413 | 2.6191582 | 31 | 4 | 1998–2006 | 0.31 | M-v | 1 | MPC | 93742 | 1998 $YT_{16}$ |
| 1998 $YD_{17}$ | 15.9 | 0.15 | 20060922 | 183.42352 | 255.42462 | 289.38285 | 5.96173 | 0.1409802 | 2.7944294 | 51 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 87347 | 1998 $YD_{17}$ |
| 1998 $YF_{20}$ | 16.3 | 0.15 | 20060922 | 304.26724 | 311.01193 | 46.37849 | 1.44612 | 0.1345990 | 2.8999492 | 46 | 5 | 1998–2005 | 0.42 | M-v | 0 | MPC | 66080 | 1998 $YF_{20}$ |
| 1998 $YH_{20}$ | 15.0 | 0.15 | 20060922 | 3.40073 | 127.12698 | 322.61033 | 2.91294 | 0.2254379 | 3.9957843 | 66 | 5 | 1997–2006 | 0.44 | M-v | 0 | MPC | 90010 | 1998 $YH_{20}$ |
| 1998 $YM_{21}$ | 16.1 | 0.15 | 20060922 | 20.38945 | 60.23798 | 279.22434 | 1.57379 | 0.0433767 | 2.7635925 | 49 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04114 | 1998 $YM_{21}$ |
| 1999 $AJ_{1}$ | 15.6 | 0.15 | 20060922 | 342.26789 | 140.53066 | 293.28998 | 3.19177 | 0.2580577 | 2.5664203 | 110 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 43340 | 1999 $AJ_{1}$ |
| 1999 $AV_{3}$ | 15.4 | 0.15 | 20060922 | 313.56842 | 36.11716 | 84.64737 | 5.56701 | 0.1926970 | 2.5782696 | 88 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 87347 | 1999 $AV_{3}$ |
| 1999 $AQ_{7}$ | 15.4 | 0.15 | 20060922 | 290.51141 | 65.32353 | 75.46586 | 29.82168 | 0.3342054 | 2.6155878 | 94 | 3 | 1999–2006 | 0.63 | M-v | 2 | MPC | 47762 | 1999 $AQ_{7}$ |
| 1999 $AQ_{9}$ | 16.5 | 0.15 | 20060922 | 341.06792 | 196.55633 | 221.22575 | 3.26502 | 0.1795882 | 2.6020989 | 79 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 73943 | 1999 $AQ_{9}$ |
| 1999 $AD_{10}$ | 14.0 | 0.15 | 20060922 | 353.78063 | 253.58617 | 224.07451 | 4.38245 | 0.2105151 | 3.9753744 | 99 | 6 | 1997–2006 | 0.54 | M-v | 0 | MPC | 97343 | 1999 $AD_{10}$ |
| 1999 $AK_{11}$ | 16.3 | 0.15 | 20060922 | 5.84716 | 244.51648 | 122.54317 | 7.19681 | 0.0396593 | 2.7166173 | 44 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 74596 | 1999 $AK_{11}$ |
| 1999 $AN_{11}$ | 16.3 | 0.15 | 20060922 | 130.39394 | 42.06197 | 291.58094 | 5.73626 | 0.1292195 | 2.4679497 | 99 | 4 | 1998–2006 | 0.43 | M-v | 2 | MPC | 90010 | 1999 $AN_{11}$ |
| 1999 $AS_{11}$ | 15.2 | 0.15 | 20060922 | 327.56643 | 358.97686 | 292.97210 | 5.31484 | 0.1689408 | 3.1489667 | 37 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 01973 | 1999 $AS_{11}$ |
| 1999 $AN_{13}$ | 15.1 | 0.15 | 20060922 | 326.81280 | 106.54439 | 303.35436 | 12.85549 | 0.1673425 | 2.6844675 | 59 | 4 | 1999–2006 | 0.46 | M-v | 2 | MPC | 04115 | 1999 $AN_{13}$ |
| 1999 $AZ_{13}$ | 16.4 | 0.15 | 20060922 | 357.77529 | 9.30283 | 82.53153 | 1.00747 | 0.0693122 | 2.5131887 | 84 | 6 | 1995–2006 | 0.44 | M-v | 2 | MPC | 97343 | 1999 $AZ_{13}$ |
| 1999 $AB_{14}$ | 17.7 | 0.15 | 20060922 | 320.38569 | 118.33740 | 102.72422 | 2.37825 | 0.1392415 | 2.3522089 | 23 | 4 | 1996–2004 | 0.34 | M-v | 0 | MPC | 49662 | 1999 $AB_{14}$ |
| 1999 $AB_{16}$ | 17.9 | 0.15 | 20060922 | 280.42474 | 221.96673 | 302.66048 | 2.29269 | 0.1785068 | 2.5666443 | 26 | 3 | 1995–2006 | 0.54 | M-v | 3 | MPC | 47763 | 1999 $AB_{16}$ |
| 1999 $AQ_{17}$ | 15.8 | 0.15 | 20060922 | 145.07933 | 112.45244 | 132.60090 | 11.34017 | 0.1077997 | 2.7416310 | 61 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 87347 | 1999 $AQ_{17}$ |
| 1999 $AQ_{22}$ | 15.4 | 0.15 | 20060922 | 249.39818 | 90.32403 | 82.53496 | 15.76177 | 0.3052544 | 2.6893885 | 94 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 41561 | 1999 $AQ_{22}$ |
| 1999 $AO_{25}$ | 15.6 | 0.15 | 20060922 | 319.36950 | 85.53278 | 324.78321 | 28.11141 | 0.3284448 | 2.6181546 | 103 | 3 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04115 | 1999 $AO_{25}$ |
| 1999 $AG_{26}$ | 15.8 | 0.15 | 20060922 | 336.18968 | 343.19752 | 100.19627 | 5.45987 | 0.2391229 | 2.5434591 | 117 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 39993 | 1999 $AG_{26}$ |
| 1999 $AA_{31}$ | 15.7 | 0.15 | 20060922 | 178.77559 | 314.70587 | 127.24834 | 11.95914 | 0.1895164 | 3.0888623 | 35 | 6 | 1999–2006 | 0.54 | M-v | 0 | MPC | 03147 | 1999 $AA_{31}$ |
| 1999 $BL_{5}$ | 15.9 | 0.15 | 20060922 | 352.58608 | 227.22174 | 188.37556 | 2.00807 | 0.2024745 | 2.6003124 | 79 | 4 | 1999–2006 | 0.51 | M-v | 2 | MPC | 73943 | 1999 $BL_{5}$ |
| 1999 $BE_{8}$ | 16.3 | 0.15 | 20060922 | 336.78318 | 320.77270 | 147.84003 | 9.82239 | 0.4750194 | 2.5323946 | 246 | 3 | 1998–2006 | 0.58 | M-v | 1 | MPC | 47764 | 1999 $BE_{8}$ |
| 1999 $BL_{10}$ | 16.4 | 0.15 | 20060922 | 326.42715 | 350.81802 | 119.70694 | 5.12841 | 0.1992950 | 2.5663299 | 75 | 4 | 1999–2006 | 0.61 | M-v | 3 | MPC | 87347 | 1999 $BL_{10}$ |
| 1999 $BW_{10}$ | 15.8 | 0.15 | 20060922 | 266.05787 | 12.08743 | 137.10750 | 8.10084 | 0.2520785 | 2.6778176 | 52 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 66080 | 1999 $BW_{10}$ |
| 1999 $BS_{26}$ | 16.4 | 0.15 | 20060922 | 325.25300 | 337.27376 | 120.27578 | 5.08791 | 0.1638940 | 2.5729471 | 62 | 7 | 1995–2006 | 0.45 | M-v | 1 | MPC | 84489 | 1999 $BS_{26}$ |
| 1999 $BA_{27}$ | 16.1 | 0.15 | 20060922 | 0.22958 | 273.06322 | 116.23996 | 3.60758 | 0.1124868 | 2.6462435 | 69 | 6 | 1995–2006 | 0.43 | M-v | 1 | MPC | 62237 | 1999 $BA_{27}$ |
| 1999 $BL_{27}$ | 17.7 | 0.15 | 20060922 | 353.92564 | 169.25452 | 339.43460 | 0.62423 | 0.1208450 | 2.4158213 | 40 | 4 | 1999–2005 | 0.39 | M-v | 1 | MPC | 90010 | 1999 $BL_{27}$ |
| 1999 $CV_{2}$ | 15.7 | 0.15 | 20060922 | 128.24187 | 228.82831 | 326.23328 | 11.04347 | 0.0698121 | 2.9879971 | 45 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 04115 | 1999 $CV_{2}$ |
| 1999 $CH_{3}$ | 15.4 | 0.15 | 20060922 | 282.47426 | 31.87795 | 66.16535 | 8.50990 | 0.3559271 | 2.6935127 | 145 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 04115 | 1999 $CH_{3}$ |

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| 1999 $CH_{4}$ | 16.7 | 0.15 | 20060922 | 312.55357 | 158.47213 | 346.33924 | 3.57962 | 0.2272058 | 2.5652173 | 74 | 4 | 1999–2006 | 0.53 | M-v | 3 | MPC | 43342 | 1999 $CH_{4}$ |
| 1999 $CS_{11}$ | 15.5 | 0.15 | 20060922 | 274.17912 | 191.17269 | 316.40992 | 17.67327 | 0.0718246 | 1.9639111 | 110 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 57684 | 1999 $CS_{11}$ |
| 1999 $CZ_{11}$ | 15.9 | 0.15 | 20060922 | 23.28091 | 117.80599 | 313.18845 | 18.84598 | 0.1071097 | 1.9119940 | 56 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 62238 | 1999 $CZ_{11}$ |
| 1999 $CU_{12}$ | 15.6 | 0.15 | 20060922 | 282.86036 | 164.66783 | 310.70905 | 10.58478 | 0.2432885 | 2.6841845 | 67 | 3 | 1999–2006 | 0.64 | M-v | 3 | MPC | 50402 | 1999 $CU_{12}$ |
| 1999 $CC_{13}$ | 16.0 | 0.15 | 20060922 | 359.60614 | 262.30016 | 186.10650 | 5.23215 | 0.1896961 | 2.5399525 | 92 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 90011 | 1999 $CC_{13}$ |
| 1999 $CQ_{13}$ | 15.9 | 0.15 | 20060922 | 236.83823 | 251.98157 | 307.34877 | 6.56974 | 0.0808241 | 2.6424660 | 57 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 87347 | 1999 $CQ_{13}$ |
| 1999 $CY_{16}$ | 14.6 | 0.15 | 20060922 | 25.04535 | 336.88050 | 51.60676 | 9.03692 | 0.2543202 | 2.5362893 | 140 | 5 | 1998–2006 | 0.64 | M-v | 2 | MPC | 66081 | 1999 $CY_{16}$ |
| 1999 $CF_{24}$ | 16.3 | 0.15 | 20060922 | 285.55410 | 347.12991 | 116.37410 | 5.22915 | 0.2259478 | 2.6811844 | 40 | 3 | 1998–2006 | 0.43 | M-v | 3 | MPC | 84489 | 1999 $CF_{24}$ |
| 1999 $CM_{28}$ | 15.5 | 0.15 | 20060922 | 293.47417 | 76.57040 | 67.07442 | 4.36467 | 0.1839117 | 2.5935227 | 86 | 4 | 1999–2006 | 0.55 | M-v | 3 | MPC | 87348 | 1999 $CM_{28}$ |
| 1999 $CW_{29}$ | 15.6 | 0.15 | 20060922 | 243.89394 | 25.52868 | 142.25567 | 16.93363 | 0.0906982 | 2.6824917 | 37 | 4 | 1999–2006 | 0.71 | M-v | 1 | MPC | 87348 | 1999 $CW_{29}$ |
| 1999 $CV_{33}$ | 15.3 | 0.15 | 20060922 | 142.80888 | 9.95388 | 149.09658 | 1.67249 | 0.1899038 | 3.0557334 | 73 | 5 | 1996–2006 | 0.52 | M-v | 0 | MPC | 77382 | 1999 $CV_{33}$ |
| 1999 $CW_{33}$ | 16.7 | 0.15 | 20060922 | 324.50034 | 161.89302 | 326.71286 | 4.21656 | 0.0791960 | 2.5549898 | 42 | 4 | 1999–2005 | 0.61 | M-v | 2 | MPC | 90011 | 1999 $CW_{33}$ |
| 1999 $CP_{36}$ | 15.5 | 0.15 | 20060922 | 305.28558 | 72.63908 | 63.35099 | 5.39046 | 0.1318716 | 2.5827596 | 118 | 5 | 1999–2006 | 0.53 | M-v | 2 | MPC | 87348 | 1999 $CP_{36}$ |
| 1999 $CK_{39}$ | 15.8 | 0.15 | 20060922 | 292.81596 | 88.23224 | 50.92114 | 2.77610 | 0.1907088 | 2.6146409 | 84 | 5 | 1991–2006 | 0.56 | M-v | 2 | MPC | 47767 | 1999 $CK_{39}$ |
| 1999 $CE_{43}$ | 16.7 | 0.15 | 20060922 | 312.24750 | 23.90097 | 105.01867 | 2.80055 | 0.2436738 | 2.5806675 | 67 | 5 | 1995–2006 | 0.60 | M-v | 2 | MPC | 04115 | 1999 $CE_{43}$ |
| 1999 $CQ_{65}$ | 15.5 | 0.15 | 20060922 | 336.11172 | 236.62601 | 194.08154 | 5.09675 | 0.2530000 | 2.6066087 | 159 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04115 | 1999 $CQ_{65}$ |
| 1999 $CA_{66}$ | 15.6 | 0.15 | 20060922 | 257.49072 | 11.31539 | 146.61746 | 13.88553 | 0.1078251 | 2.6649138 | 91 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 87348 | 1999 $CA_{66}$ |
| 1999 $CS_{69}$ | 15.7 | 0.15 | 20060922 | 292.58901 | 316.24617 | 182.61181 | 12.38205 | 0.1262384 | 2.6130917 | 47 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 90011 | 1999 $CS_{69}$ |
| 1999 $CZ_{70}$ | 16.0 | 0.15 | 20060922 | 297.15331 | 284.94996 | 159.03131 | 11.65253 | 0.2436459 | 2.6946309 | 29 | 3 | 1999–2006 | 0.69 | M-v | 4 | MPC | 60524 | 1999 $CZ_{70}$ |
| 1999 $CF_{78}$ | 15.6 | 0.15 | 20060922 | 127.50733 | 238.40163 | 299.60452 | 8.61904 | 0.2304705 | 3.0908253 | 44 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 77382 | 1999 $CF_{78}$ |
| 1999 $CU_{79}$ | 15.5 | 0.15 | 20060922 | 276.03715 | 345.66672 | 166.47657 | 13.63474 | 0.1904472 | 2.6450123 | 36 | 6 | 1999–2006 | 0.53 | M-v | 1 | MPC | 84490 | 1999 $CU_{79}$ |
| 1999 $CW_{80}$ | 15.9 | 0.15 | 20060922 | 330.94862 | 214.50378 | 205.49962 | 7.90329 | 0.2372996 | 2.6769659 | 100 | 3 | 1999–2006 | 0.50 | M-v | 3 | MPC | 04115 | 1999 $CW_{80}$ |
| 1999 $CN_{82}$ | 15.0 | 0.15 | 20060922 | 319.65368 | 129.71442 | 353.13352 | 13.68068 | 0.1094747 | 2.5314629 | 110 | 6 | 1993–2006 | 0.58 | M-v | 2 | MPC | 87348 | 1999 $CN_{82}$ |
| 1999 $CC_{86}$ | 15.3 | 0.15 | 20060922 | 320.82643 | 174.37605 | 321.95104 | 5.72975 | 0.1197352 | 2.5243658 | 182 | 6 | 1994–2006 | 0.57 | M-v | 2 | MPC | 87348 | 1999 $CC_{86}$ |
| 1999 $CR_{86}$ | 15.2 | 0.15 | 20060922 | 300.79475 | 102.13964 | 42.88959 | 5.25065 | 0.2155488 | 2.5599153 | 76 | 5 | 1999–2006 | 0.59 | M-v | 3 | MPC | 87348 | 1999 $CR_{86}$ |
| 1999 $CU_{90}$ | 15.7 | 0.15 | 20060922 | 312.72350 | 357.81087 | 124.40403 | 7.33179 | 0.1885254 | 2.5693990 | 41 | 3 | 1999–2006 | 0.68 | M-v | 3 | MPC | 43344 | 1999 $CU_{90}$ |
| 1999 $CE_{92}$ | 15.9 | 0.15 | 20060922 | 309.92510 | 45.12766 | 98.69581 | 6.06297 | 0.1413903 | 2.5514723 | 77 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 43344 | 1999 $CE_{92}$ |
| 1999 $CH_{93}$ | 15.8 | 0.15 | 20060922 | 264.45082 | 154.03453 | 2.28304 | 3.19277 | 0.1187135 | 2.6518600 | 50 | 6 | 1999–2006 | 0.63 | M-v | 1 | MPC | 87348 | 1999 $CH_{93}$ |
| 1999 $CS_{94}$ | 15.5 | 0.15 | 20060922 | 346.80520 | 20.97156 | 59.68498 | 5.62526 | 0.1902969 | 2.5751415 | 70 | 5 | 1981–2006 | 0.50 | M-v | 1 | MPC | 66082 | 1999 $CS_{94}$ |
| 1999 $CZ_{96}$ | 15.6 | 0.15 | 20060922 | 272.39438 | 19.63452 | 125.07228 | 3.59235 | 0.1424097 | 2.6635503 | 45 | 4 | 1999–2006 | 0.63 | M-v | 2 | MPC | 64659 | 1999 $CZ_{96}$ |
| 1999 $CS_{98}$ | 15.7 | 0.15 | 20060922 | 337.78110 | 355.55714 | 131.98959 | 13.15444 | 0.0886421 | 2.5350506 | 94 | 5 | 1999–2006 | 0.55 | M-v | 2 | MPC | 90011 | 1999 $CS_{98}$ |
| 1999 $CD_{99}$ | 15.7 | 0.15 | 20060922 | 248.23476 | 34.24519 | 138.62281 | 13.47542 | 0.2121660 | 2.6904152 | 39 | 4 | 1995–2006 | 0.69 | M-v | 1 | MPC | 66082 | 1999 $CD_{99}$ |
| 1999 $CE_{100}$ | 16.0 | 0.15 | 20060922 | 338.96642 | 334.09639 | 140.46810 | 12.88794 | 0.2133896 | 2.5478854 | 109 | 4 | 1999–2006 | 0.59 | M-v | 2 | MPC | 87348 | 1999 $CE_{100}$ |
| 1999 $CV_{105}$ | 15.3 | 0.15 | 20060922 | 354.63850 | 235.28625 | 192.55418 | 4.15701 | 0.2082323 | 2.5660245 | 84 | 6 | 1999–2006 | 0.51 | M-v | 1 | MPC | 87348 | 1999 $CV_{105}$ |
| 1999 $CB_{107}$ | 16.2 | 0.15 | 20060922 | 228.78847 | 287.62008 | 272.85674 | 8.07606 | 0.2012836 | 2.6644029 | 31 | 4 | 1999–2006 | 0.63 | M-v | 2 | MPC | 04115 | 1999 $CB_{107}$ |
| 1999 $CS_{108}$ | 15.5 | 0.15 | 20060922 | 303.07147 | 188.32013 | 274.58666 | 12.36282 | 0.2178169 | 2.6491281 | 76 | 3 | 1999–2006 | 0.62 | M-v | 2 | MPC | 40009 | 1999 $CS_{108}$ |
| 1999 $CB_{114}$ | 15.4 | 0.15 | 20060922 | 163.38022 | 357.46261 | 305.68681 | 11.43609 | 0.0932391 | 2.5537887 | 59 | 5 | 1999–2006 | 0.55 | M-v | 2 | MPC | 90011 | 1999 $CB_{114}$ |
| 1999 $CL_{115}$ | 15.7 | 0.15 | 20060922 | 256.10521 | 295.51287 | 245.97599 | 10.18053 | 0.2474062 | 2.6563272 | 61 | 4 | 1996–2006 | 0.51 | M-v | 2 | MPC | 47769 | 1999 $CL_{115}$ |
| 1999 $CC_{117}$ | 15.2 | 0.15 | 20060922 | 129.67322 | 39.16545 | 167.21637 | 5.72460 | 0.1882188 | 2.9978510 | 77 | 5 | 1994–2006 | 0.69 | M-v | 2 | MPC | 04115 | 1999 $CC_{117}$ |
| 1999 $CT_{118}$ | 15.0 | 0.15 | 20060922 | 1.99305 | 257.95824 | 138.82488 | 15.58245 | 0.2214812 | 2.6138631 | 57 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 50404 | 1999 $CT_{118}$ |
| 1999 $CA_{129}$ | 15.9 | 0.15 | 20060922 | 307.70927 | 70.08441 | 58.35237 | 12.41845 | 0.1504444 | 2.6266563 | 60 | 5 | 1999–2006 | 0.57 | M-v | 2 | MPC | 87349 | 1999 $CA_{129}$ |
| 1999 $CW_{129}$ | 16.4 | 0.15 | 20060922 | 304.14015 | 323.41475 | 105.36194 | 6.25552 | 0.0511290 | 2.7221624 | 23 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 64660 | 1999 $CW_{129}$ |
| 1999 $CH_{133}$ | 16.1 | 0.15 | 20060922 | 262.29943 | 233.85761 | 333.14211 | 3.23427 | 0.0829070 | 2.5442434 | 91 | 5 | 1999–2006 | 0.63 | M-v | 2 | MPC | 90011 | 1999 $CH_{133}$ |
| 1999 $CL_{137}$ | 17.7 | 0.15 | 20060922 | 322.96146 | 298.87353 | 243.50030 | 0.47048 | 0.1482450 | 2.4598401 | 35 | 4 | 1999–2005 | 0.42 | M-v | 2 | MPC | 97344 | 1999 $CL_{137}$ |
| 1999 $CU_{140}$ | 16.2 | 0.15 | 20060922 | 337.00295 | 319.23522 | 86.46277 | 4.83932 | 0.1096414 | 2.5608125 | 123 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 66083 | 1999 $CU_{140}$ |
| 1999 $CN_{141}$ | 17.7 | 0.15 | 20060922 | 9.31029 | 25.32195 | 129.09066 | 2.43434 | 0.1138443 | 2.3761575 | 30 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 46354 | 1999 $CN_{141}$ |
| 1999 $CH_{144}$ | 16.7 | 0.15 | 20060922 | 160.89276 | 178.46201 | 4.91813 | 0.52467 | 0.0964153 | 3.0220483 | 25 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 04115 | 1999 $CH_{144}$ |
| 1999 $CJ_{145}$ | 15.9 | 0.15 | 20060922 | 332.38730 | 114.94611 | 320.92058 | 9.98754 | 0.0828417 | 2.6471207 | 19 | 3 | 1999–2006 | 0.40 | M-v | 3 | MPC | 19398 | 1999 $CJ_{145}$ |
| 1999 $CB_{146}$ | 15.1 | 0.15 | 20060922 | 193.34193 | 116.25857 | 344.61275 | 9.83277 | 0.0641096 | 3.1172568 | 45 | 4 | 1996–2004 | 0.55 | M-v | 1 | MPC | 87349 | 1999 $CB_{146}$ |
| 1999 $CM_{147}$ | 16.8 | 0.15 | 20060922 | 108.93892 | 46.86139 | 158.03293 | 5.39109 | 0.0980828 | 3.0938665 | 23 | 4 | 1999–2005 | 0.44 | M-v | 1 | MPC | 19399 | 1999 $CM_{147}$ |
| 1999 $CD_{149}$ | 15.8 | 0.15 | 20060922 | 238.23942 | 322.54974 | 88.55713 | 3.26596 | 0.0685988 | 2.8271095 | 49 | 4 | 1995–2005 | 0.73 | M-v | 1 | MPC | 77382 | 1999 $CD_{149}$ |
| 1999 $CH_{159}$ | 16.7 | 0.15 | 20060922 | 47.42399 | 31.05586 | 139.80983 | 6.27037 | 0.1149064 | 2.2876327 | 105 | 5 | 1996–2006 | 0.69 | M-v | 1 | MPC | 01974 | 1999 $CH_{159}$ |
| 1999 $CK_{159}$ | 16.3 | 0.15 | 20060922 | 328.64982 | 46.57125 | 165.51055 | 2.64062 | 0.1562812 | 2.3936784 | 93 | 4 | 1999–2004 | 0.75 | M-v | 2 | MPC | 47771 | 1999 $CK_{159}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $DW_{3}$ | 17.9 | 0.15 | 20060922 | 45.99129 | 6.91200 | 288.36115 | 2.32202 | 0.1595281 | 2.0941862 | 100 | 4 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04115 | 1999 $DW_{3}$ |
| 1999 $DB_{9}$ | 15.1 | 0.15 | 20060922 | 310.52683 | 107.37689 | 35.32342 | 13.64233 | 0.1984961 | 2.5807508 | 64 | 5 | 1999–2006 | 0.61 | M-v | 2 | MPC | 87349 | 1999 $DB_{9}$ |
| 1999 $EZ_{1}$ | 15.8 | 0.15 | 20060922 | 80.91961 | 81.80010 | 138.85348 | 2.09665 | 0.1264566 | 3.1043587 | 62 | 5 | 1999–2006 | 0.40 | M-v | 1 | MPC | 04115 | 1999 $EZ_{1}$ |
| 1999 $EY_{2}$ | 15.5 | 0.15 | 20060922 | 20.07116 | 285.66229 | 154.97690 | 21.12802 | 0.3742827 | 2.4180476 | 128 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 90011 | 1999 $EY_{2}$ |
| 1999 $EE_{5}$ | 18.4 | 0.15 | 20060922 | 165.81802 | 192.86633 | 355.54435 | 30.99951 | 0.2814860 | 1.6691489 | 163 | 4 | 1999–2006 | 0.68 | M-v | 2 | MPC | 70221 | 1999 $EE_{5}$ |
| 1999 $ER_{7}$ | 15.9 | 0.15 | 20060922 | 152.06847 | 170.84317 | 151.97692 | 3.49722 | 0.0877614 | 2.5218802 | 164 | 6 | 1997–2006 | 0.57 | M-v | 2 | MPC | 97344 | 1999 $ER_{7}$ |
| 1999 $EH_{8}$ | 17.2 | 0.15 | 20060922 | 31.47326 | 162.08527 | 109.15773 | 7.40481 | 0.1762372 | 2.2524766 | 22 | 3 | 1999–2004 | 0.38 | M-v | 2 | MPC | 29027 | 1999 $EH_{8}$ |
| 1999 $EM_{8}$ | 16.3 | 0.15 | 20060922 | 186.13585 | 293.51974 | 328.49555 | 0.99399 | 0.1561463 | 2.6283347 | 53 | 6 | 1999–2006 | 0.43 | M-v | 0 | MPC | 90011 | 1999 $EM_{8}$ |
| 1999 $EU_{10}$ | 16.1 | 0.15 | 20060922 | 93.69922 | 64.40163 | 175.33805 | 13.01369 | 0.0699588 | 3.0317211 | 38 | 6 | 1996–2006 | 0.47 | M-v | 0 | MPC | 77383 | 1999 $EU_{10}$ |
| 1999 $ET_{14}$ | 15.9 | 0.15 | 20060922 | 335.42822 | 323.90862 | 338.83166 | 8.50021 | 0.0694460 | 3.1744729 | 23 | 3 | 1999–2005 | 0.28 | M-v | 3 | MPC | 74602 | 1999 $ET_{14}$ |
| 1999 $FT_{1}$ | 16.4 | 0.15 | 20060922 | 274.32320 | 286.23843 | 178.05216 | 4.86685 | 0.1264628 | 2.7870102 | 41 | 6 | 1992–2006 | 0.43 | M-v | 0 | MPC | 74602 | 1999 $FT_{1}$ |
| 1999 $FP_{2}$ | 15.5 | 0.15 | 20060922 | 93.04455 | 254.67923 | 355.63347 | 20.23989 | 0.1935123 | 3.0498346 | 35 | 3 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04115 | 1999 $FP_{2}$ |
| 1999 $FO_{3}$ | 15.4 | 0.15 | 20060922 | 297.68635 | 302.96747 | 184.33520 | 23.48849 | 0.3101443 | 2.6626785 | 66 | 4 | 1999–2006 | 0.71 | M-v | 2 | MPC | 50405 | 1999 $FO_{3}$ |
| 1999 $FC_{4}$ | 16.3 | 0.15 | 20060922 | 301.08695 | 107.03861 | 318.36830 | 3.05121 | 0.1946746 | 2.7860001 | 55 | 5 | 1994–2006 | 0.56 | M-v | 0 | MPC | 04115 | 1999 $FC_{4}$ |
| 1999 $FU_{10}$ | 16.4 | 0.15 | 20060922 | 157.04033 | 336.90829 | 193.19776 | 2.21897 | 0.1677497 | 3.0101672 | 47 | 4 | 1996–2004 | 0.58 | M-v | 2 | MPC | 60526 | 1999 $FU_{10}$ |
| 1999 $FE_{11}$ | 17.4 | 0.15 | 20060922 | 24.53909 | 73.56000 | 167.83246 | 2.41885 | 0.1137669 | 2.2853007 | 57 | 6 | 1999–2006 | 0.58 | M-v | 1 | MPC | 99902 | 1999 $FE_{11}$ |
| 1999 $FU_{12}$ | 17.4 | 0.15 | 20060922 | 338.81861 | 266.42489 | 19.70416 | 7.00368 | 0.1143113 | 2.2974405 | 23 | 2 | 1999–2006 | 0.53 | M-v | 5 | MPC | 99902 | 1999 $FU_{12}$ |
| 1999 $FO_{15}$ | 16.3 | 0.15 | 20060922 | 301.08495 | 93.80124 | 350.31336 | 7.14600 | 0.1880558 | 2.7100380 | 52 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 04115 | 1999 $FO_{15}$ |
| 1999 $FO_{17}$ | 16.4 | 0.15 | 20060922 | 99.38043 | 107.64988 | 114.92956 | 0.41604 | 0.1538522 | 3.1712488 | 37 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 04115 | 1999 $FO_{17}$ |
| 1999 $FZ_{33}$ | 15.4 | 0.15 | 20060922 | 149.27925 | 130.40698 | 79.68006 | 3.24521 | 0.3143610 | 3.0033678 | 115 | 4 | 1999–2006 | 0.70 | M-v | 1 | MPC | 87349 | 1999 $FZ_{33}$ |
| 1999 $FJ_{61}$ | 15.6 | 0.15 | 20060922 | 200.42891 | 213.81257 | 348.79428 | 7.27829 | 0.1535746 | 2.8084466 | 49 | 6 | 1999–2006 | 0.56 | M-v | 1 | MPC | 87350 | 1999 $FJ_{61}$ |
| 1999 $FJ_{62}$ | 15.9 | 0.15 | 20060922 | 230.33438 | 7.54232 | 177.04209 | 14.05493 | 0.1034479 | 2.7402746 | 46 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 87350 | 1999 $FJ_{62}$ |
| 1999 $FH_{65}$ | 16.1 | 0.15 | 20060922 | 8.50304 | 129.02980 | 185.61428 | 16.73309 | 0.2164668 | 3.1043999 | 28 | 3 | 1999–2006 | 0.34 | M-v | 2 | MPC | 04115 | 1999 $FH_{65}$ |
| 1999 $FS_{73}$ | 17.1 | 0.15 | 20060922 | 104.75893 | 332.97349 | 8.21081 | 12.62151 | 0.0187257 | 2.6619621 | 29 | 3 | 1999–2005 | 0.34 | M-v | 2 | MPC | 93748 | 1999 $FS_{73}$ |
| 1999 $FG_{74}$ | 16.3 | 0.15 | 20060922 | 62.96940 | 103.81948 | 140.72312 | 1.67300 | 0.0431529 | 3.1691681 | 23 | 3 | 1999–2005 | 0.34 | M-v | 4 | MPC | 84492 | 1999 $FG_{74}$ |
| 1999 $FC_{77}$ | 17.0 | 0.15 | 20060922 | 349.37804 | 11.59761 | 134.13544 | 4.20875 | 0.0938522 | 2.5204013 | 38 | 5 | 1995–2005 | 0.53 | M-v | 1 | MPC | 90012 | 1999 $FC_{77}$ |
| 1999 $FP_{84}$ | 16.6 | 0.15 | 20060922 | 233.51097 | 336.98160 | 245.91695 | 5.44286 | 0.1542598 | 2.6243267 | 21 | 4 | 1999–2005 | 0.21 | M-v | 0 | MPC | 87350 | 1999 $FP_{84}$ |
| 1999 $FZ_{95}$ | 15.5 | 0.15 | 20060922 | 91.19892 | 94.83505 | 162.81009 | 16.39286 | 0.2130842 | 3.1473469 | 36 | 4 | 1999–2006 | 0.57 | M-v | 0 | MPC | 93749 | 1999 $FZ_{95}$ |
| 1999 $GH_{3}$ | 16.0 | 0.15 | 20060922 | 294.82386 | 247.06210 | 180.37223 | 4.78372 | 0.0959414 | 2.8951565 | 54 | 4 | 1999–2006 | 0.45 | M-v | 2 | MPC | 74604 | 1999 $GH_{3}$ |
| 1999 $GM_{3}$ | 16.6 | 0.15 | 20060922 | 332.38130 | 288.73972 | 14.87517 | 5.53155 | 0.2263617 | 2.2755418 | 44 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 01974 | 1999 $GM_{3}$ |
| 1999 $GS_{3}$ | 16.0 | 0.15 | 20060922 | 285.62013 | 106.71392 | 45.17234 | 28.06116 | 0.4238591 | 2.6164797 | 141 | 3 | 1999–2006 | 0.60 | M-v | 1 | MPC | 47775 | 1999 $GS_{3}$ |
| 1999 $GS_{6}$ | 19.3 | 0.15 | 20060922 | 319.06503 | 134.72477 | 314.68666 | 2.02192 | 0.4974681 | 1.1911038 | 183 | 4 | 1999–2006 | 0.55 | M-v | 3 | MPC | 04115 | 1999 $GS_{6}$ |
| 1999 $GU_{6}$ | 17.6 | 0.15 | 20060922 | 26.20388 | 272.99556 | 54.01986 | 2.30723 | 0.1666440 | 2.1503393 | 80 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 77383 | 1999 $GU_{6}$ |
| 1999 $GO_{10}$ | 16.7 | 0.15 | 20060922 | 348.81254 | 252.67264 | 16.24451 | 7.31000 | 0.1114195 | 2.2968049 | 62 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 01975 | 1999 $GO_{10}$ |
| 1999 $GA_{11}$ | 17.7 | 0.15 | 20060922 | 91.72496 | 163.38436 | 52.51670 | 1.46310 | 0.1905345 | 2.1969412 | 40 | 4 | 1999–2004 | 0.46 | M-v | 3 | MPC | 73946 | 1999 $GA_{11}$ |
| 1999 $GY_{12}$ | 16.0 | 0.15 | 20060922 | 251.07494 | 322.56719 | 213.70059 | 11.68992 | 0.0997068 | 2.7577033 | 39 | 6 | 1992–2006 | 0.64 | M-v | 1 | MPC | 47775 | 1999 $GY_{12}$ |
| 1999 $GC_{56}$ | 14.6 | 0.15 | 20060922 | 246.30399 | 46.83563 | 2.47961 | 16.65821 | 0.1265709 | 3.1357119 | 66 | 4 | 1996–2004 | 0.59 | M-v | 2 | MPC | 62241 | 1999 $GC_{56}$ |
| 1999 $GM_{56}$ | 17.0 | 0.15 | 20060922 | 103.99664 | 326.87754 | 8.47858 | 21.91614 | 0.0520232 | 2.6878426 | 21 | 2 | 1999–2005 | 0.22 | M-v | 3 | MPC | 88681 | 1999 $GM_{56}$ |
| 1999 $GF_{58}$ | 16.5 | 0.15 | 20060922 | 11.76586 | 275.07416 | 271.75561 | 2.17763 | 0.1735554 | 2.3961288 | 111 | 6 | 1995–2006 | 0.55 | M-v | 1 | MPC | 01975 | 1999 $GF_{58}$ |
| 1999 $HU_{3}$ | 16.1 | 0.15 | 20060922 | 219.55968 | 135.04327 | 97.71587 | 9.43367 | 0.2159517 | 2.6971466 | 26 | 3 | 1999–2004 | 0.73 | M-v | 4 | MPC | 47776 | 1999 $HU_{3}$ |
| 1999 $HY_{4}$ | 15.4 | 0.15 | 20060922 | 80.28765 | 228.54462 | 21.38119 | 6.31719 | 0.1605076 | 3.1263399 | 32 | 6 | 1995–2006 | 0.75 | M-v | 1 | MPC | 87350 | 1999 $HY_{4}$ |
| 1999 $HD_{7}$ | 17.8 | 0.15 | 20060922 | 37.74172 | 99.84288 | 210.55100 | 2.58065 | 0.1241611 | 2.1652457 | 54 | 5 | 1993–2006 | 0.46 | M-v | 1 | MPC | 04115 | 1999 $HD_{7}$ |
| 1999 $JV_{3}$ | 18.8 | 0.15 | 20060922 | 26.18887 | 101.40699 | 229.16487 | 15.22532 | 0.4148464 | 1.4510632 | 410 | 4 | 1978–2006 | 0.54 | M-v | 2 | MPC | 04116 | 1999 $JV_{3}$ |
| 1999 $JG_{4}$ | 16.6 | 0.15 | 20060922 | 45.22455 | 33.71869 | 252.81448 | 7.84100 | 0.2852232 | 2.2239438 | 76 | 3 | 1999–2006 | 0.59 | M-v | 3 | MPC | 04116 | 1999 $JG_{4}$ |
| 1999 $JP_{5}$ | 17.2 | 0.15 | 20060922 | 46.82599 | 241.04065 | 58.47185 | 9.38644 | 0.2878031 | 2.2141108 | 43 | 3 | 1999–2006 | 0.62 | M-v | 3 | MPC | 84493 | 1999 $JP_{5}$ |
| 1999 $JH_{28}$ | 14.6 | 0.15 | 20060922 | 99.88093 | 25.33749 | 219.12545 | 9.92002 | 0.1715945 | 3.1566606 | 65 | 5 | 1999–2006 | 0.70 | M-v | 1 | MPC | 01975 | 1999 $JH_{28}$ |
| 1999 $JY_{30}$ | 16.6 | 0.15 | 20060922 | 324.05791 | 289.21563 | 332.55820 | 1.51655 | 0.1747940 | 2.4084599 | 50 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 01975 | 1999 $JY_{30}$ |
| 1999 $JK_{39}$ | 17.4 | 0.15 | 20060922 | 27.92184 | 196.51290 | 34.62490 | 3.81335 | 0.2119235 | 2.3230121 | 66 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 99904 | 1999 $JK_{39}$ |
| 1999 $JV_{39}$ | 16.5 | 0.15 | 20060922 | 344.46395 | 222.65168 | 43.53954 | 6.72621 | 0.1937562 | 2.3647287 | 59 | 4 | 1999–2006 | 0.74 | M-v | 1 | MPC | 99905 | 1999 $JV_{39}$ |
| 1999 $JW_{44}$ | 16.8 | 0.15 | 20060922 | 12.58833 | 222.28709 | 12.92850 | 0.63865 | 0.1685828 | 2.3505720 | 70 | 4 | 1999–2006 | 0.61 | M-v | 2 | MPC | 99905 | 1999 $JW_{44}$ |
| 1999 $JR_{50}$ | 15.6 | 0.15 | 20060922 | 300.20201 | 92.80392 | 77.21499 | 11.19158 | 0.2574458 | 2.6328994 | 97 | 3 | 1999–2006 | 0.59 | M-v | 2 | MPC | 47779 | 1999 $JR_{50}$ |
| 1999 $JK_{59}$ | 15.5 | 0.15 | 20060922 | 267.99794 | 85.66243 | 187.05506 | 5.41948 | 0.2577627 | 2.5535564 | 135 | 5 | 1998–2004 | 0.67 | M-v | 2 | MPC | 70223 | 1999 $JK_{59}$ |
| 1999 $JD_{67}$ | 16.2 | 0.15 | 20060922 | 289.10143 | 192.75508 | 75.35447 | 6.83333 | 0.2176267 | 2.4716157 | 69 | 5 | 1996–2005 | 0.70 | M-v | 1 | MPC | 97345 | 1999 $JD_{67}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $JK_{70}$ | 15.1 | 0.15 | 20060922 | 144.91410 | 151.64556 | 65.23258 | 7.86393 | 0.1131928 | 3.0409210 | 54 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 87351 | 1999 $JK_{70}$ |
| 1999 $JN_{73}$ | 15.0 | 0.15 | 20060922 | 270.95649 | 111.80063 | 65.09726 | 14.24437 | 0.1377426 | 2.7181519 | 64 | 5 | 1999–2006 | 0.60 | M-v | 2 | MPC | 87351 | 1999 $JN_{73}$ |
| 1999 $JK_{85}$ | 15.2 | 0.15 | 20060922 | 114.65061 | 113.00843 | 121.34718 | 6.08416 | 0.1868308 | 3.1445540 | 59 | 3 | 1999–2006 | 0.79 | M-v | 3 | MPC | 60532 | 1999 $JK_{85}$ |
| 1999 $JJ_{90}$ | 15.0 | 0.15 | 20060922 | 213.74566 | 134.62790 | 92.20756 | 16.86276 | 0.0977112 | 2.7634307 | 47 | 3 | 1999–2006 | 0.68 | M-v | 3 | MPC | 47781 | 1999 $JJ_{90}$ |
| 1999 $JP_{96}$ | 16.6 | 0.15 | 20060922 | 51.22200 | 198.50957 | 90.59903 | 9.00033 | 0.2474925 | 2.2119446 | 39 | 3 | 1999–2006 | 0.65 | M-v | 3 | MPC | 29036 | 1999 $JP_{96}$ |
| 1999 $JA_{114}$ | 16.9 | 0.15 | 20060922 | 12.28392 | 116.43337 | 127.96929 | 2.70118 | 0.1806714 | 2.3421423 | 71 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 01975 | 1999 $JA_{114}$ |
| 1999 $JA_{128}$ | 16.6 | 0.15 | 20060922 | 101.68620 | 292.30971 | 226.88847 | 5.99819 | 0.1512602 | 2.2812019 | 58 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 01975 | 1999 $JA_{128}$ |
| 1999 $JB_{134}$ | 15.4 | 0.15 | 20060922 | 139.39770 | 166.31378 | 41.46009 | 10.96748 | 0.1637741 | 3.0838878 | 67 | 5 | 1996–2006 | 0.67 | M-v | 1 | MPC | 87351 | 1999 $JB_{134}$ |
| 1999 $JH_{135}$ | 15.9 | 0.15 | 20060922 | 190.16298 | 159.71703 | 109.52580 | 7.58565 | 0.2167947 | 2.7710509 | 56 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 97346 | 1999 $JH_{135}$ |
| 1999 $JG_{136}$ | 15.3 | 0.15 | 20060922 | 284.01333 | 100.57927 | 81.33630 | 11.71156 | 0.1836496 | 2.6581968 | 83 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 50411 | 1999 $JG_{136}$ |
| 1999 $JM_{138}$ | 15.5 | 0.15 | 20060922 | 103.10920 | 84.38693 | 182.54174 | 15.66656 | 0.1458443 | 3.0904611 | 61 | 7 | 1993–2006 | 0.66 | M-v | 0 | MPC | 77384 | 1999 $JM_{138}$ |
| 1999 KD | 17.5 | 0.15 | 20060922 | 314.31888 | 269.72143 | 61.43922 | 6.01247 | 0.2671716 | 2.3325469 | 53 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 01975 | 1999 KD |
| 1999 KR | 15.4 | 0.15 | 20060922 | 238.34735 | 26.82226 | 175.10988 | 8.67467 | 0.0717292 | 2.7661743 | 75 | 6 | 1999–2006 | 0.66 | M-v | 1 | MPC | 01975 | 1999 KR |
| 1999 $KO_3$ | 16.0 | 0.15 | 20060922 | 123.27777 | 204.05232 | 94.94794 | 3.30551 | 0.0269424 | 2.8642568 | 44 | 5 | 1991–2006 | 0.47 | M-v | 0 | MPC | 04116 | 1999 $KO_3$ |
| 1999 $KH_{12}$ | 15.0 | 0.15 | 20060922 | 106.79352 | 135.59138 | 102.65316 | 4.52589 | 0.1304825 | 3.1991145 | 93 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 66086 | 1999 $KH_{12}$ |
| 1999 LL | 16.0 | 0.15 | 20060922 | 251.86414 | 78.15295 | 235.36228 | 15.17178 | 0.1997600 | 2.5554204 | 33 | 3 | 1999–2004 | 0.42 | M-v | 2 | MPC | 49665 | 1999 LL |
| 1999 $LO_1$ | 17.3 | 0.15 | 20060922 | 7.64364 | 305.78586 | 68.59230 | 3.97083 | 0.3314301 | 2.1633059 | 95 | 3 | 1999–2006 | 0.53 | M-v | 1 | MPC | 55865 | 1999 $LO_1$ |
| 1999 $LN_3$ | 17.3 | 0.15 | 20060922 | 77.64057 | 164.41159 | 107.77080 | 6.91534 | 0.1907020 | 2.2189397 | 38 | 4 | 1999–2006 | 0.65 | M-v | 1 | MPC | 57688 | 1999 $LN_3$ |
| 1999 $LJ_4$ | 14.6 | 0.15 | 20060922 | 268.24698 | 92.09505 | 126.34632 | 28.80534 | 0.3229460 | 2.6229098 | 73 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 47783 | 1999 $LJ_4$ |
| 1999 $LS_{30}$ | 16.6 | 0.15 | 20060922 | 334.75440 | 226.63612 | 83.46197 | 5.64046 | 0.2070804 | 2.3231671 | 72 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 01975 | 1999 $LS_{30}$ |
| 1999 $LB_{31}$ | 15.8 | 0.15 | 20060922 | 271.10334 | 105.71112 | 97.57421 | 13.96486 | 0.1310804 | 2.6858229 | 45 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 66087 | 1999 $LB_{31}$ |
| 1999 $LR_{32}$ | 16.9 | 0.15 | 20060922 | 335.18828 | 199.01145 | 74.14242 | 2.98696 | 0.1904727 | 2.3813152 | 44 | 4 | 1999–2006 | 0.65 | M-v | 1 | MPC | 01976 | 1999 $LR_{32}$ |
| 1999 $LV_{35}$ | 16.2 | 0.15 | 20060922 | 244.71632 | 99.99093 | 145.83253 | 13.21618 | 0.2360107 | 2.6790039 | 34 | 3 | 1999–2004 | 0.55 | M-v | 2 | MPC | 50411 | 1999 $LV_{35}$ |
| 1999 MD | 16.0 | 0.15 | 20060922 | 66.41512 | 227.18326 | 76.04382 | 6.31473 | 0.1329368 | 3.1095098 | 30 | 4 | 1999–2006 | 0.44 | M-v | 0 | MPC | 66087 | 1999 MD |
| 1999 $NS_5$ | 16.6 | 0.15 | 20060922 | 30.10868 | 63.70411 | 279.45409 | 3.89853 | 0.1965723 | 2.2246677 | 62 | 5 | 1996–2006 | 0.46 | M-v | 1 | MPC | 74606 | 1999 $NS_5$ |
| 1999 $NT_{15}$ | 15.1 | 0.15 | 20060922 | 215.11507 | 331.96608 | 289.55354 | 7.01607 | 0.2262179 | 2.7833551 | 102 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 90012 | 1999 $NT_{15}$ |
| 1999 $NR_{31}$ | 16.9 | 0.15 | 20060922 | 79.21364 | 356.28344 | 297.49732 | 5.13785 | 0.1632638 | 2.1947376 | 42 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 57688 | 1999 $NR_{31}$ |
| 1999 $NE_{35}$ | 16.9 | 0.15 | 20060922 | 90.20020 | 323.42202 | 326.99268 | 4.28467 | 0.1679311 | 2.1723658 | 42 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 93752 | 1999 $NE_{35}$ |
| 1999 $NE_{41}$ | 15.2 | 0.15 | 20060922 | 217.72149 | 150.54919 | 122.36091 | 28.75735 | 0.3010938 | 2.7762017 | 66 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87351 | 1999 $NE_{41}$ |
| 1999 $NU_{53}$ | 15.4 | 0.15 | 20060922 | 246.59202 | 69.39967 | 247.73303 | 10.39379 | 0.2031390 | 2.6131152 | 32 | 3 | 1993–2004 | 0.52 | M-v | 2 | MPC | 04116 | 1999 $NU_{53}$ |
| 1999 $PQ_4$ | 17.0 | 0.15 | 20060922 | 352.11090 | 248.74254 | 61.52966 | 2.74964 | 0.1630412 | 2.3671363 | 67 | 7 | 1992–2005 | 0.57 | M-v | 1 | MPC | 04116 | 1999 $PQ_4$ |
| 1999 $PR_5$ | 17.2 | 0.15 | 20060922 | 260.70567 | 189.32953 | 160.32809 | 5.87301 | 0.2484502 | 2.5477449 | 47 | 3 | 1999–2005 | 0.65 | M-v | 3 | MPC | 53599 | 1999 $PR_5$ |
| 1999 $PE_7$ | 17.0 | 0.15 | 20060922 | 179.93904 | 210.03505 | 307.77465 | 1.83825 | 0.0940098 | 2.2754888 | 51 | 6 | 1996–2006 | 0.61 | M-v | 1 | MPC | 77385 | 1999 $PE_7$ |
| 1999 $PN_7$ | 15.1 | 0.15 | 20060922 | 87.80364 | 55.23347 | 298.36468 | 7.28244 | 0.2733428 | 3.0804602 | 95 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 97347 | 1999 $PN_7$ |
| 1999 RD | 16.1 | 0.15 | 20060922 | 89.02104 | 70.50341 | 157.91310 | 22.18017 | 0.2334956 | 2.2925418 | 86 | 3 | 1999–2006 | 0.65 | M-v | 2 | MPC | 04116 | 1999 RD |
| 1999 $RV_1$ | 15.4 | 0.15 | 20060922 | 164.17013 | 221.56701 | 171.14647 | 10.55494 | 0.2568713 | 2.7804659 | 93 | 3 | 1999–2006 | 0.59 | M-v | 2 | MPC | 01976 | 1999 $RV_1$ |
| 1999 $RC_4$ | 16.8 | 0.15 | 20060922 | 102.28943 | 340.76429 | 302.13193 | 4.72100 | 0.1999735 | 2.1786131 | 46 | 4 | 1999–2006 | 0.52 | M-v | 2 | MPC | 74607 | 1999 $RC_4$ |
| 1999 $RY_8$ | 14.9 | 0.15 | 20060922 | 111.95279 | 128.71237 | 167.53629 | 11.57563 | 0.1714325 | 3.2321617 | 86 | 6 | 1998–2006 | 0.47 | M-v | 0 | MPC | 87352 | 1999 $RY_8$ |
| 1999 $RH_9$ | 16.2 | 0.15 | 20060922 | 101.73363 | 125.55812 | 157.08265 | 2.23750 | 0.1628363 | 3.3438011 | 34 | 4 | 1999–2006 | 0.30 | M-v | 0 | MPC | 87352 | 1999 $RH_9$ |
| 1999 $RG_{10}$ | 14.6 | 0.15 | 20060922 | 324.87141 | 84.84171 | 334.61919 | 22.34856 | 0.3291478 | 2.2727258 | 296 | 3 | 1999–2006 | 0.50 | M-v | 0 | MPC | 04116 | 1999 $RG_{10}$ |
| 1999 $RX_{10}$ | 16.8 | 0.15 | 20060922 | 50.27000 | 61.93015 | 300.93791 | 1.17767 | 0.2117470 | 2.1799986 | 53 | 4 | 1996–2006 | 0.53 | M-v | 1 | MPC | 03147 | 1999 $RX_{10}$ |
| 1999 $RZ_{13}$ | 17.6 | 0.15 | 20060922 | 13.08201 | 358.42680 | 4.99283 | 2.55872 | 0.1977216 | 2.2572807 | 79 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 55869 | 1999 $RZ_{13}$ |
| 1999 $RF_{14}$ | 14.6 | 0.15 | 20060922 | 306.29366 | 90.95147 | 345.24867 | 20.81489 | 0.2835047 | 2.2959299 | 404 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04116 | 1999 $RF_{14}$ |
| 1999 $RF_{15}$ | 15.5 | 0.15 | 20060922 | 97.80477 | 1.37711 | 348.30256 | 7.33624 | 0.1656570 | 3.1104661 | 39 | 3 | 1999–2005 | 0.58 | M-v | 5 | MPC | 93753 | 1999 $RF_{15}$ |
| 1999 $RF_{16}$ | 15.0 | 0.15 | 20060922 | 125.98998 | 351.05819 | 336.95456 | 10.49933 | 0.1192172 | 3.0662700 | 64 | 4 | 1999–2005 | 0.54 | M-v | 1 | MPC | 90013 | 1999 $RF_{16}$ |
| 1999 $RN_{17}$ | 16.8 | 0.15 | 20060922 | 23.96896 | 349.46399 | 325.46740 | 5.32597 | 0.2081054 | 2.3081569 | 133 | 4 | 1992–2006 | 0.53 | M-v | 2 | MPC | 04116 | 1999 $RN_{17}$ |
| 1999 $RO_{21}$ | 16.6 | 0.15 | 20060922 | 336.62152 | 28.24968 | 355.86552 | 25.02046 | 0.2210465 | 2.3193695 | 89 | 3 | 1994–2006 | 0.53 | M-v | 2 | MPC | 03148 | 1999 $RO_{21}$ |
| 1999 $RZ_{21}$ | 16.9 | 0.15 | 20060922 | 338.78126 | 225.66207 | 144.43295 | 3.87173 | 0.2175864 | 2.3361721 | 48 | 3 | 1999–2006 | 0.47 | M-v | 3 | MPC | 03148 | 1999 $RZ_{21}$ |
| 1999 $RO_{26}$ | 15.6 | 0.15 | 20060922 | 77.39771 | 266.76278 | 3.77026 | 23.13456 | 0.2631462 | 2.2767316 | 136 | 3 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04116 | 1999 $RO_{26}$ |
| 1999 $RC_{29}$ | 16.4 | 0.15 | 20060922 | 261.97943 | 336.74101 | 354.30434 | 14.72999 | 0.1917633 | 2.5862829 | 51 | 3 | 1999–2006 | 0.51 | M-v | 3 | MPC | 01976 | 1999 $RC_{29}$ |
| 1999 $RS_{29}$ | 15.7 | 0.15 | 20060922 | 305.75826 | 85.03320 | 326.94707 | 22.38957 | 0.2379417 | 2.3343537 | 146 | 3 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04116 | 1999 $RS_{29}$ |
| 1999 $RD_{30}$ | 15.0 | 0.15 | 20060922 | 213.68943 | 327.09390 | 332.25259 | 17.49804 | 0.2601505 | 2.7843138 | 109 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 73950 | 1999 $RD_{30}$ |
| 1999 $RE_{30}$ | 16.0 | 0.15 | 20060922 | 207.77601 | 190.64102 | 183.97605 | 17.74407 | 0.2254242 | 2.6606671 | 37 | 2 | 1999–2006 | 0.48 | M-v | 5 | MPC | 99908 | 1999 $RE_{30}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $RR_{30}$ | 16.3 | 0.15 | 20060922 | 346.40531 | 61.65331 | 333.08052 | 23.65857 | 0.2730606 | 2.2967937 | 96 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04116 | 1999 $RR_{30}$ |
| 1999 $RA_{31}$ | 15.3 | 0.15 | 20060922 | 328.98431 | 73.73307 | 350.23482 | 23.11573 | 0.3080250 | 2.3035645 | 220 | 3 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04116 | 1999 $RA_{31}$ |
| 1999 $RD_{39}$ | 16.1 | 0.15 | 20060922 | 230.42493 | 231.11367 | 154.29419 | 12.14659 | 0.1933926 | 2.5902708 | 57 | 3 | 1999–2005 | 0.58 | M-v | 2 | MPC | 49676 | 1999 $RD_{39}$ |
| 1999 $RT_{40}$ | 15.9 | 0.15 | 20060922 | 288.08647 | 276.98864 | 179.59614 | 21.78489 | 0.2807132 | 2.3132015 | 100 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 04117 | 1999 $RT_{40}$ |
| 1999 $RG_{41}$ | 17.0 | 0.15 | 20060922 | 18.71999 | 307.87530 | 9.04874 | 24.67041 | 0.2649393 | 2.3159956 | 65 | 2 | 1999–2006 | 0.57 | M-v | 2 | MPC | 03148 | 1999 $RG_{41}$ |
| 1999 $RR_{43}$ | 16.6 | 0.15 | 20060922 | 262.89955 | 324.75837 | 49.96276 | 6.51311 | 0.2033131 | 2.5234637 | 51 | 4 | 1999–2006 | 0.57 | M-v | 3 | MPC | 01976 | 1999 $RR_{43}$ |
| 1999 $RS_{45}$ | 16.4 | 0.15 | 20060922 | 213.42789 | 34.78429 | 348.00639 | 5.40787 | 0.2265622 | 2.6394144 | 69 | 3 | 1999–2005 | 0.46 | M-v | 2 | MPC | 73950 | 1999 $RS_{45}$ |
| 1999 $RT_{45}$ | 16.4 | 0.15 | 20060922 | 72.49394 | 202.66406 | 180.47382 | 5.37366 | 0.1423504 | 3.1472693 | 32 | 3 | 1999–2005 | 0.39 | M-v | 3 | MPC | 88682 | 1999 $RT_{45}$ |
| 1999 $RF_{51}$ | 16.7 | 0.15 | 20060922 | 220.31561 | 211.21064 | 156.16339 | 3.26367 | 0.3011336 | 2.6180373 | 25 | 3 | 1995–2005 | 0.64 | M-v | 2 | MPC | 15644 | 1999 $RF_{51}$ |
| 1999 $RB_{55}$ | 16.8 | 0.15 | 20060922 | 359.28695 | 179.93311 | 191.56052 | 5.97494 | 0.1918098 | 2.2653467 | 136 | 4 | 1999–2006 | 0.43 | M-v | 2 | MPC | 04117 | 1999 $RB_{55}$ |
| 1999 $RL_{55}$ | 14.9 | 0.15 | 20060922 | 93.73272 | 223.85977 | 124.98878 | 2.07015 | 0.2443465 | 3.1047156 | 103 | 6 | 1994–2006 | 0.44 | M-v | 0 | MPC | 97348 | 1999 $RL_{55}$ |
| 1999 $RQ_{55}$ | 17.6 | 0.15 | 20060922 | 355.26007 | 18.13368 | 349.24073 | 5.55466 | 0.3263859 | 2.2918732 | 127 | 3 | 1999–2006 | 0.45 | M-v | 1 | MPC | 03148 | 1999 $RQ_{55}$ |
| 1999 $RO_{57}$ | 16.4 | 0.15 | 20060922 | 67.25907 | 337.29774 | 17.02244 | 3.10397 | 0.2218124 | 2.1610373 | 65 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 60539 | 1999 $RO_{57}$ |
| 1999 $RG_{58}$ | 16.8 | 0.15 | 20060922 | 314.85301 | 181.96177 | 165.08486 | 2.67820 | 0.2058538 | 2.4024637 | 57 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 01976 | 1999 $RG_{58}$ |
| 1999 $RV_{58}$ | 16.1 | 0.15 | 20060922 | 319.02492 | 79.84220 | 318.73964 | 11.55044 | 0.1779986 | 2.3094613 | 110 | 3 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04117 | 1999 $RV_{58}$ |
| 1999 $RH_{61}$ | 15.8 | 0.15 | 20060922 | 288.20495 | 88.69289 | 326.95647 | 6.95185 | 0.2169226 | 2.3494788 | 78 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04117 | 1999 $RH_{61}$ |
| 1999 $RV_{64}$ | 17.2 | 0.15 | 20060922 | 352.66137 | 222.28786 | 123.25432 | 2.94432 | 0.2331151 | 2.3234714 | 59 | 4 | 1999–2006 | 0.63 | M-v | 2 | MPC | 04117 | 1999 $RV_{64}$ |
| 1999 $RQ_{66}$ | 16.4 | 0.15 | 20060922 | 353.98662 | 353.11831 | 357.35754 | 8.26673 | 0.1858396 | 2.3127246 | 70 | 3 | 1999–2006 | 0.61 | M-v | 2 | MPC | 04117 | 1999 $RQ_{66}$ |
| 1999 $RC_{67}$ | 16.7 | 0.15 | 20060922 | 7.00287 | 325.67383 | 350.23933 | 5.20894 | 0.2576326 | 2.3329739 | 44 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 03148 | 1999 $RC_{67}$ |
| 1999 $RN_{67}$ | 17.2 | 0.15 | 20060922 | 329.67834 | 202.45191 | 191.25456 | 4.92014 | 0.2518741 | 2.3121091 | 82 | 5 | 1999–2006 | 0.64 | M-v | 1 | MPC | 04117 | 1999 $RN_{67}$ |
| 1999 $RC_{68}$ | 15.1 | 0.15 | 20060922 | 71.74638 | 66.20245 | 335.50242 | 14.51601 | 0.2366445 | 3.0849283 | 49 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 97348 | 1999 $RC_{68}$ |
| 1999 $RM_{68}$ | 16.6 | 0.15 | 20060922 | 332.18522 | 209.17293 | 148.84235 | 7.13532 | 0.1106888 | 2.3477592 | 35 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04117 | 1999 $RM_{68}$ |
| 1999 $RM_{69}$ | 16.9 | 0.15 | 20060922 | 5.48637 | 185.79639 | 124.17340 | 3.28339 | 0.2085296 | 2.3502310 | 39 | 5 | 1998–2003 | 0.66 | M-v | 1 | MPC | 57691 | 1999 $RM_{69}$ |
| 1999 $RC_{70}$ | 16.5 | 0.15 | 20060922 | 16.21195 | 128.14827 | 166.91479 | 7.49305 | 0.2093018 | 2.3515321 | 61 | 6 | 1991–2006 | 0.47 | M-v | 1 | MPC | 77388 | 1999 $RC_{70}$ |
| 1999 $RQ_{73}$ | 17.2 | 0.15 | 20060922 | 19.98573 | 166.80215 | 187.39847 | 3.84029 | 0.2259166 | 2.2626934 | 83 | 4 | 1994–2006 | 0.46 | M-v | 1 | MPC | 74612 | 1999 $RQ_{73}$ |
| 1999 $RY_{75}$ | 17.2 | 0.15 | 20060922 | 79.99635 | 341.06734 | 311.84850 | 4.26157 | 0.1706755 | 2.2352655 | 45 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 77388 | 1999 $RY_{75}$ |
| 1999 $RA_{76}$ | 16.9 | 0.15 | 20060922 | 109.06134 | 101.04010 | 190.16068 | 6.77666 | 0.1292597 | 2.1881241 | 72 | 5 | 1996–2006 | 0.46 | M-v | 1 | MPC | 87352 | 1999 $RA_{76}$ |
| 1999 $RF_{78}$ | 16.1 | 0.15 | 20060922 | 276.72855 | 53.65160 | 311.80069 | 6.69644 | 0.1466637 | 2.4714525 | 89 | 3 | 1999–2005 | 0.65 | M-v | 3 | MPC | 57692 | 1999 $RF_{78}$ |
| 1999 $RG_{78}$ | 16.8 | 0.15 | 20060922 | 1.71901 | 98.63197 | 289.73643 | 4.44282 | 0.1268562 | 2.2404370 | 82 | 5 | 1993–2006 | 0.52 | M-v | 1 | MPC | 55876 | 1999 $RG_{78}$ |
| 1999 $RH_{78}$ | 16.4 | 0.15 | 20060922 | 344.17827 | 187.18623 | 194.94757 | 5.42368 | 0.1447235 | 2.2871893 | 125 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04117 | 1999 $RH_{78}$ |
| 1999 $RS_{78}$ | 16.8 | 0.15 | 20060922 | 348.07428 | 16.41670 | 343.57674 | 5.51451 | 0.1795437 | 2.3176086 | 89 | 4 | 1999–2006 | 0.53 | M-v | 2 | MPC | 03149 | 1999 $RS_{78}$ |
| 1999 $RY_{78}$ | 17.1 | 0.15 | 20060922 | 348.31416 | 182.78046 | 166.19020 | 8.19203 | 0.1354825 | 2.3334269 | 56 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 04117 | 1999 $RY_{78}$ |
| 1999 $RS_{80}$ | 16.1 | 0.15 | 20060922 | 156.48843 | 204.75137 | 230.43510 | 1.41453 | 0.1861389 | 2.6613304 | 65 | 6 | 1993–2006 | 0.59 | M-v | 0 | MPC | 01977 | 1999 $RS_{80}$ |
| 1999 $RT_{80}$ | 17.2 | 0.15 | 20060922 | 306.90458 | 335.97388 | 40.85341 | 1.73110 | 0.1932266 | 2.3827721 | 38 | 3 | 1999–2005 | 0.51 | M-v | 3 | MPC | 55877 | 1999 $RT_{80}$ |
| 1999 $RY_{80}$ | 16.3 | 0.15 | 20060922 | 113.73581 | 269.72094 | 344.03001 | 4.28439 | 0.1632112 | 2.2357379 | 64 | 3 | 1999–2006 | 0.57 | M-v | 3 | MPC | 74613 | 1999 $RY_{80}$ |
| 1999 $RH_{81}$ | 16.7 | 0.15 | 20060922 | 160.18377 | 184.63378 | 169.16480 | 11.69549 | 0.1834881 | 2.8637691 | 58 | 4 | 1998–2004 | 0.72 | M-v | 2 | MPC | 73951 | 1999 $RH_{81}$ |
| 1999 $RJ_{81}$ | 16.2 | 0.15 | 20060922 | 0.16977 | 301.31375 | 354.06993 | 5.76156 | 0.0953459 | 2.4165000 | 51 | 5 | 1998–2005 | 0.58 | M-v | 1 | MPC | 77388 | 1999 $RJ_{81}$ |
| 1999 $RJ_{82}$ | 17.6 | 0.15 | 20060922 | 79.22338 | 116.15912 | 240.59109 | 2.61531 | 0.1549763 | 2.1495198 | 53 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 47790 | 1999 $RJ_{82}$ |
| 1999 $RY_{82}$ | 16.9 | 0.15 | 20060922 | 18.39564 | 136.20897 | 174.90920 | 6.44959 | 0.1760622 | 2.3337262 | 58 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 03149 | 1999 $RY_{82}$ |
| 1999 $RH_{85}$ | 17.6 | 0.15 | 20060922 | 344.78390 | 222.95669 | 156.72091 | 2.69663 | 0.2453638 | 2.3084328 | 105 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 04117 | 1999 $RH_{85}$ |
| 1999 $RT_{91}$ | 16.4 | 0.15 | 20060922 | 6.98685 | 49.72016 | 351.19367 | 2.05666 | 0.2127033 | 2.2372880 | 94 | 3 | 1999–2006 | 0.54 | M-v | 2 | MPC | 60540 | 1999 $RT_{91}$ |
| 1999 $RN_{94}$ | 16.5 | 0.15 | 20060922 | 229.13782 | 236.99458 | 145.67912 | 4.71242 | 0.2482609 | 2.6042999 | 59 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 01977 | 1999 $RN_{94}$ |
| 1999 $RH_{95}$ | 17.2 | 0.15 | 20060922 | 29.92798 | 168.69841 | 173.95884 | 2.33147 | 0.2930848 | 2.2656796 | 104 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 55879 | 1999 $RH_{95}$ |
| 1999 $RP_{96}$ | 16.8 | 0.15 | 20060922 | 11.68084 | 350.16085 | 21.79514 | 1.08327 | 0.1975926 | 2.2703907 | 111 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 04117 | 1999 $RP_{96}$ |
| 1999 $RL_{97}$ | 16.8 | 0.15 | 20060922 | 351.00210 | 14.30232 | 353.64674 | 7.03485 | 0.2326045 | 2.3151568 | 147 | 2 | 1999–2006 | 0.49 | M-v | 3 | MPC | 03149 | 1999 $RL_{97}$ |
| 1999 $RV_{102}$ | 14.9 | 0.15 | 20060922 | 113.87354 | 58.43127 | 279.35544 | 7.71248 | 0.2536816 | 3.0704326 | 88 | 3 | 1995–2006 | 0.53 | M-v | 2 | MPC | 97348 | 1999 $RV_{102}$ |
| 1999 $RE_{105}$ | 16.2 | 0.15 | 20060922 | 18.32407 | 341.49919 | 21.00899 | 5.56556 | 0.1624396 | 2.2782097 | 132 | 4 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04117 | 1999 $RE_{105}$ |
| 1999 $RF_{106}$ | 16.0 | 0.15 | 20060922 | 282.13424 | 85.23891 | 304.23298 | 5.35330 | 0.1387948 | 2.4226548 | 59 | 3 | 1999–2005 | 0.51 | M-v | 3 | MPC | 55880 | 1999 $RF_{106}$ |
| 1999 $RL_{106}$ | 16.6 | 0.15 | 20060922 | 8.12863 | 71.27038 | 286.00023 | 5.64305 | 0.2221327 | 2.2901709 | 105 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04117 | 1999 $RL_{106}$ |
| 1999 $RP_{106}$ | 16.1 | 0.15 | 20060922 | 17.54178 | 43.85540 | 303.02921 | 6.45539 | 0.1459712 | 2.2872213 | 78 | 4 | 1994–2006 | 0.52 | M-v | 2 | MPC | 04117 | 1999 $RP_{106}$ |
| 1999 $RN_{107}$ | 16.7 | 0.15 | 20060922 | 10.78143 | 112.30915 | 247.44801 | 6.05355 | 0.1504135 | 2.2859177 | 72 | 4 | 1999–2006 | 0.52 | M-v | 2 | MPC | 55881 | 1999 $RN_{107}$ |
| 1999 $RQ_{108}$ | 14.8 | 0.15 | 20060922 | 77.41821 | 86.93760 | 301.04869 | 9.13045 | 0.1159172 | 3.0965099 | 73 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 97348 | 1999 $RQ_{108}$ |
| 1999 $RE_{109}$ | 16.6 | 0.15 | 20060922 | 328.60262 | 134.87799 | 270.84445 | 4.73567 | 0.1275777 | 2.2824976 | 85 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 55881 | 1999 $RE_{109}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $RZ_{114}$ | 16.8 | 0.15 | 20060922 | 351.10330 | 109.34565 | 259.89916 | 4.26821 | 0.1738748 | 2.2966186 | 82 | 2 | 1999–2006 | 0.46 | M-v | 3 | MPC | 03149 | 1999 $RZ_{114}$ |
| 1999 $RX_{121}$ | 16.8 | 0.15 | 20060922 | 19.15983 | 140.87343 | 187.39697 | 6.75406 | 0.2588214 | 2.2808578 | 115 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 04117 | 1999 $RX_{121}$ |
| 1999 $RO_{123}$ | 16.6 | 0.15 | 20060922 | 0.79970 | 112.65092 | 237.13202 | 7.46618 | 0.1387518 | 2.3129956 | 76 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 04117 | 1999 $RO_{123}$ |
| 1999 $RJ_{131}$ | 16.6 | 0.15 | 20060922 | 29.94203 | 136.53134 | 236.18090 | 7.18458 | 0.0931067 | 2.1963562 | 72 | 5 | 1999–2006 | 0.52 | M-v | 0 | MPC | 87353 | 1999 $RJ_{131}$ |
| 1999 $RO_{131}$ | 16.5 | 0.15 | 20060922 | 5.39337 | 104.30453 | 250.35031 | 6.53483 | 0.1239384 | 2.2779610 | 78 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04117 | 1999 $RO_{131}$ |
| 1999 $RG_{135}$ | 16.7 | 0.15 | 20060922 | 36.06287 | 314.60397 | 337.72416 | 12.81683 | 0.2174007 | 2.3002892 | 117 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04117 | 1999 $RG_{135}$ |
| 1999 $RO_{138}$ | 16.0 | 0.15 | 20060922 | 246.09641 | 81.63878 | 261.54301 | 11.46144 | 0.1931431 | 2.6148111 | 50 | 3 | 1999–2004 | 0.59 | M-v | 3 | MPC | 49683 | 1999 $RO_{138}$ |
| 1999 $RQ_{140}$ | 16.3 | 0.15 | 20060922 | 57.78626 | 191.30252 | 128.04424 | 4.58752 | 0.1518533 | 2.2246650 | 85 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 77390 | 1999 $RQ_{140}$ |
| 1999 $RG_{141}$ | 15.8 | 0.15 | 20060922 | 233.32566 | 122.52952 | 244.72237 | 1.24847 | 0.1905773 | 2.5876522 | 46 | 2 | 1999–2005 | 0.56 | M-v | 5 | MPC | 71987 | 1999 $RG_{141}$ |
| 1999 $RJ_{144}$ | 15.9 | 0.15 | 20060922 | 306.25809 | 76.32761 | 281.27790 | 5.10910 | 0.1234960 | 2.4143464 | 106 | 4 | 1987–2005 | 0.58 | M-v | 2 | MPC | 77390 | 1999 $RJ_{144}$ |
| 1999 $RK_{144}$ | 17.7 | 0.15 | 20060922 | 46.30829 | 138.20976 | 209.35754 | 6.35011 | 0.1613649 | 2.2156003 | 37 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 77390 | 1999 $RK_{144}$ |
| 1999 $RR_{144}$ | 14.5 | 0.15 | 20060922 | 66.74870 | 170.66921 | 218.28301 | 9.14745 | 0.1030186 | 3.0884666 | 144 | 7 | 1999–2006 | 0.50 | M-v | 0 | MPC | 97349 | 1999 $RR_{144}$ |
| 1999 $RU_{144}$ | 15.7 | 0.15 | 20060922 | 93.73853 | 145.77591 | 184.54463 | 15.16607 | 0.3266244 | 3.1695477 | 54 | 3 | 1999–2005 | 0.68 | M-v | 2 | MPC | 88684 | 1999 $RU_{144}$ |
| 1999 $RN_{145}$ | 16.5 | 0.15 | 20060922 | 9.40948 | 26.79858 | 308.55497 | 6.82096 | 0.1474400 | 2.3032621 | 92 | 5 | 1993–2006 | 0.52 | M-v | 2 | MPC | 03149 | 1999 $RN_{145}$ |
| 1999 $RR_{145}$ | 17.0 | 0.15 | 20060922 | 332.54188 | 68.58752 | 299.99304 | 4.13069 | 0.2092952 | 2.3343941 | 57 | 4 | 1992–2006 | 0.60 | M-v | 1 | MPC | 03150 | 1999 $RR_{145}$ |
| 1999 $RY_{145}$ | 16.5 | 0.15 | 20060922 | 44.07892 | 152.21599 | 187.07158 | 6.17255 | 0.2125944 | 2.2257558 | 84 | 4 | 1999–2006 | 0.53 | M-v | 2 | MPC | 77390 | 1999 $RY_{145}$ |
| 1999 $RC_{148}$ | 17.0 | 0.15 | 20060922 | 332.09318 | 165.02440 | 216.47043 | 2.86298 | 0.2436881 | 2.3207114 | 72 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 04117 | 1999 $RC_{148}$ |
| 1999 $RE_{148}$ | 16.7 | 0.15 | 20060922 | 310.83465 | 79.99155 | 317.29507 | 6.49815 | 0.1469241 | 2.3268379 | 53 | 4 | 1999–2006 | 0.45 | M-v | 0 | MPC | 04117 | 1999 $RE_{148}$ |
| 1999 $RR_{148}$ | 16.5 | 0.15 | 20060922 | 54.96681 | 161.68678 | 175.61543 | 4.40202 | 0.1681126 | 2.2075218 | 49 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 74618 | 1999 $RR_{148}$ |
| 1999 $RV_{149}$ | 15.2 | 0.15 | 20060922 | 81.88922 | 33.20915 | 323.05966 | 5.04614 | 0.2942327 | 3.1646653 | 118 | 4 | 1999–2006 | 0.45 | M-v | 2 | MPC | 97349 | 1999 $RV_{149}$ |
| 1999 $RT_{152}$ | 15.4 | 0.15 | 20060922 | 264.10379 | 1.15408 | 327.89792 | 11.67961 | 0.1843015 | 2.5728200 | 105 | 4 | 1999–2006 | 0.63 | M-v | 2 | MPC | 01978 | 1999 $RT_{152}$ |
| 1999 $RN_{153}$ | 16.2 | 0.15 | 20060922 | 7.36992 | 166.83919 | 208.52563 | 6.65445 | 0.1513640 | 2.2508208 | 92 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04117 | 1999 $RN_{153}$ |
| 1999 $RQ_{156}$ | 16.5 | 0.15 | 20060922 | 359.72097 | 354.20194 | 331.54666 | 5.24819 | 0.2468165 | 2.3394098 | 78 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 04117 | 1999 $RQ_{156}$ |
| 1999 $RV_{156}$ | 16.4 | 0.15 | 20060922 | 32.65716 | 345.90108 | 333.60426 | 5.43740 | 0.1854849 | 2.2806805 | 102 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 04118 | 1999 $RV_{156}$ |
| 1999 $RS_{161}$ | 16.3 | 0.15 | 20060922 | 280.66032 | 40.07206 | 345.53681 | 1.93488 | 0.2038358 | 2.4256254 | 118 | 3 | 1999–2005 | 0.53 | M-v | 2 | MPC | 57694 | 1999 $RS_{161}$ |
| 1999 $RT_{161}$ | 17.0 | 0.15 | 20060922 | 19.79847 | 346.69294 | 344.35568 | 6.12578 | 0.1972312 | 2.2865580 | 103 | 2 | 1999–2006 | 0.52 | M-v | 3 | MPC | 03150 | 1999 $RT_{161}$ |
| 1999 $RG_{162}$ | 17.7 | 0.15 | 20060922 | 101.90062 | 226.82441 | 100.36494 | 1.98311 | 0.1779431 | 2.1386015 | 45 | 3 | 1999–2004 | 0.49 | M-v | 3 | MPC | 93757 | 1999 $RG_{162}$ |
| 1999 $RN_{163}$ | 16.7 | 0.15 | 20060922 | 353.09730 | 169.42836 | 191.34424 | 5.22769 | 0.1824451 | 2.3068686 | 112 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 04118 | 1999 $RN_{163}$ |
| 1999 $RP_{164}$ | 17.4 | 0.15 | 20060922 | 242.82342 | 152.05490 | 206.97128 | 2.51996 | 0.2684623 | 2.5889073 | 41 | 4 | 1995–2005 | 0.60 | M-v | 2 | MPC | 50419 | 1999 $RP_{164}$ |
| 1999 $RR_{164}$ | 17.2 | 0.15 | 20060922 | 71.72277 | 24.52167 | 313.41138 | 4.44568 | 0.1266582 | 2.1856035 | 45 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 55886 | 1999 $RR_{164}$ |
| 1999 $RS_{164}$ | 17.1 | 0.15 | 20060922 | 47.96978 | 86.11698 | 240.36721 | 3.14550 | 0.1906569 | 2.2441344 | 62 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 84498 | 1999 $RS_{164}$ |
| 1999 $RP_{165}$ | 15.2 | 0.15 | 20060922 | 95.85072 | 340.30344 | 342.25526 | 5.21869 | 0.1761549 | 3.2189465 | 84 | 5 | 1996–2006 | 0.46 | M-v | 0 | MPC | 88684 | 1999 $RP_{165}$ |
| 1999 $RE_{166}$ | 16.4 | 0.15 | 20060922 | 346.76000 | 310.61606 | 17.29575 | 3.28600 | 0.1915023 | 2.3679576 | 57 | 3 | 1999–2003 | 0.53 | M-v | 3 | MPC | 57695 | 1999 $RE_{166}$ |
| 1999 $RS_{168}$ | 16.9 | 0.15 | 20060922 | 18.78484 | 184.29787 | 170.23094 | 6.41346 | 0.2659504 | 2.2658702 | 115 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04118 | 1999 $RS_{168}$ |
| 1999 $RU_{170}$ | 16.5 | 0.15 | 20060922 | 28.52084 | 341.89595 | 352.24756 | 4.79662 | 0.1705455 | 2.2743903 | 117 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 04118 | 1999 $RU_{170}$ |
| 1999 $RY_{171}$ | 16.9 | 0.15 | 20060922 | 358.05150 | 226.50858 | 144.82507 | 6.88577 | 0.1336605 | 2.2779167 | 68 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 04118 | 1999 $RY_{171}$ |
| 1999 $RC_{172}$ | 15.1 | 0.15 | 20060922 | 112.38480 | 238.91512 | 87.68328 | 3.01133 | 0.2127312 | 3.1203657 | 84 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 97349 | 1999 $RC_{172}$ |
| 1999 $RD_{176}$ | 16.8 | 0.15 | 20060922 | 40.79137 | 235.57950 | 72.20772 | 2.76677 | 0.1894478 | 2.3071335 | 82 | 5 | 1999–2006 | 0.65 | M-v | 1 | MPC | 74620 | 1999 $RD_{176}$ |
| 1999 $RM_{178}$ | 16.8 | 0.15 | 20060922 | 29.44221 | 196.11283 | 153.12806 | 6.64250 | 0.1706456 | 2.2524575 | 62 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 47795 | 1999 $RM_{178}$ |
| 1999 $RU_{179}$ | 16.9 | 0.15 | 20060922 | 28.37513 | 325.28222 | 61.58853 | 4.37889 | 0.1604659 | 2.1995487 | 43 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 62244 | 1999 $RU_{179}$ |
| 1999 $RU_{182}$ | 17.3 | 0.15 | 20060922 | 358.17096 | 22.56297 | 346.62414 | 7.03001 | 0.1473442 | 2.2907686 | 108 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04118 | 1999 $RU_{182}$ |
| 1999 $RG_{183}$ | 16.2 | 0.15 | 20060922 | 301.58801 | 231.81364 | 148.36055 | 2.83074 | 0.1518584 | 2.3974035 | 118 | 4 | 1996–2005 | 0.60 | M-v | 1 | MPC | 77392 | 1999 $RG_{183}$ |
| 1999 $RH_{185}$ | 17.1 | 0.15 | 20060922 | 357.59993 | 250.35301 | 97.70175 | 4.57240 | 0.2614805 | 2.3198620 | 38 | 2 | 1999–2006 | 0.49 | M-v | 3 | MPC | 03150 | 1999 $RH_{185}$ |
| 1999 $RN_{185}$ | 16.9 | 0.15 | 20060922 | 350.91602 | 354.06716 | 341.35198 | 6.32259 | 0.1428703 | 2.3511038 | 61 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04118 | 1999 $RN_{185}$ |
| 1999 $RV_{185}$ | 17.5 | 0.15 | 20060922 | 327.68344 | 33.34281 | 348.48213 | 8.04947 | 0.2313295 | 2.3351147 | 26 | 3 | 1999–2006 | 0.58 | M-v | 3 | MPC | 68547 | 1999 $RV_{185}$ |
| 1999 $RJ_{186}$ | 16.2 | 0.15 | 20060922 | 16.65640 | 263.41084 | 112.39737 | 5.62672 | 0.1597586 | 2.2335202 | 117 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 77392 | 1999 $RJ_{186}$ |
| 1999 $RA_{187}$ | 17.0 | 0.15 | 20060922 | 48.30086 | 328.45067 | 344.61975 | 4.05882 | 0.1664204 | 2.2670936 | 71 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 74622 | 1999 $RA_{187}$ |
| 1999 $RB_{188}$ | 16.5 | 0.15 | 20060922 | 257.76699 | 307.29706 | 106.16647 | 2.26585 | 0.1842712 | 2.4418550 | 83 | 5 | 1997–2005 | 0.48 | M-v | 1 | MPC | 55890 | 1999 $RB_{188}$ |
| 1999 $RG_{189}$ | 15.2 | 0.15 | 20060922 | 77.33225 | 229.61902 | 179.90588 | 11.46978 | 0.0937768 | 3.0174327 | 53 | 4 | 1999–2006 | 0.65 | M-v | 1 | MPC | 97349 | 1999 $RG_{189}$ |
| 1999 $RL_{189}$ | 15.9 | 0.15 | 20060922 | 246.49175 | 308.68082 | 354.16526 | 14.41350 | 0.1452343 | 2.7103693 | 66 | 3 | 1999–2004 | 0.55 | M-v | 2 | MPC | 47796 | 1999 $RL_{189}$ |
| 1999 $RV_{189}$ | 16.4 | 0.15 | 20060922 | 222.24680 | 268.97981 | 124.86029 | 5.85482 | 0.3133859 | 2.5926392 | 31 | 3 | 1999–2005 | 0.67 | M-v | 2 | MPC | 49690 | 1999 $RV_{189}$ |
| 1999 $RY_{189}$ | 17.5 | 0.15 | 20060922 | 321.91093 | 23.15184 | 332.78001 | 1.88578 | 0.1974087 | 2.3899710 | 53 | 3 | 1999–2005 | 0.49 | M-v | 2 | MPC | 55891 | 1999 $RY_{189}$ |
| 1999 $RG_{190}$ | 15.1 | 0.15 | 20060922 | 98.51906 | 4.31233 | 309.29601 | 13.27640 | 0.1047404 | 3.2384177 | 63 | 4 | 1999–2005 | 0.64 | M-v | 1 | MPC | 90014 | 1999 $RG_{190}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $RT_{190}$ | 16.7 | 0.15 | 20060922 | 270.79093 | 87.10492 | 172.70775 | 2.89079 | 0.0831364 | 2.7671973 | 17 | 3 | 1999–2004 | 0.39 | M-v | 4 | MPC | 71989 | 1999 $RT_{190}$ |
| 1999 $RW_{190}$ | 16.7 | 0.15 | 20060922 | 186.90114 | 243.37892 | 170.50517 | 2.05062 | 0.2091077 | 2.6420521 | 22 | 3 | 1997–2006 | 0.30 | M-v | 4 | MPC | 99910 | 1999 $RW_{190}$ |
| 1999 $RL_{191}$ | 14.8 | 0.15 | 20060922 | 89.15703 | 273.31082 | 39.49588 | 17.13555 | 0.1399795 | 3.4516427 | 33 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 93757 | 1999 $RL_{191}$ |
| 1999 $RO_{202}$ | 14.6 | 0.15 | 20060922 | 113.78085 | 33.35348 | 330.55857 | 13.85335 | 0.1594927 | 3.0509580 | 67 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 97350 | 1999 $RO_{202}$ |
| 1999 $RP_{202}$ | 15.3 | 0.15 | 20060922 | 151.60924 | 188.56926 | 229.78178 | 8.64863 | 0.2515378 | 2.7783755 | 84 | 4 | 1999–2006 | 0.64 | M-v | 2 | MPC | 01978 | 1999 $RP_{202}$ |
| 1999 $RU_{207}$ | 16.2 | 0.15 | 20060922 | 41.94166 | 37.86476 | 282.02962 | 5.16396 | 0.1872574 | 2.2844674 | 78 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 03150 | 1999 $RU_{207}$ |
| 1999 $RP_{208}$ | 16.9 | 0.15 | 20060922 | 356.00368 | 72.29689 | 267.00287 | 4.77802 | 0.2501432 | 2.3495734 | 89 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 04118 | 1999 $RP_{208}$ |
| 1999 $RE_{209}$ | 16.5 | 0.15 | 20060922 | 328.42100 | 53.61167 | 306.38536 | 5.28324 | 0.1525230 | 2.3892540 | 68 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 77393 | 1999 $RE_{209}$ |
| 1999 $RF_{209}$ | 16.2 | 0.15 | 20060922 | 40.62356 | 83.62399 | 250.53044 | 4.53194 | 0.1898376 | 2.2684869 | 118 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 74623 | 1999 $RF_{209}$ |
| 1999 $RC_{210}$ | 14.5 | 0.15 | 20060922 | 279.94782 | 115.92776 | 356.09037 | 23.52233 | 0.2154017 | 2.3173043 | 266 | 3 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04118 | 1999 $RC_{210}$ |
| 1999 $RM_{212}$ | 16.3 | 0.15 | 20060922 | 327.95022 | 151.47722 | 266.94341 | 5.74989 | 0.2329009 | 2.3040604 | 155 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 04118 | 1999 $RM_{212}$ |
| 1999 $RF_{213}$ | 15.1 | 0.15 | 20060922 | 136.03444 | 103.38512 | 329.16619 | 11.64253 | 0.1248775 | 2.7950621 | 47 | 4 | 1999–2004 | 0.61 | M-v | 1 | MPC | 10402 | 1999 $RF_{213}$ |
| 1999 $RC_{214}$ | 16.9 | 0.15 | 20060922 | 95.09029 | 108.00285 | 153.68888 | 8.36359 | 0.2080739 | 2.2174313 | 68 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 77393 | 1999 $RC_{214}$ |
| 1999 $RP_{214}$ | 16.9 | 0.15 | 20060922 | 48.05923 | 178.08706 | 144.00979 | 6.29322 | 0.2039331 | 2.2327696 | 37 | 4 | 1999–2006 | 0.51 | M-v | 2 | MPC | 34779 | 1999 $RP_{214}$ |
| 1999 $RR_{214}$ | 14.3 | 0.15 | 20060922 | 278.30640 | 265.84055 | 155.06156 | 8.95278 | 0.1758346 | 3.9614059 | 46 | 4 | 1995–2003 | 0.73 | M-v | 1 | MPC | 47797 | 1999 $RR_{214}$ |
| 1999 $RM_{215}$ | 16.1 | 0.15 | 20060922 | 14.59454 | 48.83608 | 279.19837 | 8.55439 | 0.2985269 | 2.3376052 | 101 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 03150 | 1999 $RM_{215}$ |
| 1999 $RV_{219}$ | 16.4 | 0.15 | 20060922 | 300.95669 | 137.27193 | 243.93724 | 5.57144 | 0.1433178 | 2.3892951 | 62 | 2 | 1999–2003 | 0.55 | M-v | 3 | MPC | 55893 | 1999 $RV_{219}$ |
| 1999 $RW_{219}$ | 15.9 | 0.15 | 20060922 | 242.68024 | 70.76186 | 250.85472 | 5.14280 | 0.2043113 | 2.6573456 | 39 | 3 | 1999–2004 | 0.53 | M-v | 4 | MPC | 71990 | 1999 $RW_{219}$ |
| 1999 $RZ_{222}$ | 16.9 | 0.15 | 20060922 | 342.91935 | 86.93605 | 273.11238 | 6.25761 | 0.1354912 | 2.3333551 | 45 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 03151 | 1999 $RZ_{222}$ |
| 1999 $RK_{223}$ | 16.0 | 0.15 | 20060922 | 303.72182 | 29.83124 | 352.82173 | 8.09545 | 0.1783490 | 2.3625614 | 78 | 4 | 1999–2005 | 0.50 | M-v | 1 | MPC | 55893 | 1999 $RK_{223}$ |
| 1999 $RA_{226}$ | 16.5 | 0.15 | 20060922 | 241.01727 | 50.20053 | 304.52167 | 13.13549 | 0.2017812 | 2.5860894 | 26 | 3 | 1999–2005 | 0.60 | M-v | 3 | MPC | 60541 | 1999 $RA_{226}$ |
| 1999 $RZ_{230}$ | 16.7 | 0.15 | 20060922 | 348.23143 | 285.50706 | 67.20608 | 6.62414 | 0.3025900 | 2.3404846 | 72 | 5 | 1992–2006 | 0.57 | M-v | 1 | MPC | 04118 | 1999 $RZ_{230}$ |
| 1999 $RS_{233}$ | 16.8 | 0.15 | 20060922 | 345.01680 | 309.79667 | 64.21789 | 7.47311 | 0.1759067 | 2.3134688 | 41 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04118 | 1999 $RS_{233}$ |
| 1999 $RY_{234}$ | 16.2 | 0.15 | 20060922 | 239.33958 | 283.24805 | 106.09411 | 4.96745 | 0.2923892 | 2.5601852 | 35 | 3 | 1999–2005 | 0.52 | M-v | 3 | MPC | 53607 | 1999 $RY_{234}$ |
| 1999 $RY_{236}$ | 17.5 | 0.15 | 20060922 | 81.60884 | 222.19919 | 122.00114 | 5.84678 | 0.1385661 | 2.1694118 | 37 | 4 | 1995–2004 | 0.62 | M-v | 1 | MPC | 87354 | 1999 $RY_{236}$ |
| 1999 $RE_{238}$ | 16.5 | 0.15 | 20060922 | 129.86661 | 174.17418 | 110.42906 | 7.25296 | 0.1333041 | 2.1806552 | 53 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87354 | 1999 $RE_{238}$ |
| 1999 $RL_{238}$ | 15.9 | 0.15 | 20060922 | 263.14356 | 217.53780 | 154.12541 | 13.28093 | 0.1976589 | 2.5347297 | 69 | 3 | 1999–2005 | 0.57 | M-v | 3 | MPC | 57697 | 1999 $RL_{238}$ |
| 1999 $RT_{241}$ | 17.8 | 0.15 | 20060922 | 91.35252 | 351.69411 | 354.85719 | 7.29807 | 0.1082774 | 2.1467038 | 32 | 4 | 1995–2004 | 0.42 | M-v | 1 | MPC | 50421 | 1999 $RT_{241}$ |
| 1999 $RT_{242}$ | 15.1 | 0.15 | 20060922 | 78.95935 | 255.37022 | 6.02751 | 24.49783 | 0.2207782 | 2.2817103 | 158 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04118 | 1999 $RT_{242}$ |
| 1999 $RV_{249}$ | 15.4 | 0.15 | 20060922 | 350.69880 | 309.60144 | 167.77152 | 1.79314 | 0.1920190 | 3.1775879 | 84 | 5 | 1999–2006 | 0.41 | M-v | 0 | MPC | 97350 | 1999 $RV_{249}$ |
| 1999 $RW_{252}$ | 15.3 | 0.15 | 20060922 | 177.18768 | 343.66494 | 323.62239 | 9.44724 | 0.0869265 | 2.9808307 | 97 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 97350 | 1999 $RW_{252}$ |
| 1999 $RC_{253}$ | 16.8 | 0.15 | 20060922 | 268.47744 | 13.29503 | 319.45812 | 6.05460 | 0.3407110 | 2.5733604 | 95 | 2 | 1999–2003 | 0.47 | M-v | 2 | MPC | 53607 | 1999 $RC_{253}$ |
| 1999 $RG_{258}$ | 17.1 | 0.15 | 20060922 | 335.94745 | 199.50639 | 168.97469 | 2.57313 | 0.1557676 | 2.3476100 | 48 | 4 | 1992–2006 | 0.52 | M-v | 3 | MPC | 04118 | 1999 $RG_{258}$ |
| 1999 SZ | 16.9 | 0.15 | 20060922 | 295.39676 | 237.82720 | 174.21839 | 6.00340 | 0.1123072 | 2.3647657 | 35 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 74626 | 1999 SZ |
| 1999 $SY_2$ | 15.8 | 0.15 | 20060922 | 24.50144 | 120.01740 | 229.13920 | 23.20095 | 0.2991078 | 2.2652956 | 155 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 31863 | 1999 $SY_2$ |
| 1999 $SH_3$ | 16.1 | 0.15 | 20060922 | 1.95812 | 60.71581 | 305.08651 | 22.13689 | 0.2735644 | 2.3002788 | 71 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 87354 | 1999 $SH_3$ |
| 1999 $SM_5$ | 19.1 | 0.15 | 20060922 | 16.40025 | 319.04110 | 327.83204 | 5.20759 | 0.6962652 | 2.2948842 | 294 | 3 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04118 | 1999 $SM_5$ |
| 1999 $SS_7$ | 15.9 | 0.15 | 20060922 | 47.66710 | 252.92994 | 41.72369 | 7.05941 | 0.3161283 | 2.2633420 | 152 | 3 | 1999–2006 | 0.54 | M-v | 2 | MPC | 31863 | 1999 $SS_7$ |
| 1999 $SK_{10}$ | 19.5 | 0.15 | 20060922 | 313.38037 | 268.88209 | 198.04653 | 6.95953 | 0.4408470 | 1.7631132 | 176 | 2 | 1999–2006 | 0.46 | M-v | 0 | MPC | 03151 | 1999 $SK_{10}$ |
| 1999 $SJ_{13}$ | 16.7 | 0.15 | 20060922 | 68.23037 | 75.72730 | 273.20923 | 5.08968 | 0.1621703 | 2.1870154 | 36 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 74627 | 1999 $SJ_{13}$ |
| 1999 $SQ_{13}$ | 16.8 | 0.15 | 20060922 | 62.32211 | 116.33064 | 195.32622 | 1.72057 | 0.2133202 | 2.2838442 | 44 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 74627 | 1999 $SQ_{13}$ |
| 1999 $SV_{13}$ | 17.3 | 0.15 | 20060922 | 344.09861 | 350.94235 | 15.31003 | 2.15071 | 0.2210541 | 2.3336731 | 80 | 2 | 1999–2006 | 0.49 | M-v | 3 | MPC | 03151 | 1999 $SV_{13}$ |
| 1999 $SC_{14}$ | 16.8 | 0.15 | 20060922 | 76.23371 | 4.81302 | 306.24716 | 2.57956 | 0.1891605 | 2.2237371 | 43 | 3 | 1999–2006 | 0.40 | M-v | 2 | MPC | 74627 | 1999 $SC_{14}$ |
| 1999 $SS_{14}$ | 14.6 | 0.15 | 20060922 | 123.43512 | 32.50033 | 268.87899 | 16.48602 | 0.2053838 | 3.1500343 | 55 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 93759 | 1999 $SS_{14}$ |
| 1999 $SU_{15}$ | 16.0 | 0.15 | 20060922 | 359.71489 | 120.87345 | 254.92006 | 6.22733 | 0.1342236 | 2.2904257 | 98 | 4 | 1999–2006 | 0.51 | M-v | 2 | MPC | 04118 | 1999 $SU_{15}$ |
| 1999 $SG_{19}$ | 17.0 | 0.15 | 20060922 | 288.18643 | 85.11173 | 342.80854 | 6.43569 | 0.2163303 | 2.3546068 | 44 | 3 | 1999–2006 | 0.56 | M-v | 3 | MPC | 55897 | 1999 $SG_{19}$ |
| 1999 $SL_{23}$ | 17.1 | 0.15 | 20060922 | 247.51204 | 110.57290 | 349.55279 | 6.03640 | 0.0609321 | 2.3344172 | 37 | 4 | 1994–2006 | 0.58 | M-v | 1 | MPC | 04118 | 1999 $SL_{23}$ |
| 1999 $SU_{23}$ | 18.0 | 0.15 | 20060922 | 35.54025 | 273.97047 | 10.65304 | 2.36043 | 0.2312147 | 2.3334437 | 28 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03152 | 1999 $SU_{23}$ |
| 1999 $SF_{26}$ | 15.9 | 0.15 | 20060922 | 269.93943 | 76.32772 | 227.77964 | 4.11299 | 0.0346243 | 2.7272982 | 28 | 4 | 1999–2004 | 0.36 | M-v | 0 | MPC | 50422 | 1999 $SF_{26}$ |
| 1999 TE | 16.5 | 0.15 | 20060922 | 20.31544 | 148.49527 | 230.82502 | 2.76187 | 0.2381645 | 2.2511723 | 92 | 4 | 1999–2006 | 0.54 | M-v | 2 | MPC | 74628 | 1999 TE |
| 1999 $TH_3$ | 17.2 | 0.15 | 20060922 | 267.48784 | 256.49232 | 113.69732 | 0.72019 | 0.1563514 | 2.5231826 | 38 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 01979 | 1999 $TH_3$ |
| 1999 $TM_9$ | 16.5 | 0.15 | 20060922 | 358.57631 | 352.80432 | 21.87200 | 8.43563 | 0.2726129 | 2.3074106 | 227 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04118 | 1999 $TM_9$ |
| 1999 $TO_9$ | 16.7 | 0.15 | 20060922 | 338.22793 | 4.38983 | 20.71811 | 5.38498 | 0.2344426 | 2.3408597 | 144 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 03152 | 1999 $TO_9$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $TC_{10}$ | 18.7 | 0.15 | 20060922 | 331.70673 | 57.75942 | 28.53057 | 19.30478 | 0.5855449 | 2.3226091 | 93 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 64673 | 1999 $TC_{10}$ |
| 1999 $TO_{11}$ | 18.1 | 0.15 | 20060922 | 355.03870 | 342.28981 | 23.58066 | 4.71409 | 0.3265056 | 2.3271535 | 176 | 2 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03152 | 1999 $TO_{11}$ |
| 1999 $TL_{12}$ | 18.7 | 0.15 | 20060922 | 257.34638 | 346.70673 | 202.40005 | 17.33551 | 0.4365451 | 1.0814243 | 46 | 4 | 1999–2006 | 0.61 | M-v | 3 | MPC | 16041 | 1999 $TL_{12}$ |
| 1999 $TT_{12}$ | 15.6 | 0.15 | 20060922 | 246.84074 | 324.07192 | 29.92579 | 15.81799 | 0.2148100 | 2.5996185 | 84 | 4 | 1999–2006 | 0.51 | M-v | 2 | MPC | 01979 | 1999 $TT_{12}$ |
| 1999 $TS_{13}$ | 16.4 | 0.15 | 20060922 | 321.31050 | 286.05395 | 85.62811 | 4.39892 | 0.2337422 | 2.3919316 | 49 | 3 | 1999–2005 | 0.53 | M-v | 3 | MPC | 55900 | 1999 $TS_{13}$ |
| 1999 $TP_{14}$ | 17.5 | 0.15 | 20060922 | 353.25566 | 25.44120 | 322.32700 | 2.83725 | 0.2419289 | 2.3674258 | 47 | 2 | 1999–2006 | 0.33 | M-v | 3 | MPC | 03153 | 1999 $TP_{14}$ |
| 1999 $TL_{15}$ | 17.7 | 0.15 | 20060922 | 238.29330 | 267.02193 | 177.23716 | 1.05062 | 0.1672272 | 2.4613407 | 35 | 3 | 1999–2003 | 0.43 | M-v | 3 | MPC | 74630 | 1999 $TL_{15}$ |
| 1999 $TX_{17}$ | 16.4 | 0.15 | 20060922 | 339.64564 | 176.40181 | 183.28231 | 10.30543 | 0.2339991 | 2.3699006 | 57 | 5 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04118 | 1999 $TX_{17}$ |
| 1999 $TC_{21}$ | 15.4 | 0.15 | 20060922 | 189.42342 | 152.78811 | 224.65401 | 6.20260 | 0.1414088 | 2.7671788 | 70 | 3 | 1999–2003 | 0.65 | M-v | 3 | MPC | 33094 | 1999 $TC_{21}$ |
| 1999 $TD_{25}$ | 17.0 | 0.15 | 20060922 | 326.05584 | 139.98948 | 284.01029 | 1.34401 | 0.2026320 | 2.3056776 | 76 | 3 | 1999–2006 | 0.40 | M-v | 2 | MPC | 60543 | 1999 $TD_{25}$ |
| 1999 $TF_{25}$ | 15.5 | 0.15 | 20060922 | 237.94444 | 125.50562 | 226.10865 | 3.13924 | 0.1114958 | 2.6763384 | 55 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 01979 | 1999 $TF_{25}$ |
| 1999 $TM_{26}$ | 16.9 | 0.15 | 20060922 | 23.02318 | 100.81463 | 341.72085 | 2.14559 | 0.0964063 | 2.1489763 | 51 | 6 | 1996–2006 | 0.47 | M-v | 1 | MPC | 87354 | 1999 $TM_{26}$ |
| 1999 $TJ_{29}$ | 16.5 | 0.15 | 20060922 | 356.69637 | 164.76526 | 197.47084 | 6.09562 | 0.1306650 | 2.3167189 | 105 | 3 | 1999–2006 | 0.47 | M-v | 3 | MPC | 04119 | 1999 $TJ_{29}$ |
| 1999 $TD_{30}$ | 16.5 | 0.15 | 20060922 | 24.00633 | 80.95390 | 337.54561 | 1.65884 | 0.1490295 | 2.1781727 | 123 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 62245 | 1999 $TD_{30}$ |
| 1999 $TC_{32}$ | 16.0 | 0.15 | 20060922 | 55.28706 | 319.18150 | 10.38320 | 6.91510 | 0.1406111 | 2.2608142 | 96 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 74631 | 1999 $TC_{32}$ |
| 1999 $TQ_{32}$ | 16.2 | 0.15 | 20060922 | 195.53457 | 200.72302 | 207.20351 | 3.71875 | 0.2088678 | 2.6549009 | 39 | 3 | 1999–2006 | 0.41 | M-v | 4 | MPC | 99912 | 1999 $TQ_{32}$ |
| 1999 $TU_{32}$ | 16.6 | 0.15 | 20060922 | 341.87557 | 90.37255 | 350.42249 | 2.65112 | 0.1402221 | 2.2205688 | 104 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 62245 | 1999 $TU_{32}$ |
| 1999 $TK_{33}$ | 16.4 | 0.15 | 20060922 | 46.29718 | 301.09323 | 9.46877 | 6.98178 | 0.1383406 | 2.3090633 | 100 | 3 | 1999–2006 | 0.52 | M-v | 3 | MPC | 04119 | 1999 $TK_{33}$ |
| 1999 $TU_{33}$ | 15.3 | 0.15 | 20060922 | 104.82990 | 152.51086 | 205.63617 | 9.93293 | 0.2319384 | 3.1361922 | 62 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 93760 | 1999 $TU_{33}$ |
| 1999 $TB_{34}$ | 16.6 | 0.15 | 20060922 | 292.81811 | 75.06156 | 352.78830 | 2.63819 | 0.2062864 | 2.3646936 | 83 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 04119 | 1999 $TB_{34}$ |
| 1999 $TL_{34}$ | 15.4 | 0.15 | 20060922 | 218.10196 | 172.29530 | 172.82509 | 13.52632 | 0.2052440 | 2.7334454 | 46 | 6 | 1993–2006 | 0.48 | M-v | 1 | MPC | 01979 | 1999 $TL_{34}$ |
| 1999 $TG_{35}$ | 17.1 | 0.15 | 20060922 | 161.59615 | 33.79410 | 7.57311 | 19.25740 | 0.0925249 | 1.9698402 | 47 | 3 | 1999–2006 | 0.57 | M-v | 3 | MPC | 99913 | 1999 $TG_{35}$ |
| 1999 $TZ_{36}$ | 16.3 | 0.15 | 20060922 | 330.04366 | 217.10739 | 161.02458 | 12.68518 | 0.2711095 | 2.3767151 | 54 | 3 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04119 | 1999 $TZ_{36}$ |
| 1999 $TA_{38}$ | 15.5 | 0.15 | 20060922 | 70.44235 | 291.82878 | 100.41880 | 2.02982 | 0.2208092 | 3.1737725 | 81 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 93760 | 1999 $TA_{38}$ |
| 1999 $TZ_{42}$ | 17.3 | 0.15 | 20060922 | 20.69718 | 92.56932 | 199.27763 | 2.39095 | 0.2221924 | 2.3574169 | 38 | 3 | 1999–2006 | 0.36 | M-v | 2 | MPC | 04119 | 1999 $TZ_{42}$ |
| 1999 $TG_{43}$ | 17.6 | 0.15 | 20060922 | 234.95702 | 124.41694 | 318.76563 | 0.93707 | 0.1827593 | 2.4433304 | 36 | 3 | 1999–2005 | 0.45 | M-v | 3 | MPC | 52491 | 1999 $TG_{43}$ |
| 1999 $TS_{44}$ | 17.5 | 0.15 | 20060922 | 294.91664 | 221.48160 | 232.96602 | 3.87612 | 0.0880027 | 2.2996256 | 69 | 4 | 1999–2006 | 0.37 | M-v | 0 | MPC | 87354 | 1999 $TS_{44}$ |
| 1999 $TV_{44}$ | 18.7 | 0.15 | 20060922 | 293.23990 | 180.44618 | 268.89309 | 2.11644 | 0.1561230 | 2.3280252 | 22 | 3 | 1999–2006 | 0.23 | M-v | 2 | MPC | 68555 | 1999 $TV_{44}$ |
| 1999 $TA_{45}$ | 16.8 | 0.15 | 20060922 | 60.96533 | 299.47728 | 4.20037 | 6.25401 | 0.1936936 | 2.2888462 | 78 | 3 | 1999–2006 | 0.39 | M-v | 2 | MPC | 74633 | 1999 $TA_{45}$ |
| 1999 $TM_{45}$ | 17.0 | 0.15 | 20060922 | 22.79913 | 63.00573 | 273.16519 | 1.42542 | 0.1830604 | 2.3158513 | 67 | 4 | 1992–2006 | 0.42 | M-v | 3 | MPC | 74633 | 1999 $TM_{45}$ |
| 1999 $TT_{45}$ | 18.2 | 0.15 | 20060922 | 265.71097 | 351.78063 | 8.64413 | 5.69423 | 0.2438383 | 2.5591062 | 59 | 3 | 1999–2003 | 0.58 | M-v | 3 | MPC | 57700 | 1999 $TT_{45}$ |
| 1999 $TL_{46}$ | 16.5 | 0.15 | 20060922 | 156.96005 | 5.53364 | 33.48994 | 4.66840 | 0.0733477 | 2.7829970 | 21 | 3 | 1999–2004 | 0.17 | M-v | 3 | MPC | 71994 | 1999 $TL_{46}$ |
| 1999 $TU_{46}$ | 17.2 | 0.15 | 20060922 | 6.91538 | 265.31584 | 54.51950 | 2.81347 | 0.2286042 | 2.3577553 | 38 | 5 | 1999–2006 | 0.38 | M-v | 1 | MPC | 03153 | 1999 $TU_{46}$ |
| 1999 $TG_{47}$ | 17.3 | 0.15 | 20060922 | 81.73355 | 206.59130 | 70.51093 | 1.39017 | 0.0428740 | 2.3135759 | 56 | 5 | 1999–2006 | 0.32 | M-v | 0 | MPC | 74633 | 1999 $TG_{47}$ |
| 1999 $TP_{47}$ | 17.3 | 0.15 | 20060922 | 222.57530 | 311.20185 | 180.64048 | 6.60070 | 0.0704527 | 2.3506075 | 39 | 4 | 1999–2006 | 0.25 | M-v | 0 | MPC | 03153 | 1999 $TP_{47}$ |
| 1999 $TG_{49}$ | 15.2 | 0.15 | 20060922 | 81.31761 | 241.75467 | 129.47477 | 2.09186 | 0.2015096 | 3.1917458 | 105 | 7 | 1996–2006 | 0.43 | M-v | 1 | MPC | 97351 | 1999 $TG_{49}$ |
| 1999 $TD_{50}$ | 15.6 | 0.15 | 20060922 | 154.60725 | 149.57361 | 186.88236 | 15.32180 | 0.0821098 | 2.9978143 | 30 | 3 | 1999–2004 | 0.46 | M-v | 2 | MPC | 68555 | 1999 $TD_{50}$ |
| 1999 $TG_{50}$ | 17.0 | 0.15 | 20060922 | 216.89817 | 348.74085 | 180.50346 | 8.02305 | 0.0720313 | 2.2792532 | 48 | 6 | 1992–2006 | 0.42 | M-v | 1 | MPC | 04119 | 1999 $TG_{50}$ |
| 1999 $TN_{51}$ | 17.2 | 0.15 | 20060922 | 332.77599 | 48.96065 | 268.94097 | 2.79822 | 0.1256837 | 2.4798836 | 38 | 5 | 1997–2006 | 0.45 | M-v | 0 | MPC | 55905 | 1999 $TN_{51}$ |
| 1999 $TQ_{51}$ | 16.1 | 0.15 | 20060922 | 97.49367 | 147.94713 | 221.14620 | 8.42811 | 0.0979252 | 3.1596861 | 30 | 3 | 1999–2006 | 0.28 | M-v | 2 | MPC | 93762 | 1999 $TQ_{51}$ |
| 1999 $TT_{51}$ | 16.7 | 0.15 | 20060922 | 2.95257 | 175.28512 | 217.52114 | 6.61426 | 0.1056260 | 2.2698490 | 99 | 6 | 1999–2006 | 0.47 | M-v | 1 | MPC | 87355 | 1999 $TT_{51}$ |
| 1999 $TY_{51}$ | 15.1 | 0.15 | 20060922 | 199.10053 | 62.18451 | 220.51664 | 8.39449 | 0.0503998 | 3.0803547 | 71 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 97352 | 1999 $TY_{51}$ |
| 1999 $TB_{54}$ | 17.1 | 0.15 | 20060922 | 4.21451 | 91.52714 | 248.12233 | 1.79560 | 0.1386142 | 2.3569662 | 74 | 4 | 1992–2006 | 0.41 | M-v | 2 | MPC | 04119 | 1999 $TB_{54}$ |
| 1999 $TC_{55}$ | 17.1 | 0.15 | 20060922 | 230.56817 | 71.67433 | 353.69141 | 1.05237 | 0.2123272 | 2.5383069 | 46 | 4 | 1999–2005 | 0.46 | M-v | 2 | MPC | 93762 | 1999 $TC_{55}$ |
| 1999 $TR_{56}$ | 16.6 | 0.15 | 20060922 | 231.26716 | 110.77577 | 33.20961 | 2.55778 | 0.1515813 | 2.3545374 | 66 | 5 | 1999–2006 | 0.46 | M-v | 0 | MPC | 57700 | 1999 $TR_{56}$ |
| 1999 $TM_{58}$ | 17.8 | 0.15 | 20060922 | 300.86642 | 5.30457 | 108.96370 | 2.19129 | 0.1042820 | 2.2858353 | 40 | 3 | 1999–2006 | 0.36 | M-v | 2 | MPC | 60544 | 1999 $TM_{58}$ |
| 1999 $TC_{61}$ | 18.0 | 0.15 | 20060922 | 75.51220 | 92.71576 | 199.39236 | 4.74874 | 0.1770342 | 2.2491949 | 49 | 3 | 1999–2006 | 0.26 | M-v | 1 | MPC | 74634 | 1999 $TC_{61}$ |
| 1999 $TL_{61}$ | 16.6 | 0.15 | 20060922 | 157.82394 | 244.39285 | 186.90708 | 14.59300 | 0.1011781 | 2.6660905 | 32 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 99914 | 1999 $TL_{61}$ |
| 1999 $TN_{61}$ | 16.1 | 0.15 | 20060922 | 339.98696 | 273.24654 | 358.11471 | 13.80514 | 0.0578764 | 2.5506591 | 36 | 4 | 1999–2006 | 0.77 | M-v | 1 | MPC | 01980 | 1999 $TN_{61}$ |
| 1999 $TT_{61}$ | 16.7 | 0.15 | 20060922 | 38.91538 | 292.68833 | 23.52752 | 2.62719 | 0.1789818 | 2.3311705 | 87 | 5 | 1992–2006 | 0.50 | M-v | 2 | MPC | 77396 | 1999 $TT_{61}$ |
| 1999 $TB_{64}$ | 17.7 | 0.15 | 20060922 | 304.82768 | 68.66185 | 359.60548 | 3.35163 | 0.1439310 | 2.3009305 | 52 | 3 | 1999–2006 | 0.29 | M-v | 2 | MPC | 04119 | 1999 $TB_{64}$ |
| 1999 $TJ_{64}$ | 16.0 | 0.15 | 20060922 | 71.83116 | 359.25601 | 2.02942 | 8.44462 | 0.0962394 | 3.2223248 | 28 | 2 | 1999–2005 | 0.31 | M-v | 3 | MPC | 88688 | 1999 $TJ_{64}$ |
| 1999 $TV_{64}$ | 16.7 | 0.15 | 20060922 | 158.66180 | 351.59993 | 354.82216 | 5.78508 | 0.0781260 | 2.8964009 | 30 | 3 | 1999–2004 | 0.41 | M-v | 3 | MPC | 29117 | 1999 $TV_{64}$ |

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| 1999 $TG_{65}$ | 16.2 | 0.15 | 20060922 | 111.02621 | 93.53388 | 225.19995 | 0.42774 | 0.0603936 | 3.2085435 | 30 | 3 | 1999–2005 | 0.24 | M-v | 4 | MPC | 90014 | 1999 $TG_{65}$ |
| 1999 $TQ_{66}$ | 18.0 | 0.15 | 20060922 | 339.79346 | 81.29529 | 295.72481 | 1.12073 | 0.2189637 | 2.3450862 | 35 | 3 | 1999–2006 | 0.35 | M-v | 2 | MPC | 03153 | 1999 $TQ_{66}$ |
| 1999 $TB_{67}$ | 17.0 | 0.15 | 20060922 | 317.27915 | 61.75887 | 351.16739 | 2.36791 | 0.1624406 | 2.3406121 | 92 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 87355 | 1999 $TB_{67}$ |
| 1999 $TW_{67}$ | 16.9 | 0.15 | 20060922 | 36.11247 | 118.58088 | 163.87936 | 1.73821 | 0.1737317 | 2.4482062 | 60 | 4 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03153 | 1999 $TW_{67}$ |
| 1999 $TG_{69}$ | 17.3 | 0.15 | 20060922 | 341.65290 | 170.54633 | 218.07854 | 5.67413 | 0.1106146 | 2.3259843 | 83 | 3 | 1999–2006 | 0.42 | M-v | 3 | MPC | 04119 | 1999 $TG_{69}$ |
| 1999 $TG_{70}$ | 17.3 | 0.15 | 20060922 | 151.88633 | 239.87271 | 20.51911 | 3.73420 | 0.1733278 | 2.2052262 | 12 | 2 | 1999–2002 | 0.23 | M-v | 5 | MPC | 37180 | 1999 $TG_{70}$ |
| 1999 $TW_{71}$ | 17.0 | 0.15 | 20060922 | 116.40925 | 64.39386 | 26.28077 | 1.72330 | 0.0217270 | 2.7911621 | 31 | 4 | 1999–2006 | 0.35 | M-v | 0 | MPC | 99914 | 1999 $TW_{71}$ |
| 1999 $TS_{72}$ | 17.5 | 0.15 | 20060922 | 68.81733 | 224.40073 | 80.52320 | 3.97735 | 0.1929417 | 2.3064713 | 48 | 4 | 1999–2006 | 0.36 | M-v | 0 | MPC | 74636 | 1999 $TS_{72}$ |
| 1999 $TD_{73}$ | 15.7 | 0.15 | 20060922 | 121.95891 | 310.23876 | 345.74847 | 9.65006 | 0.1255584 | 3.2208159 | 26 | 2 | 1999–2005 | 0.28 | M-v | 3 | MPC | 88688 | 1999 $TD_{73}$ |
| 1999 $TG_{73}$ | 18.3 | 0.15 | 20060922 | 321.40654 | 75.70589 | 337.09827 | 2.24350 | 0.2193644 | 2.3071552 | 40 | 4 | 1992–2006 | 0.31 | M-v | 1 | MPC | 62245 | 1999 $TG_{73}$ |
| 1999 $TL_{75}$ | 16.3 | 0.15 | 20060922 | 320.30637 | 92.12344 | 217.60213 | 11.31740 | 0.0263600 | 2.5914829 | 57 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 01980 | 1999 $TL_{75}$ |
| 1999 $TW_{75}$ | 17.4 | 0.15 | 20060922 | 170.51578 | 103.87460 | 14.86762 | 2.36817 | 0.0858425 | 2.5739632 | 29 | 4 | 1999–2005 | 0.23 | M-v | 1 | MPC | 93765 | 1999 $TW_{75}$ |
| 1999 $TQ_{76}$ | 16.6 | 0.15 | 20060922 | 79.72725 | 256.02178 | 33.68357 | 11.71363 | 0.1121697 | 2.3215167 | 82 | 3 | 1999–2006 | 0.43 | M-v | 2 | MPC | 74636 | 1999 $TQ_{76}$ |
| 1999 $TZ_{76}$ | 16.6 | 0.15 | 20060922 | 230.72765 | 290.74401 | 225.16571 | 4.39369 | 0.0982022 | 2.3304376 | 54 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 62245 | 1999 $TZ_{76}$ |
| 1999 $TC_{77}$ | 17.7 | 0.15 | 20060922 | 0.43527 | 321.78808 | 13.49272 | 2.45256 | 0.2049769 | 2.3784854 | 35 | 3 | 1999–2006 | 0.28 | M-v | 2 | MPC | 04119 | 1999 $TC_{77}$ |
| 1999 $TR_{77}$ | 16.6 | 0.15 | 20060922 | 144.60475 | 251.02235 | 212.92472 | 20.05862 | 0.0917972 | 1.9386660 | 52 | 2 | 1999–2006 | 0.61 | M-v | 4 | MPC | 99915 | 1999 $TR_{77}$ |
| 1999 $TQ_{78}$ | 16.7 | 0.15 | 20060922 | 156.21279 | 249.09872 | 178.26399 | 3.87572 | 0.0518564 | 2.6958124 | 41 | 5 | 1995–2006 | 0.29 | M-v | 0 | MPC | 01980 | 1999 $TQ_{78}$ |
| 1999 $TP_{79}$ | 17.1 | 0.15 | 20060922 | 325.11958 | 353.17780 | 28.91636 | 5.27261 | 0.0653379 | 2.3555964 | 33 | 3 | 1999–2005 | 0.52 | M-v | 4 | MPC | 55908 | 1999 $TP_{79}$ |
| 1999 $TQ_{80}$ | 17.3 | 0.15 | 20060922 | 291.85916 | 324.79280 | 114.56262 | 1.55927 | 0.1951158 | 2.3440134 | 43 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 04119 | 1999 $TQ_{80}$ |
| 1999 $TN_{81}$ | 16.7 | 0.15 | 20060922 | 124.81387 | 96.61362 | 352.33869 | 8.49531 | 0.0403639 | 2.6950990 | 34 | 2 | 1999–2006 | 0.34 | M-v | 4 | MPC | 01980 | 1999 $TN_{81}$ |
| 1999 $TP_{81}$ | 17.5 | 0.15 | 20060922 | 84.74042 | 272.03810 | 357.09037 | 6.75195 | 0.0960531 | 2.2950991 | 32 | 4 | 1999–2006 | 0.31 | M-v | 1 | MPC | 03154 | 1999 $TP_{81}$ |
| 1999 $TV_{81}$ | 17.9 | 0.15 | 20060922 | 63.26299 | 336.42658 | 31.64504 | 1.93659 | 0.1513277 | 2.1769884 | 32 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 62245 | 1999 $TV_{81}$ |
| 1999 $TD_{82}$ | 17.4 | 0.15 | 20060922 | 48.30555 | 299.78767 | 26.94799 | 3.31886 | 0.1933394 | 2.2617115 | 59 | 3 | 1999–2006 | 0.31 | M-v | 3 | MPC | 74636 | 1999 $TD_{82}$ |
| 1999 $TK_{85}$ | 16.2 | 0.15 | 20060922 | 28.83287 | 199.56502 | 207.10163 | 4.85671 | 0.1826541 | 2.2204463 | 123 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 62245 | 1999 $TK_{85}$ |
| 1999 $TF_{87}$ | 17.4 | 0.15 | 20060922 | 351.56323 | 337.84183 | 77.95452 | 3.19822 | 0.1596370 | 2.2841845 | 56 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 99915 | 1999 $TF_{87}$ |
| 1999 $TL_{87}$ | 17.0 | 0.15 | 20060922 | 100.42907 | 1.30037 | 110.25068 | 3.14723 | 0.0413462 | 2.8440947 | 18 | 3 | 1999–2006 | 0.30 | M-v | 3 | MPC | 93766 | 1999 $TL_{87}$ |
| 1999 $TV_{89}$ | 16.0 | 0.15 | 20060922 | 6.60962 | 338.18849 | 46.50371 | 5.16363 | 0.1742956 | 2.2572465 | 149 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 62245 | 1999 $TV_{89}$ |
| 1999 $TL_{90}$ | 17.6 | 0.15 | 20060922 | 73.30328 | 296.54930 | 36.57982 | 2.57904 | 0.2270449 | 2.1951921 | 28 | 3 | 1999–2006 | 0.47 | M-v | 3 | MPC | 88688 | 1999 $TL_{90}$ |
| 1999 $TH_{91}$ | 17.9 | 0.15 | 20060922 | 350.75795 | 199.86064 | 171.19226 | 4.12383 | 0.2658855 | 2.3151600 | 84 | 3 | 1999–2006 | 0.44 | M-v | 2 | MPC | 03154 | 1999 $TH_{91}$ |
| 1999 $TO_{92}$ | 16.7 | 0.15 | 20060922 | 336.70835 | 227.63420 | 175.21655 | 6.30468 | 0.1714120 | 2.3004336 | 112 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 04119 | 1999 $TO_{92}$ |
| 1999 $TG_{94}$ | 17.3 | 0.15 | 20060922 | 346.11426 | 318.29078 | 58.93376 | 3.17974 | 0.2349339 | 2.3213902 | 106 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04119 | 1999 $TG_{94}$ |
| 1999 $TW_{95}$ | 16.1 | 0.15 | 20060922 | 223.93421 | 211.57972 | 137.96338 | 4.34042 | 0.2248886 | 2.6918155 | 37 | 3 | 1999–2006 | 0.65 | M-v | 4 | MPC | 97352 | 1999 $TW_{95}$ |
| 1999 $TW_{98}$ | 16.7 | 0.15 | 20060922 | 352.95982 | 197.73279 | 140.98758 | 5.85504 | 0.2688366 | 2.3608045 | 31 | 3 | 1992–2006 | 0.40 | M-v | 3 | MPC | 03154 | 1999 $TW_{98}$ |
| 1999 $TY_{98}$ | 16.0 | 0.15 | 20060922 | 68.11036 | 146.76411 | 166.29366 | 7.17961 | 0.2276059 | 2.2443055 | 97 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 77397 | 1999 $TY_{98}$ |
| 1999 $TH_{103}$ | 16.5 | 0.15 | 20060922 | 321.84043 | 130.44846 | 262.57453 | 4.15696 | 0.1427591 | 2.3488544 | 62 | 2 | 1999–2006 | 0.47 | M-v | 4 | MPC | 03154 | 1999 $TH_{103}$ |
| 1999 $TR_{103}$ | 17.3 | 0.15 | 20060922 | 19.41936 | 35.22725 | 345.43713 | 5.69952 | 0.1834839 | 2.2506324 | 39 | 4 | 1994–2004 | 0.60 | M-v | 1 | MPC | 84504 | 1999 $TR_{103}$ |
| 1999 $TT_{103}$ | 16.0 | 0.15 | 20060922 | 64.76850 | 106.01324 | 223.56117 | 4.68535 | 0.2534480 | 2.2234400 | 83 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 77398 | 1999 $TT_{103}$ |
| 1999 $TV_{104}$ | 16.8 | 0.15 | 20060922 | 333.95015 | 76.02396 | 283.54889 | 1.97146 | 0.1531980 | 2.3857346 | 80 | 5 | 1999–2006 | 0.41 | M-v | 0 | MPC | 04119 | 1999 $TV_{104}$ |
| 1999 $TB_{108}$ | 16.9 | 0.15 | 20060922 | 332.36051 | 90.21917 | 292.06419 | 5.90961 | 0.1256638 | 2.3190908 | 60 | 3 | 1999–2006 | 0.61 | M-v | 3 | MPC | 04119 | 1999 $TB_{108}$ |
| 1999 $TW_{108}$ | 15.4 | 0.15 | 20060922 | 169.73832 | 166.49490 | 208.73341 | 7.75004 | 0.2394090 | 2.8014049 | 120 | 3 | 1998–2004 | 0.51 | M-v | 2 | MPC | 77398 | 1999 $TW_{108}$ |
| 1999 $TT_{110}$ | 16.0 | 0.15 | 20060922 | 224.91345 | 101.96491 | 266.38004 | 10.03778 | 0.2130119 | 2.6244482 | 41 | 3 | 1999–2005 | 0.59 | M-v | 3 | MPC | 49705 | 1999 $TT_{110}$ |
| 1999 $TC_{111}$ | 17.2 | 0.15 | 20060922 | 43.23499 | 36.19024 | 274.86244 | 5.03874 | 0.2204815 | 2.2864318 | 37 | 3 | 1999–2006 | 0.69 | M-v | 2 | MPC | 34786 | 1999 $TC_{111}$ |
| 1999 $TJ_{112}$ | 16.7 | 0.15 | 20060922 | 0.72213 | 19.09190 | 297.71365 | 1.27128 | 0.2199356 | 2.3722274 | 37 | 3 | 1999–2003 | 0.69 | M-v | 2 | MPC | 74639 | 1999 $TJ_{112}$ |
| 1999 $TM_{114}$ | 17.7 | 0.15 | 20060922 | 348.35473 | 190.14648 | 179.77484 | 2.35841 | 0.2296746 | 2.3226773 | 121 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04119 | 1999 $TM_{114}$ |
| 1999 $TO_{114}$ | 17.4 | 0.15 | 20060922 | 7.62744 | 159.94276 | 190.67565 | 5.91966 | 0.2053770 | 2.3082500 | 123 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03155 | 1999 $TO_{114}$ |
| 1999 $TY_{116}$ | 16.5 | 0.15 | 20060922 | 13.32814 | 138.46368 | 191.30715 | 5.84843 | 0.2176262 | 2.3281145 | 120 | 3 | 1999–2006 | 0.44 | M-v | 2 | MPC | 04119 | 1999 $TY_{116}$ |
| 1999 $TK_{117}$ | 17.0 | 0.15 | 20060922 | 328.80568 | 56.63068 | 327.99825 | 2.19191 | 0.1766166 | 2.3469581 | 105 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 04119 | 1999 $TK_{117}$ |
| 1999 $TS_{117}$ | 17.3 | 0.15 | 20060922 | 20.41128 | 63.59011 | 289.74940 | 3.12273 | 0.1868753 | 2.2814120 | 79 | 4 | 1999–2006 | 0.42 | M-v | 1 | MPC | 88689 | 1999 $TS_{117}$ |
| 1999 $TL_{118}$ | 16.7 | 0.15 | 20060922 | 14.63131 | 76.60039 | 241.15067 | 2.82314 | 0.2004820 | 2.3489541 | 74 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04120 | 1999 $TL_{118}$ |
| 1999 $TT_{118}$ | 16.8 | 0.15 | 20060922 | 350.13257 | 355.69133 | 355.53112 | 4.76326 | 0.2490196 | 2.3476931 | 76 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 04120 | 1999 $TT_{118}$ |
| 1999 $TL_{119}$ | 16.6 | 0.15 | 20060922 | 355.34138 | 336.43652 | 11.12623 | 3.81046 | 0.1909692 | 2.3454922 | 68 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 04120 | 1999 $TL_{119}$ |
| 1999 $TR_{120}$ | 16.4 | 0.15 | 20060922 | 277.38373 | 58.30858 | 353.45647 | 4.71914 | 0.1747820 | 2.4257216 | 77 | 3 | 1999–2005 | 0.59 | M-v | 3 | MPC | 55914 | 1999 $TR_{120}$ |
| 1999 $TG_{121}$ | 15.0 | 0.15 | 20060922 | 124.51106 | 199.61114 | 177.85033 | 9.12326 | 0.1075351 | 2.9827641 | 94 | 5 | 1991–2004 | 0.51 | M-v | 1 | MPC | 73958 | 1999 $TG_{121}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $TJ_{124}$ | 16.3 | 0.15 | 20060922 | 22.93030 | 210.78405 | 136.75099 | 3.57399 | 0.1782852 | 2.2951816 | 93 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 74641 | 1999 $TJ_{124}$ |
| 1999 $TB_{125}$ | 17.1 | 0.15 | 20060922 | 17.20635 | 9.76839 | 304.47883 | 1.71741 | 0.2216866 | 2.3419337 | 70 | 3 | 1999–2006 | 0.38 | M-v | 2 | MPC | 03155 | 1999 $TB_{125}$ |
| 1999 $TC_{125}$ | 17.2 | 0.15 | 20060922 | 16.55451 | 96.15999 | 300.48620 | 3.80136 | 0.2021277 | 2.2287802 | 51 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 87356 | 1999 $TC_{125}$ |
| 1999 $TK_{125}$ | 15.8 | 0.15 | 20060922 | 126.84675 | 301.92144 | 343.73835 | 4.74764 | 0.1765071 | 2.1788609 | 135 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 57702 | 1999 $TK_{125}$ |
| 1999 $TN_{125}$ | 15.9 | 0.15 | 20060922 | 157.41119 | 244.35104 | 191.30350 | 10.05856 | 0.0935521 | 2.6821060 | 50 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 99915 | 1999 $TN_{125}$ |
| 1999 $TH_{128}$ | 16.5 | 0.15 | 20060922 | 64.26606 | 84.60219 | 218.89289 | 4.76776 | 0.1369693 | 2.2887605 | 65 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 74642 | 1999 $TH_{128}$ |
| 1999 $TU_{129}$ | 17.0 | 0.15 | 20060922 | 66.57959 | 297.80584 | 353.59325 | 5.27376 | 0.1648141 | 2.2760641 | 59 | 3 | 1999–2006 | 0.63 | M-v | 3 | MPC | 74642 | 1999 $TU_{129}$ |
| 1999 $TH_{130}$ | 14.7 | 0.15 | 20060922 | 38.49294 | 107.14488 | 354.44061 | 9.97697 | 0.0776461 | 2.9870805 | 53 | 4 | 1999–2004 | 0.58 | M-v | 1 | MPC | 73959 | 1999 $TH_{130}$ |
| 1999 $TM_{130}$ | 16.7 | 0.15 | 20060922 | 152.76509 | 81.41855 | 212.92361 | 2.16288 | 0.1085006 | 2.1210354 | 72 | 4 | 1999–2006 | 0.47 | M-v | 3 | MPC | 90015 | 1999 $TM_{130}$ |
| 1999 $TP_{130}$ | 15.1 | 0.15 | 20060922 | 36.28263 | 236.32219 | 189.56480 | 14.90479 | 0.0530865 | 3.1382209 | 39 | 4 | 1997–2005 | 0.58 | M-v | 2 | MPC | 93767 | 1999 $TP_{130}$ |
| 1999 $TT_{130}$ | 16.8 | 0.15 | 20060922 | 149.42459 | 334.25969 | 278.35977 | 1.12763 | 0.1617284 | 2.1923493 | 53 | 3 | 1999–2006 | 0.39 | M-v | 4 | MPC | 35482 | 1999 $TT_{130}$ |
| 1999 $TQ_{131}$ | 17.2 | 0.15 | 20060922 | 308.14887 | 212.54356 | 216.02247 | 1.79150 | 0.1326285 | 2.3063697 | 68 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04120 | 1999 $TQ_{131}$ |
| 1999 $TV_{131}$ | 17.3 | 0.15 | 20060922 | 6.25240 | 355.10884 | 348.18692 | 2.42220 | 0.2307318 | 2.3187848 | 96 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 04120 | 1999 $TV_{131}$ |
| 1999 $TX_{131}$ | 17.0 | 0.15 | 20060922 | 6.39884 | 349.00765 | 359.02722 | 4.42483 | 0.1443149 | 2.3176941 | 68 | 3 | 1999–2006 | 0.40 | M-v | 3 | MPC | 04120 | 1999 $TX_{131}$ |
| 1999 $TM_{133}$ | 15.7 | 0.15 | 20060922 | 106.45894 | 94.04475 | 279.88569 | 1.47964 | 0.1094764 | 3.0706949 | 49 | 5 | 1996–2005 | 0.45 | M-v | 0 | MPC | 97353 | 1999 $TM_{133}$ |
| 1999 $TQ_{133}$ | 17.1 | 0.15 | 20060922 | 17.41267 | 77.16857 | 234.31208 | 1.72594 | 0.1999080 | 2.3550505 | 88 | 5 | 1992–2006 | 0.38 | M-v | 1 | MPC | 04120 | 1999 $TQ_{133}$ |
| 1999 $TV_{133}$ | 17.2 | 0.15 | 20060922 | 269.01291 | 170.33694 | 225.59640 | 1.05949 | 0.1444640 | 2.4710756 | 51 | 3 | 1999–2005 | 0.45 | M-v | 3 | MPC | 55917 | 1999 $TV_{133}$ |
| 1999 $TB_{134}$ | 17.3 | 0.15 | 20060922 | 280.07506 | 204.35004 | 235.84085 | 0.66494 | 0.1495032 | 2.3614599 | 38 | 7 | 1992–2006 | 0.54 | M-v | 1 | MPC | 04120 | 1999 $TB_{134}$ |
| 1999 $TE_{134}$ | 16.5 | 0.15 | 20060922 | 75.18938 | 299.28955 | 1.64556 | 6.39846 | 0.1849977 | 2.2543438 | 51 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 84505 | 1999 $TE_{134}$ |
| 1999 $TG_{135}$ | 17.1 | 0.15 | 20060922 | 4.31840 | 148.36116 | 196.78488 | 2.44367 | 0.1844909 | 2.3357965 | 87 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04120 | 1999 $TG_{135}$ |
| 1999 $TP_{135}$ | 16.8 | 0.15 | 20060922 | 35.69393 | 101.93264 | 210.32214 | 5.80785 | 0.1297781 | 2.3335791 | 65 | 3 | 1999–2006 | 0.57 | M-v | 3 | MPC | 03155 | 1999 $TP_{135}$ |
| 1999 $TS_{135}$ | 16.8 | 0.15 | 20060922 | 243.08413 | 36.02498 | 345.21922 | 1.14792 | 0.2466541 | 2.5810248 | 68 | 3 | 1999–2005 | 0.47 | M-v | 3 | MPC | 53612 | 1999 $TS_{135}$ |
| 1999 $TV_{135}$ | 15.4 | 0.15 | 20060922 | 91.75222 | 190.83345 | 202.73429 | 9.28676 | 0.1008246 | 3.0829647 | 46 | 3 | 1999–2004 | 0.57 | M-v | 3 | MPC | 70229 | 1999 $TV_{135}$ |
| 1999 $TZ_{135}$ | 16.2 | 0.15 | 20060922 | 267.47373 | 102.58606 | 356.92677 | 3.87498 | 0.2005542 | 2.3711577 | 114 | 4 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04120 | 1999 $TZ_{135}$ |
| 1999 $TG_{136}$ | 15.1 | 0.15 | 20060922 | 146.52052 | 117.06039 | 217.74008 | 4.41321 | 0.1730010 | 3.0345524 | 109 | 4 | 1999–2005 | 0.43 | M-v | 1 | MPC | 73959 | 1999 $TG_{136}$ |
| 1999 $TZ_{137}$ | 16.6 | 0.15 | 20060922 | 320.49406 | 52.64975 | 15.70210 | 6.79807 | 0.1703948 | 2.3070470 | 137 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 62246 | 1999 $TZ_{137}$ |
| 1999 $TC_{138}$ | 17.4 | 0.15 | 20060922 | 337.72314 | 28.10464 | 351.14118 | 2.16581 | 0.2008440 | 2.3451296 | 64 | 2 | 1999–2006 | 0.47 | M-v | 3 | MPC | 03156 | 1999 $TC_{138}$ |
| 1999 $TG_{138}$ | 17.2 | 0.15 | 20060922 | 346.06876 | 56.31179 | 288.04705 | 0.98502 | 0.2260256 | 2.3772180 | 57 | 3 | 1999–2006 | 0.60 | M-v | 2 | MPC | 01981 | 1999 $TG_{138}$ |
| 1999 $TH_{138}$ | 14.9 | 0.15 | 20060922 | 327.75138 | 101.04471 | 271.23538 | 1.80202 | 0.2387707 | 3.9325533 | 51 | 6 | 1991–2006 | 0.49 | M-v | 0 | MPC | 01981 | 1999 $TH_{138}$ |
| 1999 $TX_{138}$ | 16.9 | 0.15 | 20060922 | 302.91263 | 30.17193 | 0.80079 | 1.90683 | 0.2099219 | 2.4104686 | 66 | 4 | 1999–2005 | 0.52 | M-v | 2 | MPC | 55918 | 1999 $TX_{138}$ |
| 1999 $TP_{139}$ | 17.3 | 0.15 | 20060922 | 309.86629 | 119.82024 | 336.97985 | 1.65060 | 0.1174953 | 2.2763904 | 91 | 5 | 1996–2006 | 0.52 | M-v | 0 | MPC | 87356 | 1999 $TP_{139}$ |
| 1999 $TF_{140}$ | 17.3 | 0.15 | 20060922 | 346.58891 | 344.81057 | 9.12316 | 4.30729 | 0.2533984 | 2.3664036 | 44 | 4 | 1999–2006 | 0.59 | M-v | 2 | MPC | 03156 | 1999 $TF_{140}$ |
| 1999 $TE_{141}$ | 16.8 | 0.15 | 20060922 | 23.25130 | 327.59562 | 24.82862 | 3.59313 | 0.1925928 | 2.3019038 | 96 | 3 | 1999–2006 | 0.45 | M-v | 2 | MPC | 04120 | 1999 $TE_{141}$ |
| 1999 $TX_{143}$ | 15.3 | 0.15 | 20060922 | 72.67077 | 90.79031 | 293.33565 | 3.62149 | 0.1873180 | 3.1817454 | 103 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 97353 | 1999 $TX_{143}$ |
| 1999 $TM_{144}$ | 17.0 | 0.15 | 20060922 | 18.20971 | 172.73864 | 195.19098 | 2.83167 | 0.1766034 | 2.2583625 | 102 | 3 | 1999–2006 | 0.50 | M-v | 3 | MPC | 74643 | 1999 $TM_{144}$ |
| 1999 $TX_{144}$ | 17.7 | 0.15 | 20060922 | 350.56492 | 66.54582 | 298.88890 | 2.10150 | 0.2277667 | 2.3232288 | 58 | 2 | 1999–2006 | 0.58 | M-v | 4 | MPC | 03156 | 1999 $TX_{144}$ |
| 1999 $TU_{145}$ | 17.3 | 0.15 | 20060922 | 10.75655 | 190.69401 | 164.92232 | 2.89136 | 0.1862972 | 2.2974605 | 85 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 74643 | 1999 $TU_{145}$ |
| 1999 $TE_{147}$ | 16.6 | 0.15 | 20060922 | 22.78757 | 177.69395 | 150.71677 | 3.99112 | 0.2089167 | 2.3131563 | 118 | 6 | 1998–2006 | 0.45 | M-v | 1 | MPC | 04120 | 1999 $TE_{147}$ |
| 1999 $TS_{147}$ | 16.8 | 0.15 | 20060922 | 70.92716 | 199.08525 | 147.82519 | 2.45932 | 0.1442620 | 2.1994783 | 88 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 62246 | 1999 $TS_{147}$ |
| 1999 $TU_{147}$ | 16.2 | 0.15 | 20060922 | 285.27588 | 137.30590 | 288.22908 | 3.93502 | 0.1020884 | 2.3681292 | 81 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 04120 | 1999 $TU_{147}$ |
| 1999 $TP_{148}$ | 17.3 | 0.15 | 20060922 | 12.65834 | 44.47683 | 353.34506 | 4.41017 | 0.1339761 | 2.2354525 | 32 | 3 | 1999–2006 | 0.52 | M-v | 3 | MPC | 87356 | 1999 $TP_{148}$ |
| 1999 $TS_{148}$ | 16.9 | 0.15 | 20060922 | 251.42831 | 191.95016 | 181.85387 | 4.81066 | 0.1289072 | 2.5628477 | 61 | 7 | 1995–2006 | 0.60 | M-v | 1 | MPC | 01981 | 1999 $TS_{148}$ |
| 1999 $TT_{148}$ | 17.3 | 0.15 | 20060922 | 340.98329 | 238.19794 | 132.12871 | 2.94313 | 0.2389954 | 2.3410400 | 51 | 4 | 1992–2006 | 0.42 | M-v | 1 | MPC | 03156 | 1999 $TT_{148}$ |
| 1999 $TN_{149}$ | 16.8 | 0.15 | 20060922 | 59.90340 | 347.32673 | 335.04354 | 3.06411 | 0.2009102 | 2.2505649 | 46 | 5 | 1994–2006 | 0.42 | M-v | 1 | MPC | 04120 | 1999 $TN_{149}$ |
| 1999 $TP_{149}$ | 16.3 | 0.15 | 20060922 | 310.01645 | 322.21942 | 22.80363 | 2.43919 | 0.0884696 | 2.4842022 | 75 | 4 | 1999–2005 | 0.56 | M-v | 1 | MPC | 90015 | 1999 $TP_{149}$ |
| 1999 $TT_{149}$ | 16.7 | 0.15 | 20060922 | 270.04894 | 14.46680 | 21.72088 | 3.03176 | 0.1883129 | 2.4757790 | 119 | 4 | 1999–2005 | 0.51 | M-v | 2 | MPC | 57703 | 1999 $TT_{149}$ |
| 1999 $TT_{150}$ | 14.5 | 0.15 | 20060922 | 79.72412 | 155.58584 | 232.82356 | 8.21625 | 0.0984552 | 3.1695359 | 130 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 97353 | 1999 $TT_{150}$ |
| 1999 $TD_{151}$ | 18.1 | 0.15 | 20060922 | 37.74281 | 202.47764 | 178.47774 | 1.24774 | 0.1909786 | 2.2169992 | 49 | 6 | 1991–2006 | 0.56 | M-v | 1 | MPC | 62246 | 1999 $TD_{151}$ |
| 1999 $TV_{151}$ | 16.0 | 0.15 | 20060922 | 354.89126 | 180.83550 | 177.33881 | 6.22889 | 0.1319207 | 2.3480786 | 147 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 04120 | 1999 $TV_{151}$ |
| 1999 $TJ_{152}$ | 16.4 | 0.15 | 20060922 | 232.55915 | 341.19740 | 41.66168 | 1.92853 | 0.1639371 | 2.6121092 | 35 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 01981 | 1999 $TJ_{152}$ |
| 1999 $TN_{152}$ | 14.3 | 0.15 | 20060922 | 320.19653 | 331.08989 | 48.66640 | 6.66566 | 0.3159269 | 3.9746333 | 44 | 2 | 1999–2006 | 0.43 | M-v | 4 | MPC | 03157 | 1999 $TN_{152}$ |
| 1999 $TD_{155}$ | 17.1 | 0.15 | 20060922 | 348.53082 | 128.97860 | 260.97302 | 3.25562 | 0.1872433 | 2.3079122 | 58 | 4 | 1997–2006 | 0.46 | M-v | 3 | MPC | 60547 | 1999 $TD_{155}$ |
| 1999 $TW_{155}$ | 16.3 | 0.15 | 20060922 | 312.15001 | 272.98612 | 100.79349 | 4.14880 | 0.1851522 | 2.4265118 | 45 | 3 | 1999–2005 | 0.61 | M-v | 3 | MPC | 55922 | 1999 $TW_{155}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $TY_{158}$ | 15.4 | 0.15 | 20060922 | 196.66968 | 61.02236 | 356.08095 | 16.29645 | 0.1245794 | 2.5965393 | 69 | 4 | 1999–2005 | 0.51 | M-v | 1 | MPC | 73960 | 1999 $TY_{158}$ |
| 1999 $TV_{159}$ | 16.9 | 0.15 | 20060922 | 5.75206 | 106.94592 | 226.88511 | 4.70285 | 0.2006761 | 2.3268306 | 53 | 4 | 1992–2006 | 0.55 | M-v | 3 | MPC | 04120 | 1999 $TV_{159}$ |
| 1999 $TF_{161}$ | 17.2 | 0.15 | 20060922 | 105.77560 | 346.76284 | 331.68127 | 3.09414 | 0.1556644 | 2.1698840 | 66 | 3 | 1999–2004 | 0.62 | M-v | 3 | MPC | 57704 | 1999 $TF_{161}$ |
| 1999 $TP_{161}$ | 17.4 | 0.15 | 20060922 | 304.78884 | 205.96169 | 151.28186 | 2.74633 | 0.1997704 | 2.4568761 | 27 | 4 | 1997–2005 | 0.55 | M-v | 2 | MPC | 74646 | 1999 $TP_{161}$ |
| 1999 $TY_{161}$ | 16.5 | 0.15 | 20060922 | 302.25438 | 357.05379 | 52.40439 | 6.46140 | 0.1785429 | 2.3804812 | 48 | 3 | 1999–2005 | 0.62 | M-v | 4 | MPC | 55924 | 1999 $TY_{161}$ |
| 1999 $TC_{163}$ | 15.0 | 0.15 | 20060922 | 108.29461 | 289.52146 | 92.83918 | 3.29527 | 0.0947537 | 3.0576773 | 93 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 97354 | 1999 $TC_{163}$ |
| 1999 $TF_{163}$ | 16.8 | 0.15 | 20060922 | 284.80362 | 5.26602 | 67.13115 | 3.63519 | 0.1660592 | 2.3784722 | 64 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 04120 | 1999 $TF_{163}$ |
| 1999 $TV_{163}$ | 16.7 | 0.15 | 20060922 | 271.77472 | 253.34169 | 127.29349 | 7.64832 | 0.1409029 | 2.5301342 | 41 | 3 | 1999–2005 | 0.68 | M-v | 3 | MPC | 87356 | 1999 $TV_{163}$ |
| 1999 $TX_{163}$ | 17.1 | 0.15 | 20060922 | 335.35255 | 309.56908 | 90.02631 | 3.74774 | 0.1702640 | 2.3260748 | 80 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 62246 | 1999 $TX_{163}$ |
| 1999 $TY_{163}$ | 16.9 | 0.15 | 20060922 | 358.54900 | 178.89754 | 169.31134 | 5.95242 | 0.2536886 | 2.3466179 | 113 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 04120 | 1999 $TY_{163}$ |
| 1999 $TS_{164}$ | 16.7 | 0.15 | 20060922 | 329.39938 | 127.04874 | 246.03350 | 5.44805 | 0.1491358 | 2.3660983 | 42 | 4 | 1992–2006 | 0.59 | M-v | 1 | MPC | 03157 | 1999 $TS_{164}$ |
| 1999 $TG_{165}$ | 16.2 | 0.15 | 20060922 | 296.06925 | 196.79024 | 279.62106 | 3.44090 | 0.0895677 | 2.2348906 | 119 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 62246 | 1999 $TG_{165}$ |
| 1999 $TW_{165}$ | 16.7 | 0.15 | 20060922 | 22.60744 | 60.36495 | 262.60058 | 3.85555 | 0.1796054 | 2.3246861 | 90 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04120 | 1999 $TW_{165}$ |
| 1999 $TA_{166}$ | 16.4 | 0.15 | 20060922 | 269.43105 | 89.43623 | 247.30905 | 4.54909 | 0.1641917 | 2.5858722 | 72 | 4 | 1995–2005 | 0.52 | M-v | 2 | MPC | 53613 | 1999 $TA_{166}$ |
| 1999 $TE_{166}$ | 17.4 | 0.15 | 20060922 | 335.48561 | 165.58643 | 242.84526 | 3.56578 | 0.1189809 | 2.2897442 | 74 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 84506 | 1999 $TE_{166}$ |
| 1999 $TV_{166}$ | 14.9 | 0.15 | 20060922 | 30.38270 | 95.00711 | 335.81881 | 7.29175 | 0.1950376 | 3.2310655 | 113 | 5 | 1993–2006 | 0.55 | M-v | 1 | MPC | 97354 | 1999 $TV_{166}$ |
| 1999 $TH_{167}$ | 16.8 | 0.15 | 20060922 | 227.83365 | 85.07348 | 306.48255 | 2.30013 | 0.2496325 | 2.6119616 | 49 | 2 | 1999–2003 | 0.44 | M-v | 3 | MPC | 53613 | 1999 $TH_{167}$ |
| 1999 $TA_{169}$ | 17.0 | 0.15 | 20060922 | 116.43461 | 57.44554 | 227.53697 | 5.53399 | 0.1327761 | 2.2168994 | 54 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 01981 | 1999 $TA_{169}$ |
| 1999 $TB_{169}$ | 16.7 | 0.15 | 20060922 | 62.10320 | 338.47853 | 331.10149 | 3.44129 | 0.1678070 | 2.2731945 | 50 | 3 | 1999–2006 | 0.45 | M-v | 2 | MPC | 74646 | 1999 $TB_{169}$ |
| 1999 $TN_{169}$ | 17.0 | 0.15 | 20060922 | 30.84353 | 88.64229 | 214.54414 | 5.53896 | 0.2891180 | 2.3279731 | 101 | 3 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04120 | 1999 $TN_{169}$ |
| 1999 $TT_{170}$ | 17.3 | 0.15 | 20060922 | 327.92501 | 197.58158 | 197.13751 | 5.94649 | 0.1958284 | 2.3458736 | 84 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 03157 | 1999 $TT_{170}$ |
| 1999 $TU_{170}$ | 16.4 | 0.15 | 20060922 | 301.56259 | 213.00284 | 204.35039 | 7.38015 | 0.1724344 | 2.3686301 | 81 | 3 | 1999–2006 | 0.56 | M-v | 3 | MPC | 03157 | 1999 $TU_{170}$ |
| 1999 $TP_{173}$ | 17.1 | 0.15 | 20060922 | 113.65752 | 345.74742 | 327.03249 | 2.98958 | 0.2177751 | 2.1666892 | 61 | 4 | 1999–2004 | 0.60 | M-v | 2 | MPC | 38218 | 1999 $TP_{173}$ |
| 1999 $TD_{175}$ | 16.4 | 0.15 | 20060922 | 254.88692 | 162.83764 | 239.54502 | 4.72888 | 0.1900901 | 2.5231777 | 94 | 4 | 1995–2005 | 0.46 | M-v | 2 | MPC | 57704 | 1999 $TD_{175}$ |
| 1999 $TK_{175}$ | 17.7 | 0.15 | 20060922 | 354.25372 | 166.24590 | 214.83287 | 5.72954 | 0.1480781 | 2.3004471 | 45 | 3 | 1999–2006 | 0.37 | M-v | 2 | MPC | 74647 | 1999 $TK_{175}$ |
| 1999 $TZ_{175}$ | 15.8 | 0.15 | 20060922 | 234.55638 | 2.35033 | 25.18656 | 17.43188 | 0.1976946 | 2.6151913 | 62 | 2 | 1999–2003 | 0.63 | M-v | 3 | MPC | 57704 | 1999 $TZ_{175}$ |
| 1999 $TD_{176}$ | 16.6 | 0.15 | 20060922 | 47.00226 | 49.09045 | 234.28614 | 3.80440 | 0.1213975 | 2.3720352 | 67 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 04120 | 1999 $TD_{176}$ |
| 1999 $TK_{176}$ | 17.5 | 0.15 | 20060922 | 25.13940 | 331.20428 | 2.66949 | 2.61489 | 0.1705669 | 2.3105199 | 55 | 3 | 1999–2006 | 0.51 | M-v | 3 | MPC | 74647 | 1999 $TK_{176}$ |
| 1999 $TA_{177}$ | 17.5 | 0.15 | 20060922 | 314.99170 | 85.99330 | 1.60893 | 3.84560 | 0.1930412 | 2.2913226 | 70 | 5 | 1992–2006 | 0.52 | M-v | 0 | MPC | 62246 | 1999 $TA_{177}$ |
| 1999 $TL_{177}$ | 15.4 | 0.15 | 20060922 | 134.85268 | 139.02830 | 210.34907 | 10.82719 | 0.0652576 | 3.0962474 | 58 | 3 | 1999–2005 | 0.50 | M-v | 3 | MPC | 73960 | 1999 $TL_{177}$ |
| 1999 $TA_{178}$ | 16.5 | 0.15 | 20060922 | 292.31792 | 200.13024 | 203.14366 | 4.49534 | 0.1004985 | 2.4222301 | 63 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04120 | 1999 $TA_{178}$ |
| 1999 $TL_{182}$ | 16.5 | 0.15 | 20060922 | 327.98103 | 95.84915 | 331.12100 | 5.60048 | 0.0817693 | 2.2656134 | 68 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 62246 | 1999 $TL_{182}$ |
| 1999 $TX_{183}$ | 15.3 | 0.15 | 20060922 | 89.42676 | 59.04775 | 312.96822 | 15.07444 | 0.2454057 | 3.1508563 | 34 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 99917 | 1999 $TX_{183}$ |
| 1999 $TJ_{185}$ | 16.6 | 0.15 | 20060922 | 92.48770 | 327.19535 | 312.95865 | 6.46674 | 0.1235268 | 2.2840878 | 60 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 77401 | 1999 $TJ_{185}$ |
| 1999 $TM_{186}$ | 14.5 | 0.15 | 20060922 | 178.46146 | 340.26526 | 323.41284 | 8.98533 | 0.0716889 | 3.0724483 | 127 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 97354 | 1999 $TM_{186}$ |
| 1999 $TF_{190}$ | 16.2 | 0.15 | 20060922 | 26.41343 | 74.73347 | 327.62860 | 7.68341 | 0.2168454 | 2.2205103 | 69 | 5 | 1989–2006 | 0.60 | M-v | 1 | MPC | 62246 | 1999 $TF_{190}$ |
| 1999 $TT_{191}$ | 16.3 | 0.15 | 20060922 | 65.05474 | 73.10375 | 284.54162 | 6.03236 | 0.1467246 | 2.2091806 | 93 | 6 | 1994–2006 | 0.46 | M-v | 1 | MPC | 62246 | 1999 $TT_{191}$ |
| 1999 $TR_{192}$ | 15.8 | 0.15 | 20060922 | 20.74093 | 358.04155 | 335.79173 | 6.57889 | 0.1509659 | 2.3447065 | 152 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 04121 | 1999 $TR_{192}$ |
| 1999 $TT_{192}$ | 16.4 | 0.15 | 20060922 | 342.81365 | 119.27804 | 321.10555 | 5.30895 | 0.1121222 | 2.2471359 | 75 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 62246 | 1999 $TT_{192}$ |
| 1999 $TW_{192}$ | 17.7 | 0.15 | 20060922 | 24.26671 | 4.24481 | 357.90013 | 3.44618 | 0.2646693 | 2.2740909 | 40 | 3 | 1999–2006 | 0.51 | M-v | 4 | MPC | 60548 | 1999 $TW_{192}$ |
| 1999 $TH_{193}$ | 16.2 | 0.15 | 20060922 | 250.96364 | 85.70068 | 295.20405 | 6.12503 | 0.2327070 | 2.5792729 | 74 | 2 | 1999–2003 | 0.48 | M-v | 3 | MPC | 57705 | 1999 $TH_{193}$ |
| 1999 $TE_{195}$ | 16.7 | 0.15 | 20060922 | 312.97570 | 61.56486 | 14.71084 | 5.19155 | 0.2138042 | 2.3356275 | 105 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 60549 | 1999 $TE_{195}$ |
| 1999 $TJ_{196}$ | 15.9 | 0.15 | 20060922 | 31.20904 | 69.33490 | 260.32248 | 8.43479 | 0.2522907 | 2.3151907 | 109 | 3 | 1999–2006 | 0.51 | M-v | 1 | MPC | 33832 | 1999 $TJ_{196}$ |
| 1999 $TN_{197}$ | 16.8 | 0.15 | 20060922 | 16.13164 | 1.74729 | 0.22864 | 5.69060 | 0.1901968 | 2.3099086 | 96 | 6 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04121 | 1999 $TN_{197}$ |
| 1999 $TT_{197}$ | 16.7 | 0.15 | 20060922 | 59.04781 | 56.77224 | 287.55275 | 5.27473 | 0.2160548 | 2.2446277 | 82 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 87357 | 1999 $TT_{197}$ |
| 1999 $TA_{200}$ | 16.8 | 0.15 | 20060922 | 204.62006 | 294.13496 | 230.14286 | 5.44926 | 0.0638976 | 2.3432391 | 39 | 5 | 1999–2006 | 0.36 | M-v | 1 | MPC | 84507 | 1999 $TA_{200}$ |
| 1999 $TC_{200}$ | 16.1 | 0.15 | 20060922 | 299.10310 | 265.56952 | 236.91869 | 19.70186 | 0.3087103 | 2.2610882 | 111 | 3 | 1999–2006 | 0.67 | M-v | 1 | MPC | 66095 | 1999 $TC_{200}$ |
| 1999 $TR_{200}$ | 14.9 | 0.15 | 20060922 | 80.69107 | 193.81421 | 171.79801 | 11.21026 | 0.2544147 | 3.1003867 | 83 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 97355 | 1999 $TR_{200}$ |
| 1999 $TT_{200}$ | 17.1 | 0.15 | 20060922 | 71.62252 | 21.86480 | 309.75325 | 4.50078 | 0.2345556 | 2.1729254 | 44 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 57706 | 1999 $TT_{200}$ |
| 1999 $TB_{203}$ | 14.8 | 0.15 | 20060922 | 276.91256 | 215.50302 | 0.75502 | 12.98183 | 0.1308465 | 2.9861113 | 112 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 97355 | 1999 $TB_{203}$ |
| 1999 $TM_{203}$ | 16.8 | 0.15 | 20060922 | 282.85701 | 189.01065 | 235.36802 | 4.47078 | 0.1139918 | 2.3716714 | 69 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04121 | 1999 $TM_{203}$ |
| 1999 $TC_{204}$ | 17.4 | 0.15 | 20060922 | 308.06382 | 210.84251 | 241.21919 | 3.68795 | 0.1981140 | 2.3025528 | 56 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 60549 | 1999 $TC_{204}$ |
| 1999 $TH_{205}$ | 16.6 | 0.15 | 20060922 | 317.39441 | 30.19459 | 24.91945 | 7.43931 | 0.1151463 | 2.3511571 | 75 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 62246 | 1999 $TH_{205}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $TL_{206}$ | 16.1 | 0.15 | 20060922 | 292.02988 | 2.79570 | 28.92978 | 8.31370 | 0.1835919 | 2.4760942 | 41 | 3 | 1999–2005 | 0.36 | M-v | 3 | MPC | 93771 | 1999 $TL_{206}$ |
| 1999 $TW_{208}$ | 15.0 | 0.15 | 20060922 | 303.58133 | 101.43371 | 254.02563 | 14.50722 | 0.0380254 | 2.5119665 | 100 | 3 | 1999–2003 | 0.51 | M-v | 3 | MPC | 57706 | 1999 $TW_{208}$ |
| 1999 $TT_{209}$ | 17.6 | 0.15 | 20060922 | 333.34586 | 357.92694 | 59.37209 | 7.70851 | 0.1781557 | 2.3052567 | 53 | 3 | 1999–2006 | 0.62 | M-v | 2 | MPC | 88690 | 1999 $TT_{209}$ |
| 1999 $TE_{212}$ | 17.4 | 0.15 | 20060922 | 344.22677 | 121.95789 | 234.08371 | 3.62419 | 0.1948220 | 2.3700147 | 55 | 3 | 1999–2006 | 0.43 | M-v | 3 | MPC | 03157 | 1999 $TE_{212}$ |
| 1999 $TH_{212}$ | 17.2 | 0.15 | 20060922 | 46.71416 | 120.64393 | 228.48640 | 4.29666 | 0.1934031 | 2.2452447 | 65 | 3 | 1999–2006 | 0.49 | M-v | 3 | MPC | 74650 | 1999 $TH_{212}$ |
| 1999 $TU_{212}$ | 15.9 | 0.15 | 20060922 | 257.72189 | 275.20685 | 6.88860 | 9.12771 | 0.1682812 | 2.7865445 | 41 | 3 | 1999–2004 | 0.56 | M-v | 3 | MPC | 47810 | 1999 $TU_{212}$ |
| 1999 $TE_{214}$ | 17.0 | 0.15 | 20060922 | 247.10072 | 297.10513 | 84.01269 | 1.60666 | 0.2375064 | 2.5711639 | 51 | 3 | 1999–2005 | 0.59 | M-v | 3 | MPC | 57706 | 1999 $TE_{214}$ |
| 1999 $TD_{215}$ | 17.0 | 0.15 | 20060922 | 342.33789 | 221.27237 | 184.86454 | 3.72375 | 0.1347389 | 2.2930576 | 78 | 6 | 1999–2006 | 0.48 | M-v | 1 | MPC | 84508 | 1999 $TD_{215}$ |
| 1999 $TL_{215}$ | 16.0 | 0.15 | 20060922 | 180.30015 | 203.25330 | 191.38145 | 8.79999 | 0.1652128 | 2.7551929 | 29 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 99918 | 1999 $TL_{215}$ |
| 1999 $TX_{215}$ | 14.4 | 0.15 | 20060922 | 320.40651 | 236.71841 | 148.38703 | 3.53351 | 0.2521691 | 3.9429813 | 73 | 5 | 1991–2006 | 0.54 | M-v | 0 | MPC | 04121 | 1999 $TX_{215}$ |
| 1999 $TS_{217}$ | 17.6 | 0.15 | 20060922 | 352.63776 | 290.40040 | 89.72645 | 1.75919 | 0.2502384 | 2.3236568 | 74 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 03158 | 1999 $TS_{217}$ |
| 1999 $TB_{218}$ | 16.9 | 0.15 | 20060922 | 24.02227 | 21.37651 | 290.95995 | 1.34320 | 0.1854139 | 2.3519679 | 97 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04121 | 1999 $TB_{218}$ |
| 1999 $TL_{218}$ | 16.6 | 0.15 | 20060922 | 306.84425 | 120.97124 | 250.41920 | 1.59089 | 0.2077916 | 2.4446602 | 60 | 3 | 1999–2005 | 0.54 | M-v | 3 | MPC | 55935 | 1999 $TL_{218}$ |
| 1999 $TC_{219}$ | 16.4 | 0.15 | 20060922 | 272.01171 | 187.71686 | 162.15596 | 4.79744 | 0.2194742 | 2.5450239 | 88 | 4 | 1999–2006 | 0.63 | M-v | 2 | MPC | 01982 | 1999 $TC_{219}$ |
| 1999 $TF_{219}$ | 17.1 | 0.15 | 20060922 | 337.29906 | 5.19981 | 40.67944 | 4.83322 | 0.2136983 | 2.2980773 | 114 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 87357 | 1999 $TF_{219}$ |
| 1999 $TO_{219}$ | 16.8 | 0.15 | 20060922 | 93.38804 | 53.60819 | 275.99158 | 4.67252 | 0.1384669 | 2.1819432 | 75 | 6 | 1999–2006 | 0.52 | M-v | 1 | MPC | 87357 | 1999 $TO_{219}$ |
| 1999 $TX_{219}$ | 16.2 | 0.15 | 20060922 | 35.60797 | 11.64541 | 299.14089 | 5.80217 | 0.1205432 | 2.3323964 | 85 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 03158 | 1999 $TX_{219}$ |
| 1999 $TZ_{220}$ | 16.6 | 0.15 | 20060922 | 81.79292 | 348.91386 | 302.12204 | 5.90924 | 0.2365124 | 2.2332208 | 49 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 77402 | 1999 $TZ_{220}$ |
| 1999 $TE_{221}$ | 16.9 | 0.15 | 20060922 | 32.33602 | 107.75795 | 222.30243 | 5.63201 | 0.1534679 | 2.3085149 | 83 | 4 | 1992–2006 | 0.50 | M-v | 3 | MPC | 03158 | 1999 $TE_{221}$ |
| 1999 $TT_{222}$ | 16.2 | 0.15 | 20060922 | 56.98645 | 174.13411 | 144.63518 | 6.46315 | 0.2307020 | 2.2620117 | 51 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 77402 | 1999 $TT_{222}$ |
| 1999 $TB_{223}$ | 16.5 | 0.15 | 20060922 | 309.61617 | 86.58678 | 291.92849 | 5.55094 | 0.1451710 | 2.3876631 | 64 | 5 | 1999–2006 | 0.56 | M-v | 0 | MPC | 01982 | 1999 $TB_{223}$ |
| 1999 $TD_{225}$ | 17.1 | 0.15 | 20060922 | 288.31394 | 109.49542 | 338.60245 | 2.28391 | 0.1289974 | 2.2931783 | 65 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 04121 | 1999 $TD_{225}$ |
| 1999 $TD_{229}$ | 16.5 | 0.15 | 20060922 | 85.32067 | 110.41471 | 183.23231 | 6.68169 | 0.1842539 | 2.2404755 | 72 | 4 | 1995–2006 | 0.46 | M-v | 0 | MPC | 74652 | 1999 $TD_{229}$ |
| 1999 $TT_{229}$ | 17.6 | 0.15 | 20060922 | 65.70180 | 87.21857 | 206.11073 | 2.96990 | 0.1697570 | 2.2701562 | 62 | 4 | 1995–2006 | 0.41 | M-v | 2 | MPC | 74652 | 1999 $TT_{229}$ |
| 1999 $TC_{230}$ | 16.0 | 0.15 | 20060922 | 18.79890 | 281.05378 | 65.78894 | 6.14765 | 0.1924008 | 2.2987714 | 122 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 55938 | 1999 $TC_{230}$ |
| 1999 $TF_{230}$ | 16.2 | 0.15 | 20060922 | 26.35513 | 198.70017 | 123.07745 | 6.57807 | 0.1703929 | 2.3225599 | 56 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04121 | 1999 $TF_{230}$ |
| 1999 $TS_{230}$ | 16.8 | 0.15 | 20060922 | 3.04961 | 313.33133 | 25.08015 | 12.09413 | 0.2231279 | 2.3263283 | 46 | 4 | 1992–2006 | 0.55 | M-v | 2 | MPC | 03158 | 1999 $TS_{230}$ |
| 1999 $TF_{232}$ | 15.4 | 0.15 | 20060922 | 137.72192 | 271.51876 | 81.65514 | 11.97228 | 0.2779849 | 2.9909347 | 37 | 2 | 1999–2004 | 0.42 | M-v | 3 | MPC | 73962 | 1999 $TF_{232}$ |
| 1999 $TD_{234}$ | 14.9 | 0.15 | 20060922 | 31.24160 | 102.62186 | 348.31553 | 17.75776 | 0.1562217 | 3.1393740 | 65 | 5 | 1999–2006 | 0.54 | M-v | 0 | MPC | 97355 | 1999 $TD_{234}$ |
| 1999 $TF_{234}$ | 16.6 | 0.15 | 20060922 | 354.44723 | 34.73793 | 324.97752 | 7.00004 | 0.1373788 | 2.3301468 | 133 | 5 | 1992–2006 | 0.48 | M-v | 1 | MPC | 04121 | 1999 $TF_{234}$ |
| 1999 $TM_{234}$ | 15.4 | 0.15 | 20060922 | 8.86005 | 118.08319 | 237.90013 | 23.81500 | 0.2395708 | 2.3612458 | 78 | 3 | 1999–2006 | 0.53 | M-v | 1 | MPC | 01983 | 1999 $TM_{234}$ |
| 1999 $TX_{234}$ | 15.1 | 0.15 | 20060922 | 80.63944 | 255.79784 | 134.77058 | 5.22195 | 0.1483871 | 3.1493523 | 91 | 5 | 1999–2006 | 0.50 | M-v | 0 | MPC | 97355 | 1999 $TX_{234}$ |
| 1999 $TN_{236}$ | 17.5 | 0.15 | 20060922 | 26.14273 | 257.92105 | 103.23944 | 3.92246 | 0.2567876 | 2.2720155 | 32 | 3 | 1999–2006 | 0.63 | M-v | 3 | MPC | 64683 | 1999 $TN_{236}$ |
| 1999 $TF_{237}$ | 16.4 | 0.15 | 20060922 | 22.86215 | 256.09470 | 103.91738 | 5.65676 | 0.1839719 | 2.2917065 | 79 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 77403 | 1999 $TF_{237}$ |
| 1999 $TN_{237}$ | 15.3 | 0.15 | 20060922 | 46.08780 | 270.52591 | 184.54436 | 8.46897 | 0.3157464 | 3.1149033 | 28 | 3 | 1999–2006 | 0.51 | M-v | 3 | MPC | 93772 | 1999 $TN_{237}$ |
| 1999 $TV_{237}$ | 16.9 | 0.15 | 20060922 | 6.61358 | 304.75522 | 136.75944 | 1.98461 | 0.1410499 | 2.1759818 | 57 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 87357 | 1999 $TV_{237}$ |
| 1999 $TR_{238}$ | 15.7 | 0.15 | 20060922 | 212.30517 | 209.82320 | 171.82592 | 9.69702 | 0.1277677 | 2.6807475 | 49 | 5 | 1993–2006 | 0.67 | M-v | 1 | MPC | 04121 | 1999 $TR_{238}$ |
| 1999 $TW_{241}$ | 17.1 | 0.15 | 20060922 | 330.62915 | 253.97402 | 146.49046 | 4.41683 | 0.2440512 | 2.3387073 | 93 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04121 | 1999 $TW_{241}$ |
| 1999 $TQ_{244}$ | 17.6 | 0.15 | 20060922 | 8.55494 | 125.40067 | 209.86096 | 3.76150 | 0.2499891 | 2.3231661 | 80 | 4 | 1992–2006 | 0.44 | M-v | 3 | MPC | 04121 | 1999 $TQ_{244}$ |
| 1999 $TG_{245}$ | 17.1 | 0.15 | 20060922 | 307.16629 | 353.65582 | 4.50483 | 2.44104 | 0.2184202 | 2.4381564 | 40 | 3 | 1999–2005 | 0.36 | M-v | 3 | MPC | 55939 | 1999 $TG_{245}$ |
| 1999 $TA_{248}$ | 16.3 | 0.15 | 20060922 | 29.51682 | 220.73303 | 105.92645 | 3.32779 | 0.2152731 | 2.3367108 | 110 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04121 | 1999 $TA_{248}$ |
| 1999 $TK_{248}$ | 16.1 | 0.15 | 20060922 | 49.72548 | 164.42745 | 180.73337 | 8.24697 | 0.2142776 | 2.2639053 | 65 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 77403 | 1999 $TK_{248}$ |
| 1999 $TN_{249}$ | 15.7 | 0.15 | 20060922 | 170.89746 | 84.01431 | 315.33869 | 6.22216 | 0.1540161 | 2.7443486 | 38 | 3 | 1999–2005 | 0.61 | M-v | 3 | MPC | 72005 | 1999 $TN_{249}$ |
| 1999 $TK_{250}$ | 14.3 | 0.15 | 20060922 | 6.04132 | 100.62092 | 357.04079 | 22.27414 | 0.0562291 | 3.1717126 | 97 | 6 | 1999–2006 | 0.70 | M-v | 1 | MPC | 97356 | 1999 $TK_{250}$ |
| 1999 $TU_{253}$ | 16.6 | 0.15 | 20060922 | 351.84179 | 225.58941 | 211.67342 | 7.70022 | 0.1422436 | 2.2413494 | 40 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 62247 | 1999 $TU_{253}$ |
| 1999 $TU_{255}$ | 17.8 | 0.15 | 20060922 | 291.37841 | 33.29858 | 358.23058 | 1.06259 | 0.1572684 | 2.4023438 | 33 | 3 | 1997–2003 | 0.31 | M-v | 2 | MPC | 57707 | 1999 $TU_{255}$ |
| 1999 $TC_{256}$ | 17.0 | 0.15 | 20060922 | 318.94749 | 173.94162 | 222.28021 | 4.72106 | 0.2316349 | 2.3357030 | 47 | 2 | 1999–2006 | 0.61 | M-v | 4 | MPC | 03159 | 1999 $TC_{256}$ |
| 1999 $TO_{257}$ | 17.3 | 0.15 | 20060922 | 47.71006 | 305.89998 | 68.88276 | 3.37363 | 0.1515852 | 2.2004137 | 34 | 4 | 1994–2006 | 0.50 | M-v | 1 | MPC | 04121 | 1999 $TO_{257}$ |
| 1999 $TM_{258}$ | 17.4 | 0.15 | 20060922 | 47.00955 | 70.65380 | 259.55700 | 2.60451 | 0.2656665 | 2.2474452 | 46 | 5 | 1999–2006 | 0.37 | M-v | 1 | MPC | 87357 | 1999 $TM_{258}$ |
| 1999 $TO_{258}$ | 15.2 | 0.15 | 20060922 | 95.80565 | 12.08702 | 3.80411 | 4.96815 | 0.1146069 | 3.1032384 | 49 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 97356 | 1999 $TO_{258}$ |
| 1999 $TB_{259}$ | 15.9 | 0.15 | 20060922 | 68.57466 | 263.46361 | 145.29497 | 1.84984 | 0.1843482 | 3.1437800 | 41 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 93774 | 1999 $TB_{259}$ |
| 1999 $TL_{259}$ | 16.9 | 0.15 | 20060922 | 315.92715 | 9.06830 | 28.91309 | 1.78567 | 0.1819122 | 2.3642890 | 31 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 03159 | 1999 $TL_{259}$ |
| 1999 $TN_{260}$ | 17.0 | 0.15 | 20060922 | 3.57681 | 314.35078 | 25.00382 | 1.45814 | 0.2018918 | 2.3672653 | 84 | 5 | 1999–2006 | 0.46 | M-v | 2 | MPC | 04121 | 1999 $TN_{260}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $TP_{260}$ | 17.1 | 0.15 | 20060922 | 20.54897 | 38.90227 | 276.72098 | 2.68246 | 0.1789774 | 2.3558045 | 64 | 3 | 1999–2006 | 0.45 | M-v | 2 | MPC | 03159 | 1999 $TP_{260}$ |
| 1999 $TQ_{260}$ | 16.9 | 0.15 | 20060922 | 58.68722 | 267.77218 | 359.43537 | 6.31634 | 0.2044033 | 2.3729720 | 49 | 6 | 1994–2006 | 0.48 | M-v | 0 | MPC | 03159 | 1999 $TQ_{260}$ |
| 1999 $TE_{262}$ | 15.9 | 0.15 | 20060922 | 26.48411 | 222.74886 | 226.96864 | 8.22237 | 0.0554514 | 3.1649377 | 32 | 3 | 1999–2006 | 0.39 | M-v | 2 | MPC | 97356 | 1999 $TE_{262}$ |
| 1999 $TX_{263}$ | 16.7 | 0.15 | 20060922 | 17.07803 | 274.06338 | 210.52898 | 2.59795 | 0.1553834 | 3.1174108 | 18 | 3 | 1999–2005 | 0.19 | M-v | 3 | MPC | 68575 | 1999 $TX_{263}$ |
| 1999 $TY_{263}$ | 16.2 | 0.15 | 20060922 | 255.79027 | 141.67814 | 88.09727 | 0.19749 | 0.0629664 | 3.1002854 | 24 | 3 | 1999–2005 | 0.40 | M-v | 4 | MPC | 68575 | 1999 $TY_{263}$ |
| 1999 $TY_{265}$ | 17.4 | 0.15 | 20060922 | 219.66660 | 56.33053 | 346.52383 | 21.51667 | 0.1480643 | 1.8896932 | 67 | 4 | 1998–2004 | 0.71 | M-v | 1 | MPC | 66096 | 1999 $TY_{265}$ |
| 1999 $TK_{266}$ | 16.6 | 0.15 | 20060922 | 28.36022 | 74.15510 | 290.86047 | 7.27560 | 0.1588790 | 2.2425901 | 35 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 77404 | 1999 $TK_{266}$ |
| 1999 $TE_{269}$ | 16.4 | 0.15 | 20060922 | 30.58976 | 58.42146 | 311.19362 | 5.48058 | 0.1127753 | 2.2388762 | 119 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 87357 | 1999 $TE_{269}$ |
| 1999 $TE_{272}$ | 16.8 | 0.15 | 20060922 | 350.27777 | 116.18548 | 276.53870 | 3.57645 | 0.1309928 | 2.2941570 | 81 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 87357 | 1999 $TE_{272}$ |
| 1999 $TX_{272}$ | 16.6 | 0.15 | 20060922 | 28.31735 | 23.04911 | 337.54572 | 5.25644 | 0.2057837 | 2.2735217 | 66 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 87358 | 1999 $TX_{272}$ |
| 1999 $TY_{272}$ | 16.2 | 0.15 | 20060922 | 71.37027 | 9.80742 | 357.11893 | 7.12429 | 0.1673724 | 2.1844295 | 108 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 62247 | 1999 $TY_{272}$ |
| 1999 $TE_{276}$ | 16.5 | 0.15 | 20060922 | 264.39080 | 235.53084 | 204.39295 | 5.72032 | 0.1122079 | 2.3944129 | 57 | 5 | 1999–2006 | 0.67 | M-v | 1 | MPC | 04121 | 1999 $TE_{276}$ |
| 1999 $TS_{280}$ | 14.9 | 0.15 | 20060922 | 65.75307 | 200.56955 | 175.57336 | 19.42543 | 0.1463607 | 3.2099513 | 48 | 4 | 1999–2005 | 0.55 | M-v | 1 | MPC | 90016 | 1999 $TS_{280}$ |
| 1999 $TC_{284}$ | 16.6 | 0.15 | 20060922 | 359.24789 | 158.66812 | 169.71839 | 6.87520 | 0.2545535 | 2.3819956 | 62 | 6 | 1995–2006 | 0.55 | M-v | 1 | MPC | 04121 | 1999 $TC_{284}$ |
| 1999 $TF_{284}$ | 16.1 | 0.15 | 20060922 | 288.05676 | 330.73133 | 80.83919 | 7.69887 | 0.1282424 | 2.4229368 | 44 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04121 | 1999 $TF_{284}$ |
| 1999 $TO_{285}$ | 17.1 | 0.15 | 20060922 | 346.53951 | 223.64351 | 125.27879 | 2.99070 | 0.2268441 | 2.3796567 | 46 | 3 | 1997–2006 | 0.49 | M-v | 3 | MPC | 04121 | 1999 $TO_{285}$ |
| 1999 $TG_{286}$ | 16.5 | 0.15 | 20060922 | 341.04622 | 51.59976 | 336.28330 | 5.70080 | 0.1602672 | 2.3145536 | 124 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 04121 | 1999 $TG_{286}$ |
| 1999 $TJ_{286}$ | 16.9 | 0.15 | 20060922 | 22.69783 | 16.62353 | 294.58280 | 4.88901 | 0.1578232 | 2.3536783 | 71 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04121 | 1999 $TJ_{286}$ |
| 1999 $TH_{287}$ | 16.9 | 0.15 | 20060922 | 313.76473 | 262.75680 | 9.30084 | 19.15289 | 0.0910889 | 1.9240162 | 41 | 4 | 1999–2006 | 0.65 | M-v | 1 | MPC | 99920 | 1999 $TH_{287}$ |
| 1999 $TV_{287}$ | 17.6 | 0.15 | 20060922 | 345.61029 | 214.62825 | 185.67244 | 2.17432 | 0.1812451 | 2.3027107 | 59 | 4 | 1997–2006 | 0.43 | M-v | 2 | MPC | 87358 | 1999 $TV_{287}$ |
| 1999 $TE_{288}$ | 16.7 | 0.15 | 20060922 | 80.91343 | 125.77143 | 194.14593 | 4.73363 | 0.1760969 | 2.2313824 | 75 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 87358 | 1999 $TE_{288}$ |
| 1999 $TA_{289}$ | 17.4 | 0.15 | 20060922 | 21.34733 | 219.91105 | 153.16875 | 3.27375 | 0.1867791 | 2.2740905 | 64 | 7 | 1996–2006 | 0.56 | M-v | 1 | MPC | 77404 | 1999 $TA_{289}$ |
| 1999 $TB_{289}$ | 17.5 | 0.15 | 20060922 | 354.68984 | 216.00051 | 133.84856 | 2.29976 | 0.3081622 | 2.3510565 | 50 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 03159 | 1999 $TB_{289}$ |
| 1999 $TV_{289}$ | 17.3 | 0.15 | 20060922 | 275.56793 | 306.16172 | 111.73064 | 2.16553 | 0.1790237 | 2.4411484 | 32 | 3 | 1999–2003 | 0.68 | M-v | 3 | MPC | 55943 | 1999 $TV_{289}$ |
| 1999 $TG_{290}$ | 17.2 | 0.15 | 20060922 | 333.81129 | 189.11458 | 197.65436 | 6.28112 | 0.2166088 | 2.3609570 | 79 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 03160 | 1999 $TG_{290}$ |
| 1999 $TJ_{290}$ | 16.8 | 0.15 | 20060922 | 257.01492 | 229.22056 | 164.37350 | 4.76003 | 0.2252182 | 2.5417856 | 69 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 01983 | 1999 $TJ_{290}$ |
| 1999 $TY_{290}$ | 16.3 | 0.15 | 20060922 | 13.28895 | 226.98216 | 170.91457 | 8.12496 | 0.1809017 | 2.2728101 | 89 | 3 | 1999–2004 | 0.58 | M-v | 2 | MPC | 62247 | 1999 $TY_{290}$ |
| 1999 $TE_{292}$ | 17.2 | 0.15 | 20060922 | 39.50680 | 275.31762 | 48.80138 | 5.32426 | 0.1723951 | 2.2996984 | 65 | 3 | 1999–2006 | 0.52 | M-v | 3 | MPC | 84510 | 1999 $TE_{292}$ |
| 1999 $TT_{292}$ | 17.2 | 0.15 | 20060922 | 336.12899 | 135.42681 | 271.81618 | 3.64386 | 0.1786501 | 2.3132963 | 53 | 3 | 1999–2006 | 0.38 | M-v | 2 | MPC | 84511 | 1999 $TT_{292}$ |
| 1999 $TF_{293}$ | 16.0 | 0.15 | 20060922 | 315.69611 | 68.77732 | 333.47453 | 4.87748 | 0.1086064 | 2.3737126 | 107 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04122 | 1999 $TF_{293}$ |
| 1999 $TF_{294}$ | 17.5 | 0.15 | 20060922 | 201.77071 | 219.33245 | 346.20104 | 2.53512 | 0.0484802 | 2.1963873 | 29 | 5 | 1998–2006 | 0.60 | M-v | 2 | MPC | 73964 | 1999 $TF_{294}$ |
| 1999 $TG_{295}$ | 16.7 | 0.15 | 20060922 | 277.02234 | 134.60106 | 295.46077 | 4.80530 | 0.2184726 | 2.3701453 | 63 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 87358 | 1999 $TG_{295}$ |
| 1999 $TP_{295}$ | 17.4 | 0.15 | 20060922 | 23.94634 | 184.42623 | 158.30439 | 4.38455 | 0.2242649 | 2.2871782 | 43 | 4 | 1992–2006 | 0.47 | M-v | 3 | MPC | 19462 | 1999 $TP_{295}$ |
| 1999 $TN_{297}$ | 17.1 | 0.15 | 20060922 | 58.33670 | 121.25062 | 182.16853 | 6.54644 | 0.1313425 | 2.2735277 | 49 | 4 | 1995–2006 | 0.30 | M-v | 1 | MPC | 04122 | 1999 $TN_{297}$ |
| 1999 $TD_{298}$ | 17.1 | 0.15 | 20060922 | 327.71665 | 30.64067 | 343.50881 | 7.01387 | 0.1289832 | 2.3740616 | 29 | 2 | 1999–2006 | 0.51 | M-v | 4 | MPC | 03160 | 1999 $TD_{298}$ |
| 1999 $TT_{299}$ | 16.3 | 0.15 | 20060922 | 281.02945 | 201.80971 | 41.29704 | 3.06195 | 0.0410759 | 2.9747840 | 34 | 4 | 1999–2006 | 0.29 | M-v | 0 | MPC | 97356 | 1999 $TT_{299}$ |
| 1999 $TU_{299}$ | 16.0 | 0.15 | 20060922 | 304.63089 | 272.10485 | 36.52427 | 11.03652 | 0.0621663 | 2.6400965 | 47 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 01983 | 1999 $TU_{299}$ |
| 1999 $TA_{302}$ | 16.3 | 0.15 | 20060922 | 307.59294 | 25.33362 | 35.52928 | 7.78955 | 0.0948165 | 2.3641859 | 76 | 3 | 1999–2006 | 0.52 | M-v | 1 | MPC | 04122 | 1999 $TA_{302}$ |
| 1999 $TE_{306}$ | 17.8 | 0.15 | 20060922 | 279.44635 | 220.34066 | 226.05029 | 1.38410 | 0.2025141 | 2.3412900 | 49 | 5 | 1997–2006 | 0.41 | M-v | 0 | MPC | 57709 | 1999 $TE_{306}$ |
| 1999 $TJ_{312}$ | 17.2 | 0.15 | 20060922 | 215.30892 | 304.19394 | 193.92461 | 1.96301 | 0.1468889 | 2.3430567 | 49 | 5 | 1999–2006 | 0.36 | M-v | 0 | MPC | 57709 | 1999 $TJ_{312}$ |
| 1999 $TW_{314}$ | 16.1 | 0.15 | 20060922 | 252.07361 | 267.71460 | 72.70355 | 12.40680 | 0.2576005 | 2.6667355 | 35 | 3 | 1998–2003 | 0.62 | M-v | 2 | MPC | 2143 | 1999 $TW_{314}$ |
| 1999 $TQ_{320}$ | 17.2 | 0.15 | 20060922 | 58.54586 | 87.85417 | 304.42573 | 2.53789 | 0.1763856 | 2.1663150 | 68 | 5 | 1999–2006 | 0.61 | M-v | 2 | MPC | 87358 | 1999 $TQ_{320}$ |
| 1999 $TR_{320}$ | 16.2 | 0.15 | 20060922 | 326.99714 | 139.83999 | 320.42158 | 4.24544 | 0.1035191 | 2.2303909 | 90 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 62248 | 1999 $TR_{320}$ |
| 1999 $TF_{321}$ | 15.9 | 0.15 | 20060922 | 145.47401 | 102.58181 | 316.73360 | 3.24113 | 0.0937037 | 2.7961706 | 42 | 5 | 1999–2006 | 0.55 | M-v | 0 | MPC | 97357 | 1999 $TF_{321}$ |
| 1999 $TG_{321}$ | 17.0 | 0.15 | 20060922 | 277.90470 | 225.96065 | 225.05874 | 7.37339 | 0.0583543 | 2.3372861 | 55 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 74656 | 1999 $TG_{321}$ |
| 1999 $TB_{328}$ | 17.7 | 0.15 | 20060922 | 7.62465 | 94.33092 | 270.44017 | 2.79707 | 0.2543016 | 2.3017524 | 84 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04122 | 1999 $TB_{328}$ |
| 1999 $TV_{332}$ | 16.7 | 0.15 | 20060922 | 32.76518 | 170.01141 | 2.72073 | 3.93614 | 0.0392320 | 2.7936049 | 32 | 4 | 1999–2006 | 0.25 | M-v | 1 | MPC | 01983 | 1999 $TV_{332}$ |
| 1999 UA | 16.3 | 0.15 | 20060922 | 359.20210 | 125.52168 | 245.38400 | 4.44584 | 0.2392296 | 2.3198778 | 160 | 4 | 1992–2006 | 0.50 | M-v | 2 | MPC | 03160 | 1999 UA |
| 1999 UB | 16.3 | 0.15 | 20060922 | 302.61687 | 99.28697 | 11.09675 | 7.38355 | 0.0851447 | 2.2730782 | 71 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 62248 | 1999 UB |
| 1999 $UE_7$ | 16.5 | 0.15 | 20060922 | 229.80545 | 56.73591 | 347.80725 | 22.94642 | 0.0547675 | 1.9064917 | 191 | 4 | 1996–2004 | 0.58 | M-v | 1 | MPC | 73964 | 1999 $UE_7$ |
| 1999 $UH_7$ | 14.9 | 0.15 | 20060922 | 291.83713 | 102.25689 | 356.10456 | 21.89198 | 0.2898612 | 2.3866897 | 231 | 3 | 1999–2006 | 0.52 | M-v | 0 | MPC | 04122 | 1999 $UH_7$ |
| 1999 $UL_7$ | 15.4 | 0.15 | 20060922 | 309.02283 | 93.14462 | 324.53849 | 20.41431 | 0.3425118 | 2.4077014 | 203 | 3 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04122 | 1999 $UL_7$ |
| 1999 $UT_9$ | 15.3 | 0.15 | 20060922 | 336.26700 | 100.05393 | 347.16669 | 22.97667 | 0.2685670 | 2.2744467 | 56 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 62248 | 1999 $UT_9$ |

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| 1999 $UO_{10}$ | 15.5 | 0.15 | 20060922 | 352.76531 | 38.42551 | 13.75767 | 23.69400 | 0.1889526 | 2.3008357 | 51 | 3 | 1999–2006 | 0.50 | M-v | 3 | MPC | 60552 | 1999 $UO_{10}$ |
| 1999 $UX_{11}$ | 17.5 | 0.15 | 20060922 | 138.46961 | 29.06274 | 53.19704 | 5.14413 | 0.0354586 | 2.7879533 | 34 | 3 | 1999–2006 | 0.34 | M-v | 3 | MPC | 99922 | 1999 $UX_{11}$ |
| 1999 $UE_{12}$ | 17.7 | 0.15 | 20060922 | 322.03951 | 60.00244 | 38.01838 | 6.92054 | 0.1465908 | 2.2393749 | 37 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 88692 | 1999 $UE_{12}$ |
| 1999 $UF_{12}$ | 14.6 | 0.15 | 20060922 | 13.45411 | 78.23588 | 26.82901 | 18.13893 | 0.1879551 | 3.1832336 | 146 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 97357 | 1999 $UF_{12}$ |
| 1999 $UG_{12}$ | 16.0 | 0.15 | 20060922 | 176.76368 | 300.89617 | 33.10109 | 10.41979 | 0.0945945 | 2.9211412 | 38 | 4 | 1999–2006 | 0.63 | M-v | 1 | MPC | 97357 | 1999 $UG_{12}$ |
| 1999 $UM_{12}$ | 17.2 | 0.15 | 20060922 | 258.28287 | 138.11880 | 197.86200 | 12.60717 | 0.2154920 | 2.6170345 | 50 | 3 | 1999–2003 | 0.50 | M-v | 2 | MPC | 53618 | 1999 $UM_{12}$ |
| 1999 $UQ_{14}$ | 17.3 | 0.15 | 20060922 | 222.49747 | 23.71993 | 61.18375 | 7.30710 | 0.2510304 | 2.5390882 | 115 | 4 | 1995–2005 | 0.62 | M-v | 2 | MPC | 57710 | 1999 $UQ_{14}$ |
| 1999 $UD_{16}$ | 17.1 | 0.15 | 20060922 | 5.07800 | 81.73106 | 263.44291 | 1.69490 | 0.2767663 | 2.3356289 | 150 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04122 | 1999 $UD_{16}$ |
| 1999 $UE_{17}$ | 16.6 | 0.15 | 20060922 | 188.63812 | 227.78377 | 208.04752 | 21.17393 | 0.0815717 | 1.9110871 | 113 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 04122 | 1999 $UE_{17}$ |
| 1999 $UH_{17}$ | 17.6 | 0.15 | 20060922 | 295.13571 | 182.86263 | 194.88725 | 3.82034 | 0.1073504 | 2.4128696 | 28 | 3 | 1999–2005 | 0.38 | M-v | 3 | MPC | 57710 | 1999 $UH_{17}$ |
| 1999 $UE_{19}$ | 16.6 | 0.15 | 20060922 | 229.31797 | 336.08336 | 35.61754 | 12.11085 | 0.1810054 | 2.6567889 | 43 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 99922 | 1999 $UE_{19}$ |
| 1999 $UX_{19}$ | 17.7 | 0.15 | 20060922 | 323.72089 | 254.52047 | 194.63299 | 6.05877 | 0.1142082 | 2.2185825 | 57 | 5 | 1999–2006 | 0.38 | M-v | 0 | MPC | 62248 | 1999 $UX_{19}$ |
| 1999 $UO_{20}$ | 17.9 | 0.15 | 20060922 | 279.26923 | 295.42444 | 177.25946 | 3.39637 | 0.2084262 | 2.3131562 | 47 | 3 | 1999–2006 | 0.44 | M-v | 2 | MPC | 87358 | 1999 $UO_{20}$ |
| 1999 $UQ_{20}$ | 16.8 | 0.15 | 20060922 | 242.18878 | 200.57308 | 193.98596 | 9.73597 | 0.1286712 | 2.5455780 | 52 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 01984 | 1999 $UQ_{20}$ |
| 1999 $UE_{21}$ | 16.9 | 0.15 | 20060922 | 323.32423 | 207.44101 | 65.68912 | 3.80158 | 0.0445334 | 2.6409115 | 27 | 4 | 1999–2006 | 0.20 | M-v | 1 | MPC | 99922 | 1999 $UE_{21}$ |
| 1999 $UG_{21}$ | 17.3 | 0.15 | 20060922 | 323.45784 | 275.36484 | 157.30532 | 2.91834 | 0.1382384 | 2.2820793 | 69 | 5 | 1992–2006 | 0.33 | M-v | 0 | MPC | 04122 | 1999 $UG_{21}$ |
| 1999 $UK_{21}$ | 17.6 | 0.15 | 20060922 | 34.13933 | 188.25134 | 218.53781 | 2.37281 | 0.1110225 | 2.1923161 | 46 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 87358 | 1999 $UK_{21}$ |
| 1999 $UE_{22}$ | 17.6 | 0.15 | 20060922 | 50.35279 | 147.54374 | 168.51360 | 0.66155 | 0.2270270 | 2.2910195 | 40 | 3 | 1999–2006 | 0.33 | M-v | 3 | MPC | 74658 | 1999 $UE_{22}$ |
| 1999 $US_{24}$ | 16.4 | 0.15 | 20060922 | 110.76341 | 55.52734 | 258.09142 | 4.52968 | 0.2115667 | 2.1735247 | 128 | 7 | 1997–2006 | 0.51 | M-v | 2 | MPC | 77406 | 1999 $US_{24}$ |
| 1999 $UE_{25}$ | 17.4 | 0.15 | 20060922 | 8.46202 | 160.40613 | 253.59808 | 5.21964 | 0.1792453 | 2.2360013 | 41 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 62248 | 1999 $UE_{25}$ |
| 1999 $UG_{25}$ | 17.1 | 0.15 | 20060922 | 189.76412 | 30.38237 | 9.25202 | 7.01342 | 0.3631561 | 2.7299763 | 53 | 3 | 1981–2005 | 0.57 | M-v | 2 | MPC | 325 | 1999 $UG_{25}$ |
| 1999 $UV_{26}$ | 15.9 | 0.15 | 20060922 | 215.02950 | 68.18016 | 268.35203 | 3.87872 | 0.1690819 | 2.7821389 | 38 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 99922 | 1999 $UV_{26}$ |
| 1999 $UH_{27}$ | 15.7 | 0.15 | 20060922 | 164.30023 | 68.37325 | 358.31306 | 5.63440 | 0.0912180 | 2.6562476 | 73 | 4 | 1999–2005 | 0.51 | M-v | 0 | MPC | 10919 | 1999 $UH_{27}$ |
| 1999 $UL_{27}$ | 16.2 | 0.15 | 20060922 | 87.86784 | 277.46705 | 4.78615 | 7.90745 | 0.1258369 | 2.2543821 | 98 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 04122 | 1999 $UL_{27}$ |
| 1999 $UK_{33}$ | 16.3 | 0.15 | 20060922 | 50.23169 | 230.22060 | 213.71411 | 6.65219 | 0.1319788 | 3.1249975 | 20 | 2 | 1999–2004 | 0.24 | M-v | 3 | MPC | 72012 | 1999 $UK_{33}$ |
| 1999 $UT_{33}$ | 17.4 | 0.15 | 20060922 | 60.90387 | 84.11601 | 213.32665 | 2.35177 | 0.1877098 | 2.3135835 | 68 | 3 | 1999–2006 | 0.37 | M-v | 2 | MPC | 74660 | 1999 $UT_{33}$ |
| 1999 $UW_{33}$ | 17.2 | 0.15 | 20060922 | 67.96993 | 145.38845 | 215.47142 | 5.69232 | 0.1054718 | 2.2005630 | 73 | 4 | 1998–2004 | 0.64 | M-v | 1 | MPC | 47816 | 1999 $UW_{33}$ |
| 1999 $UJ_{34}$ | 17.4 | 0.15 | 20060922 | 214.33831 | 119.34534 | 40.03215 | 3.48445 | 0.1472734 | 2.3612425 | 29 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 64686 | 1999 $UJ_{34}$ |
| 1999 $UL_{34}$ | 16.5 | 0.15 | 20060922 | 85.65028 | 357.85138 | 48.46095 | 1.75467 | 0.1778534 | 3.1064307 | 25 | 4 | 1977–2005 | 0.54 | M-v | 1 | MPC | 97358 | 1999 $UL_{34}$ |
| 1999 $UU_{34}$ | 17.8 | 0.15 | 20060922 | 66.49630 | 282.10582 | 42.75603 | 3.98260 | 0.1712440 | 2.2541578 | 39 | 5 | 1999–2006 | 0.38 | M-v | 0 | MPC | 74660 | 1999 $UU_{34}$ |
| 1999 $UC_{35}$ | 16.7 | 0.15 | 20060922 | 180.01506 | 18.40271 | 48.60336 | 3.00285 | 0.0922365 | 2.6801810 | 47 | 3 | 1999–2006 | 0.40 | M-v | 3 | MPC | 01984 | 1999 $UC_{35}$ |
| 1999 $UU_{35}$ | 17.0 | 0.15 | 20060922 | 48.39218 | 320.96170 | 359.74226 | 6.25675 | 0.0704789 | 2.2683466 | 53 | 3 | 1999–2006 | 0.36 | M-v | 2 | MPC | 04122 | 1999 $UU_{35}$ |
| 1999 $UV_{35}$ | 16.8 | 0.15 | 20060922 | 277.78194 | 172.37131 | 199.64836 | 5.58686 | 0.1268311 | 2.4673153 | 44 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 01984 | 1999 $UV_{35}$ |
| 1999 $UC_{37}$ | 16.7 | 0.15 | 20060922 | 99.62525 | 257.11778 | 24.90517 | 8.65723 | 0.1123710 | 2.2532016 | 83 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 74661 | 1999 $UC_{37}$ |
| 1999 $UQ_{37}$ | 17.9 | 0.15 | 20060922 | 288.89348 | 255.84537 | 161.45723 | 2.23600 | 0.1990896 | 2.3885556 | 28 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 55951 | 1999 $UQ_{37}$ |
| 1999 $US_{37}$ | 16.8 | 0.15 | 20060922 | 70.93324 | 31.20063 | 64.51688 | 2.96483 | 0.0846255 | 2.9203100 | 34 | 4 | 1996–2006 | 0.34 | M-v | 0 | MPC | 93780 | 1999 $US_{37}$ |
| 1999 $UP_{38}$ | 15.9 | 0.15 | 20060922 | 346.85818 | 179.45898 | 243.97116 | 7.78304 | 0.1649127 | 2.2573248 | 139 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 62248 | 1999 $UP_{38}$ |
| 1999 $UW_{39}$ | 17.8 | 0.15 | 20060922 | 350.73263 | 319.97410 | 25.41313 | 2.52311 | 0.2220505 | 2.3721365 | 28 | 3 | 1999–2006 | 0.34 | M-v | 3 | MPC | 03161 | 1999 $UW_{39}$ |
| 1999 $UE_{40}$ | 14.3 | 0.15 | 20060922 | 206.04334 | 57.08363 | 211.27039 | 15.90069 | 0.0419413 | 3.1154466 | 74 | 5 | 1999–2005 | 0.65 | M-v | 1 | MPC | 97358 | 1999 $UE_{40}$ |
| 1999 $UO_{40}$ | 17.3 | 0.15 | 20060922 | 298.36987 | 96.44009 | 319.40952 | 3.01655 | 0.1042885 | 2.3710349 | 50 | 4 | 1995–2006 | 0.61 | M-v | 1 | MPC | 04122 | 1999 $UO_{40}$ |
| 1999 $UN_{41}$ | 17.0 | 0.15 | 20060922 | 300.35255 | 234.00488 | 225.32715 | 5.87548 | 0.0537866 | 2.2751063 | 78 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 68582 | 1999 $UN_{41}$ |
| 1999 $UA_{42}$ | 16.9 | 0.15 | 20060922 | 61.64682 | 6.99685 | 327.81808 | 4.56845 | 0.2143676 | 2.2245335 | 51 | 3 | 1999–2004 | 0.57 | M-v | 3 | MPC | 55952 | 1999 $UA_{42}$ |
| 1999 $UQ_{45}$ | 15.9 | 0.15 | 20060922 | 273.50769 | 53.46377 | 287.31291 | 4.17551 | 0.2791473 | 2.5743588 | 124 | 3 | 1999–2005 | 0.59 | M-v | 2 | MPC | 57711 | 1999 $UQ_{45}$ |
| 1999 $UK_{47}$ | 16.8 | 0.15 | 20060922 | 291.85617 | 92.52684 | 37.96626 | 5.85850 | 0.0937951 | 2.2602901 | 48 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 62248 | 1999 $UK_{47}$ |
| 1999 $UV_{47}$ | 15.7 | 0.15 | 20060922 | 55.77230 | 333.13965 | 357.17380 | 8.18846 | 0.1592566 | 2.2593146 | 69 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 77407 | 1999 $UV_{47}$ |
| 1999 $UW_{47}$ | 17.3 | 0.15 | 20060922 | 37.00368 | 11.94128 | 341.93221 | 4.35230 | 0.1866958 | 2.2569657 | 46 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 55952 | 1999 $UW_{47}$ |
| 1999 $UY_{47}$ | 17.2 | 0.15 | 20060922 | 337.92786 | 97.16730 | 290.46261 | 3.53194 | 0.2395220 | 2.3335572 | 93 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 04122 | 1999 $UY_{47}$ |
| 1999 $UO_{48}$ | 15.5 | 0.15 | 20060922 | 164.11869 | 321.35122 | 82.28485 | 8.79366 | 0.1527538 | 2.8539788 | 43 | 4 | 1997–2004 | 0.48 | M-v | 1 | MPC | 72014 | 1999 $UO_{48}$ |
| 1999 $UN_{50}$ | 17.0 | 0.15 | 20060922 | 354.94483 | 216.44184 | 139.88143 | 3.87274 | 0.2446783 | 2.3504399 | 109 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 03161 | 1999 $UN_{50}$ |
| 1999 $UV_{51}$ | 16.2 | 0.15 | 20060922 | 17.85292 | 281.74017 | 63.09117 | 22.82405 | 0.2854301 | 2.3197814 | 70 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 03161 | 1999 $UV_{51}$ |
| 1999 $UQ_{54}$ | 16.0 | 0.15 | 20060922 | 324.38970 | 302.81122 | 197.58172 | 2.99967 | 0.0444132 | 3.0985579 | 36 | 5 | 1995–2006 | 0.26 | M-v | 0 | MPC | 97358 | 1999 $UQ_{54}$ |
| 1999 $UQ_{56}$ | 16.2 | 0.15 | 20060922 | 354.58062 | 49.86366 | 323.37485 | 6.37075 | 0.1326395 | 2.3205439 | 93 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 04122 | 1999 $UQ_{56}$ |
| 1999 $UU_{58}$ | 16.5 | 0.15 | 20060922 | 308.29984 | 47.98039 | 333.30084 | 6.59926 | 0.2373424 | 2.4232196 | 38 | 3 | 1995–2003 | 0.60 | M-v | 4 | MPC | 55953 | 1999 $UU_{58}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $UZ_{59}$ | 16.2 | 0.15 | 20060922 | 323.55535 | 22.92805 | 7.84046 | 6.78417 | 0.1147399 | 2.3739236 | 100 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04122 | 1999 $UZ_{59}$ |
| 1999 $UK_{62}$ | 15.9 | 0.15 | 20060922 | 257.47857 | 130.16056 | 319.27749 | 6.68406 | 0.1056408 | 2.4132072 | 81 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04122 | 1999 $UK_{62}$ |
| 1999 $UA_{63}$ | 15.3 | 0.15 | 20060922 | 200.91138 | 118.94255 | 305.78580 | 30.31874 | 0.2567987 | 2.6352781 | 26 | 3 | 1999–2005 | 0.64 | M-v | 2 | MPC | 74663 | 1999 $UA_{63}$ |
| 1999 $VC_{1}$ | 17.5 | 0.15 | 20060922 | 235.91944 | 237.18079 | 151.96056 | 2.68536 | 0.3789994 | 2.5917599 | 53 | 2 | 1999–2003 | 0.49 | M-v | 3 | MPC | 84514 | 1999 $VC_{1}$ |
| 1999 $VH_{1}$ | 16.9 | 0.15 | 20060922 | 273.29668 | 128.83056 | 214.95369 | 8.29256 | 0.2197778 | 2.5884683 | 82 | 2 | 1999–2003 | 0.53 | M-v | 3 | MPC | 52527 | 1999 $VH_{1}$ |
| 1999 $VO_{1}$ | 16.7 | 0.15 | 20060922 | 336.22610 | 218.96552 | 282.70118 | 3.36011 | 0.0722170 | 2.1625776 | 148 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 97358 | 1999 $VO_{1}$ |
| 1999 $VE_{3}$ | 17.4 | 0.15 | 20060922 | 292.34058 | 282.17720 | 148.11260 | 1.55517 | 0.1601653 | 2.3958236 | 68 | 4 | 1999–2006 | 0.46 | M-v | 0 | MPC | 04122 | 1999 $VE_{3}$ |
| 1999 $VM_{5}$ | 15.5 | 0.15 | 20060922 | 311.64149 | 48.36921 | 332.14271 | 2.51612 | 0.1954879 | 2.4190807 | 137 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 77407 | 1999 $VM_{5}$ |
| 1999 $VZ_{10}$ | 17.0 | 0.15 | 20060922 | 359.50108 | 297.09267 | 114.02458 | 3.43477 | 0.2192179 | 2.2775788 | 39 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 87359 | 1999 $VZ_{10}$ |
| 1999 $VD_{14}$ | 16.6 | 0.15 | 20060922 | 332.17768 | 355.99919 | 31.51774 | 24.71264 | 0.2544386 | 2.3667070 | 54 | 4 | 1999–2006 | 0.48 | M-v | 2 | MPC | 88694 | 1999 $VD_{14}$ |
| 1999 $VU_{14}$ | 17.7 | 0.15 | 20060922 | 31.60313 | 95.92061 | 262.02480 | 2.34638 | 0.1541981 | 2.2386195 | 83 | 5 | 1999–2006 | 0.46 | M-v | 0 | MPC | 77408 | 1999 $VU_{14}$ |
| 1999 $VF_{15}$ | 15.7 | 0.15 | 20060922 | 82.67921 | 62.88354 | 1.80144 | 10.85781 | 0.0860873 | 2.9465835 | 39 | 4 | 1999–2005 | 0.50 | M-v | 0 | MPC | 68585 | 1999 $VF_{15}$ |
| 1999 $VH_{16}$ | 17.2 | 0.15 | 20060922 | 248.19959 | 130.68847 | 344.66492 | 2.67223 | 0.1618527 | 2.3850848 | 61 | 4 | 1995–2006 | 0.48 | M-v | 2 | MPC | 04122 | 1999 $VH_{16}$ |
| 1999 $VL_{16}$ | 18.0 | 0.15 | 20060922 | 43.40743 | 302.74958 | 345.44778 | 2.80631 | 0.0228253 | 2.4122217 | 23 | 3 | 1999–2005 | 0.17 | M-v | 3 | MPC | 77408 | 1999 $VL_{16}$ |
| 1999 $VD_{17}$ | 17.3 | 0.15 | 20060922 | 15.37423 | 318.15404 | 5.64202 | 3.09301 | 0.2476558 | 2.3464570 | 105 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 03162 | 1999 $VD_{17}$ |
| 1999 $VF_{17}$ | 17.6 | 0.15 | 20060922 | 125.65849 | 51.22669 | 233.69017 | 4.89490 | 0.1753997 | 2.2064100 | 30 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 37186 | 1999 $VF_{17}$ |
| 1999 $VM_{17}$ | 17.2 | 0.15 | 20060922 | 353.10309 | 64.25313 | 313.42436 | 1.30663 | 0.2235632 | 2.3178604 | 130 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 04122 | 1999 $VM_{17}$ |
| 1999 $VP_{17}$ | 17.1 | 0.15 | 20060922 | 195.23231 | 70.23851 | 8.13547 | 3.38347 | 0.2046144 | 2.6180473 | 29 | 3 | 1999–2005 | 0.33 | M-v | 2 | MPC | 74664 | 1999 $VP_{17}$ |
| 1999 $VT_{17}$ | 17.3 | 0.15 | 20060922 | 292.52218 | 87.09196 | 355.49168 | 1.94994 | 0.1860181 | 2.3551355 | 95 | 3 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04122 | 1999 $VT_{17}$ |
| 1999 $VK_{18}$ | 17.7 | 0.15 | 20060922 | 261.19740 | 351.17032 | 20.12784 | 5.10321 | 0.2104268 | 2.5599329 | 63 | 4 | 1995–2005 | 0.48 | M-v | 3 | MPC | 53621 | 1999 $VK_{18}$ |
| 1999 $VP_{18}$ | 17.7 | 0.15 | 20060922 | 271.93529 | 107.59649 | 355.86319 | 2.15765 | 0.1806608 | 2.3642670 | 53 | 3 | 1999–2006 | 0.44 | M-v | 3 | MPC | 55957 | 1999 $VP_{18}$ |
| 1999 $VD_{21}$ | 17.3 | 0.15 | 20060922 | 288.52750 | 294.38720 | 176.68327 | 1.87631 | 0.1569829 | 2.3268374 | 69 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 62249 | 1999 $VD_{21}$ |
| 1999 $VD_{23}$ | 16.0 | 0.15 | 20060922 | 353.82806 | 218.57089 | 119.82408 | 3.06955 | 0.2276922 | 2.4068030 | 95 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04123 | 1999 $VD_{23}$ |
| 1999 $VU_{24}$ | 16.1 | 0.15 | 20060922 | 339.36107 | 3.73831 | 67.88710 | 26.27472 | 0.2208265 | 2.3103986 | 114 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 87359 | 1999 $VU_{24}$ |
| 1999 $VA_{28}$ | 16.1 | 0.15 | 20060922 | 333.96445 | 138.38382 | 233.89074 | 8.30345 | 0.0971990 | 2.4045929 | 69 | 3 | 1999–2006 | 0.65 | M-v | 3 | MPC | 55959 | 1999 $VA_{28}$ |
| 1999 $VU_{29}$ | 16.6 | 0.15 | 20060922 | 327.78318 | 107.39547 | 265.00427 | 1.68203 | 0.2151159 | 2.4090070 | 60 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 04123 | 1999 $VU_{29}$ |
| 1999 $VJ_{30}$ | 16.4 | 0.15 | 20060922 | 69.03401 | 289.85975 | 53.54478 | 5.48331 | 0.1781508 | 2.2439392 | 70 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 38220 | 1999 $VJ_{30}$ |
| 1999 $VK_{34}$ | 15.5 | 0.15 | 20060922 | 236.69116 | 180.34896 | 247.70537 | 14.21675 | 0.0838984 | 2.5645259 | 85 | 3 | 1999–2005 | 0.61 | M-v | 2 | MPC | 57713 | 1999 $VK_{34}$ |
| 1999 $VT_{34}$ | 16.4 | 0.15 | 20060922 | 14.63173 | 144.36973 | 248.38627 | 4.76795 | 0.1882336 | 2.2840845 | 81 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 62249 | 1999 $VT_{34}$ |
| 1999 $VV_{35}$ | 14.8 | 0.15 | 20060922 | 209.78362 | 121.42158 | 234.73240 | 6.74666 | 0.2451727 | 2.8059606 | 60 | 3 | 1994–2003 | 0.51 | M-v | 3 | MPC | 50434 | 1999 $VV_{35}$ |
| 1999 $VW_{37}$ | 15.6 | 0.15 | 20060922 | 230.62889 | 189.52411 | 248.89321 | 6.73338 | 0.1508224 | 2.5589175 | 140 | 3 | 1999–2005 | 0.53 | M-v | 2 | MPC | 57713 | 1999 $VW_{37}$ |
| 1999 $VR_{39}$ | 17.2 | 0.15 | 20060922 | 259.89550 | 89.60229 | 14.74483 | 6.83255 | 0.0576758 | 2.3075046 | 36 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 04123 | 1999 $VR_{39}$ |
| 1999 $VY_{39}$ | 17.3 | 0.15 | 20060922 | 299.79525 | 339.19847 | 52.26536 | 3.59836 | 0.1695682 | 2.4061987 | 48 | 3 | 1999–2005 | 0.50 | M-v | 2 | MPC | 55962 | 1999 $VY_{39}$ |
| 1999 $VP_{40}$ | 17.7 | 0.15 | 20060922 | 355.58730 | 152.46197 | 196.36602 | 1.56085 | 0.2306695 | 2.3385337 | 50 | 4 | 1999–2006 | 0.42 | M-v | 1 | MPC | 03162 | 1999 $VP_{40}$ |
| 1999 $VQ_{40}$ | 17.1 | 0.15 | 20060922 | 339.66652 | 161.37527 | 232.32758 | 3.40676 | 0.1214807 | 2.3251372 | 75 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 74666 | 1999 $VQ_{40}$ |
| 1999 $VJ_{41}$ | 16.9 | 0.15 | 20060922 | 111.44356 | 108.78397 | 65.05081 | 13.92583 | 0.1953654 | 2.6618808 | 30 | 4 | 1999–2005 | 0.45 | M-v | 0 | MPC | 88694 | 1999 $VJ_{41}$ |
| 1999 $VK_{42}$ | 17.0 | 0.15 | 20060922 | 179.46236 | 197.88634 | 249.34112 | 3.46330 | 0.2328239 | 2.6542585 | 44 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 01985 | 1999 $VK_{42}$ |
| 1999 $VP_{42}$ | 16.9 | 0.15 | 20060922 | 189.79044 | 72.78948 | 338.22521 | 2.32761 | 0.1296503 | 2.6920796 | 28 | 4 | 1999–2005 | 0.44 | M-v | 0 | MPC | 49742 | 1999 $VP_{42}$ |
| 1999 $VV_{42}$ | 18.4 | 0.15 | 20060922 | 276.68652 | 89.50128 | 0.79683 | 2.70131 | 0.1385822 | 2.3707769 | 35 | 4 | 1995–2006 | 0.40 | M-v | 1 | MPC | 04123 | 1999 $VV_{42}$ |
| 1999 $VW_{42}$ | 16.9 | 0.15 | 20060922 | 253.32579 | 143.96028 | 324.89161 | 1.76392 | 0.1659348 | 2.3946002 | 46 | 3 | 1999–2006 | 0.46 | M-v | 3 | MPC | 04123 | 1999 $VW_{42}$ |
| 1999 $VQ_{44}$ | 16.8 | 0.15 | 20060922 | 315.55487 | 53.00300 | 344.90323 | 6.64779 | 0.1130955 | 2.3613335 | 47 | 2 | 1999–2006 | 0.49 | M-v | 4 | MPC | 03162 | 1999 $VQ_{44}$ |
| 1999 $VK_{45}$ | 16.6 | 0.15 | 20060922 | 330.22557 | 83.22870 | 317.50183 | 2.11769 | 0.1658379 | 2.3359452 | 194 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 04123 | 1999 $VK_{45}$ |
| 1999 $VQ_{45}$ | 17.3 | 0.15 | 20060922 | 339.35761 | 57.81329 | 330.57754 | 1.60568 | 0.2140844 | 2.3354285 | 113 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04123 | 1999 $VQ_{45}$ |
| 1999 $VF_{46}$ | 16.4 | 0.15 | 20060922 | 41.77965 | 305.73217 | 31.99559 | 12.18324 | 0.2141499 | 2.2878044 | 56 | 3 | 1999–2006 | 0.63 | M-v | 3 | MPC | 74667 | 1999 $VF_{46}$ |
| 1999 $VR_{46}$ | 16.8 | 0.15 | 20060922 | 35.40897 | 303.22411 | 45.33991 | 23.64426 | 0.2026398 | 2.2898528 | 58 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 87359 | 1999 $VR_{46}$ |
| 1999 $VP_{48}$ | 16.5 | 0.15 | 20060922 | 278.19405 | 56.09860 | 294.12541 | 3.69578 | 0.2395205 | 2.5559108 | 78 | 3 | 1999–2005 | 0.51 | M-v | 3 | MPC | 57714 | 1999 $VP_{48}$ |
| 1999 $VC_{51}$ | 17.2 | 0.15 | 20060922 | 57.16546 | 81.18924 | 264.44426 | 4.03085 | 0.1959534 | 2.2389953 | 44 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 33132 | 1999 $VC_{51}$ |
| 1999 $VF_{51}$ | 16.3 | 0.15 | 20060922 | 285.63611 | 77.37804 | 339.23125 | 6.31966 | 0.1097321 | 2.4289779 | 33 | 4 | 1995–2006 | 0.40 | M-v | 2 | MPC | 04123 | 1999 $VF_{51}$ |
| 1999 $VL_{51}$ | 16.4 | 0.15 | 20060922 | 274.98889 | 170.48877 | 263.46992 | 5.59798 | 0.0875387 | 2.4151725 | 37 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 04123 | 1999 $VL_{51}$ |
| 1999 $VY_{53}$ | 15.4 | 0.15 | 20060922 | 122.54166 | 199.39900 | 220.87364 | 11.83890 | 0.0895655 | 2.8999992 | 62 | 2 | 1999–2004 | 0.56 | M-v | 3 | MPC | 73967 | 1999 $VY_{53}$ |
| 1999 $VN_{55}$ | 16.5 | 0.15 | 20060922 | 264.57959 | 247.03143 | 212.97765 | 0.79330 | 0.0886819 | 2.3740207 | 61 | 4 | 1995–2006 | 0.58 | M-v | 2 | MPC | 04123 | 1999 $VN_{55}$ |
| 1999 $VN_{59}$ | 14.4 | 0.15 | 20060922 | 330.88830 | 341.00908 | 34.89816 | 3.24889 | 0.2297378 | 3.9858455 | 79 | 6 | 1995–2006 | 0.60 | M-v | 0 | MPC | 04123 | 1999 $VN_{59}$ |
| 1999 $VW_{59}$ | 18.1 | 0.15 | 20060922 | 316.83653 | 174.91394 | 224.71373 | 1.86758 | 0.1920685 | 2.3762269 | 41 | 4 | 1997–2006 | 0.57 | M-v | 1 | MPC | 03163 | 1999 $VW_{59}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $VV_{60}$ | 15.6 | 0.15 | 20060922 | 130.98685 | 173.43874 | 167.74943 | 1.50445 | 0.2755133 | 3.0929766 | 83 | 4 | 1999–2005 | 0.57 | M-v | 1 | MPC | 73968 | 1999 $VV_{60}$ |
| 1999 $VA_{65}$ | 16.8 | 0.15 | 20060922 | 255.73063 | 247.31043 | 224.11558 | 1.21668 | 0.1518393 | 2.4002718 | 78 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 04123 | 1999 $VA_{65}$ |
| 1999 $VC_{65}$ | 16.5 | 0.15 | 20060922 | 7.98949 | 132.66470 | 223.48760 | 3.54053 | 0.1369857 | 2.3458452 | 94 | 3 | 1999–2006 | 0.47 | M-v | 3 | MPC | 84515 | 1999 $VC_{65}$ |
| 1999 $VL_{65}$ | 17.3 | 0.15 | 20060922 | 297.90657 | 35.76866 | 53.97125 | 1.65109 | 0.1602067 | 2.3454068 | 72 | 4 | 1999–2006 | 0.44 | M-v | 0 | MPC | 62250 | 1999 $VL_{65}$ |
| 1999 $VQ_{65}$ | 15.9 | 0.15 | 20060922 | 280.43746 | 149.48824 | 217.20021 | 5.87601 | 0.1524063 | 2.5429009 | 105 | 4 | 1999–2006 | 0.66 | M-v | 2 | MPC | 01985 | 1999 $VQ_{65}$ |
| 1999 $VV_{65}$ | 17.6 | 0.15 | 20060922 | 347.93504 | 285.00587 | 93.17576 | 1.20335 | 0.2230571 | 2.3428567 | 105 | 3 | 1999–2006 | 0.45 | M-v | 2 | MPC | 04123 | 1999 $VV_{65}$ |
| 1999 $VZ_{66}$ | 16.6 | 0.15 | 20060922 | 41.38494 | 318.45027 | 58.45718 | 5.59655 | 0.1435446 | 2.2406718 | 82 | 3 | 1999–2006 | 0.50 | M-v | 1 | MPC | 38221 | 1999 $VZ_{66}$ |
| 1999 $VG_{68}$ | 16.4 | 0.15 | 20060922 | 283.85139 | 297.85796 | 127.93103 | 0.67027 | 0.2081647 | 2.4313273 | 123 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 77410 | 1999 $VG_{68}$ |
| 1999 $VJ_{69}$ | 16.3 | 0.15 | 20060922 | 38.16829 | 99.36181 | 216.44251 | 9.00225 | 0.1728995 | 2.3408453 | 77 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 74670 | 1999 $VJ_{69}$ |
| 1999 $VX_{69}$ | 16.8 | 0.15 | 20060922 | 42.03447 | 62.08181 | 244.28745 | 1.57047 | 0.1685599 | 2.3576291 | 89 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 04123 | 1999 $VX_{69}$ |
| 1999 $VZ_{69}$ | 17.4 | 0.15 | 20060922 | 335.00509 | 147.36608 | 235.59725 | 1.61933 | 0.2008458 | 2.3655092 | 71 | 3 | 1999–2006 | 0.47 | M-v | 3 | MPC | 04123 | 1999 $VZ_{69}$ |
| 1999 $VR_{70}$ | 16.9 | 0.15 | 20060922 | 286.94729 | 51.00436 | 50.18066 | 9.26580 | 0.1476715 | 2.3497320 | 57 | 3 | 1999–2006 | 0.64 | M-v | 2 | MPC | 62250 | 1999 $VR_{70}$ |
| 1999 $VM_{73}$ | 18.6 | 0.15 | 20060922 | 333.63405 | 283.95403 | 164.81321 | 1.49393 | 0.1761509 | 2.2385301 | 29 | 3 | 1999–2004 | 0.34 | M-v | 3 | MPC | 73968 | 1999 $VM_{73}$ |
| 1999 $VU_{73}$ | 18.0 | 0.15 | 20060922 | 13.51301 | 147.22609 | 171.88831 | 2.16459 | 0.2330514 | 2.3466670 | 47 | 4 | 1999–2006 | 0.27 | M-v | 1 | MPC | 04123 | 1999 $VU_{73}$ |
| 1999 $VQ_{75}$ | 18.3 | 0.15 | 20060922 | 230.02760 | 183.92874 | 199.20470 | 2.08202 | 0.1856987 | 2.6592446 | 22 | 3 | 1999–2006 | 0.21 | M-v | 4 | MPC | 03163 | 1999 $VQ_{75}$ |
| 1999 $VO_{76}$ | 17.9 | 0.15 | 20060922 | 278.04936 | 274.03192 | 219.29301 | 6.45360 | 0.0613677 | 2.2972820 | 25 | 5 | 1999–2006 | 0.33 | M-v | 0 | MPC | 50436 | 1999 $VO_{76}$ |
| 1999 $VC_{77}$ | 17.1 | 0.15 | 20060922 | 323.48915 | 12.18108 | 77.23077 | 4.00930 | 0.1612318 | 2.2993284 | 80 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 84516 | 1999 $VC_{77}$ |
| 1999 $VF_{77}$ | 18.1 | 0.15 | 20060922 | 327.03440 | 241.10458 | 145.96451 | 1.68556 | 0.1858747 | 2.3912345 | 30 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 87360 | 1999 $VF_{77}$ |
| 1999 $VU_{77}$ | 14.3 | 0.15 | 20060922 | 325.21894 | 350.24381 | 35.43502 | 7.88350 | 0.2950952 | 3.9822400 | 72 | 5 | 1994–2006 | 0.63 | M-v | 1 | MPC | 04123 | 1999 $VU_{77}$ |
| 1999 $VK_{78}$ | 16.3 | 0.15 | 20060922 | 353.15921 | 48.16068 | 344.62617 | 2.80163 | 0.2197612 | 2.2966490 | 255 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 04123 | 1999 $VK_{78}$ |
| 1999 $VX_{78}$ | 17.0 | 0.15 | 20060922 | 54.31108 | 121.07074 | 222.20002 | 4.24627 | 0.1993256 | 2.2445013 | 80 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 77411 | 1999 $VX_{78}$ |
| 1999 $VU_{79}$ | 16.0 | 0.15 | 20060922 | 288.20957 | 111.82484 | 226.25965 | 2.89721 | 0.1750128 | 2.5641614 | 88 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 01986 | 1999 $VU_{79}$ |
| 1999 $VD_{80}$ | 17.1 | 0.15 | 20060922 | 276.40499 | 32.86040 | 18.56050 | 1.26414 | 0.1710613 | 2.4532697 | 50 | 3 | 1999–2005 | 0.60 | M-v | 3 | MPC | 55970 | 1999 $VD_{80}$ |
| 1999 $VX_{80}$ | 16.0 | 0.15 | 20060922 | 240.61914 | 23.79519 | 100.57425 | 3.16315 | 0.1215422 | 2.4041778 | 40 | 7 | 1993–2006 | 0.64 | M-v | 1 | MPC | 03163 | 1999 $VX_{80}$ |
| 1999 $VD_{82}$ | 16.4 | 0.15 | 20060922 | 49.20580 | 133.59806 | 202.20027 | 3.36748 | 0.1725293 | 2.2587983 | 101 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 74672 | 1999 $VD_{82}$ |
| 1999 $VK_{82}$ | 15.1 | 0.15 | 20060922 | 226.49070 | 312.19777 | 37.01016 | 5.68733 | 0.1257910 | 2.7191222 | 40 | 4 | 1999–2004 | 0.61 | M-v | 1 | MPC | 73968 | 1999 $VK_{82}$ |
| 1999 $VS_{82}$ | 16.1 | 0.15 | 20060922 | 203.96927 | 197.38530 | 194.82823 | 6.97971 | 0.0977896 | 2.6256250 | 50 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 01986 | 1999 $VS_{82}$ |
| 1999 $VL_{83}$ | 15.6 | 0.15 | 20060922 | 44.42300 | 221.06163 | 12.56898 | 7.24207 | 0.1939996 | 2.5286968 | 46 | 4 | 1999–2005 | 0.49 | M-v | 2 | MPC | 73968 | 1999 $VL_{83}$ |
| 1999 $VZ_{83}$ | 18.1 | 0.15 | 20060922 | 333.21485 | 86.03045 | 303.91436 | 0.84404 | 0.1941112 | 2.3469400 | 39 | 2 | 1999–2006 | 0.48 | M-v | 4 | MPC | 03163 | 1999 $VZ_{83}$ |
| 1999 $VO_{84}$ | 16.1 | 0.15 | 20060922 | 170.55650 | 92.46988 | 232.29671 | 1.15089 | 0.0712330 | 3.0765861 | 39 | 3 | 1999–2004 | 0.71 | M-v | 4 | MPC | 70234 | 1999 $VO_{84}$ |
| 1999 $VP_{84}$ | 17.4 | 0.15 | 20060922 | 47.88908 | 272.19269 | 42.16563 | 2.79368 | 0.2448261 | 2.3090122 | 70 | 3 | 1999–2006 | 0.39 | M-v | 3 | MPC | 74673 | 1999 $VP_{84}$ |
| 1999 $VE_{85}$ | 17.8 | 0.15 | 20060922 | 35.44537 | 118.98593 | 197.18937 | 0.83429 | 0.2006970 | 2.3476665 | 61 | 3 | 1999–2006 | 0.41 | M-v | 2 | MPC | 04123 | 1999 $VE_{85}$ |
| 1999 $VW_{86}$ | 16.2 | 0.15 | 20060922 | 321.61767 | 239.36347 | 151.26586 | 11.61910 | 0.1429994 | 2.3923032 | 60 | 3 | 1995–2006 | 0.55 | M-v | 2 | MPC | 04124 | 1999 $VW_{86}$ |
| 1999 $VA_{88}$ | 16.2 | 0.15 | 20060922 | 6.00182 | 93.05848 | 237.77931 | 3.92646 | 0.1643684 | 2.4036686 | 83 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 03163 | 1999 $VA_{88}$ |
| 1999 $VQ_{88}$ | 16.4 | 0.15 | 20060922 | 356.41437 | 134.57237 | 179.22892 | 1.98392 | 0.2239726 | 2.4286892 | 87 | 4 | 1999–2005 | 0.71 | M-v | 1 | MPC | 57716 | 1999 $VQ_{88}$ |
| 1999 $VF_{89}$ | 16.8 | 0.15 | 20060922 | 276.59448 | 235.73558 | 201.33072 | 1.44146 | 0.1989931 | 2.4260752 | 53 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04124 | 1999 $VF_{89}$ |
| 1999 $VL_{89}$ | 16.8 | 0.15 | 20060922 | 310.99428 | 181.86125 | 170.81246 | 0.40053 | 0.2108117 | 2.4667214 | 30 | 3 | 1999–2005 | 0.46 | M-v | 3 | MPC | 55972 | 1999 $VL_{89}$ |
| 1999 $VZ_{89}$ | 14.7 | 0.15 | 20060922 | 126.74818 | 270.33821 | 22.23922 | 24.46927 | 0.3314438 | 3.1921094 | 54 | 4 | 1998–2005 | 0.62 | M-v | 1 | MPC | 88695 | 1999 $VZ_{89}$ |
| 1999 $VH_{91}$ | 16.8 | 0.15 | 20060922 | 47.61206 | 286.47178 | 33.73435 | 8.17428 | 0.1498339 | 2.2986717 | 84 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 93782 | 1999 $VH_{91}$ |
| 1999 $VP_{94}$ | 16.7 | 0.15 | 20060922 | 310.36092 | 33.86171 | 352.85795 | 0.73562 | 0.1643025 | 2.3980826 | 87 | 5 | 1999–2006 | 0.46 | M-v | 0 | MPC | 04124 | 1999 $VP_{94}$ |
| 1999 $VE_{96}$ | 17.3 | 0.15 | 20060922 | 355.40419 | 340.99510 | 12.33064 | 0.82514 | 0.1810100 | 2.3567761 | 68 | 3 | 1997–2006 | 0.42 | M-v | 2 | MPC | 03164 | 1999 $VE_{96}$ |
| 1999 $VJ_{96}$ | 18.0 | 0.15 | 20060922 | 324.51400 | 356.51709 | 43.50877 | 7.50413 | 0.1046802 | 2.3519970 | 31 | 5 | 1999–2006 | 0.36 | M-v | 1 | MPC | 77411 | 1999 $VJ_{96}$ |
| 1999 $VG_{97}$ | 16.8 | 0.15 | 20060922 | 39.10969 | 282.62749 | 33.51327 | 2.40960 | 0.1700352 | 2.3379458 | 88 | 3 | 1999–2006 | 0.44 | M-v | 3 | MPC | 74675 | 1999 $VG_{97}$ |
| 1999 $VV_{97}$ | 17.0 | 0.15 | 20060922 | 15.52896 | 293.88486 | 51.02209 | 5.26064 | 0.1711469 | 2.3362749 | 75 | 3 | 1999–2006 | 0.41 | M-v | 3 | MPC | 84516 | 1999 $VV_{97}$ |
| 1999 $VX_{99}$ | 17.3 | 0.15 | 20060922 | 243.78225 | 159.45938 | 207.91200 | 2.67967 | 0.1529652 | 2.6484634 | 33 | 3 | 1999–2005 | 0.36 | M-v | 3 | MPC | 87360 | 1999 $VX_{99}$ |
| 1999 $VY_{99}$ | 17.5 | 0.15 | 20060922 | 272.89574 | 303.50366 | 67.63660 | 0.83677 | 0.2028917 | 2.5481802 | 40 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 01986 | 1999 $VY_{99}$ |
| 1999 $VR_{100}$ | 16.5 | 0.15 | 20060922 | 19.98110 | 274.48180 | 60.95166 | 3.64880 | 0.1794751 | 2.3537207 | 108 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 04124 | 1999 $VR_{100}$ |
| 1999 $VE_{101}$ | 18.1 | 0.15 | 20060922 | 324.06885 | 6.50718 | 60.06776 | 1.39778 | 0.1895279 | 2.3298386 | 67 | 3 | 1999–2006 | 0.37 | M-v | 2 | MPC | 68596 | 1999 $VE_{101}$ |
| 1999 $VZ_{101}$ | 15.6 | 0.15 | 20060922 | 119.73066 | 319.30774 | 58.55395 | 11.08367 | 0.0958056 | 3.1093535 | 45 | 3 | 1999–2005 | 0.54 | M-v | 3 | MPC | 68596 | 1999 $VZ_{101}$ |
| 1999 $VA_{102}$ | 17.3 | 0.15 | 20060922 | 237.31012 | 193.01865 | 227.25131 | 10.12945 | 0.2194716 | 2.5601142 | 43 | 2 | 1999–2003 | 0.54 | M-v | 3 | MPC | 57717 | 1999 $VA_{102}$ |
| 1999 $VP_{102}$ | 16.7 | 0.15 | 20060922 | 8.88443 | 74.88562 | 237.16010 | 2.71845 | 0.1670634 | 2.4303643 | 48 | 4 | 1999–2006 | 0.31 | M-v | 1 | MPC | 04124 | 1999 $VP_{102}$ |
| 1999 $VU_{103}$ | 17.4 | 0.15 | 20060922 | 345.54494 | 303.01518 | 59.13677 | 1.01167 | 0.2074719 | 2.3809306 | 73 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 04124 | 1999 $VU_{103}$ |
| 1999 $VA_{104}$ | 17.5 | 0.15 | 20060922 | 314.21534 | 157.36918 | 200.45628 | 0.97030 | 0.2389236 | 2.4616561 | 24 | 3 | 1995–2002 | 0.34 | M-v | 2 | MPC | 17076 | 1999 $VA_{104}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $VD_{104}$ | 17.1 | 0.15 | 20060922 | 256.28302 | 170.56689 | 211.49743 | 2.27822 | 0.2245648 | 2.5773378 | 69 | 3 | 1999–2005 | 0.44 | M-v | 3 | MPC | 57717 | 1999 $VD_{104}$ |
| 1999 $VF_{104}$ | 16.6 | 0.15 | 20060922 | 309.07065 | 237.21022 | 232.18171 | 5.96902 | 0.1250164 | 2.2869007 | 90 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 77412 | 1999 $VF_{104}$ |
| 1999 $VJ_{104}$ | 16.9 | 0.15 | 20060922 | 20.06675 | 300.00636 | 48.30190 | 3.58558 | 0.1823368 | 2.3336153 | 96 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 04124 | 1999 $VJ_{104}$ |
| 1999 $VH_{105}$ | 16.9 | 0.15 | 20060922 | 353.54901 | 1.77362 | 54.65214 | 4.05663 | 0.1356342 | 2.2834898 | 51 | 3 | 1999–2006 | 0.62 | M-v | 4 | MPC | 60556 | 1999 $VH_{105}$ |
| 1999 $VO_{105}$ | 15.0 | 0.15 | 20060922 | 166.20660 | 88.57753 | 237.65652 | 9.83504 | 0.0454530 | 3.1499361 | 61 | 4 | 1999–2005 | 0.54 | M-v | 1 | MPC | 68598 | 1999 $VO_{105}$ |
| 1999 $VV_{105}$ | 17.2 | 0.15 | 20060922 | 24.03022 | 316.20297 | 61.72522 | 4.29616 | 0.1476856 | 2.2807292 | 35 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 88695 | 1999 $VV_{105}$ |
| 1999 $VH_{106}$ | 15.0 | 0.15 | 20060922 | 149.70743 | 91.00749 | 241.94471 | 9.19877 | 0.0225891 | 3.2174170 | 78 | 6 | 1993–2006 | 0.51 | M-v | 1 | MPC | 97360 | 1999 $VH_{106}$ |
| 1999 $VP_{107}$ | 16.6 | 0.15 | 20060922 | 238.27075 | 344.99365 | 51.66586 | 2.85047 | 0.1145415 | 2.6222784 | 55 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 01986 | 1999 $VP_{107}$ |
| 1999 $VT_{109}$ | 15.8 | 0.15 | 20060922 | 135.79863 | 111.92151 | 232.38460 | 9.76429 | 0.0871422 | 3.1872677 | 33 | 3 | 1999–2005 | 0.54 | M-v | 3 | MPC | 68599 | 1999 $VT_{109}$ |
| 1999 $VF_{110}$ | 18.1 | 0.15 | 20060922 | 305.19351 | 202.11540 | 232.84902 | 1.56051 | 0.1736830 | 2.3665962 | 50 | 3 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04124 | 1999 $VF_{110}$ |
| 1999 $VR_{110}$ | 16.7 | 0.15 | 20060922 | 155.69840 | 223.34517 | 232.03179 | 4.50102 | 0.0875091 | 2.7356877 | 48 | 4 | 1999–2006 | 0.49 | M-v | 0 | MPC | 01986 | 1999 $VR_{110}$ |
| 1999 $VZ_{110}$ | 16.3 | 0.15 | 20060922 | 248.02574 | 164.84679 | 232.54394 | 4.29816 | 0.1830170 | 2.5919215 | 48 | 3 | 1999–2005 | 0.57 | M-v | 3 | MPC | 55976 | 1999 $VZ_{110}$ |
| 1999 $VW_{111}$ | 17.2 | 0.15 | 20060922 | 307.94859 | 24.17609 | 38.13484 | 1.26652 | 0.2024626 | 2.3896127 | 49 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04124 | 1999 $VW_{111}$ |
| 1999 $VD_{112}$ | 16.6 | 0.15 | 20060922 | 349.84365 | 226.60034 | 237.04502 | 4.94157 | 0.0479434 | 2.2211895 | 61 | 5 | 1995–2005 | 0.62 | M-v | 1 | MPC | 87360 | 1999 $VD_{112}$ |
| 1999 $VA_{113}$ | 14.7 | 0.15 | 20060922 | 345.70607 | 301.65871 | 71.82835 | 10.42930 | 0.3338234 | 3.9523658 | 59 | 2 | 1999–2006 | 0.63 | M-v | 3 | MPC | 03164 | 1999 $VA_{113}$ |
| 1999 $VG_{113}$ | 16.9 | 0.15 | 20060922 | 21.80039 | 315.94606 | 62.41199 | 5.80718 | 0.1386328 | 2.3013281 | 35 | 3 | 1999–2006 | 0.37 | M-v | 1 | MPC | 34809 | 1999 $VG_{113}$ |
| 1999 $VJ_{117}$ | 17.8 | 0.15 | 20060922 | 58.87516 | 93.81101 | 180.87802 | 2.38114 | 0.1818641 | 2.3414257 | 24 | 3 | 1999–2006 | 0.35 | M-v | 3 | MPC | 74677 | 1999 $VJ_{117}$ |
| 1999 $VY_{120}$ | 17.6 | 0.15 | 20060922 | 27.16548 | 35.16202 | 257.98963 | 3.10806 | 0.1231304 | 2.4150905 | 33 | 3 | 1999–2006 | 0.32 | M-v | 2 | MPC | 03164 | 1999 $VY_{120}$ |
| 1999 $VH_{121}$ | 17.7 | 0.15 | 20060922 | 287.91036 | 59.70785 | 27.19160 | 2.45285 | 0.1904537 | 2.3607265 | 44 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 62250 | 1999 $VH_{121}$ |
| 1999 $VV_{121}$ | 18.1 | 0.15 | 20060922 | 253.70848 | 41.89110 | 75.87152 | 3.55587 | 0.1629868 | 2.4044285 | 38 | 4 | 1995–2006 | 0.60 | M-v | 2 | MPC | 55978 | 1999 $VV_{121}$ |
| 1999 $VG_{122}$ | 18.5 | 0.15 | 20060922 | 315.43230 | 355.79668 | 79.93866 | 3.38420 | 0.1615251 | 2.3370505 | 27 | 3 | 1999–2006 | 0.27 | M-v | 2 | MPC | 64692 | 1999 $VG_{122}$ |
| 1999 $VJ_{122}$ | 16.9 | 0.15 | 20060922 | 262.69700 | 263.61704 | 88.93536 | 3.19977 | 0.1466015 | 2.6460119 | 52 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 01986 | 1999 $VJ_{122}$ |
| 1999 $VT_{123}$ | 17.6 | 0.15 | 20060922 | 354.56730 | 212.29058 | 154.34159 | 1.44862 | 0.1934027 | 2.3577006 | 59 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 03164 | 1999 $VT_{123}$ |
| 1999 $VW_{123}$ | 17.4 | 0.15 | 20060922 | 291.97951 | 169.98351 | 154.11097 | 2.10920 | 0.0731341 | 2.6655404 | 39 | 5 | 1997–2006 | 0.38 | M-v | 0 | MPC | 01987 | 1999 $VW_{123}$ |
| 1999 $VV_{124}$ | 18.0 | 0.15 | 20060922 | 62.63964 | 234.51648 | 77.11684 | 5.33494 | 0.1610377 | 2.3247872 | 28 | 4 | 1999–2006 | 0.26 | M-v | 1 | MPC | 74678 | 1999 $VV_{124}$ |
| 1999 $VL_{125}$ | 15.9 | 0.15 | 20060922 | 90.86425 | 99.39086 | 44.83810 | 9.04749 | 0.0916990 | 2.7620173 | 51 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04124 | 1999 $VL_{125}$ |
| 1999 $VV_{126}$ | 17.7 | 0.15 | 20060922 | 232.70057 | 226.12137 | 176.40644 | 2.18182 | 0.2001328 | 2.5639500 | 23 | 3 | 1999–2005 | 0.47 | M-v | 3 | MPC | 68601 | 1999 $VV_{126}$ |
| 1999 $VS_{128}$ | 17.2 | 0.15 | 20060922 | 136.97324 | 190.42560 | 229.01514 | 5.19223 | 0.0535374 | 2.8719881 | 22 | 4 | 1996–2004 | 0.32 | M-v | 1 | MPC | 72026 | 1999 $VS_{128}$ |
| 1999 $VG_{129}$ | 16.2 | 0.15 | 20060922 | 261.07299 | 347.60764 | 3.94100 | 4.62010 | 0.1710952 | 2.6030891 | 121 | 3 | 1999–2005 | 0.54 | M-v | 3 | MPC | 01987 | 1999 $VG_{129}$ |
| 1999 $VW_{129}$ | 16.7 | 0.15 | 20060922 | 122.12246 | 24.53602 | 260.08035 | 2.31853 | 0.1851866 | 2.2171185 | 74 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 87360 | 1999 $VW_{129}$ |
| 1999 $VP_{130}$ | 15.7 | 0.15 | 20060922 | 225.70484 | 218.45680 | 36.00196 | 5.53485 | 0.0987146 | 3.1569332 | 42 | 4 | 1996–2006 | 0.40 | M-v | 1 | MPC | 93785 | 1999 $VP_{130}$ |
| 1999 $VC_{131}$ | 16.5 | 0.15 | 20060922 | 59.81116 | 255.56650 | 41.24667 | 7.35635 | 0.1443505 | 2.3489791 | 72 | 5 | 1998–2006 | 0.52 | M-v | 0 | MPC | 74679 | 1999 $VC_{131}$ |
| 1999 $VM_{132}$ | 17.0 | 0.15 | 20060922 | 345.09607 | 255.00342 | 105.95441 | 2.31623 | 0.1964078 | 2.3885452 | 65 | 4 | 1999–2006 | 0.49 | M-v | 3 | MPC | 04124 | 1999 $VM_{132}$ |
| 1999 $VD_{134}$ | 16.7 | 0.15 | 20060922 | 271.61543 | 206.33124 | 233.36982 | 5.98443 | 0.0825806 | 2.4100604 | 62 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 04124 | 1999 $VD_{134}$ |
| 1999 $VY_{135}$ | 16.0 | 0.15 | 20060922 | 148.82931 | 205.98221 | 40.34737 | 25.38207 | 0.1377244 | 2.2711157 | 46 | 5 | 1991–2006 | 0.53 | M-v | 1 | MPC | 47823 | 1999 $VY_{135}$ |
| 1999 $VZ_{138}$ | 17.2 | 0.15 | 20060922 | 266.21868 | 68.47130 | 82.04961 | 4.98469 | 0.1616023 | 2.3118942 | 80 | 5 | 1992–2006 | 0.41 | M-v | 2 | MPC | 62251 | 1999 $VZ_{138}$ |
| 1999 $VZ_{141}$ | 16.7 | 0.15 | 20060922 | 28.17316 | 270.93589 | 35.21906 | 2.87796 | 0.1994982 | 2.3877855 | 89 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 03165 | 1999 $VZ_{141}$ |
| 1999 $VN_{142}$ | 17.9 | 0.15 | 20060922 | 27.63565 | 236.31264 | 175.75919 | 2.14772 | 0.1660099 | 2.2220376 | 48 | 6 | 1996–2006 | 0.54 | M-v | 1 | MPC | 77413 | 1999 $VN_{142}$ |
| 1999 $VU_{142}$ | 15.3 | 0.15 | 20060922 | 90.53830 | 112.56740 | 256.29524 | 3.50953 | 0.1865055 | 3.1989204 | 101 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 97361 | 1999 $VU_{142}$ |
| 1999 $VJ_{143}$ | 17.3 | 0.15 | 20060922 | 93.91757 | 123.76194 | 214.14943 | 4.64926 | 0.2156600 | 2.1965163 | 56 | 4 | 1995–2004 | 0.57 | M-v | 1 | MPC | 62251 | 1999 $VJ_{143}$ |
| 1999 $VR_{143}$ | 16.8 | 0.15 | 20060922 | 351.75188 | 33.12623 | 346.59724 | 2.66412 | 0.1911818 | 2.3294532 | 96 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 04124 | 1999 $VR_{143}$ |
| 1999 $VZ_{143}$ | 17.6 | 0.15 | 20060922 | 26.55077 | 20.76540 | 37.69787 | 7.38458 | 0.1517823 | 2.2028577 | 42 | 3 | 1999–2004 | 0.59 | M-v | 3 | MPC | 37191 | 1999 $VZ_{143}$ |
| 1999 $VS_{146}$ | 18.0 | 0.15 | 20060922 | 302.38996 | 281.50579 | 159.59242 | 1.35967 | 0.1603216 | 2.3525228 | 50 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 62251 | 1999 $VS_{146}$ |
| 1999 $VM_{147}$ | 15.1 | 0.15 | 20060922 | 105.37829 | 167.52285 | 215.55909 | 8.58850 | 0.1146152 | 3.1354775 | 77 | 4 | 1999–2005 | 0.64 | M-v | 1 | MPC | 73971 | 1999 $VM_{147}$ |
| 1999 $VS_{153}$ | 17.4 | 0.15 | 20060922 | 141.09419 | 70.12380 | 174.91082 | 2.28865 | 0.1294700 | 2.3370403 | 37 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 50438 | 1999 $VS_{153}$ |
| 1999 $VC_{155}$ | 16.1 | 0.15 | 20060922 | 138.70035 | 275.72445 | 44.66127 | 7.16594 | 0.0579599 | 3.2520169 | 30 | 3 | 1999–2005 | 0.38 | M-v | 3 | MPC | 88696 | 1999 $VC_{155}$ |
| 1999 $VU_{155}$ | 17.0 | 0.15 | 20060922 | 280.09203 | 64.54747 | 58.37319 | 3.40146 | 0.1801719 | 2.3471672 | 73 | 3 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87361 | 1999 $VU_{155}$ |
| 1999 $VW_{155}$ | 16.4 | 0.15 | 20060922 | 343.23383 | 0.62236 | 59.52367 | 11.82818 | 0.1888387 | 2.3106617 | 82 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 84519 | 1999 $VW_{155}$ |
| 1999 $VR_{156}$ | 17.4 | 0.15 | 20060922 | 319.31784 | 157.07974 | 232.09230 | 5.70920 | 0.1250766 | 2.4054367 | 27 | 4 | 1997–2006 | 0.56 | M-v | 2 | MPC | 04124 | 1999 $VR_{156}$ |
| 1999 $VB_{158}$ | 15.4 | 0.15 | 20060922 | 269.24459 | 285.54494 | 44.71607 | 10.16054 | 0.1686302 | 2.6649150 | 69 | 5 | 1993–2005 | 0.72 | M-v | 1 | MPC | 04124 | 1999 $VB_{158}$ |
| 1999 $VO_{159}$ | 16.8 | 0.15 | 20060922 | 275.72805 | 349.58520 | 6.51376 | 3.15697 | 0.2483947 | 2.5443013 | 129 | 4 | 1999–2005 | 0.50 | M-v | 3 | MPC | 52562 | 1999 $VO_{159}$ |
| 1999 $VQ_{159}$ | 16.8 | 0.15 | 20060922 | 307.98350 | 66.14615 | 3.99239 | 2.92731 | 0.2295374 | 2.3484198 | 156 | 3 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04124 | 1999 $VQ_{159}$ |
| 1999 $VS_{159}$ | 15.9 | 0.15 | 20060922 | 197.37155 | 328.05502 | 21.94333 | 8.33654 | 0.2348431 | 2.7958355 | 71 | 3 | 1999–2004 | 0.60 | M-v | 3 | MPC | 72028 | 1999 $VS_{159}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $VY_{160}$ | 16.9 | 0.15 | 20060922 | 7.71666 | 158.40851 | 244.89710 | 6.33171 | 0.0929925 | 2.2769522 | 43 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 62251 | 1999 $VY_{160}$ |
| 1999 $VO_{161}$ | 16.8 | 0.15 | 20060922 | 318.09162 | 173.39772 | 249.07055 | 4.18791 | 0.1938813 | 2.3491841 | 95 | 3 | 1999–2006 | 0.59 | M-v | 2 | MPC | 60557 | 1999 $VO_{161}$ |
| 1999 $VR_{162}$ | 16.5 | 0.15 | 20060922 | 287.53454 | 359.67936 | 347.91399 | 2.18970 | 0.2412766 | 2.5437169 | 83 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 01987 | 1999 $VR_{162}$ |
| 1999 $VC_{163}$ | 16.6 | 0.15 | 20060922 | 326.23344 | 70.28236 | 33.90424 | 5.25365 | 0.2496724 | 2.2670608 | 93 | 3 | 1999–2006 | 0.66 | M-v | 2 | MPC | 66100 | 1999 $VC_{163}$ |
| 1999 $VF_{164}$ | 14.6 | 0.15 | 20060922 | 150.73334 | 97.48809 | 241.02376 | 8.62177 | 0.0831687 | 3.1164483 | 97 | 4 | 1999–2005 | 0.54 | M-v | 1 | MPC | 70235 | 1999 $VF_{164}$ |
| 1999 $VR_{164}$ | 16.2 | 0.15 | 20060922 | 241.84204 | 246.06712 | 249.64953 | 4.33725 | 0.1669981 | 2.3908094 | 91 | 5 | 1997–2006 | 0.60 | M-v | 1 | MPC | 55985 | 1999 $VR_{164}$ |
| 1999 $VV_{164}$ | 16.5 | 0.15 | 20060922 | 301.60585 | 48.19340 | 47.48767 | 12.98485 | 0.1242724 | 2.3253697 | 87 | 3 | 1999–2006 | 0.55 | M-v | 1 | MPC | 84519 | 1999 $VV_{164}$ |
| 1999 $VY_{164}$ | 16.7 | 0.15 | 20060922 | 171.58412 | 45.00399 | 242.40796 | 4.06626 | 0.1388493 | 2.1543616 | 79 | 4 | 1999–2006 | 0.45 | M-v | 2 | MPC | 97362 | 1999 $VY_{164}$ |
| 1999 $VJ_{165}$ | 17.3 | 0.15 | 20060922 | 340.15545 | 84.57005 | 337.97718 | 1.70795 | 0.1552281 | 2.2998043 | 70 | 3 | 1999–2006 | 0.41 | M-v | 3 | MPC | 99927 | 1999 $VJ_{165}$ |
| 1999 $VN_{165}$ | 16.7 | 0.15 | 20060922 | 40.46241 | 333.37916 | 31.48672 | 5.86913 | 0.1572067 | 2.2630505 | 41 | 3 | 1999–2004 | 0.44 | M-v | 3 | MPC | 62251 | 1999 $VN_{165}$ |
| 1999 $VH_{166}$ | 16.3 | 0.15 | 20060922 | 311.21674 | 347.94695 | 300.29707 | 2.31576 | 0.0202310 | 2.7314832 | 39 | 5 | 1998–2005 | 0.56 | M-v | 1 | MPC | 47824 | 1999 $VH_{166}$ |
| 1999 $VB_{167}$ | 16.7 | 0.15 | 20060922 | 219.68963 | 165.62180 | 255.11111 | 4.83297 | 0.1924700 | 2.6164195 | 61 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 77414 | 1999 $VB_{167}$ |
| 1999 $VE_{167}$ | 17.1 | 0.15 | 20060922 | 261.03528 | 332.57908 | 42.12770 | 5.87088 | 0.3057825 | 2.5712823 | 64 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 01987 | 1999 $VE_{167}$ |
| 1999 $VJ_{167}$ | 16.4 | 0.15 | 20060922 | 7.84048 | 333.57857 | 359.37288 | 1.13099 | 0.2023541 | 2.3949467 | 110 | 3 | 1999–2006 | 0.51 | M-v | 3 | MPC | 04124 | 1999 $VJ_{167}$ |
| 1999 $VK_{167}$ | 17.0 | 0.15 | 20060922 | 313.16027 | 80.22649 | 346.33831 | 0.97012 | 0.1634799 | 2.3618479 | 68 | 3 | 1999–2006 | 0.58 | M-v | 3 | MPC | 60558 | 1999 $VK_{167}$ |
| 1999 $VQ_{167}$ | 17.2 | 0.15 | 20060922 | 334.25910 | 75.98466 | 310.83405 | 2.36155 | 0.2025602 | 2.3742286 | 85 | 4 | 1997–2006 | 0.49 | M-v | 1 | MPC | 04124 | 1999 $VQ_{167}$ |
| 1999 $VC_{168}$ | 16.6 | 0.15 | 20060922 | 236.30670 | 104.66111 | 27.03022 | 2.68674 | 0.1446532 | 2.4257438 | 40 | 4 | 1995–2006 | 0.58 | M-v | 2 | MPC | 62251 | 1999 $VC_{168}$ |
| 1999 $VZ_{168}$ | 17.2 | 0.15 | 20060922 | 321.68838 | 358.39679 | 42.61806 | 3.24721 | 0.2071571 | 2.3851062 | 51 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 04124 | 1999 $VZ_{168}$ |
| 1999 $VB_{169}$ | 16.6 | 0.15 | 20060922 | 342.01160 | 19.77927 | 52.50954 | 6.63278 | 0.1394969 | 2.2930691 | 52 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 62251 | 1999 $VB_{169}$ |
| 1999 $VE_{169}$ | 14.1 | 0.15 | 20060922 | 327.59949 | 339.69265 | 49.07023 | 4.45749 | 0.2700040 | 4.0154887 | 53 | 5 | 1991–2006 | 0.59 | M-v | 0 | MPC | 04125 | 1999 $VE_{169}$ |
| 1999 $VD_{170}$ | 16.1 | 0.15 | 20060922 | 76.00670 | 74.46287 | 277.72673 | 3.80521 | 0.1618220 | 2.2280534 | 60 | 3 | 1999–2006 | 0.57 | M-v | 3 | MPC | 38222 | 1999 $VD_{170}$ |
| 1999 $VG_{175}$ | 16.9 | 0.15 | 20060922 | 275.97563 | 11.81959 | 77.36802 | 4.93295 | 0.0943827 | 2.3969580 | 43 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 77414 | 1999 $VG_{175}$ |
| 1999 $VH_{175}$ | 17.1 | 0.15 | 20060922 | 256.91896 | 9.81287 | 333.53790 | 2.10159 | 0.2536236 | 2.5771234 | 56 | 2 | 1999–2003 | 0.75 | M-v | 3 | MPC | 57719 | 1999 $VH_{175}$ |
| 1999 $VR_{175}$ | 17.1 | 0.15 | 20060922 | 9.70260 | 114.76814 | 280.50973 | 1.82858 | 0.0501646 | 2.2615807 | 56 | 6 | 1994–2006 | 0.49 | M-v | 1 | MPC | 04125 | 1999 $VR_{175}$ |
| 1999 $VX_{176}$ | 16.5 | 0.15 | 20060922 | 9.56551 | 195.54261 | 171.50626 | 5.89219 | 0.1507116 | 2.3074747 | 72 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04125 | 1999 $VX_{176}$ |
| 1999 $VJ_{178}$ | 15.4 | 0.15 | 20060922 | 181.91616 | 308.12453 | 73.86824 | 9.60835 | 0.1396758 | 2.7939889 | 50 | 3 | 1999–2005 | 0.70 | M-v | 3 | MPC | 72029 | 1999 $VJ_{178}$ |
| 1999 $VZ_{179}$ | 17.0 | 0.15 | 20060922 | 215.02450 | 303.77016 | 64.25609 | 22.80237 | 0.0909529 | 1.9582476 | 26 | 3 | 1999–2003 | 0.50 | M-v | 2 | MPC | 47825 | 1999 $VZ_{179}$ |
| 1999 $VG_{180}$ | 17.5 | 0.15 | 20060922 | 10.63069 | 234.56423 | 135.96289 | 2.41836 | 0.2146198 | 2.2919429 | 90 | 5 | 1994–2006 | 0.54 | M-v | 1 | MPC | 74685 | 1999 $VG_{180}$ |
| 1999 $VK_{181}$ | 16.3 | 0.15 | 20060922 | 276.61778 | 102.61616 | 243.32095 | 1.86529 | 0.1147259 | 2.6190742 | 53 | 4 | 1999–2006 | 0.67 | M-v | 1 | MPC | 01987 | 1999 $VK_{181}$ |
| 1999 $VQ_{181}$ | 15.6 | 0.15 | 20060922 | 332.35240 | 179.31731 | 198.84945 | 2.39513 | 0.2694616 | 3.9467340 | 29 | 2 | 1999–2006 | 0.46 | M-v | 3 | MPC | 03165 | 1999 $VQ_{181}$ |
| 1999 $VA_{182}$ | 14.8 | 0.15 | 20060922 | 199.67833 | 40.12317 | 236.06007 | 15.31682 | 0.1854313 | 3.1763967 | 54 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 97362 | 1999 $VA_{182}$ |
| 1999 $VK_{182}$ | 16.1 | 0.15 | 20060922 | 133.89237 | 219.51499 | 53.09022 | 8.35438 | 0.1058004 | 2.2784717 | 40 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 57720 | 1999 $VK_{182}$ |
| 1999 $VL_{182}$ | 18.3 | 0.15 | 20060922 | 330.53065 | 352.71791 | 54.59779 | 2.27257 | 0.1707036 | 2.3506126 | 26 | 3 | 1999–2006 | 0.61 | M-v | 3 | MPC | 84520 | 1999 $VL_{182}$ |
| 1999 $VQ_{182}$ | 16.9 | 0.15 | 20060922 | 269.99134 | 324.20633 | 62.49617 | 4.17899 | 0.2256482 | 2.5378440 | 68 | 3 | 1999–2006 | 0.61 | M-v | 3 | MPC | 55987 | 1999 $VQ_{182}$ |
| 1999 $VD_{184}$ | 14.8 | 0.15 | 20060922 | 121.70011 | 144.28887 | 215.30437 | 9.99863 | 0.1797199 | 3.1134967 | 64 | 3 | 1999–2004 | 0.50 | M-v | 3 | MPC | 68607 | 1999 $VD_{184}$ |
| 1999 $VD_{185}$ | 16.9 | 0.15 | 20060922 | 278.94674 | 248.19312 | 199.22509 | 3.34219 | 0.1549794 | 2.4084312 | 64 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 04125 | 1999 $VD_{185}$ |
| 1999 $VJ_{185}$ | 16.0 | 0.15 | 20060922 | 148.17482 | 326.55074 | 66.25830 | 12.87693 | 0.0591298 | 2.9485676 | 25 | 3 | 1999–2006 | 0.51 | M-v | 3 | MPC | 72030 | 1999 $VJ_{185}$ |
| 1999 $VX_{185}$ | 16.2 | 0.15 | 20060922 | 313.44375 | 253.39873 | 61.19668 | 11.67720 | 0.2942022 | 2.5386381 | 61 | 2 | 1999–2003 | 0.57 | M-v | 4 | MPC | 57720 | 1999 $VX_{185}$ |
| 1999 $VU_{186}$ | 16.5 | 0.15 | 20060922 | 301.88108 | 215.84009 | 192.96369 | 5.11186 | 0.1549889 | 2.4014470 | 38 | 4 | 1999–2006 | 0.46 | M-v | 3 | MPC | 04125 | 1999 $VU_{186}$ |
| 1999 $VL_{187}$ | 16.4 | 0.15 | 20060922 | 324.53274 | 174.20815 | 207.46259 | 6.27260 | 0.1245746 | 2.4029709 | 61 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 04125 | 1999 $VL_{187}$ |
| 1999 $VF_{188}$ | 17.1 | 0.15 | 20060922 | 318.58922 | 8.15706 | 86.61866 | 5.56868 | 0.1903468 | 2.3017277 | 77 | 4 | 1992–2006 | 0.48 | M-v | 2 | MPC | 73972 | 1999 $VF_{188}$ |
| 1999 $VJ_{188}$ | 16.9 | 0.15 | 20060922 | 329.01012 | 277.03490 | 105.22821 | 3.31017 | 0.2076911 | 2.3891368 | 58 | 6 | 1993–2006 | 0.47 | M-v | 0 | MPC | 04125 | 1999 $VJ_{188}$ |
| 1999 $VD_{189}$ | 15.6 | 0.15 | 20060922 | 62.28766 | 290.78207 | 139.52177 | 1.86766 | 0.1379577 | 3.2059824 | 50 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 73972 | 1999 $VD_{189}$ |
| 1999 $VE_{189}$ | 17.3 | 0.15 | 20060922 | 247.65077 | 195.82243 | 214.21835 | 3.13601 | 0.2185332 | 2.5582364 | 62 | 3 | 1999–2005 | 0.60 | M-v | 3 | MPC | 55990 | 1999 $VE_{189}$ |
| 1999 $VG_{191}$ | 16.2 | 0.15 | 20060922 | 295.40179 | 18.70104 | 61.64374 | 8.35880 | 0.0892924 | 2.3943608 | 57 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 77415 | 1999 $VG_{191}$ |
| 1999 $VK_{191}$ | 17.5 | 0.15 | 20060922 | 182.33475 | 257.46267 | 230.80501 | 4.41828 | 0.1787819 | 2.5707710 | 35 | 3 | 1999–2005 | 0.36 | M-v | 2 | MPC | 84520 | 1999 $VK_{191}$ |
| 1999 $VT_{191}$ | 16.6 | 0.15 | 20060922 | 15.29476 | 223.83005 | 85.99119 | 2.40386 | 0.1884789 | 2.4371914 | 44 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03165 | 1999 $VT_{191}$ |
| 1999 $VH_{193}$ | 15.1 | 0.15 | 20060922 | 60.33929 | 226.68131 | 220.14538 | 15.04855 | 0.1292112 | 3.1171015 | 47 | 4 | 1999–2004 | 0.70 | M-v | 1 | MPC | 68608 | 1999 $VH_{193}$ |
| 1999 $VO_{195}$ | 16.9 | 0.15 | 20060922 | 341.48454 | 295.38494 | 59.75471 | 3.66964 | 0.2213156 | 2.3786285 | 43 | 4 | 1997–2006 | 0.60 | M-v | 2 | MPC | 03165 | 1999 $VO_{195}$ |
| 1999 $VM_{197}$ | 15.4 | 0.15 | 20060922 | 226.98553 | 276.42640 | 58.21583 | 14.58420 | 0.1764163 | 2.7446123 | 33 | 3 | 1999–2005 | 0.49 | M-v | 2 | MPC | 33145 | 1999 $VM_{197}$ |
| 1999 $VN_{198}$ | 17.0 | 0.15 | 20060922 | 328.07607 | 278.62366 | 163.62928 | 8.31691 | 0.2644659 | 2.2967060 | 51 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 60559 | 1999 $VN_{198}$ |
| 1999 $VS_{198}$ | 15.3 | 0.15 | 20060922 | 253.66874 | 106.50339 | 61.45731 | 23.75694 | 0.2625049 | 2.2918710 | 111 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 66100 | 1999 $VS_{198}$ |
| 1999 $VJ_{201}$ | 17.2 | 0.15 | 20060922 | 28.59329 | 91.10924 | 309.88654 | 5.40578 | 0.1571260 | 2.2111089 | 42 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 62252 | 1999 $VJ_{201}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $VE_{202}$ | 16.8 | 0.15 | 20060922 | 24.08161 | 83.24465 | 274.47422 | 5.12571 | 0.1997128 | 2.2779878 | 99 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 04125 | 1999 $VE_{202}$ |
| 1999 $VJ_{202}$ | 16.3 | 0.15 | 20060922 | 308.35017 | 62.40151 | 332.89107 | 6.55360 | 0.1211317 | 2.3873220 | 43 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 04125 | 1999 $VJ_{202}$ |
| 1999 $VY_{205}$ | 17.6 | 0.15 | 20060922 | 345.19582 | 193.63045 | 174.71281 | 0.97098 | 0.1928233 | 2.3570297 | 37 | 3 | 1999–2006 | 0.59 | M-v | 4 | MPC | 03165 | 1999 $VY_{205}$ |
| 1999 $VL_{206}$ | 17.0 | 0.15 | 20060922 | 33.70223 | 338.43009 | 27.86007 | 2.39870 | 0.2349519 | 2.2611416 | 48 | 5 | 1992–2006 | 0.41 | M-v | 1 | MPC | 62252 | 1999 $VL_{206}$ |
| 1999 $VV_{207}$ | 17.3 | 0.15 | 20060922 | 282.32965 | 251.83737 | 197.30162 | 2.04699 | 0.1294785 | 2.3829365 | 41 | 6 | 1992–2006 | 0.42 | M-v | 1 | MPC | 04125 | 1999 $VV_{207}$ |
| 1999 $VD_{208}$ | 16.5 | 0.15 | 20060922 | 302.04294 | 236.84521 | 80.00588 | 3.57214 | 0.0735556 | 2.6439503 | 31 | 3 | 1999–2006 | 0.40 | M-v | 3 | MPC | 99928 | 1999 $VD_{208}$ |
| 1999 $VZ_{209}$ | 17.6 | 0.15 | 20060922 | 288.80516 | 326.21192 | 56.36600 | 2.73076 | 0.1785816 | 2.4778330 | 30 | 3 | 1999–2005 | 0.50 | M-v | 4 | MPC | 55992 | 1999 $VZ_{209}$ |
| 1999 $VE_{211}$ | 17.0 | 0.15 | 20060922 | 6.54352 | 142.89502 | 199.12920 | 3.30715 | 0.1216501 | 2.3982806 | 74 | 4 | 1999–2006 | 0.51 | M-v | 2 | MPC | 04125 | 1999 $VE_{211}$ |
| 1999 $VK_{211}$ | 16.6 | 0.15 | 20060922 | 44.26654 | 320.04149 | 30.91331 | 7.89520 | 0.1462616 | 2.2736832 | 66 | 5 | 1991–2006 | 0.61 | M-v | 1 | MPC | 55993 | 1999 $VK_{211}$ |
| 1999 $VC_{212}$ | 16.9 | 0.15 | 20060922 | 124.41938 | 43.89082 | 235.35813 | 6.64262 | 0.1037612 | 2.2777446 | 49 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 38223 | 1999 $VC_{212}$ |
| 1999 $VD_{212}$ | 16.2 | 0.15 | 20060922 | 135.07287 | 285.29377 | 235.85902 | 11.17369 | 0.2326407 | 2.6432190 | 38 | 5 | 1999–2005 | 0.51 | M-v | 0 | MPC | 77416 | 1999 $VD_{212}$ |
| 1999 $VS_{212}$ | 16.4 | 0.15 | 20060922 | 145.02532 | 178.65430 | 59.37354 | 8.49316 | 0.0733643 | 2.3463323 | 48 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 55993 | 1999 $VS_{212}$ |
| 1999 $VP_{216}$ | 16.3 | 0.15 | 20060922 | 125.88433 | 18.11719 | 277.30808 | 3.51467 | 0.1900243 | 2.1819807 | 92 | 4 | 1999–2004 | 0.60 | M-v | 2 | MPC | 57721 | 1999 $VP_{216}$ |
| 1999 $VS_{216}$ | 17.9 | 0.15 | 20060922 | 13.48135 | 159.72646 | 159.74765 | 1.88745 | 0.2118236 | 2.3509014 | 55 | 3 | 1999–2006 | 0.31 | M-v | 2 | MPC | 04125 | 1999 $VS_{216}$ |
| 1999 $VN_{217}$ | 14.8 | 0.15 | 20060922 | 132.14183 | 301.46200 | 42.96434 | 27.46885 | 0.1726098 | 3.1059330 | 42 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 97363 | 1999 $VN_{217}$ |
| 1999 $VR_{219}$ | 17.0 | 0.15 | 20060922 | 353.87855 | 337.80133 | 13.77097 | 6.73542 | 0.1451018 | 2.3311843 | 53 | 3 | 1999–2006 | 0.49 | M-v | 3 | MPC | 03166 | 1999 $VR_{219}$ |
| 1999 $VP_{225}$ | 14.6 | 0.15 | 20060922 | 331.06630 | 209.00724 | 158.85970 | 7.73178 | 0.2959746 | 3.9778107 | 46 | 5 | 1998–2006 | 0.47 | M-v | 0 | MPC | 04125 | 1999 $VP_{225}$ |
| 1999 $VP_{226}$ | 15.7 | 0.15 | 20060922 | 195.59525 | 279.77163 | 117.68552 | 14.03426 | 0.2415699 | 2.7356634 | 38 | 4 | 1997–2005 | 0.50 | M-v | 1 | MPC | 72032 | 1999 $VP_{226}$ |
| 1999 $VW_{228}$ | 17.0 | 0.15 | 20060922 | 348.75166 | 102.42711 | 318.08149 | 5.13816 | 0.1426352 | 2.2621884 | 42 | 5 | 1996–2006 | 0.63 | M-v | 1 | MPC | 47826 | 1999 $VW_{228}$ |
| 1999 $VA_{230}$ | 17.1 | 0.15 | 20060922 | 67.67383 | 108.75964 | 240.56872 | 5.16575 | 0.0562421 | 2.2544135 | 42 | 3 | 1999–2004 | 0.64 | M-v | 2 | MPC | 62252 | 1999 $VA_{230}$ |
| 1999 WN | 17.1 | 0.15 | 20060922 | 38.06651 | 265.92150 | 90.45668 | 4.12977 | 0.2637005 | 2.2574790 | 54 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 74689 | 1999 WN |
| 1999 $WL_8$ | 16.3 | 0.15 | 20060922 | 294.09756 | 36.93562 | 27.65026 | 6.79296 | 0.1083575 | 2.3905511 | 49 | 3 | 1999–2006 | 0.72 | M-v | 3 | MPC | 04125 | 1999 $WL_8$ |
| 1999 $WT_8$ | 15.5 | 0.15 | 20060922 | 281.34353 | 68.73907 | 76.34269 | 24.13614 | 0.2519376 | 2.3234074 | 124 | 3 | 1999–2006 | 0.48 | M-v | 1 | MPC | 66101 | 1999 $WT_8$ |
| 1999 $WK_{10}$ | 16.9 | 0.15 | 20060922 | 255.40430 | 185.53215 | 176.78763 | 1.04973 | 0.2260670 | 2.5754331 | 79 | 5 | 1995–2006 | 0.50 | M-v | 2 | MPC | 01988 | 1999 $WK_{10}$ |
| 1999 $WQ_{10}$ | 16.4 | 0.15 | 20060922 | 183.18336 | 185.96355 | 226.60087 | 4.60932 | 0.0724654 | 2.7604489 | 43 | 4 | 1999–2006 | 0.43 | M-v | 0 | MPC | 01988 | 1999 $WQ_{10}$ |
| 1999 $WX_{11}$ | 16.9 | 0.15 | 20060922 | 26.38736 | 269.50222 | 83.08028 | 3.08723 | 0.2291493 | 2.3229715 | 83 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 77416 | 1999 $WX_{11}$ |
| 1999 $WJ_{12}$ | 17.0 | 0.15 | 20060922 | 23.74732 | 144.67448 | 236.91636 | 3.03793 | 0.1138249 | 2.3027200 | 51 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 62252 | 1999 $WJ_{12}$ |
| 1999 $WK_{12}$ | 17.1 | 0.15 | 20060922 | 343.33760 | 284.03994 | 103.35697 | 1.91139 | 0.2247824 | 2.3643693 | 100 | 5 | 1993–2006 | 0.50 | M-v | 1 | MPC | 04125 | 1999 $WK_{12}$ |
| 1999 $WQ_{12}$ | 17.9 | 0.15 | 20060922 | 337.19440 | 151.94195 | 214.74099 | 4.79781 | 0.1965285 | 2.3586192 | 36 | 2 | 1999–2006 | 0.40 | M-v | 2 | MPC | 03166 | 1999 $WQ_{12}$ |
| 1999 $WU_{13}$ | 18.2 | 0.15 | 20060922 | 335.91442 | 180.13737 | 206.91009 | 0.84914 | 0.2009758 | 2.3547605 | 41 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 03166 | 1999 $WU_{13}$ |
| 1999 $WB_{14}$ | 17.1 | 0.15 | 20060922 | 230.83791 | 56.96449 | 70.82075 | 2.64094 | 0.1154485 | 2.4151145 | 51 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 77416 | 1999 $WB_{14}$ |
| 1999 $WG_{14}$ | 17.6 | 0.15 | 20060922 | 339.06892 | 308.03918 | 67.27025 | 4.73109 | 0.2029260 | 2.3685935 | 36 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 04125 | 1999 $WG_{14}$ |
| 1999 $WQ_{14}$ | 17.1 | 0.15 | 20060922 | 228.00346 | 70.53479 | 65.34353 | 2.25583 | 0.1223010 | 2.4186431 | 39 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 47827 | 1999 $WQ_{14}$ |
| 1999 $WS_{14}$ | 17.2 | 0.15 | 20060922 | 14.87384 | 88.63146 | 230.35002 | 2.64209 | 0.2020083 | 2.4029738 | 59 | 4 | 1995–2006 | 0.54 | M-v | 2 | MPC | 04125 | 1999 $WS_{14}$ |
| 1999 $WG_{15}$ | 17.3 | 0.15 | 20060922 | 48.70367 | 268.67779 | 61.95222 | 2.15391 | 0.1931687 | 2.2626109 | 74 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 74691 | 1999 $WG_{15}$ |
| 1999 $WD_{17}$ | 17.1 | 0.15 | 20060922 | 89.05074 | 96.85038 | 207.68675 | 3.78257 | 0.1848550 | 2.2256043 | 107 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 77417 | 1999 $WD_{17}$ |
| 1999 $WU_{17}$ | 15.7 | 0.15 | 20060922 | 274.93801 | 235.61307 | 33.03345 | 9.52503 | 0.1234368 | 2.7926151 | 30 | 3 | 1999–2004 | 0.59 | M-v | 3 | MPC | 33150 | 1999 $WU_{17}$ |
| 1999 $WX_{18}$ | 18.5 | 0.15 | 20060922 | 241.63933 | 359.05242 | 62.58687 | 4.34324 | 0.2330551 | 2.5392682 | 29 | 3 | 1995–2003 | 0.35 | M-v | 3 | MPC | 57722 | 1999 $WX_{18}$ |
| 1999 $WR_{25}$ | 18.4 | 0.15 | 20060922 | 65.56879 | 208.60294 | 70.34929 | 3.34286 | 0.1792418 | 2.4042134 | 21 | 3 | 1995–2002 | 0.16 | M-v | 3 | MPC | 99929 | 1999 $WR_{25}$ |
| 1999 $XK_4$ | 16.9 | 0.15 | 20060922 | 13.96777 | 229.68568 | 127.19296 | 2.12272 | 0.2443936 | 2.3210055 | 109 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 04126 | 1999 $XK_4$ |
| 1999 $XH_5$ | 17.2 | 0.15 | 20060922 | 21.57152 | 339.04486 | 77.97741 | 6.58701 | 0.1367141 | 2.2285894 | 64 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 62252 | 1999 $XH_5$ |
| 1999 $XO_5$ | 16.8 | 0.15 | 20060922 | 353.67786 | 359.84668 | 68.82994 | 1.98251 | 0.1380601 | 2.2675064 | 94 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 62252 | 1999 $XO_5$ |
| 1999 $XR_5$ | 17.0 | 0.15 | 20060922 | 317.38314 | 330.18484 | 86.38593 | 3.44563 | 0.2050050 | 2.3668819 | 114 | 3 | 1999–2006 | 0.60 | M-v | 2 | MPC | 04126 | 1999 $XR_5$ |
| 1999 $XF_6$ | 14.3 | 0.15 | 20060922 | 343.51713 | 136.11465 | 235.33917 | 1.88077 | 0.2377670 | 3.9836047 | 114 | 4 | 1998–2006 | 0.54 | M-v | 1 | MPC | 03166 | 1999 $XF_6$ |
| 1999 $XE_7$ | 14.2 | 0.15 | 20060922 | 327.12543 | 344.81707 | 50.98759 | 9.41019 | 0.2724552 | 3.9748214 | 84 | 5 | 1991–2006 | 0.46 | M-v | 0 | MPC | 04126 | 1999 $XE_7$ |
| 1999 $XL_{10}$ | 15.6 | 0.15 | 20060922 | 275.51394 | 111.96544 | 263.25762 | 10.35313 | 0.2455480 | 2.5200639 | 103 | 3 | 1999–2004 | 0.50 | M-v | 2 | MPC | 57723 | 1999 $XL_{10}$ |
| 1999 $XZ_{11}$ | 15.9 | 0.15 | 20060922 | 303.91653 | 88.38124 | 313.88324 | 5.99591 | 0.1338999 | 2.4124441 | 103 | 3 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04126 | 1999 $XZ_{11}$ |
| 1999 $XV_{14}$ | 15.8 | 0.15 | 20060922 | 284.60617 | 271.38768 | 242.31362 | 21.16508 | 0.2327526 | 2.3099291 | 83 | 3 | 1999–2006 | 0.51 | M-v | 1 | MPC | 64695 | 1999 $XV_{14}$ |
| 1999 $XE_{15}$ | 16.2 | 0.15 | 20060922 | 326.02589 | 336.15025 | 106.13862 | 26.29129 | 0.2902346 | 2.3679390 | 78 | 3 | 1999–2006 | 0.46 | M-v | 1 | MPC | 87362 | 1999 $XE_{15}$ |
| 1999 $XQ_{16}$ | 15.8 | 0.15 | 20060922 | 16.06846 | 321.37954 | 79.11712 | 10.50734 | 0.1780151 | 2.2762821 | 98 | 5 | 1991–2006 | 0.58 | M-v | 1 | MPC | 60561 | 1999 $XQ_{16}$ |
| 1999 $XU_{16}$ | 16.2 | 0.15 | 20060922 | 78.66853 | 100.10092 | 250.42991 | 7.27188 | 0.2215112 | 2.2242153 | 83 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 41584 | 1999 $XU_{16}$ |
| 1999 $XF_{17}$ | 15.5 | 0.15 | 20060922 | 345.23218 | 131.79507 | 268.78242 | 21.84080 | 0.2988407 | 2.3540189 | 82 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 33843 | 1999 $XF_{17}$ |
| 1999 $XG_{17}$ | 15.8 | 0.15 | 20060922 | 332.31256 | 199.84613 | 276.55992 | 22.04075 | 0.2072751 | 2.2952981 | 74 | 4 | 1992–2006 | 0.49 | M-v | 2 | MPC | 41584 | 1999 $XG_{17}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $XE_{19}$ | 15.3 | 0.15 | 20060922 | 188.71944 | 344.47934 | 42.04898 | 10.52362 | 0.2158264 | 2.7222423 | 69 | 3 | 1999–2005 | 0.58 | M-v | 2 | MPC | 73974 | 1999 $XE_{19}$ |
| 1999 $XR_{26}$ | 17.3 | 0.15 | 20060922 | 28.76216 | 318.75646 | 55.43672 | 7.25906 | 0.1827585 | 2.2618965 | 80 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 47828 | 1999 $XR_{26}$ |
| 1999 $XD_{27}$ | 15.0 | 0.15 | 20060922 | 120.79121 | 215.66832 | 141.45410 | 1.79498 | 0.2509913 | 3.1211109 | 83 | 3 | 1999–2005 | 0.53 | M-v | 3 | MPC | 73974 | 1999 $XD_{27}$ |
| 1999 $XZ_{28}$ | 17.3 | 0.15 | 20060922 | 327.13435 | 339.56029 | 81.72615 | 8.07713 | 0.1743770 | 2.3407515 | 56 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 74695 | 1999 $XZ_{28}$ |
| 1999 $XW_{29}$ | 15.2 | 0.15 | 20060922 | 140.26453 | 269.94514 | 98.59251 | 12.82360 | 0.2282022 | 3.0559094 | 33 | 3 | 1999–2006 | 0.65 | M-v | 3 | MPC | 99930 | 1999 $XW_{29}$ |
| 1999 $XH_{35}$ | 14.9 | 0.15 | 20060922 | 147.44857 | 101.93733 | 251.50078 | 24.87532 | 0.2292631 | 3.0807638 | 50 | 2 | 1999–2004 | 0.60 | M-v | 3 | MPC | 72036 | 1999 $XH_{35}$ |
| 1999 $XR_{35}$ | 17.8 | 0.15 | 20060922 | 279.38204 | 81.06585 | 60.93552 | 18.74766 | 0.5097848 | 2.3697275 | 41 | 3 | 1999–2006 | 0.52 | M-v | 1 | MPC | 64696 | 1999 $XR_{35}$ |
| 1999 $XV_{37}$ | 15.9 | 0.15 | 20060922 | 245.98346 | 106.67269 | 310.63750 | 9.56193 | 0.2352936 | 2.5447293 | 73 | 3 | 1999–2005 | 0.50 | M-v | 2 | MPC | 57725 | 1999 $XV_{37}$ |
| 1999 $XT_{41}$ | 16.2 | 0.15 | 20060922 | 19.15323 | 132.10603 | 253.28435 | 6.08751 | 0.1150361 | 2.2751448 | 111 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 62253 | 1999 $XT_{41}$ |
| 1999 $XN_{43}$ | 16.9 | 0.15 | 20060922 | 29.10821 | 113.04104 | 254.34370 | 5.18520 | 0.1909876 | 2.2798136 | 61 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 77419 | 1999 $XN_{43}$ |
| 1999 $XY_{43}$ | 17.0 | 0.15 | 20060922 | 293.19773 | 140.94961 | 330.89298 | 1.86434 | 0.1727480 | 2.3277041 | 109 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 60562 | 1999 $XY_{43}$ |
| 1999 $XJ_{44}$ | 16.7 | 0.15 | 20060922 | 311.96558 | 215.12564 | 259.70925 | 4.30963 | 0.1966191 | 2.2860208 | 74 | 6 | 1995–2006 | 0.62 | M-v | 1 | MPC | 87362 | 1999 $XJ_{44}$ |
| 1999 $XK_{45}$ | 17.1 | 0.15 | 20060922 | 320.40071 | 315.91855 | 98.26085 | 3.29756 | 0.1901625 | 2.3585354 | 46 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 84522 | 1999 $XK_{45}$ |
| 1999 $XK_{46}$ | 17.5 | 0.15 | 20060922 | 19.27154 | 142.55081 | 277.50411 | 0.80149 | 0.1434391 | 2.2279700 | 51 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 87362 | 1999 $XK_{46}$ |
| 1999 $XJ_{47}$ | 16.9 | 0.15 | 20060922 | 272.85259 | 189.14859 | 259.81075 | 3.79071 | 0.1815357 | 2.4214330 | 73 | 3 | 1999–2006 | 0.63 | M-v | 2 | MPC | 04126 | 1999 $XJ_{47}$ |
| 1999 $XS_{47}$ | 17.0 | 0.15 | 20060922 | 322.48938 | 213.71180 | 263.55505 | 0.95216 | 0.1338933 | 2.2538241 | 87 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87362 | 1999 $XS_{47}$ |
| 1999 $XB_{48}$ | 16.2 | 0.15 | 20060922 | 256.08980 | 310.84032 | 71.68394 | 5.98333 | 0.2193303 | 2.5863090 | 82 | 3 | 1999–2006 | 0.57 | M-v | 3 | MPC | 01989 | 1999 $XB_{48}$ |
| 1999 $XE_{48}$ | 15.2 | 0.15 | 20060922 | 101.79361 | 317.26217 | 66.80729 | 23.17081 | 0.1046228 | 3.1873500 | 35 | 3 | 1999–2004 | 0.46 | M-v | 2 | MPC | 33156 | 1999 $XE_{48}$ |
| 1999 $XG_{48}$ | 16.5 | 0.15 | 20060922 | 192.17287 | 193.60712 | 208.51753 | 2.69372 | 0.1821900 | 2.7537569 | 50 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 01989 | 1999 $XG_{48}$ |
| 1999 $XR_{48}$ | 16.7 | 0.15 | 20060922 | 283.84088 | 39.09366 | 65.20151 | 4.89126 | 0.1179663 | 2.3610134 | 83 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 87362 | 1999 $XR_{48}$ |
| 1999 $XE_{50}$ | 16.7 | 0.15 | 20060922 | 4.30654 | 345.44097 | 69.90842 | 7.18185 | 0.1639969 | 2.2688976 | 40 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 84522 | 1999 $XE_{50}$ |
| 1999 $XQ_{50}$ | 17.3 | 0.15 | 20060922 | 343.05826 | 329.33901 | 78.43112 | 6.67362 | 0.2099083 | 2.3236618 | 64 | 3 | 1999–2006 | 0.59 | M-v | 3 | MPC | 88697 | 1999 $XQ_{50}$ |
| 1999 $XA_{51}$ | 16.1 | 0.15 | 20060922 | 233.60748 | 353.50282 | 73.20191 | 10.75449 | 0.1197922 | 2.5688939 | 34 | 3 | 1999–2005 | 0.57 | M-v | 3 | MPC | 56007 | 1999 $XA_{51}$ |
| 1999 $XV_{51}$ | 17.0 | 0.15 | 20060922 | 355.17331 | 334.65549 | 65.39746 | 3.95182 | 0.2165042 | 2.3094695 | 111 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 84523 | 1999 $XV_{51}$ |
| 1999 $XW_{51}$ | 16.0 | 0.15 | 20060922 | 87.95375 | 278.54281 | 51.34967 | 4.00154 | 0.2132335 | 2.2301347 | 86 | 6 | 1998–2006 | 0.63 | M-v | 1 | MPC | 77419 | 1999 $XW_{51}$ |
| 1999 $XU_{52}$ | 16.3 | 0.15 | 20060922 | 332.91687 | 29.39546 | 63.22288 | 6.97808 | 0.1258385 | 2.2796721 | 65 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 87362 | 1999 $XU_{52}$ |
| 1999 $XG_{53}$ | 16.6 | 0.15 | 20060922 | 7.11788 | 322.59522 | 72.85757 | 8.16463 | 0.1180917 | 2.3007754 | 63 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 99930 | 1999 $XG_{53}$ |
| 1999 $XV_{53}$ | 16.3 | 0.15 | 20060922 | 192.41304 | 239.27955 | 227.54392 | 4.19390 | 0.1963626 | 2.6114784 | 103 | 3 | 1999–2005 | 0.59 | M-v | 2 | MPC | 57726 | 1999 $XV_{53}$ |
| 1999 $XD_{56}$ | 16.5 | 0.15 | 20060922 | 350.91170 | 196.41382 | 249.32510 | 6.75205 | 0.0801928 | 2.2516622 | 42 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87362 | 1999 $XD_{56}$ |
| 1999 $XR_{56}$ | 16.8 | 0.15 | 20060922 | 23.11630 | 148.21048 | 233.14974 | 3.26245 | 0.1890019 | 2.2829738 | 38 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 35493 | 1999 $XR_{56}$ |
| 1999 $XK_{59}$ | 16.7 | 0.15 | 20060922 | 8.31672 | 106.67868 | 242.58292 | 1.65559 | 0.2090157 | 2.3712002 | 103 | 4 | 1999–2006 | 0.44 | M-v | 2 | MPC | 04126 | 1999 $XK_{59}$ |
| 1999 $XX_{60}$ | 17.0 | 0.15 | 20060922 | 319.13558 | 328.17954 | 95.35956 | 3.27227 | 0.1802071 | 2.3623752 | 48 | 3 | 1999–2006 | 0.60 | M-v | 2 | MPC | 87362 | 1999 $XX_{60}$ |
| 1999 $XF_{61}$ | 16.3 | 0.15 | 20060922 | 24.16881 | 289.43786 | 97.80139 | 4.89708 | 0.1667305 | 2.2764070 | 70 | 6 | 1991–2006 | 0.53 | M-v | 1 | MPC | 62254 | 1999 $XF_{61}$ |
| 1999 $XG_{62}$ | 16.5 | 0.15 | 20060922 | 351.50715 | 113.65055 | 242.51772 | 5.80564 | 0.1509229 | 2.4021193 | 74 | 4 | 1999–2006 | 0.67 | M-v | 2 | MPC | 03166 | 1999 $XG_{62}$ |
| 1999 $XR_{62}$ | 16.5 | 0.15 | 20060922 | 340.03016 | 342.50910 | 91.40672 | 4.35571 | 0.0879163 | 2.2930700 | 66 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 62254 | 1999 $XR_{62}$ |
| 1999 $XU_{65}$ | 16.2 | 0.15 | 20060922 | 344.96056 | 117.84097 | 243.27000 | 5.72145 | 0.1742627 | 2.4172446 | 59 | 2 | 1999–2006 | 0.45 | M-v | 3 | MPC | 03167 | 1999 $XU_{65}$ |
| 1999 $XC_{66}$ | 15.9 | 0.15 | 20060922 | 339.87639 | 126.60897 | 245.45638 | 3.99857 | 0.2145121 | 2.3993386 | 100 | 3 | 1999–2006 | 0.54 | M-v | 2 | MPC | 04126 | 1999 $XC_{66}$ |
| 1999 $XT_{67}$ | 15.0 | 0.15 | 20060922 | 236.74073 | 268.92657 | 88.42371 | 10.33133 | 0.1386568 | 2.7562833 | 61 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 01989 | 1999 $XT_{67}$ |
| 1999 $XB_{68}$ | 16.5 | 0.15 | 20060922 | 261.78368 | 293.96099 | 157.32949 | 2.28364 | 0.1762825 | 2.4609751 | 61 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 04126 | 1999 $XB_{68}$ |
| 1999 $XE_{69}$ | 16.8 | 0.15 | 20060922 | 26.19780 | 113.12454 | 250.64846 | 1.47051 | 0.1873660 | 2.3170412 | 102 | 5 | 1998–2006 | 0.43 | M-v | 0 | MPC | 87363 | 1999 $XE_{69}$ |
| 1999 $XC_{70}$ | 17.4 | 0.15 | 20060922 | 2.43133 | 195.08365 | 222.72894 | 1.49884 | 0.1984954 | 2.2801708 | 35 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 84523 | 1999 $XC_{70}$ |
| 1999 $XK_{79}$ | 17.3 | 0.15 | 20060922 | 353.81740 | 317.61311 | 78.08822 | 3.00268 | 0.2067229 | 2.3288161 | 91 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04126 | 1999 $XK_{79}$ |
| 1999 $XB_{80}$ | 15.7 | 0.15 | 20060922 | 251.14854 | 114.41471 | 252.02456 | 10.78696 | 0.1457405 | 2.6842644 | 51 | 3 | 1999–2005 | 0.60 | M-v | 3 | MPC | 57727 | 1999 $XB_{80}$ |
| 1999 $XB_{81}$ | 15.8 | 0.15 | 20060922 | 307.22103 | 258.67338 | 238.51161 | 5.77420 | 0.0972194 | 2.2650530 | 144 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87363 | 1999 $XB_{81}$ |
| 1999 $XC_{82}$ | 17.0 | 0.15 | 20060922 | 54.63047 | 73.56823 | 258.36120 | 1.90268 | 0.1805002 | 2.3191393 | 102 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 57727 | 1999 $XC_{82}$ |
| 1999 $XZ_{88}$ | 14.7 | 0.15 | 20060922 | 240.94288 | 116.79004 | 269.92332 | 8.22964 | 0.1375349 | 2.7161269 | 113 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 01989 | 1999 $XZ_{88}$ |
| 1999 $XG_{89}$ | 15.6 | 0.15 | 20060922 | 14.39848 | 312.25838 | 96.39446 | 7.43614 | 0.1250077 | 2.3036872 | 83 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 62254 | 1999 $XG_{89}$ |
| 1999 $XB_{90}$ | 16.6 | 0.15 | 20060922 | 297.94235 | 291.81291 | 138.23811 | 2.99745 | 0.1791470 | 2.4412127 | 72 | 3 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04126 | 1999 $XB_{90}$ |
| 1999 $XR_{100}$ | 14.6 | 0.15 | 20060922 | 218.98156 | 122.56206 | 283.47413 | 9.70288 | 0.2013229 | 2.7057397 | 75 | 3 | 1999–2005 | 0.52 | M-v | 2 | MPC | 57728 | 1999 $XR_{100}$ |
| 1999 $XV_{106}$ | 17.1 | 0.15 | 20060922 | 331.12839 | 131.06093 | 266.59260 | 5.28735 | 0.2785982 | 2.3431885 | 93 | 3 | 1997–2006 | 0.56 | M-v | 2 | MPC | 04126 | 1999 $XV_{106}$ |
| 1999 $XZ_{111}$ | 16.3 | 0.15 | 20060922 | 263.06491 | 331.68723 | 54.34605 | 3.65679 | 0.1474692 | 2.5851562 | 88 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 77422 | 1999 $XZ_{111}$ |
| 1999 $XX_{114}$ | 15.9 | 0.15 | 20060922 | 13.39017 | 8.16581 | 353.12677 | 10.63855 | 0.2063671 | 2.3192732 | 69 | 2 | 1999–2006 | 0.46 | M-v | 3 | MPC | 03167 | 1999 $XX_{114}$ |
| 1999 $XE_{119}$ | 17.0 | 0.15 | 20060922 | 345.07185 | 350.67874 | 24.66685 | 5.13770 | 0.2123824 | 2.3603636 | 82 | 5 | 1997–2006 | 0.55 | M-v | 2 | MPC | 04127 | 1999 $XE_{119}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $XJ_{122}$ | 16.2 | 0.15 | 20060922 | 288.21041 | 138.97847 | 287.79873 | 9.60437 | 0.1670856 | 2.4075481 | 84 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 04127 | 1999 $XJ_{122}$ |
| 1999 $XN_{122}$ | 13.4 | 0.15 | 20060922 | 350.43653 | 54.97867 | 300.43042 | 7.52185 | 0.1812891 | 3.9678630 | 91 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 04127 | 1999 $XN_{122}$ |
| 1999 $XG_{123}$ | 16.9 | 0.15 | 20060922 | 322.72015 | 97.22614 | 310.16499 | 5.22261 | 0.2485647 | 2.3592097 | 99 | 3 | 1999–2006 | 0.58 | M-v | 2 | MPC | 04127 | 1999 $XG_{123}$ |
| 1999 $XY_{123}$ | 16.2 | 0.15 | 20060922 | 352.70782 | 308.73700 | 36.25238 | 11.45346 | 0.2768528 | 2.3823591 | 75 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04127 | 1999 $XY_{123}$ |
| 1999 $XA_{125}$ | 15.6 | 0.15 | 20060922 | 164.76784 | 179.53467 | 267.65630 | 12.82738 | 0.1045921 | 2.7214934 | 42 | 3 | 1999–2005 | 0.66 | M-v | 2 | MPC | 52607 | 1999 $XA_{125}$ |
| 1999 $XR_{125}$ | 15.9 | 0.15 | 20060922 | 351.95490 | 125.46854 | 292.97525 | 4.93405 | 0.1486721 | 2.2884703 | 122 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 62256 | 1999 $XR_{125}$ |
| 1999 $XR_{126}$ | 16.0 | 0.15 | 20060922 | 204.94257 | 86.52942 | 3.17248 | 4.31159 | 0.1970258 | 2.6094071 | 90 | 3 | 1999–2005 | 0.55 | M-v | 2 | MPC | 57729 | 1999 $XR_{126}$ |
| 1999 $XF_{127}$ | 15.1 | 0.15 | 20060922 | 322.58366 | 160.91363 | 223.18557 | 25.28324 | 0.2741356 | 2.3846111 | 92 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04127 | 1999 $XF_{127}$ |
| 1999 $XK_{131}$ | 16.2 | 0.15 | 20060922 | 270.01814 | 66.44157 | 336.07274 | 4.62916 | 0.1555769 | 2.5353175 | 36 | 3 | 1995–2003 | 0.66 | M-v | 4 | MPC | 93789 | 1999 $XK_{131}$ |
| 1999 $XZ_{131}$ | 16.2 | 0.15 | 20060922 | 319.91345 | 77.87893 | 36.49905 | 5.95339 | 0.2027630 | 2.3012319 | 86 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 66102 | 1999 $XZ_{131}$ |
| 1999 $XT_{133}$ | 17.3 | 0.15 | 20060922 | 337.58408 | 23.47638 | 21.83176 | 6.60812 | 0.2173688 | 2.3685496 | 82 | 3 | 1999–2006 | 0.45 | M-v | 2 | MPC | 88697 | 1999 $XT_{133}$ |
| 1999 $XQ_{134}$ | 14.8 | 0.15 | 20060922 | 265.89819 | 28.21870 | 84.46423 | 26.01826 | 0.2326132 | 2.4011083 | 132 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 66102 | 1999 $XQ_{134}$ |
| 1999 $XL_{135}$ | 16.7 | 0.15 | 20060922 | 50.49897 | 263.65605 | 104.10863 | 7.24135 | 0.1703220 | 2.2647380 | 53 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 47833 | 1999 $XL_{135}$ |
| 1999 $XZ_{135}$ | 16.0 | 0.15 | 20060922 | 296.49937 | 76.02256 | 56.53068 | 24.53470 | 0.2567842 | 2.3251833 | 127 | 3 | 1999–2006 | 0.50 | M-v | 1 | MPC | 66103 | 1999 $XZ_{135}$ |
| 1999 $XJ_{137}$ | 16.9 | 0.15 | 20060922 | 341.07381 | 62.80947 | 359.71170 | 2.38766 | 0.1344533 | 2.3557906 | 66 | 3 | 1999–2006 | 0.40 | M-v | 2 | MPC | 03167 | 1999 $XJ_{137}$ |
| 1999 $XB_{138}$ | 18.1 | 0.15 | 20060922 | 305.27456 | 46.20635 | 60.51407 | 2.54915 | 0.1896135 | 2.3139351 | 53 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 88697 | 1999 $XB_{138}$ |
| 1999 $XM_{138}$ | 14.8 | 0.15 | 20060922 | 307.60320 | 314.94866 | 230.77820 | 26.38448 | 0.1704174 | 3.1990439 | 85 | 4 | 1999–2005 | 0.56 | M-v | 1 | MPC | 90018 | 1999 $XM_{138}$ |
| 1999 $XR_{139}$ | 17.6 | 0.15 | 20060922 | 357.23760 | 282.79071 | 77.30372 | 1.95113 | 0.2517283 | 2.3569261 | 64 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 04127 | 1999 $XR_{139}$ |
| 1999 $XZ_{139}$ | 17.3 | 0.15 | 20060922 | 339.38941 | 330.96012 | 103.88258 | 7.14475 | 0.1603198 | 2.3398833 | 38 | 3 | 1999–2006 | 0.57 | M-v | 3 | MPC | 74699 | 1999 $XZ_{139}$ |
| 1999 $XK_{141}$ | 17.5 | 0.15 | 20060922 | 244.72422 | 173.86433 | 259.77457 | 43.73989 | 0.3416552 | 2.5317237 | 85 | 3 | 1995–2003 | 0.53 | M-v | 2 | MPC | 56024 | 1999 $XK_{141}$ |
| 1999 $XP_{141}$ | 14.7 | 0.15 | 20060922 | 23.54021 | 141.47808 | 298.88855 | 24.74544 | 0.2438120 | 2.2453670 | 139 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 90018 | 1999 $XP_{141}$ |
| 1999 $XY_{144}$ | 15.0 | 0.15 | 20060922 | 32.63684 | 161.44159 | 231.55159 | 8.87410 | 0.0774150 | 3.4764585 | 58 | 4 | 1999–2006 | 0.57 | M-v | 0 | MPC | 90018 | 1999 $XY_{144}$ |
| 1999 $XB_{148}$ | 17.5 | 0.15 | 20060922 | 5.04106 | 159.78319 | 241.55715 | 4.65667 | 0.1588480 | 2.2858380 | 31 | 3 | 1999–2006 | 0.43 | M-v | 3 | MPC | 74699 | 1999 $XB_{148}$ |
| 1999 $XL_{151}$ | 16.5 | 0.15 | 20060922 | 175.93565 | 314.11817 | 309.13314 | 2.29185 | 0.2121820 | 2.3324849 | 87 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 01990 | 1999 $XL_{151}$ |
| 1999 $XD_{152}$ | 17.6 | 0.15 | 20060922 | 197.14197 | 36.64438 | 59.36175 | 3.05834 | 0.1745345 | 2.6093575 | 28 | 4 | 1999–2005 | 0.47 | M-v | 1 | MPC | 52613 | 1999 $XD_{152}$ |
| 1999 $XC_{153}$ | 16.6 | 0.15 | 20060922 | 31.73222 | 146.92348 | 235.43526 | 4.73494 | 0.2066512 | 2.2739319 | 40 | 4 | 1998–2006 | 0.46 | M-v | 1 | MPC | 37218 | 1999 $XC_{153}$ |
| 1999 $XO_{153}$ | 14.6 | 0.15 | 20060922 | 193.03796 | 258.51404 | 268.67816 | 12.83164 | 0.1752016 | 2.5484947 | 83 | 4 | 1999–2006 | 0.62 | M-v | 2 | MPC | 04127 | 1999 $XO_{153}$ |
| 1999 $XK_{156}$ | 16.2 | 0.15 | 20060922 | 145.19016 | 57.07954 | 91.21062 | 14.95409 | 0.1293287 | 2.6664927 | 22 | 3 | 1999–2005 | 0.68 | M-v | 2 | MPC | 88698 | 1999 $XK_{156}$ |
| 1999 $XL_{159}$ | 14.9 | 0.15 | 20060922 | 202.20223 | 303.57176 | 208.82988 | 3.20042 | 0.1877013 | 2.5268732 | 129 | 5 | 1994–2006 | 0.51 | M-v | 2 | MPC | 04127 | 1999 $XL_{159}$ |
| 1999 $XS_{161}$ | 16.4 | 0.15 | 20060922 | 304.28984 | 149.08969 | 326.74395 | 4.17695 | 0.1923295 | 2.3210133 | 63 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 68627 | 1999 $XS_{161}$ |
| 1999 $XZ_{163}$ | 13.5 | 0.15 | 20060922 | 6.20904 | 271.07670 | 93.76376 | 10.63100 | 0.2001152 | 3.9334147 | 68 | 6 | 1991–2006 | 0.53 | M-v | 0 | MPC | 87364 | 1999 $XZ_{163}$ |
| 1999 $XL_{166}$ | 16.1 | 0.15 | 20060922 | 298.60416 | 143.80841 | 275.81886 | 9.10942 | 0.2721652 | 2.4018620 | 88 | 3 | 1995–2004 | 0.64 | M-v | 2 | MPC | 62257 | 1999 $XL_{166}$ |
| 1999 $XX_{177}$ | 15.6 | 0.15 | 20060922 | 207.28740 | 7.80505 | 57.62801 | 4.36625 | 0.1687652 | 2.7296308 | 103 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 01990 | 1999 $XX_{177}$ |
| 1999 $XZ_{177}$ | 15.7 | 0.15 | 20060922 | 302.41689 | 150.37801 | 333.37421 | 3.74048 | 0.1260960 | 2.3411368 | 87 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 62257 | 1999 $XZ_{177}$ |
| 1999 $XB_{182}$ | 15.9 | 0.15 | 20060922 | 212.54906 | 130.82781 | 321.74149 | 6.93096 | 0.1641239 | 2.5792816 | 54 | 3 | 1999–2005 | 0.73 | M-v | 3 | MPC | 57732 | 1999 $XB_{182}$ |
| 1999 $XL_{185}$ | 16.4 | 0.15 | 20060922 | 273.59395 | 133.00925 | 318.36454 | 6.14949 | 0.2040197 | 2.4286505 | 78 | 3 | 1999–2006 | 0.58 | M-v | 2 | MPC | 62258 | 1999 $XL_{185}$ |
| 1999 $XT_{188}$ | 16.3 | 0.15 | 20060922 | 6.02435 | 107.02090 | 308.54774 | 5.47459 | 0.1583198 | 2.2820916 | 42 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 38230 | 1999 $XT_{188}$ |
| 1999 $XD_{191}$ | 16.4 | 0.15 | 20060922 | 351.81904 | 44.94183 | 32.26509 | 7.07423 | 0.1458557 | 2.2846989 | 73 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 62258 | 1999 $XD_{191}$ |
| 1999 $XV_{194}$ | 15.8 | 0.15 | 20060922 | 65.36146 | 335.77244 | 25.35081 | 6.12145 | 0.1967024 | 2.2596496 | 130 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 62258 | 1999 $XV_{194}$ |
| 1999 $XP_{197}$ | 15.2 | 0.15 | 20060922 | 231.04709 | 82.66871 | 35.00816 | 9.34821 | 0.1784052 | 2.5268069 | 89 | 4 | 1999–2006 | 0.48 | M-v | 2 | MPC | 04127 | 1999 $XP_{197}$ |
| 1999 $XF_{198}$ | 16.0 | 0.15 | 20060922 | 232.58993 | 167.04922 | 292.22842 | 11.45628 | 0.1327328 | 2.5238905 | 62 | 4 | 1999–2006 | 0.64 | M-v | 3 | MPC | 56032 | 1999 $XF_{198}$ |
| 1999 $XZ_{198}$ | 16.4 | 0.15 | 20060922 | 0.09850 | 53.91035 | 15.77531 | 5.77490 | 0.1432437 | 2.2736330 | 63 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 62258 | 1999 $XZ_{198}$ |
| 1999 $XL_{200}$ | 15.7 | 0.15 | 20060922 | 70.64330 | 350.59497 | 4.66440 | 6.43163 | 0.1331001 | 2.2685009 | 144 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 62258 | 1999 $XL_{200}$ |
| 1999 $XL_{201}$ | 16.2 | 0.15 | 20060922 | 17.49101 | 66.51563 | 333.37436 | 5.83171 | 0.1394450 | 2.3052924 | 99 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 62258 | 1999 $XL_{201}$ |
| 1999 $XY_{216}$ | 17.6 | 0.15 | 20060922 | 340.26671 | 115.41641 | 298.45363 | 0.51599 | 0.1660879 | 2.3760576 | 64 | 5 | 1991–2006 | 0.41 | M-v | 0 | MPC | 47836 | 1999 $XY_{216}$ |
| 1999 $XZ_{216}$ | 18.2 | 0.15 | 20060922 | 12.45348 | 106.91902 | 286.25471 | 1.75171 | 0.1916668 | 2.3349498 | 28 | 4 | 1995–2006 | 0.31 | M-v | 1 | MPC | 62258 | 1999 $XZ_{216}$ |
| 1999 $XF_{217}$ | 17.1 | 0.15 | 20060922 | 80.42963 | 13.68428 | 97.20404 | 1.92368 | 0.1415494 | 3.1118802 | 34 | 4 | 1999–2006 | 0.30 | M-v | 1 | MPC | 01990 | 1999 $XF_{217}$ |
| 1999 $XM_{217}$ | 16.3 | 0.15 | 20060922 | 10.92112 | 233.43682 | 105.42856 | 15.28857 | 0.2795005 | 2.4611886 | 60 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 04127 | 1999 $XM_{217}$ |
| 1999 $XQ_{217}$ | 17.9 | 0.15 | 20060922 | 13.76193 | 192.55429 | 291.79406 | 3.41868 | 0.0800173 | 2.1897709 | 30 | 3 | 1999–2005 | 0.25 | M-v | 3 | MPC | 88698 | 1999 $XQ_{217}$ |
| 1999 $XW_{217}$ | 16.2 | 0.15 | 20060922 | 259.97865 | 236.61786 | 291.71369 | 1.48659 | 0.1370832 | 2.3581663 | 129 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 87364 | 1999 $XW_{217}$ |
| 1999 $XX_{217}$ | 17.1 | 0.15 | 20060922 | 301.59042 | 49.15026 | 98.69119 | 10.50575 | 0.1651731 | 2.3055456 | 38 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 87364 | 1999 $XX_{217}$ |
| 1999 $XD_{219}$ | 17.4 | 0.15 | 20060922 | 286.08854 | 187.57769 | 294.51153 | 2.39934 | 0.1487317 | 2.3858581 | 54 | 3 | 1999–2006 | 0.58 | M-v | 2 | MPC | 60568 | 1999 $XD_{219}$ |
| 1999 $XG_{219}$ | 15.7 | 0.15 | 20060922 | 147.26314 | 329.19492 | 48.00471 | 1.00954 | 0.1877171 | 3.1355015 | 58 | 7 | 1995–2006 | 0.41 | M-v | 0 | MPC | 01990 | 1999 $XG_{219}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $XO_{219}$ | 16.4 | 0.15 | 20060922 | 229.28601 | 339.34885 | 110.81734 | 2.80992 | 0.1446889 | 2.6070376 | 54 | 4 | 1999–2005 | 0.61 | M-v | 2 | MPC | 56036 | 1999 $XO_{219}$ |
| 1999 $XU_{221}$ | 16.9 | 0.15 | 20060922 | 325.69245 | 5.83634 | 58.31372 | 8.29219 | 0.2583311 | 2.3478577 | 110 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 87364 | 1999 $XU_{221}$ |
| 1999 $XU_{222}$ | 15.6 | 0.15 | 20060922 | 236.22259 | 134.73506 | 333.55570 | 8.35979 | 0.1039926 | 2.5187065 | 67 | 4 | 1999–2006 | 0.48 | M-v | 3 | MPC | 04127 | 1999 $XU_{222}$ |
| 1999 $XE_{224}$ | 17.3 | 0.15 | 20060922 | 347.71328 | 282.47111 | 93.47597 | 3.21217 | 0.2567283 | 2.4182830 | 58 | 4 | 1991–2006 | 0.39 | M-v | 1 | MPC | 03167 | 1999 $XE_{224}$ |
| 1999 $XA_{225}$ | 17.2 | 0.15 | 20060922 | 290.30798 | 132.46563 | 322.70602 | 1.00018 | 0.1174251 | 2.4287557 | 56 | 4 | 1991–2006 | 0.42 | M-v | 1 | MPC | 60569 | 1999 $XA_{225}$ |
| 1999 $XC_{225}$ | 16.9 | 0.15 | 20060922 | 78.44901 | 8.47592 | 296.88367 | 3.79180 | 0.0259595 | 2.4407913 | 70 | 6 | 1998–2006 | 0.39 | M-v | 1 | MPC | 87364 | 1999 $XC_{225}$ |
| 1999 $XH_{225}$ | 17.4 | 0.15 | 20060922 | 55.36656 | 251.99955 | 92.94680 | 3.33081 | 0.2324783 | 2.3437880 | 67 | 5 | 1993–2005 | 0.54 | M-v | 1 | MPC | 77426 | 1999 $XH_{225}$ |
| 1999 $XM_{225}$ | 18.4 | 0.15 | 20060922 | 7.52395 | 136.98570 | 288.68628 | 6.72219 | 0.1262491 | 2.3006854 | 21 | 3 | 1999–2006 | 0.31 | M-v | 3 | MPC | 84525 | 1999 $XM_{225}$ |
| 1999 $XR_{225}$ | 17.7 | 0.15 | 20060922 | 356.39433 | 81.94048 | 308.28169 | 2.09064 | 0.0982496 | 2.4084971 | 60 | 5 | 1998–2006 | 0.39 | M-v | 0 | MPC | 77426 | 1999 $XR_{225}$ |
| 1999 $XD_{227}$ | 15.9 | 0.15 | 20060922 | 177.95495 | 126.69918 | 289.66765 | 0.61192 | 0.1772167 | 2.8680770 | 75 | 4 | 1999–2006 | 0.49 | M-v | 0 | MPC | 01990 | 1999 $XD_{227}$ |
| 1999 $XE_{227}$ | 17.1 | 0.15 | 20060922 | 34.22377 | 27.63048 | 323.93075 | 0.38949 | 0.2056274 | 2.3836590 | 99 | 5 | 1991–2006 | 0.45 | M-v | 0 | MPC | 04127 | 1999 $XE_{227}$ |
| 1999 $XK_{228}$ | 17.0 | 0.15 | 20060922 | 10.12915 | 351.76995 | 89.93294 | 6.00984 | 0.1153604 | 2.2681116 | 40 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 62259 | 1999 $XK_{228}$ |
| 1999 $XP_{228}$ | 16.5 | 0.15 | 20060922 | 38.55414 | 222.05616 | 85.06065 | 3.58988 | 0.1426692 | 2.5240969 | 99 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04127 | 1999 $XP_{228}$ |
| 1999 $XY_{233}$ | 16.8 | 0.15 | 20060922 | 335.18652 | 209.04903 | 208.79426 | 7.17657 | 0.1930151 | 2.3246654 | 89 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 04127 | 1999 $XY_{233}$ |
| 1999 $XJ_{234}$ | 16.3 | 0.15 | 20060922 | 10.05520 | 288.85576 | 119.37703 | 7.10885 | 0.2097941 | 2.2583437 | 86 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 62259 | 1999 $XJ_{234}$ |
| 1999 $XE_{236}$ | 16.7 | 0.15 | 20060922 | 285.59483 | 285.16961 | 68.18334 | 12.14065 | 0.0575242 | 2.5969556 | 47 | 4 | 1999–2006 | 0.72 | M-v | 1 | MPC | 01990 | 1999 $XE_{236}$ |
| 1999 $XF_{244}$ | 15.2 | 0.15 | 20060922 | 202.93162 | 307.72843 | 85.55045 | 16.77673 | 0.1343970 | 2.7222168 | 49 | 3 | 1999–2005 | 0.51 | M-v | 2 | MPC | 73979 | 1999 $XF_{244}$ |
| 1999 $XV_{244}$ | 17.3 | 0.15 | 20060922 | 292.72387 | 89.80580 | 55.59240 | 5.06808 | 0.0722244 | 2.2510163 | 36 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 66104 | 1999 $XV_{244}$ |
| 1999 $XK_{245}$ | 15.8 | 0.15 | 20060922 | 4.94451 | 279.46226 | 121.59438 | 5.72888 | 0.1584489 | 2.2811872 | 53 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 62259 | 1999 $XK_{245}$ |
| 1999 $XB_{248}$ | 16.9 | 0.15 | 20060922 | 19.99257 | 298.09253 | 100.87096 | 6.19547 | 0.1569867 | 2.2710572 | 43 | 6 | 1997–2006 | 0.57 | M-v | 1 | MPC | 93793 | 1999 $XB_{248}$ |
| 1999 $XL_{248}$ | 17.0 | 0.15 | 20060922 | 21.26011 | 276.47333 | 109.53478 | 8.19256 | 0.2084156 | 2.2842502 | 47 | 6 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87364 | 1999 $XL_{248}$ |
| 1999 $XM_{248}$ | 16.5 | 0.15 | 20060922 | 359.57022 | 218.04784 | 203.37136 | 6.70876 | 0.2014941 | 2.2798063 | 55 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04127 | 1999 $XM_{248}$ |
| 1999 $XQ_{251}$ | 17.3 | 0.15 | 20060922 | 354.40537 | 142.84020 | 194.38305 | 1.97102 | 0.1749715 | 2.4275259 | 62 | 7 | 1992–2006 | 0.33 | M-v | 1 | MPC | 04127 | 1999 $XQ_{251}$ |
| 1999 $XU_{251}$ | 15.3 | 0.15 | 20060922 | 159.33205 | 151.32043 | 160.63322 | 2.20892 | 0.1678852 | 3.2094567 | 73 | 5 | 1999–2006 | 0.45 | M-v | 0 | MPC | 97365 | 1999 $XU_{251}$ |
| 1999 $XH_{252}$ | 16.7 | 0.15 | 20060922 | 44.08119 | 120.40950 | 273.51362 | 3.40812 | 0.1849570 | 2.2640807 | 87 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 77427 | 1999 $XH_{252}$ |
| 1999 $XP_{252}$ | 17.2 | 0.15 | 20060922 | 301.63355 | 149.46990 | 190.18488 | 2.09422 | 0.0685442 | 2.5950763 | 34 | 6 | 1997–2006 | 0.39 | M-v | 1 | MPC | 01991 | 1999 $XP_{252}$ |
| 1999 $XZ_{253}$ | 15.4 | 0.15 | 20060922 | 200.65693 | 82.31901 | 280.13918 | 7.13285 | 0.0943655 | 3.0037692 | 61 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 01991 | 1999 $XZ_{253}$ |
| 1999 $XV_{255}$ | 14.6 | 0.15 | 20060922 | 272.50463 | 190.87016 | 317.38474 | 1.89894 | 0.1134102 | 3.9992113 | 70 | 7 | 1993–2006 | 0.34 | M-v | 0 | MPC | 04127 | 1999 $XV_{255}$ |
| 1999 $XW_{255}$ | 17.1 | 0.15 | 20060922 | 221.92863 | 233.65511 | 328.62002 | 0.83020 | 0.1306004 | 2.3754606 | 43 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 87364 | 1999 $XW_{255}$ |
| 1999 $XQ_{257}$ | 16.1 | 0.15 | 20060922 | 320.08401 | 236.47148 | 255.04479 | 6.82563 | 0.0558119 | 2.2442826 | 60 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87364 | 1999 $XQ_{257}$ |
| 1999 $XC_{259}$ | 17.8 | 0.15 | 20060922 | 340.85501 | 193.43103 | 188.88101 | 2.23614 | 0.2198450 | 2.3640250 | 64 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 04127 | 1999 $XC_{259}$ |
| 1999 $XS_{259}$ | 15.3 | 0.15 | 20060922 | 129.78225 | 321.96106 | 61.12829 | 17.77033 | 0.0679116 | 3.0457772 | 28 | 3 | 1999–2004 | 0.53 | M-v | 3 | MPC | 73980 | 1999 $XS_{259}$ |
| 1999 $YE_{1}$ | 15.0 | 0.15 | 20060922 | 349.27557 | 124.50925 | 292.60598 | 23.51767 | 0.1834931 | 2.2989954 | 85 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 62260 | 1999 $YE_{1}$ |
| 1999 $YP_{2}$ | 16.2 | 0.15 | 20060922 | 18.17956 | 216.93869 | 100.77002 | 9.93437 | 0.1251476 | 2.5536943 | 52 | 7 | 1998–2006 | 0.55 | M-v | 0 | MPC | 04127 | 1999 $YP_{2}$ |
| 1999 $YC_{3}$ | 15.2 | 0.15 | 20060922 | 20.01270 | 72.55278 | 336.50652 | 21.28304 | 0.2649771 | 2.2682275 | 77 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 62260 | 1999 $YC_{3}$ |
| 1999 $YV_{3}$ | 16.5 | 0.15 | 20060922 | 296.69331 | 101.16116 | 355.21252 | 23.17700 | 0.2736577 | 2.3818816 | 118 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04128 | 1999 $YV_{3}$ |
| 1999 $YC_{4}$ | 15.9 | 0.15 | 20060922 | 328.29851 | 120.07246 | 356.36601 | 22.68234 | 0.2306497 | 2.2958749 | 38 | 3 | 1999–2006 | 0.52 | M-v | 3 | MPC | 37235 | 1999 $YC_{4}$ |
| 1999 $YD_{4}$ | 15.7 | 0.15 | 20060922 | 339.80351 | 41.80820 | 3.23152 | 23.32096 | 0.2992011 | 2.3633614 | 191 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04128 | 1999 $YD_{4}$ |
| 1999 $YX_{4}$ | 16.4 | 0.15 | 20060922 | 310.89207 | 67.61942 | 90.07856 | 6.56407 | 0.0799775 | 2.2370975 | 49 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 87365 | 1999 $YX_{4}$ |
| 1999 $YG_{5}$ | 15.8 | 0.15 | 20060922 | 247.90196 | 85.77813 | 84.95753 | 12.74675 | 0.2778844 | 2.4112604 | 83 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 66104 | 1999 $YG_{5}$ |
| 1999 $YH_{5}$ | 15.6 | 0.15 | 20060922 | 309.90665 | 79.54015 | 116.69303 | 24.83307 | 0.3270047 | 2.2536488 | 97 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 70239 | 1999 $YH_{5}$ |
| 1999 $YL_{5}$ | 16.4 | 0.15 | 20060922 | 315.69051 | 353.27384 | 57.19926 | 3.21495 | 0.1944285 | 2.4132307 | 94 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04128 | 1999 $YL_{5}$ |
| 1999 $YE_{6}$ | 16.4 | 0.15 | 20060922 | 331.89252 | 104.12927 | 299.37430 | 21.81576 | 0.2343839 | 2.3461536 | 38 | 4 | 1995–2006 | 0.54 | M-v | 1 | MPC | 01991 | 1999 $YE_{6}$ |
| 1999 $YL_{6}$ | 17.3 | 0.15 | 20060922 | 289.72254 | 110.87428 | 16.23017 | 9.04871 | 0.2980974 | 2.3522890 | 51 | 4 | 1995–2006 | 0.53 | M-v | 0 | MPC | 62260 | 1999 $YL_{6}$ |
| 1999 $YC_{7}$ | 15.3 | 0.15 | 20060922 | 255.85196 | 245.90038 | 321.98410 | 20.74756 | 0.2893823 | 2.3030819 | 54 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 87365 | 1999 $YC_{7}$ |
| 1999 $YX_{7}$ | 17.3 | 0.15 | 20060922 | 346.81615 | 143.20844 | 230.11903 | 0.60252 | 0.1821995 | 2.3987376 | 64 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 04128 | 1999 $YX_{7}$ |
| 1999 $YY_{7}$ | 16.0 | 0.15 | 20060922 | 267.82480 | 287.61578 | 263.19277 | 7.07800 | 0.0648640 | 2.2376428 | 97 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 87365 | 1999 $YY_{7}$ |
| 1999 $YZ_{7}$ | 17.0 | 0.15 | 20060922 | 316.38053 | 358.12018 | 100.21078 | 1.67760 | 0.1264690 | 2.3236186 | 62 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 62260 | 1999 $YZ_{7}$ |
| 1999 $YA_{8}$ | 17.8 | 0.15 | 20060922 | 263.51503 | 28.71224 | 99.67977 | 1.87527 | 0.1930872 | 2.4023605 | 47 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 87365 | 1999 $YA_{8}$ |
| 1999 $YG_{8}$ | 16.3 | 0.15 | 20060922 | 255.31548 | 6.95728 | 104.59266 | 7.94107 | 0.0910119 | 2.4870023 | 55 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 77428 | 1999 $YG_{8}$ |
| 1999 $YM_{8}$ | 17.1 | 0.15 | 20060922 | 261.57706 | 59.83138 | 91.90671 | 2.28745 | 0.1232630 | 2.3928401 | 54 | 4 | 1993–2006 | 0.51 | M-v | 1 | MPC | 04128 | 1999 $YM_{8}$ |
| 1999 $YE_{10}$ | 17.3 | 0.15 | 20060922 | 192.64577 | 245.58941 | 197.55189 | 2.90561 | 0.1500963 | 2.6547203 | 22 | 3 | 1999–2005 | 0.36 | M-v | 2 | MPC | 88698 | 1999 $YE_{10}$ |
| 1999 $YG_{10}$ | 16.2 | 0.15 | 20060922 | 302.10687 | 212.29829 | 90.20038 | 7.47584 | 0.0471811 | 2.7260651 | 38 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 01991 | 1999 $YG_{10}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 $YL_{10}$ | 17.4 | 0.15 | 20060922 | 261.30998 | 342.46446 | 186.79620 | 2.62304 | 0.1706607 | 2.2952762 | 47 | 4 | 1997–2006 | 0.43 | M-v | 2 | MPC | 60572 | 1999 $YL_{10}$ |
| 1999 $YT_{10}$ | 16.6 | 0.15 | 20060922 | 174.06480 | 219.80665 | 204.80641 | 3.93249 | 0.0451924 | 2.7676812 | 45 | 3 | 1999–2006 | 0.29 | M-v | 2 | MPC | 99932 | 1999 $YT_{10}$ |
| 1999 $YO_{12}$ | 16.0 | 0.15 | 20060922 | 242.87884 | 108.21964 | 290.19361 | 10.28345 | 0.3066503 | 2.6451197 | 80 | 2 | 1999–2004 | 0.47 | M-v | 2 | MPC | 56042 | 1999 $YO_{12}$ |
| 1999 $YU_{12}$ | 17.4 | 0.15 | 20060922 | 17.51347 | 189.66355 | 232.12415 | 5.28701 | 0.1146998 | 2.2360561 | 36 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 87365 | 1999 $YU_{12}$ |
| 1999 $YX_{12}$ | 16.1 | 0.15 | 20060922 | 198.45980 | 200.16196 | 265.38426 | 12.35376 | 0.2040417 | 2.6199842 | 47 | 2 | 1999–2003 | 0.57 | M-v | 3 | MPC | 56042 | 1999 $YX_{12}$ |
| 1999 $YF_{14}$ | 17.4 | 0.15 | 20060922 | 284.50733 | 245.99196 | 237.30320 | 0.41518 | 0.1442202 | 2.4094409 | 74 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 87365 | 1999 $YF_{14}$ |
| 1999 $YQ_{15}$ | 16.5 | 0.15 | 20060922 | 45.01673 | 25.34098 | 206.23726 | 3.52618 | 0.1404072 | 2.6544373 | 23 | 5 | 1994–2005 | 0.31 | M-v | 0 | MPC | 04128 | 1999 $YQ_{15}$ |
| 1999 $YM_{16}$ | 16.6 | 0.15 | 20060922 | 315.31424 | 190.31816 | 280.72109 | 8.88207 | 0.1024129 | 2.3177599 | 36 | 4 | 1999–2006 | 0.66 | M-v | 1 | MPC | 87365 | 1999 $YM_{16}$ |
| 1999 $YT_{16}$ | 16.5 | 0.15 | 20060922 | 266.48599 | 122.13244 | 308.32852 | 3.26627 | 0.0378224 | 2.5677205 | 53 | 6 | 1998–2006 | 0.38 | M-v | 0 | MPC | 03168 | 1999 $YT_{16}$ |
| 1999 $YX_{16}$ | 16.2 | 0.15 | 20060922 | 63.88666 | 329.20794 | 303.12748 | 8.00656 | 0.0741789 | 2.5940463 | 37 | 4 | 1999–2006 | 0.54 | M-v | 2 | MPC | 04128 | 1999 $YX_{16}$ |
| 1999 $YZ_{16}$ | 16.6 | 0.15 | 20060922 | 252.51901 | 18.78733 | 138.80628 | 3.17716 | 0.1066292 | 2.4185345 | 79 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 87365 | 1999 $YZ_{16}$ |
| 1999 $YA_{18}$ | 15.1 | 0.15 | 20060922 | 156.62334 | 238.63879 | 323.80857 | 12.09106 | 0.1983230 | 2.5336545 | 57 | 4 | 1999–2006 | 0.57 | M-v | 3 | MPC | 57736 | 1999 $YA_{18}$ |
| 1999 $YF_{21}$ | 16.9 | 0.15 | 20060922 | 263.58532 | 203.54480 | 303.37841 | 2.45634 | 0.1681713 | 2.4152596 | 52 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 60573 | 1999 $YF_{21}$ |
| 1999 $YO_{23}$ | 17.4 | 0.15 | 20060922 | 275.61169 | 269.21185 | 185.45365 | 2.16851 | 0.1720262 | 2.4048217 | 38 | 3 | 1999–2006 | 0.44 | M-v | 2 | MPC | 04128 | 1999 $YO_{23}$ |
| 1999 $YF_{27}$ | 16.4 | 0.15 | 20060922 | 89.73942 | 153.14840 | 107.34322 | 5.18116 | 0.1996192 | 2.4276394 | 42 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 77428 | 1999 $YF_{27}$ |
| 1999 $YG_{27}$ | 16.7 | 0.15 | 20060922 | 205.73232 | 72.20859 | 142.41223 | 3.04048 | 0.1549265 | 2.3040595 | 57 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 87365 | 1999 $YG_{27}$ |
| 2000 AV | 16.1 | 0.15 | 20060922 | 191.73574 | 239.72769 | 287.71459 | 2.88294 | 0.1330064 | 2.5717413 | 44 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 56045 | 2000 AV |
| 2000 $AH_{1}$ | 12.5 | 0.15 | 20060922 | 189.64143 | 185.85858 | 301.18479 | 28.93027 | 0.0321958 | 5.2674425 | 31 | 2 | 2000–2006 | 0.31 | M-v | 2 | MPC | 03168 | 2000 $AH_{1}$ |
| 2000 $AM_{3}$ | 16.1 | 0.15 | 20060922 | 254.77332 | 10.71097 | 32.94449 | 4.37131 | 0.1994843 | 2.5934471 | 79 | 3 | 1999–2005 | 0.45 | M-v | 3 | MPC | 93795 | 2000 $AM_{3}$ |
| 2000 $AU_{4}$ | 16.5 | 0.15 | 20060922 | 308.55855 | 11.61438 | 69.75149 | 8.47148 | 0.1719105 | 2.3851852 | 109 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 60573 | 2000 $AU_{4}$ |
| 2000 $AR_{19}$ | 17.0 | 0.15 | 20060922 | 318.04974 | 6.70361 | 91.16728 | 3.18553 | 0.1925709 | 2.3252128 | 86 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 68633 | 2000 $AR_{19}$ |
| 2000 $AK_{24}$ | 16.1 | 0.15 | 20060922 | 3.30268 | 106.26079 | 301.56316 | 5.64346 | 0.1877557 | 2.3186605 | 44 | 3 | 2000–2006 | 0.61 | M-v | 3 | MPC | 37241 | 2000 $AK_{24}$ |
| 2000 $AY_{24}$ | 16.0 | 0.15 | 20060922 | 171.12670 | 247.10362 | 278.97088 | 2.59286 | 0.1427884 | 2.5903857 | 45 | 5 | 1992–2006 | 0.65 | M-v | 1 | MPC | 77429 | 2000 $AY_{24}$ |
| 2000 $AG_{26}$ | 16.4 | 0.15 | 20060922 | 322.02610 | 154.89231 | 288.24265 | 2.78171 | 0.1458455 | 2.3612318 | 141 | 5 | 1998–2006 | 0.51 | M-v | 0 | MPC | 62261 | 2000 $AG_{26}$ |
| 2000 $AD_{27}$ | 16.5 | 0.15 | 20060922 | 282.38646 | 44.82588 | 64.03984 | 3.28025 | 0.1647003 | 2.4128776 | 80 | 4 | 1995–2006 | 0.62 | M-v | 1 | MPC | 60574 | 2000 $AD_{27}$ |
| 2000 $AG_{27}$ | 17.3 | 0.15 | 20060922 | 254.03973 | 86.07612 | 60.07067 | 2.95720 | 0.1143622 | 2.4092101 | 66 | 5 | 1993–2006 | 0.67 | M-v | 1 | MPC | 60575 | 2000 $AG_{27}$ |
| 2000 $AA_{28}$ | 16.4 | 0.15 | 20060922 | 328.28357 | 337.81671 | 93.72644 | 3.41302 | 0.1768683 | 2.3656323 | 94 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 74707 | 2000 $AA_{28}$ |
| 2000 $AN_{28}$ | 17.8 | 0.15 | 20060922 | 19.78091 | 27.21419 | 343.96549 | 1.97974 | 0.2281324 | 2.3649817 | 50 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 34852 | 2000 $AN_{28}$ |
| 2000 $AS_{28}$ | 15.9 | 0.15 | 20060922 | 261.89307 | 309.15350 | 90.15448 | 8.48717 | 0.2288450 | 2.5985508 | 71 | 3 | 1997–2004 | 0.54 | M-v | 2 | MPC | 56049 | 2000 $AS_{28}$ |
| 2000 $AM_{31}$ | 16.0 | 0.15 | 20060922 | 358.06155 | 330.40724 | 90.89734 | 3.92458 | 0.2161897 | 2.3188078 | 95 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 62262 | 2000 $AM_{31}$ |
| 2000 $AP_{32}$ | 17.1 | 0.15 | 20060922 | 354.30514 | 98.78469 | 335.67325 | 1.92246 | 0.1857011 | 2.3116268 | 75 | 5 | 1993–2006 | 0.55 | M-v | 0 | MPC | 62262 | 2000 $AP_{32}$ |
| 2000 $AA_{34}$ | 15.8 | 0.15 | 20060922 | 330.64856 | 26.83736 | 63.28093 | 3.51035 | 0.1871235 | 2.3439260 | 101 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 62262 | 2000 $AA_{34}$ |
| 2000 $AC_{36}$ | 16.1 | 0.15 | 20060922 | 348.76055 | 143.74328 | 285.31772 | 6.61895 | 0.0903654 | 2.3277580 | 56 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 62262 | 2000 $AC_{36}$ |
| 2000 $AE_{36}$ | 17.0 | 0.15 | 20060922 | 60.85343 | 273.84483 | 98.11126 | 5.78695 | 0.1620306 | 2.2666395 | 63 | 5 | 1991–2006 | 0.42 | M-v | 1 | MPC | 62262 | 2000 $AE_{36}$ |
| 2000 $AG_{36}$ | 16.5 | 0.15 | 20060922 | 1.64938 | 173.99392 | 286.83212 | 6.83838 | 0.1482793 | 2.2431001 | 58 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87366 | 2000 $AG_{36}$ |
| 2000 $AR_{36}$ | 16.8 | 0.15 | 20060922 | 245.52484 | 174.88321 | 321.46567 | 0.95147 | 0.1553323 | 2.4540409 | 76 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 62262 | 2000 $AR_{36}$ |
| 2000 $AW_{37}$ | 16.6 | 0.15 | 20060922 | 337.18093 | 332.91744 | 101.06679 | 8.95766 | 0.2249620 | 2.3413574 | 55 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 03168 | 2000 $AW_{37}$ |
| 2000 $AG_{38}$ | 16.1 | 0.15 | 20060922 | 290.68338 | 105.35139 | 57.16634 | 4.72414 | 0.1070116 | 2.2989533 | 89 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 87366 | 2000 $AG_{38}$ |
| 2000 $AH_{39}$ | 15.6 | 0.15 | 20060922 | 354.07798 | 330.16488 | 85.12374 | 7.57504 | 0.0952911 | 2.3741297 | 111 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 62262 | 2000 $AH_{39}$ |
| 2000 $AZ_{39}$ | 16.2 | 0.15 | 20060922 | 166.09883 | 57.35204 | 93.10913 | 7.14131 | 0.1621434 | 2.6584699 | 51 | 4 | 1999–2005 | 0.56 | M-v | 1 | MPC | 77430 | 2000 $AZ_{39}$ |
| 2000 $AU_{42}$ | 16.2 | 0.15 | 20060922 | 148.35980 | 181.60554 | 299.73029 | 18.27543 | 0.0626698 | 1.9773316 | 80 | 4 | 2000–2004 | 0.65 | M-v | 2 | MPC | 73981 | 2000 $AU_{42}$ |
| 2000 $AY_{42}$ | 14.9 | 0.15 | 20060922 | 266.27862 | 227.74713 | 270.40669 | 22.47556 | 0.3772952 | 2.4143016 | 62 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 56052 | 2000 $AY_{42}$ |
| 2000 $AR_{43}$ | 17.4 | 0.15 | 20060922 | 308.23179 | 255.61680 | 213.57643 | 0.50943 | 0.1422621 | 2.3779978 | 61 | 4 | 2000–2006 | 0.35 | M-v | 1 | MPC | 87366 | 2000 $AR_{43}$ |
| 2000 $AL_{46}$ | 16.9 | 0.15 | 20060922 | 337.52949 | 332.69678 | 109.04009 | 2.05800 | 0.1605069 | 2.3239151 | 57 | 6 | 1993–2006 | 0.52 | M-v | 0 | MPC | 04128 | 2000 $AL_{46}$ |
| 2000 $AB_{48}$ | 16.9 | 0.15 | 20060922 | 292.41208 | 19.64114 | 102.37384 | 10.56228 | 0.1532530 | 2.3520324 | 55 | 4 | 1997–2006 | 0.47 | M-v | 1 | MPC | 62262 | 2000 $AB_{48}$ |
| 2000 $AY_{48}$ | 16.2 | 0.15 | 20060922 | 326.96365 | 306.23024 | 95.83069 | 22.50675 | 0.3099576 | 2.3644418 | 53 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 04128 | 2000 $AY_{48}$ |
| 2000 $AA_{49}$ | 16.2 | 0.15 | 20060922 | 57.61013 | 98.90590 | 102.72421 | 24.34134 | 0.0787053 | 1.9732923 | 77 | 4 | 2000–2006 | 0.74 | M-v | 2 | MPC | 01991 | 2000 $AA_{49}$ |
| 2000 $AK_{55}$ | 15.8 | 0.15 | 20060922 | 3.01729 | 291.19665 | 110.83475 | 5.91618 | 0.2210526 | 2.3456152 | 83 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 62263 | 2000 $AK_{55}$ |
| 2000 $AU_{56}$ | 16.4 | 0.15 | 20060922 | 312.83792 | 178.51285 | 314.58525 | 6.16360 | 0.0521554 | 2.2895989 | 38 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 90019 | 2000 $AU_{56}$ |
| 2000 $AF_{57}$ | 15.7 | 0.15 | 20060922 | 23.94325 | 58.18838 | 323.41110 | 5.32220 | 0.1331608 | 2.3695938 | 95 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 62263 | 2000 $AF_{57}$ |
| 2000 $AD_{58}$ | 16.4 | 0.15 | 20060922 | 271.63115 | 331.55049 | 130.48905 | 1.17862 | 0.1834172 | 2.4768452 | 91 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 62263 | 2000 $AD_{58}$ |
| 2000 $AE_{61}$ | 14.7 | 0.15 | 20060922 | 142.63082 | 101.28997 | 119.06975 | 32.21747 | 0.1191072 | 2.5734267 | 99 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87366 | 2000 $AE_{61}$ |
| 2000 $AV_{61}$ | 15.2 | 0.15 | 20060922 | 164.72132 | 229.81158 | 309.59241 | 3.65564 | 0.2325765 | 2.6500638 | 108 | 5 | 1993–2006 | 0.50 | M-v | 1 | MPC | 04128 | 2000 $AV_{61}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $AR_{62}$ | 16.6 | 0.15 | 20060922 | 336.17544 | 164.03856 | 328.40346 | 4.78040 | 0.1490562 | 2.2759145 | 79 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 87366 | 2000 $AR_{62}$ |
| 2000 $AR_{65}$ | 15.6 | 0.15 | 20060922 | 15.16902 | 52.69945 | 341.02693 | 8.86604 | 0.2534269 | 2.3480800 | 162 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 62263 | 2000 $AR_{65}$ |
| 2000 $AM_{82}$ | 17.2 | 0.15 | 20060922 | 291.84850 | 292.24869 | 149.96093 | 0.61974 | 0.1732920 | 2.4346512 | 58 | 5 | 1991–2006 | 0.41 | M-v | 1 | MPC | 04128 | 2000 $AM_{82}$ |
| 2000 $AS_{85}$ | 16.5 | 0.15 | 20060922 | 8.54706 | 171.00365 | 264.19581 | 5.26695 | 0.1465870 | 2.2848656 | 54 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87366 | 2000 $AS_{85}$ |
| 2000 $AL_{87}$ | 16.2 | 0.15 | 20060922 | 173.53110 | 233.79862 | 295.25882 | 4.05353 | 0.1919956 | 2.6154160 | 51 | 4 | 1999–2006 | 0.66 | M-v | 1 | MPC | 04128 | 2000 $AL_{87}$ |
| 2000 $AR_{88}$ | 16.7 | 0.15 | 20060922 | 331.60336 | 174.88402 | 290.12067 | 2.42883 | 0.1149212 | 2.3237422 | 58 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 62264 | 2000 $AR_{88}$ |
| 2000 $AB_{90}$ | 16.3 | 0.15 | 20060922 | 42.40108 | 241.11613 | 125.13592 | 6.52352 | 0.1388118 | 2.3498699 | 67 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 62264 | 2000 $AB_{90}$ |
| 2000 $AQ_{92}$ | 15.6 | 0.15 | 20060922 | 323.09850 | 130.62226 | 282.06909 | 22.64892 | 0.2369055 | 2.3539942 | 47 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 04128 | 2000 $AQ_{92}$ |
| 2000 $AT_{92}$ | 15.4 | 0.15 | 20060922 | 251.49816 | 115.97270 | 88.05147 | 23.29399 | 0.2029762 | 2.3539548 | 112 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 87366 | 2000 $AT_{92}$ |
| 2000 $AW_{94}$ | 16.6 | 0.15 | 20060922 | 36.02887 | 54.12057 | 340.69480 | 2.97600 | 0.1712921 | 2.2783969 | 60 | 4 | 1995–2004 | 0.62 | M-v | 1 | MPC | 62264 | 2000 $AW_{94}$ |
| 2000 $AO_{112}$ | 16.6 | 0.15 | 20060922 | 311.94666 | 229.43740 | 262.66027 | 5.42369 | 0.1515266 | 2.3077236 | 42 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87366 | 2000 $AO_{112}$ |
| 2000 $AF_{131}$ | 15.5 | 0.15 | 20060922 | 187.41071 | 46.38570 | 121.75173 | 7.68453 | 0.1232488 | 2.5797509 | 73 | 4 | 1993–2006 | 0.57 | M-v | 3 | MPC | 62265 | 2000 $AF_{131}$ |
| 2000 $AJ_{133}$ | 14.7 | 0.15 | 20060922 | 205.38190 | 80.04133 | 74.26071 | 17.17672 | 0.2275232 | 2.6189008 | 135 | 4 | 1994–2006 | 0.61 | M-v | 1 | MPC | 66106 | 2000 $AJ_{133}$ |
| 2000 $AY_{133}$ | 16.4 | 0.15 | 20060922 | 330.39192 | 23.72717 | 64.33089 | 4.28935 | 0.1545879 | 2.3280587 | 50 | 3 | 2000–2006 | 0.43 | M-v | 3 | MPC | 60578 | 2000 $AY_{133}$ |
| 2000 $AA_{134}$ | 17.0 | 0.15 | 20060922 | 38.96908 | 287.06897 | 94.33676 | 9.90642 | 0.2551779 | 2.2682260 | 32 | 6 | 1999–2006 | 0.60 | M-v | 1 | MPC | 84528 | 2000 $AA_{134}$ |
| 2000 $AJ_{145}$ | 16.7 | 0.15 | 20060922 | 255.17230 | 46.11511 | 83.82407 | 2.38932 | 0.1296812 | 2.4410759 | 50 | 3 | 2000–2006 | 0.35 | M-v | 3 | MPC | 64703 | 2000 $AJ_{145}$ |
| 2000 $AG_{151}$ | 17.3 | 0.15 | 20060922 | 31.98875 | 276.36991 | 122.69410 | 6.21384 | 0.1558436 | 2.3114355 | 49 | 4 | 1994–2006 | 0.58 | M-v | 1 | MPC | 47843 | 2000 $AG_{151}$ |
| 2000 $AZ_{152}$ | 15.5 | 0.15 | 20060922 | 317.68970 | 229.22623 | 300.12354 | 20.95609 | 0.2548155 | 2.2805806 | 49 | 6 | 1993–2006 | 0.61 | M-v | 2 | MPC | 90019 | 2000 $AZ_{152}$ |
| 2000 $AQ_{154}$ | 16.2 | 0.15 | 20060922 | 315.32917 | 355.14894 | 40.38981 | 9.55936 | 0.2738219 | 2.3867769 | 117 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 04129 | 2000 $AQ_{154}$ |
| 2000 $AF_{159}$ | 16.7 | 0.15 | 20060922 | 277.68022 | 149.95524 | 1.41662 | 4.24476 | 0.1447300 | 2.3576050 | 64 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 62266 | 2000 $AF_{159}$ |
| 2000 $AH_{162}$ | 16.1 | 0.15 | 20060922 | 297.46763 | 164.95670 | 322.42178 | 3.34542 | 0.1070724 | 2.3750959 | 73 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 87367 | 2000 $AH_{162}$ |
| 2000 $AL_{171}$ | 15.7 | 0.15 | 20060922 | 267.46454 | 237.51475 | 174.02186 | 6.54609 | 0.0970681 | 2.5360055 | 66 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 01992 | 2000 $AL_{171}$ |
| 2000 $AW_{179}$ | 15.5 | 0.15 | 20060922 | 279.78957 | 290.87518 | 270.31938 | 20.02131 | 0.2219879 | 2.2716736 | 27 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 40039 | 2000 $AW_{179}$ |
| 2000 $AB_{181}$ | 16.5 | 0.15 | 20060922 | 8.19681 | 186.09155 | 224.96647 | 7.85208 | 0.1922956 | 2.3143971 | 60 | 5 | 2000–2006 | 0.70 | M-v | 1 | MPC | 62266 | 2000 $AB_{181}$ |
| 2000 $AU_{182}$ | 16.4 | 0.15 | 20060922 | 294.96724 | 354.39497 | 216.78814 | 6.29824 | 0.0963396 | 2.2032761 | 69 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 97366 | 2000 $AU_{182}$ |
| 2000 $AL_{194}$ | 17.0 | 0.15 | 20060922 | 271.69460 | 315.82353 | 169.51045 | 10.78000 | 0.2525061 | 2.4309791 | 81 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 60579 | 2000 $AL_{194}$ |
| 2000 $AH_{201}$ | 15.1 | 0.15 | 20060922 | 93.52041 | 271.00920 | 180.73022 | 14.53275 | 0.1970247 | 3.0940883 | 45 | 4 | 1999–2006 | 0.63 | M-v | 1 | MPC | 01992 | 2000 $AH_{201}$ |
| 2000 $AL_{207}$ | 17.2 | 0.15 | 20060922 | 342.87943 | 149.47612 | 309.58917 | 2.33507 | 0.1256743 | 2.3191089 | 55 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 87367 | 2000 $AL_{207}$ |
| 2000 $AA_{209}$ | 16.5 | 0.15 | 20060922 | 202.49451 | 200.76238 | 302.87305 | 14.38681 | 0.1232839 | 2.5920994 | 32 | 3 | 2000–2006 | 0.33 | M-v | 3 | MPC | 74712 | 2000 $AA_{209}$ |
| 2000 $AC_{211}$ | 17.6 | 0.15 | 20060922 | 347.99852 | 122.58227 | 292.13360 | 0.26426 | 0.2453164 | 2.3602853 | 70 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | 73984 | 2000 $AC_{211}$ |
| 2000 $AH_{212}$ | 16.1 | 0.15 | 20060922 | 73.85133 | 43.70979 | 321.06495 | 6.68949 | 0.1295326 | 2.3577847 | 58 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 27659 | 2000 $AH_{212}$ |
| 2000 $AQ_{212}$ | 16.7 | 0.15 | 20060922 | 35.85225 | 248.99055 | 76.65570 | 13.13385 | 0.2039745 | 2.3517578 | 47 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 57744 | 2000 $AQ_{212}$ |
| 2000 $AC_{214}$ | 15.0 | 0.15 | 20060922 | 88.79360 | 282.53240 | 298.09836 | 24.87848 | 0.1630112 | 2.7289605 | 50 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 04129 | 2000 $AC_{214}$ |
| 2000 $AG_{214}$ | 16.7 | 0.15 | 20060922 | 18.21451 | 288.00966 | 134.00371 | 5.03835 | 0.2051799 | 2.2880040 | 77 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 87367 | 2000 $AG_{214}$ |
| 2000 $AB_{215}$ | 15.7 | 0.15 | 20060922 | 77.93204 | 61.96545 | 266.10716 | 5.88531 | 0.1438807 | 2.2987641 | 76 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 41595 | 2000 $AB_{215}$ |
| 2000 $AJ_{215}$ | 16.3 | 0.15 | 20060922 | 283.05887 | 224.94761 | 282.89701 | 1.87107 | 0.1009195 | 2.3438775 | 88 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 87367 | 2000 $AJ_{215}$ |
| 2000 $AK_{216}$ | 17.5 | 0.15 | 20060922 | 42.57102 | 126.80849 | 258.90768 | 5.74115 | 0.1843857 | 2.2306320 | 45 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 37280 | 2000 $AK_{216}$ |
| 2000 $AR_{216}$ | 17.5 | 0.15 | 20060922 | 298.23153 | 349.42883 | 87.21938 | 2.51555 | 0.1577135 | 2.3829873 | 42 | 3 | 1999–2006 | 0.38 | M-v | 1 | MPC | 04129 | 2000 $AR_{216}$ |
| 2000 $AH_{218}$ | 16.4 | 0.15 | 20060922 | 62.51383 | 157.61443 | 97.10603 | 2.93731 | 0.0469651 | 2.6437221 | 28 | 4 | 1999–2005 | 0.30 | M-v | 0 | MPC | 49784 | 2000 $AH_{218}$ |
| 2000 $AC_{219}$ | 15.9 | 0.15 | 20060922 | 332.88917 | 188.03503 | 91.72067 | 3.23487 | 0.0303178 | 2.8667952 | 46 | 7 | 1996–2006 | 0.43 | M-v | 0 | MPC | 99934 | 2000 $AC_{219}$ |
| 2000 $AS_{220}$ | 17.1 | 0.15 | 20060922 | 348.53822 | 77.35342 | 330.50992 | 1.66766 | 0.1782798 | 2.3700492 | 55 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 2725 | 2000 $AS_{220}$ |
| 2000 $AL_{221}$ | 17.0 | 0.15 | 20060922 | 45.30437 | 7.50049 | 342.29766 | 1.97650 | 0.2311729 | 2.3611490 | 69 | 3 | 2000–2004 | 0.49 | M-v | 3 | MPC | 62267 | 2000 $AL_{221}$ |
| 2000 $AT_{223}$ | 17.3 | 0.15 | 20060922 | 36.37944 | 260.63244 | 133.72610 | 1.13631 | 0.2329484 | 2.2946271 | 83 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 47845 | 2000 $AT_{223}$ |
| 2000 $AF_{225}$ | 16.7 | 0.15 | 20060922 | 344.10360 | 94.10886 | 339.25779 | 1.95525 | 0.1834964 | 2.3374857 | 48 | 5 | 1995–2006 | 0.46 | M-v | 0 | MPC | 62267 | 2000 $AF_{225}$ |
| 2000 $AC_{226}$ | 16.0 | 0.15 | 20060922 | 59.30947 | 210.83433 | 313.90312 | 1.46327 | 0.0987704 | 2.9833712 | 30 | 4 | 2000–2006 | 0.28 | M-v | 0 | MPC | 01993 | 2000 $AC_{226}$ |
| 2000 $AN_{228}$ | 16.7 | 0.15 | 20060922 | 27.22522 | 285.43131 | 126.70333 | 5.79974 | 0.1476727 | 2.3043918 | 70 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 87367 | 2000 $AN_{228}$ |
| 2000 $AE_{234}$ | 16.6 | 0.15 | 20060922 | 236.61125 | 158.73314 | 266.74250 | 4.60310 | 0.2852425 | 2.5885426 | 72 | 3 | 1995–2004 | 0.49 | M-v | 2 | MPC | 56076 | 2000 $AE_{234}$ |
| 2000 $AW_{246}$ | 16.5 | 0.15 | 20060922 | 177.97124 | 36.41930 | 113.01387 | 3.61131 | 0.1298252 | 2.6282604 | 20 | 4 | 1999–2005 | 0.49 | M-v | 1 | MPC | 84530 | 2000 $AW_{246}$ |
| 2000 $AR_{250}$ | 16.4 | 0.15 | 20060922 | 65.73826 | 335.88571 | 181.75715 | 0.63692 | 0.1206805 | 3.0647561 | 55 | 6 | 1998–2006 | 0.26 | M-v | 0 | MPC | 01993 | 2000 $AR_{250}$ |
| 2000 $AT_{250}$ | 17.6 | 0.15 | 20060922 | 311.13317 | 59.46358 | 335.82813 | 0.08440 | 0.2171871 | 2.4339253 | 31 | 4 | 1995–2006 | 0.58 | M-v | 1 | MPC | 68639 | 2000 $AT_{250}$ |
| 2000 $AR_{252}$ | 18.4 | 0.15 | 20060922 | 335.67698 | 293.15174 | 116.81707 | 4.86324 | 0.1764342 | 2.4026821 | 29 | 4 | 1991–2006 | 0.33 | M-v | 1 | MPC | 47846 | 2000 $AR_{252}$ |
| 2000 BE | 15.8 | 0.15 | 20060922 | 190.96455 | 227.99012 | 300.27172 | 6.87083 | 0.1362593 | 2.5611260 | 70 | 4 | 1992–2006 | 0.62 | M-v | 2 | MPC | 56079 | 2000 BE |
| 2000 BG | 17.4 | 0.15 | 20060922 | 304.40065 | 353.56864 | 85.74479 | 2.47005 | 0.1469908 | 2.4250534 | 30 | 4 | 1999–2006 | 0.67 | M-v | 1 | MPC | 84530 | 2000 BG |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 BN | 16.6 | 0.15 | 20060922 | 296.21406 | 208.31364 | 294.67302 | 1.73940 | 0.1602426 | 2.3405840 | 57 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 64705 | 2000 BN |
| 2000 $BF_1$ | 16.8 | 0.15 | 20060922 | 13.19564 | 146.32112 | 304.46910 | 3.87348 | 0.1427928 | 2.2664534 | 60 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 50456 | 2000 $BF_1$ |
| 2000 $BH_1$ | 17.3 | 0.15 | 20060922 | 4.50548 | 278.08897 | 115.89911 | 3.18906 | 0.2170360 | 2.3412898 | 51 | 3 | 1999–2006 | 0.51 | M-v | 1 | MPC | 37284 | 2000 $BH_1$ |
| 2000 $BM_1$ | 16.5 | 0.15 | 20060922 | 140.41642 | 39.01050 | 119.01506 | 3.78018 | 0.0746769 | 2.7207538 | 25 | 4 | 1995–2005 | 0.39 | M-v | 1 | MPC | 47846 | 2000 $BM_1$ |
| 2000 $BC_4$ | 17.0 | 0.15 | 20060922 | 43.96363 | 251.95665 | 127.83313 | 4.57831 | 0.1361767 | 2.3133538 | 111 | 6 | 1992–2006 | 0.61 | M-v | 1 | MPC | 62267 | 2000 $BC_4$ |
| 2000 $BV_4$ | 16.5 | 0.15 | 20060922 | 310.17714 | 62.25383 | 21.43807 | 9.64699 | 0.2099168 | 2.3784529 | 71 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 60582 | 2000 $BV_4$ |
| 2000 $BF_6$ | 15.6 | 0.15 | 20060922 | 222.19690 | 22.22256 | 64.22823 | 16.03550 | 0.1358053 | 2.6420171 | 78 | 4 | 2000–2005 | 0.58 | M-v | 2 | MPC | 56079 | 2000 $BF_6$ |
| 2000 $BU_6$ | 15.6 | 0.15 | 20060922 | 296.20953 | 274.48059 | 103.45481 | 5.44973 | 0.2102684 | 2.5800843 | 51 | 5 | 1998–2005 | 0.74 | M-v | 1 | MPC | 56080 | 2000 $BU_6$ |
| 2000 $BW_6$ | 15.5 | 0.15 | 20060922 | 296.80896 | 35.85714 | 21.41655 | 14.85132 | 0.0939805 | 2.4795445 | 56 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 04129 | 2000 $BW_6$ |
| 2000 $BJ_7$ | 15.3 | 0.15 | 20060922 | 221.50168 | 157.00010 | 331.95431 | 7.08545 | 0.1542752 | 2.5235817 | 97 | 5 | 1998–2006 | 0.51 | M-v | 3 | MPC | 04129 | 2000 $BJ_7$ |
| 2000 $BF_9$ | 16.8 | 0.15 | 20060922 | 284.92962 | 214.98929 | 249.62883 | 0.74466 | 0.1471558 | 2.4464213 | 90 | 6 | 1991–2006 | 0.53 | M-v | 1 | MPC | 73985 | 2000 $BF_9$ |
| 2000 $BH_9$ | 16.6 | 0.15 | 20060922 | 85.84669 | 342.62601 | 270.12293 | 1.16584 | 0.0498546 | 2.6277326 | 41 | 5 | 2000–2006 | 0.29 | M-v | 0 | MPC | 04129 | 2000 $BH_9$ |
| 2000 $BL_9$ | 16.8 | 0.15 | 20060922 | 66.64554 | 24.68725 | 272.26925 | 1.05292 | 0.0796218 | 2.5459535 | 51 | 5 | 1998–2006 | 0.35 | M-v | 0 | MPC | 88699 | 2000 $BL_9$ |
| 2000 $BW_9$ | 16.7 | 0.15 | 20060922 | 187.46119 | 315.44734 | 150.27718 | 0.84790 | 0.0259123 | 2.7616505 | 38 | 4 | 1996–2005 | 0.36 | M-v | 0 | MPC | 74716 | 2000 $BW_9$ |
| 2000 $BL_{11}$ | 17.4 | 0.15 | 20060922 | 43.29613 | 79.47715 | 289.65812 | 5.64443 | 0.2789377 | 2.2877660 | 54 | 3 | 2000–2006 | 0.47 | M-v | 1 | MPC | 47846 | 2000 $BL_{11}$ |
| 2000 $BR_{11}$ | 16.3 | 0.15 | 20060922 | 162.41776 | 190.16032 | 293.72990 | 7.19134 | 0.1984487 | 2.7372305 | 32 | 3 | 2000–2005 | 0.41 | M-v | 2 | MPC | 74717 | 2000 $BR_{11}$ |
| 2000 $BH_{12}$ | 16.0 | 0.15 | 20060922 | 87.79851 | 118.13418 | 136.55246 | 12.29134 | 0.1554551 | 2.6686345 | 45 | 4 | 2000–2006 | 0.71 | M-v | 2 | MPC | 04129 | 2000 $BH_{12}$ |
| 2000 $BQ_{12}$ | 17.6 | 0.15 | 20060922 | 30.47913 | 44.41112 | 335.35151 | 2.00658 | 0.2474014 | 2.3606899 | 52 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 41596 | 2000 $BQ_{12}$ |
| 2000 $BB_{13}$ | 16.5 | 0.15 | 20060922 | 211.45538 | 171.12721 | 326.40553 | 6.92938 | 0.1275485 | 2.5993261 | 56 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 73985 | 2000 $BB_{13}$ |
| 2000 $BW_{13}$ | 15.6 | 0.15 | 20060922 | 170.34336 | 238.26757 | 318.42674 | 12.41696 | 0.1196814 | 2.5702371 | 67 | 2 | 2000–2004 | 0.53 | M-v | 3 | MPC | 62268 | 2000 $BW_{13}$ |
| 2000 $BB_{14}$ | 16.4 | 0.15 | 20060922 | 279.69011 | 162.31916 | 321.68390 | 9.80157 | 0.1684856 | 2.4297667 | 94 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 60584 | 2000 $BB_{14}$ |
| 2000 $BL_{15}$ | 16.8 | 0.15 | 20060922 | 263.87220 | 47.66217 | 110.91521 | 9.27509 | 0.1309524 | 2.3952497 | 53 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 60585 | 2000 $BL_{15}$ |
| 2000 $BP_{17}$ | 16.8 | 0.15 | 20060922 | 332.55807 | 92.28587 | 332.59645 | 7.62016 | 0.2856488 | 2.3600506 | 59 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 04129 | 2000 $BP_{17}$ |
| 2000 $BL_{20}$ | 16.7 | 0.15 | 20060922 | 145.08939 | 240.12124 | 312.34126 | 4.88317 | 0.1049713 | 2.6529094 | 27 | 3 | 2000–2006 | 0.33 | M-v | 3 | MPC | 03169 | 2000 $BL_{20}$ |
| 2000 $BN_{20}$ | 16.7 | 0.15 | 20060922 | 129.38543 | 307.68280 | 134.29336 | 3.42847 | 0.0965388 | 3.0700363 | 21 | 4 | 1995–2006 | 0.30 | M-v | 1 | MPC | 97367 | 2000 $BN_{20}$ |
| 2000 $BB_{21}$ | 17.1 | 0.15 | 20060922 | 68.37582 | 142.34104 | 143.92687 | 3.43590 | 0.1333467 | 2.5860925 | 30 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87368 | 2000 $BB_{21}$ |
| 2000 $BE_{21}$ | 16.4 | 0.15 | 20060922 | 43.65872 | 110.21247 | 304.14498 | 4.11686 | 0.1814575 | 2.2559510 | 142 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 90020 | 2000 $BE_{21}$ |
| 2000 $BJ_{21}$ | 17.1 | 0.15 | 20060922 | 352.93443 | 214.35869 | 304.73275 | 3.70540 | 0.0857519 | 2.1940554 | 43 | 3 | 1995–2005 | 0.46 | M-v | 3 | MPC | 97367 | 2000 $BJ_{21}$ |
| 2000 $BV_{21}$ | 16.2 | 0.15 | 20060922 | 186.02755 | 153.05640 | 316.05722 | 7.61303 | 0.1571420 | 2.7376469 | 34 | 4 | 2000–2005 | 0.37 | M-v | 1 | MPC | 56082 | 2000 $BV_{21}$ |
| 2000 $BY_{21}$ | 16.4 | 0.15 | 20060922 | 31.30389 | 69.47156 | 319.28314 | 4.77304 | 0.1216673 | 2.3622695 | 51 | 4 | 1995–2004 | 0.74 | M-v | 2 | MPC | 62268 | 2000 $BY_{21}$ |
| 2000 $BE_{22}$ | 16.6 | 0.15 | 20060922 | 282.39500 | 173.53931 | 314.57584 | 1.52054 | 0.1479534 | 2.4150017 | 84 | 4 | 1991–2006 | 0.54 | M-v | 1 | MPC | 60586 | 2000 $BE_{22}$ |
| 2000 $BT_{23}$ | 15.8 | 0.15 | 20060922 | 37.04258 | 343.53882 | 56.77268 | 5.17010 | 0.1712038 | 2.2815202 | 101 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 62268 | 2000 $BT_{23}$ |
| 2000 $BW_{24}$ | 15.5 | 0.15 | 20060922 | 276.66942 | 7.10189 | 76.74078 | 10.12887 | 0.1121258 | 2.5239622 | 80 | 5 | 2000–2006 | 0.66 | M-v | 1 | MPC | 04129 | 2000 $BW_{24}$ |
| 2000 $BT_{25}$ | 16.3 | 0.15 | 20060922 | 248.77900 | 223.33503 | 311.22590 | 6.00874 | 0.1070382 | 2.3884992 | 60 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 87368 | 2000 $BT_{25}$ |
| 2000 $BG_{28}$ | 16.4 | 0.15 | 20060922 | 331.39650 | 112.53218 | 331.81847 | 3.15657 | 0.2244688 | 2.3564686 | 111 | 3 | 2000–2006 | 0.63 | M-v | 4 | MPC | 50457 | 2000 $BG_{28}$ |
| 2000 $BH_{28}$ | 16.7 | 0.15 | 20060922 | 293.21119 | 334.92072 | 121.36617 | 6.13557 | 0.1457194 | 2.4426312 | 58 | 3 | 1999–2006 | 0.51 | M-v | 1 | MPC | 60588 | 2000 $BH_{28}$ |
| 2000 $BA_{34}$ | 16.0 | 0.15 | 20060922 | 310.47744 | 130.41390 | 336.28539 | 5.62580 | 0.1330908 | 2.3842108 | 98 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 62268 | 2000 $BA_{34}$ |
| 2000 $BE_{35}$ | 16.8 | 0.15 | 20060922 | 303.42349 | 333.82234 | 104.06845 | 4.96986 | 0.2330896 | 2.4287485 | 44 | 3 | 1999–2006 | 0.63 | M-v | 2 | MPC | 60588 | 2000 $BE_{35}$ |
| 2000 $BX_{36}$ | 16.8 | 0.15 | 20060922 | 32.37259 | 47.57542 | 326.16636 | 0.59935 | 0.1874326 | 2.3777356 | 61 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 62269 | 2000 $BX_{36}$ |
| 2000 $BH_{37}$ | 17.6 | 0.15 | 20060922 | 321.44864 | 156.43662 | 287.08804 | 0.51079 | 0.1572455 | 2.3787621 | 50 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 68641 | 2000 $BH_{37}$ |
| 2000 $BU_{37}$ | 15.0 | 0.15 | 20060922 | 9.31118 | 328.24928 | 327.83514 | 11.44005 | 0.0153418 | 2.8011537 | 29 | 2 | 2000–2002 | 0.48 | M-v | 3 | MPC | 70241 | 2000 $BU_{37}$ |
| 2000 $BA_{38}$ | 15.8 | 0.15 | 20060922 | 176.72733 | 96.81973 | 126.45239 | 5.55868 | 0.1515981 | 2.4636522 | 67 | 4 | 2000–2006 | 0.45 | M-v | 0 | MPC | 90020 | 2000 $BA_{38}$ |
| 2000 $BC_{39}$ | 17.1 | 0.15 | 20060922 | 261.43800 | 149.98329 | 298.53085 | 2.94764 | 0.1257482 | 2.5366339 | 43 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 04129 | 2000 $BC_{39}$ |
| 2000 $BO_{39}$ | 16.9 | 0.15 | 20060922 | 28.49604 | 106.05308 | 295.08516 | 1.85223 | 0.0369718 | 2.3441621 | 50 | 5 | 1991–2006 | 0.42 | M-v | 0 | MPC | 87368 | 2000 $BO_{39}$ |
| 2000 $BB_{40}$ | 15.8 | 0.15 | 20060922 | 350.77334 | 13.36352 | 307.47281 | 4.42080 | 0.0522911 | 2.7146293 | 68 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 04129 | 2000 $BB_{40}$ |
| 2000 $BZ_{40}$ | 16.3 | 0.15 | 20060922 | 231.18246 | 217.92131 | 291.61103 | 5.49852 | 0.0576624 | 2.4513337 | 44 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 62269 | 2000 $BZ_{40}$ |
| 2000 $BS_{47}$ | 17.1 | 0.15 | 20060922 | 135.43301 | 216.72357 | 126.62423 | 1.29427 | 0.2051752 | 2.2121928 | 110 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 97368 | 2000 $BS_{47}$ |
| 2000 $BC_{48}$ | 17.5 | 0.15 | 20060922 | 209.58922 | 13.70633 | 124.29809 | 5.01121 | 0.0798193 | 2.5693038 | 20 | 3 | 2000–2005 | 0.31 | M-v | 3 | MPC | 74720 | 2000 $BC_{48}$ |
| 2000 $BK_{50}$ | 16.8 | 0.15 | 20060922 | 357.64513 | 104.76709 | 301.15699 | 1.44792 | 0.1516841 | 2.3646620 | 68 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 50457 | 2000 $BK_{50}$ |
| 2000 CL | 16.4 | 0.15 | 20060922 | 200.42548 | 206.31902 | 334.37290 | 4.00317 | 0.1984364 | 2.5493100 | 68 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 60590 | 2000 CL |
| 2000 $CD_2$ | 15.8 | 0.15 | 20060922 | 235.59666 | 35.26853 | 88.82693 | 4.63318 | 0.2036545 | 2.5715057 | 172 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 04129 | 2000 $CD_2$ |
| 2000 $CU_3$ | 15.4 | 0.15 | 20060922 | 183.60498 | 324.15156 | 120.70362 | 10.46121 | 0.2305636 | 2.7408058 | 43 | 3 | 1999–2005 | 0.60 | M-v | 2 | MPC | 74720 | 2000 $CU_3$ |
| 2000 $CG_7$ | 16.6 | 0.15 | 20060922 | 274.78519 | 65.04742 | 120.47410 | 5.07056 | 0.0636945 | 2.3057925 | 56 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87369 | 2000 $CG_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $CD_{8}$ | 15.7 | 0.15 | 20060922 | 207.71059 | 345.29229 | 152.43567 | 3.62254 | 0.0714515 | 2.5592409 | 45 | 5 | 2000–2006 | 0.39 | M-v | 1 | MPC | 03169 | 2000 $CD_{8}$ |
| 2000 $CN_{9}$ | 16.4 | 0.15 | 20060922 | 283.51752 | 222.00124 | 280.29822 | 3.10465 | 0.1843505 | 2.3671606 | 81 | 3 | 2000–2006 | 0.52 | M-v | 1 | MPC | 62269 | 2000 $CN_{9}$ |
| 2000 $CA_{10}$ | 17.2 | 0.15 | 20060922 | 290.07785 | 237.41329 | 283.01751 | 3.82368 | 0.1737989 | 2.3227288 | 53 | 6 | 1998–2006 | 0.59 | M-v | 1 | MPC | 84531 | 2000 $CA_{10}$ |
| 2000 $CR_{11}$ | 15.7 | 0.15 | 20060922 | 254.62614 | 164.35778 | 294.23561 | 1.49185 | 0.1106526 | 2.5320941 | 128 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 04129 | 2000 $CR_{11}$ |
| 2000 $CL_{12}$ | 16.1 | 0.15 | 20060922 | 349.30201 | 198.39122 | 262.20786 | 4.66415 | 0.1101585 | 2.2956548 | 51 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 87369 | 2000 $CL_{12}$ |
| 2000 $CO_{12}$ | 16.5 | 0.15 | 20060922 | 264.65964 | 314.14045 | 175.02222 | 7.02029 | 0.0847572 | 2.4443096 | 68 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 60591 | 2000 $CO_{12}$ |
| 2000 $CA_{14}$ | 16.1 | 0.15 | 20060922 | 173.08433 | 294.63376 | 220.30180 | 4.50381 | 0.2232884 | 2.6644150 | 56 | 6 | 1994–2006 | 0.43 | M-v | 0 | MPC | 87369 | 2000 $CA_{14}$ |
| 2000 $CG_{15}$ | 16.2 | 0.15 | 20060922 | 110.89443 | 221.13803 | 141.86889 | 7.09796 | 0.1980443 | 2.2249975 | 111 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 97368 | 2000 $CG_{15}$ |
| 2000 $CJ_{15}$ | 16.2 | 0.15 | 20060922 | 248.57436 | 64.17357 | 95.96533 | 5.27534 | 0.1200362 | 2.4309239 | 74 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 87369 | 2000 $CJ_{15}$ |
| 2000 $CR_{15}$ | 15.7 | 0.15 | 20060922 | 94.44008 | 243.85846 | 286.83245 | 5.58716 | 0.1884602 | 2.8813018 | 49 | 4 | 1994–2005 | 0.52 | M-v | 2 | MPC | 73986 | 2000 $CR_{15}$ |
| 2000 $CQ_{17}$ | 16.3 | 0.15 | 20060922 | 335.44403 | 186.06187 | 266.98295 | 1.86199 | 0.1447127 | 2.3414769 | 72 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87369 | 2000 $CQ_{17}$ |
| 2000 $CF_{19}$ | 16.5 | 0.15 | 20060922 | 6.57758 | 151.56343 | 291.45494 | 5.74769 | 0.1418967 | 2.2913589 | 77 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 04130 | 2000 $CF_{19}$ |
| 2000 $CU_{20}$ | 15.8 | 0.15 | 20060922 | 353.89694 | 277.80955 | 149.62228 | 2.09956 | 0.1223636 | 2.3588307 | 136 | 5 | 2000–2006 | 0.48 | M-v | 0 | MPC | 77437 | 2000 $CU_{20}$ |
| 2000 $CX_{20}$ | 16.5 | 0.15 | 20060922 | 336.50755 | 198.34671 | 298.21862 | 5.19987 | 0.0887977 | 2.2707000 | 42 | 4 | 2000–2006 | 0.67 | M-v | 2 | MPC | 90020 | 2000 $CX_{20}$ |
| 2000 $CS_{21}$ | 16.0 | 0.15 | 20060922 | 208.59667 | 265.98775 | 229.94158 | 2.76309 | 0.2059167 | 2.6017012 | 52 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 56088 | 2000 $CS_{21}$ |
| 2000 $CW_{21}$ | 15.6 | 0.15 | 20060922 | 246.44522 | 184.07642 | 298.64397 | 7.71080 | 0.0184376 | 2.5294700 | 106 | 5 | 1990–2006 | 0.46 | M-v | 2 | MPC | 62270 | 2000 $CW_{21}$ |
| 2000 $CE_{22}$ | 17.2 | 0.15 | 20060922 | 276.34286 | 309.88787 | 226.00830 | 1.49903 | 0.1451705 | 2.3420151 | 42 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87369 | 2000 $CE_{22}$ |
| 2000 $CW_{22}$ | 16.2 | 0.15 | 20060922 | 186.74310 | 269.83028 | 239.32751 | 3.43755 | 0.1950108 | 2.6451968 | 52 | 5 | 1994–2006 | 0.63 | M-v | 1 | MPC | 87369 | 2000 $CW_{22}$ |
| 2000 $CE_{23}$ | 16.2 | 0.15 | 20060922 | 274.24455 | 262.59972 | 274.53301 | 5.81294 | 0.0646281 | 2.3353354 | 43 | 6 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87369 | 2000 $CE_{23}$ |
| 2000 $CC_{25}$ | 15.3 | 0.15 | 20060922 | 283.81308 | 263.65812 | 146.08861 | 22.42161 | 0.0402202 | 2.6294908 | 53 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 04130 | 2000 $CC_{25}$ |
| 2000 $CV_{30}$ | 17.1 | 0.15 | 20060922 | 6.13800 | 231.07353 | 166.03763 | 1.15421 | 0.1832792 | 2.3752902 | 90 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 66108 | 2000 $CV_{30}$ |
| 2000 $CG_{31}$ | 15.6 | 0.15 | 20060922 | 357.99866 | 99.47554 | 310.64758 | 5.93141 | 0.1149639 | 2.3936221 | 51 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 41599 | 2000 $CG_{31}$ |
| 2000 $CU_{36}$ | 15.3 | 0.15 | 20060922 | 189.98815 | 182.51020 | 326.29630 | 11.59447 | 0.1921164 | 2.6709546 | 63 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 57749 | 2000 $CU_{36}$ |
| 2000 $CK_{37}$ | 16.5 | 0.15 | 20060922 | 288.80587 | 160.35708 | 300.13208 | 5.29611 | 0.0845346 | 2.4420616 | 83 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 60593 | 2000 $CK_{37}$ |
| 2000 $CR_{37}$ | 16.9 | 0.15 | 20060922 | 333.94526 | 320.92804 | 126.37771 | 6.56225 | 0.1976600 | 2.3448049 | 48 | 6 | 1993–2006 | 0.60 | M-v | 1 | MPC | 62271 | 2000 $CR_{37}$ |
| 2000 $CQ_{38}$ | 16.1 | 0.15 | 20060922 | 220.45432 | 118.31076 | 121.64422 | 5.53679 | 0.1784665 | 2.3289844 | 96 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87369 | 2000 $CQ_{38}$ |
| 2000 $CR_{38}$ | 16.6 | 0.15 | 20060922 | 357.52122 | 133.01865 | 316.93176 | 6.03120 | 0.1228631 | 2.2996216 | 60 | 5 | 1993–2006 | 0.55 | M-v | 1 | MPC | 90020 | 2000 $CR_{38}$ |
| 2000 $CY_{38}$ | 16.0 | 0.15 | 20060922 | 227.05972 | 166.72573 | 349.41715 | 10.64898 | 0.1632687 | 2.5246313 | 129 | 5 | 1990–2006 | 0.54 | M-v | 2 | MPC | 62271 | 2000 $CY_{38}$ |
| 2000 $CE_{40}$ | 16.2 | 0.15 | 20060922 | 252.69385 | 315.60205 | 266.16171 | 5.23287 | 0.2684326 | 2.3272151 | 57 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 66108 | 2000 $CE_{40}$ |
| 2000 $CZ_{40}$ | 15.1 | 0.15 | 20060922 | 314.95124 | 357.04677 | 158.95779 | 25.91051 | 0.1828388 | 2.3170699 | 85 | 6 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87369 | 2000 $CZ_{40}$ |
| 2000 $CA_{41}$ | 15.2 | 0.15 | 20060922 | 219.43028 | 174.18619 | 337.55619 | 26.48997 | 0.1918812 | 2.5859705 | 94 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 62271 | 2000 $CA_{41}$ |
| 2000 $CT_{42}$ | 16.0 | 0.15 | 20060922 | 208.51665 | 4.84642 | 213.02684 | 6.03544 | 0.0618742 | 2.4009613 | 87 | 6 | 1993–2006 | 0.57 | M-v | 1 | MPC | 90020 | 2000 $CT_{42}$ |
| 2000 $CD_{43}$ | 16.7 | 0.15 | 20060922 | 338.47500 | 254.05090 | 203.01315 | 3.85837 | 0.1147373 | 2.3429045 | 43 | 6 | 1995–2005 | 0.64 | M-v | 1 | MPC | 93801 | 2000 $CD_{43}$ |
| 2000 $CV_{43}$ | 15.2 | 0.15 | 20060922 | 202.06732 | 359.30520 | 180.43561 | 5.82298 | 0.1475341 | 2.5358420 | 169 | 5 | 1992–2006 | 0.48 | M-v | 2 | MPC | 04130 | 2000 $CV_{43}$ |
| 2000 $CF_{48}$ | 16.0 | 0.15 | 20060922 | 168.42959 | 254.94541 | 288.82520 | 7.83432 | 0.1217726 | 2.6393980 | 51 | 3 | 2000–2006 | 0.56 | M-v | 2 | MPC | 04130 | 2000 $CF_{48}$ |
| 2000 $CQ_{48}$ | 16.3 | 0.15 | 20060922 | 269.89650 | 300.72499 | 176.21506 | 8.91509 | 0.1798243 | 2.4856714 | 96 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 62271 | 2000 $CQ_{48}$ |
| 2000 $CX_{50}$ | 15.5 | 0.15 | 20060922 | 228.03738 | 339.58679 | 154.25704 | 13.90533 | 0.1877637 | 2.5734561 | 118 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 04130 | 2000 $CX_{50}$ |
| 2000 $CE_{52}$ | 15.7 | 0.15 | 20060922 | 220.26155 | 19.33515 | 152.82690 | 15.34362 | 0.0830276 | 2.5156198 | 121 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 04130 | 2000 $CE_{52}$ |
| 2000 $CN_{55}$ | 16.9 | 0.15 | 20060922 | 329.26635 | 288.67584 | 162.07862 | 4.47353 | 0.1405306 | 2.3679758 | 95 | 4 | 2000–2006 | 0.61 | M-v | 0 | MPC | 62271 | 2000 $CN_{55}$ |
| 2000 $CU_{55}$ | 16.2 | 0.15 | 20060922 | 355.96149 | 108.04260 | 319.81389 | 5.58627 | 0.2435686 | 2.3353387 | 116 | 3 | 1999–2006 | 0.59 | M-v | 1 | MPC | 41600 | 2000 $CU_{55}$ |
| 2000 $CC_{56}$ | 16.3 | 0.15 | 20060922 | 320.43330 | 132.84178 | 324.95957 | 4.54331 | 0.1872225 | 2.3827076 | 61 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 37317 | 2000 $CC_{56}$ |
| 2000 $CE_{56}$ | 16.3 | 0.15 | 20060922 | 328.79610 | 134.70798 | 323.22251 | 1.63794 | 0.1923916 | 2.3618956 | 83 | 6 | 1993–2006 | 0.65 | M-v | 1 | MPC | 04130 | 2000 $CE_{56}$ |
| 2000 $CC_{57}$ | 16.6 | 0.15 | 20060922 | 277.91208 | 240.76966 | 267.12040 | 2.88670 | 0.1443879 | 2.3852603 | 37 | 3 | 2000–2006 | 0.59 | M-v | 2 | MPC | 74724 | 2000 $CC_{57}$ |
| 2000 $CU_{59}$ | 15.0 | 0.15 | 20060922 | 121.99621 | 306.36733 | 147.78294 | 12.96907 | 0.0789836 | 3.0646911 | 32 | 3 | 1995–2003 | 0.64 | M-v | 3 | MPC | 53644 | 2000 $CU_{59}$ |
| 2000 $CL_{64}$ | 16.1 | 0.15 | 20060922 | 213.58140 | 56.85961 | 104.41005 | 3.05926 | 0.0923760 | 2.5168896 | 85 | 6 | 1992–2006 | 0.60 | M-v | 3 | MPC | 66108 | 2000 $CL_{64}$ |
| 2000 $CR_{64}$ | 16.2 | 0.15 | 20060922 | 292.02222 | 105.00407 | 58.94034 | 2.77900 | 0.0945509 | 2.3187602 | 85 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87370 | 2000 $CR_{64}$ |
| 2000 $CG_{65}$ | 15.0 | 0.15 | 20060922 | 89.97609 | 289.87512 | 5.61307 | 2.22218 | 0.1050167 | 2.5179391 | 220 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 66108 | 2000 $CG_{65}$ |
| 2000 $CJ_{65}$ | 15.8 | 0.15 | 20060922 | 219.03024 | 128.85941 | 344.55616 | 2.87630 | 0.0818858 | 2.6399569 | 53 | 4 | 2000–2005 | 0.58 | M-v | 1 | MPC | 74724 | 2000 $CJ_{65}$ |
| 2000 $CX_{65}$ | 15.8 | 0.15 | 20060922 | 127.30284 | 62.52399 | 156.08218 | 5.76594 | 0.1528118 | 2.6481583 | 86 | 5 | 1992–2006 | 0.68 | M-v | 1 | MPC | 04130 | 2000 $CX_{65}$ |
| 2000 $CU_{66}$ | 15.2 | 0.15 | 20060922 | 133.67704 | 330.32911 | 240.77024 | 11.02047 | 0.1041566 | 2.6267470 | 102 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 04130 | 2000 $CU_{66}$ |
| 2000 $CR_{67}$ | 17.4 | 0.15 | 20060922 | 0.30357 | 192.44384 | 217.46015 | 0.74420 | 0.1760496 | 2.3658555 | 40 | 4 | 2000–2006 | 0.45 | M-v | 0 | MPC | 62272 | 2000 $CR_{67}$ |
| 2000 $CX_{67}$ | 16.7 | 0.15 | 20060922 | 216.25158 | 50.81184 | 158.92439 | 1.42558 | 0.1250769 | 2.4102505 | 96 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 90020 | 2000 $CX_{67}$ |
| 2000 $CY_{67}$ | 17.8 | 0.15 | 20060922 | 297.75562 | 258.32699 | 231.11714 | 0.64376 | 0.1337158 | 2.3709430 | 23 | 4 | 1993–2006 | 0.34 | M-v | 2 | MPC | 73986 | 2000 $CY_{67}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $CF_{68}$ | 17.2 | 0.15 | 20060922 | 214.21522 | 31.20826 | 177.42806 | 0.93869 | 0.1173585 | 2.4168438 | 49 | 5 | 2000–2006 | 0.42 | M-v | 0 | MPC | 87370 | 2000 $CF_{68}$ |
| 2000 $CO_{68}$ | 17.7 | 0.15 | 20060922 | 259.68998 | 36.56394 | 142.98451 | 1.57157 | 0.1289225 | 2.3703479 | 62 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 66108 | 2000 $CO_{68}$ |
| 2000 $CU_{68}$ | 15.8 | 0.15 | 20060922 | 159.89341 | 83.28103 | 139.72165 | 3.93247 | 0.1416326 | 2.5368662 | 86 | 6 | 2000–2006 | 0.57 | M-v | 0 | MPC | 77438 | 2000 $CU_{68}$ |
| 2000 $CZ_{68}$ | 16.4 | 0.15 | 20060922 | 89.83113 | 345.56977 | 134.39112 | 2.00799 | 0.0466624 | 3.1131773 | 30 | 3 | 2000–2006 | 0.36 | M-v | 3 | MPC | 99936 | 2000 $CZ_{68}$ |
| 2000 $CB_{69}$ | 15.8 | 0.15 | 20060922 | 36.21200 | 319.33507 | 313.47169 | 3.50563 | 0.1054488 | 2.7491870 | 43 | 4 | 2000–2006 | 0.36 | M-v | 1 | MPC | 03170 | 2000 $CB_{69}$ |
| 2000 $CU_{69}$ | 17.0 | 0.15 | 20060922 | 33.86841 | 89.47002 | 313.61931 | 4.29637 | 0.1877472 | 2.3029275 | 52 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 37321 | 2000 $CU_{69}$ |
| 2000 $CU_{73}$ | 16.2 | 0.15 | 20060922 | 68.79459 | 309.13032 | 319.61306 | 12.77421 | 0.1421478 | 2.6702086 | 35 | 4 | 2000–2006 | 0.35 | M-v | 0 | MPC | 04130 | 2000 $CU_{73}$ |
| 2000 $CU_{74}$ | 16.2 | 0.15 | 20060922 | 99.33639 | 344.27331 | 138.18821 | 2.66195 | 0.0308148 | 3.0490667 | 32 | 5 | 1995–2006 | 0.50 | M-v | 0 | MPC | 01994 | 2000 $CU_{74}$ |
| 2000 $CW_{74}$ | 17.6 | 0.15 | 20060922 | 301.64741 | 324.86782 | 138.16996 | 3.14960 | 0.1413258 | 2.4160796 | 40 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 60598 | 2000 $CW_{74}$ |
| 2000 $CY_{74}$ | 16.8 | 0.15 | 20060922 | 359.56609 | 84.89112 | 349.70553 | 2.18467 | 0.1751543 | 2.3245790 | 81 | 6 | 1995–2006 | 0.64 | M-v | 1 | MPC | 87370 | 2000 $CY_{74}$ |
| 2000 $CX_{75}$ | 15.4 | 0.15 | 20060922 | 334.95963 | 332.69414 | 85.30748 | 14.23238 | 0.1417738 | 2.4004273 | 90 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 60598 | 2000 $CX_{75}$ |
| 2000 $CF_{76}$ | 16.3 | 0.15 | 20060922 | 286.75498 | 16.74796 | 184.25107 | 1.54129 | 0.1155832 | 2.2936109 | 86 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 97368 | 2000 $CF_{76}$ |
| 2000 $CR_{76}$ | 16.2 | 0.15 | 20060922 | 245.61764 | 83.19187 | 104.76665 | 2.18669 | 0.1348840 | 2.4196191 | 117 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87370 | 2000 $CR_{76}$ |
| 2000 $CN_{78}$ | 16.7 | 0.15 | 20060922 | 57.55915 | 243.35363 | 126.84693 | 4.97584 | 0.1668375 | 2.3131290 | 68 | 6 | 1994–2006 | 0.51 | M-v | 1 | MPC | 62272 | 2000 $CN_{78}$ |
| 2000 $CW_{78}$ | 15.4 | 0.15 | 20060922 | 177.24185 | 136.72137 | 306.31661 | 4.36479 | 0.1086547 | 2.8777138 | 40 | 4 | 2000–2005 | 0.48 | M-v | 1 | MPC | 57750 | 2000 $CW_{78}$ |
| 2000 $CD_{80}$ | 16.3 | 0.15 | 20060922 | 93.90323 | 23.36017 | 342.09604 | 4.24950 | 0.1276651 | 2.3316072 | 64 | 5 | 1973–2005 | 0.62 | M-v | 2 | MPC | 87370 | 2000 $CD_{80}$ |
| 2000 $CC_{81}$ | 16.6 | 0.15 | 20060922 | 85.87614 | 247.36388 | 147.97532 | 4.51626 | 0.1436024 | 2.2185651 | 63 | 5 | 1992–2005 | 0.58 | M-v | 1 | MPC | 04130 | 2000 $CC_{81}$ |
| 2000 $CJ_{81}$ | 15.7 | 0.15 | 20060922 | 191.34870 | 209.17476 | 322.52159 | 12.06145 | 0.1707123 | 2.5899787 | 83 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 62272 | 2000 $CJ_{81}$ |
| 2000 $CS_{82}$ | 15.6 | 0.15 | 20060922 | 122.27853 | 250.58409 | 329.13273 | 2.71447 | 0.1586352 | 2.6994299 | 47 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 77439 | 2000 $CS_{82}$ |
| 2000 $CM_{84}$ | 16.1 | 0.15 | 20060922 | 351.96278 | 320.43129 | 134.02994 | 2.91486 | 0.1826938 | 2.3212403 | 79 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87370 | 2000 $CM_{84}$ |
| 2000 $CE_{88}$ | 16.3 | 0.15 | 20060922 | 208.73858 | 9.37608 | 145.34099 | 7.56474 | 0.1159069 | 2.5904766 | 82 | 5 | 1996–2006 | 0.60 | M-v | 1 | MPC | 04130 | 2000 $CE_{88}$ |
| 2000 $CK_{89}$ | 15.2 | 0.15 | 20060922 | 333.18947 | 15.56398 | 34.21076 | 4.31843 | 0.0703820 | 2.5289548 | 271 | 6 | 1994–2006 | 0.51 | M-v | 2 | MPC | 04130 | 2000 $CK_{89}$ |
| 2000 $CN_{90}$ | 16.4 | 0.15 | 20060922 | 331.89435 | 153.08623 | 323.10615 | 1.87492 | 0.1480524 | 2.3276974 | 68 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 90020 | 2000 $CN_{90}$ |
| 2000 $CK_{96}$ | 17.0 | 0.15 | 20060922 | 306.64760 | 46.48046 | 96.86916 | 0.54344 | 0.1461359 | 2.3154124 | 34 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 87370 | 2000 $CK_{96}$ |
| 2000 $CL_{97}$ | 16.4 | 0.15 | 20060922 | 28.22547 | 92.56180 | 340.82092 | 5.80799 | 0.1408506 | 2.2896263 | 101 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 87370 | 2000 $CL_{97}$ |
| 2000 $CU_{97}$ | 17.4 | 0.15 | 20060922 | 76.01709 | 261.71005 | 137.24862 | 3.79910 | 0.1882614 | 2.2301130 | 68 | 4 | 1995–2005 | 0.53 | M-v | 1 | MPC | 04130 | 2000 $CU_{97}$ |
| 2000 $CH_{98}$ | 17.3 | 0.15 | 20060922 | 262.67737 | 259.77995 | 250.86367 | 0.56067 | 0.1274220 | 2.4460609 | 44 | 3 | 2000–2006 | 0.42 | M-v | 3 | MPC | 60600 | 2000 $CH_{98}$ |
| 2000 $CO_{98}$ | 17.4 | 0.15 | 20060922 | 0.88975 | 253.88520 | 151.47578 | 3.51252 | 0.1614396 | 2.3920210 | 61 | 6 | 1993–2006 | 0.46 | M-v | 1 | MPC | 73987 | 2000 $CO_{98}$ |
| 2000 $CA_{99}$ | 18.2 | 0.15 | 20060922 | 322.72012 | 315.08461 | 144.60119 | 3.07222 | 0.1454278 | 2.3750676 | 20 | 3 | 2000–2006 | 0.28 | M-v | 2 | MPC | 88702 | 2000 $CA_{99}$ |
| 2000 $CB_{99}$ | 17.3 | 0.15 | 20060922 | 265.48885 | 22.88353 | 143.90231 | 2.31169 | 0.1610190 | 2.3934567 | 27 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 84534 | 2000 $CB_{99}$ |
| 2000 $CD_{101}$ | 16.4 | 0.15 | 20060922 | 342.16267 | 157.68504 | 313.50634 | 3.83836 | 0.0672194 | 2.2902251 | 64 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 97368 | 2000 $CD_{101}$ |
| 2000 $CE_{101}$ | 16.3 | 0.15 | 20060922 | 155.59891 | 89.65846 | 99.41537 | 1.17325 | 0.1183926 | 2.6065585 | 47 | 6 | 1992–2006 | 0.43 | M-v | 1 | MPC | 04130 | 2000 $CE_{101}$ |
| 2000 $CM_{101}$ | 15.8 | 0.15 | 20060922 | 161.28050 | 185.81057 | 348.14936 | 9.71777 | 0.1513682 | 2.7307516 | 82 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 04130 | 2000 $CM_{101}$ |
| 2000 $CE_{102}$ | 16.5 | 0.15 | 20060922 | 227.80823 | 268.53915 | 258.28835 | 5.51189 | 0.1121207 | 2.4875223 | 65 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87371 | 2000 $CE_{102}$ |
| 2000 $CD_{104}$ | 13.1 | 0.15 | 20060922 | 313.96810 | 322.73644 | 169.11531 | 9.02375 | 0.1893637 | 3.9801276 | 86 | 6 | 2000–2006 | 0.54 | M-v | 1 | MPC | 90020 | 2000 $CD_{104}$ |
| 2000 $CN_{105}$ | 4.9 | 0.15 | 20060922 | 107.84272 | 9.83720 | 28.97992 | 3.41192 | 0.0941921 | 44.6466415 | 38 | 5 | 2000–2005 | 0.21 | M-v | 4 | MPC | 77439 | 2000 $CN_{105}$ |
| 2000 $CT_{106}$ | 15.7 | 0.15 | 20060922 | 328.25237 | 32.90290 | 315.34180 | 4.30074 | 0.1612128 | 2.6470779 | 66 | 4 | 2000–2005 | 0.53 | M-v | 1 | MPC | 35513 | 2000 $CT_{106}$ |
| 2000 $CV_{107}$ | 16.5 | 0.15 | 20060922 | 87.34600 | 12.91312 | 313.45842 | 1.22301 | 0.2257560 | 2.3979751 | 43 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 62273 | 2000 $CV_{107}$ |
| 2000 $CY_{108}$ | 16.2 | 0.15 | 20060922 | 252.95369 | 37.10181 | 348.56014 | 1.14034 | 0.0901249 | 2.7922096 | 47 | 6 | 1998–2006 | 0.46 | M-v | 0 | MPC | 77439 | 2000 $CY_{108}$ |
| 2000 $CP_{109}$ | 17.1 | 0.15 | 20060922 | 7.34244 | 64.39212 | 308.01521 | 5.90594 | 0.1275095 | 2.4822093 | 15 | 3 | 2000–2004 | 0.34 | M-v | 4 | MPC | 46394 | 2000 $CP_{109}$ |
| 2000 $CV_{109}$ | 17.1 | 0.15 | 20060922 | 53.68652 | 97.70963 | 260.57702 | 0.39030 | 0.2012104 | 2.3916887 | 53 | 4 | 2000–2006 | 0.46 | M-v | 2 | MPC | 62274 | 2000 $CV_{109}$ |
| 2000 $CR_{111}$ | 16.8 | 0.15 | 20060922 | 343.45939 | 63.38724 | 35.45648 | 2.83002 | 0.1816566 | 2.3287262 | 45 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 73987 | 2000 $CR_{111}$ |
| 2000 $CV_{111}$ | 15.7 | 0.15 | 20060922 | 330.76075 | 75.92908 | 81.22332 | 9.42729 | 0.2374280 | 2.3026775 | 103 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87371 | 2000 $CV_{111}$ |
| 2000 $CE_{113}$ | 15.2 | 0.15 | 20060922 | 195.80234 | 297.43641 | 127.47056 | 8.66542 | 0.2199308 | 2.7897569 | 44 | 3 | 2000–2005 | 0.54 | M-v | 2 | MPC | 74728 | 2000 $CE_{113}$ |
| 2000 $CW_{113}$ | 16.7 | 0.15 | 20060922 | 270.80074 | 189.00428 | 307.90247 | 1.92871 | 0.1312665 | 2.4078384 | 80 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 60601 | 2000 $CW_{113}$ |
| 2000 $CO_{117}$ | 15.2 | 0.15 | 20060922 | 163.96002 | 274.84533 | 133.57605 | 3.11736 | 0.0822023 | 3.0344085 | 56 | 5 | 2000–2006 | 0.69 | M-v | 1 | MPC | 01994 | 2000 $CO_{117}$ |
| 2000 $CC_{118}$ | 16.6 | 0.15 | 20060922 | 224.96154 | 12.89093 | 130.45409 | 4.07372 | 0.0903253 | 2.5181620 | 44 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 62274 | 2000 $CC_{118}$ |
| 2000 $CG_{118}$ | 16.6 | 0.15 | 20060922 | 342.75771 | 150.21982 | 338.27898 | 4.25055 | 0.0901912 | 2.2729626 | 59 | 6 | 1998–2006 | 0.50 | M-v | 1 | MPC | 90020 | 2000 $CG_{118}$ |
| 2000 $CO_{118}$ | 16.5 | 0.15 | 20060922 | 6.93256 | 207.71621 | 144.03139 | 7.33324 | 0.1772197 | 2.5465681 | 73 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 04131 | 2000 $CO_{118}$ |
| 2000 $CT_{119}$ | 16.8 | 0.15 | 20060922 | 9.88059 | 230.50595 | 140.65102 | 6.41062 | 0.2049619 | 2.4430550 | 63 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 38248 | 2000 $CT_{119}$ |
| 2000 $CC_{120}$ | 16.7 | 0.15 | 20060922 | 166.57328 | 54.23802 | 148.40826 | 5.92544 | 0.1423607 | 2.5800368 | 33 | 4 | 1993–2006 | 0.32 | M-v | 3 | MPC | 88702 | 2000 $CC_{120}$ |
| 2000 $CO_{120}$ | 16.8 | 0.15 | 20060922 | 264.99580 | 119.98078 | 317.92965 | 2.71843 | 0.1390966 | 2.5537013 | 61 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 87371 | 2000 $CO_{120}$ |
| 2000 $CV_{120}$ | 13.0 | 0.15 | 20060922 | 266.36978 | 304.07807 | 110.05417 | 3.12898 | 0.0469697 | 5.1983906 | 36 | 5 | 1997–2006 | 0.33 | M-v | 0 | MPC | 04131 | 2000 $CV_{120}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $CX_{120}$ | 16.6 | 0.15 | 20060922 | 20.80344 | 69.70634 | 320.41979 | 2.72169 | 0.1254279 | 2.3624575 | 79 | 5 | 1991–2006 | 0.46 | M-v | 1 | MPC | 66109 | 2000 $CX_{120}$ |
| 2000 $CB_{135}$ | 17.4 | 0.15 | 20060922 | 200.73860 | 183.38497 | 321.16324 | 3.52443 | 0.0241047 | 2.6173571 | 25 | 3 | 2000–2006 | 0.29 | M-v | 3 | MPC | 74730 | 2000 $CB_{135}$ |
| 2000 $CY_{136}$ | 16.9 | 0.15 | 20060922 | 6.39525 | 243.67048 | 148.24110 | 2.91220 | 0.1864570 | 2.4383003 | 38 | 4 | 2000–2006 | 0.34 | M-v | 1 | MPC | 62274 | 2000 $CY_{136}$ |
| 2000 $CA_{137}$ | 17.7 | 0.15 | 20060922 | 277.05108 | 24.44575 | 125.07081 | 4.16247 | 0.1510824 | 2.3677656 | 73 | 6 | 1995–2006 | 0.51 | M-v | 0 | MPC | 68644 | 2000 $CA_{137}$ |
| 2000 $CB_{137}$ | 17.0 | 0.15 | 20060922 | 294.65033 | 350.68442 | 124.74245 | 6.57776 | 0.1842531 | 2.3870698 | 34 | 4 | 1991–2006 | 0.50 | M-v | 1 | MPC | 04131 | 2000 $CB_{137}$ |
| 2000 $CM_{138}$ | 17.1 | 0.15 | 20060922 | 232.80018 | 83.83228 | 115.45714 | 1.69433 | 0.1509751 | 2.3843607 | 66 | 6 | 1993–2006 | 0.56 | M-v | 1 | MPC | 04131 | 2000 $CM_{138}$ |
| 2000 $CE_{139}$ | 15.7 | 0.15 | 20060922 | 80.05735 | 143.36696 | 189.84871 | 1.98291 | 0.1990037 | 2.4662605 | 54 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 97369 | 2000 $CE_{139}$ |
| 2000 $CE_{140}$ | 16.4 | 0.15 | 20060922 | 104.41945 | 274.74856 | 308.44722 | 2.54414 | 0.1352869 | 2.6995691 | 26 | 3 | 2000–2006 | 0.22 | M-v | 3 | MPC | 04131 | 2000 $CE_{140}$ |
| 2000 $CR_{142}$ | 17.0 | 0.15 | 20060922 | 337.06203 | 36.96945 | 316.82192 | 4.44840 | 0.2137651 | 2.5885862 | 28 | 3 | 2000–2004 | 0.50 | M-v | 3 | MPC | 93803 | 2000 $CR_{142}$ |
| 2000 $CA_{144}$ | 17.2 | 0.15 | 20060922 | 51.31950 | 261.45735 | 123.93363 | 6.82590 | 0.1746474 | 2.2892224 | 52 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 77440 | 2000 $CA_{144}$ |
| 2000 $DU_{1}$ | 17.4 | 0.15 | 20060922 | 346.49710 | 253.46262 | 151.78902 | 3.03753 | 0.1699451 | 2.4323289 | 42 | 3 | 2000–2006 | 0.30 | M-v | 3 | MPC | 47854 | 2000 $DU_{1}$ |
| 2000 $DG_{2}$ | 15.9 | 0.15 | 20060922 | 158.52345 | 0.76636 | 174.62713 | 13.27281 | 0.0627418 | 2.7613999 | 56 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 04131 | 2000 $DG_{2}$ |
| 2000 $DU_{2}$ | 17.1 | 0.15 | 20060922 | 2.12365 | 289.31058 | 151.78898 | 2.94341 | 0.1657675 | 2.3101888 | 37 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 84536 | 2000 $DU_{2}$ |
| 2000 $DB_{4}$ | 16.3 | 0.15 | 20060922 | 243.01132 | 105.77406 | 105.53253 | 5.61647 | 0.1457361 | 2.3633359 | 65 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 66109 | 2000 $DB_{4}$ |
| 2000 $DT_{4}$ | 16.4 | 0.15 | 20060922 | 222.24134 | 149.86552 | 62.00962 | 4.85770 | 0.1758033 | 2.4227107 | 93 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87371 | 2000 $DT_{4}$ |
| 2000 $DU_{4}$ | 16.1 | 0.15 | 20060922 | 240.10644 | 78.75194 | 55.27365 | 4.78081 | 0.1484115 | 2.5284247 | 59 | 4 | 1996–2006 | 0.50 | M-v | 3 | MPC | 04131 | 2000 $DU_{4}$ |
| 2000 $DF_{5}$ | 16.6 | 0.15 | 20060922 | 219.88207 | 140.66873 | 71.50610 | 3.31894 | 0.1462702 | 2.4239076 | 87 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 04131 | 2000 $DF_{5}$ |
| 2000 $DW_{8}$ | 16.5 | 0.15 | 20060922 | 152.48632 | 227.04719 | 317.99127 | 3.94600 | 0.0854265 | 2.6640367 | 24 | 4 | 1997–2006 | 0.37 | M-v | 1 | MPC | 03170 | 2000 $DW_{8}$ |
| 2000 $DC_{9}$ | 16.0 | 0.15 | 20060922 | 80.42453 | 95.77790 | 151.35757 | 7.77268 | 0.1679891 | 2.7442558 | 84 | 3 | 2000–2006 | 0.61 | M-v | 3 | MPC | 04131 | 2000 $DC_{9}$ |
| 2000 $DN_{9}$ | 17.4 | 0.15 | 20060922 | 353.68479 | 247.67544 | 167.71258 | 1.16094 | 0.1766084 | 2.3899168 | 58 | 5 | 1991–2006 | 0.38 | M-v | 0 | MPC | 62275 | 2000 $DN_{9}$ |
| 2000 $DM_{10}$ | 16.8 | 0.15 | 20060922 | 31.70122 | 346.09470 | 297.47617 | 0.99268 | 0.0419331 | 2.7275817 | 40 | 7 | 1996–2006 | 0.35 | M-v | 0 | MPC | 01994 | 2000 $DM_{10}$ |
| 2000 $DT_{10}$ | 16.6 | 0.15 | 20060922 | 289.79531 | 234.48893 | 149.77051 | 2.78020 | 0.0992417 | 2.6896457 | 19 | 3 | 2000–2005 | 0.25 | M-v | 4 | MPC | 34894 | 2000 $DT_{10}$ |
| 2000 $DX_{10}$ | 16.4 | 0.15 | 20060922 | 97.22028 | 351.31530 | 131.87778 | 0.96847 | 0.1338199 | 3.0814612 | 43 | 5 | 1995–2006 | 0.44 | M-v | 0 | MPC | 01994 | 2000 $DX_{10}$ |
| 2000 $DA_{11}$ | 16.3 | 0.15 | 20060922 | 195.54538 | 164.02824 | 338.30735 | 2.79376 | 0.0957197 | 2.6464528 | 81 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 77440 | 2000 $DA_{11}$ |
| 2000 $DF_{11}$ | 18.2 | 0.15 | 20060922 | 302.81586 | 66.29346 | 331.39321 | 19.35689 | 0.0675194 | 1.8798799 | 17 | 3 | 2000–2004 | 0.56 | M-v | 2 | MPC | 19514 | 2000 $DF_{11}$ |
| 2000 $DR_{11}$ | 16.4 | 0.15 | 20060922 | 205.58351 | 353.62269 | 173.31338 | 4.42796 | 0.1178488 | 2.6157570 | 57 | 4 | 1996–2006 | 0.62 | M-v | 3 | MPC | 60606 | 2000 $DR_{11}$ |
| 2000 $DC_{12}$ | 17.1 | 0.15 | 20060922 | 319.30935 | 326.06582 | 171.26014 | 5.07920 | 0.1083000 | 2.3680491 | 39 | 6 | 1993–2006 | 0.52 | M-v | 1 | MPC | 87372 | 2000 $DC_{12}$ |
| 2000 $DL_{12}$ | 17.2 | 0.15 | 20060922 | 297.52313 | 108.05311 | 21.56133 | 1.34767 | 0.1278587 | 2.4375239 | 34 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 66110 | 2000 $DL_{12}$ |
| 2000 $DY_{12}$ | 17.1 | 0.15 | 20060922 | 218.11658 | 12.31229 | 164.43419 | 4.69562 | 0.0746638 | 2.5594988 | 44 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 87372 | 2000 $DY_{12}$ |
| 2000 $DA_{13}$ | 16.5 | 0.15 | 20060922 | 116.02617 | 178.65977 | 177.97074 | 26.33182 | 0.2107828 | 2.3631449 | 47 | 2 | 2000–2005 | 0.54 | M-v | 3 | MPC | 88702 | 2000 $DA_{13}$ |
| 2000 $DP_{13}$ | 16.8 | 0.15 | 20060922 | 224.53008 | 180.59113 | 331.45298 | 6.64627 | 0.0606194 | 2.5542744 | 42 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 87372 | 2000 $DP_{13}$ |
| 2000 $DK_{14}$ | 15.6 | 0.15 | 20060922 | 26.38711 | 196.77394 | 18.22887 | 0.38214 | 0.2028951 | 3.1469588 | 88 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 04131 | 2000 $DK_{14}$ |
| 2000 $DO_{14}$ | 16.3 | 0.15 | 20060922 | 290.29511 | 96.61542 | 123.02455 | 5.74014 | 0.2300255 | 2.2723266 | 92 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 90021 | 2000 $DO_{14}$ |
| 2000 $DP_{14}$ | 15.9 | 0.15 | 20060922 | 155.54774 | 205.94793 | 359.91163 | 12.05111 | 0.1371825 | 2.6336188 | 62 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 60606 | 2000 $DP_{14}$ |
| 2000 $DF_{16}$ | 16.2 | 0.15 | 20060922 | 303.43928 | 137.10760 | 35.80351 | 7.35151 | 0.1301467 | 2.3365521 | 79 | 2 | 2000–2005 | 0.52 | M-v | 3 | MPC | 88703 | 2000 $DF_{16}$ |
| 2000 $DW_{16}$ | 16.0 | 0.15 | 20060922 | 313.79550 | 70.00384 | 338.30688 | 28.75044 | 0.1276515 | 2.5577736 | 64 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 04131 | 2000 $DW_{16}$ |
| 2000 $DR_{17}$ | 15.5 | 0.15 | 20060922 | 50.36509 | 71.86652 | 343.67368 | 23.53807 | 0.1921137 | 2.2924079 | 101 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97369 | 2000 $DR_{17}$ |
| 2000 $DP_{18}$ | 16.1 | 0.15 | 20060922 | 156.54800 | 225.65724 | 349.44883 | 5.31862 | 0.1296417 | 2.5845490 | 51 | 5 | 1996–2006 | 0.41 | M-v | 1 | MPC | 62275 | 2000 $DP_{18}$ |
| 2000 $DR_{20}$ | 15.5 | 0.15 | 20060922 | 86.33578 | 68.09829 | 156.33835 | 12.71850 | 0.1278686 | 2.7780699 | 53 | 3 | 2000–2006 | 0.66 | M-v | 3 | MPC | 04131 | 2000 $DR_{20}$ |
| 2000 $DU_{21}$ | 15.7 | 0.15 | 20060922 | 39.53446 | 22.36845 | 156.87307 | 15.68784 | 0.2140327 | 3.1677457 | 50 | 3 | 2000–2006 | 0.63 | M-v | 3 | MPC | 99938 | 2000 $DU_{21}$ |
| 2000 $DO_{24}$ | 15.7 | 0.15 | 20060922 | 152.53034 | 215.85934 | 333.31683 | 11.03351 | 0.1333023 | 2.6647073 | 49 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 04131 | 2000 $DO_{24}$ |
| 2000 $DE_{25}$ | 15.1 | 0.15 | 20060922 | 92.26878 | 70.74931 | 168.44940 | 5.19046 | 0.1063051 | 2.7095173 | 122 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 04131 | 2000 $DE_{25}$ |
| 2000 $DX_{25}$ | 15.6 | 0.15 | 20060922 | 27.51051 | 41.21999 | 2.00429 | 1.91600 | 0.2108100 | 2.3301142 | 127 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 90021 | 2000 $DX_{25}$ |
| 2000 $DK_{26}$ | 15.6 | 0.15 | 20060922 | 225.18814 | 302.39158 | 330.43093 | 8.57266 | 0.1458592 | 2.2680578 | 121 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 20751 | 2000 $DK_{26}$ |
| 2000 $DO_{26}$ | 15.9 | 0.15 | 20060922 | 67.50437 | 199.21025 | 326.99492 | 1.22378 | 0.2258917 | 3.0813939 | 45 | 3 | 2000–2006 | 0.42 | M-v | 2 | MPC | 01995 | 2000 $DO_{26}$ |
| 2000 $DS_{26}$ | 16.4 | 0.15 | 20060922 | 351.99667 | 310.36398 | 146.58025 | 4.05041 | 0.0851113 | 2.3291871 | 64 | 6 | 1997–2006 | 0.50 | M-v | 1 | MPC | 77441 | 2000 $DS_{26}$ |
| 2000 $DC_{27}$ | 14.5 | 0.15 | 20060922 | 313.23222 | 242.09244 | 249.22370 | 1.76575 | 0.1497230 | 3.9623908 | 28 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 99938 | 2000 $DC_{27}$ |
| 2000 $DG_{27}$ | 15.0 | 0.15 | 20060922 | 114.11487 | 308.89110 | 160.95638 | 9.57265 | 0.1117765 | 3.0656572 | 48 | 6 | 1995–2006 | 0.52 | M-v | 0 | MPC | 01995 | 2000 $DG_{27}$ |
| 2000 $DE_{28}$ | 16.4 | 0.15 | 20060922 | 161.56422 | 52.16861 | 145.55429 | 2.48307 | 0.0663279 | 2.6057759 | 57 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87372 | 2000 $DE_{28}$ |
| 2000 $DY_{29}$ | 17.1 | 0.15 | 20060922 | 298.55831 | 309.52797 | 187.76536 | 0.99210 | 0.1168757 | 2.3764239 | 63 | 5 | 1993–2006 | 0.50 | M-v | 0 | MPC | 66110 | 2000 $DY_{29}$ |
| 2000 $DB_{30}$ | 16.9 | 0.15 | 20060922 | 307.43107 | 280.88026 | 159.99711 | 9.60683 | 0.2860990 | 2.4316542 | 67 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 04131 | 2000 $DB_{30}$ |
| 2000 $DF_{30}$ | 17.2 | 0.15 | 20060922 | 33.29803 | 240.17790 | 251.12452 | 1.54227 | 0.0474780 | 2.1829327 | 88 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 93804 | 2000 $DF_{30}$ |
| 2000 $DM_{30}$ | 15.7 | 0.15 | 20060922 | 213.61412 | 315.14992 | 319.52646 | 6.23082 | 0.2083338 | 2.3114864 | 109 | 3 | 2000–2004 | 0.61 | M-v | 2 | MPC | 23515 | 2000 $DM_{30}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $DJ_{31}$ | 16.9 | 0.15 | 20060922 | 266.68311 | 10.22958 | 158.14626 | 1.33888 | 0.1269202 | 2.3911875 | 39 | 6 | 1998–2006 | 0.50 | M-v | 1 | MPC | 87372 | 2000 $DJ_{31}$ |
| 2000 $DM_{37}$ | 16.4 | 0.15 | 20060922 | 147.48025 | 82.36947 | 134.40915 | 3.56174 | 0.1236017 | 2.6229948 | 42 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87372 | 2000 $DM_{37}$ |
| 2000 $DK_{38}$ | 16.8 | 0.15 | 20060922 | 154.39407 | 55.37254 | 161.66385 | 5.08925 | 0.0882988 | 2.5911191 | 40 | 5 | 1992–2006 | 0.49 | M-v | 1 | MPC | 62276 | 2000 $DK_{38}$ |
| 2000 $DJ_{40}$ | 15.2 | 0.15 | 20060922 | 213.14093 | 317.20767 | 327.86763 | 7.50365 | 0.2284570 | 2.2985565 | 107 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97369 | 2000 $DJ_{40}$ |
| 2000 $DP_{40}$ | 15.2 | 0.15 | 20060922 | 231.39865 | 275.88933 | 166.79636 | 5.67778 | 0.0770879 | 2.7237396 | 52 | 3 | 2000–2005 | 0.67 | M-v | 3 | MPC | 38250 | 2000 $DP_{40}$ |
| 2000 $DJ_{41}$ | 16.5 | 0.15 | 20060922 | 206.07473 | 201.19866 | 333.65069 | 3.48030 | 0.1832797 | 2.5579435 | 91 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 62276 | 2000 $DJ_{41}$ |
| 2000 $DP_{41}$ | 16.4 | 0.15 | 20060922 | 295.00198 | 346.61491 | 151.17607 | 5.61938 | 0.1700467 | 2.3850928 | 100 | 4 | 2000–2006 | 0.69 | M-v | 1 | MPC | 60609 | 2000 $DP_{41}$ |
| 2000 $DQ_{41}$ | 16.1 | 0.15 | 20060922 | 282.42270 | 68.38779 | 342.06209 | 8.54356 | 0.0767752 | 2.6570769 | 65 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 04131 | 2000 $DQ_{41}$ |
| 2000 $DR_{42}$ | 16.2 | 0.15 | 20060922 | 127.55431 | 225.13954 | 348.09731 | 6.22861 | 0.1700146 | 2.7134951 | 50 | 4 | 1997–2006 | 0.59 | M-v | 1 | MPC | 87372 | 2000 $DR_{42}$ |
| 2000 $DB_{43}$ | 15.8 | 0.15 | 20060922 | 262.38337 | 176.38588 | 346.97004 | 6.31890 | 0.0799430 | 2.4215002 | 81 | 3 | 2000–2004 | 0.60 | M-v | 3 | MPC | 60610 | 2000 $DB_{43}$ |
| 2000 $DF_{44}$ | 14.7 | 0.15 | 20060922 | 115.84136 | 312.18946 | 157.38124 | 16.63127 | 0.0781458 | 3.0991092 | 53 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 01995 | 2000 $DF_{44}$ |
| 2000 $DN_{45}$ | 15.8 | 0.15 | 20060922 | 135.47046 | 269.80969 | 313.57655 | 3.53278 | 0.1130771 | 2.6460680 | 92 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 62276 | 2000 $DN_{45}$ |
| 2000 $DB_{47}$ | 16.9 | 0.15 | 20060922 | 263.62759 | 262.64852 | 305.25161 | 1.57400 | 0.1640873 | 2.3425313 | 48 | 7 | 1993–2006 | 0.53 | M-v | 1 | MPC | 87372 | 2000 $DB_{47}$ |
| 2000 $DK_{47}$ | 16.4 | 0.15 | 20060922 | 55.64986 | 292.17467 | 325.81572 | 2.71205 | 0.0498785 | 2.7833895 | 36 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 04131 | 2000 $DK_{47}$ |
| 2000 $DL_{47}$ | 17.7 | 0.15 | 20060922 | 222.33832 | 206.81476 | 323.66144 | 0.59306 | 0.1267317 | 2.5191664 | 49 | 3 | 2000–2006 | 0.46 | M-v | 4 | MPC | 60611 | 2000 $DL_{47}$ |
| 2000 $DP_{47}$ | 16.4 | 0.15 | 20060922 | 267.88898 | 317.28746 | 190.45835 | 0.88227 | 0.1283397 | 2.4428326 | 136 | 6 | 1996–2006 | 0.47 | M-v | 1 | MPC | 87373 | 2000 $DP_{47}$ |
| 2000 $DV_{47}$ | 17.1 | 0.15 | 20060922 | 207.91935 | 19.12791 | 157.42858 | 8.36749 | 0.1154352 | 2.5456819 | 46 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 62276 | 2000 $DV_{47}$ |
| 2000 $DU_{48}$ | 16.6 | 0.15 | 20060922 | 148.37542 | 235.64622 | 312.82873 | 1.48942 | 0.0235012 | 2.6734423 | 46 | 5 | 2000–2006 | 0.42 | M-v | 0 | MPC | 04132 | 2000 $DU_{48}$ |
| 2000 $DD_{49}$ | 17.2 | 0.15 | 20060922 | 240.49528 | 344.20475 | 161.37853 | 2.46946 | 0.1461350 | 2.5141070 | 36 | 5 | 1994–2006 | 0.57 | M-v | 3 | MPC | 84539 | 2000 $DD_{49}$ |
| 2000 $DU_{49}$ | 16.0 | 0.15 | 20060922 | 193.44302 | 355.93046 | 165.59020 | 14.56036 | 0.0427494 | 2.6163604 | 22 | 3 | 2000–2006 | 0.33 | M-v | 3 | MPC | 74736 | 2000 $DU_{49}$ |
| 2000 $DG_{50}$ | 16.0 | 0.15 | 20060922 | 105.49203 | 328.21304 | 158.68797 | 10.55710 | 0.0795479 | 3.0732842 | 59 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 99939 | 2000 $DG_{50}$ |
| 2000 $DQ_{50}$ | 17.2 | 0.15 | 20060922 | 216.69246 | 46.60117 | 174.06365 | 2.36124 | 0.1648116 | 2.4336387 | 59 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 01995 | 2000 $DQ_{50}$ |
| 2000 $DO_{51}$ | 16.4 | 0.15 | 20060922 | 212.31642 | 30.00021 | 144.55021 | 4.68777 | 0.2038993 | 2.5445523 | 108 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87373 | 2000 $DO_{51}$ |
| 2000 $DZ_{51}$ | 16.8 | 0.15 | 20060922 | 258.00477 | 27.41340 | 147.62101 | 2.49812 | 0.1370523 | 2.4162589 | 55 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 87373 | 2000 $DZ_{51}$ |
| 2000 $DB_{52}$ | 16.1 | 0.15 | 20060922 | 301.31607 | 339.40329 | 153.83293 | 5.60490 | 0.1794671 | 2.3821955 | 45 | 4 | 1993–2006 | 0.55 | M-v | 1 | MPC | 66110 | 2000 $DB_{52}$ |
| 2000 $DE_{54}$ | 15.3 | 0.15 | 20060922 | 293.34927 | 70.31958 | 324.50233 | 5.18494 | 0.0396708 | 2.7060142 | 72 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 62276 | 2000 $DE_{54}$ |
| 2000 $DF_{54}$ | 15.4 | 0.15 | 20060922 | 342.46118 | 169.43417 | 166.97104 | 13.41553 | 0.0756496 | 2.7544094 | 65 | 4 | 2000–2006 | 0.75 | M-v | 2 | MPC | 04132 | 2000 $DF_{54}$ |
| 2000 $DW_{54}$ | 16.2 | 0.15 | 20060922 | 176.43189 | 236.95579 | 345.72474 | 4.25495 | 0.1075554 | 2.5275573 | 63 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 87373 | 2000 $DW_{54}$ |
| 2000 $DG_{55}$ | 15.9 | 0.15 | 20060922 | 228.10797 | 310.37639 | 349.48498 | 6.36516 | 0.2227533 | 2.2326875 | 96 | 3 | 2000–2003 | 0.56 | M-v | 3 | MPC | 23515 | 2000 $DG_{55}$ |
| 2000 $DR_{55}$ | 17.1 | 0.15 | 20060922 | 262.26910 | 120.73205 | 346.23531 | 8.10904 | 0.1944030 | 2.5366107 | 58 | 5 | 1996–2006 | 0.53 | M-v | 2 | MPC | 04132 | 2000 $DR_{55}$ |
| 2000 $DT_{56}$ | 15.6 | 0.15 | 20060922 | 84.49252 | 137.29028 | 162.49767 | 12.38205 | 0.1707079 | 2.5892697 | 43 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87373 | 2000 $DT_{56}$ |
| 2000 $DZ_{56}$ | 16.0 | 0.15 | 20060922 | 256.00142 | 308.07929 | 182.14742 | 2.49023 | 0.0875017 | 2.5232707 | 135 | 6 | 1992–2006 | 0.54 | M-v | 2 | MPC | 04132 | 2000 $DZ_{56}$ |
| 2000 $DR_{57}$ | 16.1 | 0.15 | 20060922 | 210.86631 | 357.12804 | 177.53940 | 5.96923 | 0.0819906 | 2.5462386 | 52 | 4 | 2000–2006 | 0.45 | M-v | 2 | MPC | 60615 | 2000 $DR_{57}$ |
| 2000 $DU_{57}$ | 15.6 | 0.15 | 20060922 | 149.49749 | 18.02690 | 168.85153 | 13.54813 | 0.0936583 | 2.7084207 | 41 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 04132 | 2000 $DU_{57}$ |
| 2000 $DN_{59}$ | 16.9 | 0.15 | 20060922 | 351.17598 | 179.48712 | 295.92123 | 0.81421 | 0.1584593 | 2.3018800 | 54 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87373 | 2000 $DN_{59}$ |
| 2000 $DC_{60}$ | 16.7 | 0.15 | 20060922 | 281.62274 | 359.40404 | 161.01911 | 1.25877 | 0.1286616 | 2.3883570 | 43 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87373 | 2000 $DC_{60}$ |
| 2000 $DF_{60}$ | 16.3 | 0.15 | 20060922 | 198.56394 | 334.02368 | 156.18367 | 5.22110 | 0.1088474 | 2.6994338 | 25 | 3 | 1998–2005 | 0.50 | M-v | 3 | MPC | 88705 | 2000 $DF_{60}$ |
| 2000 $DQ_{60}$ | 16.5 | 0.15 | 20060922 | 306.86024 | 106.84500 | 58.13877 | 1.31806 | 0.1522971 | 2.3181097 | 46 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 01995 | 2000 $DQ_{60}$ |
| 2000 $DA_{61}$ | 16.1 | 0.15 | 20060922 | 49.78663 | 142.49703 | 39.64887 | 1.69061 | 0.1362889 | 3.1404339 | 57 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 99939 | 2000 $DA_{61}$ |
| 2000 $DB_{61}$ | 16.4 | 0.15 | 20060922 | 274.81522 | 25.79795 | 136.65290 | 2.89850 | 0.1434450 | 2.4012660 | 53 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87373 | 2000 $DB_{61}$ |
| 2000 $DM_{61}$ | 15.6 | 0.15 | 20060922 | 247.58095 | 156.91594 | 345.46421 | 11.87246 | 0.0794476 | 2.5227936 | 99 | 6 | 1992–2006 | 0.54 | M-v | 2 | MPC | 62277 | 2000 $DM_{61}$ |
| 2000 $DV_{61}$ | 15.9 | 0.15 | 20060922 | 243.57877 | 241.22708 | 356.02958 | 4.32227 | 0.0928433 | 2.3230354 | 54 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 90021 | 2000 $DV_{61}$ |
| 2000 $DG_{64}$ | 16.7 | 0.15 | 20060922 | 313.10168 | 275.18126 | 232.33238 | 1.74227 | 0.1057527 | 2.3414712 | 58 | 6 | 1993–2006 | 0.59 | M-v | 1 | MPC | 90021 | 2000 $DG_{64}$ |
| 2000 $DK_{64}$ | 16.8 | 0.15 | 20060922 | 300.26415 | 321.68277 | 217.89893 | 1.83850 | 0.1008277 | 2.3110569 | 41 | 4 | 2000–2005 | 0.51 | M-v | 2 | MPC | 88705 | 2000 $DK_{64}$ |
| 2000 $DN_{64}$ | 16.3 | 0.15 | 20060922 | 359.90228 | 137.97095 | 332.13819 | 3.71225 | 0.1885781 | 2.2886290 | 118 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 97369 | 2000 $DN_{64}$ |
| 2000 $DR_{64}$ | 17.1 | 0.15 | 20060922 | 294.11907 | 260.29894 | 297.20795 | 1.49654 | 0.1384471 | 2.2954582 | 28 | 2 | 2000–2005 | 0.53 | M-v | 5 | MPC | 88705 | 2000 $DR_{64}$ |
| 2000 $DK_{65}$ | 16.3 | 0.15 | 20060922 | 221.18837 | 193.93338 | 13.00983 | 2.15115 | 0.1443909 | 2.4484091 | 104 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 87373 | 2000 $DK_{65}$ |
| 2000 $DM_{66}$ | 17.3 | 0.15 | 20060922 | 348.34195 | 82.99415 | 346.87792 | 3.09642 | 0.2412866 | 2.3769066 | 54 | 4 | 2000–2006 | 0.62 | M-v | 0 | MPC | 50462 | 2000 $DM_{66}$ |
| 2000 $DR_{67}$ | 15.2 | 0.15 | 20060922 | 7.71887 | 247.90016 | 337.22961 | 3.84334 | 0.1201514 | 3.1795005 | 39 | 4 | 1997–2006 | 0.38 | M-v | 1 | MPC | 99940 | 2000 $DR_{67}$ |
| 2000 $DH_{70}$ | 16.0 | 0.15 | 20060922 | 317.38481 | 19.80752 | 159.08469 | 5.89605 | 0.0440651 | 2.2728434 | 75 | 5 | 2000–2005 | 0.66 | M-v | 1 | MPC | 90021 | 2000 $DH_{70}$ |
| 2000 $DL_{70}$ | 16.6 | 0.15 | 20060922 | 229.49109 | 54.14197 | 147.44500 | 2.50864 | 0.1276091 | 2.4474074 | 83 | 6 | 1996–2006 | 0.63 | M-v | 1 | MPC | 87373 | 2000 $DL_{70}$ |
| 2000 $DP_{70}$ | 16.8 | 0.15 | 20060922 | 217.79858 | 224.93645 | 352.38551 | 2.08505 | 0.1469219 | 2.4485225 | 84 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04132 | 2000 $DP_{70}$ |
| 2000 $DV_{71}$ | 16.7 | 0.15 | 20060922 | 6.05654 | 107.46805 | 352.20647 | 1.81540 | 0.1798957 | 2.3023833 | 109 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87373 | 2000 $DV_{71}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $DA_{72}$ | 16.6 | 0.15 | 20060922 | 90.44019 | 2.12736 | 141.28817 | 1.55451 | 0.2389751 | 3.0830000 | 32 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 99940 | 2000 $DA_{72}$ |
| 2000 $DW_{72}$ | 16.7 | 0.15 | 20060922 | 305.81760 | 183.43460 | 1.87849 | 4.15288 | 0.0796960 | 2.2917093 | 78 | 7 | 1991–2006 | 0.59 | M-v | 1 | MPC | 90021 | 2000 $DW_{72}$ |
| 2000 $DH_{73}$ | 16.3 | 0.15 | 20060922 | 180.31128 | 354.55460 | 154.20483 | 2.88559 | 0.0823944 | 2.7314335 | 49 | 5 | 2000–2006 | 0.39 | M-v | 0 | MPC | 77444 | 2000 $DH_{73}$ |
| 2000 $DB_{76}$ | 15.2 | 0.15 | 20060922 | 144.92841 | 2.24383 | 162.52596 | 9.11001 | 0.0862186 | 2.7964643 | 88 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 01995 | 2000 $DB_{76}$ |
| 2000 $DF_{76}$ | 15.2 | 0.15 | 20060922 | 136.32453 | 253.01328 | 179.46463 | 4.82519 | 0.1138116 | 3.1889625 | 80 | 6 | 1992–2006 | 0.58 | M-v | 0 | MPC | 04132 | 2000 $DF_{76}$ |
| 2000 $DJ_{76}$ | 15.5 | 0.15 | 20060922 | 347.14032 | 78.60192 | 340.98802 | 9.63811 | 0.2564314 | 2.4129484 | 93 | 3 | 2000–2006 | 0.50 | M-v | 1 | MPC | 41607 | 2000 $DJ_{76}$ |
| 2000 $DO_{76}$ | 16.1 | 0.15 | 20060922 | 188.47965 | 355.20662 | 178.25453 | 7.82740 | 0.1396282 | 2.6295494 | 90 | 4 | 1996–2006 | 0.51 | M-v | 3 | MPC | 04132 | 2000 $DO_{76}$ |
| 2000 $DH_{80}$ | 15.9 | 0.15 | 20060922 | 244.95467 | 176.84095 | 350.46730 | 10.76933 | 0.1780657 | 2.4419582 | 106 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87374 | 2000 $DH_{80}$ |
| 2000 $DS_{83}$ | 15.9 | 0.15 | 20060922 | 332.05893 | 28.25723 | 64.50432 | 5.06135 | 0.0981865 | 2.3782738 | 59 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 66111 | 2000 $DS_{83}$ |
| 2000 $DZ_{85}$ | 16.3 | 0.15 | 20060922 | 285.12807 | 37.33061 | 101.09045 | 7.13508 | 0.0692949 | 2.4059696 | 34 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 68646 | 2000 $DZ_{85}$ |
| 2000 $DL_{86}$ | 16.4 | 0.15 | 20060922 | 295.52211 | 116.96639 | 92.43246 | 4.92775 | 0.1102316 | 2.2485844 | 62 | 4 | 1996–2006 | 0.61 | M-v | 2 | MPC | 97370 | 2000 $DL_{86}$ |
| 2000 $DH_{87}$ | 16.8 | 0.15 | 20060922 | 244.80293 | 105.30144 | 104.06736 | 4.09659 | 0.2359600 | 2.3839822 | 51 | 3 | 2000–2004 | 0.51 | M-v | 3 | MPC | 64713 | 2000 $DH_{87}$ |
| 2000 $DT_{87}$ | 15.9 | 0.15 | 20060922 | 312.11557 | 347.31491 | 107.76079 | 5.87184 | 0.1774638 | 2.4192277 | 70 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 60620 | 2000 $DT_{87}$ |
| 2000 $DB_{88}$ | 15.0 | 0.15 | 20060922 | 0.38318 | 11.87806 | 13.63121 | 2.64275 | 0.0394277 | 2.5142976 | 330 | 7 | 1990–2006 | 0.52 | M-v | 2 | MPC | 04132 | 2000 $DB_{88}$ |
| 2000 $DF_{89}$ | 16.4 | 0.15 | 20060922 | 110.49208 | 328.68858 | 342.16447 | 2.01624 | 0.1554657 | 2.4289142 | 65 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 97370 | 2000 $DF_{89}$ |
| 2000 $DG_{89}$ | 17.0 | 0.15 | 20060922 | 154.58507 | 77.57274 | 146.24762 | 5.81955 | 0.2048327 | 2.5945004 | 37 | 5 | 2000–2006 | 0.30 | M-v | 0 | MPC | 84542 | 2000 $DG_{89}$ |
| 2000 $DA_{90}$ | 16.7 | 0.15 | 20060922 | 244.43596 | 269.15833 | 319.86307 | 6.77709 | 0.0400624 | 2.2858940 | 27 | 4 | 1993–2006 | 0.29 | M-v | 1 | MPC | 26933 | 2000 $DA_{90}$ |
| 2000 $DO_{90}$ | 16.9 | 0.15 | 20060922 | 111.61899 | 350.67263 | 320.82225 | 6.39903 | 0.1343155 | 2.4036266 | 29 | 3 | 2000–2005 | 0.39 | M-v | 2 | MPC | 88706 | 2000 $DO_{90}$ |
| 2000 $DF_{91}$ | 16.0 | 0.15 | 20060922 | 326.57446 | 282.30965 | 327.61043 | 4.10393 | 0.1401015 | 3.1886521 | 28 | 3 | 2000–2006 | 0.35 | M-v | 1 | MPC | 99940 | 2000 $DF_{91}$ |
| 2000 $DR_{91}$ | 16.7 | 0.15 | 20060922 | 199.89058 | 342.95832 | 169.17269 | 2.96607 | 0.0295359 | 2.6440144 | 47 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 04132 | 2000 $DR_{91}$ |
| 2000 $DA_{92}$ | 16.3 | 0.15 | 20060922 | 343.74511 | 231.73275 | 167.17740 | 1.93308 | 0.1058420 | 2.5235286 | 97 | 5 | 1998–2006 | 0.49 | M-v | 3 | MPC | 62278 | 2000 $DA_{92}$ |
| 2000 $DD_{93}$ | 16.6 | 0.15 | 20060922 | 183.37893 | 158.81762 | 4.33952 | 5.35281 | 0.2520908 | 2.6329410 | 55 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 56108 | 2000 $DD_{93}$ |
| 2000 $DP_{94}$ | 17.1 | 0.15 | 20060922 | 304.75823 | 96.49081 | 19.29578 | 2.39596 | 0.1448177 | 2.3957207 | 48 | 4 | 1993–2006 | 0.56 | M-v | 1 | MPC | 62278 | 2000 $DP_{94}$ |
| 2000 $DR_{95}$ | 16.3 | 0.15 | 20060922 | 296.68319 | 136.03553 | 355.11470 | 6.97420 | 0.1511805 | 2.3897633 | 69 | 4 | 1998–2004 | 0.60 | M-v | 1 | MPC | 62278 | 2000 $DR_{95}$ |
| 2000 $DR_{96}$ | 17.1 | 0.15 | 20060922 | 241.24631 | 316.86336 | 175.59969 | 2.55859 | 0.1697967 | 2.5206761 | 101 | 5 | 1998–2006 | 0.49 | M-v | 3 | MPC | 04132 | 2000 $DR_{96}$ |
| 2000 $DA_{97}$ | 14.6 | 0.15 | 20060922 | 215.71484 | 30.35649 | 322.83422 | 21.17019 | 0.0791802 | 3.1260848 | 61 | 3 | 2000–2005 | 0.55 | M-v | 2 | MPC | 73989 | 2000 $DA_{97}$ |
| 2000 $DT_{97}$ | 16.1 | 0.15 | 20060922 | 280.42775 | 43.88197 | 32.81778 | 5.03472 | 0.1695010 | 2.5428680 | 74 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 04132 | 2000 $DT_{97}$ |
| 2000 $DW_{98}$ | 15.6 | 0.15 | 20060922 | 290.72522 | 52.96324 | 356.71516 | 12.38807 | 0.3446693 | 2.5297709 | 64 | 2 | 2000–2004 | 0.54 | M-v | 4 | MPC | 62278 | 2000 $DW_{98}$ |
| 2000 $DC_{99}$ | 16.4 | 0.15 | 20060922 | 270.20367 | 85.07742 | 145.74099 | 6.71462 | 0.1673578 | 2.2761907 | 46 | 4 | 1994–2006 | 0.59 | M-v | 2 | MPC | 20753 | 2000 $DC_{99}$ |
| 2000 $DQ_{99}$ | 16.3 | 0.15 | 20060922 | 294.23620 | 47.80000 | 100.72417 | 4.51619 | 0.1737774 | 2.3693782 | 62 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87374 | 2000 $DQ_{99}$ |
| 2000 $DG_{100}$ | 15.5 | 0.15 | 20060922 | 193.84853 | 24.70476 | 85.96630 | 5.05376 | 0.0555412 | 2.7745307 | 40 | 4 | 1996–2005 | 0.72 | M-v | 1 | MPC | 77444 | 2000 $DG_{100}$ |
| 2000 $DJ_{100}$ | 16.9 | 0.15 | 20060922 | 213.89891 | 58.68512 | 79.00337 | 5.08977 | 0.1882985 | 2.6114916 | 88 | 4 | 1996–2004 | 0.63 | M-v | 2 | MPC | 62278 | 2000 $DJ_{100}$ |
| 2000 $DM_{100}$ | 16.1 | 0.15 | 20060922 | 195.16494 | 100.62938 | 92.02298 | 5.74045 | 0.1807884 | 2.5556772 | 75 | 4 | 2000–2006 | 0.48 | M-v | 2 | MPC | 62279 | 2000 $DM_{100}$ |
| 2000 $DO_{100}$ | 16.8 | 0.15 | 20060922 | 282.31359 | 154.40731 | 47.81652 | 3.75086 | 0.1583354 | 2.3069889 | 55 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 97370 | 2000 $DO_{100}$ |
| 2000 $DG_{101}$ | 16.8 | 0.15 | 20060922 | 283.65084 | 118.11689 | 69.30260 | 3.87973 | 0.1843896 | 2.3346108 | 49 | 4 | 1993–2006 | 0.54 | M-v | 3 | MPC | 87374 | 2000 $DG_{101}$ |
| 2000 $DP_{104}$ | 16.1 | 0.15 | 20060922 | 219.87427 | 158.03703 | 68.40750 | 6.00776 | 0.1459394 | 2.4166365 | 67 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 66111 | 2000 $DP_{104}$ |
| 2000 $DT_{104}$ | 16.4 | 0.15 | 20060922 | 232.86268 | 129.82737 | 23.63554 | 7.42109 | 0.1461868 | 2.5248664 | 33 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 60622 | 2000 $DT_{104}$ |
| 2000 $DY_{104}$ | 16.9 | 0.15 | 20060922 | 326.78799 | 330.23103 | 111.50660 | 7.18425 | 0.0913416 | 2.4432210 | 59 | 6 | 1998–2006 | 0.60 | M-v | 0 | MPC | 77445 | 2000 $DY_{104}$ |
| 2000 $DD_{105}$ | 16.7 | 0.15 | 20060922 | 253.58392 | 335.72548 | 138.51438 | 4.07809 | 0.1490753 | 2.5510620 | 58 | 4 | 1998–2006 | 0.54 | M-v | 1 | MPC | 04132 | 2000 $DD_{105}$ |
| 2000 $DM_{105}$ | 16.1 | 0.15 | 20060922 | 265.76651 | 136.30322 | 40.04856 | 4.65045 | 0.0903454 | 2.3994385 | 65 | 4 | 2000–2004 | 0.69 | M-v | 1 | MPC | 70241 | 2000 $DM_{105}$ |
| 2000 $DF_{106}$ | 16.5 | 0.15 | 20060922 | 299.40913 | 96.43555 | 81.16548 | 4.74053 | 0.1844418 | 2.3200838 | 49 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 90022 | 2000 $DF_{106}$ |
| 2000 $DA_{108}$ | 16.1 | 0.15 | 20060922 | 238.52708 | 88.37954 | 104.41591 | 3.37481 | 0.1277289 | 2.4119323 | 123 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87374 | 2000 $DA_{108}$ |
| 2000 $DW_{108}$ | 16.5 | 0.15 | 20060922 | 286.68518 | 190.34372 | 17.02242 | 4.93243 | 0.0867036 | 2.2639892 | 63 | 4 | 1998–2005 | 0.54 | M-v | 2 | MPC | 88707 | 2000 $DW_{108}$ |
| 2000 $DU_{109}$ | 17.0 | 0.15 | 20060922 | 254.21944 | 56.94480 | 156.06040 | 2.87698 | 0.1513718 | 2.3593590 | 49 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 90022 | 2000 $DU_{109}$ |
| 2000 $DY_{109}$ | 15.8 | 0.15 | 20060922 | 180.57832 | 103.56455 | 94.59737 | 5.45184 | 0.1585010 | 2.5953558 | 48 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 60623 | 2000 $DY_{109}$ |
| 2000 $DA_{110}$ | 15.7 | 0.15 | 20060922 | 147.92159 | 258.33578 | 345.94218 | 11.47268 | 0.2404727 | 2.6137815 | 69 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87374 | 2000 $DA_{110}$ |
| 2000 $DO_{110}$ | 15.3 | 0.15 | 20060922 | 259.27881 | 60.57522 | 346.65542 | 14.55175 | 0.3251237 | 2.6601444 | 77 | 2 | 2000–2004 | 0.57 | M-v | 3 | MPC | 62279 | 2000 $DO_{110}$ |
| 2000 $DN_{112}$ | 17.0 | 0.15 | 20060922 | 263.85693 | 25.48468 | 148.75256 | 0.78890 | 0.2421055 | 2.4159386 | 65 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 64714 | 2000 $DN_{112}$ |
| 2000 $DW_{112}$ | 15.6 | 0.15 | 20060922 | 0.09244 | 59.16681 | 195.38036 | 1.42355 | 0.1393784 | 3.0853439 | 58 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 04132 | 2000 $DW_{112}$ |
| 2000 $DM_{113}$ | 15.5 | 0.15 | 20060922 | 248.46030 | 245.09595 | 145.81814 | 13.47727 | 0.0859343 | 2.8016971 | 32 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 57758 | 2000 $DM_{113}$ |
| 2000 $DP_{114}$ | 17.3 | 0.15 | 20060922 | 248.30710 | 25.89274 | 147.46410 | 1.89432 | 0.1871665 | 2.4251560 | 57 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 66112 | 2000 $DP_{114}$ |
| 2000 $DQ_{114}$ | 16.9 | 0.15 | 20060922 | 173.16810 | 31.32475 | 142.29301 | 2.90766 | 0.0656323 | 2.6203975 | 32 | 5 | 2000–2006 | 0.37 | M-v | 1 | MPC | 04132 | 2000 $DQ_{114}$ |
| 2000 $DL_{116}$ | 15.6 | 0.15 | 20060922 | 166.78329 | 111.64998 | 111.28256 | 3.35141 | 0.0277839 | 2.5237587 | 126 | 5 | 1994–2006 | 0.49 | M-v | 3 | MPC | 62279 | 2000 $DL_{116}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $DZ_{116}$ | 14.9 | 0.15 | 20060922 | 338.14866 | 95.11904 | 169.66561 | 11.12410 | 0.0357459 | 3.0871523 | 45 | 5 | 1995–2006 | 0.57 | M-v | 0 | MPC | 99941 | 2000 $DZ_{116}$ |
| 2000 $DO_{117}$ | 15.9 | 0.15 | 20060922 | 322.83680 | 131.94132 | 164.13861 | 10.42043 | 0.0655623 | 3.0349426 | 29 | 6 | 1992–2006 | 0.34 | M-v | 0 | MPC | 47860 | 2000 $DO_{117}$ |
| 2000 $DT_{117}$ | 16.3 | 0.15 | 20060922 | 265.89901 | 122.12240 | 345.20621 | 2.59727 | 0.0723380 | 2.5629670 | 55 | 3 | 2000–2006 | 0.42 | M-v | 2 | MPC | 60623 | 2000 $DT_{117}$ |
| 2000 $EV_{1}$ | 16.7 | 0.15 | 20060922 | 355.37714 | 244.19982 | 177.84616 | 6.40001 | 0.1160949 | 2.4041238 | 51 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 62279 | 2000 $EV_{1}$ |
| 2000 $EN_{2}$ | 16.7 | 0.15 | 20060922 | 6.35250 | 152.26869 | 268.77418 | 1.52380 | 0.1903809 | 2.3705372 | 59 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 77445 | 2000 $EN_{2}$ |
| 2000 $EV_{2}$ | 17.2 | 0.15 | 20060922 | 320.10013 | 260.93226 | 188.13010 | 2.07032 | 0.2205620 | 2.4180989 | 77 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 88707 | 2000 $EV_{2}$ |
| 2000 $ER_{4}$ | 16.2 | 0.15 | 20060922 | 90.52253 | 91.35716 | 26.83314 | 0.81476 | 0.1180061 | 3.1413436 | 41 | 4 | 2000–2006 | 0.31 | M-v | 0 | MPC | 99942 | 2000 $ER_{4}$ |
| 2000 $ES_{5}$ | 15.4 | 0.15 | 20060922 | 47.31744 | 112.64992 | 149.11139 | 14.59705 | 0.0847179 | 2.7728457 | 41 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 04132 | 2000 $ES_{5}$ |
| 2000 $EW_{5}$ | 14.9 | 0.15 | 20060922 | 322.26960 | 335.54507 | 170.31016 | 2.88686 | 0.1530707 | 3.9759353 | 62 | 6 | 1997–2006 | 0.39 | M-v | 0 | MPC | 97370 | 2000 $EW_{5}$ |
| 2000 $EC_{6}$ | 16.8 | 0.15 | 20060922 | 301.38255 | 134.02915 | 15.15770 | 1.71391 | 0.1334755 | 2.3849168 | 38 | 4 | 1996–2006 | 0.59 | M-v | 1 | MPC | 93807 | 2000 $EC_{6}$ |
| 2000 $EN_{7}$ | 16.3 | 0.15 | 20060922 | 50.59031 | 112.75854 | 174.48627 | 1.60381 | 0.1081651 | 2.7376809 | 50 | 4 | 2000–2006 | 0.43 | M-v | 0 | MPC | 74744 | 2000 $EN_{7}$ |
| 2000 $ET_{7}$ | 16.2 | 0.15 | 20060922 | 348.12293 | 284.11146 | 141.30597 | 5.08439 | 0.1874119 | 2.4004458 | 65 | 6 | 1993–2006 | 0.63 | M-v | 1 | MPC | 62280 | 2000 $ET_{7}$ |
| 2000 $EA_{10}$ | 16.5 | 0.15 | 20060922 | 165.71524 | 250.01681 | 343.15675 | 4.56685 | 0.1170156 | 2.5467081 | 91 | 5 | 1992–2006 | 0.56 | M-v | 1 | MPC | 62280 | 2000 $EA_{10}$ |
| 2000 $EB_{10}$ | 16.5 | 0.15 | 20060922 | 271.59231 | 341.70197 | 186.05243 | 2.37806 | 0.1190732 | 2.4074887 | 71 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 87375 | 2000 $EB_{10}$ |
| 2000 $ED_{10}$ | 16.4 | 0.15 | 20060922 | 211.67663 | 239.82427 | 279.36232 | 1.18398 | 0.0632541 | 2.5987478 | 52 | 6 | 1993–2006 | 0.53 | M-v | 1 | MPC | 62280 | 2000 $ED_{10}$ |
| 2000 $EQ_{10}$ | 14.8 | 0.15 | 20060922 | 12.00360 | 309.70606 | 353.27913 | 12.18497 | 0.1407556 | 2.8455938 | 55 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04133 | 2000 $EQ_{10}$ |
| 2000 $ET_{11}$ | 14.3 | 0.15 | 20060922 | 51.33056 | 325.83083 | 5.22641 | 13.35817 | 0.0421041 | 2.5105819 | 261 | 5 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04133 | 2000 $ET_{11}$ |
| 2000 $EO_{13}$ | 16.3 | 0.15 | 20060922 | 179.80738 | 185.34428 | 3.83827 | 4.99972 | 0.2128550 | 2.6060348 | 71 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 62280 | 2000 $EO_{13}$ |
| 2000 $ES_{13}$ | 16.3 | 0.15 | 20060922 | 236.53791 | 85.59816 | 118.69327 | 3.39386 | 0.1333588 | 2.4090975 | 113 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 87375 | 2000 $ES_{13}$ |
| 2000 $EZ_{13}$ | 16.6 | 0.15 | 20060922 | 40.19227 | 321.07182 | 342.30180 | 52.62188 | 0.1356222 | 1.9078828 | 139 | 2 | 2000–2006 | 0.55 | M-v | 3 | MPC | 03172 | 2000 $EZ_{13}$ |
| 2000 $EF_{15}$ | 15.5 | 0.15 | 20060922 | 105.10776 | 74.81055 | 161.11531 | 11.81684 | 0.1951524 | 2.7883992 | 71 | 4 | 2000–2006 | 0.66 | M-v | 1 | MPC | 87375 | 2000 $EF_{15}$ |
| 2000 $EB_{16}$ | 15.8 | 0.15 | 20060922 | 308.94759 | 36.15926 | 337.56134 | 7.92520 | 0.0503282 | 2.7350826 | 37 | 3 | 2000–2004 | 0.54 | M-v | 3 | MPC | 50463 | 2000 $EB_{16}$ |
| 2000 $EJ_{16}$ | 16.1 | 0.15 | 20060922 | 241.61915 | 44.20511 | 69.30897 | 1.82057 | 0.1238902 | 2.5911378 | 68 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 77445 | 2000 $EJ_{16}$ |
| 2000 $ES_{16}$ | 15.2 | 0.15 | 20060922 | 45.52562 | 311.03300 | 278.47910 | 2.57681 | 0.1652068 | 3.0171075 | 66 | 4 | 2000–2005 | 0.57 | M-v | 0 | MPC | 74745 | 2000 $ES_{16}$ |
| 2000 $EC_{17}$ | 16.7 | 0.15 | 20060922 | 298.28087 | 201.21731 | 336.53202 | 2.08836 | 0.1435453 | 2.3291362 | 66 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 90022 | 2000 $EC_{17}$ |
| 2000 $EX_{17}$ | 16.0 | 0.15 | 20060922 | 296.39931 | 108.74691 | 54.04708 | 6.55311 | 0.1877862 | 2.3418977 | 53 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 66112 | 2000 $EX_{17}$ |
| 2000 $EJ_{18}$ | 15.4 | 0.15 | 20060922 | 191.49290 | 8.32140 | 88.31604 | 10.24899 | 0.1145089 | 2.8101897 | 72 | 5 | 1996–2005 | 0.67 | M-v | 1 | MPC | 77446 | 2000 $EJ_{18}$ |
| 2000 $EA_{22}$ | 16.1 | 0.15 | 20060922 | 284.85481 | 87.14194 | 152.05550 | 23.52848 | 0.1949110 | 2.2635072 | 75 | 2 | 2000–2004 | 0.51 | M-v | 3 | MPC | 70242 | 2000 $EA_{22}$ |
| 2000 $EH_{22}$ | 16.4 | 0.15 | 20060922 | 67.46261 | 87.35521 | 154.65952 | 5.47626 | 0.1182072 | 2.7692262 | 47 | 5 | 1997–2006 | 0.44 | M-v | 0 | MPC | 04133 | 2000 $EH_{22}$ |
| 2000 $EX_{22}$ | 17.1 | 0.15 | 20060922 | 87.31129 | 318.02935 | 333.20824 | 1.63369 | 0.0724824 | 2.5321309 | 63 | 4 | 1998–2006 | 0.32 | M-v | 2 | MPC | 62280 | 2000 $EX_{22}$ |
| 2000 $EK_{23}$ | 16.2 | 0.15 | 20060922 | 162.79906 | 237.43135 | 158.07444 | 1.70922 | 0.2169620 | 3.0948022 | 34 | 4 | 1998–2005 | 0.48 | M-v | 0 | MPC | 53648 | 2000 $EK_{23}$ |
| 2000 $EG_{24}$ | 17.4 | 0.15 | 20060922 | 307.51374 | 258.43662 | 195.32684 | 1.24837 | 0.1804793 | 2.4839777 | 39 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 60626 | 2000 $EG_{24}$ |
| 2000 $ES_{26}$ | 16.3 | 0.15 | 20060922 | 224.94968 | 295.51687 | 179.74659 | 23.46933 | 0.1048282 | 1.9081080 | 131 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 73990 | 2000 $ES_{26}$ |
| 2000 $EF_{27}$ | 14.8 | 0.15 | 20060922 | 220.22360 | 39.83830 | 338.30755 | 9.62521 | 0.0546880 | 3.0908631 | 41 | 4 | 2000–2005 | 0.51 | M-v | 1 | MPC | 46397 | 2000 $EF_{27}$ |
| 2000 $EZ_{27}$ | 15.3 | 0.15 | 20060922 | 111.56357 | 232.14373 | 9.46349 | 11.49324 | 0.1408243 | 2.6702723 | 86 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 56116 | 2000 $EZ_{27}$ |
| 2000 $EG_{29}$ | 16.4 | 0.15 | 20060922 | 24.30078 | 329.21385 | 100.78993 | 5.17222 | 0.1687827 | 2.2769132 | 83 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87375 | 2000 $EG_{29}$ |
| 2000 $ET_{29}$ | 16.5 | 0.15 | 20060922 | 205.00018 | 52.64234 | 119.07555 | 5.31061 | 0.1587622 | 2.5581869 | 76 | 3 | 2000–2004 | 0.55 | M-v | 3 | MPC | 62281 | 2000 $ET_{29}$ |
| 2000 $EU_{29}$ | 15.4 | 0.15 | 20060922 | 145.42552 | 226.02017 | 353.08107 | 11.16024 | 0.1326943 | 2.6182861 | 72 | 6 | 1996–2006 | 0.57 | M-v | 1 | MPC | 04133 | 2000 $EU_{29}$ |
| 2000 $EL_{31}$ | 15.3 | 0.15 | 20060922 | 78.56866 | 163.64269 | 101.13544 | 7.95342 | 0.1125177 | 2.7097821 | 65 | 6 | 2000–2006 | 0.55 | M-v | 1 | MPC | 77446 | 2000 $EL_{31}$ |
| 2000 $EP_{32}$ | 16.7 | 0.15 | 20060922 | 142.51988 | 81.81511 | 119.16333 | 5.21418 | 0.1490235 | 2.6983300 | 39 | 4 | 2000–2005 | 0.51 | M-v | 1 | MPC | 84544 | 2000 $EP_{32}$ |
| 2000 $EF_{33}$ | 16.7 | 0.15 | 20060922 | 341.04665 | 83.45707 | 123.47294 | 4.93718 | 0.0628743 | 2.1652197 | 28 | 3 | 2000–2005 | 0.49 | M-v | 4 | MPC | 40063 | 2000 $EF_{33}$ |
| 2000 $EN_{33}$ | 15.3 | 0.15 | 20060922 | 114.79707 | 63.91236 | 139.49125 | 13.18267 | 0.0895767 | 2.7849289 | 91 | 4 | 1995–2006 | 0.61 | M-v | 3 | MPC | 04133 | 2000 $EN_{33}$ |
| 2000 $EW_{33}$ | 16.3 | 0.15 | 20060922 | 242.54841 | 69.37110 | 121.15088 | 9.39732 | 0.1541070 | 2.4423632 | 55 | 3 | 1992–2004 | 0.64 | M-v | 3 | MPC | 04133 | 2000 $EW_{33}$ |
| 2000 $EO_{35}$ | 16.7 | 0.15 | 20060922 | 266.81032 | 111.12881 | 58.28179 | 2.20592 | 0.1300291 | 2.4061999 | 43 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87375 | 2000 $EO_{35}$ |
| 2000 $EH_{40}$ | 16.6 | 0.15 | 20060922 | 293.25509 | 8.65701 | 172.96199 | 3.82836 | 0.2072395 | 2.3451752 | 79 | 5 | 1991–2006 | 0.65 | M-v | 1 | MPC | 90022 | 2000 $EH_{40}$ |
| 2000 $EA_{41}$ | 15.5 | 0.15 | 20060922 | 295.63804 | 194.73208 | 5.22374 | 5.27032 | 0.1741699 | 2.3135254 | 118 | 6 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97371 | 2000 $EA_{41}$ |
| 2000 $EO_{42}$ | 15.5 | 0.15 | 20060922 | 101.45117 | 40.98737 | 174.23050 | 15.36930 | 0.0845721 | 2.8425120 | 80 | 4 | 2000–2006 | 0.68 | M-v | 1 | MPC | 04133 | 2000 $EO_{42}$ |
| 2000 $ED_{44}$ | 16.4 | 0.15 | 20060922 | 265.22198 | 250.63921 | 325.69302 | 6.41991 | 0.0874591 | 2.3216513 | 48 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90022 | 2000 $ED_{44}$ |
| 2000 $EY_{44}$ | 16.9 | 0.15 | 20060922 | 19.39292 | 153.96525 | 350.83496 | 5.95712 | 0.0836493 | 2.2245691 | 43 | 4 | 2000–2005 | 0.62 | M-v | 2 | MPC | 50464 | 2000 $EY_{44}$ |
| 2000 $EJ_{52}$ | 18.0 | 0.15 | 20060922 | 223.27176 | 175.24194 | 343.29197 | 1.70026 | 0.0734337 | 2.5602486 | 26 | 4 | 2000–2006 | 0.29 | M-v | 2 | MPC | 60629 | 2000 $EJ_{52}$ |
| 2000 $EP_{52}$ | 17.8 | 0.15 | 20060922 | 28.08788 | 197.67547 | 171.60484 | 1.39853 | 0.0933644 | 2.5088388 | 46 | 4 | 1998–2006 | 0.34 | M-v | 2 | MPC | 66113 | 2000 $EP_{52}$ |
| 2000 $EX_{52}$ | 17.2 | 0.15 | 20060922 | 238.35560 | 165.81739 | 340.70705 | 1.12881 | 0.0805619 | 2.5420432 | 56 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 73991 | 2000 $EX_{52}$ |
| 2000 $EO_{53}$ | 16.5 | 0.15 | 20060922 | 336.11650 | 245.63574 | 173.99559 | 2.13407 | 0.1360675 | 2.5226947 | 109 | 4 | 2000–2006 | 0.51 | M-v | 3 | MPC | 62282 | 2000 $EO_{53}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $EZ_{55}$ | 16.8 | 0.15 | 20060922 | 264.88789 | 128.94932 | 343.24019 | 12.06216 | 0.0970082 | 2.5238523 | 59 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 60629 | 2000 $EZ_{55}$ |
| 2000 $EN_{56}$ | 15.8 | 0.15 | 20060922 | 154.58847 | 21.36763 | 169.72579 | 14.75118 | 0.2127076 | 2.7177568 | 62 | 5 | 1997–2006 | 0.64 | M-v | 1 | MPC | 87376 | 2000 $EN_{56}$ |
| 2000 $EX_{58}$ | 16.9 | 0.15 | 20060922 | 168.07691 | 29.03225 | 169.37987 | 9.75353 | 0.1677804 | 2.6090535 | 39 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 87376 | 2000 $EX_{58}$ |
| 2000 $EY_{61}$ | 16.5 | 0.15 | 20060922 | 130.09994 | 257.61496 | 356.99839 | 1.76008 | 0.1385806 | 2.6322309 | 56 | 5 | 1993–2006 | 0.50 | M-v | 1 | MPC | 62282 | 2000 $EY_{61}$ |
| 2000 $EJ_{64}$ | 17.1 | 0.15 | 20060922 | 206.68904 | 30.12064 | 174.16439 | 3.28080 | 0.1314558 | 2.5264747 | 81 | 4 | 1994–2006 | 0.51 | M-v | 3 | MPC | 04133 | 2000 $EJ_{64}$ |
| 2000 $EP_{65}$ | 16.7 | 0.15 | 20060922 | 194.53474 | 181.36627 | 359.46515 | 2.78165 | 0.1272275 | 2.6188021 | 84 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 04133 | 2000 $EP_{65}$ |
| 2000 $ES_{65}$ | 17.6 | 0.15 | 20060922 | 193.61136 | 290.17825 | 178.37864 | 23.01182 | 0.0932154 | 1.9657796 | 49 | 3 | 2000–2004 | 0.50 | M-v | 2 | MPC | 23518 | 2000 $ES_{65}$ |
| 2000 $EX_{66}$ | 15.9 | 0.15 | 20060922 | 134.66392 | 241.61520 | 7.84466 | 12.63954 | 0.1540395 | 2.6449977 | 43 | 3 | 2000–2005 | 0.49 | M-v | 2 | MPC | 84545 | 2000 $EX_{66}$ |
| 2000 $EQ_{67}$ | 17.2 | 0.15 | 20060922 | 265.66249 | 209.27262 | 350.25578 | 0.98508 | 0.1206570 | 2.3831709 | 43 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 90023 | 2000 $EQ_{67}$ |
| 2000 $ES_{72}$ | 17.0 | 0.15 | 20060922 | 243.52095 | 194.22559 | 330.65441 | 2.08637 | 0.1376422 | 2.4589498 | 45 | 3 | 2000–2006 | 0.49 | M-v | 3 | MPC | 60631 | 2000 $ES_{72}$ |
| 2000 $EJ_{73}$ | 15.0 | 0.15 | 20060922 | 315.63047 | 148.20600 | 340.50654 | 1.96532 | 0.1323046 | 3.9710958 | 31 | 3 | 2000–2006 | 0.31 | M-v | 3 | MPC | 93808 | 2000 $EJ_{73}$ |
| 2000 $EQ_{74}$ | 16.7 | 0.15 | 20060922 | 314.33127 | 98.83748 | 339.18493 | 5.55146 | 0.0171002 | 2.4748403 | 32 | 4 | 1994–2006 | 0.49 | M-v | 1 | MPC | 04133 | 2000 $EQ_{74}$ |
| 2000 $EC_{75}$ | 15.5 | 0.15 | 20060922 | 341.07576 | 88.97146 | 347.98998 | 20.39039 | 0.3339081 | 2.3534896 | 98 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 38257 | 2000 $EC_{75}$ |
| 2000 $EC_{79}$ | 15.2 | 0.15 | 20060922 | 333.89041 | 288.57042 | 123.55626 | 6.38552 | 0.0334055 | 2.5197157 | 121 | 6 | 1992–2006 | 0.53 | M-v | 3 | MPC | 62283 | 2000 $EC_{79}$ |
| 2000 $EZ_{81}$ | 16.6 | 0.15 | 20060922 | 123.71093 | 162.25145 | 86.95922 | 5.67431 | 0.1935685 | 2.6561242 | 35 | 5 | 1991–2006 | 0.57 | M-v | 1 | MPC | 62283 | 2000 $EZ_{81}$ |
| 2000 $EU_{82}$ | 15.5 | 0.15 | 20060922 | 251.57320 | 81.11627 | 110.72816 | 7.15843 | 0.1652909 | 2.4117479 | 122 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 66113 | 2000 $EU_{82}$ |
| 2000 $ET_{83}$ | 15.7 | 0.15 | 20060922 | 177.31716 | 189.13936 | 24.26438 | 14.08026 | 0.1759247 | 2.5836345 | 44 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 60632 | 2000 $ET_{83}$ |
| 2000 $ER_{84}$ | 15.9 | 0.15 | 20060922 | 214.85454 | 308.20163 | 218.13977 | 6.20945 | 0.1849072 | 2.5451982 | 99 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 62283 | 2000 $ER_{84}$ |
| 2000 $EH_{89}$ | 15.4 | 0.15 | 20060922 | 104.07232 | 76.87422 | 128.83981 | 9.75189 | 0.0885079 | 2.8117269 | 95 | 4 | 1995–2006 | 0.63 | M-v | 3 | MPC | 04133 | 2000 $EH_{89}$ |
| 2000 $EO_{96}$ | 15.6 | 0.15 | 20060922 | 282.50461 | 103.51160 | 50.83559 | 7.08186 | 0.0876470 | 2.4313223 | 134 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 87377 | 2000 $EO_{96}$ |
| 2000 $EO_{98}$ | 16.6 | 0.15 | 20060922 | 228.44775 | 178.44274 | 321.98486 | 1.97500 | 0.0194482 | 2.5419331 | 51 | 3 | 2000–2006 | 0.40 | M-v | 3 | MPC | 04133 | 2000 $EO_{98}$ |
| 2000 $ES_{98}$ | 16.3 | 0.15 | 20060922 | 86.85116 | 57.02815 | 184.17306 | 3.20351 | 0.1755508 | 2.8011788 | 42 | 3 | 2000–2006 | 0.39 | M-v | 2 | MPC | 04133 | 2000 $ES_{98}$ |
| 2000 $ER_{99}$ | 16.0 | 0.15 | 20060922 | 10.13677 | 30.64005 | 350.28640 | 14.02468 | 0.1281421 | 2.5140500 | 60 | 4 | 2000–2006 | 0.52 | M-v | 3 | MPC | 60633 | 2000 $ER_{99}$ |
| 2000 $EZ_{99}$ | 17.5 | 0.15 | 20060922 | 13.82504 | 123.53472 | 358.24634 | 3.36613 | 0.0716155 | 2.2619503 | 34 | 2 | 2000–2005 | 0.59 | M-v | 5 | MPC | 88710 | 2000 $EZ_{99}$ |
| 2000 $EV_{100}$ | 15.8 | 0.15 | 20060922 | 90.94171 | 8.53083 | 2.53011 | 5.28465 | 0.2070258 | 2.3676855 | 154 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97371 | 2000 $EV_{100}$ |
| 2000 $EB_{101}$ | 15.9 | 0.15 | 20060922 | 44.89427 | 332.56294 | 8.28413 | 9.21317 | 0.1942443 | 2.6261701 | 50 | 5 | 1993–2006 | 0.57 | M-v | 1 | MPC | 73991 | 2000 $EB_{101}$ |
| 2000 $EJ_{101}$ | 17.1 | 0.15 | 20060922 | 195.39952 | 176.92054 | 27.70274 | 14.29241 | 0.1867384 | 2.5899024 | 50 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 60633 | 2000 $EJ_{101}$ |
| 2000 $ET_{101}$ | 17.3 | 0.15 | 20060922 | 282.06465 | 348.76706 | 194.06415 | 3.25178 | 0.0653502 | 2.3563299 | 42 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 04133 | 2000 $ET_{101}$ |
| 2000 $EC_{102}$ | 16.8 | 0.15 | 20060922 | 89.93521 | 77.70292 | 183.00075 | 7.85275 | 0.1883389 | 2.7514948 | 41 | 3 | 2000–2006 | 0.37 | M-v | 2 | MPC | 04133 | 2000 $EC_{102}$ |
| 2000 $EM_{104}$ | 15.4 | 0.15 | 20060922 | 198.77255 | 65.62047 | 78.95644 | 12.41400 | 0.2095754 | 2.6801904 | 144 | 4 | 1998–2004 | 0.52 | M-v | 1 | MPC | 62283 | 2000 $EM_{104}$ |
| 2000 $EK_{109}$ | 15.8 | 0.15 | 20060922 | 172.37378 | 211.59709 | 322.87869 | 13.16023 | 0.1116194 | 2.6571532 | 70 | 4 | 2000–2006 | 0.69 | M-v | 1 | MPC | 04133 | 2000 $EK_{109}$ |
| 2000 $EM_{112}$ | 16.4 | 0.15 | 20060922 | 161.73486 | 11.68029 | 195.15189 | 4.57951 | 0.1703384 | 2.6172792 | 42 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 87377 | 2000 $EM_{112}$ |
| 2000 $EO_{114}$ | 16.7 | 0.15 | 20060922 | 254.81484 | 160.34630 | 21.85756 | 2.26818 | 0.1420091 | 2.4152015 | 52 | 6 | 1994–2006 | 0.53 | M-v | 1 | MPC | 87377 | 2000 $EO_{114}$ |
| 2000 $EX_{114}$ | 16.7 | 0.15 | 20060922 | 339.40755 | 119.61337 | 302.34693 | 1.74379 | 0.1891001 | 2.4453201 | 83 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 73992 | 2000 $EX_{114}$ |
| 2000 $EF_{115}$ | 15.8 | 0.15 | 20060922 | 295.17930 | 49.87739 | 329.41276 | 2.05327 | 0.0890426 | 2.7647015 | 81 | 6 | 1995–2005 | 0.57 | M-v | 0 | MPC | 62284 | 2000 $EF_{115}$ |
| 2000 $EG_{115}$ | 15.2 | 0.15 | 20060922 | 65.40069 | 149.72403 | 180.94302 | 3.21831 | 0.1209512 | 2.5362470 | 78 | 4 | 2000–2006 | 0.58 | M-v | 3 | MPC | 60634 | 2000 $EG_{115}$ |
| 2000 $EO_{115}$ | 17.3 | 0.15 | 20060922 | 342.88401 | 129.76250 | 336.87549 | 1.74640 | 0.1327697 | 2.3497670 | 38 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 87377 | 2000 $EO_{115}$ |
| 2000 $ED_{117}$ | 15.4 | 0.15 | 20060922 | 359.20398 | 338.40884 | 0.14599 | 12.63435 | 0.1658179 | 2.7819116 | 58 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 04134 | 2000 $ED_{117}$ |
| 2000 $EN_{118}$ | 15.7 | 0.15 | 20060922 | 246.75520 | 80.39357 | 35.36553 | 9.30760 | 0.1149505 | 2.5571926 | 66 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 87377 | 2000 $EN_{118}$ |
| 2000 $ET_{118}$ | 15.6 | 0.15 | 20060922 | 349.99374 | 92.31405 | 355.58400 | 23.38358 | 0.2949473 | 2.3117524 | 85 | 3 | 2000–2006 | 0.52 | M-v | 1 | MPC | 47868 | 2000 $ET_{118}$ |
| 2000 $EV_{118}$ | 15.6 | 0.15 | 20060922 | 187.61746 | 109.40403 | 23.52275 | 11.92513 | 0.1008859 | 2.7045621 | 31 | 3 | 2000–2005 | 0.58 | M-v | 3 | MPC | 74751 | 2000 $EV_{118}$ |
| 2000 $EE_{119}$ | 16.4 | 0.15 | 20060922 | 211.22579 | 157.36669 | 19.38578 | 12.31595 | 0.2084827 | 2.5362482 | 52 | 4 | 1994–2006 | 0.52 | M-v | 2 | MPC | 60634 | 2000 $EE_{119}$ |
| 2000 $EU_{122}$ | 16.2 | 0.15 | 20060922 | 39.52494 | 298.37378 | 349.31779 | 2.10326 | 0.1563301 | 2.7961361 | 57 | 5 | 1995–2006 | 0.55 | M-v | 0 | MPC | 04134 | 2000 $EU_{122}$ |
| 2000 $EP_{123}$ | 16.8 | 0.15 | 20060922 | 297.31820 | 10.34866 | 129.23796 | 3.15980 | 0.1270722 | 2.3923900 | 46 | 6 | 1995–2005 | 0.48 | M-v | 1 | MPC | 87377 | 2000 $EP_{123}$ |
| 2000 $EA_{124}$ | 16.3 | 0.15 | 20060922 | 251.62814 | 88.39503 | 125.57761 | 3.58584 | 0.1472806 | 2.3675976 | 72 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 64718 | 2000 $EA_{124}$ |
| 2000 $EJ_{124}$ | 14.7 | 0.15 | 20060922 | 0.06689 | 255.94748 | 132.86109 | 3.49524 | 0.0877936 | 2.5245115 | 288 | 5 | 1998–2006 | 0.50 | M-v | 2 | MPC | 04134 | 2000 $EJ_{124}$ |
| 2000 $EY_{125}$ | 15.7 | 0.15 | 20060922 | 177.13141 | 95.83382 | 101.19388 | 3.26010 | 0.1207339 | 2.6116269 | 84 | 4 | 1996–2006 | 0.48 | M-v | 3 | MPC | 66114 | 2000 $EY_{125}$ |
| 2000 $EZ_{125}$ | 15.7 | 0.15 | 20060922 | 248.66237 | 341.70283 | 149.82746 | 10.14090 | 0.1853026 | 2.5395719 | 75 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 62284 | 2000 $EZ_{125}$ |
| 2000 $EN_{126}$ | 16.7 | 0.15 | 20060922 | 209.01480 | 155.20623 | 21.86732 | 5.34457 | 0.1956808 | 2.5658620 | 34 | 3 | 2000–2006 | 0.44 | M-v | 4 | MPC | 60636 | 2000 $EN_{126}$ |
| 2000 $ER_{129}$ | 15.8 | 0.15 | 20060922 | 271.63864 | 66.66881 | 3.92660 | 14.64294 | 0.1140995 | 2.6600711 | 102 | 4 | 2000–2006 | 0.62 | M-v | 0 | MPC | 87377 | 2000 $ER_{129}$ |
| 2000 $ER_{131}$ | 16.8 | 0.15 | 20060922 | 322.93349 | 190.01637 | 4.85662 | 6.47197 | 0.1131138 | 2.2431189 | 52 | 5 | 1998–2005 | 0.73 | M-v | 2 | MPC | 47868 | 2000 $ER_{131}$ |
| 2000 $EU_{131}$ | 16.9 | 0.15 | 20060922 | 275.95795 | 104.48481 | 349.13108 | 1.29901 | 0.0880802 | 2.5734639 | 37 | 5 | 1998–2006 | 0.38 | M-v | 0 | MPC | 04134 | 2000 $EU_{131}$ |
| 2000 $EC_{134}$ | 15.6 | 0.15 | 20060922 | 182.36046 | 189.32535 | 39.28597 | 13.91903 | 0.2016576 | 2.5657274 | 86 | 4 | 1996–2006 | 0.65 | M-v | 3 | MPC | 62285 | 2000 $EC_{134}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $ET_{134}$ | 16.2 | 0.15 | 20060922 | 284.34698 | 194.50678 | 25.71700 | 6.90398 | 0.1246601 | 2.2980452 | 42 | 5 | 2000–2005 | 0.57 | M-v | 1 | MPC | 66114 | 2000 $ET_{134}$ |
| 2000 $EA_{137}$ | 17.3 | 0.15 | 20060922 | 206.05526 | 107.86529 | 15.15454 | 6.47706 | 0.3831557 | 2.6624467 | 59 | 2 | 2000–2003 | 0.54 | M-v | 3 | MPC | 56126 | 2000 $EA_{137}$ |
| 2000 $EM_{137}$ | 15.6 | 0.15 | 20060922 | 304.77847 | 97.22398 | 55.79742 | 9.10148 | 0.1773146 | 2.3775606 | 146 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87377 | 2000 $EM_{137}$ |
| 2000 $EC_{138}$ | 17.1 | 0.15 | 20060922 | 305.27478 | 112.05855 | 5.13818 | 2.08695 | 0.1776356 | 2.4056206 | 51 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 73992 | 2000 $EC_{138}$ |
| 2000 $EG_{138}$ | 15.8 | 0.15 | 20060922 | 56.49184 | 128.57947 | 164.00320 | 14.08632 | 0.1153247 | 2.6842620 | 92 | 5 | 1997–2006 | 0.54 | M-v | 0 | MPC | 04134 | 2000 $EG_{138}$ |
| 2000 $EN_{140}$ | 16.8 | 0.15 | 20060922 | 133.12455 | 284.23806 | 334.41547 | 8.66954 | 0.1492268 | 2.5426644 | 39 | 6 | 1997–2006 | 0.40 | M-v | 1 | MPC | 87378 | 2000 $EN_{140}$ |
| 2000 $EF_{141}$ | 16.5 | 0.15 | 20060922 | 234.57833 | 100.71575 | 342.23073 | 2.93871 | 0.0484355 | 2.7333986 | 31 | 4 | 2000–2005 | 0.51 | M-v | 0 | MPC | 57764 | 2000 $EF_{141}$ |
| 2000 $EM_{143}$ | 16.5 | 0.15 | 20060922 | 4.24245 | 35.95755 | 338.39879 | 3.48937 | 0.1717381 | 2.5210153 | 92 | 4 | 2000–2006 | 0.53 | M-v | 3 | MPC | 04134 | 2000 $EM_{143}$ |
| 2000 $EU_{144}$ | 17.2 | 0.15 | 20060922 | 273.33688 | 311.38142 | 244.80457 | 2.39996 | 0.1514203 | 2.3671005 | 36 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 87378 | 2000 $EU_{144}$ |
| 2000 $EO_{149}$ | 16.8 | 0.15 | 20060922 | 294.95458 | 54.53958 | 49.18721 | 3.24109 | 0.1848146 | 2.4491388 | 87 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 66114 | 2000 $EO_{149}$ |
| 2000 $EB_{153}$ | 16.3 | 0.15 | 20060922 | 260.20831 | 308.49222 | 164.15570 | 12.16160 | 0.2074393 | 2.5478616 | 65 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 04134 | 2000 $EB_{153}$ |
| 2000 $EQ_{153}$ | 16.1 | 0.15 | 20060922 | 145.68274 | 18.85232 | 202.78720 | 8.44533 | 0.1694224 | 2.6693826 | 59 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 60638 | 2000 $EQ_{153}$ |
| 2000 $EH_{154}$ | 16.1 | 0.15 | 20060922 | 189.75247 | 182.06325 | 32.37204 | 12.37825 | 0.2197375 | 2.5554812 | 85 | 5 | 1992–2006 | 0.63 | M-v | 3 | MPC | 62285 | 2000 $EH_{154}$ |
| 2000 $ES_{164}$ | 16.2 | 0.15 | 20060922 | 135.94204 | 325.33132 | 231.51506 | 0.71795 | 0.1426246 | 2.7563329 | 27 | 3 | 2000–2006 | 0.33 | M-v | 4 | MPC | 84547 | 2000 $ES_{164}$ |
| 2000 $EV_{164}$ | 14.7 | 0.15 | 20060922 | 330.49329 | 291.74168 | 357.32582 | 5.85376 | 0.1435113 | 3.0994371 | 59 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 01997 | 2000 $EV_{164}$ |
| 2000 $EX_{164}$ | 16.7 | 0.15 | 20060922 | 176.58359 | 146.64500 | 12.64850 | 1.22857 | 0.1592417 | 2.7093969 | 27 | 4 | 2000–2005 | 0.53 | M-v | 1 | MPC | 84547 | 2000 $EX_{164}$ |
| 2000 $EA_{165}$ | 16.8 | 0.15 | 20060922 | 241.40273 | 138.98734 | 358.58810 | 4.43990 | 0.1808799 | 2.5511007 | 64 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 60638 | 2000 $EA_{165}$ |
| 2000 $EA_{171}$ | 14.2 | 0.15 | 20060922 | 72.49350 | 299.26084 | 29.16453 | 14.44081 | 0.2141939 | 2.5514489 | 90 | 6 | 1999–2006 | 0.57 | M-v | 1 | MPC | 87378 | 2000 $EA_{171}$ |
| 2000 $EH_{172}$ | 15.9 | 0.15 | 20060922 | 137.21100 | 19.75187 | 185.38212 | 5.45178 | 0.0103626 | 2.7380573 | 46 | 3 | 2000–2006 | 0.63 | M-v | 3 | MPC | 04134 | 2000 $EH_{172}$ |
| 2000 $EQ_{174}$ | 15.9 | 0.15 | 20060922 | 146.70464 | 29.19089 | 170.92197 | 12.02219 | 0.0511350 | 2.7051076 | 49 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 04134 | 2000 $EQ_{174}$ |
| 2000 $EC_{178}$ | 16.1 | 0.15 | 20060922 | 145.03822 | 311.48110 | 346.43467 | 3.79642 | 0.1129988 | 2.3667868 | 83 | 3 | 2000–2005 | 0.58 | M-v | 2 | MPC | 97372 | 2000 $EC_{178}$ |
| 2000 $ER_{181}$ | 15.8 | 0.15 | 20060922 | 135.01479 | 177.10515 | 72.28820 | 9.92541 | 0.1190344 | 2.5792485 | 51 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 87378 | 2000 $ER_{181}$ |
| 2000 $EG_{196}$ | 16.8 | 0.15 | 20060922 | 187.70061 | 3.00603 | 183.34552 | 2.63411 | 0.0858730 | 2.6018532 | 37 | 3 | 2000–2006 | 0.37 | M-v | 4 | MPC | 99945 | 2000 $EG_{196}$ |
| 2000 $EH_{196}$ | 16.0 | 0.15 | 20060922 | 82.38054 | 357.99513 | 323.32763 | 3.48339 | 0.0627305 | 2.5224138 | 53 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 62286 | 2000 $EH_{196}$ |
| 2000 $EL_{198}$ | 16.5 | 0.15 | 20060922 | 277.59305 | 308.67223 | 248.88909 | 4.06038 | 0.1734293 | 2.3464412 | 39 | 6 | 1994–2006 | 0.50 | M-v | 1 | MPC | 04134 | 2000 $EL_{198}$ |
| 2000 $EV_{199}$ | 16.0 | 0.15 | 20060922 | 181.31399 | 252.72635 | 268.77369 | 10.35144 | 0.1401113 | 2.6494851 | 33 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 99945 | 2000 $EV_{199}$ |
| 2000 $EZ_{199}$ | 15.9 | 0.15 | 20060922 | 164.06636 | 351.95724 | 191.10735 | 12.08881 | 0.1711078 | 2.6602451 | 35 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 88711 | 2000 $EZ_{199}$ |
| 2000 $EF_{201}$ | 17.3 | 0.15 | 20060922 | 265.04693 | 133.95668 | 69.39691 | 3.17199 | 0.1370243 | 2.3711702 | 42 | 6 | 1996–2006 | 0.57 | M-v | 1 | MPC | 90023 | 2000 $EF_{201}$ |
| 2000 $FB_2$ | 17.9 | 0.15 | 20060922 | 174.95938 | 52.34959 | 188.92682 | 4.54891 | 0.1172966 | 2.5529825 | 22 | 3 | 2000–2006 | 0.27 | M-v | 3 | MPC | 88711 | 2000 $FB_2$ |
| 2000 $FR_2$ | 15.0 | 0.15 | 20060922 | 305.31206 | 88.20745 | 356.16710 | 22.28196 | 0.2819616 | 2.3638257 | 238 | 3 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04134 | 2000 $FR_2$ |
| 2000 $FC_3$ | 16.3 | 0.15 | 20060922 | 121.75217 | 94.82822 | 126.94491 | 24.52590 | 0.0488111 | 1.9179109 | 25 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 60640 | 2000 $FC_3$ |
| 2000 $FC_4$ | 17.0 | 0.15 | 20060922 | 160.22247 | 259.54955 | 303.89105 | 1.79325 | 0.1044807 | 2.6095321 | 29 | 3 | 2000–2006 | 0.26 | M-v | 2 | MPC | 87378 | 2000 $FC_4$ |
| 2000 $FK_4$ | 15.9 | 0.15 | 20060922 | 348.51665 | 152.65233 | 207.67595 | 4.50900 | 0.1749591 | 2.7566099 | 82 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 04134 | 2000 $FK_4$ |
| 2000 $FY_4$ | 17.4 | 0.15 | 20060922 | 347.46079 | 99.91860 | 18.36162 | 2.58598 | 0.1473744 | 2.3480366 | 47 | 5 | 1998–2006 | 0.46 | M-v | 0 | MPC | 97372 | 2000 $FY_4$ |
| 2000 $FC_5$ | 15.6 | 0.15 | 20060922 | 290.66376 | 27.05117 | 18.50435 | 5.81233 | 0.0699779 | 2.7678068 | 94 | 5 | 1993–2006 | 0.67 | M-v | 1 | MPC | 04134 | 2000 $FC_5$ |
| 2000 $FW_5$ | 16.3 | 0.15 | 20060922 | 63.74860 | 212.13595 | 13.26062 | 8.32380 | 0.0265060 | 2.9862287 | 29 | 4 | 2000–2005 | 0.33 | M-v | 0 | MPC | 74756 | 2000 $FW_5$ |
| 2000 $FX_5$ | 16.7 | 0.15 | 20060922 | 251.17124 | 126.36116 | 12.68788 | 13.43773 | 0.2064832 | 2.5484528 | 137 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 60640 | 2000 $FX_5$ |
| 2000 $FS_7$ | 16.4 | 0.15 | 20060922 | 35.72927 | 280.90569 | 32.18872 | 21.31186 | 0.0707662 | 1.9195817 | 57 | 3 | 2000–2006 | 0.65 | M-v | 2 | MPC | 23521 | 2000 $FS_7$ |
| 2000 $FU_7$ | 14.4 | 0.15 | 20060922 | 264.77582 | 34.87733 | 87.00090 | 31.69682 | 0.1687240 | 2.5496169 | 69 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 66115 | 2000 $FU_7$ |
| 2000 $FZ_7$ | 17.3 | 0.15 | 20060922 | 313.49137 | 313.99131 | 178.59152 | 1.88992 | 0.1652261 | 2.3993006 | 52 | 7 | 1995–2006 | 0.67 | M-v | 1 | MPC | 87378 | 2000 $FZ_7$ |
| 2000 $FS_8$ | 15.8 | 0.15 | 20060922 | 203.97825 | 217.90097 | 190.56538 | 11.95558 | 0.1819852 | 3.0797630 | 39 | 4 | 2000–2005 | 0.38 | M-v | 0 | MPC | 53650 | 2000 $FS_8$ |
| 2000 $FZ_8$ | 16.9 | 0.15 | 20060922 | 286.08138 | 352.72026 | 206.09254 | 5.30448 | 0.1539228 | 2.3559959 | 51 | 2 | 2000–2005 | 0.55 | M-v | 4 | MPC | 88711 | 2000 $FZ_8$ |
| 2000 $FN_9$ | 16.4 | 0.15 | 20060922 | 49.50192 | 343.63811 | 12.25825 | 6.24982 | 0.0124780 | 2.5472780 | 46 | 3 | 2000–2006 | 0.55 | M-v | 4 | MPC | 60641 | 2000 $FN_9$ |
| 2000 $FR_9$ | 16.3 | 0.15 | 20060922 | 54.70800 | 136.40066 | 190.48794 | 11.87862 | 0.1314243 | 2.6581017 | 38 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 62286 | 2000 $FR_9$ |
| 2000 $FC_{10}$ | 16.9 | 0.15 | 20060922 | 208.13531 | 340.81988 | 186.58045 | 7.76210 | 0.1437865 | 2.6234332 | 79 | 4 | 1996–2006 | 0.53 | M-v | 2 | MPC | 60641 | 2000 $FC_{10}$ |
| 2000 $FU_{12}$ | 15.2 | 0.15 | 20060922 | 251.41805 | 1.97412 | 112.27281 | 12.94428 | 0.1808331 | 2.5708842 | 103 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 62287 | 2000 $FU_{12}$ |
| 2000 $FX_{12}$ | 15.2 | 0.15 | 20060922 | 208.48217 | 117.56658 | 63.24898 | 14.61109 | 0.1217451 | 2.5577225 | 57 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 62287 | 2000 $FX_{12}$ |
| 2000 $FU_{14}$ | 16.3 | 0.15 | 20060922 | 199.40670 | 136.01253 | 19.31624 | 14.36107 | 0.2149452 | 2.6636778 | 68 | 3 | 2000–2004 | 0.65 | M-v | 3 | MPC | 62287 | 2000 $FU_{14}$ |
| 2000 $FY_{14}$ | 16.2 | 0.15 | 20060922 | 30.53125 | 126.57567 | 176.61495 | 25.31184 | 0.0815571 | 1.9610821 | 45 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 04134 | 2000 $FY_{14}$ |
| 2000 $FK_{15}$ | 15.4 | 0.15 | 20060922 | 352.12979 | 78.10720 | 30.72837 | 21.29496 | 0.0406424 | 2.3889014 | 40 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 90024 | 2000 $FK_{15}$ |
| 2000 $FL_{16}$ | 16.0 | 0.15 | 20060922 | 262.89928 | 339.62407 | 148.43820 | 8.38275 | 0.1302595 | 2.5267286 | 121 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 62287 | 2000 $FL_{16}$ |
| 2000 $FT_{18}$ | 16.3 | 0.15 | 20060922 | 301.38811 | 80.69213 | 109.82838 | 6.82349 | 0.0710377 | 2.3132362 | 65 | 6 | 1993–2006 | 0.62 | M-v | 1 | MPC | 97372 | 2000 $FT_{18}$ |
| 2000 $FZ_{18}$ | 16.0 | 0.15 | 20060922 | 185.39326 | 50.58880 | 126.11691 | 10.97826 | 0.0967789 | 2.6660758 | 77 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 87378 | 2000 $FZ_{18}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $FB_{20}$ | 15.4 | 0.15 | 20060922 | 163.89688 | 158.66845 | 48.07668 | 13.80041 | 0.1144728 | 2.6433550 | 44 | 4 | 1996–2006 | 0.71 | M-v | 3 | MPC | 97372 | 2000 $FB_{20}$ |
| 2000 $FC_{21}$ | 15.9 | 0.15 | 20060922 | 196.11080 | 143.92948 | 55.21994 | 11.33177 | 0.1181160 | 2.5638503 | 71 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 64720 | 2000 $FC_{21}$ |
| 2000 $FN_{21}$ | 16.2 | 0.15 | 20060922 | 341.33228 | 14.57469 | 104.41393 | 6.21774 | 0.1149074 | 2.3539251 | 64 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87379 | 2000 $FN_{21}$ |
| 2000 $FU_{22}$ | 17.0 | 0.15 | 20060922 | 322.07871 | 43.33869 | 58.50049 | 2.92428 | 0.1818646 | 2.4365715 | 78 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 66115 | 2000 $FU_{22}$ |
| 2000 $FA_{24}$ | 15.7 | 0.15 | 20060922 | 193.92047 | 93.31548 | 105.53897 | 12.86313 | 0.1114618 | 2.5935839 | 58 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 60642 | 2000 $FA_{24}$ |
| 2000 $FD_{25}$ | 15.3 | 0.15 | 20060922 | 252.45284 | 96.37520 | 179.85187 | 20.77528 | 0.1573842 | 2.2773728 | 88 | 4 | 2000–2004 | 0.58 | M-v | 1 | MPC | 70242 | 2000 $FD_{25}$ |
| 2000 $FU_{25}$ | 16.2 | 0.15 | 20060922 | 197.06416 | 102.07799 | 79.97382 | 3.01565 | 0.0635295 | 2.6261859 | 77 | 4 | 1996–2006 | 0.53 | M-v | 3 | MPC | 60642 | 2000 $FU_{25}$ |
| 2000 $FS_{27}$ | 15.5 | 0.15 | 20060922 | 114.68353 | 25.72475 | 190.66474 | 14.32130 | 0.0564775 | 2.7979122 | 58 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 04134 | 2000 $FS_{27}$ |
| 2000 $FA_{28}$ | 16.8 | 0.15 | 20060922 | 327.19118 | 250.06887 | 242.44100 | 1.51299 | 0.1476387 | 2.3643042 | 61 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 87379 | 2000 $FA_{28}$ |
| 2000 $FB_{28}$ | 16.3 | 0.15 | 20060922 | 241.01650 | 191.02972 | 317.03335 | 3.05006 | 0.0895002 | 2.5788134 | 88 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 60643 | 2000 $FB_{28}$ |
| 2000 $FE_{28}$ | 15.6 | 0.15 | 20060922 | 179.72383 | 308.80718 | 203.59513 | 4.76441 | 0.1080040 | 2.7667555 | 76 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87379 | 2000 $FE_{28}$ |
| 2000 $FV_{31}$ | 15.3 | 0.15 | 20060922 | 137.70196 | 138.24268 | 88.80127 | 9.08071 | 0.2311640 | 2.6990859 | 52 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 77452 | 2000 $FV_{31}$ |
| 2000 $FF_{33}$ | 16.2 | 0.15 | 20060922 | 145.71489 | 79.91334 | 136.31109 | 5.36022 | 0.1424789 | 2.7029442 | 64 | 5 | 1994–2006 | 0.65 | M-v | 1 | MPC | 62288 | 2000 $FF_{33}$ |
| 2000 $FG_{33}$ | 16.8 | 0.15 | 20060922 | 178.29873 | 71.87072 | 151.10191 | 5.61405 | 0.2004605 | 2.5891708 | 63 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 87379 | 2000 $FG_{33}$ |
| 2000 $FT_{33}$ | 16.4 | 0.15 | 20060922 | 227.17924 | 159.86098 | 51.50247 | 2.81910 | 0.1249299 | 2.4538639 | 72 | 6 | 1994–2006 | 0.56 | M-v | 1 | MPC | 87379 | 2000 $FT_{33}$ |
| 2000 $FJ_{34}$ | 15.4 | 0.15 | 20060922 | 143.87491 | 89.86198 | 116.29887 | 12.70478 | 0.1600973 | 2.7291788 | 58 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87379 | 2000 $FJ_{34}$ |
| 2000 $FK_{34}$ | 15.9 | 0.15 | 20060922 | 253.86992 | 74.31433 | 95.46978 | 10.95028 | 0.1897597 | 2.4668446 | 63 | 3 | 2000–2006 | 0.59 | M-v | 2 | MPC | 66116 | 2000 $FK_{34}$ |
| 2000 $FM_{34}$ | 15.5 | 0.15 | 20060922 | 160.79696 | 113.44851 | 102.44315 | 10.65638 | 0.2270492 | 2.6590559 | 86 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87379 | 2000 $FM_{34}$ |
| 2000 $FS_{36}$ | 16.6 | 0.15 | 20060922 | 248.37341 | 165.32460 | 69.03809 | 2.18260 | 0.1455952 | 2.3678071 | 73 | 5 | 1994–2006 | 0.61 | M-v | 2 | MPC | 93811 | 2000 $FS_{36}$ |
| 2000 $FQ_{37}$ | 16.4 | 0.15 | 20060922 | 230.11713 | 112.20688 | 141.18139 | 5.79928 | 0.1821379 | 2.3845726 | 79 | 6 | 2000–2006 | 0.54 | M-v | 1 | MPC | 97372 | 2000 $FQ_{37}$ |
| 2000 $FC_{38}$ | 16.4 | 0.15 | 20060922 | 159.04364 | 121.69413 | 119.67873 | 4.45588 | 0.2220064 | 2.6229790 | 50 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87379 | 2000 $FC_{38}$ |
| 2000 $FK_{41}$ | 15.4 | 0.15 | 20060922 | 106.30977 | 107.84648 | 172.92760 | 11.18795 | 0.1746882 | 2.6904863 | 118 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 62288 | 2000 $FK_{41}$ |
| 2000 $FH_{43}$ | 15.9 | 0.15 | 20060922 | 287.61940 | 72.07154 | 138.84208 | 6.16004 | 0.0770996 | 2.3017638 | 56 | 5 | 2000–2006 | 0.70 | M-v | 2 | MPC | 50468 | 2000 $FH_{43}$ |
| 2000 $FU_{50}$ | 16.5 | 0.15 | 20060922 | 99.26415 | 62.19940 | 206.50073 | 1.80172 | 0.0670549 | 2.6899709 | 50 | 4 | 1997–2006 | 0.47 | M-v | 0 | MPC | 62288 | 2000 $FU_{50}$ |
| 2000 $FU_{54}$ | 17.0 | 0.15 | 20060922 | 147.63702 | 61.22736 | 197.32469 | 8.62788 | 0.0711644 | 2.5789308 | 27 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 03172 | 2000 $FU_{54}$ |
| 2000 $FB_{55}$ | 15.7 | 0.15 | 20060922 | 164.57381 | 45.07839 | 136.55221 | 12.29687 | 0.1242059 | 2.7444717 | 45 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 77453 | 2000 $FB_{55}$ |
| 2000 $FN_{57}$ | 16.4 | 0.15 | 20060922 | 325.21692 | 22.73885 | 105.56408 | 2.90360 | 0.1683063 | 2.3594439 | 72 | 6 | 1993–2006 | 0.57 | M-v | 1 | MPC | 87379 | 2000 $FN_{57}$ |
| 2000 $FV_{57}$ | 16.4 | 0.15 | 20060922 | 221.97056 | 344.86688 | 148.29244 | 4.61809 | 0.1812960 | 2.6399157 | 60 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04134 | 2000 $FV_{57}$ |
| 2000 $FW_{57}$ | 15.1 | 0.15 | 20060922 | 18.69857 | 63.05955 | 174.35071 | 26.59764 | 0.1594637 | 3.1499908 | 35 | 3 | 1996–2006 | 0.69 | M-v | 2 | MPC | 99945 | 2000 $FW_{57}$ |
| 2000 $FG_{58}$ | 16.3 | 0.15 | 20060922 | 235.19385 | 222.15665 | 41.22578 | 7.77647 | 0.1867841 | 2.3346319 | 42 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 23523 | 2000 $FG_{58}$ |
| 2000 $FW_{60}$ | 15.8 | 0.15 | 20060922 | 153.16186 | 178.68794 | 73.18821 | 13.13743 | 0.1303126 | 2.5811616 | 46 | 6 | 2000–2006 | 0.62 | M-v | 1 | MPC | 87379 | 2000 $FW_{60}$ |
| 2000 $FL_{61}$ | 15.6 | 0.15 | 20060922 | 107.82691 | 182.47053 | 83.38848 | 5.32942 | 0.1144768 | 2.6831846 | 51 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 87379 | 2000 $FL_{61}$ |
| 2000 $FY_{62}$ | 15.5 | 0.15 | 20060922 | 105.60913 | 58.04614 | 210.65539 | 7.63844 | 0.2945171 | 2.7459560 | 44 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 23523 | 2000 $FY_{62}$ |
| 2000 $FO_{63}$ | 15.9 | 0.15 | 20060922 | 143.66381 | 186.01232 | 32.74958 | 12.17048 | 0.1113705 | 2.6873440 | 46 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 88712 | 2000 $FO_{63}$ |
| 2000 $FQ_{64}$ | 16.4 | 0.15 | 20060922 | 273.63133 | 263.64127 | 303.13639 | 4.99649 | 0.1211058 | 2.3613842 | 48 | 6 | 1997–2006 | 0.60 | M-v | 1 | MPC | 97373 | 2000 $FQ_{64}$ |
| 2000 $FA_{65}$ | 16.8 | 0.15 | 20060922 | 83.25241 | 74.19586 | 175.31561 | 3.35547 | 0.1320559 | 2.7921574 | 36 | 6 | 1995–2006 | 0.44 | M-v | 0 | MPC | 77453 | 2000 $FA_{65}$ |
| 2000 $FP_{65}$ | 16.3 | 0.15 | 20060922 | 212.25681 | 215.18839 | 319.37885 | 3.12323 | 0.0904013 | 2.5958848 | 71 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 60646 | 2000 $FP_{65}$ |
| 2000 $FY_{70}$ | 16.3 | 0.15 | 20060922 | 22.42732 | 70.12283 | 294.62592 | 1.15010 | 0.0927325 | 2.6164868 | 63 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 62289 | 2000 $FY_{70}$ |
| 2000 $FA_{71}$ | 16.9 | 0.15 | 20060922 | 194.78273 | 343.55259 | 202.18810 | 3.60827 | 0.0591258 | 2.6173332 | 37 | 4 | 2000–2006 | 0.31 | M-v | 1 | MPC | 60647 | 2000 $FA_{71}$ |
| 2000 $FW_{71}$ | 15.7 | 0.15 | 20060922 | 157.89414 | 123.68228 | 76.88459 | 15.77201 | 0.0918521 | 2.6886183 | 45 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 57769 | 2000 $FW_{71}$ |
| 2000 $FY_{71}$ | 16.4 | 0.15 | 20060922 | 165.95936 | 113.09153 | 97.82766 | 14.04878 | 0.2002250 | 2.6567409 | 33 | 3 | 1995–2004 | 0.64 | M-v | 3 | MPC | 87379 | 2000 $FY_{71}$ |
| 2000 $FE_{73}$ | 16.0 | 0.15 | 20060922 | 208.85948 | 112.06411 | 67.74673 | 7.23939 | 0.1049946 | 2.5725674 | 45 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 62289 | 2000 $FE_{73}$ |
| 2000 GF | 18.1 | 0.15 | 20060922 | 271.39715 | 339.73767 | 176.42911 | 2.10187 | 0.1552647 | 2.4586285 | 34 | 3 | 2000–2006 | 0.38 | M-v | 2 | MPC | 64721 | 2000 GF |
| 2000 $GE_{1}$ | 15.4 | 0.15 | 20060922 | 59.16017 | 129.06747 | 156.91746 | 24.14618 | 0.3357589 | 2.0020649 | 184 | 3 | 2000–2006 | 0.48 | M-v | 1 | MPC | 04134 | 2000 $GE_{1}$ |
| 2000 $GO_{3}$ | 17.7 | 0.15 | 20060922 | 251.33105 | 295.63530 | 204.26698 | 24.87860 | 0.0849245 | 1.8611937 | 56 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 74762 | 2000 $GO_{3}$ |
| 2000 $GH_{4}$ | 16.8 | 0.15 | 20060922 | 176.55259 | 11.16602 | 171.26457 | 21.39378 | 0.0606195 | 1.9116058 | 82 | 5 | 1998–2006 | 0.59 | M-v | 2 | MPC | 04135 | 2000 $GH_{4}$ |
| 2000 $GK_{4}$ | 16.1 | 0.15 | 20060922 | 305.36577 | 98.59282 | 42.04667 | 22.01096 | 0.2656766 | 2.3766923 | 40 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 74762 | 2000 $GK_{4}$ |
| 2000 $GV_{4}$ | 17.1 | 0.15 | 20060922 | 73.03226 | 109.60754 | 201.10628 | 20.40965 | 0.0626764 | 1.8853398 | 52 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 04135 | 2000 $GV_{4}$ |
| 2000 $GM_{6}$ | 16.9 | 0.15 | 20060922 | 316.47112 | 324.08783 | 178.49913 | 3.48515 | 0.1513904 | 2.3694378 | 68 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 93812 | 2000 $GM_{6}$ |
| 2000 $GB_{7}$ | 16.4 | 0.15 | 20060922 | 226.96657 | 324.20250 | 188.30746 | 12.05133 | 0.1944997 | 2.5862186 | 98 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 60648 | 2000 $GB_{7}$ |
| 2000 $GT_{8}$ | 16.4 | 0.15 | 20060922 | 202.31556 | 171.62016 | 12.83573 | 4.48975 | 0.1285644 | 2.5708652 | 83 | 4 | 1996–2006 | 0.42 | M-v | 3 | MPC | 60648 | 2000 $GT_{8}$ |
| 2000 $GK_{11}$ | 16.4 | 0.15 | 20060922 | 312.10175 | 205.66297 | 11.31546 | 9.44196 | 0.1167535 | 2.2340707 | 38 | 3 | 2000–2004 | 0.60 | M-v | 3 | MPC | 17253 | 2000 $GK_{11}$ |
| 2000 $GP_{11}$ | 15.5 | 0.15 | 20060922 | 8.11693 | 84.11171 | 181.06897 | 13.50075 | 0.1746589 | 3.0850353 | 22 | 2 | 2000–2006 | 0.67 | M-v | 4 | MPC | 99946 | 2000 $GP_{11}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $GW_{11}$ | 16.2 | 0.15 | 20060922 | 196.64944 | 350.82139 | 187.23275 | 13.59508 | 0.1823793 | 2.6156103 | 56 | 3 | 2000–2006 | 0.42 | M-v | 3 | MPC | 60648 | 2000 $GW_{11}$ |
| 2000 $GB_{12}$ | 15.2 | 0.15 | 20060922 | 81.79335 | 320.83818 | 199.46226 | 5.07114 | 0.0927412 | 3.1316994 | 54 | 5 | 1995–2006 | 0.59 | M-v | 0 | MPC | 01997 | 2000 $GB_{12}$ |
| 2000 $GT_{12}$ | 15.5 | 0.15 | 20060922 | 91.97247 | 263.74820 | 13.57232 | 11.91271 | 0.1678290 | 2.7055315 | 41 | 4 | 2000–2006 | 0.58 | M-v | 3 | MPC | 04135 | 2000 $GT_{12}$ |
| 2000 $GC_{13}$ | 15.7 | 0.15 | 20060922 | 220.13517 | 162.72964 | 13.31273 | 13.12874 | 0.1284048 | 2.5547022 | 112 | 4 | 2000–2006 | 0.46 | M-v | 2 | MPC | 60649 | 2000 $GC_{13}$ |
| 2000 $GA_{14}$ | 16.7 | 0.15 | 20060922 | 239.70614 | 234.52099 | 25.17897 | 2.56694 | 0.1883051 | 2.3402220 | 51 | 4 | 2000–2005 | 0.60 | M-v | 1 | MPC | 66117 | 2000 $GA_{14}$ |
| 2000 $GH_{14}$ | 17.9 | 0.15 | 20060922 | 317.82133 | 212.95700 | 39.49457 | 3.13959 | 0.2575829 | 2.1942092 | 35 | 2 | 2000–2004 | 0.47 | M-v | 3 | MPC | 68651 | 2000 $GH_{14}$ |
| 2000 $GG_{16}$ | 15.9 | 0.15 | 20060922 | 93.66557 | 262.58174 | 345.95202 | 2.90972 | 0.0632305 | 2.7707608 | 58 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 04135 | 2000 $GG_{16}$ |
| 2000 $GL_{16}$ | 15.2 | 0.15 | 20060922 | 82.62027 | 101.69013 | 198.74590 | 10.91863 | 0.1895847 | 2.6830451 | 84 | 6 | 1983–2006 | 0.49 | M-v | 1 | MPC | 87380 | 2000 $GL_{16}$ |
| 2000 $GN_{17}$ | 16.4 | 0.15 | 20060922 | 302.23394 | 9.30372 | 140.40106 | 1.75321 | 0.1210425 | 2.3932017 | 47 | 5 | 2000–2006 | 0.67 | M-v | 1 | MPC | 87380 | 2000 $GN_{17}$ |
| 2000 $GH_{19}$ | 15.9 | 0.15 | 20060922 | 252.35465 | 228.71044 | 213.95124 | 3.58643 | 0.0443795 | 2.7627323 | 44 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 04135 | 2000 $GH_{19}$ |
| 2000 $GP_{19}$ | 16.4 | 0.15 | 20060922 | 253.19789 | 229.04404 | 244.09258 | 1.02218 | 0.1585650 | 2.6146234 | 96 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 04135 | 2000 $GP_{19}$ |
| 2000 $GU_{20}$ | 16.6 | 0.15 | 20060922 | 340.00541 | 133.08102 | 7.48654 | 7.14659 | 0.0525861 | 2.3371418 | 48 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 90024 | 2000 $GU_{20}$ |
| 2000 $GB_{21}$ | 17.5 | 0.15 | 20060922 | 303.15683 | 217.17414 | 8.62640 | 5.70817 | 0.1674403 | 2.2585655 | 43 | 3 | 2000–2003 | 0.48 | M-v | 3 | MPC | 19587 | 2000 $GB_{21}$ |
| 2000 $GT_{21}$ | 16.2 | 0.15 | 20060922 | 255.38471 | 128.87381 | 22.29253 | 1.60786 | 0.1491736 | 2.5178023 | 158 | 8 | 1992–2006 | 0.52 | M-v | 2 | MPC | 62290 | 2000 $GT_{21}$ |
| 2000 $GK_{24}$ | 15.8 | 0.15 | 20060922 | 194.81614 | 142.23305 | 5.34344 | 6.58584 | 0.1171091 | 2.7278577 | 54 | 3 | 2000–2004 | 0.64 | M-v | 4 | MPC | 62290 | 2000 $GK_{24}$ |
| 2000 $GK_{25}$ | 16.8 | 0.15 | 20060922 | 217.24282 | 280.85997 | 14.04843 | 6.71320 | 0.1314556 | 2.3130286 | 41 | 3 | 2000–2003 | 0.38 | M-v | 3 | MPC | 23524 | 2000 $GK_{25}$ |
| 2000 $GR_{25}$ | 16.5 | 0.15 | 20060922 | 149.79279 | 42.31481 | 200.80202 | 3.42055 | 0.0836328 | 2.6168921 | 58 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 87380 | 2000 $GR_{25}$ |
| 2000 $GP_{26}$ | 17.4 | 0.15 | 20060922 | 270.34314 | 161.33057 | 40.61357 | 2.01021 | 0.1321982 | 2.3768560 | 47 | 2 | 2000–2005 | 0.55 | M-v | 4 | MPC | 88714 | 2000 $GP_{26}$ |
| 2000 $GR_{27}$ | 14.4 | 0.15 | 20060922 | 348.33681 | 94.56513 | 33.27942 | 3.15011 | 0.1469452 | 3.9590138 | 50 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 93812 | 2000 $GR_{27}$ |
| 2000 $GF_{30}$ | 17.5 | 0.15 | 20060922 | 234.39379 | 43.57446 | 208.73609 | 2.15517 | 0.1683524 | 2.3783837 | 39 | 3 | 2000–2005 | 0.56 | M-v | 4 | MPC | 88714 | 2000 $GF_{30}$ |
| 2000 $GM_{30}$ | 15.9 | 0.15 | 20060922 | 267.18641 | 238.45443 | 198.51238 | 2.29642 | 0.0656280 | 2.7370189 | 70 | 5 | 1997–2006 | 0.63 | M-v | 0 | MPC | 04135 | 2000 $GM_{30}$ |
| 2000 $GU_{30}$ | 16.0 | 0.15 | 20060922 | 136.67935 | 199.49267 | 18.75239 | 4.50643 | 0.0952069 | 2.7369708 | 48 | 3 | 2000–2006 | 0.42 | M-v | 3 | MPC | 60651 | 2000 $GU_{30}$ |
| 2000 $GG_{31}$ | 16.0 | 0.15 | 20060922 | 180.25985 | 163.47164 | 36.84660 | 2.73686 | 0.0340342 | 2.6380170 | 101 | 5 | 1993–2006 | 0.51 | M-v | 1 | MPC | 74764 | 2000 $GG_{31}$ |
| 2000 $GT_{31}$ | 16.7 | 0.15 | 20060922 | 202.08371 | 166.20792 | 24.05914 | 7.33178 | 0.1248662 | 2.5959892 | 60 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 68653 | 2000 $GT_{31}$ |
| 2000 $GH_{32}$ | 16.8 | 0.15 | 20060922 | 224.13514 | 233.15294 | 19.07856 | 6.66369 | 0.0818525 | 2.3856698 | 29 | 2 | 2000–2005 | 0.58 | M-v | 4 | MPC | 88714 | 2000 $GH_{32}$ |
| 2000 $GM_{32}$ | 16.6 | 0.15 | 20060922 | 198.91241 | 267.97861 | 21.17726 | 6.55091 | 0.2182879 | 2.4007308 | 48 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 23524 | 2000 $GM_{32}$ |
| 2000 $GG_{34}$ | 17.5 | 0.15 | 20060922 | 230.43119 | 217.78510 | 24.59013 | 1.66343 | 0.1363926 | 2.4029564 | 44 | 2 | 2000–2005 | 0.48 | M-v | 5 | MPC | 88714 | 2000 $GG_{34}$ |
| 2000 $GY_{34}$ | 15.9 | 0.15 | 20060922 | 186.37497 | 185.27633 | 18.87970 | 8.14398 | 0.1332457 | 2.6145278 | 98 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 60651 | 2000 $GY_{34}$ |
| 2000 $GQ_{35}$ | 16.4 | 0.15 | 20060922 | 268.97953 | 225.85824 | 329.71569 | 1.55383 | 0.1358890 | 2.3990432 | 79 | 5 | 2000–2006 | 0.55 | M-v | 2 | MPC | 90025 | 2000 $GQ_{35}$ |
| 2000 $GS_{36}$ | 16.4 | 0.15 | 20060922 | 262.96574 | 99.13175 | 69.56307 | 4.22327 | 0.1333625 | 2.4456225 | 70 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 66117 | 2000 $GS_{36}$ |
| 2000 $GB_{37}$ | 15.9 | 0.15 | 20060922 | 48.05285 | 359.26151 | 30.24274 | 2.84998 | 0.2161742 | 2.4479705 | 82 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 87380 | 2000 $GB_{37}$ |
| 2000 $GM_{37}$ | 16.8 | 0.15 | 20060922 | 332.26886 | 293.25084 | 202.70203 | 6.98439 | 0.0515503 | 2.3760763 | 61 | 3 | 2000–2005 | 0.69 | M-v | 2 | MPC | 97373 | 2000 $GM_{37}$ |
| 2000 $GQ_{37}$ | 16.5 | 0.15 | 20060922 | 214.40327 | 297.25503 | 200.21766 | 1.70768 | 0.1529163 | 2.6882923 | 85 | 5 | 1998–2006 | 0.53 | M-v | 0 | MPC | 04135 | 2000 $GQ_{37}$ |
| 2000 $GS_{37}$ | 17.0 | 0.15 | 20060922 | 208.35849 | 53.56742 | 226.92206 | 0.64492 | 0.1756376 | 2.3871787 | 35 | 4 | 1997–2005 | 0.66 | M-v | 3 | MPC | 93813 | 2000 $GS_{37}$ |
| 2000 $GU_{37}$ | 17.0 | 0.15 | 20060922 | 161.23552 | 22.82604 | 204.64719 | 6.15982 | 0.1184338 | 2.6374633 | 20 | 3 | 2000–2006 | 0.50 | M-v | 4 | MPC | 84550 | 2000 $GU_{37}$ |
| 2000 $GG_{38}$ | 14.9 | 0.15 | 20060922 | 175.36381 | 329.14042 | 152.71639 | 2.43508 | 0.0199573 | 2.9414184 | 67 | 4 | 2000–2005 | 0.46 | M-v | 0 | MPC | 77454 | 2000 $GG_{38}$ |
| 2000 $GS_{39}$ | 17.5 | 0.15 | 20060922 | 314.21012 | 98.24413 | 28.98012 | 2.55701 | 0.1714376 | 2.4136871 | 38 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 50470 | 2000 $GS_{39}$ |
| 2000 $GB_{42}$ | 17.1 | 0.15 | 20060922 | 194.11632 | 9.82438 | 207.80349 | 3.12738 | 0.1756758 | 2.5666588 | 68 | 4 | 1996–2006 | 0.65 | M-v | 3 | MPC | 62291 | 2000 $GB_{42}$ |
| 2000 $GB_{44}$ | 16.8 | 0.15 | 20060922 | 216.24908 | 172.23380 | 31.73805 | 6.13980 | 0.1146899 | 2.5247309 | 64 | 4 | 1996–2006 | 0.46 | M-v | 3 | MPC | 60652 | 2000 $GB_{44}$ |
| 2000 $GD_{44}$ | 17.2 | 0.15 | 20060922 | 288.51017 | 187.15084 | 35.83577 | 2.58479 | 0.1346294 | 2.3003643 | 32 | 3 | 2000–2005 | 0.43 | M-v | 4 | MPC | 88715 | 2000 $GD_{44}$ |
| 2000 $GW_{48}$ | 15.5 | 0.15 | 20060922 | 91.22841 | 338.78234 | 206.89706 | 10.25945 | 0.0085508 | 3.0650137 | 34 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 37473 | 2000 $GW_{48}$ |
| 2000 $GA_{49}$ | 16.9 | 0.15 | 20060922 | 268.64252 | 352.18596 | 208.77286 | 5.51382 | 0.1350726 | 2.3949487 | 41 | 2 | 2000–2005 | 0.35 | M-v | 3 | MPC | 88715 | 2000 $GA_{49}$ |
| 2000 $GB_{49}$ | 16.1 | 0.15 | 20060922 | 300.01549 | 158.46337 | 14.62332 | 2.95176 | 0.1305459 | 2.3699948 | 85 | 7 | 1994–2006 | 0.56 | M-v | 1 | MPC | 90025 | 2000 $GB_{49}$ |
| 2000 $GG_{49}$ | 16.0 | 0.15 | 20060922 | 231.27318 | 33.67659 | 223.74325 | 0.70644 | 0.1565122 | 2.3827191 | 126 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 97374 | 2000 $GG_{49}$ |
| 2000 $GU_{50}$ | 16.5 | 0.15 | 20060922 | 95.09186 | 226.48427 | 29.76101 | 9.87454 | 0.0330548 | 2.7659670 | 37 | 4 | 1997–2006 | 0.41 | M-v | 1 | MPC | 434 | 2000 $GU_{50}$ |
| 2000 $GA_{52}$ | 16.6 | 0.15 | 20060922 | 314.41008 | 130.93242 | 47.15872 | 2.96220 | 0.1513373 | 2.3235008 | 121 | 6 | 1991–2006 | 0.53 | M-v | 1 | MPC | 97374 | 2000 $GA_{52}$ |
| 2000 $GL_{54}$ | 15.6 | 0.15 | 20060922 | 129.77817 | 181.81553 | 32.69397 | 5.38550 | 0.1161900 | 2.7966071 | 67 | 4 | 1997–2006 | 0.53 | M-v | 1 | MPC | 60653 | 2000 $GL_{54}$ |
| 2000 $GY_{56}$ | 14.9 | 0.15 | 20060922 | 197.71408 | 125.33143 | 28.80068 | 14.80546 | 0.1363868 | 2.7231646 | 97 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 62291 | 2000 $GY_{56}$ |
| 2000 $GW_{61}$ | 16.6 | 0.15 | 20060922 | 95.15679 | 101.09877 | 178.31523 | 1.73026 | 0.2114944 | 2.7552059 | 66 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 25776 | 2000 $GW_{61}$ |
| 2000 $GE_{64}$ | 16.8 | 0.15 | 20060922 | 275.14860 | 81.07693 | 81.30939 | 1.85031 | 0.1633983 | 2.4446816 | 46 | 5 | 1992–2006 | 0.51 | M-v | 1 | MPC | 87381 | 2000 $GE_{64}$ |
| 2000 $GQ_{67}$ | 16.1 | 0.15 | 20060922 | 182.75416 | 0.97841 | 183.09294 | 3.28978 | 0.1206402 | 2.7005611 | 64 | 3 | 2000–2006 | 0.56 | M-v | 4 | MPC | 60655 | 2000 $GQ_{67}$ |
| 2000 $GZ_{67}$ | 17.0 | 0.15 | 20060922 | 251.06803 | 61.54185 | 185.60630 | 3.98828 | 0.1893258 | 2.3658008 | 41 | 3 | 2000–2005 | 0.55 | M-v | 3 | MPC | 64723 | 2000 $GZ_{67}$ |
| 2000 $GN_{70}$ | 16.3 | 0.15 | 20060922 | 268.46774 | 72.66064 | 210.11039 | 8.06953 | 0.1854415 | 2.2626486 | 118 | 3 | 2000–2004 | 0.62 | M-v | 3 | MPC | 70242 | 2000 $GN_{70}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $GB_{72}$ | 15.1 | 0.15 | 20060922 | 353.39082 | 214.13943 | 76.93781 | 3.06003 | 0.1372821 | 3.1478587 | 34 | 4 | 2000–2005 | 0.73 | M-v | 1 | MPC | 20768 | 2000 $GB_{72}$ |
| 2000 $GT_{74}$ | 16.5 | 0.15 | 20060922 | 78.76785 | 89.01797 | 189.42696 | 3.47078 | 0.3615515 | 2.8986704 | 86 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 74767 | 2000 $GT_{74}$ |
| 2000 $GY_{75}$ | 15.9 | 0.15 | 20060922 | 214.48433 | 176.78868 | 35.18689 | 5.78468 | 0.1863004 | 2.5394814 | 159 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87381 | 2000 $GY_{75}$ |
| 2000 $GY_{80}$ | 15.9 | 0.15 | 20060922 | 223.81422 | 248.75061 | 40.08870 | 5.31284 | 0.1522838 | 2.3242658 | 71 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 66118 | 2000 $GY_{80}$ |
| 2000 $GX_{81}$ | 16.5 | 0.15 | 20060922 | 122.55677 | 32.79018 | 204.89602 | 20.42605 | 0.0496982 | 1.9146571 | 70 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 22139 | 2000 $GX_{81}$ |
| 2000 $GS_{82}$ | 17.2 | 0.15 | 20060922 | 331.35760 | 27.26182 | 20.39156 | 22.89819 | 0.0669663 | 1.8724572 | 103 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 74768 | 2000 $GS_{82}$ |
| 2000 $GV_{83}$ | 16.2 | 0.15 | 20060922 | 296.84560 | 138.45508 | 55.57684 | 4.94076 | 0.1079107 | 2.3055575 | 63 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 97374 | 2000 $GV_{83}$ |
| 2000 $GW_{83}$ | 16.4 | 0.15 | 20060922 | 193.31302 | 69.94545 | 120.47611 | 5.08489 | 0.1275355 | 2.5893958 | 76 | 5 | 1992–2006 | 0.54 | M-v | 1 | MPC | 84553 | 2000 $GW_{83}$ |
| 2000 $GL_{85}$ | 14.9 | 0.15 | 20060922 | 173.88031 | 182.07614 | 72.03621 | 14.88654 | 0.2298557 | 2.5572928 | 80 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 87381 | 2000 $GL_{85}$ |
| 2000 $GA_{87}$ | 15.6 | 0.15 | 20060922 | 282.09238 | 34.60118 | 128.92156 | 5.73511 | 0.2553437 | 2.4086956 | 124 | 4 | 2000–2006 | 0.64 | M-v | 1 | MPC | 66118 | 2000 $GA_{87}$ |
| 2000 $GV_{89}$ | 15.5 | 0.15 | 20060922 | 234.07318 | 284.60603 | 161.57904 | 11.34596 | 0.1183980 | 2.7958635 | 41 | 4 | 2000–2005 | 0.71 | M-v | 1 | MPC | 66118 | 2000 $GV_{89}$ |
| 2000 $GQ_{90}$ | 15.2 | 0.15 | 20060922 | 120.52047 | 218.06083 | 45.59643 | 13.91565 | 0.1117668 | 2.6830485 | 89 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 60658 | 2000 $GQ_{90}$ |
| 2000 $GR_{90}$ | 15.7 | 0.15 | 20060922 | 180.68338 | 160.15636 | 79.37536 | 5.55601 | 0.2697010 | 2.5808191 | 119 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 04135 | 2000 $GR_{90}$ |
| 2000 $GF_{93}$ | 16.0 | 0.15 | 20060922 | 164.43305 | 95.20059 | 99.00120 | 9.96365 | 0.1133681 | 2.7105626 | 78 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 87381 | 2000 $GF_{93}$ |
| 2000 $GG_{93}$ | 15.5 | 0.15 | 20060922 | 145.14754 | 76.16403 | 151.44434 | 12.12345 | 0.1546163 | 2.6975656 | 123 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87381 | 2000 $GG_{93}$ |
| 2000 $GT_{94}$ | 15.2 | 0.15 | 20060922 | 174.50865 | 179.56118 | 69.81830 | 18.96380 | 0.1495621 | 2.5614364 | 105 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87381 | 2000 $GT_{94}$ |
| 2000 $GT_{97}$ | 17.0 | 0.15 | 20060922 | 238.56662 | 98.51910 | 146.68758 | 4.48378 | 0.1913082 | 2.3821567 | 67 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 90025 | 2000 $GT_{97}$ |
| 2000 $GN_{99}$ | 16.4 | 0.15 | 20060922 | 263.81254 | 336.05369 | 254.71513 | 3.62737 | 0.1331971 | 2.3439203 | 54 | 4 | 1995–2006 | 0.57 | M-v | 2 | MPC | 97374 | 2000 $GN_{99}$ |
| 2000 $GT_{110}$ | 16.6 | 0.15 | 20060922 | 284.46029 | 244.61508 | 333.51191 | 3.44481 | 0.1532455 | 2.3179578 | 46 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 93815 | 2000 $GT_{110}$ |
| 2000 $GK_{111}$ | 16.6 | 0.15 | 20060922 | 197.38059 | 210.68072 | 325.80821 | 4.07053 | 0.2504110 | 2.6265213 | 85 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 87382 | 2000 $GK_{111}$ |
| 2000 $GR_{111}$ | 16.3 | 0.15 | 20060922 | 48.99345 | 67.34046 | 177.08706 | 0.64295 | 0.2439426 | 3.0384633 | 77 | 4 | 2000–2006 | 0.56 | M-v | 0 | MPC | 04135 | 2000 $GR_{111}$ |
| 2000 $GV_{111}$ | 16.4 | 0.15 | 20060922 | 205.50460 | 261.62732 | 308.97915 | 3.98608 | 0.1047452 | 2.5314598 | 69 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87382 | 2000 $GV_{111}$ |
| 2000 $GP_{114}$ | 16.1 | 0.15 | 20060922 | 133.17738 | 55.33327 | 213.07036 | 13.97756 | 0.2746642 | 2.6698586 | 44 | 4 | 2000–2006 | 0.66 | M-v | 1 | MPC | 87382 | 2000 $GP_{114}$ |
| 2000 $GZ_{115}$ | 16.5 | 0.15 | 20060922 | 195.19366 | 45.92053 | 179.27904 | 7.98283 | 0.1878996 | 2.5412961 | 107 | 6 | 1996–2006 | 0.57 | M-v | 1 | MPC | 87382 | 2000 $GZ_{115}$ |
| 2000 $GA_{116}$ | 16.0 | 0.15 | 20060922 | 140.53039 | 223.33080 | 5.75012 | 8.38533 | 0.2230142 | 2.7175101 | 50 | 5 | 1992–2006 | 0.54 | M-v | 1 | MPC | 62293 | 2000 $GA_{116}$ |
| 2000 $GC_{116}$ | 16.2 | 0.15 | 20060922 | 322.90675 | 24.55355 | 92.90828 | 5.93208 | 0.1856493 | 2.3992313 | 63 | 7 | 1991–2006 | 0.60 | M-v | 1 | MPC | 66119 | 2000 $GC_{116}$ |
| 2000 $GC_{117}$ | 17.2 | 0.15 | 20060922 | 251.83951 | 247.48450 | 341.93616 | 1.86897 | 0.1640296 | 2.3520450 | 45 | 3 | 2000–2005 | 0.60 | M-v | 4 | MPC | 90026 | 2000 $GC_{117}$ |
| 2000 $GE_{117}$ | 16.5 | 0.15 | 20060922 | 236.03449 | 318.36513 | 190.38888 | 5.91139 | 0.1158364 | 2.5584070 | 73 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 60662 | 2000 $GE_{117}$ |
| 2000 $GG_{117}$ | 17.6 | 0.15 | 20060922 | 315.30482 | 316.76185 | 197.44450 | 2.22940 | 0.1415433 | 2.3338108 | 39 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 84554 | 2000 $GG_{117}$ |
| 2000 $GS_{117}$ | 17.0 | 0.15 | 20060922 | 86.77998 | 114.72448 | 187.86050 | 3.19798 | 0.1716384 | 2.6209322 | 36 | 4 | 1997–2006 | 0.43 | M-v | 0 | MPC | 74769 | 2000 $GS_{117}$ |
| 2000 $GJ_{118}$ | 16.2 | 0.15 | 20060922 | 17.78737 | 307.42715 | 306.06149 | 1.04794 | 0.0621360 | 2.9290336 | 31 | 5 | 2000–2006 | 0.42 | M-v | 0 | MPC | 77457 | 2000 $GJ_{118}$ |
| 2000 $GU_{118}$ | 18.0 | 0.15 | 20060922 | 276.10306 | 207.22191 | 337.70085 | 2.01382 | 0.1384374 | 2.3732106 | 29 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 47882 | 2000 $GU_{118}$ |
| 2000 $GC_{119}$ | 16.1 | 0.15 | 20060922 | 12.54682 | 195.04145 | 188.35851 | 5.89854 | 0.1949576 | 2.5159265 | 135 | 6 | 1996–2006 | 0.48 | M-v | 2 | MPC | 04135 | 2000 $GC_{119}$ |
| 2000 $GY_{119}$ | 16.8 | 0.15 | 20060922 | 324.20990 | 343.46438 | 8.69399 | 1.78336 | 0.0890530 | 2.8745245 | 36 | 4 | 1999–2005 | 0.37 | M-v | 1 | MPC | 60663 | 2000 $GY_{119}$ |
| 2000 $GV_{120}$ | 16.9 | 0.15 | 20060922 | 78.58585 | 199.65209 | 182.89155 | 4.48977 | 0.1161340 | 2.3960819 | 61 | 3 | 2000–2005 | 0.46 | M-v | 3 | MPC | 88717 | 2000 $GV_{120}$ |
| 2000 $GD_{121}$ | 16.9 | 0.15 | 20060922 | 73.86838 | 7.74764 | 14.87586 | 5.03345 | 0.1599271 | 2.4091246 | 70 | 4 | 1994–2006 | 0.43 | M-v | 1 | MPC | 04135 | 2000 $GD_{121}$ |
| 2000 $GB_{122}$ | 16.6 | 0.15 | 20060922 | 151.84100 | 193.28662 | 71.36215 | 13.15392 | 0.1573006 | 2.6287461 | 39 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 03173 | 2000 $GB_{122}$ |
| 2000 $GJ_{122}$ | 16.5 | 0.15 | 20060922 | 42.65413 | 91.62081 | 188.66761 | 8.18365 | 0.2046938 | 2.9305055 | 41 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 04136 | 2000 $GJ_{122}$ |
| 2000 $GD_{123}$ | 16.8 | 0.15 | 20060922 | 235.55415 | 149.12416 | 133.12725 | 1.20435 | 0.1989027 | 2.3512903 | 55 | 4 | 2000–2005 | 0.56 | M-v | 2 | MPC | 70242 | 2000 $GD_{123}$ |
| 2000 $GY_{128}$ | 17.6 | 0.15 | 20060922 | 135.36479 | 208.28732 | 14.02039 | 1.89998 | 0.1506264 | 2.7326485 | 32 | 3 | 2000–2006 | 0.39 | M-v | 4 | MPC | 88718 | 2000 $GY_{128}$ |
| 2000 $GC_{129}$ | 16.8 | 0.15 | 20060922 | 41.37877 | 190.04905 | 153.26183 | 0.49933 | 0.1183467 | 2.6466436 | 54 | 3 | 2000–2006 | 0.42 | M-v | 4 | MPC | 68655 | 2000 $GC_{129}$ |
| 2000 $GM_{129}$ | 17.9 | 0.15 | 20060922 | 183.57233 | 300.38345 | 12.05457 | 1.42951 | 0.1951752 | 2.3624644 | 19 | 4 | 2000–2005 | 0.39 | M-v | 1 | MPC | 66119 | 2000 $GM_{129}$ |
| 2000 $GH_{130}$ | 17.7 | 0.15 | 20060922 | 121.75367 | 84.98343 | 192.76068 | 1.94632 | 0.1132642 | 2.6074438 | 26 | 5 | 2000–2006 | 0.25 | M-v | 0 | MPC | 87382 | 2000 $GH_{130}$ |
| 2000 $GK_{130}$ | 18.0 | 0.15 | 20060922 | 199.71512 | 115.62442 | 184.40562 | 2.08854 | 0.1981478 | 2.3571864 | 22 | 3 | 2000–2005 | 0.28 | M-v | 3 | MPC | 31327 | 2000 $GK_{130}$ |
| 2000 $GY_{130}$ | 16.0 | 0.15 | 20060922 | 43.41694 | 111.17410 | 217.83136 | 4.78286 | 0.0656740 | 2.7135903 | 74 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 64725 | 2000 $GY_{130}$ |
| 2000 $GD_{131}$ | 17.2 | 0.15 | 20060922 | 166.48742 | 318.54334 | 20.67382 | 4.61313 | 0.1377116 | 2.3451918 | 69 | 3 | 2000–2005 | 0.53 | M-v | 3 | MPC | 25778 | 2000 $GD_{131}$ |
| 2000 $GJ_{131}$ | 18.0 | 0.15 | 20000406 | 314.12277 | 85.03469 | 208.71604 | 2.09575 | 0.3730854 | 2.7590108 | 9 | 1 | 6 days | 0.28 | | | MPC | *40271* | 2000 $GJ_{131}$ |
| 2000 $GC_{132}$ | 16.4 | 0.15 | 20060922 | 118.17037 | 62.95433 | 192.93867 | 13.72983 | 0.1585540 | 2.7689685 | 31 | 4 | 1992–2006 | 0.52 | M-v | 2 | MPC | 22141 | 2000 $GC_{132}$ |
| 2000 $GM_{132}$ | 17.4 | 0.15 | 20060922 | 117.31627 | 97.29465 | 187.38692 | 3.75989 | 0.1654932 | 2.6245497 | 45 | 6 | 1996–2006 | 0.43 | M-v | 0 | MPC | 87382 | 2000 $GM_{132}$ |
| 2000 $GJ_{133}$ | 15.6 | 0.15 | 20060922 | 143.82601 | 44.12891 | 171.60179 | 8.06381 | 0.1564938 | 2.7438807 | 64 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 04136 | 2000 $GJ_{133}$ |
| 2000 $GS_{136}$ | 14.9 | 0.15 | 20060922 | 319.38190 | 80.17028 | 62.36676 | 22.37241 | 0.2744999 | 2.3743289 | 159 | 3 | 2000–2006 | 0.52 | M-v | 1 | MPC | 41635 | 2000 $GS_{136}$ |
| 2000 $GX_{140}$ | 16.4 | 0.15 | 20060922 | 158.33169 | 302.70604 | 237.29898 | 3.62490 | 0.0992693 | 2.7498916 | 35 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 04136 | 2000 $GX_{140}$ |
| 2000 $GL_{141}$ | 15.7 | 0.15 | 20060922 | 228.48940 | 58.40896 | 128.84331 | 8.24162 | 0.1244257 | 2.5338097 | 87 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87382 | 2000 $GL_{141}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $GC_{145}$ | 16.0 | 0.15 | 20060922 | 30.52200 | 87.29605 | 168.17762 | 0.34413 | 0.1366615 | 3.0947455 | 30 | 3 | 2000–2005 | 0.48 | M-v | 4 | MPC | 74770 | 2000 $GC_{145}$ |
| 2000 $GH_{145}$ | 17.1 | 0.15 | 20060922 | 237.67055 | 332.24100 | 187.31575 | 19.02849 | 0.0546446 | 2.5410917 | 30 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 60666 | 2000 $GH_{145}$ |
| 2000 $GG_{147}$ | 18.0 | 0.15 | 20060922 | 275.35103 | 99.91528 | 31.75816 | 28.48568 | 0.3561859 | 1.7901422 | 45 | 3 | 2000–2006 | 0.66 | M-v | 2 | MPC | 17305 | 2000 $GG_{147}$ |
| 2000 $GO_{150}$ | 18.2 | 0.15 | 20060922 | 236.12757 | 130.57471 | 170.98559 | 1.53286 | 0.1648797 | 2.2635073 | 48 | 5 | 1994–2005 | 0.55 | M-v | 1 | MPC | 04136 | 2000 $GO_{150}$ |
| 2000 $GR_{150}$ | 16.2 | 0.15 | 20060922 | 54.95631 | 144.09061 | 184.04323 | 2.73021 | 0.1059965 | 2.6589991 | 52 | 5 | 1996–2006 | 0.40 | M-v | 1 | MPC | 04136 | 2000 $GR_{150}$ |
| 2000 $GU_{150}$ | 14.6 | 0.15 | 20060922 | 335.47037 | 304.88608 | 195.92322 | 12.45272 | 0.1503795 | 3.9751187 | 31 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 93816 | 2000 $GU_{150}$ |
| 2000 $GM_{151}$ | 16.3 | 0.15 | 20060922 | 117.55207 | 13.96882 | 220.39225 | 1.77631 | 0.0169645 | 2.7676014 | 35 | 4 | 2000–2006 | 0.47 | M-v | 0 | MPC | 04136 | 2000 $GM_{151}$ |
| 2000 $GR_{151}$ | 16.6 | 0.15 | 20060922 | 159.38450 | 195.66616 | 30.19564 | 2.48273 | 0.0237499 | 2.6558244 | 63 | 3 | 2000–2006 | 0.35 | M-v | 3 | MPC | 60666 | 2000 $GR_{151}$ |
| 2000 $GZ_{152}$ | 15.8 | 0.15 | 20060922 | 183.36050 | 235.94172 | 329.28084 | 7.10670 | 0.0318404 | 2.6126364 | 65 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 87382 | 2000 $GZ_{152}$ |
| 2000 $GO_{153}$ | 16.3 | 0.15 | 20060922 | 205.10227 | 227.27927 | 327.84506 | 6.35116 | 0.1996931 | 2.5704801 | 52 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87382 | 2000 $GO_{153}$ |
| 2000 $GM_{154}$ | 16.3 | 0.15 | 20060922 | 169.61904 | 296.35211 | 288.50059 | 3.56831 | 0.2037529 | 2.6148901 | 42 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87382 | 2000 $GM_{154}$ |
| 2000 $GN_{154}$ | 16.6 | 0.15 | 20060922 | 284.48429 | 24.57486 | 231.17517 | 7.64307 | 0.1253618 | 2.2382537 | 80 | 5 | 1998–2004 | 0.75 | M-v | 1 | MPC | 70243 | 2000 $GN_{154}$ |
| 2000 $GJ_{155}$ | 16.0 | 0.15 | 20060922 | 199.93137 | 88.27353 | 207.20593 | 8.65296 | 0.2308701 | 2.3791367 | 100 | 4 | 2000–2005 | 0.75 | M-v | 1 | MPC | 66120 | 2000 $GJ_{155}$ |
| 2000 $GL_{155}$ | 16.9 | 0.15 | 20060922 | 239.10536 | 315.98388 | 199.33187 | 8.41040 | 0.1043101 | 2.5635740 | 71 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 60667 | 2000 $GL_{155}$ |
| 2000 $GQ_{155}$ | 17.3 | 0.15 | 20060922 | 248.98684 | 117.07527 | 84.70388 | 2.96712 | 0.1355887 | 2.4319039 | 35 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 66120 | 2000 $GQ_{155}$ |
| 2000 $GL_{156}$ | 16.1 | 0.15 | 20060922 | 45.73444 | 204.39338 | 21.94388 | 10.40213 | 0.0289129 | 3.0785388 | 22 | 3 | 2000–2005 | 0.56 | M-v | 2 | MPC | 88718 | 2000 $GL_{156}$ |
| 2000 $GX_{157}$ | 16.5 | 0.15 | 20060922 | 219.90657 | 42.93141 | 130.77614 | 5.86608 | 0.1720522 | 2.5519691 | 86 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87383 | 2000 $GX_{157}$ |
| 2000 $GR_{158}$ | 16.5 | 0.15 | 20060922 | 264.30109 | 269.09577 | 300.26835 | 1.88450 | 0.0785064 | 2.3629948 | 44 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 90026 | 2000 $GR_{158}$ |
| 2000 $GZ_{158}$ | 16.6 | 0.15 | 20060922 | 180.23431 | 351.09768 | 230.29795 | 3.50413 | 0.1153069 | 2.5903208 | 36 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 87383 | 2000 $GZ_{158}$ |
| 2000 $GN_{160}$ | 16.2 | 0.15 | 20060922 | 211.68038 | 148.17631 | 26.41377 | 13.44865 | 0.1154076 | 2.6043214 | 86 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 60668 | 2000 $GN_{160}$ |
| 2000 $GT_{160}$ | 16.7 | 0.15 | 20060922 | 276.77709 | 65.87341 | 137.46541 | 2.99298 | 0.1349314 | 2.3656077 | 18 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 93816 | 2000 $GT_{160}$ |
| 2000 $GJ_{162}$ | 16.3 | 0.15 | 20060922 | 338.95442 | 87.93044 | 57.65677 | 3.70257 | 0.0850347 | 2.3010851 | 85 | 5 | 1991–2006 | 0.58 | M-v | 1 | MPC | 04136 | 2000 $GJ_{162}$ |
| 2000 $GB_{163}$ | 15.8 | 0.15 | 20060922 | 207.74295 | 108.84987 | 80.44807 | 13.87757 | 0.1185093 | 2.5988424 | 91 | 6 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87383 | 2000 $GB_{163}$ |
| 2000 $GA_{166}$ | 16.3 | 0.15 | 20060922 | 146.73196 | 219.85390 | 26.41372 | 1.94771 | 0.0452557 | 2.6162098 | 90 | 4 | 1997–2006 | 0.55 | M-v | 3 | MPC | 62294 | 2000 $GA_{166}$ |
| 2000 $GO_{166}$ | 16.1 | 0.15 | 20060922 | 153.93993 | 16.68838 | 203.69926 | 1.01468 | 0.1113362 | 2.6904415 | 82 | 4 | 2000–2006 | 0.51 | M-v | 3 | MPC | 62294 | 2000 $GO_{166}$ |
| 2000 $GS_{166}$ | 15.7 | 0.15 | 20060922 | 110.60123 | 242.15355 | 25.58568 | 14.31023 | 0.0642554 | 2.7022496 | 51 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 77459 | 2000 $GS_{166}$ |
| 2000 $GW_{167}$ | 16.2 | 0.15 | 20060922 | 135.77047 | 105.92866 | 134.93525 | 2.89384 | 0.1453620 | 2.6967047 | 59 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 77459 | 2000 $GW_{167}$ |
| 2000 $GK_{169}$ | 17.6 | 0.15 | 20060922 | 80.02365 | 82.41398 | 198.91244 | 21.28550 | 0.0477859 | 1.9111023 | 58 | 3 | 1998–2006 | 0.55 | M-v | 1 | MPC | 47885 | 2000 $GK_{169}$ |
| 2000 $GT_{169}$ | 16.2 | 0.15 | 20060922 | 330.14784 | 158.60625 | 295.47692 | 1.81371 | 0.1629754 | 2.4468883 | 91 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87383 | 2000 $GT_{169}$ |
| 2000 $GQ_{171}$ | 16.7 | 0.15 | 20060922 | 168.48552 | 12.11381 | 195.01759 | 9.59076 | 0.1961513 | 2.6886474 | 48 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 62294 | 2000 $GQ_{171}$ |
| 2000 $GW_{171}$ | 16.7 | 0.15 | 20060922 | 285.64583 | 148.45960 | 33.89498 | 12.60602 | 0.1186589 | 2.3716530 | 38 | 4 | 1998–2005 | 0.53 | M-v | 2 | MPC | 47885 | 2000 $GW_{171}$ |
| 2000 $GD_{172}$ | 16.6 | 0.15 | 20060922 | 301.86817 | 236.25532 | 299.11732 | 2.06629 | 0.1047323 | 2.3504886 | 43 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 90026 | 2000 $GD_{172}$ |
| 2000 $GD_{173}$ | 16.2 | 0.15 | 20060922 | 254.40263 | 95.95571 | 118.40940 | 4.82755 | 0.1437217 | 2.3736098 | 47 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 90026 | 2000 $GD_{173}$ |
| 2000 $GC_{175}$ | 15.7 | 0.15 | 20060922 | 254.85535 | 166.83192 | 299.98865 | 4.99931 | 0.2887916 | 2.5860262 | 83 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 60670 | 2000 $GC_{175}$ |
| 2000 $GH_{176}$ | 16.2 | 0.15 | 20060922 | 243.70028 | 118.25688 | 9.09137 | 5.60789 | 0.2475714 | 2.5970295 | 109 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97375 | 2000 $GH_{176}$ |
| 2000 $GW_{176}$ | 16.5 | 0.15 | 20060922 | 12.64973 | 106.32564 | 340.63629 | 3.16296 | 0.0839692 | 2.3487285 | 70 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 97375 | 2000 $GW_{176}$ |
| 2000 $GO_{177}$ | 17.3 | 0.15 | 20060922 | 269.40675 | 66.05062 | 137.75979 | 1.69811 | 0.1338460 | 2.3800079 | 29 | 4 | 1998–2005 | 0.40 | M-v | 1 | MPC | 90026 | 2000 $GO_{177}$ |
| 2000 $GW_{177}$ | 17.1 | 0.15 | 20060922 | 224.22924 | 144.35921 | 32.60109 | 7.94137 | 0.1334625 | 2.5528259 | 71 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 60670 | 2000 $GW_{177}$ |
| 2000 $GE_{178}$ | 16.8 | 0.15 | 20060922 | 182.13320 | 263.47288 | 304.08823 | 3.88513 | 0.2193356 | 2.5863922 | 62 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87383 | 2000 $GE_{178}$ |
| 2000 $GE_{186}$ | 16.0 | 0.15 | 20060922 | 184.60335 | 147.79190 | 80.53965 | 5.54193 | 0.1696219 | 2.5919940 | 51 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87383 | 2000 $GE_{186}$ |
| 2000 $GF_{186}$ | 16.5 | 0.15 | 20060922 | 163.80515 | 337.93924 | 190.45984 | 2.59945 | 0.1181267 | 2.7983660 | 28 | 3 | 2000–2006 | 0.60 | M-v | 4 | MPC | 74772 | 2000 $GF_{186}$ |
| 2000 $GH_{186}$ | 17.2 | 0.15 | 20060922 | 239.08958 | 101.85813 | 42.60784 | 13.23414 | 0.1112259 | 2.6462440 | 31 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 60671 | 2000 $GH_{186}$ |
| 2000 HP | 16.4 | 0.15 | 20060922 | 86.92579 | 310.99239 | 200.57456 | 13.06821 | 0.1580480 | 3.2039046 | 24 | 3 | 2000–2006 | 0.41 | M-v | 2 | MPC | 99949 | 2000 HP |
| 2000 HV | 15.9 | 0.15 | 20060922 | 351.05166 | 203.37566 | 101.52050 | 3.31026 | 0.1025902 | 3.0578057 | 43 | 5 | 2000–2005 | 0.50 | M-v | 0 | MPC | 57774 | 2000 HV |
| 2000 $HC_2$ | 17.3 | 0.15 | 20060922 | 295.46702 | 318.01856 | 148.23190 | 2.42272 | 0.1374878 | 2.5483602 | 32 | 4 | 2000–2006 | 0.38 | M-v | 1 | MPC | 66120 | 2000 $HC_2$ |
| 2000 $HM_2$ | 17.0 | 0.15 | 20060922 | 319.62641 | 251.05959 | 142.45083 | 3.24916 | 0.0997675 | 2.7626021 | 30 | 3 | 2000–2006 | 0.37 | M-v | 3 | MPC | 04136 | 2000 $HM_2$ |
| 2000 $HV_2$ | 15.9 | 0.15 | 20060922 | 22.72145 | 314.67618 | 75.72874 | 4.99138 | 0.1774943 | 2.5692085 | 46 | 6 | 1995–2006 | 0.50 | M-v | 2 | MPC | 62295 | 2000 $HV_2$ |
| 2000 $HE_3$ | 16.8 | 0.15 | 20060922 | 194.11996 | 130.85521 | 34.79350 | 1.58554 | 0.1658617 | 2.7136172 | 71 | 5 | 1995–2006 | 0.63 | M-v | 1 | MPC | 62295 | 2000 $HE_3$ |
| 2000 $HT_3$ | 16.1 | 0.15 | 20060922 | 3.19285 | 66.41655 | 204.12014 | 15.46107 | 0.1886830 | 3.1658477 | 39 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 99950 | 2000 $HT_3$ |
| 2000 $HA_5$ | 16.9 | 0.15 | 20060922 | 233.34696 | 276.12772 | 215.42714 | 20.04689 | 0.0835805 | 1.9048678 | 53 | 4 | 2000–2006 | 0.66 | M-v | 1 | MPC | 77459 | 2000 $HA_5$ |
| 2000 $HT_6$ | 16.6 | 0.15 | 20060922 | 73.54034 | 274.11247 | 43.88442 | 10.19159 | 0.2938441 | 2.7937530 | 43 | 4 | 1995–2006 | 0.57 | M-v | 1 | MPC | 27663 | 2000 $HT_6$ |
| 2000 $HV_6$ | 17.2 | 0.15 | 20060922 | 296.68015 | 137.52704 | 45.81259 | 2.10281 | 0.1272479 | 2.3879002 | 44 | 4 | 1994–2005 | 0.39 | M-v | 1 | MPC | 04136 | 2000 $HV_6$ |
| 2000 $HR_8$ | 15.6 | 0.15 | 20060922 | 268.39707 | 130.60635 | 52.22334 | 5.71570 | 0.1754930 | 2.4457442 | 106 | 4 | 1994–2006 | 0.51 | M-v | 3 | MPC | 87383 | 2000 $HR_8$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $HS_{10}$ | 15.8 | 0.15 | 20060922 | 137.00255 | 183.28774 | 61.45732 | 4.62042 | 0.2331134 | 2.7369974 | 99 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87383 | 2000 $HS_{10}$ |
| 2000 $HW_{11}$ | 15.4 | 0.15 | 20060922 | 151.18988 | 36.43364 | 228.04103 | 7.97948 | 0.1250632 | 2.6083046 | 69 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 04136 | 2000 $HW_{11}$ |
| 2000 $HO_{13}$ | 16.6 | 0.15 | 20060922 | 250.02548 | 338.49719 | 235.78670 | 1.36090 | 0.1688746 | 2.4458168 | 83 | 3 | 2000–2006 | 0.62 | M-v | 4 | MPC | 90026 | 2000 $HO_{13}$ |
| 2000 $HX_{13}$ | 15.7 | 0.15 | 20060922 | 186.88865 | 342.10592 | 228.12623 | 13.20391 | 0.1946755 | 2.6462989 | 61 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 66121 | 2000 $HX_{13}$ |
| 2000 $HU_{14}$ | 15.8 | 0.15 | 20060922 | 292.44768 | 86.29963 | 74.61444 | 8.63195 | 0.1307076 | 2.4015556 | 85 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 66121 | 2000 $HU_{14}$ |
| 2000 $HK_{18}$ | 18.0 | 0.15 | 20060922 | 203.57335 | 155.59585 | 11.22722 | 12.73949 | 0.1926364 | 2.6099645 | 21 | 3 | 2000–2006 | 0.61 | M-v | 3 | MPC | 84558 | 2000 $HK_{18}$ |
| 2000 $HS_{19}$ | 16.2 | 0.15 | 20060922 | 15.38813 | 232.75247 | 142.93641 | 6.77892 | 0.0395607 | 2.6989690 | 57 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 77460 | 2000 $HS_{19}$ |
| 2000 $HG_{21}$ | 16.2 | 0.15 | 20060922 | 297.88099 | 88.37770 | 94.12531 | 4.41488 | 0.1688605 | 2.3704373 | 41 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 40098 | 2000 $HG_{21}$ |
| 2000 $HB_{27}$ | 16.6 | 0.15 | 20060922 | 216.84986 | 161.03711 | 94.32817 | 6.86025 | 0.1849268 | 2.4468391 | 70 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97375 | 2000 $HB_{27}$ |
| 2000 $HM_{27}$ | 15.5 | 0.15 | 20060922 | 179.38391 | 98.86807 | 115.25339 | 14.05156 | 0.1047133 | 2.5917342 | 86 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87383 | 2000 $HM_{27}$ |
| 2000 $HO_{27}$ | 15.5 | 0.15 | 20060922 | 149.92154 | 4.19420 | 234.62777 | 10.43817 | 0.4584659 | 2.7001133 | 85 | 5 | 1987–2006 | 0.49 | M-v | 1 | MPC | 90027 | 2000 $HO_{27}$ |
| 2000 $HX_{29}$ | 15.4 | 0.15 | 20060922 | 217.96809 | 288.92156 | 271.58562 | 2.73114 | 0.2058259 | 2.5452411 | 159 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87384 | 2000 $HX_{29}$ |
| 2000 $HT_{30}$ | 15.6 | 0.15 | 20060922 | 201.35281 | 289.92361 | 228.77879 | 14.08259 | 0.0997843 | 2.7423625 | 70 | 5 | 1991–2006 | 0.59 | M-v | 1 | MPC | 57775 | 2000 $HT_{30}$ |
| 2000 $HA_{34}$ | 15.1 | 0.15 | 20060922 | 64.64461 | 346.08109 | 192.33915 | 15.57615 | 0.1237083 | 3.0961383 | 32 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 99951 | 2000 $HA_{34}$ |
| 2000 $HQ_{34}$ | 16.2 | 0.15 | 20060922 | 335.08207 | 108.54153 | 21.30663 | 3.58041 | 0.1348918 | 2.3866921 | 74 | 6 | 1996–2006 | 0.63 | M-v | 1 | MPC | 90027 | 2000 $HQ_{34}$ |
| 2000 $HR_{34}$ | 16.2 | 0.15 | 20060922 | 145.52399 | 44.71841 | 221.94569 | 8.03480 | 0.1740026 | 2.6252151 | 64 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 87384 | 2000 $HR_{34}$ |
| 2000 $HG_{39}$ | 16.6 | 0.15 | 20060922 | 16.31859 | 190.14601 | 203.64675 | 13.89433 | 0.0821350 | 2.5712748 | 26 | 3 | 2000–2004 | 0.48 | M-v | 3 | MPC | 60675 | 2000 $HG_{39}$ |
| 2000 $HD_{43}$ | 15.8 | 0.15 | 20060922 | 142.83836 | 167.44796 | 65.26574 | 5.75666 | 0.1011589 | 2.7213865 | 46 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 60675 | 2000 $HD_{43}$ |
| 2000 $HH_{43}$ | 16.4 | 0.15 | 20060922 | 302.91941 | 331.57822 | 176.20086 | 2.60368 | 0.1238480 | 2.4431723 | 47 | 8 | 1992–2006 | 0.46 | M-v | 1 | MPC | 84559 | 2000 $HH_{43}$ |
| 2000 $HT_{43}$ | 16.2 | 0.15 | 20060922 | 89.01051 | 84.18675 | 208.22447 | 1.32952 | 0.0451768 | 2.7353899 | 83 | 4 | 2000–2006 | 0.35 | M-v | 1 | MPC | 20780 | 2000 $HT_{43}$ |
| 2000 $HH_{44}$ | 15.9 | 0.15 | 20060922 | 210.17710 | 188.22994 | 99.60763 | 4.27138 | 0.1649371 | 2.3807807 | 41 | 4 | 2000–2005 | 0.59 | M-v | 1 | MPC | 22151 | 2000 $HH_{44}$ |
| 2000 $HX_{47}$ | 16.7 | 0.15 | 20060922 | 273.59607 | 15.13073 | 209.07129 | 6.56126 | 0.1181853 | 2.3609512 | 35 | 5 | 1994–2005 | 0.48 | M-v | 1 | MPC | 04137 | 2000 $HX_{47}$ |
| 2000 $HT_{49}$ | 17.0 | 0.15 | 20060922 | 292.12726 | 154.81684 | 38.40925 | 3.39648 | 0.1309340 | 2.3778432 | 34 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 93818 | 2000 $HT_{49}$ |
| 2000 $HB_{51}$ | 15.4 | 0.15 | 20060922 | 207.87300 | 321.32915 | 231.65240 | 13.84472 | 0.1096513 | 2.6293836 | 105 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 60677 | 2000 $HB_{51}$ |
| 2000 $HM_{54}$ | 15.6 | 0.15 | 20060922 | 200.00723 | 318.07322 | 224.20590 | 10.88489 | 0.2350853 | 2.6670634 | 93 | 4 | 2000–2006 | 0.62 | M-v | 2 | MPC | 66122 | 2000 $HM_{54}$ |
| 2000 $HX_{55}$ | 16.7 | 0.15 | 20060922 | 331.00663 | 130.35282 | 17.85825 | 2.65340 | 0.1540159 | 2.3542606 | 51 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 90027 | 2000 $HX_{55}$ |
| 2000 $HY_{58}$ | 15.4 | 0.15 | 20060922 | 99.58466 | 288.96841 | 234.72448 | 15.27500 | 0.1945632 | 3.0821166 | 38 | 3 | 2000–2005 | 0.57 | M-v | 3 | MPC | 64729 | 2000 $HY_{58}$ |
| 2000 $HL_{59}$ | 16.8 | 0.15 | 20060922 | 155.79327 | 197.33108 | 29.15807 | 3.55920 | 0.1600239 | 2.6956715 | 50 | 3 | 2000–2006 | 0.60 | M-v | 4 | MPC | 60677 | 2000 $HL_{59}$ |
| 2000 $HQ_{59}$ | 16.1 | 0.15 | 20060922 | 171.68529 | 351.74528 | 237.64008 | 4.40082 | 0.1774261 | 2.6372050 | 38 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 90027 | 2000 $HQ_{59}$ |
| 2000 $HD_{60}$ | 17.1 | 0.15 | 20060922 | 205.72396 | 164.61577 | 39.29426 | 8.08684 | 0.1513610 | 2.5847674 | 44 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 60677 | 2000 $HD_{60}$ |
| 2000 $HF_{60}$ | 16.5 | 0.15 | 20060922 | 231.83522 | 247.89771 | 28.49097 | 8.62799 | 0.1146289 | 2.3469773 | 40 | 3 | 2000–2003 | 0.52 | M-v | 3 | MPC | 19676 | 2000 $HF_{60}$ |
| 2000 $HG_{62}$ | 16.8 | 0.15 | 20060922 | 280.73415 | 334.90092 | 224.12788 | 1.80726 | 0.1484519 | 2.3909219 | 72 | 5 | 1994–2006 | 0.55 | M-v | 1 | MPC | 97376 | 2000 $HG_{62}$ |
| 2000 $HP_{63}$ | 16.9 | 0.15 | 20060922 | 239.18471 | 175.20110 | 55.51919 | 2.79761 | 0.1575872 | 2.4217498 | 32 | 3 | 2000–2006 | 0.37 | M-v | 3 | MPC | 93818 | 2000 $HP_{63}$ |
| 2000 $HA_{64}$ | 15.5 | 0.15 | 20060922 | 207.89983 | 351.33904 | 216.74438 | 13.12963 | 0.1155116 | 2.5512769 | 56 | 4 | 1996–2004 | 0.54 | M-v | 3 | MPC | 62297 | 2000 $HA_{64}$ |
| 2000 $HA_{67}$ | 16.3 | 0.15 | 20060922 | 183.26781 | 181.63854 | 36.95887 | 8.36448 | 0.1374780 | 2.5908604 | 52 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 60678 | 2000 $HA_{67}$ |
| 2000 $HE_{67}$ | 15.9 | 0.15 | 20060922 | 151.49520 | 175.53393 | 35.98298 | 9.51520 | 0.0814523 | 2.7463094 | 29 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 68657 | 2000 $HE_{67}$ |
| 2000 $HG_{67}$ | 15.7 | 0.15 | 20060922 | 210.32218 | 53.03362 | 137.09224 | 13.84747 | 0.1292160 | 2.5970669 | 73 | 4 | 2000–2006 | 0.67 | M-v | 2 | MPC | 87384 | 2000 $HG_{67}$ |
| 2000 $HP_{67}$ | 15.9 | 0.15 | 20060922 | 205.47967 | 158.16894 | 48.80360 | 13.39720 | 0.1541325 | 2.5699665 | 106 | 4 | 1996–2006 | 0.58 | M-v | 3 | MPC | 66122 | 2000 $HP_{67}$ |
| 2000 $HW_{68}$ | 17.1 | 0.15 | 20060922 | 251.11733 | 317.16434 | 207.90526 | 4.03882 | 0.1758642 | 2.5291560 | 58 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 66122 | 2000 $HW_{68}$ |
| 2000 $HL_{69}$ | 17.2 | 0.15 | 20060922 | 80.70504 | 76.32184 | 222.84454 | 20.46478 | 0.0825378 | 1.9043713 | 69 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 74778 | 2000 $HL_{69}$ |
| 2000 $HH_{71}$ | 16.9 | 0.15 | 20060922 | 278.88498 | 95.08270 | 133.68941 | 2.84391 | 0.1750421 | 2.3314974 | 59 | 7 | 1979–2006 | 0.52 | M-v | 1 | MPC | 97376 | 2000 $HH_{71}$ |
| 2000 $HV_{71}$ | 15.3 | 0.15 | 20060922 | 127.93012 | 54.65889 | 224.54114 | 14.03731 | 0.1626283 | 2.6534200 | 45 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87384 | 2000 $HV_{71}$ |
| 2000 $HF_{72}$ | 16.4 | 0.15 | 20060922 | 242.36414 | 55.49434 | 85.18805 | 2.67418 | 0.1528962 | 2.6329698 | 107 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 66122 | 2000 $HF_{72}$ |
| 2000 $HQ_{72}$ | 15.5 | 0.15 | 20060922 | 135.94162 | 37.44567 | 240.04522 | 7.37036 | 0.2114830 | 2.6268893 | 84 | 6 | 1993–2006 | 0.64 | M-v | 1 | MPC | 87384 | 2000 $HQ_{72}$ |
| 2000 $HE_{73}$ | 16.7 | 0.15 | 20060922 | 205.53377 | 29.22852 | 184.50126 | 6.64181 | 0.1495389 | 2.5487137 | 45 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87384 | 2000 $HE_{73}$ |
| 2000 $HX_{74}$ | 16.3 | 0.15 | 20060922 | 303.40972 | 23.80528 | 130.83324 | 3.95642 | 0.1253221 | 2.4204492 | 44 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 87384 | 2000 $HX_{74}$ |
| 2000 $HL_{75}$ | 15.1 | 0.15 | 20060922 | 99.08378 | 84.54824 | 199.46992 | 8.73601 | 0.1954653 | 2.7589292 | 79 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 23538 | 2000 $HL_{75}$ |
| 2000 $HM_{77}$ | 15.4 | 0.15 | 20060922 | 173.20791 | 162.29281 | 57.61444 | 19.25842 | 0.1502151 | 2.5842933 | 57 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 62297 | 2000 $HM_{77}$ |
| 2000 $HR_{77}$ | 15.4 | 0.15 | 20060922 | 96.48161 | 272.19283 | 237.69539 | 14.39766 | 0.2662796 | 3.0833755 | 34 | 4 | 1998–2005 | 0.69 | M-v | 1 | MPC | 47890 | 2000 $HR_{77}$ |
| 2000 $HZ_{78}$ | 15.3 | 0.15 | 20060922 | 131.27270 | 173.41552 | 95.24474 | 15.22349 | 0.2209739 | 2.6572060 | 49 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87385 | 2000 $HZ_{78}$ |
| 2000 $HG_{80}$ | 14.4 | 0.15 | 20060922 | 197.09746 | 63.33370 | 99.18449 | 15.32574 | 0.0267487 | 2.7569633 | 37 | 4 | 2000–2004 | 0.62 | M-v | 1 | MPC | 64730 | 2000 $HG_{80}$ |
| 2000 $HH_{81}$ | 16.7 | 0.15 | 20060922 | 108.80634 | 151.45639 | 100.41537 | 24.14335 | 0.0485560 | 1.9322036 | 38 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 03173 | 2000 $HH_{81}$ |
| 2000 $HX_{81}$ | 17.3 | 0.15 | 20060922 | 306.03064 | 175.45845 | 5.16414 | 1.61318 | 0.1234218 | 2.3577105 | 50 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 88720 | 2000 $HX_{81}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $HO_{82}$ | 16.5 | 0.15 | 20060922 | 19.15403 | 46.55300 | 44.95430 | 5.04426 | 0.1164695 | 2.3952980 | 67 | 6 | 1992–2006 | 0.59 | M-v | 1 | MPC | 90027 | 2000 $HO_{82}$ |
| 2000 $HD_{83}$ | 16.2 | 0.15 | 20060922 | 203.13526 | 156.81045 | 49.82571 | 8.27248 | 0.0904437 | 2.5999084 | 64 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 60681 | 2000 $HD_{83}$ |
| 2000 $HV_{83}$ | 16.5 | 0.15 | 20060922 | 196.76891 | 100.71133 | 55.26745 | 23.73947 | 0.0454057 | 1.9034989 | 76 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 04137 | 2000 $HV_{83}$ |
| 2000 $HX_{84}$ | 15.6 | 0.15 | 20060922 | 226.98676 | 294.14897 | 230.21360 | 12.12442 | 0.1907534 | 2.5618612 | 55 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 68658 | 2000 $HX_{84}$ |
| 2000 $HW_{85}$ | 16.2 | 0.15 | 20060922 | 264.27196 | 121.70563 | 100.74914 | 4.93396 | 0.1384876 | 2.3885868 | 58 | 5 | 1992–2006 | 0.50 | M-v | 1 | MPC | 66123 | 2000 $HW_{85}$ |
| 2000 $HG_{88}$ | 15.8 | 0.15 | 20060922 | 297.06361 | 116.15506 | 81.50120 | 7.31042 | 0.1698434 | 2.3499000 | 47 | 6 | 1982–2006 | 0.50 | M-v | 1 | MPC | 66123 | 2000 $HG_{88}$ |
| 2000 $HL_{89}$ | 15.3 | 0.15 | 20060922 | 137.79216 | 226.67942 | 47.15741 | 13.25348 | 0.1351740 | 2.6416329 | 85 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87385 | 2000 $HL_{89}$ |
| 2000 $HR_{89}$ | 15.9 | 0.15 | 20060922 | 217.90725 | 76.99340 | 220.63905 | 4.95548 | 0.1808529 | 2.3739986 | 61 | 4 | 2000–2005 | 0.62 | M-v | 1 | MPC | 66123 | 2000 $HR_{89}$ |
| 2000 $HY_{89}$ | 17.0 | 0.15 | 20060922 | 233.73800 | 83.40353 | 184.94303 | 1.11314 | 0.1705713 | 2.3953437 | 44 | 6 | 1993–2006 | 0.45 | M-v | 1 | MPC | 97376 | 2000 $HY_{89}$ |
| 2000 $HW_{90}$ | 15.8 | 0.15 | 20060922 | 74.26599 | 321.41832 | 222.22489 | 4.24333 | 0.1385435 | 3.1757638 | 29 | 3 | 2000–2005 | 0.65 | M-v | 4 | MPC | 88721 | 2000 $HW_{90}$ |
| 2000 $HL_{92}$ | 15.4 | 0.15 | 20060922 | 161.91610 | 81.57333 | 132.19679 | 13.19782 | 0.1241967 | 2.6836246 | 83 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 62298 | 2000 $HL_{92}$ |
| 2000 $HO_{97}$ | 16.8 | 0.15 | 20060922 | 332.18739 | 80.37845 | 40.80177 | 2.94365 | 0.1481149 | 2.4335182 | 43 | 6 | 1992–2006 | 0.46 | M-v | 1 | MPC | 50475 | 2000 $HO_{97}$ |
| 2000 $HH_{102}$ | 17.5 | 0.15 | 20060922 | 260.62732 | 257.67980 | 219.77630 | 3.80650 | 0.1236819 | 2.6539546 | 32 | 3 | 2000–2006 | 0.30 | M-v | 3 | MPC | 40105 | 2000 $HH_{102}$ |
| 2000 $HL_{102}$ | 17.8 | 0.15 | 20060922 | 274.71403 | 185.51265 | 47.88250 | 3.30617 | 0.1756081 | 2.3220913 | 26 | 4 | 2000–2005 | 1.21 | M-v | 2 | MPC | 99951 | 2000 $HL_{102}$ |
| 2000 $JX_{1}$ | 16.1 | 0.15 | 20060922 | 297.51466 | 131.35218 | 60.85377 | 7.19473 | 0.0583973 | 2.3494551 | 109 | 6 | 1996–2006 | 0.55 | M-v | 1 | MPC | 97376 | 2000 $JX_{1}$ |
| 2000 $JU_{3}$ | 16.9 | 0.15 | 20060922 | 133.10895 | 179.48415 | 66.62402 | 22.69376 | 0.0864614 | 1.9066848 | 56 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 74780 | 2000 $JU_{3}$ |
| 2000 $JH_{4}$ | 16.5 | 0.15 | 20060922 | 37.34669 | 158.50515 | 214.77193 | 2.78004 | 0.1694798 | 2.6287150 | 41 | 8 | 1993–2006 | 0.36 | M-v | 0 | MPC | 77462 | 2000 $JH_{4}$ |
| 2000 $JE_{6}$ | 15.8 | 0.15 | 20060922 | 60.67328 | 114.66564 | 161.60291 | 27.48030 | 0.0750909 | 1.9801536 | 114 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 03174 | 2000 $JE_{6}$ |
| 2000 $JX_{7}$ | 16.1 | 0.15 | 20060922 | 323.56880 | 358.24791 | 21.73902 | 6.30082 | 0.0331810 | 2.7178747 | 42 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 77462 | 2000 $JX_{7}$ |
| 2000 $JJ_{8}$ | 16.4 | 0.15 | 20060922 | 193.52733 | 349.84753 | 204.35044 | 14.07259 | 0.1067794 | 2.6414592 | 49 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 60683 | 2000 $JJ_{8}$ |
| 2000 $JA_{9}$ | 16.4 | 0.15 | 20060922 | 301.56306 | 272.36655 | 266.28169 | 4.10537 | 0.1652551 | 2.3550123 | 50 | 5 | 2000–2006 | 0.65 | M-v | 1 | MPC | 87385 | 2000 $JA_{9}$ |
| 2000 $JQ_{9}$ | 16.0 | 0.15 | 20060922 | 233.46112 | 319.23043 | 231.68161 | 9.92145 | 0.0716967 | 2.5483940 | 68 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 66124 | 2000 $JQ_{9}$ |
| 2000 $JG_{10}$ | 17.3 | 0.15 | 20060922 | 74.21544 | 127.14741 | 195.00678 | 19.77973 | 0.0517460 | 1.8762727 | 44 | 7 | 1993–2006 | 0.68 | M-v | 1 | MPC | 77462 | 2000 $JG_{10}$ |
| 2000 $JL_{10}$ | 17.2 | 0.15 | 20060922 | 204.85232 | 300.53742 | 223.03966 | 20.88557 | 0.0211826 | 1.9117918 | 43 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 25783 | 2000 $JL_{10}$ |
| 2000 $JM_{10}$ | 16.6 | 0.15 | 20060922 | 148.94633 | 324.71392 | 237.78105 | 19.10944 | 0.0631032 | 1.9416534 | 49 | 3 | 2000–2006 | 0.60 | M-v | 3 | MPC | 22159 | 2000 $JM_{10}$ |
| 2000 $JT_{11}$ | 15.5 | 0.15 | 20060922 | 116.55453 | 6.86054 | 249.55066 | 13.59816 | 0.1151611 | 2.7460852 | 54 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 62298 | 2000 $JT_{11}$ |
| 2000 $JH_{13}$ | 16.6 | 0.15 | 20060922 | 80.47010 | 267.13939 | 24.20085 | 2.07704 | 0.0672526 | 2.7682418 | 82 | 5 | 1992–2006 | 0.47 | M-v | 0 | MPC | 04137 | 2000 $JH_{13}$ |
| 2000 $JS_{13}$ | 16.2 | 0.15 | 20060922 | 251.14954 | 16.42090 | 190.95865 | 2.39938 | 0.1518475 | 2.4555880 | 82 | 7 | 1992–2006 | 0.54 | M-v | 1 | MPC | 87385 | 2000 $JS_{13}$ |
| 2000 $JK_{18}$ | 16.0 | 0.15 | 20060922 | 272.71395 | 327.00584 | 323.18022 | 5.31776 | 0.2342429 | 2.2493354 | 47 | 4 | 1997–2006 | 0.55 | M-v | 1 | MPC | 97376 | 2000 $JK_{18}$ |
| 2000 $JV_{18}$ | 15.2 | 0.15 | 20060922 | 89.73910 | 128.15886 | 174.91200 | 20.35121 | 0.2901051 | 2.7835769 | 52 | 4 | 1996–2005 | 0.65 | M-v | 1 | MPC | 87385 | 2000 $JV_{18}$ |
| 2000 $JN_{21}$ | 16.1 | 0.15 | 20060922 | 224.87379 | 275.56677 | 4.46522 | 4.99012 | 0.1319320 | 2.3648709 | 29 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 19707 | 2000 $JN_{21}$ |
| 2000 $JR_{22}$ | 16.2 | 0.15 | 20060922 | 260.86120 | 149.13690 | 44.25848 | 2.68291 | 0.1517658 | 2.4639142 | 41 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 88721 | 2000 $JR_{22}$ |
| 2000 $JR_{25}$ | 16.1 | 0.15 | 20060922 | 205.64965 | 308.05548 | 278.78124 | 7.21274 | 0.1611679 | 2.5324380 | 43 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 66124 | 2000 $JR_{25}$ |
| 2000 $JF_{30}$ | 15.5 | 0.15 | 20060922 | 178.20339 | 289.06569 | 242.19973 | 11.68937 | 0.2338056 | 2.7579198 | 38 | 3 | 1993–2004 | 0.50 | M-v | 2 | MPC | 62299 | 2000 $JF_{30}$ |
| 2000 $JU_{30}$ | 16.3 | 0.15 | 20060922 | 275.81336 | 224.50864 | 30.17796 | 10.31014 | 0.2131866 | 2.3127567 | 55 | 4 | 2000–2004 | 0.63 | M-v | 1 | MPC | 70243 | 2000 $JU_{30}$ |
| 2000 $JO_{33}$ | 15.6 | 0.15 | 20060922 | 272.31039 | 171.81882 | 24.19290 | 2.56913 | 0.1353377 | 2.4362434 | 62 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 87385 | 2000 $JO_{33}$ |
| 2000 $JP_{34}$ | 16.9 | 0.15 | 20060922 | 240.33073 | 359.06689 | 244.00227 | 0.90762 | 0.1398415 | 2.4103355 | 54 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 93820 | 2000 $JP_{34}$ |
| 2000 $JQ_{34}$ | 16.3 | 0.15 | 20060922 | 192.27976 | 171.66953 | 42.69371 | 4.48833 | 0.1453459 | 2.6124718 | 58 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 60686 | 2000 $JQ_{34}$ |
| 2000 $JD_{42}$ | 15.7 | 0.15 | 20060922 | 139.04188 | 211.17443 | 45.90713 | 15.25184 | 0.0553429 | 2.6604033 | 77 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 04137 | 2000 $JD_{42}$ |
| 2000 $JR_{42}$ | 15.5 | 0.15 | 20060922 | 327.66240 | 13.44603 | 42.84277 | 15.13591 | 0.0792027 | 2.6939494 | 85 | 3 | 2000–2006 | 0.61 | M-v | 2 | MPC | 68660 | 2000 $JR_{42}$ |
| 2000 $JX_{42}$ | 16.3 | 0.15 | 20060922 | 141.78655 | 356.31580 | 221.70223 | 8.28244 | 0.1049686 | 2.7838218 | 53 | 5 | 1997–2006 | 0.46 | M-v | 1 | MPC | 60687 | 2000 $JX_{42}$ |
| 2000 $JS_{44}$ | 16.7 | 0.15 | 20060922 | 141.31146 | 211.27276 | 50.84922 | 13.85462 | 0.2196319 | 2.6877780 | 32 | 3 | 2000–2006 | 0.62 | M-v | 2 | MPC | 88721 | 2000 $JS_{44}$ |
| 2000 $JU_{44}$ | 15.5 | 0.15 | 20060922 | 92.40645 | 322.44879 | 233.14622 | 8.11559 | 0.0402839 | 3.1115844 | 36 | 4 | 1994–2004 | 0.50 | M-v | 1 | MPC | 84561 | 2000 $JU_{44}$ |
| 2000 $JC_{46}$ | 15.9 | 0.15 | 20060922 | 90.84054 | 24.91346 | 226.39817 | 11.01378 | 0.2257184 | 2.9139795 | 73 | 4 | 1996–2006 | 0.56 | M-v | 2 | MPC | 87386 | 2000 $JC_{46}$ |
| 2000 $JN_{48}$ | 16.7 | 0.15 | 20060922 | 233.25633 | 18.84450 | 239.44433 | 5.03547 | 0.1032417 | 2.3965232 | 36 | 4 | 2000–2005 | 0.63 | M-v | 1 | MPC | 90028 | 2000 $JN_{48}$ |
| 2000 $JB_{64}$ | 16.8 | 0.15 | 20060922 | 304.93966 | 32.30590 | 214.43189 | 4.76605 | 0.1539170 | 2.2607630 | 57 | 6 | 1993–2006 | 0.69 | M-v | 1 | MPC | 73998 | 2000 $JB_{64}$ |
| 2000 $JB_{67}$ | 15.9 | 0.15 | 20060922 | 44.15348 | 289.34724 | 33.72668 | 11.62998 | 0.0473239 | 2.7202636 | 46 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 60688 | 2000 $JB_{67}$ |
| 2000 $JF_{67}$ | 17.0 | 0.15 | 20060922 | 217.29405 | 126.90403 | 37.58373 | 3.71398 | 0.0729371 | 2.6655194 | 55 | 4 | 1995–2006 | 0.43 | M-v | 0 | MPC | 60688 | 2000 $JF_{67}$ |
| 2000 $JO_{67}$ | 15.5 | 0.15 | 20060922 | 0.77655 | 205.66821 | 129.51326 | 12.98828 | 0.1837532 | 2.9921761 | 84 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 04137 | 2000 $JO_{67}$ |
| 2000 $JK_{68}$ | 15.1 | 0.15 | 20060922 | 5.72752 | 280.79642 | 194.43779 | 10.62812 | 0.1763822 | 3.9693437 | 32 | 4 | 1996–2005 | 0.48 | M-v | 0 | MPC | 97377 | 2000 $JK_{68}$ |
| 2000 $JC_{71}$ | 15.0 | 0.15 | 20060922 | 143.29376 | 297.42099 | 264.15437 | 8.84147 | 0.1714407 | 2.7430448 | 36 | 3 | 2000–2006 | 0.81 | M-v | 3 | MPC | 56158 | 2000 $JC_{71}$ |
| 2000 $JM_{73}$ | 15.3 | 0.15 | 20060922 | 170.44125 | 127.29840 | 93.81315 | 12.61138 | 0.2083286 | 2.6881133 | 109 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87386 | 2000 $JM_{73}$ |
| 2000 $JT_{73}$ | 15.7 | 0.15 | 20060922 | 283.34021 | 101.23952 | 87.10799 | 13.60333 | 0.1406354 | 2.4228808 | 43 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 50476 | 2000 $JT_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $JD_{79}$ | 14.8 | 0.15 | 20060922 | 147.42523 | 289.98614 | 267.01050 | 11.85261 | 0.1421701 | 2.7209683 | 37 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 57778 | 2000 $JD_{79}$ |
| 2000 $JD_{80}$ | 16.3 | 0.15 | 20060922 | 211.97105 | 124.22984 | 46.41058 | 12.93501 | 0.0995138 | 2.6751588 | 33 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 84561 | 2000 $JD_{80}$ |
| 2000 $JL_{83}$ | 15.9 | 0.15 | 20060922 | 58.31403 | 262.52174 | 42.83412 | 4.67985 | 0.0866750 | 2.8089701 | 43 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 19743 | 2000 $JL_{83}$ |
| 2000 $JY_{83}$ | 16.4 | 0.15 | 20060922 | 275.56608 | 98.81931 | 97.89883 | 4.78559 | 0.1694157 | 2.4055945 | 40 | 7 | 1992–2006 | 0.49 | M-v | 1 | MPC | 87386 | 2000 $JY_{83}$ |
| 2000 $JQ_{90}$ | 15.5 | 0.15 | 20060922 | 108.49976 | 303.50312 | 137.81428 | 6.43481 | 0.1328722 | 3.4138318 | 37 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 99952 | 2000 $JQ_{90}$ |
| 2000 KX | 16.1 | 0.15 | 20060922 | 138.10330 | 9.63546 | 236.13951 | 11.66335 | 0.1645191 | 2.7289932 | 50 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 88722 | 2000 KX |
| 2000 $KX_2$ | 15.2 | 0.15 | 20060922 | 328.67532 | 82.20740 | 61.66913 | 22.69569 | 0.2706528 | 2.3654787 | 83 | 3 | 2000–2006 | 0.51 | M-v | 1 | MPC | 41652 | 2000 $KX_2$ |
| 2000 $KH_3$ | 16.2 | 0.15 | 20060922 | 97.31749 | 129.58853 | 158.04173 | 24.32765 | 0.0588644 | 1.9119230 | 129 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 77464 | 2000 $KH_3$ |
| 2000 $KW_4$ | 16.5 | 0.15 | 20060922 | 162.17887 | 126.23288 | 72.49697 | 24.31313 | 0.0306822 | 1.9494645 | 43 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 77464 | 2000 $KW_4$ |
| 2000 $KY_5$ | 15.3 | 0.15 | 20060922 | 164.00210 | 187.58081 | 70.53045 | 14.85548 | 0.0777623 | 2.6023243 | 82 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87386 | 2000 $KY_5$ |
| 2000 $KX_8$ | 15.7 | 0.15 | 20060922 | 147.88689 | 339.69822 | 233.11252 | 12.77950 | 0.1242150 | 2.7710066 | 54 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 60691 | 2000 $KX_8$ |
| 2000 $KT_9$ | 14.6 | 0.15 | 20060922 | 134.63633 | 81.72414 | 55.13577 | 10.85160 | 0.0439781 | 3.1631955 | 49 | 5 | 2000–2005 | 0.73 | M-v | 1 | MPC | 74786 | 2000 $KT_9$ |
| 2000 $KO_{12}$ | 16.3 | 0.15 | 20060922 | 158.53172 | 214.31811 | 64.49337 | 5.14930 | 0.1291174 | 2.5753655 | 88 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87386 | 2000 $KO_{12}$ |
| 2000 $KS_{13}$ | 16.4 | 0.15 | 20060922 | 119.46891 | 183.44837 | 79.48786 | 4.51005 | 0.1845395 | 2.7592730 | 53 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 87387 | 2000 $KS_{13}$ |
| 2000 $KQ_{14}$ | 16.9 | 0.15 | 20060922 | 295.11916 | 281.88620 | 251.17399 | 4.03124 | 0.1568657 | 2.4210838 | 49 | 4 | 1998–2006 | 0.39 | M-v | 1 | MPC | 90028 | 2000 $KQ_{14}$ |
| 2000 $KW_{15}$ | 16.1 | 0.15 | 20060922 | 100.03044 | 51.54765 | 240.42459 | 12.15975 | 0.2320533 | 2.7748866 | 45 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 88722 | 2000 $KW_{15}$ |
| 2000 $KW_{23}$ | 13.5 | 0.15 | 20060922 | 345.14403 | 99.23677 | 239.30549 | 14.99925 | 0.2398141 | 3.1318752 | 116 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 01999 | 2000 $KW_{23}$ |
| 2000 $KD_{25}$ | 15.8 | 0.15 | 20060922 | 204.22163 | 7.20132 | 200.55563 | 17.04869 | 0.1858370 | 2.6118460 | 116 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 01999 | 2000 $KD_{25}$ |
| 2000 $KN_{35}$ | 16.4 | 0.15 | 20060922 | 141.65506 | 179.48245 | 102.76174 | 10.09526 | 0.1121221 | 2.6414747 | 41 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87387 | 2000 $KN_{35}$ |
| 2000 $KG_{36}$ | 15.4 | 0.15 | 20060922 | 185.90387 | 131.82496 | 101.03204 | 13.02155 | 0.1647712 | 2.6328610 | 61 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 66127 | 2000 $KG_{36}$ |
| 2000 $KM_{36}$ | 17.2 | 0.15 | 20060922 | 248.41533 | 64.63499 | 169.58110 | 1.20620 | 0.1432834 | 2.4233842 | 36 | 3 | 2000–2005 | 0.51 | M-v | 4 | MPC | 88722 | 2000 $KM_{36}$ |
| 2000 $KE_{37}$ | 18.0 | 0.15 | 20060922 | 44.73260 | 250.72012 | 40.33487 | 4.38066 | 0.3054824 | 3.0041283 | 25 | 3 | 2000–2006 | 0.38 | M-v | 2 | MPC | 74787 | 2000 $KE_{37}$ |
| 2000 $KH_{37}$ | 15.6 | 0.15 | 20060922 | 214.89616 | 357.05922 | 45.26163 | 10.69856 | 0.0671718 | 3.2537016 | 28 | 4 | 2000–2005 | 0.59 | M-v | 1 | MPC | 66127 | 2000 $KH_{37}$ |
| 2000 $KN_{37}$ | 16.8 | 0.15 | 20060922 | 194.43390 | 134.98625 | 52.11356 | 9.09092 | 0.1225766 | 2.6892044 | 23 | 3 | 2000–2006 | 0.43 | M-v | 2 | MPC | 88722 | 2000 $KN_{37}$ |
| 2000 $KD_{39}$ | 16.2 | 0.15 | 20060922 | 88.96687 | 191.49126 | 91.32499 | 6.44426 | 0.0296195 | 2.7807525 | 45 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 68662 | 2000 $KD_{39}$ |
| 2000 $KV_{39}$ | 16.2 | 0.15 | 20060922 | 242.40131 | 22.67477 | 94.94333 | 7.92392 | 0.0588458 | 2.8023324 | 38 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 60693 | 2000 $KV_{39}$ |
| 2000 $KW_{39}$ | 16.6 | 0.15 | 20060922 | 145.44578 | 219.69701 | 41.94018 | 6.24377 | 0.0910408 | 2.6340355 | 51 | 4 | 2000–2006 | 0.63 | M-v | 2 | MPC | 84561 | 2000 $KW_{39}$ |
| 2000 $KY_{39}$ | 16.7 | 0.15 | 20060922 | 207.93261 | 159.97839 | 43.02240 | 3.75294 | 0.1171805 | 2.5904553 | 80 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87387 | 2000 $KY_{39}$ |
| 2000 $KW_{40}$ | 16.5 | 0.15 | 20060922 | 228.98580 | 74.49689 | 69.42368 | 2.95764 | 0.1909980 | 2.6869931 | 56 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 60693 | 2000 $KW_{40}$ |
| 2000 $KX_{40}$ | 15.7 | 0.15 | 20060922 | 40.94852 | 88.61126 | 187.06779 | 4.34062 | 0.1406710 | 3.0455169 | 69 | 5 | 1991–2006 | 0.51 | M-v | 0 | MPC | 04137 | 2000 $KX_{40}$ |
| 2000 $KY_{40}$ | 16.4 | 0.15 | 20060922 | 183.59327 | 2.22863 | 212.69379 | 6.79178 | 0.1967866 | 2.6593200 | 60 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 87387 | 2000 $KY_{40}$ |
| 2000 $KF_{41}$ | 16.3 | 0.15 | 20060922 | 223.21711 | 42.78228 | 116.68811 | 4.24172 | 0.1726750 | 2.5855820 | 77 | 5 | 1994–2006 | 0.55 | M-v | 1 | MPC | 87387 | 2000 $KF_{41}$ |
| 2000 $KR_{42}$ | 17.5 | 0.15 | 20060922 | 209.64423 | 167.24809 | 171.48079 | 6.29482 | 0.2422605 | 2.4253560 | 61 | 3 | 1999–2004 | 0.69 | M-v | 2 | MPC | 73999 | 2000 $KR_{42}$ |
| 2000 $KA_{43}$ | 16.2 | 0.15 | 20060922 | 290.10317 | 6.48843 | 117.02974 | 5.15451 | 0.1609489 | 2.5743479 | 96 | 8 | 1995–2006 | 0.58 | M-v | 1 | MPC | 87387 | 2000 $KA_{43}$ |
| 2000 $KC_{43}$ | 15.7 | 0.15 | 20060922 | 59.05982 | 244.13856 | 53.37634 | 15.60357 | 0.1373450 | 2.8557069 | 51 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 19761 | 2000 $KC_{43}$ |
| 2000 $KD_{44}$ | 17.0 | 0.15 | 20060922 | 221.96857 | 120.72932 | 76.43131 | 0.30832 | 0.1133132 | 2.5732928 | 68 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87387 | 2000 $KD_{44}$ |
| 2000 $KV_{44}$ | 16.6 | 0.15 | 20060922 | 198.73048 | 99.49958 | 107.42601 | 9.36051 | 0.0411253 | 2.6493681 | 25 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 60694 | 2000 $KV_{44}$ |
| 2000 $KB_{49}$ | 16.6 | 0.15 | 20060922 | 275.22452 | 329.84432 | 154.83866 | 4.87899 | 0.2271008 | 2.5991157 | 47 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 62301 | 2000 $KB_{49}$ |
| 2000 $KJ_{49}$ | 17.2 | 0.15 | 20060922 | 258.37801 | 125.20333 | 49.07328 | 3.46016 | 0.0506446 | 2.5300109 | 28 | 5 | 2000–2006 | 0.42 | M-v | 1 | MPC | 87387 | 2000 $KJ_{49}$ |
| 2000 $KD_{51}$ | 17.5 | 0.15 | 20060922 | 318.38580 | 63.49043 | 253.12947 | 2.26134 | 0.1297972 | 2.0993711 | 38 | 5 | 2000–2006 | 0.52 | M-v | 2 | MPC | 04137 | 2000 $KD_{51}$ |
| 2000 $KP_{52}$ | 17.1 | 0.15 | 20060922 | 284.82943 | 67.42922 | 185.77495 | 4.62310 | 0.1480814 | 2.2863642 | 48 | 4 | 2000–2004 | 0.72 | M-v | 1 | MPC | 70244 | 2000 $KP_{52}$ |
| 2000 $KC_{54}$ | 15.5 | 0.15 | 20060922 | 176.63758 | 78.51124 | 146.92626 | 15.07062 | 0.1555176 | 2.6636642 | 80 | 4 | 1995–2005 | 0.65 | M-v | 1 | MPC | 87387 | 2000 $KC_{54}$ |
| 2000 $KQ_{54}$ | 15.0 | 0.15 | 20060922 | 172.35254 | 116.02530 | 128.08891 | 15.15959 | 0.0877605 | 2.6243469 | 73 | 2 | 2000–2004 | 0.56 | M-v | 4 | MPC | 66127 | 2000 $KQ_{54}$ |
| 2000 $KD_{55}$ | 15.8 | 0.15 | 20060922 | 227.35696 | 146.32479 | 98.09782 | 7.14766 | 0.1128316 | 2.4668991 | 75 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 90029 | 2000 $KD_{55}$ |
| 2000 $KW_{58}$ | 15.7 | 0.15 | 20060922 | 119.00193 | 215.51559 | 93.57943 | 8.65277 | 0.3204659 | 2.6651712 | 65 | 4 | 2000–2005 | 0.53 | M-v | 1 | MPC | 90029 | 2000 $KW_{58}$ |
| 2000 $KK_{59}$ | 17.1 | 0.15 | 20060922 | 153.00980 | 18.97835 | 234.36287 | 7.21867 | 0.1578245 | 2.6431041 | 37 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 88723 | 2000 $KK_{59}$ |
| 2000 $KM_{59}$ | 16.3 | 0.15 | 20060922 | 180.48128 | 202.91588 | 61.29153 | 17.73630 | 0.1881728 | 2.5570002 | 54 | 4 | 2000–2005 | 0.43 | M-v | 1 | MPC | 87387 | 2000 $KM_{59}$ |
| 2000 $KP_{66}$ | 16.1 | 0.15 | 20060922 | 262.02349 | 117.42344 | 184.72846 | 23.81847 | 0.2377863 | 2.2907783 | 50 | 3 | 2000–2004 | 0.59 | M-v | 2 | MPC | 72084 | 2000 $KP_{66}$ |
| 2000 $KD_{67}$ | 14.5 | 0.15 | 20060922 | 63.97495 | 72.26829 | 150.18453 | 22.88259 | 0.3153308 | 3.1537963 | 117 | 3 | 2000–2006 | 0.53 | M-v | 1 | MPC | 04137 | 2000 $KD_{67}$ |
| 2000 $KX_{67}$ | 16.8 | 0.15 | 20060922 | 261.20910 | 102.70844 | 112.39162 | 12.06396 | 0.2619069 | 2.3934322 | 39 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 64737 | 2000 $KX_{67}$ |
| 2000 $KM_{73}$ | 15.6 | 0.15 | 20060922 | 186.97354 | 184.88500 | 122.87796 | 10.56362 | 0.2325148 | 2.5379061 | 155 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97378 | 2000 $KM_{73}$ |
| 2000 $KG_{74}$ | 15.8 | 0.15 | 20060922 | 142.44153 | 57.42804 | 168.19611 | 13.59164 | 0.1816992 | 2.7534542 | 52 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 62302 | 2000 $KG_{74}$ |
| 2000 $KQ_{78}$ | 17.1 | 0.15 | 20060922 | 283.41660 | 90.22532 | 217.94330 | 6.23874 | 0.2608176 | 2.2294091 | 24 | 4 | 1993–2004 | 0.43 | M-v | 1 | MPC | 46407 | 2000 $KQ_{78}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $KE_{81}$ | 15.7 | 0.15 | 20060922 | 45.27226 | 146.48430 | 145.60448 | 24.13254 | 0.0676615 | 1.9738203 | 75 | 6 | 1994–2006 | 0.56 | M-v | 1 | MPC | 04137 | 2000 $KE_{81}$ |
| 2000 $KG_{82}$ | 16.6 | 0.15 | 20060922 | 86.10132 | 87.13310 | 233.64283 | 8.01501 | 0.0977156 | 2.6787342 | 29 | 4 | 2000–2006 | 0.44 | M-v | 0 | MPC | 87387 | 2000 $KG_{82}$ |
| 2000 $KE_{83}$ | 15.8 | 0.15 | 20060922 | 209.53042 | 126.73937 | 175.28960 | 4.36161 | 0.2029056 | 2.3804345 | 66 | 4 | 2000–2004 | 0.62 | M-v | 1 | MPC | 70244 | 2000 $KE_{83}$ |
| 2000 LB | 15.7 | 0.15 | 20060922 | 156.01305 | 109.73930 | 236.45947 | 7.61664 | 0.2073430 | 2.5654758 | 69 | 3 | 2000–2004 | 0.58 | M-v | 2 | MPC | 64737 | 2000 LB |
| 2000 LH | 15.1 | 0.15 | 20060922 | 72.90340 | 159.03774 | 101.69259 | 4.33016 | 0.0454326 | 2.9598851 | 49 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 04137 | 2000 LH |
| 2000 LZ | 15.7 | 0.15 | 20060922 | 81.45614 | 94.87591 | 235.26033 | 11.27367 | 0.1949909 | 2.7531703 | 95 | 3 | 2000–2005 | 0.54 | M-v | 1 | MPC | 87387 | 2000 LZ |
| 2000 $LJ_4$ | 15.0 | 0.15 | 20060922 | 35.54896 | 61.12253 | 237.59690 | 18.97483 | 0.3151977 | 3.1203993 | 39 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 74789 | 2000 $LJ_4$ |
| 2000 $LA_{16}$ | 17.9 | 0.15 | 20060922 | 265.64897 | 182.09875 | 151.03008 | 5.69379 | 0.2974805 | 2.2265562 | 38 | 3 | 2000–2006 | 0.39 | M-v | 3 | MPC | 02000 | 2000 $LA_{16}$ |
| 2000 $LK_{22}$ | 15.6 | 0.15 | 20060922 | 205.27976 | 127.00640 | 93.99289 | 13.61505 | 0.1420283 | 2.5764785 | 91 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 66128 | 2000 $LK_{22}$ |
| 2000 $LU_{23}$ | 16.8 | 0.15 | 20060922 | 196.73363 | 121.55144 | 82.87287 | 25.37878 | 0.1213993 | 1.8865938 | 58 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 87388 | 2000 $LU_{23}$ |
| 2000 $LR_{33}$ | 14.7 | 0.15 | 20060922 | 169.32049 | 122.91019 | 102.98601 | 15.01689 | 0.1219186 | 2.7102464 | 79 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87388 | 2000 $LR_{33}$ |
| 2000 $LE_{34}$ | 16.7 | 0.15 | 20060922 | 35.08644 | 209.03794 | 151.59825 | 6.71011 | 0.0421967 | 2.7046390 | 29 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87388 | 2000 $LE_{34}$ |
| 2000 $LF_{36}$ | 15.5 | 0.15 | 20060922 | 210.99103 | 325.93283 | 263.39042 | 4.12699 | 0.1791485 | 2.5409224 | 95 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 90029 | 2000 $LF_{36}$ |
| 2000 MJ | 15.6 | 0.15 | 20060922 | 215.33096 | 126.15508 | 87.19537 | 14.26776 | 0.1251523 | 2.5921486 | 59 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 66129 | 2000 MJ |
| 2000 $MU_2$ | 15.7 | 0.15 | 20060922 | 122.60637 | 76.82626 | 132.52752 | 5.29193 | 0.2051824 | 2.9160100 | 36 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 88723 | 2000 $MU_2$ |
| 2000 $NA_4$ | 16.4 | 0.15 | 20060922 | 62.44676 | 131.86433 | 235.84807 | 3.25446 | 0.2970586 | 2.8531187 | 90 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 97378 | 2000 $NA_4$ |
| 2000 $NN_4$ | 16.3 | 0.15 | 20060922 | 183.34448 | 122.48722 | 162.92991 | 4.03948 | 0.1307153 | 2.5953076 | 51 | 5 | 1999–2005 | 0.70 | M-v | 1 | MPC | 90029 | 2000 $NN_4$ |
| 2000 $NG_7$ | 16.5 | 0.15 | 20060922 | 64.68344 | 238.18095 | 142.50475 | 8.62919 | 0.2395996 | 2.7892738 | 45 | 5 | 2000–2006 | 0.37 | M-v | 1 | MPC | 84563 | 2000 $NG_7$ |
| 2000 $NH_8$ | 17.7 | 0.15 | 20060922 | 235.71507 | 11.87084 | 233.48446 | 3.76864 | 0.1507624 | 2.5280561 | 21 | 3 | 2000–2005 | 0.24 | M-v | 4 | MPC | 93824 | 2000 $NH_8$ |
| 2000 $NQ_{11}$ | 19.7 | 0.15 | 20060922 | 23.90015 | 220.61061 | 104.80763 | 7.62526 | 0.3670350 | 2.0543540 | 64 | 3 | 2000–2006 | 0.69 | M-v | 2 | MPC | 04138 | 2000 $NQ_{11}$ |
| 2000 $NC_{13}$ | 14.4 | 0.15 | 20060922 | 2.43641 | 236.95345 | 142.16653 | 23.00982 | 0.2540458 | 3.1261616 | 69 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 6275 | 2000 $NC_{13}$ |
| 2000 $NC_{18}$ | 15.1 | 0.15 | 20060922 | 5.05756 | 15.94202 | 348.86985 | 7.49960 | 0.2183083 | 3.1292267 | 123 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 04138 | 2000 $NC_{18}$ |
| 2000 $ND_{18}$ | 14.9 | 0.15 | 20060922 | 48.37122 | 316.07182 | 326.36193 | 13.67217 | 0.2452194 | 3.1853898 | 60 | 3 | 2000–2006 | 0.56 | M-v | 2 | MPC | 03174 | 2000 $ND_{18}$ |
| 2000 $NE_{22}$ | 15.9 | 0.15 | 20060922 | 136.14915 | 16.32061 | 291.75062 | 14.82918 | 0.2302447 | 2.6886598 | 46 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 93825 | 2000 $NE_{22}$ |
| 2000 $NT_{22}$ | 15.3 | 0.15 | 20060922 | 158.07691 | 16.17171 | 313.03229 | 3.74335 | 0.2036213 | 2.5668489 | 58 | 7 | 1994–2006 | 0.49 | M-v | 1 | MPC | 97378 | 2000 $NT_{22}$ |
| 2000 $OP_1$ | 14.8 | 0.15 | 20060922 | 174.78694 | 338.90019 | 312.60630 | 13.53217 | 0.2680635 | 2.5931145 | 91 | 4 | 2000–2005 | 0.67 | M-v | 2 | MPC | 43373 | 2000 $OP_1$ |
| 2000 $OD_2$ | 17.3 | 0.15 | 20060922 | 244.64036 | 183.52791 | 163.12260 | 7.01119 | 0.3121219 | 2.3295145 | 56 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 97379 | 2000 $OD_2$ |
| 2000 $OB_7$ | 16.6 | 0.15 | 20060922 | 90.15982 | 23.13240 | 323.39863 | 19.83792 | 0.0565128 | 1.9137783 | 88 | 3 | 2000–2006 | 0.76 | M-v | 3 | MPC | 97379 | 2000 $OB_7$ |
| 2000 $OU_7$ | 15.5 | 0.15 | 20060922 | 16.04844 | 69.50360 | 264.30545 | 5.41100 | 0.2291363 | 3.1868436 | 120 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04138 | 2000 $OU_7$ |
| 2000 $OW_7$ | 14.9 | 0.15 | 20060922 | 2.63245 | 86.39886 | 301.57098 | 15.04687 | 0.1452030 | 3.0397856 | 64 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87388 | 2000 $OW_7$ |
| 2000 $OT_8$ | 15.1 | 0.15 | 20060922 | 143.20335 | 11.77955 | 313.39603 | 13.47234 | 0.2769161 | 2.6544813 | 56 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 93826 | 2000 $OT_8$ |
| 2000 $OH_9$ | 14.5 | 0.15 | 20060922 | 260.01304 | 155.87563 | 313.99572 | 17.30703 | 0.1535750 | 3.1159744 | 144 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 87388 | 2000 $OH_9$ |
| 2000 $OR_9$ | 16.4 | 0.15 | 20060922 | 307.65049 | 40.21978 | 258.80396 | 4.24089 | 0.1736803 | 2.2470385 | 30 | 3 | 2000–2004 | 0.46 | M-v | 3 | MPC | 72086 | 2000 $OR_9$ |
| 2000 $OG_{10}$ | 14.2 | 0.15 | 20060922 | 39.83796 | 348.10762 | 290.55935 | 13.82862 | 0.1747071 | 3.1963001 | 53 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 04138 | 2000 $OG_{10}$ |
| 2000 $OR_{12}$ | 15.5 | 0.15 | 20060922 | 179.63042 | 355.28525 | 298.11870 | 12.78665 | 0.1651180 | 2.5803868 | 47 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 93827 | 2000 $OR_{12}$ |
| 2000 $OY_{15}$ | 15.3 | 0.15 | 20060922 | 27.92935 | 197.92103 | 149.93327 | 3.08412 | 0.3539316 | 3.0820462 | 64 | 4 | 1995–2006 | 0.54 | M-v | 0 | MPC | 84563 | 2000 $OY_{15}$ |
| 2000 $OX_{18}$ | 14.7 | 0.15 | 20060922 | 55.66596 | 169.42840 | 126.53891 | 19.36792 | 0.1482994 | 3.1041303 | 68 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87388 | 2000 $OX_{18}$ |
| 2000 $OQ_{21}$ | 15.1 | 0.15 | 20060922 | 116.48764 | 206.67157 | 140.68945 | 17.91828 | 0.2729621 | 2.6967875 | 104 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97379 | 2000 $OQ_{21}$ |
| 2000 $OZ_{22}$ | 13.8 | 0.15 | 20060922 | 139.33466 | 14.12865 | 308.44917 | 16.39156 | 0.2757664 | 2.6405880 | 104 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 97379 | 2000 $OZ_{22}$ |
| 2000 $OW_{26}$ | 14.0 | 0.15 | 20060922 | 88.66995 | 311.64493 | 304.75787 | 16.23113 | 0.2422479 | 3.0719004 | 69 | 3 | 2000–2006 | 0.51 | M-v | 1 | MPC | 62303 | 2000 $OW_{26}$ |
| 2000 $OL_{34}$ | 15.2 | 0.15 | 20060922 | 29.46454 | 140.49748 | 207.34816 | 9.38416 | 0.2192715 | 3.0331529 | 83 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 47905 | 2000 $OL_{34}$ |
| 2000 $OF_{36}$ | 15.0 | 0.15 | 20060922 | 107.34055 | 53.56163 | 280.22088 | 11.52659 | 0.2040616 | 2.7873846 | 101 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 97379 | 2000 $OF_{36}$ |
| 2000 $OH_{36}$ | 15.3 | 0.15 | 20060922 | 44.91815 | 107.71038 | 209.86074 | 6.69344 | 0.2061880 | 3.0938890 | 96 | 6 | 1998–2006 | 0.48 | M-v | 1 | MPC | 62304 | 2000 $OH_{36}$ |
| 2000 $OJ_{38}$ | 14.7 | 0.15 | 20060922 | 347.89558 | 137.04502 | 241.48746 | 9.36125 | 0.3016954 | 3.2109838 | 96 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 04138 | 2000 $OJ_{38}$ |
| 2000 $OG_{39}$ | 16.6 | 0.15 | 20060922 | 254.88456 | 125.85431 | 193.89651 | 8.53992 | 0.2677134 | 2.3448997 | 42 | 3 | 1993–2003 | 0.54 | M-v | 2 | MPC | 47905 | 2000 $OG_{39}$ |
| 2000 $OB_{42}$ | 16.5 | 0.15 | 20060922 | 260.02189 | 81.82891 | 276.72275 | 5.71028 | 0.1435105 | 2.2705425 | 42 | 3 | 1995–2004 | 0.54 | M-v | 3 | MPC | 72087 | 2000 $OB_{42}$ |
| 2000 $OA_{44}$ | 16.6 | 0.15 | 20060922 | 314.75351 | 22.20607 | 291.70095 | 6.02841 | 0.2462978 | 2.2231794 | 79 | 5 | 1997–2004 | 0.50 | M-v | 1 | MPC | 74001 | 2000 $OA_{44}$ |
| 2000 $OM_{54}$ | 15.0 | 0.15 | 20060922 | 12.40642 | 53.31166 | 290.82960 | 8.30244 | 0.0846971 | 3.0893204 | 68 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 04138 | 2000 $OM_{54}$ |
| 2000 $OQ_{60}$ | 17.4 | 0.15 | 20060922 | 239.09326 | 227.36796 | 123.87225 | 3.15451 | 0.2318285 | 2.3352116 | 30 | 3 | 1999–2004 | 0.50 | M-v | 3 | MPC | 72088 | 2000 $OQ_{60}$ |
| 2000 $OX_{60}$ | 16.3 | 0.15 | 20060922 | 119.21291 | 346.80678 | 329.65881 | 9.80196 | 0.2656274 | 2.7691603 | 63 | 3 | 2000–2005 | 0.53 | M-v | 2 | MPC | 88725 | 2000 $OX_{60}$ |
| 2000 $OA_{62}$ | 17.7 | 0.15 | 20060922 | 29.13075 | 30.42393 | 159.88514 | 4.89044 | 0.0878018 | 2.2756022 | 26 | 2 | 2000–2006 | 0.35 | M-v | 4 | MPC | 93828 | 2000 $OA_{62}$ |
| 2000 $ON_{68}$ | 14.8 | 0.15 | 20060922 | 115.56052 | 99.92604 | 121.01968 | 13.82628 | 0.1981932 | 3.1135337 | 66 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 62304 | 2000 $ON_{68}$ |
| 2000 $PU_6$ | 16.3 | 0.15 | 20060922 | 273.28406 | 233.05498 | 269.57554 | 17.28728 | 0.0763957 | 1.9499824 | 51 | 5 | 1998–2006 | 0.78 | M-v | 2 | MPC | 57781 | 2000 $PU_6$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $PX_{6}$ | 16.5 | 0.15 | 20060922 | 78.99929 | 77.02031 | 280.36303 | 17.46617 | 0.0975950 | 1.9285508 | 53 | 3 | 2000–2006 | 0.61 | M-v | 2 | MPC | 56163 | 2000 $PX_{6}$ |
| 2000 $PB_{7}$ | 16.5 | 0.15 | 20060922 | 201.65377 | 98.04051 | 288.25033 | 5.85770 | 0.1166691 | 2.3379279 | 85 | 3 | 2000–2004 | 0.56 | M-v | 3 | MPC | 74001 | 2000 $PB_{7}$ |
| 2000 $PK_{7}$ | 14.8 | 0.15 | 20060922 | 18.71540 | 229.83970 | 157.26732 | 11.61286 | 0.2025729 | 3.0447552 | 85 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 97380 | 2000 $PK_{7}$ |
| 2000 $PX_{7}$ | 14.6 | 0.15 | 20060922 | 63.44846 | 82.45952 | 330.81051 | 12.47354 | 0.1585459 | 2.7612791 | 191 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97380 | 2000 $PX_{7}$ |
| 2000 $PA_{9}$ | 14.8 | 0.15 | 20060922 | 3.57028 | 83.30346 | 286.93140 | 23.21703 | 0.3501122 | 3.1564008 | 76 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 25807 | 2000 $PA_{9}$ |
| 2000 $PF_{15}$ | 16.4 | 0.15 | 20060922 | 248.67267 | 39.25725 | 319.14912 | 7.05271 | 0.1303801 | 2.2674352 | 38 | 3 | 2000–2004 | 0.74 | M-v | 3 | MPC | 27672 | 2000 $PF_{15}$ |
| 2000 $PL_{18}$ | 16.6 | 0.15 | 20060922 | 23.88061 | 93.45826 | 320.14632 | 17.61174 | 0.1216564 | 1.9200215 | 63 | 5 | 1991–2006 | 0.62 | M-v | 1 | MPC | 62304 | 2000 $PL_{18}$ |
| 2000 $PX_{19}$ | 16.0 | 0.15 | 20060922 | 253.62704 | 30.03862 | 339.17924 | 7.42976 | 0.1630721 | 2.2683419 | 71 | 3 | 2000–2005 | 0.66 | M-v | 3 | MPC | 29229 | 2000 $PX_{19}$ |
| 2000 $PV_{23}$ | 16.3 | 0.15 | 20060922 | 272.02303 | 193.89519 | 133.18662 | 10.38033 | 0.2609977 | 2.2967384 | 52 | 4 | 2000–2004 | 0.54 | M-v | 1 | MPC | 72089 | 2000 $PV_{23}$ |
| 2000 $PY_{23}$ | 15.0 | 0.15 | 20060922 | 4.01445 | 97.58874 | 265.55303 | 7.50506 | 0.1882182 | 3.1253648 | 100 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04138 | 2000 $PY_{23}$ |
| 2000 $PX_{25}$ | 14.0 | 0.15 | 20060922 | 15.21585 | 81.98371 | 316.92652 | 17.54463 | 0.2400333 | 3.1125503 | 197 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 87389 | 2000 $PX_{25}$ |
| 2000 $PM_{26}$ | 14.5 | 0.15 | 20060922 | 50.45034 | 115.45828 | 266.82911 | 12.12936 | 0.2168874 | 2.9861726 | 105 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97380 | 2000 $PM_{26}$ |
| 2000 $PK_{27}$ | 15.3 | 0.15 | 20060922 | 308.04607 | 89.45775 | 327.34995 | 11.29870 | 0.1466112 | 3.2219953 | 36 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 03174 | 2000 $PK_{27}$ |
| 2000 $PP_{27}$ | 14.8 | 0.15 | 20060922 | 32.91676 | 166.75419 | 151.88541 | 5.47008 | 0.1313457 | 3.1907312 | 90 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 04138 | 2000 $PP_{27}$ |
| 2000 $PT_{27}$ | 15.1 | 0.15 | 20060922 | 271.18351 | 79.79143 | 276.22385 | 21.06496 | 0.2883669 | 2.2909548 | 54 | 2 | 2000–2005 | 0.43 | M-v | 2 | MPC | 72090 | 2000 $PT_{27}$ |
| 2000 $PU_{27}$ | 14.2 | 0.15 | 20060922 | 28.19485 | 107.29032 | 290.24612 | 24.52800 | 0.3142125 | 3.1071149 | 90 | 3 | 2000–2006 | 0.52 | M-v | 1 | MPC | 90030 | 2000 $PU_{27}$ |
| 2000 $PX_{27}$ | 15.8 | 0.15 | 20060922 | 242.36921 | 80.53843 | 249.21215 | 22.44713 | 0.2597622 | 2.3849697 | 74 | 2 | 2000–2004 | 0.66 | M-v | 3 | MPC | 72090 | 2000 $PX_{27}$ |
| 2000 QC | 14.8 | 0.15 | 20060922 | 30.64350 | 87.05618 | 281.12362 | 8.03721 | 0.1417520 | 3.0518978 | 49 | 3 | 2000–2006 | 0.72 | M-v | 2 | MPC | 84565 | 2000 QC |
| 2000 QG | 15.3 | 0.15 | 20060922 | 248.27191 | 152.36384 | 321.25897 | 11.59892 | 0.0841544 | 3.1278451 | 38 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04138 | 2000 QG |
| 2000 QL | 16.6 | 0.15 | 20060922 | 191.88243 | 228.60148 | 151.54057 | 1.65655 | 0.1923686 | 2.4084911 | 72 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 97380 | 2000 QL |
| 2000 $QV_{1}$ | 15.2 | 0.15 | 20060922 | 27.98320 | 121.07474 | 233.97680 | 25.61206 | 0.3467667 | 3.1325174 | 78 | 3 | 2000–2006 | 0.52 | M-v | 1 | MPC | 84565 | 2000 $QV_{1}$ |
| 2000 $QR_{5}$ | 13.5 | 0.15 | 20060922 | 23.58224 | 76.28383 | 281.79505 | 23.44075 | 0.2480000 | 3.1768546 | 99 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 41663 | 2000 $QR_{5}$ |
| 2000 $QO_{6}$ | 14.6 | 0.15 | 20060922 | 48.81696 | 45.96343 | 287.10748 | 8.87546 | 0.0631629 | 3.1015548 | 60 | 3 | 2000–2006 | 0.68 | M-v | 3 | MPC | 88726 | 2000 $QO_{6}$ |
| 2000 $QW_{8}$ | 17.5 | 0.15 | 20060922 | 31.20748 | 130.67818 | 174.63872 | 4.46631 | 0.2937053 | 2.0746167 | 219 | 4 | 1997–2006 | 0.47 | M-v | 3 | MPC | 04138 | 2000 $QW_{8}$ |
| 2000 $QB_{9}$ | 14.9 | 0.15 | 20060922 | 102.28101 | 25.94372 | 320.44399 | 7.14973 | 0.2315485 | 2.7855630 | 178 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 97381 | 2000 $QB_{9}$ |
| 2000 $QX_{12}$ | 15.4 | 0.15 | 20060922 | 91.78746 | 227.33813 | 136.48429 | 10.34490 | 0.1485552 | 2.7401210 | 59 | 6 | 2000–2006 | 0.51 | M-v | 1 | MPC | 93830 | 2000 $QX_{12}$ |
| 2000 $QK_{13}$ | 15.5 | 0.15 | 20060922 | 52.08532 | 252.32464 | 150.66206 | 13.05060 | 0.1480713 | 2.7736706 | 75 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 97381 | 2000 $QK_{13}$ |
| 2000 $QF_{16}$ | 15.0 | 0.15 | 20060922 | 346.12217 | 57.18519 | 330.00197 | 15.11086 | 0.1804259 | 3.1718706 | 56 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 26978 | 2000 $QF_{16}$ |
| 2000 $QD_{18}$ | 16.7 | 0.15 | 20060922 | 271.29714 | 213.10981 | 145.58316 | 5.64473 | 0.1823577 | 2.2473780 | 41 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 02001 | 2000 $QD_{18}$ |
| 2000 $QR_{18}$ | 16.9 | 0.15 | 20060922 | 224.14386 | 243.93383 | 145.61702 | 2.70078 | 0.2381976 | 2.3193288 | 30 | 3 | 1993–2005 | 0.43 | M-v | 2 | MPC | 4604 | 2000 $QR_{18}$ |
| 2000 $QV_{18}$ | 15.4 | 0.15 | 20060922 | 50.22299 | 10.82982 | 336.70800 | 9.97162 | 0.1075715 | 2.9962982 | 41 | 6 | 2000–2006 | 0.54 | M-v | 1 | MPC | 90031 | 2000 $QV_{18}$ |
| 2000 $QM_{21}$ | 15.4 | 0.15 | 20060922 | 50.29008 | 137.54118 | 159.12545 | 17.41546 | 0.2013689 | 3.1747631 | 37 | 4 | 2000–2006 | 0.59 | M-v | 0 | MPC | 88727 | 2000 $QM_{21}$ |
| 2000 $QM_{24}$ | 14.8 | 0.15 | 20060922 | 37.05048 | 169.78136 | 177.55140 | 17.94322 | 0.2071333 | 3.1157239 | 78 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 84567 | 2000 $QM_{24}$ |
| 2000 $QH_{26}$ | 16.2 | 0.15 | 20060922 | 232.36330 | 21.33808 | 1.14556 | 6.65060 | 0.1373107 | 2.3659475 | 83 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 02001 | 2000 $QH_{26}$ |
| 2000 $QZ_{26}$ | 15.3 | 0.15 | 20060922 | 77.55037 | 310.43341 | 326.23119 | 15.79209 | 0.1971111 | 3.1062532 | 38 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 60704 | 2000 $QZ_{26}$ |
| 2000 $QK_{28}$ | 15.2 | 0.15 | 20060922 | 197.32704 | 158.25211 | 149.17938 | 5.30881 | 0.2397196 | 2.5537006 | 198 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 97381 | 2000 $QK_{28}$ |
| 2000 $QU_{28}$ | 15.2 | 0.15 | 20060922 | 28.26102 | 306.94222 | 50.66683 | 2.16427 | 0.1948414 | 3.1211150 | 93 | 5 | 1995–2006 | 0.46 | M-v | 0 | MPC | 04138 | 2000 $QU_{28}$ |
| 2000 $QD_{32}$ | 17.1 | 0.15 | 20060922 | 251.09863 | 266.98737 | 54.19067 | 3.79637 | 0.2626941 | 2.3583630 | 44 | 3 | 2000–2004 | 0.51 | M-v | 2 | MPC | 72092 | 2000 $QD_{32}$ |
| 2000 $QO_{32}$ | 14.8 | 0.15 | 20060922 | 204.00146 | 137.79114 | 108.77117 | 10.68980 | 0.1118714 | 2.7185612 | 49 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 90031 | 2000 $QO_{32}$ |
| 2000 $QQ_{37}$ | 15.3 | 0.15 | 20060922 | 358.08245 | 104.47478 | 299.59568 | 4.16523 | 0.2871949 | 3.0779226 | 106 | 3 | 2000–2006 | 0.59 | M-v | 2 | MPC | 27676 | 2000 $QQ_{37}$ |
| 2000 $QV_{37}$ | 16.9 | 0.15 | 20060922 | 194.91161 | 115.26352 | 235.37953 | 1.45999 | 0.2307853 | 2.4546708 | 52 | 3 | 2000–2005 | 0.45 | M-v | 3 | MPC | 74004 | 2000 $QV_{37}$ |
| 2000 $QU_{38}$ | 15.1 | 0.15 | 20060922 | 102.24517 | 57.96786 | 323.76773 | 12.27629 | 0.1949233 | 2.6771286 | 77 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97382 | 2000 $QU_{38}$ |
| 2000 $QX_{38}$ | 14.9 | 0.15 | 20060922 | 19.32682 | 181.03329 | 155.78982 | 9.80742 | 0.0662585 | 3.1649497 | 88 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 04138 | 2000 $QX_{38}$ |
| 2000 $QA_{39}$ | 16.7 | 0.15 | 20060922 | 248.02929 | 150.23544 | 171.98205 | 2.27201 | 0.1846007 | 2.3597629 | 36 | 5 | 1995–2005 | 0.52 | M-v | 1 | MPC | 97382 | 2000 $QA_{39}$ |
| 2000 $QR_{39}$ | 16.4 | 0.15 | 20060922 | 258.97800 | 176.29380 | 152.59512 | 5.99036 | 0.1477651 | 2.3210084 | 38 | 4 | 1996–2006 | 0.45 | M-v | 1 | MPC | 02001 | 2000 $QR_{39}$ |
| 2000 $QZ_{39}$ | 16.2 | 0.15 | 20060922 | 98.66713 | 190.76368 | 142.73615 | 3.74222 | 0.1728908 | 2.8154411 | 42 | 3 | 1996–2005 | 0.57 | M-v | 4 | MPC | 93833 | 2000 $QZ_{39}$ |
| 2000 $QS_{40}$ | 15.2 | 0.15 | 20060922 | 26.65063 | 18.61094 | 330.06937 | 9.51984 | 0.1342456 | 3.0935301 | 67 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 43378 | 2000 $QS_{40}$ |
| 2000 $QV_{41}$ | 15.9 | 0.15 | 20060922 | 48.92458 | 134.82002 | 195.94159 | 1.19978 | 0.2378997 | 3.0461603 | 64 | 5 | 1995–2006 | 0.54 | M-v | 0 | MPC | 14905 | 2000 $QV_{41}$ |
| 2000 $QC_{43}$ | 16.6 | 0.15 | 20060922 | 193.26178 | 91.28387 | 177.21601 | 2.80547 | 0.2601797 | 2.6249959 | 41 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 88727 | 2000 $QC_{43}$ |
| 2000 $QP_{44}$ | 15.1 | 0.15 | 20060922 | 352.47349 | 258.56510 | 141.92129 | 10.68510 | 0.1322927 | 3.0653651 | 51 | 6 | 2000–2006 | 0.49 | M-v | 0 | MPC | 84568 | 2000 $QP_{44}$ |
| 2000 $QY_{46}$ | 16.1 | 0.15 | 20060922 | 171.73503 | 293.46366 | 337.32239 | 11.33938 | 0.2308024 | 2.7063771 | 26 | 4 | 1999–2005 | 0.50 | M-v | 3 | MPC | 90031 | 2000 $QY_{46}$ |
| 2000 $QV_{47}$ | 16.4 | 0.15 | 20060922 | 147.03956 | 326.06803 | 338.35900 | 5.59224 | 0.0426395 | 2.7519118 | 57 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 93833 | 2000 $QV_{47}$ |
| 2000 $QC_{52}$ | 17.5 | 0.15 | 20060922 | 223.36339 | 184.70491 | 170.57765 | 2.17601 | 0.2224954 | 2.3750168 | 21 | 2 | 2000–2004 | 0.61 | M-v | 4 | MPC | 03175 | 2000 $QC_{52}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $QQ_{52}$ | 15.1 | 0.15 | 20060922 | 80.10825 | 141.81556 | 148.14111 | 13.22110 | 0.1068406 | 3.0887669 | 43 | 6 | 1993–2006 | 0.68 | M-v | 1 | MPC | 84569 | 2000 $QQ_{52}$ |
| 2000 $QP_{55}$ | 17.2 | 0.15 | 20060922 | 262.42390 | 297.75206 | 33.44387 | 1.92186 | 0.2579939 | 2.3180043 | 35 | 3 | 2000–2006 | 0.63 | M-v | 3 | MPC | 93834 | 2000 $QP_{55}$ |
| 2000 $QG_{57}$ | 16.2 | 0.15 | 20060922 | 353.36221 | 131.56094 | 136.32507 | 4.96397 | 0.1560195 | 2.2174178 | 79 | 5 | 2000–2006 | 0.65 | M-v | 2 | MPC | 99958 | 2000 $QG_{57}$ |
| 2000 $QN_{58}$ | 16.7 | 0.15 | 20060922 | 296.34474 | 326.44185 | 16.96688 | 6.29111 | 0.2055180 | 2.2137144 | 40 | 3 | 2000–2006 | 0.43 | M-v | 2 | MPC | 99958 | 2000 $QN_{58}$ |
| 2000 $QP_{64}$ | 15.3 | 0.15 | 20060922 | 37.81916 | 292.57456 | 120.14420 | 9.59745 | 0.2768571 | 2.9319396 | 77 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 97382 | 2000 $QP_{64}$ |
| 2000 $QN_{68}$ | 16.2 | 0.15 | 20060922 | 353.45874 | 63.58807 | 321.63741 | 4.03201 | 0.1896698 | 3.1554709 | 32 | 3 | 1995–2006 | 0.40 | M-v | 3 | MPC | 47916 | 2000 $QN_{68}$ |
| 2000 $QW_{69}$ | 17.2 | 0.15 | 20060922 | 21.67778 | 220.65411 | 344.39622 | 38.15534 | 0.3020465 | 1.3762157 | 177 | 3 | 2000–2005 | 0.49 | M-v | 2 | MPC | 87391 | 2000 $QW_{69}$ |
| 2000 $QW_{72}$ | 15.0 | 0.15 | 20060922 | 41.10569 | 182.26397 | 170.53141 | 6.93399 | 0.1786770 | 3.0421923 | 63 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 87391 | 2000 $QW_{72}$ |
| 2000 $QX_{74}$ | 15.4 | 0.15 | 20060922 | 72.38819 | 21.88506 | 334.25265 | 7.36824 | 0.1443362 | 2.8907382 | 72 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 04138 | 2000 $QX_{74}$ |
| 2000 $QV_{75}$ | 15.3 | 0.15 | 20060922 | 32.27790 | 358.85679 | 335.27766 | 7.95616 | 0.0693476 | 3.1737472 | 59 | 5 | 1992–2006 | 0.56 | M-v | 1 | MPC | 50481 | 2000 $QV_{75}$ |
| 2000 $QV_{77}$ | 15.7 | 0.15 | 20060922 | 119.26933 | 18.09181 | 318.53167 | 4.40375 | 0.1925903 | 2.7647446 | 120 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 97383 | 2000 $QV_{77}$ |
| 2000 $QL_{79}$ | 14.6 | 0.15 | 20060922 | 2.49769 | 227.12616 | 171.96544 | 23.51027 | 0.1984332 | 3.1180357 | 68 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 03176 | 2000 $QL_{79}$ |
| 2000 $QP_{79}$ | 15.3 | 0.15 | 20060922 | 55.38018 | 144.66567 | 171.57584 | 16.36403 | 0.1774276 | 3.1314145 | 92 | 6 | 1999–2006 | 0.48 | M-v | 0 | MPC | 87391 | 2000 $QP_{79}$ |
| 2000 $QG_{81}$ | 16.0 | 0.15 | 20060922 | 165.96132 | 311.16620 | 171.64798 | 7.34641 | 0.0757719 | 2.2130876 | 80 | 4 | 2000–2004 | 0.60 | M-v | 1 | MPC | 26989 | 2000 $QG_{81}$ |
| 2000 $QH_{81}$ | 16.0 | 0.15 | 20060922 | 193.29730 | 106.39128 | 174.36910 | 3.33697 | 0.2141983 | 2.6230235 | 83 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 97383 | 2000 $QH_{81}$ |
| 2000 $QP_{81}$ | 15.4 | 0.15 | 20060922 | 27.67193 | 191.22238 | 170.27393 | 3.75924 | 0.1713081 | 3.0892494 | 80 | 7 | 1996–2006 | 0.62 | M-v | 0 | MPC | 77469 | 2000 $QP_{81}$ |
| 2000 $QF_{82}$ | 15.0 | 0.15 | 20060922 | 69.83005 | 291.95825 | 347.06689 | 12.38155 | 0.2550355 | 3.1800853 | 61 | 3 | 2000–2006 | 0.61 | M-v | 2 | MPC | 68679 | 2000 $QF_{82}$ |
| 2000 $QB_{83}$ | 15.8 | 0.15 | 20060922 | 18.90468 | 68.53528 | 314.48656 | 1.13316 | 0.2547875 | 3.1122982 | 68 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87391 | 2000 $QB_{83}$ |
| 2000 $QA_{86}$ | 15.8 | 0.15 | 20060922 | 26.81444 | 45.37784 | 316.48582 | 10.26754 | 0.2665949 | 3.0900977 | 35 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 84570 | 2000 $QA_{86}$ |
| 2000 $QL_{88}$ | 14.6 | 0.15 | 20060922 | 343.32873 | 121.56185 | 304.70675 | 10.04286 | 0.0583766 | 2.9902840 | 54 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 87391 | 2000 $QL_{88}$ |
| 2000 $QO_{88}$ | 15.7 | 0.15 | 20060922 | 143.98104 | 56.02844 | 261.59287 | 4.72452 | 0.0856011 | 2.7240419 | 85 | 5 | 1991–2006 | 0.55 | M-v | 1 | MPC | 97383 | 2000 $QO_{88}$ |
| 2000 $QG_{94}$ | 15.1 | 0.15 | 20060922 | 326.85052 | 109.16721 | 323.01607 | 15.23127 | 0.2289442 | 3.1450801 | 90 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 47919 | 2000 $QG_{94}$ |
| 2000 $QW_{94}$ | 15.5 | 0.15 | 20060922 | 7.77858 | 199.72319 | 159.75374 | 6.09042 | 0.1546869 | 3.1993861 | 58 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 88727 | 2000 $QW_{94}$ |
| 2000 $QV_{95}$ | 15.9 | 0.15 | 20060922 | 204.70760 | 143.76945 | 157.83385 | 2.69597 | 0.1929722 | 2.5686404 | 111 | 4 | 2000–2005 | 0.56 | M-v | 1 | MPC | 70250 | 2000 $QV_{95}$ |
| 2000 $QO_{97}$ | 16.1 | 0.15 | 20060922 | 352.70981 | 117.70238 | 154.03552 | 5.96293 | 0.1869916 | 2.2295980 | 65 | 4 | 1996–2006 | 0.60 | M-v | 1 | MPC | 02002 | 2000 $QO_{97}$ |
| 2000 $QR_{98}$ | 16.8 | 0.15 | 20060922 | 326.84097 | 187.43854 | 118.37492 | 3.89852 | 0.2050715 | 2.2232921 | 47 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 02002 | 2000 $QR_{98}$ |
| 2000 $QD_{99}$ | 15.2 | 0.15 | 20060922 | 165.33845 | 178.03403 | 128.98859 | 6.09250 | 0.1691583 | 2.6953256 | 83 | 6 | 1994–2006 | 0.56 | M-v | 1 | MPC | 97384 | 2000 $QD_{99}$ |
| 2000 $QH_{100}$ | 16.2 | 0.15 | 20060922 | 219.74072 | 333.32692 | 41.33098 | 4.49292 | 0.2242702 | 2.3817146 | 106 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 02002 | 2000 $QH_{100}$ |
| 2000 $QF_{104}$ | 14.7 | 0.15 | 20060922 | 17.24611 | 334.61815 | 36.36284 | 15.61710 | 0.2545329 | 3.1692417 | 99 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 04138 | 2000 $QF_{104}$ |
| 2000 $QK_{105}$ | 16.2 | 0.15 | 20060922 | 19.15653 | 43.75830 | 13.52980 | 19.40154 | 0.0985757 | 1.9669004 | 113 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 62305 | 2000 $QK_{105}$ |
| 2000 $QY_{106}$ | 16.0 | 0.15 | 20060922 | 151.50707 | 329.69187 | 304.59172 | 11.54502 | 0.2366469 | 2.7753126 | 40 | 4 | 2000–2005 | 0.45 | M-v | 0 | MPC | 90032 | 2000 $QY_{106}$ |
| 2000 $QM_{107}$ | 15.1 | 0.15 | 20060922 | 34.30593 | 225.51121 | 116.32799 | 2.64623 | 0.1710586 | 3.1078552 | 91 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 25821 | 2000 $QM_{107}$ |
| 2000 $QO_{107}$ | 14.7 | 0.15 | 20060922 | 26.81927 | 107.71703 | 343.22086 | 24.96932 | 0.2476292 | 2.7790777 | 115 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97384 | 2000 $QO_{107}$ |
| 2000 $QK_{109}$ | 17.1 | 0.15 | 20060922 | 30.97597 | 190.98214 | 152.42740 | 1.86660 | 0.1094833 | 3.0958504 | 34 | 4 | 2000–2006 | 0.30 | M-v | 0 | MPC | 74801 | 2000 $QK_{109}$ |
| 2000 $QW_{109}$ | 16.3 | 0.15 | 20060922 | 52.50739 | 211.41068 | 163.28440 | 1.58878 | 0.2772106 | 2.9844411 | 101 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 90032 | 2000 $QW_{109}$ |
| 2000 $QY_{110}$ | 17.8 | 0.15 | 20060922 | 294.40897 | 146.22463 | 165.04737 | 5.30293 | 0.1754868 | 2.2792300 | 26 | 3 | 2000–2006 | 0.51 | M-v | 4 | MPC | 99960 | 2000 $QY_{110}$ |
| 2000 $QF_{115}$ | 17.0 | 0.15 | 20060922 | 334.72070 | 2.58941 | 282.16690 | 3.24467 | 0.1763844 | 2.2241322 | 27 | 4 | 2000–2006 | 0.49 | M-v | 3 | MPC | 02002 | 2000 $QF_{115}$ |
| 2000 $QC_{119}$ | 15.4 | 0.15 | 20060922 | 170.06797 | 323.18215 | 327.84330 | 8.47965 | 0.2505784 | 2.6943269 | 67 | 3 | 2000–2005 | 0.59 | M-v | 2 | MPC | 50482 | 2000 $QC_{119}$ |
| 2000 $QW_{119}$ | 16.0 | 0.15 | 20060922 | 245.82694 | 82.24689 | 259.95774 | 3.35351 | 0.1875182 | 2.3646041 | 78 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 02002 | 2000 $QW_{119}$ |
| 2000 $QL_{123}$ | 14.5 | 0.15 | 20060922 | 113.91245 | 11.62223 | 350.66643 | 15.43736 | 0.2037728 | 2.7742986 | 72 | 4 | 2000–2006 | 0.62 | M-v | 2 | MPC | 93836 | 2000 $QL_{123}$ |
| 2000 $QD_{125}$ | 15.4 | 0.15 | 20060922 | 178.15748 | 8.16990 | 275.95317 | 8.40504 | 0.1390564 | 2.6755369 | 82 | 6 | 1992–2006 | 0.52 | M-v | 1 | MPC | 97385 | 2000 $QD_{125}$ |
| 2000 $QO_{125}$ | 15.6 | 0.15 | 20060922 | 209.83006 | 309.75830 | 329.02026 | 15.10140 | 0.1587369 | 2.6068456 | 58 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 70251 | 2000 $QO_{125}$ |
| 2000 $QT_{125}$ | 16.1 | 0.15 | 20060922 | 257.83523 | 23.51404 | 311.11571 | 6.45185 | 0.1401887 | 2.3403054 | 50 | 3 | 2000–2004 | 0.58 | M-v | 3 | MPC | 29251 | 2000 $QT_{125}$ |
| 2000 $QH_{131}$ | 15.2 | 0.15 | 20060922 | 350.86312 | 74.38940 | 322.49760 | 10.49236 | 0.1191097 | 3.0693713 | 48 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 47922 | 2000 $QH_{131}$ |
| 2000 $QY_{134}$ | 14.8 | 0.15 | 20060922 | 27.20288 | 72.56208 | 346.01069 | 14.45436 | 0.2519417 | 2.8762561 | 142 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97385 | 2000 $QY_{134}$ |
| 2000 $QT_{135}$ | 15.0 | 0.15 | 20060922 | 17.04917 | 0.56872 | 0.90972 | 13.36627 | 0.2548935 | 3.1342326 | 50 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 04138 | 2000 $QT_{135}$ |
| 2000 $QG_{136}$ | 15.3 | 0.15 | 20060922 | 15.06581 | 159.68071 | 190.88375 | 0.61255 | 0.1633011 | 3.1424190 | 119 | 5 | 1993–2006 | 0.43 | M-v | 0 | MPC | 27684 | 2000 $QG_{136}$ |
| 2000 $QR_{136}$ | 15.7 | 0.15 | 20060922 | 109.98666 | 14.78083 | 315.67776 | 7.22604 | 0.2215359 | 2.7761854 | 81 | 2 | 2000–2005 | 0.65 | M-v | 3 | MPC | 88729 | 2000 $QR_{136}$ |
| 2000 $QU_{136}$ | 16.4 | 0.15 | 20060922 | 301.78936 | 101.56185 | 172.79590 | 5.23852 | 0.2100885 | 2.3045535 | 52 | 4 | 1996–2006 | 0.79 | M-v | 1 | MPC | 97385 | 2000 $QU_{136}$ |
| 2000 $QN_{139}$ | 15.3 | 0.15 | 20060922 | 38.85824 | 326.81520 | 4.00319 | 12.12439 | 0.3098718 | 3.1559999 | 67 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 60707 | 2000 $QN_{139}$ |
| 2000 $QW_{139}$ | 14.7 | 0.15 | 20060922 | 40.04430 | 331.99170 | 8.82567 | 16.91322 | 0.1988927 | 3.1523248 | 91 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 04138 | 2000 $QW_{139}$ |
| 2000 $QK_{140}$ | 15.7 | 0.15 | 20060922 | 117.38820 | 232.84218 | 171.61212 | 11.79699 | 0.1959683 | 2.6366995 | 67 | 4 | 2000–2004 | 0.61 | M-v | 1 | MPC | 70252 | 2000 $QK_{140}$ |
| 2000 $QE_{143}$ | 14.9 | 0.15 | 20060922 | 44.50892 | 181.57150 | 170.65178 | 20.92168 | 0.1658153 | 3.0903830 | 42 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 84574 | 2000 $QE_{143}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $QQ_{143}$ | 16.3 | 0.15 | 20060922 | 314.80320 | 180.27318 | 145.37908 | 5.71084 | 0.2428382 | 2.2260913 | 69 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 02003 | 2000 $QQ_{143}$ |
| 2000 $QA_{144}$ | 17.2 | 0.15 | 20060922 | 258.04926 | 306.99318 | 74.31272 | 2.52671 | 0.2404834 | 2.2683485 | 36 | 2 | 2000–2005 | 0.58 | M-v | 4 | MPC | 72106 | 2000 $QA_{144}$ |
| 2000 $QC_{146}$ | 16.0 | 0.15 | 20060922 | 257.52882 | 320.48135 | 36.83593 | 5.97436 | 0.1682947 | 2.3134261 | 60 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 02003 | 2000 $QC_{146}$ |
| 2000 $QG_{149}$ | 15.5 | 0.15 | 20060922 | 87.46469 | 126.58724 | 199.54754 | 4.51852 | 0.1295353 | 2.9569470 | 98 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 97385 | 2000 $QG_{149}$ |
| 2000 $QW_{150}$ | 14.9 | 0.15 | 20060922 | 160.74060 | 159.97475 | 209.40641 | 13.83384 | 0.2024293 | 2.6049656 | 178 | 3 | 2000–2004 | 0.56 | M-v | 2 | MPC | 74009 | 2000 $QW_{150}$ |
| 2000 $QH_{152}$ | 13.8 | 0.15 | 20060922 | 0.53283 | 56.98823 | 347.76901 | 25.60609 | 0.2118299 | 3.1664137 | 101 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 87392 | 2000 $QH_{152}$ |
| 2000 $QX_{154}$ | 14.4 | 0.15 | 20060922 | 351.89087 | 65.82593 | 295.63379 | 25.90938 | 0.1654857 | 3.1754170 | 48 | 5 | 1996–2006 | 0.72 | M-v | 1 | MPC | 03177 | 2000 $QX_{154}$ |
| 2000 $QM_{155}$ | 14.8 | 0.15 | 20060922 | 9.80648 | 86.71108 | 279.68131 | 8.49047 | 0.2382279 | 3.1482642 | 60 | 3 | 2000–2006 | 0.43 | M-v | 3 | MPC | 25826 | 2000 $QM_{155}$ |
| 2000 $QQ_{156}$ | 16.9 | 0.15 | 20060922 | 190.02523 | 158.33769 | 235.25500 | 7.19019 | 0.2069961 | 2.3954400 | 76 | 3 | 2000–2005 | 0.50 | M-v | 2 | MPC | 74009 | 2000 $QQ_{156}$ |
| 2000 $QS_{157}$ | 14.9 | 0.15 | 20060922 | 5.55418 | 210.50282 | 180.92203 | 16.21523 | 0.2459213 | 3.0996742 | 51 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 03177 | 2000 $QS_{157}$ |
| 2000 $QA_{158}$ | 14.3 | 0.15 | 20060922 | 324.95261 | 152.25457 | 267.27484 | 10.23830 | 0.2080931 | 3.1860642 | 104 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 30372 | 2000 $QA_{158}$ |
| 2000 $QB_{159}$ | 15.2 | 0.15 | 20060922 | 78.27678 | 77.52672 | 185.42818 | 16.73715 | 0.2940180 | 3.1363270 | 87 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 87393 | 2000 $QB_{159}$ |
| 2000 $QJ_{159}$ | 15.5 | 0.15 | 20060922 | 80.77701 | 119.83160 | 172.47902 | 17.00730 | 0.2340377 | 2.9877207 | 57 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 87393 | 2000 $QJ_{159}$ |
| 2000 $QK_{160}$ | 16.8 | 0.15 | 20060922 | 213.51774 | 164.39742 | 187.42186 | 10.62803 | 0.2014908 | 2.4143412 | 89 | 4 | 2000–2004 | 0.62 | M-v | 1 | MPC | 74009 | 2000 $QK_{160}$ |
| 2000 $QV_{160}$ | 15.4 | 0.15 | 20060922 | 44.62013 | 194.28588 | 192.58193 | 8.91979 | 0.2439153 | 2.8882658 | 81 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 97386 | 2000 $QV_{160}$ |
| 2000 $QZ_{162}$ | 14.9 | 0.15 | 20060922 | 29.16624 | 71.14484 | 280.06612 | 8.85005 | 0.1196507 | 3.0769252 | 54 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 25827 | 2000 $QZ_{162}$ |
| 2000 $QQ_{164}$ | 16.2 | 0.15 | 20060922 | 242.91073 | 141.22143 | 246.50291 | 4.79291 | 0.1704344 | 2.2709758 | 52 | 4 | 2000–2006 | 0.64 | M-v | 1 | MPC | 02003 | 2000 $QQ_{164}$ |
| 2000 $QN_{165}$ | 14.4 | 0.15 | 20060922 | 45.12225 | 327.58648 | 334.79693 | 26.47305 | 0.1466780 | 3.2304177 | 57 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 03177 | 2000 $QN_{165}$ |
| 2000 $QM_{167}$ | 15.2 | 0.15 | 20060922 | 101.44852 | 33.20495 | 321.71063 | 8.44533 | 0.1791054 | 2.7835900 | 104 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 97386 | 2000 $QM_{167}$ |
| 2000 $QO_{167}$ | 14.9 | 0.15 | 20060922 | 354.59632 | 202.41420 | 186.07378 | 9.47128 | 0.1076075 | 3.1436359 | 76 | 5 | 1993–2006 | 0.48 | M-v | 1 | MPC | 04139 | 2000 $QO_{167}$ |
| 2000 $QQ_{167}$ | 15.6 | 0.15 | 20060922 | 89.58815 | 47.04654 | 323.09207 | 8.82856 | 0.1932543 | 2.7924366 | 106 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 97386 | 2000 $QQ_{167}$ |
| 2000 $QX_{168}$ | 14.6 | 0.15 | 20060922 | 35.97982 | 35.26963 | 328.96772 | 9.80414 | 0.0759429 | 3.0333459 | 59 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87393 | 2000 $QX_{168}$ |
| 2000 $QD_{170}$ | 15.2 | 0.15 | 20060922 | 61.79214 | 1.88485 | 306.49800 | 5.76759 | 0.1658157 | 3.1267771 | 54 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87393 | 2000 $QD_{170}$ |
| 2000 $QS_{170}$ | 16.5 | 0.15 | 20060922 | 158.09847 | 135.56075 | 251.44926 | 2.23023 | 0.2761608 | 2.5332455 | 96 | 3 | 2000–2004 | 0.45 | M-v | 2 | MPC | 70253 | 2000 $QS_{170}$ |
| 2000 $QS_{171}$ | 15.8 | 0.15 | 20060922 | 158.46563 | 52.66074 | 230.46854 | 3.82101 | 0.1959930 | 2.7771888 | 51 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 97386 | 2000 $QS_{171}$ |
| 2000 $QW_{173}$ | 14.9 | 0.15 | 20060922 | 0.76959 | 103.24791 | 279.92234 | 6.93692 | 0.2467690 | 3.1438444 | 116 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 30373 | 2000 $QW_{173}$ |
| 2000 $QQ_{174}$ | 14.7 | 0.15 | 20060922 | 47.43316 | 56.82954 | 305.19755 | 9.60122 | 0.0372541 | 2.9693328 | 49 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 87393 | 2000 $QQ_{174}$ |
| 2000 $QG_{175}$ | 15.6 | 0.15 | 20060922 | 193.81451 | 142.88484 | 181.39226 | 6.56950 | 0.1412372 | 2.5206717 | 117 | 4 | 1995–2004 | 0.55 | M-v | 3 | MPC | 70253 | 2000 $QG_{175}$ |
| 2000 $QA_{176}$ | 17.0 | 0.15 | 20060922 | 280.52675 | 60.22474 | 234.21824 | 3.55503 | 0.2450231 | 2.3379187 | 88 | 3 | 2000–2004 | 0.64 | M-v | 2 | MPC | 74010 | 2000 $QA_{176}$ |
| 2000 $QW_{176}$ | 14.6 | 0.15 | 20060922 | 346.04786 | 203.27985 | 325.45773 | 12.86229 | 0.0828687 | 2.5537086 | 112 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97386 | 2000 $QW_{176}$ |
| 2000 $QQ_{179}$ | 15.1 | 0.15 | 20060922 | 23.86496 | 297.73880 | 68.83765 | 2.63710 | 0.1621805 | 3.1297464 | 154 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 87393 | 2000 $QQ_{179}$ |
| 2000 $QJ_{184}$ | 17.1 | 0.15 | 20060922 | 282.26450 | 277.98009 | 58.92329 | 3.64867 | 0.2427654 | 2.2524466 | 24 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 03177 | 2000 $QJ_{184}$ |
| 2000 $QZ_{188}$ | 14.8 | 0.15 | 20060922 | 26.49763 | 358.52491 | 356.96492 | 16.50225 | 0.1754080 | 3.0946639 | 51 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 64781 | 2000 $QZ_{188}$ |
| 2000 $QM_{190}$ | 16.3 | 0.15 | 20060922 | 314.13145 | 236.59678 | 73.96110 | 5.33065 | 0.1435611 | 2.2347950 | 42 | 4 | 1997–2006 | 0.58 | M-v | 2 | MPC | 02003 | 2000 $QM_{190}$ |
| 2000 $QH_{192}$ | 15.5 | 0.15 | 20060922 | 26.85097 | 319.24281 | 8.63143 | 14.53456 | 0.2696005 | 3.1890758 | 117 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 03178 | 2000 $QH_{192}$ |
| 2000 $QY_{193}$ | 15.6 | 0.15 | 20060922 | 41.31272 | 171.25493 | 157.87474 | 11.95136 | 0.1025065 | 3.0816513 | 44 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 74807 | 2000 $QY_{193}$ |
| 2000 $QG_{194}$ | 15.1 | 0.15 | 20060922 | 10.64284 | 148.21595 | 221.16468 | 10.96722 | 0.2195400 | 3.1201591 | 148 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 04139 | 2000 $QG_{194}$ |
| 2000 $QZ_{201}$ | 15.5 | 0.15 | 20060922 | 87.41457 | 226.64499 | 137.19436 | 5.15881 | 0.0843625 | 2.8009380 | 52 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 97387 | 2000 $QZ_{201}$ |
| 2000 $QM_{202}$ | 15.4 | 0.15 | 20060922 | 14.94837 | 196.63801 | 141.67201 | 7.39512 | 0.1135761 | 3.2522779 | 50 | 3 | 2000–2006 | 0.61 | M-v | 3 | MPC | 04139 | 2000 $QM_{202}$ |
| 2000 $QJ_{203}$ | 17.9 | 0.15 | 20060922 | 248.91874 | 294.97333 | 34.52895 | 2.89720 | 0.2039083 | 2.3637053 | 22 | 3 | 2000–2004 | 0.58 | M-v | 3 | MPC | 74808 | 2000 $QJ_{203}$ |
| 2000 $QT_{203}$ | 14.8 | 0.15 | 20060922 | 42.61936 | 182.78811 | 137.80199 | 8.26418 | 0.1943539 | 3.1614045 | 95 | 5 | 1993–2006 | 0.53 | M-v | 1 | MPC | 47928 | 2000 $QT_{203}$ |
| 2000 $QU_{204}$ | 16.1 | 0.15 | 20060922 | 130.91962 | 148.16182 | 181.21163 | 4.78898 | 0.1908433 | 2.7441887 | 58 | 4 | 1991–2005 | 0.64 | M-v | 1 | MPC | 04139 | 2000 $QU_{204}$ |
| 2000 $QR_{205}$ | 16.6 | 0.15 | 20060922 | 260.87076 | 190.13156 | 161.57654 | 5.08985 | 0.1247991 | 2.3073296 | 50 | 3 | 2000–2006 | 0.70 | M-v | 3 | MPC | 99963 | 2000 $QR_{205}$ |
| 2000 $QE_{208}$ | 15.4 | 0.15 | 20060922 | 30.34780 | 1.72098 | 357.93346 | 11.33989 | 0.2358002 | 3.1348592 | 58 | 3 | 2000–2006 | 0.62 | M-v | 3 | MPC | 88731 | 2000 $QE_{208}$ |
| 2000 $QQ_{210}$ | 16.7 | 0.15 | 20060922 | 240.38913 | 120.11269 | 183.60177 | 5.57056 | 0.2275035 | 2.4436123 | 68 | 3 | 2000–2004 | 0.66 | M-v | 3 | MPC | 46449 | 2000 $QQ_{210}$ |
| 2000 $QF_{213}$ | 14.6 | 0.15 | 20060922 | 11.85567 | 13.68036 | 352.02980 | 25.71563 | 0.1239713 | 3.1664751 | 72 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87393 | 2000 $QF_{213}$ |
| 2000 $QL_{213}$ | 14.7 | 0.15 | 20060922 | 110.70882 | 284.83111 | 0.14177 | 15.63656 | 0.0462970 | 3.0331704 | 49 | 4 | 2000–2006 | 0.63 | M-v | 2 | MPC | 84579 | 2000 $QL_{213}$ |
| 2000 $QV_{214}$ | 15.8 | 0.15 | 20060922 | 170.81708 | 302.21092 | 5.70115 | 9.47141 | 0.2342217 | 2.6464266 | 51 | 3 | 2000–2005 | 0.47 | M-v | 2 | MPC | 97388 | 2000 $QV_{214}$ |
| 2000 $QC_{215}$ | 14.9 | 0.15 | 20060922 | 38.71792 | 227.56784 | 140.76456 | 6.09028 | 0.1050403 | 3.0325954 | 102 | 5 | 1998–2006 | 0.52 | M-v | 0 | MPC | 90033 | 2000 $QC_{215}$ |
| 2000 $QX_{215}$ | 17.8 | 0.15 | 20060922 | 176.05822 | 349.76909 | 9.86747 | 7.55416 | 0.2604629 | 2.5341247 | 139 | 4 | 1996–2004 | 0.50 | M-v | 2 | MPC | 74012 | 2000 $QX_{215}$ |
| 2000 $QO_{216}$ | 17.5 | 0.15 | 20060922 | 295.48515 | 235.39337 | 84.29076 | 1.82463 | 0.1821658 | 2.2729131 | 37 | 2 | 2000–2006 | 0.54 | M-v | 4 | MPC | 99964 | 2000 $QO_{216}$ |
| 2000 $QT_{220}$ | 15.7 | 0.15 | 20060922 | 81.45000 | 227.60624 | 140.54718 | 8.57453 | 0.1222548 | 2.7778601 | 56 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 97388 | 2000 $QT_{220}$ |
| 2000 $QA_{221}$ | 17.5 | 0.15 | 20060922 | 283.80856 | 335.29667 | 350.08986 | 4.80097 | 0.1957908 | 2.2643294 | 20 | 2 | 2000–2006 | 0.30 | M-v | 3 | MPC | 99964 | 2000 $QA_{221}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $QD_{223}$ | 15.3 | 0.15 | 20060922 | 140.37983 | 302.44867 | 0.66643 | 12.88885 | 0.1673458 | 2.7460225 | 68 | 2 | 2000–2005 | 0.74 | M-v | 3 | MPC | 88732 | 2000 $QD_{223}$ |
| 2000 $QR_{223}$ | 15.9 | 0.15 | 20060922 | 154.73285 | 303.16995 | 342.84464 | 6.26825 | 0.1404370 | 2.7437052 | 30 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 93840 | 2000 $QR_{223}$ |
| 2000 $QE_{226}$ | 6.0 | 0.15 | 20060922 | 237.48240 | 356.65030 | 118.50941 | 1.19240 | 0.0809473 | 43.9356357 | 18 | 3 | 2000–2006 | 0.31 | M-v | 4 | MPC | 84580 | 2000 $QE_{226}$ |
| 2000 $QN_{226}$ | 15.0 | 0.15 | 20060922 | 1.19710 | 163.45046 | 187.11934 | 13.20339 | 0.1071532 | 3.1754096 | 65 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 04139 | 2000 $QN_{226}$ |
| 2000 $QY_{228}$ | 15.7 | 0.15 | 20060922 | 162.80169 | 273.90516 | 9.40006 | 3.68890 | 0.2805389 | 2.7421039 | 71 | 5 | 1991–2006 | 0.46 | M-v | 1 | MPC | 90034 | 2000 $QY_{228}$ |
| 2000 $QR_{229}$ | 15.7 | 0.15 | 20060922 | 209.71741 | 33.44655 | 0.94533 | 6.98809 | 0.1168009 | 2.3450614 | 85 | 4 | 1993–2004 | 0.76 | M-v | 1 | MPC | 04139 | 2000 $QR_{229}$ |
| 2000 $QY_{230}$ | 16.5 | 0.15 | 20060922 | 236.64015 | 212.47676 | 146.87536 | 2.64460 | 0.1641557 | 2.3744719 | 77 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 02004 | 2000 $QY_{230}$ |
| 2000 $QE_{232}$ | 16.4 | 0.15 | 20060922 | 104.79930 | 131.67354 | 216.04033 | 3.51693 | 0.1161047 | 2.8097904 | 53 | 4 | 1995–2006 | 0.51 | M-v | 3 | MPC | 97388 | 2000 $QE_{232}$ |
| 2000 $QB_{235}$ | 15.8 | 0.15 | 20000804 | 242.32287 | 118.51162 | 344.03474 | 9.34363 | 0.1897721 | 3.1220499 | 6 | 1 | 28 days | 0.12 | | | MPC | 46451 | 2000 $QB_{235}$ |
| 2000 $QK_{237}$ | 16.5 | 0.15 | 20060922 | 255.03332 | 57.52163 | 155.95859 | 2.82227 | 0.0185126 | 2.6503867 | 42 | 6 | 1994–2006 | 0.36 | M-v | 0 | MPC | 97388 | 2000 $QK_{237}$ |
| 2000 $QM_{246}$ | 16.0 | 0.15 | 20060922 | 41.98210 | 186.55041 | 127.23741 | 2.49117 | 0.1564368 | 3.1591777 | 43 | 6 | 1994–2006 | 0.68 | M-v | 1 | MPC | 87394 | 2000 $QM_{246}$ |
| 2000 $QQ_{247}$ | 16.0 | 0.15 | 20060922 | 105.55362 | 89.26383 | 223.95274 | 1.37824 | 0.0623876 | 2.8582076 | 64 | 5 | 2000–2006 | 0.40 | M-v | 0 | MPC | 97388 | 2000 $QQ_{247}$ |
| 2000 $QT_{247}$ | 16.7 | 0.15 | 20060922 | 344.60490 | 164.00194 | 239.74865 | 0.24707 | 0.1793864 | 3.0988782 | 79 | 4 | 1995–2006 | 0.47 | M-v | 1 | MPC | 27022 | 2000 $QT_{247}$ |
| 2000 $QB_{251}$ | 15.0 | 0.15 | 20060922 | 185.01086 | 170.01352 | 109.39568 | 16.48231 | 0.1231855 | 2.6582980 | 50 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 93841 | 2000 $QB_{251}$ |
| 2000 $QC_{251}$ | 15.7 | 0.15 | 20060922 | 258.43941 | 264.50032 | 88.89475 | 9.62230 | 0.2022700 | 2.2882244 | 67 | 5 | 2000–2006 | 0.71 | M-v | 1 | MPC | 02004 | 2000 $QC_{251}$ |
| 2000 RH | 15.9 | 0.15 | 20060922 | 62.13291 | 17.93674 | 354.40161 | 20.02019 | 0.0776195 | 1.9608127 | 66 | 3 | 1999–2006 | 0.67 | M-v | 3 | MPC | 41668 | 2000 RH |
| 2000 RQ | 15.5 | 0.15 | 20060922 | 132.68252 | 188.61139 | 209.16725 | 13.25131 | 0.0829698 | 2.5187611 | 54 | 4 | 2000–2004 | 0.84 | M-v | 1 | MPC | 70255 | 2000 RQ |
| 2000 $RZ_2$ | 14.4 | 0.15 | 20060922 | 28.63919 | 48.60232 | 3.26608 | 11.14073 | 0.1266003 | 2.9758615 | 162 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 97388 | 2000 $RZ_2$ |
| 2000 $RK_5$ | 15.8 | 0.15 | 20060922 | 78.58187 | 350.77136 | 3.26190 | 18.81790 | 0.0959690 | 1.9656951 | 81 | 5 | 1999–2006 | 0.56 | M-v | 2 | MPC | 57781 | 2000 $RK_5$ |
| 2000 $RB_9$ | 15.6 | 0.15 | 20060922 | 87.52357 | 220.53264 | 94.20313 | 10.92123 | 0.0725218 | 3.0234681 | 42 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 87394 | 2000 $RB_9$ |
| 2000 $RV_{12}$ | 14.6 | 0.15 | 20060922 | 52.02135 | 130.76540 | 204.51398 | 10.30140 | 0.1691670 | 3.0587214 | 94 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 66142 | 2000 $RV_{12}$ |
| 2000 $RC_{15}$ | 14.7 | 0.15 | 20060922 | 20.26214 | 120.54595 | 277.95110 | 8.23154 | 0.1718859 | 3.0048548 | 145 | 4 | 2000–2006 | 0.62 | M-v | 0 | MPC | 87394 | 2000 $RC_{15}$ |
| 2000 $RZ_{15}$ | 14.6 | 0.15 | 20060922 | 11.27470 | 65.43135 | 313.29679 | 12.11767 | 0.3058627 | 3.1610806 | 94 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 27692 | 2000 $RZ_{15}$ |
| 2000 $RM_{18}$ | 15.7 | 0.15 | 20060922 | 107.53228 | 40.45016 | 304.17407 | 7.04049 | 0.1439270 | 2.8047289 | 145 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 97389 | 2000 $RM_{18}$ |
| 2000 $RR_{18}$ | 14.7 | 0.15 | 20060922 | 60.77763 | 40.30229 | 295.66453 | 8.18845 | 0.1432281 | 3.0403577 | 80 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 87394 | 2000 $RR_{18}$ |
| 2000 $RW_{18}$ | 14.6 | 0.15 | 20060922 | 358.14993 | 85.17267 | 326.33956 | 14.58394 | 0.2722903 | 3.1286263 | 178 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 87394 | 2000 $RW_{18}$ |
| 2000 $RC_{19}$ | 14.9 | 0.15 | 20060922 | 145.38741 | 2.02871 | 316.08636 | 11.77841 | 0.1233598 | 2.7400561 | 92 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97389 | 2000 $RC_{19}$ |
| 2000 $RU_{19}$ | 15.6 | 0.15 | 20060922 | 106.78298 | 204.43882 | 195.93447 | 13.58368 | 0.2014809 | 2.6629457 | 55 | 4 | 2000–2004 | 0.48 | M-v | 1 | MPC | 66143 | 2000 $RU_{19}$ |
| 2000 $RT_{20}$ | 16.5 | 0.15 | 20060922 | 319.22905 | 119.95366 | 213.79421 | 7.21116 | 0.1753536 | 2.1976255 | 80 | 3 | 1997–2006 | 0.37 | M-v | 3 | MPC | 99966 | 2000 $RT_{20}$ |
| 2000 $RF_{21}$ | 16.2 | 0.15 | 20060922 | 211.94123 | 149.85287 | 254.76187 | 5.23152 | 0.1805578 | 2.3374791 | 83 | 3 | 1998–2005 | 0.62 | M-v | 2 | MPC | 72118 | 2000 $RF_{21}$ |
| 2000 $RZ_{21}$ | 15.1 | 0.15 | 20060922 | 55.11335 | 130.52565 | 211.13065 | 8.06757 | 0.1685196 | 3.0644774 | 85 | 3 | 2000–2006 | 0.41 | M-v | 2 | MPC | 84582 | 2000 $RZ_{21}$ |
| 2000 $RA_{23}$ | 15.5 | 0.15 | 20060922 | 59.60777 | 125.24566 | 211.03768 | 3.36052 | 0.2412117 | 3.0527983 | 75 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 90034 | 2000 $RA_{23}$ |
| 2000 $RL_{24}$ | 15.1 | 0.15 | 20060922 | 174.88135 | 335.98373 | 319.62910 | 12.65186 | 0.1247681 | 2.6900548 | 58 | 5 | 2000–2005 | 0.68 | M-v | 1 | MPC | 90034 | 2000 $RL_{24}$ |
| 2000 $RB_{25}$ | 16.9 | 0.15 | 20060922 | 281.87241 | 21.49267 | 307.95911 | 5.56373 | 0.1909715 | 2.2912541 | 48 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 93841 | 2000 $RB_{25}$ |
| 2000 $RA_{27}$ | 16.8 | 0.15 | 20060922 | 237.67208 | 105.09412 | 268.94451 | 4.93476 | 0.2822385 | 2.3361468 | 68 | 3 | 1998–2005 | 0.66 | M-v | 2 | MPC | 72120 | 2000 $RA_{27}$ |
| 2000 $RC_{28}$ | 16.6 | 0.15 | 20060922 | 276.98626 | 100.36144 | 258.79369 | 5.76311 | 0.1252330 | 2.2573967 | 53 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 72120 | 2000 $RC_{28}$ |
| 2000 $RZ_{28}$ | 14.5 | 0.15 | 20060922 | 353.40953 | 124.37568 | 289.85926 | 8.84942 | 0.2339131 | 3.1509039 | 123 | 4 | 2000–2006 | 0.51 | M-v | 0 | MPC | 87395 | 2000 $RZ_{28}$ |
| 2000 $RN_{29}$ | 14.2 | 0.15 | 20060922 | 49.47025 | 351.44154 | 328.43605 | 17.05564 | 0.2330993 | 3.1608251 | 86 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 02004 | 2000 $RN_{29}$ |
| 2000 $RU_{38}$ | 15.2 | 0.15 | 20060922 | 130.37341 | 163.46811 | 214.72641 | 8.28023 | 0.2136106 | 2.7849821 | 94 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 97390 | 2000 $RU_{38}$ |
| 2000 $RM_{39}$ | 14.6 | 0.15 | 20060922 | 112.26620 | 25.60081 | 274.24277 | 8.27773 | 0.0204245 | 2.9629920 | 54 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87395 | 2000 $RM_{39}$ |
| 2000 $RO_{40}$ | 15.2 | 0.15 | 20060922 | 171.87258 | 126.91529 | 219.71686 | 11.96587 | 0.1303101 | 2.5900495 | 105 | 3 | 2000–2004 | 0.45 | M-v | 3 | MPC | 70257 | 2000 $RO_{40}$ |
| 2000 $RH_{43}$ | 13.6 | 0.15 | 20060922 | 349.78007 | 76.25054 | 356.71850 | 25.30860 | 0.2717642 | 3.1712014 | 131 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 87395 | 2000 $RH_{43}$ |
| 2000 $RP_{43}$ | 15.6 | 0.15 | 20060922 | 223.77065 | 46.41522 | 341.66299 | 11.94660 | 0.2026404 | 2.3672187 | 56 | 2 | 2000–2005 | 0.38 | M-v | 3 | MPC | 72122 | 2000 $RP_{43}$ |
| 2000 $RH_{45}$ | 14.9 | 0.15 | 20060922 | 208.63866 | 315.14771 | 332.97035 | 12.51890 | 0.1676253 | 2.6593428 | 114 | 4 | 1998–2004 | 0.53 | M-v | 1 | MPC | 70257 | 2000 $RH_{45}$ |
| 2000 $RX_{53}$ | 15.2 | 0.15 | 20060922 | 2.52552 | 159.93595 | 201.75897 | 14.00825 | 0.2160774 | 3.2134158 | 103 | 6 | 1993–2006 | 0.51 | M-v | 1 | MPC | 04139 | 2000 $RX_{53}$ |
| 2000 $RF_{54}$ | 14.6 | 0.15 | 20060922 | 42.45312 | 195.50696 | 224.45395 | 12.06104 | 0.2251748 | 3.0440977 | 181 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 97390 | 2000 $RF_{54}$ |
| 2000 $RW_{57}$ | 16.8 | 0.15 | 20060922 | 192.35315 | 166.61568 | 274.71463 | 2.38681 | 0.2346460 | 2.3484924 | 112 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 77472 | 2000 $RW_{57}$ |
| 2000 $RZ_{57}$ | 16.4 | 0.15 | 20060922 | 179.27998 | 190.38129 | 205.74117 | 7.12755 | 0.1162515 | 2.4619801 | 60 | 3 | 2000–2004 | 0.57 | M-v | 3 | MPC | 74015 | 2000 $RZ_{57}$ |
| 2000 $RH_{60}$ | 20.0 | 0.15 | 20060922 | 189.62101 | 354.37054 | 177.92577 | 19.64391 | 0.5513089 | 0.8258741 | 154 | 3 | 2000–2006 | 0.51 | M-v | 5 | MPC | 04139 | 2000 $RH_{60}$ |
| 2000 $RV_{64}$ | 15.1 | 0.15 | 20060922 | 351.86274 | 83.87244 | 316.81394 | 12.41599 | 0.1467581 | 3.1408516 | 51 | 3 | 2000–2006 | 0.63 | M-v | 3 | MPC | 22487 | 2000 $RV_{64}$ |
| 2000 $RE_{65}$ | 15.6 | 0.15 | 20060922 | 30.53310 | 185.01628 | 166.13773 | 5.43065 | 0.1933935 | 3.1488861 | 54 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 03178 | 2000 $RE_{65}$ |
| 2000 $RV_{66}$ | 16.0 | 0.15 | 20060922 | 228.96893 | 307.26816 | 113.15936 | 4.73835 | 0.1945474 | 2.3003873 | 126 | 4 | 1995–2005 | 0.57 | M-v | 2 | MPC | 77472 | 2000 $RV_{66}$ |
| 2000 $RZ_{74}$ | 15.1 | 0.15 | 20060922 | 70.85271 | 118.37067 | 184.13831 | 21.95555 | 0.0984107 | 3.1105944 | 65 | 3 | 2000–2006 | 0.65 | M-v | 2 | MPC | 60712 | 2000 $RZ_{74}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $RM_{78}$ | 16.4 | 0.15 | 20060922 | 78.38250 | 189.92142 | 179.86015 | 13.05598 | 0.1288406 | 2.8473944 | 36 | 2 | 2000–2005 | 0.47 | M-v | 3 | MPC | 90035 | 2000 $RM_{78}$ |
| 2000 $RQ_{78}$ | 16.2 | 0.15 | 20060922 | 155.16167 | 110.86108 | 195.39232 | 3.82264 | 0.1408102 | 2.7341344 | 34 | 3 | 2000–2005 | 0.45 | M-v | 3 | MPC | 99969 | 2000 $RQ_{78}$ |
| 2000 $RP_{79}$ | 15.9 | 0.15 | 20060922 | 19.61262 | 174.00167 | 193.62957 | 17.90179 | 0.2066889 | 3.0813711 | 43 | 5 | 1998–2006 | 0.54 | M-v | 0 | MPC | 74810 | 2000 $RP_{79}$ |
| 2000 $RS_{79}$ | 14.3 | 0.15 | 20060922 | 26.26599 | 95.24598 | 255.43796 | 13.28967 | 0.1662142 | 3.1107427 | 96 | 3 | 2000–2006 | 0.61 | M-v | 2 | MPC | 30383 | 2000 $RS_{79}$ |
| 2000 $RF_{80}$ | 16.1 | 0.15 | 20060922 | 245.87475 | 7.72264 | 276.66256 | 7.98251 | 0.2289704 | 2.4575469 | 81 | 5 | 1996–2005 | 0.62 | M-v | 2 | MPC | 97391 | 2000 $RF_{80}$ |
| 2000 $RL_{80}$ | 15.1 | 0.15 | 20060922 | 44.89901 | 80.25677 | 285.77367 | 5.67101 | 0.0933744 | 3.0021271 | 48 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87395 | 2000 $RL_{80}$ |
| 2000 $RM_{80}$ | 17.2 | 0.15 | 20060922 | 175.04508 | 37.70618 | 313.60168 | 6.17745 | 0.3598031 | 2.5434778 | 124 | 3 | 1996–2004 | 0.43 | M-v | 2 | MPC | 70258 | 2000 $RM_{80}$ |
| 2000 $RD_{82}$ | 14.8 | 0.15 | 20060922 | 79.83155 | 77.60015 | 248.99485 | 8.99677 | 0.1682602 | 2.9738893 | 96 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 02005 | 2000 $RD_{82}$ |
| 2000 $RQ_{82}$ | 15.2 | 0.15 | 20060922 | 25.83559 | 173.31497 | 218.47236 | 6.91434 | 0.1489780 | 3.0357612 | 44 | 5 | 2000–2006 | 0.75 | M-v | 1 | MPC | 90035 | 2000 $RQ_{82}$ |
| 2000 $RA_{83}$ | 15.2 | 0.15 | 20060922 | 76.71799 | 17.13583 | 303.79955 | 9.14528 | 0.1181455 | 3.0280874 | 49 | 2 | 2000–2005 | 0.45 | M-v | 3 | MPC | 88735 | 2000 $RA_{83}$ |
| 2000 $RN_{84}$ | 17.9 | 0.15 | 20060922 | 322.36910 | 69.52215 | 276.66053 | 2.11400 | 0.1470943 | 2.1661560 | 30 | 4 | 2000–2005 | 0.72 | M-v | 1 | MPC | 74811 | 2000 $RN_{84}$ |
| 2000 $RJ_{85}$ | 15.3 | 0.15 | 20060922 | 19.21462 | 25.16965 | 341.07390 | 9.01572 | 0.2132538 | 3.1150196 | 55 | 4 | 1997–2006 | 0.55 | M-v | 2 | MPC | 04139 | 2000 $RJ_{85}$ |
| 2000 $RP_{86}$ | 15.7 | 0.15 | 20060922 | 55.84404 | 136.35865 | 206.43696 | 6.38549 | 0.2048520 | 3.0650424 | 69 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 87395 | 2000 $RP_{86}$ |
| 2000 $RY_{86}$ | 14.5 | 0.15 | 20060922 | 344.55914 | 228.88361 | 193.51267 | 10.65332 | 0.1558971 | 3.1256816 | 83 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 04139 | 2000 $RY_{86}$ |
| 2000 $RP_{87}$ | 15.7 | 0.15 | 20060922 | 41.25089 | 4.93307 | 344.56186 | 5.85214 | 0.2466114 | 3.1021463 | 48 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 88736 | 2000 $RP_{87}$ |
| 2000 $RV_{87}$ | 16.8 | 0.15 | 20060922 | 315.04189 | 60.18955 | 306.60996 | 4.46224 | 0.1292569 | 2.1559339 | 44 | 3 | 2000–2005 | 0.59 | M-v | 3 | MPC | 49812 | 2000 $RV_{87}$ |
| 2000 $RH_{88}$ | 15.4 | 0.15 | 20060922 | 17.65452 | 165.80327 | 159.89479 | 27.10438 | 0.1321307 | 3.1988605 | 49 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04139 | 2000 $RH_{88}$ |
| 2000 $RF_{90}$ | 15.0 | 0.15 | 20060922 | 346.24160 | 210.91696 | 190.72308 | 10.44698 | 0.1821482 | 3.1969463 | 109 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 04139 | 2000 $RF_{90}$ |
| 2000 $RM_{90}$ | 15.2 | 0.15 | 20060922 | 353.97974 | 58.08216 | 340.70724 | 23.01408 | 0.1629375 | 3.1975551 | 34 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 88736 | 2000 $RM_{90}$ |
| 2000 $RZ_{90}$ | 14.9 | 0.15 | 20060922 | 43.33734 | 124.20594 | 201.55808 | 25.80711 | 0.2112901 | 3.2191181 | 60 | 5 | 1999–2006 | 0.50 | M-v | 0 | MPC | 88736 | 2000 $RZ_{90}$ |
| 2000 $RO_{92}$ | 14.8 | 0.15 | 20060922 | 40.96918 | 77.62135 | 286.79020 | 8.78174 | 0.2492644 | 3.1282404 | 88 | 4 | 2000–2006 | 0.49 | M-v | 0 | MPC | 87396 | 2000 $RO_{92}$ |
| 2000 $RG_{93}$ | 15.5 | 0.15 | 20060922 | 77.99141 | 70.53489 | 292.55675 | 5.70800 | 0.0954177 | 2.8568205 | 90 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 90035 | 2000 $RG_{93}$ |
| 2000 $RU_{93}$ | 15.7 | 0.15 | 20060922 | 67.09573 | 22.57697 | 359.64050 | 16.60309 | 0.2439125 | 2.8715249 | 90 | 2 | 2000–2005 | 0.58 | M-v | 3 | MPC | 90035 | 2000 $RU_{93}$ |
| 2000 $RG_{96}$ | 15.3 | 0.15 | 20060922 | 172.12440 | 94.81131 | 230.44787 | 17.21625 | 0.1964263 | 2.6049266 | 45 | 3 | 1996–2004 | 0.53 | M-v | 2 | MPC | 68700 | 2000 $RG_{96}$ |
| 2000 $RM_{96}$ | 16.4 | 0.15 | 20060922 | 172.17878 | 343.19420 | 313.78631 | 5.71668 | 0.0369174 | 2.7378502 | 25 | 5 | 1996–2005 | 0.64 | M-v | 1 | MPC | 90035 | 2000 $RM_{96}$ |
| 2000 $RV_{96}$ | 14.5 | 0.15 | 20060922 | 20.80084 | 81.47212 | 259.13248 | 19.56480 | 0.2501693 | 3.2277279 | 59 | 2 | 2000–2006 | 0.53 | M-v | 3 | MPC | 03179 | 2000 $RV_{96}$ |
| 2000 $RK_{97}$ | 15.0 | 0.15 | 20060922 | 28.92451 | 96.93620 | 284.36405 | 13.50340 | 0.3313441 | 3.0672934 | 83 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 87396 | 2000 $RK_{97}$ |
| 2000 $RP_{97}$ | 14.4 | 0.15 | 20060922 | 49.80335 | 105.72131 | 208.00835 | 25.15024 | 0.2615336 | 3.1322396 | 134 | 3 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87396 | 2000 $RP_{97}$ |
| 2000 $RA_{98}$ | 14.6 | 0.15 | 20060922 | 42.10508 | 103.13456 | 257.57314 | 16.11622 | 0.2485959 | 3.0655448 | 69 | 3 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97391 | 2000 $RA_{98}$ |
| 2000 $RE_{100}$ | 15.3 | 0.15 | 20060922 | 62.27471 | 6.29192 | 3.51762 | 6.73421 | 0.1214986 | 2.8902502 | 77 | 4 | 2000–2005 | 0.51 | M-v | 1 | MPC | 97391 | 2000 $RE_{100}$ |
| 2000 $RW_{100}$ | 16.2 | 0.15 | 20060922 | 302.23823 | 117.64935 | 208.04631 | 22.38340 | 0.1989800 | 2.2641719 | 72 | 2 | 2000–2006 | 0.56 | M-v | 3 | MPC | 99970 | 2000 $RW_{100}$ |
| 2000 $RP_{101}$ | 13.8 | 0.15 | 20060922 | 347.56317 | 105.02622 | 338.68493 | 25.93716 | 0.2073468 | 3.0857449 | 182 | 4 | 2000–2006 | 0.58 | M-v | 0 | MPC | 97391 | 2000 $RP_{101}$ |
| 2000 $RV_{101}$ | 14.9 | 0.15 | 20060922 | 45.09594 | 134.42513 | 285.03917 | 10.77696 | 0.1527465 | 2.8808083 | 188 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97392 | 2000 $RV_{101}$ |
| 2000 $RA_{102}$ | 14.2 | 0.15 | 20060922 | 20.29389 | 55.27494 | 323.58805 | 15.40654 | 0.1421207 | 3.1595493 | 101 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 90035 | 2000 $RA_{102}$ |
| 2000 $RW_{102}$ | 14.4 | 0.15 | 20060922 | 51.51854 | 15.60282 | 316.25512 | 13.76505 | 0.2625051 | 3.1157486 | 52 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 74813 | 2000 $RW_{102}$ |
| 2000 $RB_{104}$ | 16.6 | 0.15 | 20060922 | 279.94905 | 65.89445 | 294.89927 | 5.83408 | 0.1341357 | 2.2750715 | 59 | 3 | 2000–2005 | 0.56 | M-v | 2 | MPC | 72128 | 2000 $RB_{104}$ |
| 2000 $RD_{105}$ | 14.7 | 0.15 | 20060922 | 51.43310 | 68.55769 | 297.63195 | 12.36148 | 0.2552289 | 3.0558645 | 106 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 97392 | 2000 $RD_{105}$ |
| 2000 $RM_{107}$ | 16.5 | 0.15 | 20060922 | 27.83079 | 334.77620 | 61.59890 | 2.81850 | 0.1093151 | 2.9520038 | 19 | 3 | 1998–2005 | 0.16 | M-v | 3 | MPC | 84586 | 2000 $RM_{107}$ |
| 2000 SE | 16.3 | 0.15 | 20060922 | 227.48367 | 135.77685 | 211.08297 | 6.54186 | 0.3627309 | 2.3849146 | 79 | 3 | 2000–2005 | 0.42 | M-v | 2 | MPC | 88737 | 2000 SE |
| 2000 SO | 15.0 | 0.15 | 20060922 | 227.16064 | 159.15313 | 6.17104 | 19.54832 | 0.1218437 | 3.1932754 | 64 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 50487 | 2000 SO |
| 2000 SR | 15.7 | 0.15 | 20060922 | 90.60553 | 301.41468 | 4.17263 | 4.90329 | 0.1048246 | 3.0790332 | 67 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 84586 | 2000 SR |
| 2000 $SB_1$ | 15.2 | 0.15 | 20060922 | 341.79469 | 145.21598 | 277.03743 | 22.15021 | 0.5398696 | 3.3463880 | 372 | 2 | 2000–2006 | 0.44 | M-v | 0 | MPC | 04139 | 2000 $SB_1$ |
| 2000 $SE_1$ | 15.2 | 0.15 | 20060922 | 222.00996 | 315.39056 | 289.74034 | 28.48967 | 0.2709578 | 1.8538657 | 94 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 87396 | 2000 $SE_1$ |
| 2000 $SM_1$ | 15.4 | 0.15 | 20060922 | 101.50131 | 37.86293 | 292.43712 | 17.03626 | 0.0584411 | 1.9706383 | 73 | 4 | 1995–2006 | 0.55 | M-v | 2 | MPC | 62308 | 2000 $SM_1$ |
| 2000 $SB_2$ | 14.8 | 0.15 | 20060922 | 353.25988 | 35.45858 | 352.44712 | 28.96257 | 0.2706816 | 3.1661358 | 57 | 4 | 1997–2006 | 0.49 | M-v | 1 | MPC | 04139 | 2000 $SB_2$ |
| 2000 $SD_8$ | 20.8 | 0.15 | 20060922 | 93.45137 | 211.45934 | 19.23795 | 6.55324 | 0.3138706 | 1.1292895 | 52 | 3 | 2000–2006 | 0.62 | M-v | 2 | MPC | 04139 | 2000 $SD_8$ |
| 2000 $SU_9$ | 16.1 | 0.15 | 20060922 | 176.45639 | 19.45272 | 342.54777 | 16.89464 | 0.1707823 | 2.5434739 | 93 | 3 | 2000–2004 | 0.58 | M-v | 3 | MPC | 74018 | 2000 $SU_9$ |
| 2000 $SO_{10}$ | 17.5 | 0.15 | 20060922 | 148.93741 | 203.94585 | 356.47976 | 36.98016 | 0.5401145 | 1.2995909 | 96 | 4 | 2000–2006 | 0.55 | M-v | 3 | MPC | 04140 | 2000 $SO_{10}$ |
| 2000 $ST_{10}$ | 15.2 | 0.15 | 20060922 | 297.65315 | 115.98627 | 5.97307 | 16.65475 | 0.2079427 | 3.1769766 | 69 | 3 | 2000–2006 | 0.63 | M-v | 2 | MPC | 47940 | 2000 $ST_{10}$ |
| 2000 $SO_{11}$ | 17.0 | 0.15 | 20060922 | 197.46780 | 292.18289 | 8.34323 | 12.70402 | 0.2841277 | 2.5757028 | 46 | 3 | 1996–2004 | 0.54 | M-v | 3 | MPC | 72130 | 2000 $SO_{11}$ |
| 2000 $SU_{14}$ | 15.6 | 0.15 | 20060922 | 104.11508 | 235.46493 | 120.68062 | 14.17807 | 0.0679660 | 2.8100018 | 40 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 87396 | 2000 $SU_{14}$ |
| 2000 $SH_{15}$ | 15.9 | 0.15 | 20060922 | 96.94629 | 28.83985 | 335.27943 | 8.34673 | 0.1649923 | 2.7919783 | 72 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 97392 | 2000 $SH_{15}$ |
| 2000 $SM_{15}$ | 14.7 | 0.15 | 20060922 | 25.44668 | 156.44311 | 222.71006 | 9.31352 | 0.0981055 | 3.0580812 | 82 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 03179 | 2000 $SM_{15}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $SX_{15}$ | 15.0 | 0.15 | 20060922 | 351.06326 | 229.62825 | 199.97582 | 10.51477 | 0.1022937 | 3.0223493 | 72 | 6 | 1995–2006 | 0.62 | M-v | 1 | MPC | 87396 | 2000 $SX_{15}$ |
| 2000 $SD_{16}$ | 14.4 | 0.15 | 20060922 | 61.03278 | 336.92781 | 325.43032 | 9.93357 | 0.1207697 | 3.2079537 | 63 | 5 | 1994–2006 | 0.61 | M-v | 1 | MPC | 25846 | 2000 $SD_{16}$ |
| 2000 $SQ_{16}$ | 15.1 | 0.15 | 20060922 | 15.62288 | 156.33997 | 247.50034 | 9.71389 | 0.1268636 | 3.0392272 | 71 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87396 | 2000 $SQ_{16}$ |
| 2000 $SF_{17}$ | 15.6 | 0.15 | 20060922 | 95.51833 | 73.20899 | 276.82771 | 5.22053 | 0.0799677 | 2.8646164 | 76 | 3 | 2000–2006 | 0.57 | M-v | 4 | MPC | 88739 | 2000 $SF_{17}$ |
| 2000 $SR_{18}$ | 15.5 | 0.15 | 20060922 | 40.88620 | 58.46286 | 290.80447 | 11.48241 | 0.1358867 | 3.1116483 | 53 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 84588 | 2000 $SR_{18}$ |
| 2000 $SM_{21}$ | 17.0 | 0.15 | 20060922 | 152.30364 | 187.52351 | 182.68351 | 16.77322 | 0.2438259 | 2.5931826 | 56 | 2 | 2000–2004 | 0.52 | M-v | 3 | MPC | 72132 | 2000 $SM_{21}$ |
| 2000 $SF_{26}$ | 15.0 | 0.15 | 20060922 | 24.62128 | 134.70201 | 231.45714 | 10.19448 | 0.3150407 | 3.1089853 | 81 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 03179 | 2000 $SF_{26}$ |
| 2000 $SH_{26}$ | 15.0 | 0.15 | 20060922 | 1.95555 | 226.97382 | 182.69966 | 13.45793 | 0.2131296 | 3.0536781 | 37 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 84589 | 2000 $SH_{26}$ |
| 2000 $SK_{26}$ | 14.7 | 0.15 | 20060922 | 346.40061 | 120.46880 | 291.12866 | 15.34887 | 0.3120994 | 3.1255239 | 111 | 3 | 2000–2006 | 0.54 | M-v | 1 | MPC | 25846 | 2000 $SK_{26}$ |
| 2000 $SS_{26}$ | 17.3 | 0.15 | 20060922 | 248.16566 | 141.30697 | 269.47048 | 4.40333 | 0.1207799 | 2.2112778 | 28 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 74815 | 2000 $SS_{26}$ |
| 2000 $SZ_{26}$ | 14.7 | 0.15 | 20060922 | 356.09704 | 202.91564 | 198.76351 | 27.17676 | 0.1363522 | 3.1309479 | 58 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 60714 | 2000 $SZ_{26}$ |
| 2000 $SP_{27}$ | 16.1 | 0.15 | 20060922 | 184.86975 | 219.03438 | 230.49115 | 4.25364 | 0.1028358 | 2.2904350 | 36 | 5 | 2000–2006 | 0.66 | M-v | 1 | MPC | 02006 | 2000 $SP_{27}$ |
| 2000 $SS_{27}$ | 15.0 | 0.15 | 20060922 | 76.19774 | 82.99540 | 248.58543 | 9.08865 | 0.1142273 | 3.0194226 | 78 | 4 | 2000–2006 | 0.55 | M-v | 0 | MPC | 87397 | 2000 $SS_{27}$ |
| 2000 $SV_{27}$ | 16.1 | 0.15 | 20060922 | 108.36322 | 76.51475 | 308.39518 | 7.92332 | 0.2227966 | 2.7187463 | 37 | 2 | 2000–2006 | 0.59 | M-v | 4 | MPC | 93847 | 2000 $SV_{27}$ |
| 2000 $SG_{28}$ | 14.4 | 0.15 | 20060922 | 353.71322 | 163.90364 | 261.53260 | 9.88894 | 0.0767244 | 3.0621121 | 96 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 02006 | 2000 $SG_{28}$ |
| 2000 $SD_{29}$ | 15.9 | 0.15 | 20060922 | 90.27079 | 64.69317 | 288.93487 | 9.36782 | 0.1426337 | 2.8701813 | 78 | 5 | 1995–2006 | 0.58 | M-v | 2 | MPC | 90036 | 2000 $SD_{29}$ |
| 2000 $SL_{30}$ | 15.1 | 0.15 | 20060922 | 4.64237 | 229.72979 | 175.82289 | 10.14054 | 0.0920130 | 3.0443832 | 70 | 4 | 2000–2006 | 0.68 | M-v | 1 | MPC | 90036 | 2000 $SL_{30}$ |
| 2000 $SD_{31}$ | 15.3 | 0.15 | 20060922 | 0.09705 | 250.24172 | 171.86122 | 5.35287 | 0.2319948 | 3.0662943 | 73 | 5 | 1998–2006 | 0.56 | M-v | 0 | MPC | 87397 | 2000 $SD_{31}$ |
| 2000 $SF_{32}$ | 15.3 | 0.15 | 20060922 | 27.82372 | 311.09087 | 37.45173 | 5.11581 | 0.1559582 | 3.1816113 | 122 | 5 | 1995–2006 | 0.46 | M-v | 0 | MPC | 66148 | 2000 $SF_{32}$ |
| 2000 $SA_{33}$ | 16.4 | 0.15 | 20060922 | 197.96001 | 316.69662 | 67.74808 | 3.52853 | 0.2003869 | 2.4240395 | 68 | 2 | 2000–2004 | 0.49 | M-v | 3 | MPC | 77473 | 2000 $SA_{33}$ |
| 2000 $SF_{33}$ | 17.6 | 0.15 | 20060922 | 282.35903 | 199.87114 | 132.42913 | 2.84690 | 0.1881714 | 2.2951552 | 43 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 02006 | 2000 $SF_{33}$ |
| 2000 $SE_{34}$ | 16.7 | 0.15 | 20060922 | 168.12997 | 292.44817 | 142.37723 | 3.53117 | 0.1410703 | 2.3900611 | 85 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 02006 | 2000 $SE_{34}$ |
| 2000 $SG_{36}$ | 15.4 | 0.15 | 20060922 | 11.25124 | 341.83064 | 70.50919 | 4.69916 | 0.2773012 | 3.0865157 | 44 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97393 | 2000 $SG_{36}$ |
| 2000 $SS_{36}$ | 17.0 | 0.15 | 20060922 | 198.84285 | 20.52173 | 7.46611 | 6.79054 | 0.1420725 | 2.4064650 | 62 | 3 | 2000–2006 | 0.60 | M-v | 3 | MPC | 99972 | 2000 $SS_{36}$ |
| 2000 $SU_{37}$ | 16.7 | 0.15 | 20060922 | 11.48648 | 212.60636 | 86.94216 | 4.16334 | 0.2031847 | 2.1476789 | 50 | 5 | 1993–2005 | 0.63 | M-v | 2 | MPC | 74019 | 2000 $SU_{37}$ |
| 2000 $SE_{38}$ | 14.6 | 0.15 | 20060922 | 338.01424 | 46.12707 | 16.72704 | 9.45048 | 0.0727752 | 3.1253197 | 90 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 87397 | 2000 $SE_{38}$ |
| 2000 $SQ_{40}$ | 16.1 | 0.15 | 20060922 | 323.50527 | 354.32296 | 325.36980 | 9.82799 | 0.1361199 | 2.2407972 | 52 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 27703 | 2000 $SQ_{40}$ |
| 2000 $SW_{41}$ | 16.1 | 0.15 | 20060922 | 138.29590 | 179.22822 | 163.23338 | 9.87051 | 0.1819541 | 2.7305629 | 31 | 3 | 2000–2005 | 0.69 | M-v | 3 | MPC | 49814 | 2000 $SW_{41}$ |
| 2000 $SG_{42}$ | 16.1 | 0.15 | 20060922 | 91.30123 | 46.34850 | 324.68765 | 3.02368 | 0.0940696 | 2.8295443 | 80 | 3 | 2000–2005 | 0.61 | M-v | 4 | MPC | 97393 | 2000 $SG_{42}$ |
| 2000 $SP_{43}$ | 18.6 | 0.15 | 20060922 | 170.08837 | 224.30375 | 350.69072 | 10.35591 | 0.4668850 | 0.8113824 | 307 | 4 | 2000–2006 | 0.46 | M-v | 3 | MPC | 57782 | 2000 $SP_{43}$ |
| 2000 $SU_{43}$ | 14.4 | 0.15 | 20060922 | 141.02442 | 76.28150 | 193.57717 | 30.55938 | 0.3435585 | 2.7751599 | 244 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 04140 | 2000 $SU_{43}$ |
| 2000 $SD_{44}$ | 16.5 | 0.15 | 20060922 | 254.59128 | 217.58005 | 351.75677 | 18.54170 | 0.0523040 | 1.9083203 | 56 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 97393 | 2000 $SD_{44}$ |
| 2000 $SM_{44}$ | 16.6 | 0.15 | 20060922 | 329.05780 | 226.55900 | 232.21176 | 18.72536 | 0.1133499 | 1.9814710 | 95 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 57782 | 2000 $SM_{44}$ |
| 2000 $SX_{44}$ | 15.2 | 0.15 | 20060922 | 3.72798 | 102.25729 | 312.05260 | 15.74893 | 0.1321383 | 3.0484146 | 70 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 87398 | 2000 $SX_{44}$ |
| 2000 $SY_{45}$ | 15.1 | 0.15 | 20060922 | 119.30056 | 119.21134 | 232.02162 | 12.11327 | 0.0955188 | 2.6931571 | 120 | 3 | 2000–2005 | 0.55 | M-v | 2 | MPC | 97393 | 2000 $SY_{45}$ |
| 2000 $SO_{47}$ | 14.8 | 0.15 | 20060922 | 57.37376 | 92.79952 | 184.74250 | 25.07256 | 0.2743209 | 3.1970857 | 129 | 3 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04140 | 2000 $SO_{47}$ |
| 2000 $SE_{48}$ | 15.2 | 0.15 | 20060922 | 147.69942 | 17.02088 | 301.52025 | 12.94092 | 0.1369396 | 2.7053292 | 66 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 97394 | 2000 $SE_{48}$ |
| 2000 $SE_{49}$ | 15.2 | 0.15 | 20060922 | 11.57324 | 70.16996 | 324.09416 | 5.29515 | 0.1366485 | 3.0656850 | 53 | 4 | 2000–2006 | 0.65 | M-v | 1 | MPC | 43388 | 2000 $SE_{49}$ |
| 2000 $SH_{49}$ | 17.0 | 0.15 | 20060922 | 126.03358 | 60.83738 | 287.46507 | 5.37671 | 0.0759819 | 2.7281274 | 33 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 47944 | 2000 $SH_{49}$ |
| 2000 $SP_{49}$ | 15.2 | 0.15 | 20060922 | 51.24881 | 121.93191 | 194.17701 | 11.28787 | 0.1844391 | 3.1576948 | 50 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 74817 | 2000 $SP_{49}$ |
| 2000 $SO_{50}$ | 15.1 | 0.15 | 20060922 | 78.48961 | 122.24263 | 223.03785 | 8.92847 | 0.0829165 | 2.9495911 | 75 | 3 | 2000–2005 | 0.55 | M-v | 3 | MPC | 90036 | 2000 $SO_{50}$ |
| 2000 $SQ_{50}$ | 15.1 | 0.15 | 20060922 | 41.57752 | 64.13959 | 274.62658 | 4.21108 | 0.1210452 | 3.1504266 | 72 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 87398 | 2000 $SQ_{50}$ |
| 2000 $SW_{50}$ | 14.9 | 0.15 | 20060922 | 318.82528 | 248.99835 | 195.21566 | 10.50900 | 0.1047638 | 3.1234092 | 90 | 5 | 1995–2006 | 0.53 | M-v | 0 | MPC | 04140 | 2000 $SW_{50}$ |
| 2000 $SC_{52}$ | 15.7 | 0.15 | 20060922 | 87.45022 | 69.61729 | 249.62078 | 10.10312 | 0.1501880 | 3.0062906 | 60 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 02006 | 2000 $SC_{52}$ |
| 2000 $SJ_{52}$ | 15.3 | 0.15 | 20060922 | 33.60089 | 126.75642 | 201.50656 | 13.05018 | 0.1153569 | 3.2251907 | 55 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 84591 | 2000 $SJ_{52}$ |
| 2000 $SD_{53}$ | 16.5 | 0.15 | 20060922 | 51.21208 | 80.93420 | 337.12064 | 5.88309 | 0.3241349 | 2.8752806 | 89 | 3 | 1995–2005 | 0.51 | M-v | 3 | MPC | 97394 | 2000 $SD_{53}$ |
| 2000 $SJ_{53}$ | 15.3 | 0.15 | 20060922 | 5.63255 | 189.87064 | 192.88256 | 9.23826 | 0.0764667 | 3.1460723 | 62 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 04140 | 2000 $SJ_{53}$ |
| 2000 $SV_{54}$ | 17.0 | 0.15 | 20060922 | 312.02380 | 135.13519 | 184.48730 | 7.45337 | 0.2229420 | 2.2351985 | 38 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 99972 | 2000 $SV_{54}$ |
| 2000 $SF_{55}$ | 16.1 | 0.15 | 20060922 | 164.69458 | 319.24195 | 0.46033 | 12.57620 | 0.1080574 | 2.6820877 | 56 | 3 | 2000–2004 | 0.57 | M-v | 3 | MPC | 64818 | 2000 $SF_{55}$ |
| 2000 $SZ_{55}$ | 15.9 | 0.15 | 20060922 | 194.87891 | 109.23051 | 189.71962 | 11.17181 | 0.1754997 | 2.6177304 | 76 | 4 | 1999–2004 | 0.64 | M-v | 1 | MPC | 68710 | 2000 $SZ_{55}$ |
| 2000 $SE_{57}$ | 15.9 | 0.15 | 20060922 | 89.53135 | 49.45193 | 305.03454 | 1.02725 | 0.0864177 | 2.8739072 | 76 | 5 | 1995–2006 | 0.60 | M-v | 1 | MPC | 97394 | 2000 $SE_{57}$ |
| 2000 $SF_{58}$ | 15.8 | 0.15 | 20060922 | 44.48643 | 2.54750 | 2.94350 | 1.55354 | 0.1781439 | 3.0416755 | 70 | 6 | 1999–2006 | 0.48 | M-v | 0 | MPC | 84593 | 2000 $SF_{58}$ |
| 2000 $SJ_{60}$ | 15.5 | 0.15 | 20060922 | 102.17283 | 176.85689 | 187.38280 | 8.28152 | 0.0971504 | 2.7927265 | 73 | 4 | 1995–2005 | 0.50 | M-v | 2 | MPC | 93850 | 2000 $SJ_{60}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $SO_{60}$ | 16.0 | 0.15 | 20060922 | 151.74536 | 162.86275 | 179.32967 | 6.32948 | 0.0796488 | 2.6732941 | 39 | 4 | 2000–2005 | 0.62 | M-v | 1 | MPC | 68712 | 2000 $SO_{60}$ |
| 2000 $SY_{60}$ | 15.2 | 0.15 | 20060922 | 36.61542 | 186.16983 | 175.16713 | 5.92562 | 0.1832943 | 3.0995822 | 75 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 90037 | 2000 $SY_{60}$ |
| 2000 $SH_{61}$ | 15.9 | 0.15 | 20060922 | 107.88797 | 275.24096 | 82.72466 | 2.90734 | 0.1932200 | 2.7977201 | 78 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 97394 | 2000 $SH_{61}$ |
| 2000 $SH_{62}$ | 15.7 | 0.15 | 20060922 | 75.05979 | 43.76424 | 0.22299 | 1.04593 | 0.0857631 | 2.7708530 | 104 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 97394 | 2000 $SH_{62}$ |
| 2000 $SP_{62}$ | 16.8 | 0.15 | 20060922 | 249.01048 | 144.70630 | 210.34262 | 1.40546 | 0.2509462 | 2.3389431 | 57 | 3 | 2000–2004 | 0.46 | M-v | 2 | MPC | 47945 | 2000 $SP_{62}$ |
| 2000 $SQ_{63}$ | 14.6 | 0.15 | 20060922 | 39.03137 | 171.85440 | 193.28437 | 9.56314 | 0.0926570 | 3.0862674 | 60 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 88742 | 2000 $SQ_{63}$ |
| 2000 $SB_{64}$ | 15.1 | 0.15 | 20060922 | 23.33476 | 342.09077 | 42.61211 | 6.56464 | 0.2136682 | 3.1115867 | 37 | 3 | 2000–2006 | 0.61 | M-v | 3 | MPC | 88742 | 2000 $SB_{64}$ |
| 2000 $SN_{65}$ | 15.7 | 0.15 | 20060922 | 147.61129 | 138.93549 | 170.62446 | 8.02643 | 0.0847420 | 2.8045174 | 69 | 3 | 2000–2005 | 0.58 | M-v | 3 | MPC | 88743 | 2000 $SN_{65}$ |
| 2000 $SS_{65}$ | 17.0 | 0.15 | 20060922 | 214.37434 | 216.60783 | 163.43284 | 4.12365 | 0.2250197 | 2.3929191 | 42 | 2 | 2000–2002 | 0.51 | M-v | 4 | MPC | 47946 | 2000 $SS_{65}$ |
| 2000 $SU_{65}$ | 16.9 | 0.15 | 20060922 | 172.22240 | 204.61002 | 165.99678 | 3.00051 | 0.2603903 | 2.5330776 | 117 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 97395 | 2000 $SU_{65}$ |
| 2000 $SP_{66}$ | 15.3 | 0.15 | 20060922 | 106.14977 | 23.73497 | 305.60912 | 0.89756 | 0.0748231 | 2.9173493 | 119 | 6 | 1995–2006 | 0.43 | M-v | 1 | MPC | 97395 | 2000 $SP_{66}$ |
| 2000 $SP_{67}$ | 17.2 | 0.15 | 20060922 | 238.78343 | 210.92015 | 164.85754 | 2.29529 | 0.1410899 | 2.3343042 | 66 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 99973 | 2000 $SP_{67}$ |
| 2000 $SQ_{67}$ | 14.9 | 0.15 | 20060922 | 74.25695 | 292.66771 | 22.44357 | 5.19030 | 0.1331927 | 3.1105559 | 70 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 88743 | 2000 $SQ_{67}$ |
| 2000 $SU_{70}$ | 16.9 | 0.15 | 20060922 | 246.75041 | 226.18677 | 142.52688 | 2.77254 | 0.2256686 | 2.3339525 | 48 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 02007 | 2000 $SU_{70}$ |
| 2000 $SR_{71}$ | 14.5 | 0.15 | 20060922 | 157.37600 | 239.39319 | 16.01179 | 12.51346 | 0.0956311 | 3.0215760 | 66 | 4 | 1998–2005 | 0.70 | M-v | 1 | MPC | 88743 | 2000 $SR_{71}$ |
| 2000 $SV_{71}$ | 15.9 | 0.15 | 20060922 | 224.13744 | 357.73176 | 19.58377 | 6.53954 | 0.1261876 | 2.3751394 | 93 | 2 | 2000–2006 | 0.61 | M-v | 3 | MPC | 99974 | 2000 $SV_{71}$ |
| 2000 $SB_{73}$ | 16.1 | 0.15 | 20060922 | 309.93742 | 310.75183 | 41.97607 | 4.28701 | 0.2169303 | 2.2070530 | 73 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 02007 | 2000 $SB_{73}$ |
| 2000 $SD_{73}$ | 16.4 | 0.15 | 20060922 | 243.64197 | 259.86131 | 105.88096 | 2.66710 | 0.1522989 | 2.3533876 | 59 | 4 | 1994–2006 | 0.57 | M-v | 2 | MPC | 04140 | 2000 $SD_{73}$ |
| 2000 $SP_{76}$ | 15.9 | 0.15 | 20060922 | 155.05543 | 193.25073 | 177.24302 | 14.20453 | 0.1498614 | 2.6169727 | 106 | 3 | 2000–2004 | 0.56 | M-v | 2 | MPC | 74021 | 2000 $SP_{76}$ |
| 2000 $SZ_{76}$ | 15.1 | 0.15 | 20060922 | 352.53026 | 226.37717 | 182.76063 | 9.90168 | 0.1157632 | 3.1178978 | 55 | 5 | 2000–2006 | 0.65 | M-v | 1 | MPC | 84596 | 2000 $SZ_{76}$ |
| 2000 $SD_{78}$ | 14.8 | 0.15 | 20060922 | 112.84321 | 263.81184 | 359.83363 | 9.86958 | 0.1609356 | 3.1248977 | 64 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97395 | 2000 $SD_{78}$ |
| 2000 $SB_{79}$ | 15.9 | 0.15 | 20060922 | 9.13269 | 328.69951 | 50.17122 | 4.20788 | 0.1901507 | 3.2071759 | 100 | 4 | 2000–2006 | 0.49 | M-v | 0 | MPC | 04140 | 2000 $SB_{79}$ |
| 2000 $SK_{79}$ | 16.3 | 0.15 | 20060922 | 167.91465 | 11.85813 | 32.34686 | 7.17234 | 0.1378225 | 2.4729006 | 150 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 02007 | 2000 $SK_{79}$ |
| 2000 $SD_{81}$ | 17.0 | 0.15 | 20060922 | 205.64327 | 274.51074 | 113.38279 | 2.46851 | 0.2141244 | 2.4124202 | 50 | 3 | 1999–2004 | 0.64 | M-v | 3 | MPC | 72143 | 2000 $SD_{81}$ |
| 2000 $ST_{81}$ | 15.2 | 0.15 | 20060922 | 10.93817 | 217.96930 | 160.16744 | 4.70389 | 0.1861565 | 3.2188381 | 78 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 84596 | 2000 $ST_{81}$ |
| 2000 $ST_{84}$ | 15.4 | 0.15 | 20060922 | 32.19851 | 257.69165 | 90.93770 | 1.94454 | 0.1927013 | 3.2072001 | 94 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 84597 | 2000 $ST_{84}$ |
| 2000 $SK_{88}$ | 17.5 | 0.15 | 20060922 | 270.22106 | 182.13352 | 173.63013 | 6.32668 | 0.1399175 | 2.2996875 | 38 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 99975 | 2000 $SK_{88}$ |
| 2000 $SH_{89}$ | 16.5 | 0.15 | 20060922 | 179.78878 | 51.21105 | 45.57136 | 7.63398 | 0.0697859 | 2.3046811 | 46 | 3 | 2000–2005 | 0.72 | M-v | 2 | MPC | 74022 | 2000 $SH_{89}$ |
| 2000 $SY_{90}$ | 15.7 | 0.15 | 20060922 | 161.89603 | 74.38201 | 292.81783 | 13.80313 | 0.1713186 | 2.5786036 | 64 | 4 | 2000–2005 | 0.67 | M-v | 2 | MPC | 68718 | 2000 $SY_{90}$ |
| 2000 $SL_{91}$ | 15.3 | 0.15 | 20060922 | 21.55725 | 55.80723 | 301.35090 | 13.20015 | 0.3137319 | 3.1504610 | 43 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 47948 | 2000 $SL_{91}$ |
| 2000 $SU_{91}$ | 14.4 | 0.15 | 20060922 | 9.68963 | 116.37953 | 292.05928 | 10.44216 | 0.1368448 | 3.0049538 | 98 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87399 | 2000 $SU_{91}$ |
| 2000 $SW_{91}$ | 15.0 | 0.15 | 20060922 | 51.26595 | 36.98964 | 297.51224 | 11.03527 | 0.1113164 | 3.0852088 | 45 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 88745 | 2000 $SW_{91}$ |
| 2000 $SD_{93}$ | 14.7 | 0.15 | 20060922 | 39.18791 | 87.26863 | 279.51266 | 8.86064 | 0.0984218 | 3.0351766 | 75 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87399 | 2000 $SD_{93}$ |
| 2000 $SL_{93}$ | 14.8 | 0.15 | 20060922 | 117.22814 | 353.27096 | 293.49049 | 8.73619 | 0.0303314 | 3.0237952 | 50 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 87399 | 2000 $SL_{93}$ |
| 2000 $SM_{94}$ | 14.6 | 0.15 | 20060922 | 26.90725 | 143.17269 | 209.05541 | 10.28071 | 0.1317914 | 3.1712281 | 122 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 04140 | 2000 $SM_{94}$ |
| 2000 $SA_{95}$ | 16.8 | 0.15 | 20060922 | 167.80403 | 103.19267 | 249.08441 | 3.37486 | 0.2481360 | 2.5731284 | 62 | 3 | 1992–2004 | 0.56 | M-v | 3 | MPC | 70263 | 2000 $SA_{95}$ |
| 2000 $SH_{96}$ | 14.4 | 0.15 | 20060922 | 70.88658 | 355.19592 | 291.41640 | 12.08277 | 0.0897515 | 3.2136051 | 46 | 4 | 2000–2006 | 0.75 | M-v | 1 | MPC | 84597 | 2000 $SH_{96}$ |
| 2000 $SH_{99}$ | 15.5 | 0.15 | 20060922 | 97.24961 | 152.69076 | 199.54657 | 14.78589 | 0.1539386 | 2.8601957 | 125 | 2 | 2000–2005 | 0.54 | M-v | 3 | MPC | 90037 | 2000 $SH_{99}$ |
| 2000 $SM_{99}$ | 14.7 | 0.15 | 20060922 | 20.02146 | 162.23295 | 221.91699 | 6.96981 | 0.0265545 | 3.1073590 | 112 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 04140 | 2000 $SM_{99}$ |
| 2000 $SY_{100}$ | 14.9 | 0.15 | 20060922 | 42.98763 | 16.72222 | 352.32484 | 17.41044 | 0.2151183 | 3.1210952 | 79 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 97396 | 2000 $SY_{100}$ |
| 2000 $SS_{101}$ | 15.8 | 0.15 | 20060922 | 56.65171 | 11.68972 | 21.65109 | 2.14556 | 0.0772498 | 2.8685548 | 44 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 90038 | 2000 $SS_{101}$ |
| 2000 $SV_{102}$ | 16.9 | 0.15 | 20060922 | 228.56512 | 5.22337 | 350.64393 | 2.23468 | 0.2047359 | 2.3982684 | 46 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 93852 | 2000 $SV_{102}$ |
| 2000 $SK_{103}$ | 14.4 | 0.15 | 20060922 | 35.31019 | 334.01568 | 4.75813 | 12.57885 | 0.1711342 | 3.2167548 | 58 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 74822 | 2000 $SK_{103}$ |
| 2000 $SO_{103}$ | 15.7 | 0.15 | 20060922 | 125.63025 | 141.64962 | 356.33509 | 7.79636 | 0.1177771 | 2.3411336 | 126 | 4 | 2000–2004 | 0.66 | M-v | 1 | MPC | 74023 | 2000 $SO_{103}$ |
| 2000 $SO_{105}$ | 15.7 | 0.15 | 20060922 | 161.22536 | 306.36248 | 1.33195 | 2.19072 | 0.1504208 | 2.7360084 | 68 | 6 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97396 | 2000 $SO_{105}$ |
| 2000 $SJ_{106}$ | 17.3 | 0.15 | 20060922 | 225.81640 | 40.79738 | 309.01990 | 0.36791 | 0.2069302 | 2.4198562 | 69 | 2 | 2000–2006 | 0.47 | M-v | 4 | MPC | 99977 | 2000 $SJ_{106}$ |
| 2000 $SW_{108}$ | 15.4 | 0.15 | 20060922 | 162.84433 | 141.37705 | 168.59872 | 2.83657 | 0.1770231 | 2.7346147 | 70 | 6 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90038 | 2000 $SW_{108}$ |
| 2000 $SS_{116}$ | 16.3 | 0.15 | 20060922 | 294.44900 | 296.39782 | 37.44768 | 7.28953 | 0.1445215 | 2.2908931 | 62 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 04140 | 2000 $SS_{116}$ |
| 2000 $SA_{119}$ | 16.4 | 0.15 | 20060922 | 241.11659 | 198.10310 | 168.77994 | 2.39326 | 0.2013007 | 2.3635965 | 53 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 99978 | 2000 $SA_{119}$ |
| 2000 $SB_{120}$ | 15.9 | 0.15 | 20060922 | 256.02616 | 350.18627 | 32.12004 | 8.51455 | 0.0737057 | 2.3011001 | 86 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 02008 | 2000 $SB_{120}$ |
| 2000 $SD_{126}$ | 16.3 | 0.15 | 20060922 | 184.80459 | 133.88824 | 189.22044 | 12.55009 | 0.1999640 | 2.6108861 | 74 | 4 | 1995–2004 | 0.61 | M-v | 1 | MPC | 68723 | 2000 $SD_{126}$ |
| 2000 $SN_{132}$ | 13.6 | 0.15 | 20060922 | 317.34858 | 146.25408 | 316.22163 | 16.77326 | 0.1173410 | 3.0998024 | 142 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 90038 | 2000 $SN_{132}$ |
| 2000 $SR_{132}$ | 15.3 | 0.15 | 20060922 | 22.86921 | 103.41276 | 224.36713 | 24.70306 | 0.2512004 | 3.2356009 | 50 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04140 | 2000 $SR_{132}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $SV_{132}$ | 15.5 | 0.15 | 20060922 | 36.23662 | 139.95237 | 201.10716 | 22.81179 | 0.1756492 | 3.1356966 | 45 | 3 | 2000–2006 | 0.42 | M-v | 2 | MPC | 74823 | 2000 $SV_{132}$ |
| 2000 $SC_{133}$ | 14.7 | 0.15 | 20060922 | 83.87208 | 73.19155 | 218.13034 | 16.52061 | 0.0779017 | 3.1415489 | 97 | 4 | 2000–2006 | 0.62 | M-v | 0 | MPC | 66153 | 2000 $SC_{133}$ |
| 2000 $SM_{133}$ | 14.9 | 0.15 | 20060922 | 0.17264 | 132.83097 | 272.52089 | 11.37098 | 0.0588488 | 3.0768333 | 57 | 4 | 2000–2006 | 0.64 | M-v | 1 | MPC | 87399 | 2000 $SM_{133}$ |
| 2000 $SG_{134}$ | 14.9 | 0.15 | 20060922 | 27.17099 | 134.19442 | 252.43888 | 8.40750 | 0.1092667 | 3.0604242 | 73 | 6 | 1994–2006 | 0.64 | M-v | 1 | MPC | 87399 | 2000 $SG_{134}$ |
| 2000 $SR_{134}$ | 14.8 | 0.15 | 20060922 | 345.86588 | 86.41075 | 320.53576 | 15.58103 | 0.1108616 | 3.1637795 | 36 | 3 | 2000–2006 | 0.73 | M-v | 2 | MPC | 60717 | 2000 $SR_{134}$ |
| 2000 $SV_{134}$ | 15.2 | 0.15 | 20060922 | 26.15525 | 108.13528 | 257.46725 | 8.62579 | 0.1542478 | 3.1251601 | 56 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 03181 | 2000 $SV_{134}$ |
| 2000 $SX_{134}$ | 15.0 | 0.15 | 20060922 | 6.13215 | 144.69920 | 241.81511 | 9.69794 | 0.1020526 | 3.1530339 | 83 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 88747 | 2000 $SX_{134}$ |
| 2000 $SD_{135}$ | 15.2 | 0.15 | 20060922 | 66.79682 | 71.63251 | 258.62893 | 9.99321 | 0.1511653 | 3.0550330 | 38 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 84600 | 2000 $SD_{135}$ |
| 2000 $SF_{137}$ | 17.4 | 0.15 | 20060922 | 175.66446 | 47.34458 | 296.27477 | 6.10153 | 0.3719855 | 2.5684074 | 96 | 2 | 2000–2004 | 0.51 | M-v | 2 | MPC | 70265 | 2000 $SF_{137}$ |
| 2000 $SV_{137}$ | 16.3 | 0.15 | 20060922 | 271.21997 | 140.19817 | 219.27850 | 6.82376 | 0.1343335 | 2.2871146 | 60 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 04140 | 2000 $SV_{137}$ |
| 2000 $SS_{138}$ | 14.7 | 0.15 | 20060922 | 50.12621 | 89.79125 | 303.01731 | 9.05876 | 0.1194560 | 2.9671519 | 74 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 90038 | 2000 $SS_{138}$ |
| 2000 $SE_{139}$ | 16.8 | 0.15 | 20060922 | 245.20213 | 89.85219 | 212.83163 | 9.96295 | 0.2521683 | 2.4519594 | 31 | 3 | 2000–2004 | 0.48 | M-v | 2 | MPC | 74025 | 2000 $SE_{139}$ |
| 2000 $SU_{139}$ | 15.7 | 0.15 | 20060922 | 163.91886 | 225.92430 | 248.10192 | 5.07109 | 0.0577450 | 2.3014477 | 78 | 4 | 2000–2005 | 0.64 | M-v | 1 | MPC | 50491 | 2000 $SU_{139}$ |
| 2000 $SD_{142}$ | 14.8 | 0.15 | 20060922 | 36.81793 | 114.57132 | 297.68387 | 8.71593 | 0.0837928 | 2.9703683 | 142 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 90038 | 2000 $SD_{142}$ |
| 2000 $SR_{142}$ | 14.3 | 0.15 | 20060922 | 1.58445 | 183.18827 | 220.82316 | 26.49412 | 0.1482104 | 3.1973098 | 100 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 03181 | 2000 $SR_{142}$ |
| 2000 $SU_{147}$ | 14.4 | 0.15 | 20060922 | 33.03326 | 349.00102 | 14.27278 | 13.32419 | 0.0962471 | 3.1927834 | 88 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 87400 | 2000 $SU_{147}$ |
| 2000 $SH_{148}$ | 16.6 | 0.15 | 20060922 | 263.64502 | 51.64371 | 280.13063 | 1.48272 | 0.2076365 | 2.3643394 | 58 | 4 | 1991–2005 | 0.59 | M-v | 3 | MPC | 02008 | 2000 $SH_{148}$ |
| 2000 $SU_{148}$ | 16.5 | 0.15 | 20060922 | 191.29513 | 189.48674 | 209.76590 | 4.27907 | 0.1937373 | 2.4430324 | 66 | 3 | 2000–2006 | 0.64 | M-v | 3 | MPC | 99979 | 2000 $SU_{148}$ |
| 2000 $SC_{149}$ | 15.9 | 0.15 | 20060922 | 135.67592 | 195.76029 | 197.11470 | 7.45818 | 0.2402914 | 2.6333563 | 124 | 3 | 2000–2004 | 0.50 | M-v | 2 | MPC | 70266 | 2000 $SC_{149}$ |
| 2000 $SQ_{150}$ | 14.5 | 0.15 | 20060922 | 83.59987 | 119.18060 | 212.05725 | 9.46880 | 0.0691572 | 3.0922399 | 108 | 5 | 1998–2006 | 0.53 | M-v | 0 | MPC | 97398 | 2000 $SQ_{150}$ |
| 2000 $SH_{151}$ | 14.7 | 0.15 | 20060922 | 49.84449 | 149.52070 | 199.84638 | 16.85792 | 0.2268580 | 3.1325259 | 67 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 87400 | 2000 $SH_{151}$ |
| 2000 $SX_{153}$ | 15.6 | 0.15 | 20060922 | 164.73998 | 298.90235 | 34.16070 | 8.55089 | 0.1936542 | 2.6871362 | 84 | 3 | 2000–2004 | 0.59 | M-v | 3 | MPC | 70266 | 2000 $SX_{153}$ |
| 2000 $SL_{155}$ | 17.2 | 0.15 | 20060922 | 224.94012 | 37.65826 | 296.33413 | 1.50424 | 0.2707798 | 2.4466684 | 34 | 5 | 1996–2004 | 0.50 | M-v | 1 | MPC | 72156 | 2000 $SL_{155}$ |
| 2000 $SV_{157}$ | 15.9 | 0.15 | 20060922 | 37.17410 | 70.42612 | 312.43704 | 4.83061 | 0.1496675 | 3.0370045 | 49 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 93857 | 2000 $SV_{157}$ |
| 2000 $SW_{157}$ | 16.2 | 0.15 | 20060922 | 17.69274 | 126.18223 | 253.85537 | 4.24696 | 0.1881042 | 3.1519994 | 51 | 4 | 2000–2006 | 0.49 | M-v | 0 | MPC | 84601 | 2000 $SW_{157}$ |
| 2000 $SG_{158}$ | 13.8 | 0.15 | 20060922 | 319.65330 | 184.20740 | 279.80195 | 14.37635 | 0.2147169 | 3.1906207 | 108 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87400 | 2000 $SG_{158}$ |
| 2000 $SH_{158}$ | 16.6 | 0.15 | 20060922 | 221.66214 | 3.31077 | 52.58729 | 3.73760 | 0.1669207 | 2.3319366 | 85 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 02009 | 2000 $SH_{158}$ |
| 2000 $SR_{158}$ | 15.8 | 0.15 | 20060922 | 116.22894 | 38.44004 | 209.31934 | 12.69763 | 0.1537779 | 3.0375254 | 40 | 3 | 2000–2006 | 0.28 | M-v | 2 | MPC | 99979 | 2000 $SR_{158}$ |
| 2000 $SD_{159}$ | 16.6 | 0.15 | 20060922 | 158.90346 | 290.25998 | 185.99402 | 4.86800 | 0.1720958 | 2.3422605 | 33 | 5 | 1997–2004 | 0.39 | M-v | 1 | MPC | 31335 | 2000 $SD_{159}$ |
| 2000 $SH_{164}$ | 15.7 | 0.15 | 20060922 | 157.10742 | 193.06564 | 169.58101 | 18.49759 | 0.2033122 | 2.6157311 | 89 | 3 | 1994–2004 | 0.50 | M-v | 2 | MPC | 04140 | 2000 $SH_{164}$ |
| 2000 $SP_{165}$ | 14.6 | 0.15 | 20060922 | 14.90695 | 167.59943 | 243.13281 | 9.07738 | 0.2805981 | 3.0869521 | 77 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 87400 | 2000 $SP_{165}$ |
| 2000 $SD_{168}$ | 15.1 | 0.15 | 20060922 | 52.82833 | 163.38943 | 225.39351 | 12.37056 | 0.2112286 | 2.9761602 | 117 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 97399 | 2000 $SD_{168}$ |
| 2000 $SE_{168}$ | 15.6 | 0.15 | 20060922 | 144.98485 | 21.17819 | 297.07462 | 7.33116 | 0.1460119 | 2.8064199 | 57 | 6 | 2000–2006 | 0.50 | M-v | 0 | MPC | 97399 | 2000 $SE_{168}$ |
| 2000 $SK_{168}$ | 14.9 | 0.15 | 20060922 | 67.35909 | 69.14695 | 262.07223 | 5.63038 | 0.2034029 | 3.0970529 | 62 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 84602 | 2000 $SK_{168}$ |
| 2000 $SF_{169}$ | 14.4 | 0.15 | 20060922 | 2.60104 | 166.32104 | 250.76361 | 8.14024 | 0.2153201 | 3.1533157 | 137 | 4 | 2000–2006 | 0.51 | M-v | 0 | MPC | 87400 | 2000 $SF_{169}$ |
| 2000 $SW_{173}$ | 14.9 | 0.15 | 20060922 | 353.94267 | 191.08545 | 215.69132 | 27.16041 | 0.1483117 | 3.1769125 | 77 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 64838 | 2000 $SW_{173}$ |
| 2000 $SY_{173}$ | 14.5 | 0.15 | 20060922 | 330.52743 | 67.56726 | 327.05096 | 15.49702 | 0.1869812 | 3.3961887 | 92 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 04140 | 2000 $SY_{173}$ |
| 2000 $ST_{174}$ | 15.5 | 0.15 | 20060922 | 150.25476 | 23.38217 | 298.69906 | 9.60371 | 0.1087650 | 2.7928217 | 37 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97399 | 2000 $ST_{174}$ |
| 2000 $SO_{175}$ | 14.3 | 0.15 | 20060922 | 8.33516 | 69.47670 | 341.49680 | 10.65989 | 0.0957009 | 3.1381299 | 118 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87400 | 2000 $SO_{175}$ |
| 2000 $SE_{176}$ | 15.5 | 0.15 | 20060922 | 169.09994 | 321.88322 | 353.15773 | 12.32061 | 0.1682114 | 2.7441798 | 110 | 5 | 1998–2004 | 0.58 | M-v | 1 | MPC | 70267 | 2000 $SE_{176}$ |
| 2000 $SP_{176}$ | 16.6 | 0.15 | 20060922 | 301.39157 | 109.44094 | 253.80809 | 5.68883 | 0.1965586 | 2.2255749 | 63 | 3 | 2000–2006 | 0.54 | M-v | 4 | MPC | 02009 | 2000 $SP_{176}$ |
| 2000 $SC_{177}$ | 14.4 | 0.15 | 20060922 | 30.00945 | 78.27820 | 306.90606 | 4.58616 | 0.1817609 | 3.1387542 | 154 | 4 | 2000–2006 | 0.55 | M-v | 0 | MPC | 97399 | 2000 $SC_{177}$ |
| 2000 $SX_{177}$ | 14.5 | 0.15 | 20060922 | 309.16212 | 264.42605 | 347.35226 | 7.13202 | 0.1244841 | 2.5191720 | 199 | 5 | 1998–2006 | 0.57 | M-v | 2 | MPC | 02009 | 2000 $SX_{177}$ |
| 2000 $SN_{180}$ | 15.4 | 0.15 | 20060922 | 47.67515 | 141.44242 | 248.90761 | 7.49889 | 0.0823449 | 3.0340809 | 60 | 3 | 2000–2006 | 0.62 | M-v | 2 | MPC | 90039 | 2000 $SN_{180}$ |
| 2000 $SZ_{181}$ | 14.4 | 0.15 | 20060922 | 27.16862 | 84.53711 | 258.88177 | 14.82071 | 0.2411029 | 3.1496148 | 104 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 47956 | 2000 $SZ_{181}$ |
| 2000 $SA_{183}$ | 15.0 | 0.15 | 20060922 | 334.09677 | 113.59929 | 1.37999 | 3.41879 | 0.1957242 | 2.9888043 | 107 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97399 | 2000 $SA_{183}$ |
| 2000 $SC_{183}$ | 16.2 | 0.15 | 20060922 | 141.30862 | 310.61502 | 8.19580 | 5.32577 | 0.1019932 | 2.8035157 | 54 | 4 | 1998–2005 | 0.65 | M-v | 1 | MPC | 90039 | 2000 $SC_{183}$ |
| 2000 $SJ_{183}$ | 16.0 | 0.15 | 20060922 | 33.38945 | 318.60968 | 28.12139 | 1.84947 | 0.2077499 | 3.1884889 | 65 | 3 | 2000–2006 | 0.46 | M-v | 4 | MPC | 64840 | 2000 $SJ_{183}$ |
| 2000 $SW_{183}$ | 15.6 | 0.15 | 20060922 | 62.33629 | 274.50644 | 86.92406 | 2.21617 | 0.1011500 | 2.9469258 | 43 | 3 | 2000–2006 | 0.58 | M-v | 4 | MPC | 04140 | 2000 $SW_{183}$ |
| 2000 $SY_{183}$ | 15.4 | 0.15 | 20060922 | 348.60370 | 59.06152 | 348.12352 | 10.48595 | 0.1223774 | 3.1342368 | 41 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 47956 | 2000 $SY_{183}$ |
| 2000 $SL_{184}$ | 12.5 | 0.15 | 20060922 | 229.38062 | 161.23172 | 135.79223 | 7.30814 | 0.1770978 | 5.2577451 | 68 | 6 | 1999–2006 | 0.51 | M-v | 1 | MPC | 02009 | 2000 $SL_{184}$ |
| 2000 $SW_{184}$ | 16.3 | 0.15 | 20060922 | 239.16147 | 3.57698 | 311.49510 | 10.82287 | 0.2632970 | 2.4278477 | 55 | 4 | 1996–2006 | 0.48 | M-v | 2 | MPC | 97400 | 2000 $SW_{184}$ |
| 2000 $SD_{186}$ | 15.2 | 0.15 | 20060922 | 334.91524 | 246.18644 | 193.31515 | 10.28345 | 0.0909176 | 3.1057870 | 71 | 5 | 1997–2006 | 0.48 | M-v | 0 | MPC | 90039 | 2000 $SD_{186}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $SS_{186}$ | 14.9 | 0.15 | 20060922 | 357.43353 | 132.15132 | 292.41078 | 3.84840 | 0.1815402 | 3.0800943 | 113 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 90039 | 2000 $SS_{186}$ |
| 2000 $SZ_{186}$ | 14.9 | 0.15 | 20060922 | 246.48714 | 359.36075 | 217.34274 | 24.78932 | 0.0609535 | 2.7867149 | 83 | 7 | 1991–2005 | 0.65 | M-v | 1 | MPC | 04140 | 2000 $SZ_{186}$ |
| 2000 $SH_{190}$ | 15.2 | 0.15 | 20060922 | 29.93530 | 357.60211 | 13.14800 | 9.12397 | 0.1400874 | 3.0440560 | 33 | 3 | 2000–2005 | 0.57 | M-v | 4 | MPC | 88749 | 2000 $SH_{190}$ |
| 2000 $SB_{191}$ | 16.3 | 0.15 | 20060922 | 174.13277 | 208.13832 | 133.34548 | 4.02007 | 0.1621225 | 2.5841178 | 85 | 6 | 1994–2006 | 0.58 | M-v | 1 | MPC | 04140 | 2000 $SB_{191}$ |
| 2000 $SC_{191}$ | 16.5 | 0.15 | 20060922 | 160.18281 | 337.53875 | 138.13746 | 4.67223 | 0.1172307 | 2.2959132 | 97 | 4 | 2000–2005 | 0.73 | M-v | 1 | MPC | 74027 | 2000 $SC_{191}$ |
| 2000 $SD_{195}$ | 15.3 | 0.15 | 20060922 | 3.27487 | 42.83208 | 359.07773 | 9.30334 | 0.0974141 | 3.0746752 | 48 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 25221 | 2000 $SD_{195}$ |
| 2000 $SM_{195}$ | 15.9 | 0.15 | 20060922 | 83.37873 | 113.74893 | 250.17858 | 1.03142 | 0.0590088 | 2.8488845 | 71 | 3 | 2000–2006 | 0.43 | M-v | 4 | MPC | 88749 | 2000 $SM_{195}$ |
| 2000 $SN_{195}$ | 16.0 | 0.15 | 20060922 | 99.34745 | 12.09518 | 354.62964 | 6.21464 | 0.0992826 | 2.7757964 | 62 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 97400 | 2000 $SN_{195}$ |
| 2000 $SX_{195}$ | 15.7 | 0.15 | 20060922 | 358.35807 | 213.83310 | 180.91532 | 1.03405 | 0.1876399 | 3.1651191 | 94 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 87401 | 2000 $SX_{195}$ |
| 2000 $SO_{196}$ | 16.8 | 0.15 | 20060922 | 74.94467 | 10.01036 | 357.01920 | 5.64953 | 0.1028766 | 2.8792542 | 47 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 90039 | 2000 $SO_{196}$ |
| 2000 $SS_{197}$ | 16.2 | 0.15 | 20060922 | 203.63786 | 85.29013 | 183.02802 | 14.03716 | 0.1765897 | 2.6797208 | 44 | 4 | 1999–2004 | 0.59 | M-v | 1 | MPC | 68736 | 2000 $SS_{197}$ |
| 2000 $SR_{200}$ | 15.6 | 0.15 | 20060922 | 11.88657 | 21.39448 | 5.66103 | 4.96371 | 0.1587678 | 3.1140193 | 67 | 4 | 2000–2006 | 0.42 | M-v | 0 | MPC | 84604 | 2000 $SR_{200}$ |
| 2000 $SS_{204}$ | 14.7 | 0.15 | 20060922 | 7.06396 | 5.41093 | 29.62969 | 6.29747 | 0.1031555 | 3.1567447 | 82 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 88750 | 2000 $SS_{204}$ |
| 2000 $ST_{204}$ | 15.2 | 0.15 | 20060922 | 339.50802 | 41.30170 | 43.58588 | 2.66738 | 0.1583892 | 3.1072905 | 107 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 90040 | 2000 $ST_{204}$ |
| 2000 $SE_{207}$ | 15.7 | 0.15 | 20060922 | 59.63325 | 179.19336 | 168.51834 | 11.00443 | 0.2360324 | 3.0920698 | 52 | 3 | 2000–2005 | 0.47 | M-v | 2 | MPC | 90040 | 2000 $SE_{207}$ |
| 2000 $SW_{208}$ | 15.1 | 0.15 | 20060922 | 15.68584 | 251.26399 | 118.57823 | 6.52699 | 0.1845958 | 3.1935405 | 77 | 5 | 1998–2006 | 0.67 | M-v | 1 | MPC | 62309 | 2000 $SW_{208}$ |
| 2000 $SJ_{210}$ | 16.8 | 0.15 | 20060922 | 223.07211 | 215.53137 | 148.29177 | 8.69935 | 0.2094027 | 2.4068926 | 24 | 4 | 1996–2003 | 0.80 | M-v | 2 | MPC | 49821 | 2000 $SJ_{210}$ |
| 2000 $SW_{212}$ | 14.4 | 0.15 | 20060922 | 6.03993 | 311.93734 | 43.04964 | 23.26538 | 0.1427002 | 3.3733640 | 70 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 62310 | 2000 $SW_{212}$ |
| 2000 $SD_{214}$ | 16.8 | 0.15 | 20060922 | 157.61782 | 194.67538 | 188.15397 | 10.36490 | 0.1235303 | 2.5358677 | 56 | 5 | 1996–2004 | 0.61 | M-v | 1 | MPC | 70269 | 2000 $SD_{214}$ |
| 2000 $SQ_{215}$ | 15.6 | 0.15 | 20060922 | 39.49514 | 55.59688 | 19.98282 | 4.33744 | 0.0849482 | 2.7998975 | 74 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 90040 | 2000 $SQ_{215}$ |
| 2000 $ST_{218}$ | 16.1 | 0.15 | 20060922 | 283.10867 | 226.34044 | 107.08085 | 7.50601 | 0.2269648 | 2.3130817 | 59 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 02009 | 2000 $ST_{218}$ |
| 2000 $SU_{222}$ | 15.6 | 0.15 | 20060922 | 162.71398 | 80.93293 | 216.76865 | 8.06841 | 0.1663059 | 2.7513814 | 42 | 3 | 1996–2005 | 0.51 | M-v | 3 | MPC | 97401 | 2000 $SU_{222}$ |
| 2000 $SZ_{222}$ | 15.6 | 0.15 | 20060922 | 21.12803 | 171.14263 | 228.72314 | 0.98896 | 0.2209658 | 3.0765333 | 44 | 3 | 2000–2005 | 0.34 | M-v | 4 | MPC | 84605 | 2000 $SZ_{222}$ |
| 2000 $SH_{223}$ | 15.1 | 0.15 | 20060922 | 1.33006 | 158.46578 | 193.29500 | 13.08443 | 0.1249779 | 3.3916375 | 63 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 04140 | 2000 $SH_{223}$ |
| 2000 $SK_{224}$ | 15.0 | 0.15 | 20060922 | 152.79085 | 224.67758 | 62.61319 | 3.14987 | 0.1253656 | 2.9078033 | 106 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97401 | 2000 $SK_{224}$ |
| 2000 $SS_{224}$ | 15.6 | 0.15 | 20060922 | 53.66716 | 164.36022 | 197.21903 | 10.15958 | 0.1093915 | 3.0295779 | 25 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 88751 | 2000 $SS_{224}$ |
| 2000 $SH_{225}$ | 16.9 | 0.15 | 20060922 | 200.67377 | 332.49189 | 42.33974 | 1.80295 | 0.2046002 | 2.4574720 | 47 | 3 | 2000–2006 | 0.72 | M-v | 3 | MPC | 97401 | 2000 $SH_{225}$ |
| 2000 $SM_{227}$ | 15.0 | 0.15 | 20060922 | 6.93864 | 262.21890 | 152.70318 | 8.71094 | 0.1500152 | 3.1623627 | 105 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 90040 | 2000 $SM_{227}$ |
| 2000 $SD_{228}$ | 17.3 | 0.15 | 20060922 | 266.74749 | 176.91985 | 204.77947 | 3.91825 | 0.1581882 | 2.2665986 | 37 | 3 | 2000–2006 | 0.42 | M-v | 2 | MPC | 99981 | 2000 $SD_{228}$ |
| 2000 $SQ_{229}$ | 16.6 | 0.15 | 20060922 | 204.87893 | 202.61515 | 204.70052 | 3.13314 | 0.1782989 | 2.3915825 | 46 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 02010 | 2000 $SQ_{229}$ |
| 2000 $SA_{231}$ | 17.8 | 0.15 | 20060922 | 356.41638 | 317.84377 | 21.07258 | 4.88930 | 0.2051368 | 2.1372245 | 73 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 04140 | 2000 $SA_{231}$ |
| 2000 $SF_{237}$ | 15.1 | 0.15 | 20060922 | 159.86678 | 325.07016 | 11.91005 | 14.80977 | 0.0318663 | 2.7092311 | 47 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 70269 | 2000 $SF_{237}$ |
| 2000 $SZ_{238}$ | 15.6 | 0.15 | 20060922 | 207.55845 | 258.26486 | 56.28196 | 12.24937 | 0.2887569 | 2.5510663 | 79 | 2 | 2000–2004 | 0.59 | M-v | 3 | MPC | 72167 | 2000 $SZ_{238}$ |
| 2000 $SO_{239}$ | 14.4 | 0.15 | 20060922 | 247.53002 | 36.97999 | 26.83601 | 3.12502 | 0.2319217 | 3.9471205 | 59 | 5 | 1992–2003 | 0.49 | M-v | 0 | MPC | 47961 | 2000 $SO_{239}$ |
| 2000 $SM_{240}$ | 16.6 | 0.15 | 20060922 | 174.43285 | 340.88425 | 335.89451 | 17.79091 | 0.1167960 | 1.8721584 | 116 | 3 | 2000–2005 | 0.54 | M-v | 2 | MPC | 90040 | 2000 $SM_{240}$ |
| 2000 $SO_{240}$ | 15.9 | 0.15 | 20060922 | 54.15459 | 176.64687 | 229.42503 | 19.67976 | 0.0880715 | 1.9263249 | 93 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 62310 | 2000 $SO_{240}$ |
| 2000 $SY_{241}$ | 14.7 | 0.15 | 20060922 | 6.80221 | 4.73465 | 357.76515 | 27.73961 | 0.1624845 | 3.1937098 | 62 | 2 | 2000–2006 | 0.50 | M-v | 2 | MPC | 03182 | 2000 $SY_{241}$ |
| 2000 $SL_{245}$ | 16.4 | 0.15 | 20060922 | 85.41550 | 127.70177 | 282.68505 | 1.52293 | 0.1801432 | 2.7098285 | 58 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97402 | 2000 $SL_{245}$ |
| 2000 $SF_{246}$ | 15.6 | 0.15 | 20060922 | 20.44720 | 59.24780 | 45.23124 | 5.51588 | 0.0702694 | 2.7418205 | 105 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 97402 | 2000 $SF_{246}$ |
| 2000 $SZ_{249}$ | 15.0 | 0.15 | 20060922 | 56.39893 | 268.00132 | 44.17232 | 5.69518 | 0.1459235 | 3.2087768 | 75 | 3 | 2000–2006 | 0.42 | M-v | 2 | MPC | 74832 | 2000 $SZ_{249}$ |
| 2000 $SG_{250}$ | 15.4 | 0.15 | 20060922 | 61.84678 | 186.50787 | 134.95708 | 6.37352 | 0.1734154 | 3.1229037 | 61 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 87402 | 2000 $SG_{250}$ |
| 2000 $SH_{250}$ | 15.5 | 0.15 | 20060922 | 22.87674 | 4.92684 | 30.69893 | 11.29181 | 0.1219021 | 3.0481866 | 39 | 4 | 2000–2005 | 0.66 | M-v | 1 | MPC | 84608 | 2000 $SH_{250}$ |
| 2000 $SJ_{250}$ | 16.2 | 0.15 | 20060922 | 99.50060 | 52.81037 | 37.59361 | 9.49340 | 0.1362424 | 2.5562318 | 56 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 99983 | 2000 $SJ_{250}$ |
| 2000 $SQ_{251}$ | 17.6 | 0.15 | 20060922 | 170.92833 | 201.98411 | 165.21263 | 4.52253 | 0.2397946 | 2.5430577 | 69 | 3 | 1996–2004 | 0.45 | M-v | 3 | MPC | 97402 | 2000 $SQ_{251}$ |
| 2000 $SG_{253}$ | 16.3 | 0.15 | 20060922 | 178.37916 | 97.92332 | 349.41819 | 7.11902 | 0.1024805 | 2.3134531 | 80 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 02010 | 2000 $SG_{253}$ |
| 2000 $SM_{254}$ | 15.1 | 0.15 | 20060922 | 343.51816 | 247.93625 | 168.43410 | 15.52360 | 0.1825495 | 3.2067620 | 42 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 25237 | 2000 $SM_{254}$ |
| 2000 $SO_{258}$ | 17.2 | 0.15 | 20060922 | 200.62402 | 283.52709 | 100.40333 | 5.03681 | 0.2033413 | 2.4446939 | 37 | 3 | 2000–2004 | 0.61 | M-v | 3 | MPC | 72170 | 2000 $SO_{258}$ |
| 2000 $SE_{259}$ | 16.0 | 0.15 | 20060922 | 209.98510 | 267.40456 | 41.45828 | 12.25388 | 0.2784328 | 2.5586647 | 66 | 2 | 2000–2004 | 0.52 | M-v | 3 | MPC | 72170 | 2000 $SE_{259}$ |
| 2000 $SU_{261}$ | 15.9 | 0.15 | 20060922 | 177.94024 | 140.03327 | 184.01148 | 13.68594 | 0.2874752 | 2.6417731 | 86 | 4 | 1995–2004 | 0.59 | M-v | 1 | MPC | 70270 | 2000 $SU_{261}$ |
| 2000 $SL_{263}$ | 17.1 | 0.15 | 20060922 | 165.72699 | 80.11609 | 349.60924 | 6.18035 | 0.1653926 | 2.4123121 | 43 | 3 | 2000–2004 | 0.54 | M-v | 3 | MPC | 72170 | 2000 $SL_{263}$ |
| 2000 $SH_{264}$ | 15.5 | 0.15 | 20060922 | 28.17841 | 297.73987 | 71.51000 | 2.28638 | 0.2093380 | 3.1284787 | 81 | 5 | 2000–2006 | 0.48 | M-v | 0 | MPC | 62310 | 2000 $SH_{264}$ |
| 2000 $SG_{266}$ | 14.5 | 0.15 | 20060922 | 330.46642 | 42.89330 | 56.55378 | 9.43060 | 0.1101199 | 3.1048042 | 100 | 4 | 2000–2006 | 0.59 | M-v | 0 | MPC | 47963 | 2000 $SG_{266}$ |
| 2000 $SY_{266}$ | 14.0 | 0.15 | 20060922 | 7.09988 | 148.04063 | 247.88642 | 21.53303 | 0.0337890 | 3.1311422 | 120 | 5 | 1996–2006 | 0.50 | M-v | 0 | MPC | 87402 | 2000 $SY_{266}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $SD_{267}$ | 16.1 | 0.15 | 20060922 | 148.95412 | 359.92008 | 353.28463 | 5.50911 | 0.0536753 | 2.6655667 | 48 | 5 | 1996–2005 | 0.57 | M-v | 1 | MPC | 68748 | 2000 $SD_{267}$ |
| 2000 $SM_{267}$ | 14.9 | 0.15 | 20060922 | 34.39039 | 289.54848 | 98.66643 | 2.36664 | 0.2006198 | 3.0695084 | 93 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 90040 | 2000 $SM_{267}$ |
| 2000 $SN_{271}$ | 15.9 | 0.15 | 20060922 | 245.29400 | 353.93397 | 57.34610 | 8.87050 | 0.1119374 | 2.2796370 | 46 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 33271 | 2000 $SN_{271}$ |
| 2000 $SQ_{274}$ | 16.3 | 0.15 | 20060922 | 221.14881 | 307.14107 | 33.88425 | 10.34749 | 0.2694666 | 2.4685414 | 59 | 4 | 1999–2005 | 0.63 | M-v | 2 | MPC | 74031 | 2000 $SQ_{274}$ |
| 2000 $SK_{275}$ | 14.9 | 0.15 | 20060922 | 41.78472 | 303.91960 | 50.69051 | 14.55423 | 0.2176631 | 3.2021453 | 77 | 4 | 2000–2006 | 0.53 | M-v | 0 | MPC | 87402 | 2000 $SK_{275}$ |
| 2000 $SG_{280}$ | 14.2 | 0.15 | 20060922 | 349.25131 | 346.72545 | 65.89748 | 24.29353 | 0.1573484 | 3.2105500 | 86 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 22644 | 2000 $SG_{280}$ |
| 2000 $SN_{281}$ | 14.7 | 0.15 | 20060922 | 349.32173 | 186.97868 | 245.77590 | 8.92907 | 0.0413701 | 2.9767922 | 65 | 5 | 2000–2006 | 0.59 | M-v | 0 | MPC | 87402 | 2000 $SN_{281}$ |
| 2000 $SP_{282}$ | 15.2 | 0.15 | 20060922 | 0.03019 | 160.43525 | 227.76886 | 15.32056 | 0.0798629 | 3.1883518 | 65 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 90041 | 2000 $SP_{282}$ |
| 2000 $SS_{282}$ | 16.0 | 0.15 | 20060922 | 46.46216 | 76.98932 | 279.51286 | 9.28092 | 0.2558226 | 3.0716915 | 63 | 4 | 2000–2006 | 0.55 | M-v | 0 | MPC | 84609 | 2000 $SS_{282}$ |
| 2000 $SB_{283}$ | 15.3 | 0.15 | 20060922 | 29.26063 | 125.70967 | 268.24058 | 8.21856 | 0.1082174 | 3.0253805 | 50 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87403 | 2000 $SB_{283}$ |
| 2000 $SP_{284}$ | 15.7 | 0.15 | 20060922 | 2.75888 | 146.12430 | 279.09776 | 8.13349 | 0.1801559 | 3.0798745 | 61 | 4 | 2000–2006 | 0.59 | M-v | 0 | MPC | 87403 | 2000 $SP_{284}$ |
| 2000 $SL_{286}$ | 16.3 | 0.15 | 20060922 | 212.96639 | 112.55921 | 260.82894 | 4.90333 | 0.1670816 | 2.4307283 | 56 | 2 | 2000–2004 | 0.54 | M-v | 3 | MPC | 72173 | 2000 $SL_{286}$ |
| 2000 $SL_{288}$ | 16.1 | 0.15 | 20060922 | 22.25808 | 131.65509 | 267.95874 | 8.79792 | 0.2665189 | 3.0235729 | 41 | 4 | 2000–2006 | 0.42 | M-v | 0 | MPC | 84609 | 2000 $SL_{288}$ |
| 2000 $SS_{288}$ | 15.0 | 0.15 | 20060922 | 343.52586 | 112.86558 | 348.27621 | 15.50002 | 0.0896254 | 2.9268878 | 64 | 3 | 2000–2005 | 0.60 | M-v | 3 | MPC | 84609 | 2000 $SS_{288}$ |
| 2000 $SN_{289}$ | 15.9 | 0.15 | 20060922 | 180.10472 | 349.29701 | 303.24370 | 5.23372 | 0.0977348 | 2.7351172 | 37 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 97403 | 2000 $SN_{289}$ |
| 2000 $SC_{291}$ | 18.2 | 0.15 | 20060922 | 307.50943 | 56.36910 | 328.38419 | 3.14689 | 0.1757821 | 2.1601635 | 27 | 3 | 2000–2005 | 0.32 | M-v | 3 | MPC | 74834 | 2000 $SC_{291}$ |
| 2000 $SQ_{294}$ | 15.0 | 0.15 | 20060922 | 44.93722 | 80.33559 | 305.32292 | 9.70165 | 0.1814274 | 3.0685585 | 53 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87403 | 2000 $SQ_{294}$ |
| 2000 $SW_{295}$ | 14.9 | 0.15 | 20060922 | 43.64245 | 98.99903 | 310.79690 | 5.16683 | 0.3058582 | 3.0545884 | 179 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 97404 | 2000 $SW_{295}$ |
| 2000 $SB_{297}$ | 16.0 | 0.15 | 20060922 | 63.91983 | 66.34437 | 236.76955 | 7.05609 | 0.2727912 | 3.1419606 | 40 | 3 | 1995–2006 | 0.59 | M-v | 3 | MPC | 13777 | 2000 $SB_{297}$ |
| 2000 $SY_{297}$ | 16.7 | 0.15 | 20060922 | 137.10294 | 231.10728 | 268.90794 | 5.60052 | 0.0671212 | 2.2915490 | 20 | 3 | 2000–2004 | 0.53 | M-v | 4 | MPC | 74834 | 2000 $SY_{297}$ |
| 2000 $SG_{298}$ | 15.0 | 0.15 | 20060922 | 25.47087 | 160.82802 | 224.13289 | 8.00783 | 0.0959277 | 3.0875347 | 44 | 3 | 2000–2006 | 0.45 | M-v | 2 | MPC | 93868 | 2000 $SG_{298}$ |
| 2000 $SA_{300}$ | 15.5 | 0.15 | 20060922 | 15.81221 | 195.18397 | 212.45939 | 11.59158 | 0.0952535 | 3.0514776 | 44 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 87403 | 2000 $SA_{300}$ |
| 2000 $SJ_{300}$ | 14.9 | 0.15 | 20060922 | 76.14346 | 332.61442 | 354.78716 | 9.51160 | 0.0623983 | 3.1064902 | 45 | 6 | 1995–2006 | 0.61 | M-v | 1 | MPC | 87403 | 2000 $SJ_{300}$ |
| 2000 $SK_{301}$ | 14.7 | 0.15 | 20060922 | 49.26482 | 125.75100 | 207.18125 | 16.42754 | 0.1578832 | 3.1942151 | 91 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 66159 | 2000 $SK_{301}$ |
| 2000 $SM_{302}$ | 15.2 | 0.15 | 20060922 | 333.62149 | 183.47527 | 230.92774 | 14.26139 | 0.0399873 | 3.1603303 | 73 | 6 | 2000–2006 | 0.48 | M-v | 0 | MPC | 97404 | 2000 $SM_{302}$ |
| 2000 $SN_{302}$ | 16.7 | 0.15 | 20060922 | 207.05774 | 25.51416 | 280.38068 | 5.73761 | 0.1961802 | 2.5599434 | 51 | 3 | 2000–2004 | 0.57 | M-v | 2 | MPC | 74033 | 2000 $SN_{302}$ |
| 2000 $SU_{302}$ | 14.8 | 0.15 | 20060922 | 44.09510 | 78.63224 | 281.10713 | 9.80379 | 0.1033858 | 3.1262775 | 27 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 84611 | 2000 $SU_{302}$ |
| 2000 $SQ_{303}$ | 16.3 | 0.15 | 20060922 | 225.93571 | 53.63552 | 346.33850 | 11.18391 | 0.1630572 | 2.3481013 | 47 | 2 | 2000–2005 | 0.50 | M-v | 3 | MPC | 72176 | 2000 $SQ_{303}$ |
| 2000 $SN_{305}$ | 14.4 | 0.15 | 20060922 | 25.87837 | 132.55863 | 254.06687 | 7.14011 | 0.2475080 | 3.1260270 | 112 | 4 | 2000–2006 | 0.40 | M-v | 0 | MPC | 87403 | 2000 $SN_{305}$ |
| 2000 $SZ_{305}$ | 15.5 | 0.15 | 20060922 | 24.10225 | 103.07144 | 283.50096 | 9.30658 | 0.1200588 | 3.1080800 | 77 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87403 | 2000 $SZ_{305}$ |
| 2000 $SA_{306}$ | 16.0 | 0.15 | 20060922 | 173.89990 | 93.27654 | 243.54124 | 10.23502 | 0.2081054 | 2.6112649 | 72 | 3 | 2000–2004 | 0.42 | M-v | 2 | MPC | 68758 | 2000 $SA_{306}$ |
| 2000 $SM_{306}$ | 14.6 | 0.15 | 20060922 | 326.30908 | 196.56038 | 261.43073 | 8.71447 | 0.0904436 | 3.0810032 | 51 | 3 | 2000–2006 | 0.60 | M-v | 3 | MPC | 25868 | 2000 $SM_{306}$ |
| 2000 $SH_{308}$ | 14.7 | 0.15 | 20060922 | 80.13376 | 322.07660 | 345.95846 | 17.58644 | 0.1077404 | 3.1927324 | 37 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 90041 | 2000 $SH_{308}$ |
| 2000 $SA_{309}$ | 16.7 | 0.15 | 20060922 | 280.09000 | 70.21081 | 322.75333 | 5.35501 | 0.1765841 | 2.2222975 | 37 | 3 | 2000–2005 | 0.51 | M-v | 3 | MPC | 74835 | 2000 $SA_{309}$ |
| 2000 $SC_{309}$ | 15.2 | 0.15 | 20060922 | 56.99376 | 33.27406 | 355.33448 | 10.97105 | 0.1069432 | 2.9723227 | 153 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 97404 | 2000 $SC_{309}$ |
| 2000 $SF_{309}$ | 17.0 | 0.15 | 20060922 | 19.73754 | 106.76792 | 296.09932 | 8.25406 | 0.2464667 | 3.1141848 | 28 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 88754 | 2000 $SF_{309}$ |
| 2000 $SY_{309}$ | 13.7 | 0.15 | 20060922 | 293.84601 | 214.55411 | 269.88127 | 19.65504 | 0.0279423 | 3.1321772 | 75 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97404 | 2000 $SY_{309}$ |
| 2000 $SC_{310}$ | 14.0 | 0.15 | 20060922 | 341.13070 | 118.78279 | 313.51429 | 22.63114 | 0.1000569 | 3.1260392 | 105 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87403 | 2000 $SC_{310}$ |
| 2000 $SP_{311}$ | 14.0 | 0.15 | 20060922 | 339.39630 | 187.59392 | 233.83311 | 27.05258 | 0.1551840 | 3.1523289 | 70 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 03183 | 2000 $SP_{311}$ |
| 2000 $SY_{312}$ | 14.0 | 0.15 | 20060922 | 2.36282 | 103.45854 | 302.33105 | 13.87639 | 0.2218000 | 3.1848797 | 127 | 4 | 2000–2006 | 0.45 | M-v | 0 | MPC | 87403 | 2000 $SY_{312}$ |
| 2000 $SX_{313}$ | 13.9 | 0.15 | 20060922 | 67.44914 | 59.05557 | 278.33834 | 13.26612 | 0.0374084 | 3.1690886 | 86 | 6 | 1999–2006 | 0.61 | M-v | 1 | MPC | 87403 | 2000 $SX_{313}$ |
| 2000 $SX_{316}$ | 14.7 | 0.15 | 20060922 | 347.39110 | 162.48060 | 268.96677 | 13.56374 | 0.1095918 | 3.0405523 | 69 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 02012 | 2000 $SX_{316}$ |
| 2000 $SK_{317}$ | 14.6 | 0.15 | 20060922 | 29.76723 | 78.99691 | 243.62556 | 16.35447 | 0.1594759 | 3.2529700 | 46 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87403 | 2000 $SK_{317}$ |
| 2000 $SW_{317}$ | 15.9 | 0.15 | 20060922 | 203.82320 | 87.58884 | 258.55707 | 13.39633 | 0.1609806 | 2.4736581 | 55 | 3 | 2000–2004 | 0.62 | M-v | 3 | MPC | 74034 | 2000 $SW_{317}$ |
| 2000 $SR_{318}$ | 14.1 | 0.15 | 20060922 | 6.39208 | 124.90576 | 284.12004 | 15.64403 | 0.1853260 | 3.1430537 | 90 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 97405 | 2000 $SR_{318}$ |
| 2000 $SH_{320}$ | 15.4 | 0.15 | 20060922 | 43.30301 | 154.74504 | 177.07920 | 14.06638 | 0.1016571 | 3.0830252 | 49 | 4 | 1993–2006 | 0.61 | M-v | 1 | MPC | 35535 | 2000 $SH_{320}$ |
| 2000 $ST_{322}$ | 15.4 | 0.15 | 20060922 | 322.26235 | 107.83100 | 357.65343 | 13.65340 | 0.2092581 | 3.0519772 | 77 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 90041 | 2000 $ST_{322}$ |
| 2000 $SV_{322}$ | 14.8 | 0.15 | 20060922 | 56.16852 | 354.40549 | 310.45085 | 17.57124 | 0.0866636 | 3.3105663 | 48 | 5 | 2000–2006 | 0.65 | M-v | 0 | MPC | 87404 | 2000 $SV_{322}$ |
| 2000 $SK_{324}$ | 16.5 | 0.15 | 20060922 | 105.67534 | 145.80329 | 192.47760 | 4.92228 | 0.1242370 | 2.8969957 | 39 | 2 | 2000–2005 | 0.41 | M-v | 4 | MPC | 90041 | 2000 $SK_{324}$ |
| 2000 $SK_{327}$ | 15.3 | 0.15 | 20060922 | 0.05446 | 262.04088 | 150.61680 | 13.89606 | 0.3055585 | 3.1620961 | 100 | 4 | 2000–2006 | 0.64 | M-v | 0 | MPC | 87404 | 2000 $SK_{327}$ |
| 2000 $SG_{333}$ | 14.9 | 0.15 | 20060922 | 36.29335 | 268.39538 | 99.04763 | 10.05467 | 0.2681708 | 3.0545557 | 66 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87404 | 2000 $SG_{333}$ |
| 2000 $SX_{333}$ | 15.4 | 0.15 | 20060922 | 9.12216 | 266.21098 | 123.23826 | 10.72907 | 0.2375456 | 3.1360978 | 37 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87404 | 2000 $SX_{333}$ |
| 2000 $SD_{334}$ | 16.3 | 0.15 | 20060922 | 105.79378 | 321.08952 | 72.83732 | 4.54935 | 0.1843797 | 2.6846231 | 31 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 93870 | 2000 $SD_{334}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $SG_{334}$ | 16.6 | 0.15 | 20060922 | 201.97754 | 130.36465 | 149.12200 | 3.75917 | 0.2218175 | 2.6198318 | 47 | 4 | 2000–2005 | 0.46 | M-v | 0 | MPC | 87404 | 2000 $SG_{334}$ |
| 2000 $SE_{335}$ | 15.8 | 0.15 | 20060922 | 66.64455 | 264.59124 | 67.00991 | 5.97710 | 0.1904373 | 3.0487817 | 26 | 4 | 2000–2006 | 0.42 | M-v | 0 | MPC | 99986 | 2000 $SE_{335}$ |
| 2000 $SJ_{335}$ | 16.5 | 0.15 | 20060922 | 253.85849 | 355.88785 | 317.06137 | 7.82665 | 0.1418920 | 2.4152394 | 44 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 93870 | 2000 $SJ_{335}$ |
| 2000 $SO_{336}$ | 15.5 | 0.15 | 20060922 | 144.55097 | 4.73343 | 335.95295 | 8.19467 | 0.1589977 | 2.7544044 | 47 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 70273 | 2000 $SO_{336}$ |
| 2000 $SN_{337}$ | 14.9 | 0.15 | 20060922 | 237.93443 | 321.70317 | 188.80126 | 13.96807 | 0.0866257 | 3.1950047 | 71 | 6 | 1998–2006 | 0.54 | M-v | 1 | MPC | 04141 | 2000 $SN_{337}$ |
| 2000 $SD_{338}$ | 14.7 | 0.15 | 20060922 | 20.66062 | 240.46557 | 143.05588 | 23.08489 | 0.0956436 | 3.0970901 | 63 | 4 | 1997–2006 | 0.51 | M-v | 0 | MPC | 84613 | 2000 $SD_{338}$ |
| 2000 $SK_{340}$ | 15.5 | 0.15 | 20060922 | 60.96979 | 302.65094 | 350.71102 | 15.97360 | 0.1970315 | 3.1513087 | 27 | 3 | 2000–2006 | 0.49 | M-v | 3 | MPC | 99986 | 2000 $SK_{340}$ |
| 2000 $SU_{343}$ | 15.7 | 0.15 | 20060922 | 33.99744 | 150.27909 | 209.54756 | 8.80416 | 0.1182278 | 3.0948089 | 44 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 84613 | 2000 $SU_{343}$ |
| 2000 $SD_{345}$ | 16.0 | 0.15 | 20060922 | 83.69628 | 259.05327 | 263.06992 | 9.24782 | 0.0638379 | 2.3543899 | 41 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 02012 | 2000 $SD_{345}$ |
| 2000 $SW_{345}$ | 16.8 | 0.15 | 20060922 | 109.59308 | 103.90933 | 197.77270 | 6.79257 | 0.3018072 | 2.8798113 | 89 | 3 | 2000–2005 | 0.52 | M-v | 2 | MPC | 97405 | 2000 $SW_{345}$ |
| 2000 $SC_{347}$ | 13.8 | 0.15 | 20060922 | 21.61473 | 102.76642 | 267.71612 | 25.72709 | 0.0823787 | 3.1567312 | 68 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87404 | 2000 $SC_{347}$ |
| 2000 $SH_{347}$ | 15.8 | 0.15 | 20060922 | 36.30183 | 98.78435 | 240.74432 | 22.08592 | 0.4244475 | 3.1731297 | 23 | 3 | 2000–2006 | 0.32 | M-v | 1 | MPC | 84614 | 2000 $SH_{347}$ |
| 2000 $SU_{347}$ | 15.6 | 0.15 | 20060922 | 142.86141 | 27.68393 | 319.04641 | 21.33181 | 0.0701152 | 2.6902461 | 45 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 66161 | 2000 $SU_{347}$ |
| 2000 $SB_{352}$ | 16.9 | 0.15 | 20060922 | 337.83137 | 201.92682 | 107.12544 | 3.05350 | 0.1246299 | 2.2213844 | 53 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 02012 | 2000 $SB_{352}$ |
| 2000 $SJ_{353}$ | 15.3 | 0.15 | 20060922 | 38.05021 | 178.96985 | 187.38331 | 10.53782 | 0.2419443 | 3.1569330 | 46 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 84614 | 2000 $SJ_{353}$ |
| 2000 $SJ_{355}$ | 16.0 | 0.15 | 20060922 | 108.68711 | 342.67996 | 49.94127 | 14.69409 | 0.2027272 | 2.7088334 | 38 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 97406 | 2000 $SJ_{355}$ |
| 2000 $SB_{358}$ | 14.9 | 0.15 | 20060922 | 24.26025 | 316.58019 | 73.99138 | 24.56669 | 0.1849725 | 3.1158072 | 59 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 84614 | 2000 $SB_{358}$ |
| 2000 $SP_{359}$ | 14.8 | 0.15 | 20060922 | 101.06143 | 34.35632 | 278.59022 | 10.00878 | 0.1037698 | 3.0225241 | 52 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 84615 | 2000 $SP_{359}$ |
| 2000 $SL_{362}$ | 14.8 | 0.15 | 20060922 | 356.25702 | 223.99446 | 147.73435 | 11.19082 | 0.2309458 | 3.1581331 | 93 | 6 | 1997–2006 | 0.40 | M-v | 0 | MPC | 04141 | 2000 $SL_{362}$ |
| 2000 $SN_{363}$ | 15.1 | 0.15 | 20060922 | 29.73034 | 55.26414 | 300.69018 | 8.71089 | 0.2303135 | 3.1608419 | 37 | 4 | 1994–2006 | 0.61 | M-v | 2 | MPC | 27103 | 2000 $SN_{363}$ |
| 2000 $SG_{364}$ | 16.3 | 0.15 | 20060922 | 135.31750 | 320.95875 | 85.05210 | 7.06945 | 0.2218105 | 2.5454031 | 36 | 3 | 2000–2004 | 0.54 | M-v | 3 | MPC | 68764 | 2000 $SG_{364}$ |
| 2000 $SH_{364}$ | 15.0 | 0.15 | 20060922 | 28.82908 | 242.53422 | 112.25365 | 11.05701 | 0.1241039 | 3.1089750 | 40 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 99986 | 2000 $SH_{364}$ |
| 2000 $SB_{366}$ | 15.0 | 0.15 | 20060922 | 97.03249 | 54.76617 | 350.51466 | 13.92800 | 0.0890262 | 2.6348331 | 63 | 4 | 1994–2005 | 0.64 | M-v | 2 | MPC | 04141 | 2000 $SB_{366}$ |
| 2000 $SF_{367}$ | 14.8 | 0.15 | 20060922 | 15.50028 | 93.96583 | 235.36409 | 6.79538 | 0.1985123 | 3.3927564 | 57 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 03183 | 2000 $SF_{367}$ |
| 2000 $SZ_{371}$ | 17.5 | 0.15 | 20060922 | 6.83800 | 287.70484 | 36.59735 | 3.07884 | 0.2002842 | 2.1323644 | 66 | 3 | 2000–2006 | 0.44 | M-v | 2 | MPC | 04141 | 2000 $SZ_{371}$ |
| 2000 $SC_{372}$ | 17.0 | 0.15 | 20060922 | 301.23453 | 210.94485 | 116.53499 | 4.96617 | 0.2628529 | 2.2605098 | 25 | 3 | 2000–2006 | 0.60 | M-v | 3 | MPC | 99987 | 2000 $SC_{372}$ |
| 2000 $SE_{372}$ | 17.1 | 0.15 | 20060922 | 267.76260 | 43.73688 | 284.59624 | 5.20796 | 0.1469577 | 2.3961062 | 34 | 3 | 2000–2004 | 0.54 | M-v | 3 | MPC | 72182 | 2000 $SE_{372}$ |
| 2000 $SV_{373}$ | 15.4 | 0.15 | 20060922 | 343.06141 | 271.57106 | 137.87693 | 9.94515 | 0.0937284 | 3.1659088 | 47 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 90042 | 2000 $SV_{373}$ |
| 2000 $TD_1$ | 16.4 | 0.15 | 20060922 | 271.52679 | 151.33831 | 19.91132 | 20.27753 | 0.0579802 | 1.9632519 | 60 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 87405 | 2000 $TD_1$ |
| 2000 $TB_2$ | 14.6 | 0.15 | 20060922 | 19.19097 | 179.40777 | 227.10833 | 9.94608 | 0.2206252 | 3.1314777 | 100 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 90042 | 2000 $TB_2$ |
| 2000 $TP_2$ | 15.7 | 0.15 | 20060922 | 31.21477 | 338.06324 | 346.28215 | 11.16620 | 0.2046612 | 3.1857603 | 57 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 04141 | 2000 $TP_2$ |
| 2000 $TT_5$ | 17.3 | 0.15 | 20060922 | 214.97941 | 262.17388 | 176.29903 | 5.94388 | 0.0637193 | 2.2478761 | 24 | 3 | 2000–2003 | 0.70 | M-v | 3 | MPC | 93874 | 2000 $TT_5$ |
| 2000 $TS_6$ | 16.0 | 0.15 | 20060922 | 261.67678 | 235.26049 | 9.06142 | 12.02342 | 0.2123538 | 2.5830375 | 65 | 2 | 2003–2004 | 0.57 | M-v | 4 | MPC | 74035 | 2000 $TS_6$ |
| 2000 $TG_8$ | 14.9 | 0.15 | 20060922 | 88.09466 | 93.97417 | 192.45475 | 9.36519 | 0.1767629 | 3.1585970 | 58 | 5 | 1999–2006 | 0.47 | M-v | 0 | MPC | 88756 | 2000 $TG_8$ |
| 2000 $TG_{10}$ | 16.0 | 0.15 | 20060922 | 7.59887 | 306.36946 | 142.48834 | 1.99646 | 0.2875802 | 3.0135969 | 50 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 97406 | 2000 $TG_{10}$ |
| 2000 $TS_{10}$ | 15.2 | 0.15 | 20060922 | 356.41339 | 75.43689 | 17.44973 | 24.07866 | 0.1175008 | 2.9810289 | 55 | 3 | 2000–2006 | 0.41 | M-v | 2 | MPC | 90042 | 2000 $TS_{10}$ |
| 2000 $TX_{10}$ | 17.5 | 0.15 | 20060922 | 291.25356 | 306.76191 | 14.49969 | 4.71928 | 0.2427519 | 2.2989661 | 23 | 2 | 2000–2006 | 0.43 | M-v | 5 | MPC | 99988 | 2000 $TX_{10}$ |
| 2000 $TC_{11}$ | 16.3 | 0.15 | 20060922 | 193.45733 | 294.08418 | 22.66841 | 5.36880 | 0.1307482 | 2.6255494 | 46 | 4 | 2000–2005 | 0.58 | M-v | 1 | MPC | 70274 | 2000 $TC_{11}$ |
| 2000 $TA_{15}$ | 16.6 | 0.15 | 20060922 | 160.38383 | 235.68523 | 141.28230 | 0.75012 | 0.1773583 | 2.5845440 | 53 | 2 | 2000–2004 | 0.55 | M-v | 4 | MPC | 97406 | 2000 $TA_{15}$ |
| 2000 $TE_{16}$ | 15.8 | 0.15 | 20060922 | 48.46214 | 209.25386 | 157.10156 | 1.72454 | 0.1891588 | 3.0848962 | 55 | 4 | 2000–2005 | 0.46 | M-v | 1 | MPC | 90042 | 2000 $TE_{16}$ |
| 2000 $TH_{21}$ | 15.0 | 0.15 | 20060922 | 30.55728 | 307.86671 | 75.06972 | 11.43712 | 0.1147260 | 3.0832628 | 46 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 88757 | 2000 $TH_{21}$ |
| 2000 $TG_{23}$ | 15.2 | 0.15 | 20060922 | 330.97294 | 41.14240 | 61.28458 | 2.26486 | 0.2520572 | 3.1174117 | 92 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 87405 | 2000 $TG_{23}$ |
| 2000 $TZ_{23}$ | 15.3 | 0.15 | 20060922 | 84.40386 | 119.96247 | 203.27534 | 9.36527 | 0.0684198 | 3.0819716 | 43 | 5 | 1995–2006 | 0.39 | M-v | 0 | MPC | 87405 | 2000 $TZ_{23}$ |
| 2000 $TT_{24}$ | 15.6 | 0.15 | 20060922 | 53.65760 | 310.85862 | 56.58307 | 6.29641 | 0.1967302 | 3.0701317 | 58 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 88757 | 2000 $TT_{24}$ |
| 2000 $TC_{25}$ | 15.2 | 0.15 | 20060922 | 55.73249 | 1.11341 | 350.67807 | 3.96190 | 0.1742160 | 3.0741912 | 87 | 6 | 2000–2006 | 0.56 | M-v | 1 | MPC | 90042 | 2000 $TC_{25}$ |
| 2000 $TH_{25}$ | 15.3 | 0.15 | 20060922 | 35.53653 | 168.53838 | 218.42044 | 9.22146 | 0.1126767 | 3.0698065 | 45 | 4 | 2000–2005 | 0.60 | M-v | 1 | MPC | 84618 | 2000 $TH_{25}$ |
| 2000 $TM_{27}$ | 15.9 | 0.15 | 20060922 | 74.51715 | 217.38620 | 139.68398 | 2.84030 | 0.1008721 | 2.9167084 | 48 | 3 | 2000–2005 | 0.46 | M-v | 3 | MPC | 90042 | 2000 $TM_{27}$ |
| 2000 $TX_{27}$ | 15.1 | 0.15 | 20060922 | 129.87125 | 84.36357 | 213.26116 | 10.80277 | 0.0497260 | 3.0040279 | 34 | 4 | 1993–2005 | 0.61 | M-v | 1 | MPC | 04141 | 2000 $TX_{27}$ |
| 2000 $TG_{29}$ | 14.1 | 0.15 | 20060922 | 22.33870 | 154.98110 | 246.37127 | 16.28206 | 0.2056994 | 3.1412814 | 109 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 97407 | 2000 $TG_{29}$ |
| 2000 $TS_{30}$ | 15.8 | 0.15 | 20060922 | 312.87440 | 276.83552 | 184.78106 | 12.52764 | 0.1037046 | 3.1802442 | 32 | 5 | 1997–2006 | 0.76 | M-v | 1 | MPC | 90043 | 2000 $TS_{30}$ |
| 2000 $TO_{31}$ | 17.8 | 0.15 | 20001003 | 65.60953 | 223.25164 | 67.68267 | 5.22253 | 0.1122003 | 2.5324556 | 9 | 1 | 2 days | 0.16 | | | MPC | 25271 | 2000 $TO_{31}$ |
| 2000 $TE_{33}$ | 15.2 | 0.15 | 20060922 | 299.32069 | 237.49805 | 288.02648 | 17.52714 | 0.0772003 | 1.9500376 | 157 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 90043 | 2000 $TE_{33}$ |
| 2000 $TF_{33}$ | 14.8 | 0.15 | 20060922 | 23.37761 | 90.36554 | 315.76384 | 19.30257 | 0.2625643 | 3.1170944 | 58 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 84619 | 2000 $TF_{33}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $TM_{34}$ | 16.0 | 0.15 | 20060922 | 38.97559 | 254.23785 | 130.51020 | 3.06610 | 0.1945603 | 3.0596546 | 45 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87405 | 2000 $TM_{34}$ |
| 2000 $TB_{35}$ | 15.9 | 0.15 | 20060922 | 70.89076 | 147.41783 | 195.54446 | 10.17742 | 0.1339467 | 3.0564776 | 35 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 88758 | 2000 $TB_{35}$ |
| 2000 $TN_{35}$ | 16.2 | 0.15 | 20060922 | 8.64001 | 258.33458 | 191.64255 | 0.55212 | 0.3173546 | 3.0311183 | 41 | 4 | 2000–2006 | 0.39 | M-v | 0 | MPC | 99989 | 2000 $TN_{35}$ |
| 2000 $TO_{35}$ | 15.3 | 0.15 | 20060922 | 53.03818 | 139.10659 | 218.15373 | 4.28893 | 0.1656692 | 3.0863372 | 30 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 88758 | 2000 $TO_{35}$ |
| 2000 $TK_{36}$ | 14.5 | 0.15 | 20060922 | 85.22376 | 292.67145 | 25.37971 | 9.58600 | 0.0644751 | 3.1676548 | 59 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 84619 | 2000 $TK_{36}$ |
| 2000 $TT_{37}$ | 15.0 | 0.15 | 20060922 | 352.02919 | 264.74882 | 148.36994 | 22.55625 | 0.2567684 | 3.1283836 | 64 | 3 | 2000–2006 | 0.62 | M-v | 2 | MPC | 27729 | 2000 $TT_{37}$ |
| 2000 $TA_{40}$ | 16.7 | 0.15 | 20060922 | 285.48569 | 220.31118 | 103.25508 | 6.23148 | 0.1425597 | 2.2942645 | 35 | 3 | 2000–2003 | 0.86 | M-v | 3 | MPC | 47972 | 2000 $TA_{40}$ |
| 2000 $TG_{41}$ | 15.4 | 0.15 | 20060922 | 68.92811 | 277.15144 | 14.54356 | 6.51817 | 0.1414181 | 3.1880380 | 84 | 5 | 1993–2006 | 0.45 | M-v | 0 | MPC | 68771 | 2000 $TG_{41}$ |
| 2000 $TJ_{43}$ | 15.8 | 0.15 | 20060922 | 57.17378 | 315.65932 | 76.93238 | 9.42542 | 0.1119058 | 2.8934657 | 37 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 03184 | 2000 $TJ_{43}$ |
| 2000 $TK_{43}$ | 14.7 | 0.15 | 20060922 | 31.92906 | 243.41191 | 138.38587 | 10.94443 | 0.0556162 | 3.0482627 | 68 | 8 | 1993–2006 | 0.66 | M-v | 1 | MPC | 87405 | 2000 $TK_{43}$ |
| 2000 $TO_{45}$ | 15.1 | 0.15 | 20060922 | 59.77003 | 234.45581 | 94.10254 | 8.24627 | 0.1773631 | 3.1039831 | 73 | 6 | 2000–2006 | 0.56 | M-v | 0 | MPC | 84620 | 2000 $TO_{45}$ |
| 2000 $TF_{47}$ | 15.9 | 0.15 | 20060922 | 226.83048 | 265.51668 | 142.84327 | 6.19826 | 0.0897193 | 2.2925096 | 30 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 33280 | 2000 $TF_{47}$ |
| 2000 $TX_{48}$ | 15.7 | 0.15 | 20060922 | 318.27747 | 240.85232 | 54.70662 | 6.49108 | 0.1661410 | 2.2786028 | 51 | 4 | 2000–2006 | 0.69 | M-v | 2 | MPC | 99990 | 2000 $TX_{48}$ |
| 2000 $TL_{49}$ | 17.2 | 0.15 | 20060922 | 160.48090 | 36.92111 | 24.32160 | 5.84214 | 0.2122986 | 2.4613143 | 67 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 99990 | 2000 $TL_{49}$ |
| 2000 $TO_{51}$ | 14.7 | 0.15 | 20060922 | 10.80209 | 4.12611 | 46.68142 | 24.44182 | 0.2098043 | 3.1357505 | 83 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87406 | 2000 $TO_{51}$ |
| 2000 $TY_{52}$ | 15.9 | 0.15 | 20060922 | 125.81293 | 342.48859 | 357.03853 | 1.63068 | 0.0664591 | 2.8460655 | 60 | 6 | 2000–2006 | 0.61 | M-v | 0 | MPC | 93877 | 2000 $TY_{52}$ |
| 2000 $TQ_{53}$ | 15.5 | 0.15 | 20060922 | 92.92835 | 268.14603 | 32.42544 | 6.53761 | 0.1305777 | 3.1520230 | 54 | 5 | 2000–2006 | 0.42 | M-v | 0 | MPC | 84621 | 2000 $TQ_{53}$ |
| 2000 $TJ_{55}$ | 16.0 | 0.15 | 20060922 | 344.56112 | 62.92914 | 29.14677 | 0.97020 | 0.1468037 | 3.0758477 | 43 | 4 | 2000–2005 | 0.48 | M-v | 0 | MPC | 87406 | 2000 $TJ_{55}$ |
| 2000 $TG_{56}$ | 15.9 | 0.15 | 20060922 | 187.73756 | 290.01058 | 37.37718 | 15.51180 | 0.1390590 | 2.6264216 | 47 | 5 | 1996–2005 | 0.73 | M-v | 1 | MPC | 97408 | 2000 $TG_{56}$ |
| 2000 $TF_{58}$ | 17.0 | 0.15 | 20060922 | 278.49117 | 190.87691 | 168.01472 | 5.03439 | 0.1625529 | 2.2831716 | 36 | 4 | 2000–2006 | 0.70 | M-v | 1 | MPC | 02013 | 2000 $TF_{58}$ |
| 2000 $TW_{58}$ | 15.9 | 0.15 | 20060922 | 0.52137 | 274.44702 | 159.10721 | 16.67280 | 0.2404662 | 3.1023782 | 58 | 5 | 1994–2006 | 0.51 | M-v | 0 | MPC | 90043 | 2000 $TW_{58}$ |
| 2000 $TN_{60}$ | 15.7 | 0.15 | 20060922 | 179.96673 | 264.15144 | 148.37170 | 14.07151 | 0.1826960 | 2.4452785 | 83 | 4 | 1994–2005 | 0.57 | M-v | 1 | MPC | 04141 | 2000 $TN_{60}$ |
| 2000 $TT_{61}$ | 15.1 | 0.15 | 20060922 | 359.23822 | 295.58667 | 120.06825 | 11.19396 | 0.0829465 | 3.1021041 | 76 | 6 | 1998–2006 | 0.58 | M-v | 0 | MPC | 87406 | 2000 $TT_{61}$ |
| 2000 $TV_{61}$ | 15.1 | 0.15 | 20060922 | 10.78583 | 349.22834 | 80.04610 | 11.50105 | 0.1300925 | 3.0018427 | 55 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87406 | 2000 $TV_{61}$ |
| 2000 $TZ_{63}$ | 15.2 | 0.15 | 20060922 | 48.86926 | 164.65145 | 228.58545 | 13.48208 | 0.1650741 | 2.9829599 | 88 | 2 | 2000–2005 | 0.61 | M-v | 3 | MPC | 90043 | 2000 $TZ_{63}$ |
| 2000 $TH_{64}$ | 15.3 | 0.15 | 20060922 | 48.31014 | 334.65973 | 14.26897 | 9.79216 | 0.0721581 | 3.0718360 | 43 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 84621 | 2000 $TH_{64}$ |
| 2000 $TH_{65}$ | 16.6 | 0.15 | 20060922 | 100.70019 | 9.79352 | 12.01417 | 5.06067 | 0.0780747 | 2.7922416 | 26 | 2 | 2000–2005 | 0.36 | M-v | 4 | MPC | 88758 | 2000 $TH_{65}$ |
| 2000 $UL_{2}$ | 17.2 | 0.15 | 20060922 | 235.93578 | 301.47609 | 29.43157 | 1.89782 | 0.2029507 | 2.4408602 | 42 | 4 | 1996–2006 | 0.86 | M-v | 1 | MPC | 97408 | 2000 $UL_{2}$ |
| 2000 $UN_{2}$ | 14.8 | 0.15 | 20060922 | 101.09651 | 292.43281 | 10.26534 | 10.86564 | 0.0753283 | 3.1394477 | 39 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 90043 | 2000 $UN_{2}$ |
| 2000 $UH_{4}$ | 15.0 | 0.15 | 20060922 | 17.94188 | 338.05850 | 57.86956 | 11.18093 | 0.2703525 | 3.1561766 | 39 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 03184 | 2000 $UH_{4}$ |
| 2000 $UO_{8}$ | 16.0 | 0.15 | 20060922 | 299.47803 | 321.73047 | 46.85756 | 6.99672 | 0.1716405 | 2.2379445 | 50 | 3 | 2000–2003 | 0.39 | M-v | 3 | MPC | 53658 | 2000 $UO_{8}$ |
| 2000 $UE_{9}$ | 15.7 | 0.15 | 20060922 | 355.90157 | 88.33310 | 230.43188 | 6.01608 | 0.1608987 | 2.2184926 | 97 | 4 | 2000–2005 | 0.55 | M-v | 2 | MPC | 77479 | 2000 $UE_{9}$ |
| 2000 $UZ_{9}$ | 14.1 | 0.15 | 20060922 | 343.39065 | 26.09528 | 67.80330 | 7.39967 | 0.1760742 | 3.2039100 | 157 | 4 | 2000–2006 | 0.60 | M-v | 0 | MPC | 90043 | 2000 $UZ_{9}$ |
| 2000 $UN_{10}$ | 16.3 | 0.15 | 20060922 | 270.14119 | 327.74517 | 51.15378 | 6.31423 | 0.1746382 | 2.2937103 | 68 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 02013 | 2000 $UN_{10}$ |
| 2000 $UO_{11}$ | 16.4 | 0.15 | 20060922 | 241.05569 | 276.74146 | 60.98775 | 13.30645 | 0.3120185 | 2.3775968 | 30 | 3 | 1989–2004 | 0.74 | M-v | 3 | MPC | 10636 | 2000 $UO_{11}$ |
| 2000 $UV_{11}$ | 14.7 | 0.15 | 20060922 | 90.00899 | 73.31019 | 255.01141 | 9.03946 | 0.0214928 | 3.0893595 | 53 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 84622 | 2000 $UV_{11}$ |
| 2000 $UZ_{11}$ | 16.8 | 0.15 | 20060922 | 199.75024 | 270.53567 | 85.26318 | 8.07098 | 0.2547020 | 2.4611113 | 82 | 3 | 2000–2004 | 0.52 | M-v | 2 | MPC | 74038 | 2000 $UZ_{11}$ |
| 2000 $UV_{12}$ | 15.2 | 0.15 | 20060922 | 344.83781 | 116.64515 | 359.43397 | 15.08080 | 0.2800709 | 3.0663136 | 73 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 90043 | 2000 $UV_{12}$ |
| 2000 $UY_{12}$ | 14.8 | 0.15 | 20060922 | 350.09455 | 210.32253 | 226.94234 | 12.44271 | 0.1204448 | 3.1290632 | 50 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 87406 | 2000 $UY_{12}$ |
| 2000 $UJ_{13}$ | 15.7 | 0.15 | 20060922 | 111.23405 | 89.97636 | 236.24577 | 10.39240 | 0.0923817 | 2.9629041 | 20 | 4 | 1995–2005 | 0.37 | M-v | 2 | MPC | 84622 | 2000 $UJ_{13}$ |
| 2000 $UA_{14}$ | 17.6 | 0.15 | 20060922 | 262.66901 | 36.38111 | 294.54781 | 5.43956 | 0.1460074 | 2.3880092 | 24 | 3 | 1998–2004 | 0.33 | M-v | 3 | MPC | 64867 | 2000 $UA_{14}$ |
| 2000 $UF_{14}$ | 16.6 | 0.15 | 20060922 | 174.79295 | 153.93502 | 222.81448 | 29.11735 | 0.1555715 | 2.5556918 | 39 | 3 | 2000–2004 | 0.58 | M-v | 3 | MPC | 46507 | 2000 $UF_{14}$ |
| 2000 $UY_{17}$ | 16.1 | 0.15 | 20060922 | 160.41682 | 299.63417 | 80.51560 | 5.83715 | 0.2244715 | 2.5792677 | 51 | 3 | 2000–2004 | 0.51 | M-v | 3 | MPC | 68780 | 2000 $UY_{17}$ |
| 2000 $UO_{18}$ | 15.9 | 0.15 | 20060922 | 209.25069 | 109.22502 | 321.74135 | 6.12802 | 0.1036343 | 2.3588159 | 100 | 3 | 2000–2005 | 0.50 | M-v | 3 | MPC | 77479 | 2000 $UO_{18}$ |
| 2000 $UX_{18}$ | 14.4 | 0.15 | 20060922 | 47.44650 | 89.36303 | 260.36339 | 14.75722 | 0.1871455 | 3.2150463 | 136 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 84623 | 2000 $UX_{18}$ |
| 2000 $UH_{20}$ | 15.4 | 0.15 | 20060922 | 57.94428 | 226.73896 | 139.08648 | 1.12970 | 0.1811538 | 3.0574967 | 88 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97409 | 2000 $UH_{20}$ |
| 2000 $UU_{20}$ | 15.4 | 0.15 | 20060922 | 111.35458 | 282.98665 | 66.24198 | 2.99662 | 0.0912251 | 2.8930240 | 60 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 93879 | 2000 $UU_{20}$ |
| 2000 $UA_{22}$ | 16.3 | 0.15 | 20060922 | 209.79965 | 274.53271 | 106.35447 | 3.54390 | 0.2013416 | 2.4384776 | 55 | 3 | 1998–2005 | 0.44 | M-v | 3 | MPC | 72194 | 2000 $UA_{22}$ |
| 2000 $UD_{22}$ | 16.2 | 0.15 | 20060922 | 162.75925 | 302.92749 | 80.30983 | 6.41474 | 0.2365238 | 2.5782191 | 45 | 2 | 2000–2004 | 0.63 | M-v | 3 | MPC | 74039 | 2000 $UD_{22}$ |
| 2000 $UO_{22}$ | 17.0 | 0.15 | 20060922 | 259.38150 | 259.55159 | 99.32761 | 3.32444 | 0.2368144 | 2.3383920 | 48 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 02014 | 2000 $UO_{22}$ |
| 2000 $UU_{23}$ | 14.9 | 0.15 | 20060922 | 8.86805 | 27.19010 | 66.12288 | 12.45260 | 0.2116964 | 3.0358033 | 97 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97409 | 2000 $UU_{23}$ |
| 2000 $UY_{24}$ | 17.0 | 0.15 | 20060922 | 253.65205 | 277.74038 | 88.60556 | 3.32252 | 0.1929817 | 2.3469223 | 36 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 02014 | 2000 $UY_{24}$ |
| 2000 $UE_{28}$ | 15.4 | 0.15 | 20060922 | 28.46099 | 168.21409 | 210.89985 | 17.30643 | 0.2025315 | 3.1235417 | 32 | 3 | 2000–2005 | 0.44 | M-v | 2 | MPC | 88760 | 2000 $UE_{28}$ |

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| 2000 $UG_{29}$ | 14.9 | 0.15 | 20060922 | 106.69797 | 20.98574 | 41.46807 | 22.59598 | 0.0360382 | 2.6672503 | 36 | 3 | 2000–2004 | 0.70 | M-v | 2 | MPC | 27119 | 2000 $UG_{29}$ |
| 2000 $UT_{29}$ | 15.7 | 0.15 | 20060922 | 192.06148 | 285.43102 | 54.81252 | 13.99170 | 0.2381013 | 2.5824398 | 84 | 3 | 2000–2004 | 0.49 | M-v | 2 | MPC | 72196 | 2000 $UT_{29}$ |
| 2000 $UK_{33}$ | 15.4 | 0.15 | 20060922 | 16.69385 | 58.05066 | 355.11565 | 10.45673 | 0.0864432 | 3.0692912 | 59 | 3 | 2000–2005 | 0.67 | M-v | 2 | MPC | 97409 | 2000 $UK_{33}$ |
| 2000 $UJ_{34}$ | 17.0 | 0.15 | 20060922 | 161.33618 | 245.51771 | 216.88569 | 1.71916 | 0.1851002 | 2.4022296 | 42 | 4 | 1994–2005 | 0.72 | M-v | 1 | MPC | 04141 | 2000 $UJ_{34}$ |
| 2000 $UO_{34}$ | 15.1 | 0.15 | 20060922 | 27.31564 | 144.13617 | 239.97337 | 4.33662 | 0.1926505 | 3.1547759 | 85 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87406 | 2000 $UO_{34}$ |
| 2000 $UL_{38}$ | 15.2 | 0.15 | 20060922 | 42.35175 | 115.04699 | 240.08293 | 3.25941 | 0.2827433 | 3.1354823 | 49 | 6 | 1994–2006 | 0.45 | M-v | 0 | MPC | 88760 | 2000 $UL_{38}$ |
| 2000 $UQ_{38}$ | 15.7 | 0.15 | 20060922 | 138.85397 | 317.86789 | 31.72194 | 9.73660 | 0.1649641 | 2.7691103 | 45 | 3 | 2000–2004 | 0.68 | M-v | 3 | MPC | 66164 | 2000 $UQ_{38}$ |
| 2000 $UH_{41}$ | 15.8 | 0.15 | 20060922 | 110.26824 | 164.60387 | 231.84454 | 7.46650 | 0.2285201 | 2.7525898 | 61 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 97409 | 2000 $UH_{41}$ |
| 2000 $UN_{41}$ | 14.8 | 0.15 | 20060922 | 2.44956 | 201.87242 | 227.24124 | 13.05154 | 0.1400981 | 3.1553803 | 91 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 90044 | 2000 $UN_{41}$ |
| 2000 $UJ_{43}$ | 15.1 | 0.15 | 20060922 | 28.33642 | 307.64635 | 70.81594 | 4.35404 | 0.1652243 | 3.2189895 | 87 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 90044 | 2000 $UJ_{43}$ |
| 2000 $UZ_{43}$ | 14.8 | 0.15 | 20060922 | 12.98587 | 200.35451 | 237.42976 | 11.27089 | 0.1333434 | 3.0669921 | 89 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97409 | 2000 $UZ_{43}$ |
| 2000 $UL_{48}$ | 14.8 | 0.15 | 20060922 | 78.83638 | 282.79123 | 58.89619 | 17.00620 | 0.0996827 | 3.1613235 | 67 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97410 | 2000 $UL_{48}$ |
| 2000 $UH_{51}$ | 17.3 | 0.15 | 20060922 | 253.85838 | 286.50712 | 67.34913 | 4.02547 | 0.2690700 | 2.3644566 | 43 | 3 | 1989–2004 | 0.75 | M-v | 4 | MPC | 7262 | 2000 $UH_{51}$ |
| 2000 $UE_{55}$ | 14.5 | 0.15 | 20060922 | 358.85022 | 242.25854 | 217.59140 | 15.19641 | 0.2220285 | 3.1031663 | 99 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97410 | 2000 $UE_{55}$ |
| 2000 $UM_{55}$ | 15.7 | 0.15 | 20060922 | 187.28471 | 276.88803 | 88.82827 | 8.03935 | 0.2268003 | 2.5606447 | 63 | 3 | 2000–2004 | 0.48 | M-v | 2 | MPC | 46510 | 2000 $UM_{55}$ |
| 2000 $UW_{56}$ | 14.8 | 0.15 | 20060922 | 72.45233 | 4.91681 | 327.49324 | 9.62723 | 0.0606128 | 3.1098576 | 62 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 90044 | 2000 $UW_{56}$ |
| 2000 $UB_{57}$ | 17.3 | 0.15 | 20060922 | 165.28614 | 32.85019 | 14.70785 | 5.32300 | 0.2199568 | 2.5156057 | 43 | 3 | 1992–2004 | 0.58 | M-v | 3 | MPC | 04141 | 2000 $UB_{57}$ |
| 2000 $UJ_{57}$ | 15.0 | 0.15 | 20060922 | 340.33940 | 95.96524 | 6.65565 | 17.76118 | 0.2372081 | 3.0950948 | 63 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97410 | 2000 $UJ_{57}$ |
| 2000 $UY_{61}$ | 15.5 | 0.15 | 20060922 | 40.43121 | 183.48194 | 231.50629 | 9.29075 | 0.0944723 | 2.9623367 | 88 | 4 | 1995–2006 | 0.51 | M-v | 2 | MPC | 97410 | 2000 $UY_{61}$ |
| 2000 $UO_{62}$ | 16.1 | 0.15 | 20060922 | 32.12208 | 106.36881 | 300.56242 | 4.00434 | 0.2973551 | 3.0603755 | 58 | 3 | 2000–2006 | 0.44 | M-v | 1 | MPC | 90044 | 2000 $UO_{62}$ |
| 2000 $UT_{62}$ | 15.8 | 0.15 | 20060922 | 154.27370 | 111.28551 | 286.06460 | 4.35714 | 0.2496470 | 2.5769967 | 75 | 2 | 2000–2004 | 0.52 | M-v | 3 | MPC | 74041 | 2000 $UT_{62}$ |
| 2000 $UW_{62}$ | 14.7 | 0.15 | 20060922 | 84.60243 | 91.59203 | 243.83361 | 10.68696 | 0.1333976 | 3.0719371 | 83 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 04142 | 2000 $UW_{62}$ |
| 2000 $UB_{63}$ | 16.0 | 0.15 | 20060922 | 220.13058 | 76.42581 | 285.30863 | 4.05652 | 0.0582108 | 2.4709754 | 47 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 72201 | 2000 $UB_{63}$ |
| 2000 $UR_{65}$ | 14.7 | 0.15 | 20060922 | 82.55435 | 296.56461 | 7.59622 | 5.88461 | 0.0725889 | 3.2425190 | 65 | 5 | 2000–2006 | 0.59 | M-v | 0 | MPC | 90044 | 2000 $UR_{65}$ |
| 2000 $UT_{65}$ | 15.4 | 0.15 | 20060922 | 50.66047 | 103.62927 | 244.46321 | 5.73959 | 0.2214097 | 3.1355509 | 76 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 84629 | 2000 $UT_{65}$ |
| 2000 $UM_{67}$ | 15.1 | 0.15 | 20060922 | 22.89159 | 144.58236 | 246.32968 | 7.75316 | 0.1006316 | 3.1646542 | 32 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 84629 | 2000 $UM_{67}$ |
| 2000 $UQ_{67}$ | 16.1 | 0.15 | 20060922 | 160.36516 | 213.48616 | 258.75449 | 6.19109 | 0.0685870 | 2.3551714 | 39 | 4 | 2000–2005 | 0.68 | M-v | 1 | MPC | 72202 | 2000 $UQ_{67}$ |
| 2000 $UA_{68}$ | 15.3 | 0.15 | 20060922 | 40.72483 | 171.61770 | 241.07808 | 10.35499 | 0.0437929 | 2.9788236 | 49 | 3 | 2000–2005 | 0.57 | M-v | 4 | MPC | 88763 | 2000 $UA_{68}$ |
| 2000 $UU_{68}$ | 14.9 | 0.15 | 20060922 | 103.99443 | 73.95215 | 264.65010 | 9.08446 | 0.0869426 | 2.9677340 | 65 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 97410 | 2000 $UU_{68}$ |
| 2000 $UG_{70}$ | 16.1 | 0.15 | 20060922 | 154.35067 | 353.71381 | 3.17157 | 5.61629 | 0.1865594 | 2.6844307 | 60 | 3 | 1991–2004 | 0.65 | M-v | 3 | MPC | 74042 | 2000 $UG_{70}$ |
| 2000 $UH_{71}$ | 14.9 | 0.15 | 20060922 | 10.66900 | 152.30441 | 251.44008 | 5.01455 | 0.1659413 | 3.2032847 | 62 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 90044 | 2000 $UH_{71}$ |
| 2000 $UT_{72}$ | 14.9 | 0.15 | 20060922 | 225.72485 | 35.06037 | 242.57371 | 11.82212 | 0.1206972 | 2.7125119 | 65 | 4 | 2000–2005 | 0.57 | M-v | 1 | MPC | 70278 | 2000 $UT_{72}$ |
| 2000 $UW_{72}$ | 14.9 | 0.15 | 20060922 | 25.49349 | 93.44397 | 296.49374 | 4.02138 | 0.0588464 | 3.1975144 | 65 | 4 | 2000–2006 | 0.61 | M-v | 0 | MPC | 87407 | 2000 $UW_{72}$ |
| 2000 $UH_{74}$ | 15.8 | 0.15 | 20060922 | 24.35079 | 283.61683 | 111.12132 | 17.09195 | 0.2482016 | 3.1415071 | 48 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87407 | 2000 $UH_{74}$ |
| 2000 $UL_{74}$ | 15.9 | 0.15 | 20060922 | 39.69504 | 273.23777 | 134.13558 | 11.68045 | 0.3010757 | 3.0529886 | 52 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 84631 | 2000 $UL_{74}$ |
| 2000 $UB_{76}$ | 15.1 | 0.15 | 20060922 | 88.25828 | 218.17712 | 229.13923 | 21.32656 | 0.0529115 | 2.6517399 | 25 | 2 | 2000–2004 | 0.47 | M-v | 4 | MPC | 68797 | 2000 $UB_{76}$ |
| 2000 $UW_{80}$ | 15.4 | 0.15 | 20060922 | 35.25791 | 334.16641 | 67.68542 | 5.33238 | 0.1765626 | 3.1143642 | 55 | 5 | 2000–2006 | 0.68 | M-v | 1 | MPC | 84631 | 2000 $UW_{80}$ |
| 2000 $UE_{82}$ | 15.0 | 0.15 | 20060922 | 29.42147 | 118.59126 | 263.66904 | 5.06060 | 0.1294349 | 3.1898700 | 55 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 88764 | 2000 $UE_{82}$ |
| 2000 $US_{82}$ | 15.2 | 0.15 | 20060922 | 359.30570 | 343.66960 | 96.16528 | 2.45240 | 0.1597879 | 3.0647466 | 94 | 4 | 2000–2006 | 0.51 | M-v | 0 | MPC | 02015 | 2000 $US_{82}$ |
| 2000 $UL_{83}$ | 15.5 | 0.15 | 20060922 | 356.73457 | 274.27967 | 150.96520 | 6.02100 | 0.1720691 | 3.1774867 | 34 | 5 | 2000–2006 | 0.58 | M-v | 0 | MPC | 87407 | 2000 $UL_{83}$ |
| 2000 $UO_{83}$ | 15.2 | 0.15 | 20060922 | 129.20008 | 173.79776 | 208.58207 | 13.81438 | 0.0732070 | 2.6701248 | 75 | 4 | 2000–2004 | 0.63 | M-v | 1 | MPC | 70278 | 2000 $UO_{83}$ |
| 2000 $UU_{83}$ | 16.5 | 0.15 | 20060922 | 199.34648 | 358.42023 | 96.52408 | 5.75440 | 0.0918956 | 2.3108886 | 67 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 77481 | 2000 $UU_{83}$ |
| 2000 $UZ_{83}$ | 15.6 | 0.15 | 20060922 | 343.68179 | 231.76397 | 209.36869 | 17.18005 | 0.2290159 | 3.1853359 | 44 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 03184 | 2000 $UZ_{83}$ |
| 2000 $UO_{86}$ | 14.8 | 0.15 | 20060922 | 278.03504 | 331.30722 | 203.12975 | 9.36074 | 0.0135747 | 3.0026383 | 128 | 6 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97411 | 2000 $UO_{86}$ |
| 2000 $UG_{89}$ | 15.7 | 0.15 | 20060922 | 190.59388 | 273.18512 | 63.50099 | 13.24964 | 0.1807239 | 2.6180687 | 64 | 3 | 2000–2004 | 0.62 | M-v | 2 | MPC | 74043 | 2000 $UG_{89}$ |
| 2000 $UC_{90}$ | 16.4 | 0.15 | 20060922 | 183.33707 | 80.70026 | 17.03817 | 5.59452 | 0.0844764 | 2.3322763 | 50 | 3 | 2000–2003 | 0.49 | M-v | 3 | MPC | 29483 | 2000 $UC_{90}$ |
| 2000 $UY_{91}$ | 16.4 | 0.15 | 20060922 | 276.71786 | 4.99574 | 355.08505 | 5.96732 | 0.1918442 | 2.2947940 | 36 | 4 | 1995–2005 | 0.53 | M-v | 2 | MPC | 29484 | 2000 $UY_{91}$ |
| 2000 $UV_{93}$ | 16.0 | 0.15 | 20060922 | 106.20425 | 73.09275 | 307.73554 | 5.02186 | 0.2162821 | 2.8013030 | 49 | 4 | 2000–2005 | 0.52 | M-v | 1 | MPC | 88764 | 2000 $UV_{93}$ |
| 2000 $UV_{94}$ | 15.0 | 0.15 | 20060922 | 115.69363 | 70.04976 | 264.33709 | 8.87508 | 0.0638516 | 2.9772444 | 73 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 97411 | 2000 $UV_{94}$ |
| 2000 $UN_{96}$ | 15.6 | 0.15 | 20060922 | 262.30287 | 24.42866 | 345.96402 | 4.75258 | 0.0402675 | 2.3481045 | 119 | 6 | 1996–2006 | 0.56 | M-v | 1 | MPC | 02015 | 2000 $UN_{96}$ |
| 2000 $UV_{97}$ | 14.3 | 0.15 | 20060922 | 11.42144 | 160.45854 | 245.54578 | 15.69243 | 0.1531039 | 3.2072050 | 89 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 97411 | 2000 $UV_{97}$ |
| 2000 $UP_{102}$ | 15.9 | 0.15 | 20060922 | 103.84400 | 8.50997 | 34.55925 | 14.91042 | 0.2135178 | 2.7810044 | 41 | 3 | 2000–2006 | 0.78 | M-v | 2 | MPC | 93882 | 2000 $UP_{102}$ |
| 2000 $UQ_{103}$ | 16.2 | 0.15 | 20060922 | 121.09395 | 13.30159 | 40.02642 | 14.33422 | 0.2459208 | 2.6947380 | 47 | 3 | 1991–2004 | 0.62 | M-v | 2 | MPC | 04142 | 2000 $UQ_{103}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $UB_{105}$ | 14.5 | 0.15 | 20060922 | 8.53270 | 356.57065 | 60.42152 | 9.89302 | 0.2097768 | 3.0721492 | 61 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 87408 | 2000 $UB_{105}$ |
| 2000 $UM_{105}$ | 16.4 | 0.15 | 20060922 | 302.48310 | 215.83574 | 104.81961 | 7.19801 | 0.1519018 | 2.3046203 | 49 | 4 | 1999–2006 | 0.83 | M-v | 1 | MPC | 02015 | 2000 $UM_{105}$ |
| 2000 $UD_{107}$ | 14.8 | 0.15 | 20060922 | 30.53859 | 312.93877 | 79.69268 | 12.49721 | 0.1792385 | 3.1163833 | 55 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87408 | 2000 $UD_{107}$ |
| 2000 $UF_{111}$ | 17.1 | 0.15 | 20060922 | 216.28170 | 270.44285 | 96.32711 | 3.71497 | 0.1832073 | 2.4702296 | 30 | 4 | 2000–2006 | 0.73 | M-v | 2 | MPC | 72211 | 2000 $UF_{111}$ |
| 2000 $UR_{112}$ | 15.6 | 0.15 | 20060922 | 92.84965 | 276.66005 | 63.07110 | 11.99201 | 0.1477907 | 3.0483706 | 37 | 3 | 2000–2005 | 0.68 | M-v | 3 | MPC | 90045 | 2000 $UR_{112}$ |
| 2000 $UZ_{112}$ | 16.4 | 0.15 | 20060922 | 166.70546 | 302.01600 | 59.41971 | 31.51553 | 0.2872211 | 2.6125989 | 55 | 2 | 2000–2004 | 0.54 | M-v | 2 | MPC | 72211 | 2000 $UZ_{112}$ |
| 2000 $UE_{113}$ | 16.2 | 0.15 | 20060922 | 71.86470 | 38.48421 | 327.88024 | 0.29691 | 0.1163831 | 2.9845112 | 77 | 5 | 1993–2006 | 0.44 | M-v | 1 | MPC | 97412 | 2000 $UE_{113}$ |
| 2000 $UE_{114}$ | 17.6 | 0.15 | 20060922 | 307.48312 | 56.80470 | 337.97722 | 3.88779 | 0.2100840 | 2.1780875 | 34 | 2 | 2000–2003 | 0.47 | M-v | 3 | MPC | 57785 | 2000 $UE_{114}$ |
| 2000 $UV_{114}$ | 16.3 | 0.15 | 20060922 | 240.41181 | 101.23033 | 293.71858 | 4.80384 | 0.2366612 | 2.3451445 | 21 | 1 | 66 days | 0.56 | M-v | 5 | MPC | | 2000 $UV_{114}$ |
| 2000 $VQ_4$ | 16.8 | 0.15 | 20060922 | 136.67478 | 320.65038 | 39.60130 | 3.28004 | 0.1947352 | 2.7209018 | 25 | 3 | 2000–2005 | 0.45 | M-v | 3 | MPC | 84634 | 2000 $VQ_4$ |
| 2000 $VN_7$ | 16.4 | 0.15 | 20060922 | 188.33785 | 213.65510 | 222.66847 | 5.85383 | 0.1182614 | 2.3815872 | 50 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 02016 | 2000 $VN_7$ |
| 2000 $VW_8$ | 16.7 | 0.15 | 20060922 | 338.19474 | 165.72892 | 146.58022 | 1.96607 | 0.1903989 | 2.2435380 | 67 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 02016 | 2000 $VW_8$ |
| 2000 $VD_9$ | 15.8 | 0.15 | 20060922 | 31.23742 | 209.57399 | 218.91748 | 8.37199 | 0.1250399 | 2.9833175 | 54 | 3 | 1995–2006 | 0.51 | M-v | 3 | MPC | 97412 | 2000 $VD_9$ |
| 2000 $VF_{11}$ | 14.7 | 0.15 | 20060922 | 75.35729 | 91.80732 | 224.53966 | 24.24215 | 0.2528109 | 3.1720974 | 61 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 90045 | 2000 $VF_{11}$ |
| 2000 $VT_{11}$ | 16.2 | 0.15 | 20060922 | 219.54273 | 191.92193 | 200.90483 | 3.90730 | 0.0863917 | 2.4014766 | 36 | 4 | 2000–2006 | 0.64 | M-v | 1 | MPC | 02016 | 2000 $VT_{11}$ |
| 2000 $VH_{13}$ | 16.6 | 0.15 | 20060922 | 159.70747 | 195.29938 | 197.67000 | 5.76724 | 0.2573250 | 2.5774021 | 106 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 02016 | 2000 $VH_{13}$ |
| 2000 $VA_{14}$ | 15.9 | 0.15 | 20060922 | 90.02695 | 200.43164 | 222.91125 | 5.57516 | 0.0437767 | 2.7538428 | 71 | 4 | 1998–2004 | 0.64 | M-v | 1 | MPC | 70279 | 2000 $VA_{14}$ |
| 2000 $VD_{20}$ | 15.0 | 0.15 | 20060922 | 344.45777 | 24.86455 | 60.43416 | 6.55711 | 0.1689204 | 3.1769333 | 37 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 29503 | 2000 $VD_{20}$ |
| 2000 $VW_{20}$ | 15.9 | 0.15 | 20060922 | 53.59284 | 357.06395 | 30.23053 | 1.65145 | 0.2568059 | 3.0234676 | 71 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 02016 | 2000 $VW_{20}$ |
| 2000 $VT_{22}$ | 14.8 | 0.15 | 20060922 | 33.55234 | 155.01890 | 228.81637 | 9.55444 | 0.2398489 | 3.1406086 | 35 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 84635 | 2000 $VT_{22}$ |
| 2000 $VW_{24}$ | 17.0 | 0.15 | 20060922 | 236.61797 | 145.28780 | 265.18084 | 1.36932 | 0.2048354 | 2.3278479 | 40 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 74851 | 2000 $VW_{24}$ |
| 2000 $VN_{30}$ | 15.2 | 0.15 | 20060922 | 256.51653 | 316.50732 | 76.65282 | 11.09633 | 0.0395947 | 2.3365097 | 58 | 4 | 2000–2005 | 0.75 | M-v | 1 | MPC | 53660 | 2000 $VN_{30}$ |
| 2000 $VQ_{33}$ | 15.3 | 0.15 | 20060922 | 36.67953 | 302.23959 | 113.48005 | 5.25220 | 0.3655797 | 3.1001014 | 70 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 97413 | 2000 $VQ_{33}$ |
| 2000 $VH_{34}$ | 15.8 | 0.15 | 20060922 | 258.33225 | 287.69118 | 80.27826 | 5.64392 | 0.2439400 | 2.3583920 | 78 | 4 | 1995–2006 | 0.64 | M-v | 1 | MPC | 02016 | 2000 $VH_{34}$ |
| 2000 $VQ_{34}$ | 15.2 | 0.15 | 20060922 | 73.25621 | 242.44352 | 145.53094 | 4.73255 | 0.1930861 | 2.9708922 | 104 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 97413 | 2000 $VQ_{34}$ |
| 2000 $VD_{35}$ | 15.6 | 0.15 | 20060922 | 136.48255 | 357.47758 | 67.67279 | 14.85595 | 0.2291569 | 2.6353805 | 62 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 02016 | 2000 $VD_{35}$ |
| 2000 $VV_{36}$ | 14.1 | 0.15 | 20060922 | 41.37084 | 160.71941 | 248.89547 | 16.82860 | 0.2681079 | 3.1274223 | 153 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 97413 | 2000 $VV_{36}$ |
| 2000 $VS_{40}$ | 15.3 | 0.15 | 20060922 | 29.18562 | 77.54456 | 336.01009 | 5.13126 | 0.1687322 | 3.0382021 | 57 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 90045 | 2000 $VS_{40}$ |
| 2000 $VJ_{41}$ | 15.8 | 0.15 | 20060922 | 33.72283 | 59.43875 | 4.27785 | 2.46981 | 0.1324413 | 2.9832519 | 79 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 90045 | 2000 $VJ_{41}$ |
| 2000 $VL_{45}$ | 16.9 | 0.15 | 20060922 | 327.09172 | 29.98156 | 310.53588 | 5.05881 | 0.2685746 | 2.2144313 | 92 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 02016 | 2000 $VL_{45}$ |
| 2000 $VU_{46}$ | 14.3 | 0.15 | 20060922 | 58.55359 | 90.53419 | 255.03697 | 23.66226 | 0.2992330 | 3.1703602 | 71 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 97413 | 2000 $VU_{46}$ |
| 2000 $VS_{49}$ | 14.5 | 0.15 | 20060922 | 356.05835 | 41.43324 | 56.20731 | 5.77214 | 0.1512196 | 3.1491516 | 119 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97413 | 2000 $VS_{49}$ |
| 2000 $VE_{50}$ | 14.2 | 0.15 | 20060922 | 9.10765 | 197.39617 | 250.31599 | 16.04357 | 0.2072737 | 3.1291652 | 77 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 97413 | 2000 $VE_{50}$ |
| 2000 $VX_{50}$ | 14.7 | 0.15 | 20060922 | 75.88938 | 99.46728 | 239.32812 | 9.23623 | 0.0932164 | 3.1125003 | 67 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 84638 | 2000 $VX_{50}$ |
| 2000 $VN_{52}$ | 14.4 | 0.15 | 20060922 | 291.94595 | 265.95787 | 242.81199 | 15.14395 | 0.1534118 | 3.1745822 | 57 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87409 | 2000 $VN_{52}$ |
| 2000 $VU_{52}$ | 15.6 | 0.15 | 20060922 | 14.49257 | 95.83553 | 314.33392 | 3.79339 | 0.1794965 | 3.1734469 | 71 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90045 | 2000 $VU_{52}$ |
| 2000 $VU_{55}$ | 15.1 | 0.15 | 20060922 | 27.56938 | 173.83567 | 246.24891 | 13.95524 | 0.2394571 | 3.0856179 | 65 | 2 | 2000–2005 | 0.53 | M-v | 3 | MPC | 90045 | 2000 $VU_{55}$ |
| 2000 $VB_{58}$ | 15.5 | 0.15 | 20060922 | 40.92208 | 121.89267 | 269.38309 | 8.23814 | 0.0910228 | 3.1155995 | 49 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 90046 | 2000 $VB_{58}$ |
| 2000 $VH_{58}$ | 15.3 | 0.15 | 20060922 | 13.02974 | 120.59202 | 304.66938 | 4.32410 | 0.2159155 | 3.1601581 | 55 | 6 | 1996–2006 | 0.54 | M-v | 0 | MPC | 87409 | 2000 $VH_{58}$ |
| 2000 $VQ_{64}$ | 15.5 | 0.15 | 20060922 | 28.36902 | 242.63448 | 145.01817 | 5.08453 | 0.1831175 | 3.2017492 | 46 | 5 | 1994–2006 | 0.56 | M-v | 0 | MPC | 90046 | 2000 $VQ_{64}$ |
| 2000 $WB_1$ | 17.6 | 0.15 | 20060922 | 37.17713 | 262.85358 | 21.50215 | 41.11692 | 0.6189840 | 1.3012992 | 84 | 4 | 2000–2006 | 0.43 | M-v | 3 | MPC | 57785 | 2000 $WB_1$ |
| 2000 $WV_1$ | 17.4 | 0.15 | 20060922 | 242.61674 | 35.97146 | 82.00953 | 1.70000 | 0.0890171 | 2.2051328 | 52 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 74854 | 2000 $WV_1$ |
| 2000 $WX_3$ | 14.2 | 0.15 | 20060922 | 307.40388 | 220.39153 | 268.65667 | 17.09393 | 0.2153769 | 3.1739183 | 70 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 97414 | 2000 $WX_3$ |
| 2000 $WY_3$ | 14.4 | 0.15 | 20060922 | 98.23972 | 25.71128 | 275.89350 | 15.00696 | 0.1430406 | 3.1489790 | 67 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 90046 | 2000 $WY_3$ |
| 2000 $WL_4$ | 14.8 | 0.15 | 20060922 | 95.54505 | 61.87958 | 289.93219 | 8.84939 | 0.1132138 | 2.9751765 | 101 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 97414 | 2000 $WL_4$ |
| 2000 $WG_8$ | 15.3 | 0.15 | 20060922 | 9.82962 | 187.26612 | 264.64403 | 10.78942 | 0.2654047 | 3.1271722 | 69 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90046 | 2000 $WG_8$ |
| 2000 $WN_9$ | 14.5 | 0.15 | 20060922 | 332.28875 | 95.96057 | 54.80228 | 21.66088 | 0.2553089 | 3.0581482 | 97 | 4 | 2000–2006 | 0.68 | M-v | 1 | MPC | 97414 | 2000 $WN_9$ |
| 2000 $WL_{10}$ | 18.1 | 0.15 | 20060922 | 20.27916 | 114.92803 | 252.34581 | 10.21671 | 0.7153183 | 3.1498641 | 253 | 3 | 1983–2006 | 0.60 | M-v | 1 | MPC | 15093 | 2000 $WL_{10}$ |
| 2000 $WQ_{12}$ | 15.8 | 0.15 | 20060922 | 100.39237 | 337.55468 | 112.87181 | 17.28974 | 0.2613914 | 2.6888012 | 53 | 3 | 2000–2006 | 0.67 | M-v | 2 | MPC | 02017 | 2000 $WQ_{12}$ |
| 2000 $WW_{12}$ | 6.2 | 0.15 | 20060922 | 1.95796 | 260.53653 | 162.24371 | 2.50005 | 0.1190079 | 44.5249537 | 17 | 3 | 2000–2006 | 0.55 | M-v | 4 | MPC | 22735 | 2000 $WW_{12}$ |
| 2000 $WY_{12}$ | 16.0 | 0.15 | 20060922 | 110.58689 | 216.38816 | 262.77648 | 14.63914 | 0.1929885 | 2.5604677 | 35 | 4 | 1995–2004 | 0.69 | M-v | 2 | MPC | 72225 | 2000 $WY_{12}$ |
| 2000 $WW_{13}$ | 17.0 | 0.15 | 20060922 | 235.39309 | 216.62440 | 275.85081 | 3.01969 | 0.0994453 | 2.1505521 | 38 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 04142 | 2000 $WW_{13}$ |
| 2000 $WT_{14}$ | 17.1 | 0.15 | 20060922 | 355.48525 | 26.46636 | 341.69006 | 1.83039 | 0.1331846 | 2.1404363 | 121 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 04142 | 2000 $WT_{14}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $WP_{16}$ | 15.7 | 0.15 | 20060922 | 150.41507 | 168.35574 | 244.76329 | 12.00268 | 0.1614685 | 2.5985897 | 80 | 3 | 2000–2004 | 0.51 | M-v | 2 | MPC | 74049 | 2000 $WP_{16}$ |
| 2000 $WQ_{16}$ | 15.6 | 0.15 | 20060922 | 36.26143 | 348.16119 | 74.68726 | 2.07692 | 0.1791860 | 3.0519216 | 105 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 97415 | 2000 $WQ_{16}$ |
| 2000 $WA_{18}$ | 16.5 | 0.15 | 20060922 | 304.31206 | 295.10639 | 36.71411 | 3.44274 | 0.1776844 | 2.3110693 | 55 | 6 | 1999–2006 | 0.55 | M-v | 1 | MPC | 99997 | 2000 $WA_{18}$ |
| 2000 $WB_{19}$ | 16.6 | 0.15 | 20060922 | 270.00038 | 331.49049 | 71.34190 | 7.69035 | 0.1462626 | 2.2816705 | 43 | 3 | 2000–2005 | 0.67 | M-v | 3 | MPC | 52700 | 2000 $WB_{19}$ |
| 2000 $WN_{21}$ | 16.5 | 0.15 | 20060922 | 182.74373 | 309.51563 | 70.79361 | 3.45186 | 0.1998833 | 2.5571540 | 74 | 4 | 1994–2006 | 0.57 | M-v | 2 | MPC | 97415 | 2000 $WN_{21}$ |
| 2000 $WD_{22}$ | 15.6 | 0.15 | 20060922 | 36.08272 | 304.02535 | 79.70299 | 11.26111 | 0.2468551 | 3.1362681 | 52 | 3 | 2000–2006 | 0.43 | M-v | 1 | MPC | 84642 | 2000 $WD_{22}$ |
| 2000 $WN_{24}$ | 15.3 | 0.15 | 20060922 | 10.03753 | 301.80830 | 144.45293 | 7.58194 | 0.1884186 | 3.0876517 | 58 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97415 | 2000 $WN_{24}$ |
| 2000 $WM_{25}$ | 15.9 | 0.15 | 20060922 | 75.00755 | 208.92800 | 270.29896 | 2.15626 | 0.0378158 | 2.6317346 | 57 | 5 | 1992–2006 | 0.65 | M-v | 1 | MPC | 04142 | 2000 $WM_{25}$ |
| 2000 $WF_{26}$ | 15.2 | 0.15 | 20060922 | 21.88193 | 350.17068 | 86.07380 | 1.82106 | 0.2050162 | 3.1144763 | 124 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 97415 | 2000 $WF_{26}$ |
| 2000 $WT_{27}$ | 16.9 | 0.15 | 20060922 | 48.57281 | 332.05722 | 71.39819 | 0.75384 | 0.1585345 | 3.0171044 | 38 | 4 | 2000–2005 | 0.40 | M-v | 1 | MPC | 97415 | 2000 $WT_{27}$ |
| 2000 $WH_{28}$ | 15.9 | 0.15 | 20060922 | 191.28453 | 347.44714 | 106.18059 | 13.82842 | 0.1391674 | 2.3525553 | 66 | 4 | 1995–2005 | 0.52 | M-v | 1 | MPC | 77484 | 2000 $WH_{28}$ |
| 2000 $WB_{29}$ | 16.3 | 0.15 | 20060922 | 242.02830 | 332.64793 | 85.53830 | 11.54228 | 0.0820814 | 2.3077622 | 40 | 4 | 2000–2005 | 0.64 | M-v | 1 | MPC | 50504 | 2000 $WB_{29}$ |
| 2000 $WD_{38}$ | 15.1 | 0.15 | 20060922 | 16.29212 | 344.78829 | 92.05769 | 11.49829 | 0.0596280 | 3.0948377 | 64 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 90046 | 2000 $WD_{38}$ |
| 2000 $WG_{39}$ | 14.5 | 0.15 | 20060922 | 325.98159 | 273.48105 | 231.01956 | 12.16768 | 0.2458953 | 3.1822023 | 43 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 90046 | 2000 $WG_{39}$ |
| 2000 $WP_{39}$ | 16.2 | 0.15 | 20060922 | 169.39907 | 286.23129 | 96.03846 | 12.93468 | 0.3181054 | 2.5959710 | 75 | 4 | 1996–2005 | 0.57 | M-v | 2 | MPC | 87410 | 2000 $WP_{39}$ |
| 2000 $WY_{42}$ | 17.2 | 0.15 | 20060922 | 240.22223 | 258.04329 | 121.17832 | 2.99700 | 0.2335470 | 2.3735148 | 53 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 02018 | 2000 $WY_{42}$ |
| 2000 $WZ_{42}$ | 15.0 | 0.15 | 20060922 | 357.05831 | 233.02316 | 211.03409 | 8.33574 | 0.2298796 | 3.1764347 | 51 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 84643 | 2000 $WZ_{42}$ |
| 2000 $WV_{45}$ | 15.6 | 0.15 | 20060922 | 54.56299 | 270.47624 | 111.58401 | 4.49214 | 0.1790799 | 3.0887619 | 73 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 90047 | 2000 $WV_{45}$ |
| 2000 $WD_{47}$ | 15.6 | 0.15 | 20060922 | 50.08812 | 308.45420 | 91.44754 | 10.10873 | 0.1170779 | 3.0655393 | 59 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 90047 | 2000 $WD_{47}$ |
| 2000 $WG_{47}$ | 13.8 | 0.15 | 20060922 | 348.14436 | 7.13932 | 76.95185 | 23.74506 | 0.0594460 | 3.2117505 | 44 | 6 | 2000–2006 | 0.63 | M-v | 1 | MPC | 97416 | 2000 $WG_{47}$ |
| 2000 $WE_{50}$ | 16.8 | 0.15 | 20060922 | 286.54083 | 171.03323 | 205.83691 | 5.02180 | 0.1144621 | 2.2808627 | 53 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 62311 | 2000 $WE_{50}$ |
| 2000 $WK_{52}$ | 15.4 | 0.15 | 20060922 | 103.72606 | 79.33737 | 244.38584 | 3.43806 | 0.1353206 | 3.1256211 | 53 | 4 | 1994–2005 | 0.39 | M-v | 1 | MPC | 04142 | 2000 $WK_{52}$ |
| 2000 $WT_{52}$ | 15.8 | 0.15 | 20060922 | 65.92505 | 131.50485 | 243.43265 | 9.13422 | 0.0873643 | 3.0990748 | 44 | 2 | 2000–2005 | 0.50 | M-v | 4 | MPC | 88767 | 2000 $WT_{52}$ |
| 2000 $WP_{56}$ | 15.9 | 0.15 | 20060922 | 190.92361 | 201.45454 | 237.66688 | 5.45691 | 0.1004402 | 2.3894468 | 68 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 02018 | 2000 $WP_{56}$ |
| 2000 $WC_{57}$ | 14.4 | 0.15 | 20060922 | 343.93299 | 220.52952 | 242.44764 | 13.76008 | 0.1292739 | 3.1264883 | 76 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 90047 | 2000 $WC_{57}$ |
| 2000 $WD_{57}$ | 16.8 | 0.15 | 20060922 | 256.28798 | 40.64660 | 65.93170 | 2.11691 | 0.1094297 | 2.1727503 | 95 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 04142 | 2000 $WD_{57}$ |
| 2000 $WQ_{64}$ | 17.0 | 0.15 | 20060922 | 11.14517 | 359.77650 | 242.40454 | 3.66722 | 0.0806503 | 2.4073455 | 28 | 4 | 1998–2006 | 0.33 | M-v | 1 | MPC | 02018 | 2000 $WQ_{64}$ |
| 2000 $WS_{67}$ | 18.4 | 0.15 | 20060922 | 55.76706 | 198.27650 | 73.83580 | 20.65998 | 0.7071802 | 1.2987097 | 60 | 5 | 2000–2006 | 0.53 | M-v | 3 | MPC | 97416 | 2000 $WS_{67}$ |
| 2000 $WG_{68}$ | 16.7 | 0.15 | 20060922 | 30.96762 | 62.27029 | 248.26266 | 5.12540 | 0.2361707 | 2.1530236 | 142 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 04142 | 2000 $WG_{68}$ |
| 2000 $WK_{68}$ | 15.3 | 0.15 | 20060922 | 12.76121 | 296.80820 | 120.05061 | 17.30900 | 0.2156533 | 3.1234512 | 38 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 84645 | 2000 $WK_{68}$ |
| 2000 $WC_{69}$ | 14.8 | 0.15 | 20060922 | 25.05904 | 138.22444 | 254.79673 | 15.41948 | 0.1043087 | 3.1373819 | 39 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 04142 | 2000 $WC_{69}$ |
| 2000 $WZ_{70}$ | 14.3 | 0.15 | 20060922 | 358.09345 | 97.00781 | 320.86409 | 6.73819 | 0.0808553 | 3.2200476 | 154 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87410 | 2000 $WZ_{70}$ |
| 2000 $WA_{71}$ | 14.6 | 0.15 | 20060922 | 342.89694 | 55.30539 | 18.76462 | 10.90336 | 0.0699134 | 3.2220408 | 58 | 6 | 1997–2006 | 0.67 | M-v | 1 | MPC | 87410 | 2000 $WA_{71}$ |
| 2000 $WE_{71}$ | 17.2 | 0.15 | 20060922 | 278.17571 | 96.43473 | 327.00030 | 5.36070 | 0.1254275 | 2.1937382 | 62 | 3 | 2000–2006 | 0.44 | M-v | 2 | MPC | 04142 | 2000 $WE_{71}$ |
| 2000 $WP_{71}$ | 15.2 | 0.15 | 20060922 | 147.74667 | 63.18010 | 255.93872 | 14.97981 | 0.2845193 | 2.8018944 | 26 | 2 | 2000–2005 | 0.40 | M-v | 5 | MPC | 93887 | 2000 $WP_{71}$ |
| 2000 $WC_{73}$ | 14.9 | 0.15 | 20060922 | 31.78274 | 157.98824 | 245.93008 | 17.24237 | 0.0858080 | 3.0997839 | 42 | 2 | 2000–2005 | 0.47 | M-v | 3 | MPC | 90047 | 2000 $WC_{73}$ |
| 2000 $WK_{73}$ | 15.2 | 0.15 | 20060922 | 258.98028 | 268.30943 | 267.34555 | 9.42390 | 0.0343488 | 3.1328985 | 44 | 6 | 1999–2006 | 0.49 | M-v | 0 | MPC | 93887 | 2000 $WK_{73}$ |
| 2000 $WQ_{73}$ | 15.8 | 0.15 | 20060922 | 359.59168 | 123.85728 | 346.06772 | 4.52397 | 0.2618580 | 3.0560435 | 52 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 90047 | 2000 $WQ_{73}$ |
| 2000 $WS_{74}$ | 15.5 | 0.15 | 20060922 | 24.39089 | 45.47919 | 43.06430 | 9.77063 | 0.0560815 | 2.9555477 | 38 | 3 | 2000–2005 | 0.35 | M-v | 2 | MPC | 88768 | 2000 $WS_{74}$ |
| 2000 $WL_{76}$ | 14.6 | 0.15 | 20060922 | 329.17222 | 67.30790 | 50.03428 | 16.52605 | 0.1357629 | 3.1521242 | 56 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 90047 | 2000 $WL_{76}$ |
| 2000 $WM_{76}$ | 17.4 | 0.15 | 20060922 | 252.12456 | 182.69754 | 279.36316 | 2.79972 | 0.0544447 | 2.1815330 | 30 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 04142 | 2000 $WM_{76}$ |
| 2000 $WH_{78}$ | 16.9 | 0.15 | 20060922 | 202.23025 | 134.53628 | 322.60693 | 1.70339 | 0.1302445 | 2.3253560 | 43 | 3 | 1996–2005 | 0.52 | M-v | 4 | MPC | 8266 | 2000 $WH_{78}$ |
| 2000 $WF_{83}$ | 15.6 | 0.15 | 20060922 | 0.70882 | 352.74620 | 101.83200 | 11.61873 | 0.1180849 | 3.1413748 | 42 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 87411 | 2000 $WF_{83}$ |
| 2000 $WM_{84}$ | 14.7 | 0.15 | 20060922 | 325.36420 | 87.01739 | 24.53159 | 4.96368 | 0.1229116 | 3.2212838 | 87 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 97417 | 2000 $WM_{84}$ |
| 2000 $WC_{86}$ | 14.3 | 0.15 | 20060922 | 73.74290 | 87.85524 | 273.47057 | 6.96169 | 0.3109820 | 3.0580948 | 150 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 97417 | 2000 $WC_{86}$ |
| 2000 $WT_{86}$ | 14.9 | 0.15 | 20060922 | 39.12105 | 131.23379 | 261.43361 | 9.61806 | 0.1787439 | 3.1660516 | 63 | 3 | 2000–2005 | 0.57 | M-v | 3 | MPC | 88769 | 2000 $WT_{86}$ |
| 2000 $WH_{91}$ | 16.3 | 0.15 | 20060922 | 277.39588 | 299.58560 | 67.32090 | 7.30673 | 0.1111015 | 2.3353813 | 46 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 02018 | 2000 $WH_{91}$ |
| 2000 $WN_{95}$ | 14.7 | 0.15 | 20060922 | 332.77100 | 253.43413 | 263.29767 | 12.58775 | 0.2919665 | 3.1105849 | 95 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 90047 | 2000 $WN_{95}$ |
| 2000 $WA_{98}$ | 15.9 | 0.15 | 20060922 | 190.29852 | 91.19665 | 74.08419 | 6.46975 | 0.0814732 | 2.2427151 | 100 | 4 | 2000–2006 | 0.69 | M-v | 2 | MPC | 04142 | 2000 $WA_{98}$ |
| 2000 $WL_{101}$ | 15.0 | 0.15 | 20060922 | 13.32891 | 330.46360 | 95.12506 | 20.07894 | 0.1969768 | 3.1075337 | 53 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 88770 | 2000 $WL_{101}$ |
| 2000 $WV_{101}$ | 15.8 | 0.15 | 20060922 | 197.68408 | 291.91576 | 126.37846 | 6.56935 | 0.1238032 | 2.3953336 | 55 | 4 | 2000–2006 | 0.64 | M-v | 2 | MPC | 02019 | 2000 $WV_{101}$ |
| 2000 $WA_{102}$ | 16.6 | 0.15 | 20060922 | 281.31818 | 198.05016 | 155.43020 | 8.91460 | 0.2527484 | 2.3001047 | 55 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 50506 | 2000 $WA_{102}$ |
| 2000 $WF_{102}$ | 15.5 | 0.15 | 20060922 | 42.30292 | 282.31972 | 112.33903 | 11.95845 | 0.2780662 | 3.0756499 | 48 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 93889 | 2000 $WF_{102}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $WP_{103}$ | 16.1 | 0.15 | 20060922 | 251.59668 | 167.52396 | 195.19367 | 6.03058 | 0.1334185 | 2.4002663 | 41 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 99998 | 2000 $WP_{103}$ |
| 2000 $WC_{107}$ | 16.2 | 0.15 | 20060922 | 154.60483 | 254.00079 | 85.16940 | 23.47106 | 0.0776631 | 1.9397795 | 30 | 4 | 2000–2005 | 0.52 | M-v | 2 | MPC | 84648 | 2000 $WC_{107}$ |
| 2000 $WE_{108}$ | 14.6 | 0.15 | 20060922 | 0.68439 | 60.10791 | 33.49583 | 10.45804 | 0.0970303 | 3.0952675 | 118 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97418 | 2000 $WE_{108}$ |
| 2000 $WJ_{108}$ | 16.3 | 0.15 | 20060922 | 298.16264 | 350.82707 | 22.61694 | 4.93632 | 0.1574627 | 2.2505596 | 57 | 4 | 1995–2003 | 0.74 | M-v | 1 | MPC | 57787 | 2000 $WJ_{108}$ |
| 2000 $WL_{108}$ | 16.4 | 0.15 | 20060922 | 286.36217 | 71.27578 | 358.71686 | 4.54936 | 0.1415211 | 2.1810361 | 110 | 4 | 2000–2006 | 0.46 | M-v | 2 | MPC | 04142 | 2000 $WL_{108}$ |
| 2000 $WU_{108}$ | 15.4 | 0.15 | 20060922 | 277.72468 | 335.74310 | 338.46766 | 5.45475 | 0.1740183 | 2.4524154 | 76 | 6 | 1994–2006 | 0.56 | M-v | 2 | MPC | 02019 | 2000 $WU_{108}$ |
| 2000 $WV_{109}$ | 16.5 | 0.15 | 20060922 | 177.07022 | 84.38171 | 321.72306 | 3.43154 | 0.1913295 | 2.5242594 | 40 | 2 | 2000–2004 | 0.52 | M-v | 5 | MPC | 72242 | 2000 $WV_{109}$ |
| 2000 $WV_{112}$ | 16.3 | 0.15 | 20060922 | 16.34294 | 171.25651 | 282.46432 | 5.33299 | 0.2538752 | 3.0677438 | 39 | 2 | 2000–2005 | 0.47 | M-v | 3 | MPC | 84648 | 2000 $WV_{112}$ |
| 2000 $WK_{114}$ | 14.7 | 0.15 | 20060922 | 358.07342 | 198.54828 | 270.91975 | 14.01397 | 0.1426551 | 3.0928782 | 80 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97418 | 2000 $WK_{114}$ |
| 2000 $WT_{114}$ | 15.8 | 0.15 | 20060922 | 158.79457 | 28.50261 | 16.21001 | 4.16796 | 0.2767463 | 2.5895369 | 120 | 4 | 1993–2006 | 0.47 | M-v | 1 | MPC | 02019 | 2000 $WT_{114}$ |
| 2000 $WY_{114}$ | 16.7 | 0.15 | 20060922 | 296.60367 | 111.95058 | 305.08190 | 3.85527 | 0.1142131 | 2.1954883 | 91 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 04142 | 2000 $WY_{114}$ |
| 2000 $WF_{122}$ | 15.9 | 0.15 | 20060922 | 43.53783 | 349.49302 | 59.17968 | 2.03742 | 0.1836955 | 3.0902535 | 83 | 4 | 1994–2006 | 0.64 | M-v | 1 | MPC | 04142 | 2000 $WF_{122}$ |
| 2000 $WU_{122}$ | 16.8 | 0.15 | 20060922 | 254.61883 | 343.21030 | 54.60974 | 3.13859 | 0.2034963 | 2.3261345 | 46 | 5 | 1996–2006 | 0.60 | M-v | 2 | MPC | 84649 | 2000 $WU_{122}$ |
| 2000 $WJ_{125}$ | 15.3 | 0.15 | 20060922 | 13.75850 | 36.33096 | 12.18575 | 17.71135 | 0.2397903 | 3.1492744 | 55 | 4 | 1997–2006 | 0.54 | M-v | 1 | MPC | 87411 | 2000 $WJ_{125}$ |
| 2000 $WK_{125}$ | 15.6 | 0.15 | 20060922 | 29.65584 | 130.70630 | 273.59909 | 12.38284 | 0.2556611 | 3.0739343 | 49 | 3 | 2000–2006 | 0.51 | M-v | 1 | MPC | 93890 | 2000 $WK_{125}$ |
| 2000 $WB_{126}$ | 15.2 | 0.15 | 20060922 | 66.38267 | 265.59456 | 123.54962 | 10.78226 | 0.1428505 | 3.0089912 | 74 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 93890 | 2000 $WB_{126}$ |
| 2000 $WM_{126}$ | 15.6 | 0.15 | 20060922 | 98.49142 | 196.43783 | 167.03969 | 2.66562 | 0.1237149 | 2.9270834 | 60 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97418 | 2000 $WM_{126}$ |
| 2000 $WB_{127}$ | 15.7 | 0.15 | 20060922 | 95.59100 | 252.56661 | 85.03681 | 3.38564 | 0.2111225 | 3.0052015 | 71 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 97418 | 2000 $WB_{127}$ |
| 2000 $WM_{127}$ | 15.2 | 0.15 | 20060922 | 13.75376 | 185.41979 | 233.98458 | 7.95812 | 0.0781353 | 3.1787487 | 38 | 5 | 1994–2005 | 0.47 | M-v | 0 | MPC | 04142 | 2000 $WM_{127}$ |
| 2000 $WV_{129}$ | 16.0 | 0.15 | 20060922 | 119.08981 | 194.13788 | 241.42935 | 12.25803 | 0.1394986 | 2.6278086 | 38 | 4 | 2000–2006 | 0.64 | M-v | 1 | MPC | 72249 | 2000 $WV_{129}$ |
| 2000 $WH_{133}$ | 15.9 | 0.15 | 20060922 | 280.09117 | 358.84614 | 341.37863 | 6.50802 | 0.1367987 | 2.3425830 | 60 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 02019 | 2000 $WH_{133}$ |
| 2000 $WR_{136}$ | 16.1 | 0.15 | 20060922 | 289.38252 | 71.48963 | 258.30263 | 5.49530 | 0.1309071 | 2.3643581 | 37 | 4 | 2000–2004 | 0.47 | M-v | 1 | MPC | 90048 | 2000 $WR_{136}$ |
| 2000 $WG_{137}$ | 14.8 | 0.15 | 20060922 | 272.11269 | 283.29070 | 240.88327 | 9.59663 | 0.0301718 | 3.1245373 | 77 | 6 | 2000–2006 | 0.50 | M-v | 0 | MPC | 97419 | 2000 $WG_{137}$ |
| 2000 $WH_{137}$ | 17.9 | 0.15 | 20060922 | 291.46793 | 13.41696 | 358.97455 | 2.61801 | 0.1957325 | 2.2502892 | 24 | 3 | 2000–2005 | 0.36 | M-v | 3 | MPC | 74866 | 2000 $WH_{137}$ |
| 2000 $WN_{139}$ | 16.5 | 0.15 | 20060922 | 157.34050 | 29.06080 | 107.89214 | 3.20921 | 0.1353883 | 2.3571807 | 85 | 4 | 1998–2005 | 0.59 | M-v | 1 | MPC | 74055 | 2000 $WN_{139}$ |
| 2000 $WD_{141}$ | 14.9 | 0.15 | 20060922 | 18.29849 | 37.07452 | 68.42780 | 31.15700 | 0.3742804 | 3.1021988 | 77 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 97419 | 2000 $WD_{141}$ |
| 2000 $WF_{143}$ | 15.2 | 0.15 | 20060922 | 52.57860 | 242.10685 | 131.48671 | 17.14571 | 0.2508417 | 3.1150098 | 59 | 5 | 2000–2005 | 0.53 | M-v | 1 | MPC | 90048 | 2000 $WF_{143}$ |
| 2000 $WA_{145}$ | 15.0 | 0.15 | 20060922 | 17.95687 | 308.26303 | 125.49795 | 19.35270 | 0.2420855 | 3.0828470 | 39 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87411 | 2000 $WA_{145}$ |
| 2000 $WC_{147}$ | 14.5 | 0.15 | 20060922 | 13.37734 | 278.96595 | 154.88695 | 24.00717 | 0.4231958 | 3.1410108 | 116 | 6 | 1994–2006 | 0.49 | M-v | 0 | MPC | 90048 | 2000 $WC_{147}$ |
| 2000 $WD_{148}$ | 15.6 | 0.15 | 20060922 | 44.83528 | 330.63034 | 92.69236 | 8.37413 | 0.1363446 | 3.0999223 | 69 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 97419 | 2000 $WD_{148}$ |
| 2000 $WP_{148}$ | 19.3 | 0.15 | 20060922 | 257.28482 | 237.83907 | 252.07445 | 21.28196 | 0.2640014 | 1.3182347 | 87 | 4 | 1997–2006 | 0.57 | M-v | 2 | MPC | 62312 | 2000 $WP_{148}$ |
| 2000 $WV_{148}$ | 15.4 | 0.15 | 20060922 | 43.26807 | 293.56249 | 85.86920 | 17.50678 | 0.2500155 | 3.1241955 | 43 | 4 | 2000–2006 | 0.64 | M-v | 1 | MPC | 93891 | 2000 $WV_{148}$ |
| 2000 $WU_{151}$ | 16.5 | 0.15 | 20060922 | 197.63474 | 206.21736 | 189.36389 | 10.05150 | 0.1603955 | 2.4782800 | 46 | 3 | 2000–2006 | 0.39 | M-v | 3 | MPC | 99999 | 2000 $WU_{151}$ |
| 2000 $WP_{154}$ | 13.9 | 0.15 | 20060922 | 316.33451 | 238.56572 | 257.90418 | 21.21273 | 0.1817129 | 3.1378359 | 99 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97419 | 2000 $WP_{154}$ |
| 2000 $WZ_{154}$ | 14.8 | 0.15 | 20060922 | 43.60484 | 73.14021 | 339.78192 | 7.07592 | 0.1920159 | 3.0287784 | 142 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97419 | 2000 $WZ_{154}$ |
| 2000 $WD_{156}$ | 15.8 | 0.15 | 20060922 | 262.36938 | 5.39133 | 23.38521 | 7.58776 | 0.1070049 | 2.3228999 | 54 | 3 | 2000–2003 | 0.56 | M-v | 4 | MPC | 53663 | 2000 $WD_{156}$ |
| 2000 $WS_{156}$ | 15.9 | 0.15 | 20060922 | 209.67293 | 90.19689 | 306.91794 | 5.75654 | 0.1100045 | 2.4500273 | 28 | 3 | 2000–2005 | 0.58 | M-v | 4 | MPC | 72253 | 2000 $WS_{156}$ |
| 2000 $WB_{159}$ | 16.8 | 0.15 | 20060922 | 190.76821 | 359.95790 | 60.81394 | 1.38416 | 0.0431535 | 2.5169544 | 35 | 4 | 2000–2006 | 0.43 | M-v | 3 | MPC | 02020 | 2000 $WB_{159}$ |
| 2000 $WV_{159}$ | 15.6 | 0.15 | 20060922 | 52.03010 | 339.89930 | 88.55830 | 6.31120 | 0.1023181 | 2.9291739 | 56 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 97419 | 2000 $WV_{159}$ |
| 2000 $WY_{160}$ | 14.8 | 0.15 | 20060922 | 63.36921 | 275.12312 | 104.30142 | 11.22255 | 0.1602175 | 3.0626843 | 65 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 97419 | 2000 $WY_{160}$ |
| 2000 $WR_{163}$ | 16.2 | 0.15 | 20060922 | 28.42118 | 178.02581 | 252.38683 | 1.07367 | 0.0716083 | 3.0408996 | 45 | 5 | 1994–2006 | 0.46 | M-v | 0 | MPC | 93894 | 2000 $WR_{163}$ |
| 2000 $WM_{165}$ | 15.3 | 0.15 | 20060922 | 32.06775 | 296.94185 | 129.16401 | 9.72995 | 0.1842997 | 3.0249075 | 57 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97420 | 2000 $WM_{165}$ |
| 2000 $WY_{165}$ | 15.6 | 0.15 | 20060922 | 175.56369 | 111.82299 | 229.05823 | 13.58999 | 0.1355589 | 2.6927455 | 65 | 4 | 1991–2004 | 0.61 | M-v | 1 | MPC | 04142 | 2000 $WY_{165}$ |
| 2000 $WZ_{167}$ | 14.5 | 0.15 | 20060922 | 13.19857 | 305.76959 | 105.46621 | 13.05202 | 0.1900289 | 3.1483151 | 89 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 90049 | 2000 $WZ_{167}$ |
| 2000 $WC_{170}$ | 16.5 | 0.15 | 20060922 | 183.41676 | 11.40506 | 81.14955 | 6.72703 | 0.0301821 | 2.4095941 | 42 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 02020 | 2000 $WC_{170}$ |
| 2000 $WU_{175}$ | 17.5 | 0.15 | 20060922 | 194.84752 | 197.42059 | 237.79882 | 0.66126 | 0.1505341 | 2.4115926 | 37 | 3 | 1996–2005 | 0.57 | M-v | 3 | MPC | 74868 | 2000 $WU_{175}$ |
| 2000 $WS_{180}$ | 14.6 | 0.15 | 20060922 | 42.75865 | 254.15596 | 102.36413 | 14.29531 | 0.3246332 | 3.1067847 | 66 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87412 | 2000 $WS_{180}$ |
| 2000 $WX_{180}$ | 15.3 | 0.15 | 20060922 | 36.83671 | 352.89839 | 39.31102 | 10.52704 | 0.1753238 | 3.1433930 | 45 | 3 | 2000–2005 | 0.63 | M-v | 3 | MPC | 88773 | 2000 $WX_{180}$ |
| 2000 $WG_{181}$ | 17.2 | 0.15 | 20060922 | 317.34450 | 253.65251 | 119.85640 | 7.00389 | 0.1679016 | 2.1985003 | 21 | 2 | 2000–2003 | 0.55 | M-v | 4 | MPC | 52710 | 2000 $WG_{181}$ |
| 2000 $WB_{184}$ | 15.1 | 0.15 | 20060922 | 60.81322 | 88.13257 | 283.44872 | 8.49739 | 0.1107855 | 3.1044294 | 41 | 3 | 2000–2006 | 0.46 | M-v | 4 | MPC | 97420 | 2000 $WB_{184}$ |
| 2000 $WC_{184}$ | 14.9 | 0.15 | 20060922 | 27.47420 | 143.19907 | 265.07757 | 13.97672 | 0.1983950 | 3.0882999 | 59 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 90049 | 2000 $WC_{184}$ |
| 2000 $WF_{187}$ | 16.0 | 0.15 | 20060922 | 189.84983 | 342.14908 | 107.85895 | 5.87082 | 0.1073185 | 2.3625901 | 84 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 77489 | 2000 $WF_{187}$ |
| 2000 $WM_{188}$ | 14.7 | 0.15 | 20060922 | 329.12905 | 225.34469 | 248.41869 | 9.57813 | 0.0306011 | 3.0443180 | 60 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 90049 | 2000 $WM_{188}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $WF_{189}$ | 15.3 | 0.15 | 20060922 | 57.34770 | 158.82941 | 238.84136 | 7.89414 | 0.0796777 | 2.9901679 | 57 | 3 | 2000–2005 | 0.58 | M-v | 3 | MPC | 93895 | 2000 $WF_{189}$ |
| 2000 $WV_{191}$ | 14.7 | 0.15 | 20060922 | 39.68442 | 282.14151 | 121.87819 | 9.94746 | 0.1473386 | 3.0456849 | 78 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97420 | 2000 $WV_{191}$ |
| 2000 $WN_{193}$ | 17.9 | 0.15 | 20060922 | 46.16214 | 281.03083 | 325.29783 | 4.59950 | 0.1151848 | 2.2377939 | 39 | 4 | 2000–2004 | 0.38 | M-v | 1 | MPC | 29601 | 2000 $WN_{193}$ |
| 2000 $WL_{194}$ | 16.0 | 0.15 | 20060922 | 182.73164 | 354.41666 | 63.64062 | 15.23340 | 0.1653125 | 2.5837454 | 42 | 2 | 2000–2005 | 0.56 | M-v | 3 | MPC | 72258 | 2000 $WL_{194}$ |
| 2000 XW | 16.0 | 0.15 | 20060922 | 285.71579 | 75.64901 | 85.50563 | 24.49725 | 0.1897527 | 2.0119297 | 89 | 4 | 2000–2006 | 0.38 | M-v | 2 | MPC | 87412 | 2000 XW |
| 2000 $XV_1$ | 15.8 | 0.15 | 20060922 | 199.42073 | 164.59027 | 273.59263 | 5.35367 | 0.0795341 | 2.4384315 | 57 | 4 | 2000–2005 | 0.54 | M-v | 1 | MPC | 72259 | 2000 $XV_1$ |
| 2000 $XZ_1$ | 16.6 | 0.15 | 20060922 | 2.07479 | 228.23349 | 256.57221 | 18.15539 | 0.0908352 | 1.9298187 | 33 | 3 | 2000–2005 | 0.47 | M-v | 3 | MPC | 87412 | 2000 $XZ_1$ |
| 2000 $XQ_2$ | 13.7 | 0.15 | 20060922 | 357.15448 | 146.36700 | 282.86610 | 15.83482 | 0.1036577 | 3.1600665 | 132 | 4 | 2000–2006 | 0.55 | M-v | 0 | MPC | 97420 | 2000 $XQ_2$ |
| 2000 $XZ_2$ | 14.6 | 0.15 | 20060922 | 33.11225 | 116.77252 | 285.39425 | 15.17430 | 0.1901886 | 3.1015469 | 76 | 3 | 2000–2006 | 0.43 | M-v | 1 | MPC | 97420 | 2000 $XZ_2$ |
| 2000 $XA_3$ | 14.8 | 0.15 | 20060922 | 46.90073 | 18.58571 | 352.35367 | 10.33083 | 0.2320022 | 3.1331059 | 102 | 4 | 2000–2006 | 0.41 | M-v | 1 | MPC | 90049 | 2000 $XA_3$ |
| 2000 $XO_3$ | 14.2 | 0.15 | 20060922 | 33.53832 | 111.15238 | 262.50839 | 22.04129 | 0.2011856 | 3.2089801 | 74 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 90049 | 2000 $XO_3$ |
| 2000 $XF_9$ | 15.8 | 0.15 | 20060922 | 176.48012 | 222.98583 | 298.07624 | 23.69775 | 0.1920359 | 2.3461608 | 68 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 87413 | 2000 $XF_9$ |
| 2000 $XG_{10}$ | 15.1 | 0.15 | 20060922 | 218.27004 | 321.83973 | 57.72797 | 14.88462 | 0.1672539 | 2.5465935 | 34 | 4 | 2000–2006 | 0.62 | M-v | 3 | MPC | 02020 | 2000 $XG_{10}$ |
| 2000 $XX_{12}$ | 15.0 | 0.15 | 20060922 | 34.83983 | 99.94641 | 305.85960 | 8.54865 | 0.2385115 | 3.1513265 | 55 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 84656 | 2000 $XX_{12}$ |
| 2000 $XJ_{13}$ | 15.3 | 0.15 | 20060922 | 84.66134 | 77.48350 | 81.66193 | 3.99247 | 0.1872425 | 2.6099986 | 119 | 3 | 2000–2006 | 0.51 | M-v | 1 | MPC | 04142 | 2000 $XJ_{13}$ |
| 2000 $XJ_{14}$ | 16.6 | 0.15 | 20060922 | 151.62196 | 95.53973 | 292.34825 | 15.70746 | 0.3539139 | 2.6052432 | 64 | 2 | 2000–2004 | 0.43 | M-v | 3 | MPC | 70287 | 2000 $XJ_{14}$ |
| 2000 $XP_{14}$ | 14.6 | 0.15 | 20060922 | 347.28742 | 52.61743 | 88.47339 | 27.33676 | 0.3275642 | 3.1450519 | 69 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 93896 | 2000 $XP_{14}$ |
| 2000 $XC_{15}$ | 14.9 | 0.15 | 20060922 | 187.54313 | 96.86666 | 68.99599 | 22.20243 | 0.2942267 | 2.3352788 | 107 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 87413 | 2000 $XC_{15}$ |
| 2000 $XV_{18}$ | 14.4 | 0.15 | 20060922 | 37.81808 | 93.99263 | 304.56375 | 12.76197 | 0.0801830 | 3.1618085 | 85 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97421 | 2000 $XV_{18}$ |
| 2000 $XZ_{18}$ | 16.2 | 0.15 | 20060922 | 205.16108 | 159.42308 | 338.00310 | 6.55790 | 0.1285352 | 2.2385816 | 99 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 04142 | 2000 $XZ_{18}$ |
| 2000 $XX_{19}$ | 15.2 | 0.15 | 20060922 | 32.57668 | 37.54370 | 7.50942 | 10.05452 | 0.2377063 | 3.1433245 | 94 | 4 | 2000–2006 | 0.40 | M-v | 0 | MPC | 97421 | 2000 $XX_{19}$ |
| 2000 $XO_{21}$ | 16.6 | 0.15 | 20060922 | 275.13883 | 66.45038 | 338.01969 | 7.75196 | 0.1251711 | 2.2612794 | 51 | 3 | 2000–2005 | 0.50 | M-v | 3 | MPC | 57788 | 2000 $XO_{21}$ |
| 2000 $XM_{23}$ | 15.3 | 0.15 | 20060922 | 6.45623 | 105.35544 | 326.94316 | 10.10406 | 0.2250913 | 3.1684727 | 48 | 3 | 1996–2005 | 0.67 | M-v | 3 | MPC | 84657 | 2000 $XM_{23}$ |
| 2000 $XP_{23}$ | 14.9 | 0.15 | 20060922 | 255.63648 | 18.50526 | 331.15207 | 12.06658 | 0.1580255 | 2.4349744 | 58 | 4 | 2000–2006 | 0.62 | M-v | 2 | MPC | 02021 | 2000 $XP_{23}$ |
| 2000 $XU_{23}$ | 14.3 | 0.15 | 20060922 | 331.31163 | 112.94004 | 19.73228 | 16.96075 | 0.1366467 | 3.1041305 | 151 | 4 | 2000–2006 | 0.53 | M-v | 0 | MPC | 97421 | 2000 $XU_{23}$ |
| 2000 $XK_{24}$ | 16.1 | 0.15 | 20060922 | 268.83319 | 104.06918 | 358.03705 | 7.20394 | 0.0981519 | 2.1768984 | 141 | 4 | 2000–2006 | 0.45 | M-v | 2 | MPC | 04143 | 2000 $XK_{24}$ |
| 2000 $XU_{24}$ | 14.6 | 0.15 | 20060922 | 49.80643 | 90.34930 | 309.07595 | 15.53293 | 0.1723909 | 3.1048767 | 59 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 97421 | 2000 $XU_{24}$ |
| 2000 $XP_{25}$ | 14.9 | 0.15 | 20060922 | 37.51666 | 116.31098 | 305.73519 | 14.31898 | 0.1964002 | 3.0894454 | 77 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 97422 | 2000 $XP_{25}$ |
| 2000 $XG_{26}$ | 17.0 | 0.15 | 20060922 | 315.15292 | 10.77035 | 8.37258 | 7.03927 | 0.2452673 | 2.2101587 | 126 | 4 | 1995–2005 | 0.56 | M-v | 1 | MPC | 87413 | 2000 $XG_{26}$ |
| 2000 $XY_{26}$ | 14.3 | 0.15 | 20060922 | 34.20686 | 5.86497 | 57.75383 | 18.17336 | 0.0773523 | 3.1548088 | 96 | 6 | 1999–2006 | 0.58 | M-v | 1 | MPC | 97422 | 2000 $XY_{26}$ |
| 2000 $XW_{27}$ | 16.3 | 0.15 | 20060922 | 276.88442 | 95.27860 | 321.48975 | 6.80344 | 0.1381029 | 2.2586314 | 74 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 04143 | 2000 $XW_{27}$ |
| 2000 $XZ_{29}$ | 14.9 | 0.15 | 20060922 | 20.27264 | 123.28390 | 326.35375 | 11.67937 | 0.2419753 | 3.1251307 | 97 | 3 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97422 | 2000 $XZ_{29}$ |
| 2000 $XN_{30}$ | 15.2 | 0.15 | 20060922 | 334.13036 | 207.72953 | 298.29654 | 12.08476 | 0.1907775 | 3.0858609 | 38 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 97422 | 2000 $XN_{30}$ |
| 2000 $XF_{33}$ | 15.0 | 0.15 | 20060922 | 9.54101 | 55.20148 | 37.32628 | 13.97340 | 0.2799750 | 3.1714467 | 86 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 97422 | 2000 $XF_{33}$ |
| 2000 $XW_{35}$ | 14.2 | 0.15 | 20060922 | 319.06270 | 208.89381 | 281.68598 | 21.68319 | 0.2305369 | 3.1807619 | 40 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 97422 | 2000 $XW_{35}$ |
| 2000 $XT_{38}$ | 15.6 | 0.15 | 20060922 | 211.92522 | 322.95164 | 60.89828 | 13.46956 | 0.2695973 | 2.4633200 | 67 | 5 | 1996–2006 | 0.67 | M-v | 2 | MPC | 02021 | 2000 $XT_{38}$ |
| 2000 $XO_{41}$ | 15.6 | 0.15 | 20060922 | 136.68170 | 53.35311 | 342.96407 | 13.65455 | 0.1632072 | 2.7077971 | 81 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 97423 | 2000 $XO_{41}$ |
| 2000 $XL_{42}$ | 14.8 | 0.15 | 20060922 | 359.22740 | 85.66775 | 12.86100 | 14.62632 | 0.1964534 | 3.1814578 | 101 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 90050 | 2000 $XL_{42}$ |
| 2000 $XO_{46}$ | 14.4 | 0.15 | 20060922 | 54.28258 | 76.51249 | 314.22675 | 20.41756 | 0.2594033 | 3.0971344 | 61 | 3 | 2000–2006 | 0.42 | M-v | 2 | MPC | 97423 | 2000 $XO_{46}$ |
| 2000 $XY_{46}$ | 14.7 | 0.15 | 20060922 | 37.34563 | 70.63554 | 348.72866 | 16.25780 | 0.2556588 | 3.1399056 | 90 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 97423 | 2000 $XY_{46}$ |
| 2000 $XP_{51}$ | 14.9 | 0.15 | 20060922 | 154.47454 | 320.50628 | 26.83644 | 9.40721 | 0.1705830 | 2.7943531 | 64 | 5 | 1995–2005 | 0.58 | M-v | 1 | MPC | 97423 | 2000 $XP_{51}$ |
| 2000 $XV_{51}$ | 16.9 | 0.15 | 20060922 | 323.54157 | 5.22822 | 25.50639 | 7.55809 | 0.1891300 | 2.1742558 | 110 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 04143 | 2000 $XV_{51}$ |
| 2000 $XA_{53}$ | 14.4 | 0.15 | 20060922 | 13.81707 | 160.73251 | 292.17581 | 27.11104 | 0.1161933 | 3.1205603 | 30 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97423 | 2000 $XA_{53}$ |
| 2000 $XC_{53}$ | 14.3 | 0.15 | 20060922 | 7.13587 | 144.96762 | 310.55164 | 17.41822 | 0.2051213 | 3.1715561 | 39 | 2 | 2000–2005 | 0.46 | M-v | 3 | MPC | 88776 | 2000 $XC_{53}$ |
| 2000 $XD_{54}$ | 15.1 | 0.15 | 20060922 | 326.33931 | 241.11138 | 247.01750 | 15.12741 | 0.0417113 | 3.1274528 | 45 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 93897 | 2000 $XD_{54}$ |
| 2000 YT | 15.0 | 0.15 | 20060922 | 355.02726 | 65.98979 | 53.32716 | 26.57413 | 0.2856018 | 3.1794205 | 45 | 3 | 2000–2006 | 0.67 | M-v | 3 | MPC | 93898 | 2000 YT |
| 2000 $YB_1$ | 14.1 | 0.15 | 20060922 | 337.19616 | 228.61836 | 279.76093 | 15.02287 | 0.1931011 | 3.1481927 | 82 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 97423 | 2000 $YB_1$ |
| 2000 $YS_2$ | 17.3 | 0.15 | 20060922 | 310.80896 | 73.17900 | 44.43182 | 5.95900 | 0.2524156 | 2.0957308 | 84 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 56176 | 2000 $YS_2$ |
| 2000 $YW_5$ | 14.9 | 0.15 | 20060922 | 202.03854 | 56.21206 | 314.56030 | 13.28999 | 0.1316612 | 2.6285289 | 37 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 02021 | 2000 $YW_5$ |
| 2000 $YN_6$ | 14.5 | 0.15 | 20060922 | 83.02240 | 51.31608 | 300.03098 | 12.75353 | 0.2431299 | 3.1504837 | 92 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 97423 | 2000 $YN_6$ |
| 2000 $YL_8$ | 16.2 | 0.15 | 20060922 | 161.36986 | 319.80887 | 83.78103 | 4.33255 | 0.1547533 | 2.5934854 | 56 | 3 | 1998–2004 | 0.53 | M-v | 2 | MPC | 74062 | 2000 $YL_8$ |
| 2000 $YO_{10}$ | 15.3 | 0.15 | 20060922 | 0.40867 | 313.08334 | 127.28873 | 6.00470 | 0.1546731 | 3.2151706 | 30 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 93899 | 2000 $YO_{10}$ |
| 2000 $YZ_{11}$ | 14.0 | 0.15 | 20060922 | 15.09878 | 299.02247 | 133.06080 | 27.22704 | 0.2431318 | 3.1669857 | 49 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 90051 | 2000 $YZ_{11}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $YO_{12}$ | 16.2 | 0.15 | 20060922 | 199.43157 | 227.61829 | 154.36192 | 3.11269 | 0.2401331 | 2.5315245 | 45 | 4 | 1998–2006 | 0.40 | M-v | 3 | MPC | 02021 | 2000 $YO_{12}$ |
| 2000 $YX_{19}$ | 15.5 | 0.15 | 20060922 | 12.03580 | 292.96387 | 155.03094 | 9.71806 | 0.2244620 | 3.0907190 | 29 | 3 | 2000–2005 | 0.65 | M-v | 3 | MPC | 88777 | 2000 $YX_{19}$ |
| 2000 $YA_{21}$ | 15.4 | 0.15 | 20060922 | 143.92302 | 204.63091 | 114.87111 | 16.18024 | 0.2031392 | 3.1345524 | 37 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 87414 | 2000 $YA_{21}$ |
| 2000 $YH_{26}$ | 16.8 | 0.15 | 20060922 | 248.09664 | 43.36553 | 76.66463 | 5.06300 | 0.1103387 | 2.2292346 | 60 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 77492 | 2000 $YH_{26}$ |
| 2000 $YF_{33}$ | 15.9 | 0.15 | 20060922 | 267.19119 | 246.46326 | 127.90445 | 7.01490 | 0.3015968 | 2.3712429 | 52 | 3 | 2000–2005 | 0.60 | M-v | 2 | MPC | 53666 | 2000 $YF_{33}$ |
| 2000 $YN_{35}$ | 13.9 | 0.15 | 20060922 | 59.86404 | 296.24802 | 87.47418 | 17.31257 | 0.2313361 | 3.1210697 | 80 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 97424 | 2000 $YN_{35}$ |
| 2000 $YP_{35}$ | 14.6 | 0.15 | 20060922 | 353.20218 | 20.14113 | 88.56933 | 27.64968 | 0.1223058 | 3.1668990 | 54 | 5 | 1997–2006 | 0.62 | M-v | 1 | MPC | 97424 | 2000 $YP_{35}$ |
| 2000 $YH_{36}$ | 15.8 | 0.15 | 20060922 | 175.81115 | 156.36502 | 250.65206 | 3.28192 | 0.2386124 | 2.5651240 | 94 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 02022 | 2000 $YH_{36}$ |
| 2000 $YJ_{36}$ | 15.3 | 0.15 | 20060922 | 59.62156 | 303.84652 | 110.38294 | 10.74109 | 0.1874484 | 3.0463778 | 108 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 97424 | 2000 $YJ_{36}$ |
| 2000 $YF_{39}$ | 15.4 | 0.15 | 20060922 | 15.95622 | 336.92171 | 136.66879 | 5.51079 | 0.1754688 | 3.0731727 | 106 | 6 | 1996–2006 | 0.53 | M-v | 1 | MPC | 97424 | 2000 $YF_{39}$ |
| 2000 $YV_{39}$ | 15.4 | 0.15 | 20060922 | 174.70554 | 300.70261 | 97.09230 | 4.64895 | 0.1687548 | 2.6076688 | 72 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 72278 | 2000 $YV_{39}$ |
| 2000 $YF_{40}$ | 15.4 | 0.15 | 20060922 | 128.88502 | 154.62211 | 277.73099 | 14.28688 | 0.1143247 | 2.7063224 | 46 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 00003 | 2000 $YF_{40}$ |
| 2000 $YA_{42}$ | 14.9 | 0.15 | 20060922 | 333.07386 | 25.87927 | 103.81095 | 14.52567 | 0.0605385 | 3.2068958 | 40 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 88778 | 2000 $YA_{42}$ |
| 2000 $YN_{42}$ | 15.0 | 0.15 | 20060922 | 29.78829 | 278.46996 | 150.67307 | 3.78554 | 0.1690210 | 3.1849799 | 127 | 7 | 1993–2006 | 0.47 | M-v | 0 | MPC | 04143 | 2000 $YN_{42}$ |
| 2000 $YO_{42}$ | 14.2 | 0.15 | 20060922 | 336.61484 | 35.67822 | 139.03380 | 4.90877 | 0.2617471 | 3.0910975 | 123 | 4 | 2000–2006 | 0.57 | M-v | 0 | MPC | 97424 | 2000 $YO_{42}$ |
| 2000 $YC_{43}$ | 16.4 | 0.15 | 20060922 | 177.78604 | 339.51628 | 141.64140 | 5.35070 | 0.1102364 | 2.4132330 | 63 | 3 | 2000–2005 | 0.66 | M-v | 3 | MPC | 74876 | 2000 $YC_{43}$ |
| 2000 $YD_{43}$ | 15.3 | 0.15 | 20060922 | 46.17233 | 249.89120 | 154.67808 | 4.67862 | 0.2507767 | 3.1640366 | 72 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 97424 | 2000 $YD_{43}$ |
| 2000 $YV_{43}$ | 15.0 | 0.15 | 20060922 | 67.56678 | 71.11580 | 293.71612 | 8.14331 | 0.3492072 | 3.1395219 | 103 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 97424 | 2000 $YV_{43}$ |
| 2000 $YS_{48}$ | 15.1 | 0.15 | 20060922 | 31.74616 | 307.24992 | 122.13434 | 6.23839 | 0.1947034 | 3.1804768 | 82 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 97425 | 2000 $YS_{48}$ |
| 2000 $YK_{50}$ | 16.6 | 0.15 | 20060922 | 253.30435 | 261.23440 | 131.25830 | 6.57084 | 0.2414992 | 2.3778104 | 41 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 49865 | 2000 $YK_{50}$ |
| 2000 $YT_{50}$ | 16.9 | 0.15 | 20060922 | 239.13973 | 71.62397 | 70.65514 | 4.00866 | 0.1127401 | 2.2044857 | 64 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 77493 | 2000 $YT_{50}$ |
| 2000 $YC_{52}$ | 16.4 | 0.15 | 20060922 | 271.55065 | 163.21371 | 287.75196 | 4.59873 | 0.1116336 | 2.2274590 | 92 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 04143 | 2000 $YC_{52}$ |
| 2000 $YM_{53}$ | 15.1 | 0.15 | 20060922 | 45.70375 | 314.91098 | 95.46481 | 2.41371 | 0.2154865 | 3.1644394 | 125 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 97425 | 2000 $YM_{53}$ |
| 2000 $YL_{55}$ | 17.1 | 0.15 | 20060922 | 212.67401 | 244.30868 | 222.32255 | 2.72756 | 0.1465374 | 2.3339339 | 49 | 5 | 1996–2006 | 0.45 | M-v | 0 | MPC | 02022 | 2000 $YL_{55}$ |
| 2000 $YD_{57}$ | 15.5 | 0.15 | 20060922 | 42.73284 | 328.24673 | 89.37685 | 3.44532 | 0.1680203 | 3.1313538 | 97 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 97425 | 2000 $YD_{57}$ |
| 2000 $YP_{58}$ | 16.8 | 0.15 | 20060922 | 255.51572 | 199.69668 | 285.44977 | 6.86722 | 0.0774547 | 2.2052303 | 56 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 56180 | 2000 $YP_{58}$ |
| 2000 $YR_{59}$ | 15.5 | 0.15 | 20060922 | 50.42334 | 209.06408 | 194.21459 | 2.17932 | 0.1940102 | 3.1527559 | 104 | 5 | 1997–2006 | 0.55 | M-v | 0 | MPC | 97425 | 2000 $YR_{59}$ |
| 2000 $YA_{63}$ | 14.3 | 0.15 | 20060922 | 307.12912 | 96.08969 | 117.32299 | 18.72051 | 0.2002021 | 3.0969212 | 122 | 6 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97425 | 2000 $YA_{63}$ |
| 2000 $YO_{66}$ | 14.4 | 0.15 | 20060922 | 10.31426 | 249.10989 | 189.99857 | 25.29389 | 0.2598688 | 3.2006503 | 82 | 6 | 1991–2006 | 0.50 | M-v | 0 | MPC | 97425 | 2000 $YO_{66}$ |
| 2000 $YR_{66}$ | 17.0 | 0.15 | 20060922 | 1.81530 | 122.47599 | 265.61798 | 4.22302 | 0.1223313 | 2.1303027 | 100 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 56181 | 2000 $YR_{66}$ |
| 2000 $YD_{67}$ | 16.3 | 0.15 | 20060922 | 317.33523 | 147.68390 | 272.50326 | 24.79631 | 0.2650200 | 2.1825787 | 96 | 3 | 2000–2006 | 0.56 | M-v | 2 | MPC | 60731 | 2000 $YD_{67}$ |
| 2000 $YS_{68}$ | 14.8 | 0.15 | 20060922 | 43.03121 | 57.30295 | 131.64894 | 8.66397 | 0.1563451 | 2.8027998 | 119 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 02023 | 2000 $YS_{68}$ |
| 2000 $YS_{70}$ | 14.7 | 0.15 | 20060922 | 80.47700 | 261.71423 | 95.88899 | 12.84789 | 0.2095513 | 3.0934871 | 101 | 7 | 1998–2006 | 0.50 | M-v | 0 | MPC | 93903 | 2000 $YS_{70}$ |
| 2000 $YM_{71}$ | 15.5 | 0.15 | 20060922 | 11.13620 | 193.63532 | 256.47780 | 10.91974 | 0.2045785 | 3.1240699 | 54 | 3 | 2000–2005 | 0.55 | M-v | 3 | MPC | 90052 | 2000 $YM_{71}$ |
| 2000 $YX_{71}$ | 15.3 | 0.15 | 20060922 | 41.66217 | 312.88095 | 97.46699 | 8.85728 | 0.1642185 | 3.1149675 | 57 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 97425 | 2000 $YX_{71}$ |
| 2000 $YD_{81}$ | 14.7 | 0.15 | 20060922 | 333.47226 | 254.31783 | 248.68244 | 10.02520 | 0.1700921 | 3.1065328 | 77 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97426 | 2000 $YD_{81}$ |
| 2000 $YE_{81}$ | 15.3 | 0.15 | 20060922 | 19.83424 | 286.85812 | 133.60282 | 2.67459 | 0.1969206 | 3.1798696 | 69 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 90052 | 2000 $YE_{81}$ |
| 2000 $YO_{82}$ | 14.8 | 0.15 | 20060922 | 45.43242 | 326.72258 | 100.08499 | 11.42093 | 0.0970452 | 3.0625436 | 49 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 93904 | 2000 $YO_{82}$ |
| 2000 $YP_{82}$ | 14.9 | 0.15 | 20060922 | 27.86802 | 330.25141 | 97.79821 | 18.38900 | 0.2017412 | 3.1336926 | 42 | 3 | 2000–2005 | 0.47 | M-v | 3 | MPC | 90052 | 2000 $YP_{82}$ |
| 2000 $YR_{82}$ | 17.4 | 0.15 | 20060922 | 118.08706 | 127.59485 | 259.55802 | 19.11744 | 0.1143213 | 1.8929971 | 42 | 3 | 2000–2005 | 0.64 | M-v | 3 | MPC | 88780 | 2000 $YR_{82}$ |
| 2000 $YT_{82}$ | 16.4 | 0.15 | 20060922 | 234.60043 | 198.41494 | 184.11358 | 2.66229 | 0.1863775 | 2.4153658 | 55 | 3 | 2000–2006 | 0.42 | M-v | 3 | MPC | 02023 | 2000 $YT_{82}$ |
| 2000 $YB_{86}$ | 16.0 | 0.15 | 20060922 | 169.57495 | 276.36838 | 132.74719 | 2.46562 | 0.2623653 | 2.5715067 | 48 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 02023 | 2000 $YB_{86}$ |
| 2000 $YV_{86}$ | 16.5 | 0.15 | 20060922 | 129.45635 | 191.86285 | 258.24626 | 1.92750 | 0.1836596 | 2.6193510 | 73 | 3 | 1997–2004 | 0.41 | M-v | 3 | MPC | 74066 | 2000 $YV_{86}$ |
| 2000 $YQ_{87}$ | 15.0 | 0.15 | 20060922 | 26.34460 | 150.61695 | 281.70317 | 9.57132 | 0.2087289 | 3.1369317 | 85 | 6 | 1999–2006 | 0.43 | M-v | 0 | MPC | 97426 | 2000 $YQ_{87}$ |
| 2000 $YB_{88}$ | 14.8 | 0.15 | 20060922 | 313.14435 | 50.17376 | 118.72433 | 13.34729 | 0.0702155 | 3.1340173 | 57 | 6 | 1997–2006 | 0.58 | M-v | 1 | MPC | 97426 | 2000 $YB_{88}$ |
| 2000 $YB_{89}$ | 16.2 | 0.15 | 20060922 | 27.37811 | 248.87703 | 162.07419 | 1.89710 | 0.2718399 | 3.2283507 | 45 | 3 | 2000–2006 | 0.47 | M-v | 1 | MPC | 97426 | 2000 $YB_{89}$ |
| 2000 $YF_{89}$ | 15.6 | 0.15 | 20060922 | 31.02959 | 283.10312 | 144.39166 | 1.98942 | 0.1707495 | 3.1529698 | 83 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 88780 | 2000 $YF_{89}$ |
| 2000 $YJ_{90}$ | 16.8 | 0.15 | 20060922 | 251.37205 | 348.50600 | 116.21032 | 4.03511 | 0.0795049 | 2.2533709 | 59 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04143 | 2000 $YJ_{90}$ |
| 2000 $YG_{92}$ | 16.4 | 0.15 | 20060922 | 250.69423 | 217.71762 | 238.21578 | 3.09251 | 0.1295452 | 2.2493875 | 37 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 04143 | 2000 $YG_{92}$ |
| 2000 $YM_{93}$ | 15.6 | 0.15 | 20060922 | 59.19949 | 289.35070 | 126.75016 | 9.24934 | 0.2161712 | 3.0415584 | 54 | 4 | 1996–2006 | 0.59 | M-v | 3 | MPC | 93905 | 2000 $YM_{93}$ |
| 2000 $YZ_{94}$ | 16.6 | 0.15 | 20060922 | 173.54913 | 272.43824 | 301.19349 | 3.44641 | 0.0476345 | 2.1842604 | 61 | 4 | 2000–2006 | 0.48 | M-v | 3 | MPC | 87415 | 2000 $YZ_{94}$ |
| 2000 $YD_{97}$ | 15.1 | 0.15 | 20060922 | 179.17845 | 100.40163 | 297.26387 | 11.95034 | 0.2081465 | 2.6340618 | 45 | 3 | 1999–2005 | 0.56 | M-v | 2 | MPC | 72294 | 2000 $YD_{97}$ |
| 2000 $YV_{97}$ | 13.9 | 0.15 | 20060922 | 283.48675 | 265.26464 | 304.19379 | 15.44642 | 0.0646188 | 3.1768443 | 60 | 4 | 1984–2006 | 0.44 | M-v | 2 | MPC | 74067 | 2000 $YV_{97}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 $YB_{98}$ | 16.8 | 0.15 | 20060922 | 239.83825 | 57.16003 | 102.29413 | 3.42728 | 0.1402240 | 2.1972470 | 90 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 57792 | 2000 $YB_{98}$ |
| 2000 $YK_{99}$ | 14.7 | 0.15 | 20060922 | 320.66895 | 234.45296 | 298.45735 | 12.55559 | 0.2102233 | 3.2159747 | 52 | 5 | 1984–2006 | 0.57 | M-v | 1 | MPC | 88781 | 2000 $YK_{99}$ |
| 2000 $YA_{100}$ | 17.3 | 0.15 | 20060922 | 278.77631 | 17.57755 | 105.35653 | 3.26282 | 0.1019272 | 2.1656899 | 73 | 5 | 1995–2006 | 0.42 | M-v | 2 | MPC | 57792 | 2000 $YA_{100}$ |
| 2000 $YA_{108}$ | 15.2 | 0.15 | 20060922 | 57.75559 | 317.05441 | 67.75188 | 3.77357 | 0.2614248 | 3.1570828 | 122 | 3 | 1996–2006 | 0.45 | M-v | 1 | MPC | 97426 | 2000 $YA_{108}$ |
| 2000 $YQ_{109}$ | 15.5 | 0.15 | 20060922 | 96.90720 | 167.10493 | 303.13787 | 6.56845 | 0.0923315 | 2.7199521 | 50 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 02024 | 2000 $YQ_{109}$ |
| 2000 $YS_{109}$ | 13.0 | 0.15 | 20060922 | 160.58144 | 177.67979 | 306.73748 | 10.29580 | 0.0782500 | 5.2199607 | 58 | 4 | 1991–2004 | 0.64 | M-v | 0 | MPC | 48001 | 2000 $YS_{109}$ |
| 2000 $YF_{110}$ | 14.6 | 0.15 | 20060922 | 54.36110 | 91.80659 | 311.55096 | 8.41378 | 0.1080753 | 3.2070207 | 61 | 6 | 1993–2006 | 0.54 | M-v | 0 | MPC | 90052 | 2000 $YF_{110}$ |
| 2000 $YA_{112}$ | 14.0 | 0.15 | 20060922 | 306.28095 | 264.80783 | 312.21176 | 9.54671 | 0.1902471 | 3.0281470 | 72 | 5 | 1996–2005 | 0.47 | M-v | 1 | MPC | 97426 | 2000 $YA_{112}$ |
| 2000 $YP_{112}$ | 15.3 | 0.15 | 20060922 | 39.08297 | 123.68019 | 315.18788 | 7.58134 | 0.1621968 | 3.1107753 | 53 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 93906 | 2000 $YP_{112}$ |
| 2000 $YS_{112}$ | 16.2 | 0.15 | 20060922 | 282.07863 | 129.08596 | 302.99774 | 7.47218 | 0.1395472 | 2.2419324 | 98 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 04143 | 2000 $YS_{112}$ |
| 2000 $YC_{114}$ | 16.2 | 0.15 | 20060922 | 69.15034 | 186.57804 | 355.69521 | 2.66441 | 0.1232044 | 2.5900415 | 37 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 02024 | 2000 $YC_{114}$ |
| 2000 $YV_{114}$ | 15.1 | 0.15 | 20060922 | 343.82513 | 192.66674 | 314.01184 | 9.51183 | 0.1539351 | 3.1421378 | 36 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 68884 | 2000 $YV_{114}$ |
| 2000 $YC_{124}$ | 14.1 | 0.15 | 20060922 | 25.24162 | 155.31530 | 255.53691 | 20.82380 | 0.0843693 | 3.1343202 | 69 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 93906 | 2000 $YC_{124}$ |
| 2000 $YE_{127}$ | 17.0 | 0.15 | 20060922 | 265.67512 | 87.12174 | 294.69940 | 1.32903 | 0.2125455 | 2.3652665 | 39 | 4 | 1996–2005 | 0.46 | M-v | 1 | MPC | 87415 | 2000 $YE_{127}$ |
| 2000 $YY_{128}$ | 15.0 | 0.15 | 20060922 | 304.84217 | 253.71299 | 316.63059 | 14.81384 | 0.1934642 | 3.1372503 | 50 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 84665 | 2000 $YY_{128}$ |
| 2000 $YN_{130}$ | 16.1 | 0.15 | 20060922 | 26.70021 | 257.55218 | 162.48208 | 1.35236 | 0.1809055 | 3.1523171 | 54 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97427 | 2000 $YN_{130}$ |
| 2000 $YO_{131}$ | 16.4 | 0.15 | 20060922 | 240.30830 | 112.48960 | 320.07875 | 5.30542 | 0.2124854 | 2.3332486 | 55 | 3 | 2000–2005 | 0.49 | M-v | 2 | MPC | 53670 | 2000 $YO_{131}$ |
| 2000 $YW_{132}$ | 17.3 | 0.15 | 20060922 | 268.69111 | 181.34764 | 312.72484 | 4.79765 | 0.0312163 | 2.1685974 | 49 | 4 | 2000–2006 | 0.46 | M-v | 3 | MPC | 56183 | 2000 $YW_{132}$ |
| 2000 $YM_{135}$ | 14.5 | 0.15 | 20060922 | 355.58099 | 94.56924 | 23.55143 | 13.76879 | 0.2442640 | 3.1723369 | 118 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97427 | 2000 $YM_{135}$ |
| 2000 $YW_{135}$ | 16.1 | 0.15 | 20060922 | 50.02488 | 92.00786 | 319.43971 | 13.82589 | 0.2971968 | 3.1084940 | 40 | 3 | 1996–2005 | 0.60 | M-v | 2 | MPC | 97427 | 2000 $YW_{135}$ |
| 2001 AL | 17.3 | 0.15 | 20060922 | 86.38672 | 290.22874 | 316.84690 | 8.07350 | 0.1777239 | 2.4018016 | 39 | 5 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04144 | 2001 AL |
| 2001 $AK_2$ | 16.3 | 0.15 | 20060922 | 283.91517 | 99.99357 | 110.89919 | 24.25321 | 0.0490170 | 1.9664052 | 58 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 60732 | 2001 $AK_2$ |
| 2001 $AB_7$ | 15.8 | 0.15 | 20060922 | 312.48580 | 53.75516 | 117.91750 | 15.53393 | 0.1035170 | 3.1811084 | 35 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 97427 | 2001 $AB_7$ |
| 2001 $AF_8$ | 15.5 | 0.15 | 20060922 | 134.68414 | 327.06267 | 120.17470 | 15.03916 | 0.1334111 | 2.6433398 | 30 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 02025 | 2001 $AF_8$ |
| 2001 $AG_{11}$ | 16.1 | 0.15 | 20060922 | 148.79063 | 275.12327 | 160.81407 | 4.97683 | 0.3205242 | 2.6054995 | 107 | 3 | 1993–2005 | 0.58 | M-v | 2 | MPC | 04144 | 2001 $AG_{11}$ |
| 2001 $AK_{11}$ | 15.6 | 0.15 | 20060922 | 91.37577 | 234.83668 | 274.17910 | 2.34522 | 0.0895186 | 2.6196221 | 65 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 02025 | 2001 $AK_{11}$ |
| 2001 $AX_{11}$ | 16.6 | 0.15 | 20060922 | 203.10852 | 288.18980 | 192.01957 | 1.93865 | 0.1525713 | 2.3588837 | 27 | 3 | 2001–2005 | 0.44 | M-v | 3 | MPC | 74889 | 2001 $AX_{11}$ |
| 2001 $AT_{12}$ | 13.8 | 0.15 | 20060922 | 299.60918 | 72.45310 | 145.24186 | 11.55307 | 0.1710287 | 3.1025452 | 118 | 6 | 2001–2006 | 0.57 | M-v | 0 | MPC | 97427 | 2001 $AT_{12}$ |
| 2001 $AG_{13}$ | 15.5 | 0.15 | 20060922 | 193.19167 | 95.83046 | 112.65691 | 21.48642 | 0.2178200 | 2.2165334 | 80 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 87416 | 2001 $AG_{13}$ |
| 2001 $AA_{19}$ | 15.2 | 0.15 | 20060922 | 2.84657 | 197.92461 | 272.05082 | 4.30303 | 0.1197773 | 3.2232098 | 52 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 97427 | 2001 $AA_{19}$ |
| 2001 $AH_{21}$ | 15.8 | 0.15 | 20060922 | 105.70331 | 262.92039 | 297.88870 | 9.19753 | 0.2155806 | 2.4573347 | 81 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 77499 | 2001 $AH_{21}$ |
| 2001 $AO_{22}$ | 15.3 | 0.15 | 20060922 | 17.70548 | 182.85816 | 227.71858 | 1.71136 | 0.2347043 | 3.3163907 | 82 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 97427 | 2001 $AO_{22}$ |
| 2001 $AN_{25}$ | 15.9 | 0.15 | 20060922 | 137.23460 | 261.19423 | 301.56678 | 21.39473 | 0.2773018 | 2.3846263 | 117 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 77499 | 2001 $AN_{25}$ |
| 2001 $AL_{27}$ | 15.5 | 0.15 | 20060922 | 111.42830 | 14.46319 | 72.98937 | 11.10820 | 0.1694885 | 2.7301181 | 41 | 4 | 2000–2006 | 0.69 | M-v | 1 | MPC | 02025 | 2001 $AL_{27}$ |
| 2001 $AN_{27}$ | 16.5 | 0.15 | 20060922 | 194.30810 | 99.73968 | 53.19537 | 7.35766 | 0.2420704 | 2.3210551 | 38 | 3 | 1980–2005 | 0.53 | M-v | 2 | MPC | 11026 | 2001 $AN_{27}$ |
| 2001 $AM_{28}$ | 14.8 | 0.15 | 20060922 | 62.53756 | 57.00617 | 319.54623 | 22.02225 | 0.3604456 | 3.1184492 | 87 | 3 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97428 | 2001 $AM_{28}$ |
| 2001 $AZ_{30}$ | 14.2 | 0.15 | 20060922 | 61.48027 | 95.72970 | 285.93411 | 24.33013 | 0.1674733 | 3.1676765 | 56 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 93909 | 2001 $AZ_{30}$ |
| 2001 $AB_{34}$ | 16.0 | 0.15 | 20060922 | 145.48930 | 358.32397 | 71.06454 | 5.86516 | 0.1804358 | 2.6585437 | 69 | 5 | 1991–2006 | 0.46 | M-v | 1 | MPC | 04144 | 2001 $AB_{34}$ |
| 2001 $AR_{34}$ | 15.4 | 0.15 | 20060922 | 68.34538 | 63.02312 | 88.74437 | 15.96164 | 0.1293648 | 2.6861855 | 54 | 4 | 2000–2006 | 0.70 | M-v | 1 | MPC | 00006 | 2001 $AR_{34}$ |
| 2001 $AB_{36}$ | 16.1 | 0.15 | 20060922 | 173.28711 | 77.47508 | 335.51177 | 7.69807 | 0.1649719 | 2.6060808 | 27 | 3 | 1999–2004 | 0.52 | M-v | 2 | MPC | 72312 | 2001 $AB_{36}$ |
| 2001 $AU_{40}$ | 14.6 | 0.15 | 20060922 | 305.23054 | 237.58702 | 307.54929 | 8.77503 | 0.0188928 | 3.1086383 | 64 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97428 | 2001 $AU_{40}$ |
| 2001 $AW_{40}$ | 15.7 | 0.15 | 20060922 | 142.53704 | 325.39232 | 133.08106 | 6.13214 | 0.2294006 | 2.5951996 | 102 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 02025 | 2001 $AW_{40}$ |
| 2001 $AZ_{43}$ | 16.8 | 0.15 | 20060922 | 260.59816 | 87.68361 | 309.53534 | 5.31066 | 0.0961087 | 2.4075490 | 62 | 3 | 2000–2005 | 0.48 | M-v | 3 | MPC | 52748 | 2001 $AZ_{43}$ |
| 2001 $AQ_{45}$ | 14.8 | 0.15 | 20060922 | 32.27976 | 95.28706 | 336.44254 | 10.38413 | 0.1845058 | 3.1850289 | 88 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 97428 | 2001 $AQ_{45}$ |
| 2001 $AK_{48}$ | 15.0 | 0.15 | 20060922 | 234.67225 | 148.98595 | 104.58525 | 3.18702 | 0.0477599 | 3.0720493 | 75 | 6 | 1997–2006 | 0.52 | M-v | 0 | MPC | 97428 | 2001 $AK_{48}$ |
| 2001 $AA_{50}$ | 18.3 | 0.15 | 20060922 | 10.63123 | 58.59018 | 306.28514 | 43.88064 | 0.1977496 | 1.3206601 | 102 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 62314 | 2001 $AA_{50}$ |
| 2001 $AG_{54}$ | 17.6 | 0.15 | 20010131 | 15.87448 | 5.54822 | 103.19630 | 8.56858 | 0.2768372 | 2.2457324 | 28 | 1 | 48 days | 0.53 | | | MPC | | 2001 $AG_{54}$ |
| 2001 $BB_2$ | 17.4 | 0.15 | 20060922 | 73.22000 | 54.81359 | 179.15873 | 1.98898 | 0.1403960 | 2.4491804 | 37 | 3 | 2001–2006 | 0.29 | M-v | 1 | MPC | 04144 | 2001 $BB_2$ |
| 2001 $BD_3$ | 15.1 | 0.15 | 20060922 | 341.12496 | 37.11580 | 333.58696 | 25.47659 | 0.2403441 | 2.2674068 | 148 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04144 | 2001 $BD_3$ |
| 2001 $BU_6$ | 14.9 | 0.15 | 20060922 | 354.95265 | 180.75969 | 305.53526 | 17.05288 | 0.1699525 | 3.1711645 | 52 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 00006 | 2001 $BU_6$ |
| 2001 $BL_7$ | 15.9 | 0.15 | 20060922 | 137.05503 | 209.12739 | 69.08475 | 3.02837 | 0.0881341 | 2.1482015 | 59 | 6 | 1996–2006 | 0.63 | M-v | 2 | MPC | 88786 | 2001 $BL_7$ |
| 2001 $BE_8$ | 14.6 | 0.15 | 20060922 | 329.34726 | 218.97861 | 316.53357 | 16.00685 | 0.1513009 | 3.1248141 | 60 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 68893 | 2001 $BE_8$ |
| 2001 $BH_8$ | 16.5 | 0.15 | 20060922 | 327.13118 | 23.82486 | 54.71774 | 3.77945 | 0.0799102 | 2.1465060 | 99 | 4 | 1998–2006 | 0.50 | M-v | 3 | MPC | 56188 | 2001 $BH_8$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $BX_{8}$ | 14.6 | 0.15 | 20060922 | 282.27440 | 92.08258 | 115.34259 | 6.63647 | 0.0854153 | 3.2196238 | 49 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 38289 | 2001 $BX_{8}$ |
| 2001 $BX_{9}$ | 18.3 | 0.15 | 20060922 | 180.22113 | 308.92351 | 240.74050 | 1.97500 | 0.0719831 | 2.2539155 | 57 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 74895 | 2001 $BX_{9}$ |
| 2001 $BA_{10}$ | 14.6 | 0.15 | 20060922 | 275.11379 | 104.04182 | 82.69043 | 26.93889 | 0.1734453 | 3.1461422 | 68 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 90053 | 2001 $BA_{10}$ |
| 2001 $BH_{13}$ | 17.5 | 0.15 | 20060922 | 183.50165 | 223.86051 | 305.54514 | 1.23623 | 0.1832268 | 2.3162966 | 44 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04144 | 2001 $BH_{13}$ |
| 2001 $BV_{17}$ | 16.6 | 0.15 | 20060922 | 328.22013 | 32.04636 | 344.00141 | 3.14199 | 0.2037584 | 2.2365665 | 131 | 5 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04144 | 2001 $BV_{17}$ |
| 2001 $BB_{18}$ | 14.1 | 0.15 | 20060922 | 301.10254 | 70.85739 | 137.34991 | 17.28357 | 0.1786631 | 3.1141886 | 63 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 31935 | 2001 $BB_{18}$ |
| 2001 $BW_{18}$ | 16.2 | 0.15 | 20060922 | 287.63382 | 303.96247 | 68.74793 | 4.11743 | 0.2637380 | 2.3377015 | 112 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 02026 | 2001 $BW_{18}$ |
| 2001 $BA_{19}$ | 14.7 | 0.15 | 20060922 | 55.88013 | 309.06882 | 102.25912 | 7.75204 | 0.2100746 | 3.1419918 | 102 | 5 | 1999–2006 | 0.50 | M-v | 0 | MPC | 97429 | 2001 $BA_{19}$ |
| 2001 $BD_{19}$ | 16.5 | 0.15 | 20060922 | 311.92141 | 113.66918 | 324.49334 | 5.76354 | 0.0951958 | 2.1766762 | 87 | 4 | 1998–2006 | 0.51 | M-v | 3 | MPC | 57796 | 2001 $BD_{19}$ |
| 2001 $BR_{23}$ | 16.7 | 0.15 | 20060922 | 340.63349 | 93.72991 | 326.75159 | 2.02349 | 0.1220725 | 2.1382913 | 77 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 62314 | 2001 $BR_{23}$ |
| 2001 $BX_{23}$ | 16.4 | 0.15 | 20060922 | 139.55240 | 349.23377 | 119.39670 | 5.93312 | 0.1474143 | 2.5856535 | 39 | 4 | 1997–2006 | 0.41 | M-v | 2 | MPC | 00007 | 2001 $BX_{23}$ |
| 2001 $BB_{24}$ | 17.3 | 0.15 | 20060922 | 251.57134 | 113.93649 | 314.19794 | 2.27701 | 0.1502918 | 2.3359099 | 39 | 3 | 2000–2005 | 0.59 | M-v | 3 | MPC | 52756 | 2001 $BB_{24}$ |
| 2001 $BG_{24}$ | 16.1 | 0.15 | 20060922 | 245.28379 | 285.07274 | 135.37232 | 7.50310 | 0.1447121 | 2.3743524 | 50 | 3 | 2001–2005 | 0.72 | M-v | 3 | MPC | 04144 | 2001 $BG_{24}$ |
| 2001 $BH_{31}$ | 16.4 | 0.15 | 20060922 | 264.63058 | 347.62804 | 153.47353 | 4.16866 | 0.0948118 | 2.1865669 | 127 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 57796 | 2001 $BH_{31}$ |
| 2001 $BT_{32}$ | 15.8 | 0.15 | 20060922 | 224.25361 | 289.04722 | 187.83850 | 1.81437 | 0.1574374 | 2.3425341 | 152 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 77502 | 2001 $BT_{32}$ |
| 2001 $BA_{35}$ | 16.4 | 0.15 | 20060922 | 194.18793 | 233.83738 | 301.34300 | 3.91789 | 0.2241857 | 2.3146152 | 55 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 77503 | 2001 $BA_{35}$ |
| 2001 $BC_{35}$ | 14.9 | 0.15 | 20060922 | 345.68147 | 49.69163 | 135.93819 | 29.83139 | 0.3868032 | 3.1365655 | 74 | 3 | 2001–2006 | 0.40 | M-v | 1 | MPC | 64904 | 2001 $BC_{35}$ |
| 2001 $BP_{35}$ | 17.4 | 0.15 | 20060922 | 144.23251 | 319.33973 | 263.53192 | 3.91413 | 0.1962326 | 2.2923774 | 49 | 4 | 2000–2006 | 0.41 | M-v | 2 | MPC | 87417 | 2001 $BP_{35}$ |
| 2001 $BQ_{37}$ | 17.2 | 0.15 | 20060922 | 278.81359 | 119.50487 | 303.53842 | 5.21202 | 0.1333602 | 2.2809875 | 57 | 3 | 1999–2003 | 0.51 | M-v | 3 | MPC | 56192 | 2001 $BQ_{37}$ |
| 2001 $BK_{39}$ | 16.0 | 0.15 | 20060922 | 166.29511 | 122.95871 | 227.23763 | 4.91889 | 0.0291408 | 2.7355012 | 42 | 3 | 2000–2004 | 0.48 | M-v | 3 | MPC | 74073 | 2001 $BK_{39}$ |
| 2001 $BU_{39}$ | 16.7 | 0.15 | 20060922 | 289.35496 | 139.23990 | 342.16580 | 7.32026 | 0.0459560 | 2.2277325 | 70 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 87417 | 2001 $BU_{39}$ |
| 2001 $BM_{40}$ | 15.1 | 0.15 | 20060922 | 61.52646 | 96.15558 | 309.35748 | 11.60248 | 0.1310643 | 3.1881156 | 46 | 6 | 1999–2006 | 0.53 | M-v | 1 | MPC | 97429 | 2001 $BM_{40}$ |
| 2001 $BB_{43}$ | 15.5 | 0.15 | 20060922 | 259.83494 | 154.19339 | 281.16479 | 8.74564 | 0.1593285 | 2.3222548 | 90 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 04144 | 2001 $BB_{43}$ |
| 2001 $BQ_{43}$ | 15.9 | 0.15 | 20060922 | 118.58128 | 236.97357 | 288.83010 | 10.99762 | 0.1887452 | 2.5599124 | 44 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 72325 | 2001 $BQ_{43}$ |
| 2001 $BN_{46}$ | 12.6 | 0.15 | 20060922 | 163.88221 | 295.91885 | 202.90675 | 11.69466 | 0.0744413 | 5.1379937 | 74 | 5 | 1995–2004 | 0.62 | M-v | 1 | MPC | 70293 | 2001 $BN_{46}$ |
| 2001 $BJ_{49}$ | 15.2 | 0.15 | 20060922 | 349.94155 | 23.88229 | 162.92258 | 18.02976 | 0.2622494 | 3.0640306 | 37 | 3 | 1997–2003 | 0.53 | M-v | 2 | MPC | 11829 | 2001 $BJ_{49}$ |
| 2001 $BT_{50}$ | 15.4 | 0.15 | 20060922 | 61.69077 | 290.82257 | 125.39551 | 12.79911 | 0.1544012 | 3.1300944 | 49 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 93915 | 2001 $BT_{50}$ |
| 2001 $BN_{51}$ | 16.9 | 0.15 | 20060922 | 129.13648 | 28.00006 | 181.53317 | 2.08642 | 0.1597866 | 2.3624884 | 77 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04145 | 2001 $BN_{51}$ |
| 2001 $BK_{52}$ | 16.9 | 0.15 | 20060922 | 247.53421 | 353.93367 | 113.37153 | 3.45483 | 0.0453383 | 2.2823400 | 50 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04145 | 2001 $BK_{52}$ |
| 2001 $BC_{53}$ | 16.3 | 0.15 | 20060922 | 234.16550 | 20.40129 | 110.08987 | 7.23119 | 0.1786789 | 2.2788137 | 91 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 87417 | 2001 $BC_{53}$ |
| 2001 $BJ_{53}$ | 16.4 | 0.15 | 20060922 | 270.81062 | 315.19180 | 103.98521 | 6.53897 | 0.0852707 | 2.3544016 | 41 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 04145 | 2001 $BJ_{53}$ |
| 2001 $BV_{56}$ | 16.3 | 0.15 | 20060922 | 210.20075 | 310.10597 | 97.22306 | 3.04470 | 0.1610020 | 2.5412604 | 86 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 02027 | 2001 $BV_{56}$ |
| 2001 $BA_{58}$ | 17.1 | 0.15 | 20060922 | 224.56343 | 276.00146 | 173.80453 | 2.26094 | 0.1607733 | 2.3751904 | 59 | 3 | 2001–2005 | 0.63 | M-v | 2 | MPC | 87417 | 2001 $BA_{58}$ |
| 2001 $BD_{61}$ | 17.4 | 0.15 | 20060922 | 312.43638 | 103.42059 | 314.67673 | 6.12790 | 0.0385768 | 2.2438829 | 40 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 84668 | 2001 $BD_{61}$ |
| 2001 $BG_{62}$ | 14.4 | 0.15 | 20060922 | 329.82205 | 28.23180 | 154.88414 | 17.76884 | 0.0827601 | 3.1619835 | 112 | 5 | 2000–2006 | 0.58 | M-v | 0 | MPC | 74074 | 2001 $BG_{62}$ |
| 2001 $BK_{65}$ | 16.5 | 0.15 | 20060922 | 199.69648 | 293.32703 | 240.46200 | 4.80018 | 0.1321423 | 2.2827121 | 61 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 87417 | 2001 $BK_{65}$ |
| 2001 $BD_{66}$ | 15.5 | 0.15 | 20060922 | 98.57919 | 89.87620 | 139.22371 | 12.56769 | 0.2532197 | 2.5463731 | 94 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 77504 | 2001 $BD_{66}$ |
| 2001 $BY_{66}$ | 14.4 | 0.15 | 20060922 | 302.47181 | 80.56667 | 129.03187 | 10.67114 | 0.1640388 | 3.1789353 | 48 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 97430 | 2001 $BY_{66}$ |
| 2001 $BE_{68}$ | 15.7 | 0.15 | 20060922 | 209.31889 | 41.04755 | 94.04362 | 3.20016 | 0.1487202 | 2.3622744 | 175 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04145 | 2001 $BE_{68}$ |
| 2001 $BF_{68}$ | 16.5 | 0.15 | 20060922 | 268.29228 | 25.94560 | 86.47519 | 1.83471 | 0.1241623 | 2.2466079 | 83 | 4 | 2001–2006 | 0.59 | M-v | 2 | MPC | 77504 | 2001 $BF_{68}$ |
| 2001 $BJ_{68}$ | 16.5 | 0.15 | 20060922 | 193.77871 | 157.13552 | 36.23674 | 1.57518 | 0.1457363 | 2.2817162 | 93 | 4 | 2001–2006 | 0.41 | M-v | 2 | MPC | 74904 | 2001 $BJ_{68}$ |
| 2001 $BN_{68}$ | 16.4 | 0.15 | 20060922 | 281.23289 | 350.73360 | 111.70971 | 5.29428 | 0.1601645 | 2.2339578 | 140 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 56195 | 2001 $BN_{68}$ |
| 2001 $BR_{71}$ | 15.1 | 0.15 | 20060922 | 134.81654 | 310.09747 | 129.50402 | 5.87144 | 0.0928894 | 2.7313927 | 46 | 4 | 1999–2004 | 0.59 | M-v | 1 | MPC | 35005 | 2001 $BR_{71}$ |
| 2001 $BY_{71}$ | 15.6 | 0.15 | 20060922 | 43.27912 | 318.48660 | 163.96446 | 1.48631 | 0.1854056 | 2.9807050 | 124 | 5 | 1991–2006 | 0.50 | M-v | 2 | MPC | 02027 | 2001 $BY_{71}$ |
| 2001 $BE_{75}$ | 16.8 | 0.15 | 20060922 | 151.83073 | 332.45447 | 193.89217 | 0.72168 | 0.1115861 | 2.4275810 | 71 | 3 | 2001–2005 | 0.55 | M-v | 3 | MPC | 74904 | 2001 $BE_{75}$ |
| 2001 $BE_{76}$ | 15.7 | 0.15 | 20060922 | 39.22681 | 307.87673 | 269.46286 | 11.31474 | 0.1461737 | 2.6557765 | 31 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 00008 | 2001 $BE_{76}$ |
| 2001 $BC_{79}$ | 16.4 | 0.15 | 20060922 | 85.26648 | 289.85295 | 267.11679 | 5.94354 | 0.1917982 | 2.5738027 | 33 | 5 | 1997–2005 | 0.48 | M-v | 1 | MPC | 74074 | 2001 $BC_{79}$ |
| 2001 $BO_{80}$ | 14.5 | 0.15 | 20060922 | 347.49305 | 341.73077 | 157.32005 | 23.11018 | 0.0186238 | 3.1567519 | 36 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 97430 | 2001 $BO_{80}$ |
| 2001 $BF_{82}$ | 16.4 | 0.15 | 20060922 | 138.53972 | 191.32108 | 286.14903 | 10.92211 | 0.1943721 | 2.6034636 | 47 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 72331 | 2001 $BF_{82}$ |
| 2001 $BJ_{83}$ | 14.6 | 0.15 | 20060922 | 350.88554 | 75.22591 | 113.73342 | 16.01256 | 0.2701808 | 3.1103607 | 19 | 1 | 65 days | 0.67 | M-v | 4 | MPC | | 2001 $BJ_{83}$ |
| 2001 CY | 14.0 | 0.15 | 20060922 | 269.78869 | 271.66565 | 331.48783 | 8.78776 | 0.1785626 | 3.1988688 | 82 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 57799 | 2001 CY |
| 2001 $CS_{2}$ | 16.6 | 0.15 | 20060922 | 197.58995 | 141.75086 | 18.91658 | 2.65483 | 0.1658842 | 2.3308780 | 77 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 57799 | 2001 $CS_{2}$ |
| 2001 $CJ_{3}$ | 16.1 | 0.15 | 20060922 | 265.27713 | 157.46675 | 345.37149 | 5.95225 | 0.1123992 | 2.1933403 | 113 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 57799 | 2001 $CJ_{3}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $CG_6$ | 16.6 | 0.15 | 20060922 | 174.73143 | 221.20060 | 345.57426 | 5.07397 | 0.1180358 | 2.2801705 | 55 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 74905 | 2001 $CG_6$ |
| 2001 $CB_7$ | 15.9 | 0.15 | 20060922 | 236.18986 | 101.05363 | 356.87985 | 6.41346 | 0.0802098 | 2.3619146 | 61 | 5 | 1992–2006 | 0.58 | M-v | 1 | MPC | 04145 | 2001 $CB_7$ |
| 2001 $CL_7$ | 16.5 | 0.15 | 20060922 | 219.33347 | 80.33566 | 99.55989 | 5.80434 | 0.0736478 | 2.2255139 | 61 | 5 | 1998–2006 | 0.60 | M-v | 3 | MPC | 57799 | 2001 $CL_7$ |
| 2001 $CX_8$ | 14.6 | 0.15 | 20060922 | 294.77191 | 67.27900 | 132.65123 | 21.28030 | 0.0867031 | 3.2286372 | 60 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 50521 | 2001 $CX_8$ |
| 2001 $CJ_{10}$ | 14.2 | 0.15 | 20060922 | 325.80720 | 218.11312 | 322.18537 | 15.54449 | 0.1496199 | 3.1565149 | 82 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 74075 | 2001 $CJ_{10}$ |
| 2001 $CD_{11}$ | 15.9 | 0.15 | 20060922 | 292.56360 | 54.88602 | 338.88914 | 5.84079 | 0.1903170 | 2.3196093 | 100 | 3 | 2001–2005 | 0.59 | M-v | 2 | MPC | 57800 | 2001 $CD_{11}$ |
| 2001 $CT_{14}$ | 15.3 | 0.15 | 20060922 | 350.39364 | 31.69814 | 111.67184 | 11.94549 | 0.2141237 | 3.1880330 | 30 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97431 | 2001 $CT_{14}$ |
| 2001 $CA_{15}$ | 16.0 | 0.15 | 20060922 | 151.17386 | 91.92672 | 346.14299 | 7.98501 | 0.1167985 | 2.6718014 | 30 | 3 | 1999–2003 | 0.60 | M-v | 2 | MPC | 88787 | 2001 $CA_{15}$ |
| 2001 $CT_{15}$ | 17.0 | 0.15 | 20060922 | 229.63784 | 152.04526 | 27.30733 | 2.58222 | 0.0761408 | 2.1871077 | 44 | 5 | 1998–2006 | 0.53 | M-v | 3 | MPC | 74907 | 2001 $CT_{15}$ |
| 2001 $CV_{17}$ | 15.2 | 0.15 | 20060922 | 16.64404 | 239.81604 | 342.69476 | 13.09513 | 0.1702190 | 2.7768918 | 48 | 2 | 2001–2006 | 0.57 | M-v | 3 | MPC | 00008 | 2001 $CV_{17}$ |
| 2001 $CX_{19}$ | 16.1 | 0.15 | 20060922 | 55.60125 | 276.12627 | 324.03994 | 26.52812 | 0.3810261 | 2.6433484 | 93 | 2 | 2001–2006 | 0.61 | M-v | 3 | MPC | 03187 | 2001 $CX_{19}$ |
| 2001 $CZ_{20}$ | 17.2 | 0.15 | 20060922 | 204.97773 | 318.52840 | 195.69471 | 4.46930 | 0.3268390 | 2.3433193 | 54 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 52787 | 2001 $CZ_{20}$ |
| 2001 $CM_{22}$ | 15.2 | 0.15 | 20060922 | 139.29280 | 153.19495 | 317.69597 | 18.04589 | 0.1903581 | 2.5930986 | 79 | 3 | 2000–2005 | 0.51 | M-v | 2 | MPC | 74076 | 2001 $CM_{22}$ |
| 2001 $CS_{22}$ | 17.0 | 0.15 | 20060922 | 239.57195 | 141.72409 | 328.31621 | 4.90092 | 0.1082763 | 2.2981353 | 42 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04145 | 2001 $CS_{22}$ |
| 2001 $CN_{23}$ | 17.6 | 0.15 | 20060922 | 219.16462 | 151.57187 | 325.47938 | 1.68966 | 0.1852507 | 2.3370518 | 40 | 4 | 1994–2005 | 0.56 | M-v | 1 | MPC | 04145 | 2001 $CN_{23}$ |
| 2001 $CF_{24}$ | 16.9 | 0.15 | 20060922 | 222.43990 | 260.42601 | 248.67957 | 3.13505 | 0.1013447 | 2.2562534 | 47 | 5 | 1996–2006 | 0.49 | M-v | 0 | MPC | 77507 | 2001 $CF_{24}$ |
| 2001 $CH_{24}$ | 15.8 | 0.15 | 20060922 | 6.17269 | 339.55945 | 173.64793 | 3.92375 | 0.1308913 | 3.0249799 | 24 | 4 | 2001–2005 | 0.54 | M-v | 1 | MPC | 72337 | 2001 $CH_{24}$ |
| 2001 $CU_{25}$ | 14.4 | 0.15 | 20060922 | 187.54335 | 331.74155 | 352.80934 | 9.53388 | 0.0274475 | 3.1076881 | 70 | 4 | 1996–2006 | 0.72 | M-v | 2 | MPC | 97431 | 2001 $CU_{25}$ |
| 2001 $CV_{25}$ | 16.3 | 0.15 | 20060922 | 311.59572 | 283.21612 | 117.02413 | 6.99646 | 0.1687394 | 2.2808555 | 72 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04145 | 2001 $CV_{25}$ |
| 2001 $CO_{26}$ | 15.1 | 0.15 | 20060922 | 17.83294 | 10.95849 | 25.70820 | 8.05509 | 0.1612235 | 2.1821067 | 168 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62315 | 2001 $CO_{26}$ |
| 2001 $CL_{31}$ | 15.0 | 0.15 | 20060922 | 70.96393 | 86.20895 | 318.37043 | 14.16655 | 0.1053389 | 3.2308448 | 39 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 70294 | 2001 $CL_{31}$ |
| 2001 $CM_{31}$ | 17.9 | 0.15 | 20060922 | 102.40144 | 309.86907 | 270.13316 | 0.48385 | 0.1265477 | 2.4453667 | 38 | 3 | 1997–2005 | 0.50 | M-v | 3 | MPC | 74910 | 2001 $CM_{31}$ |
| 2001 $CU_{31}$ | 15.9 | 0.15 | 20060922 | 143.78793 | 183.36461 | 25.16538 | 24.37597 | 0.1850530 | 2.3838219 | 67 | 4 | 1999–2006 | 0.62 | M-v | 2 | MPC | 74910 | 2001 $CU_{31}$ |
| 2001 $CZ_{31}$ | 5.7 | 0.15 | 20060922 | 326.47294 | 47.31650 | 136.22846 | 10.21490 | 0.1221502 | 45.3123006 | 37 | 5 | 2001–2005 | 0.34 | M-v | 4 | MPC | 77508 | 2001 $CZ_{31}$ |
| 2001 $CQ_{32}$ | 14.3 | 0.15 | 20060922 | 11.64640 | 120.44027 | 341.68413 | 22.90101 | 0.2900288 | 3.1398955 | 71 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 97431 | 2001 $CQ_{32}$ |
| 2001 $CG_{33}$ | 16.3 | 0.15 | 20060922 | 228.96394 | 25.06147 | 52.68735 | 12.12916 | 0.1733847 | 2.3802965 | 47 | 4 | 1996–2005 | 0.62 | M-v | 1 | MPC | 68903 | 2001 $CG_{33}$ |
| 2001 $CQ_{33}$ | 15.1 | 0.15 | 20060922 | 84.65848 | 118.14154 | 44.50939 | 15.66027 | 0.1390630 | 2.6706022 | 50 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 00010 | 2001 $CQ_{33}$ |
| 2001 $CW_{36}$ | 16.6 | 0.15 | 20060922 | 109.50094 | 49.69854 | 148.74850 | 9.11201 | 0.1709453 | 2.5219005 | 105 | 6 | 1993–2006 | 0.59 | M-v | 1 | MPC | 87418 | 2001 $CW_{36}$ |
| 2001 $CC_{42}$ | 14.5 | 0.15 | 20060922 | 13.44067 | 44.01486 | 81.66492 | 16.10875 | 0.1726264 | 3.1974138 | 97 | 3 | 2000–2006 | 0.45 | M-v | 1 | MPC | 93922 | 2001 $CC_{42}$ |
| 2001 $CL_{42}$ | 17.2 | 0.15 | 20060922 | 231.39926 | 270.70518 | 12.16280 | 21.65550 | 0.4025036 | 1.5571151 | 796 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 97431 | 2001 $CL_{42}$ |
| 2001 $CS_{43}$ | 14.7 | 0.15 | 20060922 | 327.53153 | 127.39557 | 85.60693 | 20.36331 | 0.1902068 | 3.1488817 | 32 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 93922 | 2001 $CS_{43}$ |
| 2001 $CT_{44}$ | 14.7 | 0.15 | 20060922 | 86.19934 | 121.36671 | 18.04778 | 17.52851 | 0.0679797 | 2.7749063 | 78 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 00010 | 2001 $CT_{44}$ |
| 2001 $CQ_{46}$ | 15.7 | 0.15 | 20060922 | 19.49112 | 109.60564 | 344.82901 | 20.39735 | 0.2436937 | 3.1382390 | 42 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 97431 | 2001 $CQ_{46}$ |
| 2001 $CO_{47}$ | 14.5 | 0.15 | 20060922 | 332.20868 | 194.05526 | 327.27504 | 16.11242 | 0.1407776 | 3.1648399 | 29 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 68904 | 2001 $CO_{47}$ |
| 2001 $CG_{48}$ | 15.7 | 0.15 | 20060922 | 163.24872 | 9.90575 | 65.12739 | 18.52866 | 0.1494542 | 2.6156398 | 33 | 4 | 2001–2006 | 0.66 | M-v | 2 | MPC | 02028 | 2001 $CG_{48}$ |
| 2001 DE | 16.6 | 0.15 | 20060922 | 188.61794 | 35.97893 | 167.64232 | 5.42350 | 0.1370646 | 2.2786956 | 79 | 6 | 1977–2006 | 0.55 | M-v | 1 | MPC | 48010 | 2001 DE |
| 2001 DK | 14.8 | 0.15 | 20060922 | 10.09709 | 3.95678 | 147.28980 | 4.66875 | 0.1211272 | 3.1274434 | 56 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 93924 | 2001 DK |
| 2001 DQ | 17.3 | 0.15 | 20060922 | 154.62767 | 81.08352 | 166.51471 | 3.32323 | 0.1497995 | 2.3021905 | 46 | 7 | 1992–2006 | 0.36 | M-v | 0 | MPC | 77509 | 2001 DQ |
| 2001 $DK_1$ | 17.1 | 0.15 | 20060922 | 353.52654 | 183.04848 | 140.12410 | 8.16796 | 0.1611607 | 2.4228697 | 37 | 3 | 2001–2003 | 0.40 | M-v | 2 | MPC | 00011 | 2001 $DK_1$ |
| 2001 $DO_1$ | 16.4 | 0.15 | 20060922 | 37.57634 | 159.84411 | 143.86461 | 6.89628 | 0.1343936 | 2.3795129 | 70 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 04145 | 2001 $DO_1$ |
| 2001 $DZ_3$ | 11.5 | 0.15 | 20060922 | 302.06075 | 27.77769 | 339.29262 | 24.55984 | 0.0569830 | 5.1836980 | 48 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 30450 | 2001 $DZ_3$ |
| 2001 $DJ_4$ | 16.1 | 0.15 | 20060922 | 21.61215 | 348.73962 | 29.22288 | 8.13542 | 0.0671568 | 2.1600911 | 99 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 87418 | 2001 $DJ_4$ |
| 2001 $DT_4$ | 16.7 | 0.15 | 20060922 | 254.80161 | 94.86346 | 47.19008 | 5.89360 | 0.0489199 | 2.2140075 | 93 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 56202 | 2001 $DT_4$ |
| 2001 $DV_4$ | 15.3 | 0.15 | 20060922 | 48.86370 | 240.24176 | 351.82277 | 11.66905 | 0.1258776 | 2.5987320 | 44 | 3 | 2001–2005 | 0.55 | M-v | 3 | MPC | 52794 | 2001 $DV_4$ |
| 2001 $DU_5$ | 16.7 | 0.15 | 20060922 | 261.52375 | 79.59953 | 29.06209 | 7.54536 | 0.1544290 | 2.2655845 | 70 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 56203 | 2001 $DU_5$ |
| 2001 $DM_7$ | 16.7 | 0.15 | 20060922 | 178.63075 | 100.58947 | 60.47100 | 4.39301 | 0.0930314 | 2.4105601 | 102 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04145 | 2001 $DM_7$ |
| 2001 $DO_7$ | 16.2 | 0.15 | 20060922 | 164.89620 | 158.47166 | 72.60005 | 4.59522 | 0.1617711 | 2.2994158 | 64 | 3 | 1999–2006 | 0.49 | M-v | 3 | MPC | 13813 | 2001 $DO_7$ |
| 2001 $DT_7$ | 16.5 | 0.15 | 20060922 | 70.58982 | 281.96048 | 142.72982 | 23.83937 | 0.1023908 | 1.9734189 | 63 | 4 | 2000–2005 | 0.50 | M-v | 1 | MPC | 93924 | 2001 $DT_7$ |
| 2001 $DZ_7$ | 17.6 | 0.15 | 20060922 | 168.41345 | 201.73936 | 323.20319 | 6.59648 | 0.0535390 | 2.3798374 | 25 | 3 | 2001–2006 | 0.33 | M-v | 3 | MPC | 04145 | 2001 $DZ_7$ |
| 2001 $DA_9$ | 16.4 | 0.15 | 20060922 | 329.52524 | 217.47942 | 338.77612 | 18.24815 | 0.0449963 | 1.9678987 | 72 | 3 | 2001–2004 | 0.56 | M-v | 3 | MPC | 50523 | 2001 $DA_9$ |
| 2001 $DH_9$ | 16.8 | 0.15 | 20060922 | 254.43386 | 332.29974 | 164.67637 | 8.48043 | 0.0767076 | 2.2361613 | 48 | 4 | 1998–2006 | 0.70 | M-v | 2 | MPC | 11857 | 2001 $DH_9$ |
| 2001 $DW_{10}$ | 15.2 | 0.15 | 20060922 | 343.82998 | 8.89072 | 150.00844 | 7.10786 | 0.2525273 | 3.2218527 | 60 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 93925 | 2001 $DW_{10}$ |
| 2001 $DJ_{14}$ | 16.5 | 0.15 | 20060922 | 171.50604 | 276.18981 | 323.06411 | 5.51076 | 0.1244229 | 2.2190226 | 53 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87418 | 2001 $DJ_{14}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $DN_{15}$ | 17.3 | 0.15 | 20060922 | 199.21214 | 51.18941 | 94.99496 | 4.66825 | 0.2522997 | 2.3569209 | 47 | 4 | 1996–2005 | 0.59 | M-v | 1 | MPC | 77510 | 2001 $DN_{15}$ |
| 2001 $DX_{15}$ | 16.2 | 0.15 | 20060922 | 252.07846 | 10.35591 | 64.45591 | 5.56678 | 0.2117528 | 2.3555917 | 57 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 57802 | 2001 $DX_{15}$ |
| 2001 $DH_{16}$ | 12.4 | 0.15 | 20060922 | 232.49604 | 356.36933 | 90.79894 | 7.34923 | 0.0437840 | 5.2592534 | 44 | 4 | 2001–2006 | 0.64 | M-v | 2 | MPC | 04146 | 2001 $DH_{16}$ |
| 2001 $DX_{16}$ | 16.5 | 0.15 | 20060922 | 255.62226 | 14.98470 | 72.88229 | 5.40683 | 0.1157140 | 2.3466513 | 71 | 3 | 2001–2005 | 0.60 | M-v | 3 | MPC | 57802 | 2001 $DX_{16}$ |
| 2001 $DT_{17}$ | 16.8 | 0.15 | 20060922 | 245.65896 | 50.18685 | 115.69711 | 6.61905 | 0.1085339 | 2.2100477 | 48 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87418 | 2001 $DT_{17}$ |
| 2001 $DM_{19}$ | 16.1 | 0.15 | 20060922 | 209.93046 | 58.06264 | 72.11699 | 5.30355 | 0.1324980 | 2.3851156 | 31 | 3 | 2001–2005 | 0.51 | M-v | 2 | MPC | 57802 | 2001 $DM_{19}$ |
| 2001 $DB_{23}$ | 16.0 | 0.15 | 20060922 | 55.68367 | 44.52482 | 129.52442 | 8.74690 | 0.1523914 | 2.7669589 | 28 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 00011 | 2001 $DB_{23}$ |
| 2001 $DA_{25}$ | 16.4 | 0.15 | 20060922 | 191.79976 | 45.63229 | 63.37111 | 3.33827 | 0.1449445 | 2.4575050 | 55 | 4 | 1996–2005 | 0.68 | M-v | 3 | MPC | 74916 | 2001 $DA_{25}$ |
| 2001 $DQ_{26}$ | 16.3 | 0.15 | 20060922 | 170.22170 | 171.03778 | 28.96334 | 3.15975 | 0.1858990 | 2.3339264 | 68 | 4 | 1999–2006 | 0.63 | M-v | 1 | MPC | 97432 | 2001 $DQ_{26}$ |
| 2001 $DL_{27}$ | 14.9 | 0.15 | 20060922 | 45.52928 | 22.06430 | 112.38679 | 6.01568 | 0.0269686 | 2.9968377 | 59 | 6 | 1996–2006 | 0.66 | M-v | 1 | MPC | 97432 | 2001 $DL_{27}$ |
| 2001 $DL_{28}$ | 16.5 | 0.15 | 20060922 | 206.67069 | 101.82547 | 64.78900 | 3.30606 | 0.1055419 | 2.2995686 | 91 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 77511 | 2001 $DL_{28}$ |
| 2001 $DE_{29}$ | 17.4 | 0.15 | 20060922 | 150.68457 | 173.11846 | 22.58515 | 2.26714 | 0.1523312 | 2.4035998 | 62 | 5 | 1999–2006 | 0.64 | M-v | 1 | MPC | 74917 | 2001 $DE_{29}$ |
| 2001 $DF_{29}$ | 16.4 | 0.15 | 20060922 | 323.40249 | 41.23249 | 43.07307 | 1.82800 | 0.0992108 | 2.1874594 | 125 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 62315 | 2001 $DF_{29}$ |
| 2001 $DA_{30}$ | 16.2 | 0.15 | 20060922 | 202.20504 | 62.57567 | 87.38763 | 3.16091 | 0.1020354 | 2.3532006 | 92 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 77511 | 2001 $DA_{30}$ |
| 2001 $DT_{30}$ | 14.9 | 0.15 | 20060922 | 112.54632 | 337.37766 | 138.42989 | 13.70587 | 0.0974462 | 2.7651529 | 47 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 00011 | 2001 $DT_{30}$ |
| 2001 $DA_{33}$ | 16.2 | 0.15 | 20060922 | 175.83994 | 159.32213 | 11.25916 | 4.73260 | 0.0853676 | 2.3857555 | 44 | 3 | 2001–2005 | 0.64 | M-v | 3 | MPC | 56210 | 2001 $DA_{33}$ |
| 2001 $DG_{33}$ | 16.1 | 0.15 | 20060922 | 195.28070 | 83.64680 | 85.27507 | 3.88291 | 0.2086679 | 2.3400179 | 89 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04146 | 2001 $DG_{33}$ |
| 2001 $DT_{33}$ | 16.3 | 0.15 | 20060922 | 208.85363 | 63.60373 | 129.23464 | 6.57019 | 0.0815991 | 2.2503389 | 42 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 56210 | 2001 $DT_{33}$ |
| 2001 $DX_{33}$ | 17.3 | 0.15 | 20060922 | 233.63495 | 99.77828 | 38.35943 | 3.88458 | 0.1781634 | 2.2960227 | 59 | 4 | 1996–2006 | 0.53 | M-v | 1 | MPC | 04146 | 2001 $DX_{33}$ |
| 2001 $DR_{36}$ | 15.9 | 0.15 | 20060922 | 141.45663 | 348.89059 | 141.29147 | 9.27554 | 0.1029289 | 2.5635347 | 66 | 3 | 2001–2005 | 0.55 | M-v | 3 | MPC | 74918 | 2001 $DR_{36}$ |
| 2001 $DC_{38}$ | 16.4 | 0.15 | 20060922 | 129.43591 | 11.05899 | 190.09367 | 4.22654 | 0.1957204 | 2.4180955 | 118 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 77512 | 2001 $DC_{38}$ |
| 2001 $DX_{38}$ | 15.1 | 0.15 | 20060922 | 49.69091 | 265.24763 | 187.05491 | 4.65286 | 0.1196947 | 3.0766022 | 49 | 4 | 1999–2005 | 0.74 | M-v | 1 | MPC | 97432 | 2001 $DX_{38}$ |
| 2001 $DD_{39}$ | 15.8 | 0.15 | 20060922 | 146.72862 | 265.64428 | 186.99210 | 3.70238 | 0.1654140 | 2.6352017 | 45 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 02029 | 2001 $DD_{39}$ |
| 2001 $DX_{39}$ | 16.9 | 0.15 | 20060922 | 133.94718 | 63.64506 | 140.08403 | 4.46244 | 0.0912862 | 2.3929729 | 66 | 5 | 1995–2006 | 0.64 | M-v | 1 | MPC | 04146 | 2001 $DX_{39}$ |
| 2001 $DW_{40}$ | 15.3 | 0.15 | 20060922 | 134.07818 | 298.34975 | 140.38242 | 7.89395 | 0.1807697 | 2.7743573 | 74 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 02029 | 2001 $DW_{40}$ |
| 2001 $DZ_{40}$ | 12.0 | 0.15 | 20060922 | 254.16605 | 307.81483 | 125.86776 | 6.24715 | 0.0315336 | 5.1105044 | 45 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 04146 | 2001 $DZ_{40}$ |
| 2001 $DE_{42}$ | 16.3 | 0.15 | 20060922 | 211.05749 | 209.21688 | 335.39036 | 7.07147 | 0.0836431 | 2.2378824 | 56 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 84671 | 2001 $DE_{42}$ |
| 2001 $DR_{42}$ | 16.8 | 0.15 | 20060922 | 207.28581 | 9.13477 | 152.24858 | 7.37567 | 0.1229769 | 2.3056560 | 60 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 84671 | 2001 $DR_{42}$ |
| 2001 $DW_{43}$ | 17.2 | 0.15 | 20060922 | 206.02756 | 211.14117 | 293.68699 | 1.29243 | 0.1540236 | 2.3463318 | 58 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04146 | 2001 $DW_{43}$ |
| 2001 $DV_{46}$ | 16.7 | 0.15 | 20060922 | 142.81839 | 255.59534 | 215.40115 | 3.34376 | 0.2001364 | 2.6128770 | 33 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 14928 | 2001 $DV_{46}$ |
| 2001 $DN_{47}$ | 14.2 | 0.15 | 20060922 | 342.69616 | 61.15974 | 308.78691 | 7.98016 | 0.1749722 | 3.9767267 | 81 | 5 | 1998–2006 | 0.50 | M-v | 0 | MPC | 04146 | 2001 $DN_{47}$ |
| 2001 $DZ_{47}$ | 15.1 | 0.15 | 20060922 | 250.39080 | 293.34536 | 348.95972 | 9.42983 | 0.0829516 | 3.0662798 | 30 | 4 | 1996–2006 | 0.51 | M-v | 3 | MPC | 49903 | 2001 $DZ_{47}$ |
| 2001 $DC_{48}$ | 17.0 | 0.15 | 20060922 | 194.81491 | 248.51563 | 285.96472 | 3.13414 | 0.0543437 | 2.3256462 | 62 | 6 | 1999–2006 | 0.46 | M-v | 1 | MPC | 77513 | 2001 $DC_{48}$ |
| 2001 $DH_{50}$ | 15.5 | 0.15 | 20060922 | 123.08781 | 44.27068 | 57.73891 | 8.37043 | 0.0996431 | 2.7199667 | 72 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 02029 | 2001 $DH_{50}$ |
| 2001 $DQ_{50}$ | 15.6 | 0.15 | 20060922 | 64.55584 | 146.30151 | 81.63996 | 12.30560 | 0.1286110 | 2.5746691 | 37 | 4 | 2001–2005 | 0.71 | M-v | 1 | MPC | 74920 | 2001 $DQ_{50}$ |
| 2001 $DT_{50}$ | 16.0 | 0.15 | 20060922 | 149.91608 | 170.55510 | 58.58401 | 7.25324 | 0.0594191 | 2.2775071 | 62 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 77513 | 2001 $DT_{50}$ |
| 2001 $DB_{55}$ | 17.0 | 0.15 | 20060922 | 110.84460 | 300.84435 | 135.43090 | 2.85971 | 0.0613029 | 2.9052847 | 31 | 3 | 2001–2006 | 0.27 | M-v | 2 | MPC | 02029 | 2001 $DB_{55}$ |
| 2001 $DX_{55}$ | 17.6 | 0.15 | 20060922 | 161.60917 | 266.77765 | 336.19337 | 1.31217 | 0.1513792 | 2.2517869 | 26 | 4 | 1999–2006 | 0.34 | M-v | 0 | MPC | 88790 | 2001 $DX_{55}$ |
| 2001 $DY_{55}$ | 17.6 | 0.15 | 20060922 | 150.56322 | 67.20847 | 146.59158 | 1.61871 | 0.1436600 | 2.3491607 | 47 | 4 | 1995–2006 | 0.34 | M-v | 0 | MPC | 77513 | 2001 $DY_{55}$ |
| 2001 $DT_{61}$ | 16.9 | 0.15 | 20060922 | 107.78439 | 312.43230 | 323.28031 | 6.35926 | 0.1027669 | 2.2657362 | 49 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87419 | 2001 $DT_{61}$ |
| 2001 $DX_{61}$ | 16.4 | 0.15 | 20060922 | 35.84637 | 282.61081 | 324.51771 | 3.81656 | 0.2295848 | 2.6329006 | 37 | 4 | 1998–2005 | 0.55 | M-v | 1 | MPC | 35019 | 2001 $DX_{61}$ |
| 2001 $DU_{62}$ | 15.4 | 0.15 | 20060922 | 146.57115 | 273.15512 | 152.18515 | 9.89527 | 0.1363047 | 2.7602269 | 62 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 02029 | 2001 $DU_{62}$ |
| 2001 $DA_{64}$ | 16.8 | 0.15 | 20060922 | 115.47947 | 279.70449 | 323.69391 | 5.51475 | 0.0992232 | 2.3517671 | 55 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 77513 | 2001 $DA_{64}$ |
| 2001 $DW_{64}$ | 16.7 | 0.15 | 20060922 | 126.57973 | 48.00612 | 168.73630 | 5.64388 | 0.0507513 | 2.3839975 | 45 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04146 | 2001 $DW_{64}$ |
| 2001 $DD_{66}$ | 15.7 | 0.15 | 20060922 | 44.64935 | 91.19530 | 161.59909 | 6.18522 | 0.0399810 | 2.5306476 | 60 | 4 | 1997–2005 | 0.59 | M-v | 3 | MPC | 57805 | 2001 $DD_{66}$ |
| 2001 $DN_{66}$ | 16.4 | 0.15 | 20060922 | 275.13978 | 147.80501 | 323.63836 | 4.87768 | 0.0901537 | 2.2435732 | 62 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 56214 | 2001 $DN_{66}$ |
| 2001 $DQ_{66}$ | 16.7 | 0.15 | 20060922 | 215.25421 | 187.76375 | 331.58836 | 3.34971 | 0.1596691 | 2.2937060 | 44 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 74922 | 2001 $DQ_{66}$ |
| 2001 $DH_{67}$ | 16.1 | 0.15 | 20060922 | 289.48786 | 124.51087 | 329.41852 | 4.23910 | 0.1505067 | 2.2345234 | 102 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 56214 | 2001 $DH_{67}$ |
| 2001 $DS_{69}$ | 15.2 | 0.15 | 20060922 | 2.16130 | 140.97232 | 333.72017 | 8.11386 | 0.0986499 | 3.3827414 | 28 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 93930 | 2001 $DS_{69}$ |
| 2001 $DD_{70}$ | 16.0 | 0.15 | 20060922 | 109.78751 | 260.28743 | 338.48280 | 9.84970 | 0.2393640 | 2.4550710 | 83 | 5 | 1997–2006 | 0.51 | M-v | 2 | MPC | 77514 | 2001 $DD_{70}$ |
| 2001 $DQ_{75}$ | 15.2 | 0.15 | 20060922 | 17.18647 | 156.66371 | 303.96597 | 4.03075 | 0.1232195 | 3.2213983 | 64 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 97433 | 2001 $DQ_{75}$ |
| 2001 $DF_{76}$ | 17.1 | 0.15 | 20060922 | 231.56021 | 357.68591 | 152.78359 | 2.45593 | 0.1274926 | 2.2658636 | 38 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 84671 | 2001 $DF_{76}$ |
| 2001 $DH_{76}$ | 17.3 | 0.15 | 20060922 | 234.63928 | 285.47565 | 181.02401 | 4.83870 | 0.1373668 | 2.3573760 | 45 | 4 | 2001–2006 | 0.72 | M-v | 1 | MPC | 77514 | 2001 $DH_{76}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $DK_{76}$ | 15.2 | 0.15 | 20060922 | 43.66530 | 18.57050 | 148.10219 | 8.82524 | 0.1016391 | 2.8776754 | 100 | 3 | 1993–2006 | 0.60 | M-v | 2 | MPC | 04146 | 2001 $DK_{76}$ |
| 2001 $DL_{76}$ | 16.9 | 0.15 | 20060922 | 181.25983 | 27.66861 | 151.47510 | 4.52051 | 0.1338560 | 2.3467736 | 44 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04146 | 2001 $DL_{76}$ |
| 2001 $DJ_{77}$ | 16.7 | 0.15 | 20060922 | 47.52435 | 134.07884 | 146.58676 | 7.59064 | 0.0740393 | 2.4391172 | 41 | 6 | 1994–2006 | 0.54 | M-v | 0 | MPC | 04146 | 2001 $DJ_{77}$ |
| 2001 $DZ_{77}$ | 17.3 | 0.15 | 20060922 | 300.97801 | 74.37201 | 329.70275 | 6.69190 | 0.1074119 | 2.3084996 | 54 | 3 | 2001–2006 | 0.35 | M-v | 3 | MPC | 04147 | 2001 $DZ_{77}$ |
| 2001 $DQ_{78}$ | 16.8 | 0.15 | 20060922 | 278.45526 | 74.00042 | 0.38735 | 6.44809 | 0.0994047 | 2.3480914 | 42 | 3 | 2001–2006 | 0.45 | M-v | 4 | MPC | 04147 | 2001 $DQ_{78}$ |
| 2001 $DQ_{81}$ | 17.1 | 0.15 | 20060922 | 294.33574 | 60.61127 | 334.29412 | 3.50986 | 0.0971179 | 2.3533192 | 49 | 3 | 2001–2005 | 0.42 | M-v | 3 | MPC | 56216 | 2001 $DQ_{81}$ |
| 2001 $DV_{81}$ | 17.8 | 0.15 | 20060922 | 283.97040 | 20.14041 | 4.95814 | 1.35086 | 0.1921668 | 2.3844893 | 69 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 52818 | 2001 $DV_{81}$ |
| 2001 $DB_{82}$ | 17.9 | 0.15 | 20060922 | 126.57585 | 81.79064 | 142.33388 | 3.66789 | 0.1264695 | 2.3771679 | 34 | 5 | 1994–2006 | 0.41 | M-v | 0 | MPC | 84672 | 2001 $DB_{82}$ |
| 2001 $DK_{82}$ | 16.1 | 0.15 | 20060922 | 292.18842 | 105.80484 | 163.36127 | 12.45191 | 0.0614602 | 2.9848072 | 31 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 00014 | 2001 $DK_{82}$ |
| 2001 $DU_{82}$ | 17.5 | 0.15 | 20060922 | 219.92156 | 76.41469 | 3.42670 | 2.35347 | 0.2124597 | 2.4621933 | 32 | 3 | 2001–2005 | 0.37 | M-v | 3 | MPC | 74923 | 2001 $DU_{82}$ |
| 2001 $DM_{83}$ | 17.0 | 0.15 | 20060922 | 94.55357 | 139.53319 | 150.30382 | 5.65830 | 0.1661707 | 2.2936148 | 49 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 77514 | 2001 $DM_{83}$ |
| 2001 $DO_{86}$ | 17.2 | 0.15 | 20060922 | 184.04577 | 77.05958 | 106.83220 | 3.32471 | 0.1139084 | 2.3187239 | 37 | 4 | 2001–2006 | 0.60 | M-v | 2 | MPC | 87419 | 2001 $DO_{86}$ |
| 2001 $DE_{87}$ | 15.6 | 0.15 | 20060922 | 246.09921 | 138.77243 | 336.67201 | 23.72622 | 0.2750232 | 2.3201327 | 62 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04147 | 2001 $DE_{87}$ |
| 2001 $DF_{87}$ | 15.5 | 0.15 | 20060922 | 185.53781 | 31.51614 | 152.33397 | 26.61307 | 0.1822967 | 2.3743264 | 48 | 4 | 2001–2006 | 0.62 | M-v | 2 | MPC | 87419 | 2001 $DF_{87}$ |
| 2001 $DP_{87}$ | 14.6 | 0.15 | 20060922 | 91.05593 | 63.18805 | 156.61308 | 30.72432 | 0.2906921 | 2.6306010 | 214 | 3 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04147 | 2001 $DP_{87}$ |
| 2001 $DQ_{88}$ | 17.5 | 0.15 | 20060922 | 336.34793 | 95.73531 | 358.25351 | 3.86601 | 0.0753744 | 2.1552308 | 59 | 5 | 1993–2006 | 0.47 | M-v | 1 | MPC | 62316 | 2001 $DQ_{88}$ |
| 2001 $DL_{90}$ | 15.5 | 0.15 | 20060922 | 165.35905 | 301.10185 | 279.61558 | 8.66501 | 0.1583175 | 2.3235491 | 55 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 57805 | 2001 $DL_{90}$ |
| 2001 $DA_{91}$ | 16.3 | 0.15 | 20060922 | 27.56817 | 294.55356 | 258.30964 | 7.99210 | 0.2333544 | 2.8643223 | 27 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 00014 | 2001 $DA_{91}$ |
| 2001 $DN_{91}$ | 15.7 | 0.15 | 20060922 | 326.33598 | 43.74481 | 134.38763 | 1.93387 | 0.1047262 | 3.1885322 | 37 | 8 | 1995–2006 | 0.31 | M-v | 0 | MPC | 97433 | 2001 $DN_{91}$ |
| 2001 $DO_{92}$ | 16.7 | 0.15 | 20060922 | 198.83486 | 154.12885 | 23.50080 | 8.40743 | 0.1187408 | 2.2919257 | 59 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 74925 | 2001 $DO_{92}$ |
| 2001 $DU_{92}$ | 12.7 | 0.15 | 20060922 | 288.29705 | 1.60251 | 28.40409 | 7.64922 | 0.0902291 | 5.1904095 | 40 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04147 | 2001 $DU_{92}$ |
| 2001 $DL_{93}$ | 17.8 | 0.15 | 20060922 | 187.46384 | 69.12091 | 133.57559 | 3.96809 | 0.1654142 | 2.2656731 | 20 | 3 | 1998–2006 | 0.38 | M-v | 3 | MPC | 17564 | 2001 $DL_{93}$ |
| 2001 $DG_{98}$ | 14.9 | 0.15 | 20060922 | 293.54168 | 72.00806 | 141.98152 | 26.32953 | 0.1535686 | 3.2280379 | 47 | 4 | 1991–2006 | 0.55 | M-v | 1 | MPC | 48013 | 2001 $DG_{98}$ |
| 2001 $DA_{99}$ | 16.6 | 0.15 | 20060922 | 115.95294 | 233.43533 | 318.86715 | 12.58539 | 0.2346410 | 2.5372333 | 71 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04147 | 2001 $DA_{99}$ |
| 2001 $DN_{99}$ | 16.2 | 0.15 | 20060922 | 178.24733 | 313.36308 | 240.50975 | 4.93056 | 0.1563045 | 2.3339760 | 52 | 5 | 2001–2006 | 0.63 | M-v | 1 | MPC | 87419 | 2001 $DN_{99}$ |
| 2001 $DT_{100}$ | 14.2 | 0.15 | 20060922 | 296.12598 | 270.71465 | 336.88575 | 21.50782 | 0.2976784 | 3.0852158 | 60 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97433 | 2001 $DT_{100}$ |
| 2001 $DN_{107}$ | 16.2 | 0.15 | 20060922 | 190.74270 | 91.39078 | 118.63546 | 7.02106 | 0.0228504 | 2.2130078 | 37 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 57806 | 2001 $DN_{107}$ |
| 2001 EF | 15.3 | 0.15 | 20060922 | 52.12837 | 180.91291 | 90.01423 | 28.95034 | 0.3864265 | 2.7100175 | 78 | 4 | 2000–2006 | 0.48 | M-v | 2 | MPC | 04147 | 2001 EF |
| 2001 $ED_3$ | 17.6 | 0.15 | 20060922 | 220.83698 | 159.18233 | 3.16977 | 7.04205 | 0.0376007 | 2.2938044 | 47 | 5 | 1999–2006 | 0.42 | M-v | 1 | MPC | 74928 | 2001 $ED_3$ |
| 2001 $EG_3$ | 16.2 | 0.15 | 20060922 | 143.86726 | 271.18436 | 149.92521 | 9.52762 | 0.3068268 | 2.7580759 | 145 | 4 | 1999–2006 | 0.65 | M-v | 1 | MPC | 02030 | 2001 $EG_3$ |
| 2001 $EC_4$ | 17.1 | 0.15 | 20060922 | 171.92475 | 42.45228 | 149.24188 | 7.62064 | 0.1371957 | 2.3570902 | 60 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87420 | 2001 $EC_4$ |
| 2001 $ED_4$ | 14.4 | 0.15 | 20060922 | 328.21478 | 40.96300 | 150.60083 | 11.31105 | 0.1262296 | 3.1999621 | 39 | 4 | 1995–2003 | 0.64 | M-v | 1 | MPC | 11930 | 2001 $ED_4$ |
| 2001 $EA_5$ | 16.5 | 0.15 | 20060922 | 168.99574 | 192.31068 | 23.64404 | 3.47686 | 0.1573218 | 2.3216694 | 79 | 5 | 1999–2006 | 0.53 | M-v | 2 | MPC | 57807 | 2001 $EA_5$ |
| 2001 $EY_5$ | 15.3 | 0.15 | 20060922 | 105.97566 | 263.19913 | 27.81220 | 7.14958 | 0.1539233 | 2.3084402 | 125 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 57807 | 2001 $EY_5$ |
| 2001 $EU_7$ | 17.2 | 0.15 | 20060922 | 134.77700 | 107.20727 | 143.41470 | 6.46576 | 0.2622322 | 2.3746768 | 36 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 49908 | 2001 $EU_7$ |
| 2001 $ED_9$ | 16.4 | 0.15 | 20060922 | 178.76051 | 102.71070 | 80.71930 | 2.17739 | 0.2000339 | 2.3669624 | 74 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 87420 | 2001 $ED_9$ |
| 2001 $EY_9$ | 17.3 | 0.15 | 20060922 | 304.49516 | 356.37769 | 117.23038 | 2.27732 | 0.1021005 | 2.1949969 | 105 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 87420 | 2001 $EY_9$ |
| 2001 $ER_{11}$ | 15.7 | 0.15 | 20060922 | 179.40030 | 88.65824 | 112.79931 | 11.72771 | 0.1731070 | 2.3789224 | 49 | 4 | 2001–2006 | 0.68 | M-v | 2 | MPC | 56221 | 2001 $ER_{11}$ |
| 2001 $EF_{14}$ | 15.9 | 0.15 | 20060922 | 227.62478 | 88.66131 | 91.26966 | 8.36592 | 0.0722719 | 2.2405519 | 83 | 5 | 1993–2006 | 0.52 | M-v | 1 | MPC | 56222 | 2001 $EF_{14}$ |
| 2001 $EH_{15}$ | 16.7 | 0.15 | 20060922 | 50.53167 | 261.61645 | 1.33108 | 10.98479 | 0.2052730 | 2.5896897 | 30 | 4 | 1997–2006 | 0.46 | M-v | 1 | MPC | 04147 | 2001 $EH_{15}$ |
| 2001 $EQ_{16}$ | 16.0 | 0.15 | 20060922 | 187.85187 | 226.51115 | 317.74129 | 4.03182 | 0.1099670 | 2.3387184 | 33 | 3 | 2001–2006 | 0.55 | M-v | 4 | MPC | 87420 | 2001 $EQ_{16}$ |
| 2001 $EQ_{17}$ | 16.8 | 0.15 | 20060922 | 271.64029 | 107.03319 | 50.08354 | 24.72744 | 0.2457212 | 2.1834894 | 132 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 87420 | 2001 $EQ_{17}$ |
| 2001 $EX_{17}$ | 16.8 | 0.15 | 20060922 | 208.86787 | 2.84824 | 167.29892 | 2.48906 | 0.1515506 | 2.3127059 | 69 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 57807 | 2001 $EX_{17}$ |
| 2001 $EC_{21}$ | 16.2 | 0.15 | 20060922 | 250.84248 | 169.46240 | 323.52749 | 6.44935 | 0.0475572 | 2.2753339 | 62 | 6 | 1992–2006 | 0.56 | M-v | 1 | MPC | 87420 | 2001 $EC_{21}$ |
| 2001 $ED_{21}$ | 17.2 | 0.15 | 20060922 | 189.15363 | 352.70551 | 208.62714 | 5.26481 | 0.1703949 | 2.2917257 | 48 | 3 | 1999–2006 | 0.39 | M-v | 3 | MPC | 48016 | 2001 $ED_{21}$ |
| 2001 $EJ_{21}$ | 16.3 | 0.15 | 20060922 | 256.18116 | 249.42333 | 253.12150 | 3.71919 | 0.0755177 | 2.2305886 | 53 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 60738 | 2001 $EJ_{21}$ |
| 2001 $EU_{21}$ | 16.0 | 0.15 | 20060922 | 33.28933 | 281.62922 | 274.12165 | 5.97992 | 0.2565929 | 2.8545416 | 56 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 02031 | 2001 $EU_{21}$ |
| 2001 $ES_{22}$ | 16.3 | 0.15 | 20060922 | 95.49009 | 300.16171 | 24.09426 | 5.04096 | 0.2017712 | 2.2625269 | 115 | 5 | 1994–2006 | 0.58 | M-v | 1 | MPC | 04147 | 2001 $ES_{22}$ |
| 2001 $EA_{23}$ | 17.1 | 0.15 | 20060922 | 137.62405 | 22.56797 | 178.84012 | 2.54743 | 0.1388287 | 2.4515646 | 112 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04147 | 2001 $EA_{23}$ |
| 2001 $EB_{24}$ | 16.5 | 0.15 | 20060922 | 147.19353 | 186.35771 | 53.40213 | 4.16566 | 0.1965208 | 2.3904683 | 66 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 62316 | 2001 $EB_{24}$ |
| 2001 $EL_{26}$ | 15.3 | 0.15 | 20060922 | 49.71119 | 302.45831 | 173.38264 | 11.59376 | 0.1133009 | 3.1282888 | 29 | 4 | 1998–2006 | 0.83 | M-v | 2 | MPC | 93934 | 2001 $EL_{26}$ |
| 2001 FN | 16.8 | 0.15 | 20060922 | 166.58363 | 200.73711 | 51.88910 | 6.60047 | 0.1398423 | 2.2344773 | 59 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87420 | 2001 FN |
| 2001 FO | 15.5 | 0.15 | 20060922 | 67.59548 | 68.73024 | 120.82849 | 12.79236 | 0.1290673 | 2.7492339 | 73 | 5 | 1995–2006 | 0.49 | M-v | 0 | MPC | 02031 | 2001 FO |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $FW_{1}$ | 15.7 | 0.15 | 20060922 | 174.26762 | 90.16491 | 127.40118 | 6.79762 | 0.0551379 | 2.2848836 | 58 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 37551 | 2001 $FW_{1}$ |
| 2001 $FL_{3}$ | 16.6 | 0.15 | 20060922 | 214.38847 | 144.04710 | 25.46838 | 3.99998 | 0.1719294 | 2.3124393 | 89 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 56224 | 2001 $FL_{3}$ |
| 2001 $FT_{3}$ | 16.0 | 0.15 | 20060922 | 161.57214 | 162.92055 | 58.01749 | 3.18824 | 0.1655502 | 2.3764935 | 71 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 77518 | 2001 $FT_{3}$ |
| 2001 $FG_{4}$ | 16.5 | 0.15 | 20060922 | 60.00470 | 331.40849 | 343.44014 | 7.11077 | 0.1557884 | 2.2824795 | 52 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 77518 | 2001 $FG_{4}$ |
| 2001 $FH_{5}$ | 16.8 | 0.15 | 20060922 | 165.00565 | 170.45612 | 16.49033 | 1.69717 | 0.1149218 | 2.4057898 | 70 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 77518 | 2001 $FH_{5}$ |
| 2001 $FF_{6}$ | 16.8 | 0.15 | 20060922 | 170.52912 | 89.32255 | 148.06796 | 4.26535 | 0.1831629 | 2.2730302 | 80 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87420 | 2001 $FF_{6}$ |
| 2001 $FL_{7}$ | 17.2 | 0.15 | 20060922 | 302.70880 | 284.20576 | 149.07368 | 7.16651 | 0.1658145 | 2.2904208 | 60 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 03188 | 2001 $FL_{7}$ |
| 2001 $FP_{7}$ | 17.0 | 0.15 | 20060922 | 282.93255 | 218.33804 | 165.95319 | 14.93216 | 0.1068448 | 2.5445422 | 18 | 3 | 2001–2005 | 0.19 | M-v | 3 | MPC | 74933 | 2001 $FP_{7}$ |
| 2001 $FR_{7}$ | 16.8 | 0.15 | 20060922 | 355.90769 | 119.75302 | 135.41083 | 6.18509 | 0.1285733 | 2.8398124 | 24 | 3 | 2001–2006 | 0.22 | M-v | 2 | MPC | 00016 | 2001 $FR_{7}$ |
| 2001 $FJ_{9}$ | 16.4 | 0.15 | 20060922 | 162.07513 | 215.29531 | 26.67345 | 2.55450 | 0.2482823 | 2.2934403 | 55 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 90055 | 2001 $FJ_{9}$ |
| 2001 $FR_{10}$ | 17.0 | 0.15 | 20060922 | 205.20178 | 176.01666 | 334.74404 | 1.11567 | 0.1296847 | 2.3756859 | 43 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04147 | 2001 $FR_{10}$ |
| 2001 $FV_{10}$ | 15.9 | 0.15 | 20060922 | 115.43024 | 262.07470 | 353.48093 | 9.00460 | 0.1776819 | 2.4101503 | 54 | 4 | 1998–2006 | 0.59 | M-v | 3 | MPC | 50527 | 2001 $FV_{10}$ |
| 2001 $FZ_{10}$ | 17.0 | 0.15 | 20060922 | 217.14898 | 274.75125 | 231.22296 | 1.40298 | 0.1395953 | 2.3518006 | 53 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 62317 | 2001 $FZ_{10}$ |
| 2001 $FF_{11}$ | 16.8 | 0.15 | 20060922 | 179.50130 | 2.90399 | 181.95827 | 6.98899 | 0.0847735 | 2.3729854 | 67 | 4 | 1994–2006 | 0.40 | M-v | 1 | MPC | 74934 | 2001 $FF_{11}$ |
| 2001 $FN_{11}$ | 16.3 | 0.15 | 20060922 | 41.06217 | 175.38699 | 28.80442 | 8.18385 | 0.2423087 | 2.8502279 | 61 | 2 | 2001–2006 | 0.57 | M-v | 3 | MPC | 00016 | 2001 $FN_{11}$ |
| 2001 $FK_{12}$ | 15.4 | 0.15 | 20060922 | 110.51838 | 246.00223 | 42.27828 | 3.89539 | 0.1696233 | 2.3403906 | 133 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 62317 | 2001 $FK_{12}$ |
| 2001 $FG_{13}$ | 16.7 | 0.15 | 20060922 | 124.81675 | 209.46954 | 22.61384 | 6.79410 | 0.1036933 | 2.4274881 | 42 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 84673 | 2001 $FG_{13}$ |
| 2001 $FJ_{14}$ | 16.2 | 0.15 | 20060922 | 55.15913 | 92.47089 | 163.73364 | 4.42926 | 0.2277522 | 2.6323062 | 90 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 03189 | 2001 $FJ_{14}$ |
| 2001 $FT_{14}$ | 15.8 | 0.15 | 20060922 | 357.59073 | 8.14427 | 189.61750 | 4.25168 | 0.1757382 | 3.0739596 | 58 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 00016 | 2001 $FT_{14}$ |
| 2001 $FW_{14}$ | 17.9 | 0.15 | 20060922 | 164.50679 | 238.20118 | 313.56416 | 0.76081 | 0.1206557 | 2.4061999 | 48 | 7 | 1995–2006 | 0.47 | M-v | 1 | MPC | 04147 | 2001 $FW_{14}$ |
| 2001 $FR_{17}$ | 16.4 | 0.15 | 20060922 | 136.96936 | 264.61728 | 346.48906 | 2.33028 | 0.1903506 | 2.3754701 | 64 | 5 | 1991–2006 | 0.53 | M-v | 1 | MPC | 56228 | 2001 $FR_{17}$ |
| 2001 $FX_{18}$ | 16.8 | 0.15 | 20060922 | 121.32083 | 285.41997 | 308.10021 | 1.61695 | 0.1531373 | 2.4484091 | 55 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 77519 | 2001 $FX_{18}$ |
| 2001 $FA_{19}$ | 16.2 | 0.15 | 20060922 | 190.91119 | 199.42938 | 353.53721 | 5.04284 | 0.1436191 | 2.3332807 | 63 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 84673 | 2001 $FA_{19}$ |
| 2001 $FF_{19}$ | 15.8 | 0.15 | 20060922 | 21.31127 | 85.26394 | 203.10304 | 12.45162 | 0.2523404 | 2.6724163 | 61 | 3 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04147 | 2001 $FF_{19}$ |
| 2001 $FR_{20}$ | 15.8 | 0.15 | 20060922 | 223.37878 | 148.92651 | 334.03971 | 6.86500 | 0.0939589 | 2.4102050 | 61 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 04147 | 2001 $FR_{20}$ |
| 2001 $FS_{25}$ | 15.7 | 0.15 | 20060922 | 248.94744 | 155.69257 | 324.52473 | 6.50735 | 0.1416242 | 2.3228635 | 101 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 04147 | 2001 $FS_{25}$ |
| 2001 $FN_{26}$ | 16.0 | 0.15 | 20060922 | 196.67509 | 219.86726 | 319.25464 | 4.24527 | 0.1597323 | 2.3473839 | 64 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 56229 | 2001 $FN_{26}$ |
| 2001 $FK_{27}$ | 16.2 | 0.15 | 20060922 | 216.56872 | 187.73905 | 314.18548 | 5.25735 | 0.1721195 | 2.3606299 | 50 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 04147 | 2001 $FK_{27}$ |
| 2001 $FO_{27}$ | 16.1 | 0.15 | 20060922 | 180.15417 | 237.12063 | 335.09699 | 4.57277 | 0.1346723 | 2.3245546 | 62 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 62317 | 2001 $FO_{27}$ |
| 2001 $FU_{28}$ | 15.9 | 0.15 | 20060922 | 46.50263 | 223.86535 | 24.71379 | 8.98026 | 0.2250059 | 2.6902616 | 55 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 03189 | 2001 $FU_{28}$ |
| 2001 $FZ_{31}$ | 17.3 | 0.15 | 20060922 | 224.39114 | 340.29267 | 164.04168 | 7.10047 | 0.0952407 | 2.4031879 | 24 | 3 | 2001–2006 | 0.33 | M-v | 1 | MPC | 88790 | 2001 $FZ_{31}$ |
| 2001 $FT_{32}$ | 16.9 | 0.15 | 20060922 | 137.84929 | 259.80483 | 175.85044 | 23.45511 | 0.0610234 | 1.8857145 | 46 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 02031 | 2001 $FT_{32}$ |
| 2001 $FB_{34}$ | 17.1 | 0.15 | 20060922 | 152.05291 | 212.59792 | 13.70351 | 2.43114 | 0.1656461 | 2.3472938 | 48 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 48019 | 2001 $FB_{34}$ |
| 2001 $FE_{40}$ | 16.4 | 0.15 | 20060922 | 157.15147 | 49.38209 | 173.67781 | 2.40079 | 0.1199958 | 2.3479032 | 80 | 6 | 1999–2006 | 0.48 | M-v | 1 | MPC | 04148 | 2001 $FE_{40}$ |
| 2001 $FG_{40}$ | 16.3 | 0.15 | 20060922 | 108.68966 | 283.69456 | 350.60274 | 1.03061 | 0.1708491 | 2.3731870 | 89 | 6 | 1991–2006 | 0.66 | M-v | 1 | MPC | 87421 | 2001 $FG_{40}$ |
| 2001 $FS_{41}$ | 16.9 | 0.15 | 20060922 | 173.59045 | 101.78102 | 150.74862 | 2.28460 | 0.2897401 | 2.2804417 | 73 | 5 | 1998–2006 | 0.61 | M-v | 1 | MPC | 87421 | 2001 $FS_{41}$ |
| 2001 $FE_{42}$ | 16.8 | 0.15 | 20060922 | 153.69385 | 252.48158 | 318.07103 | 1.60197 | 0.1447136 | 2.3976023 | 64 | 6 | 1995–2006 | 0.41 | M-v | 1 | MPC | 77521 | 2001 $FE_{42}$ |
| 2001 $FE_{45}$ | 16.6 | 0.15 | 20060922 | 155.27172 | 266.81940 | 303.62182 | 3.40812 | 0.1365461 | 2.3875977 | 46 | 5 | 1991–2006 | 0.42 | M-v | 1 | MPC | 74939 | 2001 $FE_{45}$ |
| 2001 $FK_{47}$ | 16.8 | 0.15 | 20060922 | 149.76072 | 204.39444 | 21.11724 | 5.46047 | 0.1882305 | 2.4026058 | 60 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 74939 | 2001 $FK_{47}$ |
| 2001 $FU_{48}$ | 16.9 | 0.15 | 20060922 | 192.61271 | 29.14839 | 188.93656 | 1.71479 | 0.1829609 | 2.2999045 | 84 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 87421 | 2001 $FU_{48}$ |
| 2001 $FJ_{49}$ | 14.6 | 0.15 | 20060922 | 77.51383 | 2.51319 | 329.16037 | 5.83577 | 0.2240370 | 2.3278852 | 152 | 4 | 2001–2006 | 0.60 | M-v | 2 | MPC | 62317 | 2001 $FJ_{49}$ |
| 2001 $FT_{49}$ | 17.0 | 0.15 | 20060922 | 203.36827 | 324.49071 | 192.63512 | 2.01663 | 0.1676787 | 2.3613458 | 61 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 77521 | 2001 $FT_{49}$ |
| 2001 $FA_{52}$ | 16.7 | 0.15 | 20060922 | 212.12880 | 294.03930 | 230.01639 | 5.58136 | 0.1355122 | 2.3343740 | 24 | 4 | 1994–2006 | 0.48 | M-v | 1 | MPC | 62317 | 2001 $FA_{52}$ |
| 2001 $FA_{53}$ | 16.8 | 0.15 | 20060922 | 255.94250 | 149.84087 | 325.16950 | 5.79437 | 0.2155616 | 2.3019337 | 61 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 04148 | 2001 $FA_{53}$ |
| 2001 $FJ_{57}$ | 16.4 | 0.15 | 20060922 | 164.76083 | 186.00905 | 28.17730 | 2.81099 | 0.1579815 | 2.3606044 | 93 | 6 | 1998–2006 | 0.51 | M-v | 1 | MPC | 74085 | 2001 $FJ_{57}$ |
| 2001 $FG_{58}$ | 16.5 | 0.15 | 20060922 | 48.41419 | 269.62814 | 3.22879 | 16.90937 | 0.3328243 | 2.6243040 | 105 | 2 | 2001–2006 | 0.51 | M-v | 3 | MPC | 03189 | 2001 $FG_{58}$ |
| 2001 $FH_{58}$ | 16.6 | 0.15 | 20060922 | 187.76014 | 222.30092 | 44.76951 | 6.82815 | 0.2222199 | 2.1966553 | 39 | 3 | 2001–2005 | 0.74 | M-v | 3 | MPC | 97435 | 2001 $FH_{58}$ |
| 2001 $FJ_{58}$ | 16.2 | 0.15 | 20060922 | 117.73493 | 207.41124 | 80.50210 | 5.14312 | 0.2438915 | 2.3218583 | 37 | 6 | 1997–2006 | 0.64 | M-v | 1 | MPC | 57812 | 2001 $FJ_{58}$ |
| 2001 $FW_{61}$ | 16.9 | 0.15 | 20060922 | 209.69732 | 359.36131 | 149.97833 | 7.95917 | 0.1799330 | 2.3507968 | 41 | 4 | 1994–2006 | 0.65 | M-v | 1 | MPC | 03189 | 2001 $FW_{61}$ |
| 2001 $FA_{62}$ | 16.9 | 0.15 | 20060922 | 231.01175 | 356.45372 | 146.46281 | 6.46285 | 0.0592163 | 2.3129062 | 38 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 84674 | 2001 $FA_{62}$ |
| 2001 $FQ_{62}$ | 16.4 | 0.15 | 20060922 | 154.67818 | 165.95095 | 53.29064 | 3.15332 | 0.1646728 | 2.3694724 | 90 | 5 | 1999–2006 | 0.54 | M-v | 2 | MPC | 87422 | 2001 $FQ_{62}$ |
| 2001 $FG_{63}$ | 16.3 | 0.15 | 20060922 | 154.48961 | 118.57552 | 137.54523 | 6.47015 | 0.1426681 | 2.2816638 | 65 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 84674 | 2001 $FG_{63}$ |
| 2001 $FJ_{63}$ | 16.2 | 0.15 | 20060922 | 154.67770 | 136.25968 | 90.45031 | 3.73422 | 0.1206095 | 2.3449662 | 46 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 57812 | 2001 $FJ_{63}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $FC_{66}$ | 16.5 | 0.15 | 20060922 | 181.93998 | 79.46887 | 104.37937 | 2.39371 | 0.1234296 | 2.3742250 | 57 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87422 | 2001 $FC_{66}$ |
| 2001 $FT_{68}$ | 16.5 | 0.15 | 20060922 | 125.55426 | 155.75652 | 90.62308 | 3.58934 | 0.1464475 | 2.4045960 | 82 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 87422 | 2001 $FT_{68}$ |
| 2001 $FC_{69}$ | 16.4 | 0.15 | 20060922 | 129.58653 | 173.15788 | 55.36732 | 3.29171 | 0.0888112 | 2.4293382 | 68 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 74943 | 2001 $FC_{69}$ |
| 2001 $FW_{69}$ | 17.1 | 0.15 | 20060922 | 203.01734 | 87.40406 | 124.05888 | 4.73639 | 0.1215985 | 2.2644784 | 51 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87422 | 2001 $FW_{69}$ |
| 2001 $FU_{70}$ | 16.4 | 0.15 | 20060922 | 159.08674 | 80.53825 | 128.24108 | 2.75210 | 0.1446300 | 2.3995655 | 56 | 6 | 1999–2006 | 0.50 | M-v | 1 | MPC | 87422 | 2001 $FU_{70}$ |
| 2001 $FJ_{71}$ | 16.6 | 0.15 | 20060922 | 198.45485 | 133.24717 | 66.40686 | 5.64909 | 0.1625011 | 2.3058050 | 53 | 4 | 1994–2006 | 0.41 | M-v | 1 | MPC | 56238 | 2001 $FJ_{71}$ |
| 2001 $FG_{72}$ | 16.3 | 0.15 | 20060922 | 214.98874 | 107.11004 | 89.15725 | 5.16934 | 0.0765944 | 2.2704434 | 42 | 3 | 2001–2006 | 0.63 | M-v | 4 | MPC | 62318 | 2001 $FG_{72}$ |
| 2001 $FN_{74}$ | 16.1 | 0.15 | 20060922 | 178.61285 | 66.57914 | 145.97065 | 5.38639 | 0.1253960 | 2.3444148 | 55 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 57813 | 2001 $FN_{74}$ |
| 2001 $FQ_{74}$ | 17.8 | 0.15 | 20060922 | 240.78067 | 85.56827 | 61.95999 | 4.70878 | 0.1099262 | 2.2928652 | 38 | 3 | 2001–2006 | 0.44 | M-v | 4 | MPC | 00017 | 2001 $FQ_{74}$ |
| 2001 $FY_{74}$ | 17.1 | 0.15 | 20060922 | 173.38639 | 152.08311 | 40.42879 | 4.22880 | 0.1143992 | 2.3825798 | 53 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 77523 | 2001 $FY_{74}$ |
| 2001 $FH_{75}$ | 16.2 | 0.15 | 20060922 | 303.42308 | 56.92755 | 43.55132 | 7.60711 | 0.1283046 | 2.2417386 | 137 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04148 | 2001 $FH_{75}$ |
| 2001 $FO_{75}$ | 16.3 | 0.15 | 20060922 | 170.58316 | 80.92359 | 162.14221 | 6.25710 | 0.0341488 | 2.2473186 | 72 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 87422 | 2001 $FO_{75}$ |
| 2001 $FT_{76}$ | 16.3 | 0.15 | 20060922 | 194.28847 | 36.91565 | 152.90593 | 5.89095 | 0.1718810 | 2.3489254 | 47 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 49914 | 2001 $FT_{76}$ |
| 2001 $FA_{78}$ | 16.0 | 0.15 | 20060922 | 83.04299 | 115.82933 | 151.77355 | 4.55910 | 0.2548523 | 2.5561740 | 153 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 74944 | 2001 $FA_{78}$ |
| 2001 $FS_{78}$ | 17.4 | 0.15 | 20060922 | 196.34927 | 158.79010 | 72.80362 | 4.36914 | 0.1946364 | 2.2627805 | 45 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 87422 | 2001 $FS_{78}$ |
| 2001 $FZ_{81}$ | 16.7 | 0.15 | 20060922 | 233.88068 | 206.94460 | 299.41654 | 5.03099 | 0.1876997 | 2.2960803 | 41 | 3 | 2001–2006 | 0.55 | M-v | 4 | MPC | 56241 | 2001 $FZ_{81}$ |
| 2001 $FJ_{82}$ | 16.1 | 0.15 | 20060922 | 143.32554 | 16.63485 | 230.98578 | 6.38212 | 0.2380360 | 2.3680157 | 59 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 88791 | 2001 $FJ_{82}$ |
| 2001 $FU_{82}$ | 15.8 | 0.15 | 20060922 | 77.22402 | 346.55896 | 219.52847 | 9.92048 | 0.1599359 | 2.6747150 | 68 | 5 | 1994–2005 | 0.58 | M-v | 1 | MPC | 04148 | 2001 $FU_{82}$ |
| 2001 $FZ_{82}$ | 17.4 | 0.15 | 20060922 | 141.54453 | 84.12987 | 142.41267 | 2.41551 | 0.1268119 | 2.3834326 | 54 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87422 | 2001 $FZ_{82}$ |
| 2001 $FT_{83}$ | 18.2 | 0.15 | 20060922 | 133.06625 | 230.64742 | 352.89368 | 1.78183 | 0.1909077 | 2.4203536 | 23 | 3 | 2001–2006 | 0.24 | M-v | 3 | MPC | 88791 | 2001 $FT_{83}$ |
| 2001 $FX_{85}$ | 16.6 | 0.15 | 20060922 | 306.66377 | 148.60840 | 198.08749 | 2.95142 | 0.1392219 | 2.7284842 | 42 | 5 | 1993–2005 | 0.41 | M-v | 1 | MPC | 04148 | 2001 $FX_{85}$ |
| 2001 $FP_{86}$ | 16.5 | 0.15 | 20060922 | 134.28521 | 310.74332 | 221.89165 | 1.70093 | 0.0440654 | 2.5630617 | 58 | 7 | 1994–2005 | 0.62 | M-v | 1 | MPC | 04148 | 2001 $FP_{86}$ |
| 2001 $FK_{87}$ | 16.8 | 0.15 | 20060922 | 147.72220 | 201.01830 | 61.63426 | 5.21257 | 0.1402662 | 2.3070038 | 52 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87422 | 2001 $FK_{87}$ |
| 2001 $FT_{87}$ | 17.0 | 0.15 | 20060922 | 113.08962 | 151.41538 | 103.60867 | 3.97097 | 0.1573472 | 2.4305911 | 58 | 6 | 1999–2006 | 0.51 | M-v | 1 | MPC | 87422 | 2001 $FT_{87}$ |
| 2001 $FO_{88}$ | 18.1 | 0.15 | 20060922 | 326.54660 | 283.30132 | 170.50153 | 3.50166 | 0.0498792 | 2.2268173 | 47 | 4 | 2001–2006 | 0.37 | M-v | 2 | MPC | 97436 | 2001 $FO_{88}$ |
| 2001 $FR_{88}$ | 17.4 | 0.15 | 20060922 | 94.05644 | 230.67784 | 35.87915 | 3.18977 | 0.1514823 | 2.4581075 | 52 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 74945 | 2001 $FR_{88}$ |
| 2001 $FS_{88}$ | 17.2 | 0.15 | 20060922 | 230.28332 | 340.88161 | 160.53819 | 2.49154 | 0.1367010 | 2.3409294 | 74 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 56242 | 2001 $FS_{88}$ |
| 2001 $FC_{89}$ | 17.1 | 0.15 | 20060922 | 62.55992 | 314.69260 | 353.32832 | 6.28491 | 0.1334879 | 2.3671529 | 54 | 5 | 1997–2006 | 0.40 | M-v | 1 | MPC | 77524 | 2001 $FC_{89}$ |
| 2001 $FH_{89}$ | 17.2 | 0.15 | 20060922 | 205.95531 | 95.98028 | 7.84151 | 5.32369 | 0.1178032 | 2.4846465 | 48 | 4 | 1999–2005 | 0.37 | M-v | 0 | MPC | 74946 | 2001 $FH_{89}$ |
| 2001 $FJ_{89}$ | 17.7 | 0.15 | 20060922 | 248.24660 | 91.51867 | 34.80199 | 1.62167 | 0.0620787 | 2.3150053 | 42 | 3 | 2001–2006 | 0.28 | M-v | 3 | MPC | 84675 | 2001 $FJ_{89}$ |
| 2001 $FM_{90}$ | 17.1 | 0.15 | 20060922 | 189.35380 | 168.10720 | 27.83099 | 2.46686 | 0.1501494 | 2.3400924 | 69 | 6 | 1996–2006 | 0.45 | M-v | 1 | MPC | 57814 | 2001 $FM_{90}$ |
| 2001 $FP_{91}$ | 15.4 | 0.15 | 20060922 | 10.25904 | 229.48676 | 1.37540 | 6.52847 | 0.0747420 | 2.7916092 | 62 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 02032 | 2001 $FP_{91}$ |
| 2001 $FK_{93}$ | 13.6 | 0.15 | 20060922 | 331.38131 | 293.70192 | 42.66429 | 8.59117 | 0.1907651 | 2.5453098 | 91 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 77524 | 2001 $FK_{93}$ |
| 2001 $FZ_{93}$ | 16.1 | 0.15 | 20060922 | 254.17991 | 77.86948 | 62.62036 | 7.21085 | 0.0721537 | 2.2648561 | 98 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 56244 | 2001 $FZ_{93}$ |
| 2001 $FM_{95}$ | 16.3 | 0.15 | 20060922 | 146.97376 | 162.81470 | 47.04087 | 7.60593 | 0.1656130 | 2.4222001 | 67 | 4 | 1999–2006 | 0.57 | M-v | 3 | MPC | 87422 | 2001 $FM_{95}$ |
| 2001 $FG_{97}$ | 16.1 | 0.15 | 20060922 | 69.32293 | 150.84233 | 110.38433 | 6.35057 | 0.2296034 | 2.5828468 | 50 | 3 | 2001–2006 | 0.68 | M-v | 2 | MPC | 74947 | 2001 $FG_{97}$ |
| 2001 $FW_{98}$ | 16.2 | 0.15 | 20060922 | 259.62657 | 18.51193 | 93.74143 | 7.13795 | 0.1733535 | 2.2949514 | 69 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 56245 | 2001 $FW_{98}$ |
| 2001 $FS_{99}$ | 17.5 | 0.15 | 20060922 | 179.50373 | 145.30840 | 43.35455 | 2.92318 | 0.1571565 | 2.3682337 | 38 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 57815 | 2001 $FS_{99}$ |
| 2001 $FV_{99}$ | 16.5 | 0.15 | 20060922 | 92.66888 | 218.91676 | 104.89362 | 7.49040 | 0.1269179 | 2.2938029 | 57 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87422 | 2001 $FV_{99}$ |
| 2001 $FU_{101}$ | 16.1 | 0.15 | 20060922 | 39.29378 | 37.96554 | 209.73001 | 13.15440 | 0.2542662 | 2.6928874 | 29 | 3 | 2001–2003 | 0.44 | M-v | 2 | MPC | 48023 | 2001 $FU_{101}$ |
| 2001 $FV_{102}$ | 17.1 | 0.15 | 20060922 | 296.14685 | 274.81129 | 187.26604 | 4.55182 | 0.0987478 | 2.2112173 | 73 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 56246 | 2001 $FV_{102}$ |
| 2001 $FA_{103}$ | 15.4 | 0.15 | 20060922 | 326.90495 | 25.07455 | 176.86272 | 5.23916 | 0.1306976 | 3.1587358 | 33 | 2 | 2001–2003 | 0.44 | M-v | 4 | MPC | 52854 | 2001 $FA_{103}$ |
| 2001 $FY_{103}$ | 17.1 | 0.15 | 20060922 | 107.23989 | 357.49700 | 173.23980 | 13.96365 | 0.1808757 | 2.6357173 | 25 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 88791 | 2001 $FY_{103}$ |
| 2001 $FS_{104}$ | 16.0 | 0.15 | 20060922 | 285.75727 | 68.75074 | 71.24630 | 4.64893 | 0.0770794 | 2.1876873 | 107 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 62318 | 2001 $FS_{104}$ |
| 2001 $FG_{106}$ | 16.7 | 0.15 | 20060922 | 181.90733 | 313.62626 | 289.80161 | 4.56206 | 0.1738929 | 2.2316776 | 53 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 90055 | 2001 $FG_{106}$ |
| 2001 $FY_{106}$ | 16.1 | 0.15 | 20060922 | 181.36170 | 52.90226 | 26.94533 | 4.65321 | 0.2487817 | 2.5842204 | 79 | 4 | 1999–2005 | 0.62 | M-v | 1 | MPC | 77525 | 2001 $FY_{106}$ |
| 2001 $FE_{107}$ | 15.5 | 0.15 | 20060922 | 322.50062 | 214.59670 | 74.04813 | 4.34372 | 0.0407765 | 2.7571591 | 72 | 4 | 2001–2006 | 0.64 | M-v | 0 | MPC | 02033 | 2001 $FE_{107}$ |
| 2001 $FV_{107}$ | 16.6 | 0.15 | 20060922 | 220.58305 | 161.49114 | 331.06881 | 7.60066 | 0.0810681 | 2.3601138 | 49 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 04148 | 2001 $FV_{107}$ |
| 2001 $FM_{108}$ | 16.8 | 0.15 | 20060922 | 239.68413 | 333.52541 | 189.66626 | 3.09318 | 0.0581263 | 2.2586203 | 63 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 84675 | 2001 $FM_{108}$ |
| 2001 $FQ_{108}$ | 16.3 | 0.15 | 20060922 | 110.86884 | 268.49215 | 5.11356 | 4.82019 | 0.1159086 | 2.3509483 | 64 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 50530 | 2001 $FQ_{108}$ |
| 2001 $FF_{109}$ | 15.5 | 0.15 | 20060922 | 20.43654 | 261.12646 | 351.07876 | 8.81188 | 0.0889847 | 2.7332847 | 52 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 02033 | 2001 $FF_{109}$ |
| 2001 $FK_{109}$ | 16.8 | 0.15 | 20060922 | 74.81967 | 71.41586 | 171.12610 | 4.87144 | 0.2378302 | 2.6045477 | 46 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04148 | 2001 $FK_{109}$ |
| 2001 $FV_{109}$ | 16.3 | 0.15 | 20060922 | 193.63728 | 251.79461 | 285.50158 | 1.32957 | 0.1123026 | 2.3678215 | 94 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 56247 | 2001 $FV_{109}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $FX_{109}$ | 16.2 | 0.15 | 20060922 | 123.24172 | 199.30362 | 31.64866 | 5.03540 | 0.1564323 | 2.4564069 | 109 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 74950 | 2001 $FX_{109}$ |
| 2001 $FN_{111}$ | 17.2 | 0.15 | 20060922 | 169.50300 | 258.41871 | 277.11569 | 2.38906 | 0.1152644 | 2.4280741 | 37 | 6 | 1991–2006 | 0.60 | M-v | 1 | MPC | 04148 | 2001 $FN_{111}$ |
| 2001 $FN_{114}$ | 16.2 | 0.15 | 20060922 | 182.26009 | 71.44617 | 133.48822 | 6.89351 | 0.0564314 | 2.3121499 | 39 | 5 | 1995–2006 | 0.65 | M-v | 1 | MPC | 87423 | 2001 $FN_{114}$ |
| 2001 $FG_{115}$ | 17.1 | 0.15 | 20060922 | 147.40105 | 185.25966 | 24.63192 | 2.84018 | 0.1459381 | 2.4189352 | 41 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 74951 | 2001 $FG_{115}$ |
| 2001 $FA_{117}$ | 16.8 | 0.15 | 20060922 | 148.14908 | 228.61056 | 314.76955 | 13.31582 | 0.1323378 | 2.4408581 | 42 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04149 | 2001 $FA_{117}$ |
| 2001 $FC_{117}$ | 15.3 | 0.15 | 20060922 | 173.19750 | 98.61007 | 9.64219 | 11.90758 | 0.0141818 | 2.6356369 | 42 | 3 | 2001–2005 | 0.69 | M-v | 3 | MPC | 56248 | 2001 $FC_{117}$ |
| 2001 $FK_{120}$ | 16.2 | 0.15 | 20060922 | 58.80567 | 209.37296 | 5.25095 | 13.30102 | 0.1489203 | 2.7186943 | 45 | 5 | 1998–2005 | 0.72 | M-v | 1 | MPC | 48024 | 2001 $FK_{120}$ |
| 2001 $FK_{122}$ | 16.9 | 0.15 | 20060922 | 148.32666 | 75.06705 | 174.74272 | 2.49603 | 0.1222203 | 2.3143104 | 53 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 57816 | 2001 $FK_{122}$ |
| 2001 $FS_{122}$ | 16.5 | 0.15 | 20060922 | 128.19437 | 160.23104 | 78.50664 | 3.49622 | 0.1361574 | 2.4171540 | 61 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 74952 | 2001 $FS_{122}$ |
| 2001 $FA_{123}$ | 17.4 | 0.15 | 20060922 | 304.16478 | 106.96328 | 17.81169 | 4.92270 | 0.0995289 | 2.1906653 | 48 | 4 | 2001–2006 | 0.47 | M-v | 3 | MPC | 62319 | 2001 $FA_{123}$ |
| 2001 $FL_{124}$ | 16.5 | 0.15 | 20060922 | 319.27123 | 9.82656 | 73.80639 | 4.17952 | 0.0961704 | 2.2115974 | 127 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 62319 | 2001 $FL_{124}$ |
| 2001 $FV_{124}$ | 16.2 | 0.15 | 20060922 | 140.03555 | 149.03615 | 29.34465 | 15.07549 | 0.0762871 | 2.5402374 | 73 | 3 | 2001–2005 | 0.77 | M-v | 3 | MPC | 77526 | 2001 $FV_{124}$ |
| 2001 $FZ_{124}$ | 16.7 | 0.15 | 20060922 | 118.74297 | 78.78286 | 180.90006 | 7.78595 | 0.0929688 | 2.3801889 | 67 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 87423 | 2001 $FZ_{124}$ |
| 2001 $FQ_{125}$ | 17.0 | 0.15 | 20060922 | 168.51529 | 193.59203 | 6.50366 | 1.72610 | 0.1631170 | 2.3685971 | 55 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 56250 | 2001 $FQ_{125}$ |
| 2001 $FC_{126}$ | 17.2 | 0.15 | 20060922 | 69.37771 | 131.35097 | 189.67629 | 3.61436 | 0.2067415 | 2.3723898 | 65 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87423 | 2001 $FC_{126}$ |
| 2001 $FB_{129}$ | 15.0 | 0.15 | 20060922 | 44.04282 | 118.86276 | 135.37438 | 12.70156 | 0.2358431 | 2.7305023 | 109 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04149 | 2001 $FB_{129}$ |
| 2001 $FC_{129}$ | 16.9 | 0.15 | 20060922 | 136.16021 | 73.23391 | 81.91210 | 4.11482 | 0.1339462 | 2.5866492 | 59 | 4 | 1995–2005 | 0.69 | M-v | 1 | MPC | 77526 | 2001 $FC_{129}$ |
| 2001 $FL_{130}$ | 17.1 | 0.15 | 20060922 | 177.16112 | 4.70392 | 185.14059 | 12.19603 | 0.1270944 | 2.3657982 | 55 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 84676 | 2001 $FL_{130}$ |
| 2001 $FN_{131}$ | 15.9 | 0.15 | 20060922 | 86.58138 | 238.79742 | 292.55935 | 8.11768 | 0.1936089 | 2.7361843 | 24 | 2 | 2001–2005 | 0.50 | M-v | 4 | MPC | 72381 | 2001 $FN_{131}$ |
| 2001 $FH_{133}$ | 16.3 | 0.15 | 20060922 | 147.31462 | 159.22265 | 67.73949 | 3.86858 | 0.1148892 | 2.4001826 | 54 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 74955 | 2001 $FH_{133}$ |
| 2001 $FL_{133}$ | 15.3 | 0.15 | 20060922 | 69.62937 | 335.86427 | 293.31723 | 6.92887 | 0.1713758 | 2.5691583 | 76 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 04149 | 2001 $FL_{133}$ |
| 2001 $FK_{137}$ | 15.4 | 0.15 | 20060922 | 23.02109 | 107.87325 | 49.60291 | 16.97941 | 0.1891845 | 3.1492888 | 37 | 3 | 2001–2006 | 0.71 | M-v | 2 | MPC | 93942 | 2001 $FK_{137}$ |
| 2001 $FN_{137}$ | 15.7 | 0.15 | 20060922 | 206.97802 | 77.14219 | 82.44546 | 6.66059 | 0.1462884 | 2.3880995 | 70 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 77527 | 2001 $FN_{137}$ |
| 2001 $FO_{138}$ | 16.8 | 0.15 | 20060922 | 35.08119 | 8.14117 | 220.00124 | 1.09250 | 0.0223381 | 2.7362888 | 50 | 5 | 1998–2006 | 0.32 | M-v | 0 | MPC | 02033 | 2001 $FO_{138}$ |
| 2001 $FK_{140}$ | 17.1 | 0.15 | 20060922 | 215.05506 | 16.45076 | 132.84869 | 4.10507 | 0.0854843 | 2.3626027 | 43 | 5 | 1994–2006 | 0.65 | M-v | 1 | MPC | 04149 | 2001 $FK_{140}$ |
| 2001 $FE_{142}$ | 17.7 | 0.15 | 20060922 | 225.16106 | 271.46908 | 224.86203 | 1.49653 | 0.1543170 | 2.3552105 | 44 | 4 | 1994–2006 | 0.47 | M-v | 1 | MPC | 04149 | 2001 $FE_{142}$ |
| 2001 $FG_{142}$ | 16.7 | 0.15 | 20060922 | 230.40494 | 288.03646 | 206.32694 | 1.98108 | 0.1670304 | 2.3451109 | 63 | 7 | 1992–2006 | 0.55 | M-v | 1 | MPC | 04149 | 2001 $FG_{142}$ |
| 2001 $FK_{142}$ | 17.2 | 0.15 | 20060922 | 227.03840 | 314.25141 | 216.80253 | 5.79744 | 0.0613326 | 2.2858377 | 52 | 3 | 1999–2006 | 0.49 | M-v | 3 | MPC | 13350 | 2001 $FK_{142}$ |
| 2001 $FZ_{145}$ | 15.5 | 0.15 | 20060922 | 113.59721 | 65.90048 | 220.35631 | 12.90014 | 0.2251934 | 2.3386794 | 123 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87423 | 2001 $FZ_{145}$ |
| 2001 $FM_{146}$ | 16.2 | 0.15 | 20060922 | 96.62914 | 340.02313 | 283.59526 | 6.46755 | 0.0929821 | 2.4223407 | 52 | 5 | 1997–2006 | 0.48 | M-v | 0 | MPC | 77527 | 2001 $FM_{146}$ |
| 2001 $FJ_{147}$ | 16.3 | 0.15 | 20060922 | 160.24601 | 293.67107 | 310.36495 | 7.09484 | 0.0966332 | 2.3010115 | 68 | 5 | 1996–2006 | 0.46 | M-v | 1 | MPC | 74088 | 2001 $FJ_{147}$ |
| 2001 $FM_{149}$ | 16.5 | 0.15 | 20060922 | 188.52910 | 70.59068 | 152.37536 | 6.36570 | 0.1001708 | 2.2885502 | 37 | 4 | 2001–2006 | 0.44 | M-v | 2 | MPC | 84676 | 2001 $FM_{149}$ |
| 2001 $FK_{150}$ | 16.3 | 0.15 | 20060922 | 185.69713 | 214.34552 | 327.79529 | 7.34722 | 0.1623090 | 2.3815078 | 40 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 57818 | 2001 $FK_{150}$ |
| 2001 $FB_{152}$ | 16.9 | 0.15 | 20060922 | 106.23025 | 345.40077 | 214.33249 | 12.67196 | 0.2377699 | 2.5771719 | 30 | 3 | 1997–2005 | 0.55 | M-v | 3 | MPC | 13845 | 2001 $FB_{152}$ |
| 2001 $FX_{153}$ | 17.4 | 0.15 | 20060922 | 204.52817 | 4.80264 | 161.50387 | 2.35013 | 0.1560129 | 2.3246554 | 37 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 74958 | 2001 $FX_{153}$ |
| 2001 $FF_{154}$ | 16.3 | 0.15 | 20060922 | 320.76841 | 214.20044 | 17.72807 | 10.48607 | 0.0266699 | 3.0876299 | 21 | 3 | 1998–2003 | 0.50 | M-v | 3 | MPC | 48026 | 2001 $FF_{154}$ |
| 2001 $FG_{154}$ | 14.2 | 0.15 | 20060922 | 256.07977 | 112.66166 | 69.43602 | 3.86471 | 0.1410341 | 3.9560409 | 43 | 3 | 2001–2006 | 0.28 | M-v | 3 | MPC | 97437 | 2001 $FG_{154}$ |
| 2001 $FR_{155}$ | 16.4 | 0.15 | 20060922 | 116.11827 | 175.69175 | 79.00863 | 3.31669 | 0.1735344 | 2.3808322 | 78 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 97437 | 2001 $FR_{155}$ |
| 2001 $FM_{156}$ | 17.6 | 0.15 | 20060922 | 271.07877 | 14.18039 | 128.02894 | 4.35328 | 0.1007081 | 2.2279223 | 53 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 56254 | 2001 $FM_{156}$ |
| 2001 $FO_{156}$ | 16.1 | 0.15 | 20060922 | 233.74113 | 9.56967 | 124.94581 | 6.50904 | 0.1103178 | 2.3416401 | 76 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 87423 | 2001 $FO_{156}$ |
| 2001 $FP_{157}$ | 16.9 | 0.15 | 20060922 | 129.84731 | 195.37695 | 74.89326 | 6.79592 | 0.2803957 | 2.3749258 | 65 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 87423 | 2001 $FP_{157}$ |
| 2001 $FR_{158}$ | 15.8 | 0.15 | 20060922 | 118.05336 | 323.06174 | 327.99797 | 5.08156 | 0.1717688 | 2.2940059 | 78 | 4 | 1995–2004 | 0.56 | M-v | 1 | MPC | 62320 | 2001 $FR_{158}$ |
| 2001 $FV_{159}$ | 17.2 | 0.15 | 20060922 | 166.34465 | 55.94595 | 157.96729 | 2.02106 | 0.2417975 | 2.3815377 | 27 | 4 | 1996–2006 | 0.39 | M-v | 2 | MPC | 17593 | 2001 $FV_{159}$ |
| 2001 $FY_{160}$ | 16.4 | 0.15 | 20060922 | 220.90645 | 145.55765 | 14.27783 | 7.63908 | 0.1124727 | 2.3406968 | 64 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 56255 | 2001 $FY_{160}$ |
| 2001 $FA_{161}$ | 16.4 | 0.15 | 20060922 | 248.21252 | 80.90359 | 38.84085 | 3.02902 | 0.1258075 | 2.3574651 | 57 | 5 | 1997–2006 | 0.61 | M-v | 1 | MPC | 74089 | 2001 $FA_{161}$ |
| 2001 $FC_{161}$ | 16.1 | 0.15 | 20060922 | 176.07591 | 112.56715 | 76.28328 | 7.53484 | 0.1247482 | 2.3947522 | 46 | 5 | 2001–2006 | 0.67 | M-v | 1 | MPC | 87424 | 2001 $FC_{161}$ |
| 2001 $FL_{161}$ | 16.6 | 0.15 | 20060922 | 203.35978 | 72.70312 | 184.01913 | 2.29392 | 0.2193327 | 2.2134037 | 86 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 90055 | 2001 $FL_{161}$ |
| 2001 $FX_{161}$ | 16.5 | 0.15 | 20060922 | 166.55478 | 223.62441 | 15.71443 | 4.55948 | 0.1587480 | 2.3330544 | 56 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 87424 | 2001 $FX_{161}$ |
| 2001 $FV_{164}$ | 16.7 | 0.15 | 20060922 | 173.04876 | 322.13089 | 262.87066 | 3.24176 | 0.1905735 | 2.3081051 | 43 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 84676 | 2001 $FV_{164}$ |
| 2001 $FR_{168}$ | 16.7 | 0.15 | 20060922 | 151.41330 | 81.97779 | 171.69723 | 5.36654 | 0.1406108 | 2.2983126 | 49 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 04149 | 2001 $FR_{168}$ |
| 2001 $FD_{171}$ | 15.4 | 0.15 | 20060922 | 163.76276 | 147.68885 | 79.07656 | 8.68638 | 0.2045742 | 2.3377032 | 69 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 77529 | 2001 $FD_{171}$ |
| 2001 $FE_{171}$ | 16.2 | 0.15 | 20060922 | 203.28986 | 129.52216 | 53.73964 | 10.92766 | 0.1806469 | 2.3078639 | 54 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 56256 | 2001 $FE_{171}$ |
| 2001 $FN_{171}$ | 17.3 | 0.15 | 20060922 | 119.19151 | 107.51773 | 167.53986 | 0.38608 | 0.1935730 | 2.3620078 | 56 | 5 | 2000–2006 | 0.41 | M-v | 1 | MPC | 50532 | 2001 $FN_{171}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $FS_{175}$ | 16.8 | 0.15 | 20060922 | 228.18065 | 332.36195 | 153.66440 | 22.18143 | 0.2148735 | 2.3407859 | 20 | 2 | 2001–2006 | 0.35 | M-v | 4 | MPC | 03190 | 2001 $FS_{175}$ |
| 2001 $FN_{176}$ | 16.0 | 0.15 | 20060922 | 126.59318 | 99.14810 | 96.71724 | 8.20144 | 0.1671565 | 2.5216372 | 68 | 4 | 2001–2006 | 0.62 | M-v | 2 | MPC | 74961 | 2001 $FN_{176}$ |
| 2001 $FA_{179}$ | 16.0 | 0.15 | 20060922 | 102.70583 | 103.76836 | 63.74257 | 13.16920 | 0.1164077 | 2.6784748 | 25 | 4 | 1999–2005 | 0.34 | M-v | 1 | MPC | 53690 | 2001 $FA_{179}$ |
| 2001 $FL_{180}$ | 16.0 | 0.15 | 20060922 | 338.85042 | 136.28604 | 177.68659 | 16.87477 | 0.1011602 | 2.6533320 | 43 | 5 | 1998–2005 | 0.62 | M-v | 1 | MPC | 84676 | 2001 $FL_{180}$ |
| 2001 $FS_{180}$ | 16.5 | 0.15 | 20060922 | 133.94457 | 168.89763 | 103.18703 | 3.01348 | 0.2224010 | 2.3602690 | 85 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 87424 | 2001 $FS_{180}$ |
| 2001 $FR_{183}$ | 15.4 | 0.15 | 20060922 | 99.32419 | 244.48284 | 186.76987 | 5.41960 | 0.1212481 | 3.1166329 | 53 | 7 | 1996–2006 | 0.59 | M-v | 0 | MPC | 97437 | 2001 $FR_{183}$ |
| 2001 $FS_{184}$ | 16.8 | 0.15 | 20060922 | 12.43309 | 331.72406 | 336.84777 | 3.66068 | 0.1650192 | 2.5680557 | 52 | 5 | 1998–2006 | 0.34 | M-v | 1 | MPC | 04149 | 2001 $FS_{184}$ |
| 2001 $FZ_{185}$ | 16.8 | 0.15 | 20060922 | 247.77295 | 100.46941 | 48.47656 | 5.84045 | 0.1001551 | 2.2476317 | 59 | 4 | 1996–2006 | 0.55 | M-v | 1 | MPC | 56258 | 2001 $FZ_{185}$ |
| 2001 $FM_{186}$ | 16.0 | 0.15 | 20060922 | 131.56690 | 237.64382 | 272.83410 | 5.62766 | 0.1444241 | 2.5953432 | 65 | 4 | 1995–2005 | 0.56 | M-v | 1 | MPC | 87424 | 2001 $FM_{186}$ |
| 2001 $FZ_{186}$ | 15.9 | 0.15 | 20060922 | 277.93228 | 128.27271 | 316.83767 | 6.33356 | 0.0716968 | 2.3446195 | 85 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 04149 | 2001 $FZ_{186}$ |
| 2001 $FQ_{187}$ | 16.6 | 0.15 | 20060922 | 285.45269 | 142.10745 | 165.27157 | 2.30266 | 0.0783889 | 2.8908919 | 35 | 4 | 1998–2006 | 0.33 | M-v | 1 | MPC | 00020 | 2001 $FQ_{187}$ |
| 2001 $FF_{189}$ | 15.9 | 0.15 | 20060922 | 117.01799 | 208.31852 | 71.87541 | 10.76800 | 0.2370122 | 2.3716078 | 38 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87424 | 2001 $FF_{189}$ |
| 2001 $FN_{193}$ | 16.2 | 0.15 | 20060922 | 114.89956 | 112.22634 | 122.68828 | 7.17404 | 0.0738911 | 2.4102413 | 77 | 4 | 2001–2006 | 0.69 | M-v | 1 | MPC | 77530 | 2001 $FN_{193}$ |
| 2001 $FO_{195}$ | 16.9 | 0.15 | 20060922 | 299.25119 | 31.59634 | 32.30696 | 4.99051 | 0.0767555 | 2.3675994 | 46 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 97438 | 2001 $FO_{195}$ |
| 2001 GA | 16.8 | 0.15 | 20060922 | 174.89051 | 228.27703 | 11.88724 | 4.75884 | 0.1048837 | 2.2835561 | 52 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87424 | 2001 GA |
| 2001 GC | 15.8 | 0.15 | 20060922 | 105.88499 | 198.56913 | 91.49526 | 16.08710 | 0.2529840 | 2.4082088 | 56 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 87424 | 2001 GC |
| 2001 GT | 15.5 | 0.15 | 20060922 | 123.33309 | 173.32081 | 79.54277 | 29.58551 | 0.2381164 | 2.3929714 | 108 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 87424 | 2001 GT |
| 2001 $GB_1$ | 15.7 | 0.15 | 20060922 | 209.00288 | 69.13065 | 125.61496 | 22.49345 | 0.1979670 | 2.2836603 | 69 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 84677 | 2001 $GB_1$ |
| 2001 $GU_1$ | 18.1 | 0.15 | 20060922 | 200.84263 | 336.22768 | 186.86823 | 1.86681 | 0.1394985 | 2.3811281 | 27 | 6 | 1997–2006 | 0.36 | M-v | 1 | MPC | 57820 | 2001 $GU_1$ |
| 2001 $GY_2$ | 15.4 | 0.15 | 20060922 | 223.62043 | 349.82323 | 153.96228 | 24.69757 | 0.2121439 | 2.3493368 | 55 | 6 | 1990–2006 | 0.56 | M-v | 1 | MPC | 87424 | 2001 $GY_2$ |
| 2001 $GU_6$ | 15.3 | 0.15 | 20060922 | 84.80651 | 234.62002 | 40.35858 | 22.49536 | 0.0840420 | 2.4330304 | 106 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 87424 | 2001 $GU_6$ |
| 2001 $GL_7$ | 16.4 | 0.15 | 20060922 | 136.24147 | 146.32725 | 116.18210 | 8.81684 | 0.1041802 | 2.3583663 | 46 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 87424 | 2001 $GL_7$ |
| 2001 $GO_7$ | 15.9 | 0.15 | 20060922 | 80.69524 | 127.22722 | 132.73287 | 7.25846 | 0.1564390 | 2.5414848 | 69 | 5 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04149 | 2001 $GO_7$ |
| 2001 $GU_7$ | 16.9 | 0.15 | 20060922 | 134.93240 | 139.04226 | 123.15914 | 6.43560 | 0.1734200 | 2.3716024 | 28 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 68916 | 2001 $GU_7$ |
| 2001 $GZ_7$ | 14.7 | 0.15 | 20060922 | 85.33780 | 341.29528 | 145.45595 | 10.56805 | 0.1260164 | 2.9863836 | 58 | 4 | 2001–2006 | 0.74 | M-v | 1 | MPC | 00021 | 2001 $GZ_7$ |
| 2001 $GE_{10}$ | 17.0 | 0.15 | 20060922 | 140.02659 | 139.80041 | 94.52027 | 5.87930 | 0.1860640 | 2.4048588 | 25 | 3 | 1997–2006 | 0.41 | M-v | 3 | MPC | 48028 | 2001 $GE_{10}$ |
| 2001 $GQ_{10}$ | 17.6 | 0.15 | 20060922 | 162.35082 | 102.40240 | 122.43923 | 3.07938 | 0.1583293 | 2.3601574 | 44 | 5 | 1995–2006 | 0.36 | M-v | 1 | MPC | 48028 | 2001 $GQ_{10}$ |
| 2001 $GX_{10}$ | 16.3 | 0.15 | 20060922 | 233.61652 | 12.82647 | 119.56927 | 3.64991 | 0.1057773 | 2.3691651 | 44 | 6 | 1997–2006 | 0.44 | M-v | 1 | MPC | 04149 | 2001 $GX_{10}$ |
| 2001 $GZ_{10}$ | 17.1 | 0.15 | 20060922 | 155.76398 | 168.52820 | 70.07931 | 7.41505 | 0.2069539 | 2.3564836 | 35 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87424 | 2001 $GZ_{10}$ |
| 2001 $GW_{11}$ | 15.0 | 0.15 | 20010511 | 335.06026 | 188.25665 | 71.14475 | 18.29298 | 0.1927021 | 3.1614460 | 18 | 1 | 59 days | 0.46 | | | MPC | | 2001 $GW_{11}$ |
| 2001 HD | 15.3 | 0.15 | 20060922 | 323.17427 | 273.40784 | 61.26693 | 13.65125 | 0.1219173 | 2.7680545 | 49 | 4 | 2001–2005 | 0.64 | M-v | 1 | MPC | 74967 | 2001 HD |
| 2001 HT | 17.3 | 0.15 | 20060922 | 91.92089 | 218.47366 | 71.26063 | 2.08674 | 0.1782310 | 2.4465877 | 37 | 5 | 1998–2006 | 0.43 | M-v | 0 | MPC | 87424 | 2001 HT |
| 2001 $HZ_1$ | 15.8 | 0.15 | 20060922 | 61.58606 | 84.20694 | 204.61902 | 8.09404 | 0.3012331 | 2.6046045 | 101 | 3 | 2001–2006 | 0.56 | M-v | 1 | MPC | 74967 | 2001 $HZ_1$ |
| 2001 $HC_2$ | 15.8 | 0.15 | 20060922 | 130.62835 | 202.24564 | 37.67151 | 5.12126 | 0.1906141 | 2.4562604 | 82 | 5 | 1997–2006 | 0.50 | M-v | 2 | MPC | 77531 | 2001 $HC_2$ |
| 2001 $HA_3$ | 16.5 | 0.15 | 20060922 | 105.27998 | 25.00298 | 191.55514 | 4.45379 | 0.1976068 | 2.5919691 | 60 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04149 | 2001 $HA_3$ |
| 2001 $HL_3$ | 16.1 | 0.15 | 20060922 | 138.51711 | 242.31170 | 39.06472 | 11.40500 | 0.2394930 | 2.3623248 | 97 | 3 | 2001–2005 | 0.61 | M-v | 2 | MPC | 90056 | 2001 $HL_3$ |
| 2001 $HR_3$ | 16.7 | 0.15 | 20060922 | 198.64133 | 162.36616 | 24.84217 | 6.05887 | 0.1696792 | 2.3493348 | 69 | 3 | 1995–2006 | 0.46 | M-v | 3 | MPC | 13406 | 2001 $HR_3$ |
| 2001 $HP_6$ | 18.3 | 0.15 | 20060922 | 243.11224 | 44.77098 | 131.31160 | 2.72362 | 0.2218322 | 2.2577272 | 20 | 3 | 2001–2006 | 0.40 | M-v | 4 | MPC | 00021 | 2001 $HP_6$ |
| 2001 $HB_9$ | 16.9 | 0.15 | 20060922 | 253.72662 | 138.75783 | 67.75527 | 3.76747 | 0.1338714 | 2.1806420 | 77 | 4 | 2001–2006 | 0.59 | M-v | 3 | MPC | 87424 | 2001 $HB_9$ |
| 2001 $HE_9$ | 16.4 | 0.15 | 20060922 | 177.53469 | 191.19326 | 75.06565 | 5.38387 | 0.1352366 | 2.2590831 | 68 | 6 | 1992–2006 | 0.53 | M-v | 1 | MPC | 87425 | 2001 $HE_9$ |
| 2001 $HW_{10}$ | 17.0 | 0.15 | 20060922 | 154.39716 | 46.89256 | 215.09983 | 1.81987 | 0.1343585 | 2.3166294 | 56 | 5 | 2001–2006 | 0.44 | M-v | 1 | MPC | 90056 | 2001 $HW_{10}$ |
| 2001 $HX_{11}$ | 16.8 | 0.15 | 20060922 | 198.24120 | 299.25040 | 252.87931 | 1.63329 | 0.1657495 | 2.3358248 | 56 | 7 | 1992–2006 | 0.48 | M-v | 1 | MPC | 77531 | 2001 $HX_{11}$ |
| 2001 $HB_{12}$ | 15.8 | 0.15 | 20060922 | 92.11677 | 246.37132 | 1.17347 | 8.66841 | 0.2341492 | 2.5463678 | 101 | 5 | 2001–2006 | 0.43 | M-v | 1 | MPC | 74969 | 2001 $HB_{12}$ |
| 2001 $HN_{12}$ | 15.6 | 0.15 | 20060922 | 91.66920 | 263.32806 | 49.80783 | 7.93218 | 0.3417143 | 2.4484337 | 79 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 87425 | 2001 $HN_{12}$ |
| 2001 $HT_{12}$ | 16.6 | 0.15 | 20060922 | 255.71063 | 62.76883 | 115.16784 | 1.98960 | 0.1459147 | 2.2291035 | 115 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 87425 | 2001 $HT_{12}$ |
| 2001 $HX_{12}$ | 16.4 | 0.15 | 20060922 | 133.66399 | 67.55955 | 190.85424 | 2.26079 | 0.1759092 | 2.4106536 | 99 | 6 | 1991–2006 | 0.64 | M-v | 1 | MPC | 57821 | 2001 $HX_{12}$ |
| 2001 $HD_{13}$ | 16.3 | 0.15 | 20060922 | 164.47247 | 195.25687 | 5.35499 | 0.97208 | 0.1279322 | 2.4327882 | 44 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 77531 | 2001 $HD_{13}$ |
| 2001 $HW_{13}$ | 15.5 | 0.15 | 20060922 | 349.69501 | 52.64338 | 191.25228 | 16.28540 | 0.1664892 | 3.0135441 | 41 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 02034 | 2001 $HW_{13}$ |
| 2001 $HZ_{13}$ | 15.8 | 0.15 | 20060922 | 61.41374 | 95.83975 | 260.47224 | 4.78986 | 0.1581614 | 2.3193263 | 89 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 74090 | 2001 $HZ_{13}$ |
| 2001 $HA_{14}$ | 15.2 | 0.15 | 20060922 | 207.37751 | 153.50142 | 182.99012 | 9.08856 | 0.0879125 | 3.1631907 | 73 | 5 | 1996–2006 | 0.62 | M-v | 1 | MPC | 97438 | 2001 $HA_{14}$ |
| 2001 $HN_{14}$ | 17.2 | 0.15 | 20060922 | 135.05930 | 204.56805 | 26.69003 | 3.70805 | 0.0832289 | 2.3994196 | 49 | 5 | 1995–2006 | 0.38 | M-v | 1 | MPC | 77531 | 2001 $HN_{14}$ |
| 2001 $HV_{14}$ | 17.9 | 0.15 | 20060922 | 147.38299 | 76.33374 | 194.77849 | 5.29748 | 0.0942872 | 2.2651773 | 24 | 3 | 2001–2005 | 0.63 | M-v | 3 | MPC | 50533 | 2001 $HV_{14}$ |
| 2001 $HA_{16}$ | 16.6 | 0.15 | 20060922 | 174.48195 | 333.86557 | 224.34685 | 5.26981 | 0.0745961 | 2.4495520 | 44 | 5 | 1998–2006 | 0.51 | M-v | 2 | MPC | 84679 | 2001 $HA_{16}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $HT_{16}$ | 16.5 | 0.15 | 20060922 | 60.66264 | 206.95057 | 75.72802 | 15.12693 | 0.2375113 | 2.6410141 | 83 | 5 | 1999–2006 | 0.64 | M-v | 1 | MPC | 74970 | 2001 $HT_{16}$ |
| 2001 $HT_{17}$ | 17.0 | 0.15 | 20060922 | 308.90325 | 230.75839 | 211.43539 | 8.90881 | 0.0714682 | 2.3461553 | 76 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 77532 | 2001 $HT_{17}$ |
| 2001 $HP_{19}$ | 16.8 | 0.15 | 20060922 | 301.16958 | 133.48846 | 215.94983 | 5.46974 | 0.0288189 | 2.7491578 | 32 | 4 | 2001–2005 | 0.53 | M-v | 1 | MPC | 56264 | 2001 $HP_{19}$ |
| 2001 $HN_{20}$ | 15.6 | 0.15 | 20060922 | 141.23416 | 9.54906 | 232.78507 | 7.17562 | 0.2217873 | 2.4427634 | 102 | 5 | 1994–2006 | 0.42 | M-v | 1 | MPC | 56265 | 2001 $HN_{20}$ |
| 2001 $HA_{21}$ | 16.6 | 0.15 | 20060922 | 213.05738 | 117.37282 | 41.55218 | 2.97821 | 0.1493662 | 2.3759487 | 43 | 3 | 2001–2006 | 0.51 | M-v | 4 | MPC | 56265 | 2001 $HA_{21}$ |
| 2001 $HB_{21}$ | 16.1 | 0.15 | 20060922 | 100.68428 | 199.55657 | 35.73664 | 12.23969 | 0.1006737 | 2.5481935 | 78 | 6 | 1997–2006 | 0.64 | M-v | 1 | MPC | 04149 | 2001 $HB_{21}$ |
| 2001 $HC_{21}$ | 16.4 | 0.15 | 20060922 | 124.62129 | 177.49599 | 51.76896 | 1.49245 | 0.1156762 | 2.4873294 | 89 | 4 | 2001–2006 | 0.42 | M-v | 2 | MPC | 74970 | 2001 $HC_{21}$ |
| 2001 $HP_{21}$ | 16.9 | 0.15 | 20060922 | 29.56919 | 353.05833 | 215.16258 | 12.40286 | 0.3817426 | 2.9426869 | 91 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 00022 | 2001 $HP_{21}$ |
| 2001 $HC_{22}$ | 16.2 | 0.15 | 20060922 | 124.99690 | 72.85962 | 206.53164 | 6.25495 | 0.1142422 | 2.3662666 | 61 | 5 | 1995–2006 | 0.62 | M-v | 1 | MPC | 48029 | 2001 $HC_{22}$ |
| 2001 $HL_{24}$ | 16.4 | 0.15 | 20060922 | 328.05491 | 273.20975 | 49.50436 | 4.17730 | 0.0891566 | 2.7801438 | 42 | 5 | 1996–2005 | 0.36 | M-v | 0 | MPC | 02034 | 2001 $HL_{24}$ |
| 2001 $HN_{25}$ | 16.3 | 0.15 | 20060922 | 66.28803 | 307.33133 | 29.86940 | 5.90227 | 0.1601730 | 2.3738292 | 68 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 41682 | 2001 $HN_{25}$ |
| 2001 $HK_{26}$ | 16.6 | 0.15 | 20060922 | 304.31569 | 233.83101 | 210.34797 | 20.61595 | 0.2746732 | 2.2954585 | 68 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 60746 | 2001 $HK_{26}$ |
| 2001 $HX_{26}$ | 16.5 | 0.15 | 20060922 | 154.56397 | 145.37913 | 70.60930 | 3.94074 | 0.1417165 | 2.4441276 | 38 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 74971 | 2001 $HX_{26}$ |
| 2001 $HB_{27}$ | 15.9 | 0.15 | 20060922 | 79.78433 | 19.47140 | 199.20715 | 13.88904 | 0.1473371 | 2.7344383 | 67 | 4 | 1998–2005 | 0.73 | M-v | 2 | MPC | 50533 | 2001 $HB_{27}$ |
| 2001 $HP_{30}$ | 16.8 | 0.15 | 20060922 | 333.01606 | 340.55382 | 104.04047 | 7.33928 | 0.0652107 | 2.3121156 | 43 | 5 | 2001–2006 | 0.58 | M-v | 1 | MPC | 03190 | 2001 $HP_{30}$ |
| 2001 $HP_{31}$ | 16.2 | 0.15 | 20060922 | 162.70416 | 76.82584 | 148.40716 | 8.00570 | 0.0966121 | 2.4184137 | 40 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87425 | 2001 $HP_{31}$ |
| 2001 $HT_{32}$ | 15.9 | 0.15 | 20060922 | 41.56768 | 218.99832 | 49.05486 | 10.25605 | 0.1897960 | 2.7105856 | 40 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 03190 | 2001 $HT_{32}$ |
| 2001 $HC_{33}$ | 16.1 | 0.15 | 20060922 | 121.71287 | 349.31728 | 207.06470 | 7.33974 | 0.1686323 | 2.5930732 | 78 | 5 | 1994–2006 | 0.59 | M-v | 1 | MPC | 77532 | 2001 $HC_{33}$ |
| 2001 $HC_{38}$ | 16.0 | 0.15 | 20060922 | 196.56374 | 78.84226 | 94.36519 | 10.45162 | 0.1413404 | 2.4332912 | 46 | 3 | 1999–2004 | 0.71 | M-v | 2 | MPC | 57823 | 2001 $HC_{38}$ |
| 2001 $HN_{40}$ | 15.9 | 0.15 | 20060922 | 88.34585 | 166.61127 | 112.32188 | 8.53404 | 0.3731073 | 2.5549778 | 105 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 74972 | 2001 $HN_{40}$ |
| 2001 $HQ_{40}$ | 15.8 | 0.15 | 20060922 | 71.96125 | 142.82467 | 155.59932 | 13.32323 | 0.3083655 | 2.5546525 | 60 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 87425 | 2001 $HQ_{40}$ |
| 2001 $HA_{41}$ | 15.3 | 0.15 | 20060922 | 94.53507 | 114.61441 | 128.40289 | 14.37606 | 0.1389526 | 2.5841575 | 102 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 77533 | 2001 $HA_{41}$ |
| 2001 $HJ_{41}$ | 15.2 | 0.15 | 20060922 | 105.43573 | 150.28481 | 85.15220 | 20.06676 | 0.2358007 | 2.5732153 | 127 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 87425 | 2001 $HJ_{41}$ |
| 2001 $HZ_{41}$ | 15.5 | 0.15 | 20060922 | 26.64771 | 95.84823 | 177.85351 | 9.18399 | 0.2944059 | 2.7494231 | 45 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04150 | 2001 $HZ_{41}$ |
| 2001 $HA_{42}$ | 17.6 | 0.15 | 20060922 | 176.53603 | 133.76512 | 76.38706 | 4.27015 | 0.1922712 | 2.3541206 | 24 | 4 | 1994–2006 | 0.62 | M-v | 2 | MPC | 13466 | 2001 $HA_{42}$ |
| 2001 $HK_{42}$ | 17.1 | 0.15 | 20060922 | 213.33879 | 27.36090 | 160.57765 | 4.76264 | 0.1687352 | 2.3025950 | 34 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 84681 | 2001 $HK_{42}$ |
| 2001 $HO_{42}$ | 16.3 | 0.15 | 20060922 | 60.34815 | 147.87199 | 132.15055 | 5.12911 | 0.2396950 | 2.5983997 | 56 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 74974 | 2001 $HO_{42}$ |
| 2001 $HW_{42}$ | 16.9 | 0.15 | 20060922 | 213.25380 | 110.25201 | 46.09035 | 5.04817 | 0.1717897 | 2.3739280 | 49 | 3 | 1997–2004 | 0.59 | M-v | 2 | MPC | 56267 | 2001 $HW_{42}$ |
| 2001 $HA_{43}$ | 17.5 | 0.15 | 20060922 | 168.41985 | 173.33333 | 67.34659 | 1.87377 | 0.1881305 | 2.3289740 | 46 | 5 | 1991–2006 | 0.50 | M-v | 0 | MPC | 87425 | 2001 $HA_{43}$ |
| 2001 $HW_{43}$ | 17.2 | 0.15 | 20060922 | 199.86071 | 144.41235 | 33.68075 | 3.09718 | 0.1626945 | 2.3662925 | 54 | 6 | 1995–2006 | 0.44 | M-v | 1 | MPC | 57823 | 2001 $HW_{43}$ |
| 2001 $HZ_{43}$ | 16.8 | 0.15 | 20060922 | 104.69150 | 227.12010 | 48.34106 | 1.85728 | 0.1722017 | 2.4426860 | 70 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 74974 | 2001 $HZ_{43}$ |
| 2001 $HC_{44}$ | 17.5 | 0.15 | 20060922 | 239.22434 | 336.72720 | 206.49430 | 6.06958 | 0.1150182 | 2.2580992 | 29 | 5 | 2001–2006 | 0.43 | M-v | 1 | MPC | 00023 | 2001 $HC_{44}$ |
| 2001 $HD_{47}$ | 15.8 | 0.15 | 20060922 | 57.32298 | 326.49787 | 213.93140 | 27.13604 | 0.1961795 | 2.9318237 | 61 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 00023 | 2001 $HD_{47}$ |
| 2001 $HK_{47}$ | 16.4 | 0.15 | 20060922 | 168.39234 | 259.39176 | 324.35343 | 5.39971 | 0.1988737 | 2.3439655 | 27 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 84681 | 2001 $HK_{47}$ |
| 2001 $HF_{49}$ | 16.1 | 0.15 | 20060922 | 179.32067 | 244.39660 | 274.59661 | 5.26682 | 0.2250015 | 2.4617457 | 58 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04150 | 2001 $HF_{49}$ |
| 2001 $HO_{50}$ | 13.9 | 0.15 | 20060922 | 266.17566 | 224.34190 | 67.07315 | 33.15464 | 0.1456019 | 3.2859863 | 36 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 02034 | 2001 $HO_{50}$ |
| 2001 $HB_{51}$ | 16.5 | 0.15 | 20060922 | 154.36075 | 288.78557 | 265.21510 | 4.33102 | 0.1319210 | 2.4567672 | 46 | 5 | 2001–2006 | 0.63 | M-v | 1 | MPC | 04150 | 2001 $HB_{51}$ |
| 2001 $HG_{51}$ | 15.8 | 0.15 | 20060922 | 132.75107 | 251.83022 | 14.19340 | 7.34975 | 0.1053925 | 2.3555653 | 78 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 57824 | 2001 $HG_{51}$ |
| 2001 $HT_{51}$ | 17.6 | 0.15 | 20060922 | 195.47827 | 159.99994 | 55.77148 | 5.91605 | 0.1623439 | 2.3110105 | 31 | 5 | 1992–2006 | 0.44 | M-v | 1 | MPC | 74975 | 2001 $HT_{51}$ |
| 2001 $HW_{52}$ | 16.4 | 0.15 | 20060922 | 141.35767 | 189.10394 | 77.74133 | 3.38077 | 0.1868980 | 2.3715253 | 106 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90056 | 2001 $HW_{52}$ |
| 2001 $HY_{52}$ | 16.3 | 0.15 | 20060922 | 139.22337 | 208.57469 | 64.68793 | 7.10022 | 0.1224827 | 2.3487130 | 75 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87425 | 2001 $HY_{52}$ |
| 2001 $HD_{53}$ | 16.4 | 0.15 | 20060922 | 198.68922 | 35.24471 | 161.10202 | 3.13451 | 0.1321579 | 2.3577362 | 57 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 77533 | 2001 $HD_{53}$ |
| 2001 $HM_{54}$ | 16.6 | 0.15 | 20060922 | 127.39511 | 165.11695 | 82.90506 | 6.68762 | 0.1876291 | 2.4496975 | 65 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 87425 | 2001 $HM_{54}$ |
| 2001 $HQ_{54}$ | 16.7 | 0.15 | 20060922 | 169.23645 | 197.88144 | 33.86439 | 2.10731 | 0.1426105 | 2.3630842 | 42 | 4 | 2001–2006 | 0.63 | M-v | 2 | MPC | 62321 | 2001 $HQ_{54}$ |
| 2001 $HD_{57}$ | 16.4 | 0.15 | 20060922 | 338.00050 | 155.15065 | 49.41495 | 22.04744 | 0.0581242 | 1.9805426 | 31 | 3 | 2001–2005 | 0.60 | M-v | 3 | MPC | 37619 | 2001 $HD_{57}$ |
| 2001 $HX_{57}$ | 15.0 | 0.15 | 20060922 | 85.42188 | 98.21713 | 81.16857 | 13.21491 | 0.1604587 | 2.7577774 | 37 | 3 | 2001–2005 | 0.62 | M-v | 3 | MPC | 74976 | 2001 $HX_{57}$ |
| 2001 $HL_{59}$ | 16.3 | 0.15 | 20060922 | 169.78972 | 197.41372 | 23.52461 | 5.76830 | 0.0935374 | 2.3621621 | 45 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 97439 | 2001 $HL_{59}$ |
| 2001 $HS_{59}$ | 16.7 | 0.15 | 20060922 | 136.02039 | 267.60296 | 24.29023 | 7.10564 | 0.1416366 | 2.2972448 | 41 | 5 | 1995–2005 | 0.47 | M-v | 1 | MPC | 87426 | 2001 $HS_{59}$ |
| 2001 $HH_{61}$ | 17.2 | 0.15 | 20060922 | 156.17714 | 340.91515 | 230.69320 | 1.71427 | 0.1714519 | 2.4508793 | 28 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 48030 | 2001 $HH_{61}$ |
| 2001 $HR_{61}$ | 16.6 | 0.15 | 20060922 | 142.68067 | 157.58493 | 65.49888 | 4.41860 | 0.1116327 | 2.4550037 | 26 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 84681 | 2001 $HR_{61}$ |
| 2001 $HV_{62}$ | 16.7 | 0.15 | 20060922 | 193.67333 | 244.75314 | 75.85062 | 2.03986 | 0.2509961 | 2.1413876 | 66 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 97439 | 2001 $HV_{62}$ |
| 2001 $HT_{63}$ | 16.5 | 0.15 | 20060922 | 158.36215 | 205.13531 | 5.15336 | 1.94201 | 0.1543184 | 2.4397672 | 57 | 5 | 1997–2006 | 0.46 | M-v | 1 | MPC | 48031 | 2001 $HT_{63}$ |
| 2001 $HR_{65}$ | 16.4 | 0.15 | 20060922 | 159.71247 | 237.79877 | 17.43298 | 2.41487 | 0.1367944 | 2.3352398 | 59 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87426 | 2001 $HR_{65}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $HP_{66}$ | 16.9 | 0.15 | 20060922 | 174.29945 | 36.13351 | 178.59468 | 7.60916 | 0.2252671 | 2.3732292 | 37 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 49919 | 2001 $HP_{66}$ |
| 2001 $HX_{66}$ | 16.8 | 0.15 | 20060922 | 170.87873 | 15.07318 | 221.07199 | 5.90723 | 0.0885847 | 2.3498023 | 47 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 77534 | 2001 $HX_{66}$ |
| 2001 JR | 15.8 | 0.15 | 20060922 | 128.85268 | 149.93163 | 114.81388 | 6.91719 | 0.1547524 | 2.3972455 | 92 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 62322 | 2001 JR |
| 2001 JT | 17.0 | 0.15 | 20060922 | 168.17441 | 190.26729 | 43.98659 | 4.58224 | 0.1302349 | 2.3206816 | 43 | 5 | 2001–2006 | 0.42 | M-v | 0 | MPC | 87426 | 2001 JT |
| 2001 JV | 16.9 | 0.15 | 20060922 | 114.94467 | 55.20251 | 218.82040 | 1.85366 | 0.1635155 | 2.4471472 | 43 | 5 | 1994–2006 | 0.43 | M-v | 1 | MPC | 87426 | 2001 JV |
| 2001 JW | 16.8 | 0.15 | 20060922 | 76.03962 | 69.94361 | 196.90107 | 0.81005 | 0.1681888 | 2.6029671 | 55 | 4 | 1998–2006 | 0.47 | M-v | 0 | MPC | 04150 | 2001 JW |
| 2001 $JC_3$ | 15.8 | 0.15 | 20060922 | 115.29747 | 44.51592 | 148.24527 | 7.70292 | 0.2155204 | 2.6406730 | 110 | 4 | 1992–2006 | 0.54 | M-v | 1 | MPC | 77534 | 2001 $JC_3$ |
| 2001 $JK_3$ | 17.1 | 0.15 | 20060922 | 112.73141 | 152.95930 | 125.19166 | 1.53336 | 0.2100807 | 2.4267619 | 38 | 5 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87426 | 2001 $JK_3$ |
| 2001 $JR_3$ | 16.1 | 0.15 | 20060922 | 210.30371 | 323.97065 | 204.34354 | 9.18322 | 0.1735817 | 2.3884391 | 57 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 84682 | 2001 $JR_3$ |
| 2001 $JA_4$ | 16.8 | 0.15 | 20060922 | 125.00882 | 165.90525 | 101.00328 | 2.67236 | 0.1625730 | 2.4349590 | 46 | 4 | 1998–2006 | 0.41 | M-v | 1 | MPC | 60751 | 2001 $JA_4$ |
| 2001 $JM_5$ | 16.5 | 0.15 | 20060922 | 114.49687 | 211.89402 | 78.85030 | 4.42094 | 0.1828422 | 2.3984055 | 71 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 66185 | 2001 $JM_5$ |
| 2001 $JK_7$ | 16.0 | 0.15 | 20060922 | 221.76134 | 87.62876 | 69.97385 | 12.90752 | 0.1334976 | 2.3747447 | 73 | 4 | 1999–2006 | 0.63 | M-v | 1 | MPC | 56273 | 2001 $JK_7$ |
| 2001 $JP_7$ | 17.3 | 0.15 | 20060922 | 151.51627 | 231.41222 | 71.30178 | 8.43679 | 0.2457416 | 2.2788526 | 42 | 3 | 1998–2005 | 0.57 | M-v | 2 | MPC | 90056 | 2001 $JP_7$ |
| 2001 $JX_7$ | 17.2 | 0.15 | 20060922 | 178.14117 | 177.20094 | 71.60103 | 6.55605 | 0.1326637 | 2.2965006 | 37 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 87426 | 2001 $JX_7$ |
| 2001 $JZ_7$ | 16.3 | 0.15 | 20060922 | 94.56934 | 90.19404 | 208.52626 | 5.90095 | 0.1302278 | 2.4238452 | 55 | 6 | 1997–2006 | 0.50 | M-v | 1 | MPC | 87426 | 2001 $JZ_7$ |
| 2001 $JV_8$ | 16.5 | 0.15 | 20060922 | 137.71544 | 275.21090 | 349.40337 | 4.60590 | 0.1752497 | 2.3619074 | 47 | 6 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87426 | 2001 $JV_8$ |
| 2001 $JQ_9$ | 16.0 | 0.15 | 20060922 | 112.83041 | 181.42673 | 47.98212 | 10.62370 | 0.1271284 | 2.5730629 | 114 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 87426 | 2001 $JQ_9$ |
| 2001 $JT_9$ | 16.5 | 0.15 | 20060922 | 217.10482 | 78.81156 | 93.19594 | 5.74837 | 0.1666725 | 2.3654426 | 44 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 56274 | 2001 $JT_9$ |
| 2001 $JA_{10}$ | 15.8 | 0.15 | 20060922 | 56.80212 | 119.51044 | 177.40000 | 11.92526 | 0.2750431 | 2.6329294 | 34 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 74980 | 2001 $JA_{10}$ |
| 2001 $JO_{10}$ | 17.3 | 0.15 | 20060922 | 180.01071 | 55.24723 | 228.26903 | 6.85375 | 0.2501241 | 2.2424146 | 26 | 3 | 1998–2005 | 0.74 | M-v | 3 | MPC | 14285 | 2001 $JO_{10}$ |
| 2001 KA | 16.7 | 0.15 | 20060922 | 154.94475 | 103.92602 | 140.72823 | 6.84529 | 0.0662173 | 2.3797636 | 60 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87426 | 2001 KA |
| 2001 KD | 15.4 | 0.15 | 20060922 | 65.36570 | 129.84186 | 158.00986 | 35.31728 | 0.2929254 | 2.6763070 | 64 | 3 | 2001–2006 | 0.64 | M-v | 2 | MPC | 74980 | 2001 KD |
| 2001 KN | 16.6 | 0.15 | 20060922 | 100.84674 | 127.48053 | 204.09349 | 1.62941 | 0.2532138 | 2.3665373 | 132 | 7 | 1997–2006 | 0.46 | M-v | 1 | MPC | 97439 | 2001 KN |
| 2001 KP | 15.8 | 0.15 | 20060922 | 257.04638 | 105.39453 | 56.95673 | 23.39759 | 0.1814367 | 2.2679369 | 163 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 66185 | 2001 KP |
| 2001 KS | 15.9 | 0.15 | 20060922 | 87.56950 | 28.58819 | 235.86214 | 4.42108 | 0.0826655 | 2.5542926 | 115 | 4 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04150 | 2001 KS |
| 2001 $KB_1$ | 14.6 | 0.15 | 20060922 | 42.85998 | 88.03786 | 245.90800 | 26.39726 | 0.4104742 | 2.6339979 | 97 | 4 | 1993–2006 | 0.48 | M-v | 1 | MPC | 04150 | 2001 $KB_1$ |
| 2001 $KT_1$ | 15.9 | 0.15 | 20060922 | 37.48087 | 182.58908 | 94.40429 | 16.58468 | 0.1662720 | 2.7039015 | 66 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 03191 | 2001 $KT_1$ |
| 2001 $KK_3$ | 16.3 | 0.15 | 20060922 | 170.95072 | 175.64048 | 48.95422 | 2.18810 | 0.1358475 | 2.3834697 | 82 | 4 | 1993–2006 | 0.51 | M-v | 1 | MPC | 62322 | 2001 $KK_3$ |
| 2001 $KN_3$ | 16.8 | 0.15 | 20060922 | 136.42954 | 174.65971 | 80.74111 | 3.19893 | 0.1817311 | 2.4213992 | 55 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 56276 | 2001 $KN_3$ |
| 2001 $KV_5$ | 15.7 | 0.15 | 20060922 | 114.97751 | 305.44868 | 231.38262 | 13.85203 | 0.0320294 | 2.7442694 | 75 | 4 | 2001–2005 | 0.68 | M-v | 1 | MPC | 62322 | 2001 $KV_5$ |
| 2001 $KY_5$ | 17.2 | 0.15 | 20060922 | 178.66498 | 185.65790 | 65.82556 | 7.32169 | 0.1547769 | 2.3003662 | 47 | 5 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04150 | 2001 $KY_5$ |
| 2001 $KC_6$ | 16.0 | 0.15 | 20060922 | 61.65480 | 179.38628 | 74.27388 | 5.37677 | 0.1719607 | 2.6955992 | 78 | 5 | 1996–2006 | 0.58 | M-v | 0 | MPC | 04150 | 2001 $KC_6$ |
| 2001 $KX_6$ | 16.0 | 0.15 | 20060922 | 77.41372 | 94.66299 | 219.76992 | 2.03956 | 0.2963657 | 2.5260717 | 99 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87426 | 2001 $KX_6$ |
| 2001 $KA_9$ | 16.2 | 0.15 | 20060922 | 72.24498 | 204.63567 | 87.19487 | 5.66179 | 0.2122965 | 2.5714790 | 47 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 74982 | 2001 $KA_9$ |
| 2001 $KV_9$ | 15.0 | 0.15 | 20060922 | 31.18066 | 109.55086 | 65.89739 | 27.65548 | 0.2164110 | 3.1191705 | 55 | 4 | 2000–2006 | 0.68 | M-v | 1 | MPC | 00024 | 2001 $KV_9$ |
| 2001 $KF_{10}$ | 17.0 | 0.15 | 20060922 | 235.12777 | 152.18047 | 111.18579 | 3.62368 | 0.1313098 | 2.1439396 | 91 | 5 | 1994–2006 | 0.66 | M-v | 1 | MPC | 90056 | 2001 $KF_{10}$ |
| 2001 $KD_{13}$ | 17.0 | 0.15 | 20060922 | 174.66048 | 73.63226 | 185.78425 | 4.05157 | 0.2292537 | 2.3238206 | 46 | 6 | 1995–2005 | 0.49 | M-v | 1 | MPC | 97439 | 2001 $KD_{13}$ |
| 2001 $KC_{14}$ | 15.8 | 0.15 | 20060922 | 80.25497 | 127.57499 | 166.58249 | 7.74367 | 0.2676531 | 2.5407528 | 80 | 5 | 1997–2006 | 0.58 | M-v | 2 | MPC | 87426 | 2001 $KC_{14}$ |
| 2001 $KR_{14}$ | 15.8 | 0.15 | 20060922 | 111.15538 | 204.00962 | 84.42673 | 8.38527 | 0.2136339 | 2.4281333 | 50 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 77535 | 2001 $KR_{14}$ |
| 2001 $KZ_{14}$ | 16.0 | 0.15 | 20060922 | 124.55476 | 137.38412 | 124.66338 | 3.34305 | 0.1636380 | 2.4444416 | 41 | 4 | 1998–2006 | 0.42 | M-v | 1 | MPC | 57826 | 2001 $KZ_{14}$ |
| 2001 $KR_{15}$ | 16.7 | 0.15 | 20060922 | 191.40328 | 196.28299 | 84.00943 | 8.50768 | 0.2357898 | 2.2298228 | 84 | 4 | 2001–2005 | 0.53 | M-v | 1 | MPC | 90056 | 2001 $KR_{15}$ |
| 2001 $KT_{15}$ | 16.7 | 0.15 | 20060922 | 217.52209 | 89.99989 | 152.53543 | 2.95175 | 0.1695995 | 2.2229268 | 57 | 6 | 1998–2006 | 0.65 | M-v | 1 | MPC | 90056 | 2001 $KT_{15}$ |
| 2001 $KK_{16}$ | 16.5 | 0.15 | 20060922 | 86.99142 | 157.07262 | 82.66393 | 9.72419 | 0.2398216 | 2.6295030 | 45 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 74983 | 2001 $KK_{16}$ |
| 2001 $KE_{17}$ | 16.7 | 0.15 | 20060922 | 239.01410 | 111.57292 | 143.65512 | 3.84833 | 0.1405577 | 2.1530119 | 80 | 5 | 1992–2006 | 0.64 | M-v | 2 | MPC | 97439 | 2001 $KE_{17}$ |
| 2001 $KB_{19}$ | 15.3 | 0.15 | 20060922 | 27.86711 | 128.92018 | 67.41013 | 4.23229 | 0.1821949 | 3.0833509 | 55 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 04150 | 2001 $KB_{19}$ |
| 2001 $KU_{19}$ | 15.7 | 0.15 | 20060922 | 42.38243 | 121.09903 | 169.25353 | 9.48249 | 0.3414585 | 2.7189068 | 119 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04150 | 2001 $KU_{19}$ |
| 2001 $KD_{20}$ | 16.4 | 0.15 | 20060922 | 107.99669 | 205.40428 | 104.88114 | 5.74127 | 0.2271969 | 2.3906201 | 84 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 87427 | 2001 $KD_{20}$ |
| 2001 $KK_{21}$ | 15.9 | 0.15 | 20060922 | 249.15340 | 336.78871 | 207.70126 | 24.75844 | 0.1523066 | 2.2831039 | 53 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 62323 | 2001 $KK_{21}$ |
| 2001 $KP_{21}$ | 16.5 | 0.15 | 20060922 | 170.77812 | 164.84000 | 64.07777 | 3.44417 | 0.1577200 | 2.3689801 | 67 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 84686 | 2001 $KP_{21}$ |
| 2001 $KU_{22}$ | 16.6 | 0.15 | 20060922 | 201.85543 | 181.39623 | 71.88631 | 5.49176 | 0.0821988 | 2.2413393 | 55 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 87427 | 2001 $KU_{22}$ |
| 2001 $KV_{22}$ | 16.7 | 0.15 | 20060922 | 69.25400 | 45.19956 | 260.17319 | 3.35923 | 0.2534608 | 2.5569582 | 48 | 4 | 2001–2006 | 0.42 | M-v | 0 | MPC | 74984 | 2001 $KV_{22}$ |
| 2001 $KA_{23}$ | 16.3 | 0.15 | 20060922 | 131.47063 | 239.82455 | 54.05078 | 5.39286 | 0.2320322 | 2.3740256 | 59 | 5 | 1976–2006 | 0.60 | M-v | 1 | MPC | 84686 | 2001 $KA_{23}$ |
| 2001 $KM_{23}$ | 16.5 | 0.15 | 20060922 | 138.62453 | 55.12676 | 218.75277 | 3.95286 | 0.1857898 | 2.3890449 | 69 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 90056 | 2001 $KM_{23}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $KB_{25}$ | 15.7 | 0.15 | 20060922 | 345.64569 | 185.84609 | 59.76354 | 4.15742 | 0.1603055 | 3.1023364 | 36 | 3 | 2001–2006 | 0.63 | M-v | 4 | MPC | 02035 | 2001 $KB_{25}$ |
| 2001 $KO_{25}$ | 17.2 | 0.15 | 20060922 | 124.38620 | 170.59567 | 81.12317 | 1.60661 | 0.1401340 | 2.4751576 | 47 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 64914 | 2001 $KO_{25}$ |
| 2001 $KU_{25}$ | 17.0 | 0.15 | 20060922 | 192.33314 | 313.93777 | 254.88288 | 5.25204 | 0.1830444 | 2.3529911 | 38 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 84687 | 2001 $KU_{25}$ |
| 2001 $KT_{27}$ | 16.9 | 0.15 | 20060922 | 163.99444 | 185.91824 | 69.34612 | 3.44917 | 0.1617928 | 2.3572709 | 27 | 3 | 2001–2004 | 0.53 | M-v | 4 | MPC | 88794 | 2001 $KT_{27}$ |
| 2001 $KV_{27}$ | 15.9 | 0.15 | 20060922 | 42.12773 | 199.69483 | 73.39578 | 6.25458 | 0.2727559 | 2.7716190 | 52 | 2 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03191 | 2001 $KV_{27}$ |
| 2001 $KJ_{28}$ | 15.6 | 0.15 | 20060922 | 42.60568 | 244.72815 | 93.13030 | 6.39637 | 0.3029965 | 2.5595251 | 65 | 5 | 2001–2006 | 0.53 | M-v | 0 | MPC | 77536 | 2001 $KJ_{28}$ |
| 2001 $KD_{30}$ | 16.0 | 0.15 | 20060922 | 19.21711 | 306.90260 | 62.60334 | 10.04886 | 0.0954218 | 2.4536894 | 119 | 6 | 1993–2006 | 0.58 | M-v | 1 | MPC | 74092 | 2001 $KD_{30}$ |
| 2001 $KZ_{31}$ | 15.7 | 0.15 | 20060922 | 103.08324 | 120.73351 | 112.37363 | 8.59561 | 0.1542284 | 2.5645463 | 48 | 4 | 2001–2006 | 0.64 | M-v | 2 | MPC | 74985 | 2001 $KZ_{31}$ |
| 2001 $KN_{32}$ | 17.0 | 0.15 | 20060922 | 122.97443 | 49.91052 | 132.72386 | 3.49062 | 0.0522499 | 2.7037776 | 21 | 4 | 1993–2003 | 0.23 | M-v | 0 | MPC | 14304 | 2001 $KN_{32}$ |
| 2001 $KA_{34}$ | 16.8 | 0.15 | 20060922 | 179.69938 | 97.18965 | 104.47534 | 3.01512 | 0.1621630 | 2.4143013 | 36 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 50535 | 2001 $KA_{34}$ |
| 2001 $KU_{34}$ | 16.4 | 0.15 | 20060922 | 148.20907 | 22.78338 | 180.83717 | 5.35787 | 0.1314116 | 2.5250031 | 57 | 4 | 1998–2006 | 0.42 | M-v | 3 | MPC | 04150 | 2001 $KU_{34}$ |
| 2001 $KB_{35}$ | 16.4 | 0.15 | 20060922 | 149.39451 | 67.20442 | 204.92844 | 3.17664 | 0.1448514 | 2.3614451 | 54 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 97439 | 2001 $KB_{35}$ |
| 2001 $KS_{37}$ | 16.6 | 0.15 | 20060922 | 135.68243 | 200.24122 | 95.59427 | 7.43393 | 0.1376275 | 2.3271331 | 54 | 7 | 1991–2006 | 0.45 | M-v | 1 | MPC | 87427 | 2001 $KS_{37}$ |
| 2001 $KU_{38}$ | 15.5 | 0.15 | 20060922 | 79.53663 | 201.59402 | 88.85950 | 12.78787 | 0.2078438 | 2.5581184 | 70 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 87427 | 2001 $KU_{38}$ |
| 2001 $KO_{40}$ | 16.1 | 0.15 | 20060922 | 125.95845 | 172.49264 | 96.99061 | 16.01130 | 0.1654410 | 2.4157738 | 44 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 56281 | 2001 $KO_{40}$ |
| 2001 $KA_{42}$ | 15.5 | 0.15 | 20060922 | 320.24721 | 107.17450 | 178.45659 | 10.26965 | 0.1392512 | 3.0693487 | 40 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 02035 | 2001 $KA_{42}$ |
| 2001 $KH_{42}$ | 16.3 | 0.15 | 20060922 | 100.92366 | 305.27682 | 278.75274 | 3.44770 | 0.1218133 | 2.6541662 | 42 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04150 | 2001 $KH_{42}$ |
| 2001 $KD_{43}$ | 16.0 | 0.15 | 20060922 | 107.26823 | 94.28219 | 191.07999 | 7.17966 | 0.1858743 | 2.4629783 | 72 | 5 | 1993–2006 | 0.55 | M-v | 2 | MPC | 87427 | 2001 $KD_{43}$ |
| 2001 $KH_{47}$ | 16.1 | 0.15 | 20060922 | 171.44956 | 241.44172 | 32.61136 | 5.39473 | 0.1435539 | 2.2775229 | 63 | 5 | 1995–2005 | 0.56 | M-v | 1 | MPC | 90057 | 2001 $KH_{47}$ |
| 2001 $KX_{47}$ | 15.7 | 0.15 | 20060922 | 47.95217 | 61.86640 | 244.54979 | 11.56242 | 0.2322567 | 2.6298834 | 44 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 41686 | 2001 $KX_{47}$ |
| 2001 $KP_{48}$ | 16.5 | 0.15 | 20060922 | 216.49483 | 122.73491 | 127.12426 | 7.07601 | 0.1065138 | 2.2235608 | 80 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 97439 | 2001 $KP_{48}$ |
| 2001 $KZ_{49}$ | 15.3 | 0.15 | 20060922 | 53.70820 | 12.35210 | 254.61058 | 11.61336 | 0.3173342 | 2.7430404 | 66 | 4 | 1993–2006 | 0.58 | M-v | 1 | MPC | 04150 | 2001 $KZ_{49}$ |
| 2001 $KY_{50}$ | 17.7 | 0.15 | 20060922 | 178.16496 | 53.53849 | 193.03993 | 2.53783 | 0.1812022 | 2.3152645 | 33 | 2 | 2001–2005 | 0.32 | M-v | 4 | MPC | 88794 | 2001 $KY_{50}$ |
| 2001 $KA_{51}$ | 14.5 | 0.15 | 20060922 | 305.09536 | 72.61068 | 227.38599 | 12.22013 | 0.2093523 | 3.1381015 | 65 | 4 | 1997–2003 | 0.54 | M-v | 0 | MPC | 57828 | 2001 $KA_{51}$ |
| 2001 $KE_{51}$ | 16.0 | 0.15 | 20060922 | 104.53516 | 348.44184 | 233.45576 | 13.07672 | 0.2039046 | 2.5601319 | 28 | 4 | 1993–2005 | 0.64 | M-v | 3 | MPC | 88794 | 2001 $KE_{51}$ |
| 2001 $KN_{51}$ | 15.9 | 0.15 | 20060922 | 8.97552 | 133.41462 | 93.77472 | 24.40112 | 0.2812775 | 3.0597194 | 50 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 00026 | 2001 $KN_{51}$ |
| 2001 $KU_{51}$ | 15.8 | 0.15 | 20060922 | 49.81735 | 273.20732 | 86.29583 | 6.52808 | 0.1087919 | 2.3716986 | 79 | 4 | 2001–2006 | 0.59 | M-v | 2 | MPC | 62324 | 2001 $KU_{51}$ |
| 2001 $KB_{52}$ | 15.9 | 0.15 | 20060922 | 42.36343 | 138.27692 | 137.61333 | 26.36414 | 0.2642241 | 2.7543422 | 53 | 2 | 2001–2006 | 0.46 | M-v | 2 | MPC | 03191 | 2001 $KB_{52}$ |
| 2001 $KK_{52}$ | 16.1 | 0.15 | 20060922 | 159.33016 | 212.32966 | 19.75676 | 3.12506 | 0.1539256 | 2.3807496 | 37 | 4 | 2001–2006 | 0.67 | M-v | 2 | MPC | 37652 | 2001 $KK_{52}$ |
| 2001 $KM_{52}$ | 16.3 | 0.15 | 20060922 | 234.91524 | 321.64747 | 241.65654 | 7.56646 | 0.1383094 | 2.2299324 | 44 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 84688 | 2001 $KM_{52}$ |
| 2001 $KO_{54}$ | 16.8 | 0.15 | 20060922 | 163.15333 | 133.33380 | 110.11949 | 5.19900 | 0.2102597 | 2.3486117 | 60 | 4 | 2001–2006 | 0.41 | M-v | 2 | MPC | 90057 | 2001 $KO_{54}$ |
| 2001 $KV_{56}$ | 15.8 | 0.15 | 20060922 | 105.39588 | 56.58322 | 162.17124 | 10.65056 | 0.0940237 | 2.5983547 | 79 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04150 | 2001 $KV_{56}$ |
| 2001 $KB_{57}$ | 16.1 | 0.15 | 20060922 | 57.26537 | 134.71163 | 135.00461 | 8.60327 | 0.2721233 | 2.6793497 | 74 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04150 | 2001 $KB_{57}$ |
| 2001 $KG_{57}$ | 14.6 | 0.15 | 20060922 | 99.14717 | 169.76586 | 128.09720 | 27.07236 | 0.1724835 | 2.5430041 | 99 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 62324 | 2001 $KG_{57}$ |
| 2001 $KW_{58}$ | 15.5 | 0.15 | 20060922 | 53.97649 | 56.00498 | 212.90695 | 12.09816 | 0.1141844 | 2.7387840 | 58 | 5 | 2000–2006 | 0.66 | M-v | 1 | MPC | 04150 | 2001 $KW_{58}$ |
| 2001 $KN_{59}$ | 14.4 | 0.15 | 20060922 | 85.40835 | 98.25392 | 232.53739 | 12.77374 | 0.2518913 | 2.5270169 | 67 | 3 | 2001–2005 | 0.67 | M-v | 2 | MPC | 97440 | 2001 $KN_{59}$ |
| 2001 $KK_{60}$ | 16.4 | 0.15 | 20060922 | 229.12795 | 91.88748 | 98.65119 | 7.25137 | 0.0615190 | 2.2689702 | 51 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 62324 | 2001 $KK_{60}$ |
| 2001 $KT_{61}$ | 16.6 | 0.15 | 20060922 | 145.17097 | 166.21712 | 98.08313 | 3.59521 | 0.1730285 | 2.3609774 | 97 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 90057 | 2001 $KT_{61}$ |
| 2001 $KV_{61}$ | 16.2 | 0.15 | 20060922 | 66.45061 | 128.60773 | 165.58350 | 3.96075 | 0.1075694 | 2.5167289 | 68 | 6 | 1994–2006 | 0.50 | M-v | 0 | MPC | 04150 | 2001 $KV_{61}$ |
| 2001 $KX_{61}$ | 16.2 | 0.15 | 20060922 | 71.72004 | 189.77902 | 70.15332 | 10.24119 | 0.1870096 | 2.6269580 | 32 | 3 | 2001–2006 | 0.67 | M-v | 2 | MPC | 74991 | 2001 $KX_{61}$ |
| 2001 $KH_{62}$ | 16.4 | 0.15 | 20060922 | 60.29798 | 108.24707 | 195.34749 | 4.47379 | 0.3306235 | 2.5894652 | 46 | 3 | 2001–2006 | 0.33 | M-v | 1 | MPC | 74991 | 2001 $KH_{62}$ |
| 2001 $KK_{63}$ | 16.8 | 0.15 | 20060922 | 153.35692 | 37.99799 | 191.51361 | 4.72840 | 0.0602469 | 2.4258763 | 34 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87428 | 2001 $KK_{63}$ |
| 2001 $KW_{65}$ | 16.9 | 0.15 | 20060922 | 160.66880 | 184.02691 | 120.40998 | 11.58187 | 0.2700748 | 2.2663115 | 42 | 3 | 2000–2005 | 0.71 | M-v | 3 | MPC | 88795 | 2001 $KW_{65}$ |
| 2001 $KX_{69}$ | 15.9 | 0.15 | 20060922 | 102.62436 | 111.03548 | 106.95271 | 4.94423 | 0.0772165 | 2.6343252 | 65 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 04151 | 2001 $KX_{69}$ |
| 2001 $KF_{70}$ | 16.5 | 0.15 | 20060922 | 158.08147 | 38.59179 | 199.71605 | 6.21879 | 0.1130108 | 2.3841600 | 42 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 62324 | 2001 $KF_{70}$ |
| 2001 $KJ_{70}$ | 16.3 | 0.15 | 20060922 | 67.08913 | 211.39135 | 85.04707 | 15.67140 | 0.1916016 | 2.5707715 | 45 | 3 | 2001–2006 | 0.71 | M-v | 2 | MPC | 87428 | 2001 $KJ_{70}$ |
| 2001 $KG_{71}$ | 16.7 | 0.15 | 20060922 | 126.71189 | 108.86900 | 163.28451 | 2.96808 | 0.1251869 | 2.3926703 | 35 | 4 | 1991–2006 | 0.59 | M-v | 1 | MPC | 62324 | 2001 $KG_{71}$ |
| 2001 $KH_{71}$ | 17.3 | 0.15 | 20060922 | 229.47453 | 134.82289 | 76.87012 | 6.91306 | 0.0866668 | 2.2398633 | 48 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 68920 | 2001 $KH_{71}$ |
| 2001 $KQ_{71}$ | 16.7 | 0.15 | 20060922 | 100.84325 | 192.94338 | 111.57788 | 3.54369 | 0.1829537 | 2.3963490 | 33 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 62324 | 2001 $KQ_{71}$ |
| 2001 $KD_{72}$ | 15.7 | 0.15 | 20060922 | 81.18054 | 2.26052 | 276.00887 | 5.10045 | 0.1829209 | 2.5591039 | 59 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 77539 | 2001 $KD_{72}$ |
| 2001 $KZ_{73}$ | 17.4 | 0.15 | 20060922 | 193.49724 | 146.74835 | 75.83644 | 6.66419 | 0.1471934 | 2.3101980 | 43 | 5 | 2001–2006 | 0.40 | M-v | 1 | MPC | 87428 | 2001 $KZ_{73}$ |
| 2001 $KG_{74}$ | 14.4 | 0.15 | 20060922 | 87.12354 | 250.41421 | 234.71786 | 14.90996 | 0.0186784 | 3.1615883 | 57 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 02035 | 2001 $KG_{74}$ |
| 2001 $KO_{74}$ | 15.5 | 0.15 | 20060922 | 0.35288 | 340.78542 | 247.39793 | 11.00773 | 0.1294737 | 3.0956872 | 39 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 48035 | 2001 $KO_{74}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $KY_{74}$ | 15.4 | 0.15 | 20060922 | 76.54804 | 101.25488 | 205.43887 | 12.43444 | 0.2844022 | 2.6270570 | 83 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 87428 | 2001 $KY_{74}$ |
| 2001 $KJ_{75}$ | 16.7 | 0.15 | 20060922 | 153.37788 | 171.21285 | 110.81735 | 14.03346 | 0.2491186 | 2.3313779 | 44 | 5 | 1999–2005 | 0.51 | M-v | 1 | MPC | 88795 | 2001 $KJ_{75}$ |
| 2001 $LE_{1}$ | 15.6 | 0.15 | 20060922 | 163.83522 | 165.73641 | 89.06274 | 13.38518 | 0.1840881 | 2.3713511 | 62 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87428 | 2001 $LE_{1}$ |
| 2001 $LB_{3}$ | 15.5 | 0.15 | 20060922 | 77.48967 | 5.55247 | 243.72312 | 5.07148 | 0.2805523 | 2.6866129 | 73 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 04151 | 2001 $LB_{3}$ |
| 2001 $LN_{3}$ | 15.9 | 0.15 | 20060922 | 163.75230 | 169.55226 | 84.21492 | 3.63358 | 0.1486169 | 2.3719124 | 105 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87428 | 2001 $LN_{3}$ |
| 2001 $LA_{7}$ | 14.9 | 0.15 | 20060922 | 64.16508 | 85.33669 | 255.87680 | 10.82047 | 0.2626860 | 2.6162053 | 104 | 5 | 2001–2006 | 0.63 | M-v | 1 | MPC | 97440 | 2001 $LA_{7}$ |
| 2001 $LL_{7}$ | 15.3 | 0.15 | 20060922 | 71.59109 | 135.27389 | 158.59254 | 13.52719 | 0.2567739 | 2.6923553 | 102 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87428 | 2001 $LL_{7}$ |
| 2001 $LB_{9}$ | 15.6 | 0.15 | 20060922 | 127.11523 | 8.60933 | 228.30803 | 14.49562 | 0.1238514 | 2.5347069 | 69 | 5 | 1998–2006 | 0.40 | M-v | 2 | MPC | 84691 | 2001 $LB_{9}$ |
| 2001 $LZ_{12}$ | 15.9 | 0.15 | 20060922 | 82.43187 | 36.23941 | 264.98255 | 10.08560 | 0.2655298 | 2.6179989 | 45 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87428 | 2001 $LZ_{12}$ |
| 2001 $LN_{15}$ | 15.0 | 0.15 | 20060922 | 356.92349 | 223.25528 | 82.37806 | 14.72072 | 0.2107038 | 2.7955831 | 41 | 3 | 2001–2003 | 0.48 | M-v | 2 | MPC | 50537 | 2001 $LN_{15}$ |
| 2001 $LH_{16}$ | 16.2 | 0.15 | 20060922 | 189.92876 | 9.06911 | 251.25428 | 5.26674 | 0.1733621 | 2.3143102 | 72 | 4 | 2001–2006 | 0.63 | M-v | 2 | MPC | 87429 | 2001 $LH_{16}$ |
| 2001 $LM_{17}$ | 15.0 | 0.15 | 20060922 | 74.69764 | 199.37713 | 124.40271 | 15.60341 | 0.1693308 | 2.5873607 | 89 | 4 | 1997–2006 | 0.61 | M-v | 1 | MPC | 60766 | 2001 $LM_{17}$ |
| 2001 $LR_{17}$ | 16.0 | 0.15 | 20060922 | 67.89578 | 17.16737 | 282.89513 | 12.00094 | 0.1705094 | 2.6853271 | 56 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 74995 | 2001 $LR_{17}$ |
| 2001 $LX_{18}$ | 14.8 | 0.15 | 20060922 | 65.38625 | 66.45691 | 265.59513 | 11.81734 | 0.2155982 | 2.6218152 | 104 | 6 | 1993–2006 | 0.57 | M-v | 1 | MPC | 62325 | 2001 $LX_{18}$ |
| 2001 $LY_{18}$ | 15.3 | 0.15 | 20060922 | 62.95560 | 100.04206 | 254.42345 | 11.47320 | 0.1636960 | 2.5617177 | 91 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87429 | 2001 $LY_{18}$ |
| 2001 ME | 16.0 | 0.15 | 20060922 | 98.06597 | 122.16029 | 131.99651 | 12.71548 | 0.2270868 | 2.6503594 | 109 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 87429 | 2001 ME |
| 2001 $MB_{2}$ | 15.8 | 0.15 | 20060922 | 76.05506 | 198.73611 | 76.74766 | 11.36839 | 0.1298043 | 2.6985837 | 51 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87429 | 2001 $MB_{2}$ |
| 2001 $MF_{3}$ | 16.1 | 0.15 | 20060922 | 94.17566 | 290.85557 | 336.10696 | 3.37267 | 0.2160736 | 2.6411463 | 47 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 77540 | 2001 $MF_{3}$ |
| 2001 $MM_{3}$ | 14.2 | 0.15 | 20060922 | 59.08137 | 88.77995 | 224.93744 | 29.12860 | 0.4064521 | 2.7520131 | 235 | 4 | 1992–2006 | 0.49 | M-v | 1 | MPC | 87429 | 2001 $MM_{3}$ |
| 2001 $MY_{3}$ | 15.5 | 0.15 | 20060922 | 85.96822 | 339.32650 | 266.06926 | 12.01970 | 0.1534196 | 2.6432635 | 69 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04151 | 2001 $MY_{3}$ |
| 2001 $MD_{6}$ | 15.8 | 0.15 | 20060922 | 42.57302 | 290.76818 | 82.06152 | 3.42816 | 0.2000444 | 2.5437301 | 31 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 50537 | 2001 $MD_{6}$ |
| 2001 $MK_{6}$ | 15.7 | 0.15 | 20060922 | 57.51220 | 166.74259 | 175.20878 | 11.70012 | 0.1444673 | 2.6590235 | 53 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 60767 | 2001 $MK_{6}$ |
| 2001 $MU_{10}$ | 16.1 | 0.15 | 20060922 | 127.64862 | 259.51555 | 46.92273 | 2.48778 | 0.1999122 | 2.4263607 | 92 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 97440 | 2001 $MU_{10}$ |
| 2001 $MK_{11}$ | 15.2 | 0.15 | 20060922 | 32.03691 | 38.46356 | 258.73355 | 7.70188 | 0.2685638 | 2.8031603 | 55 | 2 | 2001–2006 | 0.57 | M-v | 4 | MPC | 03192 | 2001 $MK_{11}$ |
| 2001 $MU_{11}$ | 15.1 | 0.15 | 20060922 | 83.24359 | 169.37734 | 92.72965 | 15.19705 | 0.2436937 | 2.6976257 | 93 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 87429 | 2001 $MU_{11}$ |
| 2001 $MZ_{11}$ | 14.8 | 0.15 | 20060922 | 290.09063 | 294.03271 | 62.41413 | 6.24464 | 0.1318741 | 3.1377059 | 27 | 3 | 2001–2005 | 0.65 | M-v | 3 | MPC | 40158 | 2001 $MZ_{11}$ |
| 2001 $ML_{12}$ | 15.3 | 0.15 | 20060922 | 28.48934 | 350.43411 | 323.85639 | 10.53144 | 0.1173167 | 2.7846578 | 46 | 3 | 2001–2006 | 0.64 | M-v | 3 | MPC | 04151 | 2001 $ML_{12}$ |
| 2001 $MH_{14}$ | 15.6 | 0.15 | 20060922 | 89.78061 | 351.35437 | 309.25180 | 7.06068 | 0.1870105 | 2.6126818 | 57 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 60770 | 2001 $MH_{14}$ |
| 2001 $MD_{15}$ | 16.2 | 0.15 | 20060922 | 108.61811 | 18.65980 | 318.35178 | 6.57289 | 0.2295297 | 2.4574344 | 160 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 97440 | 2001 $MD_{15}$ |
| 2001 $MV_{15}$ | 15.5 | 0.15 | 20060922 | 62.65307 | 1.43811 | 273.65674 | 17.58772 | 0.2527429 | 2.6526584 | 33 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04151 | 2001 $MV_{15}$ |
| 2001 $MN_{17}$ | 15.5 | 0.15 | 20060922 | 217.12547 | 55.43933 | 118.22910 | 22.57629 | 0.0604246 | 2.5523476 | 40 | 5 | 2001–2006 | 0.69 | M-v | 1 | MPC | 87429 | 2001 $MN_{17}$ |
| 2001 $MD_{18}$ | 16.2 | 0.15 | 20060922 | 224.48460 | 138.26941 | 122.95987 | 24.56284 | 0.1896330 | 2.2305701 | 51 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 66186 | 2001 $MD_{18}$ |
| 2001 $MG_{18}$ | 15.5 | 0.15 | 20060922 | 97.67935 | 247.39681 | 46.05834 | 5.74266 | 0.2744244 | 2.5641964 | 57 | 4 | 1997–2006 | 0.44 | M-v | 2 | MPC | 84694 | 2001 $MG_{18}$ |
| 2001 $MM_{20}$ | 15.7 | 0.15 | 20060922 | 113.70251 | 234.23852 | 78.76259 | 6.85238 | 0.1340583 | 2.4483574 | 58 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87429 | 2001 $MM_{20}$ |
| 2001 $MR_{20}$ | 15.9 | 0.15 | 20060922 | 58.05968 | 197.61587 | 80.65073 | 6.01273 | 0.1253742 | 2.7710759 | 45 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 75001 | 2001 $MR_{20}$ |
| 2001 $MY_{20}$ | 15.9 | 0.15 | 20060922 | 130.04586 | 97.16111 | 150.76563 | 11.80922 | 0.2320729 | 2.5581574 | 37 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87429 | 2001 $MY_{20}$ |
| 2001 $MM_{21}$ | 15.9 | 0.15 | 20060922 | 84.64446 | 314.53263 | 312.91600 | 7.00105 | 0.1009945 | 2.7083145 | 41 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 56287 | 2001 $MM_{21}$ |
| 2001 $MS_{25}$ | 15.7 | 0.15 | 20060922 | 24.50550 | 51.21038 | 259.13551 | 7.15313 | 0.1867298 | 2.8115459 | 46 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03192 | 2001 $MS_{25}$ |
| 2001 $MB_{28}$ | 16.3 | 0.15 | 20060922 | 166.74833 | 9.18947 | 239.21454 | 3.56648 | 0.2718983 | 2.4079701 | 62 | 6 | 1998–2006 | 0.45 | M-v | 1 | MPC | 87430 | 2001 $MB_{28}$ |
| 2001 $MF_{28}$ | 16.1 | 0.15 | 20060922 | 104.66534 | 71.10178 | 160.08862 | 8.06462 | 0.1502782 | 2.6212189 | 60 | 4 | 1993–2006 | 0.61 | M-v | 1 | MPC | 04151 | 2001 $MF_{28}$ |
| 2001 $ML_{31}$ | 17.7 | 0.15 | 20010730 | 9.50356 | 4.73368 | 293.23176 | 5.74067 | 0.2440829 | 2.2528872 | 21 | 1 | 57 days | 0.72 | | | MPC | | 2001 $ML_{31}$ |
| 2001 NJ | 14.3 | 0.15 | 20060922 | 93.74425 | 48.53722 | 248.93302 | 31.34583 | 0.2406252 | 2.6481970 | 130 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 84696 | 2001 NJ |
| 2001 NM | 15.9 | 0.15 | 20060922 | 116.66083 | 327.37520 | 268.78851 | 12.49189 | 0.1469044 | 2.5397617 | 47 | 5 | 2001–2006 | 0.67 | M-v | 1 | MPC | 88797 | 2001 NM |
| 2001 $NL_{1}$ | 15.9 | 0.15 | 20060922 | 40.55168 | 286.42717 | 94.89541 | 14.30670 | 0.1806058 | 2.5305369 | 45 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 87430 | 2001 $NL_{1}$ |
| 2001 $NQ_{1}$ | 14.6 | 0.15 | 20060922 | 18.46061 | 115.45530 | 276.18378 | 26.99399 | 0.3469093 | 2.6773171 | 84 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 40164 | 2001 $NQ_{1}$ |
| 2001 $NS_{1}$ | 16.7 | 0.15 | 20060922 | 74.24421 | 55.53742 | 227.60661 | 12.23080 | 0.1789189 | 2.7044691 | 34 | 4 | 1997–2006 | 0.33 | M-v | 1 | MPC | 87430 | 2001 $NS_{1}$ |
| 2001 $NG_{2}$ | 16.9 | 0.15 | 20060922 | 172.20787 | 151.88225 | 112.97329 | 4.67383 | 0.1580392 | 2.3816014 | 30 | 4 | 2000–2005 | 0.34 | M-v | 0 | MPC | 88797 | 2001 $NG_{2}$ |
| 2001 $NK_{2}$ | 16.5 | 0.15 | 20060922 | 59.18126 | 164.08119 | 150.51629 | 5.99302 | 0.1135762 | 2.6551746 | 48 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 77541 | 2001 $NK_{2}$ |
| 2001 $NL_{3}$ | 15.1 | 0.15 | 20060922 | 348.18415 | 266.38307 | 126.39086 | 13.36760 | 0.2130922 | 2.7095935 | 65 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87430 | 2001 $NL_{3}$ |
| 2001 $NQ_{3}$ | 16.4 | 0.15 | 20060922 | 34.50752 | 20.62429 | 314.15214 | 3.86858 | 0.1881942 | 2.7015591 | 38 | 3 | 1999–2006 | 0.51 | M-v | 3 | MPC | 31417 | 2001 $NQ_{3}$ |
| 2001 $NL_{5}$ | 16.3 | 0.15 | 20060922 | 6.29056 | 1.16166 | 356.99569 | 5.44988 | 0.0435979 | 2.7023792 | 48 | 4 | 2001–2006 | 0.36 | M-v | 1 | MPC | 60777 | 2001 $NL_{5}$ |
| 2001 $NN_{5}$ | 16.5 | 0.15 | 20060922 | 14.27110 | 300.62188 | 41.19165 | 5.31707 | 0.1642357 | 2.7669465 | 55 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 75003 | 2001 $NN_{5}$ |
| 2001 $NT_{5}$ | 15.9 | 0.15 | 20060922 | 73.33907 | 177.95457 | 98.35335 | 13.56156 | 0.1983066 | 2.7136973 | 69 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87430 | 2001 $NT_{5}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $NV_{6}$ | 16.8 | 0.15 | 20060922 | 105.23840 | 230.36740 | 104.61579 | 7.17402 | 0.1896990 | 2.4348515 | 57 | 5 | 2001–2006 | 0.42 | M-v | 1 | MPC | 84697 | 2001 $NV_{6}$ |
| 2001 $NY_{6}$ | 15.5 | 0.15 | 20060922 | 327.42054 | 54.76332 | 320.87159 | 9.99792 | 0.2565439 | 3.0174968 | 123 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04151 | 2001 $NY_{6}$ |
| 2001 $NL_{7}$ | 13.8 | 0.15 | 20060922 | 279.64696 | 80.74791 | 302.29771 | 15.94601 | 0.1496467 | 3.0650858 | 106 | 4 | 1996–2004 | 0.59 | M-v | 0 | MPC | 62327 | 2001 $NL_{7}$ |
| 2001 $NU_{8}$ | 16.3 | 0.15 | 20060922 | 110.24205 | 10.27956 | 336.15418 | 6.25502 | 0.1316173 | 2.3838072 | 79 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 02036 | 2001 $NU_{8}$ |
| 2001 $NY_{8}$ | 15.6 | 0.15 | 20060922 | 68.82306 | 216.86045 | 92.56721 | 5.56864 | 0.1481407 | 2.6312195 | 45 | 4 | 1996–2006 | 0.52 | M-v | 1 | MPC | 84698 | 2001 $NY_{8}$ |
| 2001 $NG_{10}$ | 16.3 | 0.15 | 20060922 | 114.44341 | 347.55297 | 343.37888 | 3.94246 | 0.2064149 | 2.4250181 | 100 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 90058 | 2001 $NG_{10}$ |
| 2001 $NA_{11}$ | 17.5 | 0.15 | 20060922 | 152.15178 | 247.94562 | 45.17962 | 1.80855 | 0.1810412 | 2.3824645 | 59 | 4 | 1998–2005 | 0.53 | M-v | 1 | MPC | 90058 | 2001 $NA_{11}$ |
| 2001 $NB_{11}$ | 16.2 | 0.15 | 20060922 | 72.17932 | 169.24767 | 120.82835 | 13.91606 | 0.1233286 | 2.6903216 | 24 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 88797 | 2001 $NB_{11}$ |
| 2001 $NJ_{11}$ | 15.6 | 0.15 | 20060922 | 35.75431 | 169.81703 | 148.61427 | 9.38948 | 0.1949164 | 2.7627460 | 69 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 75003 | 2001 $NJ_{11}$ |
| 2001 $NW_{11}$ | 14.7 | 0.15 | 20060922 | 348.25129 | 35.39262 | 264.46515 | 7.99288 | 0.1170490 | 3.0584732 | 51 | 4 | 2001–2005 | 0.74 | M-v | 2 | MPC | 41691 | 2001 $NW_{11}$ |
| 2001 $NO_{12}$ | 16.8 | 0.15 | 20060922 | 97.96808 | 336.06264 | 285.73259 | 4.26369 | 0.2420624 | 2.6413545 | 36 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 77541 | 2001 $NO_{12}$ |
| 2001 $NF_{13}$ | 16.1 | 0.15 | 20060922 | 61.84052 | 302.00941 | 33.52904 | 3.90992 | 0.3552454 | 2.6161083 | 84 | 6 | 1980–2006 | 0.46 | M-v | 1 | MPC | 77542 | 2001 $NF_{13}$ |
| 2001 $NR_{13}$ | 16.2 | 0.15 | 20060922 | 63.83990 | 306.74312 | 333.48459 | 6.97966 | 0.2944082 | 2.7247193 | 51 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 75004 | 2001 $NR_{13}$ |
| 2001 $NB_{14}$ | 15.9 | 0.15 | 20060922 | 41.44075 | 283.65394 | 336.93975 | 7.67382 | 0.2001911 | 2.9306256 | 61 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 04151 | 2001 $NB_{14}$ |
| 2001 $NF_{15}$ | 16.3 | 0.15 | 20060922 | 260.11430 | 258.12396 | 341.50914 | 5.34974 | 0.1204803 | 2.1993386 | 33 | 5 | 2000–2006 | 0.40 | M-v | 1 | MPC | 90058 | 2001 $NF_{15}$ |
| 2001 $NK_{17}$ | 16.3 | 0.15 | 20060922 | 184.51844 | 175.79949 | 71.27734 | 10.40560 | 0.1808666 | 2.3866972 | 32 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 62327 | 2001 $NK_{17}$ |
| 2001 $NQ_{17}$ | 15.4 | 0.15 | 20060922 | 321.19446 | 301.66666 | 103.65694 | 9.97820 | 0.2027882 | 2.7844781 | 63 | 6 | 1997–2006 | 0.44 | M-v | 1 | MPC | 04151 | 2001 $NQ_{17}$ |
| 2001 $NU_{17}$ | 16.7 | 0.15 | 20060922 | 110.79363 | 307.97893 | 328.08166 | 5.33810 | 0.2358064 | 2.5591049 | 45 | 5 | 1997–2006 | 0.45 | M-v | 1 | MPC | 62327 | 2001 $NU_{17}$ |
| 2001 $NL_{18}$ | 15.4 | 0.15 | 20060922 | 24.17561 | 154.33854 | 196.60932 | 14.86561 | 0.2177608 | 2.7501479 | 117 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04151 | 2001 $NL_{18}$ |
| 2001 $NQ_{18}$ | 13.8 | 0.15 | 20060922 | 294.61539 | 75.07266 | 301.31274 | 9.81362 | 0.2384579 | 3.1198246 | 100 | 3 | 2001–2004 | 0.60 | M-v | 3 | MPC | 62327 | 2001 $NQ_{18}$ |
| 2001 $NO_{20}$ | 15.7 | 0.15 | 20060922 | 43.02615 | 100.46125 | 274.93452 | 12.78384 | 0.1109609 | 2.5900395 | 45 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 84699 | 2001 $NO_{20}$ |
| 2001 $NO_{22}$ | 15.8 | 0.15 | 20060922 | 50.41692 | 112.82177 | 212.84451 | 14.07336 | 0.2426482 | 2.7273143 | 49 | 3 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87431 | 2001 $NO_{22}$ |
| 2001 OL | 15.1 | 0.15 | 20060922 | 24.10609 | 50.99294 | 350.63455 | 2.71390 | 0.2300903 | 2.5495697 | 115 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 43398 | 2001 OL |
| 2001 OX | 16.4 | 0.15 | 20060922 | 206.98218 | 189.57782 | 105.11004 | 6.14477 | 0.1491944 | 2.2193062 | 57 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 97441 | 2001 OX |
| 2001 $OB_{1}$ | 18.2 | 0.15 | 20060922 | 127.43786 | 183.45387 | 128.02407 | 6.47662 | 0.2322656 | 2.4220138 | 28 | 3 | 2001–2005 | 0.54 | M-v | 3 | MPC | 84700 | 2001 $OB_{1}$ |
| 2001 $OZ_{1}$ | 15.3 | 0.15 | 20060922 | 93.30926 | 304.30931 | 339.87143 | 13.79967 | 0.0573073 | 2.6444425 | 93 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 60782 | 2001 $OZ_{1}$ |
| 2001 $OB_{2}$ | 15.8 | 0.15 | 20060922 | 46.04660 | 316.44158 | 327.58585 | 14.44032 | 0.1282388 | 2.8486704 | 51 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 03192 | 2001 $OB_{2}$ |
| 2001 $OC_{2}$ | 15.9 | 0.15 | 20060922 | 84.86884 | 224.01624 | 53.33152 | 5.75728 | 0.1218213 | 2.6957599 | 66 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87431 | 2001 $OC_{2}$ |
| 2001 $OH_{2}$ | 15.9 | 0.15 | 20060922 | 72.56933 | 134.85462 | 179.04971 | 13.24082 | 0.2187402 | 2.6326744 | 42 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 87431 | 2001 $OH_{2}$ |
| 2001 $OL_{2}$ | 16.4 | 0.15 | 20060922 | 142.39570 | 136.03514 | 181.40975 | 14.04990 | 0.2073959 | 2.3747055 | 65 | 3 | 1997–2005 | 0.46 | M-v | 2 | MPC | 90058 | 2001 $OL_{2}$ |
| 2001 $OX_{4}$ | 15.7 | 0.15 | 20060922 | 103.12372 | 53.39763 | 264.27989 | 12.08323 | 0.2282300 | 2.5334713 | 93 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 84702 | 2001 $OX_{4}$ |
| 2001 $OC_{6}$ | 15.6 | 0.15 | 20060922 | 354.88765 | 159.97960 | 187.60264 | 9.64829 | 0.2165748 | 2.9202290 | 87 | 4 | 1995–2006 | 0.47 | M-v | 2 | MPC | 03192 | 2001 $OC_{6}$ |
| 2001 $OX_{6}$ | 15.8 | 0.15 | 20060922 | 114.81633 | 17.37852 | 281.77225 | 5.59742 | 0.2206416 | 2.5413930 | 116 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 90058 | 2001 $OX_{6}$ |
| 2001 $OG_{7}$ | 15.5 | 0.15 | 20060922 | 84.61208 | 46.02844 | 296.27561 | 10.01730 | 0.3093420 | 2.5525450 | 217 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 97441 | 2001 $OG_{7}$ |
| 2001 $OU_{9}$ | 16.5 | 0.15 | 20060922 | 64.92390 | 34.13380 | 307.71643 | 2.50136 | 0.3048049 | 2.5770960 | 23 | 4 | 1997–2006 | 0.50 | M-v | 2 | MPC | 03193 | 2001 $OU_{9}$ |
| 2001 $OV_{9}$ | 17.1 | 0.15 | 20060922 | 117.69585 | 265.49956 | 74.58548 | 2.26990 | 0.1994448 | 2.3792140 | 72 | 3 | 2001–2005 | 0.62 | M-v | 3 | MPC | 97441 | 2001 $OV_{9}$ |
| 2001 $OL_{10}$ | 16.5 | 0.15 | 20060922 | 212.07367 | 141.85168 | 110.65400 | 6.94752 | 0.0976531 | 2.2987606 | 52 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 87431 | 2001 $OL_{10}$ |
| 2001 $OJ_{11}$ | 16.7 | 0.15 | 20060922 | 34.02510 | 300.15745 | 27.09067 | 2.30752 | 0.2575047 | 2.7457032 | 73 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04151 | 2001 $OJ_{11}$ |
| 2001 $OK_{11}$ | 15.9 | 0.15 | 20060922 | 14.45121 | 269.77429 | 79.12469 | 5.82752 | 0.1700753 | 2.7472074 | 91 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 75007 | 2001 $OK_{11}$ |
| 2001 $OQ_{11}$ | 15.6 | 0.15 | 20060922 | 322.81328 | 22.62371 | 4.73934 | 9.61732 | 0.1477697 | 2.8516350 | 50 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04151 | 2001 $OQ_{11}$ |
| 2001 $OW_{11}$ | 15.8 | 0.15 | 20060922 | 41.14192 | 234.21335 | 103.75967 | 7.29771 | 0.3033884 | 2.6969455 | 63 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 87431 | 2001 $OW_{11}$ |
| 2001 $OK_{13}$ | 16.0 | 0.15 | 20060922 | 85.50145 | 242.13632 | 102.79805 | 3.52959 | 0.3324294 | 2.5519860 | 193 | 4 | 1989–2006 | 0.45 | M-v | 1 | MPC | 97441 | 2001 $OK_{13}$ |
| 2001 $OK_{14}$ | 15.8 | 0.15 | 20060922 | 77.71639 | 51.94080 | 308.04213 | 10.07599 | 0.3624811 | 2.5324108 | 184 | 3 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97441 | 2001 $OK_{14}$ |
| 2001 $OW_{14}$ | 14.3 | 0.15 | 20060922 | 41.58964 | 46.69464 | 323.41274 | 12.26431 | 0.2782496 | 2.6657691 | 195 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 77543 | 2001 $OW_{14}$ |
| 2001 $OU_{15}$ | 16.2 | 0.15 | 20060922 | 212.37047 | 168.17141 | 68.24415 | 6.84205 | 0.1750596 | 2.3410055 | 43 | 4 | 2001–2006 | 0.36 | M-v | 2 | MPC | 87431 | 2001 $OU_{15}$ |
| 2001 $OV_{17}$ | 16.5 | 0.15 | 20060922 | 122.72500 | 21.15109 | 216.08910 | 4.34633 | 0.1810322 | 2.6306239 | 32 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 77543 | 2001 $OV_{17}$ |
| 2001 $OZ_{18}$ | 16.5 | 0.15 | 20060922 | 77.25783 | 159.24923 | 166.85007 | 2.13841 | 0.1777920 | 2.5606955 | 44 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 60790 | 2001 $OZ_{18}$ |
| 2001 $OD_{20}$ | 15.1 | 0.15 | 20060922 | 20.52857 | 94.23180 | 275.54985 | 7.77370 | 0.1974105 | 2.7473384 | 109 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 40180 | 2001 $OD_{20}$ |
| 2001 $OL_{22}$ | 15.7 | 0.15 | 20060922 | 310.78450 | 217.55105 | 176.53643 | 10.32611 | 0.2402099 | 2.9787497 | 42 | 4 | 1991–2006 | 0.39 | M-v | 2 | MPC | 04151 | 2001 $OL_{22}$ |
| 2001 $OB_{28}$ | 16.7 | 0.15 | 20060922 | 255.44714 | 244.94318 | 353.49554 | 6.72416 | 0.1370658 | 2.2230806 | 35 | 6 | 1998–2006 | 0.49 | M-v | 1 | MPC | 93957 | 2001 $OB_{28}$ |
| 2001 $OK_{29}$ | 16.0 | 0.15 | 20060922 | 44.38377 | 309.89787 | 348.62188 | 7.30982 | 0.2076421 | 2.7954181 | 79 | 6 | 1992–2006 | 0.52 | M-v | 0 | MPC | 04151 | 2001 $OK_{29}$ |
| 2001 $OM_{29}$ | 15.1 | 0.15 | 20060922 | 23.92505 | 216.25846 | 111.53672 | 13.86700 | 0.2261228 | 2.8050860 | 57 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04151 | 2001 $OM_{29}$ |
| 2001 $OD_{30}$ | 16.4 | 0.15 | 20060922 | 51.38044 | 318.27179 | 17.08935 | 4.32561 | 0.1367750 | 2.6113103 | 42 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 88800 | 2001 $OD_{30}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $OK_{30}$ | 15.9 | 0.15 | 20060922 | 130.32167 | 145.92203 | 88.58508 | 15.27129 | 0.1743350 | 2.6384850 | 35 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87432 | 2001 $OK_{30}$ |
| 2001 $OW_{32}$ | 16.3 | 0.15 | 20060922 | 109.93358 | 233.68149 | 74.62994 | 7.73073 | 0.1247410 | 2.4754483 | 38 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 87432 | 2001 $OW_{32}$ |
| 2001 $OT_{33}$ | 15.2 | 0.15 | 20060922 | 58.66049 | 229.24374 | 108.24503 | 14.64756 | 0.1791954 | 2.6231456 | 45 | 5 | 1995–2006 | 0.47 | M-v | 2 | MPC | 48038 | 2001 $OT_{33}$ |
| 2001 $OC_{34}$ | 15.7 | 0.15 | 20060922 | 112.79131 | 178.09616 | 101.37391 | 15.76241 | 0.0978572 | 2.5869696 | 36 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 84706 | 2001 $OC_{34}$ |
| 2001 $OF_{34}$ | 15.7 | 0.15 | 20060922 | 331.03706 | 349.50796 | 52.86601 | 8.13343 | 0.3606531 | 2.8691586 | 82 | 4 | 1982–2006 | 0.36 | M-v | 1 | MPC | 03193 | 2001 $OF_{34}$ |
| 2001 $OV_{36}$ | 16.5 | 0.15 | 20060922 | 79.56093 | 26.30735 | 328.40717 | 7.84897 | 0.2039084 | 2.4780372 | 39 | 2 | 2001–2005 | 0.51 | M-v | 4 | MPC | 88800 | 2001 $OV_{36}$ |
| 2001 $OH_{37}$ | 15.3 | 0.15 | 20060922 | 27.51636 | 347.36952 | 49.88346 | 9.90061 | 0.1828119 | 2.5645707 | 53 | 6 | 1981–2006 | 0.45 | M-v | 1 | MPC | 87432 | 2001 $OH_{37}$ |
| 2001 $OJ_{37}$ | 16.4 | 0.15 | 20060922 | 54.64444 | 260.13932 | 52.87027 | 8.77621 | 0.2605502 | 2.7107463 | 57 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 75013 | 2001 $OJ_{37}$ |
| 2001 $OP_{37}$ | 16.2 | 0.15 | 20060922 | 94.60925 | 231.81338 | 17.18675 | 12.24957 | 0.2253009 | 2.7226167 | 60 | 3 | 2001–2006 | 0.39 | M-v | 2 | MPC | 75013 | 2001 $OP_{37}$ |
| 2001 $OU_{37}$ | 15.5 | 0.15 | 20060922 | 25.71100 | 295.25534 | 98.63076 | 13.44443 | 0.2590806 | 2.6189012 | 43 | 3 | 2001–2006 | 0.33 | M-v | 2 | MPC | 43399 | 2001 $OU_{37}$ |
| 2001 $OK_{40}$ | 16.0 | 0.15 | 20060922 | 38.26545 | 266.27941 | 80.98932 | 9.78535 | 0.2655167 | 2.7311264 | 39 | 3 | 2001–2006 | 0.37 | M-v | 3 | MPC | 84707 | 2001 $OK_{40}$ |
| 2001 $OL_{41}$ | 17.8 | 0.15 | 20060922 | 166.41943 | 282.67304 | 25.32382 | 5.58108 | 0.1941071 | 2.3258095 | 29 | 3 | 2001–2005 | 0.64 | M-v | 3 | MPC | 88800 | 2001 $OL_{41}$ |
| 2001 $OM_{41}$ | 16.3 | 0.15 | 20060922 | 81.44705 | 35.16097 | 346.17189 | 11.21999 | 0.2637324 | 2.4512222 | 143 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 97442 | 2001 $OM_{41}$ |
| 2001 $OP_{41}$ | 15.1 | 0.15 | 20060922 | 1.53835 | 66.23298 | 355.03758 | 16.09952 | 0.2384779 | 2.6031913 | 58 | 3 | 2001–2006 | 0.43 | M-v | 1 | MPC | 48039 | 2001 $OP_{41}$ |
| 2001 $OD_{43}$ | 15.9 | 0.15 | 20060922 | 8.63238 | 70.63450 | 293.79989 | 8.11409 | 0.2457512 | 2.8766626 | 120 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 03193 | 2001 $OD_{43}$ |
| 2001 $OD_{45}$ | 15.2 | 0.15 | 20060922 | 53.09515 | 175.87864 | 159.71523 | 12.31804 | 0.1928134 | 2.6572133 | 45 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 77544 | 2001 $OD_{45}$ |
| 2001 $OY_{46}$ | 16.6 | 0.15 | 20060922 | 79.48369 | 108.76244 | 230.37136 | 1.95504 | 0.1956782 | 2.5303075 | 79 | 7 | 1993–2006 | 0.48 | M-v | 1 | MPC | 87432 | 2001 $OY_{46}$ |
| 2001 $OK_{47}$ | 15.0 | 0.15 | 20060922 | 350.53498 | 11.41042 | 317.98037 | 4.55064 | 0.1985423 | 2.9937390 | 121 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 04152 | 2001 $OK_{47}$ |
| 2001 $OQ_{50}$ | 15.0 | 0.15 | 20060922 | 52.99475 | 58.11828 | 316.62472 | 16.54346 | 0.4017978 | 2.6589936 | 113 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 97442 | 2001 $OQ_{50}$ |
| 2001 $OU_{50}$ | 16.0 | 0.15 | 20060922 | 53.64190 | 237.95818 | 71.46834 | 8.84233 | 0.2171272 | 2.7751716 | 55 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 87433 | 2001 $OU_{50}$ |
| 2001 $OZ_{50}$ | 16.0 | 0.15 | 20060922 | 82.05107 | 14.68069 | 351.04132 | 6.57720 | 0.2179759 | 2.4495108 | 89 | 3 | 2001–2006 | 0.40 | M-v | 1 | MPC | 97442 | 2001 $OZ_{50}$ |
| 2001 $OF_{51}$ | 14.8 | 0.15 | 20060922 | 42.86651 | 236.02531 | 105.43812 | 14.13512 | 0.2638005 | 2.6736542 | 109 | 4 | 2001–2006 | 0.58 | M-v | 0 | MPC | 87433 | 2001 $OF_{51}$ |
| 2001 $OH_{51}$ | 16.0 | 0.15 | 20060922 | 60.66993 | 272.27937 | 7.62989 | 4.71525 | 0.0886342 | 2.7815923 | 53 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 04152 | 2001 $OH_{51}$ |
| 2001 $OD_{52}$ | 16.1 | 0.15 | 20060922 | 70.35356 | 242.60928 | 113.24106 | 16.04135 | 0.2413607 | 2.5505334 | 56 | 3 | 2001–2006 | 0.35 | M-v | 2 | MPC | 87433 | 2001 $OD_{52}$ |
| 2001 $OS_{53}$ | 15.4 | 0.15 | 20060922 | 19.48920 | 302.83303 | 113.52561 | 16.44745 | 0.2123787 | 2.6136990 | 49 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 84710 | 2001 $OS_{53}$ |
| 2001 $OT_{53}$ | 15.5 | 0.15 | 20060922 | 64.87892 | 232.54774 | 84.52446 | 10.17874 | 0.2519235 | 2.6991213 | 70 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 87433 | 2001 $OT_{53}$ |
| 2001 $OY_{53}$ | 15.6 | 0.15 | 20060922 | 62.30160 | 253.82500 | 70.04505 | 12.08906 | 0.1900516 | 2.7012500 | 88 | 4 | 1997–2006 | 0.46 | M-v | 1 | MPC | 03194 | 2001 $OY_{53}$ |
| 2001 $OZ_{53}$ | 16.1 | 0.15 | 20060922 | 220.58986 | 139.22799 | 123.92057 | 22.89140 | 0.2019954 | 2.2998695 | 94 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 87433 | 2001 $OZ_{53}$ |
| 2001 $OG_{54}$ | 17.3 | 0.15 | 20060922 | 317.62719 | 329.80397 | 10.64185 | 19.28327 | 0.0991779 | 1.9395050 | 66 | 4 | 1993–2004 | 0.66 | M-v | 2 | MPC | 04152 | 2001 $OG_{54}$ |
| 2001 $OS_{54}$ | 14.5 | 0.15 | 20060922 | 256.67708 | 79.96939 | 331.51823 | 14.58837 | 0.2506468 | 3.1261138 | 137 | 3 | 2001–2004 | 0.66 | M-v | 2 | MPC | 62330 | 2001 $OS_{54}$ |
| 2001 $OB_{55}$ | 15.4 | 0.15 | 20060922 | 358.73320 | 294.12729 | 96.80015 | 13.94524 | 0.2079441 | 2.6899432 | 53 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 40195 | 2001 $OB_{55}$ |
| 2001 $OB_{56}$ | 15.7 | 0.15 | 20060922 | 83.84189 | 89.61656 | 272.13652 | 6.31131 | 0.1627902 | 2.5550358 | 77 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 90059 | 2001 $OB_{56}$ |
| 2001 $OC_{57}$ | 16.4 | 0.15 | 20060922 | 52.06794 | 50.48330 | 303.19669 | 6.55122 | 0.2427953 | 2.6197390 | 55 | 3 | 1997–2003 | 0.61 | M-v | 2 | MPC | 88801 | 2001 $OC_{57}$ |
| 2001 $OG_{58}$ | 15.9 | 0.15 | 20060922 | 63.95290 | 41.86583 | 289.02950 | 2.27674 | 0.1701049 | 2.6255016 | 45 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 00030 | 2001 $OG_{58}$ |
| 2001 $ON_{58}$ | 16.2 | 0.15 | 20060922 | 146.19778 | 24.02708 | 293.85469 | 3.68590 | 0.2059326 | 2.3662132 | 146 | 5 | 1993–2006 | 0.51 | M-v | 2 | MPC | 97443 | 2001 $ON_{58}$ |
| 2001 $OD_{59}$ | 14.8 | 0.15 | 20060922 | 299.28666 | 26.61998 | 301.88939 | 4.27077 | 0.1407866 | 3.2215300 | 73 | 5 | 1996–2005 | 0.67 | M-v | 1 | MPC | 41696 | 2001 $OD_{59}$ |
| 2001 $OZ_{59}$ | 16.1 | 0.15 | 20060922 | 18.68361 | 233.15853 | 150.84443 | 3.47738 | 0.0721398 | 2.5543166 | 42 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 66188 | 2001 $OZ_{59}$ |
| 2001 $OL_{60}$ | 17.0 | 0.15 | 20060922 | 109.80075 | 213.66953 | 131.78091 | 3.94121 | 0.2093638 | 2.3992631 | 52 | 4 | 1996–2005 | 0.55 | M-v | 2 | MPC | 97443 | 2001 $OL_{60}$ |
| 2001 $OU_{61}$ | 15.3 | 0.15 | 20060922 | 31.40961 | 1.97553 | 334.56518 | 7.10603 | 0.2021967 | 2.7498690 | 91 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04152 | 2001 $OU_{61}$ |
| 2001 $OW_{61}$ | 15.9 | 0.15 | 20060922 | 93.35789 | 30.77493 | 338.70465 | 4.59825 | 0.2303873 | 2.4299895 | 169 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 97443 | 2001 $OW_{61}$ |
| 2001 $OX_{61}$ | 15.5 | 0.15 | 20060922 | 40.29850 | 346.58667 | 346.08070 | 4.67635 | 0.1563961 | 2.7190075 | 122 | 4 | 1995–2006 | 0.43 | M-v | 2 | MPC | 60802 | 2001 $OX_{61}$ |
| 2001 $OB_{63}$ | 15.6 | 0.15 | 20060922 | 129.44790 | 336.13698 | 282.02977 | 3.01455 | 0.0731978 | 2.6146905 | 67 | 6 | 2000–2006 | 0.59 | M-v | 1 | MPC | 77544 | 2001 $OB_{63}$ |
| 2001 $OV_{63}$ | 15.6 | 0.15 | 20060922 | 89.36925 | 232.80895 | 70.28548 | 5.03466 | 0.1571445 | 2.6064590 | 80 | 5 | 1993–2006 | 0.51 | M-v | 1 | MPC | 87433 | 2001 $OV_{63}$ |
| 2001 $ON_{66}$ | 15.5 | 0.15 | 20060922 | 24.74248 | 22.96881 | 332.49516 | 9.71298 | 0.1032239 | 2.6254149 | 61 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 60803 | 2001 $ON_{66}$ |
| 2001 $OA_{67}$ | 16.5 | 0.15 | 20060922 | 48.80476 | 285.41742 | 44.34302 | 8.51228 | 0.1878931 | 2.7105691 | 70 | 3 | 1997–2006 | 0.41 | M-v | 2 | MPC | 48040 | 2001 $OA_{67}$ |
| 2001 $OF_{68}$ | 15.7 | 0.15 | 20060922 | 67.42765 | 203.36800 | 124.24803 | 13.07117 | 0.1916527 | 2.6407553 | 69 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 62330 | 2001 $OF_{68}$ |
| 2001 $OP_{68}$ | 15.4 | 0.15 | 20060922 | 38.83660 | 319.60137 | 323.61507 | 14.28060 | 0.3343278 | 2.8614522 | 116 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04152 | 2001 $OP_{68}$ |
| 2001 $OA_{69}$ | 16.5 | 0.15 | 20060922 | 103.37090 | 168.35936 | 129.75027 | 3.28812 | 0.1943703 | 2.5356824 | 44 | 4 | 1997–2006 | 0.54 | M-v | 3 | MPC | 87433 | 2001 $OA_{69}$ |
| 2001 $OE_{73}$ | 16.2 | 0.15 | 20060922 | 205.82142 | 174.17429 | 140.29389 | 8.88150 | 0.1969966 | 2.2448826 | 94 | 3 | 2000–2004 | 0.63 | M-v | 2 | MPC | 64925 | 2001 $OE_{73}$ |
| 2001 $OJ_{73}$ | 14.6 | 0.15 | 20060922 | 216.30065 | 271.10452 | 344.48302 | 25.13471 | 0.2509171 | 2.3371374 | 132 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97443 | 2001 $OJ_{73}$ |
| 2001 $OA_{74}$ | 15.5 | 0.15 | 20060922 | 21.77068 | 125.19756 | 131.98554 | 4.23332 | 0.1132427 | 3.0710387 | 62 | 3 | 2000–2005 | 0.64 | M-v | 2 | MPC | 75017 | 2001 $OA_{74}$ |
| 2001 $OC_{76}$ | 16.0 | 0.15 | 20060922 | 26.34407 | 248.72675 | 145.82232 | 11.94982 | 0.1838221 | 2.5963369 | 50 | 3 | 1999–2003 | 0.49 | M-v | 2 | MPC | 40208 | 2001 $OC_{76}$ |
| 2001 $OK_{76}$ | 15.3 | 0.15 | 20060922 | 287.67510 | 248.99527 | 98.22848 | 8.56858 | 0.1380676 | 3.2485214 | 33 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 02036 | 2001 $OK_{76}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $OB_{77}$ | 16.2 | 0.15 | 20060922 | 55.52016 | 288.63538 | 92.30685 | 8.70682 | 0.1866899 | 2.5306685 | 39 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 84716 | 2001 $OB_{77}$ |
| 2001 $OD_{78}$ | 14.5 | 0.15 | 20060922 | 236.08661 | 252.35219 | 115.30043 | 18.96559 | 0.1060814 | 3.5663338 | 32 | 5 | 2001–2006 | 0.43 | M-v | 0 | MPC | 57833 | 2001 $OD_{78}$ |
| 2001 $ON_{80}$ | 16.4 | 0.15 | 20060922 | 109.65524 | 269.13847 | 108.93097 | 3.87663 | 0.2018278 | 2.3965913 | 130 | 2 | 2001–2006 | 0.46 | M-v | 2 | MPC | 97443 | 2001 $ON_{80}$ |
| 2001 $OE_{83}$ | 15.6 | 0.15 | 20060922 | 36.57522 | 289.37205 | 87.98991 | 8.38831 | 0.1004312 | 2.5830479 | 36 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 84717 | 2001 $OE_{83}$ |
| 2001 $OQ_{83}$ | 17.0 | 0.15 | 20060922 | 149.56954 | 316.78236 | 8.85647 | 6.05466 | 0.2569909 | 2.3450468 | 35 | 3 | 2001–2005 | 0.57 | M-v | 3 | MPC | 03194 | 2001 $OQ_{83}$ |
| 2001 $OH_{84}$ | 15.8 | 0.15 | 20060922 | 78.29790 | 229.54639 | 107.30858 | 6.28292 | 0.3449665 | 2.5723614 | 104 | 5 | 1997–2006 | 0.60 | M-v | 1 | MPC | 88805 | 2001 $OH_{84}$ |
| 2001 $OP_{84}$ | 15.4 | 0.15 | 20060922 | 326.64617 | 126.56171 | 188.51125 | 3.47758 | 0.1453843 | 3.1626628 | 42 | 6 | 1996–2006 | 0.45 | M-v | 1 | MPC | 02036 | 2001 $OP_{84}$ |
| 2001 $OK_{85}$ | 16.8 | 0.15 | 20060922 | 96.27649 | 127.67241 | 185.15461 | 4.85063 | 0.1450662 | 2.5460780 | 28 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 88805 | 2001 $OK_{85}$ |
| 2001 $OS_{85}$ | 16.0 | 0.15 | 20060922 | 42.09223 | 92.00163 | 269.54606 | 10.22708 | 0.2109168 | 2.6281065 | 41 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 48041 | 2001 $OS_{85}$ |
| 2001 $OW_{86}$ | 15.4 | 0.15 | 20060922 | 72.18797 | 213.70434 | 152.53266 | 5.61991 | 0.3035720 | 2.5678311 | 195 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97443 | 2001 $OW_{86}$ |
| 2001 $OH_{87}$ | 16.1 | 0.15 | 20060922 | 58.87202 | 259.54877 | 105.64891 | 5.07761 | 0.2434812 | 2.6156590 | 81 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 87434 | 2001 $OH_{87}$ |
| 2001 $OR_{87}$ | 15.7 | 0.15 | 20060922 | 343.41047 | 107.41995 | 189.97139 | 16.22546 | 0.2394753 | 3.1645254 | 54 | 2 | 2001–2006 | 0.65 | M-v | 2 | MPC | 00031 | 2001 $OR_{87}$ |
| 2001 $OL_{88}$ | 15.5 | 0.15 | 20060922 | 104.16816 | 305.07672 | 310.10096 | 13.52835 | 0.0187557 | 2.7538409 | 84 | 3 | 2001–2006 | 0.64 | M-v | 1 | MPC | 04152 | 2001 $OL_{88}$ |
| 2001 $OL_{89}$ | 15.9 | 0.15 | 20060922 | 155.17866 | 24.60712 | 282.01242 | 5.13698 | 0.1258406 | 2.3386536 | 84 | 4 | 2001–2006 | 0.60 | M-v | 2 | MPC | 97443 | 2001 $OL_{89}$ |
| 2001 $OD_{90}$ | 15.6 | 0.15 | 20060922 | 78.47351 | 167.76744 | 128.40859 | 13.52652 | 0.1732463 | 2.6743188 | 56 | 5 | 1979–2006 | 0.61 | M-v | 1 | MPC | 75019 | 2001 $OD_{90}$ |
| 2001 $OG_{90}$ | 16.3 | 0.15 | 20060922 | 72.75896 | 169.49724 | 145.22474 | 6.08315 | 0.2365388 | 2.6039538 | 45 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87434 | 2001 $OG_{90}$ |
| 2001 $OU_{90}$ | 15.6 | 0.15 | 20060922 | 19.62097 | 200.36221 | 111.83118 | 8.81883 | 0.2681883 | 2.8747499 | 61 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 03194 | 2001 $OU_{90}$ |
| 2001 $OA_{92}$ | 16.9 | 0.15 | 20060922 | 192.51233 | 205.95995 | 86.34144 | 5.76596 | 0.1523389 | 2.2816269 | 25 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 88806 | 2001 $OA_{92}$ |
| 2001 $OF_{93}$ | 15.9 | 0.15 | 20060922 | 37.32807 | 352.54638 | 21.87469 | 5.70508 | 0.1971284 | 2.6039858 | 48 | 5 | 1997–2004 | 0.43 | M-v | 1 | MPC | 62332 | 2001 $OF_{93}$ |
| 2001 $OM_{96}$ | 15.4 | 0.15 | 20060922 | 171.12733 | 357.54534 | 303.28067 | 8.57295 | 0.2624624 | 2.3666963 | 125 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 97444 | 2001 $OM_{96}$ |
| 2001 $OX_{96}$ | 15.7 | 0.15 | 20060922 | 60.45317 | 247.15294 | 91.62590 | 5.90350 | 0.1590613 | 2.6273329 | 81 | 6 | 1996–2006 | 0.65 | M-v | 1 | MPC | 66189 | 2001 $OX_{96}$ |
| 2001 $OC_{97}$ | 15.5 | 0.15 | 20060922 | 113.78758 | 267.13898 | 28.05768 | 3.22505 | 0.1483639 | 2.5465225 | 125 | 7 | 1977–2006 | 0.64 | M-v | 1 | MPC | 87434 | 2001 $OC_{97}$ |
| 2001 $OH_{97}$ | 15.9 | 0.15 | 20060922 | 79.18610 | 277.11068 | 80.71285 | 4.65493 | 0.2887433 | 2.5255662 | 128 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 97444 | 2001 $OH_{97}$ |
| 2001 $OL_{98}$ | 17.9 | 0.15 | 20060922 | 201.21024 | 291.23379 | 1.30220 | 2.52130 | 0.2591537 | 2.2538146 | 25 | 4 | 1991–2005 | 0.54 | M-v | 1 | MPC | 87434 | 2001 $OL_{98}$ |
| 2001 $OE_{99}$ | 15.7 | 0.15 | 20060922 | 30.31669 | 221.83345 | 127.51437 | 10.80151 | 0.2703937 | 2.7357542 | 75 | 4 | 1996–2006 | 0.52 | M-v | 1 | MPC | 87434 | 2001 $OE_{99}$ |
| 2001 $OP_{100}$ | 15.3 | 0.15 | 20060922 | 100.34658 | 311.47580 | 337.09283 | 13.44419 | 0.0845183 | 2.6265510 | 59 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 87434 | 2001 $OP_{100}$ |
| 2001 $OP_{102}$ | 15.0 | 0.15 | 20060922 | 86.25964 | 6.82411 | 297.95718 | 11.25325 | 0.1034495 | 2.6376317 | 46 | 5 | 1995–2006 | 0.64 | M-v | 1 | MPC | 60814 | 2001 $OP_{102}$ |
| 2001 $OG_{103}$ | 16.0 | 0.15 | 20060922 | 121.23161 | 27.75057 | 288.88892 | 4.92185 | 0.1976030 | 2.4567856 | 84 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 90061 | 2001 $OG_{103}$ |
| 2001 $OJ_{103}$ | 15.7 | 0.15 | 20060922 | 121.36557 | 335.13584 | 276.68841 | 12.20753 | 0.1225146 | 2.6906636 | 37 | 4 | 2000–2006 | 0.65 | M-v | 1 | MPC | 60814 | 2001 $OJ_{103}$ |
| 2001 $OK_{103}$ | 15.3 | 0.15 | 20060922 | 35.69526 | 131.69828 | 251.35894 | 10.81626 | 0.2028342 | 2.6262544 | 66 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 77546 | 2001 $OK_{103}$ |
| 2001 $OA_{104}$ | 16.8 | 0.15 | 20060922 | 134.28257 | 4.09557 | 307.79184 | 1.92516 | 0.2041394 | 2.4102736 | 103 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 90061 | 2001 $OA_{104}$ |
| 2001 $OE_{104}$ | 15.7 | 0.15 | 20060922 | 38.88214 | 274.25418 | 129.16762 | 31.00065 | 0.3371520 | 2.5844416 | 51 | 4 | 2001–2006 | 0.35 | M-v | 0 | MPC | 84719 | 2001 $OE_{104}$ |
| 2001 $OK_{106}$ | 15.3 | 0.15 | 20060922 | 34.42766 | 101.77491 | 308.56239 | 9.10242 | 0.1868486 | 2.5752012 | 142 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87434 | 2001 $OK_{106}$ |
| 2001 $OL_{106}$ | 14.7 | 0.15 | 20060922 | 21.28455 | 57.81438 | 317.08842 | 12.42947 | 0.2070466 | 2.7454035 | 129 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 62333 | 2001 $OL_{106}$ |
| 2001 $OP_{106}$ | 15.7 | 0.15 | 20060922 | 346.93645 | 48.72524 | 309.10873 | 10.57033 | 0.2723359 | 2.9861288 | 119 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03194 | 2001 $OP_{106}$ |
| 2001 $OQ_{106}$ | 14.6 | 0.15 | 20060922 | 20.93994 | 89.64321 | 305.72797 | 8.43598 | 0.2685602 | 2.7174582 | 96 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 42955 | 2001 $OQ_{106}$ |
| 2001 $OB_{107}$ | 14.7 | 0.15 | 20060922 | 6.78594 | 105.25753 | 300.65066 | 6.34182 | 0.3164663 | 2.7790879 | 121 | 4 | 1984–2006 | 0.61 | M-v | 1 | MPC | 48042 | 2001 $OB_{107}$ |
| 2001 $OH_{107}$ | 15.1 | 0.15 | 20060922 | 55.24075 | 46.07679 | 335.94157 | 15.20317 | 0.2040358 | 2.6191146 | 207 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 97444 | 2001 $OH_{107}$ |
| 2001 $OP_{110}$ | 16.3 | 0.15 | 20060922 | 122.40975 | 295.04134 | 324.36175 | 12.03742 | 0.1296871 | 2.6009764 | 62 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 60816 | 2001 $OP_{110}$ |
| 2001 $OQ_{110}$ | 18.2 | 0.15 | 20060922 | 159.64979 | 69.99393 | 243.51671 | 1.29956 | 0.2261476 | 2.3290596 | 41 | 3 | 1997–2005 | 0.42 | M-v | 2 | MPC | 97444 | 2001 $OQ_{110}$ |
| 2001 $OV_{110}$ | 14.6 | 0.15 | 20060922 | 296.87439 | 242.36910 | 133.19349 | 10.11740 | 0.0787048 | 3.1697110 | 34 | 3 | 2001–2004 | 0.61 | M-v | 3 | MPC | 62333 | 2001 $OV_{110}$ |
| 2001 $OX_{110}$ | 16.2 | 0.15 | 20060922 | 48.40399 | 215.47872 | 88.20340 | 3.74003 | 0.1905362 | 2.7777575 | 59 | 5 | 1999–2006 | 0.50 | M-v | 0 | MPC | 75022 | 2001 $OX_{110}$ |
| 2001 $OD_{111}$ | 16.7 | 0.15 | 20060922 | 76.41869 | 284.35952 | 58.80739 | 5.99919 | 0.2089568 | 2.5860795 | 39 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 84720 | 2001 $OD_{111}$ |
| 2001 $OE_{111}$ | 16.1 | 0.15 | 20060922 | 325.95940 | 301.01750 | 156.93694 | 14.50358 | 0.0549770 | 2.6497399 | 47 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 90061 | 2001 $OE_{111}$ |
| 2001 $OF_{111}$ | 15.5 | 0.15 | 20060922 | 0.04473 | 217.15358 | 154.46879 | 13.27499 | 0.1146153 | 2.8781599 | 66 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87434 | 2001 $OF_{111}$ |
| 2001 $OM_{111}$ | 17.0 | 0.15 | 20060922 | 76.75668 | 65.57804 | 302.27251 | 13.58864 | 0.1326094 | 2.4764444 | 32 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 84720 | 2001 $OM_{111}$ |
| 2001 $OF_{113}$ | 17.4 | 0.15 | 20010819 | 338.23610 | 264.26084 | 118.64993 | 15.85679 | 0.3322881 | 2.7141216 | 15 | 1 | 59 days | 0.57 | | | MPC | | 2001 $OF_{113}$ |
| 2001 $OG_{113}$ | 14.7 | 0.15 | 20060922 | 313.21809 | 295.59415 | 69.89907 | 18.14274 | 0.3220996 | 3.1593999 | 20 | 1 | 108 days | 0.55 | M-v | 4 | MPC | | 2001 $OG_{113}$ |
| 2001 $OJ_{113}$ | 17.9 | 0.15 | 20060922 | 156.24229 | 216.82896 | 139.58987 | 7.16344 | 0.2212348 | 2.2983237 | 17 | 1 | 74 days | 0.53 | M-v | 4 | MPC | | 2001 $OJ_{113}$ |
| 2001 $OK_{113}$ | 15.7 | 0.15 | 20010819 | 344.26192 | 279.50551 | 83.27202 | 6.43818 | 0.2147677 | 3.1636099 | 17 | 1 | 56 days | 0.50 | | | MPC | | 2001 $OK_{113}$ |
| 2001 PR | 15.3 | 0.15 | 20060922 | 22.29010 | 114.74758 | 264.83327 | 13.92022 | 0.1077536 | 2.6058119 | 61 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 40228 | 2001 PR |
| 2001 $PT_1$ | 16.7 | 0.15 | 20060922 | 163.47444 | 65.46399 | 212.57948 | 2.58830 | 0.1754554 | 2.3709288 | 56 | 4 | 1998–2005 | 0.44 | M-v | 1 | MPC | 02037 | 2001 $PT_1$ |
| 2001 $PK_2$ | 14.9 | 0.15 | 20060922 | 3.54816 | 68.70450 | 310.61984 | 8.46954 | 0.1865081 | 2.7537058 | 136 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04152 | 2001 $PK_2$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $PS_{2}$ | 16.9 | 0.15 | 20060922 | 219.51368 | 143.98320 | 121.94023 | 3.96280 | 0.2042333 | 2.2637202 | 88 | 4 | 2000–2005 | 0.53 | M-v | 0 | MPC | 90061 | 2001 $PS_{2}$ |
| 2001 $PG_{4}$ | 15.8 | 0.15 | 20060922 | 32.06888 | 319.15291 | 49.69264 | 4.46063 | 0.2337472 | 2.6306046 | 43 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 62333 | 2001 $PG_{4}$ |
| 2001 $PK_{4}$ | 16.3 | 0.15 | 20060922 | 89.38028 | 47.71381 | 233.32384 | 4.16354 | 0.2926725 | 2.6420512 | 95 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 87435 | 2001 $PK_{4}$ |
| 2001 $PM_{4}$ | 14.8 | 0.15 | 20060922 | 331.35252 | 179.33991 | 256.05609 | 21.12717 | 0.1283694 | 2.6860639 | 62 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 84721 | 2001 $PM_{4}$ |
| 2001 $PL_{5}$ | 16.0 | 0.15 | 20060922 | 54.06296 | 250.37410 | 97.51038 | 9.56908 | 0.1188460 | 2.6288679 | 70 | 6 | 2000–2006 | 0.55 | M-v | 0 | MPC | 87435 | 2001 $PL_{5}$ |
| 2001 $PM_{5}$ | 15.7 | 0.15 | 20060922 | 42.15194 | 228.26149 | 103.94768 | 9.80134 | 0.1588150 | 2.7321726 | 63 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 84721 | 2001 $PM_{5}$ |
| 2001 $PQ_{5}$ | 15.3 | 0.15 | 20060922 | 97.33051 | 354.24408 | 269.80388 | 7.04369 | 0.1760865 | 2.7667637 | 56 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 60818 | 2001 $PQ_{5}$ |
| 2001 $PR_{5}$ | 16.1 | 0.15 | 20060922 | 58.05741 | 81.34797 | 232.72890 | 12.18145 | 0.2182054 | 2.7570471 | 117 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 87435 | 2001 $PR_{5}$ |
| 2001 $PX_{7}$ | 16.1 | 0.15 | 20060922 | 25.98396 | 261.30492 | 85.19610 | 8.43767 | 0.2406023 | 2.7714811 | 76 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 03195 | 2001 $PX_{7}$ |
| 2001 $PC_{8}$ | 17.8 | 0.15 | 20060922 | 150.81307 | 240.78644 | 79.59300 | 6.68915 | 0.2177574 | 2.3598612 | 34 | 3 | 2001–2005 | 0.44 | M-v | 2 | MPC | 88808 | 2001 $PC_{8}$ |
| 2001 $PW_{8}$ | 15.7 | 0.15 | 20060922 | 84.73142 | 23.71664 | 357.47785 | 5.11106 | 0.0564280 | 2.4470569 | 167 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 90061 | 2001 $PW_{8}$ |
| 2001 $PK_{9}$ | 18.0 | 0.15 | 20060922 | 117.81993 | 313.57901 | 273.15853 | 10.40592 | 0.3948146 | 1.7802875 | 47 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04152 | 2001 $PK_{9}$ |
| 2001 $PV_{9}$ | 18.2 | 0.15 | 20010730 | 25.86910 | 21.35624 | 249.49088 | 2.07747 | 0.1858310 | 2.1544313 | 15 | 1 | 4 days | 0.39 | | E | MPC | | 2001 $PV_{9}$ |
| 2001 $PE_{11}$ | 16.4 | 0.15 | 20060922 | 22.15963 | 312.37812 | 42.85939 | 3.73264 | 0.1529417 | 2.7119420 | 99 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 74094 | 2001 $PE_{11}$ |
| 2001 $PT_{11}$ | 16.2 | 0.15 | 20060922 | 2.38762 | 292.75544 | 83.48399 | 8.90471 | 0.2449855 | 2.8042514 | 67 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 03195 | 2001 $PT_{11}$ |
| 2001 $PX_{12}$ | 16.5 | 0.15 | 20060922 | 146.29675 | 20.14487 | 302.42682 | 6.09052 | 0.1323508 | 2.3385197 | 59 | 4 | 1994–2006 | 0.66 | M-v | 1 | MPC | 97444 | 2001 $PX_{12}$ |
| 2001 $PH_{13}$ | 18.1 | 0.15 | 20060922 | 354.18928 | 220.60828 | 148.80882 | 11.11137 | 0.5436714 | 2.9338119 | 161 | 2 | 2001–2006 | 0.50 | M-v | 0 | MPC | 03195 | 2001 $PH_{13}$ |
| 2001 $PJ_{13}$ | 14.8 | 0.15 | 20060922 | 64.41292 | 25.61136 | 291.02930 | 13.75561 | 0.1236111 | 2.6479191 | 52 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 60820 | 2001 $PJ_{13}$ |
| 2001 $PR_{13}$ | 16.0 | 0.15 | 20060922 | 39.96501 | 87.41323 | 264.41167 | 2.32551 | 0.0891536 | 2.6583353 | 78 | 5 | 1999–2006 | 0.47 | M-v | 0 | MPC | 60820 | 2001 $PR_{13}$ |
| 2001 $PL_{18}$ | 15.4 | 0.15 | 20060922 | 25.32413 | 239.14768 | 111.29149 | 14.78547 | 0.1990433 | 2.7506785 | 60 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 87435 | 2001 $PL_{18}$ |
| 2001 $PT_{18}$ | 15.7 | 0.15 | 20060922 | 92.30590 | 115.28351 | 181.13461 | 4.64784 | 0.2524700 | 2.5697350 | 42 | 4 | 1997–2006 | 0.43 | M-v | 2 | MPC | 84723 | 2001 $PT_{18}$ |
| 2001 $PZ_{18}$ | 16.8 | 0.15 | 20060922 | 159.12333 | 197.39479 | 97.86164 | 7.42125 | 0.1302729 | 2.3749305 | 36 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 87435 | 2001 $PZ_{18}$ |
| 2001 $PF_{19}$ | 16.5 | 0.15 | 20060922 | 38.45163 | 47.39457 | 62.49949 | 7.11296 | 0.0264265 | 2.2364446 | 102 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 97444 | 2001 $PF_{19}$ |
| 2001 $PM_{19}$ | 15.8 | 0.15 | 20060922 | 84.28924 | 172.68448 | 112.36708 | 14.89433 | 0.1665597 | 2.6738331 | 68 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87435 | 2001 $PM_{19}$ |
| 2001 $PK_{20}$ | 15.9 | 0.15 | 20060922 | 79.75824 | 253.66230 | 88.31398 | 13.38575 | 0.2013737 | 2.5480128 | 63 | 3 | 2001–2006 | 0.33 | M-v | 2 | MPC | 84723 | 2001 $PK_{20}$ |
| 2001 $PQ_{20}$ | 16.5 | 0.15 | 20060922 | 197.03719 | 244.28619 | 44.64632 | 7.33093 | 0.1552211 | 2.2879487 | 93 | 4 | 1998–2005 | 0.49 | M-v | 1 | MPC | 90061 | 2001 $PQ_{20}$ |
| 2001 $PR_{20}$ | 15.1 | 0.15 | 20060922 | 18.94802 | 267.44599 | 106.71397 | 13.24273 | 0.2089540 | 2.7114117 | 36 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 40239 | 2001 $PR_{20}$ |
| 2001 $PS_{20}$ | 15.3 | 0.15 | 20060922 | 31.92338 | 257.58652 | 63.92859 | 9.97990 | 0.1665386 | 2.8105093 | 86 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 75026 | 2001 $PS_{20}$ |
| 2001 $PV_{20}$ | 16.6 | 0.15 | 20060922 | 179.01248 | 165.19653 | 127.17442 | 5.55411 | 0.1658836 | 2.3300336 | 49 | 4 | 1993–2005 | 0.59 | M-v | 1 | MPC | 90061 | 2001 $PV_{20}$ |
| 2001 $PJ_{21}$ | 16.0 | 0.15 | 20060922 | 38.96770 | 1.95759 | 21.58807 | 5.03120 | 0.2601963 | 2.6104431 | 57 | 3 | 1997–2004 | 0.64 | M-v | 3 | MPC | 66190 | 2001 $PJ_{21}$ |
| 2001 $PZ_{21}$ | 16.1 | 0.15 | 20060922 | 63.73098 | 14.47644 | 287.05084 | 4.94710 | 0.1972396 | 2.7309012 | 47 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 75026 | 2001 $PZ_{21}$ |
| 2001 $PZ_{23}$ | 16.1 | 0.15 | 20060922 | 81.96951 | 306.84416 | 26.70447 | 7.91758 | 0.1627191 | 2.5610300 | 48 | 5 | 1996–2005 | 0.57 | M-v | 2 | MPC | 87435 | 2001 $PZ_{23}$ |
| 2001 $PA_{25}$ | 16.5 | 0.15 | 20060922 | 64.35966 | 151.80274 | 170.69513 | 4.13732 | 0.2124822 | 2.6900251 | 60 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 60824 | 2001 $PA_{25}$ |
| 2001 $PN_{25}$ | 15.7 | 0.15 | 20060922 | 33.56233 | 256.02699 | 32.16776 | 6.89722 | 0.3451200 | 2.9000686 | 72 | 2 | 2001–2006 | 0.57 | M-v | 4 | MPC | 03196 | 2001 $PN_{25}$ |
| 2001 $PZ_{25}$ | 15.3 | 0.15 | 20060922 | 334.31492 | 282.53406 | 133.12810 | 9.83113 | 0.1556269 | 2.7815111 | 77 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 62334 | 2001 $PZ_{25}$ |
| 2001 $PX_{26}$ | 16.5 | 0.15 | 20060922 | 90.36279 | 323.28171 | 356.81257 | 2.83679 | 0.1668031 | 2.5957565 | 84 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 87436 | 2001 $PX_{26}$ |
| 2001 $PN_{28}$ | 15.7 | 0.15 | 20060922 | 16.96507 | 20.64909 | 291.72925 | 7.42383 | 0.2166856 | 2.9159696 | 83 | 2 | 2001–2006 | 0.63 | M-v | 4 | MPC | 03196 | 2001 $PN_{28}$ |
| 2001 $PW_{28}$ | 16.4 | 0.15 | 20060922 | 161.58757 | 22.36486 | 273.74463 | 6.36505 | 0.1014325 | 2.4049538 | 96 | 5 | 1990–2006 | 0.50 | M-v | 1 | MPC | 90062 | 2001 $PW_{28}$ |
| 2001 $PP_{29}$ | 20.1 | 0.15 | 20060922 | 145.63353 | 214.80683 | 135.43990 | 23.73599 | 0.2305662 | 2.2931467 | 50 | 4 | 2001–2005 | 0.68 | M-v | 1 | MPC | 40246 | 2001 $PP_{29}$ |
| 2001 $PT_{29}$ | 17.8 | 0.15 | 20060922 | 134.21085 | 316.42797 | 356.26864 | 1.56673 | 0.2257052 | 2.4359560 | 48 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 88811 | 2001 $PT_{29}$ |
| 2001 $PN_{32}$ | 16.5 | 0.15 | 20060922 | 102.72637 | 238.01955 | 60.18357 | 6.25396 | 0.1921430 | 2.5785807 | 51 | 5 | 1996–2006 | 0.41 | M-v | 1 | MPC | 88811 | 2001 $PN_{32}$ |
| 2001 $PX_{32}$ | 16.9 | 0.15 | 20060922 | 120.73258 | 260.29741 | 98.26947 | 15.36193 | 0.1305547 | 2.3623603 | 31 | 3 | 2001–2005 | 0.45 | M-v | 2 | MPC | 64934 | 2001 $PX_{32}$ |
| 2001 $PT_{33}$ | 16.0 | 0.15 | 20060922 | 80.16487 | 226.76050 | 43.65594 | 8.51497 | 0.1852455 | 2.7684146 | 59 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 75029 | 2001 $PT_{33}$ |
| 2001 $PS_{34}$ | 15.4 | 0.15 | 20060922 | 64.25889 | 76.97254 | 235.83891 | 9.21621 | 0.1397588 | 2.7473768 | 90 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 84728 | 2001 $PS_{34}$ |
| 2001 $PA_{35}$ | 15.6 | 0.15 | 20060922 | 69.01262 | 91.47891 | 232.19389 | 12.96324 | 0.1573374 | 2.6908146 | 53 | 3 | 1997–2006 | 0.45 | M-v | 3 | MPC | 20868 | 2001 $PA_{35}$ |
| 2001 $PG_{35}$ | 17.3 | 0.15 | 20060922 | 109.90747 | 282.27976 | 43.86228 | 3.62407 | 0.2033942 | 2.4379673 | 31 | 2 | 2001–2005 | 0.51 | M-v | 3 | MPC | 88811 | 2001 $PG_{35}$ |
| 2001 $PW_{35}$ | 15.3 | 0.15 | 20060922 | 95.90540 | 317.26918 | 276.38222 | 11.78315 | 0.1421277 | 2.8038865 | 57 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 04153 | 2001 $PW_{35}$ |
| 2001 $PU_{36}$ | 14.7 | 0.15 | 20060922 | 346.73450 | 257.94250 | 57.91931 | 10.30330 | 0.1355844 | 3.0950026 | 24 | 3 | 2000–2004 | 0.47 | M-v | 3 | MPC | 17720 | 2001 $PU_{36}$ |
| 2001 $PW_{36}$ | 16.5 | 0.15 | 20060922 | 14.70149 | 250.60737 | 109.25330 | 13.27671 | 0.2155964 | 2.7869023 | 53 | 5 | 2000–2006 | 0.61 | M-v | 0 | MPC | 03196 | 2001 $PW_{36}$ |
| 2001 $PE_{37}$ | 15.6 | 0.15 | 20060922 | 169.09695 | 153.16706 | 98.15330 | 11.34397 | 0.2783516 | 2.4434907 | 72 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87436 | 2001 $PE_{37}$ |
| 2001 $PH_{38}$ | 15.2 | 0.15 | 20060922 | 64.76383 | 256.58300 | 87.97099 | 13.02950 | 0.2679276 | 2.6138759 | 57 | 5 | 1993–2006 | 0.42 | M-v | 1 | MPC | 87436 | 2001 $PH_{38}$ |
| 2001 $PM_{38}$ | 15.8 | 0.15 | 20060922 | 39.56871 | 270.61288 | 45.73677 | 9.51651 | 0.1543928 | 2.8099666 | 43 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 87436 | 2001 $PM_{38}$ |
| 2001 $PL_{39}$ | 16.0 | 0.15 | 20060922 | 98.05325 | 256.36027 | 34.78113 | 12.62468 | 0.1751532 | 2.6281200 | 28 | 6 | 1993–2006 | 0.42 | M-v | 0 | MPC | 87436 | 2001 $PL_{39}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $PO_{40}$ | 15.2 | 0.15 | 20060922 | 341.23520 | 132.13349 | 304.91995 | 12.20233 | 0.1405292 | 2.6882721 | 103 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87436 | 2001 $PO_{40}$ |
| 2001 $PT_{40}$ | 15.5 | 0.15 | 20060922 | 62.27165 | 62.91528 | 284.58111 | 7.03063 | 0.0958284 | 2.6493402 | 118 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87436 | 2001 $PT_{40}$ |
| 2001 $PO_{41}$ | 14.6 | 0.15 | 20060922 | 3.14479 | 106.12960 | 257.02925 | 11.94094 | 0.1173057 | 2.8744873 | 88 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 64935 | 2001 $PO_{41}$ |
| 2001 $PT_{41}$ | 15.6 | 0.15 | 20060922 | 36.76622 | 105.18648 | 306.50749 | 11.58323 | 0.1664813 | 2.5657768 | 90 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 90062 | 2001 $PT_{41}$ |
| 2001 $PO_{42}$ | 15.5 | 0.15 | 20060922 | 25.93976 | 266.09092 | 112.11689 | 15.70914 | 0.1261276 | 2.6665745 | 39 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 77547 | 2001 $PO_{42}$ |
| 2001 $PZ_{43}$ | 16.1 | 0.15 | 20060922 | 73.20786 | 271.74349 | 28.13339 | 4.90734 | 0.1631487 | 2.6846644 | 70 | 5 | 1991–2006 | 0.56 | M-v | 0 | MPC | 48045 | 2001 $PZ_{43}$ |
| 2001 $PM_{44}$ | 18.0 | 0.15 | 20060922 | 167.84523 | 80.95291 | 207.03532 | 2.23788 | 0.2258800 | 2.3672931 | 29 | 3 | 2001–2005 | 0.43 | M-v | 3 | MPC | 88811 | 2001 $PM_{44}$ |
| 2001 $PZ_{45}$ | 15.6 | 0.15 | 20060922 | 20.02757 | 322.11090 | 83.57734 | 16.79580 | 0.1454731 | 2.5982496 | 69 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 90062 | 2001 $PZ_{45}$ |
| 2001 $PL_{46}$ | 16.4 | 0.15 | 20060922 | 52.86628 | 277.86490 | 96.15210 | 12.46142 | 0.2369494 | 2.5967929 | 41 | 4 | 2001–2006 | 0.36 | M-v | 1 | MPC | 84729 | 2001 $PL_{46}$ |
| 2001 $PN_{46}$ | 15.4 | 0.15 | 20060922 | 321.67500 | 313.73617 | 70.91742 | 13.00955 | 0.2608629 | 2.9980915 | 44 | 5 | 1991–2006 | 0.38 | M-v | 0 | MPC | 04153 | 2001 $PN_{46}$ |
| 2001 $PO_{49}$ | 16.1 | 0.15 | 20060922 | 43.25455 | 154.74237 | 171.66943 | 27.86435 | 0.1693043 | 2.7387999 | 49 | 5 | 1996–2006 | 0.63 | M-v | 1 | MPC | 87436 | 2001 $PO_{49}$ |
| 2001 $PT_{49}$ | 14.5 | 0.15 | 20060922 | 304.41358 | 193.15142 | 288.98577 | 21.01156 | 0.0429114 | 2.6687401 | 139 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87437 | 2001 $PT_{49}$ |
| 2001 $PD_{50}$ | 16.5 | 0.15 | 20060922 | 68.81715 | 272.86992 | 96.43171 | 4.97856 | 0.0878259 | 2.4879442 | 56 | 6 | 2000–2006 | 0.41 | M-v | 0 | MPC | 87437 | 2001 $PD_{50}$ |
| 2001 $PM_{51}$ | 16.7 | 0.15 | 20060922 | 172.77901 | 127.71030 | 151.59224 | 4.17012 | 0.1353852 | 2.3863642 | 52 | 5 | 1996–2005 | 0.57 | M-v | 0 | MPC | 87437 | 2001 $PM_{51}$ |
| 2001 $PH_{53}$ | 17.1 | 0.15 | 20060922 | 114.75350 | 33.80619 | 307.92755 | 5.56765 | 0.1040480 | 2.4063470 | 55 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 90062 | 2001 $PH_{53}$ |
| 2001 $PG_{54}$ | 18.0 | 0.15 | 20060922 | 127.47442 | 347.19261 | 334.35545 | 1.77957 | 0.1993586 | 2.4196192 | 30 | 2 | 2001–2005 | 0.49 | M-v | 4 | MPC | 88813 | 2001 $PG_{54}$ |
| 2001 $PT_{54}$ | 15.9 | 0.15 | 20060922 | 359.31519 | 147.80348 | 170.72438 | 3.85186 | 0.1212049 | 2.9768083 | 44 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 02037 | 2001 $PT_{54}$ |
| 2001 $PY_{54}$ | 17.5 | 0.15 | 20060922 | 168.56691 | 8.72868 | 283.89844 | 2.77700 | 0.2135071 | 2.3502244 | 26 | 3 | 2001–2005 | 0.59 | M-v | 2 | MPC | 93971 | 2001 $PY_{54}$ |
| 2001 $PM_{57}$ | 15.8 | 0.15 | 20060922 | 69.72167 | 271.74790 | 96.02344 | 5.88119 | 0.2627752 | 2.5513732 | 83 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 90062 | 2001 $PM_{57}$ |
| 2001 $PQ_{57}$ | 17.0 | 0.15 | 20060922 | 111.31473 | 2.27914 | 353.66419 | 3.15044 | 0.1594814 | 2.4230797 | 76 | 2 | 2001–2005 | 0.44 | M-v | 3 | MPC | 88813 | 2001 $PQ_{57}$ |
| 2001 $PC_{58}$ | 15.8 | 0.15 | 20060922 | 63.08993 | 351.92886 | 10.12673 | 12.21934 | 0.0666539 | 2.5618959 | 30 | 4 | 1997–2005 | 0.65 | M-v | 3 | MPC | 00034 | 2001 $PC_{58}$ |
| 2001 $PE_{58}$ | 16.0 | 0.15 | 20060922 | 97.92910 | 237.83380 | 75.46914 | 3.23432 | 0.1151624 | 2.5926926 | 83 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 90063 | 2001 $PE_{58}$ |
| 2001 $PG_{58}$ | 15.9 | 0.15 | 20060922 | 353.22116 | 217.24068 | 145.10721 | 7.66921 | 0.2779866 | 2.9117741 | 123 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 03196 | 2001 $PG_{58}$ |
| 2001 $PN_{58}$ | 15.1 | 0.15 | 20060922 | 37.03478 | 349.79974 | 1.41217 | 14.05450 | 0.2008602 | 2.7241112 | 68 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 60831 | 2001 $PN_{58}$ |
| 2001 $PB_{60}$ | 16.3 | 0.15 | 20060922 | 71.65133 | 287.06101 | 347.79230 | 6.82865 | 0.1878006 | 2.7436598 | 56 | 5 | 1991–2006 | 0.48 | M-v | 0 | MPC | 04153 | 2001 $PB_{60}$ |
| 2001 $PX_{60}$ | 17.2 | 0.15 | 20060922 | 211.90932 | 103.48333 | 162.01064 | 6.03819 | 0.1666049 | 2.2842061 | 42 | 2 | 2001–2004 | 0.59 | M-v | 3 | MPC | 60831 | 2001 $PX_{60}$ |
| 2001 $PC_{61}$ | 16.4 | 0.15 | 20060922 | 79.62945 | 60.81937 | 333.82632 | 7.00441 | 0.1065043 | 2.3690752 | 69 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 97445 | 2001 $PC_{61}$ |
| 2001 $PF_{62}$ | 16.5 | 0.15 | 20060922 | 100.16441 | 122.95006 | 205.48552 | 2.90335 | 0.1612639 | 2.5285648 | 71 | 6 | 1973–2006 | 0.63 | M-v | 1 | MPC | 93973 | 2001 $PF_{62}$ |
| 2001 $PB_{65}$ | 15.0 | 0.15 | 20060922 | 318.93369 | 286.60192 | 143.27270 | 22.43004 | 0.0583076 | 2.6559576 | 44 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 60833 | 2001 $PB_{65}$ |
| 2001 $PG_{65}$ | 16.2 | 0.15 | 20060922 | 171.38199 | 143.09948 | 136.90246 | 10.27291 | 0.2155358 | 2.4084919 | 42 | 3 | 1995–2004 | 0.65 | M-v | 2 | MPC | 60833 | 2001 $PG_{65}$ |
| 2001 $PL_{65}$ | 16.4 | 0.15 | 20060922 | 23.31326 | 271.60268 | 96.09514 | 9.09309 | 0.3060289 | 2.7778312 | 28 | 3 | 2001–2006 | 0.31 | M-v | 2 | MPC | 84734 | 2001 $PL_{65}$ |
| 2001 $PQ_{65}$ | 15.1 | 0.15 | 20060922 | 350.00683 | 0.51817 | 329.75801 | 11.21885 | 0.0769525 | 3.0395830 | 41 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04153 | 2001 $PQ_{65}$ |
| 2001 $PY_{66}$ | 16.6 | 0.15 | 20060922 | 77.36959 | 55.41781 | 247.55613 | 12.11970 | 0.1493170 | 2.7321970 | 22 | 1 | 74 days | 0.54 | M-v | 4 | MPC | | 2001 $PY_{66}$ |
| 2001 $PZ_{66}$ | 16.1 | 0.15 | 20060922 | 336.98988 | 250.42579 | 188.03646 | 21.83874 | 0.0874424 | 2.6781425 | 20 | 1 | 70 days | 0.57 | M-v | 4 | MPC | | 2001 $PZ_{66}$ |
| 2001 QB | 18.1 | 0.15 | 20060922 | 129.27962 | 45.86209 | 278.08573 | 1.50997 | 0.2290392 | 2.4196886 | 48 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 88815 | 2001 QB |
| 2001 QG | 16.9 | 0.15 | 20060922 | 113.68129 | 12.56583 | 325.23209 | 0.45403 | 0.1981471 | 2.4521356 | 152 | 6 | 2000–2006 | 0.44 | M-v | 1 | MPC | 97446 | 2001 QG |
| 2001 $QM_1$ | 16.5 | 0.15 | 20060922 | 28.21354 | 210.84649 | 151.28027 | 13.99282 | 0.1923957 | 2.7258131 | 51 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 88816 | 2001 $QM_1$ |
| 2001 $QC_2$ | 15.8 | 0.15 | 20060922 | 28.91421 | 180.75967 | 215.24975 | 2.69474 | 0.2881153 | 2.7081590 | 128 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 77548 | 2001 $QC_2$ |
| 2001 $QE_2$ | 16.0 | 0.15 | 20060922 | 83.73214 | 91.15227 | 242.84337 | 6.02225 | 0.2118632 | 2.5725804 | 144 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 90063 | 2001 $QE_2$ |
| 2001 $QC_3$ | 15.5 | 0.15 | 20060922 | 105.57816 | 127.80732 | 150.96035 | 7.81091 | 0.1809231 | 2.6040216 | 35 | 4 | 1997–2006 | 0.63 | M-v | 1 | MPC | 18364 | 2001 $QC_3$ |
| 2001 $QM_3$ | 15.3 | 0.15 | 20060922 | 91.77554 | 164.44396 | 138.12882 | 14.48709 | 0.0926225 | 2.6079827 | 61 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87437 | 2001 $QM_3$ |
| 2001 $QO_3$ | 16.1 | 0.15 | 20060922 | 50.21879 | 203.38518 | 137.93324 | 3.91641 | 0.2231845 | 2.6605161 | 56 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 18364 | 2001 $QO_3$ |
| 2001 $QK_4$ | 15.7 | 0.15 | 20060922 | 41.02102 | 30.46959 | 320.19400 | 9.37661 | 0.0907231 | 2.6568124 | 45 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 64937 | 2001 $QK_4$ |
| 2001 $QC_5$ | 16.8 | 0.15 | 20060922 | 49.08779 | 245.04937 | 144.55722 | 13.68560 | 0.1797796 | 2.5279747 | 75 | 5 | 1995–2005 | 0.61 | M-v | 0 | MPC | 87438 | 2001 $QC_5$ |
| 2001 $QL_5$ | 15.4 | 0.15 | 20060922 | 347.92165 | 227.95656 | 137.52351 | 9.06806 | 0.2265677 | 2.8819577 | 93 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04153 | 2001 $QL_5$ |
| 2001 $QU_5$ | 15.6 | 0.15 | 20060922 | 351.99423 | 72.45084 | 315.68824 | 4.88144 | 0.0503081 | 2.7183913 | 88 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 60836 | 2001 $QU_5$ |
| 2001 $QA_7$ | 15.7 | 0.15 | 20060922 | 96.69339 | 334.91060 | 320.26103 | 6.76569 | 0.1893930 | 2.6130149 | 52 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 90063 | 2001 $QA_7$ |
| 2001 $QC_7$ | 17.0 | 0.15 | 20060922 | 141.87130 | 165.48600 | 151.26202 | 2.98790 | 0.2262182 | 2.3921173 | 69 | 3 | 2000–2005 | 0.53 | M-v | 3 | MPC | 97446 | 2001 $QC_7$ |
| 2001 $QY_8$ | 15.7 | 0.15 | 20060922 | 27.94492 | 18.46867 | 345.14314 | 5.30271 | 0.1607606 | 2.6992362 | 55 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 60837 | 2001 $QY_8$ |
| 2001 $QU_9$ | 15.1 | 0.15 | 20060922 | 23.97304 | 28.42971 | 326.36166 | 13.03739 | 0.2044510 | 2.7629224 | 89 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 60838 | 2001 $QU_9$ |
| 2001 $QJ_{10}$ | 16.9 | 0.15 | 20060922 | 100.01681 | 177.84837 | 153.36553 | 2.01196 | 0.1521739 | 2.5147581 | 85 | 4 | 1993–2005 | 0.48 | M-v | 2 | MPC | 04153 | 2001 $QJ_{10}$ |
| 2001 $QZ_{11}$ | 16.9 | 0.15 | 20060922 | 77.23461 | 10.55243 | 333.09054 | 1.16901 | 0.2158000 | 2.5781849 | 83 | 5 | 1997–2006 | 0.35 | M-v | 1 | MPC | 97446 | 2001 $QZ_{11}$ |
| 2001 $QJ_{12}$ | 15.2 | 0.15 | 20060922 | 359.41438 | 98.64252 | 327.75699 | 5.23955 | 0.3006567 | 2.6961637 | 104 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 87438 | 2001 $QJ_{12}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QG_{13}$ | 15.6 | 0.15 | 20060922 | 68.99474 | 322.79088 | 338.59330 | 8.81427 | 0.1989061 | 2.7411044 | 116 | 5 | 1992–2006 | 0.52 | M-v | 1 | MPC | 87438 | 2001 $QG_{13}$ |
| 2001 $QT_{13}$ | 16.2 | 0.15 | 20060922 | 188.60793 | 324.41033 | 345.93906 | 8.82965 | 0.2313143 | 2.2785911 | 148 | 3 | 2000–2004 | 0.54 | M-v | 2 | MPC | 66191 | 2001 $QT_{13}$ |
| 2001 $QU_{14}$ | 16.3 | 0.15 | 20060922 | 171.28751 | 299.29213 | 322.93643 | 14.37517 | 0.1768423 | 2.4211508 | 47 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 87438 | 2001 $QU_{14}$ |
| 2001 $QC_{15}$ | 16.2 | 0.15 | 20060922 | 58.65004 | 207.55187 | 157.65820 | 6.00957 | 0.2082410 | 2.5672593 | 80 | 5 | 1960–2005 | 0.59 | M-v | 1 | MPC | 90064 | 2001 $QC_{15}$ |
| 2001 $QY_{15}$ | 14.7 | 0.15 | 20060922 | 16.97105 | 196.03967 | 139.49407 | 9.90737 | 0.2780493 | 2.8522611 | 131 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04153 | 2001 $QY_{15}$ |
| 2001 $QR_{16}$ | 15.5 | 0.15 | 20060922 | 54.25486 | 193.10801 | 131.77918 | 10.68639 | 0.2474391 | 2.7141319 | 48 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 84740 | 2001 $QR_{16}$ |
| 2001 $QM_{17}$ | 16.1 | 0.15 | 20060922 | 29.79131 | 7.94384 | 24.17765 | 5.19500 | 0.2442306 | 2.6209250 | 35 | 4 | 1997–2004 | 0.60 | M-v | 1 | MPC | 62336 | 2001 $QM_{17}$ |
| 2001 $QJ_{18}$ | 15.6 | 0.15 | 20060922 | 27.92601 | 354.15179 | 3.95006 | 2.03494 | 0.2358267 | 2.7594610 | 158 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87438 | 2001 $QJ_{18}$ |
| 2001 $QY_{19}$ | 15.2 | 0.15 | 20060922 | 341.96242 | 185.84441 | 147.87683 | 9.86692 | 0.2562283 | 3.0855356 | 82 | 3 | 1998–2004 | 0.49 | M-v | 2 | MPC | 60843 | 2001 $QY_{19}$ |
| 2001 $QJ_{22}$ | 15.5 | 0.15 | 20060922 | 129.99328 | 16.90074 | 343.23328 | 5.69231 | 0.1624693 | 2.3970883 | 143 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 90064 | 2001 $QJ_{22}$ |
| 2001 $QS_{23}$ | 15.7 | 0.15 | 20060922 | 123.77440 | 167.32757 | 115.45579 | 4.85306 | 0.2527894 | 2.5545118 | 84 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 90064 | 2001 $QS_{23}$ |
| 2001 $QE_{24}$ | 15.3 | 0.15 | 20060922 | 24.73310 | 8.13448 | 357.76429 | 8.08665 | 0.2259923 | 2.7581987 | 117 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 60846 | 2001 $QE_{24}$ |
| 2001 $QJ_{24}$ | 16.5 | 0.15 | 20060922 | 133.66555 | 0.32234 | 339.89269 | 5.27799 | 0.2107916 | 2.3978990 | 116 | 3 | 1996–2005 | 0.57 | M-v | 2 | MPC | 97446 | 2001 $QJ_{24}$ |
| 2001 $QX_{24}$ | 14.9 | 0.15 | 20060922 | 76.04125 | 172.20655 | 146.00146 | 15.22727 | 0.2323969 | 2.6669848 | 71 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 87438 | 2001 $QX_{24}$ |
| 2001 $QU_{25}$ | 16.6 | 0.15 | 20060922 | 335.21209 | 199.92075 | 168.27061 | 22.81689 | 0.0903060 | 1.8800789 | 85 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04153 | 2001 $QU_{25}$ |
| 2001 $QY_{26}$ | 15.1 | 0.15 | 20060922 | 78.85752 | 307.94116 | 352.18117 | 25.02829 | 0.1087209 | 2.7456406 | 133 | 5 | 1999–2006 | 0.70 | M-v | 1 | MPC | 77549 | 2001 $QY_{26}$ |
| 2001 $QZ_{27}$ | 15.3 | 0.15 | 20060922 | 47.76007 | 15.08450 | 27.29606 | 6.05168 | 0.2796330 | 2.6320895 | 226 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97446 | 2001 $QZ_{27}$ |
| 2001 $QE_{30}$ | 15.4 | 0.15 | 20060922 | 338.75844 | 206.74088 | 204.35064 | 2.33908 | 0.3030056 | 2.9796185 | 194 | 4 | 1993–2006 | 0.44 | M-v | 1 | MPC | 03197 | 2001 $QE_{30}$ |
| 2001 $QB_{32}$ | 15.7 | 0.15 | 20060922 | 26.52219 | 238.05087 | 163.01459 | 11.60424 | 0.2518344 | 2.6274582 | 65 | 6 | 1995–2006 | 0.55 | M-v | 1 | MPC | 77549 | 2001 $QB_{32}$ |
| 2001 $QD_{32}$ | 16.0 | 0.15 | 20060922 | 141.27882 | 37.13278 | 296.59784 | 5.52641 | 0.1478403 | 2.4023259 | 138 | 4 | 2000–2005 | 0.64 | M-v | 1 | MPC | 97446 | 2001 $QD_{32}$ |
| 2001 $QM_{32}$ | 15.2 | 0.15 | 20060922 | 298.75855 | 80.61174 | 295.27828 | 3.98067 | 0.1511403 | 3.1650860 | 77 | 4 | 1990–2004 | 0.55 | M-v | 1 | MPC | 46542 | 2001 $QM_{32}$ |
| 2001 $QF_{33}$ | 17.1 | 0.15 | 20060922 | 116.26520 | 10.88204 | 355.54846 | 6.41578 | 0.1417802 | 2.3903370 | 53 | 2 | 2001–2005 | 0.56 | M-v | 3 | MPC | 88821 | 2001 $QF_{33}$ |
| 2001 $QQ_{34}$ | 16.0 | 0.15 | 20060922 | 71.56969 | 138.41280 | 132.49697 | 10.09054 | 0.1639427 | 2.7440320 | 64 | 5 | 1992–2006 | 0.74 | M-v | 1 | MPC | 77549 | 2001 $QQ_{34}$ |
| 2001 $QR_{34}$ | 15.3 | 0.15 | 20060922 | 343.23349 | 78.17111 | 298.77356 | 8.75882 | 0.1518992 | 2.7760713 | 53 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04153 | 2001 $QR_{34}$ |
| 2001 $QU_{34}$ | 15.3 | 0.15 | 20060922 | 65.07208 | 123.18312 | 141.59562 | 9.70838 | 0.2533859 | 2.7733348 | 120 | 3 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04153 | 2001 $QU_{34}$ |
| 2001 $QX_{34}$ | 17.2 | 0.15 | 20060922 | 185.49578 | 14.55359 | 289.81861 | 2.04365 | 0.1670314 | 2.2611586 | 32 | 4 | 2000–2005 | 0.57 | M-v | 1 | MPC | 90064 | 2001 $QX_{34}$ |
| 2001 $QO_{35}$ | 14.9 | 0.15 | 20060922 | 336.61973 | 338.37398 | 314.70568 | 3.94729 | 0.1417876 | 3.1860621 | 41 | 5 | 1999–2006 | 0.66 | M-v | 1 | MPC | 02037 | 2001 $QO_{35}$ |
| 2001 $QC_{36}$ | 16.0 | 0.15 | 20060922 | 25.04169 | 213.26323 | 133.41142 | 4.22323 | 0.1764708 | 2.7239601 | 63 | 5 | 1999–2006 | 0.56 | M-v | 0 | MPC | 87439 | 2001 $QC_{36}$ |
| 2001 $QR_{36}$ | 15.4 | 0.15 | 20060922 | 130.18046 | 308.58843 | 312.19699 | 7.61138 | 0.1299094 | 2.5674477 | 69 | 6 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87439 | 2001 $QR_{36}$ |
| 2001 $QD_{38}$ | 16.8 | 0.15 | 20060922 | 147.47932 | 23.51238 | 289.91819 | 1.60195 | 0.2019970 | 2.3704595 | 39 | 2 | 2001–2005 | 0.48 | M-v | 3 | MPC | 88822 | 2001 $QD_{38}$ |
| 2001 $QQ_{39}$ | 16.1 | 0.15 | 20060922 | 94.95539 | 224.82601 | 119.68120 | 4.30122 | 0.1959167 | 2.4596820 | 91 | 5 | 1997–2006 | 0.50 | M-v | 2 | MPC | 87439 | 2001 $QQ_{39}$ |
| 2001 $QS_{39}$ | 16.1 | 0.15 | 20060922 | 81.60104 | 334.57521 | 340.59068 | 1.15250 | 0.1978747 | 2.5819902 | 39 | 4 | 1993–2006 | 0.63 | M-v | 1 | MPC | 17793 | 2001 $QS_{39}$ |
| 2001 $QX_{41}$ | 16.7 | 0.15 | 20060922 | 183.67907 | 166.55154 | 132.53162 | 3.21522 | 0.1815539 | 2.2890938 | 68 | 4 | 2000–2005 | 0.56 | M-v | 1 | MPC | 90064 | 2001 $QX_{41}$ |
| 2001 $QC_{42}$ | 16.7 | 0.15 | 20060922 | 94.27732 | 223.35317 | 147.64636 | 3.43222 | 0.2306729 | 2.4186608 | 59 | 2 | 2001–2005 | 0.51 | M-v | 3 | MPC | 90064 | 2001 $QC_{42}$ |
| 2001 $QU_{42}$ | 16.3 | 0.15 | 20060922 | 267.77588 | 250.67041 | 335.04723 | 5.24065 | 0.1547225 | 2.2279718 | 43 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 93978 | 2001 $QU_{42}$ |
| 2001 $QC_{43}$ | 15.9 | 0.15 | 20060922 | 355.98065 | 62.19430 | 321.53924 | 12.07739 | 0.2186795 | 2.7629939 | 54 | 5 | 1994–2006 | 0.50 | M-v | 0 | MPC | 74095 | 2001 $QC_{43}$ |
| 2001 $QY_{43}$ | 15.3 | 0.15 | 20060922 | 31.61994 | 235.47712 | 157.66783 | 5.53158 | 0.2764032 | 2.6051158 | 62 | 4 | 1999–2006 | 0.65 | M-v | 3 | MPC | 42962 | 2001 $QY_{43}$ |
| 2001 $QS_{44}$ | 15.5 | 0.15 | 20060922 | 331.16692 | 266.31198 | 131.85178 | 4.61077 | 0.1038998 | 2.7763137 | 67 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 04153 | 2001 $QS_{44}$ |
| 2001 $QH_{45}$ | 17.2 | 0.15 | 20060922 | 121.76504 | 309.34870 | 21.34225 | 0.53758 | 0.1948113 | 2.4193614 | 78 | 5 | 1996–2005 | 0.53 | M-v | 1 | MPC | 97447 | 2001 $QH_{45}$ |
| 2001 $QU_{46}$ | 16.8 | 0.15 | 20060922 | 58.95165 | 358.61650 | 336.33827 | 1.82506 | 0.1421984 | 2.6414910 | 50 | 4 | 1999–2006 | 0.36 | M-v | 0 | MPC | 62338 | 2001 $QU_{46}$ |
| 2001 $QW_{46}$ | 17.3 | 0.15 | 20060922 | 119.80426 | 334.40990 | 359.00391 | 1.03297 | 0.1996540 | 2.4237692 | 68 | 3 | 2001–2005 | 0.61 | M-v | 3 | MPC | 97447 | 2001 $QW_{46}$ |
| 2001 $QX_{46}$ | 15.9 | 0.15 | 20060922 | 39.02592 | 15.73944 | 329.44916 | 2.47702 | 0.1063323 | 2.6894767 | 80 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 64941 | 2001 $QX_{46}$ |
| 2001 $QZ_{47}$ | 17.7 | 0.15 | 20060922 | 184.91907 | 156.89248 | 145.32920 | 8.42452 | 0.1557232 | 2.2958232 | 29 | 3 | 2000–2004 | 0.56 | M-v | 3 | MPC | 17800 | 2001 $QZ_{47}$ |
| 2001 $QL_{48}$ | 16.8 | 0.15 | 20060922 | 28.96015 | 250.36429 | 34.86518 | 0.96681 | 0.3263329 | 2.9187222 | 49 | 2 | 2001–2006 | 0.42 | M-v | 4 | MPC | 03197 | 2001 $QL_{48}$ |
| 2001 $QO_{49}$ | 16.2 | 0.15 | 20060922 | 87.00248 | 308.80599 | 326.81325 | 11.85700 | 0.1372611 | 2.7342834 | 46 | 4 | 1995–2006 | 0.63 | M-v | 1 | MPC | 60854 | 2001 $QO_{49}$ |
| 2001 $QG_{50}$ | 16.5 | 0.15 | 20060922 | 52.60575 | 247.55187 | 146.56353 | 4.92102 | 0.2896053 | 2.5535005 | 114 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 90065 | 2001 $QG_{50}$ |
| 2001 $QV_{50}$ | 15.3 | 0.15 | 20060922 | 62.85855 | 281.80507 | 54.42123 | 4.70996 | 0.1675982 | 2.6145930 | 97 | 6 | 2000–2006 | 0.62 | M-v | 1 | MPC | 77550 | 2001 $QV_{50}$ |
| 2001 $QG_{51}$ | 15.6 | 0.15 | 20060922 | 99.71072 | 288.29276 | 357.79072 | 4.26817 | 0.2728079 | 2.5935786 | 64 | 3 | 1996–2006 | 0.54 | M-v | 2 | MPC | 20882 | 2001 $QG_{51}$ |
| 2001 $QW_{51}$ | 15.8 | 0.15 | 20060922 | 118.86417 | 184.43856 | 104.77738 | 6.62820 | 0.1703871 | 2.5355694 | 50 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 88824 | 2001 $QW_{51}$ |
| 2001 $QC_{52}$ | 16.2 | 0.15 | 20060922 | 43.07513 | 358.07518 | 17.11661 | 3.85901 | 0.1937209 | 2.5932964 | 54 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 66192 | 2001 $QC_{52}$ |
| 2001 $QS_{52}$ | 15.9 | 0.15 | 20060922 | 88.48353 | 299.96025 | 10.28446 | 3.94293 | 0.1430111 | 2.5993512 | 56 | 6 | 1993–2006 | 0.58 | M-v | 1 | MPC | 87439 | 2001 $QS_{52}$ |
| 2001 $QO_{53}$ | 15.8 | 0.15 | 20060922 | 128.88207 | 316.51379 | 305.73632 | 6.74093 | 0.1089609 | 2.6105170 | 41 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 90065 | 2001 $QO_{53}$ |
| 2001 $QA_{55}$ | 16.5 | 0.15 | 20060922 | 157.62055 | 173.97765 | 119.70268 | 3.51918 | 0.1828748 | 2.4082124 | 55 | 3 | 2001–2005 | 0.49 | M-v | 2 | MPC | 97447 | 2001 $QA_{55}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QU_{55}$ | 15.0 | 0.15 | 20060922 | 288.76972 | 257.91383 | 142.77095 | 11.16901 | 0.1788462 | 3.0715532 | 49 | 5 | 2001–2006 | 0.62 | M-v | 1 | MPC | 02037 | 2001 $QU_{55}$ |
| 2001 $QV_{55}$ | 16.5 | 0.15 | 20060922 | 45.05278 | 0.96175 | 341.12926 | 4.99004 | 0.2284166 | 2.7043200 | 41 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 84750 | 2001 $QV_{55}$ |
| 2001 $QK_{56}$ | 17.1 | 0.15 | 20060922 | 179.02823 | 177.53097 | 115.16896 | 3.35859 | 0.2124919 | 2.3261152 | 54 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 97447 | 2001 $QK_{56}$ |
| 2001 $QK_{57}$ | 16.2 | 0.15 | 20060922 | 50.13696 | 200.26572 | 132.23838 | 10.78692 | 0.2292790 | 2.7104103 | 42 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 87439 | 2001 $QK_{57}$ |
| 2001 $QL_{57}$ | 16.4 | 0.15 | 20060922 | 41.10673 | 302.79267 | 53.28496 | 2.92306 | 0.2161067 | 2.6824573 | 38 | 4 | 1997–2006 | 0.59 | M-v | 1 | MPC | 62338 | 2001 $QL_{57}$ |
| 2001 $QB_{58}$ | 15.9 | 0.15 | 20060922 | 168.85728 | 172.01261 | 110.82522 | 4.16426 | 0.1669602 | 2.4144771 | 96 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90065 | 2001 $QB_{58}$ |
| 2001 $QD_{58}$ | 16.3 | 0.15 | 20060922 | 80.67930 | 271.43020 | 63.26641 | 4.40178 | 0.2420613 | 2.5921333 | 55 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 87439 | 2001 $QD_{58}$ |
| 2001 $QF_{59}$ | 14.8 | 0.15 | 20060922 | 346.54001 | 116.64169 | 314.92696 | 10.67315 | 0.2137914 | 2.7462051 | 102 | 4 | 2001–2006 | 0.59 | M-v | 0 | MPC | 87439 | 2001 $QF_{59}$ |
| 2001 $QS_{59}$ | 16.4 | 0.15 | 20060922 | 128.48724 | 207.00823 | 120.63236 | 7.28336 | 0.1574449 | 2.4111335 | 41 | 2 | 2001–2005 | 0.62 | M-v | 4 | MPC | 90065 | 2001 $QS_{59}$ |
| 2001 $QY_{62}$ | 14.8 | 0.15 | 20060922 | 351.70942 | 103.99558 | 334.75902 | 11.12638 | 0.1770527 | 2.6426741 | 163 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87440 | 2001 $QY_{62}$ |
| 2001 $QZ_{63}$ | 14.6 | 0.15 | 20060922 | 286.75543 | 256.87298 | 172.37540 | 22.86846 | 0.3148724 | 3.1182970 | 108 | 4 | 1997–2006 | 0.57 | M-v | 1 | MPC | 04153 | 2001 $QZ_{63}$ |
| 2001 $QU_{65}$ | 16.8 | 0.15 | 20060922 | 172.28055 | 121.26940 | 185.52771 | 5.75998 | 0.0972855 | 2.3595235 | 56 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 88827 | 2001 $QU_{65}$ |
| 2001 $QA_{67}$ | 14.8 | 0.15 | 20060922 | 38.14693 | 54.70793 | 1.86819 | 5.68860 | 0.3286066 | 2.5979686 | 243 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 97448 | 2001 $QA_{67}$ |
| 2001 $QP_{68}$ | 14.5 | 0.15 | 20060922 | 345.08929 | 27.91349 | 290.35685 | 16.73891 | 0.2051172 | 3.1339378 | 96 | 4 | 1997–2005 | 0.63 | M-v | 2 | MPC | 77550 | 2001 $QP_{68}$ |
| 2001 $QO_{70}$ | 14.8 | 0.15 | 20060922 | 35.90780 | 15.31300 | 327.93037 | 8.98545 | 0.1736019 | 2.7891977 | 204 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 60861 | 2001 $QO_{70}$ |
| 2001 $QQ_{71}$ | 16.3 | 0.15 | 20060922 | 31.50843 | 161.33076 | 176.40184 | 8.42344 | 0.2116914 | 2.7476045 | 71 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 75041 | 2001 $QQ_{71}$ |
| 2001 $QR_{72}$ | 15.4 | 0.15 | 20060922 | 336.69989 | 122.80581 | 265.51669 | 11.49443 | 0.1462819 | 2.8560435 | 56 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04153 | 2001 $QR_{72}$ |
| 2001 $QV_{72}$ | 14.1 | 0.15 | 20060922 | 13.96770 | 140.43306 | 174.28764 | 23.28083 | 0.2209714 | 3.1931794 | 145 | 3 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04153 | 2001 $QV_{72}$ |
| 2001 $QX_{76}$ | 15.1 | 0.15 | 20060922 | 79.79940 | 73.40750 | 307.48403 | 2.46612 | 0.1595422 | 2.6050111 | 280 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04154 | 2001 $QX_{76}$ |
| 2001 $QQ_{78}$ | 14.2 | 0.15 | 20060922 | 347.77605 | 158.89268 | 208.87353 | 16.61822 | 0.2107842 | 3.1383390 | 172 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04154 | 2001 $QQ_{78}$ |
| 2001 $QQ_{80}$ | 17.5 | 0.15 | 20060922 | 345.10848 | 29.46703 | 336.80283 | 19.75479 | 0.0832345 | 1.8673357 | 87 | 2 | 2001–2006 | 0.48 | M-v | 3 | MPC | 03198 | 2001 $QQ_{80}$ |
| 2001 $QA_{81}$ | 15.0 | 0.15 | 20060922 | 41.88104 | 65.21246 | 292.24850 | 6.57776 | 0.2088537 | 2.7569726 | 100 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 40308 | 2001 $QA_{81}$ |
| 2001 $QZ_{81}$ | 14.8 | 0.15 | 20060922 | 307.80588 | 130.14349 | 262.66655 | 7.09518 | 0.2462110 | 3.1608733 | 137 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04154 | 2001 $QZ_{81}$ |
| 2001 $QE_{82}$ | 15.7 | 0.15 | 20060922 | 35.41166 | 89.77636 | 324.32310 | 10.73673 | 0.2626198 | 2.6369624 | 84 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 90066 | 2001 $QE_{82}$ |
| 2001 $QG_{82}$ | 15.4 | 0.15 | 20060922 | 31.54150 | 78.74792 | 320.15559 | 9.91101 | 0.1113217 | 2.6718827 | 136 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 90066 | 2001 $QG_{82}$ |
| 2001 $QK_{82}$ | 15.5 | 0.15 | 20060922 | 48.45393 | 86.64730 | 344.45957 | 32.08681 | 0.3069481 | 2.5491703 | 156 | 2 | 2001–2006 | 0.49 | M-v | 2 | MPC | 97448 | 2001 $QK_{82}$ |
| 2001 $QM_{82}$ | 16.1 | 0.15 | 20060922 | 108.24703 | 16.51938 | 309.32989 | 9.10333 | 0.2581900 | 2.5452966 | 169 | 6 | 1997–2006 | 0.54 | M-v | 2 | MPC | 97448 | 2001 $QM_{82}$ |
| 2001 $QU_{82}$ | 15.8 | 0.15 | 20060922 | 356.75901 | 103.19515 | 238.85796 | 5.15663 | 0.3254650 | 3.0116378 | 99 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 04154 | 2001 $QU_{82}$ |
| 2001 $QF_{83}$ | 14.7 | 0.15 | 20060922 | 354.35887 | 43.11593 | 337.84216 | 11.33859 | 0.2690564 | 2.9376123 | 150 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 03198 | 2001 $QF_{83}$ |
| 2001 $QG_{83}$ | 15.8 | 0.15 | 20060922 | 61.21013 | 27.02467 | 324.72601 | 8.16537 | 0.3144133 | 2.6801770 | 76 | 3 | 2001–2005 | 0.52 | M-v | 2 | MPC | 46546 | 2001 $QG_{83}$ |
| 2001 $QB_{85}$ | 16.8 | 0.15 | 20060922 | 201.73663 | 159.65417 | 101.49854 | 4.70073 | 0.1854210 | 2.3268995 | 54 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 90066 | 2001 $QB_{85}$ |
| 2001 $QH_{85}$ | 16.2 | 0.15 | 20060922 | 69.89737 | 272.91164 | 359.64803 | 14.03589 | 0.2644441 | 2.7856265 | 34 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04154 | 2001 $QH_{85}$ |
| 2001 $QY_{85}$ | 16.6 | 0.15 | 20060922 | 37.42516 | 54.72810 | 6.40096 | 3.94182 | 0.2766332 | 2.6055993 | 110 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 90066 | 2001 $QY_{85}$ |
| 2001 $QB_{87}$ | 15.7 | 0.15 | 20060922 | 29.18737 | 122.29598 | 277.61003 | 11.82804 | 0.1977040 | 2.6455852 | 77 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 84758 | 2001 $QB_{87}$ |
| 2001 $QJ_{87}$ | 15.4 | 0.15 | 20060922 | 119.99505 | 45.63575 | 244.93700 | 9.77471 | 0.1139759 | 2.6124253 | 86 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87440 | 2001 $QJ_{87}$ |
| 2001 $QQ_{87}$ | 16.3 | 0.15 | 20060922 | 77.99795 | 147.49445 | 125.99491 | 10.36641 | 0.1291674 | 2.7583448 | 37 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 84758 | 2001 $QQ_{87}$ |
| 2001 $QT_{87}$ | 16.3 | 0.15 | 20060922 | 181.18896 | 200.65765 | 52.47312 | 3.12301 | 0.1413035 | 2.4222423 | 73 | 5 | 1996–2005 | 0.49 | M-v | 1 | MPC | 97448 | 2001 $QT_{87}$ |
| 2001 $QQ_{88}$ | 17.6 | 0.15 | 20060922 | 154.70691 | 332.23878 | 316.32846 | 1.22153 | 0.1972910 | 2.4149919 | 53 | 3 | 2000–2005 | 0.55 | M-v | 3 | MPC | 90066 | 2001 $QQ_{88}$ |
| 2001 $QS_{88}$ | 17.4 | 0.15 | 20060922 | 33.10841 | 310.57382 | 159.04194 | 1.86588 | 0.1480832 | 2.3076943 | 80 | 4 | 1995–2005 | 0.62 | M-v | 1 | MPC | 97448 | 2001 $QS_{88}$ |
| 2001 $QP_{89}$ | 15.3 | 0.15 | 20060922 | 329.66973 | 354.31791 | 71.15509 | 13.63725 | 0.1235572 | 2.7004904 | 55 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 40316 | 2001 $QP_{89}$ |
| 2001 $QA_{90}$ | 16.3 | 0.15 | 20060922 | 45.17994 | 94.23788 | 298.02039 | 17.63589 | 0.2148457 | 2.6438381 | 26 | 4 | 1994–2006 | 0.56 | M-v | 1 | MPC | 03199 | 2001 $QA_{90}$ |
| 2001 $QD_{90}$ | 15.1 | 0.15 | 20060922 | 41.88224 | 134.73590 | 240.37649 | 14.86417 | 0.1976252 | 2.6992284 | 62 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87441 | 2001 $QD_{90}$ |
| 2001 $QL_{90}$ | 15.4 | 0.15 | 20060922 | 330.64713 | 263.43373 | 142.16122 | 12.13250 | 0.2666096 | 3.0640684 | 112 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04154 | 2001 $QL_{90}$ |
| 2001 $QJ_{91}$ | 16.4 | 0.15 | 20060922 | 154.80365 | 4.52288 | 295.63497 | 5.98054 | 0.1221549 | 2.3765008 | 67 | 4 | 2001–2006 | 0.62 | M-v | 2 | MPC | 90066 | 2001 $QJ_{91}$ |
| 2001 $QQ_{91}$ | 16.3 | 0.15 | 20060922 | 103.76692 | 127.67141 | 214.29042 | 3.36754 | 0.1481189 | 2.4925475 | 128 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97448 | 2001 $QQ_{91}$ |
| 2001 $QL_{94}$ | 16.0 | 0.15 | 20060922 | 11.97669 | 36.29494 | 336.87852 | 3.36628 | 0.1149235 | 2.8035522 | 101 | 4 | 1994–2006 | 0.49 | M-v | 3 | MPC | 50544 | 2001 $QL_{94}$ |
| 2001 $QS_{94}$ | 15.2 | 0.15 | 20060922 | 153.74101 | 239.19663 | 353.24891 | 17.08793 | 0.1024455 | 2.7456980 | 153 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87441 | 2001 $QS_{94}$ |
| 2001 $QM_{97}$ | 15.3 | 0.15 | 20060922 | 68.92643 | 40.96271 | 322.62444 | 4.75439 | 0.2610157 | 2.6155611 | 187 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 97448 | 2001 $QM_{97}$ |
| 2001 $QL_{100}$ | 17.6 | 0.15 | 20060922 | 190.46824 | 249.07162 | 83.99896 | 5.26730 | 0.2017781 | 2.1975189 | 31 | 4 | 1998–2006 | 0.93 | M-v | 2 | MPC | 00037 | 2001 $QL_{100}$ |
| 2001 $QM_{100}$ | 17.0 | 0.15 | 20060922 | 42.72343 | 259.75460 | 15.61013 | 21.13705 | 0.0992514 | 1.8830083 | 56 | 4 | 1996–2006 | 0.65 | M-v | 2 | MPC | 02037 | 2001 $QM_{100}$ |
| 2001 $QB_{102}$ | 14.7 | 0.15 | 20060922 | 7.13020 | 68.94656 | 9.84210 | 12.68902 | 0.1393816 | 2.6800441 | 203 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 97449 | 2001 $QB_{102}$ |
| 2001 $QF_{102}$ | 17.4 | 0.15 | 20060922 | 125.09678 | 6.80404 | 321.94512 | 12.48340 | 0.2086937 | 2.3886216 | 48 | 3 | 2000–2005 | 0.66 | M-v | 3 | MPC | 88830 | 2001 $QF_{102}$ |
| 2001 $QN_{102}$ | 16.1 | 0.15 | 20060922 | 99.51981 | 208.45485 | 134.10282 | 7.00284 | 0.1488448 | 2.4372409 | 71 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 84762 | 2001 $QN_{102}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QG_{107}$ | 15.0 | 0.15 | 20060922 | 37.01931 | 131.70336 | 268.71472 | 28.86366 | 0.1863886 | 2.5773803 | 42 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 84764 | 2001 $QG_{107}$ |
| 2001 $QA_{108}$ | 17.5 | 0.15 | 20060922 | 153.85787 | 201.37125 | 143.91738 | 2.81093 | 0.2302633 | 2.3147784 | 78 | 4 | 1997–2004 | 0.48 | M-v | 1 | MPC | 64947 | 2001 $QA_{108}$ |
| 2001 $QF_{110}$ | 15.4 | 0.15 | 20060922 | 19.48809 | 287.12910 | 108.64693 | 4.85951 | 0.1066821 | 2.5559921 | 32 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 84765 | 2001 $QF_{110}$ |
| 2001 $QQ_{110}$ | 16.3 | 0.15 | 20060922 | 40.88224 | 161.24123 | 142.80516 | 2.42089 | 0.0969571 | 2.9193935 | 30 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 87441 | 2001 $QQ_{110}$ |
| 2001 $QR_{110}$ | 16.1 | 0.15 | 20060922 | 338.47993 | 305.07588 | 87.30238 | 3.33750 | 0.1026768 | 2.8626164 | 45 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 75046 | 2001 $QR_{110}$ |
| 2001 $QA_{111}$ | 15.7 | 0.15 | 20060922 | 8.01528 | 128.80027 | 245.05598 | 3.77411 | 0.1829252 | 2.7748594 | 156 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04154 | 2001 $QA_{111}$ |
| 2001 $QD_{111}$ | 15.1 | 0.15 | 20060922 | 8.89524 | 33.93805 | 296.63517 | 24.21664 | 0.3506152 | 2.9876185 | 75 | 2 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04154 | 2001 $QD_{111}$ |
| 2001 $QE_{113}$ | 15.9 | 0.15 | 20060922 | 100.31695 | 87.80684 | 210.44774 | 9.52840 | 0.2641621 | 2.6202542 | 115 | 4 | 1997–2006 | 0.50 | M-v | 1 | MPC | 87441 | 2001 $QE_{113}$ |
| 2001 $QE_{114}$ | 16.3 | 0.15 | 20060922 | 51.71030 | 128.77253 | 246.06132 | 4.44925 | 0.2744468 | 2.6157454 | 94 | 4 | 1997–2006 | 0.58 | M-v | 1 | MPC | 87441 | 2001 $QE_{114}$ |
| 2001 $QJ_{114}$ | 15.6 | 0.15 | 20060922 | 59.47429 | 47.94700 | 317.56558 | 14.07513 | 0.1123123 | 2.5884972 | 119 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87441 | 2001 $QJ_{114}$ |
| 2001 $QP_{114}$ | 14.3 | 0.15 | 20060922 | 94.54545 | 258.36928 | 319.33569 | 15.81948 | 0.0600677 | 3.1153868 | 79 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 04154 | 2001 $QP_{114}$ |
| 2001 $QC_{115}$ | 16.4 | 0.15 | 20060922 | 101.62077 | 28.85417 | 305.44843 | 7.17240 | 0.2319273 | 2.5190925 | 78 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 97449 | 2001 $QC_{115}$ |
| 2001 $QT_{115}$ | 15.2 | 0.15 | 20060922 | 357.06321 | 146.34872 | 189.25744 | 12.59657 | 0.1075856 | 3.0196513 | 95 | 6 | 1991–2006 | 0.62 | M-v | 1 | MPC | 04154 | 2001 $QT_{115}$ |
| 2001 $QU_{115}$ | 15.7 | 0.15 | 20060922 | 357.32190 | 206.72640 | 199.29571 | 7.70073 | 0.2170951 | 2.7661529 | 109 | 5 | 1992–2006 | 0.51 | M-v | 1 | MPC | 64949 | 2001 $QU_{115}$ |
| 2001 $QB_{116}$ | 16.3 | 0.15 | 20060922 | 225.79782 | 310.05429 | 321.61223 | 9.54799 | 0.1193813 | 2.3030501 | 79 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97449 | 2001 $QB_{116}$ |
| 2001 $QE_{117}$ | 15.6 | 0.15 | 20060922 | 77.12739 | 80.12453 | 299.03383 | 5.07152 | 0.2156756 | 2.5349219 | 162 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 97449 | 2001 $QE_{117}$ |
| 2001 $QQ_{118}$ | 15.5 | 0.15 | 20060922 | 323.36426 | 64.99051 | 313.58409 | 8.14532 | 0.2165851 | 3.0955528 | 77 | 4 | 1990–2006 | 0.48 | M-v | 1 | MPC | 46551 | 2001 $QQ_{118}$ |
| 2001 $QC_{119}$ | 16.5 | 0.15 | 20060922 | 32.08971 | 171.78494 | 236.61952 | 5.36660 | 0.1598016 | 2.5757608 | 81 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 90067 | 2001 $QC_{119}$ |
| 2001 $QD_{119}$ | 15.6 | 0.15 | 20060922 | 293.74626 | 114.41797 | 309.31892 | 9.58318 | 0.0886772 | 2.9295514 | 61 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04154 | 2001 $QD_{119}$ |
| 2001 $QG_{120}$ | 14.8 | 0.15 | 20060922 | 351.39031 | 266.71861 | 138.57441 | 9.76912 | 0.1642018 | 2.7718450 | 134 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 43407 | 2001 $QG_{120}$ |
| 2001 $QJ_{120}$ | 16.2 | 0.15 | 20060922 | 72.06741 | 242.52057 | 133.55903 | 4.74494 | 0.2918778 | 2.5763676 | 159 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 97449 | 2001 $QJ_{120}$ |
| 2001 $QC_{121}$ | 16.0 | 0.15 | 20060922 | 93.20964 | 270.12898 | 123.32368 | 7.42787 | 0.1134284 | 2.3350310 | 86 | 6 | 1996–2005 | 0.64 | M-v | 1 | MPC | 97449 | 2001 $QC_{121}$ |
| 2001 $QF_{121}$ | 16.2 | 0.15 | 20060922 | 88.99018 | 162.79891 | 129.33739 | 14.14686 | 0.1811609 | 2.6352127 | 46 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 84770 | 2001 $QF_{121}$ |
| 2001 $QU_{121}$ | 15.7 | 0.15 | 20060922 | 1.35779 | 18.35286 | 351.09665 | 6.37943 | 0.1100353 | 2.7715538 | 64 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04154 | 2001 $QU_{121}$ |
| 2001 $QH_{123}$ | 16.5 | 0.15 | 20060922 | 65.20771 | 266.06847 | 114.48371 | 6.80591 | 0.1044768 | 2.4855771 | 61 | 5 | 2001–2006 | 0.44 | M-v | 0 | MPC | 84770 | 2001 $QH_{123}$ |
| 2001 $QJ_{123}$ | 16.3 | 0.15 | 20060922 | 356.97369 | 19.07871 | 357.35638 | 8.89794 | 0.2150428 | 2.8100893 | 144 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04154 | 2001 $QJ_{123}$ |
| 2001 $QS_{123}$ | 16.8 | 0.15 | 20060922 | 149.05509 | 248.21647 | 50.81686 | 2.13707 | 0.1937353 | 2.4129045 | 60 | 4 | 1996–2005 | 0.62 | M-v | 1 | MPC | 97449 | 2001 $QS_{123}$ |
| 2001 $QV_{123}$ | 16.0 | 0.15 | 20060922 | 121.32967 | 241.77576 | 57.75022 | 4.06734 | 0.1149867 | 2.5234619 | 91 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87442 | 2001 $QV_{123}$ |
| 2001 $QY_{123}$ | 15.2 | 0.15 | 20060922 | 6.54196 | 317.63496 | 14.96574 | 6.34011 | 0.0920177 | 2.9140269 | 43 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04154 | 2001 $QY_{123}$ |
| 2001 $QR_{124}$ | 15.5 | 0.15 | 20060922 | 357.54633 | 276.64926 | 96.52276 | 3.94890 | 0.0986997 | 2.7832675 | 61 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 60876 | 2001 $QR_{124}$ |
| 2001 $QG_{126}$ | 14.8 | 0.15 | 20060922 | 33.63237 | 94.27987 | 266.98421 | 10.29996 | 0.2186125 | 2.6509911 | 73 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 50544 | 2001 $QG_{126}$ |
| 2001 $QJ_{126}$ | 15.8 | 0.15 | 20060922 | 72.76888 | 95.84720 | 196.69175 | 7.69556 | 0.2223905 | 2.6780156 | 71 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04154 | 2001 $QJ_{126}$ |
| 2001 $QT_{126}$ | 16.4 | 0.15 | 20060922 | 93.20326 | 42.17921 | 279.88881 | 9.43224 | 0.2515986 | 2.5403119 | 87 | 3 | 2001–2006 | 0.39 | M-v | 2 | MPC | 87442 | 2001 $QT_{126}$ |
| 2001 $QX_{127}$ | 15.4 | 0.15 | 20060922 | 43.51881 | 152.99929 | 181.68803 | 13.45481 | 0.1878087 | 2.7176223 | 57 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 84772 | 2001 $QX_{127}$ |
| 2001 $QG_{128}$ | 15.8 | 0.15 | 20060922 | 81.58822 | 56.84711 | 295.30565 | 9.25715 | 0.1426021 | 2.5124843 | 58 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 84773 | 2001 $QG_{128}$ |
| 2001 $QM_{128}$ | 16.1 | 0.15 | 20060922 | 344.67755 | 95.85451 | 294.96289 | 11.73979 | 0.1973907 | 2.8140692 | 46 | 3 | 2001–2006 | 0.58 | M-v | 1 | MPC | 48055 | 2001 $QM_{128}$ |
| 2001 $QM_{130}$ | 15.0 | 0.15 | 20060922 | 32.79948 | 82.75812 | 300.13501 | 10.38296 | 0.2220968 | 2.6496679 | 73 | 3 | 1997–2003 | 0.56 | M-v | 2 | MPC | 43407 | 2001 $QM_{130}$ |
| 2001 $QC_{132}$ | 15.9 | 0.15 | 20060922 | 101.52932 | 38.98351 | 280.84393 | 4.60765 | 0.1736523 | 2.5483399 | 84 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 87442 | 2001 $QC_{132}$ |
| 2001 $QM_{132}$ | 16.2 | 0.15 | 20060922 | 105.45879 | 4.17612 | 301.25724 | 8.00678 | 0.1107849 | 2.5903876 | 82 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87442 | 2001 $QM_{132}$ |
| 2001 $QA_{133}$ | 15.6 | 0.15 | 20060922 | 133.34860 | 333.46429 | 301.69192 | 13.41714 | 0.1067850 | 2.5824659 | 85 | 6 | 1991–2006 | 0.60 | M-v | 1 | MPC | 87442 | 2001 $QA_{133}$ |
| 2001 $QH_{133}$ | 16.1 | 0.15 | 20060922 | 13.25980 | 119.28933 | 273.96286 | 7.67787 | 0.0754776 | 2.6588653 | 80 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 77552 | 2001 $QH_{133}$ |
| 2001 $QJ_{134}$ | 16.1 | 0.15 | 20060922 | 112.74230 | 51.75441 | 240.31242 | 13.83022 | 0.1834742 | 2.5785485 | 46 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 84773 | 2001 $QJ_{134}$ |
| 2001 $QS_{134}$ | 15.8 | 0.15 | 20060922 | 30.13968 | 92.31358 | 299.59103 | 8.08449 | 0.2767808 | 2.7107621 | 83 | 4 | 1998–2006 | 0.40 | M-v | 1 | MPC | 87442 | 2001 $QS_{134}$ |
| 2001 $QE_{135}$ | 15.0 | 0.15 | 20060922 | 334.06544 | 50.01820 | 315.03791 | 11.60770 | 0.1954173 | 3.1103996 | 66 | 3 | 1996–2006 | 0.39 | M-v | 2 | MPC | 03200 | 2001 $QE_{135}$ |
| 2001 $QP_{135}$ | 14.7 | 0.15 | 20060922 | 41.34819 | 276.42061 | 353.87893 | 21.22264 | 0.3427376 | 3.0838231 | 188 | 3 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04155 | 2001 $QP_{135}$ |
| 2001 $QA_{136}$ | 16.1 | 0.15 | 20060922 | 61.60525 | 94.26856 | 295.97824 | 3.25890 | 0.3079488 | 2.6000855 | 171 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97450 | 2001 $QA_{136}$ |
| 2001 $QM_{138}$ | 15.1 | 0.15 | 20060922 | 328.40143 | 45.76326 | 336.53823 | 9.57989 | 0.1960668 | 3.0984853 | 90 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 03200 | 2001 $QM_{138}$ |
| 2001 $QR_{139}$ | 14.2 | 0.15 | 20060922 | 310.70081 | 62.82535 | 0.24421 | 21.03403 | 0.3433946 | 3.1405513 | 101 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 04155 | 2001 $QR_{139}$ |
| 2001 $QF_{140}$ | 14.6 | 0.15 | 20060922 | 312.68889 | 64.68754 | 352.94278 | 22.25955 | 0.2901657 | 3.1039805 | 114 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04155 | 2001 $QF_{140}$ |
| 2001 $QP_{140}$ | 15.7 | 0.15 | 20060922 | 17.57571 | 155.08960 | 257.42955 | 9.71350 | 0.3264150 | 2.7781719 | 126 | 4 | 1996–2006 | 0.54 | M-v | 1 | MPC | 84776 | 2001 $QP_{140}$ |
| 2001 $QP_{141}$ | 15.5 | 0.15 | 20060922 | 327.39546 | 124.48780 | 350.19476 | 11.16290 | 0.1032305 | 2.5298714 | 122 | 6 | 1993–2006 | 0.62 | M-v | 2 | MPC | 87442 | 2001 $QP_{141}$ |
| 2001 $QM_{143}$ | 15.9 | 0.15 | 20060922 | 251.27672 | 279.01425 | 188.58462 | 2.10746 | 0.0439541 | 2.8998741 | 75 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 60881 | 2001 $QM_{143}$ |
| 2001 $QW_{143}$ | 15.5 | 0.15 | 20060922 | 273.03702 | 161.91353 | 287.77872 | 0.73407 | 0.3178169 | 3.0676300 | 107 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04155 | 2001 $QW_{143}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QX_{143}$ | 16.6 | 0.15 | 20060922 | 254.90646 | 345.96605 | 188.45269 | 1.43844 | 0.0838538 | 2.5610964 | 42 | 6 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87443 | 2001 $QX_{143}$ |
| 2001 $QY_{143}$ | 16.0 | 0.15 | 20060922 | 341.78678 | 250.95938 | 166.34158 | 7.84269 | 0.2208719 | 2.7906252 | 76 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 50545 | 2001 $QY_{143}$ |
| 2001 $QD_{144}$ | 17.1 | 0.15 | 20060922 | 357.10079 | 22.61662 | 337.51934 | 1.22171 | 0.0944699 | 2.9010148 | 35 | 6 | 1991–2006 | 0.31 | M-v | 1 | MPC | 04155 | 2001 $QD_{144}$ |
| 2001 $QK_{144}$ | 16.8 | 0.15 | 20060922 | 282.23685 | 200.64275 | 345.15623 | 2.49517 | 0.1080127 | 2.4168900 | 42 | 5 | 1997–2006 | 0.38 | M-v | 2 | MPC | 90068 | 2001 $QK_{144}$ |
| 2001 $QD_{145}$ | 16.6 | 0.15 | 20060922 | 70.87701 | 33.07471 | 298.26059 | 1.84995 | 0.1125590 | 2.6706423 | 55 | 5 | 1999–2006 | 0.40 | M-v | 0 | MPC | 87443 | 2001 $QD_{145}$ |
| 2001 $QS_{146}$ | 17.7 | 0.15 | 20060922 | 163.31791 | 136.47440 | 152.10998 | 2.68623 | 0.1971283 | 2.3743529 | 29 | 4 | 2000–2005 | 0.43 | M-v | 1 | MPC | 88834 | 2001 $QS_{146}$ |
| 2001 $QL_{147}$ | 14.9 | 0.15 | 20060922 | 29.75336 | 349.95189 | 70.15506 | 14.46460 | 0.1578030 | 2.6611427 | 115 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87443 | 2001 $QL_{147}$ |
| 2001 $QB_{148}$ | 15.6 | 0.15 | 20060922 | 53.69331 | 286.37747 | 117.93617 | 9.75947 | 0.2487551 | 2.6275125 | 159 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97450 | 2001 $QB_{148}$ |
| 2001 $QY_{148}$ | 15.8 | 0.15 | 20060922 | 133.92054 | 160.66205 | 90.59896 | 3.92425 | 0.0943142 | 2.6061376 | 50 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 77553 | 2001 $QY_{148}$ |
| 2001 $QQ_{149}$ | 15.8 | 0.15 | 20060922 | 6.37581 | 278.73950 | 111.16508 | 13.30544 | 0.1931156 | 2.7430375 | 55 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 62342 | 2001 $QQ_{149}$ |
| 2001 $QL_{150}$ | 16.0 | 0.15 | 20060922 | 5.48798 | 215.16585 | 145.53621 | 6.15715 | 0.1168306 | 2.8514762 | 60 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 88835 | 2001 $QL_{150}$ |
| 2001 $QM_{150}$ | 17.3 | 0.15 | 20060922 | 131.03008 | 207.45054 | 132.74896 | 3.29356 | 0.2090021 | 2.4018977 | 56 | 2 | 2001–2005 | 0.49 | M-v | 3 | MPC | 88835 | 2001 $QM_{150}$ |
| 2001 $QV_{150}$ | 14.8 | 0.15 | 20060922 | 17.91665 | 172.01642 | 220.28824 | 28.59946 | 0.0449111 | 2.6315219 | 44 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 64953 | 2001 $QV_{150}$ |
| 2001 $QP_{153}$ | 17.0 | 0.15 | 20060922 | 122.67803 | 244.31981 | 317.70623 | 50.20743 | 0.2137179 | 0.8915508 | 188 | 4 | 1996–2006 | 0.41 | M-v | 3 | MPC | 04155 | 2001 $QP_{153}$ |
| 2001 $QW_{153}$ | 16.0 | 0.15 | 20060922 | 68.37482 | 157.12840 | 181.02969 | 3.38535 | 0.1097524 | 2.6778147 | 114 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 87443 | 2001 $QW_{153}$ |
| 2001 $QX_{154}$ | 15.5 | 0.15 | 20060922 | 47.73187 | 89.51442 | 186.26407 | 11.65585 | 0.0756329 | 2.9685982 | 53 | 6 | 1991–2006 | 0.57 | M-v | 0 | MPC | 04155 | 2001 $QX_{154}$ |
| 2001 $QY_{154}$ | 16.0 | 0.15 | 20060922 | 33.21471 | 138.35871 | 216.44896 | 5.70475 | 0.1115590 | 2.7079353 | 97 | 5 | 1997–2006 | 0.46 | M-v | 0 | MPC | 62342 | 2001 $QY_{154}$ |
| 2001 $QD_{155}$ | 16.1 | 0.15 | 20060922 | 64.17301 | 129.82007 | 220.22489 | 4.26728 | 0.2401529 | 2.6071314 | 51 | 6 | 1993–2006 | 0.52 | M-v | 1 | MPC | 77553 | 2001 $QD_{155}$ |
| 2001 $QU_{155}$ | 15.5 | 0.15 | 20060922 | 50.68067 | 42.15261 | 333.22682 | 21.54219 | 0.0447192 | 2.5670952 | 121 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 90068 | 2001 $QU_{155}$ |
| 2001 $QW_{155}$ | 16.4 | 0.15 | 20060922 | 3.28648 | 76.01948 | 318.86451 | 6.69940 | 0.2785823 | 2.7696092 | 60 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87443 | 2001 $QW_{155}$ |
| 2001 $QD_{156}$ | 16.2 | 0.15 | 20060922 | 34.69192 | 217.74470 | 170.57231 | 9.37034 | 0.1248226 | 2.5993288 | 54 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 84781 | 2001 $QD_{156}$ |
| 2001 $QH_{156}$ | 15.0 | 0.15 | 20060922 | 42.35159 | 301.11639 | 323.19488 | 11.65127 | 0.1586251 | 3.0356704 | 77 | 3 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04155 | 2001 $QH_{156}$ |
| 2001 $QL_{156}$ | 15.9 | 0.15 | 20060922 | 19.60061 | 115.18790 | 294.78895 | 4.58527 | 0.1828122 | 2.6126073 | 100 | 4 | 2001–2006 | 0.58 | M-v | 0 | MPC | 87443 | 2001 $QL_{156}$ |
| 2001 $QS_{156}$ | 15.5 | 0.15 | 20060922 | 101.61019 | 348.80770 | 309.55189 | 7.93694 | 0.1041315 | 2.6186679 | 58 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 84782 | 2001 $QS_{156}$ |
| 2001 $QT_{157}$ | 16.6 | 0.15 | 20060922 | 51.59470 | 357.08789 | 307.50556 | 3.23750 | 0.1852471 | 2.7934511 | 32 | 3 | 1997–2006 | 0.47 | M-v | 4 | MPC | 03201 | 2001 $QT_{157}$ |
| 2001 $QG_{158}$ | 16.5 | 0.15 | 20060922 | 53.34066 | 191.01373 | 162.55983 | 12.77669 | 0.1876569 | 2.6410537 | 49 | 3 | 2000–2004 | 0.68 | M-v | 3 | MPC | 88837 | 2001 $QG_{158}$ |
| 2001 $QP_{158}$ | 16.7 | 0.15 | 20060922 | 139.69966 | 343.26349 | 326.86324 | 5.97632 | 0.1677542 | 2.4348432 | 77 | 2 | 2001–2005 | 0.56 | M-v | 4 | MPC | 88837 | 2001 $QP_{158}$ |
| 2001 $QW_{160}$ | 17.2 | 0.15 | 20060922 | 155.57698 | 166.15365 | 156.31772 | 2.91487 | 0.1960374 | 2.3442757 | 41 | 4 | 1997–2005 | 0.58 | M-v | 1 | MPC | 88838 | 2001 $QW_{160}$ |
| 2001 $QX_{160}$ | 14.1 | 0.15 | 20060922 | 355.12233 | 330.53864 | 326.28424 | 10.87370 | 0.0785559 | 3.1723369 | 70 | 4 | 2001–2005 | 0.58 | M-v | 2 | MPC | 40365 | 2001 $QX_{160}$ |
| 2001 $QG_{161}$ | 16.9 | 0.15 | 20060922 | 134.25820 | 332.53608 | 345.09812 | 1.78559 | 0.1752031 | 2.4256502 | 50 | 2 | 2001–2005 | 0.52 | M-v | 3 | MPC | 04155 | 2001 $QG_{161}$ |
| 2001 $QS_{161}$ | 14.1 | 0.15 | 20060922 | 236.34796 | 288.84738 | 144.01544 | 17.65761 | 0.1190773 | 3.1865098 | 110 | 3 | 2001–2004 | 0.59 | M-v | 2 | MPC | 62343 | 2001 $QS_{161}$ |
| 2001 $QS_{162}$ | 16.7 | 0.15 | 20060922 | 142.89642 | 20.68213 | 292.92398 | 5.06481 | 0.1455604 | 2.4076043 | 84 | 4 | 2001–2006 | 0.59 | M-v | 2 | MPC | 90069 | 2001 $QS_{162}$ |
| 2001 $QV_{162}$ | 15.6 | 0.15 | 20060922 | 315.70813 | 268.45869 | 160.74691 | 14.46794 | 0.1267437 | 2.7595014 | 41 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 17922 | 2001 $QV_{162}$ |
| 2001 $QJ_{163}$ | 16.1 | 0.15 | 20060922 | 116.94295 | 331.23543 | 307.60383 | 4.44348 | 0.2312657 | 2.5950144 | 86 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87443 | 2001 $QJ_{163}$ |
| 2001 $QR_{163}$ | 16.0 | 0.15 | 20060922 | 29.72647 | 49.51859 | 350.59996 | 8.85855 | 0.2741506 | 2.7285787 | 82 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 84784 | 2001 $QR_{163}$ |
| 2001 $QV_{163}$ | 16.2 | 0.15 | 20060922 | 162.92659 | 146.92272 | 257.35861 | 3.62949 | 0.1370206 | 2.2346255 | 142 | 5 | 1951–2006 | 0.55 | M-v | 1 | MPC | 97451 | 2001 $QV_{163}$ |
| 2001 $QX_{163}$ | 15.5 | 0.15 | 20060922 | 332.79821 | 178.32924 | 210.16533 | 16.81298 | 0.2622328 | 3.0680168 | 93 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04155 | 2001 $QX_{163}$ |
| 2001 $QK_{164}$ | 16.0 | 0.15 | 20060922 | 9.59257 | 321.49194 | 77.54324 | 8.92917 | 0.1911564 | 2.6342063 | 65 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 62343 | 2001 $QK_{164}$ |
| 2001 $QM_{164}$ | 16.2 | 0.15 | 20060922 | 79.09957 | 240.19378 | 133.02887 | 15.09180 | 0.1420268 | 2.4503751 | 59 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 90069 | 2001 $QM_{164}$ |
| 2001 $QV_{164}$ | 16.3 | 0.15 | 20060922 | 51.71559 | 303.09416 | 74.07060 | 3.93444 | 0.1754439 | 2.5455334 | 44 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87444 | 2001 $QV_{164}$ |
| 2001 $QE_{165}$ | 16.1 | 0.15 | 20060922 | 350.01750 | 224.04977 | 114.42774 | 12.60765 | 0.0974812 | 2.9672208 | 30 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 03201 | 2001 $QE_{165}$ |
| 2001 $QJ_{165}$ | 15.7 | 0.15 | 20060922 | 351.63076 | 302.09666 | 85.25964 | 8.40817 | 0.1905440 | 2.7894277 | 90 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 62343 | 2001 $QJ_{165}$ |
| 2001 $QA_{166}$ | 15.7 | 0.15 | 20060922 | 8.73358 | 278.90703 | 115.27789 | 10.04496 | 0.1037378 | 2.6531397 | 62 | 5 | 2001–2006 | 0.43 | M-v | 0 | MPC | 87444 | 2001 $QA_{166}$ |
| 2001 $QP_{166}$ | 16.5 | 0.15 | 20060922 | 353.56487 | 70.11400 | 347.26278 | 11.12073 | 0.1964659 | 2.6709334 | 55 | 3 | 1999–2003 | 0.68 | M-v | 2 | MPC | 48058 | 2001 $QP_{166}$ |
| 2001 $QT_{166}$ | 15.9 | 0.15 | 20060922 | 353.32442 | 300.46626 | 96.73085 | 9.61196 | 0.1838820 | 2.7429966 | 44 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 40369 | 2001 $QT_{166}$ |
| 2001 $QP_{167}$ | 15.4 | 0.15 | 20060922 | 0.83964 | 269.92620 | 131.45734 | 15.49312 | 0.1333454 | 2.6785000 | 43 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 40369 | 2001 $QP_{167}$ |
| 2001 $QP_{169}$ | 16.2 | 0.15 | 20060922 | 23.13955 | 101.22471 | 241.62376 | 7.95461 | 0.1843913 | 2.8072282 | 62 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 75056 | 2001 $QP_{169}$ |
| 2001 $QB_{170}$ | 17.4 | 0.15 | 20060922 | 125.80456 | 76.12132 | 253.95022 | 2.61517 | 0.2031921 | 2.4395757 | 45 | 2 | 2001–2005 | 0.49 | M-v | 3 | MPC | 88839 | 2001 $QB_{170}$ |
| 2001 $QJ_{170}$ | 15.9 | 0.15 | 20060922 | 250.24706 | 234.03281 | 238.14846 | 19.84040 | 0.0901520 | 1.9006929 | 133 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 04155 | 2001 $QJ_{170}$ |
| 2001 $QF_{172}$ | 15.7 | 0.15 | 20060922 | 348.91220 | 122.74418 | 289.40051 | 7.84961 | 0.1666740 | 2.7183706 | 46 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 50545 | 2001 $QF_{172}$ |
| 2001 $QR_{172}$ | 17.2 | 0.15 | 20060922 | 86.40342 | 69.17377 | 282.62203 | 7.74918 | 0.2568359 | 2.5215289 | 51 | 4 | 1993–2005 | 0.59 | M-v | 2 | MPC | 04155 | 2001 $QR_{172}$ |
| 2001 $QL_{173}$ | 17.0 | 0.15 | 20060922 | 84.83305 | 24.73247 | 318.13213 | 14.66955 | 0.1652032 | 2.5528565 | 27 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 84786 | 2001 $QL_{173}$ |
| 2001 $QU_{175}$ | 16.7 | 0.15 | 20060922 | 75.55328 | 169.84022 | 238.96667 | 0.65197 | 0.1718472 | 2.3820621 | 143 | 4 | 1996–2006 | 0.55 | M-v | 1 | MPC | 97451 | 2001 $QU_{175}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QZ_{176}$ | 16.0 | 0.15 | 20060922 | 340.19316 | 337.14983 | 171.67537 | 2.24178 | 0.1448968 | 2.3920512 | 157 | 6 | 1996–2006 | 0.54 | M-v | 2 | MPC | 97451 | 2001 $QZ_{176}$ |
| 2001 $QA_{177}$ | 16.7 | 0.15 | 20060922 | 162.27489 | 22.76190 | 170.37249 | 11.61298 | 0.0518346 | 2.9113020 | 45 | 5 | 1994–2006 | 0.45 | M-v | 2 | MPC | 62343 | 2001 $QA_{177}$ |
| 2001 $QF_{177}$ | 17.1 | 0.15 | 20060922 | 21.36744 | 271.50347 | 164.65535 | 3.99007 | 0.2030035 | 2.5608372 | 38 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 84787 | 2001 $QF_{177}$ |
| 2001 $QX_{177}$ | 15.4 | 0.15 | 20060922 | 348.71988 | 238.89766 | 138.56061 | 8.68922 | 0.2103070 | 2.8105141 | 76 | 5 | 2001–2006 | 0.41 | M-v | 1 | MPC | 04155 | 2001 $QX_{177}$ |
| 2001 $QS_{179}$ | 15.8 | 0.15 | 20060922 | 342.18576 | 310.03213 | 57.06119 | 3.48921 | 0.2359270 | 2.9751177 | 77 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04155 | 2001 $QS_{179}$ |
| 2001 $QZ_{180}$ | 15.3 | 0.15 | 20060922 | 39.17317 | 178.20279 | 197.52400 | 9.27996 | 0.1126655 | 2.6324627 | 72 | 6 | 1997–2006 | 0.60 | M-v | 1 | MPC | 87444 | 2001 $QZ_{180}$ |
| 2001 $QY_{181}$ | 15.8 | 0.15 | 20060922 | 86.26409 | 283.77414 | 81.84859 | 6.72513 | 0.2394702 | 2.5308787 | 106 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97451 | 2001 $QY_{181}$ |
| 2001 $QZ_{182}$ | 15.3 | 0.15 | 20060922 | 319.26318 | 336.87407 | 94.37019 | 10.95011 | 0.1918276 | 2.7890114 | 104 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04155 | 2001 $QZ_{182}$ |
| 2001 $QU_{183}$ | 16.4 | 0.15 | 20060922 | 43.41695 | 133.41881 | 248.90549 | 3.82451 | 0.1000107 | 2.5904473 | 30 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 88841 | 2001 $QU_{183}$ |
| 2001 $QD_{184}$ | 17.9 | 0.15 | 20060922 | 151.57659 | 112.96616 | 174.79075 | 1.25618 | 0.1826067 | 2.4324005 | 38 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 84788 | 2001 $QD_{184}$ |
| 2001 $QK_{184}$ | 15.1 | 0.15 | 20060922 | 53.69637 | 48.41721 | 259.94057 | 7.83024 | 0.2806785 | 2.7528777 | 125 | 3 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04155 | 2001 $QK_{184}$ |
| 2001 $QJ_{185}$ | 15.5 | 0.15 | 20060922 | 105.71698 | 56.03144 | 259.38101 | 6.44273 | 0.1766279 | 2.5641005 | 109 | 6 | 1997–2006 | 0.54 | M-v | 1 | MPC | 90069 | 2001 $QJ_{185}$ |
| 2001 $QG_{186}$ | 16.8 | 0.15 | 20060922 | 107.47438 | 23.40936 | 238.60088 | 20.04367 | 0.0426336 | 1.8122592 | 39 | 3 | 2001–2006 | 0.66 | M-v | 3 | MPC | 50546 | 2001 $QG_{186}$ |
| 2001 $QQ_{187}$ | 15.6 | 0.15 | 20060922 | 23.46834 | 140.38271 | 284.98365 | 15.82273 | 0.2424811 | 2.6027641 | 59 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 84789 | 2001 $QQ_{187}$ |
| 2001 $QG_{188}$ | 14.6 | 0.15 | 20060922 | 21.24379 | 339.54817 | 326.82562 | 14.49044 | 0.0609439 | 3.1149209 | 114 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04155 | 2001 $QG_{188}$ |
| 2001 $QM_{188}$ | 16.0 | 0.15 | 20060922 | 31.18941 | 189.17191 | 149.60281 | 4.45964 | 0.0976016 | 2.7437054 | 63 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 84790 | 2001 $QM_{188}$ |
| 2001 $QQ_{188}$ | 17.3 | 0.15 | 20060922 | 107.81523 | 239.64906 | 122.82151 | 2.09101 | 0.2008349 | 2.4035901 | 70 | 3 | 2001–2005 | 0.54 | M-v | 3 | MPC | 88841 | 2001 $QQ_{188}$ |
| 2001 $QH_{189}$ | 15.3 | 0.15 | 20060922 | 84.92040 | 89.90586 | 233.49715 | 13.83127 | 0.1852146 | 2.6002422 | 81 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97451 | 2001 $QH_{189}$ |
| 2001 $QN_{189}$ | 17.0 | 0.15 | 20060922 | 115.64646 | 55.95325 | 278.36346 | 14.33900 | 0.2362741 | 2.4645070 | 44 | 2 | 2001–2005 | 0.50 | M-v | 3 | MPC | 88841 | 2001 $QN_{189}$ |
| 2001 $QT_{189}$ | 17.3 | 0.15 | 20060922 | 62.02256 | 85.70938 | 236.29469 | 11.47431 | 0.2842856 | 2.6960071 | 32 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 75059 | 2001 $QT_{189}$ |
| 2001 $QU_{189}$ | 16.1 | 0.15 | 20060922 | 11.81046 | 135.78937 | 260.23160 | 13.85065 | 0.1253834 | 2.6898805 | 73 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 75059 | 2001 $QU_{189}$ |
| 2001 $QY_{189}$ | 16.2 | 0.15 | 20060922 | 2.05854 | 76.06524 | 192.44790 | 24.41500 | 0.3733983 | 3.1545041 | 51 | 3 | 2000–2006 | 0.74 | M-v | 2 | MPC | 00039 | 2001 $QY_{189}$ |
| 2001 $QK_{190}$ | 15.3 | 0.15 | 20060922 | 57.80956 | 76.49255 | 268.11458 | 13.57943 | 0.1216485 | 2.6710628 | 62 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 75059 | 2001 $QK_{190}$ |
| 2001 $QB_{191}$ | 15.3 | 0.15 | 20060922 | 42.50598 | 102.35249 | 312.35983 | 28.48664 | 0.1850196 | 2.5594143 | 86 | 3 | 2001–2006 | 0.39 | M-v | 1 | MPC | 97451 | 2001 $QB_{191}$ |
| 2001 $QA_{192}$ | 15.5 | 0.15 | 20060922 | 3.46719 | 266.99652 | 75.80052 | 4.24146 | 0.0849763 | 2.8489832 | 54 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04156 | 2001 $QA_{192}$ |
| 2001 $QF_{192}$ | 16.0 | 0.15 | 20060922 | 95.33815 | 85.05280 | 223.28419 | 13.82885 | 0.1512479 | 2.6467405 | 51 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 87445 | 2001 $QF_{192}$ |
| 2001 $QG_{193}$ | 15.6 | 0.15 | 20060922 | 98.21181 | 62.46517 | 289.00682 | 10.09293 | 0.1504969 | 2.5204810 | 106 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 90069 | 2001 $QG_{193}$ |
| 2001 $QQ_{193}$ | 15.5 | 0.15 | 20060922 | 122.52152 | 8.75433 | 267.01967 | 12.43898 | 0.2341729 | 2.6376243 | 92 | 6 | 2000–2006 | 0.45 | M-v | 1 | MPC | 97451 | 2001 $QQ_{193}$ |
| 2001 $QU_{193}$ | 14.9 | 0.15 | 20060922 | 345.79748 | 192.44117 | 278.18874 | 11.92783 | 0.1371504 | 2.5748652 | 94 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 97451 | 2001 $QU_{193}$ |
| 2001 $QW_{193}$ | 15.9 | 0.15 | 20060922 | 78.55829 | 80.38124 | 273.21720 | 9.18490 | 0.2616615 | 2.5864246 | 125 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 97451 | 2001 $QW_{193}$ |
| 2001 $QF_{194}$ | 14.9 | 0.15 | 20060922 | 42.03944 | 99.18871 | 298.08011 | 12.43824 | 0.1455105 | 2.6196777 | 154 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 97452 | 2001 $QF_{194}$ |
| 2001 $QG_{194}$ | 15.0 | 0.15 | 20060922 | 64.72915 | 22.66697 | 300.65187 | 12.00409 | 0.1177189 | 2.7711660 | 69 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 60893 | 2001 $QG_{194}$ |
| 2001 $QZ_{194}$ | 15.0 | 0.15 | 20060922 | 18.60499 | 100.80461 | 304.68349 | 10.25683 | 0.0745617 | 2.7020045 | 65 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 87445 | 2001 $QZ_{194}$ |
| 2001 $QE_{195}$ | 15.0 | 0.15 | 20060922 | 308.07015 | 73.09901 | 324.88695 | 10.19131 | 0.1788317 | 3.1383012 | 69 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04156 | 2001 $QE_{195}$ |
| 2001 $QU_{196}$ | 14.7 | 0.15 | 20060922 | 331.46500 | 160.34796 | 292.05252 | 14.26546 | 0.1595937 | 2.7298687 | 74 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 90070 | 2001 $QU_{196}$ |
| 2001 $QZ_{196}$ | 16.3 | 0.15 | 20060922 | 14.56628 | 256.40900 | 61.53138 | 6.97212 | 0.2319460 | 2.9403954 | 31 | 2 | 2001–2006 | 0.68 | M-v | 4 | MPC | 03202 | 2001 $QZ_{196}$ |
| 2001 $QD_{197}$ | 16.3 | 0.15 | 20060922 | 100.58482 | 168.41152 | 178.24807 | 5.22992 | 0.1453859 | 2.5138351 | 127 | 4 | 1993–2005 | 0.58 | M-v | 3 | MPC | 90070 | 2001 $QD_{197}$ |
| 2001 $QF_{197}$ | 14.7 | 0.15 | 20060922 | 299.52662 | 121.07343 | 301.94542 | 20.34774 | 0.2363370 | 3.1322636 | 53 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 04156 | 2001 $QF_{197}$ |
| 2001 $QM_{197}$ | 14.9 | 0.15 | 20060922 | 55.81872 | 26.93404 | 298.26932 | 14.38004 | 0.1386133 | 2.8492384 | 59 | 5 | 1994–2006 | 0.58 | M-v | 1 | MPC | 68926 | 2001 $QM_{197}$ |
| 2001 $QV_{197}$ | 14.7 | 0.15 | 20060922 | 40.83869 | 145.63192 | 224.76541 | 11.60755 | 0.1651704 | 2.7804678 | 142 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04156 | 2001 $QV_{197}$ |
| 2001 $QS_{199}$ | 14.5 | 0.15 | 20060922 | 331.01582 | 90.49210 | 7.28614 | 13.49778 | 0.1091209 | 2.7910815 | 177 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 87445 | 2001 $QS_{199}$ |
| 2001 $QO_{200}$ | 16.7 | 0.15 | 20060922 | 285.70172 | 114.98233 | 330.67819 | 19.83034 | 0.1026167 | 1.8725398 | 73 | 3 | 2001–2006 | 0.65 | M-v | 1 | MPC | 04156 | 2001 $QO_{200}$ |
| 2001 $QQ_{200}$ | 15.6 | 0.15 | 20060922 | 346.86800 | 58.27011 | 320.33876 | 13.94834 | 0.2415822 | 2.9994357 | 78 | 4 | 1998–2006 | 0.62 | M-v | 2 | MPC | 04156 | 2001 $QQ_{200}$ |
| 2001 $QJ_{201}$ | 15.9 | 0.15 | 20060922 | 52.25513 | 147.83900 | 189.09341 | 9.36646 | 0.1360993 | 2.7339877 | 104 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 60896 | 2001 $QJ_{201}$ |
| 2001 $QM_{201}$ | 16.2 | 0.15 | 20060922 | 63.08789 | 91.43222 | 284.93348 | 3.24459 | 0.2823205 | 2.5845548 | 151 | 4 | 1997–2006 | 0.50 | M-v | 1 | MPC | 90070 | 2001 $QM_{201}$ |
| 2001 $QU_{202}$ | 16.4 | 0.15 | 20060922 | 51.75325 | 180.46775 | 96.93340 | 4.83694 | 0.1085624 | 2.8895018 | 49 | 5 | 1999–2006 | 0.50 | M-v | 0 | MPC | 04156 | 2001 $QU_{202}$ |
| 2001 $QY_{202}$ | 15.2 | 0.15 | 20060922 | 1.70077 | 282.04922 | 97.23227 | 7.13288 | 0.0696250 | 2.7127840 | 61 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 75061 | 2001 $QY_{202}$ |
| 2001 $QC_{203}$ | 17.0 | 0.15 | 20060922 | 76.38802 | 263.59806 | 27.81611 | 4.45605 | 0.1519890 | 2.6932606 | 21 | 2 | 2001–2006 | 0.61 | M-v | 4 | MPC | 00041 | 2001 $QC_{203}$ |
| 2001 $QJ_{203}$ | 15.0 | 0.15 | 20060922 | 329.31184 | 6.63913 | 330.13846 | 7.14403 | 0.0581809 | 3.0943623 | 37 | 4 | 1996–2004 | 0.59 | M-v | 1 | MPC | 56299 | 2001 $QJ_{203}$ |
| 2001 $QL_{203}$ | 16.2 | 0.15 | 20060922 | 192.33382 | 292.13686 | 335.87297 | 10.93310 | 0.2135205 | 2.3192803 | 57 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 60896 | 2001 $QL_{203}$ |
| 2001 $QW_{203}$ | 16.5 | 0.15 | 20060922 | 185.77624 | 343.51830 | 292.37910 | 9.30913 | 0.1442143 | 2.3671804 | 61 | 5 | 2000–2006 | 0.50 | M-v | 0 | MPC | 90070 | 2001 $QW_{203}$ |
| 2001 $QE_{204}$ | 16.0 | 0.15 | 20060922 | 94.27326 | 354.93135 | 260.88287 | 6.20379 | 0.0935516 | 2.8164437 | 51 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04156 | 2001 $QE_{204}$ |
| 2001 $QJ_{204}$ | 15.5 | 0.15 | 20060922 | 44.06974 | 353.83463 | 289.20947 | 8.95992 | 0.0541424 | 2.9691017 | 49 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 04156 | 2001 $QJ_{204}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QP_{204}$ | 16.5 | 0.15 | 20060922 | 103.56942 | 64.34876 | 277.74656 | 6.48119 | 0.1162247 | 2.4760613 | 49 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 84795 | 2001 $QP_{204}$ |
| 2001 $QX_{205}$ | 17.5 | 0.15 | 20060922 | 191.66352 | 347.82137 | 295.50298 | 1.80063 | 0.1547536 | 2.3368936 | 40 | 4 | 1994–2005 | 0.47 | M-v | 1 | MPC | 04156 | 2001 $QX_{205}$ |
| 2001 $QZ_{205}$ | 15.5 | 0.15 | 20060922 | 10.83464 | 120.51794 | 178.35210 | 4.46358 | 0.1559336 | 3.0562273 | 69 | 4 | 1991–2006 | 0.54 | M-v | 2 | MPC | 04156 | 2001 $QZ_{205}$ |
| 2001 $QB_{206}$ | 17.0 | 0.15 | 20060922 | 97.65566 | 132.53615 | 159.57297 | 4.28442 | 0.2561276 | 2.6204082 | 53 | 5 | 1992–2006 | 0.45 | M-v | 1 | MPC | 62345 | 2001 $QB_{206}$ |
| 2001 $QQ_{207}$ | 17.2 | 0.15 | 20060922 | 151.67912 | 202.58953 | 129.54475 | 4.25450 | 0.1475434 | 2.3434731 | 28 | 3 | 2001–2005 | 0.56 | M-v | 4 | MPC | 88844 | 2001 $QQ_{207}$ |
| 2001 $QE_{208}$ | 15.6 | 0.15 | 20060922 | 33.10061 | 351.29680 | 352.14520 | 11.74041 | 0.1704726 | 2.7512027 | 70 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 60898 | 2001 $QE_{208}$ |
| 2001 $QT_{208}$ | 15.5 | 0.15 | 20060922 | 265.13427 | 74.71334 | 334.52075 | 8.70233 | 0.1392218 | 3.1232959 | 37 | 3 | 2001–2004 | 0.64 | M-v | 3 | MPC | 62345 | 2001 $QT_{208}$ |
| 2001 $QE_{209}$ | 15.8 | 0.15 | 20060922 | 334.83781 | 51.43744 | 318.96909 | 1.47660 | 0.0784526 | 2.9029210 | 45 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 03202 | 2001 $QE_{209}$ |
| 2001 $QJ_{209}$ | 15.5 | 0.15 | 20060922 | 19.15276 | 359.25884 | 317.81229 | 11.02832 | 0.0386364 | 2.9203965 | 52 | 4 | 2001–2006 | 0.73 | M-v | 2 | MPC | 04156 | 2001 $QJ_{209}$ |
| 2001 $QL_{209}$ | 15.6 | 0.15 | 20060922 | 86.69218 | 112.88726 | 157.73279 | 17.87659 | 0.1468360 | 2.7531299 | 59 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 87445 | 2001 $QL_{209}$ |
| 2001 $QN_{209}$ | 15.8 | 0.15 | 20060922 | 350.30093 | 102.39758 | 291.12886 | 6.07641 | 0.1828574 | 2.7742820 | 71 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 48061 | 2001 $QN_{209}$ |
| 2001 $QS_{210}$ | 15.7 | 0.15 | 20060922 | 178.34001 | 222.36274 | 308.09791 | 8.92076 | 0.0619791 | 2.9215152 | 55 | 5 | 1999–2006 | 0.64 | M-v | 1 | MPC | 04156 | 2001 $QS_{210}$ |
| 2001 $QF_{211}$ | 16.1 | 0.15 | 20060922 | 18.61358 | 345.23403 | 333.73979 | 10.16955 | 0.1280812 | 2.9737214 | 52 | 3 | 1994–2006 | 0.60 | M-v | 3 | MPC | 03202 | 2001 $QF_{211}$ |
| 2001 $QR_{211}$ | 15.6 | 0.15 | 20060922 | 40.31532 | 97.75729 | 219.70800 | 1.24764 | 0.0898910 | 2.8728540 | 102 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04156 | 2001 $QR_{211}$ |
| 2001 $QM_{212}$ | 16.2 | 0.15 | 20060922 | 11.93455 | 218.96877 | 164.93805 | 2.94755 | 0.2817979 | 2.7845104 | 121 | 5 | 1994–2006 | 0.42 | M-v | 1 | MPC | 66197 | 2001 $QM_{212}$ |
| 2001 $QC_{213}$ | 15.9 | 0.15 | 20060922 | 35.39389 | 161.68701 | 175.59125 | 1.35832 | 0.2370381 | 2.7905365 | 151 | 4 | 1995–2006 | 0.43 | M-v | 1 | MPC | 04156 | 2001 $QC_{213}$ |
| 2001 $QP_{213}$ | 15.9 | 0.15 | 20060922 | 78.65084 | 341.20742 | 327.04851 | 5.18462 | 0.0852840 | 2.7163197 | 95 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 60900 | 2001 $QP_{213}$ |
| 2001 $QV_{213}$ | 15.8 | 0.15 | 20060922 | 38.97744 | 177.42064 | 170.21660 | 5.04219 | 0.1229842 | 2.7330537 | 91 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 60900 | 2001 $QV_{213}$ |
| 2001 $QY_{214}$ | 15.9 | 0.15 | 20060922 | 334.23850 | 215.42872 | 159.24439 | 10.89651 | 0.1174081 | 2.9642996 | 64 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04156 | 2001 $QY_{214}$ |
| 2001 $QC_{215}$ | 16.5 | 0.15 | 20060922 | 59.25797 | 314.62353 | 49.98446 | 1.45968 | 0.1643435 | 2.6076887 | 64 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 90070 | 2001 $QC_{215}$ |
| 2001 $QO_{215}$ | 16.1 | 0.15 | 20060922 | 335.16030 | 6.80199 | 26.79546 | 2.10979 | 0.1034202 | 2.8811003 | 97 | 6 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04156 | 2001 $QO_{215}$ |
| 2001 $QP_{215}$ | 16.0 | 0.15 | 20060922 | 36.33171 | 148.62017 | 156.60567 | 8.50438 | 0.3114687 | 2.8702976 | 90 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03202 | 2001 $QP_{215}$ |
| 2001 $QJ_{216}$ | 16.2 | 0.15 | 20060922 | 55.63464 | 313.97636 | 77.29908 | 2.87908 | 0.1694247 | 2.5476527 | 70 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87446 | 2001 $QJ_{216}$ |
| 2001 $QN_{216}$ | 15.7 | 0.15 | 20060922 | 351.02946 | 10.46164 | 21.56016 | 6.15582 | 0.0699401 | 2.7950308 | 106 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 60901 | 2001 $QN_{216}$ |
| 2001 $QQ_{216}$ | 16.1 | 0.15 | 20060922 | 62.80450 | 47.40845 | 356.97113 | 14.72857 | 0.1718883 | 2.4851303 | 136 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 97452 | 2001 $QQ_{216}$ |
| 2001 $QU_{216}$ | 15.5 | 0.15 | 20060922 | 46.82082 | 305.74966 | 14.94399 | 3.97968 | 0.0968189 | 2.8096451 | 112 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 60901 | 2001 $QU_{216}$ |
| 2001 $QB_{217}$ | 16.2 | 0.15 | 20060922 | 78.53443 | 222.69249 | 124.99173 | 2.80205 | 0.2310844 | 2.5748509 | 126 | 6 | 1996–2006 | 0.43 | M-v | 1 | MPC | 90070 | 2001 $QB_{217}$ |
| 2001 $QL_{217}$ | 17.1 | 0.15 | 20060922 | 134.38566 | 293.93163 | 41.40860 | 2.08082 | 0.2014746 | 2.4049011 | 50 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 88846 | 2001 $QL_{217}$ |
| 2001 $QU_{217}$ | 16.5 | 0.15 | 20060922 | 59.92289 | 3.51858 | 6.17185 | 1.99763 | 0.1703303 | 2.5866044 | 56 | 4 | 1999–2005 | 0.50 | M-v | 2 | MPC | 88846 | 2001 $QU_{217}$ |
| 2001 $QM_{218}$ | 16.5 | 0.15 | 20060922 | 94.53849 | 16.90706 | 341.97462 | 6.56259 | 0.1240595 | 2.4706666 | 78 | 2 | 2001–2005 | 0.56 | M-v | 3 | MPC | 84799 | 2001 $QM_{218}$ |
| 2001 $QW_{218}$ | 15.6 | 0.15 | 20060922 | 89.30708 | 316.84660 | 347.53282 | 3.31619 | 0.1597408 | 2.6488950 | 89 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87446 | 2001 $QW_{218}$ |
| 2001 $QP_{219}$ | 15.2 | 0.15 | 20060922 | 15.47803 | 157.11685 | 275.85621 | 14.15942 | 0.1048226 | 2.6617757 | 54 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 90070 | 2001 $QP_{219}$ |
| 2001 $QU_{219}$ | 17.1 | 0.15 | 20060922 | 322.52810 | 74.93162 | 333.63388 | 18.24347 | 0.1389366 | 1.8726327 | 69 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04156 | 2001 $QU_{219}$ |
| 2001 $QA_{220}$ | 14.9 | 0.15 | 20060922 | 24.53416 | 136.86178 | 313.54084 | 14.37039 | 0.0734221 | 2.5620152 | 128 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97452 | 2001 $QA_{220}$ |
| 2001 $QO_{221}$ | 15.7 | 0.15 | 20060922 | 334.05585 | 125.51118 | 280.54371 | 11.34070 | 0.2701829 | 2.8031610 | 83 | 3 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04156 | 2001 $QO_{221}$ |
| 2001 $QV_{221}$ | 16.4 | 0.15 | 20060922 | 12.37394 | 152.63182 | 201.68089 | 8.79389 | 0.2317792 | 2.8035007 | 95 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 04156 | 2001 $QV_{221}$ |
| 2001 $QQ_{222}$ | 16.8 | 0.15 | 20060922 | 73.72987 | 133.46131 | 269.31450 | 5.90238 | 0.1064786 | 2.3938040 | 94 | 3 | 2001–2005 | 0.62 | M-v | 2 | MPC | 88847 | 2001 $QQ_{222}$ |
| 2001 $QD_{223}$ | 15.3 | 0.15 | 20060922 | 297.29610 | 354.32585 | 353.00429 | 1.04307 | 0.1481434 | 3.2389058 | 56 | 7 | 1996–2006 | 0.52 | M-v | 0 | MPC | 77555 | 2001 $QD_{223}$ |
| 2001 $QP_{224}$ | 16.6 | 0.15 | 20060922 | 150.71190 | 265.00088 | 20.63274 | 1.20881 | 0.1617471 | 2.4130441 | 97 | 6 | 1998–2006 | 0.53 | M-v | 0 | MPC | 97453 | 2001 $QP_{224}$ |
| 2001 $QV_{224}$ | 15.4 | 0.15 | 20060922 | 147.40429 | 291.65295 | 299.00700 | 12.24768 | 0.1238469 | 2.6175672 | 41 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 62346 | 2001 $QV_{224}$ |
| 2001 $QO_{225}$ | 15.0 | 0.15 | 20060922 | 335.94903 | 92.75849 | 274.81441 | 8.60154 | 0.0712068 | 2.9913137 | 78 | 5 | 1992–2006 | 0.60 | M-v | 1 | MPC | 04156 | 2001 $QO_{225}$ |
| 2001 $QP_{225}$ | 16.0 | 0.15 | 20060922 | 51.90454 | 145.04351 | 202.64341 | 13.90051 | 0.1341252 | 2.6950138 | 55 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 60904 | 2001 $QP_{225}$ |
| 2001 $QA_{227}$ | 16.3 | 0.15 | 20060922 | 2.54863 | 152.06670 | 199.39784 | 10.28586 | 0.1480756 | 2.9148348 | 90 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04156 | 2001 $QA_{227}$ |
| 2001 $QH_{227}$ | 15.7 | 0.15 | 20060922 | 36.38338 | 87.14576 | 273.88176 | 8.08614 | 0.0927196 | 2.7112144 | 52 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 75064 | 2001 $QH_{227}$ |
| 2001 $QQ_{227}$ | 14.8 | 0.15 | 20060922 | 318.51461 | 176.82822 | 217.50323 | 9.87980 | 0.0605428 | 2.9327531 | 60 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04156 | 2001 $QQ_{227}$ |
| 2001 $QU_{227}$ | 14.8 | 0.15 | 20060922 | 207.86774 | 177.18373 | 298.08657 | 13.19327 | 0.0833933 | 3.1224283 | 78 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 04156 | 2001 $QU_{227}$ |
| 2001 $QZ_{227}$ | 16.6 | 0.15 | 20060922 | 26.24967 | 119.83601 | 292.07000 | 10.38800 | 0.3068278 | 2.6269165 | 33 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 87446 | 2001 $QZ_{227}$ |
| 2001 $QA_{228}$ | 15.1 | 0.15 | 20060922 | 230.77464 | 203.16292 | 265.54356 | 9.03435 | 0.1127429 | 3.0051416 | 86 | 4 | 2001–2006 | 0.57 | M-v | 0 | MPC | 62346 | 2001 $QA_{228}$ |
| 2001 $QD_{228}$ | 14.2 | 0.15 | 20060922 | 240.99459 | 131.64524 | 296.12339 | 12.79668 | 0.1226102 | 3.2241866 | 77 | 3 | 2001–2004 | 0.64 | M-v | 3 | MPC | 62346 | 2001 $QD_{228}$ |
| 2001 $QE_{228}$ | 15.5 | 0.15 | 20060922 | 279.62967 | 140.91042 | 278.69351 | 9.17303 | 0.0885538 | 3.0057602 | 42 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04156 | 2001 $QE_{228}$ |
| 2001 $QK_{228}$ | 15.1 | 0.15 | 20060922 | 341.67273 | 234.53846 | 195.73329 | 14.30206 | 0.0740301 | 2.6465390 | 68 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 87446 | 2001 $QK_{228}$ |
| 2001 $QL_{228}$ | 15.3 | 0.15 | 20060922 | 358.75855 | 110.56026 | 202.65461 | 12.50796 | 0.1249220 | 3.0746886 | 75 | 4 | 1996–2005 | 0.41 | M-v | 2 | MPC | 75064 | 2001 $QL_{228}$ |
| 2001 $QR_{228}$ | 15.2 | 0.15 | 20060922 | 330.46049 | 85.05454 | 282.34588 | 8.82105 | 0.1227466 | 2.9972844 | 57 | 3 | 2001–2006 | 0.62 | M-v | 3 | MPC | 03203 | 2001 $QR_{228}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QV_{228}$ | 16.8 | 0.15 | 20060922 | 106.51873 | 103.70103 | 260.43548 | 7.03475 | 0.1082093 | 2.4185896 | 60 | 4 | 2001–2005 | 0.64 | M-v | 1 | MPC | 88848 | 2001 $QV_{228}$ |
| 2001 $QN_{229}$ | 14.9 | 0.15 | 20060922 | 318.70924 | 95.83733 | 294.69000 | 7.87548 | 0.0991836 | 2.9744045 | 66 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 04157 | 2001 $QN_{229}$ |
| 2001 $QO_{229}$ | 16.5 | 0.15 | 20060922 | 35.33375 | 138.32728 | 194.20501 | 7.79096 | 0.2388797 | 2.8004060 | 52 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 88848 | 2001 $QO_{229}$ |
| 2001 $QR_{229}$ | 16.1 | 0.15 | 20060922 | 46.10987 | 170.68772 | 244.08375 | 5.04918 | 0.2081422 | 2.5274650 | 84 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 84803 | 2001 $QR_{229}$ |
| 2001 $QW_{229}$ | 16.1 | 0.15 | 20060922 | 40.48623 | 85.15761 | 267.04835 | 4.35132 | 0.1312833 | 2.7311519 | 61 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 03203 | 2001 $QW_{229}$ |
| 2001 $QR_{230}$ | 16.0 | 0.15 | 20060922 | 107.35615 | 123.99333 | 194.28726 | 9.51779 | 0.1014681 | 2.5462071 | 56 | 4 | 2000–2005 | 0.62 | M-v | 2 | MPC | 88849 | 2001 $QR_{230}$ |
| 2001 $QG_{231}$ | 16.0 | 0.15 | 20060922 | 49.13066 | 104.38497 | 239.17626 | 7.19835 | 0.1039178 | 2.6865558 | 81 | 4 | 1997–2006 | 0.43 | M-v | 1 | MPC | 48063 | 2001 $QG_{231}$ |
| 2001 $QO_{231}$ | 15.9 | 0.15 | 20060922 | 5.89021 | 108.44236 | 309.04413 | 12.38446 | 0.1874580 | 2.6445417 | 98 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 87446 | 2001 $QO_{231}$ |
| 2001 $QJ_{233}$ | 15.9 | 0.15 | 20060922 | 67.15423 | 29.53446 | 342.53501 | 2.27003 | 0.2046738 | 2.5678973 | 150 | 6 | 1997–2006 | 0.51 | M-v | 1 | MPC | 90071 | 2001 $QJ_{233}$ |
| 2001 $QD_{234}$ | 17.0 | 0.15 | 20060922 | 44.91494 | 208.72577 | 169.93072 | 2.67423 | 0.2030987 | 2.6415242 | 73 | 3 | 1997–2005 | 0.57 | M-v | 3 | MPC | 84805 | 2001 $QD_{234}$ |
| 2001 $QG_{234}$ | 16.2 | 0.15 | 20060922 | 319.65827 | 224.84278 | 166.71645 | 4.81263 | 0.2711241 | 3.0371560 | 75 | 2 | 2001–2006 | 0.59 | M-v | 3 | MPC | 03204 | 2001 $QG_{234}$ |
| 2001 $QM_{234}$ | 15.8 | 0.15 | 20060922 | 7.26207 | 233.46455 | 164.79869 | 8.17627 | 0.2283629 | 2.7543088 | 57 | 4 | 1999–2006 | 0.58 | M-v | 2 | MPC | 88850 | 2001 $QM_{234}$ |
| 2001 $QX_{234}$ | 16.2 | 0.15 | 20060922 | 135.08163 | 188.24255 | 152.32181 | 4.16689 | 0.1621848 | 2.4024995 | 114 | 4 | 1996–2005 | 0.53 | M-v | 1 | MPC | 97453 | 2001 $QX_{234}$ |
| 2001 $QB_{235}$ | 16.1 | 0.15 | 20060922 | 36.35293 | 151.84932 | 161.46643 | 8.85282 | 0.2115975 | 2.8825702 | 61 | 6 | 1994–2006 | 0.48 | M-v | 0 | MPC | 04157 | 2001 $QB_{235}$ |
| 2001 $QD_{235}$ | 16.2 | 0.15 | 20060922 | 357.11380 | 72.85511 | 356.24852 | 12.58477 | 0.2039459 | 2.6916452 | 64 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87446 | 2001 $QD_{235}$ |
| 2001 $QL_{235}$ | 15.3 | 0.15 | 20060922 | 335.25360 | 260.94920 | 160.43866 | 15.27409 | 0.2555246 | 2.8029111 | 93 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 50547 | 2001 $QL_{235}$ |
| 2001 $QO_{236}$ | 15.0 | 0.15 | 20060922 | 316.48752 | 96.60189 | 350.87342 | 24.20531 | 0.1946741 | 2.8042305 | 110 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 48063 | 2001 $QO_{236}$ |
| 2001 $QP_{238}$ | 15.0 | 0.15 | 20060922 | 11.69868 | 336.92742 | 355.15120 | 10.30761 | 0.0810112 | 3.0085901 | 126 | 5 | 1996–2006 | 0.56 | M-v | 1 | MPC | 04157 | 2001 $QP_{238}$ |
| 2001 $QJ_{239}$ | 15.7 | 0.15 | 20060922 | 98.68522 | 295.84325 | 342.40404 | 13.82049 | 0.0488287 | 2.7348237 | 103 | 3 | 2001–2006 | 0.64 | M-v | 2 | MPC | 60910 | 2001 $QJ_{239}$ |
| 2001 $QL_{239}$ | 17.3 | 0.15 | 20060922 | 96.10091 | 332.54094 | 344.61276 | 7.24937 | 0.2045887 | 2.5699899 | 50 | 3 | 2001–2005 | 0.69 | M-v | 3 | MPC | 88851 | 2001 $QL_{239}$ |
| 2001 $QZ_{239}$ | 15.7 | 0.15 | 20060922 | 17.74315 | 341.96490 | 338.27806 | 8.99473 | 0.0679615 | 2.9639564 | 69 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04157 | 2001 $QZ_{239}$ |
| 2001 $QK_{240}$ | 15.2 | 0.15 | 20060922 | 252.01857 | 295.99946 | 166.04345 | 15.44378 | 0.2561951 | 3.0810216 | 55 | 4 | 1998–2006 | 0.68 | M-v | 1 | MPC | 20925 | 2001 $QK_{240}$ |
| 2001 $QQ_{240}$ | 15.4 | 0.15 | 20060922 | 281.41380 | 164.55776 | 358.55612 | 14.57474 | 0.1074085 | 2.5318034 | 104 | 5 | 1998–2006 | 0.48 | M-v | 2 | MPC | 97453 | 2001 $QQ_{240}$ |
| 2001 $QU_{240}$ | 15.9 | 0.15 | 20060922 | 26.60369 | 336.39545 | 352.82506 | 5.91233 | 0.0859691 | 2.9083633 | 89 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04157 | 2001 $QU_{240}$ |
| 2001 $QD_{241}$ | 16.0 | 0.15 | 20060922 | 92.81997 | 282.34833 | 349.97478 | 11.90357 | 0.1939039 | 2.7781044 | 80 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 60912 | 2001 $QD_{241}$ |
| 2001 $QT_{241}$ | 15.2 | 0.15 | 20060922 | 343.31787 | 244.80139 | 146.60531 | 3.20065 | 0.0447677 | 2.8612974 | 92 | 4 | 1996–2006 | 0.45 | M-v | 3 | MPC | 62346 | 2001 $QT_{241}$ |
| 2001 $QV_{241}$ | 15.2 | 0.15 | 20060922 | 29.08684 | 194.97258 | 163.15963 | 8.42336 | 0.1014289 | 2.7846756 | 76 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 23674 | 2001 $QV_{241}$ |
| 2001 $QZ_{241}$ | 15.8 | 0.15 | 20060922 | 337.74500 | 333.39491 | 21.55587 | 1.32652 | 0.1741309 | 3.0735432 | 78 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 03204 | 2001 $QZ_{241}$ |
| 2001 $QO_{243}$ | 15.6 | 0.15 | 20060922 | 305.87163 | 32.61594 | 348.71896 | 7.10815 | 0.1591249 | 3.1682552 | 62 | 3 | 1998–2004 | 0.62 | M-v | 3 | MPC | 20926 | 2001 $QO_{243}$ |
| 2001 $QS_{244}$ | 15.4 | 0.15 | 20060922 | 26.72803 | 244.96791 | 165.75444 | 11.36097 | 0.1892606 | 2.6453024 | 67 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87447 | 2001 $QS_{244}$ |
| 2001 $QF_{245}$ | 15.2 | 0.15 | 20060922 | 359.68980 | 237.32814 | 172.81639 | 15.55297 | 0.1523170 | 2.7668394 | 75 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04157 | 2001 $QF_{245}$ |
| 2001 $QW_{245}$ | 16.1 | 0.15 | 20060922 | 120.23468 | 164.10701 | 181.71487 | 8.58519 | 0.2363055 | 2.4596945 | 187 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 97453 | 2001 $QW_{245}$ |
| 2001 $QS_{246}$ | 14.5 | 0.15 | 20060922 | 17.70773 | 304.31489 | 7.01018 | 22.94402 | 0.1020393 | 3.1367109 | 77 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04157 | 2001 $QS_{246}$ |
| 2001 $QG_{247}$ | 16.2 | 0.15 | 20060922 | 32.03020 | 317.47410 | 52.44608 | 1.88837 | 0.2156184 | 2.7786213 | 128 | 6 | 1992–2006 | 0.51 | M-v | 1 | MPC | 97454 | 2001 $QG_{247}$ |
| 2001 $QQ_{249}$ | 15.0 | 0.15 | 20060922 | 302.09021 | 252.90547 | 167.50773 | 16.51355 | 0.2240807 | 3.1066094 | 112 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04157 | 2001 $QQ_{249}$ |
| 2001 $QS_{249}$ | 15.4 | 0.15 | 20060922 | 60.08987 | 299.50842 | 19.93869 | 14.22376 | 0.0754755 | 2.7356696 | 71 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 75068 | 2001 $QS_{249}$ |
| 2001 $QY_{249}$ | 16.6 | 0.15 | 20060922 | 209.26961 | 192.53034 | 98.81605 | 6.94330 | 0.1909113 | 2.2643818 | 84 | 3 | 2001–2005 | 0.56 | M-v | 2 | MPC | 64964 | 2001 $QY_{249}$ |
| 2001 $QY_{250}$ | 15.7 | 0.15 | 20060922 | 71.90318 | 249.32951 | 31.86574 | 10.66437 | 0.2440666 | 2.7830860 | 121 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 87447 | 2001 $QY_{250}$ |
| 2001 $QG_{251}$ | 16.4 | 0.15 | 20060922 | 66.04573 | 110.98773 | 158.52032 | 15.88472 | 0.2549813 | 2.7686639 | 46 | 4 | 2001–2006 | 0.79 | M-v | 1 | MPC | 75068 | 2001 $QG_{251}$ |
| 2001 $QF_{252}$ | 17.3 | 0.15 | 20060922 | 169.11293 | 0.85673 | 11.88325 | 2.55537 | 0.2030475 | 2.2090495 | 59 | 3 | 1998–2006 | 0.52 | M-v | 3 | MPC | 94005 | 2001 $QF_{252}$ |
| 2001 $QH_{253}$ | 17.0 | 0.15 | 20060922 | 87.48290 | 308.11209 | 85.35660 | 2.40261 | 0.1846718 | 2.4123066 | 112 | 3 | 1996–2006 | 0.54 | M-v | 2 | MPC | 97454 | 2001 $QH_{253}$ |
| 2001 $QZ_{253}$ | 15.3 | 0.15 | 20060922 | 82.28453 | 281.82173 | 358.84072 | 11.60468 | 0.2142442 | 2.7089278 | 70 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 62347 | 2001 $QZ_{253}$ |
| 2001 $QD_{254}$ | 15.4 | 0.15 | 20060922 | 22.22912 | 247.39902 | 106.36181 | 9.42926 | 0.1553282 | 2.7652651 | 70 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87447 | 2001 $QD_{254}$ |
| 2001 $QO_{254}$ | 16.5 | 0.15 | 20060922 | 162.24376 | 185.48822 | 93.80575 | 6.78777 | 0.1689229 | 2.4174156 | 36 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 00042 | 2001 $QO_{254}$ |
| 2001 $QQ_{254}$ | 15.9 | 0.15 | 20060922 | 62.69144 | 298.56842 | 33.77011 | 6.51585 | 0.1241971 | 2.6426115 | 47 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 60916 | 2001 $QQ_{254}$ |
| 2001 $QR_{254}$ | 15.9 | 0.15 | 20060922 | 124.01236 | 202.95334 | 121.87376 | 11.20386 | 0.1835169 | 2.4373403 | 77 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 94006 | 2001 $QR_{254}$ |
| 2001 $QT_{254}$ | 16.4 | 0.15 | 20060922 | 108.21128 | 187.13946 | 121.80883 | 4.15079 | 0.1391061 | 2.5574227 | 69 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 90072 | 2001 $QT_{254}$ |
| 2001 $QU_{254}$ | 16.1 | 0.15 | 20060922 | 38.56871 | 325.63553 | 39.26531 | 4.84030 | 0.1084233 | 2.6593175 | 36 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 88853 | 2001 $QU_{254}$ |
| 2001 $QG_{255}$ | 15.9 | 0.15 | 20060922 | 12.08440 | 262.26535 | 108.87506 | 9.15841 | 0.3037665 | 2.7903951 | 54 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 84812 | 2001 $QG_{255}$ |
| 2001 $QT_{255}$ | 16.6 | 0.15 | 20060922 | 208.05969 | 81.34729 | 197.90649 | 6.72202 | 0.2014252 | 2.2862320 | 89 | 4 | 1991–2005 | 0.65 | M-v | 1 | MPC | 04157 | 2001 $QT_{255}$ |
| 2001 $QW_{255}$ | 15.3 | 0.15 | 20060922 | 349.88000 | 73.24950 | 3.34951 | 5.77674 | 0.2108764 | 2.6350130 | 73 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 43412 | 2001 $QW_{255}$ |
| 2001 $QH_{256}$ | 16.4 | 0.15 | 20060922 | 47.29917 | 179.40655 | 144.31160 | 7.00276 | 0.2713866 | 2.7827605 | 53 | 3 | 2001–2006 | 0.42 | M-v | 1 | MPC | 75069 | 2001 $QH_{256}$ |
| 2001 $QR_{257}$ | 14.9 | 0.15 | 20060922 | 327.75138 | 248.24342 | 156.47946 | 14.63707 | 0.2766032 | 2.9923200 | 143 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04157 | 2001 $QR_{257}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QC_{258}$ | 15.9 | 0.15 | 20060922 | 85.11404 | 251.60158 | 89.28210 | 7.65224 | 0.1786975 | 2.5471674 | 61 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87447 | 2001 $QC_{258}$ |
| 2001 $QG_{258}$ | 16.4 | 0.15 | 20060922 | 73.02500 | 94.98821 | 251.93843 | 7.79810 | 0.1842635 | 2.6124481 | 66 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 84813 | 2001 $QG_{258}$ |
| 2001 $QQ_{258}$ | 16.1 | 0.15 | 20060922 | 36.05039 | 115.11370 | 229.06031 | 6.98616 | 0.2009314 | 2.7861649 | 104 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 84813 | 2001 $QQ_{258}$ |
| 2001 $QA_{259}$ | 15.6 | 0.15 | 20060922 | 9.98713 | 182.91725 | 214.26811 | 8.77406 | 0.2144742 | 2.7533944 | 87 | 3 | 2001–2006 | 0.64 | M-v | 3 | MPC | 64965 | 2001 $QA_{259}$ |
| 2001 $QJ_{259}$ | 16.0 | 0.15 | 20060922 | 320.01218 | 101.58706 | 289.67355 | 8.68124 | 0.1327508 | 3.0211385 | 62 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 03204 | 2001 $QJ_{259}$ |
| 2001 $QR_{259}$ | 16.0 | 0.15 | 20060922 | 43.85912 | 117.49087 | 288.12994 | 7.46398 | 0.0897504 | 2.5540535 | 69 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87447 | 2001 $QR_{259}$ |
| 2001 $QB_{260}$ | 15.9 | 0.15 | 20060922 | 38.98429 | 89.70825 | 310.93560 | 6.36869 | 0.1965482 | 2.6158908 | 95 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90072 | 2001 $QB_{260}$ |
| 2001 $QJ_{263}$ | 16.2 | 0.15 | 20060922 | 31.76547 | 248.59178 | 117.10812 | 2.98215 | 0.2503619 | 2.7794853 | 56 | 3 | 1998–2006 | 0.54 | M-v | 3 | MPC | 20931 | 2001 $QJ_{263}$ |
| 2001 $QQ_{263}$ | 14.4 | 0.15 | 20060922 | 290.25343 | 111.82139 | 315.01742 | 9.45977 | 0.1518592 | 3.0983432 | 141 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 04157 | 2001 $QQ_{263}$ |
| 2001 $QS_{265}$ | 15.7 | 0.15 | 20060922 | 18.35428 | 216.73411 | 140.71917 | 5.65532 | 0.0817947 | 2.7167739 | 64 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 62348 | 2001 $QS_{265}$ |
| 2001 $QL_{266}$ | 16.2 | 0.15 | 20060922 | 62.37640 | 75.40655 | 279.53154 | 11.77543 | 0.2058840 | 2.5762317 | 34 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87448 | 2001 $QL_{266}$ |
| 2001 $QT_{267}$ | 15.0 | 0.15 | 20060922 | 358.53433 | 81.18397 | 319.78710 | 11.93094 | 0.1139190 | 2.7005011 | 65 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 40433 | 2001 $QT_{267}$ |
| 2001 $QX_{267}$ | 15.5 | 0.15 | 20060922 | 294.13520 | 221.05212 | 181.11326 | 8.91254 | 0.2031261 | 3.0863781 | 49 | 4 | 1998–2006 | 0.49 | M-v | 1 | MPC | 02039 | 2001 $QX_{267}$ |
| 2001 $QO_{268}$ | 15.2 | 0.15 | 20060922 | 81.37228 | 97.98162 | 271.89670 | 12.76898 | 0.1833062 | 2.5398060 | 143 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97454 | 2001 $QO_{268}$ |
| 2001 $QP_{268}$ | 14.3 | 0.15 | 20060922 | 294.78519 | 129.28741 | 269.95849 | 20.38998 | 0.0786117 | 3.1488817 | 46 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 62348 | 2001 $QP_{268}$ |
| 2001 $QE_{269}$ | 14.9 | 0.15 | 20060922 | 311.96499 | 174.03562 | 228.16132 | 9.90271 | 0.0982872 | 2.9814576 | 71 | 6 | 1991–2006 | 0.49 | M-v | 1 | MPC | 04157 | 2001 $QE_{269}$ |
| 2001 $QK_{269}$ | 15.0 | 0.15 | 20060922 | 16.13905 | 94.09357 | 326.41764 | 15.47624 | 0.1910926 | 2.6436058 | 113 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87448 | 2001 $QK_{269}$ |
| 2001 $QW_{269}$ | 15.4 | 0.15 | 20060922 | 56.15193 | 10.20674 | 341.82730 | 5.23698 | 0.1409751 | 2.5581824 | 54 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87448 | 2001 $QW_{269}$ |
| 2001 $QT_{270}$ | 15.3 | 0.15 | 20060922 | 282.54065 | 135.87629 | 319.30617 | 21.57536 | 0.0372908 | 2.6594515 | 47 | 5 | 1995–2006 | 0.57 | M-v | 2 | MPC | 04157 | 2001 $QT_{270}$ |
| 2001 $QE_{271}$ | 16.2 | 0.15 | 20060922 | 3.85204 | 12.47051 | 325.08240 | 14.46329 | 0.1409559 | 2.8582258 | 39 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 04157 | 2001 $QE_{271}$ |
| 2001 $QG_{272}$ | 16.0 | 0.15 | 20060922 | 95.18938 | 285.67393 | 349.87220 | 12.69377 | 0.1750755 | 2.6771422 | 45 | 5 | 1997–2006 | 0.61 | M-v | 1 | MPC | 62348 | 2001 $QG_{272}$ |
| 2001 $QM_{272}$ | 16.0 | 0.15 | 20060922 | 54.11539 | 220.33485 | 101.99877 | 10.14298 | 0.0735980 | 2.7118380 | 61 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 60923 | 2001 $QM_{272}$ |
| 2001 $QN_{272}$ | 16.1 | 0.15 | 20060922 | 232.10604 | 178.07125 | 89.00555 | 6.26821 | 0.1719707 | 2.2371494 | 116 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 97454 | 2001 $QN_{272}$ |
| 2001 $QY_{272}$ | 16.7 | 0.15 | 20060922 | 43.64162 | 8.19579 | 28.21742 | 5.46013 | 0.2529617 | 2.5671694 | 32 | 4 | 1993–2005 | 0.62 | M-v | 2 | MPC | 88855 | 2001 $QY_{272}$ |
| 2001 $QG_{273}$ | 15.7 | 0.15 | 20060922 | 318.02379 | 22.99532 | 356.44179 | 12.16240 | 0.1635319 | 2.9877469 | 30 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04157 | 2001 $QG_{273}$ |
| 2001 $QO_{273}$ | 16.7 | 0.15 | 20060922 | 129.66828 | 300.13334 | 26.16072 | 6.49192 | 0.1553874 | 2.4200268 | 77 | 3 | 2001–2005 | 0.60 | M-v | 3 | MPC | 97454 | 2001 $QO_{273}$ |
| 2001 $QS_{273}$ | 15.2 | 0.15 | 20060922 | 32.44691 | 262.23665 | 96.79916 | 9.30379 | 0.1666537 | 2.6983248 | 60 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 40437 | 2001 $QS_{273}$ |
| 2001 $QM_{274}$ | 15.6 | 0.15 | 20060922 | 53.92242 | 200.93766 | 104.69337 | 7.29661 | 0.0802881 | 2.7686195 | 41 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 88856 | 2001 $QM_{274}$ |
| 2001 $QU_{274}$ | 15.7 | 0.15 | 20060922 | 83.56424 | 154.11709 | 111.37290 | 7.86652 | 0.2221991 | 2.7602989 | 57 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 77557 | 2001 $QU_{274}$ |
| 2001 $QX_{274}$ | 15.4 | 0.15 | 20060922 | 8.33607 | 259.15452 | 98.58248 | 8.91243 | 0.1832008 | 2.8163550 | 67 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 77557 | 2001 $QX_{274}$ |
| 2001 $QM_{275}$ | 16.1 | 0.15 | 20060922 | 54.61868 | 97.09807 | 269.69940 | 14.85360 | 0.2257839 | 2.6299751 | 66 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87448 | 2001 $QM_{275}$ |
| 2001 $QK_{276}$ | 15.4 | 0.15 | 20060922 | 8.97421 | 288.05929 | 93.63044 | 8.24905 | 0.0903830 | 2.7225224 | 69 | 6 | 1997–2006 | 0.57 | M-v | 1 | MPC | 62348 | 2001 $QK_{276}$ |
| 2001 $QE_{278}$ | 15.8 | 0.15 | 20060922 | 71.39205 | 282.90433 | 68.39628 | 13.62174 | 0.2134372 | 2.5978436 | 60 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 87448 | 2001 $QE_{278}$ |
| 2001 $QJ_{278}$ | 14.8 | 0.15 | 20060922 | 103.03248 | 158.30311 | 117.14056 | 16.17543 | 0.2881856 | 2.6690238 | 63 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 74096 | 2001 $QJ_{278}$ |
| 2001 $QK_{278}$ | 15.6 | 0.15 | 20060922 | 83.98148 | 3.47617 | 303.85430 | 5.29811 | 0.1345862 | 2.6501890 | 32 | 4 | 1995–2006 | 0.62 | M-v | 1 | MPC | 20934 | 2001 $QK_{278}$ |
| 2001 $QU_{278}$ | 15.8 | 0.15 | 20060922 | 8.24100 | 281.03310 | 115.41449 | 13.61054 | 0.1428452 | 2.6783475 | 67 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 77557 | 2001 $QU_{278}$ |
| 2001 $QB_{279}$ | 15.7 | 0.15 | 20060922 | 87.93477 | 278.34079 | 17.58404 | 14.01953 | 0.0984772 | 2.6882941 | 27 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 68926 | 2001 $QB_{279}$ |
| 2001 $QC_{280}$ | 16.6 | 0.15 | 20060922 | 80.72593 | 264.10358 | 77.05538 | 5.20103 | 0.2438314 | 2.5775219 | 68 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 84816 | 2001 $QC_{280}$ |
| 2001 $QM_{280}$ | 16.0 | 0.15 | 20060922 | 48.36455 | 293.91199 | 57.58420 | 9.40902 | 0.2082828 | 2.6942598 | 33 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 60925 | 2001 $QM_{280}$ |
| 2001 $QK_{282}$ | 15.2 | 0.15 | 20060922 | 45.69008 | 250.21843 | 99.48756 | 14.99988 | 0.2006706 | 2.7661823 | 64 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 62349 | 2001 $QK_{282}$ |
| 2001 $QN_{283}$ | 15.8 | 0.15 | 20060922 | 56.06830 | 107.64999 | 213.59429 | 8.74900 | 0.1374800 | 2.6950807 | 80 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 60925 | 2001 $QN_{283}$ |
| 2001 $QQ_{283}$ | 15.4 | 0.15 | 20060922 | 18.50221 | 121.49470 | 266.02717 | 11.41635 | 0.1657222 | 2.6501954 | 70 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 66200 | 2001 $QQ_{283}$ |
| 2001 $QD_{284}$ | 16.0 | 0.15 | 20060922 | 49.86381 | 257.17957 | 104.61176 | 12.97717 | 0.0906978 | 2.6236075 | 45 | 6 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87449 | 2001 $QD_{284}$ |
| 2001 $QH_{284}$ | 16.3 | 0.15 | 20060922 | 75.65717 | 146.21740 | 182.90758 | 1.83660 | 0.0877132 | 2.6556250 | 64 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 90073 | 2001 $QH_{284}$ |
| 2001 $QY_{285}$ | 17.1 | 0.15 | 20060922 | 156.47000 | 62.70769 | 251.11562 | 6.36530 | 0.2097287 | 2.3594777 | 59 | 3 | 1996–2005 | 0.71 | M-v | 2 | MPC | 97455 | 2001 $QY_{285}$ |
| 2001 $QP_{286}$ | 16.6 | 0.15 | 20060922 | 55.90530 | 98.77110 | 273.55501 | 13.50438 | 0.2330085 | 2.5917898 | 36 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 84818 | 2001 $QP_{286}$ |
| 2001 $QV_{286}$ | 16.0 | 0.15 | 20060922 | 11.39555 | 166.55831 | 223.77769 | 13.63161 | 0.1950254 | 2.7157950 | 72 | 3 | 2000–2006 | 0.49 | M-v | 3 | MPC | 20075 | 2001 $QV_{286}$ |
| 2001 $QW_{286}$ | 16.8 | 0.15 | 20060922 | 41.72413 | 50.80939 | 314.10369 | 1.54344 | 0.1171263 | 2.6398392 | 41 | 5 | 1999–2006 | 0.44 | M-v | 0 | MPC | 03205 | 2001 $QW_{286}$ |
| 2001 $QZ_{286}$ | 16.4 | 0.15 | 20060922 | 51.95466 | 89.65321 | 231.10133 | 2.46144 | 0.1933567 | 2.7560871 | 72 | 4 | 1960–2006 | 0.53 | M-v | 3 | MPC | 23682 | 2001 $QZ_{286}$ |
| 2001 $QD_{287}$ | 15.1 | 0.15 | 20060922 | 13.43075 | 67.41471 | 326.97941 | 12.01958 | 0.1833828 | 2.7115896 | 108 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 87449 | 2001 $QD_{287}$ |
| 2001 $QX_{287}$ | 14.8 | 0.15 | 20060922 | 21.52855 | 343.01223 | 330.39432 | 10.85742 | 0.1136576 | 2.9875059 | 144 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04158 | 2001 $QX_{287}$ |
| 2001 $QB_{288}$ | 15.5 | 0.15 | 20060922 | 57.72015 | 71.39170 | 298.70016 | 10.18405 | 0.3273279 | 2.6482666 | 101 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 84819 | 2001 $QB_{288}$ |
| 2001 $QP_{288}$ | 15.8 | 0.15 | 20060922 | 330.43454 | 232.07955 | 242.51116 | 12.48604 | 0.1448362 | 2.5824963 | 62 | 6 | 1999–2006 | 0.52 | M-v | 1 | MPC | 90073 | 2001 $QP_{288}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $QM_{289}$ | 16.6 | 0.15 | 20060922 | 112.66385 | 0.70014 | 272.98301 | 1.35423 | 0.1860442 | 2.5946912 | 29 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 04158 | 2001 $QM_{289}$ |
| 2001 $QG_{291}$ | 16.2 | 0.15 | 20060922 | 75.16744 | 55.30196 | 309.66335 | 2.48334 | 0.2530432 | 2.5897997 | 193 | 5 | 1997–2006 | 0.51 | M-v | 2 | MPC | 97455 | 2001 $QG_{291}$ |
| 2001 $QS_{292}$ | 15.5 | 0.15 | 20060922 | 77.98280 | 239.61389 | 126.77557 | 6.15931 | 0.2579608 | 2.6001170 | 169 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97455 | 2001 $QS_{292}$ |
| 2001 $QV_{292}$ | 16.3 | 0.15 | 20060922 | 17.60272 | 347.66613 | 310.89236 | 11.75100 | 0.1971487 | 3.0329121 | 43 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 60928 | 2001 $QV_{292}$ |
| 2001 $QB_{293}$ | 15.9 | 0.15 | 20060922 | 109.96663 | 41.35872 | 298.45007 | 7.72229 | 0.1097237 | 2.5336286 | 113 | 4 | 2001–2006 | 0.51 | M-v | 3 | MPC | 90073 | 2001 $QB_{293}$ |
| 2001 $QE_{294}$ | 15.5 | 0.15 | 20060922 | 335.14067 | 252.16364 | 149.31766 | 12.65332 | 0.1461252 | 2.7856251 | 84 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04158 | 2001 $QE_{294}$ |
| 2001 $QM_{294}$ | 15.8 | 0.15 | 20060922 | 9.21415 | 163.85086 | 158.92149 | 12.69625 | 0.1605282 | 2.9171526 | 46 | 2 | 2001–2006 | 0.52 | M-v | 4 | MPC | 03205 | 2001 $QM_{294}$ |
| 2001 $QV_{294}$ | 15.7 | 0.15 | 20060922 | 63.41633 | 134.45981 | 199.73618 | 3.21587 | 0.2221668 | 2.6858839 | 112 | 5 | 1998–2006 | 0.49 | M-v | 0 | MPC | 62349 | 2001 $QV_{294}$ |
| 2001 $QL_{295}$ | 15.0 | 0.15 | 20060922 | 326.11997 | 16.14846 | 16.87850 | 13.36290 | 0.1485326 | 3.0534164 | 116 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04158 | 2001 $QL_{295}$ |
| 2001 $QR_{297}$ | 6.3 | 0.15 | 20060922 | 324.31516 | 219.20853 | 148.03890 | 5.14830 | 0.0245298 | 44.3971352 | 14 | 4 | 2001–2006 | 0.19 | M-v | 4 | MPC | 77558 | 2001 $QR_{297}$ |
| 2001 $QX_{297}$ | 6.6 | 0.15 | 20060922 | 308.71469 | 108.07441 | 279.42134 | 0.90925 | 0.0252467 | 44.1304442 | 19 | 6 | 2000–2006 | 0.26 | M-v | 4 | MPC | 02039 | 2001 $QX_{297}$ |
| 2001 $QJ_{298}$ | 6.4 | 0.15 | 20060922 | 235.66983 | 298.13026 | 162.70531 | 2.15449 | 0.0380387 | 44.0650819 | 19 | 6 | 2000–2006 | 0.31 | M-v | 4 | MPC | 02039 | 2001 $QJ_{298}$ |
| 2001 $QJ_{308}$ | 18.0 | 0.15 | 20010819 | 30.60253 | 167.31840 | 126.53000 | 3.76912 | 0.2005113 | 2.8827821 | 6 | 1 | 2 days | 0.11 | | E | MPC | 48068 | 2001 $QJ_{308}$ |
| 2001 $QE_{317}$ | 16.2 | 0.15 | 20060922 | 160.56159 | 220.65947 | 335.24672 | 5.68985 | 0.1711132 | 2.7291709 | 70 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 87449 | 2001 $QE_{317}$ |
| 2001 $QU_{317}$ | 16.3 | 0.15 | 20060922 | 19.74497 | 328.04033 | 357.26979 | 1.58991 | 0.0685568 | 2.8580354 | 37 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 03205 | 2001 $QU_{317}$ |
| 2001 $QW_{317}$ | 17.5 | 0.15 | 20060922 | 100.75509 | 31.89062 | 335.81862 | 3.90457 | 0.1993835 | 2.4130422 | 27 | 2 | 2001–2005 | 0.61 | M-v | 3 | MPC | 00043 | 2001 $QW_{317}$ |
| 2001 $QS_{320}$ | 16.5 | 0.15 | 20060922 | 327.05594 | 346.48062 | 163.83123 | 2.20208 | 0.1279221 | 2.4207947 | 77 | 4 | 2001–2006 | 0.39 | M-v | 2 | MPC | 97455 | 2001 $QS_{320}$ |
| 2001 $QE_{327}$ | 16.3 | 0.15 | 20060922 | 84.86331 | 285.52753 | 54.80142 | 9.48456 | 0.1310909 | 2.5601607 | 26 | 3 | 1996–2005 | 0.60 | M-v | 4 | MPC | 94016 | 2001 $QE_{327}$ |
| 2001 $QG_{328}$ | 16.2 | 0.15 | 20060922 | 336.33508 | 212.31867 | 169.19691 | 11.64811 | 0.1443613 | 3.0416074 | 60 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04158 | 2001 $QG_{328}$ |
| 2001 $QH_{328}$ | 14.8 | 0.15 | 20060922 | 294.08129 | 298.34265 | 141.82778 | 14.18230 | 0.2881412 | 3.1601384 | 81 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 04158 | 2001 $QH_{328}$ |
| 2001 $QJ_{328}$ | 15.1 | 0.15 | 20060922 | 353.22134 | 235.09124 | 120.58597 | 13.60839 | 0.2861646 | 3.0606115 | 69 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04158 | 2001 $QJ_{328}$ |
| 2001 $QL_{328}$ | 15.8 | 0.15 | 20060922 | 356.49510 | 203.04882 | 177.75535 | 9.55262 | 0.0866202 | 2.9460281 | 51 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 60930 | 2001 $QL_{328}$ |
| 2001 $QM_{328}$ | 15.2 | 0.15 | 20060922 | 280.18994 | 304.40674 | 147.22874 | 6.69151 | 0.1681545 | 3.0890780 | 63 | 4 | 1998–2006 | 0.64 | M-v | 0 | MPC | 48068 | 2001 $QM_{328}$ |
| 2001 $QO_{328}$ | 14.9 | 0.15 | 20060922 | 274.67671 | 332.07950 | 120.72359 | 10.06708 | 0.0224973 | 2.9131563 | 52 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 60930 | 2001 $QO_{328}$ |
| 2001 $QC_{329}$ | 16.1 | 0.15 | 20060922 | 319.91876 | 73.03189 | 309.14411 | 1.42337 | 0.1052597 | 2.9534013 | 37 | 3 | 1999–2006 | 0.38 | M-v | 3 | MPC | 04158 | 2001 $QC_{329}$ |
| 2001 $QQ_{329}$ | 16.6 | 0.15 | 20060922 | 151.33848 | 182.53235 | 146.43371 | 8.14946 | 0.0858549 | 2.3710001 | 31 | 3 | 2001–2005 | 0.72 | M-v | 4 | MPC | 88859 | 2001 $QQ_{329}$ |
| 2001 $QV_{329}$ | 16.0 | 0.15 | 20060922 | 41.66563 | 59.75585 | 256.60457 | 5.02680 | 0.0463097 | 2.8707736 | 68 | 6 | 2000–2006 | 0.51 | M-v | 0 | MPC | 77558 | 2001 $QV_{329}$ |
| 2001 $QY_{329}$ | 15.4 | 0.15 | 20060922 | 4.64896 | 228.61961 | 185.28730 | 12.10776 | 0.0860661 | 2.6195502 | 36 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 88859 | 2001 $QY_{329}$ |
| 2001 $QZ_{329}$ | 15.8 | 0.15 | 20060922 | 329.68884 | 284.53369 | 145.49310 | 13.64832 | 0.1889013 | 2.7884096 | 106 | 3 | 2001–2006 | 0.59 | M-v | 1 | MPC | 48069 | 2001 $QZ_{329}$ |
| 2001 $QL_{330}$ | 15.2 | 0.15 | 20060922 | 316.47200 | 80.25406 | 299.61906 | 8.66903 | 0.1192672 | 3.0598925 | 32 | 2 | 2001–2006 | 0.50 | M-v | 4 | MPC | 03206 | 2001 $QL_{330}$ |
| 2001 $QV_{333}$ | 18.7 | 0.15 | 20060922 | 329.94510 | 332.61997 | 340.60211 | 17.61267 | 0.0737925 | 1.9566989 | 16 | 1 | 60 days | 0.43 | M-v | 4 | MPC | | 2001 $QV_{333}$ |
| 2001 $QX_{333}$ | 12.8 | 0.15 | 20010908 | 27.30883 | 347.25562 | 352.96433 | 26.57084 | 0.0596170 | 5.2861359 | 19 | 1 | 35 days | 0.54 | | | MPC | | 2001 $QX_{333}$ |
| 2001 $QZ_{333}$ | 15.7 | 0.15 | 20010928 | 348.56853 | 140.08935 | 223.48675 | 16.05365 | 0.1564252 | 3.1398823 | 21 | 1 | 52 days | 0.43 | | | MPC | | 2001 $QZ_{333}$ |
| 2001 RB | 15.2 | 0.15 | 20060922 | 56.68695 | 68.36044 | 330.73107 | 10.62087 | 0.3069372 | 2.6436338 | 199 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 04158 | 2001 RB |
| 2001 RN | 19.8 | 0.15 | 20060922 | 37.74680 | 30.22002 | 211.59054 | 10.09471 | 0.5811575 | 1.4138754 | 77 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 97455 | 2001 RN |
| 2001 $RC_1$ | 16.0 | 0.15 | 20060922 | 44.51473 | 145.12153 | 215.71843 | 1.51808 | 0.1252721 | 2.6541298 | 103 | 7 | 1997–2006 | 0.48 | M-v | 0 | MPC | 87449 | 2001 $RC_1$ |
| 2001 $RQ_2$ | 15.7 | 0.15 | 20060922 | 62.12208 | 46.51464 | 262.57074 | 10.14124 | 0.2649110 | 2.7035582 | 113 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 75076 | 2001 $RQ_2$ |
| 2001 $RV_2$ | 15.8 | 0.15 | 20060922 | 48.55501 | 169.44502 | 183.23190 | 12.28143 | 0.1836221 | 2.6953668 | 78 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 60933 | 2001 $RV_2$ |
| 2001 $RZ_2$ | 14.8 | 0.15 | 20060922 | 283.67250 | 216.33999 | 209.35838 | 14.94046 | 0.3182091 | 3.0945390 | 59 | 3 | 2001–2004 | 0.66 | M-v | 3 | MPC | 48069 | 2001 $RZ_2$ |
| 2001 $RA_3$ | 15.9 | 0.15 | 20060922 | 39.07259 | 124.00550 | 267.47302 | 9.03907 | 0.1820272 | 2.5972983 | 71 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 87450 | 2001 $RA_3$ |
| 2001 $RB_3$ | 16.3 | 0.15 | 20060922 | 43.21537 | 109.69299 | 273.52082 | 8.51371 | 0.2192468 | 2.6094855 | 58 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 84826 | 2001 $RB_3$ |
| 2001 $RN_3$ | 16.5 | 0.15 | 20060922 | 58.83260 | 58.65576 | 244.71887 | 10.79408 | 0.2553983 | 2.7657138 | 38 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 75076 | 2001 $RN_3$ |
| 2001 $RM_4$ | 17.2 | 0.15 | 20060922 | 74.50263 | 193.23321 | 191.16562 | 6.27702 | 0.1216988 | 2.4632903 | 84 | 4 | 1996–2005 | 0.57 | M-v | 1 | MPC | 97456 | 2001 $RM_4$ |
| 2001 $RT_4$ | 15.9 | 0.15 | 20060922 | 87.64918 | 149.97862 | 174.19905 | 15.13386 | 0.1311386 | 2.5971212 | 62 | 4 | 2000–2005 | 0.42 | M-v | 1 | MPC | 88861 | 2001 $RT_4$ |
| 2001 $RG_5$ | 16.6 | 0.15 | 20060922 | 93.46123 | 113.98820 | 234.35753 | 5.63789 | 0.2223538 | 2.5324641 | 80 | 2 | 2001–2005 | 0.55 | M-v | 3 | MPC | 88862 | 2001 $RG_5$ |
| 2001 $RP_5$ | 17.0 | 0.15 | 20060922 | 99.00612 | 25.15739 | 312.55482 | 4.47341 | 0.1384140 | 2.5342379 | 88 | 5 | 1999–2006 | 0.43 | M-v | 2 | MPC | 87450 | 2001 $RP_5$ |
| 2001 $RT_5$ | 15.5 | 0.15 | 20060922 | 290.55593 | 98.53346 | 308.03879 | 2.51224 | 0.1394434 | 3.1001507 | 66 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 04158 | 2001 $RT_5$ |
| 2001 $RU_5$ | 15.4 | 0.15 | 20060922 | 15.30746 | 331.55918 | 338.30721 | 5.64890 | 0.2500312 | 2.9963930 | 157 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04158 | 2001 $RU_5$ |
| 2001 $RV_5$ | 16.6 | 0.15 | 20060922 | 35.50124 | 31.58965 | 323.19539 | 3.62876 | 0.1052964 | 2.7531653 | 73 | 4 | 2001–2006 | 0.41 | M-v | 0 | MPC | 60934 | 2001 $RV_5$ |
| 2001 $RE_6$ | 16.5 | 0.15 | 20060922 | 246.99629 | 218.89703 | 207.92006 | 21.15725 | 0.0859088 | 1.9205621 | 89 | 5 | 1995–2006 | 0.63 | M-v | 1 | MPC | 04158 | 2001 $RE_6$ |
| 2001 $RG_6$ | 15.0 | 0.15 | 20060922 | 32.84638 | 142.78581 | 278.43034 | 21.62662 | 0.1230630 | 2.5656438 | 78 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 90073 | 2001 $RG_6$ |
| 2001 $RM_6$ | 15.7 | 0.15 | 20060922 | 23.74564 | 230.25335 | 189.84080 | 11.10959 | 0.1634408 | 2.6326154 | 137 | 6 | 1991–2006 | 0.53 | M-v | 1 | MPC | 04158 | 2001 $RM_6$ |
| 2001 $RW_7$ | 16.5 | 0.15 | 20060922 | 56.24740 | 112.85189 | 266.13008 | 2.97942 | 0.2340391 | 2.5706672 | 72 | 4 | 1993–2006 | 0.38 | M-v | 1 | MPC | 90073 | 2001 $RW_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $RZ_{7}$ | 16.2 | 0.15 | 20060922 | 93.67082 | 144.99495 | 191.23975 | 13.88541 | 0.1056888 | 2.5580517 | 39 | 4 | 1996–2005 | 0.62 | M-v | 2 | MPC | 88862 | 2001 $RZ_{7}$ |
| 2001 $RH_{9}$ | 14.5 | 0.15 | 20060922 | 41.82816 | 118.55942 | 212.90748 | 31.06093 | 0.3373958 | 2.7822422 | 174 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04158 | 2001 $RH_{9}$ |
| 2001 $RK_{10}$ | 18.0 | 0.15 | 20060922 | 66.70937 | 20.25850 | 359.23617 | 2.51174 | 0.2421935 | 2.5484031 | 43 | 3 | 1993–2005 | 0.50 | M-v | 3 | MPC | 04158 | 2001 $RK_{10}$ |
| 2001 $RP_{10}$ | 16.9 | 0.15 | 20060922 | 79.67595 | 39.43711 | 200.16367 | 20.10973 | 0.0650463 | 1.9015010 | 107 | 3 | 2001–2004 | 0.62 | M-v | 2 | MPC | 46581 | 2001 $RP_{10}$ |
| 2001 $RQ_{11}$ | 15.3 | 0.15 | 20060922 | 40.24715 | 214.50991 | 177.51022 | 5.36883 | 0.2241132 | 2.6749023 | 174 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 97456 | 2001 $RQ_{11}$ |
| 2001 $RY_{13}$ | 16.0 | 0.15 | 20060922 | 142.24534 | 74.34622 | 166.74432 | 5.75684 | 0.0166594 | 2.7576661 | 65 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 60935 | 2001 $RY_{13}$ |
| 2001 $RC_{14}$ | 16.2 | 0.15 | 20060922 | 304.93886 | 249.96999 | 161.03755 | 2.40777 | 0.0966293 | 2.9343238 | 57 | 4 | 1996–2006 | 0.41 | M-v | 2 | MPC | 04158 | 2001 $RC_{14}$ |
| 2001 $RQ_{14}$ | 16.8 | 0.15 | 20060922 | 100.66905 | 142.54867 | 160.58709 | 2.63178 | 0.0605882 | 2.6519060 | 58 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 87450 | 2001 $RQ_{14}$ |
| 2001 $RG_{15}$ | 15.2 | 0.15 | 20060922 | 171.95952 | 270.64836 | 297.87691 | 11.48706 | 0.0973906 | 2.7993557 | 54 | 6 | 1994–2006 | 0.56 | M-v | 1 | MPC | 87450 | 2001 $RG_{15}$ |
| 2001 $RJ_{15}$ | 16.7 | 0.15 | 20060922 | 181.51154 | 76.34905 | 240.36457 | 8.56531 | 0.2299225 | 2.3052463 | 58 | 3 | 2001–2005 | 0.60 | M-v | 3 | MPC | 64972 | 2001 $RJ_{15}$ |
| 2001 $RD_{16}$ | 15.8 | 0.15 | 20060922 | 18.13059 | 209.38553 | 162.88032 | 7.27513 | 0.0463110 | 2.7266329 | 66 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 62350 | 2001 $RD_{16}$ |
| 2001 $RT_{17}$ | 18.0 | 0.15 | 20060922 | 275.93583 | 199.51659 | 350.08419 | 20.13625 | 0.7920068 | 1.2682965 | 66 | 3 | 2001–2006 | 0.52 | M-v | 4 | MPC | 04159 | 2001 $RT_{17}$ |
| 2001 $RL_{18}$ | 16.5 | 0.15 | 20060922 | 66.40498 | 349.57006 | 348.57795 | 3.65505 | 0.2400655 | 2.6199509 | 39 | 3 | 1997–2004 | 0.61 | M-v | 3 | MPC | 60937 | 2001 $RL_{18}$ |
| 2001 $RP_{19}$ | 17.6 | 0.15 | 20060922 | 139.97283 | 307.51082 | 9.64705 | 1.69906 | 0.2703966 | 2.4005533 | 51 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 97456 | 2001 $RP_{19}$ |
| 2001 $RA_{20}$ | 15.0 | 0.15 | 20060922 | 35.91699 | 303.03067 | 329.38495 | 11.72019 | 0.1403094 | 3.0392715 | 38 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04159 | 2001 $RA_{20}$ |
| 2001 $RE_{21}$ | 15.5 | 0.15 | 20060922 | 351.21300 | 180.28769 | 154.50045 | 10.37771 | 0.0737241 | 3.0079742 | 44 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04159 | 2001 $RE_{21}$ |
| 2001 $RP_{21}$ | 16.6 | 0.15 | 20060922 | 80.73235 | 138.48121 | 157.01313 | 7.98820 | 0.1980548 | 2.6957198 | 51 | 6 | 1995–2006 | 0.59 | M-v | 0 | MPC | 87450 | 2001 $RP_{21}$ |
| 2001 $RC_{22}$ | 16.0 | 0.15 | 20060922 | 18.15046 | 203.97628 | 259.37048 | 1.55159 | 0.1737874 | 2.4250266 | 190 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97456 | 2001 $RC_{22}$ |
| 2001 $RX_{22}$ | 15.5 | 0.15 | 20060922 | 309.03520 | 69.12743 | 333.84515 | 8.96621 | 0.1381033 | 2.9623705 | 64 | 2 | 2001–2006 | 0.48 | M-v | 4 | MPC | 03207 | 2001 $RX_{22}$ |
| 2001 $RY_{22}$ | 15.6 | 0.15 | 20060922 | 40.83948 | 106.67484 | 169.58783 | 16.22004 | 0.1132939 | 3.0228527 | 47 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 04159 | 2001 $RY_{22}$ |
| 2001 $RB_{24}$ | 16.4 | 0.15 | 20060922 | 30.61532 | 217.62469 | 144.93733 | 3.32474 | 0.0902791 | 2.7092435 | 63 | 6 | 1997–2006 | 0.61 | M-v | 1 | MPC | 62350 | 2001 $RB_{24}$ |
| 2001 $RC_{24}$ | 16.1 | 0.15 | 20060922 | 313.06775 | 241.57969 | 155.31533 | 3.42445 | 0.2277585 | 3.0042320 | 65 | 6 | 1991–2006 | 0.42 | M-v | 1 | MPC | 04159 | 2001 $RC_{24}$ |
| 2001 $RD_{24}$ | 15.7 | 0.15 | 20060922 | 71.59834 | 299.16021 | 0.72159 | 3.87681 | 0.0502495 | 2.7767792 | 83 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04159 | 2001 $RD_{24}$ |
| 2001 $RH_{24}$ | 16.1 | 0.15 | 20060922 | 1.67685 | 5.86218 | 354.49022 | 4.69684 | 0.1302053 | 2.8600399 | 95 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 04159 | 2001 $RH_{24}$ |
| 2001 $RJ_{24}$ | 15.3 | 0.15 | 20060922 | 315.71936 | 205.48574 | 157.44923 | 10.33571 | 0.0422918 | 3.0894074 | 64 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 77559 | 2001 $RJ_{24}$ |
| 2001 $RQ_{24}$ | 16.2 | 0.15 | 20060922 | 69.76017 | 335.10092 | 337.91359 | 4.41341 | 0.1002498 | 2.7208719 | 44 | 4 | 1997–2006 | 0.40 | M-v | 0 | MPC | 60941 | 2001 $RQ_{24}$ |
| 2001 $RU_{24}$ | 16.3 | 0.15 | 20060922 | 350.97404 | 15.43374 | 346.38585 | 5.75249 | 0.1027902 | 2.9084744 | 74 | 5 | 1991–2006 | 0.51 | M-v | 2 | MPC | 04159 | 2001 $RU_{24}$ |
| 2001 $RX_{24}$ | 15.6 | 0.15 | 20060922 | 312.63971 | 296.87357 | 167.49603 | 12.79385 | 0.1174904 | 2.6528905 | 37 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 68927 | 2001 $RX_{24}$ |
| 2001 $RH_{25}$ | 15.3 | 0.15 | 20060922 | 294.01613 | 285.08228 | 179.74661 | 9.18851 | 0.0820138 | 2.7136429 | 48 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87451 | 2001 $RH_{25}$ |
| 2001 $RL_{25}$ | 16.4 | 0.15 | 20060922 | 44.41433 | 137.53778 | 284.56313 | 2.13522 | 0.1807327 | 2.4899711 | 54 | 3 | 2001–2005 | 0.60 | M-v | 2 | MPC | 97456 | 2001 $RL_{25}$ |
| 2001 $RU_{25}$ | 17.8 | 0.15 | 20060922 | 128.94506 | 330.35997 | 4.79394 | 1.67533 | 0.2489322 | 2.4128837 | 52 | 2 | 2001–2005 | 0.59 | M-v | 4 | MPC | 88865 | 2001 $RU_{25}$ |
| 2001 $RE_{26}$ | 15.7 | 0.15 | 20060922 | 0.86767 | 263.63679 | 147.46359 | 6.11166 | 0.1186369 | 2.6687020 | 81 | 6 | 1995–2006 | 0.61 | M-v | 0 | MPC | 84831 | 2001 $RE_{26}$ |
| 2001 $RP_{26}$ | 15.5 | 0.15 | 20060922 | 16.23702 | 38.35880 | 2.18527 | 6.05589 | 0.2016013 | 2.6767482 | 118 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87451 | 2001 $RP_{26}$ |
| 2001 $RL_{27}$ | 16.1 | 0.15 | 20060922 | 47.98955 | 188.07713 | 155.03134 | 9.45376 | 0.2053350 | 2.7102223 | 50 | 4 | 1999–2006 | 0.66 | M-v | 1 | MPC | 60942 | 2001 $RL_{27}$ |
| 2001 $RQ_{27}$ | 15.6 | 0.15 | 20060922 | 8.72710 | 261.71764 | 144.11381 | 2.78129 | 0.1644076 | 2.6950919 | 133 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 87451 | 2001 $RQ_{27}$ |
| 2001 $RC_{28}$ | 15.4 | 0.15 | 20060922 | 342.67596 | 285.65654 | 168.24449 | 5.41295 | 0.2702601 | 2.6207292 | 190 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 90074 | 2001 $RC_{28}$ |
| 2001 $RE_{29}$ | 16.6 | 0.15 | 20060922 | 21.38816 | 241.88850 | 150.12115 | 2.64153 | 0.0912754 | 2.6474228 | 47 | 6 | 1999–2006 | 0.42 | M-v | 0 | MPC | 84832 | 2001 $RE_{29}$ |
| 2001 $RL_{30}$ | 15.3 | 0.15 | 20060922 | 317.83596 | 261.90207 | 135.08882 | 4.31320 | 0.0954359 | 2.9358560 | 89 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04159 | 2001 $RL_{30}$ |
| 2001 $RN_{30}$ | 15.9 | 0.15 | 20060922 | 350.36820 | 300.00151 | 52.69349 | 1.63881 | 0.1987908 | 2.9704766 | 77 | 5 | 1991–2006 | 0.53 | M-v | 2 | MPC | 04159 | 2001 $RN_{30}$ |
| 2001 $RR_{30}$ | 16.0 | 0.15 | 20060922 | 4.13093 | 179.17197 | 169.49923 | 8.74473 | 0.2089497 | 2.8644157 | 120 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 03207 | 2001 $RR_{30}$ |
| 2001 $RW_{30}$ | 15.9 | 0.15 | 20060922 | 9.80239 | 206.88595 | 152.74412 | 1.68779 | 0.0931435 | 2.8045557 | 84 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04159 | 2001 $RW_{30}$ |
| 2001 $RD_{31}$ | 15.6 | 0.15 | 20060922 | 340.16011 | 271.37111 | 160.98888 | 22.22554 | 0.0464465 | 2.6367768 | 79 | 7 | 1995–2006 | 0.47 | M-v | 0 | MPC | 90074 | 2001 $RD_{31}$ |
| 2001 $RJ_{31}$ | 15.7 | 0.15 | 20060922 | 118.66046 | 252.63017 | 0.46218 | 4.13001 | 0.0124394 | 2.7963280 | 108 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04159 | 2001 $RJ_{31}$ |
| 2001 $RO_{31}$ | 16.3 | 0.15 | 20060922 | 39.69286 | 177.38850 | 157.29703 | 5.55036 | 0.0530766 | 2.7864314 | 44 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 74097 | 2001 $RO_{31}$ |
| 2001 $RL_{32}$ | 16.7 | 0.15 | 20060922 | 171.22734 | 132.76744 | 180.80507 | 6.53902 | 0.1256767 | 2.3147191 | 37 | 3 | 2001–2005 | 0.68 | M-v | 2 | MPC | 88868 | 2001 $RL_{32}$ |
| 2001 $RR_{32}$ | 15.5 | 0.15 | 20060922 | 38.77495 | 124.77828 | 251.12588 | 5.40585 | 0.1142482 | 2.6017500 | 45 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 84834 | 2001 $RR_{32}$ |
| 2001 $RD_{33}$ | 16.3 | 0.15 | 20060922 | 38.52499 | 163.49564 | 167.24954 | 11.48553 | 0.2769426 | 2.7497146 | 74 | 5 | 1992–2006 | 0.55 | M-v | 1 | MPC | 77559 | 2001 $RD_{33}$ |
| 2001 $RB_{34}$ | 15.7 | 0.15 | 20060922 | 332.27601 | 230.05717 | 258.90407 | 5.30732 | 0.0841759 | 2.4272886 | 47 | 3 | 2001–2005 | 0.52 | M-v | 4 | MPC | 87451 | 2001 $RB_{34}$ |
| 2001 $RC_{34}$ | 18.0 | 0.15 | 20060922 | 207.44472 | 77.49947 | 228.28984 | 3.91872 | 0.2038480 | 2.2269770 | 32 | 3 | 1998–2004 | 0.56 | M-v | 4 | MPC | 48071 | 2001 $RC_{34}$ |
| 2001 $RP_{34}$ | 15.1 | 0.15 | 20060922 | 310.28692 | 271.64595 | 182.06790 | 10.52159 | 0.1242405 | 2.6800624 | 70 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 84834 | 2001 $RP_{34}$ |
| 2001 $RC_{36}$ | 14.9 | 0.15 | 20060922 | 82.53896 | 23.91983 | 235.36814 | 4.06062 | 0.0461352 | 2.9103554 | 35 | 2 | 2001–2006 | 0.68 | M-v | 5 | MPC | 03207 | 2001 $RC_{36}$ |
| 2001 $RU_{36}$ | 16.0 | 0.15 | 20060922 | 47.99884 | 97.99860 | 218.10925 | 3.36892 | 0.0923114 | 2.7752320 | 54 | 5 | 1997–2006 | 0.45 | M-v | 0 | MPC | 87451 | 2001 $RU_{36}$ |
| 2001 $RY_{36}$ | 16.2 | 0.15 | 20060922 | 48.72646 | 117.52414 | 199.12865 | 7.30744 | 0.1239531 | 2.7711186 | 74 | 5 | 1997–2006 | 0.45 | M-v | 0 | MPC | 84835 | 2001 $RY_{36}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $RH_{37}$ | 15.2 | 0.15 | 20060922 | 332.56436 | 277.50293 | 170.84943 | 17.16417 | 0.1053285 | 2.6044931 | 44 | 5 | 1999–2006 | 0.57 | M-v | 2 | MPC | 87451 | 2001 $RH_{37}$ |
| 2001 $RQ_{37}$ | 15.5 | 0.15 | 20060922 | 328.11673 | 61.40470 | 319.37128 | 8.70347 | 0.1149120 | 2.9411039 | 35 | 2 | 2001–2006 | 0.57 | M-v | 4 | MPC | 03207 | 2001 $RQ_{37}$ |
| 2001 $RR_{37}$ | 15.3 | 0.15 | 20060922 | 283.87086 | 143.68525 | 287.01541 | 3.37904 | 0.1591375 | 3.0249952 | 96 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 04159 | 2001 $RR_{37}$ |
| 2001 $RS_{37}$ | 15.4 | 0.15 | 20060922 | 255.38575 | 256.54439 | 181.87373 | 10.10219 | 0.0967045 | 3.0043808 | 54 | 7 | 1991–2006 | 0.65 | M-v | 1 | MPC | 04159 | 2001 $RS_{37}$ |
| 2001 $RH_{38}$ | 15.2 | 0.15 | 20060922 | 328.36547 | 106.50748 | 350.53536 | 12.34748 | 0.2608711 | 2.7179837 | 131 | 5 | 1994–2006 | 0.62 | M-v | 1 | MPC | 87451 | 2001 $RH_{38}$ |
| 2001 $RN_{38}$ | 17.0 | 0.15 | 20060922 | 138.30587 | 0.96081 | 340.69270 | 3.09987 | 0.0814753 | 2.3846800 | 29 | 3 | 1996–2005 | 0.54 | M-v | 4 | MPC | 88868 | 2001 $RN_{38}$ |
| 2001 $RJ_{39}$ | 16.4 | 0.15 | 20060922 | 334.67422 | 116.20860 | 351.56758 | 4.54108 | 0.2380714 | 2.6212328 | 85 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 87451 | 2001 $RJ_{39}$ |
| 2001 $RO_{39}$ | 17.7 | 0.15 | 20060922 | 67.70055 | 102.67641 | 228.10078 | 11.54535 | 0.2874894 | 2.6597497 | 38 | 2 | 1997–2001 | 0.55 | M-v | 3 | MPC | 46583 | 2001 $RO_{39}$ |
| 2001 $RF_{40}$ | 15.8 | 0.15 | 20060922 | 356.75699 | 113.69604 | 282.05924 | 12.36976 | 0.0326043 | 2.7507549 | 38 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 84835 | 2001 $RF_{40}$ |
| 2001 $RO_{40}$ | 15.9 | 0.15 | 20060922 | 322.26433 | 42.99933 | 357.68963 | 14.89416 | 0.2733228 | 2.9437798 | 43 | 4 | 1996–2006 | 0.71 | M-v | 2 | MPC | 04159 | 2001 $RO_{40}$ |
| 2001 $RS_{40}$ | 16.1 | 0.15 | 20060922 | 23.79987 | 31.21148 | 19.77893 | 13.14591 | 0.2607095 | 2.6371496 | 41 | 4 | 1999–2005 | 0.55 | M-v | 1 | MPC | 46583 | 2001 $RS_{40}$ |
| 2001 $RH_{41}$ | 16.8 | 0.15 | 20060922 | 224.69283 | 68.84951 | 204.16623 | 4.50992 | 0.1008932 | 2.3091105 | 53 | 3 | 2000–2005 | 0.59 | M-v | 3 | MPC | 88869 | 2001 $RH_{41}$ |
| 2001 $RS_{41}$ | 16.3 | 0.15 | 20060922 | 348.99669 | 51.93963 | 308.44931 | 0.82420 | 0.0816265 | 2.8978167 | 51 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 03208 | 2001 $RS_{41}$ |
| 2001 $RH_{42}$ | 16.6 | 0.15 | 20060922 | 109.09997 | 322.09179 | 333.40549 | 2.89617 | 0.1093278 | 2.6313379 | 44 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 87452 | 2001 $RH_{42}$ |
| 2001 $RU_{42}$ | 15.6 | 0.15 | 20060922 | 297.56191 | 282.63266 | 194.62349 | 11.40571 | 0.0262659 | 2.6227534 | 39 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87452 | 2001 $RU_{42}$ |
| 2001 $RB_{43}$ | 15.5 | 0.15 | 20060922 | 111.49969 | 346.64996 | 280.41740 | 9.99850 | 0.1157132 | 2.7206870 | 57 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 60947 | 2001 $RB_{43}$ |
| 2001 $RF_{43}$ | 15.1 | 0.15 | 20060922 | 43.15251 | 74.29165 | 286.16092 | 13.92265 | 0.2603041 | 2.6677215 | 60 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 40480 | 2001 $RF_{43}$ |
| 2001 $RX_{44}$ | 15.2 | 0.15 | 20060922 | 329.89636 | 134.91014 | 222.45644 | 10.76511 | 0.1506848 | 3.0133268 | 32 | 4 | 1996–2006 | 0.42 | M-v | 3 | MPC | 04159 | 2001 $RX_{44}$ |
| 2001 $RZ_{44}$ | 15.6 | 0.15 | 20060922 | 2.23117 | 70.49277 | 335.25544 | 4.64041 | 0.3168361 | 2.7864845 | 106 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 46586 | 2001 $RZ_{44}$ |
| 2001 $RE_{46}$ | 15.8 | 0.15 | 20060922 | 32.15548 | 33.06516 | 321.87060 | 3.39463 | 0.0818711 | 2.7751999 | 133 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 60948 | 2001 $RE_{46}$ |
| 2001 $RR_{46}$ | 17.2 | 0.15 | 20060922 | 341.08856 | 344.00207 | 20.69766 | 24.37573 | 0.0650224 | 1.8654235 | 55 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 03208 | 2001 $RR_{46}$ |
| 2001 $RW_{46}$ | 14.1 | 0.15 | 20060922 | 295.23807 | 312.44912 | 124.37400 | 23.69641 | 0.2634822 | 3.1060824 | 118 | 3 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04159 | 2001 $RW_{46}$ |
| 2001 $RN_{48}$ | 15.5 | 0.15 | 20060922 | 20.61016 | 60.05182 | 358.98779 | 13.32772 | 0.2171861 | 2.6772287 | 74 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87452 | 2001 $RN_{48}$ |
| 2001 $RP_{48}$ | 15.9 | 0.15 | 20060922 | 68.39988 | 268.93926 | 102.24628 | 18.24059 | 0.1758992 | 2.6086707 | 44 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 84837 | 2001 $RP_{48}$ |
| 2001 $RQ_{48}$ | 16.1 | 0.15 | 20060922 | 52.06456 | 254.53290 | 69.28470 | 20.13523 | 0.3503818 | 2.7741636 | 58 | 3 | 2001–2006 | 0.43 | M-v | 1 | MPC | 75084 | 2001 $RQ_{48}$ |
| 2001 $RD_{50}$ | 16.0 | 0.15 | 20060922 | 2.62625 | 162.18658 | 222.44395 | 8.29553 | 0.1582174 | 2.7878689 | 92 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 50550 | 2001 $RD_{50}$ |
| 2001 $RE_{50}$ | 17.1 | 0.15 | 20060922 | 121.75668 | 82.47921 | 279.91554 | 5.38811 | 0.2089353 | 2.3885653 | 48 | 2 | 2001–2006 | 0.57 | M-v | 3 | MPC | 94027 | 2001 $RE_{50}$ |
| 2001 $RM_{50}$ | 15.5 | 0.15 | 20060922 | 248.16794 | 231.49175 | 221.69047 | 10.21708 | 0.0479171 | 3.0028468 | 35 | 5 | 2001–2006 | 0.49 | M-v | 0 | MPC | 04159 | 2001 $RM_{50}$ |
| 2001 $RQ_{50}$ | 15.7 | 0.15 | 20060922 | 75.03385 | 175.81473 | 146.10126 | 13.95636 | 0.1387993 | 2.6333843 | 48 | 5 | 1995–2006 | 0.70 | M-v | 1 | MPC | 62352 | 2001 $RQ_{50}$ |
| 2001 $RW_{50}$ | 16.6 | 0.15 | 20060922 | 27.64919 | 109.88847 | 288.93153 | 3.35306 | 0.1357445 | 2.6379712 | 50 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 84838 | 2001 $RW_{50}$ |
| 2001 $RN_{51}$ | 15.3 | 0.15 | 20060922 | 25.35691 | 152.45764 | 202.35054 | 13.56068 | 0.2007702 | 2.7787759 | 128 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04159 | 2001 $RN_{51}$ |
| 2001 $RO_{51}$ | 15.5 | 0.15 | 20060922 | 294.58413 | 104.54244 | 314.55924 | 14.62755 | 0.1813865 | 3.0153082 | 83 | 3 | 2001–2006 | 0.43 | M-v | 1 | MPC | 04159 | 2001 $RO_{51}$ |
| 2001 $RC_{52}$ | 16.9 | 0.15 | 20060922 | 59.91354 | 63.84396 | 304.78644 | 11.55478 | 0.2823767 | 2.5978692 | 40 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 84838 | 2001 $RC_{52}$ |
| 2001 $RF_{53}$ | 16.0 | 0.15 | 20060922 | 78.55087 | 61.62032 | 228.37782 | 4.09821 | 0.1183493 | 2.7530167 | 52 | 3 | 1997–2006 | 0.41 | M-v | 3 | MPC | 48073 | 2001 $RF_{53}$ |
| 2001 $RS_{53}$ | 16.6 | 0.15 | 20060922 | 53.38351 | 320.50255 | 54.06663 | 2.47843 | 0.1611669 | 2.5834897 | 33 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 88870 | 2001 $RS_{53}$ |
| 2001 $RU_{53}$ | 16.6 | 0.15 | 20060922 | 106.56703 | 221.21103 | 86.74090 | 2.61420 | 0.1778568 | 2.5604249 | 56 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 90075 | 2001 $RU_{53}$ |
| 2001 $RF_{54}$ | 15.9 | 0.15 | 20060922 | 68.70845 | 351.40329 | 6.80176 | 21.59757 | 0.0712221 | 2.6274260 | 117 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87452 | 2001 $RF_{54}$ |
| 2001 $RK_{54}$ | 15.9 | 0.15 | 20060922 | 41.84278 | 169.32336 | 149.66496 | 2.75309 | 0.0988048 | 2.9079555 | 69 | 4 | 1999–2006 | 0.52 | M-v | 2 | MPC | 60952 | 2001 $RK_{54}$ |
| 2001 $RO_{54}$ | 16.4 | 0.15 | 20060922 | 180.31641 | 275.06734 | 26.76151 | 5.11915 | 0.0259107 | 2.4165159 | 116 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 97457 | 2001 $RO_{54}$ |
| 2001 $RD_{55}$ | 17.0 | 0.15 | 20060922 | 27.95595 | 106.16720 | 202.67221 | 0.56528 | 0.1996863 | 2.9260019 | 41 | 5 | 1991–2006 | 0.39 | M-v | 2 | MPC | 77560 | 2001 $RD_{55}$ |
| 2001 $RE_{55}$ | 17.0 | 0.15 | 20060922 | 35.33802 | 79.34343 | 325.28685 | 0.74521 | 0.1710487 | 2.5826502 | 53 | 4 | 1997–2006 | 0.36 | M-v | 1 | MPC | 88871 | 2001 $RE_{55}$ |
| 2001 $RQ_{55}$ | 15.5 | 0.15 | 20060922 | 5.39836 | 356.32487 | 1.36148 | 7.09512 | 0.0293238 | 2.8613408 | 95 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04160 | 2001 $RQ_{55}$ |
| 2001 $RY_{55}$ | 15.2 | 0.15 | 20060922 | 75.90517 | 130.87672 | 154.79531 | 13.63720 | 0.0725755 | 2.8326424 | 57 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04160 | 2001 $RY_{55}$ |
| 2001 $RK_{56}$ | 15.7 | 0.15 | 20060922 | 294.02981 | 6.40405 | 154.18588 | 5.76469 | 0.0952383 | 2.4901857 | 54 | 5 | 2000–2005 | 0.59 | M-v | 1 | MPC | 84839 | 2001 $RK_{56}$ |
| 2001 $RQ_{56}$ | 16.2 | 0.15 | 20060922 | 87.93984 | 106.81165 | 160.35129 | 4.98315 | 0.0977223 | 2.8536410 | 38 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 87452 | 2001 $RQ_{56}$ |
| 2001 $RX_{56}$ | 16.1 | 0.15 | 20060922 | 351.44811 | 309.52425 | 133.64249 | 1.82644 | 0.1463010 | 2.6224306 | 58 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04160 | 2001 $RX_{56}$ |
| 2001 $RB_{57}$ | 15.6 | 0.15 | 20060922 | 47.42848 | 253.03762 | 3.77835 | 8.70493 | 0.0584011 | 3.1783893 | 29 | 3 | 1999–2005 | 0.54 | M-v | 3 | MPC | 72402 | 2001 $RB_{57}$ |
| 2001 $RH_{57}$ | 16.2 | 0.15 | 20060922 | 124.32289 | 149.53453 | 140.80787 | 4.95213 | 0.1954449 | 2.5599690 | 73 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87452 | 2001 $RH_{57}$ |
| 2001 $RL_{57}$ | 16.6 | 0.15 | 20060922 | 27.70919 | 188.87687 | 159.79541 | 10.58932 | 0.1962333 | 2.7977607 | 58 | 4 | 1996–2006 | 0.53 | M-v | 1 | MPC | 84840 | 2001 $RL_{57}$ |
| 2001 $RS_{57}$ | 14.7 | 0.15 | 20060922 | 350.85513 | 337.82037 | 6.60264 | 13.28725 | 0.0965033 | 3.0107034 | 57 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04160 | 2001 $RS_{57}$ |
| 2001 $RG_{58}$ | 17.4 | 0.15 | 20060922 | 171.33057 | 194.00266 | 108.23714 | 3.55718 | 0.1942072 | 2.3706231 | 22 | 3 | 2001–2005 | 0.44 | M-v | 2 | MPC | 88871 | 2001 $RG_{58}$ |
| 2001 $RJ_{58}$ | 16.2 | 0.15 | 20060922 | 13.97107 | 288.31913 | 109.77464 | 3.55928 | 0.1870511 | 2.7149896 | 81 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 87452 | 2001 $RJ_{58}$ |
| 2001 $RJ_{59}$ | 17.4 | 0.15 | 20060922 | 120.59281 | 235.95164 | 110.54750 | 3.75121 | 0.1886456 | 2.4368307 | 79 | 4 | 1999–2005 | 0.56 | M-v | 2 | MPC | 90075 | 2001 $RJ_{59}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $RM_{59}$ | 15.3 | 0.15 | 20060922 | 356.92022 | 75.07988 | 15.50315 | 12.36778 | 0.1688689 | 2.5965356 | 105 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87452 | 2001 $RM_{59}$ |
| 2001 $RR_{59}$ | 16.1 | 0.15 | 20060922 | 40.75051 | 320.72220 | 21.55960 | 9.68622 | 0.1650160 | 2.7720704 | 82 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 03208 | 2001 $RR_{59}$ |
| 2001 $RV_{59}$ | 16.2 | 0.15 | 20060922 | 341.78348 | 205.38679 | 142.52517 | 7.65678 | 0.0973774 | 3.0750597 | 23 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 03208 | 2001 $RV_{59}$ |
| 2001 $RS_{60}$ | 15.7 | 0.15 | 20060922 | 56.11654 | 295.13192 | 26.90704 | 9.57825 | 0.1980473 | 2.7712656 | 111 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 75085 | 2001 $RS_{60}$ |
| 2001 $RU_{60}$ | 16.3 | 0.15 | 20060922 | 3.37303 | 246.56807 | 148.28405 | 8.33722 | 0.2364050 | 2.8031365 | 64 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 88872 | 2001 $RU_{60}$ |
| 2001 $RA_{61}$ | 15.8 | 0.15 | 20060922 | 312.14156 | 258.86369 | 145.46291 | 9.34885 | 0.0987679 | 2.9950901 | 38 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 04160 | 2001 $RA_{61}$ |
| 2001 $RC_{61}$ | 15.2 | 0.15 | 20060922 | 302.03342 | 20.82958 | 110.35769 | 6.45739 | 0.1500040 | 2.6532661 | 124 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87452 | 2001 $RC_{61}$ |
| 2001 $RJ_{61}$ | 15.0 | 0.15 | 20060922 | 355.54406 | 336.07068 | 93.13085 | 5.79547 | 0.1494164 | 2.6898401 | 112 | 5 | 2001–2006 | 0.54 | M-v | 0 | MPC | 87452 | 2001 $RJ_{61}$ |
| 2001 $RL_{61}$ | 15.7 | 0.15 | 20060922 | 1.22755 | 256.96327 | 143.34388 | 9.65489 | 0.1672283 | 2.7783515 | 62 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 43416 | 2001 $RL_{61}$ |
| 2001 $RT_{61}$ | 14.7 | 0.15 | 20060922 | 218.12741 | 90.55237 | 22.47445 | 11.00891 | 0.0759325 | 3.0856482 | 77 | 3 | 2001–2004 | 0.58 | M-v | 3 | MPC | 62352 | 2001 $RT_{61}$ |
| 2001 $RG_{62}$ | 15.6 | 0.15 | 20060922 | 69.43599 | 254.90100 | 40.80788 | 6.89110 | 0.0338755 | 2.8669052 | 64 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 66202 | 2001 $RG_{62}$ |
| 2001 $RK_{62}$ | 16.1 | 0.15 | 20060922 | 115.50166 | 244.28596 | 36.84525 | 9.36615 | 0.2110437 | 2.6362150 | 88 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 87452 | 2001 $RK_{62}$ |
| 2001 $RS_{62}$ | 15.2 | 0.15 | 20060922 | 352.06309 | 189.57342 | 134.40720 | 9.02075 | 0.0566608 | 3.1752138 | 42 | 5 | 1994–2006 | 0.54 | M-v | 0 | MPC | 04160 | 2001 $RS_{62}$ |
| 2001 $RY_{62}$ | 15.8 | 0.15 | 20060922 | 4.67840 | 23.23566 | 38.83775 | 7.80467 | 0.1333574 | 2.7009519 | 60 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 87453 | 2001 $RY_{62}$ |
| 2001 $RO_{63}$ | 15.9 | 0.15 | 20060922 | 6.00381 | 118.36941 | 311.79470 | 12.41981 | 0.2081291 | 2.6500696 | 75 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87453 | 2001 $RO_{63}$ |
| 2001 $RT_{63}$ | 16.4 | 0.15 | 20060922 | 43.14777 | 323.81608 | 66.24322 | 3.33283 | 0.2310837 | 2.6004162 | 62 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 87453 | 2001 $RT_{63}$ |
| 2001 $RB_{64}$ | 15.5 | 0.15 | 20060922 | 31.20392 | 340.86159 | 322.29384 | 10.39594 | 0.1438766 | 3.0107183 | 28 | 2 | 2001–2006 | 0.47 | M-v | 4 | MPC | 03209 | 2001 $RB_{64}$ |
| 2001 $RD_{64}$ | 16.5 | 0.15 | 20060922 | 116.16112 | 184.47152 | 227.34095 | 6.76063 | 0.1672829 | 2.3121237 | 37 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 46588 | 2001 $RD_{64}$ |
| 2001 $RT_{64}$ | 15.1 | 0.15 | 20060922 | 283.01362 | 111.56771 | 324.40430 | 9.99769 | 0.0135448 | 2.9703427 | 49 | 4 | 2001–2006 | 0.72 | M-v | 1 | MPC | 04160 | 2001 $RT_{64}$ |
| 2001 $RB_{65}$ | 15.2 | 0.15 | 20060922 | 348.90347 | 167.02364 | 218.76137 | 11.21615 | 0.0128901 | 2.8799155 | 102 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 04160 | 2001 $RB_{65}$ |
| 2001 $RG_{65}$ | 15.3 | 0.15 | 20060922 | 326.31337 | 132.68915 | 322.03146 | 8.51907 | 0.1475527 | 2.7361053 | 87 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 90075 | 2001 $RG_{65}$ |
| 2001 $RO_{66}$ | 14.3 | 0.15 | 20060922 | 215.35488 | 263.24244 | 221.54763 | 10.19417 | 0.1227387 | 3.1833636 | 94 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 04160 | 2001 $RO_{66}$ |
| 2001 $RU_{66}$ | 15.8 | 0.15 | 20060922 | 3.75833 | 95.73541 | 319.86407 | 8.04521 | 0.2238598 | 2.7612647 | 41 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 84842 | 2001 $RU_{66}$ |
| 2001 $RH_{67}$ | 14.6 | 0.15 | 20060922 | 345.62775 | 35.09627 | 308.23437 | 4.09899 | 0.1441686 | 3.1179232 | 116 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04160 | 2001 $RH_{67}$ |
| 2001 $RS_{67}$ | 15.0 | 0.15 | 20060922 | 15.23692 | 322.19187 | 351.28720 | 11.52776 | 0.1323154 | 3.1000691 | 70 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04160 | 2001 $RS_{67}$ |
| 2001 $RK_{71}$ | 15.7 | 0.15 | 20060922 | 108.27065 | 21.52088 | 352.06857 | 6.01775 | 0.1289599 | 2.4494155 | 220 | 5 | 1997–2006 | 0.52 | M-v | 2 | MPC | 97458 | 2001 $RK_{71}$ |
| 2001 $RU_{71}$ | 15.0 | 0.15 | 20060922 | 297.98497 | 215.20963 | 197.27720 | 27.08197 | 0.1368059 | 3.1229613 | 117 | 3 | 2001–2006 | 0.64 | M-v | 2 | MPC | 60957 | 2001 $RU_{71}$ |
| 2001 $RH_{74}$ | 16.2 | 0.15 | 20060922 | 198.39105 | 80.89034 | 206.08297 | 5.70959 | 0.2371676 | 2.3521809 | 119 | 3 | 2001–2005 | 0.65 | M-v | 3 | MPC | 66203 | 2001 $RH_{74}$ |
| 2001 $RV_{74}$ | 15.0 | 0.15 | 20060922 | 281.14786 | 245.26193 | 199.16574 | 21.66417 | 0.1387534 | 3.0829457 | 94 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 66203 | 2001 $RV_{74}$ |
| 2001 $RR_{75}$ | 15.2 | 0.15 | 20060922 | 2.41348 | 308.79669 | 115.26096 | 2.98066 | 0.2303262 | 2.7997897 | 178 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 97458 | 2001 $RR_{75}$ |
| 2001 $RF_{78}$ | 15.1 | 0.15 | 20060922 | 9.55207 | 228.20415 | 191.86967 | 7.52228 | 0.2990592 | 2.7639480 | 170 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87453 | 2001 $RF_{78}$ |
| 2001 $RM_{78}$ | 15.7 | 0.15 | 20060922 | 44.23160 | 334.86676 | 12.80619 | 9.76480 | 0.1974146 | 2.8101118 | 127 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 60960 | 2001 $RM_{78}$ |
| 2001 $RY_{78}$ | 15.2 | 0.15 | 20060922 | 28.27649 | 336.35833 | 78.99526 | 11.08549 | 0.1846880 | 2.7419584 | 156 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 90076 | 2001 $RY_{78}$ |
| 2001 $RO_{79}$ | 15.4 | 0.15 | 20060922 | 17.95733 | 354.54174 | 49.26956 | 9.05295 | 0.1926024 | 2.8106067 | 166 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 84847 | 2001 $RO_{79}$ |
| 2001 $RQ_{79}$ | 15.9 | 0.15 | 20060922 | 359.26606 | 277.61349 | 122.63103 | 5.76998 | 0.3327847 | 2.9243964 | 136 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 87453 | 2001 $RQ_{79}$ |
| 2001 $RN_{80}$ | 15.0 | 0.15 | 20060922 | 30.14928 | 53.94857 | 7.36912 | 14.92314 | 0.0911742 | 2.5580513 | 173 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97458 | 2001 $RN_{80}$ |
| 2001 $RQ_{80}$ | 16.2 | 0.15 | 20060922 | 14.73286 | 173.57160 | 205.74237 | 4.31211 | 0.0856991 | 2.7710045 | 101 | 6 | 1992–2006 | 0.47 | M-v | 0 | MPC | 77561 | 2001 $RQ_{80}$ |
| 2001 $RS_{80}$ | 15.6 | 0.15 | 20060922 | 13.92768 | 91.70327 | 342.26892 | 10.78932 | 0.1746009 | 2.6123670 | 125 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 90076 | 2001 $RS_{80}$ |
| 2001 $RH_{81}$ | 14.7 | 0.15 | 20060922 | 270.37668 | 236.38457 | 199.09114 | 13.13395 | 0.1479810 | 3.1437357 | 154 | 5 | 2001–2006 | 0.61 | M-v | 0 | MPC | 87453 | 2001 $RH_{81}$ |
| 2001 $RZ_{81}$ | 15.7 | 0.15 | 20060922 | 14.55417 | 310.09484 | 151.17748 | 4.39881 | 0.2241392 | 2.5948689 | 139 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 90076 | 2001 $RZ_{81}$ |
| 2001 $RB_{82}$ | 15.9 | 0.15 | 20060922 | 347.89676 | 19.09647 | 16.52337 | 12.50515 | 0.2060173 | 2.8925922 | 184 | 4 | 1996–2006 | 0.57 | M-v | 2 | MPC | 04160 | 2001 $RB_{82}$ |
| 2001 $RD_{82}$ | 14.7 | 0.15 | 20060922 | 277.98435 | 219.77338 | 198.59169 | 16.78713 | 0.2139022 | 3.1365398 | 52 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 77561 | 2001 $RD_{82}$ |
| 2001 $RK_{82}$ | 14.8 | 0.15 | 20060922 | 291.37980 | 119.89315 | 265.65604 | 8.05142 | 0.0948007 | 3.1776147 | 39 | 3 | 2001–2004 | 0.49 | M-v | 3 | MPC | 40504 | 2001 $RK_{82}$ |
| 2001 $RO_{82}$ | 14.9 | 0.15 | 20060922 | 359.23295 | 131.21818 | 192.32755 | 14.82708 | 0.1223757 | 3.0649020 | 97 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 02040 | 2001 $RO_{82}$ |
| 2001 $RS_{82}$ | 15.8 | 0.15 | 20060922 | 357.65128 | 14.97001 | 313.50039 | 8.63813 | 0.0853256 | 3.0432061 | 40 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04160 | 2001 $RS_{82}$ |
| 2001 $RZ_{82}$ | 15.4 | 0.15 | 20060922 | 345.64345 | 116.77791 | 328.54407 | 12.31135 | 0.2332971 | 2.6792775 | 52 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 50550 | 2001 $RZ_{82}$ |
| 2001 $RB_{83}$ | 15.8 | 0.15 | 20060922 | 21.25888 | 173.38964 | 239.94620 | 3.10595 | 0.2748480 | 2.6535471 | 83 | 4 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87453 | 2001 $RB_{83}$ |
| 2001 $RC_{83}$ | 15.4 | 0.15 | 20060922 | 264.34355 | 332.33376 | 197.23620 | 8.69195 | 0.1020551 | 2.5566416 | 64 | 6 | 1997–2006 | 0.63 | M-v | 1 | MPC | 90076 | 2001 $RC_{83}$ |
| 2001 $RD_{83}$ | 16.4 | 0.15 | 20060922 | 67.29910 | 101.97578 | 244.45022 | 3.71628 | 0.1567057 | 2.6299051 | 88 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 84850 | 2001 $RD_{83}$ |
| 2001 $RP_{83}$ | 15.3 | 0.15 | 20060922 | 300.37029 | 90.44629 | 310.18151 | 3.93912 | 0.0762376 | 3.0508645 | 119 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04160 | 2001 $RP_{83}$ |
| 2001 $RN_{84}$ | 15.5 | 0.15 | 20060922 | 47.88128 | 174.30926 | 180.94590 | 12.92192 | 0.0382573 | 2.6756200 | 86 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87454 | 2001 $RN_{84}$ |
| 2001 $RY_{84}$ | 16.9 | 0.15 | 20060922 | 39.82157 | 117.26637 | 288.86926 | 3.32518 | 0.2107950 | 2.5729239 | 53 | 4 | 1993–2006 | 0.55 | M-v | 1 | MPC | 03210 | 2001 $RY_{84}$ |
| 2001 $RA_{85}$ | 15.3 | 0.15 | 20060922 | 329.15228 | 110.47563 | 326.67929 | 11.73283 | 0.0877478 | 2.6879055 | 47 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 84851 | 2001 $RA_{85}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $RN_{85}$ | 16.6 | 0.15 | 20060922 | 51.48301 | 14.02915 | 349.96925 | 2.28652 | 0.0952555 | 2.6586600 | 63 | 5 | 1999–2006 | 0.45 | M-v | 0 | MPC | 87454 | 2001 $RN_{85}$ |
| 2001 $RR_{85}$ | 16.9 | 0.15 | 20060922 | 56.25674 | 126.59693 | 188.16131 | 1.28668 | 0.2312851 | 2.7821611 | 75 | 5 | 1999–2006 | 0.45 | M-v | 0 | MPC | 62353 | 2001 $RR_{85}$ |
| 2001 $RA_{86}$ | 17.6 | 0.15 | 20060922 | 173.34341 | 160.09916 | 160.49161 | 1.57474 | 0.2422514 | 2.3226237 | 64 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 94034 | 2001 $RA_{86}$ |
| 2001 $RD_{87}$ | 15.5 | 0.15 | 20060922 | 19.01254 | 335.27373 | 346.73570 | 8.39881 | 0.1551768 | 3.0009200 | 97 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04160 | 2001 $RD_{87}$ |
| 2001 $RC_{88}$ | 16.6 | 0.15 | 20060922 | 64.24592 | 227.96913 | 152.01791 | 3.46274 | 0.1607208 | 2.5788421 | 93 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 90076 | 2001 $RC_{88}$ |
| 2001 $RU_{89}$ | 15.0 | 0.15 | 20060922 | 17.97346 | 301.43928 | 15.30166 | 9.04517 | 0.0835954 | 3.0340259 | 99 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 04160 | 2001 $RU_{89}$ |
| 2001 $RN_{90}$ | 16.8 | 0.15 | 20060922 | 75.62099 | 228.88642 | 83.05186 | 5.89252 | 0.1171707 | 2.7338330 | 35 | 5 | 1991–2006 | 0.44 | M-v | 0 | MPC | 48077 | 2001 $RN_{90}$ |
| 2001 $RS_{90}$ | 15.5 | 0.15 | 20060922 | 25.83252 | 248.13103 | 135.23472 | 7.03813 | 0.0666322 | 2.6946174 | 119 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 90076 | 2001 $RS_{90}$ |
| 2001 $RV_{90}$ | 16.2 | 0.15 | 20060922 | 11.15053 | 327.38229 | 70.90996 | 3.98687 | 0.1958752 | 2.7386168 | 64 | 4 | 1999–2006 | 0.66 | M-v | 1 | MPC | 88878 | 2001 $RV_{90}$ |
| 2001 $RW_{90}$ | 15.5 | 0.15 | 20060922 | 65.93863 | 195.00405 | 127.93087 | 6.11996 | 0.1598470 | 2.7277799 | 69 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 66203 | 2001 $RW_{90}$ |
| 2001 $RZ_{90}$ | 15.3 | 0.15 | 20060922 | 7.12312 | 320.94566 | 23.98579 | 6.05670 | 0.1317206 | 2.9391774 | 107 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 04161 | 2001 $RZ_{90}$ |
| 2001 $RE_{92}$ | 16.0 | 0.15 | 20060922 | 24.79915 | 18.63134 | 349.15288 | 1.99608 | 0.0941680 | 2.7621826 | 111 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 62354 | 2001 $RE_{92}$ |
| 2001 $RR_{92}$ | 15.3 | 0.15 | 20060922 | 348.32208 | 54.71185 | 352.26418 | 7.31969 | 0.3250145 | 2.8867639 | 165 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04161 | 2001 $RR_{92}$ |
| 2001 $RE_{93}$ | 16.9 | 0.15 | 20060922 | 345.54940 | 28.60036 | 4.62966 | 23.71982 | 0.1006950 | 1.8275106 | 156 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04161 | 2001 $RE_{93}$ |
| 2001 $RJ_{93}$ | 15.6 | 0.15 | 20060922 | 106.47983 | 359.21850 | 31.87784 | 7.17433 | 0.1065975 | 2.3952519 | 136 | 4 | 1996–2006 | 0.53 | M-v | 2 | MPC | 97459 | 2001 $RJ_{93}$ |
| 2001 $RG_{94}$ | 15.9 | 0.15 | 20060922 | 333.15498 | 183.58592 | 206.84207 | 2.67681 | 0.2151593 | 2.9912948 | 94 | 3 | 1996–2006 | 0.50 | M-v | 3 | MPC | 04161 | 2001 $RG_{94}$ |
| 2001 $RD_{95}$ | 17.5 | 0.15 | 20060922 | 158.10922 | 187.82808 | 208.07293 | 4.74966 | 0.2348315 | 2.2392925 | 76 | 4 | 1991–2003 | 0.59 | M-v | 2 | MPC | 03211 | 2001 $RD_{95}$ |
| 2001 $RF_{95}$ | 16.5 | 0.15 | 20060922 | 25.68782 | 115.59776 | 280.04851 | 3.96795 | 0.2370316 | 2.7103863 | 104 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 84853 | 2001 $RF_{95}$ |
| 2001 $RT_{95}$ | 17.4 | 0.15 | 20060922 | 143.74169 | 177.59246 | 164.23173 | 3.44307 | 0.1440756 | 2.3975232 | 53 | 4 | 1997–2005 | 0.54 | M-v | 2 | MPC | 48077 | 2001 $RT_{95}$ |
| 2001 $RX_{95}$ | 15.3 | 0.15 | 20060922 | 286.18350 | 245.38965 | 184.56882 | 22.21556 | 0.1597991 | 3.0999965 | 76 | 5 | 1995–2006 | 0.52 | M-v | 0 | MPC | 25949 | 2001 $RX_{95}$ |
| 2001 $RK_{96}$ | 17.0 | 0.15 | 20060922 | 177.83102 | 304.55396 | 315.61843 | 2.45042 | 0.1394703 | 2.4545956 | 51 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 97459 | 2001 $RK_{96}$ |
| 2001 $RP_{96}$ | 16.2 | 0.15 | 20060922 | 324.49347 | 154.24210 | 224.83250 | 1.37255 | 0.0399651 | 2.9422458 | 45 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 04161 | 2001 $RP_{96}$ |
| 2001 $RQ_{96}$ | 15.2 | 0.15 | 20060922 | 225.35493 | 134.54960 | 335.28367 | 9.02941 | 0.1531628 | 3.0601226 | 52 | 5 | 1996–2004 | 0.66 | M-v | 1 | MPC | 60969 | 2001 $RQ_{96}$ |
| 2001 $RW_{97}$ | 15.9 | 0.15 | 20060922 | 300.92047 | 50.96986 | 1.26724 | 7.04924 | 0.1131150 | 3.0741977 | 79 | 4 | 1993–2006 | 0.45 | M-v | 0 | MPC | 04161 | 2001 $RW_{97}$ |
| 2001 $RC_{99}$ | 15.4 | 0.15 | 20060922 | 284.84586 | 345.21184 | 153.46510 | 4.32064 | 0.0427906 | 2.5579298 | 45 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 87454 | 2001 $RC_{99}$ |
| 2001 $RM_{99}$ | 16.2 | 0.15 | 20060922 | 37.59465 | 179.35266 | 152.55378 | 5.08321 | 0.0669022 | 2.7750125 | 55 | 3 | 1992–2006 | 0.40 | M-v | 3 | MPC | 18058 | 2001 $RM_{99}$ |
| 2001 $RO_{99}$ | 17.0 | 0.15 | 20060922 | 105.30780 | 215.94077 | 128.20935 | 3.07832 | 0.1725135 | 2.4629031 | 61 | 4 | 2001–2005 | 0.51 | M-v | 1 | MPC | 84855 | 2001 $RO_{99}$ |
| 2001 $RF_{100}$ | 14.6 | 0.15 | 20060922 | 336.86004 | 329.50775 | 8.99687 | 8.20586 | 0.1364468 | 3.0777978 | 78 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 04161 | 2001 $RF_{100}$ |
| 2001 $RM_{100}$ | 15.5 | 0.15 | 20060922 | 329.94583 | 12.16856 | 353.44091 | 10.10699 | 0.1219359 | 2.9973884 | 54 | 4 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04161 | 2001 $RM_{100}$ |
| 2001 $RZ_{100}$ | 15.9 | 0.15 | 20060922 | 26.72749 | 72.70387 | 7.08190 | 6.22086 | 0.1170016 | 2.4620880 | 136 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 97459 | 2001 $RZ_{100}$ |
| 2001 $RL_{101}$ | 15.8 | 0.15 | 20060922 | 328.33292 | 12.51769 | 358.94355 | 14.90005 | 0.1421638 | 2.9920234 | 39 | 4 | 1999–2006 | 0.67 | M-v | 2 | MPC | 04161 | 2001 $RL_{101}$ |
| 2001 $RD_{102}$ | 16.9 | 0.15 | 20060922 | 184.68549 | 152.67785 | 165.05231 | 4.39899 | 0.0944101 | 2.2798961 | 38 | 4 | 2000–2005 | 0.51 | M-v | 1 | MPC | 88879 | 2001 $RD_{102}$ |
| 2001 $RE_{102}$ | 15.4 | 0.15 | 20060922 | 349.51898 | 130.88077 | 163.33593 | 5.03009 | 0.1137269 | 3.2162368 | 43 | 3 | 2000–2005 | 0.50 | M-v | 3 | MPC | 75093 | 2001 $RE_{102}$ |
| 2001 $RW_{102}$ | 15.9 | 0.15 | 20060922 | 46.78967 | 204.07012 | 142.76958 | 7.06080 | 0.1034593 | 2.7063318 | 49 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 48078 | 2001 $RW_{102}$ |
| 2001 $RC_{103}$ | 15.6 | 0.15 | 20060922 | 277.14039 | 69.46155 | 333.99653 | 3.34700 | 0.0316514 | 3.0619151 | 38 | 5 | 1993–2004 | 0.52 | M-v | 0 | MPC | 04161 | 2001 $RC_{103}$ |
| 2001 $RE_{103}$ | 17.8 | 0.15 | 20060922 | 204.80529 | 293.74108 | 338.22841 | 4.08547 | 0.2280870 | 2.3043002 | 30 | 2 | 2001–2005 | 0.42 | M-v | 4 | MPC | 88880 | 2001 $RE_{103}$ |
| 2001 $RG_{103}$ | 16.1 | 0.15 | 20060922 | 9.78667 | 14.28824 | 41.77308 | 5.02659 | 0.1586295 | 2.6396733 | 42 | 5 | 1997–2006 | 0.60 | M-v | 1 | MPC | 62354 | 2001 $RG_{103}$ |
| 2001 $RM_{103}$ | 16.6 | 0.15 | 20060922 | 21.45757 | 208.68099 | 161.30681 | 2.15606 | 0.1022662 | 2.7185778 | 68 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 84857 | 2001 $RM_{103}$ |
| 2001 $RE_{104}$ | 15.7 | 0.15 | 20060922 | 263.36522 | 316.90119 | 162.75598 | 9.71053 | 0.1083231 | 2.7759987 | 65 | 5 | 1996–2006 | 0.48 | M-v | 0 | MPC | 60971 | 2001 $RE_{104}$ |
| 2001 $RK_{104}$ | 15.2 | 0.15 | 20060922 | 355.07781 | 259.28864 | 132.79117 | 6.86084 | 0.1189514 | 2.7856906 | 72 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 40518 | 2001 $RK_{104}$ |
| 2001 $RU_{104}$ | 17.6 | 0.15 | 20060922 | 85.50218 | 267.64555 | 142.52400 | 2.40734 | 0.1850619 | 2.3795169 | 100 | 4 | 1995–2006 | 0.60 | M-v | 1 | MPC | 97460 | 2001 $RU_{104}$ |
| 2001 $RK_{105}$ | 15.9 | 0.15 | 20060922 | 348.32987 | 41.85304 | 323.84866 | 11.75019 | 0.1591265 | 2.8747478 | 43 | 2 | 2001–2006 | 0.62 | M-v | 4 | MPC | 03212 | 2001 $RK_{105}$ |
| 2001 $RW_{105}$ | 16.1 | 0.15 | 20060922 | 48.54788 | 227.95011 | 127.66726 | 5.71950 | 0.1515774 | 2.6672322 | 41 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87455 | 2001 $RW_{105}$ |
| 2001 $RE_{106}$ | 15.3 | 0.15 | 20060922 | 155.04704 | 10.97273 | 159.63058 | 9.72957 | 0.0786372 | 3.0056643 | 59 | 5 | 1994–2006 | 0.53 | M-v | 0 | MPC | 04161 | 2001 $RE_{106}$ |
| 2001 $RG_{106}$ | 15.9 | 0.15 | 20060922 | 139.36567 | 211.24539 | 0.51841 | 2.27147 | 0.0473733 | 2.8607573 | 42 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 60972 | 2001 $RG_{106}$ |
| 2001 $RK_{106}$ | 16.4 | 0.15 | 20060922 | 1.75466 | 160.75966 | 169.41946 | 7.63154 | 0.1845157 | 2.9685194 | 39 | 2 | 2001–2006 | 0.32 | M-v | 3 | MPC | 03212 | 2001 $RK_{106}$ |
| 2001 $RM_{106}$ | 16.1 | 0.15 | 20060922 | 6.65186 | 203.37255 | 168.49389 | 2.97734 | 0.0149881 | 2.7653601 | 54 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 60972 | 2001 $RM_{106}$ |
| 2001 $RB_{107}$ | 15.9 | 0.15 | 20060922 | 26.34956 | 285.87325 | 72.86207 | 3.34949 | 0.0902292 | 2.7877278 | 76 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 60972 | 2001 $RB_{107}$ |
| 2001 $RJ_{107}$ | 17.0 | 0.15 | 20060922 | 61.74894 | 221.81852 | 150.76435 | 7.85675 | 0.2000701 | 2.5944480 | 101 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 90077 | 2001 $RJ_{107}$ |
| 2001 $RY_{107}$ | 17.1 | 0.15 | 20060922 | 119.82333 | 136.39754 | 157.58044 | 3.31720 | 0.1727495 | 2.5572074 | 51 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87455 | 2001 $RY_{107}$ |
| 2001 $RK_{108}$ | 16.5 | 0.15 | 20060922 | 344.24741 | 32.47633 | 353.32941 | 8.75760 | 0.1561600 | 2.8563323 | 41 | 3 | 1999–2006 | 0.43 | M-v | 3 | MPC | 84858 | 2001 $RK_{108}$ |
| 2001 $RO_{108}$ | 16.4 | 0.15 | 20060922 | 355.21804 | 328.11502 | 34.48831 | 2.31486 | 0.0846760 | 2.8815403 | 42 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 04161 | 2001 $RO_{108}$ |
| 2001 $RT_{108}$ | 14.8 | 0.15 | 20060922 | 204.06048 | 132.79802 | 353.80895 | 9.43439 | 0.1180935 | 3.0726214 | 95 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04161 | 2001 $RT_{108}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $RV_{109}$ | 16.1 | 0.15 | 20060922 | 339.23517 | 139.02667 | 7.25660 | 3.46944 | 0.1217344 | 2.3790351 | 75 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 97460 | 2001 $RV_{109}$ |
| 2001 $RE_{110}$ | 17.1 | 0.15 | 20060922 | 107.17713 | 156.23546 | 137.25687 | 3.62353 | 0.1164654 | 2.6331189 | 42 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 87455 | 2001 $RE_{110}$ |
| 2001 $RR_{110}$ | 16.2 | 0.15 | 20060922 | 188.26621 | 236.27861 | 37.33498 | 2.88313 | 0.1998731 | 2.3704979 | 98 | 4 | 1993–2005 | 0.55 | M-v | 1 | MPC | 90077 | 2001 $RR_{110}$ |
| 2001 $RF_{111}$ | 15.5 | 0.15 | 20060922 | 11.42971 | 195.73800 | 123.22714 | 2.76011 | 0.0491889 | 3.0156175 | 65 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 04161 | 2001 $RF_{111}$ |
| 2001 $RH_{111}$ | 15.6 | 0.15 | 20060922 | 51.24097 | 302.10882 | 16.83576 | 3.96007 | 0.0922285 | 2.7947142 | 93 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 75094 | 2001 $RH_{111}$ |
| 2001 $RK_{111}$ | 15.7 | 0.15 | 20060922 | 264.14659 | 325.68963 | 126.65148 | 2.89594 | 0.0379140 | 2.9110846 | 44 | 5 | 1994–2006 | 0.55 | M-v | 1 | MPC | 04161 | 2001 $RK_{111}$ |
| 2001 $RQ_{111}$ | 15.7 | 0.15 | 20060922 | 287.33289 | 54.66484 | 8.64911 | 0.78189 | 0.1623039 | 3.0169640 | 42 | 5 | 1998–2006 | 0.49 | M-v | 0 | MPC | 62354 | 2001 $RQ_{111}$ |
| 2001 $RE_{112}$ | 16.6 | 0.15 | 20060922 | 6.73370 | 229.78041 | 150.97368 | 5.44020 | 0.1321122 | 2.7747327 | 37 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 75095 | 2001 $RE_{112}$ |
| 2001 $RH_{112}$ | 16.4 | 0.15 | 20060922 | 5.65366 | 235.74121 | 106.82222 | 0.49167 | 0.1380755 | 2.9261717 | 43 | 3 | 2001–2006 | 0.54 | M-v | 4 | MPC | 03212 | 2001 $RH_{112}$ |
| 2001 $RW_{112}$ | 16.7 | 0.15 | 20060922 | 261.89508 | 234.79312 | 330.17807 | 1.74314 | 0.1226921 | 2.4021961 | 51 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 90077 | 2001 $RW_{112}$ |
| 2001 $RX_{112}$ | 18.5 | 0.15 | 20060922 | 132.31901 | 47.53368 | 293.33044 | 0.34562 | 0.1977944 | 2.3988933 | 30 | 2 | 2001–2005 | 0.44 | M-v | 4 | MPC | 94039 | 2001 $RX_{112}$ |
| 2001 $RE_{113}$ | 17.2 | 0.15 | 20060922 | 135.17066 | 306.96049 | 351.11843 | 6.28367 | 0.0865240 | 2.5262295 | 34 | 2 | 2001–2005 | 0.34 | M-v | 4 | MPC | 84859 | 2001 $RE_{113}$ |
| 2001 $RG_{113}$ | 16.1 | 0.15 | 20060922 | 33.28782 | 240.60447 | 107.71426 | 1.66952 | 0.0811304 | 2.7691558 | 55 | 5 | 1992–2006 | 0.43 | M-v | 1 | MPC | 66204 | 2001 $RG_{113}$ |
| 2001 $RK_{113}$ | 16.2 | 0.15 | 20060922 | 4.69908 | 38.67003 | 27.26067 | 2.36677 | 0.2564376 | 2.6737074 | 41 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 87455 | 2001 $RK_{113}$ |
| 2001 $RN_{113}$ | 15.0 | 0.15 | 20060922 | 260.77768 | 298.20882 | 147.87686 | 5.97881 | 0.2256636 | 3.1024969 | 52 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 41727 | 2001 $RN_{113}$ |
| 2001 $RR_{113}$ | 16.7 | 0.15 | 20060922 | 215.96422 | 119.24956 | 137.15123 | 3.20757 | 0.1849754 | 2.3461805 | 73 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 90077 | 2001 $RR_{113}$ |
| 2001 $RR_{114}$ | 16.1 | 0.15 | 20060922 | 20.70170 | 239.58956 | 144.92818 | 5.88732 | 0.0812507 | 2.6892875 | 45 | 5 | 2001–2006 | 0.46 | M-v | 0 | MPC | 84859 | 2001 $RR_{114}$ |
| 2001 $RT_{114}$ | 17.0 | 0.15 | 20060922 | 110.43013 | 336.36069 | 16.57323 | 5.97252 | 0.1093919 | 2.4458745 | 41 | 2 | 2001–2005 | 0.46 | M-v | 4 | MPC | 90077 | 2001 $RT_{114}$ |
| 2001 $RM_{115}$ | 16.9 | 0.15 | 20060922 | 144.99476 | 176.62544 | 137.00211 | 2.85902 | 0.1980849 | 2.4191598 | 67 | 3 | 2001–2005 | 0.63 | M-v | 3 | MPC | 90077 | 2001 $RM_{115}$ |
| 2001 $RU_{115}$ | 17.4 | 0.15 | 20060922 | 182.33043 | 168.55630 | 107.85427 | 2.47691 | 0.1545422 | 2.4056739 | 29 | 2 | 2001–2005 | 0.50 | M-v | 4 | MPC | 88882 | 2001 $RU_{115}$ |
| 2001 $RA_{116}$ | 16.0 | 0.15 | 20060922 | 0.83740 | 353.18910 | 8.42799 | 6.61716 | 0.1140451 | 2.8805097 | 64 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 77562 | 2001 $RA_{116}$ |
| 2001 $RD_{116}$ | 15.3 | 0.15 | 20060922 | 20.39505 | 326.56549 | 41.22925 | 5.63383 | 0.1672799 | 2.7687640 | 105 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 04161 | 2001 $RD_{116}$ |
| 2001 $RL_{116}$ | 16.8 | 0.15 | 20060922 | 121.59479 | 232.98624 | 45.72281 | 1.56587 | 0.1081577 | 2.6446917 | 57 | 6 | 1995–2006 | 0.51 | M-v | 0 | MPC | 87455 | 2001 $RL_{116}$ |
| 2001 $RD_{117}$ | 16.1 | 0.15 | 20060922 | 114.83074 | 95.42694 | 174.66497 | 2.03811 | 0.0131373 | 2.7562789 | 61 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 04161 | 2001 $RD_{117}$ |
| 2001 $RN_{117}$ | 15.8 | 0.15 | 20060922 | 301.65886 | 189.27942 | 172.22498 | 4.84358 | 0.1208968 | 3.2352573 | 38 | 3 | 2001–2005 | 0.64 | M-v | 4 | MPC | 75095 | 2001 $RN_{117}$ |
| 2001 $RS_{117}$ | 15.3 | 0.15 | 20060922 | 27.19443 | 331.88294 | 3.18399 | 1.88651 | 0.0644239 | 2.8676936 | 161 | 4 | 1996–2006 | 0.57 | M-v | 2 | MPC | 04161 | 2001 $RS_{117}$ |
| 2001 $RT_{117}$ | 17.4 | 0.15 | 20060922 | 1.21700 | 15.28610 | 165.91075 | 2.84075 | 0.0418012 | 2.2088949 | 34 | 4 | 2000–2004 | 0.48 | M-v | 1 | MPC | 88882 | 2001 $RT_{117}$ |
| 2001 $RU_{117}$ | 16.1 | 0.15 | 20060922 | 16.77453 | 177.73583 | 134.43515 | 1.26259 | 0.0796690 | 3.0304705 | 50 | 6 | 1991–2006 | 0.43 | M-v | 0 | MPC | 04161 | 2001 $RU_{117}$ |
| 2001 $RE_{118}$ | 15.8 | 0.15 | 20060922 | 58.05821 | 314.32389 | 1.80097 | 6.22293 | 0.0262825 | 2.8121196 | 83 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 60977 | 2001 $RE_{118}$ |
| 2001 $RL_{118}$ | 16.7 | 0.15 | 20060922 | 144.16165 | 259.31848 | 24.18089 | 1.94530 | 0.1005434 | 2.5434375 | 32 | 3 | 2001–2005 | 0.40 | M-v | 2 | MPC | 84860 | 2001 $RL_{118}$ |
| 2001 $RX_{118}$ | 15.2 | 0.15 | 20060922 | 333.23797 | 276.39729 | 87.63596 | 2.74664 | 0.0555655 | 3.0196439 | 62 | 6 | 1993–2006 | 0.55 | M-v | 0 | MPC | 03212 | 2001 $RX_{118}$ |
| 2001 $RM_{120}$ | 15.9 | 0.15 | 20060922 | 51.76162 | 157.28494 | 163.68420 | 12.74430 | 0.1207759 | 2.7933975 | 62 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87455 | 2001 $RM_{120}$ |
| 2001 $RN_{120}$ | 16.6 | 0.15 | 20060922 | 54.25642 | 260.67846 | 64.62574 | 2.25152 | 0.1191188 | 2.7642847 | 44 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 64986 | 2001 $RN_{120}$ |
| 2001 $RC_{121}$ | 15.6 | 0.15 | 20060922 | 15.37923 | 279.81652 | 77.71343 | 3.35639 | 0.0967799 | 2.8302258 | 79 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 62355 | 2001 $RC_{121}$ |
| 2001 $RK_{121}$ | 15.6 | 0.15 | 20060922 | 171.91754 | 214.33929 | 8.49407 | 9.50066 | 0.0606293 | 2.7015918 | 60 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87455 | 2001 $RK_{121}$ |
| 2001 $RY_{121}$ | 16.6 | 0.15 | 20060922 | 86.68147 | 278.38704 | 72.53813 | 2.61557 | 0.1434234 | 2.5457103 | 39 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 88883 | 2001 $RY_{121}$ |
| 2001 $RT_{122}$ | 15.9 | 0.15 | 20060922 | 50.20320 | 155.11992 | 159.47532 | 2.24445 | 0.0694949 | 2.8449997 | 47 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 04162 | 2001 $RT_{122}$ |
| 2001 $RY_{122}$ | 16.5 | 0.15 | 20060922 | 319.44121 | 256.20353 | 154.15464 | 2.62807 | 0.0605540 | 2.8746587 | 45 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 84861 | 2001 $RY_{122}$ |
| 2001 $RB_{123}$ | 15.6 | 0.15 | 20060922 | 159.20555 | 222.15231 | 359.80002 | 7.95139 | 0.1631947 | 2.7226339 | 70 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87455 | 2001 $RB_{123}$ |
| 2001 $RC_{123}$ | 16.8 | 0.15 | 20060922 | 21.16369 | 18.98351 | 9.39841 | 3.81117 | 0.1172308 | 2.6922936 | 30 | 4 | 2001–2006 | 0.59 | M-v | 0 | MPC | 84862 | 2001 $RC_{123}$ |
| 2001 $RF_{123}$ | 15.7 | 0.15 | 20060922 | 51.32099 | 322.01698 | 3.70274 | 5.67692 | 0.0543267 | 2.7971859 | 93 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 60978 | 2001 $RF_{123}$ |
| 2001 $RM_{123}$ | 16.7 | 0.15 | 20060922 | 14.03365 | 259.83517 | 165.34366 | 5.62652 | 0.0792621 | 2.5780683 | 41 | 4 | 2001–2005 | 0.48 | M-v | 1 | MPC | 84862 | 2001 $RM_{123}$ |
| 2001 $RS_{123}$ | 16.3 | 0.15 | 20060922 | 75.15112 | 193.90573 | 153.71857 | 3.94353 | 0.0986043 | 2.6040820 | 40 | 3 | 2001–2005 | 0.58 | M-v | 3 | MPC | 88883 | 2001 $RS_{123}$ |
| 2001 $RG_{126}$ | 16.0 | 0.15 | 20060922 | 47.62925 | 80.74789 | 12.38159 | 11.44888 | 0.1054024 | 2.3648245 | 68 | 3 | 2001–2005 | 0.65 | M-v | 2 | MPC | 97461 | 2001 $RG_{126}$ |
| 2001 $RH_{126}$ | 16.1 | 0.15 | 20060922 | 332.00237 | 230.83656 | 154.14738 | 12.51151 | 0.2004161 | 2.9630233 | 56 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 03212 | 2001 $RH_{126}$ |
| 2001 $RU_{126}$ | 16.5 | 0.15 | 20060922 | 27.37622 | 336.93784 | 75.92271 | 4.51239 | 0.1680320 | 2.5983354 | 42 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 88884 | 2001 $RU_{126}$ |
| 2001 $RY_{126}$ | 16.5 | 0.15 | 20060922 | 92.77263 | 266.63001 | 76.74520 | 4.62966 | 0.1664743 | 2.5412307 | 75 | 6 | 1996–2006 | 0.47 | M-v | 1 | MPC | 87456 | 2001 $RY_{126}$ |
| 2001 $RZ_{126}$ | 15.6 | 0.15 | 20060922 | 53.81598 | 25.47273 | 35.70921 | 6.52882 | 0.1145704 | 2.4558355 | 167 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97461 | 2001 $RZ_{126}$ |
| 2001 $RR_{127}$ | 16.7 | 0.15 | 20060922 | 191.05127 | 146.84142 | 148.89009 | 6.63450 | 0.1227884 | 2.3421805 | 54 | 4 | 2001–2005 | 0.57 | M-v | 1 | MPC | 66204 | 2001 $RR_{127}$ |
| 2001 $RV_{128}$ | 16.2 | 0.15 | 20060922 | 296.92589 | 341.18185 | 53.57832 | 3.20811 | 0.1769247 | 3.1330895 | 31 | 3 | 2001–2004 | 0.52 | M-v | 2 | MPC | 88885 | 2001 $RV_{128}$ |
| 2001 $RA_{129}$ | 16.5 | 0.15 | 20060922 | 106.41461 | 235.50917 | 153.47997 | 7.06363 | 0.1191591 | 2.3766430 | 69 | 3 | 1996–2005 | 0.56 | M-v | 3 | MPC | 97461 | 2001 $RA_{129}$ |
| 2001 $RB_{129}$ | 16.6 | 0.15 | 20060922 | 233.73202 | 154.73811 | 118.17083 | 3.08762 | 0.0692315 | 2.2965783 | 48 | 5 | 1993–2005 | 0.53 | M-v | 1 | MPC | 27229 | 2001 $RB_{129}$ |
| 2001 $RD_{129}$ | 16.5 | 0.15 | 20060922 | 53.32923 | 228.08063 | 114.84351 | 2.79617 | 0.2247831 | 2.7034647 | 53 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 75096 | 2001 $RD_{129}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $RH_{129}$ | 15.2 | 0.15 | 20060922 | 23.66221 | 285.27410 | 16.62704 | 6.86424 | 0.1013431 | 3.0468151 | 56 | 3 | 2001–2006 | 0.65 | M-v | 3 | MPC | 03212 | 2001 $RH_{129}$ |
| 2001 $RM_{130}$ | 16.8 | 0.15 | 20060922 | 53.49480 | 306.78338 | 122.23081 | 2.19472 | 0.1584616 | 2.4547708 | 60 | 3 | 2001–2005 | 0.56 | M-v | 2 | MPC | 90078 | 2001 $RM_{130}$ |
| 2001 $RA_{131}$ | 16.9 | 0.15 | 20060922 | 157.89308 | 190.31499 | 106.30392 | 2.13188 | 0.1769865 | 2.4371840 | 40 | 3 | 2001–2005 | 0.39 | M-v | 2 | MPC | 97461 | 2001 $RA_{131}$ |
| 2001 $RE_{131}$ | 15.5 | 0.15 | 20060922 | 139.56533 | 213.53104 | 122.25725 | 2.35696 | 0.1782153 | 2.3998879 | 208 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97461 | 2001 $RE_{131}$ |
| 2001 $RH_{131}$ | 14.4 | 0.15 | 20060922 | 165.49877 | 148.65253 | 17.66025 | 6.72565 | 0.1262020 | 3.1014410 | 101 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 04162 | 2001 $RH_{131}$ |
| 2001 $RM_{131}$ | 16.0 | 0.15 | 20060922 | 61.44372 | 201.89796 | 142.90066 | 3.66261 | 0.1260108 | 2.6773036 | 67 | 6 | 1999–2006 | 0.51 | M-v | 1 | MPC | 84863 | 2001 $RM_{131}$ |
| 2001 $RX_{131}$ | 15.6 | 0.15 | 20060922 | 274.36411 | 39.74947 | 59.31001 | 3.27548 | 0.0225127 | 2.8555163 | 56 | 3 | 2001–2006 | 0.41 | M-v | 1 | MPC | 60982 | 2001 $RX_{131}$ |
| 2001 $RD_{133}$ | 16.6 | 0.15 | 20060922 | 71.69476 | 228.49338 | 145.82230 | 8.25602 | 0.1866253 | 2.5478944 | 74 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 90078 | 2001 $RD_{133}$ |
| 2001 $RU_{133}$ | 15.0 | 0.15 | 20060922 | 260.91963 | 273.82413 | 166.88426 | 15.02863 | 0.1286647 | 3.1124928 | 71 | 6 | 1995–2006 | 0.61 | M-v | 0 | MPC | 04162 | 2001 $RU_{133}$ |
| 2001 $RR_{134}$ | 16.7 | 0.15 | 20060922 | 103.53048 | 229.09285 | 115.11767 | 4.44650 | 0.1696680 | 2.5090116 | 65 | 5 | 1996–2006 | 0.54 | M-v | 2 | MPC | 84864 | 2001 $RR_{134}$ |
| 2001 $RV_{134}$ | 16.0 | 0.15 | 20060922 | 22.88353 | 33.97974 | 16.80384 | 13.40700 | 0.1681198 | 2.6321646 | 65 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87456 | 2001 $RV_{134}$ |
| 2001 $RC_{135}$ | 16.0 | 0.15 | 20060922 | 50.02562 | 240.12496 | 84.02449 | 4.50478 | 0.1657954 | 2.7980168 | 48 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 60983 | 2001 $RC_{135}$ |
| 2001 $RH_{136}$ | 16.3 | 0.15 | 20060922 | 37.93262 | 321.57197 | 46.41007 | 6.84724 | 0.1303761 | 2.7108311 | 46 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 84865 | 2001 $RH_{136}$ |
| 2001 $RD_{137}$ | 16.0 | 0.15 | 20060922 | 17.82406 | 216.16345 | 146.45504 | 8.37471 | 0.1757689 | 2.8329741 | 44 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 60984 | 2001 $RD_{137}$ |
| 2001 $RF_{137}$ | 17.2 | 0.15 | 20060922 | 90.65017 | 302.02096 | 89.49279 | 3.27689 | 0.2101527 | 2.4416723 | 124 | 4 | 1996–2006 | 0.63 | M-v | 2 | MPC | 97461 | 2001 $RF_{137}$ |
| 2001 $RP_{137}$ | 16.6 | 0.15 | 20060922 | 289.51765 | 257.15044 | 166.28901 | 0.82391 | 0.0218408 | 2.9221107 | 53 | 7 | 1991–2006 | 0.53 | M-v | 2 | MPC | 66204 | 2001 $RP_{137}$ |
| 2001 $RV_{137}$ | 15.5 | 0.15 | 20060922 | 213.85000 | 191.80016 | 351.18446 | 12.82333 | 0.0973229 | 2.6880368 | 64 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87456 | 2001 $RV_{137}$ |
| 2001 $RC_{138}$ | 15.4 | 0.15 | 20060922 | 271.48915 | 278.54308 | 157.63538 | 10.52233 | 0.0899863 | 3.0038966 | 51 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04162 | 2001 $RC_{138}$ |
| 2001 $RD_{138}$ | 15.0 | 0.15 | 20060922 | 104.06024 | 205.39535 | 356.94800 | 17.34586 | 0.1414227 | 3.1356224 | 50 | 5 | 1999–2006 | 0.78 | M-v | 1 | MPC | 03213 | 2001 $RD_{138}$ |
| 2001 $RX_{138}$ | 15.5 | 0.15 | 20060922 | 357.18033 | 304.42854 | 58.78652 | 2.83051 | 0.0913540 | 2.8962484 | 85 | 2 | 2001–2006 | 0.40 | M-v | 3 | MPC | 03213 | 2001 $RX_{138}$ |
| 2001 $RJ_{139}$ | 15.6 | 0.15 | 20060922 | 221.50778 | 201.59794 | 357.45912 | 9.68859 | 0.2048240 | 2.5734852 | 91 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 04162 | 2001 $RJ_{139}$ |
| 2001 $RB_{140}$ | 16.4 | 0.15 | 20060922 | 321.41860 | 20.77960 | 15.72877 | 14.95017 | 0.1743906 | 2.9861927 | 32 | 4 | 1996–2006 | 0.53 | M-v | 2 | MPC | 04162 | 2001 $RB_{140}$ |
| 2001 $RE_{140}$ | 16.1 | 0.15 | 20060922 | 10.23507 | 6.48559 | 22.16744 | 6.59719 | 0.0758859 | 2.7451812 | 46 | 4 | 1992–2006 | 0.51 | M-v | 1 | MPC | 75098 | 2001 $RE_{140}$ |
| 2001 $RN_{140}$ | 16.8 | 0.15 | 20060922 | 88.15193 | 168.06662 | 158.69096 | 2.22572 | 0.1421578 | 2.6072491 | 21 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 88886 | 2001 $RN_{140}$ |
| 2001 $RL_{142}$ | 14.9 | 0.15 | 20060922 | 47.57471 | 243.41952 | 80.56344 | 16.16984 | 0.2552096 | 2.7694999 | 79 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87456 | 2001 $RL_{142}$ |
| 2001 $RB_{143}$ | 14.5 | 0.15 | 20060922 | 299.52855 | 193.84588 | 222.24318 | 10.12622 | 0.0877984 | 2.9842163 | 45 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04162 | 2001 $RB_{143}$ |
| 2001 $RC_{143}$ | 15.7 | 0.15 | 20060922 | 355.65791 | 77.28394 | 302.29767 | 7.07063 | 0.1846543 | 2.8712298 | 62 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 40538 | 2001 $RC_{143}$ |
| 2001 $RE_{143}$ | 16.8 | 0.15 | 20060922 | 104.71467 | 22.42320 | 297.52410 | 7.43552 | 0.1896917 | 2.5681428 | 59 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04162 | 2001 $RE_{143}$ |
| 2001 $RK_{143}$ | 14.3 | 0.15 | 20060922 | 330.33623 | 53.37114 | 331.63553 | 25.93940 | 0.2763673 | 3.1730791 | 146 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04162 | 2001 $RK_{143}$ |
| 2001 $RX_{143}$ | 6.3 | 0.15 | 20060922 | 86.52774 | 239.53411 | 20.55755 | 19.29064 | 0.2978517 | 39.2373855 | 20 | 3 | 2001–2006 | 0.16 | M-v | 3 | MPC | 74098 | 2001 $RX_{143}$ |
| 2001 $RJ_{144}$ | 16.2 | 0.15 | 20060922 | 350.59759 | 152.01143 | 299.88920 | 5.00411 | 0.1496587 | 2.5815079 | 99 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87457 | 2001 $RJ_{144}$ |
| 2001 $RL_{145}$ | 15.2 | 0.15 | 20060922 | 81.82413 | 297.79146 | 311.37068 | 10.96762 | 0.0953721 | 2.9336561 | 61 | 5 | 1996–2006 | 0.65 | M-v | 2 | MPC | 04162 | 2001 $RL_{145}$ |
| 2001 $RR_{145}$ | 16.4 | 0.15 | 20060922 | 354.02568 | 187.23788 | 208.18964 | 5.39619 | 0.1427097 | 2.7741008 | 72 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 60986 | 2001 $RR_{145}$ |
| 2001 $RL_{146}$ | 15.7 | 0.15 | 20060922 | 6.25292 | 222.51478 | 166.15389 | 13.77414 | 0.1185940 | 2.6924354 | 45 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 84867 | 2001 $RL_{146}$ |
| 2001 $RH_{147}$ | 15.2 | 0.15 | 20060922 | 49.67192 | 79.24557 | 267.24196 | 12.62946 | 0.1048646 | 2.7531313 | 44 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 75100 | 2001 $RH_{147}$ |
| 2001 $RD_{148}$ | 15.8 | 0.15 | 20060922 | 55.22670 | 323.19396 | 350.20535 | 14.01056 | 0.1097443 | 2.7598482 | 50 | 3 | 2001–2006 | 0.62 | M-v | 3 | MPC | 60987 | 2001 $RD_{148}$ |
| 2001 $RL_{149}$ | 16.0 | 0.15 | 20060922 | 2.64727 | 335.76847 | 77.39735 | 7.43888 | 0.1894469 | 2.7443813 | 49 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 72404 | 2001 $RL_{149}$ |
| 2001 $RN_{149}$ | 16.2 | 0.15 | 20060922 | 341.44252 | 91.46815 | 273.18120 | 1.13137 | 0.1146634 | 2.9527668 | 63 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04162 | 2001 $RN_{149}$ |
| 2001 $RQ_{149}$ | 15.8 | 0.15 | 20060922 | 269.50318 | 133.32995 | 336.80127 | 3.98813 | 0.0723028 | 2.8108771 | 54 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 60987 | 2001 $RQ_{149}$ |
| 2001 $RU_{149}$ | 16.8 | 0.15 | 20060922 | 108.44751 | 163.39316 | 158.24245 | 15.69165 | 0.1479773 | 2.5308285 | 34 | 2 | 2001–2005 | 0.63 | M-v | 4 | MPC | 88887 | 2001 $RU_{149}$ |
| 2001 $RY_{150}$ | 15.9 | 0.15 | 20060922 | 7.56005 | 332.21361 | 114.95127 | 6.39880 | 0.2381018 | 2.6152763 | 107 | 4 | 1997–2006 | 0.66 | M-v | 0 | MPC | 87457 | 2001 $RY_{150}$ |
| 2001 $RQ_{151}$ | 16.1 | 0.15 | 20060922 | 101.36617 | 214.55552 | 128.59594 | 10.30059 | 0.1715721 | 2.5268152 | 74 | 6 | 1999–2006 | 0.50 | M-v | 1 | MPC | 97462 | 2001 $RQ_{151}$ |
| 2001 $RB_{152}$ | 15.2 | 0.15 | 20060922 | 318.06462 | 281.91931 | 115.85377 | 10.54272 | 0.1243546 | 2.9975300 | 43 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 03213 | 2001 $RB_{152}$ |
| 2001 $RD_{153}$ | 15.7 | 0.15 | 20060922 | 67.83507 | 320.55940 | 318.75960 | 2.99508 | 0.1525515 | 2.8570226 | 46 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 75101 | 2001 $RD_{153}$ |
| 2001 $RH_{153}$ | 15.0 | 0.15 | 20060922 | 40.56650 | 203.59708 | 132.48235 | 8.87729 | 0.0647520 | 2.8342256 | 89 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 60989 | 2001 $RH_{153}$ |
| 2001 $RO_{153}$ | 15.9 | 0.15 | 20060922 | 273.53367 | 117.82767 | 293.29395 | 9.88864 | 0.1375023 | 3.1629980 | 22 | 4 | 1995–2003 | 0.53 | M-v | 1 | MPC | 40542 | 2001 $RO_{153}$ |
| 2001 $RP_{153}$ | 16.4 | 0.15 | 20060922 | 191.03137 | 355.12410 | 261.79603 | 4.73685 | 0.1064536 | 2.4503251 | 58 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 87457 | 2001 $RP_{153}$ |
| 2001 $RF_{154}$ | 15.1 | 0.15 | 20060922 | 285.70833 | 126.12367 | 296.43133 | 9.19169 | 0.1053635 | 2.9833996 | 61 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04162 | 2001 $RF_{154}$ |
| 2001 $RK_{154}$ | 16.5 | 0.15 | 20060922 | 48.97775 | 70.94768 | 346.11111 | 16.74465 | 0.1845400 | 2.5486896 | 50 | 3 | 2001–2005 | 0.74 | M-v | 3 | MPC | 97462 | 2001 $RK_{154}$ |
| 2001 $RM_{154}$ | 16.8 | 0.15 | 20060922 | 34.58320 | 84.36858 | 327.48580 | 12.83766 | 0.1626377 | 2.5759955 | 25 | 4 | 1999–2005 | 0.42 | M-v | 0 | MPC | 88888 | 2001 $RM_{154}$ |
| 2001 $RB_{155}$ | 15.7 | 0.15 | 20060922 | 40.46305 | 217.57496 | 148.41859 | 7.31021 | 0.0471960 | 2.7075103 | 72 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 90079 | 2001 $RB_{155}$ |
| 2001 $RH_{155}$ | 16.0 | 0.15 | 20060922 | 250.15347 | 93.40221 | 15.21942 | 3.33568 | 0.1489034 | 3.1091530 | 24 | 3 | 2001–2006 | 0.63 | M-v | 4 | MPC | 40543 | 2001 $RH_{155}$ |
| 2001 SC | 16.7 | 0.15 | 20060922 | 123.62808 | 33.94559 | 302.47902 | 5.35400 | 0.1485205 | 2.4027444 | 75 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 88888 | 2001 SC |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SW_2$ | 15.4 | 0.15 | 20060922 | 41.54166 | 318.94594 | 41.56488 | 4.39105 | 0.1932528 | 2.7608448 | 131 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87457 | 2001 $SW_2$ |
| 2001 $SL_3$ | 15.9 | 0.15 | 20060922 | 105.32087 | 355.63316 | 15.85956 | 7.91022 | 0.1049718 | 2.4629235 | 178 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 97462 | 2001 $SL_3$ |
| 2001 $SK_5$ | 15.4 | 0.15 | 20060922 | 321.43504 | 239.24776 | 153.22434 | 2.70152 | 0.0731398 | 2.9895538 | 63 | 5 | 1991–2006 | 0.57 | M-v | 1 | MPC | 04163 | 2001 $SK_5$ |
| 2001 $SU_5$ | 17.5 | 0.15 | 20060922 | 321.31253 | 69.25038 | 359.19158 | 25.21739 | 0.1453315 | 1.8267367 | 80 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 03213 | 2001 $SU_5$ |
| 2001 $SJ_6$ | 16.7 | 0.15 | 20060922 | 44.91457 | 253.52072 | 196.97592 | 1.41439 | 0.0896391 | 2.3711421 | 119 | 4 | 1996–2006 | 0.55 | M-v | 1 | MPC | 97462 | 2001 $SJ_6$ |
| 2001 $SL_6$ | 16.6 | 0.15 | 20060922 | 84.64576 | 32.10020 | 231.90734 | 0.54170 | 0.0850712 | 2.8889014 | 41 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 04163 | 2001 $SL_6$ |
| 2001 $SS_6$ | 15.4 | 0.15 | 20060922 | 252.67953 | 310.37349 | 168.06304 | 1.59958 | 0.2682579 | 2.9806916 | 72 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04163 | 2001 $SS_6$ |
| 2001 $SG_7$ | 16.0 | 0.15 | 20060922 | 294.35437 | 296.34528 | 161.61720 | 13.13647 | 0.0492134 | 2.7173361 | 68 | 3 | 2001–2006 | 0.57 | M-v | 1 | MPC | 66205 | 2001 $SG_7$ |
| 2001 $SO_9$ | 15.1 | 0.15 | 20060922 | 15.25960 | 301.83014 | 32.66327 | 12.76036 | 0.1490369 | 3.1189649 | 77 | 4 | 1993–2006 | 0.54 | M-v | 1 | MPC | 03213 | 2001 $SO_9$ |
| 2001 $SP_9$ | 14.6 | 0.15 | 20060922 | 254.45991 | 101.42945 | 36.36072 | 26.46559 | 0.2120527 | 3.1142399 | 67 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 50552 | 2001 $SP_9$ |
| 2001 $SM_{10}$ | 15.9 | 0.15 | 20060922 | 121.44118 | 5.52873 | 36.95888 | 5.16131 | 0.2401805 | 2.3890788 | 154 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 02041 | 2001 $SM_{10}$ |
| 2001 $SX_{10}$ | 14.3 | 0.15 | 20060922 | 253.59229 | 124.57856 | 315.53836 | 26.21405 | 0.1763173 | 3.1135290 | 71 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 04163 | 2001 $SX_{10}$ |
| 2001 $SB_{11}$ | 15.6 | 0.15 | 20060922 | 301.52753 | 254.26175 | 226.32482 | 9.71002 | 0.1448256 | 2.6531258 | 70 | 6 | 1997–2006 | 0.48 | M-v | 1 | MPC | 84874 | 2001 $SB_{11}$ |
| 2001 $SL_{11}$ | 16.2 | 0.15 | 20060922 | 57.18016 | 59.59188 | 274.61054 | 5.07653 | 0.0651477 | 2.7410904 | 42 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 87458 | 2001 $SL_{11}$ |
| 2001 $SR_{11}$ | 15.5 | 0.15 | 20060922 | 20.51629 | 317.26222 | 357.12277 | 9.78898 | 0.0997778 | 2.9834954 | 40 | 3 | 1996–2006 | 0.51 | M-v | 3 | MPC | 03214 | 2001 $SR_{11}$ |
| 2001 $SY_{11}$ | 15.6 | 0.15 | 20060922 | 153.64739 | 199.63293 | 29.94609 | 4.72411 | 0.0182276 | 2.7658936 | 94 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 60994 | 2001 $SY_{11}$ |
| 2001 $SK_{12}$ | 15.8 | 0.15 | 20060922 | 31.05786 | 86.33917 | 225.93238 | 3.40975 | 0.0714951 | 2.9587500 | 74 | 5 | 1991–2006 | 0.49 | M-v | 0 | MPC | 04163 | 2001 $SK_{12}$ |
| 2001 $SL_{12}$ | 16.3 | 0.15 | 20060922 | 95.35629 | 32.59021 | 268.71681 | 5.02101 | 0.0898349 | 2.6917209 | 50 | 4 | 1997–2006 | 0.39 | M-v | 1 | MPC | 84874 | 2001 $SL_{12}$ |
| 2001 $SG_{14}$ | 15.8 | 0.15 | 20060922 | 269.79456 | 14.15694 | 164.51656 | 2.64380 | 0.0768501 | 2.5206588 | 68 | 7 | 1993–2006 | 0.51 | M-v | 1 | MPC | 04163 | 2001 $SG_{14}$ |
| 2001 $SS_{14}$ | 16.0 | 0.15 | 20060922 | 64.02180 | 168.18027 | 178.02772 | 6.07333 | 0.0633555 | 2.6697936 | 51 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 84875 | 2001 $SS_{14}$ |
| 2001 $ST_{14}$ | 17.0 | 0.15 | 20060922 | 143.46732 | 159.38931 | 172.08701 | 2.05509 | 0.1974062 | 2.3959924 | 76 | 3 | 2001–2005 | 0.49 | M-v | 2 | MPC | 97462 | 2001 $ST_{14}$ |
| 2001 $SM_{15}$ | 16.2 | 0.15 | 20060922 | 32.64965 | 288.79351 | 4.46605 | 13.82926 | 0.2582206 | 2.9731073 | 70 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 03214 | 2001 $SM_{15}$ |
| 2001 $SD_{16}$ | 14.7 | 0.15 | 20060922 | 334.24273 | 165.44561 | 172.49435 | 6.12663 | 0.1228534 | 3.1788682 | 84 | 3 | 2001–2005 | 0.61 | M-v | 3 | MPC | 64993 | 2001 $SD_{16}$ |
| 2001 $SK_{16}$ | 15.7 | 0.15 | 20060922 | 289.33486 | 341.84897 | 43.02305 | 1.31728 | 0.1455513 | 3.2405532 | 55 | 5 | 1992–2005 | 0.57 | M-v | 1 | MPC | 04163 | 2001 $SK_{16}$ |
| 2001 $SL_{16}$ | 16.3 | 0.15 | 20060922 | 29.43470 | 209.07176 | 162.47740 | 3.87836 | 0.2080390 | 2.7394324 | 72 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 88893 | 2001 $SL_{16}$ |
| 2001 $SB_{17}$ | 15.1 | 0.15 | 20060922 | 261.73530 | 78.81154 | 3.92340 | 13.91635 | 0.1645546 | 3.1314636 | 84 | 4 | 1998–2004 | 0.69 | M-v | 0 | MPC | 50552 | 2001 $SB_{17}$ |
| 2001 $SF_{17}$ | 14.9 | 0.15 | 20060922 | 96.69227 | 229.35524 | 6.80826 | 10.66156 | 0.0983188 | 3.0351673 | 100 | 3 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04163 | 2001 $SF_{17}$ |
| 2001 $SJ_{17}$ | 15.8 | 0.15 | 20060922 | 63.46775 | 151.52823 | 163.94085 | 3.11764 | 0.0836474 | 2.8048322 | 77 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 60996 | 2001 $SJ_{17}$ |
| 2001 $SK_{17}$ | 16.9 | 0.15 | 20060922 | 58.02373 | 333.29703 | 25.17786 | 1.06623 | 0.1207312 | 2.6597000 | 77 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 90079 | 2001 $SK_{17}$ |
| 2001 $SO_{17}$ | 14.9 | 0.15 | 20060922 | 197.95353 | 142.01565 | 8.77678 | 12.12332 | 0.1066650 | 3.0453816 | 100 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 60996 | 2001 $SO_{17}$ |
| 2001 $SS_{17}$ | 16.2 | 0.15 | 20060922 | 5.72333 | 349.08106 | 85.29238 | 2.13757 | 0.0344410 | 2.5806274 | 67 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 97463 | 2001 $SS_{17}$ |
| 2001 $SQ_{18}$ | 16.1 | 0.15 | 20060922 | 324.17030 | 253.32515 | 145.45729 | 2.53298 | 0.2769484 | 3.0101338 | 65 | 2 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03215 | 2001 $SQ_{18}$ |
| 2001 $SW_{18}$ | 15.5 | 0.15 | 20060922 | 335.94981 | 260.79236 | 177.90679 | 12.43386 | 0.1133784 | 2.7357856 | 60 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 66205 | 2001 $SW_{18}$ |
| 2001 $SC_{19}$ | 15.9 | 0.15 | 20060922 | 310.36412 | 256.40373 | 109.13833 | 2.64484 | 0.1701464 | 3.2052782 | 31 | 4 | 1995–2005 | 0.51 | M-v | 1 | MPC | 27232 | 2001 $SC_{19}$ |
| 2001 $SE_{19}$ | 15.2 | 0.15 | 20060922 | 329.06930 | 269.84280 | 126.92605 | 2.89280 | 0.1854117 | 2.9670115 | 122 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04163 | 2001 $SE_{19}$ |
| 2001 $SF_{19}$ | 15.9 | 0.15 | 20060922 | 291.30621 | 222.14620 | 212.54332 | 1.15908 | 0.0602127 | 2.9123349 | 54 | 5 | 1991–2006 | 0.53 | M-v | 4 | MPC | 04163 | 2001 $SF_{19}$ |
| 2001 $SK_{19}$ | 15.6 | 0.15 | 20060922 | 354.57071 | 217.31548 | 168.80857 | 11.76186 | 0.1000030 | 2.8395605 | 70 | 3 | 1994–2006 | 0.51 | M-v | 3 | MPC | 20984 | 2001 $SK_{19}$ |
| 2001 $SO_{19}$ | 16.6 | 0.15 | 20060922 | 115.22330 | 282.83156 | 10.54083 | 2.60697 | 0.0679236 | 2.6621136 | 49 | 4 | 1997–2006 | 0.49 | M-v | 1 | MPC | 74098 | 2001 $SO_{19}$ |
| 2001 $ST_{19}$ | 15.6 | 0.15 | 20060922 | 343.18430 | 101.71037 | 2.82542 | 10.68823 | 0.2181223 | 2.6361232 | 149 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90079 | 2001 $ST_{19}$ |
| 2001 $SZ_{19}$ | 17.3 | 0.15 | 20060922 | 41.62085 | 3.16687 | 56.31841 | 2.46837 | 0.1487823 | 2.5407323 | 65 | 5 | 1993–2006 | 0.50 | M-v | 1 | MPC | 97463 | 2001 $SZ_{19}$ |
| 2001 $SB_{20}$ | 16.3 | 0.15 | 20060922 | 92.93525 | 245.71943 | 90.74093 | 5.32135 | 0.1555141 | 2.6072585 | 59 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 84878 | 2001 $SB_{20}$ |
| 2001 $SB_{21}$ | 16.1 | 0.15 | 20060922 | 45.37166 | 340.96906 | 59.99955 | 4.36542 | 0.1714696 | 2.6133511 | 71 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 88895 | 2001 $SB_{21}$ |
| 2001 $SF_{21}$ | 15.9 | 0.15 | 20060922 | 357.46655 | 7.48352 | 69.71355 | 4.76260 | 0.0594449 | 2.6602184 | 73 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 87458 | 2001 $SF_{21}$ |
| 2001 $SJ_{21}$ | 16.0 | 0.15 | 20060922 | 8.29097 | 27.07460 | 56.87455 | 5.70475 | 0.2361589 | 2.6589081 | 85 | 5 | 1999–2006 | 0.64 | M-v | 1 | MPC | 87458 | 2001 $SJ_{21}$ |
| 2001 $SR_{21}$ | 15.3 | 0.15 | 20060922 | 21.34278 | 192.46638 | 182.94565 | 7.11797 | 0.1393696 | 2.8124974 | 122 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 60998 | 2001 $SR_{21}$ |
| 2001 $SK_{22}$ | 15.6 | 0.15 | 20060922 | 168.34177 | 206.20923 | 2.52252 | 7.81389 | 0.1559774 | 2.8081156 | 86 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87458 | 2001 $SK_{22}$ |
| 2001 $SO_{22}$ | 16.0 | 0.15 | 20060922 | 356.35569 | 105.05033 | 329.87448 | 2.69008 | 0.1847074 | 2.6872691 | 100 | 5 | 1993–2006 | 0.65 | M-v | 1 | MPC | 87458 | 2001 $SO_{22}$ |
| 2001 $SE_{23}$ | 16.3 | 0.15 | 20060922 | 318.60169 | 238.53366 | 173.70953 | 1.96422 | 0.1971745 | 2.9664843 | 57 | 4 | 1991–2006 | 0.54 | M-v | 2 | MPC | 04163 | 2001 $SE_{23}$ |
| 2001 $SV_{23}$ | 15.2 | 0.15 | 20060922 | 81.11544 | 279.34549 | 9.45510 | 7.49290 | 0.1474828 | 2.8131131 | 97 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 60999 | 2001 $SV_{23}$ |
| 2001 $SD_{24}$ | 15.3 | 0.15 | 20060922 | 344.44045 | 76.87940 | 357.99722 | 9.11713 | 0.1657775 | 2.7367332 | 62 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 50553 | 2001 $SD_{24}$ |
| 2001 $SD_{25}$ | 16.2 | 0.15 | 20060922 | 59.13306 | 358.03017 | 359.53707 | 1.76705 | 0.1079810 | 2.6680597 | 108 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 90080 | 2001 $SD_{25}$ |
| 2001 $SM_{25}$ | 16.2 | 0.15 | 20060922 | 16.52117 | 342.09931 | 14.79340 | 1.92326 | 0.0835226 | 2.8712229 | 75 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 03215 | 2001 $SM_{25}$ |
| 2001 $SQ_{25}$ | 16.3 | 0.15 | 20060922 | 220.41437 | 237.00768 | 17.64647 | 3.36430 | 0.0711124 | 2.4203794 | 47 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 97463 | 2001 $SQ_{25}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SY_{25}$ | 16.4 | 0.15 | 20060922 | 30.94319 | 196.91205 | 167.86776 | 3.90555 | 0.1117212 | 2.7714469 | 34 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 84880 | 2001 $SY_{25}$ |
| 2001 $SP_{26}$ | 15.7 | 0.15 | 20060922 | 13.76697 | 114.31236 | 185.32165 | 14.16124 | 0.3179450 | 3.0549022 | 93 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04163 | 2001 $SP_{26}$ |
| 2001 $SL_{27}$ | 16.1 | 0.15 | 20060922 | 351.65543 | 296.14676 | 151.11017 | 1.19730 | 0.0370748 | 2.6096718 | 74 | 5 | 1993–2006 | 0.40 | M-v | 1 | MPC | 97463 | 2001 $SL_{27}$ |
| 2001 $SZ_{27}$ | 16.8 | 0.15 | 20060922 | 103.81648 | 258.28750 | 31.02537 | 3.96139 | 0.1920755 | 2.6936806 | 62 | 6 | 1992–2006 | 0.52 | M-v | 0 | MPC | 87458 | 2001 $SZ_{27}$ |
| 2001 $SC_{28}$ | 16.0 | 0.15 | 20060922 | 335.86287 | 65.71111 | 38.07694 | 3.85248 | 0.0444088 | 2.6084753 | 46 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04163 | 2001 $SC_{28}$ |
| 2001 $SA_{30}$ | 15.6 | 0.15 | 20060922 | 0.20064 | 327.76925 | 23.90115 | 2.77378 | 0.0985342 | 3.0042813 | 69 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04163 | 2001 $SA_{30}$ |
| 2001 $SK_{30}$ | 15.4 | 0.15 | 20060922 | 272.04705 | 150.16611 | 22.70001 | 3.46853 | 0.0379594 | 2.5825593 | 77 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 87459 | 2001 $SK_{30}$ |
| 2001 $SM_{30}$ | 17.0 | 0.15 | 20060922 | 85.48234 | 230.95236 | 128.67421 | 1.30792 | 0.2056716 | 2.5564575 | 93 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 94055 | 2001 $SM_{30}$ |
| 2001 $ST_{30}$ | 16.2 | 0.15 | 20060922 | 175.99647 | 317.99986 | 16.53506 | 6.86621 | 0.1429651 | 2.3142665 | 109 | 5 | 1996–2005 | 0.55 | M-v | 1 | MPC | 97463 | 2001 $ST_{30}$ |
| 2001 $SH_{31}$ | 17.0 | 0.15 | 20060922 | 128.27075 | 269.04188 | 61.05602 | 3.05986 | 0.1794361 | 2.4756002 | 110 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 97463 | 2001 $SH_{31}$ |
| 2001 $SQ_{31}$ | 15.1 | 0.15 | 20060922 | 311.72783 | 6.18646 | 56.63846 | 2.87666 | 0.0720642 | 2.9349736 | 81 | 5 | 1993–2006 | 0.57 | M-v | 1 | MPC | 66206 | 2001 $SQ_{31}$ |
| 2001 $SC_{32}$ | 15.7 | 0.15 | 20060922 | 296.86910 | 54.46611 | 24.25854 | 8.62828 | 0.2450202 | 3.0322075 | 75 | 4 | 1998–2006 | 0.57 | M-v | 0 | MPC | 50553 | 2001 $SC_{32}$ |
| 2001 $SP_{32}$ | 17.1 | 0.15 | 20060922 | 125.38986 | 182.72512 | 156.17352 | 2.38259 | 0.2091307 | 2.4594350 | 120 | 3 | 2001–2005 | 0.74 | M-v | 3 | MPC | 97463 | 2001 $SP_{32}$ |
| 2001 $SQ_{32}$ | 15.9 | 0.15 | 20060922 | 12.10829 | 313.97396 | 38.31828 | 2.58891 | 0.1151887 | 2.9338692 | 98 | 5 | 1996–2006 | 0.51 | M-v | 0 | MPC | 04163 | 2001 $SQ_{32}$ |
| 2001 $SV_{32}$ | 15.7 | 0.15 | 20060922 | 149.64668 | 211.33793 | 13.78318 | 5.95133 | 0.0152402 | 2.9003352 | 83 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 66206 | 2001 $SV_{32}$ |
| 2001 $SW_{32}$ | 15.4 | 0.15 | 20060922 | 0.23191 | 152.05313 | 173.23119 | 1.74923 | 0.2424433 | 3.0752387 | 91 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04163 | 2001 $SW_{32}$ |
| 2001 $SB_{33}$ | 15.9 | 0.15 | 20060922 | 275.52390 | 266.87292 | 184.24412 | 4.66035 | 0.1897481 | 3.0727692 | 54 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04163 | 2001 $SB_{33}$ |
| 2001 $SR_{33}$ | 15.5 | 0.15 | 20060922 | 329.99618 | 1.65743 | 9.89220 | 8.94336 | 0.2704382 | 3.0855170 | 104 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 03215 | 2001 $SR_{33}$ |
| 2001 $SX_{34}$ | 15.4 | 0.15 | 20060922 | 352.36822 | 158.01271 | 185.73401 | 17.03264 | 0.1568832 | 3.0817422 | 73 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 04163 | 2001 $SX_{34}$ |
| 2001 $SC_{35}$ | 16.8 | 0.15 | 20060922 | 131.44565 | 200.34060 | 167.98078 | 6.71560 | 0.1851019 | 2.3762717 | 77 | 4 | 1996–2006 | 0.59 | M-v | 2 | MPC | 97464 | 2001 $SC_{35}$ |
| 2001 $SB_{36}$ | 17.0 | 0.15 | 20060922 | 120.61610 | 163.98303 | 142.97994 | 2.61163 | 0.2056740 | 2.5717120 | 75 | 4 | 1996–2005 | 0.54 | M-v | 1 | MPC | 97464 | 2001 $SB_{36}$ |
| 2001 $SP_{36}$ | 15.7 | 0.15 | 20060922 | 7.59922 | 65.13981 | 14.99346 | 12.94642 | 0.2498936 | 2.6773827 | 124 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87459 | 2001 $SP_{36}$ |
| 2001 $SS_{36}$ | 15.5 | 0.15 | 20060922 | 337.20698 | 345.59453 | 19.51502 | 5.47327 | 0.1624029 | 3.0827256 | 89 | 3 | 1999–2006 | 0.59 | M-v | 3 | MPC | 03216 | 2001 $SS_{36}$ |
| 2001 $SM_{37}$ | 16.0 | 0.15 | 20060922 | 72.46510 | 277.08687 | 79.08120 | 2.24418 | 0.1273709 | 2.6386873 | 94 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 90080 | 2001 $SM_{37}$ |
| 2001 $SC_{38}$ | 15.7 | 0.15 | 20060922 | 17.74208 | 198.19679 | 173.54650 | 9.74710 | 0.1270594 | 2.8406080 | 66 | 4 | 1996–2006 | 0.52 | M-v | 1 | MPC | 72405 | 2001 $SC_{38}$ |
| 2001 $ST_{38}$ | 15.7 | 0.15 | 20060922 | 83.41891 | 103.36894 | 185.53286 | 10.05825 | 0.0311791 | 2.9336952 | 72 | 3 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04164 | 2001 $ST_{38}$ |
| 2001 $SF_{39}$ | 16.8 | 0.15 | 20060922 | 258.79801 | 268.59175 | 35.10744 | 5.23680 | 0.1919126 | 2.1518992 | 100 | 2 | 2001–2004 | 0.55 | M-v | 3 | MPC | 70300 | 2001 $SF_{39}$ |
| 2001 $SH_{39}$ | 14.7 | 0.15 | 20060922 | 358.02512 | 297.72959 | 22.98646 | 17.87907 | 0.2430749 | 3.1285906 | 116 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04164 | 2001 $SH_{39}$ |
| 2001 $SL_{39}$ | 15.7 | 0.15 | 20060922 | 71.90731 | 150.36029 | 168.17460 | 8.33821 | 0.1714045 | 2.7676013 | 68 | 6 | 1995–2006 | 0.52 | M-v | 0 | MPC | 62358 | 2001 $SL_{39}$ |
| 2001 $SA_{40}$ | 15.9 | 0.15 | 20060922 | 0.75577 | 14.90644 | 40.74473 | 8.64967 | 0.2195268 | 2.7828142 | 108 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 66206 | 2001 $SA_{40}$ |
| 2001 $SE_{40}$ | 16.2 | 0.15 | 20060922 | 65.97559 | 313.35014 | 95.31856 | 4.53914 | 0.1143578 | 2.5080912 | 153 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 02041 | 2001 $SE_{40}$ |
| 2001 $SV_{40}$ | 15.6 | 0.15 | 20060922 | 51.04784 | 180.06159 | 137.75971 | 2.98129 | 0.1244804 | 2.9012461 | 117 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 61004 | 2001 $SV_{40}$ |
| 2001 $SW_{40}$ | 15.6 | 0.15 | 20060922 | 354.16137 | 49.42254 | 25.75516 | 12.97281 | 0.1458084 | 2.7265108 | 90 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87459 | 2001 $SW_{40}$ |
| 2001 $SC_{41}$ | 16.6 | 0.15 | 20060922 | 56.25056 | 191.99817 | 151.73605 | 4.17408 | 0.2036039 | 2.7430602 | 45 | 5 | 1960–2006 | 0.51 | M-v | 1 | MPC | 62358 | 2001 $SC_{41}$ |
| 2001 $SD_{41}$ | 15.4 | 0.15 | 20060922 | 1.85941 | 86.31039 | 349.16548 | 14.47270 | 0.0934712 | 2.6045486 | 117 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87459 | 2001 $SD_{41}$ |
| 2001 $SB_{42}$ | 15.3 | 0.15 | 20060922 | 5.30531 | 358.26748 | 54.42447 | 3.96578 | 0.1290920 | 2.7079599 | 63 | 5 | 1994–2006 | 0.50 | M-v | 0 | MPC | 87459 | 2001 $SB_{42}$ |
| 2001 $SZ_{42}$ | 19.3 | 0.15 | 20060922 | 95.35385 | 245.15912 | 99.44327 | 2.32480 | 0.1985069 | 2.5464378 | 106 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 02041 | 2001 $SZ_{42}$ |
| 2001 $SL_{43}$ | 16.9 | 0.15 | 20060922 | 62.98882 | 330.25633 | 67.15162 | 0.46655 | 0.2106910 | 2.5451350 | 121 | 3 | 1999–2005 | 0.56 | M-v | 2 | MPC | 97464 | 2001 $SL_{43}$ |
| 2001 $SB_{44}$ | 17.6 | 0.15 | 20060922 | 171.65132 | 196.08608 | 126.88391 | 3.01453 | 0.2426472 | 2.3277344 | 70 | 3 | 2001–2005 | 0.60 | M-v | 1 | MPC | 64996 | 2001 $SB_{44}$ |
| 2001 $SK_{44}$ | 15.0 | 0.15 | 20060922 | 294.69836 | 356.18821 | 64.93594 | 6.02059 | 0.1201468 | 3.0466651 | 48 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 40569 | 2001 $SK_{44}$ |
| 2001 $SL_{44}$ | 15.9 | 0.15 | 20060922 | 44.44969 | 352.79798 | 22.57888 | 14.77397 | 0.0930754 | 2.6717569 | 64 | 5 | 1995–2005 | 0.61 | M-v | 1 | MPC | 87459 | 2001 $SL_{44}$ |
| 2001 $SC_{45}$ | 15.6 | 0.15 | 20060922 | 30.10342 | 337.07502 | 45.21040 | 5.26848 | 0.1470170 | 2.7198798 | 61 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 75107 | 2001 $SC_{45}$ |
| 2001 $SH_{45}$ | 15.6 | 0.15 | 20060922 | 352.86675 | 320.93709 | 131.27412 | 5.60062 | 0.1612626 | 2.6427851 | 111 | 4 | 2001–2006 | 0.58 | M-v | 0 | MPC | 87459 | 2001 $SH_{45}$ |
| 2001 $SX_{46}$ | 16.0 | 0.15 | 20060922 | 9.37756 | 305.39561 | 23.20649 | 9.78789 | 0.2727913 | 2.9907819 | 101 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04164 | 2001 $SX_{46}$ |
| 2001 $SP_{47}$ | 17.0 | 0.15 | 20060922 | 175.01818 | 149.52230 | 164.19400 | 6.54487 | 0.2182939 | 2.3551483 | 52 | 4 | 1993–2004 | 0.57 | M-v | 1 | MPC | 88901 | 2001 $SP_{47}$ |
| 2001 $SG_{48}$ | 14.8 | 0.15 | 20060922 | 42.24284 | 277.40542 | 22.94523 | 10.52716 | 0.1352603 | 3.0221984 | 127 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04164 | 2001 $SG_{48}$ |
| 2001 $SJ_{50}$ | 15.4 | 0.15 | 20060922 | 312.34939 | 76.79361 | 34.66203 | 15.80837 | 0.1964462 | 2.7845033 | 138 | 3 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04164 | 2001 $SJ_{50}$ |
| 2001 $SD_{51}$ | 15.1 | 0.15 | 20060922 | 6.26162 | 154.67501 | 164.12981 | 11.90967 | 0.1511705 | 3.0824412 | 102 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04164 | 2001 $SD_{51}$ |
| 2001 $SH_{51}$ | 15.4 | 0.15 | 20060922 | 13.23529 | 205.71126 | 155.39317 | 4.86955 | 0.0443337 | 2.8795981 | 60 | 4 | 1991–2006 | 0.52 | M-v | 3 | MPC | 04164 | 2001 $SH_{51}$ |
| 2001 $SH_{52}$ | 16.3 | 0.15 | 20060922 | 72.28444 | 259.27815 | 133.00420 | 5.59257 | 0.0932364 | 2.5365326 | 77 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 97464 | 2001 $SH_{52}$ |
| 2001 $SY_{52}$ | 16.0 | 0.15 | 20060922 | 355.85025 | 290.44974 | 138.93055 | 2.75665 | 0.1471703 | 2.7471696 | 82 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 87460 | 2001 $SY_{52}$ |
| 2001 $SX_{53}$ | 14.9 | 0.15 | 20060922 | 349.66112 | 316.75684 | 37.71598 | 11.72627 | 0.1446125 | 3.0847198 | 109 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04164 | 2001 $SX_{53}$ |
| 2001 $SF_{56}$ | 15.9 | 0.15 | 20060922 | 352.85844 | 282.53960 | 178.10635 | 13.29800 | 0.2904488 | 2.7085799 | 67 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 97464 | 2001 $SF_{56}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SV_{56}$ | 16.6 | 0.15 | 20060922 | 152.89835 | 197.36054 | 161.69369 | 7.94955 | 0.1124646 | 2.3574402 | 67 | 5 | 1996–2004 | 0.54 | M-v | 1 | MPC | 48089 | 2001 $SV_{56}$ |
| 2001 $SP_{58}$ | 14.9 | 0.15 | 20060922 | 85.89322 | 135.40276 | 181.81239 | 4.55996 | 0.1164985 | 2.7537432 | 186 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90081 | 2001 $SP_{58}$ |
| 2001 $SW_{58}$ | 15.0 | 0.15 | 20060922 | 320.28692 | 300.77736 | 104.06980 | 2.76090 | 0.1683539 | 3.0542107 | 101 | 5 | 1991–2006 | 0.69 | M-v | 1 | MPC | 04164 | 2001 $SW_{58}$ |
| 2001 $SE_{59}$ | 15.1 | 0.15 | 20060922 | 343.19466 | 190.57418 | 182.10886 | 10.00721 | 0.0765266 | 3.0764132 | 113 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 04164 | 2001 $SE_{59}$ |
| 2001 $SG_{60}$ | 15.1 | 0.15 | 20060922 | 355.57542 | 349.65380 | 349.43947 | 13.32556 | 0.1381608 | 3.0805174 | 42 | 2 | 2001–2006 | 0.62 | M-v | 3 | MPC | 03217 | 2001 $SG_{60}$ |
| 2001 $SU_{60}$ | 14.9 | 0.15 | 20060922 | 152.90088 | 67.74538 | 188.40029 | 9.22602 | 0.0352656 | 2.7440905 | 96 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87460 | 2001 $SU_{60}$ |
| 2001 $SB_{61}$ | 15.3 | 0.15 | 20060922 | 7.06690 | 301.74971 | 27.43205 | 4.21563 | 0.1989881 | 3.0614172 | 100 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04164 | 2001 $SB_{61}$ |
| 2001 $SN_{61}$ | 15.2 | 0.15 | 20060922 | 327.47969 | 208.69597 | 174.38075 | 1.14235 | 0.1755845 | 3.0864979 | 115 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04164 | 2001 $SN_{61}$ |
| 2001 $SB_{62}$ | 15.0 | 0.15 | 20060922 | 299.04796 | 22.22438 | 25.69549 | 7.77206 | 0.1613042 | 3.1616316 | 84 | 3 | 2001–2004 | 0.56 | M-v | 3 | MPC | 40581 | 2001 $SB_{62}$ |
| 2001 $SF_{63}$ | 14.4 | 0.15 | 20060922 | 65.30146 | 249.27390 | 35.69493 | 10.69847 | 0.0707618 | 3.0576217 | 130 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04164 | 2001 $SF_{63}$ |
| 2001 $SE_{65}$ | 17.5 | 0.15 | 20060922 | 91.94038 | 158.05222 | 192.57844 | 12.31966 | 0.3152987 | 2.5673701 | 69 | 2 | 2001–2005 | 0.51 | M-v | 2 | MPC | 88903 | 2001 $SE_{65}$ |
| 2001 $SH_{65}$ | 15.0 | 0.15 | 20060922 | 305.23715 | 293.16964 | 197.65612 | 11.58289 | 0.1292121 | 2.7579493 | 107 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 02042 | 2001 $SH_{65}$ |
| 2001 $SY_{66}$ | 15.9 | 0.15 | 20060922 | 49.45558 | 249.83227 | 168.26901 | 6.20913 | 0.1893423 | 2.5914384 | 146 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 97465 | 2001 $SY_{66}$ |
| 2001 $SO_{69}$ | 15.6 | 0.15 | 20060922 | 85.21945 | 240.46985 | 159.73245 | 6.09943 | 0.1400833 | 2.5207176 | 88 | 4 | 2001–2006 | 0.50 | M-v | 3 | MPC | 97465 | 2001 $SO_{69}$ |
| 2001 $SP_{70}$ | 15.5 | 0.15 | 20060922 | 57.04450 | 198.07152 | 174.86110 | 9.62039 | 0.2152686 | 2.7241567 | 100 | 4 | 1994–2005 | 0.48 | M-v | 1 | MPC | 04164 | 2001 $SP_{70}$ |
| 2001 $ST_{71}$ | 15.6 | 0.15 | 20060922 | 358.23349 | 152.47981 | 195.15543 | 10.06001 | 0.1677250 | 3.0950499 | 74 | 5 | 1994–2006 | 0.55 | M-v | 0 | MPC | 04164 | 2001 $ST_{71}$ |
| 2001 $SA_{74}$ | 14.7 | 0.15 | 20060922 | 329.17000 | 86.12418 | 293.57664 | 6.95577 | 0.1576018 | 3.0788938 | 108 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04164 | 2001 $SA_{74}$ |
| 2001 $SE_{74}$ | 16.1 | 0.15 | 20060922 | 74.03224 | 100.31204 | 262.59918 | 6.11243 | 0.2038670 | 2.6075179 | 131 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 04164 | 2001 $SE_{74}$ |
| 2001 $SW_{74}$ | 16.2 | 0.15 | 20060922 | 48.43343 | 122.35021 | 269.83839 | 3.40122 | 0.2024174 | 2.6388021 | 84 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 90082 | 2001 $SW_{74}$ |
| 2001 $SY_{74}$ | 15.5 | 0.15 | 20060922 | 337.85674 | 84.76879 | 359.95169 | 12.26712 | 0.1303890 | 2.7640223 | 109 | 4 | 2001–2006 | 0.57 | M-v | 0 | MPC | 90082 | 2001 $SY_{74}$ |
| 2001 $SL_{75}$ | 15.4 | 0.15 | 20060922 | 163.41740 | 345.00850 | 335.33139 | 6.31869 | 0.1568556 | 2.4035078 | 100 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 97465 | 2001 $SL_{75}$ |
| 2001 $SM_{75}$ | 14.7 | 0.15 | 20060922 | 297.53077 | 112.89070 | 306.10694 | 4.48076 | 0.1970428 | 3.1217836 | 220 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04165 | 2001 $SM_{75}$ |
| 2001 $SO_{75}$ | 15.8 | 0.15 | 20060922 | 3.27509 | 7.56212 | 337.59700 | 8.35810 | 0.2112561 | 2.9985384 | 115 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 03218 | 2001 $SO_{75}$ |
| 2001 $ST_{76}$ | 17.9 | 0.15 | 20060922 | 156.83511 | 353.94549 | 330.09414 | 1.95809 | 0.1618081 | 2.3781231 | 33 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 88906 | 2001 $ST_{76}$ |
| 2001 $SU_{76}$ | 16.0 | 0.15 | 20060922 | 285.97069 | 115.94798 | 281.91214 | 1.13930 | 0.0721121 | 3.1730926 | 38 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 61020 | 2001 $SU_{76}$ |
| 2001 $SZ_{76}$ | 16.2 | 0.15 | 20060922 | 343.20777 | 77.40649 | 316.97229 | 5.08944 | 0.0717509 | 2.8654526 | 56 | 3 | 2001–2006 | 0.39 | M-v | 1 | MPC | 50554 | 2001 $SZ_{76}$ |
| 2001 $SL_{77}$ | 15.5 | 0.15 | 20060922 | 303.01031 | 159.45110 | 251.91995 | 4.02359 | 0.1505252 | 3.0948166 | 56 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 75112 | 2001 $SL_{77}$ |
| 2001 $SP_{77}$ | 15.2 | 0.15 | 20060922 | 227.28713 | 6.82267 | 156.83265 | 11.00567 | 0.0451360 | 2.6929175 | 104 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87461 | 2001 $SP_{77}$ |
| 2001 $SU_{77}$ | 15.2 | 0.15 | 20060922 | 265.15765 | 76.62195 | 0.13280 | 9.00092 | 0.1025506 | 3.0709751 | 37 | 3 | 2001–2004 | 0.62 | M-v | 3 | MPC | 94066 | 2001 $SU_{77}$ |
| 2001 $SW_{77}$ | 18.1 | 0.15 | 20060922 | 248.09094 | 131.26756 | 170.26967 | 3.96241 | 0.1929348 | 2.1543643 | 48 | 3 | 1995–2004 | 0.58 | M-v | 2 | MPC | 66208 | 2001 $SW_{77}$ |
| 2001 $SF_{78}$ | 15.2 | 0.15 | 20060922 | 183.01965 | 147.18402 | 0.69633 | 13.39376 | 0.1278496 | 3.1327343 | 132 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 04165 | 2001 $SF_{78}$ |
| 2001 $SE_{79}$ | 16.0 | 0.15 | 20060922 | 13.95770 | 215.32708 | 167.28443 | 9.75728 | 0.2663141 | 2.7083097 | 40 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 88906 | 2001 $SE_{79}$ |
| 2001 $SG_{79}$ | 15.3 | 0.15 | 20060922 | 31.70482 | 211.89069 | 158.55096 | 29.79048 | 0.0958655 | 2.6230471 | 36 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 61021 | 2001 $SG_{79}$ |
| 2001 $SP_{80}$ | 17.2 | 0.15 | 20060922 | 163.34442 | 141.38660 | 192.70119 | 2.64277 | 0.0964080 | 2.2950914 | 55 | 5 | 1995–2005 | 0.51 | M-v | 1 | MPC | 97466 | 2001 $SP_{80}$ |
| 2001 $SC_{81}$ | 16.6 | 0.15 | 20060922 | 23.17781 | 184.02326 | 221.49846 | 3.62351 | 0.1004959 | 2.5668525 | 33 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 90082 | 2001 $SC_{81}$ |
| 2001 $SD_{81}$ | 16.2 | 0.15 | 20060922 | 353.62520 | 120.20494 | 293.79642 | 3.88645 | 0.1085053 | 2.6576695 | 92 | 5 | 2001–2006 | 0.55 | M-v | 0 | MPC | 87461 | 2001 $SD_{81}$ |
| 2001 $SE_{81}$ | 15.9 | 0.15 | 20060922 | 8.85642 | 226.12096 | 199.95837 | 3.89018 | 0.2341773 | 2.6071655 | 55 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 90082 | 2001 $SE_{81}$ |
| 2001 $ST_{81}$ | 17.9 | 0.15 | 20060922 | 243.31443 | 342.17900 | 304.58537 | 3.66637 | 0.1688493 | 2.1772811 | 25 | 3 | 1995–2003 | 0.56 | M-v | 4 | MPC | 94066 | 2001 $ST_{81}$ |
| 2001 $SF_{82}$ | 16.1 | 0.15 | 20060922 | 47.54139 | 25.98679 | 293.35678 | 2.84904 | 0.0928633 | 2.7849954 | 47 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 62360 | 2001 $SF_{82}$ |
| 2001 $SP_{82}$ | 15.3 | 0.15 | 20060922 | 12.99562 | 142.23434 | 181.03128 | 11.97978 | 0.0613669 | 2.9535756 | 53 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 04165 | 2001 $SP_{82}$ |
| 2001 $SQ_{82}$ | 15.4 | 0.15 | 20060922 | 134.20054 | 302.98000 | 306.33537 | 4.55379 | 0.0103033 | 2.7266724 | 72 | 5 | 1999–2006 | 0.53 | M-v | 0 | MPC | 61023 | 2001 $SQ_{82}$ |
| 2001 $SU_{82}$ | 16.7 | 0.15 | 20060922 | 60.72152 | 111.34888 | 265.07930 | 1.70605 | 0.0391840 | 2.5214551 | 42 | 5 | 1998–2005 | 0.42 | M-v | 0 | MPC | 88906 | 2001 $SU_{82}$ |
| 2001 $SC_{83}$ | 15.4 | 0.15 | 20060922 | 349.44689 | 175.00847 | 184.07893 | 10.97924 | 0.1363090 | 2.9233429 | 97 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 04165 | 2001 $SC_{83}$ |
| 2001 $SK_{83}$ | 17.0 | 0.15 | 20060922 | 88.29796 | 188.48692 | 199.32000 | 5.48660 | 0.1226714 | 2.4160095 | 54 | 2 | 2001–2005 | 0.50 | M-v | 3 | MPC | 88906 | 2001 $SK_{83}$ |
| 2001 $SX_{83}$ | 16.1 | 0.15 | 20060922 | 6.41318 | 4.01913 | 321.20820 | 3.82526 | 0.0812765 | 2.9910521 | 55 | 4 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04165 | 2001 $SX_{83}$ |
| 2001 $SH_{84}$ | 15.5 | 0.15 | 20060922 | 54.37591 | 316.06315 | 334.65248 | 14.46249 | 0.1349202 | 2.8759733 | 41 | 2 | 2001–2006 | 0.56 | M-v | 3 | MPC | 03218 | 2001 $SH_{84}$ |
| 2001 $SJ_{84}$ | 17.2 | 0.15 | 20060922 | 151.47998 | 66.45309 | 272.67369 | 2.90662 | 0.1512376 | 2.3378474 | 48 | 3 | 2001–2005 | 0.30 | M-v | 2 | MPC | 94066 | 2001 $SJ_{84}$ |
| 2001 $SW_{84}$ | 17.1 | 0.15 | 20060922 | 220.56634 | 75.08835 | 206.47186 | 3.28437 | 0.1478566 | 2.2686329 | 36 | 3 | 1997–2005 | 0.39 | M-v | 3 | MPC | 97466 | 2001 $SW_{84}$ |
| 2001 $SF_{85}$ | 15.7 | 0.15 | 20060922 | 113.70302 | 293.77195 | 327.19778 | 5.62412 | 0.0208928 | 2.7860726 | 65 | 5 | 1999–2006 | 0.61 | M-v | 0 | MPC | 97466 | 2001 $SF_{85}$ |
| 2001 $SK_{85}$ | 16.5 | 0.15 | 20060922 | 26.56342 | 170.62450 | 196.02280 | 5.94138 | 0.0445951 | 2.7179123 | 36 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 88907 | 2001 $SK_{85}$ |
| 2001 $SO_{86}$ | 16.7 | 0.15 | 20060922 | 50.23478 | 130.48026 | 180.36816 | 3.04791 | 0.2574623 | 2.7675375 | 57 | 3 | 2001–2006 | 0.39 | M-v | 1 | MPC | 75112 | 2001 $SO_{86}$ |
| 2001 $SO_{87}$ | 15.9 | 0.15 | 20060922 | 37.88740 | 128.41094 | 209.23974 | 3.75471 | 0.0209573 | 2.7826778 | 82 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 61024 | 2001 $SO_{87}$ |
| 2001 $SP_{87}$ | 16.4 | 0.15 | 20060922 | 29.34772 | 111.94206 | 287.01323 | 2.43025 | 0.0767917 | 2.5873562 | 34 | 4 | 2001–2005 | 0.54 | M-v | 1 | MPC | 00051 | 2001 $SP_{87}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SY_{88}$ | 15.3 | 0.15 | 20060922 | 282.62167 | 153.12655 | 236.29426 | 2.57558 | 0.0772941 | 3.1868277 | 46 | 5 | 1996–2005 | 0.53 | M-v | 1 | MPC | 77565 | 2001 $SY_{88}$ |
| 2001 $SF_{89}$ | 16.0 | 0.15 | 20060922 | 87.82098 | 16.21573 | 272.93614 | 3.68336 | 0.0323082 | 2.7810767 | 44 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 61025 | 2001 $SF_{89}$ |
| 2001 $ST_{89}$ | 17.4 | 0.15 | 20060922 | 167.82093 | 28.05642 | 282.14223 | 1.98435 | 0.1878803 | 2.3563109 | 37 | 4 | 1994–2005 | 0.41 | M-v | 1 | MPC | 97466 | 2001 $ST_{89}$ |
| 2001 $SX_{89}$ | 15.8 | 0.15 | 20060922 | 37.21654 | 284.19187 | 346.97783 | 16.62291 | 0.1772109 | 3.0696903 | 46 | 4 | 1994–2006 | 0.50 | M-v | 0 | MPC | 03218 | 2001 $SX_{89}$ |
| 2001 $SG_{90}$ | 15.7 | 0.15 | 20060922 | 147.89154 | 69.18815 | 181.18375 | 11.08488 | 0.0307348 | 2.6892132 | 41 | 3 | 2001–2006 | 0.66 | M-v | 3 | MPC | 61025 | 2001 $SG_{90}$ |
| 2001 $SN_{90}$ | 15.2 | 0.15 | 20060922 | 289.32185 | 173.30269 | 266.23346 | 1.14676 | 0.0202470 | 2.8563195 | 62 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 61026 | 2001 $SN_{90}$ |
| 2001 $SR_{90}$ | 15.3 | 0.15 | 20060922 | 276.48866 | 151.97401 | 349.88133 | 12.12130 | 0.0960565 | 2.6471726 | 38 | 4 | 1999–2005 | 0.53 | M-v | 2 | MPC | 97466 | 2001 $SR_{90}$ |
| 2001 $ST_{90}$ | 16.6 | 0.15 | 20060922 | 76.55932 | 122.54240 | 332.01232 | 4.49119 | 0.1816903 | 2.3003808 | 67 | 5 | 1994–2006 | 0.64 | M-v | 1 | MPC | 04165 | 2001 $ST_{90}$ |
| 2001 $SR_{91}$ | 15.2 | 0.15 | 20060922 | 86.64169 | 254.04961 | 340.31152 | 10.55256 | 0.0833362 | 3.0718275 | 61 | 5 | 2001–2006 | 0.56 | M-v | 0 | MPC | 75114 | 2001 $SR_{91}$ |
| 2001 $SB_{92}$ | 16.5 | 0.15 | 20060922 | 24.30287 | 114.62682 | 340.20595 | 6.37552 | 0.0846034 | 2.4321118 | 95 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 04165 | 2001 $SB_{92}$ |
| 2001 $SJ_{93}$ | 16.3 | 0.15 | 20060922 | 357.23228 | 182.29638 | 186.46738 | 6.04485 | 0.1038873 | 2.8803221 | 79 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 04165 | 2001 $SJ_{93}$ |
| 2001 $ST_{93}$ | 16.3 | 0.15 | 20060922 | 303.64278 | 210.35689 | 319.95688 | 1.78042 | 0.1416409 | 2.4276261 | 64 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 90082 | 2001 $ST_{93}$ |
| 2001 $SA_{94}$ | 15.9 | 0.15 | 20060922 | 22.87701 | 101.60001 | 233.47813 | 2.30265 | 0.0546129 | 2.9001976 | 62 | 4 | 1991–2006 | 0.47 | M-v | 2 | MPC | 04165 | 2001 $SA_{94}$ |
| 2001 $SF_{94}$ | 16.3 | 0.15 | 20060922 | 16.10782 | 338.32118 | 327.88854 | 2.91038 | 0.2133873 | 3.0189211 | 53 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 04165 | 2001 $SF_{94}$ |
| 2001 $SM_{94}$ | 15.0 | 0.15 | 20060922 | 39.03678 | 330.90514 | 325.25173 | 9.06899 | 0.0251937 | 3.0527851 | 59 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04165 | 2001 $SM_{94}$ |
| 2001 $SV_{94}$ | 15.7 | 0.15 | 20060922 | 135.07494 | 208.58769 | 340.16774 | 8.55875 | 0.0595437 | 3.1108793 | 58 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 04165 | 2001 $SV_{94}$ |
| 2001 $SR_{95}$ | 16.0 | 0.15 | 20060922 | 342.92089 | 257.13692 | 190.03374 | 31.17705 | 0.1356249 | 2.6642114 | 35 | 4 | 1999–2005 | 0.42 | M-v | 2 | MPC | 88908 | 2001 $SR_{95}$ |
| 2001 $ST_{95}$ | 16.1 | 0.15 | 20060922 | 305.17784 | 145.97182 | 264.29819 | 0.90123 | 0.1750250 | 3.0108966 | 44 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 04165 | 2001 $ST_{95}$ |
| 2001 $SA_{96}$ | 15.8 | 0.15 | 20060922 | 256.43080 | 265.00603 | 183.54718 | 8.47095 | 0.0663389 | 3.0316270 | 43 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 04165 | 2001 $SA_{96}$ |
| 2001 $SS_{96}$ | 16.5 | 0.15 | 20060922 | 56.30110 | 161.32503 | 185.39598 | 5.58093 | 0.0252199 | 2.7017097 | 51 | 5 | 1995–2006 | 0.37 | M-v | 0 | MPC | 87462 | 2001 $SS_{96}$ |
| 2001 $SB_{97}$ | 15.6 | 0.15 | 20060922 | 281.04934 | 276.32448 | 205.66062 | 7.77641 | 0.0769839 | 2.7408957 | 70 | 5 | 1997–2006 | 0.40 | M-v | 0 | MPC | 65005 | 2001 $SB_{97}$ |
| 2001 $SC_{97}$ | 16.6 | 0.15 | 20060922 | 327.14879 | 226.41994 | 253.55704 | 3.43107 | 0.2052711 | 2.6124916 | 96 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 50555 | 2001 $SC_{97}$ |
| 2001 $SM_{97}$ | 17.6 | 0.15 | 20060922 | 135.41859 | 104.57099 | 332.04548 | 3.84049 | 0.0722719 | 2.1651486 | 66 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 02042 | 2001 $SM_{97}$ |
| 2001 $SA_{98}$ | 15.8 | 0.15 | 20060922 | 47.21897 | 103.99864 | 247.65315 | 4.08102 | 0.0664367 | 2.7387503 | 67 | 6 | 1994–2006 | 0.48 | M-v | 0 | MPC | 87462 | 2001 $SA_{98}$ |
| 2001 $SF_{98}$ | 14.8 | 0.15 | 20060922 | 171.05059 | 295.60268 | 226.80900 | 4.61332 | 0.1239395 | 3.1030998 | 52 | 5 | 1996–2004 | 0.63 | M-v | 1 | MPC | 61028 | 2001 $SF_{98}$ |
| 2001 $SM_{98}$ | 15.4 | 0.15 | 20060922 | 80.96939 | 324.26337 | 325.79844 | 7.16874 | 0.2007691 | 2.7839061 | 69 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 65006 | 2001 $SM_{98}$ |
| 2001 $SP_{98}$ | 16.2 | 0.15 | 20060922 | 46.20606 | 105.15319 | 187.63770 | 10.89143 | 0.0566020 | 3.0009585 | 42 | 4 | 1999–2006 | 0.53 | M-v | 0 | MPC | 04165 | 2001 $SP_{98}$ |
| 2001 $SQ_{98}$ | 15.2 | 0.15 | 20060922 | 85.94129 | 238.45406 | 338.48648 | 4.09144 | 0.1447667 | 3.1965298 | 52 | 4 | 2001–2006 | 0.45 | M-v | 0 | MPC | 04165 | 2001 $SQ_{98}$ |
| 2001 $SA_{99}$ | 16.4 | 0.15 | 20060922 | 50.75164 | 88.29680 | 196.71006 | 2.75939 | 0.2581557 | 2.9035303 | 78 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 77566 | 2001 $SA_{99}$ |
| 2001 $SH_{99}$ | 16.7 | 0.15 | 20060922 | 84.75725 | 351.59457 | 332.28938 | 2.04069 | 0.0821625 | 2.6625554 | 38 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 84904 | 2001 $SH_{99}$ |
| 2001 $SN_{99}$ | 17.0 | 0.15 | 20060922 | 199.42984 | 89.88006 | 189.73435 | 6.17062 | 0.1198396 | 2.3725529 | 50 | 5 | 1993–2005 | 0.59 | M-v | 0 | MPC | 88909 | 2001 $SN_{99}$ |
| 2001 $ST_{99}$ | 16.0 | 0.15 | 20060922 | 211.73500 | 5.49209 | 187.33452 | 11.39678 | 0.0877596 | 2.6952445 | 48 | 5 | 1995–2006 | 0.65 | M-v | 1 | MPC | 87462 | 2001 $ST_{99}$ |
| 2001 $SF_{100}$ | 14.9 | 0.15 | 20060922 | 243.56133 | 107.32538 | 346.15259 | 9.51775 | 0.0472129 | 3.0906317 | 67 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 61029 | 2001 $SF_{100}$ |
| 2001 $SO_{100}$ | 15.5 | 0.15 | 20060922 | 176.50669 | 189.20166 | 345.30035 | 11.42594 | 0.0120644 | 2.9754651 | 46 | 4 | 1996–2006 | 0.51 | M-v | 2 | MPC | 61029 | 2001 $SO_{100}$ |
| 2001 $SA_{102}$ | 15.8 | 0.15 | 20060922 | 31.04556 | 100.91667 | 190.04330 | 8.66728 | 0.1349781 | 3.0670474 | 57 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04165 | 2001 $SA_{102}$ |
| 2001 $SF_{102}$ | 15.5 | 0.15 | 20060922 | 301.56713 | 250.32561 | 219.68760 | 3.42442 | 0.2215926 | 2.7984678 | 102 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 43423 | 2001 $SF_{102}$ |
| 2001 $SP_{102}$ | 15.7 | 0.15 | 20060922 | 4.02826 | 152.40539 | 264.88068 | 2.33330 | 0.2234255 | 2.7235165 | 85 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87462 | 2001 $SP_{102}$ |
| 2001 $SA_{103}$ | 17.2 | 0.15 | 20060922 | 244.01491 | 30.94366 | 222.44923 | 2.67690 | 0.1236525 | 2.3212814 | 41 | 4 | 1993–2005 | 0.45 | M-v | 1 | MPC | 97466 | 2001 $SA_{103}$ |
| 2001 $SC_{103}$ | 16.1 | 0.15 | 20060922 | 34.75603 | 326.12159 | 332.63548 | 3.79121 | 0.1270773 | 3.0166197 | 40 | 4 | 1996–2006 | 0.63 | M-v | 2 | MPC | 04165 | 2001 $SC_{103}$ |
| 2001 $SO_{104}$ | 14.8 | 0.15 | 20060922 | 226.56846 | 136.03584 | 355.26431 | 13.65799 | 0.1395809 | 3.0343407 | 44 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 84905 | 2001 $SO_{104}$ |
| 2001 $SP_{104}$ | 16.4 | 0.15 | 20060922 | 91.99165 | 112.71743 | 210.76631 | 12.55184 | 0.1963102 | 2.6245193 | 79 | 3 | 1996–2005 | 0.48 | M-v | 1 | MPC | 90083 | 2001 $SP_{104}$ |
| 2001 $SQ_{104}$ | 17.0 | 0.15 | 20060922 | 43.17932 | 148.73194 | 195.84070 | 3.58885 | 0.1073325 | 2.7669323 | 42 | 4 | 1992–2006 | 0.42 | M-v | 0 | MPC | 03219 | 2001 $SQ_{104}$ |
| 2001 $SQ_{107}$ | 15.1 | 0.15 | 20060922 | 92.98127 | 66.84268 | 297.70945 | 5.78157 | 0.2250969 | 2.5883060 | 212 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 97467 | 2001 $SQ_{107}$ |
| 2001 $SS_{107}$ | 15.3 | 0.15 | 20060922 | 299.03504 | 252.79672 | 228.34381 | 20.70933 | 0.5107039 | 3.1035708 | 152 | 4 | 1953–2006 | 0.50 | M-v | 1 | MPC | 66209 | 2001 $SS_{107}$ |
| 2001 $SX_{109}$ | 16.8 | 0.15 | 20060922 | 33.10261 | 86.04617 | 218.83358 | 21.11017 | 0.1205117 | 1.9010153 | 119 | 3 | 2001–2006 | 0.67 | M-v | 1 | MPC | 46640 | 2001 $SX_{109}$ |
| 2001 $SQ_{110}$ | 15.1 | 0.15 | 20060922 | 32.07118 | 172.10193 | 246.85256 | 11.28331 | 0.1766208 | 2.6974013 | 152 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97467 | 2001 $SQ_{110}$ |
| 2001 $SV_{110}$ | 14.3 | 0.15 | 20060922 | 353.93135 | 105.80960 | 261.73737 | 10.75966 | 0.2478489 | 3.0807070 | 196 | 2 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03219 | 2001 $SV_{110}$ |
| 2001 $SB_{111}$ | 14.7 | 0.15 | 20060922 | 60.12863 | 158.36265 | 255.03229 | 13.42470 | 0.0879292 | 2.6114428 | 212 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97467 | 2001 $SB_{111}$ |
| 2001 $SP_{111}$ | 13.9 | 0.15 | 20060922 | 282.71936 | 213.61068 | 223.87721 | 25.68902 | 0.1576623 | 3.1977849 | 123 | 4 | 2001–2006 | 0.67 | M-v | 2 | MPC | 87462 | 2001 $SP_{111}$ |
| 2001 $SC_{112}$ | 15.9 | 0.15 | 20060922 | 40.62835 | 155.10735 | 217.00947 | 4.46884 | 0.1684271 | 2.7956810 | 101 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87462 | 2001 $SC_{112}$ |
| 2001 $SS_{112}$ | 15.8 | 0.15 | 20060922 | 61.48169 | 39.58860 | 13.07778 | 3.39102 | 0.0944808 | 2.5713087 | 180 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 97467 | 2001 $SS_{112}$ |
| 2001 $SG_{113}$ | 15.1 | 0.15 | 20060922 | 218.96459 | 288.58781 | 204.66566 | 10.10282 | 0.0682992 | 3.0516345 | 84 | 5 | 1995–2006 | 0.61 | M-v | 1 | MPC | 04166 | 2001 $SG_{113}$ |
| 2001 $SH_{113}$ | 17.4 | 0.15 | 20060922 | 185.63427 | 15.73974 | 329.66279 | 3.20454 | 0.1837077 | 2.2535525 | 69 | 2 | 2001–2006 | 0.58 | M-v | 4 | MPC | 94072 | 2001 $SH_{113}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SN_{113}$ | 16.0 | 0.15 | 20060922 | 0.83606 | 116.02611 | 197.99188 | 13.56204 | 0.2535023 | 3.1090593 | 59 | 3 | 1996–2005 | 0.59 | M-v | 3 | MPC | 75117 | 2001 $SN_{113}$ |
| 2001 $SO_{113}$ | 15.8 | 0.15 | 20060922 | 143.75859 | 283.15486 | 329.18861 | 3.98297 | 0.1058848 | 2.7341519 | 86 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 61032 | 2001 $SO_{113}$ |
| 2001 $SE_{114}$ | 15.1 | 0.15 | 20060922 | 28.70763 | 313.73119 | 359.25967 | 15.54591 | 0.0139305 | 3.0814207 | 128 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 66209 | 2001 $SE_{114}$ |
| 2001 $SY_{114}$ | 15.4 | 0.15 | 20060922 | 349.66929 | 335.19205 | 24.57751 | 9.61749 | 0.1322713 | 3.0534642 | 110 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04166 | 2001 $SY_{114}$ |
| 2001 $SG_{115}$ | 15.9 | 0.15 | 20060922 | 337.34022 | 220.11894 | 143.08265 | 2.07607 | 0.3286740 | 3.0734443 | 100 | 2 | 2001–2006 | 0.52 | M-v | 3 | MPC | 03220 | 2001 $SG_{115}$ |
| 2001 $SL_{115}$ | 16.9 | 0.15 | 20060922 | 250.57569 | 252.52525 | 208.84605 | 20.64163 | 0.0974515 | 1.9266247 | 59 | 5 | 2000–2006 | 0.68 | M-v | 1 | MPC | 87463 | 2001 $SL_{115}$ |
| 2001 $SC_{116}$ | 15.3 | 0.15 | 20060922 | 328.41942 | 26.03961 | 325.40325 | 4.26590 | 0.1491124 | 3.1348402 | 92 | 3 | 2001–2006 | 0.49 | M-v | 4 | MPC | 03220 | 2001 $SC_{116}$ |
| 2001 $ST_{116}$ | 16.5 | 0.15 | 20060922 | 155.70831 | 43.79615 | 272.20229 | 5.38036 | 0.1061226 | 2.3860383 | 73 | 2 | 2001–2005 | 0.56 | M-v | 4 | MPC | 88911 | 2001 $ST_{116}$ |
| 2001 $SD_{117}$ | 15.9 | 0.15 | 20060922 | 346.35080 | 47.82693 | 296.27238 | 7.16352 | 0.0799491 | 3.0321798 | 28 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 75117 | 2001 $SD_{117}$ |
| 2001 $SN_{117}$ | 16.2 | 0.15 | 20060922 | 332.81483 | 105.64542 | 288.23095 | 6.81722 | 0.1082203 | 2.8941311 | 52 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04166 | 2001 $SN_{117}$ |
| 2001 $SU_{117}$ | 17.0 | 0.15 | 20060922 | 76.74134 | 92.86911 | 228.72483 | 5.38902 | 0.0269587 | 2.6978850 | 76 | 4 | 1997–2006 | 0.49 | M-v | 1 | MPC | 84909 | 2001 $SU_{117}$ |
| 2001 $SK_{118}$ | 16.7 | 0.15 | 20060922 | 32.30479 | 164.02611 | 242.41189 | 3.82784 | 0.1313336 | 2.5865351 | 49 | 5 | 1993–2006 | 0.44 | M-v | 1 | MPC | 87463 | 2001 $SK_{118}$ |
| 2001 $SV_{118}$ | 16.2 | 0.15 | 20060922 | 23.48673 | 112.08443 | 234.12179 | 4.98446 | 0.0885501 | 2.8408647 | 42 | 3 | 1992–2006 | 0.48 | M-v | 3 | MPC | 20281 | 2001 $SV_{118}$ |
| 2001 $SX_{118}$ | 16.2 | 0.15 | 20060922 | 154.95245 | 18.46829 | 236.65484 | 4.33849 | 0.2287116 | 2.5556539 | 69 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87463 | 2001 $SX_{118}$ |
| 2001 $SZ_{118}$ | 15.4 | 0.15 | 20060922 | 295.47832 | 203.71287 | 207.33709 | 7.93763 | 0.0184302 | 2.9840222 | 49 | 5 | 2001–2006 | 0.62 | M-v | 0 | MPC | 04166 | 2001 $SZ_{118}$ |
| 2001 $SG_{119}$ | 16.0 | 0.15 | 20060922 | 118.56570 | 60.48653 | 200.62383 | 14.15924 | 0.1321667 | 2.7356175 | 57 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 48095 | 2001 $SG_{119}$ |
| 2001 $SJ_{119}$ | 15.2 | 0.15 | 20060922 | 333.67080 | 32.82728 | 321.74130 | 9.93311 | 0.0839285 | 3.0895310 | 33 | 2 | 2001–2006 | 0.43 | M-v | 4 | MPC | 03220 | 2001 $SJ_{119}$ |
| 2001 $SK_{119}$ | 16.1 | 0.15 | 20060922 | 322.99620 | 272.76496 | 197.24315 | 12.27042 | 0.1569152 | 2.6394822 | 53 | 3 | 2001–2004 | 0.58 | M-v | 2 | MPC | 50555 | 2001 $SK_{119}$ |
| 2001 $SM_{119}$ | 16.9 | 0.15 | 20060922 | 129.50202 | 50.64332 | 233.14561 | 4.69161 | 0.2230390 | 2.5589427 | 41 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 04166 | 2001 $SM_{119}$ |
| 2001 $SS_{119}$ | 16.5 | 0.15 | 20060922 | 62.68280 | 102.35170 | 197.00405 | 12.50526 | 0.2033188 | 2.8029171 | 29 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 88912 | 2001 $SS_{119}$ |
| 2001 $SF_{120}$ | 16.2 | 0.15 | 20060922 | 58.25532 | 58.81165 | 336.49588 | 9.26001 | 0.1463486 | 2.5321821 | 93 | 6 | 1997–2006 | 0.47 | M-v | 2 | MPC | 90083 | 2001 $SF_{120}$ |
| 2001 $SH_{120}$ | 15.9 | 0.15 | 20060922 | 64.57239 | 50.48288 | 231.47906 | 4.06415 | 0.0776646 | 2.9314445 | 77 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 04166 | 2001 $SH_{120}$ |
| 2001 $SP_{120}$ | 17.5 | 0.15 | 20060922 | 106.36755 | 47.38713 | 261.94138 | 1.98653 | 0.2066500 | 2.5798723 | 56 | 3 | 2001–2005 | 0.59 | M-v | 2 | MPC | 84910 | 2001 $SP_{120}$ |
| 2001 $SG_{121}$ | 15.6 | 0.15 | 20060922 | 289.65761 | 230.31457 | 313.45595 | 6.74389 | 0.1449331 | 2.4257196 | 50 | 5 | 1992–2006 | 0.60 | M-v | 2 | MPC | 90083 | 2001 $SG_{121}$ |
| 2001 $SN_{121}$ | 15.0 | 0.15 | 20060922 | 61.38985 | 43.09470 | 284.74000 | 4.01239 | 0.1449561 | 2.7314910 | 116 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 61036 | 2001 $SN_{121}$ |
| 2001 $SP_{122}$ | 15.9 | 0.15 | 20060922 | 29.67615 | 130.47512 | 191.85213 | 16.31991 | 0.1080917 | 2.9226661 | 88 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04166 | 2001 $SP_{122}$ |
| 2001 $SP_{123}$ | 15.8 | 0.15 | 20060922 | 13.50316 | 179.17511 | 221.56115 | 3.02102 | 0.0616720 | 2.6425139 | 58 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 49930 | 2001 $SP_{123}$ |
| 2001 $SQ_{123}$ | 16.8 | 0.15 | 20060922 | 67.30667 | 179.51793 | 192.72639 | 4.62465 | 0.2379089 | 2.5586515 | 40 | 2 | 2001–2005 | 0.52 | M-v | 4 | MPC | 88913 | 2001 $SQ_{123}$ |
| 2001 $SW_{123}$ | 16.9 | 0.15 | 20060922 | 182.05288 | 326.90284 | 316.43145 | 6.50793 | 0.0800580 | 2.4064829 | 59 | 4 | 2001–2006 | 0.62 | M-v | 2 | MPC | 90083 | 2001 $SW_{123}$ |
| 2001 $SC_{124}$ | 15.9 | 0.15 | 20060922 | 78.76715 | 52.95640 | 245.20062 | 4.58657 | 0.0609022 | 2.7697858 | 64 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 03221 | 2001 $SC_{124}$ |
| 2001 $SH_{124}$ | 16.1 | 0.15 | 20060922 | 89.65595 | 80.44051 | 209.87701 | 3.06990 | 0.1901172 | 2.6982354 | 59 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 23740 | 2001 $SH_{124}$ |
| 2001 $SJ_{124}$ | 15.9 | 0.15 | 20060922 | 245.88788 | 328.00509 | 209.49558 | 3.41100 | 0.0327502 | 2.5876472 | 46 | 6 | 1993–2006 | 0.58 | M-v | 1 | MPC | 87463 | 2001 $SJ_{124}$ |
| 2001 $SX_{124}$ | 16.7 | 0.15 | 20060922 | 145.88334 | 19.29356 | 301.63487 | 5.28073 | 0.0981811 | 2.4212193 | 86 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 97467 | 2001 $SX_{124}$ |
| 2001 $SA_{125}$ | 16.6 | 0.15 | 20060922 | 97.54131 | 184.69982 | 183.75108 | 4.64027 | 0.2087896 | 2.4571815 | 119 | 3 | 1996–2005 | 0.59 | M-v | 3 | MPC | 97467 | 2001 $SA_{125}$ |
| 2001 $SB_{125}$ | 13.8 | 0.15 | 20060922 | 275.51188 | 103.44083 | 189.03686 | 5.88585 | 0.1080580 | 3.9884638 | 42 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04166 | 2001 $SB_{125}$ |
| 2001 $SH_{125}$ | 15.6 | 0.15 | 20060922 | 317.17826 | 57.77789 | 334.61006 | 8.80493 | 0.0657815 | 2.9682916 | 81 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04166 | 2001 $SH_{125}$ |
| 2001 $SM_{125}$ | 15.6 | 0.15 | 20060922 | 120.35829 | 299.75560 | 338.13029 | 10.76856 | 0.0542511 | 2.6802169 | 56 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 84912 | 2001 $SM_{125}$ |
| 2001 $SR_{125}$ | 16.4 | 0.15 | 20060922 | 28.94659 | 54.95223 | 320.11868 | 5.29162 | 0.0274528 | 2.6902382 | 53 | 5 | 1999–2006 | 0.46 | M-v | 0 | MPC | 87463 | 2001 $SR_{125}$ |
| 2001 $SW_{125}$ | 15.9 | 0.15 | 20060922 | 305.06955 | 65.78640 | 323.17753 | 2.98431 | 0.1389381 | 3.0796567 | 61 | 4 | 1998–2006 | 0.61 | M-v | 3 | MPC | 04166 | 2001 $SW_{125}$ |
| 2001 $SD_{126}$ | 15.7 | 0.15 | 20060922 | 86.17881 | 327.01930 | 346.54839 | 13.67864 | 0.0343911 | 2.6914068 | 75 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 87463 | 2001 $SD_{126}$ |
| 2001 $SN_{126}$ | 15.6 | 0.15 | 20060922 | 351.68723 | 28.42935 | 328.17674 | 8.91377 | 0.0925056 | 2.9729276 | 61 | 2 | 2001–2006 | 0.53 | M-v | 4 | MPC | 03221 | 2001 $SN_{126}$ |
| 2001 $SR_{126}$ | 17.0 | 0.15 | 20060922 | 119.02240 | 331.39513 | 341.92649 | 4.00798 | 0.1441855 | 2.5303747 | 50 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 94075 | 2001 $SR_{126}$ |
| 2001 $SE_{128}$ | 15.4 | 0.15 | 20060922 | 254.35311 | 310.95815 | 186.78209 | 6.09707 | 0.0487452 | 2.7828937 | 128 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04166 | 2001 $SE_{128}$ |
| 2001 $SP_{128}$ | 15.5 | 0.15 | 20060922 | 305.91027 | 166.42741 | 275.19116 | 3.03445 | 0.0810742 | 2.7950325 | 85 | 5 | 2001–2006 | 0.55 | M-v | 0 | MPC | 77566 | 2001 $SP_{128}$ |
| 2001 $SV_{128}$ | 15.9 | 0.15 | 20060922 | 3.09893 | 204.29493 | 192.17682 | 14.40580 | 0.2140435 | 2.7860923 | 121 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 61038 | 2001 $SV_{128}$ |
| 2001 $SH_{130}$ | 16.8 | 0.15 | 20060922 | 29.06453 | 112.01399 | 309.69726 | 1.23254 | 0.1046975 | 2.5580252 | 52 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 84914 | 2001 $SH_{130}$ |
| 2001 $SB_{131}$ | 15.9 | 0.15 | 20060922 | 305.76863 | 106.73441 | 353.96786 | 11.65897 | 0.2130975 | 2.8230771 | 60 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 50555 | 2001 $SB_{131}$ |
| 2001 $SG_{131}$ | 15.7 | 0.15 | 20060922 | 341.72969 | 177.69081 | 345.15584 | 4.79070 | 0.0855762 | 2.3516664 | 132 | 4 | 1996–2006 | 0.69 | M-v | 2 | MPC | 97468 | 2001 $SG_{131}$ |
| 2001 $ST_{132}$ | 16.0 | 0.15 | 20060922 | 5.68829 | 133.97161 | 206.16217 | 4.32089 | 0.0883178 | 2.9967073 | 49 | 4 | 1991–2006 | 0.48 | M-v | 2 | MPC | 03221 | 2001 $ST_{132}$ |
| 2001 $SU_{132}$ | 16.7 | 0.15 | 20060922 | 65.74003 | 41.21312 | 352.03060 | 10.76236 | 0.2244422 | 2.5388578 | 88 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 87464 | 2001 $SU_{132}$ |
| 2001 $SV_{132}$ | 16.4 | 0.15 | 20060922 | 353.40152 | 198.59060 | 196.93027 | 6.00428 | 0.0477495 | 2.8060640 | 57 | 5 | 1992–2006 | 0.41 | M-v | 1 | MPC | 03221 | 2001 $SV_{132}$ |
| 2001 $SD_{133}$ | 15.2 | 0.15 | 20060922 | 349.46089 | 89.41379 | 352.82515 | 13.31966 | 0.1594107 | 2.6783899 | 108 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 90084 | 2001 $SD_{133}$ |
| 2001 $SM_{133}$ | 15.5 | 0.15 | 20060922 | 5.95447 | 61.02091 | 328.95323 | 5.51572 | 0.0521707 | 2.7741554 | 35 | 3 | 2001–2006 | 0.54 | M-v | 4 | MPC | 40615 | 2001 $SM_{133}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SA_{134}$ | 16.0 | 0.15 | 20060922 | 29.62011 | 158.42371 | 208.48386 | 5.28347 | 0.0546078 | 2.7605839 | 94 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 66210 | 2001 $SA_{134}$ |
| 2001 $SY_{134}$ | 15.8 | 0.15 | 20060922 | 328.94428 | 183.96465 | 189.91980 | 8.32855 | 0.0574796 | 3.0455092 | 40 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04166 | 2001 $SY_{134}$ |
| 2001 $SB_{135}$ | 15.1 | 0.15 | 20060922 | 92.56568 | 311.33514 | 336.77761 | 2.38966 | 0.0524392 | 2.8063634 | 103 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 61042 | 2001 $SB_{135}$ |
| 2001 $SH_{135}$ | 17.6 | 0.15 | 20060922 | 175.21608 | 340.60327 | 314.49513 | 0.83327 | 0.1822614 | 2.3943625 | 53 | 4 | 2000–2005 | 0.56 | M-v | 0 | MPC | 90084 | 2001 $SH_{135}$ |
| 2001 $SJ_{135}$ | 16.5 | 0.15 | 20060922 | 17.74728 | 234.80057 | 185.46197 | 9.04423 | 0.3138172 | 2.6890795 | 81 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 46649 | 2001 $SJ_{135}$ |
| 2001 $SL_{135}$ | 15.6 | 0.15 | 20060922 | 348.39742 | 59.54948 | 1.16777 | 11.10253 | 0.1017790 | 2.7455172 | 76 | 4 | 1960–2006 | 0.55 | M-v | 1 | MPC | 62361 | 2001 $SL_{135}$ |
| 2001 $SN_{135}$ | 16.0 | 0.15 | 20060922 | 50.71085 | 152.98218 | 185.11270 | 3.77673 | 0.1058083 | 2.7674536 | 55 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 75120 | 2001 $SN_{135}$ |
| 2001 $ST_{135}$ | 16.5 | 0.15 | 20060922 | 1.01582 | 96.73480 | 344.95563 | 1.27579 | 0.3020473 | 2.6963157 | 41 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 46650 | 2001 $ST_{135}$ |
| 2001 $SX_{135}$ | 15.6 | 0.15 | 20060922 | 235.08465 | 341.49952 | 187.79177 | 9.45194 | 0.0176713 | 2.7316282 | 66 | 5 | 1992–2006 | 0.58 | M-v | 1 | MPC | 62361 | 2001 $SX_{135}$ |
| 2001 $SG_{136}$ | 16.0 | 0.15 | 20060922 | 303.56094 | 270.36050 | 195.52958 | 10.15680 | 0.1583600 | 2.7927971 | 72 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 84917 | 2001 $SG_{136}$ |
| 2001 $SH_{137}$ | 14.7 | 0.15 | 20060922 | 341.05201 | 157.60658 | 191.30816 | 13.38297 | 0.1534907 | 3.1016612 | 99 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04166 | 2001 $SH_{137}$ |
| 2001 $SR_{137}$ | 15.7 | 0.15 | 20060922 | 313.57149 | 168.25942 | 225.10290 | 0.65557 | 0.1902905 | 3.0808267 | 91 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 03222 | 2001 $SR_{137}$ |
| 2001 $SW_{137}$ | 16.3 | 0.15 | 20060922 | 228.92741 | 254.28059 | 3.83340 | 4.90299 | 0.0079394 | 2.4041457 | 91 | 5 | 1990–2006 | 0.49 | M-v | 1 | MPC | 97468 | 2001 $SW_{137}$ |
| 2001 $SB_{138}$ | 16.4 | 0.15 | 20060922 | 329.84611 | 33.67704 | 351.72643 | 0.95104 | 0.2171148 | 3.0221684 | 63 | 3 | 1996–2006 | 0.53 | M-v | 4 | MPC | 04167 | 2001 $SB_{138}$ |
| 2001 $SF_{139}$ | 16.0 | 0.15 | 20060922 | 309.63788 | 48.33357 | 357.22068 | 8.36627 | 0.1013571 | 3.0362828 | 39 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 04167 | 2001 $SF_{139}$ |
| 2001 $SO_{139}$ | 15.9 | 0.15 | 20060922 | 267.90859 | 126.94961 | 358.14924 | 5.81474 | 0.0079644 | 2.8016528 | 65 | 5 | 1999–2006 | 0.52 | M-v | 0 | MPC | 25976 | 2001 $SO_{139}$ |
| 2001 $SX_{139}$ | 15.9 | 0.15 | 20060922 | 48.51932 | 16.07112 | 346.52034 | 1.74597 | 0.0772759 | 2.7073803 | 79 | 6 | 1992–2006 | 0.50 | M-v | 0 | MPC | 04167 | 2001 $SX_{139}$ |
| 2001 $SZ_{139}$ | 16.2 | 0.15 | 20060922 | 26.51184 | 353.54269 | 335.48381 | 1.50430 | 0.1396943 | 2.9384037 | 62 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 04167 | 2001 $SZ_{139}$ |
| 2001 $SC_{140}$ | 14.8 | 0.15 | 20060922 | 39.94530 | 256.30076 | 7.76030 | 14.59007 | 0.2564086 | 3.1285061 | 142 | 3 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04167 | 2001 $SC_{140}$ |
| 2001 $SE_{140}$ | 16.1 | 0.15 | 20060922 | 73.37465 | 124.62638 | 188.28394 | 8.79945 | 0.1472836 | 2.7665301 | 58 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 61045 | 2001 $SE_{140}$ |
| 2001 $SU_{140}$ | 17.1 | 0.15 | 20060922 | 62.37194 | 257.75425 | 198.63304 | 5.24479 | 0.0849120 | 2.3481781 | 61 | 4 | 1997–2005 | 0.70 | M-v | 2 | MPC | 48098 | 2001 $SU_{140}$ |
| 2001 $SH_{141}$ | 15.8 | 0.15 | 20060922 | 305.01821 | 205.52102 | 210.16626 | 0.57881 | 0.1864622 | 3.0616050 | 85 | 5 | 1992–2006 | 0.67 | M-v | 0 | MPC | 04167 | 2001 $SH_{141}$ |
| 2001 $SX_{141}$ | 16.7 | 0.15 | 20060922 | 29.47000 | 142.18796 | 218.37939 | 4.27754 | 0.1085837 | 2.7662452 | 68 | 3 | 1992–2006 | 0.45 | M-v | 2 | MPC | 48098 | 2001 $SX_{141}$ |
| 2001 $SY_{141}$ | 15.1 | 0.15 | 20060922 | 337.17464 | 15.21952 | 341.32776 | 10.58880 | 0.0740780 | 3.0642276 | 79 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 03222 | 2001 $SY_{141}$ |
| 2001 $SJ_{142}$ | 16.5 | 0.15 | 20060922 | 331.41411 | 188.86946 | 199.35078 | 8.97262 | 0.1877718 | 2.9702765 | 42 | 2 | 2001–2006 | 0.45 | M-v | 3 | MPC | 03222 | 2001 $SJ_{142}$ |
| 2001 $ST_{142}$ | 16.1 | 0.15 | 20060922 | 81.30499 | 61.72502 | 254.12824 | 3.38911 | 0.1397120 | 2.6928088 | 48 | 4 | 2001–2006 | 0.44 | M-v | 0 | MPC | 88916 | 2001 $ST_{142}$ |
| 2001 $SF_{143}$ | 15.3 | 0.15 | 20060922 | 270.84029 | 199.33781 | 228.43127 | 4.50107 | 0.1864654 | 3.1634059 | 57 | 3 | 1990–2003 | 1.49 | M-v | 2 | MPC | 62361 | 2001 $SF_{143}$ |
| 2001 $SH_{143}$ | 16.3 | 0.15 | 20060922 | 15.42566 | 92.75292 | 189.92207 | 15.26350 | 0.2096127 | 3.1600255 | 48 | 3 | 2000–2005 | 0.46 | M-v | 2 | MPC | 50556 | 2001 $SH_{143}$ |
| 2001 $SM_{143}$ | 15.9 | 0.15 | 20060922 | 343.78107 | 224.31669 | 220.70306 | 3.65427 | 0.2881174 | 2.7434678 | 103 | 4 | 2001–2006 | 0.59 | M-v | 0 | MPC | 87464 | 2001 $SM_{143}$ |
| 2001 $ST_{143}$ | 15.0 | 0.15 | 20060922 | 261.63074 | 97.19292 | 342.44317 | 9.20101 | 0.0344486 | 3.0497805 | 57 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04167 | 2001 $ST_{143}$ |
| 2001 $SW_{143}$ | 15.5 | 0.15 | 20060922 | 114.11577 | 319.81389 | 300.94505 | 2.92201 | 0.0562221 | 2.8120998 | 112 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 61046 | 2001 $SW_{143}$ |
| 2001 $SY_{143}$ | 16.8 | 0.15 | 20060922 | 355.54504 | 199.75356 | 214.87744 | 4.16464 | 0.1076793 | 2.7214918 | 55 | 5 | 2001–2006 | 0.38 | M-v | 0 | MPC | 84921 | 2001 $SY_{143}$ |
| 2001 $SM_{144}$ | 17.5 | 0.15 | 20060922 | 118.16345 | 34.69432 | 346.43828 | 6.12512 | 0.1937560 | 2.3732228 | 48 | 1 | 72 days | 0.54 | M-v | 4 | MPC | 30467 | 2001 $SM_{144}$ |
| 2001 $SY_{144}$ | 16.1 | 0.15 | 20060922 | 32.10421 | 148.49039 | 345.36135 | 5.79822 | 0.0689906 | 2.2911253 | 95 | 4 | 1996–2006 | 0.58 | M-v | 1 | MPC | 97468 | 2001 $SY_{144}$ |
| 2001 $SA_{145}$ | 16.3 | 0.15 | 20060922 | 147.84891 | 352.63165 | 331.67717 | 4.76200 | 0.1184713 | 2.4162788 | 68 | 3 | 2001–2005 | 0.75 | M-v | 3 | MPC | 88917 | 2001 $SA_{145}$ |
| 2001 $SM_{145}$ | 15.8 | 0.15 | 20060922 | 1.37670 | 128.74997 | 322.43311 | 5.71425 | 0.1273531 | 2.5721269 | 92 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87465 | 2001 $SM_{145}$ |
| 2001 $SX_{145}$ | 16.3 | 0.15 | 20060922 | 51.35105 | 43.61232 | 321.78101 | 3.66189 | 0.1227136 | 2.6633735 | 56 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87465 | 2001 $SX_{145}$ |
| 2001 $SG_{146}$ | 15.8 | 0.15 | 20060922 | 323.29082 | 209.89015 | 205.31485 | 8.15888 | 0.0727806 | 2.8841911 | 67 | 3 | 2001–2006 | 0.37 | M-v | 2 | MPC | 66211 | 2001 $SG_{146}$ |
| 2001 $SH_{146}$ | 15.9 | 0.15 | 20060922 | 85.32920 | 101.34953 | 209.04962 | 5.27480 | 0.0352632 | 2.7501257 | 51 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 84922 | 2001 $SH_{146}$ |
| 2001 $SJ_{146}$ | 15.8 | 0.15 | 20060922 | 346.45913 | 61.23171 | 353.07756 | 12.16879 | 0.1378355 | 2.7961265 | 65 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 43035 | 2001 $SJ_{146}$ |
| 2001 $SS_{146}$ | 15.4 | 0.15 | 20060922 | 359.31053 | 305.17361 | 102.72400 | 3.85385 | 0.0772924 | 2.7377788 | 65 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 84923 | 2001 $SS_{146}$ |
| 2001 $SB_{147}$ | 16.6 | 0.15 | 20060922 | 0.89887 | 37.18245 | 5.73420 | 13.80189 | 0.1345430 | 2.7837625 | 35 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 50556 | 2001 $SB_{147}$ |
| 2001 $SH_{147}$ | 16.3 | 0.15 | 20060922 | 45.37229 | 39.65837 | 11.66541 | 21.91941 | 0.0624975 | 2.5582166 | 78 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 84923 | 2001 $SH_{147}$ |
| 2001 $SW_{147}$ | 15.0 | 0.15 | 20060922 | 289.68260 | 94.11120 | 315.68240 | 6.83520 | 0.0978073 | 3.1156176 | 58 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04167 | 2001 $SW_{147}$ |
| 2001 $SB_{148}$ | 16.1 | 0.15 | 20060922 | 140.17750 | 98.74645 | 231.02038 | 5.05113 | 0.1600162 | 2.4281706 | 175 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97469 | 2001 $SB_{148}$ |
| 2001 $SF_{148}$ | 15.5 | 0.15 | 20060922 | 119.87563 | 293.05160 | 346.77650 | 13.79389 | 0.0989475 | 2.6972283 | 45 | 3 | 2001–2005 | 0.69 | M-v | 2 | MPC | 65015 | 2001 $SF_{148}$ |
| 2001 $SN_{148}$ | 15.5 | 0.15 | 20060922 | 73.50593 | 348.68338 | 316.17242 | 4.38469 | 0.1013966 | 2.8046169 | 93 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 61048 | 2001 $SN_{148}$ |
| 2001 $SC_{149}$ | 15.4 | 0.15 | 20060922 | 8.82415 | 116.20428 | 285.48633 | 3.28017 | 0.1027660 | 2.7344308 | 123 | 4 | 2001–2006 | 0.58 | M-v | 0 | MPC | 90085 | 2001 $SC_{149}$ |
| 2001 $SB_{150}$ | 15.3 | 0.15 | 20060922 | 4.06649 | 103.36488 | 224.26497 | 4.93359 | 0.0665292 | 3.1129647 | 71 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 04167 | 2001 $SB_{150}$ |
| 2001 $SH_{150}$ | 15.7 | 0.15 | 20060922 | 4.19889 | 209.99021 | 223.33588 | 7.84277 | 0.1580409 | 2.6745999 | 70 | 6 | 1996–2006 | 0.68 | M-v | 1 | MPC | 87465 | 2001 $SH_{150}$ |
| 2001 $SK_{150}$ | 17.6 | 0.15 | 20060922 | 139.91069 | 220.52088 | 193.95117 | 8.20516 | 0.1368689 | 2.2451125 | 70 | 3 | 1996–2003 | 0.56 | M-v | 2 | MPC | 46653 | 2001 $SK_{150}$ |
| 2001 $SM_{150}$ | 16.4 | 0.15 | 20060922 | 355.51364 | 55.40271 | 352.38798 | 4.62991 | 0.1840751 | 2.8138713 | 76 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 75123 | 2001 $SM_{150}$ |
| 2001 $SN_{150}$ | 15.0 | 0.15 | 20060922 | 77.08812 | 239.12230 | 8.03647 | 27.00227 | 0.2192230 | 3.0768057 | 54 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 84924 | 2001 $SN_{150}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SC_{152}$ | 15.5 | 0.15 | 20060922 | 334.80425 | 94.69409 | 4.36450 | 12.39879 | 0.2160513 | 2.7434627 | 69 | 3 | 2001–2006 | 0.53 | M-v | 1 | MPC | 46654 | 2001 $SC_{152}$ |
| 2001 $SD_{152}$ | 15.8 | 0.15 | 20060922 | 5.00362 | 55.14400 | 2.70517 | 11.82518 | 0.3062607 | 2.7740217 | 94 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 46655 | 2001 $SD_{152}$ |
| 2001 $SV_{152}$ | 15.1 | 0.15 | 20060922 | 333.64999 | 85.98630 | 346.45462 | 4.70174 | 0.0500158 | 2.7871391 | 103 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 66211 | 2001 $SV_{152}$ |
| 2001 $SK_{153}$ | 14.9 | 0.15 | 20060922 | 353.67305 | 346.60631 | 354.97914 | 4.70294 | 0.1555441 | 3.0936148 | 109 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04167 | 2001 $SK_{153}$ |
| 2001 $SC_{154}$ | 14.7 | 0.15 | 20060922 | 352.10476 | 310.92757 | 14.04026 | 10.16113 | 0.1988055 | 3.1623832 | 112 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 04167 | 2001 $SC_{154}$ |
| 2001 $SY_{154}$ | 14.8 | 0.15 | 20060922 | 12.87634 | 20.75988 | 6.95166 | 9.33857 | 0.1576749 | 2.8066213 | 106 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 66211 | 2001 $SY_{154}$ |
| 2001 $SZ_{154}$ | 15.6 | 0.15 | 20060922 | 348.77862 | 62.55018 | 337.30767 | 1.56173 | 0.1376619 | 2.8818657 | 101 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 40626 | 2001 $SZ_{154}$ |
| 2001 $SO_{155}$ | 15.6 | 0.15 | 20060922 | 356.15714 | 106.27807 | 335.09711 | 1.82410 | 0.0677567 | 2.6769930 | 133 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 97469 | 2001 $SO_{155}$ |
| 2001 $SQ_{155}$ | 15.9 | 0.15 | 20060922 | 335.92691 | 11.62564 | 5.93274 | 5.32642 | 0.2926638 | 3.0548687 | 97 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 03223 | 2001 $SQ_{155}$ |
| 2001 $SS_{155}$ | 16.0 | 0.15 | 20060922 | 93.16983 | 78.78919 | 323.39693 | 1.50729 | 0.1761915 | 2.4448932 | 176 | 3 | 1995–2006 | 0.55 | M-v | 2 | MPC | 97469 | 2001 $SS_{155}$ |
| 2001 $SZ_{155}$ | 17.0 | 0.15 | 20060922 | 312.50905 | 32.75619 | 12.64870 | 21.13958 | 0.0506415 | 1.8767279 | 115 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 74100 | 2001 $SZ_{155}$ |
| 2001 $SQ_{156}$ | 15.9 | 0.15 | 20060922 | 28.29061 | 103.22917 | 317.16867 | 6.64240 | 0.1822890 | 2.5980809 | 80 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87465 | 2001 $SQ_{156}$ |
| 2001 $ST_{156}$ | 16.3 | 0.15 | 20060922 | 15.58452 | 154.59308 | 200.15727 | 14.79614 | 0.1544663 | 2.8674729 | 103 | 3 | 2001–2006 | 0.39 | M-v | 1 | MPC | 03223 | 2001 $ST_{156}$ |
| 2001 $SX_{156}$ | 16.5 | 0.15 | 20060922 | 18.19612 | 166.35419 | 248.09792 | 4.09075 | 0.1200393 | 2.6404271 | 45 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 84926 | 2001 $SX_{156}$ |
| 2001 $SH_{157}$ | 15.0 | 0.15 | 20060922 | 331.72799 | 68.78097 | 286.29126 | 5.58958 | 0.1766561 | 3.1718909 | 77 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 04167 | 2001 $SH_{157}$ |
| 2001 $ST_{157}$ | 15.3 | 0.15 | 20060922 | 322.21987 | 161.65008 | 232.51194 | 4.67190 | 0.1394215 | 3.0141642 | 64 | 2 | 2001–2006 | 0.53 | M-v | 4 | MPC | 03223 | 2001 $ST_{157}$ |
| 2001 $SW_{157}$ | 16.9 | 0.15 | 20060922 | 6.56432 | 136.69752 | 194.46672 | 16.48126 | 0.2633799 | 2.9927887 | 32 | 2 | 2001–2006 | 0.28 | M-v | 2 | MPC | 03223 | 2001 $SW_{157}$ |
| 2001 $SE_{158}$ | 15.5 | 0.15 | 20060922 | 293.73867 | 66.06836 | 354.33139 | 17.48304 | 0.1396956 | 3.0784656 | 61 | 4 | 1998–2006 | 0.57 | M-v | 0 | MPC | 03224 | 2001 $SE_{158}$ |
| 2001 $SH_{158}$ | 15.2 | 0.15 | 20060922 | 31.94475 | 29.85378 | 340.54316 | 5.24079 | 0.0890620 | 2.7899235 | 57 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87465 | 2001 $SH_{158}$ |
| 2001 $SO_{158}$ | 15.9 | 0.15 | 20060922 | 340.84699 | 73.16279 | 357.75264 | 12.83348 | 0.1739805 | 2.7879453 | 41 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 84926 | 2001 $SO_{158}$ |
| 2001 $SQ_{158}$ | 15.1 | 0.15 | 20060922 | 277.03385 | 102.77045 | 356.60581 | 11.41265 | 0.3032347 | 3.1326803 | 113 | 4 | 1973–2006 | 0.62 | M-v | 0 | MPC | 48100 | 2001 $SQ_{158}$ |
| 2001 $SR_{158}$ | 15.8 | 0.15 | 20060922 | 178.63553 | 262.76758 | 356.06180 | 8.65792 | 0.0760585 | 2.5701748 | 106 | 3 | 2001–2005 | 0.55 | M-v | 3 | MPC | 90085 | 2001 $SR_{158}$ |
| 2001 $SX_{158}$ | 15.4 | 0.15 | 20060922 | 327.29005 | 241.93176 | 212.55864 | 11.92901 | 0.1031594 | 2.7249407 | 67 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87465 | 2001 $SX_{158}$ |
| 2001 $SD_{160}$ | 15.1 | 0.15 | 20060922 | 358.21413 | 356.79174 | 2.66314 | 10.05606 | 0.1005557 | 2.9851730 | 171 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04167 | 2001 $SD_{160}$ |
| 2001 $SJ_{160}$ | 16.8 | 0.15 | 20060922 | 67.88450 | 201.41287 | 210.22217 | 6.13743 | 0.0230902 | 2.4585088 | 80 | 3 | 1996–2005 | 0.64 | M-v | 3 | MPC | 97469 | 2001 $SJ_{160}$ |
| 2001 $SD_{161}$ | 15.8 | 0.15 | 20060922 | 37.65325 | 355.97284 | 4.88046 | 4.98685 | 0.1552702 | 2.7678089 | 103 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 61052 | 2001 $SD_{161}$ |
| 2001 $SH_{161}$ | 15.9 | 0.15 | 20060922 | 117.70714 | 327.89226 | 0.22863 | 2.65363 | 0.2127217 | 2.5196677 | 162 | 6 | 1993–2006 | 0.47 | M-v | 1 | MPC | 97469 | 2001 $SH_{161}$ |
| 2001 $SD_{162}$ | 14.3 | 0.15 | 20060922 | 260.42238 | 93.64825 | 21.02575 | 25.37407 | 0.2219389 | 3.1384149 | 92 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 48100 | 2001 $SD_{162}$ |
| 2001 $SL_{162}$ | 15.7 | 0.15 | 20060922 | 9.13576 | 119.58377 | 329.17090 | 2.50196 | 0.1336848 | 2.6065441 | 158 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 97469 | 2001 $SL_{162}$ |
| 2001 $SM_{162}$ | 16.8 | 0.15 | 20060922 | 73.44296 | 335.42605 | 357.93610 | 4.73541 | 0.1669187 | 2.7093537 | 53 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 88921 | 2001 $SM_{162}$ |
| 2001 $SD_{163}$ | 16.1 | 0.15 | 20060922 | 46.26234 | 163.81343 | 192.53727 | 4.79349 | 0.1612338 | 2.7558449 | 73 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 77567 | 2001 $SD_{163}$ |
| 2001 $SY_{163}$ | 14.7 | 0.15 | 20060922 | 328.98117 | 178.12177 | 201.92632 | 9.32220 | 0.0851412 | 3.0975077 | 115 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 04167 | 2001 $SY_{163}$ |
| 2001 $SE_{164}$ | 14.7 | 0.15 | 20060922 | 353.30293 | 143.02196 | 204.94725 | 17.01697 | 0.2175134 | 3.0963024 | 166 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04167 | 2001 $SE_{164}$ |
| 2001 $SK_{164}$ | 14.8 | 0.15 | 20060922 | 300.46932 | 226.02826 | 208.98635 | 15.54414 | 0.2675561 | 3.1100305 | 114 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04167 | 2001 $SK_{164}$ |
| 2001 $SL_{164}$ | 14.7 | 0.15 | 20060922 | 1.05464 | 137.65738 | 209.52332 | 17.48116 | 0.1512467 | 3.0942432 | 133 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 04167 | 2001 $SL_{164}$ |
| 2001 $ST_{164}$ | 14.6 | 0.15 | 20060922 | 282.71644 | 45.96940 | 24.73636 | 11.91888 | 0.1826797 | 3.1912770 | 135 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 04167 | 2001 $ST_{164}$ |
| 2001 $SB_{165}$ | 15.1 | 0.15 | 20060922 | 25.14523 | 352.54964 | 6.14016 | 4.60259 | 0.1489594 | 2.8759771 | 148 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04167 | 2001 $SB_{165}$ |
| 2001 $SK_{165}$ | 16.7 | 0.15 | 20060922 | 7.16017 | 53.72405 | 356.12081 | 4.34877 | 0.0792129 | 2.6227256 | 29 | 5 | 1993–2006 | 0.42 | M-v | 0 | MPC | 50556 | 2001 $SK_{165}$ |
| 2001 $SN_{165}$ | 16.2 | 0.15 | 20060922 | 10.94653 | 266.10853 | 130.89574 | 3.20148 | 0.0884676 | 2.6753401 | 60 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 84929 | 2001 $SN_{165}$ |
| 2001 $SO_{165}$ | 15.0 | 0.15 | 20060922 | 339.93830 | 52.64109 | 294.51599 | 3.00402 | 0.0678194 | 3.0600631 | 59 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04167 | 2001 $SO_{165}$ |
| 2001 $SP_{165}$ | 14.7 | 0.15 | 20060922 | 25.46351 | 73.93238 | 197.74768 | 5.49691 | 0.1342089 | 3.1789069 | 74 | 5 | 1995–2005 | 0.72 | M-v | 1 | MPC | 75127 | 2001 $SP_{165}$ |
| 2001 $ST_{165}$ | 15.7 | 0.15 | 20060922 | 296.02933 | 167.83010 | 221.43776 | 0.43807 | 0.1918883 | 3.1529638 | 61 | 4 | 2001–2005 | 0.46 | M-v | 1 | MPC | 62362 | 2001 $ST_{165}$ |
| 2001 $SV_{165}$ | 16.7 | 0.15 | 20060922 | 165.29137 | 289.92872 | 358.55064 | 2.15793 | 0.1816069 | 2.4231737 | 66 | 4 | 2000–2005 | 0.62 | M-v | 1 | MPC | 88922 | 2001 $SV_{165}$ |
| 2001 $SZ_{165}$ | 17.3 | 0.15 | 20060922 | 43.13449 | 155.99409 | 288.81665 | 0.39145 | 0.1611838 | 2.4336988 | 42 | 3 | 1999–2005 | 0.42 | M-v | 3 | MPC | 90085 | 2001 $SZ_{165}$ |
| 2001 $SS_{166}$ | 14.9 | 0.15 | 20060922 | 278.87628 | 84.58491 | 0.72813 | 12.73275 | 0.1697838 | 3.0200392 | 40 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 50556 | 2001 $SS_{166}$ |
| 2001 $SW_{166}$ | 15.4 | 0.15 | 20060922 | 151.21479 | 21.66211 | 178.67523 | 10.03418 | 0.0368916 | 2.9758967 | 90 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04167 | 2001 $SW_{166}$ |
| 2001 $SA_{167}$ | 16.1 | 0.15 | 20060922 | 315.04537 | 233.43340 | 164.11449 | 1.40451 | 0.1838370 | 3.0368440 | 83 | 4 | 1996–2006 | 0.54 | M-v | 1 | MPC | 04167 | 2001 $SA_{167}$ |
| 2001 $SS_{167}$ | 16.5 | 0.15 | 20060922 | 132.89926 | 154.25723 | 251.54908 | 3.36469 | 0.2536541 | 2.2897447 | 120 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 94087 | 2001 $SS_{167}$ |
| 2001 $SX_{168}$ | 15.7 | 0.15 | 20060922 | 353.40153 | 177.20083 | 179.46732 | 5.41115 | 0.1701392 | 3.0680222 | 86 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04168 | 2001 $SX_{168}$ |
| 2001 $SK_{169}$ | 17.1 | 0.15 | 20060922 | 319.62668 | 263.97668 | 177.80885 | 20.18467 | 0.5677770 | 3.0071474 | 77 | 2 | 2001–2006 | 0.53 | M-v | 2 | MPC | 03224 | 2001 $SK_{169}$ |
| 2001 $SJ_{170}$ | 15.7 | 0.15 | 20060922 | 288.16163 | 132.83677 | 292.61497 | 6.14954 | 0.1364209 | 3.0192020 | 48 | 3 | 2001–2006 | 0.42 | M-v | 1 | MPC | 04168 | 2001 $SJ_{170}$ |
| 2001 $SN_{170}$ | 14.9 | 0.15 | 20060922 | 252.08800 | 106.63450 | 338.09418 | 14.86493 | 0.0751288 | 3.0972194 | 54 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04168 | 2001 $SN_{170}$ |
| 2001 $SY_{170}$ | 16.4 | 0.15 | 20060922 | 28.38590 | 136.50190 | 265.96327 | 3.22372 | 0.2285690 | 2.6544822 | 68 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 88923 | 2001 $SY_{170}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SZ_{170}$ | 16.0 | 0.15 | 20060922 | 46.30595 | 79.54632 | 170.07929 | 2.92833 | 0.1785884 | 3.1188115 | 42 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 75128 | 2001 $SZ_{170}$ |
| 2001 $SY_{171}$ | 16.3 | 0.15 | 20060922 | 313.48500 | 240.03923 | 169.70927 | 10.33342 | 0.1532614 | 3.0372317 | 48 | 3 | 2001–2006 | 0.41 | M-v | 1 | MPC | 03224 | 2001 $SY_{171}$ |
| 2001 $SO_{172}$ | 17.2 | 0.15 | 20060922 | 98.18499 | 25.08572 | 356.14995 | 1.19089 | 0.1968905 | 2.4542820 | 91 | 3 | 1995–2005 | 0.50 | M-v | 3 | MPC | 97470 | 2001 $SO_{172}$ |
| 2001 $ST_{172}$ | 15.1 | 0.15 | 20060922 | 286.90813 | 257.69879 | 183.87947 | 11.91578 | 0.0221178 | 2.9469784 | 95 | 4 | 1999–2006 | 0.52 | M-v | 2 | MPC | 04168 | 2001 $ST_{172}$ |
| 2001 $SA_{173}$ | 17.0 | 0.15 | 20060922 | 77.09543 | 342.28230 | 22.70945 | 2.67026 | 0.0653443 | 2.5896527 | 33 | 4 | 1997–2006 | 0.43 | M-v | 2 | MPC | 97470 | 2001 $SA_{173}$ |
| 2001 $SG_{173}$ | 15.5 | 0.15 | 20060922 | 148.47384 | 224.15752 | 31.72543 | 9.77398 | 0.0675633 | 2.7359314 | 70 | 5 | 1992–2006 | 0.60 | M-v | 1 | MPC | 87466 | 2001 $SG_{173}$ |
| 2001 $SD_{174}$ | 15.5 | 0.15 | 20060922 | 284.43851 | 328.55591 | 110.86148 | 3.04789 | 0.1479999 | 3.0843749 | 73 | 5 | 1992–2006 | 0.54 | M-v | 0 | MPC | 04168 | 2001 $SD_{174}$ |
| 2001 $SF_{174}$ | 14.4 | 0.15 | 20060922 | 256.94614 | 240.88409 | 80.31765 | 3.99264 | 0.2119812 | 3.9652713 | 31 | 3 | 1994–2005 | 0.60 | M-v | 3 | MPC | 97470 | 2001 $SF_{174}$ |
| 2001 $SP_{174}$ | 16.2 | 0.15 | 20060922 | 18.18826 | 205.63645 | 129.74102 | 3.46149 | 0.2110135 | 2.9232750 | 72 | 4 | 2000–2006 | 0.52 | M-v | 3 | MPC | 75129 | 2001 $SP_{174}$ |
| 2001 $SQ_{174}$ | 17.9 | 0.15 | 20060922 | 167.61032 | 319.63457 | 24.89734 | 7.29490 | 0.1421596 | 2.3082302 | 36 | 3 | 1994–2001 | 0.52 | M-v | 2 | MPC | 48101 | 2001 $SQ_{174}$ |
| 2001 $SY_{174}$ | 15.9 | 0.15 | 20060922 | 46.75662 | 323.90045 | 43.64388 | 6.05224 | 0.2107783 | 2.6886028 | 47 | 1 | 85 days | 0.66 | M-v | 4 | MPC | 25980 | 2001 $SY_{174}$ |
| 2001 $SO_{175}$ | 15.9 | 0.15 | 20060922 | 65.25781 | 294.16778 | 97.93949 | 4.80024 | 0.0866678 | 2.5388402 | 40 | 2 | 2001–2005 | 0.52 | M-v | 4 | MPC | 90086 | 2001 $SO_{175}$ |
| 2001 $SY_{175}$ | 15.7 | 0.15 | 20060922 | 337.13537 | 206.75549 | 170.92644 | 10.79303 | 0.1181096 | 3.0022435 | 76 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04168 | 2001 $SY_{175}$ |
| 2001 $SB_{176}$ | 16.1 | 0.15 | 20060922 | 353.92747 | 9.44305 | 78.50662 | 3.52326 | 0.1808330 | 2.6684269 | 36 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 87466 | 2001 $SB_{176}$ |
| 2001 $SV_{176}$ | 14.5 | 0.15 | 20060922 | 347.07639 | 301.58038 | 55.05240 | 12.06870 | 0.0459343 | 3.1248991 | 66 | 4 | 2001–2006 | 0.69 | M-v | 1 | MPC | 04168 | 2001 $SV_{176}$ |
| 2001 $SW_{176}$ | 16.1 | 0.15 | 20060922 | 72.17448 | 148.59767 | 173.20393 | 12.94506 | 0.1585965 | 2.7850068 | 44 | 5 | 1996–2006 | 0.77 | M-v | 1 | MPC | 66212 | 2001 $SW_{176}$ |
| 2001 $SZ_{176}$ | 15.5 | 0.15 | 20060922 | 345.96806 | 175.23036 | 186.86795 | 17.82320 | 0.2097608 | 3.1121473 | 75 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04168 | 2001 $SZ_{176}$ |
| 2001 $SL_{177}$ | 14.8 | 0.15 | 20060922 | 36.03029 | 302.96494 | 29.99574 | 17.88247 | 0.1595127 | 2.9124406 | 189 | 5 | 1991–2006 | 0.57 | M-v | 2 | MPC | 62362 | 2001 $SL_{177}$ |
| 2001 $SP_{177}$ | 16.4 | 0.15 | 20060922 | 88.90100 | 167.25813 | 180.62106 | 13.34622 | 0.1822096 | 2.6067333 | 61 | 3 | 2001–2005 | 0.54 | M-v | 2 | MPC | 90086 | 2001 $SP_{177}$ |
| 2001 $SB_{178}$ | 16.5 | 0.15 | 20060922 | 358.06772 | 317.90306 | 18.34465 | 0.42355 | 0.2549259 | 3.0520768 | 55 | 3 | 1996–2006 | 0.52 | M-v | 3 | MPC | 03224 | 2001 $SB_{178}$ |
| 2001 $SK_{180}$ | 16.9 | 0.15 | 20060922 | 70.86900 | 252.72100 | 81.26135 | 1.15531 | 0.0819462 | 2.6012144 | 64 | 7 | 1993–2006 | 0.44 | M-v | 0 | MPC | 87466 | 2001 $SK_{180}$ |
| 2001 $SL_{180}$ | 17.4 | 0.15 | 20060922 | 144.14709 | 346.35634 | 356.12373 | 6.15639 | 0.1226606 | 2.3254806 | 28 | 3 | 2000–2003 | 0.64 | M-v | 3 | MPC | 88926 | 2001 $SL_{180}$ |
| 2001 $SN_{180}$ | 16.0 | 0.15 | 20060922 | 66.58377 | 332.47367 | 344.30104 | 4.07207 | 0.1020822 | 2.6806538 | 57 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 61059 | 2001 $SN_{180}$ |
| 2001 $SO_{181}$ | 17.0 | 0.15 | 20060922 | 112.16526 | 213.08023 | 127.49877 | 2.29671 | 0.1958119 | 2.4447173 | 63 | 2 | 2001–2005 | 0.53 | M-v | 3 | MPC | 97470 | 2001 $SO_{181}$ |
| 2001 $SQ_{181}$ | 15.2 | 0.15 | 20060922 | 332.18694 | 281.53342 | 154.00463 | 13.64400 | 0.1688957 | 2.6884823 | 50 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 50557 | 2001 $SQ_{181}$ |
| 2001 $SX_{181}$ | 15.8 | 0.15 | 20060922 | 41.39933 | 357.23656 | 345.39348 | 5.13605 | 0.0767046 | 2.7117386 | 66 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 61059 | 2001 $SX_{181}$ |
| 2001 $SN_{182}$ | 17.8 | 0.15 | 20060922 | 157.15943 | 283.01762 | 24.70171 | 2.68825 | 0.2443065 | 2.3657801 | 27 | 2 | 2001–2005 | 0.45 | M-v | 4 | MPC | 88926 | 2001 $SN_{182}$ |
| 2001 $SP_{182}$ | 15.3 | 0.15 | 20060922 | 279.24927 | 91.83297 | 340.06005 | 3.42753 | 0.1631252 | 2.9681374 | 58 | 5 | 1996–2006 | 0.57 | M-v | 0 | MPC | 04168 | 2001 $SP_{182}$ |
| 2001 $ST_{185}$ | 16.1 | 0.15 | 20060922 | 81.56820 | 217.65473 | 90.78793 | 4.50174 | 0.0916606 | 2.6901951 | 37 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 65022 | 2001 $ST_{185}$ |
| 2001 $SN_{186}$ | 15.3 | 0.15 | 20060922 | 159.70583 | 9.82057 | 157.58465 | 11.52811 | 0.1049332 | 3.0421788 | 76 | 5 | 1999–2006 | 0.53 | M-v | 0 | MPC | 87467 | 2001 $SN_{186}$ |
| 2001 $SZ_{186}$ | 16.1 | 0.15 | 20060922 | 244.54180 | 14.06088 | 172.33800 | 2.61095 | 0.0837859 | 2.5441906 | 66 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87467 | 2001 $SZ_{186}$ |
| 2001 $SW_{187}$ | 17.0 | 0.15 | 20060922 | 123.38323 | 180.32291 | 96.88721 | 0.69545 | 0.1346788 | 2.6027197 | 64 | 5 | 1995–2006 | 0.36 | M-v | 0 | MPC | 87467 | 2001 $SW_{187}$ |
| 2001 $SO_{188}$ | 15.7 | 0.15 | 20060922 | 2.61081 | 315.06852 | 65.03012 | 4.36866 | 0.1016132 | 2.7744568 | 79 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 40645 | 2001 $SO_{188}$ |
| 2001 $SR_{188}$ | 16.1 | 0.15 | 20060922 | 50.09795 | 191.22707 | 152.22144 | 5.57176 | 0.0230026 | 2.6980609 | 62 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 77568 | 2001 $SR_{188}$ |
| 2001 $SY_{189}$ | 16.8 | 0.15 | 20060922 | 71.26350 | 136.87361 | 160.25719 | 4.69866 | 0.0375737 | 2.8120003 | 31 | 5 | 1999–2006 | 0.40 | M-v | 0 | MPC | 74100 | 2001 $SY_{189}$ |
| 2001 $SB_{190}$ | 17.6 | 0.15 | 20060922 | 59.54663 | 72.20146 | 348.52347 | 1.68557 | 0.2071363 | 2.4559815 | 47 | 3 | 1995–2005 | 0.48 | M-v | 3 | MPC | 90086 | 2001 $SB_{190}$ |
| 2001 $SR_{190}$ | 17.1 | 0.15 | 20060922 | 330.88411 | 57.45433 | 357.61133 | 4.04419 | 0.0596369 | 2.7839062 | 40 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 75130 | 2001 $SR_{190}$ |
| 2001 $SA_{191}$ | 16.4 | 0.15 | 20060922 | 321.20094 | 272.78440 | 152.50954 | 2.53159 | 0.0598039 | 2.7848720 | 49 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 66212 | 2001 $SA_{191}$ |
| 2001 $SM_{191}$ | 16.1 | 0.15 | 20060922 | 71.95730 | 329.94969 | 12.89416 | 5.56187 | 0.0433540 | 2.6286658 | 41 | 5 | 2001–2006 | 0.43 | M-v | 0 | MPC | 90086 | 2001 $SM_{191}$ |
| 2001 $SS_{191}$ | 16.0 | 0.15 | 20060922 | 329.66915 | 278.93745 | 148.34173 | 1.16120 | 0.0776276 | 2.7505231 | 81 | 6 | 1992–2006 | 0.50 | M-v | 1 | MPC | 87467 | 2001 $SS_{191}$ |
| 2001 $SH_{192}$ | 16.1 | 0.15 | 20060922 | 310.56265 | 179.47929 | 353.26301 | 6.18510 | 0.0743869 | 2.3859104 | 135 | 6 | 1996–2006 | 0.56 | M-v | 1 | MPC | 90086 | 2001 $SH_{192}$ |
| 2001 $SK_{192}$ | 16.6 | 0.15 | 20060922 | 298.94855 | 257.13721 | 173.20102 | 2.09094 | 0.0538242 | 2.8754039 | 45 | 3 | 1999–2006 | 0.37 | M-v | 2 | MPC | 04168 | 2001 $SK_{192}$ |
| 2001 $SQ_{192}$ | 16.4 | 0.15 | 20060922 | 140.21087 | 247.23922 | 352.79778 | 3.12654 | 0.0369615 | 2.7747850 | 50 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 88926 | 2001 $SQ_{192}$ |
| 2001 $SW_{193}$ | 16.1 | 0.15 | 20060922 | 76.45614 | 163.17963 | 160.00196 | 2.23610 | 0.0480312 | 2.6943689 | 62 | 3 | 2001–2006 | 0.37 | M-v | 2 | MPC | 84937 | 2001 $SW_{193}$ |
| 2001 $SK_{195}$ | 17.0 | 0.15 | 20060922 | 64.82345 | 41.55915 | 31.46972 | 3.13861 | 0.1574082 | 2.3999303 | 42 | 3 | 2001–2005 | 0.58 | M-v | 2 | MPC | 97471 | 2001 $SK_{195}$ |
| 2001 $SX_{195}$ | 17.6 | 0.15 | 20060922 | 35.54687 | 192.62021 | 181.63644 | 1.56859 | 0.0954549 | 2.6786035 | 43 | 5 | 1995–2006 | 0.33 | M-v | 0 | MPC | 84937 | 2001 $SX_{195}$ |
| 2001 $SB_{196}$ | 15.4 | 0.15 | 20060922 | 299.17484 | 268.98029 | 177.62461 | 7.32520 | 0.0447328 | 2.7993950 | 63 | 5 | 1999–2006 | 0.50 | M-v | 0 | MPC | 84937 | 2001 $SB_{196}$ |
| 2001 $SV_{197}$ | 16.1 | 0.15 | 20060922 | 354.76600 | 326.69683 | 32.14457 | 2.19964 | 0.0886779 | 2.9398805 | 41 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 04168 | 2001 $SV_{197}$ |
| 2001 $SX_{197}$ | 15.9 | 0.15 | 20060922 | 28.41641 | 335.23938 | 5.11605 | 9.21119 | 0.1370340 | 2.8381417 | 76 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04168 | 2001 $SX_{197}$ |
| 2001 $SQ_{198}$ | 16.3 | 0.15 | 20060922 | 2.86598 | 163.40922 | 171.26961 | 16.01008 | 0.2478885 | 2.9755161 | 75 | 3 | 2000–2006 | 0.47 | M-v | 1 | MPC | 04168 | 2001 $SQ_{198}$ |
| 2001 $ST_{199}$ | 15.9 | 0.15 | 20060922 | 354.71210 | 268.42995 | 136.69970 | 2.37320 | 0.1961352 | 2.7868538 | 104 | 3 | 1994–2006 | 0.51 | M-v | 3 | MPC | 25981 | 2001 $ST_{199}$ |
| 2001 $SJ_{200}$ | 16.1 | 0.15 | 20060922 | 120.40735 | 64.21957 | 157.19660 | 2.28636 | 0.0557928 | 2.9897162 | 36 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04168 | 2001 $SJ_{200}$ |
| 2001 $SU_{200}$ | 17.0 | 0.15 | 20060922 | 344.51444 | 210.76813 | 168.68987 | 2.04741 | 0.0873244 | 2.9085461 | 32 | 3 | 1999–2006 | 0.43 | M-v | 3 | MPC | 75131 | 2001 $SU_{200}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SB_{201}$ | 15.2 | 0.15 | 20060922 | 281.19747 | 126.16124 | 358.09829 | 15.08658 | 0.1230958 | 2.7509076 | 58 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 40648 | 2001 $SB_{201}$ |
| 2001 $SN_{201}$ | 15.1 | 0.15 | 20060922 | 245.62994 | 288.43760 | 174.66952 | 10.94300 | 0.1187046 | 3.0615021 | 79 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 04168 | 2001 $SN_{201}$ |
| 2001 $SO_{201}$ | 15.6 | 0.15 | 20060922 | 267.46145 | 294.63875 | 146.83430 | 1.76358 | 0.1625303 | 3.0873133 | 38 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 04168 | 2001 $SO_{201}$ |
| 2001 $SF_{202}$ | 16.5 | 0.15 | 20060922 | 6.71941 | 10.93418 | 0.71498 | 1.57559 | 0.0838923 | 2.8339903 | 102 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 04168 | 2001 $SF_{202}$ |
| 2001 $SH_{202}$ | 16.4 | 0.15 | 20060922 | 117.16981 | 126.03456 | 179.36375 | 3.50531 | 0.0971845 | 2.5902554 | 38 | 4 | 1995–2005 | 0.35 | M-v | 2 | MPC | 88927 | 2001 $SH_{202}$ |
| 2001 $SQ_{202}$ | 17.8 | 0.15 | 20060922 | 205.48335 | 241.97683 | 8.08071 | 4.33531 | 0.2207755 | 2.4075718 | 32 | 3 | 2001–2005 | 0.54 | M-v | 3 | MPC | 88928 | 2001 $SQ_{202}$ |
| 2001 $SV_{202}$ | 17.7 | 0.15 | 20060922 | 106.21865 | 274.99693 | 154.40682 | 1.91186 | 0.1966279 | 2.2990409 | 43 | 3 | 1999–2006 | 0.45 | M-v | 1 | MPC | 02043 | 2001 $SV_{202}$ |
| 2001 $SC_{203}$ | 17.8 | 0.15 | 20060922 | 267.27493 | 143.17224 | 152.02893 | 2.40582 | 0.1558970 | 2.1306048 | 31 | 3 | 2000–2004 | 0.62 | M-v | 4 | MPC | 75131 | 2001 $SC_{203}$ |
| 2001 $SF_{203}$ | 15.7 | 0.15 | 20060922 | 301.80387 | 23.07884 | 38.11693 | 2.40436 | 0.0669125 | 2.9374787 | 48 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 04168 | 2001 $SF_{203}$ |
| 2001 $SV_{203}$ | 16.4 | 0.15 | 20060922 | 5.40050 | 265.23677 | 147.92925 | 3.95668 | 0.1039430 | 2.6797412 | 65 | 5 | 2001–2006 | 0.49 | M-v | 0 | MPC | 87467 | 2001 $SV_{203}$ |
| 2001 $SR_{204}$ | 16.8 | 0.15 | 20060922 | 61.47166 | 230.07096 | 155.62040 | 5.12445 | 0.1213255 | 2.5509651 | 38 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 84938 | 2001 $SR_{204}$ |
| 2001 $SV_{204}$ | 16.0 | 0.15 | 20060922 | 353.79969 | 4.22342 | 37.66589 | 3.88893 | 0.0701743 | 2.7690773 | 78 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 84938 | 2001 $SV_{204}$ |
| 2001 $SX_{204}$ | 15.6 | 0.15 | 20060922 | 155.03485 | 19.87403 | 169.71165 | 9.16612 | 0.0585876 | 3.0014873 | 59 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04168 | 2001 $SX_{204}$ |
| 2001 $SC_{205}$ | 15.5 | 0.15 | 20060922 | 56.48090 | 310.51443 | 8.05948 | 11.90581 | 0.0796150 | 2.8131103 | 61 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 97471 | 2001 $SC_{205}$ |
| 2001 $SD_{205}$ | 16.3 | 0.15 | 20060922 | 330.75405 | 209.85213 | 171.65733 | 11.78837 | 0.0882952 | 2.9840580 | 39 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 87467 | 2001 $SD_{205}$ |
| 2001 $SV_{205}$ | 17.4 | 0.15 | 20060922 | 95.46233 | 167.63964 | 175.83213 | 15.99646 | 0.2135692 | 2.5380240 | 42 | 2 | 2001–2005 | 0.50 | M-v | 3 | MPC | 84939 | 2001 $SV_{205}$ |
| 2001 $SE_{206}$ | 15.7 | 0.15 | 20060922 | 82.67063 | 254.10827 | 0.04831 | 13.37170 | 0.1095227 | 2.9872198 | 33 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 61063 | 2001 $SE_{206}$ |
| 2001 $SH_{206}$ | 16.8 | 0.15 | 20060922 | 333.87520 | 233.56276 | 174.59265 | 1.81754 | 0.0508865 | 2.8336047 | 61 | 5 | 1992–2006 | 0.38 | M-v | 1 | MPC | 04168 | 2001 $SH_{206}$ |
| 2001 $SM_{206}$ | 15.7 | 0.15 | 20060922 | 308.00007 | 217.38032 | 177.20389 | 10.36928 | 0.0809576 | 3.0518992 | 47 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87467 | 2001 $SM_{206}$ |
| 2001 $SP_{206}$ | 16.9 | 0.15 | 20060922 | 101.16631 | 146.86545 | 168.79446 | 2.44878 | 0.1491013 | 2.6066083 | 39 | 4 | 1995–2005 | 0.47 | M-v | 2 | MPC | 88928 | 2001 $SP_{206}$ |
| 2001 $SU_{206}$ | 16.3 | 0.15 | 20060922 | 346.79085 | 308.04999 | 7.33960 | 5.08183 | 0.1338245 | 3.2173817 | 28 | 3 | 1999–2005 | 0.49 | M-v | 3 | MPC | 72407 | 2001 $SU_{206}$ |
| 2001 $SW_{206}$ | 15.7 | 0.15 | 20060922 | 229.44768 | 21.35307 | 176.38225 | 7.65394 | 0.1364804 | 2.5960360 | 74 | 6 | 2000–2006 | 0.50 | M-v | 1 | MPC | 87467 | 2001 $SW_{206}$ |
| 2001 $SS_{207}$ | 16.5 | 0.15 | 20060922 | 322.31912 | 216.20376 | 173.89914 | 8.94560 | 0.2614832 | 3.0364229 | 42 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 48103 | 2001 $SS_{207}$ |
| 2001 $SW_{207}$ | 16.4 | 0.15 | 20060922 | 62.52271 | 315.66043 | 20.71074 | 2.69771 | 0.0822198 | 2.7167742 | 32 | 3 | 1995–2006 | 0.42 | M-v | 4 | MPC | 27245 | 2001 $SW_{207}$ |
| 2001 $SM_{208}$ | 16.1 | 0.15 | 20060922 | 330.94652 | 282.05256 | 150.18829 | 3.20422 | 0.0628874 | 2.7453548 | 62 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 87467 | 2001 $SM_{208}$ |
| 2001 $ST_{208}$ | 17.0 | 0.15 | 20060922 | 273.36164 | 111.31786 | 150.61925 | 3.75042 | 0.1072007 | 2.2129606 | 39 | 4 | 2000–2005 | 0.64 | M-v | 1 | MPC | 66213 | 2001 $ST_{208}$ |
| 2001 $SN_{209}$ | 15.1 | 0.15 | 20060922 | 206.19901 | 173.13399 | 12.22832 | 9.18482 | 0.0899652 | 2.7707540 | 117 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 66213 | 2001 $SN_{209}$ |
| 2001 $SA_{210}$ | 17.2 | 0.15 | 20060922 | 168.63100 | 254.15005 | 56.43312 | 1.97105 | 0.1912412 | 2.3697889 | 34 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 97471 | 2001 $SA_{210}$ |
| 2001 $SP_{210}$ | 16.0 | 0.15 | 20060922 | 40.08960 | 206.66851 | 169.09894 | 6.17918 | 0.0511657 | 2.6709561 | 60 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 90086 | 2001 $SP_{210}$ |
| 2001 $SS_{210}$ | 16.2 | 0.15 | 20060922 | 286.77474 | 104.54950 | 13.28348 | 4.70840 | 0.0678842 | 2.7511417 | 58 | 5 | 1997–2006 | 0.51 | M-v | 0 | MPC | 75132 | 2001 $SS_{210}$ |
| 2001 $ST_{210}$ | 17.1 | 0.15 | 20060922 | 180.07153 | 119.28550 | 162.98107 | 4.11116 | 0.1643675 | 2.4189679 | 54 | 7 | 1994–2006 | 0.57 | M-v | 0 | MPC | 90086 | 2001 $ST_{210}$ |
| 2001 $SV_{210}$ | 15.6 | 0.15 | 20060922 | 98.37489 | 241.44336 | 29.92422 | 6.78829 | 0.1437372 | 2.8048663 | 76 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 74100 | 2001 $SV_{210}$ |
| 2001 $SY_{210}$ | 15.8 | 0.15 | 20060922 | 298.60418 | 53.22095 | 4.90395 | 8.54186 | 0.0838869 | 2.9984220 | 85 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04168 | 2001 $SY_{210}$ |
| 2001 $SB_{212}$ | 15.9 | 0.15 | 20060922 | 48.13612 | 173.49683 | 167.78943 | 6.42396 | 0.0568000 | 2.7777414 | 38 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 75133 | 2001 $SB_{212}$ |
| 2001 $SH_{212}$ | 18.1 | 0.15 | 20060922 | 90.42241 | 216.06142 | 165.85792 | 3.23726 | 0.2774768 | 2.4783962 | 33 | 2 | 2001–2005 | 0.51 | M-v | 3 | MPC | 88929 | 2001 $SH_{212}$ |
| 2001 $SN_{212}$ | 16.4 | 0.15 | 20060922 | 9.42915 | 161.21542 | 175.20164 | 9.61763 | 0.1585484 | 2.9755397 | 40 | 3 | 1996–2006 | 0.53 | M-v | 3 | MPC | 03225 | 2001 $SN_{212}$ |
| 2001 $SM_{213}$ | 16.5 | 0.15 | 20060922 | 72.19401 | 251.64376 | 116.99563 | 4.94487 | 0.1914974 | 2.5722355 | 59 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 84940 | 2001 $SM_{213}$ |
| 2001 $SR_{213}$ | 16.9 | 0.15 | 20060922 | 102.16302 | 206.77335 | 133.90921 | 2.95647 | 0.1133448 | 2.5411071 | 33 | 3 | 1996–2005 | 0.41 | M-v | 3 | MPC | 84940 | 2001 $SR_{213}$ |
| 2001 $SC_{214}$ | 16.1 | 0.15 | 20060922 | 87.10559 | 271.51358 | 49.55425 | 3.28006 | 0.0624773 | 2.6866420 | 46 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 65025 | 2001 $SC_{214}$ |
| 2001 $SC_{215}$ | 17.0 | 0.15 | 20060922 | 359.24616 | 330.42040 | 43.97897 | 4.49313 | 0.3584015 | 2.9000152 | 152 | 3 | 1996–2006 | 0.51 | M-v | 2 | MPC | 04169 | 2001 $SC_{215}$ |
| 2001 $SJ_{215}$ | 16.5 | 0.15 | 20060922 | 100.50395 | 310.04886 | 80.68929 | 4.63650 | 0.1400911 | 2.4157029 | 134 | 4 | 1996–2006 | 0.52 | M-v | 2 | MPC | 97471 | 2001 $SJ_{215}$ |
| 2001 $SS_{215}$ | 16.2 | 0.15 | 20060922 | 65.84070 | 261.45996 | 2.09613 | 1.65166 | 0.0277757 | 3.0461286 | 36 | 5 | 1996–2006 | 0.46 | M-v | 0 | MPC | 04169 | 2001 $SS_{215}$ |
| 2001 $SU_{215}$ | 16.3 | 0.15 | 20060922 | 59.57072 | 118.62048 | 165.94142 | 10.83259 | 0.1108252 | 2.9129564 | 31 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 04169 | 2001 $SU_{215}$ |
| 2001 $SG_{216}$ | 16.8 | 0.15 | 20060922 | 68.26127 | 313.80479 | 356.52869 | 3.40502 | 0.0875563 | 2.7809349 | 50 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 65025 | 2001 $SG_{216}$ |
| 2001 $SK_{217}$ | 17.6 | 0.15 | 20060922 | 59.11252 | 47.86175 | 15.13759 | 2.70328 | 0.2141576 | 2.4847849 | 64 | 3 | 1997–2005 | 0.57 | M-v | 3 | MPC | 90087 | 2001 $SK_{217}$ |
| 2001 $SV_{217}$ | 18.1 | 0.15 | 20010908 | 339.64935 | 204.23305 | 179.72168 | 4.14111 | 0.2157054 | 2.6786061 | 10 | 1 | 4 days | 0.41 | | E | MPC | | 2001 $SV_{217}$ |
| 2001 $SR_{218}$ | 16.4 | 0.15 | 20060922 | 107.35016 | 264.51985 | 9.82681 | 7.05211 | 0.2781833 | 2.6854467 | 73 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 84941 | 2001 $SR_{218}$ |
| 2001 $SS_{218}$ | 15.8 | 0.15 | 20060922 | 41.35588 | 291.86561 | 30.71959 | 2.53241 | 0.1211497 | 2.8767417 | 95 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 87468 | 2001 $SS_{218}$ |
| 2001 $SL_{219}$ | 15.5 | 0.15 | 20060922 | 257.06370 | 91.06147 | 7.69323 | 11.24115 | 0.0393940 | 3.0044011 | 48 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 68933 | 2001 $SL_{219}$ |
| 2001 $SP_{219}$ | 16.8 | 0.15 | 20060922 | 24.50662 | 300.49107 | 71.81626 | 0.56618 | 0.0871080 | 2.7702650 | 45 | 5 | 1999–2006 | 0.55 | M-v | 0 | MPC | 66213 | 2001 $SP_{219}$ |
| 2001 $SQ_{219}$ | 15.7 | 0.15 | 20060922 | 275.81282 | 72.34406 | 12.55046 | 9.19919 | 0.1353856 | 3.0380115 | 56 | 4 | 1993–2006 | 0.51 | M-v | 1 | MPC | 75134 | 2001 $SQ_{219}$ |
| 2001 $SH_{220}$ | 16.1 | 0.15 | 20060922 | 45.98047 | 184.67105 | 163.50938 | 6.23096 | 0.0373901 | 2.7701443 | 46 | 5 | 1992–2006 | 0.57 | M-v | 1 | MPC | 48104 | 2001 $SH_{220}$ |
| 2001 $SY_{220}$ | 16.1 | 0.15 | 20060922 | 15.11371 | 157.60420 | 176.85244 | 0.26339 | 0.1191336 | 2.9743131 | 68 | 4 | 1996–2006 | 0.61 | M-v | 4 | MPC | 03225 | 2001 $SY_{220}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SA_{221}$ | 16.5 | 0.15 | 20060922 | 87.09468 | 260.47417 | 39.26006 | 0.61120 | 0.0830593 | 2.7758760 | 61 | 5 | 1992–2006 | 0.37 | M-v | 0 | MPC | 62363 | 2001 $SA_{221}$ |
| 2001 $SL_{221}$ | 16.4 | 0.15 | 20060922 | 26.70308 | 332.83297 | 20.24601 | 2.07740 | 0.0832437 | 2.8458112 | 57 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 61068 | 2001 $SL_{221}$ |
| 2001 $ST_{221}$ | 17.4 | 0.15 | 20060922 | 99.38274 | 199.53507 | 142.13236 | 2.80168 | 0.1746811 | 2.5461802 | 57 | 3 | 2001–2005 | 0.52 | M-v | 3 | MPC | 84943 | 2001 $ST_{221}$ |
| 2001 $SC_{222}$ | 17.1 | 0.15 | 20060922 | 47.99218 | 207.06544 | 143.05308 | 3.38399 | 0.1344430 | 2.7425385 | 37 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 03225 | 2001 $SC_{222}$ |
| 2001 $SJ_{223}$ | 16.1 | 0.15 | 20060922 | 324.24846 | 9.99886 | 20.13573 | 2.05962 | 0.0463031 | 3.0135327 | 43 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04169 | 2001 $SJ_{223}$ |
| 2001 $SU_{223}$ | 16.3 | 0.15 | 20060922 | 262.89271 | 326.32361 | 175.53891 | 5.76424 | 0.0256849 | 2.7583984 | 54 | 5 | 1999–2006 | 0.50 | M-v | 0 | MPC | 84943 | 2001 $SU_{223}$ |
| 2001 $SX_{223}$ | 15.6 | 0.15 | 20060922 | 8.72959 | 231.47945 | 167.07369 | 5.38530 | 0.0709720 | 2.7482158 | 49 | 4 | 1994–2006 | 0.45 | M-v | 0 | MPC | 87468 | 2001 $SX_{223}$ |
| 2001 $SA_{224}$ | 15.6 | 0.15 | 20060922 | 60.08346 | 172.17271 | 126.25485 | 2.21353 | 0.0357801 | 2.9605433 | 85 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04169 | 2001 $SA_{224}$ |
| 2001 $SV_{224}$ | 16.9 | 0.15 | 20060922 | 54.91038 | 338.72752 | 68.67117 | 3.10029 | 0.1710790 | 2.5439820 | 95 | 4 | 1995–2005 | 0.57 | M-v | 2 | MPC | 90087 | 2001 $SV_{224}$ |
| 2001 $SE_{225}$ | 16.7 | 0.15 | 20060922 | 79.94511 | 163.48834 | 139.22812 | 2.72433 | 0.0382961 | 2.8371528 | 31 | 3 | 2001–2006 | 0.32 | M-v | 2 | MPC | 94096 | 2001 $SE_{225}$ |
| 2001 $SF_{226}$ | 16.4 | 0.15 | 20060922 | 56.90784 | 40.35379 | 46.32687 | 2.85657 | 0.1658378 | 2.4270728 | 108 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 97472 | 2001 $SF_{226}$ |
| 2001 $SK_{226}$ | 15.7 | 0.15 | 20060922 | 97.18795 | 141.68937 | 123.28113 | 2.73295 | 0.0903007 | 2.9197769 | 63 | 5 | 1991–2006 | 0.46 | M-v | 1 | MPC | 04169 | 2001 $SK_{226}$ |
| 2001 $SP_{226}$ | 17.1 | 0.15 | 20060922 | 195.72904 | 152.27621 | 134.89102 | 3.06482 | 0.1892614 | 2.3640922 | 45 | 3 | 2001–2005 | 0.62 | M-v | 2 | MPC | 90087 | 2001 $SP_{226}$ |
| 2001 $SY_{226}$ | 16.4 | 0.15 | 20060922 | 130.03853 | 209.07273 | 88.82557 | 2.90017 | 0.0416614 | 2.6306914 | 36 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 84944 | 2001 $SY_{226}$ |
| 2001 $SZ_{226}$ | 15.8 | 0.15 | 20060922 | 357.39892 | 251.70914 | 123.23450 | 3.33045 | 0.0670422 | 2.9182102 | 80 | 5 | 1991–2006 | 0.54 | M-v | 1 | MPC | 75135 | 2001 $SZ_{226}$ |
| 2001 $SF_{227}$ | 16.5 | 0.15 | 20060922 | 24.74291 | 165.28009 | 171.04059 | 2.67871 | 0.1848299 | 2.9170590 | 61 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 88931 | 2001 $SF_{227}$ |
| 2001 $SG_{227}$ | 15.1 | 0.15 | 20060922 | 61.17129 | 266.88432 | 40.33661 | 2.39790 | 0.0754866 | 2.9048414 | 172 | 4 | 1996–2006 | 0.45 | M-v | 2 | MPC | 61069 | 2001 $SG_{227}$ |
| 2001 $SK_{227}$ | 16.2 | 0.15 | 20060922 | 34.19546 | 112.15352 | 182.19118 | 5.91111 | 0.1934024 | 3.0564727 | 37 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04169 | 2001 $SK_{227}$ |
| 2001 $SO_{227}$ | 16.2 | 0.15 | 20060922 | 336.19344 | 357.89006 | 11.70501 | 4.09370 | 0.1218503 | 3.0697800 | 52 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 03226 | 2001 $SO_{227}$ |
| 2001 $SP_{227}$ | 15.9 | 0.15 | 20060922 | 17.91052 | 150.91454 | 193.31453 | 4.71186 | 0.0781334 | 2.9581892 | 83 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 75135 | 2001 $SP_{227}$ |
| 2001 $SA_{228}$ | 16.6 | 0.15 | 20060922 | 69.46836 | 314.88347 | 16.97582 | 6.51753 | 0.0596172 | 2.7600005 | 34 | 3 | 2001–2006 | 0.35 | M-v | 3 | MPC | 75135 | 2001 $SA_{228}$ |
| 2001 $SN_{228}$ | 15.1 | 0.15 | 20060922 | 316.19680 | 32.32114 | 24.19386 | 12.25799 | 0.0532766 | 2.9471871 | 119 | 4 | 1996–2006 | 0.57 | M-v | 3 | MPC | 66213 | 2001 $SN_{228}$ |
| 2001 $SB_{229}$ | 17.4 | 0.15 | 20060922 | 139.75385 | 181.81532 | 142.76892 | 3.19181 | 0.2024875 | 2.4504492 | 32 | 4 | 2001–2005 | 0.69 | M-v | 1 | MPC | 75136 | 2001 $SB_{229}$ |
| 2001 $SN_{229}$ | 15.9 | 0.15 | 20060922 | 13.01110 | 236.69746 | 102.26543 | 2.69926 | 0.1406424 | 2.9929039 | 88 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04169 | 2001 $SN_{229}$ |
| 2001 $SO_{229}$ | 15.0 | 0.15 | 20060922 | 316.91055 | 291.67667 | 118.40596 | 2.83242 | 0.1098097 | 3.0012307 | 89 | 3 | 2001–2006 | 0.67 | M-v | 3 | MPC | 04169 | 2001 $SO_{229}$ |
| 2001 $SS_{229}$ | 15.2 | 0.15 | 20060922 | 73.61731 | 259.44755 | 27.74509 | 11.45473 | 0.0377676 | 2.9775360 | 85 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 61070 | 2001 $SS_{229}$ |
| 2001 $SU_{229}$ | 15.9 | 0.15 | 20060922 | 318.93592 | 261.03975 | 142.31359 | 2.47911 | 0.1783351 | 3.0394048 | 61 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 03226 | 2001 $SU_{229}$ |
| 2001 $SZ_{229}$ | 16.1 | 0.15 | 20060922 | 114.01170 | 155.57278 | 171.45941 | 1.74901 | 0.1306634 | 2.5648734 | 132 | 5 | 1995–2005 | 0.59 | M-v | 1 | MPC | 97472 | 2001 $SZ_{229}$ |
| 2001 $SF_{230}$ | 16.6 | 0.15 | 20060922 | 63.40415 | 12.14856 | 21.58087 | 1.09832 | 0.1603012 | 2.5652241 | 142 | 5 | 1997–2006 | 0.52 | M-v | 2 | MPC | 97472 | 2001 $SF_{230}$ |
| 2001 $SL_{230}$ | 15.1 | 0.15 | 20060922 | 280.93620 | 51.62595 | 20.31643 | 12.95749 | 0.1137848 | 3.1239517 | 70 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04169 | 2001 $SL_{230}$ |
| 2001 $SX_{230}$ | 16.2 | 0.15 | 20060922 | 49.22405 | 200.63218 | 161.85795 | 3.44307 | 0.1209154 | 2.7251303 | 57 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 84947 | 2001 $SX_{230}$ |
| 2001 $SF_{231}$ | 15.5 | 0.15 | 20060922 | 95.63385 | 180.60839 | 93.60042 | 3.12814 | 0.0507510 | 2.9239382 | 78 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 61070 | 2001 $SF_{231}$ |
| 2001 $SH_{232}$ | 15.7 | 0.15 | 20060922 | 345.74539 | 212.30305 | 164.38710 | 1.74771 | 0.1918379 | 3.0032177 | 121 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03226 | 2001 $SH_{232}$ |
| 2001 $SS_{232}$ | 15.2 | 0.15 | 20060922 | 132.17919 | 212.34807 | 31.00573 | 7.56750 | 0.0505910 | 2.9216135 | 168 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 61071 | 2001 $SS_{232}$ |
| 2001 $SC_{233}$ | 15.8 | 0.15 | 20060922 | 81.55702 | 140.40968 | 178.23558 | 6.41399 | 0.0637855 | 2.7789460 | 65 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 90087 | 2001 $SC_{233}$ |
| 2001 $SM_{233}$ | 16.2 | 0.15 | 20060922 | 26.05568 | 273.09009 | 81.08474 | 3.26817 | 0.0880513 | 2.8870451 | 67 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 61072 | 2001 $SM_{233}$ |
| 2001 $SO_{233}$ | 15.7 | 0.15 | 20060922 | 310.02107 | 351.19852 | 72.32822 | 3.60019 | 0.2593853 | 3.0495689 | 73 | 3 | 1998–2006 | 0.55 | M-v | 3 | MPC | 03226 | 2001 $SO_{233}$ |
| 2001 $SD_{234}$ | 15.1 | 0.15 | 20060922 | 43.33528 | 284.27406 | 32.08282 | 9.94531 | 0.1074987 | 2.9347096 | 101 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 61072 | 2001 $SD_{234}$ |
| 2001 $SH_{235}$ | 14.9 | 0.15 | 20060922 | 358.51706 | 315.40089 | 21.35491 | 9.63001 | 0.1504152 | 3.1145983 | 109 | 3 | 1990–2006 | 0.43 | M-v | 2 | MPC | 04169 | 2001 $SH_{235}$ |
| 2001 $SS_{235}$ | 16.2 | 0.15 | 20060922 | 91.03295 | 317.60403 | 24.25614 | 1.77525 | 0.1697239 | 2.6148682 | 148 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04169 | 2001 $SS_{235}$ |
| 2001 $SL_{236}$ | 16.2 | 0.15 | 20060922 | 5.12852 | 333.82842 | 71.01008 | 5.43955 | 0.2050485 | 2.7896572 | 57 | 5 | 1978–2006 | 0.51 | M-v | 0 | MPC | 62364 | 2001 $SL_{236}$ |
| 2001 $SO_{237}$ | 16.6 | 0.15 | 20060922 | 11.95600 | 223.40042 | 127.92219 | 2.83305 | 0.0984184 | 2.9281739 | 29 | 3 | 2001–2006 | 0.70 | M-v | 4 | MPC | 68934 | 2001 $SO_{237}$ |
| 2001 $SP_{237}$ | 16.4 | 0.15 | 20060922 | 324.06975 | 56.67000 | 41.36460 | 3.96716 | 0.1499555 | 2.7391769 | 57 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 50558 | 2001 $SP_{237}$ |
| 2001 $SX_{237}$ | 16.7 | 0.15 | 20060922 | 48.06058 | 279.19250 | 137.77269 | 4.38747 | 0.2100863 | 2.5771543 | 100 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 84950 | 2001 $SX_{237}$ |
| 2001 $SG_{238}$ | 16.5 | 0.15 | 20060922 | 341.26319 | 218.66751 | 169.80426 | 2.32852 | 0.0838197 | 2.9329040 | 70 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 04169 | 2001 $SG_{238}$ |
| 2001 $SH_{239}$ | 16.3 | 0.15 | 20060922 | 96.40049 | 269.98275 | 20.71033 | 4.92087 | 0.0960919 | 2.7804859 | 55 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 61073 | 2001 $SH_{239}$ |
| 2001 $SG_{241}$ | 15.5 | 0.15 | 20060922 | 104.51690 | 229.10474 | 17.67580 | 10.24941 | 0.0293681 | 3.0516649 | 48 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 61073 | 2001 $SG_{241}$ |
| 2001 $SJ_{241}$ | 15.7 | 0.15 | 20060922 | 140.93251 | 240.88836 | 18.83232 | 9.73903 | 0.0927922 | 2.7534934 | 36 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 87468 | 2001 $SJ_{241}$ |
| 2001 $SK_{241}$ | 16.2 | 0.15 | 20060922 | 74.82906 | 143.56151 | 188.29431 | 4.89039 | 0.1788869 | 2.7019997 | 74 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90088 | 2001 $SK_{241}$ |
| 2001 $SM_{241}$ | 15.5 | 0.15 | 20060922 | 250.89481 | 261.51847 | 191.51666 | 9.87169 | 0.1055862 | 3.1954267 | 35 | 3 | 1999–2004 | 0.43 | M-v | 2 | MPC | 66214 | 2001 $SM_{241}$ |
| 2001 $SQ_{241}$ | 16.9 | 0.15 | 20060922 | 132.25705 | 238.19139 | 77.33370 | 1.93276 | 0.1601742 | 2.5251540 | 39 | 3 | 2001–2005 | 0.55 | M-v | 2 | MPC | 94102 | 2001 $SQ_{241}$ |
| 2001 $SF_{242}$ | 14.9 | 0.15 | 20060922 | 346.07316 | 334.99166 | 21.61430 | 10.66769 | 0.1031912 | 3.1056841 | 61 | 2 | 2001–2006 | 0.61 | M-v | 4 | MPC | 03227 | 2001 $SF_{242}$ |
| 2001 $SJ_{242}$ | 16.1 | 0.15 | 20060922 | 276.78493 | 247.46048 | 184.17389 | 4.89749 | 0.1877204 | 3.2032989 | 31 | 2 | 2001–2003 | 0.50 | M-v | 3 | MPC | 88933 | 2001 $SJ_{242}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SQ_{242}$ | 16.1 | 0.15 | 20060922 | 12.47121 | 285.59886 | 106.65532 | 3.79590 | 0.0966597 | 2.7653754 | 46 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 61074 | 2001 $SQ_{242}$ |
| 2001 $SR_{242}$ | 16.1 | 0.15 | 20060922 | 53.02440 | 279.07409 | 62.68632 | 5.30044 | 0.0802268 | 2.7745583 | 68 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 00058 | 2001 $SR_{242}$ |
| 2001 $SH_{243}$ | 15.4 | 0.15 | 20060922 | 318.43502 | 195.21562 | 193.83883 | 11.31510 | 0.1240177 | 3.1255744 | 60 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 03228 | 2001 $SH_{243}$ |
| 2001 $SR_{243}$ | 15.4 | 0.15 | 20060922 | 315.03704 | 234.70411 | 180.63052 | 13.03430 | 0.1898991 | 3.0257870 | 102 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04169 | 2001 $SR_{243}$ |
| 2001 $SA_{244}$ | 16.6 | 0.15 | 20060922 | 234.48142 | 230.45949 | 68.28871 | 5.04566 | 0.2112770 | 2.2367702 | 58 | 4 | 1997–2005 | 0.63 | M-v | 1 | MPC | 97473 | 2001 $SA_{244}$ |
| 2001 $SF_{244}$ | 16.4 | 0.15 | 20060922 | 70.25272 | 233.87051 | 136.12298 | 5.88036 | 0.1897425 | 2.6259628 | 72 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 87469 | 2001 $SF_{244}$ |
| 2001 $SK_{244}$ | 16.8 | 0.15 | 20060922 | 114.54385 | 177.67698 | 163.56679 | 8.42809 | 0.1837602 | 2.5340730 | 65 | 3 | 2000–2005 | 0.55 | M-v | 2 | MPC | 02043 | 2001 $SK_{244}$ |
| 2001 $SJ_{245}$ | 15.8 | 0.15 | 20060922 | 47.21166 | 286.14294 | 57.88428 | 9.20650 | 0.1158060 | 2.8111994 | 65 | 5 | 2001–2006 | 0.41 | M-v | 0 | MPC | 77569 | 2001 $SJ_{245}$ |
| 2001 $SR_{245}$ | 15.7 | 0.15 | 20060922 | 359.51518 | 342.79846 | 27.98492 | 12.59094 | 0.1405371 | 2.9782192 | 117 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 03228 | 2001 $SR_{245}$ |
| 2001 $SW_{245}$ | 16.2 | 0.15 | 20060922 | 111.71608 | 133.55745 | 189.94955 | 1.80763 | 0.0848874 | 2.6293018 | 78 | 3 | 2001–2005 | 0.48 | M-v | 2 | MPC | 97473 | 2001 $SW_{245}$ |
| 2001 $SP_{246}$ | 16.3 | 0.15 | 20060922 | 30.93347 | 239.29595 | 163.20825 | 3.05353 | 0.1059355 | 2.6831720 | 48 | 3 | 2001–2005 | 0.54 | M-v | 3 | MPC | 90088 | 2001 $SP_{246}$ |
| 2001 $SU_{246}$ | 16.8 | 0.15 | 20060922 | 75.05943 | 252.36345 | 106.55180 | 2.42688 | 0.0829068 | 2.6445992 | 48 | 5 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87469 | 2001 $SU_{246}$ |
| 2001 $SM_{247}$ | 15.6 | 0.15 | 20060922 | 0.59991 | 68.93467 | 28.68996 | 13.06186 | 0.2485872 | 2.6681913 | 108 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 87469 | 2001 $SM_{247}$ |
| 2001 $SV_{247}$ | 16.0 | 0.15 | 20060922 | 111.38696 | 220.30083 | 118.56871 | 2.59484 | 0.0576676 | 2.5786622 | 79 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 97473 | 2001 $SV_{247}$ |
| 2001 $SZ_{247}$ | 15.8 | 0.15 | 20060922 | 29.11494 | 351.26722 | 44.14628 | 6.84929 | 0.1515821 | 2.7221688 | 85 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 84954 | 2001 $SZ_{247}$ |
| 2001 $SB_{248}$ | 15.2 | 0.15 | 20060922 | 354.16535 | 252.69653 | 112.09934 | 2.79871 | 0.1731568 | 3.0144411 | 112 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04169 | 2001 $SB_{248}$ |
| 2001 $SK_{249}$ | 15.1 | 0.15 | 20060922 | 4.72209 | 228.95413 | 184.51651 | 5.75225 | 0.0440854 | 2.7593519 | 68 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87469 | 2001 $SK_{249}$ |
| 2001 $SJ_{250}$ | 15.6 | 0.15 | 20060922 | 62.43052 | 233.86554 | 36.83796 | 16.58528 | 0.1287046 | 3.1399571 | 36 | 4 | 1999–2006 | 0.41 | M-v | 2 | MPC | 87469 | 2001 $SJ_{250}$ |
| 2001 $ST_{250}$ | 15.5 | 0.15 | 20060922 | 292.90638 | 241.23175 | 166.31405 | 5.82757 | 0.1150922 | 3.2185009 | 55 | 5 | 1995–2006 | 0.60 | M-v | 1 | MPC | 04170 | 2001 $ST_{250}$ |
| 2001 $SF_{251}$ | 15.4 | 0.15 | 20060922 | 69.40428 | 126.16982 | 178.04172 | 5.84453 | 0.1061571 | 2.9197450 | 131 | 4 | 1999–2006 | 0.64 | M-v | 2 | MPC | 61078 | 2001 $SF_{251}$ |
| 2001 $SG_{251}$ | 16.1 | 0.15 | 20060922 | 46.76521 | 357.41270 | 24.49708 | 4.72110 | 0.1544313 | 2.6916337 | 107 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 90088 | 2001 $SG_{251}$ |
| 2001 $SP_{251}$ | 15.4 | 0.15 | 20060922 | 293.04899 | 252.97315 | 201.08477 | 9.48136 | 0.0986178 | 2.9670335 | 91 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 03228 | 2001 $SP_{251}$ |
| 2001 $SQ_{251}$ | 16.3 | 0.15 | 20060922 | 117.43495 | 254.12077 | 33.79112 | 3.59872 | 0.0758689 | 2.7718507 | 46 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 90088 | 2001 $SQ_{251}$ |
| 2001 $SY_{251}$ | 14.8 | 0.15 | 20060922 | 312.62740 | 239.96800 | 149.67765 | 2.67352 | 0.1290286 | 3.1797641 | 75 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04170 | 2001 $SY_{251}$ |
| 2001 $SG_{252}$ | 17.3 | 0.15 | 20060922 | 51.61352 | 87.26198 | 197.13802 | 20.55870 | 0.0874944 | 1.9007440 | 50 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 46675 | 2001 $SG_{252}$ |
| 2001 $SU_{252}$ | 14.9 | 0.15 | 20060922 | 47.73729 | 262.01347 | 34.48733 | 15.84514 | 0.0966024 | 3.1048645 | 77 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 84956 | 2001 $SU_{252}$ |
| 2001 $SJ_{253}$ | 16.1 | 0.15 | 20060922 | 34.83714 | 263.22151 | 156.30788 | 3.80976 | 0.1136795 | 2.6223630 | 80 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 90088 | 2001 $SJ_{253}$ |
| 2001 $SP_{253}$ | 15.8 | 0.15 | 20060922 | 60.68505 | 240.28439 | 150.09026 | 3.55382 | 0.1688591 | 2.6118994 | 124 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 02043 | 2001 $SP_{253}$ |
| 2001 $SZ_{253}$ | 15.1 | 0.15 | 20060922 | 338.77690 | 330.24225 | 41.63189 | 9.52232 | 0.0826913 | 3.1211042 | 79 | 4 | 1993–2006 | 0.56 | M-v | 1 | MPC | 04170 | 2001 $SZ_{253}$ |
| 2001 $SF_{255}$ | 15.2 | 0.15 | 20060922 | 63.15608 | 79.06781 | 196.47549 | 16.63011 | 0.2010365 | 3.0401766 | 103 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04170 | 2001 $SF_{255}$ |
| 2001 $SG_{255}$ | 15.7 | 0.15 | 20060922 | 23.85497 | 105.00658 | 187.83881 | 9.56366 | 0.2086320 | 3.1648692 | 53 | 5 | 1995–2006 | 0.41 | M-v | 0 | MPC | 04170 | 2001 $SG_{255}$ |
| 2001 $SL_{255}$ | 16.0 | 0.15 | 20060922 | 53.94921 | 172.95615 | 181.73204 | 5.73919 | 0.0608723 | 2.7706417 | 77 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 84957 | 2001 $SL_{255}$ |
| 2001 $SA_{256}$ | 14.8 | 0.15 | 20060922 | 330.89841 | 271.90859 | 91.16704 | 3.55676 | 0.1113127 | 3.1884081 | 43 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 04170 | 2001 $SA_{256}$ |
| 2001 $SF_{256}$ | 15.6 | 0.15 | 20060922 | 345.84417 | 295.04920 | 75.52279 | 5.48323 | 0.3129956 | 3.0708805 | 113 | 2 | 2001–2006 | 0.43 | M-v | 2 | MPC | 03228 | 2001 $SF_{256}$ |
| 2001 $SQ_{256}$ | 16.3 | 0.15 | 20060922 | 186.53241 | 187.47280 | 55.10718 | 3.16179 | 0.0749561 | 2.6906133 | 60 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 87469 | 2001 $SQ_{256}$ |
| 2001 $SR_{256}$ | 15.5 | 0.15 | 20060922 | 331.77551 | 211.03372 | 192.76558 | 8.69119 | 0.1233577 | 3.0028985 | 103 | 4 | 1996–2006 | 0.58 | M-v | 3 | MPC | 48108 | 2001 $SR_{256}$ |
| 2001 $SW_{256}$ | 15.6 | 0.15 | 20060922 | 3.63829 | 293.73940 | 97.97386 | 3.03833 | 0.0928537 | 2.8740970 | 90 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 75140 | 2001 $SW_{256}$ |
| 2001 $SL_{257}$ | 15.7 | 0.15 | 20060922 | 73.74872 | 287.93183 | 32.31335 | 5.97294 | 0.2016186 | 2.7656566 | 63 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 84958 | 2001 $SL_{257}$ |
| 2001 $SX_{257}$ | 15.9 | 0.15 | 20060922 | 354.64142 | 157.91146 | 229.04685 | 3.27331 | 0.0809840 | 2.7736393 | 64 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 94105 | 2001 $SX_{257}$ |
| 2001 $SK_{258}$ | 16.2 | 0.15 | 20060922 | 44.66770 | 314.49647 | 330.38636 | 8.96636 | 0.0446591 | 3.0256105 | 30 | 4 | 1999–2006 | 0.58 | M-v | 0 | MPC | 68934 | 2001 $SK_{258}$ |
| 2001 $SL_{258}$ | 15.6 | 0.15 | 20060922 | 31.62467 | 190.07581 | 179.23743 | 12.90234 | 0.0222173 | 2.6947905 | 61 | 3 | 2001–2006 | 0.64 | M-v | 3 | MPC | 61080 | 2001 $SL_{258}$ |
| 2001 $SR_{258}$ | 16.7 | 0.15 | 20060922 | 276.45068 | 200.67658 | 341.91873 | 1.24805 | 0.1133264 | 2.4696214 | 52 | 4 | 1997–2006 | 0.39 | M-v | 3 | MPC | 90089 | 2001 $SR_{258}$ |
| 2001 $SW_{258}$ | 17.1 | 0.15 | 20060922 | 46.25957 | 155.96789 | 231.15498 | 3.99306 | 0.0186514 | 2.5808708 | 35 | 3 | 2001–2005 | 0.43 | M-v | 2 | MPC | 88935 | 2001 $SW_{258}$ |
| 2001 $SL_{259}$ | 17.2 | 0.15 | 20060922 | 44.15313 | 241.40873 | 146.43603 | 6.49675 | 0.2132630 | 2.6207643 | 37 | 3 | 2001–2006 | 0.36 | M-v | 1 | MPC | 84958 | 2001 $SL_{259}$ |
| 2001 $SN_{259}$ | 17.2 | 0.15 | 20060922 | 64.83421 | 220.98855 | 134.51630 | 5.16378 | 0.1809710 | 2.6206507 | 35 | 3 | 2001–2005 | 0.43 | M-v | 3 | MPC | 88936 | 2001 $SN_{259}$ |
| 2001 $SM_{260}$ | 15.2 | 0.15 | 20060922 | 64.97600 | 271.62605 | 5.95681 | 10.91639 | 0.0698725 | 3.0448965 | 57 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04170 | 2001 $SM_{260}$ |
| 2001 $SS_{260}$ | 16.6 | 0.15 | 20060922 | 73.60790 | 35.01491 | 334.08510 | 3.47744 | 0.1680748 | 2.5997817 | 104 | 5 | 1997–2006 | 0.52 | M-v | 2 | MPC | 90089 | 2001 $SS_{260}$ |
| 2001 $SR_{262}$ | 17.0 | 0.15 | 20060922 | 51.45640 | 357.03596 | 281.51573 | 18.17237 | 0.0555558 | 1.8932034 | 45 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 04170 | 2001 $SR_{262}$ |
| 2001 $SV_{262}$ | 16.6 | 0.15 | 20060922 | 301.17908 | 102.72467 | 324.20787 | 18.41546 | 0.1397547 | 1.8706505 | 119 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04170 | 2001 $SV_{262}$ |
| 2001 $SY_{262}$ | 17.1 | 0.15 | 20060922 | 16.85212 | 109.89560 | 219.04812 | 20.59482 | 0.1089347 | 1.8603330 | 80 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 46678 | 2001 $SY_{262}$ |
| 2001 $SE_{263}$ | 16.3 | 0.15 | 20060922 | 347.05715 | 338.04849 | 42.61041 | 9.02662 | 0.1573430 | 2.9222591 | 65 | 5 | 1991–2006 | 0.54 | M-v | 0 | MPC | 25993 | 2001 $SE_{263}$ |
| 2001 $SA_{264}$ | 14.9 | 0.15 | 20060922 | 6.15361 | 183.22702 | 268.54809 | 20.87862 | 0.0504029 | 2.5641323 | 72 | 4 | 2001–2006 | 0.63 | M-v | 2 | MPC | 97473 | 2001 $SA_{264}$ |
| 2001 $SD_{264}$ | 16.1 | 0.15 | 20060922 | 86.94738 | 66.80474 | 280.95266 | 15.58501 | 0.2524363 | 2.5647190 | 81 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 90089 | 2001 $SD_{264}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SP_{264}$ | 17.3 | 0.15 | 20060922 | 19.84500 | 281.19882 | 30.20869 | 23.97000 | 0.1597915 | 1.9068943 | 89 | 3 | 2001–2006 | 0.70 | M-v | 2 | MPC | 04170 | 2001 $SP_{264}$ |
| 2001 $ST_{264}$ | 16.0 | 0.15 | 20060922 | 302.24811 | 192.00964 | 194.23349 | 4.58195 | 0.0788545 | 3.1886487 | 42 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 65037 | 2001 $ST_{264}$ |
| 2001 $ST_{265}$ | 17.7 | 0.15 | 20060922 | 84.91489 | 100.19707 | 326.77466 | 1.12160 | 0.2041837 | 2.4274649 | 68 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 94106 | 2001 $ST_{265}$ |
| 2001 $SU_{265}$ | 16.4 | 0.15 | 20060922 | 51.90249 | 102.58796 | 256.75503 | 0.90970 | 0.2543318 | 2.7268892 | 82 | 6 | 1994–2006 | 0.50 | M-v | 1 | MPC | 77569 | 2001 $SU_{265}$ |
| 2001 $SD_{266}$ | 16.1 | 0.15 | 20060922 | 131.34071 | 280.57775 | 35.78941 | 2.16785 | 0.1307886 | 2.5707051 | 139 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 97474 | 2001 $SD_{266}$ |
| 2001 $SU_{267}$ | 16.8 | 0.15 | 20060922 | 81.35724 | 309.10574 | 56.02859 | 6.55424 | 0.2929390 | 2.5992631 | 130 | 2 | 2001–2005 | 0.53 | M-v | 2 | MPC | 90089 | 2001 $SU_{267}$ |
| 2001 $SN_{268}$ | 15.8 | 0.15 | 20060922 | 327.50194 | 129.49174 | 321.67357 | 8.40470 | 0.4226468 | 2.7150395 | 81 | 4 | 1997–2006 | 0.57 | M-v | 1 | MPC | 46681 | 2001 $SN_{268}$ |
| 2001 $SV_{268}$ | 16.4 | 0.15 | 20060922 | 112.22949 | 77.03114 | 174.77124 | 9.24394 | 0.1144316 | 2.7879406 | 42 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 61081 | 2001 $SV_{268}$ |
| 2001 $SP_{269}$ | 16.6 | 0.15 | 20060922 | 279.60582 | 138.44209 | 1.66236 | 2.98845 | 0.0080057 | 2.6944892 | 48 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 87470 | 2001 $SP_{269}$ |
| 2001 $SP_{270}$ | 15.5 | 0.15 | 20060922 | 267.27479 | 261.55807 | 178.65491 | 9.38898 | 0.0803580 | 3.1670095 | 43 | 6 | 1995–2006 | 0.56 | M-v | 0 | MPC | 04170 | 2001 $SP_{270}$ |
| 2001 $SQ_{270}$ | 15.4 | 0.15 | 20060922 | 330.77416 | 240.49727 | 149.21398 | 1.90794 | 0.3178221 | 3.0834016 | 178 | 5 | 1990–2006 | 0.43 | M-v | 0 | MPC | 04170 | 2001 $SQ_{270}$ |
| 2001 $SD_{271}$ | 16.3 | 0.15 | 20060922 | 93.22672 | 147.96716 | 202.42016 | 8.33416 | 0.1792535 | 2.5678894 | 123 | 5 | 1997–2005 | 0.56 | M-v | 1 | MPC | 97474 | 2001 $SD_{271}$ |
| 2001 $SU_{271}$ | 15.8 | 0.15 | 20060922 | 117.94096 | 71.40086 | 214.76510 | 7.17481 | 0.2163499 | 2.6488372 | 41 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 84964 | 2001 $SU_{271}$ |
| 2001 $SQ_{272}$ | 16.6 | 0.15 | 20060922 | 35.48288 | 61.56093 | 17.39476 | 2.83313 | 0.1434528 | 2.5353509 | 98 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 90089 | 2001 $SQ_{272}$ |
| 2001 $SU_{272}$ | 15.4 | 0.15 | 20060922 | 285.77628 | 122.09853 | 307.61237 | 3.90617 | 0.1310700 | 3.1284902 | 63 | 3 | 1995–2003 | 0.55 | M-v | 3 | MPC | 43429 | 2001 $SU_{272}$ |
| 2001 $SV_{272}$ | 15.0 | 0.15 | 20060922 | 23.50083 | 268.81714 | 91.17274 | 17.72246 | 0.1312482 | 2.8461058 | 42 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 75142 | 2001 $SV_{272}$ |
| 2001 $SC_{273}$ | 16.4 | 0.15 | 20060922 | 49.63315 | 257.98975 | 67.36298 | 26.75613 | 0.0600026 | 1.8225192 | 50 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 49932 | 2001 $SC_{273}$ |
| 2001 $SX_{273}$ | 17.5 | 0.15 | 20060922 | 102.46595 | 283.10564 | 13.47925 | 4.62580 | 0.0497884 | 2.7668976 | 24 | 3 | 2001–2006 | 0.30 | M-v | 3 | MPC | 61084 | 2001 $SX_{273}$ |
| 2001 $SH_{274}$ | 16.2 | 0.15 | 20060922 | 54.59094 | 337.51879 | 15.64319 | 6.12319 | 0.0735268 | 2.7312965 | 52 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 88939 | 2001 $SH_{274}$ |
| 2001 $SK_{274}$ | 16.4 | 0.15 | 20060922 | 257.31909 | 275.76999 | 169.94529 | 2.98016 | 0.1256583 | 3.1945341 | 37 | 6 | 1995–2006 | 0.48 | M-v | 0 | MPC | 74101 | 2001 $SK_{274}$ |
| 2001 $SS_{274}$ | 17.3 | 0.15 | 20060922 | 64.60814 | 306.17232 | 17.60389 | 2.25793 | 0.0546018 | 2.8114920 | 35 | 3 | 1996–2006 | 0.32 | M-v | 4 | MPC | 48109 | 2001 $SS_{274}$ |
| 2001 $SG_{276}$ | 17.7 | 0.15 | 20060922 | 75.13055 | 200.22964 | 35.17233 | 26.68397 | 0.2476644 | 1.4326905 | 287 | 3 | 2001–2006 | 0.46 | M-v | 1 | MPC | 04170 | 2001 $SG_{276}$ |
| 2001 $SS_{276}$ | 16.8 | 0.15 | 20060922 | 348.96700 | 140.91282 | 215.46742 | 20.07078 | 0.0825328 | 1.9039525 | 123 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 50559 | 2001 $SS_{276}$ |
| 2001 $SE_{277}$ | 14.8 | 0.15 | 20060922 | 73.85309 | 59.69104 | 300.32832 | 26.20447 | 0.0942316 | 2.6506996 | 98 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 97474 | 2001 $SE_{277}$ |
| 2001 $SO_{277}$ | 14.5 | 0.15 | 20060922 | 286.26848 | 200.45448 | 234.76966 | 20.52337 | 0.0754533 | 3.1313373 | 94 | 3 | 2001–2006 | 0.72 | M-v | 2 | MPC | 66215 | 2001 $SO_{277}$ |
| 2001 $SC_{278}$ | 15.3 | 0.15 | 20060922 | 27.76963 | 110.97774 | 283.50753 | 6.60290 | 0.1772680 | 2.7550905 | 118 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 84966 | 2001 $SC_{278}$ |
| 2001 $SV_{278}$ | 14.7 | 0.15 | 20060922 | 356.16856 | 231.79836 | 220.97565 | 12.88266 | 0.1716572 | 2.7115157 | 175 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97474 | 2001 $SV_{278}$ |
| 2001 $SC_{279}$ | 15.3 | 0.15 | 20060922 | 81.03355 | 90.85276 | 230.89106 | 7.62466 | 0.1318740 | 2.7674391 | 124 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 87470 | 2001 $SC_{279}$ |
| 2001 $SE_{279}$ | 15.6 | 0.15 | 20060922 | 17.19817 | 232.73185 | 219.20524 | 12.23774 | 0.2538876 | 2.6381556 | 111 | 3 | 2001–2005 | 0.51 | M-v | 2 | MPC | 90089 | 2001 $SE_{279}$ |
| 2001 $SJ_{279}$ | 14.9 | 0.15 | 20060922 | 333.54144 | 165.58289 | 215.04243 | 12.13318 | 0.1542165 | 3.0953103 | 131 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 04170 | 2001 $SJ_{279}$ |
| 2001 $SJ_{280}$ | 15.3 | 0.15 | 20060922 | 350.17779 | 151.60197 | 193.30173 | 3.72526 | 0.2771439 | 3.0943536 | 153 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04170 | 2001 $SJ_{280}$ |
| 2001 $SB_{281}$ | 15.2 | 0.15 | 20060922 | 288.21289 | 54.40647 | 16.15662 | 10.97281 | 0.1346336 | 3.1212594 | 106 | 4 | 2001–2006 | 0.68 | M-v | 0 | MPC | 62365 | 2001 $SB_{281}$ |
| 2001 $SR_{282}$ | 16.2 | 0.15 | 20060922 | 29.82983 | 277.86652 | 103.58177 | 4.84865 | 0.1879754 | 2.7719523 | 74 | 5 | 1999–2006 | 0.58 | M-v | 0 | MPC | 84968 | 2001 $SR_{282}$ |
| 2001 $SN_{283}$ | 16.4 | 0.15 | 20060922 | 86.46467 | 258.88705 | 7.62078 | 11.20924 | 0.0708672 | 2.9771481 | 34 | 3 | 2001–2006 | 0.32 | M-v | 1 | MPC | 65039 | 2001 $SN_{283}$ |
| 2001 $SP_{283}$ | 16.5 | 0.15 | 20060922 | 115.13729 | 271.26941 | 2.90759 | 4.17332 | 0.0279033 | 2.8098529 | 52 | 4 | 1996–2006 | 0.35 | M-v | 2 | MPC | 66216 | 2001 $SP_{283}$ |
| 2001 $SL_{285}$ | 16.0 | 0.15 | 20060922 | 344.30831 | 32.91441 | 13.29745 | 8.03417 | 0.2590211 | 2.9202328 | 128 | 4 | 1991–2006 | 0.46 | M-v | 1 | MPC | 03229 | 2001 $SL_{285}$ |
| 2001 $SU_{285}$ | 14.6 | 0.15 | 20060922 | 53.12064 | 337.08238 | 85.80657 | 12.88316 | 0.1848825 | 2.5247544 | 180 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97475 | 2001 $SU_{285}$ |
| 2001 $SG_{287}$ | 15.4 | 0.15 | 20060922 | 38.59118 | 262.72158 | 149.03526 | 8.69617 | 0.3091481 | 2.6957159 | 118 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 90090 | 2001 $SG_{287}$ |
| 2001 $SK_{287}$ | 15.2 | 0.15 | 20060922 | 222.29283 | 214.29762 | 336.39103 | 11.04474 | 0.0952097 | 2.6485881 | 51 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 90090 | 2001 $SK_{287}$ |
| 2001 $SJ_{288}$ | 15.2 | 0.15 | 20060922 | 332.18035 | 242.15639 | 98.68153 | 11.13855 | 0.2141446 | 3.1711957 | 23 | 3 | 2000–2004 | 0.42 | M-v | 2 | MPC | 22862 | 2001 $SJ_{288}$ |
| 2001 $SW_{288}$ | 15.2 | 0.15 | 20060922 | 207.82698 | 163.15853 | 334.50108 | 9.33489 | 0.0540762 | 3.1331063 | 25 | 3 | 1998–2004 | 0.48 | M-v | 3 | MPC | 66216 | 2001 $SW_{288}$ |
| 2001 $SC_{290}$ | 16.0 | 0.15 | 20060922 | 2.91080 | 162.79989 | 295.49601 | 12.70954 | 0.1309028 | 2.5503074 | 35 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 84970 | 2001 $SC_{290}$ |
| 2001 $SD_{290}$ | 14.5 | 0.15 | 20060922 | 242.12161 | 203.89100 | 273.31934 | 10.44496 | 0.0837075 | 2.9920651 | 80 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 62366 | 2001 $SD_{290}$ |
| 2001 $SE_{290}$ | 15.8 | 0.15 | 20060922 | 60.62205 | 82.30574 | 258.53700 | 12.56463 | 0.1584042 | 2.7022642 | 52 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 84971 | 2001 $SE_{290}$ |
| 2001 $SF_{290}$ | 15.4 | 0.15 | 20060922 | 65.14133 | 151.95309 | 212.93748 | 22.06687 | 0.0966576 | 2.6032465 | 58 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 88941 | 2001 $SF_{290}$ |
| 2001 $SJ_{290}$ | 16.9 | 0.15 | 20060922 | 181.05416 | 70.05006 | 279.30568 | 7.53189 | 0.1358663 | 2.2543995 | 62 | 3 | 1995–2006 | 0.50 | M-v | 3 | MPC | 94112 | 2001 $SJ_{290}$ |
| 2001 $SN_{290}$ | 15.3 | 0.15 | 20060922 | 293.91435 | 131.50320 | 250.64952 | 16.13525 | 0.3211233 | 3.1742144 | 24 | 1 | 137 days | 0.62 | M-v | 4 | MPC | 23780 | 2001 $SN_{290}$ |
| 2001 $SL_{291}$ | 14.5 | 0.15 | 20060922 | 40.42848 | 306.84073 | 326.09262 | 26.21990 | 0.1625439 | 3.1175232 | 93 | 5 | 1999–2006 | 0.55 | M-v | 0 | MPC | 04170 | 2001 $SL_{291}$ |
| 2001 $SB_{292}$ | 15.3 | 0.15 | 20060922 | 37.82800 | 137.60535 | 270.41990 | 14.50827 | 0.1021798 | 2.5877229 | 82 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 97475 | 2001 $SB_{292}$ |
| 2001 $SM_{292}$ | 15.5 | 0.15 | 20060922 | 29.90232 | 68.04997 | 313.43039 | 5.43112 | 0.0391207 | 2.6806882 | 32 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87471 | 2001 $SM_{292}$ |
| 2001 $SR_{292}$ | 15.6 | 0.15 | 20060922 | 111.43941 | 316.19875 | 318.25305 | 9.02071 | 0.1366208 | 2.7020177 | 48 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 87471 | 2001 $SR_{292}$ |
| 2001 $ST_{292}$ | 16.2 | 0.15 | 20060922 | 264.98757 | 208.88160 | 340.83673 | 2.38351 | 0.0712889 | 2.5239613 | 82 | 5 | 1998–2006 | 0.53 | M-v | 3 | MPC | 90090 | 2001 $ST_{292}$ |
| 2001 $SY_{292}$ | 14.6 | 0.15 | 20060922 | 287.87176 | 279.08421 | 11.97252 | 9.69455 | 0.2258800 | 3.9441311 | 36 | 2 | 2001–2006 | 0.51 | M-v | 3 | MPC | 94113 | 2001 $SY_{292}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SZ_{292}$ | 16.6 | 0.15 | 20060922 | 28.38726 | 149.85408 | 239.86416 | 3.65301 | 0.1830668 | 2.6855811 | 31 | 3 | 2001–2005 | 0.61 | M-v | 3 | MPC | 88941 | 2001 $SZ_{292}$ |
| 2001 $SF_{293}$ | 13.0 | 0.15 | 20060922 | 135.87967 | 20.35947 | 347.69628 | 9.44860 | 0.0409890 | 5.1753157 | 40 | 4 | 1995–2006 | 0.50 | M-v | 0 | MPC | 56314 | 2001 $SF_{293}$ |
| 2001 $SH_{294}$ | 15.6 | 0.15 | 20060922 | 349.38688 | 42.85163 | 315.28101 | 11.91345 | 0.1613363 | 2.9274144 | 104 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04171 | 2001 $SH_{294}$ |
| 2001 $SR_{294}$ | 17.0 | 0.15 | 20060922 | 42.53289 | 258.95746 | 181.91100 | 6.85456 | 0.1892035 | 2.4446365 | 33 | 2 | 2001–2005 | 0.54 | M-v | 4 | MPC | 88942 | 2001 $SR_{294}$ |
| 2001 $SD_{295}$ | 16.6 | 0.15 | 20060922 | 322.39164 | 181.38129 | 273.05551 | 1.21745 | 0.2210966 | 2.7196024 | 69 | 3 | 2001–2006 | 0.42 | M-v | 1 | MPC | 43431 | 2001 $SD_{295}$ |
| 2001 $SG_{295}$ | 16.4 | 0.15 | 20060922 | 85.92052 | 116.56789 | 179.69099 | 5.24891 | 0.0977240 | 2.7215823 | 37 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 84972 | 2001 $SG_{295}$ |
| 2001 $SS_{295}$ | 15.7 | 0.15 | 20060922 | 15.16131 | 62.92773 | 268.13860 | 0.99416 | 0.1034065 | 2.9291744 | 68 | 3 | 2001–2006 | 0.58 | M-v | 4 | MPC | 04171 | 2001 $SS_{295}$ |
| 2001 $SW_{296}$ | 17.2 | 0.15 | 20060922 | 110.53793 | 346.32003 | 323.84957 | 3.28083 | 0.0649481 | 2.5860589 | 44 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 87471 | 2001 $SW_{296}$ |
| 2001 $SG_{298}$ | 16.2 | 0.15 | 20060922 | 315.66546 | 194.69928 | 221.38145 | 1.22032 | 0.0619694 | 2.8669960 | 53 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 04171 | 2001 $SG_{298}$ |
| 2001 $SJ_{298}$ | 15.6 | 0.15 | 20060922 | 39.61496 | 290.49118 | 343.54390 | 6.77887 | 0.0731369 | 3.1174755 | 30 | 3 | 1999–2006 | 0.41 | M-v | 1 | MPC | 03230 | 2001 $SJ_{298}$ |
| 2001 $SK_{298}$ | 17.0 | 0.15 | 20060922 | 107.75459 | 53.85466 | 231.16772 | 1.43166 | 0.0650726 | 2.7062613 | 42 | 5 | 2000–2006 | 0.39 | M-v | 0 | MPC | 87471 | 2001 $SK_{298}$ |
| 2001 $SA_{299}$ | 16.2 | 0.15 | 20060922 | 291.30209 | 204.70103 | 339.51671 | 5.95192 | 0.0924041 | 2.4139595 | 33 | 3 | 2001–2005 | 0.52 | M-v | 4 | MPC | 90090 | 2001 $SA_{299}$ |
| 2001 $SR_{299}$ | 16.7 | 0.15 | 20060922 | 115.16969 | 327.44586 | 303.06080 | 2.85615 | 0.0555762 | 2.7537287 | 30 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 03230 | 2001 $SR_{299}$ |
| 2001 $SB_{300}$ | 16.5 | 0.15 | 20060922 | 350.89204 | 150.24663 | 210.79406 | 4.64717 | 0.0992039 | 2.9623369 | 36 | 4 | 1991–2006 | 0.53 | M-v | 2 | MPC | 04171 | 2001 $SB_{300}$ |
| 2001 $SE_{301}$ | 16.3 | 0.15 | 20060922 | 58.47931 | 131.63378 | 271.87906 | 4.49790 | 0.1168476 | 2.5276753 | 57 | 3 | 1997–2005 | 0.69 | M-v | 4 | MPC | 90090 | 2001 $SE_{301}$ |
| 2001 $SF_{301}$ | 17.0 | 0.15 | 20060922 | 51.02301 | 111.50571 | 208.41577 | 1.47465 | 0.0892504 | 2.8372499 | 43 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 65041 | 2001 $SF_{301}$ |
| 2001 $SL_{301}$ | 16.3 | 0.15 | 20060922 | 303.27709 | 283.66347 | 186.81663 | 9.90802 | 0.1474527 | 2.7450776 | 56 | 5 | 1992–2006 | 0.54 | M-v | 0 | MPC | 04171 | 2001 $SL_{301}$ |
| 2001 $SP_{301}$ | 16.0 | 0.15 | 20060922 | 19.94338 | 93.17929 | 304.89027 | 2.58926 | 0.0904799 | 2.6775882 | 46 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 90090 | 2001 $SP_{301}$ |
| 2001 $SS_{301}$ | 15.5 | 0.15 | 20060922 | 109.05426 | 268.07009 | 351.49959 | 8.34042 | 0.0296812 | 2.8708139 | 63 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 61088 | 2001 $SS_{301}$ |
| 2001 $SM_{302}$ | 15.6 | 0.15 | 20060922 | 14.40217 | 48.78218 | 245.51702 | 1.55874 | 0.1322051 | 3.1660313 | 41 | 6 | 1996–2006 | 0.50 | M-v | 0 | MPC | 02044 | 2001 $SM_{302}$ |
| 2001 $ST_{302}$ | 17.0 | 0.15 | 20060922 | 81.12550 | 348.40320 | 310.32179 | 2.70720 | 0.0749730 | 2.7607381 | 44 | 3 | 2001–2006 | 0.37 | M-v | 2 | MPC | 75145 | 2001 $ST_{302}$ |
| 2001 $SE_{303}$ | 16.4 | 0.15 | 20060922 | 104.53719 | 122.56230 | 185.41695 | 5.74607 | 0.0320099 | 2.6705459 | 48 | 3 | 2001–2005 | 0.47 | M-v | 2 | MPC | 88942 | 2001 $SE_{303}$ |
| 2001 $SR_{303}$ | 16.0 | 0.15 | 20060922 | 178.49952 | 164.86421 | 3.34785 | 9.00773 | 0.0316173 | 3.0485489 | 42 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 61088 | 2001 $SR_{303}$ |
| 2001 $SS_{303}$ | 16.3 | 0.15 | 20060922 | 100.38256 | 341.31211 | 356.38006 | 3.58525 | 0.0779758 | 2.5736659 | 57 | 3 | 1993–2005 | 0.48 | M-v | 3 | MPC | 97475 | 2001 $SS_{303}$ |
| 2001 $ST_{303}$ | 16.6 | 0.15 | 20060922 | 290.83020 | 239.16787 | 311.97676 | 1.36560 | 0.1208288 | 2.4273934 | 78 | 6 | 1993–2006 | 0.56 | M-v | 2 | MPC | 97475 | 2001 $ST_{303}$ |
| 2001 $SV_{303}$ | 16.1 | 0.15 | 20060922 | 300.75734 | 173.03483 | 235.03364 | 3.04755 | 0.1264641 | 3.0784266 | 39 | 5 | 1996–2006 | 0.41 | M-v | 0 | MPC | 03230 | 2001 $SV_{303}$ |
| 2001 $SZ_{303}$ | 15.3 | 0.15 | 20060922 | 133.87896 | 213.86140 | 347.59839 | 4.77738 | 0.0716425 | 3.1037811 | 73 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 03230 | 2001 $SZ_{303}$ |
| 2001 $SG_{304}$ | 16.3 | 0.15 | 20060922 | 343.76371 | 129.25820 | 254.83286 | 1.03233 | 0.0764283 | 2.9347751 | 46 | 6 | 1991–2006 | 0.38 | M-v | 0 | MPC | 88942 | 2001 $SG_{304}$ |
| 2001 $SX_{304}$ | 16.6 | 0.15 | 20060922 | 9.61991 | 189.49226 | 206.88920 | 4.45577 | 0.0637229 | 2.7594707 | 56 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 88942 | 2001 $SX_{304}$ |
| 2001 $SF_{305}$ | 16.8 | 0.15 | 20060922 | 61.54863 | 39.11744 | 0.07988 | 14.15694 | 0.1094718 | 2.5389701 | 51 | 2 | 2001–2005 | 0.44 | M-v | 4 | MPC | 84973 | 2001 $SF_{305}$ |
| 2001 $SS_{305}$ | 16.0 | 0.15 | 20060922 | 126.03356 | 40.79439 | 232.76129 | 4.79265 | 0.0985229 | 2.7373221 | 37 | 3 | 2001–2006 | 0.41 | M-v | 4 | MPC | 88943 | 2001 $SS_{305}$ |
| 2001 $SU_{305}$ | 15.7 | 0.15 | 20060922 | 153.36688 | 269.04545 | 342.19161 | 4.29045 | 0.1130896 | 2.7215770 | 67 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87471 | 2001 $SU_{305}$ |
| 2001 $SL_{306}$ | 17.1 | 0.15 | 20060922 | 55.09528 | 172.20591 | 211.77052 | 4.67239 | 0.1802678 | 2.6219103 | 29 | 2 | 2001–2005 | 0.47 | M-v | 4 | MPC | 88943 | 2001 $SL_{306}$ |
| 2001 $SY_{306}$ | 15.7 | 0.15 | 20060922 | 301.32849 | 173.08848 | 297.16036 | 8.27842 | 0.1372356 | 2.7267717 | 80 | 4 | 1994–2006 | 0.47 | M-v | 1 | MPC | 41739 | 2001 $SY_{306}$ |
| 2001 $SF_{307}$ | 16.1 | 0.15 | 20060922 | 243.93769 | 356.39605 | 170.72328 | 4.29453 | 0.0427619 | 2.6876971 | 36 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 84975 | 2001 $SF_{307}$ |
| 2001 $SC_{308}$ | 16.0 | 0.15 | 20060922 | 84.72549 | 119.74282 | 172.73056 | 7.75905 | 0.2122048 | 2.7501219 | 26 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 84975 | 2001 $SC_{308}$ |
| 2001 $SD_{308}$ | 15.4 | 0.15 | 20060922 | 279.64508 | 353.09369 | 66.86722 | 2.41028 | 0.0194450 | 3.0807316 | 94 | 5 | 2001–2006 | 0.56 | M-v | 0 | MPC | 04171 | 2001 $SD_{308}$ |
| 2001 $SV_{308}$ | 17.1 | 0.15 | 20060922 | 213.57056 | 280.34755 | 340.45415 | 5.93223 | 0.0851952 | 2.3862485 | 30 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 88944 | 2001 $SV_{308}$ |
| 2001 $SF_{309}$ | 15.7 | 0.15 | 20060922 | 97.29683 | 255.36622 | 349.09664 | 10.77462 | 0.0246478 | 3.0075195 | 41 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 03230 | 2001 $SF_{309}$ |
| 2001 $SX_{311}$ | 15.2 | 0.15 | 20060922 | 289.29831 | 81.37651 | 350.67882 | 18.26815 | 0.1195189 | 3.0420754 | 63 | 3 | 2001–2006 | 0.59 | M-v | 1 | MPC | 03231 | 2001 $SX_{311}$ |
| 2001 $SW_{312}$ | 16.1 | 0.15 | 20060922 | 17.48991 | 48.05396 | 51.96767 | 7.23332 | 0.0821056 | 2.4641767 | 67 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 97475 | 2001 $SW_{312}$ |
| 2001 $SZ_{312}$ | 17.3 | 0.15 | 20060922 | 91.40053 | 208.43329 | 126.03139 | 3.74601 | 0.2047861 | 2.5804569 | 49 | 2 | 2001–2005 | 0.62 | M-v | 3 | MPC | 88944 | 2001 $SZ_{312}$ |
| 2001 $SP_{313}$ | 14.6 | 0.15 | 20060922 | 293.01760 | 0.51188 | 70.40341 | 10.83374 | 0.0961221 | 3.0091435 | 86 | 5 | 1991–2006 | 0.60 | M-v | 1 | MPC | 04171 | 2001 $SP_{313}$ |
| 2001 $SU_{313}$ | 15.8 | 0.15 | 20060922 | 319.12391 | 267.78983 | 125.12784 | 10.47557 | 0.1059724 | 3.0542193 | 35 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03231 | 2001 $SU_{313}$ |
| 2001 $SE_{315}$ | 15.1 | 0.15 | 20060922 | 317.44929 | 249.22180 | 233.19333 | 10.56873 | 0.2144112 | 2.7057128 | 62 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 87471 | 2001 $SE_{315}$ |
| 2001 $SL_{315}$ | 14.7 | 0.15 | 20060922 | 45.15978 | 82.68818 | 343.24045 | 14.70176 | 0.1100099 | 2.5935362 | 151 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 97475 | 2001 $SL_{315}$ |
| 2001 $SR_{315}$ | 14.2 | 0.15 | 20060922 | 295.00695 | 92.62437 | 347.14354 | 15.21053 | 0.2326347 | 3.1636907 | 103 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04171 | 2001 $SR_{315}$ |
| 2001 $SG_{316}$ | 15.1 | 0.15 | 20060922 | 46.15766 | 125.99459 | 284.40853 | 13.51388 | 0.0953078 | 2.6795662 | 95 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90091 | 2001 $SG_{316}$ |
| 2001 $SU_{316}$ | 15.1 | 0.15 | 20060922 | 339.46720 | 43.28684 | 316.76422 | 8.68388 | 0.0955714 | 3.0513763 | 77 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04171 | 2001 $SU_{316}$ |
| 2001 $SE_{317}$ | 16.3 | 0.15 | 20060922 | 65.43186 | 238.63428 | 88.52640 | 6.09467 | 0.1626369 | 2.7182885 | 76 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 61092 | 2001 $SE_{317}$ |
| 2001 $SL_{317}$ | 16.2 | 0.15 | 20060922 | 326.15102 | 300.60770 | 141.08675 | 3.48641 | 0.0733547 | 2.7607217 | 70 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 87471 | 2001 $SL_{317}$ |
| 2001 $SY_{317}$ | 15.8 | 0.15 | 20060922 | 44.82175 | 257.20099 | 46.72083 | 2.76054 | 0.0511010 | 3.0245433 | 42 | 4 | 1997–2006 | 0.64 | M-v | 2 | MPC | 04171 | 2001 $SY_{317}$ |
| 2001 $SJ_{318}$ | 16.7 | 0.15 | 20060922 | 10.64452 | 208.45181 | 197.39160 | 0.98213 | 0.0875808 | 2.7240718 | 54 | 5 | 2001–2006 | 0.37 | M-v | 0 | MPC | 84979 | 2001 $SJ_{318}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SR_{318}$ | 16.3 | 0.15 | 20060922 | 263.02972 | 171.69015 | 3.04245 | 4.31001 | 0.0998020 | 2.5785350 | 46 | 5 | 1997–2006 | 0.50 | M-v | 1 | MPC | 97475 | 2001 $SR_{318}$ |
| 2001 $SS_{319}$ | 16.2 | 0.15 | 20060922 | 14.86025 | 167.90224 | 180.48540 | 9.03917 | 0.1108908 | 2.9227728 | 55 | 4 | 1999–2006 | 0.48 | M-v | 3 | MPC | 48111 | 2001 $SS_{319}$ |
| 2001 $SU_{319}$ | 16.2 | 0.15 | 20060922 | 194.86273 | 74.53474 | 157.95983 | 3.74368 | 0.0613726 | 2.6173178 | 63 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 04171 | 2001 $SU_{319}$ |
| 2001 $SZ_{319}$ | 16.4 | 0.15 | 20060922 | 356.84234 | 248.59996 | 177.48231 | 10.16755 | 0.1183124 | 2.7167247 | 41 | 5 | 1992–2005 | 0.54 | M-v | 1 | MPC | 88944 | 2001 $SZ_{319}$ |
| 2001 $SJ_{320}$ | 16.9 | 0.15 | 20060922 | 2.84321 | 209.38407 | 167.04361 | 2.26702 | 0.0821103 | 2.8676666 | 43 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 88945 | 2001 $SJ_{320}$ |
| 2001 $SO_{321}$ | 16.1 | 0.15 | 20060922 | 311.76112 | 132.79961 | 247.26821 | 8.44349 | 0.1292268 | 3.1152693 | 29 | 3 | 1996–2005 | 0.43 | M-v | 4 | MPC | 48112 | 2001 $SO_{321}$ |
| 2001 $SY_{321}$ | 14.7 | 0.15 | 20060922 | 123.80561 | 252.85818 | 319.85001 | 10.36879 | 0.0638992 | 3.0669430 | 78 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 04171 | 2001 $SY_{321}$ |
| 2001 $SL_{322}$ | 15.1 | 0.15 | 20060922 | 42.97123 | 23.08433 | 286.46829 | 9.52477 | 0.0584766 | 2.9807107 | 64 | 3 | 1996–2006 | 0.59 | M-v | 3 | MPC | 03231 | 2001 $SL_{322}$ |
| 2001 $SM_{323}$ | 15.1 | 0.15 | 20060922 | 253.77171 | 242.81580 | 224.44479 | 15.24032 | 0.2109237 | 3.1123510 | 27 | 3 | 2001–2004 | 0.35 | M-v | 2 | MPC | 49933 | 2001 $SM_{323}$ |
| 2001 $SW_{323}$ | 16.7 | 0.15 | 20060922 | 110.19819 | 59.70496 | 274.74890 | 9.11386 | 0.1858113 | 2.5552590 | 45 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 94118 | 2001 $SW_{323}$ |
| 2001 $SA_{324}$ | 18.0 | 0.15 | 20060922 | 105.58984 | 69.85432 | 293.69516 | 3.41518 | 0.2485437 | 2.4675113 | 37 | 2 | 2001–2005 | 0.60 | M-v | 3 | MPC | 88945 | 2001 $SA_{324}$ |
| 2001 $SD_{324}$ | 15.8 | 0.15 | 20060922 | 331.96469 | 94.75960 | 278.50509 | 4.48075 | 0.1176244 | 3.0592463 | 40 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04171 | 2001 $SD_{324}$ |
| 2001 $SN_{324}$ | 16.9 | 0.15 | 20060922 | 65.51676 | 102.36411 | 266.93967 | 5.32000 | 0.1621696 | 2.5664445 | 31 | 5 | 1997–2006 | 0.42 | M-v | 2 | MPC | 87472 | 2001 $SN_{324}$ |
| 2001 $SO_{325}$ | 15.3 | 0.15 | 20060922 | 301.70269 | 43.45340 | 334.05785 | 8.00375 | 0.0307568 | 3.0796827 | 32 | 4 | 2001–2005 | 0.66 | M-v | 1 | MPC | 84981 | 2001 $SO_{325}$ |
| 2001 $ST_{326}$ | 16.1 | 0.15 | 20060922 | 314.88505 | 157.92671 | 331.87187 | 4.97980 | 0.0849598 | 2.5269850 | 56 | 5 | 1997–2006 | 0.43 | M-v | 2 | MPC | 97476 | 2001 $ST_{326}$ |
| 2001 $SU_{327}$ | 16.8 | 0.15 | 20060922 | 89.20266 | 189.03629 | 152.17417 | 7.79556 | 0.1639997 | 2.5833123 | 30 | 3 | 2001–2005 | 0.43 | M-v | 3 | MPC | 88945 | 2001 $SU_{327}$ |
| 2001 $SJ_{328}$ | 16.5 | 0.15 | 20060922 | 38.59642 | 7.61486 | 315.95588 | 3.24339 | 0.1171683 | 2.7590387 | 52 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 65043 | 2001 $SJ_{328}$ |
| 2001 $SS_{328}$ | 15.4 | 0.15 | 20060922 | 1.08754 | 305.39022 | 55.82255 | 3.47349 | 0.0650270 | 2.8964317 | 54 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 66217 | 2001 $SS_{328}$ |
| 2001 $SV_{331}$ | 16.4 | 0.15 | 20060922 | 342.45090 | 66.70309 | 14.80835 | 12.82511 | 0.1569251 | 2.7101540 | 20 | 3 | 1999–2003 | 0.58 | M-v | 2 | MPC | 35103 | 2001 $SV_{331}$ |
| 2001 $SU_{333}$ | 15.8 | 0.15 | 20060922 | 130.09145 | 39.53475 | 187.92832 | 12.77224 | 0.1140964 | 2.9662140 | 37 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 00062 | 2001 $SU_{333}$ |
| 2001 $SW_{333}$ | 15.4 | 0.15 | 20060922 | 131.38953 | 187.33397 | 19.64149 | 11.25628 | 0.0622359 | 3.1178377 | 50 | 4 | 1996–2006 | 0.60 | M-v | 2 | MPC | 61095 | 2001 $SW_{333}$ |
| 2001 $SH_{334}$ | 14.4 | 0.15 | 20060922 | 327.32181 | 73.38574 | 314.36978 | 10.70529 | 0.3140272 | 3.1069557 | 114 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04171 | 2001 $SH_{334}$ |
| 2001 $SY_{334}$ | 15.4 | 0.15 | 20060922 | 333.78686 | 229.05189 | 170.04751 | 5.88988 | 0.0770379 | 2.7849137 | 55 | 4 | 1997–2006 | 0.56 | M-v | 1 | MPC | 04171 | 2001 $SY_{334}$ |
| 2001 $SJ_{335}$ | 15.2 | 0.15 | 20060922 | 298.70462 | 115.62992 | 317.36058 | 11.28370 | 0.0810785 | 2.8009006 | 67 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04171 | 2001 $SJ_{335}$ |
| 2001 $SO_{336}$ | 16.1 | 0.15 | 20060922 | 332.56345 | 191.25437 | 183.11972 | 8.87530 | 0.0944829 | 2.9905438 | 40 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 04171 | 2001 $SO_{336}$ |
| 2001 $SW_{337}$ | 17.4 | 0.15 | 20060922 | 198.83757 | 32.50968 | 243.67133 | 1.94812 | 0.1707970 | 2.3831629 | 36 | 4 | 1997–2005 | 0.52 | M-v | 2 | MPC | 90091 | 2001 $SW_{337}$ |
| 2001 $SZ_{337}$ | 13.8 | 0.15 | 20060922 | 169.65371 | 3.02055 | 339.14149 | 3.52677 | 0.0855194 | 5.2838543 | 39 | 5 | 2000–2006 | 0.39 | M-v | 1 | MPC | 94120 | 2001 $SZ_{337}$ |
| 2001 $SN_{338}$ | 17.5 | 0.15 | 20060922 | 333.29911 | 165.85961 | 220.70807 | 3.23734 | 0.1755559 | 3.0035316 | 40 | 3 | 1996–2006 | 0.47 | M-v | 3 | MPC | 04171 | 2001 $SN_{338}$ |
| 2001 $SQ_{338}$ | 15.9 | 0.15 | 20060922 | 357.80310 | 275.28384 | 137.68038 | 4.36116 | 0.0847068 | 2.7405890 | 52 | 4 | 2001–2006 | 0.56 | M-v | 0 | MPC | 90091 | 2001 $SQ_{338}$ |
| 2001 $SF_{339}$ | 16.1 | 0.15 | 20060922 | 92.19269 | 68.76320 | 267.36275 | 14.58716 | 0.2075207 | 2.5633086 | 38 | 2 | 2001–2005 | 0.54 | M-v | 3 | MPC | 84984 | 2001 $SF_{339}$ |
| 2001 $SK_{339}$ | 15.8 | 0.15 | 20060922 | 53.04127 | 294.29047 | 47.84082 | 4.15067 | 0.0722185 | 2.6956325 | 58 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 84984 | 2001 $SK_{339}$ |
| 2001 $SZ_{339}$ | 16.3 | 0.15 | 20060922 | 332.68799 | 186.11660 | 268.35455 | 7.42990 | 0.0983159 | 2.6776800 | 63 | 5 | 1997–2006 | 0.53 | M-v | 0 | MPC | 87472 | 2001 $SZ_{339}$ |
| 2001 $SD_{340}$ | 15.2 | 0.15 | 20060922 | 150.68429 | 299.74061 | 301.37395 | 10.23779 | 0.1567174 | 2.6990583 | 100 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 87472 | 2001 $SD_{340}$ |
| 2001 $SE_{340}$ | 16.1 | 0.15 | 20060922 | 62.95419 | 313.30177 | 329.65553 | 15.27563 | 0.2292480 | 2.8795877 | 47 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 88946 | 2001 $SE_{340}$ |
| 2001 $SF_{341}$ | 15.2 | 0.15 | 20060922 | 70.72055 | 180.58067 | 149.39013 | 14.72157 | 0.1024138 | 2.6683180 | 39 | 3 | 2001–2006 | 0.65 | M-v | 3 | MPC | 75149 | 2001 $SF_{341}$ |
| 2001 $SJ_{341}$ | 16.7 | 0.15 | 20060922 | 73.37761 | 119.31331 | 172.80325 | 6.10906 | 0.0409655 | 2.8598833 | 27 | 4 | 1992–2006 | 0.36 | M-v | 0 | MPC | 04172 | 2001 $SJ_{341}$ |
| 2001 $SR_{341}$ | 16.1 | 0.15 | 20060922 | 344.28481 | 38.55906 | 41.93425 | 8.82017 | 0.3148386 | 2.7399628 | 62 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 87472 | 2001 $SR_{341}$ |
| 2001 $SW_{341}$ | 14.6 | 0.15 | 20060922 | 357.30203 | 304.63733 | 21.90034 | 27.21809 | 0.2250013 | 3.2100342 | 67 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04172 | 2001 $SW_{341}$ |
| 2001 $SZ_{341}$ | 16.2 | 0.15 | 20060922 | 87.67553 | 354.15872 | 329.00935 | 14.46782 | 0.1154817 | 2.6481320 | 32 | 2 | 2001–2005 | 0.48 | M-v | 3 | MPC | 88947 | 2001 $SZ_{341}$ |
| 2001 $SA_{342}$ | 16.6 | 0.15 | 20060922 | 97.52061 | 111.45390 | 230.55109 | 8.52134 | 0.0719720 | 2.5482001 | 42 | 3 | 2000–2005 | 0.58 | M-v | 4 | MPC | 84984 | 2001 $SA_{342}$ |
| 2001 $SL_{342}$ | 16.3 | 0.15 | 20060922 | 337.28036 | 127.58565 | 342.19244 | 7.83164 | 0.2700946 | 2.7603737 | 34 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 84984 | 2001 $SL_{342}$ |
| 2001 $SN_{342}$ | 17.3 | 0.15 | 20060922 | 123.64976 | 134.02346 | 180.94203 | 3.95099 | 0.1203290 | 2.5630178 | 39 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 94121 | 2001 $SN_{342}$ |
| 2001 $SO_{342}$ | 16.2 | 0.15 | 20060922 | 20.06503 | 169.13154 | 158.13728 | 2.02061 | 0.1052563 | 3.0200261 | 60 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 04172 | 2001 $SO_{342}$ |
| 2001 $SU_{342}$ | 14.7 | 0.15 | 20060922 | 2.64953 | 219.08398 | 138.33839 | 11.48049 | 0.0096503 | 3.0078454 | 57 | 5 | 1998–2006 | 0.71 | M-v | 1 | MPC | 87472 | 2001 $SU_{342}$ |
| 2001 $SP_{343}$ | 16.5 | 0.15 | 20060922 | 28.71070 | 260.42219 | 119.04381 | 7.79376 | 0.0827356 | 2.7633895 | 34 | 3 | 2001–2006 | 0.44 | M-v | 1 | MPC | 94122 | 2001 $SP_{343}$ |
| 2001 $SA_{344}$ | 15.5 | 0.15 | 20060922 | 21.82042 | 124.57807 | 269.70217 | 10.73124 | 0.1998236 | 2.6518091 | 50 | 5 | 1997–2006 | 0.42 | M-v | 1 | MPC | 87472 | 2001 $SA_{344}$ |
| 2001 $SS_{344}$ | 15.3 | 0.15 | 20060922 | 120.68161 | 326.55058 | 301.57259 | 8.03969 | 0.1254448 | 2.7481513 | 56 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 84984 | 2001 $SS_{344}$ |
| 2001 $SU_{344}$ | 14.7 | 0.15 | 20060922 | 329.84388 | 235.15551 | 133.02195 | 18.01544 | 0.2295862 | 3.0941042 | 93 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04172 | 2001 $SU_{344}$ |
| 2001 $SA_{345}$ | 15.1 | 0.15 | 20060922 | 353.48761 | 255.18838 | 127.24267 | 20.33781 | 0.1921856 | 2.9082619 | 38 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 74102 | 2001 $SA_{345}$ |
| 2001 $SR_{345}$ | 16.0 | 0.15 | 20060922 | 96.21530 | 42.73310 | 306.76070 | 10.97869 | 0.0787213 | 2.5311464 | 121 | 6 | 1995–2006 | 0.52 | M-v | 2 | MPC | 90091 | 2001 $SR_{345}$ |
| 2001 $SM_{346}$ | 16.0 | 0.15 | 20060922 | 22.33984 | 140.13538 | 207.40137 | 14.54179 | 0.1556301 | 2.8516081 | 84 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 84985 | 2001 $SM_{346}$ |
| 2001 $SD_{348}$ | 18.8 | 0.15 | 20060922 | 13.80270 | 89.29551 | 202.95065 | 14.38528 | 0.3281589 | 1.8850535 | 98 | 2 | 2001–2006 | 0.61 | M-v | 2 | MPC | 04172 | 2001 $SD_{348}$ |
| 2001 $SF_{348}$ | 15.8 | 0.15 | 20060922 | 138.13384 | 25.54714 | 262.23935 | 8.37162 | 0.1135413 | 2.5972635 | 33 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 94123 | 2001 $SF_{348}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $SX_{348}$ | 15.1 | 0.15 | 20060922 | 327.99982 | 278.55201 | 105.64165 | 17.76165 | 0.2822214 | 3.0935456 | 54 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04172 | 2001 $SX_{348}$ |
| 2001 $SY_{348}$ | 15.1 | 0.15 | 20060922 | 22.55339 | 321.22772 | 355.50286 | 9.48726 | 0.0653275 | 3.1031338 | 40 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 04172 | 2001 $SY_{348}$ |
| 2001 $SA_{349}$ | 16.1 | 0.15 | 20060922 | 10.40373 | 106.34812 | 343.78179 | 21.58762 | 0.1091705 | 2.5896104 | 43 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 87472 | 2001 $SA_{349}$ |
| 2001 $SR_{349}$ | 15.0 | 0.15 | 20060922 | 354.61165 | 98.27039 | 240.55238 | 13.89272 | 0.0923140 | 3.1347518 | 46 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 02044 | 2001 $SR_{349}$ |
| 2001 $SS_{349}$ | 15.2 | 0.15 | 20060922 | 5.71905 | 88.15357 | 246.73727 | 10.59417 | 0.0768754 | 3.0799931 | 28 | 3 | 1995–2005 | 0.51 | M-v | 2 | MPC | 87472 | 2001 $SS_{349}$ |
| 2001 $SU_{349}$ | 15.9 | 0.15 | 20060922 | 320.23329 | 45.63469 | 351.92221 | 26.28146 | 0.1858370 | 3.0508046 | 48 | 2 | 2001–2006 | 0.57 | M-v | 3 | MPC | 03232 | 2001 $SU_{349}$ |
| 2001 $SX_{349}$ | 16.5 | 0.15 | 20060922 | 75.68383 | 227.41042 | 133.68026 | 4.97774 | 0.0727022 | 2.6167600 | 37 | 3 | 2001–2005 | 0.44 | M-v | 3 | MPC | 04172 | 2001 $SX_{349}$ |
| 2001 $SA_{350}$ | 16.5 | 0.15 | 20060922 | 219.52669 | 274.33720 | 275.83014 | 2.81379 | 0.0306357 | 2.7266552 | 32 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 88947 | 2001 $SA_{350}$ |
| 2001 $SH_{350}$ | 14.6 | 0.15 | 20060922 | 109.08303 | 204.47482 | 29.41476 | 14.25308 | 0.0489978 | 3.2000827 | 47 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 61097 | 2001 $SH_{350}$ |
| 2001 $SJ_{350}$ | 15.9 | 0.15 | 20060922 | 144.57108 | 336.08770 | 333.32773 | 3.20681 | 0.1195558 | 2.5608841 | 98 | 7 | 1995–2006 | 0.56 | M-v | 1 | MPC | 90091 | 2001 $SJ_{350}$ |
| 2001 $SQ_{350}$ | 15.8 | 0.15 | 20060922 | 56.38496 | 284.44034 | 26.80871 | 9.23563 | 0.0946484 | 2.9769522 | 71 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 65044 | 2001 $SQ_{350}$ |
| 2001 $SO_{351}$ | 16.8 | 0.15 | 20060922 | 12.58580 | 252.85933 | 153.67203 | 12.00325 | 0.2039294 | 2.7743369 | 18 | 3 | 1998–2005 | 0.28 | M-v | 3 | MPC | 84986 | 2001 $SO_{351}$ |
| 2001 $SV_{353}$ | 18.5 | 0.15 | 20011018 | 11.82828 | 303.95146 | 52.74629 | 6.30456 | 0.2568286 | 2.3410053 | 14 | 1 | 58 days | 0.61 | | | MPC | | 2001 $SV_{353}$ |
| 2001 $SX_{353}$ | 14.0 | 0.15 | 20060922 | 261.27799 | 192.17520 | 247.21653 | 24.11329 | 0.0681105 | 3.2184491 | 20 | 1 | 73 days | 0.58 | M-v | 4 | MPC | | 2001 $SX_{353}$ |
| 2001 TJ | 17.6 | 0.15 | 20060922 | 110.24988 | 42.75936 | 20.77168 | 2.43678 | 0.1500859 | 2.3091232 | 70 | 4 | 1996–2006 | 0.62 | M-v | 1 | MPC | 97476 | 2001 TJ |
| 2001 TK | 17.3 | 0.15 | 20060922 | 56.32647 | 202.45996 | 187.58966 | 1.66328 | 0.1678159 | 2.5887713 | 49 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 84987 | 2001 TK |
| 2001 $TE_3$ | 19.3 | 0.15 | 20060922 | 232.12917 | 315.40001 | 32.44287 | 3.12901 | 0.2703526 | 2.1297753 | 33 | 2 | 2001–2004 | 0.60 | M-v | 2 | MPC | 68937 | 2001 $TE_3$ |
| 2001 $TF_3$ | 15.6 | 0.15 | 20060922 | 233.81205 | 250.90946 | 221.31413 | 8.92198 | 0.0960392 | 3.2085079 | 55 | 4 | 2000–2006 | 0.35 | M-v | 0 | MPC | 66217 | 2001 $TF_3$ |
| 2001 $TC_4$ | 16.3 | 0.15 | 20060922 | 58.30403 | 130.90375 | 242.64843 | 2.35724 | 0.1721421 | 2.6593542 | 110 | 7 | 1994–2006 | 0.54 | M-v | 1 | MPC | 04172 | 2001 $TC_4$ |
| 2001 $TK_6$ | 15.3 | 0.15 | 20060922 | 29.99884 | 277.80289 | 45.35663 | 10.38109 | 0.0967948 | 3.0099447 | 44 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 77571 | 2001 $TK_6$ |
| 2001 $TL_6$ | 16.4 | 0.15 | 20060922 | 267.01555 | 108.17190 | 115.04923 | 4.17117 | 0.0385208 | 2.4307045 | 44 | 2 | 2001–2005 | 0.53 | M-v | 6 | MPC | 88949 | 2001 $TL_6$ |
| 2001 $TW_6$ | 16.0 | 0.15 | 20060922 | 332.88587 | 265.14131 | 183.94472 | 13.72047 | 0.0319145 | 2.7288103 | 34 | 5 | 2001–2006 | 0.43 | M-v | 0 | MPC | 03232 | 2001 $TW_6$ |
| 2001 $TY_6$ | 16.5 | 0.15 | 20060922 | 80.13397 | 272.70996 | 90.51655 | 6.44767 | 0.0616922 | 2.6047813 | 38 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87473 | 2001 $TY_6$ |
| 2001 $TD_7$ | 13.7 | 0.15 | 20060922 | 261.97284 | 68.68945 | 48.02891 | 26.93404 | 0.2079552 | 3.1027415 | 123 | 4 | 1998–2006 | 0.58 | M-v | 1 | MPC | 48114 | 2001 $TD_7$ |
| 2001 $TE_7$ | 13.8 | 0.15 | 20060922 | 178.22892 | 318.82734 | 211.30534 | 27.30064 | 0.2216919 | 3.1729411 | 178 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 74102 | 2001 $TE_7$ |
| 2001 $TN_7$ | 15.7 | 0.15 | 20060922 | 10.19325 | 244.19029 | 210.07139 | 13.43932 | 0.1092394 | 2.6119518 | 131 | 3 | 2001–2005 | 0.54 | M-v | 2 | MPC | 97476 | 2001 $TN_7$ |
| 2001 $TP_7$ | 17.0 | 0.15 | 20060922 | 28.41218 | 103.73259 | 208.55146 | 21.63456 | 0.0875003 | 1.8948253 | 95 | 3 | 2001–2006 | 0.56 | M-v | 1 | MPC | 46697 | 2001 $TP_7$ |
| 2001 $TD_8$ | 17.0 | 0.15 | 20060922 | 92.15767 | 313.74158 | 107.64172 | 7.75475 | 0.1225703 | 2.4017045 | 64 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 94127 | 2001 $TD_8$ |
| 2001 $TT_9$ | 14.8 | 0.15 | 20060922 | 303.96233 | 209.80656 | 209.00107 | 11.49734 | 0.1219788 | 3.0657025 | 97 | 5 | 1993–2006 | 0.64 | M-v | 1 | MPC | 23786 | 2001 $TT_9$ |
| 2001 $TM_{10}$ | 15.7 | 0.15 | 20060922 | 300.78606 | 27.80924 | 37.58219 | 9.91643 | 0.1480282 | 3.0628739 | 64 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 66218 | 2001 $TM_{10}$ |
| 2001 $TO_{10}$ | 15.6 | 0.15 | 20060922 | 298.27578 | 245.99058 | 153.08309 | 2.13470 | 0.1844548 | 3.2182994 | 67 | 3 | 2001–2004 | 0.54 | M-v | 3 | MPC | 40703 | 2001 $TO_{10}$ |
| 2001 $TP_{11}$ | 17.2 | 0.15 | 20060922 | 21.99968 | 57.62184 | 352.31295 | 1.05815 | 0.1510670 | 2.6829302 | 45 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90092 | 2001 $TP_{11}$ |
| 2001 $TQ_{11}$ | 16.7 | 0.15 | 20060922 | 49.23156 | 230.19698 | 204.46853 | 6.23119 | 0.1425200 | 2.4927864 | 69 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 97477 | 2001 $TQ_{11}$ |
| 2001 $TR_{11}$ | 15.8 | 0.15 | 20060922 | 294.35846 | 39.72846 | 14.78921 | 1.66860 | 0.1116293 | 3.1164336 | 66 | 5 | 1995–2006 | 0.60 | M-v | 0 | MPC | 04172 | 2001 $TR_{11}$ |
| 2001 $TZ_{11}$ | 15.6 | 0.15 | 20060922 | 1.28153 | 357.94908 | 57.08081 | 3.81140 | 0.0850445 | 2.7628038 | 74 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 66218 | 2001 $TZ_{11}$ |
| 2001 $TF_{12}$ | 15.5 | 0.15 | 20060922 | 22.40616 | 112.40506 | 208.09483 | 11.03456 | 0.0930021 | 3.1132598 | 73 | 6 | 1990–2006 | 0.57 | M-v | 0 | MPC | 87473 | 2001 $TF_{12}$ |
| 2001 $TN_{12}$ | 16.0 | 0.15 | 20060922 | 44.17823 | 17.77883 | 33.59444 | 14.02165 | 0.1849021 | 2.6532823 | 79 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 97477 | 2001 $TN_{12}$ |
| 2001 $TL_{14}$ | 15.9 | 0.15 | 20060922 | 349.27359 | 92.54907 | 314.58750 | 4.76094 | 0.0785879 | 2.8553967 | 60 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87473 | 2001 $TL_{14}$ |
| 2001 $TV_{14}$ | 15.1 | 0.15 | 20060922 | 312.51961 | 227.30173 | 136.56354 | 7.01922 | 0.0767585 | 3.2627818 | 24 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 00065 | 2001 $TV_{14}$ |
| 2001 $TX_{14}$ | 16.6 | 0.15 | 20060922 | 44.94810 | 280.07260 | 131.67249 | 6.12733 | 0.1093674 | 2.5688758 | 49 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 87473 | 2001 $TX_{14}$ |
| 2001 $TD_{15}$ | 15.7 | 0.15 | 20060922 | 35.82022 | 256.63893 | 101.24605 | 8.47599 | 0.2488612 | 2.8071831 | 88 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 61102 | 2001 $TD_{15}$ |
| 2001 $TO_{16}$ | 15.4 | 0.15 | 20060922 | 322.99784 | 232.43102 | 155.84102 | 16.04755 | 0.1758787 | 3.1266630 | 61 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04172 | 2001 $TO_{16}$ |
| 2001 $TS_{16}$ | 14.4 | 0.15 | 20060922 | 352.73621 | 284.99219 | 93.99129 | 25.81740 | 0.2532673 | 3.0074512 | 79 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 04172 | 2001 $TS_{16}$ |
| 2001 $TW_{16}$ | 16.4 | 0.15 | 20060922 | 287.19934 | 218.06376 | 207.55024 | 24.22064 | 0.1007769 | 1.8978165 | 93 | 5 | 1995–2006 | 0.52 | M-v | 2 | MPC | 50560 | 2001 $TW_{16}$ |
| 2001 $TC_{17}$ | 15.9 | 0.15 | 20060922 | 338.38517 | 52.45701 | 10.06119 | 6.35870 | 0.0636564 | 2.8731903 | 90 | 5 | 1991–2006 | 0.50 | M-v | 3 | MPC | 50560 | 2001 $TC_{17}$ |
| 2001 $TT_{17}$ | 15.0 | 0.15 | 20060922 | 348.74196 | 26.87212 | 349.03607 | 9.50898 | 0.1636249 | 3.0057604 | 159 | 2 | 2001–2006 | 0.49 | M-v | 2 | MPC | 03233 | 2001 $TT_{17}$ |
| 2001 $TV_{17}$ | 15.9 | 0.15 | 20060922 | 285.13769 | 84.94777 | 0.38560 | 12.65051 | 0.2837056 | 3.1517365 | 65 | 3 | 1995–2003 | 0.54 | M-v | 2 | MPC | 48115 | 2001 $TV_{17}$ |
| 2001 $TT_{19}$ | 15.4 | 0.15 | 20060922 | 32.50086 | 94.66383 | 284.14133 | 7.21294 | 0.1700375 | 2.7997045 | 63 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 84996 | 2001 $TT_{19}$ |
| 2001 $TB_{20}$ | 14.4 | 0.15 | 20060922 | 355.57921 | 22.82756 | 344.42580 | 10.04931 | 0.1015343 | 3.0972632 | 139 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 04172 | 2001 $TB_{20}$ |
| 2001 $TH_{20}$ | 15.6 | 0.15 | 20060922 | 338.15001 | 98.63816 | 299.14262 | 8.96537 | 0.2523172 | 3.0352870 | 79 | 2 | 2001–2006 | 0.52 | M-v | 3 | MPC | 03233 | 2001 $TH_{20}$ |
| 2001 $TJ_{20}$ | 15.6 | 0.15 | 20060922 | 56.70310 | 122.04768 | 281.58811 | 8.64767 | 0.0681600 | 2.6239944 | 94 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 90092 | 2001 $TJ_{20}$ |
| 2001 $TF_{21}$ | 16.2 | 0.15 | 20060922 | 348.65505 | 128.73765 | 232.63133 | 19.34062 | 0.0877114 | 1.8962450 | 120 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 50561 | 2001 $TF_{21}$ |
| 2001 $TU_{21}$ | 15.4 | 0.15 | 20060922 | 6.85755 | 17.44898 | 59.15400 | 15.02356 | 0.1047870 | 2.6453188 | 61 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87474 | 2001 $TU_{21}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TG_{22}$ | 16.5 | 0.15 | 20060922 | 46.77383 | 222.83209 | 136.91611 | 4.19839 | 0.1448859 | 2.7477207 | 52 | 3 | 2001–2005 | 0.67 | M-v | 4 | MPC | 84997 | 2001 $TG_{22}$ |
| 2001 $TO_{22}$ | 16.5 | 0.15 | 20060922 | 7.92494 | 219.71147 | 173.27498 | 4.90531 | 0.1229717 | 2.8156748 | 76 | 5 | 1996–2006 | 0.49 | M-v | 0 | MPC | 84997 | 2001 $TO_{22}$ |
| 2001 $TQ_{22}$ | 16.2 | 0.15 | 20060922 | 121.07809 | 61.65175 | 273.24067 | 1.54254 | 0.1424605 | 2.5346347 | 133 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 90092 | 2001 $TQ_{22}$ |
| 2001 $TT_{22}$ | 16.2 | 0.15 | 20060922 | 83.61726 | 107.28071 | 261.58223 | 1.68743 | 0.1855136 | 2.5732603 | 146 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 97477 | 2001 $TT_{22}$ |
| 2001 $TY_{22}$ | 15.2 | 0.15 | 20060922 | 35.25632 | 253.52475 | 22.70774 | 25.92255 | 0.2545677 | 3.1244525 | 62 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 04172 | 2001 $TY_{22}$ |
| 2001 $TB_{23}$ | 15.8 | 0.15 | 20060922 | 1.04070 | 25.83532 | 304.99567 | 1.70086 | 0.2049053 | 3.0813567 | 94 | 6 | 1994–2006 | 0.45 | M-v | 0 | MPC | 04172 | 2001 $TB_{23}$ |
| 2001 $TU_{23}$ | 16.0 | 0.15 | 20060922 | 112.18170 | 56.19626 | 269.07442 | 1.18000 | 0.1132514 | 2.6138461 | 78 | 4 | 2000–2005 | 0.48 | M-v | 1 | MPC | 97477 | 2001 $TU_{23}$ |
| 2001 $TY_{23}$ | 17.6 | 0.15 | 20060922 | 104.26117 | 165.49817 | 218.38249 | 5.62483 | 0.2132229 | 2.4534933 | 32 | 2 | 2001–2005 | 0.55 | M-v | 3 | MPC | 88952 | 2001 $TY_{23}$ |
| 2001 $TA_{24}$ | 16.2 | 0.15 | 20060922 | 359.75958 | 55.91135 | 355.63527 | 9.10086 | 0.2213909 | 2.7961666 | 84 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 50561 | 2001 $TA_{24}$ |
| 2001 $TN_{25}$ | 16.3 | 0.15 | 20060922 | 106.02780 | 54.93098 | 287.22392 | 4.89571 | 0.1821039 | 2.5482353 | 74 | 3 | 1993–2005 | 0.56 | M-v | 3 | MPC | 04172 | 2001 $TN_{25}$ |
| 2001 $TX_{26}$ | 17.5 | 0.15 | 20060922 | 84.82809 | 54.37730 | 327.78124 | 4.80418 | 0.2708506 | 2.5263908 | 75 | 2 | 2001–2005 | 0.60 | M-v | 3 | MPC | 88953 | 2001 $TX_{26}$ |
| 2001 $TT_{28}$ | 15.9 | 0.15 | 20060922 | 165.60105 | 351.70203 | 338.05475 | 5.25191 | 0.0358185 | 2.4451451 | 78 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 97478 | 2001 $TT_{28}$ |
| 2001 $TF_{29}$ | 15.7 | 0.15 | 20060922 | 37.17022 | 109.16644 | 323.94792 | 2.19224 | 0.0680376 | 2.5807223 | 141 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 90093 | 2001 $TF_{29}$ |
| 2001 $TL_{29}$ | 14.7 | 0.15 | 20060922 | 213.78419 | 283.30294 | 204.80799 | 2.84534 | 0.0759459 | 3.2020549 | 38 | 5 | 2000–2006 | 0.68 | M-v | 1 | MPC | 85001 | 2001 $TL_{29}$ |
| 2001 $TN_{29}$ | 16.0 | 0.15 | 20060922 | 355.10791 | 180.74177 | 207.25410 | 5.72617 | 0.0819602 | 2.9184286 | 92 | 4 | 1996–2006 | 0.50 | M-v | 3 | MPC | 74102 | 2001 $TN_{29}$ |
| 2001 $TR_{29}$ | 16.2 | 0.15 | 20060922 | 150.10128 | 291.83276 | 3.83320 | 9.11934 | 0.1206283 | 2.5477796 | 58 | 2 | 2001–2005 | 0.70 | M-v | 4 | MPC | 88953 | 2001 $TR_{29}$ |
| 2001 $TX_{30}$ | 16.5 | 0.15 | 20060922 | 88.35803 | 222.89265 | 127.15009 | 5.32156 | 0.2054515 | 2.6105485 | 65 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 85002 | 2001 $TX_{30}$ |
| 2001 $TD_{31}$ | 15.2 | 0.15 | 20060922 | 12.47671 | 76.58036 | 261.61753 | 10.59646 | 0.1262637 | 3.1384238 | 73 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 03234 | 2001 $TD_{31}$ |
| 2001 $TJ_{31}$ | 15.1 | 0.15 | 20060922 | 283.02159 | 185.23976 | 274.44565 | 8.97222 | 0.0961980 | 3.0816616 | 64 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 85002 | 2001 $TJ_{31}$ |
| 2001 $TQ_{31}$ | 14.8 | 0.15 | 20060922 | 54.53194 | 1.02509 | 335.46485 | 6.63923 | 0.1116214 | 2.9190881 | 69 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 88953 | 2001 $TQ_{31}$ |
| 2001 $TK_{34}$ | 15.4 | 0.15 | 20060922 | 54.73115 | 73.94409 | 255.47524 | 13.45085 | 0.3373832 | 2.8379404 | 93 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 87474 | 2001 $TK_{34}$ |
| 2001 $TA_{36}$ | 15.3 | 0.15 | 20060922 | 352.33966 | 102.06123 | 7.94213 | 8.92766 | 0.1129014 | 2.7188464 | 140 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 90093 | 2001 $TA_{36}$ |
| 2001 $TU_{36}$ | 16.1 | 0.15 | 20060922 | 129.45813 | 317.55723 | 252.30958 | 18.76912 | 0.0641048 | 1.9670134 | 103 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 87474 | 2001 $TU_{36}$ |
| 2001 $TR_{38}$ | 15.5 | 0.15 | 20060922 | 161.02063 | 27.56562 | 276.84187 | 8.18917 | 0.1132101 | 2.5666422 | 79 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 97478 | 2001 $TR_{38}$ |
| 2001 $TK_{40}$ | 15.2 | 0.15 | 20060922 | 56.28482 | 60.71870 | 340.04191 | 5.37191 | 0.1385311 | 2.7258219 | 122 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 90093 | 2001 $TK_{40}$ |
| 2001 $TR_{40}$ | 14.4 | 0.15 | 20060922 | 89.24601 | 69.17446 | 286.87794 | 11.12723 | 0.2234444 | 2.6977529 | 146 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97479 | 2001 $TR_{40}$ |
| 2001 $TP_{43}$ | 14.9 | 0.15 | 20060922 | 48.76132 | 3.31946 | 45.36288 | 11.41474 | 0.1664538 | 2.7973292 | 151 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 97479 | 2001 $TP_{43}$ |
| 2001 $TX_{44}$ | 19.2 | 0.15 | 20060922 | 231.29696 | 135.96122 | 57.85629 | 15.20350 | 0.5459891 | 0.8747517 | 72 | 3 | 2001–2006 | 0.59 | M-v | 4 | MPC | 04173 | 2001 $TX_{44}$ |
| 2001 $TD_{45}$ | 20.0 | 0.15 | 20060922 | 52.89579 | 212.38762 | 30.33270 | 25.41964 | 0.7774190 | 0.7967410 | 47 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 77571 | 2001 $TD_{45}$ |
| 2001 $TB_{46}$ | 16.4 | 0.15 | 20060922 | 124.36236 | 41.29259 | 240.58799 | 11.97546 | 0.1389540 | 2.6003916 | 46 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 85010 | 2001 $TB_{46}$ |
| 2001 $TG_{46}$ | 17.8 | 0.15 | 20060922 | 323.62254 | 36.21810 | 9.76047 | 20.90583 | 0.0985087 | 1.8699792 | 71 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 75153 | 2001 $TG_{46}$ |
| 2001 $TL_{46}$ | 14.9 | 0.15 | 20060922 | 320.21473 | 240.88980 | 143.46768 | 26.71415 | 0.1464516 | 3.1723647 | 66 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04173 | 2001 $TL_{46}$ |
| 2001 $TM_{47}$ | 15.6 | 0.15 | 20060922 | 26.26531 | 181.56105 | 156.92125 | 10.47972 | 0.0640433 | 2.9949126 | 38 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 61107 | 2001 $TM_{47}$ |
| 2001 $TO_{47}$ | 15.4 | 0.15 | 20060922 | 78.17930 | 112.75530 | 148.41169 | 9.90907 | 0.0229040 | 3.1794845 | 55 | 3 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04173 | 2001 $TO_{47}$ |
| 2001 $TR_{47}$ | 16.0 | 0.15 | 20060922 | 28.61879 | 176.13664 | 156.53004 | 10.48224 | 0.0781805 | 3.0101589 | 32 | 5 | 1995–2006 | 0.43 | M-v | 0 | MPC | 94137 | 2001 $TR_{47}$ |
| 2001 $TW_{48}$ | 14.7 | 0.15 | 20060922 | 358.21084 | 153.95157 | 289.94996 | 21.03162 | 0.1142646 | 2.6652888 | 85 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87475 | 2001 $TW_{48}$ |
| 2001 $TJ_{49}$ | 15.3 | 0.15 | 20060922 | 269.10162 | 207.92921 | 242.00906 | 6.07769 | 0.1392735 | 3.1521862 | 97 | 4 | 2001–2006 | 0.56 | M-v | 0 | MPC | 04173 | 2001 $TJ_{49}$ |
| 2001 $TQ_{51}$ | 17.2 | 0.15 | 20060922 | 157.44212 | 7.52856 | 52.77916 | 3.19662 | 0.1952897 | 2.2033149 | 73 | 3 | 1998–2006 | 0.62 | M-v | 2 | MPC | 00065 | 2001 $TQ_{51}$ |
| 2001 $TC_{52}$ | 15.1 | 0.15 | 20060922 | 82.33841 | 270.43895 | 78.98229 | 5.34851 | 0.3020094 | 2.6073435 | 190 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 97479 | 2001 $TC_{52}$ |
| 2001 $TD_{52}$ | 15.8 | 0.15 | 20060922 | 8.85594 | 345.14878 | 110.64897 | 4.67893 | 0.1347647 | 2.6159794 | 79 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 90094 | 2001 $TD_{52}$ |
| 2001 $TF_{52}$ | 15.8 | 0.15 | 20060922 | 6.47109 | 0.62250 | 67.29777 | 9.25050 | 0.2025111 | 2.7504734 | 86 | 5 | 1992–2006 | 0.51 | M-v | 1 | MPC | 85013 | 2001 $TF_{52}$ |
| 2001 $TL_{53}$ | 17.2 | 0.15 | 20060922 | 121.15592 | 306.74140 | 53.12751 | 3.88583 | 0.2088762 | 2.4336430 | 73 | 2 | 2001–2005 | 0.48 | M-v | 4 | MPC | 88960 | 2001 $TL_{53}$ |
| 2001 $TD_{54}$ | 16.2 | 0.15 | 20060922 | 167.71471 | 345.06463 | 334.92883 | 12.94268 | 0.0772340 | 2.3591244 | 45 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 48118 | 2001 $TD_{54}$ |
| 2001 $TO_{54}$ | 16.2 | 0.15 | 20060922 | 0.53035 | 255.61254 | 209.43272 | 9.91083 | 0.1507938 | 2.5399410 | 42 | 3 | 2001–2005 | 0.59 | M-v | 2 | MPC | 90094 | 2001 $TO_{54}$ |
| 2001 $TW_{54}$ | 15.8 | 0.15 | 20060922 | 15.11449 | 171.68920 | 285.54496 | 3.29070 | 0.1877642 | 2.5373563 | 72 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 90094 | 2001 $TW_{54}$ |
| 2001 $TY_{54}$ | 14.9 | 0.15 | 20060922 | 306.33820 | 208.04909 | 203.39741 | 12.68105 | 0.1186725 | 3.0199809 | 87 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04173 | 2001 $TY_{54}$ |
| 2001 $TE_{55}$ | 15.5 | 0.15 | 20060922 | 27.98339 | 20.55305 | 282.93428 | 3.79354 | 0.1155064 | 3.1151690 | 37 | 2 | 2001–2006 | 0.50 | M-v | 5 | MPC | 03234 | 2001 $TE_{55}$ |
| 2001 $TV_{55}$ | 16.7 | 0.15 | 20060922 | 8.21300 | 209.15009 | 121.47155 | 2.79855 | 0.2994933 | 2.9872283 | 73 | 2 | 2001–2006 | 0.51 | M-v | 2 | MPC | 03234 | 2001 $TV_{55}$ |
| 2001 $TX_{55}$ | 15.6 | 0.15 | 20060922 | 339.48026 | 190.34934 | 170.25010 | 4.96898 | 0.1493115 | 3.0837944 | 46 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 03234 | 2001 $TX_{55}$ |
| 2001 $TO_{56}$ | 16.8 | 0.15 | 20060922 | 11.70275 | 13.12159 | 62.65875 | 1.41599 | 0.0894272 | 2.6291012 | 50 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 85015 | 2001 $TO_{56}$ |
| 2001 $TD_{57}$ | 15.6 | 0.15 | 20060922 | 338.44493 | 338.34755 | 11.85365 | 9.30484 | 0.1661880 | 3.1410301 | 57 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 03234 | 2001 $TD_{57}$ |
| 2001 $TH_{57}$ | 16.6 | 0.15 | 20060922 | 68.76017 | 142.20068 | 203.11204 | 5.82197 | 0.0448083 | 2.7182515 | 53 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 87475 | 2001 $TH_{57}$ |
| 2001 $TK_{57}$ | 15.5 | 0.15 | 20060922 | 335.60278 | 159.51937 | 206.09119 | 9.79975 | 0.1264887 | 3.1036495 | 64 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 75155 | 2001 $TK_{57}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TL_{57}$ | 17.0 | 0.15 | 20060922 | 97.45329 | 22.97980 | 8.55957 | 2.14012 | 0.1927071 | 2.4456184 | 102 | 3 | 1995–2006 | 0.58 | M-v | 2 | MPC | 97479 | 2001 $TL_{57}$ |
| 2001 $TQ_{57}$ | 15.9 | 0.15 | 20060922 | 24.40471 | 215.41963 | 231.92337 | 2.41784 | 0.1246368 | 2.5422176 | 140 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 90094 | 2001 $TQ_{57}$ |
| 2001 $TX_{57}$ | 16.5 | 0.15 | 20060922 | 169.91320 | 92.80880 | 209.68892 | 8.26856 | 0.2383596 | 2.4038046 | 54 | 3 | 2001–2005 | 0.67 | M-v | 2 | MPC | 90094 | 2001 $TX_{57}$ |
| 2001 $TD_{60}$ | 15.5 | 0.15 | 20060922 | 336.09320 | 36.15209 | 41.59327 | 6.05590 | 0.4061976 | 2.9105242 | 243 | 4 | 1991–2006 | 0.49 | M-v | 1 | MPC | 70303 | 2001 $TD_{60}$ |
| 2001 $TK_{60}$ | 15.1 | 0.15 | 20060922 | 281.88067 | 115.63705 | 44.10425 | 3.58878 | 0.1142910 | 2.6797036 | 134 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 97479 | 2001 $TK_{60}$ |
| 2001 $TE_{61}$ | 15.4 | 0.15 | 20060922 | 36.40556 | 314.42006 | 53.64373 | 8.70592 | 0.2395584 | 2.7830008 | 83 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 65059 | 2001 $TE_{61}$ |
| 2001 $TV_{61}$ | 15.6 | 0.15 | 20060922 | 354.58822 | 147.76157 | 214.90661 | 9.83756 | 0.1042672 | 3.0529824 | 78 | 4 | 1999–2006 | 0.54 | M-v | 0 | MPC | 75156 | 2001 $TV_{61}$ |
| 2001 $TM_{62}$ | 15.1 | 0.15 | 20060922 | 351.64358 | 311.51424 | 21.76525 | 10.39950 | 0.2119012 | 3.1703854 | 81 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 04173 | 2001 $TM_{62}$ |
| 2001 $TT_{62}$ | 15.3 | 0.15 | 20060922 | 18.33953 | 30.55468 | 56.26972 | 10.00882 | 0.1637422 | 2.6270588 | 159 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97480 | 2001 $TT_{62}$ |
| 2001 $TW_{62}$ | 16.0 | 0.15 | 20060922 | 69.19660 | 340.83737 | 47.62846 | 3.75374 | 0.1420405 | 2.5827268 | 179 | 4 | 2001–2006 | 0.44 | M-v | 2 | MPC | 97480 | 2001 $TW_{62}$ |
| 2001 $TN_{63}$ | 16.5 | 0.15 | 20060922 | 32.25419 | 25.27098 | 34.75508 | 12.83572 | 0.1640072 | 2.6460172 | 58 | 3 | 2001–2005 | 0.60 | M-v | 2 | MPC | 88961 | 2001 $TN_{63}$ |
| 2001 $TA_{64}$ | 15.3 | 0.15 | 20060922 | 322.75710 | 196.48852 | 222.83653 | 6.97339 | 0.1745080 | 3.0040808 | 120 | 4 | 1993–2006 | 0.55 | M-v | 3 | MPC | 04173 | 2001 $TA_{64}$ |
| 2001 $TO_{64}$ | 15.7 | 0.15 | 20060922 | 303.14006 | 22.04573 | 42.01918 | 2.18750 | 0.1774453 | 3.1045745 | 79 | 4 | 1992–2006 | 0.53 | M-v | 0 | MPC | 75157 | 2001 $TO_{64}$ |
| 2001 $TT_{64}$ | 14.2 | 0.15 | 20060922 | 40.29546 | 83.59026 | 206.33222 | 19.50920 | 0.0980591 | 3.2163787 | 77 | 4 | 1999–2006 | 0.68 | M-v | 1 | MPC | 04173 | 2001 $TT_{64}$ |
| 2001 $TV_{64}$ | 15.8 | 0.15 | 20060922 | 324.93363 | 284.89345 | 119.56178 | 1.91842 | 0.2099829 | 3.0533552 | 85 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 03235 | 2001 $TV_{64}$ |
| 2001 $TR_{65}$ | 15.0 | 0.15 | 20060922 | 352.18408 | 235.80791 | 205.94529 | 2.35558 | 0.1588424 | 2.7623427 | 134 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 02045 | 2001 $TR_{65}$ |
| 2001 $TC_{66}$ | 15.3 | 0.15 | 20060922 | 337.17150 | 13.69815 | 343.93508 | 1.90264 | 0.1875424 | 3.1831720 | 73 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 04173 | 2001 $TC_{66}$ |
| 2001 $TO_{66}$ | 15.9 | 0.15 | 20060922 | 5.31626 | 145.56793 | 192.89982 | 3.45063 | 0.2884410 | 3.0394775 | 168 | 4 | 1999–2006 | 0.47 | M-v | 2 | MPC | 03235 | 2001 $TO_{66}$ |
| 2001 $TJ_{67}$ | 16.1 | 0.15 | 20060922 | 51.44639 | 163.24856 | 244.22657 | 1.23239 | 0.1525171 | 2.6163392 | 111 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 02045 | 2001 $TJ_{67}$ |
| 2001 $TA_{68}$ | 15.9 | 0.15 | 20060922 | 126.51923 | 226.26391 | 163.66095 | 2.49378 | 0.1316010 | 2.3826974 | 82 | 3 | 1999–2005 | 0.65 | M-v | 3 | MPC | 94144 | 2001 $TA_{68}$ |
| 2001 $TF_{68}$ | 14.5 | 0.15 | 20060922 | 15.89822 | 13.08389 | 44.35577 | 15.82291 | 0.0672034 | 2.7323824 | 180 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 90095 | 2001 $TF_{68}$ |
| 2001 $TS_{68}$ | 15.8 | 0.15 | 20060922 | 327.83787 | 230.63247 | 213.91464 | 3.05856 | 0.0745112 | 2.7674623 | 87 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 85020 | 2001 $TS_{68}$ |
| 2001 $TV_{68}$ | 17.2 | 0.15 | 20060922 | 73.86232 | 27.02998 | 329.45480 | 1.51248 | 0.1344659 | 2.6321185 | 44 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 90095 | 2001 $TV_{68}$ |
| 2001 $TX_{68}$ | 16.1 | 0.15 | 20060922 | 113.75501 | 262.59464 | 16.46987 | 2.87012 | 0.0506543 | 2.8031218 | 48 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 85020 | 2001 $TX_{68}$ |
| 2001 $TA_{69}$ | 15.8 | 0.15 | 20060922 | 71.19884 | 87.07268 | 207.57651 | 7.72167 | 0.1462510 | 2.8888364 | 58 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 88962 | 2001 $TA_{69}$ |
| 2001 $TC_{69}$ | 15.8 | 0.15 | 20060922 | 42.12465 | 126.30323 | 202.17698 | 10.07757 | 0.0507047 | 2.9306336 | 65 | 5 | 1991–2006 | 0.51 | M-v | 3 | MPC | 85020 | 2001 $TC_{69}$ |
| 2001 $TM_{69}$ | 16.6 | 0.15 | 20060922 | 353.45393 | 66.38566 | 17.83795 | 3.48332 | 0.0787891 | 2.6688534 | 50 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 87476 | 2001 $TM_{69}$ |
| 2001 $TT_{69}$ | 16.0 | 0.15 | 20060922 | 330.99718 | 138.19389 | 321.86890 | 0.79163 | 0.1925394 | 2.7615041 | 87 | 6 | 1992–2006 | 0.56 | M-v | 0 | MPC | 87476 | 2001 $TT_{69}$ |
| 2001 $TZ_{69}$ | 15.6 | 0.15 | 20060922 | 330.49011 | 130.42307 | 260.93807 | 1.16346 | 0.0870850 | 3.0302213 | 55 | 4 | 1996–2006 | 0.45 | M-v | 2 | MPC | 04173 | 2001 $TZ_{69}$ |
| 2001 $TA_{70}$ | 15.3 | 0.15 | 20060922 | 68.53110 | 57.57981 | 207.03122 | 13.42544 | 0.1196951 | 3.1257023 | 73 | 4 | 1996–2006 | 0.55 | M-v | 2 | MPC | 04173 | 2001 $TA_{70}$ |
| 2001 $TX_{70}$ | 16.1 | 0.15 | 20060922 | 47.24515 | 257.37552 | 151.75880 | 2.76424 | 0.1786702 | 2.6194022 | 98 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87476 | 2001 $TX_{70}$ |
| 2001 $TE_{71}$ | 15.4 | 0.15 | 20060922 | 324.58294 | 282.67751 | 213.35634 | 12.09647 | 0.1165693 | 2.6289808 | 87 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90095 | 2001 $TE_{71}$ |
| 2001 $TO_{72}$ | 15.1 | 0.15 | 20060922 | 290.84063 | 42.91213 | 48.82696 | 9.25521 | 0.0972912 | 3.0098859 | 60 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 85022 | 2001 $TO_{72}$ |
| 2001 $TR_{72}$ | 15.4 | 0.15 | 20060922 | 320.65647 | 328.03368 | 71.50440 | 3.29175 | 0.2493067 | 3.1041187 | 74 | 2 | 2001–2006 | 0.59 | M-v | 3 | MPC | 03235 | 2001 $TR_{72}$ |
| 2001 $TS_{72}$ | 15.1 | 0.15 | 20060922 | 358.95549 | 148.88203 | 197.49547 | 5.14261 | 0.1565310 | 3.1049115 | 112 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04173 | 2001 $TS_{72}$ |
| 2001 $TY_{72}$ | 16.0 | 0.15 | 20060922 | 95.79550 | 340.03731 | 41.13167 | 6.61010 | 0.0907025 | 2.5132444 | 161 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 97480 | 2001 $TY_{72}$ |
| 2001 $TQ_{73}$ | 15.6 | 0.15 | 20060922 | 314.24694 | 50.18472 | 48.17819 | 11.14500 | 0.1308315 | 2.8776279 | 106 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 46729 | 2001 $TQ_{73}$ |
| 2001 $TY_{73}$ | 15.3 | 0.15 | 20060922 | 5.81422 | 90.53804 | 8.79718 | 1.96649 | 0.1743716 | 2.6459655 | 128 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97480 | 2001 $TY_{73}$ |
| 2001 $TK_{74}$ | 16.9 | 0.15 | 20060922 | 156.35279 | 116.74075 | 234.34389 | 1.50309 | 0.2376859 | 2.3613855 | 58 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 94146 | 2001 $TK_{74}$ |
| 2001 $TP_{74}$ | 14.9 | 0.15 | 20060922 | 41.95568 | 115.05601 | 198.41450 | 8.01645 | 0.0999626 | 3.0760554 | 79 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 04173 | 2001 $TP_{74}$ |
| 2001 $TR_{74}$ | 15.2 | 0.15 | 20060922 | 329.47785 | 81.98529 | 45.17919 | 14.78758 | 0.0429942 | 2.6363746 | 126 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 97480 | 2001 $TR_{74}$ |
| 2001 $TS_{75}$ | 15.5 | 0.15 | 20060922 | 21.25295 | 204.38277 | 220.82981 | 12.09463 | 0.1379980 | 2.6793685 | 95 | 5 | 1995–2006 | 0.61 | M-v | 1 | MPC | 85024 | 2001 $TS_{75}$ |
| 2001 $TN_{76}$ | 16.3 | 0.15 | 20060922 | 3.43961 | 150.94936 | 196.96295 | 14.08142 | 0.3898143 | 2.9855745 | 130 | 3 | 1995–2006 | 0.42 | M-v | 1 | MPC | 03236 | 2001 $TN_{76}$ |
| 2001 $TS_{76}$ | 15.7 | 0.15 | 20060922 | 354.83859 | 358.73169 | 40.04202 | 2.45119 | 0.1290330 | 2.9345566 | 202 | 6 | 1991–2006 | 0.47 | M-v | 2 | MPC | 04173 | 2001 $TS_{76}$ |
| 2001 $TT_{76}$ | 16.5 | 0.15 | 20060922 | 57.93107 | 349.49446 | 37.49955 | 3.23307 | 0.2186953 | 2.6523255 | 98 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 90095 | 2001 $TT_{76}$ |
| 2001 $TZ_{76}$ | 15.7 | 0.15 | 20060922 | 51.37505 | 283.24377 | 146.15846 | 4.46877 | 0.1648186 | 2.5613202 | 122 | 4 | 1995–2006 | 0.51 | M-v | 2 | MPC | 97481 | 2001 $TZ_{76}$ |
| 2001 $TT_{77}$ | 15.3 | 0.15 | 20060922 | 355.72922 | 176.44098 | 201.71627 | 15.94118 | 0.1053712 | 3.0374299 | 85 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 75159 | 2001 $TT_{77}$ |
| 2001 $TZ_{77}$ | 16.0 | 0.15 | 20060922 | 11.30973 | 319.49527 | 109.32077 | 6.33389 | 0.0545187 | 2.7275747 | 71 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 90095 | 2001 $TZ_{77}$ |
| 2001 $TC_{78}$ | 15.4 | 0.15 | 20060922 | 28.65200 | 307.32425 | 57.20488 | 6.57921 | 0.1559730 | 2.8879074 | 140 | 4 | 1991–2006 | 0.51 | M-v | 2 | MPC | 03236 | 2001 $TC_{78}$ |
| 2001 $TP_{78}$ | 15.2 | 0.15 | 20060922 | 2.43248 | 9.57972 | 59.52015 | 7.45680 | 0.0354902 | 2.7693784 | 111 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87476 | 2001 $TP_{78}$ |
| 2001 $TT_{78}$ | 15.2 | 0.15 | 20060922 | 28.68116 | 253.11206 | 189.25805 | 2.51814 | 0.1123868 | 2.6172634 | 207 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 97481 | 2001 $TT_{78}$ |
| 2001 $TH_{80}$ | 14.7 | 0.15 | 20060922 | 36.26923 | 297.72709 | 103.00251 | 8.64632 | 0.2855238 | 2.7765423 | 140 | 3 | 2001–2006 | 0.53 | M-v | 1 | MPC | 85027 | 2001 $TH_{80}$ |
| 2001 $TC_{81}$ | 16.1 | 0.15 | 20060922 | 51.49529 | 80.35823 | 269.74345 | 4.41213 | 0.0577816 | 2.7324755 | 40 | 4 | 1994–2006 | 0.48 | M-v | 0 | MPC | 85028 | 2001 $TC_{81}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TQ_{81}$ | 15.1 | 0.15 | 20060922 | 289.52130 | 122.15661 | 281.59299 | 4.88884 | 0.1368526 | 3.1765034 | 50 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04173 | 2001 $TQ_{81}$ |
| 2001 $TT_{81}$ | 15.1 | 0.15 | 20060922 | 48.09742 | 40.18041 | 274.62554 | 4.51941 | 0.0502717 | 2.9225057 | 55 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 61114 | 2001 $TT_{81}$ |
| 2001 $TV_{81}$ | 15.1 | 0.15 | 20060922 | 37.26763 | 350.15902 | 300.31429 | 4.28825 | 0.1511975 | 3.0543967 | 74 | 5 | 1993–2006 | 0.57 | M-v | 1 | MPC | 04173 | 2001 $TV_{81}$ |
| 2001 $TW_{82}$ | 16.3 | 0.15 | 20060922 | 298.58637 | 141.27740 | 287.90889 | 2.83431 | 0.1964128 | 3.0382142 | 52 | 3 | 2001–2006 | 0.69 | M-v | 1 | MPC | 04173 | 2001 $TW_{82}$ |
| 2001 $TX_{82}$ | 15.7 | 0.15 | 20060922 | 313.35996 | 63.20194 | 345.30831 | 8.18131 | 0.1036112 | 3.0073978 | 62 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 03236 | 2001 $TX_{82}$ |
| 2001 $TC_{83}$ | 16.3 | 0.15 | 20060922 | 74.15811 | 44.82289 | 289.41693 | 4.78342 | 0.1647243 | 2.6867163 | 53 | 3 | 2001–2005 | 0.54 | M-v | 4 | MPC | 85029 | 2001 $TC_{83}$ |
| 2001 $TJ_{83}$ | 16.1 | 0.15 | 20060922 | 240.62863 | 300.04613 | 319.03366 | 4.53359 | 0.1148362 | 2.3439853 | 39 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 66221 | 2001 $TJ_{83}$ |
| 2001 $TM_{83}$ | 15.6 | 0.15 | 20060922 | 331.03849 | 120.45484 | 257.24364 | 4.01912 | 0.1647238 | 3.0576045 | 76 | 3 | 1996–2006 | 0.55 | M-v | 4 | MPC | 03237 | 2001 $TM_{83}$ |
| 2001 $TX_{83}$ | 15.7 | 0.15 | 20060922 | 5.60734 | 58.62789 | 332.19647 | 6.67379 | 0.0555137 | 2.7889974 | 36 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87477 | 2001 $TX_{83}$ |
| 2001 $TF_{84}$ | 15.3 | 0.15 | 20060922 | 46.99791 | 305.76860 | 350.48920 | 10.70005 | 0.1352947 | 3.0004186 | 84 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04173 | 2001 $TF_{84}$ |
| 2001 $TH_{84}$ | 15.8 | 0.15 | 20060922 | 348.25520 | 46.90342 | 5.95416 | 6.34074 | 0.0328402 | 2.7893072 | 79 | 6 | 1999–2006 | 0.43 | M-v | 0 | MPC | 88964 | 2001 $TH_{84}$ |
| 2001 $TN_{84}$ | 15.8 | 0.15 | 20060922 | 41.43375 | 98.35702 | 208.20934 | 0.64904 | 0.1855791 | 2.9803342 | 73 | 4 | 2000–2006 | 0.44 | M-v | 0 | MPC | 75160 | 2001 $TN_{84}$ |
| 2001 $TO_{84}$ | 16.7 | 0.15 | 20060922 | 39.34505 | 56.35550 | 18.12916 | 1.20615 | 0.1565847 | 2.5455758 | 70 | 4 | 1997–2005 | 0.51 | M-v | 3 | MPC | 90096 | 2001 $TO_{84}$ |
| 2001 $TR_{84}$ | 14.8 | 0.15 | 20060922 | 118.87528 | 206.28083 | 27.79124 | 10.49299 | 0.0219951 | 3.0730749 | 110 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04173 | 2001 $TR_{84}$ |
| 2001 $TX_{84}$ | 14.8 | 0.15 | 20060922 | 123.06404 | 21.56374 | 213.37028 | 8.06080 | 0.0251622 | 3.0418705 | 90 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 04173 | 2001 $TX_{84}$ |
| 2001 $TF_{85}$ | 16.4 | 0.15 | 20060922 | 302.79197 | 275.34405 | 166.55123 | 0.94071 | 0.3081473 | 3.0655496 | 76 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 04173 | 2001 $TF_{85}$ |
| 2001 $TG_{85}$ | 17.0 | 0.15 | 20060922 | 61.41263 | 128.79908 | 233.96534 | 1.17134 | 0.2189501 | 2.6751238 | 46 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 88964 | 2001 $TG_{85}$ |
| 2001 $TM_{85}$ | 15.5 | 0.15 | 20060922 | 3.28753 | 2.74063 | 335.45505 | 8.62016 | 0.1327234 | 3.0553631 | 95 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03237 | 2001 $TM_{85}$ |
| 2001 $TA_{86}$ | 16.8 | 0.15 | 20060922 | 116.97830 | 93.31221 | 217.92719 | 7.58771 | 0.2621544 | 2.5503321 | 81 | 2 | 2001–2005 | 0.46 | M-v | 3 | MPC | 97481 | 2001 $TA_{86}$ |
| 2001 $TB_{86}$ | 15.9 | 0.15 | 20060922 | 311.44169 | 158.80415 | 247.61314 | 4.03473 | 0.1674299 | 3.0559621 | 49 | 3 | 1996–2006 | 0.64 | M-v | 4 | MPC | 03237 | 2001 $TB_{86}$ |
| 2001 $TS_{86}$ | 16.6 | 0.15 | 20060922 | 116.64653 | 344.23208 | 334.18515 | 2.17210 | 0.0328056 | 2.6166508 | 59 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 88964 | 2001 $TS_{86}$ |
| 2001 $TB_{87}$ | 16.7 | 0.15 | 20060922 | 39.07625 | 136.34700 | 259.00760 | 3.54063 | 0.1727795 | 2.6556548 | 47 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 88965 | 2001 $TB_{87}$ |
| 2001 $TC_{87}$ | 17.6 | 0.15 | 20060922 | 58.06289 | 58.89594 | 330.39002 | 3.33721 | 0.2190243 | 2.5975231 | 36 | 2 | 2001–2005 | 0.46 | M-v | 3 | MPC | 88965 | 2001 $TC_{87}$ |
| 2001 $TE_{87}$ | 15.2 | 0.15 | 20060922 | 354.57240 | 112.50767 | 247.44707 | 4.75008 | 0.0449027 | 3.0243592 | 60 | 3 | 2001–2006 | 0.69 | M-v | 3 | MPC | 03237 | 2001 $TE_{87}$ |
| 2001 $TV_{87}$ | 14.9 | 0.15 | 20060922 | 288.65172 | 180.24050 | 236.94262 | 8.91994 | 0.0655523 | 3.1238616 | 70 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 03237 | 2001 $TV_{87}$ |
| 2001 $TX_{87}$ | 16.4 | 0.15 | 20060922 | 58.47920 | 74.55510 | 276.12853 | 4.20539 | 0.0845178 | 2.7313863 | 55 | 6 | 1994–2006 | 0.41 | M-v | 0 | MPC | 87477 | 2001 $TX_{87}$ |
| 2001 $TC_{89}$ | 16.4 | 0.15 | 20060922 | 303.33666 | 190.15689 | 315.35471 | 2.95510 | 0.1118727 | 2.6290588 | 57 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 90096 | 2001 $TC_{89}$ |
| 2001 $TP_{89}$ | 17.0 | 0.15 | 20060922 | 352.55684 | 108.62370 | 310.81096 | 3.18767 | 0.1993115 | 2.8065342 | 48 | 3 | 1998–2006 | 0.42 | M-v | 2 | MPC | 48121 | 2001 $TP_{89}$ |
| 2001 $TZ_{89}$ | 14.9 | 0.15 | 20060922 | 30.49377 | 40.91512 | 269.56085 | 4.85822 | 0.1071987 | 3.0612679 | 93 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 03238 | 2001 $TZ_{89}$ |
| 2001 $TJ_{90}$ | 15.3 | 0.15 | 20060922 | 359.85998 | 346.82209 | 348.88420 | 10.87472 | 0.1793063 | 3.0875122 | 43 | 2 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03238 | 2001 $TJ_{90}$ |
| 2001 $TV_{90}$ | 14.9 | 0.15 | 20060922 | 348.85938 | 5.44320 | 352.23320 | 10.03647 | 0.0865964 | 3.0864303 | 87 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04174 | 2001 $TV_{90}$ |
| 2001 $TC_{91}$ | 14.8 | 0.15 | 20060922 | 142.64684 | 200.53666 | 2.21930 | 8.80523 | 0.0291260 | 3.1090658 | 118 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04174 | 2001 $TC_{91}$ |
| 2001 $TD_{91}$ | 15.2 | 0.15 | 20060922 | 11.09485 | 322.76310 | 5.13327 | 9.58039 | 0.0941509 | 3.0942962 | 59 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04174 | 2001 $TD_{91}$ |
| 2001 $TF_{91}$ | 15.8 | 0.15 | 20060922 | 65.45153 | 347.81875 | 351.54590 | 4.91286 | 0.0564959 | 2.7612128 | 63 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 87477 | 2001 $TF_{91}$ |
| 2001 $TN_{91}$ | 16.6 | 0.15 | 20060922 | 66.25828 | 65.04843 | 321.26615 | 1.88537 | 0.0511018 | 2.5727675 | 34 | 3 | 2001–2006 | 0.35 | M-v | 3 | MPC | 90096 | 2001 $TN_{91}$ |
| 2001 $TU_{91}$ | 17.1 | 0.15 | 20060922 | 115.03094 | 81.13208 | 304.09401 | 1.26183 | 0.2207720 | 2.4027430 | 98 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 97481 | 2001 $TU_{91}$ |
| 2001 $TV_{91}$ | 15.4 | 0.15 | 20060922 | 119.83595 | 262.15577 | 9.52421 | 9.01241 | 0.1485682 | 2.7680794 | 120 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 87477 | 2001 $TV_{91}$ |
| 2001 $TE_{92}$ | 15.4 | 0.15 | 20060922 | 148.70190 | 355.00708 | 210.92179 | 10.51416 | 0.0441682 | 3.0565745 | 45 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 04174 | 2001 $TE_{92}$ |
| 2001 $TH_{92}$ | 17.3 | 0.15 | 20060922 | 81.60715 | 23.19836 | 338.75744 | 3.25509 | 0.1929748 | 2.5821866 | 41 | 2 | 2001–2005 | 0.55 | M-v | 3 | MPC | 90096 | 2001 $TH_{92}$ |
| 2001 $TK_{92}$ | 16.5 | 0.15 | 20060922 | 21.53523 | 121.02515 | 267.51679 | 2.53317 | 0.1058494 | 2.7641794 | 55 | 4 | 2001–2006 | 0.42 | M-v | 0 | MPC | 85034 | 2001 $TK_{92}$ |
| 2001 $TV_{92}$ | 16.1 | 0.15 | 20060922 | 84.14029 | 339.46836 | 341.55586 | 5.16052 | 0.0554494 | 2.7607849 | 38 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 94151 | 2001 $TV_{92}$ |
| 2001 $TW_{92}$ | 16.1 | 0.15 | 20060922 | 321.90583 | 26.83876 | 0.94105 | 10.75575 | 0.0946557 | 3.0998772 | 28 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04174 | 2001 $TW_{92}$ |
| 2001 $TA_{93}$ | 15.3 | 0.15 | 20060922 | 22.85881 | 55.89876 | 338.01355 | 6.39273 | 0.0488919 | 2.7374690 | 51 | 4 | 2001–2005 | 0.55 | M-v | 1 | MPC | 85035 | 2001 $TA_{93}$ |
| 2001 $TH_{93}$ | 15.0 | 0.15 | 20060922 | 305.70430 | 173.83458 | 245.46053 | 8.17511 | 0.1307613 | 3.0525773 | 96 | 5 | 1990–2006 | 0.51 | M-v | 0 | MPC | 48121 | 2001 $TH_{93}$ |
| 2001 $TQ_{93}$ | 15.3 | 0.15 | 20060922 | 135.72785 | 296.69259 | 15.02805 | 22.15805 | 0.0164910 | 2.5969968 | 128 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 90096 | 2001 $TQ_{93}$ |
| 2001 $TA_{94}$ | 16.3 | 0.15 | 20060922 | 66.67567 | 133.52762 | 256.54252 | 2.76677 | 0.0476407 | 2.5665687 | 80 | 5 | 1997–2006 | 0.49 | M-v | 2 | MPC | 90096 | 2001 $TA_{94}$ |
| 2001 $TD_{94}$ | 16.6 | 0.15 | 20060922 | 7.32163 | 111.55194 | 322.21910 | 2.39011 | 0.0684824 | 2.6511749 | 58 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97481 | 2001 $TD_{94}$ |
| 2001 $TK_{94}$ | 15.6 | 0.15 | 20060922 | 18.11978 | 26.56129 | 355.67767 | 5.38529 | 0.0610507 | 2.8173787 | 68 | 5 | 1994–2006 | 0.47 | M-v | 2 | MPC | 04174 | 2001 $TK_{94}$ |
| 2001 $TA_{95}$ | 15.4 | 0.15 | 20060922 | 13.40584 | 324.68173 | 344.44169 | 4.97151 | 0.2772113 | 3.0972441 | 121 | 2 | 2001–2006 | 0.52 | M-v | 2 | MPC | 03238 | 2001 $TA_{95}$ |
| 2001 $TL_{95}$ | 15.4 | 0.15 | 20060922 | 28.31556 | 314.55246 | 10.27154 | 9.48629 | 0.1018227 | 3.0346139 | 100 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04174 | 2001 $TL_{95}$ |
| 2001 $TR_{95}$ | 17.3 | 0.15 | 20060922 | 104.43692 | 18.88530 | 328.76811 | 3.73856 | 0.1974828 | 2.5423746 | 111 | 5 | 1993–2005 | 0.65 | M-v | 2 | MPC | 04174 | 2001 $TR_{95}$ |
| 2001 $TJ_{96}$ | 15.7 | 0.15 | 20060922 | 52.08183 | 157.52310 | 245.54296 | 2.39249 | 0.1043286 | 2.5969580 | 77 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 02045 | 2001 $TJ_{96}$ |
| 2001 $TP_{96}$ | 15.2 | 0.15 | 20060922 | 320.46756 | 42.55401 | 351.31897 | 4.84958 | 0.1464312 | 3.1146021 | 100 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 04174 | 2001 $TP_{96}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TW_{96}$ | 17.8 | 0.15 | 20060922 | 136.12682 | 62.79678 | 290.33273 | 1.36491 | 0.2502976 | 2.4086404 | 42 | 3 | 1997–2005 | 0.63 | M-v | 3 | MPC | 97482 | 2001 $TW_{96}$ |
| 2001 $TL_{97}$ | 15.5 | 0.15 | 20060922 | 321.50398 | 178.69436 | 239.99096 | 11.80610 | 0.1316173 | 3.0011198 | 61 | 4 | 1996–2006 | 0.56 | M-v | 3 | MPC | 23816 | 2001 $TL_{97}$ |
| 2001 $TQ_{97}$ | 16.3 | 0.15 | 20060922 | 40.17560 | 43.38283 | 6.59087 | 11.42210 | 0.1154493 | 2.6425064 | 53 | 3 | 2001–2005 | 0.67 | M-v | 3 | MPC | 97482 | 2001 $TQ_{97}$ |
| 2001 $TY_{98}$ | 15.4 | 0.15 | 20060922 | 183.49576 | 13.80771 | 209.10715 | 9.82268 | 0.0685425 | 2.7325897 | 108 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87477 | 2001 $TY_{98}$ |
| 2001 $TA_{99}$ | 15.4 | 0.15 | 20060922 | 282.02355 | 241.50486 | 269.67250 | 2.47081 | 0.1022376 | 2.6715096 | 125 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97482 | 2001 $TA_{99}$ |
| 2001 $TC_{99}$ | 15.3 | 0.15 | 20060922 | 135.66536 | 257.92589 | 4.03912 | 10.60800 | 0.1407382 | 2.7254498 | 135 | 4 | 2001–2006 | 0.59 | M-v | 0 | MPC | 90097 | 2001 $TC_{99}$ |
| 2001 $TK_{99}$ | 15.9 | 0.15 | 20060922 | 6.14301 | 137.36888 | 260.58892 | 3.66936 | 0.0954818 | 2.7930958 | 64 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 85038 | 2001 $TK_{99}$ |
| 2001 $TM_{99}$ | 15.0 | 0.15 | 20060922 | 119.63083 | 343.22397 | 242.66139 | 3.52683 | 0.1309137 | 3.0707277 | 81 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 04174 | 2001 $TM_{99}$ |
| 2001 $TQ_{99}$ | 12.7 | 0.15 | 20060922 | 263.80284 | 38.07909 | 226.88878 | 13.48039 | 0.0746174 | 5.1643450 | 34 | 3 | 1997–2003 | 0.68 | M-v | 3 | MPC | 26014 | 2001 $TQ_{99}$ |
| 2001 $TH_{100}$ | 15.3 | 0.15 | 20060922 | 206.11709 | 183.65236 | 10.04875 | 10.66524 | 0.0531303 | 2.8786353 | 47 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87477 | 2001 $TH_{100}$ |
| 2001 $TK_{100}$ | 15.4 | 0.15 | 20060922 | 267.33617 | 218.04984 | 256.45171 | 8.31748 | 0.0167805 | 2.9720694 | 56 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 40744 | 2001 $TK_{100}$ |
| 2001 $TL_{100}$ | 15.5 | 0.15 | 20060922 | 250.17062 | 285.93673 | 328.97643 | 5.88753 | 0.0991822 | 2.3909896 | 126 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 02045 | 2001 $TL_{100}$ |
| 2001 $TN_{100}$ | 16.4 | 0.15 | 20060922 | 49.72443 | 139.40446 | 257.11527 | 2.75649 | 0.2181601 | 2.6436167 | 110 | 4 | 1994–2006 | 0.48 | M-v | 1 | MPC | 97482 | 2001 $TN_{100}$ |
| 2001 $TS_{100}$ | 16.2 | 0.15 | 20060922 | 173.27290 | 264.04966 | 334.76691 | 4.09399 | 0.0577755 | 2.7271140 | 51 | 6 | 1994–2006 | 0.54 | M-v | 0 | MPC | 85039 | 2001 $TS_{100}$ |
| 2001 $TY_{100}$ | 15.4 | 0.15 | 20060922 | 325.76219 | 341.19533 | 56.29011 | 11.62908 | 0.1022140 | 3.1182232 | 106 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87478 | 2001 $TY_{100}$ |
| 2001 $TQ_{101}$ | 15.9 | 0.15 | 20060922 | 313.39466 | 249.32287 | 213.62031 | 4.87396 | 0.0759386 | 2.7567519 | 93 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 87478 | 2001 $TQ_{101}$ |
| 2001 $TD_{102}$ | 15.5 | 0.15 | 20060922 | 327.85405 | 80.86059 | 292.60316 | 13.18088 | 0.3232497 | 3.1069266 | 54 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 03239 | 2001 $TD_{102}$ |
| 2001 $TL_{102}$ | 15.0 | 0.15 | 20060922 | 43.10811 | 78.98946 | 335.33564 | 13.53374 | 0.0372565 | 2.6161904 | 201 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97482 | 2001 $TL_{102}$ |
| 2001 $TP_{102}$ | 15.8 | 0.15 | 20060922 | 18.74391 | 123.08044 | 208.79956 | 2.83547 | 0.1083301 | 3.0435370 | 62 | 5 | 1994–2006 | 0.55 | M-v | 1 | MPC | 04174 | 2001 $TP_{102}$ |
| 2001 $TS_{102}$ | 16.2 | 0.15 | 20060922 | 337.46540 | 26.76289 | 10.00806 | 8.41717 | 0.1013173 | 2.9534478 | 80 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 66222 | 2001 $TS_{102}$ |
| 2001 $TY_{103}$ | 15.3 | 0.15 | 20060922 | 50.57267 | 63.80716 | 288.90012 | 4.38342 | 0.0178692 | 2.8144126 | 75 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 87478 | 2001 $TY_{103}$ |
| 2001 $TK_{104}$ | 15.5 | 0.15 | 20060922 | 353.84626 | 77.16338 | 65.78137 | 5.41056 | 0.0866991 | 2.5305607 | 194 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 97482 | 2001 $TK_{104}$ |
| 2001 $TL_{104}$ | 15.4 | 0.15 | 20060922 | 320.66567 | 198.47953 | 214.74305 | 10.52030 | 0.1292510 | 3.1023984 | 124 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 66222 | 2001 $TL_{104}$ |
| 2001 $TM_{104}$ | 15.0 | 0.15 | 20060922 | 16.12634 | 143.30278 | 229.41481 | 9.56872 | 0.0997069 | 2.9591902 | 123 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 65070 | 2001 $TM_{104}$ |
| 2001 $TP_{104}$ | 15.7 | 0.15 | 20060922 | 307.39293 | 248.44153 | 192.18447 | 6.36812 | 0.2007274 | 2.9992100 | 76 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 46742 | 2001 $TP_{104}$ |
| 2001 $TT_{104}$ | 15.7 | 0.15 | 20060922 | 162.93813 | 240.45053 | 12.33400 | 8.61650 | 0.0884469 | 2.6941613 | 59 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87478 | 2001 $TT_{104}$ |
| 2001 $TZ_{104}$ | 15.9 | 0.15 | 20060922 | 107.38355 | 323.71146 | 31.52254 | 1.91895 | 0.0953268 | 2.5640148 | 139 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 97482 | 2001 $TZ_{104}$ |
| 2001 $TG_{105}$ | 15.0 | 0.15 | 20060922 | 52.59772 | 14.10236 | 37.73782 | 3.00544 | 0.1328247 | 2.6098425 | 280 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 97482 | 2001 $TG_{105}$ |
| 2001 $TS_{106}$ | 15.8 | 0.15 | 20060922 | 76.72284 | 7.02362 | 25.83356 | 2.35117 | 0.2610808 | 2.6093645 | 226 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 97482 | 2001 $TS_{106}$ |
| 2001 $TF_{108}$ | 14.9 | 0.15 | 20060922 | 278.42381 | 118.28790 | 307.90219 | 5.02048 | 0.0349191 | 3.0838334 | 54 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 03239 | 2001 $TF_{108}$ |
| 2001 $TQ_{108}$ | 15.9 | 0.15 | 20060922 | 30.23381 | 320.57131 | 0.24140 | 8.52873 | 0.0876007 | 3.0206002 | 64 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 04174 | 2001 $TQ_{108}$ |
| 2001 $TU_{108}$ | 15.3 | 0.15 | 20060922 | 3.19201 | 57.95043 | 314.89107 | 5.27181 | 0.1505382 | 2.9322235 | 105 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | 04174 | 2001 $TU_{108}$ |
| 2001 $TP_{109}$ | 14.9 | 0.15 | 20060922 | 335.29115 | 131.57439 | 236.12009 | 8.29338 | 0.0808845 | 3.1645890 | 59 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 03239 | 2001 $TP_{109}$ |
| 2001 $TT_{109}$ | 14.9 | 0.15 | 20060922 | 29.17239 | 318.75798 | 11.25442 | 10.11817 | 0.0507070 | 3.0613546 | 112 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 04174 | 2001 $TT_{109}$ |
| 2001 $TW_{109}$ | 16.4 | 0.15 | 20060922 | 339.98150 | 352.90700 | 1.51527 | 5.36633 | 0.2809365 | 3.1211126 | 72 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 03239 | 2001 $TW_{109}$ |
| 2001 $TC_{110}$ | 15.9 | 0.15 | 20060922 | 320.51674 | 80.97102 | 346.18178 | 4.03720 | 0.1911127 | 2.9868776 | 86 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 46746 | 2001 $TC_{110}$ |
| 2001 $TF_{110}$ | 15.8 | 0.15 | 20060922 | 27.09433 | 169.81081 | 248.93096 | 5.15882 | 0.1448170 | 2.6694911 | 68 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 85044 | 2001 $TF_{110}$ |
| 2001 $TJ_{110}$ | 15.2 | 0.15 | 20060922 | 318.75149 | 147.64539 | 254.42386 | 9.31239 | 0.0471655 | 3.0934542 | 52 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 85044 | 2001 $TJ_{110}$ |
| 2001 $TH_{111}$ | 14.8 | 0.15 | 20060922 | 274.00690 | 83.00827 | 357.50966 | 4.37006 | 0.1488468 | 3.2100375 | 114 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04174 | 2001 $TH_{111}$ |
| 2001 $TO_{111}$ | 16.4 | 0.15 | 20060922 | 79.98347 | 75.62313 | 284.25499 | 2.71584 | 0.1195357 | 2.6436298 | 78 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 85046 | 2001 $TO_{111}$ |
| 2001 $TY_{111}$ | 14.5 | 0.15 | 20060922 | 354.59537 | 141.51562 | 228.24479 | 9.63571 | 0.1030988 | 3.0432721 | 151 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 04174 | 2001 $TY_{111}$ |
| 2001 $TC_{113}$ | 14.6 | 0.15 | 20060922 | 280.69908 | 150.02018 | 11.14846 | 9.10707 | 0.1932150 | 2.7482310 | 205 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97483 | 2001 $TC_{113}$ |
| 2001 $TF_{113}$ | 15.5 | 0.15 | 20060922 | 357.72847 | 58.95902 | 26.97957 | 22.32632 | 0.0320695 | 2.6710395 | 65 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87478 | 2001 $TF_{113}$ |
| 2001 $TD_{115}$ | 15.2 | 0.15 | 20060922 | 355.90476 | 151.48825 | 248.10913 | 5.49698 | 0.2435851 | 2.9295293 | 202 | 4 | 1996–2006 | 0.52 | M-v | 2 | MPC | 03239 | 2001 $TD_{115}$ |
| 2001 $TS_{115}$ | 15.0 | 0.15 | 20060922 | 7.10250 | 53.83824 | 26.57624 | 9.13576 | 0.1375831 | 2.7360987 | 136 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 97483 | 2001 $TS_{115}$ |
| 2001 $TD_{117}$ | 14.9 | 0.15 | 20060922 | 317.90024 | 27.79040 | 50.62497 | 8.95682 | 0.3213548 | 3.1262217 | 134 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04174 | 2001 $TD_{117}$ |
| 2001 $TA_{118}$ | 16.1 | 0.15 | 20060922 | 101.12695 | 54.26962 | 297.68481 | 13.42565 | 0.2019328 | 2.5223792 | 69 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 88973 | 2001 $TA_{118}$ |
| 2001 $TE_{118}$ | 15.4 | 0.15 | 20060922 | 106.25067 | 19.66100 | 264.98085 | 15.72852 | 0.2947689 | 2.6750295 | 79 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 90097 | 2001 $TE_{118}$ |
| 2001 $TM_{118}$ | 15.2 | 0.15 | 20060922 | 300.15400 | 98.41338 | 322.92532 | 15.00992 | 0.2372402 | 3.1115559 | 87 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04174 | 2001 $TM_{118}$ |
| 2001 $TN_{118}$ | 15.9 | 0.15 | 20060922 | 302.45427 | 134.59542 | 296.35922 | 12.77738 | 0.2862073 | 3.0756767 | 59 | 3 | 1995–2006 | 0.43 | M-v | 3 | MPC | 04174 | 2001 $TN_{118}$ |
| 2001 $TT_{118}$ | 15.3 | 0.15 | 20060922 | 74.58715 | 76.66314 | 294.28527 | 11.58313 | 0.2164782 | 2.5887253 | 126 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 97483 | 2001 $TT_{118}$ |
| 2001 $TV_{118}$ | 15.6 | 0.15 | 20060922 | 52.23763 | 83.13069 | 301.95050 | 11.77519 | 0.2009234 | 2.6428733 | 72 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 85050 | 2001 $TV_{118}$ |
| 2001 $TB_{119}$ | 15.7 | 0.15 | 20060922 | 83.40983 | 105.19340 | 262.38620 | 13.57245 | 0.1071161 | 2.5681023 | 68 | 2 | 2001–2005 | 0.51 | M-v | 3 | MPC | 88973 | 2001 $TB_{119}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TK_{119}$ | 14.8 | 0.15 | 20060922 | 325.66812 | 57.02553 | 314.08806 | 14.81280 | 0.1227628 | 3.1652901 | 80 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 04174 | 2001 $TK_{119}$ |
| 2001 $TL_{119}$ | 14.9 | 0.15 | 20060922 | 349.59367 | 3.78753 | 335.30953 | 16.84755 | 0.2318285 | 3.1241599 | 58 | 2 | 2001–2006 | 0.45 | M-v | 2 | MPC | 03240 | 2001 $TL_{119}$ |
| 2001 $TM_{119}$ | 15.6 | 0.15 | 20060922 | 27.30072 | 145.53976 | 292.40084 | 12.27831 | 0.1357242 | 2.5795097 | 101 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 90098 | 2001 $TM_{119}$ |
| 2001 $TR_{119}$ | 15.2 | 0.15 | 20060922 | 333.18855 | 33.60488 | 331.96312 | 14.07736 | 0.2654797 | 3.1137425 | 33 | 2 | 2001–2006 | 0.49 | M-v | 3 | MPC | 03240 | 2001 $TR_{119}$ |
| 2001 $TT_{119}$ | 15.2 | 0.15 | 20060922 | 25.79100 | 341.58973 | 334.62569 | 16.72658 | 0.1011104 | 3.0997811 | 51 | 2 | 2001–2006 | 0.57 | M-v | 3 | MPC | 03240 | 2001 $TT_{119}$ |
| 2001 $TJ_{120}$ | 15.2 | 0.15 | 20060922 | 271.40129 | 119.76045 | 311.54376 | 12.56363 | 0.0747345 | 3.2145592 | 68 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 04174 | 2001 $TJ_{120}$ |
| 2001 $TT_{120}$ | 15.7 | 0.15 | 20060922 | 334.11036 | 52.94525 | 317.31369 | 11.36288 | 0.1609779 | 3.1306903 | 48 | 3 | 1996–2006 | 0.62 | M-v | 4 | MPC | 03240 | 2001 $TT_{120}$ |
| 2001 $TA_{121}$ | 16.1 | 0.15 | 20060922 | 57.13419 | 96.95195 | 274.01585 | 10.09084 | 0.1953274 | 2.6803563 | 52 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 85052 | 2001 $TA_{121}$ |
| 2001 $TH_{121}$ | 15.0 | 0.15 | 20060922 | 334.16430 | 77.48104 | 299.61670 | 9.92705 | 0.2394932 | 3.0973042 | 86 | 3 | 1995–2006 | 0.52 | M-v | 2 | MPC | 03241 | 2001 $TH_{121}$ |
| 2001 $TK_{121}$ | 15.3 | 0.15 | 20060922 | 51.51278 | 76.07362 | 341.09743 | 11.84425 | 0.1566217 | 2.5771845 | 126 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90098 | 2001 $TK_{121}$ |
| 2001 $TN_{121}$ | 14.9 | 0.15 | 20060922 | 323.95411 | 121.04419 | 293.40560 | 10.02762 | 0.1090391 | 3.0070894 | 80 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 04174 | 2001 $TN_{121}$ |
| 2001 $TP_{121}$ | 16.2 | 0.15 | 20060922 | 3.53529 | 171.10146 | 278.55561 | 8.69789 | 0.2465651 | 2.7053272 | 46 | 4 | 1997–2006 | 0.58 | M-v | 1 | MPC | 04174 | 2001 $TP_{121}$ |
| 2001 $TU_{121}$ | 14.5 | 0.15 | 20060922 | 57.41791 | 30.07096 | 242.28832 | 21.92240 | 0.1016302 | 3.1243473 | 48 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87478 | 2001 $TU_{121}$ |
| 2001 $TE_{122}$ | 16.1 | 0.15 | 20060922 | 45.90103 | 71.26788 | 346.95199 | 10.97915 | 0.2004639 | 2.6073038 | 70 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 90098 | 2001 $TE_{122}$ |
| 2001 $TG_{122}$ | 14.8 | 0.15 | 20060922 | 328.75093 | 84.46577 | 332.80836 | 10.21152 | 0.0831711 | 2.9684894 | 91 | 3 | 2001–2006 | 0.69 | M-v | 3 | MPC | 43437 | 2001 $TG_{122}$ |
| 2001 $TH_{122}$ | 15.6 | 0.15 | 20060922 | 76.25720 | 96.45594 | 257.40443 | 11.63656 | 0.1151403 | 2.6827161 | 42 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 85053 | 2001 $TH_{122}$ |
| 2001 $TM_{122}$ | 14.8 | 0.15 | 20060922 | 335.33343 | 131.57715 | 252.36599 | 13.90006 | 0.2000265 | 3.1072583 | 79 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 03241 | 2001 $TM_{122}$ |
| 2001 $TO_{122}$ | 14.1 | 0.15 | 20060922 | 311.95905 | 167.09241 | 239.30737 | 26.70679 | 0.1617484 | 3.1680648 | 89 | 2 | 2001–2006 | 0.47 | M-v | 2 | MPC | 03241 | 2001 $TO_{122}$ |
| 2001 $TE_{123}$ | 15.9 | 0.15 | 20060922 | 326.81728 | 198.71264 | 253.88465 | 10.84200 | 0.1567685 | 2.6983349 | 84 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87478 | 2001 $TE_{123}$ |
| 2001 $TP_{123}$ | 14.8 | 0.15 | 20060922 | 323.70216 | 73.74297 | 298.90971 | 9.83405 | 0.0818890 | 3.1277193 | 51 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04174 | 2001 $TP_{123}$ |
| 2001 $TU_{123}$ | 16.1 | 0.15 | 20060922 | 84.85064 | 27.93499 | 335.04464 | 10.36681 | 0.1781791 | 2.5563402 | 71 | 2 | 2001–2005 | 0.54 | M-v | 3 | MPC | 88973 | 2001 $TU_{123}$ |
| 2001 $TE_{124}$ | 14.6 | 0.15 | 20060922 | 74.70434 | 323.53571 | 312.24709 | 11.67103 | 0.1119207 | 2.9785909 | 81 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04174 | 2001 $TE_{124}$ |
| 2001 $TM_{124}$ | 14.9 | 0.15 | 20060922 | 270.75360 | 194.34879 | 254.41512 | 8.49222 | 0.0522022 | 3.0311779 | 66 | 5 | 1992–2006 | 0.52 | M-v | 1 | MPC | 61124 | 2001 $TM_{124}$ |
| 2001 $TX_{124}$ | 15.4 | 0.15 | 20060922 | 271.25165 | 164.24150 | 290.10250 | 8.29844 | 0.1432705 | 3.0914213 | 68 | 4 | 1990–2006 | 0.62 | M-v | 1 | MPC | 48123 | 2001 $TX_{124}$ |
| 2001 $TZ_{124}$ | 15.2 | 0.15 | 20060922 | 285.61926 | 91.92299 | 328.40837 | 10.29633 | 0.0812311 | 3.1570441 | 72 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 04174 | 2001 $TZ_{124}$ |
| 2001 $TH_{125}$ | 16.0 | 0.15 | 20060922 | 51.53212 | 77.05327 | 277.82421 | 6.45083 | 0.1288052 | 2.7527977 | 51 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 85054 | 2001 $TH_{125}$ |
| 2001 $TJ_{125}$ | 14.8 | 0.15 | 20060922 | 314.34202 | 197.08381 | 280.52538 | 7.90451 | 0.1204581 | 2.7336747 | 58 | 5 | 1997–2006 | 0.50 | M-v | 1 | MPC | 87479 | 2001 $TJ_{125}$ |
| 2001 $TL_{125}$ | 14.4 | 0.15 | 20060922 | 333.59284 | 125.20922 | 239.04334 | 14.03820 | 0.2551339 | 3.1121355 | 94 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04174 | 2001 $TL_{125}$ |
| 2001 $TR_{125}$ | 16.4 | 0.15 | 20060922 | 339.48908 | 37.54779 | 328.19033 | 9.30849 | 0.1307492 | 3.1038227 | 30 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 03241 | 2001 $TR_{125}$ |
| 2001 $TX_{125}$ | 15.2 | 0.15 | 20060922 | 41.98468 | 43.33577 | 299.69069 | 8.17008 | 0.1399849 | 2.8502418 | 64 | 4 | 1994–2006 | 0.58 | M-v | 2 | MPC | 87479 | 2001 $TX_{125}$ |
| 2001 $TZ_{125}$ | 15.2 | 0.15 | 20060922 | 29.91220 | 209.22104 | 128.12499 | 12.15062 | 0.1313901 | 2.9639246 | 62 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 62370 | 2001 $TZ_{125}$ |
| 2001 $TH_{126}$ | 17.2 | 0.15 | 20060922 | 359.08256 | 265.50385 | 200.50101 | 3.52831 | 0.0940273 | 2.5345924 | 44 | 6 | 1993–2006 | 0.37 | M-v | 1 | MPC | 00069 | 2001 $TH_{126}$ |
| 2001 $TV_{126}$ | 16.4 | 0.15 | 20060922 | 222.61954 | 195.99584 | 34.10134 | 4.27793 | 0.1008085 | 2.6096481 | 32 | 3 | 2001–2005 | 0.46 | M-v | 3 | MPC | 90098 | 2001 $TV_{126}$ |
| 2001 $TZ_{126}$ | 17.1 | 0.15 | 20060922 | 75.07507 | 124.67033 | 210.08037 | 4.19073 | 0.1654231 | 2.7432093 | 51 | 4 | 2001–2006 | 0.42 | M-v | 0 | MPC | 90098 | 2001 $TZ_{126}$ |
| 2001 $TC_{127}$ | 16.3 | 0.15 | 20060922 | 81.27753 | 149.96555 | 164.06359 | 2.21462 | 0.2235884 | 2.7983171 | 62 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85054 | 2001 $TC_{127}$ |
| 2001 $TY_{127}$ | 15.1 | 0.15 | 20060922 | 83.48312 | 221.62284 | 38.26544 | 12.10741 | 0.1040882 | 3.0189900 | 63 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04175 | 2001 $TY_{127}$ |
| 2001 $TC_{128}$ | 16.2 | 0.15 | 20060922 | 64.85881 | 288.32163 | 85.80489 | 5.60669 | 0.1660132 | 2.6062800 | 80 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 85055 | 2001 $TC_{128}$ |
| 2001 $TN_{128}$ | 15.6 | 0.15 | 20060922 | 3.36720 | 168.71093 | 241.71870 | 9.25175 | 0.2395046 | 2.7660877 | 75 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 61125 | 2001 $TN_{128}$ |
| 2001 $TR_{129}$ | 16.0 | 0.15 | 20060922 | 49.55929 | 115.92958 | 198.92479 | 10.77963 | 0.0926561 | 2.9171346 | 74 | 5 | 1991–2006 | 0.44 | M-v | 2 | MPC | 66223 | 2001 $TR_{129}$ |
| 2001 $TY_{129}$ | 17.4 | 0.15 | 20060922 | 96.53518 | 279.13998 | 193.31923 | 6.10299 | 0.0896248 | 2.2175126 | 37 | 4 | 2001–2006 | 0.69 | M-v | 1 | MPC | 46752 | 2001 $TY_{129}$ |
| 2001 $TG_{131}$ | 16.0 | 0.15 | 20060922 | 357.05799 | 220.93340 | 135.84839 | 7.54597 | 0.2643761 | 2.9954313 | 88 | 4 | 1996–2006 | 0.68 | M-v | 2 | MPC | 03242 | 2001 $TG_{131}$ |
| 2001 $TB_{132}$ | 16.5 | 0.15 | 20060922 | 53.67962 | 148.76205 | 242.18995 | 3.13811 | 0.1214971 | 2.5968059 | 39 | 2 | 2001–2005 | 0.50 | M-v | 4 | MPC | 88975 | 2001 $TB_{132}$ |
| 2001 $TJ_{132}$ | 16.1 | 0.15 | 20060922 | 12.36186 | 154.18443 | 159.89969 | 11.96235 | 0.1340683 | 3.1495290 | 39 | 4 | 1995–2006 | 0.37 | M-v | 0 | MPC | 04175 | 2001 $TJ_{132}$ |
| 2001 $TA_{134}$ | 14.8 | 0.15 | 20060922 | 297.42916 | 325.38208 | 103.76918 | 12.20996 | 0.1519470 | 3.1046436 | 95 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04175 | 2001 $TA_{134}$ |
| 2001 $TC_{134}$ | 15.5 | 0.15 | 20060922 | 324.54956 | 339.96478 | 57.93093 | 18.40362 | 0.2067660 | 3.0763682 | 88 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04175 | 2001 $TC_{134}$ |
| 2001 $TF_{134}$ | 15.2 | 0.15 | 20060922 | 358.56344 | 278.19564 | 168.56278 | 11.84346 | 0.1605188 | 2.7093692 | 124 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 90098 | 2001 $TF_{134}$ |
| 2001 $TM_{134}$ | 16.0 | 0.15 | 20060922 | 63.86065 | 93.90328 | 317.28815 | 10.38617 | 0.2040493 | 2.4764675 | 64 | 2 | 2001–2005 | 0.52 | M-v | 4 | MPC | 90098 | 2001 $TM_{134}$ |
| 2001 $TX_{134}$ | 15.9 | 0.15 | 20060922 | 331.58907 | 153.30160 | 290.38260 | 6.69162 | 0.2278829 | 2.7990240 | 59 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 87479 | 2001 $TX_{134}$ |
| 2001 $TT_{135}$ | 14.8 | 0.15 | 20060922 | 269.02967 | 154.52377 | 285.89559 | 8.09314 | 0.0700469 | 3.1096570 | 43 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04175 | 2001 $TT_{135}$ |
| 2001 $TY_{136}$ | 15.6 | 0.15 | 20060922 | 358.29148 | 288.55861 | 114.09956 | 10.31187 | 0.1743733 | 2.7964647 | 38 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 04175 | 2001 $TY_{136}$ |
| 2001 $TC_{138}$ | 14.5 | 0.15 | 20060922 | 26.95609 | 233.47560 | 58.06105 | 28.19931 | 0.2297336 | 3.1819844 | 141 | 3 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04175 | 2001 $TC_{138}$ |
| 2001 $TG_{138}$ | 14.7 | 0.15 | 20060922 | 304.76793 | 123.70741 | 11.85005 | 12.09211 | 0.0845592 | 2.5264364 | 96 | 5 | 1998–2006 | 0.55 | M-v | 3 | MPC | 87479 | 2001 $TG_{138}$ |
| 2001 $TK_{138}$ | 16.4 | 0.15 | 20060922 | 97.21973 | 277.45470 | 51.92998 | 4.76813 | 0.0950514 | 2.5516782 | 35 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 85058 | 2001 $TK_{138}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TS_{138}$ | 15.4 | 0.15 | 20060922 | 33.05393 | 347.82224 | 22.50530 | 11.88600 | 0.0874830 | 2.6794669 | 49 | 6 | 1997–2006 | 0.59 | M-v | 1 | MPC | 87480 | 2001 $TS_{138}$ |
| 2001 $TD_{139}$ | 15.8 | 0.15 | 20060922 | 338.27472 | 322.63571 | 79.49890 | 6.69266 | 0.1776841 | 2.8515196 | 66 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 88975 | 2001 $TD_{139}$ |
| 2001 $TU_{139}$ | 16.0 | 0.15 | 20060922 | 343.04103 | 208.30759 | 152.93883 | 12.08679 | 0.1164768 | 2.9894016 | 52 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 04175 | 2001 $TU_{139}$ |
| 2001 $TY_{139}$ | 15.1 | 0.15 | 20060922 | 354.86468 | 338.53731 | 24.03970 | 11.54869 | 0.1057041 | 2.9190892 | 73 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 61127 | 2001 $TY_{139}$ |
| 2001 $TB_{140}$ | 16.2 | 0.15 | 20060922 | 28.78534 | 231.88996 | 131.92449 | 7.07355 | 0.0413872 | 2.7469706 | 26 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 85058 | 2001 $TB_{140}$ |
| 2001 $TK_{140}$ | 15.2 | 0.15 | 20060922 | 33.02548 | 264.56994 | 93.76487 | 6.45597 | 0.0622951 | 2.7533092 | 53 | 4 | 1994–2006 | 0.47 | M-v | 2 | MPC | 31427 | 2001 $TK_{140}$ |
| 2001 $TS_{140}$ | 16.2 | 0.15 | 20060922 | 19.63150 | 292.19284 | 78.96630 | 5.19363 | 0.1165174 | 2.7728772 | 70 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 75167 | 2001 $TS_{140}$ |
| 2001 $TU_{140}$ | 16.5 | 0.15 | 20060922 | 1.51795 | 278.65818 | 133.18108 | 4.88690 | 0.1631233 | 2.7247484 | 48 | 4 | 2001–2006 | 0.56 | M-v | 0 | MPC | 85059 | 2001 $TU_{140}$ |
| 2001 $TK_{142}$ | 15.6 | 0.15 | 20060922 | 341.92215 | 254.68300 | 110.06285 | 4.65819 | 0.1799761 | 3.0418381 | 57 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 03242 | 2001 $TK_{142}$ |
| 2001 $TL_{143}$ | 16.7 | 0.15 | 20060922 | 36.82277 | 331.47620 | 63.75626 | 4.93641 | 0.1307506 | 2.6590058 | 36 | 4 | 2001–2006 | 0.34 | M-v | 1 | MPC | 85059 | 2001 $TL_{143}$ |
| 2001 $TQ_{143}$ | 16.7 | 0.15 | 20060922 | 77.43559 | 282.66960 | 68.37792 | 5.09031 | 0.0883623 | 2.6378817 | 47 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 87480 | 2001 $TQ_{143}$ |
| 2001 $TJ_{144}$ | 15.1 | 0.15 | 20060922 | 227.20955 | 298.26175 | 181.01580 | 18.76860 | 0.1276811 | 3.1905379 | 57 | 4 | 1998–2006 | 0.76 | M-v | 1 | MPC | 04175 | 2001 $TJ_{144}$ |
| 2001 $TK_{144}$ | 15.0 | 0.15 | 20060922 | 101.73023 | 193.27734 | 49.44765 | 12.28805 | 0.1684468 | 3.0059510 | 50 | 5 | 1991–2006 | 0.51 | M-v | 1 | MPC | 04175 | 2001 $TK_{144}$ |
| 2001 $TT_{144}$ | 15.7 | 0.15 | 20060922 | 54.78353 | 248.72474 | 49.36288 | 11.90389 | 0.0308311 | 3.0273629 | 38 | 3 | 2001–2006 | 0.68 | M-v | 1 | MPC | 85059 | 2001 $TT_{144}$ |
| 2001 $TW_{144}$ | 16.2 | 0.15 | 20060922 | 349.09084 | 266.16226 | 157.27484 | 6.03638 | 0.0390659 | 2.7517411 | 31 | 5 | 1994–2006 | 0.38 | M-v | 0 | MPC | 90098 | 2001 $TW_{144}$ |
| 2001 $TO_{145}$ | 14.9 | 0.15 | 20060922 | 328.93129 | 341.95897 | 43.14194 | 16.59500 | 0.2044146 | 3.0513378 | 63 | 2 | 2001–2006 | 0.58 | M-v | 2 | MPC | 03242 | 2001 $TO_{145}$ |
| 2001 $TQ_{145}$ | 16.0 | 0.15 | 20060922 | 18.64697 | 230.68748 | 98.86710 | 3.80782 | 0.1771575 | 2.9948874 | 57 | 5 | 1993–2006 | 0.51 | M-v | 1 | MPC | 04175 | 2001 $TQ_{145}$ |
| 2001 $TT_{145}$ | 16.7 | 0.15 | 20060922 | 60.13317 | 286.80909 | 66.70613 | 7.29718 | 0.0509385 | 2.7218031 | 30 | 3 | 2001–2006 | 0.31 | M-v | 2 | MPC | 88976 | 2001 $TT_{145}$ |
| 2001 $TF_{146}$ | 16.5 | 0.15 | 20060922 | 126.94650 | 198.20816 | 114.58158 | 5.49338 | 0.1277150 | 2.5687069 | 32 | 3 | 2001–2005 | 0.50 | M-v | 2 | MPC | 85060 | 2001 $TF_{146}$ |
| 2001 $TL_{146}$ | 16.4 | 0.15 | 20060922 | 43.28195 | 245.65355 | 127.19753 | 4.08067 | 0.0871372 | 2.7208936 | 45 | 5 | 1995–2006 | 0.41 | M-v | 0 | MPC | 87480 | 2001 $TL_{146}$ |
| 2001 $TQ_{146}$ | 17.0 | 0.15 | 20060922 | 4.88916 | 307.84279 | 92.50677 | 5.26296 | 0.1076371 | 2.7965510 | 24 | 4 | 1999–2006 | 0.41 | M-v | 0 | MPC | 03243 | 2001 $TQ_{146}$ |
| 2001 $TT_{147}$ | 15.0 | 0.15 | 20060922 | 6.63095 | 189.38994 | 161.94582 | 9.21667 | 0.1097678 | 3.0075953 | 94 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 03243 | 2001 $TT_{147}$ |
| 2001 $TY_{147}$ | 16.5 | 0.15 | 20060922 | 24.33139 | 223.44748 | 150.69663 | 6.74254 | 0.0864503 | 2.8145395 | 34 | 3 | 2001–2006 | 0.39 | M-v | 2 | MPC | 94167 | 2001 $TY_{147}$ |
| 2001 $TB_{148}$ | 15.7 | 0.15 | 20060922 | 351.90140 | 48.67381 | 52.22158 | 13.16387 | 0.2580061 | 2.6913908 | 70 | 3 | 2001–2006 | 0.60 | M-v | 1 | MPC | 50564 | 2001 $TB_{148}$ |
| 2001 $TS_{148}$ | 16.3 | 0.15 | 20060922 | 358.61277 | 257.26642 | 160.64494 | 6.98165 | 0.0389052 | 2.7554012 | 25 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 85060 | 2001 $TS_{148}$ |
| 2001 $TT_{148}$ | 16.5 | 0.15 | 20060922 | 59.70520 | 218.33603 | 139.62143 | 4.92386 | 0.0701051 | 2.7216197 | 28 | 3 | 2001–2006 | 0.35 | M-v | 2 | MPC | 85060 | 2001 $TT_{148}$ |
| 2001 $TN_{149}$ | 16.5 | 0.15 | 20060922 | 84.99795 | 197.95319 | 149.33078 | 6.52288 | 0.1032712 | 2.6430148 | 49 | 4 | 1995–2005 | 0.44 | M-v | 1 | MPC | 85061 | 2001 $TN_{149}$ |
| 2001 $TU_{149}$ | 15.2 | 0.15 | 20060922 | 357.24959 | 234.20321 | 103.14932 | 4.50061 | 0.1868345 | 3.1123978 | 61 | 4 | 1999–2006 | 0.44 | M-v | 2 | MPC | 03243 | 2001 $TU_{149}$ |
| 2001 $TA_{150}$ | 15.8 | 0.15 | 20060922 | 341.96105 | 343.33101 | 87.74845 | 5.28957 | 0.0865184 | 2.8020873 | 61 | 5 | 1998–2006 | 0.47 | M-v | 0 | MPC | 85061 | 2001 $TA_{150}$ |
| 2001 $TB_{150}$ | 15.1 | 0.15 | 20060922 | 257.06627 | 41.91914 | 63.52474 | 9.16929 | 0.1633080 | 3.1576567 | 48 | 3 | 2001–2004 | 0.59 | M-v | 3 | MPC | 43439 | 2001 $TB_{150}$ |
| 2001 $TC_{150}$ | 15.8 | 0.15 | 20060922 | 327.76403 | 349.31629 | 53.06017 | 11.22099 | 0.1023535 | 3.0125058 | 44 | 5 | 1996–2006 | 0.70 | M-v | 1 | MPC | 04175 | 2001 $TC_{150}$ |
| 2001 $TD_{150}$ | 16.3 | 0.15 | 20060922 | 316.66468 | 300.69949 | 119.41830 | 5.44710 | 0.3566460 | 3.0610983 | 72 | 3 | 1997–2006 | 0.48 | M-v | 2 | MPC | 03243 | 2001 $TD_{150}$ |
| 2001 $TT_{150}$ | 16.1 | 0.15 | 20060922 | 51.80651 | 266.82208 | 109.54304 | 4.16283 | 0.1183754 | 2.6904156 | 36 | 3 | 2001–2006 | 0.57 | M-v | 4 | MPC | 85061 | 2001 $TT_{150}$ |
| 2001 $TG_{151}$ | 15.8 | 0.15 | 20060922 | 38.64692 | 249.20196 | 122.26205 | 5.00974 | 0.0971406 | 2.7745391 | 31 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 88977 | 2001 $TG_{151}$ |
| 2001 $TO_{151}$ | 14.8 | 0.15 | 20060922 | 350.08442 | 295.40163 | 61.28134 | 10.50309 | 0.0498892 | 3.1282404 | 48 | 4 | 2001–2006 | 0.70 | M-v | 2 | MPC | 04175 | 2001 $TO_{151}$ |
| 2001 $TN_{152}$ | 16.3 | 0.15 | 20060922 | 25.24646 | 325.80899 | 119.14152 | 3.99173 | 0.2082513 | 2.6058566 | 62 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 85062 | 2001 $TN_{152}$ |
| 2001 $TP_{152}$ | 15.3 | 0.15 | 20060922 | 337.23744 | 293.36236 | 60.21716 | 10.73439 | 0.2252590 | 3.1596496 | 48 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 03243 | 2001 $TP_{152}$ |
| 2001 $TD_{153}$ | 15.1 | 0.15 | 20060922 | 274.31115 | 99.57958 | 71.33686 | 6.76364 | 0.1381077 | 2.5311337 | 60 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 87480 | 2001 $TD_{153}$ |
| 2001 $TL_{153}$ | 17.5 | 0.15 | 20060922 | 79.59530 | 174.02900 | 173.40044 | 7.74254 | 0.2109653 | 2.6309650 | 31 | 2 | 2001–2005 | 0.35 | M-v | 2 | MPC | 88977 | 2001 $TL_{153}$ |
| 2001 $TN_{153}$ | 16.8 | 0.15 | 20060922 | 84.09672 | 270.95798 | 88.19412 | 6.08697 | 0.0755810 | 2.6008967 | 29 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 94169 | 2001 $TN_{153}$ |
| 2001 $TQ_{154}$ | 15.7 | 0.15 | 20060922 | 322.73401 | 320.97905 | 84.12599 | 7.45444 | 0.3339647 | 3.0386865 | 86 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 03244 | 2001 $TQ_{154}$ |
| 2001 $TY_{154}$ | 15.3 | 0.15 | 20060922 | 314.56620 | 324.68849 | 74.41033 | 10.72144 | 0.1304044 | 3.1141113 | 51 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 03244 | 2001 $TY_{154}$ |
| 2001 $TZ_{154}$ | 17.1 | 0.15 | 20060922 | 326.28108 | 329.14429 | 73.19342 | 10.99306 | 0.1008825 | 3.0235268 | 30 | 4 | 2001–2006 | 0.56 | M-v | 0 | MPC | 88977 | 2001 $TZ_{154}$ |
| 2001 $TB_{155}$ | 16.6 | 0.15 | 20060922 | 208.17916 | 179.26494 | 142.70322 | 7.51494 | 0.1321374 | 2.3239224 | 52 | 3 | 2000–2004 | 0.38 | M-v | 1 | MPC | 74104 | 2001 $TB_{155}$ |
| 2001 $TV_{155}$ | 17.0 | 0.15 | 20060922 | 312.07312 | 63.50871 | 14.70191 | 1.86960 | 0.0512843 | 2.8369142 | 30 | 3 | 1999–2006 | 0.30 | M-v | 1 | MPC | 27776 | 2001 $TV_{155}$ |
| 2001 $TB_{157}$ | 16.3 | 0.15 | 20060922 | 268.05699 | 24.72198 | 151.82074 | 1.72504 | 0.1179910 | 2.6427574 | 65 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 90099 | 2001 $TB_{157}$ |
| 2001 $TC_{157}$ | 16.1 | 0.15 | 20060922 | 343.79167 | 187.17659 | 182.04240 | 3.83582 | 0.0950524 | 3.0581748 | 67 | 6 | 1996–2006 | 0.52 | M-v | 1 | MPC | 04175 | 2001 $TC_{157}$ |
| 2001 $TM_{157}$ | 16.6 | 0.15 | 20060922 | 39.78588 | 196.27548 | 159.17452 | 2.52434 | 0.0668050 | 2.9071221 | 45 | 5 | 2000–2006 | 0.39 | M-v | 0 | MPC | 85063 | 2001 $TM_{157}$ |
| 2001 $TN_{157}$ | 16.6 | 0.15 | 20060922 | 343.21761 | 250.09608 | 139.89058 | 2.12523 | 0.1710853 | 3.0381526 | 64 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 48127 | 2001 $TN_{157}$ |
| 2001 $TP_{157}$ | 16.1 | 0.15 | 20060922 | 10.58297 | 160.00492 | 206.38890 | 8.29464 | 0.1037833 | 3.0081041 | 88 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 97484 | 2001 $TP_{157}$ |
| 2001 $TR_{157}$ | 16.7 | 0.15 | 20060922 | 211.23939 | 137.87006 | 159.81071 | 2.59086 | 0.2095124 | 2.3548429 | 46 | 4 | 1997–2003 | 0.53 | M-v | 1 | MPC | 48127 | 2001 $TR_{157}$ |
| 2001 $TD_{159}$ | 15.7 | 0.15 | 20060922 | 25.04792 | 127.95660 | 195.02731 | 11.99265 | 0.0524934 | 3.0389086 | 58 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 04175 | 2001 $TD_{159}$ |
| 2001 $TG_{159}$ | 17.5 | 0.15 | 20060922 | 66.00209 | 243.19843 | 187.06343 | 0.97240 | 0.1655390 | 2.4500827 | 48 | 3 | 1995–2006 | 0.36 | M-v | 1 | MPC | 97484 | 2001 $TG_{159}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TO_{159}$ | 16.6 | 0.15 | 20060922 | 81.32310 | 170.50602 | 188.68341 | 2.46085 | 0.1702018 | 2.6071199 | 98 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 97484 | 2001 $TO_{159}$ |
| 2001 $TW_{159}$ | 15.6 | 0.15 | 20060922 | 355.27394 | 228.92328 | 242.82577 | 12.74662 | 0.1302952 | 2.5706814 | 61 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87481 | 2001 $TW_{159}$ |
| 2001 $TX_{159}$ | 14.8 | 0.15 | 20060922 | 235.36528 | 155.20302 | 303.99166 | 10.53958 | 0.0449237 | 3.2141503 | 46 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 04175 | 2001 $TX_{159}$ |
| 2001 $TA_{160}$ | 14.5 | 0.15 | 20060922 | 321.37088 | 348.36368 | 124.12806 | 11.41132 | 0.1941959 | 2.7785386 | 76 | 5 | 1997–2006 | 0.62 | M-v | 1 | MPC | 87481 | 2001 $TA_{160}$ |
| 2001 $TY_{160}$ | 16.0 | 0.15 | 20060922 | 7.83508 | 174.72348 | 198.90063 | 11.77084 | 0.0705007 | 2.8389865 | 86 | 4 | 1994–2006 | 0.35 | M-v | 1 | MPC | 48127 | 2001 $TY_{160}$ |
| 2001 $TC_{161}$ | 16.7 | 0.15 | 20060922 | 32.58833 | 71.75053 | 0.21007 | 5.09569 | 0.2632252 | 2.5802032 | 54 | 2 | 2001–2005 | 0.70 | M-v | 4 | MPC | 97485 | 2001 $TC_{161}$ |
| 2001 $TJ_{161}$ | 15.7 | 0.15 | 20060922 | 59.33881 | 290.52289 | 357.94073 | 9.92976 | 0.0841434 | 2.9788582 | 52 | 2 | 2001–2006 | 0.49 | M-v | 4 | MPC | 03244 | 2001 $TJ_{161}$ |
| 2001 $TN_{161}$ | 16.4 | 0.15 | 20060922 | 12.10788 | 138.66064 | 199.45087 | 12.25022 | 0.1473038 | 2.9721464 | 38 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 75169 | 2001 $TN_{161}$ |
| 2001 $TW_{161}$ | 17.8 | 0.15 | 20060922 | 122.46182 | 88.34105 | 228.21209 | 3.52098 | 0.2143528 | 2.5219548 | 40 | 3 | 2001–2005 | 0.29 | M-v | 2 | MPC | 90099 | 2001 $TW_{161}$ |
| 2001 $TX_{161}$ | 16.5 | 0.15 | 20060922 | 320.46572 | 78.82852 | 305.58029 | 1.68289 | 0.0990268 | 3.0755151 | 37 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 04175 | 2001 $TX_{161}$ |
| 2001 $TZ_{161}$ | 16.9 | 0.15 | 20060922 | 36.49681 | 191.19358 | 301.81571 | 1.63433 | 0.0590677 | 2.3038442 | 59 | 4 | 1995–2006 | 0.60 | M-v | 1 | MPC | 97485 | 2001 $TZ_{161}$ |
| 2001 $TL_{162}$ | 16.6 | 0.15 | 20060922 | 329.59431 | 69.19172 | 4.31238 | 7.27653 | 0.1989738 | 2.8563623 | 47 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 88979 | 2001 $TL_{162}$ |
| 2001 $TW_{162}$ | 17.0 | 0.15 | 20060922 | 161.17666 | 329.08672 | 330.81362 | 2.03194 | 0.1909458 | 2.4475155 | 70 | 4 | 2000–2005 | 0.51 | M-v | 1 | MPC | 97485 | 2001 $TW_{162}$ |
| 2001 $TY_{162}$ | 16.2 | 0.15 | 20060922 | 226.72264 | 283.13852 | 215.18305 | 5.50003 | 0.0701216 | 3.0078123 | 39 | 3 | 2001–2006 | 0.29 | M-v | 2 | MPC | 04176 | 2001 $TY_{162}$ |
| 2001 $TZ_{162}$ | 16.0 | 0.15 | 20060922 | 11.85904 | 327.06302 | 357.67759 | 3.98579 | 0.0996470 | 3.0802349 | 47 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 03244 | 2001 $TZ_{162}$ |
| 2001 $TC_{163}$ | 16.8 | 0.15 | 20060922 | 9.43218 | 80.24898 | 310.08411 | 2.32379 | 0.0833774 | 2.7971675 | 37 | 3 | 2001–2006 | 0.29 | M-v | 4 | MPC | 40777 | 2001 $TC_{163}$ |
| 2001 $TE_{163}$ | 15.5 | 0.15 | 20060922 | 75.74220 | 68.88611 | 208.47012 | 11.07499 | 0.0951619 | 2.9752062 | 33 | 4 | 1996–2006 | 0.67 | M-v | 3 | MPC | 03245 | 2001 $TE_{163}$ |
| 2001 $TG_{163}$ | 17.7 | 0.15 | 20060922 | 132.40916 | 333.51362 | 6.37817 | 5.33792 | 0.1764560 | 2.4434872 | 26 | 2 | 2001–2005 | 0.43 | M-v | 4 | MPC | 88979 | 2001 $TG_{163}$ |
| 2001 $TK_{163}$ | 15.5 | 0.15 | 20060922 | 127.87646 | 209.26332 | 13.22580 | 17.12301 | 0.0328108 | 3.0463939 | 61 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 61131 | 2001 $TK_{163}$ |
| 2001 $TN_{163}$ | 16.6 | 0.15 | 20060922 | 339.55952 | 249.56385 | 195.09514 | 2.65445 | 0.0598468 | 2.7097533 | 47 | 5 | 2001–2006 | 0.49 | M-v | 0 | MPC | 87481 | 2001 $TN_{163}$ |
| 2001 $TP_{163}$ | 16.8 | 0.15 | 20060922 | 30.76449 | 352.89405 | 36.81774 | 6.63860 | 0.0332937 | 2.6978540 | 38 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 85065 | 2001 $TP_{163}$ |
| 2001 $TY_{163}$ | 15.7 | 0.15 | 20060922 | 53.55042 | 137.43897 | 179.57798 | 7.91209 | 0.0215703 | 2.9343749 | 75 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04176 | 2001 $TY_{163}$ |
| 2001 $TE_{164}$ | 16.0 | 0.15 | 20060922 | 48.17531 | 155.95591 | 198.75203 | 3.86126 | 0.0935251 | 2.7972062 | 65 | 5 | 1999–2006 | 0.47 | M-v | 0 | MPC | 87481 | 2001 $TE_{164}$ |
| 2001 $TG_{164}$ | 15.3 | 0.15 | 20060922 | 325.80884 | 348.83317 | 33.46962 | 3.81208 | 0.0271548 | 3.1524749 | 50 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04176 | 2001 $TG_{164}$ |
| 2001 $TU_{164}$ | 15.5 | 0.15 | 20060922 | 325.49427 | 349.12934 | 38.66893 | 6.29008 | 0.1685479 | 3.1203720 | 84 | 4 | 1993–2006 | 0.66 | M-v | 2 | MPC | 03245 | 2001 $TU_{164}$ |
| 2001 $TC_{165}$ | 14.9 | 0.15 | 20060922 | 241.13734 | 325.53297 | 212.90953 | 12.56431 | 0.1145743 | 2.7019925 | 59 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 65078 | 2001 $TC_{165}$ |
| 2001 $TQ_{166}$ | 14.9 | 0.15 | 20060922 | 351.97631 | 159.23471 | 260.67438 | 14.19056 | 0.1230024 | 2.8564777 | 126 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 85066 | 2001 $TQ_{166}$ |
| 2001 $TU_{166}$ | 14.3 | 0.15 | 20060922 | 334.87432 | 132.32882 | 247.66210 | 19.54243 | 0.1057769 | 3.1377040 | 86 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87481 | 2001 $TU_{166}$ |
| 2001 $TE_{167}$ | 15.4 | 0.15 | 20060922 | 3.13113 | 134.25287 | 319.04516 | 7.39702 | 0.1882970 | 2.7023801 | 76 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 85066 | 2001 $TE_{167}$ |
| 2001 $TK_{168}$ | 15.4 | 0.15 | 20060922 | 5.86090 | 105.68037 | 330.26638 | 8.25960 | 0.1450468 | 2.7565057 | 94 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 87481 | 2001 $TK_{168}$ |
| 2001 $TP_{168}$ | 15.2 | 0.15 | 20060922 | 29.54561 | 133.04810 | 272.11031 | 8.91342 | 0.2081619 | 2.7486463 | 106 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 85068 | 2001 $TP_{168}$ |
| 2001 $TE_{169}$ | 15.0 | 0.15 | 20060922 | 27.38647 | 143.52274 | 268.51192 | 13.79654 | 0.0876268 | 2.7497325 | 88 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97485 | 2001 $TE_{169}$ |
| 2001 $TJ_{169}$ | 15.4 | 0.15 | 20060922 | 50.78913 | 47.85637 | 312.23565 | 7.16380 | 0.3090564 | 2.7677682 | 54 | 4 | 1994–2006 | 0.58 | M-v | 2 | MPC | 48128 | 2001 $TJ_{169}$ |
| 2001 $TO_{169}$ | 15.6 | 0.15 | 20060922 | 332.65124 | 131.34789 | 273.60048 | 8.91827 | 0.1064521 | 3.0248738 | 41 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 23836 | 2001 $TO_{169}$ |
| 2001 $TM_{170}$ | 15.0 | 0.15 | 20060922 | 337.49895 | 219.18323 | 230.61195 | 13.70470 | 0.0844930 | 2.7170392 | 59 | 5 | 2001–2006 | 0.68 | M-v | 1 | MPC | 87481 | 2001 $TM_{170}$ |
| 2001 $TT_{170}$ | 15.5 | 0.15 | 20060922 | 328.88797 | 31.98703 | 354.72614 | 11.61165 | 0.1197785 | 3.0887159 | 50 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04176 | 2001 $TT_{170}$ |
| 2001 $TZ_{170}$ | 16.0 | 0.15 | 20060922 | 333.19857 | 100.11675 | 308.50107 | 7.60293 | 0.0222538 | 2.8818364 | 33 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 88981 | 2001 $TZ_{170}$ |
| 2001 $TB_{171}$ | 15.7 | 0.15 | 20060922 | 335.44076 | 269.84990 | 225.71528 | 7.84883 | 0.1062175 | 2.5256882 | 98 | 5 | 1999–2006 | 0.59 | M-v | 2 | MPC | 90099 | 2001 $TB_{171}$ |
| 2001 $TE_{171}$ | 15.3 | 0.15 | 20060922 | 4.09627 | 265.90079 | 56.26236 | 26.06290 | 0.2789072 | 3.1180670 | 41 | 2 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03245 | 2001 $TE_{171}$ |
| 2001 $TL_{171}$ | 16.3 | 0.15 | 20060922 | 42.59380 | 295.51341 | 108.30955 | 11.76260 | 0.1162363 | 2.6546827 | 43 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 85070 | 2001 $TL_{171}$ |
| 2001 $TM_{171}$ | 16.7 | 0.15 | 20060922 | 81.15546 | 252.55899 | 114.21321 | 8.49028 | 0.2134613 | 2.5980170 | 84 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 90099 | 2001 $TM_{171}$ |
| 2001 $TC_{172}$ | 16.0 | 0.15 | 20060922 | 41.54550 | 315.15875 | 47.75508 | 4.83578 | 0.1310966 | 2.7277826 | 58 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 66225 | 2001 $TC_{172}$ |
| 2001 $TE_{172}$ | 15.1 | 0.15 | 20060922 | 296.73088 | 28.28507 | 23.12098 | 7.77478 | 0.0016180 | 3.0113215 | 68 | 4 | 1996–2006 | 0.60 | M-v | 3 | MPC | 04176 | 2001 $TE_{172}$ |
| 2001 $TJ_{172}$ | 17.1 | 0.15 | 20060922 | 92.47601 | 170.85904 | 201.72003 | 13.07645 | 0.1460375 | 2.5254152 | 87 | 4 | 1999–2005 | 0.63 | M-v | 1 | MPC | 88981 | 2001 $TJ_{172}$ |
| 2001 $TQ_{172}$ | 16.9 | 0.15 | 20060922 | 27.72315 | 356.40424 | 78.78922 | 0.57349 | 0.0528689 | 2.5391303 | 78 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 97485 | 2001 $TQ_{172}$ |
| 2001 $TW_{172}$ | 16.6 | 0.15 | 20060922 | 44.98834 | 179.54587 | 179.05404 | 6.50484 | 0.1231586 | 2.7572326 | 50 | 6 | 1999–2006 | 0.52 | M-v | 1 | MPC | 88982 | 2001 $TW_{172}$ |
| 2001 $TX_{172}$ | 15.8 | 0.15 | 20060922 | 27.53815 | 312.34319 | 34.67167 | 10.10669 | 0.0712639 | 2.9099322 | 108 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 61134 | 2001 $TX_{172}$ |
| 2001 $TZ_{172}$ | 16.3 | 0.15 | 20060922 | 135.56218 | 83.91097 | 201.63979 | 4.34274 | 0.0751134 | 2.6704603 | 40 | 5 | 1992–2006 | 0.52 | M-v | 0 | MPC | 04176 | 2001 $TZ_{172}$ |
| 2001 $TM_{173}$ | 17.9 | 0.15 | 20060922 | 153.96182 | 166.87445 | 146.24837 | 1.67729 | 0.1943800 | 2.4452379 | 41 | 4 | 1997–2005 | 0.58 | M-v | 1 | MPC | 90100 | 2001 $TM_{173}$ |
| 2001 $TS_{173}$ | 16.8 | 0.15 | 20060922 | 71.10063 | 148.89931 | 179.41763 | 5.39599 | 0.0512907 | 2.7992893 | 38 | 4 | 1999–2006 | 0.38 | M-v | 0 | MPC | 94172 | 2001 $TS_{173}$ |
| 2001 $TV_{173}$ | 16.3 | 0.15 | 20060922 | 346.76788 | 203.83265 | 161.20153 | 1.44651 | 0.1173861 | 3.0612047 | 40 | 3 | 2001–2006 | 0.57 | M-v | 4 | MPC | 03245 | 2001 $TV_{173}$ |
| 2001 $TW_{173}$ | 14.9 | 0.15 | 20060922 | 322.69442 | 38.51619 | 344.13954 | 9.79494 | 0.0619151 | 3.0899090 | 49 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 04176 | 2001 $TW_{173}$ |
| 2001 $TU_{174}$ | 15.7 | 0.15 | 20060922 | 270.32692 | 15.36710 | 82.11255 | 0.69859 | 0.1939557 | 3.0477719 | 61 | 5 | 1996–2006 | 0.44 | M-v | 1 | MPC | 04176 | 2001 $TU_{174}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TV_{174}$ | 16.0 | 0.15 | 20060922 | 2.41593 | 217.26820 | 127.75746 | 2.93084 | 0.1667335 | 3.0071492 | 89 | 2 | 2001–2006 | 0.59 | M-v | 4 | MPC | 03245 | 2001 $TV_{174}$ |
| 2001 $TW_{174}$ | 16.7 | 0.15 | 20060922 | 339.63480 | 258.03405 | 136.59366 | 2.93119 | 0.1673834 | 2.9437720 | 39 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 85072 | 2001 $TW_{174}$ |
| 2001 $TA_{175}$ | 16.1 | 0.15 | 20060922 | 133.14667 | 233.40541 | 33.93761 | 6.67972 | 0.0692861 | 2.7576618 | 51 | 5 | 1992–2006 | 0.60 | M-v | 1 | MPC | 04176 | 2001 $TA_{175}$ |
| 2001 $TH_{175}$ | 16.3 | 0.15 | 20060922 | 5.40205 | 189.70044 | 213.13017 | 8.77754 | 0.1344219 | 2.7307037 | 42 | 5 | 1996–2006 | 0.59 | M-v | 0 | MPC | 85073 | 2001 $TH_{175}$ |
| 2001 $TR_{175}$ | 16.0 | 0.15 | 20060922 | 339.12395 | 160.00762 | 210.82577 | 8.04322 | 0.0990983 | 3.0188197 | 44 | 3 | 2001–2006 | 0.64 | M-v | 3 | MPC | 04176 | 2001 $TR_{175}$ |
| 2001 $TU_{175}$ | 16.8 | 0.15 | 20060922 | 6.17270 | 117.48471 | 288.20472 | 2.82401 | 0.0763548 | 2.7334196 | 41 | 4 | 2001–2006 | 0.41 | M-v | 0 | MPC | 85073 | 2001 $TU_{175}$ |
| 2001 $TP_{176}$ | 12.7 | 0.15 | 20060922 | 212.52520 | 292.00035 | 29.48340 | 19.09124 | 0.0360490 | 5.2550878 | 34 | 3 | 1995–2002 | 0.50 | M-v | 3 | MPC | 85074 | 2001 $TP_{176}$ |
| 2001 $TQ_{176}$ | 16.2 | 0.15 | 20060922 | 16.85593 | 45.71612 | 312.06840 | 1.11401 | 0.0642468 | 2.9525944 | 62 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 85074 | 2001 $TQ_{176}$ |
| 2001 $TR_{176}$ | 17.0 | 0.15 | 20060922 | 149.45249 | 306.65809 | 4.43507 | 2.11587 | 0.0825610 | 2.5303698 | 36 | 3 | 1997–2005 | 0.61 | M-v | 4 | MPC | 88984 | 2001 $TR_{176}$ |
| 2001 $TU_{176}$ | 14.9 | 0.15 | 20060922 | 152.36427 | 186.14168 | 4.69629 | 16.31262 | 0.0122682 | 3.0958979 | 60 | 4 | 2001–2006 | 0.71 | M-v | 1 | MPC | 04176 | 2001 $TU_{176}$ |
| 2001 $TA_{177}$ | 16.5 | 0.15 | 20060922 | 327.45478 | 115.87067 | 327.92352 | 4.18916 | 0.0112730 | 2.7457131 | 39 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 87482 | 2001 $TA_{177}$ |
| 2001 $TD_{177}$ | 16.1 | 0.15 | 20060922 | 64.28823 | 105.74984 | 222.48766 | 5.66457 | 0.0529326 | 2.8101637 | 68 | 4 | 2001–2006 | 0.45 | M-v | 0 | MPC | 88984 | 2001 $TD_{177}$ |
| 2001 $TT_{177}$ | 16.0 | 0.15 | 20060922 | 253.30793 | 120.36138 | 347.78682 | 5.25911 | 0.0634475 | 3.0622523 | 41 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 62372 | 2001 $TT_{177}$ |
| 2001 $TX_{177}$ | 15.4 | 0.15 | 20060922 | 179.42711 | 1.57392 | 226.58416 | 8.69300 | 0.0854037 | 2.7515517 | 85 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87482 | 2001 $TX_{177}$ |
| 2001 $TA_{178}$ | 15.2 | 0.15 | 20060922 | 4.20970 | 102.39247 | 222.99052 | 8.43604 | 0.1484721 | 3.1295316 | 49 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04176 | 2001 $TA_{178}$ |
| 2001 $TB_{178}$ | 16.7 | 0.15 | 20060922 | 82.85694 | 66.37557 | 340.94389 | 4.86983 | 0.1436561 | 2.4579106 | 64 | 3 | 1995–2006 | 0.59 | M-v | 3 | MPC | 97485 | 2001 $TB_{178}$ |
| 2001 $TE_{178}$ | 15.9 | 0.15 | 20060922 | 24.00591 | 82.99445 | 301.95990 | 5.44168 | 0.0659954 | 2.7809774 | 41 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 85074 | 2001 $TE_{178}$ |
| 2001 $TJ_{178}$ | 17.3 | 0.15 | 20060922 | 126.37467 | 351.77956 | 333.14033 | 3.87617 | 0.1460861 | 2.5325784 | 37 | 2 | 2001–2005 | 0.53 | M-v | 5 | MPC | 88984 | 2001 $TJ_{178}$ |
| 2001 $TO_{178}$ | 15.2 | 0.15 | 20060922 | 209.75775 | 295.70497 | 213.81943 | 16.40490 | 0.0919301 | 3.0973965 | 88 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 66225 | 2001 $TO_{178}$ |
| 2001 $TP_{178}$ | 15.4 | 0.15 | 20060922 | 315.03478 | 179.85240 | 216.68414 | 9.19668 | 0.0888170 | 3.0950702 | 66 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04176 | 2001 $TP_{178}$ |
| 2001 $TS_{178}$ | 15.7 | 0.15 | 20060922 | 317.62292 | 157.83202 | 327.61986 | 2.91695 | 0.0451561 | 2.6471631 | 90 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97485 | 2001 $TS_{178}$ |
| 2001 $TV_{178}$ | 16.6 | 0.15 | 20060922 | 14.17700 | 135.17644 | 259.76478 | 3.27254 | 0.1057349 | 2.7861649 | 42 | 6 | 1992–2006 | 0.37 | M-v | 0 | MPC | 85075 | 2001 $TV_{178}$ |
| 2001 $TX_{178}$ | 15.4 | 0.15 | 20060922 | 356.02283 | 126.21351 | 233.99426 | 9.47769 | 0.0911942 | 3.0382379 | 72 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 04176 | 2001 $TX_{178}$ |
| 2001 $TA_{179}$ | 16.2 | 0.15 | 20060922 | 23.76482 | 58.05668 | 357.23780 | 9.74864 | 0.1393297 | 2.6774109 | 44 | 4 | 1992–2005 | 0.50 | M-v | 1 | MPC | 04176 | 2001 $TA_{179}$ |
| 2001 $TB_{179}$ | 14.8 | 0.15 | 20060922 | 98.36408 | 26.68250 | 232.91460 | 12.65241 | 0.1039609 | 3.0001720 | 58 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87482 | 2001 $TB_{179}$ |
| 2001 $TL_{179}$ | 15.8 | 0.15 | 20060922 | 329.54957 | 20.40260 | 15.16408 | 13.95053 | 0.1275100 | 3.0312096 | 62 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 03246 | 2001 $TL_{179}$ |
| 2001 $TQ_{179}$ | 17.2 | 0.15 | 20060922 | 2.27814 | 8.66445 | 8.51569 | 6.62176 | 0.2302427 | 2.9149014 | 33 | 3 | 1996–2006 | 0.42 | M-v | 3 | MPC | 20553 | 2001 $TQ_{179}$ |
| 2001 $TS_{179}$ | 16.4 | 0.15 | 20060922 | 65.31723 | 121.01378 | 231.07464 | 5.01419 | 0.0299092 | 2.7375095 | 53 | 4 | 2001–2006 | 0.41 | M-v | 0 | MPC | 87482 | 2001 $TS_{179}$ |
| 2001 $TG_{180}$ | 14.9 | 0.15 | 20060922 | 315.55703 | 153.30306 | 248.66570 | 8.80665 | 0.0731830 | 3.0907564 | 35 | 4 | 2001–2006 | 0.74 | M-v | 2 | MPC | 61136 | 2001 $TG_{180}$ |
| 2001 $TH_{180}$ | 14.8 | 0.15 | 20060922 | 337.10475 | 128.72168 | 252.96201 | 8.08172 | 0.1143020 | 3.0609263 | 79 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 40783 | 2001 $TH_{180}$ |
| 2001 $TO_{180}$ | 17.5 | 0.15 | 20060922 | 66.13275 | 134.89942 | 277.01147 | 3.89798 | 0.2767741 | 2.5388101 | 52 | 2 | 2001–2005 | 0.64 | M-v | 4 | MPC | 88985 | 2001 $TO_{180}$ |
| 2001 $TA_{181}$ | 17.4 | 0.15 | 20060922 | 77.92927 | 105.52997 | 283.84418 | 1.98807 | 0.1782484 | 2.5373475 | 56 | 2 | 2001–2005 | 0.68 | M-v | 3 | MPC | 90100 | 2001 $TA_{181}$ |
| 2001 $TD_{181}$ | 15.2 | 0.15 | 20060922 | 22.76274 | 303.82354 | 14.22674 | 10.94597 | 0.1276593 | 3.1009257 | 57 | 2 | 2001–2006 | 0.52 | M-v | 3 | MPC | 03246 | 2001 $TD_{181}$ |
| 2001 $TH_{181}$ | 17.7 | 0.15 | 20060922 | 47.42080 | 54.67689 | 353.86640 | 3.27277 | 0.2545056 | 2.6188342 | 33 | 2 | 2001–2005 | 0.52 | M-v | 4 | MPC | 88985 | 2001 $TH_{181}$ |
| 2001 $TM_{181}$ | 15.8 | 0.15 | 20060922 | 12.79994 | 99.55714 | 14.91250 | 13.93633 | 0.2112646 | 2.5606546 | 79 | 3 | 2001–2005 | 0.60 | M-v | 2 | MPC | 90100 | 2001 $TM_{181}$ |
| 2001 $TN_{181}$ | 14.9 | 0.15 | 20060922 | 16.19040 | 346.47711 | 346.86428 | 8.57741 | 0.1087128 | 3.0753096 | 112 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 04176 | 2001 $TN_{181}$ |
| 2001 $TP_{181}$ | 17.4 | 0.15 | 20060922 | 168.22726 | 44.16045 | 351.11834 | 6.78066 | 0.1734145 | 2.2322619 | 47 | 3 | 1996–2006 | 0.43 | M-v | 3 | MPC | 02046 | 2001 $TP_{181}$ |
| 2001 $TU_{181}$ | 16.0 | 0.15 | 20060922 | 22.55307 | 102.99217 | 315.98198 | 4.44107 | 0.2109066 | 2.6965964 | 56 | 4 | 1994–2006 | 0.56 | M-v | 1 | MPC | 04176 | 2001 $TU_{181}$ |
| 2001 $TZ_{181}$ | 15.9 | 0.15 | 20060922 | 339.29722 | 151.68565 | 326.97701 | 2.73823 | 0.1257082 | 2.6433609 | 70 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97486 | 2001 $TZ_{181}$ |
| 2001 $TL_{182}$ | 15.2 | 0.15 | 20060922 | 333.13550 | 24.91454 | 7.95574 | 9.14993 | 0.1297228 | 3.0586374 | 94 | 5 | 1993–2006 | 0.52 | M-v | 1 | MPC | 66225 | 2001 $TL_{182}$ |
| 2001 $TP_{182}$ | 15.3 | 0.15 | 20060922 | 332.59163 | 35.76787 | 341.66784 | 6.52730 | 0.2640732 | 3.1066208 | 75 | 2 | 2001–2006 | 0.41 | M-v | 2 | MPC | 03246 | 2001 $TP_{182}$ |
| 2001 $TU_{182}$ | 15.0 | 0.15 | 20060922 | 0.75985 | 19.16527 | 359.39674 | 10.59054 | 0.0609404 | 2.9854701 | 47 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 40784 | 2001 $TU_{182}$ |
| 2001 $TW_{183}$ | 16.5 | 0.15 | 20060922 | 221.15112 | 244.97483 | 16.02146 | 4.18617 | 0.1186296 | 2.4437392 | 32 | 3 | 2001–2006 | 0.37 | M-v | 4 | MPC | 97486 | 2001 $TW_{183}$ |
| 2001 $TB_{184}$ | 15.1 | 0.15 | 20060922 | 48.40061 | 84.12809 | 212.13651 | 10.58350 | 0.0663183 | 3.0344967 | 49 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 04176 | 2001 $TB_{184}$ |
| 2001 $TE_{184}$ | 16.1 | 0.15 | 20060922 | 41.87875 | 4.75306 | 351.83535 | 4.09090 | 0.0757517 | 2.7831675 | 52 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 61137 | 2001 $TE_{184}$ |
| 2001 $TH_{184}$ | 16.1 | 0.15 | 20060922 | 230.75867 | 296.14498 | 213.07148 | 10.24974 | 0.0420581 | 2.9201557 | 52 | 4 | 1999–2006 | 0.46 | M-v | 2 | MPC | 66225 | 2001 $TH_{184}$ |
| 2001 $TA_{185}$ | 15.9 | 0.15 | 20060922 | 359.16088 | 177.97241 | 231.60620 | 5.76705 | 0.0231994 | 2.7822131 | 70 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 88986 | 2001 $TA_{185}$ |
| 2001 $TD_{185}$ | 15.4 | 0.15 | 20060922 | 116.10411 | 230.77762 | 9.60560 | 8.79738 | 0.1020518 | 3.0205493 | 106 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 66225 | 2001 $TD_{185}$ |
| 2001 $TM_{185}$ | 16.2 | 0.15 | 20060922 | 306.58711 | 99.58342 | 339.48450 | 4.14516 | 0.1929779 | 2.9924511 | 54 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 87482 | 2001 $TM_{185}$ |
| 2001 $TY_{185}$ | 15.6 | 0.15 | 20060922 | 17.24330 | 86.23616 | 241.50964 | 4.19506 | 0.1742184 | 3.0516739 | 74 | 5 | 1979–2006 | 0.46 | M-v | 0 | MPC | 04176 | 2001 $TY_{185}$ |
| 2001 $TM_{186}$ | 15.8 | 0.15 | 20060922 | 324.47668 | 210.53075 | 231.96122 | 15.77761 | 0.1202316 | 2.8811000 | 80 | 4 | 1996–2006 | 0.55 | M-v | 2 | MPC | 04176 | 2001 $TM_{186}$ |
| 2001 $TP_{186}$ | 15.2 | 0.15 | 20060922 | 88.68084 | 27.32108 | 211.56504 | 8.89414 | 0.0462044 | 3.1678593 | 55 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 87482 | 2001 $TP_{186}$ |
| 2001 $TA_{187}$ | 16.6 | 0.15 | 20060922 | 13.03763 | 141.34787 | 269.49750 | 1.71958 | 0.0733255 | 2.7537552 | 35 | 3 | 2001–2005 | 0.50 | M-v | 2 | MPC | 88986 | 2001 $TA_{187}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TC_{187}$ | 16.9 | 0.15 | 20060922 | 106.42029 | 308.37955 | 24.86450 | 13.08571 | 0.1946801 | 2.5928108 | 52 | 3 | 2001–2005 | 0.49 | M-v | 2 | MPC | 97486 | 2001 $TC_{187}$ |
| 2001 $TS_{188}$ | 15.7 | 0.15 | 20060922 | 14.93785 | 354.00574 | 19.65920 | 6.24133 | 0.1018388 | 2.9388925 | 46 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 85080 | 2001 $TS_{188}$ |
| 2001 $TW_{188}$ | 15.0 | 0.15 | 20060922 | 11.46516 | 46.64534 | 20.43938 | 5.86136 | 0.1210856 | 2.7371139 | 138 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87482 | 2001 $TW_{188}$ |
| 2001 $TX_{188}$ | 14.9 | 0.15 | 20060922 | 327.19560 | 16.27351 | 8.09551 | 5.26014 | 0.1795319 | 3.1610801 | 125 | 5 | 1995–2006 | 0.50 | M-v | 0 | MPC | 04176 | 2001 $TX_{188}$ |
| 2001 $TC_{189}$ | 15.0 | 0.15 | 20060922 | 338.69538 | 131.36490 | 244.49119 | 8.43230 | 0.1634774 | 3.1315773 | 78 | 2 | 2001–2006 | 0.51 | M-v | 3 | MPC | 03246 | 2001 $TC_{189}$ |
| 2001 $TG_{191}$ | 15.0 | 0.15 | 20060922 | 286.60330 | 217.64352 | 25.16944 | 7.98066 | 0.1668955 | 2.3582194 | 156 | 4 | 1996–2004 | 0.58 | M-v | 1 | MPC | 74104 | 2001 $TG_{191}$ |
| 2001 $TO_{191}$ | 14.8 | 0.15 | 20060922 | 318.12083 | 7.31345 | 20.96194 | 5.27462 | 0.1302297 | 3.2339738 | 147 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 04176 | 2001 $TO_{191}$ |
| 2001 $TC_{192}$ | 14.8 | 0.15 | 20060922 | 17.71680 | 25.60500 | 33.33256 | 12.70309 | 0.1421362 | 2.7782147 | 93 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87482 | 2001 $TC_{192}$ |
| 2001 $TK_{192}$ | 15.8 | 0.15 | 20060922 | 88.32199 | 312.46357 | 30.07695 | 12.47466 | 0.1885476 | 2.6643580 | 64 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 90100 | 2001 $TK_{192}$ |
| 2001 $TR_{193}$ | 15.3 | 0.15 | 20060922 | 255.59224 | 258.78303 | 203.18688 | 7.51415 | 0.1169447 | 3.0690129 | 44 | 5 | 1993–2006 | 0.69 | M-v | 1 | MPC | 04176 | 2001 $TR_{193}$ |
| 2001 $TS_{193}$ | 16.5 | 0.15 | 20060922 | 43.46012 | 83.54816 | 295.57306 | 1.67257 | 0.1169320 | 2.6760887 | 41 | 2 | 2001–2005 | 0.50 | M-v | 4 | MPC | 88988 | 2001 $TS_{193}$ |
| 2001 $TY_{193}$ | 16.5 | 0.15 | 20060922 | 355.65789 | 234.62134 | 242.96439 | 2.67276 | 0.1138810 | 2.5687423 | 37 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 88988 | 2001 $TY_{193}$ |
| 2001 $TO_{194}$ | 14.9 | 0.15 | 20060922 | 17.94486 | 57.60801 | 30.39348 | 13.06345 | 0.1599110 | 2.6997426 | 153 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 97486 | 2001 $TO_{194}$ |
| 2001 $TY_{194}$ | 16.7 | 0.15 | 20060922 | 14.08232 | 42.65864 | 352.78533 | 2.32452 | 0.0740943 | 2.7477751 | 33 | 3 | 1999–2006 | 0.50 | M-v | 3 | MPC | 88989 | 2001 $TY_{194}$ |
| 2001 $TF_{195}$ | 16.8 | 0.15 | 20060922 | 92.00131 | 243.98270 | 103.62469 | 9.81219 | 0.1834375 | 2.5774232 | 28 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 85083 | 2001 $TF_{195}$ |
| 2001 $TN_{195}$ | 15.7 | 0.15 | 20060922 | 310.19889 | 281.41098 | 151.79938 | 13.13942 | 0.1615448 | 2.9990081 | 50 | 5 | 1999–2006 | 0.59 | M-v | 0 | MPC | 50565 | 2001 $TN_{195}$ |
| 2001 $TT_{195}$ | 14.7 | 0.15 | 20060922 | 318.50405 | 257.30593 | 158.12728 | 13.74417 | 0.1554136 | 3.0612539 | 116 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04177 | 2001 $TT_{195}$ |
| 2001 $TW_{195}$ | 15.5 | 0.15 | 20060922 | 335.19709 | 211.93658 | 179.39049 | 18.42601 | 0.1720759 | 3.0676232 | 60 | 2 | 2001–2006 | 0.48 | M-v | 3 | MPC | 03247 | 2001 $TW_{195}$ |
| 2001 $TZ_{195}$ | 16.4 | 0.15 | 20060922 | 26.26546 | 120.95169 | 309.86554 | 13.47583 | 0.2693184 | 2.6210399 | 28 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 88989 | 2001 $TZ_{195}$ |
| 2001 $TB_{196}$ | 15.6 | 0.15 | 20060922 | 317.35221 | 275.97694 | 140.98341 | 15.68737 | 0.2508874 | 3.1021974 | 52 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04177 | 2001 $TB_{196}$ |
| 2001 $TJ_{196}$ | 15.0 | 0.15 | 20060922 | 349.50837 | 21.03503 | 93.26762 | 12.34233 | 0.1088298 | 2.5557527 | 52 | 4 | 1999–2005 | 0.70 | M-v | 2 | MPC | 90101 | 2001 $TJ_{196}$ |
| 2001 $TK_{196}$ | 15.6 | 0.15 | 20060922 | 184.33094 | 202.15168 | 92.10070 | 12.33266 | 0.2662908 | 2.3557234 | 87 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 97487 | 2001 $TK_{196}$ |
| 2001 $TO_{196}$ | 17.2 | 0.15 | 20060922 | 20.77172 | 278.91171 | 60.42307 | 23.37523 | 0.0385539 | 1.8655836 | 32 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 72412 | 2001 $TO_{196}$ |
| 2001 $TV_{196}$ | 16.0 | 0.15 | 20060922 | 87.42741 | 236.88715 | 120.27331 | 14.04737 | 0.2005580 | 2.5579288 | 51 | 5 | 2000–2006 | 0.40 | M-v | 1 | MPC | 90101 | 2001 $TV_{196}$ |
| 2001 $TP_{198}$ | 16.2 | 0.15 | 20060922 | 1.07828 | 293.19120 | 97.95804 | 4.78033 | 0.1035058 | 2.8026750 | 59 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 62372 | 2001 $TP_{198}$ |
| 2001 $TQ_{198}$ | 17.2 | 0.15 | 20060922 | 41.84182 | 283.88109 | 47.82489 | 8.34850 | 0.2768453 | 2.7932622 | 52 | 3 | 2001–2006 | 0.42 | M-v | 1 | MPC | 75174 | 2001 $TQ_{198}$ |
| 2001 $TR_{199}$ | 16.0 | 0.15 | 20060922 | 56.33018 | 249.28393 | 86.71617 | 5.66403 | 0.1563992 | 2.7548894 | 41 | 4 | 1994–2006 | 0.56 | M-v | 2 | MPC | 03247 | 2001 $TR_{199}$ |
| 2001 $TU_{199}$ | 15.3 | 0.15 | 20060922 | 326.24127 | 232.53113 | 155.72641 | 10.64935 | 0.1004969 | 3.0240571 | 29 | 2 | 2001–2006 | 0.51 | M-v | 4 | MPC | 03247 | 2001 $TU_{199}$ |
| 2001 $TX_{199}$ | 15.1 | 0.15 | 20060922 | 12.01344 | 247.49154 | 140.11641 | 9.87325 | 0.1688565 | 2.7883288 | 63 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 40789 | 2001 $TX_{199}$ |
| 2001 $TA_{200}$ | 15.5 | 0.15 | 20060922 | 9.15463 | 324.98179 | 74.60926 | 9.99449 | 0.1588268 | 2.7569482 | 65 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 03247 | 2001 $TA_{200}$ |
| 2001 $TO_{200}$ | 15.8 | 0.15 | 20060922 | 339.62209 | 302.63988 | 140.49801 | 9.31327 | 0.1430779 | 2.7404590 | 67 | 7 | 1994–2006 | 0.77 | M-v | 1 | MPC | 97487 | 2001 $TO_{200}$ |
| 2001 $TS_{200}$ | 15.2 | 0.15 | 20060922 | 342.34208 | 330.19099 | 105.99431 | 9.48588 | 0.0833638 | 2.7251380 | 49 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87483 | 2001 $TS_{200}$ |
| 2001 $TF_{201}$ | 14.7 | 0.15 | 20060922 | 276.26622 | 354.96302 | 75.77955 | 11.37723 | 0.0568079 | 3.1005723 | 37 | 4 | 1996–2004 | 0.54 | M-v | 1 | MPC | 62372 | 2001 $TF_{201}$ |
| 2001 $TR_{201}$ | 15.6 | 0.15 | 20060922 | 290.92228 | 292.14805 | 144.58900 | 10.39707 | 0.0746816 | 3.0097362 | 33 | 5 | 1993–2006 | 0.60 | M-v | 1 | MPC | 04177 | 2001 $TR_{201}$ |
| 2001 $TB_{202}$ | 15.5 | 0.15 | 20060922 | 341.91507 | 302.82925 | 73.20179 | 13.00993 | 0.0971387 | 3.0066679 | 24 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 88989 | 2001 $TB_{202}$ |
| 2001 $TY_{202}$ | 16.4 | 0.15 | 20060922 | 352.09778 | 294.24264 | 128.34930 | 10.24816 | 0.1446376 | 2.7913678 | 27 | 4 | 1999–2006 | 0.44 | M-v | 0 | MPC | 75175 | 2001 $TY_{202}$ |
| 2001 $TB_{203}$ | 15.6 | 0.15 | 20060922 | 328.94813 | 21.37910 | 74.88132 | 14.09471 | 0.1413662 | 2.7636817 | 66 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 87483 | 2001 $TB_{203}$ |
| 2001 $TF_{203}$ | 15.9 | 0.15 | 20060922 | 347.31478 | 353.96993 | 78.49129 | 11.82257 | 0.0691503 | 2.7490425 | 34 | 6 | 1992–2006 | 0.49 | M-v | 1 | MPC | 04177 | 2001 $TF_{203}$ |
| 2001 $TZ_{203}$ | 15.9 | 0.15 | 20060922 | 28.55491 | 324.92395 | 50.22565 | 9.53586 | 0.1066580 | 2.7261012 | 69 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 75175 | 2001 $TZ_{203}$ |
| 2001 $TA_{204}$ | 14.9 | 0.15 | 20060922 | 265.95391 | 287.88401 | 155.00209 | 11.19820 | 0.0926011 | 3.0669675 | 80 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 04177 | 2001 $TA_{204}$ |
| 2001 $TG_{204}$ | 16.0 | 0.15 | 20060922 | 348.54371 | 355.06714 | 41.24181 | 9.78881 | 0.0846779 | 2.8460121 | 64 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 65085 | 2001 $TG_{204}$ |
| 2001 $TR_{204}$ | 15.6 | 0.15 | 20060922 | 37.15696 | 252.23377 | 66.25831 | 10.79356 | 0.1798809 | 2.9074739 | 78 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 75175 | 2001 $TR_{204}$ |
| 2001 $TB_{205}$ | 15.7 | 0.15 | 20060922 | 87.63650 | 232.91426 | 107.30310 | 12.86257 | 0.2980277 | 2.5888673 | 84 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 97487 | 2001 $TB_{205}$ |
| 2001 $TP_{205}$ | 16.9 | 0.15 | 20060922 | 149.46814 | 260.99227 | 98.08475 | 8.77540 | 0.1444460 | 2.3583292 | 35 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03247 | 2001 $TP_{205}$ |
| 2001 $TW_{205}$ | 15.3 | 0.15 | 20060922 | 318.28991 | 294.77037 | 102.06424 | 10.41111 | 0.0903982 | 3.1457265 | 37 | 3 | 1999–2006 | 0.59 | M-v | 3 | MPC | 03247 | 2001 $TW_{205}$ |
| 2001 $TA_{206}$ | 14.4 | 0.15 | 20060922 | 307.07542 | 312.97539 | 91.68726 | 18.09356 | 0.1812661 | 3.1378004 | 55 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04177 | 2001 $TA_{206}$ |
| 2001 $TC_{206}$ | 15.2 | 0.15 | 20060922 | 298.29766 | 261.68651 | 173.58323 | 19.53379 | 0.1190977 | 3.0427226 | 53 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 49934 | 2001 $TC_{206}$ |
| 2001 $TL_{206}$ | 16.3 | 0.15 | 20060922 | 281.06792 | 351.44142 | 199.87054 | 2.03956 | 0.1200058 | 2.4677863 | 39 | 4 | 1993–2006 | 0.36 | M-v | 3 | MPC | 04177 | 2001 $TL_{206}$ |
| 2001 $TY_{206}$ | 15.5 | 0.15 | 20060922 | 304.62489 | 306.27378 | 106.70465 | 11.92457 | 0.0515011 | 3.0915644 | 41 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 04177 | 2001 $TY_{206}$ |
| 2001 $TO_{207}$ | 16.3 | 0.15 | 20060922 | 329.57288 | 19.88266 | 356.89687 | 2.22026 | 0.0883605 | 3.0782723 | 45 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 04177 | 2001 $TO_{207}$ |
| 2001 $TJ_{208}$ | 15.8 | 0.15 | 20060922 | 11.97441 | 314.86139 | 129.49909 | 7.62099 | 0.1031424 | 2.6779286 | 56 | 4 | 2000–2005 | 0.54 | M-v | 1 | MPC | 87483 | 2001 $TJ_{208}$ |
| 2001 $TY_{208}$ | 15.3 | 0.15 | 20060922 | 318.91156 | 285.18114 | 98.69138 | 4.21239 | 0.0357296 | 3.1159339 | 25 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 04177 | 2001 $TY_{208}$ |
| 2001 $TR_{209}$ | 17.4 | 0.15 | 20060922 | 291.89231 | 55.22984 | 13.45737 | 2.88281 | 0.1153411 | 3.0562985 | 26 | 3 | 1998–2006 | 0.40 | M-v | 3 | MPC | 04177 | 2001 $TR_{209}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TT_{209}$ | 15.7 | 0.15 | 20060922 | 290.35096 | 81.17375 | 348.23537 | 7.34378 | 0.0871088 | 3.0905327 | 51 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04177 | 2001 $TT_{209}$ |
| 2001 $TZ_{209}$ | 16.1 | 0.15 | 20060922 | 119.53192 | 29.48596 | 253.42250 | 10.87982 | 0.1615176 | 2.6158032 | 73 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 85088 | 2001 $TZ_{209}$ |
| 2001 $TA_{210}$ | 15.1 | 0.15 | 20060922 | 312.11962 | 165.03580 | 235.73024 | 10.67046 | 0.1241059 | 2.9877358 | 40 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 04177 | 2001 $TA_{210}$ |
| 2001 $TP_{210}$ | 14.6 | 0.15 | 20060922 | 58.96981 | 336.25448 | 306.95146 | 9.55104 | 0.0694377 | 2.9779287 | 83 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 04177 | 2001 $TP_{210}$ |
| 2001 $TQ_{210}$ | 16.4 | 0.15 | 20060922 | 88.20842 | 27.96270 | 333.19315 | 14.64847 | 0.1483718 | 2.5271871 | 53 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 85089 | 2001 $TQ_{210}$ |
| 2001 $TU_{210}$ | 15.9 | 0.15 | 20060922 | 141.73638 | 40.15490 | 266.81804 | 6.93136 | 0.0815380 | 2.5435009 | 59 | 4 | 2001–2005 | 0.67 | M-v | 1 | MPC | 90101 | 2001 $TU_{210}$ |
| 2001 $TA_{211}$ | 15.7 | 0.15 | 20060922 | 332.29162 | 213.19689 | 239.33513 | 10.44987 | 0.1575292 | 2.7046928 | 66 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 87483 | 2001 $TA_{211}$ |
| 2001 $TG_{211}$ | 15.0 | 0.15 | 20060922 | 31.60801 | 26.39025 | 292.88168 | 8.86781 | 0.0654956 | 2.9637406 | 47 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 61143 | 2001 $TG_{211}$ |
| 2001 $TL_{211}$ | 15.8 | 0.15 | 20060922 | 73.59961 | 9.18460 | 337.31657 | 13.61851 | 0.0905281 | 2.6459686 | 40 | 2 | 2001–2005 | 0.56 | M-v | 3 | MPC | 88991 | 2001 $TL_{211}$ |
| 2001 $TP_{211}$ | 16.0 | 0.15 | 20060922 | 43.64427 | 101.87704 | 271.95124 | 10.44945 | 0.1733226 | 2.6416465 | 62 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 90101 | 2001 $TP_{211}$ |
| 2001 $TT_{211}$ | 17.0 | 0.15 | 20060922 | 136.78006 | 255.84887 | 92.75115 | 5.95973 | 0.1834207 | 2.4066595 | 38 | 3 | 2001–2006 | 0.67 | M-v | 2 | MPC | 94182 | 2001 $TT_{211}$ |
| 2001 $TF_{212}$ | 14.5 | 0.15 | 20060922 | 194.78344 | 219.27442 | 285.91818 | 9.65547 | 0.0502808 | 3.1117222 | 71 | 5 | 1998–2006 | 0.61 | M-v | 1 | MPC | 04177 | 2001 $TF_{212}$ |
| 2001 $TH_{212}$ | 15.9 | 0.15 | 20060922 | 3.26246 | 178.76183 | 274.29820 | 9.20941 | 0.0889815 | 2.5656382 | 46 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04177 | 2001 $TH_{212}$ |
| 2001 $TK_{212}$ | 15.4 | 0.15 | 20060922 | 341.97920 | 166.69022 | 288.29311 | 8.27863 | 0.2519531 | 2.7711032 | 59 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 90101 | 2001 $TK_{212}$ |
| 2001 $TM_{212}$ | 15.7 | 0.15 | 20060922 | 296.47820 | 90.25991 | 351.88962 | 14.15853 | 0.1910636 | 3.0613116 | 65 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04177 | 2001 $TM_{212}$ |
| 2001 $TQ_{212}$ | 16.1 | 0.15 | 20060922 | 19.02111 | 114.53174 | 285.43854 | 6.49958 | 0.2290701 | 2.7833629 | 57 | 3 | 2001–2006 | 0.34 | M-v | 2 | MPC | 85090 | 2001 $TQ_{212}$ |
| 2001 $TM_{213}$ | 16.1 | 0.15 | 20060922 | 44.38281 | 118.48006 | 268.88336 | 8.00457 | 0.1514203 | 2.6686242 | 42 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 85091 | 2001 $TM_{213}$ |
| 2001 $TN_{214}$ | 16.2 | 0.15 | 20060922 | 2.16394 | 108.99559 | 338.29472 | 11.17310 | 0.1666952 | 2.6801830 | 29 | 3 | 2001–2005 | 0.51 | M-v | 2 | MPC | 85091 | 2001 $TN_{214}$ |
| 2001 $TP_{214}$ | 18.0 | 0.15 | 20060922 | 74.74598 | 45.73438 | 343.09176 | 6.44484 | 0.3283952 | 2.5519620 | 44 | 2 | 2001–2005 | 0.63 | M-v | 3 | MPC | 88991 | 2001 $TP_{214}$ |
| 2001 $TU_{214}$ | 17.0 | 0.15 | 20060922 | 6.21626 | 158.16873 | 274.86504 | 8.27860 | 0.2340653 | 2.7325484 | 25 | 3 | 1997–2006 | 0.44 | M-v | 2 | MPC | 48131 | 2001 $TU_{214}$ |
| 2001 $TC_{215}$ | 15.5 | 0.15 | 20060922 | 13.72246 | 341.09649 | 349.39101 | 12.29625 | 0.1064147 | 3.1173474 | 59 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 04177 | 2001 $TC_{215}$ |
| 2001 $TN_{215}$ | 14.8 | 0.15 | 20060922 | 325.01031 | 76.35605 | 312.51501 | 8.59400 | 0.0906763 | 3.1298484 | 104 | 5 | 1992–2006 | 0.53 | M-v | 0 | MPC | 04177 | 2001 $TN_{215}$ |
| 2001 $TE_{216}$ | 15.9 | 0.15 | 20060922 | 310.23036 | 104.45461 | 307.51618 | 8.76768 | 0.1537145 | 3.1270417 | 26 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 03248 | 2001 $TE_{216}$ |
| 2001 $TL_{216}$ | 14.6 | 0.15 | 20060922 | 16.75741 | 343.77681 | 336.81621 | 10.71569 | 0.1933230 | 3.1335499 | 108 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03248 | 2001 $TL_{216}$ |
| 2001 $TA_{217}$ | 16.1 | 0.15 | 20060922 | 108.36783 | 7.91917 | 348.63720 | 13.64499 | 0.0550941 | 2.5183901 | 50 | 3 | 2001–2005 | 0.66 | M-v | 3 | MPC | 90101 | 2001 $TA_{217}$ |
| 2001 $TY_{217}$ | 15.4 | 0.15 | 20060922 | 31.24636 | 315.62328 | 46.13852 | 15.30048 | 0.2362657 | 2.7091337 | 45 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 04177 | 2001 $TY_{217}$ |
| 2001 $TL_{219}$ | 16.4 | 0.15 | 20060922 | 128.78785 | 225.62991 | 85.05557 | 4.89086 | 0.2069690 | 2.5539129 | 60 | 5 | 1996–2005 | 0.68 | M-v | 1 | MPC | 88992 | 2001 $TL_{219}$ |
| 2001 $TF_{220}$ | 16.5 | 0.15 | 20060922 | 27.60345 | 121.83969 | 286.80128 | 5.31044 | 0.1235944 | 2.6620762 | 28 | 3 | 2001–2006 | 0.32 | M-v | 3 | MPC | 88992 | 2001 $TF_{220}$ |
| 2001 $TY_{221}$ | 15.6 | 0.15 | 20060922 | 335.45449 | 140.86083 | 233.35704 | 9.81477 | 0.0974614 | 3.1199989 | 36 | 6 | 2000–2006 | 0.71 | M-v | 0 | MPC | 04178 | 2001 $TY_{221}$ |
| 2001 $TZ_{221}$ | 15.9 | 0.15 | 20060922 | 334.05813 | 66.32737 | 296.14796 | 3.62447 | 0.1222698 | 3.1869225 | 31 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 03248 | 2001 $TZ_{221}$ |
| 2001 $TJ_{222}$ | 15.4 | 0.15 | 20060922 | 31.02128 | 23.24460 | 1.36498 | 5.80924 | 0.0382880 | 2.8072024 | 43 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 88992 | 2001 $TJ_{222}$ |
| 2001 $TR_{223}$ | 16.4 | 0.15 | 20060922 | 99.39040 | 32.36693 | 278.85336 | 5.50457 | 0.2453602 | 2.6550650 | 33 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 85094 | 2001 $TR_{223}$ |
| 2001 $TE_{224}$ | 15.9 | 0.15 | 20060922 | 125.32828 | 49.71079 | 242.86347 | 9.94068 | 0.0808150 | 2.7537613 | 34 | 5 | 2001–2006 | 0.41 | M-v | 0 | MPC | 02047 | 2001 $TE_{224}$ |
| 2001 $TX_{224}$ | 16.1 | 0.15 | 20060922 | 3.15404 | 58.79286 | 357.80240 | 4.69295 | 0.0520968 | 2.8097627 | 31 | 5 | 1991–2006 | 0.49 | M-v | 0 | MPC | 04178 | 2001 $TX_{224}$ |
| 2001 $TK_{225}$ | 15.9 | 0.15 | 20060922 | 49.06970 | 305.68703 | 119.65711 | 10.58080 | 0.0432894 | 2.5658969 | 82 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 02047 | 2001 $TK_{225}$ |
| 2001 $TV_{226}$ | 16.0 | 0.15 | 20060922 | 102.24192 | 231.26080 | 90.07217 | 14.21692 | 0.1847731 | 2.6157096 | 54 | 4 | 2000–2006 | 0.45 | M-v | 0 | MPC | 85095 | 2001 $TV_{226}$ |
| 2001 $TA_{227}$ | 16.7 | 0.15 | 20060922 | 268.81943 | 176.43965 | 26.28385 | 2.31851 | 0.0503611 | 2.5486287 | 71 | 5 | 1995–2006 | 0.43 | M-v | 2 | MPC | 97487 | 2001 $TA_{227}$ |
| 2001 $TD_{227}$ | 15.1 | 0.15 | 20060922 | 14.66940 | 95.35027 | 289.43651 | 10.62953 | 0.1172406 | 2.7406133 | 51 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87484 | 2001 $TD_{227}$ |
| 2001 $TA_{228}$ | 16.3 | 0.15 | 20060922 | 76.22952 | 119.15872 | 217.45961 | 4.73010 | 0.0910932 | 2.7000987 | 22 | 3 | 2001–2006 | 0.31 | M-v | 3 | MPC | 88993 | 2001 $TA_{228}$ |
| 2001 $TB_{228}$ | 16.4 | 0.15 | 20060922 | 228.07865 | 220.77657 | 359.96116 | 4.51233 | 0.1159261 | 2.5565095 | 35 | 2 | 2001–2005 | 0.48 | M-v | 5 | MPC | 90102 | 2001 $TB_{228}$ |
| 2001 $TS_{228}$ | 16.0 | 0.15 | 20060922 | 52.96087 | 87.93110 | 288.60050 | 12.49261 | 0.1673843 | 2.6753025 | 47 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 85096 | 2001 $TS_{228}$ |
| 2001 $TX_{228}$ | 16.2 | 0.15 | 20060922 | 59.62198 | 89.76004 | 271.54079 | 12.04889 | 0.2353231 | 2.6858164 | 54 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 85096 | 2001 $TX_{228}$ |
| 2001 $TK_{229}$ | 15.1 | 0.15 | 20060922 | 21.56141 | 18.45802 | 40.42104 | 15.43395 | 0.0979386 | 2.5963267 | 66 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 90102 | 2001 $TK_{229}$ |
| 2001 $TM_{229}$ | 15.9 | 0.15 | 20060922 | 128.26344 | 355.27113 | 325.04212 | 13.11720 | 0.1640633 | 2.5614573 | 53 | 4 | 1999–2005 | 0.52 | M-v | 1 | MPC | 90102 | 2001 $TM_{229}$ |
| 2001 $TT_{229}$ | 14.9 | 0.15 | 20060922 | 322.40744 | 246.41506 | 134.96906 | 16.65410 | 0.3022886 | 3.1021331 | 52 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04178 | 2001 $TT_{229}$ |
| 2001 $TW_{229}$ | 16.3 | 0.15 | 20060922 | 55.10120 | 264.75525 | 128.34185 | 6.40747 | 0.2734671 | 2.5896340 | 123 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 90102 | 2001 $TW_{229}$ |
| 2001 $TX_{229}$ | 15.6 | 0.15 | 20060922 | 273.51778 | 226.16364 | 288.34230 | 3.72821 | 0.0555542 | 2.7292042 | 75 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87484 | 2001 $TX_{229}$ |
| 2001 $TZ_{229}$ | 15.7 | 0.15 | 20060922 | 256.71859 | 267.63165 | 203.69710 | 8.63656 | 0.0936006 | 3.0097803 | 39 | 3 | 2001–2006 | 0.46 | M-v | 1 | MPC | 04178 | 2001 $TZ_{229}$ |
| 2001 $TO_{230}$ | 15.0 | 0.15 | 20060922 | 5.58488 | 42.43626 | 308.16598 | 15.18956 | 0.0615842 | 3.0687510 | 48 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 04178 | 2001 $TO_{230}$ |
| 2001 $TV_{230}$ | 15.4 | 0.15 | 20060922 | 80.76413 | 163.40172 | 138.42550 | 9.69025 | 0.1089974 | 2.7885377 | 38 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 61145 | 2001 $TV_{230}$ |
| 2001 $TT_{231}$ | 16.3 | 0.15 | 20060922 | 77.42890 | 239.79829 | 133.08618 | 16.02502 | 0.1867481 | 2.5631781 | 46 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 85097 | 2001 $TT_{231}$ |
| 2001 $TX_{231}$ | 16.6 | 0.15 | 20060922 | 340.76805 | 153.09268 | 266.86097 | 1.60904 | 0.0977686 | 2.8562432 | 96 | 5 | 2001–2006 | 0.41 | M-v | 0 | MPC | 87484 | 2001 $TX_{231}$ |
| 2001 $TW_{232}$ | 16.4 | 0.15 | 20060922 | 332.15181 | 223.82271 | 214.57287 | 4.89300 | 0.1488459 | 2.8513874 | 62 | 4 | 1999–2006 | 0.45 | M-v | 0 | MPC | 85098 | 2001 $TW_{232}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $TX_{232}$ | 15.7 | 0.15 | 20060922 | 41.08262 | 302.27697 | 12.58709 | 1.69751 | 0.0942141 | 3.0325896 | 83 | 5 | 1999–2006 | 0.50 | M-v | 0 | MPC | 04178 | 2001 $TX_{232}$ |
| 2001 $TM_{233}$ | 14.8 | 0.15 | 20060922 | 267.41145 | 169.69205 | 267.34813 | 10.03729 | 0.1123749 | 3.1460967 | 44 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04178 | 2001 $TM_{233}$ |
| 2001 $TY_{233}$ | 17.0 | 0.15 | 20060922 | 57.11161 | 52.85370 | 326.11938 | 1.17796 | 0.1050728 | 2.6526548 | 42 | 5 | 1994–2006 | 0.35 | M-v | 1 | MPC | 04178 | 2001 $TY_{233}$ |
| 2001 $TJ_{235}$ | 15.4 | 0.15 | 20060922 | 318.06160 | 89.58478 | 324.80388 | 13.04329 | 0.1318456 | 2.9847448 | 54 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 04178 | 2001 $TJ_{235}$ |
| 2001 $TS_{235}$ | 15.5 | 0.15 | 20060922 | 79.18865 | 233.68428 | 102.91597 | 8.27715 | 0.1264820 | 2.7268000 | 44 | 4 | 1994–2006 | 0.56 | M-v | 1 | MPC | 04178 | 2001 $TS_{235}$ |
| 2001 $TW_{235}$ | 15.3 | 0.15 | 20060922 | 338.54821 | 231.82737 | 154.19272 | 10.82612 | 0.0905205 | 3.0657217 | 72 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04178 | 2001 $TW_{235}$ |
| 2001 $TZ_{235}$ | 16.5 | 0.15 | 20060922 | 42.75319 | 303.38305 | 135.07205 | 8.70051 | 0.1232947 | 2.5417525 | 44 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 90102 | 2001 $TZ_{235}$ |
| 2001 $TB_{236}$ | 16.4 | 0.15 | 20060922 | 50.63377 | 297.49391 | 88.30839 | 8.94314 | 0.1571989 | 2.6787427 | 41 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 88994 | 2001 $TB_{236}$ |
| 2001 $TB_{237}$ | 15.2 | 0.15 | 20060922 | 337.15478 | 64.46753 | 36.33041 | 15.15131 | 0.0693084 | 2.6146635 | 54 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87484 | 2001 $TB_{237}$ |
| 2001 $TH_{237}$ | 15.7 | 0.15 | 20060922 | 339.16759 | 302.72372 | 106.02286 | 6.18740 | 0.2379817 | 2.8953016 | 86 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 50567 | 2001 $TH_{237}$ |
| 2001 $TS_{237}$ | 16.9 | 0.15 | 20060922 | 117.59143 | 302.69702 | 111.33394 | 6.40385 | 0.1016661 | 2.3037214 | 28 | 3 | 1993–2006 | 0.40 | M-v | 3 | MPC | 03248 | 2001 $TS_{237}$ |
| 2001 $TA_{238}$ | 16.6 | 0.15 | 20060922 | 63.51047 | 96.04744 | 301.16554 | 5.40854 | 0.1042648 | 2.5187713 | 41 | 5 | 1997–2006 | 0.45 | M-v | 3 | MPC | 85099 | 2001 $TA_{238}$ |
| 2001 $TM_{238}$ | 15.2 | 0.15 | 20060922 | 292.64203 | 7.04530 | 62.10039 | 10.13700 | 0.1775920 | 3.0192949 | 68 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04178 | 2001 $TM_{238}$ |
| 2001 $TE_{239}$ | 15.4 | 0.15 | 20060922 | 3.02461 | 301.25052 | 144.43423 | 12.68386 | 0.1762666 | 2.6282362 | 67 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 87484 | 2001 $TE_{239}$ |
| 2001 $TA_{240}$ | 15.4 | 0.15 | 20060922 | 342.29339 | 202.23041 | 143.92008 | 6.60741 | 0.1482788 | 3.2171917 | 35 | 6 | 1993–2006 | 0.47 | M-v | 0 | MPC | 04178 | 2001 $TA_{240}$ |
| 2001 $TP_{240}$ | 15.3 | 0.15 | 20060922 | 335.16007 | 26.70575 | 15.26160 | 9.31534 | 0.1231505 | 3.0322815 | 89 | 4 | 1993–2006 | 0.50 | M-v | 1 | MPC | 04178 | 2001 $TP_{240}$ |
| 2001 $TU_{240}$ | 14.9 | 0.15 | 20060922 | 352.33156 | 351.11245 | 17.86460 | 9.79500 | 0.1279369 | 3.1000496 | 111 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04178 | 2001 $TU_{240}$ |
| 2001 $TL_{241}$ | 15.6 | 0.15 | 20060922 | 77.84040 | 249.72400 | 43.22109 | 10.97617 | 0.0788867 | 2.9942878 | 58 | 3 | 2001–2006 | 0.46 | M-v | 1 | MPC | 61147 | 2001 $TL_{241}$ |
| 2001 $TM_{241}$ | 15.7 | 0.15 | 20060922 | 86.89060 | 223.84663 | 44.59259 | 10.05215 | 0.0341166 | 3.1289529 | 29 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 68943 | 2001 $TM_{241}$ |
| 2001 $TT_{241}$ | 16.0 | 0.15 | 20060922 | 20.13150 | 110.72755 | 268.71889 | 1.00777 | 0.0822876 | 2.8677102 | 66 | 4 | 2001–2006 | 0.42 | M-v | 0 | MPC | 88994 | 2001 $TT_{241}$ |
| 2001 $TD_{242}$ | 16.2 | 0.15 | 20060922 | 341.06734 | 353.68210 | 25.81591 | 2.51163 | 0.0723542 | 3.0157757 | 42 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 04178 | 2001 $TD_{242}$ |
| 2001 $TZ_{242}$ | 16.8 | 0.15 | 20060922 | 345.89019 | 149.84585 | 283.49287 | 3.94731 | 0.1520380 | 2.6884383 | 37 | 5 | 2001–2006 | 0.57 | M-v | 0 | MPC | 85101 | 2001 $TZ_{242}$ |
| 2001 $TP_{244}$ | 17.1 | 0.15 | 20060922 | 315.78935 | 227.71708 | 214.39609 | 3.18909 | 0.0773220 | 2.7723538 | 31 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 94187 | 2001 $TP_{244}$ |
| 2001 $TE_{245}$ | 17.2 | 0.15 | 20060922 | 60.96192 | 307.89993 | 0.22505 | 6.07350 | 0.0681954 | 2.8477161 | 25 | 3 | 2001–2006 | 0.31 | M-v | 2 | MPC | 00075 | 2001 $TE_{245}$ |
| 2001 $TJ_{245}$ | 16.1 | 0.15 | 20060922 | 240.21757 | 129.89968 | 342.25228 | 2.45318 | 0.1060098 | 3.0420204 | 28 | 4 | 1996–2006 | 0.38 | M-v | 2 | MPC | 04178 | 2001 $TJ_{245}$ |
| 2001 $TA_{246}$ | 16.8 | 0.15 | 20060922 | 319.43354 | 226.70407 | 191.87088 | 5.81895 | 0.0562882 | 2.8734608 | 38 | 3 | 2001–2006 | 0.34 | M-v | 3 | MPC | 00075 | 2001 $TA_{246}$ |
| 2001 $TC_{246}$ | 16.7 | 0.15 | 20060922 | 13.97661 | 347.53625 | 28.47809 | 1.75154 | 0.0787185 | 2.7942114 | 37 | 3 | 2001–2006 | 0.34 | M-v | 3 | MPC | 85101 | 2001 $TC_{246}$ |
| 2001 $TE_{248}$ | 16.8 | 0.15 | 20060922 | 70.19647 | 255.14679 | 45.68397 | 2.65275 | 0.0672860 | 2.8652797 | 44 | 3 | 2001–2006 | 0.24 | M-v | 2 | MPC | 75179 | 2001 $TE_{248}$ |
| 2001 $TQ_{248}$ | 17.1 | 0.15 | 20060922 | 81.25129 | 239.72100 | 50.18370 | 2.50234 | 0.0706438 | 2.8582240 | 37 | 3 | 2001–2006 | 0.32 | M-v | 2 | MPC | 75179 | 2001 $TQ_{248}$ |
| 2001 $TE_{256}$ | 14.8 | 0.15 | 20060922 | 317.33071 | 283.16049 | 122.16264 | 11.14191 | 0.1071243 | 3.0427676 | 62 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04178 | 2001 $TE_{256}$ |
| 2001 $TD_{257}$ | 19.6 | 0.15 | 20010928 | 27.83312 | 218.77793 | 107.16428 | 4.26245 | 0.2409662 | 2.2287015 | 8 | 1 | 11 days | 0.27 | | | MPC | | 2001 $TD_{257}$ |
| 2001 UN | 16.0 | 0.15 | 20060922 | 28.61091 | 115.88435 | 304.58428 | 11.60731 | 0.1835342 | 2.6529964 | 75 | 4 | 1993–2006 | 0.48 | M-v | 1 | MPC | 02047 | 2001 UN |
| 2001 UY | 16.7 | 0.15 | 20060922 | 90.34989 | 245.62779 | 213.82623 | 23.87556 | 0.2891289 | 2.3229479 | 88 | 3 | 2001–2006 | 0.66 | M-v | 2 | MPC | 00075 | 2001 UY |
| 2001 $UD_2$ | 16.7 | 0.15 | 20060922 | 34.47287 | 265.62753 | 50.46530 | 23.19828 | 0.0760555 | 1.8906793 | 111 | 3 | 2001–2006 | 0.44 | M-v | 1 | MPC | 46776 | 2001 $UD_2$ |
| 2001 $UU_2$ | 16.5 | 0.15 | 20060922 | 108.68373 | 179.12785 | 132.48364 | 3.70899 | 0.0959823 | 2.6826342 | 36 | 6 | 1995–2006 | 0.60 | M-v | 1 | MPC | 85102 | 2001 $UU_2$ |
| 2001 $UX_2$ | 17.3 | 0.15 | 20060922 | 146.69259 | 241.09108 | 78.74264 | 6.00782 | 0.2082749 | 2.4345091 | 33 | 2 | 2001–2005 | 0.40 | M-v | 4 | MPC | 00076 | 2001 $UX_2$ |
| 2001 $UN_3$ | 15.7 | 0.15 | 20060922 | 44.93627 | 253.78009 | 112.90970 | 4.93164 | 0.0882927 | 2.7631020 | 54 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 90102 | 2001 $UN_3$ |
| 2001 $UT_3$ | 15.6 | 0.15 | 20060922 | 326.54179 | 18.36520 | 91.76186 | 9.54775 | 0.2534628 | 2.7815182 | 68 | 5 | 1993–2006 | 0.64 | M-v | 0 | MPC | 87485 | 2001 $UT_3$ |
| 2001 $UK_4$ | 15.8 | 0.15 | 20060922 | 55.09922 | 335.66958 | 64.08374 | 2.79305 | 0.0753861 | 2.6591301 | 137 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97488 | 2001 $UK_4$ |
| 2001 $UM_4$ | 16.1 | 0.15 | 20060922 | 201.54559 | 201.55851 | 73.90514 | 3.19931 | 0.0205790 | 2.5670443 | 139 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 97488 | 2001 $UM_4$ |
| 2001 $US_5$ | 14.4 | 0.15 | 20060922 | 281.49906 | 27.13919 | 75.03537 | 14.90407 | 0.1551214 | 3.1831004 | 143 | 3 | 2001–2006 | 0.53 | M-v | 1 | MPC | 50567 | 2001 $US_5$ |
| 2001 $UY_5$ | 15.2 | 0.15 | 20060922 | 4.63272 | 273.23600 | 76.42502 | 15.41127 | 0.2256024 | 3.1522223 | 75 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04178 | 2001 $UY_5$ |
| 2001 $UT_6$ | 17.2 | 0.15 | 20060922 | 338.11333 | 24.89817 | 5.95936 | 8.23657 | 0.3247911 | 3.0086087 | 44 | 2 | 2001–2006 | 0.56 | M-v | 3 | MPC | 03249 | 2001 $UT_6$ |
| 2001 $UC_8$ | 15.7 | 0.15 | 20060922 | 84.17259 | 115.55457 | 213.47394 | 2.66815 | 0.0936987 | 2.7119591 | 69 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87485 | 2001 $UC_8$ |
| 2001 $UL_8$ | 17.0 | 0.15 | 20060922 | 90.17893 | 339.66708 | 33.39049 | 18.03368 | 0.1908692 | 2.5349541 | 82 | 3 | 1993–2005 | 0.67 | M-v | 3 | MPC | 04178 | 2001 $UL_8$ |
| 2001 $UM_8$ | 16.1 | 0.15 | 20060922 | 59.07534 | 299.23552 | 51.74514 | 4.64204 | 0.1118272 | 2.7561248 | 35 | 4 | 1992–2006 | 0.50 | M-v | 1 | MPC | 03249 | 2001 $UM_8$ |
| 2001 $US_8$ | 16.3 | 0.15 | 20060922 | 356.51831 | 110.10237 | 350.00633 | 2.71732 | 0.1360795 | 2.6512635 | 86 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 97488 | 2001 $US_8$ |
| 2001 $UO_9$ | 16.9 | 0.15 | 20060922 | 119.82875 | 263.81216 | 138.40055 | 4.03621 | 0.1105408 | 2.3732830 | 37 | 4 | 1999–2005 | 0.60 | M-v | 1 | MPC | 97488 | 2001 $UO_9$ |
| 2001 $UV_9$ | 14.3 | 0.15 | 20060922 | 355.62815 | 105.51238 | 251.31049 | 14.22859 | 0.2899306 | 3.1238247 | 125 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04178 | 2001 $UV_9$ |
| 2001 $UE_{10}$ | 16.7 | 0.15 | 20060922 | 313.32142 | 359.77245 | 101.84109 | 5.33723 | 0.0814525 | 2.7051907 | 28 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 62374 | 2001 $UE_{10}$ |
| 2001 $UG_{11}$ | 15.5 | 0.15 | 20060922 | 350.44492 | 286.04697 | 171.14983 | 28.17308 | 0.3972346 | 2.6229556 | 46 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 46781 | 2001 $UG_{11}$ |
| 2001 $UD_{12}$ | 13.7 | 0.15 | 20060922 | 7.49624 | 271.49702 | 107.80265 | 26.11615 | 0.2825776 | 3.1556349 | 101 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04179 | 2001 $UD_{12}$ |
| 2001 $UJ_{12}$ | 15.8 | 0.15 | 20060922 | 39.42437 | 116.40395 | 296.91779 | 2.14019 | 0.0732724 | 2.6246090 | 110 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97489 | 2001 $UJ_{12}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UD_{13}$ | 15.4 | 0.15 | 20060922 | 109.38051 | 187.12150 | 186.78419 | 3.10766 | 0.0763956 | 2.5333536 | 182 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 97489 | 2001 $UD_{13}$ |
| 2001 $UP_{14}$ | 15.3 | 0.15 | 20060922 | 351.90416 | 324.63971 | 15.19948 | 10.53060 | 0.2075226 | 3.1523725 | 81 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 04179 | 2001 $UP_{14}$ |
| 2001 $UW_{14}$ | 16.0 | 0.15 | 20060922 | 305.79807 | 330.75207 | 111.72196 | 1.21950 | 0.2426758 | 3.1032551 | 113 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 46784 | 2001 $UW_{14}$ |
| 2001 $UX_{14}$ | 15.7 | 0.15 | 20060922 | 302.49403 | 236.60823 | 231.83440 | 4.85123 | 0.2138087 | 2.9967983 | 133 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 87485 | 2001 $UX_{14}$ |
| 2001 $UH_{15}$ | 15.3 | 0.15 | 20060922 | 155.72542 | 217.21703 | 113.05116 | 5.75201 | 0.1812104 | 2.5215022 | 96 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97489 | 2001 $UH_{15}$ |
| 2001 $UK_{15}$ | 16.7 | 0.15 | 20060922 | 12.17917 | 116.24301 | 352.49773 | 2.80010 | 0.1829692 | 2.5730628 | 39 | 4 | 2001–2006 | 0.72 | M-v | 1 | MPC | 90103 | 2001 $UK_{15}$ |
| 2001 $UP_{15}$ | 15.2 | 0.15 | 20060922 | 328.47432 | 185.10843 | 226.85801 | 11.34883 | 0.1199473 | 2.9937113 | 103 | 4 | 1996–2006 | 0.61 | M-v | 3 | MPC | 61150 | 2001 $UP_{15}$ |
| 2001 $UC_{16}$ | 16.2 | 0.15 | 20060922 | 31.72254 | 209.08574 | 219.59978 | 12.71315 | 0.3018798 | 2.6841970 | 102 | 3 | 2001–2005 | 0.63 | M-v | 2 | MPC | 85107 | 2001 $UC_{16}$ |
| 2001 $UW_{16}$ | 19.7 | 0.15 | 20060922 | 297.43774 | 106.66853 | 37.08469 | 37.60080 | 0.1782849 | 1.3642008 | 53 | 2 | 2001–2006 | 0.57 | M-v | 3 | MPC | 03250 | 2001 $UW_{16}$ |
| 2001 $UL_{17}$ | 14.4 | 0.15 | 20060922 | 288.34482 | 11.51686 | 80.67643 | 17.20425 | 0.0980383 | 3.2006590 | 96 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 66228 | 2001 $UL_{17}$ |
| 2001 $UU_{17}$ | 15.9 | 0.15 | 20060922 | 354.06754 | 283.64885 | 184.21762 | 27.74106 | 0.4039453 | 2.6148041 | 37 | 3 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87485 | 2001 $UU_{17}$ |
| 2001 $UJ_{18}$ | 16.3 | 0.15 | 20060922 | 3.02418 | 27.90826 | 65.91220 | 4.42667 | 0.0223963 | 2.6148662 | 62 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97489 | 2001 $UJ_{18}$ |
| 2001 $UK_{18}$ | 15.9 | 0.15 | 20060922 | 71.31509 | 187.90515 | 155.59676 | 2.48878 | 0.1094996 | 2.7494736 | 78 | 6 | 1995–2006 | 0.53 | M-v | 0 | MPC | 87485 | 2001 $UK_{18}$ |
| 2001 $UQ_{18}$ | 5.6 | 0.15 | 20060922 | 115.04061 | 295.54430 | 1.93590 | 5.20455 | 0.0620339 | 44.0686116 | 35 | 3 | 2001–2004 | 0.25 | M-v | 4 | MPC | 62374 | 2001 $UQ_{18}$ |
| 2001 $UF_{19}$ | 16.1 | 0.15 | 20060922 | 44.86710 | 277.13002 | 84.08115 | 6.80506 | 0.0928544 | 2.6950845 | 43 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 66228 | 2001 $UF_{19}$ |
| 2001 $UO_{19}$ | 16.9 | 0.15 | 20060922 | 131.38234 | 189.84416 | 149.34176 | 4.62924 | 0.1563062 | 2.4369829 | 38 | 4 | 1996–2005 | 0.59 | M-v | 1 | MPC | 94195 | 2001 $UO_{19}$ |
| 2001 $US_{19}$ | 17.7 | 0.15 | 20060922 | 113.67847 | 134.62078 | 190.61586 | 3.70890 | 0.1386775 | 2.5504495 | 33 | 3 | 2001–2005 | 0.48 | M-v | 3 | MPC | 94195 | 2001 $US_{19}$ |
| 2001 $UX_{19}$ | 15.8 | 0.15 | 20060922 | 32.09813 | 272.01610 | 113.74839 | 6.46711 | 0.0797129 | 2.7131570 | 64 | 5 | 1994–2006 | 0.45 | M-v | 0 | MPC | 90103 | 2001 $UX_{19}$ |
| 2001 $UH_{21}$ | 16.0 | 0.15 | 20060922 | 60.23363 | 118.32682 | 237.91183 | 11.67647 | 0.1951292 | 2.6530607 | 64 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 85108 | 2001 $UH_{21}$ |
| 2001 $UL_{21}$ | 15.4 | 0.15 | 20060922 | 20.03418 | 156.00358 | 273.64694 | 6.11100 | 0.2039799 | 2.6158620 | 90 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87485 | 2001 $UL_{21}$ |
| 2001 $UP_{21}$ | 15.0 | 0.15 | 20060922 | 358.45239 | 39.94328 | 319.66656 | 10.02396 | 0.0638202 | 2.9710007 | 76 | 5 | 1993–2006 | 0.53 | M-v | 1 | MPC | 04179 | 2001 $UP_{21}$ |
| 2001 $UQ_{21}$ | 14.6 | 0.15 | 20060922 | 28.61388 | 12.88548 | 291.62139 | 8.58533 | 0.0471427 | 3.0961315 | 66 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04179 | 2001 $UQ_{21}$ |
| 2001 $UE_{22}$ | 16.1 | 0.15 | 20060922 | 41.81803 | 124.05207 | 310.22349 | 6.91009 | 0.2629897 | 2.5502892 | 81 | 2 | 2001–2005 | 0.44 | M-v | 3 | MPC | 90103 | 2001 $UE_{22}$ |
| 2001 $UO_{22}$ | 14.5 | 0.15 | 20060922 | 18.81696 | 82.70292 | 259.04274 | 7.69772 | 0.1038780 | 2.9764493 | 108 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04179 | 2001 $UO_{22}$ |
| 2001 $UZ_{22}$ | 15.5 | 0.15 | 20060922 | 50.56661 | 87.17059 | 269.72568 | 9.71387 | 0.1661408 | 2.7499969 | 62 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 85109 | 2001 $UZ_{22}$ |
| 2001 $UG_{23}$ | 15.3 | 0.15 | 20060922 | 138.24148 | 50.90795 | 293.26378 | 7.68677 | 0.0994001 | 2.4511775 | 120 | 3 | 1995–2006 | 0.57 | M-v | 3 | MPC | 97489 | 2001 $UG_{23}$ |
| 2001 $UH_{23}$ | 16.0 | 0.15 | 20060922 | 8.26431 | 123.00816 | 313.83035 | 6.99449 | 0.2842757 | 2.7192796 | 48 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 85110 | 2001 $UH_{23}$ |
| 2001 $UN_{23}$ | 15.4 | 0.15 | 20060922 | 336.91244 | 46.06352 | 310.97100 | 9.09676 | 0.2180225 | 3.1490228 | 71 | 3 | 2001–2006 | 0.35 | M-v | 2 | MPC | 03250 | 2001 $UN_{23}$ |
| 2001 $UU_{23}$ | 15.8 | 0.15 | 20060922 | 40.00066 | 105.63932 | 275.72725 | 8.19256 | 0.1434715 | 2.7271028 | 62 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87486 | 2001 $UU_{23}$ |
| 2001 $UA_{24}$ | 15.2 | 0.15 | 20060922 | 319.15650 | 35.50938 | 4.97351 | 16.99376 | 0.2205384 | 3.0957145 | 65 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 03251 | 2001 $UA_{24}$ |
| 2001 $UG_{24}$ | 16.0 | 0.15 | 20060922 | 8.24985 | 54.87297 | 2.43689 | 14.57105 | 0.2990001 | 2.7853583 | 57 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 46787 | 2001 $UG_{24}$ |
| 2001 $UN_{24}$ | 14.7 | 0.15 | 20060922 | 359.23940 | 104.86931 | 262.38973 | 11.24945 | 0.0683129 | 3.0268504 | 82 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 62374 | 2001 $UN_{24}$ |
| 2001 $UY_{24}$ | 14.1 | 0.15 | 20060922 | 259.13576 | 259.46316 | 235.30035 | 23.11060 | 0.3345925 | 3.1229902 | 52 | 3 | 2001–2006 | 0.71 | M-v | 2 | MPC | 46787 | 2001 $UY_{24}$ |
| 2001 $UE_{25}$ | 15.8 | 0.15 | 20060922 | 15.73654 | 92.27546 | 240.17202 | 10.94886 | 0.2786845 | 2.9734304 | 92 | 2 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03251 | 2001 $UE_{25}$ |
| 2001 $UK_{25}$ | 15.1 | 0.15 | 20060922 | 33.19132 | 177.17518 | 246.72552 | 12.37074 | 0.1356085 | 2.6273527 | 157 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 97489 | 2001 $UK_{25}$ |
| 2001 $UN_{26}$ | 15.6 | 0.15 | 20060922 | 16.22590 | 79.52842 | 346.21095 | 10.81623 | 0.1872049 | 2.6867685 | 73 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87486 | 2001 $UN_{26}$ |
| 2001 $UV_{26}$ | 16.6 | 0.15 | 20060922 | 51.48283 | 150.83313 | 205.65016 | 9.18900 | 0.1558647 | 2.8106369 | 48 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87486 | 2001 $UV_{26}$ |
| 2001 $UA_{27}$ | 16.4 | 0.15 | 20060922 | 30.97134 | 134.81053 | 247.21073 | 8.14905 | 0.1733631 | 2.7364431 | 29 | 4 | 1996–2006 | 0.45 | M-v | 1 | MPC | 03251 | 2001 $UA_{27}$ |
| 2001 $UO_{28}$ | 14.7 | 0.15 | 20060922 | 121.00981 | 184.13634 | 39.02435 | 10.97677 | 0.0389088 | 3.1227264 | 56 | 5 | 1993–2006 | 0.52 | M-v | 1 | MPC | 04179 | 2001 $UO_{28}$ |
| 2001 $UW_{28}$ | 15.7 | 0.15 | 20060922 | 288.05331 | 17.84117 | 57.60485 | 4.83384 | 0.1575056 | 3.1037166 | 24 | 3 | 2001–2004 | 0.49 | M-v | 4 | MPC | 61152 | 2001 $UW_{28}$ |
| 2001 $UD_{29}$ | 15.0 | 0.15 | 20060922 | 33.10328 | 303.35674 | 69.70461 | 5.39597 | 0.0847483 | 2.7908249 | 74 | 4 | 1992–2006 | 0.56 | M-v | 1 | MPC | 85112 | 2001 $UD_{29}$ |
| 2001 $UR_{30}$ | 16.7 | 0.15 | 20060922 | 192.61601 | 264.66873 | 36.10735 | 8.87936 | 0.0721703 | 2.3820786 | 22 | 4 | 2000–2005 | 0.50 | M-v | 1 | MPC | 90103 | 2001 $UR_{30}$ |
| 2001 $UX_{30}$ | 16.3 | 0.15 | 20060922 | 198.18734 | 220.97364 | 107.25564 | 7.07050 | 0.2209693 | 2.2661680 | 74 | 3 | 1996–2006 | 0.48 | M-v | 3 | MPC | 94199 | 2001 $UX_{30}$ |
| 2001 $UT_{31}$ | 16.6 | 0.15 | 20060922 | 107.07652 | 259.23644 | 60.95445 | 4.78602 | 0.2532348 | 2.5890872 | 39 | 2 | 2001–2005 | 0.59 | M-v | 5 | MPC | 88998 | 2001 $UT_{31}$ |
| 2001 $UX_{31}$ | 16.8 | 0.15 | 20060922 | 15.18961 | 252.40951 | 177.11564 | 11.44659 | 0.1778820 | 2.6741940 | 37 | 2 | 2001–2005 | 0.47 | M-v | 3 | MPC | 94200 | 2001 $UX_{31}$ |
| 2001 $UH_{32}$ | 14.9 | 0.15 | 20060922 | 285.25078 | 35.58758 | 39.63893 | 28.20806 | 0.1465860 | 3.0948242 | 52 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 04179 | 2001 $UH_{32}$ |
| 2001 $UM_{32}$ | 16.0 | 0.15 | 20060922 | 358.73155 | 255.25149 | 153.27819 | 9.68123 | 0.1510637 | 2.8149116 | 42 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 85114 | 2001 $UM_{32}$ |
| 2001 $UV_{32}$ | 15.9 | 0.15 | 20060922 | 79.88583 | 240.11438 | 128.51471 | 6.59300 | 0.1798693 | 2.5920798 | 124 | 6 | 1991–2006 | 0.48 | M-v | 1 | MPC | 97490 | 2001 $UV_{32}$ |
| 2001 $UB_{33}$ | 14.7 | 0.15 | 20060922 | 350.52048 | 300.68770 | 62.02483 | 13.01212 | 0.1074070 | 3.0960422 | 58 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04179 | 2001 $UB_{33}$ |
| 2001 $UJ_{34}$ | 14.7 | 0.15 | 20060922 | 339.01253 | 47.16478 | 70.90979 | 14.01236 | 0.1295538 | 2.6707384 | 75 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87486 | 2001 $UJ_{34}$ |
| 2001 $UG_{35}$ | 15.4 | 0.15 | 20060922 | 4.49193 | 336.86607 | 86.71547 | 10.58247 | 0.1392023 | 2.7780303 | 109 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 87486 | 2001 $UG_{35}$ |
| 2001 $UL_{35}$ | 14.8 | 0.15 | 20060922 | 337.60094 | 16.11180 | 76.72556 | 15.19137 | 0.1300922 | 2.7903851 | 78 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 48135 | 2001 $UL_{35}$ |
| 2001 $UA_{36}$ | 15.6 | 0.15 | 20060922 | 340.12530 | 282.62170 | 88.36335 | 13.06609 | 0.1901779 | 3.1528827 | 52 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04179 | 2001 $UA_{36}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UT_{36}$ | 16.2 | 0.15 | 20060922 | 337.78784 | 220.66356 | 168.60373 | 10.32536 | 0.2722851 | 3.0389569 | 96 | 2 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03251 | 2001 $UT_{36}$ |
| 2001 $UE_{37}$ | 15.8 | 0.15 | 20060922 | 333.81248 | 43.71255 | 67.89116 | 14.06237 | 0.1625184 | 2.7164811 | 63 | 3 | 2001–2006 | 0.56 | M-v | 1 | MPC | 50568 | 2001 $UE_{37}$ |
| 2001 $UP_{37}$ | 16.5 | 0.15 | 20060922 | 49.30747 | 91.52226 | 305.39335 | 5.77824 | 0.1727941 | 2.5995323 | 50 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04179 | 2001 $UP_{37}$ |
| 2001 $UQ_{37}$ | 15.7 | 0.15 | 20060922 | 330.19297 | 35.00291 | 345.11065 | 11.62820 | 0.1613492 | 3.0456985 | 44 | 2 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03252 | 2001 $UQ_{37}$ |
| 2001 $UD_{38}$ | 14.6 | 0.15 | 20060922 | 59.43871 | 260.18969 | 17.85923 | 10.75322 | 0.0541096 | 3.1358037 | 67 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 04179 | 2001 $UD_{38}$ |
| 2001 $UG_{38}$ | 15.9 | 0.15 | 20060922 | 2.68176 | 218.97940 | 195.77956 | 6.10932 | 0.0883468 | 2.7548696 | 46 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 87487 | 2001 $UG_{38}$ |
| 2001 $UG_{39}$ | 16.5 | 0.15 | 20060922 | 340.21677 | 358.42071 | 35.85715 | 6.64211 | 0.0824205 | 2.9748517 | 51 | 5 | 1996–2006 | 0.44 | M-v | 0 | MPC | 97490 | 2001 $UG_{39}$ |
| 2001 $UM_{39}$ | 15.7 | 0.15 | 20060922 | 75.22013 | 89.13693 | 190.36413 | 9.24748 | 0.0987200 | 3.0154846 | 43 | 3 | 1995–2006 | 0.41 | M-v | 3 | MPC | 27271 | 2001 $UM_{39}$ |
| 2001 $UQ_{39}$ | 15.7 | 0.15 | 20060922 | 121.77138 | 152.80168 | 139.84695 | 2.56934 | 0.0532581 | 2.7329875 | 64 | 6 | 1999–2006 | 0.62 | M-v | 1 | MPC | 90104 | 2001 $UQ_{39}$ |
| 2001 $UP_{40}$ | 14.6 | 0.15 | 20060922 | 271.07400 | 39.32378 | 41.92838 | 10.06103 | 0.0719608 | 3.1646221 | 59 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 61155 | 2001 $UP_{40}$ |
| 2001 $UE_{41}$ | 16.2 | 0.15 | 20060922 | 297.69410 | 284.03319 | 163.45648 | 4.92198 | 0.1870773 | 3.0257120 | 39 | 5 | 1998–2006 | 0.55 | M-v | 0 | MPC | 87487 | 2001 $UE_{41}$ |
| 2001 $UV_{41}$ | 16.6 | 0.15 | 20060922 | 24.50403 | 355.73213 | 76.13968 | 3.26576 | 0.1938856 | 2.6486477 | 42 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 85118 | 2001 $UV_{41}$ |
| 2001 $UX_{41}$ | 15.8 | 0.15 | 20060922 | 35.88381 | 171.10608 | 175.42884 | 4.05627 | 0.1471269 | 2.8887460 | 72 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 66229 | 2001 $UX_{41}$ |
| 2001 $UD_{42}$ | 16.4 | 0.15 | 20011018 | 4.03019 | 321.45965 | 56.83901 | 15.75748 | 0.2492144 | 3.1084695 | 25 | 1 | 52 days | 0.47 | | | MPC | | 2001 $UD_{42}$ |
| 2001 $UP_{42}$ | 16.0 | 0.15 | 20060922 | 322.92092 | 302.66113 | 196.34276 | 7.13229 | 0.1402280 | 2.6135953 | 75 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 87487 | 2001 $UP_{42}$ |
| 2001 $US_{42}$ | 16.1 | 0.15 | 20060922 | 0.38105 | 253.80408 | 186.59313 | 1.40110 | 0.0598078 | 2.6662901 | 63 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97490 | 2001 $US_{42}$ |
| 2001 $UU_{42}$ | 15.7 | 0.15 | 20060922 | 59.79853 | 295.09420 | 35.35692 | 13.76545 | 0.1336039 | 2.8120210 | 56 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 61156 | 2001 $UU_{42}$ |
| 2001 $UC_{43}$ | 15.5 | 0.15 | 20060922 | 332.15043 | 277.67941 | 181.98696 | 5.99907 | 0.0853646 | 2.7292591 | 54 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97490 | 2001 $UC_{43}$ |
| 2001 $UH_{43}$ | 15.7 | 0.15 | 20060922 | 270.80541 | 36.34769 | 53.61938 | 6.07299 | 0.1789535 | 3.1748770 | 54 | 3 | 2001–2004 | 0.63 | M-v | 3 | MPC | 43116 | 2001 $UH_{43}$ |
| 2001 $UK_{43}$ | 14.6 | 0.15 | 20060922 | 210.37177 | 302.51396 | 207.33618 | 9.60801 | 0.0283175 | 3.1054495 | 132 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 66229 | 2001 $UK_{43}$ |
| 2001 $UA_{44}$ | 15.3 | 0.15 | 20060922 | 299.19970 | 222.94951 | 195.91141 | 11.39512 | 0.1364389 | 3.1403241 | 27 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 03252 | 2001 $UA_{44}$ |
| 2001 $UM_{44}$ | 15.1 | 0.15 | 20060922 | 342.31353 | 38.30897 | 42.89758 | 6.10660 | 0.0536918 | 2.7808055 | 77 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 04179 | 2001 $UM_{44}$ |
| 2001 $UO_{44}$ | 15.6 | 0.15 | 20060922 | 345.26104 | 306.39074 | 58.94514 | 2.58433 | 0.1989334 | 3.0845407 | 85 | 2 | 2001–2006 | 0.55 | M-v | 4 | MPC | 03252 | 2001 $UO_{44}$ |
| 2001 $UQ_{44}$ | 15.5 | 0.15 | 20060922 | 6.01487 | 324.45238 | 43.81769 | 11.44323 | 0.0856424 | 2.9785459 | 127 | 4 | 1996–2006 | 0.55 | M-v | 2 | MPC | 48136 | 2001 $UQ_{44}$ |
| 2001 $US_{44}$ | 16.0 | 0.15 | 20060922 | 16.17138 | 235.92097 | 181.47710 | 3.87834 | 0.0901040 | 2.7163247 | 37 | 3 | 2001–2005 | 0.54 | M-v | 3 | MPC | 85118 | 2001 $US_{44}$ |
| 2001 $UV_{45}$ | 15.3 | 0.15 | 20060922 | 320.16709 | 72.80705 | 57.74581 | 8.75705 | 0.2016274 | 2.7414825 | 91 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87487 | 2001 $UV_{45}$ |
| 2001 $UQ_{46}$ | 15.6 | 0.15 | 20060922 | 358.60491 | 330.18554 | 57.62474 | 10.10348 | 0.1352114 | 2.9463835 | 105 | 4 | 1996–2006 | 0.56 | M-v | 2 | MPC | 66229 | 2001 $UQ_{46}$ |
| 2001 $UR_{46}$ | 15.4 | 0.15 | 20060922 | 8.55226 | 259.10778 | 65.90392 | 8.62426 | 0.2131555 | 3.1428000 | 51 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04179 | 2001 $UR_{46}$ |
| 2001 $UA_{47}$ | 15.3 | 0.15 | 20060922 | 316.45774 | 339.94553 | 57.19900 | 8.27082 | 0.1592865 | 3.1605524 | 64 | 3 | 1999–2006 | 0.43 | M-v | 3 | MPC | 03252 | 2001 $UA_{47}$ |
| 2001 $UK_{47}$ | 16.0 | 0.15 | 20060922 | 317.14839 | 344.19575 | 106.24083 | 0.86718 | 0.2682773 | 2.9723223 | 118 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04179 | 2001 $UK_{47}$ |
| 2001 $UP_{47}$ | 16.1 | 0.15 | 20060922 | 70.51364 | 231.06818 | 138.71055 | 2.82511 | 0.1114654 | 2.6694320 | 76 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 02047 | 2001 $UP_{47}$ |
| 2001 $UK_{48}$ | 16.3 | 0.15 | 20060922 | 99.45971 | 183.58979 | 166.08209 | 6.36910 | 0.2298317 | 2.5826606 | 77 | 4 | 1995–2005 | 0.49 | M-v | 1 | MPC | 97490 | 2001 $UK_{48}$ |
| 2001 $UU_{48}$ | 14.7 | 0.15 | 20060922 | 293.60462 | 38.56053 | 60.18020 | 14.33896 | 0.1567295 | 3.0466339 | 146 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 48136 | 2001 $UU_{48}$ |
| 2001 $UO_{50}$ | 15.1 | 0.15 | 20060922 | 52.97983 | 249.09586 | 99.97168 | 9.33462 | 0.3029758 | 2.7830757 | 97 | 3 | 1998–2002 | 0.63 | M-v | 2 | MPC | 30512 | 2001 $UO_{50}$ |
| 2001 $UW_{50}$ | 15.2 | 0.15 | 20060922 | 344.85620 | 200.43455 | 199.32314 | 16.32048 | 0.1686647 | 3.0251348 | 150 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03253 | 2001 $UW_{50}$ |
| 2001 $UT_{51}$ | 14.9 | 0.15 | 20060922 | 347.82650 | 319.30904 | 39.90922 | 10.60529 | 0.1033311 | 3.1471295 | 88 | 5 | 1993–2006 | 0.52 | M-v | 1 | MPC | 04179 | 2001 $UT_{51}$ |
| 2001 $UV_{51}$ | 15.6 | 0.15 | 20060922 | 102.32734 | 246.57631 | 61.58331 | 3.90711 | 0.0739111 | 2.7755376 | 82 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 87487 | 2001 $UV_{51}$ |
| 2001 $UG_{53}$ | 14.2 | 0.15 | 20060922 | 15.99622 | 245.22840 | 72.70249 | 23.09754 | 0.2681630 | 3.1545427 | 118 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04179 | 2001 $UG_{53}$ |
| 2001 $UH_{53}$ | 14.8 | 0.15 | 20060922 | 324.40209 | 77.06886 | 83.36993 | 13.35016 | 0.2370534 | 2.6690314 | 142 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 97491 | 2001 $UH_{53}$ |
| 2001 $UO_{53}$ | 14.6 | 0.15 | 20060922 | 109.34459 | 193.14513 | 54.45200 | 11.61706 | 0.0462460 | 3.0926013 | 62 | 5 | 1999–2006 | 0.69 | M-v | 1 | MPC | 61158 | 2001 $UO_{53}$ |
| 2001 $UW_{53}$ | 15.8 | 0.15 | 20060922 | 30.98140 | 264.85848 | 174.84396 | 2.27510 | 0.0639010 | 2.5987064 | 157 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 90104 | 2001 $UW_{53}$ |
| 2001 $UF_{54}$ | 16.3 | 0.15 | 20060922 | 5.89676 | 228.35617 | 219.93757 | 1.85527 | 0.1749057 | 2.6898680 | 79 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90105 | 2001 $UF_{54}$ |
| 2001 $UM_{54}$ | 16.4 | 0.15 | 20060922 | 30.06893 | 81.01242 | 301.92856 | 10.50699 | 0.0907403 | 2.7657106 | 47 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 85123 | 2001 $UM_{54}$ |
| 2001 $UV_{54}$ | 17.4 | 0.15 | 20060922 | 247.26355 | 254.81583 | 60.25229 | 4.36295 | 0.1937641 | 2.1904703 | 65 | 3 | 1997–2004 | 0.57 | M-v | 3 | MPC | 68945 | 2001 $UV_{54}$ |
| 2001 $UB_{55}$ | 15.1 | 0.15 | 20060922 | 2.56185 | 290.53577 | 92.09770 | 3.51818 | 0.1126248 | 2.8977668 | 92 | 5 | 1991–2006 | 0.52 | M-v | 1 | MPC | 04180 | 2001 $UB_{55}$ |
| 2001 $UA_{56}$ | 16.4 | 0.15 | 20060922 | 23.17416 | 355.26843 | 4.15383 | 1.72025 | 0.0860808 | 2.8617480 | 74 | 5 | 1994–2006 | 0.42 | M-v | 1 | MPC | 48137 | 2001 $UA_{56}$ |
| 2001 $UT_{56}$ | 16.2 | 0.15 | 20060922 | 323.97410 | 77.63327 | 317.07183 | 1.07890 | 0.0970038 | 3.0457795 | 49 | 3 | 1996–2006 | 0.52 | M-v | 3 | MPC | 03253 | 2001 $UT_{56}$ |
| 2001 $UD_{57}$ | 16.5 | 0.15 | 20060922 | 0.43089 | 237.71594 | 230.31481 | 2.36540 | 0.0541390 | 2.5416506 | 41 | 4 | 1997–2005 | 0.55 | M-v | 3 | MPC | 89001 | 2001 $UD_{57}$ |
| 2001 $UR_{57}$ | 16.3 | 0.15 | 20060922 | 352.61519 | 193.35195 | 199.61504 | 1.68416 | 0.0720814 | 2.8913254 | 66 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 66230 | 2001 $UR_{57}$ |
| 2001 $UV_{57}$ | 14.9 | 0.15 | 20060922 | 28.00551 | 268.93384 | 23.35960 | 19.22674 | 0.1531611 | 3.1760392 | 95 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 04180 | 2001 $UV_{57}$ |
| 2001 $US_{58}$ | 16.5 | 0.15 | 20060922 | 334.77579 | 81.03675 | 3.45346 | 2.35397 | 0.0820720 | 2.7729816 | 42 | 3 | 2001–2006 | 0.50 | M-v | 4 | MPC | 85125 | 2001 $US_{58}$ |
| 2001 $UD_{59}$ | 14.5 | 0.15 | 20060922 | 150.44559 | 166.87720 | 27.47134 | 14.69475 | 0.1215779 | 3.1922879 | 65 | 3 | 1995–2004 | 0.64 | M-v | 3 | MPC | 66230 | 2001 $UD_{59}$ |
| 2001 $UF_{59}$ | 15.7 | 0.15 | 20060922 | 0.00508 | 345.94650 | 7.70959 | 1.28622 | 0.1312328 | 3.0481242 | 57 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 03253 | 2001 $UF_{59}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UM_{59}$ | 14.9 | 0.15 | 20060922 | 27.00638 | 52.78512 | 258.84199 | 2.71573 | 0.1093890 | 3.1059592 | 79 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 04180 | 2001 $UM_{59}$ |
| 2001 $UY_{59}$ | 17.1 | 0.15 | 20060922 | 18.69876 | 185.71751 | 270.49877 | 3.51176 | 0.1820879 | 2.5603249 | 26 | 3 | 2001–2005 | 0.33 | M-v | 2 | MPC | 89002 | 2001 $UY_{59}$ |
| 2001 $UL_{60}$ | 15.3 | 0.15 | 20060922 | 22.90017 | 112.98721 | 208.29401 | 13.45786 | 0.0301247 | 3.0557601 | 34 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04180 | 2001 $UL_{60}$ |
| 2001 $UO_{60}$ | 15.8 | 0.15 | 20060922 | 81.31181 | 40.90404 | 268.82998 | 3.29488 | 0.0551683 | 2.7948873 | 54 | 3 | 2001–2006 | 0.46 | M-v | 4 | MPC | 85126 | 2001 $UO_{60}$ |
| 2001 $UR_{60}$ | 17.2 | 0.15 | 20060922 | 119.79775 | 357.45762 | 341.64235 | 4.81351 | 0.2126207 | 2.4880554 | 59 | 3 | 1997–2005 | 0.68 | M-v | 3 | MPC | 89002 | 2001 $UR_{60}$ |
| 2001 $UZ_{60}$ | 15.9 | 0.15 | 20060922 | 285.26878 | 236.57300 | 215.92185 | 1.45714 | 0.1065194 | 2.9777229 | 57 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 77575 | 2001 $UZ_{60}$ |
| 2001 $UA_{61}$ | 16.0 | 0.15 | 20060922 | 314.39586 | 199.14996 | 223.47528 | 1.20681 | 0.0556510 | 2.9468908 | 62 | 5 | 1996–2006 | 0.40 | M-v | 0 | MPC | 74105 | 2001 $UA_{61}$ |
| 2001 $UD_{61}$ | 16.4 | 0.15 | 20060922 | 345.16237 | 180.49252 | 211.90528 | 5.55764 | 0.0935955 | 2.9336062 | 45 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 62376 | 2001 $UD_{61}$ |
| 2001 $UL_{61}$ | 16.7 | 0.15 | 20060922 | 60.77061 | 156.33507 | 222.93753 | 1.33338 | 0.1070587 | 2.6247059 | 60 | 5 | 2001–2006 | 0.36 | M-v | 0 | MPC | 94208 | 2001 $UL_{61}$ |
| 2001 $UR_{61}$ | 16.5 | 0.15 | 20060922 | 83.05246 | 336.73921 | 358.66040 | 1.89285 | 0.1021901 | 2.6961109 | 55 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 90105 | 2001 $UR_{61}$ |
| 2001 $US_{61}$ | 17.0 | 0.15 | 20060922 | 51.63434 | 131.40425 | 16.09416 | 5.48749 | 0.0656652 | 2.2477626 | 51 | 4 | 1996–2006 | 0.52 | M-v | 1 | MPC | 97491 | 2001 $US_{61}$ |
| 2001 $UA_{62}$ | 17.3 | 0.15 | 20060922 | 87.97375 | 333.36521 | 26.93501 | 7.77912 | 0.2322320 | 2.5695147 | 62 | 2 | 2001–2005 | 0.52 | M-v | 3 | MPC | 90105 | 2001 $UA_{62}$ |
| 2001 $UF_{62}$ | 16.0 | 0.15 | 20060922 | 208.30767 | 256.14553 | 344.80332 | 2.28260 | 0.0436742 | 2.6080250 | 56 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 90105 | 2001 $UF_{62}$ |
| 2001 $UG_{62}$ | 17.6 | 0.15 | 20060922 | 189.27338 | 316.94749 | 10.61429 | 2.72283 | 0.2052430 | 2.3041839 | 36 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 23863 | 2001 $UG_{62}$ |
| 2001 $UN_{62}$ | 15.8 | 0.15 | 20060922 | 358.35086 | 143.84996 | 214.98235 | 11.52363 | 0.2226168 | 3.0216299 | 80 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 03254 | 2001 $UN_{62}$ |
| 2001 $UP_{62}$ | 17.1 | 0.15 | 20060922 | 80.88101 | 300.77579 | 13.67650 | 1.60832 | 0.2469159 | 2.7507519 | 37 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 62376 | 2001 $UP_{62}$ |
| 2001 $US_{62}$ | 16.1 | 0.15 | 20060922 | 316.82336 | 165.84086 | 216.88977 | 9.20786 | 0.0922624 | 3.1006716 | 44 | 7 | 1995–2006 | 0.52 | M-v | 1 | MPC | 04180 | 2001 $US_{62}$ |
| 2001 $UX_{62}$ | 15.6 | 0.15 | 20060922 | 70.62975 | 248.32380 | 27.92458 | 8.94703 | 0.2031536 | 3.0113979 | 55 | 5 | 1974–2006 | 0.46 | M-v | 0 | MPC | 75186 | 2001 $UX_{62}$ |
| 2001 $UN_{63}$ | 14.2 | 0.15 | 20060922 | 74.14205 | 232.78415 | 39.89190 | 16.68287 | 0.0536309 | 3.1914535 | 56 | 4 | 2001–2006 | 0.69 | M-v | 1 | MPC | 04180 | 2001 $UN_{63}$ |
| 2001 $UR_{63}$ | 16.8 | 0.15 | 20060922 | 330.62356 | 97.79681 | 352.51303 | 2.78009 | 0.0751583 | 2.7861843 | 51 | 4 | 1996–2005 | 0.57 | M-v | 0 | MPC | 87488 | 2001 $UR_{63}$ |
| 2001 $UT_{63}$ | 15.4 | 0.15 | 20060922 | 258.75981 | 237.81646 | 228.87833 | 10.82847 | 0.0430611 | 3.0915878 | 66 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04180 | 2001 $UT_{63}$ |
| 2001 $UE_{64}$ | 14.7 | 0.15 | 20060922 | 246.11559 | 250.34155 | 239.78065 | 13.60737 | 0.2108748 | 3.1219860 | 66 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 50569 | 2001 $UE_{64}$ |
| 2001 $UZ_{64}$ | 14.3 | 0.15 | 20060922 | 323.51713 | 146.96705 | 265.37186 | 4.90383 | 0.2212869 | 3.0724734 | 183 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04180 | 2001 $UZ_{64}$ |
| 2001 $UV_{65}$ | 15.5 | 0.15 | 20060922 | 22.24965 | 35.08167 | 34.70502 | 2.10035 | 0.2178427 | 2.7169113 | 141 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 97491 | 2001 $UV_{65}$ |
| 2001 $UN_{66}$ | 17.1 | 0.15 | 20060922 | 28.81082 | 100.54872 | 235.92398 | 22.11005 | 0.0408958 | 1.8997578 | 99 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87488 | 2001 $UN_{66}$ |
| 2001 $UP_{66}$ | 15.9 | 0.15 | 20060922 | 112.96291 | 63.34288 | 251.19626 | 6.99039 | 0.2142979 | 2.5597520 | 141 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 90105 | 2001 $UP_{66}$ |
| 2001 $UC_{67}$ | 18.0 | 0.15 | 20060922 | 241.78817 | 117.39450 | 198.80455 | 3.03667 | 0.2318783 | 2.1712292 | 42 | 2 | 2001–2004 | 0.49 | M-v | 3 | MPC | 70305 | 2001 $UC_{67}$ |
| 2001 $UH_{67}$ | 16.0 | 0.15 | 20060922 | 222.64595 | 174.32975 | 58.92685 | 3.27454 | 0.1285442 | 2.5513593 | 34 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 94210 | 2001 $UH_{67}$ |
| 2001 $UC_{68}$ | 15.2 | 0.15 | 20060922 | 132.26809 | 22.04966 | 196.44550 | 11.28284 | 0.0318845 | 3.1103595 | 59 | 4 | 1995–2006 | 0.59 | M-v | 1 | MPC | 61161 | 2001 $UC_{68}$ |
| 2001 $UJ_{70}$ | 17.0 | 0.15 | 20060922 | 329.96309 | 357.69198 | 22.86145 | 1.45894 | 0.0803904 | 3.0944244 | 24 | 2 | 2001–2006 | 0.35 | M-v | 4 | MPC | 03254 | 2001 $UJ_{70}$ |
| 2001 $UR_{70}$ | 17.6 | 0.15 | 20060922 | 13.52765 | 224.30816 | 223.47902 | 2.41050 | 0.0429001 | 2.6121536 | 22 | 3 | 2001–2005 | 0.27 | M-v | 3 | MPC | 94211 | 2001 $UR_{70}$ |
| 2001 $UT_{70}$ | 16.2 | 0.15 | 20060922 | 10.87384 | 166.28763 | 225.29370 | 1.30986 | 0.1747452 | 2.8580217 | 93 | 5 | 1991–2006 | 0.53 | M-v | 1 | MPC | 77575 | 2001 $UT_{70}$ |
| 2001 $UW_{70}$ | 18.2 | 0.15 | 20060922 | 38.13946 | 299.93192 | 219.51280 | 2.28479 | 0.1267353 | 2.3042214 | 36 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 94211 | 2001 $UW_{70}$ |
| 2001 $UZ_{70}$ | 16.4 | 0.15 | 20060922 | 290.86311 | 209.18541 | 218.96864 | 0.48994 | 0.1939083 | 3.1940062 | 46 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 43446 | 2001 $UZ_{70}$ |
| 2001 $UC_{71}$ | 16.5 | 0.15 | 20060922 | 105.70042 | 95.21927 | 216.95177 | 4.68624 | 0.0467292 | 2.7752122 | 38 | 4 | 2001–2005 | 0.41 | M-v | 1 | MPC | 89005 | 2001 $UC_{71}$ |
| 2001 $UK_{71}$ | 16.0 | 0.15 | 20060922 | 64.18375 | 302.77762 | 53.23800 | 2.91747 | 0.0720979 | 2.7679928 | 70 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 90105 | 2001 $UK_{71}$ |
| 2001 $UW_{71}$ | 16.0 | 0.15 | 20060922 | 62.88925 | 65.07583 | 225.33422 | 3.72496 | 0.1003720 | 2.9533332 | 36 | 4 | 1996–2006 | 0.48 | M-v | 2 | MPC | 89005 | 2001 $UW_{71}$ |
| 2001 $UU_{72}$ | 15.5 | 0.15 | 20060922 | 164.12596 | 210.50459 | 152.55407 | 23.73652 | 0.1648336 | 2.2964922 | 46 | 3 | 1996–2003 | 0.63 | M-v | 3 | MPC | 48138 | 2001 $UU_{72}$ |
| 2001 $US_{73}$ | 15.4 | 0.15 | 20060922 | 73.97326 | 266.02863 | 67.83417 | 4.86566 | 0.1075576 | 2.7769598 | 71 | 4 | 2001–2006 | 0.56 | M-v | 0 | MPC | 87488 | 2001 $US_{73}$ |
| 2001 $UF_{74}$ | 16.0 | 0.15 | 20060922 | 341.60459 | 18.17767 | 79.44115 | 4.12750 | 0.0437591 | 2.7070210 | 67 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 85132 | 2001 $UF_{74}$ |
| 2001 $UZ_{74}$ | 15.3 | 0.15 | 20060922 | 327.93450 | 70.76140 | 57.75754 | 13.08975 | 0.1398390 | 2.6935810 | 105 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 87488 | 2001 $UZ_{74}$ |
| 2001 $UE_{75}$ | 15.6 | 0.15 | 20060922 | 20.15003 | 357.92319 | 85.00823 | 7.95973 | 0.1728721 | 2.6495463 | 62 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 85133 | 2001 $UE_{75}$ |
| 2001 $UL_{75}$ | 15.6 | 0.15 | 20060922 | 26.87898 | 279.90888 | 144.04968 | 5.33530 | 0.1592582 | 2.6833219 | 97 | 5 | 1994–2006 | 0.54 | M-v | 1 | MPC | 87488 | 2001 $UL_{75}$ |
| 2001 $UQ_{75}$ | 14.4 | 0.15 | 20060922 | 335.89211 | 300.17779 | 68.90466 | 12.59341 | 0.0892980 | 3.2272611 | 87 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04180 | 2001 $UQ_{75}$ |
| 2001 $UA_{76}$ | 14.4 | 0.15 | 20060922 | 328.74825 | 56.43584 | 59.54945 | 15.13579 | 0.1317945 | 2.7716124 | 171 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 90105 | 2001 $UA_{76}$ |
| 2001 $UQ_{76}$ | 16.4 | 0.15 | 20060922 | 119.51050 | 267.33895 | 46.19170 | 11.99418 | 0.2166431 | 2.6010935 | 69 | 5 | 2000–2005 | 0.59 | M-v | 0 | MPC | 87488 | 2001 $UQ_{76}$ |
| 2001 $UX_{76}$ | 15.9 | 0.15 | 20060922 | 4.29459 | 41.46024 | 70.65706 | 4.78923 | 0.1266650 | 2.5886015 | 49 | 4 | 1995–2005 | 0.66 | M-v | 1 | MPC | 97492 | 2001 $UX_{76}$ |
| 2001 $UP_{77}$ | 16.6 | 0.15 | 20060922 | 28.22462 | 273.75096 | 182.05431 | 5.83315 | 0.1893851 | 2.5664522 | 32 | 2 | 2001–2005 | 0.60 | M-v | 4 | MPC | 89006 | 2001 $UP_{77}$ |
| 2001 $UA_{78}$ | 16.9 | 0.15 | 20060922 | 109.59607 | 141.26231 | 179.97988 | 8.71150 | 0.1737182 | 2.5786389 | 70 | 4 | 1996–2005 | 0.61 | M-v | 1 | MPC | 97492 | 2001 $UA_{78}$ |
| 2001 $UD_{78}$ | 16.4 | 0.15 | 20060922 | 44.45842 | 216.80785 | 146.89575 | 3.34748 | 0.1097443 | 2.7492401 | 50 | 5 | 2001–2006 | 0.49 | M-v | 0 | MPC | 85134 | 2001 $UD_{78}$ |
| 2001 $UZ_{78}$ | 16.4 | 0.15 | 20060922 | 65.73300 | 167.26262 | 211.26437 | 4.86633 | 0.1178232 | 2.6393873 | 66 | 3 | 2001–2005 | 0.58 | M-v | 3 | MPC | 97492 | 2001 $UZ_{78}$ |
| 2001 $UF_{79}$ | 15.7 | 0.15 | 20060922 | 353.06620 | 242.20915 | 194.77189 | 4.27178 | 0.0806762 | 2.7511413 | 46 | 3 | 2001–2005 | 0.60 | M-v | 2 | MPC | 97492 | 2001 $UF_{79}$ |
| 2001 $UK_{79}$ | 14.8 | 0.15 | 20060922 | 242.71934 | 278.69205 | 215.30124 | 20.36453 | 0.0907640 | 3.0722559 | 53 | 3 | 2001–2006 | 0.65 | M-v | 2 | MPC | 61164 | 2001 $UK_{79}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $US_{79}$ | 15.8 | 0.15 | 20060922 | 344.58395 | 66.39287 | 58.29619 | 2.79470 | 0.0753283 | 2.5967728 | 112 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97492 | 2001 $US_{79}$ |
| 2001 $UZ_{79}$ | 16.1 | 0.15 | 20060922 | 51.79579 | 313.89946 | 70.43000 | 3.05047 | 0.1006041 | 2.6907640 | 85 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 89007 | 2001 $UZ_{79}$ |
| 2001 $UA_{80}$ | 16.6 | 0.15 | 20060922 | 58.48864 | 216.32373 | 162.20429 | 2.26741 | 0.1632279 | 2.6691432 | 75 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 85136 | 2001 $UA_{80}$ |
| 2001 $UM_{80}$ | 16.4 | 0.15 | 20060922 | 90.00254 | 289.56724 | 43.54987 | 3.80608 | 0.2187438 | 2.6644548 | 101 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 87489 | 2001 $UM_{80}$ |
| 2001 $UR_{80}$ | 15.7 | 0.15 | 20060922 | 36.34482 | 32.12499 | 42.75320 | 15.10527 | 0.0819910 | 2.5771538 | 108 | 4 | 1995–2005 | 0.62 | M-v | 2 | MPC | 97492 | 2001 $UR_{80}$ |
| 2001 $UU_{80}$ | 15.6 | 0.15 | 20060922 | 280.23573 | 260.84185 | 197.70675 | 5.01350 | 0.1535218 | 3.0953485 | 65 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 04180 | 2001 $UU_{80}$ |
| 2001 $UQ_{81}$ | 16.0 | 0.15 | 20060922 | 75.68878 | 165.10985 | 209.29391 | 3.96553 | 0.1011080 | 2.6291758 | 132 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 97492 | 2001 $UQ_{81}$ |
| 2001 $UW_{81}$ | 16.7 | 0.15 | 20060922 | 95.21254 | 311.00471 | 44.75544 | 2.81862 | 0.2539941 | 2.5698194 | 133 | 4 | 2000–2005 | 0.63 | M-v | 2 | MPC | 97492 | 2001 $UW_{81}$ |
| 2001 $UY_{81}$ | 15.7 | 0.15 | 20060922 | 335.09499 | 195.38575 | 218.71991 | 9.76293 | 0.1137482 | 2.9756928 | 92 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 27273 | 2001 $UY_{81}$ |
| 2001 $UC_{82}$ | 16.0 | 0.15 | 20060922 | 339.59025 | 315.62919 | 86.47921 | 2.58876 | 0.2110695 | 3.0025987 | 109 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 87489 | 2001 $UC_{82}$ |
| 2001 $UM_{82}$ | 15.0 | 0.15 | 20060922 | 118.89934 | 192.20243 | 56.67131 | 13.89749 | 0.0743254 | 3.0799693 | 65 | 4 | 1999–2006 | 0.66 | M-v | 1 | MPC | 61164 | 2001 $UM_{82}$ |
| 2001 $UP_{82}$ | 16.5 | 0.15 | 20060922 | 68.44144 | 355.71213 | 64.02539 | 1.00646 | 0.1290939 | 2.5217936 | 116 | 4 | 1995–2006 | 0.47 | M-v | 2 | MPC | 97492 | 2001 $UP_{82}$ |
| 2001 $UW_{82}$ | 15.4 | 0.15 | 20060922 | 19.12798 | 318.02795 | 57.13799 | 2.98351 | 0.0739434 | 2.8970625 | 122 | 5 | 1991–2006 | 0.52 | M-v | 1 | MPC | 48139 | 2001 $UW_{82}$ |
| 2001 $UK_{83}$ | 16.6 | 0.15 | 20060922 | 76.87098 | 226.93477 | 152.72477 | 1.60706 | 0.1507107 | 2.6175786 | 124 | 5 | 1994–2006 | 0.47 | M-v | 1 | MPC | 97492 | 2001 $UK_{83}$ |
| 2001 $UP_{83}$ | 15.7 | 0.15 | 20060922 | 323.53231 | 359.85764 | 49.65841 | 17.37438 | 0.1788181 | 3.0985760 | 85 | 4 | 1990–2006 | 0.52 | M-v | 1 | MPC | 65109 | 2001 $UP_{83}$ |
| 2001 $UQ_{84}$ | 16.5 | 0.15 | 20060922 | 355.53277 | 183.90101 | 203.40646 | 0.99338 | 0.2082766 | 2.9524299 | 108 | 3 | 1996–2006 | 0.45 | M-v | 2 | MPC | 04180 | 2001 $UQ_{84}$ |
| 2001 $UR_{84}$ | 16.1 | 0.15 | 20060922 | 345.50712 | 142.02969 | 219.19508 | 12.80209 | 0.2694368 | 3.0931123 | 62 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 03254 | 2001 $UR_{84}$ |
| 2001 $UU_{84}$ | 16.1 | 0.15 | 20060922 | 3.57650 | 337.16580 | 43.61074 | 2.11751 | 0.0911364 | 2.9636023 | 77 | 7 | 1996–2006 | 0.49 | M-v | 1 | MPC | 66231 | 2001 $UU_{84}$ |
| 2001 $UV_{84}$ | 15.1 | 0.15 | 20060922 | 263.45341 | 51.40714 | 49.47233 | 12.02547 | 0.0757145 | 3.1619966 | 112 | 4 | 2001–2006 | 0.64 | M-v | 0 | MPC | 85139 | 2001 $UV_{84}$ |
| 2001 $UC_{85}$ | 16.3 | 0.15 | 20060922 | 87.40939 | 47.53608 | 192.98324 | 9.45234 | 0.0665770 | 3.1661766 | 23 | 3 | 2001–2006 | 0.33 | M-v | 3 | MPC | 94216 | 2001 $UC_{85}$ |
| 2001 $UQ_{85}$ | 17.1 | 0.15 | 20060922 | 17.15628 | 292.35046 | 164.39021 | 1.71209 | 0.1122058 | 2.5698517 | 34 | 4 | 2000–2005 | 0.57 | M-v | 1 | MPC | 94216 | 2001 $UQ_{85}$ |
| 2001 $UA_{86}$ | 16.3 | 0.15 | 20060922 | 287.83397 | 25.23878 | 73.98384 | 3.15645 | 0.0125753 | 2.9427431 | 49 | 4 | 2001–2006 | 0.27 | M-v | 0 | MPC | 89008 | 2001 $UA_{86}$ |
| 2001 $UC_{88}$ | 16.3 | 0.15 | 20060922 | 345.41383 | 170.39783 | 188.47392 | 6.50172 | 0.0648911 | 3.1074549 | 37 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 61165 | 2001 $UC_{88}$ |
| 2001 $UD_{89}$ | 15.6 | 0.15 | 20060922 | 103.41736 | 229.37227 | 97.29078 | 12.72536 | 0.1969364 | 2.6331894 | 58 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 85139 | 2001 $UD_{89}$ |
| 2001 $UK_{89}$ | 15.8 | 0.15 | 20060922 | 323.13374 | 266.90070 | 126.32579 | 11.43838 | 0.1061865 | 3.0926859 | 44 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 50569 | 2001 $UK_{89}$ |
| 2001 $UQ_{89}$ | 16.9 | 0.15 | 20060922 | 12.21288 | 199.97203 | 192.73655 | 4.15168 | 0.0828879 | 2.7781860 | 52 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 85140 | 2001 $UQ_{89}$ |
| 2001 $UM_{90}$ | 16.6 | 0.15 | 20060922 | 338.77632 | 262.65280 | 154.47001 | 2.19763 | 0.0791500 | 2.9226748 | 57 | 5 | 1993–2006 | 0.41 | M-v | 0 | MPC | 03255 | 2001 $UM_{90}$ |
| 2001 $UM_{91}$ | 16.3 | 0.15 | 20060922 | 61.52907 | 270.25342 | 130.08327 | 1.90268 | 0.0155906 | 2.5292839 | 82 | 5 | 1999–2006 | 0.57 | M-v | 2 | MPC | 90106 | 2001 $UM_{91}$ |
| 2001 $UQ_{91}$ | 16.4 | 0.15 | 20060922 | 13.59736 | 192.27467 | 205.73583 | 5.38657 | 0.0908097 | 2.7732143 | 38 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 89009 | 2001 $UQ_{91}$ |
| 2001 $UB_{92}$ | 14.9 | 0.15 | 20060922 | 1.87454 | 134.95479 | 196.92107 | 16.49852 | 0.1483786 | 3.2012314 | 50 | 4 | 1995–2006 | 0.64 | M-v | 1 | MPC | 04180 | 2001 $UB_{92}$ |
| 2001 $UE_{92}$ | 17.6 | 0.15 | 20060922 | 190.50405 | 207.28420 | 199.15989 | 1.60114 | 0.1316591 | 2.1559264 | 86 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 02048 | 2001 $UE_{92}$ |
| 2001 $UG_{92}$ | 15.5 | 0.15 | 20060922 | 347.00563 | 149.32046 | 217.57548 | 8.73762 | 0.1161535 | 3.1105042 | 80 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 75189 | 2001 $UG_{92}$ |
| 2001 $UO_{92}$ | 15.6 | 0.15 | 20060922 | 50.29074 | 261.46093 | 132.95556 | 3.57280 | 0.0848064 | 2.6809080 | 152 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97493 | 2001 $UO_{92}$ |
| 2001 $UZ_{92}$ | 16.2 | 0.15 | 20060922 | 78.64891 | 160.30968 | 222.51549 | 11.09756 | 0.0450785 | 2.5475308 | 33 | 2 | 2001–2005 | 0.40 | M-v | 4 | MPC | 89009 | 2001 $UZ_{92}$ |
| 2001 $UR_{93}$ | 15.5 | 0.15 | 20060922 | 0.83492 | 29.21904 | 79.42174 | 12.61691 | 0.1461707 | 2.6312261 | 79 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 90106 | 2001 $UR_{93}$ |
| 2001 $UD_{94}$ | 15.2 | 0.15 | 20060922 | 47.12961 | 241.99983 | 107.19884 | 8.42989 | 0.2441688 | 2.8104800 | 70 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 66231 | 2001 $UD_{94}$ |
| 2001 $UV_{94}$ | 15.7 | 0.15 | 20060922 | 74.62796 | 254.51589 | 93.51497 | 11.35502 | 0.1914244 | 2.7102881 | 48 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 85141 | 2001 $UV_{94}$ |
| 2001 $UF_{96}$ | 15.6 | 0.15 | 20060922 | 130.93545 | 85.17204 | 192.31575 | 3.02588 | 0.0510045 | 2.7686998 | 66 | 5 | 1994–2006 | 0.45 | M-v | 0 | MPC | 97493 | 2001 $UF_{96}$ |
| 2001 $UL_{96}$ | 16.8 | 0.15 | 20060922 | 45.45530 | 243.55280 | 159.81936 | 2.81478 | 0.1748303 | 2.6304860 | 47 | 3 | 2001–2005 | 0.45 | M-v | 3 | MPC | 85141 | 2001 $UL_{96}$ |
| 2001 $UO_{96}$ | 15.5 | 0.15 | 20060922 | 318.31207 | 195.21166 | 194.05707 | 11.26951 | 0.0917250 | 3.1455278 | 38 | 5 | 1995–2006 | 0.57 | M-v | 0 | MPC | 04180 | 2001 $UO_{96}$ |
| 2001 $UZ_{96}$ | 17.4 | 0.15 | 20060922 | 97.13022 | 281.13113 | 68.17857 | 4.60956 | 0.2693037 | 2.5549860 | 44 | 2 | 2001–2005 | 0.62 | M-v | 4 | MPC | 90106 | 2001 $UZ_{96}$ |
| 2001 $UH_{97}$ | 15.6 | 0.15 | 20060922 | 259.79920 | 115.07180 | 32.43339 | 7.94681 | 0.1590182 | 2.8962257 | 50 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 50569 | 2001 $UH_{97}$ |
| 2001 $UK_{97}$ | 17.0 | 0.15 | 20060922 | 29.65716 | 79.20947 | 55.14939 | 7.03134 | 0.0592195 | 2.3641587 | 50 | 4 | 1996–2005 | 0.76 | M-v | 1 | MPC | 97493 | 2001 $UK_{97}$ |
| 2001 $UO_{97}$ | 15.6 | 0.15 | 20060922 | 275.69121 | 32.00488 | 52.87213 | 11.38924 | 0.0680753 | 3.1168603 | 35 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 85142 | 2001 $UO_{97}$ |
| 2001 $UY_{97}$ | 14.8 | 0.15 | 20060922 | 80.11684 | 210.69364 | 48.71691 | 4.56589 | 0.1474688 | 3.1400237 | 81 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 04180 | 2001 $UY_{97}$ |
| 2001 $UE_{98}$ | 15.0 | 0.15 | 20060922 | 16.56158 | 280.68075 | 52.85353 | 10.23727 | 0.0752356 | 3.1118598 | 64 | 3 | 2001–2006 | 0.62 | M-v | 3 | MPC | 04180 | 2001 $UE_{98}$ |
| 2001 $UE_{99}$ | 16.1 | 0.15 | 20060922 | 61.89914 | 280.14593 | 51.04706 | 10.13277 | 0.1605044 | 2.8152781 | 62 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 61167 | 2001 $UE_{99}$ |
| 2001 $US_{99}$ | 15.8 | 0.15 | 20060922 | 120.99344 | 175.10836 | 144.69176 | 2.72253 | 0.0311549 | 2.6655144 | 70 | 4 | 1999–2005 | 0.62 | M-v | 1 | MPC | 90106 | 2001 $US_{99}$ |
| 2001 $UT_{99}$ | 16.8 | 0.15 | 20060922 | 43.40222 | 252.88636 | 135.72605 | 1.82968 | 0.2199320 | 2.7032636 | 45 | 2 | 2001–2005 | 0.41 | M-v | 3 | MPC | 89011 | 2001 $UT_{99}$ |
| 2001 $UW_{99}$ | 15.3 | 0.15 | 20060922 | 240.19788 | 352.28109 | 206.83879 | 11.83334 | 0.0425375 | 2.7092444 | 50 | 3 | 2001–2005 | 0.48 | M-v | 3 | MPC | 97493 | 2001 $UW_{99}$ |
| 2001 $UZ_{99}$ | 15.3 | 0.15 | 20060922 | 80.48274 | 251.50428 | 91.49472 | 4.68920 | 0.1513941 | 2.7366198 | 103 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87489 | 2001 $UZ_{99}$ |
| 2001 $UL_{100}$ | 17.2 | 0.15 | 20060922 | 133.56186 | 6.79197 | 59.82445 | 6.53817 | 0.1288343 | 2.2686035 | 56 | 3 | 1996–2006 | 0.65 | M-v | 3 | MPC | 02048 | 2001 $UL_{100}$ |
| 2001 $US_{100}$ | 15.2 | 0.15 | 20060922 | 9.48608 | 313.44258 | 19.48279 | 11.03460 | 0.0996139 | 3.0051714 | 38 | 2 | 2001–2006 | 0.50 | M-v | 4 | MPC | 03255 | 2001 $US_{100}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UT_{100}$ | 14.9 | 0.15 | 20060922 | 268.13222 | 61.25045 | 45.74815 | 2.87711 | 0.0140783 | 2.8334908 | 145 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 61167 | 2001 $UT_{100}$ |
| 2001 $UZ_{100}$ | 16.9 | 0.15 | 20060922 | 77.22339 | 196.79571 | 121.94336 | 1.97796 | 0.1946517 | 2.7170366 | 37 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 75190 | 2001 $UZ_{100}$ |
| 2001 $UD_{101}$ | 16.6 | 0.15 | 20060922 | 180.17653 | 53.95385 | 194.54964 | 2.91619 | 0.0920431 | 2.6180440 | 75 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04180 | 2001 $UD_{101}$ |
| 2001 $UL_{101}$ | 16.5 | 0.15 | 20060922 | 354.84425 | 29.56200 | 28.76334 | 2.94856 | 0.0831573 | 2.7628245 | 53 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 41752 | 2001 $UL_{101}$ |
| 2001 $UM_{101}$ | 16.6 | 0.15 | 20060922 | 299.12134 | 303.18327 | 174.54571 | 6.68365 | 0.0092330 | 2.7250984 | 52 | 5 | 1999–2006 | 0.51 | M-v | 0 | MPC | 90106 | 2001 $UM_{101}$ |
| 2001 $UY_{102}$ | 15.5 | 0.15 | 20060922 | 290.89236 | 292.80703 | 202.46497 | 6.96942 | 0.1676724 | 2.7954668 | 74 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 04180 | 2001 $UY_{102}$ |
| 2001 $UB_{103}$ | 15.5 | 0.15 | 20060922 | 303.04821 | 23.21367 | 43.00350 | 12.85887 | 0.0694609 | 3.0246694 | 44 | 4 | 2001–2006 | 0.69 | M-v | 0 | MPC | 04180 | 2001 $UB_{103}$ |
| 2001 $UL_{103}$ | 17.7 | 0.15 | 20060922 | 116.20270 | 2.48404 | 98.93576 | 2.00526 | 0.0999863 | 2.2074331 | 52 | 5 | 1996–2006 | 0.48 | M-v | 0 | MPC | 02048 | 2001 $UL_{103}$ |
| 2001 $UT_{103}$ | 15.5 | 0.15 | 20060922 | 330.74484 | 79.13221 | 54.18613 | 7.88335 | 0.2537515 | 2.6725625 | 48 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 46812 | 2001 $UT_{103}$ |
| 2001 $UX_{103}$ | 16.3 | 0.15 | 20060922 | 289.21063 | 351.71035 | 95.14626 | 2.46885 | 0.2201581 | 3.0832172 | 35 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 04181 | 2001 $UX_{103}$ |
| 2001 $UA_{104}$ | 16.4 | 0.15 | 20060922 | 259.84206 | 127.43072 | 40.22645 | 8.07537 | 0.0629334 | 2.7300010 | 30 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 85144 | 2001 $UA_{104}$ |
| 2001 $UO_{104}$ | 16.2 | 0.15 | 20060922 | 246.50037 | 29.05608 | 120.67644 | 3.14382 | 0.0099764 | 2.8675363 | 43 | 5 | 1998–2006 | 0.41 | M-v | 0 | MPC | 87489 | 2001 $UO_{104}$ |
| 2001 $UV_{104}$ | 14.5 | 0.15 | 20060922 | 230.30203 | 164.93027 | 37.47661 | 14.87555 | 0.2223781 | 2.7278698 | 99 | 6 | 1992–2006 | 0.56 | M-v | 1 | MPC | 04181 | 2001 $UV_{104}$ |
| 2001 $UJ_{105}$ | 14.5 | 0.15 | 20060922 | 80.18193 | 218.84262 | 50.20860 | 11.36786 | 0.0798735 | 3.1009212 | 41 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 61168 | 2001 $UJ_{105}$ |
| 2001 $UM_{105}$ | 16.0 | 0.15 | 20060922 | 15.50355 | 105.41841 | 206.03187 | 11.05199 | 0.2716962 | 3.1053610 | 64 | 4 | 2000–2006 | 0.56 | M-v | 0 | MPC | 04181 | 2001 $UM_{105}$ |
| 2001 $US_{105}$ | 16.3 | 0.15 | 20060922 | 72.01781 | 223.19004 | 114.46247 | 1.61474 | 0.0785655 | 2.7780824 | 40 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 89012 | 2001 $US_{105}$ |
| 2001 $UH_{106}$ | 16.2 | 0.15 | 20060922 | 32.47557 | 343.66608 | 55.48726 | 5.61778 | 0.1178122 | 2.7207769 | 48 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 94222 | 2001 $UH_{106}$ |
| 2001 $UK_{106}$ | 15.8 | 0.15 | 20060922 | 68.81232 | 281.66669 | 67.49480 | 6.28052 | 0.0709795 | 2.7530397 | 37 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 89012 | 2001 $UK_{106}$ |
| 2001 $UW_{106}$ | 14.6 | 0.15 | 20060922 | 75.42853 | 221.38024 | 41.56960 | 26.95438 | 0.1774787 | 3.1709510 | 57 | 4 | 1999–2006 | 0.60 | M-v | 0 | MPC | 87490 | 2001 $UW_{106}$ |
| 2001 $UB_{107}$ | 16.3 | 0.15 | 20060922 | 77.75522 | 322.78371 | 49.15311 | 5.12913 | 0.1696850 | 2.6130887 | 71 | 3 | 1995–2005 | 0.59 | M-v | 3 | MPC | 04181 | 2001 $UB_{107}$ |
| 2001 $UD_{107}$ | 15.6 | 0.15 | 20060922 | 98.35517 | 200.36601 | 84.89372 | 3.34160 | 0.0568188 | 2.9496213 | 60 | 5 | 1993–2006 | 0.50 | M-v | 0 | MPC | 04181 | 2001 $UD_{107}$ |
| 2001 $UJ_{107}$ | 17.0 | 0.15 | 20060922 | 39.72200 | 238.80287 | 205.95927 | 11.29785 | 0.0949454 | 2.5388389 | 41 | 3 | 2001–2005 | 0.57 | M-v | 3 | MPC | 89013 | 2001 $UJ_{107}$ |
| 2001 $UD_{108}$ | 16.0 | 0.15 | 20060922 | 12.88970 | 294.62543 | 39.57110 | 13.50693 | 0.1253419 | 3.0688603 | 26 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 89014 | 2001 $UD_{108}$ |
| 2001 $US_{108}$ | 15.5 | 0.15 | 20060922 | 80.39608 | 157.35444 | 216.43905 | 3.10389 | 0.2045077 | 2.6151123 | 261 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97494 | 2001 $US_{108}$ |
| 2001 $US_{110}$ | 16.7 | 0.15 | 20060922 | 83.42876 | 134.02052 | 208.19547 | 4.76953 | 0.0771179 | 2.6803801 | 33 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 94224 | 2001 $US_{110}$ |
| 2001 $UJ_{111}$ | 14.5 | 0.15 | 20060922 | 7.11202 | 75.87670 | 246.62600 | 9.45961 | 0.1731051 | 3.1921960 | 58 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 03256 | 2001 $UJ_{111}$ |
| 2001 $UK_{111}$ | 15.3 | 0.15 | 20060922 | 336.13499 | 27.76855 | 327.79468 | 4.22376 | 0.1240353 | 3.2416276 | 50 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 04181 | 2001 $UK_{111}$ |
| 2001 $UU_{112}$ | 15.8 | 0.15 | 20060922 | 14.26016 | 221.75941 | 226.44362 | 21.30840 | 0.0503296 | 2.6429271 | 66 | 3 | 1995–2005 | 0.65 | M-v | 3 | MPC | 94224 | 2001 $UU_{112}$ |
| 2001 $UX_{112}$ | 15.6 | 0.15 | 20060922 | 77.32735 | 53.93766 | 315.41518 | 2.61678 | 0.1885381 | 2.6434689 | 146 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97494 | 2001 $UX_{112}$ |
| 2001 $UY_{112}$ | 15.2 | 0.15 | 20060922 | 288.74371 | 96.33456 | 16.69652 | 5.43002 | 0.2192014 | 3.0554044 | 131 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 46819 | 2001 $UY_{112}$ |
| 2001 $UC_{113}$ | 16.6 | 0.15 | 20060922 | 75.64727 | 359.03814 | 25.48381 | 4.12413 | 0.2057065 | 2.6145733 | 175 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97494 | 2001 $UC_{113}$ |
| 2001 $UO_{113}$ | 16.4 | 0.15 | 20060922 | 329.34335 | 280.15893 | 210.45595 | 7.47351 | 0.2520134 | 2.7054588 | 50 | 5 | 2000–2006 | 0.58 | M-v | 0 | MPC | 46821 | 2001 $UO_{113}$ |
| 2001 $UW_{113}$ | 17.1 | 0.15 | 20060922 | 196.42407 | 122.34201 | 177.75042 | 1.14528 | 0.1874266 | 2.3779946 | 50 | 5 | 1996–2005 | 0.51 | M-v | 0 | MPC | 66232 | 2001 $UW_{113}$ |
| 2001 $UB_{114}$ | 15.9 | 0.15 | 20060922 | 44.08333 | 307.82862 | 44.24104 | 2.66111 | 0.0783025 | 2.8668750 | 83 | 5 | 1998–2006 | 0.49 | M-v | 0 | MPC | 87490 | 2001 $UB_{114}$ |
| 2001 $UE_{114}$ | 16.5 | 0.15 | 20060922 | 95.96184 | 312.37697 | 54.19072 | 4.65887 | 0.1824739 | 2.5471968 | 117 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 97494 | 2001 $UE_{114}$ |
| 2001 $UJ_{114}$ | 15.9 | 0.15 | 20060922 | 45.49275 | 167.60471 | 198.96219 | 5.53420 | 0.1245091 | 2.7828006 | 76 | 5 | 1998–2005 | 0.50 | M-v | 1 | MPC | 90107 | 2001 $UJ_{114}$ |
| 2001 $UX_{114}$ | 16.6 | 0.15 | 20060922 | 49.73487 | 340.53951 | 59.04702 | 3.03106 | 0.0316653 | 2.6547191 | 57 | 5 | 1993–2005 | 0.53 | M-v | 1 | MPC | 04181 | 2001 $UX_{114}$ |
| 2001 $UC_{115}$ | 15.6 | 0.15 | 20060922 | 14.94175 | 295.22454 | 69.46663 | 3.49451 | 0.0967782 | 2.9709646 | 85 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 66232 | 2001 $UC_{115}$ |
| 2001 $UL_{115}$ | 16.1 | 0.15 | 20060922 | 350.35530 | 179.88652 | 181.28236 | 3.57100 | 0.2145910 | 3.0947443 | 36 | 2 | 2001–2006 | 0.45 | M-v | 4 | MPC | 03256 | 2001 $UL_{115}$ |
| 2001 $UN_{115}$ | 15.3 | 0.15 | 20060922 | 327.56963 | 313.79072 | 182.70261 | 3.90359 | 0.1633435 | 2.6851720 | 146 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 90107 | 2001 $UN_{115}$ |
| 2001 $UA_{116}$ | 15.5 | 0.15 | 20060922 | 39.61873 | 272.03322 | 87.19604 | 3.22010 | 0.0816093 | 2.8823228 | 89 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 85149 | 2001 $UA_{116}$ |
| 2001 $UB_{116}$ | 15.1 | 0.15 | 20060922 | 14.13689 | 270.32352 | 82.24045 | 2.84506 | 0.1606330 | 3.0219118 | 112 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 48141 | 2001 $UB_{116}$ |
| 2001 $UV_{116}$ | 16.1 | 0.15 | 20060922 | 14.80505 | 289.29152 | 168.91534 | 3.42326 | 0.1801919 | 2.6369306 | 118 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97494 | 2001 $UV_{116}$ |
| 2001 $UY_{116}$ | 16.1 | 0.15 | 20060922 | 20.98001 | 293.89701 | 141.80929 | 2.15295 | 0.0050088 | 2.6465129 | 81 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97494 | 2001 $UY_{116}$ |
| 2001 $UK_{117}$ | 16.0 | 0.15 | 20060922 | 12.06412 | 30.64881 | 66.14932 | 2.53281 | 0.0857217 | 2.6223222 | 86 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 90107 | 2001 $UK_{117}$ |
| 2001 $UU_{117}$ | 16.8 | 0.15 | 20060922 | 137.40085 | 327.92196 | 25.02759 | 0.50625 | 0.2310439 | 2.4343979 | 62 | 4 | 1997–2005 | 0.52 | M-v | 2 | MPC | 22970 | 2001 $UU_{117}$ |
| 2001 $UW_{117}$ | 15.7 | 0.15 | 20060922 | 12.27156 | 353.09816 | 46.71246 | 10.11087 | 0.1363905 | 2.8484117 | 81 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 66232 | 2001 $UW_{117}$ |
| 2001 $UD_{118}$ | 16.3 | 0.15 | 20060922 | 357.50808 | 351.71497 | 116.10930 | 1.12558 | 0.1947575 | 2.6875855 | 82 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 97494 | 2001 $UD_{118}$ |
| 2001 $UD_{119}$ | 15.3 | 0.15 | 20060922 | 293.83941 | 250.83030 | 210.71018 | 7.20743 | 0.2600966 | 3.0896988 | 111 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 46824 | 2001 $UD_{119}$ |
| 2001 $UY_{119}$ | 16.8 | 0.15 | 20060922 | 353.27416 | 274.54985 | 182.12040 | 5.21861 | 0.1831250 | 2.7056751 | 47 | 4 | 2000–2005 | 0.57 | M-v | 0 | MPC | 87490 | 2001 $UY_{119}$ |
| 2001 $UA_{120}$ | 16.3 | 0.15 | 20060922 | 346.68831 | 308.50885 | 61.16025 | 5.99861 | 0.1540504 | 3.0706062 | 30 | 3 | 2001–2006 | 0.57 | M-v | 4 | MPC | 04181 | 2001 $UA_{120}$ |
| 2001 $UR_{120}$ | 16.3 | 0.15 | 20060922 | 108.80617 | 110.07618 | 209.04885 | 12.13774 | 0.1622372 | 2.6814585 | 52 | 4 | 2000–2005 | 0.64 | M-v | 1 | MPC | 90107 | 2001 $UR_{120}$ |
| 2001 $UD_{122}$ | 15.2 | 0.15 | 20060922 | 319.17399 | 283.01629 | 200.62868 | 2.63946 | 0.0719609 | 2.7686185 | 155 | 4 | 2001–2006 | 0.65 | M-v | 0 | MPC | 97495 | 2001 $UD_{122}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UP_{122}$ | 15.5 | 0.15 | 20060922 | 349.89846 | 314.45582 | 57.21266 | 7.03424 | 0.2814610 | 3.0705218 | 121 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04181 | 2001 $UP_{122}$ |
| 2001 $UC_{123}$ | 16.3 | 0.15 | 20060922 | 152.44871 | 318.27444 | 52.18698 | 8.80558 | 0.1480046 | 2.3801263 | 93 | 4 | 1996–2006 | 0.58 | M-v | 2 | MPC | 97495 | 2001 $UC_{123}$ |
| 2001 $UO_{123}$ | 15.5 | 0.15 | 20060922 | 329.68953 | 232.61246 | 151.91512 | 15.28716 | 0.2590204 | 3.0516126 | 82 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 04181 | 2001 $UO_{123}$ |
| 2001 $UU_{123}$ | 15.4 | 0.15 | 20060922 | 21.75307 | 306.70700 | 136.98213 | 12.48029 | 0.1624482 | 2.5955791 | 69 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87491 | 2001 $UU_{123}$ |
| 2001 $UV_{124}$ | 15.8 | 0.15 | 20060922 | 330.20391 | 261.11259 | 117.76933 | 13.28109 | 0.1634053 | 3.1198731 | 26 | 5 | 1995–2006 | 0.52 | M-v | 0 | MPC | 04181 | 2001 $UV_{124}$ |
| 2001 $UL_{125}$ | 15.5 | 0.15 | 20060922 | 294.30663 | 283.96698 | 174.21753 | 18.72110 | 0.2593469 | 3.0544652 | 66 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04181 | 2001 $UL_{125}$ |
| 2001 $UN_{125}$ | 15.9 | 0.15 | 20060922 | 55.22687 | 269.77129 | 105.57193 | 14.73082 | 0.1168815 | 2.6973229 | 33 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 85153 | 2001 $UN_{125}$ |
| 2001 $UT_{125}$ | 16.5 | 0.15 | 20060922 | 56.57135 | 257.17765 | 116.50131 | 12.38180 | 0.2079385 | 2.6874697 | 30 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 94228 | 2001 $UT_{125}$ |
| 2001 $UV_{125}$ | 15.1 | 0.15 | 20060922 | 56.86137 | 254.72524 | 73.58795 | 14.07049 | 0.1754952 | 2.8037749 | 72 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 03256 | 2001 $UV_{125}$ |
| 2001 $UY_{125}$ | 15.0 | 0.15 | 20060922 | 42.74082 | 182.88882 | 106.68388 | 12.24417 | 0.1489457 | 3.1040792 | 67 | 5 | 1996–2006 | 0.46 | M-v | 0 | MPC | 04181 | 2001 $UY_{125}$ |
| 2001 $UG_{126}$ | 15.6 | 0.15 | 20060922 | 299.68204 | 280.59392 | 157.23599 | 13.63879 | 0.1132510 | 3.0647304 | 43 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 48141 | 2001 $UG_{126}$ |
| 2001 $UV_{126}$ | 15.5 | 0.15 | 20060922 | 190.37562 | 229.01441 | 74.90636 | 7.34863 | 0.1424933 | 2.4043968 | 91 | 6 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97495 | 2001 $UV_{126}$ |
| 2001 $UB_{127}$ | 15.0 | 0.15 | 20060922 | 350.77033 | 170.05920 | 198.87406 | 10.46307 | 0.0562503 | 3.1193322 | 113 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 04181 | 2001 $UB_{127}$ |
| 2001 $UD_{127}$ | 15.5 | 0.15 | 20060922 | 107.31626 | 253.68430 | 120.66179 | 5.01278 | 0.0788233 | 2.5162425 | 161 | 5 | 1991–2006 | 0.57 | M-v | 2 | MPC | 97495 | 2001 $UD_{127}$ |
| 2001 $UW_{127}$ | 14.9 | 0.15 | 20060922 | 86.04034 | 228.10951 | 152.47392 | 4.62152 | 0.2893709 | 2.6034301 | 133 | 4 | 1997–2006 | 0.44 | M-v | 2 | MPC | 97495 | 2001 $UW_{127}$ |
| 2001 $UK_{128}$ | 15.6 | 0.15 | 20060922 | 350.30160 | 36.36147 | 310.81518 | 8.48724 | 0.0735214 | 3.1777457 | 67 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03256 | 2001 $UK_{128}$ |
| 2001 $UP_{129}$ | 15.3 | 0.15 | 20060922 | 293.30328 | 329.67817 | 162.79621 | 4.62517 | 0.0776329 | 2.7245822 | 78 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87491 | 2001 $UP_{129}$ |
| 2001 $UW_{129}$ | 16.2 | 0.15 | 20060922 | 246.31092 | 121.42169 | 123.37319 | 2.11271 | 0.1487378 | 2.4067991 | 75 | 6 | 2000–2006 | 0.45 | M-v | 1 | MPC | 97495 | 2001 $UW_{129}$ |
| 2001 $UA_{130}$ | 15.7 | 0.15 | 20060922 | 120.94967 | 48.39764 | 186.87592 | 10.32293 | 0.0646429 | 3.0204103 | 59 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 04181 | 2001 $UA_{130}$ |
| 2001 $UO_{130}$ | 16.0 | 0.15 | 20060922 | 89.26373 | 201.93965 | 102.01764 | 3.91211 | 0.1705798 | 2.7847985 | 43 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 89021 | 2001 $UO_{130}$ |
| 2001 $UQ_{130}$ | 16.7 | 0.15 | 20060922 | 25.02703 | 213.66209 | 199.71813 | 11.87136 | 0.1617283 | 2.7046588 | 19 | 3 | 2001–2005 | 0.34 | M-v | 3 | MPC | 85155 | 2001 $UQ_{130}$ |
| 2001 $UW_{130}$ | 16.0 | 0.15 | 20060922 | 20.14332 | 131.89429 | 198.56200 | 4.87225 | 0.1254996 | 3.0931200 | 48 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04181 | 2001 $UW_{130}$ |
| 2001 $UA_{131}$ | 16.2 | 0.15 | 20060922 | 249.09314 | 179.31736 | 40.94210 | 15.70261 | 0.0272081 | 2.5695724 | 42 | 3 | 2001–2005 | 0.65 | M-v | 3 | MPC | 94229 | 2001 $UA_{131}$ |
| 2001 $UJ_{131}$ | 16.3 | 0.15 | 20060922 | 0.27892 | 298.82670 | 108.95865 | 3.19190 | 0.0693802 | 2.8520683 | 39 | 5 | 1998–2006 | 0.45 | M-v | 0 | MPC | 87491 | 2001 $UJ_{131}$ |
| 2001 $UR_{131}$ | 16.4 | 0.15 | 20060922 | 149.61213 | 279.08283 | 52.57237 | 6.03484 | 0.1383729 | 2.4706349 | 52 | 4 | 1996–2005 | 0.49 | M-v | 3 | MPC | 97495 | 2001 $UR_{131}$ |
| 2001 $UC_{132}$ | 18.3 | 0.15 | 20060922 | 27.28475 | 46.53610 | 62.53704 | 15.98471 | 0.0533712 | 2.5349458 | 117 | 5 | 1991–2006 | 0.57 | M-v | 1 | MPC | 97495 | 2001 $UC_{132}$ |
| 2001 $UK_{132}$ | 14.6 | 0.15 | 20060922 | 155.12346 | 160.40176 | 69.73952 | 19.21065 | 0.0100310 | 3.0858291 | 51 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 87491 | 2001 $UK_{132}$ |
| 2001 $UL_{132}$ | 15.5 | 0.15 | 20060922 | 40.09403 | 98.10935 | 238.18451 | 5.19468 | 0.2027593 | 3.0050496 | 89 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 03257 | 2001 $UL_{132}$ |
| 2001 $UQ_{132}$ | 16.6 | 0.15 | 20060922 | 6.19412 | 223.52085 | 212.37746 | 1.70341 | 0.1941983 | 2.6472562 | 45 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 90108 | 2001 $UQ_{132}$ |
| 2001 $UT_{132}$ | 16.6 | 0.15 | 20060922 | 344.34938 | 182.80961 | 182.28340 | 5.58333 | 0.2489231 | 3.0490771 | 32 | 2 | 2001–2006 | 0.52 | M-v | 4 | MPC | 03257 | 2001 $UT_{132}$ |
| 2001 $UK_{133}$ | 16.4 | 0.15 | 20060922 | 75.17253 | 358.45006 | 352.82318 | 1.50654 | 0.1095732 | 2.6628254 | 81 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97495 | 2001 $UK_{133}$ |
| 2001 $UM_{133}$ | 17.2 | 0.15 | 20060922 | 233.33629 | 102.34045 | 216.14518 | 3.93903 | 0.1612213 | 2.2039939 | 41 | 2 | 2001–2004 | 0.62 | M-v | 4 | MPC | 70306 | 2001 $UM_{133}$ |
| 2001 $US_{134}$ | 16.4 | 0.15 | 20060922 | 292.34764 | 301.21729 | 223.66409 | 4.67262 | 0.0160534 | 2.6261803 | 35 | 2 | 2001–2005 | 0.60 | M-v | 4 | MPC | 89022 | 2001 $US_{134}$ |
| 2001 $UY_{134}$ | 14.7 | 0.15 | 20060922 | 315.58267 | 30.31748 | 50.04637 | 18.33408 | 0.1449277 | 3.0344364 | 102 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 46829 | 2001 $UY_{134}$ |
| 2001 $UW_{135}$ | 16.2 | 0.15 | 20060922 | 63.37414 | 11.15255 | 50.02999 | 15.37567 | 0.0969094 | 2.5433821 | 111 | 2 | 2001–2005 | 0.69 | M-v | 3 | MPC | 89022 | 2001 $UW_{135}$ |
| 2001 $UD_{136}$ | 16.9 | 0.15 | 20060922 | 38.26678 | 336.25563 | 62.94318 | 2.78421 | 0.2200217 | 2.7216708 | 58 | 4 | 1994–2006 | 0.47 | M-v | 1 | MPC | 85158 | 2001 $UD_{136}$ |
| 2001 $UT_{136}$ | 17.0 | 0.15 | 20060922 | 221.16047 | 332.54939 | 332.05509 | 4.44331 | 0.1494663 | 2.2680210 | 36 | 4 | 1996–2005 | 0.51 | M-v | 1 | MPC | 94231 | 2001 $UT_{136}$ |
| 2001 $UC_{137}$ | 14.3 | 0.15 | 20060922 | 59.70103 | 60.70309 | 242.81300 | 9.97514 | 0.1468581 | 2.9930646 | 84 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04181 | 2001 $UC_{137}$ |
| 2001 $UD_{137}$ | 16.1 | 0.15 | 20060922 | 31.73640 | 89.38710 | 298.62852 | 3.76975 | 0.0831173 | 2.7750947 | 45 | 5 | 1998–2006 | 0.43 | M-v | 0 | MPC | 89024 | 2001 $UD_{137}$ |
| 2001 $UK_{137}$ | 16.7 | 0.15 | 20060922 | 326.10632 | 14.81979 | 72.26079 | 3.46791 | 0.2281047 | 2.8499715 | 70 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 89024 | 2001 $UK_{137}$ |
| 2001 $UL_{137}$ | 15.4 | 0.15 | 20060922 | 22.32163 | 112.92958 | 199.83707 | 2.36848 | 0.0687420 | 3.1310922 | 47 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04181 | 2001 $UL_{137}$ |
| 2001 $UM_{137}$ | 16.1 | 0.15 | 20060922 | 354.96474 | 138.98676 | 201.98277 | 2.58685 | 0.2313170 | 3.0676003 | 43 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04181 | 2001 $UM_{137}$ |
| 2001 $UH_{138}$ | 16.5 | 0.15 | 20060922 | 58.13460 | 319.94318 | 42.70872 | 7.03088 | 0.0404796 | 2.7282114 | 35 | 4 | 1992–2006 | 0.53 | M-v | 1 | MPC | 65118 | 2001 $UH_{138}$ |
| 2001 $UP_{138}$ | 16.0 | 0.15 | 20060922 | 293.80993 | 252.41739 | 182.89043 | 0.57127 | 0.0938431 | 3.0574218 | 60 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 04181 | 2001 $UP_{138}$ |
| 2001 $UD_{139}$ | 15.7 | 0.15 | 20060922 | 241.00179 | 253.25729 | 4.36313 | 8.49489 | 0.1885242 | 2.3819116 | 33 | 4 | 2000–2004 | 0.67 | M-v | 2 | MPC | 66233 | 2001 $UD_{139}$ |
| 2001 $UJ_{139}$ | 16.2 | 0.15 | 20060922 | 249.40639 | 170.80905 | 113.11513 | 3.24258 | 0.1486238 | 2.2551365 | 34 | 4 | 2000–2006 | 0.79 | M-v | 1 | MPC | 97496 | 2001 $UJ_{139}$ |
| 2001 $UM_{140}$ | 16.8 | 0.15 | 20060922 | 22.73121 | 132.53501 | 183.78286 | 4.99270 | 0.3269863 | 2.9980779 | 76 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04181 | 2001 $UM_{140}$ |
| 2001 $UN_{140}$ | 16.1 | 0.15 | 20060922 | 337.76583 | 82.85181 | 58.66241 | 6.35916 | 0.1216132 | 2.5578257 | 52 | 4 | 1995–2005 | 0.41 | M-v | 1 | MPC | 87491 | 2001 $UN_{140}$ |
| 2001 $UO_{140}$ | 17.1 | 0.15 | 20060922 | 65.36315 | 166.93701 | 165.96320 | 3.82072 | 0.0961983 | 2.8163113 | 41 | 5 | 1999–2006 | 0.40 | M-v | 0 | MPC | 87491 | 2001 $UO_{140}$ |
| 2001 $UW_{140}$ | 16.9 | 0.15 | 20060922 | 353.45282 | 352.07942 | 125.50380 | 0.56010 | 0.1015161 | 2.5855239 | 38 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 90108 | 2001 $UW_{140}$ |
| 2001 $UD_{141}$ | 15.4 | 0.15 | 20060922 | 70.36320 | 240.03843 | 49.82801 | 11.48160 | 0.0310860 | 3.0672486 | 47 | 3 | 2001–2006 | 0.70 | M-v | 2 | MPC | 04181 | 2001 $UD_{141}$ |
| 2001 $UK_{141}$ | 15.8 | 0.15 | 20060922 | 303.42732 | 285.77045 | 202.10970 | 8.69372 | 0.1113268 | 2.7779844 | 55 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 85160 | 2001 $UK_{141}$ |
| 2001 $UN_{141}$ | 15.8 | 0.15 | 20060922 | 283.36107 | 245.11673 | 213.04956 | 4.18705 | 0.1492326 | 3.0546831 | 62 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 04181 | 2001 $UN_{141}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UR_{141}$ | 16.6 | 0.15 | 20060922 | 81.73161 | 316.59170 | 50.62569 | 2.83955 | 0.0665206 | 2.6209854 | 45 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 94233 | 2001 $UR_{141}$ |
| 2001 $US_{142}$ | 16.6 | 0.15 | 20060922 | 0.32655 | 288.06116 | 198.85019 | 4.28504 | 0.2110530 | 2.5867160 | 56 | 5 | 1997–2006 | 0.47 | M-v | 0 | MPC | 90108 | 2001 $US_{142}$ |
| 2001 $UQ_{143}$ | 16.5 | 0.15 | 20060922 | 176.46387 | 82.05882 | 205.19558 | 3.22114 | 0.0427886 | 2.5729720 | 75 | 6 | 1994–2006 | 0.54 | M-v | 1 | MPC | 97496 | 2001 $UQ_{143}$ |
| 2001 $UY_{143}$ | 15.7 | 0.15 | 20060922 | 345.70814 | 10.50755 | 61.10403 | 5.97602 | 0.1723225 | 2.8493909 | 99 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 03257 | 2001 $UY_{143}$ |
| 2001 $UD_{144}$ | 16.0 | 0.15 | 20060922 | 63.48117 | 266.95384 | 78.35237 | 4.16360 | 0.1060322 | 2.8017502 | 79 | 4 | 1999–2006 | 0.49 | M-v | 0 | MPC | 97496 | 2001 $UD_{144}$ |
| 2001 $UG_{144}$ | 16.0 | 0.15 | 20060922 | 338.02247 | 268.54411 | 137.67828 | 2.63420 | 0.1579500 | 2.9920047 | 94 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 46833 | 2001 $UG_{144}$ |
| 2001 $UT_{144}$ | 15.4 | 0.15 | 20060922 | 302.72546 | 44.28401 | 46.64557 | 11.11145 | 0.0857274 | 2.9808130 | 91 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 61175 | 2001 $UT_{144}$ |
| 2001 $UA_{145}$ | 15.5 | 0.15 | 20060922 | 250.09746 | 81.76586 | 52.54603 | 8.65025 | 0.1370539 | 3.0978068 | 79 | 4 | 1990–2006 | 0.63 | M-v | 2 | MPC | 48142 | 2001 $UA_{145}$ |
| 2001 $UD_{145}$ | 16.2 | 0.15 | 20060922 | 13.76124 | 302.23433 | 63.03035 | 2.13293 | 0.1616210 | 2.9658850 | 83 | 4 | 1996–2006 | 0.53 | M-v | 2 | MPC | 62377 | 2001 $UD_{145}$ |
| 2001 $UC_{146}$ | 16.4 | 0.15 | 20060922 | 312.75154 | 219.72757 | 210.88331 | 4.05867 | 0.1960369 | 3.0668032 | 80 | 5 | 1990–2006 | 0.47 | M-v | 0 | MPC | 46835 | 2001 $UC_{146}$ |
| 2001 $UM_{146}$ | 16.3 | 0.15 | 20060922 | 356.58131 | 198.43012 | 208.72829 | 1.61110 | 0.1608095 | 2.9018836 | 90 | 5 | 1996–2006 | 0.54 | M-v | 0 | MPC | 85161 | 2001 $UM_{146}$ |
| 2001 $UD_{147}$ | 15.6 | 0.15 | 20060922 | 28.49899 | 120.15522 | 177.14816 | 4.00663 | 0.0826189 | 3.2428230 | 41 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 04182 | 2001 $UD_{147}$ |
| 2001 $UT_{147}$ | 16.4 | 0.15 | 20060922 | 306.07000 | 320.04197 | 130.53655 | 1.14968 | 0.1821460 | 2.9732250 | 58 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 04182 | 2001 $UT_{147}$ |
| 2001 $UB_{148}$ | 16.0 | 0.15 | 20060922 | 287.62643 | 36.71414 | 62.68973 | 7.08026 | 0.0748339 | 2.9815442 | 26 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 68951 | 2001 $UB_{148}$ |
| 2001 $UG_{148}$ | 17.3 | 0.15 | 20060922 | 14.01402 | 267.48631 | 211.45798 | 3.21003 | 0.2863739 | 2.5851792 | 38 | 3 | 2000–2005 | 0.44 | M-v | 3 | MPC | 89025 | 2001 $UG_{148}$ |
| 2001 $UL_{148}$ | 16.3 | 0.15 | 20060922 | 335.55968 | 39.01100 | 51.43666 | 3.09101 | 0.0551823 | 2.7819596 | 34 | 5 | 1999–2006 | 0.39 | M-v | 0 | MPC | 89025 | 2001 $UL_{148}$ |
| 2001 $UN_{148}$ | 16.8 | 0.15 | 20060922 | 40.49904 | 321.98926 | 51.03161 | 4.88518 | 0.1129649 | 2.7996288 | 39 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 75195 | 2001 $UN_{148}$ |
| 2001 $UW_{148}$ | 16.0 | 0.15 | 20060922 | 338.70325 | 14.11333 | 53.15955 | 12.96799 | 0.1143382 | 2.9182310 | 83 | 4 | 1991–2006 | 0.48 | M-v | 3 | MPC | 48143 | 2001 $UW_{148}$ |
| 2001 $UY_{148}$ | 16.3 | 0.15 | 20060922 | 105.58220 | 272.14822 | 76.63688 | 4.15066 | 0.2311227 | 2.5682135 | 96 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 90108 | 2001 $UY_{148}$ |
| 2001 $UN_{150}$ | 15.3 | 0.15 | 20060922 | 291.99175 | 221.55726 | 228.52181 | 14.51282 | 0.1683323 | 3.1333301 | 79 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 30524 | 2001 $UN_{150}$ |
| 2001 $UT_{150}$ | 14.6 | 0.15 | 20060922 | 326.60602 | 329.67403 | 61.95846 | 12.02427 | 0.0526005 | 3.2170486 | 109 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 66233 | 2001 $UT_{150}$ |
| 2001 $UF_{151}$ | 15.7 | 0.15 | 20060922 | 334.84874 | 287.23824 | 210.72454 | 8.38261 | 0.2270953 | 2.7158879 | 77 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 90108 | 2001 $UF_{151}$ |
| 2001 $UR_{151}$ | 16.4 | 0.15 | 20060922 | 17.86899 | 337.86652 | 62.15725 | 2.58834 | 0.1490689 | 2.8411591 | 64 | 4 | 1993–2006 | 0.48 | M-v | 1 | MPC | 90108 | 2001 $UR_{151}$ |
| 2001 $UD_{153}$ | 15.8 | 0.15 | 20060922 | 66.17964 | 348.83033 | 64.32783 | 2.39311 | 0.0721367 | 2.5854113 | 143 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97496 | 2001 $UD_{153}$ |
| 2001 $UJ_{153}$ | 15.8 | 0.15 | 20060922 | 83.80128 | 269.28260 | 106.31955 | 1.54526 | 0.1149756 | 2.6376227 | 129 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 97497 | 2001 $UJ_{153}$ |
| 2001 $UW_{153}$ | 15.6 | 0.15 | 20060922 | 196.68969 | 109.29801 | 213.41591 | 5.59075 | 0.1401387 | 2.3831675 | 80 | 4 | 2000–2004 | 0.64 | M-v | 1 | MPC | 48143 | 2001 $UW_{153}$ |
| 2001 $UT_{154}$ | 15.2 | 0.15 | 20060922 | 50.32436 | 169.28498 | 224.18912 | 10.19386 | 0.1207473 | 2.7318176 | 83 | 3 | 2001–2005 | 0.52 | M-v | 3 | MPC | 90109 | 2001 $UT_{154}$ |
| 2001 $UV_{154}$ | 14.8 | 0.15 | 20060922 | 122.84229 | 187.55833 | 71.15641 | 18.20241 | 0.0823964 | 3.0963557 | 65 | 5 | 2001–2006 | 0.59 | M-v | 0 | MPC | 87492 | 2001 $UV_{154}$ |
| 2001 $UW_{154}$ | 16.3 | 0.15 | 20060922 | 130.76057 | 303.97826 | 83.73571 | 5.62084 | 0.1859295 | 2.4061012 | 119 | 4 | 1996–2006 | 0.64 | M-v | 3 | MPC | 97497 | 2001 $UW_{154}$ |
| 2001 $UG_{155}$ | 14.9 | 0.15 | 20060922 | 308.23868 | 204.43278 | 222.96866 | 12.04772 | 0.1299397 | 3.1702576 | 121 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04182 | 2001 $UG_{155}$ |
| 2001 $UM_{155}$ | 16.0 | 0.15 | 20060922 | 325.41373 | 321.58456 | 116.21324 | 3.29624 | 0.2588869 | 2.9795333 | 96 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 85165 | 2001 $UM_{155}$ |
| 2001 $UV_{155}$ | 14.1 | 0.15 | 20060922 | 68.76633 | 227.60304 | 50.69226 | 14.20122 | 0.0717839 | 3.2334950 | 95 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 62378 | 2001 $UV_{155}$ |
| 2001 $UH_{156}$ | 15.1 | 0.15 | 20060922 | 352.72728 | 121.46636 | 221.04793 | 15.41508 | 0.2181391 | 3.2007917 | 59 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 04182 | 2001 $UH_{156}$ |
| 2001 $UM_{156}$ | 16.2 | 0.15 | 20060922 | 330.74589 | 7.31169 | 94.02388 | 3.78427 | 0.0410053 | 2.7870368 | 61 | 4 | 2001–2006 | 0.57 | M-v | 0 | MPC | 87492 | 2001 $UM_{156}$ |
| 2001 $UC_{157}$ | 15.4 | 0.15 | 20060922 | 47.29817 | 150.11766 | 222.38649 | 4.37062 | 0.0672064 | 2.8158604 | 70 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 89028 | 2001 $UC_{157}$ |
| 2001 $UH_{158}$ | 15.4 | 0.15 | 20060922 | 0.48942 | 266.45283 | 54.82825 | 24.57049 | 0.3830118 | 3.1703239 | 79 | 3 | 2000–2006 | 0.60 | M-v | 1 | MPC | 04182 | 2001 $UH_{158}$ |
| 2001 $UJ_{160}$ | 16.1 | 0.15 | 20060922 | 19.39111 | 209.76034 | 233.22811 | 21.18174 | 0.0302422 | 2.6656227 | 60 | 3 | 1995–2005 | 0.52 | M-v | 2 | MPC | 89030 | 2001 $UJ_{160}$ |
| 2001 $UR_{160}$ | 14.9 | 0.15 | 20060922 | 250.34987 | 92.58068 | 58.07977 | 16.69492 | 0.1882045 | 3.1132224 | 75 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 46843 | 2001 $UR_{160}$ |
| 2001 $UK_{161}$ | 14.6 | 0.15 | 20060922 | 259.61262 | 59.26353 | 76.69355 | 11.01795 | 0.1897921 | 3.1357837 | 144 | 5 | 1990–2006 | 0.63 | M-v | 1 | MPC | 87493 | 2001 $UK_{161}$ |
| 2001 $UW_{162}$ | 15.6 | 0.15 | 20060922 | 320.99424 | 87.75742 | 52.23367 | 12.53439 | 0.1711871 | 2.7289405 | 80 | 4 | 1992–2006 | 0.51 | M-v | 1 | MPC | 04182 | 2001 $UW_{162}$ |
| 2001 $UN_{163}$ | 15.3 | 0.15 | 20060922 | 50.37697 | 261.91890 | 62.00193 | 8.58819 | 0.0824808 | 3.0657865 | 47 | 5 | 1999–2006 | 0.53 | M-v | 0 | MPC | 87493 | 2001 $UN_{163}$ |
| 2001 $UW_{163}$ | 15.6 | 0.15 | 20060922 | 295.92618 | 29.82101 | 143.95878 | 4.93380 | 0.0820099 | 2.4643903 | 95 | 5 | 1997–2006 | 0.46 | M-v | 2 | MPC | 90109 | 2001 $UW_{163}$ |
| 2001 $UK_{164}$ | 14.9 | 0.15 | 20060922 | 321.97036 | 202.80915 | 197.54406 | 9.75994 | 0.0865881 | 3.1264023 | 85 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 03258 | 2001 $UK_{164}$ |
| 2001 $UT_{164}$ | 15.7 | 0.15 | 20060922 | 70.00209 | 253.78747 | 58.83862 | 9.94644 | 0.1991057 | 2.7468738 | 79 | 6 | 1991–2006 | 0.49 | M-v | 1 | MPC | 87493 | 2001 $UT_{164}$ |
| 2001 $UC_{165}$ | 16.7 | 0.15 | 20060922 | 49.23035 | 174.12929 | 153.63162 | 10.22940 | 0.2671778 | 2.7919676 | 28 | 3 | 2001–2006 | 0.42 | M-v | 1 | MPC | 89031 | 2001 $UC_{165}$ |
| 2001 $UN_{165}$ | 16.0 | 0.15 | 20060922 | 8.47571 | 316.87524 | 71.38036 | 10.21143 | 0.1648522 | 2.8136644 | 88 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 46845 | 2001 $UN_{165}$ |
| 2001 $UP_{166}$ | 17.5 | 0.15 | 20060922 | 210.19884 | 211.95283 | 71.65285 | 2.84740 | 0.2148338 | 2.3402264 | 40 | 3 | 2001–2005 | 0.52 | M-v | 3 | MPC | 65124 | 2001 $UP_{166}$ |
| 2001 $UY_{166}$ | 17.0 | 0.15 | 20060922 | 70.54063 | 303.92359 | 64.73841 | 3.74521 | 0.0894447 | 2.6695030 | 44 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 85167 | 2001 $UY_{166}$ |
| 2001 $UG_{168}$ | 15.1 | 0.15 | 20060922 | 91.53804 | 48.25722 | 325.59533 | 10.70256 | 0.2731888 | 2.5852164 | 105 | 5 | 1980–2006 | 0.43 | M-v | 1 | MPC | 97498 | 2001 $UG_{168}$ |
| 2001 $UN_{169}$ | 15.3 | 0.15 | 20060922 | 27.81873 | 38.92577 | 20.08336 | 11.33033 | 0.2454549 | 2.7823799 | 89 | 5 | 1996–2006 | 0.52 | M-v | 0 | MPC | 87493 | 2001 $UN_{169}$ |
| 2001 $UV_{169}$ | 16.2 | 0.15 | 20060922 | 19.59638 | 147.34605 | 247.83992 | 3.86404 | 0.0998714 | 2.7769276 | 29 | 5 | 1992–2006 | 0.37 | M-v | 0 | MPC | 89032 | 2001 $UV_{169}$ |
| 2001 $UC_{170}$ | 16.0 | 0.15 | 20060922 | 41.17718 | 7.84495 | 13.03075 | 5.74231 | 0.0939064 | 2.7439703 | 26 | 2 | 2001–2005 | 0.49 | M-v | 4 | MPC | 89032 | 2001 $UC_{170}$ |
| 2001 $UG_{170}$ | 16.2 | 0.15 | 20060922 | 47.28422 | 135.05082 | 262.61161 | 3.40776 | 0.1068802 | 2.6672687 | 58 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 85169 | 2001 $UG_{170}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UE_{171}$ | 15.4 | 0.15 | 20060922 | 342.47797 | 252.11755 | 235.51909 | 13.07578 | 0.0758154 | 2.6318733 | 100 | 4 | 1995–2005 | 0.55 | M-v | 1 | MPC | 89033 | 2001 $UE_{171}$ |
| 2001 $UP_{171}$ | 16.4 | 0.15 | 20060922 | 57.51198 | 115.70878 | 267.47149 | 4.30932 | 0.1386635 | 2.6649696 | 52 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 02048 | 2001 $UP_{171}$ |
| 2001 $UC_{172}$ | 16.7 | 0.15 | 20060922 | 21.13811 | 64.99081 | 35.85459 | 1.49433 | 0.1167722 | 2.5144541 | 46 | 4 | 1993–2005 | 0.51 | M-v | 2 | MPC | 04182 | 2001 $UC_{172}$ |
| 2001 $UW_{172}$ | 14.9 | 0.15 | 20060922 | 230.39773 | 180.83079 | 47.74392 | 8.33551 | 0.1661929 | 2.5761887 | 92 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 97498 | 2001 $UW_{172}$ |
| 2001 $UH_{173}$ | 15.8 | 0.15 | 20060922 | 33.95521 | 285.97847 | 39.84440 | 12.19220 | 0.0711810 | 3.0670096 | 48 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 61179 | 2001 $UH_{173}$ |
| 2001 $UK_{173}$ | 16.0 | 0.15 | 20060922 | 315.31558 | 213.56462 | 172.54648 | 0.14726 | 0.1715253 | 3.2121224 | 56 | 6 | 1960–2006 | 0.53 | M-v | 1 | MPC | 04182 | 2001 $UK_{173}$ |
| 2001 $UN_{173}$ | 16.5 | 0.15 | 20060922 | 336.17954 | 77.18018 | 49.38472 | 7.22061 | 0.2090856 | 2.6944337 | 39 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 46848 | 2001 $UN_{173}$ |
| 2001 $UA_{174}$ | 14.9 | 0.15 | 20060922 | 65.44415 | 239.68055 | 43.93858 | 10.28146 | 0.0618064 | 3.1789367 | 52 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 85171 | 2001 $UA_{174}$ |
| 2001 $UG_{174}$ | 16.6 | 0.15 | 20060922 | 130.58760 | 115.33501 | 218.52372 | 10.40910 | 0.1626001 | 2.5335825 | 70 | 3 | 2000–2005 | 0.45 | M-v | 2 | MPC | 89034 | 2001 $UG_{174}$ |
| 2001 $UT_{174}$ | 15.8 | 0.15 | 20060922 | 256.07851 | 144.09314 | 44.72787 | 2.73076 | 0.0321359 | 2.7143132 | 91 | 6 | 1999–2006 | 0.55 | M-v | 1 | MPC | 90109 | 2001 $UT_{174}$ |
| 2001 $UW_{174}$ | 14.9 | 0.15 | 20060922 | 300.21253 | 16.88147 | 58.40609 | 18.55798 | 0.2084959 | 3.1317373 | 95 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 66235 | 2001 $UW_{174}$ |
| 2001 $UH_{175}$ | 16.2 | 0.15 | 20060922 | 114.69538 | 147.85968 | 190.02115 | 10.77738 | 0.1651976 | 2.5560884 | 84 | 3 | 2000–2005 | 0.63 | M-v | 2 | MPC | 89035 | 2001 $UH_{175}$ |
| 2001 $UW_{175}$ | 16.6 | 0.15 | 20060922 | 29.43547 | 192.78144 | 157.96296 | 3.00673 | 0.1268127 | 2.9584042 | 31 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 75199 | 2001 $UW_{175}$ |
| 2001 $UA_{176}$ | 16.5 | 0.15 | 20060922 | 42.68764 | 300.22215 | 108.06893 | 3.48290 | 0.0954782 | 2.6693283 | 46 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87493 | 2001 $UA_{176}$ |
| 2001 $UA_{177}$ | 16.7 | 0.15 | 20060922 | 96.43723 | 8.58454 | 344.33551 | 0.79847 | 0.1383592 | 2.5772083 | 84 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 97498 | 2001 $UA_{177}$ |
| 2001 $UC_{177}$ | 16.1 | 0.15 | 20060922 | 323.42091 | 354.90106 | 219.31789 | 5.86259 | 0.1262106 | 2.2993049 | 63 | 4 | 2001–2005 | 0.65 | M-v | 1 | MPC | 70307 | 2001 $UC_{177}$ |
| 2001 $UZ_{177}$ | 15.2 | 0.15 | 20060922 | 295.76368 | 58.53042 | 54.92853 | 11.34277 | 0.1032698 | 2.9394462 | 102 | 3 | 2001–2006 | 0.52 | M-v | 1 | MPC | 50571 | 2001 $UZ_{177}$ |
| 2001 $UK_{178}$ | 15.0 | 0.15 | 20060922 | 40.79559 | 293.80894 | 69.45311 | 13.06662 | 0.1539909 | 2.7206302 | 43 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 85173 | 2001 $UK_{178}$ |
| 2001 $UL_{178}$ | 16.1 | 0.15 | 20060922 | 86.92390 | 278.31803 | 63.46419 | 10.42195 | 0.2245736 | 2.5820536 | 32 | 2 | 2001–2005 | 0.60 | M-v | 3 | MPC | 89035 | 2001 $UL_{178}$ |
| 2001 $UN_{178}$ | 16.6 | 0.15 | 20060922 | 38.18831 | 277.44724 | 81.58663 | 9.33383 | 0.1645028 | 2.7651651 | 22 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 03258 | 2001 $UN_{178}$ |
| 2001 $UH_{179}$ | 14.7 | 0.15 | 20060922 | 342.79075 | 33.42513 | 324.43733 | 10.52116 | 0.0713201 | 3.1260729 | 75 | 2 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03258 | 2001 $UH_{179}$ |
| 2001 $UJ_{179}$ | 14.7 | 0.15 | 20060922 | 99.98941 | 270.05277 | 337.98754 | 13.04916 | 0.2012844 | 2.9988330 | 96 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04182 | 2001 $UJ_{179}$ |
| 2001 $UR_{182}$ | 15.5 | 0.15 | 20060922 | 267.20256 | 51.69690 | 37.51256 | 11.02544 | 0.0969577 | 3.0871986 | 59 | 5 | 1993–2006 | 0.64 | M-v | 0 | MPC | 04182 | 2001 $UR_{182}$ |
| 2001 $UT_{182}$ | 16.8 | 0.15 | 20060922 | 156.11180 | 208.84240 | 107.86080 | 3.38725 | 0.2116942 | 2.4235223 | 37 | 4 | 2000–2005 | 0.57 | M-v | 1 | MPC | 03259 | 2001 $UT_{182}$ |
| 2001 $UZ_{182}$ | 16.6 | 0.15 | 20060922 | 41.70435 | 275.12276 | 128.04452 | 6.24604 | 0.1691963 | 2.6263028 | 49 | 4 | 1995–2005 | 0.59 | M-v | 2 | MPC | 97498 | 2001 $UZ_{182}$ |
| 2001 $UX_{183}$ | 15.2 | 0.15 | 20060922 | 313.23833 | 355.73809 | 74.90731 | 13.22241 | 0.1580280 | 3.0331933 | 45 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 65126 | 2001 $UX_{183}$ |
| 2001 $UU_{184}$ | 17.1 | 0.15 | 20060922 | 63.56450 | 257.11158 | 118.34179 | 6.06755 | 0.2233446 | 2.6287179 | 36 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 85174 | 2001 $UU_{184}$ |
| 2001 $UW_{184}$ | 12.8 | 0.15 | 20060922 | 235.12499 | 238.84230 | 53.66314 | 17.43366 | 0.0718829 | 5.2939126 | 34 | 4 | 2001–2006 | 0.41 | M-v | 2 | MPC | 97498 | 2001 $UW_{184}$ |
| 2001 $UX_{184}$ | 15.9 | 0.15 | 20060922 | 344.31275 | 30.87687 | 67.46020 | 9.74510 | 0.1403304 | 2.7070586 | 32 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 85175 | 2001 $UX_{184}$ |
| 2001 $UC_{185}$ | 15.5 | 0.15 | 20060922 | 3.75207 | 303.06669 | 5.25105 | 16.45612 | 0.1389231 | 3.1152413 | 27 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 04182 | 2001 $UC_{185}$ |
| 2001 $UH_{185}$ | 15.9 | 0.15 | 20060922 | 357.86919 | 132.72045 | 279.04151 | 8.05004 | 0.1474648 | 2.7312720 | 70 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 87494 | 2001 $UH_{185}$ |
| 2001 $UY_{185}$ | 16.8 | 0.15 | 20060922 | 355.05482 | 23.36201 | 21.75767 | 9.52105 | 0.1159464 | 2.7852927 | 40 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 61180 | 2001 $UY_{185}$ |
| 2001 $UM_{186}$ | 18.3 | 0.15 | 20060922 | 96.53280 | 134.65597 | 221.82489 | 3.66690 | 0.2531793 | 2.5313471 | 36 | 3 | 1997–2005 | 0.50 | M-v | 3 | MPC | 89036 | 2001 $UM_{186}$ |
| 2001 $UW_{186}$ | 16.2 | 0.15 | 20060922 | 4.24219 | 176.29279 | 239.48015 | 10.50467 | 0.0795847 | 2.7164215 | 28 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 85175 | 2001 $UW_{186}$ |
| 2001 $UC_{187}$ | 16.5 | 0.15 | 20060922 | 40.07159 | 330.25210 | 38.42627 | 6.32575 | 0.0742826 | 2.7153043 | 28 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 85176 | 2001 $UC_{187}$ |
| 2001 $UH_{187}$ | 15.3 | 0.15 | 20060922 | 176.50314 | 205.72716 | 21.44761 | 13.58819 | 0.1348905 | 2.7052693 | 83 | 4 | 1995–2005 | 0.49 | M-v | 2 | MPC | 87494 | 2001 $UH_{187}$ |
| 2001 $UK_{187}$ | 16.3 | 0.15 | 20060922 | 295.72379 | 300.74143 | 193.03818 | 10.71252 | 0.1765746 | 2.7229614 | 65 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 50571 | 2001 $UK_{187}$ |
| 2001 $UN_{187}$ | 15.5 | 0.15 | 20060922 | 217.59213 | 104.89343 | 28.49041 | 10.11097 | 0.0736475 | 3.0732302 | 56 | 3 | 2001–2004 | 0.64 | M-v | 3 | MPC | 62378 | 2001 $UN_{187}$ |
| 2001 $UJ_{189}$ | 15.2 | 0.15 | 20060922 | 298.41624 | 74.74634 | 350.72486 | 25.75611 | 0.2357661 | 3.0821945 | 39 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04182 | 2001 $UJ_{189}$ |
| 2001 $UE_{190}$ | 16.1 | 0.15 | 20060922 | 293.73326 | 163.58484 | 317.02287 | 4.16698 | 0.0656966 | 2.7298148 | 45 | 5 | 1997–2006 | 0.44 | M-v | 1 | MPC | 87494 | 2001 $UE_{190}$ |
| 2001 $UH_{190}$ | 16.0 | 0.15 | 20060922 | 355.29350 | 41.01093 | 285.69634 | 3.68074 | 0.1218290 | 3.1414337 | 28 | 2 | 2001–2006 | 0.42 | M-v | 4 | MPC | 04182 | 2001 $UH_{190}$ |
| 2001 $UJ_{191}$ | 15.8 | 0.15 | 20060922 | 327.92553 | 29.98709 | 359.94669 | 9.11887 | 0.0652453 | 3.0128725 | 44 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 00082 | 2001 $UJ_{191}$ |
| 2001 $UG_{192}$ | 14.9 | 0.15 | 20060922 | 296.23319 | 148.40967 | 272.18174 | 13.31491 | 0.1571802 | 3.0994296 | 36 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 50571 | 2001 $UG_{192}$ |
| 2001 $UC_{193}$ | 16.2 | 0.15 | 20060922 | 78.90725 | 248.17869 | 86.86135 | 13.59257 | 0.2663444 | 2.6286211 | 50 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 85177 | 2001 $UC_{193}$ |
| 2001 $UD_{193}$ | 15.6 | 0.15 | 20060922 | 247.67684 | 251.86987 | 216.99558 | 6.89789 | 0.1241039 | 3.1345442 | 48 | 4 | 2000–2004 | 0.57 | M-v | 1 | MPC | 50571 | 2001 $UD_{193}$ |
| 2001 $UG_{193}$ | 16.5 | 0.15 | 20060922 | 42.45962 | 119.64184 | 214.25820 | 5.87351 | 0.0766732 | 2.8716469 | 41 | 3 | 2001–2006 | 0.34 | M-v | 3 | MPC | 00082 | 2001 $UG_{193}$ |
| 2001 $UM_{193}$ | 15.3 | 0.15 | 20060922 | 325.10205 | 185.03036 | 271.65276 | 11.95468 | 0.1192961 | 2.7481516 | 35 | 4 | 1996–2006 | 0.51 | M-v | 2 | MPC | 87494 | 2001 $UM_{193}$ |
| 2001 $UE_{194}$ | 16.5 | 0.15 | 20060922 | 138.10149 | 247.45698 | 49.72976 | 3.43118 | 0.0723814 | 2.6073088 | 45 | 5 | 1997–2006 | 0.32 | M-v | 0 | MPC | 97499 | 2001 $UE_{194}$ |
| 2001 $UJ_{194}$ | 16.8 | 0.15 | 20060922 | 84.78603 | 134.52986 | 198.68290 | 8.46767 | 0.0403719 | 2.7095753 | 30 | 5 | 1999–2005 | 0.67 | M-v | 0 | MPC | 72416 | 2001 $UJ_{194}$ |
| 2001 $UG_{195}$ | 17.2 | 0.15 | 20060922 | 87.07263 | 272.67878 | 192.45244 | 4.45817 | 0.1179850 | 2.2862823 | 36 | 5 | 1994–2006 | 0.57 | M-v | 1 | MPC | 04183 | 2001 $UG_{195}$ |
| 2001 $UU_{195}$ | 16.4 | 0.15 | 20060922 | 248.78662 | 286.81340 | 188.79511 | 14.92773 | 0.1565534 | 3.1041921 | 24 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 68953 | 2001 $UU_{195}$ |
| 2001 $UZ_{195}$ | 17.0 | 0.15 | 20060922 | 303.20253 | 282.87472 | 152.87360 | 2.85447 | 0.2328086 | 3.0671063 | 22 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 03259 | 2001 $UZ_{195}$ |
| 2001 $UD_{196}$ | 15.3 | 0.15 | 20060922 | 168.66820 | 162.86795 | 36.13134 | 12.49429 | 0.0984098 | 3.0670632 | 66 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 66235 | 2001 $UD_{196}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UK_{196}$ | 16.8 | 0.15 | 20060922 | 3.76872 | 84.25247 | 331.38310 | 3.10887 | 0.0936699 | 2.8103424 | 23 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 89036 | 2001 $UK_{196}$ |
| 2001 $UL_{196}$ | 17.0 | 0.15 | 20060922 | 44.26808 | 352.47386 | 60.96985 | 5.72683 | 0.1103389 | 2.6295327 | 32 | 3 | 2001–2005 | 0.40 | M-v | 2 | MPC | 89036 | 2001 $UL_{196}$ |
| 2001 $UN_{196}$ | 15.5 | 0.15 | 20060922 | 14.77879 | 293.61776 | 37.96902 | 1.14958 | 0.1615735 | 3.1095795 | 59 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 04183 | 2001 $UN_{196}$ |
| 2001 $UR_{196}$ | 16.0 | 0.15 | 20060922 | 42.88910 | 246.47523 | 195.83903 | 7.23962 | 0.0512454 | 2.5391465 | 88 | 5 | 1995–2005 | 0.57 | M-v | 2 | MPC | 97499 | 2001 $UR_{196}$ |
| 2001 $UA_{197}$ | 15.3 | 0.15 | 20060922 | 1.57062 | 1.25930 | 49.37158 | 10.14073 | 0.2262836 | 2.7651736 | 94 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 48145 | 2001 $UA_{197}$ |
| 2001 $UP_{197}$ | 15.0 | 0.15 | 20060922 | 47.42945 | 353.63073 | 341.74674 | 9.72438 | 0.0819872 | 2.8877820 | 44 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 89037 | 2001 $UP_{197}$ |
| 2001 $UW_{198}$ | 16.9 | 0.15 | 20060922 | 31.91457 | 54.04537 | 354.90132 | 2.84482 | 0.1039642 | 2.6390540 | 36 | 4 | 1999–2005 | 0.52 | M-v | 1 | MPC | 89037 | 2001 $UW_{198}$ |
| 2001 $UP_{200}$ | 16.2 | 0.15 | 20060922 | 265.44100 | 72.42988 | 17.28427 | 15.12803 | 0.0905465 | 3.1277109 | 30 | 3 | 2001–2004 | 0.42 | M-v | 2 | MPC | 68953 | 2001 $UP_{200}$ |
| 2001 $UX_{200}$ | 16.5 | 0.15 | 20060922 | 64.29238 | 108.63894 | 229.36922 | 2.81601 | 0.1032796 | 2.7696659 | 53 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 87494 | 2001 $UX_{200}$ |
| 2001 $UH_{201}$ | 16.6 | 0.15 | 20060922 | 124.96164 | 37.57500 | 271.47092 | 1.15682 | 0.0800441 | 2.6269550 | 51 | 6 | 1999–2006 | 0.54 | M-v | 1 | MPC | 97499 | 2001 $UH_{201}$ |
| 2001 $UX_{201}$ | 16.7 | 0.15 | 20060922 | 339.82134 | 232.69587 | 270.29604 | 2.75142 | 0.1220030 | 2.5296432 | 41 | 5 | 1997–2006 | 0.55 | M-v | 2 | MPC | 90110 | 2001 $UX_{201}$ |
| 2001 $UY_{201}$ | 16.9 | 0.15 | 20060922 | 104.71665 | 350.46600 | 337.18804 | 3.05227 | 0.1003151 | 2.6407362 | 30 | 2 | 2001–2005 | 0.37 | M-v | 4 | MPC | 85179 | 2001 $UY_{201}$ |
| 2001 $UA_{202}$ | 16.5 | 0.15 | 20060922 | 121.13493 | 318.09878 | 355.19404 | 3.13138 | 0.1320466 | 2.6096226 | 39 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87494 | 2001 $UA_{202}$ |
| 2001 $UT_{202}$ | 16.0 | 0.15 | 20060922 | 146.34585 | 272.41781 | 12.62711 | 7.10404 | 0.0422459 | 2.7138897 | 42 | 4 | 1999–2005 | 0.46 | M-v | 0 | MPC | 97499 | 2001 $UT_{202}$ |
| 2001 $UV_{202}$ | 15.9 | 0.15 | 20060922 | 298.96116 | 199.96860 | 223.89711 | 7.99829 | 0.0501579 | 3.0694491 | 44 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 04183 | 2001 $UV_{202}$ |
| 2001 $UB_{203}$ | 15.0 | 0.15 | 20060922 | 341.06442 | 295.38048 | 71.34078 | 20.93745 | 0.1901193 | 3.0938924 | 59 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04183 | 2001 $UB_{203}$ |
| 2001 $UG_{203}$ | 16.1 | 0.15 | 20060922 | 275.59478 | 165.78549 | 332.03908 | 1.36193 | 0.0137964 | 2.7873366 | 35 | 3 | 2001–2006 | 0.42 | M-v | 5 | MPC | 43148 | 2001 $UG_{203}$ |
| 2001 $US_{203}$ | 15.9 | 0.15 | 20060922 | 349.54714 | 358.07770 | 24.38725 | 11.92361 | 0.0325165 | 3.0133964 | 50 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 66235 | 2001 $US_{203}$ |
| 2001 $UM_{204}$ | 16.3 | 0.15 | 20060922 | 53.36701 | 110.51932 | 247.53591 | 2.86246 | 0.1119281 | 2.7752910 | 59 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 85180 | 2001 $UM_{204}$ |
| 2001 $UQ_{204}$ | 14.5 | 0.15 | 20060922 | 111.66343 | 212.85029 | 29.20590 | 16.20878 | 0.0084666 | 3.1572975 | 60 | 6 | 1993–2006 | 0.62 | M-v | 1 | MPC | 04183 | 2001 $UQ_{204}$ |
| 2001 $UV_{204}$ | 15.7 | 0.15 | 20060922 | 106.44729 | 305.13785 | 25.12976 | 13.33623 | 0.0933592 | 2.6582669 | 43 | 3 | 2001–2005 | 0.58 | M-v | 3 | MPC | 85180 | 2001 $UV_{204}$ |
| 2001 $UB_{205}$ | 17.4 | 0.15 | 20060922 | 196.37420 | 24.68673 | 6.74774 | 2.74314 | 0.1456437 | 2.1727634 | 54 | 5 | 1996–2006 | 0.44 | M-v | 1 | MPC | 97499 | 2001 $UB_{205}$ |
| 2001 $UL_{205}$ | 15.9 | 0.15 | 20060922 | 46.27672 | 345.44037 | 24.51054 | 3.72173 | 0.1044162 | 2.7799038 | 55 | 6 | 1999–2006 | 0.48 | M-v | 0 | MPC | 90110 | 2001 $UL_{205}$ |
| 2001 $UZ_{205}$ | 15.6 | 0.15 | 20060922 | 274.31484 | 76.03501 | 34.51653 | 10.22035 | 0.1021053 | 3.0703098 | 43 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 50572 | 2001 $UZ_{205}$ |
| 2001 $UA_{206}$ | 15.8 | 0.15 | 20060922 | 303.09760 | 58.73273 | 8.85429 | 4.95954 | 0.1353165 | 3.1270859 | 28 | 4 | 2000–2006 | 0.39 | M-v | 0 | MPC | 03259 | 2001 $UA_{206}$ |
| 2001 $UB_{206}$ | 15.4 | 0.15 | 20060922 | 29.80956 | 355.44270 | 33.28803 | 14.84328 | 0.1557567 | 2.6458276 | 50 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 85181 | 2001 $UB_{206}$ |
| 2001 $UD_{207}$ | 16.6 | 0.15 | 20060922 | 182.98883 | 254.88971 | 29.01253 | 6.97627 | 0.1152702 | 2.4560468 | 33 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 89038 | 2001 $UD_{207}$ |
| 2001 $UP_{207}$ | 17.4 | 0.15 | 20060922 | 89.23525 | 43.95267 | 41.55207 | 4.93508 | 0.1084570 | 2.3237025 | 18 | 3 | 2001–2005 | 0.38 | M-v | 3 | MPC | 00083 | 2001 $UP_{207}$ |
| 2001 $UW_{207}$ | 15.2 | 0.15 | 20060922 | 181.46462 | 136.49171 | 31.97839 | 15.82486 | 0.1580552 | 3.1694845 | 87 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 66235 | 2001 $UW_{207}$ |
| 2001 $UQ_{208}$ | 16.2 | 0.15 | 20060922 | 308.57840 | 47.20989 | 6.82686 | 7.12880 | 0.0922493 | 3.0263792 | 40 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 66235 | 2001 $UQ_{208}$ |
| 2001 $UL_{209}$ | 14.7 | 0.15 | 20060922 | 45.90475 | 51.69062 | 245.98837 | 8.60003 | 0.0664174 | 3.0602176 | 38 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 04183 | 2001 $UL_{209}$ |
| 2001 $UZ_{209}$ | 14.8 | 0.15 | 20060922 | 302.61813 | 291.20667 | 140.91301 | 17.90169 | 0.2519735 | 3.1015207 | 45 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04183 | 2001 $UZ_{209}$ |
| 2001 $UG_{210}$ | 17.5 | 0.15 | 20060922 | 56.26240 | 168.21720 | 213.20289 | 3.20205 | 0.1223060 | 2.6136780 | 35 | 2 | 2001–2005 | 0.33 | M-v | 3 | MPC | 89038 | 2001 $UG_{210}$ |
| 2001 $UV_{211}$ | 15.7 | 0.15 | 20060922 | 38.19447 | 100.10411 | 219.92545 | 7.41946 | 0.0254320 | 3.0801241 | 51 | 6 | 1997–2006 | 0.48 | M-v | 0 | MPC | 02049 | 2001 $UV_{211}$ |
| 2001 $UM_{212}$ | 16.6 | 0.15 | 20060922 | 59.99061 | 314.43141 | 21.56711 | 4.99176 | 0.1470643 | 2.8370227 | 36 | 5 | 1991–2006 | 0.46 | M-v | 1 | MPC | 68954 | 2001 $UM_{212}$ |
| 2001 $UY_{212}$ | 16.1 | 0.15 | 20060922 | 7.74901 | 280.58914 | 45.61310 | 16.64520 | 0.2900839 | 3.1266613 | 41 | 2 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03259 | 2001 $UY_{212}$ |
| 2001 $UZ_{212}$ | 16.8 | 0.15 | 20060922 | 110.38292 | 122.10169 | 207.17955 | 13.38572 | 0.2060643 | 2.5909706 | 64 | 3 | 2001–2005 | 0.42 | M-v | 2 | MPC | 89038 | 2001 $UZ_{212}$ |
| 2001 $UY_{213}$ | 15.9 | 0.15 | 20060922 | 84.95962 | 241.93209 | 123.05861 | 15.74531 | 0.1760417 | 2.5756406 | 36 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 00083 | 2001 $UY_{213}$ |
| 2001 $UF_{214}$ | 15.3 | 0.15 | 20060922 | 33.04968 | 224.15975 | 83.10009 | 2.49908 | 0.1158848 | 3.1167063 | 53 | 6 | 1995–2006 | 0.67 | M-v | 1 | MPC | 04183 | 2001 $UF_{214}$ |
| 2001 $UH_{214}$ | 14.9 | 0.15 | 20060922 | 221.41339 | 160.01190 | 66.06736 | 6.28116 | 0.2077045 | 2.6041882 | 28 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 62378 | 2001 $UH_{214}$ |
| 2001 $UL_{214}$ | 15.0 | 0.15 | 20060922 | 134.35557 | 30.99782 | 185.55379 | 3.88032 | 0.0977203 | 3.1466838 | 100 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 04183 | 2001 $UL_{214}$ |
| 2001 $UZ_{214}$ | 13.5 | 0.15 | 20060922 | 255.89979 | 77.77384 | 214.51166 | 5.93488 | 0.0435495 | 5.2283124 | 34 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 94250 | 2001 $UZ_{214}$ |
| 2001 $UL_{216}$ | 15.7 | 0.15 | 20060922 | 245.75202 | 315.90725 | 186.42112 | 5.17309 | 0.2503645 | 3.0843787 | 67 | 6 | 1992–2006 | 0.53 | M-v | 1 | MPC | 50572 | 2001 $UL_{216}$ |
| 2001 $UD_{217}$ | 16.6 | 0.15 | 20060922 | 131.79770 | 222.62703 | 56.13932 | 6.88514 | 0.0333522 | 2.7955358 | 30 | 4 | 2001–2006 | 0.32 | M-v | 0 | MPC | 75202 | 2001 $UD_{217}$ |
| 2001 $UG_{217}$ | 15.6 | 0.15 | 20060922 | 296.65549 | 85.35493 | 60.93193 | 10.05508 | 0.1218233 | 2.7420040 | 33 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 50572 | 2001 $UG_{217}$ |
| 2001 $UQ_{217}$ | 15.1 | 0.15 | 20060922 | 62.05489 | 234.39806 | 49.52066 | 10.64962 | 0.0534585 | 3.0891876 | 34 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04183 | 2001 $UQ_{217}$ |
| 2001 $UR_{217}$ | 16.1 | 0.15 | 20060922 | 309.72506 | 97.34430 | 53.93931 | 10.82351 | 0.1475105 | 2.7126662 | 64 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 90110 | 2001 $UR_{217}$ |
| 2001 $UC_{218}$ | 16.2 | 0.15 | 20060922 | 159.99554 | 298.14600 | 248.08712 | 20.53956 | 0.0542841 | 1.9136307 | 46 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04183 | 2001 $UC_{218}$ |
| 2001 $UK_{218}$ | 15.8 | 0.15 | 20060922 | 348.06979 | 14.93726 | 122.16430 | 14.23865 | 0.1123338 | 2.5948631 | 56 | 5 | 2001–2006 | 0.54 | M-v | 0 | MPC | 97499 | 2001 $UK_{218}$ |
| 2001 $UD_{219}$ | 15.5 | 0.15 | 20060922 | 173.29869 | 77.58972 | 227.44784 | 11.74559 | 0.1334088 | 2.5440626 | 54 | 3 | 2001–2005 | 0.64 | M-v | 3 | MPC | 97499 | 2001 $UD_{219}$ |
| 2001 $UK_{219}$ | 15.7 | 0.15 | 20060922 | 11.85592 | 255.45151 | 139.00548 | 14.81926 | 0.1370710 | 2.9017875 | 27 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 75202 | 2001 $UK_{219}$ |
| 2001 $UB_{220}$ | 15.1 | 0.15 | 20060922 | 100.05371 | 340.33689 | 25.93939 | 24.82572 | 0.0410962 | 2.5813421 | 154 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 97499 | 2001 $UB_{220}$ |
| 2001 $UR_{220}$ | 15.2 | 0.15 | 20060922 | 74.32358 | 33.18562 | 251.68627 | 4.14962 | 0.1300822 | 3.0894371 | 66 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 61185 | 2001 $UR_{220}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $UU_{220}$ | 16.5 | 0.15 | 20060922 | 283.06944 | 91.29178 | 14.46332 | 1.58836 | 0.2532670 | 3.0860985 | 47 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 75202 | 2001 $UU_{220}$ |
| 2001 $UK_{221}$ | 16.7 | 0.15 | 20060922 | 18.97116 | 224.99736 | 221.13618 | 1.50113 | 0.1817432 | 2.6688614 | 44 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 02049 | 2001 $UK_{221}$ |
| 2001 $UR_{221}$ | 16.9 | 0.15 | 20060922 | 55.53213 | 221.18076 | 132.73621 | 0.70060 | 0.0829199 | 2.8057951 | 41 | 4 | 1998–2006 | 0.39 | M-v | 0 | MPC | 89041 | 2001 $UR_{221}$ |
| 2001 $UC_{222}$ | 15.0 | 0.15 | 20060922 | 54.84818 | 357.34458 | 27.13428 | 15.62161 | 0.1410099 | 2.8493777 | 79 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 97500 | 2001 $UC_{222}$ |
| 2001 $UP_{222}$ | 16.8 | 0.15 | 20060922 | 355.82198 | 86.22255 | 43.82239 | 5.21235 | 0.0368461 | 2.5401751 | 26 | 2 | 2001–2005 | 0.44 | M-v | 5 | MPC | 89042 | 2001 $UP_{222}$ |
| 2001 $UX_{222}$ | 15.9 | 0.15 | 20060922 | 324.12547 | 272.99703 | 157.65638 | 14.79446 | 0.1257462 | 3.0130226 | 33 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 89042 | 2001 $UX_{222}$ |
| 2001 $UF_{224}$ | 15.6 | 0.15 | 20060922 | 354.63711 | 281.01355 | 137.73072 | 12.73606 | 0.0551339 | 2.8772863 | 47 | 6 | 1998–2006 | 0.50 | M-v | 0 | MPC | 94253 | 2001 $UF_{224}$ |
| 2001 $US_{224}$ | 16.9 | 0.15 | 20011018 | 11.78787 | 309.45149 | 53.00438 | 10.78940 | 0.1073556 | 3.0318500 | 9 | 1 | 8 days | 0.30 | | | MPC | | 2001 $US_{224}$ |
| 2001 $UF_{225}$ | 16.2 | 0.15 | 20060922 | 296.32467 | 252.58200 | 185.01244 | 13.99210 | 0.2458699 | 3.1451808 | 14 | 1 | 78 days | 0.33 | M-v | 4 | MPC | | 2001 $UF_{225}$ |
| 2001 $VF_1$ | 15.2 | 0.15 | 20060922 | 331.67074 | 284.62499 | 92.39555 | 18.76386 | 0.2957613 | 3.0456342 | 46 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 04183 | 2001 $VF_1$ |
| 2001 $VT_1$ | 16.7 | 0.15 | 20060922 | 330.25739 | 71.38180 | 306.97854 | 19.50083 | 0.0571593 | 1.8873608 | 112 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04183 | 2001 $VT_1$ |
| 2001 $VM_2$ | 17.5 | 0.15 | 20060922 | 272.72011 | 43.71756 | 55.10749 | 23.43950 | 0.0725121 | 1.8863279 | 70 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 75203 | 2001 $VM_2$ |
| 2001 $VC_3$ | 16.3 | 0.15 | 20060922 | 329.78061 | 11.41885 | 35.72138 | 10.16005 | 0.0690145 | 3.0344283 | 33 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 50572 | 2001 $VC_3$ |
| 2001 $VX_3$ | 16.5 | 0.15 | 20060922 | 35.10937 | 129.11681 | 261.18987 | 3.07804 | 0.2132290 | 2.7824839 | 64 | 3 | 2001–2006 | 0.53 | M-v | 1 | MPC | 85186 | 2001 $VX_3$ |
| 2001 $VU_4$ | 14.8 | 0.15 | 20060922 | 55.12994 | 86.81016 | 269.12984 | 26.05926 | 0.2126156 | 2.6659962 | 77 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 87495 | 2001 $VU_4$ |
| 2001 $VD_5$ | 16.2 | 0.15 | 20060922 | 247.73569 | 219.78565 | 252.10756 | 18.65870 | 0.0908135 | 1.9248944 | 95 | 4 | 1977–2006 | 0.69 | M-v | 2 | MPC | 04183 | 2001 $VD_5$ |
| 2001 $VZ_5$ | 17.0 | 0.15 | 20060922 | 91.93067 | 171.54090 | 179.27095 | 3.16580 | 0.2522612 | 2.5981247 | 108 | 2 | 2001–2005 | 0.51 | M-v | 3 | MPC | 02049 | 2001 $VZ_5$ |
| 2001 $VL_6$ | 15.8 | 0.15 | 20060922 | 9.79467 | 293.03495 | 36.29068 | 6.47897 | 0.2838099 | 3.0760165 | 60 | 4 | 1990–2006 | 0.46 | M-v | 1 | MPC | 03260 | 2001 $VL_6$ |
| 2001 $VO_6$ | 15.5 | 0.15 | 20060922 | 75.00051 | 294.70652 | 35.96245 | 4.75731 | 0.1077165 | 2.8131482 | 60 | 5 | 1996–2006 | 0.46 | M-v | 1 | MPC | 90111 | 2001 $VO_6$ |
| 2001 $VR_6$ | 16.3 | 0.15 | 20060922 | 327.58697 | 22.01008 | 28.06234 | 2.76482 | 0.2131964 | 3.0444347 | 116 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04183 | 2001 $VR_6$ |
| 2001 $VS_6$ | 15.7 | 0.15 | 20060922 | 172.39292 | 67.72264 | 232.65506 | 2.78703 | 0.0812709 | 2.5286829 | 138 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 97500 | 2001 $VS_6$ |
| 2001 $VO_7$ | 16.2 | 0.15 | 20060922 | 278.05808 | 70.11390 | 45.92155 | 9.40779 | 0.0252858 | 2.9570045 | 72 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 50572 | 2001 $VO_7$ |
| 2001 $VQ_7$ | 16.1 | 0.15 | 20060922 | 297.92501 | 124.04294 | 52.28393 | 1.55315 | 0.0827918 | 2.5921486 | 73 | 5 | 1992–2006 | 0.52 | M-v | 1 | MPC | 97500 | 2001 $VQ_7$ |
| 2001 $VR_7$ | 15.4 | 0.15 | 20060922 | 315.04426 | 200.31617 | 226.01879 | 8.52683 | 0.1337449 | 3.0450270 | 102 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 65131 | 2001 $VR_7$ |
| 2001 $VV_7$ | 15.0 | 0.15 | 20060922 | 304.42813 | 92.32510 | 35.93062 | 9.31625 | 0.0869123 | 2.7984228 | 82 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 48146 | 2001 $VV_7$ |
| 2001 $VY_7$ | 15.6 | 0.15 | 20060922 | 266.91603 | 179.40479 | 275.46577 | 2.66439 | 0.1483114 | 3.1983901 | 52 | 4 | 2001–2006 | 0.67 | M-v | 0 | MPC | 66236 | 2001 $VY_7$ |
| 2001 $VV_8$ | 16.2 | 0.15 | 20060922 | 72.28840 | 13.38617 | 3.96072 | 2.01729 | 0.2209475 | 2.6544430 | 102 | 4 | 1998–2005 | 0.56 | M-v | 2 | MPC | 90111 | 2001 $VV_8$ |
| 2001 $VL_9$ | 15.2 | 0.15 | 20060922 | 279.78424 | 234.98760 | 247.19935 | 10.42775 | 0.2203426 | 3.1236873 | 94 | 4 | 1990–2006 | 0.53 | M-v | 1 | MPC | 46862 | 2001 $VL_9$ |
| 2001 $VQ_9$ | 15.6 | 0.15 | 20060922 | 279.15113 | 57.66749 | 67.48547 | 9.99017 | 0.0564369 | 2.9850944 | 72 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 43152 | 2001 $VQ_9$ |
| 2001 $VA_{10}$ | 14.8 | 0.15 | 20060922 | 5.23611 | 54.90806 | 285.35725 | 9.23157 | 0.2841879 | 3.0164406 | 110 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 03260 | 2001 $VA_{10}$ |
| 2001 $VW_{10}$ | 15.2 | 0.15 | 20060922 | 299.57079 | 51.45151 | 31.05887 | 12.35811 | 0.1033725 | 3.0311386 | 72 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 43153 | 2001 $VW_{10}$ |
| 2001 $VL_{11}$ | 15.1 | 0.15 | 20060922 | 45.62434 | 142.81597 | 276.40376 | 10.54928 | 0.0223655 | 2.6207844 | 79 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97500 | 2001 $VL_{11}$ |
| 2001 $VM_{11}$ | 15.9 | 0.15 | 20060922 | 3.93345 | 158.67218 | 288.99338 | 8.22482 | 0.1636224 | 2.7238458 | 50 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 85190 | 2001 $VM_{11}$ |
| 2001 $VU_{11}$ | 15.1 | 0.15 | 20060922 | 39.20616 | 98.64217 | 262.80519 | 13.58549 | 0.1708923 | 2.8625627 | 78 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 75204 | 2001 $VU_{11}$ |
| 2001 $VV_{11}$ | 14.8 | 0.15 | 20060922 | 104.45149 | 62.47211 | 306.74507 | 7.41412 | 0.1231090 | 2.5583667 | 157 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97501 | 2001 $VV_{11}$ |
| 2001 $VR_{12}$ | 16.0 | 0.15 | 20060922 | 31.46349 | 112.22020 | 291.31621 | 11.46203 | 0.2053652 | 2.7637972 | 45 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 85192 | 2001 $VR_{12}$ |
| 2001 $VT_{12}$ | 15.1 | 0.15 | 20060922 | 47.69670 | 91.11183 | 290.23123 | 10.18498 | 0.1966019 | 2.7633571 | 86 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 90111 | 2001 $VT_{12}$ |
| 2001 $VG_{13}$ | 15.9 | 0.15 | 20060922 | 163.89275 | 299.97714 | 358.24435 | 2.70676 | 0.1138637 | 2.5621239 | 100 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 97501 | 2001 $VG_{13}$ |
| 2001 $VO_{13}$ | 15.1 | 0.15 | 20060922 | 311.43044 | 189.45578 | 261.32556 | 12.76589 | 0.1347888 | 2.9858332 | 61 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 85192 | 2001 $VO_{13}$ |
| 2001 $VU_{13}$ | 15.0 | 0.15 | 20060922 | 6.21724 | 75.83033 | 250.94713 | 24.16860 | 0.3193700 | 3.1432317 | 47 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 04183 | 2001 $VU_{13}$ |
| 2001 $VY_{13}$ | 15.8 | 0.15 | 20060922 | 297.32096 | 57.79907 | 37.13343 | 16.68332 | 0.2033093 | 3.0905405 | 63 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 03260 | 2001 $VY_{13}$ |
| 2001 $VF_{15}$ | 15.2 | 0.15 | 20060922 | 340.07466 | 78.45915 | 336.64015 | 4.32383 | 0.2159866 | 3.0060462 | 113 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 04183 | 2001 $VF_{15}$ |
| 2001 $VF_{16}$ | 19.1 | 0.15 | 20060922 | 137.84553 | 327.54095 | 275.41426 | 9.33150 | 0.0652457 | 1.3972091 | 50 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 65133 | 2001 $VF_{16}$ |
| 2001 $VH_{16}$ | 15.4 | 0.15 | 20060922 | 345.80863 | 110.70635 | 257.90154 | 9.56767 | 0.1172741 | 3.1076121 | 60 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 04183 | 2001 $VH_{16}$ |
| 2001 $VM_{16}$ | 15.5 | 0.15 | 20060922 | 355.22019 | 69.70819 | 5.51877 | 6.26392 | 0.0434309 | 2.7875800 | 136 | 5 | 1996–2006 | 0.54 | M-v | 0 | MPC | 97501 | 2001 $VM_{16}$ |
| 2001 $VV_{16}$ | 14.6 | 0.15 | 20060922 | 1.06542 | 75.56319 | 273.21929 | 20.57868 | 0.2259798 | 3.0383753 | 51 | 2 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04183 | 2001 $VV_{16}$ |
| 2001 $VC_{17}$ | 14.9 | 0.15 | 20060922 | 249.36397 | 137.53498 | 5.18968 | 17.25184 | 0.1265343 | 3.1020377 | 109 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04183 | 2001 $VC_{17}$ |
| 2001 $VC_{18}$ | 14.7 | 0.15 | 20060922 | 39.04938 | 278.49747 | 44.44322 | 12.31050 | 0.0740976 | 3.0810623 | 106 | 5 | 1999–2006 | 0.52 | M-v | 0 | MPC | 61188 | 2001 $VC_{18}$ |
| 2001 $VX_{18}$ | 15.4 | 0.15 | 20060922 | 345.26684 | 350.48992 | 40.43115 | 4.12827 | 0.1251120 | 3.0307334 | 94 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 66236 | 2001 $VX_{18}$ |
| 2001 $VB_{19}$ | 15.5 | 0.15 | 20060922 | 333.83810 | 79.34839 | 37.70042 | 5.22564 | 0.1052115 | 2.7137637 | 142 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 90112 | 2001 $VB_{19}$ |
| 2001 $VQ_{19}$ | 15.1 | 0.15 | 20060922 | 37.62893 | 187.55420 | 230.52206 | 8.06365 | 0.1604635 | 2.6579377 | 163 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97501 | 2001 $VQ_{19}$ |
| 2001 $VG_{20}$ | 17.3 | 0.15 | 20060922 | 60.19489 | 172.44977 | 234.96900 | 6.39798 | 0.2126483 | 2.5981091 | 54 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 89046 | 2001 $VG_{20}$ |
| 2001 $VN_{20}$ | 15.5 | 0.15 | 20060922 | 352.53179 | 243.18077 | 253.13415 | 1.82078 | 0.0827996 | 2.5574817 | 203 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97501 | 2001 $VN_{20}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $VZ_{20}$ | 15.0 | 0.15 | 20060922 | 341.72805 | 355.52378 | 19.84600 | 2.01934 | 0.1252956 | 3.1513773 | 100 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 04183 | 2001 $VZ_{20}$ |
| 2001 $VK_{21}$ | 16.6 | 0.15 | 20060922 | 82.99118 | 5.19341 | 41.60717 | 5.60160 | 0.1341342 | 2.5157317 | 77 | 3 | 2001–2005 | 0.61 | M-v | 3 | MPC | 97501 | 2001 $VK_{21}$ |
| 2001 $VE_{22}$ | 15.8 | 0.15 | 20060922 | 91.70250 | 335.72405 | 19.46406 | 2.76211 | 0.1483500 | 2.6478329 | 161 | 5 | 1993–2006 | 0.53 | M-v | 1 | MPC | 97501 | 2001 $VE_{22}$ |
| 2001 $VL_{23}$ | 15.6 | 0.15 | 20060922 | 345.27307 | 63.15879 | 338.68656 | 1.04635 | 0.1824808 | 3.0095631 | 150 | 4 | 1993–2006 | 0.46 | M-v | 2 | MPC | 03261 | 2001 $VL_{23}$ |
| 2001 $VB_{25}$ | 15.0 | 0.15 | 20060922 | 279.10262 | 67.51877 | 53.07040 | 10.58909 | 0.0494758 | 3.0089548 | 107 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 75206 | 2001 $VB_{25}$ |
| 2001 $VG_{26}$ | 15.4 | 0.15 | 20060922 | 53.44132 | 127.37339 | 237.87606 | 4.97583 | 0.2726946 | 2.7585971 | 102 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 85199 | 2001 $VG_{26}$ |
| 2001 $VF_{28}$ | 15.1 | 0.15 | 20060922 | 324.85553 | 4.86584 | 59.49396 | 8.32293 | 0.1590401 | 3.0682980 | 85 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 46874 | 2001 $VF_{28}$ |
| 2001 $VP_{28}$ | 15.8 | 0.15 | 20060922 | 123.84386 | 66.26506 | 271.51277 | 1.65866 | 0.1985025 | 2.5858839 | 113 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97502 | 2001 $VP_{28}$ |
| 2001 $VB_{29}$ | 15.2 | 0.15 | 20060922 | 309.70824 | 3.83545 | 59.32619 | 3.20355 | 0.2144917 | 3.1755459 | 64 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 04184 | 2001 $VB_{29}$ |
| 2001 $VH_{29}$ | 15.7 | 0.15 | 20060922 | 116.91785 | 234.89919 | 125.32363 | 0.99418 | 0.1318922 | 2.5565106 | 170 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 97502 | 2001 $VH_{29}$ |
| 2001 $VF_{31}$ | 14.7 | 0.15 | 20060922 | 291.90554 | 27.51235 | 68.93644 | 9.72480 | 0.0727214 | 3.1237725 | 87 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 48149 | 2001 $VF_{31}$ |
| 2001 $VP_{31}$ | 15.3 | 0.15 | 20060922 | 346.17603 | 245.08280 | 152.12322 | 0.67346 | 0.2004617 | 3.0605482 | 153 | 4 | 1990–2006 | 0.40 | M-v | 0 | MPC | 04184 | 2001 $VP_{31}$ |
| 2001 $VS_{31}$ | 15.7 | 0.15 | 20060922 | 275.51609 | 56.90394 | 68.04189 | 17.17450 | 0.2164526 | 3.1445664 | 51 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87496 | 2001 $VS_{31}$ |
| 2001 $VB_{32}$ | 15.9 | 0.15 | 20060922 | 90.30312 | 113.53633 | 267.05302 | 4.25616 | 0.1006880 | 2.6204729 | 119 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 97502 | 2001 $VB_{32}$ |
| 2001 $VJ_{34}$ | 15.4 | 0.15 | 20060922 | 19.61924 | 14.60125 | 71.85573 | 6.58543 | 0.1953540 | 2.7042579 | 114 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 97502 | 2001 $VJ_{34}$ |
| 2001 $VP_{36}$ | 15.7 | 0.15 | 20060922 | 43.28187 | 20.04351 | 25.47843 | 2.92734 | 0.1889190 | 2.7336454 | 119 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 97503 | 2001 $VP_{36}$ |
| 2001 $VL_{37}$ | 15.4 | 0.15 | 20060922 | 96.59679 | 277.80922 | 88.63745 | 5.00571 | 0.2296631 | 2.6024768 | 169 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 97503 | 2001 $VL_{37}$ |
| 2001 $VR_{37}$ | 15.3 | 0.15 | 20060922 | 340.77959 | 308.45903 | 94.81851 | 4.54725 | 0.3243153 | 3.0501010 | 148 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04184 | 2001 $VR_{37}$ |
| 2001 $VW_{37}$ | 16.0 | 0.15 | 20060922 | 181.52522 | 309.20655 | 353.34511 | 1.66492 | 0.0409248 | 2.5292480 | 102 | 6 | 1995–2006 | 0.58 | M-v | 2 | MPC | 97503 | 2001 $VW_{37}$ |
| 2001 $VM_{38}$ | 16.9 | 0.15 | 20060922 | 56.84973 | 63.28641 | 340.25642 | 1.40240 | 0.2100560 | 2.6339183 | 55 | 2 | 2001–2005 | 0.60 | M-v | 4 | MPC | 90113 | 2001 $VM_{38}$ |
| 2001 $VS_{38}$ | 16.0 | 0.15 | 20060922 | 36.96012 | 118.32706 | 309.52857 | 1.85458 | 0.0192006 | 2.6481137 | 66 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 90113 | 2001 $VS_{38}$ |
| 2001 $VC_{39}$ | 15.8 | 0.15 | 20060922 | 59.94009 | 316.56914 | 54.23108 | 4.00746 | 0.1153586 | 2.7705477 | 89 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85203 | 2001 $VC_{39}$ |
| 2001 $VJ_{39}$ | 16.0 | 0.15 | 20060922 | 90.88364 | 299.41906 | 100.38833 | 0.97609 | 0.1546049 | 2.5230276 | 182 | 4 | 1995–2006 | 0.54 | M-v | 2 | MPC | 97503 | 2001 $VJ_{39}$ |
| 2001 $VP_{39}$ | 14.9 | 0.15 | 20060922 | 351.53341 | 314.34845 | 61.54219 | 19.69969 | 0.0995406 | 3.1658749 | 65 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 89055 | 2001 $VP_{39}$ |
| 2001 $VM_{40}$ | 16.0 | 0.15 | 20060922 | 351.35645 | 65.19171 | 47.48336 | 4.44430 | 0.1554125 | 2.7417089 | 55 | 4 | 1994–2005 | 0.54 | M-v | 1 | MPC | 04184 | 2001 $VM_{40}$ |
| 2001 $VU_{40}$ | 16.9 | 0.15 | 20060922 | 219.09546 | 273.32806 | 240.37415 | 20.31503 | 0.0561210 | 1.9098487 | 58 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 77577 | 2001 $VU_{40}$ |
| 2001 $VE_{41}$ | 14.8 | 0.15 | 20060922 | 318.25527 | 161.22398 | 254.70423 | 15.14887 | 0.1016664 | 3.2032325 | 78 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 89056 | 2001 $VE_{41}$ |
| 2001 $VK_{41}$ | 16.1 | 0.15 | 20060922 | 35.25080 | 324.94713 | 68.75292 | 8.05803 | 0.2359743 | 2.7989879 | 51 | 4 | 1993–2005 | 0.70 | M-v | 1 | MPC | 89056 | 2001 $VK_{41}$ |
| 2001 $VR_{41}$ | 14.6 | 0.15 | 20060922 | 201.30630 | 58.62996 | 37.07151 | 4.10650 | 0.2151160 | 3.9485218 | 68 | 4 | 2000–2004 | 0.67 | M-v | 1 | MPC | 62380 | 2001 $VR_{41}$ |
| 2001 $VK_{42}$ | 14.9 | 0.15 | 20060922 | 104.73170 | 114.02949 | 254.72932 | 13.85689 | 0.1269865 | 2.6077210 | 186 | 3 | 1996–2006 | 0.49 | M-v | 2 | MPC | 97503 | 2001 $VK_{42}$ |
| 2001 $VU_{42}$ | 14.9 | 0.15 | 20060922 | 354.59002 | 145.16447 | 254.19319 | 10.72148 | 0.1423047 | 3.0416894 | 74 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 75208 | 2001 $VU_{42}$ |
| 2001 $VP_{43}$ | 14.3 | 0.15 | 20060922 | 280.27162 | 208.06808 | 261.19487 | 15.97895 | 0.1434407 | 3.1896843 | 88 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 85205 | 2001 $VP_{43}$ |
| 2001 $VK_{45}$ | 15.7 | 0.15 | 20060922 | 347.74451 | 184.34980 | 261.28802 | 9.57262 | 0.2847405 | 2.9046279 | 83 | 5 | 1996–2006 | 0.59 | M-v | 2 | MPC | 85205 | 2001 $VK_{45}$ |
| 2001 $VQ_{45}$ | 16.2 | 0.15 | 20060922 | 263.27590 | 23.43701 | 74.07994 | 23.73257 | 0.0798795 | 1.9440471 | 68 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 04184 | 2001 $VQ_{45}$ |
| 2001 $VL_{46}$ | 14.2 | 0.15 | 20060922 | 296.69938 | 212.93376 | 273.43165 | 12.58707 | 0.2444541 | 3.0946248 | 96 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 85205 | 2001 $VL_{46}$ |
| 2001 $VZ_{47}$ | 15.2 | 0.15 | 20060922 | 155.48111 | 314.48836 | 23.35944 | 2.39820 | 0.1698657 | 2.5135824 | 159 | 6 | 1995–2006 | 0.50 | M-v | 2 | MPC | 97504 | 2001 $VZ_{47}$ |
| 2001 $VA_{48}$ | 14.8 | 0.15 | 20060922 | 6.22500 | 297.24131 | 86.52859 | 11.17816 | 0.1452751 | 3.0551232 | 87 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 85206 | 2001 $VA_{48}$ |
| 2001 $VG_{48}$ | 15.3 | 0.15 | 20060922 | 128.79479 | 88.52421 | 259.33416 | 0.88204 | 0.2352469 | 2.5520692 | 185 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 97504 | 2001 $VG_{48}$ |
| 2001 $VN_{49}$ | 14.7 | 0.15 | 20060922 | 351.71205 | 82.13971 | 300.57269 | 8.24343 | 0.0868253 | 2.9747026 | 111 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 40886 | 2001 $VN_{49}$ |
| 2001 $VW_{49}$ | 16.5 | 0.15 | 20060922 | 31.11109 | 118.03281 | 323.98389 | 6.73670 | 0.1825461 | 2.5960723 | 90 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97504 | 2001 $VW_{49}$ |
| 2001 $VB_{50}$ | 15.7 | 0.15 | 20060922 | 11.68291 | 130.69425 | 281.45359 | 6.69499 | 0.2191863 | 2.7808293 | 50 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 85207 | 2001 $VB_{50}$ |
| 2001 $VD_{50}$ | 14.5 | 0.15 | 20060922 | 289.05360 | 144.98954 | 285.81859 | 8.27766 | 0.0754317 | 3.1448688 | 45 | 4 | 2001–2006 | 0.35 | M-v | 1 | MPC | 50573 | 2001 $VD_{50}$ |
| 2001 $VF_{50}$ | 14.8 | 0.15 | 20060922 | 137.97928 | 49.80528 | 298.20460 | 6.77347 | 0.0360448 | 2.4912409 | 171 | 5 | 1999–2006 | 0.53 | M-v | 2 | MPC | 97504 | 2001 $VF_{50}$ |
| 2001 $VS_{50}$ | 15.6 | 0.15 | 20060922 | 61.91634 | 87.07488 | 312.79186 | 5.59548 | 0.1831070 | 2.5987811 | 130 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97504 | 2001 $VS_{50}$ |
| 2001 $VX_{50}$ | 15.3 | 0.15 | 20060922 | 356.48887 | 14.85669 | 351.41142 | 8.75812 | 0.1661069 | 3.0554003 | 114 | 3 | 1998–2006 | 0.42 | M-v | 2 | MPC | 04184 | 2001 $VX_{50}$ |
| 2001 $VG_{51}$ | 15.0 | 0.15 | 20060922 | 284.33310 | 150.31071 | 291.84174 | 9.28491 | 0.2100673 | 3.1496780 | 49 | 2 | 2001–2006 | 0.57 | M-v | 4 | MPC | 03261 | 2001 $VG_{51}$ |
| 2001 $VH_{51}$ | 14.9 | 0.15 | 20060922 | 315.98278 | 195.86319 | 229.53800 | 21.76019 | 0.1104964 | 2.9904454 | 79 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 65144 | 2001 $VH_{51}$ |
| 2001 $VR_{51}$ | 15.2 | 0.15 | 20060922 | 297.45290 | 152.19666 | 265.19028 | 9.58795 | 0.0874517 | 3.1523900 | 57 | 4 | 2000–2006 | 0.64 | M-v | 0 | MPC | 04184 | 2001 $VR_{51}$ |
| 2001 $VU_{52}$ | 15.9 | 0.15 | 20060922 | 62.76109 | 68.34178 | 305.63108 | 5.62196 | 0.1497532 | 2.6713840 | 67 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85209 | 2001 $VU_{52}$ |
| 2001 $VX_{52}$ | 15.3 | 0.15 | 20060922 | 127.43871 | 67.80028 | 245.05196 | 13.19100 | 0.1106521 | 2.6309212 | 64 | 2 | 2001–2005 | 0.55 | M-v | 4 | MPC | 90114 | 2001 $VX_{52}$ |
| 2001 $VB_{53}$ | 15.1 | 0.15 | 20060922 | 36.40893 | 176.55489 | 241.32196 | 13.15334 | 0.1138692 | 2.6400392 | 75 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 90114 | 2001 $VB_{53}$ |
| 2001 $VC_{53}$ | 15.3 | 0.15 | 20060922 | 341.69215 | 101.85363 | 270.69020 | 9.82272 | 0.1624370 | 3.0980640 | 40 | 2 | 2001–2006 | 0.59 | M-v | 4 | MPC | 03261 | 2001 $VC_{53}$ |
| 2001 $VR_{53}$ | 15.6 | 0.15 | 20060922 | 308.72555 | 69.10721 | 18.70553 | 6.00217 | 0.2310668 | 3.0057180 | 106 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 48151 | 2001 $VR_{53}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $VX_{53}$ | 16.0 | 0.15 | 20011018 | 339.63333 | 169.33412 | 252.51442 | 6.32563 | 0.0624702 | 2.7260219 | 28 | 1 | 36 days | 0.52 | | | MPC | | 2001 $VX_{53}$ |
| 2001 $VM_{54}$ | 16.0 | 0.15 | 20060922 | 35.92325 | 26.50694 | 6.39362 | 8.46296 | 0.1763844 | 2.7341791 | 32 | 3 | 2001–2005 | 0.43 | M-v | 3 | MPC | 03262 | 2001 $VM_{54}$ |
| 2001 $VK_{55}$ | 15.3 | 0.15 | 20060922 | 67.74398 | 11.83365 | 320.34783 | 4.34923 | 0.2142247 | 2.7815172 | 63 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 97504 | 2001 $VK_{55}$ |
| 2001 $VY_{55}$ | 15.7 | 0.15 | 20060922 | 299.20116 | 177.28478 | 267.42741 | 8.64596 | 0.1848606 | 3.0694493 | 59 | 4 | 1995–2006 | 0.59 | M-v | 2 | MPC | 26045 | 2001 $VY_{55}$ |
| 2001 $VB_{56}$ | 16.0 | 0.15 | 20060922 | 72.60053 | 64.46363 | 307.85573 | 4.16566 | 0.1484788 | 2.6441880 | 78 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 97504 | 2001 $VB_{56}$ |
| 2001 $VE_{56}$ | 16.3 | 0.15 | 20060922 | 284.80192 | 68.75022 | 28.42139 | 13.55920 | 0.2833280 | 3.1538506 | 47 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 46890 | 2001 $VE_{56}$ |
| 2001 $VH_{56}$ | 15.5 | 0.15 | 20060922 | 329.18426 | 138.33708 | 323.44297 | 4.82396 | 0.0399723 | 2.7683537 | 103 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 87497 | 2001 $VH_{56}$ |
| 2001 $VT_{56}$ | 16.0 | 0.15 | 20060922 | 49.15247 | 244.12145 | 79.27566 | 3.80134 | 0.0797065 | 2.9911507 | 48 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 85210 | 2001 $VT_{56}$ |
| 2001 $VE_{57}$ | 15.7 | 0.15 | 20060922 | 48.17610 | 23.81213 | 352.84231 | 6.01564 | 0.0826181 | 2.7564358 | 32 | 3 | 2001–2005 | 0.52 | M-v | 4 | MPC | 85211 | 2001 $VE_{57}$ |
| 2001 $VB_{58}$ | 15.4 | 0.15 | 20060922 | 88.49252 | 313.55866 | 16.24264 | 3.78178 | 0.2550076 | 2.6763282 | 137 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97504 | 2001 $VB_{58}$ |
| 2001 $VE_{58}$ | 15.5 | 0.15 | 20060922 | 34.09466 | 126.01332 | 243.58070 | 6.53524 | 0.2461405 | 2.8073008 | 70 | 3 | 1998–2006 | 0.54 | M-v | 3 | MPC | 23912 | 2001 $VE_{58}$ |
| 2001 $VR_{58}$ | 15.1 | 0.15 | 20060922 | 322.37977 | 20.22490 | 19.77133 | 12.89958 | 0.1392224 | 3.1290516 | 63 | 2 | 2001–2006 | 0.55 | M-v | 3 | MPC | 03262 | 2001 $VR_{58}$ |
| 2001 $VS_{58}$ | 16.0 | 0.15 | 20060922 | 285.99255 | 90.05177 | 359.45133 | 7.78145 | 0.1792131 | 3.1382779 | 43 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 50573 | 2001 $VS_{58}$ |
| 2001 $VC_{59}$ | 15.7 | 0.15 | 20060922 | 341.52410 | 6.08104 | 355.05115 | 4.45489 | 0.1801067 | 3.1755500 | 74 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04184 | 2001 $VC_{59}$ |
| 2001 $VD_{60}$ | 15.8 | 0.15 | 20060922 | 195.92400 | 304.04563 | 356.56718 | 4.80753 | 0.1039678 | 2.4427737 | 56 | 6 | 1993–2006 | 0.45 | M-v | 1 | MPC | 97504 | 2001 $VD_{60}$ |
| 2001 $VL_{60}$ | 16.1 | 0.15 | 20060922 | 4.28690 | 103.16729 | 350.37950 | 2.91774 | 0.0557288 | 2.6602914 | 128 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90114 | 2001 $VL_{60}$ |
| 2001 $VT_{60}$ | 15.9 | 0.15 | 20060922 | 10.10510 | 183.58640 | 256.69760 | 7.60633 | 0.1504122 | 2.7120076 | 46 | 3 | 2001–2005 | 0.70 | M-v | 3 | MPC | 89060 | 2001 $VT_{60}$ |
| 2001 $VZ_{60}$ | 15.9 | 0.15 | 20060922 | 273.82015 | 81.73679 | 29.62245 | 16.17434 | 0.2307880 | 3.1539641 | 65 | 3 | 2001–2006 | 0.75 | M-v | 1 | MPC | 87498 | 2001 $VZ_{60}$ |
| 2001 $VC_{61}$ | 16.5 | 0.15 | 20060922 | 78.79567 | 49.74279 | 302.55529 | 5.32660 | 0.0852894 | 2.7303526 | 31 | 4 | 1992–2005 | 0.58 | M-v | 1 | MPC | 02049 | 2001 $VC_{61}$ |
| 2001 $VQ_{61}$ | 15.9 | 0.15 | 20060922 | 335.31437 | 156.25590 | 312.31844 | 4.36122 | 0.1176013 | 2.7657208 | 43 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 85213 | 2001 $VQ_{61}$ |
| 2001 $VU_{61}$ | 15.5 | 0.15 | 20060922 | 340.80814 | 46.95067 | 339.95808 | 4.26944 | 0.1597541 | 3.0854744 | 97 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 03262 | 2001 $VU_{61}$ |
| 2001 $VG_{62}$ | 16.7 | 0.15 | 20060922 | 35.75552 | 203.16681 | 258.10884 | 4.99270 | 0.2502160 | 2.5635649 | 71 | 2 | 2001–2005 | 0.53 | M-v | 3 | MPC | 89061 | 2001 $VG_{62}$ |
| 2001 $VJ_{62}$ | 15.5 | 0.15 | 20060922 | 342.63660 | 138.00947 | 239.91201 | 10.09281 | 0.0931792 | 3.1343423 | 80 | 4 | 1999–2006 | 0.61 | M-v | 0 | MPC | 03262 | 2001 $VJ_{62}$ |
| 2001 $VY_{62}$ | 16.1 | 0.15 | 20060922 | 348.56693 | 162.38314 | 261.34793 | 7.15357 | 0.1965182 | 2.8926007 | 75 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 85214 | 2001 $VY_{62}$ |
| 2001 $VP_{64}$ | 14.0 | 0.15 | 20060922 | 41.30182 | 279.83182 | 37.30765 | 13.66544 | 0.1557566 | 3.1036115 | 129 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 61193 | 2001 $VP_{64}$ |
| 2001 $VA_{65}$ | 14.6 | 0.15 | 20060922 | 273.79832 | 70.08875 | 36.71458 | 11.88560 | 0.1993594 | 3.1874847 | 78 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 46894 | 2001 $VA_{65}$ |
| 2001 $VD_{65}$ | 15.4 | 0.15 | 20060922 | 83.82121 | 351.72617 | 38.01426 | 7.33578 | 0.1435584 | 2.5706898 | 190 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 97505 | 2001 $VD_{65}$ |
| 2001 $VD_{66}$ | 15.1 | 0.15 | 20060922 | 17.82774 | 40.15746 | 49.07946 | 14.24143 | 0.1707445 | 2.6772441 | 102 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 97505 | 2001 $VD_{66}$ |
| 2001 $VV_{66}$ | 15.6 | 0.15 | 20060922 | 82.49649 | 321.43109 | 43.12747 | 9.15588 | 0.0975479 | 2.6991280 | 76 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97505 | 2001 $VV_{66}$ |
| 2001 $VJ_{67}$ | 15.6 | 0.15 | 20060922 | 58.34525 | 126.30662 | 253.37516 | 11.69339 | 0.1724478 | 2.7318405 | 68 | 3 | 2001–2005 | 0.63 | M-v | 3 | MPC | 90114 | 2001 $VJ_{67}$ |
| 2001 $VV_{67}$ | 15.5 | 0.15 | 20060922 | 327.99475 | 206.59977 | 286.98084 | 9.90592 | 0.0551257 | 2.5940265 | 61 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 89064 | 2001 $VV_{67}$ |
| 2001 $VK_{68}$ | 14.8 | 0.15 | 20060922 | 330.57400 | 27.81146 | 341.18926 | 12.76307 | 0.1592587 | 3.1955722 | 57 | 2 | 2001–2006 | 0.45 | M-v | 2 | MPC | 03263 | 2001 $VK_{68}$ |
| 2001 $VA_{69}$ | 16.2 | 0.15 | 20060922 | 336.65362 | 72.20971 | 42.41107 | 3.38285 | 0.1473814 | 2.7248648 | 59 | 5 | 1997–2006 | 0.54 | M-v | 0 | MPC | 87498 | 2001 $VA_{69}$ |
| 2001 $VC_{69}$ | 16.3 | 0.15 | 20060922 | 331.30224 | 161.45437 | 222.03888 | 3.74436 | 0.1341816 | 3.1450269 | 39 | 4 | 2000–2006 | 0.53 | M-v | 0 | MPC | 04184 | 2001 $VC_{69}$ |
| 2001 $VJ_{69}$ | 14.9 | 0.15 | 20060922 | 84.17272 | 53.99821 | 295.51219 | 12.96171 | 0.1766533 | 2.6966890 | 116 | 7 | 1987–2006 | 0.49 | M-v | 1 | MPC | 97505 | 2001 $VJ_{69}$ |
| 2001 $VU_{69}$ | 15.4 | 0.15 | 20060922 | 12.44955 | 54.64537 | 320.63191 | 8.71804 | 0.1100482 | 2.9825991 | 53 | 5 | 2000–2006 | 0.50 | M-v | 0 | MPC | 87498 | 2001 $VU_{69}$ |
| 2001 $VD_{70}$ | 15.0 | 0.15 | 20060922 | 271.78666 | 284.22434 | 247.12192 | 23.83215 | 0.1215796 | 2.7760991 | 33 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 00086 | 2001 $VD_{70}$ |
| 2001 $VG_{70}$ | 15.4 | 0.15 | 20060922 | 260.88949 | 162.14666 | 343.09127 | 5.94652 | 0.1595119 | 3.0434282 | 57 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 87498 | 2001 $VG_{70}$ |
| 2001 $VN_{70}$ | 15.1 | 0.15 | 20060922 | 299.01986 | 63.23503 | 34.25538 | 9.51526 | 0.0325812 | 3.0197458 | 78 | 7 | 1990–2006 | 0.50 | M-v | 0 | MPC | 66240 | 2001 $VN_{70}$ |
| 2001 $VP_{70}$ | 16.0 | 0.15 | 20060922 | 325.19135 | 13.08159 | 43.44879 | 0.11634 | 0.1883252 | 3.1091230 | 100 | 5 | 1997–2006 | 0.41 | M-v | 0 | MPC | 04184 | 2001 $VP_{70}$ |
| 2001 $VQ_{70}$ | 16.5 | 0.15 | 20060922 | 49.31708 | 185.63258 | 242.39861 | 14.12404 | 0.1843278 | 2.6208717 | 39 | 2 | 2001–2005 | 0.71 | M-v | 3 | MPC | 89064 | 2001 $VQ_{70}$ |
| 2001 $VT_{70}$ | 15.7 | 0.15 | 20060922 | 350.85875 | 319.43764 | 79.51011 | 0.37803 | 0.1981429 | 3.0207140 | 120 | 3 | 1995–2006 | 0.43 | M-v | 2 | MPC | 04184 | 2001 $VT_{70}$ |
| 2001 $VG_{71}$ | 15.8 | 0.15 | 20060922 | 101.71163 | 340.50781 | 299.57601 | 18.00563 | 0.0708694 | 1.9254669 | 145 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 77578 | 2001 $VG_{71}$ |
| 2001 $VS_{71}$ | 14.8 | 0.15 | 20060922 | 1.27794 | 135.39379 | 249.64033 | 14.73274 | 0.0724564 | 3.1412374 | 35 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 23066 | 2001 $VS_{71}$ |
| 2001 $VZ_{71}$ | 15.8 | 0.15 | 20060922 | 92.67771 | 304.19200 | 26.02391 | 4.02028 | 0.2152050 | 2.6863516 | 126 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97505 | 2001 $VZ_{71}$ |
| 2001 $VF_{72}$ | 15.7 | 0.15 | 20060922 | 20.56526 | 306.04501 | 88.02343 | 16.38946 | 0.1601805 | 2.8105411 | 44 | 3 | 2001–2006 | 0.52 | M-v | 1 | MPC | 85220 | 2001 $VF_{72}$ |
| 2001 $VP_{72}$ | 16.0 | 0.15 | 20060922 | 294.97006 | 202.15413 | 348.94495 | 2.18732 | 0.1455873 | 2.4776106 | 99 | 5 | 1999–2006 | 0.49 | M-v | 2 | MPC | 97505 | 2001 $VP_{72}$ |
| 2001 $VS_{72}$ | 16.6 | 0.15 | 20060922 | 221.88772 | 236.13280 | 6.71257 | 2.25153 | 0.0794990 | 2.5217047 | 59 | 4 | 2001–2006 | 0.45 | M-v | 2 | MPC | 97505 | 2001 $VS_{72}$ |
| 2001 $VA_{73}$ | 15.4 | 0.15 | 20060922 | 181.57080 | 322.92482 | 222.97242 | 8.42129 | 0.0665457 | 3.0952111 | 67 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 77578 | 2001 $VA_{73}$ |
| 2001 $VU_{73}$ | 16.0 | 0.15 | 20060922 | 111.51677 | 29.28318 | 291.69387 | 13.44799 | 0.0983093 | 2.6415702 | 54 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 90115 | 2001 $VU_{73}$ |
| 2001 $VA_{74}$ | 15.2 | 0.15 | 20060922 | 45.57660 | 122.61112 | 306.55200 | 10.63195 | 0.1369363 | 2.5754515 | 76 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 97505 | 2001 $VA_{74}$ |
| 2001 $VQ_{74}$ | 17.0 | 0.15 | 20060922 | 332.25728 | 0.55682 | 28.10022 | 0.16477 | 0.1981466 | 3.1209893 | 28 | 3 | 1995–2006 | 0.34 | M-v | 2 | MPC | 04184 | 2001 $VQ_{74}$ |
| 2001 $VO_{75}$ | 16.5 | 0.15 | 20060922 | 287.26777 | 233.42762 | 216.29682 | 9.94510 | 0.0664223 | 2.9892840 | 24 | 3 | 1996–2006 | 0.43 | M-v | 3 | MPC | 48152 | 2001 $VO_{75}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $VX_{75}$ | 17.3 | 0.15 | 20060922 | 47.28757 | 178.36334 | 216.40113 | 2.55746 | 0.0954407 | 2.6741306 | 32 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 85221 | 2001 $VX_{75}$ |
| 2001 $VF_{76}$ | 16.4 | 0.15 | 20060922 | 352.42365 | 192.14565 | 280.65427 | 2.00503 | 0.0221326 | 2.6744992 | 42 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 90115 | 2001 $VF_{76}$ |
| 2001 $VV_{76}$ | 17.2 | 0.15 | 20060922 | 211.17683 | 65.13122 | 70.80306 | 22.47323 | 0.0687222 | 1.9362932 | 73 | 4 | 2000–2006 | 0.66 | M-v | 1 | MPC | 04184 | 2001 $VV_{76}$ |
| 2001 $VC_{77}$ | 15.2 | 0.15 | 20060922 | 28.71566 | 359.97661 | 68.24550 | 28.98055 | 0.1899939 | 2.6331154 | 47 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 85221 | 2001 $VC_{77}$ |
| 2001 $VK_{77}$ | 14.5 | 0.15 | 20060922 | 0.51513 | 267.28933 | 65.46920 | 25.98885 | 0.2684570 | 3.1878546 | 134 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04184 | 2001 $VK_{77}$ |
| 2001 $VE_{78}$ | 16.4 | 0.15 | 20060922 | 172.41681 | 14.07838 | 226.25866 | 8.45305 | 0.1487517 | 2.7053989 | 34 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 66240 | 2001 $VE_{78}$ |
| 2001 $VF_{78}$ | 15.7 | 0.15 | 20060922 | 127.67229 | 195.08365 | 183.71112 | 9.89507 | 0.2285621 | 2.4344028 | 104 | 5 | 1996–2005 | 0.57 | M-v | 1 | MPC | 97506 | 2001 $VF_{78}$ |
| 2001 $VC_{79}$ | 16.0 | 0.15 | 20060922 | 47.53984 | 178.55208 | 229.95141 | 7.32478 | 0.1695931 | 2.6547182 | 88 | 2 | 2001–2005 | 0.55 | M-v | 3 | MPC | 90115 | 2001 $VC_{79}$ |
| 2001 $VO_{79}$ | 16.5 | 0.15 | 20060922 | 78.14042 | 187.93947 | 181.59003 | 4.37795 | 0.2197986 | 2.6387166 | 101 | 4 | 1999–2005 | 0.46 | M-v | 1 | MPC | 90115 | 2001 $VO_{79}$ |
| 2001 $VO_{80}$ | 15.9 | 0.15 | 20060922 | 29.16949 | 178.36056 | 236.80342 | 12.88149 | 0.1702301 | 2.6957467 | 63 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 90115 | 2001 $VO_{80}$ |
| 2001 $VE_{81}$ | 14.7 | 0.15 | 20060922 | 321.53887 | 159.27418 | 237.47956 | 16.58927 | 0.2060423 | 3.1083847 | 87 | 2 | 2001–2006 | 0.52 | M-v | 3 | MPC | 03263 | 2001 $VE_{81}$ |
| 2001 $VG_{81}$ | 15.5 | 0.15 | 20060922 | 20.13540 | 340.60130 | 105.41406 | 11.21599 | 0.0962073 | 2.6499911 | 46 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 97506 | 2001 $VG_{81}$ |
| 2001 $VH_{81}$ | 15.3 | 0.15 | 20060922 | 309.81164 | 245.87174 | 167.09374 | 10.75802 | 0.0914795 | 3.2005776 | 70 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 04184 | 2001 $VH_{81}$ |
| 2001 $VQ_{81}$ | 15.7 | 0.15 | 20060922 | 8.76934 | 5.70902 | 69.24088 | 10.84144 | 0.2433184 | 2.7697705 | 141 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87499 | 2001 $VQ_{81}$ |
| 2001 $VK_{83}$ | 15.6 | 0.15 | 20060922 | 18.54105 | 138.26772 | 256.87745 | 3.28318 | 0.0789468 | 2.8070973 | 67 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 03264 | 2001 $VK_{83}$ |
| 2001 $VW_{83}$ | 15.0 | 0.15 | 20060922 | 351.86919 | 107.59636 | 268.43899 | 8.52925 | 0.0571585 | 3.0792509 | 61 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 40894 | 2001 $VW_{83}$ |
| 2001 $VE_{84}$ | 15.9 | 0.15 | 20060922 | 33.59292 | 338.38961 | 107.79626 | 5.27963 | 0.0847991 | 2.6170006 | 68 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 97506 | 2001 $VE_{84}$ |
| 2001 $VH_{84}$ | 15.7 | 0.15 | 20060922 | 86.80952 | 68.30289 | 279.57637 | 14.05193 | 0.1926543 | 2.5610254 | 119 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 97506 | 2001 $VH_{84}$ |
| 2001 $VQ_{84}$ | 14.8 | 0.15 | 20060922 | 324.48252 | 55.80177 | 336.19025 | 8.99368 | 0.0830101 | 3.1247694 | 70 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 04184 | 2001 $VQ_{84}$ |
| 2001 $VF_{85}$ | 15.8 | 0.15 | 20060922 | 64.37390 | 278.67453 | 77.65075 | 6.44989 | 0.0860704 | 2.7724094 | 47 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 94275 | 2001 $VF_{85}$ |
| 2001 $VG_{85}$ | 16.0 | 0.15 | 20060922 | 348.96929 | 106.95823 | 348.97071 | 6.87077 | 0.0579619 | 2.7012434 | 44 | 4 | 1996–2005 | 0.70 | M-v | 1 | MPC | 90115 | 2001 $VG_{85}$ |
| 2001 $VR_{85}$ | 16.0 | 0.15 | 20060922 | 23.79932 | 191.86836 | 268.40705 | 4.16757 | 0.1263185 | 2.5793234 | 71 | 2 | 2001–2005 | 0.51 | M-v | 4 | MPC | 89068 | 2001 $VR_{85}$ |
| 2001 $VU_{85}$ | 17.1 | 0.15 | 20060922 | 84.12316 | 197.84711 | 298.07376 | 5.47300 | 0.1373979 | 2.2667005 | 38 | 3 | 2001–2006 | 0.69 | M-v | 3 | MPC | 00087 | 2001 $VU_{85}$ |
| 2001 $VG_{86}$ | 15.3 | 0.15 | 20060922 | 297.94016 | 36.49449 | 34.30094 | 9.51818 | 0.0908580 | 3.1767258 | 35 | 4 | 1995–2006 | 0.63 | M-v | 1 | MPC | 48153 | 2001 $VG_{86}$ |
| 2001 $VF_{87}$ | 16.5 | 0.15 | 20060922 | 332.32923 | 161.47419 | 230.71635 | 24.07860 | 0.1208088 | 1.9200370 | 45 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 68966 | 2001 $VF_{87}$ |
| 2001 $VS_{87}$ | 16.4 | 0.15 | 20060922 | 22.40931 | 86.47052 | 251.69592 | 20.06931 | 0.0094193 | 1.8998405 | 88 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 49939 | 2001 $VS_{87}$ |
| 2001 $VY_{87}$ | 15.4 | 0.15 | 20060922 | 71.18442 | 254.68948 | 125.81326 | 7.00925 | 0.0457840 | 2.6208882 | 79 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 90115 | 2001 $VY_{87}$ |
| 2001 $VR_{88}$ | 15.4 | 0.15 | 20060922 | 21.19515 | 353.61909 | 91.27856 | 4.54603 | 0.0972794 | 2.6171810 | 91 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97506 | 2001 $VR_{88}$ |
| 2001 $VZ_{88}$ | 14.9 | 0.15 | 20060922 | 324.10272 | 86.47477 | 299.70968 | 11.26576 | 0.2262648 | 3.0885874 | 90 | 2 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03264 | 2001 $VZ_{88}$ |
| 2001 $VA_{89}$ | 15.5 | 0.15 | 20060922 | 327.74826 | 162.33110 | 264.58135 | 11.60919 | 0.0420202 | 2.9093874 | 44 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87499 | 2001 $VA_{89}$ |
| 2001 $VB_{89}$ | 15.6 | 0.15 | 20060922 | 359.80904 | 52.84855 | 295.57315 | 8.25600 | 0.1196632 | 3.1097107 | 56 | 3 | 2001–2006 | 0.69 | M-v | 3 | MPC | 04185 | 2001 $VB_{89}$ |
| 2001 $VJ_{89}$ | 15.6 | 0.15 | 20060922 | 308.84551 | 101.85947 | 318.41470 | 8.35419 | 0.0539819 | 3.0597119 | 24 | 3 | 2001–2006 | 0.65 | M-v | 5 | MPC | 61195 | 2001 $VJ_{89}$ |
| 2001 $VP_{89}$ | 15.6 | 0.15 | 20060922 | 110.63423 | 76.73215 | 253.63701 | 11.20410 | 0.1952350 | 2.6108050 | 94 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 89069 | 2001 $VP_{89}$ |
| 2001 $VR_{89}$ | 14.7 | 0.15 | 20060922 | 50.65823 | 88.78838 | 239.55781 | 11.78850 | 0.0772280 | 2.9903842 | 120 | 6 | 1991–2006 | 0.54 | M-v | 1 | MPC | 62381 | 2001 $VR_{89}$ |
| 2001 $VD_{90}$ | 14.9 | 0.15 | 20060922 | 336.30851 | 308.51848 | 105.95214 | 11.17953 | 0.0949547 | 2.9896410 | 51 | 5 | 2001–2006 | 0.62 | M-v | 1 | MPC | 87499 | 2001 $VD_{90}$ |
| 2001 $VN_{90}$ | 14.9 | 0.15 | 20060922 | 283.81806 | 7.28537 | 88.17890 | 19.49418 | 0.1002394 | 3.0959743 | 60 | 4 | 2001–2006 | 0.61 | M-v | 0 | MPC | 48153 | 2001 $VN_{90}$ |
| 2001 $VN_{91}$ | 16.3 | 0.15 | 20060922 | 359.99777 | 343.39197 | 114.66577 | 10.60010 | 0.1741325 | 2.7143384 | 43 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 85228 | 2001 $VN_{91}$ |
| 2001 $VP_{91}$ | 15.0 | 0.15 | 20060922 | 276.35287 | 274.86689 | 175.31275 | 11.45468 | 0.0944530 | 3.2047281 | 55 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 66240 | 2001 $VP_{91}$ |
| 2001 $VR_{91}$ | 15.1 | 0.15 | 20060922 | 295.96816 | 348.16093 | 91.12138 | 18.35986 | 0.0864374 | 3.1255859 | 59 | 5 | 1990–2006 | 0.50 | M-v | 1 | MPC | 87499 | 2001 $VR_{91}$ |
| 2001 $VB_{92}$ | 15.8 | 0.15 | 20060922 | 62.23355 | 235.20834 | 137.95380 | 9.71947 | 0.1452192 | 2.7216290 | 49 | 4 | 2001–2005 | 0.51 | M-v | 2 | MPC | 03264 | 2001 $VB_{92}$ |
| 2001 $VD_{92}$ | 15.6 | 0.15 | 20060922 | 302.69005 | 322.84235 | 121.90236 | 10.72870 | 0.1059849 | 3.0720704 | 33 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 89070 | 2001 $VD_{92}$ |
| 2001 $VV_{92}$ | 15.1 | 0.15 | 20060922 | 298.74224 | 278.26599 | 169.01571 | 11.41356 | 0.1303177 | 3.1141576 | 44 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 43456 | 2001 $VV_{92}$ |
| 2001 $VH_{93}$ | 15.1 | 0.15 | 20060922 | 1.10038 | 241.81714 | 117.91650 | 15.26132 | 0.2365305 | 3.0934204 | 44 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 04185 | 2001 $VH_{93}$ |
| 2001 $VQ_{93}$ | 14.5 | 0.15 | 20060922 | 320.18835 | 311.17577 | 98.29472 | 19.09037 | 0.2388566 | 3.1525370 | 78 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03264 | 2001 $VQ_{93}$ |
| 2001 $VR_{93}$ | 15.8 | 0.15 | 20060922 | 337.02082 | 263.87990 | 134.24176 | 11.22214 | 0.3112714 | 3.0715698 | 78 | 2 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03265 | 2001 $VR_{93}$ |
| 2001 $VL_{94}$ | 15.0 | 0.15 | 20060922 | 296.45561 | 338.85163 | 115.63323 | 18.77437 | 0.1873570 | 3.1277962 | 49 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87499 | 2001 $VL_{94}$ |
| 2001 $VR_{94}$ | 14.9 | 0.15 | 20060922 | 320.24278 | 214.26287 | 194.49378 | 14.89687 | 0.2791102 | 3.1665077 | 54 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 03265 | 2001 $VR_{94}$ |
| 2001 $VU_{94}$ | 15.4 | 0.15 | 20060922 | 92.46170 | 262.14118 | 110.36632 | 12.59197 | 0.3289113 | 2.5609036 | 127 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 97506 | 2001 $VU_{94}$ |
| 2001 $VA_{95}$ | 15.4 | 0.15 | 20060922 | 6.70099 | 257.13901 | 184.09846 | 12.69104 | 0.1360934 | 2.7880487 | 77 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 90116 | 2001 $VA_{95}$ |
| 2001 $VE_{95}$ | 15.7 | 0.15 | 20060922 | 318.72978 | 230.71199 | 200.68156 | 15.36990 | 0.2714647 | 3.1079764 | 67 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 46907 | 2001 $VE_{95}$ |
| 2001 $VV_{95}$ | 14.6 | 0.15 | 20060922 | 240.93475 | 307.15892 | 211.75552 | 25.62375 | 0.2759763 | 3.1793898 | 87 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 50574 | 2001 $VV_{95}$ |
| 2001 $VX_{95}$ | 15.6 | 0.15 | 20060922 | 348.36306 | 249.27390 | 141.85898 | 10.22300 | 0.1585334 | 3.0460616 | 69 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 23086 | 2001 $VX_{95}$ |
| 2001 $VA_{96}$ | 15.4 | 0.15 | 20060922 | 286.08217 | 308.15088 | 141.05560 | 12.92261 | 0.1145496 | 3.1727519 | 32 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 77578 | 2001 $VA_{96}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $VH_{96}$ | 16.3 | 0.15 | 20060922 | 337.16673 | 212.82010 | 183.05976 | 12.08788 | 0.3107348 | 3.0827045 | 61 | 2 | 2001–2006 | 0.58 | M-v | 3 | MPC | 03265 | 2001 $VH_{96}$ |
| 2001 $VU_{96}$ | 15.9 | 0.15 | 20060922 | 43.29572 | 274.65293 | 142.62224 | 12.00733 | 0.1897245 | 2.6964937 | 41 | 4 | 2000–2005 | 0.69 | M-v | 1 | MPC | 89071 | 2001 $VU_{96}$ |
| 2001 $VW_{96}$ | 15.2 | 0.15 | 20060922 | 329.14171 | 221.31050 | 182.92168 | 13.84840 | 0.2028416 | 3.1689450 | 116 | 4 | 2000–2006 | 0.45 | M-v | 0 | MPC | 03266 | 2001 $VW_{96}$ |
| 2001 $VL_{99}$ | 15.1 | 0.15 | 20060922 | 4.60760 | 359.84785 | 98.42721 | 16.52121 | 0.2468115 | 2.7030219 | 97 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 90116 | 2001 $VL_{99}$ |
| 2001 $VL_{100}$ | 16.2 | 0.15 | 20060922 | 83.74846 | 221.61911 | 187.14440 | 9.04314 | 0.1422399 | 2.5265700 | 58 | 3 | 2001–2005 | 0.63 | M-v | 3 | MPC | 94279 | 2001 $VL_{100}$ |
| 2001 $VM_{100}$ | 15.1 | 0.15 | 20060922 | 325.72743 | 326.79319 | 79.50012 | 20.66974 | 0.0846882 | 3.1270011 | 41 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 61196 | 2001 $VM_{100}$ |
| 2001 $VP_{100}$ | 15.5 | 0.15 | 20060922 | 21.05486 | 325.43197 | 88.36737 | 16.61756 | 0.1025037 | 2.7728332 | 54 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 74108 | 2001 $VP_{100}$ |
| 2001 $VU_{100}$ | 15.0 | 0.15 | 20060922 | 14.20811 | 112.18580 | 348.63356 | 15.30760 | 0.2059002 | 2.5795807 | 140 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 97507 | 2001 $VU_{100}$ |
| 2001 $VV_{100}$ | 15.9 | 0.15 | 20060922 | 170.10176 | 223.81670 | 45.36596 | 4.59154 | 0.1058563 | 2.6666955 | 72 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 97507 | 2001 $VV_{100}$ |
| 2001 $VX_{100}$ | 15.7 | 0.15 | 20060922 | 57.26993 | 113.36070 | 272.61253 | 4.70398 | 0.0743073 | 2.6822397 | 54 | 4 | 1994–2006 | 0.57 | M-v | 1 | MPC | 04185 | 2001 $VX_{100}$ |
| 2001 $VH_{101}$ | 15.7 | 0.15 | 20060922 | 327.55233 | 3.06209 | 28.56595 | 9.76994 | 0.0773776 | 3.1370188 | 44 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 40899 | 2001 $VH_{101}$ |
| 2001 $VJ_{101}$ | 15.8 | 0.15 | 20060922 | 321.61670 | 121.97901 | 345.80219 | 3.80310 | 0.0192508 | 2.7832448 | 66 | 4 | 2001–2006 | 0.45 | M-v | 0 | MPC | 97507 | 2001 $VJ_{101}$ |
| 2001 $VL_{101}$ | 15.9 | 0.15 | 20060922 | 38.16607 | 146.12088 | 259.31273 | 5.16519 | 0.1459516 | 2.6981090 | 67 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 02050 | 2001 $VL_{101}$ |
| 2001 $VC_{102}$ | 16.3 | 0.15 | 20060922 | 32.18329 | 133.76829 | 250.88018 | 7.34504 | 0.2201123 | 2.7923038 | 46 | 3 | 2001–2006 | 0.43 | M-v | 1 | MPC | 85232 | 2001 $VC_{102}$ |
| 2001 $VA_{103}$ | 16.2 | 0.15 | 20060922 | 123.50604 | 18.69058 | 300.58477 | 2.81921 | 0.2074789 | 2.6170709 | 74 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 89072 | 2001 $VA_{103}$ |
| 2001 $VS_{103}$ | 15.9 | 0.15 | 20060922 | 84.56981 | 84.04328 | 303.83044 | 2.06722 | 0.1666725 | 2.5657193 | 210 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 97507 | 2001 $VS_{103}$ |
| 2001 $VZ_{103}$ | 15.7 | 0.15 | 20060922 | 351.45620 | 335.77173 | 42.03903 | 10.13979 | 0.0566444 | 3.1163467 | 55 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 62381 | 2001 $VZ_{103}$ |
| 2001 $VJ_{104}$ | 14.7 | 0.15 | 20060922 | 31.04914 | 91.59347 | 259.83970 | 9.27025 | 0.0375280 | 3.0395376 | 75 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 66241 | 2001 $VJ_{104}$ |
| 2001 $VD_{105}$ | 15.5 | 0.15 | 20060922 | 299.55534 | 39.66084 | 38.71971 | 5.61703 | 0.1689257 | 3.1466136 | 64 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04185 | 2001 $VD_{105}$ |
| 2001 $VK_{105}$ | 16.1 | 0.15 | 20060922 | 35.65576 | 123.70634 | 260.39562 | 7.96142 | 0.2058417 | 2.7990740 | 51 | 3 | 2001–2006 | 0.50 | M-v | 1 | MPC | 85234 | 2001 $VK_{105}$ |
| 2001 $VH_{106}$ | 16.1 | 0.15 | 20060922 | 329.56669 | 285.93768 | 248.09810 | 11.65901 | 0.1958425 | 2.5388133 | 26 | 2 | 2001–2005 | 0.44 | M-v | 4 | MPC | 89074 | 2001 $VH_{106}$ |
| 2001 $VT_{106}$ | 16.3 | 0.15 | 20060922 | 219.74142 | 234.35708 | 338.01289 | 3.53226 | 0.0545387 | 2.7843558 | 48 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 97507 | 2001 $VT_{106}$ |
| 2001 $VO_{107}$ | 17.1 | 0.15 | 20060922 | 107.16189 | 66.19137 | 269.37430 | 2.68234 | 0.2262953 | 2.6202871 | 57 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 04185 | 2001 $VO_{107}$ |
| 2001 $VA_{109}$ | 16.1 | 0.15 | 20060922 | 69.56808 | 18.10939 | 339.97469 | 2.59686 | 0.1941563 | 2.7353081 | 81 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 85236 | 2001 $VA_{109}$ |
| 2001 $VF_{109}$ | 15.8 | 0.15 | 20060922 | 260.74252 | 115.58672 | 37.43554 | 5.83360 | 0.1611351 | 3.0071189 | 41 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 87500 | 2001 $VF_{109}$ |
| 2001 $VR_{110}$ | 15.4 | 0.15 | 20060922 | 36.26717 | 83.84735 | 259.92733 | 7.23000 | 0.0435609 | 3.0780717 | 52 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 87500 | 2001 $VR_{110}$ |
| 2001 $VY_{110}$ | 15.5 | 0.15 | 20060922 | 317.22389 | 164.20974 | 262.63630 | 7.94405 | 0.0738803 | 3.0905852 | 60 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 03266 | 2001 $VY_{110}$ |
| 2001 $VA_{112}$ | 17.0 | 0.15 | 20060922 | 192.65631 | 105.36921 | 260.94832 | 2.29036 | 0.1289090 | 2.2744681 | 78 | 5 | 1994–2006 | 0.65 | M-v | 1 | MPC | 97508 | 2001 $VA_{112}$ |
| 2001 $VD_{112}$ | 15.3 | 0.15 | 20060922 | 252.83503 | 84.09142 | 42.82924 | 9.68795 | 0.0533346 | 3.1625384 | 42 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 65156 | 2001 $VD_{112}$ |
| 2001 $VL_{112}$ | 15.1 | 0.15 | 20060922 | 1.69346 | 347.66936 | 10.72137 | 4.70543 | 0.2294372 | 3.1023908 | 141 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04185 | 2001 $VL_{112}$ |
| 2001 $VR_{112}$ | 16.3 | 0.15 | 20060922 | 0.21229 | 188.02920 | 269.07842 | 4.31082 | 0.1117658 | 2.7267003 | 57 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 02050 | 2001 $VR_{112}$ |
| 2001 $VY_{112}$ | 15.7 | 0.15 | 20060922 | 50.51582 | 67.62170 | 307.78598 | 2.96711 | 0.1155966 | 2.8051714 | 102 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 90117 | 2001 $VY_{112}$ |
| 2001 $VC_{113}$ | 15.7 | 0.15 | 20060922 | 33.30528 | 146.44826 | 267.49799 | 7.95638 | 0.1364234 | 2.7340573 | 80 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 90117 | 2001 $VC_{113}$ |
| 2001 $VE_{113}$ | 15.0 | 0.15 | 20060922 | 357.14104 | 87.34134 | 268.39151 | 8.11533 | 0.2285842 | 3.1508026 | 83 | 5 | 1997–2006 | 0.45 | M-v | 1 | MPC | 04185 | 2001 $VE_{113}$ |
| 2001 $VH_{113}$ | 15.1 | 0.15 | 20060922 | 21.87246 | 107.66756 | 263.54196 | 8.77929 | 0.1481400 | 2.9680129 | 111 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 75212 | 2001 $VH_{113}$ |
| 2001 $VN_{113}$ | 16.1 | 0.15 | 20060922 | 161.78808 | 295.81634 | 22.53237 | 2.83442 | 0.1659825 | 2.5252731 | 74 | 4 | 2001–2006 | 0.52 | M-v | 3 | MPC | 94282 | 2001 $VN_{113}$ |
| 2001 $VQ_{113}$ | 14.5 | 0.15 | 20060922 | 6.28267 | 292.81918 | 62.57569 | 27.28089 | 0.1466615 | 3.1511476 | 65 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 30550 | 2001 $VQ_{113}$ |
| 2001 $VU_{113}$ | 15.6 | 0.15 | 20060922 | 41.15290 | 41.65691 | 334.95682 | 1.26457 | 0.0827648 | 2.8668403 | 55 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 97508 | 2001 $VU_{113}$ |
| 2001 $VM_{114}$ | 16.3 | 0.15 | 20060922 | 55.25768 | 55.71806 | 329.51394 | 1.83248 | 0.1957039 | 2.7209269 | 81 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 97508 | 2001 $VM_{114}$ |
| 2001 $VS_{114}$ | 15.1 | 0.15 | 20060922 | 12.80944 | 76.04414 | 272.97556 | 5.09954 | 0.1577163 | 3.1434603 | 100 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 03266 | 2001 $VS_{114}$ |
| 2001 $VY_{114}$ | 16.5 | 0.15 | 20060922 | 87.83214 | 139.78316 | 260.82304 | 6.24924 | 0.2001870 | 2.5351994 | 89 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 97508 | 2001 $VY_{114}$ |
| 2001 $VB_{115}$ | 16.1 | 0.15 | 20060922 | 33.04666 | 50.40500 | 349.34719 | 3.14770 | 0.1003978 | 2.8049073 | 40 | 3 | 2001–2005 | 0.58 | M-v | 3 | MPC | 97508 | 2001 $VB_{115}$ |
| 2001 $VV_{115}$ | 15.9 | 0.15 | 20060922 | 30.34102 | 81.98181 | 341.70842 | 2.63056 | 0.1855718 | 2.7215302 | 95 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97508 | 2001 $VV_{115}$ |
| 2001 $VH_{116}$ | 16.0 | 0.15 | 20060922 | 14.07983 | 82.39513 | 16.77766 | 3.71090 | 0.1469482 | 2.6810853 | 83 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 89078 | 2001 $VH_{116}$ |
| 2001 $VP_{116}$ | 16.5 | 0.15 | 20060922 | 43.32006 | 12.27849 | 57.38720 | 4.72230 | 0.1701834 | 2.6460147 | 104 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97508 | 2001 $VP_{116}$ |
| 2001 $VH_{117}$ | 16.2 | 0.15 | 20060922 | 28.24009 | 156.35462 | 308.72663 | 2.85278 | 0.2561471 | 2.6261006 | 101 | 2 | 2001–2005 | 0.54 | M-v | 3 | MPC | 89079 | 2001 $VH_{117}$ |
| 2001 $VK_{119}$ | 16.1 | 0.15 | 20060922 | 107.40932 | 63.32926 | 275.69026 | 4.39586 | 0.2219792 | 2.6430480 | 95 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 97508 | 2001 $VK_{119}$ |
| 2001 $VN_{119}$ | 16.1 | 0.15 | 20060922 | 65.56407 | 123.62133 | 287.90795 | 2.16287 | 0.0522617 | 2.6141464 | 84 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 97508 | 2001 $VN_{119}$ |
| 2001 $VP_{119}$ | 14.7 | 0.15 | 20060922 | 314.90809 | 150.39022 | 273.23332 | 8.03463 | 0.0814773 | 3.1608861 | 55 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 87501 | 2001 $VP_{119}$ |
| 2001 $VS_{119}$ | 16.3 | 0.15 | 20060922 | 79.17792 | 326.02609 | 47.24679 | 7.05115 | 0.0457762 | 2.7250426 | 75 | 4 | 1999–2005 | 0.62 | M-v | 1 | MPC | 90117 | 2001 $VS_{119}$ |
| 2001 $VC_{120}$ | 15.0 | 0.15 | 20060922 | 261.50079 | 81.71627 | 71.24723 | 16.50368 | 0.1807490 | 3.1178624 | 69 | 3 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87501 | 2001 $VC_{120}$ |
| 2001 $VJ_{120}$ | 16.0 | 0.15 | 20060922 | 10.57327 | 197.08953 | 260.60129 | 5.70532 | 0.1749066 | 2.7053164 | 68 | 3 | 1996–2005 | 0.64 | M-v | 3 | MPC | 90117 | 2001 $VJ_{120}$ |
| 2001 $VA_{124}$ | 16.2 | 0.15 | 20060922 | 104.74973 | 0.77140 | 353.05127 | 3.98772 | 0.1083903 | 2.6106914 | 95 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 90117 | 2001 $VA_{124}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $VB_{124}$ | 15.7 | 0.15 | 20060922 | 135.24600 | 0.17399 | 326.19410 | 4.22236 | 0.0264729 | 2.6324704 | 75 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 90118 | 2001 $VB_{124}$ |
| 2001 $VD_{124}$ | 15.2 | 0.15 | 20060922 | 146.62450 | 130.90171 | 185.66873 | 14.76270 | 0.1147613 | 2.6068779 | 88 | 4 | 1995–2005 | 0.60 | M-v | 1 | MPC | 97509 | 2001 $VD_{124}$ |
| 2001 $VZ_{124}$ | 16.1 | 0.15 | 20060922 | 176.41316 | 222.98386 | 65.65534 | 12.49884 | 0.1724127 | 2.5788156 | 52 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 89082 | 2001 $VZ_{124}$ |
| 2001 $VM_{125}$ | 16.1 | 0.15 | 20060922 | 165.63214 | 302.59958 | 316.99494 | 0.75593 | 0.0831606 | 2.7791448 | 53 | 6 | 1996–2006 | 0.44 | M-v | 1 | MPC | 90118 | 2001 $VM_{125}$ |
| 2001 $VX_{125}$ | 16.7 | 0.15 | 20060922 | 153.28077 | 255.43733 | 56.21933 | 2.94649 | 0.1448355 | 2.5531257 | 29 | 2 | 2001–2005 | 0.49 | M-v | 4 | MPC | 89082 | 2001 $VX_{125}$ |
| 2001 $VF_{126}$ | 17.4 | 0.15 | 20060922 | 71.62302 | 48.78144 | 81.27515 | 3.52084 | 0.0545245 | 2.3013416 | 52 | 7 | 1992–2006 | 0.53 | M-v | 0 | MPC | 04185 | 2001 $VF_{126}$ |
| 2001 $VL_{126}$ | 16.5 | 0.15 | 20060922 | 76.41831 | 181.61096 | 173.04847 | 2.21388 | 0.0922297 | 2.7525867 | 75 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 97509 | 2001 $VL_{126}$ |
| 2001 $VM_{131}$ | 15.1 | 0.15 | 20060922 | 36.46919 | 165.10800 | 169.37500 | 15.26420 | 0.0530992 | 3.0780397 | 60 | 5 | 1998–2006 | 0.44 | M-v | 0 | MPC | 85245 | 2001 $VM_{131}$ |
| 2001 $VY_{132}$ | 15.6 | 0.15 | 20060922 | 158.00682 | 50.57171 | 283.75826 | 9.61104 | 0.2679137 | 2.4406806 | 22 | 1 | 64 days | 0.49 | M-v | 5 | MPC | | 2001 $VY_{132}$ |
| 2001 WM | 16.0 | 0.15 | 20060922 | 118.66353 | 256.21082 | 14.20929 | 6.07642 | 0.2153888 | 2.7829721 | 85 | 4 | 2001–2006 | 0.44 | M-v | 0 | MPC | 90118 | 2001 WM |
| 2001 WT | 16.1 | 0.15 | 20060922 | 232.64755 | 231.00674 | 283.12965 | 0.07328 | 0.1317879 | 3.1560589 | 40 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 87501 | 2001 WT |
| 2001 WV | 15.1 | 0.15 | 20060922 | 22.05987 | 107.83858 | 239.93274 | 8.53076 | 0.0800179 | 3.1102652 | 55 | 6 | 1999–2006 | 0.48 | M-v | 0 | MPC | 74109 | 2001 WV |
| 2001 WY | 17.3 | 0.15 | 20060922 | 43.46622 | 254.92967 | 258.80396 | 4.63271 | 0.1006896 | 2.3684904 | 33 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 97509 | 2001 WY |
| 2001 $WN_2$ | 15.0 | 0.15 | 20060922 | 304.72699 | 301.84845 | 112.02871 | 14.13172 | 0.2003584 | 3.1344467 | 71 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04185 | 2001 $WN_2$ |
| 2001 $WH_3$ | 14.9 | 0.15 | 20060922 | 254.30585 | 270.89750 | 221.79945 | 20.13317 | 0.2434854 | 3.1188662 | 62 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 66242 | 2001 $WH_3$ |
| 2001 $WL_3$ | 16.3 | 0.15 | 20060922 | 33.88023 | 92.76739 | 215.64792 | 4.33455 | 0.1708774 | 3.0972195 | 31 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 04185 | 2001 $WL_3$ |
| 2001 $WM_3$ | 15.4 | 0.15 | 20060922 | 335.70204 | 165.92295 | 219.69248 | 9.59878 | 0.0792601 | 3.0914132 | 59 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 89084 | 2001 $WM_3$ |
| 2001 $WN_5$ | 18.3 | 0.15 | 20060922 | 85.75749 | 44.25416 | 277.74338 | 1.92219 | 0.4667650 | 1.7111844 | 67 | 4 | 1996–2006 | 0.64 | M-v | 2 | MPC | 48155 | 2001 $WN_5$ |
| 2001 $WX_5$ | 16.2 | 0.15 | 20060922 | 246.56373 | 341.06071 | 242.53095 | 9.58362 | 0.0613788 | 2.5916298 | 36 | 4 | 2000–2005 | 0.77 | M-v | 1 | MPC | 94290 | 2001 $WX_5$ |
| 2001 $WD_6$ | 14.7 | 0.15 | 20060922 | 57.01713 | 71.89505 | 224.97682 | 16.13279 | 0.1601234 | 3.0408002 | 108 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 85245 | 2001 $WD_6$ |
| 2001 $WM_6$ | 15.3 | 0.15 | 20060922 | 338.13993 | 126.67207 | 339.40193 | 8.63269 | 0.1346738 | 2.7265471 | 76 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87501 | 2001 $WM_6$ |
| 2001 $WN_6$ | 15.2 | 0.15 | 20060922 | 333.68462 | 232.71509 | 253.94136 | 16.97674 | 0.0529097 | 2.6166336 | 80 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 90118 | 2001 $WN_6$ |
| 2001 $WT_6$ | 16.3 | 0.15 | 20060922 | 1.24869 | 94.85373 | 327.23340 | 1.66688 | 0.0542850 | 2.8065134 | 60 | 6 | 1991–2006 | 0.54 | M-v | 0 | MPC | 87501 | 2001 $WT_6$ |
| 2001 $WX_7$ | 15.1 | 0.15 | 20060922 | 28.20272 | 254.19477 | 75.68344 | 18.09549 | 0.1613306 | 3.1071482 | 59 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 85246 | 2001 $WX_7$ |
| 2001 $WW_8$ | 15.0 | 0.15 | 20060922 | 58.51368 | 205.74984 | 97.20744 | 7.38543 | 0.2205028 | 3.0630876 | 64 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 68972 | 2001 $WW_8$ |
| 2001 $WF_9$ | 14.9 | 0.15 | 20060922 | 38.09395 | 239.42804 | 75.96324 | 19.34657 | 0.1344652 | 3.1648157 | 46 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 89085 | 2001 $WF_9$ |
| 2001 $WQ_9$ | 15.2 | 0.15 | 20060922 | 333.25310 | 329.21001 | 93.37413 | 13.29521 | 0.0891586 | 3.0320352 | 49 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 65164 | 2001 $WQ_9$ |
| 2001 $WP_{10}$ | 16.7 | 0.15 | 20060922 | 348.80487 | 337.22580 | 157.28576 | 1.53525 | 0.1372415 | 2.6104785 | 39 | 5 | 1999–2005 | 0.64 | M-v | 1 | MPC | 97510 | 2001 $WP_{10}$ |
| 2001 $WP_{11}$ | 15.3 | 0.15 | 20060922 | 3.82682 | 252.08686 | 116.49572 | 4.35458 | 0.0829644 | 3.0834680 | 57 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 85247 | 2001 $WP_{11}$ |
| 2001 $WV_{11}$ | 15.4 | 0.15 | 20060922 | 79.56933 | 274.34390 | 91.29658 | 7.09081 | 0.0413847 | 2.7091483 | 67 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 89086 | 2001 $WV_{11}$ |
| 2001 $WF_{12}$ | 15.5 | 0.15 | 20060922 | 8.00999 | 255.45327 | 98.52666 | 6.19054 | 0.1316990 | 3.1259665 | 27 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 04185 | 2001 $WF_{12}$ |
| 2001 $WH_{12}$ | 14.9 | 0.15 | 20060922 | 282.21502 | 31.62212 | 76.94731 | 11.18862 | 0.0873591 | 3.0759020 | 53 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 75214 | 2001 $WH_{12}$ |
| 2001 $WA_{13}$ | 15.8 | 0.15 | 20060922 | 36.81166 | 299.36994 | 107.66213 | 6.42551 | 0.0809168 | 2.7572183 | 53 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 89086 | 2001 $WA_{13}$ |
| 2001 $WN_{13}$ | 15.4 | 0.15 | 20060922 | 115.38135 | 223.31118 | 116.92284 | 16.02363 | 0.2102103 | 2.6308191 | 74 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 97510 | 2001 $WN_{13}$ |
| 2001 $WY_{13}$ | 16.4 | 0.15 | 20060922 | 229.51686 | 62.99993 | 84.39057 | 23.36549 | 0.0797051 | 1.9229618 | 63 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 77578 | 2001 $WY_{13}$ |
| 2001 $WE_{14}$ | 16.1 | 0.15 | 20060922 | 141.67775 | 318.01510 | 140.70872 | 8.26154 | 0.1290603 | 2.2790893 | 77 | 3 | 1999–2004 | 0.61 | M-v | 3 | MPC | 74109 | 2001 $WE_{14}$ |
| 2001 $WO_{14}$ | 16.6 | 0.15 | 20060922 | 94.83070 | 356.57156 | 359.82355 | 3.72840 | 0.1765334 | 2.6372583 | 96 | 5 | 1994–2005 | 0.52 | M-v | 1 | MPC | 90118 | 2001 $WO_{14}$ |
| 2001 $WV_{15}$ | 16.8 | 0.15 | 20060922 | 261.26602 | 58.31329 | 57.72049 | 21.96127 | 0.0963493 | 1.9067695 | 96 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 77578 | 2001 $WV_{15}$ |
| 2001 $WX_{15}$ | 16.4 | 0.15 | 20060922 | 253.05535 | 10.25648 | 85.58842 | 23.86842 | 0.0883157 | 1.9556387 | 52 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 04185 | 2001 $WX_{15}$ |
| 2001 $WQ_{16}$ | 16.8 | 0.15 | 20060922 | 99.54281 | 23.55695 | 13.94639 | 2.70214 | 0.1976285 | 2.4432016 | 153 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 94294 | 2001 $WQ_{16}$ |
| 2001 $WY_{16}$ | 15.2 | 0.15 | 20060922 | 162.42113 | 27.91277 | 234.48162 | 9.53383 | 0.1987562 | 2.6574502 | 87 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 90118 | 2001 $WY_{16}$ |
| 2001 $WK_{17}$ | 15.8 | 0.15 | 20060922 | 342.99324 | 334.24412 | 35.84090 | 5.29355 | 0.1964347 | 3.0827558 | 75 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 03266 | 2001 $WK_{17}$ |
| 2001 $WS_{17}$ | 17.1 | 0.15 | 20060922 | 1.82220 | 63.84912 | 11.48932 | 4.71113 | 0.0970251 | 2.7218697 | 24 | 3 | 2001–2005 | 0.54 | M-v | 3 | MPC | 89088 | 2001 $WS_{17}$ |
| 2001 $WU_{17}$ | 17.1 | 0.15 | 20060922 | 236.14202 | 287.74647 | 27.06827 | 5.73106 | 0.1801059 | 2.2202824 | 67 | 5 | 1991–2004 | 0.46 | M-v | 1 | MPC | 04185 | 2001 $WU_{17}$ |
| 2001 $WZ_{17}$ | 16.2 | 0.15 | 20060922 | 34.44485 | 177.35031 | 229.81079 | 13.39187 | 0.0706870 | 2.6787387 | 42 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 85249 | 2001 $WZ_{17}$ |
| 2001 $WF_{18}$ | 16.4 | 0.15 | 20060922 | 60.52667 | 177.31362 | 225.37241 | 12.86332 | 0.1512781 | 2.5885939 | 68 | 2 | 2001–2005 | 0.53 | M-v | 3 | MPC | 90118 | 2001 $WF_{18}$ |
| 2001 $WG_{18}$ | 17.5 | 0.15 | 20060922 | 113.26259 | 237.10678 | 226.35132 | 4.39008 | 0.1627307 | 2.2525659 | 39 | 4 | 1991–2006 | 0.53 | M-v | 1 | MPC | 04185 | 2001 $WG_{18}$ |
| 2001 $WM_{18}$ | 16.1 | 0.15 | 20060922 | 54.18856 | 120.12246 | 235.54045 | 4.44522 | 0.0632614 | 2.8057806 | 40 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 89088 | 2001 $WM_{18}$ |
| 2001 $WN_{18}$ | 15.5 | 0.15 | 20060922 | 359.91060 | 129.91466 | 230.15041 | 8.22471 | 0.1225049 | 3.0607112 | 84 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 03267 | 2001 $WN_{18}$ |
| 2001 $WW_{18}$ | 16.6 | 0.15 | 20060922 | 16.61043 | 92.46431 | 28.73605 | 4.40415 | 0.2617548 | 2.5667525 | 53 | 2 | 2001–2005 | 0.64 | M-v | 4 | MPC | 89088 | 2001 $WW_{18}$ |
| 2001 $WC_{19}$ | 15.6 | 0.15 | 20060922 | 309.65642 | 296.15433 | 226.62019 | 14.24541 | 0.0747043 | 2.5880942 | 67 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 97511 | 2001 $WC_{19}$ |
| 2001 $WD_{19}$ | 16.3 | 0.15 | 20060922 | 28.76151 | 29.13636 | 359.91796 | 1.65127 | 0.0936173 | 2.7862991 | 54 | 7 | 1996–2006 | 0.41 | M-v | 0 | MPC | 90119 | 2001 $WD_{19}$ |
| 2001 $WH_{19}$ | 15.0 | 0.15 | 20060922 | 50.43725 | 68.63537 | 229.23572 | 11.26019 | 0.1128410 | 3.1186120 | 89 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04185 | 2001 $WH_{19}$ |

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| 2001 $WX_{19}$ | 16.5 | 0.15 | 20060922 | 36.17222 | 136.90827 | 257.62495 | 2.48242 | 0.1039409 | 2.7521136 | 48 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 94295 | 2001 $WX_{19}$ |
| 2001 $WJ_{20}$ | 15.9 | 0.15 | 20060922 | 62.80830 | 224.44145 | 144.09920 | 3.45298 | 0.1966959 | 2.7216221 | 132 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 90119 | 2001 $WJ_{20}$ |
| 2001 $WK_{20}$ | 15.8 | 0.15 | 20060922 | 8.40816 | 5.28138 | 73.40393 | 13.59189 | 0.1267351 | 2.7424395 | 80 | 5 | 1992–2006 | 0.54 | M-v | 1 | MPC | 04185 | 2001 $WK_{20}$ |
| 2001 $WQ_{20}$ | 15.1 | 0.15 | 20060922 | 9.13635 | 358.35796 | 79.12321 | 10.62504 | 0.0732571 | 2.7351595 | 127 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 97511 | 2001 $WQ_{20}$ |
| 2001 $WP_{21}$ | 15.9 | 0.15 | 20060922 | 92.22905 | 65.41482 | 257.91571 | 3.82875 | 0.1814386 | 2.7347976 | 30 | 2 | 2001–2005 | 0.44 | M-v | 3 | MPC | 89089 | 2001 $WP_{21}$ |
| 2001 $WA_{23}$ | 15.3 | 0.15 | 20060922 | 16.85322 | 130.17158 | 307.54748 | 33.77007 | 0.2359514 | 2.7133477 | 39 | 4 | 1998–2006 | 0.40 | M-v | 1 | MPC | 85250 | 2001 $WA_{23}$ |
| 2001 $WS_{23}$ | 16.5 | 0.15 | 20060922 | 140.90112 | 202.47723 | 28.84335 | 0.66892 | 0.1132976 | 3.1441917 | 32 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 87502 | 2001 $WS_{23}$ |
| 2001 $WV_{23}$ | 16.5 | 0.15 | 20060922 | 81.37859 | 299.40992 | 50.26385 | 2.18625 | 0.0820145 | 2.7500198 | 61 | 5 | 2001–2006 | 0.42 | M-v | 0 | MPC | 97511 | 2001 $WV_{23}$ |
| 2001 $WV_{24}$ | 15.1 | 0.15 | 20060922 | 250.22877 | 279.36502 | 240.66833 | 15.29533 | 0.1883986 | 3.0859845 | 77 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 85251 | 2001 $WV_{24}$ |
| 2001 $WG_{25}$ | 15.3 | 0.15 | 20060922 | 302.27863 | 227.66149 | 222.13454 | 8.97553 | 0.1097730 | 2.9720834 | 98 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 65168 | 2001 $WG_{25}$ |
| 2001 $WL_{25}$ | 16.6 | 0.15 | 20060922 | 55.47890 | 342.18897 | 45.49778 | 2.56495 | 0.1025707 | 2.6656485 | 50 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 85251 | 2001 $WL_{25}$ |
| 2001 $WR_{25}$ | 15.4 | 0.15 | 20060922 | 341.72873 | 183.52573 | 226.46445 | 11.10517 | 0.0516880 | 2.9496816 | 89 | 4 | 1996–2006 | 0.50 | M-v | 3 | MPC | 65168 | 2001 $WR_{25}$ |
| 2001 $WG_{26}$ | 16.9 | 0.15 | 20060922 | 94.86703 | 119.17327 | 223.55592 | 6.67617 | 0.2359138 | 2.6113201 | 69 | 2 | 2001–2005 | 0.52 | M-v | 3 | MPC | 90119 | 2001 $WG_{26}$ |
| 2001 $WZ_{26}$ | 14.8 | 0.15 | 20060922 | 85.64480 | 309.69959 | 68.88375 | 15.98733 | 0.0506228 | 2.6272559 | 170 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 97511 | 2001 $WZ_{26}$ |
| 2001 $WM_{28}$ | 15.6 | 0.15 | 20060922 | 342.75400 | 257.42812 | 209.45779 | 5.47087 | 0.1121694 | 2.7664515 | 79 | 5 | 1996–2006 | 0.61 | M-v | 0 | MPC | 97511 | 2001 $WM_{28}$ |
| 2001 $WN_{28}$ | 15.5 | 0.15 | 20060922 | 298.22931 | 90.23756 | 83.45388 | 9.95385 | 0.2446488 | 2.7535473 | 91 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 50575 | 2001 $WN_{28}$ |
| 2001 $WO_{28}$ | 14.6 | 0.15 | 20060922 | 341.98731 | 293.00173 | 77.85246 | 10.96701 | 0.2359362 | 3.1630124 | 103 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04185 | 2001 $WO_{28}$ |
| 2001 $WN_{29}$ | 16.5 | 0.15 | 20060922 | 41.91526 | 292.74943 | 150.90226 | 3.99163 | 0.2827870 | 2.6150924 | 69 | 4 | 1994–2005 | 0.57 | M-v | 2 | MPC | 04185 | 2001 $WN_{29}$ |
| 2001 $WW_{29}$ | 15.1 | 0.15 | 20060922 | 70.91447 | 262.87973 | 84.46459 | 13.18390 | 0.2622988 | 2.7660892 | 85 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 85254 | 2001 $WW_{29}$ |
| 2001 $WX_{29}$ | 15.3 | 0.15 | 20060922 | 100.73589 | 278.62234 | 96.54774 | 8.47742 | 0.1714108 | 2.5715934 | 117 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97511 | 2001 $WX_{29}$ |
| 2001 $WA_{30}$ | 14.2 | 0.15 | 20060922 | 341.89020 | 292.07254 | 90.82635 | 15.57357 | 0.2143812 | 3.1420965 | 105 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04185 | 2001 $WA_{30}$ |
| 2001 $WH_{30}$ | 16.3 | 0.15 | 20060922 | 22.70466 | 210.99826 | 181.06791 | 1.90886 | 0.0816165 | 2.8420882 | 42 | 7 | 1991–2006 | 0.57 | M-v | 1 | MPC | 87503 | 2001 $WH_{30}$ |
| 2001 $WT_{30}$ | 15.6 | 0.15 | 20060922 | 172.58169 | 216.99920 | 70.46506 | 11.68396 | 0.1114570 | 2.5973027 | 49 | 4 | 2001–2005 | 0.68 | M-v | 1 | MPC | 89091 | 2001 $WT_{30}$ |
| 2001 $WZ_{30}$ | 16.1 | 0.15 | 20060922 | 83.63562 | 245.14226 | 108.56079 | 5.21670 | 0.2018627 | 2.6639292 | 74 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 85254 | 2001 $WZ_{30}$ |
| 2001 $WE_{31}$ | 15.4 | 0.15 | 20060922 | 351.29110 | 299.19446 | 68.41928 | 16.50620 | 0.0974726 | 3.1511546 | 38 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 03267 | 2001 $WE_{31}$ |
| 2001 $WN_{31}$ | 16.3 | 0.15 | 20060922 | 317.96066 | 209.75405 | 224.73280 | 10.19733 | 0.0461281 | 3.0023873 | 52 | 4 | 1995–2006 | 0.35 | M-v | 1 | MPC | 89091 | 2001 $WN_{31}$ |
| 2001 $WX_{31}$ | 15.3 | 0.15 | 20060922 | 341.58182 | 339.72578 | 67.80342 | 13.44663 | 0.0398244 | 3.0106983 | 47 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 43190 | 2001 $WX_{31}$ |
| 2001 $WG_{32}$ | 16.6 | 0.15 | 20060922 | 16.34048 | 332.16231 | 133.64936 | 1.94162 | 0.0765994 | 2.5855340 | 67 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97511 | 2001 $WG_{32}$ |
| 2001 $WY_{32}$ | 15.6 | 0.15 | 20060922 | 35.35188 | 284.74674 | 105.34282 | 6.18729 | 0.1690010 | 2.7755511 | 58 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85255 | 2001 $WY_{32}$ |
| 2001 $WH_{33}$ | 16.0 | 0.15 | 20060922 | 344.87106 | 191.74448 | 222.65399 | 8.35386 | 0.0909973 | 2.9622092 | 82 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87503 | 2001 $WH_{33}$ |
| 2001 $WK_{33}$ | 16.8 | 0.15 | 20060922 | 325.02824 | 36.48421 | 66.57812 | 13.80803 | 0.1628519 | 2.8724312 | 34 | 3 | 2001–2006 | 0.28 | M-v | 2 | MPC | 89092 | 2001 $WK_{33}$ |
| 2001 $WU_{33}$ | 16.3 | 0.15 | 20060922 | 226.59787 | 176.04310 | 102.99540 | 3.26301 | 0.1531157 | 2.4300297 | 79 | 7 | 1994–2006 | 0.53 | M-v | 1 | MPC | 97511 | 2001 $WU_{33}$ |
| 2001 $WB_{34}$ | 15.0 | 0.15 | 20060922 | 43.17389 | 232.14983 | 89.54509 | 6.33387 | 0.1606506 | 3.0654326 | 76 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 85256 | 2001 $WB_{34}$ |
| 2001 $WP_{34}$ | 16.1 | 0.15 | 20060922 | 21.25305 | 297.64544 | 128.52601 | 4.21148 | 0.1846118 | 2.7394550 | 67 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87503 | 2001 $WP_{34}$ |
| 2001 $WV_{34}$ | 15.2 | 0.15 | 20060922 | 265.50909 | 117.32589 | 72.82204 | 14.27837 | 0.1422160 | 2.7574066 | 78 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 48157 | 2001 $WV_{34}$ |
| 2001 $WG_{35}$ | 15.4 | 0.15 | 20060922 | 330.34798 | 313.69770 | 81.66528 | 10.03837 | 0.0947071 | 3.1762124 | 34 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 61202 | 2001 $WG_{35}$ |
| 2001 $WO_{37}$ | 15.9 | 0.15 | 20060922 | 344.44490 | 277.44078 | 94.96463 | 4.85961 | 0.3277249 | 3.0609844 | 85 | 2 | 2001–2006 | 0.59 | M-v | 3 | MPC | 03267 | 2001 $WO_{37}$ |
| 2001 $WS_{37}$ | 14.6 | 0.15 | 20060922 | 139.97153 | 138.64431 | 74.21906 | 10.38875 | 0.0470204 | 3.2445109 | 63 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 66243 | 2001 $WS_{37}$ |
| 2001 $WU_{37}$ | 16.9 | 0.15 | 20060922 | 44.29529 | 222.55206 | 205.50837 | 1.74272 | 0.1006006 | 2.5990013 | 65 | 3 | 2001–2005 | 0.45 | M-v | 3 | MPC | 97512 | 2001 $WU_{37}$ |
| 2001 $WZ_{37}$ | 15.0 | 0.15 | 20060922 | 16.50959 | 1.66275 | 66.08536 | 15.28944 | 0.0305310 | 2.7252730 | 38 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 85258 | 2001 $WZ_{37}$ |
| 2001 $WE_{38}$ | 15.8 | 0.15 | 20060922 | 54.66705 | 314.31014 | 95.21126 | 10.33949 | 0.0956708 | 2.6573300 | 92 | 4 | 1999–2005 | 0.67 | M-v | 2 | MPC | 94300 | 2001 $WE_{38}$ |
| 2001 $WD_{39}$ | 14.8 | 0.15 | 20060922 | 306.38948 | 241.68618 | 208.73851 | 8.54114 | 0.2345545 | 3.1147203 | 102 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 85258 | 2001 $WD_{39}$ |
| 2001 $WA_{40}$ | 15.2 | 0.15 | 20060922 | 327.24973 | 213.37339 | 214.57950 | 7.62097 | 0.2614291 | 3.0876646 | 120 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04186 | 2001 $WA_{40}$ |
| 2001 $WU_{41}$ | 15.3 | 0.15 | 20060922 | 349.39049 | 69.09767 | 22.32608 | 23.54686 | 0.3632605 | 2.7341886 | 64 | 3 | 2001–2006 | 0.59 | M-v | 1 | MPC | 50576 | 2001 $WU_{41}$ |
| 2001 $WE_{42}$ | 15.5 | 0.15 | 20060922 | 250.07905 | 56.30611 | 63.67964 | 10.43448 | 0.0605015 | 3.1338603 | 29 | 4 | 2001–2006 | 0.77 | M-v | 1 | MPC | 04186 | 2001 $WE_{42}$ |
| 2001 $WA_{43}$ | 16.3 | 0.15 | 20060922 | 39.39540 | 354.54827 | 54.15304 | 9.46546 | 0.1347595 | 2.6266113 | 45 | 3 | 1995–2005 | 0.62 | M-v | 3 | MPC | 85259 | 2001 $WA_{43}$ |
| 2001 $WF_{43}$ | 15.5 | 0.15 | 20060922 | 359.65947 | 343.79260 | 73.32562 | 9.14509 | 0.2136615 | 2.8037460 | 64 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 46945 | 2001 $WF_{43}$ |
| 2001 $WF_{44}$ | 16.1 | 0.15 | 20060922 | 37.70190 | 279.84426 | 93.68885 | 3.10827 | 0.0796740 | 2.8338997 | 49 | 5 | 1991–2006 | 0.51 | M-v | 1 | MPC | 03267 | 2001 $WF_{44}$ |
| 2001 $WO_{44}$ | 17.4 | 0.15 | 20060922 | 77.00588 | 249.96721 | 139.13567 | 2.90854 | 0.1381983 | 2.5964349 | 41 | 4 | 1999–2005 | 0.51 | M-v | 1 | MPC | 90120 | 2001 $WO_{44}$ |
| 2001 $WH_{45}$ | 16.4 | 0.15 | 20060922 | 71.72672 | 126.57563 | 227.17442 | 13.84523 | 0.2374475 | 2.6752392 | 40 | 2 | 2001–2005 | 0.54 | M-v | 3 | MPC | 89095 | 2001 $WH_{45}$ |
| 2001 $WN_{45}$ | 16.5 | 0.15 | 20060922 | 324.54127 | 107.06748 | 59.22358 | 0.97338 | 0.0450383 | 2.5238355 | 93 | 5 | 2001–2006 | 0.40 | M-v | 1 | MPC | 97512 | 2001 $WN_{45}$ |
| 2001 $WS_{46}$ | 16.0 | 0.15 | 20060922 | 279.16347 | 69.53704 | 58.55854 | 6.35725 | 0.2458106 | 3.0893260 | 58 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 46946 | 2001 $WS_{46}$ |
| 2001 $WW_{46}$ | 16.5 | 0.15 | 20060922 | 295.62714 | 344.34494 | 250.41472 | 5.57858 | 0.0928234 | 2.3899568 | 35 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 94302 | 2001 $WW_{46}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $WL_{48}$ | 15.6 | 0.15 | 20060922 | 36.57813 | 303.05764 | 106.83283 | 13.56040 | 0.0875020 | 2.7141808 | 40 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 85261 | 2001 $WL_{48}$ |
| 2001 $WM_{48}$ | 15.6 | 0.15 | 20060922 | 3.78906 | 233.93933 | 137.21522 | 13.40739 | 0.1435890 | 3.0420692 | 45 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87504 | 2001 $WM_{48}$ |
| 2001 $WP_{48}$ | 15.6 | 0.15 | 20060922 | 121.69148 | 240.27536 | 101.19465 | 12.80711 | 0.0770099 | 2.5859549 | 49 | 4 | 2001–2005 | 0.64 | M-v | 1 | MPC | 66244 | 2001 $WP_{48}$ |
| 2001 $WQ_{50}$ | 17.3 | 0.15 | 20060922 | 70.18980 | 156.25258 | 226.67593 | 10.76610 | 0.1977603 | 2.6263028 | 36 | 2 | 2001–2005 | 0.60 | M-v | 3 | MPC | 85261 | 2001 $WQ_{50}$ |
| 2001 $WA_{51}$ | 16.1 | 0.15 | 20060922 | 248.28374 | 326.52723 | 249.97548 | 2.03611 | 0.0217936 | 2.5552353 | 78 | 5 | 1997–2006 | 0.55 | M-v | 2 | MPC | 90120 | 2001 $WA_{51}$ |
| 2001 $WD_{51}$ | 15.8 | 0.15 | 20060922 | 304.70155 | 89.90882 | 19.20852 | 4.50026 | 0.0179864 | 2.8030064 | 49 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 43458 | 2001 $WD_{51}$ |
| 2001 $WE_{51}$ | 16.1 | 0.15 | 20060922 | 322.48194 | 58.70535 | 353.00716 | 1.98823 | 0.0872865 | 3.0234814 | 37 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 94303 | 2001 $WE_{51}$ |
| 2001 $WJ_{51}$ | 15.9 | 0.15 | 20060922 | 58.03341 | 301.18638 | 33.97031 | 6.61492 | 0.0683716 | 2.8676264 | 81 | 6 | 1994–2006 | 0.44 | M-v | 0 | MPC | 04186 | 2001 $WJ_{51}$ |
| 2001 $WK_{51}$ | 16.9 | 0.15 | 20060922 | 62.02857 | 56.34638 | 289.24465 | 1.42470 | 0.1382324 | 2.7729464 | 47 | 6 | 1992–2006 | 0.46 | M-v | 0 | MPC | 85261 | 2001 $WK_{51}$ |
| 2001 $WN_{51}$ | 15.8 | 0.15 | 20060922 | 97.58056 | 307.53612 | 327.94180 | 1.18324 | 0.0490018 | 2.9915382 | 56 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 50576 | 2001 $WN_{51}$ |
| 2001 $WT_{52}$ | 15.6 | 0.15 | 20060922 | 35.89960 | 146.43474 | 237.64406 | 4.87382 | 0.0653283 | 2.7793473 | 43 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 90120 | 2001 $WT_{52}$ |
| 2001 $WN_{53}$ | 15.7 | 0.15 | 20060922 | 115.80945 | 63.88166 | 227.04109 | 11.68174 | 0.2253646 | 2.7335313 | 34 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 90120 | 2001 $WN_{53}$ |
| 2001 $WR_{53}$ | 16.5 | 0.15 | 20060922 | 343.66690 | 271.18704 | 232.14354 | 7.68516 | 0.1190337 | 2.5632310 | 29 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 94304 | 2001 $WR_{53}$ |
| 2001 $WZ_{53}$ | 16.0 | 0.15 | 20060922 | 96.77835 | 46.20344 | 251.98351 | 2.17870 | 0.0381817 | 2.9120533 | 53 | 5 | 2001–2006 | 0.46 | M-v | 0 | MPC | 85262 | 2001 $WZ_{53}$ |
| 2001 $WW_{54}$ | 16.3 | 0.15 | 20060922 | 60.92098 | 9.99468 | 17.69263 | 1.82613 | 0.0800136 | 2.6602317 | 47 | 4 | 1992–2006 | 0.53 | M-v | 1 | MPC | 04186 | 2001 $WW_{54}$ |
| 2001 $WY_{54}$ | 17.2 | 0.15 | 20060922 | 46.12960 | 134.05047 | 266.64136 | 1.47241 | 0.1607918 | 2.6722717 | 35 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 90120 | 2001 $WY_{54}$ |
| 2001 $WC_{55}$ | 15.7 | 0.15 | 20060922 | 234.88158 | 46.24754 | 233.12630 | 6.37505 | 0.0943408 | 2.3835130 | 45 | 2 | 2001–2004 | 0.39 | M-v | 3 | MPC | 70311 | 2001 $WC_{55}$ |
| 2001 $WG_{55}$ | 15.9 | 0.15 | 20060922 | 135.37849 | 239.26357 | 46.38266 | 3.90201 | 0.1231159 | 2.7398906 | 44 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 87504 | 2001 $WG_{55}$ |
| 2001 $WK_{55}$ | 16.2 | 0.15 | 20060922 | 15.46497 | 131.29938 | 238.35057 | 3.52741 | 0.0994528 | 2.9598503 | 46 | 5 | 1996–2006 | 0.46 | M-v | 0 | MPC | 66244 | 2001 $WK_{55}$ |
| 2001 $WM_{55}$ | 17.0 | 0.15 | 20060922 | 91.59767 | 123.75566 | 247.86323 | 2.66313 | 0.1780729 | 2.5665022 | 41 | 2 | 2001–2005 | 0.54 | M-v | 4 | MPC | 89098 | 2001 $WM_{55}$ |
| 2001 $WT_{55}$ | 15.5 | 0.15 | 20060922 | 32.58274 | 352.43503 | 37.15881 | 6.04900 | 0.0609180 | 2.7907936 | 34 | 4 | 1996–2006 | 0.37 | M-v | 1 | MPC | 85264 | 2001 $WT_{55}$ |
| 2001 $WY_{55}$ | 16.9 | 0.15 | 20060922 | 99.93257 | 312.03339 | 21.92107 | 1.62520 | 0.1636377 | 2.6644675 | 44 | 3 | 1992–2005 | 0.47 | M-v | 3 | MPC | 04186 | 2001 $WY_{55}$ |
| 2001 $WN_{56}$ | 16.8 | 0.15 | 20060922 | 334.56623 | 99.06163 | 31.49602 | 2.32877 | 0.0440732 | 2.6303424 | 46 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 94305 | 2001 $WN_{56}$ |
| 2001 $WC_{57}$ | 16.8 | 0.15 | 20060922 | 34.20452 | 28.91322 | 6.48164 | 0.20432 | 0.0786186 | 2.7589027 | 36 | 5 | 1992–2005 | 0.39 | M-v | 1 | MPC | 04186 | 2001 $WC_{57}$ |
| 2001 $WM_{57}$ | 16.2 | 0.15 | 20060922 | 84.04370 | 88.29774 | 230.09184 | 6.42200 | 0.2213501 | 2.7824154 | 58 | 4 | 1999–2006 | 0.50 | M-v | 0 | MPC | 85264 | 2001 $WM_{57}$ |
| 2001 $WP_{57}$ | 15.9 | 0.15 | 20060922 | 255.59487 | 85.09781 | 33.01165 | 10.02631 | 0.0651507 | 3.0600716 | 26 | 4 | 1993–2006 | 0.58 | M-v | 1 | MPC | 04186 | 2001 $WP_{57}$ |
| 2001 $WL_{58}$ | 16.5 | 0.15 | 20060922 | 74.10286 | 86.73786 | 251.03730 | 2.72626 | 0.1061419 | 2.7870227 | 33 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 89098 | 2001 $WL_{58}$ |
| 2001 $WN_{58}$ | 16.8 | 0.15 | 20060922 | 323.77069 | 74.19164 | 30.80003 | 5.58446 | 0.0393124 | 2.7858499 | 30 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 89099 | 2001 $WN_{58}$ |
| 2001 $WP_{58}$ | 16.7 | 0.15 | 20060922 | 329.71112 | 137.97080 | 41.81838 | 7.94921 | 0.0315958 | 2.4440324 | 26 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 89099 | 2001 $WP_{58}$ |
| 2001 $WR_{58}$ | 16.3 | 0.15 | 20060922 | 223.47276 | 210.80986 | 24.55736 | 2.83324 | 0.1053075 | 2.6199506 | 41 | 2 | 2001–2005 | 0.39 | M-v | 4 | MPC | 90120 | 2001 $WR_{58}$ |
| 2001 $WU_{58}$ | 16.6 | 0.15 | 20060922 | 349.71387 | 182.91312 | 221.71899 | 1.10753 | 0.0999422 | 2.9400798 | 69 | 5 | 2001–2006 | 0.55 | M-v | 0 | MPC | 97513 | 2001 $WU_{58}$ |
| 2001 $WO_{61}$ | 16.2 | 0.15 | 20060922 | 309.85147 | 209.77256 | 296.86299 | 1.51103 | 0.1222210 | 2.7330085 | 50 | 7 | 1992–2006 | 0.62 | M-v | 1 | MPC | 04186 | 2001 $WO_{61}$ |
| 2001 $WC_{62}$ | 15.1 | 0.15 | 20060922 | 188.66050 | 297.97154 | 239.94937 | 8.91679 | 0.0688021 | 3.2062202 | 51 | 6 | 1995–2006 | 0.63 | M-v | 1 | MPC | 77579 | 2001 $WC_{62}$ |
| 2001 $WV_{62}$ | 15.9 | 0.15 | 20060922 | 265.02833 | 228.14451 | 249.83569 | 4.30372 | 0.1146630 | 3.1409318 | 29 | 4 | 1997–2005 | 0.62 | M-v | 2 | MPC | 94306 | 2001 $WV_{62}$ |
| 2001 $WJ_{64}$ | 15.0 | 0.15 | 20060922 | 46.80565 | 259.55572 | 62.11606 | 6.86780 | 0.1961353 | 3.0583874 | 79 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 75220 | 2001 $WJ_{64}$ |
| 2001 $WX_{64}$ | 16.6 | 0.15 | 20060922 | 42.45224 | 329.06294 | 81.76165 | 2.40815 | 0.0724968 | 2.6141148 | 45 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 97513 | 2001 $WX_{64}$ |
| 2001 $WT_{65}$ | 17.2 | 0.15 | 20060922 | 102.95814 | 130.61618 | 210.84622 | 6.36334 | 0.1926349 | 2.5817437 | 61 | 2 | 2001–2005 | 0.52 | M-v | 3 | MPC | 90120 | 2001 $WT_{65}$ |
| 2001 $WY_{65}$ | 16.0 | 0.15 | 20060922 | 249.47940 | 208.48744 | 293.78413 | 1.14717 | 0.0479237 | 3.0438504 | 58 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 94307 | 2001 $WY_{65}$ |
| 2001 $WE_{67}$ | 16.2 | 0.15 | 20060922 | 264.79800 | 60.92341 | 53.79959 | 1.64962 | 0.0471667 | 3.0378228 | 57 | 5 | 1993–2006 | 0.38 | M-v | 0 | MPC | 33503 | 2001 $WE_{67}$ |
| 2001 $WR_{67}$ | 16.6 | 0.15 | 20060922 | 252.51938 | 137.83333 | 69.62368 | 4.50429 | 0.0300546 | 2.6180438 | 41 | 3 | 2001–2005 | 0.45 | M-v | 3 | MPC | 03268 | 2001 $WR_{67}$ |
| 2001 $WA_{68}$ | 15.7 | 0.15 | 20060922 | 286.23117 | 104.21596 | 62.19461 | 3.37701 | 0.1814152 | 2.7337002 | 69 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 90120 | 2001 $WA_{68}$ |
| 2001 $WG_{68}$ | 16.4 | 0.15 | 20060922 | 352.32029 | 159.52661 | 226.41657 | 2.50897 | 0.0945463 | 3.0075898 | 55 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 61204 | 2001 $WG_{68}$ |
| 2001 $WH_{69}$ | 16.9 | 0.15 | 20060922 | 107.34085 | 102.07517 | 225.94339 | 10.33579 | 0.1779865 | 2.6461765 | 43 | 3 | 2001–2005 | 0.65 | M-v | 3 | MPC | 90120 | 2001 $WH_{69}$ |
| 2001 $WX_{69}$ | 15.5 | 0.15 | 20060922 | 10.21321 | 106.74502 | 228.86398 | 1.50919 | 0.1890335 | 3.1162908 | 52 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04186 | 2001 $WX_{69}$ |
| 2001 $WS_{71}$ | 16.0 | 0.15 | 20060922 | 186.40795 | 134.08611 | 56.64401 | 17.80253 | 0.0504776 | 3.0816691 | 25 | 4 | 2001–2006 | 0.65 | M-v | 0 | MPC | 85267 | 2001 $WS_{71}$ |
| 2001 $WC_{72}$ | 17.7 | 0.15 | 20060922 | 191.10266 | 285.17676 | 58.23170 | 6.12520 | 0.1879327 | 2.2959678 | 23 | 4 | 1994–2004 | 0.59 | M-v | 1 | MPC | 33503 | 2001 $WC_{72}$ |
| 2001 $WN_{72}$ | 18.4 | 0.15 | 20060922 | 139.34680 | 202.36382 | 182.07400 | 1.84473 | 0.2229590 | 2.3594438 | 28 | 3 | 1997–2006 | 0.27 | M-v | 3 | MPC | 94309 | 2001 $WN_{72}$ |
| 2001 $WC_{74}$ | 15.6 | 0.15 | 20060922 | 19.84039 | 144.39172 | 172.02657 | 3.28783 | 0.1887527 | 3.1419428 | 86 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 04186 | 2001 $WC_{74}$ |
| 2001 $WT_{74}$ | 15.9 | 0.15 | 20060922 | 223.23944 | 119.40630 | 57.72898 | 11.52986 | 0.0852166 | 2.9652338 | 54 | 4 | 1996–2006 | 0.38 | M-v | 2 | MPC | 48158 | 2001 $WT_{74}$ |
| 2001 $WZ_{76}$ | 15.7 | 0.15 | 20060922 | 69.28149 | 55.13990 | 248.02286 | 1.08437 | 0.1236160 | 3.0288633 | 67 | 6 | 1999–2006 | 0.43 | M-v | 0 | MPC | 29734 | 2001 $WZ_{76}$ |
| 2001 $WH_{77}$ | 16.1 | 0.15 | 20060922 | 316.38495 | 80.77377 | 65.71865 | 8.33349 | 0.0973679 | 2.6887105 | 30 | 3 | 1999–2003 | 0.69 | M-v | 3 | MPC | 46952 | 2001 $WH_{77}$ |
| 2001 $WW_{77}$ | 16.4 | 0.15 | 20060922 | 14.46247 | 142.49145 | 213.95976 | 1.20996 | 0.1138052 | 3.0643960 | 56 | 6 | 1995–2006 | 0.45 | M-v | 0 | MPC | 48158 | 2001 $WW_{77}$ |
| 2001 $WJ_{78}$ | 16.6 | 0.15 | 20060922 | 108.16847 | 263.18856 | 76.12984 | 7.00076 | 0.0404088 | 2.6940945 | 45 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 94311 | 2001 $WJ_{78}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $WF_{82}$ | 17.1 | 0.15 | 20060922 | 287.23930 | 164.60611 | 78.40927 | 5.12147 | 0.1502024 | 2.3644907 | 31 | 4 | 1996–2004 | 0.61 | M-v | 1 | MPC | 94312 | 2001 $WF_{82}$ |
| 2001 $WG_{82}$ | 15.4 | 0.15 | 20060922 | 29.54566 | 259.05522 | 63.07154 | 5.65285 | 0.1501949 | 3.1238475 | 57 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 77579 | 2001 $WG_{82}$ |
| 2001 $WQ_{83}$ | 16.0 | 0.15 | 20060922 | 287.35123 | 41.71882 | 81.31707 | 3.48625 | 0.0029007 | 2.9287680 | 55 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 89102 | 2001 $WQ_{83}$ |
| 2001 $WE_{84}$ | 16.4 | 0.15 | 20060922 | 94.93555 | 128.97500 | 231.15877 | 5.34231 | 0.0652412 | 2.6793329 | 39 | 2 | 2001–2005 | 0.61 | M-v | 4 | MPC | 90121 | 2001 $WE_{84}$ |
| 2001 $WC_{87}$ | 15.9 | 0.15 | 20060922 | 351.16863 | 157.94160 | 313.87950 | 3.14045 | 0.1761754 | 2.6606827 | 64 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 97514 | 2001 $WC_{87}$ |
| 2001 $WF_{87}$ | 16.4 | 0.15 | 20060922 | 110.65282 | 45.19476 | 298.23099 | 2.18229 | 0.1703594 | 2.5696472 | 119 | 4 | 1997–2006 | 0.50 | M-v | 2 | MPC | 97514 | 2001 $WF_{87}$ |
| 2001 $WN_{87}$ | 16.2 | 0.15 | 20060922 | 328.04360 | 85.05137 | 43.86761 | 14.78700 | 0.1967351 | 2.7468499 | 31 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 85270 | 2001 $WN_{87}$ |
| 2001 $WP_{87}$ | 15.9 | 0.15 | 20060922 | 119.10784 | 285.16458 | 30.66942 | 6.43970 | 0.0380941 | 2.7346972 | 34 | 4 | 1999–2005 | 0.50 | M-v | 1 | MPC | 94313 | 2001 $WP_{87}$ |
| 2001 $WT_{87}$ | 16.0 | 0.15 | 20060922 | 180.45536 | 304.16929 | 346.12856 | 3.48083 | 0.1610977 | 2.5392269 | 40 | 4 | 1997–2006 | 0.55 | M-v | 4 | MPC | 94313 | 2001 $WT_{87}$ |
| 2001 $WH_{88}$ | 16.3 | 0.15 | 20060922 | 15.47322 | 67.95037 | 8.49669 | 3.23828 | 0.0938035 | 2.7203498 | 31 | 4 | 1996–2006 | 0.52 | M-v | 1 | MPC | 02051 | 2001 $WH_{88}$ |
| 2001 $WD_{89}$ | 16.2 | 0.15 | 20060922 | 97.33433 | 188.43707 | 156.76287 | 2.53349 | 0.1035517 | 2.6693597 | 66 | 4 | 1999–2005 | 0.60 | M-v | 2 | MPC | 02051 | 2001 $WD_{89}$ |
| 2001 $WA_{90}$ | 15.4 | 0.15 | 20060922 | 318.85279 | 205.60789 | 283.50862 | 6.82669 | 0.1671094 | 2.7620481 | 66 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87505 | 2001 $WA_{90}$ |
| 2001 $WK_{90}$ | 14.7 | 0.15 | 20060922 | 228.68057 | 251.76442 | 263.29410 | 16.91521 | 0.0490374 | 3.1029005 | 44 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87505 | 2001 $WK_{90}$ |
| 2001 $WV_{90}$ | 15.5 | 0.15 | 20060922 | 335.34248 | 141.62557 | 281.66828 | 7.68500 | 0.1124760 | 2.9704948 | 44 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 85271 | 2001 $WV_{90}$ |
| 2001 $WA_{91}$ | 15.3 | 0.15 | 20060922 | 2.25732 | 351.79451 | 5.29894 | 8.14474 | 0.1486343 | 3.1345312 | 82 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | 03268 | 2001 $WA_{91}$ |
| 2001 $WC_{91}$ | 15.7 | 0.15 | 20060922 | 359.86834 | 129.34988 | 298.36367 | 5.36137 | 0.0409168 | 2.8170012 | 40 | 4 | 1996–2006 | 0.48 | M-v | 2 | MPC | 85271 | 2001 $WC_{91}$ |
| 2001 $WN_{92}$ | 15.9 | 0.15 | 20060922 | 7.36646 | 97.67070 | 226.64223 | 4.21999 | 0.1291086 | 3.2262505 | 47 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 04186 | 2001 $WN_{92}$ |
| 2001 $WY_{92}$ | 15.1 | 0.15 | 20060922 | 318.61667 | 10.59521 | 28.92486 | 8.94925 | 0.1275639 | 3.2082230 | 51 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 61205 | 2001 $WY_{92}$ |
| 2001 $WH_{95}$ | 14.8 | 0.15 | 20060922 | 353.05386 | 264.88450 | 111.43711 | 11.17083 | 0.1071839 | 3.1008017 | 59 | 4 | 1992–2006 | 0.65 | M-v | 2 | MPC | 04186 | 2001 $WH_{95}$ |
| 2001 $WC_{96}$ | 15.7 | 0.15 | 20060922 | 357.32799 | 255.58220 | 108.32497 | 5.51540 | 0.2359146 | 3.0583069 | 89 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04186 | 2001 $WC_{96}$ |
| 2001 $WJ_{96}$ | 16.4 | 0.15 | 20060922 | 96.96960 | 224.20974 | 59.64844 | 2.66327 | 0.0567459 | 3.0478849 | 45 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 85272 | 2001 $WJ_{96}$ |
| 2001 $WO_{96}$ | 16.0 | 0.15 | 20060922 | 18.49371 | 129.54435 | 200.76678 | 0.64555 | 0.1316103 | 3.2012030 | 36 | 4 | 2000–2006 | 0.51 | M-v | 0 | MPC | 85272 | 2001 $WO_{96}$ |
| 2001 $WJ_{97}$ | 17.7 | 0.15 | 20060922 | 4.49779 | 107.17709 | 66.99508 | 5.16606 | 0.1291617 | 2.4147692 | 22 | 3 | 2001–2005 | 0.36 | M-v | 3 | MPC | 94315 | 2001 $WJ_{97}$ |
| 2001 $WT_{97}$ | 16.2 | 0.15 | 20060922 | 80.53016 | 90.82934 | 272.24249 | 1.30952 | 0.0943298 | 2.7083839 | 53 | 3 | 2001–2006 | 0.62 | M-v | 3 | MPC | 90121 | 2001 $WT_{97}$ |
| 2001 $WP_{98}$ | 15.1 | 0.15 | 20060922 | 1.73147 | 160.55897 | 203.91512 | 12.61018 | 0.1216490 | 3.1192574 | 82 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04186 | 2001 $WP_{98}$ |
| 2001 $WD_{100}$ | 16.1 | 0.15 | 20060922 | 86.09473 | 58.32051 | 320.64747 | 2.96256 | 0.2466970 | 2.6172638 | 92 | 2 | 2001–2005 | 0.55 | M-v | 3 | MPC | 89103 | 2001 $WD_{100}$ |
| 2001 $WK_{100}$ | 17.3 | 0.15 | 20060922 | 85.55028 | 104.99765 | 44.55571 | 4.69408 | 0.1126799 | 2.2248579 | 38 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 00092 | 2001 $WK_{100}$ |
| 2001 $WW_{100}$ | 16.1 | 0.15 | 20060922 | 259.28711 | 12.31068 | 255.70015 | 1.79882 | 0.1762918 | 2.3653831 | 111 | 4 | 2001–2005 | 0.55 | M-v | 1 | MPC | 74110 | 2001 $WW_{100}$ |
| 2001 $WM_{101}$ | 16.1 | 0.15 | 20060922 | 36.29348 | 260.50296 | 121.99066 | 4.91422 | 0.0771268 | 2.8187685 | 28 | 3 | 1996–2005 | 0.57 | M-v | 3 | MPC | 89104 | 2001 $WM_{101}$ |
| 2001 $WC_{102}$ | 16.1 | 0.15 | 20060922 | 340.39735 | 27.22016 | 76.18029 | 5.76190 | 0.0721263 | 2.7705799 | 29 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 46955 | 2001 $WC_{102}$ |
| 2001 XR | 14.9 | 0.15 | 20060922 | 244.41915 | 264.13114 | 150.14740 | 2.22701 | 0.1986098 | 3.9499938 | 39 | 4 | 1992–2003 | 0.57 | M-v | 0 | MPC | 30560 | 2001 XR |
| 2001 $XL_1$ | 14.1 | 0.15 | 20060922 | 57.07981 | 117.12513 | 274.57462 | 15.33027 | 0.3274393 | 2.6365559 | 219 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 97514 | 2001 $XL_1$ |
| 2001 $XU_1$ | 19.3 | 0.15 | 20060922 | 19.48605 | 208.48744 | 69.74334 | 27.15981 | 0.5462641 | 0.7973915 | 197 | 3 | 2001–2006 | 0.46 | M-v | 4 | MPC | 72423 | 2001 $XU_1$ |
| 2001 $XW_1$ | 16.1 | 0.15 | 20060922 | 42.10406 | 215.66493 | 96.53411 | 25.51945 | 0.0760475 | 1.9158181 | 67 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 72424 | 2001 $XW_1$ |
| 2001 $XC_2$ | 14.6 | 0.15 | 20060922 | 288.56634 | 110.97356 | 343.46316 | 25.00743 | 0.3597502 | 3.1700858 | 59 | 3 | 1997–2006 | 0.46 | M-v | 2 | MPC | 03268 | 2001 $XC_2$ |
| 2001 $XD_2$ | 15.3 | 0.15 | 20060922 | 57.38803 | 93.70003 | 314.59357 | 21.14650 | 0.1030476 | 2.6019760 | 58 | 3 | 2001–2005 | 0.62 | M-v | 3 | MPC | 97514 | 2001 $XD_2$ |
| 2001 $XE_2$ | 16.2 | 0.15 | 20060922 | 220.45875 | 212.56460 | 286.80836 | 17.61153 | 0.0779287 | 1.9331066 | 66 | 5 | 1998–2006 | 0.65 | M-v | 2 | MPC | 04186 | 2001 $XE_2$ |
| 2001 $XN_2$ | 17.3 | 0.15 | 20060922 | 244.94451 | 195.30500 | 293.71125 | 18.27547 | 0.0796824 | 1.9106322 | 31 | 4 | 2001–2006 | 0.63 | M-v | 2 | MPC | 75223 | 2001 $XN_2$ |
| 2001 $XX_2$ | 15.6 | 0.15 | 20060922 | 38.81726 | 263.64614 | 269.99718 | 22.08194 | 0.2475340 | 2.3512052 | 93 | 4 | 1996–2006 | 0.58 | M-v | 1 | MPC | 02051 | 2001 $XX_2$ |
| 2001 $XA_3$ | 16.3 | 0.15 | 20060922 | 353.80428 | 92.75849 | 266.67673 | 19.07106 | 0.0748969 | 1.9221352 | 54 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 04186 | 2001 $XA_3$ |
| 2001 $XR_3$ | 16.5 | 0.15 | 20060922 | 64.42779 | 352.10727 | 279.14277 | 17.94692 | 0.0554740 | 1.9690657 | 38 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 03268 | 2001 $XR_3$ |
| 2001 $XB_4$ | 14.8 | 0.15 | 20060922 | 5.47096 | 91.19729 | 53.52150 | 24.91017 | 0.2798161 | 2.7473745 | 202 | 3 | 1996–2006 | 0.58 | M-v | 2 | MPC | 97515 | 2001 $XB_4$ |
| 2001 $XO_4$ | 16.4 | 0.15 | 20060922 | 242.32429 | 237.74977 | 264.83139 | 19.43716 | 0.0628429 | 1.8941040 | 84 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 77579 | 2001 $XO_4$ |
| 2001 $XT_6$ | 16.3 | 0.15 | 20060922 | 7.93673 | 68.73200 | 283.77633 | 18.08579 | 0.0884843 | 1.9219144 | 66 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 85279 | 2001 $XT_6$ |
| 2001 $XZ_6$ | 16.9 | 0.15 | 20060922 | 320.24985 | 284.43517 | 112.16247 | 26.88165 | 0.1840700 | 1.9483407 | 81 | 2 | 2001–2006 | 0.49 | M-v | 3 | MPC | 03269 | 2001 $XZ_6$ |
| 2001 $XJ_7$ | 15.0 | 0.15 | 20060922 | 312.55324 | 190.95060 | 250.25384 | 9.33279 | 0.0833686 | 3.1126802 | 104 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87505 | 2001 $XJ_7$ |
| 2001 $XH_8$ | 15.1 | 0.15 | 20060922 | 236.78868 | 21.29049 | 129.10217 | 15.05110 | 0.1158646 | 3.2042725 | 58 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 87505 | 2001 $XH_8$ |
| 2001 $XS_8$ | 15.6 | 0.15 | 20060922 | 50.21399 | 94.29914 | 284.79366 | 11.78551 | 0.2218855 | 2.7696213 | 93 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 97515 | 2001 $XS_8$ |
| 2001 $XT_8$ | 16.0 | 0.15 | 20060922 | 342.63789 | 101.42575 | 50.02835 | 15.06641 | 0.0268983 | 2.5809515 | 68 | 4 | 2001–2005 | 0.53 | M-v | 0 | MPC | 97515 | 2001 $XT_8$ |
| 2001 $XV_8$ | 15.8 | 0.15 | 20060922 | 343.21841 | 31.56218 | 350.95073 | 4.90494 | 0.1863642 | 3.1609420 | 64 | 3 | 1997–2006 | 0.45 | M-v | 3 | MPC | 03269 | 2001 $XV_8$ |
| 2001 $XA_9$ | 15.6 | 0.15 | 20060922 | 272.56722 | 252.23244 | 295.22966 | 8.26552 | 0.1551833 | 2.7991116 | 56 | 5 | 2001–2006 | 0.64 | M-v | 1 | MPC | 90122 | 2001 $XA_9$ |
| 2001 $XJ_9$ | 14.8 | 0.15 | 20060922 | 352.44349 | 307.03746 | 47.01739 | 14.76692 | 0.2922904 | 3.1793691 | 102 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04186 | 2001 $XJ_9$ |
| 2001 $XL_9$ | 15.0 | 0.15 | 20060922 | 79.74358 | 81.12422 | 277.76255 | 12.24207 | 0.1956431 | 2.7253517 | 116 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 97515 | 2001 $XL_9$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XM_{9}$ | 16.3 | 0.15 | 20060922 | 141.90452 | 0.89778 | 45.26541 | 6.09051 | 0.1860605 | 2.3433621 | 42 | 3 | 2001–2006 | 0.67 | M-v | 2 | MPC | 94320 | 2001 $XM_{9}$ |
| 2001 $XY_{9}$ | 15.3 | 0.15 | 20060922 | 287.48427 | 210.27171 | 305.00386 | 8.20538 | 0.1167671 | 2.9114386 | 53 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87505 | 2001 $XY_{9}$ |
| 2001 $XE_{10}$ | 15.3 | 0.15 | 20060922 | 338.50412 | 135.17981 | 286.83678 | 15.90721 | 0.2117670 | 3.0796650 | 61 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 77580 | 2001 $XE_{10}$ |
| 2001 $XZ_{10}$ | 14.6 | 0.15 | 20060922 | 341.80590 | 286.66170 | 78.78940 | 10.49063 | 0.0816799 | 3.1768135 | 75 | 4 | 2001–2006 | 0.59 | M-v | 2 | MPC | 04187 | 2001 $XZ_{10}$ |
| 2001 $XN_{11}$ | 14.4 | 0.15 | 20060922 | 41.76287 | 139.78309 | 276.27174 | 20.81986 | 0.0603058 | 2.6722047 | 87 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 97515 | 2001 $XN_{11}$ |
| 2001 $XP_{11}$ | 14.9 | 0.15 | 20060922 | 285.02697 | 148.50232 | 307.76023 | 15.06532 | 0.1085677 | 3.1494928 | 36 | 4 | 1997–2006 | 0.62 | M-v | 2 | MPC | 87506 | 2001 $XP_{11}$ |
| 2001 $XA_{12}$ | 15.4 | 0.15 | 20060922 | 272.17331 | 105.08696 | 8.61896 | 9.87712 | 0.0451483 | 3.1541104 | 53 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 62382 | 2001 $XA_{12}$ |
| 2001 $XV_{12}$ | 15.4 | 0.15 | 20060922 | 312.47841 | 218.87747 | 298.57921 | 12.82922 | 0.1406834 | 2.7736602 | 37 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 65183 | 2001 $XV_{12}$ |
| 2001 $XC_{13}$ | 15.1 | 0.15 | 20060922 | 21.63692 | 54.83942 | 320.28182 | 10.45630 | 0.0977401 | 3.0760530 | 46 | 4 | 2000–2006 | 0.47 | M-v | 0 | MPC | 87506 | 2001 $XC_{13}$ |
| 2001 $XT_{13}$ | 15.9 | 0.15 | 20060922 | 358.33844 | 334.56104 | 37.65788 | 5.82062 | 0.2670172 | 3.1044274 | 91 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 26065 | 2001 $XT_{13}$ |
| 2001 $XX_{13}$ | 15.4 | 0.15 | 20060922 | 82.95011 | 63.52153 | 288.09584 | 13.67843 | 0.1896844 | 2.7667430 | 62 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 90122 | 2001 $XX_{13}$ |
| 2001 $XA_{14}$ | 15.1 | 0.15 | 20060922 | 26.15696 | 19.99107 | 340.73658 | 8.28958 | 0.0841705 | 3.1465110 | 50 | 5 | 1997–2006 | 0.42 | M-v | 1 | MPC | 48159 | 2001 $XA_{14}$ |
| 2001 $XB_{14}$ | 15.7 | 0.15 | 20060922 | 2.65567 | 303.72975 | 56.06393 | 13.94734 | 0.4382226 | 3.0476303 | 76 | 3 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04187 | 2001 $XB_{14}$ |
| 2001 $XQ_{14}$ | 15.1 | 0.15 | 20060922 | 351.87034 | 65.46119 | 337.76663 | 7.85226 | 0.1251750 | 3.0617733 | 50 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 46961 | 2001 $XQ_{14}$ |
| 2001 $XU_{16}$ | 15.7 | 0.15 | 20060922 | 86.70988 | 53.21314 | 306.22525 | 6.88587 | 0.2340051 | 2.6936886 | 80 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 97515 | 2001 $XU_{16}$ |
| 2001 $XP_{17}$ | 15.6 | 0.15 | 20060922 | 106.79601 | 4.28583 | 23.58974 | 7.05986 | 0.2269240 | 2.5214710 | 70 | 4 | 1995–2006 | 0.57 | M-v | 3 | MPC | 97516 | 2001 $XP_{17}$ |
| 2001 $XK_{18}$ | 15.3 | 0.15 | 20060922 | 4.54130 | 148.73532 | 317.58467 | 8.58656 | 0.1103676 | 2.7376998 | 83 | 5 | 1991–2006 | 0.58 | M-v | 1 | MPC | 90122 | 2001 $XK_{18}$ |
| 2001 $XP_{18}$ | 15.7 | 0.15 | 20060922 | 42.08340 | 39.71138 | 41.82540 | 5.48015 | 0.0511560 | 2.6670301 | 73 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 97516 | 2001 $XP_{18}$ |
| 2001 $XA_{19}$ | 15.2 | 0.15 | 20060922 | 291.16879 | 56.24969 | 65.37668 | 16.70390 | 0.1241571 | 3.1043970 | 64 | 4 | 1998–2006 | 0.52 | M-v | 0 | MPC | 03269 | 2001 $XA_{19}$ |
| 2001 $XU_{19}$ | 14.4 | 0.15 | 20060922 | 230.58839 | 233.39356 | 323.62348 | 9.42155 | 0.0520431 | 3.0236175 | 53 | 4 | 1997–2005 | 0.71 | M-v | 1 | MPC | 90122 | 2001 $XU_{19}$ |
| 2001 $XN_{20}$ | 14.6 | 0.15 | 20060922 | 294.44362 | 192.37654 | 314.27129 | 10.07776 | 0.0525753 | 2.9397961 | 43 | 3 | 2000–2003 | 0.68 | M-v | 3 | MPC | 30563 | 2001 $XN_{20}$ |
| 2001 $XR_{20}$ | 14.2 | 0.15 | 20060922 | 338.07638 | 106.27132 | 291.54835 | 22.30764 | 0.2659356 | 3.1707038 | 82 | 3 | 2000–2006 | 0.50 | M-v | 1 | MPC | 04187 | 2001 $XR_{20}$ |
| 2001 $XD_{21}$ | 14.2 | 0.15 | 20060922 | 18.62967 | 280.31805 | 82.14603 | 18.64000 | 0.2336848 | 3.1411913 | 67 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 62382 | 2001 $XD_{21}$ |
| 2001 $XP_{21}$ | 15.7 | 0.15 | 20060922 | 344.73717 | 92.09836 | 305.93431 | 11.38970 | 0.3922041 | 3.0725047 | 73 | 3 | 1995–2006 | 0.51 | M-v | 1 | MPC | 03269 | 2001 $XP_{21}$ |
| 2001 $XX_{21}$ | 15.0 | 0.15 | 20060922 | 61.76183 | 136.55675 | 294.18561 | 21.10927 | 0.0358145 | 2.6578055 | 53 | 3 | 2000–2004 | 0.66 | M-v | 3 | MPC | 65187 | 2001 $XX_{21}$ |
| 2001 $XR_{22}$ | 14.6 | 0.15 | 20060922 | 279.25650 | 177.80619 | 301.83146 | 12.30235 | 0.1417333 | 3.1596059 | 39 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 46966 | 2001 $XR_{22}$ |
| 2001 $XE_{23}$ | 14.9 | 0.15 | 20060922 | 288.50579 | 107.24077 | 0.63132 | 4.87869 | 0.1416430 | 3.2150454 | 68 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97516 | 2001 $XE_{23}$ |
| 2001 $XC_{24}$ | 14.9 | 0.15 | 20060922 | 338.66655 | 56.47764 | 68.98890 | 12.68110 | 0.1864961 | 2.8027130 | 73 | 6 | 1977–2006 | 0.71 | M-v | 1 | MPC | 87506 | 2001 $XC_{24}$ |
| 2001 $XZ_{30}$ | 15.3 | 0.15 | 20060922 | 326.39609 | 227.22356 | 181.55163 | 14.18493 | 0.1717873 | 3.1329917 | 84 | 3 | 2000–2006 | 0.43 | M-v | 2 | MPC | 03269 | 2001 $XZ_{30}$ |
| 2001 $XH_{31}$ | 16.6 | 0.15 | 20060922 | 32.37161 | 226.46355 | 89.42832 | 23.30930 | 0.0901580 | 1.9304889 | 48 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04187 | 2001 $XH_{31}$ |
| 2001 $XG_{32}$ | 16.5 | 0.15 | 20060922 | 288.00768 | 131.90060 | 328.88557 | 0.16574 | 0.1328169 | 3.0918849 | 46 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 89112 | 2001 $XG_{32}$ |
| 2001 $XM_{32}$ | 16.4 | 0.15 | 20060922 | 301.32967 | 294.92293 | 244.07445 | 8.58974 | 0.0663840 | 2.6093014 | 55 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 97517 | 2001 $XM_{32}$ |
| 2001 $XH_{33}$ | 15.4 | 0.15 | 20060922 | 357.90749 | 10.61958 | 111.78850 | 10.39142 | 0.1260252 | 2.7788320 | 108 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 89113 | 2001 $XH_{33}$ |
| 2001 $XT_{33}$ | 16.2 | 0.15 | 20060922 | 52.84546 | 299.61527 | 92.11752 | 4.58052 | 0.1003509 | 2.7737563 | 53 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 89113 | 2001 $XT_{33}$ |
| 2001 $XC_{34}$ | 16.0 | 0.15 | 20060922 | 5.70085 | 169.68470 | 296.35184 | 12.19573 | 0.1843798 | 2.6846581 | 35 | 4 | 1997–2006 | 0.56 | M-v | 1 | MPC | 90123 | 2001 $XC_{34}$ |
| 2001 $XE_{34}$ | 15.3 | 0.15 | 20060922 | 9.35787 | 162.77766 | 310.04834 | 10.90319 | 0.1034939 | 2.6271713 | 77 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 97517 | 2001 $XE_{34}$ |
| 2001 $XJ_{34}$ | 14.6 | 0.15 | 20060922 | 342.37900 | 73.97714 | 320.83454 | 10.14091 | 0.1528005 | 3.0982930 | 73 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 03270 | 2001 $XJ_{34}$ |
| 2001 $XR_{34}$ | 15.4 | 0.15 | 20060922 | 149.11492 | 27.33245 | 302.53060 | 13.34508 | 0.0865981 | 2.5867868 | 39 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 00094 | 2001 $XR_{34}$ |
| 2001 $XD_{35}$ | 15.0 | 0.15 | 20060922 | 46.42110 | 120.56467 | 282.40149 | 12.06765 | 0.1811161 | 2.6781696 | 124 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 97517 | 2001 $XD_{35}$ |
| 2001 $XB_{36}$ | 15.5 | 0.15 | 20060922 | 70.24598 | 90.00062 | 277.70881 | 15.44114 | 0.2011639 | 2.6972339 | 80 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 90123 | 2001 $XB_{36}$ |
| 2001 $XH_{36}$ | 15.1 | 0.15 | 20060922 | 321.82506 | 74.31006 | 4.15542 | 8.24004 | 0.1468505 | 3.0253930 | 78 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 48161 | 2001 $XH_{36}$ |
| 2001 $XR_{36}$ | 15.3 | 0.15 | 20060922 | 132.07326 | 26.38107 | 302.44042 | 10.96931 | 0.1636285 | 2.6146804 | 78 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 97517 | 2001 $XR_{36}$ |
| 2001 $XU_{36}$ | 15.9 | 0.15 | 20060922 | 339.03476 | 91.50180 | 30.09273 | 8.91464 | 0.2389855 | 2.7964583 | 58 | 5 | 1991–2006 | 0.63 | M-v | 1 | MPC | 87507 | 2001 $XU_{36}$ |
| 2001 $XW_{37}$ | 14.4 | 0.15 | 20060922 | 263.32181 | 242.29544 | 282.20556 | 16.29951 | 0.1115301 | 3.1460814 | 110 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87507 | 2001 $XW_{37}$ |
| 2001 $XY_{37}$ | 15.0 | 0.15 | 20060922 | 183.20167 | 272.04587 | 23.85550 | 10.89378 | 0.1287729 | 2.5945625 | 35 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 94328 | 2001 $XY_{37}$ |
| 2001 $XF_{38}$ | 16.4 | 0.15 | 20060922 | 138.54800 | 80.39798 | 316.90240 | 8.81873 | 0.2023289 | 2.3720573 | 72 | 3 | 1995–2006 | 0.57 | M-v | 3 | MPC | 94328 | 2001 $XF_{38}$ |
| 2001 $XM_{38}$ | 15.0 | 0.15 | 20060922 | 328.13551 | 76.00169 | 334.20986 | 9.09241 | 0.2216884 | 3.1384179 | 97 | 2 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03270 | 2001 $XM_{38}$ |
| 2001 $XQ_{38}$ | 16.9 | 0.15 | 20060922 | 315.75057 | 120.38174 | 283.33570 | 16.96688 | 0.1074697 | 1.9182664 | 71 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 03270 | 2001 $XQ_{38}$ |
| 2001 $XJ_{39}$ | 15.0 | 0.15 | 20060922 | 17.92662 | 351.30669 | 35.94234 | 12.45162 | 0.1441763 | 2.9798682 | 35 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 00095 | 2001 $XJ_{39}$ |
| 2001 $XK_{39}$ | 14.5 | 0.15 | 20060922 | 357.68914 | 8.78299 | 358.45790 | 10.34679 | 0.2215646 | 3.1633576 | 126 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 03270 | 2001 $XK_{39}$ |
| 2001 $XW_{40}$ | 15.0 | 0.15 | 20060922 | 358.15411 | 85.47760 | 290.78162 | 21.26498 | 0.2520138 | 3.1188367 | 42 | 3 | 2000–2006 | 0.66 | M-v | 2 | MPC | 23172 | 2001 $XW_{40}$ |
| 2001 $XF_{41}$ | 15.1 | 0.15 | 20060922 | 54.47831 | 48.21948 | 341.62492 | 9.52050 | 0.1589462 | 2.7846958 | 106 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 97517 | 2001 $XF_{41}$ |
| 2001 $XJ_{41}$ | 15.4 | 0.15 | 20060922 | 359.19822 | 171.11225 | 320.93024 | 11.80838 | 0.2065726 | 2.6973889 | 89 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 97517 | 2001 $XJ_{41}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XR_{41}$ | 14.6 | 0.15 | 20060922 | 302.13143 | 157.93168 | 299.36145 | 15.16939 | 0.3020975 | 3.1616119 | 95 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 85292 | 2001 $XR_{41}$ |
| 2001 $XY_{41}$ | 16.2 | 0.15 | 20060922 | 51.66537 | 79.23693 | 314.91717 | 12.66288 | 0.1687112 | 2.7881398 | 65 | 2 | 2001–2005 | 0.51 | M-v | 3 | MPC | 85293 | 2001 $XY_{41}$ |
| 2001 $XG_{42}$ | 14.8 | 0.15 | 20060922 | 331.00538 | 123.60386 | 307.99569 | 17.24089 | 0.1712090 | 3.0937690 | 56 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 85293 | 2001 $XG_{42}$ |
| 2001 $XC_{43}$ | 15.3 | 0.15 | 20060922 | 77.43805 | 60.46455 | 299.67569 | 13.20256 | 0.2009596 | 2.7267719 | 69 | 3 | 1996–2005 | 0.53 | M-v | 3 | MPC | 90123 | 2001 $XC_{43}$ |
| 2001 $XO_{43}$ | 14.8 | 0.15 | 20060922 | 249.37688 | 171.15801 | 346.97095 | 9.15719 | 0.1385215 | 3.1488787 | 37 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 97518 | 2001 $XO_{43}$ |
| 2001 $XR_{43}$ | 15.3 | 0.15 | 20060922 | 270.77364 | 69.99622 | 62.82140 | 16.38019 | 0.1367575 | 3.1952099 | 51 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 87507 | 2001 $XR_{43}$ |
| 2001 $XX_{44}$ | 16.4 | 0.15 | 20060922 | 185.77868 | 337.42337 | 40.06780 | 7.18914 | 0.1212301 | 2.3477774 | 77 | 4 | 1997–2004 | 0.78 | M-v | 1 | MPC | 70313 | 2001 $XX_{44}$ |
| 2001 $XD_{45}$ | 15.6 | 0.15 | 20060922 | 354.73741 | 84.75474 | 329.42996 | 10.98382 | 0.1108424 | 3.0564039 | 58 | 6 | 1997–2006 | 0.52 | M-v | 0 | MPC | 90123 | 2001 $XD_{45}$ |
| 2001 $XH_{45}$ | 15.5 | 0.15 | 20060922 | 144.35388 | 305.38510 | 33.25905 | 13.25228 | 0.0944430 | 2.5780663 | 29 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 94329 | 2001 $XH_{45}$ |
| 2001 $XE_{47}$ | 16.1 | 0.15 | 20060922 | 338.79873 | 43.34726 | 41.60492 | 10.61454 | 0.1820572 | 3.0535204 | 50 | 4 | 2000–2006 | 0.45 | M-v | 0 | MPC | 89117 | 2001 $XE_{47}$ |
| 2001 $XW_{47}$ | 15.7 | 0.15 | 20060922 | 255.25164 | 39.08354 | 82.22262 | 24.96746 | 0.0676763 | 1.9426931 | 115 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87507 | 2001 $XW_{47}$ |
| 2001 $XV_{48}$ | 16.3 | 0.15 | 20060922 | 352.81326 | 15.69328 | 69.54617 | 2.12655 | 0.1117670 | 2.7857250 | 46 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85296 | 2001 $XV_{48}$ |
| 2001 $XR_{49}$ | 15.4 | 0.15 | 20060922 | 310.01623 | 195.43654 | 233.25361 | 5.22050 | 0.0309018 | 3.1160540 | 71 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87507 | 2001 $XR_{49}$ |
| 2001 $XC_{50}$ | 15.5 | 0.15 | 20060922 | 2.10423 | 120.53964 | 246.76685 | 1.80945 | 0.1432068 | 3.0946001 | 105 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 61207 | 2001 $XC_{50}$ |
| 2001 $XJ_{50}$ | 15.7 | 0.15 | 20060922 | 351.52940 | 24.91384 | 78.56914 | 3.28048 | 0.1239157 | 2.7452591 | 84 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 87507 | 2001 $XJ_{50}$ |
| 2001 $XA_{51}$ | 14.1 | 0.15 | 20060922 | 4.11717 | 59.98511 | 273.31892 | 15.47933 | 0.2246890 | 3.1365204 | 88 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 04187 | 2001 $XA_{51}$ |
| 2001 $XE_{51}$ | 16.3 | 0.15 | 20060922 | 52.24233 | 304.95069 | 76.57871 | 1.67834 | 0.0840047 | 2.7655742 | 46 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97518 | 2001 $XE_{51}$ |
| 2001 $XG_{51}$ | 16.2 | 0.15 | 20060922 | 52.90735 | 332.16463 | 82.51829 | 3.10139 | 0.0280102 | 2.6442682 | 91 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97518 | 2001 $XG_{51}$ |
| 2001 $XH_{51}$ | 16.2 | 0.15 | 20060922 | 45.53534 | 257.64784 | 132.76254 | 1.13070 | 0.0820369 | 2.7705217 | 50 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 87507 | 2001 $XH_{51}$ |
| 2001 $XE_{52}$ | 14.7 | 0.15 | 20060922 | 43.56658 | 99.00987 | 232.64232 | 4.30744 | 0.2534529 | 2.9776937 | 140 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 62383 | 2001 $XE_{52}$ |
| 2001 $XP_{52}$ | 16.1 | 0.15 | 20060922 | 24.43144 | 356.67531 | 78.59100 | 9.88628 | 0.1207225 | 2.7076107 | 58 | 3 | 2001–2005 | 0.52 | M-v | 2 | MPC | 89119 | 2001 $XP_{52}$ |
| 2001 $XV_{52}$ | 15.8 | 0.15 | 20060922 | 314.10026 | 66.32972 | 82.25093 | 13.85309 | 0.1342099 | 2.7604345 | 54 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 87507 | 2001 $XV_{52}$ |
| 2001 $XH_{53}$ | 15.9 | 0.15 | 20060922 | 12.00611 | 218.17669 | 231.65833 | 2.88423 | 0.1095705 | 2.7209365 | 70 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 90124 | 2001 $XH_{53}$ |
| 2001 $XB_{54}$ | 15.8 | 0.15 | 20060922 | 323.59864 | 334.26216 | 95.25959 | 6.60522 | 0.1528564 | 3.0791482 | 67 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 89120 | 2001 $XB_{54}$ |
| 2001 $XZ_{54}$ | 15.3 | 0.15 | 20060922 | 116.45869 | 282.89256 | 85.76032 | 3.57735 | 0.0747998 | 2.5783330 | 185 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97518 | 2001 $XZ_{54}$ |
| 2001 $XG_{55}$ | 15.8 | 0.15 | 20060922 | 30.49309 | 327.66817 | 86.61056 | 5.13864 | 0.0977316 | 2.7813734 | 58 | 5 | 1999–2006 | 0.55 | M-v | 0 | MPC | 90124 | 2001 $XG_{55}$ |
| 2001 $XX_{55}$ | 16.4 | 0.15 | 20060922 | 25.13109 | 358.36455 | 102.47228 | 4.36467 | 0.1788143 | 2.6389721 | 80 | 3 | 2001–2005 | 0.64 | M-v | 3 | MPC | 89120 | 2001 $XX_{55}$ |
| 2001 $XL_{57}$ | 16.0 | 0.15 | 20060922 | 328.43429 | 305.85539 | 121.75557 | 2.08460 | 0.2796726 | 3.0585901 | 88 | 3 | 1997–2006 | 0.55 | M-v | 3 | MPC | 30568 | 2001 $XL_{57}$ |
| 2001 $XK_{59}$ | 14.9 | 0.15 | 20060922 | 117.89600 | 136.62741 | 237.18242 | 3.18227 | 0.1268936 | 2.5622082 | 173 | 5 | 1984–2006 | 0.54 | M-v | 1 | MPC | 00095 | 2001 $XK_{59}$ |
| 2001 $XF_{61}$ | 15.8 | 0.15 | 20060922 | 356.30608 | 40.22729 | 85.70322 | 14.88108 | 0.1240462 | 2.6751458 | 43 | 2 | 2001–2005 | 0.60 | M-v | 4 | MPC | 89121 | 2001 $XF_{61}$ |
| 2001 $XJ_{62}$ | 15.4 | 0.15 | 20060922 | 344.22031 | 55.60996 | 95.07065 | 14.07876 | 0.1322223 | 2.6797856 | 46 | 3 | 2001–2005 | 0.71 | M-v | 2 | MPC | 46986 | 2001 $XJ_{62}$ |
| 2001 $XL_{63}$ | 15.0 | 0.15 | 20060922 | 335.40257 | 155.80709 | 275.81615 | 11.30863 | 0.2411732 | 3.0619956 | 71 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 30570 | 2001 $XL_{63}$ |
| 2001 $XQ_{63}$ | 15.2 | 0.15 | 20060922 | 333.48830 | 190.48536 | 263.12900 | 4.36289 | 0.1752407 | 2.9987850 | 83 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 90124 | 2001 $XQ_{63}$ |
| 2001 $XK_{64}$ | 16.3 | 0.15 | 20060922 | 333.60438 | 311.53986 | 95.93320 | 22.96966 | 0.1043085 | 1.9046477 | 90 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 75227 | 2001 $XK_{64}$ |
| 2001 $XF_{65}$ | 16.5 | 0.15 | 20060922 | 118.04555 | 354.64035 | 104.98365 | 3.23298 | 0.1672031 | 2.3345834 | 55 | 3 | 2000–2006 | 0.52 | M-v | 4 | MPC | 00096 | 2001 $XF_{65}$ |
| 2001 $XY_{66}$ | 15.4 | 0.15 | 20060922 | 47.13028 | 127.72586 | 283.77314 | 12.06282 | 0.2083687 | 2.7765611 | 118 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 97519 | 2001 $XY_{66}$ |
| 2001 $XF_{69}$ | 15.2 | 0.15 | 20060922 | 293.29118 | 180.80883 | 289.35962 | 15.00698 | 0.1817456 | 3.0573919 | 48 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87508 | 2001 $XF_{69}$ |
| 2001 $XG_{69}$ | 15.2 | 0.15 | 20060922 | 33.28037 | 274.70161 | 69.58510 | 12.65960 | 0.0932872 | 2.9776463 | 58 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 62383 | 2001 $XG_{69}$ |
| 2001 $XL_{69}$ | 15.9 | 0.15 | 20060922 | 49.01726 | 252.12216 | 178.40109 | 3.50603 | 0.0562442 | 2.5598608 | 172 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 97519 | 2001 $XL_{69}$ |
| 2001 $XO_{69}$ | 15.5 | 0.15 | 20060922 | 55.85632 | 245.51744 | 136.74719 | 9.71861 | 0.1868652 | 2.7508197 | 91 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87508 | 2001 $XO_{69}$ |
| 2001 $XR_{69}$ | 17.6 | 0.15 | 20060922 | 83.48129 | 305.06152 | 68.67354 | 18.49962 | 0.3518818 | 2.5600286 | 37 | 2 | 2001–2005 | 0.66 | M-v | 3 | MPC | 90124 | 2001 $XR_{69}$ |
| 2001 $XS_{69}$ | 16.5 | 0.15 | 20060922 | 318.61441 | 289.90731 | 140.41333 | 2.64184 | 0.1004056 | 3.0124654 | 45 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 50578 | 2001 $XS_{69}$ |
| 2001 $XT_{69}$ | 15.0 | 0.15 | 20060922 | 323.36491 | 321.03547 | 74.02154 | 10.29963 | 0.0884479 | 3.1657860 | 57 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04187 | 2001 $XT_{69}$ |
| 2001 $XS_{70}$ | 15.8 | 0.15 | 20060922 | 109.69374 | 210.76937 | 115.47802 | 7.50177 | 0.0871759 | 2.7094377 | 46 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 85301 | 2001 $XS_{70}$ |
| 2001 $XT_{70}$ | 16.7 | 0.15 | 20060922 | 113.69394 | 221.76083 | 143.17609 | 5.86837 | 0.1272164 | 2.5279500 | 50 | 4 | 1995–2005 | 0.56 | M-v | 3 | MPC | 97519 | 2001 $XT_{70}$ |
| 2001 $XC_{71}$ | 14.9 | 0.15 | 20060922 | 270.90901 | 14.67118 | 108.65328 | 10.30525 | 0.1247628 | 3.0824114 | 73 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 50578 | 2001 $XC_{71}$ |
| 2001 $XJ_{71}$ | 15.1 | 0.15 | 20060922 | 358.67860 | 168.80079 | 220.15695 | 11.48994 | 0.0861220 | 3.0855480 | 96 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 75228 | 2001 $XJ_{71}$ |
| 2001 $XR_{71}$ | 14.9 | 0.15 | 20060922 | 283.12538 | 27.69880 | 72.41659 | 17.68041 | 0.0926723 | 3.1027103 | 39 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85302 | 2001 $XR_{71}$ |
| 2001 $XZ_{71}$ | 15.8 | 0.15 | 20060922 | 42.58849 | 217.50087 | 147.97307 | 2.53415 | 0.1032327 | 2.8724949 | 32 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 89123 | 2001 $XZ_{71}$ |
| 2001 $XD_{72}$ | 16.2 | 0.15 | 20060922 | 86.16330 | 251.00338 | 105.65020 | 5.31235 | 0.1932950 | 2.6591697 | 53 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 04187 | 2001 $XD_{72}$ |
| 2001 $XW_{72}$ | 16.0 | 0.15 | 20060922 | 113.22792 | 168.20980 | 178.99419 | 2.30961 | 0.0401325 | 2.6866346 | 64 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 97520 | 2001 $XW_{72}$ |
| 2001 $XK_{73}$ | 15.7 | 0.15 | 20060922 | 350.55838 | 314.35659 | 129.05260 | 3.04283 | 0.0614310 | 2.8187823 | 50 | 6 | 1993–2006 | 0.57 | M-v | 0 | MPC | 04187 | 2001 $XK_{73}$ |
| 2001 $XL_{73}$ | 15.7 | 0.15 | 20060922 | 321.26053 | 353.16146 | 152.21668 | 2.59388 | 0.0211628 | 2.6642599 | 97 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 97520 | 2001 $XL_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XT_{73}$ | 15.1 | 0.15 | 20060922 | 335.87056 | 204.70612 | 200.85537 | 10.10758 | 0.0709526 | 3.1075143 | 72 | 4 | 1993–2006 | 0.41 | M-v | 1 | MPC | 27312 | 2001 $XT_{73}$ |
| 2001 $XX_{73}$ | 15.7 | 0.15 | 20060922 | 31.27239 | 9.88371 | 55.66568 | 15.14510 | 0.0935631 | 2.6295133 | 53 | 4 | 1995–2005 | 0.52 | M-v | 1 | MPC | 90125 | 2001 $XX_{73}$ |
| 2001 $XE_{74}$ | 15.2 | 0.15 | 20060922 | 275.52969 | 41.71463 | 82.00686 | 10.44288 | 0.0745623 | 3.0505059 | 57 | 4 | 1993–2006 | 0.58 | M-v | 1 | MPC | 04187 | 2001 $XE_{74}$ |
| 2001 $XN_{74}$ | 15.0 | 0.15 | 20060922 | 45.93688 | 249.01832 | 62.47663 | 11.02693 | 0.0722375 | 3.0723277 | 51 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 04187 | 2001 $XN_{74}$ |
| 2001 $XQ_{74}$ | 16.6 | 0.15 | 20060922 | 3.70333 | 324.30925 | 140.03944 | 7.12259 | 0.3102015 | 2.7330232 | 36 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 85304 | 2001 $XQ_{74}$ |
| 2001 $XT_{74}$ | 14.7 | 0.15 | 20060922 | 236.57887 | 76.28302 | 88.32281 | 10.59347 | 0.0687995 | 3.0481049 | 32 | 5 | 1993–2006 | 0.61 | M-v | 1 | MPC | 04187 | 2001 $XT_{74}$ |
| 2001 $XX_{74}$ | 15.5 | 0.15 | 20060922 | 17.38573 | 5.01957 | 92.54362 | 5.18232 | 0.0918020 | 2.5762189 | 40 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90125 | 2001 $XX_{74}$ |
| 2001 $XC_{75}$ | 15.9 | 0.15 | 20060922 | 107.86336 | 37.70675 | 308.44591 | 4.83091 | 0.2113772 | 2.6502166 | 110 | 4 | 1996–2005 | 0.58 | M-v | 1 | MPC | 97520 | 2001 $XC_{75}$ |
| 2001 $XD_{75}$ | 16.1 | 0.15 | 20060922 | 73.71228 | 295.27341 | 96.29447 | 4.77872 | 0.1143239 | 2.6389854 | 76 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 02053 | 2001 $XD_{75}$ |
| 2001 $XK_{75}$ | 16.0 | 0.15 | 20060922 | 92.98864 | 28.44345 | 340.60056 | 2.95479 | 0.1048586 | 2.6706933 | 70 | 4 | 1998–2005 | 0.60 | M-v | 2 | MPC | 94339 | 2001 $XK_{75}$ |
| 2001 $XL_{75}$ | 14.6 | 0.15 | 20060922 | 329.50053 | 325.82035 | 82.10083 | 16.53406 | 0.0635078 | 3.1444710 | 47 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 65198 | 2001 $XL_{75}$ |
| 2001 $XR_{77}$ | 17.6 | 0.15 | 20060922 | 158.21742 | 340.26825 | 119.74469 | 3.30449 | 0.0284847 | 2.1496268 | 38 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 00097 | 2001 $XR_{77}$ |
| 2001 $XE_{78}$ | 15.7 | 0.15 | 20060922 | 286.94707 | 351.32671 | 109.49364 | 3.32318 | 0.1416329 | 3.1378949 | 45 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 85306 | 2001 $XE_{78}$ |
| 2001 $XT_{78}$ | 14.8 | 0.15 | 20060922 | 2.12233 | 188.56767 | 193.69681 | 8.94705 | 0.1430209 | 3.0180026 | 109 | 6 | 1990–2006 | 0.50 | M-v | 1 | MPC | 04187 | 2001 $XT_{78}$ |
| 2001 $XW_{78}$ | 15.6 | 0.15 | 20060922 | 350.10031 | 264.13741 | 163.87932 | 2.30526 | 0.0789464 | 2.9110361 | 34 | 3 | 2001–2006 | 0.45 | M-v | 4 | MPC | 94341 | 2001 $XW_{78}$ |
| 2001 $XC_{79}$ | 16.1 | 0.15 | 20060922 | 43.77257 | 242.42335 | 176.38177 | 5.76871 | 0.2653306 | 2.6501175 | 81 | 3 | 1994–2005 | 0.47 | M-v | 3 | MPC | 04187 | 2001 $XC_{79}$ |
| 2001 $XT_{79}$ | 15.1 | 0.15 | 20060922 | 55.46730 | 247.05123 | 94.88009 | 17.55234 | 0.2008285 | 2.9811239 | 38 | 4 | 1994–2006 | 0.44 | M-v | 1 | MPC | 03271 | 2001 $XT_{79}$ |
| 2001 $XW_{79}$ | 15.7 | 0.15 | 20060922 | 51.54561 | 282.49489 | 121.69931 | 4.53534 | 0.0930260 | 2.7548066 | 66 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 90125 | 2001 $XW_{79}$ |
| 2001 $XT_{80}$ | 14.9 | 0.15 | 20060922 | 140.54122 | 317.29738 | 33.01447 | 10.58819 | 0.1604892 | 2.5530890 | 56 | 4 | 1995–2006 | 0.61 | M-v | 2 | MPC | 97520 | 2001 $XT_{80}$ |
| 2001 $XA_{82}$ | 15.9 | 0.15 | 20060922 | 357.20822 | 350.61070 | 113.74974 | 4.50780 | 0.1583396 | 2.7431737 | 43 | 3 | 2001–2006 | 0.47 | M-v | 4 | MPC | 85307 | 2001 $XA_{82}$ |
| 2001 $XD_{82}$ | 15.2 | 0.15 | 20060922 | 271.38751 | 53.42946 | 67.13389 | 15.91768 | 0.0970799 | 3.1636574 | 52 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 75229 | 2001 $XD_{82}$ |
| 2001 $XF_{82}$ | 14.1 | 0.15 | 20060922 | 6.72565 | 290.84918 | 84.42768 | 17.48973 | 0.1129263 | 3.0819351 | 71 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 62383 | 2001 $XF_{82}$ |
| 2001 $XG_{82}$ | 16.9 | 0.15 | 20060922 | 125.60134 | 241.21868 | 201.05823 | 2.95481 | 0.1360733 | 2.3098990 | 29 | 3 | 2001–2006 | 0.57 | M-v | 4 | MPC | 94342 | 2001 $XG_{82}$ |
| 2001 $XJ_{82}$ | 16.7 | 0.15 | 20060922 | 40.81519 | 279.18238 | 134.72817 | 3.27650 | 0.1807980 | 2.7100565 | 53 | 5 | 1996–2006 | 0.41 | M-v | 0 | MPC | 85308 | 2001 $XJ_{82}$ |
| 2001 $XW_{82}$ | 15.3 | 0.15 | 20060922 | 270.40333 | 102.30857 | 85.82639 | 17.68651 | 0.0514897 | 2.7519282 | 56 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 90125 | 2001 $XW_{82}$ |
| 2001 $XE_{83}$ | 16.2 | 0.15 | 20060922 | 103.27463 | 240.41689 | 136.66214 | 3.69136 | 0.1135172 | 2.5848920 | 77 | 5 | 1994–2006 | 0.55 | M-v | 2 | MPC | 04187 | 2001 $XE_{83}$ |
| 2001 $XX_{83}$ | 15.5 | 0.15 | 20060922 | 312.44651 | 40.78995 | 95.83557 | 16.01322 | 0.0934907 | 2.8613070 | 60 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 87509 | 2001 $XX_{83}$ |
| 2001 $XK_{84}$ | 16.4 | 0.15 | 20060922 | 94.82962 | 328.47540 | 132.79432 | 6.77479 | 0.1897683 | 2.3697546 | 92 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 94343 | 2001 $XK_{84}$ |
| 2001 $XQ_{86}$ | 15.2 | 0.15 | 20060922 | 359.47909 | 291.02456 | 122.98694 | 10.70300 | 0.3069535 | 3.0030414 | 128 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87509 | 2001 $XQ_{86}$ |
| 2001 $XJ_{87}$ | 16.5 | 0.15 | 20060922 | 60.33712 | 90.96337 | 324.41965 | 7.03855 | 0.2110582 | 2.6404399 | 42 | 3 | 2000–2005 | 0.66 | M-v | 3 | MPC | 89127 | 2001 $XJ_{87}$ |
| 2001 $XB_{88}$ | 15.1 | 0.15 | 20060922 | 279.52726 | 59.35488 | 95.42931 | 6.05860 | 0.1855216 | 3.1356440 | 132 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 50578 | 2001 $XB_{88}$ |
| 2001 $XQ_{88}$ | 16.0 | 0.15 | 20060922 | 126.40537 | 226.62314 | 140.42814 | 3.41530 | 0.1856209 | 2.5487542 | 69 | 4 | 1995–2006 | 0.55 | M-v | 2 | MPC | 97521 | 2001 $XQ_{88}$ |
| 2001 $XA_{89}$ | 14.7 | 0.15 | 20060922 | 179.33893 | 312.75759 | 246.96185 | 15.67463 | 0.0723090 | 3.0672162 | 42 | 5 | 2001–2006 | 0.70 | M-v | 1 | MPC | 65203 | 2001 $XA_{89}$ |
| 2001 $XC_{89}$ | 14.6 | 0.15 | 20060922 | 50.72067 | 69.41828 | 257.63184 | 9.12860 | 0.1133647 | 2.9795481 | 82 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 62383 | 2001 $XC_{89}$ |
| 2001 $XD_{89}$ | 15.4 | 0.15 | 20060922 | 305.24727 | 272.26335 | 252.45749 | 11.27959 | 0.0243222 | 2.6055579 | 92 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97521 | 2001 $XD_{89}$ |
| 2001 $XN_{89}$ | 15.7 | 0.15 | 20060922 | 357.97339 | 167.96432 | 289.28050 | 2.03375 | 0.0436899 | 2.6818936 | 94 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 90126 | 2001 $XN_{89}$ |
| 2001 $XO_{89}$ | 15.9 | 0.15 | 20060922 | 93.00359 | 266.83181 | 56.83490 | 6.21237 | 0.2384544 | 2.7188320 | 70 | 3 | 1995–2005 | 0.57 | M-v | 2 | MPC | 85310 | 2001 $XO_{89}$ |
| 2001 $XM_{90}$ | 15.7 | 0.15 | 20060922 | 44.97061 | 108.71649 | 262.51163 | 5.13651 | 0.0895666 | 2.8335391 | 36 | 3 | 2001–2006 | 0.69 | M-v | 3 | MPC | 89128 | 2001 $XM_{90}$ |
| 2001 $XN_{90}$ | 16.3 | 0.15 | 20060922 | 359.45498 | 135.00880 | 353.42313 | 1.89403 | 0.1179161 | 2.5935499 | 77 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 97521 | 2001 $XN_{90}$ |
| 2001 $XO_{90}$ | 16.6 | 0.15 | 20060922 | 138.12499 | 25.56809 | 54.86214 | 8.70373 | 0.0454801 | 2.2454716 | 55 | 3 | 2001–2004 | 0.71 | M-v | 3 | MPC | 69003 | 2001 $XO_{90}$ |
| 2001 $XQ_{90}$ | 15.3 | 0.15 | 20060922 | 353.14550 | 46.94201 | 307.90249 | 3.37211 | 0.1310129 | 3.2065305 | 54 | 4 | 2001–2006 | 0.65 | M-v | 2 | MPC | 03271 | 2001 $XQ_{90}$ |
| 2001 $XU_{90}$ | 17.4 | 0.15 | 20060922 | 42.06507 | 108.38425 | 338.65522 | 1.54534 | 0.2187836 | 2.5815827 | 38 | 2 | 2001–2005 | 0.53 | M-v | 4 | MPC | 89128 | 2001 $XU_{90}$ |
| 2001 $XW_{90}$ | 15.9 | 0.15 | 20060922 | 63.17800 | 84.90845 | 281.06173 | 3.70874 | 0.0909922 | 2.7697840 | 43 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85310 | 2001 $XW_{90}$ |
| 2001 $XX_{90}$ | 15.2 | 0.15 | 20060922 | 308.16665 | 178.19796 | 265.37370 | 8.26333 | 0.0938298 | 3.0412798 | 69 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 85310 | 2001 $XX_{90}$ |
| 2001 $XH_{91}$ | 16.5 | 0.15 | 20060922 | 58.73009 | 91.88686 | 40.36579 | 2.89209 | 0.1622161 | 2.3802710 | 79 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 94345 | 2001 $XH_{91}$ |
| 2001 $XP_{91}$ | 15.0 | 0.15 | 20060922 | 68.04179 | 255.72715 | 59.47582 | 9.76544 | 0.0310522 | 3.0459649 | 83 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 75230 | 2001 $XP_{91}$ |
| 2001 $XR_{91}$ | 17.0 | 0.15 | 20060922 | 101.27072 | 29.95778 | 56.49540 | 2.27173 | 0.1504679 | 2.3596883 | 63 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 94345 | 2001 $XR_{91}$ |
| 2001 $XA_{92}$ | 16.5 | 0.15 | 20060922 | 346.34902 | 81.06639 | 25.41072 | 1.97287 | 0.0248262 | 2.7182246 | 68 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 97521 | 2001 $XA_{92}$ |
| 2001 $XB_{92}$ | 15.7 | 0.15 | 20060922 | 38.61793 | 16.47943 | 325.62885 | 1.93716 | 0.1305003 | 3.0121957 | 63 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 66249 | 2001 $XB_{92}$ |
| 2001 $XL_{92}$ | 15.7 | 0.15 | 20060922 | 358.44850 | 64.07244 | 66.36081 | 7.56841 | 0.0756366 | 2.5842262 | 161 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 97521 | 2001 $XL_{92}$ |
| 2001 $XR_{92}$ | 15.2 | 0.15 | 20060922 | 142.95603 | 298.61564 | 27.92953 | 3.23413 | 0.1383235 | 2.5699148 | 142 | 6 | 1976–2006 | 0.48 | M-v | 1 | MPC | 97521 | 2001 $XR_{92}$ |
| 2001 $XT_{92}$ | 16.5 | 0.15 | 20060922 | 19.56962 | 147.69312 | 265.54078 | 3.08768 | 0.1005564 | 2.8008101 | 38 | 4 | 1996–2006 | 0.54 | M-v | 1 | MPC | 04187 | 2001 $XT_{92}$ |
| 2001 $XD_{93}$ | 16.1 | 0.15 | 20060922 | 36.23050 | 134.86426 | 263.70710 | 2.41143 | 0.1002432 | 2.7792795 | 66 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 90126 | 2001 $XD_{93}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XP_{93}$ | 16.4 | 0.15 | 20060922 | 56.08472 | 355.73619 | 40.88349 | 2.32919 | 0.0947233 | 2.6672208 | 73 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97521 | 2001 $XP_{93}$ |
| 2001 $XK_{94}$ | 15.1 | 0.15 | 20060922 | 211.02103 | 112.47099 | 64.97607 | 21.65933 | 0.0371822 | 3.0792729 | 32 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 65205 | 2001 $XK_{94}$ |
| 2001 $XU_{96}$ | 15.1 | 0.15 | 20060922 | 352.64683 | 243.76477 | 262.62208 | 11.59423 | 0.2284591 | 2.6346540 | 95 | 2 | 2001–2005 | 0.64 | M-v | 3 | MPC | 97522 | 2001 $XU_{96}$ |
| 2001 $XX_{96}$ | 14.4 | 0.15 | 20060922 | 344.76365 | 116.78892 | 265.46307 | 15.44125 | 0.2466379 | 3.1139808 | 123 | 2 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03272 | 2001 $XX_{96}$ |
| 2001 $XC_{97}$ | 15.7 | 0.15 | 20060922 | 341.94316 | 110.70271 | 281.13795 | 7.32388 | 0.2597425 | 3.1005226 | 127 | 2 | 2001–2006 | 0.48 | M-v | 3 | MPC | 03272 | 2001 $XC_{97}$ |
| 2001 $XV_{97}$ | 15.3 | 0.15 | 20060922 | 326.64701 | 357.76551 | 77.81438 | 9.74279 | 0.1752254 | 3.0659338 | 75 | 4 | 1993–2006 | 0.51 | M-v | 1 | MPC | 03272 | 2001 $XV_{97}$ |
| 2001 $XN_{99}$ | 17.1 | 0.15 | 20060922 | 118.63440 | 30.90665 | 77.31578 | 7.52709 | 0.1774673 | 2.3089876 | 43 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 02053 | 2001 $XN_{99}$ |
| 2001 $XO_{101}$ | 15.2 | 0.15 | 20060922 | 22.00227 | 4.32320 | 36.28503 | 3.76657 | 0.1714035 | 2.9329453 | 68 | 3 | 2001–2005 | 0.61 | M-v | 3 | MPC | 85315 | 2001 $XO_{101}$ |
| 2001 $XV_{101}$ | 15.2 | 0.15 | 20060922 | 70.10117 | 86.67422 | 297.08975 | 7.39021 | 0.2649291 | 2.7194150 | 111 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 97522 | 2001 $XV_{101}$ |
| 2001 $XN_{102}$ | 17.0 | 0.15 | 20060922 | 225.11879 | 75.94678 | 93.38310 | 24.12716 | 0.0590194 | 1.8789784 | 65 | 5 | 1996–2006 | 0.67 | M-v | 1 | MPC | 77581 | 2001 $XN_{102}$ |
| 2001 $XS_{102}$ | 16.8 | 0.15 | 20060922 | 93.22801 | 340.54246 | 287.16741 | 17.83058 | 0.0584111 | 1.9430805 | 45 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 74114 | 2001 $XS_{102}$ |
| 2001 $XC_{103}$ | 16.9 | 0.15 | 20060922 | 156.00026 | 139.88990 | 86.85169 | 23.92051 | 0.0639898 | 1.9013816 | 61 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 74114 | 2001 $XC_{103}$ |
| 2001 $XH_{103}$ | 16.8 | 0.15 | 20060922 | 196.29662 | 269.38881 | 257.39210 | 17.88640 | 0.0799863 | 1.9515026 | 49 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 77581 | 2001 $XH_{103}$ |
| 2001 $XL_{103}$ | 16.6 | 0.15 | 20060922 | 123.19901 | 351.31540 | 265.48136 | 20.85461 | 0.0550214 | 1.9031673 | 67 | 4 | 2001–2006 | 0.71 | M-v | 2 | MPC | 77581 | 2001 $XL_{103}$ |
| 2001 $XF_{104}$ | 15.8 | 0.15 | 20060922 | 357.15486 | 265.41853 | 260.85696 | 10.07599 | 0.3658796 | 2.5679431 | 39 | 2 | 2001–2005 | 0.51 | M-v | 3 | MPC | 89133 | 2001 $XF_{104}$ |
| 2001 $XR_{105}$ | 16.1 | 0.15 | 20060922 | 333.30373 | 40.06435 | 115.80752 | 6.29407 | 0.0390465 | 2.6756602 | 55 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 97522 | 2001 $XR_{105}$ |
| 2001 $XG_{106}$ | 17.2 | 0.15 | 20060922 | 143.23750 | 152.13667 | 228.20117 | 2.55292 | 0.1383281 | 2.3938907 | 44 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 94350 | 2001 $XG_{106}$ |
| 2001 $XP_{106}$ | 14.7 | 0.15 | 20060922 | 255.37696 | 227.90212 | 265.68345 | 16.11450 | 0.0925040 | 3.1169228 | 60 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 89134 | 2001 $XP_{106}$ |
| 2001 $XR_{106}$ | 15.2 | 0.15 | 20060922 | 356.07734 | 163.55360 | 282.06826 | 8.25304 | 0.1325913 | 2.7937102 | 46 | 4 | 1992–2006 | 0.59 | M-v | 1 | MPC | 27317 | 2001 $XR_{106}$ |
| 2001 $XW_{106}$ | 15.5 | 0.15 | 20060922 | 216.77018 | 323.53043 | 230.11098 | 1.03039 | 0.0238618 | 2.9442429 | 64 | 4 | 1998–2006 | 0.45 | M-v | 3 | MPC | 50578 | 2001 $XW_{106}$ |
| 2001 $XP_{107}$ | 15.1 | 0.15 | 20060922 | 255.03328 | 70.46330 | 80.66544 | 11.99672 | 0.0924235 | 3.0730115 | 31 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 85317 | 2001 $XP_{107}$ |
| 2001 $XS_{107}$ | 15.0 | 0.15 | 20060922 | 284.99219 | 268.56592 | 237.62497 | 7.92752 | 0.2018793 | 2.9868404 | 73 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 47010 | 2001 $XS_{107}$ |
| 2001 $XB_{108}$ | 15.5 | 0.15 | 20060922 | 321.79753 | 122.70758 | 306.99101 | 4.48051 | 0.2942315 | 3.0700762 | 123 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 03273 | 2001 $XB_{108}$ |
| 2001 $XL_{109}$ | 14.4 | 0.15 | 20060922 | 219.31047 | 260.46445 | 291.29659 | 10.48917 | 0.0904995 | 3.0262277 | 52 | 7 | 1992–2006 | 0.71 | M-v | 1 | MPC | 04187 | 2001 $XL_{109}$ |
| 2001 $XT_{109}$ | 14.9 | 0.15 | 20060922 | 285.48766 | 46.07159 | 97.05540 | 7.58540 | 0.1817599 | 2.8921251 | 84 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 48166 | 2001 $XT_{109}$ |
| 2001 $XE_{110}$ | 15.6 | 0.15 | 20060922 | 6.36041 | 256.89995 | 74.43192 | 16.83558 | 0.2017998 | 3.1891565 | 39 | 4 | 2001–2006 | 0.81 | M-v | 1 | MPC | 04187 | 2001 $XE_{110}$ |
| 2001 $XS_{110}$ | 15.5 | 0.15 | 20060922 | 332.82692 | 45.64011 | 73.36717 | 10.09785 | 0.1417603 | 2.7222069 | 49 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87510 | 2001 $XS_{110}$ |
| 2001 $XT_{110}$ | 15.9 | 0.15 | 20060922 | 37.11503 | 310.03444 | 82.05486 | 12.53396 | 0.1216648 | 2.7586545 | 29 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 94352 | 2001 $XT_{110}$ |
| 2001 $XQ_{111}$ | 16.3 | 0.15 | 20060922 | 70.56297 | 146.93246 | 221.85230 | 5.66612 | 0.0585693 | 2.7742078 | 33 | 4 | 1996–2005 | 0.51 | M-v | 1 | MPC | 90127 | 2001 $XQ_{111}$ |
| 2001 $XR_{111}$ | 15.2 | 0.15 | 20060922 | 320.09164 | 305.48044 | 121.69967 | 10.45340 | 0.1382153 | 3.1394982 | 51 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 85318 | 2001 $XR_{111}$ |
| 2001 $XO_{112}$ | 16.5 | 0.15 | 20060922 | 82.01789 | 293.60760 | 104.16553 | 12.45792 | 0.1963190 | 2.5872574 | 40 | 2 | 2001–2005 | 0.65 | M-v | 4 | MPC | 89135 | 2001 $XO_{112}$ |
| 2001 $XA_{114}$ | 15.5 | 0.15 | 20060922 | 70.75184 | 76.07751 | 299.26722 | 7.69026 | 0.1749769 | 2.7354561 | 123 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 97523 | 2001 $XA_{114}$ |
| 2001 $XK_{115}$ | 15.5 | 0.15 | 20060922 | 200.90780 | 317.68158 | 41.02992 | 6.22521 | 0.2053223 | 2.3257017 | 128 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 97523 | 2001 $XK_{115}$ |
| 2001 $XX_{116}$ | 15.5 | 0.15 | 20060922 | 330.16060 | 8.85870 | 87.08515 | 14.48326 | 0.0880990 | 3.0445931 | 44 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 89137 | 2001 $XX_{116}$ |
| 2001 $XB_{117}$ | 15.1 | 0.15 | 20060922 | 1.74219 | 22.41132 | 70.88955 | 9.23951 | 0.1777980 | 2.8723366 | 48 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87511 | 2001 $XB_{117}$ |
| 2001 $XA_{118}$ | 15.0 | 0.15 | 20060922 | 338.17662 | 23.07447 | 64.77804 | 7.53402 | 0.1479473 | 3.0654315 | 57 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 03273 | 2001 $XA_{118}$ |
| 2001 $XW_{118}$ | 15.6 | 0.15 | 20060922 | 165.52160 | 55.43422 | 358.76867 | 5.84574 | 0.2616980 | 2.3342502 | 191 | 4 | 1997–2006 | 0.56 | M-v | 1 | MPC | 02054 | 2001 $XW_{118}$ |
| 2001 $XZ_{118}$ | 15.1 | 0.15 | 20060922 | 341.16759 | 13.81186 | 73.43323 | 8.47117 | 0.1456465 | 3.0377639 | 75 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87511 | 2001 $XZ_{118}$ |
| 2001 $XA_{119}$ | 16.5 | 0.15 | 20060922 | 45.69328 | 343.82830 | 80.03417 | 10.64548 | 0.2872454 | 2.7212352 | 45 | 2 | 2001–2005 | 0.74 | M-v | 4 | MPC | 89137 | 2001 $XA_{119}$ |
| 2001 $XV_{120}$ | 16.4 | 0.15 | 20060922 | 88.11684 | 272.04028 | 64.11809 | 7.52813 | 0.0693033 | 2.7632756 | 40 | 5 | 1992–2006 | 0.56 | M-v | 0 | MPC | 87511 | 2001 $XV_{120}$ |
| 2001 $XC_{121}$ | 17.2 | 0.15 | 20060922 | 218.16125 | 293.82198 | 85.73262 | 5.45287 | 0.0958941 | 2.1604779 | 45 | 3 | 2001–2004 | 0.53 | M-v | 3 | MPC | 74115 | 2001 $XC_{121}$ |
| 2001 $XD_{121}$ | 15.6 | 0.15 | 20060922 | 25.82350 | 285.16355 | 77.36602 | 10.20169 | 0.0740200 | 2.9662498 | 48 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87511 | 2001 $XD_{121}$ |
| 2001 $XF_{121}$ | 15.8 | 0.15 | 20060922 | 254.72375 | 333.58970 | 150.31662 | 3.16197 | 0.1587680 | 3.1751267 | 47 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 50579 | 2001 $XF_{121}$ |
| 2001 $XU_{121}$ | 15.3 | 0.15 | 20060922 | 25.14676 | 246.67194 | 78.17737 | 7.68861 | 0.1483608 | 3.1524258 | 33 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 85320 | 2001 $XU_{121}$ |
| 2001 $XE_{122}$ | 16.2 | 0.15 | 20060922 | 333.56393 | 313.72765 | 109.67803 | 1.97711 | 0.1031409 | 2.9875952 | 68 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 02054 | 2001 $XE_{122}$ |
| 2001 $XX_{122}$ | 15.7 | 0.15 | 20060922 | 168.28853 | 53.64462 | 232.33725 | 11.38374 | 0.0434589 | 2.6725829 | 60 | 2 | 2001–2005 | 0.57 | M-v | 4 | MPC | 89138 | 2001 $XX_{122}$ |
| 2001 $XB_{123}$ | 16.8 | 0.15 | 20060922 | 54.40071 | 275.83439 | 134.97136 | 3.45481 | 0.1620146 | 2.6295502 | 39 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 89138 | 2001 $XB_{123}$ |
| 2001 $XG_{123}$ | 15.8 | 0.15 | 20060922 | 90.91130 | 102.47715 | 220.41970 | 7.16870 | 0.1411700 | 2.8092979 | 42 | 6 | 1996–2006 | 0.52 | M-v | 0 | MPC | 85321 | 2001 $XG_{123}$ |
| 2001 $XM_{123}$ | 15.5 | 0.15 | 20060922 | 50.56806 | 109.16549 | 226.02406 | 9.89090 | 0.1545234 | 2.9550823 | 52 | 3 | 1990–2006 | 0.46 | M-v | 3 | MPC | 49943 | 2001 $XM_{123}$ |
| 2001 $XO_{123}$ | 15.4 | 0.15 | 20060922 | 5.53401 | 105.53962 | 235.14180 | 11.61638 | 0.1342620 | 3.2222810 | 44 | 5 | 2000–2006 | 0.42 | M-v | 0 | MPC | 04187 | 2001 $XO_{123}$ |
| 2001 $XC_{124}$ | 15.8 | 0.15 | 20060922 | 162.60778 | 204.81319 | 89.50272 | 4.77032 | 0.1082256 | 2.6435950 | 36 | 3 | 2001–2006 | 0.44 | M-v | 4 | MPC | 90127 | 2001 $XC_{124}$ |
| 2001 $XL_{124}$ | 16.4 | 0.15 | 20060922 | 3.46914 | 68.75281 | 90.97589 | 7.58710 | 0.0519923 | 2.4413409 | 19 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 00099 | 2001 $XL_{124}$ |
| 2001 $XA_{125}$ | 16.2 | 0.15 | 20060922 | 298.00733 | 339.64031 | 130.99281 | 2.70587 | 0.1590274 | 2.9864924 | 57 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 87511 | 2001 $XA_{125}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XD_{125}$ | 17.1 | 0.15 | 20060922 | 354.29342 | 268.27799 | 147.57586 | 2.77530 | 0.1046777 | 2.9011802 | 53 | 6 | 1991–2006 | 0.59 | M-v | 1 | MPC | 87511 | 2001 $XD_{125}$ |
| 2001 $XW_{125}$ | 15.4 | 0.15 | 20060922 | 327.22509 | 195.98359 | 223.65495 | 8.83483 | 0.0858148 | 3.0649963 | 82 | 5 | 1993–2006 | 0.45 | M-v | 1 | MPC | 89139 | 2001 $XW_{125}$ |
| 2001 $XX_{125}$ | 15.4 | 0.15 | 20060922 | 260.39771 | 48.32544 | 84.73967 | 11.03347 | 0.1362167 | 3.1161838 | 62 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 50579 | 2001 $XX_{125}$ |
| 2001 $XY_{125}$ | 16.1 | 0.15 | 20060922 | 120.94317 | 102.55213 | 231.93227 | 8.33723 | 0.2249310 | 2.5867479 | 122 | 4 | 2000–2005 | 0.50 | M-v | 1 | MPC | 97524 | 2001 $XY_{125}$ |
| 2001 $XF_{126}$ | 16.1 | 0.15 | 20060922 | 306.21010 | 3.47489 | 94.74299 | 2.52808 | 0.1717694 | 3.0223311 | 60 | 5 | 1992–2006 | 0.58 | M-v | 1 | MPC | 48167 | 2001 $XF_{126}$ |
| 2001 $XG_{126}$ | 16.7 | 0.15 | 20060922 | 68.70166 | 333.15405 | 71.19442 | 7.53458 | 0.1092114 | 2.6061008 | 36 | 4 | 1995–2005 | 0.73 | M-v | 1 | MPC | 90127 | 2001 $XG_{126}$ |
| 2001 $XR_{126}$ | 16.6 | 0.15 | 20060922 | 60.94303 | 274.82036 | 109.88502 | 2.82019 | 0.0964671 | 2.7156337 | 57 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 87511 | 2001 $XR_{126}$ |
| 2001 $XF_{127}$ | 16.0 | 0.15 | 20060922 | 304.03582 | 79.94483 | 81.54801 | 9.70841 | 0.1605348 | 2.7453692 | 69 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 47018 | 2001 $XF_{127}$ |
| 2001 $XH_{127}$ | 15.8 | 0.15 | 20060922 | 38.64941 | 246.60042 | 79.05334 | 3.77854 | 0.1825815 | 3.0812968 | 64 | 4 | 1990–2006 | 0.40 | M-v | 1 | MPC | 48167 | 2001 $XH_{127}$ |
| 2001 $XV_{127}$ | 15.7 | 0.15 | 20060922 | 359.52266 | 175.77787 | 195.20220 | 1.86605 | 0.1625663 | 3.0955358 | 118 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 97524 | 2001 $XV_{127}$ |
| 2001 $XD_{128}$ | 15.8 | 0.15 | 20060922 | 322.92512 | 335.67374 | 93.78762 | 4.08517 | 0.0558938 | 3.0538974 | 49 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 85323 | 2001 $XD_{128}$ |
| 2001 $XS_{129}$ | 15.4 | 0.15 | 20060922 | 328.18637 | 160.96548 | 268.51755 | 1.03784 | 0.0710134 | 3.0275421 | 66 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 85323 | 2001 $XS_{129}$ |
| 2001 $XV_{129}$ | 15.6 | 0.15 | 20060922 | 89.70392 | 252.77585 | 72.67160 | 8.47750 | 0.2247910 | 2.7853377 | 67 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 90127 | 2001 $XV_{129}$ |
| 2001 $XA_{130}$ | 16.2 | 0.15 | 20060922 | 132.79995 | 216.71082 | 85.17114 | 4.18562 | 0.1186290 | 2.7613714 | 43 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 97524 | 2001 $XA_{130}$ |
| 2001 $XJ_{130}$ | 16.6 | 0.15 | 20060922 | 115.74844 | 179.06972 | 161.49555 | 1.79887 | 0.1044757 | 2.6573675 | 74 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 97524 | 2001 $XJ_{130}$ |
| 2001 $XR_{130}$ | 16.8 | 0.15 | 20060922 | 67.44224 | 160.33053 | 230.63196 | 3.43327 | 0.1436996 | 2.6626063 | 38 | 2 | 2001–2005 | 0.40 | M-v | 3 | MPC | 89140 | 2001 $XR_{130}$ |
| 2001 $XC_{131}$ | 16.1 | 0.15 | 20060922 | 80.12629 | 196.73492 | 175.57670 | 3.11581 | 0.1135735 | 2.6852963 | 112 | 4 | 1996–2006 | 0.41 | M-v | 1 | MPC | 97524 | 2001 $XC_{131}$ |
| 2001 $XE_{131}$ | 15.9 | 0.15 | 20060922 | 11.19262 | 163.84194 | 221.87277 | 3.22040 | 0.1482263 | 2.9701856 | 78 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 89140 | 2001 $XE_{131}$ |
| 2001 $XH_{131}$ | 14.8 | 0.15 | 20060922 | 241.54417 | 71.84483 | 84.01651 | 9.06402 | 0.0965160 | 3.1025760 | 61 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 87511 | 2001 $XH_{131}$ |
| 2001 $XL_{131}$ | 14.9 | 0.15 | 20060922 | 234.76690 | 97.68003 | 77.95716 | 17.11975 | 0.2086648 | 3.1037931 | 40 | 3 | 1998–2003 | 0.75 | M-v | 3 | MPC | 50579 | 2001 $XL_{131}$ |
| 2001 $XO_{131}$ | 16.0 | 0.15 | 20060922 | 302.28381 | 44.77504 | 73.27287 | 2.96575 | 0.0687973 | 2.9310169 | 56 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 87511 | 2001 $XO_{131}$ |
| 2001 $XS_{131}$ | 16.4 | 0.15 | 20060922 | 307.67171 | 43.81621 | 74.41615 | 3.04524 | 0.1695014 | 2.9450880 | 63 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 85324 | 2001 $XS_{131}$ |
| 2001 $XX_{131}$ | 15.8 | 0.15 | 20060922 | 336.58011 | 321.60124 | 82.50940 | 6.32962 | 0.1380467 | 3.1045699 | 45 | 3 | 1996–2006 | 0.44 | M-v | 3 | MPC | 23243 | 2001 $XX_{131}$ |
| 2001 $XG_{132}$ | 15.1 | 0.15 | 20060922 | 30.49483 | 263.83755 | 80.31141 | 2.32738 | 0.1789790 | 3.0546784 | 107 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 30578 | 2001 $XG_{132}$ |
| 2001 $XV_{132}$ | 15.3 | 0.15 | 20060922 | 322.32799 | 287.00027 | 164.77772 | 2.23401 | 0.1262432 | 2.9707013 | 82 | 4 | 1995–2006 | 0.58 | M-v | 1 | MPC | 50579 | 2001 $XV_{132}$ |
| 2001 $XX_{133}$ | 17.4 | 0.15 | 20060922 | 109.59970 | 353.64362 | 83.29656 | 2.37823 | 0.1548679 | 2.3730311 | 43 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 97524 | 2001 $XX_{133}$ |
| 2001 $XL_{134}$ | 17.4 | 0.15 | 20060922 | 128.01850 | 190.45637 | 251.79502 | 2.86066 | 0.1281684 | 2.3029285 | 36 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 75233 | 2001 $XL_{134}$ |
| 2001 $XT_{134}$ | 15.8 | 0.15 | 20060922 | 318.40651 | 279.41741 | 257.42371 | 8.50485 | 0.3821073 | 2.7617459 | 41 | 2 | 1998–2002 | 0.62 | M-v | 3 | MPC | 35131 | 2001 $XT_{134}$ |
| 2001 $XK_{135}$ | 15.0 | 0.15 | 20060922 | 276.27661 | 34.89142 | 86.71387 | 11.37360 | 0.1082699 | 3.1072587 | 45 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 47021 | 2001 $XK_{135}$ |
| 2001 $XY_{135}$ | 15.8 | 0.15 | 20060922 | 335.93858 | 228.45399 | 165.86058 | 2.14369 | 0.1043824 | 3.1937852 | 53 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 04188 | 2001 $XY_{135}$ |
| 2001 $XB_{136}$ | 16.2 | 0.15 | 20060922 | 44.09198 | 314.05861 | 90.11541 | 5.31422 | 0.0999720 | 2.7495801 | 56 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 89142 | 2001 $XB_{136}$ |
| 2001 $XL_{136}$ | 14.5 | 0.15 | 20060922 | 234.21001 | 108.37270 | 77.44674 | 14.79697 | 0.2163211 | 3.0781868 | 84 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 74115 | 2001 $XL_{136}$ |
| 2001 $XQ_{136}$ | 16.1 | 0.15 | 20060922 | 340.04539 | 326.39985 | 106.24458 | 2.12169 | 0.1548184 | 2.9691605 | 67 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 47022 | 2001 $XQ_{136}$ |
| 2001 $XV_{136}$ | 16.4 | 0.15 | 20060922 | 70.58732 | 121.64535 | 265.76498 | 0.86897 | 0.0825413 | 2.7026699 | 42 | 4 | 1992–2005 | 0.44 | M-v | 1 | MPC | 04188 | 2001 $XV_{136}$ |
| 2001 $XC_{138}$ | 15.6 | 0.15 | 20060922 | 239.68321 | 94.57008 | 116.36823 | 4.71371 | 0.0327409 | 2.7796727 | 45 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 90128 | 2001 $XC_{138}$ |
| 2001 $XA_{139}$ | 15.2 | 0.15 | 20060922 | 174.75091 | 204.77510 | 95.81666 | 7.86400 | 0.0835050 | 2.6309505 | 53 | 5 | 2001–2006 | 0.65 | M-v | 1 | MPC | 97525 | 2001 $XA_{139}$ |
| 2001 $XJ_{139}$ | 15.9 | 0.15 | 20060922 | 33.11698 | 345.14830 | 87.34548 | 3.12793 | 0.0054190 | 2.7048892 | 82 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 97525 | 2001 $XJ_{139}$ |
| 2001 $XK_{139}$ | 15.3 | 0.15 | 20060922 | 270.60087 | 47.25947 | 80.12196 | 10.22725 | 0.0510966 | 3.1062000 | 43 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 87511 | 2001 $XK_{139}$ |
| 2001 $XM_{140}$ | 16.2 | 0.15 | 20060922 | 310.46914 | 318.37025 | 130.85946 | 2.18044 | 0.1772606 | 3.0912240 | 65 | 6 | 1995–2006 | 0.41 | M-v | 0 | MPC | 48168 | 2001 $XM_{140}$ |
| 2001 $XF_{141}$ | 15.8 | 0.15 | 20060922 | 10.27126 | 132.61187 | 230.14164 | 4.98597 | 0.1547602 | 3.0789905 | 62 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 61211 | 2001 $XF_{141}$ |
| 2001 $XN_{141}$ | 15.8 | 0.15 | 20060922 | 108.50123 | 236.97983 | 87.54755 | 3.84380 | 0.1851750 | 2.7201616 | 100 | 6 | 1992–2006 | 0.53 | M-v | 0 | MPC | 90128 | 2001 $XN_{141}$ |
| 2001 $XO_{141}$ | 16.2 | 0.15 | 20060922 | 86.85499 | 274.76333 | 87.12720 | 3.48113 | 0.0977204 | 2.7044308 | 82 | 7 | 1992–2006 | 0.43 | M-v | 1 | MPC | 97525 | 2001 $XO_{141}$ |
| 2001 $XT_{141}$ | 15.3 | 0.15 | 20060922 | 308.02997 | 156.05517 | 204.58599 | 3.05333 | 0.0853951 | 3.6397905 | 22 | 3 | 1996–2005 | 0.40 | M-v | 3 | MPC | 75235 | 2001 $XT_{141}$ |
| 2001 $XW_{141}$ | 16.0 | 0.15 | 20060922 | 346.23037 | 350.00899 | 95.20081 | 3.11005 | 0.0434331 | 2.8490697 | 44 | 5 | 1998–2006 | 0.46 | M-v | 0 | MPC | 90128 | 2001 $XW_{141}$ |
| 2001 $XF_{143}$ | 15.4 | 0.15 | 20060922 | 128.52208 | 242.56043 | 99.39547 | 6.64904 | 0.2891377 | 2.5368102 | 112 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 97525 | 2001 $XF_{143}$ |
| 2001 $XT_{143}$ | 15.9 | 0.15 | 20060922 | 355.31879 | 215.70662 | 149.27459 | 1.97922 | 0.1393723 | 3.2134891 | 108 | 6 | 1995–2006 | 0.52 | M-v | 0 | MPC | 04188 | 2001 $XT_{143}$ |
| 2001 $XU_{143}$ | 16.0 | 0.15 | 20060922 | 52.50894 | 91.02251 | 265.11589 | 0.88804 | 0.1207252 | 2.9164791 | 49 | 6 | 2000–2006 | 0.51 | M-v | 0 | MPC | 89143 | 2001 $XU_{143}$ |
| 2001 $XA_{145}$ | 16.9 | 0.15 | 20060922 | 70.19106 | 135.12860 | 251.32172 | 11.05255 | 0.3031416 | 2.6429354 | 64 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 90128 | 2001 $XA_{145}$ |
| 2001 $XQ_{145}$ | 17.2 | 0.15 | 20060922 | 228.91739 | 91.57235 | 258.03088 | 4.86467 | 0.2169238 | 2.2139293 | 55 | 2 | 2001–2004 | 0.56 | M-v | 4 | MPC | 69011 | 2001 $XQ_{145}$ |
| 2001 $XX_{145}$ | 15.1 | 0.15 | 20060922 | 200.55708 | 144.77037 | 89.00718 | 3.05781 | 0.0255748 | 2.8821686 | 105 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 90128 | 2001 $XX_{145}$ |
| 2001 $XY_{145}$ | 17.4 | 0.15 | 20060922 | 53.95897 | 198.33476 | 259.68117 | 3.64628 | 0.1622893 | 2.5354987 | 35 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 94365 | 2001 $XY_{145}$ |
| 2001 $XH_{146}$ | 16.2 | 0.15 | 20060922 | 309.84416 | 76.89362 | 91.21993 | 6.75886 | 0.0928445 | 2.7072833 | 37 | 3 | 2001–2005 | 0.69 | M-v | 3 | MPC | 47027 | 2001 $XH_{146}$ |
| 2001 $XY_{146}$ | 15.7 | 0.15 | 20060922 | 289.55541 | 45.37987 | 80.50603 | 10.92123 | 0.0557891 | 3.0174583 | 41 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87512 | 2001 $XY_{146}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XP_{147}$ | 15.5 | 0.15 | 20060922 | 351.46091 | 311.54398 | 88.92410 | 14.77083 | 0.0712198 | 3.0991951 | 34 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 85327 | 2001 $XP_{147}$ |
| 2001 $XT_{147}$ | 15.3 | 0.15 | 20060922 | 317.81054 | 10.70991 | 91.41857 | 12.30726 | 0.1040879 | 2.9815869 | 86 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 85327 | 2001 $XT_{147}$ |
| 2001 $XD_{148}$ | 15.8 | 0.15 | 20060922 | 328.90330 | 334.53790 | 119.87833 | 4.29962 | 0.0792347 | 2.9485419 | 47 | 7 | 1993–2006 | 0.55 | M-v | 0 | MPC | 87512 | 2001 $XD_{148}$ |
| 2001 $XE_{148}$ | 15.7 | 0.15 | 20060922 | 26.12390 | 315.43724 | 111.72306 | 4.73866 | 0.0782473 | 2.7662224 | 51 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 90128 | 2001 $XE_{148}$ |
| 2001 $XH_{148}$ | 15.3 | 0.15 | 20060922 | 180.79255 | 196.04809 | 128.24082 | 3.43601 | 0.1876881 | 2.4672663 | 46 | 4 | 2001–2006 | 0.60 | M-v | 2 | MPC | 97525 | 2001 $XH_{148}$ |
| 2001 $XZ_{148}$ | 17.0 | 0.15 | 20060922 | 319.06525 | 262.72843 | 176.63696 | 1.46628 | 0.2921709 | 3.0866226 | 42 | 3 | 1995–2006 | 0.54 | M-v | 3 | MPC | 27325 | 2001 $XZ_{148}$ |
| 2001 $XA_{149}$ | 15.2 | 0.15 | 20060922 | 27.03068 | 123.05158 | 245.72663 | 8.27870 | 0.1091233 | 3.0409075 | 88 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 85328 | 2001 $XA_{149}$ |
| 2001 $XG_{149}$ | 15.5 | 0.15 | 20060922 | 326.85463 | 310.97659 | 146.02978 | 2.54731 | 0.0464651 | 2.9513613 | 37 | 3 | 2001–2006 | 0.43 | M-v | 4 | MPC | 94367 | 2001 $XG_{149}$ |
| 2001 $XM_{149}$ | 15.6 | 0.15 | 20060922 | 56.69517 | 296.55831 | 97.75454 | 7.26850 | 0.0553979 | 2.7739747 | 44 | 3 | 2001–2006 | 0.63 | M-v | 4 | MPC | 00101 | 2001 $XM_{149}$ |
| 2001 $XE_{151}$ | 16.9 | 0.15 | 20060922 | 55.66453 | 19.80129 | 123.76270 | 1.28980 | 0.1458047 | 2.4020387 | 103 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 02054 | 2001 $XE_{151}$ |
| 2001 $XM_{151}$ | 17.7 | 0.15 | 20060922 | 195.81523 | 286.24850 | 86.84499 | 5.75182 | 0.2188448 | 2.2551950 | 36 | 2 | 2001–2004 | 0.49 | M-v | 4 | MPC | 72432 | 2001 $XM_{151}$ |
| 2001 $XX_{151}$ | 15.0 | 0.15 | 20060922 | 14.16219 | 110.64704 | 265.78346 | 9.83736 | 0.1441867 | 3.0630554 | 60 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 75236 | 2001 $XX_{151}$ |
| 2001 $XM_{152}$ | 15.2 | 0.15 | 20060922 | 67.40888 | 267.04129 | 92.54538 | 11.88975 | 0.2410115 | 2.7861707 | 85 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 90128 | 2001 $XM_{152}$ |
| 2001 $XB_{153}$ | 15.4 | 0.15 | 20060922 | 359.89293 | 154.75861 | 251.86217 | 7.78055 | 0.1320431 | 3.0062913 | 61 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 85329 | 2001 $XB_{153}$ |
| 2001 $XG_{153}$ | 16.5 | 0.15 | 20060922 | 189.18514 | 177.82324 | 103.94676 | 6.14994 | 0.0127295 | 2.7062803 | 24 | 3 | 2001–2006 | 0.59 | M-v | 4 | MPC | 85329 | 2001 $XG_{153}$ |
| 2001 $XQ_{153}$ | 16.3 | 0.15 | 20060922 | 109.11047 | 103.93182 | 254.36415 | 1.21821 | 0.1365127 | 2.6529123 | 50 | 4 | 1996–2006 | 0.43 | M-v | 1 | MPC | 97526 | 2001 $XQ_{153}$ |
| 2001 $XC_{154}$ | 15.8 | 0.15 | 20060922 | 52.45542 | 324.75884 | 111.69342 | 3.03696 | 0.0626679 | 2.6246798 | 108 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 94369 | 2001 $XC_{154}$ |
| 2001 $XP_{154}$ | 15.6 | 0.15 | 20060922 | 330.71474 | 183.78404 | 264.72132 | 2.10057 | 0.1671999 | 2.9922213 | 79 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 47031 | 2001 $XP_{154}$ |
| 2001 $XO_{156}$ | 15.4 | 0.15 | 20060922 | 188.53622 | 309.92982 | 261.73461 | 11.50777 | 0.0145059 | 3.1358723 | 35 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 89145 | 2001 $XO_{156}$ |
| 2001 $XB_{157}$ | 14.4 | 0.15 | 20060922 | 326.25069 | 110.62735 | 299.21357 | 15.27143 | 0.0854396 | 3.2251073 | 51 | 4 | 2000–2006 | 0.63 | M-v | 0 | MPC | 48169 | 2001 $XB_{157}$ |
| 2001 $XL_{157}$ | 15.7 | 0.15 | 20060922 | 301.88368 | 228.97258 | 260.31181 | 8.95206 | 0.2244006 | 3.0206491 | 60 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 85330 | 2001 $XL_{157}$ |
| 2001 $XR_{157}$ | 15.5 | 0.15 | 20060922 | 290.82749 | 357.95624 | 116.25800 | 6.60759 | 0.1399780 | 3.1291412 | 51 | 4 | 2000–2006 | 0.56 | M-v | 0 | MPC | 87512 | 2001 $XR_{157}$ |
| 2001 $XM_{159}$ | 15.8 | 0.15 | 20060922 | 59.49147 | 234.00358 | 154.11909 | 2.03600 | 0.2198084 | 2.7517575 | 87 | 4 | 1978–2006 | 0.49 | M-v | 1 | MPC | 90129 | 2001 $XM_{159}$ |
| 2001 $XP_{159}$ | 14.7 | 0.15 | 20060922 | 280.14268 | 247.15394 | 256.72115 | 7.71841 | 0.0978201 | 3.0540673 | 66 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87512 | 2001 $XP_{159}$ |
| 2001 $XG_{160}$ | 17.7 | 0.15 | 20060922 | 158.12001 | 202.26184 | 174.75074 | 2.00287 | 0.2233248 | 2.3538658 | 25 | 2 | 2001–2006 | 0.41 | M-v | 4 | MPC | 03274 | 2001 $XG_{160}$ |
| 2001 $XC_{161}$ | 16.4 | 0.15 | 20060922 | 107.67418 | 102.63053 | 248.22117 | 4.52162 | 0.0115001 | 2.7428793 | 24 | 4 | 2001–2006 | 0.33 | M-v | 1 | MPC | 00102 | 2001 $XC_{161}$ |
| 2001 $XO_{161}$ | 16.3 | 0.15 | 20060922 | 114.65487 | 246.36271 | 96.25788 | 6.96098 | 0.0715813 | 2.7243660 | 53 | 4 | 1998–2005 | 0.51 | M-v | 1 | MPC | 94373 | 2001 $XO_{161}$ |
| 2001 $XR_{161}$ | 15.8 | 0.15 | 20060922 | 123.44707 | 116.05452 | 249.67095 | 10.20934 | 0.0446405 | 2.5926087 | 106 | 4 | 1996–2006 | 0.58 | M-v | 1 | MPC | 97526 | 2001 $XR_{161}$ |
| 2001 $XE_{162}$ | 14.6 | 0.15 | 20060922 | 228.76448 | 313.65452 | 114.43334 | 3.77293 | 0.1470861 | 3.9658725 | 37 | 3 | 1995–2003 | 0.61 | M-v | 3 | MPC | 50580 | 2001 $XE_{162}$ |
| 2001 $XT_{163}$ | 15.8 | 0.15 | 20060922 | 283.43288 | 291.71331 | 170.57830 | 3.02289 | 0.0870505 | 3.2206363 | 57 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 85331 | 2001 $XT_{163}$ |
| 2001 $XV_{163}$ | 15.7 | 0.15 | 20060922 | 11.65151 | 85.31425 | 303.36811 | 10.56016 | 0.1122801 | 2.9903534 | 27 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 85331 | 2001 $XV_{163}$ |
| 2001 $XX_{163}$ | 16.3 | 0.15 | 20060922 | 314.59551 | 286.24321 | 220.98718 | 2.53062 | 0.0289084 | 2.7655164 | 52 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 94374 | 2001 $XX_{163}$ |
| 2001 $XM_{164}$ | 14.8 | 0.15 | 20060922 | 225.35260 | 107.31621 | 97.29066 | 12.89089 | 0.2391717 | 3.0796374 | 74 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 85331 | 2001 $XM_{164}$ |
| 2001 $XR_{164}$ | 15.8 | 0.15 | 20060922 | 13.68359 | 10.54978 | 82.34147 | 3.30149 | 0.0320799 | 2.7329721 | 52 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 97526 | 2001 $XR_{164}$ |
| 2001 $XX_{164}$ | 15.5 | 0.15 | 20060922 | 2.75838 | 351.22893 | 84.30849 | 10.27659 | 0.0863518 | 2.8685095 | 54 | 4 | 2001–2006 | 0.74 | M-v | 1 | MPC | 85332 | 2001 $XX_{164}$ |
| 2001 $XY_{164}$ | 14.9 | 0.15 | 20060922 | 8.45380 | 293.86313 | 86.65663 | 10.40759 | 0.1045055 | 3.1126197 | 57 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 87512 | 2001 $XY_{164}$ |
| 2001 $XJ_{165}$ | 16.9 | 0.15 | 20060922 | 190.78297 | 257.26302 | 88.58458 | 3.27259 | 0.2375187 | 2.3476185 | 48 | 4 | 1996–2006 | 0.55 | M-v | 1 | MPC | 97526 | 2001 $XJ_{165}$ |
| 2001 $XU_{165}$ | 15.8 | 0.15 | 20060922 | 22.86398 | 332.68392 | 102.26584 | 5.90359 | 0.0487731 | 2.7743336 | 29 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 47037 | 2001 $XU_{165}$ |
| 2001 $XR_{166}$ | 15.9 | 0.15 | 20060922 | 86.15551 | 269.56577 | 106.02428 | 7.49650 | 0.1643768 | 2.6744423 | 46 | 2 | 2001–2005 | 0.60 | M-v | 5 | MPC | 89147 | 2001 $XR_{166}$ |
| 2001 $XB_{167}$ | 15.9 | 0.15 | 20060922 | 43.11143 | 135.83763 | 259.01335 | 3.17777 | 0.2097940 | 2.7925857 | 60 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 90129 | 2001 $XB_{167}$ |
| 2001 $XP_{167}$ | 15.1 | 0.15 | 20060922 | 145.43996 | 172.26677 | 123.75494 | 3.02969 | 0.0406158 | 2.8665792 | 102 | 6 | 1995–2006 | 0.62 | M-v | 0 | MPC | 90129 | 2001 $XP_{167}$ |
| 2001 $XW_{167}$ | 15.7 | 0.15 | 20060922 | 85.41410 | 265.45706 | 119.08393 | 4.27240 | 0.1324900 | 2.6666660 | 90 | 5 | 1998–2006 | 0.58 | M-v | 2 | MPC | 97526 | 2001 $XW_{167}$ |
| 2001 $XR_{169}$ | 15.3 | 0.15 | 20060922 | 15.91308 | 277.40705 | 107.32259 | 11.54476 | 0.1866640 | 3.0203522 | 57 | 5 | 1999–2006 | 0.37 | M-v | 0 | MPC | 87513 | 2001 $XR_{169}$ |
| 2001 $XD_{170}$ | 15.5 | 0.15 | 20060922 | 274.58396 | 37.10100 | 96.07178 | 4.26323 | 0.0386343 | 3.0505312 | 25 | 3 | 2001–2006 | 0.54 | M-v | 4 | MPC | 00103 | 2001 $XD_{170}$ |
| 2001 $XR_{170}$ | 15.7 | 0.15 | 20060922 | 342.51597 | 264.08777 | 130.84165 | 0.26745 | 0.1812711 | 3.1515008 | 70 | 4 | 1995–2006 | 0.48 | M-v | 0 | MPC | 04188 | 2001 $XR_{170}$ |
| 2001 $XY_{170}$ | 16.7 | 0.15 | 20060922 | 45.94957 | 150.42780 | 244.37320 | 4.20536 | 0.1602500 | 2.7908806 | 39 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 85332 | 2001 $XY_{170}$ |
| 2001 $XZ_{170}$ | 15.5 | 0.15 | 20060922 | 344.97288 | 262.56917 | 122.27447 | 2.60283 | 0.1692419 | 3.2008927 | 77 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 04188 | 2001 $XZ_{170}$ |
| 2001 $XM_{171}$ | 16.9 | 0.15 | 20060922 | 64.40559 | 278.35783 | 252.62103 | 1.17961 | 0.1640649 | 2.3065261 | 51 | 4 | 1999–2006 | 0.70 | M-v | 1 | MPC | 02055 | 2001 $XM_{171}$ |
| 2001 $XR_{171}$ | 15.5 | 0.15 | 20060922 | 308.53371 | 258.74756 | 274.94351 | 2.39324 | 0.0157948 | 2.6812958 | 63 | 6 | 1996–2006 | 0.45 | M-v | 1 | MPC | 97527 | 2001 $XR_{171}$ |
| 2001 $XE_{172}$ | 17.2 | 0.15 | 20060922 | 61.82718 | 272.67451 | 257.85598 | 2.42835 | 0.1006290 | 2.3122232 | 27 | 3 | 2000–2004 | 0.40 | M-v | 4 | MPC | 72433 | 2001 $XE_{172}$ |
| 2001 $XY_{173}$ | 15.1 | 0.15 | 20060922 | 316.85971 | 339.23890 | 112.93373 | 10.96100 | 0.0965629 | 3.1184571 | 56 | 4 | 2000–2006 | 0.67 | M-v | 1 | MPC | 89149 | 2001 $XY_{173}$ |
| 2001 $XF_{175}$ | 14.8 | 0.15 | 20060922 | 313.00514 | 185.85925 | 274.79651 | 7.95094 | 0.0678923 | 3.1066196 | 50 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85333 | 2001 $XF_{175}$ |
| 2001 $XM_{175}$ | 16.4 | 0.15 | 20060922 | 91.31376 | 57.57828 | 111.65171 | 3.92743 | 0.0584565 | 2.2240784 | 94 | 5 | 1996–2006 | 0.61 | M-v | 1 | MPC | 02055 | 2001 $XM_{175}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XM_{178}$ | 15.2 | 0.15 | 20060922 | 345.88299 | 286.81206 | 110.53073 | 16.11683 | 0.1783607 | 3.2093086 | 62 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 65224 | 2001 $XM_{178}$ |
| 2001 $XA_{179}$ | 15.0 | 0.15 | 20060922 | 337.83768 | 162.77845 | 279.19072 | 10.94813 | 0.0777933 | 3.0636493 | 78 | 5 | 2000–2006 | 0.57 | M-v | 0 | MPC | 48170 | 2001 $XA_{179}$ |
| 2001 $XG_{179}$ | 16.5 | 0.15 | 20060922 | 36.75983 | 323.21601 | 103.64945 | 6.08081 | 0.1430653 | 2.7764192 | 38 | 5 | 1991–2006 | 0.54 | M-v | 1 | MPC | 89150 | 2001 $XG_{179}$ |
| 2001 $XJ_{179}$ | 17.1 | 0.15 | 20060922 | 191.34639 | 110.12346 | 275.58769 | 4.37992 | 0.1549593 | 2.2949519 | 59 | 3 | 1999–2004 | 0.54 | M-v | 3 | MPC | 74116 | 2001 $XJ_{179}$ |
| 2001 $XE_{180}$ | 14.8 | 0.15 | 20060922 | 16.39071 | 98.91353 | 271.85227 | 17.66936 | 0.2658221 | 3.1077866 | 51 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 48170 | 2001 $XE_{180}$ |
| 2001 $XH_{180}$ | 16.0 | 0.15 | 20060922 | 326.49702 | 239.18279 | 233.26209 | 3.87822 | 0.2091138 | 2.9817638 | 81 | 6 | 1990–2006 | 0.58 | M-v | 1 | MPC | 87513 | 2001 $XH_{180}$ |
| 2001 $XG_{181}$ | 15.7 | 0.15 | 20060922 | 55.18344 | 112.81778 | 279.58511 | 6.06928 | 0.2344183 | 2.7858508 | 59 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 94381 | 2001 $XG_{181}$ |
| 2001 $XJ_{181}$ | 15.8 | 0.15 | 20060922 | 11.54448 | 289.19309 | 103.89922 | 11.03933 | 0.0965073 | 3.1285932 | 74 | 5 | 1996–2006 | 0.56 | M-v | 1 | MPC | 89150 | 2001 $XJ_{181}$ |
| 2001 $XL_{184}$ | 15.2 | 0.15 | 20060922 | 275.67781 | 47.25186 | 115.78483 | 10.28407 | 0.0848153 | 3.0439643 | 77 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 65226 | 2001 $XL_{184}$ |
| 2001 $XW_{184}$ | 14.3 | 0.15 | 20060922 | 330.20714 | 162.64244 | 285.61174 | 8.82353 | 0.0674877 | 3.1113961 | 95 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87513 | 2001 $XW_{184}$ |
| 2001 $XA_{186}$ | 15.9 | 0.15 | 20060922 | 48.22663 | 140.27798 | 264.54115 | 3.87924 | 0.1608952 | 2.7846553 | 83 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 90130 | 2001 $XA_{186}$ |
| 2001 $XH_{187}$ | 16.1 | 0.15 | 20060922 | 308.14884 | 320.71808 | 150.16192 | 1.86260 | 0.1272898 | 3.1004962 | 57 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 85335 | 2001 $XH_{187}$ |
| 2001 $XE_{188}$ | 16.2 | 0.15 | 20060922 | 56.20694 | 290.11988 | 109.16689 | 9.74797 | 0.1600486 | 2.7965185 | 75 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 89152 | 2001 $XE_{188}$ |
| 2001 $XJ_{188}$ | 16.3 | 0.15 | 20060922 | 86.90694 | 268.44852 | 167.51312 | 1.31924 | 0.1202252 | 2.5335033 | 102 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 94384 | 2001 $XJ_{188}$ |
| 2001 $XC_{189}$ | 16.2 | 0.15 | 20060922 | 46.70987 | 332.24344 | 120.39368 | 2.32243 | 0.1857410 | 2.6213853 | 111 | 4 | 1996–2005 | 0.52 | M-v | 1 | MPC | 97528 | 2001 $XC_{189}$ |
| 2001 $XF_{189}$ | 16.6 | 0.15 | 20060922 | 85.21320 | 13.10313 | 127.58719 | 2.82888 | 0.1612641 | 2.3509355 | 58 | 4 | 1995–2006 | 0.64 | M-v | 1 | MPC | 00104 | 2001 $XF_{189}$ |
| 2001 $XB_{190}$ | 16.4 | 0.15 | 20060922 | 76.08341 | 349.36258 | 164.57126 | 2.75534 | 0.1889083 | 2.3683176 | 139 | 2 | 2001–2006 | 0.48 | M-v | 3 | MPC | 00104 | 2001 $XB_{190}$ |
| 2001 $XL_{192}$ | 15.8 | 0.15 | 20060922 | 350.69465 | 314.46772 | 126.27183 | 2.24281 | 0.0667743 | 3.0339188 | 45 | 4 | 2001–2006 | 0.41 | M-v | 0 | MPC | 90130 | 2001 $XL_{192}$ |
| 2001 $XF_{193}$ | 15.1 | 0.15 | 20060922 | 306.48177 | 11.54305 | 120.22624 | 12.40315 | 0.2169178 | 3.0608766 | 124 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87513 | 2001 $XF_{193}$ |
| 2001 $XB_{194}$ | 16.3 | 0.15 | 20060922 | 39.66354 | 310.20208 | 117.42071 | 5.80202 | 0.2348823 | 2.7594379 | 74 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 90130 | 2001 $XB_{194}$ |
| 2001 $XM_{194}$ | 16.3 | 0.15 | 20060922 | 37.70994 | 264.61155 | 158.68022 | 2.06862 | 0.2407650 | 2.7847226 | 111 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 02056 | 2001 $XM_{194}$ |
| 2001 $XX_{194}$ | 15.0 | 0.15 | 20060922 | 20.88813 | 114.96339 | 278.08459 | 10.91275 | 0.1616344 | 3.0823797 | 88 | 4 | 2000–2006 | 0.60 | M-v | 0 | MPC | 90130 | 2001 $XX_{194}$ |
| 2001 $XD_{195}$ | 15.8 | 0.15 | 20060922 | 351.18565 | 283.02880 | 122.93299 | 15.39088 | 0.2174083 | 3.1645187 | 67 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 85337 | 2001 $XD_{195}$ |
| 2001 $XE_{196}$ | 15.7 | 0.15 | 20060922 | 72.92485 | 295.47368 | 115.27293 | 3.12692 | 0.1406618 | 2.7101439 | 108 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97529 | 2001 $XE_{196}$ |
| 2001 $XH_{196}$ | 14.9 | 0.15 | 20060922 | 40.56740 | 91.85224 | 293.44059 | 11.04988 | 0.0492584 | 3.0955246 | 73 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 85338 | 2001 $XH_{196}$ |
| 2001 $XY_{196}$ | 14.4 | 0.15 | 20060922 | 317.55985 | 335.82111 | 119.31390 | 13.72407 | 0.1843880 | 3.1725423 | 111 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 85338 | 2001 $XY_{196}$ |
| 2001 $XG_{198}$ | 14.5 | 0.15 | 20060922 | 205.50494 | 82.46814 | 123.34066 | 6.27581 | 0.0651217 | 3.2474917 | 94 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87514 | 2001 $XG_{198}$ |
| 2001 $XS_{198}$ | 15.6 | 0.15 | 20060922 | 291.88244 | 12.66609 | 113.84763 | 9.73940 | 0.0423442 | 3.1515767 | 44 | 4 | 1991–2006 | 0.42 | M-v | 1 | MPC | 85339 | 2001 $XS_{198}$ |
| 2001 $XZ_{199}$ | 17.1 | 0.15 | 20060922 | 143.20763 | 190.36722 | 264.76224 | 6.68158 | 0.0898776 | 2.2891154 | 51 | 3 | 2000–2004 | 0.57 | M-v | 3 | MPC | 72436 | 2001 $XZ_{199}$ |
| 2001 $XM_{200}$ | 15.0 | 0.15 | 20060922 | 205.77840 | 98.66277 | 49.83249 | 9.16694 | 0.0728263 | 3.3640180 | 35 | 3 | 2000–2004 | 0.65 | M-v | 2 | MPC | 69030 | 2001 $XM_{200}$ |
| 2001 $XQ_{200}$ | 15.1 | 0.15 | 20060922 | 88.43426 | 266.90879 | 60.20324 | 9.04195 | 0.2103236 | 2.8015727 | 100 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 90130 | 2001 $XQ_{200}$ |
| 2001 $XS_{200}$ | 15.2 | 0.15 | 20060922 | 321.33249 | 168.07014 | 270.03373 | 13.03680 | 0.1104062 | 3.0388176 | 57 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 85339 | 2001 $XS_{200}$ |
| 2001 $XR_{201}$ | 17.1 | 0.15 | 20060922 | 101.35001 | 119.20837 | 234.61208 | 5.26942 | 0.1097498 | 2.6451627 | 43 | 3 | 2001–2005 | 0.65 | M-v | 3 | MPC | 89154 | 2001 $XR_{201}$ |
| 2001 $XU_{201}$ | 16.8 | 0.15 | 20060922 | 167.44093 | 50.09188 | 231.55185 | 1.01616 | 0.0326754 | 2.7077968 | 39 | 5 | 1999–2006 | 0.31 | M-v | 0 | MPC | 90130 | 2001 $XU_{201}$ |
| 2001 $XC_{202}$ | 15.2 | 0.15 | 20060922 | 359.29705 | 7.68526 | 63.49070 | 27.25311 | 0.1411707 | 2.7342356 | 45 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87514 | 2001 $XC_{202}$ |
| 2001 $XE_{202}$ | 16.3 | 0.15 | 20060922 | 26.71029 | 100.92385 | 297.31970 | 3.80377 | 0.1771964 | 2.7795896 | 45 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 89154 | 2001 $XE_{202}$ |
| 2001 $XX_{202}$ | 16.1 | 0.15 | 20060922 | 43.21073 | 249.85199 | 162.58124 | 6.34174 | 0.0629462 | 2.6710096 | 44 | 4 | 1992–2005 | 0.58 | M-v | 1 | MPC | 04188 | 2001 $XX_{202}$ |
| 2001 $XY_{202}$ | 16.1 | 0.15 | 20060922 | 55.50048 | 325.60235 | 132.03550 | 6.24889 | 0.0854319 | 2.4656772 | 61 | 4 | 1995–2006 | 0.68 | M-v | 1 | MPC | 97529 | 2001 $XY_{202}$ |
| 2001 $XL_{203}$ | 14.5 | 0.15 | 20060922 | 18.82691 | 231.24792 | 111.80234 | 8.01315 | 0.1827231 | 3.0857010 | 87 | 6 | 2000–2006 | 0.56 | M-v | 1 | MPC | 04188 | 2001 $XL_{203}$ |
| 2001 $XS_{203}$ | 15.6 | 0.15 | 20060922 | 350.48055 | 343.53164 | 112.37181 | 5.86576 | 0.1252712 | 2.7744075 | 70 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87514 | 2001 $XS_{203}$ |
| 2001 $XU_{203}$ | 15.5 | 0.15 | 20060922 | 10.51146 | 293.78636 | 118.58536 | 5.08616 | 0.0986348 | 2.8009581 | 54 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 02056 | 2001 $XU_{203}$ |
| 2001 $XX_{203}$ | 15.3 | 0.15 | 20060922 | 66.41054 | 307.04774 | 84.88051 | 17.01624 | 0.0612264 | 2.6630366 | 55 | 4 | 1995–2005 | 0.70 | M-v | 1 | MPC | 97529 | 2001 $XX_{203}$ |
| 2001 $XY_{203}$ | 17.4 | 0.15 | 20060922 | 129.70474 | 350.29008 | 127.91018 | 3.86201 | 0.0466752 | 2.1793309 | 40 | 5 | 1991–2006 | 0.85 | M-v | 1 | MPC | 02056 | 2001 $XY_{203}$ |
| 2001 $XF_{204}$ | 16.1 | 0.15 | 20060922 | 339.83683 | 252.69638 | 160.47690 | 4.34278 | 0.1714602 | 3.0260947 | 41 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 87514 | 2001 $XF_{204}$ |
| 2001 $XV_{204}$ | 15.4 | 0.15 | 20060922 | 8.80669 | 270.68160 | 106.77493 | 10.44564 | 0.1230051 | 3.0444877 | 47 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 87514 | 2001 $XV_{204}$ |
| 2001 $XC_{205}$ | 15.9 | 0.15 | 20060922 | 35.41570 | 283.06002 | 115.05485 | 11.86130 | 0.2763345 | 2.7759244 | 49 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 89155 | 2001 $XC_{205}$ |
| 2001 $XD_{205}$ | 16.5 | 0.15 | 20060922 | 25.85408 | 287.31120 | 122.51238 | 10.15975 | 0.2885896 | 2.7872811 | 37 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 85340 | 2001 $XD_{205}$ |
| 2001 $XJ_{205}$ | 14.9 | 0.15 | 20060922 | 300.27326 | 323.02681 | 106.47360 | 8.88717 | 0.1493381 | 3.2113194 | 46 | 3 | 2001–2006 | 0.66 | M-v | 3 | MPC | 47050 | 2001 $XJ_{205}$ |
| 2001 $XT_{205}$ | 15.1 | 0.15 | 20060922 | 309.43349 | 237.28300 | 200.96532 | 4.96185 | 0.1217301 | 3.1228028 | 79 | 5 | 1995–2006 | 0.42 | M-v | 0 | MPC | 87514 | 2001 $XT_{205}$ |
| 2001 $XY_{205}$ | 15.3 | 0.15 | 20060922 | 264.25296 | 18.70722 | 104.44893 | 7.90933 | 0.1384186 | 3.1977500 | 36 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 75241 | 2001 $XY_{205}$ |
| 2001 $XZ_{205}$ | 15.1 | 0.15 | 20060922 | 337.56138 | 208.15511 | 225.92518 | 10.10198 | 0.0562261 | 2.9699894 | 67 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 85340 | 2001 $XZ_{205}$ |
| 2001 $XC_{206}$ | 14.9 | 0.15 | 20060922 | 1.85007 | 246.09304 | 94.96115 | 15.11010 | 0.2810564 | 3.1858020 | 60 | 3 | 2000–2006 | 0.63 | M-v | 2 | MPC | 04188 | 2001 $XC_{206}$ |
| 2001 $XJ_{207}$ | 15.2 | 0.15 | 20060922 | 338.88271 | 223.03248 | 170.53514 | 5.96938 | 0.1810085 | 3.1528737 | 84 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 04188 | 2001 $XJ_{207}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XT_{207}$ | 15.2 | 0.15 | 20060922 | 347.74455 | 290.53096 | 124.14732 | 6.84660 | 0.1596307 | 3.0075454 | 81 | 5 | 2001–2006 | 0.41 | M-v | 1 | MPC | 85340 | 2001 $XT_{207}$ |
| 2001 $XZ_{207}$ | 15.5 | 0.15 | 20060922 | 5.56706 | 258.40160 | 124.39891 | 8.47618 | 0.1523127 | 3.0499775 | 47 | 5 | 1999–2006 | 0.45 | M-v | 0 | MPC | 50580 | 2001 $XZ_{207}$ |
| 2001 $XF_{208}$ | 15.1 | 0.15 | 20060922 | 329.64770 | 300.50108 | 89.47979 | 28.38638 | 0.2642647 | 3.1986831 | 50 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04188 | 2001 $XF_{208}$ |
| 2001 $XR_{208}$ | 14.4 | 0.15 | 20060922 | 153.33519 | 319.76558 | 247.97308 | 16.65259 | 0.0876247 | 3.4319945 | 51 | 5 | 2001–2006 | 0.69 | M-v | 1 | MPC | 87514 | 2001 $XR_{208}$ |
| 2001 $XV_{208}$ | 16.1 | 0.15 | 20060922 | 47.89599 | 286.49202 | 108.01371 | 7.98763 | 0.2656004 | 2.7334694 | 52 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 85341 | 2001 $XV_{208}$ |
| 2001 $XX_{208}$ | 15.7 | 0.15 | 20060922 | 332.03924 | 272.83451 | 153.30753 | 5.52086 | 0.0939707 | 3.0085654 | 59 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 87514 | 2001 $XX_{208}$ |
| 2001 $XA_{209}$ | 15.2 | 0.15 | 20060922 | 316.43184 | 291.31224 | 150.74583 | 5.30728 | 0.1322853 | 3.0948585 | 59 | 4 | 1997–2006 | 0.61 | M-v | 3 | MPC | 85341 | 2001 $XA_{209}$ |
| 2001 $XB_{210}$ | 16.8 | 0.15 | 20060922 | 101.82266 | 13.86762 | 145.79338 | 4.74581 | 0.0683923 | 2.1916395 | 69 | 3 | 2000–2006 | 0.70 | M-v | 2 | MPC | 02056 | 2001 $XB_{210}$ |
| 2001 $XG_{210}$ | 16.3 | 0.15 | 20060922 | 55.04568 | 295.40075 | 185.68644 | 5.36353 | 0.1534391 | 2.4754067 | 37 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 94390 | 2001 $XG_{210}$ |
| 2001 $XT_{210}$ | 15.5 | 0.15 | 20060922 | 334.40634 | 40.57471 | 107.32708 | 11.71555 | 0.2028060 | 2.7509973 | 45 | 4 | 1998–2005 | 0.78 | M-v | 1 | MPC | 90131 | 2001 $XT_{210}$ |
| 2001 $XC_{211}$ | 17.1 | 0.15 | 20060922 | 215.36376 | 287.83840 | 119.08064 | 5.36174 | 0.0919516 | 2.1597056 | 57 | 6 | 1991–2006 | 0.70 | M-v | 1 | MPC | 02056 | 2001 $XC_{211}$ |
| 2001 $XE_{212}$ | 16.7 | 0.15 | 20060922 | 13.72622 | 251.76057 | 204.84708 | 4.34593 | 0.1260338 | 2.7080034 | 36 | 5 | 1994–2005 | 0.59 | M-v | 0 | MPC | 04188 | 2001 $XE_{212}$ |
| 2001 $XK_{212}$ | 15.8 | 0.15 | 20060922 | 82.48799 | 251.49573 | 124.97290 | 5.31515 | 0.1051472 | 2.7076943 | 70 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 02056 | 2001 $XK_{212}$ |
| 2001 $XC_{214}$ | 15.6 | 0.15 | 20060922 | 338.32169 | 226.83647 | 193.54015 | 3.91566 | 0.2956958 | 3.0873496 | 149 | 4 | 1997–2006 | 0.50 | M-v | 1 | MPC | 03275 | 2001 $XC_{214}$ |
| 2001 $XH_{214}$ | 16.7 | 0.15 | 20060922 | 293.95258 | 179.89436 | 273.07969 | 17.66551 | 0.0955082 | 1.9199820 | 44 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 77581 | 2001 $XH_{214}$ |
| 2001 $XX_{215}$ | 15.0 | 0.15 | 20060922 | 351.14805 | 5.95767 | 80.53852 | 13.58057 | 0.0421372 | 2.8627882 | 45 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 87514 | 2001 $XX_{215}$ |
| 2001 $XD_{216}$ | 15.8 | 0.15 | 20060922 | 9.98223 | 141.39783 | 281.22618 | 0.85731 | 0.0443461 | 2.8801328 | 31 | 2 | 2001–2005 | 0.42 | M-v | 4 | MPC | 97530 | 2001 $XD_{216}$ |
| 2001 $XP_{216}$ | 15.0 | 0.15 | 20060922 | 207.60662 | 284.76139 | 257.85064 | 7.57481 | 0.0279147 | 3.1771879 | 64 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 85344 | 2001 $XP_{216}$ |
| 2001 $XK_{217}$ | 14.6 | 0.15 | 20060922 | 265.25335 | 67.95655 | 102.22599 | 21.06343 | 0.0859493 | 3.0430347 | 56 | 4 | 1998–2006 | 0.62 | M-v | 1 | MPC | 47055 | 2001 $XK_{217}$ |
| 2001 $XN_{217}$ | 15.7 | 0.15 | 20060922 | 44.65491 | 304.50561 | 104.84677 | 10.56239 | 0.1677645 | 2.8135129 | 99 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 97530 | 2001 $XN_{217}$ |
| 2001 $XP_{217}$ | 14.9 | 0.15 | 20060922 | 235.57403 | 86.61604 | 107.11727 | 10.95242 | 0.0460296 | 3.0907237 | 46 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 85344 | 2001 $XP_{217}$ |
| 2001 $XD_{218}$ | 15.5 | 0.15 | 20060922 | 232.01008 | 1.44356 | 241.39611 | 12.48112 | 0.0957267 | 2.5457336 | 75 | 5 | 1993–2006 | 0.57 | M-v | 2 | MPC | 04188 | 2001 $XD_{218}$ |
| 2001 $XH_{219}$ | 16.3 | 0.15 | 20060922 | 4.84714 | 11.00152 | 47.68755 | 2.70705 | 0.0593594 | 2.8318997 | 44 | 4 | 2001–2006 | 0.45 | M-v | 0 | MPC | 87514 | 2001 $XH_{219}$ |
| 2001 $XY_{219}$ | 17.7 | 0.15 | 20060922 | 149.75966 | 57.89906 | 2.46725 | 2.79949 | 0.1482961 | 2.2664438 | 33 | 3 | 2001–2006 | 0.33 | M-v | 3 | MPC | 00106 | 2001 $XY_{219}$ |
| 2001 $XB_{220}$ | 15.4 | 0.15 | 20060922 | 297.62744 | 194.38717 | 265.65423 | 8.75936 | 0.0883536 | 3.0229530 | 35 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 85345 | 2001 $XB_{220}$ |
| 2001 $XO_{220}$ | 15.7 | 0.15 | 20060922 | 47.78478 | 76.24884 | 274.11102 | 8.39021 | 0.0882649 | 2.9374847 | 62 | 6 | 1995–2006 | 0.47 | M-v | 0 | MPC | 87514 | 2001 $XO_{220}$ |
| 2001 $XG_{221}$ | 15.7 | 0.15 | 20060922 | 68.00372 | 132.38322 | 240.93591 | 5.47217 | 0.0446421 | 2.7035783 | 59 | 2 | 2001–2005 | 0.56 | M-v | 4 | MPC | 89158 | 2001 $XG_{221}$ |
| 2001 $XO_{221}$ | 15.2 | 0.15 | 20060922 | 114.65650 | 23.59228 | 284.36624 | 3.46210 | 0.1024858 | 2.7640702 | 85 | 6 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87514 | 2001 $XO_{221}$ |
| 2001 $XQ_{221}$ | 14.9 | 0.15 | 20060922 | 335.93623 | 141.39337 | 245.93351 | 11.75100 | 0.0146136 | 3.1714273 | 29 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 40916 | 2001 $XQ_{221}$ |
| 2001 $XS_{221}$ | 16.3 | 0.15 | 20060922 | 16.70186 | 82.11776 | 0.88700 | 1.71212 | 0.0400913 | 2.6626498 | 51 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 90131 | 2001 $XS_{221}$ |
| 2001 $XL_{222}$ | 15.3 | 0.15 | 20060922 | 313.41654 | 226.48733 | 277.79360 | 7.17788 | 0.0947777 | 2.7336147 | 53 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 90131 | 2001 $XL_{222}$ |
| 2001 $XQ_{222}$ | 16.0 | 0.15 | 20060922 | 327.85184 | 152.37734 | 253.30178 | 2.96636 | 0.1166645 | 3.0922108 | 73 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87515 | 2001 $XQ_{222}$ |
| 2001 $XT_{222}$ | 16.2 | 0.15 | 20060922 | 31.69674 | 312.91906 | 44.75810 | 2.43530 | 0.1089772 | 2.9598350 | 71 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 75243 | 2001 $XT_{222}$ |
| 2001 $XX_{222}$ | 16.9 | 0.15 | 20060922 | 49.10136 | 6.15521 | 45.09045 | 2.87015 | 0.1816123 | 2.6572306 | 61 | 2 | 2001–2005 | 0.48 | M-v | 3 | MPC | 02056 | 2001 $XX_{222}$ |
| 2001 $XC_{223}$ | 16.6 | 0.15 | 20060922 | 158.57199 | 41.23933 | 305.18986 | 3.75253 | 0.2715956 | 2.3894907 | 64 | 3 | 1995–2006 | 0.55 | M-v | 4 | MPC | 94395 | 2001 $XC_{223}$ |
| 2001 $XG_{223}$ | 15.3 | 0.15 | 20060922 | 23.17417 | 6.22631 | 332.43005 | 2.84439 | 0.1309514 | 3.1369629 | 47 | 3 | 2000–2006 | 0.44 | M-v | 4 | MPC | 04188 | 2001 $XG_{223}$ |
| 2001 $XH_{223}$ | 14.8 | 0.15 | 20060922 | 254.09014 | 222.86686 | 268.31783 | 8.58218 | 0.0543171 | 3.1239623 | 48 | 3 | 2001–2006 | 0.37 | M-v | 3 | MPC | 89159 | 2001 $XH_{223}$ |
| 2001 $XW_{223}$ | 16.3 | 0.15 | 20060922 | 9.06298 | 346.75786 | 63.57480 | 11.95800 | 0.1224571 | 2.8675614 | 47 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 03275 | 2001 $XW_{223}$ |
| 2001 $XB_{224}$ | 16.1 | 0.15 | 20060922 | 81.10493 | 108.80586 | 267.91993 | 4.64854 | 0.0677805 | 2.6701867 | 35 | 2 | 2001–2005 | 0.49 | M-v | 4 | MPC | 90131 | 2001 $XB_{224}$ |
| 2001 $XK_{224}$ | 16.5 | 0.15 | 20060922 | 67.64926 | 297.91380 | 62.14977 | 2.31976 | 0.1080961 | 2.7883410 | 57 | 6 | 1996–2006 | 0.54 | M-v | 0 | MPC | 90131 | 2001 $XK_{224}$ |
| 2001 $XL_{224}$ | 17.9 | 0.15 | 20060922 | 119.96277 | 73.38169 | 30.18752 | 1.27738 | 0.1509069 | 2.2695766 | 36 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 00107 | 2001 $XL_{224}$ |
| 2001 $XS_{224}$ | 15.6 | 0.15 | 20060922 | 346.02189 | 189.84197 | 288.13332 | 4.48644 | 0.0201495 | 2.6816652 | 39 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 90131 | 2001 $XS_{224}$ |
| 2001 $XV_{224}$ | 16.4 | 0.15 | 20060922 | 20.76273 | 85.55899 | 40.38686 | 4.54124 | 0.1538718 | 2.5545326 | 48 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 97531 | 2001 $XV_{224}$ |
| 2001 $XR_{225}$ | 14.9 | 0.15 | 20060922 | 222.67390 | 122.86227 | 65.12976 | 10.41077 | 0.0875994 | 3.0029801 | 67 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 85347 | 2001 $XR_{225}$ |
| 2001 $XV_{225}$ | 15.5 | 0.15 | 20060922 | 11.63145 | 122.04165 | 257.55077 | 9.58616 | 0.0687331 | 3.0306651 | 61 | 4 | 2000–2006 | 0.57 | M-v | 0 | MPC | 85347 | 2001 $XV_{225}$ |
| 2001 $XD_{226}$ | 16.1 | 0.15 | 20060922 | 34.38594 | 144.59492 | 261.69560 | 3.33254 | 0.0670949 | 2.7775829 | 73 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 90132 | 2001 $XD_{226}$ |
| 2001 $XD_{227}$ | 16.2 | 0.15 | 20060922 | 82.50076 | 49.11137 | 336.24119 | 1.93012 | 0.0913061 | 2.6347913 | 52 | 3 | 2001–2005 | 0.53 | M-v | 4 | MPC | 97531 | 2001 $XD_{227}$ |
| 2001 $XK_{227}$ | 16.4 | 0.15 | 20060922 | 51.27627 | 337.35920 | 52.99797 | 2.90671 | 0.1094040 | 2.7525954 | 58 | 6 | 1999–2006 | 0.43 | M-v | 0 | MPC | 97531 | 2001 $XK_{227}$ |
| 2001 $XU_{227}$ | 17.0 | 0.15 | 20060922 | 27.40188 | 73.89339 | 22.46061 | 3.22719 | 0.1319747 | 2.6259220 | 29 | 3 | 2001–2005 | 0.29 | M-v | 3 | MPC | 89161 | 2001 $XU_{227}$ |
| 2001 $XV_{227}$ | 15.7 | 0.15 | 20060922 | 333.71531 | 123.76745 | 280.29221 | 9.07775 | 0.0773631 | 3.1426272 | 43 | 5 | 1996–2006 | 0.40 | M-v | 0 | MPC | 87515 | 2001 $XV_{227}$ |
| 2001 $XX_{227}$ | 16.0 | 0.15 | 20060922 | 77.48107 | 68.76514 | 296.09139 | 5.10768 | 0.0548219 | 2.7643350 | 41 | 4 | 1996–2006 | 0.39 | M-v | 2 | MPC | 02056 | 2001 $XX_{227}$ |
| 2001 $XH_{228}$ | 15.1 | 0.15 | 20060922 | 325.20817 | 141.49373 | 260.58921 | 15.48197 | 0.2207989 | 3.1674626 | 53 | 2 | 2001–2006 | 0.44 | M-v | 3 | MPC | 03275 | 2001 $XH_{228}$ |
| 2001 $XO_{228}$ | 15.8 | 0.15 | 20060922 | 97.79958 | 279.54969 | 68.27951 | 14.71226 | 0.1050101 | 2.7221032 | 35 | 4 | 1992–2005 | 0.59 | M-v | 1 | MPC | 90132 | 2001 $XO_{228}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XT_{228}$ | 16.2 | 0.15 | 20060922 | 156.39340 | 347.74370 | 317.18859 | 3.04287 | 0.0679510 | 2.6759763 | 72 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 89161 | 2001 $XT_{228}$ |
| 2001 $XV_{228}$ | 15.2 | 0.15 | 20060922 | 53.43879 | 52.03921 | 275.42032 | 8.40094 | 0.0577846 | 3.1135748 | 55 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 85349 | 2001 $XV_{228}$ |
| 2001 $XW_{229}$ | 16.8 | 0.15 | 20060922 | 299.93817 | 167.43316 | 295.90949 | 0.33876 | 0.2082270 | 3.0761971 | 33 | 3 | 1997–2006 | 0.46 | M-v | 4 | MPC | 29740 | 2001 $XW_{229}$ |
| 2001 $XG_{230}$ | 15.7 | 0.15 | 20060922 | 118.28180 | 71.41881 | 262.06807 | 3.92163 | 0.0673666 | 2.7133839 | 83 | 4 | 1992–2006 | 0.51 | M-v | 2 | MPC | 04188 | 2001 $XG_{230}$ |
| 2001 $XL_{230}$ | 16.0 | 0.15 | 20060922 | 129.04939 | 264.06376 | 73.79275 | 14.04123 | 0.0739838 | 2.6433143 | 42 | 3 | 1995–2005 | 0.58 | M-v | 2 | MPC | 94399 | 2001 $XL_{230}$ |
| 2001 $XM_{230}$ | 15.6 | 0.15 | 20060922 | 57.74453 | 94.88384 | 263.62499 | 9.57892 | 0.1619907 | 2.8446337 | 63 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 90132 | 2001 $XM_{230}$ |
| 2001 $XO_{230}$ | 16.0 | 0.15 | 20060922 | 312.13436 | 131.36117 | 4.88371 | 0.96901 | 0.0157100 | 2.7780239 | 70 | 6 | 1994–2006 | 0.52 | M-v | 0 | MPC | 90132 | 2001 $XO_{230}$ |
| 2001 $XT_{230}$ | 15.2 | 0.15 | 20060922 | 272.43333 | 78.26285 | 61.64985 | 10.14348 | 0.2407588 | 3.1092537 | 67 | 4 | 1992–2006 | 0.69 | M-v | 1 | MPC | 04188 | 2001 $XT_{230}$ |
| 2001 $XY_{230}$ | 16.2 | 0.15 | 20060922 | 9.96814 | 161.48423 | 318.36597 | 2.68202 | 0.0668615 | 2.6052455 | 24 | 3 | 2000–2005 | 0.61 | M-v | 5 | MPC | 94399 | 2001 $XY_{230}$ |
| 2001 $XH_{231}$ | 15.0 | 0.15 | 20060922 | 341.47948 | 127.11120 | 274.77055 | 8.44825 | 0.1005756 | 3.1102153 | 67 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 87515 | 2001 $XH_{231}$ |
| 2001 $XW_{231}$ | 15.9 | 0.15 | 20060922 | 108.91570 | 69.46189 | 272.48411 | 5.28264 | 0.0046419 | 2.7574478 | 42 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 94400 | 2001 $XW_{231}$ |
| 2001 $XE_{233}$ | 15.6 | 0.15 | 20060922 | 355.01736 | 319.58226 | 60.26139 | 4.74932 | 0.1196887 | 3.1403035 | 50 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 89162 | 2001 $XE_{233}$ |
| 2001 $XO_{233}$ | 17.0 | 0.15 | 20060922 | 64.74093 | 140.72375 | 280.75344 | 2.23955 | 0.1673207 | 2.5856262 | 48 | 3 | 2001–2005 | 0.52 | M-v | 3 | MPC | 97531 | 2001 $XO_{233}$ |
| 2001 $XB_{234}$ | 15.3 | 0.15 | 20060922 | 27.05382 | 97.87005 | 268.63527 | 9.13082 | 0.1087204 | 3.0245443 | 44 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 89162 | 2001 $XB_{234}$ |
| 2001 $XD_{234}$ | 15.1 | 0.15 | 20060922 | 259.44967 | 102.96081 | 44.13750 | 5.83674 | 0.1178099 | 3.0914483 | 68 | 5 | 1992–2006 | 0.53 | M-v | 1 | MPC | 50581 | 2001 $XD_{234}$ |
| 2001 $XK_{234}$ | 15.1 | 0.15 | 20060922 | 83.16358 | 66.08715 | 284.12705 | 7.75635 | 0.1704897 | 2.7626920 | 91 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 97531 | 2001 $XK_{234}$ |
| 2001 $XN_{234}$ | 16.0 | 0.15 | 20060922 | 315.05037 | 116.16325 | 23.58731 | 4.20165 | 0.0404016 | 2.7760723 | 72 | 4 | 1996–2005 | 0.55 | M-v | 1 | MPC | 90132 | 2001 $XN_{234}$ |
| 2001 $XA_{235}$ | 17.0 | 0.15 | 20060922 | 139.43437 | 351.44466 | 20.78203 | 3.00452 | 0.1918731 | 2.4399912 | 31 | 4 | 1997–2006 | 0.44 | M-v | 3 | MPC | 94401 | 2001 $XA_{235}$ |
| 2001 $XG_{235}$ | 15.9 | 0.15 | 20060922 | 54.99176 | 328.10354 | 65.07846 | 4.80396 | 0.1023803 | 2.7509162 | 61 | 4 | 1998–2006 | 0.41 | M-v | 1 | MPC | 90132 | 2001 $XG_{235}$ |
| 2001 $XH_{235}$ | 16.0 | 0.15 | 20060922 | 359.15909 | 115.26868 | 301.31097 | 1.80998 | 0.1855222 | 2.9263097 | 47 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 85351 | 2001 $XH_{235}$ |
| 2001 $XJ_{235}$ | 15.5 | 0.15 | 20060922 | 275.33254 | 46.65537 | 73.55208 | 10.57212 | 0.0659387 | 3.1247563 | 40 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 85351 | 2001 $XJ_{235}$ |
| 2001 $XK_{235}$ | 15.6 | 0.15 | 20060922 | 339.55625 | 28.62259 | 60.34960 | 4.63996 | 0.1391360 | 2.9097335 | 46 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 85351 | 2001 $XK_{235}$ |
| 2001 $XM_{235}$ | 15.4 | 0.15 | 20060922 | 16.65075 | 335.82819 | 50.09658 | 2.14847 | 0.1328734 | 2.9787492 | 77 | 6 | 1993–2006 | 0.55 | M-v | 0 | MPC | 85352 | 2001 $XM_{235}$ |
| 2001 $XV_{235}$ | 15.4 | 0.15 | 20060922 | 195.48207 | 186.72596 | 40.65596 | 2.77759 | 0.0363103 | 2.9417748 | 36 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 27344 | 2001 $XV_{235}$ |
| 2001 $XM_{236}$ | 17.7 | 0.15 | 20060922 | 178.25982 | 351.85593 | 16.96932 | 2.77665 | 0.2037433 | 2.3165750 | 26 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 00108 | 2001 $XM_{236}$ |
| 2001 $XZ_{236}$ | 15.4 | 0.15 | 20060922 | 87.73908 | 63.27660 | 275.76551 | 5.35733 | 0.0723658 | 2.8655414 | 54 | 5 | 1995–2005 | 0.59 | M-v | 1 | MPC | 87515 | 2001 $XZ_{236}$ |
| 2001 $XD_{237}$ | 15.0 | 0.15 | 20060922 | 6.30531 | 101.71612 | 272.20714 | 9.77711 | 0.2261678 | 3.0561626 | 74 | 3 | 2000–2006 | 0.62 | M-v | 1 | MPC | 26092 | 2001 $XD_{237}$ |
| 2001 $XF_{237}$ | 16.2 | 0.15 | 20060922 | 62.20732 | 109.42408 | 276.72425 | 7.31687 | 0.1523078 | 2.7323064 | 40 | 3 | 2001–2006 | 0.50 | M-v | 4 | MPC | 89163 | 2001 $XF_{237}$ |
| 2001 $XN_{237}$ | 15.5 | 0.15 | 20060922 | 101.51279 | 43.13479 | 309.68605 | 3.75709 | 0.2183183 | 2.6173926 | 121 | 5 | 1994–2006 | 0.48 | M-v | 1 | MPC | 97532 | 2001 $XN_{237}$ |
| 2001 $XP_{237}$ | 16.1 | 0.15 | 20060922 | 279.38022 | 37.95494 | 69.22449 | 4.07292 | 0.0720664 | 3.1232897 | 41 | 6 | 1996–2006 | 0.53 | M-v | 0 | MPC | 89163 | 2001 $XP_{237}$ |
| 2001 $XA_{239}$ | 15.5 | 0.15 | 20060922 | 28.89062 | 161.14713 | 270.12377 | 12.01313 | 0.1777812 | 2.7287234 | 94 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 90132 | 2001 $XA_{239}$ |
| 2001 $XC_{240}$ | 15.3 | 0.15 | 20060922 | 312.95956 | 160.37441 | 298.23651 | 9.16027 | 0.1456521 | 3.1080662 | 51 | 4 | 1997–2006 | 0.50 | M-v | 3 | MPC | 48173 | 2001 $XC_{240}$ |
| 2001 $XJ_{240}$ | 16.3 | 0.15 | 20060922 | 280.65627 | 300.68453 | 53.77997 | 3.15555 | 0.1382169 | 2.1293882 | 74 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 04188 | 2001 $XJ_{240}$ |
| 2001 $XQ_{241}$ | 16.0 | 0.15 | 20060922 | 69.61533 | 143.38344 | 228.17529 | 2.30938 | 0.0736460 | 2.7387919 | 69 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 97532 | 2001 $XQ_{241}$ |
| 2001 $XR_{241}$ | 15.7 | 0.15 | 20060922 | 147.03583 | 183.23153 | 91.08484 | 3.26517 | 0.0178767 | 2.8666884 | 43 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 89164 | 2001 $XR_{241}$ |
| 2001 $XB_{242}$ | 16.1 | 0.15 | 20060922 | 88.56668 | 247.43858 | 75.32764 | 12.86308 | 0.1495091 | 2.8824442 | 32 | 4 | 1999–2006 | 0.43 | M-v | 0 | MPC | 85352 | 2001 $XB_{242}$ |
| 2001 $XU_{242}$ | 16.4 | 0.15 | 20060922 | 294.08448 | 110.40174 | 356.81899 | 0.40718 | 0.1549291 | 3.1432069 | 51 | 4 | 1997–2006 | 0.39 | M-v | 1 | MPC | 27345 | 2001 $XU_{242}$ |
| 2001 $XE_{243}$ | 16.9 | 0.15 | 20060922 | 50.40021 | 152.01779 | 320.60153 | 12.17865 | 0.2088290 | 2.5616367 | 39 | 2 | 2000–2002 | 0.53 | M-v | 3 | MPC | 03276 | 2001 $XE_{243}$ |
| 2001 $XY_{243}$ | 15.7 | 0.15 | 20060922 | 351.39859 | 226.80484 | 240.11068 | 14.00539 | 0.0886328 | 2.6376798 | 32 | 3 | 2001–2006 | 0.62 | M-v | 3 | MPC | 94406 | 2001 $XY_{243}$ |
| 2001 $XS_{244}$ | 16.2 | 0.15 | 20060922 | 24.20632 | 111.21763 | 296.41422 | 3.21032 | 0.0709579 | 2.7824409 | 44 | 4 | 1998–2005 | 0.42 | M-v | 1 | MPC | 85353 | 2001 $XS_{244}$ |
| 2001 $XD_{245}$ | 15.8 | 0.15 | 20060922 | 273.35000 | 61.63736 | 35.18714 | 10.12174 | 0.0384019 | 3.1016146 | 42 | 5 | 1993–2006 | 0.51 | M-v | 0 | MPC | 85353 | 2001 $XD_{245}$ |
| 2001 $XE_{245}$ | 16.0 | 0.15 | 20060922 | 131.04081 | 41.00324 | 246.29445 | 13.37174 | 0.0758427 | 2.7691529 | 37 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 94407 | 2001 $XE_{245}$ |
| 2001 $XF_{245}$ | 16.7 | 0.15 | 20060922 | 81.57351 | 271.49561 | 63.43624 | 4.64767 | 0.1105720 | 2.7887700 | 40 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 87516 | 2001 $XF_{245}$ |
| 2001 $XL_{245}$ | 14.9 | 0.15 | 20060922 | 266.39911 | 11.10687 | 110.32070 | 11.79841 | 0.1793912 | 3.1250576 | 94 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 50581 | 2001 $XL_{245}$ |
| 2001 $XR_{245}$ | 15.6 | 0.15 | 20060922 | 236.86123 | 100.90362 | 52.73896 | 1.85965 | 0.1329177 | 3.1543047 | 38 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 85353 | 2001 $XR_{245}$ |
| 2001 $XP_{246}$ | 15.5 | 0.15 | 20060922 | 52.82607 | 253.83021 | 60.87286 | 5.72923 | 0.1308116 | 3.1567106 | 39 | 5 | 1995–2006 | 0.41 | M-v | 0 | MPC | 89165 | 2001 $XP_{246}$ |
| 2001 $XV_{246}$ | 15.7 | 0.15 | 20060922 | 273.79355 | 70.45979 | 62.73117 | 10.48213 | 0.2067658 | 3.1210011 | 40 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 47067 | 2001 $XV_{246}$ |
| 2001 $XS_{247}$ | 16.8 | 0.15 | 20060922 | 84.73706 | 208.62361 | 283.44065 | 3.07859 | 0.2315667 | 2.3511705 | 94 | 2 | 2001–2006 | 0.63 | M-v | 3 | MPC | 00109 | 2001 $XS_{247}$ |
| 2001 $XH_{248}$ | 18.3 | 0.15 | 20060922 | 42.49755 | 173.90106 | 282.99098 | 4.18832 | 0.2763059 | 2.6392993 | 39 | 3 | 2001–2005 | 0.65 | M-v | 3 | MPC | 89165 | 2001 $XH_{248}$ |
| 2001 $XF_{249}$ | 16.4 | 0.15 | 20060922 | 21.38616 | 332.86699 | 46.43178 | 0.13668 | 0.1590084 | 3.1266033 | 49 | 5 | 1997–2006 | 0.42 | M-v | 0 | MPC | 87516 | 2001 $XF_{249}$ |
| 2001 $XL_{249}$ | 14.4 | 0.15 | 20060922 | 309.86373 | 357.47696 | 138.60086 | 7.46255 | 0.1894878 | 3.0993333 | 189 | 6 | 1991–2006 | 0.47 | M-v | 1 | MPC | 04188 | 2001 $XL_{249}$ |
| 2001 $XT_{249}$ | 17.1 | 0.15 | 20060922 | 191.18816 | 285.29018 | 94.30301 | 7.37051 | 0.1529561 | 2.2638589 | 37 | 2 | 2001–2004 | 0.62 | M-v | 4 | MPC | 69042 | 2001 $XT_{249}$ |
| 2001 $XV_{249}$ | 15.9 | 0.15 | 20060922 | 234.67365 | 352.98427 | 233.51338 | 4.64128 | 0.0126068 | 2.7146538 | 62 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 97533 | 2001 $XV_{249}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $XD_{250}$ | 16.3 | 0.15 | 20060922 | 51.35445 | 166.27823 | 232.35428 | 2.64822 | 0.1009340 | 2.7810136 | 87 | 6 | 1999–2006 | 0.47 | M-v | 1 | MPC | 97533 | 2001 $XD_{250}$ |
| 2001 $XF_{250}$ | 16.0 | 0.15 | 20060922 | 0.49909 | 358.57419 | 101.61311 | 3.80376 | 0.1444176 | 2.7847904 | 33 | 3 | 2001–2006 | 0.43 | M-v | 4 | MPC | 94408 | 2001 $XF_{250}$ |
| 2001 $XP_{250}$ | 15.7 | 0.15 | 20060922 | 79.77311 | 255.74553 | 100.99622 | 14.53652 | 0.2253723 | 2.7759200 | 27 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 00110 | 2001 $XP_{250}$ |
| 2001 $XV_{250}$ | 15.6 | 0.15 | 20060922 | 52.05048 | 313.47211 | 97.30164 | 10.07322 | 0.1842274 | 2.7195678 | 48 | 2 | 2001–2005 | 0.64 | M-v | 4 | MPC | 90133 | 2001 $XV_{250}$ |
| 2001 $XY_{250}$ | 16.0 | 0.15 | 20060922 | 25.07995 | 283.73359 | 196.10013 | 1.39090 | 0.1545216 | 2.5945165 | 111 | 4 | 1996–2006 | 0.53 | M-v | 1 | MPC | 97533 | 2001 $XY_{250}$ |
| 2001 $XB_{251}$ | 15.9 | 0.15 | 20060922 | 303.88636 | 183.85465 | 265.05632 | 4.74397 | 0.1751872 | 3.1640152 | 43 | 6 | 1997–2006 | 0.70 | M-v | 0 | MPC | 85354 | 2001 $XB_{251}$ |
| 2001 $XD_{251}$ | 16.5 | 0.15 | 20060922 | 43.93313 | 328.61581 | 103.19642 | 3.77737 | 0.0797581 | 2.6812552 | 48 | 4 | 1992–2005 | 0.69 | M-v | 1 | MPC | 04188 | 2001 $XD_{251}$ |
| 2001 $XZ_{251}$ | 15.8 | 0.15 | 20060922 | 308.36086 | 317.33347 | 134.99437 | 2.00195 | 0.1598395 | 3.1329603 | 54 | 5 | 1997–2006 | 0.36 | M-v | 0 | MPC | 87516 | 2001 $XZ_{251}$ |
| 2001 $XA_{253}$ | 14.7 | 0.15 | 20060922 | 260.47432 | 252.16091 | 288.54696 | 8.36992 | 0.1621386 | 3.1638425 | 89 | 6 | 1998–2006 | 0.63 | M-v | 1 | MPC | 90133 | 2001 $XA_{253}$ |
| 2001 $XC_{253}$ | 15.8 | 0.15 | 20060922 | 351.63489 | 298.21494 | 140.24001 | 4.27891 | 0.1609913 | 2.9960925 | 42 | 4 | 1997–2006 | 0.54 | M-v | 3 | MPC | 90133 | 2001 $XC_{253}$ |
| 2001 $XC_{256}$ | 16.4 | 0.15 | 20060922 | 266.29248 | 18.96626 | 64.30244 | 22.80689 | 0.0944089 | 1.9098842 | 71 | 4 | 2000–2006 | 0.67 | M-v | 1 | MPC | 04189 | 2001 $XC_{256}$ |
| 2001 $XV_{256}$ | 16.1 | 0.15 | 20060922 | 331.21978 | 233.16431 | 172.98461 | 7.57721 | 0.3010436 | 3.0463134 | 71 | 2 | 2001–2006 | 0.40 | M-v | 2 | MPC | 03276 | 2001 $XV_{256}$ |
| 2001 $XA_{257}$ | 15.7 | 0.15 | 20060922 | 75.77198 | 254.39512 | 134.80759 | 14.23563 | 0.1777851 | 2.6168076 | 56 | 5 | 1994–2006 | 0.47 | M-v | 1 | MPC | 94410 | 2001 $XA_{257}$ |
| 2001 $XD_{257}$ | 15.6 | 0.15 | 20060922 | 302.26881 | 277.18234 | 184.48344 | 11.89250 | 0.1860778 | 3.0428956 | 48 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 47071 | 2001 $XD_{257}$ |
| 2001 $XZ_{257}$ | 15.7 | 0.15 | 20060922 | 191.36375 | 238.51916 | 260.29118 | 18.19079 | 0.0722593 | 1.9659267 | 59 | 4 | 1998–2006 | 0.64 | M-v | 2 | MPC | 04189 | 2001 $XZ_{257}$ |
| 2001 $XB_{258}$ | 15.1 | 0.15 | 20060922 | 8.11259 | 242.76280 | 170.95750 | 6.96970 | 0.3471195 | 2.9072587 | 35 | 6 | 1993–2006 | 0.65 | M-v | 1 | MPC | 94410 | 2001 $XB_{258}$ |
| 2001 $XE_{258}$ | 16.4 | 0.15 | 20060922 | 329.05963 | 357.20101 | 215.26744 | 7.73585 | 0.0690872 | 2.3718525 | 80 | 5 | 1997–2004 | 0.56 | M-v | 1 | MPC | 74118 | 2001 $XE_{258}$ |
| 2001 $XX_{258}$ | 15.3 | 0.15 | 20060922 | 336.08865 | 208.80393 | 190.92753 | 9.11832 | 0.0548949 | 3.1119672 | 41 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 89167 | 2001 $XX_{258}$ |
| 2001 $XN_{260}$ | 17.1 | 0.15 | 20060922 | 184.83243 | 263.12199 | 78.92977 | 6.02701 | 0.1918475 | 2.3163777 | 40 | 2 | 2001–2006 | 0.65 | M-v | 4 | MPC | 94411 | 2001 $XN_{260}$ |
| 2001 $XC_{261}$ | 15.5 | 0.15 | 20060922 | 333.11076 | 217.36566 | 198.15077 | 8.87427 | 0.0727804 | 3.0402383 | 91 | 6 | 1999–2006 | 0.40 | M-v | 0 | MPC | 04189 | 2001 $XC_{261}$ |
| 2001 $XJ_{261}$ | 14.6 | 0.15 | 20060922 | 269.60962 | 71.85537 | 90.32313 | 15.88953 | 0.0928827 | 2.8565797 | 65 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 48174 | 2001 $XJ_{261}$ |
| 2001 $XE_{262}$ | 17.4 | 0.15 | 20060922 | 188.05977 | 227.23253 | 127.32223 | 2.85829 | 0.2437385 | 2.3059476 | 25 | 3 | 2001–2006 | 0.77 | M-v | 3 | MPC | 00110 | 2001 $XE_{262}$ |
| 2001 $XE_{263}$ | 15.5 | 0.15 | 20060922 | 242.26959 | 79.24492 | 62.01844 | 2.04818 | 0.1748612 | 3.1910447 | 57 | 3 | 2001–2006 | 0.62 | M-v | 3 | MPC | 50582 | 2001 $XE_{263}$ |
| 2001 $XM_{263}$ | 15.7 | 0.15 | 20060922 | 60.53581 | 72.72990 | 232.40383 | 8.53046 | 0.1019141 | 3.0973440 | 48 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 89167 | 2001 $XM_{263}$ |
| 2001 $XU_{265}$ | 15.5 | 0.15 | 20060922 | 158.02834 | 196.57251 | 53.32519 | 2.76176 | 0.0049620 | 2.9141750 | 61 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 85357 | 2001 $XU_{265}$ |
| 2001 $XV_{266}$ | 19.7 | 0.15 | 20060922 | 169.85127 | 264.90204 | 214.19934 | 12.00518 | 0.1928988 | 1.1969188 | 72 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97533 | 2001 $XV_{266}$ |
| 2001 $XG_{267}$ | 15.1 | 0.15 | 20060922 | 266.37817 | 84.78394 | 81.88619 | 17.76373 | 0.2239815 | 3.1831812 | 23 | 1 | 65 days | 0.38 | M-v | 4 | MPC | | 2001 $XG_{267}$ |
| 2001 YC | 15.5 | 0.15 | 20060922 | 336.19506 | 310.22693 | 103.06016 | 5.69256 | 0.2575583 | 3.0572026 | 138 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 48175 | 2001 YC |
| 2001 YS | 16.3 | 0.15 | 20060922 | 15.94763 | 328.12445 | 126.84418 | 17.49226 | 0.1986573 | 2.6394889 | 50 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 85357 | 2001 YS |
| 2001 $YL_2$ | 14.8 | 0.15 | 20060922 | 331.68866 | 66.67097 | 354.45040 | 20.89045 | 0.2344659 | 3.1436894 | 90 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 03276 | 2001 $YL_2$ |
| 2001 $YU_4$ | 17.5 | 0.15 | 20060922 | 252.26619 | 171.15156 | 314.46051 | 16.62109 | 0.0988303 | 1.9301006 | 42 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 77582 | 2001 $YU_4$ |
| 2001 $YY_4$ | 17.5 | 0.15 | 20060922 | 262.80103 | 110.56757 | 8.99769 | 10.15595 | 0.2259932 | 1.9366262 | 78 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 03277 | 2001 $YY_4$ |
| 2001 $YA_5$ | 15.2 | 0.15 | 20060922 | 283.09703 | 94.40842 | 51.58641 | 20.31668 | 0.1200179 | 3.1331677 | 66 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 50582 | 2001 $YA_5$ |
| 2001 $YJ_6$ | 15.4 | 0.15 | 20060922 | 207.76305 | 117.77292 | 64.95166 | 13.60424 | 0.1070704 | 3.0965703 | 37 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 85358 | 2001 $YJ_6$ |
| 2001 $YN_7$ | 16.0 | 0.15 | 20060922 | 85.38740 | 323.67911 | 79.17164 | 5.09160 | 0.1162325 | 2.5775618 | 102 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 97534 | 2001 $YN_7$ |
| 2001 $YR_7$ | 15.3 | 0.15 | 20060922 | 128.91640 | 65.05831 | 271.10234 | 13.31552 | 0.1379293 | 2.5979068 | 73 | 3 | 2001–2005 | 0.56 | M-v | 2 | MPC | 97534 | 2001 $YR_7$ |
| 2001 $YT_7$ | 14.5 | 0.15 | 20060922 | 264.84303 | 189.19676 | 277.63379 | 10.30831 | 0.0724617 | 3.2409121 | 61 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04189 | 2001 $YT_7$ |
| 2001 $YW_7$ | 14.3 | 0.15 | 20060922 | 4.53718 | 91.79708 | 278.80820 | 9.94178 | 0.1721758 | 3.0746944 | 76 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 03277 | 2001 $YW_7$ |
| 2001 $YW_8$ | 15.7 | 0.15 | 20060922 | 256.71965 | 61.83557 | 79.36966 | 5.70277 | 0.1114493 | 3.1837032 | 36 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 48175 | 2001 $YW_8$ |
| 2001 $YB_9$ | 15.4 | 0.15 | 20060922 | 66.05700 | 343.52105 | 22.87561 | 4.42778 | 0.0987772 | 2.8097856 | 64 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 97534 | 2001 $YB_9$ |
| 2001 $YV_9$ | 14.4 | 0.15 | 20060922 | 231.68130 | 259.32442 | 276.46666 | 14.97150 | 0.1501997 | 3.1234707 | 59 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 47075 | 2001 $YV_9$ |
| 2001 $YC_{10}$ | 15.0 | 0.15 | 20060922 | 71.77096 | 1.95263 | 353.41967 | 3.90400 | 0.1169130 | 2.8107218 | 113 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04189 | 2001 $YC_{10}$ |
| 2001 $YR_{12}$ | 16.4 | 0.15 | 20060922 | 293.99792 | 13.31369 | 225.32747 | 2.53260 | 0.1539471 | 2.4058249 | 60 | 4 | 2001–2005 | 0.70 | M-v | 1 | MPC | 69046 | 2001 $YR_{12}$ |
| 2001 $YV_{12}$ | 16.6 | 0.15 | 20060922 | 94.41422 | 289.51124 | 66.63980 | 2.50087 | 0.1439140 | 2.6706235 | 73 | 4 | 2001–2005 | 0.50 | M-v | 1 | MPC | 97534 | 2001 $YV_{12}$ |
| 2001 $YO_{13}$ | 15.3 | 0.15 | 20060922 | 90.53450 | 212.85509 | 83.69976 | 10.28227 | 0.1097510 | 3.0661258 | 42 | 4 | 2001–2006 | 0.42 | M-v | 0 | MPC | 87517 | 2001 $YO_{13}$ |
| 2001 $YS_{13}$ | 16.1 | 0.15 | 20060922 | 102.50229 | 116.27939 | 233.12040 | 4.77449 | 0.0679729 | 2.7224049 | 53 | 2 | 2001–2005 | 0.57 | M-v | 4 | MPC | 90133 | 2001 $YS_{13}$ |
| 2001 $YU_{13}$ | 15.9 | 0.15 | 20060922 | 181.74385 | 101.62487 | 145.32066 | 2.62323 | 0.0344075 | 2.8838936 | 55 | 5 | 1995–2006 | 0.39 | M-v | 0 | MPC | 90133 | 2001 $YU_{13}$ |
| 2001 $YV_{13}$ | 17.5 | 0.15 | 20060922 | 89.61296 | 273.16887 | 110.54216 | 3.59507 | 0.2480674 | 2.5747471 | 40 | 2 | 2001–2005 | 0.51 | M-v | 5 | MPC | 89170 | 2001 $YV_{13}$ |
| 2001 $YU_{14}$ | 15.2 | 0.15 | 20060922 | 11.44119 | 129.86292 | 243.26756 | 8.36547 | 0.0581501 | 3.1138208 | 70 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 85360 | 2001 $YU_{14}$ |
| 2001 $YM_{16}$ | 17.4 | 0.15 | 20060922 | 99.50718 | 200.83770 | 265.50021 | 0.47137 | 0.1421740 | 2.3596874 | 54 | 4 | 1995–2006 | 0.41 | M-v | 1 | MPC | 02058 | 2001 $YM_{16}$ |
| 2001 $YV_{16}$ | 14.9 | 0.15 | 20060922 | 326.82790 | 178.69721 | 284.54185 | 11.37857 | 0.1151307 | 2.9378521 | 51 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 85361 | 2001 $YV_{16}$ |
| 2001 $YW_{16}$ | 16.2 | 0.15 | 20060922 | 341.97988 | 0.64221 | 89.10332 | 3.80629 | 0.0673828 | 2.9380757 | 42 | 4 | 1998–2005 | 0.48 | M-v | 1 | MPC | 87517 | 2001 $YW_{16}$ |
| 2001 $YY_{16}$ | 16.2 | 0.15 | 20060922 | 326.77619 | 356.40033 | 77.56194 | 2.52848 | 0.1863072 | 3.0956944 | 58 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 47077 | 2001 $YY_{16}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $YQ_{17}$ | 16.1 | 0.15 | 20060922 | 61.00682 | 135.04968 | 272.76977 | 5.01921 | 0.0695783 | 2.7180480 | 53 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 89170 | 2001 $YQ_{17}$ |
| 2001 $YZ_{17}$ | 16.1 | 0.15 | 20060922 | 330.78749 | 249.87881 | 160.84368 | 2.19184 | 0.2894272 | 3.1494506 | 105 | 3 | 1997–2006 | 0.42 | M-v | 3 | MPC | 03277 | 2001 $YZ_{17}$ |
| 2001 $YT_{18}$ | 15.5 | 0.15 | 20060922 | 5.68515 | 302.88314 | 106.46391 | 13.21882 | 0.1184948 | 3.0577025 | 55 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 85361 | 2001 $YT_{18}$ |
| 2001 $YU_{18}$ | 16.1 | 0.15 | 20060922 | 35.48301 | 93.61651 | 357.04956 | 4.55112 | 0.0817432 | 2.7212037 | 77 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97534 | 2001 $YU_{18}$ |
| 2001 $YZ_{19}$ | 15.6 | 0.15 | 20060922 | 339.89161 | 288.64751 | 126.12648 | 11.73778 | 0.1399835 | 2.9810906 | 59 | 6 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87517 | 2001 $YZ_{19}$ |
| 2001 $YN_{20}$ | 14.7 | 0.15 | 20060922 | 176.33187 | 198.63605 | 279.45212 | 1.63205 | 0.1752081 | 3.9429952 | 77 | 3 | 2001–2004 | 0.59 | M-v | 2 | MPC | 43465 | 2001 $YN_{20}$ |
| 2001 $YX_{21}$ | 15.4 | 0.15 | 20060922 | 300.96698 | 108.16350 | 43.65732 | 8.03060 | 0.0545910 | 2.7421940 | 56 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 97535 | 2001 $YX_{21}$ |
| 2001 $YA_{22}$ | 15.9 | 0.15 | 20060922 | 98.72348 | 263.02310 | 70.26226 | 7.42761 | 0.0661153 | 2.7740616 | 58 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 87517 | 2001 $YA_{22}$ |
| 2001 $YF_{23}$ | 16.9 | 0.15 | 20060922 | 165.94142 | 150.69571 | 271.33472 | 2.76800 | 0.0935199 | 2.2257765 | 49 | 3 | 2001–2004 | 0.61 | M-v | 4 | MPC | 69049 | 2001 $YF_{23}$ |
| 2001 $YB_{25}$ | 15.5 | 0.15 | 20060922 | 280.58439 | 55.83000 | 57.80641 | 1.89801 | 0.1411046 | 3.1225912 | 93 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 47079 | 2001 $YB_{25}$ |
| 2001 $YU_{26}$ | 16.3 | 0.15 | 20060922 | 44.48304 | 92.08518 | 288.08684 | 5.71306 | 0.2114730 | 2.7985842 | 37 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 94421 | 2001 $YU_{26}$ |
| 2001 $YX_{26}$ | 16.3 | 0.15 | 20060922 | 30.21166 | 51.54695 | 8.16402 | 3.57411 | 0.0966981 | 2.7508125 | 46 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 94421 | 2001 $YX_{26}$ |
| 2001 $YH_{27}$ | 15.7 | 0.15 | 20060922 | 222.60574 | 88.87766 | 70.02001 | 10.16213 | 0.0545346 | 3.1977781 | 41 | 5 | 1995–2004 | 0.43 | M-v | 0 | MPC | 74119 | 2001 $YH_{27}$ |
| 2001 $YK_{28}$ | 16.0 | 0.15 | 20060922 | 81.08580 | 112.85667 | 263.00915 | 5.02715 | 0.0486968 | 2.6812036 | 36 | 3 | 1996–2005 | 0.71 | M-v | 4 | MPC | 90134 | 2001 $YK_{28}$ |
| 2001 $YF_{29}$ | 16.1 | 0.15 | 20060922 | 71.85816 | 274.17987 | 73.49686 | 3.09901 | 0.0825946 | 2.8463221 | 45 | 3 | 2001–2006 | 0.33 | M-v | 3 | MPC | 85363 | 2001 $YF_{29}$ |
| 2001 $YP_{30}$ | 15.4 | 0.15 | 20060922 | 157.44277 | 199.21673 | 72.39612 | 16.27431 | 0.1030463 | 2.8478867 | 52 | 7 | 1996–2006 | 0.53 | M-v | 1 | MPC | 90134 | 2001 $YP_{30}$ |
| 2001 $YL_{31}$ | 16.0 | 0.15 | 20060922 | 295.08220 | 278.79705 | 259.65478 | 7.73076 | 0.0941758 | 2.6959110 | 27 | 3 | 2001–2004 | 0.55 | M-v | 4 | MPC | 47081 | 2001 $YL_{31}$ |
| 2001 $YQ_{31}$ | 16.3 | 0.15 | 20060922 | 35.36067 | 142.52940 | 274.73056 | 1.49994 | 0.0799755 | 2.7363774 | 57 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97535 | 2001 $YQ_{31}$ |
| 2001 $YQ_{32}$ | 16.4 | 0.15 | 20060922 | 80.56555 | 316.45617 | 66.10732 | 7.17576 | 0.0847639 | 2.6717968 | 32 | 3 | 2001–2005 | 0.67 | M-v | 3 | MPC | 94423 | 2001 $YQ_{32}$ |
| 2001 $YY_{32}$ | 15.7 | 0.15 | 20060922 | 157.96284 | 5.05081 | 292.28028 | 4.39681 | 0.0394451 | 2.7292898 | 32 | 3 | 2001–2006 | 0.56 | M-v | 4 | MPC | 89173 | 2001 $YY_{32}$ |
| 2001 $YA_{33}$ | 15.9 | 0.15 | 20060922 | 54.13915 | 89.80767 | 298.02496 | 3.07020 | 0.1103769 | 2.7664568 | 51 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97535 | 2001 $YA_{33}$ |
| 2001 $YD_{33}$ | 15.4 | 0.15 | 20060922 | 145.77642 | 44.67771 | 292.66832 | 5.75532 | 0.0553497 | 2.5906333 | 61 | 4 | 2000–2005 | 0.57 | M-v | 1 | MPC | 94423 | 2001 $YD_{33}$ |
| 2001 $YO_{33}$ | 15.4 | 0.15 | 20060922 | 336.26557 | 129.19115 | 287.42681 | 8.52241 | 0.0725645 | 3.0813733 | 33 | 3 | 2001–2006 | 0.50 | M-v | 4 | MPC | 85364 | 2001 $YO_{33}$ |
| 2001 $YW_{33}$ | 16.5 | 0.15 | 20060922 | 22.95326 | 119.78841 | 350.30915 | 1.95879 | 0.1026527 | 2.6051209 | 55 | 4 | 1992–2005 | 0.42 | M-v | 0 | MPC | 04189 | 2001 $YW_{33}$ |
| 2001 $YU_{34}$ | 16.1 | 0.15 | 20060922 | 183.50854 | 324.83632 | 309.21776 | 0.78460 | 0.0176388 | 2.7317603 | 49 | 5 | 1996–2005 | 0.55 | M-v | 0 | MPC | 94424 | 2001 $YU_{34}$ |
| 2001 $YW_{34}$ | 15.0 | 0.15 | 20060922 | 296.01988 | 176.02677 | 264.53190 | 4.94972 | 0.0594892 | 3.2136665 | 59 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04189 | 2001 $YW_{34}$ |
| 2001 $YB_{35}$ | 15.4 | 0.15 | 20060922 | 89.70198 | 266.66896 | 75.00870 | 8.54565 | 0.1227555 | 2.7983877 | 67 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87517 | 2001 $YB_{35}$ |
| 2001 $YS_{36}$ | 16.1 | 0.15 | 20060922 | 61.46688 | 97.10648 | 286.11911 | 3.61023 | 0.1724450 | 2.7334202 | 37 | 4 | 1996–2006 | 0.56 | M-v | 2 | MPC | 94425 | 2001 $YS_{36}$ |
| 2001 $YY_{36}$ | 15.1 | 0.15 | 20060922 | 235.79778 | 264.86054 | 268.34846 | 9.88740 | 0.0384407 | 3.0359192 | 66 | 6 | 1992–2006 | 0.49 | M-v | 1 | MPC | 87517 | 2001 $YY_{36}$ |
| 2001 $YY_{37}$ | 15.5 | 0.15 | 20060922 | 274.47170 | 238.01911 | 264.77530 | 3.87386 | 0.1384931 | 3.0464819 | 57 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 47081 | 2001 $YY_{37}$ |
| 2001 $YS_{38}$ | 16.6 | 0.15 | 20060922 | 98.98774 | 331.80279 | 33.14292 | 3.38192 | 0.0204631 | 2.7114929 | 77 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97535 | 2001 $YS_{38}$ |
| 2001 $YB_{39}$ | 15.7 | 0.15 | 20060922 | 299.20048 | 162.13102 | 275.62168 | 4.58961 | 0.0959019 | 3.2271677 | 53 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 89173 | 2001 $YB_{39}$ |
| 2001 $YT_{39}$ | 15.6 | 0.15 | 20060922 | 57.87528 | 36.44606 | 16.49999 | 1.80798 | 0.0597680 | 2.6767069 | 87 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 97535 | 2001 $YT_{39}$ |
| 2001 $YA_{41}$ | 16.0 | 0.15 | 20060922 | 358.99346 | 54.50342 | 53.44051 | 3.43709 | 0.1586805 | 2.7466421 | 70 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 97535 | 2001 $YA_{41}$ |
| 2001 $YP_{41}$ | 15.4 | 0.15 | 20060922 | 57.30759 | 335.35424 | 59.76257 | 5.20293 | 0.1223603 | 2.7383253 | 80 | 3 | 2001–2005 | 0.67 | M-v | 3 | MPC | 97535 | 2001 $YP_{41}$ |
| 2001 $YA_{42}$ | 16.0 | 0.15 | 20060922 | 78.53419 | 48.35021 | 323.69999 | 4.07621 | 0.0375129 | 2.7719388 | 62 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90134 | 2001 $YA_{42}$ |
| 2001 $YF_{43}$ | 15.7 | 0.15 | 20060922 | 79.18198 | 312.15326 | 66.68461 | 3.10680 | 0.1016403 | 2.7104759 | 103 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 97535 | 2001 $YF_{43}$ |
| 2001 $YS_{43}$ | 15.8 | 0.15 | 20060922 | 302.35093 | 34.77531 | 63.53780 | 4.56388 | 0.1209439 | 3.1064679 | 81 | 4 | 1997–2006 | 0.50 | M-v | 1 | MPC | 47083 | 2001 $YS_{43}$ |
| 2001 $YT_{43}$ | 15.6 | 0.15 | 20060922 | 184.02456 | 326.63254 | 301.84537 | 3.31729 | 0.0198069 | 2.7864710 | 75 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 90134 | 2001 $YT_{43}$ |
| 2001 $YA_{44}$ | 17.1 | 0.15 | 20060922 | 156.98943 | 346.33863 | 30.94677 | 1.66709 | 0.1914392 | 2.3739567 | 49 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 94427 | 2001 $YA_{44}$ |
| 2001 $YV_{45}$ | 16.0 | 0.15 | 20060922 | 284.00106 | 264.40821 | 282.58299 | 3.83804 | 0.0459302 | 2.7250532 | 57 | 5 | 2001–2006 | 0.65 | M-v | 1 | MPC | 97536 | 2001 $YV_{45}$ |
| 2001 $YW_{45}$ | 15.8 | 0.15 | 20060922 | 66.94724 | 83.35417 | 270.75771 | 13.42703 | 0.1695432 | 2.8545190 | 76 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 90134 | 2001 $YW_{45}$ |
| 2001 $YS_{46}$ | 15.0 | 0.15 | 20060922 | 179.40060 | 323.74537 | 275.20463 | 9.35059 | 0.0834019 | 3.0107011 | 38 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 43217 | 2001 $YS_{46}$ |
| 2001 $YC_{48}$ | 15.9 | 0.15 | 20060922 | 81.04754 | 290.89574 | 56.09213 | 2.47163 | 0.2403391 | 2.7798355 | 93 | 5 | 1994–2006 | 0.49 | M-v | 1 | MPC | 04189 | 2001 $YC_{48}$ |
| 2001 $YG_{48}$ | 15.6 | 0.15 | 20060922 | 104.09554 | 264.54123 | 70.82002 | 4.56998 | 0.0993014 | 2.8088792 | 97 | 6 | 2000–2006 | 0.48 | M-v | 0 | MPC | 97536 | 2001 $YG_{48}$ |
| 2001 $YB_{49}$ | 15.2 | 0.15 | 20060922 | 342.27371 | 9.06322 | 54.77857 | 3.74034 | 0.1458336 | 3.0296131 | 107 | 4 | 1992–2006 | 0.48 | M-v | 3 | MPC | 48177 | 2001 $YB_{49}$ |
| 2001 $YK_{49}$ | 15.3 | 0.15 | 20060922 | 32.59009 | 340.11812 | 49.25511 | 4.92730 | 0.1289481 | 2.9006738 | 43 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 85367 | 2001 $YK_{49}$ |
| 2001 $YL_{50}$ | 16.0 | 0.15 | 20060922 | 37.35142 | 59.87274 | 323.60528 | 1.26238 | 0.0955363 | 2.9225351 | 69 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 97536 | 2001 $YL_{50}$ |
| 2001 $YW_{50}$ | 16.1 | 0.15 | 20060922 | 266.04426 | 73.20673 | 72.13902 | 6.28477 | 0.1174071 | 3.1077517 | 46 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 47085 | 2001 $YW_{50}$ |
| 2001 $YJ_{51}$ | 16.2 | 0.15 | 20060922 | 47.76138 | 28.69332 | 354.73438 | 1.59807 | 0.0828439 | 2.8744067 | 30 | 4 | 2000–2005 | 0.52 | M-v | 0 | MPC | 94428 | 2001 $YJ_{51}$ |
| 2001 $YU_{52}$ | 15.5 | 0.15 | 20060922 | 17.50104 | 28.88511 | 69.91087 | 3.47032 | 0.0660035 | 2.6983809 | 139 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97536 | 2001 $YU_{52}$ |
| 2001 $YA_{53}$ | 15.3 | 0.15 | 20060922 | 34.45058 | 335.03560 | 77.48868 | 8.23169 | 0.1651887 | 2.7855239 | 56 | 3 | 2001–2005 | 0.61 | M-v | 3 | MPC | 85369 | 2001 $YA_{53}$ |
| 2001 $YM_{53}$ | 15.5 | 0.15 | 20060922 | 63.19372 | 116.68277 | 272.64917 | 26.76122 | 0.2751252 | 2.6903907 | 63 | 2 | 2001–2005 | 0.58 | M-v | 2 | MPC | 85369 | 2001 $YM_{53}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $YQ_{54}$ | 15.4 | 0.15 | 20060922 | 323.70628 | 130.20992 | 285.28912 | 7.90342 | 0.0855770 | 3.1650099 | 30 | 3 | 2001–2006 | 0.66 | M-v | 4 | MPC | 85369 | 2001 $YQ_{54}$ |
| 2001 $YA_{55}$ | 18.2 | 0.15 | 20060922 | 86.48362 | 198.30699 | 274.69156 | 2.27355 | 0.1755567 | 2.3704764 | 30 | 2 | 2001–2006 | 0.36 | M-v | 3 | MPC | 00114 | 2001 $YA_{55}$ |
| 2001 $YE_{55}$ | 16.4 | 0.15 | 20060922 | 90.17530 | 90.29201 | 283.77151 | 6.70109 | 0.0296135 | 2.6987459 | 28 | 4 | 1998–2005 | 0.48 | M-v | 1 | MPC | 94430 | 2001 $YE_{55}$ |
| 2001 $YP_{55}$ | 15.3 | 0.15 | 20060922 | 32.29187 | 93.02291 | 270.39095 | 11.84300 | 0.1057718 | 3.0191393 | 41 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 85369 | 2001 $YP_{55}$ |
| 2001 $YP_{56}$ | 16.1 | 0.15 | 20060922 | 53.86710 | 0.28519 | 16.14325 | 2.96375 | 0.2357836 | 2.7797343 | 69 | 6 | 1996–2006 | 0.43 | M-v | 0 | MPC | 90135 | 2001 $YP_{56}$ |
| 2001 $YN_{57}$ | 16.0 | 0.15 | 20060922 | 354.50782 | 345.44955 | 47.18940 | 5.63474 | 0.1676778 | 3.0855193 | 61 | 5 | 1995–2006 | 0.49 | M-v | 0 | MPC | 87518 | 2001 $YN_{57}$ |
| 2001 $YW_{57}$ | 15.6 | 0.15 | 20060922 | 3.98794 | 14.53542 | 73.23096 | 4.69315 | 0.0683869 | 2.8016450 | 44 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97536 | 2001 $YW_{57}$ |
| 2001 $YN_{58}$ | 16.1 | 0.15 | 20060922 | 24.07081 | 136.25226 | 275.28969 | 13.88811 | 0.1307661 | 2.8555745 | 41 | 5 | 1995–2006 | 0.43 | M-v | 1 | MPC | 87518 | 2001 $YN_{58}$ |
| 2001 $YC_{59}$ | 16.0 | 0.15 | 20060922 | 291.28382 | 241.98651 | 305.08142 | 3.89757 | 0.0898557 | 2.7195211 | 25 | 4 | 2000–2006 | 0.31 | M-v | 1 | MPC | 94431 | 2001 $YC_{59}$ |
| 2001 $YK_{59}$ | 15.7 | 0.15 | 20060922 | 309.11363 | 119.45981 | 340.21079 | 3.42389 | 0.1257260 | 3.0710781 | 50 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 90135 | 2001 $YK_{59}$ |
| 2001 $YQ_{59}$ | 15.8 | 0.15 | 20060922 | 20.29944 | 132.60297 | 285.26502 | 6.44803 | 0.0842712 | 2.9965693 | 35 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 85371 | 2001 $YQ_{59}$ |
| 2001 $YU_{62}$ | 16.2 | 0.15 | 20060922 | 68.82145 | 108.82760 | 317.11941 | 3.69538 | 0.2452759 | 2.5813363 | 106 | 2 | 2001–2006 | 0.42 | M-v | 2 | MPC | 97537 | 2001 $YU_{62}$ |
| 2001 $YH_{63}$ | 15.6 | 0.15 | 20060922 | 2.02238 | 137.78693 | 289.88739 | 4.69637 | 0.1622568 | 2.9214969 | 25 | 3 | 2000–2005 | 0.41 | M-v | 2 | MPC | 89176 | 2001 $YH_{63}$ |
| 2001 $YN_{63}$ | 15.8 | 0.15 | 20060922 | 303.49713 | 359.45164 | 86.95462 | 6.13936 | 0.1540767 | 3.2143594 | 39 | 4 | 2000–2006 | 0.60 | M-v | 0 | MPC | 72441 | 2001 $YN_{63}$ |
| 2001 $YU_{65}$ | 15.9 | 0.15 | 20060922 | 130.31520 | 284.52587 | 83.79993 | 5.43990 | 0.1988229 | 2.5340492 | 42 | 3 | 1995–2006 | 0.52 | M-v | 3 | MPC | 94432 | 2001 $YU_{65}$ |
| 2001 $YY_{65}$ | 15.6 | 0.15 | 20060922 | 64.18302 | 114.81158 | 286.69221 | 5.21061 | 0.0359389 | 2.7712750 | 61 | 4 | 2000–2005 | 0.65 | M-v | 1 | MPC | 97537 | 2001 $YY_{65}$ |
| 2001 $YZ_{65}$ | 14.9 | 0.15 | 20060922 | 323.40966 | 348.89097 | 89.52223 | 2.68595 | 0.1563574 | 3.1320611 | 100 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 27357 | 2001 $YZ_{65}$ |
| 2001 $YA_{66}$ | 15.5 | 0.15 | 20060922 | 326.08404 | 232.89012 | 290.43513 | 2.02882 | 0.1354578 | 2.7366202 | 60 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 97537 | 2001 $YA_{66}$ |
| 2001 $YG_{66}$ | 14.7 | 0.15 | 20060922 | 288.41750 | 183.64485 | 295.21394 | 7.92020 | 0.1175324 | 3.1612002 | 40 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 03278 | 2001 $YG_{66}$ |
| 2001 $YM_{66}$ | 15.3 | 0.15 | 20060922 | 0.10850 | 90.10937 | 306.90801 | 4.09837 | 0.1704861 | 3.0937291 | 68 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 97537 | 2001 $YM_{66}$ |
| 2001 $YR_{67}$ | 15.3 | 0.15 | 20060922 | 210.14362 | 335.56678 | 293.88065 | 5.75256 | 0.0428713 | 2.7270470 | 47 | 5 | 2000–2006 | 0.68 | M-v | 1 | MPC | 65253 | 2001 $YR_{67}$ |
| 2001 $YC_{68}$ | 15.1 | 0.15 | 20060922 | 225.14795 | 91.80410 | 94.62502 | 11.44872 | 0.0273855 | 3.1349756 | 59 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87518 | 2001 $YC_{68}$ |
| 2001 $YU_{68}$ | 15.6 | 0.15 | 20060922 | 87.04789 | 26.39640 | 357.23196 | 1.96681 | 0.1623367 | 2.6851364 | 115 | 7 | 1996–2006 | 0.56 | M-v | 1 | MPC | 97537 | 2001 $YU_{68}$ |
| 2001 $YR_{69}$ | 14.2 | 0.15 | 20060922 | 254.60344 | 249.43912 | 293.51179 | 9.94495 | 0.1236831 | 3.0395932 | 48 | 5 | 2001–2006 | 0.52 | M-v | 0 | MPC | 85372 | 2001 $YR_{69}$ |
| 2001 $YT_{69}$ | 16.0 | 0.15 | 20060922 | 47.20842 | 0.48452 | 43.46489 | 2.72956 | 0.0676817 | 2.8442775 | 64 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 90135 | 2001 $YT_{69}$ |
| 2001 $YA_{73}$ | 15.4 | 0.15 | 20060922 | 353.09586 | 118.82152 | 289.07837 | 13.54011 | 0.0788683 | 3.1638162 | 33 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 89178 | 2001 $YA_{73}$ |
| 2001 $YM_{73}$ | 15.6 | 0.15 | 20060922 | 46.82730 | 323.58553 | 97.18667 | 8.60157 | 0.0708314 | 2.7791620 | 60 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97537 | 2001 $YM_{73}$ |
| 2001 $YF_{75}$ | 15.2 | 0.15 | 20060922 | 214.87168 | 300.07612 | 275.79407 | 9.34282 | 0.0474566 | 2.9948614 | 42 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 94437 | 2001 $YF_{75}$ |
| 2001 $YY_{75}$ | 14.6 | 0.15 | 20060922 | 331.37393 | 147.42312 | 293.07714 | 9.72938 | 0.1190281 | 3.0616650 | 52 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 89179 | 2001 $YY_{75}$ |
| 2001 $YY_{77}$ | 15.7 | 0.15 | 20060922 | 354.68915 | 309.59418 | 79.61246 | 6.03706 | 0.1661337 | 3.2173947 | 35 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 23324 | 2001 $YY_{77}$ |
| 2001 $YL_{78}$ | 15.9 | 0.15 | 20060922 | 2.54919 | 30.69075 | 85.09661 | 10.06418 | 0.1106162 | 2.7603941 | 34 | 3 | 2001–2005 | 0.55 | M-v | 3 | MPC | 97538 | 2001 $YL_{78}$ |
| 2001 $YZ_{81}$ | 15.9 | 0.15 | 20060922 | 285.26010 | 177.71883 | 26.82716 | 2.84110 | 0.1077640 | 2.7669374 | 58 | 6 | 1998–2006 | 0.69 | M-v | 1 | MPC | 97538 | 2001 $YZ_{81}$ |
| 2001 $YE_{82}$ | 15.1 | 0.15 | 20060922 | 19.20467 | 127.32620 | 301.45482 | 10.15106 | 0.1123781 | 2.8832508 | 82 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 90136 | 2001 $YE_{82}$ |
| 2001 $YF_{83}$ | 15.5 | 0.15 | 20060922 | 319.85198 | 340.81391 | 102.31806 | 12.35228 | 0.1672291 | 3.1756328 | 50 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 89180 | 2001 $YF_{83}$ |
| 2001 $YW_{84}$ | 14.4 | 0.15 | 20060922 | 340.80684 | 130.15581 | 291.90250 | 7.61120 | 0.0369700 | 3.2314465 | 77 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 04189 | 2001 $YW_{84}$ |
| 2001 $YG_{88}$ | 16.8 | 0.15 | 20060922 | 30.89994 | 109.80079 | 64.45575 | 2.09671 | 0.1265990 | 2.4435226 | 43 | 3 | 1995–2006 | 0.50 | M-v | 3 | MPC | 02059 | 2001 $YG_{88}$ |
| 2001 $YV_{89}$ | 13.7 | 0.15 | 20060922 | 28.62474 | 36.21971 | 297.81966 | 16.83397 | 0.0695522 | 3.5583303 | 49 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 27361 | 2001 $YV_{89}$ |
| 2001 $YX_{89}$ | 17.3 | 0.15 | 20060922 | 92.79343 | 93.87220 | 28.65980 | 1.78339 | 0.1403217 | 2.3844496 | 45 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 94445 | 2001 $YX_{89}$ |
| 2001 $YD_{90}$ | 14.7 | 0.15 | 20060922 | 125.26734 | 206.31753 | 79.69278 | 7.02487 | 0.1063785 | 3.2176898 | 69 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 04189 | 2001 $YD_{90}$ |
| 2001 $YJ_{91}$ | 15.6 | 0.15 | 20060922 | 317.27847 | 177.83011 | 334.73152 | 1.62938 | 0.1512791 | 2.8909759 | 82 | 4 | 2000–2006 | 0.47 | M-v | 3 | MPC | 90136 | 2001 $YJ_{91}$ |
| 2001 $YF_{92}$ | 16.7 | 0.15 | 20060922 | 320.76899 | 315.96984 | 105.27470 | 25.17676 | 0.0764208 | 1.9291598 | 61 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 75255 | 2001 $YF_{92}$ |
| 2001 $YP_{92}$ | 15.9 | 0.15 | 20060922 | 86.97308 | 268.80151 | 59.38027 | 2.87221 | 0.0736976 | 2.8926407 | 32 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 89180 | 2001 $YP_{92}$ |
| 2001 $YJ_{93}$ | 16.2 | 0.15 | 20060922 | 284.72976 | 193.71914 | 266.14507 | 1.34583 | 0.0635877 | 2.9352063 | 67 | 6 | 1996–2006 | 0.48 | M-v | 0 | MPC | 85375 | 2001 $YJ_{93}$ |
| 2001 $YM_{93}$ | 15.1 | 0.15 | 20060922 | 148.18344 | 337.61616 | 297.83271 | 8.20782 | 0.0563477 | 3.1135802 | 60 | 4 | 2001–2006 | 0.65 | M-v | 0 | MPC | 87518 | 2001 $YM_{93}$ |
| 2001 $YQ_{93}$ | 15.4 | 0.15 | 20060922 | 287.28816 | 196.50060 | 281.15224 | 4.15082 | 0.0095609 | 3.2453838 | 55 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 94446 | 2001 $YQ_{93}$ |
| 2001 $YU_{94}$ | 17.1 | 0.15 | 20060922 | 126.96990 | 141.24775 | 290.97200 | 1.59988 | 0.1880073 | 2.3754320 | 49 | 3 | 1997–2006 | 0.46 | M-v | 3 | MPC | 00117 | 2001 $YU_{94}$ |
| 2001 $YB_{96}$ | 15.9 | 0.15 | 20060922 | 15.66259 | 76.94564 | 24.88600 | 4.91332 | 0.0745867 | 2.7576267 | 130 | 6 | 1998–2006 | 0.52 | M-v | 0 | MPC | 97539 | 2001 $YB_{96}$ |
| 2001 $YL_{96}$ | 15.5 | 0.15 | 20060922 | 310.20256 | 93.66436 | 92.69863 | 16.53030 | 0.1615914 | 2.7846185 | 67 | 4 | 1998–2006 | 0.58 | M-v | 1 | MPC | 48180 | 2001 $YL_{96}$ |
| 2001 $YC_{98}$ | 15.9 | 0.15 | 20060922 | 266.76530 | 286.07707 | 220.86650 | 5.57866 | 0.1274524 | 3.0579658 | 59 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 94447 | 2001 $YC_{98}$ |
| 2001 $YH_{98}$ | 15.7 | 0.15 | 20060922 | 353.84592 | 303.50200 | 164.29735 | 2.32412 | 0.0272313 | 2.7324851 | 96 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90136 | 2001 $YH_{98}$ |
| 2001 $YK_{98}$ | 17.8 | 0.15 | 20060922 | 50.97330 | 188.46627 | 241.83474 | 4.77543 | 0.3036433 | 2.6134672 | 54 | 2 | 2001–2005 | 0.62 | M-v | 3 | MPC | 85376 | 2001 $YK_{98}$ |
| 2001 $YQ_{98}$ | 17.3 | 0.15 | 20060922 | 40.90961 | 7.62811 | 94.58849 | 5.72123 | 0.1810853 | 2.5737187 | 30 | 3 | 1994–2005 | 0.48 | M-v | 3 | MPC | 04189 | 2001 $YQ_{98}$ |
| 2001 $YM_{99}$ | 16.2 | 0.15 | 20060922 | 358.87549 | 256.20554 | 131.15521 | 0.45230 | 0.2649449 | 3.0389860 | 72 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 04189 | 2001 $YM_{99}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $YA_{101}$ | 15.9 | 0.15 | 20060922 | 100.15854 | 247.25859 | 115.48032 | 7.25511 | 0.0396991 | 2.7417395 | 64 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 97539 | 2001 $YA_{101}$ |
| 2001 $YP_{101}$ | 15.6 | 0.15 | 20060922 | 319.95075 | 4.76631 | 158.97366 | 2.55955 | 0.0667985 | 2.7090729 | 77 | 6 | 1991–2006 | 0.60 | M-v | 1 | MPC | 97539 | 2001 $YP_{101}$ |
| 2001 $YB_{102}$ | 16.3 | 0.15 | 20060922 | 335.21398 | 26.35798 | 111.37228 | 4.59702 | 0.1231148 | 2.7493562 | 38 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 85377 | 2001 $YB_{102}$ |
| 2001 $YJ_{102}$ | 16.1 | 0.15 | 20060922 | 286.19758 | 347.91670 | 247.41472 | 5.60310 | 0.0536729 | 2.5265239 | 49 | 4 | 2001–2005 | 0.81 | M-v | 1 | MPC | 70322 | 2001 $YJ_{102}$ |
| 2001 $YU_{103}$ | 16.9 | 0.15 | 20060922 | 128.28786 | 314.80135 | 121.98362 | 1.96302 | 0.1620984 | 2.3563010 | 34 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 02059 | 2001 $YU_{103}$ |
| 2001 $YV_{104}$ | 16.8 | 0.15 | 20060922 | 60.54658 | 291.15022 | 229.72157 | 2.03705 | 0.1824788 | 2.3898975 | 43 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 00118 | 2001 $YV_{104}$ |
| 2001 $YD_{105}$ | 14.3 | 0.15 | 20060922 | 14.34920 | 250.01775 | 118.08370 | 17.49231 | 0.2447575 | 3.1674704 | 102 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 30599 | 2001 $YD_{105}$ |
| 2001 $YL_{105}$ | 15.9 | 0.15 | 20060922 | 66.96438 | 252.79151 | 147.92656 | 2.31649 | 0.1109257 | 2.7653231 | 142 | 6 | 1991–2006 | 0.57 | M-v | 1 | MPC | 04189 | 2001 $YL_{105}$ |
| 2001 $YO_{105}$ | 15.9 | 0.15 | 20060922 | 336.55437 | 47.06332 | 145.82352 | 4.22660 | 0.0574036 | 2.5655246 | 51 | 3 | 2001–2005 | 0.56 | M-v | 4 | MPC | 69073 | 2001 $YO_{105}$ |
| 2001 $YN_{106}$ | 15.6 | 0.15 | 20060922 | 301.78871 | 74.30199 | 120.23446 | 10.59724 | 0.0951457 | 2.7434790 | 76 | 5 | 1992–2006 | 0.61 | M-v | 1 | MPC | 97539 | 2001 $YN_{106}$ |
| 2001 $YV_{106}$ | 17.0 | 0.15 | 20060922 | 105.47652 | 302.77241 | 178.69888 | 2.69239 | 0.1740933 | 2.3475004 | 85 | 3 | 1999–2006 | 0.58 | M-v | 3 | MPC | 00118 | 2001 $YV_{106}$ |
| 2001 $YS_{107}$ | 15.6 | 0.15 | 20060922 | 43.30048 | 161.87440 | 264.16105 | 6.94743 | 0.2078450 | 2.7712572 | 76 | 2 | 2001–2005 | 0.55 | M-v | 4 | MPC | 89182 | 2001 $YS_{107}$ |
| 2001 $YQ_{108}$ | 15.6 | 0.15 | 20060922 | 326.29932 | 38.42169 | 21.53594 | 7.01535 | 0.2785708 | 3.0976470 | 47 | 3 | 1995–2006 | 0.49 | M-v | 2 | MPC | 25518 | 2001 $YQ_{108}$ |
| 2001 $YR_{108}$ | 14.8 | 0.15 | 20060922 | 16.08957 | 314.21676 | 77.60651 | 8.86089 | 0.0543319 | 3.0010760 | 108 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87519 | 2001 $YR_{108}$ |
| 2001 $YG_{110}$ | 15.5 | 0.15 | 20060922 | 319.57128 | 162.59262 | 314.31029 | 5.44836 | 0.0478389 | 2.8146854 | 43 | 3 | 2001–2005 | 0.60 | M-v | 3 | MPC | 90137 | 2001 $YG_{110}$ |
| 2001 $YM_{110}$ | 16.1 | 0.15 | 20060922 | 359.23900 | 325.13000 | 88.42616 | 11.60616 | 0.2456282 | 3.0229621 | 52 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 89183 | 2001 $YM_{110}$ |
| 2001 $YN_{110}$ | 15.7 | 0.15 | 20060922 | 338.30412 | 159.72701 | 240.04713 | 8.36581 | 0.1033611 | 3.0355493 | 47 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 03278 | 2001 $YN_{110}$ |
| 2001 $YD_{111}$ | 16.1 | 0.15 | 20060922 | 66.88900 | 77.41936 | 325.84642 | 10.58806 | 0.1653890 | 2.7285506 | 69 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 97540 | 2001 $YD_{111}$ |
| 2001 $YG_{114}$ | 15.7 | 0.15 | 20060922 | 14.38443 | 293.59050 | 116.58321 | 7.46575 | 0.0658707 | 2.8583294 | 37 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87519 | 2001 $YG_{114}$ |
| 2001 $YX_{114}$ | 15.3 | 0.15 | 20060922 | 293.43431 | 20.36557 | 111.20563 | 10.79397 | 0.0504348 | 3.0261299 | 34 | 5 | 2000–2006 | 0.58 | M-v | 0 | MPC | 87519 | 2001 $YX_{114}$ |
| 2001 $YL_{115}$ | 14.0 | 0.15 | 20060922 | 248.42386 | 71.81395 | 101.72587 | 20.61235 | 0.0971245 | 3.2105506 | 68 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 65262 | 2001 $YL_{115}$ |
| 2001 $YF_{116}$ | 15.5 | 0.15 | 20060922 | 338.08319 | 140.70585 | 284.72199 | 5.15396 | 0.1999626 | 3.1385594 | 73 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 89184 | 2001 $YF_{116}$ |
| 2001 $YO_{117}$ | 15.0 | 0.15 | 20060922 | 6.34438 | 317.08420 | 92.17119 | 5.65600 | 0.0844353 | 3.1293239 | 109 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87519 | 2001 $YO_{117}$ |
| 2001 $YD_{118}$ | 15.6 | 0.15 | 20060922 | 322.65553 | 219.25529 | 309.50954 | 7.63717 | 0.0784917 | 2.7748456 | 77 | 6 | 1998–2006 | 0.64 | M-v | 1 | MPC | 97540 | 2001 $YD_{118}$ |
| 2001 $YL_{118}$ | 15.1 | 0.15 | 20060922 | 1.00133 | 286.54223 | 107.93875 | 16.85094 | 0.2473761 | 3.1521827 | 50 | 5 | 2000–2006 | 0.50 | M-v | 0 | MPC | 87519 | 2001 $YL_{118}$ |
| 2001 $YE_{121}$ | 14.8 | 0.15 | 20060922 | 308.69953 | 32.63188 | 60.23033 | 16.79185 | 0.0648014 | 3.0595458 | 49 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 47107 | 2001 $YE_{121}$ |
| 2001 $YH_{121}$ | 15.6 | 0.15 | 20060922 | 320.80104 | 46.18135 | 48.30299 | 10.88889 | 0.0732967 | 2.9797751 | 97 | 4 | 1993–2006 | 0.55 | M-v | 1 | MPC | 04189 | 2001 $YH_{121}$ |
| 2001 $YL_{121}$ | 15.0 | 0.15 | 20060922 | 312.01470 | 32.19492 | 43.26189 | 12.47128 | 0.0784027 | 3.1072563 | 73 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 65264 | 2001 $YL_{121}$ |
| 2001 $YS_{121}$ | 15.1 | 0.15 | 20060922 | 2.20089 | 113.96840 | 294.89462 | 9.52549 | 0.1335441 | 2.9268176 | 34 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 85380 | 2001 $YS_{121}$ |
| 2001 $YA_{122}$ | 15.2 | 0.15 | 20060922 | 53.71996 | 70.49524 | 303.72519 | 6.35914 | 0.2338702 | 2.7645397 | 89 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 90137 | 2001 $YA_{122}$ |
| 2001 $YL_{122}$ | 15.8 | 0.15 | 20060922 | 287.39986 | 161.56237 | 16.46759 | 7.50163 | 0.0556135 | 2.7813846 | 98 | 5 | 1996–2005 | 0.57 | M-v | 1 | MPC | 90137 | 2001 $YL_{122}$ |
| 2001 $YX_{122}$ | 15.5 | 0.15 | 20060922 | 54.51606 | 339.43811 | 58.17924 | 14.90269 | 0.0747602 | 2.7389212 | 43 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 89185 | 2001 $YX_{122}$ |
| 2001 $YC_{123}$ | 15.6 | 0.15 | 20060922 | 68.79106 | 63.94712 | 305.75941 | 7.81544 | 0.2030943 | 2.7323898 | 56 | 2 | 2001–2005 | 0.64 | M-v | 3 | MPC | 97540 | 2001 $YC_{123}$ |
| 2001 $YE_{123}$ | 15.0 | 0.15 | 20060922 | 251.11588 | 111.73118 | 41.82006 | 10.56825 | 0.1804222 | 3.1568987 | 77 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 47108 | 2001 $YE_{123}$ |
| 2001 $YE_{124}$ | 16.1 | 0.15 | 20060922 | 338.52295 | 123.14231 | 287.42586 | 10.32098 | 0.1262958 | 3.1016200 | 52 | 5 | 1996–2006 | 0.52 | M-v | 0 | MPC | 89185 | 2001 $YE_{124}$ |
| 2001 $YP_{124}$ | 16.2 | 0.15 | 20060922 | 337.25989 | 97.06387 | 302.71303 | 6.04152 | 0.2673384 | 3.1136148 | 80 | 3 | 1997–2006 | 0.42 | M-v | 3 | MPC | 04189 | 2001 $YP_{124}$ |
| 2001 $YS_{124}$ | 15.0 | 0.15 | 20060922 | 353.08683 | 336.65307 | 28.39887 | 5.87947 | 0.3460188 | 3.1175914 | 98 | 2 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03279 | 2001 $YS_{124}$ |
| 2001 $YB_{125}$ | 16.2 | 0.15 | 20060922 | 163.95361 | 17.26636 | 335.06014 | 4.54167 | 0.2040589 | 2.4198216 | 47 | 4 | 1993–2006 | 0.92 | M-v | 2 | MPC | 97541 | 2001 $YB_{125}$ |
| 2001 $YQ_{125}$ | 15.3 | 0.15 | 20060922 | 303.42427 | 48.83752 | 57.12420 | 11.60467 | 0.1187040 | 3.0745083 | 102 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 87520 | 2001 $YQ_{125}$ |
| 2001 $YY_{125}$ | 15.5 | 0.15 | 20060922 | 42.93918 | 79.88658 | 349.36157 | 5.92765 | 0.1188876 | 2.6922676 | 85 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 97541 | 2001 $YY_{125}$ |
| 2001 $YB_{126}$ | 15.3 | 0.15 | 20060922 | 30.64157 | 120.25477 | 296.22946 | 11.16253 | 0.1674686 | 2.7890658 | 76 | 3 | 2001–2006 | 0.52 | M-v | 1 | MPC | 90137 | 2001 $YB_{126}$ |
| 2001 $YU_{126}$ | 15.3 | 0.15 | 20060922 | 353.54941 | 168.08825 | 304.09666 | 8.44381 | 0.1100777 | 2.7764076 | 63 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 90137 | 2001 $YU_{126}$ |
| 2001 $YE_{127}$ | 16.0 | 0.15 | 20060922 | 32.68054 | 80.66230 | 30.39752 | 4.82519 | 0.0900681 | 2.6049487 | 59 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 94455 | 2001 $YE_{127}$ |
| 2001 $YL_{127}$ | 15.3 | 0.15 | 20060922 | 331.02973 | 37.80298 | 38.42772 | 5.08329 | 0.1453992 | 3.0793267 | 73 | 5 | 1995–2006 | 0.46 | M-v | 0 | MPC | 48182 | 2001 $YL_{127}$ |
| 2001 $YA_{128}$ | 16.2 | 0.15 | 20060922 | 23.31340 | 122.69975 | 297.79860 | 6.66856 | 0.2196037 | 2.7794024 | 54 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 85381 | 2001 $YA_{128}$ |
| 2001 $YS_{128}$ | 15.3 | 0.15 | 20060922 | 343.58928 | 193.63161 | 295.35332 | 13.24867 | 0.0247174 | 2.7174856 | 48 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 97541 | 2001 $YS_{128}$ |
| 2001 $YC_{129}$ | 15.4 | 0.15 | 20060922 | 268.43456 | 96.83750 | 66.52536 | 10.94973 | 0.0464265 | 2.9935025 | 54 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 87520 | 2001 $YC_{129}$ |
| 2001 $YS_{129}$ | 15.7 | 0.15 | 20060922 | 107.98492 | 333.16963 | 35.63159 | 6.57179 | 0.0371472 | 2.6795491 | 55 | 4 | 2001–2005 | 0.67 | M-v | 1 | MPC | 97541 | 2001 $YS_{129}$ |
| 2001 $YF_{130}$ | 14.5 | 0.15 | 20060922 | 35.82030 | 279.65400 | 83.16587 | 17.26373 | 0.1014061 | 3.1475536 | 62 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87520 | 2001 $YF_{130}$ |
| 2001 $YN_{132}$ | 15.0 | 0.15 | 20060922 | 95.30500 | 46.30036 | 312.44954 | 11.83500 | 0.3338408 | 2.5856476 | 135 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 97541 | 2001 $YN_{132}$ |
| 2001 $YT_{132}$ | 14.7 | 0.15 | 20060922 | 314.39792 | 145.55860 | 282.33036 | 15.76775 | 0.1468840 | 3.1403965 | 56 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 75257 | 2001 $YT_{132}$ |
| 2001 $YB_{134}$ | 14.8 | 0.15 | 20060922 | 254.41405 | 85.88524 | 61.51203 | 15.18376 | 0.2192032 | 3.1812303 | 46 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 47112 | 2001 $YB_{134}$ |
| 2001 $YR_{135}$ | 16.1 | 0.15 | 20060922 | 309.62474 | 357.48315 | 104.18894 | 12.95300 | 0.1841829 | 3.0838094 | 20 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 89188 | 2001 $YR_{135}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 $YS_{135}$ | 17.0 | 0.15 | 20060922 | 46.89053 | 60.18443 | 115.63407 | 3.57203 | 0.1207982 | 2.3491787 | 49 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 02060 | 2001 $YS_{135}$ |
| 2001 $YD_{137}$ | 15.6 | 0.15 | 20060922 | 343.67345 | 162.19491 | 344.73682 | 6.91806 | 0.2269353 | 2.6786223 | 55 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 90138 | 2001 $YD_{137}$ |
| 2001 $YE_{137}$ | 14.9 | 0.15 | 20060922 | 288.42756 | 146.81927 | 323.02742 | 8.53000 | 0.1274082 | 3.0976587 | 45 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 47113 | 2001 $YE_{137}$ |
| 2001 $YJ_{137}$ | 15.0 | 0.15 | 20060922 | 30.73931 | 135.72034 | 303.75886 | 16.12754 | 0.0854241 | 2.7518358 | 70 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 97542 | 2001 $YJ_{137}$ |
| 2001 $YV_{137}$ | 15.3 | 0.15 | 20060922 | 356.37849 | 359.67964 | 40.80876 | 13.60497 | 0.1585503 | 3.1215000 | 62 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 48183 | 2001 $YV_{137}$ |
| 2001 $YY_{137}$ | 14.4 | 0.15 | 20060922 | 257.49909 | 98.52195 | 67.42159 | 18.24204 | 0.0755369 | 3.1481483 | 90 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 47113 | 2001 $YY_{137}$ |
| 2001 $YM_{139}$ | 15.5 | 0.15 | 20060922 | 317.89391 | 318.52588 | 131.40264 | 10.06251 | 0.2160826 | 3.1411767 | 63 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 89188 | 2001 $YM_{139}$ |
| 2001 $YP_{140}$ | 13.8 | 0.15 | 20060922 | 71.44599 | 41.44501 | 332.89027 | 14.36410 | 0.1373587 | 2.6565666 | 197 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 97542 | 2001 $YP_{140}$ |
| 2001 $YD_{141}$ | 16.1 | 0.15 | 20060922 | 1.46746 | 280.54684 | 85.39437 | 2.91695 | 0.2252663 | 3.0514839 | 79 | 3 | 1990–2006 | 0.46 | M-v | 3 | MPC | 03279 | 2001 $YD_{141}$ |
| 2001 $YF_{142}$ | 16.6 | 0.15 | 20060922 | 335.13506 | 125.81940 | 310.30087 | 0.91933 | 0.0940719 | 2.9586254 | 46 | 5 | 1995–2006 | 0.39 | M-v | 1 | MPC | 74122 | 2001 $YF_{142}$ |
| 2001 $YH_{142}$ | 16.2 | 0.15 | 20060922 | 15.17778 | 15.60643 | 337.12707 | 0.93655 | 0.1201719 | 3.1409575 | 44 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 04189 | 2001 $YH_{142}$ |
| 2001 $YY_{142}$ | 16.7 | 0.15 | 20060922 | 267.52086 | 190.96132 | 297.54447 | 0.42589 | 0.1833884 | 3.1709736 | 25 | 4 | 1997–2006 | 0.42 | M-v | 1 | MPC | 48183 | 2001 $YY_{142}$ |
| 2001 $YQ_{143}$ | 15.8 | 0.15 | 20060922 | 65.33002 | 85.99911 | 328.97616 | 6.00865 | 0.0791417 | 2.6608009 | 58 | 6 | 1994–2006 | 0.53 | M-v | 1 | MPC | 04189 | 2001 $YQ_{143}$ |
| 2001 $YK_{145}$ | 15.1 | 0.15 | 20060922 | 31.44120 | 51.01173 | 326.36443 | 11.00328 | 0.1450226 | 3.0916712 | 76 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 90138 | 2001 $YK_{145}$ |
| 2001 $YW_{145}$ | 14.9 | 0.15 | 20060922 | 65.26190 | 73.75042 | 320.63888 | 10.41466 | 0.1897762 | 2.6153865 | 119 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97542 | 2001 $YW_{145}$ |
| 2001 $YY_{145}$ | 15.8 | 0.15 | 20060922 | 130.28185 | 17.94122 | 315.69632 | 9.61139 | 0.1327622 | 2.5799312 | 61 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 97542 | 2001 $YY_{145}$ |
| 2001 $YZ_{145}$ | 14.9 | 0.15 | 20060922 | 266.26181 | 78.98078 | 32.91508 | 15.41949 | 0.1836104 | 3.2013758 | 41 | 3 | 2001–2006 | 0.73 | M-v | 2 | MPC | 48183 | 2001 $YZ_{145}$ |
| 2001 $YL_{149}$ | 14.5 | 0.15 | 20060922 | 142.95980 | 233.84640 | 333.55790 | 9.05115 | 0.0214782 | 3.5434760 | 74 | 5 | 1999–2006 | 0.67 | M-v | 0 | MPC | 04189 | 2001 $YL_{149}$ |
| 2001 $YM_{150}$ | 15.4 | 0.15 | 20060922 | 287.41186 | 294.20307 | 174.02285 | 10.08398 | 0.2067277 | 3.1465515 | 33 | 5 | 1997–2006 | 0.65 | M-v | 1 | MPC | 87520 | 2001 $YM_{150}$ |
| 2001 $YC_{151}$ | 16.3 | 0.15 | 20060922 | 96.06824 | 22.95516 | 316.96854 | 4.37280 | 0.0797048 | 2.7856120 | 50 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 87520 | 2001 $YC_{151}$ |
| 2001 $YW_{151}$ | 15.7 | 0.15 | 20060922 | 2.70030 | 171.51953 | 303.08153 | 13.74608 | 0.0709278 | 2.7275262 | 31 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 94461 | 2001 $YW_{151}$ |
| 2001 $YY_{151}$ | 17.3 | 0.15 | 20060922 | 140.99402 | 8.16709 | 19.09404 | 4.49395 | 0.2241324 | 2.4177298 | 30 | 6 | 1995–2006 | 0.73 | M-v | 1 | MPC | 97542 | 2001 $YY_{151}$ |
| 2001 $YZ_{151}$ | 15.6 | 0.15 | 20060922 | 22.18079 | 67.37482 | 343.49671 | 7.34928 | 0.2168650 | 2.8647096 | 33 | 2 | 2001–2005 | 0.60 | M-v | 4 | MPC | 89189 | 2001 $YZ_{151}$ |
| 2001 $YE_{153}$ | 15.2 | 0.15 | 20060922 | 315.67840 | 49.44069 | 29.64761 | 13.31833 | 0.0918792 | 3.2273042 | 73 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 74122 | 2001 $YE_{153}$ |
| 2001 $YF_{153}$ | 15.3 | 0.15 | 20060922 | 334.87991 | 27.66336 | 46.52018 | 16.17665 | 0.0851488 | 3.1127756 | 70 | 4 | 2000–2006 | 0.44 | M-v | 0 | MPC | 89189 | 2001 $YF_{153}$ |
| 2001 $YZ_{153}$ | 15.1 | 0.15 | 20060922 | 334.82464 | 105.19092 | 333.22940 | 9.04732 | 0.1043498 | 3.0911510 | 39 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 94462 | 2001 $YZ_{153}$ |
| 2001 $YX_{154}$ | 15.4 | 0.15 | 20060922 | 324.40471 | 101.21583 | 354.58953 | 10.16951 | 0.1149430 | 3.0981029 | 35 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 87520 | 2001 $YX_{154}$ |
| 2001 $YZ_{154}$ | 14.8 | 0.15 | 20060922 | 212.35244 | 125.09231 | 57.28816 | 16.73536 | 0.0377664 | 3.1008779 | 37 | 4 | 1998–2006 | 0.62 | M-v | 1 | MPC | 85385 | 2001 $YZ_{154}$ |
| 2001 $YO_{156}$ | 15.1 | 0.15 | 20060922 | 282.93962 | 79.45306 | 54.71950 | 18.75995 | 0.2011823 | 3.1404507 | 70 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 47118 | 2001 $YO_{156}$ |
| 2001 $YM_{158}$ | 15.2 | 0.15 | 20060922 | 265.66421 | 164.09848 | 355.79818 | 4.94247 | 0.1022880 | 3.1125997 | 31 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 94464 | 2001 $YM_{158}$ |
| 2001 $YC_{160}$ | 17.2 | 0.15 | 20060922 | 20.63089 | 19.97135 | 321.98159 | 18.08380 | 0.0634122 | 1.9556989 | 41 | 4 | 1994–2006 | 0.55 | M-v | 1 | MPC | 75258 | 2001 $YC_{160}$ |
| 2002 AA | 19.3 | 0.15 | 20060922 | 359.74453 | 64.57330 | 302.27979 | 11.27239 | 0.3023775 | 1.1480556 | 315 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 00121 | 2002 AA |
| 2002 AE | 16.0 | 0.15 | 20060922 | 22.86567 | 189.16786 | 253.26978 | 2.97471 | 0.0763151 | 2.7721115 | 81 | 7 | 1991–2006 | 0.56 | M-v | 0 | MPC | 04189 | 2002 AE |
| 2002 $AB_1$ | 15.2 | 0.15 | 20060922 | 77.07342 | 57.91446 | 313.23704 | 10.53694 | 0.2706488 | 2.6415022 | 145 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04190 | 2002 $AB_1$ |
| 2002 $AG_1$ | 16.1 | 0.15 | 20060922 | 324.37480 | 275.95812 | 227.06803 | 14.74886 | 0.1656998 | 2.7561427 | 36 | 3 | 2001–2005 | 0.65 | M-v | 2 | MPC | 90138 | 2002 $AG_1$ |
| 2002 $AD_2$ | 20.7 | 0.15 | 20060922 | 287.25031 | 343.05254 | 116.49990 | 32.39284 | 0.2468023 | 1.4230189 | 52 | 2 | 2002–2006 | 0.63 | M-v | 1 | MPC | 03279 | 2002 $AD_2$ |
| 2002 $AJ_2$ | 15.8 | 0.15 | 20060922 | 162.56134 | 188.97749 | 8.18582 | 20.65179 | 0.0277543 | 1.9779702 | 174 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 04190 | 2002 $AJ_2$ |
| 2002 $AL_2$ | 15.8 | 0.15 | 20060922 | 77.66402 | 240.85513 | 153.04008 | 29.43159 | 0.2700597 | 2.6111688 | 41 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 94465 | 2002 $AL_2$ |
| 2002 $AU_2$ | 17.3 | 0.15 | 20060922 | 238.26096 | 148.44872 | 331.42042 | 17.55713 | 0.0818523 | 1.9837723 | 85 | 3 | 2001–2006 | 0.68 | M-v | 2 | MPC | 04190 | 2002 $AU_2$ |
| 2002 $AC_3$ | 18.4 | 0.15 | 20060922 | 286.16701 | 214.84171 | 314.57843 | 15.48441 | 0.3421826 | 1.8360518 | 57 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 87520 | 2002 $AC_3$ |
| 2002 $AF_3$ | 17.7 | 0.15 | 20060922 | 256.24577 | 190.09355 | 353.38684 | 10.60613 | 0.6204302 | 1.9054248 | 83 | 4 | 2001–2006 | 0.45 | M-v | 2 | MPC | 87521 | 2002 $AF_3$ |
| 2002 $AK_3$ | 15.8 | 0.15 | 20060922 | 359.11336 | 10.58231 | 113.61643 | 14.59452 | 0.1849103 | 2.6772493 | 34 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 48184 | 2002 $AK_3$ |
| 2002 $AG_4$ | 17.4 | 0.15 | 20060922 | 249.88482 | 55.15981 | 87.26966 | 23.35726 | 0.0971404 | 1.9217577 | 40 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 75259 | 2002 $AG_4$ |
| 2002 $AY_4$ | 15.2 | 0.15 | 20060922 | 344.67479 | 353.56848 | 89.36395 | 14.67274 | 0.1030557 | 2.7489049 | 37 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 43222 | 2002 $AY_4$ |
| 2002 $AB_5$ | 14.8 | 0.15 | 20060922 | 266.12028 | 165.79701 | 35.71345 | 13.08294 | 0.3887099 | 3.3097127 | 174 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 97543 | 2002 $AB_5$ |
| 2002 $AK_6$ | 17.2 | 0.15 | 20060922 | 255.35324 | 297.38423 | 61.57098 | 8.31324 | 0.1559781 | 2.2200692 | 34 | 4 | 2002–2006 | 0.37 | M-v | 1 | MPC | 02060 | 2002 $AK_6$ |
| 2002 $AP_6$ | 15.6 | 0.15 | 20060922 | 0.13621 | 270.54663 | 124.36584 | 12.05612 | 0.1207664 | 3.0125935 | 38 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 03279 | 2002 $AP_6$ |
| 2002 $AO_7$ | 18.3 | 0.15 | 20060922 | 319.03928 | 237.24988 | 281.61036 | 14.85202 | 0.6258194 | 2.9348428 | 53 | 3 | 2002–2006 | 0.48 | M-v | 0 | MPC | 52885 | 2002 $AO_7$ |
| 2002 $AX_7$ | 16.9 | 0.15 | 20060922 | 303.43591 | 122.11642 | 134.15260 | 3.77781 | 0.1625416 | 2.4685085 | 36 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 94466 | 2002 $AX_7$ |
| 2002 $AB_8$ | 17.2 | 0.15 | 20060922 | 39.16536 | 171.09342 | 273.99510 | 4.09528 | 0.1380449 | 2.7110165 | 38 | 3 | 2001–2005 | 0.43 | M-v | 3 | MPC | 89190 | 2002 $AB_8$ |
| 2002 $AE_8$ | 15.5 | 0.15 | 20060922 | 337.04884 | 167.59233 | 278.52328 | 3.48170 | 0.1230521 | 3.0942372 | 54 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 94466 | 2002 $AE_8$ |
| 2002 $AK_8$ | 16.8 | 0.15 | 20060922 | 222.03521 | 134.47302 | 133.88369 | 4.12309 | 0.0475585 | 2.7653587 | 24 | 4 | 1998–2005 | 0.35 | M-v | 2 | MPC | 89190 | 2002 $AK_8$ |
| 2002 $AL_9$ | 16.9 | 0.15 | 20060922 | 94.45407 | 335.03763 | 299.21365 | 16.86139 | 0.0667211 | 1.9670175 | 110 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 77583 | 2002 $AL_9$ |

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| 2002 $AK_{10}$ | 14.8 | 0.15 | 20060922 | 295.22347 | 212.28319 | 277.66456 | 17.56742 | 0.1930224 | 3.1924842 | 57 | 3 | 2001–2006 | 0.66 | M-v | 2 | MPC | 85387 | 2002 $AK_{10}$ |
| 2002 $AO_{10}$ | 16.3 | 0.15 | 20060922 | 348.90157 | 64.01212 | 109.91424 | 3.56772 | 0.0500340 | 2.5705073 | 51 | 4 | 2001–2005 | 0.54 | M-v | 0 | MPC | 47122 | 2002 $AO_{10}$ |
| 2002 $AH_{11}$ | 16.0 | 0.15 | 20060922 | 53.22001 | 91.70412 | 305.40267 | 6.39015 | 0.2340392 | 2.8009271 | 118 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 85388 | 2002 $AH_{11}$ |
| 2002 $AV_{11}$ | 16.1 | 0.15 | 20060922 | 146.58469 | 334.98374 | 276.28175 | 17.64816 | 0.0460303 | 1.9201122 | 119 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 77583 | 2002 $AV_{11}$ |
| 2002 $AW_{11}$ | 18.5 | 0.15 | 20060922 | 223.22258 | 91.04990 | 95.63750 | 18.32997 | 0.3304100 | 1.4469555 | 49 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 69089 | 2002 $AW_{11}$ |
| 2002 $AX_{11}$ | 15.6 | 0.15 | 20060922 | 325.55691 | 48.14480 | 60.21008 | 3.12463 | 0.2077312 | 3.0306399 | 78 | 4 | 1992–2006 | 0.47 | M-v | 1 | MPC | 03280 | 2002 $AX_{11}$ |
| 2002 $AW_{12}$ | 16.5 | 0.15 | 20060922 | 113.11769 | 301.06396 | 145.98312 | 2.63487 | 0.1517599 | 2.4483522 | 113 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 02061 | 2002 $AW_{12}$ |
| 2002 $AX_{12}$ | 17.3 | 0.15 | 20060922 | 105.28090 | 329.89706 | 159.95359 | 2.49783 | 0.1273735 | 2.3606460 | 86 | 5 | 1991–2006 | 0.48 | M-v | 1 | MPC | 02061 | 2002 $AX_{12}$ |
| 2002 $AA_{14}$ | 14.3 | 0.15 | 20060922 | 291.24608 | 21.77944 | 131.44667 | 20.93779 | 0.2143084 | 3.1318010 | 117 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 49952 | 2002 $AA_{14}$ |
| 2002 $AP_{14}$ | 15.4 | 0.15 | 20060922 | 359.80600 | 71.74044 | 333.47898 | 1.15751 | 0.2891262 | 3.0580186 | 103 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 48184 | 2002 $AP_{14}$ |
| 2002 $AM_{15}$ | 16.2 | 0.15 | 20060922 | 171.23233 | 351.93129 | 21.90038 | 13.07065 | 0.2092948 | 2.4033210 | 84 | 3 | 2001–2004 | 0.60 | M-v | 3 | MPC | 70324 | 2002 $AM_{15}$ |
| 2002 $AN_{15}$ | 14.9 | 0.15 | 20060922 | 303.29190 | 56.93195 | 48.18095 | 16.36007 | 0.0419716 | 3.2254891 | 61 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 50585 | 2002 $AN_{15}$ |
| 2002 $AA_{17}$ | 14.3 | 0.15 | 20060922 | 275.47034 | 33.28040 | 118.84894 | 18.56030 | 0.1589665 | 3.1143863 | 68 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 47124 | 2002 $AA_{17}$ |
| 2002 $AH_{17}$ | 17.1 | 0.15 | 20060922 | 157.08658 | 141.20771 | 293.08800 | 5.46218 | 0.1719453 | 2.3427185 | 84 | 3 | 1997–2004 | 0.62 | M-v | 2 | MPC | 74123 | 2002 $AH_{17}$ |
| 2002 $AJ_{17}$ | 16.5 | 0.15 | 20060922 | 338.31437 | 251.83280 | 126.51194 | 23.98346 | 0.1047511 | 1.9684911 | 60 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04190 | 2002 $AJ_{17}$ |
| 2002 $AR_{17}$ | 17.1 | 0.15 | 20060922 | 331.78421 | 80.64128 | 296.57432 | 17.62939 | 0.0849609 | 1.9915126 | 28 | 2 | 2002–2006 | 0.54 | M-v | 4 | MPC | 03280 | 2002 $AR_{17}$ |
| 2002 $AT_{17}$ | 16.9 | 0.15 | 20060922 | 334.41026 | 289.67572 | 119.43273 | 23.36247 | 0.0924108 | 1.9125143 | 65 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 75260 | 2002 $AT_{17}$ |
| 2002 $AE_{18}$ | 16.8 | 0.15 | 20060922 | 92.31430 | 278.68802 | 148.68143 | 7.04398 | 0.1368729 | 2.4555591 | 18 | 3 | 1999–2003 | 0.31 | M-v | 2 | MPC | 89191 | 2002 $AE_{18}$ |
| 2002 $AN_{19}$ | 16.5 | 0.15 | 20060922 | 337.57411 | 3.66318 | 103.67182 | 3.16289 | 0.0694910 | 2.9344422 | 29 | 5 | 1995–2005 | 0.43 | M-v | 0 | MPC | 87521 | 2002 $AN_{19}$ |
| 2002 $AB_{20}$ | 15.8 | 0.15 | 20060922 | 18.36267 | 291.26983 | 165.55079 | 7.80798 | 0.2816095 | 2.7557057 | 53 | 3 | 2001–2005 | 0.74 | M-v | 3 | MPC | 85390 | 2002 $AB_{20}$ |
| 2002 $AY_{22}$ | 15.3 | 0.15 | 20060922 | 282.38249 | 94.58768 | 125.30985 | 13.21052 | 0.1171197 | 2.6972946 | 53 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 50585 | 2002 $AY_{22}$ |
| 2002 $AD_{23}$ | 17.4 | 0.15 | 20060922 | 142.61764 | 335.36134 | 152.00043 | 4.87250 | 0.0985590 | 2.2043369 | 26 | 4 | 1996–2006 | 0.66 | M-v | 2 | MPC | 31962 | 2002 $AD_{23}$ |
| 2002 $AU_{23}$ | 15.4 | 0.15 | 20060922 | 32.88446 | 353.74528 | 64.08863 | 6.92493 | 0.0555254 | 2.8503973 | 45 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 90139 | 2002 $AU_{23}$ |
| 2002 $AZ_{23}$ | 15.5 | 0.15 | 20060922 | 46.22794 | 280.11105 | 136.36497 | 15.63059 | 0.1419456 | 2.8367494 | 75 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 97544 | 2002 $AZ_{23}$ |
| 2002 $AJ_{24}$ | 15.3 | 0.15 | 20060922 | 58.86975 | 86.33475 | 333.96460 | 11.03804 | 0.0881948 | 2.7330636 | 84 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 97544 | 2002 $AJ_{24}$ |
| 2002 $AL_{24}$ | 15.9 | 0.15 | 20060922 | 16.60649 | 328.30850 | 142.26505 | 9.56637 | 0.2367325 | 2.7230505 | 44 | 2 | 2001–2005 | 0.61 | M-v | 3 | MPC | 89193 | 2002 $AL_{24}$ |
| 2002 $AK_{25}$ | 16.4 | 0.15 | 20060922 | 342.10200 | 121.63855 | 284.60231 | 18.46878 | 0.1232619 | 1.9315002 | 56 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 77583 | 2002 $AK_{25}$ |
| 2002 $AA_{26}$ | 16.0 | 0.15 | 20060922 | 39.03626 | 279.38193 | 121.22943 | 5.54880 | 0.1094866 | 2.9450115 | 40 | 5 | 1997–2005 | 0.52 | M-v | 1 | MPC | 90139 | 2002 $AA_{26}$ |
| 2002 $AM_{27}$ | 15.4 | 0.15 | 20060922 | 270.50727 | 147.30747 | 13.12058 | 5.33141 | 0.2008520 | 3.1613576 | 60 | 4 | 1997–2006 | 0.62 | M-v | 2 | MPC | 87521 | 2002 $AM_{27}$ |
| 2002 $AB_{28}$ | 15.8 | 0.15 | 20060922 | 337.71930 | 189.17630 | 329.06649 | 7.70461 | 0.2322010 | 2.7854779 | 65 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 89193 | 2002 $AB_{28}$ |
| 2002 $AS_{29}$ | 15.7 | 0.15 | 20060922 | 14.71653 | 156.86140 | 283.53123 | 12.02242 | 0.1480961 | 2.8102111 | 44 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 03281 | 2002 $AS_{29}$ |
| 2002 $AY_{29}$ | 15.9 | 0.15 | 20060922 | 67.07766 | 99.51415 | 67.94258 | 7.70504 | 0.0498080 | 2.3448666 | 51 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 00125 | 2002 $AY_{29}$ |
| 2002 $AK_{30}$ | 16.2 | 0.15 | 20060922 | 343.11579 | 251.53417 | 262.15828 | 2.05074 | 0.1277326 | 2.7154148 | 48 | 3 | 2001–2005 | 0.54 | M-v | 4 | MPC | 89193 | 2002 $AK_{30}$ |
| 2002 $AN_{30}$ | 17.4 | 0.15 | 20060922 | 72.75585 | 259.14281 | 272.62173 | 1.28366 | 0.1453094 | 2.3151932 | 55 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 04190 | 2002 $AN_{30}$ |
| 2002 $AU_{30}$ | 14.7 | 0.15 | 20060922 | 70.79247 | 57.39783 | 288.37189 | 10.35018 | 0.1168063 | 3.1064812 | 53 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 97544 | 2002 $AU_{30}$ |
| 2002 $AQ_{31}$ | 16.4 | 0.15 | 20060922 | 70.55429 | 347.78707 | 320.22539 | 17.11130 | 0.0614930 | 1.9687535 | 82 | 4 | 2002–2006 | 0.63 | M-v | 2 | MPC | 87521 | 2002 $AQ_{31}$ |
| 2002 $AY_{31}$ | 15.8 | 0.15 | 20060922 | 164.89937 | 200.89850 | 75.87275 | 6.48917 | 0.0734760 | 2.6763970 | 51 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87521 | 2002 $AY_{31}$ |
| 2002 $AJ_{32}$ | 15.6 | 0.15 | 20060922 | 346.16334 | 348.34101 | 103.96484 | 3.67040 | 0.2610063 | 2.9903857 | 99 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 89194 | 2002 $AJ_{32}$ |
| 2002 $AE_{35}$ | 16.8 | 0.15 | 20060922 | 150.53670 | 148.65360 | 296.21789 | 1.15506 | 0.1130348 | 2.2500510 | 38 | 3 | 1994–2004 | 0.51 | M-v | 3 | MPC | 04190 | 2002 $AE_{35}$ |
| 2002 $AT_{35}$ | 16.6 | 0.15 | 20060922 | 330.98476 | 46.50797 | 104.40514 | 4.44198 | 0.0656804 | 2.7596918 | 47 | 7 | 1993–2006 | 0.46 | M-v | 0 | MPC | 90139 | 2002 $AT_{35}$ |
| 2002 $AA_{36}$ | 15.8 | 0.15 | 20060922 | 57.48537 | 286.67603 | 83.38813 | 25.12276 | 0.1894936 | 2.7584018 | 40 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 89194 | 2002 $AA_{36}$ |
| 2002 $AF_{36}$ | 14.3 | 0.15 | 20060922 | 201.65916 | 7.43220 | 93.36059 | 4.02409 | 0.1951720 | 3.9445285 | 81 | 4 | 2000–2004 | 0.59 | M-v | 1 | MPC | 66260 | 2002 $AF_{36}$ |
| 2002 $AH_{36}$ | 15.7 | 0.15 | 20060922 | 303.40912 | 1.91644 | 93.78109 | 4.29039 | 0.1552638 | 3.0776356 | 34 | 3 | 2001–2006 | 0.64 | M-v | 3 | MPC | 94477 | 2002 $AH_{36}$ |
| 2002 $AS_{36}$ | 16.2 | 0.15 | 20060922 | 36.90453 | 86.93548 | 116.14446 | 7.84902 | 0.1618073 | 2.2760475 | 77 | 3 | 1999–2006 | 0.69 | M-v | 2 | MPC | 02062 | 2002 $AS_{36}$ |
| 2002 $AW_{36}$ | 16.0 | 0.15 | 20060922 | 7.03838 | 325.32623 | 124.66120 | 6.05373 | 0.1305577 | 2.7809877 | 41 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 94478 | 2002 $AW_{36}$ |
| 2002 $AA_{38}$ | 14.5 | 0.15 | 20060922 | 224.92225 | 77.43632 | 98.19540 | 23.41214 | 0.1075589 | 3.1809712 | 32 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 00127 | 2002 $AA_{38}$ |
| 2002 $AV_{38}$ | 15.1 | 0.15 | 20060922 | 29.91974 | 273.06236 | 133.71332 | 10.39611 | 0.0968275 | 2.9684190 | 39 | 3 | 2000–2005 | 0.67 | M-v | 3 | MPC | 03281 | 2002 $AV_{38}$ |
| 2002 $AG_{39}$ | 15.3 | 0.15 | 20060922 | 323.71567 | 197.91615 | 257.28730 | 3.97110 | 0.1164663 | 3.1408335 | 74 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 85393 | 2002 $AG_{39}$ |
| 2002 $AS_{39}$ | 17.2 | 0.15 | 20060922 | 79.57394 | 283.39648 | 233.32862 | 1.95451 | 0.0950487 | 2.3444499 | 47 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 02062 | 2002 $AS_{39}$ |
| 2002 $AD_{40}$ | 14.5 | 0.15 | 20060922 | 311.68738 | 195.81582 | 293.66360 | 12.64421 | 0.1017345 | 3.0536513 | 70 | 2 | 2001–2005 | 0.61 | M-v | 3 | MPC | 89195 | 2002 $AD_{40}$ |
| 2002 $AR_{40}$ | 15.6 | 0.15 | 20060922 | 44.10101 | 291.56962 | 143.29978 | 4.64785 | 0.0672840 | 2.8018203 | 74 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 97545 | 2002 $AR_{40}$ |
| 2002 $AL_{41}$ | 16.4 | 0.15 | 20060922 | 120.21528 | 2.77935 | 129.17371 | 5.37764 | 0.1323634 | 2.2894519 | 87 | 2 | 2001–2006 | 0.59 | M-v | 3 | MPC | 00127 | 2002 $AL_{41}$ |
| 2002 $AN_{41}$ | 14.6 | 0.15 | 20060922 | 333.14591 | 152.16804 | 297.98809 | 10.44174 | 0.1853026 | 3.1053118 | 81 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 85394 | 2002 $AN_{41}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $AW_{41}$ | 16.2 | 0.15 | 20060922 | 36.33544 | 322.19539 | 155.00155 | 3.42851 | 0.1006218 | 2.6576146 | 76 | 6 | 1998–2005 | 0.66 | M-v | 1 | MPC | 27803 | 2002 $AW_{41}$ |
| 2002 $AY_{42}$ | 15.6 | 0.15 | 20060922 | 318.59894 | 308.41865 | 142.47905 | 5.62002 | 0.1177858 | 3.1366062 | 45 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 85394 | 2002 $AY_{42}$ |
| 2002 $AB_{43}$ | 16.8 | 0.15 | 20060922 | 29.48490 | 54.44531 | 135.47309 | 5.67666 | 0.1387561 | 2.4002953 | 52 | 4 | 1995–2006 | 0.62 | M-v | 1 | MPC | 97545 | 2002 $AB_{43}$ |
| 2002 $AP_{43}$ | 15.1 | 0.15 | 20060922 | 138.27192 | 208.85193 | 116.17471 | 27.87649 | 0.1893589 | 2.7619752 | 33 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 94481 | 2002 $AP_{43}$ |
| 2002 $AR_{43}$ | 16.1 | 0.15 | 20060922 | 346.63056 | 294.60308 | 120.01348 | 14.76215 | 0.2301321 | 3.0941541 | 48 | 4 | 2002–2006 | 0.51 | M-v | 0 | MPC | 85394 | 2002 $AR_{43}$ |
| 2002 $AT_{43}$ | 15.4 | 0.15 | 20060922 | 327.13916 | 322.60166 | 126.44541 | 10.08372 | 0.1240399 | 3.0956261 | 51 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 87522 | 2002 $AT_{43}$ |
| 2002 $AA_{44}$ | 15.1 | 0.15 | 20060922 | 121.81040 | 6.18441 | 288.63447 | 9.63502 | 0.0723114 | 3.1161390 | 35 | 4 | 2000–2006 | 0.66 | M-v | 2 | MPC | 02062 | 2002 $AA_{44}$ |
| 2002 $AG_{44}$ | 15.7 | 0.15 | 20060922 | 328.06293 | 309.14601 | 120.97194 | 9.46329 | 0.1750893 | 3.1743780 | 32 | 3 | 2002–2006 | 0.47 | M-v | 4 | MPC | 89195 | 2002 $AG_{44}$ |
| 2002 $AM_{44}$ | 17.6 | 0.15 | 20060922 | 110.50601 | 196.47508 | 270.93996 | 2.60476 | 0.1638667 | 2.3555718 | 49 | 3 | 1997–2006 | 0.52 | M-v | 3 | MPC | 02062 | 2002 $AM_{44}$ |
| 2002 $AO_{44}$ | 16.0 | 0.15 | 20060922 | 238.81658 | 75.30468 | 119.45908 | 7.37511 | 0.0584270 | 3.0662058 | 30 | 4 | 2001–2006 | 0.58 | M-v | 0 | MPC | 85394 | 2002 $AO_{44}$ |
| 2002 $AR_{44}$ | 16.3 | 0.15 | 20060922 | 339.54142 | 300.46457 | 182.56606 | 2.53363 | 0.1171903 | 2.8678654 | 54 | 6 | 1993–2006 | 0.52 | M-v | 1 | MPC | 90140 | 2002 $AR_{44}$ |
| 2002 $AA_{45}$ | 15.8 | 0.15 | 20060922 | 352.87648 | 183.63961 | 246.25774 | 0.99609 | 0.1424046 | 3.0327703 | 54 | 6 | 1995–2006 | 0.65 | M-v | 0 | MPC | 87522 | 2002 $AA_{45}$ |
| 2002 $AF_{45}$ | 16.3 | 0.15 | 20060922 | 166.48903 | 230.98077 | 136.47791 | 5.04014 | 0.2391578 | 2.4197004 | 57 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 97545 | 2002 $AF_{45}$ |
| 2002 $AL_{46}$ | 15.8 | 0.15 | 20060922 | 25.63236 | 294.65093 | 134.57747 | 2.84029 | 0.0445365 | 2.8924522 | 58 | 5 | 1995–2006 | 0.38 | M-v | 0 | MPC | 97545 | 2002 $AL_{46}$ |
| 2002 $AM_{46}$ | 15.9 | 0.15 | 20060922 | 344.74237 | 240.16190 | 183.09814 | 2.88408 | 0.1527864 | 3.1257215 | 60 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 62385 | 2002 $AM_{46}$ |
| 2002 $AN_{46}$ | 15.1 | 0.15 | 20060922 | 250.75941 | 64.18377 | 132.62839 | 8.69716 | 0.1510846 | 3.0572377 | 22 | 3 | 2001–2004 | 0.51 | M-v | 3 | MPC | 47131 | 2002 $AN_{46}$ |
| 2002 $AQ_{46}$ | 15.8 | 0.15 | 20060922 | 271.89641 | 27.76501 | 171.65338 | 1.95558 | 0.0341903 | 2.8439722 | 57 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 97545 | 2002 $AQ_{46}$ |
| 2002 $AQ_{47}$ | 14.7 | 0.15 | 20060922 | 353.56684 | 293.90026 | 120.27934 | 26.47855 | 0.0761586 | 3.1719290 | 42 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 89196 | 2002 $AQ_{47}$ |
| 2002 $AS_{47}$ | 15.4 | 0.15 | 20060922 | 307.82270 | 350.01391 | 129.01760 | 6.46847 | 0.1001289 | 3.0967007 | 42 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 85395 | 2002 $AS_{47}$ |
| 2002 $AK_{49}$ | 14.6 | 0.15 | 20060922 | 129.17324 | 164.60229 | 123.92490 | 12.13972 | 0.0514875 | 3.1929351 | 54 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 87522 | 2002 $AK_{49}$ |
| 2002 $AN_{49}$ | 16.4 | 0.15 | 20060922 | 306.70925 | 359.14738 | 126.99018 | 4.07022 | 0.1473638 | 3.0871931 | 56 | 6 | 1995–2006 | 0.47 | M-v | 0 | MPC | 87522 | 2002 $AN_{49}$ |
| 2002 $AP_{49}$ | 15.3 | 0.15 | 20060922 | 241.65791 | 266.14656 | 298.79524 | 0.65935 | 0.1525837 | 3.0982834 | 72 | 6 | 1999–2006 | 0.49 | M-v | 1 | MPC | 97545 | 2002 $AP_{49}$ |
| 2002 $AU_{49}$ | 15.3 | 0.15 | 20060922 | 89.78083 | 282.23597 | 116.90643 | 2.92585 | 0.1019519 | 2.7007118 | 92 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97545 | 2002 $AU_{49}$ |
| 2002 $AA_{50}$ | 15.2 | 0.15 | 20060922 | 91.82624 | 57.88181 | 290.09540 | 9.34859 | 0.0867629 | 2.9921898 | 44 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87522 | 2002 $AA_{50}$ |
| 2002 $AC_{50}$ | 17.0 | 0.15 | 20060922 | 32.79819 | 309.17445 | 279.54153 | 4.57759 | 0.1124663 | 2.2834111 | 33 | 4 | 1997–2006 | 0.72 | M-v | 2 | MPC | 00129 | 2002 $AC_{50}$ |
| 2002 $AE_{51}$ | 15.1 | 0.15 | 20060922 | 354.79946 | 294.25309 | 126.16355 | 15.13553 | 0.1655766 | 3.1034921 | 66 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 89196 | 2002 $AE_{51}$ |
| 2002 $AT_{51}$ | 15.7 | 0.15 | 20060922 | 1.24050 | 278.73550 | 131.55636 | 5.28597 | 0.2892493 | 3.0435073 | 64 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 85395 | 2002 $AT_{51}$ |
| 2002 $AX_{51}$ | 15.8 | 0.15 | 20060922 | 280.81387 | 28.80131 | 137.32559 | 2.36330 | 0.1485519 | 3.0751421 | 61 | 2 | 2002–2005 | 0.52 | M-v | 4 | MPC | 89197 | 2002 $AX_{51}$ |
| 2002 $AY_{52}$ | 14.4 | 0.15 | 20060922 | 279.89589 | 225.24427 | 303.31755 | 7.14256 | 0.2181819 | 3.1106482 | 108 | 6 | 1991–2006 | 0.50 | M-v | 1 | MPC | 04190 | 2002 $AY_{52}$ |
| 2002 $AC_{53}$ | 14.3 | 0.15 | 20060922 | 325.47002 | 174.23261 | 280.57216 | 9.70957 | 0.0642496 | 3.1654144 | 74 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87522 | 2002 $AC_{53}$ |
| 2002 $AE_{53}$ | 15.3 | 0.15 | 20060922 | 5.58672 | 163.40719 | 282.02849 | 8.21197 | 0.0398961 | 2.9674655 | 49 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 90140 | 2002 $AE_{53}$ |
| 2002 $AZ_{54}$ | 14.9 | 0.15 | 20060922 | 89.90502 | 30.90609 | 291.71824 | 15.75165 | 0.0843485 | 3.1440119 | 45 | 2 | 2001–2005 | 0.57 | M-v | 3 | MPC | 90140 | 2002 $AZ_{54}$ |
| 2002 $AK_{55}$ | 16.1 | 0.15 | 20060922 | 351.65037 | 347.57071 | 115.98249 | 2.23845 | 0.1071572 | 2.9049175 | 67 | 4 | 2000–2006 | 0.48 | M-v | 3 | MPC | 90140 | 2002 $AK_{55}$ |
| 2002 $AS_{55}$ | 16.6 | 0.15 | 20060922 | 4.33497 | 355.58430 | 167.17677 | 2.59676 | 0.1231674 | 2.6141601 | 35 | 3 | 2001–2005 | 0.60 | M-v | 4 | MPC | 69104 | 2002 $AS_{55}$ |
| 2002 $AS_{56}$ | 15.4 | 0.15 | 20060922 | 308.81996 | 332.23764 | 131.94530 | 10.61476 | 0.0266455 | 3.1721869 | 42 | 6 | 1998–2006 | 0.64 | M-v | 0 | MPC | 89197 | 2002 $AS_{56}$ |
| 2002 $AR_{57}$ | 14.7 | 0.15 | 20060922 | 267.17345 | 55.89342 | 150.41117 | 6.24459 | 0.1705689 | 2.9913061 | 98 | 3 | 1997–2004 | 0.52 | M-v | 3 | MPC | 69105 | 2002 $AR_{57}$ |
| 2002 $AR_{58}$ | 16.7 | 0.15 | 20060922 | 108.42021 | 2.28031 | 131.65306 | 5.82347 | 0.1131848 | 2.3308681 | 81 | 2 | 2002–2006 | 0.54 | M-v | 3 | MPC | 00130 | 2002 $AR_{58}$ |
| 2002 $AD_{61}$ | 14.6 | 0.15 | 20060922 | 321.12569 | 160.47410 | 313.61411 | 15.33159 | 0.0154728 | 3.1798807 | 41 | 2 | 2002–2005 | 0.50 | M-v | 3 | MPC | 89197 | 2002 $AD_{61}$ |
| 2002 $AP_{61}$ | 14.7 | 0.15 | 20060922 | 255.88326 | 66.83465 | 169.90790 | 5.54381 | 0.1361009 | 2.9152524 | 108 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 97546 | 2002 $AP_{61}$ |
| 2002 $AD_{64}$ | 15.5 | 0.15 | 20060922 | 67.66876 | 236.44512 | 323.84123 | 8.81214 | 0.1556335 | 2.3521259 | 92 | 3 | 1996–2003 | 0.58 | M-v | 2 | MPC | 27805 | 2002 $AD_{64}$ |
| 2002 $AY_{65}$ | 16.0 | 0.15 | 20060922 | 1.57353 | 257.40344 | 162.25367 | 2.34326 | 0.1742513 | 3.0395226 | 40 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 85397 | 2002 $AY_{65}$ |
| 2002 $AP_{68}$ | 16.1 | 0.15 | 20060922 | 110.97743 | 352.52268 | 337.72740 | 1.10597 | 0.1001419 | 2.9503851 | 69 | 7 | 1995–2006 | 0.46 | M-v | 1 | MPC | 97546 | 2002 $AP_{68}$ |
| 2002 $AH_{69}$ | 16.4 | 0.15 | 20060922 | 300.40975 | 19.76091 | 149.06466 | 2.05285 | 0.1466356 | 3.1059975 | 32 | 3 | 2002–2005 | 0.42 | M-v | 3 | MPC | 89198 | 2002 $AH_{69}$ |
| 2002 $AQ_{69}$ | 15.2 | 0.15 | 20060922 | 2.96711 | 159.97357 | 270.54988 | 8.47067 | 0.1296627 | 2.8075295 | 50 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 85397 | 2002 $AQ_{69}$ |
| 2002 $AR_{70}$ | 15.2 | 0.15 | 20060922 | 231.63495 | 89.92392 | 77.83826 | 5.87052 | 0.1082307 | 3.2015254 | 67 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 87523 | 2002 $AR_{70}$ |
| 2002 $AV_{72}$ | 16.4 | 0.15 | 20060922 | 348.44963 | 108.11950 | 304.37572 | 5.33255 | 0.2081490 | 3.0727763 | 36 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 89199 | 2002 $AV_{72}$ |
| 2002 $AW_{72}$ | 15.9 | 0.15 | 20060922 | 321.85627 | 1.75683 | 91.64618 | 10.73528 | 0.0680798 | 3.0819296 | 38 | 4 | 2000–2006 | 0.57 | M-v | 0 | MPC | 03282 | 2002 $AW_{72}$ |
| 2002 $AT_{73}$ | 15.8 | 0.15 | 20060922 | 61.03006 | 268.46285 | 103.01820 | 12.52696 | 0.1572305 | 2.8885390 | 41 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 02063 | 2002 $AT_{73}$ |
| 2002 $AP_{74}$ | 14.5 | 0.15 | 20060922 | 186.21354 | 294.49180 | 302.48545 | 10.55444 | 0.0811519 | 3.0958864 | 42 | 5 | 1997–2005 | 0.69 | M-v | 1 | MPC | 87523 | 2002 $AP_{74}$ |
| 2002 $AL_{75}$ | 15.8 | 0.15 | 20060922 | 337.62651 | 355.98349 | 43.61981 | 1.28237 | 0.2245326 | 3.2289534 | 79 | 5 | 1977–2006 | 0.55 | M-v | 0 | MPC | 50586 | 2002 $AL_{75}$ |
| 2002 $AO_{75}$ | 15.6 | 0.15 | 20060922 | 4.08271 | 303.71714 | 102.90322 | 11.44372 | 0.1261693 | 3.0699187 | 55 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 02063 | 2002 $AO_{75}$ |
| 2002 $AZ_{76}$ | 15.8 | 0.15 | 20060922 | 342.47100 | 123.10409 | 310.07617 | 9.45171 | 0.0743829 | 3.0937708 | 33 | 3 | 2001–2006 | 0.26 | M-v | 2 | MPC | 85399 | 2002 $AZ_{76}$ |
| 2002 $AR_{77}$ | 15.4 | 0.15 | 20060922 | 291.43794 | 203.09807 | 294.24181 | 9.63487 | 0.0276261 | 3.0540104 | 60 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 85399 | 2002 $AR_{77}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $AP_{79}$ | 15.5 | 0.15 | 20060922 | 153.82646 | 192.00379 | 89.16013 | 3.89925 | 0.0982043 | 3.0056169 | 62 | 6 | 1998–2006 | 0.54 | M-v | 0 | MPC | 90140 | 2002 $AP_{79}$ |
| 2002 $AR_{79}$ | 15.8 | 0.15 | 20060922 | 353.52097 | 342.62633 | 69.21393 | 2.96274 | 0.0837019 | 3.1420620 | 82 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87523 | 2002 $AR_{79}$ |
| 2002 $AF_{81}$ | 15.2 | 0.15 | 20060922 | 311.29060 | 316.81815 | 138.68893 | 8.63903 | 0.1132151 | 3.0759867 | 45 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 87523 | 2002 $AF_{81}$ |
| 2002 $AY_{81}$ | 16.7 | 0.15 | 20060922 | 109.75495 | 228.40783 | 219.19802 | 5.03932 | 0.1990593 | 2.3860875 | 34 | 3 | 1997–2006 | 0.68 | M-v | 3 | MPC | 00132 | 2002 $AY_{81}$ |
| 2002 $AC_{82}$ | 15.7 | 0.15 | 20060922 | 352.02195 | 350.36326 | 135.36314 | 10.95942 | 0.1955864 | 2.7687797 | 38 | 4 | 1993–2006 | 0.57 | M-v | 1 | MPC | 48188 | 2002 $AC_{82}$ |
| 2002 $AG_{82}$ | 15.6 | 0.15 | 20060922 | 354.95158 | 342.86577 | 160.26396 | 3.79221 | 0.1906459 | 2.6647519 | 69 | 6 | 1998–2006 | 0.63 | M-v | 1 | MPC | 97547 | 2002 $AG_{82}$ |
| 2002 $AU_{82}$ | 16.0 | 0.15 | 20060922 | 98.63317 | 260.31497 | 177.09365 | 5.44864 | 0.1201508 | 2.4482703 | 67 | 5 | 1995–2006 | 0.74 | M-v | 1 | MPC | 97547 | 2002 $AU_{82}$ |
| 2002 $AM_{83}$ | 15.0 | 0.15 | 20060922 | 357.19472 | 286.22280 | 133.41992 | 9.91741 | 0.1035798 | 2.9954145 | 37 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 85400 | 2002 $AM_{83}$ |
| 2002 $AO_{83}$ | 14.8 | 0.15 | 20060922 | 325.97627 | 329.67701 | 125.37497 | 15.41789 | 0.2179644 | 3.0414105 | 41 | 4 | 1997–2006 | 0.48 | M-v | 3 | MPC | 03282 | 2002 $AO_{83}$ |
| 2002 $AV_{84}$ | 14.5 | 0.15 | 20060922 | 151.64577 | 121.25166 | 138.85769 | 11.81854 | 0.0254423 | 3.1817974 | 71 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 85400 | 2002 $AV_{84}$ |
| 2002 $AC_{85}$ | 15.0 | 0.15 | 20060922 | 307.98471 | 322.43478 | 153.74798 | 7.32410 | 0.1376765 | 3.0994045 | 54 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 85400 | 2002 $AC_{85}$ |
| 2002 $AP_{86}$ | 15.0 | 0.15 | 20060922 | 178.30711 | 110.05384 | 140.56139 | 10.41607 | 0.0350981 | 3.1072720 | 41 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 03282 | 2002 $AP_{86}$ |
| 2002 $AT_{86}$ | 15.0 | 0.15 | 20060922 | 283.37630 | 259.42442 | 252.40709 | 7.97699 | 0.0667419 | 3.0725866 | 31 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 00133 | 2002 $AT_{86}$ |
| 2002 $AZ_{87}$ | 17.1 | 0.15 | 20060922 | 160.50304 | 236.09223 | 136.07207 | 3.01872 | 0.2239611 | 2.4191414 | 31 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 94498 | 2002 $AZ_{87}$ |
| 2002 $AP_{88}$ | 16.7 | 0.15 | 20060922 | 142.88624 | 203.38081 | 249.46537 | 5.92109 | 0.0691509 | 2.2941884 | 41 | 3 | 2000–2004 | 0.71 | M-v | 3 | MPC | 72460 | 2002 $AP_{88}$ |
| 2002 $AY_{88}$ | 17.0 | 0.15 | 20060922 | 53.81748 | 17.03404 | 168.01184 | 4.03636 | 0.2085211 | 2.3681832 | 77 | 2 | 2002–2006 | 0.62 | M-v | 3 | MPC | 00133 | 2002 $AY_{88}$ |
| 2002 $AC_{89}$ | 14.7 | 0.15 | 20060922 | 8.70212 | 262.97960 | 126.86847 | 26.73451 | 0.2211827 | 3.1202048 | 54 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 89201 | 2002 $AC_{89}$ |
| 2002 $AH_{91}$ | 17.0 | 0.15 | 20060922 | 53.93022 | 20.15116 | 165.92709 | 3.04927 | 0.1721943 | 2.3515518 | 75 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 00133 | 2002 $AH_{91}$ |
| 2002 $AE_{92}$ | 16.7 | 0.15 | 20060922 | 46.76792 | 26.87715 | 209.47437 | 8.07040 | 0.1615867 | 2.3160253 | 30 | 2 | 2002–2003 | 0.31 | M-v | 3 | MPC | 89201 | 2002 $AE_{92}$ |
| 2002 $AQ_{93}$ | 15.8 | 0.15 | 20060922 | 336.47523 | 77.87822 | 341.40273 | 0.52590 | 0.1653920 | 3.1828262 | 82 | 4 | 2000–2006 | 0.43 | M-v | 0 | MPC | 04190 | 2002 $AQ_{93}$ |
| 2002 $AR_{93}$ | 17.3 | 0.15 | 20060922 | 116.07662 | 107.50479 | 326.49192 | 0.60869 | 0.1533656 | 2.4224558 | 50 | 4 | 1995–2006 | 0.41 | M-v | 0 | MPC | 02063 | 2002 $AR_{93}$ |
| 2002 $AA_{94}$ | 15.5 | 0.15 | 20060922 | 260.20008 | 173.68120 | 351.66702 | 4.45931 | 0.1241061 | 3.1450217 | 29 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 03283 | 2002 $AA_{94}$ |
| 2002 $AS_{95}$ | 15.8 | 0.15 | 20060922 | 313.05885 | 15.74270 | 108.03313 | 11.84030 | 0.0532188 | 3.0233756 | 49 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 87523 | 2002 $AS_{95}$ |
| 2002 $AX_{96}$ | 17.2 | 0.15 | 20060922 | 30.81194 | 230.13639 | 301.93615 | 9.74292 | 0.1736306 | 2.4799802 | 35 | 2 | 2002–2006 | 0.41 | M-v | 5 | MPC | 94500 | 2002 $AX_{96}$ |
| 2002 $AG_{97}$ | 17.2 | 0.15 | 20060922 | 112.75727 | 25.27028 | 81.52039 | 2.25854 | 0.1488919 | 2.3584809 | 63 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 02064 | 2002 $AG_{97}$ |
| 2002 $AN_{97}$ | 15.9 | 0.15 | 20060922 | 65.49844 | 305.75229 | 94.11581 | 6.24591 | 0.1673720 | 2.7661759 | 51 | 2 | 2002–2005 | 0.60 | M-v | 4 | MPC | 89201 | 2002 $AN_{97}$ |
| 2002 $AX_{98}$ | 14.8 | 0.15 | 20060922 | 94.75263 | 241.67461 | 99.41425 | 9.86348 | 0.1072164 | 3.0025319 | 78 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 97548 | 2002 $AX_{98}$ |
| 2002 $AT_{99}$ | 14.5 | 0.15 | 20060922 | 61.77449 | 28.22423 | 324.40707 | 8.30889 | 0.0575634 | 3.1689758 | 68 | 6 | 1999–2006 | 0.60 | M-v | 1 | MPC | 87523 | 2002 $AT_{99}$ |
| 2002 $AH_{100}$ | 16.4 | 0.15 | 20060922 | 20.37466 | 243.40795 | 315.75607 | 7.75252 | 0.1636126 | 2.4460446 | 89 | 3 | 1996–2006 | 0.56 | M-v | 2 | MPC | 02064 | 2002 $AH_{100}$ |
| 2002 $AU_{100}$ | 15.9 | 0.15 | 20060922 | 2.71643 | 137.64606 | 78.86157 | 4.31150 | 0.1195633 | 2.4401844 | 101 | 4 | 1993–2006 | 0.56 | M-v | 2 | MPC | 97548 | 2002 $AU_{100}$ |
| 2002 $AV_{100}$ | 16.0 | 0.15 | 20060922 | 30.95239 | 18.74214 | 92.27919 | 6.23199 | 0.1028729 | 2.6956635 | 46 | 2 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03283 | 2002 $AV_{100}$ |
| 2002 $AH_{101}$ | 16.6 | 0.15 | 20060922 | 65.96719 | 97.64011 | 336.55914 | 4.66717 | 0.0782013 | 2.6396521 | 28 | 5 | 1992–2006 | 0.29 | M-v | 0 | MPC | 04190 | 2002 $AH_{101}$ |
| 2002 $AJ_{101}$ | 15.5 | 0.15 | 20060922 | 343.94976 | 181.69636 | 315.41124 | 8.18395 | 0.0418212 | 2.7641372 | 60 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 03283 | 2002 $AJ_{101}$ |
| 2002 $AP_{101}$ | 15.4 | 0.15 | 20060922 | 350.02552 | 319.80025 | 101.32722 | 3.71480 | 0.0763290 | 3.1309875 | 69 | 6 | 1999–2006 | 0.56 | M-v | 0 | MPC | 87523 | 2002 $AP_{101}$ |
| 2002 $AX_{101}$ | 16.5 | 0.15 | 20060922 | 335.52623 | 191.96822 | 325.20878 | 3.39657 | 0.1423624 | 2.7591442 | 46 | 4 | 1993–2006 | 0.43 | M-v | 1 | MPC | 04190 | 2002 $AX_{101}$ |
| 2002 $AN_{103}$ | 15.3 | 0.15 | 20060922 | 280.14211 | 176.84566 | 354.28508 | 3.56291 | 0.2268459 | 3.0746069 | 73 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 85402 | 2002 $AN_{103}$ |
| 2002 $AQ_{103}$ | 17.2 | 0.15 | 20060922 | 76.13226 | 61.08557 | 79.24928 | 3.51401 | 0.1568802 | 2.4093521 | 38 | 3 | 1995–2006 | 0.55 | M-v | 3 | MPC | 02064 | 2002 $AQ_{103}$ |
| 2002 $AF_{104}$ | 16.8 | 0.15 | 20060922 | 127.75372 | 157.31262 | 300.47932 | 3.68992 | 0.0966614 | 2.3353014 | 56 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 02064 | 2002 $AF_{104}$ |
| 2002 $AK_{104}$ | 16.5 | 0.15 | 20060922 | 15.85360 | 311.38779 | 118.73238 | 3.05282 | 0.0642643 | 2.9493833 | 57 | 6 | 1997–2006 | 0.57 | M-v | 0 | MPC | 97549 | 2002 $AK_{104}$ |
| 2002 $AA_{105}$ | 15.5 | 0.15 | 20060922 | 275.79447 | 230.80582 | 312.48517 | 3.37348 | 0.1665497 | 2.9970461 | 31 | 3 | 1997–2005 | 0.66 | M-v | 4 | MPC | 94506 | 2002 $AA_{105}$ |
| 2002 $AP_{105}$ | 14.7 | 0.15 | 20060922 | 262.19517 | 216.54356 | 302.27387 | 5.99274 | 0.0882420 | 3.1987084 | 56 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87523 | 2002 $AP_{105}$ |
| 2002 $AK_{107}$ | 15.5 | 0.15 | 20060922 | 12.38512 | 305.28319 | 94.14821 | 3.12102 | 0.1430886 | 3.1244472 | 40 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 94508 | 2002 $AK_{107}$ |
| 2002 $AJ_{108}$ | 15.9 | 0.15 | 20060922 | 277.27503 | 198.74399 | 345.86300 | 1.68213 | 0.1300011 | 2.9897788 | 39 | 4 | 1997–2006 | 0.61 | M-v | 4 | MPC | 94509 | 2002 $AJ_{108}$ |
| 2002 $AB_{109}$ | 15.6 | 0.15 | 20060922 | 61.93634 | 351.29145 | 41.68686 | 2.54190 | 0.0930643 | 2.8971017 | 101 | 6 | 1996–2006 | 0.59 | M-v | 1 | MPC | 97549 | 2002 $AB_{109}$ |
| 2002 $AQ_{109}$ | 15.5 | 0.15 | 20060922 | 349.02053 | 349.97373 | 101.69935 | 2.88854 | 0.1141454 | 3.0121837 | 68 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 85403 | 2002 $AQ_{109}$ |
| 2002 $AY_{111}$ | 15.0 | 0.15 | 20060922 | 252.74615 | 208.94567 | 324.63505 | 5.14063 | 0.1002580 | 3.2274013 | 74 | 6 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87523 | 2002 $AY_{111}$ |
| 2002 $AC_{113}$ | 17.4 | 0.15 | 20060922 | 127.18050 | 145.59815 | 335.07552 | 1.18272 | 0.2436770 | 2.2938472 | 90 | 3 | 2000–2004 | 0.61 | M-v | 2 | MPC | 69119 | 2002 $AC_{113}$ |
| 2002 $AO_{114}$ | 15.1 | 0.15 | 20060922 | 267.42071 | 69.04725 | 93.85150 | 4.45038 | 0.1182051 | 3.1732834 | 60 | 4 | 2002–2006 | 0.51 | M-v | 0 | MPC | 85403 | 2002 $AO_{114}$ |
| 2002 $AO_{115}$ | 14.7 | 0.15 | 20060922 | 305.22937 | 156.08950 | 316.65179 | 9.55477 | 0.0777971 | 3.2168209 | 65 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 89204 | 2002 $AO_{115}$ |
| 2002 $AD_{116}$ | 14.4 | 0.15 | 20060922 | 105.66037 | 188.82497 | 117.41355 | 19.81851 | 0.0890889 | 3.2465969 | 56 | 6 | 2000–2006 | 0.59 | M-v | 0 | MPC | 87524 | 2002 $AD_{116}$ |
| 2002 $AH_{121}$ | 15.2 | 0.15 | 20060922 | 293.35256 | 141.20162 | 2.50328 | 2.59299 | 0.2368973 | 3.1475562 | 123 | 4 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04190 | 2002 $AH_{121}$ |
| 2002 $AO_{123}$ | 14.7 | 0.15 | 20060922 | 305.87628 | 349.23998 | 128.02320 | 20.59821 | 0.1502116 | 3.1930717 | 58 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 85404 | 2002 $AO_{123}$ |
| 2002 $AD_{124}$ | 14.8 | 0.15 | 20060922 | 340.76256 | 128.53725 | 332.64316 | 15.86823 | 0.1553517 | 3.0805874 | 100 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 87524 | 2002 $AD_{124}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $AK_{124}$ | 16.2 | 0.15 | 20060922 | 56.80062 | 121.50455 | 112.22249 | 8.81732 | 0.1492469 | 2.2337101 | 46 | 3 | 2002–2004 | 0.53 | M-v | 2 | MPC | 52887 | 2002 $AK_{124}$ |
| 2002 $AP_{124}$ | 17.4 | 0.15 | 20060922 | 84.04288 | 120.41203 | 29.99011 | 2.79427 | 0.1446064 | 2.3767865 | 43 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 00134 | 2002 $AP_{124}$ |
| 2002 $AR_{124}$ | 15.4 | 0.15 | 20060922 | 7.75672 | 126.01725 | 332.91064 | 6.61351 | 0.1157773 | 2.9078210 | 90 | 4 | 2000–2006 | 0.52 | M-v | 3 | MPC | 97550 | 2002 $AR_{124}$ |
| 2002 $AE_{125}$ | 15.8 | 0.15 | 20060922 | 338.46312 | 68.93696 | 138.83542 | 14.86142 | 0.2751167 | 2.7069017 | 86 | 4 | 1998–2003 | 0.52 | M-v | 1 | MPC | 49959 | 2002 $AE_{125}$ |
| 2002 $AH_{125}$ | 15.2 | 0.15 | 20060922 | 292.51797 | 20.21154 | 138.82349 | 14.57909 | 0.2610426 | 3.1633060 | 80 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 69125 | 2002 $AH_{125}$ |
| 2002 $AD_{127}$ | 15.8 | 0.15 | 20060922 | 354.75945 | 248.42210 | 161.19262 | 2.70796 | 0.1387001 | 3.1494249 | 61 | 4 | 2000–2006 | 0.36 | M-v | 0 | MPC | 89205 | 2002 $AD_{127}$ |
| 2002 $AU_{128}$ | 16.0 | 0.15 | 20060922 | 74.09355 | 2.57097 | 320.73519 | 20.63402 | 0.0738654 | 1.9254399 | 159 | 4 | 1995–2005 | 0.50 | M-v | 1 | MPC | 77583 | 2002 $AU_{128}$ |
| 2002 $AJ_{129}$ | 18.5 | 0.15 | 20060922 | 352.51352 | 210.86074 | 138.19617 | 15.50156 | 0.9147938 | 1.3711485 | 122 | 3 | 2002–2006 | 0.73 | M-v | 2 | MPC | 77584 | 2002 $AJ_{129}$ |
| 2002 $AR_{129}$ | 17.8 | 0.15 | 20060922 | 334.77456 | 157.19767 | 4.55042 | 19.33493 | 0.5739868 | 2.8584368 | 45 | 3 | 2002–2006 | 0.59 | M-v | 0 | MPC | 52887 | 2002 $AR_{129}$ |
| 2002 $AU_{129}$ | 15.3 | 0.15 | 20060922 | 38.51013 | 83.36340 | 349.13324 | 24.65876 | 0.1862571 | 2.7155622 | 81 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 97550 | 2002 $AU_{129}$ |
| 2002 $AZ_{129}$ | 17.0 | 0.15 | 20060922 | 270.14598 | 40.41438 | 56.50302 | 22.69641 | 0.0578139 | 1.9559097 | 39 | 3 | 2001–2006 | 0.59 | M-v | 1 | MPC | 75270 | 2002 $AZ_{129}$ |
| 2002 $AB_{130}$ | 16.9 | 0.15 | 20060922 | 349.68648 | 42.38225 | 344.22613 | 20.74924 | 0.0827926 | 1.9153867 | 72 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 75270 | 2002 $AB_{130}$ |
| 2002 $AD_{130}$ | 17.3 | 0.15 | 20060922 | 235.71800 | 68.43437 | 104.54648 | 22.14631 | 0.0498686 | 1.8972670 | 57 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 75270 | 2002 $AD_{130}$ |
| 2002 $AE_{130}$ | 17.1 | 0.15 | 20060922 | 298.80851 | 108.47253 | 322.91918 | 16.91998 | 0.1156596 | 1.9539182 | 70 | 2 | 2001–2006 | 0.55 | M-v | 3 | MPC | 03284 | 2002 $AE_{130}$ |
| 2002 $AR_{131}$ | 14.0 | 0.15 | 20060922 | 335.40908 | 117.15288 | 268.23539 | 20.54390 | 0.1948492 | 3.1166548 | 63 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04190 | 2002 $AR_{131}$ |
| 2002 $AE_{132}$ | 15.4 | 0.15 | 20060922 | 279.21888 | 31.52064 | 102.07801 | 10.97518 | 0.0588052 | 3.0917706 | 37 | 6 | 1998–2006 | 0.56 | M-v | 1 | MPC | 89205 | 2002 $AE_{132}$ |
| 2002 $AH_{132}$ | 15.6 | 0.15 | 20060922 | 309.32844 | 29.27091 | 96.57343 | 3.91205 | 0.2331426 | 3.0082148 | 57 | 4 | 1992–2006 | 0.54 | M-v | 3 | MPC | 27407 | 2002 $AH_{132}$ |
| 2002 $AY_{132}$ | 15.2 | 0.15 | 20060922 | 279.14111 | 45.34530 | 86.29810 | 10.33890 | 0.0587363 | 3.1746062 | 34 | 4 | 2000–2006 | 0.53 | M-v | 0 | MPC | 89206 | 2002 $AY_{132}$ |
| 2002 $AZ_{132}$ | 16.6 | 0.15 | 20060922 | 43.19364 | 132.89868 | 300.41802 | 6.20203 | 0.1647257 | 2.7227033 | 57 | 4 | 1996–2005 | 0.60 | M-v | 0 | MPC | 97550 | 2002 $AZ_{132}$ |
| 2002 $AJ_{133}$ | 15.9 | 0.15 | 20060922 | 330.54611 | 118.85659 | 43.52572 | 4.00655 | 0.1289010 | 2.7401473 | 78 | 4 | 1998–2006 | 0.41 | M-v | 1 | MPC | 97550 | 2002 $AJ_{133}$ |
| 2002 $AF_{134}$ | 16.4 | 0.15 | 20060922 | 353.82384 | 235.46821 | 165.99649 | 0.46265 | 0.1802004 | 3.1396307 | 54 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 85406 | 2002 $AF_{134}$ |
| 2002 $AU_{135}$ | 15.8 | 0.15 | 20060922 | 9.68259 | 338.32104 | 119.29366 | 10.75444 | 0.1611068 | 2.7879130 | 28 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 03284 | 2002 $AU_{135}$ |
| 2002 $AX_{135}$ | 13.8 | 0.15 | 20060922 | 205.99424 | 102.89676 | 114.86514 | 22.17698 | 0.2427317 | 3.2378563 | 72 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 66262 | 2002 $AX_{135}$ |
| 2002 $AB_{136}$ | 15.8 | 0.15 | 20060922 | 44.39905 | 259.44523 | 125.98975 | 10.35989 | 0.0691573 | 2.9712062 | 43 | 4 | 1995–2005 | 0.63 | M-v | 3 | MPC | 85406 | 2002 $AB_{136}$ |
| 2002 $AZ_{136}$ | 15.5 | 0.15 | 20060922 | 92.51643 | 187.07542 | 129.08510 | 2.53883 | 0.1250961 | 3.1407471 | 72 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97551 | 2002 $AZ_{136}$ |
| 2002 $AG_{137}$ | 17.6 | 0.15 | 20060922 | 139.45626 | 300.44683 | 123.79884 | 1.87987 | 0.1622309 | 2.3673204 | 50 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 02065 | 2002 $AG_{137}$ |
| 2002 $AP_{137}$ | 17.2 | 0.15 | 20060922 | 106.91781 | 122.79079 | 7.91027 | 3.63769 | 0.1069135 | 2.3394303 | 50 | 4 | 1997–2006 | 0.64 | M-v | 1 | MPC | 02065 | 2002 $AP_{137}$ |
| 2002 $AV_{137}$ | 15.3 | 0.15 | 20060922 | 326.11263 | 327.67740 | 123.13203 | 11.27566 | 0.0925793 | 3.0746251 | 38 | 5 | 1998–2006 | 0.62 | M-v | 0 | MPC | 94522 | 2002 $AV_{137}$ |
| 2002 $AD_{138}$ | 14.8 | 0.15 | 20060922 | 120.51815 | 18.38474 | 282.27403 | 11.66245 | 0.0468467 | 3.0637253 | 32 | 5 | 1999–2006 | 0.65 | M-v | 1 | MPC | 90142 | 2002 $AD_{138}$ |
| 2002 $AX_{138}$ | 15.8 | 0.15 | 20060922 | 111.28170 | 226.89459 | 130.17496 | 5.85806 | 0.0799406 | 2.7600400 | 54 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97551 | 2002 $AX_{138}$ |
| 2002 $AO_{139}$ | 15.2 | 0.15 | 20060922 | 24.78406 | 297.18683 | 107.69477 | 10.41989 | 0.1144609 | 3.0900001 | 33 | 3 | 1999–2005 | 0.80 | M-v | 2 | MPC | 85407 | 2002 $AO_{139}$ |
| 2002 $AF_{140}$ | 15.7 | 0.15 | 20060922 | 74.83819 | 125.55005 | 261.29683 | 3.73056 | 0.0895011 | 2.7027297 | 78 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 89207 | 2002 $AF_{140}$ |
| 2002 $AW_{140}$ | 14.9 | 0.15 | 20060922 | 359.79229 | 132.89926 | 262.62992 | 7.94042 | 0.0622903 | 3.1827015 | 41 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 87524 | 2002 $AW_{140}$ |
| 2002 $AD_{142}$ | 16.7 | 0.15 | 20060922 | 155.88959 | 197.42496 | 170.36726 | 2.48604 | 0.2120861 | 2.4656747 | 36 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 03285 | 2002 $AD_{142}$ |
| 2002 $AN_{142}$ | 16.5 | 0.15 | 20060922 | 11.95059 | 106.61158 | 285.75476 | 7.85875 | 0.1411076 | 3.1117933 | 28 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 89207 | 2002 $AN_{142}$ |
| 2002 $AU_{142}$ | 16.3 | 0.15 | 20060922 | 2.42695 | 307.59624 | 120.90944 | 11.22279 | 0.0876777 | 2.9976595 | 34 | 3 | 2001–2005 | 0.66 | M-v | 3 | MPC | 89208 | 2002 $AU_{142}$ |
| 2002 $AM_{144}$ | 15.4 | 0.15 | 20060922 | 358.60957 | 287.23297 | 117.41200 | 18.25377 | 0.1387455 | 3.1529639 | 31 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 85407 | 2002 $AM_{144}$ |
| 2002 $AS_{145}$ | 16.2 | 0.15 | 20060922 | 138.90265 | 56.68741 | 269.50151 | 2.62138 | 0.0978560 | 2.8001372 | 49 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 94526 | 2002 $AS_{145}$ |
| 2002 $AO_{146}$ | 15.8 | 0.15 | 20060922 | 128.41838 | 75.96490 | 268.19323 | 4.98924 | 0.0452831 | 2.7771156 | 49 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 97551 | 2002 $AO_{146}$ |
| 2002 $AQ_{146}$ | 16.0 | 0.15 | 20060922 | 204.24447 | 162.26611 | 116.74595 | 12.47406 | 0.1554429 | 2.7647672 | 48 | 5 | 2002–2006 | 0.50 | M-v | 0 | MPC | 97551 | 2002 $AQ_{146}$ |
| 2002 $AH_{147}$ | 15.5 | 0.15 | 20060922 | 314.77903 | 237.67890 | 316.03971 | 7.71965 | 0.1562637 | 2.6769775 | 29 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 85407 | 2002 $AH_{147}$ |
| 2002 $AV_{147}$ | 15.9 | 0.15 | 20060922 | 286.41211 | 141.97221 | 8.78344 | 3.34701 | 0.1264985 | 3.1159590 | 24 | 3 | 1997–2005 | 0.53 | M-v | 4 | MPC | 03285 | 2002 $AV_{147}$ |
| 2002 $AZ_{147}$ | 15.6 | 0.15 | 20060922 | 276.43820 | 108.15651 | 55.34598 | 11.78175 | 0.1258467 | 3.0344069 | 46 | 4 | 1995–2006 | 0.42 | M-v | 0 | MPC | 47150 | 2002 $AZ_{147}$ |
| 2002 $AA_{148}$ | 15.8 | 0.15 | 20060922 | 14.39521 | 345.22200 | 55.66715 | 11.79483 | 0.1364483 | 3.0334475 | 36 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 85407 | 2002 $AA_{148}$ |
| 2002 $AG_{148}$ | 15.4 | 0.15 | 20060922 | 8.66156 | 299.78665 | 88.24094 | 18.63712 | 0.2524645 | 3.1188141 | 44 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 65289 | 2002 $AG_{148}$ |
| 2002 $AF_{149}$ | 16.0 | 0.15 | 20060922 | 59.90549 | 78.18144 | 310.17439 | 6.40293 | 0.2348793 | 2.7827092 | 72 | 3 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97551 | 2002 $AF_{149}$ |
| 2002 $AL_{149}$ | 15.7 | 0.15 | 20060922 | 212.16003 | 126.39421 | 107.18051 | 11.30626 | 0.0199092 | 2.9764405 | 57 | 6 | 2000–2006 | 0.56 | M-v | 0 | MPC | 87524 | 2002 $AL_{149}$ |
| 2002 $AN_{150}$ | 16.4 | 0.15 | 20060922 | 28.58072 | 117.06135 | 326.10275 | 4.18917 | 0.1360099 | 2.7862724 | 39 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 94528 | 2002 $AN_{150}$ |
| 2002 $AQ_{150}$ | 15.2 | 0.15 | 20060922 | 21.22183 | 100.23695 | 316.33654 | 14.94573 | 0.0863211 | 3.0661573 | 49 | 2 | 2002–2005 | 0.54 | M-v | 3 | MPC | 85408 | 2002 $AQ_{150}$ |
| 2002 $AS_{151}$ | 15.1 | 0.15 | 20060922 | 270.90429 | 103.17588 | 95.92002 | 3.02158 | 0.1415968 | 3.0243626 | 99 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 97551 | 2002 $AS_{151}$ |
| 2002 $AJ_{153}$ | 14.9 | 0.15 | 20060922 | 1.39050 | 65.20286 | 324.84374 | 24.76225 | 0.4481310 | 3.1215157 | 57 | 2 | 2002–2006 | 0.53 | M-v | 2 | MPC | 03285 | 2002 $AJ_{153}$ |
| 2002 $AU_{153}$ | 15.6 | 0.15 | 20060922 | 352.74423 | 136.20136 | 357.10731 | 4.48965 | 0.0519162 | 2.8567207 | 51 | 3 | 2002–2006 | 0.56 | M-v | 4 | MPC | 03286 | 2002 $AU_{153}$ |
| 2002 $AA_{155}$ | 15.7 | 0.15 | 20060922 | 98.70016 | 68.52118 | 127.43613 | 7.37038 | 0.0704828 | 2.2254231 | 73 | 4 | 1999–2005 | 0.64 | M-v | 2 | MPC | 74130 | 2002 $AA_{155}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $AG_{158}$ | 16.2 | 0.15 | 20060922 | 81.92637 | 285.76351 | 144.15167 | 7.99559 | 0.1745614 | 2.6132607 | 30 | 3 | 2000–2006 | 0.71 | M-v | 3 | MPC | 03286 | 2002 $AG_{158}$ |
| 2002 $AT_{158}$ | 15.9 | 0.15 | 20060922 | 296.77485 | 291.81027 | 225.47710 | 3.31035 | 0.1412417 | 3.0498502 | 35 | 2 | 2002–2005 | 0.50 | M-v | 4 | MPC | 89210 | 2002 $AT_{158}$ |
| 2002 $AX_{158}$ | 15.2 | 0.15 | 20060922 | 289.53552 | 335.93811 | 160.35708 | 6.21504 | 0.1157577 | 3.2138323 | 76 | 6 | 1993–2006 | 0.58 | M-v | 1 | MPC | 03286 | 2002 $AX_{158}$ |
| 2002 $AE_{159}$ | 15.9 | 0.15 | 20060922 | 7.63094 | 274.11333 | 166.44303 | 3.10377 | 0.1048509 | 2.9907384 | 66 | 3 | 2002–2005 | 0.49 | M-v | 3 | MPC | 90142 | 2002 $AE_{159}$ |
| 2002 $AK_{159}$ | 16.7 | 0.15 | 20060922 | 266.36506 | 211.44274 | 144.74890 | 5.57381 | 0.2122931 | 2.2141490 | 27 | 4 | 1996–2006 | 0.61 | M-v | 1 | MPC | 02066 | 2002 $AK_{159}$ |
| 2002 $AG_{160}$ | 17.1 | 0.15 | 20060922 | 88.98097 | 330.09385 | 171.84883 | 1.54012 | 0.1404207 | 2.3839725 | 65 | 3 | 2002–2006 | 0.69 | M-v | 3 | MPC | 02066 | 2002 $AG_{160}$ |
| 2002 $AG_{161}$ | 14.8 | 0.15 | 20060922 | 296.45437 | 3.78348 | 134.98882 | 9.44606 | 0.1841995 | 3.1526679 | 130 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 87525 | 2002 $AG_{161}$ |
| 2002 $AT_{162}$ | 16.3 | 0.15 | 20060922 | 57.57264 | 4.99195 | 170.92430 | 3.80502 | 0.1470785 | 2.4079713 | 89 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 00138 | 2002 $AT_{162}$ |
| 2002 $AW_{162}$ | 15.1 | 0.15 | 20060922 | 356.36656 | 158.00247 | 298.32815 | 9.17660 | 0.0858575 | 3.0061723 | 75 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 90142 | 2002 $AW_{162}$ |
| 2002 $AF_{164}$ | 15.0 | 0.15 | 20060922 | 355.98317 | 137.06027 | 302.93137 | 12.29830 | 0.0894471 | 3.1263784 | 40 | 3 | 2000–2005 | 0.58 | M-v | 2 | MPC | 04191 | 2002 $AF_{164}$ |
| 2002 $AG_{164}$ | 15.5 | 0.15 | 20060922 | 88.42865 | 275.38736 | 147.10079 | 14.76474 | 0.0690364 | 2.6899892 | 74 | 4 | 1995–2004 | 0.72 | M-v | 1 | MPC | 70328 | 2002 $AG_{164}$ |
| 2002 $AO_{164}$ | 16.8 | 0.15 | 20060922 | 132.55075 | 230.82551 | 239.23126 | 0.95867 | 0.1230427 | 2.3302227 | 77 | 3 | 2002–2006 | 0.63 | M-v | 3 | MPC | 02067 | 2002 $AO_{164}$ |
| 2002 $AB_{165}$ | 15.2 | 0.15 | 20060922 | 65.23332 | 56.06291 | 299.77880 | 11.91084 | 0.1127664 | 3.1682707 | 67 | 4 | 1999–2005 | 0.57 | M-v | 1 | MPC | 90142 | 2002 $AB_{165}$ |
| 2002 $AT_{165}$ | 15.6 | 0.15 | 20060922 | 154.66558 | 188.18973 | 147.44441 | 5.81057 | 0.0470213 | 2.7931782 | 44 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 97553 | 2002 $AT_{165}$ |
| 2002 $AX_{165}$ | 14.8 | 0.15 | 20060922 | 292.37587 | 57.28944 | 150.39128 | 6.83205 | 0.1447393 | 2.8743685 | 94 | 4 | 2002–2006 | 0.49 | M-v | 2 | MPC | 94534 | 2002 $AX_{165}$ |
| 2002 $AE_{166}$ | 13.2 | 0.15 | 20060922 | 160.87147 | 203.12035 | 286.29097 | 6.02046 | 0.0356849 | 5.1390762 | 34 | 3 | 2002–2004 | 0.59 | M-v | 2 | MPC | 47154 | 2002 $AE_{166}$ |
| 2002 $AC_{168}$ | 16.8 | 0.15 | 20060922 | 105.18944 | 348.21581 | 134.77328 | 2.01407 | 0.1257739 | 2.3710152 | 84 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 00139 | 2002 $AC_{168}$ |
| 2002 $AD_{168}$ | 16.8 | 0.15 | 20060922 | 58.01654 | 67.62224 | 129.17228 | 6.96707 | 0.0496098 | 2.3062806 | 50 | 2 | 2002–2006 | 0.63 | M-v | 4 | MPC | 03286 | 2002 $AD_{168}$ |
| 2002 $AM_{169}$ | 16.1 | 0.15 | 20060922 | 289.25977 | 133.13717 | 358.57155 | 0.75240 | 0.1609821 | 3.1273794 | 45 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 94534 | 2002 $AM_{169}$ |
| 2002 $AZ_{169}$ | 15.1 | 0.15 | 20060922 | 46.22840 | 258.38576 | 104.85717 | 14.89160 | 0.0357423 | 3.1688199 | 44 | 5 | 1998–2006 | 0.59 | M-v | 0 | MPC | 87525 | 2002 $AZ_{169}$ |
| 2002 $AO_{170}$ | 15.2 | 0.15 | 20060922 | 57.84887 | 264.57373 | 106.34996 | 11.42552 | 0.1272264 | 3.0022116 | 31 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 89211 | 2002 $AO_{170}$ |
| 2002 $AD_{171}$ | 16.5 | 0.15 | 20060922 | 76.44251 | 293.46720 | 110.03671 | 7.54951 | 0.0700988 | 2.7584880 | 36 | 4 | 2000–2005 | 0.68 | M-v | 0 | MPC | 85411 | 2002 $AD_{171}$ |
| 2002 $AE_{171}$ | 15.5 | 0.15 | 20060922 | 325.70778 | 143.99160 | 306.29065 | 9.41542 | 0.1318836 | 3.1411162 | 43 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 89211 | 2002 $AE_{171}$ |
| 2002 $AY_{171}$ | 15.2 | 0.15 | 20060922 | 357.39068 | 57.07737 | 323.44319 | 9.26674 | 0.1237047 | 3.3879731 | 48 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 87525 | 2002 $AY_{171}$ |
| 2002 $AA_{172}$ | 15.7 | 0.15 | 20060922 | 341.90274 | 108.33846 | 326.99644 | 3.73088 | 0.1306864 | 3.1198232 | 52 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 87525 | 2002 $AA_{172}$ |
| 2002 $AB_{172}$ | 15.9 | 0.15 | 20060922 | 319.30273 | 23.63833 | 83.26307 | 1.95489 | 0.1470970 | 3.1020681 | 55 | 5 | 1995–2006 | 0.38 | M-v | 0 | MPC | 87525 | 2002 $AB_{172}$ |
| 2002 $AS_{172}$ | 16.2 | 0.15 | 20060922 | 155.38083 | 277.29773 | 107.94164 | 10.18974 | 0.2493066 | 2.4189485 | 59 | 3 | 2001–2005 | 0.51 | M-v | 2 | MPC | 90143 | 2002 $AS_{172}$ |
| 2002 $AB_{173}$ | 15.7 | 0.15 | 20060922 | 321.10188 | 131.22215 | 347.36689 | 0.73941 | 0.1194420 | 3.0415327 | 62 | 6 | 2000–2006 | 0.43 | M-v | 0 | MPC | 97553 | 2002 $AB_{173}$ |
| 2002 $AC_{174}$ | 17.3 | 0.15 | 20060922 | 67.48415 | 118.01241 | 59.74727 | 2.03150 | 0.1491087 | 2.3443009 | 45 | 3 | 1995–2006 | 0.62 | M-v | 2 | MPC | 00140 | 2002 $AC_{174}$ |
| 2002 $AZ_{174}$ | 15.1 | 0.15 | 20060922 | 261.07795 | 131.89733 | 114.28431 | 13.47758 | 0.1633873 | 2.7675131 | 38 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 85412 | 2002 $AZ_{174}$ |
| 2002 $AC_{176}$ | 15.7 | 0.15 | 20060922 | 269.06420 | 225.36454 | 317.26118 | 2.55175 | 0.0620558 | 3.0477532 | 61 | 6 | 1994–2006 | 0.55 | M-v | 1 | MPC | 87525 | 2002 $AC_{176}$ |
| 2002 $AD_{176}$ | 16.4 | 0.15 | 20060922 | 83.77236 | 98.95934 | 112.99991 | 6.92760 | 0.0764370 | 2.1873456 | 52 | 3 | 2002–2004 | 0.48 | M-v | 2 | MPC | 49963 | 2002 $AD_{176}$ |
| 2002 $AL_{176}$ | 16.5 | 0.15 | 20060922 | 57.12789 | 53.37716 | 121.36729 | 6.51579 | 0.1737188 | 2.4072368 | 54 | 2 | 2002–2006 | 0.59 | M-v | 3 | MPC | 03287 | 2002 $AL_{176}$ |
| 2002 $AG_{177}$ | 15.1 | 0.15 | 20060922 | 296.39758 | 150.25727 | 4.63418 | 2.52184 | 0.0962992 | 3.0535834 | 86 | 4 | 2000–2006 | 0.63 | M-v | 2 | MPC | 97554 | 2002 $AG_{177}$ |
| 2002 $AN_{179}$ | 16.9 | 0.15 | 20060922 | 124.26933 | 182.26185 | 316.53966 | 1.20566 | 0.1669727 | 2.2862691 | 107 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 72472 | 2002 $AN_{179}$ |
| 2002 $AA_{180}$ | 16.3 | 0.15 | 20060922 | 240.49670 | 72.15646 | 86.52273 | 24.44223 | 0.1204839 | 1.9376837 | 66 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 87525 | 2002 $AA_{180}$ |
| 2002 $AM_{180}$ | 16.2 | 0.15 | 20060922 | 215.44165 | 328.45471 | 293.98704 | 3.51559 | 0.0198595 | 2.7713292 | 23 | 3 | 2000–2005 | 0.54 | M-v | 4 | MPC | 00140 | 2002 $AM_{180}$ |
| 2002 $AW_{180}$ | 14.6 | 0.15 | 20060922 | 34.16607 | 359.97325 | 71.09500 | 27.18624 | 0.1316596 | 2.7464292 | 91 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 97554 | 2002 $AW_{180}$ |
| 2002 $AZ_{180}$ | 15.8 | 0.15 | 20060922 | 289.38755 | 67.24460 | 61.39501 | 17.01774 | 0.2142056 | 3.1210316 | 46 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 49965 | 2002 $AZ_{180}$ |
| 2002 $AH_{181}$ | 16.3 | 0.15 | 20060922 | 61.54541 | 80.34928 | 334.70445 | 14.42502 | 0.0591823 | 2.7221777 | 36 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 97554 | 2002 $AH_{181}$ |
| 2002 $AN_{181}$ | 15.4 | 0.15 | 20060922 | 35.16787 | 1.50555 | 31.42068 | 13.11202 | 0.1863819 | 2.8886607 | 74 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 90143 | 2002 $AN_{181}$ |
| 2002 $AT_{181}$ | 14.8 | 0.15 | 20060922 | 48.21098 | 110.36886 | 327.44138 | 9.78692 | 0.1029840 | 2.5553350 | 182 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 97554 | 2002 $AT_{181}$ |
| 2002 $AJ_{183}$ | 15.1 | 0.15 | 20060922 | 333.33861 | 55.62229 | 318.88617 | 11.78179 | 0.1779672 | 3.1183597 | 75 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 03288 | 2002 $AJ_{183}$ |
| 2002 $AF_{184}$ | 16.9 | 0.15 | 20060922 | 311.03074 | 118.17718 | 355.38752 | 1.12418 | 0.2432162 | 3.0854191 | 51 | 3 | 2000–2006 | 0.42 | M-v | 3 | MPC | 48194 | 2002 $AF_{184}$ |
| 2002 $AU_{184}$ | 15.4 | 0.15 | 20060922 | 340.50846 | 265.13515 | 106.76419 | 11.84597 | 0.2944501 | 3.1390064 | 54 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 03288 | 2002 $AU_{184}$ |
| 2002 $AY_{184}$ | 15.7 | 0.15 | 20060922 | 67.44568 | 294.00236 | 111.18228 | 11.69385 | 0.1261547 | 2.6236001 | 57 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 97554 | 2002 $AY_{184}$ |
| 2002 $AH_{185}$ | 17.0 | 0.15 | 20060922 | 67.73352 | 105.42262 | 302.67573 | 3.95304 | 0.1172616 | 2.7155007 | 57 | 2 | 2001–2005 | 0.52 | M-v | 3 | MPC | 89213 | 2002 $AH_{185}$ |
| 2002 $AL_{185}$ | 16.9 | 0.15 | 20060922 | 183.20975 | 291.48637 | 101.46294 | 5.97306 | 0.1687818 | 2.3052630 | 44 | 3 | 2001–2006 | 0.72 | M-v | 3 | MPC | 03288 | 2002 $AL_{185}$ |
| 2002 $AP_{185}$ | 16.0 | 0.15 | 20060922 | 226.22399 | 158.55753 | 78.46076 | 6.80702 | 0.0243952 | 2.8765018 | 57 | 5 | 1993–2005 | 0.70 | M-v | 1 | MPC | 04191 | 2002 $AP_{185}$ |
| 2002 $AG_{186}$ | 16.7 | 0.15 | 20060922 | 44.13233 | 72.66468 | 84.33168 | 10.62825 | 0.1201428 | 2.4642989 | 48 | 2 | 2002–2006 | 0.61 | M-v | 4 | MPC | 94541 | 2002 $AG_{186}$ |
| 2002 $AQ_{187}$ | 16.5 | 0.15 | 20060922 | 277.51487 | 16.09572 | 117.29414 | 23.89677 | 0.0696462 | 1.9164755 | 50 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 75274 | 2002 $AQ_{187}$ |
| 2002 $AU_{188}$ | 14.2 | 0.15 | 20060922 | 113.40579 | 168.89709 | 136.75073 | 17.44152 | 0.1002542 | 3.2108475 | 46 | 3 | 2000–2005 | 0.58 | M-v | 3 | MPC | 90143 | 2002 $AU_{188}$ |
| 2002 $AB_{190}$ | 15.5 | 0.15 | 20060922 | 277.19992 | 202.89739 | 294.80661 | 7.71050 | 0.0262052 | 3.1273571 | 24 | 4 | 2001–2006 | 0.32 | M-v | 0 | MPC | 85414 | 2002 $AB_{190}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $AJ_{190}$ | 15.4 | 0.15 | 20060922 | 357.14883 | 5.44789 | 67.48153 | 8.69995 | 0.0882117 | 3.0285689 | 20 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 85414 | 2002 $AJ_{190}$ |
| 2002 $AN_{190}$ | 16.0 | 0.15 | 20060922 | 332.25630 | 306.48674 | 139.11282 | 4.17495 | 0.1901627 | 3.1115944 | 51 | 3 | 1995–2006 | 0.37 | M-v | 3 | MPC | 48194 | 2002 $AN_{190}$ |
| 2002 $AE_{191}$ | 14.3 | 0.15 | 20060922 | 299.59937 | 267.88921 | 233.08204 | 14.95594 | 0.1952470 | 3.1131444 | 54 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 97554 | 2002 $AE_{191}$ |
| 2002 $AE_{192}$ | 16.9 | 0.15 | 20060922 | 218.00416 | 221.74844 | 177.69983 | 3.38950 | 0.0436279 | 2.2627697 | 27 | 3 | 1992–2006 | 0.34 | M-v | 3 | MPC | 00141 | 2002 $AE_{192}$ |
| 2002 $AA_{193}$ | 15.3 | 0.15 | 20060922 | 221.66613 | 49.58599 | 168.65103 | 1.78081 | 0.1375449 | 3.2009743 | 63 | 7 | 1998–2006 | 0.38 | M-v | 0 | MPC | 97555 | 2002 $AA_{193}$ |
| 2002 $AD_{193}$ | 15.6 | 0.15 | 20060922 | 150.17361 | 359.16358 | 314.76335 | 7.60622 | 0.0937594 | 2.9361233 | 46 | 6 | 1999–2006 | 0.52 | M-v | 1 | MPC | 97555 | 2002 $AD_{193}$ |
| 2002 $AR_{194}$ | 16.5 | 0.15 | 20060922 | 222.89921 | 343.14921 | 296.72783 | 6.67317 | 0.1130018 | 2.6795232 | 29 | 3 | 1995–2004 | 0.63 | M-v | 3 | MPC | 72474 | 2002 $AR_{194}$ |
| 2002 $AV_{195}$ | 16.0 | 0.15 | 20060922 | 12.41901 | 16.19748 | 61.56448 | 2.90753 | 0.0782916 | 2.9442703 | 56 | 4 | 2000–2006 | 0.36 | M-v | 1 | MPC | 97555 | 2002 $AV_{195}$ |
| 2002 $AS_{196}$ | 16.7 | 0.15 | 20060922 | 41.63586 | 185.38015 | 263.08896 | 3.85661 | 0.0475443 | 2.6958175 | 36 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 03289 | 2002 $AS_{196}$ |
| 2002 $AL_{197}$ | 16.2 | 0.15 | 20060922 | 98.19490 | 61.94479 | 329.12750 | 1.02355 | 0.0975852 | 2.6778702 | 99 | 6 | 1996–2006 | 0.58 | M-v | 1 | MPC | 97555 | 2002 $AL_{197}$ |
| 2002 $AP_{197}$ | 15.3 | 0.15 | 20060922 | 288.85578 | 157.82052 | 335.84058 | 13.99328 | 0.1145864 | 3.1150268 | 22 | 2 | 2002–2005 | 0.40 | M-v | 3 | MPC | 89215 | 2002 $AP_{197}$ |
| 2002 $AK_{198}$ | 17.6 | 0.15 | 20060922 | 29.11004 | 41.08886 | 305.95741 | 18.86609 | 0.1113413 | 1.9176588 | 20 | 1 | 63 days | 0.45 | M-v | 4 | MPC | 33960 | 2002 $AK_{198}$ |
| 2002 $AM_{198}$ | 16.1 | 0.15 | 20060922 | 109.45548 | 87.27931 | 259.47026 | 1.05814 | 0.0802149 | 2.8496506 | 48 | 6 | 1995–2006 | 0.49 | M-v | 0 | MPC | 03289 | 2002 $AM_{198}$ |
| 2002 $AX_{198}$ | 14.6 | 0.15 | 20060922 | 43.02297 | 57.13434 | 272.82823 | 12.19098 | 0.0573338 | 3.2606738 | 45 | 4 | 2000–2006 | 0.66 | M-v | 1 | MPC | 87526 | 2002 $AX_{198}$ |
| 2002 $AQ_{199}$ | 15.4 | 0.15 | 20060922 | 115.80471 | 227.99698 | 106.06000 | 16.53773 | 0.1596143 | 2.8694257 | 43 | 4 | 2000–2006 | 0.56 | M-v | 3 | MPC | 94544 | 2002 $AQ_{199}$ |
| 2002 $AT_{199}$ | 16.0 | 0.15 | 20060922 | 265.08486 | 175.43261 | 342.28787 | 4.66150 | 0.0826179 | 3.1615508 | 23 | 3 | 2001–2006 | 0.43 | M-v | 4 | MPC | 94544 | 2002 $AT_{199}$ |
| 2002 $AR_{202}$ | 17.4 | 0.15 | 20060922 | 73.39466 | 25.59479 | 163.28423 | 5.81356 | 0.0844822 | 2.2965748 | 36 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 00142 | 2002 $AR_{202}$ |
| 2002 $AV_{202}$ | 17.9 | 0.15 | 20060922 | 44.08118 | 55.85747 | 163.28983 | 3.45412 | 0.1085551 | 2.3039992 | 42 | 4 | 1992–2006 | 0.45 | M-v | 1 | MPC | 04191 | 2002 $AV_{202}$ |
| 2002 $AN_{203}$ | 16.8 | 0.15 | 20060922 | 271.00357 | 332.33576 | 179.37152 | 0.34105 | 0.1346722 | 3.1899513 | 32 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 47159 | 2002 $AN_{203}$ |
| 2002 $AA_{204}$ | 16.1 | 0.15 | 20060922 | 320.12132 | 285.83549 | 223.25098 | 12.42972 | 0.1422298 | 2.7413416 | 34 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 94547 | 2002 $AA_{204}$ |
| 2002 $AR_{204}$ | 16.9 | 0.15 | 20060922 | 323.26990 | 343.57027 | 286.96621 | 2.58624 | 0.1480210 | 2.3873564 | 54 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 02068 | 2002 $AR_{204}$ |
| 2002 $AC_{205}$ | 15.9 | 0.15 | 20060922 | 2.40152 | 150.06619 | 16.53678 | 4.23885 | 0.1707287 | 2.5997959 | 22 | 3 | 2002–2005 | 0.58 | M-v | 4 | MPC | 89215 | 2002 $AC_{205}$ |
| 2002 $AW_{208}$ | 14.5 | 0.15 | 20060922 | 277.27006 | 97.21568 | 88.59605 | 17.31279 | 0.1853073 | 3.1991545 | 20 | 1 | 102 days | 0.41 | M-v | 3 | MPC | | 2002 $AW_{208}$ |
| 2002 BB | 15.0 | 0.15 | 20060922 | 238.08514 | 263.20028 | 297.12463 | 7.18230 | 0.0606135 | 3.0540754 | 84 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 03289 | 2002 BB |
| 2002 $BU_2$ | 16.4 | 0.15 | 20060922 | 25.00107 | 122.38269 | 350.22031 | 11.19046 | 0.1179179 | 2.7014170 | 35 | 4 | 1998–2005 | 0.59 | M-v | 2 | MPC | 03289 | 2002 $BU_2$ |
| 2002 $BY_2$ | 14.3 | 0.15 | 20060922 | 303.11554 | 82.38103 | 45.54739 | 15.85904 | 0.1741735 | 3.1115174 | 122 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04191 | 2002 $BY_2$ |
| 2002 $BZ_2$ | 15.5 | 0.15 | 20060922 | 348.98845 | 66.19074 | 23.14231 | 13.82293 | 0.1963478 | 2.9821687 | 56 | 5 | 1990–2006 | 0.64 | M-v | 0 | MPC | 50588 | 2002 $BZ_2$ |
| 2002 $BE_4$ | 15.4 | 0.15 | 20060922 | 333.59959 | 146.76101 | 5.89691 | 13.87380 | 0.1949210 | 2.7782816 | 58 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 97555 | 2002 $BE_4$ |
| 2002 $BG_8$ | 16.1 | 0.15 | 20060922 | 10.34474 | 119.36915 | 330.29853 | 7.55822 | 0.3050743 | 2.8586286 | 51 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 85418 | 2002 $BG_8$ |
| 2002 $BC_{11}$ | 14.3 | 0.15 | 20060922 | 284.47088 | 243.39500 | 337.69497 | 15.22476 | 0.2799863 | 2.9789325 | 131 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 53698 | 2002 $BC_{11}$ |
| 2002 $BW_{12}$ | 14.4 | 0.15 | 20060922 | 288.10935 | 121.38377 | 319.98199 | 9.31591 | 0.0251112 | 3.5286953 | 86 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 03290 | 2002 $BW_{12}$ |
| 2002 $BB_{13}$ | 15.4 | 0.15 | 20060922 | 313.44097 | 58.19169 | 63.11860 | 10.81574 | 0.1782016 | 3.1115723 | 25 | 3 | 2002–2006 | 0.45 | M-v | 4 | MPC | 49967 | 2002 $BB_{13}$ |
| 2002 $BV_{13}$ | 16.2 | 0.15 | 20060922 | 352.81745 | 284.92880 | 203.65715 | 2.26533 | 0.2012577 | 2.8590170 | 83 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 97556 | 2002 $BV_{13}$ |
| 2002 $BT_{14}$ | 15.5 | 0.15 | 20060922 | 318.98801 | 315.00208 | 150.47127 | 14.07726 | 0.2830978 | 3.1586835 | 66 | 3 | 1997–2006 | 0.53 | M-v | 2 | MPC | 30631 | 2002 $BT_{14}$ |
| 2002 $BP_{15}$ | 15.5 | 0.15 | 20060922 | 14.59173 | 257.39130 | 193.06412 | 1.36613 | 0.0517699 | 2.9410110 | 61 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 97556 | 2002 $BP_{15}$ |
| 2002 $BA_{16}$ | 15.6 | 0.15 | 20060922 | 332.81680 | 87.02108 | 357.00319 | 14.18709 | 0.2371037 | 3.1274555 | 36 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 48196 | 2002 $BA_{16}$ |
| 2002 $BE_{16}$ | 15.9 | 0.15 | 20060922 | 321.38522 | 45.10663 | 134.03840 | 10.08695 | 0.1177603 | 2.8090808 | 83 | 6 | 1998–2006 | 0.51 | M-v | 1 | MPC | 97556 | 2002 $BE_{16}$ |
| 2002 $BF_{16}$ | 17.3 | 0.15 | 20060922 | 191.35293 | 313.33525 | 131.43878 | 6.33722 | 0.1080764 | 2.2079853 | 52 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 00145 | 2002 $BF_{16}$ |
| 2002 $BZ_{16}$ | 15.9 | 0.15 | 20060922 | 219.20327 | 245.73821 | 184.99865 | 2.89860 | 0.1179501 | 2.1896870 | 105 | 3 | 1996–2005 | 0.59 | M-v | 2 | MPC | 77584 | 2002 $BZ_{16}$ |
| 2002 $BP_{17}$ | 15.7 | 0.15 | 20060922 | 271.15914 | 208.14907 | 295.70732 | 4.55918 | 0.0994395 | 3.2287728 | 54 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 03290 | 2002 $BP_{17}$ |
| 2002 $BZ_{18}$ | 15.9 | 0.15 | 20060922 | 358.46898 | 87.76062 | 25.08495 | 6.31524 | 0.2122441 | 2.8481900 | 62 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 90144 | 2002 $BZ_{18}$ |
| 2002 $BL_{19}$ | 16.4 | 0.15 | 20060922 | 132.15695 | 125.47061 | 45.21540 | 4.07490 | 0.0815906 | 2.1934708 | 72 | 2 | 2002–2005 | 0.49 | M-v | 4 | MPC | 72480 | 2002 $BL_{19}$ |
| 2002 $BH_{21}$ | 17.3 | 0.15 | 20060922 | 299.07043 | 76.29142 | 52.15128 | 22.26354 | 0.0832715 | 1.8833917 | 26 | 3 | 1998–2006 | 0.62 | M-v | 2 | MPC | 48196 | 2002 $BH_{21}$ |
| 2002 $BK_{21}$ | 16.0 | 0.15 | 20060922 | 265.15344 | 120.74030 | 34.65341 | 22.00544 | 0.0614549 | 1.8951146 | 65 | 5 | 1998–2006 | 0.61 | M-v | 1 | MPC | 77584 | 2002 $BK_{21}$ |
| 2002 $BT_{21}$ | 17.0 | 0.15 | 20060922 | 330.91118 | 344.98009 | 86.85746 | 24.20240 | 0.0765014 | 1.9206182 | 49 | 3 | 2002–2006 | 0.64 | M-v | 2 | MPC | 75278 | 2002 $BT_{21}$ |
| 2002 $BR_{22}$ | 14.6 | 0.15 | 20060922 | 72.23082 | 59.48149 | 323.69394 | 17.43963 | 0.2582102 | 2.6931101 | 152 | 3 | 2001–2006 | 0.43 | M-v | 1 | MPC | 97557 | 2002 $BR_{22}$ |
| 2002 $BZ_{22}$ | 15.5 | 0.15 | 20060922 | 343.68693 | 35.98891 | 357.49447 | 14.06428 | 0.2851664 | 3.1697676 | 89 | 2 | 2001–2006 | 0.44 | M-v | 3 | MPC | 03290 | 2002 $BZ_{22}$ |
| 2002 $BH_{23}$ | 16.8 | 0.15 | 20060922 | 11.97238 | 135.12986 | 103.36444 | 7.27897 | 0.0643978 | 2.2971073 | 48 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 00146 | 2002 $BH_{23}$ |
| 2002 $BQ_{23}$ | 14.7 | 0.15 | 20060922 | 272.11110 | 130.86667 | 15.74133 | 13.51465 | 0.1573609 | 3.1842199 | 59 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 66265 | 2002 $BQ_{23}$ |
| 2002 $BX_{23}$ | 15.1 | 0.15 | 20060922 | 341.03855 | 27.66011 | 56.26499 | 10.08701 | 0.2421098 | 3.0510642 | 98 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87526 | 2002 $BX_{23}$ |
| 2002 $BQ_{25}$ | 14.8 | 0.15 | 20060922 | 348.14804 | 220.94831 | 232.41665 | 4.29810 | 0.1035515 | 3.1739638 | 62 | 4 | 1993–2006 | 0.54 | M-v | 1 | MPC | 85421 | 2002 $BQ_{25}$ |
| 2002 $BU_{26}$ | 15.7 | 0.15 | 20060922 | 320.13433 | 46.28284 | 37.28869 | 4.85216 | 0.1906180 | 3.1594378 | 92 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 49969 | 2002 $BU_{26}$ |
| 2002 $BK_{27}$ | 15.4 | 0.15 | 20060922 | 356.24569 | 2.13048 | 64.68291 | 11.38613 | 0.1157330 | 3.0525609 | 38 | 5 | 2000–2006 | 0.48 | M-v | 0 | MPC | 89220 | 2002 $BK_{27}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $BQ_{28}$ | 16.8 | 0.15 | 20060922 | 73.09525 | 158.78210 | 15.17925 | 8.50153 | 0.1802529 | 2.3291190 | 45 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 00147 | 2002 $BQ_{28}$ |
| 2002 $BU_{28}$ | 16.5 | 0.15 | 20060922 | 42.74068 | 81.36042 | 345.77420 | 12.39763 | 0.1958028 | 2.7658422 | 66 | 3 | 1991–2005 | 0.71 | M-v | 1 | MPC | 04191 | 2002 $BU_{28}$ |
| 2002 $BE_{29}$ | 16.4 | 0.15 | 20060922 | 91.61026 | 303.10909 | 98.27809 | 18.55046 | 0.2484768 | 2.6204800 | 47 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 03290 | 2002 $BE_{29}$ |
| 2002 $BK_{30}$ | 14.8 | 0.15 | 20060922 | 279.61893 | 91.11545 | 55.98827 | 16.59680 | 0.2028877 | 3.1451614 | 98 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 47167 | 2002 $BK_{30}$ |
| 2002 $BM_{30}$ | 14.4 | 0.15 | 20060922 | 267.00356 | 89.81747 | 80.23007 | 26.12659 | 0.2196591 | 3.1811894 | 39 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 47167 | 2002 $BM_{30}$ |
| 2002 $BX_{30}$ | 14.1 | 0.15 | 20060922 | 308.45265 | 22.10673 | 32.63142 | 15.57440 | 0.1753886 | 3.4154393 | 43 | 3 | 2000–2006 | 0.69 | M-v | 2 | MPC | 04191 | 2002 $BX_{30}$ |
| 2002 $BL_{31}$ | 13.4 | 0.15 | 20060922 | 162.48740 | 34.96952 | 93.06893 | 6.66296 | 0.1623737 | 5.1942864 | 39 | 4 | 2000–2004 | 0.51 | M-v | 1 | MPC | 47167 | 2002 $BL_{31}$ |
| 2002 $BE_{32}$ | 14.7 | 0.15 | 20060922 | 330.35852 | 66.20298 | 58.81630 | 18.40758 | 0.2142898 | 3.0791503 | 20 | 1 | 81 days | 0.66 | M-v | 4 | MPC | | 2002 $BE_{32}$ |
| 2002 $BF_{32}$ | 17.6 | 0.15 | 20020106 | 338.82992 | 258.92343 | 240.47675 | 11.99500 | 0.1934043 | 2.5939936 | 12 | 1 | 2 days | 0.54 | | E | MPC | | 2002 $BF_{32}$ |
| 2002 $CN_1$ | 15.0 | 0.15 | 20060922 | 14.85439 | 10.25460 | 62.19601 | 11.20012 | 0.0471256 | 2.9972274 | 107 | 6 | 1995–2006 | 0.59 | M-v | 0 | MPC | 90144 | 2002 $CN_1$ |
| 2002 $CB_3$ | 17.3 | 0.15 | 20060922 | 110.31398 | 81.73835 | 44.66268 | 4.17087 | 0.1761573 | 2.3484801 | 50 | 2 | 2002–2006 | 0.39 | M-v | 3 | MPC | 03291 | 2002 $CB_3$ |
| 2002 $CD_3$ | 15.2 | 0.15 | 20060922 | 271.94312 | 104.80918 | 68.89890 | 13.19338 | 0.1078203 | 3.1966022 | 40 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 66265 | 2002 $CD_3$ |
| 2002 $CH_3$ | 15.2 | 0.15 | 20060922 | 283.97270 | 226.99992 | 1.48596 | 8.26844 | 0.1370351 | 2.7957473 | 54 | 3 | 1993–2004 | 0.58 | M-v | 3 | MPC | 04191 | 2002 $CH_3$ |
| 2002 $CJ_3$ | 17.2 | 0.15 | 20060922 | 109.08936 | 114.92593 | 17.84859 | 4.77758 | 0.1769520 | 2.3442273 | 54 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 02069 | 2002 $CJ_3$ |
| 2002 $CJ_4$ | 16.9 | 0.15 | 20060922 | 1.38397 | 116.20358 | 357.13048 | 2.25372 | 0.1115534 | 2.9103497 | 36 | 4 | 1995–2005 | 0.57 | M-v | 2 | MPC | 97558 | 2002 $CJ_4$ |
| 2002 $CR_4$ | 16.9 | 0.15 | 20060922 | 234.03812 | 26.61972 | 139.07570 | 23.79378 | 0.0525323 | 1.9263740 | 56 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 75279 | 2002 $CR_4$ |
| 2002 $CO_7$ | 16.1 | 0.15 | 20060922 | 325.43736 | 244.96150 | 286.77430 | 2.27885 | 0.1265728 | 2.7997914 | 55 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 97558 | 2002 $CO_7$ |
| 2002 $CU_7$ | 15.0 | 0.15 | 20060922 | 307.58906 | 199.82345 | 330.19067 | 2.99511 | 0.0793890 | 2.9859856 | 133 | 7 | 1992–2006 | 0.52 | M-v | 0 | MPC | 97558 | 2002 $CU_7$ |
| 2002 $CZ_7$ | 15.4 | 0.15 | 20060922 | 292.79942 | 356.50954 | 140.88176 | 16.13488 | 0.1472455 | 3.1589604 | 48 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 75279 | 2002 $CZ_7$ |
| 2002 $CS_8$ | 15.5 | 0.15 | 20060922 | 244.83729 | 23.57329 | 154.00503 | 5.11555 | 0.0860906 | 3.2386607 | 62 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 85424 | 2002 $CS_8$ |
| 2002 $CV_8$ | 14.8 | 0.15 | 20060922 | 320.81759 | 187.93388 | 296.21621 | 7.95908 | 0.0241768 | 3.0346739 | 77 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 90145 | 2002 $CV_8$ |
| 2002 $CG_9$ | 15.8 | 0.15 | 20060922 | 68.37229 | 48.54773 | 326.51803 | 15.33332 | 0.0914780 | 3.0621156 | 26 | 3 | 1999–2005 | 0.56 | M-v | 4 | MPC | 00147 | 2002 $CG_9$ |
| 2002 $CN_9$ | 16.3 | 0.15 | 20060922 | 2.50717 | 74.89144 | 20.32069 | 1.61884 | 0.0384396 | 3.0070835 | 40 | 4 | 2000–2005 | 0.56 | M-v | 1 | MPC | 94563 | 2002 $CN_9$ |
| 2002 $CO_9$ | 17.9 | 0.15 | 20060922 | 235.03462 | 280.48896 | 128.23294 | 4.29679 | 0.1772930 | 2.1631546 | 39 | 3 | 1997–2005 | 0.48 | M-v | 3 | MPC | 72483 | 2002 $CO_9$ |
| 2002 $CX_{10}$ | 15.9 | 0.15 | 20060922 | 273.74587 | 76.00480 | 90.73601 | 21.75252 | 0.0572259 | 1.9062112 | 82 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 57850 | 2002 $CX_{10}$ |
| 2002 $CF_{11}$ | 16.7 | 0.15 | 20060922 | 120.89099 | 346.45148 | 120.42869 | 3.15797 | 0.1927205 | 2.3818484 | 70 | 2 | 2002–2006 | 0.67 | M-v | 4 | MPC | 00148 | 2002 $CF_{11}$ |
| 2002 $CH_{11}$ | 14.4 | 0.15 | 20060922 | 290.85177 | 256.66466 | 324.48292 | 37.99134 | 0.1999819 | 2.7473966 | 72 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 97558 | 2002 $CH_{11}$ |
| 2002 $CM_{11}$ | 17.5 | 0.15 | 20060922 | 90.39146 | 324.61355 | 177.78056 | 3.48346 | 0.1587129 | 2.3951747 | 40 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 00148 | 2002 $CM_{11}$ |
| 2002 $CW_{12}$ | 14.4 | 0.15 | 20060922 | 32.11550 | 37.16725 | 4.21374 | 13.51883 | 0.3703766 | 2.9128661 | 108 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 90145 | 2002 $CW_{12}$ |
| 2002 $CR_{13}$ | 16.8 | 0.15 | 20060922 | 92.99692 | 248.04784 | 179.39545 | 0.93303 | 0.1626190 | 2.5830554 | 73 | 5 | 1996–2006 | 0.48 | M-v | 0 | MPC | 94564 | 2002 $CR_{13}$ |
| 2002 $CV_{13}$ | 16.9 | 0.15 | 20060922 | 77.36302 | 198.09041 | 332.16793 | 6.48093 | 0.1374269 | 2.3931636 | 72 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 00149 | 2002 $CV_{13}$ |
| 2002 $CL_{14}$ | 16.6 | 0.15 | 20060922 | 105.52541 | 327.67850 | 337.09109 | 18.97617 | 0.0914925 | 1.9372918 | 47 | 3 | 2000–2003 | 0.70 | M-v | 3 | MPC | 52890 | 2002 $CL_{14}$ |
| 2002 $CS_{16}$ | 15.3 | 0.15 | 20060922 | 29.80702 | 326.22177 | 97.44348 | 3.41218 | 0.0763975 | 2.8660748 | 60 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 97559 | 2002 $CS_{16}$ |
| 2002 $CW_{16}$ | 17.7 | 0.15 | 20060922 | 300.44953 | 99.69111 | 306.35531 | 18.47834 | 0.0479254 | 1.9992072 | 41 | 3 | 2002–2006 | 0.61 | M-v | 2 | MPC | 04191 | 2002 $CW_{16}$ |
| 2002 $CO_{17}$ | 15.4 | 0.15 | 20060922 | 312.44492 | 101.78088 | 355.81771 | 4.50294 | 0.1607744 | 3.2027398 | 91 | 5 | 1994–2006 | 0.52 | M-v | 0 | MPC | 27452 | 2002 $CO_{17}$ |
| 2002 $CE_{19}$ | 15.4 | 0.15 | 20060922 | 43.07702 | 60.75321 | 332.57775 | 10.29978 | 0.1314890 | 2.9987324 | 43 | 3 | 2000–2005 | 0.65 | M-v | 3 | MPC | 94566 | 2002 $CE_{19}$ |
| 2002 $CQ_{20}$ | 17.8 | 0.15 | 20060922 | 97.18280 | 7.97362 | 179.25685 | 7.69875 | 0.0538583 | 2.2294715 | 33 | 4 | 1999–2003 | 0.79 | M-v | 1 | MPC | 50590 | 2002 $CQ_{20}$ |
| 2002 $CA_{21}$ | 15.0 | 0.15 | 20060922 | 344.03364 | 107.44583 | 344.41542 | 15.75380 | 0.2060840 | 3.0913344 | 76 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 90145 | 2002 $CA_{21}$ |
| 2002 $CV_{21}$ | 15.4 | 0.15 | 20060922 | 350.35967 | 298.91812 | 160.31939 | 1.21608 | 0.1063307 | 3.0363211 | 93 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 90145 | 2002 $CV_{21}$ |
| 2002 $CW_{21}$ | 16.9 | 0.15 | 20060922 | 173.04056 | 289.19951 | 129.38967 | 3.37086 | 0.1503621 | 2.3353299 | 89 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 02070 | 2002 $CW_{21}$ |
| 2002 $CH_{22}$ | 17.2 | 0.15 | 20060922 | 107.00709 | 133.61169 | 352.51493 | 0.93447 | 0.1366612 | 2.3759217 | 70 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 02070 | 2002 $CH_{22}$ |
| 2002 $CL_{23}$ | 15.2 | 0.15 | 20060922 | 275.03960 | 255.79241 | 278.66820 | 8.26189 | 0.0568214 | 3.1251766 | 36 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 94569 | 2002 $CL_{23}$ |
| 2002 $CN_{23}$ | 15.3 | 0.15 | 20060922 | 319.89722 | 318.08045 | 149.94631 | 11.73934 | 0.0994516 | 3.0699733 | 38 | 5 | 1997–2006 | 0.43 | M-v | 0 | MPC | 04191 | 2002 $CN_{23}$ |
| 2002 $CY_{23}$ | 15.8 | 0.15 | 20060922 | 2.93885 | 161.19239 | 272.68121 | 8.66261 | 0.2110955 | 2.9782167 | 46 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 89222 | 2002 $CY_{23}$ |
| 2002 $CF_{24}$ | 15.1 | 0.15 | 20060922 | 42.08324 | 140.38163 | 277.20690 | 10.87755 | 0.0400143 | 2.9282843 | 61 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 97559 | 2002 $CF_{24}$ |
| 2002 $CG_{24}$ | 16.5 | 0.15 | 20060922 | 28.48838 | 221.22129 | 244.27595 | 8.52517 | 0.1485735 | 2.7371631 | 55 | 4 | 1995–2006 | 0.51 | M-v | 0 | MPC | 97559 | 2002 $CG_{24}$ |
| 2002 $CL_{24}$ | 14.4 | 0.15 | 20060922 | 241.57056 | 305.71115 | 268.03494 | 13.12652 | 0.2303203 | 3.1666146 | 61 | 6 | 1998–2006 | 0.63 | M-v | 0 | MPC | 90145 | 2002 $CL_{24}$ |
| 2002 $CE_{25}$ | 17.6 | 0.15 | 20060922 | 47.78393 | 283.28002 | 338.89338 | 4.81267 | 0.1601829 | 2.2074145 | 46 | 4 | 2002–2006 | 0.42 | M-v | 0 | MPC | 04191 | 2002 $CE_{25}$ |
| 2002 $CS_{25}$ | 17.2 | 0.15 | 20060922 | 335.37708 | 51.51415 | 332.74061 | 18.72794 | 0.0987575 | 1.9770642 | 58 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04191 | 2002 $CS_{25}$ |
| 2002 $CW_{25}$ | 16.5 | 0.15 | 20060922 | 343.46692 | 76.78570 | 349.05139 | 19.55694 | 0.1213015 | 1.9017501 | 93 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 57850 | 2002 $CW_{25}$ |
| 2002 $CW_{27}$ | 15.5 | 0.15 | 20060922 | 329.15887 | 70.40381 | 55.59576 | 3.98999 | 0.0829580 | 2.9653746 | 77 | 7 | 1990–2006 | 0.43 | M-v | 0 | MPC | 90145 | 2002 $CW_{27}$ |
| 2002 $CD_{28}$ | 14.3 | 0.15 | 20060922 | 255.16437 | 223.20676 | 330.79499 | 16.36794 | 0.1555623 | 3.0921476 | 64 | 3 | 2002–2005 | 0.53 | M-v | 2 | MPC | 90145 | 2002 $CD_{28}$ |
| 2002 $CT_{29}$ | 14.5 | 0.15 | 20060922 | 36.52444 | 297.49060 | 83.63477 | 10.22451 | 0.0970649 | 3.1629860 | 68 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 90145 | 2002 $CT_{29}$ |

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| 2002 $CK_{32}$ | 16.9 | 0.15 | 20060922 | 36.60638 | 153.73980 | 64.20101 | 5.56162 | 0.1710934 | 2.3628621 | 68 | 3 | 1995–2006 | 0.47 | M-v | 3 | MPC | 04191 | 2002 $CK_{32}$ |
| 2002 $CW_{32}$ | 16.7 | 0.15 | 20060922 | 232.61904 | 319.54802 | 63.70576 | 5.42586 | 0.1250277 | 2.2574574 | 66 | 3 | 2002–2006 | 0.42 | M-v | 4 | MPC | 02071 | 2002 $CW_{32}$ |
| 2002 $CG_{34}$ | 14.6 | 0.15 | 20060922 | 22.66813 | 13.36325 | 14.36693 | 6.29379 | 0.0428469 | 3.2258408 | 53 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 87527 | 2002 $CG_{34}$ |
| 2002 $CA_{35}$ | 16.0 | 0.15 | 20060922 | 250.75996 | 310.37303 | 60.63786 | 7.92038 | 0.2007554 | 2.2276759 | 45 | 3 | 1996–2005 | 0.47 | M-v | 3 | MPC | 72490 | 2002 $CA_{35}$ |
| 2002 $CB_{35}$ | 15.7 | 0.15 | 20060922 | 322.25358 | 6.68003 | 105.88433 | 11.06246 | 0.0828002 | 3.1083383 | 31 | 5 | 2002–2006 | 0.43 | M-v | 1 | MPC | 85428 | 2002 $CB_{35}$ |
| 2002 $CY_{37}$ | 15.6 | 0.15 | 20060922 | 245.13216 | 273.97939 | 274.51375 | 4.38222 | 0.0708030 | 3.1903448 | 33 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 89224 | 2002 $CY_{37}$ |
| 2002 $CA_{38}$ | 14.5 | 0.15 | 20060922 | 175.44476 | 2.13232 | 273.86063 | 4.46842 | 0.1261374 | 3.0964822 | 95 | 5 | 2002–2006 | 0.64 | M-v | 1 | MPC | 90146 | 2002 $CA_{38}$ |
| 2002 $CO_{38}$ | 15.7 | 0.15 | 20060922 | 301.60292 | 336.14834 | 334.34987 | 5.91449 | 0.1426620 | 2.3615931 | 68 | 6 | 1996–2006 | 0.69 | M-v | 1 | MPC | 02071 | 2002 $CO_{38}$ |
| 2002 $CS_{39}$ | 16.5 | 0.15 | 20060922 | 4.46252 | 72.97856 | 304.54815 | 17.45559 | 0.1214505 | 1.9579098 | 60 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 53699 | 2002 $CS_{39}$ |
| 2002 $CH_{40}$ | 16.1 | 0.15 | 20060922 | 35.79494 | 246.29638 | 276.43591 | 11.25922 | 0.2307168 | 2.6041706 | 107 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 02071 | 2002 $CH_{40}$ |
| 2002 $CY_{40}$ | 14.4 | 0.15 | 20060922 | 181.50398 | 353.29512 | 289.18580 | 18.68804 | 0.1218104 | 3.0483302 | 63 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 69178 | 2002 $CY_{40}$ |
| 2002 $CA_{41}$ | 15.1 | 0.15 | 20060922 | 192.58529 | 9.48885 | 244.77460 | 10.17910 | 0.0187473 | 3.1091704 | 29 | 3 | 2000–2005 | 0.61 | M-v | 2 | MPC | 89225 | 2002 $CA_{41}$ |
| 2002 $CN_{41}$ | 15.0 | 0.15 | 20060922 | 262.51195 | 350.57408 | 215.36695 | 10.31151 | 0.0965548 | 3.0668439 | 44 | 3 | 2002–2005 | 0.60 | M-v | 3 | MPC | 89225 | 2002 $CN_{41}$ |
| 2002 $CV_{43}$ | 16.4 | 0.15 | 20060922 | 74.86080 | 336.45277 | 347.38603 | 18.99492 | 0.0840299 | 1.9608632 | 92 | 3 | 2002–2005 | 0.62 | M-v | 2 | MPC | 57850 | 2002 $CV_{43}$ |
| 2002 $CX_{43}$ | 17.2 | 0.15 | 20060922 | 35.74134 | 125.35386 | 121.11243 | 6.20590 | 0.1599457 | 2.2526434 | 33 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 00152 | 2002 $CX_{43}$ |
| 2002 $CF_{46}$ | 16.0 | 0.15 | 20060922 | 74.77911 | 220.16394 | 279.70915 | 12.98978 | 0.2133967 | 2.4704628 | 36 | 2 | 2002–2006 | 0.53 | M-v | 3 | MPC | 00152 | 2002 $CF_{46}$ |
| 2002 $CQ_{47}$ | 14.8 | 0.15 | 20060922 | 147.83238 | 29.17823 | 263.23518 | 8.54611 | 0.0535654 | 3.1124790 | 63 | 5 | 2002–2006 | 0.65 | M-v | 1 | MPC | 90146 | 2002 $CQ_{47}$ |
| 2002 $CT_{47}$ | 15.4 | 0.15 | 20060922 | 323.11335 | 293.31586 | 162.27029 | 12.31655 | 0.0831099 | 3.2011172 | 31 | 4 | 2002–2006 | 0.62 | M-v | 1 | MPC | 85429 | 2002 $CT_{47}$ |
| 2002 $CG_{48}$ | 16.4 | 0.15 | 20060922 | 40.90056 | 236.13359 | 205.53112 | 6.04805 | 0.2336561 | 2.7453299 | 72 | 3 | 2000–2005 | 0.59 | M-v | 2 | MPC | 97561 | 2002 $CG_{48}$ |
| 2002 $CX_{49}$ | 15.7 | 0.15 | 20060922 | 327.46084 | 282.17302 | 164.76790 | 13.60188 | 0.2822516 | 3.1528743 | 58 | 3 | 2000–2006 | 0.58 | M-v | 2 | MPC | 75284 | 2002 $CX_{49}$ |
| 2002 $CL_{50}$ | 15.7 | 0.15 | 20060922 | 324.54987 | 2.38073 | 141.01404 | 5.95109 | 0.1554009 | 2.9654698 | 63 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 89226 | 2002 $CL_{50}$ |
| 2002 $CY_{50}$ | 16.2 | 0.15 | 20060922 | 27.42082 | 176.29186 | 320.60575 | 14.21563 | 0.0710311 | 2.6585740 | 47 | 3 | 2002–2005 | 0.64 | M-v | 3 | MPC | 85429 | 2002 $CY_{50}$ |
| 2002 $CA_{52}$ | 14.5 | 0.15 | 20060922 | 356.36187 | 95.02430 | 344.16271 | 25.36840 | 0.2148018 | 3.1586181 | 145 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 90146 | 2002 $CA_{52}$ |
| 2002 $CK_{52}$ | 17.1 | 0.15 | 20060922 | 39.17410 | 228.47364 | 354.48764 | 1.57886 | 0.1713483 | 2.3945984 | 126 | 3 | 2000–2006 | 0.62 | M-v | 2 | MPC | 00153 | 2002 $CK_{52}$ |
| 2002 $CW_{52}$ | 17.3 | 0.15 | 20060922 | 116.89671 | 344.90496 | 160.18984 | 0.83334 | 0.1471928 | 2.2574209 | 63 | 5 | 1992–2006 | 0.49 | M-v | 1 | MPC | 04192 | 2002 $CW_{52}$ |
| 2002 $CB_{53}$ | 17.1 | 0.15 | 20060922 | 41.81049 | 175.05825 | 17.54659 | 1.81123 | 0.1074623 | 2.3983066 | 52 | 4 | 2000–2006 | 0.64 | M-v | 2 | MPC | 00153 | 2002 $CB_{53}$ |
| 2002 $CD_{53}$ | 17.2 | 0.15 | 20060922 | 93.57838 | 310.24398 | 162.68634 | 6.74186 | 0.2019780 | 2.4591591 | 42 | 2 | 2002–2006 | 0.53 | M-v | 3 | MPC | 03291 | 2002 $CD_{53}$ |
| 2002 $CA_{54}$ | 15.6 | 0.15 | 20060922 | 11.05995 | 328.72905 | 184.14077 | 3.22671 | 0.1160618 | 2.7104228 | 85 | 6 | 1971–2005 | 0.71 | M-v | 1 | MPC | 97561 | 2002 $CA_{54}$ |
| 2002 $CJ_{54}$ | 16.5 | 0.15 | 20060922 | 63.92199 | 243.87492 | 317.33033 | 2.13302 | 0.1451829 | 2.3385925 | 79 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 04192 | 2002 $CJ_{54}$ |
| 2002 $CL_{54}$ | 13.0 | 0.15 | 20060922 | 131.09035 | 197.96033 | 325.70001 | 3.57074 | 0.0784158 | 5.2380837 | 46 | 3 | 2001–2004 | 0.53 | M-v | 2 | MPC | 29787 | 2002 $CL_{54}$ |
| 2002 $CW_{54}$ | 16.8 | 0.15 | 20060922 | 249.21788 | 145.75300 | 263.41785 | 2.34280 | 0.1409191 | 2.1600726 | 59 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 72494 | 2002 $CW_{54}$ |
| 2002 $CK_{55}$ | 14.6 | 0.15 | 20060922 | 320.00073 | 201.83055 | 281.70398 | 2.83943 | 0.1641308 | 3.1589618 | 87 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 97561 | 2002 $CK_{55}$ |
| 2002 $CZ_{56}$ | 15.1 | 0.15 | 20060922 | 326.62824 | 287.93547 | 180.60294 | 23.25192 | 0.4408497 | 3.1259629 | 132 | 3 | 2000–2006 | 0.52 | M-v | 1 | MPC | 72494 | 2002 $CZ_{56}$ |
| 2002 $CX_{57}$ | 17.0 | 0.15 | 20060922 | 228.38204 | 163.25680 | 280.03241 | 0.53465 | 0.0792324 | 2.1444054 | 110 | 5 | 1997–2005 | 0.58 | M-v | 1 | MPC | 77585 | 2002 $CX_{57}$ |
| 2002 $CX_{59}$ | 16.1 | 0.15 | 20060922 | 350.70234 | 100.31265 | 297.73985 | 17.17139 | 0.1038314 | 1.9485764 | 70 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 77585 | 2002 $CX_{59}$ |
| 2002 $CK_{60}$ | 14.8 | 0.15 | 20060922 | 234.92538 | 212.52307 | 343.04295 | 6.91298 | 0.0539166 | 3.1531612 | 51 | 3 | 2002–2005 | 0.44 | M-v | 3 | MPC | 90146 | 2002 $CK_{60}$ |
| 2002 $CU_{62}$ | 14.6 | 0.15 | 20060922 | 330.82699 | 350.00338 | 111.12019 | 18.75018 | 0.0885300 | 3.1694377 | 49 | 6 | 1996–2006 | 0.45 | M-v | 0 | MPC | 87528 | 2002 $CU_{62}$ |
| 2002 $CF_{66}$ | 17.4 | 0.15 | 20060922 | 50.85454 | 70.42879 | 118.47604 | 3.54081 | 0.1771494 | 2.3699145 | 29 | 3 | 2000–2006 | 0.62 | M-v | 2 | MPC | 00154 | 2002 $CF_{66}$ |
| 2002 $CP_{66}$ | 15.6 | 0.15 | 20060922 | 331.62805 | 24.82527 | 102.37040 | 3.42193 | 0.0542198 | 2.9333019 | 66 | 6 | 1995–2006 | 0.59 | M-v | 0 | MPC | 90146 | 2002 $CP_{66}$ |
| 2002 $CD_{67}$ | 15.5 | 0.15 | 20060922 | 144.94735 | 14.21490 | 323.80234 | 3.66885 | 0.0805125 | 2.7882389 | 58 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97562 | 2002 $CD_{67}$ |
| 2002 $CN_{68}$ | 16.1 | 0.15 | 20060922 | 291.32523 | 76.87997 | 94.85691 | 2.47143 | 0.1699252 | 3.0016092 | 26 | 3 | 2002–2005 | 0.55 | M-v | 4 | MPC | 94586 | 2002 $CN_{68}$ |
| 2002 $CV_{68}$ | 15.8 | 0.15 | 20060922 | 123.59061 | 228.54332 | 109.92727 | 3.40560 | 0.0491814 | 2.9270911 | 73 | 7 | 1995–2006 | 0.63 | M-v | 1 | MPC | 97562 | 2002 $CV_{68}$ |
| 2002 $CW_{68}$ | 15.9 | 0.15 | 20060922 | 350.58030 | 11.67198 | 98.22137 | 3.14575 | 0.0662592 | 2.9366326 | 54 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 97562 | 2002 $CW_{68}$ |
| 2002 $CZ_{69}$ | 15.6 | 0.15 | 20060922 | 296.56548 | 88.09750 | 101.75599 | 3.28287 | 0.0398396 | 2.8382381 | 61 | 6 | 1993–2006 | 0.43 | M-v | 1 | MPC | 97562 | 2002 $CZ_{69}$ |
| 2002 $CQ_{71}$ | 15.4 | 0.15 | 20060922 | 351.62095 | 116.73887 | 339.39115 | 9.04199 | 0.0603711 | 3.0340641 | 50 | 5 | 1994–2005 | 0.56 | M-v | 1 | MPC | 90146 | 2002 $CQ_{71}$ |
| 2002 $CS_{71}$ | 15.4 | 0.15 | 20060922 | 62.35056 | 259.05906 | 122.70862 | 11.82108 | 0.1283341 | 3.0028208 | 44 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 03292 | 2002 $CS_{71}$ |
| 2002 $CT_{71}$ | 14.9 | 0.15 | 20060922 | 221.84530 | 317.84394 | 333.41971 | 11.74097 | 0.1348142 | 2.7317915 | 86 | 3 | 1999–2004 | 0.55 | M-v | 3 | MPC | 70333 | 2002 $CT_{71}$ |
| 2002 $CD_{72}$ | 15.7 | 0.15 | 20060922 | 128.06870 | 297.74480 | 45.93940 | 2.29271 | 0.0139512 | 2.9187233 | 76 | 6 | 2000–2006 | 0.39 | M-v | 0 | MPC | 97563 | 2002 $CD_{72}$ |
| 2002 $CH_{72}$ | 17.6 | 0.15 | 20060922 | 112.38762 | 103.73871 | 328.17251 | 2.97090 | 0.2099329 | 2.4791060 | 46 | 2 | 2002–2006 | 0.47 | M-v | 4 | MPC | 94588 | 2002 $CH_{72}$ |
| 2002 $CY_{73}$ | 16.4 | 0.15 | 20060922 | 29.69699 | 43.81118 | 29.63259 | 2.07245 | 0.0827457 | 2.9324306 | 46 | 4 | 2000–2006 | 0.45 | M-v | 2 | MPC | 97563 | 2002 $CY_{73}$ |
| 2002 $CB_{74}$ | 15.1 | 0.15 | 20060922 | 0.84637 | 312.08049 | 114.65514 | 6.05944 | 0.1338622 | 3.1167560 | 48 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 87528 | 2002 $CB_{74}$ |
| 2002 $CL_{74}$ | 15.4 | 0.15 | 20060922 | 239.97724 | 190.17630 | 26.17680 | 1.67881 | 0.0659243 | 3.0735397 | 69 | 4 | 2002–2006 | 0.46 | M-v | 0 | MPC | 97563 | 2002 $CL_{74}$ |
| 2002 $CR_{74}$ | 17.3 | 0.15 | 20060922 | 167.30036 | 278.38486 | 137.96700 | 4.97822 | 0.1293957 | 2.3648137 | 75 | 5 | 1995–2006 | 0.62 | M-v | 1 | MPC | 02073 | 2002 $CR_{74}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $CX_{74}$ | 15.8 | 0.15 | 20060922 | 163.99354 | 203.37677 | 141.45178 | 6.83070 | 0.0456792 | 2.7300310 | 37 | 4 | 1995–2004 | 0.62 | M-v | 1 | MPC | 62387 | 2002 $CX_{74}$ |
| 2002 $CO_{75}$ | 14.7 | 0.15 | 20060922 | 54.53466 | 38.52089 | 330.98660 | 13.79266 | 0.0855763 | 3.1995721 | 42 | 2 | 2002–2005 | 0.56 | M-v | 4 | MPC | 89230 | 2002 $CO_{75}$ |
| 2002 $CS_{75}$ | 15.9 | 0.15 | 20060922 | 13.82077 | 3.47638 | 78.35815 | 2.68506 | 0.0819633 | 2.9895444 | 60 | 6 | 1995–2006 | 0.52 | M-v | 0 | MPC | 89230 | 2002 $CS_{75}$ |
| 2002 $CU_{75}$ | 15.5 | 0.15 | 20060922 | 336.07771 | 123.87582 | 342.86762 | 7.55424 | 0.0550297 | 3.1011016 | 36 | 3 | 2002–2005 | 0.61 | M-v | 3 | MPC | 89230 | 2002 $CU_{75}$ |
| 2002 $CE_{76}$ | 16.6 | 0.15 | 20060922 | 143.73369 | 109.32911 | 331.98432 | 4.40206 | 0.1310867 | 2.3711171 | 71 | 3 | 2000–2004 | 0.60 | M-v | 3 | MPC | 74138 | 2002 $CE_{76}$ |
| 2002 $CP_{76}$ | 17.0 | 0.15 | 20060922 | 150.32375 | 104.09369 | 324.37020 | 2.85878 | 0.1044746 | 2.4001597 | 52 | 2 | 2002–2004 | 0.53 | M-v | 4 | MPC | 69193 | 2002 $CP_{76}$ |
| 2002 $CV_{76}$ | 15.0 | 0.15 | 20060922 | 177.75679 | 324.66517 | 326.70872 | 9.75871 | 0.0451388 | 2.9843167 | 87 | 4 | 1999–2005 | 0.71 | M-v | 1 | MPC | 97563 | 2002 $CV_{76}$ |
| 2002 $CR_{77}$ | 15.9 | 0.15 | 20060922 | 324.56159 | 320.44677 | 154.58599 | 2.44189 | 0.0730265 | 3.1340339 | 64 | 4 | 2000–2005 | 0.50 | M-v | 1 | MPC | 90147 | 2002 $CR_{77}$ |
| 2002 $CA_{78}$ | 15.5 | 0.15 | 20060922 | 254.49211 | 169.33160 | 55.60684 | 2.84862 | 0.0450957 | 2.9350313 | 75 | 6 | 1992–2006 | 0.53 | M-v | 0 | MPC | 97563 | 2002 $CA_{78}$ |
| 2002 $CD_{78}$ | 15.6 | 0.15 | 20060922 | 121.46338 | 14.46086 | 3.64447 | 4.87276 | 0.0372118 | 2.7713644 | 42 | 3 | 2002–2005 | 0.48 | M-v | 3 | MPC | 69193 | 2002 $CD_{78}$ |
| 2002 $CJ_{78}$ | 17.6 | 0.15 | 20060922 | 56.16082 | 90.99395 | 95.52375 | 2.22447 | 0.1469793 | 2.3940933 | 55 | 4 | 1995–2006 | 0.54 | M-v | 1 | MPC | 00156 | 2002 $CJ_{78}$ |
| 2002 $CW_{78}$ | 16.3 | 0.15 | 20060922 | 345.27264 | 55.56406 | 33.88135 | 1.36998 | 0.1429652 | 3.1198095 | 48 | 7 | 1997–2006 | 0.57 | M-v | 0 | MPC | 87528 | 2002 $CW_{78}$ |
| 2002 $CJ_{79}$ | 16.8 | 0.15 | 20060922 | 38.85261 | 223.48392 | 350.44503 | 1.86103 | 0.1325559 | 2.3749531 | 65 | 3 | 1996–2006 | 0.54 | M-v | 2 | MPC | 00156 | 2002 $CJ_{79}$ |
| 2002 $CK_{79}$ | 15.2 | 0.15 | 20060922 | 106.01557 | 44.29863 | 333.54831 | 7.94473 | 0.0419974 | 2.8710066 | 63 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 97563 | 2002 $CK_{79}$ |
| 2002 $CV_{80}$ | 15.7 | 0.15 | 20060922 | 302.18959 | 129.84399 | 32.29636 | 1.99440 | 0.1611075 | 3.0416732 | 74 | 4 | 1997–2006 | 0.47 | M-v | 4 | MPC | 97563 | 2002 $CV_{80}$ |
| 2002 $CG_{81}$ | 14.6 | 0.15 | 20060922 | 181.80017 | 122.02171 | 149.06328 | 10.98278 | 0.0238100 | 3.1235716 | 63 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 65312 | 2002 $CG_{81}$ |
| 2002 $CX_{81}$ | 15.7 | 0.15 | 20060922 | 350.70412 | 3.25882 | 113.11284 | 2.78167 | 0.1122945 | 2.9736270 | 50 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 97563 | 2002 $CX_{81}$ |
| 2002 $CY_{81}$ | 15.2 | 0.15 | 20060922 | 350.30303 | 308.76643 | 132.92110 | 6.18101 | 0.1228583 | 3.1712891 | 65 | 5 | 1995–2006 | 0.53 | M-v | 0 | MPC | 85433 | 2002 $CY_{81}$ |
| 2002 $CH_{82}$ | 13.7 | 0.15 | 20060922 | 188.57275 | 119.49346 | 337.76638 | 6.49524 | 0.0962144 | 5.1647466 | 33 | 4 | 1997–2003 | 0.49 | M-v | 1 | MPC | 50591 | 2002 $CH_{82}$ |
| 2002 $CK_{82}$ | 15.7 | 0.15 | 20060922 | 304.16922 | 297.68000 | 338.57734 | 7.23250 | 0.0832198 | 2.4916658 | 112 | 4 | 2000–2006 | 0.72 | M-v | 2 | MPC | 02073 | 2002 $CK_{82}$ |
| 2002 $CU_{83}$ | 15.9 | 0.15 | 20060922 | 348.94433 | 77.61480 | 140.74914 | 6.21600 | 0.0795496 | 2.5491031 | 108 | 3 | 1996–2006 | 0.70 | M-v | 3 | MPC | 02073 | 2002 $CU_{83}$ |
| 2002 $CA_{84}$ | 17.3 | 0.15 | 20060922 | 84.33806 | 7.02128 | 136.91703 | 2.14942 | 0.1364452 | 2.4249798 | 84 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 02073 | 2002 $CA_{84}$ |
| 2002 $CY_{87}$ | 14.9 | 0.15 | 20060922 | 349.67034 | 286.35799 | 139.64255 | 6.36081 | 0.1612713 | 3.2013471 | 82 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 85434 | 2002 $CY_{87}$ |
| 2002 $CD_{88}$ | 15.7 | 0.15 | 20060922 | 271.47889 | 120.45278 | 127.70158 | 10.14436 | 0.0620599 | 2.7143039 | 30 | 3 | 1999–2004 | 0.51 | M-v | 2 | MPC | 69198 | 2002 $CD_{88}$ |
| 2002 $CK_{88}$ | 15.6 | 0.15 | 20060922 | 45.14211 | 263.17960 | 133.38199 | 3.04156 | 0.0682759 | 3.0934572 | 54 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 89231 | 2002 $CK_{88}$ |
| 2002 $CR_{88}$ | 15.5 | 0.15 | 20060922 | 221.41909 | 231.91924 | 345.38544 | 0.60059 | 0.0872887 | 3.2396129 | 70 | 4 | 1997–2006 | 0.51 | M-v | 3 | MPC | 97564 | 2002 $CR_{88}$ |
| 2002 $CW_{88}$ | 15.9 | 0.15 | 20060922 | 70.81644 | 304.71288 | 112.86528 | 5.55428 | 0.0929023 | 2.7951765 | 53 | 4 | 1995–2006 | 0.41 | M-v | 1 | MPC | 94597 | 2002 $CW_{88}$ |
| 2002 $CD_{89}$ | 15.3 | 0.15 | 20060922 | 276.36804 | 32.75292 | 133.48474 | 1.81378 | 0.1272995 | 3.1891784 | 82 | 4 | 1997–2006 | 0.47 | M-v | 3 | MPC | 90147 | 2002 $CD_{89}$ |
| 2002 $CR_{90}$ | 16.3 | 0.15 | 20060922 | 337.36216 | 157.32320 | 342.58344 | 1.76862 | 0.1178638 | 2.9364398 | 52 | 3 | 2002–2005 | 0.54 | M-v | 4 | MPC | 97564 | 2002 $CR_{90}$ |
| 2002 $CZ_{90}$ | 15.1 | 0.15 | 20060922 | 111.63761 | 211.23645 | 137.44940 | 9.94204 | 0.0910156 | 3.0436564 | 42 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 97564 | 2002 $CZ_{90}$ |
| 2002 $CK_{91}$ | 16.9 | 0.15 | 20060922 | 99.16091 | 64.22213 | 30.41587 | 3.52868 | 0.1069849 | 2.5261575 | 66 | 4 | 1992–2006 | 0.55 | M-v | 1 | MPC | 04192 | 2002 $CK_{91}$ |
| 2002 $CS_{91}$ | 16.9 | 0.15 | 20060922 | 81.67083 | 135.33926 | 29.12798 | 2.96837 | 0.1439691 | 2.3782715 | 46 | 2 | 2002–2006 | 0.66 | M-v | 4 | MPC | 03293 | 2002 $CS_{91}$ |
| 2002 $CE_{92}$ | 14.7 | 0.15 | 20060922 | 103.53137 | 326.74255 | 8.46235 | 4.02601 | 0.0338201 | 3.2346226 | 103 | 6 | 1993–2005 | 0.63 | M-v | 1 | MPC | 90147 | 2002 $CE_{92}$ |
| 2002 $CJ_{92}$ | 15.0 | 0.15 | 20060922 | 172.73419 | 184.18721 | 132.47726 | 8.61982 | 0.0619181 | 2.8065917 | 98 | 5 | 2002–2006 | 0.59 | M-v | 0 | MPC | 97564 | 2002 $CJ_{92}$ |
| 2002 $CS_{92}$ | 16.8 | 0.15 | 20060922 | 35.70837 | 194.22923 | 11.45197 | 1.83316 | 0.1905833 | 2.4189928 | 92 | 4 | 2000–2006 | 1.38 | M-v | 3 | MPC | 02074 | 2002 $CS_{92}$ |
| 2002 $CG_{93}$ | 15.1 | 0.15 | 20060922 | 82.61676 | 21.22900 | 341.32571 | 9.80430 | 0.1357064 | 3.0816766 | 62 | 2 | 2002–2005 | 0.67 | M-v | 3 | MPC | 89232 | 2002 $CG_{93}$ |
| 2002 $CD_{94}$ | 16.4 | 0.15 | 20060922 | 72.95641 | 33.10278 | 123.01365 | 3.70137 | 0.1307093 | 2.4370734 | 120 | 3 | 1998–2006 | 0.63 | M-v | 3 | MPC | 00159 | 2002 $CD_{94}$ |
| 2002 $CD_{95}$ | 15.3 | 0.15 | 20060922 | 1.75879 | 313.43430 | 146.14137 | 4.43750 | 0.1418096 | 2.9960541 | 111 | 6 | 1995–2006 | 0.52 | M-v | 0 | MPC | 90147 | 2002 $CD_{95}$ |
| 2002 $CA_{96}$ | 14.9 | 0.15 | 20060922 | 327.11882 | 344.06412 | 149.94987 | 10.83024 | 0.0742601 | 3.0685031 | 86 | 4 | 2002–2005 | 0.59 | M-v | 2 | MPC | 89232 | 2002 $CA_{96}$ |
| 2002 $CO_{96}$ | 15.8 | 0.15 | 20060922 | 330.68145 | 4.21704 | 98.04242 | 2.42185 | 0.1710725 | 3.1826803 | 33 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 85435 | 2002 $CO_{96}$ |
| 2002 $CP_{96}$ | 16.7 | 0.15 | 20060922 | 22.21010 | 100.48001 | 124.22163 | 3.46789 | 0.1294233 | 2.4244563 | 51 | 3 | 1999–2006 | 0.63 | M-v | 3 | MPC | 00160 | 2002 $CP_{96}$ |
| 2002 $CB_{97}$ | 12.3 | 0.15 | 20060922 | 240.62441 | 60.62891 | 350.46710 | 16.50184 | 0.0253558 | 5.2657201 | 28 | 3 | 1996–2003 | 0.51 | M-v | 3 | MPC | 47177 | 2002 $CB_{97}$ |
| 2002 $CD_{97}$ | 14.8 | 0.15 | 20060922 | 259.01428 | 81.42157 | 137.26029 | 11.17127 | 0.0562637 | 3.0139058 | 39 | 3 | 2002–2005 | 0.60 | M-v | 3 | MPC | 69203 | 2002 $CD_{97}$ |
| 2002 $CH_{97}$ | 15.5 | 0.15 | 20060922 | 8.23647 | 314.55803 | 125.73079 | 6.70376 | 0.1294901 | 3.0777889 | 50 | 7 | 1999–2006 | 0.57 | M-v | 0 | MPC | 97564 | 2002 $CH_{97}$ |
| 2002 $CS_{97}$ | 17.2 | 0.15 | 20060922 | 216.37274 | 85.46866 | 350.90419 | 6.02564 | 0.1156017 | 2.1893353 | 49 | 3 | 1997–2005 | 0.64 | M-v | 3 | MPC | 72505 | 2002 $CS_{97}$ |
| 2002 $CN_{98}$ | 16.5 | 0.15 | 20060922 | 40.11297 | 242.26484 | 345.92776 | 5.61087 | 0.0898190 | 2.3416192 | 76 | 2 | 2002–2006 | 0.57 | M-v | 4 | MPC | 00161 | 2002 $CN_{98}$ |
| 2002 $CO_{98}$ | 16.0 | 0.15 | 20060922 | 332.32254 | 160.51070 | 359.33539 | 4.31804 | 0.0696934 | 2.9034491 | 100 | 6 | 1997–2006 | 0.51 | M-v | 1 | MPC | 97565 | 2002 $CO_{98}$ |
| 2002 $CL_{99}$ | 15.6 | 0.15 | 20060922 | 34.10508 | 221.44721 | 44.07739 | 2.71877 | 0.2243235 | 2.2920808 | 104 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 02074 | 2002 $CL_{99}$ |
| 2002 $CA_{100}$ | 15.2 | 0.15 | 20060922 | 260.31554 | 90.93616 | 117.80223 | 3.37006 | 0.0635316 | 3.0920845 | 48 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 97565 | 2002 $CA_{100}$ |
| 2002 $CE_{100}$ | 15.2 | 0.15 | 20060922 | 319.85425 | 19.26181 | 102.50527 | 2.60520 | 0.1701920 | 3.1728107 | 66 | 3 | 2001–2005 | 0.54 | M-v | 3 | MPC | 90148 | 2002 $CE_{100}$ |
| 2002 $CV_{100}$ | 15.5 | 0.15 | 20060922 | 297.29404 | 54.37369 | 121.61349 | 2.50650 | 0.1095624 | 3.0539141 | 45 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 97565 | 2002 $CV_{100}$ |
| 2002 $CG_{103}$ | 14.9 | 0.15 | 20060922 | 242.31281 | 110.38865 | 136.32308 | 6.11959 | 0.1198548 | 3.0428258 | 40 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 03293 | 2002 $CG_{103}$ |
| 2002 $CH_{103}$ | 15.6 | 0.15 | 20060922 | 1.37107 | 16.54503 | 95.63767 | 3.57111 | 0.1361151 | 2.9773451 | 74 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 97565 | 2002 $CH_{103}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $CT_{103}$ | 14.6 | 0.15 | 20060922 | 204.14349 | 274.18876 | 348.26805 | 15.91107 | 0.1237268 | 3.2068445 | 137 | 3 | 1996–2004 | 0.61 | M-v | 1 | MPC | 74139 | 2002 $CT_{103}$ |
| 2002 $CL_{104}$ | 16.3 | 0.15 | 20060922 | 17.04643 | 90.60598 | 147.70800 | 9.11573 | 0.2087268 | 2.4530203 | 71 | 2 | 2002–2006 | 0.52 | M-v | 3 | MPC | 00161 | 2002 $CL_{104}$ |
| 2002 $CW_{104}$ | 16.3 | 0.15 | 20060922 | 82.53976 | 221.60923 | 2.24971 | 7.11406 | 0.0578758 | 2.2262203 | 119 | 3 | 2002–2005 | 0.64 | M-v | 3 | MPC | 74139 | 2002 $CW_{104}$ |
| 2002 $CN_{107}$ | 15.6 | 0.15 | 20060922 | 355.47507 | 323.39490 | 157.81043 | 16.38758 | 0.0443837 | 3.0580397 | 42 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 97565 | 2002 $CN_{107}$ |
| 2002 $CF_{108}$ | 14.2 | 0.15 | 20060922 | 320.09226 | 357.15433 | 165.79072 | 11.32192 | 0.0951793 | 3.0439313 | 169 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 97565 | 2002 $CF_{108}$ |
| 2002 $CM_{108}$ | 16.6 | 0.15 | 20060922 | 9.95920 | 58.32466 | 354.43507 | 21.03030 | 0.1347923 | 1.9058737 | 127 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 57850 | 2002 $CM_{108}$ |
| 2002 $CK_{109}$ | 16.0 | 0.15 | 20060922 | 340.51438 | 268.38129 | 352.65604 | 7.76630 | 0.0883002 | 2.4328329 | 62 | 3 | 1996–2006 | 0.52 | M-v | 2 | MPC | 00162 | 2002 $CK_{109}$ |
| 2002 $CU_{109}$ | 15.6 | 0.15 | 20060922 | 258.47792 | 199.00622 | 14.51342 | 4.96211 | 0.1032974 | 3.0980263 | 24 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 00162 | 2002 $CU_{109}$ |
| 2002 $CL_{110}$ | 16.8 | 0.15 | 20060922 | 77.27853 | 12.76831 | 151.09792 | 9.98732 | 0.1036173 | 2.4153867 | 73 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 02074 | 2002 $CL_{110}$ |
| 2002 $CP_{110}$ | 15.2 | 0.15 | 20060922 | 304.09656 | 55.48234 | 87.22545 | 2.30449 | 0.1461574 | 3.1991467 | 81 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 85436 | 2002 $CP_{110}$ |
| 2002 $CX_{113}$ | 15.8 | 0.15 | 20060922 | 326.70637 | 123.83542 | 130.63648 | 7.51647 | 0.1547615 | 2.4918000 | 66 | 4 | 1998–2006 | 0.62 | M-v | 2 | MPC | 97566 | 2002 $CX_{113}$ |
| 2002 $CQ_{115}$ | 15.9 | 0.15 | 20060922 | 348.21423 | 52.59071 | 58.32778 | 2.93950 | 0.1833694 | 3.0466271 | 69 | 3 | 2000–2005 | 0.65 | M-v | 2 | MPC | 90148 | 2002 $CQ_{115}$ |
| 2002 $CS_{115}$ | 16.9 | 0.15 | 20060922 | 89.86857 | 60.99487 | 167.46795 | 24.97106 | 0.1922586 | 2.1946676 | 53 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 03294 | 2002 $CS_{115}$ |
| 2002 $CA_{116}$ | 14.0 | 0.15 | 20060922 | 286.50517 | 79.80654 | 88.15252 | 33.22602 | 0.0984466 | 3.2353172 | 49 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 90148 | 2002 $CA_{116}$ |
| 2002 $CT_{117}$ | 16.4 | 0.15 | 20060922 | 282.88957 | 278.87453 | 287.61556 | 0.90174 | 0.1934234 | 3.0280001 | 52 | 3 | 2002–2006 | 0.54 | M-v | 4 | MPC | 03294 | 2002 $CT_{117}$ |
| 2002 $CL_{118}$ | 15.1 | 0.15 | 20060922 | 207.98924 | 83.31739 | 166.50483 | 4.84831 | 0.0861677 | 3.2446041 | 70 | 3 | 1998–2005 | 0.53 | M-v | 3 | MPC | 89234 | 2002 $CL_{118}$ |
| 2002 $CD_{119}$ | 15.4 | 0.15 | 20060922 | 300.83091 | 347.82337 | 142.72954 | 2.03301 | 0.1177201 | 3.1146624 | 82 | 6 | 2000–2006 | 0.44 | M-v | 1 | MPC | 90148 | 2002 $CD_{119}$ |
| 2002 $CO_{119}$ | 15.3 | 0.15 | 20060922 | 218.72927 | 332.32583 | 246.18026 | 3.40857 | 0.0871573 | 3.1286199 | 26 | 4 | 1993–2005 | 0.48 | M-v | 0 | MPC | 04192 | 2002 $CO_{119}$ |
| 2002 $CQ_{119}$ | 15.6 | 0.15 | 20060922 | 275.77486 | 77.97159 | 149.28441 | 7.86222 | 0.0191489 | 2.7139413 | 54 | 4 | 2002–2006 | 0.64 | M-v | 1 | MPC | 70335 | 2002 $CQ_{119}$ |
| 2002 $CC_{120}$ | 16.8 | 0.15 | 20060922 | 94.51326 | 196.86785 | 290.80380 | 3.54861 | 0.0948051 | 2.3860426 | 41 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 94607 | 2002 $CC_{120}$ |
| 2002 $CW_{120}$ | 17.0 | 0.15 | 20060922 | 49.11869 | 253.44912 | 291.29154 | 3.08221 | 0.1575690 | 2.3941391 | 32 | 2 | 2002–2006 | 0.56 | M-v | 3 | MPC | 00164 | 2002 $CW_{120}$ |
| 2002 $CK_{121}$ | 14.7 | 0.15 | 20060922 | 353.51104 | 258.52780 | 147.64192 | 12.98248 | 0.3108380 | 3.1284764 | 81 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 30663 | 2002 $CK_{121}$ |
| 2002 $CQ_{122}$ | 17.6 | 0.15 | 20060922 | 135.16958 | 165.62688 | 275.86964 | 0.90561 | 0.1560878 | 2.3725303 | 34 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 04192 | 2002 $CQ_{122}$ |
| 2002 $CX_{122}$ | 16.2 | 0.15 | 20060922 | 2.97849 | 343.91402 | 160.80039 | 2.50785 | 0.1575732 | 2.7349330 | 57 | 3 | 1995–2005 | 0.46 | M-v | 4 | MPC | 97566 | 2002 $CX_{122}$ |
| 2002 $CG_{123}$ | 16.9 | 0.15 | 20060922 | 64.30503 | 2.59507 | 173.93515 | 5.04016 | 0.1580577 | 2.3857238 | 79 | 3 | 1995–2006 | 0.48 | M-v | 1 | MPC | 00165 | 2002 $CG_{123}$ |
| 2002 $CH_{123}$ | 15.4 | 0.15 | 20060922 | 260.71002 | 336.03663 | 230.48768 | 3.41234 | 0.1374781 | 3.0479056 | 70 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 89235 | 2002 $CH_{123}$ |
| 2002 $CX_{123}$ | 17.6 | 0.15 | 20060922 | 62.29641 | 337.30848 | 149.54990 | 1.59062 | 0.1061549 | 2.5277019 | 28 | 3 | 1998–2006 | 0.47 | M-v | 3 | MPC | 03294 | 2002 $CX_{123}$ |
| 2002 $CJ_{125}$ | 16.8 | 0.15 | 20060922 | 52.28779 | 51.85110 | 142.56350 | 3.09746 | 0.0680295 | 2.3566878 | 45 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 00165 | 2002 $CJ_{125}$ |
| 2002 $CY_{126}$ | 18.1 | 0.15 | 20060922 | 119.77580 | 274.75137 | 203.64269 | 1.76515 | 0.1611716 | 2.3263070 | 39 | 4 | 1997–2006 | 0.48 | M-v | 0 | MPC | 04192 | 2002 $CY_{126}$ |
| 2002 $CG_{127}$ | 15.0 | 0.15 | 20060922 | 344.92196 | 277.53018 | 153.37384 | 5.99873 | 0.1556350 | 3.1577982 | 93 | 3 | 2002–2006 | 0.73 | M-v | 3 | MPC | 85438 | 2002 $CG_{127}$ |
| 2002 $CQ_{128}$ | 15.7 | 0.15 | 20060922 | 79.32644 | 248.65744 | 148.47659 | 2.62036 | 0.0716567 | 2.8521680 | 60 | 6 | 1993–2006 | 0.45 | M-v | 1 | MPC | 04192 | 2002 $CQ_{128}$ |
| 2002 $CE_{130}$ | 17.1 | 0.15 | 20060922 | 88.35063 | 243.39346 | 256.82974 | 0.70178 | 0.1355451 | 2.4093523 | 40 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 03295 | 2002 $CE_{130}$ |
| 2002 $CR_{130}$ | 17.0 | 0.15 | 20060922 | 41.61758 | 57.38329 | 151.00799 | 2.59393 | 0.1212447 | 2.3886301 | 52 | 2 | 2002–2006 | 0.66 | M-v | 3 | MPC | 04192 | 2002 $CR_{130}$ |
| 2002 $CA_{131}$ | 15.3 | 0.15 | 20060922 | 50.85369 | 97.26006 | 295.09192 | 8.32070 | 0.0869817 | 3.0421054 | 45 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 90148 | 2002 $CA_{131}$ |
| 2002 $CX_{132}$ | 16.5 | 0.15 | 20060922 | 169.56402 | 104.05187 | 330.35433 | 6.46941 | 0.0807589 | 2.3643631 | 72 | 3 | 2000–2004 | 0.55 | M-v | 2 | MPC | 72513 | 2002 $CX_{132}$ |
| 2002 $CE_{133}$ | 17.1 | 0.15 | 20060922 | 111.97377 | 143.54427 | 329.55583 | 1.61432 | 0.1588532 | 2.4240265 | 41 | 4 | 1998–2004 | 0.66 | M-v | 1 | MPC | 31453 | 2002 $CE_{133}$ |
| 2002 $CF_{133}$ | 17.0 | 0.15 | 20060922 | 82.41120 | 338.28416 | 166.21270 | 2.47787 | 0.1483235 | 2.4503119 | 97 | 4 | 1996–2006 | 0.56 | M-v | 1 | MPC | 02076 | 2002 $CF_{133}$ |
| 2002 $CG_{134}$ | 15.5 | 0.15 | 20060922 | 290.08800 | 353.36466 | 160.42946 | 5.60922 | 0.1230342 | 3.2289580 | 49 | 3 | 1996–2005 | 0.61 | M-v | 3 | MPC | 85439 | 2002 $CG_{134}$ |
| 2002 $CS_{134}$ | 16.5 | 0.15 | 20060922 | 66.99902 | 69.37093 | 167.39165 | 4.50089 | 0.2393782 | 2.3168384 | 120 | 4 | 1993–2006 | 0.49 | M-v | 1 | MPC | 03295 | 2002 $CS_{134}$ |
| 2002 $CY_{135}$ | 17.3 | 0.15 | 20060922 | 38.92727 | 320.55444 | 234.19598 | 3.37290 | 0.1511165 | 2.4133117 | 37 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 00166 | 2002 $CY_{135}$ |
| 2002 $CZ_{135}$ | 15.7 | 0.15 | 20060922 | 45.33511 | 258.56325 | 161.42291 | 8.99670 | 0.2637714 | 2.7483230 | 65 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 90148 | 2002 $CZ_{135}$ |
| 2002 $CH_{136}$ | 15.3 | 0.15 | 20060922 | 342.26595 | 191.73184 | 245.06393 | 6.69216 | 0.2128256 | 3.0739282 | 88 | 4 | 1995–2006 | 0.49 | M-v | 0 | MPC | 27516 | 2002 $CH_{136}$ |
| 2002 $CO_{136}$ | 14.7 | 0.15 | 20060922 | 16.03749 | 293.18093 | 142.89044 | 17.47271 | 0.0768032 | 2.9371451 | 39 | 4 | 2000–2005 | 0.63 | M-v | 1 | MPC | 27517 | 2002 $CO_{136}$ |
| 2002 $CW_{136}$ | 14.5 | 0.15 | 20060922 | 22.42898 | 248.14672 | 147.76721 | 16.59208 | 0.1020014 | 3.1252210 | 57 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87529 | 2002 $CW_{136}$ |
| 2002 $CB_{138}$ | 14.6 | 0.15 | 20060922 | 350.10211 | 97.10038 | 301.63979 | 23.63783 | 0.3765719 | 3.1747984 | 52 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 27519 | 2002 $CB_{138}$ |
| 2002 $CQ_{138}$ | 16.8 | 0.15 | 20060922 | 35.06206 | 223.85668 | 263.84269 | 5.59040 | 0.2441088 | 2.6327098 | 69 | 2 | 2002–2006 | 0.46 | M-v | 4 | MPC | 94612 | 2002 $CQ_{138}$ |
| 2002 $CP_{142}$ | 15.6 | 0.15 | 20060922 | 78.43126 | 281.44487 | 159.98044 | 4.89409 | 0.0983772 | 2.5752123 | 42 | 3 | 2001–2006 | 0.56 | M-v | 4 | MPC | 94613 | 2002 $CP_{142}$ |
| 2002 $CC_{144}$ | 17.4 | 0.15 | 20060922 | 92.11921 | 264.69659 | 251.26815 | 2.61756 | 0.1102319 | 2.3620196 | 31 | 2 | 2002–2006 | 0.63 | M-v | 4 | MPC | 03295 | 2002 $CC_{144}$ |
| 2002 $CH_{144}$ | 15.6 | 0.15 | 20060922 | 12.10802 | 138.06396 | 318.56594 | 7.76731 | 0.0454463 | 2.9943014 | 58 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 97568 | 2002 $CH_{144}$ |
| 2002 $CJ_{144}$ | 16.6 | 0.15 | 20060922 | 35.94397 | 40.62731 | 181.66889 | 2.47449 | 0.1132086 | 2.3688557 | 81 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 04192 | 2002 $CJ_{144}$ |
| 2002 $CQ_{144}$ | 17.4 | 0.15 | 20060922 | 92.99423 | 253.59181 | 238.00386 | 1.55385 | 0.1656537 | 2.4294651 | 59 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 02076 | 2002 $CQ_{144}$ |
| 2002 $CU_{144}$ | 17.3 | 0.15 | 20060922 | 124.64135 | 292.00294 | 165.90992 | 2.35805 | 0.1478917 | 2.4136289 | 74 | 5 | 1994–2006 | 0.53 | M-v | 0 | MPC | 04192 | 2002 $CU_{144}$ |
| 2002 $CM_{146}$ | 16.5 | 0.15 | 20060922 | 81.23328 | 359.56473 | 171.60299 | 5.31714 | 0.1691207 | 2.3899791 | 120 | 3 | 1996–2006 | 0.52 | M-v | 3 | MPC | 00168 | 2002 $CM_{146}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $CV_{147}$ | 15.9 | 0.15 | 20060922 | 75.68046 | 316.03070 | 98.60989 | 4.93503 | 0.0462012 | 2.7619836 | 62 | 4 | 1995–2006 | 0.60 | M-v | 1 | MPC | 94614 | 2002 $CV_{147}$ |
| 2002 $CL_{148}$ | 16.7 | 0.15 | 20060922 | 8.14802 | 321.69257 | 303.30061 | 4.71255 | 0.1405031 | 2.3041279 | 64 | 5 | 1996–2006 | 0.65 | M-v | 1 | MPC | 02076 | 2002 $CL_{148}$ |
| 2002 $CX_{148}$ | 14.9 | 0.15 | 20060922 | 159.24733 | 325.38240 | 306.51035 | 4.94621 | 0.0551292 | 3.2667685 | 43 | 5 | 1999–2006 | 0.67 | M-v | 1 | MPC | 00169 | 2002 $CX_{148}$ |
| 2002 $CH_{149}$ | 17.9 | 0.15 | 20060922 | 176.97486 | 40.19797 | 57.35969 | 1.32485 | 0.1118899 | 2.2222309 | 35 | 4 | 1992–2006 | 0.47 | M-v | 2 | MPC | 27527 | 2002 $CH_{149}$ |
| 2002 $CN_{150}$ | 15.7 | 0.15 | 20060922 | 354.32289 | 337.48689 | 94.27175 | 3.17566 | 0.1052777 | 3.1881957 | 66 | 5 | 2000–2006 | 0.49 | M-v | 0 | MPC | 89237 | 2002 $CN_{150}$ |
| 2002 $CS_{150}$ | 17.3 | 0.15 | 20060922 | 79.84114 | 106.87633 | 357.41956 | 4.63233 | 0.1783835 | 2.5418310 | 40 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | 94615 | 2002 $CS_{150}$ |
| 2002 $CU_{151}$ | 16.9 | 0.15 | 20060922 | 358.74003 | 135.51968 | 118.38975 | 3.33677 | 0.1782388 | 2.4513942 | 59 | 3 | 2002–2006 | 0.66 | M-v | 2 | MPC | 02076 | 2002 $CU_{151}$ |
| 2002 $CM_{152}$ | 17.4 | 0.15 | 20060922 | 60.54014 | 80.74740 | 112.42449 | 7.24657 | 0.0575719 | 2.3110446 | 34 | 4 | 1999–2006 | 0.67 | M-v | 1 | MPC | 02076 | 2002 $CM_{152}$ |
| 2002 $CU_{152}$ | 13.5 | 0.15 | 20060922 | 163.48112 | 119.41563 | 3.65010 | 6.92872 | 0.0531414 | 5.2542908 | 27 | 4 | 1996–2003 | 0.59 | M-v | 1 | MPC | 50593 | 2002 $CU_{152}$ |
| 2002 $CA_{153}$ | 16.1 | 0.15 | 20060922 | 258.81608 | 153.44988 | 6.01546 | 20.84210 | 0.0544611 | 1.9169630 | 78 | 4 | 1995–2006 | 0.56 | M-v | 2 | MPC | 57851 | 2002 $CA_{153}$ |
| 2002 $CN_{153}$ | 15.9 | 0.15 | 20060922 | 95.80904 | 43.69634 | 314.30960 | 8.05832 | 0.1013692 | 2.9324759 | 46 | 3 | 2002–2006 | 0.53 | M-v | 4 | MPC | 97568 | 2002 $CN_{153}$ |
| 2002 $CQ_{153}$ | 16.4 | 0.15 | 20060922 | 91.09147 | 27.83709 | 320.75376 | 2.97212 | 0.1539178 | 3.0016885 | 38 | 2 | 2002–2005 | 0.50 | M-v | 4 | MPC | 89238 | 2002 $CQ_{153}$ |
| 2002 $CR_{155}$ | 15.2 | 0.15 | 20060922 | 330.75629 | 163.60690 | 329.12997 | 12.10165 | 0.1353707 | 2.9204103 | 48 | 2 | 2002–2005 | 0.57 | M-v | 3 | MPC | 89238 | 2002 $CR_{155}$ |
| 2002 $CT_{155}$ | 15.5 | 0.15 | 20060922 | 198.98423 | 237.90542 | 3.48976 | 5.06141 | 0.0903916 | 3.1438664 | 41 | 7 | 1994–2006 | 0.46 | M-v | 0 | MPC | 94617 | 2002 $CT_{155}$ |
| 2002 $CV_{155}$ | 15.1 | 0.15 | 20060922 | 347.37629 | 86.32875 | 322.95382 | 23.87576 | 0.2681516 | 3.1746099 | 30 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 27529 | 2002 $CV_{155}$ |
| 2002 $CO_{156}$ | 16.0 | 0.15 | 20060922 | 293.43569 | 145.66178 | 353.61382 | 3.32515 | 0.1581876 | 3.1319212 | 27 | 3 | 2002–2006 | 0.60 | M-v | 4 | MPC | 03296 | 2002 $CO_{156}$ |
| 2002 $CP_{156}$ | 17.0 | 0.15 | 20060922 | 81.85617 | 357.38777 | 127.60705 | 3.38213 | 0.1062429 | 2.4399046 | 41 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 94617 | 2002 $CP_{156}$ |
| 2002 $CQ_{156}$ | 16.0 | 0.15 | 20060922 | 333.43310 | 140.11150 | 347.23487 | 1.57767 | 0.0503214 | 2.9364459 | 63 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 89238 | 2002 $CQ_{156}$ |
| 2002 $CR_{156}$ | 15.0 | 0.15 | 20060922 | 95.55775 | 257.51465 | 83.41378 | 10.47835 | 0.0940327 | 3.0839597 | 61 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 97568 | 2002 $CR_{156}$ |
| 2002 $CN_{157}$ | 16.4 | 0.15 | 20060922 | 322.23895 | 101.39696 | 139.80332 | 4.59501 | 0.1249309 | 2.5496634 | 38 | 3 | 1999–2006 | 0.57 | M-v | 3 | MPC | 94617 | 2002 $CN_{157}$ |
| 2002 $CK_{158}$ | 17.0 | 0.15 | 20060922 | 191.23411 | 316.04419 | 127.50530 | 1.98137 | 0.1028372 | 2.2184636 | 61 | 6 | 1992–2006 | 0.61 | M-v | 1 | MPC | 02077 | 2002 $CK_{158}$ |
| 2002 $CS_{158}$ | 15.4 | 0.15 | 20060922 | 6.76423 | 350.10270 | 105.82963 | 3.40402 | 0.0510077 | 3.0174622 | 93 | 5 | 1999–2006 | 0.56 | M-v | 0 | MPC | 97569 | 2002 $CS_{158}$ |
| 2002 $CE_{159}$ | 17.0 | 0.15 | 20060922 | 74.07815 | 85.68864 | 95.05304 | 2.20189 | 0.1281431 | 2.3686482 | 42 | 3 | 2002–2006 | 0.59 | M-v | 4 | MPC | 00170 | 2002 $CE_{159}$ |
| 2002 $CP_{160}$ | 15.0 | 0.15 | 20060922 | 351.24791 | 343.57885 | 71.87338 | 7.41892 | 0.1943508 | 3.1201863 | 73 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 85441 | 2002 $CP_{160}$ |
| 2002 $CQ_{161}$ | 15.1 | 0.15 | 20060922 | 259.43792 | 105.79229 | 112.46054 | 10.67726 | 0.1682044 | 2.9865868 | 39 | 3 | 1993–2006 | 0.49 | M-v | 3 | MPC | 29849 | 2002 $CQ_{161}$ |
| 2002 $CW_{166}$ | 16.6 | 0.15 | 20060922 | 23.59389 | 205.61358 | 15.17491 | 7.27240 | 0.0686344 | 2.3923649 | 58 | 2 | 2002–2006 | 0.56 | M-v | 3 | MPC | 00172 | 2002 $CW_{166}$ |
| 2002 $CX_{166}$ | 15.7 | 0.15 | 20060922 | 278.60067 | 118.65760 | 44.97464 | 4.65288 | 0.1593471 | 3.2054292 | 51 | 4 | 1994–2006 | 0.44 | M-v | 1 | MPC | 04193 | 2002 $CX_{166}$ |
| 2002 $CY_{167}$ | 15.4 | 0.15 | 20060922 | 296.99167 | 113.52866 | 33.58156 | 5.57844 | 0.1061171 | 3.1758027 | 59 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 89239 | 2002 $CY_{167}$ |
| 2002 $CH_{168}$ | 17.0 | 0.15 | 20060922 | 144.31950 | 98.67688 | 65.32339 | 3.95329 | 0.0821221 | 2.1790672 | 88 | 5 | 1999–2005 | 0.59 | M-v | 1 | MPC | 74143 | 2002 $CH_{168}$ |
| 2002 $CS_{170}$ | 16.3 | 0.15 | 20060922 | 38.95910 | 187.80040 | 53.14131 | 3.47249 | 0.1252522 | 2.3253898 | 43 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 02077 | 2002 $CS_{170}$ |
| 2002 $CJ_{172}$ | 16.0 | 0.15 | 20060922 | 23.29211 | 70.00605 | 108.42403 | 5.75395 | 0.0868311 | 2.5433939 | 42 | 2 | 2002–2006 | 0.70 | M-v | 4 | MPC | 02077 | 2002 $CJ_{172}$ |
| 2002 $CP_{172}$ | 15.4 | 0.15 | 20060922 | 23.33950 | 318.03973 | 112.06471 | 10.75435 | 0.0854561 | 3.0318623 | 57 | 3 | 2002–2006 | 0.53 | M-v | 1 | MPC | 94622 | 2002 $CP_{172}$ |
| 2002 $CX_{172}$ | 15.0 | 0.15 | 20060922 | 348.30880 | 307.77559 | 123.03242 | 16.35834 | 0.2401220 | 3.1668621 | 55 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 30675 | 2002 $CX_{172}$ |
| 2002 $CT_{173}$ | 15.5 | 0.15 | 20060922 | 13.48132 | 325.65175 | 147.37556 | 17.10993 | 0.1902690 | 2.8686166 | 49 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 94622 | 2002 $CT_{173}$ |
| 2002 $CA_{174}$ | 14.9 | 0.15 | 20060922 | 219.29580 | 161.31485 | 81.34358 | 5.42558 | 0.1487322 | 3.1196657 | 67 | 5 | 2002–2006 | 0.48 | M-v | 1 | MPC | 90149 | 2002 $CA_{174}$ |
| 2002 $CH_{174}$ | 15.4 | 0.15 | 20060922 | 278.80060 | 95.87658 | 131.83012 | 10.78774 | 0.2037669 | 2.9795594 | 63 | 4 | 1990–2006 | 0.53 | M-v | 1 | MPC | 50000 | 2002 $CH_{174}$ |
| 2002 $CB_{176}$ | 15.0 | 0.15 | 20060922 | 132.95716 | 340.07424 | 316.20350 | 16.34058 | 0.0507036 | 3.1086228 | 50 | 3 | 1997–2005 | 0.69 | M-v | 2 | MPC | 48208 | 2002 $CB_{176}$ |
| 2002 $CH_{176}$ | 15.7 | 0.15 | 20060922 | 344.27053 | 158.92730 | 331.61540 | 5.01414 | 0.0107244 | 2.8370440 | 26 | 3 | 2002–2005 | 0.54 | M-v | 4 | MPC | 00173 | 2002 $CH_{176}$ |
| 2002 $CO_{176}$ | 15.2 | 0.15 | 20060922 | 144.50558 | 166.23597 | 106.80223 | 6.79853 | 0.0829748 | 3.2426213 | 41 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 87530 | 2002 $CO_{176}$ |
| 2002 $CD_{178}$ | 15.6 | 0.15 | 20060922 | 13.87161 | 1.28821 | 42.22352 | 2.12842 | 0.1128941 | 3.1333568 | 35 | 5 | 2000–2006 | 0.57 | M-v | 0 | MPC | 85443 | 2002 $CD_{178}$ |
| 2002 $CF_{179}$ | 16.6 | 0.15 | 20060922 | 104.08554 | 314.86201 | 73.66057 | 2.58154 | 0.0946151 | 2.7165084 | 49 | 5 | 2000–2005 | 0.61 | M-v | 1 | MPC | 97570 | 2002 $CF_{179}$ |
| 2002 $CP_{179}$ | 16.3 | 0.15 | 20060922 | 156.75934 | 201.45097 | 127.67909 | 2.92239 | 0.0669162 | 2.7978802 | 50 | 5 | 1998–2005 | 0.63 | M-v | 1 | MPC | 66270 | 2002 $CP_{179}$ |
| 2002 $CR_{179}$ | 16.1 | 0.15 | 20060922 | 316.32388 | 74.54257 | 45.11786 | 0.72206 | 0.1324982 | 3.0925655 | 36 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 90149 | 2002 $CR_{179}$ |
| 2002 $CQ_{181}$ | 15.0 | 0.15 | 20060922 | 336.17097 | 275.63572 | 128.98601 | 10.93778 | 0.0815665 | 3.4794072 | 42 | 5 | 1996–2006 | 0.51 | M-v | 0 | MPC | 89240 | 2002 $CQ_{181}$ |
| 2002 $CB_{182}$ | 16.1 | 0.15 | 20060922 | 355.27665 | 135.87934 | 336.53025 | 1.20156 | 0.0561413 | 2.9092767 | 57 | 5 | 1995–2005 | 0.52 | M-v | 0 | MPC | 89240 | 2002 $CB_{182}$ |
| 2002 $CA_{183}$ | 16.1 | 0.15 | 20060922 | 237.85127 | 233.01803 | 116.57104 | 7.48076 | 0.1482506 | 2.3514052 | 22 | 3 | 2000–2003 | 0.57 | M-v | 3 | MPC | 35159 | 2002 $CA_{183}$ |
| 2002 $CP_{183}$ | 15.4 | 0.15 | 20060922 | 76.19715 | 35.44049 | 317.85811 | 8.27981 | 0.1463407 | 3.1119117 | 62 | 2 | 2002–2005 | 0.64 | M-v | 4 | MPC | 89241 | 2002 $CP_{183}$ |
| 2002 $CR_{183}$ | 17.7 | 0.15 | 20060922 | 151.21550 | 309.48704 | 129.98433 | 2.91774 | 0.1846200 | 2.3241893 | 52 | 3 | 1995–2006 | 0.45 | M-v | 4 | MPC | 00173 | 2002 $CR_{183}$ |
| 2002 $CG_{184}$ | 15.5 | 0.15 | 20060922 | 170.80980 | 158.92139 | 138.20307 | 10.74307 | 0.0682310 | 2.9628775 | 40 | 4 | 2002–2005 | 0.54 | M-v | 1 | MPC | 70337 | 2002 $CG_{184}$ |
| 2002 $CE_{185}$ | 16.8 | 0.15 | 20060922 | 46.84117 | 225.06082 | 345.18465 | 3.68222 | 0.1844030 | 2.3570580 | 49 | 3 | 1996–2006 | 0.64 | M-v | 3 | MPC | 00174 | 2002 $CE_{185}$ |
| 2002 $CH_{185}$ | 13.1 | 0.15 | 20060922 | 55.52216 | 221.07870 | 5.33047 | 4.13685 | 0.0069133 | 5.1014929 | 38 | 3 | 2002–2004 | 0.39 | M-v | 2 | MPC | 66270 | 2002 $CH_{185}$ |
| 2002 $CJ_{186}$ | 15.7 | 0.15 | 20060922 | 78.43085 | 241.29254 | 128.86955 | 3.45024 | 0.0772025 | 3.0248038 | 46 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 89241 | 2002 $CJ_{186}$ |
| 2002 $CL_{187}$ | 15.9 | 0.15 | 20060922 | 331.62420 | 104.22442 | 24.39509 | 1.77295 | 0.0976850 | 2.9857375 | 62 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 97570 | 2002 $CL_{187}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $CJ_{190}$ | 16.0 | 0.15 | 20060922 | 292.57224 | 9.11807 | 139.02261 | 2.45447 | 0.1218543 | 3.1105751 | 40 | 3 | 2002–2006 | 0.55 | M-v | 4 | MPC | 00175 | 2002 $CJ_{190}$ |
| 2002 $CE_{191}$ | 16.1 | 0.15 | 20060922 | 294.85270 | 13.70431 | 137.44800 | 2.53373 | 0.1153424 | 3.0961018 | 34 | 3 | 2002–2006 | 0.44 | M-v | 4 | MPC | 90149 | 2002 $CE_{191}$ |
| 2002 $CG_{192}$ | 15.5 | 0.15 | 20060922 | 218.30597 | 166.84831 | 122.75207 | 8.89952 | 0.0894251 | 2.7245232 | 65 | 4 | 2002–2005 | 0.69 | M-v | 1 | MPC | 70337 | 2002 $CG_{192}$ |
| 2002 $CK_{194}$ | 16.5 | 0.15 | 20060922 | 33.14906 | 53.66329 | 18.30515 | 1.87303 | 0.0897976 | 2.9206811 | 50 | 5 | 1995–2006 | 0.44 | M-v | 2 | MPC | 90149 | 2002 $CK_{194}$ |
| 2002 $CS_{194}$ | 16.4 | 0.15 | 20060922 | 295.74155 | 125.08713 | 138.16985 | 2.86058 | 0.0381511 | 2.5285526 | 52 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 02078 | 2002 $CS_{194}$ |
| 2002 $CN_{195}$ | 17.3 | 0.15 | 20060922 | 11.88508 | 267.91331 | 334.29783 | 1.16816 | 0.1641846 | 2.3799398 | 38 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 00175 | 2002 $CN_{195}$ |
| 2002 $CO_{197}$ | 16.5 | 0.15 | 20060922 | 16.57655 | 211.65324 | 73.46239 | 1.49473 | 0.1590206 | 2.2075972 | 61 | 3 | 2002–2005 | 0.59 | M-v | 3 | MPC | 53700 | 2002 $CO_{197}$ |
| 2002 $CM_{198}$ | 15.9 | 0.15 | 20060922 | 14.03649 | 305.86322 | 139.55507 | 9.60785 | 0.0633927 | 2.9907742 | 40 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 90149 | 2002 $CM_{198}$ |
| 2002 $CB_{199}$ | 15.3 | 0.15 | 20060922 | 85.24955 | 239.54968 | 119.62261 | 3.69059 | 0.0732505 | 3.1007345 | 89 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 90149 | 2002 $CB_{199}$ |
| 2002 $CF_{199}$ | 16.5 | 0.15 | 20060922 | 340.31123 | 338.55728 | 327.41084 | 7.10148 | 0.1650028 | 2.2404083 | 39 | 3 | 2000–2003 | 0.57 | M-v | 3 | MPC | 50593 | 2002 $CF_{199}$ |
| 2002 $CR_{199}$ | 17.5 | 0.15 | 20060922 | 63.58039 | 45.67795 | 114.66882 | 2.24776 | 0.1381948 | 2.4412542 | 25 | 2 | 2002–2006 | 0.31 | M-v | 3 | MPC | 00177 | 2002 $CR_{199}$ |
| 2002 $CF_{200}$ | 15.4 | 0.15 | 20060922 | 3.22963 | 87.44072 | 340.26882 | 8.18688 | 0.0856325 | 3.1643246 | 47 | 2 | 2002–2005 | 0.46 | M-v | 3 | MPC | 89242 | 2002 $CF_{200}$ |
| 2002 $CA_{201}$ | 16.4 | 0.15 | 20060922 | 81.69931 | 269.56978 | 142.80460 | 10.26170 | 0.0796718 | 2.7854657 | 35 | 5 | 2000–2005 | 0.56 | M-v | 0 | MPC | 65323 | 2002 $CA_{201}$ |
| 2002 $CF_{201}$ | 16.4 | 0.15 | 20060922 | 328.58580 | 162.38299 | 137.74973 | 3.84570 | 0.1290216 | 2.3017563 | 57 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 04193 | 2002 $CF_{201}$ |
| 2002 $CL_{201}$ | 15.9 | 0.15 | 20060922 | 260.77161 | 165.24895 | 9.92672 | 2.14048 | 0.0200897 | 3.2116297 | 54 | 3 | 1999–2005 | 0.44 | M-v | 4 | MPC | 90150 | 2002 $CL_{201}$ |
| 2002 $CT_{201}$ | 17.5 | 0.15 | 20060922 | 114.05260 | 348.24895 | 113.51155 | 2.06823 | 0.1465302 | 2.4220179 | 47 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 03296 | 2002 $CT_{201}$ |
| 2002 $CG_{203}$ | 17.1 | 0.15 | 20060922 | 344.46661 | 99.95520 | 124.52063 | 0.80461 | 0.1245625 | 2.5494218 | 31 | 4 | 1994–2006 | 0.56 | M-v | 4 | MPC | 04193 | 2002 $CG_{203}$ |
| 2002 $CR_{203}$ | 16.3 | 0.15 | 20060922 | 44.96196 | 71.21273 | 11.12182 | 2.11987 | 0.1175364 | 2.8124476 | 75 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 97571 | 2002 $CR_{203}$ |
| 2002 $CW_{204}$ | 16.9 | 0.15 | 20060922 | 325.17107 | 220.45806 | 18.62326 | 2.60287 | 0.1030304 | 2.5634746 | 41 | 3 | 2002–2006 | 0.56 | M-v | 4 | MPC | 94631 | 2002 $CW_{204}$ |
| 2002 $CZ_{204}$ | 15.2 | 0.15 | 20060922 | 183.65799 | 157.50136 | 136.40659 | 12.11655 | 0.0893703 | 2.9827054 | 39 | 5 | 2002–2006 | 0.59 | M-v | 1 | MPC | 87530 | 2002 $CZ_{204}$ |
| 2002 $CA_{205}$ | 16.2 | 0.15 | 20060922 | 18.80583 | 352.33482 | 117.84857 | 3.77835 | 0.1216357 | 2.8296294 | 65 | 3 | 1997–2006 | 0.61 | M-v | 1 | MPC | 97571 | 2002 $CA_{205}$ |
| 2002 $CP_{205}$ | 15.6 | 0.15 | 20060922 | 43.50652 | 261.13885 | 148.90284 | 10.12335 | 0.0792952 | 3.0387783 | 34 | 3 | 2002–2005 | 0.69 | M-v | 3 | MPC | 94632 | 2002 $CP_{205}$ |
| 2002 $CX_{205}$ | 15.7 | 0.15 | 20060922 | 54.81920 | 292.89600 | 117.05795 | 0.30200 | 0.0306784 | 3.0072238 | 70 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 97571 | 2002 $CX_{205}$ |
| 2002 $CL_{206}$ | 14.8 | 0.15 | 20060922 | 90.08535 | 212.87687 | 141.66191 | 11.83967 | 0.1008266 | 3.1311636 | 50 | 3 | 1999–2005 | 0.52 | M-v | 3 | MPC | 89243 | 2002 $CL_{206}$ |
| 2002 $CC_{208}$ | 17.0 | 0.15 | 20060922 | 42.95676 | 171.52105 | 17.22212 | 1.54454 | 0.1310354 | 2.4491198 | 73 | 2 | 2002–2006 | 0.44 | M-v | 3 | MPC | 00178 | 2002 $CC_{208}$ |
| 2002 $CN_{209}$ | 15.4 | 0.15 | 20060922 | 239.27215 | 202.99104 | 56.96310 | 2.86727 | 0.0228572 | 2.8527695 | 66 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 97571 | 2002 $CN_{209}$ |
| 2002 $CQ_{209}$ | 16.3 | 0.15 | 20060922 | 350.71748 | 156.41295 | 131.23027 | 7.19815 | 0.1232027 | 2.2997261 | 67 | 4 | 1995–2006 | 0.61 | M-v | 1 | MPC | 02078 | 2002 $CQ_{209}$ |
| 2002 $CC_{210}$ | 17.0 | 0.15 | 20060922 | 46.20421 | 295.29643 | 148.15281 | 10.18552 | 0.3286322 | 2.7217979 | 46 | 2 | 2002–2005 | 0.54 | M-v | 3 | MPC | 89244 | 2002 $CC_{210}$ |
| 2002 $CE_{210}$ | 17.6 | 0.15 | 20060922 | 176.11534 | 306.30207 | 139.18045 | 3.42656 | 0.1143541 | 2.2824347 | 45 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 00179 | 2002 $CE_{210}$ |
| 2002 $CG_{210}$ | 15.6 | 0.15 | 20060922 | 324.82723 | 101.23489 | 29.34099 | 1.35182 | 0.1111834 | 3.0839027 | 73 | 4 | 1994–2006 | 0.51 | M-v | 1 | MPC | 97572 | 2002 $CG_{210}$ |
| 2002 $CW_{210}$ | 12.6 | 0.15 | 20060922 | 205.72384 | 84.77896 | 1.75411 | 8.99285 | 0.0552084 | 5.1382362 | 43 | 3 | 2001–2003 | 0.57 | M-v | 2 | MPC | 48209 | 2002 $CW_{210}$ |
| 2002 $CD_{211}$ | 15.0 | 0.15 | 20060922 | 244.51638 | 109.30192 | 120.29292 | 3.10557 | 0.0793121 | 3.0514624 | 95 | 4 | 2002–2006 | 0.46 | M-v | 0 | MPC | 97572 | 2002 $CD_{211}$ |
| 2002 $CU_{211}$ | 15.7 | 0.15 | 20060922 | 183.07011 | 284.03920 | 2.25629 | 1.11612 | 0.0874590 | 3.0018317 | 46 | 5 | 1999–2006 | 0.37 | M-v | 0 | MPC | 97572 | 2002 $CU_{211}$ |
| 2002 $CW_{212}$ | 17.3 | 0.15 | 20060922 | 21.13357 | 96.20105 | 141.33038 | 2.63004 | 0.1774113 | 2.3844157 | 49 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 04193 | 2002 $CW_{212}$ |
| 2002 $CB_{214}$ | 15.9 | 0.15 | 20060922 | 73.25382 | 315.45037 | 127.05511 | 2.97283 | 0.0449390 | 2.7365383 | 45 | 4 | 2002–2006 | 0.72 | M-v | 1 | MPC | 97572 | 2002 $CB_{214}$ |
| 2002 $CE_{214}$ | 15.4 | 0.15 | 20060922 | 3.54767 | 324.96638 | 136.54432 | 3.96539 | 0.0811351 | 3.0132083 | 91 | 6 | 1999–2006 | 0.49 | M-v | 0 | MPC | 90150 | 2002 $CE_{214}$ |
| 2002 $CB_{216}$ | 17.4 | 0.15 | 20060922 | 122.52312 | 27.58923 | 75.43207 | 2.03781 | 0.1600961 | 2.4104670 | 39 | 5 | 1993–2006 | 0.49 | M-v | 0 | MPC | 02079 | 2002 $CB_{216}$ |
| 2002 $CJ_{216}$ | 17.8 | 0.15 | 20060922 | 82.15206 | 9.34728 | 148.24836 | 2.91076 | 0.1320024 | 2.4077430 | 37 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 00180 | 2002 $CJ_{216}$ |
| 2002 $CY_{216}$ | 15.7 | 0.15 | 20060922 | 10.29961 | 2.94614 | 72.20103 | 3.32590 | 0.2643037 | 3.0191206 | 33 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 31970 | 2002 $CY_{216}$ |
| 2002 $CM_{217}$ | 15.5 | 0.15 | 20060922 | 222.62824 | 168.96582 | 107.69269 | 3.23985 | 0.0296504 | 2.8994989 | 80 | 4 | 2002–2006 | 0.53 | M-v | 0 | MPC | 97572 | 2002 $CM_{217}$ |
| 2002 $CE_{219}$ | 16.8 | 0.15 | 20060922 | 148.62378 | 325.73041 | 122.05661 | 5.25272 | 0.1893545 | 2.3633612 | 57 | 3 | 1995–2004 | 0.58 | M-v | 1 | MPC | 74145 | 2002 $CE_{219}$ |
| 2002 $CE_{220}$ | 15.9 | 0.15 | 20060922 | 58.11091 | 293.56750 | 145.03511 | 2.96387 | 0.0377026 | 2.8445567 | 46 | 3 | 1999–2006 | 0.64 | M-v | 3 | MPC | 03297 | 2002 $CE_{220}$ |
| 2002 $CO_{220}$ | 16.8 | 0.15 | 20060922 | 35.79376 | 150.18121 | 71.32508 | 2.05826 | 0.1292425 | 2.3985314 | 83 | 4 | 1992–2006 | 0.63 | M-v | 1 | MPC | 04193 | 2002 $CO_{220}$ |
| 2002 $CO_{221}$ | 16.6 | 0.15 | 20060922 | 166.98500 | 108.82644 | 357.15800 | 5.25489 | 0.1497911 | 2.2826129 | 85 | 3 | 2000–2005 | 0.53 | M-v | 2 | MPC | 72529 | 2002 $CO_{221}$ |
| 2002 $CD_{222}$ | 15.3 | 0.15 | 20060922 | 103.17450 | 189.41675 | 135.45963 | 6.10776 | 0.1569131 | 3.1583686 | 52 | 4 | 1999–2005 | 0.53 | M-v | 1 | MPC | 89244 | 2002 $CD_{222}$ |
| 2002 $CV_{222}$ | 16.2 | 0.15 | 20060922 | 193.46248 | 18.25760 | 293.99849 | 4.69676 | 0.0393461 | 2.7733951 | 81 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97572 | 2002 $CV_{222}$ |
| 2002 $CF_{223}$ | 12.8 | 0.15 | 20060922 | 24.49320 | 308.03735 | 325.94991 | 4.52962 | 0.0694717 | 5.1398374 | 52 | 7 | 1996–2006 | 0.62 | M-v | 0 | MPC | 04193 | 2002 $CF_{223}$ |
| 2002 $CL_{223}$ | 15.6 | 0.15 | 20060922 | 239.57760 | 47.93398 | 173.31121 | 10.47705 | 0.1516137 | 3.1669779 | 34 | 3 | 2002–2005 | 0.65 | M-v | 2 | MPC | 89244 | 2002 $CL_{223}$ |
| 2002 $CP_{224}$ | 16.1 | 0.15 | 20060922 | 309.77394 | 93.22621 | 52.16539 | 3.83407 | 0.2042439 | 3.1102113 | 36 | 3 | 2000–2005 | 0.55 | M-v | 3 | MPC | 90150 | 2002 $CP_{224}$ |
| 2002 $CT_{224}$ | 14.7 | 0.15 | 20060922 | 306.80948 | 27.90574 | 197.52108 | 4.31250 | 0.1375488 | 2.8048007 | 82 | 4 | 1999–2004 | 0.63 | M-v | 1 | MPC | 50002 | 2002 $CT_{224}$ |
| 2002 $CG_{225}$ | 14.6 | 0.15 | 20060922 | 164.63404 | 143.16015 | 154.97842 | 27.70502 | 0.1933065 | 3.1737204 | 96 | 3 | 2002–2004 | 0.62 | M-v | 2 | MPC | 70338 | 2002 $CG_{225}$ |
| 2002 $CH_{225}$ | 16.4 | 0.15 | 20060922 | 174.80304 | 193.77921 | 152.24056 | 6.71079 | 0.0434500 | 2.7479282 | 32 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 03298 | 2002 $CH_{225}$ |
| 2002 $CT_{225}$ | 14.4 | 0.15 | 20060922 | 108.70457 | 41.55123 | 279.86522 | 15.31110 | 0.0883153 | 3.1949674 | 66 | 7 | 1995–2006 | 0.59 | M-v | 1 | MPC | 94639 | 2002 $CT_{225}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $CD_{226}$ | 15.6 | 0.15 | 20060922 | 39.11823 | 107.89111 | 300.84912 | 8.86582 | 0.1872510 | 2.9095282 | 36 | 4 | 2000–2006 | 0.45 | M-v | 2 | MPC | 94640 | 2002 $CD_{226}$ |
| 2002 $CK_{226}$ | 14.9 | 0.15 | 20060922 | 168.44129 | 338.40318 | 296.75489 | 9.27974 | 0.0606776 | 3.1053446 | 52 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 89244 | 2002 $CK_{226}$ |
| 2002 $CZ_{226}$ | 15.7 | 0.15 | 20060922 | 32.15754 | 163.78909 | 273.73010 | 5.07333 | 0.0567148 | 2.8729815 | 46 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 97573 | 2002 $CZ_{226}$ |
| 2002 $CA_{227}$ | 15.4 | 0.15 | 20060922 | 233.02741 | 142.12449 | 149.38216 | 13.62273 | 0.1545060 | 2.6551904 | 59 | 4 | 1998–2004 | 0.53 | M-v | 1 | MPC | 74145 | 2002 $CA_{227}$ |
| 2002 $CB_{227}$ | 15.7 | 0.15 | 20060922 | 297.94185 | 307.47358 | 193.22436 | 4.23951 | 0.0905813 | 3.1079102 | 48 | 5 | 1994–2006 | 0.38 | M-v | 1 | MPC | 87531 | 2002 $CB_{227}$ |
| 2002 $CD_{228}$ | 15.2 | 0.15 | 20060922 | 345.88057 | 175.38387 | 287.38540 | 9.72944 | 0.0430117 | 3.0870734 | 37 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 89245 | 2002 $CD_{228}$ |
| 2002 $CV_{228}$ | 17.6 | 0.15 | 20060922 | 236.92440 | 283.98642 | 86.39560 | 6.50511 | 0.1607005 | 2.3299580 | 21 | 3 | 2000–2004 | 0.51 | M-v | 3 | MPC | 72530 | 2002 $CV_{228}$ |
| 2002 $CC_{232}$ | 17.5 | 0.15 | 20060922 | 124.39358 | 295.10058 | 312.73175 | 19.18764 | 0.0404640 | 1.9640448 | 42 | 3 | 2002–2005 | 0.63 | M-v | 2 | MPC | 53700 | 2002 $CC_{232}$ |
| 2002 $CX_{233}$ | 15.8 | 0.15 | 20060922 | 346.08009 | 325.33941 | 273.58580 | 5.24395 | 0.1466995 | 2.5187742 | 58 | 6 | 1994–2006 | 0.63 | M-v | 1 | MPC | 02079 | 2002 $CX_{233}$ |
| 2002 $CN_{234}$ | 17.8 | 0.15 | 20060922 | 164.05403 | 281.22343 | 131.42114 | 4.99885 | 0.2560308 | 2.3194970 | 25 | 3 | 1995–2004 | 0.37 | M-v | 1 | MPC | 85448 | 2002 $CN_{234}$ |
| 2002 $CZ_{234}$ | 15.9 | 0.15 | 20060922 | 266.72356 | 173.10917 | 12.25097 | 0.09128 | 0.1169714 | 3.0847664 | 48 | 3 | 2000–2005 | 0.55 | M-v | 4 | MPC | 97573 | 2002 $CZ_{234}$ |
| 2002 $CK_{236}$ | 16.2 | 0.15 | 20060922 | 45.07054 | 272.32825 | 149.59910 | 2.49006 | 0.0642502 | 2.8416420 | 57 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 94641 | 2002 $CK_{236}$ |
| 2002 $CN_{236}$ | 17.5 | 0.15 | 20060922 | 144.81768 | 33.60513 | 65.81998 | 5.02670 | 0.0901211 | 2.2771731 | 43 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 00183 | 2002 $CN_{236}$ |
| 2002 $CD_{237}$ | 15.5 | 0.15 | 20060922 | 228.27960 | 161.94002 | 105.90828 | 2.89198 | 0.1371693 | 3.0111478 | 45 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 97573 | 2002 $CD_{237}$ |
| 2002 $CZ_{238}$ | 15.8 | 0.15 | 20060922 | 303.75449 | 295.57720 | 203.57184 | 4.14811 | 0.1418724 | 3.2212782 | 57 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 90150 | 2002 $CZ_{238}$ |
| 2002 $CL_{241}$ | 16.4 | 0.15 | 20060922 | 147.24217 | 233.63052 | 225.95303 | 5.67686 | 0.0577023 | 2.3514968 | 73 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 02079 | 2002 $CL_{241}$ |
| 2002 $CV_{245}$ | 15.4 | 0.15 | 20060922 | 302.28110 | 329.42195 | 149.44124 | 11.51107 | 0.1373267 | 3.1798827 | 39 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 89246 | 2002 $CV_{245}$ |
| 2002 $CD_{246}$ | 17.9 | 0.15 | 20060922 | 118.75003 | 9.02381 | 129.99345 | 1.86717 | 0.0440266 | 2.3267757 | 39 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 02080 | 2002 $CD_{246}$ |
| 2002 $CO_{246}$ | 15.6 | 0.15 | 20060922 | 161.74983 | 298.31806 | 347.79768 | 4.32347 | 0.0922606 | 3.1396030 | 50 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 90151 | 2002 $CO_{246}$ |
| 2002 $CY_{248}$ | 4.9 | 0.15 | 20060922 | 219.32791 | 337.52678 | 300.72017 | 7.04516 | 0.1467314 | 46.1996080 | 18 | 3 | 2002–2005 | 0.18 | M-v | 5 | MPC | 74147 | 2002 $CY_{248}$ |
| 2002 $CU_{250}$ | 15.8 | 0.15 | 20060922 | 12.06971 | 30.34426 | 48.05884 | 2.04336 | 0.1343921 | 3.0451402 | 48 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97574 | 2002 $CU_{250}$ |
| 2002 $CK_{252}$ | 16.7 | 0.15 | 20060922 | 46.44049 | 245.11788 | 231.26491 | 3.76607 | 0.1146081 | 2.6109181 | 31 | 3 | 2002–2005 | 0.46 | M-v | 3 | MPC | 69255 | 2002 $CK_{252}$ |
| 2002 $CS_{252}$ | 15.2 | 0.15 | 20060922 | 224.04247 | 132.22660 | 101.01611 | 10.20782 | 0.0410404 | 2.9945761 | 33 | 4 | 1998–2005 | 0.61 | M-v | 1 | MPC | 94646 | 2002 $CS_{252}$ |
| 2002 $CW_{252}$ | 17.4 | 0.15 | 20060922 | 55.19015 | 357.32639 | 170.36425 | 5.46781 | 0.1941580 | 2.4124159 | 36 | 2 | 2002–2006 | 0.42 | M-v | 3 | MPC | 00185 | 2002 $CW_{252}$ |
| 2002 $CH_{253}$ | 14.2 | 0.15 | 20060922 | 311.91351 | 207.72076 | 286.31136 | 16.05012 | 0.1569241 | 3.0897774 | 52 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 90151 | 2002 $CH_{253}$ |
| 2002 $CJ_{253}$ | 15.5 | 0.15 | 20060922 | 158.40312 | 39.11328 | 233.86751 | 8.12782 | 0.0327821 | 3.1568515 | 30 | 4 | 2000–2006 | 0.30 | M-v | 0 | MPC | 94647 | 2002 $CJ_{253}$ |
| 2002 $CP_{253}$ | 16.2 | 0.15 | 20060922 | 26.18202 | 196.79912 | 260.21430 | 8.84552 | 0.1768378 | 2.7731878 | 43 | 3 | 1996–2005 | 0.52 | M-v | 2 | MPC | 97574 | 2002 $CP_{253}$ |
| 2002 $CC_{254}$ | 16.0 | 0.15 | 20060922 | 91.86714 | 110.22384 | 303.86905 | 3.37366 | 0.0952059 | 2.6404642 | 30 | 2 | 2002–2006 | 0.43 | M-v | 4 | MPC | 03299 | 2002 $CC_{254}$ |
| 2002 $CD_{254}$ | 16.0 | 0.15 | 20060922 | 282.14454 | 196.51152 | 319.77524 | 3.92009 | 0.0752611 | 3.1009014 | 31 | 3 | 2002–2005 | 0.44 | M-v | 3 | MPC | 89247 | 2002 $CD_{254}$ |
| 2002 $CZ_{254}$ | 17.2 | 0.15 | 20060922 | 54.13195 | 347.42539 | 208.48428 | 5.01827 | 0.1526583 | 2.3511997 | 30 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04193 | 2002 $CZ_{254}$ |
| 2002 $CE_{255}$ | 15.0 | 0.15 | 20060922 | 37.97906 | 104.81939 | 306.24806 | 7.63386 | 0.0595067 | 3.0333307 | 73 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 90151 | 2002 $CE_{255}$ |
| 2002 $CF_{256}$ | 16.6 | 0.15 | 20060922 | 342.95479 | 22.97052 | 80.58387 | 5.75684 | 0.1669220 | 2.9762165 | 28 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 03299 | 2002 $CF_{256}$ |
| 2002 $CL_{256}$ | 14.9 | 0.15 | 20060922 | 97.47695 | 349.30195 | 347.56860 | 10.18470 | 0.0309073 | 3.1263428 | 43 | 3 | 2002–2005 | 0.69 | M-v | 2 | MPC | 90151 | 2002 $CL_{256}$ |
| 2002 $CK_{259}$ | 14.4 | 0.15 | 20060922 | 357.33052 | 302.89770 | 117.53120 | 22.23355 | 0.3938951 | 3.1302872 | 68 | 6 | 2000–2006 | 0.62 | M-v | 1 | MPC | 87532 | 2002 $CK_{259}$ |
| 2002 $CX_{259}$ | 14.5 | 0.15 | 20060922 | 40.58783 | 102.71476 | 281.86867 | 12.96934 | 0.0690457 | 3.1059701 | 60 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 90151 | 2002 $CX_{259}$ |
| 2002 $CJ_{260}$ | 16.1 | 0.15 | 20060922 | 48.93399 | 79.34436 | 310.18952 | 0.40131 | 0.1426206 | 3.0699370 | 60 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 97574 | 2002 $CJ_{260}$ |
| 2002 $CO_{260}$ | 16.8 | 0.15 | 20060922 | 319.34059 | 83.46000 | 188.42615 | 1.29468 | 0.1563514 | 2.4624959 | 45 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 02080 | 2002 $CO_{260}$ |
| 2002 $CT_{261}$ | 16.8 | 0.15 | 20060922 | 57.86465 | 92.95765 | 84.64885 | 3.28448 | 0.1516536 | 2.4241931 | 44 | 3 | 1998–2006 | 0.72 | M-v | 3 | MPC | 00185 | 2002 $CT_{261}$ |
| 2002 $CF_{263}$ | 14.5 | 0.15 | 20060922 | 266.37264 | 168.93049 | 53.77485 | 14.24820 | 0.2677033 | 3.0673542 | 72 | 3 | 1997–2005 | 0.55 | M-v | 2 | MPC | 89247 | 2002 $CF_{263}$ |
| 2002 $CU_{263}$ | 15.5 | 0.15 | 20060922 | 128.95250 | 29.93463 | 328.06654 | 1.23902 | 0.0881486 | 2.8459156 | 68 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 94653 | 2002 $CU_{263}$ |
| 2002 $CX_{263}$ | 17.6 | 0.15 | 20060922 | 308.74478 | 112.87233 | 145.34568 | 4.67010 | 0.1130385 | 2.5497502 | 31 | 5 | 1994–2006 | 0.54 | M-v | 3 | MPC | 02080 | 2002 $CX_{263}$ |
| 2002 $CP_{264}$ | 16.7 | 0.15 | 20060922 | 271.91036 | 6.44053 | 314.93377 | 6.24826 | 0.1285286 | 2.3664676 | 22 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 61220 | 2002 $CP_{264}$ |
| 2002 $CB_{265}$ | 17.1 | 0.15 | 20060922 | 349.73383 | 271.37168 | 333.12167 | 4.96986 | 0.0751555 | 2.3677717 | 25 | 3 | 2000–2006 | 0.42 | M-v | 3 | MPC | 94653 | 2002 $CB_{265}$ |
| 2002 $CM_{265}$ | 14.1 | 0.15 | 20060922 | 258.47078 | 144.85989 | 69.90472 | 9.91492 | 0.0295829 | 3.1092552 | 140 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 97574 | 2002 $CM_{265}$ |
| 2002 $CV_{265}$ | 17.1 | 0.15 | 20060922 | 338.01467 | 317.41416 | 120.02249 | 4.71124 | 0.2508992 | 3.1061674 | 31 | 3 | 2000–2006 | 0.26 | M-v | 2 | MPC | 94653 | 2002 $CV_{265}$ |
| 2002 $CF_{266}$ | 16.2 | 0.15 | 20060922 | 87.23577 | 311.59218 | 58.88128 | 2.03437 | 0.1098732 | 2.9745524 | 32 | 4 | 2002–2005 | 0.49 | M-v | 1 | MPC | 94653 | 2002 $CF_{266}$ |
| 2002 $CT_{267}$ | 14.4 | 0.15 | 20060922 | 320.00762 | 246.16997 | 133.92091 | 7.69008 | 0.1451324 | 3.9897804 | 27 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 03299 | 2002 $CT_{267}$ |
| 2002 $CT_{271}$ | 16.0 | 0.15 | 20060922 | 174.49202 | 167.68294 | 118.65277 | 2.74345 | 0.0240938 | 3.0440068 | 29 | 2 | 2002–2005 | 0.49 | M-v | 3 | MPC | 03300 | 2002 $CT_{271}$ |
| 2002 $CN_{272}$ | 14.7 | 0.15 | 20060922 | 305.96411 | 64.67734 | 114.46527 | 12.23492 | 0.1348370 | 2.9769421 | 86 | 6 | 1993–2006 | 0.52 | M-v | 1 | MPC | 90151 | 2002 $CN_{272}$ |
| 2002 $CF_{273}$ | 15.6 | 0.15 | 20060922 | 340.54281 | 94.73284 | 10.48666 | 8.15305 | 0.1125387 | 3.0432066 | 27 | 2 | 2002–2005 | 0.60 | M-v | 4 | MPC | 85451 | 2002 $CF_{273}$ |
| 2002 $CK_{273}$ | 16.8 | 0.15 | 20060922 | 144.04715 | 251.06225 | 129.01554 | 4.09660 | 0.1342495 | 2.5682763 | 29 | 3 | 2000–2006 | 0.35 | M-v | 3 | MPC | 00187 | 2002 $CK_{273}$ |
| 2002 $CL_{273}$ | 17.5 | 0.15 | 20060922 | 148.51511 | 304.56756 | 142.02667 | 1.56777 | 0.1090797 | 2.3714663 | 47 | 4 | 2000–2006 | 0.39 | M-v | 0 | MPC | 02080 | 2002 $CL_{273}$ |
| 2002 $CJ_{274}$ | 17.7 | 0.15 | 20060922 | 175.66326 | 268.33250 | 127.19893 | 5.71101 | 0.1107135 | 2.4280718 | 27 | 3 | 1998–2006 | 0.74 | M-v | 3 | MPC | 03300 | 2002 $CJ_{274}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $CB_{278}$ | 16.3 | 0.15 | 20060922 | 13.46568 | 282.56912 | 175.82166 | 3.27918 | 0.0920562 | 2.9209733 | 31 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 97575 | 2002 $CB_{278}$ |
| 2002 $CF_{278}$ | 15.6 | 0.15 | 20060922 | 253.48349 | 30.07322 | 232.27490 | 7.18122 | 0.1807893 | 2.7842184 | 35 | 6 | 1998–2005 | 0.71 | M-v | 0 | MPC | 03300 | 2002 $CF_{278}$ |
| 2002 $CQ_{278}$ | 16.2 | 0.15 | 20060922 | 268.97624 | 345.93738 | 320.97361 | 5.25576 | 0.1214875 | 2.4603990 | 44 | 4 | 2000–2006 | 0.48 | M-v | 2 | MPC | 02080 | 2002 $CQ_{278}$ |
| 2002 $CZ_{279}$ | 16.0 | 0.15 | 20060922 | 48.31185 | 72.90458 | 316.52044 | 3.77669 | 0.1634730 | 3.0470027 | 46 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 00188 | 2002 $CZ_{279}$ |
| 2002 $CP_{282}$ | 16.7 | 0.15 | 20060922 | 253.46213 | 51.97059 | 141.36188 | 3.43729 | 0.0770562 | 3.0839094 | 21 | 3 | 2002–2005 | 0.40 | M-v | 3 | MPC | 94658 | 2002 $CP_{282}$ |
| 2002 $CK_{283}$ | 16.0 | 0.15 | 20060922 | 17.78514 | 313.48661 | 160.61316 | 2.31389 | 0.0108754 | 2.9071970 | 46 | 7 | 1994–2006 | 0.44 | M-v | 0 | MPC | 04194 | 2002 $CK_{283}$ |
| 2002 $CK_{285}$ | 15.9 | 0.15 | 20060922 | 254.83386 | 200.79983 | 35.28196 | 0.23928 | 0.1554452 | 2.8557838 | 28 | 3 | 2002–2006 | 0.74 | M-v | 3 | MPC | 94658 | 2002 $CK_{285}$ |
| 2002 $CL_{287}$ | 16.2 | 0.15 | 20060922 | 43.67232 | 59.76904 | 74.98087 | 5.04848 | 0.0717878 | 2.6239683 | 44 | 3 | 2000–2006 | 0.69 | M-v | 3 | MPC | 94659 | 2002 $CL_{287}$ |
| 2002 $CW_{287}$ | 15.3 | 0.15 | 20060922 | 121.38558 | 343.18234 | 321.92397 | 8.78345 | 0.0598132 | 3.2402758 | 28 | 2 | 2002–2005 | 0.63 | M-v | 4 | MPC | 89248 | 2002 $CW_{287}$ |
| 2002 $CC_{289}$ | 14.9 | 0.15 | 20060922 | 23.46078 | 340.75797 | 61.59818 | 11.91640 | 0.0737702 | 3.0806841 | 57 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 87532 | 2002 $CC_{289}$ |
| 2002 $CU_{291}$ | 15.5 | 0.15 | 20060922 | 348.50012 | 295.28089 | 129.38333 | 9.90691 | 0.0700640 | 3.1604711 | 36 | 4 | 2000–2006 | 0.56 | M-v | 0 | MPC | 85453 | 2002 $CU_{291}$ |
| 2002 $CK_{292}$ | 17.1 | 0.15 | 20060922 | 57.67300 | 252.77983 | 302.97177 | 1.57772 | 0.1094679 | 2.3178012 | 27 | 2 | 2002–2006 | 0.40 | M-v | 4 | MPC | 04194 | 2002 $CK_{292}$ |
| 2002 $CW_{294}$ | 15.0 | 0.15 | 20060922 | 345.64279 | 105.33467 | 6.43814 | 10.73550 | 0.0526966 | 2.9647277 | 60 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 89249 | 2002 $CW_{294}$ |
| 2002 $CZ_{294}$ | 15.3 | 0.15 | 20060922 | 291.40176 | 147.68025 | 344.90840 | 12.04048 | 0.1586648 | 3.1316952 | 42 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 04194 | 2002 $CZ_{294}$ |
| 2002 $CN_{295}$ | 15.4 | 0.15 | 20060922 | 187.41160 | 288.16976 | 338.10400 | 5.38792 | 0.1070698 | 3.2013552 | 33 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 90151 | 2002 $CN_{295}$ |
| 2002 $CP_{295}$ | 14.9 | 0.15 | 20060922 | 333.15174 | 338.97709 | 117.96324 | 19.84339 | 0.1231249 | 3.1645158 | 56 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 85454 | 2002 $CP_{295}$ |
| 2002 $CH_{296}$ | 15.5 | 0.15 | 20060922 | 240.23816 | 84.10911 | 137.79941 | 4.91129 | 0.1180767 | 3.1672001 | 39 | 4 | 1994–2005 | 0.50 | M-v | 1 | MPC | 90151 | 2002 $CH_{296}$ |
| 2002 $CN_{296}$ | 13.5 | 0.15 | 20060922 | 44.44390 | 150.31499 | 113.40059 | 1.25264 | 0.0304197 | 5.1370588 | 40 | 6 | 1996–2006 | 0.60 | M-v | 0 | MPC | 02081 | 2002 $CN_{296}$ |
| 2002 $CQ_{296}$ | 15.9 | 0.15 | 20060922 | 8.26845 | 325.13208 | 123.33899 | 1.91555 | 0.1194302 | 3.0585157 | 43 | 5 | 2000–2006 | 0.37 | M-v | 0 | MPC | 94664 | 2002 $CQ_{296}$ |
| 2002 $CS_{296}$ | 16.4 | 0.15 | 20060922 | 12.40011 | 305.95990 | 133.93579 | 2.19934 | 0.2138736 | 3.0214590 | 44 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 90152 | 2002 $CS_{296}$ |
| 2002 $CB_{297}$ | 16.2 | 0.15 | 20060922 | 75.04256 | 80.18421 | 353.63363 | 5.99430 | 0.0314864 | 2.8044448 | 50 | 3 | 1997–2004 | 0.78 | M-v | 3 | MPC | 74148 | 2002 $CB_{297}$ |
| 2002 $CT_{297}$ | 16.2 | 0.15 | 20060922 | 347.07141 | 307.78200 | 137.95599 | 4.23877 | 0.0862144 | 3.0688995 | 41 | 6 | 1995–2006 | 0.46 | M-v | 0 | MPC | 87532 | 2002 $CT_{297}$ |
| 2002 $CV_{297}$ | 15.1 | 0.15 | 20060922 | 243.69777 | 92.85360 | 177.57087 | 5.05013 | 0.0744961 | 2.7207152 | 35 | 3 | 2002–2004 | 0.65 | M-v | 4 | MPC | 94665 | 2002 $CV_{297}$ |
| 2002 $CU_{298}$ | 17.3 | 0.15 | 20060922 | 122.24730 | 194.24030 | 297.40864 | 1.97524 | 0.1676913 | 2.3143898 | 37 | 2 | 2002–2004 | 0.45 | M-v | 4 | MPC | 74148 | 2002 $CU_{298}$ |
| 2002 $CH_{300}$ | 15.8 | 0.15 | 20060922 | 304.98530 | 347.18011 | 154.17245 | 1.96646 | 0.0151774 | 3.0452660 | 46 | 6 | 1997–2006 | 0.31 | M-v | 0 | MPC | 94665 | 2002 $CH_{300}$ |
| 2002 $CG_{301}$ | 15.8 | 0.15 | 20060922 | 192.86107 | 169.55903 | 170.26699 | 6.36908 | 0.0584011 | 2.6995073 | 51 | 3 | 1993–2004 | 0.65 | M-v | 4 | MPC | 04194 | 2002 $CG_{301}$ |
| 2002 $CD_{302}$ | 16.5 | 0.15 | 20060922 | 313.84762 | 204.59253 | 103.51667 | 6.75094 | 0.0743653 | 2.2913279 | 41 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 00190 | 2002 $CD_{302}$ |
| 2002 $CL_{302}$ | 15.6 | 0.15 | 20060922 | 287.19262 | 359.47432 | 152.11859 | 2.48680 | 0.1178683 | 3.0824364 | 37 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 89250 | 2002 $CL_{302}$ |
| 2002 $CP_{302}$ | 14.8 | 0.15 | 20060922 | 10.15072 | 211.48171 | 222.69651 | 8.18338 | 0.0857397 | 3.0861667 | 53 | 4 | 2000–2005 | 0.72 | M-v | 1 | MPC | 90152 | 2002 $CP_{302}$ |
| 2002 $CM_{303}$ | 15.3 | 0.15 | 20060922 | 242.19648 | 50.92745 | 158.16738 | 20.98338 | 0.0313734 | 3.0845198 | 32 | 4 | 1999–2004 | 0.70 | M-v | 1 | MPC | 66272 | 2002 $CM_{303}$ |
| 2002 $CD_{304}$ | 17.5 | 0.15 | 20060922 | 10.99340 | 253.02194 | 351.39437 | 0.85290 | 0.1425335 | 2.3966655 | 29 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 00190 | 2002 $CD_{304}$ |
| 2002 $CC_{307}$ | 15.2 | 0.15 | 20060922 | 277.41544 | 140.92910 | 45.23215 | 6.30876 | 0.1557386 | 2.9859225 | 90 | 6 | 1992–2006 | 0.42 | M-v | 2 | MPC | 97576 | 2002 $CC_{307}$ |
| 2002 $CW_{307}$ | 16.2 | 0.15 | 20060922 | 29.99687 | 88.06000 | 326.85835 | 2.85280 | 0.1153650 | 2.9931499 | 64 | 4 | 1997–2006 | 0.52 | M-v | 2 | MPC | 90152 | 2002 $CW_{307}$ |
| 2002 $CA_{309}$ | 16.8 | 0.15 | 20060922 | 69.67579 | 114.84377 | 9.72430 | 4.06821 | 0.0179895 | 2.5665229 | 25 | 4 | 2000–2006 | 0.83 | M-v | 2 | MPC | 74149 | 2002 $CA_{309}$ |
| 2002 $CF_{309}$ | 12.5 | 0.15 | 20060922 | 277.13346 | 248.25342 | 138.61217 | 10.08172 | 0.0191054 | 5.1811312 | 31 | 3 | 2002–2004 | 0.63 | M-v | 3 | MPC | 47190 | 2002 $CF_{309}$ |
| 2002 $CS_{309}$ | 16.4 | 0.15 | 20060922 | 296.19734 | 85.62040 | 96.67460 | 0.90757 | 0.1174970 | 3.0005828 | 31 | 3 | 2002–2005 | 0.50 | M-v | 3 | MPC | 94668 | 2002 $CS_{309}$ |
| 2002 $CY_{309}$ | 15.2 | 0.15 | 20060922 | 351.73002 | 287.29262 | 173.99166 | 10.32376 | 0.0954786 | 3.0172026 | 42 | 3 | 2002–2005 | 0.62 | M-v | 3 | MPC | 90152 | 2002 $CY_{309}$ |
| 2002 $CZ_{309}$ | 15.8 | 0.15 | 20060922 | 245.49009 | 339.12411 | 242.73971 | 4.15576 | 0.1009433 | 3.0408281 | 50 | 5 | 2000–2006 | 0.37 | M-v | 0 | MPC | 90152 | 2002 $CZ_{309}$ |
| 2002 $CS_{310}$ | 15.2 | 0.15 | 20060922 | 293.92428 | 102.49921 | 76.20346 | 5.51720 | 0.0871150 | 3.0593134 | 50 | 4 | 1994–2006 | 0.52 | M-v | 2 | MPC | 04194 | 2002 $CS_{310}$ |
| 2002 $CZ_{310}$ | 17.7 | 0.15 | 20060922 | 79.01378 | 70.95886 | 108.13279 | 8.17308 | 0.1880278 | 2.3661662 | 40 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 03301 | 2002 $CZ_{310}$ |
| 2002 $CJ_{311}$ | 16.0 | 0.15 | 20060922 | 352.32961 | 293.32543 | 163.18156 | 0.92832 | 0.1506060 | 3.0819243 | 48 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 90152 | 2002 $CJ_{311}$ |
| 2002 $CL_{311}$ | 17.2 | 0.15 | 20060922 | 45.54374 | 3.65042 | 251.73957 | 3.73742 | 0.1127810 | 2.2251571 | 64 | 4 | 1999–2003 | 0.64 | M-v | 0 | MPC | 53701 | 2002 $CL_{311}$ |
| 2002 $CQ_{311}$ | 15.1 | 0.15 | 20060922 | 229.58402 | 66.31341 | 171.75834 | 10.51338 | 0.1497418 | 3.1368108 | 41 | 3 | 2002–2004 | 0.59 | M-v | 3 | MPC | 69265 | 2002 $CQ_{311}$ |
| 2002 $CT_{311}$ | 16.0 | 0.15 | 20060922 | 299.37641 | 229.08136 | 323.15398 | 3.43826 | 0.0788571 | 2.9073302 | 31 | 4 | 1997–2006 | 0.39 | M-v | 2 | MPC | 94670 | 2002 $CT_{311}$ |
| 2002 $DT_1$ | 17.6 | 0.15 | 20060922 | 47.12826 | 29.95347 | 267.05501 | 1.93630 | 0.2449038 | 2.1219473 | 58 | 4 | 2002–2006 | 0.44 | M-v | 2 | MPC | 75301 | 2002 $DT_1$ |
| 2002 $DA_2$ | 11.8 | 0.15 | 20060922 | 180.48342 | 6.24268 | 109.52131 | 32.18763 | 0.0338535 | 5.2470208 | 44 | 4 | 2001–2004 | 0.67 | M-v | 2 | MPC | 65330 | 2002 $DA_2$ |
| 2002 $DB_2$ | 15.2 | 0.15 | 20060922 | 265.42388 | 118.24210 | 85.75979 | 27.02429 | 0.2228473 | 3.1395359 | 39 | 3 | 1997–2006 | 0.59 | M-v | 3 | MPC | 48214 | 2002 $DB_2$ |
| 2002 $DE_2$ | 16.4 | 0.15 | 20060922 | 284.99757 | 27.58075 | 95.77731 | 23.93799 | 0.0718551 | 1.9262828 | 43 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 87532 | 2002 $DE_2$ |
| 2002 $DG_3$ | 16.0 | 0.15 | 20060922 | 97.08198 | 307.10402 | 10.05603 | 20.67184 | 0.0927887 | 1.9222293 | 116 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 77587 | 2002 $DG_3$ |
| 2002 $DK_3$ | 15.6 | 0.15 | 20060922 | 337.72966 | 118.04876 | 3.90452 | 22.75091 | 0.1651370 | 3.0943268 | 56 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 89251 | 2002 $DK_3$ |
| 2002 $DV_3$ | 16.3 | 0.15 | 20060922 | 178.01408 | 175.89633 | 86.37210 | 23.98707 | 0.0536728 | 1.8916284 | 66 | 3 | 2002–2006 | 0.63 | M-v | 2 | MPC | 57851 | 2002 $DV_3$ |
| 2002 $DX_3$ | 14.4 | 0.15 | 20060922 | 305.15751 | 97.86609 | 97.59785 | 25.58416 | 0.2505681 | 2.9107236 | 42 | 4 | 1992–2006 | 0.63 | M-v | 3 | MPC | 03301 | 2002 $DX_3$ |
| 2002 $DE_4$ | 16.7 | 0.15 | 20060922 | 243.88046 | 47.91627 | 113.73412 | 24.36771 | 0.0584282 | 1.9300222 | 57 | 3 | 2002–2006 | 0.58 | M-v | 1 | MPC | 87532 | 2002 $DE_4$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $DF_4$ | 16.1 | 0.15 | 20060922 | 109.40031 | 174.72547 | 107.47268 | 24.48099 | 0.0418018 | 1.9652018 | 59 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 75302 | 2002 $DF_4$ |
| 2002 $DV_4$ | 15.6 | 0.15 | 20060922 | 138.70563 | 53.62875 | 274.48331 | 8.30954 | 0.2312577 | 3.1410190 | 70 | 4 | 1999–2005 | 0.54 | M-v | 1 | MPC | 69267 | 2002 $DV_4$ |
| 2002 $DF_5$ | 14.4 | 0.15 | 20060922 | 306.52724 | 93.03683 | 60.72338 | 22.64243 | 0.0986399 | 3.1275423 | 62 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97576 | 2002 $DF_5$ |
| 2002 $DV_5$ | 16.1 | 0.15 | 20060922 | 183.29144 | 157.25730 | 223.23158 | 5.52120 | 0.2085693 | 2.3679580 | 144 | 4 | 1997–2004 | 0.53 | M-v | 1 | MPC | 74149 | 2002 $DV_5$ |
| 2002 $DE_6$ | 14.4 | 0.15 | 20060922 | 334.83659 | 157.77248 | 282.59609 | 16.48607 | 0.1577909 | 3.1863878 | 57 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 87532 | 2002 $DE_6$ |
| 2002 $DH_6$ | 14.9 | 0.15 | 20060922 | 63.36826 | 217.30529 | 158.52383 | 12.66518 | 0.1466044 | 3.1187175 | 52 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 90152 | 2002 $DH_6$ |
| 2002 $DL_6$ | 17.6 | 0.15 | 20060922 | 12.73868 | 37.34806 | 157.09401 | 15.26695 | 0.0533045 | 2.5264200 | 24 | 3 | 2000–2006 | 0.76 | M-v | 3 | MPC | 94673 | 2002 $DL_6$ |
| 2002 $DR_6$ | 15.6 | 0.15 | 20060922 | 330.24264 | 328.21681 | 178.42289 | 2.25982 | 0.0714784 | 2.9549073 | 73 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 97576 | 2002 $DR_6$ |
| 2002 $DT_8$ | 15.1 | 0.15 | 20060922 | 335.57546 | 31.97324 | 36.64864 | 17.62213 | 0.2480945 | 3.1383104 | 124 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 50595 | 2002 $DT_8$ |
| 2002 $DN_9$ | 14.9 | 0.15 | 20060922 | 280.08098 | 189.93524 | 51.30865 | 16.38444 | 0.1122249 | 2.7310308 | 50 | 4 | 1998–2004 | 0.62 | M-v | 1 | MPC | 74149 | 2002 $DN_9$ |
| 2002 $DO_9$ | 14.0 | 0.15 | 20060922 | 245.70297 | 131.37115 | 80.21367 | 18.60422 | 0.1475239 | 3.1305262 | 64 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 97577 | 2002 $DO_9$ |
| 2002 $DS_9$ | 14.5 | 0.15 | 20060922 | 260.20183 | 103.64068 | 87.20404 | 17.22045 | 0.1738809 | 3.1668992 | 43 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 89253 | 2002 $DS_9$ |
| 2002 $DC_{10}$ | 16.7 | 0.15 | 20060922 | 240.65397 | 164.17468 | 355.28272 | 21.05753 | 0.0506550 | 1.9279432 | 90 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 87532 | 2002 $DC_{10}$ |
| 2002 $DO_{10}$ | 16.7 | 0.15 | 20060922 | 348.69989 | 40.97002 | 184.11590 | 4.58478 | 0.0683113 | 2.5220660 | 52 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 02082 | 2002 $DO_{10}$ |
| 2002 $DU_{10}$ | 15.3 | 0.15 | 20060922 | 324.97522 | 74.29270 | 359.52672 | 25.31010 | 0.3563291 | 3.1628024 | 123 | 2 | 2001–2006 | 0.44 | M-v | 2 | MPC | 03302 | 2002 $DU_{10}$ |
| 2002 $DO_{11}$ | 17.1 | 0.15 | 20060922 | 118.23081 | 344.25154 | 126.19381 | 3.07754 | 0.1466004 | 2.4130499 | 55 | 3 | 1998–2006 | 0.58 | M-v | 3 | MPC | 00192 | 2002 $DO_{11}$ |
| 2002 $DU_{11}$ | 13.3 | 0.15 | 20060922 | 146.14737 | 191.30409 | 316.38666 | 4.64502 | 0.0176498 | 5.1641026 | 42 | 3 | 2000–2004 | 0.53 | M-v | 2 | MPC | 48214 | 2002 $DU_{11}$ |
| 2002 $DO_{12}$ | 15.0 | 0.15 | 20060922 | 281.91370 | 106.37951 | 69.75290 | 6.70714 | 0.0987923 | 3.0716961 | 44 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 00193 | 2002 $DO_{12}$ |
| 2002 $DV_{12}$ | 15.1 | 0.15 | 20060922 | 257.83582 | 44.05574 | 186.71588 | 2.72992 | 0.0492816 | 2.9716500 | 78 | 4 | 2002–2006 | 0.57 | M-v | 0 | MPC | 97577 | 2002 $DV_{12}$ |
| 2002 $DX_{12}$ | 12.8 | 0.15 | 20060922 | 228.96114 | 70.74259 | 358.63957 | 10.11971 | 0.0512075 | 5.1186270 | 64 | 3 | 1999–2003 | 0.61 | M-v | 3 | MPC | 48214 | 2002 $DX_{12}$ |
| 2002 $DF_{13}$ | 15.1 | 0.15 | 20060922 | 305.11486 | 248.59829 | 235.63153 | 12.74892 | 0.2451900 | 3.0815745 | 128 | 5 | 2000–2006 | 0.39 | M-v | 1 | MPC | 90152 | 2002 $DF_{13}$ |
| 2002 $DA_{14}$ | 17.8 | 0.15 | 20060922 | 58.17879 | 87.30042 | 88.49440 | 2.59607 | 0.1104662 | 2.4249650 | 25 | 3 | 2002–2006 | 0.29 | M-v | 3 | MPC | 00193 | 2002 $DA_{14}$ |
| 2002 $DG_{14}$ | 16.8 | 0.15 | 20060922 | 111.54399 | 34.24590 | 23.76229 | 2.55527 | 0.0600574 | 2.6449928 | 35 | 4 | 2000–2006 | 0.49 | M-v | 0 | MPC | 97577 | 2002 $DG_{14}$ |
| 2002 $DS_{14}$ | 17.3 | 0.15 | 20060922 | 54.64201 | 257.52546 | 6.46430 | 4.02898 | 0.1304070 | 2.1851735 | 49 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04194 | 2002 $DS_{14}$ |
| 2002 $DT_{14}$ | 16.2 | 0.15 | 20060922 | 343.88830 | 283.13631 | 155.23088 | 14.08377 | 0.2521216 | 3.1066909 | 26 | 3 | 2000–2006 | 0.37 | M-v | 1 | MPC | 72541 | 2002 $DT_{14}$ |
| 2002 $DW_{14}$ | 16.3 | 0.15 | 20060922 | 335.34261 | 351.06316 | 278.29095 | 3.93711 | 0.1672919 | 2.4094916 | 40 | 4 | 2000–2004 | 0.54 | M-v | 1 | MPC | 57851 | 2002 $DW_{14}$ |
| 2002 $DD_{15}$ | 16.0 | 0.15 | 20060922 | 205.03769 | 99.58754 | 197.93702 | 3.95953 | 0.0389994 | 2.8067307 | 39 | 4 | 2000–2004 | 0.72 | M-v | 1 | MPC | 94677 | 2002 $DD_{15}$ |
| 2002 $DG_{15}$ | 15.3 | 0.15 | 20060922 | 339.56827 | 350.69812 | 165.58522 | 8.02558 | 0.0388565 | 2.8368358 | 48 | 4 | 2002–2005 | 0.67 | M-v | 2 | MPC | 69271 | 2002 $DG_{15}$ |
| 2002 $DM_{15}$ | 15.2 | 0.15 | 20060922 | 81.61097 | 195.20144 | 157.14617 | 18.77258 | 0.1015380 | 3.1969796 | 44 | 4 | 1999–2005 | 0.50 | M-v | 0 | MPC | 89253 | 2002 $DM_{15}$ |
| 2002 $DR_{15}$ | 16.6 | 0.15 | 20060922 | 34.14773 | 307.45682 | 303.08207 | 5.15095 | 0.1408292 | 2.2868163 | 41 | 3 | 2002–2004 | 0.64 | M-v | 2 | MPC | 57851 | 2002 $DR_{15}$ |
| 2002 $DL_{17}$ | 16.4 | 0.15 | 20060922 | 215.45807 | 49.56754 | 133.51519 | 24.88864 | 0.0667574 | 1.9803421 | 44 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 75302 | 2002 $DL_{17}$ |
| 2002 $DN_{17}$ | 16.3 | 0.15 | 20060922 | 297.53954 | 72.75315 | 96.48535 | 2.03447 | 0.0555295 | 3.0555406 | 21 | 3 | 2002–2006 | 0.39 | M-v | 4 | MPC | 00193 | 2002 $DN_{17}$ |
| 2002 $DR_{17}$ | 16.2 | 0.15 | 20060922 | 294.65612 | 34.39773 | 123.58510 | 25.17628 | 0.0617801 | 1.8943769 | 38 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 87532 | 2002 $DR_{17}$ |
| 2002 $DA_{18}$ | 15.8 | 0.15 | 20060922 | 330.77340 | 82.12062 | 27.21205 | 1.74950 | 0.1361482 | 3.1666867 | 36 | 4 | 1997–2006 | 0.45 | M-v | 2 | MPC | 00194 | 2002 $DA_{18}$ |
| 2002 $DA_{19}$ | 17.4 | 0.15 | 20060922 | 353.78519 | 65.23470 | 359.88921 | 20.00227 | 0.1003154 | 1.8931888 | 31 | 3 | 2002–2006 | 0.75 | M-v | 2 | MPC | 52904 | 2002 $DA_{19}$ |
| 2002 $DS_{19}$ | 14.0 | 0.15 | 20020215 | 94.72182 | 9.49392 | 45.62657 | 2.35266 | 0.0673849 | 5.1580081 | 16 | 1 | 57 days | 0.43 | | | MPC | | 2002 $DS_{19}$ |
| 2002 EJ | 17.2 | 0.15 | 20060922 | 254.48977 | 68.15043 | 95.91151 | 25.47292 | 0.0799089 | 1.9081077 | 52 | 3 | 2002–2006 | 0.51 | M-v | 1 | MPC | 87533 | 2002 EJ |
| 2002 EU | 16.9 | 0.15 | 20060922 | 11.85255 | 313.73557 | 174.28512 | 7.75296 | 0.3669629 | 2.7302133 | 48 | 3 | 2000–2005 | 0.54 | M-v | 2 | MPC | 89254 | 2002 EU |
| 2002 $EZ_1$ | 16.9 | 0.15 | 20060922 | 352.50876 | 291.60591 | 352.16742 | 2.93775 | 0.1354907 | 2.2576091 | 37 | 6 | 1993–2006 | 0.58 | M-v | 1 | MPC | 02082 | 2002 $EZ_1$ |
| 2002 $EH_2$ | 16.7 | 0.15 | 20060922 | 114.52602 | 169.54234 | 218.03601 | 1.22674 | 0.0657594 | 2.8654701 | 28 | 4 | 1999–2004 | 0.39 | M-v | 0 | MPC | 74150 | 2002 $EH_2$ |
| 2002 $EJ_2$ | 17.8 | 0.15 | 20060922 | 143.73081 | 279.16703 | 200.04440 | 0.78457 | 0.0772178 | 2.3295280 | 37 | 6 | 1991–2006 | 0.56 | M-v | 1 | MPC | 02082 | 2002 $EJ_2$ |
| 2002 $EG_3$ | 16.6 | 0.15 | 20060922 | 45.27759 | 96.18901 | 174.48156 | 23.35241 | 0.2759532 | 2.2848042 | 80 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 04194 | 2002 $EG_3$ |
| 2002 $EO_3$ | 17.0 | 0.15 | 20060922 | 10.32513 | 84.49715 | 166.75895 | 2.37915 | 0.1841339 | 2.4223651 | 75 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 00194 | 2002 $EO_3$ |
| 2002 $EW_3$ | 17.2 | 0.15 | 20060922 | 55.86160 | 270.17483 | 347.74969 | 3.54368 | 0.1441497 | 2.2332367 | 46 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 04194 | 2002 $EW_3$ |
| 2002 $EZ_3$ | 15.6 | 0.15 | 20060922 | 221.89495 | 99.12676 | 162.73417 | 1.41065 | 0.1525612 | 3.1039542 | 36 | 4 | 1997–2005 | 0.43 | M-v | 1 | MPC | 97578 | 2002 $EZ_3$ |
| 2002 $EH_4$ | 15.2 | 0.15 | 20060922 | 259.87977 | 185.74221 | 6.82586 | 0.29109 | 0.0883942 | 3.2385824 | 51 | 3 | 2002–2005 | 0.46 | M-v | 3 | MPC | 97578 | 2002 $EH_4$ |
| 2002 $ET_4$ | 16.6 | 0.15 | 20060922 | 176.63591 | 331.92472 | 358.56238 | 1.55605 | 0.0177700 | 2.8606303 | 35 | 3 | 2002–2006 | 0.41 | M-v | 4 | MPC | 74150 | 2002 $ET_4$ |
| 2002 $EY_4$ | 15.7 | 0.15 | 20060922 | 5.34923 | 296.94459 | 153.36604 | 1.86502 | 0.0804097 | 3.1277529 | 66 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 97578 | 2002 $EY_4$ |
| 2002 $EC_5$ | 15.8 | 0.15 | 20060922 | 348.90930 | 72.06996 | 20.93750 | 1.29659 | 0.1267644 | 3.1936451 | 51 | 4 | 1994–2006 | 0.48 | M-v | 0 | MPC | 02082 | 2002 $EC_5$ |
| 2002 $EF_5$ | 15.8 | 0.15 | 20060922 | 34.28791 | 281.91899 | 151.78282 | 2.92160 | 0.0976033 | 3.0312415 | 56 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 97578 | 2002 $EF_5$ |
| 2002 $EG_5$ | 17.1 | 0.15 | 20060922 | 353.96404 | 219.59646 | 8.31041 | 2.50648 | 0.0813612 | 2.5362782 | 41 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 02082 | 2002 $EG_5$ |
| 2002 $ED_6$ | 16.1 | 0.15 | 20060922 | 292.56367 | 285.37723 | 32.58716 | 7.11857 | 0.1280206 | 2.4280439 | 32 | 2 | 2002–2006 | 0.52 | M-v | 4 | MPC | 03302 | 2002 $ED_6$ |
| 2002 $EL_6$ | 18.0 | 0.15 | 20060922 | 82.14661 | 186.41923 | 85.04438 | 9.54141 | 0.5793948 | 2.2997548 | 335 | 2 | 2002–2006 | 0.46 | M-v | 1 | MPC | 62388 | 2002 $EL_6$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $EY_6$ | 17.1 | 0.15 | 20060922 | 275.04591 | 317.16686 | 358.85926 | 5.89455 | 0.1405221 | 2.5619493 | 33 | 3 | 2002–2006 | 0.31 | M-v | 3 | MPC | 02082 | 2002 $EY_6$ |
| 2002 $EQ_7$ | 17.1 | 0.15 | 20060922 | 2.77802 | 69.10252 | 6.13115 | 21.05331 | 0.1635562 | 1.8858860 | 116 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 57851 | 2002 $EQ_7$ |
| 2002 $EV_7$ | 16.6 | 0.15 | 20060922 | 93.11546 | 155.51934 | 15.54791 | 5.41374 | 0.1735746 | 2.3506174 | 133 | 4 | 1993–2004 | 0.56 | M-v | 1 | MPC | 72543 | 2002 $EV_7$ |
| 2002 $EX_7$ | 13.2 | 0.15 | 20060922 | 273.92125 | 51.91880 | 337.48015 | 7.92135 | 0.0659410 | 5.2280674 | 34 | 4 | 1996–2004 | 0.42 | M-v | 1 | MPC | 31976 | 2002 $EX_7$ |
| 2002 $EZ_7$ | 13.5 | 0.15 | 20060922 | 143.15746 | 40.35458 | 117.01816 | 10.23209 | 0.0493101 | 5.2475253 | 28 | 4 | 2001–2004 | 0.38 | M-v | 2 | MPC | 66273 | 2002 $EZ_7$ |
| 2002 $EL_{10}$ | 14.5 | 0.15 | 20060922 | 28.40101 | 326.37178 | 142.13758 | 11.16146 | 0.0526737 | 2.9816764 | 80 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 97578 | 2002 $EL_{10}$ |
| 2002 $EF_{12}$ | 15.8 | 0.15 | 20060922 | 279.88802 | 115.78986 | 70.89928 | 3.79914 | 0.1749235 | 3.1774885 | 43 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 97578 | 2002 $EF_{12}$ |
| 2002 $ES_{12}$ | 16.7 | 0.15 | 20060922 | 139.03868 | 11.87462 | 3.50022 | 1.42001 | 0.0889909 | 2.6567745 | 46 | 6 | 1994–2005 | 0.49 | M-v | 0 | MPC | 31977 | 2002 $ES_{12}$ |
| 2002 $EB_{13}$ | 15.7 | 0.15 | 20060922 | 338.42510 | 304.54117 | 1.24594 | 24.16082 | 0.1747776 | 2.3202289 | 66 | 4 | 1996–2006 | 0.65 | M-v | 2 | MPC | 02083 | 2002 $EB_{13}$ |
| 2002 $EB_{14}$ | 16.9 | 0.15 | 20060922 | 73.80433 | 317.21384 | 213.20517 | 3.74534 | 0.1379725 | 2.3913245 | 75 | 5 | 1996–2006 | 0.56 | M-v | 1 | MPC | 04194 | 2002 $EB_{14}$ |
| 2002 $EP_{14}$ | 13.4 | 0.15 | 20060922 | 198.12359 | 255.89746 | 204.32312 | 7.37862 | 0.0396322 | 5.1540260 | 22 | 3 | 1995–2003 | 0.46 | M-v | 3 | MPC | 47192 | 2002 $EP_{14}$ |
| 2002 $EM_{15}$ | 15.0 | 0.15 | 20060922 | 258.34240 | 69.09067 | 172.49089 | 2.68410 | 0.0143019 | 2.8620774 | 92 | 4 | 2002–2006 | 0.50 | M-v | 0 | MPC | 02083 | 2002 $EM_{15}$ |
| 2002 $EP_{15}$ | 17.0 | 0.15 | 20060922 | 100.96527 | 299.47501 | 201.96367 | 10.10991 | 0.1813770 | 2.3895982 | 29 | 4 | 1995–2006 | 0.43 | M-v | 0 | MPC | 02083 | 2002 $EP_{15}$ |
| 2002 $EW_{15}$ | 15.1 | 0.15 | 20060922 | 1.64902 | 165.63965 | 280.45120 | 8.89738 | 0.1134218 | 3.1267724 | 57 | 4 | 2000–2006 | 0.42 | M-v | 0 | MPC | 97578 | 2002 $EW_{15}$ |
| 2002 $EY_{15}$ | 15.2 | 0.15 | 20060922 | 247.31756 | 295.89169 | 288.53892 | 9.37695 | 0.0279409 | 3.0658751 | 45 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 97578 | 2002 $EY_{15}$ |
| 2002 $EA_{17}$ | 13.8 | 0.15 | 20060922 | 254.24442 | 108.10108 | 117.39501 | 10.09641 | 0.2186003 | 3.1506467 | 98 | 5 | 2002–2006 | 0.66 | M-v | 1 | MPC | 90153 | 2002 $EA_{17}$ |
| 2002 $EB_{17}$ | 16.3 | 0.15 | 20060922 | 74.95437 | 91.29099 | 313.73263 | 1.21046 | 0.0816973 | 2.9032598 | 37 | 3 | 1997–2006 | 0.31 | M-v | 2 | MPC | 97578 | 2002 $EB_{17}$ |
| 2002 $EJ_{17}$ | 16.2 | 0.15 | 20060922 | 212.94571 | 192.29907 | 160.88359 | 5.61983 | 0.1243222 | 2.5688037 | 39 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 02083 | 2002 $EJ_{17}$ |
| 2002 $ES_{17}$ | 16.6 | 0.15 | 20060922 | 307.12274 | 103.26465 | 153.78921 | 4.76805 | 0.1163222 | 2.6458756 | 48 | 3 | 1998–2006 | 0.53 | M-v | 2 | MPC | 00196 | 2002 $ES_{17}$ |
| 2002 $EA_{20}$ | 17.0 | 0.15 | 20060922 | 50.29625 | 79.05015 | 154.59967 | 2.61506 | 0.1711828 | 2.3425865 | 55 | 4 | 1999–2004 | 0.52 | M-v | 1 | MPC | 52909 | 2002 $EA_{20}$ |
| 2002 $EC_{20}$ | 15.6 | 0.15 | 20060922 | 282.60995 | 353.11621 | 208.56343 | 0.20684 | 0.1714441 | 3.0537889 | 98 | 6 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04194 | 2002 $EC_{20}$ |
| 2002 $EM_{20}$ | 16.3 | 0.15 | 20060922 | 132.30951 | 71.84701 | 83.67401 | 3.38214 | 0.1683128 | 2.2979930 | 76 | 5 | 1995–2005 | 0.68 | M-v | 1 | MPC | 74151 | 2002 $EM_{20}$ |
| 2002 $EC_{21}$ | 16.9 | 0.15 | 20060922 | 333.02457 | 83.97786 | 359.69309 | 19.86466 | 0.0918673 | 1.9058267 | 109 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 87533 | 2002 $EC_{21}$ |
| 2002 $EG_{21}$ | 15.5 | 0.15 | 20060922 | 295.66784 | 108.14891 | 95.49636 | 9.86042 | 0.1717445 | 2.9885179 | 39 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 94683 | 2002 $EG_{21}$ |
| 2002 $EJ_{21}$ | 17.3 | 0.15 | 20060922 | 90.30222 | 284.30509 | 231.32864 | 4.03116 | 0.1657972 | 2.4015402 | 56 | 4 | 1998–2006 | 0.40 | M-v | 1 | MPC | 02083 | 2002 $EJ_{21}$ |
| 2002 $EM_{21}$ | 16.7 | 0.15 | 20060922 | 9.15180 | 103.11313 | 70.35892 | 4.13778 | 0.2524790 | 2.6786162 | 34 | 2 | 2002–2006 | 0.40 | M-v | 3 | MPC | 03303 | 2002 $EM_{21}$ |
| 2002 $EK_{22}$ | 14.8 | 0.15 | 20060922 | 234.27043 | 134.25674 | 128.50955 | 8.97232 | 0.0932805 | 2.9828209 | 50 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 97579 | 2002 $EK_{22}$ |
| 2002 $EW_{22}$ | 16.3 | 0.15 | 20060922 | 81.68880 | 314.43979 | 227.35995 | 4.77495 | 0.1578691 | 2.3942118 | 60 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 00196 | 2002 $EW_{22}$ |
| 2002 $EQ_{23}$ | 16.8 | 0.15 | 20060922 | 347.13750 | 286.08469 | 354.02771 | 5.29437 | 0.1694519 | 2.3757751 | 77 | 4 | 2002–2006 | 0.64 | M-v | 1 | MPC | 02083 | 2002 $EQ_{23}$ |
| 2002 $EQ_{24}$ | 15.9 | 0.15 | 20060922 | 4.54629 | 298.51656 | 161.77885 | 2.64928 | 0.0904819 | 3.0790200 | 57 | 4 | 2000–2006 | 0.37 | M-v | 0 | MPC | 97579 | 2002 $EQ_{24}$ |
| 2002 $ET_{24}$ | 17.3 | 0.15 | 20060922 | 193.10342 | 252.04120 | 163.80555 | 2.79629 | 0.1836176 | 2.3386524 | 36 | 4 | 2000–2006 | 0.43 | M-v | 0 | MPC | 00197 | 2002 $ET_{24}$ |
| 2002 $ED_{28}$ | 17.1 | 0.15 | 20060922 | 122.40075 | 30.88057 | 162.93537 | 4.85117 | 0.1708254 | 2.2122769 | 73 | 4 | 2002–2006 | 0.59 | M-v | 2 | MPC | 04194 | 2002 $ED_{28}$ |
| 2002 $EH_{28}$ | 16.6 | 0.15 | 20060922 | 39.01303 | 48.61082 | 156.07652 | 12.63682 | 0.1489874 | 2.4192852 | 78 | 2 | 2002–2006 | 0.61 | M-v | 3 | MPC | 00197 | 2002 $EH_{28}$ |
| 2002 $EK_{28}$ | 14.8 | 0.15 | 20060922 | 21.32148 | 71.63176 | 2.17965 | 5.99129 | 0.1367905 | 3.0616703 | 94 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90153 | 2002 $EK_{28}$ |
| 2002 $EX_{28}$ | 16.0 | 0.15 | 20060922 | 0.38379 | 87.44929 | 0.26448 | 14.95266 | 0.2601019 | 3.0586098 | 60 | 4 | 2000–2006 | 0.58 | M-v | 0 | MPC | 97579 | 2002 $EX_{28}$ |
| 2002 $ES_{29}$ | 15.9 | 0.15 | 20060922 | 290.70951 | 104.82847 | 159.36306 | 10.91552 | 0.0310196 | 2.6398791 | 61 | 4 | 1998–2006 | 0.71 | M-v | 2 | MPC | 00198 | 2002 $ES_{29}$ |
| 2002 $EZ_{29}$ | 17.1 | 0.15 | 20060922 | 103.96429 | 93.07990 | 63.97912 | 3.01102 | 0.1703967 | 2.3559801 | 55 | 4 | 1995–2006 | 0.54 | M-v | 1 | MPC | 72547 | 2002 $EZ_{29}$ |
| 2002 $EV_{31}$ | 16.2 | 0.15 | 20060922 | 295.73174 | 102.01587 | 59.88934 | 2.14002 | 0.1113689 | 3.1065167 | 37 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 89257 | 2002 $EV_{31}$ |
| 2002 $EA_{32}$ | 17.3 | 0.15 | 20060922 | 54.98503 | 106.52082 | 153.31074 | 5.09855 | 0.1150328 | 2.2202393 | 30 | 2 | 2002–2006 | 0.45 | M-v | 4 | MPC | 03303 | 2002 $EA_{32}$ |
| 2002 $EH_{32}$ | 16.3 | 0.15 | 20060922 | 35.92003 | 321.15478 | 118.52315 | 2.95806 | 0.0731566 | 2.9917823 | 29 | 3 | 2000–2005 | 0.44 | M-v | 3 | MPC | 89257 | 2002 $EH_{32}$ |
| 2002 $EL_{32}$ | 17.6 | 0.15 | 20060922 | 85.65686 | 317.61133 | 192.34189 | 0.90732 | 0.1291955 | 2.4307261 | 32 | 4 | 2000–2006 | 0.41 | M-v | 1 | MPC | 02083 | 2002 $EL_{32}$ |
| 2002 $EY_{33}$ | 16.6 | 0.15 | 20060922 | 74.84023 | 71.25357 | 22.30761 | 5.17793 | 0.2388899 | 2.6101891 | 38 | 3 | 1996–2006 | 0.55 | M-v | 3 | MPC | 94686 | 2002 $EY_{33}$ |
| 2002 $EH_{34}$ | 16.4 | 0.15 | 20060922 | 42.95118 | 210.95555 | 42.89931 | 3.93569 | 0.1678524 | 2.2919099 | 34 | 3 | 2002–2005 | 0.49 | M-v | 3 | MPC | 52911 | 2002 $EH_{34}$ |
| 2002 $ER_{34}$ | 16.6 | 0.15 | 20060922 | 15.56831 | 18.87204 | 125.01728 | 4.94261 | 0.0402551 | 2.7742782 | 20 | 4 | 1993–2005 | 0.52 | M-v | 1 | MPC | 48217 | 2002 $ER_{34}$ |
| 2002 $ET_{35}$ | 16.2 | 0.15 | 20060922 | 171.06256 | 349.11081 | 318.68865 | 3.86711 | 0.1481348 | 3.0595011 | 26 | 3 | 2002–2005 | 0.50 | M-v | 3 | MPC | 69281 | 2002 $ET_{35}$ |
| 2002 $EB_{37}$ | 17.6 | 0.15 | 20060922 | 282.24814 | 260.87124 | 116.08009 | 3.06049 | 0.1438767 | 2.2105046 | 23 | 3 | 2000–2005 | 0.50 | M-v | 3 | MPC | 29980 | 2002 $EB_{37}$ |
| 2002 $ED_{37}$ | 15.9 | 0.15 | 20060922 | 77.06131 | 236.59667 | 154.40871 | 10.68751 | 0.1028031 | 3.0592467 | 29 | 4 | 2002–2005 | 0.50 | M-v | 1 | MPC | 94686 | 2002 $ED_{37}$ |
| 2002 $EG_{39}$ | 15.8 | 0.15 | 20060922 | 274.82905 | 358.25650 | 178.52434 | 1.15600 | 0.1325516 | 3.1687844 | 62 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 97579 | 2002 $EG_{39}$ |
| 2002 $EP_{39}$ | 15.7 | 0.15 | 20060922 | 274.71200 | 16.34349 | 180.78644 | 3.59236 | 0.1145876 | 3.1350493 | 54 | 5 | 1995–2005 | 0.47 | M-v | 0 | MPC | 90153 | 2002 $EP_{39}$ |
| 2002 $EB_{40}$ | 16.1 | 0.15 | 20060922 | 353.63454 | 93.41085 | 14.37808 | 1.39471 | 0.1405328 | 3.0718421 | 46 | 5 | 2000–2006 | 0.48 | M-v | 0 | MPC | 90153 | 2002 $EB_{40}$ |
| 2002 $EC_{40}$ | 16.0 | 0.15 | 20060922 | 309.66802 | 178.45771 | 345.85500 | 4.39025 | 0.1157001 | 3.0683230 | 48 | 4 | 1999–2005 | 0.68 | M-v | 1 | MPC | 89257 | 2002 $EC_{40}$ |
| 2002 $EF_{40}$ | 16.2 | 0.15 | 20060922 | 82.35061 | 354.87052 | 196.14753 | 2.55082 | 0.1823112 | 2.3531672 | 77 | 3 | 2002–2004 | 0.57 | M-v | 3 | MPC | 50021 | 2002 $EF_{40}$ |
| 2002 $EF_{42}$ | 13.4 | 0.15 | 20060922 | 208.79675 | 92.94025 | 356.02222 | 1.28699 | 0.0634336 | 5.2134608 | 39 | 5 | 1998–2004 | 0.55 | M-v | 1 | MPC | 85462 | 2002 $EF_{42}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $EZ_{42}$ | 15.2 | 0.15 | 20060922 | 2.75982 | 244.00955 | 192.58162 | 0.99951 | 0.1683531 | 3.1942619 | 83 | 4 | 2000–2006 | 0.60 | M-v | 0 | MPC | 97580 | 2002 $EZ_{42}$ |
| 2002 $EG_{43}$ | 15.8 | 0.15 | 20060922 | 286.55039 | 89.74279 | 175.18827 | 13.03814 | 0.1007181 | 2.7018718 | 41 | 4 | 1998–2003 | 0.69 | M-v | 1 | MPC | 35170 | 2002 $EG_{43}$ |
| 2002 $EJ_{43}$ | 16.8 | 0.15 | 20060922 | 82.72283 | 324.72832 | 276.37772 | 1.99469 | 0.1617033 | 2.2179077 | 53 | 2 | 2002–2006 | 0.54 | M-v | 4 | MPC | 03304 | 2002 $EJ_{43}$ |
| 2002 $EO_{43}$ | 17.0 | 0.15 | 20060922 | 62.14224 | 46.84470 | 201.57586 | 3.09404 | 0.2107820 | 2.2798555 | 51 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 04194 | 2002 $EO_{43}$ |
| 2002 $EA_{45}$ | 15.1 | 0.15 | 20060922 | 229.75509 | 286.23943 | 326.54430 | 8.18776 | 0.0582758 | 3.0660122 | 45 | 6 | 1993–2006 | 0.52 | M-v | 0 | MPC | 70341 | 2002 $EA_{45}$ |
| 2002 $ES_{45}$ | 16.1 | 0.15 | 20060922 | 336.44499 | 116.67497 | 68.55697 | 4.94873 | 0.0345067 | 2.7721637 | 25 | 5 | 1993–2005 | 0.54 | M-v | 2 | MPC | 97580 | 2002 $ES_{45}$ |
| 2002 $ED_{46}$ | 16.6 | 0.15 | 20060922 | 137.72871 | 248.50932 | 216.52172 | 4.31522 | 0.1912845 | 2.3631026 | 51 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 02084 | 2002 $ED_{46}$ |
| 2002 $EL_{46}$ | 16.7 | 0.15 | 20060922 | 332.19704 | 0.44565 | 213.15934 | 4.69502 | 0.0716666 | 2.7006571 | 30 | 4 | 1995–2006 | 0.40 | M-v | 2 | MPC | 00200 | 2002 $EL_{46}$ |
| 2002 $EO_{47}$ | 17.4 | 0.15 | 20060922 | 163.01944 | 246.61879 | 197.33255 | 1.72561 | 0.2061655 | 2.3303334 | 39 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 02084 | 2002 $EO_{47}$ |
| 2002 $ES_{47}$ | 17.2 | 0.15 | 20060922 | 333.00458 | 73.41604 | 186.89786 | 1.70726 | 0.1433600 | 2.5327670 | 25 | 3 | 2002–2006 | 0.75 | M-v | 4 | MPC | 00201 | 2002 $ES_{47}$ |
| 2002 $EU_{47}$ | 15.9 | 0.15 | 20060922 | 15.59758 | 269.74872 | 181.88656 | 4.09696 | 0.1423256 | 3.0217068 | 55 | 2 | 2002–2005 | 0.52 | M-v | 3 | MPC | 89257 | 2002 $EU_{47}$ |
| 2002 $EN_{48}$ | 13.7 | 0.15 | 20060922 | 132.76868 | 332.09761 | 206.49941 | 2.30497 | 0.0360377 | 5.2319256 | 33 | 5 | 1997–2006 | 0.50 | M-v | 0 | MPC | 02084 | 2002 $EN_{48}$ |
| 2002 $EG_{49}$ | 17.4 | 0.15 | 20060922 | 80.49406 | 353.20278 | 165.36619 | 1.58151 | 0.0969052 | 2.4057205 | 58 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 00202 | 2002 $EG_{49}$ |
| 2002 $EQ_{49}$ | 15.6 | 0.15 | 20060922 | 211.00682 | 262.37784 | 338.85396 | 4.31281 | 0.0677666 | 3.2275176 | 39 | 5 | 1999–2005 | 0.48 | M-v | 0 | MPC | 89257 | 2002 $EQ_{49}$ |
| 2002 $EY_{49}$ | 15.4 | 0.15 | 20060922 | 165.29064 | 157.25989 | 164.73146 | 10.77425 | 0.0851096 | 2.9713079 | 84 | 4 | 1999–2004 | 0.61 | M-v | 1 | MPC | 69285 | 2002 $EY_{49}$ |
| 2002 $EB_{50}$ | 15.7 | 0.15 | 20060922 | 284.74640 | 226.69237 | 297.38154 | 0.34717 | 0.1154550 | 3.2121926 | 32 | 2 | 2002–2005 | 0.43 | M-v | 6 | MPC | 89257 | 2002 $EB_{50}$ |
| 2002 $EE_{50}$ | 16.6 | 0.15 | 20060922 | 302.45141 | 73.94575 | 168.75781 | 9.48314 | 0.1466643 | 2.7245627 | 32 | 3 | 1998–2003 | 0.55 | M-v | 2 | MPC | 75306 | 2002 $EE_{50}$ |
| 2002 $EG_{51}$ | 15.7 | 0.15 | 20060922 | 32.85521 | 258.40485 | 146.13953 | 2.16097 | 0.1499890 | 3.1874168 | 67 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 02084 | 2002 $EG_{51}$ |
| 2002 $EM_{52}$ | 16.4 | 0.15 | 20060922 | 306.44868 | 117.96757 | 153.05250 | 4.67956 | 0.1614536 | 2.5873765 | 62 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 02084 | 2002 $EM_{52}$ |
| 2002 $EP_{52}$ | 15.9 | 0.15 | 20060922 | 314.86828 | 293.59454 | 12.97999 | 6.15229 | 0.0821341 | 2.3704984 | 45 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 02084 | 2002 $EP_{52}$ |
| 2002 $EL_{53}$ | 16.6 | 0.15 | 20060922 | 350.05895 | 289.55572 | 208.67528 | 1.96960 | 0.1329180 | 2.8800272 | 50 | 4 | 2000–2006 | 0.49 | M-v | 3 | MPC | 97580 | 2002 $EL_{53}$ |
| 2002 $ER_{53}$ | 17.8 | 0.15 | 20060922 | 117.32314 | 326.74372 | 247.80636 | 0.58419 | 0.0711827 | 2.1526849 | 55 | 4 | 2002–2006 | 0.64 | M-v | 2 | MPC | 77588 | 2002 $ER_{53}$ |
| 2002 $EV_{53}$ | 15.6 | 0.15 | 20060922 | 243.79733 | 154.25853 | 181.83780 | 2.83002 | 0.2082361 | 2.5365173 | 48 | 2 | 2002–2006 | 0.53 | M-v | 3 | MPC | 00203 | 2002 $EV_{53}$ |
| 2002 $ED_{54}$ | 16.8 | 0.15 | 20060922 | 1.51159 | 267.36935 | 301.29708 | 1.48013 | 0.1284040 | 2.5974800 | 66 | 3 | 1995–2006 | 0.53 | M-v | 4 | MPC | 02084 | 2002 $ED_{54}$ |
| 2002 $EO_{55}$ | 16.6 | 0.15 | 20060922 | 31.47390 | 26.95671 | 185.22484 | 4.63215 | 0.1328365 | 2.4085953 | 88 | 3 | 2000–2006 | 0.64 | M-v | 2 | MPC | 00203 | 2002 $EO_{55}$ |
| 2002 $EK_{56}$ | 17.1 | 0.15 | 20060922 | 62.32255 | 284.21875 | 199.99091 | 3.70630 | 0.1124416 | 2.5746032 | 60 | 4 | 1992–2006 | 0.64 | M-v | 1 | MPC | 04194 | 2002 $EK_{56}$ |
| 2002 $EY_{56}$ | 16.2 | 0.15 | 20060922 | 86.09737 | 214.16776 | 211.20312 | 3.24317 | 0.0679933 | 2.7428890 | 27 | 4 | 2000–2006 | 0.64 | M-v | 0 | MPC | 72554 | 2002 $EY_{56}$ |
| 2002 $EH_{57}$ | 16.4 | 0.15 | 20060922 | 123.42085 | 303.49154 | 178.68490 | 6.55566 | 0.0619179 | 2.3694431 | 36 | 2 | 2002–2006 | 0.39 | M-v | 4 | MPC | 00204 | 2002 $EH_{57}$ |
| 2002 $EV_{58}$ | 16.5 | 0.15 | 20060922 | 358.02703 | 296.21504 | 321.31543 | 5.24190 | 0.0832172 | 2.3903273 | 39 | 3 | 2002–2006 | 0.64 | M-v | 3 | MPC | 00204 | 2002 $EV_{58}$ |
| 2002 $EP_{59}$ | 16.4 | 0.15 | 20060922 | 316.61350 | 35.12170 | 191.80225 | 3.85159 | 0.0974426 | 2.6936563 | 33 | 4 | 1995–2006 | 0.47 | M-v | 1 | MPC | 97581 | 2002 $EP_{59}$ |
| 2002 $EX_{59}$ | 15.7 | 0.15 | 20060922 | 238.27323 | 312.29188 | 303.19686 | 0.90712 | 0.0554621 | 2.9431133 | 44 | 4 | 2002–2006 | 0.54 | M-v | 0 | MPC | 97581 | 2002 $EX_{59}$ |
| 2002 $EZ_{59}$ | 15.2 | 0.15 | 20060922 | 102.90729 | 204.81026 | 182.25860 | 1.88022 | 0.0821292 | 2.8899201 | 106 | 6 | 1997–2006 | 0.57 | M-v | 0 | MPC | 97581 | 2002 $EZ_{59}$ |
| 2002 $EH_{60}$ | 15.9 | 0.15 | 20060922 | 322.68253 | 196.77912 | 307.35812 | 1.89817 | 0.1058498 | 3.0590851 | 35 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 94691 | 2002 $EH_{60}$ |
| 2002 $EP_{60}$ | 15.7 | 0.15 | 20060922 | 231.90209 | 265.49298 | 316.10474 | 4.39914 | 0.0928085 | 3.2473586 | 28 | 3 | 2002–2005 | 0.40 | M-v | 3 | MPC | 89258 | 2002 $EP_{60}$ |
| 2002 $ET_{60}$ | 16.3 | 0.15 | 20060922 | 47.71383 | 304.11828 | 206.54151 | 5.00125 | 0.0888075 | 2.5786103 | 63 | 4 | 1995–2006 | 0.66 | M-v | 2 | MPC | 97581 | 2002 $ET_{60}$ |
| 2002 $EC_{61}$ | 16.4 | 0.15 | 20060922 | 225.01144 | 219.75927 | 185.79106 | 6.26196 | 0.1739475 | 2.2583975 | 42 | 3 | 2000–2006 | 0.72 | M-v | 3 | MPC | 02085 | 2002 $EC_{61}$ |
| 2002 $EN_{61}$ | 15.2 | 0.15 | 20060922 | 175.51772 | 150.64863 | 173.02199 | 11.35383 | 0.0990918 | 2.9217361 | 65 | 5 | 1992–2004 | 0.72 | M-v | 1 | MPC | 74154 | 2002 $EN_{61}$ |
| 2002 $ER_{61}$ | 15.2 | 0.15 | 20060922 | 72.00574 | 235.05569 | 186.22239 | 10.21802 | 0.0212756 | 2.9243128 | 27 | 3 | 2002–2005 | 0.69 | M-v | 3 | MPC | 75308 | 2002 $ER_{61}$ |
| 2002 $EB_{62}$ | 15.6 | 0.15 | 20060922 | 340.81843 | 298.86247 | 185.90958 | 9.28123 | 0.0445581 | 3.0926862 | 30 | 4 | 1999–2005 | 0.50 | M-v | 1 | MPC | 69289 | 2002 $EB_{62}$ |
| 2002 $EH_{62}$ | 15.7 | 0.15 | 20060922 | 341.34965 | 128.61421 | 345.27452 | 4.42770 | 0.1035785 | 3.1231022 | 35 | 3 | 1999–2005 | 0.47 | M-v | 3 | MPC | 85465 | 2002 $EH_{62}$ |
| 2002 $EW_{62}$ | 16.0 | 0.15 | 20060922 | 286.57841 | 62.91627 | 200.53298 | 2.16205 | 0.0945467 | 2.6976104 | 38 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 97581 | 2002 $EW_{62}$ |
| 2002 $EG_{63}$ | 16.0 | 0.15 | 20060922 | 101.16821 | 239.37490 | 180.35062 | 5.29712 | 0.0618112 | 2.7608999 | 29 | 3 | 1997–2004 | 0.70 | M-v | 4 | MPC | 72556 | 2002 $EG_{63}$ |
| 2002 $EL_{63}$ | 15.1 | 0.15 | 20060922 | 52.25821 | 238.21512 | 179.66380 | 9.66458 | 0.0847694 | 3.0459993 | 73 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 97581 | 2002 $EL_{63}$ |
| 2002 $EG_{64}$ | 17.7 | 0.15 | 20060922 | 97.90863 | 251.63476 | 341.23249 | 6.21403 | 0.1407571 | 2.1860705 | 33 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04194 | 2002 $EG_{64}$ |
| 2002 $ES_{64}$ | 16.1 | 0.15 | 20060922 | 356.18896 | 264.19332 | 203.35509 | 3.24690 | 0.1369531 | 3.0638198 | 54 | 4 | 2000–2006 | 0.43 | M-v | 0 | MPC | 97581 | 2002 $ES_{64}$ |
| 2002 $EY_{66}$ | 16.7 | 0.15 | 20060922 | 14.04779 | 38.35601 | 195.46578 | 4.12742 | 0.0744509 | 2.4548828 | 63 | 5 | 2000–2006 | 0.41 | M-v | 1 | MPC | 02085 | 2002 $EY_{66}$ |
| 2002 $EF_{67}$ | 16.8 | 0.15 | 20060922 | 81.22049 | 284.04886 | 265.42813 | 1.40399 | 0.1529807 | 2.3569036 | 73 | 3 | 2002–2004 | 0.61 | M-v | 3 | MPC | 50025 | 2002 $EF_{67}$ |
| 2002 $EO_{67}$ | 16.2 | 0.15 | 20060922 | 34.87021 | 350.08891 | 265.37118 | 2.01573 | 0.1538461 | 2.3379266 | 93 | 3 | 2002–2005 | 0.61 | M-v | 2 | MPC | 52918 | 2002 $EO_{67}$ |
| 2002 $EC_{68}$ | 17.8 | 0.15 | 20060922 | 72.01117 | 12.92842 | 238.78518 | 0.45782 | 0.2449313 | 2.2542631 | 46 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04195 | 2002 $EC_{68}$ |
| 2002 $EN_{68}$ | 12.8 | 0.15 | 20060922 | 308.55620 | 17.36130 | 352.94618 | 6.74299 | 0.0368289 | 5.1750090 | 54 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 04195 | 2002 $EN_{68}$ |
| 2002 $EP_{69}$ | 15.7 | 0.15 | 20060922 | 322.57459 | 202.40817 | 275.43727 | 1.61852 | 0.1466314 | 3.2881259 | 48 | 5 | 1999–2006 | 0.57 | M-v | 0 | MPC | 02085 | 2002 $EP_{69}$ |
| 2002 $EE_{70}$ | 17.1 | 0.15 | 20060922 | 5.90591 | 84.08942 | 181.04691 | 1.46327 | 0.1706342 | 2.4212956 | 67 | 4 | 2002–2006 | 0.61 | M-v | 0 | MPC | 02085 | 2002 $EE_{70}$ |
| 2002 $EM_{70}$ | 17.4 | 0.15 | 20060922 | 135.17081 | 102.60222 | 9.28687 | 3.85631 | 0.1442109 | 2.3884588 | 32 | 4 | 2000–2006 | 0.76 | M-v | 1 | MPC | 02085 | 2002 $EM_{70}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $EQ_{70}$ | 15.8 | 0.15 | 20060922 | 287.55893 | 32.61577 | 178.89915 | 2.32580 | 0.1733485 | 3.0297733 | 58 | 4 | 1997–2005 | 0.55 | M-v | 1 | MPC | 31471 | 2002 $EQ_{70}$ |
| 2002 $EP_{71}$ | 16.9 | 0.15 | 20060922 | 59.31042 | 59.99511 | 198.01818 | 6.32165 | 0.1992578 | 2.2656989 | 67 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04195 | 2002 $EP_{71}$ |
| 2002 $EM_{72}$ | 14.6 | 0.15 | 20060922 | 0.49821 | 115.56305 | 357.60309 | 17.01253 | 0.1403857 | 3.0605858 | 99 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 97582 | 2002 $EM_{72}$ |
| 2002 $EP_{72}$ | 15.1 | 0.15 | 20060922 | 339.97192 | 16.46738 | 187.15009 | 11.97920 | 0.1090018 | 2.7504878 | 62 | 4 | 1999–2004 | 0.51 | M-v | 1 | MPC | 74154 | 2002 $EP_{72}$ |
| 2002 $EQ_{72}$ | 15.2 | 0.15 | 20060922 | 52.75971 | 102.47013 | 352.49267 | 5.29511 | 0.0372252 | 2.9073154 | 79 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 97582 | 2002 $EQ_{72}$ |
| 2002 $EE_{75}$ | 15.2 | 0.15 | 20060922 | 323.89194 | 307.35767 | 200.78455 | 1.41058 | 0.1273243 | 3.1239407 | 96 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 97582 | 2002 $EE_{75}$ |
| 2002 $EX_{75}$ | 15.1 | 0.15 | 20060922 | 337.30570 | 198.22677 | 284.33252 | 8.56607 | 0.0583235 | 3.1319106 | 46 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 90154 | 2002 $EX_{75}$ |
| 2002 $EJ_{76}$ | 17.1 | 0.15 | 20060922 | 54.65758 | 171.72930 | 279.75888 | 0.94003 | 0.0316458 | 2.8638973 | 22 | 4 | 1997–2006 | 0.47 | M-v | 1 | MPC | 00205 | 2002 $EJ_{76}$ |
| 2002 $EO_{77}$ | 15.7 | 0.15 | 20060922 | 88.22581 | 77.95365 | 331.15516 | 1.18727 | 0.0713797 | 2.8647419 | 50 | 6 | 1999–2006 | 0.48 | M-v | 0 | MPC | 97582 | 2002 $EO_{77}$ |
| 2002 $EC_{79}$ | 13.0 | 0.15 | 20060922 | 173.89326 | 277.57801 | 209.38792 | 11.49294 | 0.1064461 | 5.2414812 | 52 | 4 | 2001–2004 | 0.61 | M-v | 2 | MPC | 66274 | 2002 $EC_{79}$ |
| 2002 $EV_{79}$ | 13.4 | 0.15 | 20060922 | 321.78176 | 192.09664 | 161.33838 | 8.09457 | 0.0439909 | 5.1434255 | 30 | 4 | 1996–2004 | 0.43 | M-v | 1 | MPC | 85467 | 2002 $EV_{79}$ |
| 2002 $ER_{80}$ | 15.9 | 0.15 | 20060922 | 18.37681 | 3.20902 | 64.99090 | 2.10600 | 0.1569882 | 3.1711280 | 87 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 97582 | 2002 $ER_{80}$ |
| 2002 $EA_{81}$ | 17.5 | 0.15 | 20060922 | 60.79259 | 282.32386 | 319.60424 | 2.69636 | 0.1859629 | 2.2713003 | 37 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 04195 | 2002 $EA_{81}$ |
| 2002 $ER_{82}$ | 16.0 | 0.15 | 20060922 | 49.52465 | 277.73835 | 198.55388 | 2.85186 | 0.0417905 | 2.7715983 | 62 | 5 | 1995–2006 | 0.54 | M-v | 0 | MPC | 02086 | 2002 $ER_{82}$ |
| 2002 $EW_{82}$ | 16.0 | 0.15 | 20060922 | 268.38490 | 261.65968 | 322.77840 | 1.54657 | 0.0914278 | 3.0356320 | 25 | 3 | 2002–2005 | 0.44 | M-v | 3 | MPC | 00206 | 2002 $EW_{82}$ |
| 2002 $ET_{83}$ | 14.9 | 0.15 | 20060922 | 230.43876 | 101.61387 | 157.19887 | 7.09926 | 0.0714592 | 3.0524204 | 55 | 3 | 1999–2004 | 0.66 | M-v | 3 | MPC | 74155 | 2002 $ET_{83}$ |
| 2002 $EZ_{83}$ | 15.0 | 0.15 | 20060922 | 247.40692 | 230.33305 | 346.74762 | 2.70713 | 0.1896766 | 3.1651555 | 36 | 3 | 2002–2006 | 0.47 | M-v | 4 | MPC | 94696 | 2002 $EZ_{83}$ |
| 2002 $EN_{84}$ | 15.5 | 0.15 | 20060922 | 7.74549 | 24.26900 | 104.22926 | 3.08412 | 0.0431141 | 2.9145111 | 92 | 6 | 1997–2006 | 0.55 | M-v | 0 | MPC | 97582 | 2002 $EN_{84}$ |
| 2002 $ES_{84}$ | 13.2 | 0.15 | 20060922 | 204.48621 | 302.07636 | 157.82752 | 8.15026 | 0.0950742 | 5.1307804 | 50 | 4 | 1996–2004 | 0.47 | M-v | 1 | MPC | 48221 | 2002 $ES_{84}$ |
| 2002 $EC_{85}$ | 16.8 | 0.15 | 20060922 | 20.94769 | 199.94949 | 36.96863 | 1.98075 | 0.1319730 | 2.4345880 | 58 | 4 | 1996–2006 | 0.49 | M-v | 2 | MPC | 00206 | 2002 $EC_{85}$ |
| 2002 $EA_{86}$ | 17.3 | 0.15 | 20060922 | 70.97509 | 58.19628 | 175.81082 | 4.98327 | 0.1800810 | 2.2924719 | 58 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04195 | 2002 $EA_{86}$ |
| 2002 $EZ_{87}$ | 16.2 | 0.15 | 20060922 | 55.53367 | 81.92261 | 153.63813 | 4.83915 | 0.0863342 | 2.3245910 | 76 | 4 | 2000–2005 | 0.57 | M-v | 1 | MPC | 53703 | 2002 $EZ_{87}$ |
| 2002 $EF_{89}$ | 14.6 | 0.15 | 20060922 | 279.49563 | 256.03968 | 322.63222 | 8.72481 | 0.0477523 | 2.9916891 | 62 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 74156 | 2002 $EF_{89}$ |
| 2002 $EV_{89}$ | 14.8 | 0.15 | 20060922 | 262.85612 | 309.43409 | 291.72069 | 5.58413 | 0.2688054 | 3.0332404 | 48 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 97583 | 2002 $EV_{89}$ |
| 2002 $EA_{90}$ | 14.8 | 0.15 | 20060922 | 211.79566 | 103.72982 | 162.18141 | 11.32889 | 0.0851380 | 3.0928349 | 49 | 3 | 2002–2005 | 0.64 | M-v | 3 | MPC | 69298 | 2002 $EA_{90}$ |
| 2002 $EQ_{90}$ | 14.9 | 0.15 | 20060922 | 253.62047 | 149.42409 | 62.17575 | 2.13691 | 0.1118243 | 3.2055593 | 100 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 97583 | 2002 $EQ_{90}$ |
| 2002 $EO_{92}$ | 16.8 | 0.15 | 20060922 | 49.04405 | 328.50962 | 287.99164 | 1.70714 | 0.2105961 | 2.3321583 | 67 | 4 | 2002–2006 | 0.32 | M-v | 1 | MPC | 04195 | 2002 $EO_{92}$ |
| 2002 $EU_{92}$ | 15.0 | 0.15 | 20060922 | 277.37944 | 238.32095 | 344.44316 | 14.35215 | 0.0907867 | 2.8504875 | 44 | 4 | 1999–2006 | 0.60 | M-v | 2 | MPC | 75310 | 2002 $EU_{92}$ |
| 2002 $EC_{93}$ | 17.3 | 0.15 | 20060922 | 58.89427 | 58.42621 | 128.22302 | 3.22415 | 0.1302253 | 2.4007961 | 44 | 3 | 2000–2006 | 0.65 | M-v | 3 | MPC | 00207 | 2002 $EC_{93}$ |
| 2002 $EK_{93}$ | 17.3 | 0.15 | 20060922 | 17.89748 | 109.08159 | 140.22557 | 3.14526 | 0.1819656 | 2.3768621 | 71 | 4 | 1995–2006 | 0.61 | M-v | 1 | MPC | 04195 | 2002 $EK_{93}$ |
| 2002 $EX_{93}$ | 15.1 | 0.15 | 20060922 | 86.78612 | 226.89968 | 158.91018 | 10.69416 | 0.0770384 | 2.9918709 | 118 | 6 | 1999–2006 | 0.58 | M-v | 0 | MPC | 97583 | 2002 $EX_{93}$ |
| 2002 $EL_{94}$ | 17.1 | 0.15 | 20060922 | 43.46504 | 46.26122 | 155.72041 | 1.86377 | 0.1391398 | 2.4342412 | 60 | 2 | 2002–2006 | 0.43 | M-v | 3 | MPC | 00208 | 2002 $EL_{94}$ |
| 2002 $EM_{95}$ | 16.8 | 0.15 | 20060922 | 37.10263 | 191.98263 | 49.66523 | 3.17220 | 0.1256861 | 2.3247766 | 52 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 02087 | 2002 $EM_{95}$ |
| 2002 $EP_{95}$ | 16.1 | 0.15 | 20060922 | 305.03753 | 358.84589 | 151.05125 | 2.72709 | 0.1177382 | 3.1421054 | 35 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 89260 | 2002 $EP_{95}$ |
| 2002 $EU_{95}$ | 16.0 | 0.15 | 20060922 | 355.63910 | 85.35572 | 351.13079 | 15.07746 | 0.2489222 | 3.1356317 | 37 | 3 | 2000–2005 | 0.68 | M-v | 2 | MPC | 48221 | 2002 $EU_{95}$ |
| 2002 $EG_{96}$ | 17.6 | 0.15 | 20060922 | 55.78137 | 0.11873 | 146.46376 | 2.56823 | 0.1371859 | 2.5607015 | 37 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 02087 | 2002 $EG_{96}$ |
| 2002 $ET_{99}$ | 16.6 | 0.15 | 20060922 | 42.57142 | 27.63936 | 186.49261 | 9.55060 | 0.2131394 | 2.3986418 | 71 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 00209 | 2002 $ET_{99}$ |
| 2002 $EE_{102}$ | 16.7 | 0.15 | 20060922 | 17.55109 | 130.53947 | 114.51032 | 12.65915 | 0.2135407 | 2.4336334 | 90 | 3 | 1994–2006 | 0.75 | M-v | 2 | MPC | 04195 | 2002 $EE_{102}$ |
| 2002 $EM_{102}$ | 15.5 | 0.15 | 20060922 | 222.47346 | 287.65657 | 331.10428 | 25.46864 | 0.1872955 | 3.1303999 | 26 | 4 | 1998–2006 | 0.40 | M-v | 1 | MPC | 30060 | 2002 $EM_{102}$ |
| 2002 $ES_{102}$ | 16.7 | 0.15 | 20060922 | 321.56867 | 105.08061 | 168.06544 | 6.24096 | 0.1011833 | 2.4538692 | 52 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 02087 | 2002 $ES_{102}$ |
| 2002 $ED_{103}$ | 18.3 | 0.15 | 20060922 | 99.24860 | 339.48906 | 155.12976 | 2.50927 | 0.1529534 | 2.4217144 | 35 | 3 | 2000–2006 | 0.34 | M-v | 3 | MPC | 00210 | 2002 $ED_{103}$ |
| 2002 $EO_{103}$ | 14.9 | 0.15 | 20060922 | 354.97782 | 355.82870 | 101.92417 | 10.43405 | 0.0509404 | 3.1618277 | 55 | 6 | 1999–2006 | 0.62 | M-v | 1 | MPC | 90154 | 2002 $EO_{103}$ |
| 2002 $ES_{103}$ | 17.1 | 0.15 | 20060922 | 197.78076 | 160.85725 | 167.86622 | 5.13588 | 0.1160531 | 2.7087153 | 26 | 4 | 1995–2006 | 0.30 | M-v | 1 | MPC | 94702 | 2002 $ES_{103}$ |
| 2002 $ET_{105}$ | 17.1 | 0.15 | 20060922 | 52.19547 | 70.43233 | 53.17025 | 5.27879 | 0.1975144 | 2.6482572 | 31 | 4 | 1993–2006 | 0.55 | M-v | 0 | MPC | 94703 | 2002 $ET_{105}$ |
| 2002 $EO_{106}$ | 17.5 | 0.15 | 20060922 | 85.43940 | 139.27151 | 102.03185 | 5.40272 | 0.2099212 | 2.2182269 | 46 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 04195 | 2002 $EO_{106}$ |
| 2002 $ER_{107}$ | 15.4 | 0.15 | 20060922 | 9.67719 | 81.86713 | 346.23462 | 25.05681 | 0.2549819 | 3.1360305 | 35 | 4 | 2000–2006 | 0.43 | M-v | 0 | MPC | 94704 | 2002 $ER_{107}$ |
| 2002 $EX_{107}$ | 17.4 | 0.15 | 20060922 | 250.02278 | 23.23045 | 19.24223 | 1.98938 | 0.1728839 | 2.1802137 | 52 | 4 | 1995–2005 | 0.65 | M-v | 2 | MPC | 72569 | 2002 $EX_{107}$ |
| 2002 $EM_{108}$ | 17.9 | 0.15 | 20060922 | 96.40106 | 81.66379 | 54.65066 | 1.37008 | 0.1513703 | 2.4093774 | 29 | 2 | 2002–2006 | 0.30 | M-v | 4 | MPC | 00211 | 2002 $EM_{108}$ |
| 2002 $EP_{109}$ | 16.6 | 0.15 | 20060922 | 338.82050 | 159.85174 | 147.57159 | 5.03780 | 0.1430799 | 2.3123297 | 102 | 5 | 1996–2006 | 0.68 | M-v | 1 | MPC | 02087 | 2002 $EP_{109}$ |
| 2002 $EF_{110}$ | 17.1 | 0.15 | 20060922 | 45.43555 | 109.58409 | 138.62884 | 5.90959 | 0.2020066 | 2.3416119 | 47 | 3 | 1999–2003 | 0.67 | M-v | 2 | MPC | 89262 | 2002 $EF_{110}$ |
| 2002 $EG_{111}$ | 16.6 | 0.15 | 20060922 | 39.86121 | 131.65780 | 84.64131 | 4.31684 | 0.1451180 | 2.4296164 | 71 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 04195 | 2002 $EG_{111}$ |
| 2002 $EX_{112}$ | 14.3 | 0.15 | 20060922 | 300.64955 | 347.58028 | 19.34800 | 5.92074 | 0.0815590 | 5.1907737 | 24 | 4 | 1996–2004 | 0.46 | M-v | 1 | MPC | 85469 | 2002 $EX_{112}$ |
| 2002 $EB_{113}$ | 16.0 | 0.15 | 20060922 | 346.13881 | 16.34187 | 97.89736 | 2.56930 | 0.1376229 | 3.0871336 | 39 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 94706 | 2002 $EB_{113}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $EC_{113}$ | 15.3 | 0.15 | 20060922 | 141.97664 | 302.78898 | 61.22382 | 2.78279 | 0.0857698 | 2.8680169 | 94 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 97584 | 2002 $EC_{113}$ |
| 2002 $EF_{113}$ | 13.8 | 0.15 | 20060922 | 134.79821 | 51.01911 | 125.86541 | 4.69352 | 0.0109878 | 5.1862850 | 28 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04195 | 2002 $EF_{113}$ |
| 2002 $EA_{114}$ | 16.8 | 0.15 | 20060922 | 244.77294 | 209.63203 | 130.34388 | 2.53807 | 0.1453033 | 2.5155116 | 22 | 3 | 2002–2006 | 0.36 | M-v | 4 | MPC | 94706 | 2002 $EA_{114}$ |
| 2002 $EE_{115}$ | 16.7 | 0.15 | 20060922 | 92.51089 | 131.87125 | 115.57067 | 5.82138 | 0.1988522 | 2.2044279 | 61 | 6 | 1992–2006 | 0.68 | M-v | 1 | MPC | 72571 | 2002 $EE_{115}$ |
| 2002 $EM_{115}$ | 15.9 | 0.15 | 20060922 | 297.25504 | 352.03987 | 321.49840 | 6.06788 | 0.0867537 | 2.4199707 | 42 | 4 | 1994–2006 | 0.57 | M-v | 2 | MPC | 04195 | 2002 $EM_{115}$ |
| 2002 $EV_{116}$ | 17.4 | 0.15 | 20060922 | 133.29547 | 17.44050 | 75.71038 | 2.09595 | 0.1609930 | 2.4192760 | 45 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 00213 | 2002 $EV_{116}$ |
| 2002 $ED_{117}$ | 15.7 | 0.15 | 20060922 | 84.86985 | 224.23928 | 146.91435 | 8.25863 | 0.1126872 | 3.1712163 | 40 | 4 | 2002–2006 | 0.45 | M-v | 0 | MPC | 97584 | 2002 $ED_{117}$ |
| 2002 $ER_{117}$ | 16.5 | 0.15 | 20060922 | 330.69109 | 313.67309 | 317.20291 | 5.45572 | 0.1129423 | 2.4262957 | 43 | 4 | 1996–2006 | 0.43 | M-v | 1 | MPC | 02088 | 2002 $ER_{117}$ |
| 2002 $EZ_{117}$ | 16.1 | 0.15 | 20060922 | 215.98235 | 309.35169 | 314.44564 | 3.71863 | 0.0910943 | 3.1033820 | 26 | 3 | 1998–2005 | 0.37 | M-v | 3 | MPC | 00213 | 2002 $EZ_{117}$ |
| 2002 $ES_{118}$ | 17.2 | 0.15 | 20060922 | 91.61180 | 143.75372 | 33.91130 | 4.52613 | 0.1551795 | 2.3340845 | 42 | 3 | 2000–2004 | 0.63 | M-v | 3 | MPC | 48223 | 2002 $ES_{118}$ |
| 2002 $EZ_{119}$ | 15.7 | 0.15 | 20060922 | 2.86298 | 115.38802 | 344.11140 | 8.56398 | 0.1279047 | 3.0851280 | 33 | 2 | 2002–2005 | 0.53 | M-v | 4 | MPC | 89263 | 2002 $EZ_{119}$ |
| 2002 $EJ_{120}$ | 16.1 | 0.15 | 20060922 | 347.88045 | 131.36949 | 329.78497 | 4.32729 | 0.0796744 | 3.1221887 | 36 | 3 | 2002–2005 | 0.32 | M-v | 2 | MPC | 04195 | 2002 $EJ_{120}$ |
| 2002 $EN_{120}$ | 17.5 | 0.15 | 20060922 | 356.59202 | 139.28936 | 168.62356 | 4.21435 | 0.1247883 | 2.2232984 | 44 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 57853 | 2002 $EN_{120}$ |
| 2002 $ER_{120}$ | 17.4 | 0.15 | 20060922 | 147.87652 | 270.30409 | 175.79734 | 5.76402 | 0.0708577 | 2.4140970 | 19 | 2 | 2002–2006 | 0.27 | M-v | 4 | MPC | 00213 | 2002 $ER_{120}$ |
| 2002 $EK_{122}$ | 17.0 | 0.15 | 20060922 | 65.48696 | 4.65398 | 176.28866 | 3.68401 | 0.0428599 | 2.4198709 | 45 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 00213 | 2002 $EK_{122}$ |
| 2002 $EP_{122}$ | 16.7 | 0.15 | 20060922 | 278.04356 | 75.86869 | 233.34020 | 1.19714 | 0.1255468 | 2.5380732 | 31 | 3 | 2002–2006 | 0.25 | M-v | 4 | MPC | 94708 | 2002 $EP_{122}$ |
| 2002 $ET_{122}$ | 15.5 | 0.15 | 20060922 | 198.17920 | 290.75860 | 348.33433 | 5.52145 | 0.1116098 | 3.1590819 | 60 | 3 | 2002–2005 | 0.64 | M-v | 3 | MPC | 74158 | 2002 $ET_{122}$ |
| 2002 $EZ_{123}$ | 15.3 | 0.15 | 20060922 | 240.10082 | 278.69205 | 319.76547 | 4.70074 | 0.1054901 | 3.1188144 | 34 | 4 | 2002–2006 | 0.34 | M-v | 1 | MPC | 02088 | 2002 $EZ_{123}$ |
| 2002 $EZ_{124}$ | 15.6 | 0.15 | 20060922 | 192.49156 | 175.06441 | 96.39750 | 2.99334 | 0.0418087 | 3.1352656 | 60 | 6 | 1999–2006 | 0.39 | M-v | 0 | MPC | 97584 | 2002 $EZ_{124}$ |
| 2002 $EZ_{126}$ | 15.2 | 0.15 | 20060922 | 10.50537 | 270.72737 | 171.88885 | 16.63999 | 0.1883576 | 3.1033295 | 44 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 87535 | 2002 $EZ_{126}$ |
| 2002 $ES_{128}$ | 17.1 | 0.15 | 20060922 | 40.65389 | 49.30829 | 161.02997 | 3.85732 | 0.0412495 | 2.3971624 | 31 | 2 | 2002–2006 | 0.41 | M-v | 3 | MPC | 00215 | 2002 $ES_{128}$ |
| 2002 $EU_{128}$ | 16.7 | 0.15 | 20060922 | 17.63588 | 99.73370 | 52.55585 | 2.36153 | 0.0415436 | 2.7207000 | 50 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 02088 | 2002 $EU_{128}$ |
| 2002 $EZ_{128}$ | 15.4 | 0.15 | 20060922 | 329.77209 | 89.34319 | 54.61357 | 2.26240 | 0.0447270 | 3.1018598 | 76 | 7 | 1995–2006 | 0.51 | M-v | 0 | MPC | 94709 | 2002 $EZ_{128}$ |
| 2002 $EJ_{129}$ | 15.3 | 0.15 | 20060922 | 225.01268 | 12.02860 | 259.41167 | 2.86004 | 0.1643245 | 3.1196582 | 45 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 97585 | 2002 $EJ_{129}$ |
| 2002 $EX_{129}$ | 15.4 | 0.15 | 20060922 | 330.04942 | 16.98942 | 156.05088 | 17.09060 | 0.1365000 | 2.7677932 | 47 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 00215 | 2002 $EX_{129}$ |
| 2002 $EE_{130}$ | 17.1 | 0.15 | 20060922 | 83.21823 | 318.80320 | 253.67430 | 6.27205 | 0.1431089 | 2.2583480 | 40 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 02088 | 2002 $EE_{130}$ |
| 2002 $EU_{130}$ | 16.0 | 0.15 | 20060922 | 212.71350 | 230.78725 | 73.77421 | 3.11997 | 0.0486565 | 2.8646143 | 29 | 4 | 1992–2006 | 0.56 | M-v | 1 | MPC | 04195 | 2002 $EU_{130}$ |
| 2002 $EN_{132}$ | 16.1 | 0.15 | 20060922 | 185.12232 | 115.49704 | 168.69765 | 10.60894 | 0.0933351 | 3.2379367 | 24 | 3 | 1997–2004 | 0.40 | M-v | 3 | MPC | 69310 | 2002 $EN_{132}$ |
| 2002 $EO_{133}$ | 14.4 | 0.15 | 20060922 | 122.49560 | 294.93466 | 358.13830 | 4.25250 | 0.2217338 | 3.9453903 | 79 | 7 | 1996–2006 | 0.45 | M-v | 0 | MPC | 90155 | 2002 $EO_{133}$ |
| 2002 $ER_{133}$ | 16.5 | 0.15 | 20060922 | 333.73874 | 324.37309 | 328.89557 | 3.52344 | 0.1651154 | 2.3860302 | 56 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 02088 | 2002 $ER_{133}$ |
| 2002 $ER_{134}$ | 17.4 | 0.15 | 20060922 | 80.97230 | 259.65228 | 332.58262 | 6.68571 | 0.0503583 | 2.2156193 | 22 | 3 | 2002–2005 | 0.48 | M-v | 3 | MPC | 75314 | 2002 $ER_{134}$ |
| 2002 $EL_{135}$ | 15.1 | 0.15 | 20060922 | 352.87215 | 166.29366 | 293.05545 | 12.21206 | 0.2374853 | 3.0714167 | 37 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 30077 | 2002 $EL_{135}$ |
| 2002 $EP_{135}$ | 12.8 | 0.15 | 20060922 | 166.40323 | 350.98992 | 160.63996 | 8.00634 | 0.0078441 | 5.1802148 | 38 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04195 | 2002 $EP_{135}$ |
| 2002 $ES_{135}$ | 15.4 | 0.15 | 20060922 | 282.27226 | 117.72053 | 116.92721 | 3.26457 | 0.0287539 | 2.8741794 | 30 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 00216 | 2002 $ES_{135}$ |
| 2002 $EY_{135}$ | 17.5 | 0.15 | 20060922 | 358.59077 | 300.24213 | 13.76746 | 3.64531 | 0.1928797 | 2.2345050 | 105 | 4 | 2000–2005 | 0.65 | M-v | 2 | MPC | 74159 | 2002 $EY_{135}$ |
| 2002 $EL_{136}$ | 15.7 | 0.15 | 20060922 | 94.27658 | 257.63874 | 150.56755 | 2.56384 | 0.0638919 | 2.8610266 | 32 | 2 | 2002–2004 | 0.67 | M-v | 4 | MPC | 69311 | 2002 $EL_{136}$ |
| 2002 $EP_{136}$ | 16.3 | 0.15 | 20060922 | 48.53797 | 71.79357 | 24.42050 | 2.11485 | 0.0199774 | 2.8723673 | 33 | 4 | 2000–2006 | 0.47 | M-v | 0 | MPC | 69311 | 2002 $EP_{136}$ |
| 2002 $ER_{136}$ | 16.2 | 0.15 | 20060922 | 355.46187 | 315.41902 | 153.88535 | 4.30548 | 0.0910210 | 3.0803667 | 35 | 4 | 1994–2005 | 0.51 | M-v | 0 | MPC | 04195 | 2002 $ER_{136}$ |
| 2002 $ES_{136}$ | 18.5 | 0.15 | 20060922 | 93.80491 | 78.07202 | 86.51189 | 2.15749 | 0.1204722 | 2.3648784 | 32 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 00216 | 2002 $ES_{136}$ |
| 2002 $EB_{137}$ | 15.2 | 0.15 | 20060922 | 95.88075 | 28.69851 | 357.06153 | 10.02639 | 0.1204195 | 2.9782660 | 54 | 6 | 1997–2006 | 0.60 | M-v | 1 | MPC | 97585 | 2002 $EB_{137}$ |
| 2002 $EM_{137}$ | 17.4 | 0.15 | 20060922 | 25.68804 | 247.97673 | 10.64778 | 3.15420 | 0.1682314 | 2.3507022 | 38 | 5 | 1996–2006 | 0.52 | M-v | 0 | MPC | 02089 | 2002 $EM_{137}$ |
| 2002 $EV_{138}$ | 17.4 | 0.15 | 20060922 | 53.61600 | 76.53238 | 118.13670 | 2.46888 | 0.1384067 | 2.4360302 | 31 | 4 | 1994–2006 | 0.46 | M-v | 2 | MPC | 04195 | 2002 $EV_{138}$ |
| 2002 $EA_{141}$ | 16.8 | 0.15 | 20060922 | 314.87016 | 242.92088 | 1.90842 | 5.93672 | 0.0504493 | 2.6004129 | 31 | 2 | 2002–2006 | 0.55 | M-v | 5 | MPC | 03307 | 2002 $EA_{141}$ |
| 2002 $EG_{141}$ | 15.6 | 0.15 | 20060922 | 153.92972 | 216.31096 | 157.80155 | 14.48665 | 0.0850926 | 2.6988565 | 59 | 6 | 1995–2006 | 0.64 | M-v | 1 | MPC | 97585 | 2002 $EG_{141}$ |
| 2002 $EO_{141}$ | 15.8 | 0.15 | 20060922 | 1.31898 | 67.32025 | 10.46794 | 3.49267 | 0.1514121 | 3.1621830 | 51 | 4 | 1996–2005 | 0.43 | M-v | 1 | MPC | 97585 | 2002 $EO_{141}$ |
| 2002 $ED_{143}$ | 15.0 | 0.15 | 20060922 | 178.29025 | 133.08383 | 163.62996 | 10.38946 | 0.0718577 | 3.1342618 | 57 | 5 | 1993–2005 | 0.74 | M-v | 1 | MPC | 74159 | 2002 $ED_{143}$ |
| 2002 $ED_{145}$ | 15.4 | 0.15 | 20060922 | 220.12260 | 305.21828 | 300.52606 | 2.67440 | 0.0205954 | 3.2324170 | 44 | 5 | 1993–2006 | 0.41 | M-v | 0 | MPC | 97586 | 2002 $ED_{145}$ |
| 2002 $EV_{146}$ | 16.7 | 0.15 | 20060922 | 16.08214 | 29.64821 | 208.16348 | 7.01102 | 0.1788556 | 2.4702328 | 65 | 3 | 2002–2006 | 0.66 | M-v | 2 | MPC | 02089 | 2002 $EV_{146}$ |
| 2002 $ES_{147}$ | 16.8 | 0.15 | 20060922 | 74.19330 | 57.19170 | 157.55504 | 5.43387 | 0.1077917 | 2.3025606 | 34 | 3 | 1996–2003 | 0.42 | M-v | 3 | MPC | 52932 | 2002 $ES_{147}$ |
| 2002 $EH_{148}$ | 16.7 | 0.15 | 20060922 | 47.83637 | 98.38356 | 66.36053 | 2.53831 | 0.0577710 | 2.5609868 | 69 | 6 | 1996–2006 | 0.69 | M-v | 1 | MPC | 97586 | 2002 $EH_{148}$ |
| 2002 $EV_{148}$ | 17.2 | 0.15 | 20060922 | 0.20765 | 147.80368 | 175.48064 | 7.95126 | 0.2463187 | 2.2377350 | 73 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 56325 | 2002 $EV_{148}$ |
| 2002 $EE_{149}$ | 15.2 | 0.15 | 20060922 | 224.97738 | 169.39425 | 75.34500 | 2.97114 | 0.0277070 | 3.1664409 | 52 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 94713 | 2002 $EE_{149}$ |
| 2002 $EH_{149}$ | 16.9 | 0.15 | 20060922 | 334.01522 | 149.02493 | 155.66175 | 1.62551 | 0.1795236 | 2.3829743 | 93 | 6 | 1995–2006 | 0.54 | M-v | 0 | MPC | 02089 | 2002 $EH_{149}$ |

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| 2002 $EQ_{150}$ | 15.5 | 0.15 | 20060922 | 10.83855 | 328.72528 | 113.37507 | 3.09949 | 0.1200004 | 3.1789179 | 42 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 89264 | 2002 $EQ_{150}$ |
| 2002 $EK_{151}$ | 14.2 | 0.15 | 20060922 | 193.31251 | 142.64722 | 186.42733 | 10.73914 | 0.1616872 | 2.9621927 | 53 | 4 | 1992–2004 | 0.74 | M-v | 1 | MPC | 04196 | 2002 $EK_{151}$ |
| 2002 $EP_{151}$ | 16.2 | 0.15 | 20060922 | 10.01881 | 171.51837 | 22.69026 | 3.52929 | 0.1201003 | 2.6618156 | 58 | 4 | 1995–2006 | 0.63 | M-v | 2 | MPC | 02089 | 2002 $EP_{151}$ |
| 2002 $EN_{152}$ | 16.1 | 0.15 | 20060922 | 322.78956 | 338.96067 | 235.55440 | 7.96519 | 0.1129838 | 2.7556358 | 44 | 4 | 1995–2003 | 0.62 | M-v | 1 | MPC | 50599 | 2002 $EN_{152}$ |
| 2002 $EW_{154}$ | 16.3 | 0.15 | 20060922 | 318.61308 | 344.94226 | 147.66722 | 1.68996 | 0.0982167 | 3.2123843 | 32 | 3 | 2001–2005 | 0.37 | M-v | 3 | MPC | 90155 | 2002 $EW_{154}$ |
| 2002 $EC_{155}$ | 16.6 | 0.15 | 20060922 | 293.04711 | 344.15481 | 1.23870 | 7.19972 | 0.1404052 | 2.3434801 | 21 | 3 | 1996–2003 | 0.59 | M-v | 3 | MPC | 89264 | 2002 $EC_{155}$ |
| 2002 $EH_{157}$ | 13.9 | 0.15 | 20060922 | 246.49516 | 100.97619 | 310.15903 | 5.22575 | 0.0535255 | 5.2238418 | 31 | 4 | 1996–2006 | 0.46 | M-v | 0 | MPC | 02089 | 2002 $EH_{157}$ |
| 2002 $EM_{157}$ | 12.6 | 0.15 | 20060922 | 15.90762 | 336.05661 | 320.46433 | 8.81246 | 0.1328292 | 5.3022416 | 60 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 04196 | 2002 $EM_{157}$ |
| 2002 $EG_{161}$ | 15.5 | 0.15 | 20060922 | 291.40526 | 31.95276 | 150.43636 | 18.11637 | 0.0715019 | 3.2007466 | 18 | 1 | 62 days | 0.43 | M-v | 4 | MPC | | 2002 $EG_{161}$ |
| 2002 FD | 19.4 | 0.15 | 20060922 | 294.63968 | 267.07128 | 182.27023 | 22.81030 | 0.2823192 | 1.4237002 | 127 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 04196 | 2002 FD |
| 2002 FW | 15.8 | 0.15 | 20060922 | 267.26815 | 59.11859 | 185.97043 | 14.94453 | 0.2628940 | 3.0660148 | 67 | 3 | 1998–2003 | 0.58 | M-v | 2 | MPC | 57853 | 2002 FW |
| 2002 $FC_1$ | 16.2 | 0.15 | 20060922 | 336.61966 | 10.07374 | 192.82559 | 5.57478 | 0.1529247 | 2.7903229 | 51 | 4 | 1994–2004 | 0.56 | M-v | 1 | MPC | 04196 | 2002 $FC_1$ |
| 2002 $FP_2$ | 17.3 | 0.15 | 20060922 | 111.33463 | 25.36956 | 179.49780 | 4.84139 | 0.1048850 | 2.2445095 | 52 | 3 | 2002–2005 | 0.54 | M-v | 3 | MPC | 89265 | 2002 $FP_2$ |
| 2002 $FV_2$ | 15.0 | 0.15 | 20060922 | 256.62884 | 204.34842 | 37.21409 | 5.27875 | 0.1336254 | 3.1237689 | 54 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 97586 | 2002 $FV_2$ |
| 2002 $FQ_4$ | 20.5 | 0.15 | 20060922 | 96.63210 | 68.44785 | 182.44624 | 34.94160 | 0.1941275 | 1.5213848 | 29 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 75317 | 2002 $FQ_4$ |
| 2002 $FZ_4$ | 17.1 | 0.15 | 20060922 | 42.84946 | 245.25327 | 20.97180 | 24.30836 | 0.2814616 | 2.3347004 | 42 | 2 | 2002–2006 | 0.53 | M-v | 3 | MPC | 03308 | 2002 $FZ_4$ |
| 2002 $FJ_5$ | 16.3 | 0.15 | 20060922 | 348.05171 | 118.67668 | 138.36057 | 5.21107 | 0.1818608 | 2.5367044 | 40 | 2 | 2002–2005 | 0.57 | M-v | 4 | MPC | 94716 | 2002 $FJ_5$ |
| 2002 $FQ_6$ | 16.5 | 0.15 | 20060922 | 79.26013 | 152.30237 | 23.50783 | 4.66915 | 0.1190009 | 2.4254402 | 43 | 4 | 1996–2006 | 0.63 | M-v | 3 | MPC | 00220 | 2002 $FQ_6$ |
| 2002 $FA_7$ | 15.7 | 0.15 | 20060922 | 335.65833 | 89.09623 | 17.58921 | 25.21546 | 0.2589625 | 3.1081406 | 35 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87536 | 2002 $FA_7$ |
| 2002 $FH_8$ | 17.7 | 0.15 | 20060922 | 88.10461 | 315.89727 | 195.69213 | 7.90504 | 0.2346940 | 2.4138446 | 24 | 2 | 2002–2006 | 0.54 | M-v | 4 | MPC | 03308 | 2002 $FH_8$ |
| 2002 $FO_{10}$ | 14.7 | 0.15 | 20060922 | 275.90546 | 103.05306 | 114.70879 | 7.27243 | 0.0840446 | 2.9929591 | 65 | 3 | 2002–2005 | 0.61 | M-v | 3 | MPC | 69320 | 2002 $FO_{10}$ |
| 2002 $FL_{11}$ | 15.9 | 0.15 | 20060922 | 280.83861 | 112.85930 | 87.21503 | 0.27451 | 0.1058678 | 3.1098421 | 46 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 97587 | 2002 $FL_{11}$ |
| 2002 $FY_{12}$ | 15.9 | 0.15 | 20060922 | 42.42475 | 192.37293 | 47.53053 | 5.29312 | 0.1123045 | 2.3639172 | 47 | 4 | 2000–2005 | 0.57 | M-v | 1 | MPC | 74161 | 2002 $FY_{12}$ |
| 2002 $FH_{14}$ | 15.7 | 0.15 | 20060922 | 16.80461 | 297.63143 | 145.49185 | 3.50255 | 0.1525434 | 3.0181283 | 30 | 3 | 2002–2005 | 0.63 | M-v | 3 | MPC | 90155 | 2002 $FH_{14}$ |
| 2002 $FJ_{15}$ | 15.0 | 0.15 | 20060922 | 244.22531 | 137.47554 | 95.49059 | 8.54596 | 0.1172870 | 3.1570893 | 35 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 31484 | 2002 $FJ_{15}$ |
| 2002 $FR_{18}$ | 13.6 | 0.15 | 20060922 | 334.64882 | 175.14289 | 149.46560 | 2.19916 | 0.0892929 | 5.1623540 | 26 | 5 | 1996–2005 | 0.38 | M-v | 1 | MPC | 89267 | 2002 $FR_{18}$ |
| 2002 $FY_{18}$ | 15.9 | 0.15 | 20060922 | 7.75896 | 86.45474 | 351.64076 | 9.16284 | 0.1072522 | 3.1124435 | 26 | 2 | 2002–2005 | 0.38 | M-v | 3 | MPC | 90155 | 2002 $FY_{18}$ |
| 2002 $FN_{19}$ | 16.0 | 0.15 | 20060922 | 282.09458 | 231.89091 | 339.23072 | 1.30775 | 0.0323154 | 2.9252277 | 21 | 3 | 1999–2005 | 0.44 | M-v | 4 | MPC | 94719 | 2002 $FN_{19}$ |
| 2002 $FP_{21}$ | 13.5 | 0.15 | 20060922 | 125.90958 | 253.50404 | 34.13406 | 5.35687 | 0.1500507 | 3.9599757 | 150 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 97587 | 2002 $FP_{21}$ |
| 2002 $FX_{23}$ | 16.4 | 0.15 | 20060922 | 100.65567 | 225.15013 | 177.19399 | 6.32260 | 0.0932147 | 2.9045875 | 30 | 3 | 1997–2004 | 0.33 | M-v | 3 | MPC | 72583 | 2002 $FX_{23}$ |
| 2002 $FZ_{24}$ | 17.1 | 0.15 | 20060922 | 182.61733 | 95.84044 | 6.70530 | 8.63347 | 0.0696149 | 2.2895497 | 40 | 4 | 1995–2005 | 0.71 | M-v | 1 | MPC | 48225 | 2002 $FZ_{24}$ |
| 2002 $FA_{25}$ | 14.7 | 0.15 | 20060922 | 359.61146 | 340.64856 | 102.65672 | 17.87875 | 0.0527770 | 3.1845868 | 29 | 5 | 2002–2006 | 0.61 | M-v | 1 | MPC | 94720 | 2002 $FA_{25}$ |
| 2002 $FG_{25}$ | 14.3 | 0.15 | 20060922 | 203.67593 | 161.33847 | 99.66521 | 20.18972 | 0.0616909 | 3.1515771 | 51 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 94720 | 2002 $FG_{25}$ |
| 2002 $FN_{26}$ | 16.2 | 0.15 | 20060922 | 42.10187 | 59.97315 | 343.02799 | 4.12593 | 0.1463479 | 3.1220849 | 44 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 90156 | 2002 $FN_{26}$ |
| 2002 $FC_{29}$ | 16.6 | 0.15 | 20060922 | 84.12185 | 178.41688 | 114.98110 | 6.47130 | 0.2557754 | 2.1271091 | 52 | 5 | 1999–2006 | 0.65 | M-v | 2 | MPC | 75318 | 2002 $FC_{29}$ |
| 2002 $FG_{33}$ | 15.1 | 0.15 | 20060922 | 226.29599 | 136.88223 | 136.66862 | 17.21396 | 0.1847406 | 3.0488049 | 58 | 6 | 1991–2006 | 0.65 | M-v | 1 | MPC | 50601 | 2002 $FG_{33}$ |
| 2002 $FT_{34}$ | 16.0 | 0.15 | 20060922 | 89.51443 | 335.90320 | 195.41918 | 7.09312 | 0.1132180 | 2.4271810 | 70 | 5 | 1998–2006 | 0.76 | M-v | 1 | MPC | 02091 | 2002 $FT_{34}$ |
| 2002 $FY_{34}$ | 15.1 | 0.15 | 20060922 | 230.57041 | 59.32715 | 208.25022 | 5.00378 | 0.1354183 | 3.1292461 | 69 | 5 | 1999–2005 | 0.60 | M-v | 0 | MPC | 70345 | 2002 $FY_{34}$ |
| 2002 $FK_{35}$ | 15.1 | 0.15 | 20060922 | 233.78900 | 28.31369 | 234.21302 | 8.01589 | 0.1706925 | 3.0748222 | 26 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 72586 | 2002 $FK_{35}$ |
| 2002 $FD_{36}$ | 15.7 | 0.15 | 20060922 | 68.32247 | 38.02360 | 89.37331 | 14.62761 | 0.1947925 | 2.6116053 | 41 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 02091 | 2002 $FD_{36}$ |
| 2002 $FR_{36}$ | 13.6 | 0.15 | 20060922 | 119.63159 | 29.79508 | 159.13551 | 22.23562 | 0.0586492 | 5.2235325 | 29 | 5 | 1995–2004 | 0.59 | M-v | 0 | MPC | 89267 | 2002 $FR_{36}$ |
| 2002 $FV_{38}$ | 15.8 | 0.15 | 20060922 | 313.54435 | 27.41082 | 129.30635 | 7.27212 | 0.1086179 | 3.1071961 | 36 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 90156 | 2002 $FV_{38}$ |
| 2002 $FA_{39}$ | 14.4 | 0.15 | 20060922 | 24.84707 | 337.05192 | 90.51022 | 15.20913 | 0.0340627 | 3.1227744 | 53 | 6 | 2000–2006 | 0.69 | M-v | 1 | MPC | 97588 | 2002 $FA_{39}$ |
| 2002 $FP_{39}$ | 16.6 | 0.15 | 20060922 | 346.00060 | 180.75188 | 95.23407 | 2.30450 | 0.1677908 | 2.4491749 | 70 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 02091 | 2002 $FP_{39}$ |
| 2002 $FZ_{39}$ | 14.6 | 0.15 | 20060922 | 318.09743 | 221.79205 | 264.61113 | 12.02418 | 0.2084554 | 3.1487655 | 26 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 72587 | 2002 $FZ_{39}$ |
| 2002 $FA_{40}$ | 14.0 | 0.15 | 20060922 | 245.23149 | 310.02491 | 278.09923 | 13.20199 | 0.1762468 | 3.1712336 | 55 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 97588 | 2002 $FA_{40}$ |
| 2002 $FC_{40}$ | 15.2 | 0.15 | 20060922 | 280.91828 | 250.76457 | 316.93664 | 7.25661 | 0.0336896 | 3.0410806 | 26 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 72587 | 2002 $FC_{40}$ |
| 2002 $FZ_{40}$ | 15.5 | 0.15 | 20020416 | 325.60199 | 84.08773 | 175.28556 | 24.43287 | 0.2406526 | 3.1687113 | 17 | 1 | 54 days | 0.28 | | | MPC | | 2002 $FZ_{40}$ |
| 2002 $FA_{41}$ | 15.1 | 0.15 | 20020416 | 4.16788 | 101.68410 | 83.29243 | 17.42345 | 0.1768992 | 3.1531497 | 18 | 1 | 53 days | 0.31 | | | MPC | | 2002 $FA_{41}$ |
| 2002 $FB_{41}$ | 15.0 | 0.15 | 20020416 | 345.61615 | 142.30837 | 79.31859 | 18.25561 | 0.1730777 | 3.1534591 | 18 | 1 | 55 days | 0.48 | | | MPC | | 2002 $FB_{41}$ |
| 2002 GG | 17.5 | 0.15 | 20060922 | 70.46371 | 228.29320 | 36.42173 | 7.06963 | 0.1725206 | 2.1985149 | 25 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 52940 | 2002 GG |
| 2002 GK | 15.3 | 0.15 | 20060922 | 322.79793 | 303.25637 | 180.94341 | 14.60970 | 0.3122191 | 3.1285228 | 117 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 89267 | 2002 GK |
| 2002 $GQ_1$ | 14.8 | 0.15 | 20060922 | 293.16180 | 292.65575 | 205.32256 | 19.75373 | 0.3241682 | 3.3196297 | 83 | 4 | 1984–2006 | 0.57 | M-v | 2 | MPC | 35575 | 2002 $GQ_1$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $GU_{2}$ | 16.8 | 0.15 | 20060922 | 71.05354 | 80.10371 | 196.60750 | 21.18642 | 0.3039863 | 2.2795096 | 53 | 4 | 1995–2006 | 0.56 | M-v | 2 | MPC | 33543 | 2002 $GU_{2}$ |
| 2002 $GM_{3}$ | 16.6 | 0.15 | 20060922 | 74.12990 | 235.64766 | 27.85678 | 10.85497 | 0.1098033 | 2.2261384 | 93 | 5 | 1992–2006 | 0.64 | M-v | 1 | MPC | 04196 | 2002 $GM_{3}$ |
| 2002 $GH_{4}$ | 17.7 | 0.15 | 20060922 | 166.61138 | 130.81631 | 201.36348 | 23.99566 | 0.0641845 | 1.8196714 | 51 | 2 | 2002–2005 | 0.60 | M-v | 4 | MPC | 85477 | 2002 $GH_{4}$ |
| 2002 $GP_{4}$ | 15.7 | 0.15 | 20060922 | 22.68494 | 280.70564 | 10.15321 | 23.53464 | 0.2514824 | 2.3344186 | 94 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04196 | 2002 $GP_{4}$ |
| 2002 $GH_{5}$ | 16.5 | 0.15 | 20060922 | 66.30507 | 352.84829 | 22.75237 | 21.01830 | 0.0773072 | 1.9252828 | 52 | 5 | 1999–2006 | 0.55 | M-v | 2 | MPC | 85477 | 2002 $GH_{5}$ |
| 2002 $GQ_{6}$ | 16.5 | 0.15 | 20060922 | 65.94120 | 92.29810 | 31.19444 | 28.45734 | 0.3563748 | 2.6189894 | 47 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03310 | 2002 $GQ_{6}$ |
| 2002 $GS_{7}$ | 14.8 | 0.15 | 20060922 | 251.73380 | 94.79199 | 159.17854 | 9.83773 | 0.0514397 | 3.0349057 | 53 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 69328 | 2002 $GS_{7}$ |
| 2002 $GT_{8}$ | 15.6 | 0.15 | 20060922 | 52.13490 | 151.89844 | 28.68219 | 12.63462 | 0.1958720 | 2.5500526 | 131 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 00226 | 2002 $GT_{8}$ |
| 2002 $GV_{10}$ | 16.4 | 0.15 | 20060922 | 35.10084 | 14.66386 | 21.38100 | 20.39443 | 0.0868429 | 1.9288790 | 73 | 5 | 1994–2006 | 0.60 | M-v | 2 | MPC | 57855 | 2002 $GV_{10}$ |
| 2002 $GW_{10}$ | 16.8 | 0.15 | 20060922 | 340.71774 | 265.48086 | 197.90547 | 20.02922 | 0.1000418 | 1.8905692 | 137 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 87537 | 2002 $GW_{10}$ |
| 2002 $GX_{10}$ | 16.1 | 0.15 | 20060922 | 20.57617 | 27.61580 | 24.26355 | 21.16403 | 0.0866668 | 1.9236601 | 98 | 4 | 1999–2006 | 0.59 | M-v | 2 | MPC | 62389 | 2002 $GX_{10}$ |
| 2002 $GJ_{11}$ | 15.9 | 0.15 | 20060922 | 322.65343 | 147.40867 | 94.65713 | 4.89719 | 0.0767288 | 2.7369891 | 67 | 5 | 2000–2006 | 0.65 | M-v | 1 | MPC | 97589 | 2002 $GJ_{11}$ |
| 2002 $GN_{11}$ | 16.9 | 0.15 | 20060922 | 8.92089 | 136.54002 | 156.03657 | 4.26853 | 0.1791461 | 2.3732163 | 61 | 4 | 1999–2005 | 0.71 | M-v | 1 | MPC | 72589 | 2002 $GN_{11}$ |
| 2002 $GP_{11}$ | 15.8 | 0.15 | 20060922 | 26.59306 | 74.23683 | 94.51158 | 10.82757 | 0.2183134 | 2.7150617 | 101 | 3 | 1996–2006 | 0.50 | M-v | 1 | MPC | 97589 | 2002 $GP_{11}$ |
| 2002 $GA_{12}$ | 17.2 | 0.15 | 20060922 | 133.34855 | 78.26348 | 107.04327 | 2.39735 | 0.0989111 | 2.2365540 | 58 | 4 | 1995–2005 | 0.57 | M-v | 1 | MPC | 75319 | 2002 $GA_{12}$ |
| 2002 $GO_{12}$ | 14.7 | 0.15 | 20060922 | 177.11184 | 288.59645 | 19.99025 | 5.12962 | 0.1458025 | 3.2030519 | 95 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 70345 | 2002 $GO_{12}$ |
| 2002 $GO_{13}$ | 16.6 | 0.15 | 20060922 | 179.04011 | 75.87067 | 39.10242 | 3.97646 | 0.0579286 | 2.3157893 | 37 | 2 | 2002–2005 | 0.62 | M-v | 5 | MPC | 72589 | 2002 $GO_{13}$ |
| 2002 $GE_{14}$ | 16.6 | 0.15 | 20060922 | 55.15937 | 338.41304 | 203.55014 | 5.51616 | 0.1328375 | 2.5479481 | 62 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 00226 | 2002 $GE_{14}$ |
| 2002 $GY_{14}$ | 15.0 | 0.15 | 20060922 | 245.83239 | 180.63321 | 72.35337 | 2.31718 | 0.0200207 | 2.9658794 | 56 | 5 | 1994–2006 | 0.52 | M-v | 0 | MPC | 97589 | 2002 $GY_{14}$ |
| 2002 $GB_{15}$ | 16.6 | 0.15 | 20060922 | 151.75694 | 144.88430 | 12.26528 | 5.33482 | 0.0833608 | 2.2138033 | 48 | 3 | 2000–2005 | 0.65 | M-v | 4 | MPC | 72590 | 2002 $GB_{15}$ |
| 2002 $GV_{15}$ | 15.9 | 0.15 | 20060922 | 320.82440 | 174.73616 | 32.68086 | 9.00211 | 0.2355630 | 2.8579471 | 39 | 3 | 1999–2004 | 0.47 | M-v | 3 | MPC | 30138 | 2002 $GV_{15}$ |
| 2002 $GZ_{15}$ | 14.8 | 0.15 | 20060922 | 208.07747 | 116.05373 | 181.11870 | 11.86469 | 0.0836204 | 3.0463560 | 74 | 4 | 1993–2004 | 0.71 | M-v | 1 | MPC | 04196 | 2002 $GZ_{15}$ |
| 2002 $GC_{16}$ | 16.6 | 0.15 | 20060922 | 11.11194 | 198.13402 | 22.10112 | 4.75187 | 0.0797581 | 2.5377503 | 49 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 00227 | 2002 $GC_{16}$ |
| 2002 $GD_{16}$ | 17.0 | 0.15 | 20060922 | 63.57317 | 91.60290 | 173.72923 | 4.12791 | 0.1764866 | 2.2366407 | 63 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 04196 | 2002 $GD_{16}$ |
| 2002 $GL_{16}$ | 14.7 | 0.15 | 20060922 | 7.84720 | 92.81902 | 24.13466 | 9.99451 | 0.0655600 | 3.0336342 | 41 | 4 | 2000–2005 | 0.74 | M-v | 1 | MPC | 94728 | 2002 $GL_{16}$ |
| 2002 $GD_{17}$ | 16.5 | 0.15 | 20060922 | 41.65661 | 188.43117 | 69.87808 | 3.59728 | 0.1433195 | 2.3579066 | 69 | 4 | 1996–2005 | 0.56 | M-v | 1 | MPC | 57855 | 2002 $GD_{17}$ |
| 2002 $GN_{17}$ | 16.4 | 0.15 | 20060922 | 68.92942 | 225.10898 | 42.93492 | 11.26426 | 0.1068600 | 2.2452129 | 81 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 04196 | 2002 $GN_{17}$ |
| 2002 $GQ_{20}$ | 16.5 | 0.15 | 20060922 | 73.68615 | 230.20589 | 25.81835 | 11.87981 | 0.1257864 | 2.2696689 | 40 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 52950 | 2002 $GQ_{20}$ |
| 2002 $GB_{21}$ | 16.0 | 0.15 | 20060922 | 46.63789 | 230.74905 | 10.85965 | 2.69786 | 0.1420839 | 2.4101916 | 106 | 5 | 1994–2005 | 0.59 | M-v | 1 | MPC | 04196 | 2002 $GB_{21}$ |
| 2002 $GV_{21}$ | 15.9 | 0.15 | 20060922 | 28.32361 | 345.72317 | 222.15530 | 12.18574 | 0.2423199 | 2.5914591 | 61 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 00227 | 2002 $GV_{21}$ |
| 2002 $GD_{24}$ | 17.4 | 0.15 | 20060922 | 75.76749 | 200.24569 | 6.96853 | 4.94679 | 0.2389448 | 2.3842393 | 42 | 2 | 2002–2003 | 0.66 | M-v | 3 | MPC | 89269 | 2002 $GD_{24}$ |
| 2002 $GL_{24}$ | 16.8 | 0.15 | 20060922 | 257.85483 | 170.88012 | 187.30011 | 6.45954 | 0.1510377 | 2.4123426 | 42 | 5 | 1994–2006 | 0.73 | M-v | 1 | MPC | 02092 | 2002 $GL_{24}$ |
| 2002 $GK_{25}$ | 16.6 | 0.15 | 20060922 | 344.71696 | 349.24775 | 137.55654 | 1.53910 | 0.1856678 | 3.2149906 | 32 | 4 | 1999–2005 | 0.38 | M-v | 0 | MPC | 94729 | 2002 $GK_{25}$ |
| 2002 $GP_{26}$ | 14.3 | 0.15 | 20060922 | 123.74652 | 335.74617 | 30.92299 | 9.68400 | 0.1005250 | 3.1612039 | 62 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 97589 | 2002 $GP_{26}$ |
| 2002 $GX_{26}$ | 16.0 | 0.15 | 20060922 | 57.03176 | 229.20095 | 42.03536 | 7.70167 | 0.1802141 | 2.2656478 | 128 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04196 | 2002 $GX_{26}$ |
| 2002 $GG_{27}$ | 16.6 | 0.15 | 20060922 | 68.64110 | 99.76628 | 144.65764 | 24.84683 | 0.2312762 | 2.3163170 | 30 | 2 | 2002–2006 | 0.58 | M-v | 4 | MPC | 03310 | 2002 $GG_{27}$ |
| 2002 $GT_{27}$ | 16.5 | 0.15 | 20060922 | 287.55942 | 324.38668 | 351.69876 | 2.09955 | 0.1992771 | 2.4345761 | 34 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 00228 | 2002 $GT_{27}$ |
| 2002 $GF_{31}$ | 15.0 | 0.15 | 20060922 | 316.03224 | 5.23595 | 158.09338 | 6.32885 | 0.2016513 | 3.0966123 | 58 | 6 | 1991–2006 | 0.59 | M-v | 1 | MPC | 94729 | 2002 $GF_{31}$ |
| 2002 $GO_{34}$ | 14.6 | 0.15 | 20060922 | 206.14417 | 129.20291 | 133.68052 | 9.66260 | 0.0518825 | 3.1353396 | 47 | 4 | 1995–2005 | 0.64 | M-v | 1 | MPC | 70346 | 2002 $GO_{34}$ |
| 2002 $GJ_{35}$ | 16.3 | 0.15 | 20060922 | 181.70768 | 127.42056 | 94.34020 | 23.78589 | 0.0578550 | 1.9282460 | 69 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 75321 | 2002 $GJ_{35}$ |
| 2002 $GW_{36}$ | 16.2 | 0.15 | 20060922 | 325.64127 | 217.80040 | 30.38197 | 12.32232 | 0.1545662 | 2.6403465 | 36 | 3 | 1998–2006 | 0.87 | M-v | 3 | MPC | 03310 | 2002 $GW_{36}$ |
| 2002 $GM_{37}$ | 17.1 | 0.15 | 20060922 | 27.26950 | 68.17516 | 217.28025 | 1.91620 | 0.1598047 | 2.2840451 | 62 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 02092 | 2002 $GM_{37}$ |
| 2002 $GS_{37}$ | 17.7 | 0.15 | 20060922 | 32.83878 | 89.52591 | 199.12143 | 2.67898 | 0.1647018 | 2.2603034 | 57 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 04197 | 2002 $GS_{37}$ |
| 2002 $GU_{37}$ | 17.1 | 0.15 | 20060922 | 143.13262 | 186.61756 | 11.34254 | 4.78459 | 0.0996303 | 2.1767306 | 100 | 4 | 2002–2006 | 0.55 | M-v | 2 | MPC | 75321 | 2002 $GU_{37}$ |
| 2002 $GW_{37}$ | 15.8 | 0.15 | 20060922 | 298.28058 | 247.03232 | 12.85651 | 3.36342 | 0.0467253 | 2.7623886 | 43 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 02092 | 2002 $GW_{37}$ |
| 2002 $GA_{38}$ | 17.5 | 0.15 | 20060922 | 70.15753 | 3.09549 | 206.33121 | 2.86389 | 0.1509984 | 2.3901779 | 37 | 2 | 2002–2003 | 0.45 | M-v | 3 | MPC | 89269 | 2002 $GA_{38}$ |
| 2002 $GH_{38}$ | 17.1 | 0.15 | 20060922 | 48.42383 | 100.02933 | 189.31634 | 6.60432 | 0.2294599 | 2.2354716 | 82 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04197 | 2002 $GH_{38}$ |
| 2002 $GV_{38}$ | 17.6 | 0.15 | 20060922 | 130.96788 | 6.30508 | 182.85219 | 4.89303 | 0.1033772 | 2.2286721 | 53 | 6 | 1993–2006 | 0.61 | M-v | 1 | MPC | 85479 | 2002 $GV_{38}$ |
| 2002 $GZ_{39}$ | 17.8 | 0.15 | 20060922 | 38.68514 | 317.79851 | 311.36548 | 4.07098 | 0.1929524 | 2.3097959 | 62 | 5 | 1999–2006 | 0.33 | M-v | 1 | MPC | 04197 | 2002 $GZ_{39}$ |
| 2002 $GU_{40}$ | 17.2 | 0.15 | 20060922 | 146.13279 | 195.65738 | 352.15962 | 5.10909 | 0.0401580 | 2.1682490 | 37 | 3 | 2002–2005 | 0.69 | M-v | 4 | MPC | 75322 | 2002 $GU_{40}$ |
| 2002 $GS_{41}$ | 13.9 | 0.15 | 20060922 | 170.66399 | 250.91364 | 344.80856 | 10.07964 | 0.1461586 | 3.9753733 | 29 | 3 | 2002–2005 | 0.54 | M-v | 3 | MPC | 89270 | 2002 $GS_{41}$ |
| 2002 $GO_{45}$ | 15.0 | 0.15 | 20060922 | 305.49600 | 125.02758 | 33.76757 | 12.85446 | 0.2248020 | 3.1998138 | 74 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 97590 | 2002 $GO_{45}$ |
| 2002 $GZ_{46}$ | 17.2 | 0.15 | 20060922 | 122.93934 | 354.29114 | 174.03060 | 2.44775 | 0.1032930 | 2.2990658 | 28 | 3 | 1995–2004 | 0.61 | M-v | 3 | MPC | 31520 | 2002 $GZ_{46}$ |

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| 2002 $GA_{47}$ | 16.4 | 0.15 | 20060922 | 308.98495 | 83.90202 | 188.27805 | 14.68851 | 0.1348743 | 2.6060020 | 18 | 3 | 1999–2003 | 0.44 | M-v | 2 | MPC | 31521 | 2002 $GA_{47}$ |
| 2002 $GQ_{47}$ | 15.0 | 0.15 | 20060922 | 128.20257 | 262.40041 | 24.46199 | 9.01903 | 0.0612754 | 3.9655963 | 26 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 94732 | 2002 $GQ_{47}$ |
| 2002 $GL_{49}$ | 16.4 | 0.15 | 20060922 | 329.25930 | 305.55400 | 277.20800 | 9.08676 | 0.2443323 | 2.7214942 | 31 | 2 | 2002–2006 | 0.43 | M-v | 4 | MPC | 03311 | 2002 $GL_{49}$ |
| 2002 $GY_{50}$ | 16.7 | 0.15 | 20060922 | 52.25437 | 102.16869 | 162.79521 | 5.71665 | 0.1491647 | 2.2857945 | 67 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 04197 | 2002 $GY_{50}$ |
| 2002 $GZ_{51}$ | 16.3 | 0.15 | 20060922 | 313.08882 | 230.39890 | 57.71897 | 4.60378 | 0.1159741 | 2.5687770 | 37 | 5 | 1994–2006 | 0.62 | M-v | 1 | MPC | 04197 | 2002 $GZ_{51}$ |
| 2002 $GN_{52}$ | 17.1 | 0.15 | 20060922 | 30.23087 | 220.12177 | 52.64031 | 2.92601 | 0.1047106 | 2.3345501 | 25 | 3 | 2002–2005 | 0.39 | M-v | 2 | MPC | 52960 | 2002 $GN_{52}$ |
| 2002 $GU_{53}$ | 15.5 | 0.15 | 20060922 | 304.00352 | 103.94750 | 107.80393 | 2.01894 | 0.1869683 | 3.0232410 | 61 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 97591 | 2002 $GU_{53}$ |
| 2002 $GC_{55}$ | 16.8 | 0.15 | 20060922 | 12.63998 | 119.75186 | 123.75186 | 1.36562 | 0.2499826 | 2.5419174 | 83 | 3 | 1998–2006 | 0.54 | M-v | 3 | MPC | 00231 | 2002 $GC_{55}$ |
| 2002 $GJ_{55}$ | 14.4 | 0.15 | 20060922 | 254.76521 | 238.20483 | 339.64593 | 9.74470 | 0.0345742 | 3.1930477 | 42 | 3 | 2002–2005 | 0.65 | M-v | 3 | MPC | 74166 | 2002 $GJ_{55}$ |
| 2002 $GU_{56}$ | 14.8 | 0.15 | 20060922 | 286.45370 | 135.75238 | 83.48530 | 18.47134 | 0.1910128 | 3.1355055 | 67 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 94734 | 2002 $GU_{56}$ |
| 2002 $GD_{57}$ | 17.3 | 0.15 | 20060922 | 318.62420 | 44.37202 | 5.14262 | 18.33162 | 0.1140068 | 1.9906717 | 87 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 75325 | 2002 $GD_{57}$ |
| 2002 $GN_{57}$ | 17.5 | 0.15 | 20060922 | 131.67249 | 281.87409 | 270.37050 | 5.65117 | 0.2317588 | 2.1943016 | 44 | 6 | 1997–2006 | 0.45 | M-v | 1 | MPC | 74167 | 2002 $GN_{57}$ |
| 2002 $GB_{58}$ | 17.8 | 0.15 | 20060922 | 356.84001 | 197.44810 | 13.07970 | 4.73930 | 0.0369570 | 2.6593891 | 18 | 3 | 1995–2006 | 0.30 | M-v | 4 | MPC | 35182 | 2002 $GB_{58}$ |
| 2002 $GO_{58}$ | 15.1 | 0.15 | 20060922 | 295.30394 | 0.03366 | 200.39717 | 9.98271 | 0.0435257 | 3.1027655 | 34 | 4 | 1996–2005 | 0.59 | M-v | 1 | MPC | 97591 | 2002 $GO_{58}$ |
| 2002 $GK_{59}$ | 16.9 | 0.15 | 20060922 | 79.22420 | 0.46621 | 205.10988 | 1.66336 | 0.1377380 | 2.3680900 | 37 | 3 | 2002–2004 | 0.59 | M-v | 4 | MPC | 89271 | 2002 $GK_{59}$ |
| 2002 $GV_{61}$ | 15.3 | 0.15 | 20060922 | 159.93302 | 144.95462 | 208.67352 | 9.66096 | 0.1160810 | 3.0685550 | 65 | 4 | 1997–2004 | 0.63 | M-v | 1 | MPC | 74167 | 2002 $GV_{61}$ |
| 2002 $GF_{63}$ | 15.7 | 0.15 | 20060922 | 316.60817 | 193.82223 | 171.32807 | 5.30998 | 0.1761303 | 2.2783089 | 134 | 5 | 1996–2005 | 0.56 | M-v | 1 | MPC | 77591 | 2002 $GF_{63}$ |
| 2002 $GY_{63}$ | 16.0 | 0.15 | 20060922 | 302.62033 | 8.06672 | 197.85188 | 4.32121 | 0.1525799 | 3.0512990 | 21 | 3 | 2002–2005 | 0.56 | M-v | 4 | MPC | 85481 | 2002 $GY_{63}$ |
| 2002 $GJ_{64}$ | 16.4 | 0.15 | 20060922 | 342.64807 | 152.65963 | 114.52998 | 2.80762 | 0.1362883 | 2.5680683 | 47 | 6 | 1995–2006 | 0.66 | M-v | 1 | MPC | 00233 | 2002 $GJ_{64}$ |
| 2002 $GO_{64}$ | 16.2 | 0.15 | 20060922 | 7.19809 | 355.07739 | 154.20509 | 3.01340 | 0.1847971 | 2.8983811 | 27 | 4 | 2000–2005 | 0.50 | M-v | 0 | MPC | 97591 | 2002 $GO_{64}$ |
| 2002 $GW_{64}$ | 16.0 | 0.15 | 20060922 | 226.89300 | 335.99583 | 42.47655 | 15.58575 | 0.0597755 | 2.5493178 | 39 | 5 | 1998–2006 | 0.58 | M-v | 2 | MPC | 00233 | 2002 $GW_{64}$ |
| 2002 $GP_{65}$ | 15.4 | 0.15 | 20060922 | 244.65779 | 194.15177 | 77.03200 | 2.97967 | 0.0508692 | 2.9916574 | 42 | 6 | 1995–2006 | 0.56 | M-v | 0 | MPC | 97591 | 2002 $GP_{65}$ |
| 2002 $GS_{65}$ | 15.4 | 0.15 | 20060922 | 352.79936 | 287.97940 | 45.44124 | 6.31691 | 0.3048417 | 2.3160758 | 74 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 57856 | 2002 $GS_{65}$ |
| 2002 $GX_{66}$ | 16.6 | 0.15 | 20060922 | 61.17804 | 232.01032 | 43.98760 | 6.36505 | 0.1651238 | 2.2440896 | 96 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 04197 | 2002 $GX_{66}$ |
| 2002 $GM_{67}$ | 15.2 | 0.15 | 20060922 | 340.97630 | 91.95697 | 33.28711 | 19.21289 | 0.1253220 | 3.2315260 | 51 | 6 | 1996–2006 | 0.56 | M-v | 1 | MPC | 97591 | 2002 $GM_{67}$ |
| 2002 $GQ_{67}$ | 15.9 | 0.15 | 20060922 | 293.74159 | 96.35061 | 107.90839 | 0.49771 | 0.0768645 | 3.0784786 | 60 | 6 | 1999–2006 | 0.42 | M-v | 0 | MPC | 97591 | 2002 $GQ_{67}$ |
| 2002 $GZ_{67}$ | 16.0 | 0.15 | 20060922 | 191.59912 | 247.30269 | 152.13478 | 3.71583 | 0.0187771 | 2.5830801 | 88 | 4 | 1991–2006 | 0.51 | M-v | 1 | MPC | 04197 | 2002 $GZ_{67}$ |
| 2002 $GA_{68}$ | 17.3 | 0.15 | 20060922 | 38.44483 | 16.44339 | 167.39018 | 4.70881 | 0.1910127 | 2.5894906 | 35 | 2 | 2002–2006 | 0.45 | M-v | 3 | MPC | 00234 | 2002 $GA_{68}$ |
| 2002 $GU_{68}$ | 14.8 | 0.15 | 20060922 | 260.15258 | 128.88766 | 158.69126 | 11.11149 | 0.2289244 | 3.0970452 | 60 | 4 | 1996–2006 | 0.45 | M-v | 0 | MPC | 97592 | 2002 $GU_{68}$ |
| 2002 $GB_{69}$ | 17.5 | 0.15 | 20060922 | 31.00115 | 226.68715 | 37.93011 | 0.82675 | 0.1882027 | 2.3706123 | 34 | 4 | 1996–2003 | 0.47 | M-v | 1 | MPC | 31538 | 2002 $GB_{69}$ |
| 2002 $GF_{69}$ | 17.5 | 0.15 | 20060922 | 356.07461 | 182.86706 | 111.89608 | 3.55166 | 0.2288396 | 2.4186025 | 23 | 4 | 2002–2006 | 0.29 | M-v | 1 | MPC | 00234 | 2002 $GF_{69}$ |
| 2002 $GY_{70}$ | 15.2 | 0.15 | 20060922 | 195.86982 | 201.47019 | 99.90991 | 6.14176 | 0.1433754 | 3.1909119 | 37 | 4 | 1998–2006 | 0.47 | M-v | 0 | MPC | 94739 | 2002 $GY_{70}$ |
| 2002 $GE_{71}$ | 17.1 | 0.15 | 20060922 | 60.58810 | 226.09992 | 29.70685 | 2.58296 | 0.2104551 | 2.2996928 | 57 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 04197 | 2002 $GE_{71}$ |
| 2002 $GU_{72}$ | 15.7 | 0.15 | 20060922 | 117.62031 | 3.54366 | 168.53269 | 6.37362 | 0.0428337 | 2.3158076 | 65 | 3 | 2002–2005 | 0.54 | M-v | 2 | MPC | 53708 | 2002 $GU_{72}$ |
| 2002 $GV_{72}$ | 15.1 | 0.15 | 20060922 | 270.73672 | 96.98401 | 147.70283 | 6.02574 | 0.1559499 | 3.0093697 | 31 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 50055 | 2002 $GV_{72}$ |
| 2002 $GH_{73}$ | 15.7 | 0.15 | 20060922 | 297.16851 | 265.94719 | 43.57632 | 14.44570 | 0.0660418 | 2.5219906 | 55 | 5 | 1998–2006 | 0.69 | M-v | 1 | MPC | 00235 | 2002 $GH_{73}$ |
| 2002 $GR_{73}$ | 16.8 | 0.15 | 20060922 | 53.85614 | 248.51974 | 41.52941 | 6.71270 | 0.0974580 | 2.2075310 | 47 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 03311 | 2002 $GR_{73}$ |
| 2002 $GY_{74}$ | 16.9 | 0.15 | 20060922 | 35.78430 | 247.89444 | 24.99227 | 0.83972 | 0.1988024 | 2.3354420 | 78 | 5 | 1992–2006 | 0.41 | M-v | 0 | MPC | 04197 | 2002 $GY_{74}$ |
| 2002 $GZ_{74}$ | 16.7 | 0.15 | 20060922 | 132.62009 | 98.62604 | 17.40919 | 3.27017 | 0.1568860 | 2.4138104 | 47 | 4 | 2000–2006 | 0.72 | M-v | 1 | MPC | 02094 | 2002 $GZ_{74}$ |
| 2002 $GT_{75}$ | 16.3 | 0.15 | 20060922 | 93.52136 | 226.62787 | 265.57522 | 2.22250 | 0.1593295 | 2.5463190 | 39 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 02094 | 2002 $GT_{75}$ |
| 2002 $GF_{77}$ | 17.0 | 0.15 | 20060922 | 60.89759 | 118.66482 | 155.77200 | 6.80971 | 0.1764944 | 2.2351898 | 42 | 3 | 2002–2006 | 0.64 | M-v | 3 | MPC | 03311 | 2002 $GF_{77}$ |
| 2002 $GS_{77}$ | 14.9 | 0.15 | 20060922 | 266.11166 | 62.24773 | 152.88489 | 10.58360 | 0.0515342 | 3.1506286 | 75 | 5 | 1996–2005 | 0.71 | M-v | 1 | MPC | 97592 | 2002 $GS_{77}$ |
| 2002 $GT_{77}$ | 16.1 | 0.15 | 20060922 | 352.44977 | 141.54571 | 104.81082 | 6.36333 | 0.0464647 | 2.5175178 | 36 | 3 | 2002–2006 | 0.74 | M-v | 5 | MPC | 00236 | 2002 $GT_{77}$ |
| 2002 $GY_{77}$ | 14.8 | 0.15 | 20060922 | 347.42645 | 227.08982 | 266.38836 | 3.78950 | 0.0904026 | 3.1217549 | 64 | 6 | 1999–2006 | 0.46 | M-v | 0 | MPC | 97592 | 2002 $GY_{77}$ |
| 2002 $GQ_{78}$ | 15.3 | 0.15 | 20060922 | 49.68397 | 53.98562 | 124.67988 | 14.96701 | 0.0370754 | 2.6413744 | 50 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 02094 | 2002 $GQ_{78}$ |
| 2002 $GA_{80}$ | 17.0 | 0.15 | 20060922 | 54.29324 | 172.36164 | 62.45532 | 4.65987 | 0.1845107 | 2.3629216 | 41 | 2 | 2002–2003 | 0.52 | M-v | 3 | MPC | 85484 | 2002 $GA_{80}$ |
| 2002 $GT_{80}$ | 16.9 | 0.15 | 20060922 | 160.28419 | 336.07017 | 137.64439 | 5.71208 | 0.2409825 | 2.2893982 | 63 | 4 | 1995–2005 | 0.57 | M-v | 1 | MPC | 72603 | 2002 $GT_{80}$ |
| 2002 $GM_{81}$ | 16.7 | 0.15 | 20060922 | 50.66827 | 109.18372 | 171.24703 | 10.51106 | 0.1901332 | 2.2649512 | 90 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 04197 | 2002 $GM_{81}$ |
| 2002 $GW_{83}$ | 16.1 | 0.15 | 20060922 | 17.71708 | 169.28745 | 113.51108 | 6.17279 | 0.2181411 | 2.3947547 | 39 | 4 | 1999–2005 | 0.61 | M-v | 2 | MPC | 89272 | 2002 $GW_{83}$ |
| 2002 $GH_{84}$ | 17.3 | 0.15 | 20060922 | 114.02447 | 147.01923 | 81.75199 | 5.92665 | 0.1630981 | 2.2000170 | 45 | 3 | 2002–2005 | 0.54 | M-v | 3 | MPC | 85485 | 2002 $GH_{84}$ |
| 2002 $GH_{85}$ | 15.9 | 0.15 | 20060922 | 294.44315 | 276.23282 | 33.55922 | 14.19725 | 0.0834558 | 2.5221998 | 54 | 4 | 1998–2006 | 0.60 | M-v | 3 | MPC | 00237 | 2002 $GH_{85}$ |
| 2002 $GH_{86}$ | 15.0 | 0.15 | 20060922 | 10.38589 | 316.76636 | 167.74824 | 10.61990 | 0.0275574 | 3.1076213 | 41 | 4 | 1997–2005 | 0.68 | M-v | 1 | MPC | 97593 | 2002 $GH_{86}$ |
| 2002 $GC_{89}$ | 15.1 | 0.15 | 20060922 | 220.36948 | 221.64573 | 96.51771 | 17.26978 | 0.1940601 | 3.0739416 | 27 | 3 | 2002–2004 | 0.31 | M-v | 2 | MPC | 72606 | 2002 $GC_{89}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $GT_{90}$ | 16.5 | 0.15 | 20060922 | 336.18013 | 113.78714 | 192.82506 | 1.39051 | 0.1256548 | 2.4074551 | 71 | 5 | 1994–2006 | 0.56 | M-v | 0 | MPC | 04197 | 2002 $GT_{90}$ |
| 2002 $GY_{90}$ | 16.1 | 0.15 | 20060922 | 345.98739 | 132.63340 | 199.98736 | 5.32712 | 0.1309558 | 2.3148393 | 78 | 4 | 1998–2005 | 0.52 | M-v | 1 | MPC | 77592 | 2002 $GY_{90}$ |
| 2002 $GM_{91}$ | 15.8 | 0.15 | 20060922 | 222.67892 | 94.14122 | 194.92242 | 9.45239 | 0.0508341 | 2.9866652 | 27 | 2 | 2002–2004 | 0.38 | M-v | 3 | MPC | 69344 | 2002 $GM_{91}$ |
| 2002 $GQ_{91}$ | 14.9 | 0.15 | 20060922 | 286.33032 | 61.83173 | 150.11942 | 9.31701 | 0.0559821 | 3.0703648 | 41 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 75327 | 2002 $GQ_{91}$ |
| 2002 $GU_{91}$ | 15.8 | 0.15 | 20060922 | 334.61914 | 293.93574 | 40.84119 | 11.28670 | 0.2034065 | 2.3544115 | 145 | 3 | 2002–2005 | 0.52 | M-v | 2 | MPC | 57857 | 2002 $GU_{91}$ |
| 2002 $GW_{92}$ | 15.1 | 0.15 | 20060922 | 312.07055 | 189.14664 | 348.87509 | 9.82629 | 0.0409082 | 3.0955669 | 25 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 74169 | 2002 $GW_{92}$ |
| 2002 $GF_{93}$ | 16.8 | 0.15 | 20060922 | 80.98122 | 225.96090 | 335.04756 | 2.58087 | 0.1805381 | 2.3597647 | 36 | 3 | 2002–2004 | 0.48 | M-v | 3 | MPC | 52972 | 2002 $GF_{93}$ |
| 2002 $GN_{94}$ | 16.8 | 0.15 | 20060922 | 114.08767 | 273.86799 | 253.10996 | 2.29014 | 0.1083003 | 2.3313897 | 39 | 3 | 2000–2005 | 0.50 | M-v | 3 | MPC | 72606 | 2002 $GN_{94}$ |
| 2002 $GX_{94}$ | 17.4 | 0.15 | 20060922 | 123.26785 | 343.21119 | 203.24131 | 4.60136 | 0.0910737 | 2.2633248 | 50 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 02095 | 2002 $GX_{94}$ |
| 2002 $GZ_{94}$ | 16.5 | 0.15 | 20060922 | 78.44512 | 345.90774 | 220.16564 | 5.94213 | 0.0570333 | 2.3630421 | 37 | 5 | 1996–2005 | 0.63 | M-v | 1 | MPC | 74169 | 2002 $GZ_{94}$ |
| 2002 $GU_{95}$ | 15.3 | 0.15 | 20060922 | 286.57237 | 221.14996 | 9.40401 | 10.36048 | 0.0467069 | 2.9883189 | 29 | 2 | 2002–2004 | 0.44 | M-v | 3 | MPC | 74170 | 2002 $GU_{95}$ |
| 2002 $GF_{96}$ | 15.4 | 0.15 | 20060922 | 323.39473 | 170.42754 | 342.57367 | 4.57737 | 0.1219720 | 3.1962083 | 42 | 7 | 1996–2006 | 0.40 | M-v | 0 | MPC | 89274 | 2002 $GF_{96}$ |
| 2002 $GU_{98}$ | 16.6 | 0.15 | 20060922 | 343.31434 | 30.73035 | 304.43839 | 1.13158 | 0.1627000 | 2.2303891 | 104 | 6 | 1993–2005 | 0.70 | M-v | 1 | MPC | 74170 | 2002 $GU_{98}$ |
| 2002 $GE_{100}$ | 14.6 | 0.15 | 20060922 | 140.97301 | 152.77053 | 202.54576 | 9.78687 | 0.0385363 | 3.0446025 | 58 | 4 | 1997–2004 | 0.67 | M-v | 1 | MPC | 69346 | 2002 $GE_{100}$ |
| 2002 $GB_{101}$ | 15.7 | 0.15 | 20060922 | 326.89283 | 146.06411 | 20.71189 | 2.45643 | 0.0929480 | 3.0305470 | 57 | 6 | 1997–2006 | 0.56 | M-v | 0 | MPC | 97593 | 2002 $GB_{101}$ |
| 2002 $GD_{101}$ | 16.2 | 0.15 | 20060922 | 52.07074 | 154.60132 | 345.20030 | 2.46912 | 0.1486544 | 2.6653627 | 85 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 94745 | 2002 $GD_{101}$ |
| 2002 $GX_{101}$ | 14.9 | 0.15 | 20060922 | 328.55032 | 330.62695 | 171.86734 | 15.38218 | 0.1777517 | 3.1777387 | 38 | 4 | 1996–2005 | 0.59 | M-v | 1 | MPC | 90157 | 2002 $GX_{101}$ |
| 2002 $GA_{102}$ | 16.2 | 0.15 | 20060922 | 61.83023 | 169.07892 | 79.27936 | 6.81783 | 0.0780570 | 2.3024830 | 57 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 04197 | 2002 $GA_{102}$ |
| 2002 $GT_{102}$ | 16.1 | 0.15 | 20060922 | 357.78515 | 118.67270 | 7.60612 | 2.32332 | 0.2188408 | 2.9810732 | 61 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97593 | 2002 $GT_{102}$ |
| 2002 $GY_{104}$ | 16.0 | 0.15 | 20060922 | 6.96253 | 173.43294 | 123.41788 | 8.16106 | 0.2122722 | 2.4189478 | 55 | 3 | 2002–2005 | 0.46 | M-v | 2 | MPC | 56332 | 2002 $GY_{104}$ |
| 2002 $GD_{105}$ | 16.9 | 0.15 | 20060922 | 79.62562 | 34.91041 | 127.26727 | 5.61251 | 0.1526309 | 2.4445451 | 40 | 4 | 1994–2006 | 0.81 | M-v | 3 | MPC | 04197 | 2002 $GD_{105}$ |
| 2002 $GH_{105}$ | 14.9 | 0.15 | 20060922 | 104.28956 | 295.16675 | 82.93221 | 10.51159 | 0.0360691 | 3.0998816 | 86 | 7 | 1995–2006 | 0.57 | M-v | 0 | MPC | 94747 | 2002 $GH_{105}$ |
| 2002 $GL_{105}$ | 14.5 | 0.15 | 20060922 | 277.86999 | 118.52167 | 108.35478 | 10.54011 | 0.0879220 | 2.9994796 | 52 | 6 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97594 | 2002 $GL_{105}$ |
| 2002 $GQ_{105}$ | 15.2 | 0.15 | 20060922 | 271.68505 | 139.94624 | 99.28277 | 8.52545 | 0.2663168 | 3.0670302 | 49 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 94747 | 2002 $GQ_{105}$ |
| 2002 $GR_{105}$ | 14.7 | 0.15 | 20060922 | 227.53769 | 239.27505 | 33.13165 | 27.39830 | 0.1731448 | 3.1292867 | 82 | 4 | 1993–2006 | 0.55 | M-v | 1 | MPC | 04197 | 2002 $GR_{105}$ |
| 2002 $GG_{106}$ | 15.0 | 0.15 | 20060922 | 292.90494 | 144.04199 | 50.31444 | 20.05807 | 0.1486532 | 3.1176519 | 37 | 2 | 2002–2005 | 0.38 | M-v | 3 | MPC | 89275 | 2002 $GG_{106}$ |
| 2002 $GA_{107}$ | 14.6 | 0.15 | 20060922 | 228.20729 | 153.71437 | 105.71097 | 6.06438 | 0.1265934 | 3.1634758 | 36 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 00240 | 2002 $GA_{107}$ |
| 2002 $GK_{107}$ | 16.1 | 0.15 | 20060922 | 302.88167 | 69.83892 | 109.73005 | 13.69988 | 0.2050514 | 3.0836941 | 27 | 3 | 1997–2006 | 0.33 | M-v | 3 | MPC | 31580 | 2002 $GK_{107}$ |
| 2002 $GO_{107}$ | 16.2 | 0.15 | 20060922 | 71.09964 | 173.37883 | 100.63672 | 6.04623 | 0.2291305 | 2.2147808 | 88 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 77593 | 2002 $GO_{107}$ |
| 2002 $GH_{109}$ | 15.1 | 0.15 | 20060922 | 301.81858 | 89.27617 | 132.57165 | 11.95905 | 0.0745982 | 2.9913802 | 30 | 3 | 2002–2004 | 0.52 | M-v | 3 | MPC | 50062 | 2002 $GH_{109}$ |
| 2002 $GP_{109}$ | 14.3 | 0.15 | 20060922 | 92.82631 | 290.43490 | 113.11125 | 12.00794 | 0.0292184 | 3.1295097 | 59 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 69349 | 2002 $GP_{109}$ |
| 2002 $GT_{110}$ | 17.0 | 0.15 | 20060922 | 54.74149 | 221.67072 | 60.67975 | 7.98192 | 0.1575567 | 2.2326707 | 48 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 75329 | 2002 $GT_{110}$ |
| 2002 $GZ_{110}$ | 15.0 | 0.15 | 20060922 | 352.34840 | 296.02492 | 179.90041 | 14.17295 | 0.2046414 | 3.1476502 | 40 | 5 | 1999–2006 | 0.54 | M-v | 0 | MPC | 90157 | 2002 $GZ_{110}$ |
| 2002 $GH_{111}$ | 16.1 | 0.15 | 20060922 | 314.71468 | 108.53951 | 146.26373 | 4.74212 | 0.0882115 | 2.6976288 | 45 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 94749 | 2002 $GH_{111}$ |
| 2002 $GQ_{111}$ | 16.8 | 0.15 | 20060922 | 1.08250 | 222.98646 | 86.15785 | 7.44666 | 0.1251389 | 2.3292834 | 36 | 2 | 2002–2003 | 0.40 | M-v | 2 | MPC | 89276 | 2002 $GQ_{111}$ |
| 2002 $GP_{112}$ | 16.1 | 0.15 | 20060922 | 35.39576 | 246.13758 | 69.82603 | 8.40873 | 0.2079923 | 2.2424368 | 89 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 04198 | 2002 $GP_{112}$ |
| 2002 $GW_{112}$ | 17.0 | 0.15 | 20060922 | 46.13010 | 126.17298 | 146.85658 | 5.31554 | 0.2149576 | 2.3332129 | 31 | 3 | 2002–2006 | 0.38 | M-v | 4 | MPC | 03312 | 2002 $GW_{112}$ |
| 2002 $GB_{113}$ | 14.3 | 0.15 | 20060922 | 210.56430 | 146.30479 | 138.43888 | 10.93854 | 0.1468302 | 3.1887536 | 60 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 75330 | 2002 $GB_{113}$ |
| 2002 $GG_{113}$ | 14.9 | 0.15 | 20060922 | 328.44902 | 22.37107 | 113.31658 | 5.78063 | 0.0902911 | 3.1842121 | 61 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 94750 | 2002 $GG_{113}$ |
| 2002 $GR_{113}$ | 17.0 | 0.15 | 20060922 | 65.61543 | 69.41910 | 128.83551 | 6.26105 | 0.1046805 | 2.4032612 | 36 | 4 | 1998–2006 | 0.65 | M-v | 2 | MPC | 03312 | 2002 $GR_{113}$ |
| 2002 $GY_{113}$ | 15.7 | 0.15 | 20060922 | 96.18115 | 157.81350 | 56.15796 | 8.35113 | 0.0513590 | 2.2492297 | 56 | 4 | 2000–2006 | 0.62 | M-v | 3 | MPC | 04198 | 2002 $GY_{113}$ |
| 2002 $GU_{114}$ | 17.1 | 0.15 | 20060922 | 39.29264 | 110.28161 | 165.15974 | 5.93153 | 0.2012798 | 2.3114355 | 52 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 03313 | 2002 $GU_{114}$ |
| 2002 $GP_{115}$ | 15.4 | 0.15 | 20060922 | 196.99109 | 220.12159 | 84.48793 | 8.11553 | 0.1138062 | 3.1119676 | 50 | 6 | 1997–2006 | 0.65 | M-v | 1 | MPC | 97594 | 2002 $GP_{115}$ |
| 2002 $GB_{117}$ | 16.4 | 0.15 | 20060922 | 281.76528 | 272.47013 | 51.66661 | 15.04543 | 0.1332685 | 2.5762447 | 35 | 4 | 1999–2003 | 0.67 | M-v | 1 | MPC | 53710 | 2002 $GB_{117}$ |
| 2002 $GG_{117}$ | 16.8 | 0.15 | 20060922 | 156.97875 | 62.37650 | 72.07573 | 6.26797 | 0.1022814 | 2.3071047 | 38 | 4 | 1995–2005 | 0.59 | M-v | 3 | MPC | 72612 | 2002 $GG_{117}$ |
| 2002 $GT_{117}$ | 14.7 | 0.15 | 20060922 | 112.65605 | 236.59449 | 154.76434 | 9.85854 | 0.0504572 | 3.0055642 | 28 | 3 | 2001–2004 | 0.53 | M-v | 3 | MPC | 75330 | 2002 $GT_{117}$ |
| 2002 $GA_{118}$ | 16.9 | 0.15 | 20060922 | 58.12561 | 111.90262 | 154.89043 | 6.30457 | 0.1323484 | 2.2780418 | 53 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 03313 | 2002 $GA_{118}$ |
| 2002 $GU_{118}$ | 16.9 | 0.15 | 20060922 | 66.72068 | 211.48006 | 71.23093 | 4.08143 | 0.3182682 | 2.2292935 | 66 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 74171 | 2002 $GU_{118}$ |
| 2002 $GM_{119}$ | 15.7 | 0.15 | 20060922 | 351.72708 | 150.66359 | 51.18572 | 14.40295 | 0.1372020 | 2.7278172 | 37 | 2 | 2002–2006 | 0.58 | M-v | 3 | MPC | 03313 | 2002 $GM_{119}$ |
| 2002 $GT_{119}$ | 16.5 | 0.15 | 20060922 | 359.45712 | 96.57254 | 212.63114 | 3.60149 | 0.1382689 | 2.2905544 | 55 | 3 | 2002–2005 | 0.61 | M-v | 3 | MPC | 57858 | 2002 $GT_{119}$ |
| 2002 $GV_{120}$ | 16.6 | 0.15 | 20060922 | 181.21596 | 76.39366 | 31.33189 | 3.07917 | 0.1970650 | 2.2970436 | 65 | 4 | 1998–2005 | 0.61 | M-v | 1 | MPC | 77593 | 2002 $GV_{120}$ |
| 2002 $GS_{121}$ | 14.9 | 0.15 | 20060922 | 331.90034 | 291.88042 | 206.82725 | 11.18939 | 0.1283192 | 3.1434281 | 66 | 4 | 1999–2006 | 0.45 | M-v | 2 | MPC | 97594 | 2002 $GS_{121}$ |
| 2002 $GM_{124}$ | 17.4 | 0.15 | 20060922 | 72.51755 | 320.35167 | 222.71083 | 0.59126 | 0.1154423 | 2.4485588 | 43 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 00243 | 2002 $GM_{124}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $GG_{125}$ | 15.8 | 0.15 | 20060922 | 206.02129 | 144.29696 | 229.94780 | 4.03194 | 0.0760181 | 2.5403409 | 46 | 4 | 2000–2006 | 0.50 | M-v | 3 | MPC | 02097 | 2002 $GG_{125}$ |
| 2002 $GY_{125}$ | 16.0 | 0.15 | 20060922 | 287.51711 | 72.32160 | 211.96278 | 7.37469 | 0.2863036 | 2.7653773 | 35 | 3 | 1997–2003 | 0.60 | M-v | 2 | MPC | 57858 | 2002 $GY_{125}$ |
| 2002 $GM_{126}$ | 17.3 | 0.15 | 20060922 | 17.09816 | 269.93773 | 5.17735 | 5.69504 | 0.1084046 | 2.3380038 | 35 | 3 | 2002–2005 | 0.60 | M-v | 2 | MPC | 89277 | 2002 $GM_{126}$ |
| 2002 $GQ_{126}$ | 17.0 | 0.15 | 20060922 | 44.04085 | 357.83489 | 169.55988 | 1.18761 | 0.0992805 | 2.5940264 | 38 | 3 | 2002–2006 | 0.37 | M-v | 3 | MPC | 02097 | 2002 $GQ_{126}$ |
| 2002 $GW_{127}$ | 17.1 | 0.15 | 20060922 | 39.37131 | 14.15921 | 279.88286 | 1.81550 | 0.1964764 | 2.2473196 | 68 | 4 | 2002–2006 | 0.65 | M-v | 1 | MPC | 03313 | 2002 $GW_{127}$ |
| 2002 $GH_{128}$ | 16.2 | 0.15 | 20060922 | 240.33203 | 46.34128 | 202.58795 | 5.38159 | 0.1337149 | 3.1732136 | 30 | 3 | 2002–2004 | 0.43 | M-v | 3 | MPC | 74172 | 2002 $GH_{128}$ |
| 2002 $GL_{128}$ | 16.0 | 0.15 | 20060922 | 326.79134 | 274.05908 | 243.89300 | 3.69026 | 0.0958510 | 3.0785702 | 41 | 4 | 1995–2006 | 0.36 | M-v | 1 | MPC | 97595 | 2002 $GL_{128}$ |
| 2002 $GH_{129}$ | 14.2 | 0.15 | 20060922 | 163.22945 | 3.08754 | 246.92617 | 1.72580 | 0.1447838 | 3.9587649 | 48 | 5 | 1998–2006 | 0.46 | M-v | 0 | MPC | 90157 | 2002 $GH_{129}$ |
| 2002 $GS_{129}$ | 17.0 | 0.15 | 20060922 | 338.87653 | 35.96926 | 214.55499 | 3.56294 | 0.1145217 | 2.6088767 | 27 | 4 | 1995–2004 | 0.44 | M-v | 0 | MPC | 56333 | 2002 $GS_{129}$ |
| 2002 $GO_{131}$ | 17.9 | 0.15 | 20060922 | 90.78683 | 45.66455 | 227.89573 | 2.33986 | 0.1460439 | 2.1527658 | 39 | 4 | 1999–2006 | 0.50 | M-v | 2 | MPC | 89278 | 2002 $GO_{131}$ |
| 2002 $GW_{131}$ | 15.7 | 0.15 | 20060922 | 329.52567 | 124.94769 | 218.69296 | 5.03915 | 0.2174356 | 2.3209468 | 125 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 04198 | 2002 $GW_{131}$ |
| 2002 $GQ_{132}$ | 18.0 | 0.15 | 20060922 | 113.69953 | 235.83423 | 8.23849 | 5.30283 | 0.1780229 | 2.1653103 | 40 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 75331 | 2002 $GQ_{132}$ |
| 2002 $GH_{133}$ | 17.5 | 0.15 | 20060922 | 67.03132 | 67.71048 | 221.64170 | 4.23736 | 0.1679366 | 2.1909499 | 35 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 75331 | 2002 $GH_{133}$ |
| 2002 $GK_{134}$ | 16.1 | 0.15 | 20060922 | 14.88765 | 183.04323 | 344.45874 | 2.87826 | 0.0265592 | 2.7725169 | 37 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 00244 | 2002 $GK_{134}$ |
| 2002 $GL_{134}$ | 17.7 | 0.15 | 20060922 | 11.67122 | 80.29891 | 221.80478 | 3.68962 | 0.1385454 | 2.3090528 | 47 | 3 | 2002–2005 | 0.48 | M-v | 2 | MPC | 56333 | 2002 $GL_{134}$ |
| 2002 $GX_{135}$ | 15.8 | 0.15 | 20060922 | 244.72138 | 6.01657 | 234.64365 | 3.93955 | 0.1070944 | 3.2243126 | 29 | 4 | 1999–2005 | 0.34 | M-v | 0 | MPC | 74172 | 2002 $GX_{135}$ |
| 2002 $GX_{137}$ | 13.8 | 0.15 | 20060922 | 177.01782 | 303.79228 | 303.30648 | 5.24367 | 0.1675934 | 3.9756274 | 56 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 90157 | 2002 $GX_{137}$ |
| 2002 $GY_{138}$ | 14.7 | 0.15 | 20060922 | 196.05270 | 163.56058 | 145.57425 | 7.96289 | 0.0562199 | 2.9863754 | 47 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 72617 | 2002 $GY_{138}$ |
| 2002 $GT_{139}$ | 17.3 | 0.15 | 20060922 | 83.76927 | 51.03338 | 168.01660 | 3.83385 | 0.0894310 | 2.3262588 | 33 | 4 | 2000–2005 | 0.63 | M-v | 1 | MPC | 85494 | 2002 $GT_{139}$ |
| 2002 $GZ_{139}$ | 17.2 | 0.15 | 20060922 | 11.01544 | 129.90244 | 171.56355 | 3.19974 | 0.1696921 | 2.3275045 | 37 | 5 | 1995–2005 | 0.40 | M-v | 0 | MPC | 77593 | 2002 $GZ_{139}$ |
| 2002 $GN_{140}$ | 16.3 | 0.15 | 20060922 | 159.46473 | 206.53546 | 169.91870 | 2.12932 | 0.0872570 | 2.8547899 | 39 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 97595 | 2002 $GN_{140}$ |
| 2002 $GO_{140}$ | 17.0 | 0.15 | 20060922 | 338.19431 | 150.32904 | 191.08062 | 5.25010 | 0.2130005 | 2.3025023 | 64 | 4 | 1996–2005 | 0.54 | M-v | 2 | MPC | 57859 | 2002 $GO_{140}$ |
| 2002 $GX_{140}$ | 15.9 | 0.15 | 20060922 | 265.81327 | 54.51691 | 159.22314 | 1.65461 | 0.0608011 | 3.2331695 | 55 | 5 | 1999–2006 | 0.36 | M-v | 0 | MPC | 97595 | 2002 $GX_{140}$ |
| 2002 $GA_{141}$ | 17.9 | 0.15 | 20060922 | 55.36349 | 109.39237 | 154.49173 | 2.42542 | 0.1891276 | 2.3026381 | 38 | 4 | 1999–2006 | 0.37 | M-v | 0 | MPC | 03314 | 2002 $GA_{141}$ |
| 2002 $GE_{141}$ | 16.5 | 0.15 | 20060922 | 359.88772 | 61.70004 | 184.54566 | 3.88756 | 0.0880369 | 2.5701267 | 65 | 5 | 1991–2006 | 0.55 | M-v | 1 | MPC | 04198 | 2002 $GE_{141}$ |
| 2002 $GA_{142}$ | 17.6 | 0.15 | 20060922 | 24.84158 | 221.64800 | 206.70301 | 20.24640 | 0.0766428 | 1.9102823 | 28 | 3 | 2000–2003 | 0.46 | M-v | 2 | MPC | 89279 | 2002 $GA_{142}$ |
| 2002 $GJ_{143}$ | 15.3 | 0.15 | 20060922 | 172.98856 | 313.12087 | 8.05245 | 3.26355 | 0.0395933 | 3.1965836 | 32 | 4 | 2001–2005 | 0.48 | M-v | 0 | MPC | 74172 | 2002 $GJ_{143}$ |
| 2002 $GX_{143}$ | 17.3 | 0.15 | 20060922 | 50.32979 | 0.71150 | 191.73329 | 10.53474 | 0.1653708 | 2.5274704 | 40 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 00245 | 2002 $GX_{143}$ |
| 2002 $GY_{143}$ | 15.0 | 0.15 | 20060922 | 259.40271 | 273.71280 | 58.42575 | 17.12465 | 0.2479765 | 2.7297198 | 44 | 3 | 2002–2005 | 0.59 | M-v | 2 | MPC | 74172 | 2002 $GY_{143}$ |
| 2002 $GK_{144}$ | 16.0 | 0.15 | 20060922 | 86.58859 | 3.75285 | 108.61810 | 12.20124 | 0.1644442 | 2.6452101 | 46 | 4 | 1995–2006 | 0.62 | M-v | 1 | MPC | 02097 | 2002 $GK_{144}$ |
| 2002 $GN_{144}$ | 15.4 | 0.15 | 20060922 | 322.36566 | 64.80345 | 91.24220 | 13.05559 | 0.2705555 | 3.1047740 | 53 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 31598 | 2002 $GN_{144}$ |
| 2002 $GT_{145}$ | 14.3 | 0.15 | 20060922 | 203.71157 | 302.03097 | 358.19547 | 17.26028 | 0.1920588 | 3.1711925 | 26 | 3 | 1998–2004 | 0.64 | M-v | 2 | MPC | 72620 | 2002 $GT_{145}$ |
| 2002 $GE_{146}$ | 14.9 | 0.15 | 20060922 | 10.95924 | 2.79037 | 101.78685 | 10.11754 | 0.0288000 | 3.0488300 | 46 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 97595 | 2002 $GE_{146}$ |
| 2002 $GH_{146}$ | 15.6 | 0.15 | 20060922 | 335.24207 | 356.54444 | 128.06156 | 5.99244 | 0.1055098 | 3.1947670 | 37 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 00245 | 2002 $GH_{146}$ |
| 2002 $GA_{148}$ | 16.5 | 0.15 | 20060922 | 309.16672 | 255.86483 | 94.65719 | 5.00716 | 0.0896683 | 2.3183345 | 64 | 5 | 1995–2005 | 0.64 | M-v | 1 | MPC | 74173 | 2002 $GA_{148}$ |
| 2002 $GN_{149}$ | 16.8 | 0.15 | 20060922 | 23.25323 | 304.52404 | 357.65115 | 2.81450 | 0.1518164 | 2.2647873 | 65 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 04198 | 2002 $GN_{149}$ |
| 2002 $GK_{150}$ | 17.5 | 0.15 | 20060922 | 27.84483 | 305.25290 | 319.96979 | 1.61560 | 0.1030516 | 2.3510144 | 37 | 4 | 2000–2005 | 0.51 | M-v | 0 | MPC | 52986 | 2002 $GK_{150}$ |
| 2002 $GN_{150}$ | 16.4 | 0.15 | 20060922 | 220.87032 | 11.72666 | 276.77802 | 1.10699 | 0.0795717 | 3.0364920 | 19 | 3 | 2000–2004 | 0.39 | M-v | 3 | MPC | 89280 | 2002 $GN_{150}$ |
| 2002 $GV_{150}$ | 17.4 | 0.15 | 20060922 | 122.22136 | 78.01608 | 147.66794 | 3.62619 | 0.0338819 | 2.1582605 | 71 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 04198 | 2002 $GV_{150}$ |
| 2002 $GD_{151}$ | 17.5 | 0.15 | 20060922 | 196.37263 | 199.11067 | 302.13701 | 2.77444 | 0.0746023 | 2.1611728 | 77 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 04198 | 2002 $GD_{151}$ |
| 2002 $GR_{151}$ | 15.6 | 0.15 | 20060922 | 18.07291 | 90.64354 | 110.07287 | 3.91759 | 0.0257795 | 2.6526067 | 37 | 4 | 1995–2006 | 0.52 | M-v | 2 | MPC | 97596 | 2002 $GR_{151}$ |
| 2002 $GV_{151}$ | 16.7 | 0.15 | 20060922 | 354.66353 | 267.50954 | 326.19004 | 7.40798 | 0.1263834 | 2.5958540 | 29 | 3 | 2002–2006 | 0.67 | M-v | 3 | MPC | 00246 | 2002 $GV_{151}$ |
| 2002 $GL_{152}$ | 16.1 | 0.15 | 20060922 | 296.76920 | 250.22817 | 74.54285 | 12.71170 | 0.2960052 | 2.5586046 | 86 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 02098 | 2002 $GL_{152}$ |
| 2002 $GN_{152}$ | 17.0 | 0.15 | 20060922 | 68.07667 | 160.20127 | 111.20870 | 7.18752 | 0.1791038 | 2.2313004 | 36 | 4 | 1998–2006 | 0.62 | M-v | 1 | MPC | 31601 | 2002 $GN_{152}$ |
| 2002 $GV_{152}$ | 15.4 | 0.15 | 20060922 | 329.86974 | 91.21388 | 90.94086 | 10.48068 | 0.0445147 | 2.9739771 | 21 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 03314 | 2002 $GV_{152}$ |
| 2002 $GD_{154}$ | 16.4 | 0.15 | 20060922 | 355.91100 | 112.54615 | 98.72514 | 10.01961 | 0.1812846 | 2.7451085 | 33 | 3 | 2000–2006 | 0.63 | M-v | 3 | MPC | 94757 | 2002 $GD_{154}$ |
| 2002 $GH_{157}$ | 16.6 | 0.15 | 20060922 | 23.76855 | 166.05830 | 140.15210 | 6.05401 | 0.1368377 | 2.2558281 | 75 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 04198 | 2002 $GH_{157}$ |
| 2002 $GM_{159}$ | 17.2 | 0.15 | 20060922 | 70.85521 | 345.75351 | 227.19633 | 5.89544 | 0.0500131 | 2.3784844 | 26 | 3 | 2000–2003 | 0.45 | M-v | 3 | MPC | 89281 | 2002 $GM_{159}$ |
| 2002 $GV_{159}$ | 16.2 | 0.15 | 20060922 | 351.63016 | 131.88906 | 90.78280 | 3.72685 | 0.0498524 | 2.6581565 | 59 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 02098 | 2002 $GV_{159}$ |
| 2002 $GF_{162}$ | 17.4 | 0.15 | 20060922 | 58.41897 | 95.27769 | 158.85838 | 3.89986 | 0.1497753 | 2.2893005 | 36 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 04198 | 2002 $GF_{162}$ |
| 2002 $GV_{162}$ | 17.0 | 0.15 | 20060922 | 195.00063 | 337.40053 | 150.76633 | 3.95016 | 0.0707474 | 2.1970557 | 51 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 04198 | 2002 $GV_{162}$ |
| 2002 $GB_{163}$ | 16.4 | 0.15 | 20060922 | 336.03924 | 9.96121 | 140.64118 | 1.89131 | 0.2776717 | 3.0041326 | 36 | 4 | 2000–2006 | 0.34 | M-v | 1 | MPC | 03315 | 2002 $GB_{163}$ |
| 2002 $GA_{164}$ | 16.5 | 0.15 | 20060922 | 30.64725 | 136.00061 | 124.30333 | 3.06702 | 0.1677268 | 2.3879650 | 29 | 5 | 1996–2005 | 0.47 | M-v | 1 | MPC | 89281 | 2002 $GA_{164}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $GB_{164}$ | 16.0 | 0.15 | 20060922 | 247.45874 | 324.19247 | 46.98973 | 6.23312 | 0.0713374 | 2.4608851 | 67 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 02098 | 2002 $GB_{164}$ |
| 2002 $GD_{164}$ | 15.3 | 0.15 | 20060922 | 36.25058 | 251.44053 | 198.56427 | 10.61284 | 0.0668688 | 3.1233818 | 44 | 4 | 2001–2005 | 0.60 | M-v | 1 | MPC | 69361 | 2002 $GD_{164}$ |
| 2002 $GP_{165}$ | 16.8 | 0.15 | 20060922 | 9.13845 | 151.68299 | 149.01102 | 3.21909 | 0.1745188 | 2.3013550 | 34 | 3 | 2002–2005 | 0.62 | M-v | 3 | MPC | 74174 | 2002 $GP_{165}$ |
| 2002 $GJ_{167}$ | 14.9 | 0.15 | 20060922 | 331.10995 | 242.29115 | 263.69418 | 4.42192 | 0.1017001 | 3.1490426 | 86 | 4 | 2000–2006 | 0.51 | M-v | 0 | MPC | 97596 | 2002 $GJ_{167}$ |
| 2002 $GQ_{168}$ | 16.9 | 0.15 | 20060922 | 30.84703 | 47.13418 | 258.71666 | 2.80917 | 0.0819909 | 2.2249654 | 101 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 04198 | 2002 $GQ_{168}$ |
| 2002 $GR_{168}$ | 17.0 | 0.15 | 20060922 | 133.32524 | 91.34577 | 45.71623 | 2.38725 | 0.1882365 | 2.3531381 | 41 | 3 | 2000–2005 | 0.48 | M-v | 3 | MPC | 72624 | 2002 $GR_{168}$ |
| 2002 $GN_{169}$ | 16.1 | 0.15 | 20060922 | 14.16749 | 237.23806 | 295.81848 | 3.94611 | 0.0992354 | 2.7780175 | 60 | 5 | 1995–2006 | 0.63 | M-v | 1 | MPC | 94760 | 2002 $GN_{169}$ |
| 2002 $GA_{170}$ | 17.4 | 0.15 | 20060922 | 54.27319 | 29.86987 | 233.23231 | 0.64449 | 0.1989342 | 2.3230726 | 55 | 2 | 2002–2006 | 0.50 | M-v | 4 | MPC | 03315 | 2002 $GA_{170}$ |
| 2002 $GQ_{171}$ | 16.0 | 0.15 | 20060922 | 325.46103 | 240.53189 | 29.53776 | 7.06008 | 0.0640641 | 2.5458948 | 57 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 00248 | 2002 $GQ_{171}$ |
| 2002 $GB_{175}$ | 16.6 | 0.15 | 20060922 | 33.12175 | 130.79182 | 117.54156 | 3.42626 | 0.1440735 | 2.4008002 | 23 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 00249 | 2002 $GB_{175}$ |
| 2002 $GN_{175}$ | 16.7 | 0.15 | 20060922 | 39.82753 | 251.10247 | 48.43455 | 7.90329 | 0.2398426 | 2.2400555 | 65 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04198 | 2002 $GN_{175}$ |
| 2002 $GW_{175}$ | 15.7 | 0.15 | 20060922 | 283.09788 | 213.81389 | 97.55570 | 7.90919 | 0.0747591 | 2.5844973 | 33 | 5 | 1994–2006 | 0.68 | M-v | 1 | MPC | 04198 | 2002 $GW_{175}$ |
| 2002 $GL_{177}$ | 15.1 | 0.15 | 20060922 | 193.82535 | 120.94059 | 179.00199 | 9.40981 | 0.0720892 | 3.1617452 | 32 | 3 | 2001–2004 | 0.73 | M-v | 3 | MPC | 74175 | 2002 $GL_{177}$ |
| 2002 $GN_{177}$ | 17.9 | 0.15 | 20060922 | 31.10070 | 120.17054 | 138.22815 | 1.71218 | 0.1610266 | 2.3875858 | 22 | 3 | 1998–2003 | 0.42 | M-v | 3 | MPC | 52989 | 2002 $GN_{177}$ |
| 2002 $GE_{178}$ | 17.0 | 0.15 | 20060922 | 16.79917 | 107.80136 | 208.16226 | 3.49234 | 0.1353057 | 2.2699603 | 75 | 4 | 1996–2006 | 0.57 | M-v | 1 | MPC | 04198 | 2002 $GE_{178}$ |
| 2002 $GG_{178}$ | 15.9 | 0.15 | 20060922 | 158.05179 | 2.06230 | 42.04188 | 6.74569 | 0.0104602 | 2.7515768 | 32 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 94762 | 2002 $GG_{178}$ |
| 2002 $GV_{178}$ | 17.7 | 0.15 | 20060922 | 19.92824 | 347.16576 | 314.39182 | 2.45421 | 0.1873818 | 2.2925537 | 34 | 4 | 2002–2006 | 0.32 | M-v | 1 | MPC | 04198 | 2002 $GV_{178}$ |
| 2002 $GB_{179}$ | 18.1 | 0.15 | 20060922 | 47.28128 | 230.74512 | 45.49993 | 3.64956 | 0.1574752 | 2.2914575 | 29 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 04198 | 2002 $GB_{179}$ |
| 2002 $GF_{179}$ | 16.9 | 0.15 | 20060922 | 23.37529 | 153.41564 | 64.38276 | 4.99051 | 0.1223663 | 2.4377038 | 27 | 3 | 2002–2006 | 0.65 | M-v | 4 | MPC | 00249 | 2002 $GF_{179}$ |
| 2002 $GG_{179}$ | 15.8 | 0.15 | 20060922 | 227.47791 | 115.38795 | 178.85424 | 8.97646 | 0.0781191 | 3.0128250 | 28 | 3 | 2001–2003 | 0.36 | M-v | 3 | MPC | 89282 | 2002 $GG_{179}$ |
| 2002 $GD_{182}$ | 16.4 | 0.15 | 20020307 | 332.18846 | 244.35958 | 338.82574 | 16.12194 | 0.1827086 | 3.0973659 | 12 | 1 | 52 days | 0.19 | | | MPC | | 2002 $GD_{182}$ |
| 2002 HT | 15.9 | 0.15 | 20060922 | 57.31933 | 198.54918 | 67.43239 | 14.09048 | 0.1891019 | 2.3205610 | 113 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 04199 | 2002 HT |
| 2002 $HB_2$ | 16.8 | 0.15 | 20060922 | 98.86629 | 148.69552 | 97.23859 | 6.76956 | 0.1383093 | 2.1896018 | 49 | 4 | 1999–2006 | 0.61 | M-v | 2 | MPC | 75335 | 2002 $HB_2$ |
| 2002 $HS_2$ | 16.3 | 0.15 | 20060922 | 2.52429 | 131.72810 | 156.82826 | 7.38171 | 0.1165141 | 2.3679432 | 50 | 3 | 1995–2003 | 0.48 | M-v | 2 | MPC | 57859 | 2002 $HS_2$ |
| 2002 $HZ_2$ | 14.2 | 0.15 | 20060922 | 143.51532 | 267.19041 | 79.31585 | 7.41260 | 0.1734208 | 3.1986655 | 115 | 7 | 1998–2006 | 0.54 | M-v | 1 | MPC | 97597 | 2002 $HZ_2$ |
| 2002 $HG_4$ | 16.2 | 0.15 | 20060922 | 42.87521 | 202.81343 | 69.28526 | 5.81549 | 0.2152505 | 2.3455422 | 69 | 2 | 2002–2006 | 0.39 | M-v | 3 | MPC | 03316 | 2002 $HG_4$ |
| 2002 $HQ_4$ | 17.0 | 0.15 | 20060922 | 310.93068 | 72.65028 | 49.45306 | 22.66457 | 0.0719502 | 1.9536573 | 74 | 3 | 2002–2006 | 0.57 | M-v | 1 | MPC | 57859 | 2002 $HQ_4$ |
| 2002 $HB_5$ | 17.1 | 0.15 | 20060922 | 103.55683 | 104.06394 | 131.51571 | 6.47484 | 0.1343536 | 2.2111892 | 90 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 85500 | 2002 $HB_5$ |
| 2002 $HG_6$ | 16.4 | 0.15 | 20060922 | 342.50825 | 277.16800 | 8.66535 | 4.89068 | 0.3210386 | 2.5980260 | 67 | 2 | 2002–2006 | 0.72 | M-v | 4 | MPC | 00251 | 2002 $HG_6$ |
| 2002 $HK_6$ | 17.1 | 0.15 | 20060922 | 359.41380 | 55.48523 | 188.87748 | 4.62454 | 0.2306882 | 2.5998306 | 35 | 2 | 2002–2006 | 0.35 | M-v | 4 | MPC | 03316 | 2002 $HK_6$ |
| 2002 $HZ_7$ | 14.7 | 0.15 | 20060922 | 52.04859 | 85.46606 | 157.35110 | 21.43506 | 0.2599745 | 2.3778078 | 124 | 3 | 1999–2006 | 0.52 | M-v | 1 | MPC | 04199 | 2002 $HZ_7$ |
| 2002 $HD_{10}$ | 16.2 | 0.15 | 20060922 | 14.32690 | 250.58504 | 38.64130 | 6.00016 | 0.1268161 | 2.3441339 | 83 | 3 | 2002–2005 | 0.64 | M-v | 2 | MPC | 52995 | 2002 $HD_{10}$ |
| 2002 $HE_{10}$ | 15.8 | 0.15 | 20060922 | 108.31009 | 122.96240 | 37.87531 | 5.99140 | 0.1150875 | 2.3858280 | 101 | 4 | 2000–2005 | 0.64 | M-v | 1 | MPC | 74176 | 2002 $HE_{10}$ |
| 2002 $HF_{10}$ | 15.5 | 0.15 | 20060922 | 22.27671 | 352.73503 | 201.95324 | 12.58436 | 0.0558323 | 2.6721813 | 49 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 30169 | 2002 $HF_{10}$ |
| 2002 $HU_{10}$ | 14.8 | 0.15 | 20060922 | 316.50363 | 107.98935 | 48.98579 | 26.94302 | 0.1879337 | 3.1247442 | 50 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 97597 | 2002 $HU_{10}$ |
| 2002 $HQ_{11}$ | 19.2 | 0.15 | 20060922 | 301.51113 | 321.80404 | 153.54869 | 6.02813 | 0.5947990 | 1.8509596 | 58 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04199 | 2002 $HQ_{11}$ |
| 2002 $HE_{12}$ | 16.9 | 0.15 | 20060922 | 72.49028 | 211.16521 | 37.87467 | 6.64287 | 0.2350918 | 2.2796929 | 81 | 4 | 1995–2006 | 0.76 | M-v | 2 | MPC | 04199 | 2002 $HE_{12}$ |
| 2002 $HJ_{13}$ | 13.7 | 0.15 | 20060922 | 268.74957 | 128.17425 | 101.73734 | 27.79160 | 0.1534163 | 3.1505842 | 34 | 4 | 2001–2006 | 0.65 | M-v | 2 | MPC | 97598 | 2002 $HJ_{13}$ |
| 2002 $HH_{15}$ | 15.7 | 0.15 | 20060922 | 332.70165 | 208.02700 | 65.32534 | 13.95821 | 0.1438153 | 2.5390105 | 25 | 3 | 1998–2006 | 0.76 | M-v | 4 | MPC | 03317 | 2002 $HH_{15}$ |
| 2002 $HO_{15}$ | 16.7 | 0.15 | 20060922 | 137.87776 | 342.24955 | 131.39612 | 1.94279 | 0.1354205 | 2.4017244 | 53 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 02099 | 2002 $HO_{15}$ |
| 2002 $HH_{16}$ | 15.7 | 0.15 | 20060922 | 303.78558 | 103.03886 | 66.09327 | 2.02972 | 0.0852119 | 3.1979808 | 65 | 5 | 1999–2006 | 0.37 | M-v | 0 | MPC | 97598 | 2002 $HH_{16}$ |
| 2002 $HR_{16}$ | 17.1 | 0.15 | 20060922 | 151.05988 | 254.03389 | 261.69257 | 5.00341 | 0.1128616 | 2.2708726 | 30 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 72630 | 2002 $HR_{16}$ |
| 2002 $HN_{17}$ | 14.2 | 0.15 | 20060922 | 204.46706 | 224.03091 | 75.54750 | 28.91812 | 0.1910865 | 3.1832952 | 46 | 3 | 2002–2005 | 0.60 | M-v | 2 | MPC | 72630 | 2002 $HN_{17}$ |
| 2002 $HA_{18}$ | 16.9 | 0.15 | 20060922 | 340.92977 | 240.14834 | 32.54293 | 10.30290 | 0.1051624 | 2.5824242 | 30 | 3 | 1995–2006 | 0.37 | M-v | 3 | MPC | 00253 | 2002 $HA_{18}$ |
| 2002 $JC_1$ | 15.4 | 0.15 | 20060922 | 28.82155 | 93.61602 | 34.39589 | 17.66702 | 0.2566329 | 2.7558920 | 41 | 2 | 2002–2005 | 0.46 | M-v | 3 | MPC | 03317 | 2002 $JC_1$ |
| 2002 $JN_2$ | 16.6 | 0.15 | 20060922 | 64.41928 | 121.78405 | 114.03172 | 21.98233 | 0.2099359 | 2.3368669 | 39 | 3 | 1995–2006 | 0.53 | M-v | 2 | MPC | 04199 | 2002 $JN_2$ |
| 2002 $JC_3$ | 17.2 | 0.15 | 20060922 | 39.32939 | 13.13388 | 209.95621 | 4.81669 | 0.0944465 | 2.4748937 | 31 | 2 | 2002–2006 | 0.37 | M-v | 3 | MPC | 03317 | 2002 $JC_3$ |
| 2002 $JB_4$ | 15.7 | 0.15 | 20060922 | 86.73846 | 270.56510 | 86.58816 | 23.64431 | 0.0973756 | 1.9343337 | 89 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 77595 | 2002 $JB_4$ |
| 2002 $JN_4$ | 15.9 | 0.15 | 20060922 | 21.31394 | 317.43999 | 106.33549 | 24.50959 | 0.0468632 | 1.9057488 | 68 | 4 | 1998–2006 | 0.71 | M-v | 2 | MPC | 56338 | 2002 $JN_4$ |
| 2002 $JQ_4$ | 13.9 | 0.15 | 20060922 | 279.10121 | 93.31248 | 123.24684 | 26.60938 | 0.1913096 | 3.1633003 | 59 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97598 | 2002 $JQ_4$ |
| 2002 $JC_5$ | 16.8 | 0.15 | 20060922 | 25.66444 | 181.55186 | 86.48324 | 2.21650 | 0.1606600 | 2.4388089 | 79 | 7 | 1995–2005 | 0.61 | M-v | 1 | MPC | 74176 | 2002 $JC_5$ |
| 2002 $JN_5$ | 14.3 | 0.15 | 20060922 | 255.97731 | 122.28286 | 61.60376 | 17.23424 | 0.1051147 | 3.4514015 | 61 | 5 | 2000–2006 | 0.58 | M-v | 0 | MPC | 89284 | 2002 $JN_5$ |
| 2002 $JR_5$ | 14.5 | 0.15 | 20060922 | 300.00716 | 80.70271 | 122.46778 | 11.57665 | 0.0902506 | 3.0689210 | 51 | 6 | 1996–2006 | 0.48 | M-v | 1 | MPC | 97598 | 2002 $JR_5$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $JH_{8}$ | 16.8 | 0.15 | 20060922 | 77.32843 | 81.22356 | 177.18954 | 8.73222 | 0.1781718 | 2.2569842 | 79 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 75336 | 2002 $JH_{8}$ |
| 2002 $JW_{11}$ | 16.6 | 0.15 | 20060922 | 93.04433 | 180.64164 | 36.33949 | 10.92275 | 0.0429461 | 2.3273619 | 34 | 3 | 2002–2005 | 0.57 | M-v | 3 | MPC | 53001 | 2002 $JW_{11}$ |
| 2002 $JL_{14}$ | 15.9 | 0.15 | 20060922 | 138.22656 | 342.40021 | 155.26552 | 7.30764 | 0.1200958 | 2.3644533 | 57 | 4 | 1998–2005 | 0.58 | M-v | 1 | MPC | 50607 | 2002 $JL_{14}$ |
| 2002 $JJ_{15}$ | 17.0 | 0.15 | 20060922 | 115.41702 | 128.29484 | 111.71725 | 4.39502 | 0.1798020 | 2.1881031 | 92 | 4 | 1999–2006 | 0.62 | M-v | 2 | MPC | 75337 | 2002 $JJ_{15}$ |
| 2002 $JO_{15}$ | 16.5 | 0.15 | 20060922 | 40.10372 | 211.68734 | 82.51582 | 6.63640 | 0.1712241 | 2.3005717 | 50 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 04199 | 2002 $JO_{15}$ |
| 2002 $JJ_{16}$ | 16.9 | 0.15 | 20060922 | 50.83428 | 245.08875 | 62.16666 | 6.66940 | 0.2069891 | 2.2274136 | 41 | 4 | 2002–2006 | 0.66 | M-v | 1 | MPC | 69366 | 2002 $JJ_{16}$ |
| 2002 $JK_{16}$ | 16.0 | 0.15 | 20060922 | 17.72447 | 154.55711 | 198.88449 | 7.30406 | 0.2121350 | 2.1894057 | 145 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 04199 | 2002 $JK_{16}$ |
| 2002 $JE_{17}$ | 15.1 | 0.15 | 20060922 | 20.34140 | 247.93261 | 229.95456 | 6.10618 | 0.1010083 | 3.0641321 | 34 | 4 | 2001–2005 | 0.67 | M-v | 1 | MPC | 97598 | 2002 $JE_{17}$ |
| 2002 $JE_{18}$ | 17.2 | 0.15 | 20060922 | 51.60968 | 41.46707 | 233.60004 | 4.90650 | 0.0375668 | 2.2725913 | 57 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 04199 | 2002 $JE_{18}$ |
| 2002 $JG_{21}$ | 17.0 | 0.15 | 20060922 | 106.00846 | 355.06843 | 278.55651 | 0.81449 | 0.1691311 | 2.1466995 | 48 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 89285 | 2002 $JG_{21}$ |
| 2002 $JA_{23}$ | 16.8 | 0.15 | 20060922 | 83.60603 | 56.97433 | 192.81582 | 3.93481 | 0.1294975 | 2.2547656 | 47 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 04199 | 2002 $JA_{23}$ |
| 2002 $JC_{23}$ | 17.7 | 0.15 | 20060922 | 85.90813 | 138.39102 | 72.78601 | 3.90500 | 0.2240794 | 2.3434223 | 41 | 4 | 1999–2004 | 0.67 | M-v | 2 | MPC | 89285 | 2002 $JC_{23}$ |
| 2002 $JM_{23}$ | 13.8 | 0.15 | 20060922 | 210.55222 | 140.11038 | 66.08975 | 9.48131 | 0.1657011 | 3.9516850 | 54 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 38335 | 2002 $JM_{23}$ |
| 2002 $JW_{24}$ | 15.6 | 0.15 | 20060922 | 350.38997 | 183.86753 | 56.60674 | 14.03769 | 0.1148131 | 2.6660374 | 56 | 4 | 1995–2006 | 0.73 | M-v | 2 | MPC | 02101 | 2002 $JW_{24}$ |
| 2002 $JA_{26}$ | 16.8 | 0.15 | 20060922 | 343.00989 | 181.93981 | 100.69993 | 4.70813 | 0.1995290 | 2.5803901 | 48 | 5 | 1994–2006 | 0.57 | M-v | 2 | MPC | 02101 | 2002 $JA_{26}$ |
| 2002 $JC_{27}$ | 15.9 | 0.15 | 20060922 | 19.80830 | 166.00110 | 56.99211 | 5.93243 | 0.1732024 | 2.5789989 | 102 | 4 | 1998–2006 | 0.64 | M-v | 3 | MPC | 00256 | 2002 $JC_{27}$ |
| 2002 $JH_{27}$ | 17.1 | 0.15 | 20060922 | 200.22548 | 304.29126 | 195.33005 | 5.32770 | 0.0733799 | 2.1983109 | 77 | 4 | 2002–2006 | 0.65 | M-v | 1 | MPC | 85508 | 2002 $JH_{27}$ |
| 2002 $JL_{27}$ | 16.3 | 0.15 | 20060922 | 21.06913 | 207.56580 | 83.64690 | 7.57581 | 0.1851821 | 2.3874765 | 31 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03318 | 2002 $JL_{27}$ |
| 2002 $JQ_{27}$ | 16.1 | 0.15 | 20060922 | 19.12540 | 90.77181 | 184.98825 | 2.20931 | 0.1673435 | 2.4103039 | 76 | 4 | 1998–2005 | 0.55 | M-v | 1 | MPC | 57862 | 2002 $JQ_{27}$ |
| 2002 $JR_{28}$ | 17.3 | 0.15 | 20060922 | 77.36986 | 48.90657 | 211.84049 | 2.53287 | 0.1948124 | 2.2709976 | 53 | 4 | 2002–2006 | 0.37 | M-v | 1 | MPC | 04200 | 2002 $JR_{28}$ |
| 2002 $JU_{28}$ | 15.6 | 0.15 | 20060922 | 275.02573 | 68.12299 | 207.05431 | 4.81346 | 0.1285071 | 2.9388666 | 41 | 4 | 1998–2004 | 0.49 | M-v | 0 | MPC | 74178 | 2002 $JU_{28}$ |
| 2002 $JJ_{29}$ | 17.2 | 0.15 | 20060922 | 72.84533 | 50.45023 | 216.07619 | 2.43785 | 0.1696027 | 2.2723074 | 60 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 04200 | 2002 $JJ_{29}$ |
| 2002 $JY_{29}$ | 15.6 | 0.15 | 20060922 | 336.77818 | 178.90567 | 61.23537 | 9.24241 | 0.1026058 | 2.7488555 | 75 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 03319 | 2002 $JY_{29}$ |
| 2002 $JT_{30}$ | 16.8 | 0.15 | 20060922 | 49.56876 | 183.09839 | 69.36505 | 7.91259 | 0.0873032 | 2.3827250 | 55 | 4 | 1996–2006 | 0.58 | M-v | 2 | MPC | 02101 | 2002 $JT_{30}$ |
| 2002 $JQ_{32}$ | 17.2 | 0.15 | 20060922 | 60.45824 | 25.23016 | 212.28217 | 2.04421 | 0.1907991 | 2.3790231 | 32 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03319 | 2002 $JQ_{32}$ |
| 2002 $JX_{33}$ | 16.2 | 0.15 | 20060922 | 42.17775 | 168.45401 | 87.19309 | 3.93002 | 0.1686111 | 2.4195901 | 54 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 97599 | 2002 $JX_{33}$ |
| 2002 $JS_{36}$ | 16.7 | 0.15 | 20060922 | 113.08402 | 117.08202 | 99.15464 | 8.06050 | 0.0767169 | 2.2559355 | 51 | 5 | 1999–2006 | 0.72 | M-v | 1 | MPC | 04200 | 2002 $JS_{36}$ |
| 2002 $JV_{36}$ | 15.6 | 0.15 | 20060922 | 18.25004 | 177.35082 | 96.75739 | 6.54786 | 0.1424624 | 2.4259163 | 95 | 5 | 1998–2005 | 0.68 | M-v | 1 | MPC | 74179 | 2002 $JV_{36}$ |
| 2002 $JX_{36}$ | 16.1 | 0.15 | 20060922 | 345.37714 | 187.95173 | 90.15389 | 5.84455 | 0.2960636 | 2.6030387 | 81 | 3 | 1999–2006 | 0.52 | M-v | 3 | MPC | 00258 | 2002 $JX_{36}$ |
| 2002 $JN_{37}$ | 15.7 | 0.15 | 20060922 | 66.26001 | 329.13256 | 266.36518 | 6.35464 | 0.0738395 | 2.3565326 | 39 | 3 | 2002–2005 | 0.54 | M-v | 3 | MPC | 53014 | 2002 $JN_{37}$ |
| 2002 $JQ_{37}$ | 16.6 | 0.15 | 20060922 | 38.98195 | 273.03697 | 276.71457 | 3.59049 | 0.1593809 | 2.6097580 | 49 | 3 | 2000–2006 | 0.62 | M-v | 3 | MPC | 02101 | 2002 $JQ_{37}$ |
| 2002 $JS_{37}$ | 17.1 | 0.15 | 20060922 | 110.28877 | 319.30412 | 271.34139 | 4.51337 | 0.1169685 | 2.2275779 | 63 | 6 | 1995–2006 | 0.78 | M-v | 1 | MPC | 04200 | 2002 $JS_{37}$ |
| 2002 $JT_{37}$ | 14.8 | 0.15 | 20060922 | 263.86857 | 40.89809 | 247.38248 | 10.90924 | 0.1547713 | 2.9446664 | 55 | 5 | 1999–2005 | 0.58 | M-v | 1 | MPC | 74179 | 2002 $JT_{37}$ |
| 2002 $JR_{39}$ | 17.0 | 0.15 | 20060922 | 83.00079 | 132.73342 | 106.64454 | 6.34474 | 0.1949842 | 2.3132110 | 68 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 04200 | 2002 $JR_{39}$ |
| 2002 $JF_{40}$ | 15.1 | 0.15 | 20060922 | 271.57541 | 293.26770 | 287.44556 | 3.14063 | 0.1731721 | 3.1437329 | 70 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 97599 | 2002 $JF_{40}$ |
| 2002 $JV_{40}$ | 14.4 | 0.15 | 20060922 | 242.23159 | 258.94308 | 359.60860 | 4.19507 | 0.1461211 | 3.1669407 | 90 | 5 | 2002–2006 | 0.59 | M-v | 1 | MPC | 97599 | 2002 $JV_{40}$ |
| 2002 $JD_{42}$ | 16.5 | 0.15 | 20060922 | 69.63379 | 34.70600 | 223.43728 | 6.17313 | 0.0837969 | 2.2567599 | 82 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 04200 | 2002 $JD_{42}$ |
| 2002 $JF_{45}$ | 16.3 | 0.15 | 20060922 | 47.77392 | 45.10025 | 232.55359 | 6.89505 | 0.1144450 | 2.2841663 | 60 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 04200 | 2002 $JF_{45}$ |
| 2002 $JP_{45}$ | 16.7 | 0.15 | 20060922 | 44.35007 | 60.43700 | 234.85282 | 5.92071 | 0.1946638 | 2.2748595 | 59 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04200 | 2002 $JP_{45}$ |
| 2002 $JQ_{45}$ | 16.0 | 0.15 | 20060922 | 5.79039 | 332.51055 | 253.12095 | 3.40688 | 0.0821346 | 2.6206211 | 41 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 02101 | 2002 $JQ_{45}$ |
| 2002 $JZ_{45}$ | 14.4 | 0.15 | 20060922 | 249.49240 | 44.09404 | 228.89679 | 16.27282 | 0.2527281 | 3.0915334 | 56 | 3 | 2002–2004 | 0.49 | M-v | 3 | MPC | 74179 | 2002 $JZ_{45}$ |
| 2002 $JU_{46}$ | 14.1 | 0.15 | 20060922 | 236.16078 | 290.18920 | 347.52483 | 7.33521 | 0.1639660 | 3.1896451 | 80 | 5 | 2002–2006 | 0.54 | M-v | 1 | MPC | 97600 | 2002 $JU_{46}$ |
| 2002 $JK_{48}$ | 17.1 | 0.15 | 20060922 | 155.19583 | 288.09562 | 248.35427 | 3.66172 | 0.1053538 | 2.2266557 | 74 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 04200 | 2002 $JK_{48}$ |
| 2002 $JE_{50}$ | 17.3 | 0.15 | 20060922 | 83.06361 | 310.53760 | 274.64182 | 3.49572 | 0.2195295 | 2.3390840 | 37 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 75343 | 2002 $JE_{50}$ |
| 2002 $JF_{51}$ | 15.0 | 0.15 | 20060922 | 337.17038 | 119.61156 | 240.22487 | 19.53365 | 0.2469675 | 2.3453266 | 70 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 04200 | 2002 $JF_{51}$ |
| 2002 $JL_{51}$ | 16.6 | 0.15 | 20060922 | 10.87325 | 38.34015 | 271.43307 | 1.69882 | 0.2246785 | 2.3966526 | 101 | 6 | 1998–2006 | 0.46 | M-v | 0 | MPC | 04200 | 2002 $JL_{51}$ |
| 2002 $JN_{51}$ | 16.8 | 0.15 | 20060922 | 53.98895 | 251.84932 | 27.16503 | 3.07323 | 0.1731898 | 2.3125533 | 70 | 4 | 1998–2006 | 0.66 | M-v | 1 | MPC | 03319 | 2002 $JN_{51}$ |
| 2002 $JV_{52}$ | 16.6 | 0.15 | 20060922 | 41.50217 | 355.85199 | 277.17611 | 4.50202 | 0.2134490 | 2.3574874 | 49 | 3 | 2002–2006 | 0.68 | M-v | 3 | MPC | 03319 | 2002 $JV_{52}$ |
| 2002 $JW_{53}$ | 15.7 | 0.15 | 20020506 | 323.65160 | 11.39336 | 263.62146 | 2.56380 | 0.2030059 | 2.7014642 | 9 | 1 | 4 days | 0.54 | | E | MPC | 94773 | 2002 $JW_{53}$ |
| 2002 $JL_{54}$ | 16.2 | 0.15 | 20060922 | 52.33914 | 346.49316 | 210.65727 | 6.01576 | 0.1211567 | 2.5325220 | 59 | 3 | 1995–2006 | 0.58 | M-v | 3 | MPC | 04200 | 2002 $JL_{54}$ |
| 2002 $JN_{54}$ | 16.4 | 0.15 | 20060922 | 359.32850 | 23.76683 | 231.14116 | 8.33597 | 0.3276199 | 2.6111078 | 69 | 2 | 2002–2006 | 0.58 | M-v | 3 | MPC | 03320 | 2002 $JN_{54}$ |
| 2002 $JD_{55}$ | 16.7 | 0.15 | 20060922 | 136.60284 | 279.38586 | 237.77319 | 2.54868 | 0.1497032 | 2.3309202 | 37 | 3 | 2002–2005 | 0.60 | M-v | 4 | MPC | 53023 | 2002 $JD_{55}$ |
| 2002 $JO_{55}$ | 15.1 | 0.15 | 20060922 | 323.34786 | 137.61020 | 47.71086 | 22.32025 | 0.2002170 | 3.0932550 | 50 | 3 | 2000–2005 | 0.51 | M-v | 2 | MPC | 89287 | 2002 $JO_{55}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $JU_{55}$ | 17.2 | 0.15 | 20060922 | 20.20585 | 230.48388 | 47.51796 | 0.97848 | 0.1914982 | 2.4332209 | 46 | 5 | 1994–2005 | 0.52 | M-v | 1 | MPC | 35194 | 2002 $JU_{55}$ |
| 2002 $JZ_{57}$ | 14.3 | 0.15 | 20020506 | 107.57750 | 115.68706 | 357.01927 | 1.02796 | 0.0507635 | 3.0325487 | 18 | 1 | 9 days | 0.61 | | | MPC | 31684 | 2002 $JZ_{57}$ |
| 2002 $JK_{60}$ | 17.2 | 0.15 | 20060922 | 56.49062 | 66.53199 | 223.19071 | 3.91841 | 0.1640192 | 2.2727150 | 46 | 5 | 1996–2006 | 0.44 | M-v | 1 | MPC | 77598 | 2002 $JK_{60}$ |
| 2002 $JX_{60}$ | 16.5 | 0.15 | 20060922 | 264.32074 | 21.17494 | 40.53295 | 7.44869 | 0.0840025 | 2.2729762 | 56 | 5 | 1995–2005 | 0.59 | M-v | 1 | MPC | 97600 | 2002 $JX_{60}$ |
| 2002 $JB_{61}$ | 17.0 | 0.15 | 20060922 | 118.02553 | 256.08657 | 292.39213 | 2.40214 | 0.1446446 | 2.3167853 | 63 | 4 | 1998–2005 | 0.52 | M-v | 1 | MPC | 77598 | 2002 $JB_{61}$ |
| 2002 $JG_{62}$ | 17.1 | 0.15 | 20060922 | 94.85542 | 124.62527 | 127.88711 | 3.19993 | 0.1814458 | 2.2381896 | 57 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 77598 | 2002 $JG_{62}$ |
| 2002 $JV_{62}$ | 16.9 | 0.15 | 20060922 | 97.59438 | 40.93422 | 169.45701 | 5.27232 | 0.1753891 | 2.3393577 | 39 | 4 | 2002–2006 | 0.62 | M-v | 1 | MPC | 85516 | 2002 $JV_{62}$ |
| 2002 $JC_{63}$ | 16.4 | 0.15 | 20060922 | 67.54024 | 154.77954 | 103.46218 | 7.43897 | 0.2498328 | 2.3460234 | 58 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 04200 | 2002 $JC_{63}$ |
| 2002 $JU_{63}$ | 16.8 | 0.15 | 20060922 | 80.80807 | 176.60813 | 69.82248 | 5.82600 | 0.2222793 | 2.3178741 | 61 | 3 | 2002–2006 | 0.67 | M-v | 3 | MPC | 04200 | 2002 $JU_{63}$ |
| 2002 $JG_{64}$ | 16.5 | 0.15 | 20060922 | 122.43200 | 0.82726 | 228.53740 | 9.92633 | 0.1846545 | 2.2220275 | 66 | 4 | 2002–2006 | 0.57 | M-v | 2 | MPC | 89288 | 2002 $JG_{64}$ |
| 2002 $JH_{64}$ | 16.4 | 0.15 | 20060922 | 84.85342 | 8.86228 | 217.93975 | 2.97789 | 0.1967475 | 2.3341802 | 73 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 03320 | 2002 $JH_{64}$ |
| 2002 $JY_{65}$ | 17.2 | 0.15 | 20060922 | 91.29876 | 98.79687 | 94.24139 | 2.31213 | 0.1265676 | 2.4096648 | 35 | 4 | 1998–2004 | 0.75 | M-v | 1 | MPC | 62390 | 2002 $JY_{65}$ |
| 2002 $JE_{66}$ | 15.9 | 0.15 | 20060922 | 62.40133 | 175.79091 | 73.89187 | 6.32732 | 0.1058695 | 2.3659054 | 66 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 04201 | 2002 $JE_{66}$ |
| 2002 $JG_{66}$ | 16.4 | 0.15 | 20060922 | 120.07534 | 162.15121 | 77.48043 | 6.21150 | 0.2599678 | 2.2067488 | 113 | 4 | 1999–2006 | 0.64 | M-v | 2 | MPC | 77598 | 2002 $JG_{66}$ |
| 2002 $JM_{66}$ | 16.2 | 0.15 | 20060922 | 46.79205 | 148.66422 | 191.11319 | 3.25170 | 0.2225371 | 2.1792332 | 61 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 77598 | 2002 $JM_{66}$ |
| 2002 $JQ_{66}$ | 15.7 | 0.15 | 20060922 | 78.32932 | 337.63249 | 194.93503 | 4.23504 | 0.0803266 | 2.5556770 | 74 | 6 | 1991–2006 | 0.55 | M-v | 1 | MPC | 04201 | 2002 $JQ_{66}$ |
| 2002 $JA_{67}$ | 17.7 | 0.15 | 20060922 | 138.62628 | 125.31911 | 118.70545 | 2.91861 | 0.1714847 | 2.1336854 | 40 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 75346 | 2002 $JA_{67}$ |
| 2002 $JE_{68}$ | 16.6 | 0.15 | 20060922 | 333.64086 | 53.11224 | 65.61371 | 22.79832 | 0.0800743 | 1.9320126 | 78 | 4 | 1999–2006 | 0.62 | M-v | 2 | MPC | 57864 | 2002 $JE_{68}$ |
| 2002 $JK_{68}$ | 17.2 | 0.15 | 20060922 | 73.95733 | 90.59866 | 221.35138 | 2.93083 | 0.1868401 | 2.1392588 | 60 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 75346 | 2002 $JK_{68}$ |
| 2002 $JX_{69}$ | 14.5 | 0.15 | 20060922 | 323.29064 | 93.66258 | 52.59336 | 25.90242 | 0.2002234 | 3.1736891 | 56 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 97600 | 2002 $JX_{69}$ |
| 2002 $JE_{70}$ | 17.5 | 0.15 | 20060922 | 39.60014 | 174.71642 | 106.97069 | 6.50479 | 0.3794100 | 2.3889033 | 62 | 2 | 2002–2006 | 0.48 | M-v | 4 | MPC | 03320 | 2002 $JE_{70}$ |
| 2002 $JA_{71}$ | 17.1 | 0.15 | 20060922 | 104.24370 | 58.19873 | 163.34885 | 7.61881 | 0.0832046 | 2.2619592 | 56 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 04201 | 2002 $JA_{71}$ |
| 2002 $JB_{71}$ | 16.0 | 0.15 | 20060922 | 59.63938 | 1.37716 | 162.76389 | 8.69636 | 0.1252969 | 2.6142026 | 109 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 02102 | 2002 $JB_{71}$ |
| 2002 $JG_{74}$ | 15.6 | 0.15 | 20060922 | 77.08585 | 173.66676 | 82.73933 | 24.79370 | 0.2100665 | 2.3261621 | 44 | 4 | 2002–2006 | 0.60 | M-v | 2 | MPC | 04201 | 2002 $JG_{74}$ |
| 2002 $JY_{74}$ | 17.5 | 0.15 | 20060922 | 86.84878 | 25.40878 | 232.51664 | 4.00741 | 0.1650906 | 2.2446300 | 49 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 89289 | 2002 $JY_{74}$ |
| 2002 $JL_{75}$ | 16.9 | 0.15 | 20060922 | 53.12423 | 168.94351 | 108.91189 | 4.96034 | 0.1492986 | 2.3210437 | 52 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 03321 | 2002 $JL_{75}$ |
| 2002 $JR_{76}$ | 17.2 | 0.15 | 20060922 | 130.12484 | 313.31549 | 253.06736 | 1.49039 | 0.1166306 | 2.1866029 | 87 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 04201 | 2002 $JR_{76}$ |
| 2002 $JT_{76}$ | 16.7 | 0.15 | 20060922 | 12.97415 | 358.62406 | 211.69646 | 5.71537 | 0.1973628 | 2.6067938 | 47 | 2 | 2002–2006 | 0.53 | M-v | 3 | MPC | 03321 | 2002 $JT_{76}$ |
| 2002 $JD_{78}$ | 14.5 | 0.15 | 20060922 | 199.78207 | 306.46739 | 16.59692 | 6.29786 | 0.1823880 | 3.0610479 | 67 | 5 | 1998–2006 | 0.72 | M-v | 1 | MPC | 74182 | 2002 $JD_{78}$ |
| 2002 $JM_{78}$ | 14.9 | 0.15 | 20060922 | 341.21556 | 125.16199 | 21.51450 | 5.02114 | 0.0903019 | 3.1121128 | 69 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 97601 | 2002 $JM_{78}$ |
| 2002 $JY_{78}$ | 17.2 | 0.15 | 20060922 | 47.74884 | 24.34923 | 244.03993 | 5.03271 | 0.1453587 | 2.3090361 | 32 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 04201 | 2002 $JY_{78}$ |
| 2002 $JD_{79}$ | 17.3 | 0.15 | 20060922 | 107.40243 | 261.69927 | 340.47454 | 1.68401 | 0.1496157 | 2.1885351 | 69 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 75349 | 2002 $JD_{79}$ |
| 2002 $JR_{80}$ | 16.2 | 0.15 | 20060922 | 310.12106 | 233.70240 | 39.24743 | 2.55248 | 0.1168335 | 2.6910961 | 40 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 97601 | 2002 $JR_{80}$ |
| 2002 $JF_{81}$ | 15.3 | 0.15 | 20060922 | 221.18554 | 258.97955 | 6.23369 | 5.99530 | 0.0825514 | 3.2293020 | 65 | 5 | 1992–2005 | 0.61 | M-v | 0 | MPC | 74182 | 2002 $JF_{81}$ |
| 2002 $JZ_{81}$ | 16.6 | 0.15 | 20060922 | 115.71250 | 242.62614 | 267.79347 | 0.47167 | 0.1237921 | 2.4067050 | 70 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 02103 | 2002 $JZ_{81}$ |
| 2002 $JQ_{82}$ | 16.0 | 0.15 | 20060922 | 240.08214 | 123.67382 | 213.91475 | 5.25767 | 0.0235645 | 2.6869473 | 55 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 00261 | 2002 $JQ_{82}$ |
| 2002 $JZ_{82}$ | 17.3 | 0.15 | 20060922 | 124.83887 | 324.99382 | 210.04854 | 1.35850 | 0.1599312 | 2.3005096 | 55 | 4 | 2000–2005 | 0.66 | M-v | 1 | MPC | 72649 | 2002 $JZ_{82}$ |
| 2002 $JA_{83}$ | 15.7 | 0.15 | 20060922 | 353.45956 | 148.82599 | 41.46555 | 11.96018 | 0.0792813 | 2.8423119 | 23 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 72650 | 2002 $JA_{83}$ |
| 2002 $JH_{83}$ | 17.0 | 0.15 | 20060922 | 133.43722 | 174.99688 | 28.35614 | 7.13294 | 0.0842590 | 2.2145219 | 45 | 4 | 2000–2005 | 0.58 | M-v | 1 | MPC | 53040 | 2002 $JH_{83}$ |
| 2002 $JB_{84}$ | 17.1 | 0.15 | 20060922 | 116.15058 | 338.45690 | 263.30622 | 2.27943 | 0.1208981 | 2.1769610 | 82 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 75349 | 2002 $JB_{84}$ |
| 2002 $JG_{84}$ | 17.7 | 0.15 | 20060922 | 113.33751 | 348.62954 | 227.17329 | 3.55238 | 0.1065196 | 2.2472812 | 37 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03321 | 2002 $JG_{84}$ |
| 2002 $JN_{84}$ | 17.0 | 0.15 | 20060922 | 63.59198 | 274.42438 | 6.94567 | 1.24895 | 0.1942770 | 2.2588314 | 55 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04201 | 2002 $JN_{84}$ |
| 2002 $JO_{85}$ | 16.4 | 0.15 | 20060922 | 341.98243 | 246.17346 | 26.97566 | 3.32801 | 0.0561520 | 2.5550079 | 46 | 6 | 1995–2006 | 0.64 | M-v | 0 | MPC | 02103 | 2002 $JO_{85}$ |
| 2002 $JQ_{85}$ | 16.7 | 0.15 | 20060922 | 26.42153 | 288.79062 | 31.36656 | 5.28250 | 0.2019348 | 2.2790833 | 110 | 2 | 2002–2006 | 0.45 | M-v | 3 | MPC | 03322 | 2002 $JQ_{85}$ |
| 2002 $JW_{85}$ | 16.4 | 0.15 | 20060922 | 38.66966 | 61.55816 | 252.20811 | 9.15020 | 0.1449451 | 2.2181205 | 67 | 4 | 1993–2006 | 0.53 | M-v | 1 | MPC | 04201 | 2002 $JW_{85}$ |
| 2002 $JO_{86}$ | 16.4 | 0.15 | 20060922 | 58.35960 | 357.56666 | 222.68282 | 5.31614 | 0.1010324 | 2.4391138 | 48 | 5 | 1994–2003 | 0.53 | M-v | 1 | MPC | 53717 | 2002 $JO_{86}$ |
| 2002 $JF_{87}$ | 17.2 | 0.15 | 20060922 | 47.03214 | 252.53987 | 33.69629 | 5.91137 | 0.1491170 | 2.3002935 | 26 | 3 | 2002–2006 | 0.47 | M-v | 4 | MPC | 57865 | 2002 $JF_{87}$ |
| 2002 $JW_{88}$ | 16.5 | 0.15 | 20060922 | 29.26655 | 348.06833 | 222.05776 | 8.26835 | 0.1076058 | 2.5777177 | 48 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 02103 | 2002 $JW_{88}$ |
| 2002 $JY_{89}$ | 17.6 | 0.15 | 20060922 | 32.10218 | 54.18195 | 254.51889 | 1.06073 | 0.2453650 | 2.3165160 | 59 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 04201 | 2002 $JY_{89}$ |
| 2002 $JY_{91}$ | 15.0 | 0.15 | 20060922 | 193.04292 | 2.94069 | 236.42774 | 2.59002 | 0.1659877 | 3.9669412 | 40 | 4 | 2000–2005 | 0.44 | M-v | 0 | MPC | 89290 | 2002 $JY_{91}$ |
| 2002 $JJ_{93}$ | 16.9 | 0.15 | 20060922 | 125.78468 | 124.28414 | 77.82941 | 0.73235 | 0.1364216 | 2.2607699 | 65 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 04201 | 2002 $JJ_{93}$ |
| 2002 $JN_{95}$ | 16.9 | 0.15 | 20060922 | 33.87772 | 59.96312 | 232.08700 | 3.33347 | 0.1603196 | 2.3504066 | 79 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 04201 | 2002 $JN_{95}$ |
| 2002 $JR_{98}$ | 17.0 | 0.15 | 20060922 | 56.75028 | 237.50050 | 32.55257 | 2.95098 | 0.1476162 | 2.3086905 | 59 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 04201 | 2002 $JR_{98}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $JU_{98}$ | 20.6 | 0.15 | 20060922 | 124.71339 | 144.20124 | 59.39281 | 6.52820 | 0.1310575 | 2.2478360 | 31 | 4 | 2000–2005 | 0.64 | M-v | 1 | MPC | 89292 | 2002 $JU_{98}$ |
| 2002 $JM_{101}$ | 15.4 | 0.15 | 20060922 | 255.00633 | 116.81783 | 169.93023 | 1.13803 | 0.2578639 | 3.0532970 | 57 | 4 | 1995–2006 | 0.55 | M-v | 0 | MPC | 97602 | 2002 $JM_{101}$ |
| 2002 $JQ_{102}$ | 15.4 | 0.15 | 20060922 | 340.35814 | 169.80906 | 71.79738 | 8.51572 | 0.1111994 | 2.7772875 | 37 | 4 | 2002–2006 | 0.68 | M-v | 2 | MPC | 02104 | 2002 $JQ_{102}$ |
| 2002 $JR_{102}$ | 16.0 | 0.15 | 20060922 | 15.30529 | 135.14199 | 70.51693 | 15.00154 | 0.2104319 | 2.6970582 | 51 | 3 | 2002–2006 | 0.64 | M-v | 3 | MPC | 00262 | 2002 $JR_{102}$ |
| 2002 $JL_{103}$ | 16.3 | 0.15 | 20060922 | 23.70447 | 84.04989 | 129.99087 | 3.75880 | 0.1103153 | 2.6095150 | 49 | 4 | 1993–2006 | 0.67 | M-v | 1 | MPC | 04201 | 2002 $JL_{103}$ |
| 2002 $JT_{103}$ | 15.0 | 0.15 | 20060922 | 251.24551 | 214.68044 | 74.28094 | 5.76893 | 0.0661485 | 3.0205499 | 55 | 4 | 1996–2004 | 0.49 | M-v | 1 | MPC | 74184 | 2002 $JT_{103}$ |
| 2002 $JC_{104}$ | 14.5 | 0.15 | 20060922 | 334.95416 | 304.56701 | 230.41941 | 12.43102 | 0.0452540 | 3.1897936 | 62 | 5 | 1999–2004 | 0.55 | M-v | 1 | MPC | 31733 | 2002 $JC_{104}$ |
| 2002 $JD_{104}$ | 16.7 | 0.15 | 20060922 | 41.80752 | 179.44429 | 98.43326 | 2.33663 | 0.1751570 | 2.3690279 | 70 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04201 | 2002 $JD_{104}$ |
| 2002 $JG_{104}$ | 17.3 | 0.15 | 20060922 | 65.36857 | 45.42941 | 204.27227 | 3.75371 | 0.2033906 | 2.3593950 | 51 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03322 | 2002 $JG_{104}$ |
| 2002 $JY_{104}$ | 16.9 | 0.15 | 20060922 | 90.28190 | 40.57984 | 240.49797 | 3.63754 | 0.1543994 | 2.2038941 | 56 | 4 | 1998–2006 | 0.46 | M-v | 3 | MPC | 56354 | 2002 $JY_{104}$ |
| 2002 $JA_{105}$ | 16.6 | 0.15 | 20060922 | 113.77070 | 131.17322 | 106.52769 | 2.22567 | 0.1809210 | 2.2242373 | 123 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 75353 | 2002 $JA_{105}$ |
| 2002 $JP_{105}$ | 16.5 | 0.15 | 20060922 | 29.38159 | 176.51956 | 115.32104 | 3.93595 | 0.1790494 | 2.3931861 | 60 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 04201 | 2002 $JP_{105}$ |
| 2002 $JR_{105}$ | 17.2 | 0.15 | 20060922 | 94.39180 | 67.78678 | 187.85974 | 1.82742 | 0.1035366 | 2.2487564 | 51 | 5 | 2000–2006 | 0.38 | M-v | 0 | MPC | 04201 | 2002 $JR_{105}$ |
| 2002 $JS_{106}$ | 15.2 | 0.15 | 20060922 | 296.73437 | 32.63591 | 284.97220 | 6.39949 | 0.2029981 | 2.6083720 | 68 | 3 | 2002–2005 | 0.51 | M-v | 2 | MPC | 57866 | 2002 $JS_{106}$ |
| 2002 $JH_{108}$ | 14.2 | 0.15 | 20060922 | 234.57558 | 131.45264 | 143.46936 | 17.56521 | 0.1874975 | 3.1576892 | 66 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 53718 | 2002 $JH_{108}$ |
| 2002 $JP_{108}$ | 14.9 | 0.15 | 20060922 | 199.63739 | 149.67973 | 164.60783 | 23.44241 | 0.1243866 | 3.1208232 | 39 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 74184 | 2002 $JP_{108}$ |
| 2002 $JT_{108}$ | 15.4 | 0.15 | 20060922 | 67.36999 | 198.32020 | 103.48977 | 25.03390 | 0.2551176 | 2.2404662 | 62 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 75354 | 2002 $JT_{108}$ |
| 2002 $JP_{110}$ | 17.1 | 0.15 | 20060922 | 104.13684 | 310.03152 | 356.62990 | 2.99307 | 0.1486324 | 2.0864102 | 31 | 3 | 2002–2006 | 0.63 | M-v | 3 | MPC | 87539 | 2002 $JP_{110}$ |
| 2002 $JO_{112}$ | 17.0 | 0.15 | 20060922 | 38.08967 | 22.78314 | 262.99046 | 5.41907 | 0.2366342 | 2.3715950 | 51 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03322 | 2002 $JO_{112}$ |
| 2002 $JF_{113}$ | 16.1 | 0.15 | 20060922 | 42.03213 | 229.90681 | 50.08058 | 8.14062 | 0.2134277 | 2.2837430 | 83 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 04202 | 2002 $JF_{113}$ |
| 2002 $JX_{113}$ | 17.0 | 0.15 | 20060922 | 149.14109 | 260.95514 | 298.67152 | 5.29644 | 0.0723277 | 2.1762644 | 54 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 04202 | 2002 $JX_{113}$ |
| 2002 $JJ_{114}$ | 17.2 | 0.15 | 20060922 | 34.48513 | 278.55963 | 359.01974 | 0.93304 | 0.1713332 | 2.3594940 | 55 | 5 | 1999–2006 | 0.36 | M-v | 0 | MPC | 04202 | 2002 $JJ_{114}$ |
| 2002 $JT_{114}$ | 17.0 | 0.15 | 20060922 | 34.36921 | 153.00213 | 134.96910 | 7.57794 | 0.1441295 | 2.3608469 | 41 | 6 | 1999–2006 | 0.44 | M-v | 1 | MPC | 04202 | 2002 $JT_{114}$ |
| 2002 $JP_{115}$ | 17.2 | 0.15 | 20060922 | 56.28592 | 217.97830 | 87.48144 | 2.23784 | 0.2128984 | 2.2307406 | 53 | 6 | 1999–2006 | 0.48 | M-v | 1 | MPC | 77600 | 2002 $JP_{115}$ |
| 2002 $JB_{116}$ | 14.8 | 0.15 | 20060922 | 251.79050 | 222.56571 | 63.85948 | 22.01420 | 0.3905380 | 3.0836382 | 73 | 3 | 1998–2003 | 0.73 | M-v | 1 | MPC | 57866 | 2002 $JB_{116}$ |
| 2002 $JF_{116}$ | 16.2 | 0.15 | 20060922 | 323.56289 | 25.67076 | 91.32260 | 24.88127 | 0.0451008 | 1.9118009 | 31 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 65345 | 2002 $JF_{116}$ |
| 2002 $JK_{116}$ | 15.8 | 0.15 | 20060922 | 77.04302 | 267.36048 | 253.31027 | 5.90127 | 0.1317406 | 2.5468311 | 39 | 6 | 1996–2006 | 0.55 | M-v | 1 | MPC | 02104 | 2002 $JK_{116}$ |
| 2002 $JT_{117}$ | 16.6 | 0.15 | 20060922 | 50.91547 | 149.37270 | 107.84436 | 12.07686 | 0.2041543 | 2.3865762 | 60 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 04202 | 2002 $JT_{117}$ |
| 2002 $JV_{117}$ | 14.8 | 0.15 | 20060922 | 303.67557 | 110.11025 | 78.79894 | 27.62461 | 0.2026969 | 3.1958665 | 41 | 3 | 2002–2006 | 0.62 | M-v | 2 | MPC | 94781 | 2002 $JV_{117}$ |
| 2002 $JM_{118}$ | 14.8 | 0.15 | 20060922 | 302.26619 | 118.32624 | 40.97338 | 27.30457 | 0.1829251 | 3.1712207 | 42 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 03322 | 2002 $JM_{118}$ |
| 2002 $JT_{118}$ | 15.0 | 0.15 | 20060922 | 331.10906 | 347.71326 | 150.70365 | 14.58446 | 0.2177924 | 3.1658948 | 36 | 5 | 1996–2006 | 0.71 | M-v | 1 | MPC | 87539 | 2002 $JT_{118}$ |
| 2002 $JC_{119}$ | 15.5 | 0.15 | 20060922 | 279.29188 | 66.60677 | 160.62602 | 17.03905 | 0.1821026 | 3.1486431 | 38 | 5 | 1999–2006 | 0.70 | M-v | 1 | MPC | 89293 | 2002 $JC_{119}$ |
| 2002 $JF_{119}$ | 16.3 | 0.15 | 20060922 | 69.94785 | 10.34295 | 151.04337 | 12.73812 | 0.1664049 | 2.5712279 | 34 | 2 | 2002–2006 | 0.68 | M-v | 4 | MPC | 00265 | 2002 $JF_{119}$ |
| 2002 $JE_{120}$ | 16.4 | 0.15 | 20060922 | 78.86526 | 53.44425 | 98.71147 | 14.58658 | 0.0873805 | 2.5631960 | 24 | 3 | 2000–2006 | 0.83 | M-v | 2 | MPC | 03323 | 2002 $JE_{120}$ |
| 2002 $JH_{120}$ | 16.1 | 0.15 | 20060922 | 28.60997 | 104.11684 | 111.13727 | 4.91879 | 0.0882215 | 2.6125700 | 52 | 5 | 1995–2006 | 0.67 | M-v | 1 | MPC | 00265 | 2002 $JH_{120}$ |
| 2002 $JJ_{120}$ | 16.7 | 0.15 | 20060922 | 5.40736 | 111.56274 | 113.40671 | 13.81177 | 0.1062745 | 2.6203994 | 29 | 3 | 1997–2006 | 0.67 | M-v | 3 | MPC | 00265 | 2002 $JJ_{120}$ |
| 2002 $JP_{120}$ | 16.2 | 0.15 | 20060922 | 48.03764 | 32.31932 | 149.02568 | 13.57696 | 0.1254908 | 2.5900643 | 55 | 4 | 1998–2006 | 0.53 | M-v | 3 | MPC | 00266 | 2002 $JP_{120}$ |
| 2002 $JQ_{120}$ | 17.0 | 0.15 | 20060922 | 96.22343 | 166.67899 | 98.48434 | 5.02711 | 0.1529656 | 2.2092455 | 60 | 4 | 2002–2006 | 0.68 | M-v | 1 | MPC | 75355 | 2002 $JQ_{120}$ |
| 2002 $JL_{121}$ | 14.0 | 0.15 | 20060922 | 145.94488 | 213.45311 | 146.04294 | 15.25143 | 0.0455768 | 3.1762935 | 32 | 3 | 2002–2004 | 0.55 | M-v | 3 | MPC | 72656 | 2002 $JL_{121}$ |
| 2002 $JF_{122}$ | 16.7 | 0.15 | 20060922 | 108.89164 | 262.83456 | 330.32183 | 6.08980 | 0.1277117 | 2.2080624 | 64 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 75355 | 2002 $JF_{122}$ |
| 2002 $JM_{122}$ | 14.8 | 0.15 | 20060922 | 259.02591 | 112.07904 | 147.42319 | 17.54383 | 0.1272013 | 3.1005883 | 42 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 74185 | 2002 $JM_{122}$ |
| 2002 $JA_{125}$ | 15.5 | 0.15 | 20060922 | 288.98414 | 300.30159 | 261.36025 | 3.91558 | 0.1132568 | 3.1882494 | 47 | 5 | 1998–2006 | 0.47 | M-v | 0 | MPC | 94785 | 2002 $JA_{125}$ |
| 2002 $JA_{127}$ | 17.4 | 0.15 | 20060922 | 35.63565 | 181.91486 | 120.42696 | 6.80894 | 0.1820849 | 2.2963412 | 39 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 04202 | 2002 $JA_{127}$ |
| 2002 $JD_{128}$ | 17.1 | 0.15 | 20060922 | 120.81398 | 43.67013 | 167.35947 | 5.55424 | 0.1350933 | 2.2390264 | 31 | 3 | 2002–2006 | 0.51 | M-v | 4 | MPC | 75356 | 2002 $JD_{128}$ |
| 2002 $JE_{128}$ | 16.7 | 0.15 | 20060922 | 118.89126 | 56.54887 | 153.52840 | 5.58015 | 0.0255055 | 2.2561450 | 50 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 04202 | 2002 $JE_{128}$ |
| 2002 $JG_{128}$ | 16.6 | 0.15 | 20060922 | 41.46049 | 189.30399 | 93.78274 | 7.13631 | 0.1936865 | 2.3343190 | 43 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 04202 | 2002 $JG_{128}$ |
| 2002 $JL_{129}$ | 17.0 | 0.15 | 20060922 | 47.75521 | 90.69890 | 195.52621 | 5.14206 | 0.1729653 | 2.3045205 | 64 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 03323 | 2002 $JL_{129}$ |
| 2002 $JP_{130}$ | 17.0 | 0.15 | 20060922 | 19.68390 | 124.23995 | 159.32939 | 5.08381 | 0.1808581 | 2.4405494 | 61 | 5 | 1991–2005 | 0.54 | M-v | 1 | MPC | 04202 | 2002 $JP_{130}$ |
| 2002 $JV_{131}$ | 16.3 | 0.15 | 20060922 | 332.46101 | 224.49836 | 14.14117 | 3.17539 | 0.0484080 | 2.7025852 | 55 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 02105 | 2002 $JV_{131}$ |
| 2002 $JZ_{131}$ | 16.1 | 0.15 | 20060922 | 138.57729 | 152.50958 | 348.13561 | 2.27343 | 0.1183067 | 2.3550429 | 42 | 4 | 1996–2005 | 0.59 | M-v | 1 | MPC | 77600 | 2002 $JZ_{131}$ |
| 2002 $JV_{135}$ | 17.6 | 0.15 | 20060922 | 41.25924 | 27.60723 | 250.91975 | 2.20682 | 0.1750610 | 2.3378528 | 32 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 03323 | 2002 $JV_{135}$ |
| 2002 $JA_{138}$ | 17.6 | 0.15 | 20060922 | 68.52561 | 20.05736 | 186.01358 | 0.42430 | 0.1270441 | 2.4445783 | 28 | 3 | 1999–2003 | 0.48 | M-v | 3 | MPC | 89294 | 2002 $JA_{138}$ |
| 2002 $JE_{138}$ | 17.8 | 0.15 | 20060922 | 100.87343 | 314.82685 | 286.86961 | 0.22496 | 0.1179964 | 2.2349879 | 34 | 5 | 1996–2006 | 0.24 | M-v | 0 | MPC | 75357 | 2002 $JE_{138}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $JO_{138}$ | 17.7 | 0.15 | 20060922 | 17.92606 | 221.25856 | 63.44589 | 2.11523 | 0.1781652 | 2.4197960 | 26 | 4 | 1999–2004 | 0.34 | M-v | 0 | MPC | 57867 | 2002 $JO_{138}$ |
| 2002 $JZ_{139}$ | 16.4 | 0.15 | 20060922 | 60.57930 | 141.38647 | 34.72700 | 14.70264 | 0.0771829 | 2.5984804 | 45 | 2 | 2002–2006 | 0.39 | M-v | 3 | MPC | 00268 | 2002 $JZ_{139}$ |
| 2002 $JA_{140}$ | 16.7 | 0.15 | 20060922 | 30.22954 | 46.04907 | 253.39775 | 7.32031 | 0.1379656 | 2.3113113 | 48 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 04202 | 2002 $JA_{140}$ |
| 2002 $JT_{141}$ | 16.0 | 0.15 | 20060922 | 296.85036 | 189.11714 | 30.17293 | 0.38367 | 0.1029845 | 3.0549745 | 43 | 5 | 1996–2005 | 0.43 | M-v | 0 | MPC | 69376 | 2002 $JT_{141}$ |
| 2002 $JN_{143}$ | 15.0 | 0.15 | 20060922 | 290.41419 | 193.49790 | 86.11422 | 14.35739 | 0.2005081 | 2.7394730 | 22 | 3 | 2002–2004 | 0.59 | M-v | 3 | MPC | 53059 | 2002 $JN_{143}$ |
| 2002 $JC_{144}$ | 17.1 | 0.15 | 20060922 | 32.13236 | 150.52194 | 57.55331 | 4.27489 | 0.1402376 | 2.5879891 | 50 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 02105 | 2002 $JC_{144}$ |
| 2002 $JL_{144}$ | 16.3 | 0.15 | 20060922 | 335.45709 | 182.72972 | 129.34644 | 6.66554 | 0.2925669 | 2.5905851 | 42 | 2 | 2002–2006 | 0.68 | M-v | 4 | MPC | 00268 | 2002 $JL_{144}$ |
| 2002 $JA_{145}$ | 16.7 | 0.15 | 20060922 | 78.15340 | 138.71464 | 132.75659 | 10.29334 | 0.1112337 | 2.2402304 | 50 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 75358 | 2002 $JA_{145}$ |
| 2002 $JG_{145}$ | 15.1 | 0.15 | 20060922 | 315.55749 | 15.00225 | 184.21976 | 18.06279 | 0.1621805 | 3.0938488 | 54 | 4 | 1998–2005 | 0.67 | M-v | 1 | MPC | 94788 | 2002 $JG_{145}$ |
| 2002 $JC_{146}$ | 15.4 | 0.15 | 20060922 | 347.24016 | 198.74186 | 140.41164 | 16.76740 | 0.2468290 | 2.4135166 | 63 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 02105 | 2002 $JC_{146}$ |
| 2002 $JD_{146}$ | 14.6 | 0.15 | 20060922 | 250.45464 | 107.27546 | 160.25951 | 16.55841 | 0.0698423 | 3.1982466 | 58 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 53720 | 2002 $JD_{146}$ |
| 2002 $JB_{147}$ | 16.9 | 0.15 | 20060922 | 68.42907 | 254.90147 | 63.57301 | 2.44496 | 0.1751589 | 2.1778649 | 82 | 5 | 1995–2006 | 0.37 | M-v | 0 | MPC | 75358 | 2002 $JB_{147}$ |
| 2002 $JK_{147}$ | 17.6 | 0.15 | 20060922 | 144.17481 | 150.64406 | 65.12243 | 4.71225 | 0.0926339 | 2.1878759 | 83 | 4 | 2002–2006 | 0.53 | M-v | 2 | MPC | 77601 | 2002 $JK_{147}$ |
| 2002 $JL_{149}$ | 17.1 | 0.15 | 20020506 | 267.40095 | 73.35375 | 254.64658 | 5.82185 | 0.1494258 | 2.3117440 | 7 | 1 | 16 days | 0.30 | | | MPC | | 2002 $JL_{149}$ |
| 2002 KQ | 14.5 | 0.15 | 20060922 | 258.12108 | 40.98661 | 246.55388 | 11.88690 | 0.0860000 | 3.0563828 | 57 | 3 | 2002–2004 | 0.68 | M-v | 3 | MPC | 57867 | 2002 KQ |
| 2002 $KF_1$ | 15.7 | 0.15 | 20060922 | 35.28650 | 281.26407 | 125.27233 | 23.98927 | 0.1194349 | 1.9721851 | 56 | 5 | 2000–2006 | 0.60 | M-v | 2 | MPC | 87539 | 2002 $KF_1$ |
| 2002 $KD_3$ | 17.7 | 0.15 | 20060922 | 53.30678 | 182.14233 | 56.32622 | 1.90890 | 0.1437113 | 2.4057443 | 31 | 4 | 1998–2005 | 0.46 | M-v | 1 | MPC | 53061 | 2002 $KD_3$ |
| 2002 $KL_4$ | 16.3 | 0.15 | 20060922 | 11.89404 | 12.13623 | 233.54687 | 13.57790 | 0.1358345 | 2.5811939 | 31 | 3 | 1995–2006 | 0.55 | M-v | 3 | MPC | 00270 | 2002 $KL_4$ |
| 2002 $KM_4$ | 14.9 | 0.15 | 20060922 | 203.49018 | 162.45678 | 73.52955 | 3.04359 | 0.1860442 | 3.9453317 | 27 | 5 | 1994–2005 | 0.40 | M-v | 0 | MPC | 89295 | 2002 $KM_4$ |
| 2002 $KU_4$ | 16.8 | 0.15 | 20060922 | 66.48097 | 29.64052 | 231.74098 | 6.31722 | 0.1117819 | 2.3315121 | 53 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04202 | 2002 $KU_4$ |
| 2002 $KW_4$ | 16.9 | 0.15 | 20060922 | 81.23387 | 104.00555 | 141.54539 | 2.16099 | 0.1762038 | 2.3240523 | 64 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 04202 | 2002 $KW_4$ |
| 2002 $KL_5$ | 16.1 | 0.15 | 20060922 | 331.24954 | 28.76021 | 240.50820 | 10.54548 | 0.1618248 | 2.7272040 | 27 | 2 | 2002–2003 | 0.45 | M-v | 3 | MPC | 65345 | 2002 $KL_5$ |
| 2002 $KU_6$ | 16.7 | 0.15 | 20060922 | 50.97597 | 147.85540 | 130.15620 | 14.36076 | 0.2614760 | 2.3411477 | 50 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 75360 | 2002 $KU_6$ |
| 2002 $KQ_9$ | 14.3 | 0.15 | 20060922 | 257.28823 | 112.06831 | 155.09629 | 18.90025 | 0.1472621 | 3.2082291 | 42 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 97604 | 2002 $KQ_9$ |
| 2002 $KE_{10}$ | 15.0 | 0.15 | 20060922 | 211.27590 | 213.86456 | 96.13360 | 4.72568 | 0.1864095 | 3.1977524 | 62 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 97604 | 2002 $KE_{10}$ |
| 2002 $KW_{10}$ | 17.2 | 0.15 | 20060922 | 9.51457 | 67.51358 | 215.04906 | 3.02608 | 0.1589260 | 2.4777832 | 36 | 5 | 1991–2005 | 0.47 | M-v | 1 | MPC | 48238 | 2002 $KW_{10}$ |
| 2002 $KY_{11}$ | 16.3 | 0.15 | 20060922 | 280.10313 | 214.12149 | 109.89178 | 2.28181 | 0.0977109 | 2.6700631 | 64 | 5 | 2001–2006 | 0.55 | M-v | 0 | MPC | 02106 | 2002 $KY_{11}$ |
| 2002 $KH_{13}$ | 17.5 | 0.15 | 20060922 | 138.19157 | 127.54392 | 88.62050 | 2.39523 | 0.0906617 | 2.2010697 | 36 | 6 | 1995–2006 | 0.38 | M-v | 1 | MPC | 75360 | 2002 $KH_{13}$ |
| 2002 $KM_{13}$ | 16.1 | 0.15 | 20060922 | 64.11806 | 105.18522 | 49.95818 | 4.16667 | 0.0184030 | 2.6803017 | 62 | 5 | 1993–2006 | 0.39 | M-v | 1 | MPC | 02106 | 2002 $KM_{13}$ |
| 2002 $KH_{14}$ | 16.6 | 0.15 | 20060922 | 15.24755 | 44.52331 | 190.15137 | 14.93518 | 0.0970274 | 2.6123800 | 49 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 02106 | 2002 $KH_{14}$ |
| 2002 $KU_{15}$ | 17.1 | 0.15 | 20060922 | 334.95839 | 45.02113 | 226.17887 | 3.28651 | 0.1895398 | 2.6723064 | 22 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 00272 | 2002 $KU_{15}$ |
| 2002 LO | 14.6 | 0.15 | 20060922 | 240.75227 | 74.51909 | 230.01679 | 25.29850 | 0.2683596 | 3.1581569 | 50 | 2 | 2002–2003 | 0.43 | M-v | 3 | MPC | 57868 | 2002 LO |
| 2002 LP | 16.6 | 0.15 | 20060922 | 33.97366 | 111.04806 | 92.73656 | 12.63035 | 0.2067309 | 2.6175638 | 42 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 00272 | 2002 LP |
| 2002 $LW_1$ | 16.6 | 0.15 | 20060922 | 339.72150 | 137.06101 | 140.43731 | 3.09467 | 0.1716464 | 2.6479015 | 35 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 00273 | 2002 $LW_1$ |
| 2002 $LM_2$ | 16.9 | 0.15 | 20060922 | 76.90683 | 179.29206 | 121.28672 | 6.53125 | 0.2368654 | 2.2140542 | 40 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 34011 | 2002 $LM_2$ |
| 2002 $LS_2$ | 16.8 | 0.15 | 20060922 | 117.02953 | 51.62045 | 233.51742 | 7.63638 | 0.3108443 | 2.1797326 | 124 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 87539 | 2002 $LS_2$ |
| 2002 $LQ_3$ | 16.7 | 0.15 | 20060922 | 10.03726 | 156.26623 | 99.05372 | 9.61761 | 0.3354568 | 2.5933625 | 74 | 2 | 2002–2006 | 0.65 | M-v | 2 | MPC | 00273 | 2002 $LQ_3$ |
| 2002 $LV_5$ | 17.4 | 0.15 | 20060922 | 79.62044 | 239.74342 | 37.14435 | 1.61421 | 0.1812147 | 2.2435239 | 78 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 75362 | 2002 $LV_5$ |
| 2002 $LG_6$ | 17.2 | 0.15 | 20060922 | 72.90635 | 164.32003 | 125.46614 | 5.05584 | 0.1397303 | 2.2269799 | 55 | 7 | 1994–2006 | 0.50 | M-v | 1 | MPC | 77602 | 2002 $LG_6$ |
| 2002 $LE_7$ | 17.2 | 0.15 | 20060922 | 35.37773 | 146.92010 | 158.17140 | 5.39603 | 0.2371835 | 2.3365447 | 49 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 75362 | 2002 $LE_7$ |
| 2002 $LW_7$ | 16.4 | 0.15 | 20060922 | 32.37936 | 196.41561 | 169.20734 | 1.82537 | 0.1975858 | 2.1689901 | 71 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 77602 | 2002 $LW_7$ |
| 2002 $LF_8$ | 16.3 | 0.15 | 20060922 | 31.99772 | 192.61645 | 115.65338 | 5.34500 | 0.2391399 | 2.3443475 | 83 | 2 | 2002–2006 | 0.34 | M-v | 3 | MPC | 03324 | 2002 $LF_8$ |
| 2002 $LW_8$ | 17.6 | 0.15 | 20060922 | 41.37076 | 108.85626 | 201.25938 | 5.23377 | 0.2401641 | 2.3164231 | 59 | 4 | 1999–2006 | 0.46 | M-v | 0 | MPC | 48239 | 2002 $LW_8$ |
| 2002 $LX_8$ | 16.3 | 0.15 | 20060922 | 115.33665 | 96.27100 | 125.72469 | 5.20851 | 0.1443263 | 2.2653712 | 80 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 77602 | 2002 $LX_8$ |
| 2002 $LE_{10}$ | 16.7 | 0.15 | 20060922 | 109.45408 | 92.16739 | 125.79738 | 6.05263 | 0.1131432 | 2.3067836 | 55 | 4 | 2002–2006 | 0.72 | M-v | 1 | MPC | 04203 | 2002 $LE_{10}$ |
| 2002 $LR_{10}$ | 16.7 | 0.15 | 20060922 | 80.03348 | 59.79117 | 182.95839 | 3.23704 | 0.1413144 | 2.3428902 | 34 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 04203 | 2002 $LR_{10}$ |
| 2002 $LA_{12}$ | 16.2 | 0.15 | 20060922 | 92.36508 | 123.07655 | 108.59679 | 11.08079 | 0.2162951 | 2.3391025 | 45 | 4 | 2002–2006 | 0.66 | M-v | 1 | MPC | 04203 | 2002 $LA_{12}$ |
| 2002 $LK_{12}$ | 16.5 | 0.15 | 20060922 | 66.41168 | 208.44992 | 104.04755 | 7.56059 | 0.2137060 | 2.2327895 | 51 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 77602 | 2002 $LK_{12}$ |
| 2002 $LM_{12}$ | 17.0 | 0.15 | 20060922 | 80.10862 | 144.00749 | 133.76470 | 4.61623 | 0.1557980 | 2.2640945 | 48 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 77602 | 2002 $LM_{12}$ |
| 2002 $LD_{14}$ | 16.8 | 0.15 | 20060922 | 34.32152 | 273.27524 | 22.29829 | 2.61070 | 0.1980864 | 2.3655471 | 79 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04203 | 2002 $LD_{14}$ |
| 2002 $LO_{15}$ | 16.6 | 0.15 | 20060922 | 61.06689 | 307.09614 | 277.08869 | 3.50988 | 0.2346422 | 2.4496001 | 26 | 3 | 1998–2004 | 0.50 | M-v | 4 | MPC | 31777 | 2002 $LO_{15}$ |
| 2002 $LQ_{15}$ | 16.2 | 0.15 | 20060922 | 20.38871 | 151.13780 | 69.49561 | 14.77501 | 0.1990234 | 2.6509536 | 55 | 3 | 2002–2006 | 0.61 | M-v | 3 | MPC | 02106 | 2002 $LQ_{15}$ |
| 2002 $LR_{15}$ | 16.3 | 0.15 | 20060922 | 12.95745 | 248.40613 | 350.67974 | 1.08845 | 0.1526175 | 2.6318216 | 64 | 6 | 1993–2006 | 0.55 | M-v | 1 | MPC | 00275 | 2002 $LR_{15}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $LG_{17}$ | 17.4 | 0.15 | 20060922 | 97.91264 | 186.24361 | 117.16985 | 2.37759 | 0.1933422 | 2.1332001 | 36 | 4 | 1998–2006 | 0.70 | M-v | 2 | MPC | 87540 | 2002 $LG_{17}$ |
| 2002 $LR_{17}$ | 16.4 | 0.15 | 20060922 | 60.37381 | 39.53206 | 196.77471 | 2.36769 | 0.1720965 | 2.4262783 | 33 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 04203 | 2002 $LR_{17}$ |
| 2002 $LB_{19}$ | 15.8 | 0.15 | 20060922 | 8.16919 | 206.79456 | 111.81499 | 6.15221 | 0.2136441 | 2.4267252 | 75 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 04203 | 2002 $LB_{19}$ |
| 2002 $LE_{19}$ | 16.5 | 0.15 | 20060922 | 358.28093 | 84.84917 | 258.47818 | 7.82534 | 0.2756302 | 2.4012087 | 50 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 04203 | 2002 $LE_{19}$ |
| 2002 $LO_{19}$ | 14.8 | 0.15 | 20060922 | 322.19990 | 323.12441 | 252.36963 | 11.91544 | 0.1605291 | 3.0395626 | 30 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 97604 | 2002 $LO_{19}$ |
| 2002 $LU_{19}$ | 16.5 | 0.15 | 20060922 | 41.54972 | 7.00739 | 337.66744 | 2.90582 | 0.2643481 | 2.2822879 | 38 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 77603 | 2002 $LU_{19}$ |
| 2002 $LH_{20}$ | 16.2 | 0.15 | 20060922 | 86.58505 | 216.29973 | 82.01276 | 7.54167 | 0.2159117 | 2.2352208 | 90 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 77603 | 2002 $LH_{20}$ |
| 2002 $LQ_{20}$ | 17.1 | 0.15 | 20060922 | 101.32995 | 208.81971 | 78.02345 | 6.63138 | 0.2706351 | 2.2139144 | 68 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 75365 | 2002 $LQ_{20}$ |
| 2002 $LR_{20}$ | 16.9 | 0.15 | 20060922 | 77.29686 | 9.12204 | 260.60304 | 7.48663 | 0.2490976 | 2.3229176 | 52 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 77603 | 2002 $LR_{20}$ |
| 2002 $LY_{21}$ | 16.9 | 0.15 | 20060922 | 268.77893 | 284.35876 | 252.31046 | 18.24323 | 0.0808811 | 1.9595964 | 62 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 77603 | 2002 $LY_{21}$ |
| 2002 $LK_{22}$ | 16.4 | 0.15 | 20060922 | 54.57815 | 87.48113 | 253.83650 | 3.25030 | 0.2055837 | 2.1825248 | 40 | 4 | 1999–2006 | 0.35 | M-v | 1 | MPC | 57869 | 2002 $LK_{22}$ |
| 2002 $LD_{23}$ | 16.8 | 0.15 | 20060922 | 73.50794 | 123.93302 | 166.39966 | 5.26677 | 0.2688716 | 2.2850625 | 57 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 75365 | 2002 $LD_{23}$ |
| 2002 $LT_{23}$ | 16.5 | 0.15 | 20060922 | 83.77030 | 200.69808 | 98.70733 | 8.14768 | 0.2220760 | 2.2574329 | 57 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 75365 | 2002 $LT_{23}$ |
| 2002 $LZ_{23}$ | 16.3 | 0.15 | 20060922 | 114.46036 | 333.33342 | 280.59968 | 5.89332 | 0.1627113 | 2.2344779 | 59 | 5 | 2001–2006 | 0.64 | M-v | 1 | MPC | 75366 | 2002 $LZ_{23}$ |
| 2002 $LD_{24}$ | 16.4 | 0.15 | 20060922 | 83.35761 | 144.85023 | 157.88670 | 4.82878 | 0.2040424 | 2.2580172 | 127 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 75366 | 2002 $LD_{24}$ |
| 2002 $LZ_{24}$ | 16.8 | 0.15 | 20060922 | 320.64116 | 128.16177 | 174.90418 | 3.89284 | 0.1814291 | 2.6453754 | 33 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 02107 | 2002 $LZ_{24}$ |
| 2002 $LH_{25}$ | 16.0 | 0.15 | 20060922 | 323.95621 | 117.94044 | 177.37072 | 13.93054 | 0.1858265 | 2.6347262 | 46 | 4 | 1993–2006 | 0.79 | M-v | 1 | MPC | 04203 | 2002 $LH_{25}$ |
| 2002 $LZ_{25}$ | 16.0 | 0.15 | 20060922 | 67.87049 | 44.05293 | 293.99164 | 5.21251 | 0.1914580 | 2.1319937 | 53 | 5 | 2001–2006 | 0.58 | M-v | 1 | MPC | 77603 | 2002 $LZ_{25}$ |
| 2002 $LM_{26}$ | 17.1 | 0.15 | 20060922 | 80.06881 | 16.00060 | 238.11297 | 4.85299 | 0.1532946 | 2.3080240 | 40 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04203 | 2002 $LM_{26}$ |
| 2002 $LA_{27}$ | 14.5 | 0.15 | 20060922 | 234.12076 | 112.33917 | 222.30872 | 12.59417 | 0.3005670 | 3.1603236 | 108 | 3 | 1997–2004 | 0.61 | M-v | 1 | MPC | 57869 | 2002 $LA_{27}$ |
| 2002 $LD_{27}$ | 15.9 | 0.15 | 20060922 | 30.06583 | 96.73545 | 224.34694 | 7.33281 | 0.2861425 | 2.4015821 | 126 | 2 | 2002–2006 | 0.53 | M-v | 2 | MPC | 03325 | 2002 $LD_{27}$ |
| 2002 $LL_{27}$ | 16.3 | 0.15 | 20060922 | 110.18834 | 145.61698 | 98.13105 | 8.87391 | 0.1752797 | 2.2985342 | 52 | 3 | 2002–2006 | 0.66 | M-v | 3 | MPC | 75367 | 2002 $LL_{27}$ |
| 2002 $LT_{27}$ | 17.1 | 0.15 | 20060922 | 51.50704 | 117.45513 | 170.67873 | 4.70331 | 0.1199443 | 2.2988826 | 64 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 04203 | 2002 $LT_{27}$ |
| 2002 $LH_{28}$ | 16.7 | 0.15 | 20060922 | 30.18064 | 109.90635 | 180.86856 | 4.12774 | 0.1749964 | 2.4063441 | 45 | 4 | 1998–2006 | 0.38 | M-v | 2 | MPC | 03325 | 2002 $LH_{28}$ |
| 2002 $LG_{29}$ | 14.6 | 0.15 | 20060922 | 328.33983 | 249.69541 | 86.07342 | 12.70437 | 0.2094109 | 2.6369140 | 80 | 4 | 2002–2006 | 0.64 | M-v | 1 | MPC | 02107 | 2002 $LG_{29}$ |
| 2002 $LQ_{29}$ | 17.0 | 0.15 | 20060922 | 13.92092 | 125.34017 | 100.42849 | 8.45147 | 0.2318635 | 2.6400354 | 32 | 2 | 2002–2006 | 0.45 | M-v | 3 | MPC | 00278 | 2002 $LQ_{29}$ |
| 2002 $LM_{30}$ | 17.3 | 0.15 | 20060922 | 82.49225 | 83.99531 | 193.45173 | 5.42794 | 0.1080020 | 2.2140234 | 55 | 4 | 1998–2006 | 0.34 | M-v | 0 | MPC | 85536 | 2002 $LM_{30}$ |
| 2002 $LJ_{31}$ | 17.4 | 0.15 | 20060922 | 81.62252 | 206.56210 | 107.86594 | 6.64167 | 0.2270856 | 2.2236837 | 54 | 5 | 1994–2006 | 0.37 | M-v | 1 | MPC | 77603 | 2002 $LJ_{31}$ |
| 2002 $LP_{31}$ | 17.1 | 0.15 | 20060922 | 56.63167 | 57.98342 | 209.09074 | 1.31242 | 0.2273273 | 2.3538592 | 63 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04203 | 2002 $LP_{31}$ |
| 2002 $LD_{34}$ | 16.3 | 0.15 | 20060922 | 328.56814 | 156.94872 | 142.73115 | 6.91532 | 0.1553453 | 2.6188114 | 38 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 02107 | 2002 $LD_{34}$ |
| 2002 $LP_{35}$ | 17.7 | 0.15 | 20060922 | 36.10027 | 162.87656 | 124.92166 | 5.83608 | 0.2248639 | 2.4038039 | 41 | 5 | 1991–2006 | 0.39 | M-v | 1 | MPC | 04203 | 2002 $LP_{35}$ |
| 2002 $LH_{36}$ | 16.2 | 0.15 | 20060922 | 98.76248 | 117.93338 | 172.81818 | 5.85920 | 0.1884597 | 2.2292420 | 81 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 75370 | 2002 $LH_{36}$ |
| 2002 $LG_{37}$ | 16.0 | 0.15 | 20060922 | 72.90076 | 54.63462 | 238.17256 | 6.06840 | 0.1604748 | 2.3049601 | 95 | 5 | 1998–2006 | 0.41 | M-v | 1 | MPC | 04203 | 2002 $LG_{37}$ |
| 2002 $LV_{38}$ | 16.8 | 0.15 | 20060922 | 66.65342 | 97.51645 | 198.78923 | 4.68149 | 0.2907220 | 2.3143009 | 56 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03326 | 2002 $LV_{38}$ |
| 2002 $LW_{38}$ | 16.5 | 0.15 | 20060922 | 58.52498 | 186.26627 | 120.68389 | 7.90773 | 0.1867721 | 2.2644573 | 56 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 77604 | 2002 $LW_{38}$ |
| 2002 $LM_{40}$ | 17.2 | 0.15 | 20060922 | 72.41517 | 156.16990 | 128.99924 | 7.30001 | 0.1714551 | 2.2680643 | 38 | 5 | 1996–2006 | 0.80 | M-v | 1 | MPC | 89297 | 2002 $LM_{40}$ |
| 2002 $LO_{40}$ | 16.3 | 0.15 | 20060922 | 62.65123 | 60.02928 | 223.43871 | 9.90285 | 0.2329985 | 2.3153761 | 67 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 85537 | 2002 $LO_{40}$ |
| 2002 $LS_{40}$ | 16.5 | 0.15 | 20060922 | 102.96717 | 82.22142 | 167.87032 | 7.01256 | 0.1149923 | 2.2543285 | 84 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 04203 | 2002 $LS_{40}$ |
| 2002 $LT_{42}$ | 16.1 | 0.15 | 20060922 | 343.58129 | 184.91692 | 165.47923 | 8.33614 | 0.2438419 | 2.4580683 | 42 | 5 | 1987–2006 | 0.51 | M-v | 1 | MPC | 04203 | 2002 $LT_{42}$ |
| 2002 $LD_{43}$ | 16.5 | 0.15 | 20060922 | 73.32350 | 129.81551 | 184.99705 | 7.18286 | 0.1658663 | 2.2425827 | 67 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 89297 | 2002 $LD_{43}$ |
| 2002 $LL_{43}$ | 14.9 | 0.15 | 20060922 | 313.52637 | 105.34611 | 249.03488 | 13.84504 | 0.1548678 | 2.6419367 | 47 | 4 | 1998–2005 | 0.55 | M-v | 1 | MPC | 35580 | 2002 $LL_{43}$ |
| 2002 $LP_{43}$ | 14.9 | 0.15 | 20060922 | 268.40194 | 169.64528 | 170.33999 | 13.98727 | 0.2857921 | 3.0494451 | 91 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 00281 | 2002 $LP_{43}$ |
| 2002 $LG_{44}$ | 15.5 | 0.15 | 20060922 | 47.09529 | 292.21614 | 246.28123 | 15.03518 | 0.0933158 | 2.6828515 | 47 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 02107 | 2002 $LG_{44}$ |
| 2002 $LD_{47}$ | 16.7 | 0.15 | 20060922 | 50.75829 | 139.23540 | 159.24175 | 8.30631 | 0.2139687 | 2.2958272 | 97 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 75372 | 2002 $LD_{47}$ |
| 2002 $LN_{49}$ | 16.3 | 0.15 | 20060922 | 23.71789 | 112.29418 | 206.80029 | 5.88777 | 0.1490174 | 2.4278173 | 87 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 04204 | 2002 $LN_{49}$ |
| 2002 $LY_{49}$ | 17.1 | 0.15 | 20060922 | 122.39895 | 112.29226 | 73.91358 | 5.88574 | 0.0807507 | 2.3534672 | 22 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 33627 | 2002 $LY_{49}$ |
| 2002 $LA_{50}$ | 16.1 | 0.15 | 20060922 | 65.35681 | 13.95775 | 163.56583 | 2.10304 | 0.1575968 | 2.5927342 | 55 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 00282 | 2002 $LA_{50}$ |
| 2002 $LE_{50}$ | 17.2 | 0.15 | 20060922 | 95.67700 | 332.93221 | 314.27095 | 4.96868 | 0.2571342 | 2.2437283 | 70 | 6 | 1999–2006 | 0.44 | M-v | 1 | MPC | 77604 | 2002 $LE_{50}$ |
| 2002 $LT_{51}$ | 15.9 | 0.15 | 20060922 | 285.18224 | 101.08977 | 218.83173 | 10.96357 | 0.2681546 | 2.8054967 | 46 | 3 | 1998–2003 | 0.70 | M-v | 2 | MPC | 57870 | 2002 $LT_{51}$ |
| 2002 $LX_{51}$ | 17.2 | 0.15 | 20060922 | 42.49922 | 157.88827 | 122.30374 | 7.41111 | 0.1256596 | 2.3604388 | 43 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 04204 | 2002 $LX_{51}$ |
| 2002 $LZ_{51}$ | 17.2 | 0.15 | 20060922 | 7.01314 | 137.37061 | 111.41787 | 6.81466 | 0.2088244 | 2.6153570 | 38 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 00282 | 2002 $LZ_{51}$ |
| 2002 $LR_{52}$ | 16.5 | 0.15 | 20060922 | 8.80755 | 182.42570 | 143.40121 | 9.52432 | 0.2571056 | 2.3990721 | 77 | 2 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03326 | 2002 $LR_{52}$ |
| 2002 $LZ_{52}$ | 15.1 | 0.15 | 20060922 | 208.78513 | 254.59681 | 71.50020 | 18.63545 | 0.1705894 | 3.1696067 | 26 | 3 | 2000–2004 | 0.51 | M-v | 2 | MPC | 89298 | 2002 $LZ_{52}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $LL_{54}$ | 16.7 | 0.15 | 20060922 | 69.60998 | 238.17940 | 25.62750 | 3.03025 | 0.1733085 | 2.3830194 | 51 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 04204 | 2002 $LL_{54}$ |
| 2002 $LO_{55}$ | 16.4 | 0.15 | 20060922 | 120.17527 | 192.72482 | 91.49591 | 6.44647 | 0.1764952 | 2.1791404 | 75 | 5 | 1999–2006 | 0.55 | M-v | 2 | MPC | 87540 | 2002 $LO_{55}$ |
| 2002 $LD_{56}$ | 14.1 | 0.15 | 20060922 | 288.42409 | 117.25197 | 137.43765 | 18.86118 | 0.3207754 | 3.0793327 | 71 | 3 | 2001–2003 | 0.57 | M-v | 2 | MPC | 53723 | 2002 $LD_{56}$ |
| 2002 $LE_{56}$ | 14.7 | 0.15 | 20060922 | 269.08539 | 112.96985 | 181.83333 | 16.72387 | 0.2938245 | 3.1006596 | 52 | 3 | 2001–2003 | 0.60 | M-v | 3 | MPC | 57871 | 2002 $LE_{56}$ |
| 2002 $LL_{57}$ | 16.9 | 0.15 | 20060922 | 281.53087 | 163.26780 | 171.23343 | 9.57266 | 0.1639268 | 2.7181557 | 28 | 4 | 1998–2003 | 0.44 | M-v | 0 | MPC | 61230 | 2002 $LL_{57}$ |
| 2002 $LV_{57}$ | 16.2 | 0.15 | 20060922 | 42.79495 | 74.92964 | 266.54418 | 2.56089 | 0.2492249 | 2.3271486 | 99 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 77605 | 2002 $LV_{57}$ |
| 2002 $LC_{58}$ | 15.0 | 0.15 | 20060922 | 339.06636 | 112.47272 | 228.38618 | 29.15367 | 0.4233850 | 2.7459500 | 156 | 4 | 1983–2006 | 0.56 | M-v | 1 | MPC | 02108 | 2002 $LC_{58}$ |
| 2002 $LP_{60}$ | 16.9 | 0.15 | 20060922 | 97.59573 | 234.00452 | 4.31115 | 2.16219 | 0.1636042 | 2.3524590 | 48 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 75375 | 2002 $LP_{60}$ |
| 2002 $LO_{61}$ | 15.5 | 0.15 | 20060922 | 331.86328 | 30.73387 | 158.61579 | 10.04043 | 0.0422181 | 3.1647663 | 25 | 4 | 1992–2002 | 0.37 | M-v | 0 | MPC | 00284 | 2002 $LO_{61}$ |
| 2002 $LU_{61}$ | 17.6 | 0.15 | 20060922 | 96.80351 | 85.20127 | 190.87868 | 7.36658 | 0.2341780 | 2.2049766 | 37 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 00284 | 2002 $LU_{61}$ |
| 2002 $MK_{1}$ | 16.1 | 0.15 | 20060922 | 253.93500 | 91.51597 | 149.04881 | 23.36509 | 0.0658341 | 1.8967469 | 65 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 90159 | 2002 $MK_{1}$ |
| 2002 $MU_{1}$ | 16.3 | 0.15 | 20060922 | 99.19396 | 158.81477 | 88.03962 | 7.89347 | 0.0671916 | 2.2637809 | 62 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 75376 | 2002 $MU_{1}$ |
| 2002 $MA_{2}$ | 17.1 | 0.15 | 20060922 | 65.44655 | 50.72031 | 260.61783 | 4.69298 | 0.2207479 | 2.2830005 | 42 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 75377 | 2002 $MA_{2}$ |
| 2002 $MB_{2}$ | 16.1 | 0.15 | 20060922 | 25.59688 | 174.50914 | 140.82088 | 1.80202 | 0.1743901 | 2.4181976 | 139 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04204 | 2002 $MB_{2}$ |
| 2002 $MP_{2}$ | 16.6 | 0.15 | 20060922 | 70.49820 | 61.69372 | 265.64632 | 4.77167 | 0.2079656 | 2.1594105 | 37 | 5 | 1993–2006 | 0.34 | M-v | 1 | MPC | 04204 | 2002 $MP_{2}$ |
| 2002 $MK_{4}$ | 17.6 | 0.15 | 20060922 | 121.47421 | 47.74237 | 217.83334 | 5.19808 | 0.1559698 | 2.2082135 | 50 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 75377 | 2002 $MK_{4}$ |
| 2002 $MD_{5}$ | 17.3 | 0.15 | 20060922 | 71.35231 | 107.95653 | 157.96231 | 3.03222 | 0.1495554 | 2.3856558 | 53 | 6 | 1994–2006 | 0.38 | M-v | 0 | MPC | 02108 | 2002 $MD_{5}$ |
| 2002 $MJ_{5}$ | 16.5 | 0.15 | 20060922 | 354.43523 | 210.35004 | 109.36962 | 6.68425 | 0.2962997 | 2.5756708 | 26 | 1 | 76 days | 0.83 | M-v | 5 | MPC | | 2002 $MJ_{5}$ |
| 2002 NJ | 17.2 | 0.15 | 20060922 | 49.96475 | 139.46107 | 193.40517 | 3.20697 | 0.2486906 | 2.2991005 | 63 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 87540 | 2002 NJ |
| 2002 $NG_{1}$ | 16.7 | 0.15 | 20060922 | 97.21619 | 111.61271 | 169.48952 | 5.56184 | 0.1733396 | 2.2620641 | 67 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 75378 | 2002 $NG_{1}$ |
| 2002 $NW_{1}$ | 16.8 | 0.15 | 20060922 | 40.47445 | 174.12993 | 128.62109 | 5.72556 | 0.1975931 | 2.4040757 | 41 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03327 | 2002 $NW_{1}$ |
| 2002 $NF_{2}$ | 17.0 | 0.15 | 20060922 | 39.88222 | 70.18142 | 211.20713 | 1.37354 | 0.1949191 | 2.4646172 | 62 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 03327 | 2002 $NF_{2}$ |
| 2002 $NE_{3}$ | 15.6 | 0.15 | 20060922 | 266.41115 | 326.49133 | 345.12354 | 2.90724 | 0.1720509 | 3.1106199 | 32 | 4 | 1997–2006 | 0.39 | M-v | 0 | MPC | 02109 | 2002 $NE_{3}$ |
| 2002 $NU_{3}$ | 16.5 | 0.15 | 20060922 | 51.49943 | 90.96281 | 234.84003 | 9.52478 | 0.2388643 | 2.3260951 | 108 | 3 | 1998–2006 | 0.46 | M-v | 2 | MPC | 38339 | 2002 $NU_{3}$ |
| 2002 $NY_{3}$ | 17.6 | 0.15 | 20060922 | 93.15328 | 106.87393 | 162.85376 | 3.09486 | 0.1601374 | 2.2831143 | 52 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75379 | 2002 $NY_{3}$ |
| 2002 $NC_{5}$ | 15.9 | 0.15 | 20060922 | 2.70439 | 95.50448 | 181.80298 | 1.60811 | 0.0427862 | 2.6765406 | 39 | 5 | 1994–2005 | 0.32 | M-v | 0 | MPC | 04204 | 2002 $NC_{5}$ |
| 2002 $NR_{5}$ | 17.7 | 0.15 | 20060922 | 48.88794 | 170.23687 | 131.97314 | 3.50649 | 0.1957849 | 2.3742670 | 32 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 75379 | 2002 $NR_{5}$ |
| 2002 $NK_{6}$ | 16.2 | 0.15 | 20060922 | 7.38705 | 27.94756 | 286.56815 | 5.04164 | 0.0676095 | 2.5181455 | 56 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 04204 | 2002 $NK_{6}$ |
| 2002 $NP_{6}$ | 17.1 | 0.15 | 20060922 | 19.16629 | 167.99376 | 160.56603 | 1.48755 | 0.1825921 | 2.4325598 | 80 | 4 | 1991–2006 | 0.46 | M-v | 1 | MPC | 04204 | 2002 $NP_{6}$ |
| 2002 $NQ_{6}$ | 17.6 | 0.15 | 20060922 | 12.76971 | 198.70559 | 157.98217 | 1.76686 | 0.2037718 | 2.3820168 | 53 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 03328 | 2002 $NQ_{6}$ |
| 2002 $NV_{6}$ | 17.3 | 0.15 | 20060922 | 7.77989 | 92.21038 | 256.01422 | 1.49620 | 0.1981802 | 2.4268978 | 80 | 2 | 2002–2006 | 0.40 | M-v | 3 | MPC | 03328 | 2002 $NV_{6}$ |
| 2002 $NL_{7}$ | 16.8 | 0.15 | 20060922 | 45.12648 | 192.38667 | 90.60809 | 5.46638 | 0.1955888 | 2.4337480 | 53 | 3 | 1998–2006 | 0.43 | M-v | 3 | MPC | 03328 | 2002 $NL_{7}$ |
| 2002 $NS_{7}$ | 16.9 | 0.15 | 20060922 | 70.36508 | 5.06729 | 286.40230 | 25.11245 | 0.2153510 | 2.3214962 | 26 | 1 | 61 days | 0.58 | M-v | 4 | MPC | | 2002 $NS_{7}$ |
| 2002 $NC_{9}$ | 16.6 | 0.15 | 20060922 | 47.12918 | 229.27241 | 83.78476 | 4.84319 | 0.2549601 | 2.3450894 | 56 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 33645 | 2002 $NC_{9}$ |
| 2002 $NN_{9}$ | 16.4 | 0.15 | 20060922 | 86.05013 | 23.92838 | 247.54088 | 4.95126 | 0.1507072 | 2.3022578 | 48 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 75381 | 2002 $NN_{9}$ |
| 2002 $NQ_{9}$ | 16.1 | 0.15 | 20060922 | 333.77502 | 222.52771 | 147.86550 | 6.75926 | 0.2431035 | 2.4775196 | 60 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 04204 | 2002 $NQ_{9}$ |
| 2002 $NX_{10}$ | 16.7 | 0.15 | 20060922 | 54.64153 | 146.72641 | 129.88055 | 2.99698 | 0.1881135 | 2.4093570 | 68 | 6 | 1994–2006 | 0.58 | M-v | 1 | MPC | 04204 | 2002 $NX_{10}$ |
| 2002 $NY_{10}$ | 17.0 | 0.15 | 20060922 | 76.11745 | 230.65338 | 118.10052 | 5.03705 | 0.2156987 | 2.1655725 | 62 | 6 | 1996–2006 | 0.47 | M-v | 1 | MPC | 87540 | 2002 $NY_{10}$ |
| 2002 $NB_{11}$ | 16.6 | 0.15 | 20060922 | 88.48769 | 19.75629 | 268.57558 | 4.63282 | 0.2135693 | 2.2565685 | 68 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 77606 | 2002 $NB_{11}$ |
| 2002 $NM_{11}$ | 16.7 | 0.15 | 20060922 | 343.41928 | 178.69758 | 118.61640 | 4.62082 | 0.2526484 | 2.6738679 | 38 | 3 | 2001–2006 | 0.54 | M-v | 4 | MPC | 00286 | 2002 $NM_{11}$ |
| 2002 $NB_{12}$ | 14.4 | 0.15 | 20060922 | 163.18099 | 118.36002 | 287.18155 | 7.42725 | 0.0988874 | 3.2312337 | 87 | 4 | 1997–2005 | 0.54 | M-v | 0 | MPC | 74190 | 2002 $NB_{12}$ |
| 2002 $NF_{13}$ | 17.3 | 0.15 | 20060922 | 65.37229 | 191.21343 | 108.31191 | 3.31543 | 0.2332126 | 2.3221050 | 43 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 69379 | 2002 $NF_{13}$ |
| 2002 $NR_{13}$ | 15.9 | 0.15 | 20060922 | 2.90843 | 71.17358 | 280.01840 | 5.90016 | 0.1262708 | 2.4113506 | 105 | 4 | 1997–2006 | 0.46 | M-v | 2 | MPC | 04204 | 2002 $NR_{13}$ |
| 2002 $NN_{15}$ | 17.0 | 0.15 | 20060922 | 75.98427 | 240.83220 | 67.18465 | 6.65591 | 0.2021869 | 2.2654896 | 51 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 00287 | 2002 $NN_{15}$ |
| 2002 $NR_{15}$ | 16.1 | 0.15 | 20060922 | 356.19840 | 15.54047 | 335.99957 | 6.21635 | 0.1470502 | 2.4190695 | 119 | 5 | 1991–2006 | 0.52 | M-v | 1 | MPC | 04204 | 2002 $NR_{15}$ |
| 2002 $NS_{15}$ | 15.9 | 0.15 | 20060922 | 245.54877 | 296.68750 | 57.50176 | 5.49445 | 0.2680228 | 3.0744523 | 24 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 00287 | 2002 $NS_{15}$ |
| 2002 $NC_{16}$ | 17.0 | 0.15 | 20060922 | 10.94819 | 197.86676 | 123.17589 | 3.23209 | 0.1886562 | 2.4592480 | 39 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 03329 | 2002 $NC_{16}$ |
| 2002 $ND_{16}$ | 16.7 | 0.15 | 20060922 | 39.99963 | 24.91331 | 311.15979 | 2.73033 | 0.1420729 | 2.2934971 | 79 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 57872 | 2002 $ND_{16}$ |
| 2002 $NK_{17}$ | 14.3 | 0.15 | 20060922 | 243.94394 | 88.96402 | 253.15777 | 24.01441 | 0.2872104 | 3.1963261 | 21 | 1 | 103 days | 0.30 | M-v | 4 | MPC | 38339 | 2002 $NK_{17}$ |
| 2002 $NS_{17}$ | 16.8 | 0.15 | 20060922 | 59.90982 | 18.33246 | 305.79063 | 5.46960 | 0.2772279 | 2.2980336 | 69 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 85543 | 2002 $NS_{17}$ |
| 2002 $NG_{18}$ | 16.4 | 0.15 | 20060922 | 14.66061 | 192.15311 | 147.69217 | 7.29299 | 0.1307187 | 2.3875030 | 82 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03329 | 2002 $NG_{18}$ |
| 2002 $NQ_{18}$ | 16.0 | 0.15 | 20060922 | 14.18864 | 11.08147 | 266.92579 | 5.24367 | 0.2388848 | 2.5949695 | 44 | 4 | 1998–2005 | 0.61 | M-v | 1 | MPC | 72671 | 2002 $NQ_{18}$ |
| 2002 $ND_{19}$ | 16.7 | 0.15 | 20060922 | 30.56079 | 157.75435 | 150.71047 | 5.12421 | 0.1999512 | 2.4444992 | 89 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04204 | 2002 $ND_{19}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $NE_{19}$ | 16.5 | 0.15 | 20060922 | 108.31008 | 124.87674 | 139.17267 | 8.53807 | 0.1332308 | 2.2792031 | 80 | 3 | 2002–2006 | 0.62 | M-v | 2 | MPC | 75382 | 2002 $NE_{19}$ |
| 2002 $NM_{19}$ | 16.8 | 0.15 | 20060922 | 81.46142 | 129.28342 | 153.07161 | 6.43770 | 0.2208264 | 2.3155386 | 63 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 77606 | 2002 $NM_{19}$ |
| 2002 $NO_{19}$ | 15.6 | 0.15 | 20060922 | 351.26541 | 127.91860 | 131.92170 | 16.19263 | 0.2509499 | 2.7919816 | 64 | 5 | 1996–2006 | 0.70 | M-v | 1 | MPC | 02109 | 2002 $NO_{19}$ |
| 2002 $NS_{19}$ | 16.6 | 0.15 | 20060922 | 48.99926 | 51.43616 | 267.27215 | 5.90592 | 0.1481438 | 2.3508968 | 74 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 75383 | 2002 $NS_{19}$ |
| 2002 $NU_{19}$ | 16.1 | 0.15 | 20060922 | 7.47592 | 108.91134 | 285.84000 | 6.21977 | 0.0871302 | 2.2516039 | 96 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 62391 | 2002 $NU_{19}$ |
| 2002 $ND_{21}$ | 16.8 | 0.15 | 20060922 | 55.95866 | 122.73166 | 166.59383 | 5.55594 | 0.1858685 | 2.3842982 | 54 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 03329 | 2002 $ND_{21}$ |
| 2002 $NU_{21}$ | 17.4 | 0.15 | 20060922 | 67.56502 | 150.28368 | 143.78819 | 4.68280 | 0.2456085 | 2.3316458 | 44 | 5 | 1994–2006 | 0.41 | M-v | 1 | MPC | 75383 | 2002 $NU_{21}$ |
| 2002 $NV_{21}$ | 16.6 | 0.15 | 20060922 | 48.65227 | 170.58957 | 155.40796 | 6.39114 | 0.1272889 | 2.3193025 | 43 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 75383 | 2002 $NV_{21}$ |
| 2002 $NY_{21}$ | 16.4 | 0.15 | 20060922 | 14.88672 | 64.72498 | 270.45225 | 5.86171 | 0.1368787 | 2.4291654 | 81 | 5 | 1995–2006 | 0.46 | M-v | 1 | MPC | 04204 | 2002 $NY_{21}$ |
| 2002 $NE_{22}$ | 16.1 | 0.15 | 20060922 | 346.11995 | 230.93311 | 138.32763 | 6.01820 | 0.2005441 | 2.4590949 | 169 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04204 | 2002 $NE_{22}$ |
| 2002 $NJ_{22}$ | 16.8 | 0.15 | 20060922 | 46.72068 | 197.82236 | 141.31810 | 6.84575 | 0.1477726 | 2.3023593 | 56 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 48241 | 2002 $NJ_{22}$ |
| 2002 $NS_{22}$ | 16.3 | 0.15 | 20060922 | 57.35438 | 150.37855 | 184.00388 | 5.00293 | 0.1893697 | 2.2787292 | 52 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 75384 | 2002 $NS_{22}$ |
| 2002 $NU_{22}$ | 14.5 | 0.15 | 20060922 | 198.02422 | 114.04207 | 275.17263 | 15.99892 | 0.1564839 | 3.1286372 | 57 | 3 | 2002–2005 | 0.61 | M-v | 3 | MPC | 56384 | 2002 $NU_{22}$ |
| 2002 $NY_{22}$ | 14.8 | 0.15 | 20060922 | 69.26537 | 289.25054 | 284.75468 | 10.26671 | 0.1478812 | 2.6508207 | 60 | 4 | 2001–2005 | 0.56 | M-v | 1 | MPC | 57872 | 2002 $NY_{22}$ |
| 2002 $NZ_{22}$ | 16.3 | 0.15 | 20060922 | 310.13745 | 229.19974 | 130.12497 | 15.29018 | 0.1847874 | 2.6231939 | 26 | 2 | 1999–2002 | 0.60 | M-v | 4 | MPC | 56384 | 2002 $NZ_{22}$ |
| 2002 $NJ_{23}$ | 17.1 | 0.15 | 20060922 | 99.87829 | 60.77264 | 217.07605 | 4.09231 | 0.1677008 | 2.2622919 | 57 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 75384 | 2002 $NJ_{23}$ |
| 2002 $NT_{23}$ | 16.4 | 0.15 | 20060922 | 31.78717 | 228.94651 | 133.67394 | 8.80141 | 0.2908124 | 2.3295985 | 92 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 87540 | 2002 $NT_{23}$ |
| 2002 $NL_{24}$ | 15.7 | 0.15 | 20060922 | 16.53928 | 155.66575 | 145.42228 | 14.79062 | 0.1834135 | 2.5510497 | 90 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 04204 | 2002 $NL_{24}$ |
| 2002 $NC_{25}$ | 15.9 | 0.15 | 20060922 | 344.35043 | 207.06859 | 139.13500 | 16.41386 | 0.1891747 | 2.5656467 | 76 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 04204 | 2002 $NC_{25}$ |
| 2002 $NN_{25}$ | 16.7 | 0.15 | 20060922 | 50.18143 | 29.44112 | 283.40248 | 6.17421 | 0.2539121 | 2.3838730 | 89 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 85544 | 2002 $NN_{25}$ |
| 2002 $NX_{25}$ | 15.8 | 0.15 | 20060922 | 30.72956 | 148.30876 | 145.82720 | 11.34935 | 0.1457961 | 2.5401934 | 103 | 4 | 1998–2006 | 0.61 | M-v | 2 | MPC | 04204 | 2002 $NX_{25}$ |
| 2002 $NN_{26}$ | 15.0 | 0.15 | 20060922 | 321.52009 | 36.99629 | 319.23330 | 10.87912 | 0.2140915 | 2.6729749 | 91 | 3 | 1998–2004 | 0.65 | M-v | 2 | MPC | 62392 | 2002 $NN_{26}$ |
| 2002 $NC_{27}$ | 16.1 | 0.15 | 20060922 | 37.01016 | 42.18126 | 307.38778 | 4.13674 | 0.2509156 | 2.3663233 | 83 | 5 | 1991–2006 | 0.55 | M-v | 1 | MPC | 62392 | 2002 $NC_{27}$ |
| 2002 $NH_{27}$ | 16.9 | 0.15 | 20060922 | 75.80231 | 42.10345 | 269.91103 | 0.89005 | 0.2597308 | 2.3042512 | 79 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 75387 | 2002 $NH_{27}$ |
| 2002 $NT_{27}$ | 14.7 | 0.15 | 20060922 | 222.37111 | 247.97239 | 149.39743 | 26.47420 | 0.2450847 | 3.1812248 | 72 | 4 | 1995–2005 | 0.62 | M-v | 1 | MPC | 85545 | 2002 $NT_{27}$ |
| 2002 $NY_{27}$ | 16.0 | 0.15 | 20060922 | 6.80844 | 63.28958 | 254.38561 | 11.53381 | 0.3021417 | 2.5654959 | 60 | 3 | 1998–2006 | 0.51 | M-v | 2 | MPC | 04204 | 2002 $NY_{27}$ |
| 2002 $NH_{28}$ | 17.3 | 0.15 | 20060922 | 43.70710 | 35.19687 | 288.18302 | 1.16120 | 0.2138660 | 2.3947956 | 65 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 75388 | 2002 $NH_{28}$ |
| 2002 $NM_{28}$ | 15.5 | 0.15 | 20060922 | 246.58473 | 70.55335 | 274.33204 | 8.95353 | 0.1106024 | 3.0834765 | 81 | 4 | 1997–2003 | 0.43 | M-v | 0 | MPC | 57873 | 2002 $NM_{28}$ |
| 2002 $NS_{28}$ | 16.7 | 0.15 | 20060922 | 355.37385 | 85.22522 | 259.16284 | 0.79711 | 0.1275321 | 2.4451035 | 73 | 5 | 1991–2006 | 0.35 | M-v | 1 | MPC | 04204 | 2002 $NS_{28}$ |
| 2002 $NJ_{30}$ | 16.2 | 0.15 | 20060922 | 94.62778 | 127.39774 | 104.14661 | 6.60003 | 0.1705066 | 2.3992183 | 69 | 6 | 1992–2006 | 0.62 | M-v | 1 | MPC | 04205 | 2002 $NJ_{30}$ |
| 2002 $NW_{33}$ | 16.7 | 0.15 | 20060922 | 49.05062 | 31.64708 | 290.96244 | 4.06618 | 0.2414988 | 2.3375738 | 86 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 77608 | 2002 $NW_{33}$ |
| 2002 $NX_{33}$ | 16.9 | 0.15 | 20060922 | 26.22701 | 178.83918 | 139.98953 | 5.65728 | 0.1989912 | 2.4330487 | 87 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03329 | 2002 $NX_{33}$ |
| 2002 $NL_{34}$ | 16.6 | 0.15 | 20060922 | 73.47320 | 37.57812 | 263.19517 | 4.85195 | 0.1756771 | 2.3039977 | 75 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 75389 | 2002 $NL_{34}$ |
| 2002 $NO_{34}$ | 16.8 | 0.15 | 20060922 | 65.41146 | 97.12808 | 240.42986 | 6.17049 | 0.1428064 | 2.2243321 | 47 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 87540 | 2002 $NO_{34}$ |
| 2002 $NP_{34}$ | 16.5 | 0.15 | 20060922 | 25.13173 | 121.70446 | 215.46304 | 6.03562 | 0.1624918 | 2.3736344 | 110 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75389 | 2002 $NP_{34}$ |
| 2002 $NS_{34}$ | 15.9 | 0.15 | 20060922 | 25.49135 | 105.72798 | 206.21099 | 5.79230 | 0.1232992 | 2.4443619 | 95 | 4 | 1991–2006 | 0.51 | M-v | 1 | MPC | 03330 | 2002 $NS_{34}$ |
| 2002 $NE_{35}$ | 17.4 | 0.15 | 20060922 | 117.26194 | 66.82318 | 200.13057 | 4.87925 | 0.1656645 | 2.2343904 | 42 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 75389 | 2002 $NE_{35}$ |
| 2002 $NG_{35}$ | 16.6 | 0.15 | 20060922 | 17.10770 | 130.97162 | 206.31801 | 6.02823 | 0.1553462 | 2.4173349 | 105 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04205 | 2002 $NG_{35}$ |
| 2002 $NL_{35}$ | 17.4 | 0.15 | 20060922 | 67.38534 | 136.18412 | 183.80137 | 6.04427 | 0.1785963 | 2.2791880 | 37 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 75390 | 2002 $NL_{35}$ |
| 2002 $NR_{35}$ | 16.8 | 0.15 | 20060922 | 68.59260 | 34.21770 | 256.38926 | 5.37813 | 0.1937636 | 2.3493430 | 67 | 5 | 1994–2006 | 0.42 | M-v | 1 | MPC | 90159 | 2002 $NR_{35}$ |
| 2002 $NE_{36}$ | 17.1 | 0.15 | 20060922 | 29.89889 | 211.92321 | 151.46119 | 6.49082 | 0.1589994 | 2.2804519 | 49 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 85545 | 2002 $NE_{36}$ |
| 2002 $NU_{36}$ | 17.1 | 0.15 | 20060922 | 13.86796 | 174.14389 | 175.28421 | 7.73317 | 0.1469689 | 2.3831350 | 64 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 75390 | 2002 $NU_{36}$ |
| 2002 $NB_{37}$ | 16.4 | 0.15 | 20060922 | 207.60530 | 324.20911 | 233.55893 | 6.01365 | 0.0908637 | 2.1747546 | 82 | 4 | 2001–2006 | 0.44 | M-v | 2 | MPC | 57873 | 2002 $NB_{37}$ |
| 2002 $NC_{37}$ | 17.3 | 0.15 | 20060922 | 327.82875 | 176.72048 | 205.68433 | 5.05061 | 0.2757415 | 2.5219398 | 32 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 03330 | 2002 $NC_{37}$ |
| 2002 $NF_{37}$ | 15.6 | 0.15 | 20060922 | 292.45862 | 132.37173 | 172.15321 | 10.13148 | 0.1014111 | 3.0069519 | 32 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 00291 | 2002 $NF_{37}$ |
| 2002 $NW_{37}$ | 13.9 | 0.15 | 20060922 | 150.85712 | 181.72103 | 201.14859 | 8.11954 | 0.3117224 | 3.9880420 | 98 | 2 | 2002–2004 | 0.54 | M-v | 2 | MPC | 62392 | 2002 $NW_{37}$ |
| 2002 $NL_{38}$ | 17.2 | 0.15 | 20060922 | 63.50854 | 139.92877 | 175.16083 | 4.66387 | 0.2583486 | 2.3202747 | 51 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 38342 | 2002 $NL_{38}$ |
| 2002 $NP_{39}$ | 15.4 | 0.15 | 20060922 | 7.71590 | 111.91579 | 192.28797 | 12.42597 | 0.2707885 | 2.6589461 | 105 | 5 | 1998–2006 | 0.66 | M-v | 1 | MPC | 77608 | 2002 $NP_{39}$ |
| 2002 $NQ_{39}$ | 18.5 | 0.15 | 20060922 | 80.95003 | 134.40979 | 177.13741 | 6.80796 | 0.2209507 | 2.2510437 | 28 | 4 | 1992–2005 | 0.51 | M-v | 1 | MPC | 48241 | 2002 $NQ_{39}$ |
| 2002 $NS_{39}$ | 16.8 | 0.15 | 20060922 | 36.54049 | 184.66435 | 166.40843 | 7.45315 | 0.2806495 | 2.3304012 | 74 | 6 | 1995–2006 | 0.44 | M-v | 1 | MPC | 77608 | 2002 $NS_{39}$ |
| 2002 $NX_{39}$ | 17.0 | 0.15 | 20060922 | 81.73744 | 316.98605 | 308.74901 | 3.34373 | 0.1974106 | 2.3564572 | 38 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 75392 | 2002 $NX_{39}$ |
| 2002 $NC_{40}$ | 15.6 | 0.15 | 20060922 | 15.73693 | 17.76626 | 313.95548 | 8.66596 | 0.2123737 | 2.4445756 | 135 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04205 | 2002 $NC_{40}$ |
| 2002 $NV_{40}$ | 17.4 | 0.15 | 20060922 | 55.60917 | 203.06632 | 99.50524 | 2.64820 | 0.1910614 | 2.3652023 | 46 | 3 | 2002–2006 | 0.30 | M-v | 3 | MPC | 61234 | 2002 $NV_{40}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $NR_{42}$ | 15.7 | 0.15 | 20060922 | 317.85536 | 271.21857 | 48.49473 | 5.92354 | 0.0509286 | 2.7342990 | 54 | 8 | 1992–2006 | 0.60 | M-v | 0 | MPC | 04205 | 2002 $NR_{42}$ |
| 2002 $NY_{42}$ | 17.3 | 0.15 | 20060922 | 119.12961 | 220.55754 | 44.81272 | 5.24800 | 0.1775229 | 2.2244734 | 40 | 3 | 2002–2006 | 0.33 | M-v | 3 | MPC | 75399 | 2002 $NY_{42}$ |
| 2002 $NO_{43}$ | 16.9 | 0.15 | 20060922 | 335.49441 | 306.10034 | 73.32403 | 7.17632 | 0.1968630 | 2.4692604 | 48 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04205 | 2002 $NO_{43}$ |
| 2002 $NP_{43}$ | 17.3 | 0.15 | 20060922 | 100.36898 | 207.31919 | 74.94813 | 6.63276 | 0.1887376 | 2.2539640 | 36 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 94803 | 2002 $NP_{43}$ |
| 2002 $NA_{44}$ | 16.4 | 0.15 | 20060922 | 322.16375 | 206.63333 | 142.71315 | 4.12628 | 0.2115022 | 2.6276474 | 35 | 3 | 1998–2003 | 0.65 | M-v | 3 | MPC | 35225 | 2002 $NA_{44}$ |
| 2002 $ND_{44}$ | 17.9 | 0.15 | 20060922 | 77.28544 | 183.00461 | 132.30754 | 3.35073 | 0.1934001 | 2.2514376 | 27 | 3 | 2002–2006 | 0.24 | M-v | 2 | MPC | 75399 | 2002 $ND_{44}$ |
| 2002 $NF_{45}$ | 16.4 | 0.15 | 20060922 | 53.01467 | 69.50478 | 274.25557 | 5.84977 | 0.1523713 | 2.2836217 | 45 | 4 | 1996–2006 | 0.45 | M-v | 2 | MPC | 62392 | 2002 $NF_{45}$ |
| 2002 $NG_{45}$ | 17.2 | 0.15 | 20060922 | 99.01505 | 44.77675 | 262.58960 | 4.41668 | 0.1348818 | 2.2215583 | 71 | 6 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87540 | 2002 $NG_{45}$ |
| 2002 $NP_{45}$ | 16.6 | 0.15 | 20060922 | 353.33298 | 155.15869 | 137.29378 | 5.99480 | 0.2370924 | 2.6362639 | 30 | 3 | 1993–2006 | 0.55 | M-v | 3 | MPC | 04205 | 2002 $NP_{45}$ |
| 2002 $NR_{45}$ | 16.5 | 0.15 | 20060922 | 84.63830 | 124.83436 | 118.00415 | 7.71177 | 0.1591575 | 2.3958310 | 39 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 04205 | 2002 $NR_{45}$ |
| 2002 $NV_{45}$ | 16.4 | 0.15 | 20060922 | 54.26867 | 37.98857 | 264.51116 | 4.85700 | 0.1484159 | 2.3460060 | 57 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03330 | 2002 $NV_{45}$ |
| 2002 $NK_{46}$ | 16.7 | 0.15 | 20060922 | 41.22727 | 128.79740 | 177.11801 | 3.84143 | 0.1063506 | 2.3863226 | 50 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04205 | 2002 $NK_{46}$ |
| 2002 $NX_{46}$ | 16.6 | 0.15 | 20060922 | 238.10177 | 178.04565 | 182.47117 | 6.51668 | 0.4843934 | 3.2664630 | 55 | 1 | 110 days | 0.58 | M-v | 4 | MPC | 62392 | 2002 $NX_{46}$ |
| 2002 $NZ_{46}$ | 17.1 | 0.15 | 20060922 | 60.56215 | 296.81875 | 339.52900 | 7.04335 | 0.0776302 | 2.3935197 | 48 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 04205 | 2002 $NZ_{46}$ |
| 2002 $NO_{47}$ | 16.9 | 0.15 | 20060922 | 41.12661 | 79.61963 | 243.93353 | 5.39845 | 0.1555031 | 2.3441895 | 63 | 4 | 1999–2006 | 0.36 | M-v | 0 | MPC | 75401 | 2002 $NO_{47}$ |
| 2002 $NJ_{48}$ | 15.5 | 0.15 | 20060922 | 266.46176 | 172.41594 | 314.33717 | 25.03280 | 0.1537621 | 2.2684728 | 67 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 85547 | 2002 $NJ_{48}$ |
| 2002 $NK_{48}$ | 16.9 | 0.15 | 20060922 | 39.21617 | 234.18717 | 113.32935 | 3.28911 | 0.2358660 | 2.3260965 | 72 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 77609 | 2002 $NK_{48}$ |
| 2002 $NV_{48}$ | 16.9 | 0.15 | 20060922 | 324.65649 | 88.43903 | 246.90421 | 2.50716 | 0.2770589 | 2.6856698 | 40 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 03330 | 2002 $NV_{48}$ |
| 2002 $NV_{49}$ | 16.2 | 0.15 | 20060922 | 74.46603 | 203.09259 | 106.42688 | 5.18332 | 0.1801039 | 2.2706182 | 105 | 5 | 1998–2006 | 0.53 | M-v | 0 | MPC | 77609 | 2002 $NV_{49}$ |
| 2002 $NX_{49}$ | 16.6 | 0.15 | 20060922 | 37.74700 | 220.53320 | 125.60936 | 6.57606 | 0.2511006 | 2.3241188 | 50 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 61235 | 2002 $NX_{49}$ |
| 2002 $NZ_{49}$ | 16.9 | 0.15 | 20060922 | 8.81596 | 100.58261 | 281.57871 | 2.02925 | 0.2820796 | 2.3468151 | 61 | 4 | 1999–2006 | 0.51 | M-v | 0 | MPC | 38343 | 2002 $NZ_{49}$ |
| 2002 $NK_{50}$ | 15.9 | 0.15 | 20060922 | 299.78304 | 71.48210 | 318.22775 | 2.53084 | 0.2258323 | 2.5447747 | 58 | 4 | 2000–2005 | 0.44 | M-v | 1 | MPC | 56395 | 2002 $NK_{50}$ |
| 2002 $NL_{50}$ | 15.4 | 0.15 | 20060922 | 337.15755 | 205.55668 | 72.69142 | 11.38378 | 0.1330500 | 2.7835321 | 48 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 02110 | 2002 $NL_{50}$ |
| 2002 $NK_{51}$ | 16.4 | 0.15 | 20060922 | 62.59105 | 332.81885 | 357.89659 | 4.25959 | 0.2430393 | 2.2630792 | 61 | 6 | 1998–2006 | 0.49 | M-v | 1 | MPC | 77609 | 2002 $NK_{51}$ |
| 2002 $NU_{51}$ | 17.1 | 0.15 | 20060922 | 81.09574 | 2.01344 | 295.18036 | 6.14294 | 0.1484336 | 2.2758836 | 41 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 61235 | 2002 $NU_{51}$ |
| 2002 $NX_{51}$ | 15.6 | 0.15 | 20060922 | 237.02061 | 73.57444 | 300.36485 | 12.81312 | 0.3531145 | 3.1441285 | 39 | 2 | 2002–2004 | 0.52 | M-v | 3 | MPC | 56396 | 2002 $NX_{51}$ |
| 2002 $NC_{52}$ | 17.8 | 0.15 | 20060922 | 92.89184 | 47.11047 | 294.47559 | 3.42031 | 0.1473689 | 2.1422551 | 43 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 62392 | 2002 $NC_{52}$ |
| 2002 $NO_{52}$ | 17.1 | 0.15 | 20060922 | 56.64015 | 188.35553 | 102.19424 | 3.77799 | 0.2041173 | 2.3874015 | 56 | 6 | 1994–2006 | 0.43 | M-v | 1 | MPC | 85548 | 2002 $NO_{52}$ |
| 2002 $NQ_{53}$ | 16.7 | 0.15 | 20060922 | 6.97490 | 220.17709 | 116.44893 | 7.09442 | 0.1304942 | 2.4584650 | 42 | 2 | 2002–2006 | 0.56 | M-v | 4 | MPC | 03331 | 2002 $NQ_{53}$ |
| 2002 $NY_{53}$ | 17.1 | 0.15 | 20060922 | 44.80154 | 108.79886 | 184.45994 | 2.36494 | 0.1870864 | 2.4118464 | 78 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04205 | 2002 $NY_{53}$ |
| 2002 $NU_{54}$ | 15.5 | 0.15 | 20060922 | 41.64932 | 346.01442 | 301.87482 | 13.16233 | 0.0576294 | 2.4530012 | 28 | 2 | 2002–2006 | 0.30 | M-v | 3 | MPC | 03331 | 2002 $NU_{54}$ |
| 2002 $NM_{55}$ | 16.6 | 0.15 | 20060922 | 347.48679 | 190.28730 | 162.88669 | 9.09308 | 0.2564960 | 2.5229743 | 68 | 3 | 1998–2006 | 0.59 | M-v | 3 | MPC | 03331 | 2002 $NM_{55}$ |
| 2002 $NO_{55}$ | 16.9 | 0.15 | 20060922 | 69.38452 | 98.33625 | 218.89260 | 3.41016 | 0.2683334 | 2.2913310 | 84 | 6 | 1992–2006 | 0.44 | M-v | 1 | MPC | 77609 | 2002 $NO_{55}$ |
| 2002 $NV_{55}$ | 17.6 | 0.15 | 20060922 | 60.89553 | 208.67493 | 63.20729 | 2.87913 | 0.2058329 | 2.3894066 | 38 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 87540 | 2002 $NV_{55}$ |
| 2002 $NX_{55}$ | 17.0 | 0.15 | 20060922 | 45.82263 | 260.23331 | 63.11221 | 3.12795 | 0.2305686 | 2.3244415 | 80 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 75403 | 2002 $NX_{55}$ |
| 2002 $NN_{56}$ | 17.4 | 0.15 | 20060922 | 33.11317 | 132.89162 | 173.77847 | 4.38834 | 0.2868402 | 2.4339407 | 81 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04205 | 2002 $NN_{56}$ |
| 2002 $NA_{57}$ | 17.0 | 0.15 | 20060922 | 56.91189 | 34.68609 | 325.79453 | 3.49013 | 0.1440178 | 2.2138071 | 37 | 3 | 1999–2004 | 0.43 | M-v | 3 | MPC | 47204 | 2002 $NA_{57}$ |
| 2002 $NK_{57}$ | 16.1 | 0.15 | 20060922 | 184.88870 | 126.77141 | 273.09942 | 10.55107 | 0.1243441 | 3.1516812 | 31 | 3 | 2002–2005 | 0.29 | M-v | 2 | MPC | 74192 | 2002 $NK_{57}$ |
| 2002 $NN_{57}$ | 16.7 | 0.15 | 20060922 | 317.19069 | 187.20484 | 114.21447 | 3.55533 | 0.1989289 | 2.8509136 | 28 | 4 | 2001–2006 | 0.33 | M-v | 1 | MPC | 00294 | 2002 $NN_{57}$ |
| 2002 $NW_{57}$ | 17.1 | 0.15 | 20060922 | 143.48654 | 75.22750 | 174.76036 | 6.51220 | 0.1326162 | 2.2185893 | 44 | 4 | 1998–2006 | 0.35 | M-v | 1 | MPC | 87540 | 2002 $NW_{57}$ |
| 2002 $NX_{57}$ | 17.4 | 0.15 | 20060922 | 59.46381 | 167.73019 | 132.95452 | 2.99832 | 0.2014547 | 2.3516400 | 41 | 3 | 2002–2006 | 0.30 | M-v | 2 | MPC | 75404 | 2002 $NX_{57}$ |
| 2002 $NF_{58}$ | 15.7 | 0.15 | 20060922 | 251.34193 | 193.90698 | 211.11351 | 13.71464 | 0.1990993 | 2.7753544 | 33 | 2 | 1998–2002 | 0.53 | M-v | 3 | MPC | 89300 | 2002 $NF_{58}$ |
| 2002 $NG_{58}$ | 17.1 | 0.15 | 20060922 | 237.17088 | 105.54822 | 263.86012 | 17.42934 | 0.1393727 | 3.0522097 | 20 | 2 | 2002–2003 | 0.37 | M-v | 3 | MPC | 89300 | 2002 $NG_{58}$ |
| 2002 $NT_{58}$ | 16.9 | 0.15 | 20060922 | 4.33717 | 165.34088 | 145.24536 | 8.17361 | 0.1408385 | 2.5440439 | 37 | 4 | 1998–2006 | 0.35 | M-v | 2 | MPC | 94803 | 2002 $NT_{58}$ |
| 2002 $NW_{59}$ | 17.5 | 0.15 | 20060922 | 7.58808 | 178.53779 | 214.18641 | 1.52443 | 0.2221287 | 2.2945761 | 34 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 94805 | 2002 $NW_{59}$ |
| 2002 $NX_{59}$ | 16.9 | 0.15 | 20060922 | 93.37243 | 24.91292 | 257.45994 | 5.69866 | 0.1302722 | 2.2760004 | 69 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 94805 | 2002 $NX_{59}$ |
| 2002 $NY_{59}$ | 16.8 | 0.15 | 20060922 | 129.16728 | 103.90634 | 123.13193 | 6.85364 | 0.0777431 | 2.3330002 | 39 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 94806 | 2002 $NY_{59}$ |
| 2002 $NX_{60}$ | 17.2 | 0.15 | 20060922 | 33.47397 | 290.64807 | 17.06351 | 3.11387 | 0.1809576 | 2.4356459 | 59 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 03332 | 2002 $NX_{60}$ |
| 2002 $NJ_{61}$ | 17.6 | 0.15 | 20060922 | 99.48358 | 124.55813 | 119.44706 | 1.45476 | 0.1755346 | 2.3633022 | 23 | 3 | 2002–2006 | 0.29 | M-v | 3 | MPC | 03333 | 2002 $NJ_{61}$ |
| 2002 $NA_{62}$ | 16.5 | 0.15 | 20020725 | 338.68803 | 223.36944 | 112.80144 | 8.79664 | 0.2338703 | 3.0260486 | 14 | 1 | 56 days | 0.22 | | | MPC | | 2002 $NA_{62}$ |
| 2002 OV | 17.1 | 0.15 | 20060922 | 73.41125 | 139.24636 | 177.65067 | 6.52566 | 0.1662953 | 2.2489164 | 35 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 75404 | 2002 OV |
| 2002 $OU_{1}$ | 16.1 | 0.15 | 20060922 | 316.50447 | 98.93135 | 263.54100 | 10.17853 | 0.2071310 | 2.6491603 | 56 | 3 | 1998–2004 | 0.59 | M-v | 2 | MPC | 85548 | 2002 $OU_{1}$ |
| 2002 $OM_{2}$ | 15.7 | 0.15 | 20060922 | 355.56432 | 107.37387 | 292.16836 | 10.76398 | 0.2490633 | 2.4006587 | 76 | 3 | 2000–2006 | 0.50 | M-v | 1 | MPC | 41767 | 2002 $OM_{2}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $OP_2$ | 16.5 | 0.15 | 20060922 | 332.93436 | 92.26180 | 286.04845 | 10.44196 | 0.3859535 | 2.5997772 | 57 | 3 | 1998–2006 | 0.47 | M-v | 2 | MPC | 02111 | 2002 $OP_2$ |
| 2002 $OZ_3$ | 14.3 | 0.15 | 20060922 | 277.91426 | 146.85496 | 215.60309 | 19.80925 | 0.2508293 | 3.0692114 | 91 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 02111 | 2002 $OZ_3$ |
| 2002 $OQ_4$ | 18.6 | 0.15 | 20060922 | 38.55775 | 77.30285 | 230.59962 | 1.16501 | 0.2862059 | 2.4187445 | 45 | 3 | 1998–2006 | 0.34 | M-v | 3 | MPC | 50096 | 2002 $OQ_4$ |
| 2002 $OH_5$ | 16.8 | 0.15 | 20060922 | 341.17085 | 172.76609 | 181.42542 | 5.72930 | 0.1865782 | 2.5198180 | 36 | 3 | 2002–2006 | 0.33 | M-v | 1 | MPC | 04205 | 2002 $OH_5$ |
| 2002 $OY_5$ | 15.1 | 0.15 | 20060922 | 165.70583 | 190.39692 | 225.50942 | 8.72213 | 0.0554240 | 3.1715751 | 54 | 4 | 2001–2005 | 0.44 | M-v | 1 | MPC | 74192 | 2002 $OY_5$ |
| 2002 $OC_6$ | 17.2 | 0.15 | 20060922 | 146.39484 | 35.55393 | 206.05919 | 6.61827 | 0.1615220 | 2.2146200 | 84 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 87540 | 2002 $OC_6$ |
| 2002 $OZ_6$ | 16.5 | 0.15 | 20060922 | 321.31658 | 195.50059 | 208.14248 | 8.04628 | 0.1729970 | 2.4736273 | 74 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 04205 | 2002 $OZ_6$ |
| 2002 $OQ_7$ | 16.6 | 0.15 | 20060922 | 349.57748 | 136.16244 | 231.77400 | 3.73468 | 0.1846434 | 2.4152009 | 80 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 03333 | 2002 $OQ_7$ |
| 2002 $OR_7$ | 17.3 | 0.15 | 20060922 | 14.69442 | 225.42906 | 117.91073 | 16.15437 | 0.2441494 | 2.4158235 | 34 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 61236 | 2002 $OR_7$ |
| 2002 $OW_8$ | 16.3 | 0.15 | 20060922 | 343.93854 | 210.37093 | 164.57538 | 5.80664 | 0.1016864 | 2.4014386 | 90 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03333 | 2002 $OW_8$ |
| 2002 $OA_9$ | 16.5 | 0.15 | 20060922 | 135.07399 | 330.92496 | 258.01962 | 4.69039 | 0.0721081 | 2.3199493 | 41 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 77610 | 2002 $OA_9$ |
| 2002 $OJ_9$ | 16.0 | 0.15 | 20060922 | 297.18144 | 130.61406 | 216.17862 | 3.96325 | 0.0816801 | 2.7734431 | 42 | 6 | 1993–2006 | 0.49 | M-v | 1 | MPC | 02111 | 2002 $OJ_9$ |
| 2002 $OL_9$ | 16.8 | 0.15 | 20060922 | 28.60050 | 152.96758 | 216.61354 | 3.62219 | 0.2698618 | 2.3230714 | 56 | 1 | 85 days | 0.54 | M-v | 4 | MPC | 38344 | 2002 $OL_9$ |
| 2002 $OO_9$ | 17.4 | 0.15 | 20060922 | 44.43015 | 173.47769 | 173.61307 | 5.75712 | 0.1902166 | 2.3054395 | 50 | 3 | 2002–2006 | 0.30 | M-v | 2 | MPC | 75407 | 2002 $OO_9$ |
| 2002 $OP_9$ | 16.2 | 0.15 | 20060922 | 10.12879 | 182.42707 | 165.70301 | 7.80012 | 0.2004467 | 2.4382426 | 125 | 2 | 2002–2006 | 0.51 | M-v | 2 | MPC | 03334 | 2002 $OP_9$ |
| 2002 $OC_{10}$ | 17.1 | 0.15 | 20060922 | 92.97358 | 68.25835 | 246.93464 | 5.51190 | 0.1824333 | 2.2240616 | 69 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 75407 | 2002 $OC_{10}$ |
| 2002 $OP_{10}$ | 17.1 | 0.15 | 20060922 | 39.71544 | 218.27238 | 132.83654 | 9.34388 | 0.2555221 | 2.3194590 | 66 | 4 | 1995–2006 | 0.62 | M-v | 1 | MPC | 48243 | 2002 $OP_{10}$ |
| 2002 $OV_{10}$ | 17.3 | 0.15 | 20060922 | 33.81994 | 132.18994 | 186.37203 | 5.53233 | 0.2258268 | 2.4335350 | 78 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 75407 | 2002 $OV_{10}$ |
| 2002 $OC_{11}$ | 16.9 | 0.15 | 20060922 | 50.94892 | 105.95238 | 199.28901 | 1.68282 | 0.2176873 | 2.3872452 | 102 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 75408 | 2002 $OC_{11}$ |
| 2002 $OJ_{11}$ | 16.9 | 0.15 | 20060922 | 27.68233 | 149.44803 | 212.32176 | 6.66283 | 0.2730573 | 2.3271899 | 39 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 03334 | 2002 $OJ_{11}$ |
| 2002 $OD_{13}$ | 16.7 | 0.15 | 20060922 | 105.06679 | 33.02442 | 217.78339 | 7.12640 | 0.1748401 | 2.3057932 | 41 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 75408 | 2002 $OD_{13}$ |
| 2002 $OE_{13}$ | 16.5 | 0.15 | 20060922 | 337.86338 | 192.79541 | 168.88954 | 8.88884 | 0.2978241 | 2.5340386 | 53 | 5 | 1994–2006 | 0.43 | M-v | 2 | MPC | 48243 | 2002 $OE_{13}$ |
| 2002 $OL_{13}$ | 16.5 | 0.15 | 20060922 | 96.46832 | 74.12173 | 220.17672 | 6.65146 | 0.1197210 | 2.2367110 | 65 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 87540 | 2002 $OL_{13}$ |
| 2002 $OL_{14}$ | 16.1 | 0.15 | 20060922 | 354.89210 | 169.09352 | 170.74245 | 11.34587 | 0.1492335 | 2.5253421 | 83 | 4 | 1998–2006 | 0.49 | M-v | 3 | MPC | 04206 | 2002 $OL_{14}$ |
| 2002 $OA_{15}$ | 15.5 | 0.15 | 20060922 | 35.79797 | 8.28922 | 284.60678 | 13.11326 | 0.1545738 | 2.5253490 | 68 | 3 | 1998–2006 | 0.54 | M-v | 3 | MPC | 04206 | 2002 $OA_{15}$ |
| 2002 $OD_{15}$ | 15.5 | 0.15 | 20060922 | 327.37154 | 61.40917 | 272.64162 | 11.47746 | 0.1821791 | 2.7240973 | 41 | 1 | 80 days | 0.49 | M-v | 4 | MPC | 38345 | 2002 $OD_{15}$ |
| 2002 $OO_{15}$ | 16.2 | 0.15 | 20060922 | 249.11123 | 237.15184 | 263.62164 | 10.97425 | 0.0382638 | 2.2734107 | 44 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 57875 | 2002 $OO_{15}$ |
| 2002 $OD_{16}$ | 14.6 | 0.15 | 20060922 | 237.71640 | 104.99716 | 237.25895 | 8.91159 | 0.1059754 | 3.1113113 | 76 | 3 | 2002–2005 | 0.48 | M-v | 3 | MPC | 57875 | 2002 $OD_{16}$ |
| 2002 $OM_{16}$ | 17.2 | 0.15 | 20060922 | 107.06104 | 31.08908 | 229.92597 | 6.06707 | 0.1429194 | 2.2773329 | 51 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 75409 | 2002 $OM_{16}$ |
| 2002 $OX_{16}$ | 16.6 | 0.15 | 20060922 | 71.44050 | 108.85461 | 195.12984 | 5.30678 | 0.1835385 | 2.2970293 | 87 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 75409 | 2002 $OX_{16}$ |
| 2002 $OF_{17}$ | 17.2 | 0.15 | 20060922 | 70.75805 | 111.84182 | 190.76561 | 5.92678 | 0.2767847 | 2.3108807 | 87 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75410 | 2002 $OF_{17}$ |
| 2002 $OP_{17}$ | 17.3 | 0.15 | 20060922 | 138.23802 | 48.81316 | 217.03035 | 6.03739 | 0.1542100 | 2.1962092 | 50 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 85549 | 2002 $OP_{17}$ |
| 2002 $OU_{17}$ | 16.0 | 0.15 | 20060922 | 2.08073 | 98.88756 | 239.42098 | 6.11753 | 0.1697372 | 2.5225097 | 73 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 04206 | 2002 $OU_{17}$ |
| 2002 $OW_{17}$ | 16.3 | 0.15 | 20060922 | 342.75483 | 149.60079 | 217.02482 | 5.86372 | 0.1400152 | 2.4374606 | 46 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 04206 | 2002 $OW_{17}$ |
| 2002 $OY_{17}$ | 14.5 | 0.15 | 20060922 | 209.42867 | 139.06630 | 239.06972 | 9.10490 | 0.0502045 | 3.0840159 | 57 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 57875 | 2002 $OY_{17}$ |
| 2002 $OM_{18}$ | 17.2 | 0.15 | 20060922 | 10.55604 | 148.98456 | 161.81710 | 12.24867 | 0.2677912 | 2.5501206 | 52 | 3 | 1998–2006 | 0.54 | M-v | 3 | MPC | 03335 | 2002 $OM_{18}$ |
| 2002 $OF_{19}$ | 16.2 | 0.15 | 20060922 | 0.42681 | 219.38956 | 128.92850 | 16.60190 | 0.1273678 | 2.4277465 | 43 | 2 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03335 | 2002 $OF_{19}$ |
| 2002 $OH_{19}$ | 15.0 | 0.15 | 20060922 | 22.76366 | 81.04534 | 257.06052 | 20.90536 | 0.2766432 | 2.3439965 | 77 | 3 | 1999–2006 | 0.48 | M-v | 1 | MPC | 02111 | 2002 $OH_{19}$ |
| 2002 $OW_{19}$ | 16.3 | 0.15 | 20060922 | 25.01729 | 99.90154 | 303.27743 | 19.44949 | 0.3845774 | 2.3024983 | 43 | 1 | 163 days | 0.54 | M-v | 3 | MPC | 41768 | 2002 $OW_{19}$ |
| 2002 $OZ_{20}$ | 17.3 | 0.15 | 20060922 | 12.93888 | 259.75603 | 111.15385 | 2.26620 | 0.1983300 | 2.3533243 | 88 | 6 | 1993–2006 | 0.43 | M-v | 0 | MPC | 61237 | 2002 $OZ_{20}$ |
| 2002 $OC_{21}$ | 17.3 | 0.15 | 20060922 | 50.74036 | 166.03847 | 118.14566 | 3.04911 | 0.1728376 | 2.4467305 | 30 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 35595 | 2002 $OC_{21}$ |
| 2002 $OF_{21}$ | 16.9 | 0.15 | 20060922 | 77.96688 | 25.97068 | 271.52802 | 2.94219 | 0.2254276 | 2.3004656 | 70 | 4 | 1994–2006 | 0.43 | M-v | 0 | MPC | 75411 | 2002 $OF_{21}$ |
| 2002 $OZ_{21}$ | 16.8 | 0.15 | 20060922 | 64.56109 | 348.79511 | 328.25275 | 7.68789 | 0.1832769 | 2.3088099 | 66 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 57876 | 2002 $OZ_{21}$ |
| 2002 $OH_{22}$ | 16.8 | 0.15 | 20060922 | 358.88577 | 64.39465 | 284.39972 | 4.68969 | 0.0800907 | 2.4589307 | 64 | 4 | 1998–2006 | 0.51 | M-v | 3 | MPC | 04206 | 2002 $OH_{22}$ |
| 2002 $OH_{23}$ | 15.8 | 0.15 | 20060922 | 338.13562 | 216.16042 | 136.79381 | 16.02715 | 0.1686917 | 2.5736461 | 60 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 04206 | 2002 $OH_{23}$ |
| 2002 $OP_{23}$ | 16.5 | 0.15 | 20060922 | 47.18717 | 4.31340 | 286.21307 | 3.26825 | 0.0716800 | 2.4630739 | 42 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 04206 | 2002 $OP_{23}$ |
| 2002 $OE_{24}$ | 15.4 | 0.15 | 20060922 | 346.02765 | 359.94077 | 319.92580 | 15.13395 | 0.1477689 | 2.6223915 | 43 | 4 | 1998–2005 | 0.65 | M-v | 2 | MPC | 35240 | 2002 $OE_{24}$ |
| 2002 $OR_{24}$ | 17.5 | 0.15 | 20060922 | 49.26707 | 325.00828 | 316.93478 | 5.39632 | 0.1173676 | 2.4766112 | 43 | 4 | 1997–2006 | 0.40 | M-v | 1 | MPC | 04206 | 2002 $OR_{24}$ |
| 2002 $OY_{24}$ | 15.6 | 0.15 | 20060922 | 0.72676 | 277.70073 | 333.94016 | 5.26457 | 0.0468241 | 2.9192294 | 50 | 4 | 1993–2005 | 0.45 | M-v | 0 | MPC | 56411 | 2002 $OY_{24}$ |
| 2002 $OL_{25}$ | 16.5 | 0.15 | 20060922 | 325.81377 | 71.77641 | 305.05095 | 3.66444 | 0.2313113 | 2.5805472 | 66 | 5 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04206 | 2002 $OL_{25}$ |
| 2002 $OQ_{26}$ | 17.3 | 0.15 | 20060922 | 17.95983 | 237.26960 | 81.27215 | 1.29147 | 0.2502684 | 2.4738326 | 80 | 4 | 2001–2006 | 0.38 | M-v | 2 | MPC | 04206 | 2002 $OQ_{26}$ |
| 2002 $OX_{26}$ | 17.4 | 0.15 | 20060922 | 108.42499 | 48.53578 | 204.92647 | 3.12525 | 0.0552459 | 2.3256886 | 37 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 94806 | 2002 $OX_{26}$ |
| 2002 $OO_{27}$ | 16.4 | 0.15 | 20060922 | 50.04320 | 124.39205 | 189.21198 | 5.60252 | 0.1228591 | 2.3944347 | 99 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 94807 | 2002 $OO_{27}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $OP_{27}$ | 16.9 | 0.15 | 20060922 | 5.81648 | 120.12107 | 268.65116 | 5.61877 | 0.1082387 | 2.3286295 | 58 | 5 | 1997–2006 | 0.45 | M-v | 1 | MPC | 94808 | 2002 $OP_{27}$ |
| 2002 $OV_{27}$ | 17.6 | 0.15 | 20060922 | 69.29975 | 41.38649 | 218.94451 | 1.95332 | 0.0971235 | 2.4657979 | 37 | 5 | 1999–2006 | 0.33 | M-v | 0 | MPC | 03336 | 2002 $OV_{27}$ |
| 2002 $OB_{28}$ | 17.8 | 0.15 | 20060922 | 27.78511 | 132.54931 | 172.31678 | 0.93686 | 0.1915300 | 2.4700614 | 31 | 2 | 2002–2006 | 0.33 | M-v | 3 | MPC | 03336 | 2002 $OB_{28}$ |
| 2002 $OF_{28}$ | 16.1 | 0.15 | 20060922 | 20.68907 | 332.74950 | 298.87203 | 12.98337 | 0.0279958 | 2.6725731 | 28 | 4 | 1995–2005 | 0.50 | M-v | 1 | MPC | 00301 | 2002 $OF_{28}$ |
| 2002 $OR_{28}$ | 17.4 | 0.15 | 20020814 | 314.33042 | 125.84235 | 262.47737 | 6.58005 | 0.1724259 | 2.2259849 | 16 | 1 | 52 days | 0.53 | | | MPC | | 2002 $OR_{28}$ |
| 2002 $OS_{28}$ | 14.5 | 0.15 | 20060922 | 263.45075 | 125.11488 | 219.72193 | 22.01719 | 0.1327961 | 3.1118755 | 18 | 1 | 85 days | 0.65 | M-v | 4 | MPC | | 2002 $OS_{28}$ |
| 2002 $OT_{28}$ | 18.9 | 0.15 | 20020814 | 12.56494 | 337.98112 | 321.15038 | 9.16880 | 0.2974489 | 2.2295095 | 17 | 1 | 52 days | 0.20 | | | MPC | | 2002 $OT_{28}$ |
| 2002 PH | 17.6 | 0.15 | 20060922 | 39.19999 | 75.09221 | 273.18239 | 1.86536 | 0.2341492 | 2.3119826 | 39 | 5 | 1960–2006 | 0.40 | M-v | 1 | MPC | 77611 | 2002 PH |
| 2002 PL | 18.0 | 0.15 | 20060922 | 66.66796 | 130.92908 | 159.71246 | 2.10165 | 0.1927939 | 2.3446888 | 44 | 3 | 2002–2006 | 0.27 | M-v | 2 | MPC | 89301 | 2002 PL |
| 2002 PT | 15.5 | 0.15 | 20060922 | 263.92358 | 141.25357 | 289.70496 | 5.18700 | 0.2067335 | 2.6283484 | 83 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 62393 | 2002 PT |
| 2002 $PA_{3}$ | 16.0 | 0.15 | 20060922 | 2.84418 | 58.51725 | 270.45687 | 11.87024 | 0.1977607 | 2.5427644 | 82 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 04206 | 2002 $PA_{3}$ |
| 2002 $PN_{4}$ | 17.4 | 0.15 | 20060922 | 141.51730 | 359.22767 | 245.91731 | 7.16125 | 0.0950444 | 2.2404703 | 53 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 87541 | 2002 $PN_{4}$ |
| 2002 $PV_{4}$ | 15.1 | 0.15 | 20060922 | 191.83845 | 189.26415 | 225.38281 | 8.52847 | 0.1341225 | 3.1003279 | 86 | 4 | 2002–2006 | 0.68 | M-v | 1 | MPC | 02112 | 2002 $PV_{4}$ |
| 2002 $PD_{5}$ | 15.7 | 0.15 | 20060922 | 270.60412 | 150.26544 | 256.93778 | 12.10669 | 0.0906684 | 2.6367346 | 41 | 3 | 2002–2005 | 0.55 | M-v | 3 | MPC | 56414 | 2002 $PD_{5}$ |
| 2002 $PS_{5}$ | 15.1 | 0.15 | 20060922 | 290.50175 | 123.13219 | 196.07128 | 10.03576 | 0.1152641 | 3.0123226 | 58 | 4 | 1996–2006 | 0.49 | M-v | 0 | MPC | 00302 | 2002 $PS_{5}$ |
| 2002 $PQ_{7}$ | 17.0 | 0.15 | 20060922 | 114.86305 | 72.76112 | 162.68324 | 2.28454 | 0.1929756 | 2.3489211 | 58 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 75414 | 2002 $PQ_{7}$ |
| 2002 $PA_{8}$ | 17.3 | 0.15 | 20060922 | 34.35776 | 99.03159 | 250.04084 | 3.75184 | 0.1780506 | 2.3191349 | 72 | 3 | 2002–2006 | 0.33 | M-v | 4 | MPC | 75415 | 2002 $PA_{8}$ |
| 2002 $PB_{8}$ | 17.6 | 0.15 | 20060922 | 11.33668 | 105.68154 | 286.22316 | 1.61779 | 0.3070842 | 2.3206469 | 38 | 4 | 1995–2006 | 0.40 | M-v | 1 | MPC | 72678 | 2002 $PB_{8}$ |
| 2002 $PG_{9}$ | 15.9 | 0.15 | 20060922 | 277.63902 | 32.93606 | 277.96903 | 9.88571 | 0.1261763 | 3.0872548 | 27 | 2 | 2002–2003 | 0.37 | M-v | 3 | MPC | 56415 | 2002 $PG_{9}$ |
| 2002 $PA_{10}$ | 17.0 | 0.15 | 20060922 | 356.73851 | 174.95391 | 201.44191 | 5.34354 | 0.1524948 | 2.3948410 | 75 | 3 | 2002–2006 | 0.34 | M-v | 2 | MPC | 04206 | 2002 $PA_{10}$ |
| 2002 $PG_{11}$ | 17.0 | 0.15 | 20060922 | 326.73420 | 166.40866 | 219.14934 | 2.60225 | 0.1183087 | 2.4604160 | 51 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 04206 | 2002 $PG_{11}$ |
| 2002 $PL_{11}$ | 17.0 | 0.15 | 20060922 | 357.67733 | 127.98845 | 290.64086 | 5.39773 | 0.1059070 | 2.2231949 | 32 | 4 | 1994–2006 | 0.39 | M-v | 1 | MPC | 48244 | 2002 $PL_{11}$ |
| 2002 $PM_{11}$ | 16.7 | 0.15 | 20060922 | 49.56034 | 45.43208 | 284.40527 | 3.51601 | 0.1869855 | 2.3247436 | 103 | 5 | 1995–2006 | 0.46 | M-v | 1 | MPC | 75416 | 2002 $PM_{11}$ |
| 2002 $PO_{11}$ | 17.5 | 0.15 | 20060922 | 121.61914 | 89.63182 | 172.69501 | 3.26923 | 0.1408565 | 2.2509941 | 40 | 3 | 2002–2006 | 0.27 | M-v | 3 | MPC | 75416 | 2002 $PO_{11}$ |
| 2002 $PB_{13}$ | 16.9 | 0.15 | 20060922 | 9.14017 | 186.24188 | 171.29581 | 7.74975 | 0.1026040 | 2.4023357 | 59 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 04206 | 2002 $PB_{13}$ |
| 2002 $PD_{13}$ | 16.8 | 0.15 | 20060922 | 94.46477 | 89.05210 | 164.03660 | 4.65443 | 0.1092790 | 2.3479518 | 45 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 75417 | 2002 $PD_{13}$ |
| 2002 $PV_{13}$ | 17.4 | 0.15 | 20060922 | 81.12387 | 19.68145 | 288.13696 | 3.55393 | 0.1567290 | 2.2422469 | 47 | 4 | 1994–2006 | 0.39 | M-v | 1 | MPC | 89301 | 2002 $PV_{13}$ |
| 2002 $PW_{14}$ | 17.1 | 0.15 | 20060922 | 13.53679 | 123.58726 | 207.28846 | 2.94209 | 0.1894291 | 2.4419923 | 44 | 2 | 2002–2006 | 0.45 | M-v | 3 | MPC | 03337 | 2002 $PW_{14}$ |
| 2002 $PJ_{15}$ | 17.8 | 0.15 | 20060922 | 344.57247 | 149.94160 | 176.43004 | 3.31501 | 0.2651527 | 2.5979677 | 32 | 3 | 1998–2005 | 0.43 | M-v | 3 | MPC | 35246 | 2002 $PJ_{15}$ |
| 2002 $PM_{15}$ | 17.4 | 0.15 | 20060922 | 34.67457 | 152.49048 | 173.13675 | 2.65729 | 0.1371590 | 2.3668562 | 41 | 5 | 1999–2006 | 0.34 | M-v | 0 | MPC | 85551 | 2002 $PM_{15}$ |
| 2002 $PQ_{17}$ | 17.0 | 0.15 | 20060922 | 3.79110 | 35.75426 | 307.37134 | 7.38848 | 0.2233002 | 2.4621460 | 67 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 03337 | 2002 $PQ_{17}$ |
| 2002 $PE_{18}$ | 17.6 | 0.15 | 20060922 | 357.59158 | 202.96712 | 167.57858 | 2.47105 | 0.1911831 | 2.3990550 | 56 | 5 | 1991–2006 | 0.39 | M-v | 0 | MPC | 04206 | 2002 $PE_{18}$ |
| 2002 $PA_{19}$ | 16.6 | 0.15 | 20060922 | 7.32567 | 93.86609 | 289.37514 | 6.28129 | 0.1257812 | 2.3014207 | 54 | 4 | 1997–2006 | 0.47 | M-v | 1 | MPC | 48244 | 2002 $PA_{19}$ |
| 2002 $PA_{20}$ | 17.0 | 0.15 | 20060922 | 17.38367 | 78.88637 | 243.05452 | 1.71116 | 0.1689358 | 2.4657257 | 56 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 03338 | 2002 $PA_{20}$ |
| 2002 $PO_{20}$ | 16.0 | 0.15 | 20060922 | 259.40984 | 18.09219 | 304.06299 | 3.29750 | 0.1167953 | 3.1469713 | 32 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 94809 | 2002 $PO_{20}$ |
| 2002 $PD_{21}$ | 16.4 | 0.15 | 20060922 | 110.29505 | 306.62882 | 287.95408 | 5.95008 | 0.1736521 | 2.3601133 | 47 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 75417 | 2002 $PD_{21}$ |
| 2002 $PQ_{21}$ | 17.4 | 0.15 | 20060922 | 15.48164 | 203.97406 | 183.55421 | 1.93081 | 0.2264141 | 2.3011162 | 43 | 5 | 1994–2004 | 0.40 | M-v | 1 | MPC | 62393 | 2002 $PQ_{21}$ |
| 2002 $PL_{22}$ | 17.0 | 0.15 | 20060922 | 55.10250 | 45.19357 | 282.93089 | 5.59077 | 0.1361531 | 2.3032860 | 52 | 4 | 1994–2006 | 0.46 | M-v | 2 | MPC | 56418 | 2002 $PL_{22}$ |
| 2002 $PG_{23}$ | 16.8 | 0.15 | 20060922 | 36.14766 | 193.53090 | 167.03919 | 6.61524 | 0.1426352 | 2.2896820 | 37 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 75418 | 2002 $PG_{23}$ |
| 2002 $PS_{23}$ | 15.9 | 0.15 | 20060922 | 285.60613 | 138.32852 | 244.54480 | 1.83041 | 0.2018845 | 2.7074639 | 44 | 4 | 1998–2005 | 0.58 | M-v | 1 | MPC | 57877 | 2002 $PS_{23}$ |
| 2002 $PU_{23}$ | 16.3 | 0.15 | 20060922 | 162.44476 | 237.06069 | 294.52030 | 5.42729 | 0.0751589 | 2.4676720 | 54 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04206 | 2002 $PU_{23}$ |
| 2002 $PF_{24}$ | 16.3 | 0.15 | 20060922 | 17.12038 | 345.90183 | 270.38001 | 2.30847 | 0.0456798 | 2.7722942 | 39 | 5 | 2001–2006 | 0.44 | M-v | 0 | MPC | 02112 | 2002 $PF_{24}$ |
| 2002 $PG_{24}$ | 17.0 | 0.15 | 20060922 | 55.14391 | 76.06125 | 173.67953 | 1.68131 | 0.1258947 | 2.5639835 | 38 | 6 | 1993–2006 | 0.31 | M-v | 0 | MPC | 04206 | 2002 $PG_{24}$ |
| 2002 $PR_{24}$ | 17.0 | 0.15 | 20060922 | 105.73260 | 110.34470 | 149.81362 | 6.64004 | 0.1194789 | 2.3192118 | 33 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 75420 | 2002 $PR_{24}$ |
| 2002 $PW_{24}$ | 17.0 | 0.15 | 20060922 | 105.62011 | 352.91401 | 248.47430 | 3.51446 | 0.0818641 | 2.4018215 | 62 | 5 | 1999–2006 | 0.46 | M-v | 0 | MPC | 77613 | 2002 $PW_{24}$ |
| 2002 $PD_{25}$ | 16.6 | 0.15 | 20060922 | 335.12217 | 104.24491 | 261.85004 | 3.41674 | 0.1426347 | 2.5118803 | 22 | 3 | 2002–2006 | 0.34 | M-v | 4 | MPC | 03338 | 2002 $PD_{25}$ |
| 2002 $PG_{25}$ | 16.8 | 0.15 | 20060922 | 51.55171 | 168.50561 | 158.64590 | 3.28227 | 0.1784319 | 2.3243281 | 61 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 89302 | 2002 $PG_{25}$ |
| 2002 $PJ_{25}$ | 17.0 | 0.15 | 20060922 | 320.25515 | 201.25184 | 209.09803 | 2.47468 | 0.1861333 | 2.4251596 | 86 | 6 | 1991–2006 | 0.44 | M-v | 0 | MPC | 04206 | 2002 $PJ_{25}$ |
| 2002 $PY_{25}$ | 17.0 | 0.15 | 20060922 | 75.69210 | 102.99188 | 153.07194 | 1.46368 | 0.1539679 | 2.4396191 | 57 | 5 | 1997–2006 | 0.50 | M-v | 1 | MPC | 04206 | 2002 $PY_{25}$ |
| 2002 $PZ_{25}$ | 16.8 | 0.15 | 20060922 | 24.25380 | 44.87800 | 309.23407 | 7.01784 | 0.1547045 | 2.3503330 | 51 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 61239 | 2002 $PZ_{25}$ |
| 2002 $PJ_{26}$ | 17.5 | 0.15 | 20060922 | 132.37933 | 306.42288 | 301.78456 | 2.46778 | 0.1240143 | 2.2625292 | 40 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 75420 | 2002 $PJ_{26}$ |
| 2002 $PL_{26}$ | 17.3 | 0.15 | 20060922 | 5.71132 | 205.19113 | 169.23034 | 2.29215 | 0.1169636 | 2.3476165 | 65 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 04206 | 2002 $PL_{26}$ |
| 2002 $PA_{27}$ | 17.2 | 0.15 | 20060922 | 92.73282 | 26.96427 | 298.71934 | 4.23010 | 0.0384940 | 2.1822893 | 70 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 85552 | 2002 $PA_{27}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $PW_{27}$ | 16.2 | 0.15 | 20060922 | 297.95920 | 123.02349 | 291.68196 | 4.52159 | 0.2250090 | 2.5321223 | 47 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 04206 | 2002 $PW_{27}$ |
| 2002 $PB_{28}$ | 17.0 | 0.15 | 20060922 | 152.92275 | 299.18273 | 308.94825 | 2.82481 | 0.1713499 | 2.1818155 | 40 | 3 | 1999–2006 | 0.33 | M-v | 4 | MPC | 89302 | 2002 $PB_{28}$ |
| 2002 $PT_{28}$ | 17.0 | 0.15 | 20060922 | 111.11929 | 84.01495 | 170.08883 | 5.56146 | 0.1425970 | 2.3202522 | 72 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 75421 | 2002 $PT_{28}$ |
| 2002 $PV_{28}$ | 16.0 | 0.15 | 20060922 | 266.91166 | 127.14088 | 256.32954 | 2.35247 | 0.0841457 | 2.7670078 | 43 | 4 | 1998–2005 | 0.59 | M-v | 1 | MPC | 57877 | 2002 $PV_{28}$ |
| 2002 $PY_{28}$ | 17.4 | 0.15 | 20060922 | 16.96697 | 177.75405 | 172.58117 | 0.95409 | 0.1997161 | 2.4035330 | 117 | 5 | 1991–2006 | 0.37 | M-v | 0 | MPC | 75421 | 2002 $PY_{28}$ |
| 2002 $PA_{29}$ | 17.4 | 0.15 | 20060922 | 94.93042 | 93.10331 | 166.00669 | 5.37577 | 0.1817469 | 2.3508240 | 32 | 4 | 1995–2006 | 0.28 | M-v | 0 | MPC | 75421 | 2002 $PA_{29}$ |
| 2002 $PN_{29}$ | 17.3 | 0.15 | 20060922 | 282.10805 | 331.17448 | 149.45944 | 5.92140 | 0.0058023 | 2.2375899 | 39 | 3 | 2000–2006 | 0.37 | M-v | 2 | MPC | 89302 | 2002 $PN_{29}$ |
| 2002 $PW_{29}$ | 16.6 | 0.15 | 20060922 | 38.26179 | 37.57471 | 266.56709 | 2.34696 | 0.1839286 | 2.4467491 | 107 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04207 | 2002 $PW_{29}$ |
| 2002 $PY_{29}$ | 16.7 | 0.15 | 20060922 | 26.87574 | 173.71247 | 195.64767 | 3.41116 | 0.0351314 | 2.2728157 | 48 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 56421 | 2002 $PY_{29}$ |
| 2002 $PZ_{29}$ | 17.3 | 0.15 | 20060922 | 59.16148 | 7.68865 | 266.88623 | 3.69991 | 0.1638790 | 2.4550682 | 31 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 03338 | 2002 $PZ_{29}$ |
| 2002 $PV_{30}$ | 17.2 | 0.15 | 20060922 | 243.11294 | 268.99092 | 265.72375 | 2.90934 | 0.0305438 | 2.1855250 | 44 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 56421 | 2002 $PV_{30}$ |
| 2002 $PF_{31}$ | 15.1 | 0.15 | 20060922 | 312.30858 | 120.89924 | 160.30440 | 7.54141 | 0.0886729 | 3.0593640 | 46 | 3 | 1995–2006 | 0.35 | M-v | 2 | MPC | 00303 | 2002 $PF_{31}$ |
| 2002 $PL_{31}$ | 16.5 | 0.15 | 20060922 | 321.51834 | 130.87163 | 246.72852 | 2.40852 | 0.1841252 | 2.5601527 | 65 | 7 | 1990–2006 | 0.41 | M-v | 2 | MPC | 04207 | 2002 $PL_{31}$ |
| 2002 $PS_{31}$ | 18.3 | 0.15 | 20060922 | 104.73746 | 68.78799 | 261.04202 | 1.96390 | 0.1869192 | 2.1479983 | 25 | 1 | 53 days | 0.27 | M-v | 4 | MPC | | 2002 $PS_{31}$ |
| 2002 $PY_{31}$ | 17.0 | 0.15 | 20060922 | 8.38379 | 226.01243 | 151.70398 | 7.18401 | 0.1898850 | 2.3617361 | 54 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 89302 | 2002 $PY_{31}$ |
| 2002 $PZ_{31}$ | 17.4 | 0.15 | 20060922 | 29.36922 | 97.29527 | 253.24421 | 2.52605 | 0.1561939 | 2.3531992 | 83 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 75423 | 2002 $PZ_{31}$ |
| 2002 $PA_{32}$ | 18.4 | 0.15 | 20060922 | 108.59454 | 34.41399 | 276.17235 | 2.86796 | 0.2126961 | 2.1756693 | 25 | 1 | 53 days | 0.32 | M-v | 4 | MPC | | 2002 $PA_{32}$ |
| 2002 $PC_{32}$ | 17.2 | 0.15 | 20060922 | 17.53663 | 42.04864 | 287.33577 | 1.52092 | 0.2015513 | 2.4656928 | 84 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 03338 | 2002 $PC_{32}$ |
| 2002 $PL_{32}$ | 16.8 | 0.15 | 20060922 | 173.28754 | 85.45895 | 162.30677 | 3.98708 | 0.1449101 | 2.1369467 | 47 | 4 | 1999–2006 | 0.49 | M-v | 3 | MPC | 87541 | 2002 $PL_{32}$ |
| 2002 $PC_{33}$ | 16.8 | 0.15 | 20060922 | 24.25768 | 166.48608 | 191.98161 | 2.22555 | 0.1952046 | 2.3598359 | 74 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 75423 | 2002 $PC_{33}$ |
| 2002 $PN_{33}$ | 16.4 | 0.15 | 20060922 | 29.58918 | 200.84220 | 144.31259 | 5.04565 | 0.1835800 | 2.3885049 | 114 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 75424 | 2002 $PN_{33}$ |
| 2002 $PO_{33}$ | 16.3 | 0.15 | 20060922 | 85.55776 | 84.98891 | 149.31253 | 14.84230 | 0.0692897 | 2.5820838 | 38 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 75424 | 2002 $PO_{33}$ |
| 2002 $PW_{33}$ | 17.3 | 0.15 | 20060922 | 279.93803 | 100.12922 | 333.47624 | 13.50083 | 0.1364400 | 2.5355830 | 35 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 94809 | 2002 $PW_{33}$ |
| 2002 $PR_{34}$ | 17.6 | 0.15 | 20020814 | 35.93290 | 95.86826 | 175.36527 | 4.61252 | 0.1929991 | 2.3536931 | 18 | 1 | 24 days | 0.29 | | | MPC | | 2002 $PR_{34}$ |
| 2002 $PW_{34}$ | 17.4 | 0.15 | 20060922 | 86.61191 | 131.48902 | 165.40035 | 4.85532 | 0.1841221 | 2.2827683 | 40 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 75425 | 2002 $PW_{34}$ |
| 2002 $PB_{35}$ | 15.9 | 0.15 | 20060922 | 340.74015 | 99.09615 | 160.50443 | 9.43058 | 0.1279282 | 2.9768476 | 27 | 3 | 2001–2006 | 0.29 | M-v | 2 | MPC | 00303 | 2002 $PB_{35}$ |
| 2002 $PC_{35}$ | 17.4 | 0.15 | 20060922 | 348.54739 | 237.99676 | 146.61794 | 1.47202 | 0.1958009 | 2.4090536 | 66 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 75426 | 2002 $PC_{35}$ |
| 2002 $PJ_{35}$ | 17.3 | 0.15 | 20060922 | 42.46369 | 11.46820 | 304.56002 | 1.31683 | 0.2097340 | 2.3925485 | 65 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 75426 | 2002 $PJ_{35}$ |
| 2002 $PC_{36}$ | 17.3 | 0.15 | 20060922 | 18.67943 | 130.29797 | 177.37840 | 5.17800 | 0.2020513 | 2.5292963 | 43 | 4 | 1998–2006 | 0.31 | M-v | 2 | MPC | 04207 | 2002 $PC_{36}$ |
| 2002 $PL_{36}$ | 17.8 | 0.15 | 20060922 | 42.43169 | 126.73433 | 199.11990 | 1.84774 | 0.2061532 | 2.3768915 | 42 | 4 | 2001–2006 | 0.27 | M-v | 1 | MPC | 03339 | 2002 $PL_{36}$ |
| 2002 $PN_{36}$ | 17.0 | 0.15 | 20060922 | 78.48139 | 342.00952 | 282.00863 | 1.74269 | 0.1639224 | 2.4176368 | 40 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 75427 | 2002 $PN_{36}$ |
| 2002 $PP_{36}$ | 15.7 | 0.15 | 20060922 | 322.48084 | 87.15686 | 278.66592 | 4.00637 | 0.0998840 | 2.5829759 | 64 | 5 | 1995–2006 | 0.36 | M-v | 2 | MPC | 04207 | 2002 $PP_{36}$ |
| 2002 $PQ_{36}$ | 14.5 | 0.15 | 20060922 | 184.48934 | 277.66179 | 155.70783 | 17.40271 | 0.2503352 | 3.1527402 | 93 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 02113 | 2002 $PQ_{36}$ |
| 2002 $PY_{36}$ | 16.7 | 0.15 | 20060922 | 24.01096 | 207.43582 | 133.55764 | 9.71854 | 0.2585675 | 2.3875972 | 75 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 61239 | 2002 $PY_{36}$ |
| 2002 $PC_{37}$ | 15.1 | 0.15 | 20060922 | 17.68864 | 321.41526 | 347.36456 | 32.64922 | 0.2425408 | 2.6266312 | 108 | 3 | 2002–2006 | 0.49 | M-v | 1 | MPC | 04207 | 2002 $PC_{37}$ |
| 2002 $PH_{38}$ | 17.6 | 0.15 | 20060922 | 39.83988 | 151.67552 | 142.91413 | 1.93067 | 0.1715631 | 2.4489563 | 39 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 03339 | 2002 $PH_{38}$ |
| 2002 $PK_{38}$ | 16.2 | 0.15 | 20060922 | 325.04176 | 175.37492 | 136.46426 | 6.93169 | 0.0337853 | 2.7555058 | 19 | 3 | 2002–2005 | 0.42 | M-v | 4 | MPC | 75427 | 2002 $PK_{38}$ |
| 2002 $PR_{38}$ | 16.5 | 0.15 | 20060922 | 358.23537 | 194.07076 | 155.22067 | 6.47851 | 0.1336442 | 2.4638508 | 81 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03339 | 2002 $PR_{38}$ |
| 2002 $PZ_{38}$ | 17.3 | 0.15 | 20060922 | 87.52497 | 78.70436 | 222.13436 | 2.09004 | 0.1750645 | 2.2618683 | 41 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 77614 | 2002 $PZ_{38}$ |
| 2002 $PB_{39}$ | 17.2 | 0.15 | 20060922 | 119.48082 | 61.71385 | 181.27617 | 3.15426 | 0.1392737 | 2.3252621 | 48 | 4 | 1998–2006 | 0.37 | M-v | 1 | MPC | 75427 | 2002 $PB_{39}$ |
| 2002 $PP_{39}$ | 17.2 | 0.15 | 20060922 | 39.76145 | 352.63575 | 304.41680 | 1.26560 | 0.2165488 | 2.4436972 | 58 | 4 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04207 | 2002 $PP_{39}$ |
| 2002 $PR_{39}$ | 17.0 | 0.15 | 20060922 | 340.41367 | 232.15446 | 149.93079 | 1.75174 | 0.1935870 | 2.4456992 | 82 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 04207 | 2002 $PR_{39}$ |
| 2002 $PD_{40}$ | 15.4 | 0.15 | 20060922 | 37.43860 | 78.82636 | 170.16539 | 26.79390 | 0.4635464 | 2.5953045 | 177 | 2 | 2002–2006 | 0.49 | M-v | 1 | MPC | 04207 | 2002 $PD_{40}$ |
| 2002 $PP_{40}$ | 14.3 | 0.15 | 20060922 | 229.26285 | 121.91927 | 240.93258 | 23.57320 | 0.1112479 | 3.1595617 | 90 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 02113 | 2002 $PP_{40}$ |
| 2002 $PX_{40}$ | 15.6 | 0.15 | 20060922 | 330.57268 | 28.52583 | 291.94449 | 7.49126 | 0.3352582 | 2.7868231 | 36 | 1 | 66 days | 0.42 | M-v | 4 | MPC | 38349 | 2002 $PX_{40}$ |
| 2002 $PA_{41}$ | 16.0 | 0.15 | 20060922 | 335.10849 | 193.79507 | 198.06062 | 15.33577 | 0.3075602 | 2.5775136 | 128 | 3 | 1998–2006 | 0.57 | M-v | 2 | MPC | 04207 | 2002 $PA_{41}$ |
| 2002 $PH_{41}$ | 15.7 | 0.15 | 20060922 | 342.53749 | 52.64621 | 303.03075 | 11.39126 | 0.1832841 | 2.6239559 | 72 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 04207 | 2002 $PH_{41}$ |
| 2002 $PJ_{41}$ | 16.9 | 0.15 | 20060922 | 306.88281 | 79.89538 | 296.90453 | 7.22736 | 0.3307688 | 2.7647814 | 43 | 2 | 1998–2002 | 0.49 | M-v | 2 | MPC | 89303 | 2002 $PJ_{41}$ |
| 2002 $PN_{41}$ | 16.2 | 0.15 | 20060922 | 23.89640 | 215.65031 | 153.78405 | 5.47598 | 0.2442768 | 2.3939981 | 94 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 77614 | 2002 $PN_{41}$ |
| 2002 $PO_{41}$ | 16.2 | 0.15 | 20060922 | 350.42514 | 200.24738 | 159.05682 | 8.57458 | 0.2153282 | 2.5759292 | 150 | 7 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04207 | 2002 $PO_{41}$ |
| 2002 $PU_{41}$ | 15.3 | 0.15 | 20060922 | 348.98856 | 175.30562 | 166.17359 | 14.14996 | 0.2623194 | 2.6493609 | 91 | 3 | 1997–2006 | 0.47 | M-v | 1 | MPC | 03339 | 2002 $PU_{41}$ |
| 2002 $PC_{42}$ | 15.7 | 0.15 | 20060922 | 43.04771 | 318.54932 | 28.21100 | 5.41795 | 0.2509870 | 2.3939474 | 139 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 75428 | 2002 $PC_{42}$ |
| 2002 $PW_{42}$ | 17.0 | 0.15 | 20060922 | 350.82341 | 179.43423 | 152.59473 | 8.96007 | 0.4094971 | 2.6160458 | 73 | 2 | 2002–2006 | 0.52 | M-v | 2 | MPC | 03339 | 2002 $PW_{42}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $PA_{43}$ | 17.2 | 0.15 | 20060922 | 66.53829 | 60.92530 | 231.09126 | 4.96482 | 0.1326045 | 2.3765679 | 73 | 5 | 1999–2006 | 0.51 | M-v | 0 | MPC | 75429 | 2002 $PA_{43}$ |
| 2002 $PV_{43}$ | 16.1 | 0.15 | 20060922 | 49.31304 | 31.32255 | 342.85309 | 6.96824 | 0.1581145 | 2.2806214 | 116 | 4 | 1995–2004 | 0.68 | M-v | 1 | MPC | 62394 | 2002 $PV_{43}$ |
| 2002 $PC_{44}$ | 16.5 | 0.15 | 20060922 | 25.29064 | 37.93741 | 342.69422 | 4.62083 | 0.2271281 | 2.3714032 | 88 | 4 | 2000–2006 | 0.45 | M-v | 2 | MPC | 65349 | 2002 $PC_{44}$ |
| 2002 $PH_{44}$ | 16.6 | 0.15 | 20060922 | 65.73984 | 206.14145 | 160.92693 | 3.55127 | 0.1822508 | 2.2572707 | 115 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 66278 | 2002 $PH_{44}$ |
| 2002 $PC_{45}$ | 16.1 | 0.15 | 20060922 | 26.77962 | 297.85116 | 99.90631 | 2.85250 | 0.2534318 | 2.3404205 | 115 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 61242 | 2002 $PC_{45}$ |
| 2002 $PO_{46}$ | 16.6 | 0.15 | 20060922 | 333.01780 | 54.83386 | 321.10310 | 3.52925 | 0.2943215 | 2.6064061 | 70 | 3 | 1998–2006 | 0.43 | M-v | 2 | MPC | 03340 | 2002 $PO_{46}$ |
| 2002 $PP_{46}$ | 16.2 | 0.15 | 20060922 | 355.27378 | 38.26540 | 312.46263 | 4.03372 | 0.3260870 | 2.5715194 | 144 | 4 | 1998–2006 | 0.45 | M-v | 1 | MPC | 04207 | 2002 $PP_{46}$ |
| 2002 $PR_{46}$ | 15.8 | 0.15 | 20060922 | 44.89315 | 104.66023 | 241.27337 | 2.85776 | 0.2553398 | 2.3814992 | 118 | 3 | 2002–2006 | 0.49 | M-v | 1 | MPC | 75431 | 2002 $PR_{46}$ |
| 2002 $PN_{47}$ | 16.7 | 0.15 | 20060922 | 81.16151 | 109.70315 | 185.53391 | 8.68871 | 0.2217399 | 2.3239114 | 82 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 75431 | 2002 $PN_{47}$ |
| 2002 $PW_{47}$ | 17.5 | 0.15 | 20060922 | 82.52662 | 101.33348 | 232.51542 | 5.68980 | 0.1856489 | 2.2359305 | 64 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 77615 | 2002 $PW_{47}$ |
| 2002 $PY_{47}$ | 14.0 | 0.15 | 20060922 | 182.15457 | 120.10545 | 229.66169 | 9.11339 | 0.3031786 | 3.9676264 | 63 | 1 | 90 days | 0.50 | M-v | 3 | MPC | 41770 | 2002 $PY_{47}$ |
| 2002 $PD_{48}$ | 15.3 | 0.15 | 20060922 | 302.95261 | 257.48144 | 169.63602 | 28.28125 | 0.3949035 | 2.6150032 | 56 | 1 | 85 days | 0.51 | M-v | 4 | MPC | 77615 | 2002 $PD_{48}$ |
| 2002 $PK_{48}$ | 16.6 | 0.15 | 20060922 | 90.66896 | 53.29207 | 260.46242 | 5.69028 | 0.1414710 | 2.2634679 | 86 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 87541 | 2002 $PK_{48}$ |
| 2002 $PR_{48}$ | 15.2 | 0.15 | 20060922 | 283.18036 | 103.12300 | 295.63982 | 10.54789 | 0.1441865 | 2.7367934 | 62 | 3 | 1998–2004 | 0.58 | M-v | 2 | MPC | 62394 | 2002 $PR_{48}$ |
| 2002 $PF_{49}$ | 16.0 | 0.15 | 20060922 | 28.21399 | 51.66113 | 236.50312 | 6.87935 | 0.1798959 | 2.5819786 | 96 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04207 | 2002 $PF_{49}$ |
| 2002 $PD_{51}$ | 16.9 | 0.15 | 20060922 | 24.73012 | 251.46704 | 73.56788 | 2.99673 | 0.2181758 | 2.4148527 | 80 | 5 | 1991–2006 | 0.46 | M-v | 1 | MPC | 77615 | 2002 $PD_{51}$ |
| 2002 $PS_{51}$ | 17.1 | 0.15 | 20060922 | 350.05368 | 339.29039 | 25.89756 | 2.63565 | 0.1953614 | 2.4552538 | 61 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04207 | 2002 $PS_{51}$ |
| 2002 $PE_{52}$ | 16.4 | 0.15 | 20060922 | 301.36204 | 316.93506 | 23.64262 | 2.40453 | 0.0964923 | 2.7696360 | 35 | 4 | 1998–2005 | 0.41 | M-v | 1 | MPC | 56432 | 2002 $PE_{52}$ |
| 2002 $PG_{52}$ | 17.2 | 0.15 | 20060922 | 108.35671 | 138.91872 | 119.92361 | 6.86808 | 0.0604880 | 2.3311500 | 37 | 4 | 1998–2006 | 0.34 | M-v | 1 | MPC | 75433 | 2002 $PG_{52}$ |
| 2002 $PG_{54}$ | 17.1 | 0.15 | 20060922 | 117.89227 | 214.69653 | 70.05639 | 5.25099 | 0.1694441 | 2.2119892 | 56 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 87541 | 2002 $PG_{54}$ |
| 2002 $PM_{54}$ | 14.9 | 0.15 | 20060922 | 306.35803 | 220.78395 | 150.46324 | 10.30868 | 0.2325099 | 2.7909394 | 76 | 5 | 1995–2005 | 0.58 | M-v | 1 | MPC | 77615 | 2002 $PM_{54}$ |
| 2002 $PA_{55}$ | 16.6 | 0.15 | 20060922 | 357.35550 | 199.61926 | 184.39801 | 3.60298 | 0.2620801 | 2.4228440 | 112 | 2 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03340 | 2002 $PA_{55}$ |
| 2002 $PN_{55}$ | 17.2 | 0.15 | 20060922 | 69.74805 | 4.79609 | 327.14380 | 5.02436 | 0.1844708 | 2.2737298 | 54 | 3 | 1996–2004 | 0.57 | M-v | 3 | MPC | 61245 | 2002 $PN_{55}$ |
| 2002 $PZ_{55}$ | 16.7 | 0.15 | 20060922 | 39.14751 | 136.47515 | 169.13797 | 5.79073 | 0.1940568 | 2.4449962 | 85 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04207 | 2002 $PZ_{55}$ |
| 2002 $PX_{56}$ | 16.8 | 0.15 | 20060922 | 43.84395 | 150.99701 | 183.04681 | 5.46710 | 0.1713256 | 2.3730593 | 67 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 03341 | 2002 $PX_{56}$ |
| 2002 $PF_{57}$ | 16.5 | 0.15 | 20060922 | 49.09725 | 15.78124 | 319.40677 | 3.50685 | 0.2143855 | 2.3552683 | 91 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 62394 | 2002 $PF_{57}$ |
| 2002 $PM_{57}$ | 14.4 | 0.15 | 20060922 | 262.78984 | 169.99019 | 168.02853 | 18.53941 | 0.1713409 | 3.2132262 | 80 | 3 | 2001–2005 | 0.68 | M-v | 2 | MPC | 41771 | 2002 $PM_{57}$ |
| 2002 $PE_{58}$ | 16.4 | 0.15 | 20060922 | 5.48309 | 102.18878 | 235.24456 | 5.58626 | 0.1821809 | 2.5206166 | 86 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 03341 | 2002 $PE_{58}$ |
| 2002 $PO_{59}$ | 15.3 | 0.15 | 20060922 | 4.10075 | 169.79098 | 152.30586 | 15.71572 | 0.1569888 | 2.6066318 | 87 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04207 | 2002 $PO_{59}$ |
| 2002 $PT_{60}$ | 15.6 | 0.15 | 20060922 | 316.68765 | 3.24895 | 351.84226 | 16.70758 | 0.2791644 | 2.7690081 | 39 | 1 | 82 days | 0.46 | M-v | 4 | MPC | 38353 | 2002 $PT_{60}$ |
| 2002 $PC_{61}$ | 16.0 | 0.15 | 20060922 | 279.85407 | 135.01604 | 194.64984 | 14.36535 | 0.2252553 | 2.9714984 | 38 | 3 | 2001–2006 | 0.37 | M-v | 3 | MPC | 00305 | 2002 $PC_{61}$ |
| 2002 $PQ_{61}$ | 15.9 | 0.15 | 20060922 | 288.40999 | 198.40137 | 199.44676 | 12.27575 | 0.1607810 | 2.6598912 | 38 | 3 | 2002–2005 | 0.40 | M-v | 2 | MPC | 56435 | 2002 $PQ_{61}$ |
| 2002 $PZ_{61}$ | 17.1 | 0.15 | 20060922 | 48.93699 | 213.07929 | 129.16421 | 4.50071 | 0.1644783 | 2.2872254 | 40 | 4 | 2002–2006 | 0.36 | M-v | 1 | MPC | 77616 | 2002 $PZ_{61}$ |
| 2002 $PJ_{62}$ | 16.8 | 0.15 | 20060922 | 30.80826 | 45.52094 | 326.22636 | 5.55241 | 0.1394179 | 2.2653551 | 28 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 03341 | 2002 $PJ_{62}$ |
| 2002 $PP_{62}$ | 17.0 | 0.15 | 20060922 | 16.98651 | 182.58481 | 139.81357 | 3.92372 | 0.2499177 | 2.4774834 | 51 | 2 | 2002–2006 | 0.68 | M-v | 3 | MPC | 03341 | 2002 $PP_{62}$ |
| 2002 $PA_{63}$ | 16.9 | 0.15 | 20060922 | 64.49132 | 304.92507 | 332.93709 | 1.68503 | 0.1851385 | 2.4080177 | 62 | 5 | 2001–2006 | 0.38 | M-v | 0 | MPC | 04208 | 2002 $PA_{63}$ |
| 2002 $PB_{63}$ | 17.6 | 0.15 | 20060922 | 28.92773 | 260.26168 | 58.68424 | 0.18368 | 0.2391478 | 2.4374767 | 71 | 4 | 2001–2006 | 0.35 | M-v | 2 | MPC | 03342 | 2002 $PB_{63}$ |
| 2002 $PR_{63}$ | 16.4 | 0.15 | 20060922 | 50.81587 | 7.38231 | 337.30541 | 4.98073 | 0.1287010 | 2.2938346 | 76 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 85556 | 2002 $PR_{63}$ |
| 2002 $PF_{64}$ | 16.9 | 0.15 | 20060922 | 59.55312 | 79.90178 | 177.71265 | 2.51816 | 0.1776306 | 2.4652454 | 50 | 4 | 2002–2006 | 0.33 | M-v | 1 | MPC | 03342 | 2002 $PF_{64}$ |
| 2002 $PN_{65}$ | 17.3 | 0.15 | 20060922 | 53.41586 | 76.83149 | 211.72863 | 5.68456 | 0.1986245 | 2.3999644 | 43 | 6 | 1995–2006 | 0.36 | M-v | 0 | MPC | 77617 | 2002 $PN_{65}$ |
| 2002 $PA_{66}$ | 15.9 | 0.15 | 20060922 | 303.94220 | 116.05170 | 284.24985 | 7.43698 | 0.1326941 | 2.4585835 | 41 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04208 | 2002 $PA_{66}$ |
| 2002 $PQ_{66}$ | 16.5 | 0.15 | 20060922 | 342.15567 | 217.84795 | 154.18348 | 4.82693 | 0.1324275 | 2.4217039 | 60 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 03342 | 2002 $PQ_{66}$ |
| 2002 $PU_{66}$ | 15.9 | 0.15 | 20060922 | 235.55285 | 306.79563 | 139.88724 | 13.38067 | 0.0276196 | 2.5116608 | 40 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 77617 | 2002 $PU_{66}$ |
| 2002 $PA_{67}$ | 17.4 | 0.15 | 20060922 | 35.50289 | 94.54406 | 241.97848 | 0.60654 | 0.2789934 | 2.3582581 | 68 | 3 | 1995–2006 | 0.53 | M-v | 2 | MPC | 50098 | 2002 $PA_{67}$ |
| 2002 $PE_{67}$ | 17.1 | 0.15 | 20060922 | 41.17264 | 176.35654 | 146.32545 | 1.08886 | 0.2201749 | 2.3645324 | 85 | 6 | 1999–2006 | 0.42 | M-v | 0 | MPC | 04208 | 2002 $PE_{67}$ |
| 2002 $PJ_{67}$ | 17.2 | 0.15 | 20060922 | 8.06776 | 152.93103 | 217.98140 | 2.26529 | 0.1639198 | 2.3503652 | 79 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 75438 | 2002 $PJ_{67}$ |
| 2002 $PU_{67}$ | 16.3 | 0.15 | 20060922 | 2.46391 | 223.40159 | 169.59956 | 5.21605 | 0.2380621 | 2.3469230 | 106 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 62395 | 2002 $PU_{67}$ |
| 2002 $PY_{67}$ | 17.8 | 0.15 | 20060922 | 67.84754 | 24.14903 | 232.99081 | 2.05005 | 0.1447602 | 2.4727981 | 34 | 5 | 1999–2006 | 0.40 | M-v | 1 | MPC | 75438 | 2002 $PY_{67}$ |
| 2002 $PB_{68}$ | 16.9 | 0.15 | 20060922 | 100.39471 | 124.95293 | 159.22449 | 4.19573 | 0.1319963 | 2.2674941 | 68 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75438 | 2002 $PB_{68}$ |
| 2002 $PL_{68}$ | 16.3 | 0.15 | 20060922 | 85.86343 | 322.01462 | 289.81176 | 4.94431 | 0.1610421 | 2.4256953 | 45 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 04208 | 2002 $PL_{68}$ |
| 2002 $PA_{69}$ | 15.6 | 0.15 | 20060922 | 32.94930 | 331.51885 | 308.28217 | 18.15831 | 0.2059172 | 2.5871792 | 53 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04208 | 2002 $PA_{69}$ |
| 2002 $PN_{70}$ | 16.9 | 0.15 | 20060922 | 0.57686 | 112.02406 | 227.66738 | 6.97404 | 0.2571837 | 2.5326210 | 103 | 3 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04208 | 2002 $PN_{70}$ |
| 2002 $PC_{71}$ | 14.4 | 0.15 | 20060922 | 311.72163 | 347.44092 | 293.57135 | 13.64015 | 0.1716153 | 3.1160530 | 39 | 5 | 1994–2006 | 0.62 | M-v | 1 | MPC | 04208 | 2002 $PC_{71}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $PT_{71}$ | 17.5 | 0.15 | 20060922 | 91.50245 | 90.68340 | 196.86462 | 6.62274 | 0.1211853 | 2.2880514 | 38 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 75441 | 2002 $PT_{71}$ |
| 2002 $PJ_{72}$ | 17.3 | 0.15 | 20060922 | 352.75327 | 167.90009 | 173.24109 | 13.48724 | 0.2804892 | 2.5375554 | 33 | 3 | 1998–2006 | 0.62 | M-v | 3 | MPC | 35285 | 2002 $PJ_{72}$ |
| 2002 $PM_{74}$ | 16.1 | 0.15 | 20060922 | 13.42241 | 99.42556 | 238.76603 | 5.57397 | 0.1401886 | 2.4739473 | 96 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 04208 | 2002 $PM_{74}$ |
| 2002 $PP_{74}$ | 16.7 | 0.15 | 20060922 | 25.55037 | 177.04968 | 169.32425 | 6.69722 | 0.1534879 | 2.4095919 | 68 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04208 | 2002 $PP_{74}$ |
| 2002 $PF_{75}$ | 15.2 | 0.15 | 20060922 | 275.91232 | 170.69168 | 159.52768 | 10.72735 | 0.2257887 | 3.1265358 | 72 | 5 | 1985–2006 | 0.63 | M-v | 1 | MPC | 00307 | 2002 $PF_{75}$ |
| 2002 $PU_{75}$ | 17.0 | 0.15 | 20060922 | 83.66915 | 275.19989 | 346.47202 | 4.17681 | 0.1956898 | 2.3695110 | 60 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 04208 | 2002 $PU_{75}$ |
| 2002 $PX_{77}$ | 16.1 | 0.15 | 20060922 | 353.23660 | 264.82636 | 79.56462 | 6.44802 | 0.2202241 | 2.5470576 | 61 | 3 | 1998–2006 | 0.47 | M-v | 3 | MPC | 03343 | 2002 $PX_{77}$ |
| 2002 $PN_{78}$ | 16.8 | 0.15 | 20060922 | 101.42229 | 172.78058 | 73.84070 | 3.47655 | 0.1427647 | 2.3822260 | 76 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 77617 | 2002 $PN_{78}$ |
| 2002 $PP_{79}$ | 17.2 | 0.15 | 20060922 | 56.63191 | 239.70911 | 99.93194 | 6.61878 | 0.2038786 | 2.2903769 | 48 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 75444 | 2002 $PP_{79}$ |
| 2002 $PT_{79}$ | 17.0 | 0.15 | 20060922 | 28.45826 | 15.68072 | 321.02087 | 3.10068 | 0.2027262 | 2.4041004 | 79 | 5 | 1997–2006 | 0.45 | M-v | 1 | MPC | 04208 | 2002 $PT_{79}$ |
| 2002 $PC_{81}$ | 17.2 | 0.15 | 20060922 | 97.19320 | 251.56915 | 16.66902 | 2.61884 | 0.1518903 | 2.3118984 | 63 | 4 | 1999–2006 | 0.38 | M-v | 0 | MPC | 75444 | 2002 $PC_{81}$ |
| 2002 $PU_{81}$ | 16.5 | 0.15 | 20060922 | 95.17052 | 17.30333 | 306.03065 | 2.98303 | 0.1610855 | 2.2003850 | 64 | 4 | 1999–2006 | 0.47 | M-v | 2 | MPC | 72688 | 2002 $PU_{81}$ |
| 2002 $PF_{83}$ | 15.4 | 0.15 | 20060922 | 34.61442 | 59.52656 | 331.63930 | 8.43959 | 0.2062057 | 2.2500028 | 120 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 62395 | 2002 $PF_{83}$ |
| 2002 $PZ_{83}$ | 16.7 | 0.15 | 20060922 | 70.91468 | 304.67448 | 359.74533 | 2.54661 | 0.1791132 | 2.3386247 | 69 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 75445 | 2002 $PZ_{83}$ |
| 2002 $PD_{84}$ | 16.0 | 0.15 | 20060922 | 98.04693 | 150.21954 | 140.79812 | 7.51204 | 0.1306975 | 2.2895808 | 63 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 77618 | 2002 $PD_{84}$ |
| 2002 $PL_{84}$ | 16.0 | 0.15 | 20060922 | 33.28631 | 340.50417 | 17.37116 | 3.30895 | 0.1381391 | 2.3343960 | 92 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 61249 | 2002 $PL_{84}$ |
| 2002 $PA_{85}$ | 16.0 | 0.15 | 20060922 | 311.80121 | 336.05205 | 343.96002 | 7.97375 | 0.3143077 | 2.8675452 | 42 | 1 | 62 days | 0.52 | M-v | 5 | MPC | 38356 | 2002 $PA_{85}$ |
| 2002 $PG_{85}$ | 16.8 | 0.15 | 20060922 | 31.11902 | 234.58084 | 120.93679 | 3.64283 | 0.2284896 | 2.3729329 | 72 | 4 | 1995–2006 | 0.37 | M-v | 0 | MPC | 77618 | 2002 $PG_{85}$ |
| 2002 $PV_{85}$ | 16.5 | 0.15 | 20060922 | 20.23540 | 242.11507 | 81.84610 | 4.22909 | 0.1937561 | 2.4439582 | 76 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03343 | 2002 $PV_{85}$ |
| 2002 $PT_{86}$ | 15.3 | 0.15 | 20060922 | 329.27669 | 23.96167 | 328.13735 | 13.85619 | 0.1438641 | 2.6155669 | 96 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 02114 | 2002 $PT_{86}$ |
| 2002 $PU_{86}$ | 16.4 | 0.15 | 20060922 | 63.21132 | 319.16265 | 329.51539 | 4.79686 | 0.2275464 | 2.3932872 | 76 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 75446 | 2002 $PU_{86}$ |
| 2002 $PC_{87}$ | 16.6 | 0.15 | 20060922 | 356.84463 | 247.78758 | 173.05145 | 22.19317 | 0.2637026 | 2.3198798 | 41 | 4 | 1994–2004 | 0.46 | M-v | 1 | MPC | 04208 | 2002 $PC_{87}$ |
| 2002 $PJ_{88}$ | 16.4 | 0.15 | 20060922 | 126.19574 | 104.79232 | 155.63906 | 6.17757 | 0.1185596 | 2.2904024 | 98 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87541 | 2002 $PJ_{88}$ |
| 2002 $PL_{88}$ | 16.6 | 0.15 | 20060922 | 9.99773 | 225.38810 | 163.17210 | 4.91023 | 0.1578604 | 2.3373053 | 55 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 85559 | 2002 $PL_{88}$ |
| 2002 $PU_{89}$ | 16.9 | 0.15 | 20060922 | 49.15932 | 108.59437 | 192.06884 | 13.78746 | 0.2519860 | 2.4223963 | 64 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75447 | 2002 $PU_{89}$ |
| 2002 $PV_{89}$ | 14.9 | 0.15 | 20060922 | 296.21455 | 127.03172 | 254.90120 | 12.45176 | 0.1189521 | 2.6919927 | 53 | 4 | 1998–2003 | 0.62 | M-v | 1 | MPC | 38357 | 2002 $PV_{89}$ |
| 2002 $PS_{90}$ | 16.8 | 0.15 | 20060922 | 303.73330 | 230.00370 | 148.75436 | 5.31109 | 0.2192904 | 2.6582283 | 27 | 4 | 1991–2004 | 0.46 | M-v | 1 | MPC | 48247 | 2002 $PS_{90}$ |
| 2002 $PA_{91}$ | 15.7 | 0.15 | 20060922 | 326.77909 | 54.39543 | 294.36860 | 13.25049 | 0.2104341 | 2.7344872 | 75 | 4 | 1995–2004 | 0.54 | M-v | 1 | MPC | 85559 | 2002 $PA_{91}$ |
| 2002 $PB_{91}$ | 16.2 | 0.15 | 20060922 | 351.56432 | 315.36089 | 75.14780 | 5.78396 | 0.2303105 | 2.4005037 | 85 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 03344 | 2002 $PB_{91}$ |
| 2002 $PF_{91}$ | 16.4 | 0.15 | 20060922 | 71.18699 | 279.20383 | 23.03950 | 6.66439 | 0.1508937 | 2.3352729 | 76 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 97608 | 2002 $PF_{91}$ |
| 2002 $PQ_{91}$ | 16.2 | 0.15 | 20060922 | 348.61847 | 274.60250 | 95.26507 | 4.78841 | 0.2238866 | 2.4743712 | 80 | 2 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03344 | 2002 $PQ_{91}$ |
| 2002 $PU_{91}$ | 17.0 | 0.15 | 20060922 | 340.32807 | 219.45521 | 150.19037 | 5.12643 | 0.3364782 | 2.5532688 | 87 | 4 | 1990–2006 | 0.53 | M-v | 2 | MPC | 04208 | 2002 $PU_{91}$ |
| 2002 $PV_{91}$ | 16.7 | 0.15 | 20060922 | 61.02503 | 330.28399 | 327.61073 | 2.09254 | 0.1928411 | 2.3779927 | 67 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 75447 | 2002 $PV_{91}$ |
| 2002 $PY_{91}$ | 17.2 | 0.15 | 20060922 | 55.31528 | 189.65991 | 142.56940 | 5.44826 | 0.2000109 | 2.3125636 | 55 | 6 | 1994–2006 | 0.40 | M-v | 0 | MPC | 75447 | 2002 $PY_{91}$ |
| 2002 $PG_{92}$ | 16.8 | 0.15 | 20060922 | 49.34496 | 11.59927 | 328.10021 | 4.57669 | 0.1512263 | 2.3175404 | 85 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 85560 | 2002 $PG_{92}$ |
| 2002 $PS_{93}$ | 17.4 | 0.15 | 20060922 | 26.12405 | 247.18674 | 105.78771 | 3.21212 | 0.2331357 | 2.3858035 | 83 | 4 | 1991–2006 | 0.48 | M-v | 1 | MPC | 48248 | 2002 $PS_{93}$ |
| 2002 $PV_{93}$ | 16.4 | 0.15 | 20060922 | 347.84796 | 345.85510 | 56.56492 | 6.11645 | 0.2248341 | 2.3987924 | 157 | 5 | 1991–2006 | 0.49 | M-v | 1 | MPC | 04208 | 2002 $PV_{93}$ |
| 2002 $PH_{94}$ | 14.3 | 0.15 | 20060922 | 159.74280 | 328.97850 | 44.91212 | 9.72448 | 0.2307375 | 3.9961019 | 66 | 3 | 2000–2003 | 0.60 | M-v | 3 | MPC | 57880 | 2002 $PH_{94}$ |
| 2002 $PK_{94}$ | 17.1 | 0.15 | 20060922 | 105.31227 | 273.55156 | 8.18836 | 7.19126 | 0.1255308 | 2.2911346 | 39 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04208 | 2002 $PK_{94}$ |
| 2002 $PD_{95}$ | 16.7 | 0.15 | 20060922 | 29.66153 | 313.51586 | 37.13865 | 5.02171 | 0.2447067 | 2.3728566 | 81 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 75448 | 2002 $PD_{95}$ |
| 2002 $PE_{95}$ | 16.9 | 0.15 | 20060922 | 4.47067 | 0.07139 | 5.72879 | 8.19823 | 0.2301372 | 2.4334384 | 96 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03345 | 2002 $PE_{95}$ |
| 2002 $PY_{95}$ | 16.4 | 0.15 | 20060922 | 8.38490 | 43.27925 | 311.31424 | 5.31035 | 0.1625662 | 2.4230908 | 81 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 04208 | 2002 $PY_{95}$ |
| 2002 $PK_{96}$ | 15.9 | 0.15 | 20060922 | 23.52945 | 269.41778 | 23.83829 | 4.48086 | 0.2177574 | 2.5552568 | 56 | 3 | 1998–2006 | 0.43 | M-v | 3 | MPC | 03345 | 2002 $PK_{96}$ |
| 2002 $PP_{96}$ | 16.5 | 0.15 | 20060922 | 31.51617 | 299.93064 | 14.67796 | 2.01859 | 0.2139933 | 2.4581787 | 119 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 04208 | 2002 $PP_{96}$ |
| 2002 $PW_{96}$ | 16.8 | 0.15 | 20060922 | 36.04267 | 246.85625 | 115.59301 | 6.48036 | 0.1927607 | 2.3155791 | 43 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 89305 | 2002 $PW_{96}$ |
| 2002 $PE_{97}$ | 16.0 | 0.15 | 20060922 | 352.51624 | 4.10786 | 342.08819 | 15.20848 | 0.1530600 | 2.5432607 | 99 | 3 | 1998–2006 | 0.60 | M-v | 3 | MPC | 04208 | 2002 $PE_{97}$ |
| 2002 $PH_{97}$ | 15.8 | 0.15 | 20060922 | 315.20636 | 235.20239 | 130.95600 | 10.32818 | 0.2641347 | 2.6988296 | 49 | 3 | 2001–2004 | 0.63 | M-v | 2 | MPC | 61252 | 2002 $PH_{97}$ |
| 2002 $PO_{97}$ | 15.9 | 0.15 | 20060922 | 16.04379 | 216.92198 | 128.18739 | 7.76870 | 0.2536642 | 2.4529069 | 82 | 6 | 1997–2006 | 0.46 | M-v | 1 | MPC | 04209 | 2002 $PO_{97}$ |
| 2002 $PH_{98}$ | 15.1 | 0.15 | 20060922 | 298.18098 | 259.67120 | 115.04358 | 10.09874 | 0.1599671 | 2.7363198 | 68 | 3 | 1998–2004 | 0.57 | M-v | 2 | MPC | 62395 | 2002 $PH_{98}$ |
| 2002 $PL_{98}$ | 16.3 | 0.15 | 20060922 | 357.84251 | 255.27200 | 79.91419 | 8.22481 | 0.2428811 | 2.5668032 | 53 | 2 | 2002–2006 | 0.57 | M-v | 3 | MPC | 03345 | 2002 $PL_{98}$ |
| 2002 $PN_{98}$ | 14.8 | 0.15 | 20060922 | 211.09434 | 250.42041 | 157.93618 | 5.13294 | 0.2765477 | 3.1159146 | 62 | 4 | 1994–2005 | 0.61 | M-v | 1 | MPC | 56455 | 2002 $PN_{98}$ |
| 2002 $PV_{98}$ | 16.2 | 0.15 | 20060922 | 325.48254 | 218.28946 | 133.31156 | 7.52621 | 0.2351489 | 2.6709164 | 50 | 2 | 2002–2004 | 0.62 | M-v | 3 | MPC | 56455 | 2002 $PV_{98}$ |
| 2002 $PC_{99}$ | 16.4 | 0.15 | 20060922 | 4.71020 | 7.01659 | 344.77299 | 9.84887 | 0.2294450 | 2.4724979 | 127 | 2 | 2002–2006 | 0.54 | M-v | 2 | MPC | 03345 | 2002 $PC_{99}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $PL_{99}$ | 17.0 | 0.15 | 20060922 | 79.98159 | 212.84405 | 96.27764 | 6.31087 | 0.1809138 | 2.2905031 | 68 | 4 | 2002–2006 | 0.35 | M-v | 0 | MPC | 85561 | 2002 $PL_{99}$ |
| 2002 $PT_{99}$ | 17.1 | 0.15 | 20060922 | 87.39164 | 306.23458 | 19.70084 | 4.36325 | 0.1796321 | 2.2256385 | 52 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 89305 | 2002 $PT_{99}$ |
| 2002 $PA_{100}$ | 16.5 | 0.15 | 20060922 | 68.25459 | 254.36507 | 62.48184 | 3.59580 | 0.1746891 | 2.3244849 | 66 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 77620 | 2002 $PA_{100}$ |
| 2002 $PD_{100}$ | 16.6 | 0.15 | 20060922 | 76.76741 | 224.74353 | 86.00960 | 5.79193 | 0.1875285 | 2.3085260 | 63 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 75451 | 2002 $PD_{100}$ |
| 2002 $PK_{100}$ | 16.6 | 0.15 | 20060922 | 20.67712 | 180.50202 | 121.84621 | 10.07376 | 0.2271168 | 2.5397120 | 58 | 2 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03346 | 2002 $PK_{100}$ |
| 2002 $PL_{100}$ | 16.0 | 0.15 | 20060922 | 8.39494 | 212.81594 | 117.10119 | 12.13342 | 0.1040255 | 2.5258297 | 44 | 4 | 2000–2006 | 0.56 | M-v | 3 | MPC | 04209 | 2002 $PL_{100}$ |
| 2002 $PW_{101}$ | 14.8 | 0.15 | 20060922 | 300.89458 | 27.98835 | 259.63346 | 7.84172 | 0.0592129 | 3.0956002 | 46 | 4 | 2002–2006 | 0.57 | M-v | 2 | MPC | 02114 | 2002 $PW_{101}$ |
| 2002 $PX_{101}$ | 16.8 | 0.15 | 20060922 | 59.31360 | 115.72337 | 203.93378 | 6.09963 | 0.2484333 | 2.3172954 | 70 | 4 | 1994–2006 | 0.43 | M-v | 1 | MPC | 75451 | 2002 $PX_{101}$ |
| 2002 $PF_{102}$ | 16.2 | 0.15 | 20060922 | 300.94240 | 114.64033 | 228.07629 | 7.09859 | 0.1002061 | 2.7820530 | 38 | 4 | 1998–2005 | 0.44 | M-v | 1 | MPC | 74200 | 2002 $PF_{102}$ |
| 2002 $PK_{102}$ | 16.2 | 0.15 | 20060922 | 343.35516 | 128.98352 | 198.86761 | 11.27699 | 0.1917461 | 2.6035458 | 30 | 3 | 1998–2005 | 0.44 | M-v | 3 | MPC | 35313 | 2002 $PK_{102}$ |
| 2002 $PE_{103}$ | 16.4 | 0.15 | 20060922 | 348.41253 | 175.73514 | 188.49032 | 6.53648 | 0.0806941 | 2.4547402 | 75 | 5 | 1991–2006 | 0.42 | M-v | 1 | MPC | 04209 | 2002 $PE_{103}$ |
| 2002 $PF_{103}$ | 16.8 | 0.15 | 20060922 | 346.82757 | 155.96363 | 242.10515 | 4.56051 | 0.1572068 | 2.3689130 | 89 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04209 | 2002 $PF_{103}$ |
| 2002 $PJ_{103}$ | 17.2 | 0.15 | 20060922 | 40.50762 | 99.10097 | 262.54827 | 5.78636 | 0.2156428 | 2.2926070 | 45 | 5 | 1998–2006 | 0.38 | M-v | 1 | MPC | 62395 | 2002 $PJ_{103}$ |
| 2002 $PL_{103}$ | 16.0 | 0.15 | 20060922 | 298.42315 | 213.87671 | 167.19431 | 12.26419 | 0.2000799 | 2.6653766 | 37 | 4 | 1998–2004 | 0.54 | M-v | 0 | MPC | 85561 | 2002 $PL_{103}$ |
| 2002 $PS_{103}$ | 16.2 | 0.15 | 20060922 | 36.95287 | 85.62710 | 222.23569 | 7.08854 | 0.1242194 | 2.4480349 | 82 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04209 | 2002 $PS_{103}$ |
| 2002 $PY_{103}$ | 17.7 | 0.15 | 20060922 | 61.17832 | 115.06618 | 179.47722 | 8.52947 | 0.2228357 | 2.3786199 | 24 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 89306 | 2002 $PY_{103}$ |
| 2002 $PD_{104}$ | 16.5 | 0.15 | 20060922 | 18.65633 | 127.58782 | 174.21975 | 13.83087 | 0.1807761 | 2.5473040 | 44 | 4 | 1994–2006 | 0.42 | M-v | 2 | MPC | 04209 | 2002 $PD_{104}$ |
| 2002 $PX_{104}$ | 15.7 | 0.15 | 20060922 | 296.79351 | 107.29687 | 190.27655 | 11.94506 | 0.1429895 | 3.0874057 | 49 | 3 | 2001–2006 | 0.33 | M-v | 2 | MPC | 00310 | 2002 $PX_{104}$ |
| 2002 $PE_{105}$ | 16.8 | 0.15 | 20060922 | 68.61664 | 99.39466 | 210.60075 | 5.12327 | 0.2490100 | 2.3205704 | 60 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 75453 | 2002 $PE_{105}$ |
| 2002 $PU_{106}$ | 15.3 | 0.15 | 20060922 | 322.27465 | 77.47223 | 199.97711 | 10.01318 | 0.0567535 | 3.0837413 | 45 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 00311 | 2002 $PU_{106}$ |
| 2002 $PY_{106}$ | 16.8 | 0.15 | 20060922 | 350.89511 | 34.59007 | 281.81566 | 12.35840 | 0.1640444 | 2.6425523 | 22 | 1 | 102 days | 0.51 | M-v | 3 | MPC | 48248 | 2002 $PY_{106}$ |
| 2002 $PB_{107}$ | 16.8 | 0.15 | 20060922 | 290.27370 | 58.14706 | 290.19861 | 11.70914 | 0.2065392 | 2.8751947 | 21 | 1 | 86 days | 0.42 | M-v | 3 | MPC | 48248 | 2002 $PB_{107}$ |
| 2002 $PT_{107}$ | 16.0 | 0.15 | 20060922 | 253.62991 | 157.47602 | 194.54117 | 10.71212 | 0.0193676 | 3.0066016 | 21 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 00311 | 2002 $PT_{107}$ |
| 2002 $PC_{108}$ | 16.2 | 0.15 | 20060922 | 3.44402 | 299.90756 | 94.85864 | 6.97325 | 0.1777365 | 2.3079659 | 73 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 72690 | 2002 $PC_{108}$ |
| 2002 $PK_{108}$ | 15.7 | 0.15 | 20060922 | 320.03595 | 350.92013 | 352.79266 | 5.48673 | 0.2501862 | 2.6902300 | 43 | 3 | 1998–2005 | 0.61 | M-v | 3 | MPC | 38360 | 2002 $PK_{108}$ |
| 2002 $PS_{108}$ | 17.6 | 0.15 | 20060922 | 78.38450 | 234.80047 | 81.52090 | 4.12750 | 0.1923968 | 2.2542710 | 30 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 87541 | 2002 $PS_{108}$ |
| 2002 $PS_{109}$ | 15.9 | 0.15 | 20060922 | 320.37479 | 148.30025 | 180.25909 | 17.64005 | 0.1483593 | 2.7775021 | 49 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 00311 | 2002 $PS_{109}$ |
| 2002 $PD_{110}$ | 17.7 | 0.15 | 20060922 | 64.48116 | 249.85260 | 113.74405 | 6.19411 | 0.1974835 | 2.1960171 | 33 | 4 | 1999–2006 | 0.53 | M-v | 2 | MPC | 02115 | 2002 $PD_{110}$ |
| 2002 $PP_{110}$ | 17.7 | 0.15 | 20060922 | 354.11645 | 229.96437 | 109.67169 | 5.03557 | 0.3180057 | 2.5455862 | 26 | 3 | 1998–2006 | 0.41 | M-v | 3 | MPC | 03346 | 2002 $PP_{110}$ |
| 2002 $PQ_{110}$ | 16.6 | 0.15 | 20060922 | 75.29331 | 299.46487 | 5.04206 | 6.70406 | 0.1315576 | 2.3033861 | 59 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 65350 | 2002 $PQ_{110}$ |
| 2002 $PR_{110}$ | 17.0 | 0.15 | 20060922 | 66.39978 | 233.75231 | 88.01334 | 5.97279 | 0.1432997 | 2.2893997 | 30 | 4 | 2002–2006 | 0.42 | M-v | 1 | MPC | 75454 | 2002 $PR_{110}$ |
| 2002 $PV_{110}$ | 15.9 | 0.15 | 20060922 | 300.89271 | 17.50658 | 255.36424 | 7.97096 | 0.1438561 | 3.1503990 | 31 | 4 | 1997–2004 | 0.43 | M-v | 1 | MPC | 56462 | 2002 $PV_{110}$ |
| 2002 $PB_{111}$ | 15.7 | 0.15 | 20060922 | 348.28291 | 59.75518 | 290.37263 | 12.30856 | 0.0547146 | 2.5389475 | 58 | 5 | 1998–2006 | 0.58 | M-v | 2 | MPC | 04209 | 2002 $PB_{111}$ |
| 2002 $PK_{111}$ | 16.2 | 0.15 | 20060922 | 267.37292 | 103.23669 | 350.85655 | 5.90248 | 0.0723619 | 2.4169742 | 64 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 04209 | 2002 $PK_{111}$ |
| 2002 $PS_{111}$ | 16.4 | 0.15 | 20060922 | 85.44768 | 286.82169 | 339.84714 | 7.21592 | 0.1864699 | 2.3655728 | 58 | 4 | 1994–2006 | 0.55 | M-v | 1 | MPC | 75455 | 2002 $PS_{111}$ |
| 2002 $PB_{112}$ | 15.9 | 0.15 | 20060922 | 287.82232 | 156.91207 | 314.43957 | 24.47933 | 0.1573842 | 2.2990652 | 89 | 3 | 1997–2004 | 0.50 | M-v | 2 | MPC | 62396 | 2002 $PB_{112}$ |
| 2002 $PX_{112}$ | 15.8 | 0.15 | 20060922 | 297.67586 | 86.05515 | 315.43442 | 12.82245 | 0.2134670 | 2.6197452 | 86 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04209 | 2002 $PX_{112}$ |
| 2002 $PK_{113}$ | 16.5 | 0.15 | 20060922 | 357.78609 | 348.37232 | 335.92612 | 15.31046 | 0.1460653 | 2.5801306 | 42 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 04209 | 2002 $PK_{113}$ |
| 2002 $PL_{113}$ | 16.6 | 0.15 | 20060922 | 3.17644 | 217.41762 | 112.14763 | 5.80223 | 0.3258235 | 2.5610209 | 79 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 04209 | 2002 $PL_{113}$ |
| 2002 $PE_{114}$ | 18.1 | 0.15 | 20060922 | 80.48954 | 105.29949 | 170.63294 | 1.42213 | 0.1655840 | 2.3527156 | 49 | 5 | 1994–2006 | 0.39 | M-v | 0 | MPC | 04209 | 2002 $PE_{114}$ |
| 2002 $PR_{114}$ | 16.6 | 0.15 | 20060922 | 29.80529 | 58.59259 | 313.51054 | 3.89277 | 0.1396682 | 2.3048213 | 38 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 85563 | 2002 $PR_{114}$ |
| 2002 $PY_{114}$ | 14.9 | 0.15 | 20060922 | 162.07160 | 206.77208 | 172.06287 | 2.86649 | 0.2709799 | 3.9591463 | 42 | 4 | 1997–2005 | 0.53 | M-v | 0 | MPC | 75456 | 2002 $PY_{114}$ |
| 2002 $PL_{117}$ | 15.2 | 0.15 | 20060922 | 4.33298 | 26.70724 | 252.48307 | 12.13718 | 0.1944269 | 2.7837360 | 79 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 02115 | 2002 $PL_{117}$ |
| 2002 $PP_{117}$ | 16.4 | 0.15 | 20060922 | 14.12436 | 129.56504 | 233.32537 | 10.24716 | 0.2045607 | 2.4372165 | 85 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 87541 | 2002 $PP_{117}$ |
| 2002 $PP_{118}$ | 15.5 | 0.15 | 20060922 | 264.31213 | 190.87087 | 200.12592 | 5.94165 | 0.0478139 | 2.7574596 | 57 | 4 | 1998–2005 | 0.65 | M-v | 1 | MPC | 56465 | 2002 $PP_{118}$ |
| 2002 $PS_{118}$ | 16.2 | 0.15 | 20060922 | 356.91012 | 131.45838 | 275.03955 | 6.23464 | 0.0938814 | 2.2954001 | 90 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 62396 | 2002 $PS_{118}$ |
| 2002 $PA_{119}$ | 17.2 | 0.15 | 20060922 | 104.28730 | 356.93879 | 258.39433 | 3.88129 | 0.1972579 | 2.3440568 | 33 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 89306 | 2002 $PA_{119}$ |
| 2002 $PD_{119}$ | 16.0 | 0.15 | 20060922 | 300.22195 | 69.01165 | 292.98315 | 6.36425 | 0.2275272 | 2.7579514 | 50 | 3 | 1995–2004 | 0.54 | M-v | 3 | MPC | 56466 | 2002 $PD_{119}$ |
| 2002 $PJ_{119}$ | 16.7 | 0.15 | 20060922 | 309.74634 | 162.10652 | 217.02691 | 2.98606 | 0.1322350 | 2.6082126 | 47 | 5 | 1994–2006 | 0.39 | M-v | 2 | MPC | 04209 | 2002 $PJ_{119}$ |
| 2002 $PP_{119}$ | 16.3 | 0.15 | 20060922 | 30.99750 | 336.94560 | 310.19726 | 8.71766 | 0.1228620 | 2.5676625 | 37 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 03347 | 2002 $PP_{119}$ |
| 2002 $PW_{119}$ | 15.9 | 0.15 | 20060922 | 275.16005 | 150.08584 | 235.72141 | 3.06795 | 0.0825097 | 2.7493937 | 54 | 4 | 1998–2005 | 0.50 | M-v | 1 | MPC | 57882 | 2002 $PW_{119}$ |
| 2002 $PS_{120}$ | 16.2 | 0.15 | 20060922 | 342.31130 | 136.72161 | 292.10969 | 4.58488 | 0.1390325 | 2.2975379 | 85 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 61255 | 2002 $PS_{120}$ |
| 2002 $PX_{120}$ | 16.7 | 0.15 | 20060922 | 112.56269 | 87.91637 | 177.66302 | 6.34644 | 0.1023076 | 2.3228827 | 64 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 87542 | 2002 $PX_{120}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $PJ_{121}$ | 16.3 | 0.15 | 20060922 | 7.28518 | 103.79405 | 264.87545 | 5.57683 | 0.1368621 | 2.4059819 | 92 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 04209 | 2002 $PJ_{121}$ |
| 2002 $PL_{121}$ | 16.3 | 0.15 | 20060922 | 353.17656 | 159.02722 | 168.19928 | 15.61444 | 0.1393620 | 2.6099984 | 50 | 4 | 1998–2005 | 0.53 | M-v | 1 | MPC | 38361 | 2002 $PL_{121}$ |
| 2002 $PM_{121}$ | 16.2 | 0.15 | 20060922 | 343.22178 | 91.34469 | 198.13455 | 7.28368 | 0.2027879 | 2.8069784 | 66 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 02115 | 2002 $PM_{121}$ |
| 2002 $PR_{121}$ | 17.0 | 0.15 | 20060922 | 62.84823 | 89.49569 | 235.33685 | 4.76643 | 0.1679344 | 2.3117032 | 60 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 75459 | 2002 $PR_{121}$ |
| 2002 $PT_{121}$ | 16.4 | 0.15 | 20060922 | 30.80979 | 114.69155 | 257.09237 | 5.44754 | 0.1324478 | 2.2995465 | 61 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 87542 | 2002 $PT_{121}$ |
| 2002 $PV_{121}$ | 16.4 | 0.15 | 20060922 | 352.55071 | 185.96098 | 203.36923 | 6.71391 | 0.1132310 | 2.3839698 | 118 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 77621 | 2002 $PV_{121}$ |
| 2002 $PD_{122}$ | 17.1 | 0.15 | 20060922 | 158.08163 | 33.01133 | 230.30012 | 5.34938 | 0.1609201 | 2.1548273 | 47 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 87542 | 2002 $PD_{122}$ |
| 2002 $PJ_{122}$ | 16.5 | 0.15 | 20060922 | 136.45574 | 85.41298 | 183.16971 | 3.86750 | 0.1271567 | 2.1911394 | 50 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 87542 | 2002 $PJ_{122}$ |
| 2002 $PK_{122}$ | 17.1 | 0.15 | 20060922 | 99.72062 | 41.58218 | 224.87802 | 4.02466 | 0.1283255 | 2.3217265 | 56 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 75460 | 2002 $PK_{122}$ |
| 2002 $PL_{122}$ | 16.7 | 0.15 | 20060922 | 314.76670 | 177.60921 | 210.85174 | 4.52300 | 0.1849573 | 2.5382146 | 28 | 4 | 1996–2006 | 0.34 | M-v | 1 | MPC | 03347 | 2002 $PL_{122}$ |
| 2002 $PR_{122}$ | 16.3 | 0.15 | 20060922 | 179.35485 | 13.89609 | 218.84530 | 6.04781 | 0.1793545 | 2.1787659 | 53 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 87542 | 2002 $PR_{122}$ |
| 2002 $PS_{122}$ | 15.8 | 0.15 | 20060922 | 55.02052 | 337.74236 | 266.96927 | 6.46076 | 0.2648443 | 2.5868989 | 52 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 03347 | 2002 $PS_{122}$ |
| 2002 $PD_{123}$ | 15.2 | 0.15 | 20060922 | 258.34702 | 83.53000 | 271.51585 | 9.13256 | 0.0685588 | 2.9787798 | 42 | 2 | 2002–2003 | 0.44 | M-v | 3 | MPC | 65350 | 2002 $PD_{123}$ |
| 2002 $PN_{124}$ | 16.3 | 0.15 | 20060922 | 337.33418 | 254.48011 | 167.01924 | 4.16247 | 0.1326106 | 2.3292043 | 114 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 61256 | 2002 $PN_{124}$ |
| 2002 $PP_{124}$ | 16.9 | 0.15 | 20060922 | 143.54343 | 300.90438 | 315.35212 | 7.02806 | 0.0966705 | 2.2356155 | 40 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 57882 | 2002 $PP_{124}$ |
| 2002 $PQ_{124}$ | 16.9 | 0.15 | 20060922 | 322.81325 | 297.79896 | 155.47676 | 4.86430 | 0.0604827 | 2.2343685 | 79 | 4 | 1998–2006 | 0.59 | M-v | 3 | MPC | 66279 | 2002 $PQ_{124}$ |
| 2002 $PS_{124}$ | 16.0 | 0.15 | 20060922 | 313.33178 | 70.14046 | 313.86328 | 4.79816 | 0.2556228 | 2.6194982 | 49 | 4 | 1998–2004 | 0.65 | M-v | 2 | MPC | 38362 | 2002 $PS_{124}$ |
| 2002 $PE_{125}$ | 16.7 | 0.15 | 20060922 | 94.87738 | 145.21009 | 157.35492 | 3.47645 | 0.1978179 | 2.2348549 | 95 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 77621 | 2002 $PE_{125}$ |
| 2002 $PC_{127}$ | 16.5 | 0.15 | 20060922 | 45.09843 | 252.49438 | 91.73412 | 4.13662 | 0.2700726 | 2.3503380 | 82 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 77621 | 2002 $PC_{127}$ |
| 2002 $PD_{127}$ | 15.9 | 0.15 | 20060922 | 94.85102 | 209.12631 | 119.42182 | 7.52656 | 0.2210371 | 2.2084235 | 56 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 87542 | 2002 $PD_{127}$ |
| 2002 $PP_{127}$ | 16.9 | 0.15 | 20060922 | 37.46159 | 24.13845 | 329.04298 | 4.88832 | 0.1598111 | 2.3150246 | 53 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 62396 | 2002 $PP_{127}$ |
| 2002 $PU_{127}$ | 17.6 | 0.15 | 20060922 | 70.74665 | 249.92968 | 70.30357 | 2.90311 | 0.1935727 | 2.2849760 | 55 | 4 | 1999–2006 | 0.41 | M-v | 0 | MPC | 77621 | 2002 $PU_{127}$ |
| 2002 $PJ_{128}$ | 16.7 | 0.15 | 20060922 | 105.87587 | 273.57566 | 44.73364 | 5.31218 | 0.1431201 | 2.1991063 | 54 | 3 | 1999–2004 | 0.55 | M-v | 3 | MPC | 62396 | 2002 $PJ_{128}$ |
| 2002 $PO_{129}$ | 17.1 | 0.15 | 20060922 | 14.65415 | 252.38371 | 138.61158 | 6.87800 | 0.0996812 | 2.2687888 | 28 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 61257 | 2002 $PO_{129}$ |
| 2002 $PR_{129}$ | 18.2 | 0.15 | 20060922 | 54.26205 | 334.12713 | 343.91334 | 1.44851 | 0.2101413 | 2.3459205 | 34 | 4 | 1995–2006 | 0.37 | M-v | 1 | MPC | 70352 | 2002 $PR_{129}$ |
| 2002 $PS_{129}$ | 16.7 | 0.15 | 20060922 | 73.78928 | 290.78594 | 40.88348 | 4.98113 | 0.0929864 | 2.2799583 | 63 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 85567 | 2002 $PS_{129}$ |
| 2002 $PT_{129}$ | 16.8 | 0.15 | 20060922 | 6.74347 | 301.00926 | 27.71284 | 6.32614 | 0.2230993 | 2.5540047 | 70 | 5 | 1998–2006 | 0.58 | M-v | 2 | MPC | 04209 | 2002 $PT_{129}$ |
| 2002 $PY_{129}$ | 16.6 | 0.15 | 20060922 | 40.78225 | 247.68991 | 79.49054 | 6.75548 | 0.2084198 | 2.4052763 | 66 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 77622 | 2002 $PY_{129}$ |
| 2002 $PA_{130}$ | 17.1 | 0.15 | 20060922 | 346.58858 | 199.96879 | 149.31204 | 5.66417 | 0.2227707 | 2.5592366 | 46 | 2 | 2002–2006 | 0.36 | M-v | 3 | MPC | 03348 | 2002 $PA_{130}$ |
| 2002 $PE_{130}$ | 18.3 | 0.15 | 20060922 | 348.26268 | 33.50357 | 357.54119 | 15.62032 | 0.6192884 | 2.5590109 | 109 | 2 | 2002–2006 | 0.56 | M-v | 0 | MPC | 04209 | 2002 $PE_{130}$ |
| 2002 $PF_{130}$ | 17.8 | 0.15 | 20060922 | 72.44791 | 152.77317 | 133.29114 | 4.27583 | 0.2706877 | 2.3248586 | 48 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 77622 | 2002 $PF_{130}$ |
| 2002 $PL_{130}$ | 15.6 | 0.15 | 20060922 | 330.84081 | 19.28011 | 349.16972 | 14.76694 | 0.1469372 | 2.5483331 | 66 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 04209 | 2002 $PL_{130}$ |
| 2002 $PP_{130}$ | 15.8 | 0.15 | 20060922 | 255.31456 | 165.22469 | 205.26016 | 21.21106 | 0.2997055 | 3.0817410 | 25 | 1 | 97 days | 0.57 | M-v | 4 | MPC | 38363 | 2002 $PP_{130}$ |
| 2002 $PD_{131}$ | 17.4 | 0.15 | 20060922 | 56.14677 | 106.47801 | 207.65055 | 2.82793 | 0.2518080 | 2.3511749 | 35 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 75464 | 2002 $PD_{131}$ |
| 2002 $PQ_{131}$ | 16.1 | 0.15 | 20060922 | 31.11630 | 37.22995 | 256.55666 | 11.80971 | 0.2600588 | 2.5531499 | 57 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03348 | 2002 $PQ_{131}$ |
| 2002 $PZ_{131}$ | 15.9 | 0.15 | 20060922 | 239.79038 | 174.94932 | 249.25921 | 5.15360 | 0.1446823 | 2.7675673 | 42 | 4 | 1998–2005 | 0.51 | M-v | 1 | MPC | 56471 | 2002 $PZ_{131}$ |
| 2002 $PM_{132}$ | 16.2 | 0.15 | 20060922 | 80.06245 | 335.34210 | 313.37426 | 10.35503 | 0.1376502 | 2.3082388 | 43 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 89306 | 2002 $PM_{132}$ |
| 2002 $PT_{132}$ | 17.7 | 0.15 | 20060922 | 87.63768 | 128.69292 | 135.81671 | 2.04352 | 0.3031228 | 2.3233692 | 41 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 75465 | 2002 $PT_{132}$ |
| 2002 $PX_{132}$ | 17.4 | 0.15 | 20060922 | 344.71022 | 200.15847 | 155.22089 | 6.25967 | 0.2626826 | 2.5276508 | 42 | 4 | 1994–2006 | 0.42 | M-v | 3 | MPC | 04210 | 2002 $PX_{132}$ |
| 2002 $PY_{132}$ | 17.2 | 0.15 | 20060922 | 43.35944 | 188.47695 | 165.71160 | 2.50714 | 0.1908457 | 2.2825081 | 35 | 5 | 1999–2006 | 0.36 | M-v | 0 | MPC | 94812 | 2002 $PY_{132}$ |
| 2002 $PB_{133}$ | 16.4 | 0.15 | 20060922 | 23.27421 | 357.06905 | 334.52236 | 0.99601 | 0.1479355 | 2.4179766 | 95 | 5 | 1991–2006 | 0.46 | M-v | 1 | MPC | 04210 | 2002 $PB_{133}$ |
| 2002 $PD_{133}$ | 17.3 | 0.15 | 20060922 | 80.73251 | 21.39792 | 314.04494 | 4.35445 | 0.1333697 | 2.1867860 | 36 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 62396 | 2002 $PD_{133}$ |
| 2002 $PE_{133}$ | 17.6 | 0.15 | 20060922 | 55.36833 | 125.29580 | 162.46438 | 3.57077 | 0.2496032 | 2.3965924 | 51 | 6 | 1994–2006 | 0.46 | M-v | 1 | MPC | 04210 | 2002 $PE_{133}$ |
| 2002 $PO_{133}$ | 17.2 | 0.15 | 20060922 | 50.38804 | 68.36507 | 228.15706 | 1.70071 | 0.1925655 | 2.4260035 | 50 | 5 | 1999–2006 | 0.40 | M-v | 0 | MPC | 75465 | 2002 $PO_{133}$ |
| 2002 $PR_{133}$ | 17.1 | 0.15 | 20060922 | 46.96553 | 339.04548 | 325.21031 | 3.64068 | 0.0871535 | 2.4197897 | 65 | 4 | 1993–2006 | 0.44 | M-v | 0 | MPC | 04210 | 2002 $PR_{133}$ |
| 2002 $PT_{133}$ | 17.5 | 0.15 | 20060922 | 82.47504 | 336.90655 | 320.12888 | 3.55573 | 0.1894984 | 2.2918576 | 51 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 75466 | 2002 $PT_{133}$ |
| 2002 $PY_{133}$ | 16.1 | 0.15 | 20060922 | 352.02910 | 4.99487 | 345.03324 | 7.11128 | 0.2054534 | 2.5166461 | 96 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 03349 | 2002 $PY_{133}$ |
| 2002 $PF_{134}$ | 16.7 | 0.15 | 20060922 | 41.41763 | 170.72495 | 166.77658 | 2.47112 | 0.2285080 | 2.3593997 | 76 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 75466 | 2002 $PF_{134}$ |
| 2002 $PY_{134}$ | 16.7 | 0.15 | 20060922 | 99.15080 | 200.29650 | 90.38088 | 5.68067 | 0.2141384 | 2.2571924 | 89 | 4 | 1994–2006 | 0.46 | M-v | 0 | MPC | 04210 | 2002 $PY_{134}$ |
| 2002 $PK_{135}$ | 17.5 | 0.15 | 20060922 | 78.91898 | 150.09643 | 166.01947 | 3.17906 | 0.1816906 | 2.2668832 | 57 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 77622 | 2002 $PK_{135}$ |
| 2002 $PE_{136}$ | 17.0 | 0.15 | 20060922 | 54.89134 | 239.37224 | 80.63362 | 4.27091 | 0.1920500 | 2.3522962 | 54 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 75467 | 2002 $PE_{136}$ |
| 2002 $PL_{137}$ | 15.5 | 0.15 | 20060922 | 264.28899 | 192.54460 | 136.32426 | 6.21498 | 0.1668995 | 3.1629170 | 44 | 4 | 1995–2005 | 0.47 | M-v | 1 | MPC | 56473 | 2002 $PL_{137}$ |
| 2002 $PP_{137}$ | 16.8 | 0.15 | 20060922 | 37.11921 | 64.43918 | 327.54153 | 4.30757 | 0.1845404 | 2.2284261 | 33 | 3 | 1999–2004 | 0.53 | M-v | 3 | MPC | 61257 | 2002 $PP_{137}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $PC_{138}$ | 15.5 | 0.15 | 20060922 | 290.34611 | 51.15249 | 315.14694 | 5.02607 | 0.0518066 | 2.7628593 | 35 | 4 | 2000–2005 | 0.55 | M-v | 1 | MPC | 77622 | 2002 $PC_{138}$ |
| 2002 $PH_{139}$ | 17.5 | 0.15 | 20060922 | 353.41960 | 209.27377 | 151.40555 | 5.40428 | 0.3177414 | 2.5246663 | 136 | 3 | 1998–2006 | 0.57 | M-v | 3 | MPC | 04210 | 2002 $PH_{139}$ |
| 2002 $PL_{139}$ | 16.3 | 0.15 | 20060922 | 335.81244 | 215.63696 | 152.04950 | 14.15213 | 0.1891761 | 2.5646269 | 65 | 3 | 1998–2006 | 0.56 | M-v | 3 | MPC | 03349 | 2002 $PL_{139}$ |
| 2002 $PM_{139}$ | 15.1 | 0.15 | 20060922 | 18.42373 | 177.12346 | 129.87044 | 21.01522 | 0.2543237 | 2.5434258 | 118 | 3 | 2002–2006 | 0.41 | M-v | 1 | MPC | 04210 | 2002 $PM_{139}$ |
| 2002 $PQ_{139}$ | 16.6 | 0.15 | 20060922 | 11.22228 | 228.64539 | 123.51880 | 14.21669 | 0.2483567 | 2.4281346 | 51 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 85568 | 2002 $PQ_{139}$ |
| 2002 $PH_{140}$ | 16.4 | 0.15 | 20060922 | 22.46242 | 171.96805 | 136.62190 | 14.10350 | 0.1761701 | 2.5276040 | 45 | 2 | 2002–2006 | 0.51 | M-v | 4 | MPC | 03350 | 2002 $PH_{140}$ |
| 2002 $PK_{140}$ | 17.4 | 0.15 | 20060922 | 12.38425 | 57.94564 | 342.57795 | 23.56994 | 0.2327358 | 2.3199407 | 45 | 1 | 78 days | 0.53 | M-v | 4 | MPC | 48249 | 2002 $PK_{140}$ |
| 2002 $PG_{141}$ | 16.4 | 0.15 | 20060922 | 359.60105 | 87.52581 | 262.54601 | 10.18102 | 0.3098363 | 2.5413750 | 94 | 3 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04210 | 2002 $PG_{141}$ |
| 2002 $PS_{141}$ | 16.8 | 0.15 | 20060922 | 11.91552 | 110.27330 | 226.88049 | 4.83781 | 0.2066617 | 2.4646380 | 80 | 2 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03350 | 2002 $PS_{141}$ |
| 2002 $PV_{141}$ | 15.5 | 0.15 | 20060922 | 86.29778 | 267.42242 | 318.59892 | 27.93503 | 0.0893401 | 2.5930243 | 29 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 03350 | 2002 $PV_{141}$ |
| 2002 $PB_{142}$ | 15.7 | 0.15 | 20060922 | 281.74585 | 113.07681 | 312.96581 | 25.78823 | 0.2136792 | 2.6113897 | 76 | 4 | 1998–2006 | 0.64 | M-v | 1 | MPC | 04210 | 2002 $PB_{142}$ |
| 2002 $PV_{147}$ | 15.4 | 0.15 | 20060922 | 286.98756 | 355.38121 | 335.79885 | 5.97661 | 0.1347037 | 2.9499955 | 41 | 3 | 2000–2005 | 0.47 | M-v | 3 | MPC | 37786 | 2002 $PV_{147}$ |
| 2002 $PP_{149}$ | 6.9 | 0.15 | 20060922 | 51.66136 | 124.41333 | 159.65205 | 34.74541 | 0.0909237 | 40.9180317 | 12 | 4 | 2000–2006 | 0.43 | M-v | 4 | MPC | 53095 | 2002 $PP_{149}$ |
| 2002 $PW_{150}$ | 17.6 | 0.15 | 20060922 | 46.00389 | 170.34202 | 149.82341 | 2.49686 | 0.2282463 | 2.3550915 | 49 | 4 | 1995–2006 | 0.37 | M-v | 0 | MPC | 37786 | 2002 $PW_{150}$ |
| 2002 $PF_{151}$ | 16.8 | 0.15 | 20060922 | 24.44633 | 41.56864 | 317.54449 | 5.95598 | 0.1699621 | 2.3544929 | 46 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 61258 | 2002 $PF_{151}$ |
| 2002 $PT_{153}$ | 17.5 | 0.15 | 20060922 | 88.18857 | 163.60564 | 163.09893 | 2.85544 | 0.0667668 | 2.2139201 | 41 | 5 | 1994–2006 | 0.44 | M-v | 1 | MPC | 85570 | 2002 $PT_{153}$ |
| 2002 $PM_{155}$ | 17.5 | 0.15 | 20060922 | 4.91170 | 0.29187 | 0.70357 | 0.81474 | 0.1917689 | 2.4172423 | 81 | 5 | 1991–2006 | 0.36 | M-v | 1 | MPC | 04210 | 2002 $PM_{155}$ |
| 2002 $PQ_{155}$ | 17.5 | 0.15 | 20060922 | 78.96718 | 280.80032 | 11.01938 | 1.81850 | 0.2461803 | 2.3078882 | 33 | 3 | 2002–2006 | 0.30 | M-v | 2 | MPC | 75471 | 2002 $PQ_{155}$ |
| 2002 $PX_{156}$ | 17.4 | 0.15 | 20060922 | 38.13546 | 320.92643 | 343.54540 | 0.71141 | 0.1883906 | 2.4361991 | 52 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04210 | 2002 $PX_{156}$ |
| 2002 $PF_{157}$ | 14.7 | 0.15 | 20060922 | 142.88929 | 313.44104 | 136.44092 | 14.99027 | 0.2185123 | 3.2155407 | 53 | 4 | 1999–2005 | 0.56 | M-v | 1 | MPC | 75472 | 2002 $PF_{157}$ |
| 2002 $PS_{157}$ | 17.3 | 0.15 | 20060922 | 347.06018 | 226.60058 | 113.35165 | 1.77507 | 0.1890791 | 2.5594065 | 32 | 3 | 2002–2006 | 0.28 | M-v | 3 | MPC | 03350 | 2002 $PS_{157}$ |
| 2002 $PY_{157}$ | 16.8 | 0.15 | 20060922 | 131.38278 | 278.66813 | 330.06183 | 4.60180 | 0.0968767 | 2.2747613 | 53 | 5 | 1994–2006 | 0.38 | M-v | 1 | MPC | 04210 | 2002 $PY_{157}$ |
| 2002 $PM_{158}$ | 17.4 | 0.15 | 20060922 | 63.84499 | 302.99437 | 343.33409 | 2.18864 | 0.2107212 | 2.3830874 | 68 | 3 | 2002–2006 | 0.29 | M-v | 2 | MPC | 75472 | 2002 $PM_{158}$ |
| 2002 $PB_{159}$ | 17.3 | 0.15 | 20060922 | 6.96916 | 327.04601 | 48.81452 | 1.92184 | 0.2522633 | 2.3764539 | 98 | 4 | 2001–2006 | 0.37 | M-v | 2 | MPC | 03351 | 2002 $PB_{159}$ |
| 2002 $PP_{159}$ | 17.3 | 0.15 | 20060922 | 356.08213 | 299.08641 | 91.14205 | 3.38122 | 0.2295308 | 2.3703598 | 83 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 47210 | 2002 $PP_{159}$ |
| 2002 $PV_{159}$ | 17.4 | 0.15 | 20060922 | 145.52657 | 276.29769 | 334.53369 | 7.34263 | 0.0640021 | 2.2280780 | 27 | 4 | 1998–2006 | 0.45 | M-v | 3 | MPC | 50101 | 2002 $PV_{159}$ |
| 2002 $PB_{160}$ | 16.2 | 0.15 | 20060922 | 6.39487 | 136.54268 | 124.84668 | 13.37997 | 0.0936931 | 2.7868414 | 31 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 02116 | 2002 $PB_{160}$ |
| 2002 $PH_{160}$ | 18.2 | 0.15 | 20060922 | 75.16657 | 14.75911 | 354.93823 | 3.92751 | 0.1197377 | 2.1291504 | 40 | 6 | 1993–2004 | 0.40 | M-v | 1 | MPC | 62397 | 2002 $PH_{160}$ |
| 2002 $PQ_{160}$ | 16.4 | 0.15 | 20060922 | 7.54342 | 10.13029 | 327.18179 | 6.77819 | 0.1526344 | 2.4623356 | 74 | 2 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03351 | 2002 $PQ_{160}$ |
| 2002 $PA_{161}$ | 16.2 | 0.15 | 20060922 | 0.45039 | 114.79313 | 136.56159 | 10.74572 | 0.0714386 | 2.9096126 | 34 | 4 | 1997–2006 | 0.28 | M-v | 0 | MPC | 02116 | 2002 $PA_{161}$ |
| 2002 $PH_{161}$ | 15.3 | 0.15 | 20060922 | 301.18237 | 169.17620 | 120.65509 | 7.89534 | 0.0702535 | 3.0777697 | 51 | 4 | 2000–2005 | 0.44 | M-v | 0 | MPC | 77623 | 2002 $PH_{161}$ |
| 2002 $PP_{161}$ | 16.5 | 0.15 | 20060922 | 6.91370 | 168.54424 | 126.81278 | 2.64231 | 0.0900468 | 2.6371095 | 28 | 3 | 2001–2005 | 0.33 | M-v | 3 | MPC | 47212 | 2002 $PP_{161}$ |
| 2002 $PQ_{161}$ | 16.6 | 0.15 | 20060922 | 306.33347 | 358.99803 | 336.76138 | 3.01572 | 0.0991840 | 2.7849084 | 36 | 4 | 1996–2005 | 0.37 | M-v | 1 | MPC | 56481 | 2002 $PQ_{161}$ |
| 2002 $PD_{162}$ | 16.6 | 0.15 | 20060922 | 304.07347 | 48.79857 | 325.83813 | 2.26210 | 0.1537863 | 2.6415687 | 43 | 4 | 2000–2005 | 0.42 | M-v | 1 | MPC | 47212 | 2002 $PD_{162}$ |
| 2002 $PS_{162}$ | 15.7 | 0.15 | 20060922 | 278.04917 | 321.89118 | 357.38387 | 3.85156 | 0.0865618 | 3.0687866 | 50 | 4 | 2002–2006 | 0.39 | M-v | 1 | MPC | 02116 | 2002 $PS_{162}$ |
| 2002 $PZ_{162}$ | 16.9 | 0.15 | 20060922 | 355.76190 | 275.21547 | 3.70625 | 4.22268 | 0.0376289 | 2.7969301 | 27 | 3 | 1998–2003 | 0.40 | M-v | 3 | MPC | 72694 | 2002 $PZ_{162}$ |
| 2002 $PA_{163}$ | 18.0 | 0.15 | 20060922 | 67.19757 | 271.55936 | 9.36592 | 2.94633 | 0.2132919 | 2.3878271 | 44 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 75473 | 2002 $PA_{163}$ |
| 2002 $PB_{163}$ | 17.7 | 0.15 | 20060922 | 10.89926 | 255.56197 | 117.21838 | 6.23682 | 0.1456341 | 2.3512054 | 46 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 77623 | 2002 $PB_{163}$ |
| 2002 $PL_{163}$ | 17.2 | 0.15 | 20060922 | 100.14682 | 108.91627 | 136.03983 | 3.00392 | 0.1528389 | 2.3742022 | 41 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 75474 | 2002 $PL_{163}$ |
| 2002 $PU_{163}$ | 17.6 | 0.15 | 20060922 | 21.38464 | 314.74710 | 37.51671 | 2.08317 | 0.1967773 | 2.3675038 | 42 | 4 | 2002–2006 | 0.36 | M-v | 1 | MPC | 75474 | 2002 $PU_{163}$ |
| 2002 $PN_{164}$ | 17.0 | 0.15 | 20060922 | 333.99858 | 33.72610 | 339.84075 | 2.91541 | 0.2986199 | 2.5330836 | 43 | 5 | 1990–2006 | 0.39 | M-v | 2 | MPC | 04210 | 2002 $PN_{164}$ |
| 2002 $PB_{165}$ | 17.7 | 0.15 | 20060922 | 118.91498 | 140.07110 | 128.85202 | 3.57117 | 0.1437492 | 2.2326988 | 34 | 3 | 2002–2006 | 0.28 | M-v | 3 | MPC | 75475 | 2002 $PB_{165}$ |
| 2002 $PD_{165}$ | 17.6 | 0.15 | 20060922 | 19.45908 | 269.37088 | 110.99469 | 2.92069 | 0.1698349 | 2.2854557 | 29 | 4 | 2001–2006 | 0.34 | M-v | 2 | MPC | 75475 | 2002 $PD_{165}$ |
| 2002 $PZ_{165}$ | 16.8 | 0.15 | 20060922 | 43.61390 | 318.05967 | 355.05874 | 3.34671 | 0.1540876 | 2.4168183 | 57 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 75476 | 2002 $PZ_{165}$ |
| 2002 $PY_{166}$ | 14.9 | 0.15 | 20060922 | 18.62186 | 3.96295 | 195.84976 | 12.56258 | 0.0965280 | 3.2197867 | 52 | 7 | 1983–2006 | 0.40 | M-v | 0 | MPC | 02116 | 2002 $PY_{166}$ |
| 2002 $PK_{167}$ | 16.8 | 0.15 | 20060922 | 226.98894 | 246.24561 | 137.01145 | 12.45589 | 0.0853356 | 3.0870195 | 26 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 00316 | 2002 $PK_{167}$ |
| 2002 $PV_{168}$ | 16.9 | 0.15 | 20060922 | 345.88302 | 330.13076 | 346.29893 | 2.06376 | 0.1004125 | 2.6812733 | 39 | 5 | 1996–2005 | 0.38 | M-v | 1 | MPC | 75477 | 2002 $PV_{168}$ |
| 2002 $PW_{168}$ | 17.7 | 0.15 | 20060922 | 130.14463 | 125.43464 | 136.17965 | 2.43043 | 0.1053455 | 2.2606516 | 50 | 6 | 1992–2006 | 0.44 | M-v | 0 | MPC | 87542 | 2002 $PW_{168}$ |
| 2002 $PG_{169}$ | 17.6 | 0.15 | 20060922 | 344.81745 | 46.69615 | 25.60150 | 2.95736 | 0.2101496 | 2.2936098 | 33 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 75478 | 2002 $PG_{169}$ |
| 2002 $PR_{169}$ | 17.1 | 0.15 | 20060922 | 146.67876 | 86.95938 | 139.49354 | 4.17524 | 0.0677699 | 2.3437876 | 35 | 5 | 1992–2006 | 0.29 | M-v | 1 | MPC | 04210 | 2002 $PR_{169}$ |
| 2002 $PS_{169}$ | 16.3 | 0.15 | 20060922 | 138.51528 | 232.76215 | 330.23756 | 6.07701 | 0.0718416 | 2.4769134 | 39 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04210 | 2002 $PS_{169}$ |
| 2002 $PT_{169}$ | 17.2 | 0.15 | 20060922 | 358.38640 | 306.94513 | 115.57291 | 1.16869 | 0.2661227 | 2.3059622 | 21 | 2 | 2000–2002 | 0.40 | M-v | 4 | MPC | 85572 | 2002 $PT_{169}$ |
| 2002 $PV_{169}$ | 16.7 | 0.15 | 20060922 | 35.19183 | 334.81261 | 27.54437 | 4.73078 | 0.1616358 | 2.3180141 | 49 | 6 | 1994–2006 | 0.63 | M-v | 1 | MPC | 00316 | 2002 $PV_{169}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $PV_{170}$ | 6.5 | 0.15 | 20060922 | 332.25241 | 272.26040 | 88.38011 | 1.27093 | 0.0126698 | 42.6487682 | 33 | 4 | 2002–2006 | 0.18 | M-v | 4 | MPC | 94814 | 2002 $PV_{170}$ |
| 2002 $PJ_{171}$ | 17.3 | 0.15 | 20060922 | 195.09761 | 146.13686 | 36.50231 | 3.21206 | 0.1047521 | 2.3139042 | 42 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 94816 | 2002 $PJ_{171}$ |
| 2002 $PM_{171}$ | 15.7 | 0.15 | 20060922 | 181.37924 | 118.91237 | 289.81520 | 3.99754 | 0.0107303 | 3.0351789 | 34 | 3 | 2002–2005 | 0.48 | M-v | 3 | MPC | 03352 | 2002 $PM_{171}$ |
| 2002 $PV_{171}$ | 18.1 | 0.15 | 20060922 | 102.27572 | 23.82968 | 229.22174 | 1.77007 | 0.1613667 | 2.3493392 | 27 | 3 | 2002–2006 | 0.33 | M-v | 3 | MPC | 94817 | 2002 $PV_{171}$ |
| 2002 $PF_{172}$ | 17.1 | 0.15 | 20060922 | 104.95555 | 129.16036 | 129.63179 | 6.62879 | 0.1291800 | 2.3370264 | 28 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 94818 | 2002 $PF_{172}$ |
| 2002 $PY_{172}$ | 17.5 | 0.15 | 20060922 | 326.90051 | 322.52560 | 84.62513 | 2.57201 | 0.1768468 | 2.4213585 | 49 | 6 | 1991–2006 | 0.41 | M-v | 0 | MPC | 00317 | 2002 $PY_{172}$ |
| 2002 $PH_{173}$ | 16.6 | 0.15 | 20060922 | 270.23357 | 122.53813 | 193.10064 | 4.68866 | 0.1786381 | 3.1649576 | 37 | 4 | 1991–2006 | 0.26 | M-v | 1 | MPC | 04210 | 2002 $PH_{173}$ |
| 2002 $PR_{173}$ | 16.8 | 0.15 | 20060922 | 28.73203 | 132.43166 | 190.36126 | 6.27676 | 0.1431420 | 2.4375533 | 108 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04210 | 2002 $PR_{173}$ |
| 2002 $PY_{173}$ | 18.0 | 0.15 | 20060922 | 326.39915 | 203.99893 | 175.44362 | 3.67901 | 0.2295426 | 2.5535979 | 29 | 4 | 1998–2006 | 0.36 | M-v | 3 | MPC | 03353 | 2002 $PY_{173}$ |
| 2002 $PE_{174}$ | 16.7 | 0.15 | 20060922 | 178.75606 | 352.16289 | 156.72160 | 13.26235 | 0.0881986 | 2.5514102 | 32 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 94820 | 2002 $PE_{174}$ |
| 2002 $PL_{174}$ | 18.5 | 0.15 | 20060922 | 24.70219 | 209.29866 | 144.45647 | 2.62396 | 0.2209632 | 2.3528546 | 34 | 4 | 1995–2006 | 0.33 | M-v | 0 | MPC | 00318 | 2002 $PL_{174}$ |
| 2002 $PS_{174}$ | 15.9 | 0.15 | 20060922 | 132.99313 | 83.88899 | 61.60196 | 5.41114 | 0.0135514 | 2.7867221 | 39 | 3 | 2002–2005 | 0.62 | M-v | 3 | MPC | 04210 | 2002 $PS_{174}$ |
| 2002 $PC_{175}$ | 17.8 | 0.15 | 20060922 | 62.93834 | 223.20486 | 96.53853 | 5.82051 | 0.1601523 | 2.3057048 | 42 | 4 | 2002–2006 | 0.33 | M-v | 0 | MPC | 00318 | 2002 $PC_{175}$ |
| 2002 $PN_{175}$ | 17.5 | 0.15 | 20060922 | 33.60213 | 309.42197 | 23.31860 | 4.34742 | 0.1552287 | 2.3790937 | 70 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 00319 | 2002 $PN_{175}$ |
| 2002 $PT_{175}$ | 17.6 | 0.15 | 20060922 | 14.36056 | 112.34100 | 256.81062 | 3.88048 | 0.2471541 | 2.3647128 | 54 | 3 | 1995–2006 | 0.46 | M-v | 1 | MPC | 00319 | 2002 $PT_{175}$ |
| 2002 $PX_{175}$ | 16.6 | 0.15 | 20060922 | 149.72356 | 145.36127 | 95.52761 | 3.21441 | 0.0851868 | 2.2701099 | 69 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 00319 | 2002 $PX_{175}$ |
| 2002 $PB_{176}$ | 17.2 | 0.15 | 20060922 | 5.87019 | 153.54263 | 219.91292 | 5.97313 | 0.1117168 | 2.3446957 | 86 | 5 | 1995–2006 | 0.37 | M-v | 1 | MPC | 00320 | 2002 $PB_{176}$ |
| 2002 $PE_{177}$ | 17.5 | 0.15 | 20060922 | 15.05549 | 338.94760 | 36.83668 | 2.90696 | 0.2373032 | 2.3357930 | 23 | 3 | 2002–2006 | 0.40 | M-v | 4 | MPC | 00320 | 2002 $PE_{177}$ |
| 2002 $PE_{178}$ | 16.3 | 0.15 | 20060922 | 332.42819 | 63.10434 | 285.91766 | 3.49017 | 0.0810935 | 2.5974572 | 32 | 4 | 2002–2006 | 0.36 | M-v | 1 | MPC | 03354 | 2002 $PE_{178}$ |
| 2002 $PJ_{178}$ | 16.3 | 0.15 | 20060922 | 249.19336 | 290.92538 | 161.65607 | 4.23949 | 0.0965522 | 2.5203372 | 54 | 6 | 2000–2006 | 0.38 | M-v | 0 | MPC | 03354 | 2002 $PJ_{178}$ |
| 2002 $PK_{178}$ | 16.2 | 0.15 | 20020814 | 316.66366 | 13.91153 | 8.50750 | 4.94474 | 0.2163761 | 3.0684983 | 9 | 1 | 14 days | 0.10 | | | MPC | | 2002 $PK_{178}$ |
| 2002 $PM_{178}$ | 17.1 | 0.15 | 20020814 | 0.04122 | 249.67130 | 69.19888 | 3.59343 | 0.2420732 | 3.0029556 | 9 | 1 | 14 days | 0.41 | | | MPC | | 2002 $PM_{178}$ |
| 2002 $PV_{178}$ | 15.8 | 0.15 | 20020814 | 80.06554 | 315.81679 | 273.95869 | 10.71589 | 0.1740170 | 3.0421993 | 12 | 1 | 20 days | 0.29 | | | MPC | | 2002 $PV_{178}$ |
| 2002 $PW_{178}$ | 17.5 | 0.15 | 20020814 | 5.89126 | 57.41706 | 262.73812 | 8.24128 | 0.1585290 | 2.7976465 | 8 | 1 | 11 days | 0.23 | | | MPC | | 2002 $PW_{178}$ |
| 2002 $PA_{179}$ | 17.4 | 0.15 | 20020814 | 230.90134 | 60.20702 | 39.04207 | 4.02700 | 0.1089368 | 2.2067767 | 9 | 1 | 4 days | 0.34 | | | MPC | | 2002 $PA_{179}$ |
| 2002 $PB_{179}$ | 16.8 | 0.15 | 20020814 | 307.67442 | 322.74842 | 61.89899 | 4.29151 | 0.1109625 | 2.7826455 | 8 | 1 | 4 days | 0.26 | | | MPC | | 2002 $PB_{179}$ |
| 2002 $PC_{179}$ | 18.0 | 0.15 | 20020814 | 326.83598 | 268.57087 | 104.37794 | 5.98334 | 0.2276675 | 2.4250047 | 8 | 1 | 4 days | 0.34 | | | MPC | | 2002 $PC_{179}$ |
| 2002 $PE_{179}$ | 16.0 | 0.15 | 20060922 | 332.40700 | 81.03048 | 274.17399 | 11.40512 | 0.2851813 | 2.6650664 | 20 | 1 | 66 days | 0.55 | M-v | 4 | MPC | | 2002 $PE_{179}$ |
| 2002 $PF_{179}$ | 16.8 | 0.15 | 20060922 | 23.62309 | 287.50808 | 321.49236 | 14.33458 | 0.3928648 | 2.6595663 | 18 | 1 | 80 days | 0.63 | M-v | 5 | MPC | | 2002 $PF_{179}$ |
| 2002 $PH_{179}$ | 16.5 | 0.15 | 20020903 | 354.56788 | 159.95295 | 188.39911 | 23.19344 | 0.1533984 | 2.2818998 | 21 | 1 | 52 days | 0.43 | | | MPC | | 2002 $PH_{179}$ |
| 2002 $PJ_{179}$ | 17.0 | 0.15 | 20060922 | 225.92169 | 96.30558 | 287.90741 | 14.53650 | 0.2568192 | 3.1697995 | 14 | 1 | 76 days | 0.46 | M-v | 4 | MPC | | 2002 $PJ_{179}$ |
| 2002 $PK_{179}$ | 18.4 | 0.15 | 20020814 | 321.89803 | 76.90587 | 301.47338 | 5.16142 | 0.1877429 | 2.2747672 | 9 | 1 | 20 days | 0.21 | | | MPC | | 2002 $PK_{179}$ |
| 2002 $PL_{179}$ | 19.9 | 0.15 | 20020814 | 354.83387 | 39.88477 | 293.67888 | 5.33891 | 0.2721879 | 2.1434056 | 19 | 1 | 52 days | 0.27 | | | MPC | | 2002 $PL_{179}$ |
| 2002 $PM_{179}$ | 17.1 | 0.15 | 20020725 | 358.70981 | 131.24173 | 190.72739 | 5.02962 | 0.0723357 | 2.6900712 | 18 | 1 | 37 days | 0.25 | | | MPC | | 2002 $PM_{179}$ |
| 2002 $PN_{179}$ | 16.7 | 0.15 | 20020814 | 271.12865 | 103.99598 | 314.00672 | 10.97330 | 0.0315296 | 2.9128446 | 13 | 1 | 20 days | 0.36 | | | MPC | | 2002 $PN_{179}$ |
| 2002 $PO_{179}$ | 19.0 | 0.15 | 20020814 | 329.69565 | 219.37919 | 152.47932 | 8.91041 | 0.2311946 | 2.3158519 | 11 | 1 | 19 days | 0.30 | | | MPC | | 2002 $PO_{179}$ |
| 2002 $PP_{179}$ | 18.6 | 0.15 | 20020725 | 19.32586 | 316.36621 | 320.49205 | 16.85392 | 0.3291221 | 2.6491893 | 13 | 1 | 34 days | 0.27 | | | MPC | | 2002 $PP_{179}$ |
| 2002 $PQ_{179}$ | 16.5 | 0.15 | 20060922 | 266.70357 | 250.45635 | 92.80662 | 1.08462 | 0.2227175 | 3.0506497 | 17 | 1 | 68 days | 0.19 | M-v | 4 | MPC | | 2002 $PQ_{179}$ |
| 2002 $PR_{179}$ | 16.6 | 0.15 | 20020725 | 21.02312 | 124.24717 | 160.11018 | 1.46588 | 0.2327121 | 2.8164512 | 7 | 1 | 9 days | 0.18 | | | MPC | | 2002 $PR_{179}$ |
| 2002 $PS_{179}$ | 17.6 | 0.15 | 20020814 | 326.51857 | 211.44652 | 162.08307 | 7.00013 | 0.2164243 | 2.4878435 | 26 | 1 | 54 days | 0.49 | | | MPC | | 2002 $PS_{179}$ |
| 2002 $PT_{179}$ | 15.9 | 0.15 | 20020814 | 269.60634 | 121.58406 | 302.35496 | 9.77364 | 0.0851948 | 3.1087134 | 12 | 1 | 19 days | 0.25 | | | MPC | | 2002 $PT_{179}$ |
| 2002 $PU_{179}$ | 17.8 | 0.15 | 20020814 | 314.22334 | 228.48336 | 162.88469 | 1.35304 | 0.2069885 | 2.5747723 | 18 | 1 | 53 days | 0.28 | | | MPC | | 2002 $PU_{179}$ |
| 2002 $PV_{179}$ | 17.9 | 0.15 | 20020814 | 341.42302 | 218.20618 | 124.81996 | 2.76858 | 0.0871039 | 2.3122319 | 11 | 1 | 34 days | 0.22 | | | MPC | | 2002 $PV_{179}$ |
| 2002 $PX_{179}$ | 17.1 | 0.15 | 20020814 | 28.36345 | 334.88832 | 319.70363 | 4.82809 | 0.0329436 | 2.6883581 | 17 | 1 | 53 days | 0.29 | | | MPC | | 2002 $PX_{179}$ |
| 2002 QF | 15.7 | 0.15 | 20060922 | 54.53747 | 92.41066 | 244.27202 | 5.43676 | 0.2025620 | 2.3365377 | 156 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 87542 | 2002 QF |
| 2002 QH | 15.7 | 0.15 | 20060922 | 27.36095 | 343.90594 | 317.94984 | 14.20825 | 0.2749484 | 2.5355912 | 159 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 04211 | 2002 QH |
| 2002 QK | 15.6 | 0.15 | 20060922 | 338.75701 | 80.00891 | 314.15298 | 27.13158 | 0.2651342 | 2.5571358 | 57 | 2 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03354 | 2002 QK |
| 2002 QV | 15.2 | 0.15 | 20060922 | 327.37740 | 106.85632 | 159.85755 | 9.99580 | 0.0888986 | 3.1047842 | 41 | 4 | 1995–2006 | 0.44 | M-v | 0 | MPC | 00321 | 2002 QV |
| 2002 $QT_1$ | 15.8 | 0.15 | 20060922 | 50.51719 | 87.90920 | 161.37082 | 5.73183 | 0.2348768 | 2.5632247 | 46 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04211 | 2002 $QT_1$ |
| 2002 $QX_2$ | 16.9 | 0.15 | 20060922 | 4.19906 | 89.38129 | 239.36010 | 2.46063 | 0.1722400 | 2.5404351 | 41 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03354 | 2002 $QX_2$ |
| 2002 $QH_3$ | 16.5 | 0.15 | 20060922 | 86.30464 | 93.19604 | 193.72850 | 5.98863 | 0.1359352 | 2.3363390 | 79 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 75479 | 2002 $QH_3$ |
| 2002 $QL_3$ | 16.7 | 0.15 | 20060922 | 68.77914 | 51.07623 | 236.08229 | 2.80494 | 0.0982177 | 2.4149822 | 59 | 5 | 1991–2006 | 0.39 | M-v | 1 | MPC | 04211 | 2002 $QL_3$ |
| 2002 $QQ_3$ | 16.8 | 0.15 | 20060922 | 43.33213 | 183.22527 | 177.21364 | 7.01921 | 0.1234960 | 2.2842777 | 43 | 3 | 1995–2005 | 0.51 | M-v | 3 | MPC | 38366 | 2002 $QQ_3$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $QG_4$ | 15.4 | 0.15 | 20060922 | 203.57571 | 79.41093 | 313.28504 | 5.04868 | 0.1037298 | 3.2207900 | 40 | 4 | 1994–2005 | 0.54 | M-v | 0 | MPC | 04211 | 2002 $QG_4$ |
| 2002 $QV_4$ | 17.9 | 0.15 | 20060922 | 99.87387 | 211.22606 | 59.89682 | 6.55689 | 0.2467522 | 2.3176709 | 42 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 75480 | 2002 $QV_4$ |
| 2002 $QV_5$ | 15.9 | 0.15 | 20060922 | 33.83769 | 328.86726 | 359.92771 | 5.61204 | 0.3425798 | 2.3953852 | 46 | 4 | 1991–2006 | 0.62 | M-v | 1 | MPC | 75481 | 2002 $QV_5$ |
| 2002 $QV_6$ | 16.7 | 0.15 | 20060922 | 50.91965 | 281.70480 | 333.91043 | 26.65888 | 0.4116412 | 2.5390035 | 74 | 3 | 2001–2006 | 0.41 | M-v | 1 | MPC | 04211 | 2002 $QV_6$ |
| 2002 $QL_7$ | 16.4 | 0.15 | 20060922 | 22.23761 | 205.49484 | 89.28026 | 4.86350 | 0.1853992 | 2.5414537 | 41 | 2 | 2002–2006 | 0.46 | M-v | 4 | MPC | 03355 | 2002 $QL_7$ |
| 2002 $QZ_7$ | 17.5 | 0.15 | 20060922 | 45.13622 | 255.28350 | 78.17518 | 5.02348 | 0.2608327 | 2.3631857 | 74 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 77625 | 2002 $QZ_7$ |
| 2002 $QL_9$ | 16.5 | 0.15 | 20060922 | 83.05162 | 177.51245 | 100.57351 | 8.40752 | 0.1108383 | 2.3977389 | 44 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 75482 | 2002 $QL_9$ |
| 2002 $QA_{10}$ | 17.4 | 0.15 | 20060922 | 56.30679 | 104.61046 | 230.70519 | 6.21516 | 0.1283486 | 2.3401629 | 47 | 3 | 2002–2006 | 0.45 | M-v | 1 | MPC | 75483 | 2002 $QA_{10}$ |
| 2002 $QE_{11}$ | 16.4 | 0.15 | 20060922 | 45.70220 | 340.84861 | 307.97311 | 5.63012 | 0.1192930 | 2.4650743 | 39 | 2 | 2002–2006 | 0.54 | M-v | 4 | MPC | 03355 | 2002 $QE_{11}$ |
| 2002 $QF_{12}$ | 17.2 | 0.15 | 20060922 | 40.29683 | 158.60684 | 202.08187 | 3.26799 | 0.1232018 | 2.2849484 | 42 | 4 | 1992–2006 | 0.46 | M-v | 2 | MPC | 50104 | 2002 $QF_{12}$ |
| 2002 $QG_{12}$ | 17.4 | 0.15 | 20060922 | 1.34587 | 160.41699 | 212.69593 | 3.15476 | 0.2058953 | 2.4163798 | 92 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 75483 | 2002 $QG_{12}$ |
| 2002 $QM_{12}$ | 16.3 | 0.15 | 20060922 | 145.05822 | 357.09901 | 204.18260 | 6.35489 | 0.0476168 | 2.4571814 | 38 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04211 | 2002 $QM_{12}$ |
| 2002 $QU_{12}$ | 15.1 | 0.15 | 20060922 | 195.55421 | 168.12030 | 293.90806 | 7.83768 | 0.1055975 | 2.7699345 | 51 | 4 | 2000–2005 | 0.46 | M-v | 0 | MPC | 66279 | 2002 $QU_{12}$ |
| 2002 $QV_{12}$ | 16.1 | 0.15 | 20020814 | 320.72458 | 127.07880 | 248.36488 | 4.56472 | 0.1017733 | 2.7729857 | 11 | 1 | 11 days | 0.36 | | | MPC | | 2002 $QV_{12}$ |
| 2002 $QC_{13}$ | 17.7 | 0.15 | 20060922 | 314.39730 | 148.53409 | 258.60458 | 3.30211 | 0.2708461 | 2.5368940 | 29 | 3 | 2002–2006 | 0.29 | M-v | 3 | MPC | 03355 | 2002 $QC_{13}$ |
| 2002 $QM_{13}$ | 17.1 | 0.15 | 20060922 | 35.53435 | 91.93795 | 164.27329 | 12.70664 | 0.1440405 | 2.6700782 | 22 | 3 | 2001–2005 | 0.27 | M-v | 2 | MPC | 35354 | 2002 $QM_{13}$ |
| 2002 $QW_{13}$ | 16.9 | 0.15 | 20060922 | 59.07259 | 74.78666 | 230.11679 | 4.00045 | 0.2366662 | 2.3688880 | 69 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 75484 | 2002 $QW_{13}$ |
| 2002 $QH_{14}$ | 17.5 | 0.15 | 20060922 | 98.64500 | 36.91481 | 238.78821 | 6.23078 | 0.1047549 | 2.3398136 | 56 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 87542 | 2002 $QH_{14}$ |
| 2002 $QP_{14}$ | 16.3 | 0.15 | 20060922 | 131.23185 | 337.35990 | 265.89476 | 9.70748 | 0.0703899 | 2.3531301 | 61 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 75485 | 2002 $QP_{14}$ |
| 2002 $QV_{15}$ | 15.3 | 0.15 | 20060922 | 326.51391 | 101.60909 | 288.89143 | 27.96323 | 0.1984185 | 2.6021691 | 55 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03356 | 2002 $QV_{15}$ |
| 2002 $QF_{16}$ | 16.8 | 0.15 | 20060922 | 177.33841 | 325.98731 | 270.78748 | 4.13820 | 0.1286444 | 2.1790214 | 49 | 5 | 2001–2006 | 0.41 | M-v | 1 | MPC | 87542 | 2002 $QF_{16}$ |
| 2002 $QV_{16}$ | 16.8 | 0.15 | 20060922 | 92.02511 | 26.07870 | 261.86336 | 4.59677 | 0.2531684 | 2.2935841 | 69 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 75486 | 2002 $QV_{16}$ |
| 2002 $QE_{17}$ | 16.9 | 0.15 | 20060922 | 29.17991 | 212.36616 | 187.74898 | 4.55788 | 0.1470396 | 2.2421846 | 42 | 5 | 1994–2004 | 0.58 | M-v | 1 | MPC | 89308 | 2002 $QE_{17}$ |
| 2002 $QK_{17}$ | 17.4 | 0.15 | 20060922 | 358.54958 | 188.86505 | 156.37837 | 6.55555 | 0.3150327 | 2.5372781 | 64 | 4 | 1994–2006 | 0.49 | M-v | 2 | MPC | 04211 | 2002 $QK_{17}$ |
| 2002 $QN_{17}$ | 15.4 | 0.15 | 20060922 | 257.85657 | 9.88798 | 323.50525 | 8.28883 | 0.0761041 | 3.1084362 | 34 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 02118 | 2002 $QN_{17}$ |
| 2002 $QR_{17}$ | 16.4 | 0.15 | 20060922 | 353.12670 | 59.12766 | 327.30302 | 2.40557 | 0.1988047 | 2.4319419 | 131 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 03356 | 2002 $QR_{17}$ |
| 2002 $QX_{17}$ | 17.2 | 0.15 | 20060922 | 68.10601 | 138.31447 | 157.36674 | 0.69433 | 0.2064836 | 2.3794776 | 63 | 3 | 2002–2006 | 0.35 | M-v | 1 | MPC | 04211 | 2002 $QX_{17}$ |
| 2002 $QY_{17}$ | 16.4 | 0.15 | 20060922 | 25.66271 | 211.23050 | 158.58163 | 6.79428 | 0.1792745 | 2.3487558 | 85 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 87542 | 2002 $QY_{17}$ |
| 2002 $QH_{18}$ | 17.2 | 0.15 | 20060922 | 340.18983 | 149.34662 | 226.48697 | 1.69225 | 0.2401049 | 2.5432635 | 112 | 3 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04211 | 2002 $QH_{18}$ |
| 2002 $QL_{18}$ | 15.0 | 0.15 | 20060922 | 231.02165 | 217.51479 | 170.84042 | 16.42465 | 0.1421435 | 3.1378111 | 53 | 3 | 1995–2005 | 0.53 | M-v | 3 | MPC | 75487 | 2002 $QL_{18}$ |
| 2002 $QX_{18}$ | 17.4 | 0.15 | 20060922 | 94.90785 | 213.93781 | 62.09068 | 3.24034 | 0.1801491 | 2.3321887 | 49 | 4 | 1999–2006 | 0.32 | M-v | 1 | MPC | 75487 | 2002 $QX_{18}$ |
| 2002 $QC_{19}$ | 17.0 | 0.15 | 20060922 | 349.56576 | 349.54361 | 1.17764 | 6.24623 | 0.1541137 | 2.5482751 | 25 | 3 | 1994–2006 | 0.31 | M-v | 4 | MPC | 03356 | 2002 $QC_{19}$ |
| 2002 $QH_{19}$ | 17.9 | 0.15 | 20060922 | 47.37225 | 308.57951 | 34.00063 | 2.90498 | 0.2136903 | 2.3316373 | 30 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 77625 | 2002 $QH_{19}$ |
| 2002 $QL_{19}$ | 14.8 | 0.15 | 20060922 | 271.17379 | 235.33581 | 109.26568 | 4.63291 | 0.1189153 | 3.0441284 | 45 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 02118 | 2002 $QL_{19}$ |
| 2002 $QE_{20}$ | 16.2 | 0.15 | 20060922 | 4.43823 | 85.73010 | 253.32961 | 5.30627 | 0.1834179 | 2.5516198 | 72 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 03356 | 2002 $QE_{20}$ |
| 2002 $QG_{21}$ | 16.5 | 0.15 | 20060922 | 355.85865 | 218.29914 | 156.93737 | 5.02882 | 0.2001714 | 2.4662853 | 108 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 89308 | 2002 $QG_{21}$ |
| 2002 $QP_{21}$ | 15.9 | 0.15 | 20060922 | 266.79852 | 300.09795 | 27.43528 | 1.75413 | 0.1993919 | 3.1050573 | 43 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 00323 | 2002 $QP_{21}$ |
| 2002 $QE_{22}$ | 16.3 | 0.15 | 20060922 | 5.56596 | 198.96844 | 163.48095 | 6.61205 | 0.1392661 | 2.4157984 | 88 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 04211 | 2002 $QE_{22}$ |
| 2002 $QP_{22}$ | 15.9 | 0.15 | 20060922 | 255.10072 | 24.50548 | 319.34939 | 8.24389 | 0.2109862 | 3.1449873 | 46 | 3 | 1991–2005 | 0.40 | M-v | 3 | MPC | 50627 | 2002 $QP_{22}$ |
| 2002 $QV_{22}$ | 15.1 | 0.15 | 20060922 | 305.48898 | 134.49178 | 135.57190 | 10.05131 | 0.0630668 | 3.1660416 | 35 | 5 | 1993–2006 | 0.62 | M-v | 0 | MPC | 04211 | 2002 $QV_{22}$ |
| 2002 $QB_{23}$ | 17.6 | 0.15 | 20060922 | 354.95970 | 18.75195 | 354.54172 | 0.49641 | 0.1961016 | 2.4291967 | 75 | 4 | 2000–2006 | 0.38 | M-v | 1 | MPC | 03357 | 2002 $QB_{23}$ |
| 2002 $QF_{23}$ | 17.7 | 0.15 | 20020814 | 25.76569 | 147.10942 | 146.92235 | 2.76767 | 0.1593698 | 2.4828318 | 15 | 1 | 29 days | 0.31 | | | MPC | | 2002 $QF_{23}$ |
| 2002 $QR_{23}$ | 17.8 | 0.15 | 20060922 | 332.71942 | 260.60360 | 143.03728 | 3.05733 | 0.2274031 | 2.4569046 | 49 | 4 | 1996–2006 | 0.42 | M-v | 1 | MPC | 89309 | 2002 $QR_{23}$ |
| 2002 $QN_{24}$ | 18.0 | 0.15 | 20020814 | 8.24387 | 172.20216 | 135.79238 | 9.90280 | 0.2974561 | 2.4274963 | 12 | 1 | 29 days | 0.19 | | | MPC | | 2002 $QN_{24}$ |
| 2002 $QE_{25}$ | 17.4 | 0.15 | 20060922 | 37.28940 | 203.33495 | 145.40653 | 6.78963 | 0.1488683 | 2.3263342 | 38 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 89309 | 2002 $QE_{25}$ |
| 2002 $QQ_{25}$ | 16.2 | 0.15 | 20060922 | 204.39221 | 343.47679 | 162.84731 | 8.79879 | 0.1573168 | 2.5170374 | 62 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04211 | 2002 $QQ_{25}$ |
| 2002 $QQ_{27}$ | 17.9 | 0.15 | 20060922 | 46.63902 | 260.16894 | 84.28244 | 4.20256 | 0.2071642 | 2.3157642 | 34 | 4 | 2002–2006 | 0.33 | M-v | 1 | MPC | 75491 | 2002 $QQ_{27}$ |
| 2002 $QW_{27}$ | 17.3 | 0.15 | 20060922 | 54.43361 | 252.83443 | 85.80761 | 3.39452 | 0.1893833 | 2.3015451 | 50 | 5 | 1999–2006 | 0.39 | M-v | 0 | MPC | 94822 | 2002 $QW_{27}$ |
| 2002 $QX_{27}$ | 17.0 | 0.15 | 20060922 | 80.60255 | 196.25222 | 67.37209 | 3.67686 | 0.0472425 | 2.4644775 | 37 | 3 | 1995–2005 | 0.29 | M-v | 2 | MPC | 75491 | 2002 $QX_{27}$ |
| 2002 $QY_{27}$ | 16.6 | 0.15 | 20060922 | 67.75717 | 160.99110 | 130.83202 | 5.84177 | 0.1551624 | 2.3822129 | 64 | 3 | 2002–2006 | 0.61 | M-v | 2 | MPC | 89309 | 2002 $QY_{27}$ |
| 2002 $QL_{28}$ | 17.1 | 0.15 | 20060922 | 44.44270 | 218.49596 | 119.07049 | 6.38594 | 0.2282000 | 2.3075825 | 27 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 89309 | 2002 $QL_{28}$ |
| 2002 $QN_{28}$ | 16.5 | 0.15 | 20060922 | 126.88930 | 131.41577 | 103.87805 | 6.90595 | 0.1073156 | 2.3112847 | 62 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 75491 | 2002 $QN_{28}$ |
| 2002 $QP_{28}$ | 17.4 | 0.15 | 20060922 | 76.24927 | 301.27736 | 22.20994 | 3.45840 | 0.2027169 | 2.2370239 | 26 | 4 | 1999–2006 | 0.34 | M-v | 1 | MPC | 75492 | 2002 $QP_{28}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $QW_{28}$ | 16.6 | 0.15 | 20060922 | 32.14351 | 251.76089 | 67.44852 | 3.30946 | 0.2035792 | 2.4194827 | 83 | 6 | 1994–2006 | 0.50 | M-v | 1 | MPC | 94822 | 2002 $QW_{28}$ |
| 2002 $QG_{30}$ | 17.7 | 0.15 | 20060922 | 103.56406 | 154.80462 | 108.99812 | 2.88887 | 0.1903988 | 2.3130242 | 25 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 00323 | 2002 $QG_{30}$ |
| 2002 $QK_{30}$ | 16.4 | 0.15 | 20060922 | 91.04445 | 172.13935 | 92.90522 | 4.24104 | 0.1296659 | 2.3766381 | 52 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 75493 | 2002 $QK_{30}$ |
| 2002 $QW_{30}$ | 16.7 | 0.15 | 20060922 | 87.55227 | 150.32273 | 113.42714 | 3.12460 | 0.1400239 | 2.3953333 | 50 | 5 | 1991–2006 | 0.36 | M-v | 0 | MPC | 04212 | 2002 $QW_{30}$ |
| 2002 $QX_{30}$ | 16.6 | 0.15 | 20060922 | 301.87357 | 303.02425 | 51.16979 | 2.57699 | 0.0759044 | 2.7517499 | 35 | 5 | 1996–2005 | 0.45 | M-v | 1 | MPC | 75493 | 2002 $QX_{30}$ |
| 2002 $QH_{31}$ | 17.0 | 0.15 | 20060922 | 130.44118 | 155.12780 | 89.24038 | 3.16738 | 0.1464474 | 2.3038174 | 44 | 4 | 2002–2006 | 0.31 | M-v | 1 | MPC | 75494 | 2002 $QH_{31}$ |
| 2002 $QM_{32}$ | 16.7 | 0.15 | 20060922 | 337.83806 | 332.15242 | 61.46961 | 3.29395 | 0.2145270 | 2.4707894 | 102 | 4 | 1996–2006 | 0.48 | M-v | 1 | MPC | 03357 | 2002 $QM_{32}$ |
| 2002 $QW_{32}$ | 15.0 | 0.15 | 20060922 | 310.31542 | 286.32982 | 349.09960 | 9.78235 | 0.1957619 | 3.1599925 | 71 | 2 | 2002–2006 | 0.43 | M-v | 3 | MPC | 02118 | 2002 $QW_{32}$ |
| 2002 $QX_{32}$ | 16.8 | 0.15 | 20060922 | 1.97907 | 315.90706 | 15.92874 | 0.64041 | 0.1009856 | 2.5830206 | 66 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 04212 | 2002 $QX_{32}$ |
| 2002 $QB_{33}$ | 16.0 | 0.15 | 20060922 | 337.15522 | 215.98510 | 157.63363 | 6.46608 | 0.0401709 | 2.5253533 | 52 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 03357 | 2002 $QB_{33}$ |
| 2002 $QH_{33}$ | 16.6 | 0.15 | 20060922 | 36.11025 | 179.44238 | 84.00918 | 3.87578 | 0.1888313 | 2.6331231 | 19 | 3 | 2002–2005 | 0.38 | M-v | 4 | MPC | 75495 | 2002 $QH_{33}$ |
| 2002 $QB_{34}$ | 17.5 | 0.15 | 20060922 | 1.88723 | 266.23697 | 76.47516 | 1.71435 | 0.1163937 | 2.5242335 | 33 | 5 | 1999–2006 | 0.38 | M-v | 1 | MPC | 04212 | 2002 $QB_{34}$ |
| 2002 $QL_{34}$ | 16.2 | 0.15 | 20060922 | 31.89598 | 207.65869 | 81.30536 | 3.32819 | 0.1588522 | 2.5722189 | 86 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 04212 | 2002 $QL_{34}$ |
| 2002 $QM_{34}$ | 16.8 | 0.15 | 20060922 | 323.23444 | 75.67536 | 4.13282 | 4.92409 | 0.1207229 | 2.3373564 | 62 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 62398 | 2002 $QM_{34}$ |
| 2002 $QA_{35}$ | 17.9 | 0.15 | 20060922 | 13.33186 | 291.42301 | 51.02725 | 2.62283 | 0.1945980 | 2.4744479 | 26 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 75496 | 2002 $QA_{35}$ |
| 2002 $QG_{35}$ | 15.9 | 0.15 | 20060922 | 2.14074 | 15.74983 | 3.74253 | 2.27598 | 0.1451544 | 2.4071730 | 142 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 62398 | 2002 $QG_{35}$ |
| 2002 $QL_{35}$ | 15.6 | 0.15 | 20060922 | 243.98835 | 236.97356 | 129.83587 | 7.80549 | 0.1799493 | 3.1532275 | 39 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 00324 | 2002 $QL_{35}$ |
| 2002 $QM_{35}$ | 16.2 | 0.15 | 20060922 | 293.64467 | 239.11940 | 75.40431 | 4.03007 | 0.1691268 | 3.0499508 | 34 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 00324 | 2002 $QM_{35}$ |
| 2002 $QX_{35}$ | 15.7 | 0.15 | 20060922 | 303.21169 | 288.88570 | 355.41551 | 16.55902 | 0.2367279 | 3.1124544 | 58 | 3 | 1995–2006 | 0.53 | M-v | 2 | MPC | 02118 | 2002 $QX_{35}$ |
| 2002 $QY_{35}$ | 17.1 | 0.15 | 20060922 | 3.20336 | 17.88371 | 358.95177 | 10.94261 | 0.2042981 | 2.4244149 | 66 | 4 | 1993–2006 | 0.45 | M-v | 1 | MPC | 04212 | 2002 $QY_{35}$ |
| 2002 $QD_{36}$ | 17.4 | 0.15 | 20060922 | 32.60560 | 282.03843 | 77.94703 | 2.89783 | 0.2389901 | 2.3568598 | 55 | 3 | 1999–2006 | 0.42 | M-v | 3 | MPC | 38371 | 2002 $QD_{36}$ |
| 2002 $QV_{36}$ | 16.1 | 0.15 | 20060922 | 184.37884 | 315.74294 | 134.72641 | 2.78378 | 0.1558035 | 3.1016006 | 38 | 4 | 1999–2005 | 0.42 | M-v | 0 | MPC | 48253 | 2002 $QV_{36}$ |
| 2002 $QZ_{36}$ | 16.5 | 0.15 | 20060922 | 276.21591 | 314.04388 | 132.46341 | 2.44644 | 0.1721799 | 2.5738304 | 83 | 6 | 1996–2006 | 0.66 | M-v | 1 | MPC | 04212 | 2002 $QZ_{36}$ |
| 2002 $QA_{37}$ | 15.2 | 0.15 | 20060922 | 204.69766 | 252.45298 | 165.21800 | 16.05589 | 0.1188051 | 3.1587134 | 52 | 5 | 1999–2006 | 0.51 | M-v | 0 | MPC | 02118 | 2002 $QA_{37}$ |
| 2002 $QB_{37}$ | 16.6 | 0.15 | 20020903 | 236.30808 | 11.20398 | 114.33073 | 2.03029 | 0.1202999 | 3.0027460 | 18 | 1 | 17 days | 0.31 | | | MPC | | 2002 $QB_{37}$ |
| 2002 $QD_{37}$ | 17.1 | 0.15 | 20020903 | 247.70233 | 325.96341 | 151.23241 | 4.76106 | 0.1435443 | 2.6838115 | 15 | 1 | 16 days | 0.19 | | | MPC | | 2002 $QD_{37}$ |
| 2002 $QK_{37}$ | 17.6 | 0.15 | 20020903 | 335.81071 | 279.76509 | 98.79963 | 1.75770 | 0.0803985 | 2.7930347 | 19 | 1 | 17 days | 0.31 | | | MPC | | 2002 $QK_{37}$ |
| 2002 $QN_{37}$ | 17.2 | 0.15 | 20020903 | 36.10412 | 277.52603 | 32.60016 | 2.34085 | 0.0635416 | 2.9534041 | 17 | 1 | 17 days | 0.24 | | | MPC | | 2002 $QN_{37}$ |
| 2002 $QX_{37}$ | 16.7 | 0.15 | 20020903 | 54.43642 | 274.63979 | 10.24433 | 5.75995 | 0.1214742 | 3.1194944 | 12 | 1 | 16 days | 0.16 | | | MPC | | 2002 $QX_{37}$ |
| 2002 $QS_{41}$ | 16.5 | 0.15 | 20060922 | 11.53215 | 218.40671 | 120.17168 | 4.99319 | 0.1414200 | 2.4480576 | 72 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 03357 | 2002 $QS_{41}$ |
| 2002 $QS_{43}$ | 16.1 | 0.15 | 20060922 | 35.66150 | 272.63163 | 31.40880 | 5.39233 | 0.1908192 | 2.4556333 | 90 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04212 | 2002 $QS_{43}$ |
| 2002 $QD_{44}$ | 16.2 | 0.15 | 20060922 | 358.71097 | 261.50296 | 107.03982 | 7.36510 | 0.1609996 | 2.4211133 | 69 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 04212 | 2002 $QD_{44}$ |
| 2002 $QG_{44}$ | 15.9 | 0.15 | 20060922 | 307.79881 | 280.46178 | 102.46116 | 8.89003 | 0.1290012 | 2.6024818 | 43 | 3 | 2002–2005 | 0.48 | M-v | 2 | MPC | 56502 | 2002 $QG_{44}$ |
| 2002 $QK_{44}$ | 15.8 | 0.15 | 20060922 | 10.22022 | 199.77881 | 126.64989 | 7.11132 | 0.1418724 | 2.4758147 | 83 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03358 | 2002 $QK_{44}$ |
| 2002 $QS_{44}$ | 16.5 | 0.15 | 20060922 | 24.59064 | 21.31881 | 343.80183 | 9.66657 | 0.1856322 | 2.3854926 | 77 | 3 | 2002–2006 | 0.62 | M-v | 3 | MPC | 61266 | 2002 $QS_{44}$ |
| 2002 $QX_{44}$ | 16.7 | 0.15 | 20060922 | 14.58269 | 241.26764 | 70.65690 | 4.70137 | 0.1576406 | 2.5736069 | 31 | 5 | 1993–2006 | 0.31 | M-v | 1 | MPC | 04212 | 2002 $QX_{44}$ |
| 2002 $QT_{45}$ | 17.2 | 0.15 | 20060922 | 52.42203 | 44.78299 | 302.62806 | 1.76882 | 0.2032102 | 2.3026957 | 37 | 4 | 1997–2006 | 0.46 | M-v | 1 | MPC | 03358 | 2002 $QT_{45}$ |
| 2002 $QU_{45}$ | 16.7 | 0.15 | 20060922 | 17.76139 | 61.04819 | 324.94867 | 4.40288 | 0.1342401 | 2.3168127 | 46 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 62398 | 2002 $QU_{45}$ |
| 2002 $QX_{45}$ | 15.2 | 0.15 | 20060922 | 295.37892 | 276.13101 | 45.08854 | 9.51498 | 0.1373330 | 3.0581516 | 36 | 2 | 2002–2006 | 0.51 | M-v | 4 | MPC | 00325 | 2002 $QX_{45}$ |
| 2002 $QL_{46}$ | 17.4 | 0.15 | 20060922 | 15.80444 | 274.57597 | 90.13973 | 5.86839 | 0.2277440 | 2.3565866 | 57 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 00325 | 2002 $QL_{46}$ |
| 2002 $QA_{47}$ | 16.6 | 0.15 | 20060922 | 93.64951 | 41.56925 | 258.93958 | 8.77828 | 0.2402015 | 2.3049553 | 57 | 6 | 1960–2006 | 0.51 | M-v | 1 | MPC | 77627 | 2002 $QA_{47}$ |
| 2002 $QM_{47}$ | 16.0 | 0.15 | 20060922 | 20.66017 | 176.28837 | 107.96122 | 8.37875 | 0.3588813 | 2.5931784 | 101 | 3 | 1997–2006 | 0.43 | M-v | 1 | MPC | 04212 | 2002 $QM_{47}$ |
| 2002 $QP_{48}$ | 17.9 | 0.15 | 20060922 | 42.54670 | 212.03080 | 128.15567 | 5.06107 | 0.1471429 | 2.3193889 | 34 | 4 | 2002–2006 | 0.33 | M-v | 0 | MPC | 75500 | 2002 $QP_{48}$ |
| 2002 $QF_{49}$ | 17.0 | 0.15 | 20060922 | 25.11721 | 26.44241 | 331.48727 | 6.06286 | 0.1470843 | 2.3782842 | 53 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 61267 | 2002 $QF_{49}$ |
| 2002 $QH_{49}$ | 16.6 | 0.15 | 20060922 | 345.99614 | 260.14401 | 115.46907 | 8.02581 | 0.2326868 | 2.4629406 | 43 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 03358 | 2002 $QH_{49}$ |
| 2002 $QJ_{49}$ | 17.8 | 0.15 | 20060922 | 5.85160 | 87.23006 | 292.75318 | 0.67974 | 0.1905620 | 2.3615957 | 66 | 3 | 1995–2006 | 0.35 | M-v | 2 | MPC | 87543 | 2002 $QJ_{49}$ |
| 2002 $QQ_{49}$ | 16.9 | 0.15 | 20060922 | 345.56310 | 354.47644 | 344.18979 | 2.19082 | 0.0891237 | 2.5675517 | 31 | 3 | 1998–2005 | 0.39 | M-v | 4 | MPC | 50107 | 2002 $QQ_{49}$ |
| 2002 $QO_{50}$ | 16.7 | 0.15 | 20060922 | 1.83084 | 79.86355 | 207.50341 | 4.10682 | 0.0900179 | 2.7588545 | 23 | 3 | 1998–2002 | 0.45 | M-v | 3 | MPC | 50108 | 2002 $QO_{50}$ |
| 2002 $QU_{50}$ | 17.0 | 0.15 | 20060922 | 0.74485 | 19.81207 | 9.06891 | 2.96572 | 0.0629961 | 2.3679698 | 46 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 04212 | 2002 $QU_{50}$ |
| 2002 $QY_{50}$ | 15.3 | 0.15 | 20060922 | 204.11302 | 164.82764 | 324.81667 | 11.13583 | 0.0186215 | 2.5832809 | 59 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04212 | 2002 $QY_{50}$ |
| 2002 $QJ_{51}$ | 17.3 | 0.15 | 20060922 | 327.67962 | 148.94330 | 240.32949 | 4.63319 | 0.2150081 | 2.5300035 | 46 | 2 | 2002–2006 | 0.55 | M-v | 4 | MPC | 03358 | 2002 $QJ_{51}$ |
| 2002 $QZ_{51}$ | 16.7 | 0.15 | 20060922 | 293.39559 | 99.43741 | 345.75504 | 5.83863 | 0.0814705 | 2.3977470 | 47 | 3 | 2002–2006 | 0.42 | M-v | 1 | MPC | 85577 | 2002 $QZ_{51}$ |
| 2002 $QA_{52}$ | 17.7 | 0.15 | 20060922 | 57.84020 | 187.19385 | 124.87795 | 3.44028 | 0.2277977 | 2.3611885 | 35 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 89311 | 2002 $QA_{52}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $QH_{52}$ | 16.6 | 0.15 | 20060922 | 9.49697 | 275.50044 | 109.77902 | 3.17395 | 0.2058482 | 2.3611468 | 73 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 03359 | 2002 $QH_{52}$ |
| 2002 $QR_{52}$ | 15.9 | 0.15 | 20060922 | 113.85068 | 69.98581 | 137.45887 | 9.24932 | 0.0093958 | 2.6097999 | 35 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04212 | 2002 $QR_{52}$ |
| 2002 $QK_{53}$ | 17.1 | 0.15 | 20060922 | 29.91724 | 326.68579 | 29.52863 | 1.92108 | 0.2094605 | 2.3595953 | 53 | 5 | 1993–2006 | 0.50 | M-v | 1 | MPC | 89311 | 2002 $QK_{53}$ |
| 2002 $QR_{53}$ | 15.9 | 0.15 | 20060922 | 246.71332 | 262.33617 | 137.73573 | 7.34754 | 0.0683046 | 2.8466307 | 31 | 4 | 1996–2002 | 0.40 | M-v | 1 | MPC | 50109 | 2002 $QR_{53}$ |
| 2002 $QY_{53}$ | 16.8 | 0.15 | 20060922 | 71.20519 | 187.93421 | 101.11911 | 3.41988 | 0.1508561 | 2.3880244 | 45 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 75502 | 2002 $QY_{53}$ |
| 2002 $QZ_{53}$ | 15.8 | 0.15 | 20060922 | 192.50637 | 37.60414 | 40.11914 | 1.28403 | 0.2032636 | 3.0723932 | 47 | 5 | 1999–2005 | 0.42 | M-v | 0 | MPC | 77628 | 2002 $QZ_{53}$ |
| 2002 $QJ_{54}$ | 16.8 | 0.15 | 20060922 | 32.94237 | 321.06383 | 322.28198 | 8.56723 | 0.1034234 | 2.6554438 | 40 | 3 | 2002–2006 | 0.31 | M-v | 2 | MPC | 04212 | 2002 $QJ_{54}$ |
| 2002 $QO_{54}$ | 17.7 | 0.15 | 20060922 | 356.38102 | 350.63412 | 348.82903 | 7.15567 | 0.1555900 | 2.5518068 | 30 | 4 | 1994–2006 | 0.41 | M-v | 3 | MPC | 04212 | 2002 $QO_{54}$ |
| 2002 $QV_{54}$ | 15.7 | 0.15 | 20060922 | 225.64900 | 102.58013 | 348.03870 | 12.34368 | 0.0817778 | 2.6863228 | 27 | 3 | 2002–2005 | 0.34 | M-v | 3 | MPC | 85578 | 2002 $QV_{54}$ |
| 2002 $QY_{54}$ | 17.3 | 0.15 | 20060922 | 9.01846 | 51.57276 | 359.80311 | 5.00560 | 0.1610064 | 2.2723263 | 30 | 3 | 1999–2004 | 0.58 | M-v | 3 | MPC | 61268 | 2002 $QY_{54}$ |
| 2002 $QA_{55}$ | 17.9 | 0.15 | 20060922 | 342.70175 | 309.38893 | 119.03127 | 3.50147 | 0.2095870 | 2.3317786 | 39 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 56507 | 2002 $QA_{55}$ |
| 2002 $QW_{55}$ | 17.8 | 0.15 | 20060922 | 55.83506 | 140.35201 | 159.47396 | 1.64316 | 0.1827209 | 2.4040416 | 57 | 4 | 2001–2006 | 0.37 | M-v | 1 | MPC | 04212 | 2002 $QW_{55}$ |
| 2002 $QJ_{56}$ | 17.3 | 0.15 | 20060922 | 115.79308 | 165.36451 | 86.60602 | 2.46309 | 0.1690691 | 2.3359159 | 53 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 75504 | 2002 $QJ_{56}$ |
| 2002 $QR_{56}$ | 16.8 | 0.15 | 20060922 | 277.49307 | 114.53930 | 348.33666 | 4.41625 | 0.0830351 | 2.3730513 | 71 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 04212 | 2002 $QR_{56}$ |
| 2002 $QJ_{57}$ | 17.3 | 0.15 | 20060922 | 108.50249 | 314.89504 | 311.39683 | 2.12301 | 0.2184925 | 2.2898597 | 40 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 75504 | 2002 $QJ_{57}$ |
| 2002 $QM_{57}$ | 16.8 | 0.15 | 20060922 | 233.13204 | 349.44299 | 160.39099 | 6.66966 | 0.0647599 | 2.3397910 | 36 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 04212 | 2002 $QM_{57}$ |
| 2002 $QR_{57}$ | 17.5 | 0.15 | 20060922 | 62.32493 | 242.31281 | 142.81093 | 2.71737 | 0.1074198 | 2.1579942 | 49 | 4 | 1999–2005 | 0.44 | M-v | 3 | MPC | 85578 | 2002 $QR_{57}$ |
| 2002 $QK_{58}$ | 16.3 | 0.15 | 20060922 | 262.25468 | 260.53736 | 160.57629 | 12.93593 | 0.1679985 | 2.6935997 | 25 | 2 | 2002–2004 | 0.42 | M-v | 4 | MPC | 62398 | 2002 $QK_{58}$ |
| 2002 $QX_{58}$ | 17.4 | 0.15 | 20060922 | 67.52848 | 77.78385 | 199.61819 | 3.37439 | 0.2024968 | 2.4260326 | 52 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 75504 | 2002 $QX_{58}$ |
| 2002 $QE_{59}$ | 15.6 | 0.15 | 20060922 | 112.27638 | 46.87062 | 171.04665 | 15.26726 | 0.0657902 | 2.5360934 | 77 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 77628 | 2002 $QE_{59}$ |
| 2002 $QK_{59}$ | 17.2 | 0.15 | 20060922 | 316.71432 | 35.30696 | 307.33345 | 6.49527 | 0.0639060 | 2.7278934 | 22 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 75504 | 2002 $QK_{59}$ |
| 2002 $QT_{59}$ | 18.3 | 0.15 | 20060922 | 113.80360 | 4.49532 | 288.90644 | 6.52812 | 0.1063097 | 2.2258017 | 33 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 61270 | 2002 $QT_{59}$ |
| 2002 $QD_{60}$ | 16.7 | 0.15 | 20060922 | 320.28410 | 130.07257 | 291.62946 | 8.61746 | 0.1798285 | 2.4187576 | 39 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 61270 | 2002 $QD_{60}$ |
| 2002 $QJ_{60}$ | 17.8 | 0.15 | 20060922 | 356.94671 | 129.50827 | 268.14555 | 5.79531 | 0.1863935 | 2.3620108 | 58 | 3 | 1999–2006 | 0.39 | M-v | 2 | MPC | 89311 | 2002 $QJ_{60}$ |
| 2002 $QJ_{61}$ | 16.6 | 0.15 | 20060922 | 237.49514 | 172.48882 | 266.13571 | 3.49632 | 0.0888470 | 2.6869503 | 41 | 4 | 1993–2005 | 0.46 | M-v | 1 | MPC | 65353 | 2002 $QJ_{61}$ |
| 2002 $QK_{61}$ | 16.9 | 0.15 | 20020814 | 327.43044 | 218.96421 | 157.36612 | 18.26187 | 0.1799965 | 2.9101591 | 14 | 1 | 28 days | 0.27 | | | MPC | | 2002 $QK_{61}$ |
| 2002 $QL_{61}$ | 17.4 | 0.15 | 20060922 | 80.95829 | 148.10239 | 163.46100 | 3.98339 | 0.1298231 | 2.2855324 | 42 | 6 | 1995–2006 | 0.44 | M-v | 0 | MPC | 77628 | 2002 $QL_{61}$ |
| 2002 $QM_{61}$ | 16.4 | 0.15 | 20060922 | 223.55854 | 5.06029 | 160.47778 | 6.37470 | 0.0440649 | 2.3129977 | 31 | 3 | 2001–2006 | 0.52 | M-v | 4 | MPC | 61270 | 2002 $QM_{61}$ |
| 2002 $QO_{61}$ | 17.3 | 0.15 | 20060922 | 75.38987 | 112.18797 | 166.83963 | 2.57153 | 0.1539739 | 2.3994988 | 35 | 3 | 2002–2006 | 0.26 | M-v | 1 | MPC | 75505 | 2002 $QO_{61}$ |
| 2002 $QV_{61}$ | 16.9 | 0.15 | 20060922 | 343.05895 | 102.65504 | 258.00882 | 3.77363 | 0.1310381 | 2.5331250 | 33 | 2 | 2002–2006 | 0.46 | M-v | 5 | MPC | 03360 | 2002 $QV_{61}$ |
| 2002 $QY_{61}$ | 16.4 | 0.15 | 20060922 | 328.00934 | 109.38246 | 213.00299 | 2.56491 | 0.0979700 | 2.7630725 | 26 | 3 | 1998–2005 | 0.39 | M-v | 4 | MPC | 65354 | 2002 $QY_{61}$ |
| 2002 $QZ_{61}$ | 17.5 | 0.15 | 20060922 | 73.47570 | 46.61957 | 228.33397 | 3.73336 | 0.1212900 | 2.4370823 | 34 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 85579 | 2002 $QZ_{61}$ |
| 2002 $QX_{62}$ | 16.8 | 0.15 | 20060922 | 339.30610 | 341.68742 | 315.89909 | 2.28763 | 0.2111236 | 2.7772555 | 33 | 2 | 2002–2006 | 0.39 | M-v | 4 | MPC | 03360 | 2002 $QX_{62}$ |
| 2002 $QY_{62}$ | 16.9 | 0.15 | 20060922 | 354.21778 | 271.23245 | 140.72026 | 9.05642 | 0.2056440 | 2.3361990 | 36 | 5 | 2000–2006 | 0.50 | M-v | 0 | MPC | 65355 | 2002 $QY_{62}$ |
| 2002 $QA_{63}$ | 17.0 | 0.15 | 20060922 | 103.77032 | 182.71128 | 71.72295 | 3.68436 | 0.1661416 | 2.3644783 | 52 | 4 | 1995–2006 | 0.40 | M-v | 1 | MPC | 75506 | 2002 $QA_{63}$ |
| 2002 $QB_{63}$ | 17.7 | 0.15 | 20060922 | 337.14692 | 132.04854 | 260.81457 | 1.25014 | 0.1757461 | 2.4504065 | 57 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 04213 | 2002 $QB_{63}$ |
| 2002 $QM_{63}$ | 17.0 | 0.15 | 20060922 | 307.84500 | 340.87932 | 29.71846 | 2.55923 | 0.2040653 | 2.6778058 | 30 | 3 | 1998–2004 | 0.32 | M-v | 3 | MPC | 65355 | 2002 $QM_{63}$ |
| 2002 $QW_{63}$ | 16.2 | 0.15 | 20060922 | 324.09932 | 38.61705 | 338.98959 | 14.48431 | 0.1634282 | 2.5570223 | 57 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04213 | 2002 $QW_{63}$ |
| 2002 $QY_{63}$ | 17.1 | 0.15 | 20060922 | 276.86759 | 31.24388 | 86.24599 | 5.76812 | 0.0885711 | 2.3049165 | 48 | 4 | 1996–2006 | 0.55 | M-v | 1 | MPC | 69385 | 2002 $QY_{63}$ |
| 2002 $QZ_{63}$ | 16.6 | 0.15 | 20060922 | 58.58040 | 209.87496 | 113.35306 | 7.53607 | 0.1367343 | 2.3262437 | 37 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 65356 | 2002 $QZ_{63}$ |
| 2002 $QL_{64}$ | 17.1 | 0.15 | 20060922 | 159.94955 | 115.91748 | 103.86679 | 3.16457 | 0.1133461 | 2.3010154 | 36 | 3 | 2002–2006 | 0.48 | M-v | 4 | MPC | 89312 | 2002 $QL_{64}$ |
| 2002 $QQ_{65}$ | 16.7 | 0.15 | 20060922 | 12.30149 | 189.84106 | 147.68160 | 6.69650 | 0.1176061 | 2.4143256 | 63 | 5 | 1991–2006 | 0.47 | M-v | 1 | MPC | 04213 | 2002 $QQ_{65}$ |
| 2002 $QU_{65}$ | 16.2 | 0.15 | 20060922 | 246.65517 | 33.98301 | 335.86462 | 2.20471 | 0.0978180 | 3.0173317 | 45 | 3 | 2002–2005 | 0.51 | M-v | 3 | MPC | 69386 | 2002 $QU_{65}$ |
| 2002 $QW_{65}$ | 17.6 | 0.15 | 20060922 | 355.68728 | 241.43304 | 142.45719 | 3.94024 | 0.1284713 | 2.3830898 | 59 | 5 | 1995–2006 | 0.31 | M-v | 0 | MPC | 77629 | 2002 $QW_{65}$ |
| 2002 $QA_{66}$ | 17.8 | 0.15 | 20060922 | 112.06588 | 248.02433 | 6.84254 | 2.20144 | 0.1884352 | 2.3118925 | 53 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 77629 | 2002 $QA_{66}$ |
| 2002 $QB_{66}$ | 16.7 | 0.15 | 20060922 | 97.91065 | 160.92347 | 106.31022 | 4.83168 | 0.2547894 | 2.3061082 | 80 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 75508 | 2002 $QB_{66}$ |
| 2002 $QH_{66}$ | 17.2 | 0.15 | 20060922 | 28.07206 | 275.40436 | 126.44776 | 2.47286 | 0.1223349 | 2.2050979 | 37 | 3 | 1999–2006 | 0.38 | M-v | 2 | MPC | 69386 | 2002 $QH_{66}$ |
| 2002 $QQ_{66}$ | 17.2 | 0.15 | 20060922 | 84.74088 | 179.60196 | 80.45255 | 2.37699 | 0.1552309 | 2.4120306 | 30 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 75509 | 2002 $QQ_{66}$ |
| 2002 $QS_{66}$ | 17.2 | 0.15 | 20060922 | 321.57245 | 273.98817 | 138.92369 | 6.74560 | 0.1682805 | 2.4339135 | 34 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 04213 | 2002 $QS_{66}$ |
| 2002 $QT_{66}$ | 19.0 | 0.15 | 20060922 | 147.03957 | 142.29961 | 140.79967 | 5.56306 | 0.0588612 | 2.1508551 | 29 | 5 | 1995–2004 | 0.42 | M-v | 1 | MPC | 72701 | 2002 $QT_{66}$ |
| 2002 $QX_{66}$ | 18.0 | 0.15 | 20060922 | 59.59455 | 297.76464 | 355.86833 | 4.90264 | 0.2360703 | 2.3895221 | 35 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 75509 | 2002 $QX_{66}$ |
| 2002 $QH_{67}$ | 17.4 | 0.15 | 20060922 | 177.44585 | 157.45524 | 46.01571 | 0.88648 | 0.1668327 | 2.2711748 | 54 | 7 | 1992–2006 | 0.45 | M-v | 1 | MPC | 72702 | 2002 $QH_{67}$ |
| 2002 $QJ_{67}$ | 17.3 | 0.15 | 20060922 | 107.60976 | 293.79266 | 336.70275 | 5.21212 | 0.1492021 | 2.2930866 | 40 | 5 | 1994–2006 | 0.44 | M-v | 1 | MPC | 77629 | 2002 $QJ_{67}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $QO_{67}$ | 16.0 | 0.15 | 20060922 | 314.06548 | 150.50905 | 122.97276 | 2.22102 | 0.1427953 | 3.0928746 | 50 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 02119 | 2002 $QO_{67}$ |
| 2002 $QB_{68}$ | 17.4 | 0.15 | 20060922 | 59.45296 | 93.77585 | 175.30158 | 1.87726 | 0.1182561 | 2.5215374 | 47 | 6 | 1993–2006 | 0.45 | M-v | 2 | MPC | 04213 | 2002 $QB_{68}$ |
| 2002 $QF_{68}$ | 16.2 | 0.15 | 20060922 | 266.65281 | 223.90964 | 114.05198 | 2.30787 | 0.0905693 | 3.0940905 | 45 | 5 | 2001–2006 | 0.36 | M-v | 0 | MPC | 02119 | 2002 $QF_{68}$ |
| 2002 $QF_{69}$ | 17.1 | 0.15 | 20060922 | 122.53468 | 187.61013 | 45.33638 | 2.73909 | 0.1830291 | 2.3543118 | 78 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 75510 | 2002 $QF_{69}$ |
| 2002 $QK_{69}$ | 17.8 | 0.15 | 20060922 | 78.83322 | 315.45896 | 17.44113 | 3.06323 | 0.1876911 | 2.2298106 | 14 | 3 | 2001–2004 | 0.24 | M-v | 3 | MPC | 75511 | 2002 $QK_{69}$ |
| 2002 $QC_{70}$ | 18.2 | 0.15 | 20060922 | 76.20249 | 317.34367 | 335.55978 | 5.55927 | 0.1556349 | 2.3470683 | 24 | 3 | 2002–2006 | 0.30 | M-v | 1 | MPC | 75512 | 2002 $QC_{70}$ |
| 2002 $QV_{70}$ | 17.3 | 0.15 | 20060922 | 305.97580 | 98.21161 | 330.31378 | 6.11091 | 0.1595036 | 2.4392164 | 61 | 3 | 2002–2006 | 0.44 | M-v | 1 | MPC | 04213 | 2002 $QV_{70}$ |
| 2002 $QC_{71}$ | 17.2 | 0.15 | 20060922 | 220.74724 | 314.51730 | 143.04071 | 3.15425 | 0.0692819 | 2.6423444 | 35 | 5 | 1996–2005 | 0.37 | M-v | 0 | MPC | 75512 | 2002 $QC_{71}$ |
| 2002 $QN_{71}$ | 17.4 | 0.15 | 20060922 | 88.46195 | 278.49342 | 346.46553 | 0.90511 | 0.0918078 | 2.4131994 | 52 | 4 | 2001–2006 | 0.29 | M-v | 0 | MPC | 89314 | 2002 $QN_{71}$ |
| 2002 $QY_{72}$ | 17.1 | 0.15 | 20060922 | 348.62567 | 47.33461 | 339.13118 | 1.86986 | 0.2013182 | 2.4357268 | 79 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 04213 | 2002 $QY_{72}$ |
| 2002 $QR_{73}$ | 17.0 | 0.15 | 20060922 | 56.57638 | 280.13344 | 13.81976 | 6.08334 | 0.1870669 | 2.4195654 | 59 | 3 | 2002–2006 | 0.31 | M-v | 2 | MPC | 85579 | 2002 $QR_{73}$ |
| 2002 $QH_{74}$ | 16.8 | 0.15 | 20060922 | 284.34367 | 61.34340 | 355.23064 | 1.14142 | 0.1267473 | 2.5762856 | 40 | 5 | 1998–2005 | 0.42 | M-v | 0 | MPC | 85580 | 2002 $QH_{74}$ |
| 2002 $QK_{74}$ | 16.1 | 0.15 | 20060922 | 309.04105 | 186.05272 | 147.81523 | 6.46420 | 0.1318871 | 2.8167415 | 63 | 6 | 1996–2006 | 0.36 | M-v | 0 | MPC | 02119 | 2002 $QK_{74}$ |
| 2002 $QO_{75}$ | 16.9 | 0.15 | 20060922 | 227.72242 | 121.47425 | 14.31037 | 1.49856 | 0.0820796 | 2.4256025 | 40 | 6 | 1991–2006 | 0.44 | M-v | 1 | MPC | 04213 | 2002 $QO_{75}$ |
| 2002 $QV_{75}$ | 16.2 | 0.15 | 20060922 | 260.93463 | 300.47210 | 127.81467 | 14.85163 | 0.0488140 | 2.6075957 | 35 | 5 | 1996–2006 | 0.30 | M-v | 0 | MPC | 04213 | 2002 $QV_{75}$ |
| 2002 $QW_{75}$ | 17.2 | 0.15 | 20060922 | 8.22482 | 282.45997 | 100.18113 | 7.47548 | 0.1250490 | 2.3522057 | 48 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 04213 | 2002 $QW_{75}$ |
| 2002 $QO_{76}$ | 16.6 | 0.15 | 20060922 | 22.28704 | 177.02679 | 128.51510 | 6.97590 | 0.1008625 | 2.5521543 | 31 | 2 | 2002–2006 | 0.41 | M-v | 3 | MPC | 03361 | 2002 $QO_{76}$ |
| 2002 $QL_{77}$ | 16.2 | 0.15 | 20060922 | 274.52582 | 265.35918 | 77.37196 | 3.25179 | 0.0303680 | 2.9588288 | 37 | 4 | 2002–2006 | 0.37 | M-v | 1 | MPC | 00327 | 2002 $QL_{77}$ |
| 2002 $QX_{77}$ | 17.6 | 0.15 | 20060922 | 136.04562 | 250.34908 | 353.06542 | 1.97549 | 0.1524674 | 2.2648763 | 46 | 3 | 2002–2006 | 0.32 | M-v | 2 | MPC | 00327 | 2002 $QX_{77}$ |
| 2002 $QQ_{78}$ | 17.1 | 0.15 | 20060922 | 62.77054 | 287.92435 | 359.05711 | 5.23497 | 0.2313875 | 2.3922002 | 64 | 3 | 2002–2006 | 0.30 | M-v | 2 | MPC | 94825 | 2002 $QQ_{78}$ |
| 2002 $QR_{78}$ | 17.1 | 0.15 | 20060922 | 165.35027 | 135.65056 | 92.94045 | 3.54136 | 0.0787238 | 2.2508183 | 43 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 03362 | 2002 $QR_{78}$ |
| 2002 $QS_{78}$ | 16.5 | 0.15 | 20060922 | 215.76949 | 118.66131 | 18.39371 | 1.77931 | 0.0788744 | 2.5098899 | 27 | 3 | 2002–2006 | 0.37 | M-v | 3 | MPC | 03362 | 2002 $QS_{78}$ |
| 2002 $QD_{79}$ | 16.9 | 0.15 | 20060922 | 298.29238 | 294.58779 | 28.85963 | 2.67712 | 0.0965646 | 2.9023587 | 35 | 3 | 2002–2006 | 0.37 | M-v | 3 | MPC | 03362 | 2002 $QD_{79}$ |
| 2002 $QQ_{79}$ | 16.3 | 0.15 | 20060922 | 81.92203 | 316.28939 | 298.65235 | 9.16370 | 0.1435917 | 2.3965416 | 62 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 94826 | 2002 $QQ_{79}$ |
| 2002 $QR_{79}$ | 17.2 | 0.15 | 20060922 | 299.89659 | 258.14799 | 149.99618 | 13.31235 | 0.2142342 | 2.5462762 | 30 | 4 | 2000–2006 | 0.31 | M-v | 1 | MPC | 94827 | 2002 $QR_{79}$ |
| 2002 $QX_{79}$ | 16.3 | 0.15 | 20060922 | 18.00749 | 11.94160 | 307.66981 | 5.69904 | 0.1244437 | 2.4507665 | 81 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03363 | 2002 $QX_{79}$ |
| 2002 $QC_{80}$ | 17.1 | 0.15 | 20060922 | 165.79224 | 212.99030 | 332.26932 | 6.19504 | 0.1103379 | 2.3832137 | 35 | 3 | 2001–2006 | 0.39 | M-v | 2 | MPC | 94827 | 2002 $QC_{80}$ |
| 2002 $QG_{80}$ | 16.7 | 0.15 | 20060922 | 305.32812 | 232.29059 | 183.99400 | 5.35272 | 0.2287682 | 2.5293024 | 56 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 03363 | 2002 $QG_{80}$ |
| 2002 $QQ_{80}$ | 16.9 | 0.15 | 20060922 | 287.61820 | 1.48076 | 87.46314 | 2.27207 | 0.1499024 | 2.4188169 | 46 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04213 | 2002 $QQ_{80}$ |
| 2002 $QS_{80}$ | 16.0 | 0.15 | 20060922 | 332.72928 | 231.45215 | 28.86399 | 5.33864 | 0.1078359 | 3.1067462 | 32 | 3 | 2002–2006 | 0.41 | M-v | 4 | MPC | 02120 | 2002 $QS_{80}$ |
| 2002 $QH_{81}$ | 16.5 | 0.15 | 20060922 | 327.56914 | 38.68342 | 330.22240 | 12.71834 | 0.0865114 | 2.5240484 | 48 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04213 | 2002 $QH_{81}$ |
| 2002 $QE_{83}$ | 16.6 | 0.15 | 20060922 | 338.29079 | 70.68895 | 186.76473 | 5.60698 | 0.1571408 | 3.0003442 | 42 | 5 | 1992–2006 | 0.40 | M-v | 0 | MPC | 04213 | 2002 $QE_{83}$ |
| 2002 $QH_{83}$ | 16.5 | 0.15 | 20060922 | 176.29697 | 353.25773 | 162.97947 | 12.44795 | 0.0934775 | 2.5306091 | 33 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03364 | 2002 $QH_{83}$ |
| 2002 $QK_{83}$ | 17.4 | 0.15 | 20060922 | 305.24134 | 193.61734 | 241.84017 | 2.93108 | 0.1659746 | 2.4117510 | 45 | 4 | 2000–2006 | 0.45 | M-v | 0 | MPC | 94828 | 2002 $QK_{83}$ |
| 2002 $QE_{84}$ | 16.5 | 0.15 | 20060922 | 181.28534 | 187.52949 | 336.99369 | 4.11954 | 0.1685361 | 2.4785279 | 29 | 4 | 1993–2006 | 0.54 | M-v | 2 | MPC | 04213 | 2002 $QE_{84}$ |
| 2002 $QR_{84}$ | 16.4 | 0.15 | 20060922 | 281.16776 | 270.55834 | 163.89342 | 7.31125 | 0.2116395 | 2.5470260 | 35 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 94829 | 2002 $QR_{84}$ |
| 2002 $QT_{84}$ | 16.8 | 0.15 | 20060922 | 24.68973 | 324.34867 | 55.99764 | 4.70858 | 0.1894945 | 2.3198646 | 42 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 94830 | 2002 $QT_{84}$ |
| 2002 $QW_{85}$ | 17.0 | 0.15 | 20060922 | 352.28934 | 103.31821 | 237.12744 | 1.44606 | 0.2472646 | 2.5569274 | 61 | 3 | 1994–2006 | 0.35 | M-v | 2 | MPC | 04213 | 2002 $QW_{85}$ |
| 2002 $QZ_{85}$ | 17.3 | 0.15 | 20060922 | 46.70338 | 221.21178 | 100.13182 | 6.92851 | 0.1215320 | 2.3999208 | 45 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 94831 | 2002 $QZ_{85}$ |
| 2002 $QK_{86}$ | 17.2 | 0.15 | 20060922 | 354.70514 | 40.55660 | 303.84594 | 3.69627 | 0.1947200 | 2.5311507 | 34 | 4 | 1994–2006 | 0.55 | M-v | 3 | MPC | 03365 | 2002 $QK_{86}$ |
| 2002 $QC_{87}$ | 16.4 | 0.15 | 20060922 | 343.57514 | 321.48862 | 78.27666 | 6.16147 | 0.1308892 | 2.3791236 | 97 | 7 | 1991–2006 | 0.52 | M-v | 1 | MPC | 94833 | 2002 $QC_{87}$ |
| 2002 $QT_{87}$ | 17.4 | 0.15 | 20060922 | 324.18986 | 273.69587 | 152.81432 | 2.88900 | 0.2195883 | 2.4116822 | 49 | 4 | 1991–2006 | 0.43 | M-v | 1 | MPC | 94834 | 2002 $QT_{87}$ |
| 2002 $QY_{87}$ | 17.5 | 0.15 | 20060922 | 328.53233 | 71.88888 | 332.09369 | 5.94602 | 0.1039378 | 2.4278643 | 31 | 3 | 2002–2006 | 0.28 | M-v | 2 | MPC | 04213 | 2002 $QY_{87}$ |
| 2002 $QW_{88}$ | 17.5 | 0.15 | 20060922 | 305.58044 | 158.97820 | 280.95157 | 1.35719 | 0.1971806 | 2.4259504 | 33 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 94835 | 2002 $QW_{88}$ |
| 2002 $QG_{89}$ | 17.8 | 0.15 | 20060922 | 87.54677 | 117.71749 | 178.29187 | 2.51079 | 0.1786708 | 2.2987743 | 38 | 3 | 2002–2006 | 0.30 | M-v | 2 | MPC | 94835 | 2002 $QG_{89}$ |
| 2002 $QP_{89}$ | 17.8 | 0.15 | 20060922 | 336.74321 | 206.95546 | 207.49675 | 1.69980 | 0.1955615 | 2.3750351 | 67 | 3 | 1995–2006 | 0.43 | M-v | 3 | MPC | 94835 | 2002 $QP_{89}$ |
| 2002 $QS_{89}$ | 18.7 | 0.15 | 20060922 | 50.85573 | 141.96334 | 176.70379 | 1.09848 | 0.1883066 | 2.3765771 | 26 | 3 | 2002–2006 | 0.27 | M-v | 3 | MPC | 94835 | 2002 $QS_{89}$ |
| 2002 $QV_{89}$ | 17.1 | 0.15 | 20060922 | 28.52956 | 245.54264 | 113.43977 | 4.80511 | 0.0748670 | 2.3502719 | 44 | 4 | 2002–2006 | 0.40 | M-v | 0 | MPC | 02120 | 2002 $QV_{89}$ |
| 2002 $QW_{89}$ | 16.6 | 0.15 | 20060922 | 205.15974 | 202.32061 | 313.53109 | 3.10365 | 0.1319420 | 2.4351705 | 48 | 5 | 1998–2006 | 0.39 | M-v | 1 | MPC | 02120 | 2002 $QW_{89}$ |
| 2002 $QX_{89}$ | 17.4 | 0.15 | 20060922 | 338.74608 | 253.48698 | 121.03225 | 5.30416 | 0.2294987 | 2.5385317 | 30 | 2 | 2002–2006 | 0.31 | M-v | 4 | MPC | 03365 | 2002 $QX_{89}$ |
| 2002 $QZ_{89}$ | 16.9 | 0.15 | 20060922 | 355.54865 | 272.45011 | 94.30292 | 7.36323 | 0.0930903 | 2.4637079 | 54 | 5 | 1999–2006 | 0.36 | M-v | 0 | MPC | 04213 | 2002 $QZ_{89}$ |
| 2002 $QM_{90}$ | 16.8 | 0.15 | 20060922 | 358.42034 | 309.51900 | 88.44033 | 6.01403 | 0.1882634 | 2.3742146 | 55 | 4 | 1995–2006 | 0.43 | M-v | 1 | MPC | 00330 | 2002 $QM_{90}$ |
| 2002 $QR_{90}$ | 15.0 | 0.15 | 20060922 | 277.56534 | 290.14670 | 27.30423 | 8.31412 | 0.0458083 | 3.2032580 | 40 | 4 | 1997–2006 | 0.42 | M-v | 1 | MPC | 00331 | 2002 $QR_{90}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $QA_{91}$ | 16.7 | 0.15 | 20060922 | 68.24353 | 246.29460 | 45.36263 | 6.97224 | 0.1221695 | 2.4178659 | 41 | 3 | 2002–2006 | 0.31 | M-v | 1 | MPC | | 00331 | 2002 $QA_{91}$ |
| 2002 $QD_{91}$ | 16.6 | 0.15 | 20060922 | 309.15177 | 296.79448 | 65.69430 | 6.84908 | 0.0544883 | 2.7105495 | 21 | 3 | 2002–2005 | 0.30 | M-v | 2 | MPC | | 00331 | 2002 $QD_{91}$ |
| 2002 $QL_{91}$ | 16.7 | 0.15 | 20060922 | 27.22691 | 124.91640 | 174.70871 | 5.79997 | 0.1153729 | 2.5620039 | 57 | 5 | 1994–2006 | 0.45 | M-v | 3 | MPC | | 04213 | 2002 $QL_{91}$ |
| 2002 $QR_{91}$ | 17.3 | 0.15 | 20060922 | 119.59885 | 212.50955 | 50.69278 | 6.36073 | 0.1295355 | 2.3113548 | 50 | 4 | 1999–2006 | 0.31 | M-v | 1 | MPC | | 00331 | 2002 $QR_{91}$ |
| 2002 $QH_{92}$ | 17.0 | 0.15 | 20060922 | 45.67263 | 213.78308 | 101.55827 | 4.57692 | 0.2029088 | 2.3795567 | 67 | 5 | 1995–2006 | 0.42 | M-v | 1 | MPC | | 00332 | 2002 $QH_{92}$ |
| 2002 $QO_{92}$ | 16.2 | 0.15 | 20060922 | 329.56428 | 289.88316 | 353.09355 | 8.85855 | 0.0695246 | 3.0096276 | 24 | 3 | 1995–2003 | 0.31 | M-v | 3 | MPC | | 00332 | 2002 $QO_{92}$ |
| 2002 $QX_{92}$ | 17.3 | 0.15 | 20060922 | 307.93309 | 260.93022 | 145.26629 | 5.94261 | 0.2475979 | 2.5902011 | 28 | 3 | 1998–2006 | 0.38 | M-v | 3 | MPC | | 03366 | 2002 $QX_{92}$ |
| 2002 $QC_{93}$ | 15.3 | 0.15 | 20060922 | 225.26381 | 256.00945 | 131.10716 | 10.89388 | 0.1275691 | 3.1360482 | 18 | 3 | 2002–2006 | 0.37 | M-v | 3 | MPC | | 00333 | 2002 $QC_{93}$ |
| 2002 $QC_{94}$ | 18.3 | 0.15 | 20060922 | 66.58135 | 192.89976 | 103.08595 | 2.40566 | 0.2230066 | 2.3518153 | 31 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | | 00334 | 2002 $QC_{94}$ |
| 2002 $QF_{95}$ | 16.0 | 0.15 | 20060922 | 95.17667 | 90.15099 | 101.07563 | 4.66697 | 0.0331610 | 2.7694490 | 51 | 5 | 1996–2005 | 0.61 | M-v | 1 | MPC | | 00335 | 2002 $QF_{95}$ |
| 2002 $QS_{95}$ | 17.4 | 0.15 | 20060922 | 343.29435 | 345.21054 | 99.35761 | 4.62476 | 0.1201581 | 2.2201131 | 38 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | | 00335 | 2002 $QS_{95}$ |
| 2002 $QE_{96}$ | 17.3 | 0.15 | 20060922 | 163.18349 | 216.40033 | 12.96312 | 4.41301 | 0.1289559 | 2.2193053 | 38 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | | 00336 | 2002 $QE_{96}$ |
| 2002 $QZ_{98}$ | 17.0 | 0.15 | 20060922 | 0.93918 | 3.75178 | 50.01987 | 6.54770 | 0.1516097 | 2.2937071 | 44 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | | 03368 | 2002 $QZ_{98}$ |
| 2002 $QM_{99}$ | 16.5 | 0.15 | 20060922 | 293.13712 | 242.10890 | 140.45081 | 14.38237 | 0.1600964 | 2.7120724 | 32 | 2 | 2002–2004 | 0.29 | M-v | 2 | MPC | | 03368 | 2002 $QM_{99}$ |
| 2002 $QQ_{99}$ | 16.7 | 0.15 | 20060922 | 328.69906 | 355.76480 | 80.75440 | 3.78395 | 0.1252565 | 2.3176859 | 74 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | | 03368 | 2002 $QQ_{99}$ |
| 2002 $QA_{100}$ | 16.8 | 0.15 | 20060922 | 348.49608 | 246.84048 | 140.57208 | 10.03863 | 0.2267154 | 2.4467619 | 60 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | | 03369 | 2002 $QA_{100}$ |
| 2002 $QS_{100}$ | 15.1 | 0.15 | 20060922 | 272.26658 | 315.91109 | 13.49986 | 9.64531 | 0.0527559 | 3.0443789 | 34 | 4 | 1995–2005 | 0.60 | M-v | 1 | MPC | | 03369 | 2002 $QS_{100}$ |
| 2002 $QU_{100}$ | 17.5 | 0.15 | 20060922 | 28.69744 | 304.67181 | 7.55463 | 8.44023 | 0.2251579 | 2.4609777 | 38 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | | 03369 | 2002 $QU_{100}$ |
| 2002 $QC_{101}$ | 15.2 | 0.15 | 20060922 | 339.33929 | 286.67097 | 10.89103 | 5.09247 | 0.1456178 | 2.7877943 | 27 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | | 03369 | 2002 $QC_{101}$ |
| 2002 $QG_{101}$ | 16.3 | 0.15 | 20060922 | 0.22003 | 222.05382 | 71.96850 | 3.20960 | 0.0532680 | 2.7023003 | 41 | 7 | 1994–2005 | 0.44 | M-v | 0 | MPC | | 03370 | 2002 $QG_{101}$ |
| 2002 $QM_{101}$ | 17.2 | 0.15 | 20060922 | 318.84115 | 271.23005 | 100.04910 | 4.05574 | 0.2020844 | 2.6076945 | 28 | 3 | 1998–2004 | 0.45 | M-v | 3 | MPC | | 03370 | 2002 $QM_{101}$ |
| 2002 $QO_{102}$ | 18.4 | 0.15 | 20060922 | 53.55318 | 85.79315 | 259.26785 | 2.43711 | 0.2401055 | 2.3214775 | 23 | 1 | 72 days | 0.59 | M-v | 3 | MPC | | | 2002 $QO_{102}$ |
| 2002 $QR_{102}$ | 17.0 | 0.15 | 20020814 | 20.26953 | 206.13421 | 93.26616 | 5.27315 | 0.1497278 | 2.4133492 | 12 | 1 | 28 days | 0.23 | | | MPC | | | 2002 $QR_{102}$ |
| 2002 $QS_{102}$ | 18.3 | 0.15 | 20020903 | 21.64285 | 76.59956 | 245.05057 | 4.16418 | 0.1188086 | 2.3836123 | 12 | 1 | 38 days | 0.28 | | | MPC | | | 2002 $QS_{102}$ |
| 2002 $QU_{102}$ | 19.0 | 0.15 | 20020903 | 325.75145 | 185.27155 | 207.69938 | 5.62627 | 0.1439980 | 2.0639985 | 9 | 1 | 16 days | 0.38 | | | MPC | | | 2002 $QU_{102}$ |
| 2002 $QV_{102}$ | 16.5 | 0.15 | 20020903 | 18.12004 | 139.42283 | 181.43219 | 13.59236 | 0.1974066 | 2.8047623 | 11 | 1 | 17 days | 0.36 | | | MPC | | | 2002 $QV_{102}$ |
| 2002 $QW_{102}$ | 18.1 | 0.15 | 20020903 | 320.53968 | 99.78076 | 301.78644 | 5.81470 | 0.1578076 | 2.2435774 | 15 | 1 | 39 days | 0.17 | | | MPC | | | 2002 $QW_{102}$ |
| 2002 $QB_{103}$ | 17.0 | 0.15 | 20020814 | 307.62293 | 13.35493 | 30.08803 | 4.73320 | 0.2088035 | 3.0862957 | 17 | 1 | 28 days | 0.20 | | | MPC | | | 2002 $QB_{103}$ |
| 2002 $QC_{103}$ | 16.1 | 0.15 | 20020903 | 5.40718 | 219.50910 | 114.00186 | 5.66502 | 0.1082822 | 2.6874101 | 24 | 1 | 49 days | 0.32 | | | MPC | | | 2002 $QC_{103}$ |
| 2002 $QE_{103}$ | 16.1 | 0.15 | 20020814 | 304.73605 | 269.42115 | 133.66746 | 14.18952 | 0.1808766 | 2.9546660 | 11 | 1 | 12 days | 0.20 | | | MPC | | | 2002 $QE_{103}$ |
| 2002 $QF_{103}$ | 18.4 | 0.15 | 20020814 | 9.48245 | 184.37119 | 130.93685 | 10.26590 | 0.1122491 | 2.3317811 | 8 | 1 | 12 days | 0.30 | | | MPC | | | 2002 $QF_{103}$ |
| 2002 $QH_{103}$ | 17.2 | 0.15 | 20020814 | 34.46089 | 197.32806 | 88.61670 | 2.64209 | 0.1568754 | 2.9734128 | 11 | 1 | 17 days | 0.19 | | | MPC | | | 2002 $QH_{103}$ |
| 2002 $QJ_{103}$ | 19.1 | 0.15 | 20020814 | 356.96858 | 194.60463 | 139.57370 | 6.38277 | 0.1513087 | 2.2450880 | 12 | 1 | 29 days | 0.31 | | | MPC | | | 2002 $QJ_{103}$ |
| 2002 $QN_{103}$ | 16.2 | 0.15 | 20020814 | 357.82176 | 216.03155 | 110.56835 | 6.66815 | 0.0415973 | 3.0902414 | 12 | 1 | 12 days | 0.23 | | | MPC | | | 2002 $QN_{103}$ |
| 2002 $QP_{103}$ | 18.5 | 0.15 | 20020814 | 332.36401 | 252.74143 | 110.51046 | 4.57383 | 0.1819716 | 2.2812862 | 11 | 1 | 12 days | 0.40 | | | MPC | | | 2002 $QP_{103}$ |
| 2002 $QR_{103}$ | 16.6 | 0.15 | 20020814 | 339.11432 | 23.09726 | 321.50915 | 4.39279 | 0.0914094 | 3.0880334 | 9 | 1 | 10 days | 0.88 | | E | MPC | | | 2002 $QR_{103}$ |
| 2002 $QS_{103}$ | 16.1 | 0.15 | 20020814 | 266.64899 | 177.40972 | 253.31701 | 3.92513 | 0.0974593 | 2.5636067 | 9 | 1 | 10 days | 0.30 | | | MPC | | | 2002 $QS_{103}$ |
| 2002 $QT_{103}$ | 16.0 | 0.15 | 20060922 | 253.47224 | 63.58279 | 289.26300 | 8.38671 | 0.1029926 | 3.1317130 | 15 | 1 | 84 days | 0.24 | M-v | 3 | MPC | | | 2002 $QT_{103}$ |
| 2002 $QU_{103}$ | 15.5 | 0.15 | 20020903 | 332.04618 | 271.87498 | 104.14806 | 6.66809 | 0.1204923 | 2.9373088 | 25 | 1 | 56 days | 0.32 | | | MPC | | | 2002 $QU_{103}$ |
| 2002 $QV_{103}$ | 17.8 | 0.15 | 20020814 | 9.08068 | 42.79841 | 270.19019 | 5.31743 | 0.2311004 | 2.9361777 | 17 | 1 | 28 days | 0.20 | | | MPC | | | 2002 $QV_{103}$ |
| 2002 $QW_{103}$ | 16.6 | 0.15 | 20020814 | 22.98460 | 334.45552 | 321.79004 | 27.45960 | 0.1873325 | 3.1629423 | 16 | 1 | 28 days | 0.29 | | | MPC | | | 2002 $QW_{103}$ |
| 2002 $QZ_{103}$ | 17.8 | 0.15 | 20020814 | 310.84319 | 17.99600 | 25.54025 | 5.33422 | 0.2091238 | 2.3177653 | 15 | 1 | 28 days | 0.38 | | | MPC | | | 2002 $QZ_{103}$ |
| 2002 $QA_{104}$ | 16.4 | 0.15 | 20020814 | 355.62980 | 158.23321 | 177.48785 | 10.57165 | 0.2182592 | 3.1433172 | 23 | 1 | 55 days | 0.21 | | | MPC | | | 2002 $QA_{104}$ |
| 2002 $QB_{104}$ | 17.6 | 0.15 | 20020814 | 189.52992 | 207.13381 | 292.26990 | 6.51848 | 0.0336703 | 2.3806525 | 17 | 1 | 15 days | 0.26 | | | MPC | | | 2002 $QB_{104}$ |
| 2002 $QC_{104}$ | 16.9 | 0.15 | 20020903 | 356.20974 | 136.78686 | 200.65945 | 5.68519 | 0.0648212 | 2.7043832 | 19 | 1 | 37 days | 0.29 | | | MPC | | | 2002 $QC_{104}$ |
| 2002 $QE_{104}$ | 19.0 | 0.15 | 20020814 | 342.65456 | 114.55984 | 236.91237 | 3.32510 | 0.1683336 | 2.2617252 | 12 | 1 | 28 days | 0.32 | | | MPC | | | 2002 $QE_{104}$ |
| 2002 $QF_{104}$ | 18.2 | 0.15 | 20020814 | 32.95568 | 105.62759 | 177.75304 | 8.94553 | 0.1503131 | 2.2715122 | 17 | 1 | 29 days | 0.24 | | | MPC | | | 2002 $QF_{104}$ |
| 2002 $QG_{104}$ | 16.2 | 0.15 | 20020814 | 46.32974 | 336.82658 | 301.79644 | 9.81605 | 0.0582123 | 3.0818588 | 13 | 1 | 28 days | 0.25 | | | MPC | | | 2002 $QG_{104}$ |
| 2002 $QH_{104}$ | 15.9 | 0.15 | 20020814 | 312.27580 | 76.99412 | 303.73668 | 9.79896 | 0.0325349 | 3.0943727 | 11 | 1 | 25 days | 0.19 | | | MPC | | | 2002 $QH_{104}$ |
| 2002 $QJ_{104}$ | 16.7 | 0.15 | 20020814 | 306.25324 | 85.46605 | 314.65570 | 8.99644 | 0.2473378 | 3.0589473 | 8 | 1 | 15 days | 0.12 | | | MPC | | | 2002 $QJ_{104}$ |
| 2002 $QK_{104}$ | 16.4 | 0.15 | 20020814 | 47.95155 | 308.46567 | 314.82654 | 9.57812 | 0.0911745 | 2.8894123 | 11 | 1 | 18 days | 0.46 | | | MPC | | | 2002 $QK_{104}$ |
| 2002 $QP_{104}$ | 18.4 | 0.15 | 20020814 | 28.65810 | 14.08305 | 273.74638 | 5.18643 | 0.1617206 | 2.3213350 | 13 | 1 | 28 days | 0.31 | | | MPC | | | 2002 $QP_{104}$ |
| 2002 $QQ_{104}$ | 15.6 | 0.15 | 20060922 | 349.10693 | 308.97045 | 287.33379 | 7.44377 | 0.1547128 | 3.0774898 | 22 | 1 | 63 days | 0.22 | M-v | 4 | MPC | | | 2002 $QQ_{104}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $QR_{104}$ | 16.7 | 0.15 | 20020814 | 64.57536 | 346.09025 | 260.01177 | 5.22785 | 0.1584350 | 2.8780401 | 15 | 1 | 11 days | 0.24 | | MPC | 2002 $QR_{104}$ |
| 2002 $QS_{104}$ | 18.3 | 0.15 | 20020814 | 345.08491 | 66.99830 | 285.21058 | 6.23555 | 0.2440049 | 2.7364667 | 11 | 1 | 11 days | 0.18 | | MPC | 2002 $QS_{104}$ |
| 2002 $QT_{104}$ | 16.3 | 0.15 | 20020814 | 232.31207 | 276.70328 | 195.87942 | 7.63781 | 0.2110588 | 2.7281411 | 12 | 1 | 11 days | 0.26 | | MPC | 2002 $QT_{104}$ |
| 2002 $QU_{104}$ | 17.4 | 0.15 | 20020814 | 230.90469 | 189.11807 | 275.88332 | 5.63955 | 0.0985888 | 2.2313766 | 17 | 1 | 11 days | 0.23 | | MPC | 2002 $QU_{104}$ |
| 2002 $QV_{104}$ | 19.8 | 0.15 | 20020814 | 351.91062 | 60.05489 | 279.26679 | 4.09059 | 0.2524979 | 2.2197210 | 12 | 1 | 11 days | 0.17 | | MPC | 2002 $QV_{104}$ |
| 2002 $QW_{104}$ | 16.0 | 0.15 | 20020814 | 210.68835 | 154.34063 | 330.15776 | 8.38076 | 0.1463798 | 2.7193619 | 9 | 1 | 9 days | 0.16 | | MPC | 2002 $QW_{104}$ |
| 2002 $QX_{104}$ | 20.1 | 0.15 | 20020814 | 358.39870 | 175.99071 | 151.68732 | 7.61602 | 0.2574169 | 2.2521591 | 8 | 1 | 9 days | 0.24 | | MPC | 2002 $QX_{104}$ |
| 2002 $QY_{104}$ | 16.5 | 0.15 | 20020814 | 250.07296 | 270.28564 | 177.67149 | 10.58520 | 0.1009088 | 2.9394410 | 15 | 1 | 13 days | 0.31 | | MPC | 2002 $QY_{104}$ |
| 2002 $QD_{105}$ | 17.0 | 0.15 | 20020814 | 274.22711 | 284.04784 | 146.94014 | 4.45343 | 0.1277217 | 2.5880977 | 12 | 1 | 12 days | 0.25 | | MPC | 2002 $QD_{105}$ |
| 2002 $QF_{105}$ | 18.3 | 0.15 | 20020814 | 321.17195 | 44.47372 | 339.66658 | 2.62306 | 0.1912435 | 2.2543907 | 21 | 1 | 29 days | 0.24 | | MPC | 2002 $QF_{105}$ |
| 2002 $QJ_{105}$ | 17.6 | 0.15 | 20020903 | 304.11883 | 224.63945 | 185.59703 | 0.74281 | 0.1690390 | 2.4544467 | 8 | 1 | 18 days | 0.15 | | MPC | 2002 $QJ_{105}$ |
| 2002 $QK_{105}$ | 16.9 | 0.15 | 20020814 | 325.75454 | 227.61837 | 143.88504 | 3.64355 | 0.0912454 | 2.5791459 | 17 | 1 | 23 days | 0.35 | | MPC | 2002 $QK_{105}$ |
| 2002 $QL_{105}$ | 16.1 | 0.15 | 20020814 | 280.01118 | 137.01580 | 265.74112 | 1.95708 | 0.0084018 | 2.9893192 | 8 | 1 | 18 days | 0.21 | E | MPC | 2002 $QL_{105}$ |
| 2002 $QM_{105}$ | 17.2 | 0.15 | 20020814 | 332.37858 | 216.54447 | 145.68331 | 12.84810 | 0.1850287 | 2.7398043 | 16 | 1 | 26 days | 0.31 | | MPC | 2002 $QM_{105}$ |
| 2002 $QN_{105}$ | 17.2 | 0.15 | 20020814 | 40.13585 | 182.20674 | 97.90731 | 4.55092 | 0.0636929 | 2.6142226 | 15 | 1 | 28 days | 0.22 | | MPC | 2002 $QN_{105}$ |
| 2002 $QP_{105}$ | 17.3 | 0.15 | 20020814 | 74.31527 | 207.09811 | 46.75321 | 4.10714 | 0.0436539 | 2.6500230 | 15 | 1 | 12 days | 0.31 | | MPC | 2002 $QP_{105}$ |
| 2002 $QQ_{105}$ | 19.4 | 0.15 | 20020814 | 327.01695 | 333.55581 | 46.31596 | 2.93605 | 0.2094015 | 2.2656922 | 18 | 1 | 29 days | 0.36 | | MPC | 2002 $QQ_{105}$ |
| 2002 $QS_{105}$ | 18.1 | 0.15 | 20020814 | 300.88972 | 354.34645 | 56.80720 | 3.26875 | 0.1799953 | 2.4482986 | 13 | 1 | 29 days | 0.31 | | MPC | 2002 $QS_{105}$ |
| 2002 $QT_{105}$ | 19.0 | 0.15 | 20020814 | 1.98292 | 338.72635 | 348.61014 | 14.90270 | 0.1889616 | 2.4052905 | 20 | 1 | 28 days | 0.31 | | MPC | 2002 $QT_{105}$ |
| 2002 $QU_{105}$ | 18.3 | 0.15 | 20020814 | 344.66499 | 237.55469 | 117.24782 | 3.73591 | 0.2224158 | 2.4176707 | 17 | 1 | 29 days | 0.20 | | MPC | 2002 $QU_{105}$ |
| 2002 $QV_{105}$ | 16.4 | 0.15 | 20020814 | 83.41595 | 194.79974 | 44.33970 | 5.04906 | 0.1115764 | 2.6111231 | 12 | 1 | 28 days | 0.21 | | MPC | 2002 $QV_{105}$ |
| 2002 $QX_{105}$ | 16.8 | 0.15 | 20020903 | 13.38718 | 176.10992 | 139.44584 | 18.85736 | 0.2367232 | 3.0682359 | 18 | 1 | 51 days | 0.27 | | MPC | 2002 $QX_{105}$ |
| 2002 $QY_{105}$ | 16.8 | 0.15 | 20020814 | 6.04854 | 191.18698 | 133.81696 | 14.72305 | 0.1407270 | 2.8600943 | 7 | 1 | 15 days | 0.24 | | MPC | 2002 $QY_{105}$ |
| 2002 $QA_{106}$ | 18.6 | 0.15 | 20020814 | 351.93044 | 305.25538 | 36.98711 | 5.19286 | 0.2311574 | 2.2173492 | 15 | 1 | 35 days | 0.21 | | MPC | 2002 $QA_{106}$ |
| 2002 $QC_{106}$ | 16.5 | 0.15 | 20020814 | 335.50585 | 295.31706 | 65.65224 | 7.09763 | 0.0696942 | 2.7001218 | 17 | 1 | 36 days | 0.29 | | MPC | 2002 $QC_{106}$ |
| 2002 $QD_{106}$ | 16.4 | 0.15 | 20020903 | 334.64918 | 265.16964 | 107.80777 | 10.17232 | 0.1548243 | 3.0628350 | 14 | 1 | 58 days | 0.28 | | MPC | 2002 $QD_{106}$ |
| 2002 $QE_{106}$ | 16.1 | 0.15 | 20020903 | 4.99204 | 221.97869 | 110.48039 | 10.77272 | 0.0970452 | 3.0277814 | 18 | 1 | 58 days | 0.35 | | MPC | 2002 $QE_{106}$ |
| 2002 $QF_{106}$ | 18.3 | 0.15 | 20020814 | 344.98677 | 278.79653 | 73.62412 | 5.47661 | 0.1830656 | 2.2864124 | 15 | 1 | 36 days | 0.20 | | MPC | 2002 $QF_{106}$ |
| 2002 $QG_{106}$ | 15.7 | 0.15 | 20020814 | 66.61032 | 259.16702 | 4.59331 | 15.58483 | 0.0311560 | 3.1121411 | 8 | 1 | 35 days | 0.17 | | MPC | 2002 $QG_{106}$ |
| 2002 $QJ_{106}$ | 16.5 | 0.15 | 20020814 | 301.69822 | 43.03698 | 3.65886 | 14.84676 | 0.1512437 | 2.6788442 | 12 | 1 | 28 days | 0.20 | | MPC | 2002 $QJ_{106}$ |
| 2002 $QK_{106}$ | 20.0 | 0.15 | 20020814 | 351.77925 | 216.27287 | 127.06452 | 6.78947 | 0.3105588 | 2.2150994 | 16 | 1 | 37 days | 0.27 | | MPC | 2002 $QK_{106}$ |
| 2002 $QL_{106}$ | 17.5 | 0.15 | 20020814 | 0.54250 | 331.02778 | 358.92578 | 13.38761 | 0.2096643 | 2.8032893 | 13 | 1 | 28 days | 0.29 | | MPC | 2002 $QL_{106}$ |
| 2002 $QM_{106}$ | 18.3 | 0.15 | 20020814 | 4.75579 | 205.32033 | 119.30119 | 7.57358 | 0.1447183 | 2.3495782 | 11 | 1 | 11 days | 0.22 | | MPC | 2002 $QM_{106}$ |
| 2002 $QN_{106}$ | 18.9 | 0.15 | 20020814 | 357.07254 | 208.87666 | 125.34240 | 6.60497 | 0.2485757 | 2.3068190 | 18 | 1 | 36 days | 0.20 | | MPC | 2002 $QN_{106}$ |
| 2002 $QO_{106}$ | 16.6 | 0.15 | 20020814 | 308.62883 | 220.81617 | 173.53519 | 8.63942 | 0.1721646 | 2.5773292 | 14 | 1 | 55 days | 0.21 | | MPC | 2002 $QO_{106}$ |
| 2002 $QP_{106}$ | 17.7 | 0.15 | 20020814 | 330.34699 | 247.47952 | 127.15448 | 9.41416 | 0.2047799 | 2.5780162 | 14 | 1 | 36 days | 0.25 | | MPC | 2002 $QP_{106}$ |
| 2002 $QQ_{106}$ | 19.0 | 0.15 | 20020814 | 332.08719 | 283.58652 | 86.68889 | 4.22017 | 0.1973629 | 2.2778578 | 11 | 1 | 28 days | 0.26 | | MPC | 2002 $QQ_{106}$ |
| 2002 $QR_{106}$ | 16.1 | 0.15 | 20020814 | 334.35796 | 325.29631 | 38.00656 | 6.70348 | 0.1023627 | 2.8361562 | 15 | 1 | 36 days | 0.28 | | MPC | 2002 $QR_{106}$ |
| 2002 $QS_{106}$ | 17.1 | 0.15 | 20020725 | 22.08190 | 137.56295 | 148.52045 | 14.95760 | 0.2045729 | 3.1210461 | 7 | 1 | 10 days | 0.16 | | MPC | 2002 $QS_{106}$ |
| 2002 $QT_{106}$ | 17.2 | 0.15 | 20020814 | 322.36103 | 219.21859 | 157.04682 | 5.68439 | 0.1674545 | 2.6019363 | 14 | 1 | 38 days | 0.22 | | MPC | 2002 $QT_{106}$ |
| 2002 $QU_{106}$ | 16.5 | 0.15 | 20020814 | 306.78673 | 68.56117 | 320.93614 | 8.26319 | 0.1132890 | 2.7281915 | 14 | 1 | 37 days | 0.25 | | MPC | 2002 $QU_{106}$ |
| 2002 $QV_{106}$ | 15.9 | 0.15 | 20020814 | 153.61101 | 213.90860 | 316.60265 | 9.15745 | 0.0325316 | 3.1524832 | 20 | 1 | 38 days | 0.28 | | MPC | 2002 $QV_{106}$ |
| 2002 $QW_{106}$ | 18.3 | 0.15 | 20020814 | 22.36559 | 142.33203 | 163.33490 | 4.57948 | 0.0589097 | 2.2456969 | 14 | 1 | 20 days | 0.35 | | MPC | 2002 $QW_{106}$ |
| 2002 $QX_{106}$ | 17.5 | 0.15 | 20020814 | 315.17127 | 45.42388 | 1.21773 | 4.07653 | 0.3067361 | 2.6991402 | 8 | 1 | 14 days | 0.15 | | MPC | 2002 $QX_{106}$ |
| 2002 $QY_{106}$ | 16.1 | 0.15 | 20020814 | 61.59713 | 166.05265 | 92.47088 | 2.49273 | 0.1136217 | 3.0407346 | 11 | 1 | 17 days | 0.22 | | MPC | 2002 $QY_{106}$ |
| 2002 $QZ_{106}$ | 17.8 | 0.15 | 20020814 | 332.61820 | 211.68173 | 155.07865 | 4.96542 | 0.2215152 | 2.6074236 | 28 | 1 | 54 days | 0.22 | | MPC | 2002 $QZ_{106}$ |
| 2002 $QB_{107}$ | 17.1 | 0.15 | 20020814 | 297.33094 | 137.00692 | 272.43318 | 3.63425 | 0.1966361 | 2.6264514 | 18 | 1 | 38 days | 0.19 | | MPC | 2002 $QB_{107}$ |
| 2002 $QC_{107}$ | 17.5 | 0.15 | 20020814 | 322.75294 | 105.75826 | 272.46493 | 1.87553 | 0.1922225 | 2.6916993 | 15 | 1 | 37 days | 0.26 | | MPC | 2002 $QC_{107}$ |
| 2002 $QD_{107}$ | 16.1 | 0.15 | 20020814 | 350.63736 | 195.75313 | 141.84837 | 12.23599 | 0.1497476 | 3.1329638 | 13 | 1 | 54 days | 0.21 | | MPC | 2002 $QD_{107}$ |
| 2002 $QE_{107}$ | 17.2 | 0.15 | 20020814 | 342.40251 | 86.58883 | 267.99822 | 2.70161 | 0.2546454 | 3.0889015 | 15 | 1 | 38 days | 0.30 | | MPC | 2002 $QE_{107}$ |
| 2002 $QF_{107}$ | 17.9 | 0.15 | 20020814 | 33.93095 | 346.60681 | 297.21594 | 2.70569 | 0.0940785 | 2.2665061 | 16 | 1 | 38 days | 0.19 | | MPC | 2002 $QF_{107}$ |
| 2002 $QG_{107}$ | 18.9 | 0.15 | 20020814 | 320.01626 | 223.82918 | 157.32743 | 6.92552 | 0.1913976 | 2.2410933 | 17 | 1 | 38 days | 0.26 | | MPC | 2002 $QG_{107}$ |
| 2002 $QH_{107}$ | 17.8 | 0.15 | 20020814 | 49.79288 | 322.61529 | 298.65847 | 5.03670 | 0.1243417 | 2.2621924 | 21 | 1 | 53 days | 0.20 | | MPC | 2002 $QH_{107}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $QJ_{107}$ | 16.1 | 0.15 | 20020814 | 217.73714 | 158.70204 | 312.66021 | 11.70966 | 0.0574022 | 2.9260322 | 11 | 1 | 37 days | 0.21 | | | MPC | | 2002 $QJ_{107}$ |
| 2002 $QK_{107}$ | 16.6 | 0.15 | 20020814 | 193.19192 | 194.70328 | 300.74291 | 6.10217 | 0.1465355 | 2.4295607 | 16 | 1 | 38 days | 0.29 | | | MPC | | 2002 $QK_{107}$ |
| 2002 $QL_{107}$ | 16.6 | 0.15 | 20020814 | 241.23742 | 295.33266 | 152.19365 | 15.38325 | 0.0549362 | 2.6332582 | 17 | 1 | 53 days | 0.20 | | | MPC | | 2002 $QL_{107}$ |
| 2002 $QM_{107}$ | 17.4 | 0.15 | 20020814 | 83.27892 | 25.39749 | 202.58430 | 2.35027 | 0.1068300 | 2.2382908 | 12 | 1 | 53 days | 0.23 | | | MPC | | 2002 $QM_{107}$ |
| 2002 $QO_{107}$ | 17.6 | 0.15 | 20020814 | 36.85629 | 321.86418 | 309.94009 | 6.68543 | 0.1897460 | 2.6399113 | 14 | 1 | 38 days | 0.21 | | | MPC | | 2002 $QO_{107}$ |
| 2002 $QP_{107}$ | 17.9 | 0.15 | 20020814 | 345.13128 | 200.42327 | 145.52156 | 3.57156 | 0.1927313 | 2.3913826 | 21 | 1 | 54 days | 0.29 | | | MPC | | 2002 $QP_{107}$ |
| 2002 $QQ_{107}$ | 19.1 | 0.15 | 20020725 | 352.17754 | 151.71807 | 174.05637 | 4.49377 | 0.1818927 | 2.2411101 | 14 | 1 | 36 days | 0.32 | | | MPC | | 2002 $QQ_{107}$ |
| 2002 $QR_{107}$ | 17.0 | 0.15 | 20020814 | 323.66935 | 119.36557 | 248.91166 | 2.59627 | 0.1093372 | 2.8144006 | 15 | 1 | 38 days | 0.28 | | | MPC | | 2002 $QR_{107}$ |
| 2002 $QS_{107}$ | 17.0 | 0.15 | 20020814 | 6.78699 | 40.33302 | 273.40866 | 2.70002 | 0.1705936 | 2.6066176 | 13 | 1 | 53 days | 0.22 | | | MPC | | 2002 $QS_{107}$ |
| 2002 $QT_{107}$ | 18.4 | 0.15 | 20020814 | 359.78708 | 18.40789 | 304.92288 | 4.22751 | 0.2384072 | 2.4004329 | 20 | 1 | 53 days | 0.23 | | | MPC | | 2002 $QT_{107}$ |
| 2002 $QU_{107}$ | 19.2 | 0.15 | 20020814 | 2.04193 | 68.43897 | 251.00430 | 1.58932 | 0.2379863 | 2.3145645 | 12 | 1 | 38 days | 0.29 | | | MPC | | 2002 $QU_{107}$ |
| 2002 $QV_{107}$ | 17.2 | 0.15 | 20020725 | 11.24024 | 148.63486 | 156.52835 | 14.21106 | 0.0757650 | 2.6120964 | 11 | 1 | 37 days | 0.23 | | | MPC | | 2002 $QV_{107}$ |
| 2002 $QW_{107}$ | 15.7 | 0.15 | 20020814 | 288.79932 | 88.25195 | 313.87308 | 10.42474 | 0.0582820 | 3.2003522 | 17 | 1 | 53 days | 0.32 | | | MPC | | 2002 $QW_{107}$ |
| 2002 $QX_{107}$ | 16.8 | 0.15 | 20060922 | 274.96544 | 237.59181 | 154.88254 | 16.62368 | 0.2748670 | 2.7865140 | 16 | 1 | 64 days | 0.19 | M-v | 4 | MPC | | 2002 $QX_{107}$ |
| 2002 $QY_{107}$ | 17.0 | 0.15 | 20020814 | 336.67555 | 208.66727 | 155.25784 | 15.81066 | 0.2651920 | 3.1610556 | 14 | 1 | 55 days | 0.23 | | | MPC | | 2002 $QY_{107}$ |
| 2002 $QZ_{107}$ | 18.8 | 0.15 | 20020814 | 21.68691 | 140.27214 | 150.42534 | 2.73359 | 0.2045710 | 2.3478718 | 15 | 1 | 39 days | 0.30 | | | MPC | | 2002 $QZ_{107}$ |
| 2002 $QA_{108}$ | 16.5 | 0.15 | 20020814 | 123.83033 | 233.95667 | 325.43530 | 8.04595 | 0.0183771 | 2.8386793 | 13 | 1 | 53 days | 0.31 | | | MPC | | 2002 $QA_{108}$ |
| 2002 $QB_{108}$ | 16.0 | 0.15 | 20020814 | 30.02164 | 139.97384 | 146.25337 | 14.64301 | 0.1310961 | 3.1706708 | 19 | 1 | 39 days | 0.23 | | | MPC | | 2002 $QB_{108}$ |
| 2002 $QC_{108}$ | 17.6 | 0.15 | 20060922 | 333.81830 | 24.81099 | 301.41518 | 10.87456 | 0.2648074 | 2.7348109 | 12 | 1 | 63 days | 0.26 | M-v | 4 | MPC | | 2002 $QC_{108}$ |
| 2002 $QD_{108}$ | 16.1 | 0.15 | 20020725 | 335.50512 | 207.43518 | 157.32575 | 4.34947 | 0.2859924 | 3.8987485 | 8 | 1 | 10 days | 0.20 | | E | MPC | | 2002 $QD_{108}$ |
| 2002 $QE_{108}$ | 16.5 | 0.15 | 20020814 | 189.73684 | 349.18315 | 147.56288 | 22.50203 | 0.0846743 | 2.5854523 | 11 | 1 | 38 days | 0.26 | | | MPC | | 2002 $QE_{108}$ |
| 2002 $QF_{108}$ | 18.3 | 0.15 | 20020814 | 293.78935 | 221.21195 | 190.93099 | 0.62080 | 0.1906638 | 2.1964379 | 12 | 1 | 37 days | 0.26 | | | MPC | | 2002 $QF_{108}$ |
| 2002 RA | 16.5 | 0.15 | 20060922 | 52.04156 | 44.44329 | 318.69950 | 4.53133 | 0.2885295 | 2.2553256 | 98 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 85582 | 2002 RA |
| 2002 RF | 17.0 | 0.15 | 20060922 | 33.19169 | 287.22030 | 57.02638 | 10.64753 | 0.2938073 | 2.4016825 | 78 | 5 | 1991–2006 | 0.44 | M-v | 0 | MPC | 77630 | 2002 RF |
| 2002 $RH_2$ | 17.0 | 0.15 | 20060922 | 52.67293 | 331.50927 | 347.11025 | 1.82182 | 0.2301911 | 2.3933137 | 91 | 6 | 1994–2006 | 0.45 | M-v | 1 | MPC | 75516 | 2002 $RH_2$ |
| 2002 $RK_2$ | 16.7 | 0.15 | 20060922 | 322.66139 | 218.23487 | 172.45513 | 12.31949 | 0.1620648 | 2.5740031 | 101 | 6 | 1996–2006 | 0.41 | M-v | 1 | MPC | 04215 | 2002 $RK_2$ |
| 2002 $RR_2$ | 16.9 | 0.15 | 20060922 | 69.06815 | 184.59498 | 161.58848 | 6.89926 | 0.1541242 | 2.2646703 | 50 | 4 | 1994–2004 | 0.44 | M-v | 1 | MPC | 04215 | 2002 $RR_2$ |
| 2002 $RW_2$ | 16.7 | 0.15 | 20060922 | 306.62417 | 23.39214 | 352.62287 | 8.59195 | 0.2367649 | 2.7272165 | 55 | 3 | 1993–2004 | 0.64 | M-v | 2 | MPC | 48254 | 2002 $RW_2$ |
| 2002 $RX_2$ | 16.8 | 0.15 | 20060922 | 68.21278 | 183.95315 | 119.77998 | 1.51448 | 0.1895788 | 2.3818243 | 68 | 4 | 1991–2006 | 0.49 | M-v | 1 | MPC | 75516 | 2002 $RX_2$ |
| 2002 $RZ_2$ | 17.2 | 0.15 | 20060922 | 56.77887 | 203.72996 | 145.79405 | 5.72691 | 0.1920247 | 2.2992360 | 47 | 3 | 2002–2005 | 0.62 | M-v | 3 | MPC | 89315 | 2002 $RZ_2$ |
| 2002 $RL_3$ | 17.1 | 0.15 | 20060922 | 62.42447 | 231.30849 | 97.46919 | 2.98080 | 0.2099874 | 2.3298459 | 50 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 75516 | 2002 $RL_3$ |
| 2002 $RM_3$ | 16.3 | 0.15 | 20060922 | 68.68158 | 210.58255 | 74.43975 | 3.42102 | 0.1873766 | 2.4416656 | 67 | 3 | 2002–2006 | 0.55 | M-v | 1 | MPC | 75516 | 2002 $RM_3$ |
| 2002 $RV_3$ | 15.5 | 0.15 | 20060922 | 261.66215 | 229.80382 | 195.73198 | 14.60983 | 0.1575096 | 2.7202550 | 51 | 4 | 1998–2005 | 0.74 | M-v | 1 | MPC | 69386 | 2002 $RV_3$ |
| 2002 $RP_5$ | 16.1 | 0.15 | 20060922 | 53.18666 | 59.12575 | 275.41060 | 6.88424 | 0.1374382 | 2.3766980 | 48 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 03371 | 2002 $RP_5$ |
| 2002 $RR_5$ | 16.1 | 0.15 | 20060922 | 7.34643 | 7.09307 | 317.98538 | 11.34326 | 0.1936185 | 2.6035115 | 80 | 2 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03371 | 2002 $RR_5$ |
| 2002 $RW_5$ | 16.2 | 0.15 | 20060922 | 37.66339 | 339.02336 | 317.54687 | 13.81822 | 0.0915246 | 2.5610602 | 69 | 2 | 2002–2006 | 0.49 | M-v | 4 | MPC | 03371 | 2002 $RW_5$ |
| 2002 $RA_6$ | 16.5 | 0.15 | 20060922 | 37.01584 | 186.18450 | 165.99583 | 6.65307 | 0.1339488 | 2.3383276 | 59 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 75518 | 2002 $RA_6$ |
| 2002 $RF_6$ | 16.3 | 0.15 | 20060922 | 355.79391 | 178.85195 | 162.30490 | 11.25314 | 0.2034649 | 2.5530795 | 73 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 04215 | 2002 $RF_6$ |
| 2002 $RP_6$ | 16.1 | 0.15 | 20060922 | 23.35089 | 48.71438 | 311.71175 | 3.31453 | 0.1220805 | 2.3716263 | 77 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 62400 | 2002 $RP_6$ |
| 2002 $RP_7$ | 16.3 | 0.15 | 20060922 | 6.55143 | 8.28956 | 6.53108 | 1.30134 | 0.1940793 | 2.3831458 | 106 | 6 | 2000–2006 | 0.44 | M-v | 1 | MPC | 04215 | 2002 $RP_7$ |
| 2002 $RW_7$ | 16.4 | 0.15 | 20060922 | 11.58340 | 257.89769 | 131.26493 | 2.91641 | 0.2183592 | 2.3579990 | 75 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 38375 | 2002 $RW_7$ |
| 2002 $RK_8$ | 16.0 | 0.15 | 20060922 | 335.57147 | 288.36995 | 166.01271 | 22.75332 | 0.2602153 | 2.3029014 | 33 | 3 | 1995–2004 | 0.58 | M-v | 2 | MPC | 89316 | 2002 $RK_8$ |
| 2002 $RM_8$ | 16.8 | 0.15 | 20060922 | 3.67803 | 71.97914 | 271.86825 | 1.87893 | 0.2080352 | 2.5202192 | 51 | 2 | 2002–2006 | 0.45 | M-v | 3 | MPC | 03371 | 2002 $RM_8$ |
| 2002 $RZ_8$ | 16.9 | 0.15 | 20060922 | 7.19621 | 206.93140 | 160.51026 | 2.57265 | 0.2224235 | 2.4233195 | 98 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03371 | 2002 $RZ_8$ |
| 2002 $RN_9$ | 17.1 | 0.15 | 20060922 | 46.07515 | 31.65936 | 335.87331 | 3.09159 | 0.0787175 | 2.2521546 | 45 | 3 | 2002–2006 | 0.53 | M-v | 4 | MPC | 61273 | 2002 $RN_9$ |
| 2002 $RS_9$ | 17.6 | 0.15 | 20060922 | 44.41610 | 148.63358 | 183.95267 | 2.70373 | 0.1318941 | 2.3671998 | 43 | 4 | 2001–2006 | 0.33 | M-v | 0 | MPC | 75519 | 2002 $RS_9$ |
| 2002 $RX_9$ | 15.9 | 0.15 | 20060922 | 120.41492 | 244.50612 | 333.81992 | 13.28745 | 0.0403452 | 2.5176588 | 66 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04215 | 2002 $RX_9$ |
| 2002 $RA_{10}$ | 17.3 | 0.15 | 20060922 | 45.98447 | 149.17877 | 170.32244 | 3.69376 | 0.1831383 | 2.3961680 | 65 | 5 | 1991–2006 | 0.41 | M-v | 0 | MPC | 04215 | 2002 $RA_{10}$ |
| 2002 $RL_{10}$ | 16.1 | 0.15 | 20060922 | 303.48545 | 19.78354 | 316.86887 | 0.45870 | 0.0763938 | 2.8543619 | 39 | 6 | 1997–2005 | 0.36 | M-v | 0 | MPC | 75520 | 2002 $RL_{10}$ |
| 2002 $RX_{10}$ | 16.5 | 0.15 | 20060922 | 83.33110 | 222.54242 | 35.28973 | 1.60622 | 0.1601658 | 2.4474144 | 79 | 5 | 1998–2006 | 0.45 | M-v | 0 | MPC | 75520 | 2002 $RX_{10}$ |
| 2002 $RP_{11}$ | 16.7 | 0.15 | 20060922 | 127.73778 | 306.48079 | 334.58015 | 5.30786 | 0.1579770 | 2.2401919 | 48 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 03372 | 2002 $RP_{11}$ |
| 2002 $RB_{12}$ | 16.9 | 0.15 | 20060922 | 304.45530 | 129.77033 | 275.22102 | 1.24865 | 0.1892793 | 2.6345933 | 61 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 04215 | 2002 $RB_{12}$ |
| 2002 $RK_{12}$ | 16.6 | 0.15 | 20060922 | 94.09371 | 102.87672 | 192.62641 | 2.18585 | 0.1699451 | 2.3234698 | 121 | 5 | 1997–2006 | 0.56 | M-v | 0 | MPC | 75521 | 2002 $RK_{12}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RP_{12}$ | 17.0 | 0.15 | 20060922 | 24.25375 | 126.76507 | 180.02647 | 5.66576 | 0.2878727 | 2.5474739 | 142 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 03372 | 2002 $RP_{12}$ |
| 2002 $RF_{13}$ | 17.0 | 0.15 | 20060922 | 31.50824 | 337.43697 | 23.22001 | 3.03334 | 0.2056296 | 2.3799962 | 77 | 6 | 1991–2006 | 0.54 | M-v | 1 | MPC | 87544 | 2002 $RF_{13}$ |
| 2002 $RM_{13}$ | 17.0 | 0.15 | 20060922 | 50.94673 | 294.07562 | 43.75287 | 1.95160 | 0.1948498 | 2.3666023 | 95 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 89316 | 2002 $RM_{13}$ |
| 2002 $RD_{14}$ | 17.3 | 0.15 | 20060922 | 78.15911 | 192.61807 | 152.87349 | 1.72102 | 0.1648326 | 2.2397217 | 52 | 4 | 2001–2006 | 0.48 | M-v | 3 | MPC | 75523 | 2002 $RD_{14}$ |
| 2002 $RQ_{14}$ | 16.0 | 0.15 | 20060922 | 12.23883 | 338.67686 | 345.96337 | 14.40428 | 0.1235339 | 2.5791042 | 65 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04215 | 2002 $RQ_{14}$ |
| 2002 $RU_{15}$ | 17.4 | 0.15 | 20060922 | 30.60455 | 172.94938 | 183.78050 | 4.68567 | 0.1985786 | 2.3779039 | 91 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 75524 | 2002 $RU_{15}$ |
| 2002 $RB_{16}$ | 16.7 | 0.15 | 20060922 | 356.50670 | 139.89417 | 195.97052 | 3.62946 | 0.1474326 | 2.6011447 | 78 | 4 | 1998–2006 | 0.47 | M-v | 3 | MPC | 04215 | 2002 $RB_{16}$ |
| 2002 $RB_{17}$ | 15.2 | 0.15 | 20060922 | 231.97544 | 237.30673 | 165.62129 | 9.71769 | 0.0671263 | 2.9949998 | 87 | 5 | 1995–2006 | 0.66 | M-v | 1 | MPC | 02123 | 2002 $RB_{17}$ |
| 2002 $RO_{17}$ | 16.7 | 0.15 | 20060922 | 71.14808 | 143.74747 | 164.48413 | 4.36287 | 0.2004822 | 2.3482901 | 57 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 77632 | 2002 $RO_{17}$ |
| 2002 $RO_{18}$ | 16.2 | 0.15 | 20060922 | 355.66421 | 30.45969 | 13.68802 | 5.06510 | 0.1534905 | 2.3847195 | 94 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 61275 | 2002 $RO_{18}$ |
| 2002 $RZ_{18}$ | 15.9 | 0.15 | 20060922 | 352.86571 | 14.43865 | 37.67092 | 2.52677 | 0.1554102 | 2.3749542 | 125 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 87544 | 2002 $RZ_{18}$ |
| 2002 $RG_{19}$ | 16.9 | 0.15 | 20060922 | 43.07601 | 314.76239 | 1.92588 | 16.27591 | 0.2399255 | 2.4422363 | 91 | 3 | 2002–2006 | 0.52 | M-v | 1 | MPC | 04215 | 2002 $RG_{19}$ |
| 2002 $RK_{19}$ | 16.0 | 0.15 | 20060922 | 331.83584 | 312.15147 | 72.44900 | 2.25450 | 0.2128113 | 2.5759470 | 71 | 5 | 1998–2006 | 0.67 | M-v | 2 | MPC | 04215 | 2002 $RK_{19}$ |
| 2002 $RF_{20}$ | 15.8 | 0.15 | 20060922 | 351.79645 | 339.51292 | 9.15188 | 13.00461 | 0.1467948 | 2.5917177 | 82 | 4 | 1998–2006 | 0.54 | M-v | 3 | MPC | 04215 | 2002 $RF_{20}$ |
| 2002 $RH_{20}$ | 17.2 | 0.15 | 20060922 | 22.13011 | 260.91524 | 91.34026 | 3.57609 | 0.2117796 | 2.4383229 | 52 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 85585 | 2002 $RH_{20}$ |
| 2002 $RQ_{20}$ | 17.2 | 0.15 | 20060922 | 64.54041 | 262.88897 | 128.50122 | 4.61351 | 0.1573656 | 2.1725802 | 52 | 3 | 1999–2005 | 0.64 | M-v | 4 | MPC | 85585 | 2002 $RQ_{20}$ |
| 2002 $RV_{20}$ | 16.1 | 0.15 | 20060922 | 32.44523 | 340.45649 | 18.16798 | 4.43515 | 0.1651800 | 2.3671591 | 119 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 65358 | 2002 $RV_{20}$ |
| 2002 $RL_{21}$ | 16.8 | 0.15 | 20060922 | 333.09724 | 349.50307 | 73.20888 | 2.25095 | 0.1769659 | 2.4130928 | 106 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 74209 | 2002 $RL_{21}$ |
| 2002 $RS_{21}$ | 16.6 | 0.15 | 20060922 | 9.44089 | 259.44445 | 153.87291 | 6.84452 | 0.2431833 | 2.3167539 | 61 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 62400 | 2002 $RS_{21}$ |
| 2002 $RY_{21}$ | 17.6 | 0.15 | 20060922 | 52.15549 | 170.12295 | 142.43585 | 1.95671 | 0.1999472 | 2.4090204 | 45 | 4 | 1991–2006 | 0.42 | M-v | 1 | MPC | 75527 | 2002 $RY_{21}$ |
| 2002 $RZ_{21}$ | 17.1 | 0.15 | 20060922 | 17.65643 | 193.16693 | 128.13171 | 2.51431 | 0.1957738 | 2.5344836 | 53 | 4 | 2001–2006 | 0.43 | M-v | 2 | MPC | 03373 | 2002 $RZ_{21}$ |
| 2002 $RN_{22}$ | 17.5 | 0.15 | 20060922 | 43.96039 | 173.50897 | 157.23733 | 1.14359 | 0.1910635 | 2.3887777 | 47 | 6 | 1991–2006 | 0.46 | M-v | 1 | MPC | 75528 | 2002 $RN_{22}$ |
| 2002 $RO_{22}$ | 17.1 | 0.15 | 20060922 | 64.54573 | 160.01154 | 144.92528 | 2.97651 | 0.1963431 | 2.3778199 | 59 | 5 | 1991–2006 | 0.49 | M-v | 0 | MPC | 85585 | 2002 $RO_{22}$ |
| 2002 $RU_{22}$ | 16.9 | 0.15 | 20060922 | 356.45051 | 207.87788 | 145.81227 | 3.10684 | 0.1604730 | 2.5280446 | 83 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 04215 | 2002 $RU_{22}$ |
| 2002 $RJ_{23}$ | 16.8 | 0.15 | 20060922 | 37.44714 | 135.78672 | 174.29637 | 1.13645 | 0.1573456 | 2.4817253 | 60 | 5 | 2001–2006 | 0.42 | M-v | 1 | MPC | 04215 | 2002 $RJ_{23}$ |
| 2002 $RT_{23}$ | 16.5 | 0.15 | 20060922 | 68.49520 | 145.06339 | 162.63435 | 5.68895 | 0.2510309 | 2.3411712 | 70 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 75528 | 2002 $RT_{23}$ |
| 2002 $RH_{24}$ | 17.6 | 0.15 | 20060922 | 70.18518 | 19.16209 | 291.61084 | 1.12629 | 0.2460699 | 2.3280032 | 42 | 4 | 1995–2006 | 0.40 | M-v | 1 | MPC | 77632 | 2002 $RH_{24}$ |
| 2002 $RR_{24}$ | 17.6 | 0.15 | 20060922 | 103.07424 | 114.51193 | 175.09622 | 2.67482 | 0.1794808 | 2.2786420 | 43 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 77632 | 2002 $RR_{24}$ |
| 2002 $RG_{26}$ | 16.4 | 0.15 | 20060922 | 75.81366 | 175.14752 | 116.86579 | 6.28524 | 0.1515801 | 2.4054272 | 50 | 5 | 1993–2006 | 0.59 | M-v | 1 | MPC | 03373 | 2002 $RG_{26}$ |
| 2002 $RO_{26}$ | 17.0 | 0.15 | 20060922 | 20.23541 | 117.05034 | 194.91940 | 12.91766 | 0.1924568 | 2.5519665 | 82 | 4 | 1998–2006 | 0.61 | M-v | 2 | MPC | 04215 | 2002 $RO_{26}$ |
| 2002 $RM_{27}$ | 17.3 | 0.15 | 20060922 | 325.76517 | 243.04784 | 144.53923 | 5.64321 | 0.2645339 | 2.6023609 | 29 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03374 | 2002 $RM_{27}$ |
| 2002 $RX_{27}$ | 16.4 | 0.15 | 20060922 | 75.78832 | 165.66524 | 122.52885 | 6.48961 | 0.1182357 | 2.4470013 | 48 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 75531 | 2002 $RX_{27}$ |
| 2002 $RU_{28}$ | 17.1 | 0.15 | 20060922 | 33.57328 | 148.63807 | 218.88004 | 4.62714 | 0.1897282 | 2.3287960 | 84 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 89317 | 2002 $RU_{28}$ |
| 2002 $RY_{28}$ | 17.0 | 0.15 | 20060922 | 332.98406 | 176.45561 | 184.40293 | 5.03620 | 0.2340216 | 2.5690613 | 40 | 4 | 1990–2006 | 0.60 | M-v | 3 | MPC | 48256 | 2002 $RY_{28}$ |
| 2002 $RK_{29}$ | 17.3 | 0.15 | 20060922 | 354.82271 | 36.65826 | 298.48818 | 3.78256 | 0.2690443 | 2.5872588 | 26 | 2 | 2002–2006 | 0.37 | M-v | 3 | MPC | 03374 | 2002 $RK_{29}$ |
| 2002 $RT_{29}$ | 17.0 | 0.15 | 20060922 | 66.49032 | 8.58667 | 298.69775 | 5.50676 | 0.1382886 | 2.3768227 | 61 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 85587 | 2002 $RT_{29}$ |
| 2002 $RV_{29}$ | 17.6 | 0.15 | 20060922 | 66.41937 | 75.81319 | 253.92994 | 4.61771 | 0.1854565 | 2.3025202 | 48 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 75532 | 2002 $RV_{29}$ |
| 2002 $RZ_{29}$ | 17.2 | 0.15 | 20060922 | 42.32963 | 88.33307 | 214.99489 | 5.90857 | 0.1632342 | 2.4838860 | 66 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04216 | 2002 $RZ_{29}$ |
| 2002 $RK_{30}$ | 16.5 | 0.15 | 20060922 | 306.67947 | 103.36514 | 288.60707 | 4.48410 | 0.1420265 | 2.6283426 | 42 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04216 | 2002 $RK_{30}$ |
| 2002 $RE_{31}$ | 17.0 | 0.15 | 20060922 | 36.12048 | 158.48108 | 200.98563 | 6.74169 | 0.1489825 | 2.3472266 | 76 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 87544 | 2002 $RE_{31}$ |
| 2002 $RX_{31}$ | 16.5 | 0.15 | 20060922 | 72.29521 | 104.80439 | 215.23535 | 2.73107 | 0.1893291 | 2.3158266 | 79 | 4 | 1997–2006 | 0.46 | M-v | 1 | MPC | 97616 | 2002 $RX_{31}$ |
| 2002 $RE_{32}$ | 16.3 | 0.15 | 20060922 | 339.69636 | 128.79910 | 322.02156 | 6.23292 | 0.1306753 | 2.2733452 | 52 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 87544 | 2002 $RE_{32}$ |
| 2002 $RM_{32}$ | 17.0 | 0.15 | 20060922 | 52.18581 | 157.45498 | 189.78487 | 5.99317 | 0.1255423 | 2.3264576 | 45 | 3 | 2002–2005 | 0.63 | M-v | 3 | MPC | 75534 | 2002 $RM_{32}$ |
| 2002 $RO_{32}$ | 17.0 | 0.15 | 20060922 | 49.16905 | 81.04018 | 238.17102 | 1.75997 | 0.1846647 | 2.4136002 | 76 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 89318 | 2002 $RO_{32}$ |
| 2002 $RP_{32}$ | 16.7 | 0.15 | 20060922 | 126.19380 | 6.58367 | 261.15992 | 2.64468 | 0.0920601 | 2.3151698 | 91 | 7 | 1992–2006 | 0.53 | M-v | 1 | MPC | 77633 | 2002 $RP_{32}$ |
| 2002 $RW_{32}$ | 17.3 | 0.15 | 20060922 | 336.83813 | 51.69368 | 337.56923 | 8.37073 | 0.1403364 | 2.5111012 | 75 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 03374 | 2002 $RW_{32}$ |
| 2002 $RD_{33}$ | 17.2 | 0.15 | 20060922 | 11.69122 | 9.19715 | 342.11661 | 6.87676 | 0.1866132 | 2.4894341 | 98 | 3 | 1998–2006 | 0.54 | M-v | 2 | MPC | 03375 | 2002 $RD_{33}$ |
| 2002 $RC_{34}$ | 18.1 | 0.15 | 20060922 | 101.50087 | 336.26333 | 19.40428 | 3.08111 | 0.1628975 | 2.1378419 | 37 | 4 | 1999–2005 | 0.58 | M-v | 3 | MPC | 89318 | 2002 $RC_{34}$ |
| 2002 $RF_{34}$ | 14.7 | 0.15 | 20060922 | 316.51483 | 302.95123 | 10.37650 | 9.96906 | 0.1025431 | 2.9811238 | 48 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 56523 | 2002 $RF_{34}$ |
| 2002 $RG_{34}$ | 16.9 | 0.15 | 20060922 | 17.64248 | 287.61252 | 80.83442 | 2.31167 | 0.1946244 | 2.4110876 | 77 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 75535 | 2002 $RG_{34}$ |
| 2002 $RA_{35}$ | 16.2 | 0.15 | 20060922 | 334.64036 | 170.99904 | 187.05192 | 7.82760 | 0.2090337 | 2.6184564 | 38 | 3 | 1998–2005 | 0.48 | M-v | 3 | MPC | 38381 | 2002 $RA_{35}$ |
| 2002 $RT_{35}$ | 16.8 | 0.15 | 20060922 | 95.69972 | 4.40036 | 296.32420 | 5.90836 | 0.1234248 | 2.2803678 | 46 | 6 | 1992–2006 | 0.50 | M-v | 1 | MPC | 77633 | 2002 $RT_{35}$ |
| 2002 $RX_{35}$ | 16.6 | 0.15 | 20060922 | 39.01707 | 145.22371 | 195.60540 | 5.70481 | 0.2544390 | 2.3726402 | 84 | 4 | 1995–2006 | 0.47 | M-v | 1 | MPC | 40956 | 2002 $RX_{35}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RQ_{36}$ | 16.8 | 0.15 | 20060922 | 340.48147 | 74.41240 | 297.40117 | 4.80880 | 0.1882739 | 2.5374401 | 44 | 2 | 2002–2006 | 0.74 | M-v | 5 | MPC | 03375 | 2002 $RQ_{36}$ |
| 2002 $RD_{37}$ | 16.9 | 0.15 | 20060922 | 3.21115 | 124.04406 | 217.80572 | 2.02462 | 0.2196684 | 2.5264622 | 45 | 4 | 1994–2006 | 0.48 | M-v | 3 | MPC | 04216 | 2002 $RD_{37}$ |
| 2002 $RB_{38}$ | 16.3 | 0.15 | 20060922 | 357.86781 | 30.04707 | 357.95401 | 4.02517 | 0.2014059 | 2.3869981 | 105 | 2 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03375 | 2002 $RB_{38}$ |
| 2002 $RF_{38}$ | 16.6 | 0.15 | 20060922 | 0.81158 | 282.86455 | 68.52079 | 2.50961 | 0.2369151 | 2.4885095 | 88 | 4 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04216 | 2002 $RF_{38}$ |
| 2002 $RZ_{38}$ | 16.8 | 0.15 | 20060922 | 21.31155 | 345.23120 | 297.74659 | 4.48371 | 0.2830793 | 2.5948785 | 53 | 2 | 2002–2006 | 0.40 | M-v | 3 | MPC | 04216 | 2002 $RZ_{38}$ |
| 2002 $RC_{39}$ | 16.4 | 0.15 | 20060922 | 342.67912 | 319.82102 | 82.94321 | 3.10883 | 0.1868840 | 2.4090080 | 88 | 5 | 1991–2006 | 0.49 | M-v | 1 | MPC | 89318 | 2002 $RC_{39}$ |
| 2002 $RD_{40}$ | 17.0 | 0.15 | 20060922 | 46.32572 | 320.18006 | 23.36986 | 2.32865 | 0.2305097 | 2.3336465 | 64 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87544 | 2002 $RD_{40}$ |
| 2002 $RJ_{40}$ | 14.5 | 0.15 | 20060922 | 271.26295 | 340.51572 | 354.62404 | 9.92206 | 0.1372769 | 3.0969005 | 59 | 4 | 2000–2005 | 0.66 | M-v | 1 | MPC | 38382 | 2002 $RJ_{40}$ |
| 2002 $RK_{40}$ | 15.5 | 0.15 | 20060922 | 351.90703 | 188.74326 | 144.48478 | 10.41967 | 0.0927266 | 2.6051352 | 63 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04216 | 2002 $RK_{40}$ |
| 2002 $RW_{40}$ | 17.3 | 0.15 | 20060922 | 38.72450 | 5.94183 | 13.54628 | 1.83483 | 0.2838075 | 2.2898074 | 62 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 61281 | 2002 $RW_{40}$ |
| 2002 $RX_{40}$ | 16.9 | 0.15 | 20060922 | 66.10656 | 279.86555 | 12.50245 | 1.95254 | 0.1975261 | 2.3952031 | 83 | 3 | 2002–2006 | 0.41 | M-v | 1 | MPC | 04216 | 2002 $RX_{40}$ |
| 2002 $RZ_{40}$ | 16.3 | 0.15 | 20060922 | 39.20283 | 307.86539 | 354.54358 | 7.29501 | 0.1715834 | 2.4847568 | 89 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04216 | 2002 $RZ_{40}$ |
| 2002 $RJ_{41}$ | 17.1 | 0.15 | 20060922 | 24.69494 | 293.86303 | 2.89143 | 5.85345 | 0.2698173 | 2.5446892 | 52 | 3 | 1994–2006 | 0.36 | M-v | 3 | MPC | 03376 | 2002 $RJ_{41}$ |
| 2002 $RB_{42}$ | 16.6 | 0.15 | 20060922 | 324.31689 | 217.72375 | 146.27710 | 10.09502 | 0.1133716 | 2.6290863 | 48 | 7 | 1998–2006 | 0.53 | M-v | 1 | MPC | 03376 | 2002 $RB_{42}$ |
| 2002 $RE_{42}$ | 17.2 | 0.15 | 20060922 | 72.47151 | 228.88850 | 79.53577 | 2.32372 | 0.2296251 | 2.3237034 | 59 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 85590 | 2002 $RE_{42}$ |
| 2002 $RH_{42}$ | 15.9 | 0.15 | 20060922 | 303.51556 | 244.64976 | 148.53318 | 14.36413 | 0.1741428 | 2.6367653 | 36 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04216 | 2002 $RH_{42}$ |
| 2002 $RJ_{42}$ | 17.0 | 0.15 | 20060922 | 358.92357 | 255.21362 | 106.41302 | 3.71682 | 0.1728306 | 2.4822009 | 66 | 2 | 2002–2006 | 0.44 | M-v | 3 | MPC | 03376 | 2002 $RJ_{42}$ |
| 2002 $RX_{42}$ | 16.6 | 0.15 | 20060922 | 342.81411 | 233.59590 | 129.06838 | 5.16653 | 0.1534465 | 2.5543080 | 56 | 5 | 1993–2006 | 0.49 | M-v | 1 | MPC | 04216 | 2002 $RX_{42}$ |
| 2002 $RA_{43}$ | 17.2 | 0.15 | 20060922 | 75.96916 | 247.93753 | 72.23650 | 2.72041 | 0.2049845 | 2.2880300 | 59 | 5 | 2001–2006 | 0.42 | M-v | 1 | MPC | 87544 | 2002 $RA_{43}$ |
| 2002 $RG_{43}$ | 16.4 | 0.15 | 20060922 | 340.71866 | 338.31889 | 35.93430 | 3.21818 | 0.1587416 | 2.5249595 | 44 | 3 | 2002–2006 | 0.55 | M-v | 4 | MPC | 03376 | 2002 $RG_{43}$ |
| 2002 $RF_{44}$ | 15.1 | 0.15 | 20060922 | 297.36974 | 10.35334 | 357.13799 | 13.97659 | 0.2035108 | 2.7885706 | 46 | 3 | 2002–2005 | 0.57 | M-v | 3 | MPC | 56530 | 2002 $RF_{44}$ |
| 2002 $RQ_{44}$ | 16.3 | 0.15 | 20060922 | 324.50134 | 274.70230 | 106.66554 | 4.27644 | 0.1491630 | 2.5782829 | 53 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 04216 | 2002 $RQ_{44}$ |
| 2002 $RR_{44}$ | 17.3 | 0.15 | 20060922 | 95.74856 | 181.35218 | 152.68232 | 6.25136 | 0.1936256 | 2.1921385 | 57 | 4 | 1995–2004 | 0.52 | M-v | 3 | MPC | 89318 | 2002 $RR_{44}$ |
| 2002 $RV_{44}$ | 16.3 | 0.15 | 20060922 | 56.24817 | 195.14888 | 154.05174 | 8.46280 | 0.1427805 | 2.2951449 | 52 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 87544 | 2002 $RV_{44}$ |
| 2002 $RN_{45}$ | 16.8 | 0.15 | 20060922 | 337.86980 | 279.15503 | 82.55521 | 3.34761 | 0.1823464 | 2.5964450 | 47 | 4 | 2002–2006 | 0.67 | M-v | 1 | MPC | 04216 | 2002 $RN_{45}$ |
| 2002 $RQ_{45}$ | 17.3 | 0.15 | 20060922 | 48.63096 | 290.37839 | 37.49583 | 2.79377 | 0.2345081 | 2.3749539 | 38 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 75541 | 2002 $RQ_{45}$ |
| 2002 $RC_{46}$ | 16.0 | 0.15 | 20060922 | 9.73822 | 203.81496 | 117.24110 | 3.84047 | 0.2124112 | 2.5693889 | 52 | 4 | 1998–2006 | 0.67 | M-v | 3 | MPC | 04216 | 2002 $RC_{46}$ |
| 2002 $RD_{46}$ | 16.4 | 0.15 | 20060922 | 4.45531 | 213.67055 | 109.15495 | 4.11517 | 0.1453549 | 2.6005810 | 48 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 03376 | 2002 $RD_{46}$ |
| 2002 $RW_{46}$ | 16.5 | 0.15 | 20060922 | 59.04726 | 144.91339 | 123.82341 | 4.06449 | 0.2030408 | 2.5343427 | 48 | 6 | 1993–2006 | 0.79 | M-v | 1 | MPC | 77634 | 2002 $RW_{46}$ |
| 2002 $RA_{47}$ | 16.0 | 0.15 | 20060922 | 12.57223 | 290.76824 | 2.26056 | 13.32903 | 0.1995947 | 2.6641459 | 60 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 03377 | 2002 $RA_{47}$ |
| 2002 $RR_{47}$ | 15.6 | 0.15 | 20060922 | 303.96941 | 339.31577 | 55.88833 | 3.25262 | 0.1629529 | 2.6448012 | 53 | 5 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04216 | 2002 $RR_{47}$ |
| 2002 $RB_{48}$ | 15.2 | 0.15 | 20060922 | 296.54742 | 291.61718 | 2.77627 | 9.45824 | 0.1926555 | 3.1784053 | 49 | 3 | 2000–2006 | 0.61 | M-v | 3 | MPC | 02124 | 2002 $RB_{48}$ |
| 2002 $RF_{48}$ | 16.6 | 0.15 | 20060922 | 20.16871 | 4.91204 | 20.02351 | 2.60187 | 0.2110414 | 2.3518849 | 63 | 1 | 85 days | 0.50 | M-v | 4 | MPC | 41779 | 2002 $RF_{48}$ |
| 2002 $RK_{48}$ | 17.1 | 0.15 | 20060922 | 37.15070 | 300.87854 | 43.96458 | 3.19107 | 0.2390231 | 2.3847380 | 67 | 6 | 1994–2006 | 0.42 | M-v | 1 | MPC | 77634 | 2002 $RK_{48}$ |
| 2002 $RY_{48}$ | 16.7 | 0.15 | 20060922 | 0.79065 | 163.21358 | 160.45595 | 12.77037 | 0.1942504 | 2.6266974 | 46 | 2 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03377 | 2002 $RY_{48}$ |
| 2002 $RZ_{48}$ | 15.6 | 0.15 | 20060922 | 259.21098 | 330.73309 | 151.73826 | 7.92076 | 0.0290351 | 2.4229012 | 90 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 66281 | 2002 $RZ_{48}$ |
| 2002 $RF_{49}$ | 17.0 | 0.15 | 20060922 | 36.82576 | 229.50438 | 121.62723 | 3.20745 | 0.2125210 | 2.3778055 | 48 | 4 | 1994–2006 | 0.44 | M-v | 1 | MPC | 75543 | 2002 $RF_{49}$ |
| 2002 $RJ_{49}$ | 16.9 | 0.15 | 20060922 | 51.77562 | 307.52272 | 51.88366 | 2.86222 | 0.1964951 | 2.3001035 | 44 | 4 | 1995–2006 | 0.62 | M-v | 2 | MPC | 89319 | 2002 $RJ_{49}$ |
| 2002 $RK_{49}$ | 16.5 | 0.15 | 20060922 | 6.53073 | 257.44638 | 118.43376 | 3.63966 | 0.1941987 | 2.4364616 | 93 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 75543 | 2002 $RK_{49}$ |
| 2002 $RP_{49}$ | 16.9 | 0.15 | 20060922 | 34.68992 | 228.80400 | 124.53285 | 4.43404 | 0.1278956 | 2.3826276 | 58 | 6 | 1991–2006 | 0.58 | M-v | 1 | MPC | 87544 | 2002 $RP_{49}$ |
| 2002 $RX_{49}$ | 15.8 | 0.15 | 20060922 | 296.88847 | 282.12367 | 150.16440 | 5.65505 | 0.2661029 | 2.6057131 | 64 | 4 | 1998–2006 | 0.65 | M-v | 3 | MPC | 04216 | 2002 $RX_{49}$ |
| 2002 $RA_{50}$ | 17.2 | 0.15 | 20060922 | 124.51206 | 177.79385 | 136.38994 | 3.69575 | 0.2284831 | 2.1526945 | 78 | 4 | 2002–2006 | 0.45 | M-v | 2 | MPC | 87544 | 2002 $RA_{50}$ |
| 2002 $RW_{50}$ | 17.8 | 0.15 | 20060922 | 1.93241 | 325.78632 | 14.92334 | 7.39763 | 0.2885734 | 2.5625853 | 87 | 2 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03377 | 2002 $RW_{50}$ |
| 2002 $RZ_{50}$ | 16.6 | 0.15 | 20060922 | 79.93665 | 322.94633 | 22.35770 | 7.15724 | 0.2136658 | 2.2391233 | 90 | 5 | 1992–2004 | 0.57 | M-v | 2 | MPC | 62401 | 2002 $RZ_{50}$ |
| 2002 $RH_{51}$ | 15.5 | 0.15 | 20060922 | 280.13486 | 329.97464 | 12.79825 | 13.87056 | 0.2057150 | 3.0807366 | 60 | 1 | 62 days | 0.55 | M-v | 4 | MPC | 48258 | 2002 $RH_{51}$ |
| 2002 $RZ_{51}$ | 15.5 | 0.15 | 20060922 | 13.53296 | 253.01835 | 142.07406 | 7.09067 | 0.1146024 | 2.3534972 | 92 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 62401 | 2002 $RZ_{51}$ |
| 2002 $RA_{52}$ | 15.7 | 0.15 | 20060922 | 42.90832 | 231.97306 | 140.04869 | 6.97462 | 0.1267113 | 2.3113899 | 68 | 4 | 1995–2006 | 0.58 | M-v | 2 | MPC | 74210 | 2002 $RA_{52}$ |
| 2002 $RB_{52}$ | 16.5 | 0.15 | 20060922 | 40.01264 | 333.60818 | 18.50742 | 9.21948 | 0.1719125 | 2.3789824 | 83 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 04216 | 2002 $RB_{52}$ |
| 2002 $RD_{52}$ | 17.2 | 0.15 | 20060922 | 9.88844 | 229.55064 | 110.97154 | 3.36453 | 0.2206764 | 2.5417298 | 76 | 5 | 1994–2006 | 0.49 | M-v | 2 | MPC | 04216 | 2002 $RD_{52}$ |
| 2002 $RJ_{52}$ | 16.1 | 0.15 | 20060922 | 297.82353 | 297.68246 | 59.81544 | 2.66521 | 0.2048238 | 2.8865372 | 62 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 77635 | 2002 $RJ_{52}$ |
| 2002 $RB_{53}$ | 16.1 | 0.15 | 20060922 | 15.13000 | 319.43530 | 354.37803 | 12.45676 | 0.1613092 | 2.5699537 | 60 | 3 | 1998–2006 | 0.57 | M-v | 2 | MPC | 04216 | 2002 $RB_{53}$ |
| 2002 $RK_{53}$ | 16.9 | 0.15 | 20060922 | 345.27363 | 196.88730 | 155.62591 | 15.82172 | 0.2707244 | 2.5877453 | 23 | 2 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03377 | 2002 $RK_{53}$ |
| 2002 $RS_{53}$ | 15.2 | 0.15 | 20060922 | 302.91708 | 153.57260 | 145.79660 | 8.99740 | 0.1485411 | 3.1100075 | 30 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 89319 | 2002 $RS_{53}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RX_{53}$ | 17.0 | 0.15 | 20060922 | 33.65968 | 216.59539 | 132.86957 | 2.89235 | 0.2106388 | 2.3881300 | 55 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 75547 | 2002 $RX_{53}$ |
| 2002 $RD_{54}$ | 15.4 | 0.15 | 20060922 | 313.29671 | 275.29311 | 51.81457 | 2.90694 | 0.0778119 | 2.9473101 | 98 | 5 | 1992–2006 | 0.64 | M-v | 1 | MPC | 02124 | 2002 $RD_{54}$ |
| 2002 $RH_{54}$ | 16.2 | 0.15 | 20060922 | 356.82250 | 28.42979 | 24.31935 | 4.27896 | 0.1469396 | 2.3660676 | 81 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 61285 | 2002 $RH_{54}$ |
| 2002 $RW_{54}$ | 16.2 | 0.15 | 20060922 | 83.18726 | 11.31688 | 289.80891 | 5.69913 | 0.1210815 | 2.3565140 | 57 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 87545 | 2002 $RW_{54}$ |
| 2002 $RG_{55}$ | 16.8 | 0.15 | 20060922 | 54.00570 | 103.19974 | 233.29114 | 3.87723 | 0.2430223 | 2.3459480 | 41 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 89320 | 2002 $RG_{55}$ |
| 2002 $RK_{55}$ | 16.5 | 0.15 | 20060922 | 317.09718 | 99.90212 | 296.34923 | 5.11213 | 0.3360205 | 2.6413237 | 36 | 1 | 87 days | 0.52 | M-v | 5 | MPC | 41779 | 2002 $RK_{55}$ |
| 2002 $RV_{55}$ | 16.5 | 0.15 | 20060922 | 340.64846 | 132.60783 | 237.52670 | 3.70312 | 0.2223222 | 2.5815111 | 64 | 2 | 2002–2006 | 0.57 | M-v | 3 | MPC | 03378 | 2002 $RV_{55}$ |
| 2002 $RX_{55}$ | 16.4 | 0.15 | 20060922 | 48.08919 | 133.16873 | 208.38595 | 4.60794 | 0.2322567 | 2.3612033 | 111 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 75548 | 2002 $RX_{55}$ |
| 2002 $RO_{56}$ | 16.1 | 0.15 | 20060922 | 52.14841 | 12.59621 | 308.42938 | 4.24873 | 0.1532647 | 2.4262060 | 95 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 04216 | 2002 $RO_{56}$ |
| 2002 $RP_{56}$ | 16.3 | 0.15 | 20060922 | 330.57630 | 48.10868 | 337.24109 | 8.61111 | 0.2087237 | 2.5911037 | 76 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03378 | 2002 $RP_{56}$ |
| 2002 $RV_{56}$ | 15.2 | 0.15 | 20060922 | 287.49755 | 219.61242 | 188.89353 | 10.56424 | 0.3105743 | 2.7612954 | 96 | 4 | 1996–2005 | 0.60 | M-v | 1 | MPC | 77635 | 2002 $RV_{56}$ |
| 2002 $RA_{57}$ | 16.8 | 0.15 | 20060922 | 65.73882 | 111.57643 | 192.18173 | 6.30246 | 0.1350599 | 2.4267730 | 38 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 03379 | 2002 $RA_{57}$ |
| 2002 $RH_{57}$ | 16.4 | 0.15 | 20060922 | 358.92022 | 40.66049 | 288.41647 | 3.44285 | 0.2093844 | 2.6198286 | 51 | 2 | 2002–2006 | 0.42 | M-v | 3 | MPC | 03379 | 2002 $RH_{57}$ |
| 2002 $RM_{57}$ | 16.5 | 0.15 | 20060922 | 310.99227 | 79.01575 | 312.23239 | 3.37702 | 0.3236663 | 2.6825833 | 33 | 1 | 68 days | 0.44 | M-v | 4 | MPC | 38386 | 2002 $RM_{57}$ |
| 2002 $RP_{57}$ | 17.0 | 0.15 | 20060922 | 73.26752 | 158.58278 | 203.42086 | 3.77091 | 0.1773571 | 2.2205643 | 47 | 1 | 62 days | 0.49 | M-v | 3 | MPC | 48259 | 2002 $RP_{57}$ |
| 2002 $RW_{57}$ | 17.2 | 0.15 | 20060922 | 6.24747 | 114.09042 | 221.82445 | 4.65375 | 0.2311314 | 2.5518986 | 57 | 2 | 2002–2006 | 0.52 | M-v | 3 | MPC | 03379 | 2002 $RW_{57}$ |
| 2002 $RZ_{57}$ | 16.4 | 0.15 | 20060922 | 2.09607 | 54.42327 | 288.94290 | 4.52321 | 0.0930073 | 2.5650285 | 72 | 3 | 2002–2006 | 0.57 | M-v | 4 | MPC | 04216 | 2002 $RZ_{57}$ |
| 2002 $RB_{58}$ | 16.6 | 0.15 | 20060922 | 0.74375 | 85.79783 | 232.88053 | 3.42847 | 0.2014225 | 2.6438000 | 75 | 3 | 1998–2006 | 0.40 | M-v | 2 | MPC | 04216 | 2002 $RB_{58}$ |
| 2002 $RJ_{59}$ | 17.2 | 0.15 | 20060922 | 72.64247 | 85.34521 | 222.88973 | 4.01295 | 0.1313905 | 2.3691041 | 58 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 89320 | 2002 $RJ_{59}$ |
| 2002 $RL_{59}$ | 16.2 | 0.15 | 20060922 | 33.22599 | 59.27729 | 311.95560 | 6.13744 | 0.1259930 | 2.3333700 | 51 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 61287 | 2002 $RL_{59}$ |
| 2002 $RS_{59}$ | 17.4 | 0.15 | 20060922 | 0.92910 | 306.00492 | 38.62479 | 4.98322 | 0.3157250 | 2.5581932 | 98 | 3 | 1998–2006 | 0.57 | M-v | 2 | MPC | 03379 | 2002 $RS_{59}$ |
| 2002 $RZ_{59}$ | 16.9 | 0.15 | 20060922 | 182.22840 | 25.46023 | 207.95859 | 6.80907 | 0.0587756 | 2.2464571 | 61 | 6 | 1991–2006 | 0.56 | M-v | 0 | MPC | 85591 | 2002 $RZ_{59}$ |
| 2002 $RV_{60}$ | 16.3 | 0.15 | 20060922 | 34.23090 | 327.89137 | 28.73144 | 7.11555 | 0.2102024 | 2.3922153 | 120 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 48260 | 2002 $RV_{60}$ |
| 2002 $RO_{61}$ | 16.0 | 0.15 | 20060922 | 351.29502 | 197.02292 | 171.84929 | 13.92893 | 0.2511396 | 2.5590367 | 158 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 03380 | 2002 $RO_{61}$ |
| 2002 $RV_{61}$ | 15.4 | 0.15 | 20060922 | 235.93754 | 222.33750 | 175.98058 | 16.75706 | 0.2178425 | 3.1931245 | 54 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 00342 | 2002 $RV_{61}$ |
| 2002 $RA_{62}$ | 16.6 | 0.15 | 20060922 | 42.27393 | 310.23927 | 19.94754 | 10.24693 | 0.3234033 | 2.4187968 | 109 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 85592 | 2002 $RA_{62}$ |
| 2002 $RD_{62}$ | 16.2 | 0.15 | 20060922 | 78.66865 | 264.72507 | 36.08072 | 7.36269 | 0.2596982 | 2.3781295 | 86 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 75551 | 2002 $RD_{62}$ |
| 2002 $RU_{62}$ | 16.8 | 0.15 | 20060922 | 34.29781 | 199.39830 | 205.41994 | 2.61468 | 0.2448623 | 2.3302884 | 93 | 6 | 1997–2006 | 0.45 | M-v | 1 | MPC | 77636 | 2002 $RU_{62}$ |
| 2002 $RJ_{63}$ | 16.1 | 0.15 | 20060922 | 44.27965 | 304.60761 | 75.45767 | 5.51402 | 0.1749874 | 2.3488075 | 92 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 61290 | 2002 $RJ_{63}$ |
| 2002 $RJ_{64}$ | 17.1 | 0.15 | 20060922 | 121.88587 | 247.01201 | 64.44836 | 3.81126 | 0.1794784 | 2.1931115 | 73 | 6 | 1994–2006 | 0.55 | M-v | 1 | MPC | 87545 | 2002 $RJ_{64}$ |
| 2002 $RS_{64}$ | 15.7 | 0.15 | 20060922 | 353.57130 | 306.84240 | 43.11507 | 15.18314 | 0.2149753 | 2.6866050 | 104 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 04217 | 2002 $RS_{64}$ |
| 2002 $RE_{65}$ | 16.0 | 0.15 | 20060922 | 63.03168 | 256.48534 | 105.96430 | 4.83311 | 0.2617394 | 2.3310714 | 105 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 62402 | 2002 $RE_{65}$ |
| 2002 $RB_{66}$ | 16.9 | 0.15 | 20060922 | 63.35477 | 330.18670 | 5.07812 | 2.32449 | 0.2300570 | 2.3112686 | 71 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 75553 | 2002 $RB_{66}$ |
| 2002 $RF_{66}$ | 15.8 | 0.15 | 20060922 | 327.65308 | 195.82338 | 205.75262 | 34.77521 | 0.3517022 | 2.6621802 | 70 | 3 | 2000–2006 | 0.56 | M-v | 1 | MPC | 40964 | 2002 $RF_{66}$ |
| 2002 $RC_{67}$ | 17.3 | 0.15 | 20060922 | 355.50074 | 144.76044 | 247.50541 | 6.36976 | 0.2241314 | 2.4542557 | 86 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 03380 | 2002 $RC_{67}$ |
| 2002 $RM_{67}$ | 15.5 | 0.15 | 20060922 | 62.75055 | 56.07902 | 287.68864 | 5.98098 | 0.1403928 | 2.3192100 | 68 | 5 | 2000–2006 | 0.49 | M-v | 2 | MPC | 77636 | 2002 $RM_{67}$ |
| 2002 $RU_{68}$ | 16.7 | 0.15 | 20060922 | 349.84374 | 176.86732 | 174.07069 | 12.49016 | 0.1446127 | 2.5845957 | 47 | 2 | 2002–2006 | 0.39 | M-v | 3 | MPC | 03380 | 2002 $RU_{68}$ |
| 2002 $RO_{69}$ | 17.0 | 0.15 | 20060922 | 36.30552 | 330.32809 | 16.46249 | 2.63034 | 0.2358747 | 2.3900819 | 47 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 87545 | 2002 $RO_{69}$ |
| 2002 $RF_{70}$ | 15.6 | 0.15 | 20060922 | 277.39828 | 116.25567 | 226.31628 | 8.08466 | 0.1066486 | 2.9929863 | 63 | 6 | 2000–2006 | 0.59 | M-v | 1 | MPC | 02124 | 2002 $RF_{70}$ |
| 2002 $RK_{70}$ | 16.3 | 0.15 | 20060922 | 326.25582 | 114.75613 | 264.40604 | 7.49550 | 0.1776426 | 2.5697610 | 39 | 2 | 2002–2006 | 0.51 | M-v | 4 | MPC | 03381 | 2002 $RK_{70}$ |
| 2002 $RL_{70}$ | 16.8 | 0.15 | 20060922 | 295.06791 | 145.42328 | 261.01405 | 7.36518 | 0.2873962 | 2.6699509 | 30 | 1 | 73 days | 0.46 | M-v | 4 | MPC | 48260 | 2002 $RL_{70}$ |
| 2002 $RO_{70}$ | 16.7 | 0.15 | 20060922 | 21.26278 | 121.46159 | 275.55986 | 6.54521 | 0.1411275 | 2.2748676 | 71 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 62402 | 2002 $RO_{70}$ |
| 2002 $RU_{70}$ | 16.4 | 0.15 | 20060922 | 75.44762 | 66.09420 | 220.67553 | 7.84502 | 0.0048273 | 2.4527537 | 79 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 75554 | 2002 $RU_{70}$ |
| 2002 $RV_{70}$ | 16.7 | 0.15 | 20060922 | 330.27484 | 185.13093 | 194.78786 | 11.62806 | 0.1590341 | 2.5509296 | 41 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 03381 | 2002 $RV_{70}$ |
| 2002 $RA_{71}$ | 17.8 | 0.15 | 20060922 | 73.38058 | 83.75770 | 236.23310 | 5.72250 | 0.1396292 | 2.3101252 | 35 | 4 | 2002–2006 | 0.32 | M-v | 0 | MPC | 94838 | 2002 $RA_{71}$ |
| 2002 $RX_{71}$ | 16.4 | 0.15 | 20060922 | 108.81955 | 64.76034 | 163.54012 | 14.77320 | 0.0274900 | 2.5454991 | 56 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04217 | 2002 $RX_{71}$ |
| 2002 $RF_{72}$ | 17.2 | 0.15 | 20060922 | 23.63629 | 0.49610 | 6.99396 | 1.50454 | 0.2057757 | 2.3630971 | 65 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 62402 | 2002 $RF_{72}$ |
| 2002 $RK_{72}$ | 17.3 | 0.15 | 20060922 | 355.05450 | 240.26108 | 149.36602 | 4.95503 | 0.1926340 | 2.4136268 | 54 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 61294 | 2002 $RK_{72}$ |
| 2002 $RV_{72}$ | 16.4 | 0.15 | 20060922 | 305.34184 | 137.59606 | 172.43271 | 6.30451 | 0.1510126 | 2.9962231 | 25 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 00342 | 2002 $RV_{72}$ |
| 2002 $RH_{73}$ | 16.8 | 0.15 | 20060922 | 0.10417 | 178.16291 | 170.34671 | 5.71751 | 0.1100154 | 2.5180109 | 65 | 6 | 1998–2006 | 0.46 | M-v | 1 | MPC | 04217 | 2002 $RH_{73}$ |
| 2002 $RW_{73}$ | 16.3 | 0.15 | 20060922 | 256.99599 | 148.00232 | 332.34543 | 6.17269 | 0.0700734 | 2.4183893 | 54 | 4 | 1998–2006 | 0.62 | M-v | 3 | MPC | 62402 | 2002 $RW_{73}$ |
| 2002 $RY_{73}$ | 15.3 | 0.15 | 20060922 | 308.50442 | 33.30346 | 297.16336 | 1.25781 | 0.0547253 | 2.8924113 | 53 | 4 | 2000–2006 | 0.70 | M-v | 2 | MPC | 77637 | 2002 $RY_{73}$ |
| 2002 $RD_{74}$ | 16.3 | 0.15 | 20060922 | 20.65311 | 107.52706 | 153.83340 | 5.50327 | 0.1249331 | 2.7881721 | 26 | 4 | 1997–2005 | 0.47 | M-v | 1 | MPC | 75556 | 2002 $RD_{74}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RL_{74}$ | 16.7 | 0.15 | 20060922 | 79.62499 | 303.60674 | 335.87288 | 2.62123 | 0.1859241 | 2.3938194 | 80 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 75556 | 2002 $RL_{74}$ |
| 2002 $RX_{74}$ | 17.0 | 0.15 | 20060922 | 324.76688 | 181.79873 | 216.19721 | 0.80610 | 0.1803177 | 2.5227530 | 59 | 5 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04217 | 2002 $RX_{74}$ |
| 2002 $RA_{75}$ | 16.7 | 0.15 | 20060922 | 14.25909 | 215.71895 | 175.22666 | 2.33404 | 0.2117437 | 2.3466258 | 77 | 7 | 1997–2006 | 0.55 | M-v | 1 | MPC | 87545 | 2002 $RA_{75}$ |
| 2002 $RR_{75}$ | 17.4 | 0.15 | 20060922 | 0.24017 | 59.32545 | 327.88750 | 6.09249 | 0.1265965 | 2.3948528 | 23 | 3 | 2002–2006 | 0.68 | M-v | 4 | MPC | 00342 | 2002 $RR_{75}$ |
| 2002 $RH_{76}$ | 17.4 | 0.15 | 20060922 | 354.64164 | 181.93573 | 161.56842 | 8.33858 | 0.2039257 | 2.5680523 | 47 | 3 | 1998–2006 | 0.39 | M-v | 2 | MPC | 03381 | 2002 $RH_{76}$ |
| 2002 $RF_{77}$ | 18.0 | 0.15 | 20060922 | 351.10091 | 31.51808 | 336.21644 | 6.36373 | 0.2759975 | 2.5218233 | 54 | 3 | 1998–2006 | 0.50 | M-v | 2 | MPC | 03381 | 2002 $RF_{77}$ |
| 2002 $RJ_{77}$ | 16.8 | 0.15 | 20060922 | 2.11168 | 206.33790 | 175.38292 | 4.28975 | 0.0960726 | 2.4037695 | 57 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 03381 | 2002 $RJ_{77}$ |
| 2002 $RW_{77}$ | 17.0 | 0.15 | 20060922 | 46.24744 | 322.05276 | 18.89328 | 2.50829 | 0.2096513 | 2.3556995 | 69 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 77637 | 2002 $RW_{77}$ |
| 2002 $RK_{78}$ | 17.3 | 0.15 | 20060922 | 347.47305 | 192.43111 | 215.49831 | 0.49225 | 0.1835652 | 2.4045455 | 97 | 5 | 1991–2006 | 0.41 | M-v | 0 | MPC | 04217 | 2002 $RK_{78}$ |
| 2002 $RW_{78}$ | 15.8 | 0.15 | 20060922 | 266.85778 | 174.14965 | 173.77723 | 4.82120 | 0.1604623 | 3.1119783 | 52 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 02124 | 2002 $RW_{78}$ |
| 2002 $RE_{79}$ | 16.1 | 0.15 | 20060922 | 31.44005 | 222.84007 | 132.76549 | 2.04243 | 0.1973979 | 2.3802968 | 88 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 75559 | 2002 $RE_{79}$ |
| 2002 $RO_{79}$ | 16.9 | 0.15 | 20060922 | 357.87088 | 20.79615 | 330.41475 | 2.14231 | 0.1535841 | 2.5415071 | 58 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 03381 | 2002 $RO_{79}$ |
| 2002 $RU_{79}$ | 17.0 | 0.15 | 20060922 | 133.95869 | 70.15906 | 197.73460 | 2.28936 | 0.1519825 | 2.2628207 | 68 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 74210 | 2002 $RU_{79}$ |
| 2002 $RA_{80}$ | 17.1 | 0.15 | 20060922 | 343.71190 | 56.05586 | 349.89955 | 5.92647 | 0.0974685 | 2.4070142 | 48 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 61296 | 2002 $RA_{80}$ |
| 2002 $RR_{80}$ | 17.1 | 0.15 | 20060922 | 50.45301 | 22.54042 | 317.66273 | 1.52095 | 0.1840260 | 2.3530241 | 70 | 5 | 1993–2006 | 0.53 | M-v | 1 | MPC | 77638 | 2002 $RR_{80}$ |
| 2002 $RC_{81}$ | 16.7 | 0.15 | 20060922 | 35.53618 | 337.67809 | 7.62937 | 3.38987 | 0.1395368 | 2.4025156 | 63 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 61297 | 2002 $RC_{81}$ |
| 2002 $RT_{81}$ | 16.0 | 0.15 | 20060922 | 20.35791 | 280.99374 | 5.14290 | 11.20387 | 0.2922960 | 2.6452962 | 106 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04217 | 2002 $RT_{81}$ |
| 2002 $RB_{82}$ | 17.1 | 0.15 | 20060922 | 18.76663 | 116.38409 | 244.91180 | 0.41944 | 0.1804592 | 2.4313302 | 97 | 4 | 2000–2006 | 0.38 | M-v | 0 | MPC | 87545 | 2002 $RB_{82}$ |
| 2002 $RD_{82}$ | 17.3 | 0.15 | 20060922 | 3.64571 | 151.59657 | 201.18033 | 3.68758 | 0.1552481 | 2.5261840 | 48 | 3 | 1998–2006 | 0.42 | M-v | 2 | MPC | 04217 | 2002 $RD_{82}$ |
| 2002 $RE_{82}$ | 16.7 | 0.15 | 20060922 | 26.93907 | 60.81658 | 333.46166 | 4.41587 | 0.1950473 | 2.3104666 | 54 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 61297 | 2002 $RE_{82}$ |
| 2002 $RQ_{82}$ | 15.4 | 0.15 | 20060922 | 286.25149 | 155.89224 | 176.18175 | 4.97396 | 0.1896501 | 3.0836708 | 62 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 00342 | 2002 $RQ_{82}$ |
| 2002 $RC_{83}$ | 15.4 | 0.15 | 20060922 | 14.75062 | 7.51663 | 29.49270 | 7.42404 | 0.1380552 | 2.3451129 | 109 | 4 | 1999–2006 | 0.63 | M-v | 1 | MPC | 62403 | 2002 $RC_{83}$ |
| 2002 $RH_{83}$ | 16.3 | 0.15 | 20060922 | 345.56244 | 193.15883 | 174.89521 | 9.37018 | 0.2172025 | 2.5663433 | 90 | 4 | 1998–2006 | 0.53 | M-v | 3 | MPC | 04217 | 2002 $RH_{83}$ |
| 2002 $RV_{83}$ | 15.9 | 0.15 | 20060922 | 326.31321 | 26.78096 | 3.17262 | 7.47747 | 0.2241844 | 2.5973215 | 113 | 5 | 1998–2006 | 0.59 | M-v | 2 | MPC | 04217 | 2002 $RV_{83}$ |
| 2002 $RB_{84}$ | 17.0 | 0.15 | 20060922 | 36.01574 | 51.07442 | 327.08276 | 2.57489 | 0.1820063 | 2.3204227 | 42 | 4 | 1993–2006 | 0.45 | M-v | 1 | MPC | 74210 | 2002 $RB_{84}$ |
| 2002 $RJ_{84}$ | 16.8 | 0.15 | 20060922 | 64.15680 | 331.71982 | 343.49067 | 4.32910 | 0.2035935 | 2.3788243 | 60 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 75563 | 2002 $RJ_{84}$ |
| 2002 $RB_{85}$ | 18.1 | 0.15 | 20060922 | 3.07550 | 348.20331 | 343.87978 | 5.24947 | 0.3378895 | 2.5750367 | 31 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03382 | 2002 $RB_{85}$ |
| 2002 $RC_{85}$ | 16.2 | 0.15 | 20060922 | 344.46618 | 186.83944 | 185.55474 | 8.21843 | 0.1796277 | 2.5644607 | 154 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04217 | 2002 $RC_{85}$ |
| 2002 $RE_{85}$ | 16.0 | 0.15 | 20060922 | 69.16769 | 352.92751 | 340.54468 | 2.84601 | 0.0663409 | 2.3402174 | 104 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 62403 | 2002 $RE_{85}$ |
| 2002 $RQ_{85}$ | 17.3 | 0.15 | 20060922 | 2.11092 | 229.79641 | 165.21287 | 1.79076 | 0.2129132 | 2.4182616 | 70 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 61298 | 2002 $RQ_{85}$ |
| 2002 $RW_{85}$ | 17.2 | 0.15 | 20060922 | 69.82267 | 196.49098 | 116.97483 | 1.25735 | 0.2354995 | 2.3541003 | 74 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75563 | 2002 $RW_{85}$ |
| 2002 $RE_{86}$ | 16.4 | 0.15 | 20060922 | 358.92076 | 26.58170 | 7.19846 | 5.53726 | 0.1662935 | 2.4301840 | 172 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04217 | 2002 $RE_{86}$ |
| 2002 $RS_{86}$ | 16.7 | 0.15 | 20060922 | 31.74119 | 45.41924 | 343.37133 | 4.51712 | 0.2456352 | 2.3249441 | 31 | 1 | 92 days | 0.49 | M-v | 4 | MPC | 41783 | 2002 $RS_{86}$ |
| 2002 $RA_{87}$ | 15.5 | 0.15 | 20060922 | 43.62528 | 186.01255 | 179.32763 | 6.48335 | 0.1686209 | 2.3343360 | 105 | 3 | 2000–2004 | 0.51 | M-v | 2 | MPC | 62403 | 2002 $RA_{87}$ |
| 2002 $RC_{87}$ | 16.6 | 0.15 | 20060922 | 59.61578 | 334.56593 | 358.90286 | 2.64555 | 0.2170887 | 2.3494547 | 73 | 5 | 1991–2006 | 0.53 | M-v | 1 | MPC | 75564 | 2002 $RC_{87}$ |
| 2002 $RH_{87}$ | 15.9 | 0.15 | 20060922 | 350.54287 | 173.29628 | 176.96973 | 17.47372 | 0.2544765 | 2.6039419 | 69 | 2 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03382 | 2002 $RH_{87}$ |
| 2002 $RP_{87}$ | 16.6 | 0.15 | 20060922 | 7.01726 | 242.11444 | 158.19893 | 4.76172 | 0.1377141 | 2.3746789 | 91 | 5 | 1998–2006 | 0.61 | M-v | 1 | MPC | 66281 | 2002 $RP_{87}$ |
| 2002 $RS_{87}$ | 15.5 | 0.15 | 20060922 | 305.15550 | 259.06181 | 180.04047 | 26.65441 | 0.3160127 | 2.5873171 | 95 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03382 | 2002 $RS_{87}$ |
| 2002 $RJ_{88}$ | 16.3 | 0.15 | 20060922 | 51.14540 | 147.48366 | 193.06273 | 1.55560 | 0.2011118 | 2.3737272 | 127 | 4 | 1991–2006 | 0.59 | M-v | 1 | MPC | 87545 | 2002 $RJ_{88}$ |
| 2002 $RS_{88}$ | 16.3 | 0.15 | 20060922 | 291.07776 | 128.14088 | 337.12255 | 6.82790 | 0.0713292 | 2.3443759 | 66 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 61300 | 2002 $RS_{88}$ |
| 2002 $RU_{88}$ | 16.0 | 0.15 | 20060922 | 119.32912 | 243.46451 | 322.49807 | 4.14570 | 0.0505356 | 2.6109394 | 56 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 04218 | 2002 $RU_{88}$ |
| 2002 $RF_{89}$ | 16.6 | 0.15 | 20060922 | 155.58059 | 263.97970 | 347.73165 | 3.22809 | 0.2044307 | 2.2045818 | 36 | 4 | 1998–2006 | 0.54 | M-v | 1 | MPC | 50644 | 2002 $RF_{89}$ |
| 2002 $RC_{90}$ | 17.3 | 0.15 | 20060922 | 17.10640 | 92.79351 | 293.34392 | 1.50219 | 0.2327920 | 2.3694898 | 52 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 61300 | 2002 $RC_{90}$ |
| 2002 $RH_{91}$ | 16.9 | 0.15 | 20060922 | 52.10997 | 334.09793 | 351.97113 | 4.70811 | 0.2413114 | 2.3882087 | 41 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 89322 | 2002 $RH_{91}$ |
| 2002 $RK_{91}$ | 17.2 | 0.15 | 20060922 | 58.44752 | 149.33604 | 192.14568 | 5.77112 | 0.1210865 | 2.3432817 | 61 | 3 | 2001–2004 | 0.61 | M-v | 3 | MPC | 48262 | 2002 $RK_{91}$ |
| 2002 $RL_{91}$ | 17.7 | 0.15 | 20060922 | 343.41366 | 135.95886 | 223.56675 | 1.21815 | 0.3010337 | 2.6052703 | 58 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 04218 | 2002 $RL_{91}$ |
| 2002 $RO_{91}$ | 16.6 | 0.15 | 20060922 | 5.15278 | 62.02195 | 338.90600 | 1.79843 | 0.1293642 | 2.3731189 | 91 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 66281 | 2002 $RO_{91}$ |
| 2002 $RV_{91}$ | 17.0 | 0.15 | 20060922 | 14.22444 | 321.23357 | 10.14569 | 7.25482 | 0.2555330 | 2.5468166 | 84 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04218 | 2002 $RV_{91}$ |
| 2002 $RX_{91}$ | 16.8 | 0.15 | 20060922 | 336.05053 | 27.31491 | 354.63112 | 3.27349 | 0.1996994 | 2.5845322 | 80 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 03382 | 2002 $RX_{91}$ |
| 2002 $RA_{92}$ | 16.4 | 0.15 | 20060922 | 331.81096 | 205.31201 | 169.30302 | 4.18401 | 0.1640746 | 2.5591054 | 75 | 4 | 1997–2006 | 0.48 | M-v | 2 | MPC | 03383 | 2002 $RA_{92}$ |
| 2002 $RO_{93}$ | 16.4 | 0.15 | 20060922 | 82.64296 | 45.73501 | 305.43564 | 6.18279 | 0.1900379 | 2.2112972 | 78 | 4 | 1994–2006 | 0.48 | M-v | 2 | MPC | 40969 | 2002 $RO_{93}$ |
| 2002 $RH_{94}$ | 16.7 | 0.15 | 20060922 | 83.36627 | 290.19855 | 11.42712 | 4.98429 | 0.2346136 | 2.3457279 | 52 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 89322 | 2002 $RH_{94}$ |
| 2002 $RJ_{94}$ | 17.0 | 0.15 | 20060922 | 22.75302 | 254.45862 | 151.94576 | 2.16799 | 0.2308138 | 2.3177274 | 74 | 3 | 2000–2004 | 0.54 | M-v | 2 | MPC | 48263 | 2002 $RJ_{94}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RN_{94}$ | 17.1 | 0.15 | 20060922 | 344.97087 | 219.20168 | 160.57541 | 4.45263 | 0.2261564 | 2.5509666 | 128 | 6 | 1996–2006 | 0.53 | M-v | 1 | MPC | 04218 | 2002 $RN_{94}$ |
| 2002 $RT_{94}$ | 15.9 | 0.15 | 20060922 | 12.01873 | 16.08597 | 17.89430 | 2.74145 | 0.2112058 | 2.3915570 | 160 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 62403 | 2002 $RT_{94}$ |
| 2002 $RD_{95}$ | 17.0 | 0.15 | 20060922 | 348.68198 | 348.04546 | 6.92403 | 3.95349 | 0.2560570 | 2.6082206 | 83 | 2 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03383 | 2002 $RD_{95}$ |
| 2002 $RL_{95}$ | 16.9 | 0.15 | 20060922 | 24.28942 | 175.36551 | 178.30641 | 3.30226 | 0.2343907 | 2.4475620 | 96 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04218 | 2002 $RL_{95}$ |
| 2002 $RW_{95}$ | 16.5 | 0.15 | 20060922 | 98.45995 | 76.12996 | 243.81015 | 0.82180 | 0.2211637 | 2.2475621 | 92 | 6 | 1998–2006 | 0.40 | M-v | 1 | MPC | 97616 | 2002 $RW_{95}$ |
| 2002 $RZ_{95}$ | 16.6 | 0.15 | 20060922 | 65.37822 | 329.98113 | 351.55428 | 6.89347 | 0.1192579 | 2.4006760 | 69 | 4 | 1998–2006 | 0.43 | M-v | 2 | MPC | 85599 | 2002 $RZ_{95}$ |
| 2002 $RY_{96}$ | 16.6 | 0.15 | 20060922 | 70.54670 | 158.96526 | 176.13317 | 7.12429 | 0.1326568 | 2.3317177 | 69 | 5 | 1977–2006 | 0.48 | M-v | 2 | MPC | 62403 | 2002 $RY_{96}$ |
| 2002 $RE_{97}$ | 16.7 | 0.15 | 20060922 | 358.86163 | 340.10047 | 6.50981 | 5.37259 | 0.2620506 | 2.5854322 | 108 | 2 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03383 | 2002 $RE_{97}$ |
| 2002 $RZ_{97}$ | 16.5 | 0.15 | 20060922 | 333.07445 | 31.78113 | 1.62020 | 12.78195 | 0.2800703 | 2.5912823 | 62 | 2 | 2002–2006 | 0.45 | M-v | 2 | MPC | 03383 | 2002 $RZ_{97}$ |
| 2002 $RM_{98}$ | 15.9 | 0.15 | 20060922 | 8.34597 | 304.03915 | 11.35528 | 12.95779 | 0.2703959 | 2.6397480 | 71 | 2 | 2002–2006 | 0.41 | M-v | 2 | MPC | 03384 | 2002 $RM_{98}$ |
| 2002 $RW_{98}$ | 16.1 | 0.15 | 20060922 | 328.76014 | 358.42064 | 5.60193 | 11.10312 | 0.3914215 | 2.6754084 | 77 | 1 | 141 days | 0.50 | M-v | 3 | MPC | 41784 | 2002 $RW_{98}$ |
| 2002 $RC_{99}$ | 16.4 | 0.15 | 20060922 | 346.17235 | 166.25547 | 179.12991 | 7.49982 | 0.3074761 | 2.6525901 | 75 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 75571 | 2002 $RC_{99}$ |
| 2002 $RU_{99}$ | 16.2 | 0.15 | 20060922 | 47.42737 | 4.54991 | 21.77360 | 6.13005 | 0.1702900 | 2.2850705 | 108 | 3 | 1997–2004 | 0.50 | M-v | 2 | MPC | 61304 | 2002 $RU_{99}$ |
| 2002 $RO_{100}$ | 16.3 | 0.15 | 20060922 | 344.77429 | 12.69639 | 355.16701 | 4.64821 | 0.2376909 | 2.6196078 | 107 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 03384 | 2002 $RO_{100}$ |
| 2002 $RT_{100}$ | 16.5 | 0.15 | 20060922 | 57.69310 | 307.01184 | 64.06186 | 1.46833 | 0.2449050 | 2.2925809 | 103 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 62403 | 2002 $RT_{100}$ |
| 2002 $RZ_{100}$ | 16.2 | 0.15 | 20060922 | 45.49744 | 4.64612 | 1.22808 | 2.30395 | 0.2171182 | 2.3579622 | 97 | 4 | 1991–2006 | 0.57 | M-v | 2 | MPC | 61306 | 2002 $RZ_{100}$ |
| 2002 $RT_{101}$ | 16.2 | 0.15 | 20060922 | 52.59355 | 210.16994 | 163.53856 | 2.97173 | 0.2427873 | 2.3153868 | 103 | 6 | 1995–2006 | 0.53 | M-v | 2 | MPC | 62403 | 2002 $RT_{101}$ |
| 2002 $RU_{101}$ | 16.5 | 0.15 | 20060922 | 58.11059 | 311.96598 | 39.57929 | 3.59753 | 0.2611680 | 2.3423437 | 103 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87545 | 2002 $RU_{101}$ |
| 2002 $RX_{101}$ | 17.2 | 0.15 | 20060922 | 61.71290 | 15.69346 | 319.02667 | 1.79907 | 0.2410008 | 2.3835785 | 66 | 5 | 1991–2006 | 0.55 | M-v | 1 | MPC | 62403 | 2002 $RX_{101}$ |
| 2002 $RA_{102}$ | 15.5 | 0.15 | 20060922 | 72.52576 | 5.48534 | 346.55868 | 2.94902 | 0.2188899 | 2.3020013 | 103 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 62403 | 2002 $RA_{102}$ |
| 2002 $RQ_{102}$ | 15.3 | 0.15 | 20060922 | 343.23251 | 151.30318 | 210.76105 | 10.97396 | 0.1748383 | 2.7107359 | 115 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04218 | 2002 $RQ_{102}$ |
| 2002 $RB_{103}$ | 16.9 | 0.15 | 20060922 | 5.74889 | 9.88911 | 29.11751 | 2.00960 | 0.1708318 | 2.3988734 | 85 | 4 | 2001–2006 | 0.42 | M-v | 2 | MPC | 61309 | 2002 $RB_{103}$ |
| 2002 $RL_{103}$ | 16.2 | 0.15 | 20060922 | 340.38190 | 196.81955 | 176.10766 | 7.35820 | 0.0956598 | 2.6030706 | 109 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 04218 | 2002 $RL_{103}$ |
| 2002 $RN_{103}$ | 15.7 | 0.15 | 20060922 | 269.05285 | 59.98535 | 0.81440 | 8.58037 | 0.1457266 | 2.8103489 | 68 | 3 | 1995–2004 | 0.52 | M-v | 2 | MPC | 61309 | 2002 $RN_{103}$ |
| 2002 $RW_{103}$ | 15.9 | 0.15 | 20060922 | 34.93314 | 286.66437 | 7.31399 | 11.99286 | 0.2814821 | 2.6023816 | 97 | 2 | 2002–2006 | 0.53 | M-v | 3 | MPC | 03384 | 2002 $RW_{103}$ |
| 2002 $RE_{104}$ | 16.2 | 0.15 | 20060922 | 352.55659 | 336.57497 | 31.51186 | 5.30003 | 0.2747297 | 2.5758974 | 179 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04218 | 2002 $RE_{104}$ |
| 2002 $RJ_{104}$ | 16.4 | 0.15 | 20060922 | 55.56367 | 353.43331 | 4.73277 | 2.62770 | 0.2434519 | 2.3355170 | 70 | 4 | 1977–2006 | 0.45 | M-v | 3 | MPC | 41785 | 2002 $RJ_{104}$ |
| 2002 $RT_{104}$ | 14.7 | 0.15 | 20060922 | 299.86363 | 289.84460 | 33.17876 | 16.54255 | 0.2637540 | 3.1410926 | 79 | 3 | 1995–2006 | 0.59 | M-v | 2 | MPC | 00344 | 2002 $RT_{104}$ |
| 2002 $RW_{104}$ | 16.6 | 0.15 | 20060922 | 48.94474 | 271.39747 | 89.30330 | 2.68735 | 0.2054006 | 2.3782001 | 95 | 5 | 1991–2006 | 0.55 | M-v | 1 | MPC | 62403 | 2002 $RW_{104}$ |
| 2002 $RY_{104}$ | 15.4 | 0.15 | 20060922 | 269.75570 | 187.92715 | 195.51737 | 9.64207 | 0.2144052 | 3.0858959 | 60 | 5 | 1991–2005 | 0.48 | M-v | 1 | MPC | 04218 | 2002 $RY_{104}$ |
| 2002 $RB_{105}$ | 16.4 | 0.15 | 20060922 | 63.97801 | 306.23335 | 39.90618 | 1.63228 | 0.2463092 | 2.3555857 | 97 | 5 | 1991–2006 | 0.56 | M-v | 2 | MPC | 89322 | 2002 $RB_{105}$ |
| 2002 $RH_{105}$ | 16.9 | 0.15 | 20060922 | 16.28071 | 30.24824 | 14.89964 | 5.98534 | 0.2236888 | 2.3673589 | 79 | 4 | 1991–2006 | 0.44 | M-v | 2 | MPC | 03385 | 2002 $RH_{105}$ |
| 2002 $RJ_{105}$ | 16.5 | 0.15 | 20060922 | 346.88045 | 348.21954 | 6.90135 | 7.84451 | 0.3837648 | 2.6194793 | 69 | 2 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03385 | 2002 $RJ_{105}$ |
| 2002 $RY_{106}$ | 15.1 | 0.15 | 20060922 | 79.09510 | 110.82673 | 237.59029 | 4.34200 | 0.2807288 | 2.3061990 | 117 | 5 | 2000–2006 | 0.42 | M-v | 1 | MPC | 87545 | 2002 $RY_{106}$ |
| 2002 $RK_{107}$ | 14.6 | 0.15 | 20060922 | 11.94784 | 171.12644 | 221.78210 | 12.62446 | 0.1916534 | 2.5265814 | 111 | 5 | 1998–2006 | 0.61 | M-v | 2 | MPC | 62404 | 2002 $RK_{107}$ |
| 2002 $RV_{108}$ | 16.8 | 0.15 | 20060922 | 109.98518 | 102.45010 | 186.41959 | 4.85085 | 0.1543171 | 2.2816018 | 72 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87545 | 2002 $RV_{108}$ |
| 2002 $RK_{109}$ | 16.1 | 0.15 | 20060922 | 297.05991 | 238.39160 | 174.57746 | 14.86351 | 0.0843807 | 2.5591273 | 60 | 4 | 1998–2006 | 0.45 | M-v | 1 | MPC | 04218 | 2002 $RK_{109}$ |
| 2002 $RY_{109}$ | 16.5 | 0.15 | 20060922 | 353.94481 | 69.27171 | 329.05651 | 8.59979 | 0.2245710 | 2.4385275 | 45 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 50645 | 2002 $RY_{109}$ |
| 2002 $RM_{110}$ | 15.9 | 0.15 | 20060922 | 111.38345 | 342.54845 | 307.17222 | 4.03351 | 0.1735836 | 2.2853009 | 44 | 5 | 1998–2006 | 0.66 | M-v | 2 | MPC | 56554 | 2002 $RM_{110}$ |
| 2002 $RS_{110}$ | 16.7 | 0.15 | 20060922 | 78.89207 | 239.76226 | 132.66646 | 5.41076 | 0.1371401 | 2.1825809 | 64 | 4 | 1999–2005 | 0.49 | M-v | 2 | MPC | 90160 | 2002 $RS_{110}$ |
| 2002 $RY_{110}$ | 17.3 | 0.15 | 20060922 | 125.12829 | 86.36222 | 238.86695 | 3.38968 | 0.1646875 | 2.1443684 | 70 | 4 | 1999–2005 | 0.53 | M-v | 2 | MPC | 90160 | 2002 $RY_{110}$ |
| 2002 $RA_{111}$ | 16.0 | 0.15 | 20060922 | 1.65287 | 295.74853 | 4.96314 | 9.95897 | 0.2666335 | 2.7262541 | 47 | 3 | 2001–2004 | 0.63 | M-v | 3 | MPC | 77640 | 2002 $RA_{111}$ |
| 2002 $RZ_{112}$ | 14.7 | 0.15 | 20060922 | 284.39361 | 39.42394 | 277.78142 | 13.65586 | 0.0906194 | 3.2078659 | 57 | 4 | 2002–2006 | 0.60 | M-v | 2 | MPC | 02125 | 2002 $RZ_{112}$ |
| 2002 $RA_{113}$ | 16.5 | 0.15 | 20060922 | 72.44913 | 306.25825 | 61.47191 | 5.30310 | 0.2389824 | 2.2817201 | 100 | 3 | 2001–2004 | 0.54 | M-v | 2 | MPC | 40983 | 2002 $RA_{113}$ |
| 2002 $RF_{113}$ | 15.7 | 0.15 | 20060922 | 256.33812 | 241.95553 | 141.54768 | 2.96314 | 0.0732580 | 2.9061986 | 32 | 6 | 1995–2005 | 0.49 | M-v | 1 | MPC | 75576 | 2002 $RF_{113}$ |
| 2002 $RG_{113}$ | 17.2 | 0.15 | 20060922 | 350.78616 | 216.79186 | 143.07216 | 2.74723 | 0.1922043 | 2.5214478 | 57 | 3 | 1994–2006 | 0.53 | M-v | 3 | MPC | 03385 | 2002 $RG_{113}$ |
| 2002 $RF_{114}$ | 16.8 | 0.15 | 20060922 | 353.90951 | 215.00578 | 134.03943 | 4.57075 | 0.2757784 | 2.5801710 | 80 | 4 | 1973–2006 | 0.62 | M-v | 1 | MPC | 04218 | 2002 $RF_{114}$ |
| 2002 $RN_{114}$ | 15.5 | 0.15 | 20060922 | 3.55865 | 152.89235 | 172.92962 | 13.46195 | 0.1860037 | 2.6522211 | 74 | 3 | 2002–2006 | 0.61 | M-v | 2 | MPC | 04218 | 2002 $RN_{114}$ |
| 2002 $RS_{114}$ | 16.9 | 0.15 | 20060922 | 310.69292 | 319.23775 | 88.79730 | 5.49093 | 0.1364350 | 2.5758767 | 43 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 04218 | 2002 $RS_{114}$ |
| 2002 $RV_{114}$ | 16.5 | 0.15 | 20060922 | 45.80941 | 80.14810 | 223.45453 | 5.40930 | 0.1534617 | 2.4198996 | 75 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 75578 | 2002 $RV_{114}$ |
| 2002 $RA_{115}$ | 16.7 | 0.15 | 20060922 | 346.34432 | 184.12833 | 213.96255 | 5.27267 | 0.1569676 | 2.4174368 | 95 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04218 | 2002 $RA_{115}$ |
| 2002 $RP_{115}$ | 17.0 | 0.15 | 20060922 | 78.48889 | 196.32486 | 113.37900 | 4.56784 | 0.1382873 | 2.3108761 | 64 | 5 | 1998–2006 | 0.44 | M-v | 0 | MPC | 87545 | 2002 $RP_{115}$ |
| 2002 $RU_{115}$ | 17.0 | 0.15 | 20060922 | 357.01041 | 80.67022 | 320.21049 | 9.47483 | 0.2504121 | 2.3958670 | 44 | 3 | 2000–2006 | 0.56 | M-v | 2 | MPC | 48264 | 2002 $RU_{115}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RV_{115}$ | 16.9 | 0.15 | 20060922 | 299.01743 | 69.81573 | 274.19189 | 5.08309 | 0.2595342 | 2.8736397 | 26 | 1 | 72 days | 0.60 | M-v | 3 | MPC | 48264 | 2002 $RV_{115}$ |
| 2002 $RX_{115}$ | 17.0 | 0.15 | 20060922 | 106.67612 | 331.05679 | 294.43087 | 5.58487 | 0.1023126 | 2.3757420 | 34 | 3 | 1997–2006 | 0.48 | M-v | 3 | MPC | 48264 | 2002 $RX_{115}$ |
| 2002 $RB_{116}$ | 16.2 | 0.15 | 20060922 | 103.33626 | 193.33143 | 84.63724 | 3.49608 | 0.2116306 | 2.3356781 | 105 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 75578 | 2002 $RB_{116}$ |
| 2002 $RC_{116}$ | 17.4 | 0.15 | 20060922 | 334.42029 | 201.46435 | 112.89944 | 2.94217 | 0.3021036 | 2.7518847 | 22 | 3 | 2002–2006 | 0.23 | M-v | 3 | MPC | 03386 | 2002 $RC_{116}$ |
| 2002 $RM_{116}$ | 16.3 | 0.15 | 20060922 | 246.60888 | 146.73914 | 242.32778 | 1.38291 | 0.1680649 | 2.9937355 | 37 | 6 | 1997–2005 | 0.45 | M-v | 0 | MPC | 75579 | 2002 $RM_{116}$ |
| 2002 $RL_{117}$ | 16.6 | 0.15 | 20060922 | 60.47649 | 286.64274 | 37.79860 | 6.82560 | 0.1905574 | 2.3727207 | 86 | 5 | 1997–2006 | 0.47 | M-v | 0 | MPC | 75579 | 2002 $RL_{117}$ |
| 2002 $RO_{117}$ | 16.0 | 0.15 | 20060922 | 320.35516 | 1.01034 | 31.22849 | 10.07615 | 0.1322781 | 2.6046798 | 63 | 4 | 1998–2006 | 0.71 | M-v | 2 | MPC | 04218 | 2002 $RO_{117}$ |
| 2002 $RP_{117}$ | 16.6 | 0.15 | 20060922 | 346.21299 | 347.75551 | 21.71101 | 3.82156 | 0.2440243 | 2.5819463 | 130 | 2 | 2002–2006 | 0.44 | M-v | 2 | MPC | 03386 | 2002 $RP_{117}$ |
| 2002 $RB_{118}$ | 15.7 | 0.15 | 20060922 | 40.26530 | 66.06163 | 277.86772 | 4.51668 | 0.2726284 | 2.3826981 | 126 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 04219 | 2002 $RB_{118}$ |
| 2002 $RD_{118}$ | 16.0 | 0.15 | 20060922 | 44.40854 | 336.48696 | 33.40438 | 6.21946 | 0.2666743 | 2.3139741 | 97 | 5 | 1981–2004 | 0.55 | M-v | 1 | MPC | 62404 | 2002 $RD_{118}$ |
| 2002 $RH_{118}$ | 16.3 | 0.15 | 20060922 | 359.72523 | 193.45335 | 182.15950 | 5.27968 | 0.3461343 | 2.5680136 | 150 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04219 | 2002 $RH_{118}$ |
| 2002 $RP_{118}$ | 17.2 | 0.15 | 20060922 | 48.66206 | 297.04798 | 91.34662 | 4.68820 | 0.1307946 | 2.2155789 | 59 | 6 | 1999–2006 | 0.57 | M-v | 1 | MPC | 87545 | 2002 $RP_{118}$ |
| 2002 $RS_{119}$ | 15.9 | 0.15 | 20060922 | 47.19827 | 336.66758 | 37.96751 | 6.79016 | 0.1226626 | 2.2887293 | 61 | 4 | 1999–2004 | 0.63 | M-v | 2 | MPC | 61318 | 2002 $RS_{119}$ |
| 2002 $RO_{120}$ | 16.0 | 0.15 | 20060922 | 19.05811 | 173.90601 | 151.07547 | 14.99723 | 0.1141429 | 2.5420761 | 95 | 5 | 1998–2006 | 0.60 | M-v | 2 | MPC | 03386 | 2002 $RO_{120}$ |
| 2002 $RG_{121}$ | 16.1 | 0.15 | 20060922 | 72.80532 | 14.10365 | 309.06450 | 6.30749 | 0.1339572 | 2.3568585 | 60 | 6 | 1991–2006 | 0.57 | M-v | 1 | MPC | 87545 | 2002 $RG_{121}$ |
| 2002 $RJ_{121}$ | 15.8 | 0.15 | 20060922 | 41.66958 | 120.05827 | 259.34533 | 6.25975 | 0.1139295 | 2.3101850 | 71 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 62404 | 2002 $RJ_{121}$ |
| 2002 $RC_{122}$ | 14.8 | 0.15 | 20060922 | 235.60054 | 345.21269 | 56.60345 | 11.38146 | 0.0730137 | 3.0120940 | 51 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 56560 | 2002 $RC_{122}$ |
| 2002 $RR_{122}$ | 16.7 | 0.15 | 20060922 | 71.49298 | 284.09894 | 78.56908 | 7.36290 | 0.1948484 | 2.2228745 | 70 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 57892 | 2002 $RR_{122}$ |
| 2002 $RU_{122}$ | 16.6 | 0.15 | 20060922 | 10.21734 | 219.85622 | 96.37502 | 9.32495 | 0.1952240 | 2.6102048 | 35 | 3 | 1998–2006 | 0.36 | M-v | 3 | MPC | 03386 | 2002 $RU_{122}$ |
| 2002 $RV_{122}$ | 16.1 | 0.15 | 20060922 | 304.82528 | 260.29723 | 115.77243 | 9.76450 | 0.1680736 | 2.7403221 | 42 | 3 | 2001–2004 | 0.46 | M-v | 2 | MPC | 56561 | 2002 $RV_{122}$ |
| 2002 $RU_{124}$ | 16.5 | 0.15 | 20060922 | 124.19521 | 203.28940 | 96.72301 | 8.06740 | 0.2084497 | 2.1718305 | 41 | 5 | 1999–2006 | 0.51 | M-v | 2 | MPC | 94839 | 2002 $RU_{124}$ |
| 2002 $RW_{124}$ | 14.7 | 0.15 | 20060922 | 0.71608 | 225.03997 | 90.46892 | 6.83334 | 0.2590585 | 2.6206084 | 50 | 4 | 1993–2006 | 0.49 | M-v | 1 | MPC | 03387 | 2002 $RW_{124}$ |
| 2002 $RC_{125}$ | 16.7 | 0.15 | 20060922 | 354.57432 | 103.87772 | 253.58583 | 4.25345 | 0.2746962 | 2.5529619 | 94 | 3 | 1998–2006 | 0.48 | M-v | 3 | MPC | 03387 | 2002 $RC_{125}$ |
| 2002 $RE_{125}$ | 18.2 | 0.15 | 20060922 | 329.52398 | 7.31230 | 34.24140 | 6.50066 | 0.3658232 | 2.5801902 | 54 | 3 | 1998–2006 | 0.58 | M-v | 2 | MPC | 03387 | 2002 $RE_{125}$ |
| 2002 $RD_{126}$ | 16.4 | 0.15 | 20060922 | 68.47740 | 248.39462 | 101.42760 | 6.58056 | 0.1462913 | 2.2880233 | 51 | 4 | 1997–2006 | 0.52 | M-v | 2 | MPC | 61319 | 2002 $RD_{126}$ |
| 2002 $RU_{126}$ | 17.1 | 0.15 | 20060922 | 36.63099 | 225.83007 | 104.18368 | 5.91317 | 0.2394682 | 2.3965382 | 51 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 89323 | 2002 $RU_{126}$ |
| 2002 $RW_{126}$ | 16.8 | 0.15 | 20060922 | 8.54202 | 284.16884 | 98.71030 | 5.93322 | 0.2520955 | 2.3832074 | 82 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 03388 | 2002 $RW_{126}$ |
| 2002 $RT_{127}$ | 16.1 | 0.15 | 20060922 | 56.79389 | 58.08082 | 212.36858 | 13.51727 | 0.1202891 | 2.5323327 | 33 | 3 | 2002–2006 | 0.62 | M-v | 2 | MPC | 04219 | 2002 $RT_{127}$ |
| 2002 $RK_{129}$ | 15.1 | 0.15 | 20060922 | 355.53117 | 110.60477 | 218.10781 | 11.56537 | 0.2699151 | 2.6268824 | 69 | 3 | 1998–2006 | 0.61 | M-v | 2 | MPC | 02126 | 2002 $RK_{129}$ |
| 2002 $RN_{129}$ | 18.8 | 0.15 | 20060922 | 264.60319 | 198.52362 | 332.17918 | 23.12614 | 0.3697862 | 1.1620650 | 63 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 50120 | 2002 $RN_{129}$ |
| 2002 $RR_{129}$ | 22.2 | 0.15 | 20020903 | 358.67150 | 20.41008 | 328.29485 | 11.66187 | 0.5631406 | 3.1916291 | 24 | 1 | 16 days | 0.68 | | | MPC | | 2002 $RR_{129}$ |
| 2002 $RR_{130}$ | 16.0 | 0.15 | 20060922 | 302.45219 | 101.38081 | 328.68333 | 12.39384 | 0.1663451 | 2.5518382 | 76 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04219 | 2002 $RR_{130}$ |
| 2002 $RD_{132}$ | 16.5 | 0.15 | 20060922 | 102.72457 | 10.91714 | 283.29304 | 6.23563 | 0.0994066 | 2.3195252 | 60 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 85603 | 2002 $RD_{132}$ |
| 2002 $RN_{132}$ | 15.2 | 0.15 | 20060922 | 21.85590 | 322.56818 | 327.25629 | 12.50878 | 0.1909001 | 2.6713792 | 75 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04219 | 2002 $RN_{132}$ |
| 2002 $RE_{133}$ | 14.9 | 0.15 | 20060922 | 251.53905 | 243.94431 | 132.14617 | 12.73523 | 0.2077250 | 3.1273276 | 41 | 3 | 2002–2006 | 0.63 | M-v | 3 | MPC | 56567 | 2002 $RE_{133}$ |
| 2002 $RK_{134}$ | 16.7 | 0.15 | 20060922 | 39.87095 | 211.49466 | 109.27866 | 8.35023 | 0.2272928 | 2.4494835 | 52 | 5 | 1998–2006 | 0.45 | M-v | 2 | MPC | 57892 | 2002 $RK_{134}$ |
| 2002 $RP_{134}$ | 17.0 | 0.15 | 20060922 | 49.25175 | 254.70720 | 61.97130 | 6.90821 | 0.3479400 | 2.3939443 | 59 | 4 | 1994–2006 | 0.33 | M-v | 1 | MPC | 50648 | 2002 $RP_{134}$ |
| 2002 $RA_{135}$ | 15.7 | 0.15 | 20060922 | 9.72533 | 31.30712 | 20.37475 | 7.34808 | 0.0866344 | 2.2700009 | 70 | 4 | 1999–2006 | 0.67 | M-v | 1 | MPC | 97616 | 2002 $RA_{135}$ |
| 2002 $RF_{135}$ | 16.2 | 0.15 | 20060922 | 77.29019 | 132.15745 | 134.25983 | 7.72142 | 0.1479288 | 2.4845791 | 71 | 5 | 1998–2006 | 0.76 | M-v | 1 | MPC | 97616 | 2002 $RF_{135}$ |
| 2002 $RJ_{135}$ | 16.3 | 0.15 | 20060922 | 44.77185 | 132.01244 | 147.56323 | 13.20640 | 0.1437655 | 2.5844933 | 45 | 4 | 1997–2006 | 0.60 | M-v | 1 | MPC | 04219 | 2002 $RJ_{135}$ |
| 2002 $RO_{135}$ | 15.8 | 0.15 | 20060922 | 13.93421 | 275.25582 | 11.48542 | 28.20941 | 0.3518989 | 2.6262750 | 46 | 2 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03388 | 2002 $RO_{135}$ |
| 2002 $RP_{135}$ | 14.8 | 0.15 | 20060922 | 236.58339 | 332.49170 | 73.66784 | 11.51957 | 0.1989494 | 3.0632201 | 37 | 3 | 1997–2004 | 0.67 | M-v | 2 | MPC | 89324 | 2002 $RP_{135}$ |
| 2002 $RY_{135}$ | 16.4 | 0.15 | 20060922 | 120.02878 | 185.96656 | 98.05860 | 6.55154 | 0.1885365 | 2.2392133 | 38 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 85604 | 2002 $RY_{135}$ |
| 2002 $RD_{136}$ | 17.0 | 0.15 | 20060922 | 13.27381 | 206.89084 | 120.98713 | 6.54203 | 0.2610848 | 2.5275925 | 42 | 2 | 2002–2006 | 0.66 | M-v | 4 | MPC | 03388 | 2002 $RD_{136}$ |
| 2002 $RJ_{136}$ | 15.7 | 0.15 | 20060922 | 132.63774 | 199.48678 | 79.99820 | 6.11887 | 0.1722873 | 2.2164479 | 70 | 5 | 1998–2004 | 0.67 | M-v | 1 | MPC | 62405 | 2002 $RJ_{136}$ |
| 2002 $RN_{136}$ | 15.0 | 0.15 | 20060922 | 300.71536 | 188.47867 | 136.45127 | 11.11705 | 0.1011522 | 3.0071890 | 58 | 6 | 1997–2006 | 0.79 | M-v | 1 | MPC | 02126 | 2002 $RN_{136}$ |
| 2002 $RT_{136}$ | 16.4 | 0.15 | 20060922 | 16.33825 | 285.69734 | 118.48403 | 8.05599 | 0.1499620 | 2.2979779 | 41 | 3 | 2000–2004 | 0.55 | M-v | 2 | MPC | 62405 | 2002 $RT_{136}$ |
| 2002 $RC_{137}$ | 16.2 | 0.15 | 20060922 | 114.84888 | 11.15639 | 293.69719 | 4.65871 | 0.2427993 | 2.2464727 | 63 | 4 | 2001–2006 | 0.57 | M-v | 3 | MPC | 61321 | 2002 $RC_{137}$ |
| 2002 $RE_{137}$ | 16.6 | 0.15 | 20060922 | 356.75310 | 12.65908 | 320.30750 | 12.75751 | 0.1752728 | 2.5924447 | 80 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 04219 | 2002 $RE_{137}$ |
| 2002 $RF_{137}$ | 16.7 | 0.15 | 20060922 | 64.37435 | 137.78401 | 209.85927 | 3.84733 | 0.1707274 | 2.2811467 | 88 | 4 | 2000–2005 | 0.60 | M-v | 2 | MPC | 74212 | 2002 $RF_{137}$ |
| 2002 $RP_{138}$ | 15.0 | 0.15 | 20060922 | 203.71921 | 337.19468 | 100.59245 | 13.06692 | 0.0231483 | 2.9336243 | 36 | 4 | 2000–2005 | 0.58 | M-v | 1 | MPC | 69388 | 2002 $RP_{138}$ |
| 2002 $RR_{138}$ | 16.3 | 0.15 | 20060922 | 12.31186 | 170.09500 | 128.27123 | 14.43878 | 0.1558438 | 2.6670364 | 31 | 3 | 1997–2006 | 0.52 | M-v | 2 | MPC | 03389 | 2002 $RR_{138}$ |
| 2002 $RB_{139}$ | 15.7 | 0.15 | 20060922 | 305.36829 | 349.72327 | 71.90863 | 10.17535 | 0.1189508 | 2.5339697 | 44 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 85605 | 2002 $RB_{139}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RH_{139}$ | 16.3 | 0.15 | 20060922 | 95.96448 | 199.67777 | 91.18359 | 6.58140 | 0.1825221 | 2.3044932 | 81 | 5 | 1992–2006 | 0.56 | M-v | 1 | MPC | 04219 | 2002 $RH_{139}$ |
| 2002 $RQ_{139}$ | 16.2 | 0.15 | 20060922 | 345.19256 | 299.76640 | 76.18513 | 11.26774 | 0.1709994 | 2.5290499 | 66 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04219 | 2002 $RQ_{139}$ |
| 2002 $RT_{139}$ | 16.6 | 0.15 | 20060922 | 343.67742 | 324.71783 | 48.54160 | 11.62859 | 0.2185838 | 2.5511265 | 36 | 4 | 1998–2006 | 0.53 | M-v | 3 | MPC | 04219 | 2002 $RT_{139}$ |
| 2002 $RD_{140}$ | 16.1 | 0.15 | 20060922 | 12.56498 | 243.95112 | 58.67091 | 13.64331 | 0.1800268 | 2.6596422 | 32 | 2 | 2002–2006 | 0.43 | M-v | 3 | MPC | 03389 | 2002 $RD_{140}$ |
| 2002 $RG_{140}$ | 16.2 | 0.15 | 20060922 | 63.14626 | 181.62593 | 108.97194 | 6.61759 | 0.1756735 | 2.4418021 | 72 | 3 | 2002–2006 | 0.65 | M-v | 2 | MPC | 75585 | 2002 $RG_{140}$ |
| 2002 $RR_{140}$ | 16.7 | 0.15 | 20060922 | 69.70299 | 208.37997 | 99.02009 | 7.44425 | 0.1781182 | 2.3683347 | 31 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 89324 | 2002 $RR_{140}$ |
| 2002 $RA_{141}$ | 16.9 | 0.15 | 20060922 | 43.45204 | 283.13669 | 77.73558 | 6.28568 | 0.1672757 | 2.3311005 | 57 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 89324 | 2002 $RA_{141}$ |
| 2002 $RB_{141}$ | 15.4 | 0.15 | 20060922 | 290.44351 | 33.23921 | 33.32068 | 15.72517 | 0.0972103 | 2.5715988 | 51 | 3 | 2002–2006 | 0.54 | M-v | 1 | MPC | 04219 | 2002 $RB_{141}$ |
| 2002 $RF_{141}$ | 16.4 | 0.15 | 20060922 | 338.18617 | 230.58278 | 149.42005 | 16.29470 | 0.2169842 | 2.5651907 | 97 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 04219 | 2002 $RF_{141}$ |
| 2002 $RP_{141}$ | 16.4 | 0.15 | 20060922 | 111.55618 | 342.31867 | 296.56254 | 6.25437 | 0.1083194 | 2.3249782 | 40 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87545 | 2002 $RP_{141}$ |
| 2002 $RR_{141}$ | 16.5 | 0.15 | 20060922 | 313.58155 | 281.99377 | 132.81986 | 3.40463 | 0.2268874 | 2.5485524 | 54 | 3 | 1998–2006 | 0.61 | M-v | 3 | MPC | 04219 | 2002 $RR_{141}$ |
| 2002 $RS_{141}$ | 17.9 | 0.15 | 20060922 | 53.31801 | 122.74607 | 255.93823 | 2.31655 | 0.2790808 | 2.2542362 | 57 | 1 | 72 days | 0.57 | M-v | 4 | MPC | 48266 | 2002 $RS_{141}$ |
| 2002 $RW_{141}$ | 16.7 | 0.15 | 20060922 | 354.59508 | 140.91759 | 195.01145 | 14.42883 | 0.1326441 | 2.6211748 | 36 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 04219 | 2002 $RW_{141}$ |
| 2002 $RA_{142}$ | 16.5 | 0.15 | 20060922 | 264.66032 | 142.03207 | 295.55018 | 4.60346 | 0.0717536 | 2.6148081 | 58 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04219 | 2002 $RA_{142}$ |
| 2002 $RD_{142}$ | 16.8 | 0.15 | 20060922 | 353.83824 | 69.50477 | 267.01957 | 3.62952 | 0.1219875 | 2.6164291 | 59 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03389 | 2002 $RD_{142}$ |
| 2002 $RG_{142}$ | 16.8 | 0.15 | 20060922 | 304.20709 | 183.16373 | 219.87501 | 4.85867 | 0.1313492 | 2.6045499 | 37 | 3 | 2002–2006 | 0.44 | M-v | 4 | MPC | 04219 | 2002 $RG_{142}$ |
| 2002 $RZ_{142}$ | 16.4 | 0.15 | 20060922 | 51.07020 | 18.96532 | 235.51052 | 4.27516 | 0.2262292 | 2.6377997 | 39 | 2 | 2002–2006 | 0.39 | M-v | 3 | MPC | 03389 | 2002 $RZ_{142}$ |
| 2002 $RU_{143}$ | 17.4 | 0.15 | 20020903 | 23.24311 | 117.51602 | 202.23752 | 6.61243 | 0.1375007 | 2.2974011 | 15 | 1 | 21 days | 0.21 | | | MPC | | 2002 $RU_{143}$ |
| 2002 $RA_{144}$ | 16.8 | 0.15 | 20060922 | 339.68654 | 118.59934 | 301.73415 | 4.10363 | 0.1386445 | 2.3923700 | 74 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 37900 | 2002 $RA_{144}$ |
| 2002 $RQ_{144}$ | 16.1 | 0.15 | 20060922 | 253.29248 | 109.92913 | 267.05309 | 3.83214 | 0.0894043 | 3.0603922 | 24 | 3 | 2002–2005 | 0.52 | M-v | 3 | MPC | 65362 | 2002 $RQ_{144}$ |
| 2002 $RE_{145}$ | 15.5 | 0.15 | 20060922 | 180.23045 | 183.20683 | 0.31079 | 8.67836 | 0.1200333 | 2.4776512 | 96 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 56573 | 2002 $RE_{145}$ |
| 2002 $RX_{145}$ | 16.7 | 0.15 | 20060922 | 3.34890 | 304.45171 | 111.52975 | 2.40183 | 0.1955985 | 2.3298913 | 33 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 50650 | 2002 $RX_{145}$ |
| 2002 $RA_{147}$ | 18.3 | 0.15 | 20060922 | 36.76338 | 142.02759 | 185.24025 | 1.23122 | 0.1926340 | 2.4467015 | 34 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 85607 | 2002 $RA_{147}$ |
| 2002 $RE_{147}$ | 17.6 | 0.15 | 20060922 | 12.86690 | 347.06262 | 352.09139 | 4.82027 | 0.1833263 | 2.5183898 | 66 | 4 | 1994–2006 | 0.52 | M-v | 2 | MPC | 04219 | 2002 $RE_{147}$ |
| 2002 $RP_{147}$ | 16.9 | 0.15 | 20060922 | 23.10087 | 244.82969 | 131.13896 | 1.74262 | 0.0843142 | 2.3534460 | 64 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 61323 | 2002 $RP_{147}$ |
| 2002 $RZ_{147}$ | 17.0 | 0.15 | 20060922 | 137.96598 | 269.36351 | 4.10574 | 5.07510 | 0.1332114 | 2.2427492 | 34 | 4 | 1998–2006 | 0.62 | M-v | 2 | MPC | 89325 | 2002 $RZ_{147}$ |
| 2002 $RB_{148}$ | 17.5 | 0.15 | 20060922 | 95.60136 | 107.99952 | 183.28414 | 1.93674 | 0.2112716 | 2.3127385 | 64 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 75588 | 2002 $RB_{148}$ |
| 2002 $RC_{148}$ | 16.4 | 0.15 | 20060922 | 328.26863 | 332.10496 | 63.06416 | 1.87270 | 0.1110541 | 2.5246786 | 65 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 04219 | 2002 $RC_{148}$ |
| 2002 $RX_{148}$ | 16.5 | 0.15 | 20060922 | 85.09319 | 30.13117 | 252.72506 | 5.39617 | 0.1374037 | 2.3602310 | 56 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 75588 | 2002 $RX_{148}$ |
| 2002 $RS_{149}$ | 16.1 | 0.15 | 20060922 | 150.23999 | 352.02064 | 265.41030 | 5.24580 | 0.2020942 | 2.2281021 | 44 | 4 | 1998–2006 | 0.67 | M-v | 1 | MPC | 85607 | 2002 $RS_{149}$ |
| 2002 $RN_{150}$ | 14.6 | 0.15 | 20060922 | 315.48825 | 23.63953 | 241.18758 | 8.58775 | 0.0465594 | 3.4449712 | 63 | 5 | 2000–2006 | 0.66 | M-v | 0 | MPC | 02126 | 2002 $RN_{150}$ |
| 2002 $RQ_{151}$ | 17.1 | 0.15 | 20060922 | 28.34144 | 201.92953 | 209.73822 | 8.62537 | 0.1891862 | 2.2402438 | 41 | 3 | 1999–2004 | 0.59 | M-v | 3 | MPC | 40990 | 2002 $RQ_{151}$ |
| 2002 $RE_{152}$ | 16.0 | 0.15 | 20060922 | 34.40661 | 68.99015 | 207.97783 | 12.24667 | 0.0329702 | 2.7240910 | 36 | 5 | 2000–2005 | 0.50 | M-v | 0 | MPC | 89325 | 2002 $RE_{152}$ |
| 2002 $RJ_{152}$ | 15.7 | 0.15 | 20060922 | 253.90364 | 110.82439 | 327.31616 | 13.89289 | 0.0535639 | 2.6765183 | 51 | 4 | 1993–2006 | 0.52 | M-v | 1 | MPC | 04219 | 2002 $RJ_{152}$ |
| 2002 $RD_{153}$ | 16.9 | 0.15 | 20060922 | 95.46090 | 9.49309 | 292.06682 | 6.33420 | 0.1137663 | 2.3222807 | 34 | 5 | 1997–2006 | 0.40 | M-v | 1 | MPC | 87546 | 2002 $RD_{153}$ |
| 2002 $RO_{153}$ | 15.9 | 0.15 | 20060922 | 295.02935 | 99.19672 | 330.21026 | 12.17326 | 0.2546784 | 2.6392392 | 43 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 03390 | 2002 $RO_{153}$ |
| 2002 $RY_{153}$ | 16.9 | 0.15 | 20060922 | 74.69572 | 134.26463 | 191.94534 | 3.75266 | 0.1319372 | 2.3262903 | 66 | 5 | 1994–2006 | 0.45 | M-v | 1 | MPC | 87546 | 2002 $RY_{153}$ |
| 2002 $RM_{154}$ | 17.7 | 0.15 | 20060922 | 10.04175 | 138.98217 | 201.56201 | 2.42601 | 0.1614774 | 2.5212387 | 42 | 5 | 1993–2006 | 0.43 | M-v | 3 | MPC | 04219 | 2002 $RM_{154}$ |
| 2002 $RS_{155}$ | 16.9 | 0.15 | 20060922 | 353.82420 | 30.10414 | 335.16112 | 8.05307 | 0.1681555 | 2.5125582 | 116 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 04220 | 2002 $RS_{155}$ |
| 2002 $RT_{155}$ | 16.8 | 0.15 | 20060922 | 41.91074 | 69.71107 | 220.54225 | 3.33766 | 0.0476625 | 2.6020779 | 37 | 3 | 2002–2006 | 0.31 | M-v | 3 | MPC | 04220 | 2002 $RT_{155}$ |
| 2002 $RV_{155}$ | 16.8 | 0.15 | 20060922 | 114.67959 | 86.15027 | 182.39008 | 5.90695 | 0.1012394 | 2.3456505 | 39 | 3 | 2002–2006 | 0.20 | M-v | 2 | MPC | 85608 | 2002 $RV_{155}$ |
| 2002 $RY_{155}$ | 17.0 | 0.15 | 20060922 | 146.78322 | 306.61227 | 309.77542 | 3.21773 | 0.1520559 | 2.2527152 | 39 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 57893 | 2002 $RY_{155}$ |
| 2002 $RZ_{155}$ | 17.2 | 0.15 | 20060922 | 341.05067 | 243.79313 | 191.58365 | 3.64144 | 0.2447723 | 2.3673581 | 37 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 74212 | 2002 $RZ_{155}$ |
| 2002 $RB_{156}$ | 16.4 | 0.15 | 20060922 | 261.59645 | 153.00390 | 249.68881 | 1.27895 | 0.1597619 | 2.8559875 | 44 | 3 | 2002–2005 | 0.52 | M-v | 3 | MPC | 62406 | 2002 $RB_{156}$ |
| 2002 $RJ_{156}$ | 17.3 | 0.15 | 20060922 | 142.17869 | 310.20130 | 315.17828 | 3.47045 | 0.1109270 | 2.2561705 | 29 | 5 | 2001–2006 | 0.38 | M-v | 0 | MPC | 87546 | 2002 $RJ_{156}$ |
| 2002 $RA_{157}$ | 16.0 | 0.15 | 20060922 | 51.42468 | 296.71736 | 343.47439 | 14.30746 | 0.0266066 | 2.6261919 | 44 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 03390 | 2002 $RA_{157}$ |
| 2002 $RE_{157}$ | 17.0 | 0.15 | 20060922 | 40.46616 | 50.61746 | 281.87038 | 2.08617 | 0.2015599 | 2.4108126 | 78 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 75592 | 2002 $RE_{157}$ |
| 2002 $RN_{157}$ | 17.2 | 0.15 | 20060922 | 140.18866 | 293.09615 | 310.64386 | 1.65214 | 0.1715532 | 2.3222830 | 45 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 75592 | 2002 $RN_{157}$ |
| 2002 $RO_{157}$ | 17.8 | 0.15 | 20060922 | 64.81920 | 118.98533 | 212.52961 | 3.26782 | 0.1818649 | 2.3203297 | 37 | 4 | 1995–2006 | 0.35 | M-v | 0 | MPC | 87546 | 2002 $RO_{157}$ |
| 2002 $RS_{157}$ | 17.3 | 0.15 | 20060922 | 299.94543 | 93.08524 | 319.71036 | 3.77725 | 0.1702880 | 2.6116398 | 22 | 4 | 2000–2006 | 0.44 | M-v | 0 | MPC | 89326 | 2002 $RS_{157}$ |
| 2002 $RY_{157}$ | 15.8 | 0.15 | 20060922 | 169.03196 | 154.32271 | 325.32402 | 2.52309 | 0.1489664 | 2.9992619 | 39 | 4 | 1999–2005 | 0.51 | M-v | 0 | MPC | 94840 | 2002 $RY_{157}$ |
| 2002 $RZ_{157}$ | 16.1 | 0.15 | 20060922 | 17.36040 | 136.22625 | 179.92932 | 14.39527 | 0.0155262 | 2.6278621 | 30 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 04220 | 2002 $RZ_{157}$ |
| 2002 $RF_{158}$ | 16.2 | 0.15 | 20060922 | 281.77950 | 232.51660 | 211.78400 | 3.50046 | 0.0789442 | 2.5214871 | 44 | 4 | 2000–2006 | 0.52 | M-v | 3 | MPC | 61325 | 2002 $RF_{158}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RN_{158}$ | 16.1 | 0.15 | 20060922 | 110.53396 | 313.81598 | 333.02876 | 5.41535 | 0.1685281 | 2.2860378 | 99 | 4 | 1995–2004 | 0.70 | M-v | 1 | MPC | 62406 | 2002 $RN_{158}$ |
| 2002 $RP_{158}$ | 15.3 | 0.15 | 20060922 | 120.31504 | 218.76653 | 336.33685 | 3.89305 | 0.1302815 | 2.7111735 | 66 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 04220 | 2002 $RP_{158}$ |
| 2002 $RH_{159}$ | 15.8 | 0.15 | 20060922 | 314.24379 | 204.43792 | 175.15543 | 7.85927 | 0.0297199 | 2.6447580 | 35 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 04220 | 2002 $RH_{159}$ |
| 2002 $RS_{159}$ | 18.1 | 0.15 | 20060922 | 20.14368 | 216.51646 | 191.49516 | 2.32600 | 0.2029975 | 2.2765171 | 22 | 3 | 2002–2006 | 0.46 | M-v | 4 | MPC | 69388 | 2002 $RS_{159}$ |
| 2002 $RM_{160}$ | 16.8 | 0.15 | 20060922 | 196.04725 | 14.05401 | 175.03659 | 6.79621 | 0.0665279 | 2.3604757 | 30 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 85608 | 2002 $RM_{160}$ |
| 2002 $RO_{160}$ | 16.2 | 0.15 | 20060922 | 226.17158 | 156.03436 | 298.83076 | 0.99888 | 0.0444983 | 2.6924959 | 51 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 04220 | 2002 $RO_{160}$ |
| 2002 $RV_{160}$ | 17.8 | 0.15 | 20060922 | 346.05898 | 78.73510 | 316.29100 | 1.14053 | 0.1901099 | 2.4478725 | 59 | 3 | 2000–2006 | 0.40 | M-v | 2 | MPC | 75594 | 2002 $RV_{160}$ |
| 2002 $RA_{161}$ | 17.2 | 0.15 | 20060922 | 22.27371 | 83.09232 | 254.22989 | 0.85493 | 0.1886312 | 2.4643556 | 66 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 75594 | 2002 $RA_{161}$ |
| 2002 $RG_{162}$ | 16.1 | 0.15 | 20060922 | 349.64122 | 309.15920 | 86.59250 | 1.59986 | 0.2098205 | 2.4353374 | 121 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 03391 | 2002 $RG_{162}$ |
| 2002 $RK_{163}$ | 17.5 | 0.15 | 20060922 | 86.73716 | 106.28575 | 162.65394 | 2.92076 | 0.1775830 | 2.4200230 | 52 | 5 | 1997–2006 | 0.35 | M-v | 0 | MPC | 77643 | 2002 $RK_{163}$ |
| 2002 $RX_{163}$ | 17.0 | 0.15 | 20060922 | 97.85434 | 107.86792 | 171.65733 | 6.82533 | 0.1671963 | 2.3435085 | 34 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 75595 | 2002 $RX_{163}$ |
| 2002 $RY_{163}$ | 18.3 | 0.15 | 20060922 | 72.60205 | 107.48859 | 189.36110 | 0.92620 | 0.1822262 | 2.3819968 | 30 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 94840 | 2002 $RY_{163}$ |
| 2002 $RZ_{164}$ | 17.8 | 0.15 | 20060922 | 41.41189 | 52.77123 | 338.13955 | 0.42582 | 0.1445507 | 2.2418680 | 42 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 66281 | 2002 $RZ_{164}$ |
| 2002 $RT_{165}$ | 17.8 | 0.15 | 20060922 | 2.97889 | 116.45919 | 282.66080 | 0.71920 | 0.1738518 | 2.3715245 | 38 | 3 | 2000–2006 | 0.45 | M-v | 2 | MPC | 48267 | 2002 $RT_{165}$ |
| 2002 $RG_{166}$ | 18.1 | 0.15 | 20060922 | 66.06682 | 93.06652 | 224.02240 | 0.29898 | 0.2027053 | 2.3462698 | 31 | 4 | 1995–2006 | 0.47 | M-v | 1 | MPC | 77643 | 2002 $RG_{166}$ |
| 2002 $RL_{166}$ | 17.1 | 0.15 | 20060922 | 344.31431 | 74.76033 | 354.31251 | 3.28943 | 0.1883309 | 2.3543416 | 27 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 89327 | 2002 $RL_{166}$ |
| 2002 $RY_{166}$ | 17.6 | 0.15 | 20060922 | 66.48378 | 159.31183 | 171.25107 | 2.23848 | 0.1333897 | 2.3196889 | 34 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 85609 | 2002 $RY_{166}$ |
| 2002 $RO_{168}$ | 17.3 | 0.15 | 20060922 | 11.47648 | 210.04660 | 205.55368 | 1.37447 | 0.1611092 | 2.2917956 | 28 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 62406 | 2002 $RO_{168}$ |
| 2002 $RY_{168}$ | 17.5 | 0.15 | 20060922 | 10.90820 | 161.42163 | 166.46499 | 2.61036 | 0.2339315 | 2.5527207 | 43 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03391 | 2002 $RY_{168}$ |
| 2002 $RO_{169}$ | 15.5 | 0.15 | 20060922 | 297.92863 | 122.47948 | 227.66779 | 1.01543 | 0.0311723 | 2.9092946 | 63 | 4 | 2000–2005 | 0.63 | M-v | 1 | MPC | 77644 | 2002 $RO_{169}$ |
| 2002 $RP_{169}$ | 17.1 | 0.15 | 20060922 | 129.91421 | 141.88855 | 159.21210 | 1.49234 | 0.0716506 | 2.2058893 | 45 | 5 | 1999–2006 | 0.38 | M-v | 1 | MPC | 85609 | 2002 $RP_{169}$ |
| 2002 $RV_{169}$ | 17.0 | 0.15 | 20060922 | 349.10112 | 80.53610 | 310.01701 | 6.31083 | 0.1338723 | 2.4036584 | 50 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 89327 | 2002 $RV_{169}$ |
| 2002 $RX_{169}$ | 16.9 | 0.15 | 20060922 | 56.29467 | 121.84122 | 211.31759 | 3.35145 | 0.1473093 | 2.3181181 | 38 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 75598 | 2002 $RX_{169}$ |
| 2002 $RG_{170}$ | 16.2 | 0.15 | 20060922 | 336.47135 | 82.68718 | 283.53205 | 3.96270 | 0.0733489 | 2.5375260 | 56 | 4 | 1998–2006 | 0.46 | M-v | 3 | MPC | 04220 | 2002 $RG_{170}$ |
| 2002 $RE_{172}$ | 16.1 | 0.15 | 20060922 | 349.76457 | 330.19512 | 94.01139 | 5.75466 | 0.2116463 | 2.3441740 | 36 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 62406 | 2002 $RE_{172}$ |
| 2002 $RL_{172}$ | 15.8 | 0.15 | 20060922 | 302.34672 | 273.80613 | 134.05952 | 11.82470 | 0.1944690 | 2.6052791 | 49 | 5 | 2000–2006 | 0.65 | M-v | 1 | MPC | 04220 | 2002 $RL_{172}$ |
| 2002 $RV_{172}$ | 17.3 | 0.15 | 20060922 | 128.23789 | 43.35360 | 216.79786 | 3.93482 | 0.1235500 | 2.3018164 | 52 | 4 | 1999–2006 | 0.32 | M-v | 1 | MPC | 87546 | 2002 $RV_{172}$ |
| 2002 $RL_{173}$ | 15.3 | 0.15 | 20060922 | 329.62858 | 244.91052 | 97.38182 | 9.92818 | 0.1300047 | 2.7626586 | 54 | 4 | 2001–2005 | 0.72 | M-v | 1 | MPC | 66281 | 2002 $RL_{173}$ |
| 2002 $RX_{173}$ | 15.8 | 0.15 | 20060922 | 222.68991 | 102.68742 | 302.58670 | 4.63879 | 0.1022429 | 3.0564968 | 21 | 4 | 1999–2005 | 0.38 | M-v | 1 | MPC | 75598 | 2002 $RX_{173}$ |
| 2002 $RZ_{173}$ | 17.8 | 0.15 | 20060922 | 59.64261 | 77.76168 | 286.08247 | 3.16829 | 0.0672210 | 2.2370501 | 26 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 69389 | 2002 $RZ_{173}$ |
| 2002 $RG_{174}$ | 17.1 | 0.15 | 20060922 | 132.56166 | 16.83817 | 254.85693 | 4.39589 | 0.1467654 | 2.2452140 | 38 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 50653 | 2002 $RG_{174}$ |
| 2002 $RV_{174}$ | 14.8 | 0.15 | 20060922 | 260.20385 | 58.17488 | 301.94797 | 8.11384 | 0.1007471 | 3.0857971 | 36 | 3 | 1999–2004 | 0.51 | M-v | 3 | MPC | 56582 | 2002 $RV_{174}$ |
| 2002 $RW_{174}$ | 15.2 | 0.15 | 20060922 | 306.71289 | 20.52919 | 269.73184 | 4.76020 | 0.1649562 | 3.1350970 | 49 | 3 | 2002–2005 | 0.56 | M-v | 3 | MPC | 56582 | 2002 $RW_{174}$ |
| 2002 $RX_{174}$ | 17.3 | 0.15 | 20060922 | 30.29075 | 82.69058 | 283.49760 | 2.51121 | 0.1883183 | 2.3531081 | 50 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 48268 | 2002 $RX_{174}$ |
| 2002 $RA_{175}$ | 16.3 | 0.15 | 20060922 | 334.29984 | 93.15965 | 296.12055 | 5.58889 | 0.2423062 | 2.5376557 | 63 | 2 | 2002–2006 | 0.51 | M-v | 4 | MPC | 03391 | 2002 $RA_{175}$ |
| 2002 $RD_{175}$ | 16.9 | 0.15 | 20060922 | 94.91006 | 20.89839 | 278.74276 | 4.68704 | 0.1701798 | 2.2910449 | 57 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 87546 | 2002 $RD_{175}$ |
| 2002 $RJ_{175}$ | 16.1 | 0.15 | 20060922 | 32.31501 | 76.63743 | 222.41391 | 3.98116 | 0.1192749 | 2.5735345 | 86 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 04220 | 2002 $RJ_{175}$ |
| 2002 $RX_{175}$ | 17.6 | 0.15 | 20060922 | 75.51694 | 85.19092 | 230.83786 | 4.88974 | 0.1826597 | 2.3153977 | 58 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 75599 | 2002 $RX_{175}$ |
| 2002 $RZ_{175}$ | 15.9 | 0.15 | 20060922 | 316.02302 | 86.93823 | 206.84830 | 9.48596 | 0.1195200 | 3.0739460 | 35 | 4 | 2000–2006 | 0.33 | M-v | 0 | MPC | 00348 | 2002 $RZ_{175}$ |
| 2002 $RU_{177}$ | 16.5 | 0.15 | 20060922 | 359.14657 | 35.17155 | 317.01786 | 4.42726 | 0.0854011 | 2.5525061 | 63 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04220 | 2002 $RU_{177}$ |
| 2002 $RN_{178}$ | 17.8 | 0.15 | 20060922 | 58.53207 | 169.83395 | 165.05249 | 1.37458 | 0.1496802 | 2.2979148 | 54 | 5 | 1992–2006 | 0.38 | M-v | 0 | MPC | 75599 | 2002 $RN_{178}$ |
| 2002 $RB_{179}$ | 16.5 | 0.15 | 20060922 | 145.46286 | 45.48492 | 168.72080 | 3.22414 | 0.1496390 | 2.4493346 | 50 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 85610 | 2002 $RB_{179}$ |
| 2002 $RE_{179}$ | 16.0 | 0.15 | 20060922 | 322.33492 | 19.45806 | 315.17849 | 1.12335 | 0.0672602 | 2.8608313 | 50 | 5 | 1993–2005 | 0.59 | M-v | 1 | MPC | 04220 | 2002 $RE_{179}$ |
| 2002 $RT_{179}$ | 16.6 | 0.15 | 20060922 | 240.00527 | 272.39913 | 121.99246 | 0.11242 | 0.1765477 | 3.1187115 | 32 | 3 | 1991–2004 | 0.34 | M-v | 2 | MPC | 04220 | 2002 $RT_{179}$ |
| 2002 $RX_{179}$ | 18.1 | 0.15 | 20060922 | 63.78930 | 155.89884 | 177.75715 | 3.55526 | 0.1271266 | 2.3494391 | 30 | 5 | 2001–2006 | 0.34 | M-v | 1 | MPC | 00349 | 2002 $RX_{179}$ |
| 2002 $RE_{180}$ | 15.9 | 0.15 | 20060922 | 67.96730 | 61.64736 | 180.54770 | 8.08681 | 0.1199511 | 2.7558504 | 44 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 75600 | 2002 $RE_{180}$ |
| 2002 $RM_{180}$ | 16.9 | 0.15 | 20060922 | 325.33064 | 36.25116 | 337.73835 | 1.21345 | 0.0973108 | 2.6463327 | 37 | 6 | 1998–2006 | 0.43 | M-v | 1 | MPC | 48268 | 2002 $RM_{180}$ |
| 2002 $RV_{180}$ | 17.1 | 0.15 | 20060922 | 11.64791 | 156.50214 | 171.93488 | 3.72179 | 0.2197853 | 2.5752574 | 135 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04220 | 2002 $RV_{180}$ |
| 2002 $RM_{181}$ | 16.2 | 0.15 | 20060922 | 1.59389 | 204.54367 | 147.91088 | 14.55720 | 0.3114182 | 2.5437204 | 139 | 6 | 1997–2006 | 0.47 | M-v | 1 | MPC | 04220 | 2002 $RM_{181}$ |
| 2002 $RN_{181}$ | 16.5 | 0.15 | 20060922 | 64.77110 | 117.07875 | 193.63977 | 12.58005 | 0.2396581 | 2.3688613 | 94 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 77644 | 2002 $RN_{181}$ |
| 2002 $RC_{182}$ | 16.1 | 0.15 | 20060922 | 3.41820 | 178.82390 | 218.17948 | 10.47653 | 0.2519887 | 2.3904986 | 88 | 5 | 2000–2006 | 0.48 | M-v | 0 | MPC | 77644 | 2002 $RC_{182}$ |
| 2002 $RD_{182}$ | 15.2 | 0.15 | 20060922 | 238.44196 | 187.21610 | 276.54784 | 13.09038 | 0.1378849 | 2.6547077 | 84 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 04220 | 2002 $RD_{182}$ |
| 2002 $RH_{182}$ | 16.3 | 0.15 | 20060922 | 5.75879 | 86.05252 | 243.15011 | 11.32597 | 0.2273008 | 2.5728876 | 55 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03392 | 2002 $RH_{182}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RX_{182}$ | 15.7 | 0.15 | 20060922 | 326.02250 | 170.87113 | 228.30421 | 14.09507 | 0.1749824 | 2.5455048 | 53 | 4 | 1994–2006 | 0.54 | M-v | 3 | MPC | 03392 | 2002 $RX_{182}$ |
| 2002 $RA_{183}$ | 15.2 | 0.15 | 20060922 | 156.39664 | 284.47048 | 266.61853 | 13.24228 | 0.0468405 | 2.5791689 | 39 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 04220 | 2002 $RA_{183}$ |
| 2002 $RB_{183}$ | 16.3 | 0.15 | 20060922 | 2.11966 | 60.25665 | 293.73657 | 12.18751 | 0.1959780 | 2.5303987 | 46 | 3 | 1996–2006 | 0.55 | M-v | 3 | MPC | 04220 | 2002 $RB_{183}$ |
| 2002 $RQ_{184}$ | 16.1 | 0.15 | 20060922 | 6.56730 | 116.52111 | 208.83279 | 12.86512 | 0.2289508 | 2.5822435 | 58 | 3 | 1998–2006 | 0.67 | M-v | 2 | MPC | 04220 | 2002 $RQ_{184}$ |
| 2002 $RM_{185}$ | 16.7 | 0.15 | 20060922 | 11.95088 | 124.05605 | 209.46961 | 13.19882 | 0.1959750 | 2.5412722 | 43 | 3 | 1998–2006 | 0.59 | M-v | 3 | MPC | 03392 | 2002 $RM_{185}$ |
| 2002 $RK_{186}$ | 15.4 | 0.15 | 20060922 | 182.01782 | 231.17584 | 222.89490 | 14.37383 | 0.1645486 | 3.1598928 | 47 | 5 | 1994–2005 | 0.68 | M-v | 0 | MPC | 04220 | 2002 $RK_{186}$ |
| 2002 $RO_{186}$ | 15.6 | 0.15 | 20060922 | 316.85033 | 140.01869 | 215.20583 | 11.13246 | 0.1493853 | 2.7665577 | 39 | 1 | 70 days | 0.47 | M-v | 4 | MPC | 38413 | 2002 $RO_{186}$ |
| 2002 $RV_{186}$ | 16.5 | 0.15 | 20060922 | 20.34274 | 346.93622 | 320.14380 | 12.63000 | 0.1750607 | 2.6210428 | 61 | 2 | 2002–2006 | 0.59 | M-v | 3 | MPC | 03392 | 2002 $RV_{186}$ |
| 2002 $RO_{187}$ | 16.1 | 0.15 | 20060922 | 311.87067 | 75.91255 | 334.74223 | 14.29942 | 0.1036398 | 2.5557010 | 84 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 04221 | 2002 $RO_{187}$ |
| 2002 $RW_{187}$ | 16.9 | 0.15 | 20060922 | 329.13229 | 33.32189 | 333.26231 | 2.58061 | 0.0572800 | 2.6135610 | 34 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 04221 | 2002 $RW_{187}$ |
| 2002 $RK_{188}$ | 17.6 | 0.15 | 20060922 | 344.47120 | 336.90257 | 11.32825 | 1.88154 | 0.2033073 | 2.6168685 | 25 | 4 | 1998–2005 | 0.48 | M-v | 2 | MPC | 75602 | 2002 $RK_{188}$ |
| 2002 $RT_{188}$ | 16.9 | 0.15 | 20060922 | 102.46998 | 117.04511 | 162.42269 | 4.77760 | 0.0304146 | 2.3914392 | 28 | 5 | 2001–2006 | 0.49 | M-v | 0 | MPC | 85611 | 2002 $RT_{188}$ |
| 2002 $RX_{188}$ | 16.6 | 0.15 | 20060922 | 355.40224 | 266.86356 | 164.01154 | 6.13977 | 0.0603754 | 2.2607917 | 53 | 4 | 1994–2005 | 0.59 | M-v | 1 | MPC | 61330 | 2002 $RX_{188}$ |
| 2002 $RL_{189}$ | 17.2 | 0.15 | 20060922 | 18.91904 | 127.58906 | 220.10616 | 0.64144 | 0.1984849 | 2.4452908 | 81 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 75602 | 2002 $RL_{189}$ |
| 2002 $RN_{189}$ | 16.7 | 0.15 | 20060922 | 351.31298 | 98.49074 | 232.47265 | 3.15731 | 0.1114055 | 2.6424372 | 34 | 3 | 1998–2006 | 0.48 | M-v | 3 | MPC | 02127 | 2002 $RN_{189}$ |
| 2002 $RP_{189}$ | 17.1 | 0.15 | 20060922 | 338.99294 | 117.33769 | 323.70571 | 5.13076 | 0.2093221 | 2.3327273 | 30 | 3 | 1995–2002 | 0.51 | M-v | 3 | MPC | 89328 | 2002 $RP_{189}$ |
| 2002 $RA_{190}$ | 16.9 | 0.15 | 20060922 | 99.52189 | 79.03829 | 194.22158 | 4.91809 | 0.1439270 | 2.3677553 | 47 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 75603 | 2002 $RA_{190}$ |
| 2002 $RM_{190}$ | 16.6 | 0.15 | 20060922 | 45.40891 | 330.28574 | 323.59043 | 3.08514 | 0.1358990 | 2.5378023 | 55 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 04221 | 2002 $RM_{190}$ |
| 2002 $RN_{190}$ | 17.0 | 0.15 | 20060922 | 89.58462 | 301.27504 | 339.99171 | 0.72223 | 0.1799427 | 2.3725098 | 56 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 89328 | 2002 $RN_{190}$ |
| 2002 $RW_{190}$ | 16.8 | 0.15 | 20060922 | 67.49369 | 289.94068 | 12.33408 | 13.65025 | 0.1915993 | 2.3784267 | 36 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 75603 | 2002 $RW_{190}$ |
| 2002 $RX_{190}$ | 16.1 | 0.15 | 20060922 | 301.32855 | 266.10369 | 145.30939 | 14.94028 | 0.1803309 | 2.5997370 | 82 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 04221 | 2002 $RX_{190}$ |
| 2002 $RJ_{191}$ | 16.6 | 0.15 | 20060922 | 349.43055 | 326.33083 | 24.94623 | 12.98874 | 0.2888454 | 2.5790196 | 61 | 5 | 1998–2006 | 0.63 | M-v | 2 | MPC | 04221 | 2002 $RJ_{191}$ |
| 2002 $RN_{191}$ | 17.0 | 0.15 | 20060922 | 49.18224 | 286.22057 | 21.11124 | 2.46873 | 0.2065870 | 2.4272375 | 67 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 75603 | 2002 $RN_{191}$ |
| 2002 $RC_{192}$ | 16.5 | 0.15 | 20060922 | 239.45390 | 154.05659 | 7.89578 | 6.85170 | 0.0481115 | 2.3073090 | 40 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 65363 | 2002 $RC_{192}$ |
| 2002 $RF_{192}$ | 17.4 | 0.15 | 20060922 | 41.41747 | 313.57286 | 357.07306 | 5.97552 | 0.1094740 | 2.4801166 | 33 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 85612 | 2002 $RF_{192}$ |
| 2002 $RG_{192}$ | 15.0 | 0.15 | 20060922 | 203.05368 | 311.51725 | 99.33537 | 2.71335 | 0.1806005 | 3.2287311 | 59 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 02127 | 2002 $RG_{192}$ |
| 2002 $RR_{192}$ | 18.6 | 0.15 | 20060922 | 31.51983 | 357.83859 | 11.19945 | 1.84087 | 0.2276620 | 2.3419893 | 15 | 3 | 1995–2005 | 0.23 | M-v | 3 | MPC | 85612 | 2002 $RR_{192}$ |
| 2002 $RG_{195}$ | 17.5 | 0.15 | 20060922 | 56.78536 | 156.70527 | 132.52435 | 2.71466 | 0.1854470 | 2.4710974 | 33 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 00351 | 2002 $RG_{195}$ |
| 2002 $RF_{196}$ | 16.6 | 0.15 | 20060922 | 354.44157 | 210.95177 | 118.19332 | 2.95559 | 0.0657678 | 2.6494724 | 19 | 2 | 2002–2006 | 0.29 | M-v | 4 | MPC | 03393 | 2002 $RF_{196}$ |
| 2002 $RS_{196}$ | 16.6 | 0.15 | 20060922 | 335.94941 | 217.56899 | 150.32405 | 4.09300 | 0.1956589 | 2.5612794 | 61 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04221 | 2002 $RS_{196}$ |
| 2002 $RJ_{197}$ | 17.4 | 0.15 | 20060922 | 36.66239 | 287.05088 | 37.46175 | 1.98360 | 0.1516303 | 2.4535633 | 61 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 75605 | 2002 $RJ_{197}$ |
| 2002 $RG_{198}$ | 17.6 | 0.15 | 20060922 | 0.38438 | 328.20229 | 19.60018 | 4.38489 | 0.2300354 | 2.5366807 | 61 | 4 | 1994–2006 | 0.42 | M-v | 2 | MPC | 03393 | 2002 $RG_{198}$ |
| 2002 $RO_{198}$ | 16.2 | 0.15 | 20020903 | 5.79786 | 339.75926 | 4.69775 | 8.32520 | 0.0093197 | 2.7280229 | 12 | 1 | 5 days | 0.26 | | E | MPC | | 2002 $RO_{198}$ |
| 2002 $RU_{198}$ | 17.7 | 0.15 | 20020903 | 12.91952 | 168.04556 | 161.99825 | 5.51017 | 0.1732978 | 2.2902470 | 12 | 1 | 10 days | 0.23 | | | MPC | | 2002 $RU_{198}$ |
| 2002 $RV_{198}$ | 18.0 | 0.15 | 20060922 | 167.28410 | 157.30647 | 137.39618 | 1.63218 | 0.1313209 | 2.0840846 | 21 | 3 | 2002–2005 | 0.39 | M-v | 4 | MPC | 94841 | 2002 $RV_{198}$ |
| 2002 $RC_{199}$ | 16.7 | 0.15 | 20020903 | 59.43312 | 239.19108 | 35.95096 | 2.65468 | 0.1459030 | 2.6615101 | 11 | 1 | 4 days | 0.26 | | | MPC | | 2002 $RC_{199}$ |
| 2002 $RJ_{199}$ | 17.7 | 0.15 | 20060922 | 81.05677 | 328.55807 | 327.84663 | 1.82245 | 0.2281610 | 2.3433869 | 52 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 75605 | 2002 $RJ_{199}$ |
| 2002 $RJ_{200}$ | 16.5 | 0.15 | 20060922 | 2.29248 | 174.45438 | 231.17653 | 4.09042 | 0.2459039 | 2.3509983 | 56 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 62406 | 2002 $RJ_{200}$ |
| 2002 $RM_{200}$ | 16.7 | 0.15 | 20060922 | 120.64471 | 21.42673 | 249.46351 | 5.25822 | 0.1242242 | 2.2800113 | 71 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 87546 | 2002 $RM_{200}$ |
| 2002 $RP_{200}$ | 15.9 | 0.15 | 20060922 | 298.43392 | 356.26155 | 73.04456 | 7.18065 | 0.1322235 | 2.5180054 | 76 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 04221 | 2002 $RP_{200}$ |
| 2002 $RS_{200}$ | 15.7 | 0.15 | 20060922 | 20.43388 | 216.93689 | 112.21217 | 6.78718 | 0.1283199 | 2.5165967 | 84 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 04221 | 2002 $RS_{200}$ |
| 2002 $RU_{200}$ | 15.0 | 0.15 | 20060922 | 248.50163 | 316.41388 | 62.42428 | 8.62655 | 0.1092234 | 3.0609858 | 41 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 02128 | 2002 $RU_{200}$ |
| 2002 $RL_{201}$ | 16.9 | 0.15 | 20060922 | 65.44742 | 315.61351 | 351.47337 | 2.18398 | 0.1443733 | 2.3643287 | 69 | 5 | 1995–2006 | 0.53 | M-v | 0 | MPC | 77645 | 2002 $RL_{201}$ |
| 2002 $RO_{201}$ | 17.0 | 0.15 | 20060922 | 10.87969 | 229.62178 | 140.80615 | 3.02482 | 0.2024742 | 2.4040460 | 93 | 5 | 1991–2006 | 0.53 | M-v | 1 | MPC | 75607 | 2002 $RO_{201}$ |
| 2002 $RR_{201}$ | 17.1 | 0.15 | 20060922 | 128.47044 | 163.85071 | 116.52984 | 3.48869 | 0.1227267 | 2.2235920 | 33 | 5 | 1998–2006 | 0.50 | M-v | 2 | MPC | 85613 | 2002 $RR_{201}$ |
| 2002 $RS_{201}$ | 16.7 | 0.15 | 20060922 | 312.12844 | 268.07182 | 137.81912 | 4.77672 | 0.2270960 | 2.5657602 | 34 | 4 | 2002–2006 | 0.39 | M-v | 1 | MPC | 03393 | 2002 $RS_{201}$ |
| 2002 $RD_{202}$ | 16.5 | 0.15 | 20060922 | 266.75992 | 263.43569 | 270.18122 | 4.18942 | 0.0452735 | 2.1974212 | 69 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87546 | 2002 $RD_{202}$ |
| 2002 $RH_{202}$ | 16.3 | 0.15 | 20060922 | 326.68424 | 185.53826 | 242.23615 | 6.12959 | 0.1816345 | 2.4411644 | 83 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 61332 | 2002 $RH_{202}$ |
| 2002 $RM_{202}$ | 16.7 | 0.15 | 20060922 | 347.45633 | 236.18854 | 189.69808 | 10.66817 | 0.2086971 | 2.3694788 | 42 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 61332 | 2002 $RM_{202}$ |
| 2002 $RS_{202}$ | 16.5 | 0.15 | 20060922 | 286.64715 | 167.59928 | 301.58099 | 6.77828 | 0.0295488 | 2.3771499 | 70 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 85613 | 2002 $RS_{202}$ |
| 2002 $RK_{203}$ | 16.6 | 0.15 | 20060922 | 334.00950 | 322.06515 | 102.98267 | 3.47888 | 0.1875863 | 2.4244532 | 67 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 61333 | 2002 $RK_{203}$ |
| 2002 $RP_{203}$ | 17.1 | 0.15 | 20060922 | 331.53702 | 41.09361 | 341.39391 | 2.39464 | 0.2524707 | 2.5265197 | 39 | 5 | 1994–2006 | 0.67 | M-v | 2 | MPC | 03393 | 2002 $RP_{203}$ |
| 2002 $RS_{203}$ | 16.7 | 0.15 | 20060922 | 12.58606 | 205.44532 | 157.11495 | 6.79386 | 0.1260315 | 2.3853688 | 53 | 5 | 1991–2006 | 0.37 | M-v | 1 | MPC | 04221 | 2002 $RS_{203}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RX_{203}$ | 16.7 | 0.15 | 20060922 | 325.88660 | 145.74339 | 163.48133 | 2.00272 | 0.2381846 | 2.8078947 | 46 | 4 | 1996–2006 | 0.46 | M-v | 3 | MPC | 00352 | 2002 $RX_{203}$ |
| 2002 $RR_{204}$ | 15.3 | 0.15 | 20060922 | 319.27261 | 283.55505 | 349.10031 | 6.03304 | 0.1148425 | 3.1483287 | 49 | 6 | 1994–2006 | 0.64 | M-v | 0 | MPC | 04221 | 2002 $RR_{204}$ |
| 2002 $RD_{205}$ | 16.8 | 0.15 | 20060922 | 298.92344 | 282.53531 | 166.90366 | 5.97221 | 0.0834991 | 2.4104242 | 53 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 65363 | 2002 $RD_{205}$ |
| 2002 $RN_{205}$ | 17.0 | 0.15 | 20060922 | 340.02848 | 205.64347 | 136.43612 | 3.52655 | 0.0928910 | 2.6469054 | 23 | 4 | 2000–2005 | 0.37 | M-v | 1 | MPC | 57894 | 2002 $RN_{205}$ |
| 2002 $RU_{205}$ | 17.1 | 0.15 | 20060922 | 9.04678 | 358.47865 | 332.25810 | 4.34390 | 0.1356340 | 2.5707041 | 52 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 04221 | 2002 $RU_{205}$ |
| 2002 $RX_{205}$ | 17.7 | 0.15 | 20060922 | 339.17351 | 185.95665 | 194.83273 | 4.12845 | 0.1981619 | 2.5441229 | 34 | 4 | 1994–2006 | 0.52 | M-v | 2 | MPC | 03394 | 2002 $RX_{205}$ |
| 2002 $RY_{205}$ | 16.2 | 0.15 | 20060922 | 184.73120 | 226.91747 | 341.63807 | 8.27239 | 0.0865928 | 2.3487652 | 42 | 4 | 2001–2006 | 0.67 | M-v | 2 | MPC | 56590 | 2002 $RY_{205}$ |
| 2002 $RJ_{206}$ | 16.3 | 0.15 | 20060922 | 346.48763 | 68.94085 | 346.64014 | 6.93183 | 0.1623988 | 2.3941252 | 80 | 3 | 2002–2006 | 0.61 | M-v | 3 | MPC | 61333 | 2002 $RJ_{206}$ |
| 2002 $RR_{206}$ | 16.7 | 0.15 | 20060922 | 3.42793 | 203.67897 | 182.84916 | 1.38970 | 0.2075443 | 2.4229548 | 101 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 04221 | 2002 $RR_{206}$ |
| 2002 $RV_{206}$ | 16.2 | 0.15 | 20060922 | 345.67904 | 48.63853 | 315.89007 | 4.18552 | 0.1833309 | 2.5701805 | 102 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04221 | 2002 $RV_{206}$ |
| 2002 $RW_{206}$ | 17.1 | 0.15 | 20060922 | 37.22314 | 317.56732 | 358.14468 | 6.39721 | 0.1481742 | 2.4714148 | 49 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 75609 | 2002 $RW_{206}$ |
| 2002 $RZ_{206}$ | 16.0 | 0.15 | 20060922 | 261.45677 | 250.24748 | 178.95226 | 1.71197 | 0.2165619 | 2.7814400 | 47 | 3 | 2000–2004 | 0.59 | M-v | 3 | MPC | 61333 | 2002 $RZ_{206}$ |
| 2002 $RJ_{209}$ | 17.1 | 0.15 | 20060922 | 342.68515 | 56.87300 | 356.50172 | 3.57382 | 0.1605366 | 2.4299879 | 65 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 61334 | 2002 $RJ_{209}$ |
| 2002 $RK_{210}$ | 17.3 | 0.15 | 20060922 | 262.62604 | 124.94725 | 340.16890 | 1.59398 | 0.2535069 | 2.6417636 | 30 | 3 | 1998–2004 | 0.36 | M-v | 2 | MPC | 61334 | 2002 $RK_{210}$ |
| 2002 $RT_{210}$ | 17.2 | 0.15 | 20060922 | 72.19961 | 118.81891 | 177.47330 | 6.24798 | 0.0943575 | 2.4618152 | 56 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 75610 | 2002 $RT_{210}$ |
| 2002 $RA_{211}$ | 15.8 | 0.15 | 20060922 | 35.99996 | 137.98324 | 276.00204 | 5.46989 | 0.0666645 | 2.3695466 | 89 | 5 | 1998–2006 | 0.42 | M-v | 1 | MPC | 04221 | 2002 $RA_{211}$ |
| 2002 $RJ_{211}$ | 16.4 | 0.15 | 20060922 | 21.68007 | 303.48765 | 15.78234 | 14.61103 | 0.1305405 | 2.5273182 | 35 | 4 | 2001–2006 | 0.48 | M-v | 3 | MPC | 04221 | 2002 $RJ_{211}$ |
| 2002 $RL_{211}$ | 16.5 | 0.15 | 20060922 | 90.59469 | 289.41525 | 19.14597 | 5.92969 | 0.1971727 | 2.3365105 | 84 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 85614 | 2002 $RL_{211}$ |
| 2002 $RM_{211}$ | 16.4 | 0.15 | 20060922 | 32.53628 | 302.34833 | 26.96029 | 3.13586 | 0.1508204 | 2.5340128 | 73 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 89329 | 2002 $RM_{211}$ |
| 2002 $RK_{212}$ | 16.3 | 0.15 | 20060922 | 87.30572 | 225.10587 | 86.37640 | 8.27638 | 0.1684498 | 2.3209453 | 50 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 87546 | 2002 $RK_{212}$ |
| 2002 $RX_{212}$ | 15.4 | 0.15 | 20060922 | 88.45095 | 229.79837 | 95.16525 | 7.37728 | 0.1427669 | 2.2890736 | 48 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 57894 | 2002 $RX_{212}$ |
| 2002 $RO_{213}$ | 16.6 | 0.15 | 20060922 | 52.31007 | 322.52279 | 10.41155 | 11.54861 | 0.2041653 | 2.3234819 | 32 | 4 | 1994–2006 | 0.49 | M-v | 1 | MPC | 03394 | 2002 $RO_{213}$ |
| 2002 $RN_{214}$ | 15.6 | 0.15 | 20060922 | 22.80782 | 174.60158 | 126.95629 | 6.91105 | 0.2725175 | 2.5544327 | 100 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04221 | 2002 $RN_{214}$ |
| 2002 $RS_{214}$ | 16.6 | 0.15 | 20060922 | 5.64684 | 311.37561 | 17.44870 | 13.07795 | 0.1904618 | 2.5712535 | 39 | 4 | 1998–2006 | 0.57 | M-v | 3 | MPC | 04221 | 2002 $RS_{214}$ |
| 2002 $RV_{214}$ | 16.8 | 0.15 | 20060922 | 7.37730 | 319.88245 | 353.25289 | 4.83584 | 0.2278470 | 2.5854810 | 39 | 2 | 2002–2006 | 0.44 | M-v | 2 | MPC | 03394 | 2002 $RV_{214}$ |
| 2002 $RA_{215}$ | 16.5 | 0.15 | 20060922 | 37.23358 | 229.15382 | 130.64630 | 7.59956 | 0.1243843 | 2.3343023 | 36 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 89330 | 2002 $RA_{215}$ |
| 2002 $RC_{215}$ | 17.3 | 0.15 | 20060922 | 334.96868 | 216.93597 | 142.89041 | 8.39068 | 0.1977136 | 2.6143594 | 41 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 03394 | 2002 $RC_{215}$ |
| 2002 $RT_{215}$ | 16.4 | 0.15 | 20060922 | 21.97381 | 209.76021 | 112.36134 | 7.56509 | 0.1947245 | 2.5275361 | 47 | 4 | 2000–2006 | 0.56 | M-v | 3 | MPC | 04221 | 2002 $RT_{215}$ |
| 2002 $RB_{216}$ | 16.9 | 0.15 | 20060922 | 114.79481 | 157.23497 | 113.81642 | 5.74763 | 0.2118731 | 2.2892068 | 41 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 87546 | 2002 $RB_{216}$ |
| 2002 $RT_{216}$ | 16.2 | 0.15 | 20060922 | 96.62717 | 211.45326 | 86.36455 | 7.53468 | 0.1169769 | 2.3203572 | 47 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 87546 | 2002 $RT_{216}$ |
| 2002 $RY_{216}$ | 15.5 | 0.15 | 20060922 | 246.14737 | 100.10431 | 338.88261 | 21.79665 | 0.0406928 | 2.6321454 | 31 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03394 | 2002 $RY_{216}$ |
| 2002 $RF_{217}$ | 17.8 | 0.15 | 20060922 | 131.44048 | 53.60205 | 218.93767 | 1.50414 | 0.1467966 | 2.2272977 | 28 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 03395 | 2002 $RF_{217}$ |
| 2002 $RF_{219}$ | 16.7 | 0.15 | 20060922 | 89.72786 | 285.81701 | 357.67135 | 6.75600 | 0.1008687 | 2.3522614 | 48 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 77646 | 2002 $RF_{219}$ |
| 2002 $RG_{219}$ | 15.6 | 0.15 | 20060922 | 231.87892 | 294.59481 | 88.10629 | 2.51256 | 0.1635991 | 3.1216941 | 33 | 4 | 2002–2006 | 0.33 | M-v | 1 | MPC | 03395 | 2002 $RG_{219}$ |
| 2002 $RT_{219}$ | 16.1 | 0.15 | 20060922 | 303.11441 | 144.96779 | 159.82942 | 10.05610 | 0.1817685 | 3.0183982 | 29 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 00353 | 2002 $RT_{219}$ |
| 2002 $RW_{219}$ | 16.8 | 0.15 | 20060922 | 329.79234 | 4.40187 | 55.89184 | 1.48951 | 0.2329730 | 2.4293633 | 84 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 69390 | 2002 $RW_{219}$ |
| 2002 $RY_{219}$ | 16.9 | 0.15 | 20060922 | 84.64144 | 98.73301 | 161.64353 | 2.89408 | 0.1936854 | 2.4272656 | 53 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 75613 | 2002 $RY_{219}$ |
| 2002 $RM_{220}$ | 17.8 | 0.15 | 20060922 | 29.87845 | 287.39265 | 49.21024 | 3.43803 | 0.1920674 | 2.4275652 | 41 | 3 | 2002–2006 | 0.38 | M-v | 3 | MPC | 75613 | 2002 $RM_{220}$ |
| 2002 $RP_{220}$ | 16.5 | 0.15 | 20060922 | 10.06095 | 338.97385 | 28.46894 | 6.07932 | 0.2169594 | 2.4045348 | 104 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04221 | 2002 $RP_{220}$ |
| 2002 $RV_{220}$ | 15.6 | 0.15 | 20060922 | 221.61280 | 19.68431 | 14.70904 | 9.20310 | 0.0759621 | 3.1214087 | 28 | 4 | 2000–2005 | 0.66 | M-v | 1 | MPC | 61334 | 2002 $RV_{220}$ |
| 2002 $RJ_{221}$ | 14.8 | 0.15 | 20060922 | 3.67519 | 237.34981 | 11.75798 | 11.44910 | 0.0557537 | 3.0783875 | 37 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 02128 | 2002 $RJ_{221}$ |
| 2002 $RS_{221}$ | 16.4 | 0.15 | 20060922 | 33.27645 | 283.11279 | 63.57230 | 3.38836 | 0.2181317 | 2.3709826 | 69 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 03395 | 2002 $RS_{221}$ |
| 2002 $RB_{223}$ | 17.0 | 0.15 | 20060922 | 36.95361 | 233.31780 | 111.12802 | 4.71809 | 0.2140256 | 2.3906197 | 42 | 3 | 2002–2006 | 0.34 | M-v | 2 | MPC | 75614 | 2002 $RB_{223}$ |
| 2002 $RN_{223}$ | 17.2 | 0.15 | 20060922 | 355.78845 | 226.85724 | 121.92587 | 4.70457 | 0.2446353 | 2.5694065 | 36 | 3 | 1998–2006 | 0.52 | M-v | 3 | MPC | 03395 | 2002 $RN_{223}$ |
| 2002 $RA_{224}$ | 16.4 | 0.15 | 20060922 | 90.56642 | 218.82695 | 92.44784 | 7.24869 | 0.2315762 | 2.2466894 | 81 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 87546 | 2002 $RA_{224}$ |
| 2002 $RG_{224}$ | 17.2 | 0.15 | 20060922 | 58.04219 | 283.16795 | 91.46764 | 7.82204 | 0.1705747 | 2.2159593 | 40 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 72714 | 2002 $RG_{224}$ |
| 2002 $RH_{224}$ | 16.6 | 0.15 | 20060922 | 58.22848 | 166.74354 | 115.33100 | 11.47374 | 0.2277989 | 2.4539036 | 28 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 75615 | 2002 $RH_{224}$ |
| 2002 $RO_{224}$ | 15.2 | 0.15 | 20060922 | 261.29246 | 296.98638 | 55.28504 | 10.36483 | 0.0906509 | 3.1353111 | 32 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 00354 | 2002 $RO_{224}$ |
| 2002 $RV_{224}$ | 17.1 | 0.15 | 20060922 | 338.68024 | 231.26139 | 205.11965 | 6.30865 | 0.0516591 | 2.2852325 | 30 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 69391 | 2002 $RV_{224}$ |
| 2002 $RW_{224}$ | 17.4 | 0.15 | 20060922 | 49.29972 | 259.61044 | 77.39019 | 7.43220 | 0.1657115 | 2.3412245 | 25 | 3 | 2002–2006 | 0.28 | M-v | 2 | MPC | 75615 | 2002 $RW_{224}$ |
| 2002 $RC_{225}$ | 17.9 | 0.15 | 20020923 | 36.07656 | 352.31313 | 312.60377 | 5.62499 | 0.1607418 | 2.3959851 | 14 | 1 | 56 days | 0.22 | | | MPC | | 2002 $RC_{225}$ |
| 2002 $RG_{225}$ | 16.7 | 0.15 | 20060922 | 169.19794 | 351.63780 | 209.66216 | 6.19943 | 0.0677892 | 2.4249461 | 35 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 03395 | 2002 $RG_{225}$ |
| 2002 $RL_{225}$ | 17.5 | 0.15 | 20060922 | 157.64615 | 59.45038 | 223.23789 | 4.08147 | 0.1980225 | 2.1228223 | 29 | 3 | 1999–2005 | 0.34 | M-v | 3 | MPC | 89330 | 2002 $RL_{225}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RQ_{225}$ | 17.3 | 0.15 | 20060922 | 326.20770 | 53.63568 | 329.06882 | 7.36587 | 0.1803727 | 2.5932980 | 25 | 2 | 2002–2006 | 0.35 | M-v | 4 | MPC | 03396 | 2002 $RQ_{225}$ |
| 2002 $RV_{225}$ | 15.3 | 0.15 | 20060922 | 253.23521 | 118.53377 | 320.74443 | 8.52970 | 0.1258246 | 2.7196547 | 109 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04221 | 2002 $RV_{225}$ |
| 2002 $RZ_{225}$ | 16.3 | 0.15 | 20060922 | 93.21556 | 55.48148 | 235.25804 | 5.80402 | 0.1246984 | 2.3542394 | 72 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 87546 | 2002 $RZ_{225}$ |
| 2002 $RG_{226}$ | 16.1 | 0.15 | 20060922 | 31.32522 | 156.42136 | 124.21780 | 3.27231 | 0.1739801 | 2.6697857 | 40 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 03396 | 2002 $RG_{226}$ |
| 2002 $RK_{226}$ | 17.5 | 0.15 | 20060922 | 325.33522 | 50.09930 | 334.48844 | 10.48676 | 0.1444328 | 2.5642517 | 32 | 4 | 2000–2006 | 0.41 | M-v | 1 | MPC | 04221 | 2002 $RK_{226}$ |
| 2002 $RN_{227}$ | 16.3 | 0.15 | 20060922 | 84.79423 | 77.66905 | 179.12102 | 14.35981 | 0.0790935 | 2.5388071 | 45 | 3 | 1998–2006 | 0.64 | M-v | 5 | MPC | 03396 | 2002 $RN_{227}$ |
| 2002 $RQ_{227}$ | 16.5 | 0.15 | 20060922 | 56.51300 | 345.53242 | 327.19191 | 4.99586 | 0.0288774 | 2.4517874 | 83 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 62407 | 2002 $RQ_{227}$ |
| 2002 $RR_{227}$ | 16.3 | 0.15 | 20060922 | 276.22008 | 101.89182 | 290.94155 | 2.94083 | 0.1096078 | 2.8069676 | 37 | 4 | 2000–2005 | 0.62 | M-v | 0 | MPC | 56593 | 2002 $RR_{227}$ |
| 2002 $RA_{228}$ | 16.6 | 0.15 | 20060922 | 56.64900 | 231.58030 | 99.15321 | 8.09446 | 0.1926029 | 2.3320572 | 51 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 85615 | 2002 $RA_{228}$ |
| 2002 $RG_{228}$ | 16.4 | 0.15 | 20060922 | 56.53205 | 224.94746 | 82.47289 | 7.34069 | 0.1461263 | 2.4076395 | 38 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 03396 | 2002 $RG_{228}$ |
| 2002 $RA_{229}$ | 17.6 | 0.15 | 20060922 | 37.42920 | 253.41503 | 97.06435 | 7.06604 | 0.1648239 | 2.3609937 | 34 | 4 | 2001–2006 | 0.35 | M-v | 0 | MPC | 85616 | 2002 $RA_{229}$ |
| 2002 $RK_{229}$ | 14.4 | 0.15 | 20060922 | 274.99875 | 252.36183 | 78.98743 | 9.53768 | 0.1413551 | 3.2040008 | 43 | 4 | 2002–2006 | 0.59 | M-v | 2 | MPC | 02128 | 2002 $RK_{229}$ |
| 2002 $RV_{229}$ | 16.3 | 0.15 | 20060922 | 313.89284 | 272.71184 | 136.35990 | 13.03601 | 0.1827179 | 2.5870055 | 37 | 4 | 2002–2006 | 0.69 | M-v | 2 | MPC | 03396 | 2002 $RV_{229}$ |
| 2002 $RO_{230}$ | 16.8 | 0.15 | 20060922 | 343.36292 | 292.36843 | 85.33818 | 2.47660 | 0.1588386 | 2.5124163 | 51 | 4 | 1998–2006 | 0.50 | M-v | 3 | MPC | 04222 | 2002 $RO_{230}$ |
| 2002 $RR_{230}$ | 17.0 | 0.15 | 20060922 | 356.87000 | 285.77643 | 65.16120 | 2.68475 | 0.1549719 | 2.5425739 | 37 | 4 | 1994–2006 | 0.47 | M-v | 2 | MPC | 03396 | 2002 $RR_{230}$ |
| 2002 $RX_{230}$ | 16.8 | 0.15 | 20060922 | 52.79645 | 280.73910 | 32.33559 | 5.04246 | 0.1889908 | 2.4127775 | 96 | 5 | 2001–2006 | 0.52 | M-v | 0 | MPC | 75617 | 2002 $RX_{230}$ |
| 2002 $RK_{231}$ | 15.7 | 0.15 | 20060922 | 261.53548 | 145.01359 | 207.55675 | 2.02085 | 0.1426217 | 3.1138026 | 30 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 00354 | 2002 $RK_{231}$ |
| 2002 $RN_{231}$ | 17.1 | 0.15 | 20060922 | 1.27359 | 134.81223 | 190.55247 | 3.42488 | 0.0696974 | 2.6242786 | 27 | 4 | 1998–2006 | 0.27 | M-v | 3 | MPC | 75617 | 2002 $RN_{231}$ |
| 2002 $RR_{232}$ | 16.4 | 0.15 | 20060922 | 154.80998 | 247.85494 | 295.01542 | 2.98992 | 0.1679101 | 2.5962556 | 38 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 04222 | 2002 $RR_{232}$ |
| 2002 $RK_{233}$ | 16.5 | 0.15 | 20060922 | 57.69621 | 108.83652 | 167.17500 | 12.84386 | 0.1198222 | 2.5204016 | 63 | 5 | 1998–2006 | 0.50 | M-v | 2 | MPC | 04222 | 2002 $RK_{233}$ |
| 2002 $RB_{234}$ | 16.7 | 0.15 | 20060922 | 342.23664 | 359.07511 | 342.29229 | 1.46476 | 0.1110838 | 2.6232784 | 26 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 89331 | 2002 $RB_{234}$ |
| 2002 $RD_{234}$ | 16.0 | 0.15 | 20060922 | 327.26927 | 63.34559 | 200.58954 | 0.23262 | 0.1212393 | 3.1281610 | 51 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 00355 | 2002 $RD_{234}$ |
| 2002 $RZ_{234}$ | 15.8 | 0.15 | 20060922 | 290.08474 | 148.72677 | 172.56242 | 10.97030 | 0.0817613 | 3.0573245 | 45 | 4 | 2000–2006 | 0.35 | M-v | 0 | MPC | 02129 | 2002 $RZ_{234}$ |
| 2002 $RA_{235}$ | 17.6 | 0.15 | 20060922 | 59.11408 | 83.00232 | 211.20999 | 1.52171 | 0.1702558 | 2.4294571 | 48 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 75620 | 2002 $RA_{235}$ |
| 2002 $RK_{235}$ | 16.3 | 0.15 | 20060922 | 235.38657 | 245.28990 | 175.96612 | 4.52886 | 0.0623182 | 2.8105195 | 22 | 2 | 2002–2005 | 0.49 | M-v | 4 | MPC | 03397 | 2002 $RK_{235}$ |
| 2002 $RZ_{235}$ | 18.5 | 0.15 | 20060922 | 87.64370 | 322.24140 | 325.03138 | 3.31500 | 0.2197645 | 2.3233860 | 22 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 75621 | 2002 $RZ_{235}$ |
| 2002 $RA_{236}$ | 17.3 | 0.15 | 20060922 | 124.51548 | 275.90318 | 329.00398 | 3.92462 | 0.1020541 | 2.3727032 | 30 | 3 | 2002–2006 | 0.38 | M-v | 3 | MPC | 75621 | 2002 $RA_{236}$ |
| 2002 $RF_{238}$ | 17.2 | 0.15 | 20060922 | 263.55840 | 354.71304 | 151.28561 | 6.57951 | 0.0561334 | 2.2833569 | 54 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 62407 | 2002 $RF_{238}$ |
| 2002 $RJ_{238}$ | 17.0 | 0.15 | 20060922 | 145.33374 | 7.23256 | 221.63518 | 1.55238 | 0.1620520 | 2.3290167 | 57 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 87547 | 2002 $RJ_{238}$ |
| 2002 $RY_{238}$ | 16.2 | 0.15 | 20060922 | 271.44140 | 136.17505 | 301.68631 | 2.89522 | 0.1721530 | 2.5966235 | 61 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 04222 | 2002 $RY_{238}$ |
| 2002 $RB_{239}$ | 16.5 | 0.15 | 20060922 | 273.11761 | 244.50700 | 177.35618 | 9.53567 | 0.1139604 | 2.6327257 | 46 | 5 | 2001–2006 | 0.62 | M-v | 0 | MPC | 04222 | 2002 $RB_{239}$ |
| 2002 $RC_{239}$ | 15.3 | 0.15 | 20060922 | 300.14401 | 137.86402 | 175.96814 | 10.82478 | 0.1033507 | 3.0224128 | 51 | 4 | 1992–2006 | 0.47 | M-v | 1 | MPC | 04222 | 2002 $RC_{239}$ |
| 2002 $RE_{239}$ | 16.4 | 0.15 | 20060922 | 219.58339 | 310.16280 | 172.80762 | 15.04846 | 0.0377371 | 2.5501076 | 40 | 5 | 1998–2006 | 0.46 | M-v | 2 | MPC | 04222 | 2002 $RE_{239}$ |
| 2002 $RL_{239}$ | 17.0 | 0.15 | 20060922 | 275.93664 | 283.65319 | 203.45627 | 2.55659 | 0.1106665 | 2.3192989 | 82 | 6 | 1992–2006 | 0.51 | M-v | 1 | MPC | 62407 | 2002 $RL_{239}$ |
| 2002 $RM_{239}$ | 16.4 | 0.15 | 20060922 | 157.35502 | 234.07869 | 329.86438 | 6.03786 | 0.0686312 | 2.4331358 | 34 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 04222 | 2002 $RM_{239}$ |
| 2002 $RV_{239}$ | 18.1 | 0.15 | 20060922 | 65.32165 | 152.59089 | 142.72606 | 3.05910 | 0.1803226 | 2.3870470 | 43 | 4 | 2001–2006 | 0.34 | M-v | 1 | MPC | 89331 | 2002 $RV_{239}$ |
| 2002 $RW_{239}$ | 17.0 | 0.15 | 20060922 | 131.26289 | 104.04949 | 144.32537 | 5.70920 | 0.1363764 | 2.2996286 | 72 | 4 | 2001–2006 | 0.44 | M-v | 0 | MPC | 77647 | 2002 $RW_{239}$ |
| 2002 $RC_{240}$ | 16.5 | 0.15 | 20060922 | 218.66167 | 304.29180 | 210.49676 | 3.58785 | 0.0736724 | 2.4108713 | 46 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 89332 | 2002 $RC_{240}$ |
| 2002 $RK_{240}$ | 17.2 | 0.15 | 20060922 | 312.29966 | 314.63578 | 112.50517 | 2.27948 | 0.1700406 | 2.4387542 | 62 | 5 | 1991–2006 | 0.57 | M-v | 0 | MPC | 62407 | 2002 $RK_{240}$ |
| 2002 $RZ_{240}$ | 17.5 | 0.15 | 20060922 | 184.12767 | 312.45907 | 289.69717 | 3.71500 | 0.1071273 | 2.1693549 | 49 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 87547 | 2002 $RZ_{240}$ |
| 2002 $RH_{241}$ | 17.2 | 0.15 | 20060922 | 318.41940 | 203.97481 | 272.92061 | 2.85558 | 0.1644208 | 2.2314291 | 44 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 87547 | 2002 $RH_{241}$ |
| 2002 $RO_{241}$ | 16.5 | 0.15 | 20060922 | 302.34086 | 188.81061 | 271.64397 | 3.71666 | 0.1844156 | 2.3685675 | 45 | 3 | 2002–2006 | 0.62 | M-v | 2 | MPC | 69392 | 2002 $RO_{241}$ |
| 2002 $RT_{241}$ | 16.1 | 0.15 | 20060922 | 284.48394 | 233.88313 | 189.80370 | 8.37480 | 0.0401318 | 2.5354177 | 43 | 3 | 2002–2006 | 0.71 | M-v | 4 | MPC | 04222 | 2002 $RT_{241}$ |
| 2002 $RZ_{241}$ | 16.6 | 0.15 | 20060922 | 210.20277 | 285.79504 | 219.71814 | 4.37012 | 0.1108296 | 2.4921257 | 34 | 5 | 2001–2006 | 0.36 | M-v | 1 | MPC | 04222 | 2002 $RZ_{241}$ |
| 2002 $RB_{242}$ | 16.4 | 0.15 | 20060922 | 235.47799 | 139.75394 | 328.59758 | 13.00102 | 0.2096864 | 2.6359627 | 96 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 85617 | 2002 $RB_{242}$ |
| 2002 $RU_{242}$ | 16.3 | 0.15 | 20060922 | 154.64514 | 253.00230 | 297.89437 | 5.07514 | 0.0561489 | 2.4844894 | 38 | 4 | 2002–2006 | 0.42 | M-v | 1 | MPC | 04222 | 2002 $RU_{242}$ |
| 2002 $RK_{243}$ | 16.7 | 0.15 | 20060922 | 95.97918 | 25.22905 | 216.57772 | 7.52561 | 0.2179113 | 2.4199236 | 34 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 75624 | 2002 $RK_{243}$ |
| 2002 $RR_{243}$ | 16.4 | 0.15 | 20060922 | 162.43605 | 7.72642 | 164.77508 | 15.42286 | 0.0595799 | 2.5269362 | 49 | 5 | 1997–2006 | 0.50 | M-v | 2 | MPC | 04222 | 2002 $RR_{243}$ |
| 2002 $RU_{243}$ | 17.3 | 0.15 | 20060922 | 351.02474 | 22.77749 | 319.31795 | 8.48959 | 0.1208297 | 2.5607204 | 21 | 2 | 2002–2006 | 0.28 | M-v | 4 | MPC | 03397 | 2002 $RU_{243}$ |
| 2002 $RA_{244}$ | 15.3 | 0.15 | 20060922 | 249.95268 | 233.68933 | 188.18315 | 3.80271 | 0.0867026 | 2.7118346 | 57 | 5 | 1996–2005 | 0.47 | M-v | 1 | MPC | 77647 | 2002 $RA_{244}$ |
| 2002 $RV_{244}$ | 16.3 | 0.15 | 20060922 | 358.71061 | 99.30501 | 185.21361 | 7.75259 | 0.2135188 | 2.7844382 | 42 | 4 | 1993–2006 | 0.45 | M-v | 1 | MPC | 04222 | 2002 $RV_{244}$ |
| 2002 $RG_{245}$ | 17.3 | 0.15 | 20060922 | 24.52015 | 26.33529 | 343.23119 | 2.92541 | 0.2366924 | 2.3406142 | 55 | 4 | 1993–2006 | 0.39 | M-v | 1 | MPC | 69392 | 2002 $RG_{245}$ |
| 2002 $RL_{245}$ | 17.1 | 0.15 | 20060922 | 43.10823 | 82.63576 | 273.43194 | 1.87451 | 0.1987878 | 2.3062586 | 44 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 85618 | 2002 $RL_{245}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RC_{246}$ | 16.6 | 0.15 | 20060922 | 303.79876 | 195.47343 | 124.79904 | 3.15843 | 0.0867332 | 2.9325311 | 35 | 5 | 1996–2006 | 0.33 | M-v | 0 | MPC | 00356 | 2002 $RC_{246}$ |
| 2002 $RU_{246}$ | 16.1 | 0.15 | 20060922 | 286.09370 | 238.55772 | 191.97329 | 14.08955 | 0.0811040 | 2.4717987 | 41 | 2 | 2002–2006 | 0.41 | M-v | 4 | MPC | 03397 | 2002 $RU_{246}$ |
| 2002 $RV_{246}$ | 16.8 | 0.15 | 20060922 | 28.46541 | 120.67457 | 167.75809 | 2.79711 | 0.1949508 | 2.5601834 | 74 | 5 | 1998–2006 | 0.43 | M-v | 2 | MPC | 04222 | 2002 $RV_{246}$ |
| 2002 $RE_{247}$ | 16.4 | 0.15 | 20060922 | 350.36431 | 2.68318 | 5.84779 | 6.44557 | 0.1417316 | 2.4714485 | 107 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04222 | 2002 $RE_{247}$ |
| 2002 $RP_{247}$ | 16.2 | 0.15 | 20060922 | 357.60955 | 289.12056 | 359.44259 | 5.05961 | 0.0861817 | 2.7620629 | 37 | 3 | 1996–2005 | 0.34 | M-v | 3 | MPC | 85619 | 2002 $RP_{247}$ |
| 2002 $RQ_{247}$ | 17.4 | 0.15 | 20060922 | 20.57546 | 147.86312 | 148.69756 | 6.09842 | 0.2402073 | 2.5596393 | 46 | 2 | 2002–2006 | 0.29 | M-v | 2 | MPC | 03398 | 2002 $RQ_{247}$ |
| 2002 $RB_{248}$ | 17.9 | 0.15 | 20060922 | 2.36577 | 350.09252 | 37.08563 | 3.69300 | 0.0878549 | 2.3453082 | 48 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 03398 | 2002 $RB_{248}$ |
| 2002 $RQ_{248}$ | 16.5 | 0.15 | 20060922 | 337.14748 | 106.41029 | 161.19674 | 13.19250 | 0.0907270 | 3.0705416 | 31 | 3 | 1995–2002 | 0.52 | M-v | 3 | MPC | 94844 | 2002 $RQ_{248}$ |
| 2002 $RV_{248}$ | 17.3 | 0.15 | 20060922 | 331.91373 | 253.32347 | 165.98281 | 3.94307 | 0.1957775 | 2.4198016 | 67 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 94844 | 2002 $RV_{248}$ |
| 2002 $RD_{249}$ | 16.7 | 0.15 | 20060922 | 305.87914 | 127.93874 | 162.07303 | 2.76816 | 0.1864583 | 3.0881862 | 34 | 3 | 2002–2006 | 0.37 | M-v | 3 | MPC | 00356 | 2002 $RD_{249}$ |
| 2002 $RB_{250}$ | 17.7 | 0.15 | 20060922 | 195.86242 | 262.82904 | 312.33957 | 5.71481 | 0.0530228 | 2.2730980 | 23 | 3 | 2002–2006 | 0.34 | M-v | 2 | MPC | 94844 | 2002 $RB_{250}$ |
| 2002 $RJ_{250}$ | 18.0 | 0.15 | 20060922 | 330.36587 | 4.10114 | 7.28568 | 1.97427 | 0.1676041 | 2.5304213 | 29 | 3 | 2002–2006 | 0.32 | M-v | 2 | MPC | 04222 | 2002 $RJ_{250}$ |
| 2002 $RL_{250}$ | 17.1 | 0.15 | 20060922 | 88.09184 | 169.89437 | 86.43794 | 3.81509 | 0.1493522 | 2.4517293 | 51 | 5 | 1993–2006 | 0.66 | M-v | 1 | MPC | 00357 | 2002 $RL_{250}$ |
| 2002 $RS_{250}$ | 17.4 | 0.15 | 20060922 | 308.62709 | 171.47093 | 197.52761 | 5.92033 | 0.1672975 | 2.6564115 | 22 | 3 | 1998–2002 | 0.57 | M-v | 4 | MPC | 94845 | 2002 $RS_{250}$ |
| 2002 $RJ_{253}$ | 17.0 | 0.15 | 20060922 | 316.78920 | 211.02429 | 195.95584 | 5.59717 | 0.0258292 | 2.4897882 | 30 | 4 | 2002–2006 | 0.27 | M-v | 0 | MPC | 00358 | 2002 $RJ_{253}$ |
| 2002 $RR_{253}$ | 17.5 | 0.15 | 20060922 | 248.21647 | 188.22945 | 253.53606 | 3.06412 | 0.1385516 | 2.7282580 | 15 | 1 | 29 days | 0.32 | M-v | 5 | MPC | | 2002 $RR_{253}$ |
| 2002 $RZ_{253}$ | 18.1 | 0.15 | 20060922 | 132.45595 | 71.23134 | 179.79982 | 6.20536 | 0.0902487 | 2.3346335 | 30 | 4 | 2001–2006 | 0.31 | M-v | 1 | MPC | 00358 | 2002 $RZ_{253}$ |
| 2002 $RF_{254}$ | 17.7 | 0.15 | 20060922 | 336.13889 | 45.80436 | 330.98383 | 2.88855 | 0.1820242 | 2.5469245 | 33 | 3 | 2002–2006 | 0.24 | M-v | 2 | MPC | 03398 | 2002 $RF_{254}$ |
| 2002 $RN_{254}$ | 15.7 | 0.15 | 20060922 | 18.53101 | 334.83834 | 280.10858 | 1.21453 | 0.0196862 | 2.9349005 | 30 | 4 | 1997–2003 | 0.40 | M-v | 1 | MPC | 00358 | 2002 $RN_{254}$ |
| 2002 $RJ_{255}$ | 18.6 | 0.15 | 20060922 | 341.47234 | 332.11504 | 39.91720 | 2.64297 | 0.2209654 | 2.5254749 | 23 | 3 | 2002–2006 | 0.21 | M-v | 3 | MPC | 03398 | 2002 $RJ_{255}$ |
| 2002 $RY_{255}$ | 16.2 | 0.15 | 20060922 | 79.33261 | 41.16805 | 195.59384 | 11.76701 | 0.1985626 | 2.5250110 | 46 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04222 | 2002 $RY_{255}$ |
| 2002 $RV_{258}$ | 18.0 | 0.15 | 20060922 | 303.37240 | 92.67324 | 324.32577 | 2.03399 | 0.0420750 | 2.5158744 | 34 | 3 | 1998–2006 | 0.36 | M-v | 4 | MPC | 03399 | 2002 $RV_{258}$ |
| 2002 $RO_{260}$ | 17.4 | 0.15 | 20020814 | 93.82252 | 238.70494 | 356.95983 | 6.60686 | 0.1038526 | 2.4934830 | 12 | 1 | 26 days | 0.31 | | | MPC | | 2002 $RO_{260}$ |
| 2002 $RR_{260}$ | 16.3 | 0.15 | 20020903 | 296.15334 | 248.21666 | 167.02020 | 12.95917 | 0.0439399 | 3.0589428 | 9 | 1 | 3 days | 0.28 | | | MPC | | 2002 $RR_{260}$ |
| 2002 $RV_{260}$ | 18.0 | 0.15 | 20020903 | 2.14367 | 344.59197 | 358.53069 | 5.29109 | 0.1017963 | 2.6414616 | 13 | 1 | 50 days | 0.18 | | | MPC | | 2002 $RV_{260}$ |
| 2002 $RX_{260}$ | 16.1 | 0.15 | 20020903 | 107.21906 | 127.06867 | 94.78273 | 12.37251 | 0.1331109 | 2.7084282 | 13 | 1 | 28 days | 0.29 | | | MPC | | 2002 $RX_{260}$ |
| 2002 $RY_{260}$ | 16.9 | 0.15 | 20020903 | 302.17354 | 314.49968 | 101.21674 | 13.26395 | 0.1438607 | 2.6737096 | 15 | 1 | 38 days | 0.26 | | | MPC | | 2002 $RY_{260}$ |
| 2002 $RC_{261}$ | 17.0 | 0.15 | 20020903 | 316.12456 | 293.62167 | 108.27480 | 13.53075 | 0.1663714 | 2.6553623 | 16 | 1 | 38 days | 0.28 | | | MPC | | 2002 $RC_{261}$ |
| 2002 $RD_{261}$ | 17.5 | 0.15 | 20020903 | 10.25945 | 17.58607 | 316.56151 | 6.22320 | 0.2148018 | 3.0538025 | 11 | 1 | 7 days | 0.23 | | | MPC | | 2002 $RD_{261}$ |
| 2002 $RE_{261}$ | 17.6 | 0.15 | 20020923 | 10.08865 | 69.91996 | 273.38426 | 3.81289 | 0.1063906 | 2.7915793 | 13 | 1 | 24 days | 0.30 | | | MPC | | 2002 $RE_{261}$ |
| 2002 $RG_{261}$ | 17.0 | 0.15 | 20020903 | 292.32684 | 153.71103 | 278.02385 | 4.09065 | 0.1199597 | 2.7863791 | 10 | 1 | 7 days | 0.24 | | | MPC | | 2002 $RG_{261}$ |
| 2002 $RJ_{261}$ | 19.2 | 0.15 | 20020903 | 34.25996 | 95.55410 | 199.51362 | 5.92966 | 0.2186805 | 2.1330381 | 12 | 1 | 16 days | 0.15 | | | MPC | | 2002 $RJ_{261}$ |
| 2002 $RK_{261}$ | 18.8 | 0.15 | 20020903 | 350.64598 | 158.84180 | 202.61546 | 5.46477 | 0.1850974 | 2.3020865 | 12 | 1 | 44 days | 0.24 | | | MPC | | 2002 $RK_{261}$ |
| 2002 $RM_{261}$ | 17.1 | 0.15 | 20020903 | 284.02893 | 213.63649 | 221.59192 | 5.23381 | 0.0759007 | 2.8645041 | 11 | 1 | 7 days | 0.25 | | | MPC | | 2002 $RM_{261}$ |
| 2002 $RN_{261}$ | 17.9 | 0.15 | 20060922 | 330.51683 | 108.03394 | 208.58113 | 6.51466 | 0.2187295 | 2.8103411 | 21 | 1 | 63 days | 0.36 | M-v | 3 | MPC | | 2002 $RN_{261}$ |
| 2002 $RP_{261}$ | 17.7 | 0.15 | 20020903 | 23.95533 | 96.34362 | 217.99315 | 6.15789 | 0.1874901 | 2.5977201 | 16 | 1 | 39 days | 0.30 | | | MPC | | 2002 $RP_{261}$ |
| 2002 $RQ_{261}$ | 15.8 | 0.15 | 20020903 | 122.42003 | 242.24652 | 338.65991 | 21.92820 | 0.0878255 | 3.0870424 | 14 | 1 | 39 days | 0.23 | | | MPC | | 2002 $RQ_{261}$ |
| 2002 $RR_{261}$ | 17.1 | 0.15 | 20020903 | 71.91730 | 29.75188 | 235.10427 | 5.39350 | 0.1121471 | 2.6592789 | 12 | 1 | 17 days | 0.27 | | | MPC | | 2002 $RR_{261}$ |
| 2002 $RX_{261}$ | 17.2 | 0.15 | 20020903 | 310.03308 | 69.10005 | 337.91799 | 13.55101 | 0.0496425 | 2.6439781 | 18 | 1 | 39 days | 0.25 | | | MPC | | 2002 $RX_{261}$ |
| 2002 $RY_{261}$ | 16.5 | 0.15 | 20020903 | 82.83551 | 297.62146 | 325.88022 | 8.44947 | 0.0612382 | 3.0499024 | 10 | 1 | 7 days | 0.31 | | | MPC | | 2002 $RY_{261}$ |
| 2002 $RZ_{261}$ | 17.9 | 0.15 | 20020903 | 356.95408 | 172.58271 | 181.70689 | 20.78848 | 0.2322178 | 2.5979146 | 11 | 1 | 16 days | 0.25 | | | MPC | | 2002 $RZ_{261}$ |
| 2002 $RA_{262}$ | 15.2 | 0.15 | 20020903 | 295.67191 | 114.89613 | 327.41385 | 8.19731 | 0.2178595 | 3.1675404 | 13 | 1 | 12 days | 0.25 | | | MPC | | 2002 $RA_{262}$ |
| 2002 $RB_{262}$ | 17.1 | 0.15 | 20020903 | 262.68170 | 210.47476 | 249.57816 | 3.66942 | 0.0932033 | 2.5266234 | 11 | 1 | 7 days | 0.24 | | | MPC | | 2002 $RB_{262}$ |
| 2002 $RC_{262}$ | 15.8 | 0.15 | 20020903 | 113.11292 | 257.79794 | 338.34328 | 12.94764 | 0.0468564 | 3.1720777 | 11 | 1 | 21 days | 0.27 | | | MPC | | 2002 $RC_{262}$ |
| 2002 $RH_{262}$ | 18.4 | 0.15 | 20020903 | 336.72152 | 51.49415 | 328.95453 | 5.72114 | 0.1110767 | 2.3722751 | 9 | 1 | 3 days | 0.25 | | | MPC | | 2002 $RH_{262}$ |
| 2002 $RK_{262}$ | 18.1 | 0.15 | 20020903 | 340.83115 | 197.91107 | 184.06710 | 15.86900 | 0.2291792 | 2.7689295 | 13 | 1 | 21 days | 0.31 | | | MPC | | 2002 $RK_{262}$ |
| 2002 $RL_{262}$ | 17.1 | 0.15 | 20020903 | 285.29006 | 217.56663 | 237.94628 | 4.03825 | 0.2414277 | 2.5838810 | 11 | 1 | 7 days | 0.20 | | | MPC | | 2002 $RL_{262}$ |
| 2002 $RM_{262}$ | 19.6 | 0.15 | 20020903 | 9.24855 | 131.67134 | 202.02894 | 5.21940 | 0.2330461 | 2.2411653 | 14 | 1 | 18 days | 0.29 | | | MPC | | 2002 $RM_{262}$ |
| 2002 $RN_{262}$ | 16.8 | 0.15 | 20020903 | 314.31051 | 119.70275 | 336.07504 | 9.41827 | 0.4860314 | 3.1695912 | 9 | 1 | 2 days | 0.41 | | | MPC | | 2002 $RN_{262}$ |
| 2002 $RO_{262}$ | 16.6 | 0.15 | 20020903 | 320.50883 | 127.69134 | 281.07226 | 3.53609 | 0.1818136 | 3.1617790 | 9 | 1 | 2 days | 0.24 | | E | MPC | | 2002 $RO_{262}$ |
| 2002 $RQ_{262}$ | 15.6 | 0.15 | 20020903 | 259.53420 | 306.12263 | 189.34134 | 16.30665 | 0.4284335 | 2.7731756 | 9 | 1 | 2 days | 0.26 | | E | MPC | | 2002 $RQ_{262}$ |
| 2002 $RR_{262}$ | 17.7 | 0.15 | 20020903 | 54.02736 | 339.90441 | 306.58070 | 4.64134 | 0.1247029 | 2.6028515 | 11 | 1 | 7 days | 0.20 | | | MPC | | 2002 $RR_{262}$ |
| 2002 $RS_{262}$ | 15.6 | 0.15 | 20020903 | 272.16714 | 119.62241 | 350.07811 | 28.51893 | 0.2335709 | 3.1992773 | 9 | 1 | 2 days | 0.21 | | E | MPC | | 2002 $RS_{262}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RV_{262}$ | 18.0 | 0.15 | 20020903 | 344.39258 | 193.73894 | 190.34268 | 12.22387 | 0.3291322 | 3.3416220 | 9 | 1 | 3 days | 0.37 | E | MPC | 2002 $RV_{262}$ |
| 2002 $RW_{262}$ | 16.8 | 0.15 | 20020903 | 23.06529 | 32.96538 | 289.43312 | 3.83770 | 0.1596718 | 3.2286597 | 14 | 1 | 7 days | 0.25 | | MPC | 2002 $RW_{262}$ |
| 2002 $RX_{262}$ | 17.4 | 0.15 | 20020903 | 23.91865 | 328.84607 | 345.83766 | 18.17690 | 0.2432509 | 3.1487604 | 8 | 1 | 5 days | 0.22 | | MPC | 2002 $RX_{262}$ |
| 2002 $RY_{262}$ | 15.5 | 0.15 | 20020903 | 196.38493 | 331.85868 | 191.53549 | 14.14564 | 0.1698304 | 2.8903865 | 9 | 1 | 2 days | 0.35 | E | MPC | 2002 $RY_{262}$ |
| 2002 $RB_{263}$ | 16.8 | 0.15 | 20020903 | 358.59457 | 31.81872 | 324.30083 | 6.59099 | 0.1791710 | 3.1296429 | 18 | 1 | 17 days | 0.31 | | MPC | 2002 $RB_{263}$ |
| 2002 $RC_{263}$ | 15.6 | 0.15 | 20020903 | 358.79242 | 94.41249 | 262.21242 | 3.69663 | 0.3088314 | 3.9385812 | 25 | 1 | 28 days | 0.49 | | MPC | 2002 $RC_{263}$ |
| 2002 $RH_{263}$ | 18.0 | 0.15 | 20020903 | 341.42133 | 74.13491 | 301.09726 | 4.28488 | 0.1203884 | 2.4322165 | 11 | 1 | 7 days | 0.26 | | MPC | 2002 $RH_{263}$ |
| 2002 $RJ_{263}$ | 18.9 | 0.15 | 20020903 | 43.62561 | 22.08293 | 258.59011 | 3.22078 | 0.2684561 | 2.4275058 | 6 | 1 | 2 days | 0.22 | | MPC | 2002 $RJ_{263}$ |
| 2002 $RK_{263}$ | 16.9 | 0.15 | 20020903 | 214.75730 | 285.22635 | 218.28030 | 6.27531 | 0.0738408 | 2.7352231 | 9 | 1 | 6 days | 0.54 | | MPC | 2002 $RK_{263}$ |
| 2002 $RL_{263}$ | 17.5 | 0.15 | 20020903 | 350.30368 | 171.15520 | 196.29966 | 10.39723 | 0.2120490 | 3.1447160 | 11 | 1 | 7 days | 0.20 | | MPC | 2002 $RL_{263}$ |
| 2002 $RM_{263}$ | 17.2 | 0.15 | 20020903 | 326.93323 | 165.31452 | 231.48391 | 4.71111 | 0.1385445 | 3.1239063 | 11 | 1 | 7 days | 0.25 | | MPC | 2002 $RM_{263}$ |
| 2002 $RO_{263}$ | 16.4 | 0.15 | 20020903 | 206.87274 | 335.70807 | 182.15136 | 33.55828 | 0.2885730 | 2.3672291 | 12 | 1 | 4 days | 0.29 | | MPC | 2002 $RO_{263}$ |
| 2002 $RP_{263}$ | 17.7 | 0.15 | 20020903 | 53.80441 | 326.53323 | 320.27317 | 6.11162 | 0.1204303 | 2.4125211 | 11 | 1 | 7 days | 0.22 | | MPC | 2002 $RP_{263}$ |
| 2002 $RQ_{263}$ | 17.4 | 0.15 | 20020903 | 315.10611 | 204.41562 | 210.13570 | 6.29516 | 0.1768757 | 2.7778400 | 10 | 1 | 7 days | 0.28 | | MPC | 2002 $RQ_{263}$ |
| 2002 $RS_{263}$ | 17.2 | 0.15 | 20020903 | 106.95795 | 330.60410 | 273.09759 | 3.81359 | 0.0287882 | 2.5978014 | 11 | 1 | 7 days | 0.26 | | MPC | 2002 $RS_{263}$ |
| 2002 $RT_{263}$ | 16.3 | 0.15 | 20020903 | 87.38441 | 40.13716 | 207.23727 | 8.15867 | 0.1694650 | 2.6468704 | 11 | 1 | 6 days | 0.31 | | MPC | 2002 $RT_{263}$ |
| 2002 $RU_{263}$ | 19.5 | 0.15 | 20020903 | 341.34473 | 159.49824 | 221.06057 | 3.91057 | 0.2405288 | 2.2831566 | 11 | 1 | 7 days | 0.29 | | MPC | 2002 $RU_{263}$ |
| 2002 $RV_{263}$ | 19.2 | 0.15 | 20020903 | 343.05471 | 121.46146 | 253.95987 | 2.69304 | 0.2000523 | 2.1745720 | 11 | 1 | 7 days | 0.17 | | MPC | 2002 $RV_{263}$ |
| 2002 $RA_{264}$ | 17.0 | 0.15 | 20020903 | 338.19169 | 91.04674 | 291.70517 | 4.26322 | 0.1335962 | 2.9308166 | 13 | 1 | 17 days | 0.19 | | MPC | 2002 $RA_{264}$ |
| 2002 $RB_{264}$ | 17.7 | 0.15 | 20020903 | 51.72686 | 31.87789 | 259.80314 | 3.64906 | 0.1082803 | 2.6369389 | 11 | 1 | 7 days | 0.26 | | MPC | 2002 $RB_{264}$ |
| 2002 $RC_{264}$ | 18.6 | 0.15 | 20020903 | 50.34982 | 70.38753 | 214.72255 | 4.56427 | 0.1660436 | 2.2584424 | 9 | 1 | 3 days | 0.29 | | MPC | 2002 $RC_{264}$ |
| 2002 $RF_{264}$ | 19.3 | 0.15 | 20020903 | 352.81051 | 152.09119 | 208.55760 | 4.05356 | 0.1758406 | 2.1726721 | 12 | 1 | 15 days | 0.35 | | MPC | 2002 $RF_{264}$ |
| 2002 $RJ_{264}$ | 16.4 | 0.15 | 20020903 | 255.11708 | 262.62625 | 206.19547 | 8.99766 | 0.0959523 | 3.0419975 | 11 | 1 | 7 days | 0.33 | | MPC | 2002 $RJ_{264}$ |
| 2002 $RK_{264}$ | 17.1 | 0.15 | 20020903 | 57.03881 | 85.30078 | 190.47452 | 15.69211 | 0.1855721 | 3.0127555 | 11 | 1 | 7 days | 0.32 | | MPC | 2002 $RK_{264}$ |
| 2002 $RL_{264}$ | 18.7 | 0.15 | 20020903 | 4.26171 | 111.04737 | 232.61719 | 3.98859 | 0.2309558 | 2.6712932 | 11 | 1 | 7 days | 0.35 | | MPC | 2002 $RL_{264}$ |
| 2002 $RN_{264}$ | 17.7 | 0.15 | 20020903 | 264.70695 | 141.97041 | 315.11024 | 5.82117 | 0.0821081 | 2.3488221 | 11 | 1 | 7 days | 0.24 | | MPC | 2002 $RN_{264}$ |
| 2002 $RO_{264}$ | 19.0 | 0.15 | 20020903 | 3.07321 | 57.34534 | 288.32310 | 2.97683 | 0.2252127 | 2.3575817 | 13 | 1 | 17 days | 0.28 | | MPC | 2002 $RO_{264}$ |
| 2002 $RP_{264}$ | 17.8 | 0.15 | 20020903 | 10.74375 | 4.94235 | 330.62862 | 7.61963 | 0.2261252 | 2.8039411 | 11 | 1 | 7 days | 0.16 | | MPC | 2002 $RP_{264}$ |
| 2002 $RQ_{264}$ | 16.0 | 0.15 | 20020903 | 101.58370 | 286.98426 | 321.54419 | 9.00071 | 0.0571755 | 3.0575018 | 10 | 1 | 17 days | 0.33 | | MPC | 2002 $RQ_{264}$ |
| 2002 $RR_{264}$ | 17.1 | 0.15 | 20020903 | 350.55741 | 42.51152 | 327.66748 | 6.63282 | 0.3241134 | 2.6743736 | 13 | 1 | 13 days | 0.31 | | MPC | 2002 $RR_{264}$ |
| 2002 $RS_{264}$ | 17.8 | 0.15 | 20020903 | 311.13411 | 98.52958 | 312.13581 | 5.44241 | 0.0899963 | 2.3314185 | 11 | 1 | 17 days | 0.27 | | MPC | 2002 $RS_{264}$ |
| 2002 $RT_{264}$ | 18.5 | 0.15 | 20020903 | 37.30394 | 339.78809 | 316.37821 | 4.65143 | 0.2199513 | 2.4053569 | 8 | 1 | 7 days | 0.24 | | MPC | 2002 $RT_{264}$ |
| 2002 $RU_{264}$ | 17.4 | 0.15 | 20020923 | 359.11683 | 21.48815 | 340.40416 | 13.35126 | 0.2649894 | 2.6926297 | 14 | 1 | 24 days | 0.50 | | MPC | 2002 $RU_{264}$ |
| 2002 $RW_{264}$ | 16.6 | 0.15 | 20020903 | 353.22445 | 197.15369 | 162.50806 | 8.61875 | 0.1198260 | 3.1678585 | 8 | 1 | 4 days | 0.29 | | MPC | 2002 $RW_{264}$ |
| 2002 $RX_{264}$ | 16.2 | 0.15 | 20020903 | 332.84682 | 332.17482 | 47.50840 | 2.34619 | 0.0269149 | 3.1244005 | 12 | 1 | 3 days | 0.21 | E | MPC | 2002 $RX_{264}$ |
| 2002 $RY_{264}$ | 19.1 | 0.15 | 20020903 | 351.96491 | 193.38952 | 169.90168 | 16.62387 | 0.2798938 | 2.7252543 | 13 | 1 | 11 days | 0.21 | | MPC | 2002 $RY_{264}$ |
| 2002 $RA_{265}$ | 17.3 | 0.15 | 20020903 | 53.47860 | 286.98746 | 0.43581 | 13.86882 | 0.0976942 | 2.9017077 | 10 | 1 | 3 days | 0.32 | E | MPC | 2002 $RA_{265}$ |
| 2002 $RB_{265}$ | 19.2 | 0.15 | 20020903 | 22.89879 | 274.20353 | 40.91138 | 1.61192 | 0.1844048 | 2.2949525 | 12 | 1 | 3 days | 0.30 | | MPC | 2002 $RB_{265}$ |
| 2002 $RC_{265}$ | 17.3 | 0.15 | 20020903 | 8.74685 | 337.26192 | 2.60591 | 8.96164 | 0.0980106 | 2.9357726 | 12 | 1 | 3 days | 0.23 | E | MPC | 2002 $RC_{265}$ |
| 2002 $RD_{265}$ | 17.5 | 0.15 | 20020903 | 33.12439 | 299.64819 | 356.75490 | 27.47401 | 0.2491823 | 3.1498161 | 6 | 1 | 2 days | 0.29 | E | MPC | 2002 $RD_{265}$ |
| 2002 $RE_{265}$ | 18.5 | 0.15 | 20020903 | 312.91909 | 44.04579 | 1.04957 | 8.17180 | 0.0948305 | 2.4064420 | 9 | 1 | 3 days | 0.34 | E | MPC | 2002 $RE_{265}$ |
| 2002 $RF_{265}$ | 16.7 | 0.15 | 20020903 | 259.52820 | 325.72918 | 138.60954 | 3.16948 | 0.1187979 | 2.8176315 | 14 | 1 | 3 days | 0.20 | E | MPC | 2002 $RF_{265}$ |
| 2002 $RG_{265}$ | 16.2 | 0.15 | 20020903 | 276.05341 | 282.90069 | 164.93068 | 8.98534 | 0.1091003 | 3.0565452 | 17 | 1 | 6 days | 0.34 | E | MPC | 2002 $RG_{265}$ |
| 2002 $RH_{265}$ | 18.1 | 0.15 | 20020903 | 20.57986 | 321.39016 | 0.00359 | 9.74387 | 0.1567346 | 2.7199959 | 9 | 1 | 3 days | 0.25 | E | MPC | 2002 $RH_{265}$ |
| 2002 $RK_{265}$ | 18.7 | 0.15 | 20020903 | 31.06907 | 168.69116 | 137.19896 | 2.02258 | 0.1685338 | 2.5719040 | 12 | 1 | 3 days | 0.34 | | MPC | 2002 $RK_{265}$ |
| 2002 $RL_{265}$ | 19.4 | 0.15 | 20020903 | 359.83847 | 192.18554 | 155.18109 | 3.19221 | 0.2596185 | 2.4206635 | 12 | 1 | 3 days | 0.27 | E | MPC | 2002 $RL_{265}$ |
| 2002 $RM_{265}$ | 18.7 | 0.15 | 20020903 | 351.34630 | 209.02721 | 153.15585 | 2.90610 | 0.2248605 | 2.5735466 | 10 | 1 | 3 days | 0.31 | E | MPC | 2002 $RM_{265}$ |
| 2002 $RP_{265}$ | 15.8 | 0.15 | 20020903 | 274.87783 | 287.30670 | 163.58443 | 11.11571 | 0.1202251 | 3.0583012 | 8 | 1 | 4 days | 0.19 | E | MPC | 2002 $RP_{265}$ |
| 2002 $RQ_{265}$ | 16.1 | 0.15 | 20020903 | 346.31373 | 6.04954 | 8.42320 | 7.97905 | 0.2530287 | 3.9385141 | 9 | 1 | 10 days | 0.21 | | MPC | 2002 $RQ_{265}$ |
| 2002 $RR_{265}$ | 16.5 | 0.15 | 20020903 | 0.56816 | 347.74469 | 1.60773 | 12.21429 | 0.0955535 | 2.6367781 | 16 | 1 | 10 days | 0.46 | D | MPC | 2002 $RR_{265}$ |
| 2002 $RT_{265}$ | 16.8 | 0.15 | 20020903 | 347.81116 | 342.19402 | 23.74337 | 2.90864 | 0.1509082 | 2.5254803 | 15 | 1 | 13 days | 0.51 | | MPC | 2002 $RT_{265}$ |
| 2002 $RU_{265}$ | 16.6 | 0.15 | 20020903 | 223.37319 | 17.52981 | 116.44637 | 1.92270 | 0.0787646 | 2.7653596 | 9 | 1 | 4 days | 0.37 | E | MPC | 2002 $RU_{265}$ |
| 2002 $RW_{265}$ | 18.3 | 0.15 | 20020903 | 17.46839 | 310.04166 | 6.77127 | 6.16850 | 0.2845260 | 2.7746157 | 9 | 1 | 4 days | 0.14 | | MPC | 2002 $RW_{265}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $RY_{265}$ | 17.6 | 0.15 | 20020903 | 15.99555 | 54.45603 | 270.14680 | 3.80241 | 0.1655750 | 2.7212686 | 16 | 1 | 43 days | 0.21 | | MPC | | 2002 $RY_{265}$ |
| 2002 $RZ_{265}$ | 19.5 | 0.15 | 20020903 | 325.64323 | 240.47637 | 187.92071 | 9.55892 | 0.4595475 | 2.4844742 | 9 | 1 | 4 days | 0.14 | | MPC | | 2002 $RZ_{265}$ |
| 2002 $RA_{266}$ | 17.5 | 0.15 | 20060922 | 299.96868 | 110.44980 | 262.73362 | 3.58258 | 0.2102997 | 2.7618862 | 13 | 1 | 64 days | 0.22 | M-v 4 | MPC | | 2002 $RA_{266}$ |
| 2002 $RB_{266}$ | 16.5 | 0.15 | 20020903 | 357.82839 | 124.57067 | 226.10065 | 4.42608 | 0.1599195 | 3.1162238 | 14 | 1 | 43 days | 0.28 | | MPC | | 2002 $RB_{266}$ |
| 2002 $RC_{266}$ | 17.8 | 0.15 | 20020903 | 324.49830 | 111.02603 | 284.13535 | 4.15699 | 0.1540048 | 2.6933814 | 8 | 1 | 5 days | 0.25 | | MPC | | 2002 $RC_{266}$ |
| 2002 $RE_{266}$ | 16.6 | 0.15 | 20020814 | 221.92571 | 143.68253 | 335.22850 | 12.78764 | 0.1323492 | 2.6075861 | 13 | 1 | 28 days | 0.23 | | MPC | | 2002 $RE_{266}$ |
| 2002 $RG_{266}$ | 16.6 | 0.15 | 20020814 | 287.01216 | 290.16601 | 119.14617 | 5.45662 | 0.0240535 | 2.7925179 | 19 | 1 | 29 days | 0.27 | | MPC | | 2002 $RG_{266}$ |
| 2002 $RH_{266}$ | 18.4 | 0.15 | 20060922 | 72.75571 | 275.74976 | 358.26961 | 2.36358 | 0.2446362 | 2.3835690 | 16 | 1 | 80 days | 0.28 | M-v 4 | MPC | | 2002 $RH_{266}$ |
| 2002 SK | 15.5 | 0.15 | 20060922 | 329.06964 | 347.40700 | 35.84145 | 12.74195 | 0.1913208 | 2.6474731 | 70 | 3 | 2002–2006 | 0.45 | M-v 2 | MPC | 03399 | 2002 SK |
| 2002 SM | 17.6 | 0.15 | 20060922 | 280.08121 | 217.13265 | 11.00157 | 14.43630 | 0.4857754 | 1.8720579 | 51 | 4 | 2002–2006 | 0.56 | M-v 2 | MPC | 87547 | 2002 SM |
| 2002 $SD_1$ | 16.8 | 0.15 | 20060922 | 35.45510 | 344.96228 | 8.38020 | 6.18983 | 0.1364052 | 2.3976089 | 92 | 4 | 1997–2006 | 0.52 | M-v 3 | MPC | 48272 | 2002 $SD_1$ |
| 2002 $SK_1$ | 16.7 | 0.15 | 20060922 | 330.99612 | 72.36655 | 335.49707 | 4.47767 | 0.2432235 | 2.5376146 | 122 | 4 | 1998–2006 | 0.57 | M-v 2 | MPC | 04223 | 2002 $SK_1$ |
| 2002 $SN_1$ | 16.6 | 0.15 | 20060922 | 293.56803 | 135.44113 | 351.09992 | 4.10972 | 0.1688212 | 2.3499111 | 82 | 3 | 2002–2006 | 0.59 | M-v 2 | MPC | 61336 | 2002 $SN_1$ |
| 2002 $SP_1$ | 16.6 | 0.15 | 20060922 | 299.19414 | 30.38414 | 31.32155 | 3.29858 | 0.2215375 | 2.6205131 | 47 | 4 | 1998–2006 | 0.47 | M-v 2 | MPC | 03400 | 2002 $SP_1$ |
| 2002 $SQ_1$ | 17.6 | 0.15 | 20060922 | 33.68911 | 195.78378 | 190.95646 | 4.88848 | 0.2533103 | 2.3160706 | 66 | 3 | 1995–2004 | 0.51 | M-v 2 | MPC | 61336 | 2002 $SQ_1$ |
| 2002 $SC_2$ | 15.7 | 0.15 | 20060922 | 314.23860 | 114.04383 | 179.82823 | 6.60094 | 0.1299279 | 3.1552440 | 35 | 5 | 1995–2006 | 0.40 | M-v 0 | MPC | 02130 | 2002 $SC_2$ |
| 2002 $SB_3$ | 15.8 | 0.15 | 20060922 | 10.15444 | 65.83764 | 273.96968 | 15.53915 | 0.1964358 | 2.5497270 | 55 | 2 | 2002–2006 | 0.43 | M-v 3 | MPC | 03400 | 2002 $SB_3$ |
| 2002 $SE_3$ | 16.3 | 0.15 | 20060922 | 340.02738 | 233.65244 | 183.83922 | 11.70079 | 0.2814707 | 2.4637634 | 84 | 2 | 2002–2006 | 0.47 | M-v 3 | MPC | 03400 | 2002 $SE_3$ |
| 2002 $SK_3$ | 17.8 | 0.15 | 20060922 | 125.40336 | 261.20232 | 14.52031 | 3.13161 | 0.1479162 | 2.2894472 | 21 | 3 | 2001–2006 | 0.42 | M-v 2 | MPC | 89332 | 2002 $SK_3$ |
| 2002 $SR_3$ | 17.1 | 0.15 | 20060922 | 25.42629 | 229.78054 | 85.16825 | 1.89596 | 0.1744127 | 2.5615574 | 45 | 4 | 2002–2006 | 0.41 | M-v 1 | MPC | 04223 | 2002 $SR_3$ |
| 2002 $SX_3$ | 17.8 | 0.15 | 20060922 | 30.63382 | 22.81333 | 359.40280 | 2.83605 | 0.1853244 | 2.3423628 | 38 | 3 | 1995–2006 | 0.38 | M-v 4 | MPC | 37926 | 2002 $SX_3$ |
| 2002 $SC_4$ | 16.1 | 0.15 | 20060922 | 42.96002 | 84.50245 | 273.23894 | 3.79731 | 0.2505167 | 2.3532478 | 65 | 1 | 112 days | 0.45 | M-v 3 | MPC | 41791 | 2002 $SC_4$ |
| 2002 $SD_4$ | 15.6 | 0.15 | 20060922 | 337.56826 | 100.91046 | 290.89837 | 4.76513 | 0.1449341 | 2.5393977 | 127 | 4 | 1998–2006 | 0.56 | M-v 3 | MPC | 04223 | 2002 $SD_4$ |
| 2002 $SF_4$ | 14.8 | 0.15 | 20060922 | 315.07721 | 322.14875 | 302.28289 | 26.22583 | 0.3444343 | 3.1501524 | 30 | 3 | 2000–2005 | 0.49 | M-v 2 | MPC | 85619 | 2002 $SF_4$ |
| 2002 $SY_4$ | 16.1 | 0.15 | 20060922 | 0.21216 | 167.28669 | 183.24220 | 14.87808 | 0.1256406 | 2.5797066 | 82 | 3 | 1996–2006 | 0.50 | M-v 2 | MPC | 03400 | 2002 $SY_4$ |
| 2002 $SM_5$ | 16.5 | 0.15 | 20060922 | 269.07145 | 221.98565 | 132.73232 | 2.28969 | 0.1890842 | 3.1334573 | 39 | 3 | 2002–2006 | 0.64 | M-v 4 | MPC | 03400 | 2002 $SM_5$ |
| 2002 $SF_6$ | 17.4 | 0.15 | 20060922 | 86.87208 | 116.20168 | 187.18802 | 2.07972 | 0.2145619 | 2.3366973 | 74 | 4 | 2001–2006 | 0.45 | M-v 0 | MPC | 77648 | 2002 $SF_6$ |
| 2002 $SL_6$ | 15.4 | 0.15 | 20060922 | 207.28881 | 270.32799 | 174.96723 | 4.67791 | 0.1647291 | 3.0840200 | 43 | 4 | 2000–2005 | 0.94 | M-v 1 | MPC | 77648 | 2002 $SL_6$ |
| 2002 $SQ_6$ | 16.5 | 0.15 | 20060922 | 33.53256 | 283.13707 | 90.58715 | 1.14087 | 0.2138224 | 2.3557550 | 97 | 5 | 1997–2006 | 0.52 | M-v 1 | MPC | 77648 | 2002 $SQ_6$ |
| 2002 $SW_6$ | 16.2 | 0.15 | 20060922 | 65.44636 | 130.72031 | 108.89180 | 3.19736 | 0.0128043 | 2.8647551 | 34 | 4 | 1995–2005 | 0.48 | M-v 1 | MPC | 75629 | 2002 $SW_6$ |
| 2002 $SZ_6$ | 17.1 | 0.15 | 20060922 | 109.21276 | 233.45647 | 45.62387 | 2.33823 | 0.2177345 | 2.3321952 | 70 | 4 | 1995–2006 | 0.44 | M-v 1 | MPC | 75629 | 2002 $SZ_6$ |
| 2002 $SF_7$ | 17.3 | 0.15 | 20060922 | 68.60637 | 325.08638 | 9.79206 | 4.05829 | 0.1484694 | 2.3345223 | 45 | 4 | 1994–2006 | 0.45 | M-v 1 | MPC | 50661 | 2002 $SF_7$ |
| 2002 $SJ_8$ | 17.7 | 0.15 | 20060922 | 355.15234 | 181.70848 | 192.91760 | 2.75198 | 0.2286420 | 2.5212623 | 68 | 4 | 1994–2006 | 0.43 | M-v 3 | MPC | 48273 | 2002 $SJ_8$ |
| 2002 $SK_8$ | 16.9 | 0.15 | 20060922 | 290.78144 | 39.35992 | 46.33541 | 3.81356 | 0.0973609 | 2.5354919 | 33 | 4 | 1994–2006 | 0.47 | M-v 1 | MPC | 75629 | 2002 $SK_8$ |
| 2002 $SP_8$ | 16.4 | 0.15 | 20060922 | 332.75170 | 0.93504 | 36.48637 | 4.57330 | 0.2949054 | 2.5700928 | 116 | 3 | 1998–2006 | 0.54 | M-v 2 | MPC | 04224 | 2002 $SP_8$ |
| 2002 $SY_8$ | 16.5 | 0.15 | 20060922 | 45.76457 | 142.35969 | 145.15603 | 4.22947 | 0.0470692 | 2.6791509 | 53 | 7 | 1993–2006 | 0.43 | M-v 0 | MPC | 04224 | 2002 $SY_8$ |
| 2002 $SK_9$ | 16.1 | 0.15 | 20060922 | 340.80679 | 316.56005 | 20.77277 | 3.68629 | 0.0990187 | 2.7618206 | 37 | 4 | 2002–2006 | 0.48 | M-v 1 | MPC | 04224 | 2002 $SK_9$ |
| 2002 $ST_9$ | 16.4 | 0.15 | 20060922 | 27.22773 | 109.41832 | 202.49974 | 2.62990 | 0.1115628 | 2.6241832 | 80 | 5 | 1998–2006 | 0.53 | M-v 1 | MPC | 04224 | 2002 $ST_9$ |
| 2002 $SV_9$ | 16.3 | 0.15 | 20060922 | 331.30054 | 228.65666 | 140.05471 | 2.75611 | 0.0932932 | 2.6669901 | 61 | 4 | 1998–2006 | 0.49 | M-v 3 | MPC | 04224 | 2002 $SV_9$ |
| 2002 $SH_{10}$ | 16.0 | 0.15 | 20060922 | 280.83152 | 43.27383 | 23.82747 | 10.40611 | 0.1010587 | 2.6795986 | 63 | 5 | 1998–2006 | 0.68 | M-v 1 | MPC | 04224 | 2002 $SH_{10}$ |
| 2002 $SK_{10}$ | 16.0 | 0.15 | 20060922 | 255.44429 | 85.35588 | 20.92725 | 14.85332 | 0.0661988 | 2.6012916 | 67 | 5 | 1996–2006 | 0.57 | M-v 1 | MPC | 04224 | 2002 $SK_{10}$ |
| 2002 $SL_{10}$ | 15.4 | 0.15 | 20060922 | 107.96453 | 37.56905 | 186.12018 | 8.85316 | 0.0250926 | 2.7197131 | 50 | 5 | 2000–2006 | 0.52 | M-v 1 | MPC | 04224 | 2002 $SL_{10}$ |
| 2002 $SO_{10}$ | 17.1 | 0.15 | 20060922 | 45.14378 | 191.46545 | 155.34048 | 3.74683 | 0.2081816 | 2.3814105 | 84 | 5 | 1991–2006 | 0.52 | M-v 0 | MPC | 89333 | 2002 $SO_{10}$ |
| 2002 $SP_{10}$ | 16.1 | 0.15 | 20060922 | 16.23930 | 12.02409 | 33.67075 | 6.00660 | 0.1609401 | 2.3352523 | 72 | 3 | 2002–2006 | 0.46 | M-v 3 | MPC | 61339 | 2002 $SP_{10}$ |
| 2002 $SR_{10}$ | 16.6 | 0.15 | 20060922 | 325.16258 | 261.02042 | 145.53650 | 3.37389 | 0.2212330 | 2.5697364 | 99 | 5 | 1998–2006 | 0.56 | M-v 1 | MPC | 04224 | 2002 $SR_{10}$ |
| 2002 $SW_{10}$ | 16.2 | 0.15 | 20060922 | 295.44298 | 206.73692 | 183.48038 | 8.33907 | 0.0881383 | 2.7740826 | 49 | 4 | 1996–2006 | 0.57 | M-v 0 | MPC | 02131 | 2002 $SW_{10}$ |
| 2002 $SB_{11}$ | 16.0 | 0.15 | 20060922 | 297.71867 | 122.75252 | 185.00669 | 16.13246 | 0.2603640 | 3.1506438 | 48 | 4 | 1995–2006 | 0.70 | M-v 0 | MPC | 02131 | 2002 $SB_{11}$ |
| 2002 $SG_{11}$ | 15.9 | 0.15 | 20060922 | 26.08227 | 304.36440 | 12.06682 | 15.05981 | 0.1515193 | 2.5955540 | 61 | 3 | 2002–2006 | 0.51 | M-v 2 | MPC | 04224 | 2002 $SG_{11}$ |
| 2002 $SH_{11}$ | 16.2 | 0.15 | 20060922 | 292.90514 | 6.40996 | 69.35913 | 2.53136 | 0.0457207 | 2.5540552 | 35 | 5 | 2000–2006 | 0.46 | M-v 1 | MPC | 87547 | 2002 $SH_{11}$ |
| 2002 $SZ_{11}$ | 15.9 | 0.15 | 20060922 | 56.86408 | 85.84633 | 185.26831 | 11.37416 | 0.1810350 | 2.6339494 | 87 | 4 | 2001–2006 | 0.55 | M-v 0 | MPC | 04224 | 2002 $SZ_{11}$ |
| 2002 $SC_{12}$ | 16.2 | 0.15 | 20060922 | 248.99618 | 100.25345 | 65.06187 | 3.71025 | 0.1121908 | 2.3607865 | 92 | 3 | 2002–2006 | 0.46 | M-v 2 | MPC | 66282 | 2002 $SC_{12}$ |
| 2002 $SS_{12}$ | 17.1 | 0.15 | 20060922 | 124.68939 | 203.24630 | 101.75474 | 2.43960 | 0.0790673 | 2.2469012 | 43 | 5 | 2001–2006 | 0.42 | M-v 0 | MPC | 87547 | 2002 $SS_{12}$ |
| 2002 $SM_{13}$ | 16.2 | 0.15 | 20060922 | 285.35054 | 306.86813 | 80.36108 | 1.46373 | 0.1747990 | 2.8059513 | 75 | 6 | 1993–2005 | 0.59 | M-v 0 | MPC | 04224 | 2002 $SM_{13}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $SP_{14}$ | 16.9 | 0.15 | 20060922 | 14.78167 | 346.74531 | 38.76566 | 4.23961 | 0.2140873 | 2.3948126 | 79 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 61340 | 2002 $SP_{14}$ |
| 2002 $SR_{14}$ | 17.7 | 0.15 | 20060922 | 163.91102 | 201.33728 | 96.46533 | 2.19867 | 0.0934449 | 2.1212958 | 83 | 6 | 1995–2005 | 0.54 | M-v | 1 | MPC | 97619 | 2002 $SR_{14}$ |
| 2002 $SZ_{14}$ | 16.1 | 0.15 | 20060922 | 64.51999 | 357.43308 | 299.79424 | 14.58120 | 0.1404619 | 2.4809663 | 41 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | 56602 | 2002 $SZ_{14}$ |
| 2002 $SU_{15}$ | 16.1 | 0.15 | 20060922 | 39.21539 | 5.64387 | 299.58693 | 13.58996 | 0.1363213 | 2.5831829 | 41 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 04224 | 2002 $SU_{15}$ |
| 2002 $SX_{15}$ | 16.4 | 0.15 | 20060922 | 14.84621 | 17.24175 | 307.48704 | 11.24225 | 0.2420608 | 2.5802824 | 65 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 03402 | 2002 $SX_{15}$ |
| 2002 $SB_{16}$ | 14.3 | 0.15 | 20060922 | 225.94124 | 138.85520 | 285.48083 | 16.24543 | 0.1310294 | 3.0785463 | 31 | 2 | 2002–2004 | 0.66 | M-v | 3 | MPC | 56603 | 2002 $SB_{16}$ |
| 2002 $SJ_{16}$ | 15.7 | 0.15 | 20060922 | 321.26319 | 105.34817 | 287.06095 | 10.41184 | 0.2118310 | 2.6388632 | 65 | 3 | 1998–2006 | 0.44 | M-v | 3 | MPC | 03402 | 2002 $SJ_{16}$ |
| 2002 $SG_{17}$ | 16.5 | 0.15 | 20060922 | 319.94503 | 25.34290 | 6.06175 | 12.69720 | 0.2965676 | 2.6436965 | 50 | 1 | 78 days | 0.50 | M-v | 4 | MPC | 41792 | 2002 $SG_{17}$ |
| 2002 $SH_{17}$ | 16.9 | 0.15 | 20060922 | 107.94444 | 55.34999 | 209.73556 | 1.63016 | 0.2026645 | 2.3883718 | 99 | 5 | 1997–2006 | 0.46 | M-v | 1 | MPC | 75634 | 2002 $SH_{17}$ |
| 2002 $SK_{17}$ | 16.5 | 0.15 | 20060922 | 194.88551 | 325.38316 | 189.86569 | 12.87157 | 0.1110041 | 2.6382414 | 22 | 4 | 1996–2006 | 0.45 | M-v | 2 | MPC | 85621 | 2002 $SK_{17}$ |
| 2002 $SD_{18}$ | 17.3 | 0.15 | 20060922 | 327.83091 | 291.51421 | 179.83969 | 4.14242 | 0.0889103 | 2.2718638 | 50 | 4 | 1995–2005 | 0.42 | M-v | 0 | MPC | 87547 | 2002 $SD_{18}$ |
| 2002 $SH_{18}$ | 17.0 | 0.15 | 20060922 | 22.08471 | 206.77917 | 109.22052 | 0.99446 | 0.1407004 | 2.6115540 | 50 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 03402 | 2002 $SH_{18}$ |
| 2002 $SO_{18}$ | 17.2 | 0.15 | 20060922 | 354.70666 | 330.17078 | 32.64996 | 1.76104 | 0.1255938 | 2.5413337 | 74 | 5 | 1994–2006 | 0.50 | M-v | 3 | MPC | 04224 | 2002 $SO_{18}$ |
| 2002 $SP_{18}$ | 16.8 | 0.15 | 20060922 | 258.70098 | 352.67038 | 168.64105 | 6.47774 | 0.0402064 | 2.2888512 | 53 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 87547 | 2002 $SP_{18}$ |
| 2002 $SE_{19}$ | 17.0 | 0.15 | 20060922 | 28.60467 | 247.27781 | 158.68323 | 2.78865 | 0.1475511 | 2.2648313 | 66 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87547 | 2002 $SE_{19}$ |
| 2002 $SF_{19}$ | 16.9 | 0.15 | 20060922 | 8.58850 | 338.88418 | 20.22852 | 4.92302 | 0.0926957 | 2.4875887 | 82 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 89333 | 2002 $SF_{19}$ |
| 2002 $SN_{19}$ | 15.7 | 0.15 | 20060922 | 338.16957 | 321.22286 | 42.70458 | 14.08826 | 0.2588615 | 2.6372212 | 111 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 04224 | 2002 $SN_{19}$ |
| 2002 $ST_{19}$ | 16.1 | 0.15 | 20060922 | 306.39081 | 277.86284 | 165.21240 | 27.61673 | 0.4320810 | 2.6116713 | 47 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 03402 | 2002 $ST_{19}$ |
| 2002 $SA_{20}$ | 17.1 | 0.15 | 20060922 | 347.82011 | 74.67388 | 16.28379 | 2.87067 | 0.1180251 | 2.2646718 | 36 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 61341 | 2002 $SA_{20}$ |
| 2002 $SL_{20}$ | 15.4 | 0.15 | 20060922 | 1.44125 | 236.21277 | 18.30606 | 10.76759 | 0.0634873 | 3.1446945 | 28 | 4 | 2000–2006 | 0.60 | M-v | 0 | MPC | 69394 | 2002 $SL_{20}$ |
| 2002 $SM_{20}$ | 15.8 | 0.15 | 20060922 | 334.99458 | 276.52055 | 13.96440 | 6.26462 | 0.2031998 | 2.9677513 | 43 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 00361 | 2002 $SM_{20}$ |
| 2002 $SO_{20}$ | 17.0 | 0.15 | 20060922 | 131.80205 | 259.44598 | 20.33507 | 7.23505 | 0.1882104 | 2.2419449 | 46 | 2 | 1998–2002 | 0.67 | M-v | 4 | MPC | 57895 | 2002 $SO_{20}$ |
| 2002 $SS_{20}$ | 16.6 | 0.15 | 20060922 | 12.83212 | 143.89047 | 161.22349 | 2.60114 | 0.1221004 | 2.6983845 | 52 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 02131 | 2002 $SS_{20}$ |
| 2002 $SW_{20}$ | 17.4 | 0.15 | 20060922 | 12.10732 | 136.08702 | 181.57227 | 13.22698 | 0.2183062 | 2.6089335 | 46 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03403 | 2002 $SW_{20}$ |
| 2002 $SP_{21}$ | 17.6 | 0.15 | 20060922 | 122.93520 | 248.41625 | 36.17558 | 2.77884 | 0.1295296 | 2.2866564 | 40 | 6 | 1992–2006 | 0.41 | M-v | 0 | MPC | 65366 | 2002 $SP_{21}$ |
| 2002 $SO_{22}$ | 16.0 | 0.15 | 20060922 | 292.22667 | 46.22559 | 18.02290 | 13.09435 | 0.1590156 | 2.6381166 | 85 | 4 | 1998–2006 | 0.62 | M-v | 2 | MPC | 04224 | 2002 $SO_{22}$ |
| 2002 $SR_{22}$ | 16.6 | 0.15 | 20060922 | 108.25032 | 260.09796 | 29.88528 | 5.93090 | 0.1702963 | 2.3088217 | 61 | 3 | 1995–2006 | 0.48 | M-v | 3 | MPC | 50131 | 2002 $SR_{22}$ |
| 2002 $SU_{22}$ | 16.3 | 0.15 | 20060922 | 2.23076 | 311.78367 | 68.72253 | 6.98589 | 0.1839019 | 2.4542987 | 96 | 5 | 1993–2006 | 0.49 | M-v | 1 | MPC | 89333 | 2002 $SU_{22}$ |
| 2002 $SB_{23}$ | 17.2 | 0.15 | 20060922 | 331.64533 | 241.71720 | 165.07512 | 4.14655 | 0.2539535 | 2.5375532 | 104 | 4 | 1990–2006 | 0.59 | M-v | 3 | MPC | 04224 | 2002 $SB_{23}$ |
| 2002 $SJ_{23}$ | 15.8 | 0.15 | 20060922 | 242.60706 | 98.29200 | 22.82774 | 12.11269 | 0.0517542 | 2.5649902 | 83 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 61342 | 2002 $SJ_{23}$ |
| 2002 $SK_{23}$ | 16.6 | 0.15 | 20060922 | 320.84078 | 354.44881 | 36.44989 | 5.90698 | 0.1100502 | 2.6206618 | 52 | 6 | 1996–2006 | 0.59 | M-v | 1 | MPC | 89334 | 2002 $SK_{23}$ |
| 2002 $SM_{24}$ | 17.5 | 0.15 | 20060922 | 131.76133 | 141.58374 | 161.96810 | 3.41300 | 0.2194669 | 2.1727467 | 84 | 3 | 2002–2005 | 0.48 | M-v | 2 | MPC | 90160 | 2002 $SM_{24}$ |
| 2002 $SG_{25}$ | 16.4 | 0.15 | 20060922 | 290.45485 | 92.47497 | 36.22374 | 7.76872 | 0.0545437 | 2.3256036 | 63 | 6 | 1999–2006 | 0.62 | M-v | 1 | MPC | 85623 | 2002 $SG_{25}$ |
| 2002 $SH_{25}$ | 15.7 | 0.15 | 20060922 | 329.63736 | 301.90728 | 181.77383 | 24.14336 | 0.2000895 | 2.2656839 | 68 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 87547 | 2002 $SH_{25}$ |
| 2002 $SA_{26}$ | 16.8 | 0.15 | 20060922 | 10.90857 | 232.12840 | 80.53514 | 3.22261 | 0.2418669 | 2.6438448 | 41 | 3 | 1998–2006 | 0.59 | M-v | 2 | MPC | 03403 | 2002 $SA_{26}$ |
| 2002 $SJ_{26}$ | 16.9 | 0.15 | 20060922 | 61.68990 | 324.79094 | 33.82354 | 8.49231 | 0.2387662 | 2.2872431 | 70 | 1 | 107 days | 0.64 | M-v | 4 | MPC | 41793 | 2002 $SJ_{26}$ |
| 2002 $SE_{27}$ | 16.6 | 0.15 | 20060922 | 345.98636 | 260.47799 | 107.50363 | 4.87109 | 0.1687340 | 2.6018481 | 98 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 04224 | 2002 $SE_{27}$ |
| 2002 $SN_{27}$ | 16.5 | 0.15 | 20060922 | 33.57769 | 230.24222 | 141.34652 | 6.78815 | 0.1365725 | 2.3794366 | 48 | 4 | 2000–2006 | 0.62 | M-v | 2 | MPC | 61344 | 2002 $SN_{27}$ |
| 2002 $SO_{28}$ | 17.0 | 0.15 | 20060922 | 317.85412 | 10.44990 | 85.91852 | 2.43623 | 0.1441221 | 2.3770189 | 72 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 61345 | 2002 $SO_{28}$ |
| 2002 $SW_{28}$ | 16.5 | 0.15 | 20060922 | 340.60208 | 348.83187 | 22.83224 | 13.89085 | 0.2749297 | 2.5923138 | 82 | 3 | 1998–2006 | 0.54 | M-v | 2 | MPC | 04224 | 2002 $SW_{28}$ |
| 2002 $SZ_{28}$ | 17.4 | 0.15 | 20060922 | 354.03669 | 277.50613 | 133.80923 | 2.12582 | 0.1697369 | 2.4099662 | 35 | 4 | 2000–2006 | 0.41 | M-v | 1 | MPC | 03404 | 2002 $SZ_{28}$ |
| 2002 $SC_{29}$ | 15.8 | 0.15 | 20060922 | 284.33152 | 350.86053 | 89.37439 | 8.06350 | 0.0833075 | 2.6161749 | 52 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 61345 | 2002 $SC_{29}$ |
| 2002 $SE_{29}$ | 17.2 | 0.15 | 20060922 | 46.03764 | 150.30488 | 197.28641 | 4.00857 | 0.2615237 | 2.3667139 | 47 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 85624 | 2002 $SE_{29}$ |
| 2002 $SL_{29}$ | 16.4 | 0.15 | 20060922 | 260.54259 | 286.97498 | 161.14036 | 1.85502 | 0.1297115 | 2.7066290 | 57 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 04224 | 2002 $SL_{29}$ |
| 2002 $SN_{29}$ | 17.6 | 0.15 | 20060922 | 357.38791 | 173.99747 | 187.21749 | 5.76381 | 0.3165202 | 2.5438495 | 110 | 2 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03404 | 2002 $SN_{29}$ |
| 2002 $SB_{30}$ | 16.4 | 0.15 | 20060922 | 150.24589 | 72.68223 | 172.18033 | 7.79201 | 0.0673055 | 2.3351568 | 53 | 5 | 1995–2006 | 0.58 | M-v | 0 | MPC | 85624 | 2002 $SB_{30}$ |
| 2002 $SL_{30}$ | 15.4 | 0.15 | 20060922 | 215.03482 | 112.19949 | 38.59674 | 13.99599 | 0.1005863 | 2.5479940 | 92 | 4 | 1999–2006 | 0.61 | M-v | 2 | MPC | 62409 | 2002 $SL_{30}$ |
| 2002 $SS_{30}$ | 16.6 | 0.15 | 20060922 | 57.24852 | 277.88376 | 66.33336 | 5.78687 | 0.1658311 | 2.3371997 | 49 | 5 | 1997–2006 | 0.46 | M-v | 1 | MPC | 77650 | 2002 $SS_{30}$ |
| 2002 $ST_{30}$ | 15.9 | 0.15 | 20060922 | 313.03583 | 7.90972 | 44.27457 | 9.74426 | 0.1533483 | 2.5749171 | 41 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 61346 | 2002 $ST_{30}$ |
| 2002 $SO_{31}$ | 15.8 | 0.15 | 20060922 | 359.77229 | 313.79457 | 74.05192 | 7.43765 | 0.1236484 | 2.4400054 | 84 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 61346 | 2002 $SO_{31}$ |
| 2002 $SY_{31}$ | 16.1 | 0.15 | 20060922 | 294.47573 | 330.25464 | 74.24505 | 5.08191 | 0.2897660 | 2.7454434 | 29 | 1 | 70 days | 0.48 | M-v | 4 | MPC | 41793 | 2002 $SY_{31}$ |
| 2002 $SA_{32}$ | 16.4 | 0.15 | 20060922 | 324.54371 | 225.92786 | 141.04030 | 6.58121 | 0.0584852 | 2.7021160 | 41 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 04225 | 2002 $SA_{32}$ |
| 2002 $SC_{32}$ | 16.4 | 0.15 | 20060922 | 347.71831 | 9.70938 | 59.14656 | 5.16523 | 0.1195185 | 2.3548533 | 63 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 62409 | 2002 $SC_{32}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $SE_{32}$ | 16.9 | 0.15 | 20060922 | 17.03146 | 289.81336 | 27.91032 | 10.88617 | 0.3078018 | 2.5604050 | 49 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03404 | 2002 $SE_{32}$ |
| 2002 $SP_{32}$ | 16.4 | 0.15 | 20060922 | 337.89886 | 9.08592 | 7.34392 | 15.27661 | 0.1862732 | 2.6020414 | 64 | 3 | 1998–2006 | 0.44 | M-v | 2 | MPC | 03404 | 2002 $SP_{32}$ |
| 2002 $SR_{32}$ | 15.6 | 0.15 | 20060922 | 320.69597 | 127.72531 | 200.13887 | 8.71236 | 0.1711604 | 2.9095326 | 54 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 00362 | 2002 $SR_{32}$ |
| 2002 $SS_{32}$ | 16.5 | 0.15 | 20060922 | 339.06444 | 126.94976 | 242.99878 | 1.76004 | 0.2966046 | 2.6119022 | 118 | 3 | 1981–2006 | 0.45 | M-v | 2 | MPC | 03404 | 2002 $SS_{32}$ |
| 2002 $SA_{33}$ | 16.3 | 0.15 | 20060922 | 121.57227 | 59.56372 | 227.92806 | 5.75642 | 0.1175815 | 2.3066404 | 52 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 62409 | 2002 $SA_{33}$ |
| 2002 $SK_{33}$ | 16.3 | 0.15 | 20060922 | 329.98103 | 35.19251 | 350.96822 | 3.36376 | 0.2068646 | 2.6181053 | 94 | 4 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04225 | 2002 $SK_{33}$ |
| 2002 $SP_{33}$ | 15.1 | 0.15 | 20060922 | 282.12711 | 79.75711 | 357.86126 | 12.77408 | 0.1538596 | 2.6668421 | 112 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 04225 | 2002 $SP_{33}$ |
| 2002 $SA_{34}$ | 15.8 | 0.15 | 20060922 | 327.95592 | 3.66349 | 14.33668 | 13.58622 | 0.1769418 | 2.6108496 | 71 | 3 | 1998–2006 | 0.59 | M-v | 3 | MPC | 03405 | 2002 $SA_{34}$ |
| 2002 $SR_{34}$ | 15.2 | 0.15 | 20060922 | 226.06573 | 121.84785 | 21.82836 | 12.03154 | 0.1349280 | 2.5224279 | 115 | 4 | 1999–2006 | 0.56 | M-v | 3 | MPC | 04225 | 2002 $SR_{34}$ |
| 2002 $SG_{35}$ | 16.2 | 0.15 | 20060922 | 313.39235 | 27.12510 | 28.73752 | 14.34784 | 0.2468144 | 2.6170302 | 39 | 1 | 76 days | 0.67 | M-v | 4 | MPC | 41794 | 2002 $SG_{35}$ |
| 2002 $SL_{35}$ | 15.9 | 0.15 | 20060922 | 296.81955 | 287.79402 | 135.17973 | 2.93721 | 0.1964126 | 2.6666733 | 85 | 5 | 1996–2006 | 0.51 | M-v | 0 | MPC | 04225 | 2002 $SL_{35}$ |
| 2002 $SU_{35}$ | 15.6 | 0.15 | 20060922 | 304.09892 | 45.12099 | 21.18265 | 15.13721 | 0.1196329 | 2.5902814 | 126 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 61348 | 2002 $SU_{35}$ |
| 2002 $SX_{35}$ | 17.1 | 0.15 | 20060922 | 25.70290 | 190.90688 | 189.07751 | 2.00397 | 0.1964152 | 2.3848287 | 62 | 5 | 1991–2006 | 0.53 | M-v | 1 | MPC | 04225 | 2002 $SX_{35}$ |
| 2002 $SB_{36}$ | 16.3 | 0.15 | 20060922 | 358.09228 | 245.00573 | 167.99349 | 1.19624 | 0.1748816 | 2.4060557 | 84 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 62409 | 2002 $SB_{36}$ |
| 2002 $SH_{36}$ | 17.2 | 0.15 | 20060922 | 332.19048 | 237.45637 | 144.42000 | 4.73048 | 0.2622478 | 2.6249422 | 51 | 2 | 2002–2006 | 0.52 | M-v | 3 | MPC | 03406 | 2002 $SH_{36}$ |
| 2002 $SO_{36}$ | 16.3 | 0.15 | 20060922 | 348.64953 | 207.86924 | 148.05724 | 3.84866 | 0.1384210 | 2.6468874 | 76 | 5 | 1993–2006 | 0.53 | M-v | 1 | MPC | 04225 | 2002 $SO_{36}$ |
| 2002 $SY_{36}$ | 16.7 | 0.15 | 20060922 | 10.70984 | 47.81262 | 350.29395 | 2.19674 | 0.2005231 | 2.4019779 | 78 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 61349 | 2002 $SY_{36}$ |
| 2002 $SA_{37}$ | 16.7 | 0.15 | 20060922 | 120.20402 | 300.16218 | 5.67405 | 2.58272 | 0.2508301 | 2.2155269 | 82 | 6 | 1992–2006 | 0.54 | M-v | 1 | MPC | 90160 | 2002 $SA_{37}$ |
| 2002 $SE_{37}$ | 14.7 | 0.15 | 20060922 | 181.29959 | 288.38048 | 95.11426 | 4.44202 | 0.1710572 | 3.9468827 | 33 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 75645 | 2002 $SE_{37}$ |
| 2002 $SF_{37}$ | 16.3 | 0.15 | 20060922 | 344.65813 | 282.99822 | 112.84573 | 3.04151 | 0.2722518 | 2.5299254 | 136 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04225 | 2002 $SF_{37}$ |
| 2002 $SK_{37}$ | 16.4 | 0.15 | 20060922 | 53.41667 | 209.25177 | 168.04131 | 4.98265 | 0.1496986 | 2.2888385 | 70 | 4 | 1995–2005 | 0.65 | M-v | 1 | MPC | 87548 | 2002 $SK_{37}$ |
| 2002 $SL_{37}$ | 16.7 | 0.15 | 20060922 | 333.17484 | 351.81520 | 45.28754 | 3.59179 | 0.2495607 | 2.5824586 | 58 | 3 | 1998–2006 | 0.69 | M-v | 3 | MPC | 04225 | 2002 $SL_{37}$ |
| 2002 $SX_{37}$ | 15.8 | 0.15 | 20060922 | 36.09525 | 221.98778 | 79.11488 | 9.78598 | 0.3617748 | 2.5645075 | 86 | 5 | 1994–2006 | 0.48 | M-v | 2 | MPC | 75646 | 2002 $SX_{37}$ |
| 2002 $SC_{38}$ | 17.8 | 0.15 | 20060922 | 344.43728 | 89.85576 | 273.40996 | 2.95395 | 0.2681384 | 2.5671493 | 46 | 2 | 2002–2006 | 0.59 | M-v | 3 | MPC | 03406 | 2002 $SC_{38}$ |
| 2002 $SJ_{38}$ | 16.9 | 0.15 | 20060922 | 342.50955 | 62.16939 | 11.84663 | 7.21225 | 0.0647249 | 2.3206100 | 55 | 3 | 2002–2006 | 0.67 | M-v | 2 | MPC | 04225 | 2002 $SJ_{38}$ |
| 2002 $ST_{38}$ | 16.4 | 0.15 | 20060922 | 60.83735 | 188.70087 | 146.64212 | 4.19259 | 0.1130732 | 2.3622383 | 67 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 89335 | 2002 $ST_{38}$ |
| 2002 $SC_{39}$ | 16.6 | 0.15 | 20060922 | 36.28014 | 142.33984 | 160.48444 | 5.83488 | 0.2330048 | 2.5647279 | 132 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04225 | 2002 $SC_{39}$ |
| 2002 $SF_{39}$ | 16.1 | 0.15 | 20060922 | 321.36112 | 21.19411 | 32.60201 | 10.05601 | 0.1987524 | 2.5684903 | 118 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62409 | 2002 $SF_{39}$ |
| 2002 $SM_{39}$ | 17.3 | 0.15 | 20060922 | 48.17291 | 312.47923 | 28.54140 | 2.55033 | 0.2021822 | 2.3708386 | 69 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 75647 | 2002 $SM_{39}$ |
| 2002 $SA_{40}$ | 16.8 | 0.15 | 20060922 | 7.32565 | 307.86334 | 27.41419 | 12.37025 | 0.2079151 | 2.5663934 | 34 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 75648 | 2002 $SA_{40}$ |
| 2002 $SG_{40}$ | 17.2 | 0.15 | 20060922 | 57.22241 | 232.69686 | 83.83591 | 2.24699 | 0.1951512 | 2.4088685 | 53 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75648 | 2002 $SG_{40}$ |
| 2002 $SM_{40}$ | 17.3 | 0.15 | 20060922 | 26.03042 | 290.70910 | 84.98124 | 2.62174 | 0.1195604 | 2.3667269 | 48 | 4 | 1995–2006 | 0.54 | M-v | 1 | MPC | 61350 | 2002 $SM_{40}$ |
| 2002 $SR_{40}$ | 16.2 | 0.15 | 20060922 | 48.76862 | 267.81388 | 80.49777 | 4.01610 | 0.1602429 | 2.3559427 | 77 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 89336 | 2002 $SR_{40}$ |
| 2002 $SX_{40}$ | 15.3 | 0.15 | 20060922 | 309.81162 | 327.09456 | 40.74646 | 5.99913 | 0.0588673 | 2.7701523 | 69 | 5 | 1996–2006 | 0.67 | M-v | 1 | MPC | 04225 | 2002 $SX_{40}$ |
| 2002 $SA_{41}$ | 15.9 | 0.15 | 20060922 | 338.87647 | 239.29513 | 152.62243 | 4.59421 | 0.1974017 | 2.5658451 | 129 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04225 | 2002 $SA_{41}$ |
| 2002 $SG_{41}$ | 15.8 | 0.15 | 20060922 | 310.64122 | 22.88009 | 33.12401 | 15.86563 | 0.1163215 | 2.6172216 | 90 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 77651 | 2002 $SG_{41}$ |
| 2002 $SO_{41}$ | 15.3 | 0.15 | 20060922 | 282.40973 | 256.44820 | 76.44789 | 3.08383 | 0.2167114 | 3.1618381 | 43 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 00363 | 2002 $SO_{41}$ |
| 2002 $SM_{42}$ | 16.5 | 0.15 | 20060922 | 297.66318 | 194.25241 | 200.68817 | 5.71287 | 0.0820586 | 2.7172043 | 50 | 4 | 2002–2006 | 0.65 | M-v | 1 | MPC | 89336 | 2002 $SM_{42}$ |
| 2002 $SS_{42}$ | 16.4 | 0.15 | 20060922 | 90.35404 | 132.81425 | 200.08570 | 6.21555 | 0.1425312 | 2.2572252 | 83 | 4 | 1995–2004 | 0.54 | M-v | 1 | MPC | 62409 | 2002 $SS_{42}$ |
| 2002 $ST_{42}$ | 16.8 | 0.15 | 20060922 | 33.49287 | 169.93603 | 216.84582 | 2.35490 | 0.1778736 | 2.3211585 | 74 | 4 | 1995–2006 | 0.50 | M-v | 2 | MPC | 62409 | 2002 $ST_{42}$ |
| 2002 $SW_{42}$ | 16.4 | 0.15 | 20060922 | 327.62394 | 36.15162 | 344.57110 | 3.36214 | 0.1599637 | 2.6344018 | 45 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 04225 | 2002 $SW_{42}$ |
| 2002 $SL_{43}$ | 17.1 | 0.15 | 20060922 | 346.46719 | 169.00557 | 201.64062 | 4.81668 | 0.2155009 | 2.5813515 | 87 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 03406 | 2002 $SL_{43}$ |
| 2002 $SO_{43}$ | 16.4 | 0.15 | 20060922 | 16.38317 | 170.33729 | 216.76929 | 1.39872 | 0.1625835 | 2.3972597 | 90 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 61352 | 2002 $SO_{43}$ |
| 2002 $SV_{43}$ | 17.3 | 0.15 | 20060922 | 83.39453 | 121.55160 | 177.94251 | 2.21869 | 0.2225552 | 2.3389092 | 61 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 75649 | 2002 $SV_{43}$ |
| 2002 $SC_{44}$ | 17.7 | 0.15 | 20060922 | 45.81046 | 167.75810 | 164.45073 | 1.33971 | 0.1868240 | 2.4066950 | 57 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 75650 | 2002 $SC_{44}$ |
| 2002 $SD_{44}$ | 16.9 | 0.15 | 20060922 | 351.80147 | 143.39708 | 256.06137 | 1.10494 | 0.1732784 | 2.4392819 | 84 | 4 | 1998–2006 | 0.44 | M-v | 3 | MPC | 61352 | 2002 $SD_{44}$ |
| 2002 $SR_{44}$ | 17.1 | 0.15 | 20060922 | 54.75242 | 131.96285 | 194.85901 | 5.98562 | 0.1280871 | 2.4420067 | 59 | 5 | 1998–2006 | 0.49 | M-v | 0 | MPC | 87548 | 2002 $SR_{44}$ |
| 2002 $ST_{44}$ | 14.3 | 0.15 | 20060922 | 188.21463 | 7.26238 | 358.29022 | 2.49477 | 0.2333669 | 3.9983683 | 47 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 94849 | 2002 $ST_{44}$ |
| 2002 $SU_{44}$ | 17.0 | 0.15 | 20060922 | 311.79146 | 178.32897 | 226.57582 | 1.78756 | 0.1901781 | 2.6559987 | 41 | 4 | 1995–2006 | 0.52 | M-v | 2 | MPC | 03407 | 2002 $SU_{44}$ |
| 2002 $SY_{44}$ | 16.8 | 0.15 | 20060922 | 182.18814 | 266.20805 | 5.79149 | 1.75249 | 0.0726345 | 2.1827700 | 66 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 97619 | 2002 $SY_{44}$ |
| 2002 $SZ_{44}$ | 16.9 | 0.15 | 20060922 | 0.32048 | 10.65935 | 72.36714 | 2.00410 | 0.1851407 | 2.3083126 | 51 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 47218 | 2002 $SZ_{44}$ |
| 2002 $SJ_{45}$ | 15.9 | 0.15 | 20060922 | 5.00492 | 214.30036 | 200.28248 | 6.29669 | 0.1000905 | 2.3597737 | 113 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87548 | 2002 $SJ_{45}$ |
| 2002 $SQ_{45}$ | 16.6 | 0.15 | 20060922 | 318.64193 | 209.28148 | 183.25623 | 2.07703 | 0.2119555 | 2.6751331 | 51 | 3 | 1995–2006 | 0.65 | M-v | 3 | MPC | 03407 | 2002 $SQ_{45}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $SR_{45}$ | 17.2 | 0.15 | 20060922 | 4.71610 | 28.14314 | 32.84616 | 2.70458 | 0.1858424 | 2.3669157 | 44 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 61354 | 2002 $SR_{45}$ |
| 2002 $SA_{46}$ | 15.4 | 0.15 | 20060922 | 274.80905 | 267.75477 | 116.34667 | 3.95260 | 0.2074174 | 2.9703813 | 51 | 4 | 1994–2004 | 0.72 | M-v | 2 | MPC | 04225 | 2002 $SA_{46}$ |
| 2002 $SG_{46}$ | 16.9 | 0.15 | 20060922 | 29.36141 | 187.61341 | 173.74851 | 2.89224 | 0.1947699 | 2.4266818 | 57 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 03407 | 2002 $SG_{46}$ |
| 2002 $SH_{46}$ | 16.5 | 0.15 | 20060922 | 53.93811 | 151.28204 | 184.41223 | 5.08721 | 0.0693511 | 2.4418010 | 101 | 5 | 1993–2006 | 0.53 | M-v | 2 | MPC | 62409 | 2002 $SH_{46}$ |
| 2002 $SJ_{46}$ | 14.7 | 0.15 | 20060922 | 122.45924 | 13.84686 | 199.10551 | 12.60112 | 0.0966329 | 2.7382403 | 99 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 04225 | 2002 $SJ_{46}$ |
| 2002 $SO_{46}$ | 15.3 | 0.15 | 20060922 | 1.76044 | 308.36954 | 39.59397 | 19.30453 | 0.2270971 | 2.6258008 | 156 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04225 | 2002 $SO_{46}$ |
| 2002 $SR_{46}$ | 15.9 | 0.15 | 20060922 | 358.28851 | 273.46625 | 53.78215 | 5.83281 | 0.2595132 | 2.7192067 | 85 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 04225 | 2002 $SR_{46}$ |
| 2002 $SW_{46}$ | 17.0 | 0.15 | 20060922 | 346.48414 | 334.66122 | 44.04416 | 7.74457 | 0.3538030 | 2.5855418 | 97 | 2 | 2002–2006 | 0.52 | M-v | 2 | MPC | 03407 | 2002 $SW_{46}$ |
| 2002 $SX_{46}$ | 15.4 | 0.15 | 20060922 | 16.76665 | 291.15311 | 42.45109 | 13.00293 | 0.1815037 | 2.6338140 | 142 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04225 | 2002 $SX_{46}$ |
| 2002 $SZ_{46}$ | 15.5 | 0.15 | 20060922 | 343.17158 | 161.04181 | 212.76307 | 12.28652 | 0.1775667 | 2.6561256 | 132 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 04225 | 2002 $SZ_{46}$ |
| 2002 $SE_{47}$ | 16.9 | 0.15 | 20060922 | 359.82431 | 137.85579 | 261.51863 | 1.26932 | 0.1953167 | 2.4056054 | 110 | 6 | 1991–2006 | 0.53 | M-v | 0 | MPC | 89337 | 2002 $SE_{47}$ |
| 2002 $SN_{47}$ | 15.8 | 0.15 | 20060922 | 298.22749 | 126.02299 | 193.37791 | 9.81236 | 0.1002475 | 3.1132572 | 33 | 3 | 1995–2006 | 0.60 | M-v | 2 | MPC | 03408 | 2002 $SN_{47}$ |
| 2002 $SR_{47}$ | 16.9 | 0.15 | 20060922 | 123.29499 | 112.46121 | 168.78094 | 4.34570 | 0.1398924 | 2.2868644 | 47 | 5 | 1991–2006 | 0.59 | M-v | 1 | MPC | 48278 | 2002 $SR_{47}$ |
| 2002 $SA_{48}$ | 16.1 | 0.15 | 20060922 | 356.49059 | 148.73142 | 186.51136 | 5.76527 | 0.0662915 | 2.6669503 | 86 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04225 | 2002 $SA_{48}$ |
| 2002 $SB_{48}$ | 16.8 | 0.15 | 20060922 | 14.61042 | 122.17161 | 179.55026 | 1.44063 | 0.1813364 | 2.6767200 | 51 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 04225 | 2002 $SB_{48}$ |
| 2002 $SH_{48}$ | 16.9 | 0.15 | 20060922 | 7.89831 | 291.83180 | 21.58663 | 13.15481 | 0.2939714 | 2.6220047 | 51 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 03408 | 2002 $SH_{48}$ |
| 2002 $SL_{48}$ | 16.5 | 0.15 | 20060922 | 303.23325 | 355.93265 | 146.47320 | 5.47322 | 0.0818032 | 2.2405809 | 125 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 90160 | 2002 $SL_{48}$ |
| 2002 $SY_{48}$ | 17.4 | 0.15 | 20060922 | 89.35637 | 215.64789 | 147.26000 | 4.80184 | 0.0717098 | 2.1922577 | 51 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 90160 | 2002 $SY_{48}$ |
| 2002 $SC_{49}$ | 15.4 | 0.15 | 20060922 | 188.72962 | 138.34706 | 42.28863 | 10.74073 | 0.0782298 | 2.5513178 | 127 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 62409 | 2002 $SC_{49}$ |
| 2002 $SU_{49}$ | 16.8 | 0.15 | 20060922 | 119.79171 | 123.87021 | 150.02942 | 6.08489 | 0.1095741 | 2.3569096 | 36 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 85628 | 2002 $SU_{49}$ |
| 2002 $SB_{50}$ | 16.0 | 0.15 | 20060922 | 328.81931 | 353.43998 | 18.68651 | 14.58176 | 0.2669057 | 2.6446157 | 49 | 1 | 83 days | 0.55 | M-v | 4 | MPC | 41795 | 2002 $SB_{50}$ |
| 2002 $SQ_{50}$ | 15.7 | 0.15 | 20060922 | 63.33151 | 162.13415 | 172.93768 | 2.63232 | 0.1833168 | 2.3732295 | 107 | 4 | 2002–2006 | 0.44 | M-v | 0 | MPC | 87548 | 2002 $SQ_{50}$ |
| 2002 $SB_{51}$ | 16.2 | 0.15 | 20060922 | 354.96985 | 100.88130 | 312.90435 | 6.90406 | 0.3215784 | 2.4289402 | 85 | 6 | 1979–2006 | 0.62 | M-v | 1 | MPC | 77652 | 2002 $SB_{51}$ |
| 2002 $SU_{51}$ | 16.6 | 0.15 | 20060922 | 354.87538 | 352.87609 | 67.12651 | 7.96248 | 0.0798980 | 2.3183578 | 28 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 89337 | 2002 $SU_{51}$ |
| 2002 $SP_{52}$ | 15.6 | 0.15 | 20060922 | 0.98116 | 339.62677 | 75.69459 | 8.12375 | 0.1984775 | 2.3609399 | 59 | 3 | 2002–2006 | 0.67 | M-v | 3 | MPC | 61357 | 2002 $SP_{52}$ |
| 2002 $SW_{52}$ | 15.5 | 0.15 | 20060922 | 339.44578 | 305.04909 | 58.46316 | 12.33634 | 0.1806055 | 2.6148458 | 54 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 04225 | 2002 $SW_{52}$ |
| 2002 $SX_{52}$ | 16.2 | 0.15 | 20060922 | 45.77087 | 235.27247 | 91.83378 | 9.16341 | 0.2313000 | 2.4159683 | 67 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 77652 | 2002 $SX_{52}$ |
| 2002 $SU_{53}$ | 15.5 | 0.15 | 20060922 | 343.99613 | 141.28229 | 247.23088 | 14.27122 | 0.1196638 | 2.5330754 | 79 | 5 | 1991–2006 | 0.58 | M-v | 2 | MPC | 87548 | 2002 $SU_{53}$ |
| 2002 $SZ_{53}$ | 16.0 | 0.15 | 20060922 | 31.10853 | 167.86740 | 229.34374 | 9.56205 | 0.1869908 | 2.3608315 | 105 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 74218 | 2002 $SZ_{53}$ |
| 2002 $SF_{54}$ | 17.4 | 0.15 | 20060922 | 93.00753 | 36.03969 | 317.67674 | 5.84462 | 0.1178771 | 2.1557218 | 47 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 85629 | 2002 $SF_{54}$ |
| 2002 $SR_{54}$ | 17.1 | 0.15 | 20060922 | 76.83375 | 105.99243 | 217.61296 | 5.54231 | 0.1419832 | 2.2980311 | 45 | 5 | 2001–2006 | 0.40 | M-v | 0 | MPC | 85629 | 2002 $SR_{54}$ |
| 2002 $SD_{55}$ | 16.7 | 0.15 | 20060922 | 14.23886 | 104.01342 | 204.20173 | 6.80489 | 0.1954229 | 2.6090299 | 67 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04226 | 2002 $SD_{55}$ |
| 2002 $SE_{55}$ | 15.9 | 0.15 | 20060922 | 339.47607 | 35.30283 | 327.81927 | 7.36207 | 0.0493138 | 2.5904546 | 64 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04226 | 2002 $SE_{55}$ |
| 2002 $SU_{55}$ | 16.7 | 0.15 | 20060922 | 71.75409 | 219.51774 | 128.01768 | 4.50433 | 0.1541856 | 2.2905332 | 52 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 75657 | 2002 $SU_{55}$ |
| 2002 $SM_{56}$ | 16.4 | 0.15 | 20060922 | 9.61050 | 351.18712 | 54.44314 | 8.01216 | 0.1058078 | 2.3589931 | 83 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 61357 | 2002 $SM_{56}$ |
| 2002 $SP_{56}$ | 16.5 | 0.15 | 20060922 | 356.41486 | 277.41344 | 75.72829 | 6.19014 | 0.1762960 | 2.5608196 | 49 | 5 | 1996–2006 | 0.58 | M-v | 2 | MPC | 04226 | 2002 $SP_{56}$ |
| 2002 $SS_{56}$ | 16.0 | 0.15 | 20060922 | 35.34425 | 254.58073 | 128.95402 | 6.68682 | 0.1301860 | 2.3374501 | 73 | 3 | 2000–2004 | 0.56 | M-v | 3 | MPC | 62410 | 2002 $SS_{56}$ |
| 2002 $SE_{57}$ | 16.7 | 0.15 | 20060922 | 347.83616 | 344.35242 | 85.70096 | 6.85108 | 0.1791508 | 2.4030778 | 69 | 5 | 1991–2006 | 0.59 | M-v | 0 | MPC | 62410 | 2002 $SE_{57}$ |
| 2002 $SJ_{57}$ | 17.1 | 0.15 | 20060922 | 46.38055 | 277.97199 | 56.44033 | 6.11976 | 0.2599715 | 2.3839205 | 55 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 75658 | 2002 $SJ_{57}$ |
| 2002 $SM_{57}$ | 17.0 | 0.15 | 20060922 | 64.38516 | 278.37098 | 92.80978 | 4.43423 | 0.1734194 | 2.2355897 | 66 | 5 | 1997–2006 | 0.57 | M-v | 2 | MPC | 61359 | 2002 $SM_{57}$ |
| 2002 $SA_{58}$ | 17.1 | 0.15 | 20060922 | 64.54053 | 246.79202 | 133.72545 | 7.23129 | 0.1625912 | 2.2410905 | 40 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 85630 | 2002 $SA_{58}$ |
| 2002 $SL_{58}$ | 16.0 | 0.15 | 20060922 | 317.89490 | 339.86787 | 78.98995 | 6.69057 | 0.1285002 | 2.5685832 | 71 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 61359 | 2002 $SL_{58}$ |
| 2002 $ST_{58}$ | 17.3 | 0.15 | 20060922 | 27.28348 | 275.45615 | 26.72065 | 2.90401 | 0.1953007 | 2.5944608 | 41 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03409 | 2002 $ST_{58}$ |
| 2002 $SW_{58}$ | 16.0 | 0.15 | 20060922 | 231.41255 | 337.51972 | 67.80259 | 0.31202 | 0.1723054 | 3.1171129 | 45 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 77653 | 2002 $SW_{58}$ |
| 2002 $SZ_{58}$ | 17.3 | 0.15 | 20060922 | 90.77412 | 251.17075 | 31.49830 | 2.81152 | 0.1727602 | 2.3888603 | 49 | 4 | 2001–2006 | 0.35 | M-v | 0 | MPC | 85630 | 2002 $SZ_{58}$ |
| 2002 $SG_{59}$ | 16.9 | 0.15 | 20060922 | 8.01336 | 315.50332 | 46.37457 | 7.10026 | 0.1710488 | 2.4328245 | 67 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 75659 | 2002 $SG_{59}$ |
| 2002 $SQ_{59}$ | 16.3 | 0.15 | 20060922 | 13.52810 | 325.44737 | 71.74413 | 8.20189 | 0.1007663 | 2.3209721 | 31 | 3 | 2002–2006 | 0.63 | M-v | 3 | MPC | 61359 | 2002 $SQ_{59}$ |
| 2002 $SB_{60}$ | 16.1 | 0.15 | 20060922 | 30.92927 | 253.46716 | 93.21045 | 6.01421 | 0.1729013 | 2.3919409 | 67 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 03409 | 2002 $SB_{60}$ |
| 2002 $SF_{60}$ | 17.5 | 0.15 | 20060922 | 61.00179 | 281.42282 | 89.03627 | 5.55292 | 0.1515614 | 2.2211478 | 24 | 3 | 1999–2006 | 0.58 | M-v | 3 | MPC | 72719 | 2002 $SF_{60}$ |
| 2002 $SH_{61}$ | 17.4 | 0.15 | 20060922 | 112.97689 | 126.05791 | 158.73624 | 9.29843 | 0.2101048 | 2.2806889 | 56 | 4 | 1995–2005 | 0.55 | M-v | 1 | MPC | 87548 | 2002 $SH_{61}$ |
| 2002 $SN_{61}$ | 17.1 | 0.15 | 20060922 | 16.50022 | 296.19001 | 23.63526 | 7.93343 | 0.2015613 | 2.5537479 | 49 | 5 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04226 | 2002 $SN_{61}$ |
| 2002 $SC_{63}$ | 16.9 | 0.15 | 20060922 | 146.98028 | 100.65212 | 79.79151 | 3.58754 | 0.0261465 | 2.6285556 | 28 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04226 | 2002 $SC_{63}$ |
| 2002 $SG_{63}$ | 15.8 | 0.15 | 20060922 | 262.05317 | 294.52027 | 37.75586 | 4.54485 | 0.1019651 | 3.2226129 | 37 | 4 | 2002–2006 | 0.33 | M-v | 1 | MPC | 02132 | 2002 $SG_{63}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $SO_{63}$ | 17.7 | 0.15 | 20060922 | 60.70204 | 289.81821 | 27.89364 | 2.47194 | 0.2241289 | 2.4007221 | 36 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75660 | 2002 $SO_{63}$ |
| 2002 $SP_{63}$ | 17.4 | 0.15 | 20060922 | 60.53339 | 2.64344 | 312.15594 | 5.68703 | 0.1370611 | 2.3553777 | 58 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 56623 | 2002 $SP_{63}$ |
| 2002 $SB_{64}$ | 16.2 | 0.15 | 20060922 | 7.72498 | 22.54188 | 317.47592 | 28.50570 | 0.0899122 | 2.5727282 | 33 | 3 | 2002–2006 | 0.70 | M-v | 3 | MPC | 04226 | 2002 $SB_{64}$ |
| 2002 $SH_{64}$ | 17.2 | 0.15 | 20060922 | 356.61953 | 341.71332 | 4.40020 | 11.00843 | 0.1979557 | 2.5235974 | 49 | 2 | 2002–2006 | 0.40 | M-v | 4 | MPC | 03409 | 2002 $SH_{64}$ |
| 2002 $SA_{65}$ | 17.4 | 0.15 | 20060922 | 113.47580 | 246.75529 | 19.72523 | 5.62292 | 0.1521445 | 2.2948452 | 33 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 94850 | 2002 $SA_{65}$ |
| 2002 $SE_{65}$ | 17.1 | 0.15 | 20060922 | 121.72139 | 312.68635 | 307.98568 | 5.25301 | 0.0921715 | 2.3519384 | 46 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 00365 | 2002 $SE_{65}$ |
| 2002 $SQ_{65}$ | 17.7 | 0.15 | 20060922 | 107.88913 | 248.72139 | 41.20409 | 5.29814 | 0.1402792 | 2.2620003 | 26 | 3 | 1999–2006 | 0.36 | M-v | 4 | MPC | 94850 | 2002 $SQ_{65}$ |
| 2002 $SY_{65}$ | 16.7 | 0.15 | 20060922 | 294.77396 | 324.24625 | 108.73467 | 4.97281 | 0.1971915 | 2.5231799 | 39 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 03409 | 2002 $SY_{65}$ |
| 2002 $SZ_{65}$ | 16.1 | 0.15 | 20060922 | 47.76325 | 277.64273 | 5.40398 | 14.03456 | 0.0503255 | 2.5619701 | 33 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 04226 | 2002 $SZ_{65}$ |
| 2002 $SD_{66}$ | 17.1 | 0.15 | 20060922 | 10.51125 | 281.05322 | 95.95872 | 5.25621 | 0.0883469 | 2.3670978 | 54 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 00365 | 2002 $SD_{66}$ |
| 2002 $SH_{66}$ | 16.9 | 0.15 | 20060922 | 358.98200 | 5.31041 | 52.19165 | 6.91830 | 0.0900489 | 2.2777171 | 24 | 3 | 1999–2006 | 0.37 | M-v | 3 | MPC | 00366 | 2002 $SH_{66}$ |
| 2002 $SX_{66}$ | 16.2 | 0.15 | 20020923 | 249.06560 | 125.78511 | 344.29408 | 22.01243 | 0.0304848 | 2.6573670 | 17 | 1 | 23 days | 0.40 | | | MPC | | 2002 $SX_{66}$ |
| 2002 $SA_{67}$ | 16.2 | 0.15 | 20020903 | 221.92888 | 301.57736 | 198.78766 | 11.95570 | 0.1009492 | 3.2171852 | 10 | 1 | 7 days | 0.27 | | | MPC | | 2002 $SA_{67}$ |
| 2002 $SB_{67}$ | 16.5 | 0.15 | 20020903 | 45.83929 | 327.89224 | 333.30509 | 9.43080 | 0.0868913 | 3.0123808 | 10 | 1 | 7 days | 0.20 | | | MPC | | 2002 $SB_{67}$ |
| 2002 $SC_{67}$ | 16.6 | 0.15 | 20020903 | 333.88606 | 164.91761 | 222.24477 | 5.95143 | 0.1150611 | 3.1192641 | 8 | 1 | 5 days | 0.19 | | E | MPC | | 2002 $SC_{67}$ |
| 2002 $SD_{67}$ | 17.1 | 0.15 | 20020903 | 3.00220 | 100.23744 | 250.14321 | 3.88914 | 0.1372354 | 3.1261576 | 13 | 1 | 7 days | 0.27 | | | MPC | | 2002 $SD_{67}$ |
| 2002 $SE_{67}$ | 18.1 | 0.15 | 20020923 | 358.80105 | 147.51727 | 213.53993 | 4.87153 | 0.2267179 | 2.3370655 | 18 | 1 | 55 days | 0.58 | | | MPC | | 2002 $SE_{67}$ |
| 2002 $SF_{67}$ | 16.8 | 0.15 | 20020923 | 346.61233 | 177.81585 | 196.13298 | 15.26495 | 0.0766630 | 2.9573397 | 16 | 1 | 58 days | 0.25 | | | MPC | | 2002 $SF_{67}$ |
| 2002 $SJ_{67}$ | 16.8 | 0.15 | 20020903 | 24.16473 | 188.16369 | 121.93106 | 5.89365 | 0.1087589 | 2.6051462 | 11 | 1 | 27 days | 0.27 | | | MPC | | 2002 $SJ_{67}$ |
| 2002 $SL_{67}$ | 17.9 | 0.15 | 20020903 | 359.01736 | 57.88937 | 292.16106 | 17.15077 | 0.0980641 | 1.9458322 | 12 | 1 | 57 days | 0.17 | | | MPC | | 2002 $SL_{67}$ |
| 2002 $SM_{67}$ | 17.1 | 0.15 | 20020903 | 335.20384 | 250.36632 | 119.39535 | 7.07340 | 0.1198385 | 2.3303284 | 21 | 1 | 49 days | 0.26 | | | MPC | | 2002 $SM_{67}$ |
| 2002 $SN_{67}$ | 16.6 | 0.15 | 20020814 | 6.21203 | 221.71476 | 101.38254 | 5.87350 | 0.1581615 | 2.5831240 | 14 | 1 | 28 days | 0.29 | | | MPC | | 2002 $SN_{67}$ |
| 2002 $SP_{67}$ | 16.4 | 0.15 | 20020814 | 15.41321 | 249.37911 | 64.29460 | 5.72000 | 0.1037224 | 2.7119170 | 15 | 1 | 28 days | 0.32 | | | MPC | | 2002 $SP_{67}$ |
| 2002 $SQ_{67}$ | 16.7 | 0.15 | 20020903 | 332.30080 | 355.97075 | 16.55813 | 11.94461 | 0.1371242 | 2.6852232 | 9 | 1 | 28 days | 0.18 | | | MPC | | 2002 $SQ_{67}$ |
| 2002 TM | 17.6 | 0.15 | 20060922 | 359.18408 | 352.00302 | 12.84937 | 13.07954 | 0.1726028 | 2.5158432 | 64 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 50136 | 2002 TM |
| 2002 TP | 14.9 | 0.15 | 20060922 | 282.80035 | 188.99453 | 137.84704 | 6.34443 | 0.1477941 | 3.1957111 | 32 | 3 | 1999–2005 | 0.41 | M-v | 3 | MPC | 37960 | 2002 TP |
| 2002 TY | 16.2 | 0.15 | 20060922 | 4.49332 | 355.48732 | 60.89819 | 3.69547 | 0.1633271 | 2.3330814 | 47 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 62410 | 2002 TY |
| 2002 $TB_1$ | 17.0 | 0.15 | 20060922 | 44.40384 | 215.59381 | 124.85416 | 2.91350 | 0.2345763 | 2.3856017 | 63 | 7 | 1991–2006 | 0.48 | M-v | 1 | MPC | 77653 | 2002 $TB_1$ |
| 2002 $TC_1$ | 15.4 | 0.15 | 20060922 | 263.11277 | 315.66355 | 35.55334 | 5.14736 | 0.1577748 | 3.1787097 | 35 | 3 | 2002–2006 | 0.72 | M-v | 3 | MPC | 00366 | 2002 $TC_1$ |
| 2002 $TF_1$ | 15.0 | 0.15 | 20060922 | 268.98000 | 328.15392 | 27.03938 | 12.45112 | 0.0616859 | 3.1107896 | 35 | 4 | 2000–2005 | 0.74 | M-v | 1 | MPC | 62410 | 2002 $TF_1$ |
| 2002 $TM_1$ | 15.9 | 0.15 | 20060922 | 7.01062 | 191.20180 | 220.52295 | 2.54802 | 0.2308548 | 2.3877679 | 98 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 62410 | 2002 $TM_1$ |
| 2002 $TN_1$ | 17.0 | 0.15 | 20060922 | 336.20262 | 21.05482 | 8.61685 | 5.03727 | 0.2702157 | 2.5921178 | 90 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03410 | 2002 $TN_1$ |
| 2002 $TO_1$ | 17.2 | 0.15 | 20060922 | 125.28846 | 117.61343 | 206.95016 | 5.34796 | 0.1919069 | 2.1715551 | 89 | 3 | 1995–2005 | 0.64 | M-v | 2 | MPC | 97620 | 2002 $TO_1$ |
| 2002 $TV_1$ | 14.5 | 0.15 | 20060922 | 305.55431 | 313.34611 | 24.59152 | 15.93316 | 0.0953807 | 3.0471970 | 73 | 3 | 2000–2005 | 0.60 | M-v | 3 | MPC | 41797 | 2002 $TV_1$ |
| 2002 $TZ_1$ | 16.3 | 0.15 | 20060922 | 334.52662 | 24.66149 | 356.49247 | 2.48472 | 0.1904516 | 2.6142430 | 124 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04226 | 2002 $TZ_1$ |
| 2002 $TG_2$ | 17.2 | 0.15 | 20060922 | 57.85891 | 41.36519 | 276.75260 | 1.26740 | 0.1915873 | 2.4353753 | 49 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 69395 | 2002 $TG_2$ |
| 2002 $TJ_2$ | 17.0 | 0.15 | 20060922 | 347.03988 | 175.46143 | 205.75105 | 5.62883 | 0.2885900 | 2.5539213 | 92 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03410 | 2002 $TJ_2$ |
| 2002 $TS_2$ | 17.0 | 0.15 | 20060922 | 19.68474 | 180.36432 | 193.30100 | 3.63896 | 0.1325736 | 2.4246394 | 77 | 4 | 1998–2006 | 0.61 | M-v | 3 | MPC | 50669 | 2002 $TS_2$ |
| 2002 $TX_2$ | 17.2 | 0.15 | 20060922 | 50.82922 | 147.41201 | 196.53505 | 0.95283 | 0.1995006 | 2.3777804 | 67 | 6 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87548 | 2002 $TX_2$ |
| 2002 $TY_2$ | 16.0 | 0.15 | 20060922 | 317.33711 | 221.19742 | 198.23768 | 3.82282 | 0.0640262 | 2.5314646 | 120 | 5 | 1998–2006 | 0.49 | M-v | 2 | MPC | 61362 | 2002 $TY_2$ |
| 2002 $TZ_2$ | 16.3 | 0.15 | 20060922 | 18.18943 | 226.95446 | 188.51929 | 3.12573 | 0.2056358 | 2.3199633 | 71 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87548 | 2002 $TZ_2$ |
| 2002 $TF_3$ | 16.4 | 0.15 | 20060922 | 86.67896 | 304.61269 | 13.37651 | 0.76418 | 0.1164504 | 2.3428377 | 68 | 5 | 1991–2006 | 0.49 | M-v | 1 | MPC | 65367 | 2002 $TF_3$ |
| 2002 $TH_3$ | 16.7 | 0.15 | 20060922 | 350.41263 | 350.30790 | 17.31110 | 4.25738 | 0.1889266 | 2.5815229 | 113 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 03410 | 2002 $TH_3$ |
| 2002 $TT_3$ | 15.9 | 0.15 | 20060922 | 305.42927 | 169.77619 | 147.37542 | 1.39697 | 0.2621598 | 3.0663201 | 30 | 3 | 2002–2006 | 0.58 | M-v | 4 | MPC | 03411 | 2002 $TT_3$ |
| 2002 $TU_3$ | 16.5 | 0.15 | 20060922 | 44.32699 | 312.57845 | 39.50427 | 3.94745 | 0.2250997 | 2.3822485 | 50 | 1 | 79 days | 0.64 | M-v | 4 | MPC | 41797 | 2002 $TU_3$ |
| 2002 $TN_4$ | 17.3 | 0.15 | 20060922 | 87.76124 | 183.65622 | 173.27829 | 3.54392 | 0.2005602 | 2.2128679 | 51 | 3 | 2002–2005 | 0.49 | M-v | 2 | MPC | 90160 | 2002 $TN_4$ |
| 2002 $TR_4$ | 15.9 | 0.15 | 20060922 | 355.17719 | 342.35644 | 67.30434 | 3.46260 | 0.2021740 | 2.4392229 | 115 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04226 | 2002 $TR_4$ |
| 2002 $TT_4$ | 16.8 | 0.15 | 20060922 | 357.25576 | 308.15347 | 42.77421 | 5.49060 | 0.2791936 | 2.5939026 | 63 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03411 | 2002 $TT_4$ |
| 2002 $TU_4$ | 15.3 | 0.15 | 20060922 | 27.55855 | 330.04438 | 41.28887 | 7.00116 | 0.1146172 | 2.4162459 | 158 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62410 | 2002 $TU_4$ |
| 2002 $TV_4$ | 16.1 | 0.15 | 20060922 | 43.90170 | 329.36877 | 48.35439 | 5.41670 | 0.1803272 | 2.3258800 | 69 | 3 | 1995–2004 | 0.44 | M-v | 2 | MPC | 61363 | 2002 $TV_4$ |
| 2002 $TY_4$ | 16.7 | 0.15 | 20060922 | 0.51963 | 272.23373 | 144.80020 | 5.15914 | 0.2171118 | 2.4001429 | 45 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 62411 | 2002 $TY_4$ |
| 2002 $TC_5$ | 16.0 | 0.15 | 20060922 | 359.91452 | 241.56725 | 179.79192 | 6.45295 | 0.1038809 | 2.3689814 | 76 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 62411 | 2002 $TC_5$ |
| 2002 $TT_5$ | 17.4 | 0.15 | 20060922 | 46.87801 | 268.65734 | 66.15851 | 1.84490 | 0.3026268 | 2.3929850 | 60 | 4 | 1991–2006 | 0.54 | M-v | 1 | MPC | 75662 | 2002 $TT_5$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TX_5$ | 16.6 | 0.15 | 20060922 | 343.82415 | 38.99134 | 38.66008 | 5.25185 | 0.2082066 | 2.3931493 | 77 | 4 | 1993–2006 | 0.45 | M-v | 1 | MPC | 97620 | 2002 $TX_5$ |
| 2002 $TY_5$ | 16.3 | 0.15 | 20060922 | 356.68985 | 187.42215 | 167.75198 | 2.87449 | 0.1799946 | 2.5919135 | 74 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 03411 | 2002 $TY_5$ |
| 2002 $TB_6$ | 15.9 | 0.15 | 20060922 | 350.31634 | 303.25293 | 63.51874 | 5.27330 | 0.2095999 | 2.6006931 | 93 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 04226 | 2002 $TB_6$ |
| 2002 $TQ_6$ | 16.2 | 0.15 | 20060922 | 3.31776 | 348.17786 | 88.21434 | 4.25343 | 0.2204414 | 2.3462659 | 96 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 85633 | 2002 $TQ_6$ |
| 2002 $TE_7$ | 15.8 | 0.15 | 20060922 | 306.95904 | 320.45731 | 26.39833 | 2.73921 | 0.1314116 | 2.9129685 | 68 | 4 | 1992–2005 | 0.47 | M-v | 2 | MPC | 77654 | 2002 $TE_7$ |
| 2002 $TN_7$ | 16.4 | 0.15 | 20060922 | 98.98661 | 328.59490 | 346.00280 | 2.54892 | 0.0637656 | 2.3161430 | 37 | 3 | 2001–2004 | 0.50 | M-v | 3 | MPC | 61364 | 2002 $TN_7$ |
| 2002 $TP_7$ | 16.6 | 0.15 | 20060922 | 353.78766 | 308.42565 | 98.13170 | 2.30240 | 0.1767223 | 2.4541669 | 100 | 5 | 1992–2006 | 0.47 | M-v | 1 | MPC | 61364 | 2002 $TP_7$ |
| 2002 $TZ_7$ | 16.2 | 0.15 | 20060922 | 351.21844 | 327.89323 | 6.81425 | 1.95106 | 0.0933042 | 2.7035898 | 65 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 85634 | 2002 $TZ_7$ |
| 2002 $TM_8$ | 17.1 | 0.15 | 20060922 | 72.97892 | 206.86063 | 105.53909 | 3.70130 | 0.1839625 | 2.3681394 | 39 | 5 | 1995–2006 | 0.42 | M-v | 1 | MPC | 77654 | 2002 $TM_8$ |
| 2002 $TO_8$ | 16.8 | 0.15 | 20060922 | 37.53755 | 130.03047 | 204.27979 | 2.69924 | 0.1708355 | 2.4571222 | 99 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04226 | 2002 $TO_8$ |
| 2002 $TV_8$ | 16.4 | 0.15 | 20060922 | 65.03172 | 184.87973 | 152.73015 | 2.91703 | 0.1632793 | 2.3471022 | 54 | 6 | 1994–2006 | 0.52 | M-v | 1 | MPC | 87548 | 2002 $TV_8$ |
| 2002 $TQ_9$ | 16.3 | 0.15 | 20060922 | 356.84395 | 193.69723 | 180.59174 | 13.26589 | 0.1946502 | 2.5484067 | 119 | 6 | 1997–2006 | 0.52 | M-v | 1 | MPC | 04226 | 2002 $TQ_9$ |
| 2002 $TS_9$ | 16.4 | 0.15 | 20060922 | 319.09694 | 270.91160 | 139.74974 | 4.42356 | 0.1869755 | 2.6182656 | 82 | 3 | 2000–2006 | 0.62 | M-v | 3 | MPC | 03412 | 2002 $TS_9$ |
| 2002 $TO_{10}$ | 17.3 | 0.15 | 20060922 | 341.57529 | 4.10812 | 17.89340 | 2.78742 | 0.1997702 | 2.5345043 | 81 | 6 | 1990–2006 | 0.58 | M-v | 2 | MPC | 04226 | 2002 $TO_{10}$ |
| 2002 $TY_{10}$ | 15.3 | 0.15 | 20060922 | 315.06488 | 110.18941 | 266.26657 | 10.73963 | 0.1838720 | 2.7087165 | 45 | 1 | 96 days | 0.53 | M-v | 4 | MPC | 41798 | 2002 $TY_{10}$ |
| 2002 $TD_{11}$ | 16.9 | 0.15 | 20060922 | 31.35071 | 109.24501 | 185.74116 | 15.25078 | 0.1725040 | 2.5952226 | 26 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 85635 | 2002 $TD_{11}$ |
| 2002 $TS_{12}$ | 15.5 | 0.15 | 20060922 | 336.12347 | 185.34587 | 157.36081 | 6.52629 | 0.0291091 | 2.7501852 | 38 | 6 | 1996–2006 | 0.51 | M-v | 1 | MPC | 04226 | 2002 $TS_{12}$ |
| 2002 $TV_{12}$ | 15.3 | 0.15 | 20060922 | 224.57645 | 91.39378 | 34.04306 | 8.39239 | 0.0366084 | 2.5871313 | 71 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04226 | 2002 $TV_{12}$ |
| 2002 $TH_{13}$ | 17.3 | 0.15 | 20060922 | 74.56902 | 66.61279 | 249.98777 | 1.63146 | 0.1687637 | 2.3740887 | 56 | 6 | 1991–2006 | 0.47 | M-v | 1 | MPC | 75665 | 2002 $TH_{13}$ |
| 2002 $TO_{13}$ | 16.5 | 0.15 | 20060922 | 324.15923 | 233.18040 | 158.05120 | 3.66831 | 0.2340138 | 2.6415625 | 33 | 2 | 2002–2006 | 0.59 | M-v | 4 | MPC | 03412 | 2002 $TO_{13}$ |
| 2002 $TA_{14}$ | 16.5 | 0.15 | 20060922 | 55.76599 | 250.85025 | 152.72064 | 5.07306 | 0.1382100 | 2.2181811 | 62 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 89338 | 2002 $TA_{14}$ |
| 2002 $TD_{14}$ | 16.6 | 0.15 | 20060922 | 331.33795 | 260.85802 | 186.68624 | 6.26968 | 0.0826864 | 2.3606021 | 51 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 77654 | 2002 $TD_{14}$ |
| 2002 $TE_{14}$ | 16.4 | 0.15 | 20060922 | 26.68647 | 281.87572 | 75.06524 | 5.26555 | 0.1909666 | 2.4613833 | 78 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 94851 | 2002 $TE_{14}$ |
| 2002 $TV_{14}$ | 17.3 | 0.15 | 20060922 | 41.77258 | 84.95319 | 244.43063 | 1.69320 | 0.2129412 | 2.4466081 | 60 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 77654 | 2002 $TV_{14}$ |
| 2002 $TJ_{15}$ | 16.7 | 0.15 | 20060922 | 46.49520 | 287.38720 | 36.87123 | 6.43558 | 0.2189502 | 2.4185331 | 54 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 89338 | 2002 $TJ_{15}$ |
| 2002 $TK_{15}$ | 16.5 | 0.15 | 20060922 | 335.79016 | 227.52844 | 150.45598 | 5.17245 | 0.2288753 | 2.5853857 | 79 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03412 | 2002 $TK_{15}$ |
| 2002 $TM_{15}$ | 16.2 | 0.15 | 20060922 | 358.79259 | 359.57968 | 64.98569 | 3.66533 | 0.1477105 | 2.3232897 | 60 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 62411 | 2002 $TM_{15}$ |
| 2002 $TX_{15}$ | 15.9 | 0.15 | 20060922 | 107.57120 | 34.66452 | 193.49982 | 12.05674 | 0.0521037 | 2.6252730 | 62 | 5 | 1992–2006 | 0.50 | M-v | 1 | MPC | 04227 | 2002 $TX_{15}$ |
| 2002 $TM_{16}$ | 16.1 | 0.15 | 20060922 | 63.76549 | 91.67116 | 240.68010 | 2.10727 | 0.1813443 | 2.3364813 | 74 | 4 | 2002–2006 | 0.40 | M-v | 0 | MPC | 77654 | 2002 $TM_{16}$ |
| 2002 $TU_{16}$ | 16.6 | 0.15 | 20060922 | 268.47119 | 232.32849 | 210.72967 | 3.63336 | 0.0386503 | 2.6021535 | 44 | 4 | 1998–2006 | 0.52 | M-v | 3 | MPC | 04227 | 2002 $TU_{16}$ |
| 2002 $TE_{17}$ | 16.9 | 0.15 | 20060922 | 85.28859 | 112.92331 | 207.49711 | 4.51516 | 0.1867728 | 2.2912457 | 51 | 4 | 1995–2005 | 0.42 | M-v | 1 | MPC | 87549 | 2002 $TE_{17}$ |
| 2002 $TS_{17}$ | 17.4 | 0.15 | 20060922 | 114.00195 | 277.24983 | 6.15094 | 7.51520 | 0.1427051 | 2.3184460 | 29 | 3 | 1995–2002 | 0.52 | M-v | 2 | MPC | 50671 | 2002 $TS_{17}$ |
| 2002 $TE_{18}$ | 17.1 | 0.15 | 20060922 | 87.09429 | 265.54160 | 11.59214 | 14.47707 | 0.1293419 | 2.4621887 | 41 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 77654 | 2002 $TE_{18}$ |
| 2002 $TH_{18}$ | 17.2 | 0.15 | 20060922 | 53.26984 | 336.40210 | 338.37389 | 1.04405 | 0.1714433 | 2.4458108 | 68 | 5 | 2000–2006 | 0.35 | M-v | 0 | MPC | 75668 | 2002 $TH_{18}$ |
| 2002 $TV_{18}$ | 16.7 | 0.15 | 20060922 | 353.87357 | 134.34812 | 289.33699 | 1.24579 | 0.2201763 | 2.3793803 | 60 | 6 | 1991–2006 | 0.67 | M-v | 1 | MPC | 66283 | 2002 $TV_{18}$ |
| 2002 $TY_{18}$ | 15.5 | 0.15 | 20060922 | 285.65029 | 135.59357 | 197.16426 | 10.45592 | 0.2011725 | 3.1119121 | 62 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 00367 | 2002 $TY_{18}$ |
| 2002 $TZ_{18}$ | 16.7 | 0.15 | 20060922 | 81.26536 | 40.38148 | 299.31652 | 1.43264 | 0.1924962 | 2.2590523 | 58 | 4 | 1994–2006 | 0.45 | M-v | 2 | MPC | 61368 | 2002 $TZ_{18}$ |
| 2002 $TQ_{19}$ | 16.5 | 0.15 | 20060922 | 186.24836 | 144.26427 | 44.02427 | 3.24330 | 0.0742899 | 2.4933124 | 46 | 4 | 1998–2006 | 0.37 | M-v | 2 | MPC | 66283 | 2002 $TQ_{19}$ |
| 2002 $TU_{19}$ | 17.9 | 0.15 | 20060922 | 68.60534 | 127.92961 | 182.27766 | 4.09102 | 0.1885793 | 2.3947038 | 34 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 94851 | 2002 $TU_{19}$ |
| 2002 $TL_{20}$ | 16.6 | 0.15 | 20060922 | 114.98686 | 66.77664 | 203.65685 | 5.55417 | 0.2239245 | 2.3448323 | 97 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 87549 | 2002 $TL_{20}$ |
| 2002 $TM_{20}$ | 17.0 | 0.15 | 20060922 | 47.88143 | 130.93167 | 206.41922 | 4.64702 | 0.1938650 | 2.4007657 | 60 | 4 | 1991–2006 | 0.53 | M-v | 1 | MPC | 04227 | 2002 $TM_{20}$ |
| 2002 $TT_{20}$ | 16.5 | 0.15 | 20060922 | 287.46592 | 207.56374 | 173.58933 | 2.04714 | 0.0761193 | 2.8584305 | 33 | 3 | 2002–2005 | 0.45 | M-v | 3 | MPC | 94851 | 2002 $TT_{20}$ |
| 2002 $TY_{20}$ | 15.4 | 0.15 | 20060922 | 210.50915 | 282.32495 | 167.27593 | 5.73527 | 0.1458929 | 3.0523484 | 73 | 4 | 1999–2005 | 0.58 | M-v | 0 | MPC | 62411 | 2002 $TY_{20}$ |
| 2002 $TK_{21}$ | 16.9 | 0.15 | 20060922 | 351.73085 | 139.79690 | 215.97923 | 2.64126 | 0.1646455 | 2.6076841 | 73 | 6 | 1998–2006 | 0.45 | M-v | 1 | MPC | 04227 | 2002 $TK_{21}$ |
| 2002 $TR_{21}$ | 15.8 | 0.15 | 20060922 | 325.34248 | 348.21372 | 43.93152 | 5.31958 | 0.1006023 | 2.6197713 | 51 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 04227 | 2002 $TR_{21}$ |
| 2002 $TS_{21}$ | 17.4 | 0.15 | 20060922 | 2.00454 | 215.26477 | 194.40399 | 2.24715 | 0.2233399 | 2.3971305 | 43 | 4 | 1995–2006 | 0.47 | M-v | 1 | MPC | 37975 | 2002 $TS_{21}$ |
| 2002 $TA_{22}$ | 17.4 | 0.15 | 20060922 | 6.13353 | 31.93921 | 24.80111 | 1.59766 | 0.1712875 | 2.3514337 | 32 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 61369 | 2002 $TA_{22}$ |
| 2002 $TG_{22}$ | 16.4 | 0.15 | 20060922 | 9.03800 | 20.73174 | 16.09869 | 3.09482 | 0.2120864 | 2.4044320 | 75 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 61369 | 2002 $TG_{22}$ |
| 2002 $TH_{22}$ | 16.0 | 0.15 | 20060922 | 276.72624 | 163.75484 | 211.20803 | 1.08275 | 0.2749996 | 2.9774514 | 40 | 1 | 69 days | 0.33 | M-v | 4 | MPC | 41798 | 2002 $TH_{22}$ |
| 2002 $TP_{23}$ | 16.4 | 0.15 | 20060922 | 336.12733 | 192.80986 | 176.15078 | 4.60687 | 0.0946706 | 2.6553398 | 47 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 04227 | 2002 $TP_{23}$ |
| 2002 $TT_{23}$ | 16.8 | 0.15 | 20060922 | 306.47565 | 240.73186 | 183.34491 | 4.28858 | 0.2363207 | 2.6223140 | 53 | 3 | 2000–2006 | 0.44 | M-v | 3 | MPC | 03413 | 2002 $TT_{23}$ |
| 2002 $TU_{23}$ | 15.4 | 0.15 | 20060922 | 299.12668 | 198.11459 | 164.71317 | 2.14307 | 0.0874835 | 2.9130579 | 82 | 6 | 1992–2005 | 0.51 | M-v | 1 | MPC | 04227 | 2002 $TU_{23}$ |
| 2002 $TX_{23}$ | 15.9 | 0.15 | 20060922 | 260.89806 | 238.14812 | 134.27022 | 1.96562 | 0.1854024 | 3.1272321 | 67 | 5 | 1992–2006 | 0.59 | M-v | 0 | MPC | 02133 | 2002 $TX_{23}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TG_{24}$ | 16.6 | 0.15 | 20060922 | 45.07378 | 304.70865 | 15.29891 | 11.68052 | 0.1928676 | 2.4823111 | 59 | 5 | 1993–2006 | 0.48 | M-v | 1 | MPC | 85638 | 2002 $TG_{24}$ |
| 2002 $TJ_{24}$ | 16.1 | 0.15 | 20060922 | 9.66106 | 312.26764 | 20.27358 | 5.66897 | 0.1292836 | 2.6305601 | 111 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04227 | 2002 $TJ_{24}$ |
| 2002 $TO_{24}$ | 16.7 | 0.15 | 20060922 | 352.43293 | 176.55524 | 184.76000 | 14.68036 | 0.1880371 | 2.6062072 | 79 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 03413 | 2002 $TO_{24}$ |
| 2002 $TF_{25}$ | 15.6 | 0.15 | 20060922 | 16.67068 | 296.26595 | 22.92500 | 3.95671 | 0.0881416 | 2.6832327 | 75 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04227 | 2002 $TF_{25}$ |
| 2002 $TS_{25}$ | 16.4 | 0.15 | 20060922 | 23.42824 | 104.04931 | 288.00702 | 0.77870 | 0.1082579 | 2.3654467 | 74 | 5 | 1991–2006 | 0.40 | M-v | 1 | MPC | 62412 | 2002 $TS_{25}$ |
| 2002 $TX_{25}$ | 15.6 | 0.15 | 20060922 | 323.17763 | 290.13002 | 131.15324 | 2.54808 | 0.1393806 | 2.5470997 | 145 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 66283 | 2002 $TX_{25}$ |
| 2002 $TY_{25}$ | 16.0 | 0.15 | 20060922 | 31.91877 | 350.11232 | 22.20456 | 7.72918 | 0.1386686 | 2.3886892 | 71 | 1 | 103 days | 0.52 | M-v | 4 | MPC | 41799 | 2002 $TY_{25}$ |
| 2002 $TC_{26}$ | 15.1 | 0.15 | 20060922 | 233.95340 | 299.00377 | 112.53491 | 3.84315 | 0.1788515 | 3.1718083 | 57 | 5 | 1997–2005 | 0.50 | M-v | 0 | MPC | 61372 | 2002 $TC_{26}$ |
| 2002 $TD_{26}$ | 16.3 | 0.15 | 20060922 | 356.89306 | 287.45394 | 41.73163 | 3.13178 | 0.2252412 | 2.6836315 | 51 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04227 | 2002 $TD_{26}$ |
| 2002 $TJ_{26}$ | 16.3 | 0.15 | 20060922 | 335.66148 | 277.40043 | 127.67650 | 1.99523 | 0.1199385 | 2.5302810 | 82 | 4 | 2000–2006 | 0.58 | M-v | 3 | MPC | 62412 | 2002 $TJ_{26}$ |
| 2002 $TN_{26}$ | 16.8 | 0.15 | 20060922 | 22.61108 | 331.36635 | 29.33970 | 6.48282 | 0.1241797 | 2.4718755 | 53 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 85639 | 2002 $TN_{26}$ |
| 2002 $TW_{26}$ | 15.8 | 0.15 | 20060922 | 345.98620 | 353.20338 | 23.56486 | 3.98926 | 0.1359630 | 2.5906776 | 175 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 04227 | 2002 $TW_{26}$ |
| 2002 $TX_{26}$ | 16.1 | 0.15 | 20060922 | 68.22786 | 273.27609 | 44.17718 | 9.16221 | 0.1410741 | 2.4394192 | 70 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 87549 | 2002 $TX_{26}$ |
| 2002 $TJ_{27}$ | 16.3 | 0.15 | 20060922 | 325.55823 | 199.33506 | 182.57837 | 5.38591 | 0.1384581 | 2.6964721 | 67 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 04227 | 2002 $TJ_{27}$ |
| 2002 $TL_{28}$ | 16.5 | 0.15 | 20060922 | 357.29072 | 32.00839 | 37.56490 | 4.74759 | 0.1595514 | 2.3645355 | 58 | 4 | 1993–2006 | 0.51 | M-v | 1 | MPC | 75673 | 2002 $TL_{28}$ |
| 2002 $TP_{28}$ | 16.4 | 0.15 | 20060922 | 75.09753 | 269.16855 | 28.19027 | 12.97619 | 0.2103368 | 2.4415919 | 63 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 87549 | 2002 $TP_{28}$ |
| 2002 $TS_{28}$ | 15.0 | 0.15 | 20060922 | 288.43662 | 334.60728 | 27.18662 | 18.14384 | 0.2292941 | 2.9845586 | 47 | 1 | 103 days | 0.48 | M-v | 4 | MPC | 41799 | 2002 $TS_{28}$ |
| 2002 $TW_{28}$ | 15.8 | 0.15 | 20060922 | 358.15458 | 227.40335 | 184.28536 | 6.40119 | 0.1042407 | 2.4079879 | 133 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 04227 | 2002 $TW_{28}$ |
| 2002 $TM_{29}$ | 16.7 | 0.15 | 20060922 | 47.83116 | 243.03398 | 125.35301 | 2.99511 | 0.2290327 | 2.3417576 | 51 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 61372 | 2002 $TM_{29}$ |
| 2002 $TP_{29}$ | 15.5 | 0.15 | 20060922 | 269.20660 | 66.90519 | 18.38293 | 3.36116 | 0.1698174 | 2.7430688 | 123 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04227 | 2002 $TP_{29}$ |
| 2002 $TQ_{29}$ | 15.9 | 0.15 | 20060922 | 350.81186 | 358.60032 | 23.22914 | 3.95208 | 0.1243201 | 2.5544727 | 158 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 04227 | 2002 $TQ_{29}$ |
| 2002 $TR_{29}$ | 16.5 | 0.15 | 20060922 | 12.61457 | 125.31953 | 203.28680 | 4.48829 | 0.2534888 | 2.6050592 | 115 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03413 | 2002 $TR_{29}$ |
| 2002 $TV_{29}$ | 17.2 | 0.15 | 20060922 | 21.02768 | 25.68056 | 353.84408 | 1.90346 | 0.2046855 | 2.4187555 | 71 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 87549 | 2002 $TV_{29}$ |
| 2002 $TC_{30}$ | 16.7 | 0.15 | 20060922 | 77.54104 | 241.59952 | 83.58716 | 3.58772 | 0.2219248 | 2.3469942 | 58 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87549 | 2002 $TC_{30}$ |
| 2002 $TD_{30}$ | 15.6 | 0.15 | 20060922 | 334.61613 | 350.52480 | 40.96088 | 13.79050 | 0.1507078 | 2.6141030 | 64 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 04227 | 2002 $TD_{30}$ |
| 2002 $TY_{30}$ | 16.0 | 0.15 | 20060922 | 308.60015 | 231.83201 | 202.91571 | 12.85218 | 0.1411663 | 2.5689812 | 74 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 61373 | 2002 $TY_{30}$ |
| 2002 $TZ_{30}$ | 16.4 | 0.15 | 20060922 | 11.64299 | 192.86876 | 193.60760 | 2.21966 | 0.1819153 | 2.4431804 | 100 | 6 | 1996–2006 | 0.56 | M-v | 1 | MPC | 41800 | 2002 $TZ_{30}$ |
| 2002 $TD_{31}$ | 16.2 | 0.15 | 20060922 | 38.60332 | 314.73224 | 31.73706 | 7.85017 | 0.1185319 | 2.4646325 | 82 | 4 | 1998–2006 | 0.53 | M-v | 3 | MPC | 66283 | 2002 $TD_{31}$ |
| 2002 $TE_{31}$ | 16.2 | 0.15 | 20060922 | 37.17025 | 198.46166 | 178.25898 | 2.42760 | 0.1114443 | 2.3685810 | 60 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 74220 | 2002 $TE_{31}$ |
| 2002 $TF_{31}$ | 16.9 | 0.15 | 20060922 | 54.77048 | 328.29186 | 54.19918 | 1.68500 | 0.2180786 | 2.2775194 | 59 | 3 | 1995–2004 | 0.48 | M-v | 3 | MPC | 41800 | 2002 $TF_{31}$ |
| 2002 $TM_{31}$ | 16.5 | 0.15 | 20060922 | 46.44426 | 164.98638 | 177.68974 | 4.21054 | 0.2318199 | 2.4093426 | 33 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 03413 | 2002 $TM_{31}$ |
| 2002 $TW_{31}$ | 15.7 | 0.15 | 20060922 | 41.44225 | 333.77890 | 35.30593 | 3.92168 | 0.0790300 | 2.3832078 | 76 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 61374 | 2002 $TW_{31}$ |
| 2002 $TD_{32}$ | 15.8 | 0.15 | 20060922 | 320.18101 | 190.86101 | 207.47794 | 6.16012 | 0.1492254 | 2.6569200 | 75 | 3 | 2002–2006 | 0.66 | M-v | 3 | MPC | 03413 | 2002 $TD_{32}$ |
| 2002 $TH_{32}$ | 16.5 | 0.15 | 20060922 | 25.08520 | 53.93684 | 343.46039 | 1.79616 | 0.1181668 | 2.3565609 | 49 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 61375 | 2002 $TH_{32}$ |
| 2002 $TK_{32}$ | 16.5 | 0.15 | 20060922 | 357.41144 | 135.81859 | 209.50541 | 14.06445 | 0.2640472 | 2.6287508 | 75 | 3 | 1997–2006 | 0.46 | M-v | 2 | MPC | 03414 | 2002 $TK_{32}$ |
| 2002 $TB_{33}$ | 16.7 | 0.15 | 20060922 | 349.97367 | 197.97093 | 185.26643 | 9.45228 | 0.0411367 | 2.4856358 | 54 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 85640 | 2002 $TB_{33}$ |
| 2002 $TH_{33}$ | 16.7 | 0.15 | 20060922 | 106.60014 | 50.00273 | 229.46809 | 1.46010 | 0.1951120 | 2.3366098 | 74 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 87549 | 2002 $TH_{33}$ |
| 2002 $TO_{33}$ | 17.7 | 0.15 | 20060922 | 69.05369 | 116.15720 | 205.51824 | 4.94737 | 0.2591205 | 2.3314164 | 34 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 89339 | 2002 $TO_{33}$ |
| 2002 $TQ_{33}$ | 17.1 | 0.15 | 20060922 | 54.01382 | 254.52842 | 71.21735 | 4.48499 | 0.2050750 | 2.4062888 | 81 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 75676 | 2002 $TQ_{33}$ |
| 2002 $TV_{33}$ | 17.4 | 0.15 | 20060922 | 9.72689 | 139.34198 | 192.15710 | 4.35793 | 0.2234360 | 2.5757681 | 50 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 03414 | 2002 $TV_{33}$ |
| 2002 $TW_{33}$ | 16.8 | 0.15 | 20060922 | 144.21862 | 193.09660 | 5.91668 | 13.33762 | 0.0979512 | 2.6278832 | 50 | 4 | 2002–2006 | 0.47 | M-v | 0 | MPC | 04227 | 2002 $TW_{33}$ |
| 2002 $TE_{34}$ | 15.7 | 0.15 | 20060922 | 185.87839 | 255.71819 | 200.62948 | 12.01497 | 0.0893715 | 3.1181317 | 48 | 5 | 1991–2005 | 0.46 | M-v | 0 | MPC | 04228 | 2002 $TE_{34}$ |
| 2002 $TQ_{34}$ | 17.7 | 0.15 | 20060922 | 340.77203 | 16.07983 | 5.06121 | 2.75649 | 0.2385224 | 2.5783536 | 54 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03414 | 2002 $TQ_{34}$ |
| 2002 $TV_{34}$ | 16.4 | 0.15 | 20060922 | 306.36861 | 243.08180 | 191.72467 | 8.01448 | 0.1208611 | 2.5358868 | 36 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 69397 | 2002 $TV_{34}$ |
| 2002 $TW_{34}$ | 16.5 | 0.15 | 20060922 | 327.77503 | 247.71970 | 184.17128 | 4.71985 | 0.0844404 | 2.4353063 | 86 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04228 | 2002 $TW_{34}$ |
| 2002 $TA_{35}$ | 15.4 | 0.15 | 20060922 | 257.87870 | 9.92875 | 14.64794 | 13.32512 | 0.1095716 | 3.0871267 | 35 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 89340 | 2002 $TA_{35}$ |
| 2002 $TR_{35}$ | 16.3 | 0.15 | 20060922 | 339.10385 | 165.08197 | 187.90319 | 3.04264 | 0.1418516 | 2.7126487 | 45 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 04228 | 2002 $TR_{35}$ |
| 2002 $TA_{36}$ | 16.6 | 0.15 | 20060922 | 334.78327 | 17.91864 | 4.18316 | 1.85261 | 0.2278458 | 2.6237787 | 86 | 2 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03414 | 2002 $TA_{36}$ |
| 2002 $TB_{36}$ | 16.4 | 0.15 | 20060922 | 304.30715 | 6.83899 | 14.41918 | 6.89831 | 0.1396923 | 2.8107091 | 36 | 3 | 2000–2005 | 0.50 | M-v | 4 | MPC | 37989 | 2002 $TB_{36}$ |
| 2002 $TD_{36}$ | 16.4 | 0.15 | 20060922 | 67.23727 | 264.51353 | 55.61407 | 2.07764 | 0.1894525 | 2.3996284 | 85 | 5 | 1998–2006 | 0.44 | M-v | 0 | MPC | 85641 | 2002 $TD_{36}$ |
| 2002 $TJ_{36}$ | 16.6 | 0.15 | 20060922 | 320.57601 | 257.66035 | 196.95640 | 6.22044 | 0.0776215 | 2.4033407 | 76 | 5 | 1997–2006 | 0.55 | M-v | 0 | MPC | 77656 | 2002 $TJ_{36}$ |
| 2002 $TB_{37}$ | 16.8 | 0.15 | 20060922 | 43.19734 | 348.86672 | 26.34601 | 5.39963 | 0.0829196 | 2.3563748 | 62 | 3 | 1997–2004 | 0.53 | M-v | 3 | MPC | 66283 | 2002 $TB_{37}$ |
| 2002 $TK_{37}$ | 16.3 | 0.15 | 20060922 | 16.07755 | 197.54464 | 196.01751 | 6.14144 | 0.1141405 | 2.4073417 | 39 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 66283 | 2002 $TK_{37}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TL_{37}$ | 17.1 | 0.15 | 20060922 | 351.57492 | 12.48543 | 34.18074 | 7.07512 | 0.1703840 | 2.4751702 | 86 | 3 | 1998–2006 | 0.46 | M-v | 2 | MPC | 75678 | 2002 $TL_{37}$ |
| 2002 $TN_{37}$ | 17.3 | 0.15 | 20060922 | 314.92185 | 249.01227 | 185.95162 | 5.24711 | 0.2011267 | 2.5333832 | 51 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 62413 | 2002 $TN_{37}$ |
| 2002 $TA_{38}$ | 16.7 | 0.15 | 20060922 | 334.79597 | 9.70121 | 48.67186 | 5.33749 | 0.2135773 | 2.5335031 | 133 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04228 | 2002 $TA_{38}$ |
| 2002 $TD_{38}$ | 16.0 | 0.15 | 20060922 | 21.74042 | 136.53810 | 208.23098 | 21.48357 | 0.0761318 | 2.6065191 | 54 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 87549 | 2002 $TD_{38}$ |
| 2002 $TQ_{38}$ | 16.2 | 0.15 | 20060922 | 345.70767 | 160.12997 | 219.28649 | 4.13532 | 0.1703751 | 2.6196902 | 191 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04228 | 2002 $TQ_{38}$ |
| 2002 $TX_{38}$ | 15.9 | 0.15 | 20060922 | 23.71326 | 317.48277 | 30.85764 | 9.43732 | 0.1174382 | 2.5713192 | 124 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 61378 | 2002 $TX_{38}$ |
| 2002 $TD_{39}$ | 16.2 | 0.15 | 20060922 | 12.90196 | 330.38148 | 33.54848 | 3.48409 | 0.1912582 | 2.5337456 | 147 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04228 | 2002 $TD_{39}$ |
| 2002 $TM_{39}$ | 16.0 | 0.15 | 20060922 | 4.20179 | 134.45544 | 229.99709 | 12.11008 | 0.1969233 | 2.6230963 | 94 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 75679 | 2002 $TM_{39}$ |
| 2002 $TQ_{39}$ | 15.1 | 0.15 | 20060922 | 336.46628 | 330.96788 | 94.73566 | 5.46070 | 0.2551149 | 2.5790211 | 154 | 5 | 1996–2006 | 0.44 | M-v | 1 | MPC | 04228 | 2002 $TQ_{39}$ |
| 2002 $TY_{40}$ | 16.3 | 0.15 | 20060922 | 324.24044 | 53.05520 | 20.23099 | 1.61240 | 0.2024823 | 2.6090868 | 144 | 6 | 1991–2006 | 0.47 | M-v | 1 | MPC | 04228 | 2002 $TY_{40}$ |
| 2002 $TZ_{41}$ | 16.7 | 0.15 | 20060922 | 336.19202 | 177.07103 | 195.65555 | 9.45352 | 0.1579076 | 2.6757500 | 68 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 04228 | 2002 $TZ_{41}$ |
| 2002 $TG_{42}$ | 16.6 | 0.15 | 20060922 | 1.36254 | 244.32775 | 179.91284 | 2.14959 | 0.1959670 | 2.3864599 | 80 | 6 | 1995–2006 | 0.49 | M-v | 1 | MPC | 77656 | 2002 $TG_{42}$ |
| 2002 $TH_{42}$ | 17.1 | 0.15 | 20060922 | 21.34879 | 232.75013 | 149.00733 | 1.36302 | 0.2327979 | 2.4177453 | 73 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 62413 | 2002 $TH_{42}$ |
| 2002 $TJ_{42}$ | 16.6 | 0.15 | 20060922 | 317.83061 | 55.00110 | 27.65380 | 29.77208 | 0.2961076 | 2.5545823 | 123 | 3 | 1998–2006 | 0.57 | M-v | 2 | MPC | 41038 | 2002 $TJ_{42}$ |
| 2002 $TM_{42}$ | 16.2 | 0.15 | 20060922 | 56.67182 | 332.05740 | 37.59730 | 5.99406 | 0.1165317 | 2.3217787 | 77 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 87549 | 2002 $TM_{42}$ |
| 2002 $TY_{42}$ | 16.4 | 0.15 | 20060922 | 343.51287 | 7.01937 | 16.32405 | 5.57081 | 0.1846091 | 2.5948540 | 91 | 3 | 1960–2006 | 0.52 | M-v | 2 | MPC | 04228 | 2002 $TY_{42}$ |
| 2002 $TZ_{42}$ | 15.4 | 0.15 | 20060922 | 245.32603 | 253.02317 | 213.59486 | 12.22472 | 0.1142505 | 2.7680187 | 57 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 87549 | 2002 $TZ_{42}$ |
| 2002 $TJ_{43}$ | 15.9 | 0.15 | 20060922 | 357.51071 | 161.09903 | 214.96732 | 8.52265 | 0.1282243 | 2.5605709 | 132 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 87549 | 2002 $TJ_{43}$ |
| 2002 $TL_{43}$ | 15.8 | 0.15 | 20060922 | 302.31413 | 268.35958 | 219.18345 | 6.11080 | 0.1075394 | 2.3822606 | 130 | 4 | 2002–2006 | 0.53 | M-v | 0 | MPC | 87549 | 2002 $TL_{43}$ |
| 2002 $TT_{43}$ | 16.2 | 0.15 | 20060922 | 13.06676 | 202.92676 | 202.61183 | 5.89754 | 0.1052095 | 2.3866490 | 88 | 4 | 1991–2006 | 0.56 | M-v | 2 | MPC | 04228 | 2002 $TT_{43}$ |
| 2002 $TW_{43}$ | 16.2 | 0.15 | 20060922 | 1.63655 | 327.59754 | 31.77499 | 8.22250 | 0.2133546 | 2.5841095 | 144 | 5 | 1977–2006 | 0.47 | M-v | 1 | MPC | 75682 | 2002 $TW_{43}$ |
| 2002 $TZ_{43}$ | 16.3 | 0.15 | 20060922 | 14.81476 | 234.51630 | 158.02459 | 1.17470 | 0.1421782 | 2.4219735 | 88 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 61384 | 2002 $TZ_{43}$ |
| 2002 $TK_{44}$ | 15.9 | 0.15 | 20060922 | 326.89048 | 289.17294 | 152.17919 | 6.99635 | 0.0651717 | 2.3398239 | 69 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 61384 | 2002 $TK_{44}$ |
| 2002 $TN_{44}$ | 16.1 | 0.15 | 20060922 | 3.03286 | 153.17708 | 199.30713 | 12.38957 | 0.1863658 | 2.6360414 | 96 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 03415 | 2002 $TN_{44}$ |
| 2002 $TR_{44}$ | 14.7 | 0.15 | 20060922 | 230.40796 | 246.20024 | 195.31959 | 9.41341 | 0.0345300 | 2.9746442 | 58 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 02134 | 2002 $TR_{44}$ |
| 2002 $TU_{44}$ | 17.0 | 0.15 | 20060922 | 68.79412 | 290.56297 | 45.31175 | 7.27261 | 0.1555744 | 2.3729820 | 45 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 89340 | 2002 $TU_{44}$ |
| 2002 $TE_{45}$ | 15.7 | 0.15 | 20060922 | 332.28076 | 347.15538 | 44.92757 | 3.83091 | 0.1125109 | 2.6334987 | 120 | 3 | 1996–2006 | 0.49 | M-v | 3 | MPC | 03415 | 2002 $TE_{45}$ |
| 2002 $TA_{46}$ | 17.1 | 0.15 | 20060922 | 348.52680 | 355.56569 | 24.17131 | 8.93646 | 0.3833123 | 2.5675540 | 98 | 2 | 2002–2006 | 0.57 | M-v | 2 | MPC | 03415 | 2002 $TA_{46}$ |
| 2002 $TJ_{46}$ | 14.9 | 0.15 | 20060922 | 274.28686 | 246.79199 | 211.75883 | 27.28243 | 0.1629942 | 2.6882742 | 103 | 3 | 2002–2006 | 0.47 | M-v | 1 | MPC | 04228 | 2002 $TJ_{46}$ |
| 2002 $TM_{46}$ | 16.6 | 0.15 | 20060922 | 23.84425 | 31.68370 | 35.36838 | 6.48198 | 0.1621961 | 2.2924862 | 81 | 3 | 1995–2004 | 0.55 | M-v | 2 | MPC | 66284 | 2002 $TM_{46}$ |
| 2002 $TQ_{46}$ | 16.3 | 0.15 | 20060922 | 347.51978 | 66.05896 | 34.76402 | 12.34137 | 0.1671424 | 2.3305011 | 66 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 62413 | 2002 $TQ_{46}$ |
| 2002 $TD_{47}$ | 16.2 | 0.15 | 20060922 | 24.75148 | 301.55440 | 41.33341 | 5.63918 | 0.1855245 | 2.5471977 | 136 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 77657 | 2002 $TD_{47}$ |
| 2002 $TR_{47}$ | 16.5 | 0.15 | 20060922 | 6.60064 | 319.05082 | 42.75109 | 5.35358 | 0.2633287 | 2.5472701 | 186 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04228 | 2002 $TR_{47}$ |
| 2002 $TW_{47}$ | 16.9 | 0.15 | 20060922 | 83.42841 | 289.46585 | 61.12466 | 3.81587 | 0.1795654 | 2.2769796 | 87 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 85645 | 2002 $TW_{47}$ |
| 2002 $TX_{47}$ | 16.0 | 0.15 | 20060922 | 327.42392 | 269.27870 | 155.28464 | 2.77744 | 0.1297372 | 2.5469573 | 122 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 61388 | 2002 $TX_{47}$ |
| 2002 $TY_{47}$ | 15.7 | 0.15 | 20060922 | 45.29511 | 308.69980 | 60.51269 | 4.59486 | 0.2168309 | 2.3662340 | 164 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 02134 | 2002 $TY_{47}$ |
| 2002 $TF_{48}$ | 16.2 | 0.15 | 20060922 | 304.63146 | 48.03702 | 40.27208 | 12.81985 | 0.2580905 | 2.6123879 | 113 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 65368 | 2002 $TF_{48}$ |
| 2002 $TJ_{48}$ | 16.4 | 0.15 | 20060922 | 25.37498 | 216.24016 | 192.33046 | 3.41291 | 0.1743101 | 2.3460699 | 96 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 87550 | 2002 $TJ_{48}$ |
| 2002 $TP_{48}$ | 16.9 | 0.15 | 20060922 | 25.82821 | 342.76315 | 30.55887 | 4.43689 | 0.2086216 | 2.4413559 | 50 | 5 | 1998–2006 | 0.62 | M-v | 2 | MPC | 62413 | 2002 $TP_{48}$ |
| 2002 $TZ_{48}$ | 16.5 | 0.15 | 20060922 | 102.35209 | 302.25815 | 32.30494 | 3.03939 | 0.1611113 | 2.2651870 | 101 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 85645 | 2002 $TZ_{48}$ |
| 2002 $TG_{49}$ | 15.4 | 0.15 | 20060922 | 271.76394 | 226.46302 | 221.09888 | 13.19086 | 0.1477208 | 2.7663168 | 91 | 4 | 1999–2006 | 0.66 | M-v | 1 | MPC | 04228 | 2002 $TG_{49}$ |
| 2002 $TD_{50}$ | 15.3 | 0.15 | 20060922 | 351.63325 | 131.94714 | 212.47551 | 12.04885 | 0.2724174 | 2.6965708 | 101 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 03415 | 2002 $TD_{50}$ |
| 2002 $TJ_{50}$ | 16.6 | 0.15 | 20060922 | 17.65997 | 332.40115 | 98.61062 | 4.24159 | 0.2112077 | 2.3381525 | 67 | 4 | 1993–2006 | 0.54 | M-v | 2 | MPC | 41044 | 2002 $TJ_{50}$ |
| 2002 $TO_{50}$ | 16.2 | 0.15 | 20060922 | 32.40298 | 323.67225 | 56.14131 | 4.43728 | 0.2553712 | 2.3952415 | 123 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 61392 | 2002 $TO_{50}$ |
| 2002 $TR_{50}$ | 16.2 | 0.15 | 20060922 | 21.93573 | 313.91495 | 120.68710 | 4.20189 | 0.2175529 | 2.3139581 | 117 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 90161 | 2002 $TR_{50}$ |
| 2002 $TU_{50}$ | 15.0 | 0.15 | 20060922 | 303.52816 | 349.60060 | 57.77297 | 15.42669 | 0.2294966 | 2.7830261 | 136 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 03416 | 2002 $TU_{50}$ |
| 2002 $TH_{51}$ | 15.8 | 0.15 | 20060922 | 357.16222 | 321.44097 | 37.99829 | 13.48901 | 0.2029261 | 2.6558696 | 91 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04228 | 2002 $TH_{51}$ |
| 2002 $TK_{51}$ | 16.0 | 0.15 | 20060922 | 45.64031 | 341.03244 | 38.10372 | 5.51609 | 0.1589471 | 2.3722537 | 88 | 4 | 1997–2006 | 0.50 | M-v | 2 | MPC | 61393 | 2002 $TK_{51}$ |
| 2002 $TJ_{52}$ | 16.7 | 0.15 | 20060922 | 1.75414 | 130.61834 | 232.03489 | 5.75777 | 0.3666778 | 2.5657304 | 160 | 2 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03416 | 2002 $TJ_{52}$ |
| 2002 $TH_{53}$ | 15.9 | 0.15 | 20060922 | 68.12994 | 241.60596 | 119.39066 | 4.33373 | 0.2629178 | 2.3290188 | 77 | 5 | 1991–2006 | 0.59 | M-v | 2 | MPC | 62414 | 2002 $TH_{53}$ |
| 2002 $TD_{54}$ | 15.4 | 0.15 | 20060922 | 318.95126 | 116.01074 | 281.04757 | 3.69398 | 0.1982005 | 2.7805546 | 112 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 03417 | 2002 $TD_{54}$ |
| 2002 $TV_{54}$ | 16.0 | 0.15 | 20060922 | 351.98312 | 153.60031 | 231.00052 | 13.17061 | 0.1794033 | 2.6058521 | 88 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 87550 | 2002 $TV_{54}$ |
| 2002 $TW_{54}$ | 15.6 | 0.15 | 20060922 | 326.93658 | 151.87047 | 238.61920 | 8.82514 | 0.2056397 | 2.7286414 | 129 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04228 | 2002 $TW_{54}$ |

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| 2002 $TZ_{54}$ | 15.6 | 0.15 | 20060922 | 342.83678 | 194.78848 | 214.95154 | 13.17439 | 0.2590529 | 2.5893303 | 117 | 2 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03417 | 2002 $TZ_{54}$ |
| 2002 $TA_{55}$ | 16.5 | 0.15 | 20060922 | 26.34157 | 266.70600 | 33.86155 | 7.23107 | 0.2387520 | 2.5691102 | 49 | 2 | 2002–2006 | 0.51 | M-v | 4 | MPC | 03417 | 2002 $TA_{55}$ |
| 2002 $TB_{55}$ | 17.3 | 0.15 | 20060922 | 52.11118 | 279.93329 | 62.88697 | 3.55682 | 0.2465972 | 2.3360560 | 39 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 75688 | 2002 $TB_{55}$ |
| 2002 $TC_{55}$ | 16.4 | 0.15 | 20060922 | 348.24848 | 348.74560 | 44.48380 | 4.74150 | 0.2590803 | 2.5948013 | 132 | 2 | 2002–2006 | 0.40 | M-v | 2 | MPC | 03417 | 2002 $TC_{55}$ |
| 2002 $TG_{55}$ | 16.0 | 0.15 | 20060922 | 72.28068 | 321.27525 | 31.78300 | 5.82932 | 0.1876024 | 2.2432766 | 69 | 4 | 2000–2004 | 0.61 | M-v | 2 | MPC | 61399 | 2002 $TG_{55}$ |
| 2002 $TO_{55}$ | 17.4 | 0.15 | 20060922 | 350.41875 | 196.87609 | 172.86135 | 10.58631 | 0.2004944 | 2.5656592 | 47 | 2 | 2002–2006 | 0.57 | M-v | 3 | MPC | 03417 | 2002 $TO_{55}$ |
| 2002 $TJ_{56}$ | 16.4 | 0.15 | 20060922 | 319.72348 | 345.73367 | 13.49373 | 3.29637 | 0.2260569 | 2.7900690 | 40 | 3 | 1960–2004 | 0.53 | M-v | 4 | MPC | 03418 | 2002 $TJ_{56}$ |
| 2002 $TG_{57}$ | 16.9 | 0.15 | 20060922 | 83.39550 | 261.13235 | 19.51481 | 3.84326 | 0.3223953 | 2.4004698 | 72 | 4 | 1998–2006 | 0.43 | M-v | 2 | MPC | 75690 | 2002 $TG_{57}$ |
| 2002 $TX_{57}$ | 16.2 | 0.15 | 20060922 | 343.95649 | 164.71387 | 184.69374 | 12.85646 | 0.2125086 | 2.7148135 | 51 | 5 | 1993–2006 | 0.62 | M-v | 1 | MPC | 04229 | 2002 $TX_{57}$ |
| 2002 $TJ_{58}$ | 16.8 | 0.15 | 20060922 | 73.12438 | 74.24601 | 254.49391 | 3.61590 | 0.1635257 | 2.3390235 | 50 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 85648 | 2002 $TJ_{58}$ |
| 2002 $TL_{58}$ | 15.5 | 0.15 | 20060922 | 320.52150 | 125.24960 | 8.38115 | 23.37271 | 0.2600183 | 2.3081763 | 56 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 87550 | 2002 $TL_{58}$ |
| 2002 $TN_{58}$ | 16.4 | 0.15 | 20060922 | 88.26371 | 85.37716 | 246.39970 | 5.57711 | 0.1394582 | 2.2780317 | 66 | 5 | 1992–2006 | 0.63 | M-v | 1 | MPC | 62414 | 2002 $TN_{58}$ |
| 2002 $TD_{60}$ | 19.3 | 0.15 | 20060922 | 338.33327 | 343.81807 | 62.70973 | 7.41243 | 0.0829018 | 1.2022377 | 432 | 2 | 2002–2006 | 0.43 | M-v | 1 | MPC | 03418 | 2002 $TD_{60}$ |
| 2002 $TU_{61}$ | 15.9 | 0.15 | 20060922 | 302.07655 | 76.36581 | 334.51742 | 11.42711 | 0.1404154 | 2.6436464 | 63 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04229 | 2002 $TU_{61}$ |
| 2002 $TY_{61}$ | 15.8 | 0.15 | 20060922 | 280.97808 | 119.70507 | 306.74880 | 7.81298 | 0.0667305 | 2.6569558 | 65 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04229 | 2002 $TY_{61}$ |
| 2002 $TC_{62}$ | 17.1 | 0.15 | 20060922 | 44.08725 | 132.15926 | 265.65484 | 6.29054 | 0.1002891 | 2.2418533 | 42 | 4 | 1999–2006 | 0.34 | M-v | 1 | MPC | 85648 | 2002 $TC_{62}$ |
| 2002 $TK_{62}$ | 16.1 | 0.15 | 20060922 | 275.24201 | 125.76698 | 288.81290 | 3.75647 | 0.0352715 | 2.7478544 | 49 | 4 | 1995–2006 | 0.47 | M-v | 0 | MPC | 04229 | 2002 $TK_{62}$ |
| 2002 $TN_{63}$ | 16.4 | 0.15 | 20060922 | 278.63227 | 246.30137 | 206.37053 | 13.74271 | 0.1507175 | 2.6139611 | 31 | 3 | 1996–2004 | 0.60 | M-v | 2 | MPC | 61404 | 2002 $TN_{63}$ |
| 2002 $TE_{64}$ | 15.7 | 0.15 | 20060922 | 205.55714 | 236.86297 | 277.38305 | 3.74821 | 0.0771142 | 2.6042521 | 51 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04229 | 2002 $TE_{64}$ |
| 2002 $TK_{64}$ | 16.9 | 0.15 | 20060922 | 138.81417 | 318.71553 | 323.34477 | 3.24387 | 0.1549276 | 2.2520111 | 53 | 4 | 2002–2006 | 0.39 | M-v | 1 | MPC | 87550 | 2002 $TK_{64}$ |
| 2002 $TU_{64}$ | 15.3 | 0.15 | 20060922 | 90.93658 | 213.01055 | 38.41044 | 28.63992 | 0.0607353 | 2.6667211 | 41 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 75691 | 2002 $TU_{64}$ |
| 2002 $TV_{65}$ | 17.3 | 0.15 | 20060922 | 11.53142 | 131.86260 | 204.80798 | 4.24549 | 0.2388887 | 2.5863203 | 74 | 2 | 2002–2006 | 0.60 | M-v | 3 | MPC | 03419 | 2002 $TV_{65}$ |
| 2002 $TG_{67}$ | 15.8 | 0.15 | 20060922 | 324.90488 | 137.60517 | 322.98020 | 24.27213 | 0.1624770 | 2.3117992 | 64 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 62414 | 2002 $TG_{67}$ |
| 2002 $TO_{68}$ | 15.8 | 0.15 | 20060922 | 324.16470 | 250.47924 | 168.32800 | 16.07368 | 0.1679081 | 2.5846710 | 87 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04229 | 2002 $TO_{68}$ |
| 2002 $TP_{68}$ | 15.2 | 0.15 | 20060922 | 330.50420 | 349.94945 | 31.05073 | 28.26681 | 0.1115539 | 2.6442129 | 96 | 5 | 1996–2006 | 0.63 | M-v | 2 | MPC | 04229 | 2002 $TP_{68}$ |
| 2002 $TM_{69}$ | 16.4 | 0.15 | 20060922 | 19.68957 | 82.40755 | 272.61105 | 1.88866 | 0.2323422 | 2.5383714 | 113 | 4 | 1998–2006 | 0.46 | M-v | 3 | MPC | 75692 | 2002 $TM_{69}$ |
| 2002 $TO_{69}$ | 15.4 | 0.15 | 20060922 | 313.60144 | 90.14836 | 307.14300 | 5.68687 | 0.0757151 | 2.5992648 | 119 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 04229 | 2002 $TO_{69}$ |
| 2002 $TY_{69}$ | 15.7 | 0.15 | 20060922 | 352.70216 | 253.75846 | 132.52965 | 13.76258 | 0.2031980 | 2.6130731 | 60 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 87550 | 2002 $TY_{69}$ |
| 2002 $TE_{70}$ | 16.1 | 0.15 | 20060922 | 336.92383 | 143.16357 | 222.58872 | 13.10084 | 0.1225652 | 2.6585971 | 46 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 04229 | 2002 $TE_{70}$ |
| 2002 $TG_{70}$ | 16.3 | 0.15 | 20060922 | 0.86248 | 212.82635 | 228.62450 | 8.99930 | 0.1812942 | 2.3036197 | 66 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 66284 | 2002 $TG_{70}$ |
| 2002 $TH_{70}$ | 14.9 | 0.15 | 20060922 | 227.68535 | 183.40438 | 236.94134 | 9.45035 | 0.0673583 | 3.0673953 | 69 | 3 | 1998–2005 | 0.72 | M-v | 3 | MPC | 75692 | 2002 $TH_{70}$ |
| 2002 $TK_{70}$ | 15.9 | 0.15 | 20060922 | 95.36957 | 30.80719 | 268.06619 | 5.09199 | 0.1213003 | 2.3774083 | 62 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 62414 | 2002 $TK_{70}$ |
| 2002 $TL_{70}$ | 15.6 | 0.15 | 20060922 | 245.99456 | 194.38079 | 261.94669 | 12.72466 | 0.0627277 | 2.5997041 | 50 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 04229 | 2002 $TL_{70}$ |
| 2002 $TQ_{70}$ | 15.9 | 0.15 | 20060922 | 306.48003 | 77.17630 | 321.06920 | 17.50651 | 0.2111099 | 2.6561450 | 40 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 75693 | 2002 $TQ_{70}$ |
| 2002 $TC_{71}$ | 15.9 | 0.15 | 20060922 | 357.64718 | 338.16847 | 347.79542 | 12.04917 | 0.2846980 | 2.6614436 | 55 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04229 | 2002 $TC_{71}$ |
| 2002 $TF_{71}$ | 15.9 | 0.15 | 20060922 | 96.01152 | 29.87692 | 291.65467 | 6.92328 | 0.2383593 | 2.2568114 | 66 | 4 | 2002–2006 | 0.39 | M-v | 2 | MPC | 85649 | 2002 $TF_{71}$ |
| 2002 $TL_{71}$ | 16.4 | 0.15 | 20060922 | 339.94113 | 26.06641 | 352.79404 | 12.26453 | 0.2634777 | 2.5961975 | 52 | 2 | 2002–2006 | 0.52 | M-v | 3 | MPC | 03420 | 2002 $TL_{71}$ |
| 2002 $TR_{71}$ | 15.7 | 0.15 | 20060922 | 339.83589 | 99.87062 | 331.51407 | 6.57846 | 0.0749112 | 2.3900003 | 67 | 3 | 2002–2006 | 0.62 | M-v | 3 | MPC | 61409 | 2002 $TR_{71}$ |
| 2002 $TT_{71}$ | 16.7 | 0.15 | 20060922 | 5.94214 | 155.20060 | 271.10502 | 6.50722 | 0.1713708 | 2.3334244 | 40 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 94855 | 2002 $TT_{71}$ |
| 2002 $TK_{72}$ | 15.7 | 0.15 | 20060922 | 100.03769 | 57.86395 | 247.26855 | 6.34186 | 0.1212846 | 2.3403068 | 80 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 66284 | 2002 $TK_{72}$ |
| 2002 $TS_{72}$ | 15.7 | 0.15 | 20060922 | 346.80017 | 71.52512 | 270.35384 | 3.98430 | 0.1619138 | 2.7158115 | 63 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04229 | 2002 $TS_{72}$ |
| 2002 $TT_{72}$ | 17.0 | 0.15 | 20060922 | 66.78579 | 22.18872 | 297.61982 | 5.70309 | 0.1438552 | 2.4217015 | 26 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 00370 | 2002 $TT_{72}$ |
| 2002 $TZ_{72}$ | 15.7 | 0.15 | 20060922 | 179.77419 | 289.50519 | 290.47794 | 3.65975 | 0.0227599 | 2.4225068 | 137 | 5 | 1993–2006 | 0.56 | M-v | 2 | MPC | 66284 | 2002 $TZ_{72}$ |
| 2002 $TF_{73}$ | 15.1 | 0.15 | 20060922 | 289.03345 | 135.51687 | 277.50970 | 6.08449 | 0.0999129 | 2.7422292 | 82 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 04229 | 2002 $TF_{73}$ |
| 2002 $TP_{73}$ | 16.6 | 0.15 | 20060922 | 8.11472 | 139.47525 | 302.72827 | 6.07636 | 0.0600398 | 2.2525779 | 49 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 90161 | 2002 $TP_{73}$ |
| 2002 $TU_{73}$ | 17.0 | 0.15 | 20060922 | 9.01117 | 139.60528 | 261.21602 | 3.05537 | 0.2024411 | 2.4078580 | 66 | 4 | 1991–2006 | 0.49 | M-v | 1 | MPC | 48284 | 2002 $TU_{73}$ |
| 2002 $TV_{73}$ | 16.3 | 0.15 | 20060922 | 320.51140 | 156.87318 | 285.75694 | 2.62679 | 0.1555418 | 2.4775475 | 86 | 4 | 1994–2006 | 0.43 | M-v | 2 | MPC | 04229 | 2002 $TV_{73}$ |
| 2002 $TD_{74}$ | 15.7 | 0.15 | 20060922 | 329.13097 | 159.35514 | 223.83980 | 10.14311 | 0.2249157 | 2.6530535 | 78 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 75693 | 2002 $TD_{74}$ |
| 2002 $TQ_{74}$ | 15.4 | 0.15 | 20060922 | 267.41500 | 270.77415 | 87.53988 | 5.44842 | 0.1047919 | 3.0983536 | 41 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 02134 | 2002 $TQ_{74}$ |
| 2002 $TC_{75}$ | 16.9 | 0.15 | 20060922 | 49.74822 | 237.36902 | 89.23407 | 6.04653 | 0.1243317 | 2.4286658 | 43 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 75694 | 2002 $TC_{75}$ |
| 2002 $TF_{75}$ | 16.6 | 0.15 | 20060922 | 350.08337 | 282.47617 | 84.75174 | 6.27035 | 0.1281298 | 2.5547050 | 51 | 4 | 1998–2006 | 0.60 | M-v | 3 | MPC | 03420 | 2002 $TF_{75}$ |
| 2002 $TM_{75}$ | 15.6 | 0.15 | 20060922 | 19.63466 | 191.35721 | 96.64171 | 6.55560 | 0.2598661 | 2.6607685 | 71 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 04229 | 2002 $TM_{75}$ |
| 2002 $TO_{75}$ | 17.5 | 0.15 | 20060922 | 349.92993 | 60.57971 | 298.60048 | 4.02863 | 0.3008611 | 2.5886788 | 59 | 2 | 2002–2006 | 0.38 | M-v | 3 | MPC | 03420 | 2002 $TO_{75}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TQ_{75}$ | 15.1 | 0.15 | 20060922 | 160.92434 | 336.91288 | 230.10979 | 6.85606 | 0.1461690 | 2.5272707 | 54 | 4 | 1994–2006 | 0.51 | M-v | 3 | MPC | 03420 | 2002 $TQ_{75}$ |
| 2002 $TU_{75}$ | 16.1 | 0.15 | 20060922 | 306.63185 | 78.55477 | 0.08299 | 13.33887 | 0.1251127 | 2.5246989 | 105 | 5 | 1995–2006 | 0.49 | M-v | 2 | MPC | 04229 | 2002 $TU_{75}$ |
| 2002 $TR_{76}$ | 16.6 | 0.15 | 20060922 | 324.01043 | 131.52497 | 280.52588 | 3.13395 | 0.2120033 | 2.5713702 | 108 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04229 | 2002 $TR_{76}$ |
| 2002 $TF_{77}$ | 16.0 | 0.15 | 20060922 | 316.54478 | 42.31119 | 359.72443 | 5.06908 | 0.2039624 | 2.6460562 | 102 | 4 | 2000–2006 | 0.40 | M-v | 2 | MPC | 03421 | 2002 $TF_{77}$ |
| 2002 $TG_{77}$ | 15.8 | 0.15 | 20060922 | 276.92206 | 146.15124 | 359.21208 | 7.07916 | 0.1491903 | 2.3914066 | 83 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 66285 | 2002 $TG_{77}$ |
| 2002 $TP_{77}$ | 16.3 | 0.15 | 20060922 | 351.18352 | 137.40915 | 285.43460 | 1.95899 | 0.1553490 | 2.4061670 | 54 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 62415 | 2002 $TP_{77}$ |
| 2002 $TU_{77}$ | 16.3 | 0.15 | 20060922 | 15.30960 | 328.32652 | 351.69593 | 3.88164 | 0.2985561 | 2.5983790 | 158 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04229 | 2002 $TU_{77}$ |
| 2002 $TZ_{77}$ | 17.0 | 0.15 | 20060922 | 348.83984 | 176.45720 | 248.76028 | 1.71791 | 0.1724253 | 2.4087280 | 65 | 6 | 1993–2006 | 0.58 | M-v | 1 | MPC | 66285 | 2002 $TZ_{77}$ |
| 2002 $TC_{78}$ | 17.3 | 0.15 | 20060922 | 39.41454 | 112.64638 | 287.58467 | 1.69705 | 0.0826497 | 2.2645435 | 55 | 5 | 1997–2006 | 0.41 | M-v | 1 | MPC | 87550 | 2002 $TC_{78}$ |
| 2002 $TD_{78}$ | 16.5 | 0.15 | 20060922 | 81.80689 | 72.80683 | 221.37860 | 4.26367 | 0.1837246 | 2.4222926 | 81 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 87550 | 2002 $TD_{78}$ |
| 2002 $TO_{78}$ | 15.9 | 0.15 | 20060922 | 21.86998 | 326.05882 | 58.11854 | 7.92485 | 0.1174167 | 2.4023420 | 73 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 61412 | 2002 $TO_{78}$ |
| 2002 $TR_{78}$ | 16.7 | 0.15 | 20060922 | 40.75829 | 263.98967 | 101.97917 | 3.86776 | 0.2494127 | 2.3682884 | 73 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 85651 | 2002 $TR_{78}$ |
| 2002 $TT_{78}$ | 15.5 | 0.15 | 20060922 | 60.62274 | 299.57630 | 6.05138 | 22.99102 | 0.2741568 | 2.3602168 | 69 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 75696 | 2002 $TT_{78}$ |
| 2002 $TZ_{78}$ | 16.5 | 0.15 | 20060922 | 304.64736 | 314.94522 | 125.20920 | 5.99251 | 0.2507577 | 2.6107711 | 69 | 3 | 1998–2006 | 0.68 | M-v | 3 | MPC | 65370 | 2002 $TZ_{78}$ |
| 2002 $TB_{79}$ | 16.4 | 0.15 | 20060922 | 337.97518 | 284.72314 | 113.54306 | 5.71989 | 0.1543708 | 2.5659836 | 51 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 65370 | 2002 $TB_{79}$ |
| 2002 $TV_{79}$ | 15.9 | 0.15 | 20060922 | 351.77465 | 201.45390 | 154.42649 | 7.38397 | 0.2779248 | 2.6311014 | 118 | 3 | 1998–2006 | 0.46 | M-v | 2 | MPC | 03421 | 2002 $TV_{79}$ |
| 2002 $TD_{80}$ | 17.1 | 0.15 | 20060922 | 64.85837 | 91.32289 | 226.92349 | 2.14196 | 0.0926260 | 2.4253400 | 62 | 4 | 1997–2006 | 0.40 | M-v | 1 | MPC | 87550 | 2002 $TD_{80}$ |
| 2002 $TO_{80}$ | 17.1 | 0.15 | 20060922 | 356.35526 | 134.47814 | 222.04566 | 3.62087 | 0.2769881 | 2.5668856 | 93 | 2 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03421 | 2002 $TO_{80}$ |
| 2002 $TV_{80}$ | 15.4 | 0.15 | 20060922 | 97.44073 | 238.56564 | 67.58759 | 12.59401 | 0.2443497 | 2.3405686 | 72 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87551 | 2002 $TV_{80}$ |
| 2002 $TO_{81}$ | 16.4 | 0.15 | 20060922 | 28.70776 | 256.10164 | 98.37477 | 5.90841 | 0.2119391 | 2.3834808 | 69 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 50677 | 2002 $TO_{81}$ |
| 2002 $TQ_{81}$ | 16.9 | 0.15 | 20060922 | 63.00992 | 259.04541 | 74.71635 | 3.71631 | 0.2079351 | 2.3036947 | 33 | 5 | 1994–2006 | 0.49 | M-v | 1 | MPC | 89343 | 2002 $TQ_{81}$ |
| 2002 $TU_{81}$ | 16.9 | 0.15 | 20060922 | 41.15149 | 276.46620 | 120.22921 | 5.86344 | 0.1989910 | 2.2614819 | 44 | 4 | 1993–2006 | 0.45 | M-v | 2 | MPC | 50141 | 2002 $TU_{81}$ |
| 2002 $TA_{82}$ | 16.4 | 0.15 | 20060922 | 355.99978 | 285.39977 | 115.44346 | 6.75034 | 0.1556152 | 2.4211210 | 53 | 4 | 1997–2006 | 0.52 | M-v | 2 | MPC | 03422 | 2002 $TA_{82}$ |
| 2002 $TR_{82}$ | 16.9 | 0.15 | 20060922 | 317.31996 | 4.19798 | 56.22921 | 2.57288 | 0.1688835 | 2.5543264 | 40 | 4 | 1994–2006 | 0.52 | M-v | 3 | MPC | 65371 | 2002 $TR_{82}$ |
| 2002 $TB_{83}$ | 16.6 | 0.15 | 20060922 | 19.83944 | 107.11727 | 206.84287 | 13.74519 | 0.1784384 | 2.6472588 | 37 | 4 | 2000–2006 | 0.80 | M-v | 2 | MPC | 03422 | 2002 $TB_{83}$ |
| 2002 $TD_{83}$ | 15.7 | 0.15 | 20060922 | 357.87732 | 355.83278 | 64.84976 | 7.77130 | 0.1610625 | 2.3221412 | 44 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 74221 | 2002 $TD_{83}$ |
| 2002 $TO_{83}$ | 16.4 | 0.15 | 20060922 | 42.54932 | 233.11185 | 121.74740 | 7.45857 | 0.1549090 | 2.3450582 | 62 | 5 | 1992–2006 | 0.60 | M-v | 1 | MPC | 87551 | 2002 $TO_{83}$ |
| 2002 $TZ_{83}$ | 16.3 | 0.15 | 20060922 | 346.35639 | 319.97141 | 32.68669 | 16.68663 | 0.3194687 | 2.6174302 | 109 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 04229 | 2002 $TZ_{83}$ |
| 2002 $TC_{84}$ | 16.6 | 0.15 | 20060922 | 7.09440 | 148.21571 | 170.48463 | 13.36903 | 0.2699838 | 2.6340648 | 26 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 75697 | 2002 $TC_{84}$ |
| 2002 $TF_{84}$ | 15.8 | 0.15 | 20060922 | 316.83445 | 322.90628 | 33.69986 | 16.05606 | 0.2006083 | 2.7914430 | 37 | 1 | 83 days | 0.50 | M-v | 3 | MPC | 48285 | 2002 $TF_{84}$ |
| 2002 $TA_{85}$ | 16.8 | 0.15 | 20060922 | 345.89832 | 242.82898 | 134.16127 | 5.75679 | 0.2841333 | 2.5818787 | 105 | 2 | 2002–2006 | 0.59 | M-v | 2 | MPC | 03422 | 2002 $TA_{85}$ |
| 2002 $TA_{86}$ | 15.8 | 0.15 | 20060922 | 310.83376 | 157.09982 | 238.44157 | 2.88036 | 0.2257250 | 2.6786492 | 82 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 04229 | 2002 $TA_{86}$ |
| 2002 $TD_{86}$ | 15.9 | 0.15 | 20060922 | 239.69617 | 68.74228 | 343.24532 | 4.83258 | 0.1987842 | 3.0585497 | 47 | 3 | 1999–2004 | 0.58 | M-v | 3 | MPC | 89343 | 2002 $TD_{86}$ |
| 2002 $TF_{86}$ | 16.3 | 0.15 | 20060922 | 135.80440 | 265.61026 | 352.51942 | 5.52976 | 0.1040569 | 2.3691248 | 45 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 72720 | 2002 $TF_{86}$ |
| 2002 $TK_{86}$ | 16.4 | 0.15 | 20060922 | 2.95976 | 359.63278 | 343.16174 | 4.06956 | 0.2191811 | 2.5816094 | 137 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 04230 | 2002 $TK_{86}$ |
| 2002 $TY_{86}$ | 17.5 | 0.15 | 20060922 | 359.50472 | 86.77714 | 335.43742 | 1.82284 | 0.1933720 | 2.3548273 | 34 | 3 | 2000–2006 | 0.44 | M-v | 2 | MPC | 89343 | 2002 $TY_{86}$ |
| 2002 $TS_{87}$ | 16.8 | 0.15 | 20060922 | 298.11315 | 64.52138 | 357.93578 | 3.53004 | 0.1344735 | 2.6216610 | 54 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 04230 | 2002 $TS_{87}$ |
| 2002 $TY_{87}$ | 16.7 | 0.15 | 20060922 | 330.00182 | 252.63546 | 182.91784 | 6.32251 | 0.1102202 | 2.4259309 | 32 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 69398 | 2002 $TY_{87}$ |
| 2002 $TN_{88}$ | 16.7 | 0.15 | 20060922 | 321.11235 | 230.49407 | 253.57277 | 5.31409 | 0.0855750 | 2.2703749 | 29 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 00372 | 2002 $TN_{88}$ |
| 2002 $TW_{88}$ | 16.3 | 0.15 | 20060922 | 355.08501 | 133.56846 | 217.47665 | 11.14689 | 0.2155514 | 2.6126858 | 63 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 04230 | 2002 $TW_{88}$ |
| 2002 $TE_{89}$ | 15.9 | 0.15 | 20060922 | 27.23235 | 23.23655 | 345.29897 | 5.75707 | 0.1239446 | 2.4243294 | 67 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 61417 | 2002 $TE_{89}$ |
| 2002 $TP_{89}$ | 16.4 | 0.15 | 20060922 | 6.10947 | 354.46624 | 341.77511 | 5.70479 | 0.0896644 | 2.6684581 | 61 | 5 | 1993–2006 | 0.45 | M-v | 1 | MPC | 04230 | 2002 $TP_{89}$ |
| 2002 $TG_{90}$ | 16.3 | 0.15 | 20060922 | 0.63741 | 39.51096 | 294.00194 | 2.94101 | 0.2354628 | 2.6522182 | 60 | 2 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03423 | 2002 $TG_{90}$ |
| 2002 $TS_{90}$ | 16.3 | 0.15 | 20060922 | 134.45510 | 309.05203 | 328.55505 | 4.21897 | 0.0970587 | 2.3390436 | 42 | 6 | 1991–2005 | 0.71 | M-v | 1 | MPC | 04230 | 2002 $TS_{90}$ |
| 2002 $TG_{91}$ | 16.7 | 0.15 | 20060922 | 6.94887 | 324.36369 | 4.69632 | 13.23598 | 0.2706709 | 2.6305850 | 51 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04230 | 2002 $TG_{91}$ |
| 2002 $TT_{91}$ | 16.0 | 0.15 | 20060922 | 65.30599 | 92.78647 | 249.69450 | 5.83174 | 0.1522347 | 2.3550206 | 76 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 61418 | 2002 $TT_{91}$ |
| 2002 $TW_{91}$ | 16.6 | 0.15 | 20060922 | 120.10422 | 1.48003 | 313.77323 | 4.33606 | 0.0517498 | 2.2342717 | 87 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 90161 | 2002 $TW_{91}$ |
| 2002 $TX_{91}$ | 17.2 | 0.15 | 20060922 | 11.19367 | 131.03882 | 193.26166 | 1.01731 | 0.2488969 | 2.5890009 | 62 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 03423 | 2002 $TX_{91}$ |
| 2002 $TY_{91}$ | 16.3 | 0.15 | 20060922 | 336.03106 | 64.63187 | 0.28101 | 7.32096 | 0.0946937 | 2.3629143 | 63 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 61419 | 2002 $TY_{91}$ |
| 2002 $TE_{92}$ | 17.7 | 0.15 | 20060922 | 64.50257 | 335.26893 | 332.58575 | 1.07414 | 0.1691244 | 2.4241587 | 57 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 89344 | 2002 $TE_{92}$ |
| 2002 $TO_{92}$ | 15.3 | 0.15 | 20060922 | 345.96622 | 252.49893 | 38.56985 | 0.51575 | 0.1012327 | 2.9897552 | 52 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 03423 | 2002 $TO_{92}$ |
| 2002 $TS_{93}$ | 16.3 | 0.15 | 20060922 | 83.76406 | 265.41678 | 10.82209 | 8.60471 | 0.0797852 | 2.5433617 | 50 | 4 | 1994–2006 | 0.38 | M-v | 4 | MPC | 50678 | 2002 $TS_{93}$ |
| 2002 $TM_{94}$ | 15.9 | 0.15 | 20060922 | 231.49954 | 217.43454 | 173.43816 | 5.69856 | 0.1582640 | 3.1927601 | 23 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 75701 | 2002 $TM_{94}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TN_{94}$ | 18.6 | 0.15 | 20060922 | 99.50013 | 179.22802 | 171.75917 | 3.49185 | 0.1567271 | 2.1662314 | 28 | 3 | 2002–2005 | 0.39 | M-v | 3 | MPC | 89344 | 2002 $TN_{94}$ |
| 2002 $TC_{95}$ | 17.3 | 0.15 | 20060922 | 121.64736 | 46.21347 | 247.25954 | 1.87761 | 0.2112012 | 2.2523085 | 37 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 74221 | 2002 $TC_{95}$ |
| 2002 $TG_{96}$ | 14.6 | 0.15 | 20060922 | 34.39132 | 142.12950 | 231.74534 | 6.10734 | 0.2015296 | 2.5393399 | 81 | 5 | 1998–2006 | 0.60 | M-v | 3 | MPC | 62415 | 2002 $TG_{96}$ |
| 2002 $TS_{96}$ | 17.3 | 0.15 | 20060922 | 73.74235 | 8.21447 | 293.70442 | 1.65833 | 0.2282160 | 2.3859877 | 58 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 75701 | 2002 $TS_{96}$ |
| 2002 $TG_{97}$ | 17.7 | 0.15 | 20060922 | 92.50744 | 144.97185 | 142.52582 | 0.92252 | 0.2116543 | 2.3609033 | 55 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 75702 | 2002 $TG_{97}$ |
| 2002 $TJ_{97}$ | 17.3 | 0.15 | 20060922 | 358.82536 | 304.02402 | 58.22259 | 1.29800 | 0.0574949 | 2.5421187 | 45 | 5 | 1998–2006 | 0.39 | M-v | 1 | MPC | 50142 | 2002 $TJ_{97}$ |
| 2002 $TK_{97}$ | 15.1 | 0.15 | 20060922 | 316.59538 | 113.43279 | 196.38925 | 8.74125 | 0.0716164 | 3.0997832 | 51 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 02135 | 2002 $TK_{97}$ |
| 2002 $TL_{97}$ | 16.4 | 0.15 | 20060922 | 280.47218 | 60.72977 | 314.84241 | 1.24887 | 0.1212647 | 2.9449425 | 28 | 5 | 1992–2005 | 0.44 | M-v | 1 | MPC | 62415 | 2002 $TL_{97}$ |
| 2002 $TP_{97}$ | 17.1 | 0.15 | 20060922 | 157.26386 | 17.20724 | 260.31067 | 8.04893 | 0.0262638 | 2.1910354 | 68 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 87551 | 2002 $TP_{97}$ |
| 2002 $TW_{97}$ | 16.1 | 0.15 | 20060922 | 335.13234 | 83.57766 | 294.22504 | 10.90579 | 0.2039912 | 2.5851817 | 82 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 04230 | 2002 $TW_{97}$ |
| 2002 $TZ_{97}$ | 15.6 | 0.15 | 20060922 | 114.15330 | 291.61693 | 287.64256 | 10.76924 | 0.1151901 | 2.6298566 | 55 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 04230 | 2002 $TZ_{97}$ |
| 2002 $TV_{98}$ | 16.9 | 0.15 | 20060922 | 336.38040 | 256.79132 | 160.29308 | 4.89332 | 0.0511828 | 2.4115330 | 28 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 69399 | 2002 $TV_{98}$ |
| 2002 $TW_{98}$ | 16.5 | 0.15 | 20060922 | 247.44085 | 233.51216 | 189.65264 | 5.98944 | 0.0461241 | 2.8404002 | 53 | 3 | 1997–2005 | 0.52 | M-v | 3 | MPC | 75702 | 2002 $TW_{98}$ |
| 2002 $TC_{99}$ | 16.6 | 0.15 | 20060922 | 294.41938 | 100.79056 | 9.44237 | 6.43844 | 0.1213864 | 2.4379827 | 64 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 61420 | 2002 $TC_{99}$ |
| 2002 $TD_{99}$ | 16.7 | 0.15 | 20060922 | 137.39642 | 289.23955 | 320.66778 | 4.38083 | 0.1494093 | 2.3829816 | 27 | 3 | 1997–2006 | 0.43 | M-v | 2 | MPC | 41063 | 2002 $TD_{99}$ |
| 2002 $TU_{99}$ | 15.9 | 0.15 | 20060922 | 63.62859 | 281.67182 | 332.31464 | 13.92206 | 0.1192794 | 2.6317276 | 33 | 2 | 2002–2006 | 0.41 | M-v | 4 | MPC | 03423 | 2002 $TU_{99}$ |
| 2002 $TF_{100}$ | 16.1 | 0.15 | 20060922 | 212.93418 | 205.26340 | 338.28375 | 2.18271 | 0.1284370 | 2.4076227 | 100 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 62416 | 2002 $TF_{100}$ |
| 2002 $TO_{100}$ | 16.5 | 0.15 | 20060922 | 60.85774 | 345.63407 | 329.48398 | 8.27427 | 0.1252656 | 2.4116590 | 58 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 50142 | 2002 $TO_{100}$ |
| 2002 $TK_{101}$ | 16.8 | 0.15 | 20060922 | 310.02349 | 207.07100 | 220.18720 | 4.64608 | 0.2549991 | 2.5807557 | 31 | 2 | 2002–2006 | 0.65 | M-v | 4 | MPC | 03424 | 2002 $TK_{101}$ |
| 2002 $TP_{101}$ | 16.0 | 0.15 | 20060922 | 297.94489 | 144.14341 | 240.93428 | 4.75847 | 0.0204796 | 2.7610991 | 33 | 4 | 2002–2006 | 0.37 | M-v | 1 | MPC | 04230 | 2002 $TP_{101}$ |
| 2002 $TF_{102}$ | 16.7 | 0.15 | 20060922 | 29.44319 | 96.00733 | 221.19930 | 6.77808 | 0.2425960 | 2.5311898 | 97 | 5 | 1994–2006 | 0.46 | M-v | 2 | MPC | 89345 | 2002 $TF_{102}$ |
| 2002 $TH_{102}$ | 17.0 | 0.15 | 20060922 | 86.37835 | 69.67169 | 231.86114 | 5.39957 | 0.1980790 | 2.3548376 | 45 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 89345 | 2002 $TH_{102}$ |
| 2002 $TJ_{102}$ | 17.7 | 0.15 | 20060922 | 1.38638 | 114.45930 | 232.11499 | 4.15124 | 0.2836593 | 2.5647384 | 75 | 3 | 1998–2006 | 0.51 | M-v | 2 | MPC | 04230 | 2002 $TJ_{102}$ |
| 2002 $TQ_{102}$ | 16.9 | 0.15 | 20060922 | 105.57669 | 347.04631 | 298.34645 | 2.14976 | 0.1589634 | 2.3505994 | 33 | 7 | 1995–2006 | 0.41 | M-v | 1 | MPC | 89345 | 2002 $TQ_{102}$ |
| 2002 $TW_{102}$ | 16.9 | 0.15 | 20060922 | 338.06598 | 23.12092 | 343.29660 | 5.65908 | 0.2725500 | 2.6302084 | 64 | 2 | 2002–2006 | 0.39 | M-v | 2 | MPC | 03424 | 2002 $TW_{102}$ |
| 2002 $TX_{102}$ | 16.3 | 0.15 | 20060922 | 85.57883 | 25.08084 | 300.56349 | 3.20369 | 0.1583204 | 2.2988332 | 50 | 4 | 1995–2006 | 0.42 | M-v | 2 | MPC | 03424 | 2002 $TX_{102}$ |
| 2002 $TB_{103}$ | 17.1 | 0.15 | 20060922 | 27.83923 | 351.15992 | 1.25587 | 12.95311 | 0.1755929 | 2.4503171 | 42 | 4 | 1998–2006 | 0.44 | M-v | 3 | MPC | 03424 | 2002 $TB_{103}$ |
| 2002 $TB_{104}$ | 17.0 | 0.15 | 20060922 | 21.17409 | 112.56306 | 232.07220 | 5.50578 | 0.1258035 | 2.4617941 | 47 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 75703 | 2002 $TB_{104}$ |
| 2002 $TP_{105}$ | 17.4 | 0.15 | 20060922 | 47.04621 | 114.28155 | 221.05984 | 6.29515 | 0.1509706 | 2.4184839 | 49 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 87551 | 2002 $TP_{105}$ |
| 2002 $TD_{107}$ | 15.9 | 0.15 | 20060922 | 37.53977 | 112.96640 | 214.04757 | 10.07153 | 0.1075029 | 2.5986428 | 73 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 87551 | 2002 $TD_{107}$ |
| 2002 $TW_{107}$ | 15.2 | 0.15 | 20060922 | 299.93667 | 204.06747 | 126.25869 | 10.25277 | 0.0227761 | 3.0845293 | 48 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 02135 | 2002 $TW_{107}$ |
| 2002 $TD_{108}$ | 15.0 | 0.15 | 20060922 | 338.14725 | 26.40295 | 343.89912 | 12.13957 | 0.2170669 | 2.7034155 | 168 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04230 | 2002 $TD_{108}$ |
| 2002 $TT_{109}$ | 15.9 | 0.15 | 20060922 | 295.69981 | 268.34466 | 131.61840 | 9.67466 | 0.3168691 | 2.7670365 | 48 | 3 | 1999–2004 | 0.64 | M-v | 2 | MPC | 61423 | 2002 $TT_{109}$ |
| 2002 $TA_{110}$ | 14.7 | 0.15 | 20060922 | 291.76506 | 275.69097 | 90.39973 | 13.60590 | 0.1237227 | 2.9120371 | 28 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 56656 | 2002 $TA_{110}$ |
| 2002 $TD_{110}$ | 15.6 | 0.15 | 20060922 | 303.64919 | 279.08435 | 79.03103 | 10.91099 | 0.2636429 | 2.8542640 | 32 | 2 | 2002–2006 | 0.39 | M-v | 3 | MPC | 03424 | 2002 $TD_{110}$ |
| 2002 $TF_{110}$ | 15.9 | 0.15 | 20060922 | 310.68254 | 241.52110 | 153.26317 | 13.46817 | 0.2617782 | 2.6948213 | 44 | 3 | 1993–2006 | 0.57 | M-v | 3 | MPC | 38032 | 2002 $TF_{110}$ |
| 2002 $TG_{110}$ | 17.4 | 0.15 | 20060922 | 4.49908 | 296.19087 | 55.23141 | 10.31131 | 0.3529811 | 2.5268708 | 47 | 3 | 1998–2006 | 0.50 | M-v | 2 | MPC | 50680 | 2002 $TG_{110}$ |
| 2002 $TP_{110}$ | 15.1 | 0.15 | 20060922 | 298.18162 | 272.08278 | 139.01820 | 13.02941 | 0.2032641 | 2.6986931 | 49 | 4 | 1998–2006 | 0.65 | M-v | 2 | MPC | 03425 | 2002 $TP_{110}$ |
| 2002 $TR_{110}$ | 16.9 | 0.15 | 20060922 | 359.78740 | 177.81811 | 155.40759 | 15.30754 | 0.1916682 | 2.6515204 | 61 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 03425 | 2002 $TR_{110}$ |
| 2002 $TM_{111}$ | 17.0 | 0.15 | 20060922 | 72.93450 | 135.02073 | 175.76609 | 7.55459 | 0.2361078 | 2.3118544 | 68 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 75705 | 2002 $TM_{111}$ |
| 2002 $TX_{111}$ | 16.7 | 0.15 | 20060922 | 46.63778 | 251.32612 | 63.09140 | 4.35686 | 0.1851095 | 2.4328851 | 60 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 75705 | 2002 $TX_{111}$ |
| 2002 $TY_{111}$ | 16.8 | 0.15 | 20060922 | 6.10799 | 289.67999 | 103.03774 | 3.07595 | 0.2132709 | 2.3854820 | 80 | 6 | 1991–2006 | 0.39 | M-v | 0 | MPC | 89346 | 2002 $TY_{111}$ |
| 2002 $TU_{112}$ | 15.6 | 0.15 | 20060922 | 156.25181 | 182.69573 | 17.70546 | 3.69949 | 0.0828128 | 2.5702093 | 75 | 6 | 1994–2006 | 0.50 | M-v | 1 | MPC | 62416 | 2002 $TU_{112}$ |
| 2002 $TX_{112}$ | 14.3 | 0.15 | 20060922 | 276.41888 | 112.79937 | 222.13916 | 15.68101 | 0.2376483 | 3.1573057 | 68 | 1 | 127 days | 0.47 | M-v | 3 | MPC | 41813 | 2002 $TX_{112}$ |
| 2002 $TS_{113}$ | 15.4 | 0.15 | 20060922 | 96.21110 | 249.04016 | 353.07901 | 28.23210 | 0.2460758 | 2.5668022 | 106 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04230 | 2002 $TS_{113}$ |
| 2002 $TT_{114}$ | 16.2 | 0.15 | 20060922 | 339.93485 | 148.28289 | 223.54797 | 12.47031 | 0.1826238 | 2.6031745 | 39 | 4 | 1998–2006 | 0.58 | M-v | 3 | MPC | 03425 | 2002 $TT_{114}$ |
| 2002 $TV_{114}$ | 15.9 | 0.15 | 20060922 | 110.82196 | 2.74279 | 291.82781 | 6.66208 | 0.1141495 | 2.3181328 | 46 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 62416 | 2002 $TV_{114}$ |
| 2002 $TC_{115}$ | 15.3 | 0.15 | 20060922 | 48.24789 | 304.03959 | 332.81974 | 12.41199 | 0.1012905 | 2.6979100 | 73 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 04230 | 2002 $TC_{115}$ |
| 2002 $TE_{115}$ | 16.2 | 0.15 | 20060922 | 320.06218 | 176.72170 | 222.49266 | 14.61242 | 0.1235131 | 2.5984841 | 45 | 4 | 1998–2006 | 0.51 | M-v | 3 | MPC | 04230 | 2002 $TE_{115}$ |
| 2002 $TS_{115}$ | 15.9 | 0.15 | 20060922 | 56.10833 | 60.19611 | 314.97522 | 5.78138 | 0.1959625 | 2.2711203 | 63 | 4 | 1999–2006 | 0.54 | M-v | 2 | MPC | 62416 | 2002 $TS_{115}$ |
| 2002 $TX_{115}$ | 15.9 | 0.15 | 20060922 | 6.01835 | 11.36162 | 306.92056 | 7.91421 | 0.1849521 | 2.6793454 | 58 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04230 | 2002 $TX_{115}$ |
| 2002 $TC_{116}$ | 15.9 | 0.15 | 20060922 | 15.77778 | 63.67430 | 236.04100 | 12.33395 | 0.2669972 | 2.6629649 | 52 | 3 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04230 | 2002 $TC_{116}$ |
| 2002 $TJ_{116}$ | 15.9 | 0.15 | 20060922 | 356.21020 | 357.73937 | 342.37162 | 12.33294 | 0.1172873 | 2.6684217 | 49 | 2 | 2002–2006 | 0.36 | M-v | 2 | MPC | 03426 | 2002 $TJ_{116}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TQ_{116}$ | 14.9 | 0.15 | 20060922 | 280.11089 | 139.35783 | 281.56254 | 7.93075 | 0.2573095 | 2.7856637 | 55 | 2 | 2002–2006 | 0.52 | M-v | 3 | MPC | 03426 | 2002 $TQ_{116}$ |
| 2002 $TK_{117}$ | 15.0 | 0.15 | 20060922 | 294.39283 | 55.56042 | 296.90133 | 8.91475 | 0.1113490 | 3.0019001 | 75 | 4 | 1998–2005 | 0.54 | M-v | 1 | MPC | 62416 | 2002 $TK_{117}$ |
| 2002 $TM_{117}$ | 17.0 | 0.15 | 20060922 | 340.79606 | 27.01325 | 349.37306 | 13.87732 | 0.2790512 | 2.5959719 | 34 | 2 | 2002–2006 | 0.40 | M-v | 3 | MPC | 03426 | 2002 $TM_{117}$ |
| 2002 $TN_{119}$ | 15.9 | 0.15 | 20060922 | 325.80624 | 84.92011 | 316.69674 | 7.04565 | 0.1848146 | 2.5960015 | 66 | 2 | 2002–2006 | 0.47 | M-v | 4 | MPC | 03426 | 2002 $TN_{119}$ |
| 2002 $TZ_{119}$ | 15.4 | 0.15 | 20060922 | 262.57537 | 130.74461 | 313.23777 | 8.54164 | 0.1778025 | 2.7768380 | 85 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04230 | 2002 $TZ_{119}$ |
| 2002 $TB_{120}$ | 15.7 | 0.15 | 20060922 | 38.92537 | 31.42763 | 270.81209 | 7.63319 | 0.1864465 | 2.5984168 | 96 | 6 | 1996–2006 | 0.57 | M-v | 1 | MPC | 04230 | 2002 $TB_{120}$ |
| 2002 $TP_{120}$ | 16.7 | 0.15 | 20060922 | 17.56118 | 89.81344 | 329.79017 | 6.89741 | 0.0470975 | 2.2864807 | 34 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 87551 | 2002 $TP_{120}$ |
| 2002 $TY_{120}$ | 15.1 | 0.15 | 20060922 | 61.63552 | 124.61990 | 241.27186 | 7.68192 | 0.1705470 | 2.2919204 | 130 | 4 | 1999–2006 | 0.51 | M-v | 2 | MPC | 62416 | 2002 $TY_{120}$ |
| 2002 $TE_{121}$ | 16.1 | 0.15 | 20060922 | 315.56187 | 92.26932 | 345.61990 | 7.19993 | 0.1502924 | 2.5175018 | 89 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 61426 | 2002 $TE_{121}$ |
| 2002 $TH_{121}$ | 16.4 | 0.15 | 20060922 | 39.43141 | 152.33227 | 251.87216 | 7.10768 | 0.1416859 | 2.2738063 | 56 | 4 | 2000–2005 | 0.55 | M-v | 2 | MPC | 85657 | 2002 $TH_{121}$ |
| 2002 $TO_{121}$ | 15.6 | 0.15 | 20060922 | 287.13452 | 90.79269 | 318.67044 | 6.26531 | 0.0540149 | 2.7714854 | 37 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 04231 | 2002 $TO_{121}$ |
| 2002 $TS_{121}$ | 16.0 | 0.15 | 20060922 | 326.25155 | 64.15566 | 323.58070 | 5.72330 | 0.1557799 | 2.6587590 | 117 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 04231 | 2002 $TS_{121}$ |
| 2002 $TT_{121}$ | 16.7 | 0.15 | 20060922 | 162.71527 | 284.90758 | 314.04944 | 6.04009 | 0.0828583 | 2.4097134 | 45 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 61427 | 2002 $TT_{121}$ |
| 2002 $TA_{122}$ | 15.4 | 0.15 | 20060922 | 46.64864 | 318.04444 | 310.96624 | 14.05714 | 0.0732450 | 2.6546716 | 66 | 5 | 2000–2006 | 0.41 | M-v | 1 | MPC | 04231 | 2002 $TA_{122}$ |
| 2002 $TN_{122}$ | 17.4 | 0.15 | 20060922 | 356.27112 | 70.46749 | 294.11924 | 7.94100 | 0.1890100 | 2.5151435 | 62 | 2 | 2002–2006 | 0.80 | M-v | 4 | MPC | 03427 | 2002 $TN_{122}$ |
| 2002 $TQ_{123}$ | 13.9 | 0.15 | 20060922 | 254.14130 | 75.26956 | 300.83058 | 10.35326 | 0.0942685 | 3.0946800 | 46 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 56662 | 2002 $TQ_{123}$ |
| 2002 $TZ_{123}$ | 15.3 | 0.15 | 20060922 | 245.75690 | 192.77440 | 201.80951 | 21.20525 | 0.2884950 | 3.0841133 | 34 | 1 | 144 days | 0.42 | M-v | 3 | MPC | 41814 | 2002 $TZ_{123}$ |
| 2002 $TJ_{124}$ | 16.3 | 0.15 | 20060922 | 13.06197 | 329.46881 | 329.15468 | 11.84983 | 0.2715440 | 2.6541569 | 44 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 03427 | 2002 $TJ_{124}$ |
| 2002 $TL_{124}$ | 14.2 | 0.15 | 20060922 | 93.61960 | 302.66852 | 250.53327 | 9.82872 | 0.0321312 | 2.9578391 | 75 | 4 | 2000–2005 | 0.63 | M-v | 1 | MPC | 56662 | 2002 $TL_{124}$ |
| 2002 $TX_{124}$ | 16.7 | 0.15 | 20060922 | 276.85428 | 276.33082 | 246.42664 | 6.96141 | 0.0460441 | 2.2237883 | 22 | 3 | 2002–2006 | 0.30 | M-v | 3 | MPC | 03427 | 2002 $TX_{124}$ |
| 2002 $TF_{125}$ | 15.8 | 0.15 | 20060922 | 47.14759 | 359.66056 | 299.44752 | 8.45220 | 0.1091238 | 2.5568391 | 62 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03427 | 2002 $TF_{125}$ |
| 2002 $TU_{125}$ | 17.0 | 0.15 | 20060922 | 55.84698 | 212.51317 | 141.04450 | 6.74480 | 0.1366942 | 2.2972445 | 45 | 3 | 1995–2004 | 0.60 | M-v | 3 | MPC | 61427 | 2002 $TU_{125}$ |
| 2002 $TV_{125}$ | 15.4 | 0.15 | 20060922 | 312.08355 | 344.38703 | 46.94028 | 6.69202 | 0.2686824 | 2.6537981 | 52 | 3 | 1998–2002 | 0.73 | M-v | 3 | MPC | 03428 | 2002 $TV_{125}$ |
| 2002 $TR_{126}$ | 15.4 | 0.15 | 20060922 | 332.57323 | 344.36742 | 58.78746 | 6.83028 | 0.1202121 | 2.4862721 | 142 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 61428 | 2002 $TR_{126}$ |
| 2002 $TU_{126}$ | 16.8 | 0.15 | 20060922 | 1.58251 | 246.70174 | 132.15383 | 6.53567 | 0.1143058 | 2.4496249 | 52 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87551 | 2002 $TU_{126}$ |
| 2002 $TG_{127}$ | 16.5 | 0.15 | 20060922 | 85.52750 | 51.54403 | 238.81779 | 6.89749 | 0.0943469 | 2.4227303 | 71 | 5 | 1998–2006 | 0.42 | M-v | 0 | MPC | 87551 | 2002 $TG_{127}$ |
| 2002 $TN_{127}$ | 15.3 | 0.15 | 20060922 | 71.71584 | 278.80137 | 337.50152 | 14.26949 | 0.1596909 | 2.6217238 | 108 | 4 | 2002–2006 | 0.62 | M-v | 1 | MPC | 04231 | 2002 $TN_{127}$ |
| 2002 $TY_{127}$ | 16.8 | 0.15 | 20060922 | 73.32192 | 79.06656 | 278.83969 | 5.76724 | 0.1367713 | 2.2450661 | 42 | 4 | 1996–2006 | 0.57 | M-v | 1 | MPC | 87551 | 2002 $TY_{127}$ |
| 2002 $TA_{128}$ | 15.7 | 0.15 | 20060922 | 175.53577 | 304.15180 | 226.48651 | 14.06456 | 0.0363390 | 2.6215352 | 67 | 6 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04231 | 2002 $TA_{128}$ |
| 2002 $TH_{129}$ | 16.6 | 0.15 | 20060922 | 137.36965 | 22.22140 | 277.10320 | 5.54948 | 0.1017880 | 2.2035915 | 91 | 6 | 1994–2006 | 0.49 | M-v | 1 | MPC | 04231 | 2002 $TH_{129}$ |
| 2002 $TG_{130}$ | 16.6 | 0.15 | 20060922 | 357.84954 | 272.78336 | 81.56933 | 6.23462 | 0.1900815 | 2.5553231 | 47 | 3 | 2002–2006 | 0.66 | M-v | 3 | MPC | 03428 | 2002 $TG_{130}$ |
| 2002 $TO_{130}$ | 16.7 | 0.15 | 20060922 | 30.50324 | 133.06611 | 221.65121 | 5.59328 | 0.1247391 | 2.3942035 | 101 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 75711 | 2002 $TO_{130}$ |
| 2002 $TR_{130}$ | 15.9 | 0.15 | 20060922 | 153.30352 | 19.70071 | 242.84448 | 5.94758 | 0.1120204 | 2.2507191 | 64 | 6 | 1998–2006 | 0.59 | M-v | 1 | MPC | 87551 | 2002 $TR_{130}$ |
| 2002 $TZ_{130}$ | 17.1 | 0.15 | 20060922 | 50.19320 | 31.85407 | 303.99493 | 2.99579 | 0.1711546 | 2.3835429 | 32 | 3 | 2000–2006 | 0.40 | M-v | 3 | MPC | 38040 | 2002 $TZ_{130}$ |
| 2002 $TE_{131}$ | 16.0 | 0.15 | 20060922 | 342.30791 | 285.94081 | 115.65288 | 6.63852 | 0.1511105 | 2.4644864 | 79 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 03428 | 2002 $TE_{131}$ |
| 2002 $TH_{131}$ | 16.4 | 0.15 | 20060922 | 339.84309 | 339.22892 | 104.90161 | 6.63765 | 0.0988723 | 2.3083182 | 38 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87551 | 2002 $TH_{131}$ |
| 2002 $TK_{131}$ | 15.1 | 0.15 | 20060922 | 251.58844 | 192.73714 | 215.52124 | 11.44722 | 0.0504408 | 2.9265775 | 28 | 3 | 2000–2005 | 0.56 | M-v | 4 | MPC | 89347 | 2002 $TK_{131}$ |
| 2002 $TN_{131}$ | 16.0 | 0.15 | 20060922 | 17.01913 | 41.59020 | 338.15275 | 6.69422 | 0.1133652 | 2.4045093 | 49 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 75711 | 2002 $TN_{131}$ |
| 2002 $TC_{132}$ | 16.5 | 0.15 | 20060922 | 58.48658 | 354.75774 | 322.57419 | 5.76686 | 0.0998158 | 2.4537641 | 84 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 85660 | 2002 $TC_{132}$ |
| 2002 $TE_{132}$ | 15.4 | 0.15 | 20060922 | 265.04181 | 181.03389 | 241.78386 | 3.93974 | 0.0589339 | 2.7700453 | 53 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 04231 | 2002 $TE_{132}$ |
| 2002 $TF_{132}$ | 16.4 | 0.15 | 20060922 | 291.69068 | 84.47419 | 350.55305 | 6.60769 | 0.1699997 | 2.6171436 | 72 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04231 | 2002 $TF_{132}$ |
| 2002 $TJ_{132}$ | 15.7 | 0.15 | 20060922 | 61.98017 | 74.73677 | 272.04068 | 2.46794 | 0.1525452 | 2.3252958 | 106 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 62416 | 2002 $TJ_{132}$ |
| 2002 $TW_{132}$ | 16.7 | 0.15 | 20060922 | 13.87197 | 29.78199 | 299.28952 | 5.17159 | 0.2633927 | 2.5564152 | 86 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03428 | 2002 $TW_{132}$ |
| 2002 $TC_{133}$ | 16.9 | 0.15 | 20060922 | 3.50582 | 126.47931 | 305.21742 | 3.44787 | 0.2244191 | 2.3270274 | 55 | 3 | 2000–2006 | 0.55 | M-v | 1 | MPC | 38041 | 2002 $TC_{133}$ |
| 2002 $TD_{133}$ | 15.7 | 0.15 | 20060922 | 122.24940 | 300.73312 | 329.53524 | 6.26356 | 0.0956838 | 2.3733825 | 84 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 66285 | 2002 $TD_{133}$ |
| 2002 $TP_{133}$ | 16.2 | 0.15 | 20060922 | 98.05921 | 359.09636 | 288.00547 | 7.67249 | 0.1332292 | 2.3378797 | 42 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 87551 | 2002 $TP_{133}$ |
| 2002 $TR_{133}$ | 17.1 | 0.15 | 20060922 | 351.63700 | 147.92194 | 219.22962 | 7.30936 | 0.2910286 | 2.5315787 | 41 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 03429 | 2002 $TR_{133}$ |
| 2002 $TE_{134}$ | 16.0 | 0.15 | 20060922 | 55.96315 | 63.80075 | 281.39043 | 4.70395 | 0.1526300 | 2.3489859 | 48 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 62417 | 2002 $TE_{134}$ |
| 2002 $TB_{135}$ | 15.5 | 0.15 | 20060922 | 38.96660 | 50.90700 | 320.84482 | 5.70632 | 0.1510271 | 2.3441193 | 58 | 4 | 1995–2006 | 0.56 | M-v | 2 | MPC | 61431 | 2002 $TB_{135}$ |
| 2002 $TJ_{135}$ | 16.2 | 0.15 | 20060922 | 9.21450 | 123.04904 | 274.24391 | 4.43705 | 0.2324636 | 2.4007764 | 45 | 1 | 124 days | 0.51 | M-v | 4 | MPC | 41815 | 2002 $TJ_{135}$ |
| 2002 $TP_{135}$ | 16.0 | 0.15 | 20060922 | 318.92453 | 345.33781 | 0.91269 | 12.78356 | 0.2413551 | 2.8447261 | 51 | 3 | 1997–2005 | 0.61 | M-v | 3 | MPC | 38042 | 2002 $TP_{135}$ |
| 2002 $TN_{136}$ | 16.5 | 0.15 | 20060922 | 12.51158 | 331.68123 | 348.05230 | 13.63271 | 0.2568667 | 2.6348171 | 37 | 2 | 2002–2006 | 0.56 | M-v | 3 | MPC | 03429 | 2002 $TN_{136}$ |
| 2002 $TV_{136}$ | 15.4 | 0.15 | 20060922 | 331.18304 | 82.40241 | 318.26439 | 8.19363 | 0.1610550 | 2.5781555 | 88 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04231 | 2002 $TV_{136}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TW_{136}$ | 16.0 | 0.15 | 20060922 | 26.61515 | 27.99064 | 291.90646 | 7.38821 | 0.1888473 | 2.5938338 | 80 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04231 | 2002 $TW_{136}$ |
| 2002 $TC_{137}$ | 14.5 | 0.15 | 20060922 | 293.20524 | 102.87959 | 229.98513 | 14.65630 | 0.1050362 | 3.1672266 | 57 | 2 | 2002–2006 | 0.46 | M-v | 3 | MPC | 00375 | 2002 $TC_{137}$ |
| 2002 $TG_{137}$ | 15.9 | 0.15 | 20060922 | 39.56637 | 54.12546 | 244.11073 | 8.35003 | 0.2066837 | 2.5841135 | 69 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03429 | 2002 $TG_{137}$ |
| 2002 $TN_{137}$ | 16.5 | 0.15 | 20060922 | 350.12250 | 118.17074 | 272.99015 | 5.81627 | 0.2748009 | 2.5274021 | 115 | 3 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04231 | 2002 $TN_{137}$ |
| 2002 $TT_{137}$ | 15.9 | 0.15 | 20060922 | 132.18116 | 23.31204 | 288.58796 | 6.52805 | 0.1910537 | 2.2307769 | 164 | 4 | 2002–2006 | 0.52 | M-v | 2 | MPC | 04231 | 2002 $TT_{137}$ |
| 2002 $TR_{138}$ | 15.0 | 0.15 | 20060922 | 309.74280 | 162.70229 | 252.81353 | 13.18653 | 0.0978431 | 2.6413337 | 96 | 5 | 1998–2006 | 0.61 | M-v | 2 | MPC | 04231 | 2002 $TR_{138}$ |
| 2002 $TU_{138}$ | 16.7 | 0.15 | 20060922 | 47.74233 | 85.39303 | 303.63968 | 6.21048 | 0.1108192 | 2.2953428 | 66 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87551 | 2002 $TU_{138}$ |
| 2002 $TE_{139}$ | 16.3 | 0.15 | 20060922 | 8.61268 | 130.12918 | 294.42591 | 4.66489 | 0.2169030 | 2.3590263 | 89 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 85662 | 2002 $TE_{139}$ |
| 2002 $TD_{140}$ | 16.6 | 0.15 | 20060922 | 331.91263 | 122.30018 | 263.14537 | 0.71065 | 0.1002761 | 2.5845731 | 80 | 4 | 1998–2006 | 0.48 | M-v | 3 | MPC | 04231 | 2002 $TD_{140}$ |
| 2002 $TG_{140}$ | 15.9 | 0.15 | 20060922 | 335.95105 | 166.99654 | 215.16106 | 5.58234 | 0.1366157 | 2.6668834 | 146 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03429 | 2002 $TG_{140}$ |
| 2002 $TH_{142}$ | 16.9 | 0.15 | 20060922 | 12.60590 | 183.45962 | 158.39584 | 4.14361 | 0.1494564 | 2.5333016 | 81 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 03430 | 2002 $TH_{142}$ |
| 2002 $TM_{142}$ | 16.8 | 0.15 | 20060922 | 17.97400 | 241.54560 | 157.80706 | 3.08353 | 0.2088807 | 2.3661793 | 44 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 66286 | 2002 $TM_{142}$ |
| 2002 $TS_{142}$ | 16.2 | 0.15 | 20060922 | 55.90634 | 199.83647 | 137.94162 | 6.66849 | 0.1315519 | 2.3520690 | 42 | 3 | 2002–2006 | 0.38 | M-v | 1 | MPC | 89347 | 2002 $TS_{142}$ |
| 2002 $TB_{143}$ | 17.7 | 0.15 | 20060922 | 342.66174 | 231.74444 | 152.63447 | 6.79652 | 0.3193926 | 2.5641529 | 53 | 2 | 2002–2006 | 0.45 | M-v | 3 | MPC | 03430 | 2002 $TB_{143}$ |
| 2002 $TC_{143}$ | 15.9 | 0.15 | 20060922 | 5.32028 | 291.47447 | 125.08211 | 6.27067 | 0.1568839 | 2.3562633 | 37 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 69401 | 2002 $TC_{143}$ |
| 2002 $TH_{143}$ | 16.8 | 0.15 | 20060922 | 27.97619 | 337.96778 | 75.26394 | 7.16943 | 0.0888024 | 2.2659080 | 47 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 62417 | 2002 $TH_{143}$ |
| 2002 $TL_{143}$ | 16.7 | 0.15 | 20060922 | 335.57479 | 258.58936 | 67.32758 | 8.72484 | 0.2877616 | 2.7878634 | 28 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 03430 | 2002 $TL_{143}$ |
| 2002 $TN_{143}$ | 16.0 | 0.15 | 20060922 | 319.71139 | 323.77942 | 78.24199 | 8.59307 | 0.1868282 | 2.6200816 | 75 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04231 | 2002 $TN_{143}$ |
| 2002 $TR_{143}$ | 16.1 | 0.15 | 20060922 | 335.65331 | 283.73431 | 108.41820 | 5.94186 | 0.1306372 | 2.5645578 | 51 | 4 | 1994–2006 | 0.59 | M-v | 4 | MPC | 04231 | 2002 $TR_{143}$ |
| 2002 $TC_{144}$ | 16.5 | 0.15 | 20060922 | 107.08701 | 204.21318 | 135.51269 | 5.43132 | 0.2210417 | 2.2092007 | 114 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 97622 | 2002 $TC_{144}$ |
| 2002 $TE_{144}$ | 16.9 | 0.15 | 20060922 | 350.29664 | 256.68359 | 101.86782 | 4.93596 | 0.1593267 | 2.5665627 | 48 | 7 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04231 | 2002 $TE_{144}$ |
| 2002 $TP_{144}$ | 16.5 | 0.15 | 20060922 | 338.90217 | 234.58321 | 143.99274 | 17.40267 | 0.2456946 | 2.6333304 | 56 | 2 | 2002–2006 | 0.58 | M-v | 3 | MPC | 03430 | 2002 $TP_{144}$ |
| 2002 $TK_{145}$ | 17.0 | 0.15 | 20060922 | 85.70655 | 58.93275 | 226.53080 | 1.94733 | 0.1806177 | 2.4193607 | 59 | 5 | 2001–2006 | 0.49 | M-v | 0 | MPC | 85662 | 2002 $TK_{145}$ |
| 2002 $TT_{146}$ | 16.6 | 0.15 | 20060922 | 340.44112 | 130.70738 | 262.58245 | 3.01618 | 0.2673994 | 2.5461548 | 152 | 3 | 1998–2006 | 0.46 | M-v | 2 | MPC | 04231 | 2002 $TT_{146}$ |
| 2002 $TD_{147}$ | 16.5 | 0.15 | 20060922 | 30.64347 | 35.08210 | 249.76041 | 2.39777 | 0.1738476 | 2.7001769 | 45 | 5 | 1998–2006 | 0.37 | M-v | 1 | MPC | 04231 | 2002 $TD_{147}$ |
| 2002 $TE_{148}$ | 15.4 | 0.15 | 20060922 | 89.04811 | 358.86502 | 228.50161 | 12.54033 | 0.1153186 | 2.5981213 | 47 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 04231 | 2002 $TE_{148}$ |
| 2002 $TR_{148}$ | 16.9 | 0.15 | 20060922 | 307.77330 | 150.92402 | 212.37448 | 13.22418 | 0.2624715 | 2.7427997 | 23 | 1 | 151 days | 0.50 | M-v | 3 | MPC | 48287 | 2002 $TR_{148}$ |
| 2002 $TS_{148}$ | 15.0 | 0.15 | 20060922 | 177.68446 | 229.53188 | 210.23476 | 16.44726 | 0.0194937 | 3.0538274 | 38 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 00376 | 2002 $TS_{148}$ |
| 2002 $TF_{149}$ | 16.3 | 0.15 | 20060922 | 232.30736 | 249.79676 | 198.71990 | 5.78925 | 0.0208336 | 2.7740355 | 21 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 87552 | 2002 $TF_{149}$ |
| 2002 $TT_{154}$ | 17.2 | 0.15 | 20060922 | 7.99357 | 152.48604 | 277.38974 | 5.78867 | 0.1370367 | 2.2337363 | 44 | 3 | 1999–2006 | 0.45 | M-v | 2 | MPC | 48287 | 2002 $TT_{154}$ |
| 2002 $TO_{155}$ | 17.1 | 0.15 | 20060922 | 90.90197 | 21.48818 | 278.69358 | 6.94280 | 0.1949540 | 2.3004787 | 32 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 85663 | 2002 $TO_{155}$ |
| 2002 $TW_{155}$ | 15.1 | 0.15 | 20060922 | 352.66248 | 53.65034 | 200.96222 | 15.37316 | 0.1713213 | 3.2074592 | 58 | 3 | 1996–2006 | 0.58 | M-v | 2 | MPC | 00377 | 2002 $TW_{155}$ |
| 2002 $TJ_{156}$ | 17.1 | 0.15 | 20060922 | 359.84587 | 46.30101 | 277.29010 | 4.59953 | 0.2328452 | 2.6141658 | 29 | 2 | 2002–2006 | 0.38 | M-v | 3 | MPC | 03431 | 2002 $TJ_{156}$ |
| 2002 $TH_{157}$ | 15.5 | 0.15 | 20060922 | 205.63986 | 87.82191 | 72.76418 | 14.34124 | 0.0825472 | 2.6028864 | 31 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 65372 | 2002 $TH_{157}$ |
| 2002 $TV_{157}$ | 16.0 | 0.15 | 20060922 | 16.93800 | 168.44900 | 158.13078 | 14.72038 | 0.0546593 | 2.6732719 | 36 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 03431 | 2002 $TV_{157}$ |
| 2002 $TB_{158}$ | 16.6 | 0.15 | 20060922 | 22.57170 | 175.90760 | 162.01853 | 14.36680 | 0.2012062 | 2.5329854 | 86 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 03432 | 2002 $TB_{158}$ |
| 2002 $TG_{158}$ | 16.4 | 0.15 | 20060922 | 358.03212 | 194.66817 | 130.29906 | 10.75550 | 0.1591989 | 2.7332572 | 47 | 4 | 1997–2006 | 0.41 | M-v | 1 | MPC | 03432 | 2002 $TG_{158}$ |
| 2002 $TL_{158}$ | 15.6 | 0.15 | 20060922 | 1.62518 | 181.95044 | 159.86837 | 13.93488 | 0.1718237 | 2.6351639 | 119 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 04231 | 2002 $TL_{158}$ |
| 2002 $TN_{158}$ | 16.9 | 0.15 | 20060922 | 4.53161 | 169.12264 | 158.70436 | 14.87329 | 0.2628093 | 2.6377608 | 94 | 2 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04232 | 2002 $TN_{158}$ |
| 2002 $TR_{158}$ | 16.7 | 0.15 | 20060922 | 7.03970 | 211.61851 | 116.91501 | 11.34001 | 0.2366058 | 2.6285898 | 25 | 2 | 2002–2006 | 0.36 | M-v | 4 | MPC | 03432 | 2002 $TR_{158}$ |
| 2002 $TD_{159}$ | 16.3 | 0.15 | 20060922 | 102.50679 | 195.33828 | 111.04232 | 9.88183 | 0.1432890 | 2.3239455 | 27 | 2 | 2002–2004 | 0.46 | M-v | 3 | MPC | 89348 | 2002 $TD_{159}$ |
| 2002 $TE_{159}$ | 15.4 | 0.15 | 20060922 | 231.26427 | 256.70970 | 159.71550 | 20.72214 | 0.1873147 | 3.1548187 | 29 | 3 | 1996–2004 | 0.43 | M-v | 2 | MPC | 61437 | 2002 $TE_{159}$ |
| 2002 $TM_{160}$ | 15.6 | 0.15 | 20060922 | 263.82358 | 242.00661 | 152.39170 | 15.83347 | 0.1061493 | 3.0314627 | 25 | 3 | 1999–2004 | 0.55 | M-v | 2 | MPC | 89348 | 2002 $TM_{160}$ |
| 2002 $TA_{161}$ | 15.7 | 0.15 | 20060922 | 46.05797 | 195.63805 | 94.95237 | 13.89264 | 0.2370340 | 2.6078407 | 53 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 75717 | 2002 $TA_{161}$ |
| 2002 $TW_{161}$ | 16.5 | 0.15 | 20060922 | 11.39159 | 205.41107 | 153.51745 | 15.78599 | 0.1457873 | 2.5488646 | 50 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 94858 | 2002 $TW_{161}$ |
| 2002 $TX_{162}$ | 16.7 | 0.15 | 20060922 | 1.03971 | 213.08633 | 151.72369 | 16.10530 | 0.1758347 | 2.5766172 | 41 | 4 | 1998–2006 | 0.42 | M-v | 1 | MPC | 03432 | 2002 $TX_{162}$ |
| 2002 $TY_{162}$ | 16.0 | 0.15 | 20060922 | 339.24918 | 279.24689 | 120.40880 | 14.51641 | 0.1576848 | 2.5603868 | 49 | 5 | 1998–2006 | 0.41 | M-v | 1 | MPC | 87552 | 2002 $TY_{162}$ |
| 2002 $TK_{163}$ | 15.9 | 0.15 | 20060922 | 353.62223 | 224.89183 | 110.47923 | 14.28608 | 0.1821170 | 2.7360076 | 35 | 3 | 2002–2006 | 0.30 | M-v | 2 | MPC | 03432 | 2002 $TK_{163}$ |
| 2002 $TM_{163}$ | 16.1 | 0.15 | 20060922 | 292.42556 | 285.02113 | 131.22210 | 14.33478 | 0.1703887 | 2.7588710 | 29 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 75717 | 2002 $TM_{163}$ |
| 2002 $TN_{163}$ | 15.5 | 0.15 | 20060922 | 263.23131 | 301.38653 | 62.70593 | 27.02306 | 0.1963044 | 3.2127496 | 28 | 3 | 2000–2006 | 0.43 | M-v | 2 | MPC | 89349 | 2002 $TN_{163}$ |
| 2002 $TS_{164}$ | 15.1 | 0.15 | 20060922 | 296.89035 | 302.28588 | 131.08727 | 15.31242 | 0.1081633 | 2.6725746 | 64 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 61438 | 2002 $TS_{164}$ |
| 2002 $TU_{164}$ | 14.6 | 0.15 | 20060922 | 274.06918 | 262.51774 | 105.19003 | 17.45504 | 0.2463567 | 3.1267783 | 24 | 1 | 69 days | 0.18 | M-v | 3 | MPC | 41818 | 2002 $TU_{164}$ |
| 2002 $TC_{165}$ | 15.8 | 0.15 | 20060922 | 280.31265 | 67.07596 | 28.71054 | 27.88460 | 0.1785623 | 2.5834976 | 34 | 4 | 1998–2006 | 0.54 | M-v | 1 | MPC | 61438 | 2002 $TC_{165}$ |

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| 2002 $TH_{166}$ | 16.2 | 0.15 | 20060922 | 7.89693 | 341.92624 | 12.87309 | 7.14248 | 0.1348839 | 2.4533773 | 126 | 4 | 2002–2006 | 0.42 | M-v | 1 | MPC | 04232 | 2002 $TH_{166}$ |
| 2002 $TK_{166}$ | 16.9 | 0.15 | 20060922 | 328.91191 | 211.67237 | 185.28517 | 6.75697 | 0.2889693 | 2.5329754 | 88 | 4 | 1990–2006 | 0.54 | M-v | 3 | MPC | 04232 | 2002 $TK_{166}$ |
| 2002 $TY_{166}$ | 16.2 | 0.15 | 20060922 | 40.52080 | 0.31190 | 293.91986 | 12.98796 | 0.0568727 | 2.6312739 | 40 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 03433 | 2002 $TY_{166}$ |
| 2002 $TR_{168}$ | 15.6 | 0.15 | 20060922 | 92.56611 | 292.24701 | 319.66864 | 13.72902 | 0.1904541 | 2.5267680 | 71 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04232 | 2002 $TR_{168}$ |
| 2002 $TX_{168}$ | 15.5 | 0.15 | 20060922 | 300.11609 | 180.34980 | 260.23377 | 11.36955 | 0.1848501 | 2.5434856 | 70 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04232 | 2002 $TX_{168}$ |
| 2002 $TC_{169}$ | 16.2 | 0.15 | 20060922 | 309.91866 | 77.38430 | 328.20621 | 13.30703 | 0.1839230 | 2.6297872 | 49 | 2 | 2002–2006 | 0.32 | M-v | 4 | MPC | 03433 | 2002 $TC_{169}$ |
| 2002 $TJ_{169}$ | 15.8 | 0.15 | 20060922 | 333.85531 | 173.37395 | 226.33146 | 14.22623 | 0.1763442 | 2.5280217 | 75 | 4 | 1998–2006 | 0.62 | M-v | 3 | MPC | 77664 | 2002 $TJ_{169}$ |
| 2002 $TQ_{169}$ | 16.2 | 0.15 | 20060922 | 36.07855 | 65.52454 | 260.71749 | 11.10706 | 0.0543388 | 2.5261396 | 38 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 89349 | 2002 $TQ_{169}$ |
| 2002 $TS_{169}$ | 16.6 | 0.15 | 20060922 | 314.55251 | 278.48460 | 126.66061 | 4.38237 | 0.1740200 | 2.5865889 | 43 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 04232 | 2002 $TS_{169}$ |
| 2002 $TK_{171}$ | 15.4 | 0.15 | 20060922 | 306.68397 | 81.07670 | 327.65142 | 11.38024 | 0.1793405 | 2.6602918 | 81 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04232 | 2002 $TK_{171}$ |
| 2002 $TZ_{172}$ | 16.1 | 0.15 | 20060922 | 13.16183 | 351.75928 | 72.58150 | 5.24013 | 0.0918089 | 2.2548308 | 70 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 87552 | 2002 $TZ_{172}$ |
| 2002 $TZ_{173}$ | 16.6 | 0.15 | 20060922 | 324.04194 | 293.60825 | 93.74737 | 6.84323 | 0.2131872 | 2.6264135 | 36 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 04232 | 2002 $TZ_{173}$ |
| 2002 $TL_{174}$ | 15.6 | 0.15 | 20060922 | 338.72263 | 354.66602 | 59.31013 | 7.54849 | 0.1058597 | 2.4468953 | 107 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 61440 | 2002 $TL_{174}$ |
| 2002 $TN_{174}$ | 15.4 | 0.15 | 20060922 | 243.98112 | 3.40478 | 48.13564 | 11.31980 | 0.0955045 | 2.9792357 | 39 | 4 | 1995–2004 | 0.63 | M-v | 1 | MPC | 57901 | 2002 $TN_{174}$ |
| 2002 $TT_{174}$ | 16.0 | 0.15 | 20060922 | 341.21429 | 278.53441 | 79.81727 | 7.29335 | 0.2458230 | 2.6352017 | 39 | 3 | 1998–2006 | 0.43 | M-v | 3 | MPC | 03434 | 2002 $TT_{174}$ |
| 2002 $TW_{174}$ | 17.1 | 0.15 | 20060922 | 11.24127 | 206.51060 | 119.84485 | 5.93501 | 0.2590531 | 2.5851059 | 49 | 2 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03434 | 2002 $TW_{174}$ |
| 2002 $TJ_{175}$ | 15.7 | 0.15 | 20060922 | 247.11391 | 286.78859 | 138.40665 | 8.66790 | 0.1689959 | 2.9178340 | 74 | 3 | 1999–2004 | 0.53 | M-v | 2 | MPC | 62418 | 2002 $TJ_{175}$ |
| 2002 $TA_{176}$ | 15.9 | 0.15 | 20060922 | 356.99697 | 78.36871 | 275.24716 | 9.62462 | 0.1756260 | 2.6081310 | 83 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04232 | 2002 $TA_{176}$ |
| 2002 $TE_{177}$ | 16.4 | 0.15 | 20060922 | 348.80362 | 247.81804 | 107.17794 | 12.61396 | 0.3193503 | 2.6424791 | 54 | 2 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03435 | 2002 $TE_{177}$ |
| 2002 $TH_{177}$ | 15.3 | 0.15 | 20060922 | 343.73924 | 245.47514 | 116.27446 | 16.77688 | 0.1644653 | 2.7166365 | 33 | 2 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03435 | 2002 $TH_{177}$ |
| 2002 $TQ_{177}$ | 16.0 | 0.15 | 20060922 | 47.65010 | 14.38780 | 301.60066 | 14.55773 | 0.1289889 | 2.5350514 | 46 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 85667 | 2002 $TQ_{177}$ |
| 2002 $TO_{178}$ | 15.9 | 0.15 | 20060922 | 15.49092 | 93.75704 | 236.68544 | 12.85952 | 0.1011262 | 2.6742441 | 53 | 2 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03435 | 2002 $TO_{178}$ |
| 2002 $TU_{178}$ | 16.1 | 0.15 | 20060922 | 31.80589 | 107.84137 | 221.37538 | 27.11950 | 0.1175745 | 2.5808522 | 46 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 75721 | 2002 $TU_{178}$ |
| 2002 $TB_{179}$ | 15.9 | 0.15 | 20060922 | 342.76344 | 56.25183 | 339.12290 | 11.41469 | 0.1906206 | 2.5781330 | 78 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03435 | 2002 $TB_{179}$ |
| 2002 $TH_{179}$ | 15.6 | 0.15 | 20060922 | 336.74120 | 84.52413 | 296.26856 | 11.70080 | 0.1870224 | 2.6667238 | 81 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03436 | 2002 $TH_{179}$ |
| 2002 $TQ_{179}$ | 15.5 | 0.15 | 20060922 | 48.86898 | 21.36831 | 296.90686 | 12.30210 | 0.1948331 | 2.5649467 | 44 | 5 | 2001–2006 | 0.62 | M-v | 1 | MPC | 75721 | 2002 $TQ_{179}$ |
| 2002 $TU_{179}$ | 15.3 | 0.15 | 20060922 | 350.07170 | 130.64642 | 276.62624 | 14.05504 | 0.1293002 | 2.5282603 | 57 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 61442 | 2002 $TU_{179}$ |
| 2002 $TB_{180}$ | 15.3 | 0.15 | 20060922 | 335.94948 | 61.56213 | 358.74129 | 13.10784 | 0.1739771 | 2.5582611 | 84 | 5 | 1969–2006 | 0.53 | M-v | 1 | MPC | 61442 | 2002 $TB_{180}$ |
| 2002 $TO_{180}$ | 15.4 | 0.15 | 20060922 | 338.21315 | 59.11964 | 305.57280 | 11.23168 | 0.2123401 | 2.7159885 | 89 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03436 | 2002 $TO_{180}$ |
| 2002 $TS_{180}$ | 15.2 | 0.15 | 20060922 | 352.45031 | 84.58301 | 341.71598 | 11.83920 | 0.1744586 | 2.4610382 | 76 | 7 | 1992–2006 | 0.52 | M-v | 1 | MPC | 87552 | 2002 $TS_{180}$ |
| 2002 $TT_{180}$ | 14.7 | 0.15 | 20060922 | 248.87827 | 81.48398 | 338.25420 | 14.78489 | 0.2083189 | 3.1275485 | 33 | 3 | 2001–2004 | 0.77 | M-v | 3 | MPC | 61443 | 2002 $TT_{180}$ |
| 2002 $TX_{180}$ | 15.3 | 0.15 | 20060922 | 12.85055 | 30.13402 | 350.73247 | 13.43088 | 0.1949825 | 2.5305864 | 89 | 4 | 2000–2006 | 0.48 | M-v | 2 | MPC | 61443 | 2002 $TX_{180}$ |
| 2002 $TX_{183}$ | 15.6 | 0.15 | 20060922 | 19.27707 | 109.39951 | 245.75725 | 4.24747 | 0.1324446 | 2.4614020 | 145 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 04232 | 2002 $TX_{183}$ |
| 2002 $TZ_{183}$ | 14.9 | 0.15 | 20060922 | 240.59510 | 72.18735 | 322.13487 | 8.06932 | 0.0934070 | 3.0870302 | 57 | 4 | 1999–2005 | 0.59 | M-v | 1 | MPC | 57901 | 2002 $TZ_{183}$ |
| 2002 $TY_{184}$ | 17.1 | 0.15 | 20060922 | 112.80815 | 84.25185 | 234.20869 | 3.44233 | 0.1888655 | 2.1983505 | 32 | 3 | 1999–2006 | 0.45 | M-v | 4 | MPC | 38060 | 2002 $TY_{184}$ |
| 2002 $TB_{185}$ | 17.2 | 0.15 | 20060922 | 359.31765 | 14.47713 | 340.16152 | 3.76726 | 0.2745484 | 2.5432057 | 102 | 2 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03436 | 2002 $TB_{185}$ |
| 2002 $TP_{185}$ | 15.6 | 0.15 | 20060922 | 14.87126 | 339.89062 | 349.45306 | 15.33093 | 0.1488071 | 2.5788136 | 90 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 03436 | 2002 $TP_{185}$ |
| 2002 $TU_{185}$ | 15.7 | 0.15 | 20060922 | 31.45431 | 323.26845 | 319.97769 | 6.42845 | 0.2168969 | 2.6608685 | 71 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 03437 | 2002 $TU_{185}$ |
| 2002 $TZ_{185}$ | 16.8 | 0.15 | 20060922 | 16.27757 | 18.29353 | 300.25015 | 3.91786 | 0.2863118 | 2.5680513 | 100 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 04232 | 2002 $TZ_{185}$ |
| 2002 $TB_{186}$ | 16.8 | 0.15 | 20060922 | 81.31876 | 0.70884 | 309.10422 | 3.64476 | 0.1569223 | 2.3528807 | 45 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 89349 | 2002 $TB_{186}$ |
| 2002 $TK_{186}$ | 17.4 | 0.15 | 20060922 | 354.20190 | 96.84923 | 326.38440 | 2.69478 | 0.2306003 | 2.3820700 | 34 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 48288 | 2002 $TK_{186}$ |
| 2002 $TT_{186}$ | 17.6 | 0.15 | 20060922 | 144.58331 | 6.34989 | 284.93427 | 4.44102 | 0.1614705 | 2.1828028 | 67 | 3 | 2002–2005 | 0.55 | M-v | 2 | MPC | 89350 | 2002 $TT_{186}$ |
| 2002 $TY_{186}$ | 16.3 | 0.15 | 20060922 | 13.35571 | 115.40382 | 199.31318 | 29.61828 | 0.2363477 | 2.6137734 | 51 | 2 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03437 | 2002 $TY_{186}$ |
| 2002 $TG_{187}$ | 16.2 | 0.15 | 20060922 | 324.89158 | 118.08507 | 273.33294 | 3.82993 | 0.1202635 | 2.6002229 | 62 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03437 | 2002 $TG_{187}$ |
| 2002 $TL_{187}$ | 17.3 | 0.15 | 20060922 | 346.09113 | 42.02794 | 322.26614 | 4.78314 | 0.2596449 | 2.5915846 | 59 | 2 | 2002–2006 | 0.42 | M-v | 3 | MPC | 03437 | 2002 $TL_{187}$ |
| 2002 $TP_{187}$ | 15.8 | 0.15 | 20060922 | 69.24540 | 347.67858 | 341.69445 | 7.27602 | 0.1363279 | 2.3563409 | 64 | 5 | 1997–2006 | 0.45 | M-v | 2 | MPC | 87552 | 2002 $TP_{187}$ |
| 2002 $TF_{189}$ | 16.0 | 0.15 | 20060922 | 311.42299 | 84.52567 | 334.66318 | 13.23575 | 0.1711128 | 2.5425508 | 92 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04232 | 2002 $TF_{189}$ |
| 2002 $TL_{189}$ | 16.5 | 0.15 | 20060922 | 334.18556 | 175.48851 | 214.52992 | 12.47291 | 0.2530975 | 2.5583190 | 60 | 4 | 1998–2006 | 0.67 | M-v | 3 | MPC | 77665 | 2002 $TL_{189}$ |
| 2002 $TP_{189}$ | 15.7 | 0.15 | 20060922 | 75.72743 | 51.83548 | 274.56613 | 5.94857 | 0.1438911 | 2.3243788 | 49 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 85670 | 2002 $TP_{189}$ |
| 2002 $TQ_{189}$ | 13.9 | 0.15 | 20060922 | 215.64056 | 178.89245 | 243.47103 | 9.26243 | 0.0406494 | 3.0699950 | 57 | 4 | 1997–2005 | 0.75 | M-v | 1 | MPC | 41085 | 2002 $TQ_{189}$ |
| 2002 $TE_{191}$ | 15.3 | 0.15 | 20060922 | 342.25533 | 58.93539 | 306.62413 | 10.34028 | 0.2078279 | 2.6907268 | 133 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03438 | 2002 $TE_{191}$ |
| 2002 $TH_{191}$ | 15.6 | 0.15 | 20060922 | 34.78350 | 42.16998 | 238.56951 | 16.61726 | 0.1819035 | 2.6508108 | 40 | 2 | 2002–2006 | 0.37 | M-v | 3 | MPC | 00382 | 2002 $TH_{191}$ |
| 2002 $TK_{191}$ | 15.8 | 0.15 | 20060922 | 28.01116 | 23.78217 | 274.88726 | 12.34767 | 0.2581949 | 2.5717483 | 75 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03438 | 2002 $TK_{191}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TW_{191}$ | 15.4 | 0.15 | 20060922 | 270.07129 | 150.58973 | 326.37589 | 11.42407 | 0.2136091 | 2.6222675 | 63 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 03438 | 2002 $TW_{191}$ |
| 2002 $TY_{191}$ | 15.7 | 0.15 | 20060922 | 38.27729 | 0.78459 | 336.82288 | 12.73782 | 0.0698287 | 2.5265559 | 55 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 72724 | 2002 $TY_{191}$ |
| 2002 $TP_{192}$ | 14.5 | 0.15 | 20060922 | 208.56251 | 297.26164 | 239.92607 | 27.21713 | 0.1088913 | 2.5754249 | 75 | 5 | 1998–2006 | 0.47 | M-v | 2 | MPC | 62419 | 2002 $TP_{192}$ |
| 2002 $TT_{195}$ | 15.4 | 0.15 | 20060922 | 300.23965 | 63.13774 | 41.91164 | 29.90235 | 0.3381211 | 2.6259364 | 117 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 43474 | 2002 $TT_{195}$ |
| 2002 $TN_{196}$ | 17.0 | 0.15 | 20060922 | 327.69178 | 91.81435 | 359.97200 | 1.58627 | 0.1704376 | 2.4180809 | 49 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 61449 | 2002 $TN_{196}$ |
| 2002 $TT_{196}$ | 16.9 | 0.15 | 20060922 | 349.20160 | 211.66886 | 198.04629 | 6.04223 | 0.1833099 | 2.3822568 | 102 | 3 | 2000–2006 | 0.54 | M-v | 1 | MPC | 50149 | 2002 $TT_{196}$ |
| 2002 $TP_{197}$ | 16.5 | 0.15 | 20060922 | 347.57041 | 349.05638 | 344.13040 | 2.91704 | 0.1914007 | 2.7245543 | 28 | 3 | 2002–2005 | 0.53 | M-v | 4 | MPC | 65374 | 2002 $TP_{197}$ |
| 2002 $TT_{197}$ | 15.8 | 0.15 | 20060922 | 206.20943 | 192.52947 | 359.65324 | 10.60982 | 0.1398221 | 2.3778798 | 79 | 7 | 1991–2006 | 0.62 | M-v | 1 | MPC | 87552 | 2002 $TT_{197}$ |
| 2002 $TB_{198}$ | 16.7 | 0.15 | 20060922 | 348.37250 | 125.97657 | 226.25188 | 4.78042 | 0.3509740 | 2.6384366 | 63 | 2 | 2002–2006 | 0.42 | M-v | 2 | MPC | 00383 | 2002 $TB_{198}$ |
| 2002 $TN_{198}$ | 16.0 | 0.15 | 20060922 | 349.84542 | 37.78607 | 335.94785 | 12.13528 | 0.2030128 | 2.5431513 | 116 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04232 | 2002 $TN_{198}$ |
| 2002 $TG_{199}$ | 15.1 | 0.15 | 20060922 | 325.21479 | 116.05065 | 275.25467 | 12.21223 | 0.1738478 | 2.6391754 | 88 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 04233 | 2002 $TG_{199}$ |
| 2002 $TR_{200}$ | 16.6 | 0.15 | 20060922 | 79.32163 | 87.03943 | 237.18764 | 4.78405 | 0.2130605 | 2.3083924 | 53 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 75727 | 2002 $TR_{200}$ |
| 2002 $TS_{200}$ | 17.1 | 0.15 | 20060922 | 76.78738 | 93.01243 | 211.61749 | 12.35419 | 0.2129695 | 2.3773542 | 49 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 75727 | 2002 $TS_{200}$ |
| 2002 $TY_{202}$ | 16.4 | 0.15 | 20060922 | 321.13666 | 317.16495 | 75.59904 | 4.97648 | 0.2275293 | 2.6341668 | 36 | 3 | 2001–2006 | 0.61 | M-v | 4 | MPC | 03439 | 2002 $TY_{202}$ |
| 2002 $TK_{203}$ | 17.1 | 0.15 | 20060922 | 4.54991 | 310.95992 | 40.21372 | 10.36520 | 0.2459546 | 2.5437233 | 69 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 75727 | 2002 $TK_{203}$ |
| 2002 $TL_{203}$ | 15.9 | 0.15 | 20060922 | 302.41175 | 241.10689 | 163.98000 | 14.75389 | 0.1207065 | 2.6740996 | 80 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04233 | 2002 $TL_{203}$ |
| 2002 $TO_{203}$ | 17.0 | 0.15 | 20060922 | 112.35102 | 211.04548 | 118.31287 | 6.15233 | 0.1958861 | 2.1871639 | 110 | 6 | 1994–2006 | 0.49 | M-v | 1 | MPC | 87552 | 2002 $TO_{203}$ |
| 2002 $TV_{203}$ | 16.1 | 0.15 | 20060922 | 45.89622 | 298.98819 | 77.63610 | 5.98701 | 0.2581514 | 2.3084092 | 86 | 4 | 2001–2006 | 0.67 | M-v | 2 | MPC | 62419 | 2002 $TV_{203}$ |
| 2002 $TA_{204}$ | 16.4 | 0.15 | 20060922 | 31.12248 | 247.70964 | 71.96215 | 7.91253 | 0.1425052 | 2.5746671 | 52 | 5 | 2001–2006 | 0.58 | M-v | 1 | MPC | 04233 | 2002 $TA_{204}$ |
| 2002 $TN_{204}$ | 16.2 | 0.15 | 20060922 | 54.14785 | 284.61714 | 100.28114 | 6.31798 | 0.1033816 | 2.2456769 | 38 | 5 | 2000–2006 | 0.65 | M-v | 1 | MPC | 87552 | 2002 $TN_{204}$ |
| 2002 $TV_{204}$ | 17.1 | 0.15 | 20060922 | 70.10733 | 197.59123 | 117.24613 | 6.08991 | 0.2421661 | 2.3679715 | 28 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75728 | 2002 $TV_{204}$ |
| 2002 $TY_{204}$ | 17.3 | 0.15 | 20060922 | 35.18815 | 281.44902 | 129.86918 | 5.50555 | 0.0450137 | 2.2385651 | 30 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 00384 | 2002 $TY_{204}$ |
| 2002 $TC_{205}$ | 17.1 | 0.15 | 20060922 | 123.85602 | 196.28772 | 89.21315 | 7.44474 | 0.1949738 | 2.2821074 | 26 | 4 | 1998–2006 | 0.64 | M-v | 2 | MPC | 77666 | 2002 $TC_{205}$ |
| 2002 $TQ_{205}$ | 15.5 | 0.15 | 20060922 | 326.97497 | 128.95456 | 244.33138 | 7.82246 | 0.1523039 | 2.7170807 | 48 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03439 | 2002 $TQ_{205}$ |
| 2002 $TB_{206}$ | 16.2 | 0.15 | 20060922 | 325.58783 | 133.96454 | 237.69962 | 3.98614 | 0.1746854 | 2.7276861 | 69 | 4 | 2002–2006 | 0.53 | M-v | 2 | MPC | 03439 | 2002 $TB_{206}$ |
| 2002 $TL_{206}$ | 16.1 | 0.15 | 20060922 | 57.45640 | 98.45655 | 249.50334 | 2.48899 | 0.1959856 | 2.3627886 | 62 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 87552 | 2002 $TL_{206}$ |
| 2002 $TS_{206}$ | 15.6 | 0.15 | 20060922 | 258.52824 | 217.93777 | 261.24647 | 5.14395 | 0.1622525 | 2.6550377 | 98 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 61454 | 2002 $TS_{206}$ |
| 2002 $TB_{207}$ | 15.6 | 0.15 | 20060922 | 18.64735 | 288.58907 | 16.33284 | 12.00317 | 0.2545112 | 2.6926831 | 64 | 3 | 2001–2006 | 0.44 | M-v | 1 | MPC | 03439 | 2002 $TB_{207}$ |
| 2002 $TD_{207}$ | 16.7 | 0.15 | 20060922 | 353.76249 | 113.85698 | 256.32311 | 2.58610 | 0.1999863 | 2.5828356 | 96 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 89351 | 2002 $TD_{207}$ |
| 2002 $TJ_{207}$ | 15.3 | 0.15 | 20060922 | 296.34791 | 111.29695 | 323.39929 | 3.37829 | 0.2384716 | 2.6802808 | 135 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04233 | 2002 $TJ_{207}$ |
| 2002 $TD_{208}$ | 15.9 | 0.15 | 20060922 | 11.06180 | 305.01595 | 22.17394 | 11.43691 | 0.2805904 | 2.6353533 | 112 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04233 | 2002 $TD_{208}$ |
| 2002 $TE_{208}$ | 16.3 | 0.15 | 20060922 | 313.05514 | 45.47701 | 6.33069 | 3.87482 | 0.2632936 | 2.6784844 | 63 | 4 | 1993–2006 | 0.47 | M-v | 1 | MPC | 03440 | 2002 $TE_{208}$ |
| 2002 $TG_{208}$ | 16.3 | 0.15 | 20060922 | 345.74482 | 116.13945 | 268.82000 | 3.26485 | 0.1421515 | 2.5794427 | 107 | 4 | 1998–2006 | 0.50 | M-v | 3 | MPC | 04233 | 2002 $TG_{208}$ |
| 2002 $TJ_{208}$ | 16.2 | 0.15 | 20060922 | 7.00872 | 170.86168 | 217.58595 | 14.58717 | 0.1839695 | 2.4696651 | 113 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 50688 | 2002 $TJ_{208}$ |
| 2002 $TL_{208}$ | 16.9 | 0.15 | 20060922 | 336.62342 | 139.14844 | 272.11452 | 2.81336 | 0.2477160 | 2.5522648 | 111 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 41824 | 2002 $TL_{208}$ |
| 2002 $TP_{208}$ | 16.6 | 0.15 | 20060922 | 43.91634 | 269.22394 | 116.87542 | 5.55678 | 0.2420389 | 2.3529445 | 80 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 61455 | 2002 $TP_{208}$ |
| 2002 $TS_{208}$ | 16.0 | 0.15 | 20060922 | 339.68898 | 229.53218 | 135.76556 | 10.39443 | 0.0877115 | 2.6327766 | 67 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 04233 | 2002 $TS_{208}$ |
| 2002 $TZ_{208}$ | 16.5 | 0.15 | 20060922 | 335.71525 | 300.62433 | 87.71508 | 9.80827 | 0.1712478 | 2.5753580 | 32 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 03440 | 2002 $TZ_{208}$ |
| 2002 $TG_{209}$ | 16.2 | 0.15 | 20060922 | 22.44177 | 197.32841 | 106.45567 | 7.44620 | 0.2535320 | 2.6062633 | 46 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03440 | 2002 $TG_{209}$ |
| 2002 $TT_{209}$ | 16.3 | 0.15 | 20060922 | 358.55219 | 190.49462 | 147.93570 | 10.27919 | 0.1539805 | 2.6571144 | 67 | 5 | 1993–2006 | 0.45 | M-v | 0 | MPC | 04233 | 2002 $TT_{209}$ |
| 2002 $TY_{209}$ | 16.2 | 0.15 | 20060922 | 347.70391 | 247.43848 | 124.94424 | 8.32062 | 0.1382854 | 2.5846044 | 81 | 6 | 2000–2006 | 0.48 | M-v | 1 | MPC | 04233 | 2002 $TY_{209}$ |
| 2002 $TA_{210}$ | 16.2 | 0.15 | 20060922 | 313.39117 | 330.10974 | 95.50022 | 6.76944 | 0.2044431 | 2.5552799 | 47 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 61455 | 2002 $TA_{210}$ |
| 2002 $TR_{210}$ | 17.0 | 0.15 | 20060922 | 49.07189 | 333.28500 | 45.75744 | 2.90842 | 0.1240483 | 2.3131942 | 52 | 4 | 2001–2006 | 0.59 | M-v | 2 | MPC | 66286 | 2002 $TR_{210}$ |
| 2002 $TV_{210}$ | 16.7 | 0.15 | 20060922 | 47.58397 | 0.12437 | 352.80562 | 2.40439 | 0.1967953 | 2.3913633 | 58 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 74228 | 2002 $TV_{210}$ |
| 2002 $TD_{211}$ | 16.7 | 0.15 | 20060922 | 339.06699 | 5.21264 | 92.20631 | 1.74901 | 0.2026006 | 2.3910695 | 63 | 5 | 1991–2006 | 0.58 | M-v | 1 | MPC | 65374 | 2002 $TD_{211}$ |
| 2002 $TO_{211}$ | 17.0 | 0.15 | 20060922 | 355.93127 | 211.51967 | 125.27370 | 14.23288 | 0.2318247 | 2.6618136 | 52 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 03440 | 2002 $TO_{211}$ |
| 2002 $TW_{211}$ | 16.1 | 0.15 | 20060922 | 353.38543 | 298.78275 | 58.49493 | 13.38626 | 0.2050349 | 2.5499802 | 53 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04233 | 2002 $TW_{211}$ |
| 2002 $TM_{212}$ | 16.9 | 0.15 | 20060922 | 5.00218 | 220.51780 | 120.03984 | 12.30508 | 0.2555569 | 2.5515919 | 32 | 2 | 2002–2006 | 0.37 | M-v | 3 | MPC | 03441 | 2002 $TM_{212}$ |
| 2002 $TD_{213}$ | 16.3 | 0.15 | 20060922 | 296.62055 | 326.10962 | 70.79533 | 5.63796 | 0.0797331 | 2.7392387 | 48 | 5 | 1993–2005 | 0.69 | M-v | 0 | MPC | 85673 | 2002 $TD_{213}$ |
| 2002 $TO_{213}$ | 16.4 | 0.15 | 20060922 | 333.48578 | 175.91853 | 178.50279 | 6.31720 | 0.0418475 | 2.7499485 | 30 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 85673 | 2002 $TO_{213}$ |
| 2002 $TN_{214}$ | 16.5 | 0.15 | 20060922 | 48.57481 | 232.04138 | 86.36484 | 5.50666 | 0.2137798 | 2.4566365 | 75 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 03441 | 2002 $TN_{214}$ |
| 2002 $TD_{215}$ | 17.0 | 0.15 | 20060922 | 333.47525 | 306.48538 | 134.04640 | 5.52592 | 0.2063435 | 2.4004253 | 69 | 3 | 2000–2006 | 0.38 | M-v | 2 | MPC | 00386 | 2002 $TD_{215}$ |
| 2002 $TE_{215}$ | 16.6 | 0.15 | 20060922 | 45.83141 | 277.67135 | 66.47022 | 7.18626 | 0.1785634 | 2.4144319 | 48 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 87552 | 2002 $TE_{215}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TG_{215}$ | 16.2 | 0.15 | 20060922 | 77.62195 | 252.41376 | 72.81061 | 6.91015 | 0.1150840 | 2.3702419 | 31 | 5 | 1993–2006 | 0.56 | M-v | 1 | MPC | 69404 | 2002 $TG_{215}$ |
| 2002 $TO_{215}$ | 16.5 | 0.15 | 20060922 | 94.80104 | 246.88388 | 119.91440 | 7.91447 | 0.2096860 | 2.2176935 | 98 | 6 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97622 | 2002 $TO_{215}$ |
| 2002 $TA_{216}$ | 16.2 | 0.15 | 20060922 | 315.74282 | 289.00610 | 123.42749 | 13.42929 | 0.1947478 | 2.6639792 | 54 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 85674 | 2002 $TA_{216}$ |
| 2002 $TS_{216}$ | 16.3 | 0.15 | 20060922 | 5.47981 | 232.92166 | 100.07195 | 12.72286 | 0.1786910 | 2.5780934 | 39 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03441 | 2002 $TS_{216}$ |
| 2002 $TB_{217}$ | 16.5 | 0.15 | 20060922 | 293.18623 | 308.40992 | 133.43591 | 6.52284 | 0.0326638 | 2.5275677 | 69 | 5 | 1998–2006 | 0.51 | M-v | 0 | MPC | 87552 | 2002 $TB_{217}$ |
| 2002 $TV_{217}$ | 17.8 | 0.15 | 20060922 | 144.17990 | 190.23385 | 92.99665 | 3.31389 | 0.2177677 | 2.2803517 | 28 | 3 | 2002–2005 | 0.62 | M-v | 3 | MPC | 90161 | 2002 $TV_{217}$ |
| 2002 $TW_{217}$ | 17.0 | 0.15 | 20060922 | 352.24720 | 59.09062 | 296.08778 | 2.18669 | 0.1979102 | 2.6050423 | 48 | 2 | 2002–2006 | 0.42 | M-v | 3 | MPC | 03441 | 2002 $TW_{217}$ |
| 2002 $TC_{218}$ | 16.7 | 0.15 | 20060922 | 351.59490 | 61.73442 | 329.42119 | 5.94721 | 0.1144041 | 2.4754283 | 58 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 65374 | 2002 $TC_{218}$ |
| 2002 $TH_{219}$ | 14.8 | 0.15 | 20060922 | 255.68381 | 157.73971 | 236.72573 | 10.73393 | 0.1308138 | 3.0176348 | 36 | 3 | 1997–2005 | 0.66 | M-v | 3 | MPC | 41094 | 2002 $TH_{219}$ |
| 2002 $TK_{219}$ | 15.8 | 0.15 | 20060922 | 312.70154 | 91.95377 | 286.34740 | 5.36921 | 0.0410810 | 2.7335998 | 49 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 02137 | 2002 $TK_{219}$ |
| 2002 $TO_{219}$ | 15.5 | 0.15 | 20060922 | 41.74235 | 306.31075 | 354.19451 | 14.93575 | 0.2227113 | 2.5627733 | 102 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04233 | 2002 $TO_{219}$ |
| 2002 $TP_{219}$ | 15.9 | 0.15 | 20060922 | 328.51944 | 37.53902 | 345.83719 | 12.70466 | 0.1710158 | 2.6394019 | 75 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04233 | 2002 $TP_{219}$ |
| 2002 $TU_{220}$ | 16.7 | 0.15 | 20060922 | 85.95645 | 19.96479 | 274.49776 | 8.49384 | 0.1556497 | 2.3797439 | 42 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 85677 | 2002 $TU_{220}$ |
| 2002 $TW_{220}$ | 15.8 | 0.15 | 20060922 | 22.93851 | 358.48228 | 331.39094 | 14.77536 | 0.1170558 | 2.5554941 | 67 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 03441 | 2002 $TW_{220}$ |
| 2002 $TY_{220}$ | 15.5 | 0.15 | 20060922 | 49.51869 | 303.10805 | 329.19115 | 14.44632 | 0.1145381 | 2.6896502 | 104 | 5 | 1993–2006 | 0.50 | M-v | 0 | MPC | 04233 | 2002 $TY_{220}$ |
| 2002 $TE_{221}$ | 16.0 | 0.15 | 20060922 | 18.15010 | 9.98328 | 297.26430 | 10.98347 | 0.2608543 | 2.6245992 | 63 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03442 | 2002 $TE_{221}$ |
| 2002 $TO_{221}$ | 15.5 | 0.15 | 20060922 | 307.55067 | 294.98372 | 10.19927 | 14.97717 | 0.2930944 | 3.1012451 | 43 | 2 | 2002–2006 | 0.36 | M-v | 3 | MPC | 00386 | 2002 $TO_{221}$ |
| 2002 $TP_{221}$ | 15.7 | 0.15 | 20060922 | 349.30207 | 138.71522 | 213.85760 | 10.87883 | 0.1224906 | 2.6657819 | 52 | 3 | 2002–2006 | 0.70 | M-v | 3 | MPC | 04233 | 2002 $TP_{221}$ |
| 2002 $TT_{221}$ | 15.9 | 0.15 | 20060922 | 23.10710 | 313.78451 | 332.77919 | 31.17477 | 0.2997504 | 2.6015954 | 81 | 3 | 2002–2006 | 0.62 | M-v | 2 | MPC | 04233 | 2002 $TT_{221}$ |
| 2002 $TX_{221}$ | 16.6 | 0.15 | 20060922 | 349.54371 | 26.49454 | 347.45378 | 12.73941 | 0.2118484 | 2.5512801 | 59 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03442 | 2002 $TX_{221}$ |
| 2002 $TA_{222}$ | 15.9 | 0.15 | 20060922 | 272.74785 | 176.78807 | 282.44116 | 4.24245 | 0.1866765 | 2.6006595 | 33 | 4 | 1998–2006 | 0.81 | M-v | 2 | MPC | 04233 | 2002 $TA_{222}$ |
| 2002 $TK_{222}$ | 17.3 | 0.15 | 20060922 | 357.02353 | 50.80463 | 353.71861 | 2.82581 | 0.1948752 | 2.4354125 | 69 | 4 | 1998–2006 | 0.49 | M-v | 3 | MPC | 75732 | 2002 $TK_{222}$ |
| 2002 $TT_{222}$ | 16.6 | 0.15 | 20060922 | 325.43036 | 32.04680 | 22.64299 | 5.35677 | 0.1360339 | 2.5640232 | 90 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 65374 | 2002 $TT_{222}$ |
| 2002 $TH_{223}$ | 16.7 | 0.15 | 20060922 | 315.33789 | 199.61713 | 226.03490 | 2.68207 | 0.1242555 | 2.5659174 | 86 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 94860 | 2002 $TH_{223}$ |
| 2002 $TO_{223}$ | 16.6 | 0.15 | 20060922 | 327.81940 | 208.99834 | 201.41069 | 3.32724 | 0.2195671 | 2.5858077 | 76 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 04233 | 2002 $TO_{223}$ |
| 2002 $TX_{223}$ | 16.5 | 0.15 | 20060922 | 323.27669 | 225.40891 | 197.92582 | 3.64252 | 0.1446937 | 2.5379940 | 117 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 61459 | 2002 $TX_{223}$ |
| 2002 $TB_{224}$ | 15.7 | 0.15 | 20060922 | 101.90282 | 64.85954 | 251.50980 | 4.15602 | 0.1724570 | 2.3013238 | 76 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 87553 | 2002 $TB_{224}$ |
| 2002 $TG_{224}$ | 17.3 | 0.15 | 20060922 | 35.95294 | 63.56932 | 316.68728 | 1.89523 | 0.1938547 | 2.3646706 | 42 | 5 | 1991–2006 | 0.47 | M-v | 1 | MPC | 85677 | 2002 $TG_{224}$ |
| 2002 $TR_{224}$ | 15.1 | 0.15 | 20060922 | 351.74768 | 145.13559 | 199.85802 | 6.46708 | 0.1024508 | 2.7530063 | 80 | 3 | 2002–2006 | 0.62 | M-v | 3 | MPC | 04233 | 2002 $TR_{224}$ |
| 2002 $TT_{224}$ | 16.4 | 0.15 | 20060922 | 347.65632 | 23.53192 | 55.20036 | 5.87646 | 0.1993763 | 2.4071451 | 64 | 3 | 1996–2004 | 0.54 | M-v | 3 | MPC | 75733 | 2002 $TT_{224}$ |
| 2002 $TV_{224}$ | 16.9 | 0.15 | 20060922 | 141.01205 | 248.98192 | 55.49520 | 5.50216 | 0.2094660 | 2.1918822 | 66 | 4 | 1998–2005 | 0.57 | M-v | 1 | MPC | 85678 | 2002 $TV_{224}$ |
| 2002 $TB_{225}$ | 16.9 | 0.15 | 20060922 | 352.62772 | 331.89838 | 34.20414 | 3.75227 | 0.2436746 | 2.5840060 | 76 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03442 | 2002 $TB_{225}$ |
| 2002 $TC_{225}$ | 17.6 | 0.15 | 20060922 | 354.55485 | 77.94311 | 282.47616 | 0.50081 | 0.3009520 | 2.5797818 | 109 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 03442 | 2002 $TC_{225}$ |
| 2002 $TJ_{225}$ | 16.4 | 0.15 | 20060922 | 37.54465 | 311.22750 | 59.66939 | 5.40498 | 0.1518304 | 2.4087548 | 72 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 62420 | 2002 $TJ_{225}$ |
| 2002 $TM_{225}$ | 15.6 | 0.15 | 20060922 | 7.39111 | 309.54751 | 56.03206 | 6.33652 | 0.1161350 | 2.5845848 | 127 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04233 | 2002 $TM_{225}$ |
| 2002 $TY_{225}$ | 16.1 | 0.15 | 20060922 | 293.76091 | 174.78361 | 244.38277 | 13.27602 | 0.0822823 | 2.5574320 | 40 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 77667 | 2002 $TY_{225}$ |
| 2002 $TZ_{225}$ | 16.6 | 0.15 | 20060922 | 14.26279 | 289.36464 | 109.99397 | 4.54345 | 0.2553620 | 2.4397710 | 74 | 3 | 1998–2006 | 0.54 | M-v | 2 | MPC | 41098 | 2002 $TZ_{225}$ |
| 2002 $TG_{226}$ | 15.6 | 0.15 | 20060922 | 27.29429 | 149.42583 | 203.08362 | 17.29115 | 0.2135379 | 2.5436865 | 79 | 3 | 1997–2006 | 0.55 | M-v | 1 | MPC | 04233 | 2002 $TG_{226}$ |
| 2002 $TK_{226}$ | 15.4 | 0.15 | 20060922 | 314.50575 | 354.20777 | 56.20356 | 18.61807 | 0.2188341 | 2.7006922 | 118 | 2 | 2002–2006 | 0.53 | M-v | 2 | MPC | 03443 | 2002 $TK_{226}$ |
| 2002 $TM_{226}$ | 16.8 | 0.15 | 20060922 | 328.66376 | 244.19182 | 163.19297 | 5.47432 | 0.3560901 | 2.6312041 | 106 | 2 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03443 | 2002 $TM_{226}$ |
| 2002 $TO_{226}$ | 15.6 | 0.15 | 20060922 | 74.73065 | 221.53302 | 134.12742 | 5.25359 | 0.1940403 | 2.3054106 | 90 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87553 | 2002 $TO_{226}$ |
| 2002 $TV_{227}$ | 16.1 | 0.15 | 20060922 | 4.15502 | 279.80241 | 97.70501 | 3.55022 | 0.1790568 | 2.5250764 | 100 | 4 | 1998–2006 | 0.55 | M-v | 3 | MPC | 50690 | 2002 $TV_{227}$ |
| 2002 $TW_{227}$ | 16.8 | 0.15 | 20060922 | 33.98780 | 241.71309 | 126.26161 | 3.30578 | 0.1986969 | 2.4155543 | 46 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 77667 | 2002 $TW_{227}$ |
| 2002 $TE_{228}$ | 15.5 | 0.15 | 20060922 | 352.34464 | 288.25245 | 57.94155 | 17.50671 | 0.2820123 | 2.6492511 | 129 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 04233 | 2002 $TE_{228}$ |
| 2002 $TJ_{228}$ | 16.7 | 0.15 | 20060922 | 9.64460 | 327.99114 | 89.99911 | 6.45617 | 0.2262360 | 2.3798306 | 66 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 62420 | 2002 $TJ_{228}$ |
| 2002 $TK_{228}$ | 17.2 | 0.15 | 20060922 | 76.69660 | 238.03887 | 111.70384 | 6.06986 | 0.1828165 | 2.2961785 | 34 | 3 | 1999–2006 | 0.28 | M-v | 4 | MPC | 50690 | 2002 $TK_{228}$ |
| 2002 $TZ_{228}$ | 16.8 | 0.15 | 20060922 | 106.52428 | 164.03313 | 153.98348 | 6.85943 | 0.1367835 | 2.2747614 | 19 | 1 | 62 days | 0.49 | M-v | 4 | MPC | 48290 | 2002 $TZ_{228}$ |
| 2002 $TA_{229}$ | 17.8 | 0.15 | 20060922 | 23.94713 | 207.04542 | 160.45573 | 7.12132 | 0.1757341 | 2.4405147 | 32 | 4 | 2002–2006 | 0.36 | M-v | 0 | MPC | 89351 | 2002 $TA_{229}$ |
| 2002 $TD_{229}$ | 16.7 | 0.15 | 20060922 | 18.12230 | 298.04044 | 71.65378 | 5.78355 | 0.2010456 | 2.4569437 | 93 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 87553 | 2002 $TD_{229}$ |
| 2002 $TE_{229}$ | 15.7 | 0.15 | 20060922 | 318.46006 | 350.52016 | 72.24142 | 5.91266 | 0.0978130 | 2.5478371 | 105 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 61462 | 2002 $TE_{229}$ |
| 2002 $TH_{229}$ | 15.3 | 0.15 | 20060922 | 322.67633 | 196.00796 | 185.47957 | 13.95337 | 0.2068393 | 2.7907222 | 66 | 4 | 1997–2006 | 0.49 | M-v | 1 | MPC | 02137 | 2002 $TH_{229}$ |
| 2002 $TK_{229}$ | 17.1 | 0.15 | 20060922 | 6.67321 | 106.48138 | 216.43695 | 3.15355 | 0.2422428 | 2.6197306 | 42 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 03444 | 2002 $TK_{229}$ |
| 2002 $TK_{230}$ | 15.7 | 0.15 | 20060922 | 346.70631 | 272.98530 | 93.96171 | 12.76668 | 0.1976735 | 2.5901839 | 31 | 3 | 1998–2006 | 0.43 | M-v | 3 | MPC | 04233 | 2002 $TK_{230}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TA_{231}$ | 16.4 | 0.15 | 20060922 | 6.82361 | 258.14553 | 79.59871 | 7.48409 | 0.2417643 | 2.5341654 | 70 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 03444 | 2002 $TA_{231}$ |
| 2002 $TJ_{231}$ | 15.7 | 0.15 | 20060922 | 22.34607 | 16.50188 | 19.37468 | 25.90627 | 0.2640271 | 2.3236268 | 54 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 66287 | 2002 $TJ_{231}$ |
| 2002 $TY_{231}$ | 15.2 | 0.15 | 20060922 | 271.88254 | 156.54823 | 297.26456 | 13.07323 | 0.1177015 | 2.5951207 | 55 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 61463 | 2002 $TY_{231}$ |
| 2002 $TZ_{231}$ | 15.7 | 0.15 | 20060922 | 22.28309 | 28.14663 | 285.73579 | 12.33443 | 0.1756991 | 2.5981088 | 43 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03444 | 2002 $TZ_{231}$ |
| 2002 $TF_{233}$ | 15.1 | 0.15 | 20060922 | 50.48800 | 34.09026 | 254.41901 | 11.50129 | 0.1129894 | 2.6286694 | 53 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04234 | 2002 $TF_{233}$ |
| 2002 $TM_{233}$ | 15.7 | 0.15 | 20060922 | 324.54773 | 93.21685 | 309.42020 | 11.08917 | 0.1965169 | 2.5954469 | 70 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 04234 | 2002 $TM_{233}$ |
| 2002 $TQ_{233}$ | 15.8 | 0.15 | 20060922 | 335.44807 | 48.51635 | 311.69937 | 10.88638 | 0.1772655 | 2.6904430 | 47 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 04234 | 2002 $TQ_{233}$ |
| 2002 $TA_{234}$ | 15.6 | 0.15 | 20060922 | 339.94478 | 81.55602 | 300.89231 | 8.26871 | 0.2205343 | 2.5875745 | 87 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 03444 | 2002 $TA_{234}$ |
| 2002 $TM_{234}$ | 15.0 | 0.15 | 20060922 | 359.67785 | 34.83333 | 284.81037 | 12.07870 | 0.1632121 | 2.7424390 | 68 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 04234 | 2002 $TM_{234}$ |
| 2002 $TF_{235}$ | 15.8 | 0.15 | 20060922 | 336.94853 | 144.65992 | 248.75903 | 12.41549 | 0.1680819 | 2.5646051 | 45 | 4 | 1998–2006 | 0.45 | M-v | 3 | MPC | 03444 | 2002 $TF_{235}$ |
| 2002 $TS_{235}$ | 16.3 | 0.15 | 20060922 | 318.36948 | 113.44530 | 269.79604 | 12.33013 | 0.2164022 | 2.7077546 | 58 | 2 | 2002–2006 | 0.60 | M-v | 3 | MPC | 03444 | 2002 $TS_{235}$ |
| 2002 $TY_{235}$ | 15.2 | 0.15 | 20060922 | 315.63004 | 148.09910 | 259.15091 | 13.53639 | 0.0945478 | 2.6186117 | 93 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 04234 | 2002 $TY_{235}$ |
| 2002 $TC_{236}$ | 14.7 | 0.15 | 20060922 | 304.83840 | 78.17796 | 258.66987 | 14.51678 | 0.1432969 | 3.0393110 | 28 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 03445 | 2002 $TC_{236}$ |
| 2002 $TS_{236}$ | 15.9 | 0.15 | 20060922 | 20.08267 | 104.17762 | 266.67931 | 9.33366 | 0.2381740 | 2.4424825 | 83 | 4 | 1996–2006 | 0.51 | M-v | 1 | MPC | 41827 | 2002 $TS_{236}$ |
| 2002 $TU_{236}$ | 15.3 | 0.15 | 20060922 | 301.09385 | 166.99764 | 274.73605 | 12.35064 | 0.1519433 | 2.5749742 | 55 | 4 | 1998–2006 | 0.66 | M-v | 2 | MPC | 61465 | 2002 $TU_{236}$ |
| 2002 $TV_{236}$ | 15.8 | 0.15 | 20060922 | 328.29360 | 100.41949 | 314.45681 | 10.47103 | 0.2374464 | 2.5645684 | 70 | 3 | 1998–2006 | 0.56 | M-v | 3 | MPC | 04234 | 2002 $TV_{236}$ |
| 2002 $TB_{237}$ | 15.3 | 0.15 | 20060922 | 334.11295 | 56.72437 | 331.93578 | 10.80621 | 0.2053338 | 2.6142521 | 132 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04234 | 2002 $TB_{237}$ |
| 2002 $TX_{237}$ | 15.5 | 0.15 | 20060922 | 12.81184 | 81.85678 | 240.64503 | 15.87702 | 0.2611586 | 2.5716431 | 92 | 3 | 1998–2006 | 0.51 | M-v | 1 | MPC | 04234 | 2002 $TX_{237}$ |
| 2002 $TC_{238}$ | 15.9 | 0.15 | 20060922 | 348.52439 | 65.04756 | 289.93349 | 11.95489 | 0.1945209 | 2.6379353 | 62 | 4 | 1991–2006 | 0.49 | M-v | 1 | MPC | 04234 | 2002 $TC_{238}$ |
| 2002 $TR_{238}$ | 16.5 | 0.15 | 20060922 | 68.51997 | 136.86678 | 229.40007 | 5.62779 | 0.2010646 | 2.3031480 | 75 | 3 | 2001–2004 | 0.57 | M-v | 3 | MPC | 61466 | 2002 $TR_{238}$ |
| 2002 $TS_{238}$ | 15.8 | 0.15 | 20060922 | 7.40012 | 11.66763 | 31.48492 | 7.24903 | 0.1174469 | 2.4765972 | 100 | 5 | 1994–2006 | 0.46 | M-v | 2 | MPC | 62420 | 2002 $TS_{238}$ |
| 2002 $TZ_{238}$ | 16.6 | 0.15 | 20060922 | 29.84821 | 268.35775 | 84.53346 | 8.36807 | 0.1192309 | 2.4590934 | 57 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 03445 | 2002 $TZ_{238}$ |
| 2002 $TD_{239}$ | 16.6 | 0.15 | 20060922 | 22.44684 | 150.30952 | 261.96972 | 2.74963 | 0.2377436 | 2.3475742 | 94 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 77668 | 2002 $TD_{239}$ |
| 2002 $TH_{239}$ | 15.8 | 0.15 | 20060922 | 34.70481 | 28.07788 | 357.48469 | 12.18316 | 0.1586780 | 2.3319881 | 109 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 62420 | 2002 $TH_{239}$ |
| 2002 $TJ_{239}$ | 16.0 | 0.15 | 20060922 | 292.10483 | 136.29566 | 264.47841 | 8.08726 | 0.1276513 | 2.7299269 | 37 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04234 | 2002 $TJ_{239}$ |
| 2002 $TO_{239}$ | 17.2 | 0.15 | 20060922 | 114.09073 | 301.92782 | 6.20151 | 6.16645 | 0.1456528 | 2.2675792 | 36 | 4 | 2001–2005 | 0.54 | M-v | 1 | MPC | 85681 | 2002 $TO_{239}$ |
| 2002 $TR_{239}$ | 16.6 | 0.15 | 20060922 | 56.38921 | 106.34106 | 235.23296 | 7.07665 | 0.2140963 | 2.3765845 | 65 | 5 | 1991–2006 | 0.47 | M-v | 1 | MPC | 89352 | 2002 $TR_{239}$ |
| 2002 $TU_{239}$ | 16.4 | 0.15 | 20060922 | 28.49135 | 76.96925 | 311.03785 | 2.09309 | 0.1716207 | 2.3695673 | 101 | 5 | 1991–2006 | 0.50 | M-v | 1 | MPC | 62420 | 2002 $TU_{239}$ |
| 2002 $TY_{239}$ | 15.3 | 0.15 | 20060922 | 299.48057 | 192.41031 | 222.10823 | 12.09037 | 0.1358103 | 2.7054410 | 88 | 4 | 1997–2006 | 0.54 | M-v | 1 | MPC | 04234 | 2002 $TY_{239}$ |
| 2002 $TT_{240}$ | 14.6 | 0.15 | 20060922 | 292.48335 | 263.15226 | 101.59706 | 13.53073 | 0.1443664 | 3.0072583 | 39 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 61467 | 2002 $TT_{240}$ |
| 2002 $TC_{241}$ | 15.9 | 0.15 | 20060922 | 334.44104 | 26.57191 | 59.68084 | 2.73178 | 0.1366545 | 2.3942843 | 71 | 5 | 1991–2006 | 0.61 | M-v | 1 | MPC | 04234 | 2002 $TC_{241}$ |
| 2002 $TE_{241}$ | 17.7 | 0.15 | 20060922 | 126.92052 | 293.87465 | 27.45239 | 4.94121 | 0.2014772 | 2.1689252 | 31 | 2 | 2002–2005 | 0.52 | M-v | 3 | MPC | 89352 | 2002 $TE_{241}$ |
| 2002 $TQ_{241}$ | 15.4 | 0.15 | 20060922 | 275.15177 | 343.10014 | 121.62248 | 14.04846 | 0.1340133 | 2.6506732 | 43 | 3 | 2002–2006 | 0.49 | M-v | 1 | MPC | 72726 | 2002 $TQ_{241}$ |
| 2002 $TB_{242}$ | 16.0 | 0.15 | 20060922 | 355.01975 | 273.15136 | 86.19593 | 8.95911 | 0.2217413 | 2.6089471 | 85 | 4 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04234 | 2002 $TB_{242}$ |
| 2002 $TC_{242}$ | 16.6 | 0.15 | 20060922 | 29.25641 | 305.93577 | 66.04449 | 14.11442 | 0.1109131 | 2.4242597 | 60 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 61468 | 2002 $TC_{242}$ |
| 2002 $TJ_{242}$ | 16.6 | 0.15 | 20060922 | 78.92027 | 290.24152 | 90.67754 | 9.15257 | 0.1083814 | 2.2078222 | 74 | 6 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87553 | 2002 $TJ_{242}$ |
| 2002 $TC_{243}$ | 15.5 | 0.15 | 20060922 | 349.41685 | 266.58910 | 105.08983 | 13.29125 | 0.1237678 | 2.6789810 | 73 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04234 | 2002 $TC_{243}$ |
| 2002 $TU_{243}$ | 16.1 | 0.15 | 20060922 | 239.47183 | 9.31720 | 60.32116 | 1.30389 | 0.0342670 | 2.9458105 | 44 | 5 | 1995–2005 | 0.47 | M-v | 0 | MPC | 77668 | 2002 $TU_{243}$ |
| 2002 $TV_{243}$ | 17.6 | 0.15 | 20060922 | 355.96436 | 257.77098 | 187.15401 | 7.56065 | 0.1542731 | 2.2796022 | 24 | 3 | 1997–2004 | 0.41 | M-v | 3 | MPC | 38083 | 2002 $TV_{243}$ |
| 2002 $TY_{243}$ | 16.9 | 0.15 | 20060922 | 294.84410 | 227.23163 | 216.46442 | 1.01246 | 0.1310312 | 2.5912865 | 52 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 75737 | 2002 $TY_{243}$ |
| 2002 $TG_{245}$ | 15.9 | 0.15 | 20060922 | 306.04424 | 10.02842 | 45.05490 | 15.73279 | 0.1080269 | 2.6398626 | 21 | 2 | 2002–2006 | 0.32 | M-v | 4 | MPC | 03445 | 2002 $TG_{245}$ |
| 2002 $TP_{245}$ | 16.7 | 0.15 | 20060922 | 355.18107 | 181.26035 | 178.36293 | 4.27787 | 0.2014622 | 2.5966673 | 87 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03445 | 2002 $TP_{245}$ |
| 2002 $TW_{245}$ | 16.2 | 0.15 | 20060922 | 103.25632 | 268.91017 | 49.79865 | 7.47170 | 0.1482204 | 2.2834905 | 57 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87553 | 2002 $TW_{245}$ |
| 2002 $TB_{246}$ | 16.6 | 0.15 | 20060922 | 37.39893 | 206.26956 | 150.75674 | 6.64885 | 0.1232891 | 2.4210643 | 50 | 7 | 1993–2006 | 0.65 | M-v | 1 | MPC | 87553 | 2002 $TB_{246}$ |
| 2002 $TC_{246}$ | 16.9 | 0.15 | 20060922 | 1.23410 | 236.06030 | 155.79173 | 5.58852 | 0.1457997 | 2.4643953 | 74 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 62420 | 2002 $TC_{246}$ |
| 2002 $TS_{246}$ | 16.5 | 0.15 | 20060922 | 347.64846 | 158.23019 | 205.00381 | 1.95192 | 0.1511313 | 2.6363051 | 84 | 6 | 2000–2006 | 0.41 | M-v | 1 | MPC | 04234 | 2002 $TS_{246}$ |
| 2002 $TX_{246}$ | 16.6 | 0.15 | 20060922 | 24.56453 | 287.42711 | 53.22256 | 1.91507 | 0.0876165 | 2.5633821 | 73 | 4 | 1998–2006 | 0.37 | M-v | 3 | MPC | 94860 | 2002 $TX_{246}$ |
| 2002 $TY_{246}$ | 17.2 | 0.15 | 20060922 | 329.37238 | 358.91400 | 44.91394 | 2.69141 | 0.1156916 | 2.5759107 | 40 | 5 | 1998–2006 | 0.51 | M-v | 2 | MPC | 89352 | 2002 $TY_{246}$ |
| 2002 $TG_{247}$ | 17.0 | 0.15 | 20060922 | 38.61259 | 190.09382 | 148.35331 | 3.35167 | 0.2154047 | 2.4543894 | 29 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 75739 | 2002 $TG_{247}$ |
| 2002 $TW_{247}$ | 14.6 | 0.15 | 20060922 | 233.48697 | 202.10469 | 187.55354 | 3.37380 | 0.0504142 | 3.2393800 | 46 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 00388 | 2002 $TW_{247}$ |
| 2002 $TB_{248}$ | 15.7 | 0.15 | 20060922 | 235.61130 | 345.90776 | 49.45739 | 2.48277 | 0.1304767 | 3.1876333 | 35 | 5 | 1996–2006 | 0.51 | M-v | 0 | MPC | 02137 | 2002 $TB_{248}$ |
| 2002 $TL_{248}$ | 16.7 | 0.15 | 20060922 | 74.68510 | 159.81981 | 140.00865 | 3.26348 | 0.1953190 | 2.4238570 | 37 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 87553 | 2002 $TL_{248}$ |
| 2002 $TX_{248}$ | 17.3 | 0.15 | 20060922 | 41.80596 | 181.21285 | 157.84982 | 1.97265 | 0.1456017 | 2.4365159 | 51 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 85683 | 2002 $TX_{248}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TF_{249}$ | 16.9 | 0.15 | 20060922 | 33.46198 | 182.09585 | 126.81760 | 2.08708 | 0.1923957 | 2.5725178 | 57 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 03446 | 2002 $TF_{249}$ |
| 2002 $TU_{249}$ | 16.2 | 0.15 | 20060922 | 358.51685 | 341.29647 | 28.97516 | 8.10750 | 0.2009966 | 2.6004296 | 114 | 3 | 1996–2006 | 0.50 | M-v | 2 | MPC | 41107 | 2002 $TU_{249}$ |
| 2002 $TF_{250}$ | 16.4 | 0.15 | 20060922 | 310.40950 | 33.10465 | 34.80888 | 3.74888 | 0.1034209 | 2.5533659 | 41 | 4 | 1998–2006 | 0.48 | M-v | 3 | MPC | 69405 | 2002 $TF_{250}$ |
| 2002 $TH_{250}$ | 16.3 | 0.15 | 20060922 | 257.53820 | 256.47754 | 153.46744 | 2.33377 | 0.2171641 | 2.9856410 | 37 | 3 | 1997–2005 | 0.69 | M-v | 2 | MPC | 89353 | 2002 $TH_{250}$ |
| 2002 $TS_{250}$ | 16.8 | 0.15 | 20060922 | 42.44898 | 167.11902 | 212.76024 | 3.51432 | 0.2004354 | 2.3545342 | 75 | 5 | 1991–2006 | 0.47 | M-v | 1 | MPC | 62421 | 2002 $TS_{250}$ |
| 2002 $TV_{250}$ | 16.3 | 0.15 | 20060922 | 347.64124 | 86.43095 | 264.44285 | 1.52797 | 0.1952356 | 2.7161612 | 102 | 5 | 1995–2006 | 0.46 | M-v | 1 | MPC | 04234 | 2002 $TV_{250}$ |
| 2002 $TE_{251}$ | 17.2 | 0.15 | 20060922 | 339.56118 | 27.15831 | 11.63894 | 4.75071 | 0.2051656 | 2.5569085 | 67 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 61471 | 2002 $TE_{251}$ |
| 2002 $TL_{251}$ | 16.2 | 0.15 | 20060922 | 92.32400 | 236.99928 | 70.70048 | 5.38717 | 0.0869702 | 2.3872976 | 56 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 85683 | 2002 $TL_{251}$ |
| 2002 $TN_{251}$ | 15.3 | 0.15 | 20060922 | 345.84138 | 154.52928 | 232.65445 | 12.11727 | 0.1784898 | 2.6657103 | 135 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 87553 | 2002 $TN_{251}$ |
| 2002 $TS_{251}$ | 16.7 | 0.15 | 20060922 | 303.62940 | 61.05349 | 24.31942 | 4.93975 | 0.1201117 | 2.4679397 | 87 | 3 | 2002–2006 | 0.45 | M-v | 1 | MPC | 61471 | 2002 $TS_{251}$ |
| 2002 $TF_{252}$ | 16.3 | 0.15 | 20060922 | 15.04464 | 128.98853 | 172.21198 | 9.56698 | 0.1499746 | 2.7233449 | 46 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 04234 | 2002 $TF_{252}$ |
| 2002 $TU_{252}$ | 14.5 | 0.15 | 20060922 | 173.88882 | 225.76131 | 249.06192 | 3.44651 | 0.1256209 | 3.2881148 | 83 | 4 | 2001–2005 | 0.56 | M-v | 1 | MPC | 62421 | 2002 $TU_{252}$ |
| 2002 $TZ_{252}$ | 17.2 | 0.15 | 20060922 | 3.78788 | 142.52744 | 219.99745 | 3.69377 | 0.2257665 | 2.5590389 | 94 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 48291 | 2002 $TZ_{252}$ |
| 2002 $TA_{253}$ | 17.8 | 0.15 | 20060922 | 118.43781 | 270.21262 | 209.02197 | 19.00219 | 0.1249563 | 1.8697711 | 40 | 4 | 1996–2006 | 0.67 | M-v | 1 | MPC | 02137 | 2002 $TA_{253}$ |
| 2002 $TN_{253}$ | 15.9 | 0.15 | 20060922 | 324.36705 | 283.12158 | 130.30283 | 1.73134 | 0.1421686 | 2.6133773 | 124 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 04234 | 2002 $TN_{253}$ |
| 2002 $TV_{253}$ | 16.8 | 0.15 | 20060922 | 7.98918 | 326.13037 | 8.99581 | 12.09310 | 0.1889308 | 2.5434475 | 53 | 4 | 1998–2006 | 0.62 | M-v | 3 | MPC | 04234 | 2002 $TV_{253}$ |
| 2002 $TO_{254}$ | 15.1 | 0.15 | 20060922 | 249.59962 | 52.91107 | 52.00614 | 12.09473 | 0.0761861 | 2.7267974 | 64 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04234 | 2002 $TO_{254}$ |
| 2002 $TS_{255}$ | 16.8 | 0.15 | 20060922 | 24.85608 | 357.52980 | 21.46463 | 2.20886 | 0.2161146 | 2.4307813 | 71 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 61473 | 2002 $TS_{255}$ |
| 2002 $TU_{255}$ | 15.8 | 0.15 | 20060922 | 348.72341 | 144.27274 | 232.39782 | 1.22846 | 0.0975420 | 2.6493364 | 94 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04234 | 2002 $TU_{255}$ |
| 2002 $TG_{256}$ | 16.4 | 0.15 | 20060922 | 292.39577 | 346.08099 | 36.43335 | 2.51450 | 0.0955206 | 2.8778625 | 60 | 5 | 1995–2005 | 0.36 | M-v | 0 | MPC | 77668 | 2002 $TG_{256}$ |
| 2002 $TP_{256}$ | 16.1 | 0.15 | 20060922 | 350.46091 | 309.70295 | 48.48724 | 2.58901 | 0.2112252 | 2.6396740 | 56 | 2 | 2002–2006 | 0.51 | M-v | 4 | MPC | 03446 | 2002 $TP_{256}$ |
| 2002 $TQ_{256}$ | 17.6 | 0.15 | 20060922 | 21.53926 | 161.86995 | 205.97952 | 0.76147 | 0.1923635 | 2.4601360 | 62 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 77668 | 2002 $TQ_{256}$ |
| 2002 $TY_{256}$ | 15.4 | 0.15 | 20060922 | 336.44984 | 338.58875 | 40.33495 | 11.42088 | 0.1527472 | 2.6491095 | 89 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04234 | 2002 $TY_{256}$ |
| 2002 $TB_{257}$ | 17.0 | 0.15 | 20060922 | 9.53161 | 240.09286 | 196.33286 | 1.25157 | 0.1867827 | 2.3203267 | 54 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87553 | 2002 $TB_{257}$ |
| 2002 $TD_{257}$ | 16.0 | 0.15 | 20060922 | 306.31015 | 6.47916 | 30.92477 | 4.24077 | 0.1085487 | 2.7550526 | 55 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 03446 | 2002 $TD_{257}$ |
| 2002 $TJ_{257}$ | 16.9 | 0.15 | 20060922 | 359.33356 | 327.19090 | 115.30333 | 2.90448 | 0.2535022 | 2.3605789 | 67 | 6 | 1991–2006 | 0.48 | M-v | 1 | MPC | 85684 | 2002 $TJ_{257}$ |
| 2002 $TR_{257}$ | 16.8 | 0.15 | 20060922 | 74.17051 | 193.34692 | 138.48145 | 1.76764 | 0.1277121 | 2.3875651 | 35 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 75741 | 2002 $TR_{257}$ |
| 2002 $TC_{258}$ | 16.8 | 0.15 | 20060922 | 330.64838 | 307.51708 | 88.13740 | 4.67919 | 0.2307582 | 2.6319610 | 78 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 03446 | 2002 $TC_{258}$ |
| 2002 $TP_{258}$ | 16.3 | 0.15 | 20060922 | 75.76236 | 223.22150 | 118.53531 | 3.70620 | 0.1824878 | 2.3425360 | 51 | 5 | 1994–2006 | 0.52 | M-v | 2 | MPC | 41112 | 2002 $TP_{258}$ |
| 2002 $TT_{258}$ | 16.0 | 0.15 | 20060922 | 344.56231 | 258.44080 | 152.97269 | 3.88429 | 0.1141811 | 2.5271977 | 151 | 6 | 1996–2006 | 0.57 | M-v | 2 | MPC | 62421 | 2002 $TT_{258}$ |
| 2002 $TK_{259}$ | 16.4 | 0.15 | 20060922 | 93.52878 | 255.88211 | 85.92472 | 5.90805 | 0.1905566 | 2.2830301 | 81 | 6 | 1997–2006 | 0.48 | M-v | 1 | MPC | 85685 | 2002 $TK_{259}$ |
| 2002 $TE_{260}$ | 17.0 | 0.15 | 20060922 | 11.39240 | 163.28231 | 200.08744 | 4.86722 | 0.2371087 | 2.5277722 | 72 | 4 | 1998–2006 | 0.43 | M-v | 2 | MPC | 03447 | 2002 $TE_{260}$ |
| 2002 $TF_{260}$ | 16.6 | 0.15 | 20060922 | 87.18046 | 237.98016 | 154.16354 | 3.62904 | 0.1143656 | 2.1635946 | 83 | 5 | 1994–2005 | 0.49 | M-v | 1 | MPC | 04235 | 2002 $TF_{260}$ |
| 2002 $TQ_{260}$ | 15.9 | 0.15 | 20060922 | 330.05149 | 320.64561 | 86.19153 | 4.32021 | 0.3109530 | 2.6436515 | 123 | 3 | 1996–2006 | 0.52 | M-v | 2 | MPC | 03447 | 2002 $TQ_{260}$ |
| 2002 $TU_{260}$ | 16.0 | 0.15 | 20060922 | 20.33157 | 204.41710 | 204.92339 | 7.55880 | 0.1908912 | 2.4146443 | 71 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 77669 | 2002 $TU_{260}$ |
| 2002 $TW_{260}$ | 15.8 | 0.15 | 20060922 | 346.53102 | 161.54685 | 226.09506 | 13.06766 | 0.2666504 | 2.6429270 | 117 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 85686 | 2002 $TW_{260}$ |
| 2002 $TL_{261}$ | 14.8 | 0.15 | 20060922 | 314.70811 | 192.69552 | 228.56291 | 8.96628 | 0.1987960 | 2.7582461 | 83 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04235 | 2002 $TL_{261}$ |
| 2002 $TM_{261}$ | 15.3 | 0.15 | 20060922 | 306.66479 | 359.69943 | 73.51246 | 11.63175 | 0.3347040 | 2.7499468 | 85 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03447 | 2002 $TM_{261}$ |
| 2002 $TY_{261}$ | 16.8 | 0.15 | 20060922 | 358.48663 | 232.38699 | 135.26631 | 3.06132 | 0.1814141 | 2.5494060 | 73 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04235 | 2002 $TY_{261}$ |
| 2002 $TA_{262}$ | 16.5 | 0.15 | 20060922 | 263.61424 | 265.90522 | 188.41746 | 13.87955 | 0.1722378 | 2.7188393 | 33 | 4 | 1993–2006 | 0.61 | M-v | 0 | MPC | 00388 | 2002 $TA_{262}$ |
| 2002 $TQ_{262}$ | 16.1 | 0.15 | 20060922 | 239.18722 | 175.72773 | 23.89789 | 23.88539 | 0.1116578 | 2.2788192 | 51 | 3 | 1995–2004 | 0.53 | M-v | 3 | MPC | 61477 | 2002 $TQ_{262}$ |
| 2002 $TR_{263}$ | 16.1 | 0.15 | 20060922 | 300.49590 | 168.06284 | 270.09032 | 1.99828 | 0.1273363 | 2.5936653 | 75 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 61478 | 2002 $TR_{263}$ |
| 2002 $TZ_{264}$ | 15.8 | 0.15 | 20060922 | 289.91969 | 76.30522 | 19.51901 | 2.07403 | 0.1716702 | 2.6564779 | 112 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 66287 | 2002 $TZ_{264}$ |
| 2002 $TW_{265}$ | 15.5 | 0.15 | 20060922 | 342.85920 | 117.08174 | 254.97017 | 8.37709 | 0.2322970 | 2.7390481 | 82 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 03447 | 2002 $TW_{265}$ |
| 2002 $TA_{266}$ | 15.2 | 0.15 | 20060922 | 67.03360 | 271.90259 | 60.44910 | 12.47518 | 0.1550960 | 2.5276303 | 113 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 85687 | 2002 $TA_{266}$ |
| 2002 $TE_{266}$ | 15.4 | 0.15 | 20060922 | 343.15910 | 172.58865 | 236.65998 | 4.44845 | 0.2667921 | 2.6027134 | 179 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 03448 | 2002 $TE_{266}$ |
| 2002 $TR_{266}$ | 14.7 | 0.15 | 20060922 | 19.76430 | 138.36651 | 255.04174 | 2.85339 | 0.2066939 | 2.5260573 | 106 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 61480 | 2002 $TR_{266}$ |
| 2002 $TZ_{266}$ | 14.7 | 0.15 | 20060922 | 32.39663 | 128.74440 | 250.77761 | 5.30493 | 0.2296175 | 2.5270447 | 77 | 5 | 1991–2006 | 0.59 | M-v | 1 | MPC | 04235 | 2002 $TZ_{266}$ |
| 2002 $TA_{267}$ | 15.5 | 0.15 | 20060922 | 29.13415 | 317.78584 | 45.09194 | 12.62685 | 0.1158943 | 2.5405914 | 96 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 61480 | 2002 $TA_{267}$ |
| 2002 $TJ_{267}$ | 15.0 | 0.15 | 20060922 | 4.80769 | 312.24892 | 38.84378 | 30.02189 | 0.2204056 | 2.6619308 | 72 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04235 | 2002 $TJ_{267}$ |
| 2002 $TO_{267}$ | 15.9 | 0.15 | 20060922 | 14.42973 | 84.88903 | 244.92985 | 5.92953 | 0.1413637 | 2.6625908 | 57 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 03448 | 2002 $TO_{267}$ |
| 2002 $TQ_{267}$ | 15.7 | 0.15 | 20060922 | 301.89234 | 127.33572 | 302.53896 | 2.31086 | 0.1010044 | 2.6435239 | 72 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 04235 | 2002 $TQ_{267}$ |
| 2002 $TH_{268}$ | 15.1 | 0.15 | 20060922 | 335.75142 | 57.73137 | 307.06333 | 4.33229 | 0.0867683 | 2.7069205 | 122 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 04235 | 2002 $TH_{268}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TP_{268}$ | 16.4 | 0.15 | 20060922 | 10.97543 | 84.05675 | 256.08812 | 5.18257 | 0.1804386 | 2.5489819 | 56 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | 04235 | 2002 $TP_{268}$ |
| 2002 $TE_{269}$ | 16.9 | 0.15 | 20060922 | 329.64879 | 100.62057 | 299.51333 | 3.45059 | 0.2966865 | 2.5776082 | 56 | 2 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03448 | 2002 $TE_{269}$ |
| 2002 $TQ_{269}$ | 15.9 | 0.15 | 20060922 | 126.44677 | 334.76944 | 270.62841 | 5.48495 | 0.0991924 | 2.4757671 | 42 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 89354 | 2002 $TQ_{269}$ |
| 2002 $TZ_{269}$ | 16.2 | 0.15 | 20060922 | 35.26067 | 334.93612 | 328.24665 | 3.35554 | 0.1813004 | 2.5870088 | 79 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03448 | 2002 $TZ_{269}$ |
| 2002 $TM_{270}$ | 16.1 | 0.15 | 20060922 | 257.82440 | 205.73446 | 248.80987 | 4.61582 | 0.0508473 | 2.6583266 | 42 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 04235 | 2002 $TM_{270}$ |
| 2002 $TP_{270}$ | 16.3 | 0.15 | 20060922 | 309.38906 | 148.96335 | 262.16555 | 2.78304 | 0.1119773 | 2.6194834 | 46 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 03448 | 2002 $TP_{270}$ |
| 2002 $TR_{270}$ | 16.3 | 0.15 | 20060922 | 74.01689 | 329.25032 | 341.19232 | 6.07462 | 0.0867258 | 2.4341746 | 54 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 72726 | 2002 $TR_{270}$ |
| 2002 $TB_{271}$ | 16.5 | 0.15 | 20060922 | 43.68183 | 119.85688 | 213.14765 | 13.82354 | 0.1799793 | 2.4483281 | 76 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 75746 | 2002 $TB_{271}$ |
| 2002 $TD_{271}$ | 16.7 | 0.15 | 20060922 | 296.53104 | 93.30953 | 344.53133 | 6.99389 | 0.1723355 | 2.6042169 | 50 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75747 | 2002 $TD_{271}$ |
| 2002 $TE_{271}$ | 16.7 | 0.15 | 20060922 | 7.28129 | 356.54972 | 334.24372 | 4.89681 | 0.2253616 | 2.6172296 | 73 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03448 | 2002 $TE_{271}$ |
| 2002 $TF_{271}$ | 15.8 | 0.15 | 20060922 | 58.37889 | 93.59158 | 262.10553 | 3.92983 | 0.1164193 | 2.3330223 | 53 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 61481 | 2002 $TF_{271}$ |
| 2002 $TG_{271}$ | 16.1 | 0.15 | 20060922 | 120.73558 | 49.33961 | 238.03309 | 5.42711 | 0.1086697 | 2.3250563 | 36 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 03449 | 2002 $TG_{271}$ |
| 2002 $TX_{271}$ | 16.2 | 0.15 | 20060922 | 353.83752 | 127.79824 | 242.92767 | 3.97015 | 0.1790334 | 2.5567593 | 99 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 75747 | 2002 $TX_{271}$ |
| 2002 $TY_{271}$ | 16.7 | 0.15 | 20060922 | 16.53297 | 48.90640 | 267.92600 | 3.35075 | 0.2471456 | 2.6147780 | 64 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03449 | 2002 $TY_{271}$ |
| 2002 $TC_{272}$ | 16.9 | 0.15 | 20060922 | 50.71982 | 43.04539 | 353.86668 | 5.42193 | 0.1448981 | 2.2443962 | 63 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 90162 | 2002 $TC_{272}$ |
| 2002 $TE_{272}$ | 17.2 | 0.15 | 20060922 | 68.42037 | 61.01537 | 275.57735 | 3.63513 | 0.1059701 | 2.3593425 | 35 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 72727 | 2002 $TE_{272}$ |
| 2002 $TF_{272}$ | 15.7 | 0.15 | 20060922 | 73.52698 | 4.13813 | 321.32280 | 4.08841 | 0.1498200 | 2.3629439 | 63 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 62421 | 2002 $TF_{272}$ |
| 2002 $TT_{272}$ | 15.5 | 0.15 | 20060922 | 259.79494 | 93.35813 | 349.80084 | 6.21902 | 0.0750149 | 2.7468732 | 99 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 04235 | 2002 $TT_{272}$ |
| 2002 $TJ_{273}$ | 17.9 | 0.15 | 20060922 | 358.53635 | 90.40388 | 272.87449 | 2.70965 | 0.3090647 | 2.5407325 | 68 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03449 | 2002 $TJ_{273}$ |
| 2002 $TL_{273}$ | 16.2 | 0.15 | 20060922 | 299.16454 | 152.72350 | 240.93776 | 3.43811 | 0.1213348 | 2.7611902 | 39 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 04235 | 2002 $TL_{273}$ |
| 2002 $TN_{273}$ | 16.1 | 0.15 | 20060922 | 272.85143 | 178.67521 | 285.59988 | 2.59056 | 0.1019583 | 2.5732027 | 84 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 61482 | 2002 $TN_{273}$ |
| 2002 $TP_{273}$ | 16.2 | 0.15 | 20060922 | 21.32072 | 103.74408 | 212.43561 | 13.15275 | 0.1375185 | 2.6455684 | 38 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04235 | 2002 $TP_{273}$ |
| 2002 $TF_{274}$ | 16.3 | 0.15 | 20060922 | 73.53003 | 111.96116 | 234.54484 | 5.15818 | 0.1437000 | 2.3132060 | 61 | 3 | 1995–2006 | 0.52 | M-v | 3 | MPC | 41833 | 2002 $TF_{274}$ |
| 2002 $TK_{274}$ | 15.4 | 0.15 | 20060922 | 31.79054 | 304.24679 | 9.74330 | 13.34562 | 0.1883009 | 2.6081337 | 180 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04235 | 2002 $TK_{274}$ |
| 2002 $TM_{274}$ | 16.0 | 0.15 | 20060922 | 320.72239 | 93.60367 | 336.29601 | 5.53509 | 0.1146951 | 2.5247078 | 106 | 5 | 1995–2006 | 0.54 | M-v | 2 | MPC | 62421 | 2002 $TM_{274}$ |
| 2002 $TP_{274}$ | 16.3 | 0.15 | 20060922 | 78.82141 | 67.93440 | 238.92376 | 4.64496 | 0.2493881 | 2.3840609 | 73 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 77669 | 2002 $TP_{274}$ |
| 2002 $TS_{274}$ | 16.2 | 0.15 | 20060922 | 341.31132 | 137.13899 | 233.07522 | 3.17435 | 0.2631219 | 2.6288040 | 99 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03449 | 2002 $TS_{274}$ |
| 2002 $TT_{274}$ | 16.4 | 0.15 | 20060922 | 306.10468 | 156.14350 | 279.06347 | 3.06423 | 0.2293250 | 2.6157407 | 60 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 66288 | 2002 $TT_{274}$ |
| 2002 $TZ_{274}$ | 16.3 | 0.15 | 20060922 | 314.57854 | 123.56942 | 306.46175 | 1.71636 | 0.1832302 | 2.5748570 | 75 | 4 | 1998–2006 | 0.52 | M-v | 3 | MPC | 66288 | 2002 $TZ_{274}$ |
| 2002 $TA_{275}$ | 16.2 | 0.15 | 20060922 | 33.46556 | 345.71714 | 346.29604 | 2.71285 | 0.1824809 | 2.5277895 | 111 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 04235 | 2002 $TA_{275}$ |
| 2002 $TQ_{275}$ | 16.2 | 0.15 | 20060922 | 50.44914 | 35.88494 | 345.21186 | 2.52780 | 0.2320839 | 2.3072544 | 106 | 5 | 1993–2006 | 0.42 | M-v | 1 | MPC | 62422 | 2002 $TQ_{275}$ |
| 2002 $TE_{276}$ | 15.4 | 0.15 | 20060922 | 23.09323 | 47.74240 | 257.66223 | 3.36090 | 0.2014518 | 2.6603859 | 119 | 3 | 2002–2006 | 0.70 | M-v | 3 | MPC | 04235 | 2002 $TE_{276}$ |
| 2002 $TF_{276}$ | 16.9 | 0.15 | 20060922 | 44.24241 | 14.61478 | 287.19947 | 2.85156 | 0.2215760 | 2.5576265 | 69 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 03449 | 2002 $TF_{276}$ |
| 2002 $TP_{276}$ | 16.5 | 0.15 | 20060922 | 326.27592 | 136.09499 | 249.96960 | 2.06700 | 0.1001699 | 2.6596983 | 58 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 04235 | 2002 $TP_{276}$ |
| 2002 $TO_{277}$ | 17.2 | 0.15 | 20060922 | 100.81984 | 12.57971 | 296.02315 | 2.09712 | 0.1719586 | 2.3172197 | 24 | 4 | 1994–2006 | 0.39 | M-v | 1 | MPC | 89355 | 2002 $TO_{277}$ |
| 2002 $TS_{277}$ | 16.5 | 0.15 | 20060922 | 1.35170 | 78.91691 | 261.87977 | 5.20544 | 0.0598503 | 2.6710867 | 55 | 4 | 2000–2006 | 0.68 | M-v | 3 | MPC | 03450 | 2002 $TS_{277}$ |
| 2002 $TU_{277}$ | 14.8 | 0.15 | 20060922 | 226.99830 | 74.93114 | 345.34589 | 25.30622 | 0.2667301 | 3.1734353 | 42 | 3 | 1996–2004 | 0.53 | M-v | 2 | MPC | 61483 | 2002 $TU_{277}$ |
| 2002 $TX_{277}$ | 16.0 | 0.15 | 20060922 | 352.84241 | 101.81381 | 241.88240 | 11.75310 | 0.2093161 | 2.6533548 | 33 | 2 | 2002–2006 | 0.70 | M-v | 3 | MPC | 03450 | 2002 $TX_{277}$ |
| 2002 $TF_{278}$ | 15.7 | 0.15 | 20060922 | 37.03827 | 104.41305 | 273.70950 | 6.90668 | 0.1462258 | 2.3595566 | 53 | 4 | 1998–2006 | 0.60 | M-v | 3 | MPC | 72727 | 2002 $TF_{278}$ |
| 2002 $TF_{279}$ | 16.3 | 0.15 | 20060922 | 48.63097 | 85.97114 | 265.24955 | 5.01025 | 0.1610052 | 2.3945765 | 52 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 87553 | 2002 $TF_{279}$ |
| 2002 $TR_{279}$ | 15.4 | 0.15 | 20060922 | 10.80311 | 344.78506 | 347.67822 | 10.84961 | 0.1362773 | 2.6689729 | 117 | 4 | 1993–2006 | 0.47 | M-v | 1 | MPC | 03450 | 2002 $TR_{279}$ |
| 2002 $TS_{279}$ | 15.3 | 0.15 | 20060922 | 1.80149 | 353.02091 | 358.31171 | 14.64697 | 0.1162339 | 2.6408971 | 142 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04235 | 2002 $TS_{279}$ |
| 2002 $TL_{280}$ | 15.3 | 0.15 | 20060922 | 345.21647 | 138.09309 | 283.43396 | 5.73108 | 0.1161069 | 2.4505925 | 131 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 66288 | 2002 $TL_{280}$ |
| 2002 $TM_{280}$ | 17.0 | 0.15 | 20060922 | 357.75098 | 145.15020 | 287.40657 | 4.60669 | 0.2203706 | 2.3838995 | 57 | 4 | 1996–2006 | 0.44 | M-v | 1 | MPC | 48292 | 2002 $TM_{280}$ |
| 2002 $TS_{280}$ | 15.9 | 0.15 | 20060922 | 348.38317 | 140.44685 | 285.71886 | 5.37832 | 0.1106253 | 2.4230586 | 45 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 87554 | 2002 $TS_{280}$ |
| 2002 $TV_{280}$ | 16.8 | 0.15 | 20060922 | 78.38409 | 71.91183 | 271.78982 | 4.48054 | 0.1505588 | 2.3113159 | 42 | 3 | 1999–2006 | 0.42 | M-v | 3 | MPC | 41834 | 2002 $TV_{280}$ |
| 2002 $TX_{280}$ | 15.8 | 0.15 | 20060922 | 334.42842 | 149.08182 | 248.93932 | 6.49560 | 0.1894058 | 2.5938464 | 155 | 2 | 2002–2006 | 0.41 | M-v | 2 | MPC | 03450 | 2002 $TX_{280}$ |
| 2002 $TE_{281}$ | 15.3 | 0.15 | 20060922 | 328.46932 | 105.10076 | 289.98857 | 4.04287 | 0.2268473 | 2.6357058 | 156 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 04235 | 2002 $TE_{281}$ |
| 2002 $TK_{281}$ | 16.1 | 0.15 | 20060922 | 87.69892 | 16.92538 | 328.47946 | 4.64451 | 0.2055381 | 2.2590112 | 87 | 5 | 2000–2006 | 0.60 | M-v | 2 | MPC | 97623 | 2002 $TK_{281}$ |
| 2002 $TN_{281}$ | 15.9 | 0.15 | 20060922 | 355.88074 | 344.02547 | 348.28324 | 9.15767 | 0.2734053 | 2.6984338 | 52 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 03451 | 2002 $TN_{281}$ |
| 2002 $TA_{282}$ | 15.0 | 0.15 | 20060922 | 337.42130 | 122.11874 | 235.35317 | 7.97637 | 0.1720480 | 2.7369196 | 85 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 04235 | 2002 $TA_{282}$ |
| 2002 $TN_{282}$ | 15.2 | 0.15 | 20060922 | 333.51190 | 134.15220 | 227.76769 | 15.40711 | 0.2774490 | 2.7122554 | 89 | 2 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03451 | 2002 $TN_{282}$ |
| 2002 $TQ_{282}$ | 16.7 | 0.15 | 20060922 | 64.23296 | 94.28845 | 283.75693 | 4.21921 | 0.1301866 | 2.2771960 | 79 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 90162 | 2002 $TQ_{282}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TS_{283}$ | 16.3 | 0.15 | 20060922 | 353.48676 | 84.00864 | 286.92536 | 2.50314 | 0.2449552 | 2.5888844 | 176 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 03451 | 2002 $TS_{283}$ |
| 2002 $TW_{283}$ | 16.2 | 0.15 | 20060922 | 354.36735 | 80.86186 | 281.76939 | 3.07547 | 0.2803833 | 2.6025223 | 149 | 2 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03452 | 2002 $TW_{283}$ |
| 2002 $TX_{284}$ | 16.6 | 0.15 | 20060922 | 44.59061 | 32.15928 | 356.41226 | 3.42126 | 0.1358130 | 2.3258618 | 41 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 61488 | 2002 $TX_{284}$ |
| 2002 $TB_{286}$ | 15.7 | 0.15 | 20060922 | 105.02244 | 323.27515 | 357.32380 | 4.46397 | 0.1974978 | 2.2895834 | 115 | 4 | 2002–2006 | 0.56 | M-v | 2 | MPC | 87554 | 2002 $TB_{286}$ |
| 2002 $TC_{286}$ | 16.9 | 0.15 | 20060922 | 56.40438 | 32.48315 | 318.94338 | 2.99628 | 0.2845177 | 2.3554068 | 84 | 4 | 1991–2006 | 0.55 | M-v | 3 | MPC | 41128 | 2002 $TC_{286}$ |
| 2002 $TJ_{286}$ | 14.9 | 0.15 | 20060922 | 307.19981 | 59.82121 | 342.76052 | 8.47554 | 0.1766395 | 2.7546117 | 145 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04235 | 2002 $TJ_{286}$ |
| 2002 $TT_{286}$ | 14.8 | 0.15 | 20060922 | 301.69509 | 36.51150 | 11.46417 | 13.31522 | 0.1924167 | 2.7702456 | 144 | 4 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04235 | 2002 $TT_{286}$ |
| 2002 $TU_{286}$ | 15.1 | 0.15 | 20060922 | 328.78147 | 151.03429 | 239.44567 | 11.90448 | 0.2421161 | 2.6668084 | 125 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04235 | 2002 $TU_{286}$ |
| 2002 $TB_{287}$ | 15.5 | 0.15 | 20060922 | 57.86262 | 100.57458 | 262.92100 | 6.00254 | 0.1355182 | 2.3616328 | 107 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 62422 | 2002 $TB_{287}$ |
| 2002 $TK_{287}$ | 16.1 | 0.15 | 20060922 | 47.21749 | 18.35766 | 7.02990 | 7.40134 | 0.1222348 | 2.3404554 | 80 | 4 | 1995–2005 | 0.65 | M-v | 1 | MPC | 87554 | 2002 $TK_{287}$ |
| 2002 $TU_{287}$ | 15.1 | 0.15 | 20060922 | 278.23412 | 204.27461 | 249.43602 | 11.54902 | 0.2043106 | 2.7306008 | 75 | 3 | 2002–2006 | 0.61 | M-v | 2 | MPC | 61491 | 2002 $TU_{287}$ |
| 2002 $TG_{288}$ | 15.4 | 0.15 | 20060922 | 350.53634 | 113.87072 | 294.45898 | 4.30879 | 0.1426354 | 2.5172595 | 161 | 4 | 1998–2006 | 0.48 | M-v | 3 | MPC | 61492 | 2002 $TG_{288}$ |
| 2002 $TH_{288}$ | 16.0 | 0.15 | 20060922 | 331.61817 | 159.56793 | 242.25429 | 9.24921 | 0.2227207 | 2.6324353 | 149 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04235 | 2002 $TH_{288}$ |
| 2002 $TC_{289}$ | 15.5 | 0.15 | 20060922 | 23.50001 | 90.62835 | 231.72346 | 13.63919 | 0.3417944 | 2.6003000 | 144 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03452 | 2002 $TC_{289}$ |
| 2002 $TE_{289}$ | 16.4 | 0.15 | 20060922 | 341.16258 | 63.62288 | 342.88637 | 5.11543 | 0.3175301 | 2.5678277 | 164 | 2 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03452 | 2002 $TE_{289}$ |
| 2002 $TV_{289}$ | 15.1 | 0.15 | 20060922 | 358.67833 | 296.65452 | 42.14682 | 21.00185 | 0.1706763 | 2.7947809 | 59 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 04235 | 2002 $TV_{289}$ |
| 2002 $TF_{290}$ | 16.0 | 0.15 | 20060922 | 29.32281 | 315.96461 | 344.90885 | 12.85227 | 0.2568750 | 2.6373897 | 96 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03453 | 2002 $TF_{290}$ |
| 2002 $TQ_{290}$ | 16.2 | 0.15 | 20060922 | 44.90570 | 0.12640 | 354.27143 | 6.63068 | 0.1393547 | 2.4337399 | 49 | 4 | 1998–2006 | 0.75 | M-v | 3 | MPC | 41836 | 2002 $TQ_{290}$ |
| 2002 $TR_{290}$ | 15.5 | 0.15 | 20060922 | 323.94402 | 69.52321 | 322.62103 | 4.49516 | 0.1027294 | 2.6907045 | 156 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04235 | 2002 $TR_{290}$ |
| 2002 $TS_{290}$ | 16.1 | 0.15 | 20060922 | 20.57656 | 105.89772 | 226.82762 | 10.59705 | 0.1966065 | 2.6081552 | 90 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 04235 | 2002 $TS_{290}$ |
| 2002 $TX_{290}$ | 15.1 | 0.15 | 20060922 | 286.58418 | 129.77423 | 298.22916 | 8.27379 | 0.2117679 | 2.7756707 | 86 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 04235 | 2002 $TX_{290}$ |
| 2002 $TG_{292}$ | 16.4 | 0.15 | 20060922 | 55.94450 | 71.29970 | 272.13689 | 5.65321 | 0.1126158 | 2.4400672 | 61 | 3 | 1995–2006 | 0.49 | M-v | 4 | MPC | 48292 | 2002 $TG_{292}$ |
| 2002 $TJ_{292}$ | 16.5 | 0.15 | 20060922 | 108.09879 | 352.31453 | 335.62219 | 4.15644 | 0.1806916 | 2.2635871 | 84 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 97623 | 2002 $TJ_{292}$ |
| 2002 $TP_{292}$ | 16.0 | 0.15 | 20060922 | 352.10665 | 340.01763 | 23.75549 | 16.11395 | 0.3211446 | 2.6198690 | 76 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03453 | 2002 $TP_{292}$ |
| 2002 $TV_{292}$ | 15.0 | 0.15 | 20060922 | 348.15596 | 125.22475 | 241.50624 | 11.97918 | 0.2803496 | 2.6778778 | 131 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 03453 | 2002 $TV_{292}$ |
| 2002 $TZ_{292}$ | 15.6 | 0.15 | 20060922 | 323.18453 | 144.63871 | 258.02210 | 8.41540 | 0.2228763 | 2.7253728 | 105 | 2 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03454 | 2002 $TZ_{292}$ |
| 2002 $TC_{293}$ | 15.2 | 0.15 | 20060922 | 349.02632 | 133.02597 | 254.38776 | 13.76870 | 0.2349903 | 2.6458068 | 93 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 03454 | 2002 $TC_{293}$ |
| 2002 $TH_{293}$ | 14.7 | 0.15 | 20060922 | 20.06691 | 109.18214 | 275.90052 | 9.90617 | 0.2266294 | 2.5220784 | 106 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 03454 | 2002 $TH_{293}$ |
| 2002 $TV_{293}$ | 17.1 | 0.15 | 20060922 | 42.78211 | 325.82494 | 7.60238 | 6.06191 | 0.1980803 | 2.4662326 | 37 | 3 | 1998–2006 | 0.41 | M-v | 3 | MPC | 38106 | 2002 $TV_{293}$ |
| 2002 $TX_{293}$ | 16.9 | 0.15 | 20060922 | 340.05345 | 208.56459 | 250.84127 | 5.80740 | 0.1772414 | 2.3241669 | 35 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 04236 | 2002 $TX_{293}$ |
| 2002 $TF_{294}$ | 17.2 | 0.15 | 20060922 | 59.25602 | 230.57159 | 168.96796 | 6.65570 | 0.0721352 | 2.2133814 | 44 | 5 | 1995–2005 | 0.46 | M-v | 1 | MPC | 85695 | 2002 $TF_{294}$ |
| 2002 $TL_{295}$ | 15.7 | 0.15 | 20060922 | 342.09627 | 50.57863 | 345.58853 | 12.09933 | 0.2056697 | 2.5910439 | 127 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04236 | 2002 $TL_{295}$ |
| 2002 $TT_{295}$ | 15.0 | 0.15 | 20060922 | 293.76035 | 141.66901 | 330.46117 | 12.85607 | 0.1137704 | 2.5389252 | 71 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 61497 | 2002 $TT_{295}$ |
| 2002 $TX_{295}$ | 15.5 | 0.15 | 20060922 | 327.93184 | 77.75623 | 311.33125 | 8.89605 | 0.2289923 | 2.6959142 | 121 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04236 | 2002 $TX_{295}$ |
| 2002 $TB_{296}$ | 15.4 | 0.15 | 20060922 | 11.26269 | 77.06771 | 282.31592 | 12.74879 | 0.2011516 | 2.5808517 | 97 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 85695 | 2002 $TB_{296}$ |
| 2002 $TJ_{297}$ | 17.5 | 0.15 | 20060922 | 9.88056 | 59.67173 | 330.69440 | 0.64356 | 0.1883383 | 2.4550312 | 37 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 50153 | 2002 $TJ_{297}$ |
| 2002 $TL_{297}$ | 15.8 | 0.15 | 20060922 | 4.46506 | 328.85117 | 24.79318 | 5.75685 | 0.1009313 | 2.6402586 | 102 | 2 | 2002–2006 | 0.39 | M-v | 3 | MPC | 03454 | 2002 $TL_{297}$ |
| 2002 $TT_{297}$ | 16.7 | 0.15 | 20060922 | 330.39289 | 202.77702 | 213.38607 | 6.06132 | 0.1519491 | 2.5576681 | 78 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 61498 | 2002 $TT_{297}$ |
| 2002 $TY_{298}$ | 16.1 | 0.15 | 20060922 | 26.40005 | 149.87299 | 250.55132 | 4.30148 | 0.2088240 | 2.3710421 | 94 | 3 | 1998–2006 | 0.54 | M-v | 2 | MPC | 43476 | 2002 $TY_{298}$ |
| 2002 $TP_{299}$ | 17.3 | 0.15 | 20021013 | 341.80382 | 12.32933 | 46.64013 | 9.04139 | 0.2369261 | 2.6487861 | 12 | 1 | 15 days | 0.28 | | | MPC | | 2002 $TP_{299}$ |
| 2002 $TC_{300}$ | 17.2 | 0.15 | 20060922 | 309.53101 | 52.32320 | 56.99982 | 7.06051 | 0.0783149 | 2.3614478 | 34 | 5 | 1995–2006 | 0.43 | M-v | 0 | MPC | 69406 | 2002 $TC_{300}$ |
| 2002 $TJ_{300}$ | 17.2 | 0.15 | 20060922 | 291.98603 | 33.94870 | 65.05265 | 6.27949 | 0.1740110 | 2.5302999 | 38 | 4 | 1994–2006 | 0.53 | M-v | 1 | MPC | 04236 | 2002 $TJ_{300}$ |
| 2002 $TW_{300}$ | 15.8 | 0.15 | 20060922 | 353.73004 | 44.60036 | 328.52320 | 13.22965 | 0.2233394 | 2.5924330 | 67 | 2 | 2002–2006 | 0.45 | M-v | 2 | MPC | 03455 | 2002 $TW_{300}$ |
| 2002 $TE_{302}$ | 16.0 | 0.15 | 20060922 | 340.42923 | 184.73225 | 260.34423 | 5.90776 | 0.0743547 | 2.3606055 | 42 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 94862 | 2002 $TE_{302}$ |
| 2002 $TB_{303}$ | 17.2 | 0.15 | 20060922 | 65.82454 | 160.31920 | 157.26248 | 3.09559 | 0.1860462 | 2.4047406 | 50 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 77671 | 2002 $TB_{303}$ |
| 2002 $TD_{303}$ | 16.5 | 0.15 | 20060922 | 341.90347 | 290.54124 | 80.26705 | 2.70892 | 0.1070975 | 2.6218302 | 44 | 6 | 1996–2006 | 0.54 | M-v | 1 | MPC | 75752 | 2002 $TD_{303}$ |
| 2002 $TY_{304}$ | 16.3 | 0.15 | 20060922 | 41.43652 | 136.51987 | 147.51991 | 6.73785 | 0.0299587 | 2.7563014 | 23 | 4 | 1996–2006 | 0.29 | M-v | 0 | MPC | 04236 | 2002 $TY_{304}$ |
| 2002 $TW_{311}$ | 17.1 | 0.15 | 20060922 | 114.43785 | 228.48483 | 90.84371 | 8.11770 | 0.0092987 | 2.2858356 | 28 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 87554 | 2002 $TW_{311}$ |
| 2002 $TC_{312}$ | 17.1 | 0.15 | 20060922 | 351.45595 | 265.35098 | 125.66508 | 7.62252 | 0.1244159 | 2.5132072 | 30 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 66288 | 2002 $TC_{312}$ |
| 2002 $TE_{312}$ | 16.0 | 0.15 | 20060922 | 171.37073 | 16.17019 | 176.78555 | 17.31169 | 0.1119052 | 2.6273871 | 31 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 04236 | 2002 $TE_{312}$ |
| 2002 $TM_{312}$ | 15.5 | 0.15 | 20060922 | 281.94918 | 225.38684 | 139.65256 | 9.98243 | 0.1131554 | 3.0577033 | 25 | 4 | 1999–2005 | 0.48 | M-v | 0 | MPC | 50154 | 2002 $TM_{312}$ |
| 2002 $TN_{314}$ | 16.8 | 0.15 | 20060922 | 237.63995 | 315.33065 | 166.67479 | 14.10083 | 0.1143597 | 2.7312305 | 26 | 4 | 1997–2004 | 0.41 | M-v | 0 | MPC | 69407 | 2002 $TN_{314}$ |
| 2002 $TU_{314}$ | 16.3 | 0.15 | 20060922 | 50.21405 | 129.16083 | 152.76717 | 11.86109 | 0.1259972 | 2.7365583 | 36 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 03456 | 2002 $TU_{314}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $TV_{314}$ | 17.1 | 0.15 | 20060922 | 89.70271 | 111.36584 | 169.06322 | 15.07372 | 0.1189930 | 2.5396945 | 31 | 3 | 2002–2006 | 0.28 | M-v | 2 | MPC | 87554 | 2002 $TV_{314}$ |
| 2002 $TG_{315}$ | 16.4 | 0.15 | 20060922 | 61.78127 | 213.73692 | 80.13044 | 14.94683 | 0.0407997 | 2.6567894 | 19 | 3 | 2002–2006 | 0.17 | M-v | 0 | MPC | 94863 | 2002 $TG_{315}$ |
| 2002 $TV_{315}$ | 16.1 | 0.15 | 20060922 | 248.08113 | 42.75815 | 113.67996 | 11.93727 | 0.2049881 | 2.5588095 | 74 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 66288 | 2002 $TV_{315}$ |
| 2002 $TZ_{315}$ | 16.2 | 0.15 | 20060922 | 122.48691 | 130.72671 | 92.87221 | 14.12143 | 0.0855109 | 2.7522673 | 48 | 5 | 2001–2006 | 0.64 | M-v | 1 | MPC | 04236 | 2002 $TZ_{315}$ |
| 2002 $TE_{316}$ | 16.0 | 0.15 | 20060922 | 283.77980 | 263.26061 | 182.61468 | 21.74586 | 0.0704744 | 2.6674520 | 60 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04236 | 2002 $TE_{316}$ |
| 2002 $TD_{317}$ | 16.3 | 0.15 | 20060922 | 219.24779 | 220.55581 | 276.19621 | 7.58641 | 0.1729153 | 2.5237936 | 37 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 57904 | 2002 $TD_{317}$ |
| 2002 $TW_{317}$ | 16.1 | 0.15 | 20060922 | 113.91623 | 225.61660 | 335.19897 | 12.72036 | 0.2159262 | 2.6436086 | 55 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 04236 | 2002 $TW_{317}$ |
| 2002 $TF_{318}$ | 17.9 | 0.15 | 20060922 | 226.82770 | 324.60327 | 227.23256 | 4.12685 | 0.1086294 | 2.2468313 | 35 | 4 | 1995–2006 | 0.22 | M-v | 0 | MPC | 85697 | 2002 $TF_{318}$ |
| 2002 $TM_{318}$ | 17.2 | 0.15 | 20020903 | 11.00322 | 139.96694 | 195.71463 | 9.77450 | 0.1332029 | 2.7869575 | 20 | 1 | 44 days | 0.17 | | | MPC | | 2002 $TM_{318}$ |
| 2002 $TX_{318}$ | 15.7 | 0.15 | 20060922 | 32.72427 | 246.68070 | 341.83201 | 7.78082 | 0.0427365 | 3.0567268 | 44 | 6 | 1997–2006 | 0.50 | M-v | 0 | MPC | 03456 | 2002 $TX_{318}$ |
| 2002 $TA_{321}$ | 17.0 | 0.15 | 20060922 | 341.25379 | 20.97930 | 348.81673 | 4.81721 | 0.1048853 | 2.5689708 | 36 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04236 | 2002 $TA_{321}$ |
| 2002 $TN_{324}$ | 17.5 | 0.15 | 20060922 | 37.38354 | 251.85868 | 59.68441 | 0.53920 | 0.1242161 | 2.5331028 | 42 | 5 | 1993–2006 | 0.41 | M-v | 1 | MPC | 04236 | 2002 $TN_{324}$ |
| 2002 $TJ_{325}$ | 17.9 | 0.15 | 20060922 | 86.93772 | 263.22780 | 26.44876 | 2.81072 | 0.2299031 | 2.3580848 | 32 | 4 | 1995–2006 | 0.37 | M-v | 0 | MPC | 75754 | 2002 $TJ_{325}$ |
| 2002 $TX_{328}$ | 17.3 | 0.15 | 20060922 | 262.33497 | 328.17254 | 173.03199 | 7.20645 | 0.0573847 | 2.3768880 | 30 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 61500 | 2002 $TX_{328}$ |
| 2002 $TS_{329}$ | 17.0 | 0.15 | 20060922 | 16.54627 | 127.65168 | 167.23288 | 4.35201 | 0.0792770 | 2.7623625 | 33 | 5 | 1996–2006 | 0.33 | M-v | 0 | MPC | 02138 | 2002 $TS_{329}$ |
| 2002 $TV_{330}$ | 18.2 | 0.15 | 20021013 | 47.31374 | 288.24624 | 24.97925 | 6.79572 | 0.1308497 | 2.4202020 | 7 | 1 | 25 days | 0.02 | | | MPC | | 2002 $TV_{330}$ |
| 2002 $TG_{331}$ | 16.3 | 0.15 | 20060922 | 188.92761 | 322.94748 | 169.16481 | 5.68697 | 0.0102772 | 2.7684862 | 25 | 4 | 2000–2006 | 0.78 | M-v | 1 | MPC | 04236 | 2002 $TG_{331}$ |
| 2002 $TH_{331}$ | 17.8 | 0.15 | 20060922 | 120.19915 | 96.38511 | 165.13696 | 6.12544 | 0.2075038 | 2.3555378 | 28 | 5 | 1991–2006 | 0.19 | M-v | 0 | MPC | 87554 | 2002 $TH_{331}$ |
| 2002 $TD_{332}$ | 17.8 | 0.15 | 20060922 | 23.85170 | 160.59682 | 153.98129 | 3.70479 | 0.0697069 | 2.6328824 | 14 | 2 | 2002–2006 | 0.12 | M-v | 4 | MPC | 03456 | 2002 $TD_{332}$ |
| 2002 $TS_{333}$ | 18.2 | 0.15 | 20060922 | 259.10585 | 326.23366 | 161.27920 | 5.25305 | 0.1110777 | 2.4933344 | 30 | 5 | 1996–2006 | 0.35 | M-v | 1 | MPC | 00391 | 2002 $TS_{333}$ |
| 2002 $TH_{334}$ | 16.3 | 0.15 | 20060922 | 128.03409 | 180.05625 | 33.61221 | 8.55872 | 0.0733557 | 2.6388524 | 36 | 5 | 1998–2006 | 0.43 | M-v | 0 | MPC | 87554 | 2002 $TH_{334}$ |
| 2002 $TK_{335}$ | 18.2 | 0.15 | 20060922 | 313.33643 | 293.06576 | 167.18358 | 6.87130 | 0.0970097 | 2.3765212 | 30 | 3 | 2002–2006 | 0.36 | M-v | 1 | MPC | 61500 | 2002 $TK_{335}$ |
| 2002 $TW_{337}$ | 17.8 | 0.15 | 20060922 | 1.18130 | 2.77409 | 83.70787 | 3.53677 | 0.1222186 | 2.2586088 | 18 | 3 | 1992–2006 | 0.26 | M-v | 2 | MPC | 75756 | 2002 $TW_{337}$ |
| 2002 $TK_{340}$ | 17.4 | 0.15 | 20060922 | 230.44122 | 82.83548 | 72.28808 | 5.70794 | 0.1563988 | 2.5250906 | 31 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 85699 | 2002 $TK_{340}$ |
| 2002 $TS_{340}$ | 17.4 | 0.15 | 20060922 | 102.01961 | 61.56114 | 173.78109 | 12.44157 | 0.2253739 | 2.6150783 | 24 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 75756 | 2002 $TS_{340}$ |
| 2002 $TD_{343}$ | 17.1 | 0.15 | 20060922 | 291.91235 | 44.69833 | 76.91754 | 6.89888 | 0.1183876 | 2.4069311 | 35 | 3 | 2002–2006 | 0.42 | M-v | 1 | MPC | 00392 | 2002 $TD_{343}$ |
| 2002 $TZ_{343}$ | 16.6 | 0.15 | 20060922 | 22.56686 | 133.88931 | 172.56636 | 11.98839 | 0.1696519 | 2.6706322 | 52 | 3 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04236 | 2002 $TZ_{343}$ |
| 2002 $TY_{346}$ | 15.8 | 0.15 | 20060922 | 264.49491 | 302.83561 | 66.98382 | 10.25562 | 0.1677114 | 3.1434038 | 31 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 00392 | 2002 $TY_{346}$ |
| 2002 $TK_{350}$ | 15.6 | 0.15 | 20060922 | 217.43668 | 180.63718 | 197.12122 | 16.33184 | 0.0885345 | 3.2367137 | 31 | 4 | 2000–2006 | 0.37 | M-v | 0 | MPC | 00393 | 2002 $TK_{350}$ |
| 2002 $TQ_{351}$ | 17.6 | 0.15 | 20060922 | 49.35572 | 119.66680 | 219.85591 | 6.49613 | 0.1302211 | 2.3437074 | 38 | 3 | 2002–2006 | 0.34 | M-v | 2 | MPC | 85699 | 2002 $TQ_{351}$ |
| 2002 $TJ_{353}$ | 18.0 | 0.15 | 20060922 | 348.42228 | 66.36856 | 295.36194 | 3.26648 | 0.2663565 | 2.5527087 | 50 | 2 | 2002–2006 | 0.36 | M-v | 2 | MPC | 03456 | 2002 $TJ_{353}$ |
| 2002 $TK_{353}$ | 16.9 | 0.15 | 20060922 | 347.46804 | 104.71414 | 205.83136 | 8.20572 | 0.1759420 | 2.7447489 | 18 | 1 | 63 days | 0.40 | M-v | 3 | MPC | | 2002 $TK_{353}$ |
| 2002 $TU_{353}$ | 17.1 | 0.15 | 20060922 | 354.29606 | 137.64123 | 195.43954 | 11.52561 | 0.0562404 | 2.6418230 | 27 | 2 | 2002–2005 | 0.27 | M-v | 2 | MPC | 75757 | 2002 $TU_{353}$ |
| 2002 $TK_{355}$ | 17.3 | 0.15 | 20020903 | 39.00567 | 99.86589 | 200.98820 | 8.28079 | 0.1463246 | 2.7385358 | 16 | 1 | 44 days | 0.16 | | | MPC | | 2002 $TK_{355}$ |
| 2002 $TL_{356}$ | 18.6 | 0.15 | 20060922 | 66.34087 | 104.03085 | 206.22986 | 2.11692 | 0.2258972 | 2.3677244 | 14 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 85700 | 2002 $TL_{356}$ |
| 2002 $TE_{359}$ | 17.3 | 0.15 | 20060922 | 284.67203 | 256.39859 | 183.98918 | 5.03590 | 0.1342573 | 2.5844784 | 17 | 3 | 2000–2006 | 0.27 | M-v | 4 | MPC | 00394 | 2002 $TE_{359}$ |
| 2002 $TF_{359}$ | 16.2 | 0.15 | 20060922 | 117.45597 | 189.30417 | 11.78848 | 4.65841 | 0.0394542 | 2.7508642 | 28 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 04236 | 2002 $TF_{359}$ |
| 2002 $TB_{361}$ | 16.7 | 0.15 | 20060922 | 247.73539 | 4.02019 | 50.59785 | 2.76961 | 0.0935920 | 2.9236310 | 22 | 4 | 2000–2005 | 0.35 | M-v | 0 | MPC | 87554 | 2002 $TB_{361}$ |
| 2002 $TP_{362}$ | 17.6 | 0.15 | 20060922 | 101.81010 | 144.20860 | 128.99894 | 2.93479 | 0.1823678 | 2.4030386 | 45 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 75758 | 2002 $TP_{362}$ |
| 2002 $TO_{364}$ | 17.0 | 0.15 | 20060922 | 268.39114 | 246.98831 | 167.55647 | 9.37824 | 0.1315123 | 2.8330882 | 16 | 3 | 1997–2004 | 0.35 | M-v | 3 | MPC | 75758 | 2002 $TO_{364}$ |
| 2002 $TE_{366}$ | 17.7 | 0.15 | 20060922 | 255.52085 | 68.34379 | 74.62505 | 7.07426 | 0.0731423 | 2.4500279 | 23 | 3 | 2002–2006 | 0.19 | M-v | 1 | MPC | 89357 | 2002 $TE_{366}$ |
| 2002 $TJ_{368}$ | 17.0 | 0.15 | 20060922 | 63.55864 | 207.49577 | 96.98152 | 9.15949 | 0.0918137 | 2.5338865 | 37 | 4 | 2002–2006 | 0.54 | M-v | 0 | MPC | 85700 | 2002 $TJ_{368}$ |
| 2002 $TC_{370}$ | 16.6 | 0.15 | 20060922 | 28.04999 | 145.78215 | 151.49202 | 10.82939 | 0.2675852 | 2.6827337 | 85 | 2 | 2002–2006 | 0.45 | M-v | 3 | MPC | 03457 | 2002 $TC_{370}$ |
| 2002 $TY_{371}$ | 16.3 | 0.15 | 20060922 | 260.46356 | 5.26018 | 112.01928 | 12.92575 | 0.1333025 | 2.6861986 | 29 | 3 | 2002–2006 | 0.57 | M-v | 1 | MPC | 72729 | 2002 $TY_{371}$ |
| 2002 $TF_{374}$ | 16.4 | 0.15 | 20060922 | 182.24477 | 32.08688 | 180.50025 | 6.41227 | 0.0904463 | 2.4816319 | 39 | 5 | 1994–2006 | 0.35 | M-v | 1 | MPC | 04236 | 2002 $TF_{374}$ |
| 2002 $TN_{376}$ | 16.1 | 0.15 | 20021013 | 38.80463 | 261.89998 | 81.77982 | 14.32099 | 0.1128581 | 2.9740649 | 12 | 1 | 27 days | 0.29 | | | MPC | | 2002 $TN_{376}$ |
| 2002 $TO_{376}$ | 16.2 | 0.15 | 20060922 | 223.08343 | 4.93169 | 70.27489 | 16.62990 | 0.2395632 | 3.1716091 | 15 | 1 | 118 days | 0.41 | M-v | 3 | MPC | | 2002 $TO_{376}$ |
| 2002 $TP_{376}$ | 14.3 | 0.15 | 20060922 | 248.19267 | 329.25059 | 62.59638 | 28.63808 | 0.1709019 | 3.1955067 | 25 | 1 | 64 days | 0.41 | M-v | 4 | MPC | | 2002 $TP_{376}$ |
| 2002 $TQ_{376}$ | 16.6 | 0.15 | 20060922 | 325.18520 | 105.54715 | 292.74748 | 10.26127 | 0.3066365 | 2.6442374 | 19 | 1 | 61 days | 0.50 | M-v | 4 | MPC | | 2002 $TQ_{376}$ |
| 2002 $TU_{376}$ | 18.6 | 0.15 | 20020923 | 326.82463 | 107.92891 | 301.71983 | 4.75754 | 0.2591110 | 2.4520556 | 9 | 1 | 23 days | 0.39 | | | MPC | | 2002 $TU_{376}$ |
| 2002 UH | 16.6 | 0.15 | 20060922 | 332.08094 | 16.52276 | 26.77323 | 2.05814 | 0.1710283 | 2.6045318 | 111 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 61502 | 2002 UH |
| 2002 UO | 19.2 | 0.15 | 20060922 | 40.20965 | 184.08530 | 90.80696 | 8.30019 | 0.4723389 | 1.2091355 | 75 | 4 | 2002–2006 | 0.47 | M-v | 3 | MPC | 97624 | 2002 UO |
| 2002 UP | 17.3 | 0.15 | 20060922 | 349.33679 | 86.61298 | 279.99134 | 2.13938 | 0.2677717 | 2.5654340 | 98 | 3 | 1998–2006 | 0.55 | M-v | 2 | MPC | 03457 | 2002 UP |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 UZ | 15.6 | 0.15 | 20060922 | 23.70915 | 259.43799 | 68.52626 | 12.75686 | 0.1658183 | 2.5338047 | 47 | 5 | 1998–2006 | 0.64 | M-v | 2 | MPC | 85701 | 2002 UZ |
| 2002 $UB_1$ | 15.6 | 0.15 | 20060922 | 352.00240 | 51.98142 | 322.05369 | 17.22835 | 0.1874684 | 2.6605102 | 63 | 3 | 1995–2006 | 0.52 | M-v | 2 | MPC | 04236 | 2002 $UB_1$ |
| 2002 $UF_1$ | 15.8 | 0.15 | 20060922 | 79.94135 | 264.02075 | 90.24741 | 7.16502 | 0.2020487 | 2.2495260 | 71 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 77671 | 2002 $UF_1$ |
| 2002 $UQ_1$ | 15.5 | 0.15 | 20060922 | 207.67964 | 218.77684 | 279.77856 | 3.19295 | 0.0410886 | 2.7748559 | 77 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 04237 | 2002 $UQ_1$ |
| 2002 $UR_1$ | 16.8 | 0.15 | 20060922 | 316.56220 | 91.44722 | 349.82283 | 3.12370 | 0.1083593 | 2.5168268 | 56 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 66288 | 2002 $UR_1$ |
| 2002 $UW_1$ | 16.0 | 0.15 | 20060922 | 318.04205 | 93.55156 | 290.89088 | 2.29112 | 0.1095233 | 2.7568291 | 71 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04237 | 2002 $UW_1$ |
| 2002 $UA_2$ | 16.3 | 0.15 | 20060922 | 336.32880 | 304.29728 | 72.60350 | 7.23780 | 0.3264274 | 2.6020177 | 44 | 2 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03457 | 2002 $UA_2$ |
| 2002 $UE_2$ | 16.2 | 0.15 | 20060922 | 44.46384 | 357.27107 | 23.18782 | 7.16189 | 0.1604332 | 2.2675066 | 45 | 3 | 1999–2004 | 0.63 | M-v | 3 | MPC | 50701 | 2002 $UE_2$ |
| 2002 $UW_2$ | 15.3 | 0.15 | 20060922 | 356.59169 | 275.40847 | 74.20116 | 27.62794 | 0.2648817 | 2.6185047 | 65 | 5 | 1998–2006 | 0.38 | M-v | 1 | MPC | 04237 | 2002 $UW_2$ |
| 2002 $UK_3$ | 15.6 | 0.15 | 20060922 | 27.30049 | 200.94463 | 124.66532 | 15.40255 | 0.3045197 | 2.5744437 | 50 | 4 | 1996–2006 | 0.57 | M-v | 2 | MPC | 03458 | 2002 $UK_3$ |
| 2002 $US_3$ | 16.7 | 0.15 | 20060922 | 352.09286 | 342.68488 | 36.29794 | 14.37949 | 0.1904905 | 2.5438443 | 69 | 3 | 1998–2006 | 0.48 | M-v | 3 | MPC | 41144 | 2002 $US_3$ |
| 2002 $UJ_4$ | 14.7 | 0.15 | 20060922 | 321.05887 | 85.47296 | 331.86430 | 21.66115 | 0.0829495 | 2.6363313 | 77 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 66289 | 2002 $UJ_4$ |
| 2002 $UZ_4$ | 16.3 | 0.15 | 20060922 | 300.01165 | 322.65221 | 105.79344 | 8.34755 | 0.1841388 | 2.6617936 | 38 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04237 | 2002 $UZ_4$ |
| 2002 $UF_5$ | 15.1 | 0.15 | 20060922 | 310.96201 | 152.94177 | 143.08985 | 6.55441 | 0.1633949 | 3.2146098 | 43 | 5 | 1994–2006 | 0.56 | M-v | 0 | MPC | 04237 | 2002 $UF_5$ |
| 2002 $UO_5$ | 16.1 | 0.15 | 20060922 | 55.68201 | 279.81834 | 77.85792 | 5.97493 | 0.1508256 | 2.3316667 | 56 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 62423 | 2002 $UO_5$ |
| 2002 $UZ_5$ | 16.9 | 0.15 | 20060922 | 359.36675 | 244.22601 | 157.38859 | 7.69100 | 0.1216146 | 2.4354753 | 33 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 72729 | 2002 $UZ_5$ |
| 2002 $UG_6$ | 16.3 | 0.15 | 20060922 | 13.58640 | 281.20990 | 113.80464 | 7.75000 | 0.1221288 | 2.3972900 | 58 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 61505 | 2002 $UG_6$ |
| 2002 $UL_6$ | 17.0 | 0.15 | 20060922 | 5.29552 | 297.82473 | 114.00760 | 6.84476 | 0.0981348 | 2.3770531 | 33 | 4 | 1997–2006 | 0.42 | M-v | 2 | MPC | 62423 | 2002 $UL_6$ |
| 2002 $US_6$ | 17.4 | 0.15 | 20060922 | 337.49298 | 256.06922 | 139.21674 | 6.02891 | 0.3419861 | 2.5766364 | 85 | 3 | 1998–2006 | 0.57 | M-v | 2 | MPC | 04237 | 2002 $US_6$ |
| 2002 $UG_7$ | 14.9 | 0.15 | 20060922 | 275.79910 | 285.40321 | 61.69040 | 19.50249 | 0.1324545 | 3.2361804 | 23 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 00394 | 2002 $UG_7$ |
| 2002 $UH_7$ | 15.2 | 0.15 | 20060922 | 317.57656 | 217.66334 | 155.22622 | 13.30337 | 0.0994989 | 2.7901489 | 43 | 4 | 1997–2006 | 0.36 | M-v | 1 | MPC | 04237 | 2002 $UH_7$ |
| 2002 $UL_7$ | 16.5 | 0.15 | 20060922 | 352.04559 | 195.72890 | 158.16184 | 9.60529 | 0.2019534 | 2.6497897 | 65 | 2 | 2002–2006 | 0.52 | M-v | 4 | MPC | 03458 | 2002 $UL_7$ |
| 2002 $UE_8$ | 15.8 | 0.15 | 20060922 | 337.13717 | 253.88755 | 110.61272 | 9.51647 | 0.2615364 | 2.6867903 | 118 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 04237 | 2002 $UE_8$ |
| 2002 $UL_8$ | 17.3 | 0.15 | 20060922 | 346.90827 | 198.08575 | 169.84180 | 13.66509 | 0.2057251 | 2.6458430 | 77 | 2 | 2002–2006 | 0.42 | M-v | 3 | MPC | 03459 | 2002 $UL_8$ |
| 2002 $UY_8$ | 15.6 | 0.15 | 20060922 | 2.90018 | 164.65930 | 188.63419 | 19.72048 | 0.2690695 | 2.6115582 | 165 | 6 | 1998–2006 | 0.45 | M-v | 1 | MPC | 04237 | 2002 $UY_8$ |
| 2002 $UZ_8$ | 16.2 | 0.15 | 20060922 | 2.07199 | 206.73080 | 158.38638 | 12.54871 | 0.2266564 | 2.5873950 | 88 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03460 | 2002 $UZ_8$ |
| 2002 $UB_9$ | 16.0 | 0.15 | 20060922 | 325.61948 | 218.78000 | 155.16832 | 13.18054 | 0.1576180 | 2.7827144 | 52 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 03460 | 2002 $UB_9$ |
| 2002 $UM_9$ | 15.8 | 0.15 | 20060922 | 62.44482 | 252.27108 | 114.28971 | 7.31534 | 0.1610991 | 2.2300115 | 45 | 4 | 1999–2006 | 0.51 | M-v | 2 | MPC | 62423 | 2002 $UM_9$ |
| 2002 $UU_9$ | 14.5 | 0.15 | 20060922 | 291.32204 | 287.75601 | 72.51662 | 8.44956 | 0.0866387 | 3.0574677 | 64 | 5 | 2000–2005 | 0.54 | M-v | 1 | MPC | 50702 | 2002 $UU_9$ |
| 2002 $UD_{11}$ | 15.9 | 0.15 | 20060922 | 27.99799 | 47.91561 | 301.16197 | 3.51635 | 0.0421476 | 2.5848160 | 72 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 61508 | 2002 $UD_{11}$ |
| 2002 $UH_{11}$ | 15.3 | 0.15 | 20060922 | 292.86897 | 284.53311 | 83.71888 | 2.19559 | 0.0544502 | 2.9928464 | 45 | 5 | 1995–2005 | 0.60 | M-v | 1 | MPC | 77672 | 2002 $UH_{11}$ |
| 2002 $UG_{12}$ | 15.2 | 0.15 | 20060922 | 17.31685 | 55.99948 | 266.52260 | 17.49192 | 0.3499913 | 2.6096726 | 127 | 2 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04237 | 2002 $UG_{12}$ |
| 2002 $UM_{12}$ | 15.7 | 0.15 | 20060922 | 334.86269 | 357.89983 | 67.66581 | 14.68140 | 0.2878479 | 2.5666165 | 112 | 3 | 1998–2006 | 0.52 | M-v | 2 | MPC | 66289 | 2002 $UM_{12}$ |
| 2002 $UF_{14}$ | 16.0 | 0.15 | 20060922 | 63.94629 | 258.37352 | 93.58694 | 11.66892 | 0.2516167 | 2.3347672 | 75 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 87555 | 2002 $UF_{14}$ |
| 2002 $UH_{15}$ | 17.1 | 0.15 | 20060922 | 88.23852 | 243.00226 | 107.78397 | 6.01329 | 0.1564442 | 2.2636829 | 63 | 6 | 2000–2006 | 0.41 | M-v | 0 | MPC | 87555 | 2002 $UH_{15}$ |
| 2002 $UJ_{15}$ | 16.9 | 0.15 | 20060922 | 25.83493 | 269.64433 | 68.02089 | 13.22341 | 0.1655011 | 2.5738225 | 48 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 77672 | 2002 $UJ_{15}$ |
| 2002 $UK_{15}$ | 16.2 | 0.15 | 20060922 | 259.00668 | 32.88886 | 97.98871 | 7.94929 | 0.0539145 | 2.5569236 | 65 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 61510 | 2002 $UK_{15}$ |
| 2002 $UE_{16}$ | 16.8 | 0.15 | 20060922 | 319.56232 | 237.53319 | 185.96239 | 8.74220 | 0.1486928 | 2.5722346 | 75 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 61511 | 2002 $UE_{16}$ |
| 2002 $UN_{16}$ | 15.8 | 0.15 | 20060922 | 306.15293 | 325.01916 | 130.62905 | 6.78760 | 0.1917274 | 2.5608084 | 106 | 4 | 1990–2006 | 0.52 | M-v | 2 | MPC | 47225 | 2002 $UN_{16}$ |
| 2002 $UA_{17}$ | 16.1 | 0.15 | 20060922 | 353.27056 | 207.10925 | 153.68733 | 9.51362 | 0.2222524 | 2.6790348 | 99 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04237 | 2002 $UA_{17}$ |
| 2002 $UE_{17}$ | 17.3 | 0.15 | 20060922 | 338.01739 | 326.35613 | 63.65572 | 8.74526 | 0.3693316 | 2.5916797 | 77 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 03461 | 2002 $UE_{17}$ |
| 2002 $UL_{17}$ | 16.5 | 0.15 | 20060922 | 345.00596 | 39.19465 | 40.89597 | 4.94508 | 0.1753363 | 2.4259032 | 77 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 48294 | 2002 $UL_{17}$ |
| 2002 $UQ_{17}$ | 15.5 | 0.15 | 20060922 | 96.54370 | 223.17875 | 29.30932 | 13.68486 | 0.1437579 | 2.6340208 | 43 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 87555 | 2002 $UQ_{17}$ |
| 2002 $UP_{18}$ | 15.8 | 0.15 | 20060922 | 5.99080 | 280.14041 | 55.64304 | 9.60348 | 0.1380534 | 2.6751610 | 49 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 04237 | 2002 $UP_{18}$ |
| 2002 $UW_{18}$ | 15.9 | 0.15 | 20060922 | 252.70149 | 181.96525 | 222.41032 | 6.13834 | 0.1115534 | 3.0559850 | 31 | 4 | 2000–2005 | 0.50 | M-v | 1 | MPC | 85705 | 2002 $UW_{18}$ |
| 2002 $UB_{19}$ | 17.0 | 0.15 | 20060922 | 59.27396 | 280.31764 | 88.28180 | 3.86576 | 0.2671492 | 2.3093452 | 71 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 66289 | 2002 $UB_{19}$ |
| 2002 $UD_{19}$ | 16.6 | 0.15 | 20060922 | 321.39847 | 351.64709 | 83.55083 | 5.32435 | 0.1944661 | 2.5702930 | 91 | 4 | 1991–2006 | 0.49 | M-v | 2 | MPC | 61511 | 2002 $UD_{19}$ |
| 2002 $UE_{19}$ | 15.6 | 0.15 | 20060922 | 287.83221 | 238.44121 | 221.54455 | 11.43999 | 0.1653817 | 2.6486355 | 98 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 66289 | 2002 $UE_{19}$ |
| 2002 $UK_{19}$ | 16.6 | 0.15 | 20060922 | 301.25757 | 271.83664 | 161.08066 | 8.65298 | 0.1775586 | 2.6929676 | 35 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 85705 | 2002 $UK_{19}$ |
| 2002 $UT_{19}$ | 16.9 | 0.15 | 20060922 | 41.71274 | 308.62867 | 89.78911 | 7.86377 | 0.1143164 | 2.3402497 | 47 | 4 | 1991–2006 | 0.47 | M-v | 1 | MPC | 04237 | 2002 $UT_{19}$ |
| 2002 $UY_{19}$ | 16.0 | 0.15 | 20060922 | 20.82140 | 294.56204 | 110.39565 | 7.45625 | 0.1445222 | 2.4107525 | 78 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 85705 | 2002 $UY_{19}$ |
| 2002 $UN_{20}$ | 16.5 | 0.15 | 20060922 | 307.71092 | 285.54598 | 170.22393 | 3.51289 | 0.2109885 | 2.5481963 | 82 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 04237 | 2002 $UN_{20}$ |
| 2002 $UW_{20}$ | 15.4 | 0.15 | 20060922 | 320.57158 | 190.37254 | 244.11219 | 5.14612 | 0.0473887 | 2.5356225 | 119 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 66289 | 2002 $UW_{20}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $UZ_{20}$ | 17.1 | 0.15 | 20060922 | 15.63320 | 310.36623 | 33.62602 | 15.90545 | 0.2417668 | 2.5483979 | 74 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 75763 | 2002 $UZ_{20}$ |
| 2002 $UL_{21}$ | 17.2 | 0.15 | 20060922 | 309.26110 | 9.51301 | 44.01439 | 2.96226 | 0.2048101 | 2.6699545 | 30 | 3 | 2000–2004 | 0.52 | M-v | 3 | MPC | 48294 | 2002 $UL_{21}$ |
| 2002 $UW_{21}$ | 16.1 | 0.15 | 20060922 | 357.51814 | 115.59813 | 226.93783 | 3.82702 | 0.2924196 | 2.6756433 | 119 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04237 | 2002 $UW_{21}$ |
| 2002 $UX_{21}$ | 17.1 | 0.15 | 20060922 | 349.68641 | 220.10662 | 211.09523 | 1.61678 | 0.1844496 | 2.4495977 | 69 | 6 | 1994–2006 | 0.52 | M-v | 1 | MPC | 77672 | 2002 $UX_{21}$ |
| 2002 $UP_{22}$ | 15.4 | 0.15 | 20060922 | 300.98237 | 33.45989 | 41.43732 | 3.40040 | 0.1785140 | 2.6950248 | 128 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04237 | 2002 $UP_{22}$ |
| 2002 $UX_{22}$ | 16.3 | 0.15 | 20060922 | 359.77851 | 327.00619 | 50.88357 | 9.36352 | 0.2067247 | 2.5850224 | 98 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 61515 | 2002 $UX_{22}$ |
| 2002 $UY_{22}$ | 16.6 | 0.15 | 20060922 | 15.03114 | 189.11592 | 263.65854 | 2.13774 | 0.1710916 | 2.2907725 | 82 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 97624 | 2002 $UY_{22}$ |
| 2002 $UB_{23}$ | 16.0 | 0.15 | 20060922 | 304.89917 | 2.18204 | 68.28005 | 7.45171 | 0.1678525 | 2.6972321 | 91 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 61516 | 2002 $UB_{23}$ |
| 2002 $UP_{23}$ | 16.1 | 0.15 | 20060922 | 81.77410 | 292.50862 | 347.01056 | 4.88995 | 0.1082258 | 2.5875261 | 63 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 04238 | 2002 $UP_{23}$ |
| 2002 $UU_{23}$ | 15.5 | 0.15 | 20060922 | 278.00295 | 136.77369 | 285.92850 | 3.67236 | 0.0175924 | 2.7702172 | 54 | 4 | 2002–2006 | 0.62 | M-v | 1 | MPC | 04238 | 2002 $UU_{23}$ |
| 2002 $UV_{23}$ | 14.9 | 0.15 | 20060922 | 308.88846 | 95.13802 | 265.48666 | 4.77888 | 0.1031580 | 2.9240281 | 55 | 3 | 2002–2005 | 0.47 | M-v | 3 | MPC | 61516 | 2002 $UV_{23}$ |
| 2002 $US_{24}$ | 16.3 | 0.15 | 20060922 | 32.89334 | 274.89220 | 38.28465 | 17.65146 | 0.1940999 | 2.6148353 | 44 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 75764 | 2002 $US_{24}$ |
| 2002 $UJ_{25}$ | 15.3 | 0.15 | 20060922 | 174.40665 | 238.00840 | 247.49347 | 9.33227 | 0.1122750 | 3.1028831 | 38 | 4 | 1996–2005 | 0.40 | M-v | 0 | MPC | 85707 | 2002 $UJ_{25}$ |
| 2002 $UN_{25}$ | 16.0 | 0.15 | 20060922 | 52.17071 | 311.55799 | 329.76081 | 4.78827 | 0.3070895 | 2.5889802 | 99 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04238 | 2002 $UN_{25}$ |
| 2002 $UX_{26}$ | 15.9 | 0.15 | 20060922 | 330.47471 | 262.28081 | 160.74741 | 6.89326 | 0.2299558 | 2.5443058 | 103 | 5 | 1996–2006 | 0.51 | M-v | 2 | MPC | 66289 | 2002 $UX_{26}$ |
| 2002 $UA_{27}$ | 16.1 | 0.15 | 20060922 | 308.11145 | 15.84310 | 23.92117 | 8.17731 | 0.0567998 | 2.7410701 | 37 | 3 | 2000–2004 | 0.55 | M-v | 3 | MPC | 38119 | 2002 $UA_{27}$ |
| 2002 $UL_{27}$ | 14.7 | 0.15 | 20060922 | 359.28291 | 62.46117 | 234.18729 | 10.30664 | 0.1012825 | 2.9982941 | 35 | 4 | 2000–2005 | 0.52 | M-v | 1 | MPC | 62424 | 2002 $UL_{27}$ |
| 2002 $UP_{27}$ | 14.5 | 0.15 | 20060922 | 163.60849 | 114.12561 | 28.32476 | 10.16065 | 0.0814867 | 3.0887906 | 41 | 3 | 2002–2005 | 0.61 | M-v | 3 | MPC | 62424 | 2002 $UP_{27}$ |
| 2002 $UQ_{27}$ | 16.3 | 0.15 | 20060922 | 211.62254 | 172.04634 | 24.00631 | 6.45756 | 0.0500807 | 2.4457861 | 82 | 4 | 1998–2006 | 0.55 | M-v | 3 | MPC | 62424 | 2002 $UQ_{27}$ |
| 2002 $UA_{28}$ | 15.8 | 0.15 | 20060922 | 295.89218 | 334.70946 | 108.81228 | 5.45696 | 0.2651710 | 2.6760957 | 69 | 3 | 1995–2006 | 0.52 | M-v | 2 | MPC | 03462 | 2002 $UA_{28}$ |
| 2002 $UK_{28}$ | 16.2 | 0.15 | 20060922 | 56.59178 | 199.29573 | 170.75426 | 7.28229 | 0.1386724 | 2.3440648 | 90 | 3 | 2001–2004 | 0.59 | M-v | 3 | MPC | 66289 | 2002 $UK_{28}$ |
| 2002 $UL_{28}$ | 15.2 | 0.15 | 20060922 | 342.97451 | 315.88919 | 58.25507 | 16.82666 | 0.1907696 | 2.6627190 | 135 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 04238 | 2002 $UL_{28}$ |
| 2002 $UO_{28}$ | 15.9 | 0.15 | 20060922 | 322.79248 | 315.37331 | 115.26369 | 7.52646 | 0.1369563 | 2.5657914 | 77 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 61518 | 2002 $UO_{28}$ |
| 2002 $UV_{28}$ | 17.4 | 0.15 | 20060922 | 82.05876 | 245.29013 | 120.41494 | 4.53907 | 0.1634619 | 2.2341480 | 50 | 3 | 2002–2005 | 0.49 | M-v | 2 | MPC | 90162 | 2002 $UV_{28}$ |
| 2002 $UB_{29}$ | 16.0 | 0.15 | 20060922 | 343.31588 | 244.40463 | 118.88693 | 8.32574 | 0.0690747 | 2.7035911 | 37 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 03462 | 2002 $UB_{29}$ |
| 2002 $UQ_{31}$ | 16.8 | 0.15 | 20060922 | 177.13108 | 324.49156 | 311.58760 | 5.57094 | 0.1308530 | 2.1828589 | 41 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87555 | 2002 $UQ_{31}$ |
| 2002 $UU_{31}$ | 16.3 | 0.15 | 20060922 | 303.29918 | 50.21426 | 7.79325 | 12.69651 | 0.1015557 | 2.6594551 | 42 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04238 | 2002 $UU_{31}$ |
| 2002 $UZ_{31}$ | 16.6 | 0.15 | 20060922 | 282.69756 | 87.22410 | 357.20037 | 12.47242 | 0.1444464 | 2.6733756 | 43 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 66289 | 2002 $UZ_{31}$ |
| 2002 $UE_{32}$ | 15.6 | 0.15 | 20060922 | 295.79727 | 21.46576 | 73.09064 | 1.50717 | 0.2232541 | 2.6514338 | 139 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 65379 | 2002 $UE_{32}$ |
| 2002 $UQ_{32}$ | 16.2 | 0.15 | 20060922 | 135.42365 | 300.39255 | 23.17592 | 3.14396 | 0.2078363 | 2.1987332 | 196 | 4 | 2002–2006 | 0.51 | M-v | 2 | MPC | 02139 | 2002 $UQ_{32}$ |
| 2002 $UT_{32}$ | 15.9 | 0.15 | 20060922 | 266.49884 | 314.27801 | 243.83378 | 5.70794 | 0.0418555 | 2.2368934 | 110 | 4 | 2000–2005 | 0.60 | M-v | 2 | MPC | 87555 | 2002 $UT_{32}$ |
| 2002 $UW_{32}$ | 15.6 | 0.15 | 20060922 | 13.60786 | 327.08795 | 46.02662 | 4.41336 | 0.1374759 | 2.5414052 | 155 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 04238 | 2002 $UW_{32}$ |
| 2002 $UL_{34}$ | 16.3 | 0.15 | 20060922 | 17.36846 | 338.38804 | 72.32845 | 5.64057 | 0.1252661 | 2.3662850 | 56 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 61521 | 2002 $UL_{34}$ |
| 2002 $UV_{34}$ | 16.2 | 0.15 | 20060922 | 340.81557 | 244.09005 | 147.63517 | 3.13664 | 0.0854335 | 2.6028051 | 30 | 3 | 1998–2006 | 0.47 | M-v | 5 | MPC | 38124 | 2002 $UV_{34}$ |
| 2002 $UC_{35}$ | 15.6 | 0.15 | 20060922 | 241.07450 | 235.42674 | 193.05456 | 13.65364 | 0.1275096 | 3.0555355 | 32 | 4 | 2001–2005 | 0.58 | M-v | 1 | MPC | 61522 | 2002 $UC_{35}$ |
| 2002 $UK_{35}$ | 15.7 | 0.15 | 20060922 | 228.35987 | 203.74125 | 229.51509 | 8.85392 | 0.0681131 | 3.1034314 | 28 | 4 | 1996–2004 | 0.56 | M-v | 1 | MPC | 89359 | 2002 $UK_{35}$ |
| 2002 $UP_{35}$ | 16.5 | 0.15 | 20060922 | 39.82640 | 276.35648 | 40.66338 | 7.59460 | 0.2070473 | 2.5818913 | 85 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 75767 | 2002 $UP_{35}$ |
| 2002 $US_{35}$ | 15.3 | 0.15 | 20060922 | 10.80772 | 288.20406 | 33.15712 | 8.69548 | 0.1629412 | 2.7485367 | 76 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04238 | 2002 $US_{35}$ |
| 2002 $UR_{36}$ | 16.3 | 0.15 | 20060922 | 229.20387 | 250.25177 | 191.00022 | 1.05796 | 0.1570590 | 3.0806800 | 33 | 3 | 1996–2004 | 0.59 | M-v | 3 | MPC | 61522 | 2002 $UR_{36}$ |
| 2002 $UW_{36}$ | 15.6 | 0.15 | 20060922 | 52.81020 | 220.00389 | 115.93833 | 2.56440 | 0.1062803 | 2.5321101 | 146 | 5 | 1998–2006 | 0.55 | M-v | 3 | MPC | 66289 | 2002 $UW_{36}$ |
| 2002 $UF_{37}$ | 15.9 | 0.15 | 20060922 | 294.34381 | 57.18422 | 31.90436 | 15.44168 | 0.1076212 | 2.6102505 | 82 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 62425 | 2002 $UF_{37}$ |
| 2002 $UH_{37}$ | 16.7 | 0.15 | 20060922 | 290.58726 | 79.21646 | 31.52157 | 3.76758 | 0.1700403 | 2.5536667 | 79 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 66289 | 2002 $UH_{37}$ |
| 2002 $UM_{37}$ | 16.7 | 0.15 | 20060922 | 347.49312 | 94.07923 | 255.27514 | 2.02040 | 0.2286992 | 2.6956030 | 51 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 03462 | 2002 $UM_{37}$ |
| 2002 $UQ_{37}$ | 16.6 | 0.15 | 20060922 | 332.72988 | 11.82904 | 30.18302 | 2.96941 | 0.1251795 | 2.6023510 | 57 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 61523 | 2002 $UQ_{37}$ |
| 2002 $UT_{37}$ | 16.7 | 0.15 | 20060922 | 54.20675 | 330.90915 | 13.90888 | 2.23102 | 0.1322201 | 2.4262978 | 47 | 6 | 1997–2006 | 0.50 | M-v | 2 | MPC | 66289 | 2002 $UT_{37}$ |
| 2002 $UU_{37}$ | 16.1 | 0.15 | 20060922 | 350.29026 | 137.94000 | 246.09140 | 2.11409 | 0.0735773 | 2.5892393 | 82 | 4 | 1998–2006 | 0.49 | M-v | 3 | MPC | 77673 | 2002 $UU_{37}$ |
| 2002 $UV_{37}$ | 17.0 | 0.15 | 20060922 | 353.95753 | 135.83825 | 232.01151 | 4.33293 | 0.2790417 | 2.5867334 | 78 | 2 | 2002–2006 | 0.60 | M-v | 3 | MPC | 03462 | 2002 $UV_{37}$ |
| 2002 $UZ_{37}$ | 17.0 | 0.15 | 20060922 | 97.34289 | 246.42182 | 62.65986 | 2.54199 | 0.1699021 | 2.3634864 | 40 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 62425 | 2002 $UZ_{37}$ |
| 2002 $US_{38}$ | 16.8 | 0.15 | 20060922 | 9.88895 | 131.80079 | 226.47042 | 16.11102 | 0.2222222 | 2.5669045 | 76 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 75768 | 2002 $US_{38}$ |
| 2002 $UT_{38}$ | 16.3 | 0.15 | 20060922 | 300.56410 | 41.37457 | 49.36529 | 5.13101 | 0.1709174 | 2.6030005 | 77 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 75768 | 2002 $UT_{38}$ |
| 2002 $UV_{38}$ | 15.2 | 0.15 | 20060922 | 299.87376 | 295.28090 | 43.86709 | 14.20871 | 0.2537612 | 3.0895449 | 75 | 2 | 2002–2006 | 0.53 | M-v | 3 | MPC | 00397 | 2002 $UV_{38}$ |
| 2002 $UY_{38}$ | 16.8 | 0.15 | 20060922 | 20.70279 | 262.20845 | 78.47517 | 5.34327 | 0.2489463 | 2.5654197 | 90 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 77673 | 2002 $UY_{38}$ |
| 2002 $UB_{39}$ | 17.8 | 0.15 | 20060922 | 15.20629 | 208.41713 | 207.72970 | 0.54471 | 0.1815458 | 2.3740574 | 46 | 7 | 1991–2006 | 0.64 | M-v | 1 | MPC | 87555 | 2002 $UB_{39}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $UC_{39}$ | 16.9 | 0.15 | 20060922 | 353.96686 | 17.57585 | 52.68994 | 3.57093 | 0.2063616 | 2.4268498 | 61 | 5 | 1998–2006 | 0.59 | M-v | 1 | | MPC | 41844 | 2002 $UC_{39}$ |
| 2002 $UL_{39}$ | 16.2 | 0.15 | 20060922 | 327.42231 | 286.84249 | 118.52046 | 2.63421 | 0.1331163 | 2.6324064 | 70 | 3 | 2002–2006 | 0.57 | M-v | 3 | | MPC | 04238 | 2002 $UL_{39}$ |
| 2002 $UR_{39}$ | 15.5 | 0.15 | 20060922 | 241.71846 | 7.29209 | 38.87391 | 1.54323 | 0.1445787 | 3.2184608 | 24 | 4 | 1996–2005 | 0.41 | M-v | 1 | | MPC | 89360 | 2002 $UR_{39}$ |
| 2002 $UK_{40}$ | 15.5 | 0.15 | 20060922 | 330.10619 | 344.20134 | 77.58427 | 14.80521 | 0.1051334 | 2.5506919 | 81 | 4 | 1998–2006 | 0.62 | M-v | 2 | | MPC | 62425 | 2002 $UK_{40}$ |
| 2002 $UP_{40}$ | 16.3 | 0.15 | 20060922 | 321.24428 | 341.06368 | 78.87836 | 14.43870 | 0.2331531 | 2.6157176 | 58 | 6 | 1995–2006 | 0.62 | M-v | 1 | | MPC | 48295 | 2002 $UP_{40}$ |
| 2002 $UR_{40}$ | 15.8 | 0.15 | 20060922 | 334.88412 | 300.82102 | 80.29405 | 12.51299 | 0.2115198 | 2.6755971 | 76 | 3 | 2002–2006 | 0.51 | M-v | 2 | | MPC | 04238 | 2002 $UR_{40}$ |
| 2002 $US_{40}$ | 15.8 | 0.15 | 20060922 | 247.36806 | 268.19007 | 148.03223 | 8.50159 | 0.1658885 | 3.1034012 | 24 | 3 | 2002–2005 | 0.45 | M-v | 3 | | MPC | 89360 | 2002 $US_{40}$ |
| 2002 $UU_{40}$ | 16.1 | 0.15 | 20060922 | 312.69077 | 311.26632 | 99.53706 | 10.68664 | 0.2669071 | 2.6965027 | 62 | 2 | 2002–2006 | 0.51 | M-v | 2 | | MPC | 03462 | 2002 $UU_{40}$ |
| 2002 $UF_{41}$ | 16.4 | 0.15 | 20060922 | 343.52710 | 311.45642 | 57.49050 | 12.34165 | 0.1942788 | 2.6812511 | 60 | 3 | 2002–2006 | 0.55 | M-v | 3 | | MPC | 04238 | 2002 $UF_{41}$ |
| 2002 $UR_{41}$ | 16.5 | 0.15 | 20060922 | 352.54690 | 299.57579 | 129.79415 | 3.53335 | 0.1185327 | 2.4298199 | 50 | 4 | 1998–2005 | 0.40 | M-v | 1 | | MPC | 85711 | 2002 $UR_{41}$ |
| 2002 $UC_{42}$ | 16.5 | 0.15 | 20060922 | 280.14577 | 242.81314 | 211.40819 | 6.21641 | 0.0769357 | 2.5812034 | 47 | 5 | 1994–2006 | 0.47 | M-v | 1 | | MPC | 69411 | 2002 $UC_{42}$ |
| 2002 $UP_{44}$ | 17.3 | 0.15 | 20060922 | 352.50505 | 84.74878 | 9.17391 | 1.68702 | 0.1499273 | 2.3167725 | 27 | 3 | 2002–2006 | 0.50 | M-v | 3 | | MPC | 00397 | 2002 $UP_{44}$ |
| 2002 $UT_{44}$ | 16.4 | 0.15 | 20060922 | 27.83491 | 255.65364 | 107.52290 | 8.49856 | 0.1389440 | 2.4483246 | 49 | 5 | 1998–2006 | 0.55 | M-v | 1 | | MPC | 85711 | 2002 $UT_{44}$ |
| 2002 $UU_{44}$ | 16.3 | 0.15 | 20060922 | 358.89072 | 231.43589 | 131.72288 | 8.24205 | 0.2116515 | 2.5711912 | 68 | 5 | 1998–2006 | 0.54 | M-v | 1 | | MPC | 04238 | 2002 $UU_{44}$ |
| 2002 $UW_{45}$ | 16.1 | 0.15 | 20060922 | 290.12852 | 327.89510 | 125.97281 | 6.50468 | 0.2658374 | 2.6701877 | 44 | 4 | 1995–2004 | 0.67 | M-v | 1 | | MPC | 66290 | 2002 $UW_{45}$ |
| 2002 $UD_{46}$ | 15.4 | 0.15 | 20060922 | 322.10100 | 327.03173 | 95.88427 | 12.40744 | 0.0937465 | 2.6081479 | 53 | 3 | 2000–2006 | 0.53 | M-v | 3 | | MPC | 03462 | 2002 $UD_{46}$ |
| 2002 $US_{47}$ | 16.8 | 0.15 | 20060922 | 319.03804 | 171.63030 | 209.89928 | 2.81060 | 0.2035116 | 2.7501612 | 29 | 4 | 2002–2006 | 0.46 | M-v | 2 | | MPC | 03463 | 2002 $US_{47}$ |
| 2002 $UW_{47}$ | 15.3 | 0.15 | 20060922 | 312.88783 | 1.01814 | 29.96061 | 6.50739 | 0.0426122 | 2.7405212 | 49 | 4 | 2000–2006 | 0.50 | M-v | 1 | | MPC | 66290 | 2002 $UW_{47}$ |
| 2002 $UB_{48}$ | 15.8 | 0.15 | 20060922 | 352.37025 | 178.93089 | 164.76869 | 9.27773 | 0.2649983 | 2.6839635 | 74 | 3 | 2002–2006 | 0.53 | M-v | 2 | | MPC | 04238 | 2002 $UB_{48}$ |
| 2002 $UG_{48}$ | 15.7 | 0.15 | 20060922 | 33.71733 | 186.64778 | 123.23046 | 6.84191 | 0.2893794 | 2.5995958 | 82 | 4 | 2002–2006 | 0.42 | M-v | 1 | | MPC | 04238 | 2002 $UG_{48}$ |
| 2002 $UO_{48}$ | 16.3 | 0.15 | 20060922 | 326.29577 | 30.21097 | 10.33720 | 9.20834 | 0.3485480 | 2.6743246 | 57 | 3 | 2002–2006 | 0.58 | M-v | 2 | | MPC | 03463 | 2002 $UO_{48}$ |
| 2002 $UX_{48}$ | 16.3 | 0.15 | 20060922 | 332.83560 | 39.81707 | 28.92642 | 12.09702 | 0.2298755 | 2.5760398 | 78 | 4 | 1999–2006 | 0.58 | M-v | 2 | | MPC | 85712 | 2002 $UX_{48}$ |
| 2002 $UO_{49}$ | 15.5 | 0.15 | 20060922 | 287.59477 | 85.03551 | 12.14555 | 10.43170 | 0.1990480 | 2.7170854 | 87 | 4 | 1999–2006 | 0.61 | M-v | 2 | | MPC | 87555 | 2002 $UO_{49}$ |
| 2002 $UT_{49}$ | 15.4 | 0.15 | 20060922 | 321.03253 | 61.75751 | 351.37716 | 8.07769 | 0.2431370 | 2.7068074 | 118 | 3 | 1999–2006 | 0.46 | M-v | 3 | | MPC | 03463 | 2002 $UT_{49}$ |
| 2002 $UC_{50}$ | 16.2 | 0.15 | 20060922 | 354.72780 | 298.37829 | 93.63335 | 15.43022 | 0.1737039 | 2.5670558 | 57 | 4 | 1998–2006 | 0.59 | M-v | 2 | | MPC | 03463 | 2002 $UC_{50}$ |
| 2002 $UF_{50}$ | 15.6 | 0.15 | 20060922 | 358.11155 | 222.22233 | 146.87610 | 11.32951 | 0.1410993 | 2.6523608 | 50 | 3 | 2002–2006 | 0.42 | M-v | 2 | | MPC | 04238 | 2002 $UF_{50}$ |
| 2002 $UX_{50}$ | 16.6 | 0.15 | 20060922 | 278.82531 | 9.13870 | 292.33954 | 15.73119 | 0.1888405 | 3.1575349 | 18 | 1 | 87 days | 0.34 | M-v | 4 | | MPC | | 2002 $UX_{50}$ |
| 2002 $UQ_{51}$ | 16.1 | 0.15 | 20060922 | 298.03857 | 24.70618 | 259.55262 | 9.37752 | 0.1868927 | 3.1394145 | 21 | 1 | 101 days | 0.28 | M-v | 3 | | MPC | 62425 | 2002 $UQ_{51}$ |
| 2002 $UX_{51}$ | 17.6 | 0.15 | 20060922 | 304.92414 | 98.37771 | 268.39037 | 7.89395 | 0.2217688 | 2.7208866 | 21 | 1 | 101 days | 0.24 | M-v | 3 | | MPC | 62425 | 2002 $UX_{51}$ |
| 2002 $UE_{52}$ | 17.3 | 0.15 | 20060922 | 93.25509 | 182.54829 | 100.32209 | 5.68887 | 0.1434540 | 2.4483579 | 21 | 3 | 2002–2006 | 0.30 | M-v | 3 | | MPC | 94867 | 2002 $UE_{52}$ |
| 2002 $UR_{52}$ | 17.3 | 0.15 | 20060922 | 46.69317 | 309.81090 | 73.87091 | 6.44500 | 0.0346329 | 2.2958536 | 23 | 3 | 2002–2006 | 0.43 | M-v | 3 | | MPC | 94867 | 2002 $UR_{52}$ |
| 2002 $UQ_{56}$ | 17.3 | 0.15 | 20060922 | 354.61225 | 348.28282 | 89.28888 | 6.24144 | 0.1765997 | 2.3580008 | 24 | 3 | 2002–2006 | 0.34 | M-v | 2 | | MPC | 85712 | 2002 $UQ_{56}$ |
| 2002 $UA_{57}$ | 16.0 | 0.15 | 20060922 | 164.76021 | 33.59289 | 168.08937 | 10.34228 | 0.0764623 | 2.6045394 | 30 | 3 | 2000–2006 | 0.44 | M-v | 3 | | MPC | 69411 | 2002 $UA_{57}$ |
| 2002 $UX_{58}$ | 18.2 | 0.15 | 20060922 | 339.40952 | 247.05212 | 141.00468 | 6.37408 | 0.2989299 | 2.5868492 | 24 | 2 | 2002–2006 | 0.47 | M-v | 2 | | MPC | 03464 | 2002 $UX_{58}$ |
| 2002 $UE_{59}$ | 17.5 | 0.15 | 20060922 | 249.48852 | 73.54562 | 100.72571 | 7.62945 | 0.0558033 | 2.3622081 | 17 | 3 | 1995–2006 | 0.14 | M-v | 3 | | MPC | 50158 | 2002 $UE_{59}$ |
| 2002 $UH_{64}$ | 18.5 | 0.15 | 20060922 | 32.95316 | 158.05325 | 183.11199 | 0.78327 | 0.2064189 | 2.4341937 | 21 | 3 | 1998–2006 | 0.22 | M-v | 2 | | MPC | 03464 | 2002 $UH_{64}$ |
| 2002 $UM_{64}$ | 17.1 | 0.15 | 20060922 | 224.05471 | 296.84554 | 189.94042 | 2.05408 | 0.0213298 | 2.6033208 | 39 | 5 | 1996–2006 | 0.36 | M-v | 0 | | MPC | 04238 | 2002 $UM_{64}$ |
| 2002 $UQ_{64}$ | 17.1 | 0.15 | 20060922 | 79.30935 | 60.63537 | 192.90407 | 12.64924 | 0.2124667 | 2.5721667 | 44 | 3 | 2002–2006 | 0.47 | M-v | 2 | | MPC | 75772 | 2002 $UQ_{64}$ |
| 2002 $UL_{66}$ | 16.9 | 0.15 | 20060922 | 334.96895 | 209.31941 | 144.24404 | 3.86608 | 0.0476914 | 2.7282642 | 38 | 7 | 1994–2006 | 0.50 | M-v | 0 | | MPC | 03464 | 2002 $UL_{66}$ |
| 2002 $UO_{68}$ | 17.7 | 0.15 | 20060922 | 73.08871 | 181.89402 | 120.95941 | 5.07636 | 0.1441706 | 2.4468710 | 23 | 4 | 2001–2006 | 0.25 | M-v | 0 | | MPC | 94867 | 2002 $UO_{68}$ |
| 2002 $UE_{70}$ | 17.7 | 0.15 | 20060922 | 13.16875 | 345.62829 | 79.29371 | 5.03871 | 0.1402678 | 2.3259754 | 18 | 3 | 1995–2006 | 0.26 | M-v | 3 | | MPC | 85714 | 2002 $UE_{70}$ |
| 2002 $UA_{71}$ | 15.9 | 0.15 | 20021102 | 66.49580 | 140.04545 | 184.70648 | 11.30785 | 0.1008194 | 3.1126502 | 9 | 1 | 39 days | 0.38 | | | | MPC | | 2002 $UA_{71}$ |
| 2002 $UB_{71}$ | 17.4 | 0.15 | 20021102 | 29.39510 | 296.99375 | 65.31567 | 14.58840 | 0.1486288 | 2.6694174 | 8 | 1 | 23 days | 0.16 | | | | MPC | | 2002 $UB_{71}$ |
| 2002 $UC_{71}$ | 16.3 | 0.15 | 20021013 | 64.72979 | 237.75554 | 77.00196 | 3.61392 | 0.1152969 | 3.1054127 | 9 | 1 | 5 days | 0.36 | | | E | MPC | | 2002 $UC_{71}$ |
| 2002 $UD_{71}$ | 17.7 | 0.15 | 20021013 | 39.64553 | 208.04950 | 114.12138 | 2.01943 | 0.2924016 | 2.6192806 | 9 | 1 | 5 days | 0.45 | | | | MPC | | 2002 $UD_{71}$ |
| 2002 $UE_{71}$ | 18.7 | 0.15 | 20021013 | 346.02126 | 270.50919 | 145.14241 | 1.93366 | 0.3039366 | 2.6980523 | 8 | 1 | 5 days | 0.33 | | | | MPC | | 2002 $UE_{71}$ |
| 2002 VB | 15.6 | 0.15 | 20060922 | 17.85952 | 98.40743 | 283.88778 | 5.97718 | 0.1698706 | 2.4831754 | 142 | 5 | 1996–2006 | 0.45 | M-v | 2 | | MPC | 74236 | 2002 VB |
| 2002 VG | 15.7 | 0.15 | 20060922 | 261.84513 | 53.07517 | 53.76685 | 11.34876 | 0.1506059 | 2.7171111 | 41 | 4 | 1998–2006 | 0.72 | M-v | 1 | | MPC | 61526 | 2002 VG |
| 2002 VK | 16.3 | 0.15 | 20060922 | 55.86936 | 273.30332 | 37.26922 | 12.78742 | 0.1778648 | 2.5520139 | 103 | 3 | 2002–2006 | 0.45 | M-v | 1 | | MPC | 75773 | 2002 VK |
| 2002 $VG_2$ | 16.5 | 0.15 | 20060922 | 44.37437 | 318.17753 | 51.78835 | 6.88289 | 0.1176490 | 2.3918502 | 41 | 3 | 2002–2006 | 0.44 | M-v | 3 | | MPC | 61527 | 2002 $VG_2$ |
| 2002 $VB_3$ | 16.7 | 0.15 | 20060922 | 321.28293 | 184.57990 | 193.97023 | 4.60025 | 0.1302920 | 2.7823031 | 48 | 5 | 2000–2006 | 0.43 | M-v | 1 | | MPC | 04238 | 2002 $VB_3$ |
| 2002 $VF_3$ | 16.2 | 0.15 | 20060922 | 315.16574 | 199.78713 | 279.66346 | 1.78000 | 0.1675743 | 2.4203919 | 52 | 4 | 2000–2006 | 0.46 | M-v | 1 | | MPC | 03464 | 2002 $VF_3$ |
| 2002 $VN_3$ | 16.4 | 0.15 | 20060922 | 348.98327 | 91.99494 | 270.27950 | 5.91897 | 0.1859402 | 2.6797614 | 30 | 2 | 2002–2006 | 0.70 | M-v | 5 | | MPC | 03464 | 2002 $VN_3$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VP_3$ | 16.3 | 0.15 | 20060922 | 314.85300 | 200.62217 | 301.03626 | 3.80801 | 0.1632726 | 2.3390217 | 43 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87555 | 2002 $VP_3$ |
| 2002 $VS_3$ | 16.0 | 0.15 | 20060922 | 280.29410 | 82.26335 | 291.93409 | 3.73492 | 0.1488616 | 3.0960379 | 52 | 3 | 2002–2005 | 0.46 | M-v | 3 | MPC | 89361 | 2002 $VS_3$ |
| 2002 $VV_3$ | 15.3 | 0.15 | 20060922 | 305.35781 | 69.35275 | 330.14799 | 4.72318 | 0.0385770 | 2.8017409 | 96 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 04238 | 2002 $VV_3$ |
| 2002 $VY_4$ | 15.7 | 0.15 | 20060922 | 311.78579 | 286.52080 | 110.26168 | 17.39380 | 0.1115136 | 3.0804659 | 22 | 1 | 89 days | 0.40 | M-v | 4 | MPC | 41846 | 2002 $VY_4$ |
| 2002 $VA_5$ | 15.2 | 0.15 | 20060922 | 77.92302 | 237.74560 | 57.89137 | 27.47281 | 0.1026884 | 2.5664363 | 56 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 66290 | 2002 $VA_5$ |
| 2002 $VK_6$ | 17.5 | 0.15 | 20060922 | 344.22746 | 243.49700 | 187.91617 | 1.85335 | 0.1847046 | 2.4599332 | 46 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 97625 | 2002 $VK_6$ |
| 2002 $VP_6$ | 16.0 | 0.15 | 20060922 | 298.85913 | 228.16929 | 211.37426 | 8.47626 | 0.0909779 | 2.6374917 | 67 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 61528 | 2002 $VP_6$ |
| 2002 $VQ_6$ | 17.9 | 0.15 | 20060922 | 37.75450 | 61.72246 | 237.84945 | 5.33208 | 0.1378788 | 1.6430886 | 185 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04238 | 2002 $VQ_6$ |
| 2002 $VS_6$ | 17.3 | 0.15 | 20060922 | 355.67753 | 81.06797 | 297.26821 | 2.66105 | 0.3408743 | 2.5506725 | 94 | 3 | 1998–2006 | 0.51 | M-v | 2 | MPC | 03464 | 2002 $VS_6$ |
| 2002 $VX_6$ | 15.6 | 0.15 | 20060922 | 355.73092 | 30.74125 | 312.59877 | 3.47821 | 0.0789980 | 2.8017174 | 59 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 03465 | 2002 $VX_6$ |
| 2002 $VE_7$ | 16.5 | 0.15 | 20060922 | 307.63156 | 156.85211 | 260.72784 | 0.98531 | 0.2003508 | 2.6962905 | 80 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 04239 | 2002 $VE_7$ |
| 2002 $VG_7$ | 17.1 | 0.15 | 20060922 | 70.67351 | 220.71231 | 119.02383 | 2.93434 | 0.1765860 | 2.3696508 | 38 | 4 | 1998–2004 | 0.70 | M-v | 1 | MPC | 89361 | 2002 $VG_7$ |
| 2002 $VK_7$ | 15.7 | 0.15 | 20060922 | 331.26928 | 356.49289 | 67.46444 | 6.91507 | 0.1092261 | 2.5490206 | 98 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | 62425 | 2002 $VK_7$ |
| 2002 $VE_8$ | 16.2 | 0.15 | 20060922 | 309.58563 | 69.14002 | 327.97358 | 6.05113 | 0.1753206 | 2.7370080 | 48 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 03465 | 2002 $VE_8$ |
| 2002 $VK_8$ | 15.8 | 0.15 | 20060922 | 120.40065 | 22.83244 | 268.76931 | 7.31583 | 0.1836547 | 2.3289260 | 61 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 87555 | 2002 $VK_8$ |
| 2002 $VM_8$ | 16.5 | 0.15 | 20060922 | 31.58373 | 136.49743 | 267.58703 | 6.58417 | 0.1265720 | 2.3243589 | 81 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 85716 | 2002 $VM_8$ |
| 2002 $VP_8$ | 15.6 | 0.15 | 20060922 | 280.86623 | 72.81322 | 26.15756 | 15.34376 | 0.0846894 | 2.6089651 | 100 | 3 | 2002–2006 | 0.65 | M-v | 1 | MPC | 61529 | 2002 $VP_8$ |
| 2002 $VR_8$ | 15.6 | 0.15 | 20060922 | 112.70016 | 338.95492 | 309.17770 | 5.53078 | 0.0845218 | 2.4303207 | 58 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 66290 | 2002 $VR_8$ |
| 2002 $VY_8$ | 16.2 | 0.15 | 20060922 | 96.26282 | 59.79003 | 275.96311 | 5.34801 | 0.2091027 | 2.2606861 | 78 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 87556 | 2002 $VY_8$ |
| 2002 $VB_9$ | 15.5 | 0.15 | 20060922 | 351.05341 | 94.19231 | 276.04539 | 6.10600 | 0.2090538 | 2.6118777 | 124 | 4 | 1994–2006 | 0.48 | M-v | 2 | MPC | 04239 | 2002 $VB_9$ |
| 2002 $VM_9$ | 15.8 | 0.15 | 20060922 | 143.13982 | 326.37078 | 291.83406 | 5.54546 | 0.1150370 | 2.4396443 | 70 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 87556 | 2002 $VM_9$ |
| 2002 $VW_9$ | 15.6 | 0.15 | 20060922 | 242.62015 | 38.56942 | 32.78983 | 12.55539 | 0.0479419 | 3.0001414 | 33 | 4 | 1997–2005 | 0.57 | M-v | 0 | MPC | 89361 | 2002 $VW_9$ |
| 2002 $VD_{10}$ | 16.8 | 0.15 | 20060922 | 312.29659 | 114.29291 | 330.72491 | 4.32240 | 0.2797234 | 2.5905887 | 69 | 4 | 1995–2006 | 0.58 | M-v | 3 | MPC | 48295 | 2002 $VD_{10}$ |
| 2002 $VE_{10}$ | 16.1 | 0.15 | 20060922 | 0.03790 | 349.55909 | 359.74412 | 6.17944 | 0.2856834 | 2.6206299 | 154 | 2 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03465 | 2002 $VE_{10}$ |
| 2002 $VR_{10}$ | 15.8 | 0.15 | 20060922 | 23.84443 | 23.97895 | 325.22448 | 3.76822 | 0.0304867 | 2.6229626 | 95 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 61531 | 2002 $VR_{10}$ |
| 2002 $VO_{11}$ | 16.5 | 0.15 | 20060922 | 74.77910 | 338.00541 | 5.49233 | 2.62447 | 0.2570544 | 2.3319592 | 66 | 5 | 1991–2006 | 0.54 | M-v | 2 | MPC | 77674 | 2002 $VO_{11}$ |
| 2002 $VP_{11}$ | 16.4 | 0.15 | 20060922 | 340.13700 | 33.85334 | 351.21938 | 2.03508 | 0.1890498 | 2.6604573 | 92 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 04239 | 2002 $VP_{11}$ |
| 2002 $VU_{11}$ | 16.1 | 0.15 | 20060922 | 0.33742 | 99.51046 | 301.87925 | 1.84654 | 0.0826512 | 2.5204110 | 108 | 5 | 1998–2006 | 0.50 | M-v | 3 | MPC | 61532 | 2002 $VU_{11}$ |
| 2002 $VX_{11}$ | 16.1 | 0.15 | 20060922 | 293.61941 | 80.93658 | 45.01106 | 7.16028 | 0.2045345 | 2.5526054 | 105 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 65381 | 2002 $VX_{11}$ |
| 2002 $VY_{11}$ | 16.4 | 0.15 | 20060922 | 3.82960 | 276.15852 | 69.83441 | 5.36449 | 0.3030988 | 2.5866467 | 87 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03466 | 2002 $VY_{11}$ |
| 2002 $VA_{12}$ | 16.4 | 0.15 | 20060922 | 128.51633 | 223.27986 | 82.16011 | 4.25554 | 0.1811803 | 2.2421237 | 87 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 87556 | 2002 $VA_{12}$ |
| 2002 $VH_{12}$ | 16.9 | 0.15 | 20060922 | 10.02951 | 297.23793 | 32.21229 | 5.26360 | 0.3322961 | 2.6197416 | 92 | 2 | 2002–2006 | 0.41 | M-v | 2 | MPC | 03466 | 2002 $VH_{12}$ |
| 2002 $VM_{12}$ | 16.3 | 0.15 | 20060922 | 350.89178 | 25.06515 | 14.95319 | 6.63924 | 0.1042344 | 2.5162529 | 80 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 03466 | 2002 $VM_{12}$ |
| 2002 $VP_{12}$ | 15.7 | 0.15 | 20060922 | 313.64538 | 98.02351 | 307.26657 | 3.02619 | 0.0827004 | 2.6954581 | 65 | 5 | 1993–2006 | 0.55 | M-v | 1 | MPC | 04239 | 2002 $VP_{12}$ |
| 2002 $VV_{12}$ | 16.1 | 0.15 | 20060922 | 342.49848 | 2.70470 | 14.35231 | 2.99932 | 0.1133997 | 2.6728764 | 109 | 5 | 1993–2006 | 0.46 | M-v | 1 | MPC | 04239 | 2002 $VV_{12}$ |
| 2002 $VA_{13}$ | 16.8 | 0.15 | 20060922 | 87.94404 | 319.42733 | 12.41071 | 2.85921 | 0.2313559 | 2.3104255 | 43 | 3 | 1994–2002 | 0.42 | M-v | 3 | MPC | 48295 | 2002 $VA_{13}$ |
| 2002 $VE_{13}$ | 16.1 | 0.15 | 20060922 | 336.05631 | 132.79922 | 262.61828 | 2.70806 | 0.3177761 | 2.6104330 | 184 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 04239 | 2002 $VE_{13}$ |
| 2002 $VG_{13}$ | 16.6 | 0.15 | 20060922 | 18.48228 | 159.89187 | 253.87500 | 5.75301 | 0.1373399 | 2.3670763 | 103 | 6 | 1991–2006 | 0.51 | M-v | 0 | MPC | 85718 | 2002 $VG_{13}$ |
| 2002 $VZ_{13}$ | 16.5 | 0.15 | 20060922 | 336.19244 | 168.78661 | 344.36808 | 5.53279 | 0.0572800 | 2.1537423 | 85 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04239 | 2002 $VZ_{13}$ |
| 2002 $VU_{14}$ | 16.4 | 0.15 | 20060922 | 21.89516 | 22.15754 | 292.76331 | 3.63764 | 0.1794138 | 2.6624530 | 39 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 03467 | 2002 $VU_{14}$ |
| 2002 $VW_{14}$ | 16.4 | 0.15 | 20060922 | 248.64516 | 108.62472 | 4.87376 | 8.61755 | 0.1336084 | 2.7154365 | 66 | 4 | 1993–2006 | 0.38 | M-v | 1 | MPC | 04239 | 2002 $VW_{14}$ |
| 2002 $VH_{15}$ | 16.6 | 0.15 | 20060922 | 124.07718 | 139.58583 | 184.62947 | 2.10314 | 0.1993118 | 2.2261003 | 147 | 7 | 1997–2006 | 0.51 | M-v | 1 | MPC | 97625 | 2002 $VH_{15}$ |
| 2002 $VR_{15}$ | 16.9 | 0.15 | 20060922 | 345.69508 | 59.68355 | 39.61308 | 2.62292 | 0.1704198 | 2.3409754 | 31 | 4 | 1993–2006 | 0.61 | M-v | 3 | MPC | 72731 | 2002 $VR_{15}$ |
| 2002 $VZ_{16}$ | 16.9 | 0.15 | 20060922 | 44.00629 | 114.26766 | 271.71114 | 3.99639 | 0.2043810 | 2.3260093 | 60 | 3 | 1995–2006 | 0.43 | M-v | 3 | MPC | 41165 | 2002 $VZ_{16}$ |
| 2002 $VK_{17}$ | 16.5 | 0.15 | 20060922 | 1.11757 | 4.36449 | 77.31411 | 5.61747 | 0.1896969 | 2.3971037 | 68 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 89362 | 2002 $VK_{17}$ |
| 2002 $VN_{17}$ | 15.3 | 0.15 | 20060922 | 310.24314 | 2.17323 | 83.93707 | 6.21175 | 0.1250303 | 2.6257575 | 121 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 61538 | 2002 $VN_{17}$ |
| 2002 $VQ_{17}$ | 16.6 | 0.15 | 20060922 | 83.87141 | 186.74056 | 181.79441 | 8.39387 | 0.2038510 | 2.2698458 | 49 | 3 | 2002–2005 | 0.62 | M-v | 3 | MPC | 90162 | 2002 $VQ_{17}$ |
| 2002 $VF_{18}$ | 16.9 | 0.15 | 20060922 | 340.64236 | 211.54153 | 178.54337 | 2.42544 | 0.1103513 | 2.6152062 | 51 | 4 | 2000–2006 | 0.40 | M-v | 2 | MPC | 03467 | 2002 $VF_{18}$ |
| 2002 $VJ_{18}$ | 16.6 | 0.15 | 20060922 | 312.58033 | 34.68634 | 43.47450 | 6.84273 | 0.0449211 | 2.5456016 | 71 | 4 | 1996–2006 | 0.40 | M-v | 1 | MPC | 65382 | 2002 $VJ_{18}$ |
| 2002 $VF_{19}$ | 16.0 | 0.15 | 20060922 | 123.66216 | 259.28988 | 9.97778 | 1.63007 | 0.0273599 | 2.5248787 | 105 | 5 | 1998–2006 | 0.48 | M-v | 2 | MPC | 66290 | 2002 $VF_{19}$ |
| 2002 $VK_{19}$ | 16.5 | 0.15 | 20060922 | 323.38579 | 60.16202 | 56.25512 | 3.83685 | 0.1262915 | 2.3799601 | 50 | 6 | 1991–2006 | 0.59 | M-v | 1 | MPC | 87556 | 2002 $VK_{19}$ |
| 2002 $VS_{19}$ | 15.2 | 0.15 | 20060922 | 317.02108 | 327.73529 | 70.69378 | 5.91591 | 0.1274855 | 2.7561110 | 93 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 04239 | 2002 $VS_{19}$ |
| 2002 $VJ_{20}$ | 16.7 | 0.15 | 20060922 | 314.80023 | 232.63426 | 222.65451 | 3.84690 | 0.2294312 | 2.5509897 | 70 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 85722 | 2002 $VJ_{20}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VN_{20}$ | 16.8 | 0.15 | 20060922 | 91.97653 | 113.48090 | 246.71483 | 4.74286 | 0.1739039 | 2.2674028 | 61 | 2 | 2002–2005 | 0.59 | M-v | 3 | MPC | 89363 | 2002 $VN_{20}$ |
| 2002 $VO_{20}$ | 16.6 | 0.15 | 20060922 | 359.11993 | 149.64491 | 305.98414 | 5.20277 | 0.0716382 | 2.2519973 | 36 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 03467 | 2002 $VO_{20}$ |
| 2002 $VT_{20}$ | 17.7 | 0.15 | 20060922 | 321.52046 | 102.48741 | 318.19625 | 6.18283 | 0.3792274 | 2.6308309 | 73 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 04239 | 2002 $VT_{20}$ |
| 2002 $VA_{21}$ | 15.3 | 0.15 | 20060922 | 286.47011 | 175.73427 | 252.50337 | 11.82668 | 0.0728453 | 2.6914590 | 65 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 61540 | 2002 $VA_{21}$ |
| 2002 $VD_{21}$ | 15.6 | 0.15 | 20060922 | 249.88899 | 78.99358 | 318.53156 | 7.46990 | 0.1302391 | 3.1282871 | 38 | 4 | 1999–2004 | 0.34 | M-v | 0 | MPC | 89363 | 2002 $VD_{21}$ |
| 2002 $VE_{21}$ | 16.5 | 0.15 | 20060922 | 38.52045 | 55.06437 | 309.24510 | 5.60111 | 0.1423721 | 2.4078371 | 29 | 3 | 1998–2006 | 0.70 | M-v | 4 | MPC | 94868 | 2002 $VE_{21}$ |
| 2002 $VF_{21}$ | 14.2 | 0.15 | 20060922 | 220.37413 | 165.69887 | 271.53784 | 8.15229 | 0.0703243 | 3.0835299 | 39 | 3 | 2002–2005 | 0.48 | M-v | 3 | MPC | 65383 | 2002 $VF_{21}$ |
| 2002 $VJ_{21}$ | 15.6 | 0.15 | 20060922 | 109.33733 | 306.63576 | 326.60797 | 6.77784 | 0.2136630 | 2.4364363 | 53 | 5 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87556 | 2002 $VJ_{21}$ |
| 2002 $VM_{21}$ | 16.7 | 0.15 | 20060922 | 92.05289 | 51.15515 | 308.01039 | 4.52478 | 0.1647854 | 2.2166479 | 72 | 4 | 2002–2006 | 0.41 | M-v | 2 | MPC | 90162 | 2002 $VM_{21}$ |
| 2002 $VO_{21}$ | 16.3 | 0.15 | 20060922 | 354.42201 | 116.37196 | 322.43851 | 2.85609 | 0.2300679 | 2.3852435 | 65 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 85722 | 2002 $VO_{21}$ |
| 2002 $VS_{21}$ | 16.3 | 0.15 | 20060922 | 308.10919 | 74.41914 | 345.87978 | 5.76005 | 0.1172768 | 2.6504337 | 97 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04239 | 2002 $VS_{21}$ |
| 2002 $VY_{21}$ | 15.5 | 0.15 | 20060922 | 266.67150 | 80.34089 | 349.61785 | 4.50425 | 0.0848616 | 2.8555893 | 47 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 04239 | 2002 $VY_{21}$ |
| 2002 $VB_{22}$ | 16.7 | 0.15 | 20060922 | 28.40431 | 103.62406 | 335.03119 | 3.38318 | 0.0798339 | 2.2372307 | 53 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 97625 | 2002 $VB_{22}$ |
| 2002 $VG_{22}$ | 15.9 | 0.15 | 20060922 | 335.90738 | 356.39324 | 24.52809 | 2.55834 | 0.1166628 | 2.6902049 | 83 | 5 | 1993–2006 | 0.57 | M-v | 1 | MPC | 04239 | 2002 $VG_{22}$ |
| 2002 $VL_{22}$ | 16.9 | 0.15 | 20060922 | 55.46108 | 153.48519 | 235.10758 | 2.74588 | 0.1530987 | 2.2917630 | 72 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 90163 | 2002 $VL_{22}$ |
| 2002 $VM_{22}$ | 15.5 | 0.15 | 20060922 | 76.81209 | 66.08582 | 241.87712 | 1.06501 | 0.1059432 | 2.5197129 | 114 | 5 | 1998–2006 | 0.55 | M-v | 3 | MPC | 62426 | 2002 $VM_{22}$ |
| 2002 $VH_{23}$ | 15.6 | 0.15 | 20060922 | 317.89777 | 140.86811 | 262.23957 | 3.88299 | 0.1141212 | 2.7214405 | 96 | 3 | 1998–2006 | 0.68 | M-v | 3 | MPC | 03467 | 2002 $VH_{23}$ |
| 2002 $VJ_{23}$ | 16.0 | 0.15 | 20060922 | 310.87618 | 190.35389 | 240.59594 | 8.96554 | 0.1008837 | 2.6384056 | 103 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 61542 | 2002 $VJ_{23}$ |
| 2002 $VK_{23}$ | 16.7 | 0.15 | 20060922 | 341.48207 | 191.59179 | 276.92864 | 1.76917 | 0.1461126 | 2.3614227 | 78 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 03467 | 2002 $VK_{23}$ |
| 2002 $VN_{23}$ | 16.0 | 0.15 | 20060922 | 348.88747 | 172.60254 | 233.74199 | 14.41522 | 0.1069766 | 2.5429605 | 107 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 61543 | 2002 $VN_{23}$ |
| 2002 $VY_{23}$ | 16.3 | 0.15 | 20060922 | 352.35775 | 208.37701 | 241.70195 | 4.76335 | 0.1772837 | 2.3879759 | 83 | 7 | 1991–2006 | 0.68 | M-v | 1 | MPC | 87556 | 2002 $VY_{23}$ |
| 2002 $VC_{24}$ | 17.2 | 0.15 | 20060922 | 59.66937 | 320.75526 | 42.52915 | 3.15388 | 0.2012228 | 2.3552435 | 58 | 6 | 1998–2006 | 0.54 | M-v | 2 | MPC | 66290 | 2002 $VC_{24}$ |
| 2002 $VN_{24}$ | 16.3 | 0.15 | 20060922 | 109.18467 | 64.73355 | 228.93270 | 4.98386 | 0.2848056 | 2.3882409 | 42 | 5 | 1991–2006 | 0.52 | M-v | 1 | MPC | 87556 | 2002 $VN_{24}$ |
| 2002 $VB_{25}$ | 15.8 | 0.15 | 20060922 | 297.49771 | 131.52361 | 275.45153 | 5.21096 | 0.0179405 | 2.7594147 | 48 | 6 | 2000–2006 | 0.73 | M-v | 1 | MPC | 04239 | 2002 $VB_{25}$ |
| 2002 $VM_{25}$ | 15.7 | 0.15 | 20060922 | 354.58251 | 252.98106 | 82.77012 | 14.94667 | 0.2175061 | 2.7419893 | 56 | 2 | 2002–2006 | 0.61 | M-v | 3 | MPC | 03468 | 2002 $VM_{25}$ |
| 2002 $VQ_{25}$ | 17.9 | 0.15 | 20060922 | 13.66385 | 23.99773 | 10.68090 | 2.39368 | 0.1956309 | 2.4475193 | 67 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 62426 | 2002 $VQ_{25}$ |
| 2002 $VE_{26}$ | 16.1 | 0.15 | 20060922 | 355.97625 | 107.95095 | 240.44997 | 2.68342 | 0.2338782 | 2.7006486 | 98 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 03468 | 2002 $VE_{26}$ |
| 2002 $VN_{26}$ | 16.8 | 0.15 | 20060922 | 49.35764 | 107.07873 | 259.97983 | 1.53114 | 0.1987275 | 2.3856631 | 45 | 3 | 2002–2006 | 0.49 | M-v | 4 | MPC | 61545 | 2002 $VN_{26}$ |
| 2002 $VZ_{26}$ | 16.6 | 0.15 | 20060922 | 112.53491 | 293.89574 | 37.58823 | 3.57942 | 0.1182616 | 2.2695944 | 74 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 90163 | 2002 $VZ_{26}$ |
| 2002 $VO_{27}$ | 16.4 | 0.15 | 20060922 | 341.81712 | 159.41087 | 256.05883 | 3.53462 | 0.2300479 | 2.5384734 | 143 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 41173 | 2002 $VO_{27}$ |
| 2002 $VP_{27}$ | 16.2 | 0.15 | 20060922 | 36.99785 | 342.82013 | 9.21838 | 1.84924 | 0.1280254 | 2.5204382 | 97 | 6 | 1990–2006 | 0.53 | M-v | 3 | MPC | 62426 | 2002 $VP_{27}$ |
| 2002 $VY_{27}$ | 16.0 | 0.15 | 20060922 | 67.29437 | 296.32824 | 62.07077 | 7.34612 | 0.1408551 | 2.3715511 | 67 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 87556 | 2002 $VY_{27}$ |
| 2002 $VD_{28}$ | 15.9 | 0.15 | 20060922 | 349.60264 | 330.94521 | 85.04581 | 3.06719 | 0.0494945 | 2.5089961 | 129 | 5 | 1994–2006 | 0.58 | M-v | 3 | MPC | 66290 | 2002 $VD_{28}$ |
| 2002 $VK_{28}$ | 16.1 | 0.15 | 20060922 | 51.17402 | 115.95048 | 230.90761 | 5.52496 | 0.1711961 | 2.4517814 | 53 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 41175 | 2002 $VK_{28}$ |
| 2002 $VX_{28}$ | 15.8 | 0.15 | 20060922 | 281.03360 | 206.79180 | 234.08280 | 12.81220 | 0.1285158 | 2.7462183 | 46 | 4 | 1993–2006 | 0.52 | M-v | 1 | MPC | 04239 | 2002 $VX_{28}$ |
| 2002 $VY_{28}$ | 16.6 | 0.15 | 20060922 | 20.58370 | 140.83927 | 263.73934 | 1.43357 | 0.2173668 | 2.3845618 | 90 | 5 | 1991–2006 | 0.45 | M-v | 1 | MPC | 41176 | 2002 $VY_{28}$ |
| 2002 $VE_{29}$ | 16.6 | 0.15 | 20060922 | 49.33089 | 308.71992 | 43.24955 | 2.69934 | 0.1946262 | 2.4133634 | 54 | 3 | 1998–2006 | 0.64 | M-v | 3 | MPC | 41176 | 2002 $VE_{29}$ |
| 2002 $VH_{29}$ | 15.6 | 0.15 | 20060922 | 11.44459 | 261.97312 | 140.66312 | 6.68378 | 0.1403992 | 2.4566611 | 75 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 62427 | 2002 $VH_{29}$ |
| 2002 $VQ_{29}$ | 15.9 | 0.15 | 20060922 | 47.84458 | 264.27584 | 129.06128 | 7.60401 | 0.1261502 | 2.3370742 | 103 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 87556 | 2002 $VQ_{29}$ |
| 2002 $VS_{29}$ | 16.0 | 0.15 | 20060922 | 4.11299 | 142.49360 | 245.81738 | 3.31119 | 0.1922851 | 2.5355370 | 143 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04239 | 2002 $VS_{29}$ |
| 2002 $VU_{29}$ | 15.5 | 0.15 | 20060922 | 339.45587 | 168.68535 | 241.75687 | 3.63904 | 0.1164724 | 2.5924340 | 146 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 66290 | 2002 $VU_{29}$ |
| 2002 $VX_{29}$ | 16.9 | 0.15 | 20060922 | 352.97608 | 221.83215 | 240.52541 | 2.88550 | 0.1667635 | 2.3508654 | 66 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 85725 | 2002 $VX_{29}$ |
| 2002 $VD_{30}$ | 16.6 | 0.15 | 20060922 | 2.43973 | 291.43589 | 66.44621 | 5.65430 | 0.2364740 | 2.6368478 | 59 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04239 | 2002 $VD_{30}$ |
| 2002 $VH_{30}$ | 16.7 | 0.15 | 20060922 | 4.05992 | 198.11437 | 230.90950 | 5.59709 | 0.0851628 | 2.4038893 | 72 | 6 | 1996–2006 | 0.53 | M-v | 1 | MPC | 87556 | 2002 $VH_{30}$ |
| 2002 $VQ_{30}$ | 16.1 | 0.15 | 20060922 | 336.11989 | 329.95667 | 52.92506 | 9.90608 | 0.3036104 | 2.6712652 | 86 | 4 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04240 | 2002 $VQ_{30}$ |
| 2002 $VS_{30}$ | 17.4 | 0.15 | 20060922 | 30.18975 | 5.12456 | 52.60535 | 1.48400 | 0.2148485 | 2.3330324 | 64 | 6 | 1991–2006 | 0.50 | M-v | 1 | MPC | 04240 | 2002 $VS_{30}$ |
| 2002 $VU_{30}$ | 16.3 | 0.15 | 20060922 | 316.12688 | 193.33644 | 239.41505 | 13.72227 | 0.2513425 | 2.6386044 | 49 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 75781 | 2002 $VU_{30}$ |
| 2002 $VW_{30}$ | 16.3 | 0.15 | 20060922 | 13.37006 | 137.53026 | 239.31767 | 13.35402 | 0.2357607 | 2.5203025 | 109 | 4 | 1978–2006 | 0.56 | M-v | 4 | MPC | 41179 | 2002 $VW_{30}$ |
| 2002 $VX_{30}$ | 15.7 | 0.15 | 20060922 | 238.01712 | 35.46774 | 38.79134 | 1.34378 | 0.1693360 | 3.1579447 | 51 | 5 | 1998–2005 | 0.59 | M-v | 1 | MPC | 77675 | 2002 $VX_{30}$ |
| 2002 $VY_{30}$ | 16.8 | 0.15 | 20060922 | 74.37776 | 322.95726 | 52.18576 | 5.41152 | 0.1565470 | 2.2862961 | 36 | 3 | 2002–2005 | 0.47 | M-v | 3 | MPC | 89364 | 2002 $VY_{30}$ |
| 2002 $VA_{31}$ | 15.5 | 0.15 | 20060922 | 325.68433 | 329.47496 | 66.47205 | 2.51105 | 0.1562704 | 2.7297816 | 120 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 04240 | 2002 $VA_{31}$ |
| 2002 $VO_{31}$ | 15.1 | 0.15 | 20060922 | 64.64076 | 225.97002 | 66.60951 | 16.04078 | 0.2458324 | 2.6512579 | 89 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 75781 | 2002 $VO_{31}$ |
| 2002 $VP_{31}$ | 17.0 | 0.15 | 20060922 | 324.94159 | 207.80516 | 222.21665 | 7.30555 | 0.1849439 | 2.5973986 | 66 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 61551 | 2002 $VP_{31}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VR_{31}$ | 15.8 | 0.15 | 20060922 | 327.80506 | 228.24140 | 184.33244 | 2.49348 | 0.1031364 | 2.6536538 | 155 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04240 | 2002 $VR_{31}$ |
| 2002 $VU_{31}$ | 16.6 | 0.15 | 20060922 | 17.37774 | 358.89173 | 68.75160 | 3.63780 | 0.1530529 | 2.3596059 | 73 | 5 | 1991–2006 | 0.49 | M-v | 1 | MPC | 85726 | 2002 $VU_{31}$ |
| 2002 $VA_{32}$ | 15.7 | 0.15 | 20060922 | 293.68830 | 37.19807 | 64.98510 | 6.62974 | 0.1550880 | 2.6390328 | 105 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 66291 | 2002 $VA_{32}$ |
| 2002 $VM_{32}$ | 16.5 | 0.15 | 20060922 | 349.19572 | 244.53730 | 172.83926 | 0.73647 | 0.1801998 | 2.5234744 | 90 | 4 | 1996–2006 | 0.44 | M-v | 2 | MPC | 03468 | 2002 $VM_{32}$ |
| 2002 $VO_{32}$ | 15.3 | 0.15 | 20060922 | 301.51679 | 353.65433 | 66.36274 | 10.00874 | 0.1423889 | 2.7761316 | 92 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 03468 | 2002 $VO_{32}$ |
| 2002 $VN_{33}$ | 16.3 | 0.15 | 20060922 | 75.29561 | 134.21064 | 242.38238 | 6.09309 | 0.1158630 | 2.3044491 | 61 | 4 | 1995–2005 | 0.64 | M-v | 2 | MPC | 90163 | 2002 $VN_{33}$ |
| 2002 $VU_{33}$ | 15.2 | 0.15 | 20060922 | 332.90724 | 327.30115 | 71.12368 | 15.37891 | 0.1052343 | 2.7138389 | 76 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 50707 | 2002 $VU_{33}$ |
| 2002 $VE_{34}$ | 16.4 | 0.15 | 20060922 | 41.66837 | 349.85013 | 72.90704 | 6.67048 | 0.1366362 | 2.2937725 | 82 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 85727 | 2002 $VE_{34}$ |
| 2002 $VF_{34}$ | 16.4 | 0.15 | 20060922 | 3.63438 | 141.30501 | 243.01883 | 2.62349 | 0.2157051 | 2.5726796 | 115 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 61555 | 2002 $VF_{34}$ |
| 2002 $VH_{34}$ | 15.4 | 0.15 | 20060922 | 335.86296 | 7.73133 | 65.23203 | 15.62544 | 0.1425051 | 2.5578814 | 128 | 5 | 1996–2006 | 0.45 | M-v | 2 | MPC | 62427 | 2002 $VH_{34}$ |
| 2002 $VM_{34}$ | 15.9 | 0.15 | 20060922 | 38.75933 | 307.27876 | 71.80477 | 9.15840 | 0.2508030 | 2.4144348 | 67 | 5 | 1997–2006 | 0.44 | M-v | 2 | MPC | 66291 | 2002 $VM_{34}$ |
| 2002 $VP_{34}$ | 15.8 | 0.15 | 20060922 | 61.38130 | 272.43100 | 72.50070 | 3.86079 | 0.2295933 | 2.4456226 | 62 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 62427 | 2002 $VP_{34}$ |
| 2002 $VV_{34}$ | 15.7 | 0.15 | 20060922 | 335.81559 | 51.76422 | 66.25829 | 24.13235 | 0.3378197 | 2.4580286 | 86 | 3 | 1998–2006 | 0.51 | M-v | 2 | MPC | 89364 | 2002 $VV_{34}$ |
| 2002 $VZ_{34}$ | 16.5 | 0.15 | 20060922 | 352.83609 | 202.46210 | 221.45275 | 1.39020 | 0.1559559 | 2.4469638 | 63 | 6 | 1994–2006 | 0.49 | M-v | 1 | MPC | 87556 | 2002 $VZ_{34}$ |
| 2002 $VC_{35}$ | 15.1 | 0.15 | 20060922 | 359.10590 | 158.74603 | 261.40688 | 9.63393 | 0.2155568 | 2.5323263 | 58 | 4 | 1998–2006 | 0.64 | M-v | 2 | MPC | 77675 | 2002 $VC_{35}$ |
| 2002 $VE_{35}$ | 16.0 | 0.15 | 20060922 | 286.76043 | 63.48513 | 26.46489 | 2.50676 | 0.0928222 | 2.7027678 | 98 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 61556 | 2002 $VE_{35}$ |
| 2002 $VM_{35}$ | 16.3 | 0.15 | 20060922 | 20.45017 | 118.11995 | 231.35993 | 10.26591 | 0.2105811 | 2.5936061 | 79 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 75783 | 2002 $VM_{35}$ |
| 2002 $VP_{35}$ | 16.0 | 0.15 | 20060922 | 326.03142 | 186.08777 | 240.72160 | 10.85637 | 0.1562274 | 2.6005244 | 94 | 3 | 1997–2006 | 0.48 | M-v | 2 | MPC | 48297 | 2002 $VP_{35}$ |
| 2002 $VQ_{35}$ | 17.4 | 0.15 | 20060922 | 16.02397 | 9.29021 | 46.92687 | 3.33451 | 0.1890694 | 2.3966879 | 40 | 4 | 1996–2006 | 0.38 | M-v | 1 | MPC | 41186 | 2002 $VQ_{35}$ |
| 2002 $VU_{36}$ | 15.1 | 0.15 | 20060922 | 339.95388 | 165.38176 | 268.22488 | 12.18260 | 0.2398556 | 2.5989821 | 81 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 77675 | 2002 $VU_{36}$ |
| 2002 $VV_{36}$ | 14.9 | 0.15 | 20060922 | 321.40150 | 42.18607 | 73.08728 | 5.96022 | 0.1717675 | 2.5838612 | 106 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 87557 | 2002 $VV_{36}$ |
| 2002 $VZ_{36}$ | 16.7 | 0.15 | 20060922 | 82.68000 | 216.06364 | 144.59824 | 3.92265 | 0.1675127 | 2.2534866 | 75 | 3 | 2002–2005 | 0.48 | M-v | 2 | MPC | 90163 | 2002 $VZ_{36}$ |
| 2002 $VK_{37}$ | 16.3 | 0.15 | 20060922 | 352.80405 | 271.56789 | 94.41975 | 7.34921 | 0.0691898 | 2.6785061 | 55 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 87557 | 2002 $VK_{37}$ |
| 2002 $VL_{37}$ | 16.9 | 0.15 | 20060922 | 81.26336 | 48.98733 | 305.69035 | 3.97421 | 0.1581024 | 2.2939249 | 37 | 3 | 2000–2005 | 0.53 | M-v | 3 | MPC | 85729 | 2002 $VL_{37}$ |
| 2002 $VT_{37}$ | 15.8 | 0.15 | 20060922 | 300.00392 | 333.16429 | 105.12745 | 13.26748 | 0.1384181 | 2.6578350 | 71 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 61558 | 2002 $VT_{37}$ |
| 2002 $VZ_{37}$ | 16.2 | 0.15 | 20060922 | 9.49335 | 319.61063 | 95.09454 | 6.93591 | 0.0954852 | 2.3639768 | 36 | 4 | 1997–2006 | 0.66 | M-v | 2 | MPC | 72732 | 2002 $VZ_{37}$ |
| 2002 $VD_{38}$ | 17.5 | 0.15 | 20060922 | 90.12994 | 42.48494 | 331.76666 | 4.15571 | 0.1454527 | 2.1930537 | 57 | 3 | 2002–2005 | 0.52 | M-v | 3 | MPC | 90163 | 2002 $VD_{38}$ |
| 2002 $VR_{38}$ | 16.2 | 0.15 | 20060922 | 0.73324 | 13.12470 | 329.06658 | 3.03820 | 0.2305575 | 2.6735154 | 103 | 5 | 1993–2006 | 0.63 | M-v | 1 | MPC | 04240 | 2002 $VR_{38}$ |
| 2002 $VU_{38}$ | 16.0 | 0.15 | 20060922 | 43.54536 | 268.22919 | 109.42959 | 5.88710 | 0.1367638 | 2.3745673 | 58 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 61559 | 2002 $VU_{38}$ |
| 2002 $VC_{39}$ | 17.0 | 0.15 | 20060922 | 329.82407 | 228.39852 | 167.28139 | 7.61827 | 0.3024226 | 2.6256893 | 50 | 2 | 2002–2006 | 0.68 | M-v | 3 | MPC | 03469 | 2002 $VC_{39}$ |
| 2002 $VP_{39}$ | 16.0 | 0.15 | 20060922 | 335.35346 | 30.67588 | 79.05878 | 14.81757 | 0.1842284 | 2.3839014 | 47 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 65384 | 2002 $VP_{39}$ |
| 2002 $VQ_{39}$ | 17.0 | 0.15 | 20060922 | 110.40566 | 213.03756 | 132.91353 | 5.97686 | 0.1456156 | 2.2223060 | 57 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 85730 | 2002 $VQ_{39}$ |
| 2002 $VU_{39}$ | 15.6 | 0.15 | 20060922 | 288.53308 | 299.97540 | 171.85767 | 8.14317 | 0.1331335 | 2.5927225 | 83 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 61559 | 2002 $VU_{39}$ |
| 2002 $VM_{40}$ | 15.2 | 0.15 | 20060922 | 321.99807 | 239.94036 | 191.81256 | 11.29029 | 0.1401686 | 2.6114901 | 139 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04240 | 2002 $VM_{40}$ |
| 2002 $VP_{40}$ | 16.3 | 0.15 | 20060922 | 330.98922 | 187.07803 | 204.01201 | 13.59173 | 0.2485262 | 2.6923835 | 60 | 2 | 2002–2006 | 0.63 | M-v | 3 | MPC | 03469 | 2002 $VP_{40}$ |
| 2002 $VQ_{40}$ | 17.0 | 0.15 | 20060922 | 94.95444 | 243.60355 | 145.35690 | 7.02700 | 0.1778319 | 2.1725751 | 48 | 2 | 2002–2005 | 0.53 | M-v | 4 | MPC | 90163 | 2002 $VQ_{40}$ |
| 2002 $VS_{40}$ | 16.2 | 0.15 | 20060922 | 280.27791 | 165.72320 | 269.98423 | 6.65452 | 0.0667744 | 2.7626952 | 41 | 4 | 2001–2006 | 0.69 | M-v | 1 | MPC | 75784 | 2002 $VS_{40}$ |
| 2002 $VU_{40}$ | 15.7 | 0.15 | 20060922 | 206.06681 | 249.78594 | 277.52667 | 4.23479 | 0.0466063 | 2.6761656 | 48 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 61561 | 2002 $VU_{40}$ |
| 2002 $VX_{40}$ | 15.8 | 0.15 | 20060922 | 273.01117 | 201.28375 | 251.49902 | 2.21991 | 0.0635172 | 2.7136134 | 49 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 04240 | 2002 $VX_{40}$ |
| 2002 $VA_{41}$ | 15.3 | 0.15 | 20060922 | 22.17245 | 104.39051 | 251.84739 | 8.83405 | 0.1006534 | 2.5800199 | 87 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 87557 | 2002 $VA_{41}$ |
| 2002 $VY_{41}$ | 16.7 | 0.15 | 20060922 | 343.85677 | 1.44422 | 15.12739 | 2.24147 | 0.2203953 | 2.6461814 | 56 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03470 | 2002 $VY_{41}$ |
| 2002 $VE_{42}$ | 16.2 | 0.15 | 20060922 | 34.77121 | 347.96025 | 356.20693 | 4.92508 | 0.1918759 | 2.5244708 | 72 | 5 | 1996–2006 | 0.45 | M-v | 2 | MPC | 04240 | 2002 $VE_{42}$ |
| 2002 $VG_{42}$ | 15.9 | 0.15 | 20060922 | 330.48705 | 44.01926 | 332.75026 | 4.64618 | 0.1011379 | 2.7692261 | 83 | 3 | 2002–2006 | 0.60 | M-v | 4 | MPC | 04240 | 2002 $VG_{42}$ |
| 2002 $VJ_{42}$ | 16.1 | 0.15 | 20060922 | 315.74375 | 311.68903 | 81.36560 | 10.13759 | 0.1664659 | 2.7527045 | 57 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 04240 | 2002 $VJ_{42}$ |
| 2002 $VM_{42}$ | 17.2 | 0.15 | 20060922 | 21.34645 | 170.28456 | 200.79274 | 2.24751 | 0.1943665 | 2.4689219 | 52 | 4 | 1994–2006 | 0.43 | M-v | 3 | MPC | 41194 | 2002 $VM_{42}$ |
| 2002 $VP_{42}$ | 16.4 | 0.15 | 20060922 | 296.94284 | 42.40999 | 57.84382 | 3.88343 | 0.1809826 | 2.5721290 | 122 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 66291 | 2002 $VP_{42}$ |
| 2002 $VA_{43}$ | 15.0 | 0.15 | 20060922 | 237.27484 | 74.65576 | 60.27553 | 12.12169 | 0.1519910 | 2.7303544 | 90 | 4 | 1998–2006 | 0.67 | M-v | 1 | MPC | 66291 | 2002 $VA_{43}$ |
| 2002 $VJ_{43}$ | 16.3 | 0.15 | 20060922 | 8.36011 | 274.59059 | 89.51788 | 4.72388 | 0.1252963 | 2.5847327 | 65 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 75785 | 2002 $VJ_{43}$ |
| 2002 $VK_{43}$ | 17.2 | 0.15 | 20060922 | 350.34016 | 186.77392 | 179.87361 | 5.26098 | 0.2936237 | 2.6141136 | 85 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 03470 | 2002 $VK_{43}$ |
| 2002 $VP_{43}$ | 16.3 | 0.15 | 20060922 | 346.70749 | 357.80118 | 105.18422 | 6.08227 | 0.1839897 | 2.3486768 | 56 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87557 | 2002 $VP_{43}$ |
| 2002 $VQ_{43}$ | 16.2 | 0.15 | 20060922 | 24.76271 | 177.85915 | 141.60860 | 4.60487 | 0.2076637 | 2.6598864 | 107 | 5 | 2001–2006 | 0.40 | M-v | 0 | MPC | 04240 | 2002 $VQ_{43}$ |
| 2002 $VX_{43}$ | 14.9 | 0.15 | 20060922 | 334.86463 | 280.05553 | 52.04551 | 12.01476 | 0.1340035 | 2.9932842 | 33 | 3 | 2002–2005 | 0.71 | M-v | 4 | MPC | 65385 | 2002 $VX_{43}$ |
| 2002 $VY_{43}$ | 15.2 | 0.15 | 20060922 | 320.46698 | 87.95722 | 298.07318 | 11.48570 | 0.1926073 | 2.7760958 | 73 | 2 | 2002–2006 | 0.40 | M-v | 3 | MPC | 03470 | 2002 $VY_{43}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VO_{44}$ | 16.1 | 0.15 | 20060922 | 351.10224 | 278.09028 | 92.57675 | 7.21541 | 0.1716424 | 2.6567827 | 59 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 89365 | 2002 $VO_{44}$ |
| 2002 $VF_{45}$ | 16.2 | 0.15 | 20060922 | 328.84472 | 124.46233 | 307.43377 | 0.96434 | 0.1888769 | 2.5438648 | 114 | 4 | 1998–2006 | 0.42 | M-v | 2 | MPC | 66291 | 2002 $VF_{45}$ |
| 2002 $VG_{45}$ | 16.0 | 0.15 | 20060922 | 273.76623 | 261.24231 | 237.05321 | 11.62912 | 0.2019444 | 2.5831271 | 76 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 65385 | 2002 $VG_{45}$ |
| 2002 $VN_{45}$ | 16.0 | 0.15 | 20060922 | 127.57677 | 301.04790 | 343.78067 | 3.55988 | 0.1075907 | 2.3611470 | 57 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87557 | 2002 $VN_{45}$ |
| 2002 $VY_{45}$ | 17.4 | 0.15 | 20060922 | 345.09849 | 251.28711 | 131.69060 | 2.14833 | 0.3254296 | 2.5932655 | 71 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03471 | 2002 $VY_{45}$ |
| 2002 $VC_{46}$ | 17.0 | 0.15 | 20060922 | 320.26975 | 227.38533 | 177.69819 | 8.76146 | 0.2395027 | 2.6872094 | 33 | 2 | 2002–2006 | 0.58 | M-v | 3 | MPC | 03471 | 2002 $VC_{46}$ |
| 2002 $VD_{46}$ | 16.5 | 0.15 | 20060922 | 345.29938 | 335.54807 | 91.70509 | 6.00348 | 0.0767475 | 2.4533619 | 70 | 6 | 1992–2006 | 0.52 | M-v | 1 | MPC | 66291 | 2002 $VD_{46}$ |
| 2002 $VF_{46}$ | 16.5 | 0.15 | 20060922 | 326.32329 | 339.77128 | 95.40588 | 4.99307 | 0.1834133 | 2.5339652 | 54 | 4 | 1994–2006 | 0.60 | M-v | 4 | MPC | 75785 | 2002 $VF_{46}$ |
| 2002 $VP_{46}$ | 15.9 | 0.15 | 20060922 | 300.06172 | 237.10048 | 119.50778 | 3.40262 | 0.2278276 | 3.0033792 | 44 | 4 | 2002–2006 | 0.49 | M-v | 2 | MPC | 02140 | 2002 $VP_{46}$ |
| 2002 $VC_{47}$ | 17.1 | 0.15 | 20060922 | 332.84022 | 308.11075 | 201.17423 | 6.93792 | 0.1232711 | 2.2297197 | 34 | 3 | 1992–2005 | 0.48 | M-v | 4 | MPC | 04240 | 2002 $VC_{47}$ |
| 2002 $VJ_{47}$ | 16.7 | 0.15 | 20060922 | 16.23917 | 230.88894 | 132.46643 | 2.55487 | 0.2908834 | 2.5216079 | 93 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 75786 | 2002 $VJ_{47}$ |
| 2002 $VX_{47}$ | 17.3 | 0.15 | 20060922 | 18.96173 | 273.73548 | 170.51149 | 2.57627 | 0.1601318 | 2.3187839 | 55 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 87557 | 2002 $VX_{47}$ |
| 2002 $VZ_{47}$ | 15.3 | 0.15 | 20060922 | 330.29334 | 204.19628 | 205.20739 | 11.11641 | 0.1680291 | 2.6718488 | 151 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04240 | 2002 $VZ_{47}$ |
| 2002 $VL_{48}$ | 15.1 | 0.15 | 20060922 | 346.25540 | 145.97541 | 241.91319 | 12.69831 | 0.2626863 | 2.6798630 | 88 | 5 | 1993–2006 | 0.43 | M-v | 1 | MPC | 04240 | 2002 $VL_{48}$ |
| 2002 $VO_{48}$ | 16.3 | 0.15 | 20060922 | 58.55949 | 292.28784 | 70.54426 | 7.37743 | 0.1271963 | 2.3984211 | 62 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 89366 | 2002 $VO_{48}$ |
| 2002 $VP_{48}$ | 15.6 | 0.15 | 20060922 | 33.22498 | 270.02168 | 69.98129 | 12.61172 | 0.1962710 | 2.5935478 | 115 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 87557 | 2002 $VP_{48}$ |
| 2002 $VQ_{48}$ | 16.5 | 0.15 | 20060922 | 25.85963 | 208.52033 | 142.41244 | 2.04259 | 0.2695617 | 2.5346886 | 85 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 03471 | 2002 $VQ_{48}$ |
| 2002 $VS_{48}$ | 15.2 | 0.15 | 20060922 | 327.83840 | 181.38091 | 210.56408 | 5.08453 | 0.2945396 | 2.7322168 | 126 | 4 | 1997–2006 | 0.53 | M-v | 1 | MPC | 03471 | 2002 $VS_{48}$ |
| 2002 $VZ_{48}$ | 16.8 | 0.15 | 20060922 | 340.39104 | 228.68149 | 209.16569 | 7.22988 | 0.1826422 | 2.4781011 | 67 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | 41200 | 2002 $VZ_{48}$ |
| 2002 $VL_{49}$ | 15.7 | 0.15 | 20060922 | 21.12629 | 246.79455 | 104.34782 | 5.56198 | 0.2875323 | 2.5436587 | 105 | 4 | 2001–2006 | 0.39 | M-v | 2 | MPC | 75787 | 2002 $VL_{49}$ |
| 2002 $VM_{49}$ | 16.6 | 0.15 | 20060922 | 38.94799 | 217.09839 | 177.70738 | 3.63867 | 0.1900073 | 2.3590370 | 39 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 03471 | 2002 $VM_{49}$ |
| 2002 $VN_{49}$ | 16.3 | 0.15 | 20060922 | 353.49873 | 327.59165 | 95.73547 | 6.02983 | 0.2380662 | 2.4748498 | 92 | 5 | 1998–2006 | 0.50 | M-v | 2 | MPC | 62428 | 2002 $VN_{49}$ |
| 2002 $VO_{49}$ | 16.0 | 0.15 | 20060922 | 314.94809 | 307.14621 | 135.71006 | 4.32885 | 0.1968265 | 2.6039284 | 90 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 61567 | 2002 $VO_{49}$ |
| 2002 $VA_{50}$ | 15.5 | 0.15 | 20060922 | 326.20179 | 327.50251 | 92.34128 | 6.10544 | 0.0761255 | 2.5928381 | 102 | 5 | 1996–2006 | 0.56 | M-v | 1 | MPC | 89367 | 2002 $VA_{50}$ |
| 2002 $VE_{50}$ | 16.8 | 0.15 | 20060922 | 326.45545 | 299.18685 | 89.60608 | 5.93169 | 0.1247589 | 2.7191514 | 34 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 03472 | 2002 $VE_{50}$ |
| 2002 $VH_{50}$ | 16.6 | 0.15 | 20060922 | 34.61491 | 288.71522 | 111.52729 | 4.53642 | 0.1682805 | 2.3447759 | 61 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 87557 | 2002 $VH_{50}$ |
| 2002 $VP_{50}$ | 16.5 | 0.15 | 20060922 | 318.51731 | 349.02750 | 60.48529 | 6.68036 | 0.0653782 | 2.6164570 | 63 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 04240 | 2002 $VP_{50}$ |
| 2002 $VV_{50}$ | 17.0 | 0.15 | 20060922 | 350.18063 | 337.41478 | 83.63208 | 4.25460 | 0.1764319 | 2.4450610 | 47 | 5 | 1992–2006 | 0.46 | M-v | 1 | MPC | 62428 | 2002 $VV_{50}$ |
| 2002 $VA_{51}$ | 15.4 | 0.15 | 20060922 | 287.41671 | 8.63958 | 74.25667 | 7.42764 | 0.1513301 | 2.6765547 | 52 | 4 | 1998–2006 | 0.70 | M-v | 2 | MPC | 61568 | 2002 $VA_{51}$ |
| 2002 $VK_{51}$ | 16.5 | 0.15 | 20060922 | 105.45084 | 230.23238 | 88.05287 | 6.36121 | 0.1843258 | 2.2947398 | 39 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 89367 | 2002 $VK_{51}$ |
| 2002 $VO_{51}$ | 16.0 | 0.15 | 20060922 | 336.61185 | 240.94710 | 130.92346 | 4.75758 | 0.2138763 | 2.6868028 | 58 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03472 | 2002 $VO_{51}$ |
| 2002 $VP_{52}$ | 16.4 | 0.15 | 20060922 | 109.53843 | 253.11044 | 65.29746 | 7.73831 | 0.1302650 | 2.2771705 | 37 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 87557 | 2002 $VP_{52}$ |
| 2002 $VR_{52}$ | 15.7 | 0.15 | 20060922 | 349.90262 | 336.52326 | 18.26335 | 4.36135 | 0.1576839 | 2.7114944 | 63 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03472 | 2002 $VR_{52}$ |
| 2002 $VT_{52}$ | 17.0 | 0.15 | 20060922 | 322.88188 | 39.68186 | 50.16102 | 8.02077 | 0.1077009 | 2.4653267 | 69 | 4 | 1999–2006 | 0.41 | M-v | 2 | MPC | 75788 | 2002 $VT_{52}$ |
| 2002 $VT_{53}$ | 15.4 | 0.15 | 20060922 | 335.81368 | 299.58878 | 78.42776 | 6.90265 | 0.0699105 | 2.6760077 | 56 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04240 | 2002 $VT_{53}$ |
| 2002 $VK_{54}$ | 16.8 | 0.15 | 20060922 | 29.59746 | 213.87151 | 217.10160 | 6.14275 | 0.0922248 | 2.2738145 | 30 | 4 | 2000–2005 | 0.58 | M-v | 2 | MPC | 85734 | 2002 $VK_{54}$ |
| 2002 $VN_{54}$ | 16.4 | 0.15 | 20060922 | 358.96064 | 345.76881 | 4.62344 | 13.70992 | 0.2546890 | 2.6255602 | 74 | 2 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03472 | 2002 $VN_{54}$ |
| 2002 $VP_{54}$ | 16.8 | 0.15 | 20060922 | 113.87732 | 37.58145 | 293.43383 | 7.37531 | 0.2154405 | 2.2097357 | 81 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 85735 | 2002 $VP_{54}$ |
| 2002 $VY_{54}$ | 15.9 | 0.15 | 20060922 | 23.91807 | 356.15369 | 350.31370 | 1.56627 | 0.0945700 | 2.6153790 | 94 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 04240 | 2002 $VY_{54}$ |
| 2002 $VJ_{55}$ | 14.8 | 0.15 | 20060922 | 281.20080 | 279.24525 | 109.92357 | 10.86216 | 0.1062313 | 3.0291924 | 23 | 3 | 2001–2004 | 0.71 | M-v | 4 | MPC | 89368 | 2002 $VJ_{55}$ |
| 2002 $VP_{55}$ | 16.4 | 0.15 | 20060922 | 18.56658 | 36.36403 | 332.73809 | 0.83572 | 0.1633415 | 2.5300509 | 90 | 4 | 2000–2006 | 0.50 | M-v | 3 | MPC | 61572 | 2002 $VP_{55}$ |
| 2002 $VV_{55}$ | 15.8 | 0.15 | 20060922 | 18.37256 | 20.88931 | 342.30974 | 7.38899 | 0.2751098 | 2.5314257 | 54 | 4 | 1998–2006 | 0.62 | M-v | 3 | MPC | 04240 | 2002 $VV_{55}$ |
| 2002 $VY_{55}$ | 17.2 | 0.15 | 20060922 | 76.18085 | 295.10889 | 45.25364 | 3.24970 | 0.1961822 | 2.3629857 | 55 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 41206 | 2002 $VY_{55}$ |
| 2002 $VA_{56}$ | 15.3 | 0.15 | 20060922 | 281.12064 | 310.95217 | 128.80263 | 5.57514 | 0.0897443 | 2.7259125 | 27 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 03472 | 2002 $VA_{56}$ |
| 2002 $VC_{56}$ | 16.0 | 0.15 | 20060922 | 349.58183 | 304.00410 | 74.09688 | 9.66878 | 0.1748552 | 2.6103374 | 86 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 03472 | 2002 $VC_{56}$ |
| 2002 $VG_{56}$ | 16.2 | 0.15 | 20060922 | 345.01328 | 335.97654 | 89.87679 | 7.27436 | 0.1083429 | 2.4646284 | 60 | 5 | 1992–2006 | 0.54 | M-v | 1 | MPC | 65386 | 2002 $VG_{56}$ |
| 2002 $VL_{56}$ | 17.0 | 0.15 | 20060922 | 11.26186 | 341.99275 | 81.03331 | 7.14744 | 0.2298262 | 2.3757102 | 58 | 4 | 1993–2006 | 0.52 | M-v | 2 | MPC | 66292 | 2002 $VL_{56}$ |
| 2002 $VQ_{56}$ | 15.6 | 0.15 | 20060922 | 335.76651 | 164.48158 | 247.40955 | 21.20750 | 0.0886801 | 2.6445552 | 54 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 66292 | 2002 $VQ_{56}$ |
| 2002 $VS_{56}$ | 16.3 | 0.15 | 20060922 | 271.01846 | 259.10749 | 144.27537 | 5.05547 | 0.2606842 | 3.0580607 | 47 | 4 | 1998–2004 | 0.51 | M-v | 1 | MPC | 89368 | 2002 $VS_{56}$ |
| 2002 $VE_{57}$ | 16.6 | 0.15 | 20060922 | 315.87149 | 226.82820 | 155.49382 | 4.04622 | 0.1115055 | 2.7702396 | 35 | 5 | 1993–2006 | 0.51 | M-v | 1 | MPC | 04241 | 2002 $VE_{57}$ |
| 2002 $VL_{57}$ | 15.5 | 0.15 | 20060922 | 243.49550 | 65.50568 | 62.51088 | 13.44739 | 0.1321195 | 2.6865853 | 59 | 4 | 2000–2006 | 0.72 | M-v | 1 | MPC | 85736 | 2002 $VL_{57}$ |
| 2002 $VN_{57}$ | 16.1 | 0.15 | 20060922 | 323.40601 | 290.14787 | 133.78944 | 4.99011 | 0.1393298 | 2.5585430 | 81 | 4 | 1998–2006 | 0.48 | M-v | 3 | MPC | 61574 | 2002 $VN_{57}$ |
| 2002 $VU_{57}$ | 16.4 | 0.15 | 20060922 | 354.49607 | 158.76095 | 194.69327 | 6.25000 | 0.0727891 | 2.7100536 | 57 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 04241 | 2002 $VU_{57}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VV_{57}$ | 15.2 | 0.15 | 20060922 | 261.56052 | 282.52454 | 129.98133 | 5.45162 | 0.1952172 | 2.9878268 | 32 | 3 | 2002–2005 | 0.52 | M-v | 3 | MPC | 69414 | 2002 $VV_{57}$ |
| 2002 $VO_{58}$ | 15.6 | 0.15 | 20060922 | 343.23331 | 258.67117 | 147.42603 | 4.20002 | 0.1893554 | 2.5961693 | 133 | 5 | 1993–2006 | 0.47 | M-v | 1 | MPC | 04241 | 2002 $VO_{58}$ |
| 2002 $VX_{58}$ | 15.6 | 0.15 | 20060922 | 4.14959 | 221.88131 | 128.21519 | 6.18175 | 0.3086155 | 2.6552266 | 111 | 4 | 1996–2006 | 0.45 | M-v | 1 | MPC | 03473 | 2002 $VX_{58}$ |
| 2002 $VM_{59}$ | 15.8 | 0.15 | 20060922 | 272.56812 | 280.93808 | 191.47504 | 12.63423 | 0.1118510 | 2.6351130 | 81 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 61575 | 2002 $VM_{59}$ |
| 2002 $VO_{59}$ | 15.9 | 0.15 | 20060922 | 311.19671 | 313.41448 | 126.15617 | 4.97428 | 0.1253161 | 2.5806521 | 80 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 61575 | 2002 $VO_{59}$ |
| 2002 $VT_{59}$ | 16.0 | 0.15 | 20060922 | 339.74629 | 207.76408 | 155.41991 | 2.12341 | 0.1083572 | 2.7630297 | 48 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04241 | 2002 $VT_{59}$ |
| 2002 $VZ_{59}$ | 15.9 | 0.15 | 20060922 | 78.42378 | 79.31209 | 255.77746 | 3.36676 | 0.1399226 | 2.3791725 | 62 | 6 | 1998–2006 | 0.54 | M-v | 1 | MPC | 77677 | 2002 $VZ_{59}$ |
| 2002 $VA_{60}$ | 15.2 | 0.15 | 20060922 | 23.92077 | 55.68456 | 250.65205 | 6.80754 | 0.2103007 | 2.7519224 | 119 | 5 | 2001–2006 | 0.59 | M-v | 0 | MPC | 04241 | 2002 $VA_{60}$ |
| 2002 $VE_{61}$ | 16.1 | 0.15 | 20060922 | 321.00025 | 123.45777 | 257.18315 | 4.60427 | 0.0789440 | 2.7682257 | 33 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 03473 | 2002 $VE_{61}$ |
| 2002 $VH_{61}$ | 16.0 | 0.15 | 20060922 | 29.64861 | 307.37269 | 4.09960 | 4.90523 | 0.1883755 | 2.6753269 | 96 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 04241 | 2002 $VH_{61}$ |
| 2002 $VQ_{61}$ | 15.7 | 0.15 | 20060922 | 319.07797 | 102.37615 | 322.74076 | 4.05291 | 0.0811624 | 2.5824436 | 100 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 61577 | 2002 $VQ_{61}$ |
| 2002 $VU_{61}$ | 16.4 | 0.15 | 20060922 | 111.89631 | 329.66719 | 354.02537 | 2.88837 | 0.1801750 | 2.2661535 | 68 | 3 | 2002–2005 | 0.53 | M-v | 2 | MPC | 97625 | 2002 $VU_{61}$ |
| 2002 $VF_{62}$ | 16.1 | 0.15 | 20060922 | 86.19866 | 352.09634 | 318.79983 | 1.81427 | 0.1753901 | 2.4378405 | 66 | 7 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87557 | 2002 $VF_{62}$ |
| 2002 $VJ_{62}$ | 15.3 | 0.15 | 20060922 | 108.14783 | 231.96417 | 47.73907 | 14.77504 | 0.1369965 | 2.5326645 | 131 | 3 | 2002–2006 | 0.50 | M-v | 1 | MPC | 85738 | 2002 $VJ_{62}$ |
| 2002 $VP_{62}$ | 16.0 | 0.15 | 20060922 | 314.18522 | 168.07835 | 271.91120 | 6.65397 | 0.1355256 | 2.5821719 | 77 | 3 | 1998–2006 | 0.59 | M-v | 3 | MPC | 41860 | 2002 $VP_{62}$ |
| 2002 $VC_{63}$ | 16.4 | 0.15 | 20060922 | 71.50056 | 53.71891 | 302.63730 | 4.67472 | 0.1906192 | 2.3221278 | 52 | 4 | 1991–2006 | 0.57 | M-v | 3 | MPC | 41212 | 2002 $VC_{63}$ |
| 2002 $VF_{63}$ | 16.4 | 0.15 | 20060922 | 96.86044 | 349.16656 | 342.10048 | 4.75947 | 0.2322013 | 2.2887528 | 56 | 3 | 1997–2004 | 0.53 | M-v | 3 | MPC | 41860 | 2002 $VF_{63}$ |
| 2002 $VO_{63}$ | 15.5 | 0.15 | 20060922 | 293.27709 | 185.74974 | 249.38816 | 9.31667 | 0.2341459 | 2.7466774 | 69 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03473 | 2002 $VO_{63}$ |
| 2002 $VU_{63}$ | 15.3 | 0.15 | 20060922 | 270.67546 | 161.66959 | 283.48709 | 5.35631 | 0.0714949 | 2.7917037 | 82 | 3 | 2002–2006 | 0.64 | M-v | 2 | MPC | 04241 | 2002 $VU_{63}$ |
| 2002 $VX_{63}$ | 16.3 | 0.15 | 20060922 | 53.85601 | 117.32926 | 271.52502 | 5.97473 | 0.1323352 | 2.3095161 | 71 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 85739 | 2002 $VX_{63}$ |
| 2002 $VC_{64}$ | 15.7 | 0.15 | 20060922 | 0.37709 | 97.46120 | 249.61222 | 10.87739 | 0.2370341 | 2.6507114 | 70 | 2 | 2002–2006 | 0.59 | M-v | 3 | MPC | 03473 | 2002 $VC_{64}$ |
| 2002 $VD_{64}$ | 15.9 | 0.15 | 20060922 | 342.60810 | 103.96823 | 345.58620 | 4.69740 | 0.1815645 | 2.4102391 | 78 | 3 | 1998–2006 | 0.52 | M-v | 3 | MPC | 41860 | 2002 $VD_{64}$ |
| 2002 $VN_{64}$ | 14.6 | 0.15 | 20060922 | 283.98242 | 313.04660 | 36.87604 | 24.41383 | 0.1114967 | 3.2119308 | 35 | 1 | 70 days | 0.52 | M-v | 4 | MPC | 48298 | 2002 $VN_{64}$ |
| 2002 $VO_{64}$ | 16.7 | 0.15 | 20060922 | 18.07543 | 329.13728 | 35.98217 | 14.75639 | 0.1191278 | 2.5203992 | 61 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 48298 | 2002 $VO_{64}$ |
| 2002 $VP_{64}$ | 17.1 | 0.15 | 20060922 | 76.17338 | 202.21112 | 160.78843 | 3.00043 | 0.1858429 | 2.2681784 | 39 | 3 | 2002–2005 | 0.63 | M-v | 4 | MPC | 85739 | 2002 $VP_{64}$ |
| 2002 $VA_{65}$ | 16.1 | 0.15 | 20060922 | 295.84543 | 98.46804 | 338.36544 | 8.84726 | 0.1750112 | 2.6619653 | 56 | 4 | 1995–2006 | 0.48 | M-v | 3 | MPC | 04241 | 2002 $VA_{65}$ |
| 2002 $VM_{65}$ | 16.3 | 0.15 | 20060922 | 2.03688 | 144.63428 | 212.02243 | 12.51257 | 0.2073783 | 2.6220601 | 103 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 03474 | 2002 $VM_{65}$ |
| 2002 $VS_{65}$ | 17.2 | 0.15 | 20060922 | 321.54082 | 89.48543 | 315.32148 | 7.64969 | 0.3077700 | 2.6530404 | 36 | 2 | 2002–2006 | 0.56 | M-v | 3 | MPC | 03474 | 2002 $VS_{65}$ |
| 2002 $VE_{66}$ | 15.4 | 0.15 | 20060922 | 293.15881 | 88.67786 | 56.77188 | 26.89743 | 0.3844385 | 2.5390155 | 127 | 3 | 1998–2006 | 0.55 | M-v | 3 | MPC | 50710 | 2002 $VE_{66}$ |
| 2002 $VF_{67}$ | 16.2 | 0.15 | 20060922 | 325.83608 | 203.48665 | 213.78522 | 4.44067 | 0.1827793 | 2.5848934 | 96 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 61581 | 2002 $VF_{67}$ |
| 2002 $VG_{67}$ | 16.8 | 0.15 | 20060922 | 325.21012 | 28.02174 | 49.07806 | 5.50382 | 0.1140800 | 2.5154976 | 82 | 6 | 1996–2006 | 0.41 | M-v | 2 | MPC | 62429 | 2002 $VG_{67}$ |
| 2002 $VQ_{67}$ | 15.6 | 0.15 | 20060922 | 327.07333 | 24.97515 | 4.86463 | 10.11777 | 0.2201468 | 2.7122184 | 92 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04241 | 2002 $VQ_{67}$ |
| 2002 $VD_{68}$ | 15.1 | 0.15 | 20060922 | 16.18120 | 99.47255 | 248.74751 | 11.64622 | 0.2191287 | 2.6194410 | 116 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 04241 | 2002 $VD_{68}$ |
| 2002 $VR_{68}$ | 15.5 | 0.15 | 20060922 | 352.99962 | 18.41086 | 307.69986 | 8.69101 | 0.1554904 | 2.8084278 | 56 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04241 | 2002 $VR_{68}$ |
| 2002 $VA_{69}$ | 15.9 | 0.15 | 20060922 | 311.08995 | 130.16749 | 292.22556 | 10.72357 | 0.1709975 | 2.6268419 | 76 | 5 | 1994–2006 | 0.63 | M-v | 2 | MPC | 62429 | 2002 $VA_{69}$ |
| 2002 $VB_{69}$ | 16.4 | 0.15 | 20060922 | 314.64372 | 226.51593 | 284.03999 | 4.66235 | 0.0456696 | 2.2392638 | 78 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87558 | 2002 $VB_{69}$ |
| 2002 $VJ_{69}$ | 16.0 | 0.15 | 20060922 | 331.54374 | 102.19293 | 310.16520 | 2.68845 | 0.2760431 | 2.6019453 | 164 | 3 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04241 | 2002 $VJ_{69}$ |
| 2002 $VL_{69}$ | 16.2 | 0.15 | 20060922 | 5.28355 | 65.99125 | 292.55648 | 3.85785 | 0.3071689 | 2.5794904 | 124 | 3 | 1998–2006 | 0.46 | M-v | 2 | MPC | 04241 | 2002 $VL_{69}$ |
| 2002 $VY_{69}$ | 15.8 | 0.15 | 20060922 | 339.72496 | 315.80093 | 46.91666 | 14.43664 | 0.3183965 | 2.6499312 | 61 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03474 | 2002 $VY_{69}$ |
| 2002 $VV_{70}$ | 16.9 | 0.15 | 20060922 | 75.10028 | 290.27658 | 79.36736 | 5.53208 | 0.1742628 | 2.2558881 | 71 | 4 | 1995–2005 | 0.57 | M-v | 1 | MPC | 87558 | 2002 $VV_{70}$ |
| 2002 $VA_{71}$ | 16.0 | 0.15 | 20060922 | 38.49975 | 227.02646 | 95.23117 | 6.47827 | 0.2602526 | 2.5305636 | 67 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 87558 | 2002 $VA_{71}$ |
| 2002 $VF_{71}$ | 17.0 | 0.15 | 20060922 | 348.19625 | 148.36205 | 215.43104 | 17.04691 | 0.2259910 | 2.6533297 | 48 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04241 | 2002 $VF_{71}$ |
| 2002 $VL_{71}$ | 16.2 | 0.15 | 20060922 | 51.44696 | 220.89285 | 112.74564 | 4.29059 | 0.2180359 | 2.4521043 | 58 | 7 | 1994–2006 | 0.55 | M-v | 1 | MPC | 77678 | 2002 $VL_{71}$ |
| 2002 $VS_{71}$ | 16.7 | 0.15 | 20060922 | 44.52716 | 210.06109 | 180.20860 | 2.74645 | 0.1626547 | 2.3246087 | 52 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 87558 | 2002 $VS_{71}$ |
| 2002 $VU_{71}$ | 15.9 | 0.15 | 20060922 | 104.01665 | 195.23779 | 79.27910 | 7.02509 | 0.1159138 | 2.5496916 | 54 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 85741 | 2002 $VU_{71}$ |
| 2002 $VV_{71}$ | 17.1 | 0.15 | 20060922 | 47.35321 | 247.76737 | 104.01836 | 3.54021 | 0.2330542 | 2.4104042 | 48 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 75792 | 2002 $VV_{71}$ |
| 2002 $VF_{72}$ | 16.7 | 0.15 | 20060922 | 344.37874 | 240.69708 | 134.00309 | 3.52840 | 0.1184697 | 2.6762372 | 43 | 6 | 1996–2006 | 0.49 | M-v | 0 | MPC | 77678 | 2002 $VF_{72}$ |
| 2002 $VN_{72}$ | 17.1 | 0.15 | 20060922 | 80.52658 | 167.80460 | 203.33135 | 6.23017 | 0.1216048 | 2.2576532 | 34 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 89370 | 2002 $VN_{72}$ |
| 2002 $VR_{72}$ | 16.2 | 0.15 | 20060922 | 332.39547 | 313.16150 | 136.34766 | 4.31792 | 0.1730398 | 2.4578132 | 79 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87558 | 2002 $VR_{72}$ |
| 2002 $VS_{72}$ | 16.7 | 0.15 | 20060922 | 102.24372 | 255.81500 | 82.73745 | 7.63637 | 0.1492200 | 2.2676455 | 51 | 3 | 2002–2005 | 0.39 | M-v | 3 | MPC | 85742 | 2002 $VS_{72}$ |
| 2002 $VT_{72}$ | 16.4 | 0.15 | 20060922 | 263.19746 | 308.86915 | 103.08219 | 6.19140 | 0.1283280 | 3.0147213 | 22 | 4 | 2000–2005 | 0.51 | M-v | 1 | MPC | 41222 | 2002 $VT_{72}$ |
| 2002 $VY_{72}$ | 16.7 | 0.15 | 20060922 | 303.24861 | 263.80065 | 191.44976 | 8.25490 | 0.1305361 | 2.5681563 | 46 | 5 | 1996–2006 | 0.40 | M-v | 1 | MPC | 62429 | 2002 $VY_{72}$ |
| 2002 $VA_{73}$ | 16.8 | 0.15 | 20060922 | 11.86927 | 322.80547 | 105.51377 | 4.53783 | 0.1304331 | 2.3529955 | 46 | 6 | 1997–2006 | 0.46 | M-v | 1 | MPC | 87558 | 2002 $VA_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VM_{73}$ | 16.9 | 0.15 | 20060922 | 335.94266 | 233.53320 | 161.22802 | 4.20594 | 0.1889470 | 2.6353127 | 71 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 04241 | 2002 $VM_{73}$ |
| 2002 $VR_{73}$ | 16.9 | 0.15 | 20060922 | 47.80347 | 212.29466 | 144.79858 | 3.68379 | 0.2316130 | 2.4058646 | 35 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 89370 | 2002 $VR_{73}$ |
| 2002 $VV_{73}$ | 16.2 | 0.15 | 20060922 | 318.37380 | 330.44989 | 70.89076 | 3.97190 | 0.0899860 | 2.6624085 | 46 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 04241 | 2002 $VV_{73}$ |
| 2002 $VN_{74}$ | 16.2 | 0.15 | 20060922 | 299.59069 | 349.77686 | 69.46140 | 7.02753 | 0.1164190 | 2.7194634 | 34 | 3 | 2002–2006 | 0.70 | M-v | 3 | MPC | 04241 | 2002 $VN_{74}$ |
| 2002 $VV_{74}$ | 16.6 | 0.15 | 20060922 | 292.02381 | 249.36872 | 169.37435 | 4.75912 | 0.0634399 | 2.7696685 | 52 | 6 | 2000–2006 | 0.50 | M-v | 0 | MPC | 04241 | 2002 $VV_{74}$ |
| 2002 $VE_{75}$ | 16.1 | 0.15 | 20060922 | 329.86178 | 43.46970 | 70.07089 | 8.84691 | 0.0728635 | 2.3537131 | 51 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 75792 | 2002 $VE_{75}$ |
| 2002 $VL_{75}$ | 16.2 | 0.15 | 20060922 | 2.29065 | 264.81900 | 98.74010 | 4.10204 | 0.1899279 | 2.6137243 | 96 | 4 | 1996–2006 | 0.49 | M-v | 2 | MPC | 89370 | 2002 $VL_{75}$ |
| 2002 $VS_{75}$ | 15.2 | 0.15 | 20060922 | 279.23781 | 282.80909 | 116.10749 | 5.84109 | 0.0919203 | 2.9938016 | 52 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 66292 | 2002 $VS_{75}$ |
| 2002 $VV_{75}$ | 15.9 | 0.15 | 20060922 | 303.00330 | 333.68193 | 89.95434 | 5.56638 | 0.1931365 | 2.6496560 | 49 | 4 | 1998–2006 | 0.78 | M-v | 2 | MPC | 04241 | 2002 $VV_{75}$ |
| 2002 $VG_{76}$ | 15.7 | 0.15 | 20060922 | 248.17533 | 353.64417 | 124.33103 | 5.81878 | 0.0629513 | 2.7198419 | 60 | 3 | 2002–2006 | 0.67 | M-v | 2 | MPC | 04241 | 2002 $VG_{76}$ |
| 2002 $VQ_{76}$ | 16.5 | 0.15 | 20060922 | 27.07172 | 262.21822 | 115.42804 | 5.36025 | 0.2016389 | 2.4426770 | 36 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 62429 | 2002 $VQ_{76}$ |
| 2002 $VR_{76}$ | 16.2 | 0.15 | 20060922 | 102.45244 | 233.66528 | 80.85486 | 10.02713 | 0.2166937 | 2.3376103 | 29 | 3 | 2002–2006 | 0.38 | M-v | 4 | MPC | 03474 | 2002 $VR_{76}$ |
| 2002 $VJ_{77}$ | 16.3 | 0.15 | 20060922 | 320.79031 | 346.24774 | 64.30806 | 14.80292 | 0.0677610 | 2.6795096 | 44 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 61589 | 2002 $VJ_{77}$ |
| 2002 $VR_{77}$ | 16.3 | 0.15 | 20060922 | 345.47358 | 256.09268 | 157.63531 | 3.93100 | 0.2258235 | 2.5318136 | 119 | 3 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04241 | 2002 $VR_{77}$ |
| 2002 $VU_{77}$ | 16.7 | 0.15 | 20060922 | 35.10441 | 296.46465 | 106.80712 | 4.96551 | 0.2425479 | 2.3372207 | 70 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 87558 | 2002 $VU_{77}$ |
| 2002 $VY_{77}$ | 15.7 | 0.15 | 20060922 | 314.33365 | 253.52580 | 176.91034 | 6.68291 | 0.1112010 | 2.6277345 | 94 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04241 | 2002 $VY_{77}$ |
| 2002 $VL_{78}$ | 16.1 | 0.15 | 20060922 | 13.23641 | 240.36178 | 137.62020 | 2.79799 | 0.1476823 | 2.5350290 | 93 | 4 | 1998–2006 | 0.48 | M-v | 3 | MPC | 75793 | 2002 $VL_{78}$ |
| 2002 $VM_{78}$ | 16.3 | 0.15 | 20060922 | 90.31151 | 238.76015 | 74.74092 | 8.76362 | 0.2185391 | 2.4072570 | 35 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 72733 | 2002 $VM_{78}$ |
| 2002 $VN_{78}$ | 16.3 | 0.15 | 20060922 | 12.13126 | 264.75472 | 90.49975 | 6.21144 | 0.1932290 | 2.6126717 | 52 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 75793 | 2002 $VN_{78}$ |
| 2002 $VR_{78}$ | 16.0 | 0.15 | 20060922 | 298.54359 | 250.72887 | 170.12089 | 3.86074 | 0.1827413 | 2.7729156 | 57 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04241 | 2002 $VR_{78}$ |
| 2002 $VV_{78}$ | 16.8 | 0.15 | 20060922 | 51.86547 | 241.08553 | 127.19635 | 3.84013 | 0.2165181 | 2.3700874 | 62 | 6 | 1991–2006 | 0.53 | M-v | 1 | MPC | 62429 | 2002 $VV_{78}$ |
| 2002 $VX_{78}$ | 15.9 | 0.15 | 20060922 | 44.02231 | 234.03373 | 143.38773 | 3.75533 | 0.1371514 | 2.3986892 | 48 | 5 | 1996–2006 | 0.48 | M-v | 2 | MPC | 66292 | 2002 $VX_{78}$ |
| 2002 $VG_{79}$ | 16.1 | 0.15 | 20060922 | 38.48820 | 237.22513 | 122.90576 | 5.80281 | 0.2142370 | 2.4573919 | 54 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 87558 | 2002 $VG_{79}$ |
| 2002 $VL_{79}$ | 17.2 | 0.15 | 20060922 | 26.42546 | 237.10416 | 171.98076 | 2.59257 | 0.1935112 | 2.3666462 | 29 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 85743 | 2002 $VL_{79}$ |
| 2002 $VM_{79}$ | 15.8 | 0.15 | 20060922 | 4.70939 | 137.34738 | 223.87584 | 12.03783 | 0.0812162 | 2.6887494 | 56 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 89371 | 2002 $VM_{79}$ |
| 2002 $VU_{79}$ | 16.5 | 0.15 | 20060922 | 27.28392 | 320.36633 | 93.57549 | 6.93524 | 0.1381654 | 2.3548789 | 48 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 87558 | 2002 $VU_{79}$ |
| 2002 $VX_{79}$ | 15.2 | 0.15 | 20060922 | 81.13459 | 192.41074 | 132.35329 | 5.36510 | 0.1015995 | 2.4650992 | 97 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62430 | 2002 $VX_{79}$ |
| 2002 $VZ_{79}$ | 16.2 | 0.15 | 20060922 | 99.85533 | 224.41556 | 134.99898 | 5.16631 | 0.1127886 | 2.2480060 | 98 | 6 | 1998–2006 | 0.49 | M-v | 1 | MPC | 90163 | 2002 $VZ_{79}$ |
| 2002 $VD_{80}$ | 16.8 | 0.15 | 20060922 | 38.12593 | 316.59968 | 73.23659 | 7.86945 | 0.1237660 | 2.3916523 | 32 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 65388 | 2002 $VD_{80}$ |
| 2002 $VG_{80}$ | 16.6 | 0.15 | 20060922 | 19.45002 | 280.73069 | 135.31448 | 3.39848 | 0.1073781 | 2.3863554 | 60 | 5 | 1991–2006 | 0.50 | M-v | 1 | MPC | 85743 | 2002 $VG_{80}$ |
| 2002 $VJ_{80}$ | 15.6 | 0.15 | 20060922 | 320.20009 | 320.17352 | 79.05371 | 10.08860 | 0.1817464 | 2.7386633 | 29 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03475 | 2002 $VJ_{80}$ |
| 2002 $VM_{80}$ | 17.4 | 0.15 | 20060922 | 78.52942 | 289.08344 | 101.51377 | 7.05049 | 0.0916277 | 2.2395686 | 71 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87558 | 2002 $VM_{80}$ |
| 2002 $VR_{80}$ | 16.6 | 0.15 | 20060922 | 40.15346 | 265.34057 | 91.85971 | 5.94511 | 0.2936089 | 2.4379658 | 39 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 77678 | 2002 $VR_{80}$ |
| 2002 $VS_{80}$ | 15.6 | 0.15 | 20060922 | 343.02589 | 280.96137 | 113.23527 | 5.48655 | 0.1383477 | 2.6455932 | 113 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 61591 | 2002 $VS_{80}$ |
| 2002 $VT_{80}$ | 16.5 | 0.15 | 20060922 | 350.67721 | 167.71291 | 186.47176 | 5.14202 | 0.2998270 | 2.6984547 | 84 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04241 | 2002 $VT_{80}$ |
| 2002 $VV_{80}$ | 16.3 | 0.15 | 20060922 | 9.86290 | 147.47536 | 218.18826 | 7.16491 | 0.2527186 | 2.5786716 | 90 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 04241 | 2002 $VV_{80}$ |
| 2002 $VC_{81}$ | 14.5 | 0.15 | 20060922 | 243.87138 | 213.62344 | 217.43956 | 13.14056 | 0.1475273 | 3.1451463 | 62 | 4 | 2001–2005 | 0.71 | M-v | 1 | MPC | 62430 | 2002 $VC_{81}$ |
| 2002 $VF_{81}$ | 16.7 | 0.15 | 20060922 | 333.07863 | 313.61784 | 155.53945 | 2.32542 | 0.1477081 | 2.4254646 | 52 | 7 | 1994–2006 | 0.62 | M-v | 1 | MPC | 87558 | 2002 $VF_{81}$ |
| 2002 $VN_{81}$ | 15.7 | 0.15 | 20060922 | 300.06153 | 54.53467 | 91.83938 | 10.58693 | 0.1795493 | 2.4475554 | 69 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 66293 | 2002 $VN_{81}$ |
| 2002 $VQ_{81}$ | 15.6 | 0.15 | 20060922 | 309.32404 | 321.73444 | 138.49473 | 5.80354 | 0.2189780 | 2.5916195 | 106 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 85743 | 2002 $VQ_{81}$ |
| 2002 $VP_{82}$ | 16.6 | 0.15 | 20060922 | 342.26968 | 302.35480 | 88.01087 | 7.99442 | 0.3715256 | 2.6315960 | 101 | 2 | 2002–2006 | 0.44 | M-v | 2 | MPC | 03475 | 2002 $VP_{82}$ |
| 2002 $VX_{82}$ | 16.5 | 0.15 | 20060922 | 302.37854 | 355.10908 | 106.57970 | 4.87286 | 0.1383199 | 2.5655244 | 42 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 72733 | 2002 $VX_{82}$ |
| 2002 $VB_{83}$ | 15.9 | 0.15 | 20060922 | 313.44269 | 200.31649 | 199.90710 | 4.33857 | 0.1630402 | 2.7702250 | 49 | 5 | 1997–2006 | 0.75 | M-v | 1 | MPC | 04242 | 2002 $VB_{83}$ |
| 2002 $VD_{83}$ | 15.3 | 0.15 | 20060922 | 208.32445 | 338.49384 | 150.40731 | 4.53615 | 0.1704489 | 3.0625396 | 132 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04242 | 2002 $VD_{83}$ |
| 2002 $VJ_{83}$ | 15.8 | 0.15 | 20060922 | 16.80615 | 286.21545 | 69.10158 | 26.66653 | 0.0779819 | 2.6743052 | 57 | 5 | 1996–2006 | 0.62 | M-v | 1 | MPC | 89371 | 2002 $VJ_{83}$ |
| 2002 $VN_{83}$ | 16.1 | 0.15 | 20060922 | 349.79677 | 261.25101 | 133.43637 | 5.80937 | 0.1499609 | 2.6069596 | 66 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 03475 | 2002 $VN_{83}$ |
| 2002 $VT_{83}$ | 19.3 | 0.15 | 20060922 | 347.28427 | 282.20989 | 97.81716 | 13.65917 | 0.0393323 | 2.7703002 | 59 | 5 | 1993–2006 | 0.79 | M-v | 1 | MPC | 85744 | 2002 $VT_{83}$ |
| 2002 $VV_{83}$ | 14.9 | 0.15 | 20060922 | 14.85106 | 144.88553 | 230.30304 | 12.85030 | 0.1952708 | 2.5822410 | 152 | 2 | 2002–2006 | 0.44 | M-v | 2 | MPC | 03475 | 2002 $VV_{83}$ |
| 2002 $VW_{83}$ | 14.7 | 0.15 | 20060922 | 29.62553 | 267.91819 | 97.55782 | 6.16969 | 0.1698181 | 2.5618626 | 148 | 4 | 1998–2006 | 0.49 | M-v | 3 | MPC | 61594 | 2002 $VW_{83}$ |
| 2002 $VC_{84}$ | 15.0 | 0.15 | 20060922 | 18.31576 | 155.49040 | 223.65001 | 12.62281 | 0.2242778 | 2.5362653 | 73 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 03475 | 2002 $VC_{84}$ |
| 2002 $VF_{84}$ | 14.7 | 0.15 | 20060922 | 17.17401 | 292.67318 | 98.35822 | 14.67919 | 0.1909541 | 2.5308697 | 106 | 6 | 1995–2006 | 0.55 | M-v | 2 | MPC | 62430 | 2002 $VF_{84}$ |
| 2002 $VR_{84}$ | 14.9 | 0.15 | 20060922 | 0.43171 | 22.14843 | 108.99800 | 21.41316 | 0.1532385 | 2.3529513 | 124 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 90163 | 2002 $VR_{84}$ |
| 2002 $VV_{84}$ | 15.9 | 0.15 | 20060922 | 328.10940 | 254.97593 | 199.72654 | 3.75478 | 0.2372334 | 2.5801373 | 81 | 5 | 1999–2006 | 0.38 | M-v | 1 | MPC | 87558 | 2002 $VV_{84}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VY_{84}$ | 16.6 | 0.15 | 20060922 | 357.27874 | 282.60536 | 153.77291 | 2.46068 | 0.1624302 | 2.3738647 | 61 | 6 | 1998–2006 | 0.61 | M-v | 1 | MPC | 87558 | 2002 $VY_{84}$ |
| 2002 $VM_{85}$ | 16.6 | 0.15 | 20060922 | 55.92730 | 27.44926 | 312.35979 | 4.33442 | 0.1250586 | 2.4462730 | 59 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62430 | 2002 $VM_{85}$ |
| 2002 $VQ_{85}$ | 15.3 | 0.15 | 20060922 | 13.73472 | 102.18472 | 267.80371 | 27.16234 | 0.3843891 | 2.6178592 | 48 | 2 | 2002–2006 | 0.57 | M-v | 2 | MPC | 00400 | 2002 $VQ_{85}$ |
| 2002 $VJ_{86}$ | 17.1 | 0.15 | 20060922 | 13.00345 | 139.32851 | 290.02632 | 2.05152 | 0.1439815 | 2.3183154 | 42 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 85745 | 2002 $VJ_{86}$ |
| 2002 $VK_{86}$ | 16.6 | 0.15 | 20060922 | 351.69465 | 20.35719 | 328.64099 | 4.02906 | 0.1232634 | 2.7249362 | 48 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 04242 | 2002 $VK_{86}$ |
| 2002 $VP_{86}$ | 15.7 | 0.15 | 20060922 | 53.48178 | 27.93402 | 287.57998 | 4.22047 | 0.1775481 | 2.5498786 | 76 | 5 | 2001–2006 | 0.44 | M-v | 0 | MPC | 75795 | 2002 $VP_{86}$ |
| 2002 $VR_{86}$ | 16.3 | 0.15 | 20060922 | 268.14571 | 236.21779 | 267.41718 | 3.51506 | 0.2064033 | 2.5525937 | 53 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 69415 | 2002 $VR_{86}$ |
| 2002 $VS_{86}$ | 16.8 | 0.15 | 20060922 | 329.73869 | 88.23403 | 325.24596 | 2.96969 | 0.1786877 | 2.5927767 | 46 | 3 | 1960–2006 | 0.47 | M-v | 4 | MPC | 41239 | 2002 $VS_{86}$ |
| 2002 $VE_{87}$ | 15.8 | 0.15 | 20060922 | 343.18662 | 336.78212 | 27.58616 | 9.59272 | 0.1099764 | 2.7699689 | 54 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 04242 | 2002 $VE_{87}$ |
| 2002 $VH_{87}$ | 15.3 | 0.15 | 20060922 | 328.34480 | 159.79058 | 247.55008 | 12.50116 | 0.1557419 | 2.6441083 | 78 | 3 | 1997–2006 | 0.51 | M-v | 2 | MPC | 41240 | 2002 $VH_{87}$ |
| 2002 $VS_{87}$ | 16.0 | 0.15 | 20060922 | 302.26484 | 130.36041 | 281.39387 | 3.90906 | 0.1666369 | 2.7847292 | 62 | 2 | 2002–2006 | 0.43 | M-v | 3 | MPC | 03476 | 2002 $VS_{87}$ |
| 2002 $VG_{88}$ | 17.5 | 0.15 | 20060922 | 13.03720 | 109.74168 | 321.03756 | 1.58877 | 0.1874794 | 2.3242371 | 43 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 87558 | 2002 $VG_{88}$ |
| 2002 $VK_{88}$ | 15.2 | 0.15 | 20060922 | 35.54229 | 89.06289 | 259.65801 | 9.41351 | 0.1492028 | 2.5925422 | 131 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 87558 | 2002 $VK_{88}$ |
| 2002 $VL_{88}$ | 16.0 | 0.15 | 20060922 | 335.13270 | 111.93945 | 317.89758 | 2.02729 | 0.1234864 | 2.5709248 | 114 | 5 | 1993–2006 | 0.48 | M-v | 1 | MPC | 66293 | 2002 $VL_{88}$ |
| 2002 $VP_{88}$ | 15.8 | 0.15 | 20060922 | 281.65981 | 27.12749 | 70.38349 | 13.40192 | 0.1250251 | 2.6935464 | 65 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 66293 | 2002 $VP_{88}$ |
| 2002 $VV_{88}$ | 17.2 | 0.15 | 20060922 | 11.41789 | 90.60280 | 320.56408 | 2.58701 | 0.2008270 | 2.4184792 | 55 | 5 | 1992–2006 | 0.52 | M-v | 1 | MPC | 62430 | 2002 $VV_{88}$ |
| 2002 $VX_{88}$ | 15.9 | 0.15 | 20060922 | 95.26741 | 21.54144 | 290.43009 | 4.63665 | 0.1885382 | 2.3876200 | 46 | 5 | 1994–2006 | 0.60 | M-v | 2 | MPC | 62430 | 2002 $VX_{88}$ |
| 2002 $VD_{89}$ | 16.3 | 0.15 | 20060922 | 125.97848 | 27.82507 | 280.68474 | 5.84836 | 0.1192586 | 2.2985523 | 59 | 5 | 1997–2006 | 0.50 | M-v | 1 | MPC | 85746 | 2002 $VD_{89}$ |
| 2002 $VE_{89}$ | 15.5 | 0.15 | 20060922 | 109.19922 | 272.80237 | 14.32666 | 5.74981 | 0.1151187 | 2.4650521 | 61 | 4 | 1998–2006 | 0.62 | M-v | 2 | MPC | 62430 | 2002 $VE_{89}$ |
| 2002 $VK_{89}$ | 16.6 | 0.15 | 20060922 | 340.44424 | 278.78542 | 137.04695 | 4.99084 | 0.1912641 | 2.5795124 | 67 | 5 | 1991–2006 | 0.45 | M-v | 2 | MPC | 62430 | 2002 $VK_{89}$ |
| 2002 $VM_{89}$ | 15.7 | 0.15 | 20060922 | 332.66758 | 253.19571 | 216.19067 | 13.23051 | 0.1939982 | 2.4781049 | 48 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 89372 | 2002 $VM_{89}$ |
| 2002 $VO_{89}$ | 15.9 | 0.15 | 20060922 | 335.48517 | 126.19389 | 20.84532 | 23.26584 | 0.2241721 | 2.3804888 | 34 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 90163 | 2002 $VO_{89}$ |
| 2002 $VT_{89}$ | 15.7 | 0.15 | 20060922 | 274.41902 | 208.22774 | 232.56984 | 8.49204 | 0.1507483 | 2.7374008 | 66 | 3 | 2002–2006 | 0.64 | M-v | 2 | MPC | 04242 | 2002 $VT_{89}$ |
| 2002 $VU_{89}$ | 16.3 | 0.15 | 20060922 | 27.59459 | 106.28231 | 281.89750 | 2.81861 | 0.0935982 | 2.3791054 | 65 | 5 | 1991–2006 | 0.51 | M-v | 1 | MPC | 62430 | 2002 $VU_{89}$ |
| 2002 $VC_{90}$ | 17.0 | 0.15 | 20060922 | 134.53904 | 258.91542 | 67.19256 | 5.35910 | 0.1207671 | 2.2046064 | 44 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 85746 | 2002 $VC_{90}$ |
| 2002 $VF_{90}$ | 16.4 | 0.15 | 20060922 | 287.32696 | 0.58731 | 111.31482 | 3.54865 | 0.1487938 | 2.5811076 | 47 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 69415 | 2002 $VF_{90}$ |
| 2002 $VJ_{90}$ | 15.5 | 0.15 | 20060922 | 14.51952 | 275.09284 | 88.30826 | 16.22221 | 0.1456779 | 2.5970233 | 60 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 89372 | 2002 $VJ_{90}$ |
| 2002 $VT_{91}$ | 16.2 | 0.15 | 20060922 | 106.26081 | 83.83045 | 255.35536 | 5.65949 | 0.1318088 | 2.2848401 | 118 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 90163 | 2002 $VT_{91}$ |
| 2002 $VU_{91}$ | 16.4 | 0.15 | 20060922 | 356.48802 | 32.04971 | 328.13264 | 6.70186 | 0.2050151 | 2.6426833 | 68 | 2 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03476 | 2002 $VU_{91}$ |
| 2002 $VG_{92}$ | 15.0 | 0.15 | 20060922 | 338.95323 | 100.93636 | 320.16306 | 20.69010 | 0.1857436 | 2.5782461 | 60 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 62430 | 2002 $VG_{92}$ |
| 2002 $VM_{92}$ | 16.0 | 0.15 | 20060922 | 294.24863 | 198.05398 | 288.79535 | 3.89843 | 0.1314219 | 2.4402712 | 70 | 6 | 1991–2006 | 0.62 | M-v | 1 | MPC | 87559 | 2002 $VM_{92}$ |
| 2002 $VN_{92}$ | 16.8 | 0.15 | 20060922 | 348.00498 | 219.38506 | 213.40484 | 4.02313 | 0.1124976 | 2.4448757 | 45 | 5 | 1994–2006 | 0.47 | M-v | 1 | MPC | 87559 | 2002 $VN_{92}$ |
| 2002 $VP_{92}$ | 15.5 | 0.15 | 20060922 | 226.59263 | 39.95931 | 100.45672 | 3.05484 | 0.0718176 | 2.7418666 | 64 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 61599 | 2002 $VP_{92}$ |
| 2002 $VQ_{92}$ | 15.1 | 0.15 | 20060922 | 172.42253 | 66.59262 | 113.64680 | 4.89484 | 0.0895787 | 2.8355604 | 62 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 66293 | 2002 $VQ_{92}$ |
| 2002 $VX_{92}$ | 16.3 | 0.15 | 20060922 | 41.19589 | 269.06450 | 66.26075 | 15.89341 | 0.1853394 | 2.5426528 | 84 | 5 | 1998–2006 | 0.54 | M-v | 0 | MPC | 87559 | 2002 $VX_{92}$ |
| 2002 $VY_{92}$ | 15.3 | 0.15 | 20060922 | 345.02768 | 276.73801 | 76.41305 | 9.93961 | 0.1680085 | 2.7803541 | 68 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03476 | 2002 $VY_{92}$ |
| 2002 $VB_{93}$ | 16.4 | 0.15 | 20060922 | 73.69515 | 262.37285 | 65.38219 | 6.35331 | 0.1934180 | 2.4167033 | 45 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 77679 | 2002 $VB_{93}$ |
| 2002 $VJ_{93}$ | 16.2 | 0.15 | 20060922 | 302.58268 | 290.68169 | 170.34953 | 3.80323 | 0.0893152 | 2.5486473 | 64 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87559 | 2002 $VJ_{93}$ |
| 2002 $VS_{93}$ | 16.5 | 0.15 | 20060922 | 13.23749 | 164.69477 | 275.08746 | 5.42448 | 0.0770233 | 2.3189155 | 65 | 6 | 1998–2006 | 0.46 | M-v | 1 | MPC | 87559 | 2002 $VS_{93}$ |
| 2002 $VY_{93}$ | 16.8 | 0.15 | 20060922 | 107.79709 | 343.58059 | 344.43389 | 2.73868 | 0.1925899 | 2.2908530 | 87 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 97626 | 2002 $VY_{93}$ |
| 2002 $VH_{94}$ | 14.9 | 0.15 | 20060922 | 19.33623 | 86.54680 | 255.88929 | 11.43181 | 0.2278790 | 2.6440527 | 142 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 41245 | 2002 $VH_{94}$ |
| 2002 $VY_{95}$ | 15.2 | 0.15 | 20060922 | 5.16354 | 350.35959 | 345.24969 | 6.70141 | 0.1289438 | 2.7694924 | 138 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04242 | 2002 $VY_{95}$ |
| 2002 $VD_{96}$ | 16.9 | 0.15 | 20060922 | 358.14975 | 131.30239 | 329.42265 | 5.09592 | 0.1615977 | 2.3063294 | 44 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 90163 | 2002 $VD_{96}$ |
| 2002 $VO_{96}$ | 15.4 | 0.15 | 20060922 | 323.61932 | 133.97291 | 255.26920 | 10.02117 | 0.1288475 | 2.7049531 | 73 | 4 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04242 | 2002 $VO_{96}$ |
| 2002 $VZ_{96}$ | 15.6 | 0.15 | 20060922 | 259.11000 | 100.68838 | 9.01022 | 12.52925 | 0.1848802 | 2.7818470 | 31 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 72734 | 2002 $VZ_{96}$ |
| 2002 $VC_{97}$ | 15.3 | 0.15 | 20060922 | 250.54883 | 177.76350 | 329.83183 | 7.99115 | 0.2338163 | 2.6630319 | 38 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 66293 | 2002 $VC_{97}$ |
| 2002 $VL_{97}$ | 16.5 | 0.15 | 20060922 | 282.37111 | 90.97064 | 342.30965 | 4.87574 | 0.0713318 | 2.7522976 | 32 | 4 | 1997–2006 | 0.59 | M-v | 1 | MPC | 61602 | 2002 $VL_{97}$ |
| 2002 $VQ_{97}$ | 17.5 | 0.15 | 20060922 | 20.81784 | 17.44960 | 27.51745 | 3.23724 | 0.1205942 | 2.4020729 | 38 | 4 | 1996–2006 | 0.58 | M-v | 1 | MPC | 50712 | 2002 $VQ_{97}$ |
| 2002 $VR_{97}$ | 16.4 | 0.15 | 20060922 | 317.69821 | 147.16800 | 19.37171 | 3.64437 | 0.0581509 | 2.2107782 | 117 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 90163 | 2002 $VR_{97}$ |
| 2002 $VS_{97}$ | 16.1 | 0.15 | 20060922 | 337.48360 | 46.06021 | 37.72020 | 5.42843 | 0.0866177 | 2.4575890 | 53 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 66293 | 2002 $VS_{97}$ |
| 2002 $VB_{98}$ | 15.5 | 0.15 | 20060922 | 290.11715 | 53.03594 | 7.88948 | 6.06914 | 0.1075976 | 2.7334464 | 27 | 4 | 2002–2006 | 0.77 | M-v | 2 | MPC | 04242 | 2002 $VB_{98}$ |
| 2002 $VV_{98}$ | 17.2 | 0.15 | 20060922 | 129.05537 | 100.57127 | 218.41716 | 3.17976 | 0.1499519 | 2.2163506 | 62 | 3 | 1995–2005 | 0.43 | M-v | 3 | MPC | 97626 | 2002 $VV_{98}$ |
| 2002 $VM_{99}$ | 15.6 | 0.15 | 20060922 | 343.24068 | 112.78870 | 10.78414 | 22.10406 | 0.3325477 | 2.3962270 | 74 | 3 | 1998–2006 | 0.62 | M-v | 2 | MPC | 89374 | 2002 $VM_{99}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VS_{99}$ | 14.4 | 0.15 | 20060922 | 303.48538 | 78.85678 | 359.61747 | 22.28730 | 0.3117577 | 2.7557615 | 119 | 2 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03476 | 2002 $VS_{99}$ |
| 2002 $VA_{100}$ | 16.2 | 0.15 | 20060922 | 322.44713 | 77.43443 | 36.23535 | 7.58328 | 0.0665958 | 2.3681943 | 72 | 4 | 1993–2004 | 0.62 | M-v | 1 | MPC | 04242 | 2002 $VA_{100}$ |
| 2002 $VB_{100}$ | 16.3 | 0.15 | 20060922 | 348.44323 | 132.33658 | 264.06495 | 2.13130 | 0.1688251 | 2.5630267 | 98 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 04242 | 2002 $VB_{100}$ |
| 2002 $VM_{101}$ | 16.7 | 0.15 | 20060922 | 356.16327 | 299.30321 | 101.05126 | 4.81457 | 0.1834307 | 2.5550740 | 78 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 61604 | 2002 $VM_{101}$ |
| 2002 $VW_{101}$ | 15.6 | 0.15 | 20060922 | 339.57222 | 301.55067 | 131.86517 | 3.96375 | 0.2030108 | 2.5481490 | 110 | 5 | 1996–2006 | 0.56 | M-v | 2 | MPC | 87559 | 2002 $VW_{101}$ |
| 2002 $VU_{102}$ | 17.4 | 0.15 | 20060922 | 26.11060 | 64.29983 | 343.80831 | 2.35943 | 0.1687231 | 2.3513377 | 27 | 4 | 2000–2005 | 0.44 | M-v | 1 | MPC | 03477 | 2002 $VU_{102}$ |
| 2002 $VX_{102}$ | 15.9 | 0.15 | 20060922 | 354.13456 | 116.50137 | 278.44059 | 5.57852 | 0.1627519 | 2.5363303 | 124 | 5 | 1990–2006 | 0.51 | M-v | 2 | MPC | 04242 | 2002 $VX_{102}$ |
| 2002 $VB_{103}$ | 17.1 | 0.15 | 20060922 | 0.65529 | 84.03336 | 291.28329 | 2.85903 | 0.2845907 | 2.5473566 | 75 | 2 | 2002–2006 | 0.56 | M-v | 3 | MPC | 03477 | 2002 $VB_{103}$ |
| 2002 $VL_{103}$ | 15.3 | 0.15 | 20060922 | 3.89211 | 286.52796 | 45.17681 | 20.97806 | 0.1136138 | 2.8012391 | 47 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 04242 | 2002 $VL_{103}$ |
| 2002 $VH_{104}$ | 17.0 | 0.15 | 20060922 | 83.45574 | 314.55858 | 17.31645 | 2.70390 | 0.2144585 | 2.3516518 | 28 | 4 | 1991–2006 | 0.70 | M-v | 2 | MPC | 89375 | 2002 $VH_{104}$ |
| 2002 $VQ_{104}$ | 16.3 | 0.15 | 20060922 | 320.81118 | 148.53918 | 277.67997 | 2.74705 | 0.1310950 | 2.6181317 | 66 | 4 | 1997–2006 | 0.53 | M-v | 1 | MPC | 50162 | 2002 $VQ_{104}$ |
| 2002 $VX_{104}$ | 15.6 | 0.15 | 20060922 | 282.10395 | 200.94934 | 253.14541 | 13.59334 | 0.1512577 | 2.7239973 | 72 | 4 | 1994–2006 | 0.63 | M-v | 1 | MPC | 03477 | 2002 $VX_{104}$ |
| 2002 $VD_{105}$ | 16.2 | 0.15 | 20060922 | 5.88338 | 8.19135 | 357.35990 | 4.08747 | 0.2076380 | 2.6021881 | 133 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 04242 | 2002 $VD_{105}$ |
| 2002 $VQ_{105}$ | 16.1 | 0.15 | 20060922 | 51.96521 | 7.40010 | 355.76468 | 5.10177 | 0.1253289 | 2.4274034 | 64 | 4 | 1998–2004 | 0.63 | M-v | 2 | MPC | 66293 | 2002 $VQ_{105}$ |
| 2002 $VR_{105}$ | 14.9 | 0.15 | 20060922 | 342.21541 | 97.52000 | 262.98369 | 11.93344 | 0.2195814 | 2.7548650 | 67 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04242 | 2002 $VR_{105}$ |
| 2002 $VS_{105}$ | 16.5 | 0.15 | 20060922 | 3.31213 | 359.37953 | 28.72517 | 9.14691 | 0.1082081 | 2.5678284 | 60 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 03477 | 2002 $VS_{105}$ |
| 2002 $VU_{105}$ | 15.2 | 0.15 | 20060922 | 35.12959 | 108.43703 | 270.88450 | 7.28838 | 0.0554620 | 2.4648213 | 89 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87559 | 2002 $VU_{105}$ |
| 2002 $VE_{106}$ | 16.1 | 0.15 | 20060922 | 39.37411 | 17.24844 | 329.43638 | 2.44583 | 0.2028985 | 2.5143923 | 81 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 94870 | 2002 $VE_{106}$ |
| 2002 $VK_{106}$ | 15.1 | 0.15 | 20060922 | 293.07284 | 177.45619 | 262.05529 | 4.91639 | 0.1165098 | 2.7317201 | 151 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04242 | 2002 $VK_{106}$ |
| 2002 $VN_{106}$ | 15.7 | 0.15 | 20060922 | 352.41773 | 93.50712 | 251.96339 | 4.93805 | 0.0712402 | 2.7623590 | 63 | 3 | 2002–2006 | 0.50 | M-v | 4 | MPC | 03477 | 2002 $VN_{106}$ |
| 2002 $VQ_{106}$ | 15.8 | 0.15 | 20060922 | 257.62764 | 306.20441 | 247.06781 | 6.41601 | 0.0508959 | 2.2833819 | 32 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 61608 | 2002 $VQ_{106}$ |
| 2002 $VC_{107}$ | 14.8 | 0.15 | 20060922 | 199.67205 | 149.53029 | 39.25640 | 17.08184 | 0.2264956 | 2.6812012 | 152 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 66293 | 2002 $VC_{107}$ |
| 2002 $VE_{107}$ | 16.8 | 0.15 | 20060922 | 336.09477 | 32.66643 | 7.51631 | 2.40629 | 0.0775679 | 2.6184077 | 60 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 74240 | 2002 $VE_{107}$ |
| 2002 $VV_{107}$ | 16.5 | 0.15 | 20060922 | 342.85080 | 334.66461 | 36.67015 | 9.34593 | 0.1788816 | 2.7251177 | 34 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 03478 | 2002 $VV_{107}$ |
| 2002 $VL_{108}$ | 15.5 | 0.15 | 20060922 | 298.01998 | 59.73040 | 8.19935 | 4.30752 | 0.0675698 | 2.7629613 | 88 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 04242 | 2002 $VL_{108}$ |
| 2002 $VM_{108}$ | 16.7 | 0.15 | 20060922 | 55.89040 | 31.99883 | 342.96517 | 2.76369 | 0.2560577 | 2.3352147 | 51 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 61609 | 2002 $VM_{108}$ |
| 2002 $VS_{108}$ | 15.4 | 0.15 | 20060922 | 308.84782 | 33.38288 | 53.83768 | 14.30826 | 0.0681568 | 2.6099506 | 82 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 61609 | 2002 $VS_{108}$ |
| 2002 $VT_{108}$ | 17.0 | 0.15 | 20060922 | 53.81866 | 24.11430 | 357.07378 | 2.12810 | 0.2056484 | 2.3421341 | 57 | 4 | 1991–2006 | 0.58 | M-v | 2 | MPC | 66293 | 2002 $VT_{108}$ |
| 2002 $VD_{109}$ | 14.9 | 0.15 | 20060922 | 341.22670 | 140.93399 | 260.34724 | 12.26063 | 0.1669653 | 2.6491063 | 103 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04242 | 2002 $VD_{109}$ |
| 2002 $VE_{109}$ | 15.7 | 0.15 | 20060922 | 347.85536 | 14.57805 | 47.72992 | 6.63674 | 0.2073213 | 2.5386508 | 107 | 4 | 1998–2006 | 0.46 | M-v | 2 | MPC | 66293 | 2002 $VE_{109}$ |
| 2002 $VF_{109}$ | 16.3 | 0.15 | 20060922 | 337.24220 | 85.28961 | 324.11111 | 2.64014 | 0.2105309 | 2.6389633 | 106 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 04242 | 2002 $VF_{109}$ |
| 2002 $VN_{109}$ | 16.1 | 0.15 | 20060922 | 19.73422 | 110.87999 | 260.40406 | 7.39112 | 0.1891566 | 2.5306714 | 87 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 75801 | 2002 $VN_{109}$ |
| 2002 $VP_{109}$ | 16.2 | 0.15 | 20060922 | 47.69541 | 342.45218 | 26.57398 | 5.28071 | 0.1666630 | 2.4204080 | 41 | 4 | 1998–2006 | 0.49 | M-v | 3 | MPC | 89376 | 2002 $VP_{109}$ |
| 2002 $VT_{109}$ | 15.7 | 0.15 | 20060922 | 339.67316 | 332.46619 | 48.71213 | 10.25652 | 0.1787110 | 2.7227611 | 61 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87559 | 2002 $VT_{109}$ |
| 2002 $VZ_{109}$ | 15.8 | 0.15 | 20060922 | 336.44116 | 8.78199 | 57.69061 | 5.38853 | 0.2573789 | 2.6183470 | 154 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03478 | 2002 $VZ_{109}$ |
| 2002 $VC_{110}$ | 16.8 | 0.15 | 20060922 | 73.50377 | 270.32930 | 56.75844 | 3.41559 | 0.1807303 | 2.4131878 | 46 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 74240 | 2002 $VC_{110}$ |
| 2002 $VS_{110}$ | 14.5 | 0.15 | 20060922 | 30.56370 | 70.82647 | 314.38369 | 16.64694 | 0.3064513 | 2.5692088 | 84 | 5 | 1993–2006 | 0.59 | M-v | 1 | MPC | 66294 | 2002 $VS_{110}$ |
| 2002 $VX_{110}$ | 16.3 | 0.15 | 20060922 | 320.22024 | 75.38975 | 308.92820 | 8.10048 | 0.1048154 | 2.6952075 | 48 | 4 | 1997–2006 | 0.41 | M-v | 1 | MPC | 04243 | 2002 $VX_{110}$ |
| 2002 $VG_{111}$ | 16.9 | 0.15 | 20060922 | 39.18913 | 128.63814 | 194.69303 | 2.47160 | 0.2441773 | 2.5696711 | 55 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 75801 | 2002 $VG_{111}$ |
| 2002 $VK_{111}$ | 14.9 | 0.15 | 20060922 | 9.73873 | 204.18886 | 125.18955 | 7.75799 | 0.1176264 | 2.7781490 | 65 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03478 | 2002 $VK_{111}$ |
| 2002 $VL_{111}$ | 15.2 | 0.15 | 20060922 | 341.05936 | 304.39719 | 80.04612 | 16.71993 | 0.0530720 | 2.6835098 | 38 | 3 | 2002–2006 | 0.51 | M-v | 4 | MPC | 89376 | 2002 $VL_{111}$ |
| 2002 $VP_{111}$ | 15.8 | 0.15 | 20060922 | 102.92599 | 340.19954 | 318.85808 | 7.12829 | 0.0967409 | 2.4332072 | 55 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 62431 | 2002 $VP_{111}$ |
| 2002 $VS_{111}$ | 15.3 | 0.15 | 20060922 | 257.60926 | 232.00485 | 268.14667 | 9.28366 | 0.2474970 | 2.6551623 | 66 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 87559 | 2002 $VS_{111}$ |
| 2002 $VX_{111}$ | 16.6 | 0.15 | 20060922 | 356.20733 | 62.74054 | 298.57162 | 0.70621 | 0.1036850 | 2.6808818 | 56 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 04243 | 2002 $VX_{111}$ |
| 2002 $VY_{111}$ | 16.0 | 0.15 | 20060922 | 38.50466 | 260.89507 | 46.93968 | 12.59714 | 0.1775509 | 2.6776775 | 57 | 5 | 1992–2006 | 0.50 | M-v | 0 | MPC | 85754 | 2002 $VY_{111}$ |
| 2002 $VQ_{112}$ | 16.0 | 0.15 | 20060922 | 8.36139 | 78.10291 | 260.77688 | 4.53058 | 0.2175167 | 2.6841595 | 108 | 6 | 2000–2006 | 0.55 | M-v | 1 | MPC | 04243 | 2002 $VQ_{112}$ |
| 2002 $VV_{112}$ | 16.0 | 0.15 | 20060922 | 11.40621 | 113.43626 | 233.57787 | 10.33421 | 0.1244331 | 2.6784278 | 72 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04243 | 2002 $VV_{112}$ |
| 2002 $VG_{113}$ | 16.2 | 0.15 | 20060922 | 1.69528 | 114.19384 | 226.26600 | 1.43489 | 0.2507133 | 2.7028544 | 105 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04243 | 2002 $VG_{113}$ |
| 2002 $VH_{113}$ | 16.6 | 0.15 | 20060922 | 351.24701 | 6.76870 | 81.85667 | 3.56979 | 0.1684771 | 2.3955971 | 46 | 3 | 1996–2006 | 0.44 | M-v | 2 | MPC | 41266 | 2002 $VH_{113}$ |
| 2002 $VL_{113}$ | 16.8 | 0.15 | 20060922 | 36.73262 | 303.72326 | 77.19961 | 3.38766 | 0.2354447 | 2.3917423 | 72 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 62431 | 2002 $VL_{113}$ |
| 2002 $VB_{114}$ | 15.3 | 0.15 | 20060922 | 317.40311 | 359.29309 | 64.21773 | 16.53963 | 0.1226873 | 2.6539983 | 103 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 61613 | 2002 $VB_{114}$ |
| 2002 $VF_{114}$ | 15.1 | 0.15 | 20060922 | 278.76331 | 194.94173 | 254.79880 | 5.70576 | 0.1773920 | 2.7783332 | 94 | 3 | 2002–2006 | 0.63 | M-v | 2 | MPC | 04243 | 2002 $VF_{114}$ |
| 2002 $VH_{114}$ | 17.3 | 0.15 | 20060922 | 9.18838 | 297.71256 | 137.02511 | 1.63842 | 0.1647944 | 2.3698517 | 48 | 4 | 1991–2006 | 0.62 | M-v | 2 | MPC | 65390 | 2002 $VH_{114}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VR_{114}$ | 16.6 | 0.15 | 20060922 | 7.40958 | 19.85626 | 67.28498 | 3.47851 | 0.1398842 | 2.3396920 | 56 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 85754 | 2002 $VR_{114}$ |
| 2002 $VO_{115}$ | 16.6 | 0.15 | 20060922 | 310.46288 | 50.00937 | 23.10248 | 15.09046 | 0.0745965 | 2.6125678 | 38 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87559 | 2002 $VO_{115}$ |
| 2002 $VX_{115}$ | 17.5 | 0.15 | 20060922 | 16.25864 | 198.82263 | 196.91623 | 5.89569 | 0.1367420 | 2.4385076 | 22 | 3 | 1998–2004 | 0.47 | M-v | 4 | MPC | 41268 | 2002 $VX_{115}$ |
| 2002 $VF_{116}$ | 15.8 | 0.15 | 20060922 | 311.91036 | 147.04353 | 301.36580 | 11.87185 | 0.2319038 | 2.5385079 | 63 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 41269 | 2002 $VF_{116}$ |
| 2002 $VJ_{116}$ | 16.6 | 0.15 | 20060922 | 353.75224 | 46.38338 | 310.88339 | 4.36583 | 0.2217620 | 2.6642832 | 72 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03478 | 2002 $VJ_{116}$ |
| 2002 $VQ_{116}$ | 14.8 | 0.15 | 20060922 | 33.64497 | 338.01490 | 272.96545 | 12.31419 | 0.0296301 | 3.2495817 | 44 | 5 | 1995–2005 | 0.61 | M-v | 1 | MPC | 77680 | 2002 $VQ_{116}$ |
| 2002 $VZ_{116}$ | 16.4 | 0.15 | 20060922 | 30.18893 | 291.08344 | 21.42782 | 12.14348 | 0.2829967 | 2.6417825 | 75 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04243 | 2002 $VZ_{116}$ |
| 2002 $VP_{118}$ | 15.0 | 0.15 | 20060922 | 250.13508 | 140.22420 | 275.13001 | 10.50119 | 0.2844322 | 3.1028457 | 58 | 1 | 107 days | 0.45 | M-v | 3 | MPC | 41871 | 2002 $VP_{118}$ |
| 2002 $VA_{119}$ | 15.3 | 0.15 | 20060922 | 306.51856 | 184.25781 | 255.86081 | 20.78123 | 0.0745694 | 2.6484128 | 43 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 50163 | 2002 $VA_{119}$ |
| 2002 $VB_{119}$ | 16.0 | 0.15 | 20060922 | 359.41050 | 56.57779 | 26.47534 | 7.15019 | 0.0883903 | 2.3859614 | 49 | 6 | 1998–2006 | 0.64 | M-v | 1 | MPC | 87559 | 2002 $VB_{119}$ |
| 2002 $VQ_{119}$ | 15.6 | 0.15 | 20060922 | 10.82740 | 27.41620 | 6.46246 | 4.60629 | 0.1928586 | 2.5267055 | 123 | 7 | 1992–2006 | 0.60 | M-v | 2 | MPC | 04243 | 2002 $VQ_{119}$ |
| 2002 $VS_{119}$ | 15.0 | 0.15 | 20060922 | 276.65219 | 74.26967 | 39.49627 | 10.19448 | 0.1697888 | 2.7430409 | 91 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 66294 | 2002 $VS_{119}$ |
| 2002 $VW_{119}$ | 14.2 | 0.15 | 20060922 | 29.04100 | 86.80403 | 284.30484 | 12.68776 | 0.2424145 | 2.5309470 | 116 | 5 | 1995–2006 | 0.54 | M-v | 2 | MPC | 62432 | 2002 $VW_{119}$ |
| 2002 $VD_{121}$ | 15.5 | 0.15 | 20060922 | 326.39730 | 109.07441 | 280.23141 | 8.12167 | 0.1975141 | 2.7309983 | 92 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03479 | 2002 $VD_{121}$ |
| 2002 $VK_{121}$ | 14.5 | 0.15 | 20060922 | 350.72613 | 113.42994 | 273.33065 | 11.70947 | 0.1726693 | 2.6146835 | 131 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 03479 | 2002 $VK_{121}$ |
| 2002 $VM_{121}$ | 16.3 | 0.15 | 20060922 | 72.95821 | 69.07548 | 322.97539 | 6.67051 | 0.1074775 | 2.2506406 | 104 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 85756 | 2002 $VM_{121}$ |
| 2002 $VV_{121}$ | 15.3 | 0.15 | 20060922 | 25.06052 | 340.71387 | 15.23044 | 13.43041 | 0.1209188 | 2.5473532 | 113 | 5 | 1998–2006 | 0.44 | M-v | 2 | MPC | 04243 | 2002 $VV_{121}$ |
| 2002 $VZ_{121}$ | 15.4 | 0.15 | 20060922 | 339.02093 | 39.63306 | 321.20120 | 8.18639 | 0.1799709 | 2.7526011 | 71 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 04243 | 2002 $VZ_{121}$ |
| 2002 $VO_{122}$ | 15.1 | 0.15 | 20060922 | 314.51881 | 110.77848 | 289.18680 | 7.95729 | 0.1604303 | 2.7479218 | 111 | 4 | 1998–2006 | 0.54 | M-v | 1 | MPC | 03479 | 2002 $VO_{122}$ |
| 2002 $VF_{123}$ | 16.7 | 0.15 | 20060922 | 93.58478 | 29.66580 | 324.14066 | 5.58666 | 0.1568431 | 2.2652270 | 58 | 4 | 2002–2006 | 0.44 | M-v | 2 | MPC | 90164 | 2002 $VF_{123}$ |
| 2002 $VH_{123}$ | 15.8 | 0.15 | 20060922 | 324.08120 | 54.33786 | 327.86455 | 6.15257 | 0.1235834 | 2.7881768 | 47 | 2 | 2002–2006 | 0.57 | M-v | 4 | MPC | 03480 | 2002 $VH_{123}$ |
| 2002 $VR_{123}$ | 15.3 | 0.15 | 20060922 | 336.26515 | 107.19972 | 259.16796 | 16.01155 | 0.2041483 | 2.7089566 | 59 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03480 | 2002 $VR_{123}$ |
| 2002 $VS_{123}$ | 15.6 | 0.15 | 20060922 | 352.30057 | 62.99888 | 278.82673 | 7.79688 | 0.1451364 | 2.7492366 | 48 | 2 | 2002–2006 | 0.58 | M-v | 4 | MPC | 03480 | 2002 $VS_{123}$ |
| 2002 $VL_{124}$ | 15.8 | 0.15 | 20060922 | 290.04188 | 190.84309 | 185.16852 | 9.42648 | 0.0808788 | 3.0592145 | 32 | 5 | 2000–2005 | 0.48 | M-v | 1 | MPC | 75805 | 2002 $VL_{124}$ |
| 2002 $VM_{124}$ | 15.8 | 0.15 | 20060922 | 261.62789 | 266.56292 | 194.43459 | 8.16589 | 0.1117952 | 2.7790127 | 64 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04243 | 2002 $VM_{124}$ |
| 2002 $VV_{124}$ | 16.4 | 0.15 | 20060922 | 36.82548 | 270.42773 | 108.24391 | 7.19363 | 0.1583260 | 2.4099590 | 36 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 62432 | 2002 $VV_{124}$ |
| 2002 $VQ_{125}$ | 15.9 | 0.15 | 20060922 | 305.19169 | 90.08477 | 5.65251 | 6.05827 | 0.0862395 | 2.5573185 | 78 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 61619 | 2002 $VQ_{125}$ |
| 2002 $VE_{126}$ | 16.3 | 0.15 | 20060922 | 73.96902 | 100.32366 | 281.70118 | 6.03131 | 0.1169377 | 2.2675037 | 42 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 85757 | 2002 $VE_{126}$ |
| 2002 $VG_{126}$ | 15.0 | 0.15 | 20060922 | 341.64267 | 87.64602 | 279.80058 | 7.21821 | 0.1828259 | 2.7352391 | 107 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03480 | 2002 $VG_{126}$ |
| 2002 $VH_{126}$ | 16.6 | 0.15 | 20060922 | 17.98801 | 59.49199 | 33.80682 | 8.35383 | 0.0918516 | 2.2682324 | 31 | 2 | 2002–2005 | 0.55 | M-v | 4 | MPC | 03481 | 2002 $VH_{126}$ |
| 2002 $VQ_{126}$ | 16.5 | 0.15 | 20060922 | 63.71767 | 85.89220 | 293.09558 | 5.19795 | 0.1833530 | 2.3010634 | 62 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 85758 | 2002 $VQ_{126}$ |
| 2002 $VW_{126}$ | 16.1 | 0.15 | 20060922 | 2.22496 | 104.21021 | 242.89865 | 11.54656 | 0.1959699 | 2.7121286 | 71 | 2 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03481 | 2002 $VW_{126}$ |
| 2002 $VN_{127}$ | 16.3 | 0.15 | 20060922 | 331.69421 | 120.78498 | 355.99162 | 2.46286 | 0.1775822 | 2.4092700 | 55 | 4 | 1996–2006 | 0.59 | M-v | 1 | MPC | 85758 | 2002 $VN_{127}$ |
| 2002 $VT_{127}$ | 15.3 | 0.15 | 20060922 | 304.71148 | 308.48367 | 131.25515 | 16.74942 | 0.1756097 | 2.6563012 | 71 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 66294 | 2002 $VT_{127}$ |
| 2002 $VF_{128}$ | 16.3 | 0.15 | 20060922 | 14.77710 | 291.21129 | 76.82247 | 11.27147 | 0.2640540 | 2.5462239 | 119 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 75805 | 2002 $VF_{128}$ |
| 2002 $VH_{129}$ | 17.2 | 0.15 | 20060922 | 354.69417 | 167.78757 | 216.16711 | 4.68666 | 0.2342304 | 2.5919427 | 101 | 3 | 1960–2006 | 0.40 | M-v | 2 | MPC | 41280 | 2002 $VH_{129}$ |
| 2002 $VL_{129}$ | 15.8 | 0.15 | 20060922 | 294.88263 | 148.96638 | 253.49164 | 5.27069 | 0.0096800 | 2.7958748 | 50 | 4 | 2002–2006 | 0.33 | M-v | 1 | MPC | 75805 | 2002 $VL_{129}$ |
| 2002 $VU_{129}$ | 15.9 | 0.15 | 20060922 | 320.52359 | 346.41384 | 27.44034 | 9.80401 | 0.0465547 | 2.7806544 | 44 | 5 | 2000–2006 | 0.66 | M-v | 0 | MPC | 03481 | 2002 $VU_{129}$ |
| 2002 $VS_{130}$ | 6.2 | 0.15 | 20060922 | 48.25489 | 84.94793 | 275.58468 | 2.98744 | 0.1305325 | 45.1038121 | 18 | 4 | 1995–2005 | 1.13 | M-v | 4 | MPC | 87560 | 2002 $VS_{130}$ |
| 2002 $VT_{130}$ | 5.7 | 0.15 | 20060922 | 108.77742 | 338.01589 | 334.58052 | 1.16261 | 0.0324887 | 42.2858792 | 27 | 3 | 2002–2006 | 0.14 | M-v | 3 | MPC | 97626 | 2002 $VT_{130}$ |
| 2002 $VU_{130}$ | 5.7 | 0.15 | 20060922 | 257.62182 | 281.46349 | 267.87390 | 1.37186 | 0.2115476 | 39.0374683 | 23 | 4 | 2002–2005 | 0.22 | M-v | 4 | MPC | 97626 | 2002 $VU_{130}$ |
| 2002 $VX_{132}$ | 16.8 | 0.15 | 20060922 | 332.10462 | 211.66881 | 185.84896 | 6.14418 | 0.1441062 | 2.6165124 | 69 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04243 | 2002 $VX_{132}$ |
| 2002 $VO_{133}$ | 15.4 | 0.15 | 20060922 | 268.07902 | 154.32140 | 256.55251 | 4.95295 | 0.0935435 | 3.0422511 | 31 | 4 | 2001–2005 | 0.60 | M-v | 1 | MPC | 77680 | 2002 $VO_{133}$ |
| 2002 $VP_{133}$ | 14.8 | 0.15 | 20060922 | 56.94390 | 93.10878 | 238.90301 | 26.49846 | 0.1005880 | 2.5893459 | 123 | 3 | 2002–2006 | 0.53 | M-v | 1 | MPC | 87560 | 2002 $VP_{133}$ |
| 2002 $VR_{133}$ | 15.8 | 0.15 | 20060922 | 342.00957 | 274.89325 | 101.07299 | 6.45476 | 0.0931321 | 2.7062477 | 37 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 04243 | 2002 $VR_{133}$ |
| 2002 $VY_{133}$ | 16.1 | 0.15 | 20060922 | 79.04537 | 238.16305 | 79.53611 | 4.82093 | 0.1851785 | 2.3805015 | 58 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 77680 | 2002 $VY_{133}$ |
| 2002 $VQ_{134}$ | 17.8 | 0.15 | 20060922 | 48.42091 | 28.89726 | 339.61059 | 2.01752 | 0.2394985 | 2.3695456 | 31 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 89377 | 2002 $VQ_{134}$ |
| 2002 $VR_{134}$ | 16.6 | 0.15 | 20060922 | 15.91358 | 78.54477 | 3.92705 | 1.95978 | 0.1275247 | 2.3024078 | 59 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 87560 | 2002 $VR_{134}$ |
| 2002 $VS_{134}$ | 15.8 | 0.15 | 20060922 | 325.63426 | 69.17658 | 359.99383 | 6.87152 | 0.1924294 | 2.6080621 | 103 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04243 | 2002 $VS_{134}$ |
| 2002 $VD_{136}$ | 16.9 | 0.15 | 20060922 | 22.20211 | 110.81212 | 246.81938 | 6.59263 | 0.1518328 | 2.5357477 | 74 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 87560 | 2002 $VD_{136}$ |
| 2002 $VX_{138}$ | 16.8 | 0.15 | 20021122 | 6.93208 | 19.55628 | 24.33391 | 16.49309 | 0.1617470 | 3.0963713 | 14 | 1 | 30 days | 0.51 | | | MPC | | 2002 $VX_{138}$ |
| 2002 $VY_{138}$ | 14.9 | 0.15 | 20021122 | 210.70152 | 312.24107 | 248.25045 | 21.70728 | 0.0124263 | 3.1144755 | 11 | 1 | 27 days | 0.44 | | | MPC | | 2002 $VY_{138}$ |
| 2002 $VZ_{138}$ | 17.1 | 0.15 | 20021102 | 66.77106 | 52.54631 | 266.96007 | 7.83787 | 0.1813825 | 2.5870877 | 8 | 1 | 10 days | 0.28 | | | MPC | | 2002 $VZ_{138}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $VB_{139}$ | 18.0 | 0.15 | 20021122 | 338.69310 | 7.57625 | 84.65543 | 5.98940 | 0.2616137 | 2.5974960 | 9 | 1 | 25 days | 0.14 | | | MPC | | 2002 $VB_{139}$ |
| 2002 $VD_{139}$ | 16.0 | 0.15 | 20021122 | 52.65617 | 310.75697 | 24.12802 | 17.21294 | 0.2376453 | 3.1587996 | 9 | 1 | 28 days | 0.22 | | | MPC | | 2002 $VD_{139}$ |
| 2002 $VE_{139}$ | 15.2 | 0.15 | 20021102 | 17.36038 | 115.93334 | 273.74234 | 11.53954 | 0.0121950 | 3.1079759 | 8 | 1 | 12 days | 0.17 | | | MPC | | 2002 $VE_{139}$ |
| 2002 $VF_{139}$ | 15.5 | 0.15 | 20021122 | 323.00546 | 155.30487 | 309.29285 | 7.18496 | 0.1810189 | 2.7840541 | 12 | 1 | 19 days | 0.34 | | | MPC | | 2002 $VF_{139}$ |
| 2002 $VM_{139}$ | 16.8 | 0.15 | 20021102 | 359.27687 | 79.85106 | 329.87337 | 4.18150 | 0.1081210 | 2.8922231 | 9 | 1 | 23 days | 0.38 | | | MPC | | 2002 $VM_{139}$ |
| 2002 $VN_{139}$ | 17.2 | 0.15 | 20021102 | 323.40410 | 140.51170 | 324.63276 | 3.89992 | 0.2313752 | 2.8148720 | 8 | 1 | 40 days | 0.40 | | | MPC | | 2002 $VN_{139}$ |
| 2002 $VO_{139}$ | 16.8 | 0.15 | 20021102 | 16.37699 | 350.52702 | 29.94135 | 11.84211 | 0.2576472 | 3.0984803 | 8 | 1 | 13 days | 0.20 | | | MPC | | 2002 $VO_{139}$ |
| 2002 $VP_{139}$ | 13.4 | 0.15 | 20021102 | 64.84362 | 312.63946 | 31.47391 | 16.89849 | 0.0311651 | 5.3130152 | 9 | 1 | 19 days | 0.14 | | | MPC | | 2002 $VP_{139}$ |
| 2002 $VQ_{139}$ | 16.8 | 0.15 | 20021102 | 3.20104 | 302.80805 | 97.99486 | 5.40921 | 0.0393871 | 2.8120419 | 7 | 1 | 11 days | 0.36 | | | MPC | | 2002 $VQ_{139}$ |
| 2002 $VR_{139}$ | 16.9 | 0.15 | 20021102 | 281.25159 | 174.00513 | 327.39313 | 6.23096 | 0.1126818 | 2.6302953 | 9 | 1 | 12 days | 0.10 | | | MPC | | 2002 $VR_{139}$ |
| 2002 $VW_{139}$ | 17.1 | 0.15 | 20021102 | 8.45939 | 53.97900 | 334.81213 | 5.25643 | 0.1319458 | 2.3616843 | 6 | 1 | 23 days | 0.12 | | | MPC | | 2002 $VW_{139}$ |
| 2002 $VX_{139}$ | 16.0 | 0.15 | 20060922 | 228.90477 | 8.02774 | 147.00897 | 16.19078 | 0.1453011 | 3.0882751 | 17 | 1 | 119 days | 0.38 | M-v | 3 | MPC | | 2002 $VX_{139}$ |
| 2002 $VY_{139}$ | 16.4 | 0.15 | 20021102 | 12.10442 | 52.90860 | 333.66054 | 5.11864 | 0.1249865 | 3.1170805 | 8 | 1 | 23 days | 0.23 | | | MPC | | 2002 $VY_{139}$ |
| 2002 $VZ_{139}$ | 15.3 | 0.15 | 20021102 | 95.68006 | 22.90878 | 266.27098 | 10.11894 | 0.1595317 | 3.0996188 | 9 | 1 | 11 days | 0.22 | | | MPC | | 2002 $VZ_{139}$ |
| 2002 $VB_{140}$ | 17.4 | 0.15 | 20021122 | 357.23157 | 160.74033 | 254.17223 | 12.73560 | 0.1482206 | 2.5802156 | 9 | 1 | 28 days | 0.26 | | | MPC | | 2002 $VB_{140}$ |
| 2002 $VC_{140}$ | 15.8 | 0.15 | 20021122 | 75.64496 | 293.99956 | 16.66048 | 14.55521 | 0.2209359 | 2.7942212 | 8 | 1 | 28 days | 0.21 | | | MPC | | 2002 $VC_{140}$ |
| 2002 $VJ_{140}$ | 16.0 | 0.15 | 20021122 | 314.70593 | 217.61122 | 245.76650 | 12.20009 | 0.0602537 | 3.1592299 | 8 | 1 | 36 days | 0.36 | | | MPC | | 2002 $VJ_{140}$ |
| 2002 $VK_{140}$ | 17.2 | 0.15 | 20021122 | 314.19315 | 152.61823 | 318.25779 | 7.06198 | 0.1491175 | 2.5447115 | 8 | 1 | 28 days | 0.29 | | | MPC | | 2002 $VK_{140}$ |
| 2002 $VL_{140}$ | 16.1 | 0.15 | 20021122 | 42.31919 | 9.68074 | 347.86418 | 8.75873 | 0.1259822 | 2.9937588 | 9 | 1 | 20 days | 0.25 | | | MPC | | 2002 $VL_{140}$ |
| 2002 $VM_{140}$ | 13.4 | 0.15 | 20021102 | 64.83547 | 203.85713 | 136.82568 | 2.68413 | 0.1311783 | 5.5691271 | 12 | 1 | 12 days | 0.42 | | | MPC | | 2002 $VM_{140}$ |
| 2002 $VN_{140}$ | 16.1 | 0.15 | 20021102 | 265.62679 | 67.57757 | 87.53540 | 1.50545 | 0.0283268 | 2.8134687 | 11 | 1 | 12 days | 0.37 | | E | MPC | | 2002 $VN_{140}$ |
| 2002 $VP_{140}$ | 18.5 | 0.15 | 20021102 | 358.86147 | 180.36628 | 235.46533 | 2.90428 | 0.2304995 | 2.6692084 | 14 | 1 | 18 days | 0.34 | | | MPC | | 2002 $VP_{140}$ |
| 2002 $VQ_{140}$ | 16.3 | 0.15 | 20021102 | 234.53028 | 322.30762 | 234.77236 | 17.55800 | 0.1592311 | 2.7478822 | 11 | 1 | 12 days | 0.39 | | | MPC | | 2002 $VQ_{140}$ |
| 2002 WM | 15.2 | 0.15 | 20060922 | 358.95735 | 280.32726 | 148.55179 | 21.20848 | 0.3069081 | 2.3939507 | 72 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 89377 | 2002 WM |
| 2002 WV | 16.1 | 0.15 | 20060922 | 314.03673 | 66.52043 | 56.13301 | 5.31223 | 0.2565623 | 2.6159248 | 90 | 3 | 1999–2006 | 0.54 | M-v | 2 | MPC | 50715 | 2002 WV |
| 2002 $WN_1$ | 16.7 | 0.15 | 20060922 | 168.23362 | 193.51589 | 115.96035 | 3.50999 | 0.2003402 | 2.1359310 | 82 | 5 | 1995–2005 | 0.48 | M-v | 1 | MPC | 97626 | 2002 $WN_1$ |
| 2002 $WS_1$ | 16.0 | 0.15 | 20060922 | 325.25532 | 315.07774 | 97.77811 | 3.13966 | 0.0654458 | 2.6553805 | 59 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 61622 | 2002 $WS_1$ |
| 2002 $WZ_1$ | 17.4 | 0.15 | 20060922 | 342.82215 | 27.64237 | 79.94729 | 5.89116 | 0.1116243 | 2.3576870 | 36 | 3 | 2002–2006 | 0.39 | M-v | 4 | MPC | 85761 | 2002 $WZ_1$ |
| 2002 $WC_2$ | 17.2 | 0.15 | 20060922 | 338.45791 | 15.88375 | 91.17695 | 3.69771 | 0.1503884 | 2.3902196 | 49 | 5 | 1991–2006 | 0.42 | M-v | 1 | MPC | 66294 | 2002 $WC_2$ |
| 2002 $WW_2$ | 15.6 | 0.15 | 20060922 | 338.23253 | 64.26774 | 346.80811 | 11.98811 | 0.2629425 | 2.6615060 | 99 | 2 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03482 | 2002 $WW_2$ |
| 2002 $WX_2$ | 16.2 | 0.15 | 20060922 | 357.58516 | 261.07660 | 79.55115 | 4.10851 | 0.2162209 | 2.7427741 | 50 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 03482 | 2002 $WX_2$ |
| 2002 $WZ_2$ | 17.1 | 0.15 | 20060922 | 9.46451 | 48.06486 | 261.51204 | 51.45092 | 0.8840470 | 2.4611180 | 132 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 00402 | 2002 $WZ_2$ |
| 2002 $WZ_3$ | 16.2 | 0.15 | 20060922 | 358.78408 | 256.20248 | 87.48596 | 6.43856 | 0.2942375 | 2.7095554 | 50 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 03483 | 2002 $WZ_3$ |
| 2002 $WE_4$ | 15.8 | 0.15 | 20060922 | 347.65376 | 303.36288 | 66.95003 | 8.44352 | 0.1005827 | 2.7613891 | 59 | 5 | 2001–2006 | 0.46 | M-v | 0 | MPC | 87560 | 2002 $WE_4$ |
| 2002 $WD_5$ | 16.2 | 0.15 | 20060922 | 2.44072 | 291.19576 | 57.47554 | 13.98177 | 0.1586086 | 2.7451050 | 34 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04243 | 2002 $WD_5$ |
| 2002 $WN_5$ | 16.7 | 0.15 | 20060922 | 8.68408 | 301.48179 | 133.57465 | 2.95728 | 0.1430553 | 2.3901286 | 47 | 5 | 1998–2006 | 0.49 | M-v | 0 | MPC | 85761 | 2002 $WN_5$ |
| 2002 $WP_5$ | 15.6 | 0.15 | 20060922 | 343.09987 | 238.40396 | 144.60785 | 14.28131 | 0.2951575 | 2.6435443 | 98 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04243 | 2002 $WP_5$ |
| 2002 $WR_5$ | 16.3 | 0.15 | 20060922 | 303.71723 | 213.90985 | 241.60206 | 2.35542 | 0.1403268 | 2.5880629 | 81 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 77680 | 2002 $WR_5$ |
| 2002 $WV_5$ | 15.8 | 0.15 | 20060922 | 338.66991 | 235.27554 | 137.25417 | 14.96186 | 0.2074195 | 2.7301155 | 32 | 2 | 2002–2006 | 0.46 | M-v | 4 | MPC | 03483 | 2002 $WV_5$ |
| 2002 $WW_5$ | 15.3 | 0.15 | 20060922 | 335.40272 | 294.18992 | 108.78997 | 22.10069 | 0.1912092 | 2.6426147 | 65 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 61624 | 2002 $WW_5$ |
| 2002 $WA_6$ | 15.4 | 0.15 | 20060922 | 15.88902 | 300.82128 | 23.35069 | 12.19814 | 0.1276879 | 2.7423396 | 61 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 04243 | 2002 $WA_6$ |
| 2002 $WC_6$ | 16.0 | 0.15 | 20060922 | 4.61123 | 136.03984 | 298.90771 | 5.23948 | 0.1004300 | 2.3521237 | 78 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 87560 | 2002 $WC_6$ |
| 2002 $WM_6$ | 15.9 | 0.15 | 20060922 | 304.36054 | 206.11833 | 290.22202 | 5.27705 | 0.1339111 | 2.4080668 | 42 | 3 | 2000–2005 | 0.53 | M-v | 3 | MPC | 02141 | 2002 $WM_6$ |
| 2002 $WQ_6$ | 14.8 | 0.15 | 20060922 | 135.69472 | 353.95031 | 250.11353 | 21.98379 | 0.0610783 | 2.6257894 | 48 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 62433 | 2002 $WQ_6$ |
| 2002 $WX_6$ | 15.7 | 0.15 | 20060922 | 323.43618 | 114.96920 | 279.37280 | 2.98871 | 0.1631279 | 2.7372660 | 71 | 2 | 2002–2006 | 0.56 | M-v | 4 | MPC | 03483 | 2002 $WX_6$ |
| 2002 $WY_6$ | 17.6 | 0.15 | 20060922 | 75.52457 | 86.97529 | 326.50252 | 3.72298 | 0.0969801 | 2.1743163 | 61 | 2 | 2002–2005 | 0.56 | M-v | 5 | MPC | 85762 | 2002 $WY_6$ |
| 2002 $WB_7$ | 15.9 | 0.15 | 20060922 | 301.15901 | 141.17544 | 281.24364 | 4.42112 | 0.0208464 | 2.7560902 | 78 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 62433 | 2002 $WB_7$ |
| 2002 $WK_7$ | 16.3 | 0.15 | 20060922 | 334.18300 | 86.58433 | 60.87423 | 5.38143 | 0.0975738 | 2.2523636 | 57 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 87560 | 2002 $WK_7$ |
| 2002 $WS_7$ | 15.8 | 0.15 | 20060922 | 353.03216 | 294.64605 | 68.86053 | 5.87103 | 0.1306565 | 2.7302106 | 82 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 04243 | 2002 $WS_7$ |
| 2002 $WT_7$ | 17.3 | 0.15 | 20060922 | 10.54867 | 328.71332 | 63.08683 | 1.71948 | 0.2691870 | 2.4787915 | 48 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 50163 | 2002 $WT_7$ |
| 2002 $WW_7$ | 16.7 | 0.15 | 20060922 | 139.45329 | 48.43649 | 260.36371 | 2.09961 | 0.1510360 | 2.2766867 | 84 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 04243 | 2002 $WW_7$ |
| 2002 $WY_7$ | 16.2 | 0.15 | 20060922 | 247.51628 | 294.60013 | 151.11818 | 1.48290 | 0.1453495 | 3.0116906 | 46 | 5 | 1992–2004 | 0.51 | M-v | 0 | MPC | 04243 | 2002 $WY_7$ |
| 2002 $WD_8$ | 17.1 | 0.15 | 20060922 | 40.57205 | 171.19125 | 218.93623 | 2.02707 | 0.1771126 | 2.3747342 | 45 | 5 | 1995–2005 | 0.50 | M-v | 1 | MPC | 41287 | 2002 $WD_8$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $WH_8$ | 15.9 | 0.15 | 20060922 | 32.87323 | 122.03862 | 226.75295 | 4.37721 | 0.1178001 | 2.5968878 | 78 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 75808 | 2002 $WH_8$ |
| 2002 $WW_8$ | 17.2 | 0.15 | 20060922 | 359.20904 | 14.36766 | 54.00007 | 2.02463 | 0.1707346 | 2.4307510 | 60 | 6 | 1960–2006 | 0.61 | M-v | 1 | MPC | 66294 | 2002 $WW_8$ |
| 2002 $WZ_8$ | 17.3 | 0.15 | 20060922 | 33.94723 | 99.11648 | 7.58295 | 5.49774 | 0.0942121 | 2.1444293 | 47 | 2 | 2002–2005 | 0.67 | M-v | 5 | MPC | 89378 | 2002 $WZ_8$ |
| 2002 $WA_9$ | 14.7 | 0.15 | 20060922 | 201.63882 | 268.14553 | 253.38982 | 14.18156 | 0.0376529 | 2.7138617 | 84 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 61625 | 2002 $WA_9$ |
| 2002 $WC_9$ | 16.8 | 0.15 | 20060922 | 33.55845 | 8.84285 | 349.89540 | 2.73423 | 0.1846575 | 2.4740952 | 38 | 3 | 1998–2006 | 0.55 | M-v | 3 | MPC | 85763 | 2002 $WC_9$ |
| 2002 $WF_9$ | 17.0 | 0.15 | 20060922 | 0.38243 | 355.54131 | 24.77156 | 1.60280 | 0.1264746 | 2.5992062 | 77 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 04243 | 2002 $WF_9$ |
| 2002 $WV_9$ | 17.1 | 0.15 | 20060922 | 72.72662 | 333.86055 | 49.83078 | 4.00809 | 0.1641462 | 2.2653990 | 35 | 3 | 2002–2005 | 0.45 | M-v | 4 | MPC | 89378 | 2002 $WV_9$ |
| 2002 $WL_{10}$ | 15.8 | 0.15 | 20060922 | 26.78145 | 260.49079 | 96.21981 | 7.62710 | 0.1852637 | 2.5546329 | 46 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 75808 | 2002 $WL_{10}$ |
| 2002 $WM_{10}$ | 15.6 | 0.15 | 20060922 | 239.40343 | 305.33036 | 122.25577 | 5.46599 | 0.2184024 | 3.1941169 | 72 | 4 | 1996–2004 | 0.50 | M-v | 1 | MPC | 61626 | 2002 $WM_{10}$ |
| 2002 $WU_{10}$ | 15.6 | 0.15 | 20060922 | 143.07046 | 10.28685 | 205.64019 | 11.54509 | 0.0193362 | 2.8041706 | 53 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04243 | 2002 $WU_{10}$ |
| 2002 $WZ_{10}$ | 14.5 | 0.15 | 20060922 | 288.01655 | 263.12237 | 114.49847 | 9.96020 | 0.1166161 | 3.1172181 | 44 | 5 | 2000–2005 | 0.57 | M-v | 1 | MPC | 50164 | 2002 $WZ_{10}$ |
| 2002 $WD_{12}$ | 15.3 | 0.15 | 20060922 | 303.48423 | 275.11283 | 145.10877 | 13.22449 | 0.1708736 | 2.7666354 | 50 | 5 | 2001–2006 | 0.74 | M-v | 1 | MPC | 04243 | 2002 $WD_{12}$ |
| 2002 $WB_{13}$ | 16.4 | 0.15 | 20060922 | 300.89395 | 86.95534 | 17.29146 | 5.06244 | 0.1856211 | 2.5643704 | 54 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 65391 | 2002 $WB_{13}$ |
| 2002 $WD_{13}$ | 14.8 | 0.15 | 20060922 | 310.29663 | 221.95040 | 118.80492 | 11.92233 | 0.1336158 | 3.0625925 | 50 | 4 | 2000–2005 | 0.53 | M-v | 1 | MPC | 66295 | 2002 $WD_{13}$ |
| 2002 $WX_{13}$ | 15.9 | 0.15 | 20060922 | 145.11284 | 181.69800 | 109.73039 | 7.33917 | 0.1113593 | 2.3521096 | 67 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 87560 | 2002 $WX_{13}$ |
| 2002 $WY_{13}$ | 15.2 | 0.15 | 20060922 | 69.67275 | 210.52969 | 98.70128 | 10.21309 | 0.1237181 | 2.6148537 | 60 | 6 | 1994–2006 | 0.53 | M-v | 1 | MPC | 04244 | 2002 $WY_{13}$ |
| 2002 $WL_{14}$ | 16.0 | 0.15 | 20060922 | 345.19671 | 280.91203 | 133.82344 | 7.31202 | 0.2795483 | 2.5489715 | 99 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 66295 | 2002 $WL_{14}$ |
| 2002 $WN_{14}$ | 16.9 | 0.15 | 20060922 | 313.28864 | 326.45023 | 133.15317 | 7.67529 | 0.3251255 | 2.5984754 | 62 | 3 | 1999–2006 | 0.62 | M-v | 3 | MPC | 41294 | 2002 $WN_{14}$ |
| 2002 $WS_{14}$ | 15.3 | 0.15 | 20060922 | 327.00185 | 240.14825 | 138.40081 | 8.62400 | 0.1789012 | 2.8068130 | 72 | 3 | 1994–2006 | 0.47 | M-v | 2 | MPC | 03483 | 2002 $WS_{14}$ |
| 2002 $WY_{14}$ | 15.4 | 0.15 | 20060922 | 282.55890 | 13.28962 | 96.22997 | 13.06578 | 0.1405069 | 2.6707143 | 60 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 61630 | 2002 $WY_{14}$ |
| 2002 $WE_{15}$ | 16.7 | 0.15 | 20060922 | 36.62798 | 280.43391 | 122.65763 | 5.29858 | 0.1529769 | 2.3546950 | 51 | 5 | 1995–2006 | 0.43 | M-v | 1 | MPC | 85764 | 2002 $WE_{15}$ |
| 2002 $WF_{15}$ | 15.4 | 0.15 | 20060922 | 5.98034 | 241.98728 | 137.66191 | 5.67480 | 0.0929394 | 2.6015279 | 109 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 61630 | 2002 $WF_{15}$ |
| 2002 $WJ_{15}$ | 16.5 | 0.15 | 20060922 | 86.36325 | 225.13194 | 135.77763 | 7.22174 | 0.1369150 | 2.2908114 | 66 | 5 | 1992–2006 | 0.52 | M-v | 1 | MPC | 85765 | 2002 $WJ_{15}$ |
| 2002 $WR_{15}$ | 15.3 | 0.15 | 20060922 | 259.43063 | 320.49758 | 84.70324 | 13.21555 | 0.2932306 | 3.1088594 | 48 | 1 | 86 days | 0.54 | M-v | 4 | MPC | 41877 | 2002 $WR_{15}$ |
| 2002 $WY_{15}$ | 15.8 | 0.15 | 20060922 | 27.80805 | 259.92529 | 83.76768 | 12.34032 | 0.2618323 | 2.5453650 | 59 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 89379 | 2002 $WY_{15}$ |
| 2002 $WH_{16}$ | 15.6 | 0.15 | 20060922 | 330.67902 | 168.57326 | 219.56833 | 13.13185 | 0.1604850 | 2.7610270 | 46 | 4 | 1997–2006 | 0.55 | M-v | 1 | MPC | 04244 | 2002 $WH_{16}$ |
| 2002 $WL_{16}$ | 15.7 | 0.15 | 20060922 | 31.98708 | 149.66713 | 219.14776 | 11.57652 | 0.0538560 | 2.5634367 | 61 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 69419 | 2002 $WL_{16}$ |
| 2002 $WS_{16}$ | 16.5 | 0.15 | 20060922 | 318.97427 | 282.17527 | 111.57627 | 8.73456 | 0.2391498 | 2.7793963 | 24 | 3 | 1994–2006 | 0.39 | M-v | 2 | MPC | 03483 | 2002 $WS_{16}$ |
| 2002 $WA_{17}$ | 16.1 | 0.15 | 20060922 | 344.22040 | 304.02333 | 177.69275 | 7.24741 | 0.1910087 | 2.3613985 | 58 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90164 | 2002 $WA_{17}$ |
| 2002 $WE_{18}$ | 15.8 | 0.15 | 20060922 | 324.41805 | 259.03582 | 140.68975 | 13.24061 | 0.2807396 | 2.6826544 | 73 | 2 | 2002–2006 | 0.67 | M-v | 3 | MPC | 03483 | 2002 $WE_{18}$ |
| 2002 $WF_{18}$ | 15.4 | 0.15 | 20060922 | 299.53221 | 326.23279 | 121.80647 | 12.93296 | 0.1689292 | 2.6472686 | 52 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 61631 | 2002 $WF_{18}$ |
| 2002 $WO_{18}$ | 15.5 | 0.15 | 20060922 | 344.29175 | 281.99463 | 93.54885 | 15.00264 | 0.1389341 | 2.6747788 | 56 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 04244 | 2002 $WO_{18}$ |
| 2002 $WQ_{18}$ | 15.8 | 0.15 | 20060922 | 36.05263 | 324.08669 | 42.55758 | 24.19511 | 0.2361531 | 2.3409700 | 67 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 04244 | 2002 $WQ_{18}$ |
| 2002 $WS_{18}$ | 16.8 | 0.15 | 20060922 | 121.49706 | 175.87143 | 147.95906 | 2.97547 | 0.1921685 | 2.2746826 | 77 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 90164 | 2002 $WS_{18}$ |
| 2002 $WV_{18}$ | 15.5 | 0.15 | 20060922 | 302.95328 | 279.21476 | 164.44225 | 11.51908 | 0.1537014 | 2.6287780 | 130 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04244 | 2002 $WV_{18}$ |
| 2002 $WV_{19}$ | 18.2 | 0.15 | 20060922 | 95.21887 | 138.85571 | 209.60257 | 5.33997 | 0.2255764 | 2.2530811 | 21 | 2 | 2002–2005 | 0.21 | M-v | 3 | MPC | 89380 | 2002 $WV_{19}$ |
| 2002 $WZ_{19}$ | 16.2 | 0.15 | 20060922 | 27.94732 | 104.21047 | 241.76135 | 4.90139 | 0.1306125 | 2.6176473 | 59 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 85767 | 2002 $WZ_{19}$ |
| 2002 $WF_{20}$ | 16.8 | 0.15 | 20060922 | 180.41042 | 164.86351 | 54.99138 | 6.13460 | 0.1488048 | 2.5918177 | 38 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 74242 | 2002 $WF_{20}$ |
| 2002 $WG_{20}$ | 15.3 | 0.15 | 20060922 | 113.26408 | 223.53659 | 277.40175 | 1.62318 | 0.1662327 | 3.9658956 | 36 | 4 | 2000–2005 | 0.34 | M-v | 0 | MPC | 62433 | 2002 $WG_{20}$ |
| 2002 $WJ_{20}$ | 17.3 | 0.15 | 20060922 | 334.31413 | 288.90468 | 114.31359 | 4.42460 | 0.1184268 | 2.6371281 | 31 | 4 | 1995–2006 | 0.44 | M-v | 2 | MPC | 72736 | 2002 $WJ_{20}$ |
| 2002 $WL_{20}$ | 16.5 | 0.15 | 20060922 | 288.61385 | 195.26043 | 227.77717 | 3.94089 | 0.1448082 | 2.7902862 | 39 | 4 | 2000–2006 | 0.65 | M-v | 2 | MPC | 85767 | 2002 $WL_{20}$ |
| 2002 $WP_{21}$ | 17.7 | 0.15 | 20021122 | 335.91938 | 305.86275 | 154.09448 | 2.59042 | 0.1605881 | 2.3668709 | 8 | 1 | 16 days | 0.11 | | | MPC | | 2002 $WP_{21}$ |
| 2002 $WR_{21}$ | 18.2 | 0.15 | 20021122 | 9.26744 | 318.07329 | 97.52185 | 6.63372 | 0.1201721 | 2.3684486 | 8 | 1 | 16 days | 0.20 | | | MPC | | 2002 $WR_{21}$ |
| 2002 XG | 16.4 | 0.15 | 20060922 | 322.56396 | 182.49396 | 209.49067 | 4.67580 | 0.1651579 | 2.7735027 | 51 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 04244 | 2002 XG |
| 2002 XJ | 16.9 | 0.15 | 20060922 | 54.67093 | 258.33938 | 103.90547 | 2.38409 | 0.1951572 | 2.3812142 | 66 | 5 | 1997–2006 | 0.59 | M-v | 2 | MPC | 62433 | 2002 XJ |
| 2002 XO | 16.3 | 0.15 | 20060922 | 271.97194 | 307.42002 | 173.23238 | 4.99469 | 0.1950845 | 2.6696964 | 51 | 5 | 1997–2006 | 0.44 | M-v | 0 | MPC | 03484 | 2002 XO |
| 2002 XP | 16.9 | 0.15 | 20060922 | 107.88648 | 192.66383 | 155.86386 | 6.77619 | 0.2110615 | 2.2157959 | 98 | 3 | 2002–2005 | 0.49 | M-v | 2 | MPC | 85768 | 2002 XP |
| 2002 $XP_1$ | 16.9 | 0.15 | 20060922 | 325.06658 | 203.37404 | 203.49150 | 8.42434 | 0.3190459 | 2.6633827 | 42 | 2 | 2002–2006 | 0.45 | M-v | 3 | MPC | 03484 | 2002 $XP_1$ |
| 2002 $XW_1$ | 16.8 | 0.15 | 20060922 | 105.25473 | 263.28103 | 113.35011 | 5.76209 | 0.0851696 | 2.1879225 | 41 | 2 | 2002–2005 | 0.62 | M-v | 4 | MPC | 90164 | 2002 $XW_1$ |
| 2002 $XL_2$ | 16.1 | 0.15 | 20060922 | 23.46937 | 160.07163 | 184.90048 | 4.31253 | 0.2494143 | 2.6033223 | 74 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04244 | 2002 $XL_2$ |
| 2002 $XR_2$ | 17.5 | 0.15 | 20060922 | 120.74521 | 165.09662 | 189.30698 | 3.31606 | 0.1637682 | 2.1940786 | 78 | 3 | 2002–2005 | 0.57 | M-v | 3 | MPC | 97627 | 2002 $XR_2$ |
| 2002 $XD_3$ | 16.1 | 0.15 | 20060922 | 329.56076 | 236.69926 | 213.70844 | 9.41931 | 0.1541838 | 2.5156765 | 62 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 65392 | 2002 $XD_3$ |
| 2002 $XM_3$ | 16.4 | 0.15 | 20060922 | 314.52436 | 307.69863 | 160.95909 | 5.39530 | 0.1816441 | 2.5309852 | 54 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 65392 | 2002 $XM_3$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $XS_3$ | 15.7 | 0.15 | 20060922 | 256.94103 | 254.76395 | 238.54413 | 13.35307 | 0.0567163 | 2.6245104 | 57 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87561 | 2002 $XS_3$ |
| 2002 $XV_3$ | 15.9 | 0.15 | 20060922 | 8.84381 | 142.83720 | 240.98207 | 3.40437 | 0.0919085 | 2.5682863 | 113 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 61634 | 2002 $XV_3$ |
| 2002 $XA_4$ | 17.3 | 0.15 | 20060922 | 38.71010 | 80.84495 | 298.71415 | 0.44388 | 0.1977188 | 2.3869901 | 47 | 4 | 1998–2006 | 0.46 | M-v | 1 | MPC | 03484 | 2002 $XA_4$ |
| 2002 $XC_4$ | 16.6 | 0.15 | 20060922 | 165.11819 | 137.13883 | 165.93110 | 4.71608 | 0.2161131 | 2.1982739 | 72 | 5 | 1995–2005 | 0.49 | M-v | 1 | MPC | 97627 | 2002 $XC_4$ |
| 2002 $XH_4$ | 19.3 | 0.15 | 20060922 | 45.12205 | 213.55064 | 93.54618 | 14.52495 | 0.2703946 | 1.6082942 | 34 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 02141 | 2002 $XH_4$ |
| 2002 $XS_4$ | 16.6 | 0.15 | 20060922 | 0.44801 | 281.66478 | 65.85189 | 5.66021 | 0.3376046 | 2.6285996 | 81 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 03484 | 2002 $XS_4$ |
| 2002 $XN_5$ | 17.1 | 0.15 | 20060922 | 15.44429 | 274.64472 | 146.73041 | 1.59239 | 0.1632889 | 2.3756707 | 57 | 6 | 1991–2006 | 0.49 | M-v | 1 | MPC | 87561 | 2002 $XN_5$ |
| 2002 $XZ_5$ | 16.0 | 0.15 | 20060922 | 283.90284 | 349.30836 | 126.21439 | 8.83549 | 0.1421087 | 2.6092644 | 30 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 85770 | 2002 $XZ_5$ |
| 2002 $XC_6$ | 16.2 | 0.15 | 20060922 | 356.97113 | 316.46451 | 105.87524 | 7.14903 | 0.1046562 | 2.4775647 | 77 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 87561 | 2002 $XC_6$ |
| 2002 $XD_7$ | 15.8 | 0.15 | 20060922 | 257.45848 | 259.88367 | 240.61211 | 11.57365 | 0.2053193 | 2.6311755 | 62 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 66295 | 2002 $XD_7$ |
| 2002 $XT_7$ | 16.2 | 0.15 | 20060922 | 301.04034 | 186.91794 | 265.17154 | 12.77624 | 0.1072422 | 2.5761926 | 80 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 61637 | 2002 $XT_7$ |
| 2002 $XW_7$ | 16.6 | 0.15 | 20060922 | 336.14840 | 25.86543 | 78.32929 | 2.29281 | 0.1466191 | 2.4032819 | 49 | 3 | 1998–2006 | 0.45 | M-v | 3 | MPC | 94873 | 2002 $XW_7$ |
| 2002 $XA_8$ | 15.4 | 0.15 | 20060922 | 17.72543 | 90.43872 | 235.92061 | 14.13594 | 0.1542898 | 2.7565981 | 63 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04244 | 2002 $XA_8$ |
| 2002 $XJ_8$ | 15.5 | 0.15 | 20060922 | 244.57263 | 94.47252 | 71.27291 | 13.58709 | 0.2013639 | 2.6159418 | 68 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 66295 | 2002 $XJ_8$ |
| 2002 $XO_8$ | 15.8 | 0.15 | 20060922 | 21.37712 | 276.47480 | 87.05878 | 4.86104 | 0.0852187 | 2.5890046 | 69 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 03485 | 2002 $XO_8$ |
| 2002 $XS_8$ | 18.0 | 0.15 | 20060922 | 20.50964 | 221.08902 | 201.76964 | 2.08276 | 0.1931927 | 2.3593639 | 39 | 5 | 1991–2006 | 0.51 | M-v | 1 | MPC | 50165 | 2002 $XS_8$ |
| 2002 $XT_8$ | 16.3 | 0.15 | 20060922 | 31.24029 | 148.74102 | 200.43503 | 2.97627 | 0.1965476 | 2.5522801 | 59 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 75811 | 2002 $XT_8$ |
| 2002 $XE_9$ | 15.9 | 0.15 | 20060922 | 250.23692 | 87.63753 | 19.69043 | 1.96215 | 0.0530833 | 2.7981257 | 50 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 61637 | 2002 $XE_9$ |
| 2002 $XJ_9$ | 16.4 | 0.15 | 20060922 | 49.75927 | 182.59268 | 172.71754 | 1.02018 | 0.2014855 | 2.4378707 | 24 | 3 | 1994–2006 | 0.66 | M-v | 4 | MPC | 48302 | 2002 $XJ_9$ |
| 2002 $XM_9$ | 16.4 | 0.15 | 20060922 | 354.35878 | 13.69863 | 63.05906 | 4.40948 | 0.1007448 | 2.3975377 | 52 | 4 | 1998–2006 | 0.64 | M-v | 3 | MPC | 66295 | 2002 $XM_9$ |
| 2002 $XP_{10}$ | 16.0 | 0.15 | 20060922 | 288.27900 | 5.13228 | 119.05278 | 5.47127 | 0.1827339 | 2.6001361 | 69 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 65393 | 2002 $XP_{10}$ |
| 2002 $XT_{10}$ | 15.7 | 0.15 | 20060922 | 14.40068 | 141.34315 | 207.82404 | 7.00446 | 0.0316535 | 2.7734195 | 51 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 85771 | 2002 $XT_{10}$ |
| 2002 $XW_{10}$ | 15.3 | 0.15 | 20060922 | 123.85453 | 174.87050 | 56.37121 | 5.60647 | 0.0429328 | 2.8717943 | 35 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 04244 | 2002 $XW_{10}$ |
| 2002 $XA_{11}$ | 17.3 | 0.15 | 20060922 | 58.39374 | 87.08831 | 294.79131 | 1.36170 | 0.2329408 | 2.3225735 | 56 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 77682 | 2002 $XA_{11}$ |
| 2002 $XK_{11}$ | 17.5 | 0.15 | 20060922 | 237.06105 | 127.58201 | 75.59016 | 6.50457 | 0.0705338 | 2.3778584 | 36 | 4 | 2001–2005 | 0.68 | M-v | 1 | MPC | 87561 | 2002 $XK_{11}$ |
| 2002 $XO_{11}$ | 15.3 | 0.15 | 20060922 | 332.64845 | 101.93662 | 294.77134 | 9.13002 | 0.0952905 | 2.6798164 | 72 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04244 | 2002 $XO_{11}$ |
| 2002 $XQ_{11}$ | 15.3 | 0.15 | 20060922 | 285.24022 | 207.92486 | 283.17491 | 11.68695 | 0.2064932 | 2.5669902 | 62 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 85772 | 2002 $XQ_{11}$ |
| 2002 $XU_{11}$ | 15.5 | 0.15 | 20060922 | 60.66543 | 322.08551 | 6.81392 | 8.97977 | 0.1192202 | 2.5316330 | 50 | 4 | 2000–2006 | 0.50 | M-v | 3 | MPC | 62433 | 2002 $XU_{11}$ |
| 2002 $XW_{11}$ | 15.2 | 0.15 | 20060922 | 346.16812 | 120.77054 | 257.29266 | 29.98223 | 0.2557873 | 2.6380378 | 96 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 02141 | 2002 $XW_{11}$ |
| 2002 $XA_{12}$ | 14.9 | 0.15 | 20060922 | 29.29668 | 49.55065 | 273.62731 | 16.21833 | 0.1904127 | 2.6877798 | 50 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04244 | 2002 $XA_{12}$ |
| 2002 $XC_{12}$ | 15.7 | 0.15 | 20060922 | 344.71170 | 44.58690 | 305.21720 | 6.84040 | 0.2882168 | 2.7493846 | 83 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 04244 | 2002 $XC_{12}$ |
| 2002 $XJ_{12}$ | 15.7 | 0.15 | 20060922 | 347.04737 | 46.90781 | 310.67490 | 8.20200 | 0.1373749 | 2.7891610 | 79 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 04244 | 2002 $XJ_{12}$ |
| 2002 $XM_{12}$ | 15.6 | 0.15 | 20060922 | 305.57727 | 63.82775 | 0.72528 | 8.12871 | 0.1581417 | 2.7276156 | 128 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04244 | 2002 $XM_{12}$ |
| 2002 $XQ_{12}$ | 16.1 | 0.15 | 20060922 | 274.64431 | 91.41465 | 66.50483 | 9.25668 | 0.1732288 | 2.5247508 | 60 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 65393 | 2002 $XQ_{12}$ |
| 2002 $XS_{12}$ | 15.2 | 0.15 | 20060922 | 244.16231 | 203.54902 | 256.93790 | 9.96982 | 0.0827030 | 2.9629792 | 44 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 61640 | 2002 $XS_{12}$ |
| 2002 $XH_{13}$ | 15.8 | 0.15 | 20060922 | 206.47264 | 357.55042 | 115.74440 | 2.76540 | 0.1647805 | 3.1876371 | 64 | 4 | 1999–2004 | 0.57 | M-v | 0 | MPC | 61640 | 2002 $XH_{13}$ |
| 2002 $XJ_{13}$ | 16.3 | 0.15 | 20060922 | 272.11938 | 287.98375 | 235.14139 | 5.65974 | 0.0863959 | 2.4474062 | 65 | 7 | 1994–2006 | 0.58 | M-v | 1 | MPC | 97627 | 2002 $XJ_{13}$ |
| 2002 $XS_{13}$ | 17.4 | 0.15 | 20060922 | 347.41952 | 315.42097 | 144.32805 | 2.89944 | 0.1487166 | 2.4001554 | 31 | 3 | 1996–2006 | 0.56 | M-v | 3 | MPC | 41308 | 2002 $XS_{13}$ |
| 2002 $XR_{14}$ | 18.1 | 0.15 | 20060922 | 116.45301 | 120.08634 | 75.71216 | 2.13046 | 0.6257077 | 1.9047513 | 181 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04244 | 2002 $XR_{14}$ |
| 2002 $XE_{16}$ | 15.0 | 0.15 | 20060922 | 327.26227 | 49.00074 | 332.21641 | 8.67966 | 0.1215144 | 2.7682060 | 138 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04244 | 2002 $XE_{16}$ |
| 2002 $XN_{16}$ | 14.9 | 0.15 | 20060922 | 338.05819 | 13.12520 | 346.29578 | 9.61555 | 0.2136444 | 2.7728238 | 91 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 04244 | 2002 $XN_{16}$ |
| 2002 $XX_{16}$ | 16.5 | 0.15 | 20060922 | 6.20827 | 36.34432 | 350.65844 | 9.00876 | 0.1696741 | 2.5358703 | 22 | 3 | 2002–2006 | 0.41 | M-v | 4 | MPC | 61642 | 2002 $XX_{16}$ |
| 2002 $XE_{17}$ | 15.7 | 0.15 | 20060922 | 328.48806 | 17.08626 | 68.09055 | 22.95017 | 0.0811708 | 2.6134562 | 92 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 65393 | 2002 $XE_{17}$ |
| 2002 $XO_{17}$ | 14.4 | 0.15 | 20060922 | 123.18878 | 271.52447 | 288.36340 | 16.61093 | 0.0641923 | 3.1378258 | 50 | 3 | 1997–2004 | 0.52 | M-v | 3 | MPC | 61643 | 2002 $XO_{17}$ |
| 2002 $XH_{18}$ | 16.5 | 0.15 | 20060922 | 312.39638 | 5.56898 | 85.17071 | 5.58645 | 0.1502849 | 2.6196479 | 57 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 61643 | 2002 $XH_{18}$ |
| 2002 $XT_{18}$ | 16.3 | 0.15 | 20060922 | 1.23500 | 28.58270 | 8.64005 | 7.58627 | 0.2426268 | 2.5424481 | 30 | 4 | 1998–2006 | 0.65 | M-v | 3 | MPC | 62434 | 2002 $XT_{18}$ |
| 2002 $XB_{19}$ | 15.3 | 0.15 | 20060922 | 7.99204 | 90.77850 | 249.64539 | 12.71008 | 0.1490329 | 2.6687884 | 73 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03485 | 2002 $XB_{19}$ |
| 2002 $XF_{19}$ | 16.3 | 0.15 | 20060922 | 264.47075 | 287.42001 | 280.40775 | 5.95424 | 0.1166609 | 2.2269825 | 93 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 90164 | 2002 $XF_{19}$ |
| 2002 $XJ_{19}$ | 14.8 | 0.15 | 20060922 | 68.16723 | 27.50901 | 258.09598 | 12.79650 | 0.1749628 | 2.6611164 | 91 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 75812 | 2002 $XJ_{19}$ |
| 2002 $XX_{19}$ | 17.0 | 0.15 | 20060922 | 54.94127 | 53.30127 | 4.76238 | 3.30615 | 0.0259443 | 2.2340286 | 56 | 3 | 2002–2005 | 0.46 | M-v | 3 | MPC | 02141 | 2002 $XX_{19}$ |
| 2002 $XK_{20}$ | 15.8 | 0.15 | 20060922 | 313.64498 | 349.08832 | 26.65230 | 5.30483 | 0.0543445 | 2.9351653 | 25 | 4 | 2001–2005 | 0.40 | M-v | 1 | MPC | 75812 | 2002 $XK_{20}$ |
| 2002 $XL_{20}$ | 16.2 | 0.15 | 20060922 | 127.57947 | 53.00460 | 268.67651 | 6.09511 | 0.1369832 | 2.2636410 | 32 | 3 | 2002–2006 | 0.65 | M-v | 4 | MPC | 89381 | 2002 $XL_{20}$ |
| 2002 $XP_{20}$ | 16.4 | 0.15 | 20060922 | 29.14852 | 9.30472 | 342.69871 | 2.32128 | 0.1972684 | 2.5410030 | 60 | 5 | 1998–2006 | 0.56 | M-v | 2 | MPC | 75812 | 2002 $XP_{20}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $XN_{21}$ | 15.7 | 0.15 | 20060922 | 336.21206 | 107.66042 | 319.07626 | 3.35469 | 0.1530828 | 2.5612139 | 123 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 04244 | 2002 $XN_{21}$ |
| 2002 $XU_{21}$ | 15.3 | 0.15 | 20060922 | 315.70135 | 341.65868 | 72.44578 | 9.10365 | 0.2209146 | 2.7915644 | 53 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 04244 | 2002 $XU_{21}$ |
| 2002 $XZ_{21}$ | 15.4 | 0.15 | 20060922 | 11.43602 | 354.31821 | 45.14949 | 3.91016 | 0.2115611 | 2.5252402 | 100 | 7 | 1992–2006 | 0.62 | M-v | 3 | MPC | 66295 | 2002 $XZ_{21}$ |
| 2002 $XK_{22}$ | 15.4 | 0.15 | 20060922 | 210.68396 | 144.20454 | 30.17772 | 6.90320 | 0.0818802 | 2.7323053 | 100 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 61646 | 2002 $XK_{22}$ |
| 2002 $XO_{22}$ | 15.9 | 0.15 | 20060922 | 272.24618 | 102.86246 | 47.11521 | 7.21328 | 0.1776243 | 2.5803521 | 82 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 65394 | 2002 $XO_{22}$ |
| 2002 $XY_{23}$ | 15.6 | 0.15 | 20060922 | 328.50975 | 14.05566 | 9.34001 | 9.09605 | 0.1696242 | 2.7647650 | 34 | 2 | 2002–2006 | 0.42 | M-v | 3 | MPC | 03486 | 2002 $XY_{23}$ |
| 2002 $XO_{24}$ | 17.4 | 0.15 | 20060922 | 30.95272 | 115.46742 | 287.24232 | 1.71905 | 0.1750287 | 2.4027728 | 53 | 6 | 1991–2006 | 0.50 | M-v | 1 | MPC | 87561 | 2002 $XO_{24}$ |
| 2002 $XT_{24}$ | 16.4 | 0.15 | 20060922 | 252.83553 | 271.61638 | 259.18065 | 7.83453 | 0.1351649 | 2.5793700 | 48 | 5 | 2001–2006 | 0.57 | M-v | 0 | MPC | 87561 | 2002 $XT_{24}$ |
| 2002 $XV_{24}$ | 16.1 | 0.15 | 20060922 | 330.74815 | 162.65779 | 260.36052 | 8.80942 | 0.1706333 | 2.6323584 | 65 | 3 | 1993–2006 | 0.45 | M-v | 2 | MPC | 50719 | 2002 $XV_{24}$ |
| 2002 $XF_{25}$ | 16.7 | 0.15 | 20060922 | 303.81698 | 59.33091 | 91.14547 | 3.31709 | 0.1123433 | 2.4106283 | 45 | 6 | 1994–2006 | 0.45 | M-v | 1 | MPC | 85775 | 2002 $XF_{25}$ |
| 2002 $XX_{25}$ | 16.3 | 0.15 | 20060922 | 41.99128 | 51.40114 | 305.51960 | 0.47964 | 0.1734573 | 2.5323749 | 54 | 5 | 1998–2006 | 0.50 | M-v | 3 | MPC | 66296 | 2002 $XX_{25}$ |
| 2002 $XF_{26}$ | 17.0 | 0.15 | 20060922 | 23.79318 | 40.88797 | 41.12373 | 2.51056 | 0.1835092 | 2.3040289 | 51 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 85775 | 2002 $XF_{26}$ |
| 2002 $XQ_{26}$ | 15.4 | 0.15 | 20060922 | 335.93527 | 73.61782 | 302.42484 | 11.58529 | 0.2856068 | 2.6732665 | 118 | 2 | 2002–2006 | 0.47 | M-v | 2 | MPC | 04244 | 2002 $XQ_{26}$ |
| 2002 $XU_{26}$ | 16.0 | 0.15 | 20060922 | 346.12866 | 84.14905 | 278.01601 | 16.61533 | 0.2945279 | 2.6618168 | 42 | 2 | 2002–2006 | 0.64 | M-v | 3 | MPC | 03486 | 2002 $XU_{26}$ |
| 2002 $XZ_{26}$ | 16.8 | 0.15 | 20060922 | 33.56073 | 82.73966 | 1.40960 | 3.16375 | 0.1422510 | 2.2447073 | 28 | 2 | 2002–2005 | 0.52 | M-v | 4 | MPC | 03486 | 2002 $XZ_{26}$ |
| 2002 $XO_{27}$ | 16.9 | 0.15 | 20060922 | 14.47474 | 187.45957 | 246.12056 | 2.23919 | 0.1278059 | 2.3595601 | 47 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 94874 | 2002 $XO_{27}$ |
| 2002 $XU_{27}$ | 16.1 | 0.15 | 20060922 | 356.19071 | 310.51258 | 67.59026 | 3.86116 | 0.1046988 | 2.6729130 | 111 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 66296 | 2002 $XU_{27}$ |
| 2002 $XW_{27}$ | 16.3 | 0.15 | 20060922 | 45.65168 | 322.15837 | 74.19609 | 4.92899 | 0.1296463 | 2.3473055 | 38 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 03486 | 2002 $XW_{27}$ |
| 2002 $XB_{28}$ | 15.4 | 0.15 | 20060922 | 273.13829 | 220.76277 | 281.27937 | 11.90851 | 0.2071547 | 2.6097861 | 57 | 6 | 1998–2006 | 0.61 | M-v | 1 | MPC | 85776 | 2002 $XB_{28}$ |
| 2002 $XC_{28}$ | 15.6 | 0.15 | 20060922 | 272.63997 | 218.66371 | 288.76858 | 12.13561 | 0.1814649 | 2.5721829 | 50 | 5 | 1998–2006 | 0.55 | M-v | 2 | MPC | 89381 | 2002 $XC_{28}$ |
| 2002 $XP_{28}$ | 16.1 | 0.15 | 20060922 | 307.07031 | 351.27935 | 78.77213 | 5.93119 | 0.0983497 | 2.7615543 | 55 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 61650 | 2002 $XP_{28}$ |
| 2002 $XR_{28}$ | 17.1 | 0.15 | 20060922 | 8.08482 | 174.99398 | 258.72381 | 1.41400 | 0.1556239 | 2.4201526 | 52 | 4 | 1998–2006 | 0.69 | M-v | 2 | MPC | 87561 | 2002 $XR_{28}$ |
| 2002 $XS_{28}$ | 15.4 | 0.15 | 20060922 | 355.37481 | 157.15786 | 257.55620 | 1.69743 | 0.2120309 | 2.5384423 | 99 | 5 | 1993–2006 | 0.55 | M-v | 1 | MPC | 04245 | 2002 $XS_{28}$ |
| 2002 $XY_{28}$ | 18.0 | 0.15 | 20060922 | 33.12705 | 307.23881 | 97.53483 | 2.31437 | 0.1833242 | 2.3889743 | 42 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 85776 | 2002 $XY_{28}$ |
| 2002 $XB_{29}$ | 15.5 | 0.15 | 20060922 | 64.66403 | 250.95620 | 83.88859 | 2.46815 | 0.1445654 | 2.5568806 | 72 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 61650 | 2002 $XB_{29}$ |
| 2002 $XP_{29}$ | 14.7 | 0.15 | 20060922 | 197.53914 | 315.92630 | 178.19469 | 6.21060 | 0.1464226 | 3.1722535 | 78 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 62434 | 2002 $XP_{29}$ |
| 2002 $XR_{29}$ | 16.8 | 0.15 | 20060922 | 36.36885 | 300.65501 | 128.74356 | 5.63319 | 0.1951962 | 2.2975468 | 43 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 85776 | 2002 $XR_{29}$ |
| 2002 $XT_{29}$ | 16.2 | 0.15 | 20060922 | 280.56608 | 314.30059 | 182.25885 | 6.19369 | 0.2259743 | 2.6356688 | 60 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 87562 | 2002 $XT_{29}$ |
| 2002 $XF_{30}$ | 16.0 | 0.15 | 20060922 | 334.46635 | 39.79925 | 341.29643 | 10.41298 | 0.2058894 | 2.7238277 | 97 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04245 | 2002 $XF_{30}$ |
| 2002 $XJ_{30}$ | 15.3 | 0.15 | 20060922 | 26.67782 | 320.25445 | 18.82820 | 12.69420 | 0.1796527 | 2.6452775 | 229 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04245 | 2002 $XJ_{30}$ |
| 2002 $XK_{30}$ | 15.3 | 0.15 | 20060922 | 320.65592 | 63.28165 | 339.45703 | 8.70785 | 0.2047304 | 2.7261697 | 149 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 04245 | 2002 $XK_{30}$ |
| 2002 $XM_{30}$ | 15.4 | 0.15 | 20060922 | 319.63103 | 143.07658 | 286.64261 | 14.39544 | 0.1516507 | 2.6292422 | 52 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 66296 | 2002 $XM_{30}$ |
| 2002 $XM_{31}$ | 16.1 | 0.15 | 20060922 | 282.13423 | 179.64317 | 307.93673 | 3.45140 | 0.1849879 | 2.6251467 | 62 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 03486 | 2002 $XM_{31}$ |
| 2002 $XP_{31}$ | 16.4 | 0.15 | 20060922 | 0.06504 | 65.03589 | 278.56981 | 10.77841 | 0.3677287 | 2.6700186 | 67 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 03486 | 2002 $XP_{31}$ |
| 2002 $XQ_{31}$ | 15.6 | 0.15 | 20060922 | 60.87598 | 54.97001 | 291.64101 | 8.11408 | 0.2489427 | 2.4197066 | 70 | 6 | 1995–2006 | 0.57 | M-v | 1 | MPC | 87562 | 2002 $XQ_{31}$ |
| 2002 $XR_{31}$ | 14.9 | 0.15 | 20060922 | 352.60328 | 106.27125 | 269.73909 | 15.81332 | 0.2268149 | 2.6524776 | 121 | 2 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03487 | 2002 $XR_{31}$ |
| 2002 $XX_{31}$ | 16.4 | 0.15 | 20060922 | 34.44678 | 135.79765 | 288.37972 | 5.85719 | 0.0930342 | 2.3177991 | 47 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 85777 | 2002 $XX_{31}$ |
| 2002 $XP_{32}$ | 17.0 | 0.15 | 20060922 | 72.57158 | 38.95981 | 19.48841 | 4.92047 | 0.1327916 | 2.2057981 | 62 | 2 | 2002–2005 | 0.54 | M-v | 4 | MPC | 89382 | 2002 $XP_{32}$ |
| 2002 $XC_{33}$ | 16.8 | 0.15 | 20060922 | 122.76414 | 5.23132 | 343.22014 | 3.03950 | 0.1841781 | 2.1986054 | 126 | 5 | 1994–2005 | 0.47 | M-v | 1 | MPC | 97627 | 2002 $XC_{33}$ |
| 2002 $XG_{33}$ | 15.8 | 0.15 | 20060922 | 317.35702 | 326.27990 | 111.67731 | 13.62901 | 0.1161816 | 2.6422994 | 56 | 4 | 1998–2006 | 0.57 | M-v | 2 | MPC | 50720 | 2002 $XG_{33}$ |
| 2002 $XK_{33}$ | 15.8 | 0.15 | 20060922 | 343.66829 | 42.49153 | 332.29336 | 12.01328 | 0.1913339 | 2.6697708 | 88 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03487 | 2002 $XK_{33}$ |
| 2002 $XP_{33}$ | 17.2 | 0.15 | 20060922 | 36.28857 | 124.32674 | 276.35071 | 9.93762 | 0.1427126 | 2.3406313 | 45 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 85778 | 2002 $XP_{33}$ |
| 2002 $XQ_{33}$ | 16.8 | 0.15 | 20060922 | 33.81096 | 128.34233 | 275.96273 | 9.09254 | 0.1333304 | 2.3486017 | 60 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 85778 | 2002 $XQ_{33}$ |
| 2002 $XG_{34}$ | 16.3 | 0.15 | 20060922 | 322.51430 | 38.39988 | 42.76687 | 2.39500 | 0.1225385 | 2.6001680 | 89 | 5 | 1995–2006 | 0.39 | M-v | 1 | MPC | 04245 | 2002 $XG_{34}$ |
| 2002 $XK_{34}$ | 15.1 | 0.15 | 20060922 | 269.08006 | 341.59239 | 86.77017 | 9.49937 | 0.0692647 | 3.0542961 | 53 | 6 | 1997–2006 | 0.68 | M-v | 1 | MPC | 04245 | 2002 $XK_{34}$ |
| 2002 $XM_{34}$ | 16.0 | 0.15 | 20060922 | 47.94276 | 120.43971 | 289.39145 | 6.28568 | 0.0899761 | 2.3838470 | 64 | 6 | 1991–2006 | 0.68 | M-v | 1 | MPC | 02141 | 2002 $XM_{34}$ |
| 2002 $XR_{34}$ | 15.9 | 0.15 | 20060922 | 320.29875 | 93.88867 | 337.91143 | 4.43460 | 0.1756482 | 2.6081058 | 70 | 4 | 1995–2006 | 0.44 | M-v | 3 | MPC | 41324 | 2002 $XR_{34}$ |
| 2002 $XV_{34}$ | 16.1 | 0.15 | 20060922 | 56.11902 | 308.23184 | 48.25630 | 6.70853 | 0.1153884 | 2.4533598 | 45 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 87562 | 2002 $XV_{34}$ |
| 2002 $XZ_{34}$ | 16.0 | 0.15 | 20060922 | 314.17227 | 16.00702 | 61.08873 | 9.28206 | 0.0995819 | 2.6393573 | 73 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 61654 | 2002 $XZ_{34}$ |
| 2002 $XL_{35}$ | 17.0 | 0.15 | 20060922 | 69.18436 | 63.61028 | 279.74783 | 1.43634 | 0.2275544 | 2.4312802 | 39 | 5 | 1994–2006 | 0.40 | M-v | 2 | MPC | 66296 | 2002 $XL_{35}$ |
| 2002 $XR_{35}$ | 15.7 | 0.15 | 20060922 | 271.47738 | 201.67389 | 256.04339 | 7.29235 | 0.1160755 | 2.7953218 | 73 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 66296 | 2002 $XR_{35}$ |
| 2002 $XW_{35}$ | 16.1 | 0.15 | 20060922 | 335.56815 | 127.55404 | 19.04190 | 7.22420 | 0.0848083 | 2.2624167 | 74 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97627 | 2002 $XW_{35}$ |
| 2002 $XD_{36}$ | 16.1 | 0.15 | 20060922 | 24.50763 | 278.69748 | 82.88098 | 5.71146 | 0.3119433 | 2.5590486 | 57 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 85778 | 2002 $XD_{36}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $XE_{37}$ | 15.1 | 0.15 | 20060922 | 347.50552 | 43.29649 | 26.11871 | 13.34220 | 0.1694178 | 2.5854359 | 55 | 5 | 1999–2006 | 0.72 | M-v | 2 | MPC | 04245 | 2002 $XE_{37}$ |
| 2002 $XG_{37}$ | 15.8 | 0.15 | 20060922 | 339.26175 | 43.32799 | 15.92515 | 13.44729 | 0.2521380 | 2.6521232 | 72 | 3 | 1993–2006 | 0.47 | M-v | 2 | MPC | 41326 | 2002 $XG_{37}$ |
| 2002 $XL_{38}$ | 15.9 | 0.15 | 20060922 | 345.30934 | 64.09336 | 308.03521 | 2.56399 | 0.1966590 | 2.7399464 | 86 | 3 | 1997–2006 | 0.58 | M-v | 3 | MPC | 03488 | 2002 $XL_{38}$ |
| 2002 $XM_{38}$ | 14.9 | 0.15 | 20060922 | 245.43256 | 172.42670 | 294.77044 | 8.98368 | 0.0597025 | 2.9843787 | 42 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 85779 | 2002 $XM_{38}$ |
| 2002 $XF_{39}$ | 16.1 | 0.15 | 20060922 | 97.84316 | 27.34403 | 260.76402 | 3.58657 | 0.1351120 | 2.5756738 | 43 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 61656 | 2002 $XF_{39}$ |
| 2002 $XQ_{39}$ | 14.4 | 0.15 | 20060922 | 54.77267 | 8.59459 | 284.82189 | 21.05793 | 0.0401779 | 3.0866153 | 61 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 85779 | 2002 $XQ_{39}$ |
| 2002 $XZ_{39}$ | 18.2 | 0.15 | 20060922 | 44.21877 | 10.02235 | 82.38242 | 3.24392 | 0.4158979 | 2.2577043 | 105 | 1 | 113 days | 0.51 | M-v | 4 | MPC | 74243 | 2002 $XZ_{39}$ |
| 2002 $XB_{40}$ | 23.9 | 0.15 | 20060922 | 197.67224 | 118.14555 | 255.71903 | 6.79624 | 0.5536447 | 1.8528376 | 28 | 1 | 18 days | 0.55 | M-v | 5 | MPC | 57909 | 2002 $XB_{40}$ |
| 2002 $XP_{40}$ | 20.1 | 0.15 | 20060922 | 253.97207 | 70.72288 | 73.75345 | 3.77500 | 0.2958708 | 1.6448637 | 237 | 3 | 2002–2006 | 0.50 | M-v | 1 | MPC | 69421 | 2002 $XP_{40}$ |
| 2002 $XR_{40}$ | 15.3 | 0.15 | 20060922 | 338.38966 | 95.54101 | 320.10974 | 29.34430 | 0.4015797 | 2.7407862 | 117 | 2 | 2002–2006 | 0.52 | M-v | 2 | MPC | 03488 | 2002 $XR_{40}$ |
| 2002 $XS_{40}$ | 20.2 | 0.15 | 20060922 | 318.65695 | 83.59045 | 97.75799 | 11.62882 | 0.3378432 | 1.4966330 | 77 | 2 | 2002–2005 | 0.50 | M-v | 2 | MPC | 75815 | 2002 $XS_{40}$ |
| 2002 $XK_{41}$ | 15.6 | 0.15 | 20060922 | 45.64029 | 209.19996 | 86.64635 | 3.07515 | 0.0347117 | 2.9642965 | 42 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04245 | 2002 $XK_{41}$ |
| 2002 $XM_{41}$ | 16.9 | 0.15 | 20060922 | 125.46001 | 66.16146 | 267.36879 | 5.29484 | 0.2076383 | 2.2204159 | 83 | 2 | 2002–2005 | 0.50 | M-v | 3 | MPC | 90165 | 2002 $XM_{41}$ |
| 2002 $XV_{41}$ | 15.7 | 0.15 | 20060922 | 347.65181 | 350.32153 | 53.66750 | 14.95401 | 0.1144551 | 2.6132644 | 80 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 50721 | 2002 $XV_{41}$ |
| 2002 $XY_{41}$ | 14.9 | 0.15 | 20060922 | 79.57991 | 13.05186 | 299.38895 | 6.66195 | 0.2091663 | 2.5259447 | 48 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 74243 | 2002 $XY_{41}$ |
| 2002 $XZ_{41}$ | 16.0 | 0.15 | 20060922 | 107.32109 | 30.98295 | 299.77079 | 6.34185 | 0.1216603 | 2.3553171 | 51 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 87562 | 2002 $XZ_{41}$ |
| 2002 $XE_{42}$ | 14.8 | 0.15 | 20060922 | 190.47114 | 214.68244 | 292.39300 | 15.75861 | 0.1709192 | 3.1316185 | 66 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 74243 | 2002 $XE_{42}$ |
| 2002 $XF_{42}$ | 16.4 | 0.15 | 20060922 | 21.35302 | 118.81267 | 282.32840 | 4.67539 | 0.2051582 | 2.4506527 | 41 | 3 | 1998–2006 | 0.48 | M-v | 3 | MPC | 41327 | 2002 $XF_{42}$ |
| 2002 $XM_{42}$ | 15.5 | 0.15 | 20060922 | 333.54872 | 167.15692 | 280.21251 | 8.39389 | 0.1493226 | 2.5491702 | 84 | 5 | 1999–2006 | 0.44 | M-v | 2 | MPC | 85781 | 2002 $XM_{42}$ |
| 2002 $XA_{43}$ | 15.3 | 0.15 | 20060922 | 47.34938 | 268.99532 | 84.61818 | 6.26812 | 0.1459452 | 2.5504459 | 106 | 4 | 1996–2006 | 0.52 | M-v | 2 | MPC | 61658 | 2002 $XA_{43}$ |
| 2002 $XE_{43}$ | 15.3 | 0.15 | 20060922 | 184.68871 | 133.03431 | 67.45413 | 8.77137 | 0.1510169 | 2.7928792 | 84 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 87562 | 2002 $XE_{43}$ |
| 2002 $XK_{43}$ | 16.5 | 0.15 | 20060922 | 27.75944 | 242.95085 | 122.83599 | 9.91761 | 0.2614567 | 2.4526163 | 47 | 5 | 1994–2006 | 0.36 | M-v | 1 | MPC | 04245 | 2002 $XK_{43}$ |
| 2002 $XP_{43}$ | 16.3 | 0.15 | 20060922 | 272.79671 | 53.83678 | 88.76891 | 6.69861 | 0.1118365 | 2.5426240 | 53 | 5 | 1998–2006 | 0.53 | M-v | 0 | MPC | 87562 | 2002 $XP_{43}$ |
| 2002 $XS_{43}$ | 17.0 | 0.15 | 20060922 | 338.46522 | 80.08837 | 58.45052 | 7.69944 | 0.0397597 | 2.2707035 | 46 | 3 | 2002–2005 | 0.65 | M-v | 3 | MPC | 89382 | 2002 $XS_{43}$ |
| 2002 $XU_{43}$ | 15.5 | 0.15 | 20060922 | 70.91424 | 284.65296 | 58.53722 | 7.29799 | 0.1540486 | 2.4423526 | 66 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87562 | 2002 $XU_{43}$ |
| 2002 $XZ_{43}$ | 17.6 | 0.15 | 20060922 | 37.87171 | 81.59304 | 356.49946 | 2.80093 | 0.1222085 | 2.2638144 | 33 | 3 | 1995–2005 | 0.46 | M-v | 4 | MPC | 87562 | 2002 $XZ_{43}$ |
| 2002 $XL_{44}$ | 17.1 | 0.15 | 20060922 | 22.79077 | 297.46813 | 105.32452 | 4.80502 | 0.1211689 | 2.4254699 | 32 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 85782 | 2002 $XL_{44}$ |
| 2002 $XO_{44}$ | 15.0 | 0.15 | 20060922 | 19.61893 | 43.94481 | 302.18178 | 11.91694 | 0.2177147 | 2.5397933 | 91 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 04245 | 2002 $XO_{44}$ |
| 2002 $XS_{44}$ | 15.6 | 0.15 | 20060922 | 324.30125 | 171.15018 | 225.15374 | 11.55636 | 0.1091662 | 2.7062079 | 64 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 04245 | 2002 $XS_{44}$ |
| 2002 $XC_{45}$ | 16.3 | 0.15 | 20060922 | 52.76242 | 281.56590 | 114.25863 | 7.20357 | 0.1098515 | 2.3451721 | 34 | 4 | 2000–2006 | 0.38 | M-v | 1 | MPC | 85782 | 2002 $XC_{45}$ |
| 2002 $XG_{46}$ | 15.4 | 0.15 | 20060922 | 332.00086 | 124.30170 | 252.17128 | 13.64204 | 0.1690504 | 2.6984404 | 72 | 2 | 2002–2006 | 0.55 | M-v | 3 | MPC | 03488 | 2002 $XG_{46}$ |
| 2002 $XL_{46}$ | 15.6 | 0.15 | 20060922 | 186.91528 | 134.61394 | 75.92268 | 13.99409 | 0.1468877 | 2.6853449 | 55 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 66296 | 2002 $XL_{46}$ |
| 2002 $XN_{46}$ | 16.9 | 0.15 | 20060922 | 348.14687 | 153.26623 | 320.93095 | 5.60635 | 0.0996619 | 2.3565630 | 22 | 4 | 1996–2006 | 0.41 | M-v | 1 | MPC | 85783 | 2002 $XN_{46}$ |
| 2002 $XP_{46}$ | 15.4 | 0.15 | 20060922 | 18.65380 | 200.18989 | 183.84520 | 4.58935 | 0.2104785 | 2.5213233 | 86 | 5 | 1998–2006 | 0.58 | M-v | 4 | MPC | 62435 | 2002 $XP_{46}$ |
| 2002 $XR_{46}$ | 16.2 | 0.15 | 20060922 | 338.28576 | 20.97463 | 29.92703 | 4.07087 | 0.2157168 | 2.6406145 | 110 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 61659 | 2002 $XR_{46}$ |
| 2002 $XV_{47}$ | 16.1 | 0.15 | 20060922 | 66.62650 | 63.47553 | 300.33055 | 5.95916 | 0.1369327 | 2.3863764 | 69 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 85783 | 2002 $XV_{47}$ |
| 2002 $XZ_{47}$ | 15.8 | 0.15 | 20060922 | 16.48320 | 72.87125 | 272.20727 | 5.40517 | 0.1290819 | 2.7271039 | 76 | 6 | 1997–2006 | 0.50 | M-v | 1 | MPC | 77682 | 2002 $XZ_{47}$ |
| 2002 $XB_{48}$ | 16.4 | 0.15 | 20060922 | 139.55782 | 13.09357 | 287.51709 | 3.17097 | 0.1487142 | 2.3464772 | 82 | 6 | 1991–2006 | 0.58 | M-v | 1 | MPC | 04245 | 2002 $XB_{48}$ |
| 2002 $XC_{48}$ | 15.7 | 0.15 | 20060922 | 276.22707 | 246.15290 | 271.23680 | 5.55974 | 0.1746148 | 2.5266395 | 103 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 87562 | 2002 $XC_{48}$ |
| 2002 $XS_{48}$ | 15.9 | 0.15 | 20060922 | 85.23415 | 250.21174 | 74.98394 | 8.23407 | 0.1199126 | 2.4667711 | 46 | 7 | 1996–2006 | 0.60 | M-v | 1 | MPC | 85784 | 2002 $XS_{48}$ |
| 2002 $XB_{49}$ | 15.7 | 0.15 | 20060922 | 24.17607 | 298.64320 | 68.78472 | 16.18738 | 0.0184898 | 2.6304073 | 36 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 87562 | 2002 $XB_{49}$ |
| 2002 $XD_{49}$ | 16.2 | 0.15 | 20060922 | 321.58318 | 87.99258 | 334.24600 | 12.67502 | 0.2599748 | 2.6467626 | 96 | 2 | 2002–2006 | 0.42 | M-v | 2 | MPC | 03488 | 2002 $XD_{49}$ |
| 2002 $XG_{49}$ | 15.9 | 0.15 | 20060922 | 252.09066 | 79.80239 | 80.52381 | 5.76698 | 0.1362763 | 2.6130539 | 86 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 74243 | 2002 $XG_{49}$ |
| 2002 $XP_{49}$ | 14.9 | 0.15 | 20060922 | 287.03123 | 140.76204 | 244.07505 | 9.90490 | 0.1449410 | 3.1148524 | 32 | 5 | 1991–2004 | 0.55 | M-v | 1 | MPC | 50721 | 2002 $XP_{49}$ |
| 2002 $XE_{50}$ | 15.6 | 0.15 | 20060922 | 55.32490 | 262.24983 | 63.32258 | 11.96266 | 0.1708640 | 2.6007011 | 82 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 85785 | 2002 $XE_{50}$ |
| 2002 $XV_{50}$ | 15.5 | 0.15 | 20060922 | 135.35052 | 183.48504 | 79.18348 | 16.12628 | 0.0793601 | 2.5365250 | 38 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 03489 | 2002 $XV_{50}$ |
| 2002 $XZ_{50}$ | 16.6 | 0.15 | 20060922 | 9.84423 | 348.36815 | 98.69771 | 3.11100 | 0.1788731 | 2.3591347 | 85 | 6 | 1991–2006 | 0.49 | M-v | 1 | MPC | 90165 | 2002 $XZ_{50}$ |
| 2002 $XD_{51}$ | 16.5 | 0.15 | 20060922 | 328.05451 | 212.94335 | 275.02229 | 1.39917 | 0.1506317 | 2.4183665 | 63 | 3 | 2002–2006 | 0.50 | M-v | 4 | MPC | 85785 | 2002 $XD_{51}$ |
| 2002 $XF_{51}$ | 15.7 | 0.15 | 20060922 | 46.30105 | 256.54615 | 80.91837 | 16.39861 | 0.2941447 | 2.5274518 | 44 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 75817 | 2002 $XF_{51}$ |
| 2002 $XK_{51}$ | 15.3 | 0.15 | 20060922 | 327.78045 | 280.03857 | 83.26905 | 14.72782 | 0.1872197 | 2.9229546 | 53 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 03489 | 2002 $XK_{51}$ |
| 2002 $XP_{51}$ | 16.8 | 0.15 | 20060922 | 13.11930 | 62.99169 | 342.73228 | 1.90204 | 0.1930767 | 2.4704342 | 28 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 69423 | 2002 $XP_{51}$ |
| 2002 $XX_{51}$ | 16.5 | 0.15 | 20060922 | 39.67703 | 270.01345 | 107.62032 | 3.57168 | 0.2081010 | 2.4431116 | 49 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 50167 | 2002 $XX_{51}$ |
| 2002 $XB_{52}$ | 15.2 | 0.15 | 20060922 | 34.43912 | 56.77535 | 297.24421 | 3.39792 | 0.2710910 | 2.5405967 | 65 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 89383 | 2002 $XB_{52}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $XD_{52}$ | 16.2 | 0.15 | 20060922 | 302.77132 | 50.32855 | 66.45073 | 4.11315 | 0.0866070 | 2.5667602 | 69 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 85785 | 2002 $XD_{52}$ |
| 2002 $XE_{52}$ | 16.0 | 0.15 | 20060922 | 353.68297 | 5.31729 | 45.20698 | 1.66482 | 0.1749180 | 2.5678008 | 94 | 4 | 1998–2006 | 0.48 | M-v | 3 | MPC | 65397 | 2002 $XE_{52}$ |
| 2002 $XM_{52}$ | 16.0 | 0.15 | 20060922 | 9.04066 | 156.97679 | 249.14079 | 5.26664 | 0.1214839 | 2.5370755 | 40 | 4 | 2002–2006 | 0.38 | M-v | 1 | MPC | 85785 | 2002 $XM_{52}$ |
| 2002 $XO_{52}$ | 17.0 | 0.15 | 20060922 | 8.53320 | 294.62141 | 151.97626 | 1.32848 | 0.1555069 | 2.3878150 | 45 | 5 | 1996–2006 | 0.46 | M-v | 1 | MPC | 89384 | 2002 $XO_{52}$ |
| 2002 $XV_{52}$ | 16.9 | 0.15 | 20060922 | 18.64920 | 150.57232 | 293.89710 | 1.44523 | 0.1748549 | 2.3600809 | 62 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 90165 | 2002 $XV_{52}$ |
| 2002 $XG_{53}$ | 15.3 | 0.15 | 20060922 | 14.76580 | 84.52281 | 270.03019 | 11.54474 | 0.1293532 | 2.7346445 | 66 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 41336 | 2002 $XG_{53}$ |
| 2002 $XP_{53}$ | 16.8 | 0.15 | 20060922 | 9.79410 | 12.45978 | 93.63326 | 8.08935 | 0.0503625 | 2.2552686 | 27 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 85786 | 2002 $XP_{53}$ |
| 2002 $XQ_{53}$ | 16.4 | 0.15 | 20060922 | 344.38591 | 244.82768 | 174.55871 | 2.04888 | 0.0979702 | 2.5478398 | 93 | 5 | 1996–2006 | 0.54 | M-v | 2 | MPC | 85786 | 2002 $XQ_{53}$ |
| 2002 $XB_{54}$ | 16.1 | 0.15 | 20060922 | 22.41165 | 328.15039 | 78.04599 | 10.33686 | 0.2368680 | 2.4703214 | 49 | 5 | 1998–2006 | 0.62 | M-v | 2 | MPC | 66297 | 2002 $XB_{54}$ |
| 2002 $XC_{54}$ | 16.0 | 0.15 | 20060922 | 2.78737 | 301.87399 | 104.25163 | 12.54281 | 0.1778748 | 2.5856669 | 57 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 74243 | 2002 $XC_{54}$ |
| 2002 $XE_{54}$ | 16.6 | 0.15 | 20060922 | 309.34133 | 291.00338 | 141.67685 | 2.23408 | 0.1238618 | 2.6853506 | 59 | 5 | 1997–2006 | 0.36 | M-v | 0 | MPC | 00406 | 2002 $XE_{54}$ |
| 2002 $XH_{54}$ | 16.6 | 0.15 | 20060922 | 26.18994 | 320.07531 | 121.40341 | 3.09736 | 0.1354925 | 2.2957301 | 59 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 85786 | 2002 $XH_{54}$ |
| 2002 $XX_{54}$ | 15.3 | 0.15 | 20060922 | 241.36239 | 62.94674 | 119.26316 | 5.10884 | 0.1976483 | 2.5956122 | 74 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 87563 | 2002 $XX_{54}$ |
| 2002 $XD_{55}$ | 16.3 | 0.15 | 20060922 | 322.09723 | 221.42235 | 215.64239 | 4.89509 | 0.1324078 | 2.6133788 | 76 | 3 | 2002–2006 | 0.63 | M-v | 3 | MPC | 66297 | 2002 $XD_{55}$ |
| 2002 $XH_{55}$ | 17.3 | 0.15 | 20060922 | 25.75711 | 264.45359 | 163.28833 | 2.98559 | 0.1686554 | 2.3453555 | 27 | 3 | 2000–2005 | 0.42 | M-v | 3 | MPC | 89384 | 2002 $XH_{55}$ |
| 2002 $XX_{55}$ | 15.2 | 0.15 | 20060922 | 21.30816 | 145.73837 | 244.45886 | 4.19541 | 0.2620090 | 2.5686273 | 67 | 5 | 1993–2006 | 0.62 | M-v | 1 | MPC | 65398 | 2002 $XX_{55}$ |
| 2002 $XZ_{55}$ | 16.3 | 0.15 | 20060922 | 4.77079 | 251.20514 | 201.18356 | 8.82669 | 0.1840251 | 2.4382884 | 59 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 87563 | 2002 $XZ_{55}$ |
| 2002 $XE_{56}$ | 16.1 | 0.15 | 20060922 | 15.78640 | 255.88681 | 110.77859 | 14.73496 | 0.2335587 | 2.5838689 | 45 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 03489 | 2002 $XE_{56}$ |
| 2002 $XJ_{56}$ | 14.9 | 0.15 | 20060922 | 322.04562 | 1.31239 | 29.28619 | 18.89723 | 0.2625246 | 2.9179012 | 52 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 04245 | 2002 $XJ_{56}$ |
| 2002 $XO_{56}$ | 15.8 | 0.15 | 20060922 | 30.69695 | 22.78626 | 317.67948 | 15.03883 | 0.1516994 | 2.5644194 | 49 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 85787 | 2002 $XO_{56}$ |
| 2002 $XX_{56}$ | 15.7 | 0.15 | 20060922 | 271.39373 | 228.50904 | 217.29428 | 1.60812 | 0.1761929 | 2.9271331 | 36 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 04245 | 2002 $XX_{56}$ |
| 2002 $XK_{57}$ | 16.0 | 0.15 | 20060922 | 251.96075 | 355.86070 | 111.60155 | 7.26717 | 0.0716473 | 2.8809993 | 36 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 04245 | 2002 $XK_{57}$ |
| 2002 $XM_{57}$ | 16.6 | 0.15 | 20060922 | 116.39368 | 118.61909 | 224.64312 | 5.23229 | 0.1239918 | 2.2759130 | 49 | 2 | 2002–2005 | 0.48 | M-v | 3 | MPC | 97628 | 2002 $XM_{57}$ |
| 2002 $XN_{57}$ | 16.0 | 0.15 | 20060922 | 24.68257 | 188.81239 | 182.14994 | 5.37415 | 0.1732454 | 2.5443079 | 51 | 3 | 2002–2006 | 0.42 | M-v | 4 | MPC | 75818 | 2002 $XN_{57}$ |
| 2002 $XV_{57}$ | 14.9 | 0.15 | 20060922 | 240.84606 | 5.48962 | 89.36689 | 5.66179 | 0.1720365 | 3.1217630 | 57 | 5 | 1993–2006 | 0.65 | M-v | 1 | MPC | 04245 | 2002 $XV_{57}$ |
| 2002 $XN_{58}$ | 16.0 | 0.15 | 20060922 | 339.52389 | 226.19329 | 199.29444 | 3.76873 | 0.2386172 | 2.5840873 | 123 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 04245 | 2002 $XN_{58}$ |
| 2002 $XA_{59}$ | 15.0 | 0.15 | 20060922 | 346.09700 | 116.51340 | 296.05233 | 10.70700 | 0.1956334 | 2.6335737 | 50 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 41339 | 2002 $XA_{59}$ |
| 2002 $XF_{59}$ | 14.7 | 0.15 | 20060922 | 266.67882 | 84.88924 | 96.91562 | 13.41968 | 0.1903054 | 2.6506805 | 97 | 6 | 1995–2006 | 0.44 | M-v | 2 | MPC | 87563 | 2002 $XF_{59}$ |
| 2002 $XH_{59}$ | 14.7 | 0.15 | 20060922 | 297.49005 | 62.45527 | 68.95860 | 18.16075 | 0.1189852 | 2.5842779 | 103 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 66297 | 2002 $XH_{59}$ |
| 2002 $XR_{59}$ | 15.0 | 0.15 | 20060922 | 262.51150 | 68.84884 | 94.53784 | 5.43263 | 0.1991118 | 2.6919625 | 86 | 5 | 1999–2006 | 0.50 | M-v | 2 | MPC | 94875 | 2002 $XR_{59}$ |
| 2002 $XT_{59}$ | 16.9 | 0.15 | 20060922 | 27.36604 | 97.04526 | 319.85422 | 6.08396 | 0.1275957 | 2.3657012 | 39 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 87563 | 2002 $XT_{59}$ |
| 2002 $XV_{59}$ | 15.0 | 0.15 | 20060922 | 167.51141 | 189.94552 | 341.42343 | 9.47137 | 0.0503390 | 3.0214740 | 65 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 04245 | 2002 $XV_{59}$ |
| 2002 $XE_{60}$ | 16.3 | 0.15 | 20060922 | 49.69573 | 270.75512 | 91.95459 | 2.53106 | 0.2066514 | 2.4374385 | 58 | 5 | 1994–2006 | 0.61 | M-v | 3 | MPC | 66297 | 2002 $XE_{60}$ |
| 2002 $XF_{60}$ | 15.7 | 0.15 | 20060922 | 327.86308 | 325.09486 | 80.46044 | 14.25433 | 0.0873927 | 2.7251631 | 37 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 85788 | 2002 $XF_{60}$ |
| 2002 $XK_{60}$ | 15.4 | 0.15 | 20060922 | 310.56776 | 168.66360 | 243.06460 | 3.68721 | 0.0660229 | 2.7760894 | 78 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 62435 | 2002 $XK_{60}$ |
| 2002 $XP_{60}$ | 16.7 | 0.15 | 20060922 | 298.45715 | 264.60388 | 261.10333 | 6.71761 | 0.0507007 | 2.3336063 | 36 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 85788 | 2002 $XP_{60}$ |
| 2002 $XS_{60}$ | 15.7 | 0.15 | 20060922 | 245.77982 | 357.97628 | 90.83956 | 3.60136 | 0.0522285 | 3.0334281 | 50 | 6 | 1993–2006 | 0.55 | M-v | 1 | MPC | 04245 | 2002 $XS_{60}$ |
| 2002 $XW_{60}$ | 17.0 | 0.15 | 20060922 | 12.68368 | 338.38882 | 74.43386 | 3.35239 | 0.1642386 | 2.4424455 | 64 | 6 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87563 | 2002 $XW_{60}$ |
| 2002 $XA_{61}$ | 16.2 | 0.15 | 20060922 | 316.09166 | 329.97680 | 75.23538 | 8.20889 | 0.2612206 | 2.7655617 | 34 | 2 | 2002–2006 | 0.48 | M-v | 4 | MPC | 03489 | 2002 $XA_{61}$ |
| 2002 $XC_{61}$ | 17.0 | 0.15 | 20060922 | 50.41542 | 83.57918 | 278.72302 | 1.90083 | 0.2122724 | 2.4475181 | 34 | 4 | 1999–2006 | 0.37 | M-v | 3 | MPC | 85788 | 2002 $XC_{61}$ |
| 2002 $XF_{61}$ | 15.8 | 0.15 | 20060922 | 238.85157 | 57.87973 | 49.26041 | 3.78805 | 0.2663672 | 3.0639767 | 32 | 3 | 1993–2004 | 0.55 | M-v | 3 | MPC | 41342 | 2002 $XF_{61}$ |
| 2002 $XK_{61}$ | 16.2 | 0.15 | 20060922 | 323.75134 | 207.53373 | 186.46596 | 4.53971 | 0.2173506 | 2.7385377 | 37 | 2 | 2002–2006 | 0.53 | M-v | 4 | MPC | 03490 | 2002 $XK_{61}$ |
| 2002 $XB_{62}$ | 15.2 | 0.15 | 20060922 | 69.82829 | 244.20515 | 59.76775 | 28.18841 | 0.2156391 | 2.5918776 | 123 | 3 | 2002–2006 | 0.61 | M-v | 2 | MPC | 87563 | 2002 $XB_{62}$ |
| 2002 $XC_{62}$ | 15.4 | 0.15 | 20060922 | 53.46131 | 41.77791 | 286.83220 | 6.72558 | 0.2450938 | 2.5235697 | 103 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04245 | 2002 $XC_{62}$ |
| 2002 $XH_{62}$ | 14.2 | 0.15 | 20060922 | 168.94822 | 99.35976 | 83.89368 | 16.29095 | 0.1983215 | 3.1298974 | 113 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 87563 | 2002 $XH_{62}$ |
| 2002 $XL_{62}$ | 15.9 | 0.15 | 20060922 | 36.13506 | 132.78473 | 230.40584 | 4.50716 | 0.1470631 | 2.5253974 | 62 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 61665 | 2002 $XL_{62}$ |
| 2002 $XW_{62}$ | 15.6 | 0.15 | 20060922 | 34.20506 | 71.80265 | 317.39983 | 4.36076 | 0.1163585 | 2.4490217 | 56 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87563 | 2002 $XW_{62}$ |
| 2002 $XY_{62}$ | 16.6 | 0.15 | 20060922 | 60.01451 | 287.51119 | 111.55926 | 6.89912 | 0.1129744 | 2.3117488 | 62 | 6 | 1997–2006 | 0.52 | M-v | 1 | MPC | 87563 | 2002 $XY_{62}$ |
| 2002 $XC_{63}$ | 15.6 | 0.15 | 20060922 | 335.54038 | 335.25960 | 104.72302 | 6.06279 | 0.1603453 | 2.5525725 | 99 | 6 | 1994–2006 | 0.48 | M-v | 1 | MPC | 85789 | 2002 $XC_{63}$ |
| 2002 $XH_{63}$ | 15.2 | 0.15 | 20060922 | 6.83587 | 85.45289 | 282.23448 | 7.34676 | 0.0770005 | 2.7267982 | 53 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 50723 | 2002 $XH_{63}$ |
| 2002 $XJ_{63}$ | 15.7 | 0.15 | 20060922 | 58.43621 | 319.75706 | 28.76927 | 3.00590 | 0.1338596 | 2.5139262 | 63 | 5 | 1997–2006 | 0.64 | M-v | 1 | MPC | 62435 | 2002 $XJ_{63}$ |
| 2002 $XS_{64}$ | 16.1 | 0.15 | 20060922 | 273.05658 | 156.65868 | 327.57143 | 4.39610 | 0.1273534 | 2.7527525 | 65 | 7 | 1994–2006 | 0.46 | M-v | 0 | MPC | 85790 | 2002 $XS_{64}$ |
| 2002 $XY_{64}$ | 15.6 | 0.15 | 20060922 | 8.09962 | 290.78274 | 71.43815 | 9.95968 | 0.2487591 | 2.7178287 | 61 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 03490 | 2002 $XY_{64}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $XC_{66}$ | 15.9 | 0.15 | 20060922 | 338.63949 | 68.33404 | 83.05570 | 2.86084 | 0.1608247 | 2.4109459 | 116 | 6 | 1994–2006 | 0.53 | M-v | 1 | MPC | 97628 | 2002 $XC_{66}$ |
| 2002 $XL_{66}$ | 15.6 | 0.15 | 20060922 | 351.80331 | 290.39317 | 72.49106 | 7.66649 | 0.0751496 | 2.8042413 | 52 | 4 | 1997–2006 | 0.73 | M-v | 1 | MPC | 04245 | 2002 $XL_{66}$ |
| 2002 $XQ_{66}$ | 15.7 | 0.15 | 20060922 | 52.14449 | 64.73312 | 261.38685 | 3.92979 | 0.2608723 | 2.5437189 | 63 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 75819 | 2002 $XQ_{66}$ |
| 2002 $XX_{66}$ | 15.8 | 0.15 | 20060922 | 39.72532 | 95.14163 | 251.62020 | 2.58127 | 0.2366954 | 2.5342758 | 76 | 3 | 2002–2006 | 0.35 | M-v | 1 | MPC | 04245 | 2002 $XX_{66}$ |
| 2002 $XC_{67}$ | 16.4 | 0.15 | 20021122 | 315.37668 | 46.42812 | 72.71397 | 17.13092 | 0.0666261 | 3.0802694 | 14 | 1 | 38 days | 0.27 | | | MPC | | 2002 $XC_{67}$ |
| 2002 $XE_{67}$ | 16.3 | 0.15 | 20060922 | 294.57384 | 329.82471 | 116.90762 | 13.80950 | 0.0923188 | 2.6949905 | 31 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 50723 | 2002 $XE_{67}$ |
| 2002 $XO_{67}$ | 15.6 | 0.15 | 20060922 | 281.83734 | 261.43550 | 157.80426 | 8.64035 | 0.1696307 | 2.8795297 | 57 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 77683 | 2002 $XO_{67}$ |
| 2002 $XP_{67}$ | 14.7 | 0.15 | 20060922 | 154.85863 | 308.40744 | 243.73283 | 9.02366 | 0.0329453 | 2.9759158 | 47 | 6 | 1996–2006 | 0.59 | M-v | 1 | MPC | 85791 | 2002 $XP_{67}$ |
| 2002 $XN_{68}$ | 15.0 | 0.15 | 20060922 | 245.22134 | 338.95807 | 166.33188 | 13.59822 | 0.2196134 | 2.6932373 | 112 | 3 | 2002–2006 | 0.50 | M-v | 1 | MPC | 66297 | 2002 $XN_{68}$ |
| 2002 $XR_{69}$ | 16.2 | 0.15 | 20060922 | 250.90132 | 127.45079 | 76.03637 | 2.20422 | 0.1354112 | 2.3818224 | 77 | 7 | 1994–2006 | 0.51 | M-v | 1 | MPC | 90165 | 2002 $XR_{69}$ |
| 2002 $XX_{69}$ | 15.6 | 0.15 | 20060922 | 312.12954 | 74.65153 | 92.43947 | 11.88441 | 0.1667384 | 2.4120563 | 44 | 3 | 1998–2005 | 0.55 | M-v | 3 | MPC | 85792 | 2002 $XX_{69}$ |
| 2002 $XD_{70}$ | 15.9 | 0.15 | 20060922 | 333.56604 | 271.54906 | 145.52107 | 8.90523 | 0.0745037 | 2.6225071 | 54 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 61669 | 2002 $XD_{70}$ |
| 2002 $XP_{70}$ | 16.1 | 0.15 | 20060922 | 9.92359 | 347.65201 | 55.40814 | 3.39526 | 0.1248838 | 2.5247010 | 32 | 4 | 1998–2006 | 0.52 | M-v | 4 | MPC | 66297 | 2002 $XP_{70}$ |
| 2002 $XQ_{70}$ | 15.8 | 0.15 | 20060922 | 2.95258 | 175.77782 | 275.30428 | 6.56672 | 0.1528498 | 2.3845113 | 57 | 6 | 1998–2006 | 0.45 | M-v | 1 | MPC | 87563 | 2002 $XQ_{70}$ |
| 2002 $XV_{70}$ | 15.8 | 0.15 | 20060922 | 11.00393 | 89.70802 | 296.63609 | 2.43503 | 0.2047697 | 2.5626037 | 82 | 4 | 1993–2006 | 0.41 | M-v | 1 | MPC | 50723 | 2002 $XV_{70}$ |
| 2002 $XB_{71}$ | 15.1 | 0.15 | 20060922 | 315.19882 | 347.36026 | 66.07581 | 5.07924 | 0.1424968 | 2.8096585 | 72 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 04246 | 2002 $XB_{71}$ |
| 2002 $XC_{71}$ | 15.4 | 0.15 | 20060922 | 134.17713 | 254.22323 | 78.57515 | 7.91284 | 0.1443205 | 2.2847689 | 180 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 97628 | 2002 $XC_{71}$ |
| 2002 $XE_{71}$ | 16.7 | 0.15 | 20060922 | 22.01845 | 159.29640 | 296.38911 | 2.27006 | 0.1815817 | 2.3082849 | 70 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 97628 | 2002 $XE_{71}$ |
| 2002 $XK_{71}$ | 16.1 | 0.15 | 20060922 | 341.11111 | 221.37202 | 261.30634 | 5.48619 | 0.0741173 | 2.3927134 | 43 | 5 | 1999–2006 | 0.55 | M-v | 2 | MPC | 85792 | 2002 $XK_{71}$ |
| 2002 $XU_{71}$ | 14.7 | 0.15 | 20060922 | 305.62624 | 174.82440 | 268.14450 | 13.17281 | 0.2187347 | 2.6625678 | 113 | 3 | 1998–2006 | 0.55 | M-v | 2 | MPC | 50724 | 2002 $XU_{71}$ |
| 2002 $XX_{71}$ | 15.4 | 0.15 | 20060922 | 356.47057 | 80.95077 | 280.52413 | 10.27168 | 0.2222776 | 2.6813873 | 92 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 04246 | 2002 $XX_{71}$ |
| 2002 $XE_{72}$ | 15.9 | 0.15 | 20060922 | 349.54132 | 155.62584 | 279.84753 | 9.21537 | 0.0362353 | 2.4454770 | 40 | 4 | 2002–2006 | 0.39 | M-v | 1 | MPC | 87563 | 2002 $XE_{72}$ |
| 2002 $XG_{72}$ | 16.3 | 0.15 | 20060922 | 19.94352 | 359.10465 | 359.75159 | 3.27248 | 0.1577316 | 2.5983559 | 81 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 89385 | 2002 $XG_{72}$ |
| 2002 $XL_{72}$ | 15.3 | 0.15 | 20060922 | 270.70039 | 16.38915 | 55.12061 | 4.51176 | 0.0919904 | 3.0052717 | 65 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04246 | 2002 $XL_{72}$ |
| 2002 $XM_{72}$ | 16.5 | 0.15 | 20060922 | 55.44525 | 320.67287 | 48.05440 | 2.12345 | 0.1986304 | 2.4155692 | 38 | 3 | 1998–2006 | 0.68 | M-v | 3 | MPC | 41349 | 2002 $XM_{72}$ |
| 2002 $XU_{72}$ | 16.7 | 0.15 | 20060922 | 343.05227 | 27.78495 | 32.41661 | 3.63590 | 0.1699706 | 2.5488771 | 73 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 03490 | 2002 $XU_{72}$ |
| 2002 $XJ_{73}$ | 16.2 | 0.15 | 20060922 | 300.65771 | 74.10963 | 42.42685 | 4.12314 | 0.2223880 | 2.5910294 | 101 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 50724 | 2002 $XJ_{73}$ |
| 2002 $XK_{73}$ | 16.2 | 0.15 | 20060922 | 350.62983 | 120.51624 | 275.77365 | 6.25317 | 0.1462746 | 2.6222076 | 42 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 50724 | 2002 $XK_{73}$ |
| 2002 $XM_{73}$ | 16.3 | 0.15 | 20060922 | 27.40714 | 148.76403 | 296.97750 | 6.05383 | 0.0522838 | 2.2825465 | 53 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 90165 | 2002 $XM_{73}$ |
| 2002 $XS_{73}$ | 17.0 | 0.15 | 20060922 | 335.27246 | 140.59026 | 282.09554 | 9.66598 | 0.2180277 | 2.5960710 | 29 | 3 | 1998–2006 | 0.52 | M-v | 3 | MPC | 69423 | 2002 $XS_{73}$ |
| 2002 $XZ_{73}$ | 17.0 | 0.15 | 20060922 | 66.88606 | 325.66480 | 53.09382 | 3.87857 | 0.1635470 | 2.3292199 | 28 | 3 | 2002–2005 | 0.39 | M-v | 4 | MPC | 85793 | 2002 $XZ_{73}$ |
| 2002 $XQ_{74}$ | 15.7 | 0.15 | 20060922 | 17.59604 | 334.71966 | 42.88147 | 5.73348 | 0.2152970 | 2.5440632 | 92 | 4 | 1998–2006 | 0.53 | M-v | 3 | MPC | 66297 | 2002 $XQ_{74}$ |
| 2002 $XT_{74}$ | 14.2 | 0.15 | 20060922 | 191.53447 | 238.69484 | 271.51556 | 15.50672 | 0.1248823 | 3.1031008 | 102 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 66297 | 2002 $XT_{74}$ |
| 2002 $XC_{75}$ | 15.6 | 0.15 | 20060922 | 30.31431 | 278.44371 | 67.62847 | 11.56269 | 0.1735913 | 2.6630906 | 95 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 87563 | 2002 $XC_{75}$ |
| 2002 $XM_{75}$ | 16.9 | 0.15 | 20060922 | 358.72322 | 101.48743 | 356.59479 | 1.95507 | 0.1639618 | 2.3913254 | 34 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 85793 | 2002 $XM_{75}$ |
| 2002 $XQ_{76}$ | 15.7 | 0.15 | 20060922 | 272.60487 | 217.99705 | 312.05502 | 6.12717 | 0.1464007 | 2.5406081 | 36 | 4 | 2001–2006 | 0.51 | M-v | 3 | MPC | 87563 | 2002 $XQ_{76}$ |
| 2002 $XR_{76}$ | 14.9 | 0.15 | 20060922 | 267.36467 | 51.56164 | 24.89209 | 4.63642 | 0.1672533 | 3.0394871 | 38 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 04246 | 2002 $XR_{76}$ |
| 2002 $XA_{77}$ | 15.4 | 0.15 | 20060922 | 20.57813 | 120.70207 | 277.98907 | 12.27239 | 0.1655838 | 2.4614883 | 68 | 4 | 1998–2006 | 0.40 | M-v | 2 | MPC | 65402 | 2002 $XA_{77}$ |
| 2002 $XG_{77}$ | 15.5 | 0.15 | 20060922 | 217.47369 | 53.72683 | 51.92150 | 5.27176 | 0.1565523 | 3.2089230 | 31 | 3 | 1996–2004 | 0.52 | M-v | 3 | MPC | 61672 | 2002 $XG_{77}$ |
| 2002 $XH_{77}$ | 15.2 | 0.15 | 20060922 | 232.52534 | 96.57412 | 60.78058 | 8.95715 | 0.1362504 | 2.7710432 | 87 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 66298 | 2002 $XH_{77}$ |
| 2002 $XJ_{77}$ | 15.0 | 0.15 | 20060922 | 237.35550 | 188.46699 | 279.78794 | 11.10970 | 0.0402932 | 2.9827037 | 55 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 04246 | 2002 $XJ_{77}$ |
| 2002 $XN_{77}$ | 16.8 | 0.15 | 20060922 | 29.41687 | 138.28111 | 279.67419 | 5.89463 | 0.1170261 | 2.3727059 | 28 | 4 | 1995–2006 | 0.58 | M-v | 1 | MPC | 89385 | 2002 $XN_{77}$ |
| 2002 $XU_{77}$ | 15.7 | 0.15 | 20060922 | 268.16705 | 232.83422 | 275.79740 | 11.36061 | 0.1074663 | 2.6217677 | 30 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 85794 | 2002 $XU_{77}$ |
| 2002 $XV_{77}$ | 15.6 | 0.15 | 20060922 | 319.10351 | 56.90847 | 57.94286 | 5.02256 | 0.1791751 | 2.5276404 | 71 | 5 | 1998–2006 | 0.72 | M-v | 2 | MPC | 66298 | 2002 $XV_{77}$ |
| 2002 $XW_{77}$ | 15.7 | 0.15 | 20060922 | 255.60960 | 121.34375 | 53.58418 | 7.51110 | 0.1318987 | 2.5806645 | 84 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 87563 | 2002 $XW_{77}$ |
| 2002 $XX_{77}$ | 16.6 | 0.15 | 20060922 | 348.28642 | 151.95003 | 348.44525 | 2.15946 | 0.1654073 | 2.3130817 | 58 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 90165 | 2002 $XX_{77}$ |
| 2002 $XO_{78}$ | 15.6 | 0.15 | 20060922 | 334.92531 | 74.51889 | 311.52904 | 6.33276 | 0.2375130 | 2.7870586 | 65 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 03490 | 2002 $XO_{78}$ |
| 2002 $XN_{79}$ | 16.3 | 0.15 | 20060922 | 30.22920 | 8.58969 | 39.79414 | 3.04310 | 0.2035174 | 2.4279226 | 40 | 3 | 1998–2003 | 0.60 | M-v | 3 | MPC | 66298 | 2002 $XN_{79}$ |
| 2002 $XX_{79}$ | 15.4 | 0.15 | 20060922 | 16.11742 | 307.23286 | 76.11454 | 12.32648 | 0.2998583 | 2.5523405 | 50 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 94877 | 2002 $XX_{79}$ |
| 2002 $XA_{80}$ | 14.7 | 0.15 | 20060922 | 45.64488 | 49.27617 | 312.60407 | 4.49504 | 0.2197199 | 2.5428049 | 49 | 6 | 1993–2006 | 0.60 | M-v | 1 | MPC | 62436 | 2002 $XA_{80}$ |
| 2002 $XC_{80}$ | 14.6 | 0.15 | 20060922 | 242.62345 | 246.42895 | 297.21949 | 11.33446 | 0.1424448 | 2.6713251 | 69 | 5 | 1999–2006 | 0.58 | M-v | 2 | MPC | 87563 | 2002 $XC_{80}$ |
| 2002 $XE_{80}$ | 15.6 | 0.15 | 20060922 | 320.87624 | 63.61800 | 25.35763 | 4.52177 | 0.1944187 | 2.6464803 | 120 | 5 | 1993–2006 | 0.52 | M-v | 0 | MPC | 97628 | 2002 $XE_{80}$ |
| 2002 $XL_{80}$ | 15.5 | 0.15 | 20060922 | 319.91073 | 164.07192 | 295.28207 | 12.97150 | 0.1181854 | 2.6238493 | 52 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87563 | 2002 $XL_{80}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $XS_{80}$ | 16.9 | 0.15 | 20060922 | 24.77238 | 60.42144 | 60.87243 | 4.02516 | 0.1728738 | 2.2575729 | 78 | 4 | 1995–2005 | 0.68 | M-v | 1 | MPC | 97628 | 2002 $XS_{80}$ |
| 2002 $XT_{80}$ | 16.2 | 0.15 | 20060922 | 350.15433 | 35.59767 | 35.63835 | 4.16312 | 0.2228025 | 2.5596001 | 67 | 4 | 1999–2006 | 0.49 | M-v | 3 | MPC | 66298 | 2002 $XT_{80}$ |
| 2002 $XW_{80}$ | 16.2 | 0.15 | 20060922 | 2.83936 | 119.29402 | 353.83445 | 4.22448 | 0.1841052 | 2.3717074 | 88 | 6 | 1996–2006 | 0.52 | M-v | 1 | MPC | 97628 | 2002 $XW_{80}$ |
| 2002 $XK_{81}$ | 15.5 | 0.15 | 20060922 | 357.08910 | 346.05076 | 83.26904 | 11.61243 | 0.2096667 | 2.5691029 | 61 | 4 | 1999–2006 | 0.55 | M-v | 3 | MPC | 50725 | 2002 $XK_{81}$ |
| 2002 $XT_{81}$ | 15.9 | 0.15 | 20060922 | 336.12531 | 85.79788 | 316.01859 | 5.51257 | 0.2482171 | 2.7432412 | 86 | 4 | 1993–2006 | 0.48 | M-v | 1 | MPC | 04246 | 2002 $XT_{81}$ |
| 2002 $XW_{81}$ | 16.2 | 0.15 | 20060922 | 11.61105 | 319.03503 | 83.03176 | 12.89119 | 0.1841510 | 2.5763669 | 29 | 3 | 1996–2006 | 0.62 | M-v | 2 | MPC | 50168 | 2002 $XW_{81}$ |
| 2002 $XZ_{81}$ | 16.0 | 0.15 | 20060922 | 299.39556 | 100.27518 | 85.67711 | 12.66680 | 0.1620721 | 2.4080676 | 70 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 90165 | 2002 $XZ_{81}$ |
| 2002 $XJ_{82}$ | 14.8 | 0.15 | 20060922 | 196.34148 | 203.38376 | 325.55745 | 9.36737 | 0.1134360 | 3.0871028 | 39 | 4 | 1998–2006 | 0.70 | M-v | 1 | MPC | 66298 | 2002 $XJ_{82}$ |
| 2002 $XL_{82}$ | 15.5 | 0.15 | 20060922 | 248.89786 | 289.60842 | 249.88459 | 12.50130 | 0.0890110 | 2.6767059 | 45 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 65403 | 2002 $XL_{82}$ |
| 2002 $XP_{82}$ | 16.7 | 0.15 | 20060922 | 302.45628 | 330.69619 | 140.93694 | 8.76006 | 0.1799516 | 2.5880255 | 33 | 6 | 1995–2006 | 0.38 | M-v | 1 | MPC | 85796 | 2002 $XP_{82}$ |
| 2002 $XR_{82}$ | 15.2 | 0.15 | 20060922 | 354.98827 | 135.75070 | 219.71507 | 11.12971 | 0.1672911 | 2.7856743 | 75 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04246 | 2002 $XR_{82}$ |
| 2002 $XD_{83}$ | 15.3 | 0.15 | 20060922 | 217.56765 | 41.89744 | 83.19101 | 5.10078 | 0.0790975 | 3.0705496 | 84 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 62436 | 2002 $XD_{83}$ |
| 2002 $XC_{84}$ | 15.8 | 0.15 | 20060922 | 265.61100 | 307.08923 | 186.90321 | 11.68778 | 0.3308569 | 2.8989349 | 60 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 48305 | 2002 $XC_{84}$ |
| 2002 $XM_{84}$ | 15.7 | 0.15 | 20060922 | 111.19608 | 318.14082 | 39.27390 | 7.02183 | 0.2295906 | 2.2502410 | 171 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 97628 | 2002 $XM_{84}$ |
| 2002 $XS_{84}$ | 15.3 | 0.15 | 20060922 | 271.07162 | 292.80675 | 263.90665 | 10.57188 | 0.2532176 | 2.5939625 | 96 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 90165 | 2002 $XS_{84}$ |
| 2002 $XA_{85}$ | 15.2 | 0.15 | 20060922 | 217.74475 | 160.43169 | 313.78602 | 3.53104 | 0.1336708 | 3.1034215 | 69 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 61674 | 2002 $XA_{85}$ |
| 2002 $XF_{85}$ | 15.5 | 0.15 | 20060922 | 283.89704 | 151.44935 | 283.06051 | 14.06425 | 0.1159194 | 2.8607523 | 56 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 04246 | 2002 $XF_{85}$ |
| 2002 $XH_{85}$ | 15.5 | 0.15 | 20060922 | 339.15143 | 25.09090 | 8.25123 | 5.15777 | 0.1886174 | 2.7027084 | 99 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04246 | 2002 $XH_{85}$ |
| 2002 $XJ_{85}$ | 15.2 | 0.15 | 20060922 | 42.67703 | 286.95158 | 59.90901 | 13.64109 | 0.2383014 | 2.5403722 | 94 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 87564 | 2002 $XJ_{85}$ |
| 2002 $XL_{85}$ | 14.2 | 0.15 | 20060922 | 229.05516 | 66.19815 | 64.71918 | 17.30140 | 0.0652021 | 2.9255002 | 71 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 66298 | 2002 $XL_{85}$ |
| 2002 $XQ_{85}$ | 15.5 | 0.15 | 20060922 | 325.61025 | 66.09777 | 29.31429 | 6.01146 | 0.1866039 | 2.5506893 | 75 | 3 | 1973–2006 | 0.57 | M-v | 3 | MPC | 50725 | 2002 $XQ_{85}$ |
| 2002 $XA_{86}$ | 16.0 | 0.15 | 20060922 | 322.21820 | 152.77789 | 286.33885 | 13.70107 | 0.0706066 | 2.6396180 | 44 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87564 | 2002 $XA_{86}$ |
| 2002 $XB_{86}$ | 16.2 | 0.15 | 20060922 | 63.63641 | 63.95989 | 316.67043 | 6.03296 | 0.1577087 | 2.3618358 | 68 | 4 | 1998–2006 | 0.38 | M-v | 1 | MPC | 85798 | 2002 $XB_{86}$ |
| 2002 $XD_{86}$ | 16.5 | 0.15 | 20060922 | 1.16194 | 125.93656 | 326.30102 | 4.29307 | 0.1507601 | 2.4002902 | 24 | 3 | 2002–2006 | 0.43 | M-v | 4 | MPC | 94877 | 2002 $XD_{86}$ |
| 2002 $XG_{86}$ | 15.6 | 0.15 | 20060922 | 281.16755 | 87.37455 | 54.59461 | 8.12277 | 0.1428131 | 2.6082849 | 80 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 87564 | 2002 $XG_{86}$ |
| 2002 $XQ_{86}$ | 16.4 | 0.15 | 20060922 | 80.68198 | 22.68797 | 42.93668 | 5.15999 | 0.0809340 | 2.1872959 | 71 | 3 | 1995–2005 | 0.55 | M-v | 2 | MPC | 97628 | 2002 $XQ_{86}$ |
| 2002 $XG_{87}$ | 17.1 | 0.15 | 20060922 | 84.71910 | 39.28657 | 358.67818 | 4.29557 | 0.1604400 | 2.2380795 | 92 | 3 | 2000–2005 | 0.46 | M-v | 4 | MPC | 89386 | 2002 $XG_{87}$ |
| 2002 $XK_{87}$ | 15.7 | 0.15 | 20060922 | 302.62810 | 44.86912 | 71.54012 | 12.51485 | 0.1466476 | 2.6244856 | 88 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 50725 | 2002 $XK_{87}$ |
| 2002 $XH_{88}$ | 15.5 | 0.15 | 20060922 | 21.38737 | 33.74125 | 324.82677 | 12.19752 | 0.2669589 | 2.6369892 | 25 | 3 | 1995–2006 | 0.40 | M-v | 2 | MPC | 50725 | 2002 $XH_{88}$ |
| 2002 $XL_{88}$ | 15.3 | 0.15 | 20060922 | 22.72291 | 55.80949 | 325.18462 | 5.75080 | 0.2043449 | 2.4879071 | 54 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 61676 | 2002 $XL_{88}$ |
| 2002 $XS_{88}$ | 16.5 | 0.15 | 20060922 | 336.87301 | 198.69876 | 304.00844 | 2.12933 | 0.1002691 | 2.3253595 | 69 | 6 | 1994–2006 | 0.55 | M-v | 1 | MPC | 90165 | 2002 $XS_{88}$ |
| 2002 $XX_{88}$ | 15.5 | 0.15 | 20060922 | 2.30281 | 1.80834 | 46.41216 | 4.69997 | 0.1773173 | 2.5975887 | 76 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 62436 | 2002 $XX_{88}$ |
| 2002 $XK_{89}$ | 16.1 | 0.15 | 20060922 | 0.40552 | 236.52344 | 124.96506 | 14.76099 | 0.3212229 | 2.6277065 | 49 | 5 | 1989–2006 | 0.42 | M-v | 1 | MPC | 04246 | 2002 $XK_{89}$ |
| 2002 $XY_{89}$ | 16.3 | 0.15 | 20060922 | 11.24407 | 208.86105 | 154.14331 | 5.87703 | 0.3655464 | 2.5455973 | 110 | 3 | 1998–2006 | 0.53 | M-v | 2 | MPC | 03490 | 2002 $XY_{89}$ |
| 2002 $XN_{91}$ | 16.3 | 0.15 | 20060922 | 268.79347 | 263.02288 | 243.04546 | 5.16562 | 0.1630623 | 2.6431142 | 63 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 85800 | 2002 $XN_{91}$ |
| 2002 $XO_{91}$ | 15.9 | 0.15 | 20060922 | 191.45522 | 164.20807 | 92.92424 | 8.12885 | 0.0780017 | 2.4233843 | 55 | 6 | 2000–2006 | 0.65 | M-v | 1 | MPC | 87564 | 2002 $XO_{91}$ |
| 2002 $XS_{91}$ | 15.7 | 0.15 | 20060922 | 261.80479 | 251.40913 | 266.07670 | 9.96290 | 0.1305748 | 2.6379008 | 57 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87564 | 2002 $XS_{91}$ |
| 2002 $XW_{92}$ | 15.8 | 0.15 | 20060922 | 239.21139 | 97.81894 | 70.09986 | 15.32019 | 0.0330766 | 2.5843806 | 55 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 69424 | 2002 $XW_{92}$ |
| 2002 $XB_{93}$ | 16.2 | 0.15 | 20060922 | 294.42831 | 60.48878 | 350.45838 | 1.38719 | 0.1324394 | 2.9218525 | 34 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 04246 | 2002 $XB_{93}$ |
| 2002 $XD_{93}$ | 14.9 | 0.15 | 20060922 | 83.64758 | 255.86901 | 57.38922 | 4.90759 | 0.2287220 | 2.5254875 | 37 | 4 | 2000–2006 | 0.55 | M-v | 3 | MPC | 62436 | 2002 $XD_{93}$ |
| 2002 $XF_{93}$ | 16.5 | 0.15 | 20060922 | 351.57587 | 134.39646 | 336.02181 | 1.83528 | 0.1671157 | 2.3929855 | 40 | 3 | 1998–2005 | 0.43 | M-v | 4 | MPC | 85800 | 2002 $XF_{93}$ |
| 2002 $XG_{93}$ | 17.4 | 0.15 | 20060922 | 18.28704 | 37.84237 | 29.76436 | 1.91625 | 0.1614987 | 2.3761359 | 27 | 5 | 1996–2006 | 0.47 | M-v | 0 | MPC | 66298 | 2002 $XG_{93}$ |
| 2002 $XJ_{94}$ | 15.0 | 0.15 | 20060922 | 333.84258 | 212.31623 | 239.28669 | 22.36297 | 0.2568802 | 2.3670791 | 54 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 03490 | 2002 $XJ_{94}$ |
| 2002 $XU_{95}$ | 17.4 | 0.15 | 20060922 | 43.95206 | 130.30943 | 261.03733 | 0.40748 | 0.1896190 | 2.3497791 | 44 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 85801 | 2002 $XU_{95}$ |
| 2002 $XY_{95}$ | 16.5 | 0.15 | 20060922 | 328.43903 | 108.60217 | 303.69562 | 1.71553 | 0.1495600 | 2.6436463 | 64 | 4 | 1993–2006 | 0.51 | M-v | 1 | MPC | 03491 | 2002 $XY_{95}$ |
| 2002 $XL_{96}$ | 16.9 | 0.15 | 20060922 | 9.74828 | 216.51236 | 217.26922 | 1.05289 | 0.1621204 | 2.3780217 | 44 | 5 | 1998–2006 | 0.38 | M-v | 1 | MPC | 87564 | 2002 $XL_{96}$ |
| 2002 $XB_{97}$ | 17.2 | 0.15 | 20060922 | 17.68901 | 135.20251 | 279.20676 | 1.59182 | 0.1610126 | 2.4072597 | 42 | 4 | 1994–2006 | 0.48 | M-v | 2 | MPC | 03491 | 2002 $XB_{97}$ |
| 2002 $XJ_{98}$ | 17.2 | 0.15 | 20060922 | 22.70870 | 180.22766 | 262.66478 | 2.94979 | 0.1078905 | 2.2794998 | 24 | 2 | 2002–2005 | 0.46 | M-v | 4 | MPC | 03491 | 2002 $XJ_{98}$ |
| 2002 $XE_{99}$ | 16.7 | 0.15 | 20060922 | 52.04315 | 112.18508 | 262.81383 | 4.88759 | 0.1363410 | 2.3995616 | 38 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 85801 | 2002 $XE_{99}$ |
| 2002 $XZ_{99}$ | 16.0 | 0.15 | 20060922 | 303.78953 | 90.25579 | 270.44158 | 1.35633 | 0.1770761 | 3.0948734 | 29 | 4 | 1998–2004 | 0.61 | M-v | 1 | MPC | 66298 | 2002 $XZ_{99}$ |
| 2002 $XJ_{101}$ | 16.1 | 0.15 | 20060922 | 64.53335 | 272.83715 | 80.93875 | 5.91928 | 0.1266141 | 2.4414308 | 45 | 4 | 1998–2006 | 0.56 | M-v | 3 | MPC | 72738 | 2002 $XJ_{101}$ |
| 2002 $XR_{101}$ | 16.3 | 0.15 | 20060922 | 303.12590 | 357.10732 | 69.81610 | 6.44032 | 0.1735383 | 2.7604174 | 36 | 3 | 2002–2006 | 0.64 | M-v | 3 | MPC | 04246 | 2002 $XR_{101}$ |
| 2002 $XR_{102}$ | 15.5 | 0.15 | 20060922 | 161.03111 | 320.62296 | 247.84614 | 14.15034 | 0.0904719 | 2.8353172 | 23 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 85802 | 2002 $XR_{102}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $XW_{102}$ | 15.8 | 0.15 | 20060922 | 22.41198 | 128.66603 | 234.10534 | 3.79342 | 0.1370883 | 2.6076721 | 72 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 85802 | 2002 $XW_{102}$ |
| 2002 $XZ_{102}$ | 16.5 | 0.15 | 20060922 | 5.44493 | 307.72969 | 80.46738 | 11.88155 | 0.1100995 | 2.5981261 | 41 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 66298 | 2002 $XZ_{102}$ |
| 2002 $XH_{107}$ | 16.0 | 0.15 | 20060922 | 71.22015 | 276.48487 | 78.48188 | 12.34779 | 0.1284883 | 2.4645411 | 38 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 89386 | 2002 $XH_{107}$ |
| 2002 $XT_{107}$ | 15.2 | 0.15 | 20060922 | 350.80437 | 98.46026 | 255.35753 | 12.21741 | 0.2592791 | 2.7871351 | 60 | 3 | 1997–2006 | 0.52 | M-v | 2 | MPC | 04246 | 2002 $XT_{107}$ |
| 2002 $XG_{108}$ | 15.6 | 0.15 | 20060922 | 266.70398 | 148.85459 | 330.21062 | 4.38664 | 0.1156200 | 2.6878770 | 34 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 94878 | 2002 $XG_{108}$ |
| 2002 $XU_{108}$ | 15.3 | 0.15 | 20060922 | 6.63659 | 80.64793 | 264.25637 | 10.09891 | 0.2087737 | 2.6983022 | 77 | 2 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03491 | 2002 $XU_{108}$ |
| 2002 $XY_{108}$ | 16.7 | 0.15 | 20060922 | 332.75161 | 106.69903 | 304.08066 | 1.98048 | 0.1936203 | 2.6210798 | 69 | 4 | 1995–2006 | 0.40 | M-v | 1 | MPC | 72738 | 2002 $XY_{108}$ |
| 2002 $XU_{109}$ | 15.6 | 0.15 | 20060922 | 357.45809 | 332.52046 | 18.06824 | 5.27989 | 0.1692873 | 2.7603777 | 106 | 4 | 1997–2006 | 0.54 | M-v | 1 | MPC | 04246 | 2002 $XU_{109}$ |
| 2002 $XA_{110}$ | 15.5 | 0.15 | 20060922 | 231.15065 | 201.62242 | 267.21305 | 9.26316 | 0.0712706 | 2.9786556 | 40 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 03491 | 2002 $XA_{110}$ |
| 2002 $XC_{110}$ | 17.2 | 0.15 | 20060922 | 24.24064 | 110.32733 | 333.24942 | 2.01580 | 0.1237982 | 2.2893638 | 47 | 5 | 1993–2005 | 0.59 | M-v | 1 | MPC | 04246 | 2002 $XC_{110}$ |
| 2002 $XP_{110}$ | 15.5 | 0.15 | 20060922 | 58.54059 | 290.76505 | 23.86615 | 4.32995 | 0.2594735 | 2.5727610 | 80 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 85803 | 2002 $XP_{110}$ |
| 2002 $XL_{111}$ | 15.9 | 0.15 | 20060922 | 65.59362 | 50.70794 | 283.11836 | 4.37963 | 0.1117506 | 2.5390668 | 39 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 66299 | 2002 $XL_{111}$ |
| 2002 $XY_{111}$ | 16.2 | 0.15 | 20060922 | 334.28484 | 342.64267 | 56.24392 | 6.61512 | 0.2426524 | 2.6790358 | 49 | 3 | 1993–2006 | 0.52 | M-v | 2 | MPC | 50727 | 2002 $XY_{111}$ |
| 2002 $XO_{112}$ | 16.5 | 0.15 | 20060922 | 346.09650 | 49.45875 | 13.05933 | 4.23330 | 0.1781700 | 2.5692428 | 61 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 69425 | 2002 $XO_{112}$ |
| 2002 $XX_{112}$ | 17.1 | 0.15 | 20060922 | 38.95909 | 84.98074 | 331.68611 | 2.11269 | 0.1191865 | 2.3343062 | 20 | 4 | 1998–2005 | 0.52 | M-v | 1 | MPC | 03492 | 2002 $XX_{112}$ |
| 2002 $XH_{113}$ | 15.3 | 0.15 | 20060922 | 347.27079 | 15.10396 | 65.96299 | 8.41940 | 0.2064179 | 2.5223359 | 82 | 5 | 1996–2006 | 0.54 | M-v | 2 | MPC | 04246 | 2002 $XH_{113}$ |
| 2002 $XC_{115}$ | 17.5 | 0.15 | 20060922 | 332.39615 | 24.50468 | 99.29992 | 6.80642 | 0.2007666 | 2.3699425 | 36 | 4 | 1996–2006 | 0.34 | M-v | 0 | MPC | 94879 | 2002 $XC_{115}$ |
| 2002 $XZ_{115}$ | 16.0 | 0.15 | 20021122 | 7.97950 | 319.23707 | 103.67772 | 13.14401 | 0.1120413 | 3.1433594 | 7 | 1 | 8 days | 0.13 | | | MPC | | 2002 $XZ_{115}$ |
| 2002 $XF_{116}$ | 16.4 | 0.15 | 20060922 | 211.72003 | 34.50349 | 165.93758 | 0.77730 | 0.1563573 | 3.0161977 | 15 | 1 | 90 days | 0.49 | M-v | 5 | MPC | | 2002 $XF_{116}$ |
| 2002 $XG_{116}$ | 16.8 | 0.15 | 20060922 | 307.94000 | 67.88734 | 132.18307 | 7.29134 | 0.0592301 | 2.3886537 | 14 | 1 | 90 days | 0.59 | M-v | 4 | MPC | | 2002 $XG_{116}$ |
| 2002 $XK_{116}$ | 16.9 | 0.15 | 20060922 | 313.43114 | 157.39253 | 344.47277 | 12.65222 | 0.1071493 | 2.6716529 | 15 | 1 | 119 days | 0.53 | M-v | 4 | MPC | | 2002 $XK_{116}$ |
| 2002 YL | 16.1 | 0.15 | 20060922 | 318.55931 | 357.62244 | 73.05960 | 5.63229 | 0.2062206 | 2.7580754 | 51 | 4 | 1997–2006 | 0.69 | M-v | 1 | MPC | 87564 | 2002 YL |
| 2002 YQ | 15.7 | 0.15 | 20060922 | 327.87605 | 17.11485 | 93.17969 | 5.24859 | 0.1181752 | 2.5500198 | 71 | 5 | 1998–2006 | 0.51 | M-v | 2 | MPC | 97629 | 2002 YQ |
| 2002 YT | 15.7 | 0.15 | 20060922 | 315.71753 | 302.33588 | 134.81784 | 1.99828 | 0.2216072 | 2.7482573 | 107 | 6 | 1993–2006 | 0.48 | M-v | 0 | MPC | 48306 | 2002 YT |
| 2002 YV | 16.2 | 0.15 | 20060922 | 2.72084 | 135.07249 | 285.84104 | 3.31092 | 0.1849342 | 2.5535231 | 76 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 87564 | 2002 YV |
| 2002 YZ | 15.6 | 0.15 | 20060922 | 288.46332 | 166.35662 | 315.81342 | 13.29417 | 0.1397517 | 2.7360271 | 62 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 90166 | 2002 YZ |
| 2002 $YB_1$ | 15.9 | 0.15 | 20060922 | 45.73958 | 345.29356 | 27.56011 | 7.16448 | 0.2665544 | 2.5298547 | 35 | 4 | 2000–2006 | 0.61 | M-v | 3 | MPC | 62437 | 2002 $YB_1$ |
| 2002 $YD_1$ | 15.4 | 0.15 | 20060922 | 241.31947 | 233.75707 | 328.12140 | 12.28700 | 0.2079824 | 2.6944844 | 79 | 4 | 2000–2004 | 0.69 | M-v | 1 | MPC | 48306 | 2002 $YD_1$ |
| 2002 $YQ_1$ | 15.6 | 0.15 | 20060922 | 340.30996 | 137.15562 | 277.43093 | 7.96279 | 0.2543023 | 2.6946578 | 91 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 41373 | 2002 $YQ_1$ |
| 2002 $YL_2$ | 16.2 | 0.15 | 20060922 | 340.01024 | 164.14044 | 271.79672 | 10.75738 | 0.1293631 | 2.6523278 | 48 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 89387 | 2002 $YL_2$ |
| 2002 $YS_2$ | 14.3 | 0.15 | 20060922 | 223.58172 | 37.63396 | 69.34194 | 6.31207 | 0.0902892 | 3.2293829 | 84 | 3 | 2001–2004 | 0.65 | M-v | 3 | MPC | 61680 | 2002 $YS_2$ |
| 2002 $YF_3$ | 16.1 | 0.15 | 20060922 | 124.05908 | 187.67759 | 103.51436 | 15.46122 | 0.1063478 | 2.6498592 | 38 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 94879 | 2002 $YF_3$ |
| 2002 $YP_3$ | 14.9 | 0.15 | 20060922 | 357.27948 | 285.24483 | 79.09478 | 30.52253 | 0.3672182 | 2.7302926 | 68 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 04246 | 2002 $YP_3$ |
| 2002 $YD_4$ | 16.6 | 0.15 | 20060922 | 307.55305 | 61.64555 | 30.09242 | 1.19059 | 0.2804233 | 2.7280408 | 112 | 5 | 1994–2006 | 0.44 | M-v | 0 | MPC | 66299 | 2002 $YD_4$ |
| 2002 $YE_4$ | 16.6 | 0.15 | 20060922 | 347.03441 | 344.16057 | 63.24630 | 0.91789 | 0.0697538 | 2.7640038 | 30 | 3 | 2001–2006 | 0.30 | M-v | 3 | MPC | 41376 | 2002 $YE_4$ |
| 2002 $YK_4$ | 15.6 | 0.15 | 20060922 | 299.96603 | 20.02097 | 65.16505 | 12.54925 | 0.2348647 | 2.7862262 | 47 | 3 | 1997–2006 | 0.66 | M-v | 2 | MPC | 41376 | 2002 $YK_4$ |
| 2002 $YL_4$ | 15.7 | 0.15 | 20060922 | 278.94797 | 144.68450 | 332.65332 | 10.84711 | 0.1743428 | 2.7865075 | 63 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 89387 | 2002 $YL_4$ |
| 2002 $YU_5$ | 15.8 | 0.15 | 20060922 | 251.78183 | 209.98658 | 310.19577 | 6.96987 | 0.1577534 | 2.8102881 | 54 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 87565 | 2002 $YU_5$ |
| 2002 $YV_5$ | 15.9 | 0.15 | 20060922 | 319.66694 | 93.53623 | 24.21876 | 3.02227 | 0.1591535 | 2.5879389 | 52 | 4 | 1993–2005 | 0.59 | M-v | 3 | MPC | 04246 | 2002 $YV_5$ |
| 2002 $YC_6$ | 15.5 | 0.15 | 20060922 | 227.20423 | 84.90843 | 84.94119 | 14.25518 | 0.0922495 | 2.7068022 | 65 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 66299 | 2002 $YC_6$ |
| 2002 $YF_6$ | 16.6 | 0.15 | 20060922 | 292.54208 | 237.55660 | 264.92165 | 2.93109 | 0.1939620 | 2.5480602 | 50 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 94880 | 2002 $YF_6$ |
| 2002 $YG_6$ | 16.8 | 0.15 | 20060922 | 358.02654 | 327.46633 | 93.70703 | 12.34207 | 0.1819032 | 2.5311719 | 36 | 5 | 1994–2006 | 0.49 | M-v | 1 | MPC | 57910 | 2002 $YG_6$ |
| 2002 $YR_6$ | 17.8 | 0.15 | 20060922 | 3.26832 | 118.70931 | 278.16106 | 4.70968 | 0.2632160 | 2.6215810 | 115 | 3 | 1999–2006 | 0.54 | M-v | 2 | MPC | 04247 | 2002 $YR_6$ |
| 2002 $YU_6$ | 15.6 | 0.15 | 20060922 | 16.94399 | 266.36117 | 117.29360 | 5.84966 | 0.2837606 | 2.5880174 | 46 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 61681 | 2002 $YU_6$ |
| 2002 $YY_6$ | 15.4 | 0.15 | 20060922 | 292.55726 | 157.68434 | 309.50923 | 5.55536 | 0.0365288 | 2.8006307 | 76 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87565 | 2002 $YY_6$ |
| 2002 $YF_7$ | 15.2 | 0.15 | 20060922 | 316.99836 | 345.14928 | 116.93701 | 13.07498 | 0.1472099 | 2.6745304 | 107 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 66299 | 2002 $YF_7$ |
| 2002 $YO_7$ | 15.8 | 0.15 | 20060922 | 15.06182 | 103.63725 | 324.09565 | 3.70154 | 0.2674026 | 2.4739048 | 104 | 4 | 1998–2006 | 0.61 | M-v | 2 | MPC | 90166 | 2002 $YO_7$ |
| 2002 $YB_8$ | 15.7 | 0.15 | 20060922 | 313.43889 | 328.51338 | 136.28995 | 8.81702 | 0.2889889 | 2.6568416 | 72 | 1 | 99 days | 0.53 | M-v | 4 | MPC | 43483 | 2002 $YB_8$ |
| 2002 $YD_8$ | 16.1 | 0.15 | 20060922 | 288.21833 | 53.61037 | 140.42463 | 5.20185 | 0.0947937 | 2.4332471 | 61 | 5 | 1993–2005 | 0.68 | M-v | 1 | MPC | 04247 | 2002 $YD_8$ |
| 2002 $YF_8$ | 15.8 | 0.15 | 20060922 | 45.85325 | 350.61438 | 64.80555 | 4.54600 | 0.1774205 | 2.3231237 | 60 | 6 | 1991–2006 | 0.50 | M-v | 1 | MPC | 85806 | 2002 $YF_8$ |
| 2002 $YM_8$ | 15.6 | 0.15 | 20060922 | 336.13806 | 358.52130 | 77.86560 | 4.02595 | 0.1699152 | 2.5764528 | 102 | 4 | 2002–2006 | 0.42 | M-v | 1 | MPC | 85806 | 2002 $YM_8$ |
| 2002 $YP_8$ | 15.6 | 0.15 | 20060922 | 324.12075 | 346.43604 | 120.29924 | 2.81709 | 0.1468635 | 2.5335993 | 58 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87565 | 2002 $YP_8$ |
| 2002 $YU_8$ | 16.2 | 0.15 | 20060922 | 310.60425 | 210.25584 | 253.81324 | 6.88323 | 0.1636410 | 2.6171219 | 47 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 85806 | 2002 $YU_8$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $YW_{8}$ | 15.6 | 0.15 | 20060922 | 13.26127 | 248.02545 | 138.13360 | 3.31683 | 0.1727544 | 2.5871933 | 66 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 74246 | 2002 $YW_{8}$ |
| 2002 $YZ_{8}$ | 16.7 | 0.15 | 20060922 | 22.04367 | 120.66874 | 316.40376 | 1.74508 | 0.1615854 | 2.3737128 | 61 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 90166 | 2002 $YZ_{8}$ |
| 2002 $YC_{9}$ | 15.6 | 0.15 | 20060922 | 300.17975 | 189.11616 | 282.87917 | 10.73602 | 0.1327607 | 2.6551028 | 35 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 89388 | 2002 $YC_{9}$ |
| 2002 $YE_{9}$ | 15.3 | 0.15 | 20060922 | 272.20354 | 329.95833 | 120.15348 | 3.54429 | 0.1348895 | 2.9460148 | 47 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 72739 | 2002 $YE_{9}$ |
| 2002 $YH_{9}$ | 16.2 | 0.15 | 20060922 | 4.29903 | 174.54802 | 270.64773 | 4.51445 | 0.0762364 | 2.4401884 | 43 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 89388 | 2002 $YH_{9}$ |
| 2002 $YQ_{9}$ | 15.5 | 0.15 | 20060922 | 280.02484 | 292.38963 | 142.85471 | 2.91809 | 0.1561961 | 2.9775808 | 51 | 4 | 1960–2006 | 0.62 | M-v | 2 | MPC | 04247 | 2002 $YQ_{9}$ |
| 2002 $YV_{9}$ | 15.9 | 0.15 | 20060922 | 40.71266 | 104.44555 | 273.35088 | 5.38712 | 0.2255048 | 2.4874744 | 43 | 3 | 1994–2006 | 0.51 | M-v | 4 | MPC | 41382 | 2002 $YV_{9}$ |
| 2002 $YX_{9}$ | 16.4 | 0.15 | 20060922 | 347.51228 | 46.01305 | 71.71698 | 3.08954 | 0.0675898 | 2.3983498 | 43 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 94881 | 2002 $YX_{9}$ |
| 2002 $YJ_{10}$ | 16.0 | 0.15 | 20060922 | 323.21208 | 215.97821 | 262.89712 | 2.70816 | 0.1254550 | 2.5261974 | 51 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87565 | 2002 $YJ_{10}$ |
| 2002 $YS_{10}$ | 15.7 | 0.15 | 20060922 | 342.30340 | 144.71202 | 270.01482 | 1.81722 | 0.1312858 | 2.6954138 | 84 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 66299 | 2002 $YS_{10}$ |
| 2002 $YU_{10}$ | 16.1 | 0.15 | 20060922 | 303.35099 | 246.52152 | 278.67731 | 7.54010 | 0.1420486 | 2.4474031 | 47 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 85807 | 2002 $YU_{10}$ |
| 2002 $YJ_{11}$ | 16.1 | 0.15 | 20060922 | 359.94671 | 334.01878 | 107.00782 | 6.79056 | 0.1064270 | 2.4511659 | 53 | 5 | 1998–2006 | 0.58 | M-v | 2 | MPC | 66299 | 2002 $YJ_{11}$ |
| 2002 $YY_{12}$ | 16.0 | 0.15 | 20060922 | 299.91633 | 358.45807 | 119.61443 | 4.73817 | 0.1540192 | 2.5899535 | 67 | 6 | 1995–2006 | 0.48 | M-v | 1 | MPC | 85808 | 2002 $YY_{12}$ |
| 2002 $YC_{13}$ | 15.9 | 0.15 | 20060922 | 336.08435 | 110.01159 | 270.44340 | 7.16067 | 0.1665398 | 2.8039742 | 34 | 2 | 2002–2006 | 0.64 | M-v | 4 | MPC | 03492 | 2002 $YC_{13}$ |
| 2002 $YD_{13}$ | 14.6 | 0.15 | 20060922 | 249.56994 | 200.91266 | 245.61421 | 8.03050 | 0.0541347 | 3.0677536 | 43 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 85808 | 2002 $YD_{13}$ |
| 2002 $YH_{13}$ | 15.4 | 0.15 | 20060922 | 221.86370 | 330.25160 | 158.46588 | 0.18385 | 0.1259110 | 3.1208787 | 47 | 6 | 1993–2006 | 0.74 | M-v | 0 | MPC | 74246 | 2002 $YH_{13}$ |
| 2002 $YO_{13}$ | 15.7 | 0.15 | 20060922 | 348.95212 | 142.78081 | 266.98546 | 7.28540 | 0.0702305 | 2.6920534 | 58 | 3 | 2002–2006 | 0.38 | M-v | 3 | MPC | 94881 | 2002 $YO_{13}$ |
| 2002 $YQ_{13}$ | 16.1 | 0.15 | 20060922 | 288.90411 | 343.59908 | 119.18877 | 5.55488 | 0.1339510 | 2.7752287 | 44 | 3 | 2002–2006 | 0.65 | M-v | 4 | MPC | 85808 | 2002 $YQ_{13}$ |
| 2002 $YV_{13}$ | 15.6 | 0.15 | 20060922 | 345.34254 | 300.12442 | 105.59156 | 4.81154 | 0.2272430 | 2.6673667 | 110 | 4 | 1995–2006 | 0.48 | M-v | 2 | MPC | 03492 | 2002 $YV_{13}$ |
| 2002 $YM_{14}$ | 16.1 | 0.15 | 20060922 | 38.12078 | 176.63947 | 187.91798 | 3.36546 | 0.2151075 | 2.5255262 | 20 | 3 | 2000–2006 | 0.35 | M-v | 1 | MPC | 04247 | 2002 $YM_{14}$ |
| 2002 $YF_{15}$ | 16.4 | 0.15 | 20060922 | 300.29071 | 216.13745 | 293.12473 | 4.79713 | 0.0810204 | 2.5493462 | 57 | 3 | 1998–2006 | 0.58 | M-v | 3 | MPC | 47242 | 2002 $YF_{15}$ |
| 2002 $YH_{15}$ | 16.2 | 0.15 | 20060922 | 343.23625 | 290.94147 | 142.52289 | 5.04059 | 0.1436786 | 2.5378578 | 43 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 85809 | 2002 $YH_{15}$ |
| 2002 $YW_{15}$ | 17.5 | 0.15 | 20060922 | 194.31057 | 73.95968 | 323.75147 | 18.25119 | 0.1046719 | 1.9515444 | 35 | 3 | 1996–2006 | 0.62 | M-v | 3 | MPC | 97629 | 2002 $YW_{15}$ |
| 2002 $YB_{16}$ | 15.9 | 0.15 | 20060922 | 241.97903 | 229.01300 | 265.73917 | 8.23879 | 0.1041070 | 2.7782776 | 36 | 4 | 2001–2006 | 0.60 | M-v | 0 | MPC | 85809 | 2002 $YB_{16}$ |
| 2002 $YP_{16}$ | 16.3 | 0.15 | 20060922 | 332.23775 | 170.66852 | 287.18930 | 1.11625 | 0.1307313 | 2.4803198 | 63 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87565 | 2002 $YP_{16}$ |
| 2002 $YQ_{16}$ | 16.1 | 0.15 | 20060922 | 297.59390 | 35.54078 | 88.15885 | 4.31286 | 0.1515993 | 2.5540854 | 92 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 65408 | 2002 $YQ_{16}$ |
| 2002 $YT_{16}$ | 16.1 | 0.15 | 20060922 | 347.59687 | 178.36917 | 302.35471 | 1.65189 | 0.1830637 | 2.3483187 | 72 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 85809 | 2002 $YT_{16}$ |
| 2002 $YV_{18}$ | 15.3 | 0.15 | 20060922 | 343.38545 | 206.84165 | 164.55851 | 2.12193 | 0.2366541 | 2.7648708 | 148 | 5 | 1997–2006 | 0.44 | M-v | 1 | MPC | 04247 | 2002 $YV_{18}$ |
| 2002 $YW_{18}$ | 16.5 | 0.15 | 20060922 | 339.14734 | 345.33313 | 132.21451 | 2.75447 | 0.1584606 | 2.4090342 | 32 | 5 | 1992–2006 | 0.43 | M-v | 1 | MPC | 04247 | 2002 $YW_{18}$ |
| 2002 $YZ_{18}$ | 15.8 | 0.15 | 20060922 | 16.89120 | 131.47628 | 242.87005 | 2.89873 | 0.2074025 | 2.5795410 | 89 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 04247 | 2002 $YZ_{18}$ |
| 2002 $YA_{19}$ | 16.6 | 0.15 | 20060922 | 331.88664 | 297.61534 | 149.48253 | 0.91525 | 0.1899513 | 2.5498620 | 57 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 87565 | 2002 $YA_{19}$ |
| 2002 $YC_{19}$ | 15.0 | 0.15 | 20060922 | 49.70468 | 61.52428 | 279.98133 | 4.78574 | 0.1974015 | 2.5778154 | 77 | 3 | 2002–2006 | 0.54 | M-v | 1 | MPC | 04247 | 2002 $YC_{19}$ |
| 2002 $YL_{19}$ | 16.2 | 0.15 | 20060922 | 289.74315 | 208.99808 | 274.77140 | 2.53820 | 0.2400984 | 2.6627532 | 53 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 97629 | 2002 $YL_{19}$ |
| 2002 $YS_{19}$ | 16.6 | 0.15 | 20060922 | 353.69096 | 28.73896 | 89.23300 | 7.08701 | 0.1014302 | 2.3421039 | 48 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 87565 | 2002 $YS_{19}$ |
| 2002 $YT_{19}$ | 17.0 | 0.15 | 20060922 | 322.82430 | 191.16603 | 268.04575 | 4.50449 | 0.2822554 | 2.5690538 | 84 | 3 | 1998–2006 | 0.51 | M-v | 2 | MPC | 85810 | 2002 $YT_{19}$ |
| 2002 $YV_{19}$ | 15.3 | 0.15 | 20060922 | 32.78002 | 90.40396 | 269.63014 | 3.48774 | 0.2914765 | 2.5270328 | 65 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 75824 | 2002 $YV_{19}$ |
| 2002 $YX_{19}$ | 16.0 | 0.15 | 20060922 | 268.27322 | 212.37812 | 272.52995 | 8.07264 | 0.1597728 | 2.7665891 | 28 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 85810 | 2002 $YX_{19}$ |
| 2002 $YY_{19}$ | 16.8 | 0.15 | 20060922 | 19.17795 | 322.05261 | 94.45048 | 2.52392 | 0.1782919 | 2.4338732 | 49 | 5 | 1998–2006 | 0.40 | M-v | 0 | MPC | 85810 | 2002 $YY_{19}$ |
| 2002 $YF_{20}$ | 15.3 | 0.15 | 20060922 | 344.11105 | 161.69585 | 266.64462 | 8.87110 | 0.1473945 | 2.5693458 | 83 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 65409 | 2002 $YF_{20}$ |
| 2002 $YN_{20}$ | 15.9 | 0.15 | 20060922 | 54.32018 | 56.96665 | 312.49496 | 1.40166 | 0.2144047 | 2.4321642 | 50 | 6 | 1994–2006 | 0.53 | M-v | 1 | MPC | 97629 | 2002 $YN_{20}$ |
| 2002 $YY_{20}$ | 15.6 | 0.15 | 20060922 | 36.61871 | 274.60963 | 94.66036 | 2.84438 | 0.1058346 | 2.5215733 | 96 | 6 | 1996–2006 | 0.57 | M-v | 1 | MPC | 62438 | 2002 $YY_{20}$ |
| 2002 $YG_{21}$ | 16.2 | 0.15 | 20060922 | 49.08441 | 125.76608 | 264.16582 | 5.55536 | 0.1179782 | 2.3936727 | 30 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 85811 | 2002 $YG_{21}$ |
| 2002 $YP_{21}$ | 17.1 | 0.15 | 20060922 | 352.85282 | 239.56516 | 200.56744 | 2.08644 | 0.1610782 | 2.4699777 | 40 | 5 | 1990–2006 | 0.57 | M-v | 2 | MPC | 87565 | 2002 $YP_{21}$ |
| 2002 $YZ_{21}$ | 16.8 | 0.15 | 20060922 | 339.75592 | 163.20497 | 272.71355 | 7.09041 | 0.2672862 | 2.5579996 | 60 | 3 | 1998–2006 | 0.51 | M-v | 2 | MPC | 48307 | 2002 $YZ_{21}$ |
| 2002 $YF_{22}$ | 16.9 | 0.15 | 20060922 | 317.82340 | 169.07822 | 348.78719 | 1.03919 | 0.2146863 | 2.4082344 | 39 | 3 | 2002–2006 | 0.38 | M-v | 4 | MPC | 03492 | 2002 $YF_{22}$ |
| 2002 $YR_{22}$ | 15.0 | 0.15 | 20060922 | 129.99130 | 136.56589 | 99.51457 | 11.23749 | 0.0584388 | 2.9640500 | 48 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 66299 | 2002 $YR_{22}$ |
| 2002 $YC_{23}$ | 16.5 | 0.15 | 20060922 | 346.12597 | 183.50740 | 286.19575 | 4.20130 | 0.1556041 | 2.4333567 | 38 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 04247 | 2002 $YC_{23}$ |
| 2002 $YH_{23}$ | 15.7 | 0.15 | 20060922 | 1.64327 | 146.34627 | 232.36720 | 2.79464 | 0.2668500 | 2.6570203 | 92 | 2 | 2002–2006 | 0.41 | M-v | 3 | MPC | 03492 | 2002 $YH_{23}$ |
| 2002 $YO_{23}$ | 16.0 | 0.15 | 20060922 | 295.60046 | 7.09234 | 117.13884 | 2.84014 | 0.0746071 | 2.6194859 | 41 | 5 | 1998–2006 | 0.39 | M-v | 1 | MPC | 94883 | 2002 $YO_{23}$ |
| 2002 $YP_{23}$ | 15.8 | 0.15 | 20060922 | 311.59021 | 311.72896 | 114.70017 | 2.76735 | 0.1940732 | 2.7845546 | 96 | 5 | 1992–2006 | 0.47 | M-v | 0 | MPC | 04247 | 2002 $YP_{23}$ |
| 2002 $YS_{23}$ | 15.7 | 0.15 | 20060922 | 78.39890 | 272.55734 | 108.21886 | 7.36804 | 0.1152624 | 2.3537954 | 72 | 6 | 1995–2006 | 0.49 | M-v | 1 | MPC | 97629 | 2002 $YS_{23}$ |
| 2002 $YX_{24}$ | 16.9 | 0.15 | 20060922 | 46.20951 | 348.58696 | 96.56045 | 3.00897 | 0.1805054 | 2.2572625 | 53 | 2 | 2002–2005 | 0.59 | M-v | 4 | MPC | 90166 | 2002 $YX_{24}$ |
| 2002 $YC_{25}$ | 16.7 | 0.15 | 20060922 | 308.22146 | 357.86138 | 140.51916 | 1.08069 | 0.1452155 | 2.5188686 | 33 | 4 | 2001–2006 | 0.33 | M-v | 3 | MPC | 87565 | 2002 $YC_{25}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 $YO_{25}$ | 16.3 | 0.15 | 20060922 | 325.41938 | 357.53764 | 90.60328 | 1.83298 | 0.1402697 | 2.6283075 | 72 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 89390 | 2002 $YO_{25}$ |
| 2002 $YR_{25}$ | 16.6 | 0.15 | 20060922 | 100.30463 | 271.47489 | 92.95381 | 7.80420 | 0.2077516 | 2.2898034 | 49 | 3 | 1998–2005 | 0.58 | M-v | 3 | MPC | 89390 | 2002 $YR_{25}$ |
| 2002 $YV_{25}$ | 15.2 | 0.15 | 20060922 | 67.79736 | 62.74643 | 299.77303 | 4.94326 | 0.1716814 | 2.4624857 | 134 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 97629 | 2002 $YV_{25}$ |
| 2002 $YM_{26}$ | 15.9 | 0.15 | 20060922 | 293.61730 | 165.91899 | 307.00447 | 4.55406 | 0.0056872 | 2.6960073 | 45 | 5 | 1997–2006 | 0.45 | M-v | 1 | MPC | 94884 | 2002 $YM_{26}$ |
| 2002 $YS_{26}$ | 17.1 | 0.15 | 20060922 | 6.66734 | 151.57491 | 315.46224 | 1.97386 | 0.1304515 | 2.3611706 | 49 | 4 | 1998–2006 | 0.39 | M-v | 1 | MPC | 94884 | 2002 $YS_{26}$ |
| 2002 $YU_{26}$ | 14.0 | 0.15 | 20060922 | 204.35326 | 212.01837 | 288.04685 | 20.33417 | 0.0980920 | 3.2110372 | 77 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 02142 | 2002 $YU_{26}$ |
| 2002 $YX_{26}$ | 17.3 | 0.15 | 20060922 | 56.54876 | 152.71378 | 280.81271 | 5.85433 | 0.1347159 | 2.2662494 | 49 | 2 | 2002–2005 | 0.51 | M-v | 4 | MPC | 89390 | 2002 $YX_{26}$ |
| 2002 $YB_{27}$ | 15.2 | 0.15 | 20060922 | 236.27089 | 275.57880 | 280.82167 | 13.01785 | 0.0413556 | 2.5907424 | 48 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87566 | 2002 $YB_{27}$ |
| 2002 $YE_{27}$ | 17.4 | 0.15 | 20060922 | 31.91963 | 166.04186 | 270.12926 | 1.32436 | 0.1882022 | 2.3492580 | 36 | 2 | 2002–2005 | 0.36 | M-v | 3 | MPC | 89391 | 2002 $YE_{27}$ |
| 2002 $YL_{27}$ | 16.2 | 0.15 | 20060922 | 338.97061 | 55.11318 | 92.99385 | 1.65739 | 0.1479795 | 2.3564688 | 48 | 6 | 1985–2006 | 0.60 | M-v | 1 | MPC | 87566 | 2002 $YL_{27}$ |
| 2002 $YM_{27}$ | 16.0 | 0.15 | 20060922 | 342.67286 | 152.40501 | 290.38351 | 3.88855 | 0.2052519 | 2.5599960 | 83 | 4 | 1999–2006 | 0.53 | M-v | 2 | MPC | 85814 | 2002 $YM_{27}$ |
| 2002 $YP_{27}$ | 16.6 | 0.15 | 20060922 | 313.00921 | 27.51388 | 94.76452 | 5.27524 | 0.1066796 | 2.5666156 | 30 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 03493 | 2002 $YP_{27}$ |
| 2002 $YQ_{27}$ | 15.9 | 0.15 | 20060922 | 210.70767 | 93.26853 | 84.99342 | 3.10463 | 0.1421567 | 2.9307171 | 56 | 4 | 1999–2006 | 0.37 | M-v | 0 | MPC | 65410 | 2002 $YQ_{27}$ |
| 2002 $YR_{27}$ | 16.5 | 0.15 | 20060922 | 5.47740 | 310.93899 | 92.00325 | 4.85119 | 0.1824310 | 2.6031971 | 60 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 62438 | 2002 $YR_{27}$ |
| 2002 $YS_{27}$ | 15.8 | 0.15 | 20060922 | 294.22701 | 52.44972 | 90.21955 | 4.66080 | 0.1675914 | 2.5989470 | 41 | 3 | 1999–2006 | 0.66 | M-v | 4 | MPC | 43483 | 2002 $YS_{27}$ |
| 2002 $YK_{28}$ | 16.5 | 0.15 | 20060922 | 333.21296 | 37.47953 | 71.91240 | 1.94243 | 0.0866085 | 2.5213055 | 56 | 5 | 1998–2006 | 0.51 | M-v | 2 | MPC | 87566 | 2002 $YK_{28}$ |
| 2002 $YU_{28}$ | 16.4 | 0.15 | 20060922 | 33.03074 | 138.56496 | 305.60974 | 2.42461 | 0.1141969 | 2.3432035 | 78 | 4 | 1996–2005 | 0.51 | M-v | 1 | MPC | 94884 | 2002 $YU_{28}$ |
| 2002 $YV_{28}$ | 17.1 | 0.15 | 20060922 | 326.04917 | 204.32801 | 322.36327 | 1.77474 | 0.1689155 | 2.3640368 | 53 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 89391 | 2002 $YV_{28}$ |
| 2002 $YC_{29}$ | 16.7 | 0.15 | 20060922 | 302.59133 | 94.91826 | 81.29476 | 3.11550 | 0.1100996 | 2.4102581 | 51 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 97629 | 2002 $YC_{29}$ |
| 2002 $YH_{29}$ | 16.3 | 0.15 | 20060922 | 342.31726 | 208.89721 | 281.48819 | 0.95314 | 0.1462028 | 2.4189146 | 82 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 97629 | 2002 $YH_{29}$ |
| 2002 $YR_{29}$ | 15.3 | 0.15 | 20060922 | 233.60172 | 191.12437 | 295.49983 | 7.30372 | 0.0502045 | 3.1178847 | 39 | 5 | 1992–2006 | 0.41 | M-v | 0 | MPC | 04247 | 2002 $YR_{29}$ |
| 2002 $YY_{29}$ | 14.4 | 0.15 | 20060922 | 189.18034 | 263.70780 | 302.69527 | 10.03381 | 0.1828208 | 3.0100816 | 73 | 6 | 1998–2006 | 0.65 | M-v | 1 | MPC | 85815 | 2002 $YY_{29}$ |
| 2002 $YZ_{29}$ | 17.0 | 0.15 | 20060922 | 341.07144 | 98.47591 | 36.22154 | 1.18605 | 0.1573277 | 2.4225193 | 91 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 90166 | 2002 $YZ_{29}$ |
| 2002 $YM_{30}$ | 16.6 | 0.15 | 20060922 | 75.27735 | 135.54808 | 269.20682 | 5.14115 | 0.1053330 | 2.2854715 | 90 | 2 | 2002–2005 | 0.63 | M-v | 4 | MPC | 90166 | 2002 $YM_{30}$ |
| 2002 $YR_{30}$ | 15.6 | 0.15 | 20060922 | 326.31642 | 192.21432 | 281.49990 | 4.80730 | 0.1732855 | 2.5250174 | 43 | 6 | 1994–2006 | 0.57 | M-v | 3 | MPC | 85816 | 2002 $YR_{30}$ |
| 2002 $YX_{30}$ | 15.8 | 0.15 | 20060922 | 332.44122 | 317.03163 | 103.91072 | 14.70780 | 0.1583793 | 2.7357895 | 49 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 41395 | 2002 $YX_{30}$ |
| 2002 $YC_{31}$ | 15.4 | 0.15 | 20060922 | 249.48524 | 290.67297 | 298.49444 | 12.16596 | 0.2079573 | 2.4700975 | 74 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 65410 | 2002 $YC_{31}$ |
| 2002 $YP_{31}$ | 15.8 | 0.15 | 20060922 | 340.17006 | 338.88464 | 112.41546 | 5.42030 | 0.2592276 | 2.5833237 | 57 | 4 | 1995–2004 | 1.06 | M-v | 3 | MPC | 66300 | 2002 $YP_{31}$ |
| 2002 $YH_{32}$ | 14.6 | 0.15 | 20060922 | 325.76612 | 250.95063 | 227.40144 | 11.81318 | 0.2206173 | 2.6140371 | 71 | 5 | 1999–2006 | 0.56 | M-v | 2 | MPC | 87566 | 2002 $YH_{32}$ |
| 2002 $YO_{32}$ | 15.3 | 0.15 | 20060922 | 269.01275 | 57.65318 | 336.89549 | 2.53987 | 0.1464773 | 3.1243276 | 39 | 3 | 2002–2005 | 0.52 | M-v | 3 | MPC | 61687 | 2002 $YO_{32}$ |
| 2002 $YP_{32}$ | 16.3 | 0.15 | 20060922 | 300.11228 | 108.83674 | 350.52459 | 2.22942 | 0.0669406 | 2.5788287 | 44 | 4 | 1997–2006 | 0.38 | M-v | 0 | MPC | 85817 | 2002 $YP_{32}$ |
| 2002 $YF_{33}$ | 15.6 | 0.15 | 20060922 | 21.84484 | 101.03700 | 292.54510 | 8.17880 | 0.2772489 | 2.4370411 | 57 | 3 | 1998–2006 | 0.57 | M-v | 2 | MPC | 85817 | 2002 $YF_{33}$ |
| 2002 $YJ_{33}$ | 15.6 | 0.15 | 20060922 | 310.24619 | 104.96594 | 342.85397 | 1.90417 | 0.1364050 | 2.7147253 | 80 | 5 | 2001–2006 | 0.43 | M-v | 1 | MPC | 85817 | 2002 $YJ_{33}$ |
| 2002 $YX_{34}$ | 15.1 | 0.15 | 20060922 | 345.39690 | 125.34504 | 241.74714 | 12.10067 | 0.2067771 | 2.7853305 | 76 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 03493 | 2002 $YX_{34}$ |
| 2003 AF | 15.7 | 0.15 | 20060922 | 310.72724 | 311.43294 | 168.82263 | 4.74997 | 0.2020630 | 2.5320413 | 60 | 5 | 1998–2006 | 0.65 | M-v | 3 | MPC | 87566 | 2003 AF |
| 2003 AZ | 16.0 | 0.15 | 20060922 | 292.14846 | 263.85898 | 272.25103 | 4.78704 | 0.1631210 | 2.5297501 | 112 | 6 | 1991–2006 | 0.48 | M-v | 2 | MPC | 87566 | 2003 AZ |
| 2003 $AH_1$ | 15.4 | 0.15 | 20060922 | 307.98197 | 329.76187 | 126.72931 | 14.77843 | 0.2155969 | 2.6697280 | 80 | 5 | 1999–2006 | 0.46 | M-v | 2 | MPC | 87566 | 2003 $AH_1$ |
| 2003 $AP_1$ | 14.4 | 0.15 | 20060922 | 201.21000 | 33.10395 | 128.38360 | 17.07338 | 0.0778931 | 3.0913665 | 72 | 5 | 1999–2006 | 0.66 | M-v | 1 | MPC | 66300 | 2003 $AP_1$ |
| 2003 $AD_2$ | 15.0 | 0.15 | 20060922 | 217.95322 | 284.09721 | 226.25816 | 12.61111 | 0.2124290 | 3.1464894 | 50 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 65412 | 2003 $AD_2$ |
| 2003 $AH_2$ | 15.7 | 0.15 | 20060922 | 346.45753 | 239.23608 | 176.83879 | 11.97341 | 0.2907309 | 2.6448475 | 65 | 3 | 1997–2006 | 0.50 | M-v | 1 | MPC | 50730 | 2003 $AH_2$ |
| 2003 $AY_2$ | 19.4 | 0.15 | 20060922 | 155.51869 | 285.56089 | 275.34444 | 10.30739 | 0.5648847 | 1.8219321 | 77 | 2 | 2002–2003 | 0.45 | M-v | 3 | MPC | 57910 | 2003 $AY_2$ |
| 2003 $AJ_3$ | 16.5 | 0.15 | 20060922 | 354.54943 | 327.05498 | 134.51946 | 12.20651 | 0.1555189 | 2.5348796 | 54 | 1 | 91 days | 0.57 | M-v | 3 | MPC | 48308 | 2003 $AJ_3$ |
| 2003 $AY_3$ | 16.3 | 0.15 | 20060922 | 353.90779 | 281.78553 | 207.34589 | 22.58985 | 0.3164182 | 2.3402479 | 29 | 1 | 85 days | 0.37 | M-v | 4 | MPC | 41907 | 2003 $AY_3$ |
| 2003 $AS_4$ | 15.2 | 0.15 | 20060922 | 188.80097 | 139.19425 | 351.94409 | 16.31659 | 0.1922704 | 3.1703659 | 137 | 3 | 2001–2004 | 0.50 | M-v | 2 | MPC | 62438 | 2003 $AS_4$ |
| 2003 $AZ_4$ | 16.0 | 0.15 | 20060922 | 43.25534 | 126.99789 | 259.11875 | 1.36449 | 0.1798571 | 2.4496748 | 46 | 6 | 1994–2006 | 0.52 | M-v | 1 | MPC | 85821 | 2003 $AZ_4$ |
| 2003 $AD_5$ | 16.3 | 0.15 | 20060922 | 43.22338 | 303.56740 | 88.38232 | 7.84248 | 0.1768406 | 2.4295605 | 48 | 4 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87566 | 2003 $AD_5$ |
| 2003 $AH_5$ | 16.0 | 0.15 | 20060922 | 253.69032 | 187.06803 | 251.57985 | 0.76898 | 0.2310493 | 3.1692335 | 41 | 4 | 1996–2004 | 0.60 | M-v | 1 | MPC | 62438 | 2003 $AH_5$ |
| 2003 $AL_5$ | 16.5 | 0.15 | 20060922 | 103.94164 | 68.75015 | 293.50285 | 10.80451 | 0.1841919 | 2.3045870 | 90 | 3 | 1998–2005 | 0.57 | M-v | 2 | MPC | 97630 | 2003 $AL_5$ |
| 2003 $AQ_5$ | 15.6 | 0.15 | 20060922 | 350.22052 | 236.32650 | 244.96285 | 1.69674 | 0.1504718 | 2.4444148 | 108 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 97630 | 2003 $AQ_5$ |
| 2003 $AW_5$ | 16.0 | 0.15 | 20060922 | 19.98207 | 132.72160 | 309.00283 | 10.79241 | 0.2138662 | 2.4421250 | 99 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 85822 | 2003 $AW_5$ |
| 2003 $AP_6$ | 15.4 | 0.15 | 20060922 | 200.97817 | 82.16297 | 113.69749 | 3.32481 | 0.2013331 | 3.0240994 | 82 | 7 | 1993–2006 | 0.55 | M-v | 1 | MPC | 87566 | 2003 $AP_6$ |
| 2003 $AQ_6$ | 16.5 | 0.15 | 20060922 | 23.76719 | 113.08261 | 313.62359 | 1.84930 | 0.1655414 | 2.4659995 | 70 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 97630 | 2003 $AQ_6$ |
| 2003 $AA_8$ | 14.9 | 0.15 | 20060922 | 299.90543 | 198.91941 | 335.09808 | 17.55995 | 0.1716577 | 2.6286831 | 56 | 5 | 2000–2006 | 0.64 | M-v | 2 | MPC | 90167 | 2003 $AA_8$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $AN_{8}$ | 16.3 | 0.15 | 20060922 | 228.94083 | 135.38896 | 93.36938 | 7.80526 | 0.0574662 | 2.3802559 | 48 | 7 | 1993–2006 | 0.62 | M-v | 1 | MPC | 85824 | 2003 $AN_{8}$ |
| 2003 $AU_{8}$ | 15.3 | 0.15 | 20060922 | 329.70693 | 251.42891 | 158.33242 | 27.80650 | 0.2018313 | 2.6858016 | 54 | 4 | 2002–2006 | 0.37 | M-v | 2 | MPC | 85824 | 2003 $AU_{8}$ |
| 2003 $AV_{8}$ | 14.7 | 0.15 | 20060922 | 183.88176 | 359.80472 | 155.76427 | 28.63663 | 0.1425978 | 3.1774554 | 42 | 4 | 1998–2006 | 0.49 | M-v | 1 | MPC | 04247 | 2003 $AV_{8}$ |
| 2003 $AY_{9}$ | 15.6 | 0.15 | 20060922 | 273.20091 | 316.23215 | 143.76100 | 5.56700 | 0.1370682 | 2.7805144 | 52 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 04247 | 2003 $AY_{9}$ |
| 2003 $AR_{10}$ | 16.0 | 0.15 | 20060922 | 341.37866 | 228.84599 | 194.96278 | 6.11529 | 0.1756271 | 2.6004991 | 97 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 66300 | 2003 $AR_{10}$ |
| 2003 $AY_{10}$ | 14.9 | 0.15 | 20060922 | 295.78031 | 331.42916 | 122.50880 | 13.69835 | 0.1681487 | 2.7019710 | 51 | 4 | 1999–2006 | 0.64 | M-v | 2 | MPC | 50731 | 2003 $AY_{10}$ |
| 2003 $AE_{11}$ | 15.7 | 0.15 | 20060922 | 338.48775 | 284.83889 | 146.86590 | 10.30448 | 0.1438306 | 2.5850309 | 45 | 7 | 1995–2006 | 0.52 | M-v | 1 | MPC | 77685 | 2003 $AE_{11}$ |
| 2003 $AM_{12}$ | 15.6 | 0.15 | 20060922 | 327.06506 | 271.43853 | 144.38335 | 9.96018 | 0.1738030 | 2.7473485 | 65 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04247 | 2003 $AM_{12}$ |
| 2003 $AO_{12}$ | 15.3 | 0.15 | 20060922 | 323.27851 | 301.06991 | 131.10029 | 15.39690 | 0.1645517 | 2.6962484 | 48 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 61690 | 2003 $AO_{12}$ |
| 2003 $AU_{12}$ | 15.4 | 0.15 | 20060922 | 352.11655 | 165.61674 | 255.14373 | 12.98428 | 0.1436994 | 2.6066700 | 61 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 85826 | 2003 $AU_{12}$ |
| 2003 $AZ_{12}$ | 14.3 | 0.15 | 20060922 | 225.07716 | 2.32974 | 120.05277 | 28.73829 | 0.1255831 | 3.1534476 | 123 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04247 | 2003 $AZ_{12}$ |
| 2003 $AO_{13}$ | 16.0 | 0.15 | 20060922 | 346.75210 | 305.99483 | 129.86966 | 12.71204 | 0.1612690 | 2.5977740 | 52 | 5 | 1999–2005 | 0.57 | M-v | 1 | MPC | 85826 | 2003 $AO_{13}$ |
| 2003 $AA_{14}$ | 14.8 | 0.15 | 20060922 | 280.46203 | 316.35564 | 122.09799 | 13.06560 | 0.3039211 | 3.0631476 | 51 | 1 | 65 days | 0.58 | M-v | 4 | MPC | 43485 | 2003 $AA_{14}$ |
| 2003 $AD_{14}$ | 15.3 | 0.15 | 20060922 | 339.92918 | 320.46991 | 121.87060 | 14.14329 | 0.2633328 | 2.6389753 | 82 | 5 | 1986–2006 | 0.51 | M-v | 1 | MPC | 85827 | 2003 $AD_{14}$ |
| 2003 $AP_{14}$ | 15.5 | 0.15 | 20060922 | 2.26707 | 3.59260 | 27.99461 | 8.54822 | 0.1917796 | 2.6194294 | 127 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 04247 | 2003 $AP_{14}$ |
| 2003 $AT_{14}$ | 15.3 | 0.15 | 20060922 | 338.85028 | 170.28846 | 283.04286 | 11.85376 | 0.2488736 | 2.6396246 | 31 | 4 | 2001–2006 | 0.66 | M-v | 2 | MPC | 85827 | 2003 $AT_{14}$ |
| 2003 $AU_{14}$ | 15.2 | 0.15 | 20060922 | 288.56811 | 244.30608 | 243.60804 | 8.78553 | 0.2282433 | 2.7820440 | 90 | 3 | 1997–2006 | 0.60 | M-v | 2 | MPC | 50731 | 2003 $AU_{14}$ |
| 2003 $AV_{14}$ | 15.3 | 0.15 | 20060922 | 315.68692 | 196.62006 | 258.52326 | 10.19935 | 0.2636672 | 2.7547687 | 60 | 3 | 1997–2006 | 0.47 | M-v | 1 | MPC | 50731 | 2003 $AV_{14}$ |
| 2003 $AY_{14}$ | 15.6 | 0.15 | 20060922 | 318.17168 | 207.14157 | 255.00511 | 11.09593 | 0.1495672 | 2.7149825 | 63 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 87567 | 2003 $AY_{14}$ |
| 2003 $AK_{15}$ | 15.1 | 0.15 | 20060922 | 353.41739 | 347.40867 | 32.48472 | 23.71254 | 0.1832737 | 2.4465540 | 123 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 04247 | 2003 $AK_{15}$ |
| 2003 $AW_{15}$ | 15.8 | 0.15 | 20060922 | 246.13569 | 183.47938 | 333.05412 | 8.65303 | 0.1099161 | 2.7526658 | 47 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 50731 | 2003 $AW_{15}$ |
| 2003 $AZ_{15}$ | 15.2 | 0.15 | 20060922 | 62.43196 | 193.16185 | 97.69141 | 11.70534 | 0.0401986 | 3.0677285 | 47 | 6 | 1996–2006 | 0.57 | M-v | 0 | MPC | 69427 | 2003 $AZ_{15}$ |
| 2003 $AD_{16}$ | 16.3 | 0.15 | 20060922 | 39.81065 | 24.94079 | 329.77258 | 1.85262 | 0.2533569 | 2.5971693 | 30 | 6 | 1993–2006 | 0.55 | M-v | 1 | MPC | 87567 | 2003 $AD_{16}$ |
| 2003 $AW_{16}$ | 15.5 | 0.15 | 20060922 | 338.49301 | 317.43334 | 90.17416 | 13.51641 | 0.1609324 | 2.7132846 | 81 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 04247 | 2003 $AW_{16}$ |
| 2003 $AN_{17}$ | 14.9 | 0.15 | 20060922 | 255.59213 | 111.24270 | 332.94864 | 13.06562 | 0.1249589 | 3.0824232 | 63 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 04248 | 2003 $AN_{17}$ |
| 2003 $AO_{17}$ | 15.8 | 0.15 | 20060922 | 300.68544 | 344.90274 | 113.51576 | 11.02762 | 0.1605822 | 2.7221131 | 39 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 00408 | 2003 $AO_{17}$ |
| 2003 $AB_{18}$ | 15.3 | 0.15 | 20060922 | 8.86144 | 19.10658 | 40.87107 | 9.94150 | 0.2165729 | 2.5361418 | 85 | 5 | 1999–2006 | 0.58 | M-v | 2 | MPC | 66300 | 2003 $AB_{18}$ |
| 2003 $AG_{18}$ | 15.9 | 0.15 | 20060922 | 231.99164 | 150.93078 | 4.04627 | 10.76697 | 0.2458540 | 3.0358001 | 43 | 3 | 1998–2006 | 0.61 | M-v | 3 | MPC | 50731 | 2003 $AG_{18}$ |
| 2003 $AJ_{18}$ | 16.1 | 0.15 | 20060922 | 327.13968 | 355.06163 | 62.76779 | 10.63244 | 0.3010672 | 2.7638006 | 62 | 3 | 1997–2006 | 0.57 | M-v | 2 | MPC | 48309 | 2003 $AJ_{18}$ |
| 2003 $AL_{18}$ | 17.9 | 0.15 | 20060922 | 211.87917 | 246.44253 | 313.10641 | 15.73656 | 0.4164734 | 1.6845966 | 284 | 2 | 2003–2005 | 0.41 | M-v | 1 | MPC | 77685 | 2003 $AL_{18}$ |
| 2003 $AT_{18}$ | 16.3 | 0.15 | 20060922 | 20.04114 | 325.34472 | 121.00314 | 6.50436 | 0.0887990 | 2.3380234 | 48 | 6 | 2000–2006 | 0.47 | M-v | 1 | MPC | 85830 | 2003 $AT_{18}$ |
| 2003 $AW_{18}$ | 16.8 | 0.15 | 20060922 | 12.12254 | 326.67071 | 151.24180 | 6.33637 | 0.1169149 | 2.3521742 | 61 | 4 | 1995–2005 | 0.69 | M-v | 1 | MPC | 89393 | 2003 $AW_{18}$ |
| 2003 $AF_{19}$ | 15.7 | 0.15 | 20060922 | 258.17238 | 0.17377 | 104.29664 | 6.64679 | 0.1316474 | 3.0928927 | 50 | 5 | 1991–2004 | 0.66 | M-v | 0 | MPC | 04248 | 2003 $AF_{19}$ |
| 2003 $AH_{19}$ | 15.2 | 0.15 | 20060922 | 220.05179 | 104.59512 | 69.29530 | 24.89084 | 0.2091556 | 2.7605906 | 109 | 4 | 1999–2006 | 0.60 | M-v | 2 | MPC | 66300 | 2003 $AH_{19}$ |
| 2003 $AL_{19}$ | 16.4 | 0.15 | 20060922 | 355.64172 | 333.78893 | 109.99303 | 11.54920 | 0.1858054 | 2.4570772 | 37 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 65415 | 2003 $AL_{19}$ |
| 2003 $AY_{19}$ | 15.3 | 0.15 | 20060922 | 14.40302 | 279.33391 | 87.55387 | 13.65649 | 0.1744355 | 2.6966432 | 66 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 04248 | 2003 $AY_{19}$ |
| 2003 $AZ_{19}$ | 16.9 | 0.15 | 20060922 | 29.06497 | 349.37991 | 65.52690 | 6.10290 | 0.1839469 | 2.4101804 | 33 | 5 | 1992–2006 | 0.54 | M-v | 1 | MPC | 48310 | 2003 $AZ_{19}$ |
| 2003 $AE_{20}$ | 15.7 | 0.15 | 20060922 | 251.49704 | 2.61277 | 142.24412 | 8.84793 | 0.1603998 | 2.8051245 | 31 | 4 | 2003–2006 | 0.55 | M-v | 1 | MPC | 87567 | 2003 $AE_{20}$ |
| 2003 $AQ_{20}$ | 16.7 | 0.15 | 20060922 | 52.75793 | 238.46892 | 174.76166 | 2.98572 | 0.1496679 | 2.3885238 | 57 | 4 | 1994–2005 | 0.59 | M-v | 1 | MPC | 04248 | 2003 $AQ_{20}$ |
| 2003 $AU_{20}$ | 15.7 | 0.15 | 20060922 | 282.21034 | 85.01904 | 65.37267 | 5.67915 | 0.1089292 | 2.5868639 | 28 | 4 | 1999–2006 | 0.55 | M-v | 3 | MPC | 85830 | 2003 $AU_{20}$ |
| 2003 $AF_{21}$ | 15.0 | 0.15 | 20060922 | 234.46684 | 52.16821 | 72.71366 | 10.56582 | 0.0554796 | 3.0511046 | 48 | 5 | 1991–2006 | 0.77 | M-v | 1 | MPC | 66300 | 2003 $AF_{21}$ |
| 2003 $AJ_{21}$ | 15.7 | 0.15 | 20060922 | 338.40786 | 307.51927 | 91.69914 | 8.14568 | 0.1347833 | 2.8092179 | 62 | 4 | 1997–2006 | 0.57 | M-v | 1 | MPC | 50172 | 2003 $AJ_{21}$ |
| 2003 $AM_{21}$ | 16.9 | 0.15 | 20060922 | 316.61399 | 204.44547 | 335.07954 | 2.56529 | 0.1075932 | 2.3221893 | 59 | 3 | 1996–2005 | 0.52 | M-v | 5 | MPC | 89394 | 2003 $AM_{21}$ |
| 2003 $AN_{21}$ | 15.5 | 0.15 | 20060922 | 172.08577 | 131.26170 | 46.38002 | 2.73301 | 0.0639351 | 3.1859791 | 34 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04248 | 2003 $AN_{21}$ |
| 2003 $AV_{21}$ | 15.1 | 0.15 | 20060922 | 309.71853 | 321.37993 | 83.54546 | 11.27906 | 0.0801494 | 3.0428862 | 53 | 4 | 2001–2006 | 0.59 | M-v | 0 | MPC | 62438 | 2003 $AV_{21}$ |
| 2003 $AC_{22}$ | 16.4 | 0.15 | 20060922 | 248.22669 | 72.67097 | 55.80199 | 4.01722 | 0.1734066 | 2.9821626 | 37 | 5 | 2001–2006 | 0.55 | M-v | 0 | MPC | 04248 | 2003 $AC_{22}$ |
| 2003 $AR_{22}$ | 15.3 | 0.15 | 20060922 | 338.24038 | 180.44108 | 297.67253 | 13.10191 | 0.1723074 | 2.5935567 | 66 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87567 | 2003 $AR_{22}$ |
| 2003 $AZ_{22}$ | 15.2 | 0.15 | 20060922 | 302.74345 | 251.24116 | 310.41711 | 21.34910 | 0.3008274 | 2.3705913 | 68 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 70353 | 2003 $AZ_{22}$ |
| 2003 $AP_{23}$ | 16.4 | 0.15 | 20060922 | 1.08332 | 45.93429 | 11.25959 | 2.12560 | 0.1215504 | 2.5159291 | 29 | 3 | 2002–2006 | 0.43 | M-v | 4 | MPC | 61693 | 2003 $AP_{23}$ |
| 2003 $AY_{23}$ | 16.2 | 0.15 | 20060922 | 40.28955 | 292.69081 | 98.20721 | 15.68881 | 0.1672621 | 2.4329453 | 44 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87567 | 2003 $AY_{23}$ |
| 2003 $AZ_{23}$ | 15.8 | 0.15 | 20060922 | 350.10393 | 39.47947 | 78.19133 | 4.47871 | 0.1813888 | 2.3778634 | 53 | 6 | 1996–2006 | 0.45 | M-v | 1 | MPC | 87567 | 2003 $AZ_{23}$ |
| 2003 $AF_{24}$ | 16.7 | 0.15 | 20060922 | 344.31220 | 122.15745 | 315.81571 | 0.50052 | 0.1619779 | 2.5401146 | 42 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 87567 | 2003 $AF_{24}$ |
| 2003 $AM_{24}$ | 14.9 | 0.15 | 20060922 | 226.20352 | 273.10269 | 278.55611 | 11.74297 | 0.1279095 | 2.6256517 | 31 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 65417 | 2003 $AM_{24}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $AY_{24}$ | 16.2 | 0.15 | 20060922 | 313.07145 | 325.33471 | 107.73848 | 4.20433 | 0.1916409 | 2.7330900 | 50 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 85832 | 2003 $AY_{24}$ |
| 2003 $AD_{25}$ | 15.6 | 0.15 | 20060922 | 290.84071 | 236.67749 | 253.87197 | 2.63542 | 0.1521009 | 2.6253706 | 61 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 65417 | 2003 $AD_{25}$ |
| 2003 $AR_{25}$ | 16.9 | 0.15 | 20060922 | 39.38453 | 81.54750 | 332.49855 | 1.96896 | 0.1657271 | 2.3726585 | 43 | 5 | 1998–2006 | 0.35 | M-v | 1 | MPC | 90167 | 2003 $AR_{25}$ |
| 2003 $AC_{26}$ | 15.2 | 0.15 | 20060922 | 239.69998 | 169.49376 | 296.12047 | 9.40516 | 0.1207217 | 3.1527336 | 34 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 03493 | 2003 $AC_{26}$ |
| 2003 $AN_{26}$ | 16.6 | 0.15 | 20060922 | 49.94448 | 106.42535 | 282.22761 | 3.78274 | 0.2008561 | 2.4336475 | 37 | 3 | 2002–2006 | 0.37 | M-v | 1 | MPC | 85833 | 2003 $AN_{26}$ |
| 2003 $AV_{26}$ | 17.0 | 0.15 | 20060922 | 68.47520 | 262.96064 | 122.48842 | 6.83116 | 0.1435299 | 2.3954711 | 30 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 94887 | 2003 $AV_{26}$ |
| 2003 $AU_{27}$ | 16.4 | 0.15 | 20060922 | 268.14847 | 300.26776 | 251.77414 | 2.66087 | 0.1477756 | 2.5314873 | 65 | 8 | 1991–2006 | 0.58 | M-v | 2 | MPC | 90167 | 2003 $AU_{27}$ |
| 2003 $AQ_{28}$ | 16.5 | 0.15 | 20060922 | 337.98467 | 354.73200 | 150.28705 | 1.70790 | 0.1303942 | 2.3890462 | 100 | 5 | 1994–2006 | 0.54 | M-v | 1 | MPC | 90167 | 2003 $AQ_{28}$ |
| 2003 $AR_{28}$ | 17.4 | 0.15 | 20060922 | 44.01817 | 92.63355 | 332.12588 | 1.63894 | 0.1944130 | 2.3520610 | 49 | 3 | 1998–2005 | 0.46 | M-v | 1 | MPC | 97630 | 2003 $AR_{28}$ |
| 2003 $AA_{29}$ | 16.4 | 0.15 | 20060922 | 357.77842 | 289.83149 | 186.33558 | 2.24835 | 0.1491496 | 2.4074968 | 63 | 5 | 1992–2006 | 0.62 | M-v | 1 | MPC | 97630 | 2003 $AA_{29}$ |
| 2003 $AD_{29}$ | 14.8 | 0.15 | 20060922 | 235.03287 | 176.18539 | 298.73561 | 20.04073 | 0.0564547 | 3.2268844 | 56 | 5 | 2000–2006 | 0.83 | M-v | 1 | MPC | 85834 | 2003 $AD_{29}$ |
| 2003 $AE_{29}$ | 16.6 | 0.15 | 20060922 | 38.53094 | 130.78890 | 292.43973 | 1.86545 | 0.1612041 | 2.4041775 | 86 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 97630 | 2003 $AE_{29}$ |
| 2003 $AK_{29}$ | 16.5 | 0.15 | 20060922 | 354.01808 | 199.72390 | 294.45487 | 3.20257 | 0.1390220 | 2.3594080 | 80 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04248 | 2003 $AK_{29}$ |
| 2003 $AC_{30}$ | 15.9 | 0.15 | 20060922 | 27.82705 | 341.44852 | 99.34505 | 2.76926 | 0.1675214 | 2.4236380 | 97 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 87567 | 2003 $AC_{30}$ |
| 2003 $AE_{30}$ | 15.7 | 0.15 | 20060922 | 334.02469 | 315.86636 | 124.05636 | 12.48342 | 0.0922967 | 2.7011624 | 59 | 3 | 2001–2005 | 0.48 | M-v | 2 | MPC | 85835 | 2003 $AE_{30}$ |
| 2003 $AK_{30}$ | 16.2 | 0.15 | 20060922 | 269.00446 | 9.29174 | 142.86395 | 4.03206 | 0.1802647 | 2.7620934 | 71 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 48310 | 2003 $AK_{30}$ |
| 2003 $AW_{30}$ | 15.5 | 0.15 | 20060922 | 241.53771 | 233.36228 | 313.01290 | 8.29256 | 0.1447797 | 2.8006415 | 104 | 3 | 2000–2005 | 0.52 | M-v | 2 | MPC | 89395 | 2003 $AW_{30}$ |
| 2003 $AD_{31}$ | 16.1 | 0.15 | 20060922 | 307.67222 | 200.05252 | 323.25836 | 5.80298 | 0.2686070 | 2.5876002 | 107 | 3 | 1999–2005 | 0.51 | M-v | 2 | MPC | 90167 | 2003 $AD_{31}$ |
| 2003 $AU_{31}$ | 16.1 | 0.15 | 20060922 | 2.81387 | 79.68226 | 294.03516 | 11.05949 | 0.2759062 | 2.6553182 | 55 | 3 | 1997–2006 | 0.54 | M-v | 2 | MPC | 03494 | 2003 $AU_{31}$ |
| 2003 $AF_{32}$ | 17.0 | 0.15 | 20060922 | 2.06957 | 47.23994 | 4.19378 | 1.57990 | 0.1776959 | 2.5707937 | 21 | 3 | 1999–2006 | 0.41 | M-v | 5 | MPC | 43251 | 2003 $AF_{32}$ |
| 2003 $AH_{32}$ | 16.6 | 0.15 | 20060922 | 263.35299 | 224.81748 | 341.93973 | 1.68712 | 0.1468082 | 2.4463477 | 33 | 3 | 2002–2006 | 0.36 | M-v | 4 | MPC | 89395 | 2003 $AH_{32}$ |
| 2003 $AJ_{32}$ | 16.2 | 0.15 | 20060922 | 349.23842 | 79.70032 | 346.92020 | 1.19558 | 0.0937965 | 2.6091300 | 55 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 87567 | 2003 $AJ_{32}$ |
| 2003 $AM_{32}$ | 16.7 | 0.15 | 20060922 | 73.54307 | 99.85165 | 302.07453 | 4.38552 | 0.1567968 | 2.2812840 | 63 | 5 | 1998–2005 | 0.49 | M-v | 1 | MPC | 97630 | 2003 $AM_{32}$ |
| 2003 $AR_{32}$ | 15.5 | 0.15 | 20060922 | 240.72867 | 229.76024 | 297.30083 | 8.04158 | 0.0942430 | 2.7593132 | 30 | 2 | 2002–2005 | 0.61 | M-v | 4 | MPC | 89395 | 2003 $AR_{32}$ |
| 2003 $AX_{32}$ | 17.5 | 0.15 | 20060922 | 4.20363 | 154.42120 | 337.52761 | 1.74884 | 0.1425256 | 2.3020971 | 26 | 2 | 2002–2005 | 0.48 | M-v | 4 | MPC | 89395 | 2003 $AX_{32}$ |
| 2003 $AF_{33}$ | 17.8 | 0.15 | 20060922 | 45.49954 | 62.98206 | 48.40781 | 1.37918 | 0.1365927 | 2.2183538 | 51 | 4 | 1995–2005 | 0.30 | M-v | 1 | MPC | 97630 | 2003 $AF_{33}$ |
| 2003 $AO_{33}$ | 16.9 | 0.15 | 20060922 | 3.11591 | 110.59057 | 6.15332 | 1.46130 | 0.1334809 | 2.3830514 | 57 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 97630 | 2003 $AO_{33}$ |
| 2003 $AA_{34}$ | 15.7 | 0.15 | 20060922 | 347.70113 | 211.76409 | 303.81839 | 24.52509 | 0.1857176 | 2.3463333 | 51 | 1 | 107 days | 0.38 | M-v | 3 | MPC | 43486 | 2003 $AA_{34}$ |
| 2003 $AN_{34}$ | 16.1 | 0.15 | 20060922 | 289.42233 | 248.01553 | 255.17864 | 11.41802 | 0.2591906 | 2.5962180 | 70 | 3 | 1998–2006 | 0.58 | M-v | 3 | MPC | 41425 | 2003 $AN_{34}$ |
| 2003 $AW_{34}$ | 16.9 | 0.15 | 20060922 | 54.35479 | 223.64239 | 216.16806 | 5.37230 | 0.1201082 | 2.2236586 | 96 | 4 | 1995–2005 | 0.60 | M-v | 1 | MPC | 04248 | 2003 $AW_{34}$ |
| 2003 $AZ_{34}$ | 14.7 | 0.15 | 20060922 | 297.73361 | 311.70744 | 104.37209 | 13.07390 | 0.0464879 | 2.9487151 | 57 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04248 | 2003 $AZ_{34}$ |
| 2003 $AM_{35}$ | 14.9 | 0.15 | 20060922 | 22.55196 | 261.81290 | 112.41154 | 10.52098 | 0.2031887 | 2.5817240 | 72 | 5 | 1991–2006 | 0.51 | M-v | 2 | MPC | 62439 | 2003 $AM_{35}$ |
| 2003 $AO_{35}$ | 14.2 | 0.15 | 20060922 | 195.17789 | 250.41747 | 261.46958 | 13.93570 | 0.1057462 | 3.1413889 | 66 | 3 | 2001–2004 | 0.53 | M-v | 3 | MPC | 66301 | 2003 $AO_{35}$ |
| 2003 $AU_{35}$ | 15.3 | 0.15 | 20060922 | 240.14829 | 280.62313 | 244.57528 | 7.48067 | 0.1998548 | 2.7880162 | 59 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 87567 | 2003 $AU_{35}$ |
| 2003 $AW_{35}$ | 16.0 | 0.15 | 20060922 | 310.71647 | 328.34363 | 128.56055 | 8.72507 | 0.2605750 | 2.6511335 | 65 | 5 | 1995–2006 | 0.48 | M-v | 2 | MPC | 87567 | 2003 $AW_{35}$ |
| 2003 $AZ_{35}$ | 15.7 | 0.15 | 20060922 | 35.68692 | 131.17974 | 250.85783 | 7.52138 | 0.0967829 | 2.5477895 | 62 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 85838 | 2003 $AZ_{35}$ |
| 2003 $AG_{36}$ | 14.7 | 0.15 | 20060922 | 337.86451 | 48.45206 | 337.19105 | 12.60164 | 0.2327452 | 2.7467212 | 157 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04248 | 2003 $AG_{36}$ |
| 2003 $AW_{36}$ | 15.4 | 0.15 | 20060922 | 344.98634 | 150.72900 | 264.27057 | 8.72200 | 0.1853460 | 2.6430626 | 81 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 56740 | 2003 $AW_{36}$ |
| 2003 $AZ_{36}$ | 16.2 | 0.15 | 20060922 | 26.10485 | 176.30056 | 257.61589 | 6.03913 | 0.2078622 | 2.3708475 | 23 | 3 | 1998–2005 | 0.42 | M-v | 3 | MPC | 89397 | 2003 $AZ_{36}$ |
| 2003 $AM_{37}$ | 15.4 | 0.15 | 20060922 | 348.16804 | 159.03166 | 268.08484 | 6.78454 | 0.1072956 | 2.6257665 | 55 | 5 | 1993–2006 | 0.45 | M-v | 1 | MPC | 04248 | 2003 $AM_{37}$ |
| 2003 $AS_{37}$ | 16.2 | 0.15 | 20060922 | 11.56271 | 204.63848 | 182.99408 | 2.87807 | 0.2711948 | 2.5974824 | 44 | 3 | 1993–2006 | 0.44 | M-v | 2 | MPC | 50733 | 2003 $AS_{37}$ |
| 2003 $AD_{38}$ | 16.0 | 0.15 | 20060922 | 356.62177 | 300.40265 | 128.05662 | 8.15511 | 0.1671876 | 2.5610204 | 59 | 7 | 1995–2006 | 0.54 | M-v | 1 | MPC | 85839 | 2003 $AD_{38}$ |
| 2003 $AM_{39}$ | 16.0 | 0.15 | 20060922 | 268.56867 | 28.78692 | 126.37772 | 10.19247 | 0.1341200 | 2.7082075 | 54 | 4 | 2002–2006 | 0.62 | M-v | 1 | MPC | 87567 | 2003 $AM_{39}$ |
| 2003 $AP_{39}$ | 16.0 | 0.15 | 20060922 | 6.50371 | 330.04206 | 141.93306 | 7.29251 | 0.0797504 | 2.3840500 | 64 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 94889 | 2003 $AP_{39}$ |
| 2003 $AY_{39}$ | 15.5 | 0.15 | 20060922 | 329.47016 | 174.55252 | 260.20126 | 8.20143 | 0.1244807 | 2.7437754 | 94 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 87567 | 2003 $AY_{39}$ |
| 2003 $AH_{40}$ | 14.6 | 0.15 | 20060922 | 224.95744 | 337.01441 | 160.05214 | 8.22543 | 0.0867739 | 3.1643201 | 51 | 5 | 1998–2006 | 0.72 | M-v | 1 | MPC | 65419 | 2003 $AH_{40}$ |
| 2003 $AX_{40}$ | 16.8 | 0.15 | 20060922 | 297.38143 | 338.40588 | 168.07747 | 6.07944 | 0.1393458 | 2.6224214 | 47 | 5 | 1995–2005 | 0.54 | M-v | 1 | MPC | 87568 | 2003 $AX_{40}$ |
| 2003 $AY_{40}$ | 15.2 | 0.15 | 20060922 | 263.91811 | 188.67576 | 279.64044 | 9.37660 | 0.2170363 | 3.0337958 | 73 | 4 | 1995–2003 | 0.57 | M-v | 1 | MPC | 50733 | 2003 $AY_{40}$ |
| 2003 $AF_{41}$ | 16.9 | 0.15 | 20060922 | 283.02580 | 245.12716 | 131.40017 | 24.33702 | 0.0356345 | 1.8250055 | 24 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 02142 | 2003 $AF_{41}$ |
| 2003 $AM_{41}$ | 15.3 | 0.15 | 20060922 | 305.72732 | 171.94361 | 293.32142 | 13.06447 | 0.1382525 | 2.7836239 | 62 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 87568 | 2003 $AM_{41}$ |
| 2003 $AB_{42}$ | 15.8 | 0.15 | 20060922 | 307.61995 | 327.17418 | 142.17056 | 12.93745 | 0.1062386 | 2.7151454 | 41 | 4 | 1994–2006 | 0.59 | M-v | 1 | MPC | 04248 | 2003 $AB_{42}$ |
| 2003 $AO_{42}$ | 16.2 | 0.15 | 20060922 | 303.55298 | 236.11780 | 281.37443 | 5.32340 | 0.3812697 | 2.6300329 | 88 | 4 | 1993–2006 | 0.50 | M-v | 1 | MPC | 47249 | 2003 $AO_{42}$ |
| 2003 $AR_{42}$ | 15.0 | 0.15 | 20060922 | 278.14304 | 359.68555 | 124.82717 | 16.17794 | 0.0875039 | 2.8605248 | 73 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 87568 | 2003 $AR_{42}$ |

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| 2003 $AD_{43}$ | 15.4 | 0.15 | 20060922 | 332.93614 | 89.55455 | 4.10276 | 2.61643 | 0.0704190 | 2.5476271 | 36 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 66301 | 2003 $AD_{43}$ |
| 2003 $AH_{43}$ | 15.0 | 0.15 | 20060922 | 22.17019 | 74.14331 | 302.44314 | 13.31846 | 0.2534022 | 2.5541562 | 46 | 4 | 1998–2006 | 0.69 | M-v | 3 | MPC | 85842 | 2003 $AH_{43}$ |
| 2003 $AU_{44}$ | 15.3 | 0.15 | 20060922 | 15.29255 | 306.16603 | 73.89803 | 12.10300 | 0.1343236 | 2.6640646 | 87 | 5 | 1993–2006 | 0.51 | M-v | 1 | MPC | 61697 | 2003 $AU_{44}$ |
| 2003 $AG_{45}$ | 14.5 | 0.15 | 20060922 | 157.42557 | 121.11568 | 78.74347 | 10.29602 | 0.1241362 | 3.1469807 | 71 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87568 | 2003 $AG_{45}$ |
| 2003 $AA_{46}$ | 15.7 | 0.15 | 20060922 | 50.09925 | 354.92805 | 19.87450 | 3.26956 | 0.1936529 | 2.4791515 | 33 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 85842 | 2003 $AA_{46}$ |
| 2003 $AE_{46}$ | 16.1 | 0.15 | 20060922 | 273.05052 | 174.82577 | 310.25837 | 8.18240 | 0.0887507 | 2.7686968 | 29 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 85842 | 2003 $AE_{46}$ |
| 2003 $AK_{46}$ | 15.2 | 0.15 | 20060922 | 148.21488 | 257.23329 | 322.89875 | 9.09537 | 0.0889887 | 3.0231300 | 37 | 5 | 2000–2006 | 0.65 | M-v | 1 | MPC | 77686 | 2003 $AK_{46}$ |
| 2003 $AL_{46}$ | 16.2 | 0.15 | 20060922 | 304.80233 | 102.26173 | 21.10330 | 5.01938 | 0.1485407 | 2.6022553 | 41 | 3 | 1995–2006 | 0.49 | M-v | 3 | MPC | 48312 | 2003 $AL_{46}$ |
| 2003 $AQ_{46}$ | 15.8 | 0.15 | 20060922 | 267.33214 | 149.88873 | 329.95657 | 4.81994 | 0.1263832 | 2.8435251 | 56 | 4 | 1992–2006 | 0.54 | M-v | 1 | MPC | 48312 | 2003 $AQ_{46}$ |
| 2003 $AY_{46}$ | 16.0 | 0.15 | 20060922 | 357.00173 | 321.12992 | 83.31090 | 7.70347 | 0.1791649 | 2.6371906 | 64 | 4 | 1993–2006 | 0.44 | M-v | 1 | MPC | 47250 | 2003 $AY_{46}$ |
| 2003 $AH_{47}$ | 15.5 | 0.15 | 20060922 | 233.38008 | 104.65578 | 88.13942 | 9.33691 | 0.2069249 | 2.7326141 | 41 | 3 | 1999–2006 | 0.58 | M-v | 3 | MPC | 56740 | 2003 $AH_{47}$ |
| 2003 $AE_{48}$ | 15.3 | 0.15 | 20060922 | 318.25247 | 157.60163 | 298.45857 | 12.29738 | 0.0968784 | 2.6521590 | 56 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87568 | 2003 $AE_{48}$ |
| 2003 $AN_{48}$ | 16.3 | 0.15 | 20060922 | 329.62078 | 18.27302 | 96.84168 | 14.12099 | 0.2239793 | 2.5183519 | 44 | 3 | 1998–2006 | 0.61 | M-v | 3 | MPC | 48312 | 2003 $AN_{48}$ |
| 2003 $AE_{49}$ | 16.9 | 0.15 | 20060922 | 338.91073 | 169.05769 | 344.18086 | 3.53988 | 0.1397025 | 2.3378709 | 35 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 04248 | 2003 $AE_{49}$ |
| 2003 $AL_{49}$ | 16.4 | 0.15 | 20060922 | 359.60773 | 352.69133 | 93.74983 | 8.33553 | 0.1291929 | 2.4760854 | 70 | 6 | 1990–2006 | 0.39 | M-v | 1 | MPC | 87568 | 2003 $AL_{49}$ |
| 2003 $AM_{49}$ | 16.6 | 0.15 | 20060922 | 313.29002 | 143.27259 | 322.83715 | 4.05354 | 0.2031089 | 2.6378121 | 76 | 4 | 1993–2006 | 0.53 | M-v | 1 | MPC | 50733 | 2003 $AM_{49}$ |
| 2003 $AB_{50}$ | 16.6 | 0.15 | 20060922 | 310.32637 | 187.98376 | 354.31307 | 2.05705 | 0.1583053 | 2.3684637 | 70 | 7 | 1996–2006 | 0.42 | M-v | 1 | MPC | 97631 | 2003 $AB_{50}$ |
| 2003 $AH_{50}$ | 15.6 | 0.15 | 20060922 | 211.10546 | 140.61626 | 94.04034 | 10.42395 | 0.0728186 | 2.5508893 | 57 | 6 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87568 | 2003 $AH_{50}$ |
| 2003 $AX_{50}$ | 14.3 | 0.15 | 20060922 | 21.30960 | 238.13462 | 91.29207 | 9.05206 | 0.0365697 | 3.1273049 | 48 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04248 | 2003 $AX_{50}$ |
| 2003 $AB_{51}$ | 15.7 | 0.15 | 20060922 | 219.11721 | 182.73688 | 340.83432 | 2.97796 | 0.1484081 | 2.9941547 | 52 | 6 | 1993–2006 | 0.47 | M-v | 1 | MPC | 85844 | 2003 $AB_{51}$ |
| 2003 $AC_{51}$ | 15.1 | 0.15 | 20060922 | 264.54438 | 1.92932 | 101.18544 | 11.41602 | 0.0610242 | 3.0109592 | 41 | 4 | 2001–2006 | 0.74 | M-v | 1 | MPC | 85844 | 2003 $AC_{51}$ |
| 2003 $AL_{51}$ | 16.7 | 0.15 | 20060922 | 320.06742 | 110.92217 | 5.99877 | 4.88938 | 0.1549410 | 2.5684444 | 30 | 3 | 1997–2006 | 0.42 | M-v | 3 | MPC | 50734 | 2003 $AL_{51}$ |
| 2003 $AF_{52}$ | 16.5 | 0.15 | 20060922 | 336.03418 | 141.33190 | 353.44009 | 2.92368 | 0.1175534 | 2.4288579 | 59 | 3 | 2002–2006 | 0.45 | M-v | 4 | MPC | 97631 | 2003 $AF_{52}$ |
| 2003 $AH_{52}$ | 15.5 | 0.15 | 20060922 | 353.73821 | 77.35565 | 317.24219 | 8.18371 | 0.2200565 | 2.7196847 | 56 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 56740 | 2003 $AH_{52}$ |
| 2003 $AB_{53}$ | 16.8 | 0.15 | 20060922 | 343.35402 | 65.17919 | 68.66737 | 3.12608 | 0.1505367 | 2.4030131 | 43 | 3 | 1996–2005 | 0.46 | M-v | 3 | MPC | 89398 | 2003 $AB_{53}$ |
| 2003 $AE_{53}$ | 16.7 | 0.15 | 20060922 | 20.51112 | 338.42784 | 90.76357 | 3.75832 | 0.1483007 | 2.4597586 | 47 | 4 | 1992–2006 | 0.49 | M-v | 1 | MPC | 04248 | 2003 $AE_{53}$ |
| 2003 $AH_{53}$ | 18.1 | 0.15 | 20060922 | 43.36516 | 57.92030 | 1.85600 | 1.92568 | 0.1831958 | 2.3768303 | 89 | 6 | 1992–2006 | 0.48 | M-v | 0 | MPC | 97631 | 2003 $AH_{53}$ |
| 2003 $AJ_{53}$ | 16.2 | 0.15 | 20060922 | 321.05616 | 356.74026 | 84.80555 | 5.11210 | 0.1224083 | 2.7435496 | 44 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 03494 | 2003 $AJ_{53}$ |
| 2003 $AK_{53}$ | 14.6 | 0.15 | 20060922 | 271.51205 | 333.24080 | 105.39997 | 16.47142 | 0.2303559 | 3.0731250 | 60 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 03494 | 2003 $AK_{53}$ |
| 2003 $AL_{53}$ | 15.7 | 0.15 | 20060922 | 285.43678 | 45.34475 | 97.58437 | 9.73113 | 0.0646337 | 2.6538023 | 52 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 87568 | 2003 $AL_{53}$ |
| 2003 $AN_{53}$ | 16.5 | 0.15 | 20060922 | 301.04702 | 104.33818 | 49.94085 | 2.93882 | 0.1387646 | 2.5363493 | 77 | 5 | 1999–2006 | 0.57 | M-v | 2 | MPC | 90168 | 2003 $AN_{53}$ |
| 2003 $AO_{53}$ | 15.9 | 0.15 | 20060922 | 281.30379 | 194.47523 | 309.10219 | 11.75317 | 0.2483340 | 2.7125083 | 51 | 1 | 68 days | 0.50 | M-v | 4 | MPC | 48312 | 2003 $AO_{53}$ |
| 2003 $AD_{54}$ | 14.8 | 0.15 | 20060922 | 259.62067 | 268.99601 | 302.69600 | 25.99064 | 0.3714971 | 2.6260095 | 54 | 1 | 111 days | 0.67 | M-v | 4 | MPC | 48312 | 2003 $AD_{54}$ |
| 2003 $AG_{54}$ | 14.5 | 0.15 | 20060922 | 209.70767 | 70.82564 | 104.00561 | 15.99808 | 0.0717168 | 2.9792196 | 57 | 6 | 1999–2006 | 0.64 | M-v | 1 | MPC | 87568 | 2003 $AG_{54}$ |
| 2003 $AM_{54}$ | 17.0 | 0.15 | 20060922 | 35.09209 | 58.14853 | 0.28987 | 1.85439 | 0.2035478 | 2.4146462 | 45 | 3 | 1998–2005 | 0.58 | M-v | 2 | MPC | 89399 | 2003 $AM_{54}$ |
| 2003 $AS_{54}$ | 16.4 | 0.15 | 20060922 | 17.68341 | 352.82886 | 57.97955 | 3.09829 | 0.1571854 | 2.5589176 | 44 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 50734 | 2003 $AS_{54}$ |
| 2003 $AU_{54}$ | 15.3 | 0.15 | 20060922 | 33.51127 | 261.91907 | 110.24570 | 12.12210 | 0.3172564 | 2.6266006 | 46 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87568 | 2003 $AU_{54}$ |
| 2003 $AW_{54}$ | 16.9 | 0.15 | 20060922 | 123.53460 | 45.25508 | 358.22442 | 4.17617 | 0.1144650 | 2.1485634 | 25 | 3 | 1992–2006 | 0.47 | M-v | 4 | MPC | 03494 | 2003 $AW_{54}$ |
| 2003 $AY_{54}$ | 17.1 | 0.15 | 20060922 | 11.08208 | 113.67766 | 356.83603 | 4.46145 | 0.1371047 | 2.3631002 | 57 | 3 | 1996–2005 | 0.45 | M-v | 3 | MPC | 90168 | 2003 $AY_{54}$ |
| 2003 $AA_{55}$ | 14.9 | 0.15 | 20060922 | 195.01588 | 64.86996 | 102.87176 | 17.12211 | 0.0577440 | 3.1544486 | 76 | 4 | 2001–2006 | 0.59 | M-v | 0 | MPC | 66301 | 2003 $AA_{55}$ |
| 2003 $AE_{55}$ | 15.8 | 0.15 | 20060922 | 2.52410 | 64.76374 | 18.22894 | 4.60903 | 0.1990722 | 2.4826281 | 59 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 87568 | 2003 $AE_{55}$ |
| 2003 $AL_{55}$ | 16.1 | 0.15 | 20060922 | 302.55882 | 204.97900 | 328.04103 | 6.05017 | 0.0886977 | 2.4451412 | 114 | 6 | 1997–2006 | 0.60 | M-v | 2 | MPC | 90168 | 2003 $AL_{55}$ |
| 2003 $AN_{55}$ | 16.5 | 0.15 | 20060922 | 74.42026 | 288.73950 | 98.90909 | 5.83102 | 0.2148618 | 2.3598368 | 87 | 5 | 1993–2005 | 0.59 | M-v | 1 | MPC | 97631 | 2003 $AN_{55}$ |
| 2003 $AS_{55}$ | 17.0 | 0.15 | 20060922 | 19.83732 | 0.70653 | 82.56931 | 3.48375 | 0.1337310 | 2.4299706 | 40 | 4 | 1996–2005 | 0.58 | M-v | 2 | MPC | 85845 | 2003 $AS_{55}$ |
| 2003 $AW_{55}$ | 16.4 | 0.15 | 20060922 | 355.17256 | 15.25818 | 58.48957 | 4.43255 | 0.1056441 | 2.6061254 | 34 | 3 | 2001–2004 | 0.49 | M-v | 3 | MPC | 65421 | 2003 $AW_{55}$ |
| 2003 $AZ_{55}$ | 16.0 | 0.15 | 20060922 | 328.04499 | 305.18928 | 146.60932 | 13.54850 | 0.1573145 | 2.6234914 | 35 | 4 | 1999–2006 | 0.54 | M-v | 3 | MPC | 85845 | 2003 $AZ_{55}$ |
| 2003 $AC_{56}$ | 16.1 | 0.15 | 20060922 | 311.76393 | 215.37171 | 225.44191 | 6.43290 | 0.2559110 | 2.7424299 | 67 | 4 | 1997–2006 | 0.46 | M-v | 0 | MPC | 87568 | 2003 $AC_{56}$ |
| 2003 $AH_{56}$ | 15.0 | 0.15 | 20060922 | 262.57836 | 232.71764 | 221.38742 | 7.31239 | 0.1700110 | 3.0791147 | 46 | 4 | 2001–2006 | 0.71 | M-v | 1 | MPC | 41442 | 2003 $AH_{56}$ |
| 2003 $AU_{56}$ | 16.6 | 0.15 | 20060922 | 356.85238 | 159.66799 | 330.51910 | 3.10720 | 0.1350711 | 2.3738821 | 83 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 90168 | 2003 $AU_{56}$ |
| 2003 $AZ_{56}$ | 16.2 | 0.15 | 20060922 | 345.56433 | 69.49438 | 19.25996 | 3.13523 | 0.1653287 | 2.5758004 | 29 | 4 | 1995–2006 | 0.56 | M-v | 3 | MPC | 50734 | 2003 $AZ_{56}$ |
| 2003 $AD_{57}$ | 14.8 | 0.15 | 20060922 | 242.76997 | 157.28498 | 330.00411 | 9.03681 | 0.1688439 | 3.0803716 | 47 | 4 | 1998–2006 | 0.58 | M-v | 1 | MPC | 48313 | 2003 $AD_{57}$ |
| 2003 $AK_{57}$ | 16.3 | 0.15 | 20060922 | 339.84982 | 148.39034 | 357.97802 | 5.03430 | 0.1283548 | 2.3932557 | 56 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 89399 | 2003 $AK_{57}$ |
| 2003 $AO_{57}$ | 15.4 | 0.15 | 20060922 | 342.50131 | 349.99124 | 100.30096 | 8.15712 | 0.0954061 | 2.6088815 | 63 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87568 | 2003 $AO_{57}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $AR_{57}$ | 15.7 | 0.15 | 20060922 | 326.08432 | 92.90358 | 64.49184 | 3.00281 | 0.1612038 | 2.4280853 | 130 | 5 | 1994–2006 | 0.40 | M-v | 2 | MPC | 90168 | 2003 $AR_{57}$ |
| 2003 $AM_{58}$ | 15.8 | 0.15 | 20060922 | 356.79448 | 352.79216 | 79.97729 | 5.51738 | 0.2034290 | 2.5841888 | 77 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 65421 | 2003 $AM_{58}$ |
| 2003 $AO_{58}$ | 14.9 | 0.15 | 20060922 | 256.88336 | 204.79041 | 330.57609 | 11.63179 | 0.1321180 | 2.7344617 | 84 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87568 | 2003 $AO_{58}$ |
| 2003 $AT_{58}$ | 15.8 | 0.15 | 20060922 | 355.69548 | 63.52500 | 7.00214 | 4.18259 | 0.2649633 | 2.5757657 | 74 | 4 | 1981–2006 | 0.55 | M-v | 3 | MPC | 50734 | 2003 $AT_{58}$ |
| 2003 $AU_{58}$ | 15.3 | 0.15 | 20060922 | 334.60990 | 338.61259 | 110.71855 | 13.90483 | 0.1717078 | 2.6617629 | 76 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87568 | 2003 $AU_{58}$ |
| 2003 $AX_{58}$ | 16.4 | 0.15 | 20060922 | 358.31204 | 150.31194 | 330.26364 | 4.43576 | 0.1526539 | 2.4222167 | 110 | 5 | 1997–2006 | 0.48 | M-v | 2 | MPC | 90168 | 2003 $AX_{58}$ |
| 2003 $AB_{59}$ | 16.2 | 0.15 | 20060922 | 22.93907 | 1.77021 | 86.22788 | 4.29030 | 0.1661847 | 2.4213369 | 40 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 43488 | 2003 $AB_{59}$ |
| 2003 $AP_{59}$ | 14.3 | 0.15 | 20060922 | 172.81556 | 246.83610 | 335.50393 | 15.34962 | 0.1795208 | 3.1912536 | 117 | 3 | 2003–2006 | 0.51 | M-v | 2 | MPC | 85847 | 2003 $AP_{59}$ |
| 2003 $AQ_{59}$ | 14.9 | 0.15 | 20060922 | 319.77909 | 167.35481 | 329.79806 | 15.50328 | 0.0847797 | 2.5964761 | 156 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 90168 | 2003 $AQ_{59}$ |
| 2003 $AE_{60}$ | 15.2 | 0.15 | 20060922 | 13.39508 | 281.83183 | 105.23419 | 13.60437 | 0.2765843 | 2.6869556 | 71 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 85848 | 2003 $AE_{60}$ |
| 2003 $AD_{61}$ | 14.9 | 0.15 | 20060922 | 266.32252 | 163.83561 | 274.66927 | 13.36128 | 0.0318264 | 3.1659679 | 28 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 62439 | 2003 $AD_{61}$ |
| 2003 $AF_{61}$ | 15.6 | 0.15 | 20060922 | 285.13031 | 345.85751 | 168.80053 | 6.51050 | 0.2545905 | 2.6342007 | 71 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 87569 | 2003 $AF_{61}$ |
| 2003 $AF_{62}$ | 16.7 | 0.15 | 20060922 | 38.66089 | 221.10439 | 241.97616 | 4.86993 | 0.1117192 | 2.2400204 | 76 | 4 | 1995–2006 | 0.54 | M-v | 1 | MPC | 97631 | 2003 $AF_{62}$ |
| 2003 $AS_{62}$ | 16.5 | 0.15 | 20060922 | 59.27803 | 286.89554 | 84.67673 | 3.43425 | 0.2045630 | 2.4483255 | 63 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 87569 | 2003 $AS_{62}$ |
| 2003 $AT_{62}$ | 15.8 | 0.15 | 20060922 | 110.94055 | 263.42550 | 73.18542 | 3.06307 | 0.1932988 | 2.3947258 | 90 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97631 | 2003 $AT_{62}$ |
| 2003 $AV_{62}$ | 15.6 | 0.15 | 20060922 | 195.37651 | 197.28250 | 325.76389 | 0.45773 | 0.1384352 | 3.1426467 | 42 | 7 | 1992–2006 | 0.48 | M-v | 0 | MPC | 85849 | 2003 $AV_{62}$ |
| 2003 $AD_{63}$ | 16.3 | 0.15 | 20060922 | 262.29923 | 53.89902 | 113.03111 | 3.03256 | 0.0417052 | 2.6166060 | 32 | 5 | 1995–2006 | 0.49 | M-v | 0 | MPC | 87569 | 2003 $AD_{63}$ |
| 2003 $AB_{64}$ | 16.2 | 0.15 | 20060922 | 63.78204 | 70.19293 | 340.14057 | 6.61997 | 0.1002990 | 2.3214906 | 75 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 89400 | 2003 $AB_{64}$ |
| 2003 $AD_{65}$ | 15.4 | 0.15 | 20060922 | 345.24631 | 22.34979 | 41.64226 | 10.90110 | 0.1839709 | 2.6228863 | 81 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 65422 | 2003 $AD_{65}$ |
| 2003 $AG_{65}$ | 14.7 | 0.15 | 20060922 | 40.92498 | 302.15071 | 68.45126 | 13.37477 | 0.2057458 | 2.5634741 | 50 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 62440 | 2003 $AG_{65}$ |
| 2003 $AH_{65}$ | 15.3 | 0.15 | 20060922 | 44.95665 | 30.63727 | 339.80370 | 12.45465 | 0.1858742 | 2.5475250 | 43 | 3 | 2001–2004 | 0.62 | M-v | 2 | MPC | 47254 | 2003 $AH_{65}$ |
| 2003 $AM_{65}$ | 14.8 | 0.15 | 20060922 | 244.28217 | 23.16224 | 81.88035 | 18.70454 | 0.2085017 | 3.1359037 | 34 | 3 | 1993–2004 | 0.42 | M-v | 2 | MPC | 03495 | 2003 $AM_{65}$ |
| 2003 $AQ_{65}$ | 15.0 | 0.15 | 20060922 | 337.67668 | 97.67324 | 335.97198 | 11.86972 | 0.1703091 | 2.6373273 | 40 | 4 | 1999–2006 | 0.61 | M-v | 2 | MPC | 50735 | 2003 $AQ_{65}$ |
| 2003 $AV_{65}$ | 16.2 | 0.15 | 20060922 | 5.29159 | 345.32310 | 70.81433 | 13.90034 | 0.1593801 | 2.5843682 | 38 | 5 | 1999–2004 | 0.47 | M-v | 1 | MPC | 85850 | 2003 $AV_{65}$ |
| 2003 $AW_{65}$ | 15.3 | 0.15 | 20060922 | 323.82287 | 34.73303 | 83.75980 | 15.34149 | 0.1541104 | 2.5539795 | 57 | 4 | 1998–2006 | 0.62 | M-v | 3 | MPC | 94892 | 2003 $AW_{65}$ |
| 2003 $AH_{66}$ | 15.0 | 0.15 | 20060922 | 218.52042 | 162.45886 | 343.46672 | 17.86273 | 0.0730977 | 3.1332374 | 50 | 5 | 1998–2006 | 0.88 | M-v | 1 | MPC | 65423 | 2003 $AH_{66}$ |
| 2003 $AK_{66}$ | 14.8 | 0.15 | 20060922 | 254.82940 | 119.56285 | 323.85585 | 18.21888 | 0.0894061 | 3.1411080 | 47 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 04248 | 2003 $AK_{66}$ |
| 2003 $AL_{66}$ | 14.4 | 0.15 | 20060922 | 271.04663 | 6.34260 | 70.68195 | 17.95262 | 0.0765139 | 3.0864872 | 29 | 4 | 1999–2004 | 0.74 | M-v | 1 | MPC | 65423 | 2003 $AL_{66}$ |
| 2003 $AO_{66}$ | 16.2 | 0.15 | 20060922 | 314.70527 | 54.33911 | 16.26508 | 9.18497 | 0.1873451 | 2.7691756 | 60 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 00409 | 2003 $AO_{66}$ |
| 2003 $AB_{67}$ | 15.9 | 0.15 | 20060922 | 325.19473 | 105.27454 | 9.98089 | 11.65935 | 0.2410797 | 2.6538089 | 78 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87569 | 2003 $AB_{67}$ |
| 2003 $AC_{67}$ | 14.7 | 0.15 | 20060922 | 269.32414 | 47.46739 | 70.12776 | 10.89277 | 0.1972405 | 3.0681143 | 89 | 4 | 1997–2006 | 0.64 | M-v | 2 | MPC | 48314 | 2003 $AC_{67}$ |
| 2003 $AF_{67}$ | 15.1 | 0.15 | 20060922 | 0.93803 | 5.37193 | 21.82109 | 9.25019 | 0.3441303 | 2.6940466 | 136 | 3 | 1997–2006 | 0.45 | M-v | 2 | MPC | 03495 | 2003 $AF_{67}$ |
| 2003 $AC_{68}$ | 16.3 | 0.15 | 20060922 | 330.82977 | 274.43720 | 120.44514 | 3.77562 | 0.1911339 | 2.8943945 | 35 | 4 | 1999–2006 | 0.51 | M-v | 0 | MPC | 03495 | 2003 $AC_{68}$ |
| 2003 $AG_{68}$ | 15.8 | 0.15 | 20060922 | 329.51350 | 328.03858 | 68.37952 | 13.80576 | 0.1168375 | 2.9511476 | 31 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 75830 | 2003 $AG_{68}$ |
| 2003 $AL_{68}$ | 17.3 | 0.15 | 20060922 | 1.19502 | 344.84391 | 121.45634 | 3.70949 | 0.1297191 | 2.4131539 | 32 | 6 | 1996–2006 | 0.63 | M-v | 1 | MPC | 87569 | 2003 $AL_{68}$ |
| 2003 $AN_{68}$ | 16.8 | 0.15 | 20060922 | 352.96160 | 165.20910 | 261.57721 | 3.21617 | 0.1932521 | 2.6200248 | 40 | 4 | 1993–2006 | 0.51 | M-v | 0 | MPC | 50735 | 2003 $AN_{68}$ |
| 2003 $AU_{68}$ | 15.3 | 0.15 | 20060922 | 354.54891 | 286.26053 | 99.74767 | 13.71914 | 0.1380030 | 2.8088063 | 61 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 85850 | 2003 $AU_{68}$ |
| 2003 $AK_{69}$ | 15.8 | 0.15 | 20060922 | 338.20993 | 183.71848 | 238.83685 | 5.13199 | 0.2059907 | 2.6596073 | 84 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04248 | 2003 $AK_{69}$ |
| 2003 $AP_{69}$ | 16.2 | 0.15 | 20060922 | 268.19469 | 264.84161 | 290.22086 | 5.03184 | 0.0942385 | 2.4720594 | 58 | 3 | 2003–2006 | 0.43 | M-v | 3 | MPC | 90168 | 2003 $AP_{69}$ |
| 2003 $AE_{70}$ | 17.3 | 0.15 | 20060922 | 1.17704 | 316.88500 | 117.47925 | 5.37044 | 0.1600494 | 2.5375929 | 26 | 3 | 1995–2006 | 0.38 | M-v | 3 | MPC | 74247 | 2003 $AE_{70}$ |
| 2003 $AF_{70}$ | 15.1 | 0.15 | 20060922 | 173.87775 | 257.76315 | 297.58318 | 10.65785 | 0.0385275 | 3.0797490 | 36 | 6 | 1998–2006 | 0.61 | M-v | 1 | MPC | 87569 | 2003 $AF_{70}$ |
| 2003 $AM_{70}$ | 14.7 | 0.15 | 20060922 | 308.88585 | 292.85988 | 91.35988 | 27.43713 | 0.1914010 | 3.1427997 | 43 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03495 | 2003 $AM_{70}$ |
| 2003 $AO_{70}$ | 16.2 | 0.15 | 20060922 | 5.48422 | 131.73821 | 339.88323 | 6.79388 | 0.1093588 | 2.3562725 | 84 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 90168 | 2003 $AO_{70}$ |
| 2003 $AC_{72}$ | 15.1 | 0.15 | 20060922 | 318.55266 | 88.27869 | 25.39293 | 12.61787 | 0.0895235 | 2.5876693 | 44 | 5 | 1999–2006 | 0.66 | M-v | 2 | MPC | 41454 | 2003 $AC_{72}$ |
| 2003 $AD_{73}$ | 15.8 | 0.15 | 20060922 | 13.07792 | 329.48349 | 77.91861 | 15.49947 | 0.0478075 | 2.6734484 | 55 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 85852 | 2003 $AD_{73}$ |
| 2003 $AH_{73}$ | 15.7 | 0.15 | 20060922 | 49.21048 | 299.83563 | 79.82257 | 15.56526 | 0.1809980 | 2.5859629 | 50 | 5 | 2001–2006 | 0.58 | M-v | 1 | MPC | 00409 | 2003 $AH_{73}$ |
| 2003 $AS_{74}$ | 16.7 | 0.15 | 20060922 | 18.93660 | 87.55863 | 351.26653 | 6.01254 | 0.1437451 | 2.4078286 | 22 | 3 | 1996–2005 | 0.50 | M-v | 3 | MPC | 85853 | 2003 $AS_{74}$ |
| 2003 $AQ_{75}$ | 15.1 | 0.15 | 20060922 | 306.66813 | 110.60122 | 347.26828 | 12.44217 | 0.2274419 | 2.7097826 | 99 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 04249 | 2003 $AQ_{75}$ |
| 2003 $AF_{77}$ | 16.3 | 0.15 | 20060922 | 283.03278 | 60.15506 | 66.61773 | 10.18719 | 0.2098552 | 2.7581385 | 50 | 4 | 1993–2006 | 0.56 | M-v | 1 | MPC | 89401 | 2003 $AF_{77}$ |
| 2003 $AB_{78}$ | 15.9 | 0.15 | 20060922 | 280.88973 | 77.97809 | 61.21714 | 14.05358 | 0.1429349 | 2.7918471 | 72 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 89401 | 2003 $AB_{78}$ |
| 2003 $AH_{78}$ | 14.6 | 0.15 | 20060922 | 261.74929 | 89.40040 | 86.69516 | 14.08839 | 0.1200411 | 2.6657380 | 65 | 5 | 1995–2006 | 0.58 | M-v | 2 | MPC | 50735 | 2003 $AH_{78}$ |
| 2003 $AK_{78}$ | 15.2 | 0.15 | 20060922 | 280.63891 | 116.92197 | 41.28940 | 12.69698 | 0.1070651 | 2.6287074 | 44 | 4 | 1995–2003 | 0.60 | M-v | 3 | MPC | 50736 | 2003 $AK_{78}$ |
| 2003 $AL_{78}$ | 14.6 | 0.15 | 20060922 | 166.02611 | 107.50888 | 86.31092 | 17.65534 | 0.0382508 | 3.2250126 | 87 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 66302 | 2003 $AL_{78}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $AN_{78}$ | 15.7 | 0.15 | 20060922 | 225.51108 | 299.08619 | 289.96659 | 10.84142 | 0.2017496 | 2.6530957 | 67 | 4 | 2000–2005 | 0.68 | M-v | 1 | MPC | 90168 | 2003 $AN_{78}$ |
| 2003 $AW_{78}$ | 16.8 | 0.15 | 20060922 | 64.81033 | 153.62130 | 266.17213 | 3.31090 | 0.1109189 | 2.3347578 | 93 | 4 | 1999–2005 | 0.65 | M-v | 1 | MPC | 90169 | 2003 $AW_{78}$ |
| 2003 $AV_{79}$ | 15.1 | 0.15 | 20060922 | 280.89224 | 122.81371 | 59.29041 | 15.74271 | 0.0975582 | 2.5275939 | 76 | 5 | 1999–2006 | 0.64 | M-v | 3 | MPC | 90169 | 2003 $AV_{79}$ |
| 2003 $AX_{79}$ | 14.8 | 0.15 | 20060922 | 240.98683 | 61.68856 | 80.24352 | 17.52845 | 0.2908098 | 3.0613853 | 68 | 2 | 1998–2003 | 0.58 | M-v | 2 | MPC | 50736 | 2003 $AX_{79}$ |
| 2003 $AQ_{80}$ | 15.0 | 0.15 | 20060922 | 223.71553 | 106.36670 | 54.38698 | 21.89244 | 0.2138639 | 3.1741679 | 32 | 2 | 2001–2003 | 0.52 | M-v | 3 | MPC | 50736 | 2003 $AQ_{80}$ |
| 2003 $AZ_{80}$ | 16.6 | 0.15 | 20060922 | 26.45138 | 241.12622 | 145.45492 | 9.19699 | 0.2551057 | 2.4555694 | 59 | 6 | 1998–2006 | 0.43 | M-v | 1 | MPC | 87569 | 2003 $AZ_{80}$ |
| 2003 $AA_{81}$ | 14.3 | 0.15 | 20060922 | 209.99825 | 106.70253 | 39.50547 | 20.76212 | 0.1478960 | 3.1758858 | 83 | 4 | 1998–2004 | 0.62 | M-v | 1 | MPC | 66302 | 2003 $AA_{81}$ |
| 2003 $AD_{81}$ | 15.1 | 0.15 | 20060922 | 273.33766 | 44.67543 | 6.49952 | 16.54363 | 0.2850448 | 3.1097082 | 25 | 3 | 1996–2004 | 0.43 | M-v | 3 | MPC | 62440 | 2003 $AD_{81}$ |
| 2003 $AJ_{81}$ | 16.4 | 0.15 | 20060922 | 83.70964 | 327.85126 | 46.69226 | 13.76686 | 0.2157842 | 2.3150183 | 35 | 4 | 1997–2005 | 0.49 | M-v | 1 | MPC | 89401 | 2003 $AJ_{81}$ |
| 2003 $AL_{81}$ | 14.8 | 0.15 | 20060922 | 317.20920 | 335.54511 | 56.20103 | 17.53580 | 0.2132424 | 2.9345868 | 56 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03495 | 2003 $AL_{81}$ |
| 2003 $AY_{81}$ | 15.6 | 0.15 | 20060922 | 334.45615 | 91.16946 | 11.88281 | 12.71884 | 0.1304763 | 2.5730368 | 48 | 5 | 1999–2006 | 0.73 | M-v | 2 | MPC | 87569 | 2003 $AY_{81}$ |
| 2003 $AY_{82}$ | 17.3 | 0.15 | 20060922 | 69.35980 | 265.85273 | 133.20269 | 4.14583 | 0.2227184 | 2.3192578 | 51 | 3 | 1998–2005 | 0.54 | M-v | 2 | MPC | 85854 | 2003 $AY_{82}$ |
| 2003 $AZ_{82}$ | 16.4 | 0.15 | 20060922 | 56.05698 | 114.39402 | 306.40180 | 9.00221 | 0.1822867 | 2.3384959 | 114 | 3 | 1998–2005 | 0.46 | M-v | 2 | MPC | 97631 | 2003 $AZ_{82}$ |
| 2003 $AC_{83}$ | 16.6 | 0.15 | 20060922 | 247.18446 | 116.14828 | 90.30387 | 4.28577 | 0.0623475 | 2.5533470 | 38 | 4 | 2001–2006 | 0.44 | M-v | 2 | MPC | 89402 | 2003 $AC_{83}$ |
| 2003 $AF_{84}$ | 16.9 | 0.15 | 20060922 | 323.02259 | 221.61976 | 306.20592 | 1.63774 | 0.1518098 | 2.4218248 | 92 | 5 | 1993–2006 | 0.50 | M-v | 2 | MPC | 04249 | 2003 $AF_{84}$ |
| 2003 $AJ_{86}$ | 15.4 | 0.15 | 20060922 | 19.29794 | 274.96451 | 116.66154 | 9.26138 | 0.1185750 | 2.4765291 | 44 | 4 | 1998–2006 | 0.64 | M-v | 3 | MPC | 97631 | 2003 $AJ_{86}$ |
| 2003 $AY_{87}$ | 15.2 | 0.15 | 20060922 | 278.07982 | 280.01338 | 136.86099 | 17.41625 | 0.1628575 | 3.2118425 | 39 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 85855 | 2003 $AY_{87}$ |
| 2003 $AB_{88}$ | 16.3 | 0.15 | 20060922 | 32.39494 | 190.04716 | 184.53598 | 3.48341 | 0.1434192 | 2.5235844 | 30 | 3 | 2002–2006 | 0.36 | M-v | 4 | MPC | 61702 | 2003 $AB_{88}$ |
| 2003 $AJ_{88}$ | 15.3 | 0.15 | 20060922 | 294.84445 | 286.34317 | 180.31999 | 13.86707 | 0.2032682 | 2.7726485 | 91 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 85856 | 2003 $AJ_{88}$ |
| 2003 $AS_{88}$ | 15.2 | 0.15 | 20060922 | 324.12392 | 234.23099 | 255.69486 | 11.13708 | 0.2500736 | 2.5704575 | 78 | 5 | 1981–2006 | 0.59 | M-v | 1 | MPC | 90169 | 2003 $AS_{88}$ |
| 2003 $AT_{88}$ | 15.2 | 0.15 | 20060922 | 319.33611 | 215.21501 | 262.87592 | 12.43337 | 0.2084422 | 2.6539569 | 67 | 4 | 1996–2006 | 0.60 | M-v | 2 | MPC | 50736 | 2003 $AT_{88}$ |
| 2003 $AF_{89}$ | 15.7 | 0.15 | 20060922 | 355.24507 | 60.01952 | 322.71781 | 10.69928 | 0.3146687 | 2.6430031 | 67 | 4 | 1993–2006 | 0.55 | M-v | 1 | MPC | 04249 | 2003 $AF_{89}$ |
| 2003 $AT_{89}$ | 14.9 | 0.15 | 20060922 | 46.49364 | 272.77247 | 79.19311 | 22.30689 | 0.0493190 | 2.6874733 | 60 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 87569 | 2003 $AT_{89}$ |
| 2003 $AT_{90}$ | 16.7 | 0.15 | 20060922 | 31.04122 | 76.05142 | 21.28879 | 6.83438 | 0.0900443 | 2.3500404 | 56 | 2 | 2003–2005 | 0.47 | M-v | 3 | MPC | 89402 | 2003 $AT_{90}$ |
| 2003 $AR_{91}$ | 15.5 | 0.15 | 20060922 | 224.67577 | 131.52879 | 12.33427 | 11.29856 | 0.0795335 | 3.1360425 | 55 | 5 | 1995–2006 | 0.50 | M-v | 0 | MPC | 85857 | 2003 $AR_{91}$ |
| 2003 $AN_{92}$ | 16.2 | 0.15 | 20060922 | 70.46236 | 241.90416 | 118.69386 | 3.40733 | 0.2040581 | 2.4635193 | 82 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 85858 | 2003 $AN_{92}$ |
| 2003 $AV_{92}$ | 15.4 | 0.15 | 20060922 | 307.78719 | 37.87009 | 31.78261 | 16.27656 | 0.1963563 | 2.8385685 | 60 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 75831 | 2003 $AV_{92}$ |
| 2003 BN | 16.9 | 0.15 | 20060922 | 26.67227 | 334.33501 | 105.76086 | 2.38098 | 0.1594046 | 2.3636917 | 50 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 85858 | 2003 BN |
| 2003 $BF_1$ | 15.9 | 0.15 | 20060922 | 322.97646 | 268.85704 | 144.78280 | 5.01853 | 0.2454151 | 2.7897673 | 102 | 5 | 1992–2006 | 0.58 | M-v | 0 | MPC | 04249 | 2003 $BF_1$ |
| 2003 $BH_1$ | 15.9 | 0.15 | 20060922 | 6.24354 | 167.08529 | 316.31805 | 7.13504 | 0.0533794 | 2.3364785 | 105 | 5 | 1996–2006 | 0.59 | M-v | 2 | MPC | 97632 | 2003 $BH_1$ |
| 2003 $BZ_1$ | 14.6 | 0.15 | 20060922 | 129.70395 | 290.90833 | 304.42224 | 24.13312 | 0.1545310 | 3.2193807 | 85 | 6 | 1999–2006 | 0.46 | M-v | 0 | MPC | 87570 | 2003 $BZ_1$ |
| 2003 $BJ_2$ | 16.2 | 0.15 | 20060922 | 329.58480 | 274.65954 | 175.79946 | 8.10844 | 0.2793510 | 2.6837711 | 99 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 89403 | 2003 $BJ_2$ |
| 2003 $BK_2$ | 15.1 | 0.15 | 20060922 | 322.98788 | 161.17068 | 293.47248 | 8.35394 | 0.1188635 | 2.7958591 | 50 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 87570 | 2003 $BK_2$ |
| 2003 $BL_2$ | 15.7 | 0.15 | 20060922 | 4.83999 | 280.63182 | 123.72681 | 15.89538 | 0.1540722 | 2.6760374 | 54 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 85860 | 2003 $BL_2$ |
| 2003 $BB_5$ | 16.1 | 0.15 | 20060922 | 255.55913 | 357.47044 | 178.18426 | 7.55432 | 0.0784244 | 2.7267634 | 59 | 6 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87570 | 2003 $BB_5$ |
| 2003 $BE_6$ | 16.0 | 0.15 | 20060922 | 322.26579 | 108.65269 | 311.45143 | 8.22522 | 0.3154437 | 2.7957264 | 58 | 2 | 2003–2006 | 0.53 | M-v | 3 | MPC | 03495 | 2003 $BE_6$ |
| 2003 $BJ_6$ | 15.8 | 0.15 | 20060922 | 83.31514 | 260.64570 | 118.74217 | 1.85112 | 0.2585936 | 2.3808466 | 167 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 97632 | 2003 $BJ_6$ |
| 2003 $BV_6$ | 15.3 | 0.15 | 20060922 | 268.04651 | 9.66392 | 104.09393 | 13.57096 | 0.1486132 | 2.7413945 | 66 | 3 | 2002–2006 | 0.69 | M-v | 2 | MPC | 66302 | 2003 $BV_6$ |
| 2003 $BD_7$ | 15.3 | 0.15 | 20060922 | 308.33863 | 314.45270 | 124.71940 | 13.70442 | 0.0491705 | 2.9008433 | 61 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 85861 | 2003 $BD_7$ |
| 2003 $BF_7$ | 16.6 | 0.15 | 20060922 | 346.44272 | 94.94061 | 340.51295 | 1.97503 | 0.1790963 | 2.6213963 | 74 | 6 | 1995–2006 | 0.59 | M-v | 1 | MPC | 87570 | 2003 $BF_7$ |
| 2003 $BN_7$ | 15.5 | 0.15 | 20060922 | 242.20376 | 310.98699 | 146.05122 | 17.93916 | 0.3609378 | 3.0632654 | 43 | 1 | 114 days | 0.54 | M-v | 4 | MPC | 50737 | 2003 $BN_7$ |
| 2003 $BW_7$ | 16.3 | 0.15 | 20060922 | 69.93559 | 297.68760 | 132.81241 | 6.47384 | 0.0831969 | 2.2928109 | 83 | 4 | 1996–2005 | 0.63 | M-v | 1 | MPC | 97632 | 2003 $BW_7$ |
| 2003 $BD_8$ | 16.3 | 0.15 | 20060922 | 22.94219 | 155.91947 | 262.67509 | 2.40950 | 0.1196526 | 2.5388487 | 56 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87570 | 2003 $BD_8$ |
| 2003 $BG_8$ | 16.7 | 0.15 | 20060922 | 2.82260 | 279.63784 | 145.96438 | 5.24575 | 0.2282427 | 2.5499597 | 72 | 6 | 1995–2006 | 0.48 | M-v | 1 | MPC | 87570 | 2003 $BG_8$ |
| 2003 $BM_8$ | 16.0 | 0.15 | 20060922 | 282.40529 | 322.34604 | 212.19245 | 3.04866 | 0.1280667 | 2.5621275 | 90 | 5 | 1995–2006 | 0.56 | M-v | 2 | MPC | 90169 | 2003 $BM_8$ |
| 2003 $BQ_8$ | 16.6 | 0.15 | 20060922 | 8.37729 | 271.27402 | 188.06739 | 3.69828 | 0.1587636 | 2.4086367 | 41 | 3 | 1992–2005 | 0.38 | M-v | 3 | MPC | 04249 | 2003 $BQ_8$ |
| 2003 $BF_9$ | 15.4 | 0.15 | 20060922 | 167.04804 | 289.04922 | 283.89483 | 11.08881 | 0.0737499 | 3.1017706 | 45 | 4 | 2003–2006 | 0.59 | M-v | 1 | MPC | 89405 | 2003 $BF_9$ |
| 2003 $BK_9$ | 15.0 | 0.15 | 20060922 | 64.99963 | 18.98214 | 286.04548 | 8.83000 | 0.0634913 | 3.0282404 | 28 | 3 | 1998–2006 | 0.50 | M-v | 3 | MPC | 69432 | 2003 $BK_9$ |
| 2003 $BS_{10}$ | 16.1 | 0.15 | 20060922 | 326.68581 | 74.52232 | 97.75284 | 5.58451 | 0.0645154 | 2.3730621 | 56 | 5 | 1992–2005 | 0.66 | M-v | 1 | MPC | 04249 | 2003 $BS_{10}$ |
| 2003 $BV_{10}$ | 14.8 | 0.15 | 20060922 | 211.21927 | 73.37620 | 125.69663 | 17.76835 | 0.1047172 | 2.9307354 | 83 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87570 | 2003 $BV_{10}$ |
| 2003 $BX_{10}$ | 15.6 | 0.15 | 20060922 | 260.59467 | 160.68068 | 335.53760 | 12.95856 | 0.1117418 | 2.9730135 | 50 | 5 | 1995–2006 | 0.61 | M-v | 1 | MPC | 90169 | 2003 $BX_{10}$ |
| 2003 $BE_{11}$ | 16.2 | 0.15 | 20060922 | 291.15889 | 142.66447 | 356.64826 | 3.29582 | 0.2124888 | 2.7171062 | 78 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 87570 | 2003 $BE_{11}$ |
| 2003 $BO_{11}$ | 17.2 | 0.15 | 20060922 | 323.14973 | 84.01424 | 109.49815 | 4.03742 | 0.1663410 | 2.3411068 | 52 | 3 | 2001–2005 | 0.72 | M-v | 3 | MPC | 75832 | 2003 $BO_{11}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $BT_{11}$ | 17.1 | 0.15 | 20060922 | 323.81766 | 171.66809 | 325.21857 | 2.20422 | 0.1120497 | 2.5398553 | 70 | 5 | 1999–2006 | 0.48 | M-v | 2 | MPC | 90169 | 2003 $BT_{11}$ |
| 2003 $BU_{11}$ | 16.2 | 0.15 | 20060922 | 274.91186 | 57.11350 | 133.39079 | 10.51925 | 0.0779363 | 2.5532868 | 92 | 5 | 1999–2006 | 0.59 | M-v | 2 | MPC | 90169 | 2003 $BU_{11}$ |
| 2003 $BZ_{11}$ | 15.5 | 0.15 | 20060922 | 215.23279 | 115.23493 | 55.97437 | 1.67173 | 0.1235614 | 3.1044499 | 70 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 66302 | 2003 $BZ_{11}$ |
| 2003 $BB_{12}$ | 14.6 | 0.15 | 20060922 | 260.66318 | 162.27825 | 320.99833 | 10.76409 | 0.0874237 | 3.0511618 | 67 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87570 | 2003 $BB_{12}$ |
| 2003 $BE_{12}$ | 16.8 | 0.15 | 20060922 | 20.29409 | 57.55082 | 39.76858 | 2.67490 | 0.1470284 | 2.4247116 | 49 | 2 | 2003–2005 | 0.58 | M-v | 4 | MPC | 89406 | 2003 $BE_{12}$ |
| 2003 $BY_{12}$ | 16.4 | 0.15 | 20060922 | 302.71885 | 35.86829 | 129.10515 | 5.58595 | 0.2272375 | 2.5811498 | 71 | 4 | 1999–2006 | 0.45 | M-v | 2 | MPC | 48316 | 2003 $BY_{12}$ |
| 2003 $BZ_{12}$ | 16.6 | 0.15 | 20060922 | 6.38490 | 115.35294 | 321.12493 | 11.18980 | 0.2212611 | 2.5409225 | 85 | 5 | 1999–2006 | 0.63 | M-v | 2 | MPC | 90169 | 2003 $BZ_{12}$ |
| 2003 $BF_{13}$ | 15.1 | 0.15 | 20060922 | 233.96095 | 232.44583 | 261.09529 | 9.11035 | 0.0738556 | 3.0851487 | 43 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 66303 | 2003 $BF_{13}$ |
| 2003 $BQ_{13}$ | 16.7 | 0.15 | 20060922 | 309.10999 | 218.95394 | 288.57056 | 3.32961 | 0.1390734 | 2.5275246 | 34 | 4 | 1995–2006 | 0.50 | M-v | 3 | MPC | 03496 | 2003 $BQ_{13}$ |
| 2003 $BS_{13}$ | 15.8 | 0.15 | 20060922 | 265.07445 | 259.38479 | 282.78261 | 3.42764 | 0.1508164 | 2.6210397 | 39 | 5 | 1999–2006 | 0.73 | M-v | 2 | MPC | 97632 | 2003 $BS_{13}$ |
| 2003 $BU_{13}$ | 16.7 | 0.15 | 20060922 | 348.87774 | 323.19617 | 118.21060 | 2.51866 | 0.0862395 | 2.6014161 | 52 | 6 | 1995–2006 | 0.41 | M-v | 0 | MPC | 87570 | 2003 $BU_{13}$ |
| 2003 $BL_{14}$ | 14.9 | 0.15 | 20060922 | 352.88572 | 229.59047 | 142.32782 | 16.10635 | 0.0624109 | 3.0563457 | 50 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04249 | 2003 $BL_{14}$ |
| 2003 $BM_{14}$ | 17.1 | 0.15 | 20060922 | 39.35862 | 180.90662 | 259.52413 | 4.34102 | 0.1123519 | 2.3600840 | 57 | 3 | 1999–2005 | 0.63 | M-v | 2 | MPC | 90169 | 2003 $BM_{14}$ |
| 2003 $BO_{14}$ | 15.6 | 0.15 | 20060922 | 253.95146 | 70.73753 | 138.38680 | 10.93953 | 0.0981404 | 2.5292791 | 48 | 3 | 1995–2003 | 0.53 | M-v | 3 | MPC | 43265 | 2003 $BO_{14}$ |
| 2003 $BR_{14}$ | 14.8 | 0.15 | 20060922 | 172.50789 | 273.95428 | 299.75808 | 7.40724 | 0.1162040 | 3.0385249 | 57 | 4 | 2003–2006 | 0.56 | M-v | 1 | MPC | 90169 | 2003 $BR_{14}$ |
| 2003 $BC_{15}$ | 16.1 | 0.15 | 20060922 | 24.11249 | 100.86938 | 336.72041 | 8.25700 | 0.2166016 | 2.4419162 | 75 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 87570 | 2003 $BC_{15}$ |
| 2003 $BG_{15}$ | 15.4 | 0.15 | 20060922 | 353.38207 | 9.38334 | 65.41669 | 6.23560 | 0.2496393 | 2.5936428 | 102 | 4 | 1995–2006 | 0.49 | M-v | 2 | MPC | 66303 | 2003 $BG_{15}$ |
| 2003 $BT_{15}$ | 14.8 | 0.15 | 20060922 | 208.89567 | 78.52350 | 117.49735 | 12.74309 | 0.1264349 | 3.0292205 | 48 | 4 | 1998–2005 | 0.66 | M-v | 1 | MPC | 89407 | 2003 $BT_{15}$ |
| 2003 $BD_{16}$ | 14.7 | 0.15 | 20060922 | 238.05202 | 297.46565 | 338.16321 | 10.93484 | 0.2498159 | 2.4163236 | 177 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 74247 | 2003 $BD_{16}$ |
| 2003 $BJ_{16}$ | 14.7 | 0.15 | 20060922 | 298.61146 | 304.01518 | 126.82087 | 14.36357 | 0.1370036 | 3.0950039 | 56 | 3 | 2001–2006 | 0.69 | M-v | 2 | MPC | 04249 | 2003 $BJ_{16}$ |
| 2003 $BM_{16}$ | 14.8 | 0.15 | 20060922 | 183.18664 | 210.51927 | 346.11386 | 8.37861 | 0.0407221 | 3.1813809 | 39 | 3 | 2003–2006 | 0.48 | M-v | 2 | MPC | 90170 | 2003 $BM_{16}$ |
| 2003 $BY_{16}$ | 14.7 | 0.15 | 20060922 | 281.72876 | 122.53891 | 346.83501 | 14.00088 | 0.0441309 | 3.0384359 | 55 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 87570 | 2003 $BY_{16}$ |
| 2003 $BC_{17}$ | 16.7 | 0.15 | 20060922 | 8.93647 | 352.40235 | 120.59051 | 9.18956 | 0.1199319 | 2.4423858 | 34 | 3 | 1996–2003 | 0.42 | M-v | 3 | MPC | 48317 | 2003 $BC_{17}$ |
| 2003 $BP_{17}$ | 17.2 | 0.15 | 20060922 | 352.11653 | 211.26588 | 307.03643 | 3.02459 | 0.1721239 | 2.3257790 | 81 | 3 | 2001–2005 | 0.42 | M-v | 2 | MPC | 89407 | 2003 $BP_{17}$ |
| 2003 $BR_{17}$ | 16.0 | 0.15 | 20060922 | 311.09973 | 333.12865 | 134.46884 | 13.88216 | 0.1085544 | 2.7379870 | 57 | 4 | 2003–2006 | 0.57 | M-v | 1 | MPC | 00411 | 2003 $BR_{17}$ |
| 2003 $BV_{17}$ | 17.0 | 0.15 | 20060922 | 325.19550 | 15.04164 | 148.88879 | 1.86475 | 0.1298734 | 2.4236360 | 64 | 4 | 2001–2006 | 0.43 | M-v | 2 | MPC | 97633 | 2003 $BV_{17}$ |
| 2003 $BW_{17}$ | 16.5 | 0.15 | 20060922 | 316.60808 | 337.25660 | 155.19784 | 1.19173 | 0.1098799 | 2.5922032 | 73 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 90170 | 2003 $BW_{17}$ |
| 2003 $BH_{18}$ | 16.6 | 0.15 | 20060922 | 61.03282 | 281.96883 | 122.55944 | 4.26228 | 0.2085403 | 2.4055246 | 51 | 4 | 1996–2005 | 0.45 | M-v | 1 | MPC | 04249 | 2003 $BH_{18}$ |
| 2003 $BK_{18}$ | 17.2 | 0.15 | 20060922 | 2.80776 | 195.56608 | 263.58444 | 0.77573 | 0.1468918 | 2.4782176 | 45 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 90170 | 2003 $BK_{18}$ |
| 2003 $BV_{18}$ | 15.7 | 0.15 | 20060922 | 348.00048 | 293.15189 | 113.80136 | 14.23421 | 0.1864749 | 2.5298446 | 64 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 61705 | 2003 $BV_{18}$ |
| 2003 $BX_{18}$ | 16.1 | 0.15 | 20060922 | 184.02404 | 156.34258 | 306.60502 | 23.10989 | 0.1060287 | 1.8571457 | 100 | 3 | 1999–2004 | 0.48 | M-v | 2 | MPC | 74247 | 2003 $BX_{18}$ |
| 2003 $BW_{19}$ | 14.3 | 0.15 | 20060922 | 269.90602 | 331.03279 | 122.52956 | 19.52487 | 0.0895845 | 3.1989366 | 44 | 3 | 2001–2004 | 0.52 | M-v | 3 | MPC | 61706 | 2003 $BW_{19}$ |
| 2003 $BA_{20}$ | 16.0 | 0.15 | 20060922 | 283.89983 | 186.46979 | 338.06221 | 4.13871 | 0.1021691 | 2.6878369 | 53 | 4 | 1996–2005 | 0.58 | M-v | 1 | MPC | 90170 | 2003 $BA_{20}$ |
| 2003 $BD_{20}$ | 16.3 | 0.15 | 20060922 | 44.85065 | 345.40067 | 79.49646 | 7.26802 | 0.1201264 | 2.4286360 | 43 | 3 | 2003–2006 | 0.45 | M-v | 2 | MPC | 90170 | 2003 $BD_{20}$ |
| 2003 $BP_{20}$ | 16.0 | 0.15 | 20060922 | 355.60903 | 60.52046 | 56.39606 | 3.05001 | 0.1435611 | 2.4438069 | 68 | 4 | 1998–2006 | 0.43 | M-v | 2 | MPC | 97633 | 2003 $BP_{20}$ |
| 2003 $BQ_{20}$ | 14.6 | 0.15 | 20060922 | 195.43278 | 185.38630 | 8.89723 | 8.49631 | 0.1597021 | 3.2047516 | 87 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87571 | 2003 $BQ_{20}$ |
| 2003 $BU_{20}$ | 16.1 | 0.15 | 20060922 | 358.50410 | 359.52089 | 112.15680 | 7.05873 | 0.0616692 | 2.5336721 | 72 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 90170 | 2003 $BU_{20}$ |
| 2003 $BG_{21}$ | 16.5 | 0.15 | 20060922 | 71.65266 | 64.08338 | 127.60014 | 25.49030 | 0.0760921 | 1.9218145 | 44 | 2 | 2003–2006 | 0.59 | M-v | 3 | MPC | 00411 | 2003 $BG_{21}$ |
| 2003 $BC_{22}$ | 15.2 | 0.15 | 20060922 | 304.02715 | 309.36321 | 115.25968 | 14.09687 | 0.2514959 | 2.6690827 | 51 | 4 | 1999–2006 | 0.60 | M-v | 2 | MPC | 04249 | 2003 $BC_{22}$ |
| 2003 $BG_{22}$ | 15.4 | 0.15 | 20060922 | 322.16414 | 285.79924 | 119.87811 | 15.01000 | 0.2531390 | 2.6356265 | 66 | 3 | 1998–2006 | 0.45 | M-v | 2 | MPC | 03496 | 2003 $BG_{22}$ |
| 2003 $BH_{22}$ | 15.3 | 0.15 | 20060922 | 301.72937 | 132.79413 | 295.27741 | 8.80775 | 0.0965982 | 2.9960698 | 63 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04249 | 2003 $BH_{22}$ |
| 2003 $BJ_{22}$ | 16.3 | 0.15 | 20060922 | 324.43132 | 263.18536 | 162.73530 | 13.91769 | 0.1722801 | 2.6302944 | 57 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 62441 | 2003 $BJ_{22}$ |
| 2003 $BK_{22}$ | 15.2 | 0.15 | 20060922 | 52.53888 | 210.17226 | 140.13189 | 19.56642 | 0.0710823 | 2.5309324 | 38 | 5 | 1998–2006 | 0.67 | M-v | 3 | MPC | 65431 | 2003 $BK_{22}$ |
| 2003 $BQ_{23}$ | 16.2 | 0.15 | 20060922 | 357.89279 | 181.74889 | 246.45507 | 12.09464 | 0.1498152 | 2.6200912 | 39 | 5 | 1993–2006 | 0.47 | M-v | 1 | MPC | 94898 | 2003 $BQ_{23}$ |
| 2003 $BZ_{23}$ | 16.3 | 0.15 | 20060922 | 306.04052 | 294.46870 | 189.04861 | 11.93883 | 0.1351715 | 2.6782769 | 26 | 5 | 2001–2006 | 0.42 | M-v | 1 | MPC | 87571 | 2003 $BZ_{23}$ |
| 2003 $BG_{24}$ | 15.1 | 0.15 | 20060922 | 249.12918 | 296.97639 | 174.49283 | 16.50361 | 0.2180199 | 3.1528008 | 36 | 5 | 1992–2004 | 0.60 | M-v | 1 | MPC | 04249 | 2003 $BG_{24}$ |
| 2003 $BK_{24}$ | 16.4 | 0.15 | 20060922 | 32.76337 | 216.55776 | 172.85359 | 13.85856 | 0.2832638 | 2.5712418 | 48 | 4 | 1993–2006 | 0.68 | M-v | 2 | MPC | 04249 | 2003 $BK_{24}$ |
| 2003 $BS_{24}$ | 17.0 | 0.15 | 20060922 | 312.05075 | 278.09406 | 201.54323 | 7.02568 | 0.2713258 | 2.6632407 | 67 | 4 | 1997–2006 | 0.57 | M-v | 1 | MPC | 48318 | 2003 $BS_{24}$ |
| 2003 $BA_{25}$ | 16.0 | 0.15 | 20060922 | 353.40319 | 135.90627 | 282.96594 | 12.03760 | 0.2469268 | 2.6922421 | 20 | 4 | 1993–2005 | 0.45 | M-v | 0 | MPC | 04249 | 2003 $BA_{25}$ |
| 2003 $BC_{25}$ | 16.2 | 0.15 | 20060922 | 348.47136 | 291.70338 | 230.01404 | 7.19190 | 0.1570345 | 2.3517966 | 42 | 2 | 2003–2005 | 0.43 | M-v | 3 | MPC | 89409 | 2003 $BC_{25}$ |
| 2003 $BF_{25}$ | 16.2 | 0.15 | 20060922 | 257.71036 | 339.48431 | 194.98628 | 9.04940 | 0.0960824 | 2.7859482 | 57 | 6 | 1999–2006 | 0.54 | M-v | 1 | MPC | 90170 | 2003 $BF_{25}$ |
| 2003 $BU_{25}$ | 15.3 | 0.15 | 20060922 | 321.02866 | 223.20860 | 199.33202 | 11.05445 | 0.1627607 | 2.6927576 | 105 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04249 | 2003 $BU_{25}$ |
| 2003 $BE_{26}$ | 15.6 | 0.15 | 20060922 | 299.82407 | 255.05747 | 186.44782 | 8.90581 | 0.0788184 | 2.9600316 | 66 | 3 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04249 | 2003 $BE_{26}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $BO_{26}$ | 15.1 | 0.15 | 20060922 | 181.38881 | 63.33457 | 135.40844 | 11.22916 | 0.1714522 | 3.0947111 | 56 | 4 | 1998–2005 | 0.60 | M-v | 1 | MPC | 87571 | 2003 $BO_{26}$ |
| 2003 $BF_{27}$ | 15.9 | 0.15 | 20060922 | 15.88511 | 240.72113 | 170.76648 | 6.08956 | 0.2903034 | 2.5834831 | 47 | 6 | 1993–2006 | 0.62 | M-v | 1 | MPC | 85871 | 2003 $BF_{27}$ |
| 2003 $BH_{27}$ | 16.4 | 0.15 | 20060922 | 359.16812 | 319.74915 | 168.09769 | 7.30797 | 0.2048330 | 2.4087662 | 82 | 5 | 1992–2005 | 0.62 | M-v | 1 | MPC | 04249 | 2003 $BH_{27}$ |
| 2003 $BT_{27}$ | 16.3 | 0.15 | 20060922 | 320.07205 | 138.54874 | 323.37541 | 9.66996 | 0.2502031 | 2.7173990 | 58 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 75834 | 2003 $BT_{27}$ |
| 2003 $BU_{27}$ | 14.7 | 0.15 | 20060922 | 189.14139 | 57.60610 | 148.75634 | 16.49413 | 0.1985952 | 3.2090494 | 43 | 1 | 88 days | 0.52 | M-v | 4 | MPC | 48318 | 2003 $BU_{27}$ |
| 2003 $BP_{28}$ | 16.2 | 0.15 | 20060922 | 313.36475 | 130.77609 | 328.96508 | 8.19764 | 0.2506217 | 2.7753696 | 65 | 3 | 2001–2006 | 0.49 | M-v | 1 | MPC | 48318 | 2003 $BP_{28}$ |
| 2003 $BM_{29}$ | 16.8 | 0.15 | 20060922 | 284.14719 | 331.88473 | 218.41819 | 2.43466 | 0.1273150 | 2.4576196 | 25 | 2 | 2003–2005 | 0.51 | M-v | 5 | MPC | 89409 | 2003 $BM_{29}$ |
| 2003 $BP_{29}$ | 16.4 | 0.15 | 20060922 | 241.16103 | 7.49819 | 227.88726 | 1.64053 | 0.1098102 | 2.4653756 | 40 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 97633 | 2003 $BP_{29}$ |
| 2003 $BQ_{29}$ | 15.2 | 0.15 | 20060922 | 313.02870 | 92.59220 | 299.89458 | 10.86864 | 0.1462189 | 3.1282768 | 55 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03497 | 2003 $BQ_{29}$ |
| 2003 $BZ_{29}$ | 15.5 | 0.15 | 20060922 | 327.05005 | 233.50984 | 178.27622 | 8.48523 | 0.1702384 | 2.7084450 | 109 | 5 | 1997–2006 | 0.41 | M-v | 0 | MPC | 04250 | 2003 $BZ_{29}$ |
| 2003 $BL_{30}$ | 16.5 | 0.15 | 20060922 | 32.23307 | 101.20924 | 333.38710 | 1.15915 | 0.1449564 | 2.4081586 | 71 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 85872 | 2003 $BL_{30}$ |
| 2003 $BB_{31}$ | 16.5 | 0.15 | 20060922 | 6.38108 | 198.14021 | 266.89730 | 1.64271 | 0.1742516 | 2.4180469 | 58 | 4 | 1994–2006 | 0.55 | M-v | 3 | MPC | 90170 | 2003 $BB_{31}$ |
| 2003 $BD_{31}$ | 16.4 | 0.15 | 20060922 | 79.71120 | 98.79060 | 284.93444 | 5.11742 | 0.2258983 | 2.3705469 | 77 | 2 | 2003–2005 | 0.43 | M-v | 3 | MPC | 90170 | 2003 $BD_{31}$ |
| 2003 $BG_{31}$ | 16.1 | 0.15 | 20060922 | 351.79598 | 285.77115 | 140.65956 | 9.95203 | 0.0641885 | 2.7185792 | 53 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 90170 | 2003 $BG_{31}$ |
| 2003 $BP_{31}$ | 16.1 | 0.15 | 20060922 | 53.75340 | 107.95972 | 311.00862 | 5.38344 | 0.1799713 | 2.3722580 | 94 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 85873 | 2003 $BP_{31}$ |
| 2003 $BQ_{31}$ | 16.7 | 0.15 | 20060922 | 288.22545 | 242.56133 | 311.37681 | 1.70544 | 0.1288427 | 2.4752413 | 48 | 4 | 1998–2006 | 0.44 | M-v | 3 | MPC | 90170 | 2003 $BQ_{31}$ |
| 2003 $BU_{31}$ | 16.7 | 0.15 | 20060922 | 0.85245 | 83.11165 | 338.04135 | 0.92168 | 0.2235148 | 2.6109903 | 49 | 3 | 1997–2006 | 0.61 | M-v | 3 | MPC | 03497 | 2003 $BU_{31}$ |
| 2003 $BV_{31}$ | 17.1 | 0.15 | 20060922 | 48.02458 | 199.60723 | 275.81370 | 4.48055 | 0.1163875 | 2.2189229 | 71 | 3 | 1995–2006 | 0.54 | M-v | 2 | MPC | 97633 | 2003 $BV_{31}$ |
| 2003 $BK_{32}$ | 15.0 | 0.15 | 20030121 | 149.63300 | 201.50769 | 132.76158 | 4.08876 | 0.1740245 | 2.6919949 | 10 | 1 | 2 days | 0.32 | | E | MPC | 04250 | 2003 $BK_{32}$ |
| 2003 $BF_{33}$ | 16.0 | 0.15 | 20060922 | 284.38676 | 329.47613 | 115.96662 | 5.37052 | 0.1002980 | 3.0239712 | 55 | 5 | 1998–2006 | 0.50 | M-v | 0 | MPC | 94901 | 2003 $BF_{33}$ |
| 2003 $BR_{33}$ | 15.8 | 0.15 | 20060922 | 347.79061 | 326.25982 | 130.80562 | 12.68710 | 0.1529681 | 2.6326316 | 76 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 85874 | 2003 $BR_{33}$ |
| 2003 $BT_{33}$ | 15.5 | 0.15 | 20060922 | 180.07605 | 334.74089 | 303.65056 | 13.13745 | 0.1440549 | 2.5367376 | 61 | 5 | 1995–2005 | 0.58 | M-v | 2 | MPC | 97633 | 2003 $BT_{33}$ |
| 2003 $BY_{33}$ | 16.1 | 0.15 | 20060922 | 299.80538 | 284.64428 | 203.25633 | 11.90249 | 0.2136888 | 2.6837027 | 44 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 50174 | 2003 $BY_{33}$ |
| 2003 $BQ_{34}$ | 17.1 | 0.15 | 20060922 | 48.51900 | 64.63234 | 347.49868 | 2.51315 | 0.1202740 | 2.4157050 | 53 | 4 | 2003–2006 | 0.44 | M-v | 1 | MPC | 85874 | 2003 $BQ_{34}$ |
| 2003 $BT_{34}$ | 16.9 | 0.15 | 20060922 | 15.61394 | 49.76933 | 21.95646 | 2.14075 | 0.1650410 | 2.4766206 | 45 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 90170 | 2003 $BT_{34}$ |
| 2003 $BV_{34}$ | 16.7 | 0.15 | 20060922 | 304.13916 | 100.66514 | 84.98055 | 3.43342 | 0.1403112 | 2.4042618 | 63 | 5 | 1992–2006 | 0.49 | M-v | 1 | MPC | 90170 | 2003 $BV_{34}$ |
| 2003 $BH_{35}$ | 16.1 | 0.15 | 20060922 | 234.13386 | 205.53073 | 26.32822 | 12.80677 | 0.1188565 | 2.5827269 | 55 | 4 | 2001–2005 | 0.58 | M-v | 1 | MPC | 90170 | 2003 $BH_{35}$ |
| 2003 $BB_{36}$ | 16.4 | 0.15 | 20060922 | 254.27208 | 139.65046 | 131.11660 | 6.27170 | 0.1396616 | 2.2711850 | 60 | 4 | 2000–2004 | 0.65 | M-v | 1 | MPC | 66303 | 2003 $BB_{36}$ |
| 2003 $BV_{36}$ | 16.1 | 0.15 | 20060922 | 184.48636 | 40.89332 | 173.22947 | 3.54291 | 0.1385336 | 3.2189661 | 38 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 94902 | 2003 $BV_{36}$ |
| 2003 $BN_{37}$ | 16.4 | 0.15 | 20060922 | 232.39163 | 271.69578 | 349.55870 | 8.24090 | 0.0679849 | 2.5366142 | 49 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 70354 | 2003 $BN_{37}$ |
| 2003 $BC_{38}$ | 17.1 | 0.15 | 20060922 | 23.61537 | 101.22749 | 359.22333 | 2.22482 | 0.1618977 | 2.3485585 | 59 | 2 | 2003–2005 | 0.46 | M-v | 4 | MPC | 90171 | 2003 $BC_{38}$ |
| 2003 $BK_{38}$ | 15.4 | 0.15 | 20060922 | 281.66843 | 125.97535 | 316.26010 | 10.07154 | 0.2136316 | 3.0119028 | 50 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 04250 | 2003 $BK_{38}$ |
| 2003 $BL_{38}$ | 16.0 | 0.15 | 20060922 | 331.91512 | 21.59198 | 119.91973 | 7.56235 | 0.0837728 | 2.4480922 | 54 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 00412 | 2003 $BL_{38}$ |
| 2003 $BQ_{38}$ | 16.5 | 0.15 | 20060922 | 9.44906 | 284.52522 | 147.09356 | 4.60522 | 0.1070663 | 2.5362339 | 27 | 3 | 1995–2005 | 0.58 | M-v | 3 | MPC | 85877 | 2003 $BQ_{38}$ |
| 2003 $BR_{38}$ | 15.0 | 0.15 | 20060922 | 170.93704 | 339.50071 | 295.24522 | 7.56932 | 0.1889519 | 2.6278485 | 96 | 6 | 2000–2006 | 0.56 | M-v | 1 | MPC | 94903 | 2003 $BR_{38}$ |
| 2003 $BS_{38}$ | 16.3 | 0.15 | 20060922 | 193.09697 | 251.71157 | 296.78685 | 6.69867 | 0.1141151 | 3.0648867 | 32 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 85877 | 2003 $BS_{38}$ |
| 2003 $BX_{38}$ | 16.8 | 0.15 | 20060922 | 316.54110 | 305.18932 | 224.14636 | 1.63337 | 0.1600088 | 2.4280612 | 42 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 94904 | 2003 $BX_{38}$ |
| 2003 $BL_{39}$ | 16.1 | 0.15 | 20060922 | 117.18251 | 225.62111 | 131.19714 | 2.92945 | 0.2272168 | 2.3393098 | 137 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 97633 | 2003 $BL_{39}$ |
| 2003 $BN_{39}$ | 15.9 | 0.15 | 20060922 | 185.59969 | 322.50549 | 276.02991 | 3.87781 | 0.1045721 | 2.7759508 | 42 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 90171 | 2003 $BN_{39}$ |
| 2003 $BO_{39}$ | 15.9 | 0.15 | 20060922 | 159.42346 | 324.74552 | 298.87815 | 10.76182 | 0.1329162 | 2.7840547 | 49 | 5 | 2000–2005 | 0.63 | M-v | 1 | MPC | 94904 | 2003 $BO_{39}$ |
| 2003 $BB_{40}$ | 15.6 | 0.15 | 20060922 | 226.76229 | 127.57060 | 119.06595 | 6.07462 | 0.2585938 | 2.5767296 | 55 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 66303 | 2003 $BB_{40}$ |
| 2003 $BH_{40}$ | 17.0 | 0.15 | 20060922 | 337.18785 | 153.83204 | 353.18974 | 0.94444 | 0.1219927 | 2.3963954 | 48 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 90171 | 2003 $BH_{40}$ |
| 2003 $BM_{40}$ | 14.8 | 0.15 | 20060922 | 138.25031 | 120.52430 | 123.40420 | 17.21226 | 0.1916734 | 3.1592226 | 66 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 87572 | 2003 $BM_{40}$ |
| 2003 $BY_{41}$ | 14.7 | 0.15 | 20060922 | 218.88095 | 357.85797 | 152.23234 | 22.86771 | 0.0144684 | 3.1197763 | 35 | 3 | 2000–2004 | 0.68 | M-v | 3 | MPC | 43273 | 2003 $BY_{41}$ |
| 2003 $BB_{42}$ | 15.6 | 0.15 | 20060922 | 260.60064 | 229.75241 | 330.97921 | 4.59728 | 0.1640744 | 2.6093540 | 58 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87572 | 2003 $BB_{42}$ |
| 2003 $BC_{42}$ | 17.4 | 0.15 | 20060922 | 64.48839 | 216.79456 | 201.44123 | 3.65985 | 0.2282383 | 2.2992247 | 87 | 5 | 1991–2005 | 0.55 | M-v | 1 | MPC | 97634 | 2003 $BC_{42}$ |
| 2003 $BF_{42}$ | 16.6 | 0.15 | 20060922 | 298.40226 | 57.87353 | 170.55889 | 3.55491 | 0.2159120 | 2.3295008 | 41 | 3 | 2003–2005 | 0.53 | M-v | 3 | MPC | 69434 | 2003 $BF_{42}$ |
| 2003 $BM_{42}$ | 16.0 | 0.15 | 20060922 | 317.83232 | 36.43162 | 140.53829 | 6.95289 | 0.0482254 | 2.3914535 | 68 | 5 | 1992–2006 | 0.55 | M-v | 2 | MPC | 04250 | 2003 $BM_{42}$ |
| 2003 $BN_{42}$ | 15.1 | 0.15 | 20060922 | 241.39664 | 189.80629 | 294.38902 | 9.10343 | 0.1596449 | 3.1926654 | 62 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87572 | 2003 $BN_{42}$ |
| 2003 $BP_{42}$ | 15.1 | 0.15 | 20060922 | 234.10114 | 293.23385 | 292.97625 | 7.78116 | 0.2109259 | 2.7588978 | 73 | 7 | 1996–2006 | 0.63 | M-v | 1 | MPC | 90171 | 2003 $BP_{42}$ |
| 2003 $BR_{42}$ | 14.8 | 0.15 | 20060922 | 186.30332 | 21.59012 | 161.04294 | 11.32668 | 0.0585416 | 3.1923445 | 54 | 6 | 1994–2006 | 0.59 | M-v | 0 | MPC | 87572 | 2003 $BR_{42}$ |
| 2003 $BM_{43}$ | 16.4 | 0.15 | 20060922 | 235.03080 | 328.63721 | 281.55800 | 6.43669 | 0.0928310 | 2.3798037 | 56 | 5 | 1996–2006 | 0.64 | M-v | 1 | MPC | 94904 | 2003 $BM_{43}$ |
| 2003 $BX_{43}$ | 16.6 | 0.15 | 20060922 | 297.35085 | 217.49001 | 9.53128 | 6.36937 | 0.0923370 | 2.3005615 | 24 | 4 | 2001–2005 | 0.52 | M-v | 1 | MPC | 85879 | 2003 $BX_{43}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $BZ_{43}$ | 14.9 | 0.15 | 20060922 | 301.35041 | 321.68298 | 108.27569 | 10.89583 | 0.1029915 | 3.0927207 | 44 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 02143 | 2003 $BZ_{43}$ |
| 2003 $BG_{44}$ | 16.4 | 0.15 | 20060922 | 343.07186 | 19.46398 | 135.00739 | 5.22642 | 0.0796495 | 2.3616944 | 69 | 5 | 1994–2005 | 0.66 | M-v | 1 | MPC | 04250 | 2003 $BG_{44}$ |
| 2003 $BM_{44}$ | 17.0 | 0.15 | 20060922 | 339.77461 | 119.43184 | 340.97567 | 3.12157 | 0.2019918 | 2.5708976 | 74 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 50740 | 2003 $BM_{44}$ |
| 2003 $BO_{44}$ | 17.8 | 0.15 | 20060922 | 57.09567 | 96.60617 | 344.86763 | 1.53430 | 0.1824921 | 2.2837020 | 37 | 2 | 2003–2005 | 0.44 | M-v | 4 | MPC | 89413 | 2003 $BO_{44}$ |
| 2003 $BS_{44}$ | 16.5 | 0.15 | 20060922 | 351.73704 | 33.04040 | 90.73481 | 3.46140 | 0.1349306 | 2.4408952 | 37 | 3 | 2003–2006 | 0.56 | M-v | 3 | MPC | 00412 | 2003 $BS_{44}$ |
| 2003 $BA_{45}$ | 16.3 | 0.15 | 20060922 | 334.74681 | 141.78384 | 292.01773 | 8.57101 | 0.1831416 | 2.7298341 | 35 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 85879 | 2003 $BA_{45}$ |
| 2003 $BM_{45}$ | 16.2 | 0.15 | 20060922 | 289.94826 | 327.20587 | 117.65144 | 3.10125 | 0.0871731 | 2.9516460 | 44 | 4 | 2001–2006 | 0.72 | M-v | 0 | MPC | 04250 | 2003 $BM_{45}$ |
| 2003 $BZ_{45}$ | 16.1 | 0.15 | 20060922 | 268.38333 | 108.94599 | 154.91524 | 7.14790 | 0.0881091 | 2.3546092 | 88 | 2 | 2003–2004 | 0.52 | M-v | 3 | MPC | 70354 | 2003 $BZ_{45}$ |
| 2003 $BY_{46}$ | 15.9 | 0.15 | 20060922 | 32.48791 | 52.51375 | 348.71915 | 2.72129 | 0.2634954 | 2.4736330 | 70 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 66303 | 2003 $BY_{46}$ |
| 2003 $BB_{47}$ | 15.0 | 0.15 | 20060922 | 276.02098 | 99.88328 | 334.15576 | 25.12078 | 0.2338574 | 3.1125626 | 43 | 2 | 2001–2003 | 0.41 | M-v | 3 | MPC | 50740 | 2003 $BB_{47}$ |
| 2003 $BY_{47}$ | 16.7 | 0.15 | 20060922 | 24.37164 | 115.38260 | 320.34778 | 8.77024 | 0.1845353 | 2.4660087 | 45 | 3 | 2003–2006 | 0.43 | M-v | 2 | MPC | 85881 | 2003 $BY_{47}$ |
| 2003 $BE_{48}$ | 17.2 | 0.15 | 20060922 | 50.90526 | 272.35012 | 151.89716 | 5.28933 | 0.2064126 | 2.3657860 | 51 | 3 | 1998–2005 | 0.66 | M-v | 2 | MPC | 85881 | 2003 $BE_{48}$ |
| 2003 $BF_{48}$ | 15.7 | 0.15 | 20060922 | 239.03404 | 349.79670 | 159.45787 | 6.25201 | 0.2131698 | 3.0473595 | 94 | 5 | 1993–2006 | 0.63 | M-v | 2 | MPC | 04250 | 2003 $BF_{48}$ |
| 2003 $BW_{48}$ | 15.8 | 0.15 | 20060922 | 226.12016 | 128.70925 | 356.48222 | 1.30127 | 0.1502404 | 3.2025258 | 44 | 5 | 2000–2006 | 0.63 | M-v | 0 | MPC | 04250 | 2003 $BW_{48}$ |
| 2003 $BZ_{48}$ | 15.0 | 0.15 | 20060922 | 327.82795 | 67.78811 | 323.26395 | 15.44477 | 0.2380617 | 3.0930865 | 141 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 04250 | 2003 $BZ_{48}$ |
| 2003 $BE_{49}$ | 15.9 | 0.15 | 20060922 | 14.00250 | 310.65483 | 128.90163 | 7.38217 | 0.0896902 | 2.5692969 | 88 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87572 | 2003 $BE_{49}$ |
| 2003 $BK_{49}$ | 16.6 | 0.15 | 20060922 | 340.52222 | 14.59159 | 66.73640 | 2.09340 | 0.1613606 | 2.6091996 | 41 | 4 | 1993–2006 | 0.61 | M-v | 1 | MPC | 74248 | 2003 $BK_{49}$ |
| 2003 $BR_{49}$ | 16.8 | 0.15 | 20060922 | 15.28945 | 36.08789 | 58.18357 | 2.29140 | 0.1306505 | 2.4220084 | 80 | 6 | 1994–2006 | 0.48 | M-v | 0 | MPC | 97634 | 2003 $BR_{49}$ |
| 2003 $BG_{50}$ | 15.1 | 0.15 | 20060922 | 40.36266 | 70.16684 | 295.69917 | 9.97484 | 0.3270088 | 2.5902070 | 65 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 89414 | 2003 $BG_{50}$ |
| 2003 $BM_{50}$ | 15.9 | 0.15 | 20060922 | 223.96802 | 62.03760 | 143.05620 | 9.20120 | 0.1370389 | 2.7668118 | 71 | 6 | 1994–2006 | 0.49 | M-v | 0 | MPC | 04250 | 2003 $BM_{50}$ |
| 2003 $BS_{50}$ | 17.2 | 0.15 | 20060922 | 27.45877 | 258.76346 | 206.37521 | 1.56492 | 0.1518415 | 2.3293269 | 60 | 3 | 1998–2005 | 0.53 | M-v | 3 | MPC | 97634 | 2003 $BS_{50}$ |
| 2003 $BU_{50}$ | 14.9 | 0.15 | 20060922 | 12.53794 | 76.95507 | 293.35503 | 8.20605 | 0.0559621 | 2.9680517 | 57 | 5 | 2000–2006 | 0.50 | M-v | 0 | MPC | 87572 | 2003 $BU_{50}$ |
| 2003 $BW_{50}$ | 17.6 | 0.15 | 20060922 | 7.73580 | 187.46494 | 316.51403 | 3.56822 | 0.1884458 | 2.2957169 | 42 | 2 | 2003–2005 | 0.40 | M-v | 3 | MPC | 89414 | 2003 $BW_{50}$ |
| 2003 $BY_{50}$ | 15.9 | 0.15 | 20060922 | 28.79545 | 304.85474 | 122.74710 | 2.82151 | 0.1826927 | 2.4444492 | 85 | 6 | 1994–2006 | 0.48 | M-v | 1 | MPC | 90171 | 2003 $BY_{50}$ |
| 2003 $BJ_{51}$ | 15.3 | 0.15 | 20060922 | 217.19767 | 225.39520 | 302.34102 | 4.48795 | 0.1783426 | 3.1063997 | 87 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87572 | 2003 $BJ_{51}$ |
| 2003 $BQ_{51}$ | 15.0 | 0.15 | 20060922 | 179.36023 | 99.02273 | 137.74981 | 5.26689 | 0.1995741 | 2.9856573 | 77 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87572 | 2003 $BQ_{51}$ |
| 2003 $BU_{51}$ | 16.4 | 0.15 | 20060922 | 314.18604 | 168.13906 | 332.67188 | 4.18823 | 0.1733777 | 2.5856482 | 84 | 7 | 1993–2006 | 0.63 | M-v | 1 | MPC | 04250 | 2003 $BU_{51}$ |
| 2003 $BW_{51}$ | 16.6 | 0.15 | 20060922 | 49.36752 | 89.15534 | 325.76077 | 6.56002 | 0.1915623 | 2.4320884 | 94 | 3 | 2003–2006 | 0.48 | M-v | 2 | MPC | 85883 | 2003 $BW_{51}$ |
| 2003 $BY_{51}$ | 16.8 | 0.15 | 20060922 | 298.36907 | 63.80943 | 158.66046 | 6.11294 | 0.1425845 | 2.3140068 | 52 | 6 | 1996–2006 | 0.53 | M-v | 0 | MPC | 97634 | 2003 $BY_{51}$ |
| 2003 $BE_{52}$ | 16.6 | 0.15 | 20060922 | 317.70335 | 275.72320 | 231.83266 | 2.72375 | 0.1439351 | 2.5251503 | 62 | 5 | 1999–2006 | 0.57 | M-v | 2 | MPC | 87572 | 2003 $BE_{52}$ |
| 2003 $BO_{52}$ | 15.2 | 0.15 | 20060922 | 213.40288 | 235.05525 | 296.44809 | 7.51545 | 0.0808491 | 3.0955958 | 62 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87572 | 2003 $BO_{52}$ |
| 2003 $BC_{53}$ | 15.2 | 0.15 | 20060922 | 277.11663 | 356.25614 | 108.31237 | 11.73636 | 0.0760624 | 3.0054813 | 45 | 4 | 2001–2006 | 0.59 | M-v | 0 | MPC | 62441 | 2003 $BC_{53}$ |
| 2003 $BD_{53}$ | 15.0 | 0.15 | 20060922 | 285.53127 | 99.52559 | 338.57876 | 11.24164 | 0.1108534 | 3.1028443 | 67 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04250 | 2003 $BD_{53}$ |
| 2003 $BL_{53}$ | 15.9 | 0.15 | 20060922 | 262.22381 | 255.33514 | 307.38738 | 4.38317 | 0.0726287 | 2.5575368 | 53 | 5 | 1993–2006 | 0.55 | M-v | 2 | MPC | 04250 | 2003 $BL_{53}$ |
| 2003 $BT_{54}$ | 16.1 | 0.15 | 20060922 | 12.01035 | 121.38844 | 299.41936 | 11.19691 | 0.2444705 | 2.5398778 | 66 | 4 | 1993–2006 | 0.55 | M-v | 1 | MPC | 87572 | 2003 $BT_{54}$ |
| 2003 $BU_{54}$ | 16.4 | 0.15 | 20060922 | 284.04422 | 13.69191 | 140.86641 | 8.80121 | 0.1880543 | 2.6876372 | 38 | 4 | 1999–2006 | 0.53 | M-v | 3 | MPC | 87572 | 2003 $BU_{54}$ |
| 2003 $BV_{54}$ | 17.0 | 0.15 | 20060922 | 40.92915 | 291.64838 | 149.85525 | 6.01199 | 0.1394529 | 2.3701638 | 56 | 3 | 2001–2005 | 0.61 | M-v | 2 | MPC | 90171 | 2003 $BV_{54}$ |
| 2003 $BW_{54}$ | 15.7 | 0.15 | 20060922 | 194.41585 | 342.73804 | 311.45402 | 13.58410 | 0.1432741 | 2.4332224 | 23 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 85884 | 2003 $BW_{54}$ |
| 2003 $BB_{55}$ | 16.1 | 0.15 | 20060922 | 227.18409 | 74.95362 | 52.70084 | 1.67275 | 0.1701007 | 3.2252335 | 46 | 4 | 2001–2006 | 0.58 | M-v | 0 | MPC | 04250 | 2003 $BB_{55}$ |
| 2003 $BE_{55}$ | 16.0 | 0.15 | 20060922 | 272.76386 | 191.40810 | 26.00919 | 2.47840 | 0.1630375 | 2.4474146 | 58 | 5 | 1993–2006 | 0.45 | M-v | 1 | MPC | 04250 | 2003 $BE_{55}$ |
| 2003 $BG_{55}$ | 16.4 | 0.15 | 20060922 | 76.05570 | 64.84937 | 331.58982 | 5.33523 | 0.1971437 | 2.3451334 | 60 | 2 | 2003–2005 | 0.44 | M-v | 4 | MPC | 97634 | 2003 $BG_{55}$ |
| 2003 $BJ_{55}$ | 17.2 | 0.15 | 20060922 | 294.69856 | 129.90164 | 78.10571 | 3.27887 | 0.1790297 | 2.3964202 | 25 | 4 | 2001–2005 | 0.42 | M-v | 1 | MPC | 89416 | 2003 $BJ_{55}$ |
| 2003 $BA_{56}$ | 17.1 | 0.15 | 20060922 | 6.22599 | 278.92780 | 137.68270 | 6.84946 | 0.1742678 | 2.6418422 | 33 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 00412 | 2003 $BA_{56}$ |
| 2003 $BY_{56}$ | 17.4 | 0.15 | 20060922 | 324.83949 | 239.29616 | 267.81401 | 1.54395 | 0.1401825 | 2.4447904 | 26 | 3 | 2003–2006 | 0.37 | M-v | 4 | MPC | 94908 | 2003 $BY_{56}$ |
| 2003 $BC_{57}$ | 15.7 | 0.15 | 20060922 | 25.11586 | 254.88733 | 127.86471 | 5.94842 | 0.3209387 | 2.5580039 | 61 | 8 | 1993–2006 | 0.49 | M-v | 1 | MPC | 74248 | 2003 $BC_{57}$ |
| 2003 $BE_{57}$ | 14.9 | 0.15 | 20060922 | 158.36602 | 325.75391 | 162.75991 | 3.10153 | 0.1696887 | 3.9766193 | 25 | 3 | 2001–2004 | 0.66 | M-v | 3 | MPC | 89417 | 2003 $BE_{57}$ |
| 2003 $BK_{57}$ | 17.6 | 0.15 | 20060922 | 46.08141 | 261.70010 | 172.06552 | 2.13207 | 0.1929674 | 2.3225312 | 45 | 6 | 1991–2005 | 0.40 | M-v | 0 | MPC | 04250 | 2003 $BK_{57}$ |
| 2003 $BM_{57}$ | 16.9 | 0.15 | 20060922 | 35.05189 | 196.69989 | 251.90508 | 1.10969 | 0.0897979 | 2.3647147 | 68 | 4 | 1992–2005 | 0.60 | M-v | 1 | MPC | 90171 | 2003 $BM_{57}$ |
| 2003 $BX_{57}$ | 15.8 | 0.15 | 20060922 | 242.51150 | 270.04674 | 297.31016 | 7.06413 | 0.1916897 | 2.6873535 | 57 | 4 | 2000–2006 | 0.51 | M-v | 0 | MPC | 65437 | 2003 $BX_{57}$ |
| 2003 $BK_{58}$ | 15.5 | 0.15 | 20060922 | 238.74346 | 201.27008 | 312.06203 | 9.19290 | 0.0267807 | 2.9850441 | 45 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 89417 | 2003 $BK_{58}$ |
| 2003 $BU_{58}$ | 16.3 | 0.15 | 20060922 | 289.69742 | 57.23311 | 111.15494 | 10.98754 | 0.1596306 | 2.6452887 | 46 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 94908 | 2003 $BU_{58}$ |
| 2003 $BY_{58}$ | 15.9 | 0.15 | 20060922 | 194.10032 | 325.14620 | 300.49743 | 7.96419 | 0.0760017 | 2.5469625 | 39 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 94908 | 2003 $BY_{58}$ |
| 2003 $BE_{60}$ | 16.1 | 0.15 | 20060922 | 291.72714 | 37.38178 | 115.07890 | 10.52273 | 0.2012753 | 2.7198137 | 69 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 89418 | 2003 $BE_{60}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $BH_{60}$ | 16.3 | 0.15 | 20060922 | 308.68247 | 333.73371 | 154.05982 | 2.58217 | 0.0914876 | 2.6223901 | 44 | 5 | 1993–2005 | 0.46 | M-v | 1 | MPC | 04250 | 2003 $BH_{60}$ |
| 2003 $BO_{60}$ | 17.0 | 0.15 | 20060922 | 281.17815 | 12.69542 | 143.71608 | 2.27858 | 0.1641869 | 2.6865230 | 30 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 89418 | 2003 $BO_{60}$ |
| 2003 $BT_{60}$ | 17.2 | 0.15 | 20060922 | 56.05826 | 242.87458 | 178.08190 | 2.25808 | 0.1828748 | 2.3623511 | 47 | 3 | 1998–2005 | 0.56 | M-v | 2 | MPC | 94909 | 2003 $BT_{60}$ |
| 2003 $BV_{60}$ | 16.9 | 0.15 | 20060922 | 31.08950 | 215.98168 | 234.00803 | 1.10578 | 0.1084137 | 2.3912755 | 55 | 3 | 1994–2005 | 0.48 | M-v | 3 | MPC | 04250 | 2003 $BV_{60}$ |
| 2003 $BW_{61}$ | 14.8 | 0.15 | 20060922 | 240.19235 | 219.86186 | 255.28145 | 20.79987 | 0.0722395 | 3.1756454 | 32 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 85887 | 2003 $BW_{61}$ |
| 2003 $BJ_{63}$ | 15.3 | 0.15 | 20060922 | 211.68568 | 221.86464 | 327.79848 | 17.80690 | 0.2369970 | 3.1409567 | 62 | 1 | 133 days | 0.56 | M-v | 3 | MPC | 48321 | 2003 $BJ_{63}$ |
| 2003 $BL_{63}$ | 16.8 | 0.15 | 20060922 | 339.24949 | 298.36995 | 137.46913 | 17.90978 | 0.1054478 | 2.7304727 | 34 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 85888 | 2003 $BL_{63}$ |
| 2003 $BN_{63}$ | 16.3 | 0.15 | 20060922 | 228.52529 | 9.98104 | 166.49504 | 1.38514 | 0.1995764 | 2.9699178 | 62 | 6 | 1995–2006 | 0.35 | M-v | 1 | MPC | 87573 | 2003 $BN_{63}$ |
| 2003 $BG_{64}$ | 16.8 | 0.15 | 20060922 | 259.24134 | 67.40166 | 126.47070 | 6.01188 | 0.1476466 | 2.5887967 | 26 | 3 | 1999–2003 | 0.35 | M-v | 3 | MPC | 62441 | 2003 $BG_{64}$ |
| 2003 $BT_{64}$ | 15.9 | 0.15 | 20060922 | 341.72818 | 127.33913 | 304.47560 | 5.39445 | 0.0380926 | 2.7506876 | 55 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 90172 | 2003 $BT_{64}$ |
| 2003 $BE_{65}$ | 17.3 | 0.15 | 20060922 | 353.96688 | 181.64600 | 316.14276 | 0.71913 | 0.1204435 | 2.3712754 | 58 | 3 | 2001–2005 | 0.35 | M-v | 3 | MPC | 97635 | 2003 $BE_{65}$ |
| 2003 $BL_{65}$ | 16.1 | 0.15 | 20060922 | 308.83891 | 299.99690 | 157.65787 | 1.99864 | 0.1931870 | 2.7868255 | 78 | 4 | 1992–2006 | 0.43 | M-v | 1 | MPC | 48321 | 2003 $BL_{65}$ |
| 2003 $BP_{65}$ | 17.0 | 0.15 | 20060922 | 342.65684 | 293.59432 | 156.50750 | 5.87742 | 0.2405961 | 2.5973339 | 46 | 3 | 1995–2003 | 0.60 | M-v | 3 | MPC | 48321 | 2003 $BP_{65}$ |
| 2003 $BT_{65}$ | 15.9 | 0.15 | 20060922 | 306.00002 | 3.48164 | 94.01398 | 12.18814 | 0.1603518 | 2.7891768 | 47 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 85889 | 2003 $BT_{65}$ |
| 2003 $BV_{65}$ | 15.0 | 0.15 | 20060922 | 300.39839 | 44.61507 | 77.01660 | 10.48640 | 0.1050728 | 2.7543940 | 87 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 50742 | 2003 $BV_{65}$ |
| 2003 $BY_{65}$ | 16.4 | 0.15 | 20060922 | 14.60399 | 309.20969 | 150.06382 | 2.00306 | 0.1532273 | 2.4331404 | 97 | 7 | 1996–2006 | 0.62 | M-v | 1 | MPC | 02143 | 2003 $BY_{65}$ |
| 2003 $BD_{66}$ | 16.4 | 0.15 | 20060922 | 355.13002 | 359.09246 | 126.32017 | 3.32093 | 0.1440625 | 2.4459920 | 82 | 6 | 1992–2006 | 0.52 | M-v | 1 | MPC | 90172 | 2003 $BD_{66}$ |
| 2003 $BG_{66}$ | 15.2 | 0.15 | 20060922 | 204.52590 | 221.90707 | 322.54230 | 9.08415 | 0.1738477 | 3.1424247 | 68 | 6 | 1992–2006 | 0.53 | M-v | 1 | MPC | 87573 | 2003 $BG_{66}$ |
| 2003 $BM_{66}$ | 16.6 | 0.15 | 20060922 | 286.31940 | 42.65769 | 135.69856 | 2.96628 | 0.1330519 | 2.5997338 | 68 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 90172 | 2003 $BM_{66}$ |
| 2003 $BK_{67}$ | 15.4 | 0.15 | 20060922 | 9.24837 | 319.19427 | 89.56553 | 9.88469 | 0.1838409 | 2.6884703 | 44 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87573 | 2003 $BK_{67}$ |
| 2003 $BY_{67}$ | 15.8 | 0.15 | 20060922 | 297.05356 | 333.77130 | 102.91396 | 4.34018 | 0.1050400 | 3.0328222 | 30 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 56742 | 2003 $BY_{67}$ |
| 2003 $BG_{69}$ | 15.5 | 0.15 | 20060922 | 164.70385 | 256.54875 | 352.62845 | 3.97066 | 0.1339429 | 3.1486410 | 68 | 4 | 1998–2006 | 0.46 | M-v | 0 | MPC | 90172 | 2003 $BG_{69}$ |
| 2003 $BS_{69}$ | 16.1 | 0.15 | 20060922 | 231.77054 | 138.86570 | 89.49209 | 3.38104 | 0.1095711 | 2.5800949 | 40 | 6 | 1997–2006 | 0.52 | M-v | 1 | MPC | 89420 | 2003 $BS_{69}$ |
| 2003 $BL_{71}$ | 16.1 | 0.15 | 20060922 | 307.67529 | 22.83399 | 148.44053 | 9.03874 | 0.1352010 | 2.5557736 | 101 | 6 | 1999–2006 | 0.55 | M-v | 1 | MPC | 90172 | 2003 $BL_{71}$ |
| 2003 $BQ_{71}$ | 16.8 | 0.15 | 20060922 | 7.39147 | 323.47313 | 161.85337 | 7.00394 | 0.1781105 | 2.3668012 | 70 | 5 | 1992–2005 | 0.67 | M-v | 1 | MPC | 87573 | 2003 $BQ_{71}$ |
| 2003 $BT_{71}$ | 15.8 | 0.15 | 20060922 | 252.46152 | 352.77662 | 185.21830 | 9.35485 | 0.1000537 | 2.7558520 | 63 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 97635 | 2003 $BT_{71}$ |
| 2003 $BW_{71}$ | 15.9 | 0.15 | 20060922 | 239.17418 | 297.28290 | 243.71392 | 7.70492 | 0.0820343 | 2.7764385 | 45 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 65439 | 2003 $BW_{71}$ |
| 2003 $BX_{71}$ | 16.2 | 0.15 | 20060922 | 303.06640 | 330.47610 | 164.99127 | 12.15483 | 0.1369065 | 2.6435158 | 41 | 2 | 2003–2005 | 0.38 | M-v | 3 | MPC | 85892 | 2003 $BX_{71}$ |
| 2003 $BY_{71}$ | 16.6 | 0.15 | 20060922 | 35.92429 | 253.56899 | 210.99719 | 5.29844 | 0.0906916 | 2.3160095 | 77 | 5 | 1996–2005 | 0.50 | M-v | 1 | MPC | 97635 | 2003 $BY_{71}$ |
| 2003 $BF_{72}$ | 15.7 | 0.15 | 20060922 | 1.06068 | 247.98058 | 166.46853 | 11.81846 | 0.1915417 | 2.6598762 | 46 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 50742 | 2003 $BF_{72}$ |
| 2003 $BH_{72}$ | 16.1 | 0.15 | 20060922 | 209.30370 | 292.40698 | 257.25808 | 13.23245 | 0.2644414 | 3.0856041 | 18 | 1 | 115 days | 0.34 | M-v | 3 | MPC | 48322 | 2003 $BH_{72}$ |
| 2003 $BT_{72}$ | 15.6 | 0.15 | 20060922 | 325.23139 | 103.77936 | 14.30074 | 4.83280 | 0.2623191 | 2.5888927 | 88 | 4 | 1999–2006 | 0.53 | M-v | 2 | MPC | 87573 | 2003 $BT_{72}$ |
| 2003 $BW_{72}$ | 14.9 | 0.15 | 20060922 | 248.03554 | 177.17575 | 296.85586 | 21.53076 | 0.0800088 | 3.1957936 | 43 | 4 | 1997–2006 | 0.70 | M-v | 2 | MPC | 85893 | 2003 $BW_{72}$ |
| 2003 $BC_{73}$ | 15.6 | 0.15 | 20060922 | 350.46737 | 327.17159 | 128.95132 | 6.92737 | 0.2468013 | 2.5706163 | 81 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 90172 | 2003 $BC_{73}$ |
| 2003 $BF_{73}$ | 16.5 | 0.15 | 20060922 | 7.11346 | 63.51219 | 35.05225 | 2.54733 | 0.1477696 | 2.4550111 | 60 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 97635 | 2003 $BF_{73}$ |
| 2003 $BQ_{73}$ | 16.8 | 0.15 | 20060922 | 288.15939 | 102.89570 | 343.75074 | 5.60450 | 0.1993448 | 2.9191759 | 37 | 4 | 1996–2006 | 0.49 | M-v | 3 | MPC | 04250 | 2003 $BQ_{73}$ |
| 2003 $BL_{74}$ | 15.9 | 0.15 | 20060922 | 356.11013 | 12.87746 | 86.35618 | 11.38089 | 0.0328998 | 2.5385046 | 46 | 3 | 2001–2005 | 0.56 | M-v | 2 | MPC | 85894 | 2003 $BL_{74}$ |
| 2003 $BM_{74}$ | 16.1 | 0.15 | 20060922 | 298.56451 | 91.45206 | 76.07184 | 12.36848 | 0.0970804 | 2.5215371 | 65 | 5 | 1999–2006 | 0.58 | M-v | 2 | MPC | 87573 | 2003 $BM_{74}$ |
| 2003 $BL_{75}$ | 15.1 | 0.15 | 20060922 | 218.26552 | 92.29179 | 59.13677 | 10.62017 | 0.0623032 | 3.1710681 | 43 | 3 | 2001–2004 | 0.57 | M-v | 3 | MPC | 50742 | 2003 $BL_{75}$ |
| 2003 $BM_{75}$ | 15.1 | 0.15 | 20060922 | 347.06893 | 13.65293 | 358.06235 | 15.99376 | 0.1344629 | 3.1185936 | 79 | 2 | 2003–2006 | 0.45 | M-v | 3 | MPC | 03498 | 2003 $BM_{75}$ |
| 2003 $BC_{76}$ | 15.9 | 0.15 | 20060922 | 248.12565 | 127.98820 | 47.94794 | 8.77180 | 0.1501089 | 2.8131384 | 43 | 3 | 2001–2006 | 0.34 | M-v | 3 | MPC | 47289 | 2003 $BC_{76}$ |
| 2003 $BQ_{76}$ | 15.5 | 0.15 | 20060922 | 7.22422 | 45.55444 | 7.10884 | 11.59150 | 0.1815549 | 2.6533858 | 47 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 47289 | 2003 $BQ_{76}$ |
| 2003 $BT_{77}$ | 16.9 | 0.15 | 20060922 | 45.23118 | 122.24188 | 330.45746 | 6.23620 | 0.1358961 | 2.3059494 | 30 | 2 | 2003–2005 | 0.57 | M-v | 5 | MPC | 89421 | 2003 $BT_{77}$ |
| 2003 $BC_{78}$ | 14.9 | 0.15 | 20060922 | 307.04359 | 71.48156 | 353.55390 | 10.50075 | 0.0833789 | 3.1056956 | 78 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 04251 | 2003 $BC_{78}$ |
| 2003 $BD_{78}$ | 15.0 | 0.15 | 20060922 | 306.61126 | 61.58841 | 86.47450 | 8.63525 | 0.1776198 | 2.6018291 | 92 | 4 | 1999–2006 | 0.50 | M-v | 2 | MPC | 50742 | 2003 $BD_{78}$ |
| 2003 $BF_{79}$ | 15.9 | 0.15 | 20060922 | 289.74124 | 140.06203 | 334.03934 | 9.01062 | 0.2455121 | 2.7914163 | 88 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 89421 | 2003 $BF_{79}$ |
| 2003 $BW_{79}$ | 15.1 | 0.15 | 20060922 | 241.16900 | 144.26935 | 5.28794 | 10.14714 | 0.0418578 | 2.9637706 | 45 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 50742 | 2003 $BW_{79}$ |
| 2003 $BV_{80}$ | 16.8 | 0.15 | 20060922 | 283.10228 | 68.38747 | 143.47407 | 3.87699 | 0.0916160 | 2.4026511 | 44 | 5 | 1996–2006 | 0.46 | M-v | 1 | MPC | 90172 | 2003 $BV_{80}$ |
| 2003 $BB_{81}$ | 15.5 | 0.15 | 20060922 | 346.20513 | 174.65175 | 292.84655 | 11.43348 | 0.1054069 | 2.4507992 | 69 | 5 | 1998–2006 | 0.57 | M-v | 2 | MPC | 90172 | 2003 $BB_{81}$ |
| 2003 $BF_{81}$ | 16.3 | 0.15 | 20060922 | 13.48705 | 308.47979 | 91.20009 | 2.43046 | 0.2193350 | 2.5950036 | 42 | 5 | 1995–2006 | 0.42 | M-v | 1 | MPC | 04251 | 2003 $BF_{81}$ |
| 2003 $BG_{81}$ | 16.3 | 0.15 | 20060922 | 78.56712 | 229.77307 | 143.26874 | 4.91813 | 0.2048535 | 2.4130822 | 98 | 8 | 1990–2006 | 0.52 | M-v | 1 | MPC | 97635 | 2003 $BG_{81}$ |
| 2003 $BH_{81}$ | 16.0 | 0.15 | 20060922 | 249.34124 | 118.49504 | 101.75598 | 13.09217 | 0.2313134 | 2.5852272 | 50 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 85897 | 2003 $BH_{81}$ |
| 2003 $BO_{81}$ | 15.6 | 0.15 | 20060922 | 253.59376 | 178.82906 | 313.23453 | 10.13231 | 0.1190305 | 3.0618100 | 59 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 87573 | 2003 $BO_{81}$ |

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| 2003 $BP_{81}$ | 16.4 | 0.15 | 20060922 | 242.29919 | 90.98514 | 126.34659 | 5.10934 | 0.0724647 | 2.5606274 | 27 | 3 | 1999–2006 | 0.60 | M-v | 4 | MPC | 75837 | 2003 $BP_{81}$ |
| 2003 $BB_{82}$ | 16.1 | 0.15 | 20060922 | 255.81396 | 151.51436 | 10.90036 | 1.65047 | 0.1919289 | 2.8868074 | 43 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 85898 | 2003 $BB_{82}$ |
| 2003 $BK_{82}$ | 15.5 | 0.15 | 20060922 | 24.61104 | 38.29031 | 352.66388 | 7.30626 | 0.1969307 | 2.5786668 | 31 | 3 | 1960–2006 | 0.39 | M-v | 4 | MPC | 50743 | 2003 $BK_{82}$ |
| 2003 $BP_{82}$ | 15.8 | 0.15 | 20060922 | 354.13751 | 303.13647 | 99.28846 | 13.22445 | 0.1191276 | 2.7875960 | 43 | 3 | 1995–2006 | 0.48 | M-v | 2 | MPC | 89422 | 2003 $BP_{82}$ |
| 2003 $BW_{82}$ | 15.9 | 0.15 | 20060922 | 78.64310 | 52.74889 | 291.77659 | 5.29940 | 0.0409483 | 2.7615301 | 50 | 5 | 1996–2006 | 0.56 | M-v | 1 | MPC | 85898 | 2003 $BW_{82}$ |
| 2003 $BY_{82}$ | 15.9 | 0.15 | 20060922 | 297.57481 | 205.00415 | 312.52319 | 4.54831 | 0.0808310 | 2.6101238 | 61 | 5 | 1999–2006 | 0.54 | M-v | 2 | MPC | 90173 | 2003 $BY_{82}$ |
| 2003 $BZ_{82}$ | 15.9 | 0.15 | 20060922 | 284.48621 | 77.22063 | 143.94672 | 7.37235 | 0.2047790 | 2.4554572 | 55 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 69437 | 2003 $BZ_{82}$ |
| 2003 $BF_{83}$ | 16.2 | 0.15 | 20060922 | 285.43117 | 134.68490 | 46.00193 | 4.74045 | 0.1515573 | 2.5618860 | 79 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 90173 | 2003 $BF_{83}$ |
| 2003 $BV_{83}$ | 15.3 | 0.15 | 20060922 | 317.86253 | 25.04963 | 90.68464 | 5.90694 | 0.0636795 | 2.7240326 | 42 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87574 | 2003 $BV_{83}$ |
| 2003 $BW_{83}$ | 16.0 | 0.15 | 20060922 | 318.67396 | 351.59774 | 139.12601 | 12.19180 | 0.2109532 | 2.6538482 | 40 | 1 | 69 days | 0.60 | M-v | 4 | MPC | 48323 | 2003 $BW_{83}$ |
| 2003 $BF_{84}$ | 14.0 | 0.15 | 20060922 | 177.85449 | 75.10073 | 157.69357 | 27.10654 | 0.1856905 | 3.1863812 | 98 | 6 | 1998–2006 | 0.60 | M-v | 1 | MPC | 87574 | 2003 $BF_{84}$ |
| 2003 $BQ_{84}$ | 16.4 | 0.15 | 20060922 | 48.60906 | 52.68703 | 20.97448 | 6.30667 | 0.0983365 | 2.3970527 | 90 | 3 | 2001–2005 | 0.50 | M-v | 2 | MPC | 89422 | 2003 $BQ_{84}$ |
| 2003 $BD_{85}$ | 17.1 | 0.15 | 20060922 | 10.21735 | 278.96070 | 145.99395 | 4.48484 | 0.2414008 | 2.5461081 | 34 | 5 | 1995–2006 | 0.44 | M-v | 2 | MPC | 85900 | 2003 $BD_{85}$ |
| 2003 $BF_{85}$ | 17.7 | 0.15 | 20060922 | 65.14212 | 62.63936 | 6.79632 | 1.43472 | 0.1876914 | 2.2935876 | 51 | 2 | 2003–2005 | 0.51 | M-v | 4 | MPC | 89423 | 2003 $BF_{85}$ |
| 2003 $BQ_{86}$ | 14.9 | 0.15 | 20060922 | 179.01561 | 356.41200 | 180.52162 | 10.16661 | 0.0178693 | 3.2527404 | 33 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 69438 | 2003 $BQ_{86}$ |
| 2003 $BK_{87}$ | 16.7 | 0.15 | 20060922 | 353.18721 | 36.51771 | 149.22068 | 9.17159 | 0.1649498 | 2.2742652 | 41 | 2 | 2003–2004 | 0.54 | M-v | 3 | MPC | 69438 | 2003 $BK_{87}$ |
| 2003 $BN_{87}$ | 14.7 | 0.15 | 20060922 | 248.10861 | 104.73307 | 96.81344 | 12.51288 | 0.0844432 | 2.7353722 | 67 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 97636 | 2003 $BN_{87}$ |
| 2003 $BV_{87}$ | 16.5 | 0.15 | 20060922 | 325.92696 | 275.78032 | 167.38591 | 4.11204 | 0.2132391 | 2.6242830 | 58 | 4 | 1999–2006 | 0.50 | M-v | 3 | MPC | 94912 | 2003 $BV_{87}$ |
| 2003 $BC_{88}$ | 17.2 | 0.15 | 20060922 | 310.60081 | 357.64388 | 180.46522 | 1.03956 | 0.1300487 | 2.4355428 | 39 | 4 | 2001–2006 | 0.45 | M-v | 2 | MPC | 94913 | 2003 $BC_{88}$ |
| 2003 $BD_{88}$ | 16.4 | 0.15 | 20060922 | 322.87095 | 345.78457 | 112.61191 | 5.91199 | 0.0771133 | 2.7327528 | 37 | 4 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04251 | 2003 $BD_{88}$ |
| 2003 $BK_{88}$ | 14.7 | 0.15 | 20060922 | 241.03546 | 0.62201 | 119.71981 | 12.00355 | 0.0385630 | 3.2211754 | 38 | 5 | 1997–2006 | 0.69 | M-v | 1 | MPC | 62442 | 2003 $BK_{88}$ |
| 2003 $BM_{88}$ | 15.5 | 0.15 | 20060922 | 185.72603 | 78.05845 | 128.77039 | 11.83653 | 0.0349758 | 2.9953403 | 25 | 4 | 2003–2006 | 0.46 | M-v | 1 | MPC | 87574 | 2003 $BM_{88}$ |
| 2003 $BW_{88}$ | 14.8 | 0.15 | 20060922 | 356.43429 | 72.20943 | 301.71423 | 7.74660 | 0.0904917 | 3.0667400 | 49 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 04251 | 2003 $BW_{88}$ |
| 2003 $BZ_{88}$ | 16.4 | 0.15 | 20060922 | 53.61072 | 168.80363 | 283.65048 | 7.57968 | 0.0982297 | 2.3047965 | 72 | 3 | 1996–2006 | 0.53 | M-v | 2 | MPC | 97636 | 2003 $BZ_{88}$ |
| 2003 $BE_{89}$ | 16.8 | 0.15 | 20060922 | 308.40803 | 198.94995 | 321.33066 | 3.29811 | 0.1290751 | 2.5841490 | 62 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 90173 | 2003 $BE_{89}$ |
| 2003 $BH_{89}$ | 15.9 | 0.15 | 20060922 | 29.09616 | 223.17978 | 165.43874 | 2.29501 | 0.0790608 | 2.8660661 | 46 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 90173 | 2003 $BH_{89}$ |
| 2003 $BF_{90}$ | 15.3 | 0.15 | 20060922 | 244.26747 | 308.59574 | 265.06697 | 5.12341 | 0.2149056 | 2.7680302 | 77 | 4 | 2003–2006 | 0.56 | M-v | 1 | MPC | 90173 | 2003 $BF_{90}$ |
| 2003 $BO_{90}$ | 16.6 | 0.15 | 20060922 | 31.11180 | 29.56176 | 53.02588 | 2.91656 | 0.1457052 | 2.4434817 | 67 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97636 | 2003 $BO_{90}$ |
| 2003 $BU_{90}$ | 15.5 | 0.15 | 20060922 | 338.19833 | 348.60393 | 87.22804 | 13.62829 | 0.0492125 | 2.7010477 | 53 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 85903 | 2003 $BU_{90}$ |
| 2003 $BA_{91}$ | 14.6 | 0.15 | 20060922 | 228.14033 | 42.55883 | 143.26358 | 23.14668 | 0.2072515 | 3.0512269 | 46 | 1 | 60 days | 0.58 | M-v | 4 | MPC | 48324 | 2003 $BA_{91}$ |
| 2003 $BG_{92}$ | 15.5 | 0.15 | 20060922 | 234.99318 | 77.69010 | 76.70265 | 9.05348 | 0.2119039 | 3.0774748 | 19 | 1 | 87 days | 0.44 | M-v | 4 | MPC | | 2003 $BG_{92}$ |
| 2003 $BJ_{92}$ | 16.0 | 0.15 | 20030210 | 312.90169 | 91.01855 | 105.38487 | 16.51323 | 0.0361729 | 2.6034558 | 19 | 1 | 41 days | 0.52 | | | MPC | | 2003 $BJ_{92}$ |
| 2003 $BK_{92}$ | 16.9 | 0.15 | 20030210 | 19.38116 | 0.45504 | 116.45271 | 4.69819 | 0.1312773 | 2.6238101 | 21 | 1 | 38 days | 0.62 | | | MPC | | 2003 $BK_{92}$ |
| 2003 $BM_{92}$ | 15.5 | 0.15 | 20030210 | 311.87824 | 289.14704 | 272.21992 | 10.76969 | 0.1044522 | 2.9811970 | 18 | 1 | 39 days | 0.59 | | | MPC | | 2003 $BM_{92}$ |
| 2003 $BO_{92}$ | 18.5 | 0.15 | 20030210 | 62.50153 | 95.85236 | 337.39618 | 19.10812 | 0.1221428 | 1.8803641 | 15 | 1 | 38 days | 0.52 | | | MPC | | 2003 $BO_{92}$ |
| 2003 CS | 16.6 | 0.15 | 20060922 | 298.28916 | 227.86605 | 337.37404 | 8.57232 | 0.2457233 | 2.3763215 | 33 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 94913 | 2003 CS |
| 2003 CZ | 17.0 | 0.15 | 20060922 | 338.25846 | 237.65129 | 333.12910 | 24.03651 | 0.2641591 | 2.2868529 | 69 | 1 | 71 days | 0.49 | M-v | 4 | MPC | 48324 | 2003 CZ |
| 2003 $CU_1$ | 15.1 | 0.15 | 20060922 | 236.74541 | 83.52103 | 95.09966 | 6.17812 | 0.0502591 | 2.7350391 | 59 | 6 | 1994–2006 | 0.51 | M-v | 1 | MPC | 87574 | 2003 $CU_1$ |
| 2003 $CW_1$ | 17.3 | 0.15 | 20060922 | 353.58793 | 46.59677 | 92.02611 | 3.22019 | 0.1454803 | 2.3384919 | 30 | 3 | 1996–2005 | 0.61 | M-v | 4 | MPC | 94913 | 2003 $CW_1$ |
| 2003 $CP_2$ | 15.1 | 0.15 | 20060922 | 344.52284 | 192.39139 | 285.70997 | 23.94271 | 0.1977376 | 2.4174426 | 75 | 5 | 1998–2006 | 0.60 | M-v | 2 | MPC | 90173 | 2003 $CP_2$ |
| 2003 $CQ_2$ | 15.7 | 0.15 | 20060922 | 23.64233 | 100.67748 | 286.55434 | 10.40096 | 0.2023922 | 2.5940664 | 55 | 3 | 2001–2006 | 0.68 | M-v | 2 | MPC | 50744 | 2003 $CQ_2$ |
| 2003 $CX_2$ | 16.0 | 0.15 | 20060922 | 220.22057 | 281.57702 | 283.85705 | 7.66691 | 0.0920007 | 2.8121218 | 27 | 3 | 1997–2006 | 0.51 | M-v | 3 | MPC | 48324 | 2003 $CX_2$ |
| 2003 $CZ_2$ | 16.3 | 0.15 | 20060922 | 321.07286 | 141.34389 | 308.60976 | 12.77840 | 0.1583754 | 2.7640146 | 53 | 4 | 2001–2006 | 0.44 | M-v | 0 | MPC | 87574 | 2003 $CZ_2$ |
| 2003 $CF_3$ | 17.4 | 0.15 | 20060922 | 332.51485 | 164.13995 | 314.39087 | 3.79747 | 0.2083867 | 2.5387762 | 30 | 4 | 1999–2006 | 0.39 | M-v | 2 | MPC | 43295 | 2003 $CF_3$ |
| 2003 $CS_3$ | 14.5 | 0.15 | 20060922 | 241.95593 | 23.01931 | 153.98444 | 18.02883 | 0.1619578 | 2.9970992 | 99 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 87574 | 2003 $CS_3$ |
| 2003 $CB_4$ | 14.5 | 0.15 | 20060922 | 350.50732 | 110.89834 | 292.65402 | 12.87758 | 0.1998276 | 2.5973371 | 70 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 85906 | 2003 $CB_4$ |
| 2003 $CK_4$ | 15.6 | 0.15 | 20060922 | 324.99316 | 29.53632 | 85.38552 | 4.31252 | 0.1484406 | 2.5420200 | 41 | 4 | 1994–2006 | 0.47 | M-v | 3 | MPC | 03498 | 2003 $CK_4$ |
| 2003 $CC_5$ | 16.2 | 0.15 | 20060922 | 318.29204 | 138.03887 | 23.07429 | 4.68509 | 0.0655398 | 2.3918222 | 60 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 97636 | 2003 $CC_5$ |
| 2003 $CY_5$ | 16.6 | 0.15 | 20060922 | 348.96403 | 294.55195 | 192.13333 | 11.11528 | 0.1990086 | 2.4441257 | 62 | 3 | 1997–2005 | 0.63 | M-v | 2 | MPC | 85907 | 2003 $CY_5$ |
| 2003 $CC_6$ | 15.7 | 0.15 | 20060922 | 268.31330 | 80.11741 | 78.94537 | 5.65364 | 0.0664257 | 2.7434256 | 36 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 85908 | 2003 $CC_6$ |
| 2003 $CG_6$ | 14.6 | 0.15 | 20060922 | 175.06712 | 11.44824 | 110.17534 | 7.43782 | 0.2003081 | 3.9877444 | 32 | 4 | 1994–2004 | 0.64 | M-v | 1 | MPC | 04251 | 2003 $CG_6$ |
| 2003 $CS_6$ | 14.6 | 0.15 | 20060922 | 171.13072 | 113.60936 | 119.43770 | 9.47097 | 0.1228324 | 3.0290227 | 56 | 6 | 1998–2006 | 0.61 | M-v | 1 | MPC | 87574 | 2003 $CS_6$ |
| 2003 $CK_7$ | 16.3 | 0.15 | 20060922 | 316.44095 | 61.82454 | 81.85003 | 3.20322 | 0.1383713 | 2.5532426 | 43 | 4 | 1999–2006 | 0.47 | M-v | 3 | MPC | 00415 | 2003 $CK_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $CL_{7}$ | 14.4 | 0.15 | 20060922 | 298.52208 | 279.76878 | 143.42791 | 18.58254 | 0.2459214 | 3.1092468 | 61 | 4 | 1992–2006 | 0.59 | M-v | 1 | MPC | 04251 | 2003 $CL_{7}$ |
| 2003 $CM_{7}$ | 15.5 | 0.15 | 20060922 | 295.57555 | 258.54936 | 293.60999 | 10.77085 | 0.1934488 | 2.5783765 | 65 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87574 | 2003 $CM_{7}$ |
| 2003 $CV_{7}$ | 15.6 | 0.15 | 20060922 | 259.37252 | 135.72302 | 353.57759 | 8.57681 | 0.1309489 | 3.0833819 | 66 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 89426 | 2003 $CV_{7}$ |
| 2003 $CD_{8}$ | 15.9 | 0.15 | 20060922 | 311.40131 | 156.85905 | 15.33252 | 7.21251 | 0.1055604 | 2.5255867 | 88 | 6 | 1971–2005 | 0.63 | M-v | 2 | MPC | 04251 | 2003 $CD_{8}$ |
| 2003 $CJ_{8}$ | 15.3 | 0.15 | 20060922 | 275.96917 | 24.99084 | 148.59966 | 9.78512 | 0.1940974 | 2.8003989 | 71 | 7 | 1998–2006 | 0.61 | M-v | 1 | MPC | 02144 | 2003 $CJ_{8}$ |
| 2003 $CK_{8}$ | 15.7 | 0.15 | 20060922 | 251.61791 | 104.89762 | 38.03808 | 5.44215 | 0.1588978 | 3.0493140 | 58 | 4 | 1998–2006 | 0.45 | M-v | 1 | MPC | 47299 | 2003 $CK_{8}$ |
| 2003 $CY_{8}$ | 15.5 | 0.15 | 20060922 | 213.17304 | 325.42815 | 252.68370 | 6.42381 | 0.0943540 | 2.7977558 | 50 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87575 | 2003 $CY_{8}$ |
| 2003 $CJ_{9}$ | 16.5 | 0.15 | 20060922 | 41.67634 | 222.74561 | 177.61400 | 4.02037 | 0.1606468 | 2.5267694 | 53 | 8 | 1993–2006 | 0.43 | M-v | 0 | MPC | 00415 | 2003 $CJ_{9}$ |
| 2003 $CN_{9}$ | 16.5 | 0.15 | 20060922 | 28.87832 | 206.70679 | 203.38685 | 5.53335 | 0.2434980 | 2.5274802 | 29 | 3 | 1996–2005 | 0.52 | M-v | 2 | MPC | 89426 | 2003 $CN_{9}$ |
| 2003 $CR_{9}$ | 15.7 | 0.15 | 20060922 | 236.89297 | 301.13593 | 267.61531 | 3.78171 | 0.0961868 | 2.7097740 | 53 | 5 | 1999–2005 | 0.58 | M-v | 1 | MPC | 90174 | 2003 $CR_{9}$ |
| 2003 $CH_{10}$ | 15.5 | 0.15 | 20060922 | 284.68533 | 335.43346 | 168.62685 | 8.18456 | 0.1589686 | 2.7885432 | 118 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 97636 | 2003 $CH_{10}$ |
| 2003 $CO_{10}$ | 17.2 | 0.15 | 20060922 | 312.49575 | 33.60460 | 156.58805 | 2.91172 | 0.1660623 | 2.3946469 | 74 | 4 | 1992–2005 | 0.48 | M-v | 1 | MPC | 90174 | 2003 $CO_{10}$ |
| 2003 $CD_{11}$ | 16.2 | 0.15 | 20060922 | 347.23506 | 261.50972 | 187.47182 | 6.82167 | 0.2147197 | 2.5991591 | 63 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 85912 | 2003 $CD_{11}$ |
| 2003 $CU_{11}$ | 17.5 | 0.15 | 20060922 | 23.32472 | 82.11859 | 21.15739 | 2.84092 | 0.1725340 | 2.3499303 | 50 | 3 | 1998–2005 | 0.47 | M-v | 3 | MPC | 97637 | 2003 $CU_{11}$ |
| 2003 $CV_{11}$ | 15.6 | 0.15 | 20060922 | 3.00667 | 243.26635 | 122.83825 | 17.19168 | 0.0209344 | 3.1550026 | 23 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 89427 | 2003 $CV_{11}$ |
| 2003 $CN_{12}$ | 17.5 | 0.15 | 20060922 | 20.29022 | 96.79526 | 0.36156 | 2.31859 | 0.2022514 | 2.3903339 | 31 | 2 | 2003–2005 | 0.52 | M-v | 4 | MPC | 03499 | 2003 $CN_{12}$ |
| 2003 $CO_{12}$ | 15.2 | 0.15 | 20060922 | 309.23885 | 123.16487 | 332.23337 | 6.90259 | 0.0322670 | 2.8675884 | 41 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 89427 | 2003 $CO_{12}$ |
| 2003 $CT_{12}$ | 15.8 | 0.15 | 20060922 | 272.19604 | 167.44816 | 18.26039 | 10.33941 | 0.2189456 | 2.6972318 | 47 | 3 | 2001–2005 | 0.62 | M-v | 3 | MPC | 89427 | 2003 $CT_{12}$ |
| 2003 $CV_{12}$ | 15.5 | 0.15 | 20060922 | 294.16772 | 138.75637 | 359.26475 | 14.87505 | 0.2582260 | 2.7333717 | 96 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 50745 | 2003 $CV_{12}$ |
| 2003 $CE_{13}$ | 17.1 | 0.15 | 20060922 | 23.01826 | 12.92735 | 108.61473 | 2.98471 | 0.1554402 | 2.3451363 | 91 | 4 | 1996–2006 | 0.65 | M-v | 1 | MPC | 97637 | 2003 $CE_{13}$ |
| 2003 $CH_{13}$ | 16.0 | 0.15 | 20060922 | 340.97533 | 65.51473 | 44.24939 | 5.79227 | 0.2590286 | 2.5775158 | 73 | 5 | 1999–2006 | 0.62 | M-v | 2 | MPC | 87575 | 2003 $CH_{13}$ |
| 2003 $CO_{13}$ | 15.2 | 0.15 | 20060922 | 239.19828 | 95.65279 | 96.48194 | 12.34034 | 0.1311368 | 2.8132489 | 62 | 5 | 1997–2006 | 0.50 | M-v | 0 | MPC | 74248 | 2003 $CO_{13}$ |
| 2003 $CT_{13}$ | 14.7 | 0.15 | 20060922 | 194.78392 | 80.35596 | 126.20152 | 16.56928 | 0.1632747 | 3.1943609 | 60 | 7 | 1997–2006 | 0.65 | M-v | 0 | MPC | 87575 | 2003 $CT_{13}$ |
| 2003 $CV_{13}$ | 16.0 | 0.15 | 20060922 | 242.20544 | 301.69502 | 191.61647 | 16.53383 | 0.1928455 | 3.1148071 | 38 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 69440 | 2003 $CV_{13}$ |
| 2003 $CB_{14}$ | 17.5 | 0.15 | 20060922 | 298.20165 | 15.92332 | 190.23994 | 0.72695 | 0.1036196 | 2.3775357 | 37 | 3 | 2003–2005 | 0.45 | M-v | 2 | MPC | 94915 | 2003 $CB_{14}$ |
| 2003 $CF_{14}$ | 16.0 | 0.15 | 20060922 | 221.48712 | 106.19250 | 154.67692 | 14.06404 | 0.0832142 | 2.6131960 | 66 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 97637 | 2003 $CF_{14}$ |
| 2003 $CM_{14}$ | 15.3 | 0.15 | 20060922 | 38.28604 | 217.22241 | 126.18855 | 12.36682 | 0.0529091 | 3.0617820 | 55 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 87575 | 2003 $CM_{14}$ |
| 2003 $CU_{14}$ | 15.3 | 0.15 | 20060922 | 264.61114 | 290.44922 | 166.63177 | 7.44371 | 0.1181435 | 3.1774345 | 67 | 5 | 1995–2006 | 0.55 | M-v | 0 | MPC | 04251 | 2003 $CU_{14}$ |
| 2003 $CY_{14}$ | 15.7 | 0.15 | 20060922 | 201.76703 | 131.69333 | 71.28227 | 3.68689 | 0.1587898 | 2.9976344 | 42 | 4 | 1995–2006 | 0.36 | M-v | 1 | MPC | 62442 | 2003 $CY_{14}$ |
| 2003 $CN_{15}$ | 15.3 | 0.15 | 20060922 | 183.22550 | 190.01083 | 18.01078 | 7.08226 | 0.2017032 | 3.1538777 | 53 | 4 | 1998–2006 | 0.65 | M-v | 2 | MPC | 50745 | 2003 $CN_{15}$ |
| 2003 $CV_{15}$ | 15.9 | 0.15 | 20060922 | 257.55129 | 290.21218 | 284.58323 | 12.79853 | 0.0587593 | 2.5758119 | 33 | 4 | 2000–2006 | 0.48 | M-v | 2 | MPC | 94916 | 2003 $CV_{15}$ |
| 2003 $CL_{16}$ | 16.7 | 0.15 | 20060922 | 311.24207 | 66.49107 | 80.19722 | 5.40704 | 0.1479401 | 2.6255932 | 52 | 3 | 1997–2006 | 0.58 | M-v | 2 | MPC | 04251 | 2003 $CL_{16}$ |
| 2003 $CQ_{16}$ | 16.3 | 0.15 | 20060922 | 51.38263 | 29.85442 | 44.71260 | 4.20772 | 0.1897507 | 2.3812003 | 135 | 3 | 1996–2006 | 0.52 | M-v | 1 | MPC | 97637 | 2003 $CQ_{16}$ |
| 2003 $CU_{16}$ | 17.6 | 0.15 | 20060922 | 59.36855 | 289.57279 | 145.21560 | 6.00301 | 0.1280377 | 2.3246068 | 40 | 4 | 1996–2005 | 0.72 | M-v | 1 | MPC | 89428 | 2003 $CU_{16}$ |
| 2003 $CH_{17}$ | 16.6 | 0.15 | 20060922 | 278.50777 | 61.58562 | 45.38320 | 4.35010 | 0.2851491 | 2.9778993 | 40 | 3 | 1993–2003 | 0.59 | M-v | 3 | MPC | 48326 | 2003 $CH_{17}$ |
| 2003 $CM_{17}$ | 15.3 | 0.15 | 20060922 | 217.95816 | 130.40339 | 134.16187 | 13.36439 | 0.1771258 | 2.6162521 | 99 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 70355 | 2003 $CM_{17}$ |
| 2003 $CQ_{17}$ | 16.9 | 0.15 | 20060922 | 324.94071 | 143.37240 | 344.56595 | 3.81668 | 0.2227311 | 2.6148105 | 40 | 3 | 2003–2006 | 0.56 | M-v | 3 | MPC | 85914 | 2003 $CQ_{17}$ |
| 2003 $CX_{17}$ | 16.4 | 0.15 | 20060922 | 225.32349 | 275.82345 | 302.49214 | 13.76694 | 0.2001149 | 2.7877006 | 24 | 1 | 85 days | 0.38 | M-v | 4 | MPC | 48326 | 2003 $CX_{17}$ |
| 2003 $CB_{18}$ | 15.4 | 0.15 | 20060922 | 296.67620 | 120.39467 | 318.73981 | 8.14431 | 0.1231678 | 3.0051537 | 50 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 50745 | 2003 $CB_{18}$ |
| 2003 $CK_{18}$ | 14.3 | 0.15 | 20060922 | 0.79740 | 37.36756 | 325.43652 | 14.60328 | 0.1238926 | 3.1247611 | 57 | 4 | 2000–2006 | 0.38 | M-v | 1 | MPC | 04251 | 2003 $CK_{18}$ |
| 2003 $CA_{19}$ | 14.4 | 0.15 | 20060922 | 150.13353 | 213.25992 | 6.17058 | 21.05652 | 0.0644481 | 3.2312041 | 52 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 43304 | 2003 $CA_{19}$ |
| 2003 $CF_{19}$ | 15.2 | 0.15 | 20060922 | 240.53949 | 2.53175 | 140.65183 | 10.20737 | 0.1057922 | 3.0665757 | 56 | 4 | 2003–2006 | 0.55 | M-v | 1 | MPC | 85915 | 2003 $CF_{19}$ |
| 2003 $CW_{19}$ | 17.0 | 0.15 | 20060922 | 352.85562 | 163.70960 | 284.10940 | 6.10696 | 0.2711732 | 2.5535742 | 38 | 5 | 1977–2006 | 0.66 | M-v | 1 | MPC | 04251 | 2003 $CW_{19}$ |
| 2003 $CA_{20}$ | 15.4 | 0.15 | 20060922 | 182.39528 | 182.37091 | 78.26697 | 10.93361 | 0.1645998 | 2.7534650 | 46 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 90174 | 2003 $CA_{20}$ |
| 2003 $CG_{20}$ | 17.2 | 0.15 | 20060922 | 338.03542 | 128.49604 | 99.27301 | 4.13886 | 0.1236728 | 2.1646866 | 37 | 4 | 1997–2006 | 0.59 | M-v | 3 | MPC | 94917 | 2003 $CG_{20}$ |
| 2003 $CK_{20}$ | 15.3 | 0.15 | 20060922 | 278.15775 | 263.93357 | 191.08627 | 4.68642 | 0.1573874 | 3.0966063 | 43 | 5 | 2000–2006 | 0.49 | M-v | 0 | MPC | 94917 | 2003 $CK_{20}$ |
| 2003 $CZ_{21}$ | 16.2 | 0.15 | 20060922 | 330.87740 | 264.34440 | 176.97696 | 9.38180 | 0.2372583 | 2.7160229 | 48 | 4 | 1997–2006 | 0.57 | M-v | 1 | MPC | 87575 | 2003 $CZ_{21}$ |
| 2003 $CK_{25}$ | 14.4 | 0.15 | 20060922 | 252.37745 | 56.58126 | 75.40783 | 14.62054 | 0.1639035 | 3.1259209 | 18 | 1 | 65 days | 0.41 | M-v | 4 | MPC | | 2003 $CK_{25}$ |
| 2003 $CL_{25}$ | 15.4 | 0.15 | 20060922 | 275.90942 | 75.84248 | 105.21026 | 12.36608 | 0.1660305 | 2.7097113 | 21 | 1 | 64 days | 0.46 | M-v | 4 | MPC | | 2003 $CL_{25}$ |
| 2003 $CM_{25}$ | 18.1 | 0.15 | 20030302 | 329.73066 | 203.67904 | 12.07867 | 8.33305 | 0.3936298 | 2.3651676 | 23 | 1 | 52 days | 0.47 | | | MPC | | 2003 $CM_{25}$ |
| 2003 $CN_{25}$ | 16.9 | 0.15 | 20030302 | 321.24002 | 49.86438 | 164.06410 | 11.19534 | 0.1885615 | 2.3856166 | 20 | 1 | 57 days | 0.58 | | | MPC | | 2003 $CN_{25}$ |
| 2003 $CO_{25}$ | 17.3 | 0.15 | 20030210 | 358.82113 | 53.75038 | 93.94041 | 9.76904 | 0.3565198 | 2.9796489 | 22 | 1 | 32 days | 0.54 | | | MPC | | 2003 $CO_{25}$ |
| 2003 $CP_{25}$ | 17.2 | 0.15 | 20030302 | 310.64628 | 68.86181 | 152.35389 | 12.51598 | 0.2129756 | 2.6527070 | 16 | 1 | 36 days | 0.46 | | | MPC | | 2003 $CP_{25}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $CQ_{25}$ | 15.7 | 0.15 | 20060922 | 328.78746 | 336.73141 | 144.56267 | 20.66498 | 0.3218089 | 2.6271270 | 27 | 1 | 63 days | 0.51 | M-v | 4 | MPC | | 2003 $CQ_{25}$ |
| 2003 $CR_{25}$ | 16.3 | 0.15 | 20030302 | 16.42584 | 138.85138 | 352.58612 | 17.49591 | 0.2823022 | 3.3110344 | 23 | 1 | 54 days | 0.53 | | | MPC | | 2003 $CR_{25}$ |
| 2003 DC | 14.9 | 0.15 | 20060922 | 258.13193 | 80.03923 | 115.22104 | 27.94140 | 0.0823275 | 2.6804484 | 47 | 6 | 1994–2006 | 0.60 | M-v | 1 | MPC | 04251 | 2003 DC |
| 2003 DP | 17.5 | 0.15 | 20060922 | 42.72668 | 176.19093 | 268.88080 | 1.82092 | 0.1542294 | 2.3822259 | 74 | 3 | 2001–2005 | 0.57 | M-v | 1 | MPC | 04252 | 2003 DP |
| 2003 $DN_2$ | 17.5 | 0.15 | 20060922 | 314.69933 | 27.11930 | 158.89932 | 1.57484 | 0.1265519 | 2.4249249 | 37 | 2 | 2002–2005 | 0.32 | M-v | 4 | MPC | 89431 | 2003 $DN_2$ |
| 2003 $DU_2$ | 15.8 | 0.15 | 20060922 | 221.52008 | 219.83163 | 333.46360 | 9.13236 | 0.1373629 | 3.0269254 | 75 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 85918 | 2003 $DU_2$ |
| 2003 $DB_3$ | 14.4 | 0.15 | 20060922 | 272.22874 | 308.53160 | 153.07621 | 21.96590 | 0.0280339 | 3.2428387 | 77 | 5 | 2000–2006 | 0.63 | M-v | 0 | MPC | 89431 | 2003 $DB_3$ |
| 2003 $DC_3$ | 16.3 | 0.15 | 20060922 | 288.14071 | 177.60249 | 351.04344 | 8.05912 | 0.1551382 | 2.6835714 | 60 | 3 | 1996–2005 | 0.52 | M-v | 2 | MPC | 89431 | 2003 $DC_3$ |
| 2003 $DE_3$ | 17.6 | 0.15 | 20060922 | 28.78636 | 132.00645 | 340.39494 | 2.13657 | 0.1412809 | 2.3490911 | 55 | 2 | 2003–2005 | 0.42 | M-v | 4 | MPC | 89431 | 2003 $DE_3$ |
| 2003 $DS_3$ | 15.3 | 0.15 | 20060922 | 258.21603 | 132.50727 | 342.98839 | 7.25210 | 0.0815280 | 3.2342357 | 40 | 4 | 2000–2006 | 0.44 | M-v | 0 | MPC | 87575 | 2003 $DS_3$ |
| 2003 $DU_3$ | 17.4 | 0.15 | 20060922 | 354.44276 | 142.29593 | 347.51252 | 3.05169 | 0.1313788 | 2.4633542 | 44 | 2 | 2003–2005 | 0.44 | M-v | 4 | MPC | 85919 | 2003 $DU_3$ |
| 2003 $DY_3$ | 15.1 | 0.15 | 20060922 | 322.47065 | 69.01559 | 342.77911 | 16.61895 | 0.1429654 | 3.1415544 | 67 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 85919 | 2003 $DY_3$ |
| 2003 $DB_4$ | 16.0 | 0.15 | 20060922 | 306.17639 | 158.63325 | 342.27016 | 17.11597 | 0.1360565 | 2.6856778 | 45 | 3 | 2003–2006 | 0.57 | M-v | 3 | MPC | 03499 | 2003 $DB_4$ |
| 2003 $DH_4$ | 16.8 | 0.15 | 20060922 | 287.63817 | 284.08869 | 245.32944 | 10.67118 | 0.2670900 | 2.6328374 | 29 | 4 | 1994–2006 | 0.58 | M-v | 2 | MPC | 50746 | 2003 $DH_4$ |
| 2003 $DU_5$ | 15.3 | 0.15 | 20060922 | 350.71189 | 67.20938 | 39.15935 | 12.39684 | 0.1490816 | 2.5195718 | 72 | 5 | 1999–2006 | 0.64 | M-v | 2 | MPC | 97637 | 2003 $DU_5$ |
| 2003 $DY_5$ | 17.1 | 0.15 | 20060922 | 23.37298 | 352.35546 | 87.60076 | 1.63494 | 0.1861113 | 2.4675359 | 41 | 3 | 2002–2006 | 0.51 | M-v | 1 | MPC | 94919 | 2003 $DY_5$ |
| 2003 $DC_6$ | 16.6 | 0.15 | 20060922 | 299.61477 | 191.00490 | 353.15468 | 6.98673 | 0.1515130 | 2.5632784 | 55 | 4 | 1999–2005 | 0.54 | M-v | 1 | MPC | 89431 | 2003 $DC_6$ |
| 2003 $DK_6$ | 16.0 | 0.15 | 20060922 | 183.15305 | 120.21944 | 97.93847 | 7.78195 | 0.1616022 | 2.9746647 | 33 | 4 | 1996–2006 | 0.51 | M-v | 1 | MPC | 72744 | 2003 $DK_6$ |
| 2003 $DN_7$ | 16.7 | 0.15 | 20060922 | 36.75565 | 323.18554 | 108.41746 | 3.31466 | 0.1576046 | 2.4577839 | 41 | 2 | 2002–2005 | 0.58 | M-v | 4 | MPC | 89432 | 2003 $DN_7$ |
| 2003 $DG_8$ | 17.1 | 0.15 | 20060922 | 235.56472 | 96.81157 | 167.39367 | 2.24555 | 0.0935959 | 2.4701264 | 42 | 5 | 1999–2005 | 0.42 | M-v | 1 | MPC | 97637 | 2003 $DG_8$ |
| 2003 $DH_8$ | 16.5 | 0.15 | 20060922 | 318.52483 | 64.68018 | 147.78000 | 7.74714 | 0.1238187 | 2.3256253 | 47 | 2 | 2003–2004 | 0.43 | M-v | 3 | MPC | 69442 | 2003 $DH_8$ |
| 2003 $DU_8$ | 18.1 | 0.15 | 20060922 | 30.29781 | 312.52717 | 155.25447 | 3.49713 | 0.2479415 | 2.3408898 | 27 | 3 | 1996–2005 | 0.44 | M-v | 2 | MPC | 94920 | 2003 $DU_8$ |
| 2003 $DF_9$ | 16.7 | 0.15 | 20060922 | 314.99366 | 130.52014 | 61.70062 | 5.55878 | 0.1295028 | 2.3922143 | 42 | 3 | 1996–2006 | 0.36 | M-v | 3 | MPC | 94920 | 2003 $DF_9$ |
| 2003 $DJ_9$ | 16.7 | 0.15 | 20060922 | 269.76560 | 171.89019 | 40.97480 | 6.43862 | 0.2337978 | 2.5782978 | 37 | 3 | 2001–2005 | 0.44 | M-v | 4 | MPC | 89433 | 2003 $DJ_9$ |
| 2003 $DK_{10}$ | 16.2 | 0.15 | 20060922 | 329.57146 | 87.54951 | 11.43015 | 9.31170 | 0.2704034 | 2.7153689 | 71 | 3 | 2001–2006 | 0.56 | M-v | 1 | MPC | 50746 | 2003 $DK_{10}$ |
| 2003 $DA_{11}$ | 16.5 | 0.15 | 20060922 | 317.93037 | 110.78914 | 340.52458 | 6.84059 | 0.0509033 | 2.8776645 | 30 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 56745 | 2003 $DA_{11}$ |
| 2003 $DX_{11}$ | 16.1 | 0.15 | 20060922 | 256.04593 | 250.10581 | 340.82014 | 4.00291 | 0.1320827 | 2.5553486 | 75 | 7 | 1999–2006 | 0.50 | M-v | 1 | MPC | 90174 | 2003 $DX_{11}$ |
| 2003 $DS_{12}$ | 16.3 | 0.15 | 20060922 | 286.19709 | 331.07189 | 172.47304 | 1.65168 | 0.1531627 | 2.8152093 | 43 | 3 | 2001–2006 | 0.46 | M-v | 4 | MPC | 47310 | 2003 $DS_{12}$ |
| 2003 $DX_{12}$ | 17.0 | 0.15 | 20060922 | 318.13444 | 11.27911 | 180.86338 | 0.78104 | 0.1372564 | 2.4419007 | 76 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 02144 | 2003 $DX_{12}$ |
| 2003 $DF_{13}$ | 15.3 | 0.15 | 20060922 | 190.45152 | 54.19063 | 150.88026 | 6.01995 | 0.1174769 | 3.1605180 | 53 | 4 | 1994–2006 | 0.50 | M-v | 1 | MPC | 04252 | 2003 $DF_{13}$ |
| 2003 $DN_{13}$ | 16.1 | 0.15 | 20060922 | 273.54758 | 100.55010 | 132.07738 | 10.00260 | 0.1433919 | 2.4389701 | 59 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 97638 | 2003 $DN_{13}$ |
| 2003 $DS_{13}$ | 15.3 | 0.15 | 20060922 | 309.59572 | 187.61494 | 279.96940 | 15.21700 | 0.1775425 | 2.7743719 | 50 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 94920 | 2003 $DS_{13}$ |
| 2003 $DA_{14}$ | 16.2 | 0.15 | 20060922 | 337.29969 | 103.74063 | 88.75512 | 3.32345 | 0.1494218 | 2.3597070 | 111 | 4 | 1996–2006 | 0.56 | M-v | 2 | MPC | 97638 | 2003 $DA_{14}$ |
| 2003 $DQ_{14}$ | 15.3 | 0.15 | 20060922 | 249.91939 | 27.65828 | 118.00361 | 11.82160 | 0.2463447 | 3.0862014 | 84 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 87576 | 2003 $DQ_{14}$ |
| 2003 $DH_{15}$ | 16.3 | 0.15 | 20060922 | 306.60174 | 62.22449 | 54.69280 | 13.78291 | 0.1642990 | 2.7972093 | 60 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 75841 | 2003 $DH_{15}$ |
| 2003 $DK_{15}$ | 14.4 | 0.15 | 20060922 | 301.87485 | 56.63725 | 23.35419 | 26.50401 | 0.1193223 | 3.1003596 | 83 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 50747 | 2003 $DK_{15}$ |
| 2003 $DN_{15}$ | 16.0 | 0.15 | 20060922 | 260.42010 | 102.38971 | 122.64621 | 12.46080 | 0.1167216 | 2.5990673 | 62 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 70355 | 2003 $DN_{15}$ |
| 2003 $DO_{15}$ | 15.0 | 0.15 | 20060922 | 250.60767 | 102.14648 | 150.25738 | 27.18115 | 0.2201589 | 2.5849171 | 55 | 3 | 2000–2004 | 0.45 | M-v | 2 | MPC | 69443 | 2003 $DO_{15}$ |
| 2003 $DA_{16}$ | 17.9 | 0.15 | 20060922 | 327.57243 | 282.71715 | 159.19473 | 45.68354 | 0.6251975 | 2.5939716 | 128 | 2 | 2002–2006 | 0.57 | M-v | 1 | MPC | 04252 | 2003 $DA_{16}$ |
| 2003 $DO_{16}$ | 16.3 | 0.15 | 20060922 | 334.32218 | 294.72472 | 145.11698 | 9.85686 | 0.1275276 | 2.7523177 | 40 | 5 | 1994–2006 | 0.51 | M-v | 0 | MPC | 85926 | 2003 $DO_{16}$ |
| 2003 $DU_{16}$ | 16.0 | 0.15 | 20060922 | 341.27309 | 316.32530 | 125.10065 | 3.77228 | 0.0297565 | 2.7794174 | 34 | 5 | 2001–2006 | 0.56 | M-v | 0 | MPC | 94921 | 2003 $DU_{16}$ |
| 2003 $DY_{16}$ | 16.6 | 0.15 | 20060922 | 0.39637 | 299.93035 | 141.68755 | 5.26631 | 0.2446449 | 2.5541297 | 41 | 3 | 1997–2005 | 0.56 | M-v | 3 | MPC | 90175 | 2003 $DY_{16}$ |
| 2003 $DD_{17}$ | 15.9 | 0.15 | 20060922 | 271.84913 | 138.34586 | 343.43451 | 2.83388 | 0.1425969 | 2.9734218 | 42 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 50747 | 2003 $DD_{17}$ |
| 2003 $DE_{17}$ | 15.4 | 0.15 | 20060922 | 164.83578 | 251.88021 | 336.14071 | 7.51561 | 0.0591968 | 3.1294033 | 43 | 5 | 1994–2006 | 0.73 | M-v | 1 | MPC | 85927 | 2003 $DE_{17}$ |
| 2003 $DK_{17}$ | 15.8 | 0.15 | 20060922 | 219.76031 | 35.32610 | 138.18193 | 12.94454 | 0.0855685 | 3.1368742 | 42 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 85927 | 2003 $DK_{17}$ |
| 2003 $DT_{17}$ | 15.0 | 0.15 | 20060922 | 269.25315 | 260.06121 | 299.26320 | 9.74325 | 0.1713800 | 2.6369542 | 32 | 1 | 89 days | 0.64 | M-v | 5 | MPC | 48329 | 2003 $DT_{17}$ |
| 2003 $DB_{18}$ | 16.6 | 0.15 | 20060922 | 302.16166 | 105.47240 | 54.43248 | 3.66600 | 0.1190101 | 2.5677964 | 44 | 5 | 1995–2006 | 0.52 | M-v | 2 | MPC | 90175 | 2003 $DB_{18}$ |
| 2003 $DF_{18}$ | 15.9 | 0.15 | 20060922 | 76.88060 | 20.15041 | 6.16801 | 10.42453 | 0.2200119 | 2.4179366 | 117 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97638 | 2003 $DF_{18}$ |
| 2003 $DG_{18}$ | 16.4 | 0.15 | 20060922 | 286.48545 | 114.95617 | 96.79320 | 4.01107 | 0.1447393 | 2.4453713 | 41 | 3 | 2003–2005 | 0.52 | M-v | 3 | MPC | 89436 | 2003 $DG_{18}$ |
| 2003 $DR_{18}$ | 16.6 | 0.15 | 20060922 | 293.23592 | 168.64403 | 30.76267 | 2.06348 | 0.1226956 | 2.4538424 | 67 | 5 | 1993–2006 | 0.46 | M-v | 2 | MPC | 90175 | 2003 $DR_{18}$ |
| 2003 $DS_{18}$ | 15.0 | 0.15 | 20060922 | 310.88275 | 280.89797 | 130.34795 | 10.72627 | 0.1051567 | 3.1693858 | 29 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 04252 | 2003 $DS_{18}$ |
| 2003 $DT_{18}$ | 16.7 | 0.15 | 20060922 | 15.94235 | 308.49482 | 111.54538 | 3.20684 | 0.2220282 | 2.5663727 | 39 | 4 | 1995–2006 | 0.52 | M-v | 2 | MPC | 87576 | 2003 $DT_{18}$ |
| 2003 $DY_{18}$ | 15.2 | 0.15 | 20060922 | 256.57486 | 159.30674 | 342.88409 | 12.65302 | 0.0306333 | 2.9754644 | 26 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 03499 | 2003 $DY_{18}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $DE_{19}$ | 17.7 | 0.15 | 20060922 | 328.80977 | 272.72816 | 272.81159 | 1.30824 | 0.1785717 | 2.3963146 | 33 | 3 | 2001–2005 | 0.46 | M-v | 3 | MPC | 47315 | 2003 $DE_{19}$ |
| 2003 $DG_{19}$ | 16.9 | 0.15 | 20060922 | 295.49286 | 326.13742 | 180.33402 | 3.57863 | 0.2012082 | 2.7224813 | 25 | 4 | 1996–2006 | 0.45 | M-v | 1 | MPC | 03499 | 2003 $DG_{19}$ |
| 2003 $DO_{19}$ | 15.6 | 0.15 | 20060922 | 297.80011 | 124.00173 | 328.47738 | 9.18293 | 0.0618275 | 3.0497088 | 66 | 3 | 2001–2006 | 0.40 | M-v | 1 | MPC | 50177 | 2003 $DO_{19}$ |
| 2003 $DT_{19}$ | 15.4 | 0.15 | 20060922 | 226.84222 | 17.06095 | 165.34551 | 9.99877 | 0.1273732 | 2.9996612 | 36 | 4 | 1998–2006 | 0.58 | M-v | 2 | MPC | 87576 | 2003 $DT_{19}$ |
| 2003 $DW_{19}$ | 17.2 | 0.15 | 20060922 | 76.94082 | 85.20132 | 330.26320 | 5.93590 | 0.1054533 | 2.3848958 | 35 | 3 | 2001–2005 | 0.62 | M-v | 2 | MPC | 75841 | 2003 $DW_{19}$ |
| 2003 $DZ_{19}$ | 15.2 | 0.15 | 20060922 | 208.98121 | 14.99360 | 170.74379 | 5.28874 | 0.0524749 | 3.1014695 | 56 | 7 | 1993–2006 | 0.50 | M-v | 1 | MPC | 85929 | 2003 $DZ_{19}$ |
| 2003 $DB_{20}$ | 16.8 | 0.15 | 20060922 | 325.42661 | 217.47072 | 273.72700 | 1.61373 | 0.1625242 | 2.5988485 | 58 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90175 | 2003 $DB_{20}$ |
| 2003 $DK_{20}$ | 15.3 | 0.15 | 20060922 | 176.92652 | 71.86362 | 167.25785 | 2.02913 | 0.1719030 | 3.0612830 | 55 | 6 | 1998–2006 | 0.56 | M-v | 0 | MPC | 90175 | 2003 $DK_{20}$ |
| 2003 $DW_{20}$ | 16.9 | 0.15 | 20060922 | 357.80596 | 157.87239 | 336.33612 | 0.64610 | 0.1369074 | 2.4363354 | 81 | 3 | 2001–2005 | 0.47 | M-v | 2 | MPC | 90175 | 2003 $DW_{20}$ |
| 2003 $DY_{20}$ | 16.5 | 0.15 | 20060922 | 323.47636 | 43.51302 | 156.47237 | 2.75443 | 0.1666913 | 2.3714276 | 75 | 5 | 1992–2005 | 0.61 | M-v | 1 | MPC | 97638 | 2003 $DY_{20}$ |
| 2003 $DC_{21}$ | 16.9 | 0.15 | 20060922 | 179.03337 | 90.60366 | 343.44742 | 18.96734 | 0.0850976 | 1.9753972 | 75 | 2 | 2003–2004 | 0.54 | M-v | 3 | MPC | 69443 | 2003 $DC_{21}$ |
| 2003 $DM_{21}$ | 15.5 | 0.15 | 20060922 | 251.71409 | 156.50023 | 324.84111 | 6.04377 | 0.1536442 | 3.1826764 | 41 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 50747 | 2003 $DM_{21}$ |
| 2003 $DQ_{21}$ | 15.6 | 0.15 | 20060922 | 237.16677 | 82.92012 | 163.93564 | 13.10907 | 0.1220875 | 2.5790244 | 70 | 7 | 1996–2006 | 0.56 | M-v | 1 | MPC | 90175 | 2003 $DQ_{21}$ |
| 2003 $DK_{22}$ | 16.3 | 0.15 | 20060922 | 291.63240 | 306.69067 | 171.01184 | 6.78199 | 0.2047895 | 2.8611489 | 53 | 5 | 1994–2006 | 0.51 | M-v | 0 | MPC | 04252 | 2003 $DK_{22}$ |
| 2003 $DQ_{24}$ | 16.2 | 0.15 | 20030322 | 315.22997 | 57.36915 | 174.47675 | 6.29073 | 0.1963267 | 2.8978160 | 19 | 1 | 41 days | 0.49 | | | MPC | | 2003 $DQ_{24}$ |
| 2003 $DR_{24}$ | 16.5 | 0.15 | 20030322 | 340.26918 | 205.58793 | 346.55217 | 6.97686 | 0.0638761 | 2.3434713 | 18 | 1 | 38 days | 0.62 | | | MPC | | 2003 $DR_{24}$ |
| 2003 $DS_{24}$ | 16.6 | 0.15 | 20030322 | 60.06014 | 96.22752 | 353.75196 | 13.09836 | 0.1362130 | 2.7411961 | 17 | 1 | 31 days | 0.45 | | | MPC | | 2003 $DS_{24}$ |
| 2003 $DT_{24}$ | 16.3 | 0.15 | 20060922 | 220.61665 | 97.34935 | 120.98428 | 12.69637 | 0.3248928 | 3.0652949 | 32 | 1 | 91 days | 0.56 | M-v | 4 | MPC | | 2003 $DT_{24}$ |
| 2003 EB | 16.4 | 0.15 | 20060922 | 258.94917 | 307.74439 | 227.89937 | 8.19649 | 0.0892348 | 2.7600801 | 33 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 87576 | 2003 EB |
| 2003 EK | 16.3 | 0.15 | 20060922 | 4.99061 | 299.53451 | 343.91038 | 19.18348 | 0.0491797 | 1.8864372 | 91 | 4 | 1996–2004 | 0.56 | M-v | 2 | MPC | 74249 | 2003 EK |
| 2003 $EH_2$ | 15.4 | 0.15 | 20060922 | 213.38433 | 216.08721 | 327.56328 | 4.23605 | 0.1211226 | 3.0900914 | 75 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 87576 | 2003 $EH_2$ |
| 2003 $EZ_2$ | 16.6 | 0.15 | 20060922 | 326.89659 | 168.91939 | 6.44876 | 4.97583 | 0.1673648 | 2.3936597 | 32 | 2 | 2003–2005 | 0.39 | M-v | 4 | MPC | 89437 | 2003 $EZ_2$ |
| 2003 $EE_3$ | 15.6 | 0.15 | 20060922 | 343.62269 | 347.33944 | 90.92667 | 5.58071 | 0.0416929 | 2.7899382 | 42 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 94924 | 2003 $EE_3$ |
| 2003 $EK_3$ | 16.6 | 0.15 | 20060922 | 33.24146 | 0.79969 | 95.96358 | 4.18756 | 0.0925822 | 2.3702547 | 70 | 4 | 2000–2005 | 0.62 | M-v | 2 | MPC | 97639 | 2003 $EK_3$ |
| 2003 $EN_3$ | 16.4 | 0.15 | 20060922 | 299.20662 | 113.71870 | 50.01407 | 4.18470 | 0.1103439 | 2.6028294 | 55 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 90175 | 2003 $EN_3$ |
| 2003 $ES_3$ | 16.1 | 0.15 | 20060922 | 182.91170 | 96.34202 | 163.63028 | 3.45675 | 0.0383421 | 2.7482324 | 50 | 4 | 1994–2005 | 0.51 | M-v | 1 | MPC | 04252 | 2003 $ES_3$ |
| 2003 $EH_5$ | 16.3 | 0.15 | 20060922 | 248.36321 | 12.33986 | 199.51407 | 1.69159 | 0.1352865 | 2.6713606 | 73 | 7 | 1999–2006 | 0.50 | M-v | 1 | MPC | 94924 | 2003 $EH_5$ |
| 2003 $EM_5$ | 16.9 | 0.15 | 20060922 | 323.26586 | 269.88495 | 273.82573 | 1.29050 | 0.1241984 | 2.3981820 | 36 | 4 | 2001–2005 | 0.44 | M-v | 1 | MPC | 97639 | 2003 $EM_5$ |
| 2003 $ER_5$ | 16.5 | 0.15 | 20060922 | 357.77146 | 358.97786 | 171.66234 | 4.18787 | 0.1696258 | 2.3359617 | 75 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 97639 | 2003 $ER_5$ |
| 2003 $ES_5$ | 15.0 | 0.15 | 20060922 | 216.07960 | 206.43587 | 341.92405 | 7.10976 | 0.1511088 | 3.1717390 | 37 | 4 | 1994–2006 | 0.43 | M-v | 1 | MPC | 04252 | 2003 $ES_5$ |
| 2003 $EG_6$ | 16.1 | 0.15 | 20060922 | 276.68737 | 178.14126 | 20.19419 | 6.35819 | 0.1126594 | 2.5757448 | 56 | 6 | 1997–2005 | 0.57 | M-v | 1 | MPC | 90176 | 2003 $EG_6$ |
| 2003 $ER_6$ | 16.9 | 0.15 | 20060922 | 340.10989 | 274.47901 | 199.86634 | 4.00883 | 0.2080265 | 2.5854418 | 43 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 85934 | 2003 $ER_6$ |
| 2003 $EZ_6$ | 15.1 | 0.15 | 20060922 | 167.24278 | 265.80271 | 327.37081 | 12.64707 | 0.1127237 | 3.1755069 | 35 | 3 | 1999–2005 | 0.58 | M-v | 2 | MPC | 89438 | 2003 $EZ_6$ |
| 2003 $EF_7$ | 15.6 | 0.15 | 20060922 | 133.54754 | 3.37748 | 310.50768 | 4.11353 | 0.0379998 | 2.7157329 | 41 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 85934 | 2003 $EF_7$ |
| 2003 $EV_7$ | 14.9 | 0.15 | 20060922 | 351.77817 | 117.76287 | 297.53616 | 8.08884 | 0.0184486 | 2.9636525 | 47 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90176 | 2003 $EV_7$ |
| 2003 $EX_7$ | 14.8 | 0.15 | 20060922 | 148.33112 | 301.62223 | 309.91263 | 10.02034 | 0.0842040 | 3.1247955 | 46 | 3 | 2003–2006 | 0.55 | M-v | 2 | MPC | 85935 | 2003 $EX_7$ |
| 2003 $EC_8$ | 14.7 | 0.15 | 20060922 | 242.62262 | 315.59913 | 173.22647 | 15.55418 | 0.0742532 | 3.2297609 | 41 | 5 | 1994–2006 | 0.55 | M-v | 0 | MPC | 04252 | 2003 $EC_8$ |
| 2003 $EC_9$ | 15.8 | 0.15 | 20060922 | 261.98574 | 254.58047 | 327.24541 | 10.95879 | 0.0822341 | 2.5400046 | 49 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 94925 | 2003 $EC_9$ |
| 2003 $EN_{10}$ | 15.0 | 0.15 | 20060922 | 225.43475 | 288.07010 | 242.76841 | 3.75841 | 0.1348921 | 3.1494180 | 56 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 85937 | 2003 $EN_{10}$ |
| 2003 $EF_{11}$ | 16.6 | 0.15 | 20060922 | 2.74381 | 341.18120 | 210.94363 | 2.64333 | 0.2359696 | 2.2751732 | 97 | 3 | 2001–2004 | 0.57 | M-v | 2 | MPC | 50748 | 2003 $EF_{11}$ |
| 2003 $EL_{11}$ | 17.3 | 0.15 | 20060922 | 335.84956 | 291.87590 | 205.40722 | 4.93337 | 0.1910166 | 2.5302125 | 38 | 4 | 1999–2005 | 0.35 | M-v | 2 | MPC | 90176 | 2003 $EL_{11}$ |
| 2003 $EP_{11}$ | 16.0 | 0.15 | 20060922 | 329.60798 | 284.53508 | 207.40797 | 3.94485 | 0.1565277 | 2.6087671 | 56 | 5 | 1999–2006 | 0.60 | M-v | 2 | MPC | 90176 | 2003 $EP_{11}$ |
| 2003 $EA_{12}$ | 15.7 | 0.15 | 20060922 | 292.27303 | 239.19879 | 318.77476 | 3.99566 | 0.2072835 | 2.5851088 | 44 | 3 | 1999–2006 | 0.67 | M-v | 4 | MPC | 85938 | 2003 $EA_{12}$ |
| 2003 $EE_{12}$ | 15.4 | 0.15 | 20060922 | 278.83571 | 305.53545 | 162.52507 | 13.36257 | 0.1081091 | 3.1217865 | 53 | 5 | 1998–2006 | 0.57 | M-v | 0 | MPC | 69448 | 2003 $EE_{12}$ |
| 2003 $EC_{13}$ | 16.6 | 0.15 | 20060922 | 307.11915 | 236.00862 | 306.58858 | 3.89139 | 0.2067344 | 2.5568096 | 34 | 3 | 2000–2006 | 0.49 | M-v | 4 | MPC | 75844 | 2003 $EC_{13}$ |
| 2003 $EE_{13}$ | 17.3 | 0.15 | 20060922 | 35.73933 | 313.78095 | 156.48836 | 2.73119 | 0.1169802 | 2.3238324 | 37 | 2 | 2002–2005 | 0.46 | M-v | 4 | MPC | 89439 | 2003 $EE_{13}$ |
| 2003 $EN_{13}$ | 17.3 | 0.15 | 20060922 | 314.62242 | 237.59975 | 275.61341 | 2.51488 | 0.1866406 | 2.5566313 | 30 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 00418 | 2003 $EN_{13}$ |
| 2003 $EA_{14}$ | 16.3 | 0.15 | 20060922 | 341.78496 | 316.80568 | 162.02549 | 4.40599 | 0.1175771 | 2.6128413 | 45 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87577 | 2003 $EA_{14}$ |
| 2003 $EH_{14}$ | 15.9 | 0.15 | 20060922 | 197.54508 | 141.27290 | 123.87004 | 12.49088 | 0.0501727 | 2.6100326 | 39 | 5 | 2000–2006 | 0.59 | M-v | 0 | MPC | 97639 | 2003 $EH_{14}$ |
| 2003 $EW_{14}$ | 15.4 | 0.15 | 20060922 | 197.78359 | 93.71129 | 99.64571 | 5.12089 | 0.1116634 | 3.1600592 | 41 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 87577 | 2003 $EW_{14}$ |
| 2003 $ED_{15}$ | 14.6 | 0.15 | 20060922 | 202.08107 | 199.53443 | 326.67730 | 22.54504 | 0.1025322 | 3.1710102 | 41 | 4 | 1992–2006 | 0.72 | M-v | 1 | MPC | 87577 | 2003 $ED_{15}$ |
| 2003 $EL_{15}$ | 14.7 | 0.15 | 20060922 | 190.24215 | 261.67787 | 315.60179 | 10.09366 | 0.0096271 | 3.0391118 | 45 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 85939 | 2003 $EL_{15}$ |
| 2003 $ER_{15}$ | 17.2 | 0.15 | 20060922 | 346.33462 | 257.19865 | 267.99253 | 3.82624 | 0.1817801 | 2.4042007 | 40 | 3 | 1998–2005 | 0.66 | M-v | 3 | MPC | 00418 | 2003 $ER_{15}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $EA_{16}$ | 16.6 | 0.15 | 20060922 | 76.34229 | 12.85848 | 81.32820 | 5.75314 | 0.0914520 | 2.2397173 | 38 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 94927 | 2003 $EA_{16}$ |
| 2003 $EG_{18}$ | 15.6 | 0.15 | 20060922 | 162.68170 | 118.89361 | 122.26580 | 2.50514 | 0.1017388 | 3.1009663 | 45 | 6 | 1995–2006 | 0.63 | M-v | 0 | MPC | 85940 | 2003 $EG_{18}$ |
| 2003 $ES_{18}$ | 17.2 | 0.15 | 20060922 | 302.21100 | 301.67379 | 269.74448 | 0.50613 | 0.1271006 | 2.4101467 | 33 | 4 | 2001–2005 | 0.44 | M-v | 1 | MPC | 56745 | 2003 $ES_{18}$ |
| 2003 $EV_{19}$ | 16.9 | 0.15 | 20060922 | 350.18179 | 197.95874 | 312.39448 | 2.13146 | 0.1691500 | 2.4157125 | 54 | 2 | 2003–2005 | 0.44 | M-v | 4 | MPC | 89439 | 2003 $EV_{19}$ |
| 2003 $EW_{19}$ | 16.1 | 0.15 | 20060922 | 232.58411 | 353.20315 | 181.78097 | 5.58275 | 0.2192389 | 3.0579800 | 81 | 6 | 1998–2006 | 0.60 | M-v | 1 | MPC | 87577 | 2003 $EW_{19}$ |
| 2003 $EF_{21}$ | 15.1 | 0.15 | 20060922 | 189.10407 | 61.54986 | 172.22155 | 9.18595 | 0.1601583 | 3.0902322 | 61 | 6 | 1992–2006 | 0.55 | M-v | 1 | MPC | 04253 | 2003 $EF_{21}$ |
| 2003 $EG_{21}$ | 15.1 | 0.15 | 20060922 | 315.29817 | 115.95996 | 350.62708 | 9.38338 | 0.0099625 | 2.9736388 | 70 | 5 | 1995–2005 | 0.55 | M-v | 1 | MPC | 90176 | 2003 $EG_{21}$ |
| 2003 $EM_{21}$ | 15.7 | 0.15 | 20060922 | 312.73764 | 333.12760 | 177.16996 | 12.98989 | 0.1254636 | 2.6454183 | 89 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 87577 | 2003 $EM_{21}$ |
| 2003 $ET_{21}$ | 16.3 | 0.15 | 20060922 | 0.87359 | 312.24857 | 133.56822 | 4.82726 | 0.1021743 | 2.6513779 | 48 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 02145 | 2003 $ET_{21}$ |
| 2003 $EU_{21}$ | 15.6 | 0.15 | 20060922 | 249.36586 | 5.19611 | 140.21998 | 5.30621 | 0.0893756 | 3.0941099 | 34 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 85942 | 2003 $EU_{21}$ |
| 2003 $EX_{21}$ | 15.3 | 0.15 | 20060922 | 239.18805 | 9.55575 | 151.02066 | 13.94959 | 0.2011708 | 3.0717729 | 69 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 85942 | 2003 $EX_{21}$ |
| 2003 $ED_{22}$ | 15.7 | 0.15 | 20060922 | 315.64588 | 298.33466 | 179.61608 | 7.73986 | 0.3331366 | 2.6798754 | 81 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 50750 | 2003 $ED_{22}$ |
| 2003 $EA_{23}$ | 15.3 | 0.15 | 20060922 | 230.98283 | 106.11193 | 119.37049 | 4.98456 | 0.1392453 | 2.8004944 | 85 | 6 | 2000–2006 | 0.58 | M-v | 1 | MPC | 90177 | 2003 $EA_{23}$ |
| 2003 $EK_{23}$ | 15.4 | 0.15 | 20060922 | 257.48046 | 83.28864 | 116.90013 | 5.73513 | 0.0570438 | 2.7424935 | 52 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87577 | 2003 $EK_{23}$ |
| 2003 $EK_{24}$ | 16.6 | 0.15 | 20060922 | 359.62701 | 10.39817 | 103.61850 | 2.75869 | 0.1511567 | 2.5426050 | 59 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 97640 | 2003 $EK_{24}$ |
| 2003 $EO_{24}$ | 16.0 | 0.15 | 20060922 | 271.21302 | 139.58587 | 78.02720 | 4.69719 | 0.1368206 | 2.5919570 | 56 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 02145 | 2003 $EO_{24}$ |
| 2003 $EW_{24}$ | 16.3 | 0.15 | 20060922 | 281.96676 | 7.50924 | 178.68499 | 14.29712 | 0.1793317 | 2.6517568 | 57 | 5 | 1996–2003 | 0.65 | M-v | 1 | MPC | 50750 | 2003 $EW_{24}$ |
| 2003 $EA_{25}$ | 15.7 | 0.15 | 20060922 | 213.97527 | 102.76978 | 91.59882 | 4.97403 | 0.2212928 | 3.1239327 | 49 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 65460 | 2003 $EA_{25}$ |
| 2003 $EH_{25}$ | 15.8 | 0.15 | 20060922 | 242.29611 | 76.36556 | 120.13256 | 9.07653 | 0.1594401 | 2.8941424 | 32 | 4 | 2003–2006 | 0.47 | M-v | 1 | MPC | 90177 | 2003 $EH_{25}$ |
| 2003 $EM_{25}$ | 15.9 | 0.15 | 20060922 | 239.92662 | 200.74051 | 16.49579 | 9.69924 | 0.1504264 | 2.7894147 | 68 | 5 | 1996–2005 | 0.48 | M-v | 1 | MPC | 89441 | 2003 $EM_{25}$ |
| 2003 $ER_{25}$ | 16.8 | 0.15 | 20060922 | 265.74225 | 125.58394 | 83.72935 | 2.93892 | 0.1370313 | 2.6584455 | 65 | 4 | 2000–2006 | 0.48 | M-v | 2 | MPC | 97640 | 2003 $ER_{25}$ |
| 2003 $EB_{26}$ | 16.9 | 0.15 | 20060922 | 331.74887 | 58.02891 | 116.98498 | 3.34916 | 0.1502004 | 2.4307043 | 44 | 2 | 2003–2005 | 0.56 | M-v | 3 | MPC | 89441 | 2003 $EB_{26}$ |
| 2003 $EC_{26}$ | 15.8 | 0.15 | 20060922 | 241.78498 | 83.31874 | 117.22538 | 3.52897 | 0.1884845 | 2.8625495 | 61 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87577 | 2003 $EC_{26}$ |
| 2003 $EK_{26}$ | 16.5 | 0.15 | 20060922 | 330.94414 | 0.19636 | 136.27001 | 4.90196 | 0.1191354 | 2.5921515 | 54 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 90177 | 2003 $EK_{26}$ |
| 2003 $EO_{26}$ | 15.3 | 0.15 | 20060922 | 194.92424 | 223.04709 | 348.96136 | 6.68881 | 0.1935791 | 3.1818876 | 68 | 4 | 1997–2006 | 0.57 | M-v | 2 | MPC | 03500 | 2003 $EO_{26}$ |
| 2003 $EP_{26}$ | 16.3 | 0.15 | 20060922 | 267.39542 | 140.04301 | 351.26541 | 5.50077 | 0.1429821 | 3.0523146 | 52 | 4 | 1992–2006 | 0.57 | M-v | 0 | MPC | 75846 | 2003 $EP_{26}$ |
| 2003 $EA_{29}$ | 14.8 | 0.15 | 20060922 | 241.24958 | 12.54060 | 152.78429 | 5.53206 | 0.0803781 | 3.1160535 | 77 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 85949 | 2003 $EA_{29}$ |
| 2003 $EE_{29}$ | 15.6 | 0.15 | 20060922 | 329.42254 | 30.75596 | 90.09672 | 5.19200 | 0.1455438 | 2.7015813 | 58 | 5 | 1994–2006 | 0.64 | M-v | 1 | MPC | 87578 | 2003 $EE_{29}$ |
| 2003 $EM_{29}$ | 16.7 | 0.15 | 20060922 | 353.59368 | 150.77124 | 35.86762 | 3.63264 | 0.1652303 | 2.3233227 | 56 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 04253 | 2003 $EM_{29}$ |
| 2003 $EW_{29}$ | 17.2 | 0.15 | 20060922 | 348.16177 | 311.51329 | 158.51991 | 4.20481 | 0.1296970 | 2.5466549 | 35 | 4 | 1995–2006 | 0.51 | M-v | 3 | MPC | 90177 | 2003 $EW_{29}$ |
| 2003 $EH_{30}$ | 16.5 | 0.15 | 20060922 | 255.25240 | 249.82201 | 329.78295 | 10.80706 | 0.1385897 | 2.6238585 | 26 | 4 | 1996–2004 | 0.53 | M-v | 2 | MPC | 66307 | 2003 $EH_{30}$ |
| 2003 $EO_{30}$ | 17.0 | 0.15 | 20060922 | 168.80792 | 297.37051 | 165.70888 | 23.80197 | 0.0655443 | 1.9307728 | 64 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 02145 | 2003 $EO_{30}$ |
| 2003 $EB_{31}$ | 16.3 | 0.15 | 20060922 | 229.07246 | 272.86473 | 358.71168 | 5.82030 | 0.1796435 | 2.5536829 | 58 | 7 | 1995–2005 | 0.63 | M-v | 0 | MPC | 69453 | 2003 $EB_{31}$ |
| 2003 $EQ_{31}$ | 15.6 | 0.15 | 20060922 | 263.71050 | 57.37340 | 209.70084 | 5.80301 | 0.2517380 | 2.3675175 | 81 | 4 | 1996–2005 | 0.56 | M-v | 1 | MPC | 97640 | 2003 $EQ_{31}$ |
| 2003 $EV_{31}$ | 15.3 | 0.15 | 20060922 | 227.39289 | 258.07014 | 312.62724 | 8.75267 | 0.1096629 | 2.7939212 | 33 | 3 | 2000–2005 | 0.60 | M-v | 3 | MPC | 00420 | 2003 $EV_{31}$ |
| 2003 $EY_{31}$ | 16.4 | 0.15 | 20060922 | 220.58991 | 74.16936 | 170.73624 | 12.10555 | 0.1197564 | 2.6529190 | 33 | 4 | 1999–2005 | 0.61 | M-v | 1 | MPC | 89441 | 2003 $EY_{31}$ |
| 2003 $EJ_{32}$ | 15.5 | 0.15 | 20060922 | 176.75378 | 50.85637 | 168.62171 | 5.77252 | 0.0694514 | 3.1571883 | 51 | 5 | 1995–2006 | 0.43 | M-v | 0 | MPC | 94932 | 2003 $EJ_{32}$ |
| 2003 $EK_{32}$ | 16.6 | 0.15 | 20060922 | 328.46177 | 208.09610 | 299.63357 | 3.11965 | 0.1117562 | 2.5447096 | 44 | 4 | 2001–2006 | 0.45 | M-v | 2 | MPC | 85950 | 2003 $EK_{32}$ |
| 2003 $ET_{32}$ | 17.2 | 0.15 | 20060922 | 331.59183 | 207.16590 | 338.01075 | 1.78868 | 0.1534918 | 2.4001589 | 54 | 4 | 1998–2005 | 0.54 | M-v | 1 | MPC | 97641 | 2003 $ET_{32}$ |
| 2003 $EV_{32}$ | 17.0 | 0.15 | 20060922 | 312.23288 | 25.48544 | 166.43700 | 12.19657 | 0.1237759 | 2.4653326 | 33 | 2 | 1999–2003 | 0.50 | M-v | 3 | MPC | 47357 | 2003 $EV_{32}$ |
| 2003 $EY_{32}$ | 15.4 | 0.15 | 20060922 | 188.03456 | 47.04669 | 165.12868 | 9.84583 | 0.0357332 | 3.1776943 | 57 | 4 | 2003–2006 | 0.56 | M-v | 1 | MPC | 85951 | 2003 $EY_{32}$ |
| 2003 $EH_{33}$ | 17.1 | 0.15 | 20060922 | 284.33001 | 116.71601 | 161.05898 | 4.98202 | 0.1713770 | 2.2858467 | 33 | 4 | 1996–2006 | 0.74 | M-v | 1 | MPC | 97641 | 2003 $EH_{33}$ |
| 2003 $EL_{33}$ | 15.9 | 0.15 | 20060922 | 323.02011 | 326.76587 | 152.17595 | 4.31938 | 0.0472416 | 2.8070974 | 41 | 3 | 2001–2005 | 0.59 | M-v | 2 | MPC | 90177 | 2003 $EL_{33}$ |
| 2003 $EP_{34}$ | 15.6 | 0.15 | 20060922 | 0.13223 | 277.51267 | 176.80454 | 15.04534 | 0.0704343 | 2.6417317 | 68 | 3 | 2001–2005 | 0.60 | M-v | 2 | MPC | 02145 | 2003 $EP_{34}$ |
| 2003 $EV_{34}$ | 15.3 | 0.15 | 20060922 | 241.21511 | 296.13636 | 319.50169 | 8.49164 | 0.1735459 | 2.6253078 | 53 | 5 | 1991–2006 | 0.54 | M-v | 1 | MPC | 69455 | 2003 $EV_{34}$ |
| 2003 $EC_{35}$ | 16.2 | 0.15 | 20060922 | 331.21951 | 203.55188 | 289.33111 | 4.03714 | 0.2019218 | 2.6038344 | 47 | 4 | 2001–2006 | 0.66 | M-v | 2 | MPC | 03500 | 2003 $EC_{35}$ |
| 2003 $EY_{35}$ | 15.7 | 0.15 | 20060922 | 238.32936 | 63.65964 | 95.49732 | 2.35225 | 0.0947961 | 3.1560370 | 36 | 5 | 2000–2006 | 0.34 | M-v | 0 | MPC | 89442 | 2003 $EY_{35}$ |
| 2003 $EZ_{35}$ | 15.6 | 0.15 | 20060922 | 245.81586 | 127.59345 | 151.60559 | 7.60717 | 0.1065259 | 2.4082020 | 77 | 5 | 1996–2004 | 0.49 | M-v | 1 | MPC | 70356 | 2003 $EZ_{35}$ |
| 2003 $EJ_{36}$ | 16.8 | 0.15 | 20060922 | 242.77785 | 194.79800 | 20.33973 | 1.58336 | 0.1581800 | 2.7680420 | 65 | 6 | 1994–2006 | 0.51 | M-v | 1 | MPC | 04253 | 2003 $EJ_{36}$ |
| 2003 $EL_{36}$ | 16.1 | 0.15 | 20060922 | 60.30105 | 250.07868 | 157.12322 | 9.12570 | 0.0521042 | 2.5899125 | 27 | 3 | 2001–2005 | 0.71 | M-v | 4 | MPC | 00420 | 2003 $EL_{36}$ |
| 2003 $EP_{36}$ | 16.4 | 0.15 | 20060922 | 287.99965 | 19.72525 | 145.45952 | 2.92607 | 0.0533143 | 2.6985104 | 46 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 90178 | 2003 $EP_{36}$ |
| 2003 $EW_{36}$ | 15.4 | 0.15 | 20060922 | 342.93591 | 352.49076 | 80.11411 | 14.28009 | 0.1817427 | 2.7379598 | 80 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 50179 | 2003 $EW_{36}$ |
| 2003 $EB_{37}$ | 15.3 | 0.15 | 20060922 | 241.83958 | 117.82506 | 88.12149 | 13.48671 | 0.1725563 | 2.7749491 | 42 | 3 | 1999–2003 | 0.59 | M-v | 3 | MPC | 50751 | 2003 $EB_{37}$ |

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| 2003 $ED_{37}$ | 15.7 | 0.15 | 20060922 | 300.92284 | 108.32358 | 65.04499 | 14.05894 | 0.0844305 | 2.5496578 | 46 | 4 | 1999–2005 | 0.68 | M-v | 3 | MPC | 89443 | 2003 $ED_{37}$ |
| 2003 $EF_{37}$ | 14.7 | 0.15 | 20060922 | 224.84241 | 66.48563 | 117.34268 | 20.85969 | 0.1653027 | 3.0958348 | 46 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 50751 | 2003 $EF_{37}$ |
| 2003 $EM_{37}$ | 16.0 | 0.15 | 20060922 | 319.81553 | 53.11218 | 77.07838 | 13.60878 | 0.0886381 | 2.6819174 | 37 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 02145 | 2003 $EM_{37}$ |
| 2003 $EO_{37}$ | 15.4 | 0.15 | 20060922 | 224.85919 | 150.74102 | 112.24035 | 16.88925 | 0.2022800 | 2.6412926 | 41 | 3 | 2003–2006 | 0.48 | M-v | 2 | MPC | 70356 | 2003 $EO_{37}$ |
| 2003 $EU_{37}$ | 15.4 | 0.15 | 20060922 | 193.28599 | 50.32829 | 166.29878 | 16.33743 | 0.1786485 | 3.1344108 | 97 | 5 | 1998–2006 | 0.41 | M-v | 0 | MPC | 85953 | 2003 $EU_{37}$ |
| 2003 $ER_{38}$ | 15.5 | 0.15 | 20060922 | 268.67991 | 286.77476 | 259.06660 | 11.57531 | 0.0987588 | 2.7067237 | 33 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 03500 | 2003 $ER_{38}$ |
| 2003 $EL_{39}$ | 15.5 | 0.15 | 20060922 | 250.57587 | 17.40397 | 122.17885 | 16.23339 | 0.2268963 | 3.1557377 | 32 | 4 | 1996–2003 | 0.59 | M-v | 0 | MPC | 47364 | 2003 $EL_{39}$ |
| 2003 $ER_{39}$ | 15.4 | 0.15 | 20060922 | 279.39353 | 117.79124 | 56.15746 | 15.45818 | 0.0539436 | 2.7159727 | 50 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90178 | 2003 $ER_{39}$ |
| 2003 $EU_{39}$ | 16.0 | 0.15 | 20060922 | 296.91282 | 83.41652 | 95.30654 | 12.73228 | 0.1392201 | 2.6036346 | 45 | 3 | 1995–2006 | 0.60 | M-v | 4 | MPC | 47365 | 2003 $EU_{39}$ |
| 2003 $EV_{39}$ | 14.8 | 0.15 | 20060922 | 208.98249 | 134.53702 | 64.68804 | 15.18950 | 0.0976933 | 3.1024457 | 37 | 4 | 1998–2006 | 0.46 | M-v | 1 | MPC | 47365 | 2003 $EV_{39}$ |
| 2003 $EX_{41}$ | 16.4 | 0.15 | 20060922 | 254.78541 | 213.50818 | 26.56880 | 6.70487 | 0.0783826 | 2.4569095 | 25 | 3 | 2001–2005 | 0.30 | M-v | 3 | MPC | 89443 | 2003 $EX_{41}$ |
| 2003 $EP_{42}$ | 15.9 | 0.15 | 20060922 | 48.88811 | 321.44810 | 54.78405 | 10.60715 | 0.0316937 | 3.0866745 | 26 | 4 | 2002–2006 | 0.42 | M-v | 0 | MPC | 00421 | 2003 $EP_{42}$ |
| 2003 $EQ_{43}$ | 16.7 | 0.15 | 20060922 | 335.81985 | 275.56678 | 180.98871 | 27.18494 | 0.4119364 | 2.5890389 | 54 | 3 | 1999–2006 | 0.57 | M-v | 1 | MPC | 72747 | 2003 $EQ_{43}$ |
| 2003 $EW_{43}$ | 15.4 | 0.15 | 20060922 | 255.02811 | 11.67608 | 154.28429 | 6.25283 | 0.1611921 | 2.9928960 | 73 | 5 | 1995–2006 | 0.63 | M-v | 1 | MPC | 04253 | 2003 $EW_{43}$ |
| 2003 $EO_{45}$ | 15.5 | 0.15 | 20060922 | 247.27536 | 174.42010 | 345.66098 | 11.91823 | 0.0260080 | 3.1305436 | 24 | 3 | 2003–2006 | 0.59 | M-v | 4 | MPC | 85957 | 2003 $EO_{45}$ |
| 2003 $EG_{46}$ | 16.8 | 0.15 | 20060922 | 282.71865 | 177.57096 | 16.75223 | 7.96788 | 0.1318973 | 2.6167095 | 23 | 3 | 1999–2005 | 0.46 | M-v | 3 | MPC | 94935 | 2003 $EG_{46}$ |
| 2003 $EB_{47}$ | 14.8 | 0.15 | 20060922 | 236.82905 | 314.16579 | 270.20602 | 9.06236 | 0.3254851 | 2.8922782 | 82 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 70356 | 2003 $EB_{47}$ |
| 2003 $EC_{47}$ | 15.9 | 0.15 | 20060922 | 307.22233 | 318.28537 | 225.23998 | 12.00210 | 0.2173475 | 2.5709953 | 60 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 89444 | 2003 $EC_{47}$ |
| 2003 $EO_{47}$ | 15.7 | 0.15 | 20060922 | 345.57949 | 231.62668 | 232.17620 | 4.73920 | 0.2733616 | 2.5690219 | 83 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 90178 | 2003 $EO_{47}$ |
| 2003 $EP_{47}$ | 16.6 | 0.15 | 20060922 | 333.82144 | 280.12407 | 205.84182 | 6.98327 | 0.1483546 | 2.5587128 | 65 | 5 | 1997–2005 | 0.57 | M-v | 1 | MPC | 90178 | 2003 $EP_{47}$ |
| 2003 $EK_{48}$ | 15.4 | 0.15 | 20060922 | 331.69960 | 324.20030 | 169.48272 | 15.68154 | 0.1570357 | 2.6268033 | 69 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90178 | 2003 $EK_{48}$ |
| 2003 $EA_{49}$ | 15.8 | 0.15 | 20060922 | 214.94685 | 198.28678 | 78.87512 | 3.31632 | 0.1731833 | 2.6490972 | 62 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 97641 | 2003 $EA_{49}$ |
| 2003 $ET_{49}$ | 16.0 | 0.15 | 20060922 | 10.15068 | 80.64720 | 359.53061 | 21.95523 | 0.0544998 | 2.6640040 | 63 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 90178 | 2003 $ET_{49}$ |
| 2003 $EW_{49}$ | 17.6 | 0.15 | 20060922 | 338.69426 | 91.78613 | 112.41619 | 6.13587 | 0.1335426 | 2.2866672 | 25 | 3 | 2001–2005 | 0.58 | M-v | 3 | MPC | 89444 | 2003 $EW_{49}$ |
| 2003 $EP_{50}$ | 16.2 | 0.15 | 20060922 | 255.46130 | 286.07583 | 355.71316 | 10.23967 | 0.1627780 | 2.3578250 | 72 | 3 | 1996–2004 | 0.56 | M-v | 2 | MPC | 74250 | 2003 $EP_{50}$ |
| 2003 $ET_{50}$ | 17.0 | 0.15 | 20060922 | 223.63618 | 77.12746 | 156.04032 | 5.42410 | 0.0506705 | 2.7177691 | 27 | 4 | 1994–2005 | 0.28 | M-v | 0 | MPC | 04253 | 2003 $ET_{50}$ |
| 2003 $EU_{51}$ | 16.3 | 0.15 | 20060922 | 3.33443 | 233.22345 | 208.65474 | 12.23694 | 0.1503817 | 2.5587043 | 31 | 4 | 2001–2006 | 0.44 | M-v | 0 | MPC | 66307 | 2003 $EU_{51}$ |
| 2003 $EJ_{52}$ | 15.9 | 0.15 | 20060922 | 322.38573 | 301.13030 | 156.10727 | 10.81483 | 0.0544513 | 2.9638503 | 36 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 85961 | 2003 $EJ_{52}$ |
| 2003 $EF_{53}$ | 15.2 | 0.15 | 20060922 | 204.61071 | 168.78014 | 85.00808 | 9.86585 | 0.2554297 | 2.8701420 | 87 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 70356 | 2003 $EF_{53}$ |
| 2003 $EP_{53}$ | 15.2 | 0.15 | 20060922 | 248.84517 | 113.39699 | 141.06059 | 13.29485 | 0.2320613 | 2.6736101 | 67 | 2 | 2003–2004 | 0.69 | M-v | 3 | MPC | 69459 | 2003 $EP_{53}$ |
| 2003 $EY_{53}$ | 15.6 | 0.15 | 20060922 | 256.70443 | 322.58658 | 183.52789 | 30.09610 | 0.3998813 | 3.1289596 | 46 | 4 | 1995–2006 | 0.63 | M-v | 1 | MPC | 65467 | 2003 $EY_{53}$ |
| 2003 $EB_{54}$ | 17.2 | 0.15 | 20060922 | 6.85020 | 304.84868 | 205.22523 | 22.77461 | 0.3000558 | 2.3342282 | 69 | 4 | 1996–2005 | 0.56 | M-v | 1 | MPC | 90178 | 2003 $EB_{54}$ |
| 2003 $EA_{55}$ | 15.2 | 0.15 | 20060922 | 165.42039 | 137.24011 | 82.25129 | 10.97142 | 0.0268186 | 3.0611407 | 32 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 66307 | 2003 $EA_{55}$ |
| 2003 $EZ_{55}$ | 14.8 | 0.15 | 20060922 | 105.60398 | 216.04382 | 75.96660 | 11.43355 | 0.0761620 | 3.4541638 | 37 | 4 | 2000–2006 | 0.36 | M-v | 0 | MPC | 85962 | 2003 $EZ_{55}$ |
| 2003 $EE_{57}$ | 16.2 | 0.15 | 20060922 | 325.64213 | 46.06663 | 86.85611 | 14.22713 | 0.2057456 | 2.6869558 | 38 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 50752 | 2003 $EE_{57}$ |
| 2003 $EF_{57}$ | 15.7 | 0.15 | 20060922 | 359.07538 | 53.37512 | 155.02060 | 23.49338 | 0.1974985 | 2.2613456 | 58 | 1 | 137 days | 0.54 | M-v | 3 | MPC | 50752 | 2003 $EF_{57}$ |
| 2003 $EG_{57}$ | 16.1 | 0.15 | 20060922 | 278.71664 | 106.71593 | 129.22001 | 12.68633 | 0.2352666 | 2.5537502 | 56 | 3 | 1999–2006 | 0.63 | M-v | 3 | MPC | 85962 | 2003 $EG_{57}$ |
| 2003 $EO_{57}$ | 15.1 | 0.15 | 20060922 | 315.64939 | 38.31369 | 97.83310 | 13.86371 | 0.2432260 | 2.6223761 | 75 | 4 | 1995–2006 | 0.53 | M-v | 2 | MPC | 85962 | 2003 $EO_{57}$ |
| 2003 $EV_{57}$ | 13.8 | 0.15 | 20060922 | 173.60698 | 132.76124 | 105.75310 | 17.49000 | 0.1667239 | 3.1405000 | 48 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 87578 | 2003 $EV_{57}$ |
| 2003 $EK_{58}$ | 14.7 | 0.15 | 20060922 | 262.41036 | 272.65719 | 231.15119 | 17.93564 | 0.1156233 | 3.1671242 | 74 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 87578 | 2003 $EK_{58}$ |
| 2003 $EV_{58}$ | 17.0 | 0.15 | 20060922 | 335.02624 | 129.03725 | 73.63173 | 5.14997 | 0.1470438 | 2.3353155 | 51 | 3 | 1996–2006 | 0.54 | M-v | 2 | MPC | 94939 | 2003 $EV_{58}$ |
| 2003 $EO_{59}$ | 14.6 | 0.15 | 20060922 | 345.54529 | 128.49559 | 326.10975 | 13.10020 | 0.1680539 | 2.7635293 | 68 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 87578 | 2003 $EO_{59}$ |
| 2003 $EJ_{60}$ | 16.1 | 0.15 | 20060922 | 257.41537 | 69.43385 | 162.24735 | 13.35626 | 0.2131726 | 2.6684068 | 88 | 4 | 1995–2004 | 0.74 | M-v | 1 | MPC | 85964 | 2003 $EJ_{60}$ |
| 2003 $EL_{60}$ | 16.0 | 0.15 | 20060922 | 305.03226 | 48.08220 | 130.65126 | 4.06280 | 0.1421318 | 2.5491208 | 62 | 5 | 1995–2006 | 0.55 | M-v | 2 | MPC | 87579 | 2003 $EL_{60}$ |
| 2003 $EQ_{60}$ | 15.2 | 0.15 | 20060922 | 262.56750 | 196.31394 | 20.10341 | 11.12778 | 0.1223519 | 2.6332587 | 85 | 5 | 1992–2005 | 0.63 | M-v | 2 | MPC | 04253 | 2003 $EQ_{60}$ |
| 2003 $EG_{62}$ | 16.8 | 0.15 | 20030322 | 30.84993 | 52.86069 | 87.30693 | 8.49208 | 0.2351719 | 2.7131118 | 27 | 1 | 33 days | 0.63 | | | MPC | | 2003 $EG_{62}$ |
| 2003 $EH_{62}$ | 17.2 | 0.15 | 20030322 | 42.87534 | 119.17037 | 351.67571 | 12.90265 | 0.1415575 | 2.6577672 | 12 | 1 | 29 days | 0.56 | | | MPC | | 2003 $EH_{62}$ |
| 2003 $EJ_{62}$ | 16.2 | 0.15 | 20030322 | 26.98793 | 266.08943 | 241.50688 | 11.63555 | 0.2087612 | 2.6933185 | 18 | 1 | 34 days | 0.55 | | | MPC | | 2003 $EJ_{62}$ |
| 2003 $EK_{62}$ | 16.4 | 0.15 | 20060922 | 295.30086 | 77.19700 | 118.23201 | 13.84207 | 0.2095255 | 2.6735000 | 22 | 1 | 62 days | 0.41 | M-v | 4 | MPC | | 2003 $EK_{62}$ |
| 2003 $EL_{62}$ | 15.9 | 0.15 | 20030322 | 262.02305 | 115.86545 | 167.30249 | 11.14728 | 0.1181257 | 2.7156283 | 15 | 1 | 33 days | 0.29 | | | MPC | | 2003 $EL_{62}$ |
| 2003 $EM_{62}$ | 14.7 | 0.15 | 20030322 | 284.46048 | 109.77285 | 170.09299 | 25.66792 | 0.2303740 | 3.1867297 | 18 | 1 | 27 days | 0.74 | | | MPC | | 2003 $EM_{62}$ |
| 2003 $EN_{62}$ | 16.4 | 0.15 | 20030322 | 4.41634 | 37.71925 | 146.54431 | 10.21451 | 0.0706112 | 2.5350439 | 21 | 1 | 31 days | 0.61 | | | MPC | | 2003 $EN_{62}$ |
| 2003 $EO_{62}$ | 16.4 | 0.15 | 20030411 | 3.17859 | 47.26704 | 155.84703 | 14.16477 | 0.1394113 | 2.4474024 | 16 | 1 | 59 days | 0.34 | | | MPC | | 2003 $EO_{62}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $EP_{62}$ | 18.6 | 0.15 | 20030411 | 356.26939 | 13.91098 | 181.35892 | 1.71151 | 0.1482820 | 2.4196887 | 15 | 1 | 49 days | 0.41 | | | MPC | | 2003 $EP_{62}$ |
| 2003 $ER_{62}$ | 16.3 | 0.15 | 20030322 | 12.12075 | 101.43239 | 60.48911 | 9.06117 | 0.1711865 | 2.7731238 | 12 | 1 | 19 days | 0.40 | | | MPC | | 2003 $ER_{62}$ |
| 2003 FE | 13.5 | 0.15 | 20060922 | 186.30579 | 96.15010 | 132.96938 | 26.59214 | 0.1449228 | 3.1791571 | 64 | 7 | 1993–2006 | 0.71 | M-v | 1 | MPC | 87579 | 2003 FE |
| 2003 FV | 16.1 | 0.15 | 20060922 | 69.47627 | 38.76724 | 73.38389 | 24.78777 | 0.2156136 | 2.2017146 | 55 | 2 | 2003–2006 | 0.61 | M-v | 3 | MPC | 94939 | 2003 FV |
| 2003 $FT_2$ | 14.5 | 0.15 | 20060922 | 225.23595 | 337.56993 | 217.06120 | 22.29999 | 0.0669466 | 3.0856687 | 48 | 7 | 1995–2006 | 0.63 | M-v | 1 | MPC | 87579 | 2003 $FT_2$ |
| 2003 $FB_3$ | 17.4 | 0.15 | 20060922 | 47.79755 | 142.63749 | 129.22110 | 23.30674 | 0.0742195 | 1.8772986 | 26 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03500 | 2003 $FB_3$ |
| 2003 $FR_4$ | 15.7 | 0.15 | 20060922 | 317.12411 | 80.50004 | 68.14626 | 26.85807 | 0.2461339 | 2.6571183 | 50 | 5 | 1997–2006 | 0.61 | M-v | 1 | MPC | 85967 | 2003 $FR_4$ |
| 2003 $FU_4$ | 16.4 | 0.15 | 20060922 | 120.51212 | 240.60111 | 103.13863 | 7.01622 | 0.0721290 | 2.6639402 | 41 | 6 | 1997–2006 | 0.51 | M-v | 1 | MPC | 94941 | 2003 $FU_4$ |
| 2003 $FW_4$ | 16.1 | 0.15 | 20060922 | 201.20372 | 69.10542 | 133.13670 | 10.47364 | 0.1038802 | 3.1652391 | 27 | 3 | 1997–2003 | 0.28 | M-v | 3 | MPC | 47393 | 2003 $FW_4$ |
| 2003 $FY_4$ | 15.5 | 0.15 | 20060922 | 243.94453 | 344.59092 | 181.22784 | 18.73671 | 0.0640929 | 3.1495473 | 60 | 5 | 1998–2006 | 0.60 | M-v | 0 | MPC | 87579 | 2003 $FY_4$ |
| 2003 $FV_5$ | 14.3 | 0.15 | 20060922 | 85.89124 | 77.36687 | 228.82657 | 5.64873 | 0.0470194 | 3.4688075 | 106 | 6 | 1999–2006 | 0.49 | M-v | 0 | MPC | 85967 | 2003 $FV_5$ |
| 2003 $FO_6$ | 16.8 | 0.15 | 20060922 | 306.62708 | 155.75169 | 76.06100 | 8.04798 | 0.0709856 | 2.3554952 | 40 | 4 | 1996–2005 | 0.49 | M-v | 2 | MPC | 94941 | 2003 $FO_6$ |
| 2003 $FR_6$ | 19.2 | 0.15 | 20060922 | 53.06407 | 72.51906 | 186.15134 | 40.56163 | 0.3975219 | 1.9873041 | 77 | 2 | 2003–2006 | 0.55 | M-v | 2 | MPC | 03501 | 2003 $FR_6$ |
| 2003 $FO_7$ | 16.0 | 0.15 | 20060922 | 302.08426 | 295.42346 | 180.30324 | 4.60235 | 0.1283742 | 2.9417379 | 54 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 00423 | 2003 $FO_7$ |
| 2003 $FP_7$ | 16.1 | 0.15 | 20060922 | 254.07022 | 344.06408 | 179.55241 | 5.47137 | 0.0350616 | 3.0368447 | 41 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 94942 | 2003 $FP_7$ |
| 2003 $FE_8$ | 14.2 | 0.15 | 20060922 | 233.79734 | 57.53736 | 147.35086 | 23.70401 | 0.1535506 | 3.1000361 | 75 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 70357 | 2003 $FE_8$ |
| 2003 $FX_8$ | 14.3 | 0.15 | 20060922 | 185.12108 | 340.62799 | 259.95747 | 24.00008 | 0.2850791 | 3.1905593 | 54 | 6 | 1998–2006 | 0.60 | M-v | 0 | MPC | 90179 | 2003 $FX_8$ |
| 2003 $FJ_{11}$ | 16.5 | 0.15 | 20060922 | 228.37239 | 18.10970 | 220.24432 | 2.36289 | 0.0988832 | 2.7424448 | 33 | 3 | 1996–2005 | 0.32 | M-v | 4 | MPC | 97642 | 2003 $FJ_{11}$ |
| 2003 $FN_{11}$ | 16.3 | 0.15 | 20060922 | 316.31419 | 52.75845 | 52.14764 | 1.86620 | 0.0666030 | 2.9861515 | 44 | 5 | 1995–2006 | 0.34 | M-v | 0 | MPC | 87579 | 2003 $FN_{11}$ |
| 2003 $FV_{11}$ | 15.7 | 0.15 | 20060922 | 130.53478 | 0.60109 | 320.39604 | 1.06168 | 0.0756037 | 2.8804038 | 71 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 90179 | 2003 $FV_{11}$ |
| 2003 $FZ_{11}$ | 15.7 | 0.15 | 20060922 | 124.98443 | 63.47335 | 258.71627 | 1.06168 | 0.1193399 | 2.9493088 | 70 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 97642 | 2003 $FZ_{11}$ |
| 2003 $FD_{12}$ | 16.2 | 0.15 | 20060922 | 265.89716 | 303.92193 | 250.90019 | 1.43286 | 0.0104623 | 2.7921054 | 53 | 3 | 1996–2005 | 0.64 | M-v | 4 | MPC | 89447 | 2003 $FD_{12}$ |
| 2003 $FP_{12}$ | 15.5 | 0.15 | 20060922 | 213.83574 | 69.45068 | 129.58936 | 10.55613 | 0.0070782 | 2.9894903 | 33 | 6 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87579 | 2003 $FP_{12}$ |
| 2003 $FR_{12}$ | 14.6 | 0.15 | 20060922 | 230.48825 | 226.61130 | 4.82403 | 22.47314 | 0.0211986 | 2.6507620 | 113 | 3 | 2003–2006 | 0.54 | M-v | 2 | MPC | 97642 | 2003 $FR_{12}$ |
| 2003 $FG_{15}$ | 15.4 | 0.15 | 20060922 | 261.26277 | 165.31348 | 357.61517 | 12.21908 | 0.1212690 | 2.9865007 | 36 | 4 | 1995–2006 | 0.66 | M-v | 1 | MPC | 85969 | 2003 $FG_{15}$ |
| 2003 $FH_{15}$ | 17.2 | 0.15 | 20060922 | 338.23388 | 5.63996 | 204.46568 | 4.82381 | 0.1231316 | 2.3120857 | 35 | 3 | 2001–2004 | 0.65 | M-v | 3 | MPC | 47401 | 2003 $FH_{15}$ |
| 2003 $FF_{17}$ | 15.8 | 0.15 | 20060922 | 96.37382 | 277.62060 | 56.01238 | 2.83687 | 0.0265789 | 2.9057187 | 58 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 90179 | 2003 $FF_{17}$ |
| 2003 $FR_{17}$ | 17.4 | 0.15 | 20060922 | 67.75289 | 131.61872 | 346.49175 | 5.31759 | 0.0894125 | 2.2348993 | 41 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 94943 | 2003 $FR_{17}$ |
| 2003 $FD_{20}$ | 15.7 | 0.15 | 20060922 | 332.16818 | 81.75214 | 24.79734 | 13.05499 | 0.2236092 | 2.6491093 | 48 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 50754 | 2003 $FD_{20}$ |
| 2003 $FJ_{21}$ | 15.1 | 0.15 | 20060922 | 306.54558 | 105.30715 | 53.06713 | 9.96264 | 0.0840624 | 2.8106826 | 79 | 7 | 1991–2006 | 0.58 | M-v | 1 | MPC | 90179 | 2003 $FJ_{21}$ |
| 2003 $FK_{21}$ | 17.0 | 0.15 | 20060922 | 280.89594 | 68.44508 | 171.27820 | 11.56510 | 0.1446185 | 2.5503063 | 32 | 3 | 2000–2004 | 0.61 | M-v | 3 | MPC | 69467 | 2003 $FK_{21}$ |
| 2003 $FT_{22}$ | 15.0 | 0.15 | 20060922 | 239.13888 | 145.06010 | 4.44345 | 27.80894 | 0.1234826 | 3.1311416 | 45 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 89448 | 2003 $FT_{22}$ |
| 2003 $FZ_{24}$ | 15.5 | 0.15 | 20060922 | 153.94651 | 250.09136 | 7.57654 | 4.92911 | 0.1863135 | 3.2311557 | 39 | 3 | 2003–2006 | 0.40 | M-v | 3 | MPC | 90179 | 2003 $FZ_{24}$ |
| 2003 $FK_{25}$ | 16.7 | 0.15 | 20060922 | 303.39404 | 328.32474 | 171.20813 | 8.87331 | 0.1394447 | 2.7553316 | 30 | 2 | 2003–2005 | 0.46 | M-v | 4 | MPC | 03501 | 2003 $FK_{25}$ |
| 2003 $FS_{25}$ | 16.7 | 0.15 | 20060922 | 259.74340 | 271.53680 | 352.68101 | 0.77251 | 0.1629199 | 2.4429544 | 58 | 4 | 1999–2006 | 0.71 | M-v | 1 | MPC | 74251 | 2003 $FS_{25}$ |
| 2003 $FL_{26}$ | 15.9 | 0.15 | 20060922 | 252.64996 | 354.48067 | 152.29740 | 3.78870 | 0.1805876 | 3.1314017 | 51 | 6 | 1992–2006 | 0.53 | M-v | 1 | MPC | 85973 | 2003 $FL_{26}$ |
| 2003 $FT_{26}$ | 15.9 | 0.15 | 20060922 | 245.08238 | 5.68796 | 159.71150 | 1.90357 | 0.1312011 | 3.0946676 | 45 | 6 | 1992–2006 | 0.43 | M-v | 1 | MPC | 87579 | 2003 $FT_{26}$ |
| 2003 $FW_{26}$ | 16.1 | 0.15 | 20060922 | 189.61429 | 260.80771 | 12.49368 | 6.55329 | 0.0567745 | 2.7712367 | 35 | 3 | 2000–2005 | 0.53 | M-v | 2 | MPC | 90179 | 2003 $FW_{26}$ |
| 2003 $FZ_{26}$ | 16.1 | 0.15 | 20060922 | 28.77977 | 254.40482 | 189.14320 | 13.77263 | 0.0597125 | 2.6254034 | 63 | 5 | 1992–2005 | 0.62 | M-v | 1 | MPC | 04253 | 2003 $FZ_{26}$ |
| 2003 $FK_{27}$ | 16.5 | 0.15 | 20060922 | 265.44323 | 242.32638 | 319.46801 | 1.02006 | 0.0460265 | 2.7121315 | 50 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97643 | 2003 $FK_{27}$ |
| 2003 $FM_{27}$ | 15.9 | 0.15 | 20060922 | 323.33748 | 248.98988 | 194.28988 | 10.07330 | 0.0864668 | 3.0871284 | 32 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 87579 | 2003 $FM_{27}$ |
| 2003 $FV_{27}$ | 18.1 | 0.15 | 20060922 | 258.34958 | 65.54631 | 212.70865 | 4.87662 | 0.2069891 | 2.4463758 | 23 | 3 | 2000–2004 | 0.36 | M-v | 2 | MPC | 72748 | 2003 $FV_{27}$ |
| 2003 $FB_{28}$ | 16.0 | 0.15 | 20060922 | 209.00204 | 308.33133 | 271.12619 | 2.13422 | 0.1384530 | 3.0560933 | 38 | 3 | 2003–2006 | 0.43 | M-v | 3 | MPC | 89448 | 2003 $FB_{28}$ |
| 2003 $FK_{28}$ | 13.3 | 0.15 | 20060922 | 90.15981 | 205.58012 | 89.49722 | 10.59075 | 0.2452312 | 3.9470273 | 81 | 3 | 2003–2006 | 0.52 | M-v | 2 | MPC | 97643 | 2003 $FK_{28}$ |
| 2003 $FE_{31}$ | 15.3 | 0.15 | 20060922 | 172.39684 | 142.90582 | 43.64306 | 10.47182 | 0.0135431 | 3.5066251 | 39 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 47411 | 2003 $FE_{31}$ |
| 2003 $FG_{31}$ | 15.6 | 0.15 | 20060922 | 94.64673 | 152.51049 | 178.82249 | 4.81332 | 0.0704756 | 3.0590061 | 73 | 4 | 1995–2006 | 0.46 | M-v | 0 | MPC | 97643 | 2003 $FG_{31}$ |
| 2003 $FN_{31}$ | 15.7 | 0.15 | 20060922 | 240.45655 | 354.52125 | 181.16788 | 10.36213 | 0.0313543 | 3.1018301 | 39 | 4 | 1992–2006 | 0.48 | M-v | 1 | MPC | 97643 | 2003 $FN_{31}$ |
| 2003 $FP_{31}$ | 16.1 | 0.15 | 20060922 | 192.96699 | 40.29138 | 178.62100 | 5.31818 | 0.0689027 | 3.1864811 | 39 | 3 | 2003–2006 | 0.36 | M-v | 3 | MPC | 85975 | 2003 $FP_{31}$ |
| 2003 $FG_{32}$ | 17.4 | 0.15 | 20060922 | 352.18108 | 28.93950 | 169.88020 | 5.53938 | 0.1094222 | 2.2887522 | 31 | 3 | 1996–2004 | 0.66 | M-v | 4 | MPC | 69470 | 2003 $FG_{32}$ |
| 2003 $FN_{32}$ | 15.9 | 0.15 | 20060922 | 251.81528 | 101.12129 | 55.70948 | 2.22817 | 0.1045699 | 3.1187857 | 46 | 6 | 1995–2006 | 0.46 | M-v | 0 | MPC | 89449 | 2003 $FN_{32}$ |
| 2003 $FW_{33}$ | 16.7 | 0.15 | 20060922 | 189.74629 | 271.21430 | 30.55210 | 6.55793 | 0.1450617 | 2.6639156 | 25 | 3 | 2003–2005 | 0.58 | M-v | 3 | MPC | 85976 | 2003 $FW_{33}$ |
| 2003 $FY_{33}$ | 16.7 | 0.15 | 20060922 | 293.12662 | 293.25414 | 172.92603 | 1.76171 | 0.1838076 | 3.0724634 | 34 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 00424 | 2003 $FY_{33}$ |
| 2003 $FB_{34}$ | 15.9 | 0.15 | 20060922 | 32.15893 | 68.08046 | 10.06855 | 2.13634 | 0.0353356 | 2.6687507 | 85 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 97643 | 2003 $FB_{34}$ |

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| 2003 $FD_{34}$ | 15.0 | 0.15 | 20060922 | 12.74803 | 210.79747 | 179.30665 | 8.57514 | 0.0153461 | 3.2206449 | 47 | 4 | 2003–2006 | 0.53 | M-v | 1 | MPC | 03501 | 2003 $FD_{34}$ |
| 2003 $FE_{34}$ | 17.6 | 0.15 | 20060922 | 41.88242 | 308.49190 | 163.86385 | 1.98758 | 0.1701149 | 2.3615504 | 31 | 2 | 2003–2005 | 0.33 | M-v | 4 | MPC | 89450 | 2003 $FE_{34}$ |
| 2003 $FV_{34}$ | 15.9 | 0.15 | 20060922 | 311.06505 | 135.98807 | 23.97237 | 2.37569 | 0.0253629 | 2.6869488 | 52 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97644 | 2003 $FV_{34}$ |
| 2003 $FP_{35}$ | 15.6 | 0.15 | 20060922 | 107.63211 | 158.71752 | 175.57998 | 1.76695 | 0.1625145 | 2.9791216 | 93 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 97644 | 2003 $FP_{35}$ |
| 2003 $FC_{36}$ | 16.1 | 0.15 | 20060922 | 92.25760 | 156.93795 | 185.07874 | 9.87014 | 0.0478549 | 2.9769250 | 42 | 3 | 1995–2005 | 0.33 | M-v | 3 | MPC | 97644 | 2003 $FC_{36}$ |
| 2003 $FW_{37}$ | 16.6 | 0.15 | 20060922 | 258.69580 | 295.86444 | 219.87290 | 1.39669 | 0.2234593 | 3.0265100 | 43 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 75850 | 2003 $FW_{37}$ |
| 2003 $FO_{39}$ | 16.4 | 0.15 | 20060922 | 127.45260 | 333.05935 | 336.83509 | 1.53192 | 0.0783539 | 3.0117022 | 34 | 3 | 2002–2005 | 0.47 | M-v | 3 | MPC | 89450 | 2003 $FO_{39}$ |
| 2003 $FZ_{40}$ | 16.0 | 0.15 | 20060922 | 326.09453 | 96.02475 | 16.74233 | 10.49237 | 0.0262181 | 2.7740978 | 45 | 4 | 1996–2005 | 0.53 | M-v | 1 | MPC | 97644 | 2003 $FZ_{40}$ |
| 2003 $FM_{41}$ | 15.3 | 0.15 | 20060922 | 233.00456 | 264.74791 | 14.36162 | 14.59091 | 0.1294937 | 2.4544686 | 70 | 3 | 2001–2004 | 0.52 | M-v | 2 | MPC | 70357 | 2003 $FM_{41}$ |
| 2003 $FS_{41}$ | 15.0 | 0.15 | 20060922 | 218.55252 | 115.09101 | 67.68011 | 6.80191 | 0.0821419 | 3.2153578 | 98 | 6 | 1997–2006 | 0.48 | M-v | 1 | MPC | 85979 | 2003 $FS_{41}$ |
| 2003 $FW_{41}$ | 15.8 | 0.15 | 20060922 | 254.20630 | 83.73240 | 103.08276 | 4.77454 | 0.1486005 | 2.9128418 | 69 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 70357 | 2003 $FW_{41}$ |
| 2003 $FQ_{42}$ | 16.2 | 0.15 | 20060922 | 286.21566 | 94.46354 | 165.45920 | 5.92877 | 0.1126915 | 2.3289482 | 69 | 4 | 1996–2004 | 0.71 | M-v | 1 | MPC | 75851 | 2003 $FQ_{42}$ |
| 2003 $FX_{42}$ | 15.3 | 0.15 | 20060922 | 266.26626 | 207.38347 | 5.47694 | 11.17682 | 0.1559965 | 2.6965320 | 68 | 5 | 1994–2005 | 0.66 | M-v | 2 | MPC | 90180 | 2003 $FX_{42}$ |
| 2003 $FO_{43}$ | 15.9 | 0.15 | 20060922 | 260.80820 | 193.15445 | 348.89683 | 0.93669 | 0.0552610 | 2.9335941 | 35 | 2 | 2003–2005 | 0.32 | M-v | 4 | MPC | 90180 | 2003 $FO_{43}$ |
| 2003 $FR_{43}$ | 13.2 | 0.15 | 20060922 | 112.15285 | 171.49652 | 19.45030 | 10.88837 | 0.0478623 | 5.2048241 | 28 | 3 | 1997–2003 | 0.47 | M-v | 2 | MPC | 85980 | 2003 $FR_{43}$ |
| 2003 $FS_{43}$ | 15.7 | 0.15 | 20060922 | 213.62758 | 202.55961 | 19.78476 | 3.03537 | 0.0605885 | 3.0396415 | 56 | 7 | 1997–2006 | 0.49 | M-v | 0 | MPC | 90180 | 2003 $FS_{43}$ |
| 2003 $FT_{43}$ | 15.3 | 0.15 | 20060922 | 137.76464 | 259.85284 | 24.86835 | 5.05957 | 0.0955754 | 3.2482820 | 62 | 4 | 2002–2006 | 0.50 | M-v | 0 | MPC | 97644 | 2003 $FT_{43}$ |
| 2003 $FG_{44}$ | 15.8 | 0.15 | 20060922 | 201.72818 | 13.17525 | 206.70174 | 2.83158 | 0.1752477 | 3.1485567 | 39 | 6 | 1993–2006 | 0.43 | M-v | 0 | MPC | 87579 | 2003 $FG_{44}$ |
| 2003 $FK_{44}$ | 16.8 | 0.15 | 20060922 | 246.73604 | 214.14996 | 345.14256 | 6.17470 | 0.0045576 | 2.8653456 | 27 | 3 | 2000–2005 | 0.51 | M-v | 3 | MPC | 90180 | 2003 $FK_{44}$ |
| 2003 $FX_{44}$ | 16.6 | 0.15 | 20060922 | 322.31514 | 92.04306 | 13.89928 | 5.19864 | 0.1820698 | 2.7774925 | 30 | 4 | 1994–2006 | 0.38 | M-v | 1 | MPC | 04254 | 2003 $FX_{44}$ |
| 2003 $FJ_{45}$ | 16.9 | 0.15 | 20060922 | 299.96333 | 38.21396 | 157.41794 | 3.36093 | 0.1797339 | 2.5511321 | 76 | 6 | 1999–2006 | 0.63 | M-v | 1 | MPC | 90180 | 2003 $FJ_{45}$ |
| 2003 $FK_{45}$ | 16.2 | 0.15 | 20060922 | 247.84868 | 180.96711 | 7.39586 | 16.71734 | 0.1314956 | 2.9212426 | 32 | 3 | 1998–2005 | 0.67 | M-v | 3 | MPC | 02146 | 2003 $FK_{45}$ |
| 2003 $FO_{45}$ | 16.1 | 0.15 | 20060922 | 163.76976 | 291.31537 | 345.39322 | 3.73530 | 0.1253387 | 3.0105664 | 32 | 3 | 2003–2005 | 0.64 | M-v | 4 | MPC | 94950 | 2003 $FO_{45}$ |
| 2003 $FV_{45}$ | 15.6 | 0.15 | 20060922 | 249.20982 | 141.87017 | 21.93993 | 8.22113 | 0.1411921 | 3.0941963 | 50 | 3 | 1995–2006 | 0.47 | M-v | 3 | MPC | 47418 | 2003 $FV_{45}$ |
| 2003 $FD_{46}$ | 16.4 | 0.15 | 20060922 | 235.52687 | 227.87717 | 18.20757 | 11.67806 | 0.1236329 | 2.7119226 | 45 | 3 | 1996–2003 | 0.57 | M-v | 2 | MPC | 47418 | 2003 $FD_{46}$ |
| 2003 $FQ_{46}$ | 15.9 | 0.15 | 20060922 | 155.02145 | 124.67331 | 145.71823 | 1.53785 | 0.0984846 | 3.1487497 | 44 | 5 | 1994–2005 | 0.46 | M-v | 0 | MPC | 04254 | 2003 $FQ_{46}$ |
| 2003 $FW_{46}$ | 16.4 | 0.15 | 20060922 | 212.62626 | 190.90422 | 31.52411 | 1.97525 | 0.0370412 | 2.9922850 | 41 | 4 | 2000–2006 | 0.35 | M-v | 1 | MPC | 90180 | 2003 $FW_{46}$ |
| 2003 $FL_{47}$ | 17.4 | 0.15 | 20060922 | 303.90681 | 38.19174 | 192.55145 | 0.71745 | 0.1428585 | 2.4119202 | 43 | 3 | 1999–2004 | 0.56 | M-v | 3 | MPC | 62443 | 2003 $FL_{47}$ |
| 2003 $FT_{47}$ | 16.5 | 0.15 | 20060922 | 39.55840 | 84.26734 | 351.84477 | 4.58022 | 0.0744074 | 2.6386939 | 40 | 4 | 1996–2005 | 0.70 | M-v | 1 | MPC | 90180 | 2003 $FT_{47}$ |
| 2003 $FN_{48}$ | 15.9 | 0.15 | 20060922 | 204.83312 | 25.84878 | 206.53517 | 3.60746 | 0.0531822 | 3.0220572 | 56 | 6 | 1997–2006 | 0.46 | M-v | 0 | MPC | 90180 | 2003 $FN_{48}$ |
| 2003 $FC_{49}$ | 16.1 | 0.15 | 20060922 | 289.72456 | 72.25914 | 132.23961 | 12.37142 | 0.0884818 | 2.5930120 | 36 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 90180 | 2003 $FC_{49}$ |
| 2003 $FX_{49}$ | 15.5 | 0.15 | 20060922 | 251.04201 | 120.35015 | 145.48293 | 14.07299 | 0.1869684 | 2.5832175 | 52 | 3 | 2003–2006 | 0.59 | M-v | 2 | MPC | 69473 | 2003 $FX_{49}$ |
| 2003 $FC_{50}$ | 16.0 | 0.15 | 20060922 | 356.50936 | 342.03476 | 142.85751 | 13.43301 | 0.2129531 | 2.5572499 | 46 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 85982 | 2003 $FC_{50}$ |
| 2003 $FD_{51}$ | 15.8 | 0.15 | 20060922 | 234.46578 | 76.80641 | 90.16394 | 2.52624 | 0.0846128 | 3.0736926 | 58 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 85982 | 2003 $FD_{51}$ |
| 2003 $FG_{51}$ | 16.5 | 0.15 | 20060922 | 202.43006 | 177.69838 | 79.34425 | 4.62266 | 0.0487840 | 2.6877245 | 29 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 94951 | 2003 $FG_{51}$ |
| 2003 $FZ_{51}$ | 15.8 | 0.15 | 20060922 | 277.12247 | 161.95534 | 98.44703 | 8.05390 | 0.2025183 | 2.4081188 | 45 | 5 | 2000–2005 | 0.69 | M-v | 1 | MPC | 74252 | 2003 $FZ_{51}$ |
| 2003 $FX_{52}$ | 15.0 | 0.15 | 20060922 | 293.06410 | 347.01051 | 141.97646 | 12.82958 | 0.0450582 | 3.0008392 | 47 | 5 | 1998–2006 | 0.70 | M-v | 1 | MPC | 97644 | 2003 $FX_{52}$ |
| 2003 $FL_{53}$ | 15.3 | 0.15 | 20060922 | 266.50130 | 37.17644 | 110.64029 | 10.26190 | 0.1702498 | 3.0281392 | 51 | 4 | 1992–2006 | 0.63 | M-v | 2 | MPC | 04254 | 2003 $FL_{53}$ |
| 2003 $FL_{55}$ | 15.5 | 0.15 | 20060922 | 185.00657 | 243.40914 | 339.27357 | 10.20760 | 0.0836001 | 3.1009263 | 45 | 5 | 1992–2006 | 0.52 | M-v | 1 | MPC | 87580 | 2003 $FL_{55}$ |
| 2003 $FT_{55}$ | 14.8 | 0.15 | 20060922 | 120.13342 | 289.86312 | 350.77582 | 9.85265 | 0.1055209 | 3.1949157 | 70 | 3 | 2003–2006 | 0.65 | M-v | 3 | MPC | 04254 | 2003 $FT_{55}$ |
| 2003 $FO_{56}$ | 16.1 | 0.15 | 20060922 | 206.63061 | 116.38251 | 104.53635 | 2.29382 | 0.0312523 | 2.9243962 | 45 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 90180 | 2003 $FO_{56}$ |
| 2003 $FZ_{56}$ | 15.7 | 0.15 | 20060922 | 175.33862 | 274.72364 | 332.53814 | 2.26601 | 0.0864969 | 3.0307784 | 26 | 4 | 1998–2006 | 0.49 | M-v | 1 | MPC | 00426 | 2003 $FZ_{56}$ |
| 2003 $FC_{57}$ | 16.5 | 0.15 | 20060922 | 277.49969 | 323.95283 | 160.09037 | 10.58180 | 0.2004033 | 2.9933077 | 53 | 4 | 1995–2006 | 0.45 | M-v | 0 | MPC | 75852 | 2003 $FC_{57}$ |
| 2003 $FC_{58}$ | 15.1 | 0.15 | 20060922 | 212.59379 | 182.82908 | 15.23512 | 15.34348 | 0.1963081 | 3.1872611 | 59 | 5 | 1994–2005 | 0.64 | M-v | 1 | MPC | 89454 | 2003 $FC_{58}$ |
| 2003 $FH_{59}$ | 16.0 | 0.15 | 20060922 | 349.79645 | 324.71392 | 122.59296 | 4.21468 | 0.1524855 | 2.7778456 | 37 | 3 | 2001–2005 | 0.55 | M-v | 3 | MPC | 94953 | 2003 $FH_{59}$ |
| 2003 $FE_{61}$ | 14.5 | 0.15 | 20060922 | 339.34320 | 268.43530 | 156.06782 | 10.11884 | 0.0924012 | 3.1110869 | 59 | 5 | 2000–2006 | 0.66 | M-v | 1 | MPC | 87580 | 2003 $FE_{61}$ |
| 2003 $FF_{61}$ | 16.3 | 0.15 | 20060922 | 316.29331 | 68.58971 | 110.86919 | 4.00192 | 0.1122654 | 2.5285143 | 41 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 90181 | 2003 $FF_{61}$ |
| 2003 $FO_{61}$ | 16.2 | 0.15 | 20060922 | 331.73860 | 13.34002 | 135.17914 | 5.78401 | 0.1236956 | 2.5789821 | 64 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 90181 | 2003 $FO_{61}$ |
| 2003 $FU_{61}$ | 16.3 | 0.15 | 20060922 | 236.82669 | 212.96582 | 34.22314 | 9.15538 | 0.2391310 | 2.7335412 | 41 | 4 | 2000–2005 | 0.63 | M-v | 1 | MPC | 89454 | 2003 $FU_{61}$ |
| 2003 $FA_{62}$ | 15.7 | 0.15 | 20060922 | 287.95667 | 86.22939 | 19.80415 | 14.63940 | 0.2175935 | 3.0743927 | 38 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 47434 | 2003 $FA_{62}$ |
| 2003 $FF_{62}$ | 15.4 | 0.15 | 20060922 | 265.74935 | 70.75162 | 59.21177 | 6.46800 | 0.1294227 | 3.1708137 | 50 | 5 | 1997–2006 | 0.59 | M-v | 0 | MPC | 47435 | 2003 $FF_{62}$ |
| 2003 $FH_{63}$ | 14.7 | 0.15 | 20060922 | 20.28579 | 220.75122 | 167.17158 | 10.38578 | 0.0506984 | 3.1759520 | 45 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 85989 | 2003 $FH_{63}$ |
| 2003 $FO_{64}$ | 15.4 | 0.15 | 20060922 | 272.12330 | 140.15711 | 45.70426 | 6.45815 | 0.0685541 | 2.7846672 | 66 | 6 | 1991–2005 | 0.59 | M-v | 1 | MPC | 04254 | 2003 $FO_{64}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $FE_{65}$ | 16.2 | 0.15 | 20060922 | 244.49852 | 65.63888 | 159.19270 | 9.61308 | 0.1375789 | 2.7722423 | 35 | 3 | 1995–2004 | 0.55 | M-v | 3 | MPC | 89455 | 2003 $FE_{65}$ |
| 2003 $FO_{65}$ | 17.5 | 0.15 | 20060922 | 322.95028 | 104.94567 | 122.75748 | 5.68388 | 0.1827686 | 2.3413807 | 41 | 5 | 1992–2005 | 0.55 | M-v | 1 | MPC | 04254 | 2003 $FO_{65}$ |
| 2003 $FT_{66}$ | 15.2 | 0.15 | 20060922 | 120.05617 | 224.95607 | 69.91032 | 8.17509 | 0.0139834 | 3.1536109 | 44 | 5 | 1998–2006 | 0.46 | M-v | 0 | MPC | 03501 | 2003 $FT_{66}$ |
| 2003 $FX_{66}$ | 16.5 | 0.15 | 20060922 | 291.95703 | 205.77941 | 58.67730 | 4.18193 | 0.1810774 | 2.3556105 | 50 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97645 | 2003 $FX_{66}$ |
| 2003 $FM_{67}$ | 15.0 | 0.15 | 20060922 | 265.66160 | 359.04718 | 157.53384 | 9.21931 | 0.0553149 | 3.0582351 | 49 | 6 | 1992–2006 | 0.63 | M-v | 1 | MPC | 87580 | 2003 $FM_{67}$ |
| 2003 $FB_{68}$ | 15.9 | 0.15 | 20060922 | 70.92456 | 275.10705 | 113.18872 | 6.01954 | 0.0716420 | 2.7748152 | 49 | 5 | 1993–2006 | 0.45 | M-v | 1 | MPC | 02146 | 2003 $FB_{68}$ |
| 2003 $FC_{68}$ | 16.2 | 0.15 | 20060922 | 155.23766 | 180.87706 | 141.53287 | 5.89745 | 0.0681376 | 2.7140620 | 48 | 6 | 1999–2006 | 0.57 | M-v | 0 | MPC | 90181 | 2003 $FC_{68}$ |
| 2003 $FF_{68}$ | 15.5 | 0.15 | 20060922 | 303.31783 | 79.34331 | 25.79025 | 17.49866 | 0.1058767 | 3.1001801 | 25 | 3 | 2000–2006 | 0.54 | M-v | 1 | MPC | 94955 | 2003 $FF_{68}$ |
| 2003 $FM_{68}$ | 14.9 | 0.15 | 20060922 | 304.68756 | 67.49960 | 41.93215 | 8.69036 | 0.0548125 | 3.1129112 | 49 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 47439 | 2003 $FM_{68}$ |
| 2003 $FN_{68}$ | 16.0 | 0.15 | 20060922 | 113.69759 | 312.79231 | 45.91082 | 11.50847 | 0.0793090 | 2.7168458 | 68 | 4 | 1996–2005 | 0.47 | M-v | 1 | MPC | 97646 | 2003 $FN_{68}$ |
| 2003 $FK_{69}$ | 15.8 | 0.15 | 20060922 | 138.97968 | 203.79886 | 124.64833 | 6.25386 | 0.0092539 | 2.7493889 | 55 | 7 | 1991–2006 | 0.52 | M-v | 0 | MPC | 04254 | 2003 $FK_{69}$ |
| 2003 $FM_{69}$ | 15.8 | 0.15 | 20060922 | 243.93149 | 245.48985 | 52.40787 | 8.22250 | 0.1696645 | 2.4277270 | 43 | 3 | 2000–2004 | 0.67 | M-v | 2 | MPC | 72749 | 2003 $FM_{69}$ |
| 2003 $FO_{69}$ | 16.4 | 0.15 | 20060922 | 299.92184 | 64.02972 | 136.33764 | 4.94373 | 0.1121857 | 2.5568502 | 52 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 97646 | 2003 $FO_{69}$ |
| 2003 $FP_{69}$ | 17.4 | 0.15 | 20060922 | 335.33923 | 25.38184 | 132.27303 | 6.26287 | 0.1589020 | 2.5342285 | 29 | 4 | 1999–2004 | 0.59 | M-v | 3 | MPC | 72749 | 2003 $FP_{69}$ |
| 2003 $FW_{70}$ | 17.0 | 0.15 | 20060922 | 322.09163 | 117.25556 | 106.79404 | 3.14402 | 0.1394598 | 2.3448617 | 39 | 4 | 1996–2005 | 0.64 | M-v | 2 | MPC | 89456 | 2003 $FW_{70}$ |
| 2003 $FP_{71}$ | 13.2 | 0.15 | 20060922 | 199.50025 | 58.57200 | 28.40403 | 11.52333 | 0.0731781 | 5.2264829 | 22 | 3 | 2002–2004 | 0.38 | M-v | 3 | MPC | 47440 | 2003 $FP_{71}$ |
| 2003 $FA_{72}$ | 15.9 | 0.15 | 20060922 | 224.98738 | 148.98766 | 91.00806 | 8.53419 | 0.0365145 | 2.7737454 | 56 | 4 | 2003–2006 | 0.54 | M-v | 0 | MPC | 90181 | 2003 $FA_{72}$ |
| 2003 $FJ_{72}$ | 17.0 | 0.15 | 20060922 | 318.64149 | 150.18846 | 68.54699 | 7.95669 | 0.0555246 | 2.3818758 | 46 | 4 | 2001–2005 | 0.64 | M-v | 1 | MPC | 97646 | 2003 $FJ_{72}$ |
| 2003 $FN_{72}$ | 15.3 | 0.15 | 20060922 | 275.82922 | 76.20064 | 40.76045 | 15.76757 | 0.2296809 | 3.1650607 | 41 | 4 | 1995–2006 | 0.50 | M-v | 0 | MPC | 87580 | 2003 $FN_{72}$ |
| 2003 $FB_{73}$ | 14.8 | 0.15 | 20060922 | 226.83614 | 170.21581 | 22.65529 | 15.76147 | 0.0385516 | 3.1382950 | 54 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 87580 | 2003 $FB_{73}$ |
| 2003 $FL_{73}$ | 16.5 | 0.15 | 20060922 | 268.23881 | 172.13596 | 74.42054 | 10.12411 | 0.1768816 | 2.5620313 | 62 | 5 | 1995–2006 | 0.66 | M-v | 1 | MPC | 97646 | 2003 $FL_{73}$ |
| 2003 $FR_{73}$ | 14.6 | 0.15 | 20060922 | 342.69769 | 255.60670 | 175.86006 | 21.46439 | 0.0477292 | 3.2144156 | 62 | 5 | 2000–2006 | 0.59 | M-v | 0 | MPC | 89456 | 2003 $FR_{73}$ |
| 2003 $FS_{73}$ | 15.4 | 0.15 | 20060922 | 275.56307 | 335.93577 | 169.21210 | 15.98493 | 0.1857263 | 3.0349886 | 73 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 85993 | 2003 $FS_{73}$ |
| 2003 $FF_{74}$ | 15.5 | 0.15 | 20060922 | 238.29254 | 164.90350 | 86.09166 | 5.52042 | 0.2252267 | 2.7409134 | 106 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 94957 | 2003 $FF_{74}$ |
| 2003 $FK_{74}$ | 14.9 | 0.15 | 20060922 | 227.47054 | 189.11780 | 10.88349 | 17.89192 | 0.2169466 | 3.1414662 | 62 | 3 | 2001–2005 | 0.58 | M-v | 2 | MPC | 90181 | 2003 $FK_{74}$ |
| 2003 $FY_{74}$ | 15.7 | 0.15 | 20060922 | 302.42305 | 8.51107 | 140.38623 | 9.13114 | 0.2325000 | 2.7850945 | 55 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87580 | 2003 $FY_{74}$ |
| 2003 $FX_{77}$ | 15.6 | 0.15 | 20060922 | 324.18334 | 135.60107 | 29.28785 | 6.80167 | 0.0745548 | 2.5922490 | 95 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 02146 | 2003 $FX_{77}$ |
| 2003 $FJ_{78}$ | 14.6 | 0.15 | 20060922 | 141.53034 | 115.27949 | 179.74728 | 10.24156 | 0.1154530 | 3.0894821 | 57 | 5 | 1997–2005 | 0.66 | M-v | 1 | MPC | 89457 | 2003 $FJ_{78}$ |
| 2003 $FN_{78}$ | 15.2 | 0.15 | 20060922 | 122.95654 | 276.83880 | 28.22821 | 8.03697 | 0.0495241 | 3.0980851 | 72 | 4 | 2000–2005 | 0.54 | M-v | 0 | MPC | 97646 | 2003 $FN_{78}$ |
| 2003 $FU_{78}$ | 16.7 | 0.15 | 20060922 | 303.47960 | 49.18717 | 206.94651 | 4.73306 | 0.1961441 | 2.3506865 | 58 | 4 | 1992–2004 | 0.55 | M-v | 1 | MPC | 04254 | 2003 $FU_{78}$ |
| 2003 $FX_{78}$ | 16.4 | 0.15 | 20060922 | 310.25121 | 75.70459 | 72.22996 | 3.47104 | 0.1879002 | 2.6732538 | 37 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 85995 | 2003 $FX_{78}$ |
| 2003 $FN_{79}$ | 14.6 | 0.15 | 20060922 | 226.66754 | 354.78279 | 207.37142 | 10.01539 | 0.0592841 | 3.0676968 | 66 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 02146 | 2003 $FN_{79}$ |
| 2003 $FX_{79}$ | 16.3 | 0.15 | 20060922 | 259.99489 | 169.15280 | 124.41356 | 2.68411 | 0.3960397 | 2.5312980 | 51 | 5 | 1995–2006 | 0.72 | M-v | 2 | MPC | 97646 | 2003 $FX_{79}$ |
| 2003 $FZ_{79}$ | 16.2 | 0.15 | 20060922 | 216.28355 | 217.27473 | 74.23955 | 8.18516 | 0.2852906 | 2.7249843 | 46 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 69481 | 2003 $FZ_{79}$ |
| 2003 $FQ_{80}$ | 16.8 | 0.15 | 20060922 | 313.49510 | 28.53184 | 128.05310 | 8.12953 | 0.2160569 | 2.6341742 | 36 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 94958 | 2003 $FQ_{80}$ |
| 2003 $FX_{81}$ | 17.6 | 0.15 | 20060922 | 336.51316 | 90.21213 | 113.87933 | 3.25173 | 0.1491242 | 2.3580430 | 22 | 3 | 1999–2004 | 0.50 | M-v | 3 | MPC | 47452 | 2003 $FX_{81}$ |
| 2003 $FC_{82}$ | 15.8 | 0.15 | 20060922 | 310.11655 | 5.64723 | 149.92952 | 3.01776 | 0.1345342 | 2.6992876 | 77 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 02146 | 2003 $FC_{82}$ |
| 2003 $FH_{82}$ | 14.8 | 0.15 | 20060922 | 270.77487 | 351.56588 | 158.29811 | 11.34717 | 0.0304976 | 3.1599944 | 22 | 3 | 2003–2006 | 0.63 | M-v | 3 | MPC | 85997 | 2003 $FH_{82}$ |
| 2003 $FJ_{83}$ | 16.9 | 0.15 | 20060922 | 329.75817 | 85.20348 | 150.69193 | 6.07505 | 0.1032578 | 2.3081784 | 69 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 02146 | 2003 $FJ_{83}$ |
| 2003 $FP_{83}$ | 13.9 | 0.15 | 20060922 | 273.90630 | 91.16070 | 56.03399 | 25.62985 | 0.2209890 | 3.1577023 | 123 | 3 | 2001–2006 | 0.57 | M-v | 1 | MPC | 85997 | 2003 $FP_{83}$ |
| 2003 $FZ_{83}$ | 17.2 | 0.15 | 20060922 | 341.48473 | 133.41719 | 56.71353 | 6.00125 | 0.2087571 | 2.3302718 | 28 | 2 | 2003–2005 | 0.28 | M-v | 3 | MPC | 03502 | 2003 $FZ_{83}$ |
| 2003 $FE_{84}$ | 15.0 | 0.15 | 20060922 | 59.81982 | 219.37488 | 182.72881 | 21.88182 | 0.0407686 | 2.6040127 | 81 | 6 | 1999–2006 | 0.53 | M-v | 1 | MPC | 90182 | 2003 $FE_{84}$ |
| 2003 $FU_{84}$ | 16.4 | 0.15 | 20060922 | 333.15292 | 221.83930 | 321.96857 | 6.58932 | 0.0912596 | 2.4145869 | 33 | 4 | 1997–2004 | 0.61 | M-v | 3 | MPC | 66309 | 2003 $FU_{84}$ |
| 2003 $FL_{85}$ | 16.5 | 0.15 | 20060922 | 261.30034 | 5.89049 | 215.03803 | 8.48570 | 0.0736019 | 2.6621899 | 30 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 94959 | 2003 $FL_{85}$ |
| 2003 $FR_{85}$ | 14.6 | 0.15 | 20060922 | 224.74246 | 194.23987 | 4.07889 | 9.11007 | 0.2254555 | 3.1726568 | 67 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 90182 | 2003 $FR_{85}$ |
| 2003 $FZ_{85}$ | 16.4 | 0.15 | 20060922 | 258.55812 | 276.80746 | 232.65075 | 6.12947 | 0.2338910 | 3.0483070 | 25 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 47458 | 2003 $FZ_{85}$ |
| 2003 $FB_{86}$ | 15.2 | 0.15 | 20060922 | 229.95768 | 334.73428 | 216.28294 | 8.91717 | 0.2147226 | 3.0758855 | 68 | 3 | 1998–2006 | 0.52 | M-v | 3 | MPC | 47458 | 2003 $FB_{86}$ |
| 2003 $FM_{86}$ | 14.7 | 0.15 | 20060922 | 152.87726 | 61.81739 | 205.84315 | 14.64942 | 0.0481580 | 3.1185766 | 53 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 97647 | 2003 $FM_{86}$ |
| 2003 $FZ_{86}$ | 17.1 | 0.15 | 20060922 | 29.36037 | 213.72753 | 318.36468 | 5.49103 | 0.0728098 | 2.2356155 | 59 | 5 | 1996–2006 | 0.56 | M-v | 1 | MPC | 02146 | 2003 $FZ_{86}$ |
| 2003 $FF_{87}$ | 15.8 | 0.15 | 20060922 | 256.50656 | 18.92332 | 226.00182 | 10.93269 | 0.1277720 | 2.5787014 | 45 | 5 | 1995–2005 | 0.74 | M-v | 1 | MPC | 97647 | 2003 $FF_{87}$ |
| 2003 $FP_{87}$ | 15.4 | 0.15 | 20060922 | 234.34154 | 280.67080 | 346.41028 | 10.97678 | 0.1781525 | 2.6495568 | 85 | 4 | 1978–2006 | 0.59 | M-v | 1 | MPC | 74252 | 2003 $FP_{87}$ |
| 2003 $FW_{88}$ | 15.9 | 0.15 | 20060922 | 203.09355 | 105.43401 | 178.79145 | 12.38997 | 0.1699398 | 2.7000176 | 89 | 5 | 1991–2006 | 0.55 | M-v | 1 | MPC | 70359 | 2003 $FW_{88}$ |
| 2003 $FA_{89}$ | 16.5 | 0.15 | 20060922 | 330.82070 | 347.00902 | 234.08921 | 3.01757 | 0.1703583 | 2.3383435 | 61 | 2 | 2001–2003 | 0.96 | M-v | 4 | MPC | 97647 | 2003 $FA_{89}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $FE_{89}$ | 15.0 | 0.15 | 20060922 | 205.20415 | 219.18076 | 358.98605 | 7.91571 | 0.0868320 | 3.1499268 | 56 | 2 | 2003–2005 | 0.59 | M-v | 3 | MPC | 02146 | 2003 $FE_{89}$ |
| 2003 $FK_{89}$ | 15.3 | 0.15 | 20060922 | 239.14351 | 332.83236 | 217.16073 | 8.83578 | 0.0833195 | 3.0419959 | 46 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 90182 | 2003 $FK_{89}$ |
| 2003 $FO_{89}$ | 15.8 | 0.15 | 20060922 | 296.45814 | 131.34857 | 345.71427 | 10.21410 | 0.1211607 | 3.0528512 | 39 | 6 | 1992–2006 | 0.53 | M-v | 0 | MPC | 97647 | 2003 $FO_{89}$ |
| 2003 $FQ_{89}$ | 14.3 | 0.15 | 20060922 | 60.55733 | 122.68503 | 234.62801 | 7.17753 | 0.0779838 | 3.1518343 | 72 | 7 | 1999–2006 | 0.58 | M-v | 1 | MPC | 90182 | 2003 $FQ_{89}$ |
| 2003 $FH_{90}$ | 15.4 | 0.15 | 20060922 | 192.28224 | 356.78443 | 235.50566 | 9.56176 | 0.1528813 | 3.1645199 | 34 | 3 | 2000–2004 | 0.48 | M-v | 2 | MPC | 47463 | 2003 $FH_{90}$ |
| 2003 $FP_{90}$ | 14.5 | 0.15 | 20060922 | 254.23922 | 296.65463 | 230.98831 | 8.94259 | 0.0396066 | 3.0939940 | 68 | 6 | 1995–2006 | 0.52 | M-v | 0 | MPC | 94961 | 2003 $FP_{90}$ |
| 2003 $FZ_{90}$ | 15.9 | 0.15 | 20060922 | 303.83120 | 216.90761 | 305.47681 | 9.19228 | 0.1420544 | 2.7205223 | 42 | 5 | 1998–2006 | 0.39 | M-v | 1 | MPC | 90182 | 2003 $FZ_{90}$ |
| 2003 $FA_{91}$ | 15.1 | 0.15 | 20060922 | 245.94679 | 278.06805 | 320.93906 | 7.59311 | 0.1459149 | 2.7321278 | 85 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 70359 | 2003 $FA_{91}$ |
| 2003 $FJ_{93}$ | 16.0 | 0.15 | 20060922 | 344.39086 | 344.93928 | 151.00912 | 5.76321 | 0.2145560 | 2.5796586 | 58 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87581 | 2003 $FJ_{93}$ |
| 2003 $FK_{93}$ | 16.3 | 0.15 | 20060922 | 334.08609 | 357.70310 | 151.11877 | 6.07387 | 0.0782214 | 2.6543212 | 38 | 5 | 2000–2005 | 0.58 | M-v | 1 | MPC | 62444 | 2003 $FK_{93}$ |
| 2003 $FL_{94}$ | 15.4 | 0.15 | 20060922 | 256.28364 | 6.66401 | 154.51711 | 11.38769 | 0.1613731 | 3.1416055 | 75 | 4 | 1998–2006 | 0.65 | M-v | 1 | MPC | 87581 | 2003 $FL_{94}$ |
| 2003 $FT_{95}$ | 15.0 | 0.15 | 20060922 | 295.44331 | 137.01501 | 339.66614 | 11.79020 | 0.1089238 | 3.0326007 | 38 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 86000 | 2003 $FT_{95}$ |
| 2003 $FL_{96}$ | 16.0 | 0.15 | 20060922 | 122.92291 | 354.65097 | 323.55213 | 1.17115 | 0.1759429 | 2.9820192 | 63 | 3 | 2000–2005 | 0.40 | M-v | 3 | MPC | 94962 | 2003 $FL_{96}$ |
| 2003 $FW_{96}$ | 15.2 | 0.15 | 20060922 | 83.89147 | 35.42893 | 357.58371 | 13.60689 | 0.1119229 | 2.6404965 | 97 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 97647 | 2003 $FW_{96}$ |
| 2003 $FB_{97}$ | 16.4 | 0.15 | 20060922 | 110.93999 | 160.62048 | 184.03471 | 5.74505 | 0.0783739 | 2.7960354 | 50 | 5 | 1995–2006 | 0.54 | M-v | 2 | MPC | 90182 | 2003 $FB_{97}$ |
| 2003 $FT_{97}$ | 15.5 | 0.15 | 20060922 | 335.96300 | 178.36256 | 297.99407 | 12.51710 | 0.2268520 | 2.6850384 | 35 | 3 | 2001–2005 | 0.60 | M-v | 2 | MPC | 47471 | 2003 $FT_{97}$ |
| 2003 $FR_{98}$ | 15.2 | 0.15 | 20060922 | 220.00341 | 145.02553 | 52.16213 | 5.19935 | 0.1716698 | 3.1162407 | 61 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87581 | 2003 $FR_{98}$ |
| 2003 $FW_{98}$ | 16.0 | 0.15 | 20060922 | 336.24714 | 29.84874 | 116.94882 | 5.14313 | 0.1567665 | 2.5933089 | 46 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 90182 | 2003 $FW_{98}$ |
| 2003 $FZ_{98}$ | 15.5 | 0.15 | 20060922 | 264.64951 | 124.42041 | 27.17829 | 6.64241 | 0.0473069 | 3.0489443 | 54 | 7 | 1995–2006 | 0.54 | M-v | 0 | MPC | 86001 | 2003 $FZ_{98}$ |
| 2003 $FG_{99}$ | 14.5 | 0.15 | 20060922 | 84.09324 | 286.51371 | 41.69071 | 4.99465 | 0.1238647 | 3.2174864 | 84 | 7 | 1997–2006 | 0.55 | M-v | 0 | MPC | 97647 | 2003 $FG_{99}$ |
| 2003 $FQ_{100}$ | 21.2 | 0.15 | 20060922 | 299.82368 | 72.22758 | 92.10876 | 5.34771 | 0.1546953 | 2.6936707 | 40 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 86002 | 2003 $FQ_{100}$ |
| 2003 $FW_{101}$ | 15.2 | 0.15 | 20060922 | 236.54046 | 181.05520 | 353.55585 | 7.43895 | 0.1627458 | 3.1115056 | 54 | 3 | 2001–2005 | 0.55 | M-v | 3 | MPC | 86002 | 2003 $FW_{101}$ |
| 2003 $FR_{102}$ | 16.5 | 0.15 | 20060922 | 253.14783 | 83.07919 | 181.56119 | 12.71831 | 0.2747109 | 2.5821828 | 42 | 3 | 1999–2004 | 0.73 | M-v | 2 | MPC | 70359 | 2003 $FR_{102}$ |
| 2003 $FE_{103}$ | 16.0 | 0.15 | 20060922 | 163.94259 | 98.20651 | 165.80126 | 1.83565 | 0.0513512 | 3.0692341 | 56 | 7 | 1997–2006 | 0.41 | M-v | 0 | MPC | 90182 | 2003 $FE_{103}$ |
| 2003 $FQ_{103}$ | 15.6 | 0.15 | 20060922 | 221.01632 | 47.06483 | 188.29540 | 14.87198 | 0.0896116 | 2.8609580 | 50 | 4 | 1998–2005 | 0.66 | M-v | 2 | MPC | 94963 | 2003 $FQ_{103}$ |
| 2003 $FO_{105}$ | 16.7 | 0.15 | 20060922 | 256.09651 | 16.80163 | 168.03847 | 8.12155 | 0.1325520 | 2.9149342 | 24 | 5 | 1993–2003 | 0.61 | M-v | 2 | MPC | 62444 | 2003 $FO_{105}$ |
| 2003 $FV_{105}$ | 16.5 | 0.15 | 20060922 | 344.36203 | 337.28765 | 146.34373 | 4.93400 | 0.2087645 | 2.6150901 | 30 | 3 | 2003–2006 | 0.46 | M-v | 3 | MPC | 90182 | 2003 $FV_{105}$ |
| 2003 $FT_{106}$ | 16.4 | 0.15 | 20060922 | 296.70967 | 327.41636 | 199.32825 | 14.24773 | 0.1272746 | 2.7206732 | 32 | 4 | 2000–2005 | 0.39 | M-v | 1 | MPC | 86004 | 2003 $FT_{106}$ |
| 2003 $FU_{106}$ | 15.7 | 0.15 | 20060922 | 321.69288 | 109.57672 | 19.26652 | 8.60886 | 0.0386261 | 2.8037784 | 41 | 2 | 2003–2005 | 0.61 | M-v | 3 | MPC | 90182 | 2003 $FU_{106}$ |
| 2003 $FV_{106}$ | 14.0 | 0.15 | 20060922 | 264.40897 | 114.65817 | 32.59725 | 26.72821 | 0.1775909 | 3.1793928 | 157 | 6 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87581 | 2003 $FV_{106}$ |
| 2003 $FX_{106}$ | 15.3 | 0.15 | 20060922 | 255.66739 | 64.48985 | 190.61202 | 11.28799 | 0.1589510 | 2.6518132 | 113 | 5 | 1996–2005 | 0.56 | M-v | 1 | MPC | 97648 | 2003 $FX_{106}$ |
| 2003 $FL_{107}$ | 15.3 | 0.15 | 20060922 | 314.43095 | 325.72445 | 191.12715 | 12.54679 | 0.1768303 | 2.7262486 | 88 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 97648 | 2003 $FL_{107}$ |
| 2003 $FY_{107}$ | 14.9 | 0.15 | 20060922 | 180.78285 | 71.00359 | 181.50845 | 16.32681 | 0.0470036 | 3.1188131 | 51 | 4 | 1998–2005 | 0.61 | M-v | 1 | MPC | 90183 | 2003 $FY_{107}$ |
| 2003 $FB_{108}$ | 14.3 | 0.15 | 20060922 | 187.31548 | 36.18409 | 204.06179 | 23.34696 | 0.1371794 | 3.0973030 | 94 | 4 | 1998–2006 | 0.58 | M-v | 1 | MPC | 97648 | 2003 $FB_{108}$ |
| 2003 $FO_{108}$ | 15.3 | 0.15 | 20060922 | 146.56510 | 216.07971 | 42.48624 | 5.30497 | 0.0705282 | 3.2636928 | 53 | 4 | 2002–2006 | 0.41 | M-v | 0 | MPC | 86006 | 2003 $FO_{108}$ |
| 2003 $FN_{109}$ | 16.1 | 0.15 | 20060922 | 316.87452 | 113.33176 | 58.84069 | 13.77980 | 0.1978136 | 2.6424456 | 60 | 3 | 2001–2005 | 0.64 | M-v | 2 | MPC | 02146 | 2003 $FN_{109}$ |
| 2003 $FF_{111}$ | 15.9 | 0.15 | 20060922 | 231.35741 | 189.82813 | 341.74140 | 8.69300 | 0.0516392 | 3.1885144 | 29 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 03503 | 2003 $FF_{111}$ |
| 2003 $FO_{113}$ | 15.9 | 0.15 | 20060922 | 263.23099 | 350.32708 | 184.39499 | 1.62502 | 0.0130902 | 2.8993124 | 64 | 6 | 1995–2006 | 0.50 | M-v | 1 | MPC | 02146 | 2003 $FO_{113}$ |
| 2003 $FV_{114}$ | 15.4 | 0.15 | 20060922 | 148.78974 | 109.31383 | 157.84594 | 11.26446 | 0.0539221 | 3.1611352 | 41 | 5 | 2000–2006 | 0.52 | M-v | 0 | MPC | 94964 | 2003 $FV_{114}$ |
| 2003 $FW_{114}$ | 16.1 | 0.15 | 20060922 | 300.59954 | 157.99981 | 29.90762 | 12.16363 | 0.0918636 | 2.5871140 | 53 | 3 | 2003–2005 | 0.67 | M-v | 3 | MPC | 97648 | 2003 $FW_{114}$ |
| 2003 $FM_{115}$ | 15.0 | 0.15 | 20060922 | 170.06738 | 52.22986 | 186.09069 | 26.89957 | 0.1846130 | 3.2267823 | 87 | 4 | 1999–2005 | 0.67 | M-v | 1 | MPC | 02146 | 2003 $FM_{115}$ |
| 2003 $FQ_{115}$ | 15.4 | 0.15 | 20030322 | 277.46528 | 73.87442 | 193.91748 | 14.56784 | 0.0944795 | 2.6192558 | 10 | 1 | 8 days | 0.55 | | | MPC | 50758 | 2003 $FQ_{115}$ |
| 2003 $FT_{115}$ | 15.6 | 0.15 | 20060922 | 230.14064 | 229.23469 | 326.98253 | 2.38539 | 0.1476280 | 3.1455626 | 35 | 4 | 1997–2006 | 0.60 | M-v | 1 | MPC | 86009 | 2003 $FT_{115}$ |
| 2003 $FC_{116}$ | 14.1 | 0.15 | 20060922 | 184.10859 | 76.25637 | 144.24900 | 15.30503 | 0.1186516 | 3.2394438 | 45 | 3 | 2003–2006 | 0.54 | M-v | 2 | MPC | 86009 | 2003 $FC_{116}$ |
| 2003 $FK_{116}$ | 15.4 | 0.15 | 20060922 | 207.40379 | 38.25112 | 155.40660 | 6.90898 | 0.1206909 | 3.2044630 | 31 | 3 | 2003–2006 | 0.42 | M-v | 3 | MPC | 86009 | 2003 $FK_{116}$ |
| 2003 $FU_{116}$ | 16.4 | 0.15 | 20060922 | 335.23400 | 56.95175 | 131.20895 | 3.41907 | 0.1340649 | 2.4649341 | 59 | 4 | 1995–2005 | 0.66 | M-v | 2 | MPC | 47491 | 2003 $FU_{116}$ |
| 2003 $FE_{117}$ | 15.0 | 0.15 | 20060922 | 211.80822 | 178.60859 | 45.89900 | 18.17436 | 0.1388144 | 3.1372321 | 105 | 4 | 2000–2004 | 0.65 | M-v | 1 | MPC | 66310 | 2003 $FE_{117}$ |
| 2003 $FK_{117}$ | 15.9 | 0.15 | 20060922 | 169.99539 | 182.87273 | 109.76551 | 5.39741 | 0.0692245 | 2.7210681 | 57 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 90183 | 2003 $FK_{117}$ |
| 2003 $FQ_{117}$ | 16.6 | 0.15 | 20060922 | 306.50510 | 39.25929 | 144.43619 | 6.80161 | 0.0902266 | 2.5242888 | 39 | 4 | 2003–2006 | 0.48 | M-v | 1 | MPC | 89460 | 2003 $FQ_{117}$ |
| 2003 $FR_{117}$ | 15.1 | 0.15 | 20060922 | 170.06075 | 140.63899 | 111.41200 | 6.17346 | 0.0940667 | 3.0383606 | 31 | 3 | 2003–2006 | 0.49 | M-v | 2 | MPC | 86011 | 2003 $FR_{117}$ |
| 2003 $FS_{117}$ | 16.1 | 0.15 | 20060922 | 220.56569 | 160.88342 | 75.06237 | 5.23459 | 0.0758436 | 2.7615185 | 42 | 6 | 1999–2006 | 0.52 | M-v | 0 | MPC | 86011 | 2003 $FS_{117}$ |
| 2003 $FZ_{119}$ | 16.2 | 0.15 | 20060922 | 262.86098 | 300.75945 | 177.48653 | 16.42619 | 0.2008456 | 3.1444242 | 37 | 5 | 1995–2006 | 0.56 | M-v | 0 | MPC | 04255 | 2003 $FZ_{119}$ |
| 2003 $FE_{120}$ | 16.0 | 0.15 | 20060922 | 295.58790 | 10.13755 | 159.92103 | 5.53218 | 0.1619037 | 2.6760788 | 45 | 3 | 1999–2004 | 0.62 | M-v | 4 | MPC | 47495 | 2003 $FE_{120}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $FK_{121}$ | 16.3 | 0.15 | 20060922 | 12.83400 | 213.29667 | 215.41162 | 1.27931 | 0.0253640 | 2.8496645 | 54 | 5 | 1991–2006 | 0.54 | M-v | 1 | MPC | 87581 | 2003 $FK_{121}$ |
| 2003 $FE_{124}$ | 15.7 | 0.15 | 20060922 | 66.51567 | 286.31867 | 43.30392 | 1.59995 | 0.1659426 | 3.1935073 | 37 | 5 | 1994–2006 | 0.40 | M-v | 0 | MPC | 04255 | 2003 $FE_{124}$ |
| 2003 $FV_{127}$ | 14.8 | 0.15 | 20060922 | 227.14732 | 174.01190 | 22.30253 | 15.62535 | 0.1444079 | 3.1551357 | 29 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 00430 | 2003 $FV_{127}$ |
| 2003 $FE_{128}$ | 6.3 | 0.15 | 20060922 | 357.66000 | 51.80821 | 169.17566 | 3.38169 | 0.2570737 | 48.3266059 | 23 | 2 | 2003–2004 | 0.22 | M-v | 5 | MPC | 65485 | 2003 $FE_{128}$ |
| 2003 $FF_{128}$ | 6.9 | 0.15 | 20060922 | 333.11801 | 169.58773 | 91.72751 | 1.91106 | 0.2209677 | 39.8412174 | 40 | 2 | 2003–2004 | 0.21 | M-v | 4 | MPC | 65485 | 2003 $FF_{128}$ |
| 2003 $FD_{131}$ | 16.2 | 0.15 | 20060922 | 264.69676 | 90.50592 | 133.81963 | 14.73411 | 0.1266332 | 2.6628025 | 16 | 1 | 68 days | 0.71 | M-v | 4 | MPC | | 2003 $FD_{131}$ |
| 2003 $FG_{131}$ | 16.8 | 0.15 | 20030411 | 38.76862 | 132.29948 | 10.58195 | 12.64511 | 0.0890134 | 2.6083541 | 19 | 1 | 36 days | 0.33 | | | MPC | | 2003 $FG_{131}$ |
| 2003 $FH_{131}$ | 17.2 | 0.15 | 20030411 | 351.82369 | 315.29110 | 249.40138 | 2.52785 | 0.1242034 | 2.6621103 | 16 | 1 | 32 days | 0.56 | | | MPC | | 2003 $FH_{131}$ |
| 2003 $FL_{131}$ | 18.1 | 0.15 | 20030411 | 340.73664 | 30.52069 | 188.60133 | 3.16627 | 0.1498712 | 2.2563455 | 18 | 1 | 31 days | 0.61 | | | MPC | | 2003 $FL_{131}$ |
| 2003 $FM_{131}$ | 16.0 | 0.15 | 20030411 | 157.06081 | 36.10410 | 356.68061 | 10.71301 | 0.0221854 | 3.0710446 | 16 | 1 | 31 days | 0.56 | | | MPC | | 2003 $FM_{131}$ |
| 2003 $FO_{131}$ | 17.6 | 0.15 | 20030411 | 317.16513 | 80.36335 | 175.68949 | 7.09774 | 0.1895904 | 2.4327520 | 15 | 1 | 30 days | 0.72 | | | MPC | | 2003 $FO_{131}$ |
| 2003 $FP_{131}$ | 16.2 | 0.15 | 20030411 | 254.82783 | 271.59559 | 31.41157 | 10.26973 | 0.0411459 | 3.0980526 | 13 | 1 | 39 days | 0.59 | | | MPC | | 2003 $FP_{131}$ |
| 2003 $FQ_{131}$ | 16.3 | 0.15 | 20060922 | 331.94899 | 340.68457 | 178.44533 | 13.82831 | 0.1862884 | 2.6646298 | 16 | 1 | 62 days | 0.32 | M-v | 4 | MPC | | 2003 $FQ_{131}$ |
| 2003 $FR_{131}$ | 15.7 | 0.15 | 20060922 | 250.14769 | 114.99214 | 176.40358 | 13.90871 | 0.1733873 | 2.5758443 | 23 | 1 | 69 days | 0.53 | M-v | 4 | MPC | | 2003 $FR_{131}$ |
| 2003 $FS_{131}$ | 17.0 | 0.15 | 20060922 | 209.23711 | 232.96895 | 62.06053 | 8.32575 | 0.2807768 | 2.8479762 | 20 | 1 | 62 days | 0.29 | M-v | 4 | MPC | | 2003 $FS_{131}$ |
| 2003 GG | 15.3 | 0.15 | 20060922 | 104.91696 | 230.15205 | 130.87284 | 6.97797 | 0.0679742 | 2.9128776 | 94 | 8 | 1992–2006 | 0.58 | M-v | 1 | MPC | 94967 | 2003 GG |
| 2003 $GH_1$ | 15.9 | 0.15 | 20060922 | 264.25247 | 83.68690 | 171.74430 | 12.75792 | 0.1298482 | 2.5382202 | 56 | 3 | 2000–2004 | 0.52 | M-v | 3 | MPC | 69496 | 2003 $GH_1$ |
| 2003 $GJ_1$ | 16.2 | 0.15 | 20060922 | 307.24891 | 124.57466 | 36.80116 | 5.33193 | 0.2191650 | 2.6949700 | 65 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 90183 | 2003 $GJ_1$ |
| 2003 $GK_2$ | 15.5 | 0.15 | 20060922 | 219.42711 | 151.47083 | 50.18279 | 2.49755 | 0.1177431 | 3.1212029 | 55 | 4 | 2003–2006 | 0.43 | M-v | 1 | MPC | 00431 | 2003 $GK_2$ |
| 2003 $GM_2$ | 16.9 | 0.15 | 20060922 | 0.28392 | 5.67007 | 179.11876 | 5.92356 | 0.0361793 | 2.3226137 | 52 | 4 | 1997–2004 | 0.74 | M-v | 1 | MPC | 90183 | 2003 $GM_2$ |
| 2003 $GZ_2$ | 15.1 | 0.15 | 20060922 | 147.55472 | 279.64700 | 349.73607 | 6.12095 | 0.1194022 | 3.1738415 | 83 | 5 | 1994–2006 | 0.48 | M-v | 0 | MPC | 90183 | 2003 $GZ_2$ |
| 2003 $GO_4$ | 16.4 | 0.15 | 20060922 | 265.41818 | 77.00968 | 188.27423 | 7.57549 | 0.2487742 | 2.5259482 | 49 | 3 | 1999–2004 | 0.62 | M-v | 2 | MPC | 47504 | 2003 $GO_4$ |
| 2003 $GR_4$ | 16.4 | 0.15 | 20060922 | 329.96513 | 106.33717 | 33.49431 | 2.20662 | 0.1677659 | 2.6513501 | 56 | 6 | 1996–2006 | 0.42 | M-v | 1 | MPC | 97649 | 2003 $GR_4$ |
| 2003 $GQ_5$ | 15.5 | 0.15 | 20060922 | 277.24210 | 285.56015 | 210.00160 | 6.64441 | 0.1126442 | 3.1131603 | 48 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 86014 | 2003 $GQ_5$ |
| 2003 $GV_5$ | 15.3 | 0.15 | 20060922 | 224.22118 | 3.62213 | 193.50712 | 3.55111 | 0.1556908 | 3.1417020 | 66 | 3 | 2003–2006 | 0.40 | M-v | 3 | MPC | 90183 | 2003 $GV_5$ |
| 2003 $GU_6$ | 16.5 | 0.15 | 20060922 | 356.03638 | 125.31236 | 87.98042 | 6.26353 | 0.1116791 | 2.2981836 | 57 | 5 | 1994–2006 | 0.61 | M-v | 1 | MPC | 04255 | 2003 $GU_6$ |
| 2003 $GB_7$ | 18.0 | 0.15 | 20060922 | 32.69251 | 24.05982 | 172.12951 | 3.57713 | 0.1317231 | 2.1539912 | 77 | 6 | 1995–2006 | 0.49 | M-v | 1 | MPC | 02146 | 2003 $GB_7$ |
| 2003 $GN_7$ | 15.6 | 0.15 | 20060922 | 142.09547 | 100.08569 | 184.76282 | 4.96404 | 0.1383113 | 3.1866551 | 48 | 4 | 1999–2006 | 0.44 | M-v | 0 | MPC | 90183 | 2003 $GN_7$ |
| 2003 $GZ_7$ | 14.9 | 0.15 | 20060922 | 158.33960 | 73.90492 | 181.92032 | 14.80375 | 0.0301195 | 3.2036928 | 46 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 04255 | 2003 $GZ_7$ |
| 2003 $GG_8$ | 17.7 | 0.15 | 20060922 | 241.66211 | 94.55018 | 175.21704 | 3.79681 | 0.1434468 | 2.5715343 | 28 | 3 | 2003–2005 | 0.49 | M-v | 3 | MPC | 69500 | 2003 $GG_8$ |
| 2003 $GQ_8$ | 16.8 | 0.15 | 20060922 | 317.94305 | 245.01647 | 60.13740 | 4.76794 | 0.2191100 | 2.1824969 | 65 | 5 | 1996–2006 | 0.60 | M-v | 1 | MPC | 02147 | 2003 $GQ_8$ |
| 2003 $GU_{10}$ | 15.4 | 0.15 | 20060922 | 283.80463 | 340.77330 | 154.43596 | 18.25952 | 0.1485048 | 3.0803315 | 36 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 94969 | 2003 $GU_{10}$ |
| 2003 $GJ_{12}$ | 17.4 | 0.15 | 20060922 | 8.51144 | 305.54066 | 188.01234 | 1.64949 | 0.1596853 | 2.4272888 | 64 | 4 | 1997–2005 | 0.41 | M-v | 3 | MPC | 97650 | 2003 $GJ_{12}$ |
| 2003 $GL_{12}$ | 15.0 | 0.15 | 20060922 | 321.51651 | 63.46881 | 5.08988 | 17.31578 | 0.1864415 | 3.1079141 | 137 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04255 | 2003 $GL_{12}$ |
| 2003 $GS_{12}$ | 15.9 | 0.15 | 20060922 | 322.00132 | 323.56437 | 200.31477 | 13.34639 | 0.0642849 | 2.6409204 | 58 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97650 | 2003 $GS_{12}$ |
| 2003 $GX_{12}$ | 15.5 | 0.15 | 20060922 | 218.79242 | 113.94222 | 88.47615 | 1.58230 | 0.1724107 | 3.1740197 | 43 | 5 | 1994–2006 | 0.39 | M-v | 1 | MPC | 04255 | 2003 $GX_{12}$ |
| 2003 $GC_{13}$ | 15.0 | 0.15 | 20060922 | 235.92079 | 61.12440 | 221.31809 | 25.47753 | 0.2174190 | 2.7440271 | 83 | 2 | 2003–2004 | 0.58 | M-v | 3 | MPC | 74254 | 2003 $GC_{13}$ |
| 2003 $GF_{13}$ | 16.4 | 0.15 | 20060922 | 243.19333 | 99.99762 | 165.24035 | 3.73325 | 0.0673734 | 2.5810873 | 57 | 3 | 2003–2005 | 0.47 | M-v | 3 | MPC | 69502 | 2003 $GF_{13}$ |
| 2003 $GF_{14}$ | 14.6 | 0.15 | 20060922 | 174.63860 | 211.87674 | 31.94803 | 10.80472 | 0.1614044 | 3.1561302 | 77 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 90184 | 2003 $GF_{14}$ |
| 2003 $GR_{14}$ | 15.2 | 0.15 | 20060922 | 57.66464 | 278.58161 | 119.63843 | 12.48787 | 0.0263458 | 2.7406399 | 51 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 94970 | 2003 $GR_{14}$ |
| 2003 $GS_{14}$ | 15.6 | 0.15 | 20060922 | 311.66525 | 26.01365 | 135.16413 | 8.70410 | 0.0655902 | 2.6418118 | 31 | 4 | 2003–2006 | 0.57 | M-v | 1 | MPC | 00432 | 2003 $GS_{14}$ |
| 2003 $GE_{16}$ | 15.3 | 0.15 | 20060922 | 226.26443 | 142.36495 | 43.09390 | 11.75600 | 0.0610143 | 3.1061419 | 63 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87582 | 2003 $GE_{16}$ |
| 2003 $GL_{16}$ | 15.3 | 0.15 | 20060922 | 239.08047 | 97.70439 | 83.42281 | 19.13701 | 0.0418246 | 3.1254549 | 36 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 94970 | 2003 $GL_{16}$ |
| 2003 $GQ_{16}$ | 14.9 | 0.15 | 20060922 | 204.68889 | 64.48607 | 153.15996 | 18.10426 | 0.0739953 | 3.0944103 | 40 | 3 | 2003–2006 | 0.59 | M-v | 2 | MPC | 94970 | 2003 $GQ_{16}$ |
| 2003 $GS_{16}$ | 15.4 | 0.15 | 20060922 | 189.55752 | 138.09003 | 99.69330 | 7.79416 | 0.1284702 | 2.9977005 | 25 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 94971 | 2003 $GS_{16}$ |
| 2003 $GV_{16}$ | 14.4 | 0.15 | 20060922 | 155.77084 | 196.30740 | 65.69629 | 11.51514 | 0.0305585 | 3.1031108 | 60 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 87582 | 2003 $GV_{16}$ |
| 2003 $GA_{17}$ | 15.0 | 0.15 | 20060922 | 295.06886 | 231.77717 | 292.24962 | 10.57827 | 0.1746945 | 2.7307586 | 44 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87582 | 2003 $GA_{17}$ |
| 2003 $GE_{17}$ | 14.1 | 0.15 | 20060922 | 233.60028 | 24.21560 | 162.56667 | 29.59994 | 0.1620859 | 3.1885252 | 29 | 4 | 2003–2006 | 0.47 | M-v | 2 | MPC | 03503 | 2003 $GE_{17}$ |
| 2003 $GA_{18}$ | 16.8 | 0.15 | 20060922 | 82.70722 | 44.67638 | 343.06541 | 1.28314 | 0.1021165 | 2.6970173 | 53 | 4 | 1996–2005 | 0.61 | M-v | 1 | MPC | 97650 | 2003 $GA_{18}$ |
| 2003 $GZ_{19}$ | 17.0 | 0.15 | 20060922 | 293.76407 | 240.36227 | 3.76564 | 1.89366 | 0.1631756 | 2.3858427 | 33 | 3 | 2003–2006 | 0.63 | M-v | 3 | MPC | 69503 | 2003 $GZ_{19}$ |
| 2003 $GY_{20}$ | 15.5 | 0.15 | 20060922 | 281.66783 | 191.81581 | 17.53781 | 9.07371 | 0.1517583 | 2.6824284 | 56 | 3 | 2000–2005 | 0.66 | M-v | 3 | MPC | 89463 | 2003 $GY_{20}$ |
| 2003 $GK_{21}$ | 17.2 | 0.15 | 20060922 | 207.95994 | 345.25947 | 66.22917 | 6.74129 | 0.2699831 | 1.9965690 | 35 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 02147 | 2003 $GK_{21}$ |
| 2003 $GY_{22}$ | 16.2 | 0.15 | 20060922 | 235.98865 | 242.94438 | 28.15993 | 8.01247 | 0.2503566 | 2.7403153 | 54 | 4 | 1995–2004 | 0.49 | M-v | 0 | MPC | 69504 | 2003 $GY_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $GC_{23}$ | 16.0 | 0.15 | 20060922 | 257.06635 | 206.13451 | 24.53203 | 12.21552 | 0.1639228 | 2.7446839 | 51 | 2 | 2000–2003 | 0.56 | M-v | 3 | MPC | 47522 | 2003 $GC_{23}$ |
| 2003 $GG_{23}$ | 16.3 | 0.15 | 20060922 | 294.71712 | 156.12976 | 17.48241 | 9.61237 | 0.2040608 | 2.7390044 | 33 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 94971 | 2003 $GG_{23}$ |
| 2003 $GD_{27}$ | 15.7 | 0.15 | 20060922 | 278.20084 | 313.89376 | 188.86428 | 10.15026 | 0.0536612 | 3.0978503 | 39 | 3 | 2003–2006 | 0.65 | M-v | 3 | MPC | 94973 | 2003 $GD_{27}$ |
| 2003 $GJ_{27}$ | 15.6 | 0.15 | 20060922 | 290.76417 | 265.72546 | 221.76119 | 4.53994 | 0.1064108 | 3.0729086 | 67 | 5 | 2000–2006 | 0.54 | M-v | 0 | MPC | 86017 | 2003 $GJ_{27}$ |
| 2003 $GX_{28}$ | 16.3 | 0.15 | 20060922 | 319.21202 | 32.43638 | 144.75424 | 5.58667 | 0.0975325 | 2.5992142 | 46 | 6 | 1994–2006 | 0.55 | M-v | 1 | MPC | 90184 | 2003 $GX_{28}$ |
| 2003 $GG_{29}$ | 14.4 | 0.15 | 20060922 | 273.64304 | 86.46625 | 47.15064 | 31.64824 | 0.1789958 | 3.2001362 | 78 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 50760 | 2003 $GG_{29}$ |
| 2003 $GN_{31}$ | 16.1 | 0.15 | 20060922 | 209.97153 | 176.61764 | 99.46641 | 3.80463 | 0.2706724 | 2.8493144 | 51 | 7 | 1995–2005 | 0.67 | M-v | 1 | MPC | 69505 | 2003 $GN_{31}$ |
| 2003 $GG_{34}$ | 16.1 | 0.15 | 20060922 | 295.73941 | 48.98454 | 128.36630 | 13.23650 | 0.0501384 | 2.7628574 | 25 | 3 | 2003–2006 | 0.60 | M-v | 2 | MPC | 94975 | 2003 $GG_{34}$ |
| 2003 $GP_{35}$ | 17.1 | 0.15 | 20060922 | 171.39128 | 97.64167 | 50.37665 | 22.21284 | 0.0635996 | 1.8821548 | 81 | 2 | 2003–2004 | 0.64 | M-v | 3 | MPC | 72753 | 2003 $GP_{35}$ |
| 2003 $GD_{36}$ | 16.0 | 0.15 | 20060922 | 255.28957 | 108.99966 | 119.31492 | 13.59702 | 0.1425445 | 2.6833537 | 41 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 86019 | 2003 $GD_{36}$ |
| 2003 $GH_{36}$ | 15.4 | 0.15 | 20060922 | 278.01218 | 117.49365 | 114.63144 | 13.11963 | 0.2348784 | 2.5650658 | 37 | 3 | 1999–2006 | 0.62 | M-v | 3 | MPC | 50760 | 2003 $GH_{36}$ |
| 2003 $GL_{36}$ | 16.8 | 0.15 | 20060922 | 232.82976 | 285.73714 | 352.45531 | 2.38786 | 0.1181785 | 2.5940140 | 47 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 97651 | 2003 $GL_{36}$ |
| 2003 $GN_{36}$ | 16.7 | 0.15 | 20060922 | 167.91496 | 313.80014 | 311.73809 | 0.85897 | 0.0631730 | 3.1152715 | 18 | 3 | 2002–2005 | 0.50 | M-v | 4 | MPC | 94976 | 2003 $GN_{36}$ |
| 2003 $GB_{37}$ | 16.3 | 0.15 | 20060922 | 295.08491 | 53.28994 | 85.88742 | 10.64077 | 0.1996634 | 2.7892885 | 60 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 86019 | 2003 $GB_{37}$ |
| 2003 $GF_{37}$ | 15.6 | 0.15 | 20060922 | 284.07296 | 70.11780 | 134.25641 | 15.78783 | 0.1306558 | 2.6355465 | 74 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 90184 | 2003 $GF_{37}$ |
| 2003 $GP_{37}$ | 16.4 | 0.15 | 20060922 | 278.43456 | 243.77783 | 352.98646 | 1.82498 | 0.1627086 | 2.5687571 | 56 | 6 | 1996–2006 | 0.50 | M-v | 1 | MPC | 97651 | 2003 $GP_{37}$ |
| 2003 $GE_{38}$ | 15.6 | 0.15 | 20060922 | 307.08245 | 29.19762 | 106.46521 | 3.36023 | 0.0418622 | 2.9245762 | 50 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 04255 | 2003 $GE_{38}$ |
| 2003 $GK_{39}$ | 15.2 | 0.15 | 20060922 | 302.66316 | 59.31161 | 22.22623 | 26.93413 | 0.1939879 | 3.1509725 | 41 | 3 | 1995–2006 | 0.49 | M-v | 2 | MPC | 47531 | 2003 $GK_{39}$ |
| 2003 $GO_{39}$ | 15.4 | 0.15 | 20060922 | 145.41303 | 126.15824 | 164.13182 | 6.40637 | 0.1311356 | 3.0521555 | 30 | 2 | 2003–2005 | 0.67 | M-v | 4 | MPC | 89466 | 2003 $GO_{39}$ |
| 2003 $GT_{39}$ | 16.8 | 0.15 | 20060922 | 318.63381 | 108.27145 | 46.75404 | 7.80029 | 0.2144875 | 2.6540494 | 33 | 2 | 2001–2003 | 0.54 | M-v | 3 | MPC | 47531 | 2003 $GT_{39}$ |
| 2003 $GD_{40}$ | 16.0 | 0.15 | 20060922 | 296.39078 | 140.37600 | 36.77694 | 11.96864 | 0.1173409 | 2.6472433 | 36 | 3 | 1999–2005 | 0.46 | M-v | 3 | MPC | 90184 | 2003 $GD_{40}$ |
| 2003 $GE_{40}$ | 16.9 | 0.15 | 20060922 | 302.35673 | 115.43459 | 136.22472 | 5.20453 | 0.1743619 | 2.3339036 | 33 | 3 | 1999–2006 | 0.65 | M-v | 4 | MPC | 94977 | 2003 $GE_{40}$ |
| 2003 $GV_{41}$ | 14.5 | 0.15 | 20060922 | 179.70710 | 106.85792 | 97.34576 | 9.02470 | 0.1642703 | 3.3881491 | 45 | 5 | 2002–2006 | 0.52 | M-v | 1 | MPC | 87582 | 2003 $GV_{41}$ |
| 2003 $GB_{43}$ | 15.3 | 0.15 | 20060922 | 206.32435 | 135.60239 | 79.69771 | 17.90063 | 0.2042256 | 3.1316092 | 36 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 86021 | 2003 $GB_{43}$ |
| 2003 $GN_{44}$ | 14.9 | 0.15 | 20060922 | 175.33757 | 179.64749 | 89.59549 | 19.30103 | 0.1742505 | 3.0834309 | 46 | 6 | 1998–2006 | 0.65 | M-v | 1 | MPC | 90184 | 2003 $GN_{44}$ |
| 2003 $GT_{45}$ | 16.5 | 0.15 | 20060922 | 306.90539 | 33.60256 | 128.02477 | 5.80366 | 0.0478940 | 2.7241052 | 20 | 4 | 1998–2006 | 0.25 | M-v | 0 | MPC | 62444 | 2003 $GT_{45}$ |
| 2003 $GW_{46}$ | 16.0 | 0.15 | 20060922 | 248.82849 | 258.79390 | 49.96865 | 8.19073 | 0.1989323 | 2.3770724 | 52 | 3 | 2000–2004 | 0.66 | M-v | 2 | MPC | 74254 | 2003 $GW_{46}$ |
| 2003 $GE_{47}$ | 16.1 | 0.15 | 20060922 | 219.24261 | 56.55825 | 142.00842 | 4.11668 | 0.0500039 | 2.9993475 | 36 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 86023 | 2003 $GE_{47}$ |
| 2003 $GR_{47}$ | 16.7 | 0.15 | 20060922 | 67.93496 | 283.21729 | 175.16982 | 14.48797 | 0.0706612 | 2.5766072 | 31 | 3 | 2002–2004 | 0.37 | M-v | 3 | MPC | 69508 | 2003 $GR_{47}$ |
| 2003 $GX_{47}$ | 16.6 | 0.15 | 20060922 | 296.50165 | 126.72667 | 83.57632 | 4.39016 | 0.2000460 | 2.5561495 | 43 | 5 | 1999–2006 | 0.59 | M-v | 2 | MPC | 97651 | 2003 $GX_{47}$ |
| 2003 $GJ_{49}$ | 15.9 | 0.15 | 20060922 | 281.71980 | 137.14242 | 49.63056 | 8.69335 | 0.1518540 | 2.7738688 | 58 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 97651 | 2003 $GJ_{49}$ |
| 2003 $GS_{50}$ | 15.6 | 0.15 | 20060922 | 237.51519 | 141.71594 | 79.67869 | 6.00798 | 0.0694114 | 2.8007446 | 41 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90184 | 2003 $GS_{50}$ |
| 2003 $GR_{51}$ | 15.9 | 0.15 | 20060922 | 117.32881 | 319.73037 | 28.91458 | 5.47026 | 0.0702895 | 2.7543654 | 60 | 5 | 1991–2005 | 0.55 | M-v | 1 | MPC | 89466 | 2003 $GR_{51}$ |
| 2003 $GN_{53}$ | 15.6 | 0.15 | 20060922 | 0.89692 | 20.05805 | 72.52315 | 13.43551 | 0.2402749 | 2.5687883 | 47 | 3 | 2003–2006 | 0.54 | M-v | 2 | MPC | 86025 | 2003 $GN_{53}$ |
| 2003 $GE_{54}$ | 15.7 | 0.15 | 20060922 | 211.99339 | 213.30554 | 12.16023 | 9.53828 | 0.0586731 | 2.9825454 | 44 | 3 | 2002–2005 | 0.39 | M-v | 3 | MPC | 90184 | 2003 $GE_{54}$ |
| 2003 $GH_{54}$ | 15.6 | 0.15 | 20060922 | 307.61200 | 225.95799 | 286.35789 | 8.19473 | 0.1654725 | 2.7171584 | 41 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 00434 | 2003 $GH_{54}$ |
| 2003 $GJ_{54}$ | 15.8 | 0.15 | 20060922 | 294.72787 | 115.19840 | 352.12753 | 9.72099 | 0.0704355 | 3.0811748 | 24 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 86025 | 2003 $GJ_{54}$ |
| 2003 $GM_{54}$ | 15.3 | 0.15 | 20060922 | 116.98505 | 248.38511 | 81.30812 | 2.07444 | 0.1557411 | 2.9673526 | 100 | 6 | 1999–2006 | 0.61 | M-v | 1 | MPC | 97652 | 2003 $GM_{54}$ |
| 2003 $GC_{55}$ | 15.7 | 0.15 | 20060922 | 219.59013 | 126.60878 | 97.79691 | 13.40451 | 0.1356756 | 3.0120072 | 24 | 3 | 1998–2006 | 0.40 | M-v | 3 | MPC | 50188 | 2003 $GC_{55}$ |
| 2003 $GX_{55}$ | 18.1 | 0.15 | 20030501 | 351.94072 | 177.51276 | 64.71799 | 5.31723 | 0.2046111 | 2.3065061 | 16 | 1 | 57 days | 0.65 | | | MPC | | 2003 $GX_{55}$ |
| 2003 $GY_{55}$ | 17.8 | 0.15 | 20030501 | 15.84846 | 333.13093 | 212.10706 | 10.16537 | 0.2512934 | 2.3305946 | 29 | 1 | 33 days | 0.67 | | | MPC | | 2003 $GY_{55}$ |
| 2003 HC | 15.1 | 0.15 | 20060922 | 210.54155 | 23.55729 | 189.28563 | 10.58430 | 0.1510611 | 3.1499360 | 92 | 5 | 1994–2005 | 0.52 | M-v | 0 | MPC | 04255 | 2003 HC |
| 2003 HT | 17.2 | 0.15 | 20060922 | 231.35504 | 221.78897 | 130.83095 | 4.10251 | 0.2284587 | 2.3177856 | 43 | 5 | 1996–2006 | 0.65 | M-v | 1 | MPC | 02147 | 2003 HT |
| 2003 HV | 17.4 | 0.15 | 20060922 | 312.62949 | 170.25425 | 99.14442 | 3.76932 | 0.1471351 | 2.2929061 | 25 | 4 | 1996–2006 | 0.73 | M-v | 1 | MPC | 94980 | 2003 HV |
| 2003 $HD_3$ | 15.6 | 0.15 | 20060922 | 249.30751 | 154.11803 | 28.76091 | 5.84291 | 0.1067837 | 3.0622003 | 44 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 03504 | 2003 $HD_3$ |
| 2003 $HN_6$ | 17.5 | 0.15 | 20060922 | 290.88222 | 219.04462 | 65.17832 | 3.72758 | 0.1522913 | 2.3285249 | 21 | 2 | 2003–2006 | 0.49 | M-v | 4 | MPC | 94982 | 2003 $HN_6$ |
| 2003 $HV_6$ | 16.5 | 0.15 | 20060922 | 248.29589 | 140.21832 | 25.21321 | 2.52608 | 0.0833056 | 3.1742582 | 42 | 3 | 2001–2006 | 0.35 | M-v | 3 | MPC | 75860 | 2003 $HV_6$ |
| 2003 $HX_6$ | 15.8 | 0.15 | 20060922 | 300.03429 | 113.38091 | 25.03328 | 9.82464 | 0.0079908 | 2.9938569 | 53 | 4 | 2000–2005 | 0.49 | M-v | 0 | MPC | 97652 | 2003 $HX_6$ |
| 2003 $HE_7$ | 16.1 | 0.15 | 20060922 | 359.64079 | 54.74808 | 28.73841 | 8.27006 | 0.0601015 | 2.9103149 | 30 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 86027 | 2003 $HE_7$ |
| 2003 $HS_7$ | 16.0 | 0.15 | 20060922 | 234.49351 | 55.14066 | 198.60183 | 8.44553 | 0.1043748 | 2.7799134 | 46 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 70361 | 2003 $HS_7$ |
| 2003 $HF_9$ | 16.2 | 0.15 | 20060922 | 255.54509 | 63.20590 | 217.27161 | 7.30107 | 0.1687077 | 2.5222606 | 53 | 3 | 2000–2004 | 0.64 | M-v | 2 | MPC | 72755 | 2003 $HF_9$ |
| 2003 $HQ_9$ | 15.4 | 0.15 | 20060922 | 201.04011 | 153.09192 | 104.96662 | 6.67427 | 0.1159968 | 3.0833410 | 40 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 70361 | 2003 $HQ_9$ |
| 2003 $HL_{10}$ | 15.4 | 0.15 | 20060922 | 244.91764 | 127.96892 | 130.98374 | 10.08114 | 0.1537995 | 2.7409600 | 61 | 4 | 1999–2004 | 0.66 | M-v | 1 | MPC | 50762 | 2003 $HL_{10}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $HP_{10}$ | 15.4 | 0.15 | 20060922 | 268.36460 | 37.85066 | 132.55193 | 7.30456 | 0.2115286 | 3.0524138 | 42 | 4 | 1997–2006 | 0.59 | M-v | 2 | MPC | 50762 | 2003 $HP_{10}$ |
| 2003 $HV_{10}$ | 14.8 | 0.15 | 20060922 | 159.89349 | 265.00984 | 2.32168 | 8.35171 | 0.1858839 | 3.1667956 | 85 | 3 | 2003–2005 | 0.60 | M-v | 3 | MPC | 89468 | 2003 $HV_{10}$ |
| 2003 $HP_{11}$ | 15.8 | 0.15 | 20060922 | 327.63389 | 90.23484 | 83.88978 | 9.81224 | 0.2200176 | 2.5765632 | 61 | 3 | 2001–2005 | 0.63 | M-v | 3 | MPC | 90185 | 2003 $HP_{11}$ |
| 2003 $HE_{13}$ | 15.0 | 0.15 | 20060922 | 126.56510 | 212.77332 | 103.15413 | 4.87943 | 0.0640934 | 3.1402884 | 55 | 5 | 2002–2006 | 0.51 | M-v | 1 | MPC | 90185 | 2003 $HE_{13}$ |
| 2003 $HO_{14}$ | 17.1 | 0.15 | 20060922 | 67.42663 | 162.28270 | 79.00147 | 23.87827 | 0.0538394 | 1.9698384 | 44 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 75861 | 2003 $HO_{14}$ |
| 2003 $HD_{15}$ | 15.7 | 0.15 | 20060922 | 235.98578 | 115.26478 | 147.67035 | 7.04517 | 0.0502344 | 2.6565552 | 64 | 6 | 1998–2006 | 0.56 | M-v | 0 | MPC | 97653 | 2003 $HD_{15}$ |
| 2003 $HL_{16}$ | 17.0 | 0.15 | 20060922 | 333.37826 | 226.83829 | 52.09711 | 5.82686 | 0.1550965 | 2.1601307 | 35 | 3 | 2003–2006 | 0.68 | M-v | 3 | MPC | 00437 | 2003 $HL_{16}$ |
| 2003 $HT_{17}$ | 16.6 | 0.15 | 20060922 | 215.06963 | 25.61447 | 201.06431 | 12.99462 | 0.0368758 | 3.0700548 | 21 | 3 | 2003–2005 | 0.56 | M-v | 3 | MPC | 94986 | 2003 $HT_{17}$ |
| 2003 $HE_{19}$ | 17.8 | 0.15 | 20060922 | 273.20885 | 342.30028 | 297.73780 | 1.15263 | 0.1927589 | 2.4093170 | 43 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 97653 | 2003 $HE_{19}$ |
| 2003 $HG_{19}$ | 16.6 | 0.15 | 20060922 | 116.98267 | 313.10925 | 70.69598 | 3.95580 | 0.1592985 | 2.6727940 | 38 | 4 | 1996–2006 | 0.38 | M-v | 2 | MPC | 94987 | 2003 $HG_{19}$ |
| 2003 $HS_{19}$ | 14.6 | 0.15 | 20060922 | 28.84203 | 252.43877 | 102.54943 | 1.37049 | 0.1517969 | 3.9585645 | 63 | 3 | 2003–2006 | 0.50 | M-v | 2 | MPC | 89468 | 2003 $HS_{19}$ |
| 2003 $HZ_{19}$ | 17.1 | 0.15 | 20060922 | 289.74241 | 291.93747 | 350.73646 | 2.29893 | 0.1915628 | 2.3556944 | 50 | 5 | 1992–2006 | 0.59 | M-v | 1 | MPC | 04256 | 2003 $HZ_{19}$ |
| 2003 $HX_{20}$ | 15.6 | 0.15 | 20060922 | 225.98052 | 152.01661 | 74.92758 | 8.39608 | 0.2118447 | 3.0672080 | 49 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 47553 | 2003 $HX_{20}$ |
| 2003 $HY_{20}$ | 16.3 | 0.15 | 20060922 | 276.96890 | 49.30826 | 205.51372 | 13.24174 | 0.1813500 | 2.5639894 | 59 | 4 | 1999–2004 | 0.68 | M-v | 2 | MPC | 74255 | 2003 $HY_{20}$ |
| 2003 $HQ_{22}$ | 16.5 | 0.15 | 20060922 | 278.38478 | 302.18130 | 22.87341 | 7.11017 | 0.1946851 | 2.1949413 | 51 | 6 | 1994–2006 | 0.66 | M-v | 1 | MPC | 02147 | 2003 $HQ_{22}$ |
| 2003 $HM_{23}$ | 18.3 | 0.15 | 20060922 | 310.66352 | 49.16403 | 183.06617 | 1.63448 | 0.1362476 | 2.3751886 | 26 | 3 | 2003–2005 | 0.45 | M-v | 3 | MPC | 89469 | 2003 $HM_{23}$ |
| 2003 $HN_{25}$ | 16.8 | 0.15 | 20060922 | 214.88163 | 57.38024 | 182.03786 | 1.75008 | 0.0446193 | 2.9368760 | 26 | 4 | 2000–2005 | 0.48 | M-v | 1 | MPC | 94989 | 2003 $HN_{25}$ |
| 2003 $HW_{25}$ | 17.1 | 0.15 | 20060922 | 297.11031 | 51.71732 | 233.08310 | 3.81700 | 0.1269710 | 2.2713452 | 22 | 3 | 2003–2006 | 0.46 | M-v | 3 | MPC | 00438 | 2003 $HW_{25}$ |
| 2003 $HF_{26}$ | 15.4 | 0.15 | 20060922 | 250.62193 | 354.45070 | 192.14311 | 9.15986 | 0.0186894 | 3.0386602 | 51 | 3 | 1998–2005 | 0.48 | M-v | 3 | MPC | 89469 | 2003 $HF_{26}$ |
| 2003 $HR_{26}$ | 17.3 | 0.15 | 20060922 | 324.67069 | 158.79271 | 97.56549 | 5.94670 | 0.2302404 | 2.3104131 | 26 | 3 | 1996–2006 | 0.65 | M-v | 4 | MPC | 61717 | 2003 $HR_{26}$ |
| 2003 $HM_{27}$ | 16.7 | 0.15 | 20060922 | 275.69016 | 60.40849 | 199.11870 | 6.15217 | 0.1295550 | 2.4731729 | 45 | 3 | 2000–2004 | 0.65 | M-v | 3 | MPC | 50194 | 2003 $HM_{27}$ |
| 2003 $HZ_{27}$ | 15.1 | 0.15 | 20060922 | 156.73286 | 274.95325 | 22.43272 | 9.73709 | 0.0717731 | 3.0650473 | 78 | 4 | 1994–2005 | 0.63 | M-v | 0 | MPC | 04256 | 2003 $HZ_{27}$ |
| 2003 $HV_{31}$ | 14.1 | 0.15 | 20060922 | 102.86623 | 97.75352 | 198.40134 | 8.56444 | 0.2175716 | 3.9445327 | 76 | 4 | 2003–2006 | 0.44 | M-v | 1 | MPC | 97654 | 2003 $HV_{31}$ |
| 2003 $HF_{32}$ | 16.3 | 0.15 | 20060922 | 231.95197 | 36.57777 | 220.59420 | 8.52780 | 0.1169863 | 2.8052388 | 44 | 4 | 2003–2006 | 0.44 | M-v | 1 | MPC | 90185 | 2003 $HF_{32}$ |
| 2003 $HG_{32}$ | 15.5 | 0.15 | 20060922 | 218.82064 | 223.37832 | 63.67885 | 13.16162 | 0.1687158 | 2.6583984 | 78 | 5 | 1999–2004 | 0.65 | M-v | 1 | MPC | 70362 | 2003 $HG_{32}$ |
| 2003 $HO_{32}$ | 22.1 | 0.15 | 20060922 | 61.94962 | 320.13961 | 231.77435 | 1.66501 | 0.3596446 | 2.0633868 | 41 | 2 | 2003–2006 | 0.45 | M-v | 3 | MPC | 03505 | 2003 $HO_{32}$ |
| 2003 $HV_{33}$ | 17.2 | 0.15 | 20060922 | 323.06669 | 337.16478 | 174.53689 | 3.18594 | 0.1251903 | 2.7341179 | 30 | 3 | 2002–2005 | 0.22 | M-v | 2 | MPC | 00438 | 2003 $HV_{33}$ |
| 2003 $HM_{34}$ | 18.1 | 0.15 | 20060922 | 274.39408 | 150.05610 | 141.91799 | 2.62031 | 0.2137858 | 2.4178309 | 29 | 3 | 1996–2003 | 0.50 | M-v | 3 | MPC | 97654 | 2003 $HM_{34}$ |
| 2003 $HB_{38}$ | 15.8 | 0.15 | 20060922 | 246.77914 | 106.45072 | 216.33989 | 7.17845 | 0.2744440 | 2.5388520 | 46 | 4 | 1998–2006 | 0.71 | M-v | 3 | MPC | 50763 | 2003 $HB_{38}$ |
| 2003 $HD_{38}$ | 15.7 | 0.15 | 20060922 | 225.46545 | 39.59198 | 183.76023 | 1.30218 | 0.1691953 | 3.0571452 | 46 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 94993 | 2003 $HD_{38}$ |
| 2003 $HP_{38}$ | 15.3 | 0.15 | 20060922 | 253.84174 | 340.59218 | 262.11152 | 14.52329 | 0.2013938 | 2.6591741 | 44 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 97654 | 2003 $HP_{38}$ |
| 2003 $HC_{40}$ | 17.1 | 0.15 | 20060922 | 333.49265 | 3.02661 | 257.80391 | 3.23624 | 0.1736743 | 2.2671767 | 31 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 94994 | 2003 $HC_{40}$ |
| 2003 $HG_{42}$ | 15.3 | 0.15 | 20060922 | 243.99733 | 37.00496 | 139.97308 | 11.61340 | 0.1054038 | 3.1567912 | 27 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 86033 | 2003 $HG_{42}$ |
| 2003 $HR_{42}$ | 15.6 | 0.15 | 20060922 | 309.94021 | 100.16062 | 38.58616 | 30.40027 | 0.3761216 | 2.7773313 | 33 | 3 | 2001–2006 | 0.65 | M-v | 2 | MPC | 94995 | 2003 $HR_{42}$ |
| 2003 $HH_{43}$ | 15.9 | 0.15 | 20060922 | 241.28870 | 147.51019 | 41.33315 | 11.02354 | 0.1486698 | 3.1521239 | 27 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 89471 | 2003 $HH_{43}$ |
| 2003 $HK_{44}$ | 16.3 | 0.15 | 20060922 | 270.35714 | 104.67186 | 129.94100 | 3.57094 | 0.0900753 | 2.6344462 | 21 | 3 | 2003–2005 | 0.36 | M-v | 3 | MPC | 75865 | 2003 $HK_{44}$ |
| 2003 $HM_{44}$ | 16.0 | 0.15 | 20060922 | 5.58012 | 319.62752 | 172.99282 | 6.07478 | 0.1700842 | 2.5444851 | 74 | 5 | 1995–2005 | 0.62 | M-v | 1 | MPC | 97654 | 2003 $HM_{44}$ |
| 2003 $HF_{45}$ | 17.2 | 0.15 | 20060922 | 317.47874 | 137.55514 | 87.05435 | 2.49071 | 0.1458525 | 2.4447425 | 33 | 4 | 1999–2005 | 0.60 | M-v | 1 | MPC | 97654 | 2003 $HF_{45}$ |
| 2003 $HJ_{45}$ | 15.4 | 0.15 | 20060922 | 213.53358 | 357.60549 | 223.42516 | 13.18931 | 0.1422179 | 3.2156479 | 27 | 3 | 1994–2005 | 0.54 | M-v | 3 | MPC | 04256 | 2003 $HJ_{45}$ |
| 2003 $HJ_{47}$ | 15.0 | 0.15 | 20060922 | 228.64547 | 253.24725 | 76.39460 | 11.89434 | 0.3096631 | 2.6339487 | 57 | 4 | 1999–2004 | 0.61 | M-v | 1 | MPC | 72761 | 2003 $HJ_{47}$ |
| 2003 $HM_{47}$ | 15.4 | 0.15 | 20060922 | 188.32576 | 186.39632 | 81.25769 | 3.42827 | 0.1899089 | 3.0449734 | 71 | 4 | 2003–2006 | 0.52 | M-v | 1 | MPC | 97655 | 2003 $HM_{47}$ |
| 2003 $HR_{47}$ | 15.9 | 0.15 | 20060922 | 192.70080 | 262.38547 | 56.85790 | 14.85419 | 0.1416394 | 2.6978906 | 32 | 3 | 2000–2004 | 0.46 | M-v | 2 | MPC | 62445 | 2003 $HR_{47}$ |
| 2003 $HP_{48}$ | 16.1 | 0.15 | 20060922 | 322.63353 | 196.64034 | 93.92886 | 3.85604 | 0.1085500 | 2.2136506 | 72 | 6 | 1996–2006 | 0.63 | M-v | 1 | MPC | 02148 | 2003 $HP_{48}$ |
| 2003 $HS_{50}$ | 16.0 | 0.15 | 20060922 | 279.88603 | 115.63612 | 127.59040 | 6.55338 | 0.2485710 | 2.6333623 | 50 | 4 | 1994–2006 | 0.67 | M-v | 1 | MPC | 03505 | 2003 $HS_{50}$ |
| 2003 $HH_{51}$ | 17.8 | 0.15 | 20060922 | 316.30968 | 149.63644 | 136.70430 | 4.99420 | 0.1208791 | 2.2117987 | 28 | 3 | 1996–2006 | 0.45 | M-v | 4 | MPC | 02148 | 2003 $HH_{51}$ |
| 2003 $HN_{53}$ | 17.9 | 0.15 | 20060922 | 345.34193 | 154.69522 | 84.51795 | 4.76724 | 0.1367813 | 2.2107017 | 52 | 4 | 1996–2006 | 0.58 | M-v | 1 | MPC | 97655 | 2003 $HN_{53}$ |
| 2003 $HA_{54}$ | 15.7 | 0.15 | 20060922 | 201.61063 | 22.74916 | 194.80125 | 5.71474 | 0.0669953 | 3.2060638 | 29 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 00440 | 2003 $HA_{54}$ |
| 2003 $HZ_{54}$ | 17.7 | 0.15 | 20060922 | 34.06560 | 113.33708 | 19.85399 | 1.88942 | 0.1316848 | 2.3813350 | 32 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 94999 | 2003 $HZ_{54}$ |
| 2003 $HJ_{55}$ | 15.8 | 0.15 | 20060922 | 83.12041 | 215.40251 | 158.83025 | 8.27374 | 0.0495313 | 3.0092619 | 38 | 5 | 1994–2005 | 0.68 | M-v | 1 | MPC | 50202 | 2003 $HJ_{55}$ |
| 2003 $HZ_{57}$ | 17.6 | 0.15 | 20030521 | 8.00436 | 150.33482 | 61.99811 | 4.19384 | 0.0859306 | 2.3370078 | 16 | 1 | 42 days | 0.48 | | | MPC | | 2003 $HZ_{57}$ |
| 2003 $HA_{58}$ | 16.6 | 0.15 | 20060922 | 320.40203 | 161.90491 | 97.43214 | 11.21497 | 0.2012557 | 2.3460281 | 37 | 1 | 70 days | 0.60 | M-v | 4 | MPC | | 2003 $HA_{58}$ |
| 2003 $HB_{58}$ | 16.8 | 0.15 | 20030521 | 349.14939 | 8.80806 | 225.87377 | 17.77226 | 0.0553337 | 3.2488885 | 14 | 1 | 42 days | 0.42 | | | MPC | | 2003 $HB_{58}$ |
| 2003 $HC_{58}$ | 17.4 | 0.15 | 20030521 | 306.05374 | 225.69662 | 71.39114 | 6.63944 | 0.1631050 | 2.4101508 | 17 | 1 | 30 days | 0.61 | | | MPC | | 2003 $HC_{58}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $HD_{58}$ | 17.2 | 0.15 | 20030521 | 323.53984 | 237.55931 | 49.27178 | 6.87546 | 0.1971695 | 2.2090962 | 24 | 1 | 56 days | 0.45 | | | MPC | | 2003 $HD_{58}$ |
| 2003 JA | 17.8 | 0.15 | 20060922 | 313.73260 | 5.55326 | 91.74253 | 9.97351 | 0.0830548 | 1.7082876 | 75 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 75866 | 2003 JA |
| 2003 $JK_1$ | 15.0 | 0.15 | 20060922 | 172.28553 | 85.46769 | 212.24428 | 15.59192 | 0.2276391 | 3.1175998 | 61 | 3 | 1997–2004 | 0.41 | M-v | 1 | MPC | 69526 | 2003 $JK_1$ |
| 2003 $JL_1$ | 16.3 | 0.15 | 20060922 | 331.21114 | 122.24350 | 99.47164 | 3.43056 | 0.1321815 | 2.3946421 | 48 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 94999 | 2003 $JL_1$ |
| 2003 $JT_1$ | 17.8 | 0.15 | 20060922 | 72.16721 | 247.13774 | 53.07378 | 14.23484 | 0.0925141 | 1.8174757 | 49 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 89473 | 2003 $JT_1$ |
| 2003 $JU_2$ | 14.1 | 0.15 | 20060922 | 255.97810 | 326.48725 | 222.77024 | 26.72860 | 0.1176835 | 3.1411485 | 50 | 3 | 2003–2006 | 0.62 | M-v | 3 | MPC | 97655 | 2003 $JU_2$ |
| 2003 $JB_3$ | 16.9 | 0.15 | 20060922 | 123.72106 | 332.43350 | 37.63985 | 6.78552 | 0.0534243 | 2.7217615 | 21 | 3 | 2000–2005 | 0.29 | M-v | 3 | MPC | 00442 | 2003 $JB_3$ |
| 2003 $JL_3$ | 16.4 | 0.15 | 20060922 | 246.89344 | 158.05545 | 33.75582 | 1.26318 | 0.1523403 | 3.0683019 | 41 | 6 | 1995–2006 | 0.42 | M-v | 0 | MPC | 90186 | 2003 $JL_3$ |
| 2003 $JP_4$ | 15.8 | 0.15 | 20060922 | 248.48462 | 72.93762 | 155.79587 | 3.39049 | 0.0936013 | 2.7760732 | 52 | 4 | 2003–2006 | 0.54 | M-v | 1 | MPC | 90186 | 2003 $JP_4$ |
| 2003 $JD_5$ | 15.8 | 0.15 | 20060922 | 266.69959 | 36.96242 | 204.18225 | 13.04034 | 0.1373307 | 2.6425767 | 26 | 3 | 2000–2004 | 0.46 | M-v | 3 | MPC | 75867 | 2003 $JD_5$ |
| 2003 $JL_5$ | 17.3 | 0.15 | 20060922 | 334.33473 | 25.89424 | 205.75403 | 5.53333 | 0.2304404 | 2.3554439 | 40 | 4 | 2000–2005 | 0.53 | M-v | 2 | MPC | 72764 | 2003 $JL_5$ |
| 2003 $JT_7$ | 16.8 | 0.15 | 20060922 | 308.02618 | 135.28811 | 70.24788 | 8.83492 | 0.2616087 | 2.5501406 | 52 | 3 | 1999–2005 | 0.49 | M-v | 2 | MPC | 90186 | 2003 $JT_7$ |
| 2003 $JJ_8$ | 15.6 | 0.15 | 20060922 | 225.21515 | 31.62590 | 187.17299 | 11.14088 | 0.0520400 | 3.0931249 | 32 | 4 | 1992–2005 | 0.53 | M-v | 1 | MPC | 04256 | 2003 $JJ_8$ |
| 2003 $JM_8$ | 15.5 | 0.15 | 20060922 | 214.88128 | 157.62500 | 82.34123 | 13.40635 | 0.1757635 | 3.1089748 | 60 | 6 | 2000–2006 | 0.55 | M-v | 1 | MPC | 90186 | 2003 $JM_8$ |
| 2003 $JD_{10}$ | 15.4 | 0.15 | 20060922 | 177.31493 | 147.79946 | 137.24825 | 5.41283 | 0.2298082 | 3.1067131 | 33 | 3 | 2003–2005 | 0.70 | M-v | 3 | MPC | 69528 | 2003 $JD_{10}$ |
| 2003 $JG_{11}$ | 14.0 | 0.15 | 20060922 | 175.76291 | 123.98622 | 0.83415 | 1.40733 | 0.1581219 | 5.3038846 | 33 | 4 | 1996–2003 | 0.50 | M-v | 1 | MPC | 62445 | 2003 $JG_{11}$ |
| 2003 $JP_{11}$ | 15.6 | 0.15 | 20060922 | 9.77975 | 341.23228 | 103.63642 | 15.78771 | 0.0136394 | 3.1283101 | 27 | 4 | 2002–2006 | 0.39 | M-v | 1 | MPC | 90186 | 2003 $JP_{11}$ |
| 2003 $JC_{12}$ | 16.7 | 0.15 | 20060922 | 258.99173 | 210.74533 | 34.71508 | 2.49915 | 0.1413786 | 2.6234975 | 44 | 5 | 1997–2005 | 0.50 | M-v | 0 | MPC | 97656 | 2003 $JC_{12}$ |
| 2003 $JQ_{13}$ | 16.2 | 0.15 | 20060922 | 208.57558 | 78.59932 | 181.96294 | 10.28971 | 0.1968990 | 3.0246641 | 30 | 5 | 1999–2005 | 0.43 | M-v | 0 | MPC | 90186 | 2003 $JQ_{13}$ |
| 2003 $JZ_{13}$ | 15.1 | 0.15 | 20060922 | 339.58941 | 347.74647 | 213.33867 | 14.89042 | 0.0525343 | 2.5278805 | 33 | 3 | 2000–2004 | 0.54 | M-v | 3 | MPC | 75868 | 2003 $JZ_{13}$ |
| 2003 $JA_{15}$ | 17.5 | 0.15 | 20060922 | 282.95027 | 49.39419 | 215.62784 | 2.63266 | 0.1823257 | 2.4198355 | 24 | 2 | 2003–2004 | 0.44 | M-v | 4 | MPC | 72765 | 2003 $JA_{15}$ |
| 2003 $JF_{18}$ | 16.2 | 0.15 | 20060922 | 234.56408 | 118.76924 | 189.57458 | 12.89501 | 0.2068673 | 2.6269747 | 14 | 1 | 83 days | 0.64 | M-v | 5 | MPC | | 2003 $JF_{18}$ |
| 2003 KD | 12.5 | 0.15 | 20060922 | 69.30950 | 96.09445 | 158.59653 | 13.70845 | 0.0243569 | 5.1446359 | 56 | 5 | 2001–2006 | 0.39 | M-v | 1 | MPC | 04256 | 2003 KD |
| 2003 KP | 17.5 | 0.15 | 20060922 | 323.61817 | 100.22966 | 201.50332 | 3.14066 | 0.1438467 | 2.1961707 | 24 | 3 | 2003–2006 | 0.43 | M-v | 3 | MPC | 00444 | 2003 KP |
| 2003 $KM_1$ | 16.3 | 0.15 | 20060922 | 305.66706 | 31.16396 | 162.22125 | 11.41729 | 0.0699781 | 2.7457814 | 26 | 4 | 2002–2005 | 0.48 | M-v | 1 | MPC | 86038 | 2003 $KM_1$ |
| 2003 $KP_1$ | 15.5 | 0.15 | 20060922 | 198.00849 | 145.99419 | 139.28832 | 11.14194 | 0.0968544 | 2.9610644 | 44 | 5 | 2002–2006 | 0.72 | M-v | 1 | MPC | 97656 | 2003 $KP_1$ |
| 2003 $KN_7$ | 16.9 | 0.15 | 20060922 | 286.97813 | 170.50135 | 135.27433 | 6.90907 | 0.1325812 | 2.3373240 | 37 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 00444 | 2003 $KN_7$ |
| 2003 $KX_7$ | 16.7 | 0.15 | 20060922 | 220.84537 | 112.02968 | 126.30658 | 12.49467 | 0.2343190 | 3.1064518 | 20 | 3 | 1998–2003 | 0.71 | M-v | 3 | MPC | 95007 | 2003 $KX_7$ |
| 2003 $KB_{10}$ | 16.2 | 0.15 | 20060922 | 181.79078 | 161.27432 | 171.64606 | 8.69288 | 0.2276667 | 2.7241285 | 82 | 3 | 1995–2004 | 0.51 | M-v | 2 | MPC | 74257 | 2003 $KB_{10}$ |
| 2003 $KA_{11}$ | 16.7 | 0.15 | 20060922 | 283.35334 | 65.87142 | 175.69423 | 5.24215 | 0.1760224 | 2.6182879 | 34 | 4 | 1991–2004 | 0.60 | M-v | 2 | MPC | 04256 | 2003 $KA_{11}$ |
| 2003 $KQ_{11}$ | 15.4 | 0.15 | 20060922 | 285.36050 | 71.92862 | 69.96744 | 19.05921 | 0.1300478 | 3.2106886 | 30 | 4 | 1997–2006 | 0.49 | M-v | 0 | MPC | 69532 | 2003 $KQ_{11}$ |
| 2003 $KF_{12}$ | 16.5 | 0.15 | 20060922 | 287.45393 | 83.78602 | 106.78697 | 9.49661 | 0.2226810 | 2.7801790 | 30 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 69532 | 2003 $KF_{12}$ |
| 2003 $KL_{13}$ | 16.3 | 0.15 | 20060922 | 278.38952 | 56.37733 | 171.52056 | 3.42743 | 0.0403126 | 2.6792645 | 36 | 6 | 1996–2005 | 0.56 | M-v | 1 | MPC | 97657 | 2003 $KL_{13}$ |
| 2003 $KP_{13}$ | 15.3 | 0.15 | 20060922 | 213.81401 | 145.05069 | 89.09806 | 14.36766 | 0.1046196 | 3.0738697 | 58 | 4 | 2002–2005 | 0.64 | M-v | 1 | MPC | 90186 | 2003 $KP_{13}$ |
| 2003 $KG_{14}$ | 16.0 | 0.15 | 20060922 | 148.80044 | 227.78272 | 69.08578 | 3.08069 | 0.1500794 | 3.1750592 | 29 | 3 | 2003–2005 | 0.52 | M-v | 4 | MPC | 95009 | 2003 $KG_{14}$ |
| 2003 $KR_{16}$ | 14.8 | 0.15 | 20060922 | 192.45115 | 212.94500 | 77.47813 | 7.35201 | 0.2056561 | 3.0855060 | 39 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 95010 | 2003 $KR_{16}$ |
| 2003 $KQ_{17}$ | 16.1 | 0.15 | 20060922 | 305.43049 | 90.89054 | 97.24972 | 2.97009 | 0.2192697 | 2.6696523 | 40 | 5 | 1997–2006 | 0.39 | M-v | 1 | MPC | 97657 | 2003 $KQ_{17}$ |
| 2003 $KC_{18}$ | 16.1 | 0.15 | 20060922 | 328.87806 | 69.08180 | 129.24168 | 4.79819 | 0.1923005 | 2.5529857 | 35 | 4 | 2000–2005 | 0.56 | M-v | 1 | MPC | 86040 | 2003 $KC_{18}$ |
| 2003 $KB_{20}$ | 15.9 | 0.15 | 20060922 | 294.13579 | 90.55727 | 156.43273 | 6.56145 | 0.1095779 | 2.5327379 | 25 | 5 | 1992–2005 | 0.48 | M-v | 1 | MPC | 04256 | 2003 $KB_{20}$ |
| 2003 $KC_{30}$ | 16.1 | 0.15 | 20060922 | 335.45809 | 67.15280 | 120.29891 | 5.65099 | 0.1579845 | 2.5350967 | 27 | 3 | 2002–2005 | 0.66 | M-v | 3 | MPC | 69536 | 2003 $KC_{30}$ |
| 2003 $KW_{32}$ | 17.5 | 0.15 | 20060922 | 243.44850 | 172.48142 | 154.65761 | 4.60268 | 0.1069518 | 2.3636623 | 32 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 02148 | 2003 $KW_{32}$ |
| 2003 $KZ_{34}$ | 16.2 | 0.15 | 20060922 | 292.89643 | 253.43448 | 76.34846 | 9.07795 | 0.1711417 | 2.2437691 | 35 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 02148 | 2003 $KZ_{34}$ |
| 2003 $KL_{36}$ | 16.9 | 0.15 | 20060922 | 306.71144 | 185.90530 | 91.12637 | 6.45669 | 0.1851323 | 2.3605451 | 30 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 75872 | 2003 $KL_{36}$ |
| 2003 $LM_1$ | 15.2 | 0.15 | 20060922 | 178.22684 | 77.56740 | 218.41625 | 8.24118 | 0.1979103 | 3.1830133 | 43 | 4 | 1998–2004 | 0.65 | M-v | 1 | MPC | 75872 | 2003 $LM_1$ |
| 2003 $LX_1$ | 16.2 | 0.15 | 20060922 | 2.92595 | 101.14809 | 254.00313 | 19.93285 | 0.0106112 | 1.8673387 | 66 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 50215 | 2003 $LX_1$ |
| 2003 $LQ_2$ | 15.8 | 0.15 | 20060922 | 296.36607 | 349.22034 | 241.09568 | 10.48676 | 0.0887625 | 2.6315703 | 40 | 6 | 1996–2006 | 0.55 | M-v | 1 | MPC | 97657 | 2003 $LQ_2$ |
| 2003 $LH_4$ | 16.7 | 0.15 | 20060922 | 347.62748 | 137.55504 | 236.08908 | 19.72369 | 0.0967796 | 1.9134272 | 55 | 6 | 1993–2006 | 0.63 | M-v | 1 | MPC | 77695 | 2003 $LH_4$ |
| 2003 $LP_4$ | 16.3 | 0.15 | 20060922 | 205.91975 | 171.52425 | 59.10841 | 6.57295 | 0.1022150 | 3.1584804 | 28 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 03507 | 2003 $LP_4$ |
| 2003 $LK_9$ | 18.1 | 0.15 | 20030521 | 357.63641 | 140.63066 | 99.58709 | 3.80096 | 0.1426465 | 2.3802988 | 16 | 1 | 32 days | 0.46 | | | MPC | | 2003 $LK_9$ |
| 2003 $LL_9$ | 17.1 | 0.15 | 20060922 | 243.68232 | 177.52732 | 151.12664 | 7.75601 | 0.2870384 | 2.6923670 | 17 | 1 | 60 days | 0.42 | M-v | 5 | MPC | | 2003 $LL_9$ |
| 2003 MC | 16.4 | 0.15 | 20060922 | 24.53430 | 133.77905 | 190.17097 | 22.60788 | 0.0753924 | 1.9101932 | 75 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 04256 | 2003 MC |
| 2003 MU | 20.4 | 0.15 | 20060922 | 18.80038 | 175.50756 | 143.73641 | 5.88799 | 0.4941493 | 2.0540181 | 128 | 2 | 2003–2006 | 0.49 | M-v | 0 | MPC | 00447 | 2003 MU |
| 2003 $MD_2$ | 15.6 | 0.15 | 20060922 | 279.34384 | 202.33836 | 114.35462 | 8.59646 | 0.2102304 | 2.5306389 | 48 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 02149 | 2003 $MD_2$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $MT_2$ | 16.0 | 0.15 | 20060922 | 281.40769 | 304.61308 | 305.18891 | 27.91657 | 0.5359195 | 2.6827373 | 206 | 3 | 1998–2006 | 0.40 | M-v | 1 | MPC | 57915 | 2003 $MT_2$ |
| 2003 $MS_3$ | 17.1 | 0.15 | 20060922 | 332.82950 | 222.83892 | 71.59072 | 3.01927 | 0.2175029 | 2.2809026 | 19 | 3 | 2000–2006 | 0.43 | M-v | 4 | MPC | 00448 | 2003 $MS_3$ |
| 2003 $MX_4$ | 16.2 | 0.15 | 20060922 | 309.16258 | 47.48912 | 251.88250 | 3.81940 | 0.1979733 | 2.3796680 | 24 | 3 | 2002–2004 | 0.60 | M-v | 3 | MPC | 50226 | 2003 $MX_4$ |
| 2003 $MM_6$ | 14.8 | 0.15 | 20060922 | 238.41388 | 246.87693 | 102.47904 | 25.30148 | 0.2486116 | 2.5719792 | 50 | 4 | 1993–2005 | 0.48 | M-v | 2 | MPC | 04256 | 2003 $MM_6$ |
| 2003 $MK_7$ | 14.6 | 0.15 | 20060922 | 207.71910 | 83.71610 | 194.13829 | 15.58468 | 0.1510168 | 3.0762987 | 86 | 4 | 1998–2004 | 0.55 | M-v | 1 | MPC | 74258 | 2003 $MK_7$ |
| 2003 $MB_8$ | 14.6 | 0.15 | 20060922 | 204.35343 | 24.35613 | 270.46022 | 25.05387 | 0.1095460 | 3.1699804 | 33 | 4 | 2001–2005 | 0.72 | M-v | 1 | MPC | 75873 | 2003 $MB_8$ |
| 2003 $ML_8$ | 14.6 | 0.15 | 20060922 | 207.14908 | 171.01157 | 134.30305 | 17.20230 | 0.2001693 | 3.0762901 | 49 | 5 | 1996–2004 | 0.58 | M-v | 1 | MPC | 86045 | 2003 $ML_8$ |
| 2003 $MN_9$ | 15.1 | 0.15 | 20060922 | 239.10615 | 106.24465 | 263.12881 | 15.50845 | 0.1863129 | 2.5509370 | 95 | 4 | 1999–2005 | 0.56 | M-v | 2 | MPC | 53735 | 2003 $MN_9$ |
| 2003 $MA_{12}$ | 14.1 | 0.15 | 20060922 | 177.63028 | 101.25068 | 220.18152 | 21.94284 | 0.2122341 | 3.0983575 | 125 | 5 | 1997–2005 | 0.58 | M-v | 1 | MPC | 74259 | 2003 $MA_{12}$ |
| 2003 $MB_{13}$ | 16.2 | 0.15 | 20060922 | 315.99023 | 24.65833 | 281.90658 | 4.26771 | 0.2308622 | 2.3705082 | 20 | 1 | 70 days | 0.37 | M-v | 4 | MPC | | 2003 $MB_{13}$ |
| 2003 NQ | 16.6 | 0.15 | 20060922 | 309.50154 | 321.91850 | 289.82261 | 3.30807 | 0.2253900 | 2.5386754 | 38 | 3 | 1999–2006 | 0.40 | M-v | 4 | MPC | 02149 | 2003 NQ |
| 2003 $NR_2$ | 16.9 | 0.15 | 20060922 | 42.74093 | 221.27656 | 109.28349 | 24.79339 | 0.0733745 | 1.9102289 | 22 | 3 | 2000–2006 | 0.65 | M-v | 4 | MPC | 50238 | 2003 $NR_2$ |
| 2003 $NH_5$ | 18.4 | 0.15 | 20060922 | 9.93928 | 80.56457 | 196.12538 | 4.88787 | 0.2757773 | 2.1410052 | 58 | 2 | 2003–2006 | 0.50 | M-v | 4 | MPC | 04256 | 2003 $NH_5$ |
| 2003 $NN_6$ | 15.9 | 0.15 | 20060922 | 180.04442 | 171.98214 | 179.81185 | 9.45295 | 0.1800601 | 3.0565601 | 24 | 4 | 1993–2005 | 0.48 | M-v | 0 | MPC | 57916 | 2003 $NN_6$ |
| 2003 $NE_7$ | 16.7 | 0.15 | 20060922 | 297.75977 | 328.97837 | 7.88599 | 3.37117 | 0.2614852 | 2.3264457 | 27 | 5 | 1995–2006 | 0.61 | M-v | 2 | MPC | 00452 | 2003 $NE_7$ |
| 2003 $NH_7$ | 15.3 | 0.15 | 20060922 | 251.17790 | 301.78775 | 318.91545 | 12.20553 | 0.1311827 | 2.9626017 | 28 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 50240 | 2003 $NH_7$ |
| 2003 $NU_{11}$ | 15.9 | 0.15 | 20060922 | 302.44372 | 138.07713 | 142.53986 | 12.10842 | 0.0344577 | 2.5706401 | 26 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 02149 | 2003 $NU_{11}$ |
| 2003 $NY_{11}$ | 16.4 | 0.15 | 20060922 | 172.08978 | 89.68921 | 285.15671 | 11.69938 | 0.1998666 | 3.0160609 | 19 | 3 | 1999–2004 | 0.34 | M-v | 2 | MPC | 86047 | 2003 $NY_{11}$ |
| 2003 $NW_{12}$ | 15.8 | 0.15 | 20060922 | 253.61374 | 39.13084 | 233.92088 | 14.39970 | 0.1700159 | 2.9416974 | 14 | 1 | 111 days | 0.79 | M-v | 4 | MPC | | 2003 $NW_{12}$ |
| 2003 $NX_{12}$ | 16.1 | 0.15 | 20030809 | 346.18181 | 181.86001 | 157.12550 | 16.35313 | 0.2721752 | 3.1675936 | 16 | 1 | 58 days | 0.52 | | | MPC | | 2003 $NX_{12}$ |
| 2003 $NY_{12}$ | 16.7 | 0.15 | 20060922 | 318.51477 | 358.85491 | 301.21956 | 4.74238 | 0.1685409 | 2.3808976 | 17 | 1 | 80 days | 0.40 | M-v | 4 | MPC | | 2003 $NY_{12}$ |
| 2003 $NA_{13}$ | 17.9 | 0.15 | 20030809 | 336.25112 | 60.37899 | 298.24882 | 4.61351 | 0.2392833 | 2.2943470 | 19 | 1 | 56 days | 0.63 | | | MPC | | 2003 $NA_{13}$ |
| 2003 $NB_{13}$ | 17.9 | 0.15 | 20060922 | 304.93737 | 219.35018 | 137.92553 | 5.24018 | 0.2017636 | 2.2669387 | 16 | 1 | 80 days | 0.46 | M-v | 4 | MPC | | 2003 $NB_{13}$ |
| 2003 $NC_{13}$ | 17.1 | 0.15 | 20030809 | 320.33995 | 67.31776 | 308.73532 | 7.52947 | 0.1893436 | 2.3119794 | 19 | 1 | 56 days | 0.42 | | | MPC | | 2003 $NC_{13}$ |
| 2003 $ND_{13}$ | 16.0 | 0.15 | 20060922 | 198.58298 | 33.01711 | 315.23315 | 16.23388 | 0.2145368 | 3.1044518 | 22 | 1 | 81 days | 0.23 | M-v | 3 | MPC | | 2003 $ND_{13}$ |
| 2003 OE | 16.9 | 0.15 | 20060922 | 176.26532 | 355.19111 | 58.07568 | 3.46916 | 0.1399769 | 2.5853204 | 28 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 02150 | 2003 OE |
| 2003 OH | 17.0 | 0.15 | 20060922 | 12.44215 | 287.94186 | 357.39872 | 2.74668 | 0.0832918 | 2.1549156 | 41 | 5 | 1994–2004 | 0.46 | M-v | 2 | MPC | 04256 | 2003 OH |
| 2003 OP | 16.2 | 0.15 | 20060922 | 290.47670 | 241.51480 | 35.30494 | 2.87950 | 0.2062851 | 2.5799204 | 70 | 9 | 1991–2006 | 0.67 | M-v | 1 | MPC | 04256 | 2003 OP |
| 2003 OW | 15.3 | 0.15 | 20060922 | 268.51845 | 55.59129 | 265.08795 | 23.31437 | 0.2455592 | 2.6144686 | 32 | 1 | 113 days | 0.60 | M-v | 4 | MPC | 53736 | 2003 OW |
| 2003 $OG_1$ | 14.2 | 0.15 | 20060922 | 288.33554 | 255.36805 | 320.06526 | 15.16412 | 0.1813139 | 3.1262927 | 56 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 70363 | 2003 $OG_1$ |
| 2003 $OE_2$ | 17.2 | 0.15 | 20060922 | 311.16950 | 225.41278 | 99.64383 | 2.49187 | 0.1987957 | 2.2987899 | 49 | 6 | 1996–2006 | 0.45 | M-v | 1 | MPC | 02150 | 2003 $OE_2$ |
| 2003 $OJ_4$ | 17.0 | 0.15 | 20060922 | 285.57713 | 34.37156 | 319.85944 | 3.18567 | 0.1426583 | 2.3517741 | 54 | 4 | 1996–2005 | 0.66 | M-v | 1 | MPC | 90187 | 2003 $OJ_4$ |
| 2003 $OD_6$ | 17.1 | 0.15 | 20060922 | 311.74637 | 87.66081 | 234.99770 | 1.29865 | 0.2615046 | 2.3254479 | 56 | 5 | 1996–2004 | 0.43 | M-v | 1 | MPC | 74260 | 2003 $OD_6$ |
| 2003 $OE_6$ | 16.7 | 0.15 | 20060922 | 280.33777 | 104.72396 | 242.38489 | 5.70094 | 0.1196555 | 2.4220640 | 26 | 2 | 2003–2006 | 0.43 | M-v | 4 | MPC | 03507 | 2003 $OE_6$ |
| 2003 $OP_6$ | 15.4 | 0.15 | 20060922 | 214.89465 | 264.14087 | 109.49091 | 12.01191 | 0.2927363 | 2.8042226 | 45 | 3 | 2000–2005 | 0.50 | M-v | 2 | MPC | 74260 | 2003 $OP_6$ |
| 2003 $OR_6$ | 16.7 | 0.15 | 20060922 | 231.90596 | 5.82480 | 143.91726 | 22.82804 | 0.0544645 | 1.8923171 | 51 | 5 | 2000–2006 | 0.65 | M-v | 2 | MPC | 77697 | 2003 $OR_6$ |
| 2003 $OY_6$ | 15.0 | 0.15 | 20060922 | 238.67987 | 4.28827 | 267.08925 | 11.57540 | 0.2274118 | 3.0368044 | 32 | 4 | 2002–2005 | 0.51 | M-v | 1 | MPC | 95021 | 2003 $OY_6$ |
| 2003 $OU_7$ | 15.6 | 0.15 | 20060922 | 315.65085 | 88.81460 | 149.73693 | 13.57886 | 0.2361066 | 2.6185059 | 44 | 3 | 1998–2003 | 0.52 | M-v | 2 | MPC | 50255 | 2003 $OU_7$ |
| 2003 $OK_8$ | 16.6 | 0.15 | 20060922 | 285.82688 | 357.19867 | 346.49313 | 3.61154 | 0.1675993 | 2.3536695 | 26 | 4 | 2000–2005 | 0.59 | M-v | 1 | MPC | 72779 | 2003 $OK_8$ |
| 2003 $OD_{10}$ | 15.6 | 0.15 | 20060922 | 282.65856 | 40.97576 | 301.94032 | 6.84753 | 0.1436913 | 2.4014236 | 65 | 5 | 1994–2006 | 0.61 | M-v | 1 | MPC | 04257 | 2003 $OD_{10}$ |
| 2003 $OO_{11}$ | 16.5 | 0.15 | 20060922 | 48.95928 | 127.70694 | 179.43998 | 22.46885 | 0.0811026 | 1.9834322 | 111 | 5 | 1997–2006 | 0.47 | M-v | 2 | MPC | 04257 | 2003 $OO_{11}$ |
| 2003 $OM_{12}$ | 17.1 | 0.15 | 20060922 | 318.61455 | 133.43774 | 165.04529 | 13.36012 | 0.2548406 | 2.3685368 | 46 | 3 | 1995–2003 | 0.75 | M-v | 2 | MPC | 53110 | 2003 $OM_{12}$ |
| 2003 $OJ_{13}$ | 16.7 | 0.15 | 20060922 | 307.10173 | 193.72996 | 113.11236 | 2.97748 | 0.1868694 | 2.3784281 | 48 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 00456 | 2003 $OJ_{13}$ |
| 2003 $OM_{14}$ | 16.6 | 0.15 | 20060922 | 11.41731 | 113.18197 | 269.51616 | 17.68904 | 0.1041531 | 1.9108690 | 38 | 4 | 1998–2006 | 0.66 | M-v | 1 | MPC | 87584 | 2003 $OM_{14}$ |
| 2003 $OK_{16}$ | 16.6 | 0.15 | 20060922 | 312.83729 | 165.71768 | 166.53051 | 4.53798 | 0.2539722 | 2.3650586 | 86 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 04257 | 2003 $OK_{16}$ |
| 2003 $OJ_{18}$ | 15.5 | 0.15 | 20060922 | 275.48186 | 79.12118 | 356.67228 | 21.34763 | 0.3591499 | 2.3616328 | 96 | 3 | 1999–2006 | 0.76 | M-v | 1 | MPC | 04257 | 2003 $OJ_{18}$ |
| 2003 $OS_{19}$ | 15.7 | 0.15 | 20060922 | 241.09936 | 144.55384 | 222.15576 | 8.08660 | 0.1748629 | 2.5711790 | 53 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 02151 | 2003 $OS_{19}$ |
| 2003 $OB_{20}$ | 15.2 | 0.15 | 20060922 | 220.98975 | 45.64425 | 264.02365 | 9.81936 | 0.0746849 | 2.9336902 | 38 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 97660 | 2003 $OB_{20}$ |
| 2003 $OP_{20}$ | 17.0 | 0.15 | 20060922 | 282.15559 | 268.48075 | 61.51728 | 2.19422 | 0.2012493 | 2.4362351 | 27 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 02151 | 2003 $OP_{20}$ |
| 2003 $OV_{20}$ | 16.5 | 0.15 | 20060922 | 266.03355 | 271.10015 | 79.72974 | 7.39152 | 0.1369245 | 2.4266351 | 23 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 72783 | 2003 $OV_{20}$ |
| 2003 $OT_{21}$ | 17.7 | 0.15 | 20060922 | 21.56825 | 82.70337 | 157.15294 | 2.29751 | 0.1623100 | 2.2732400 | 40 | 3 | 1999–2006 | 0.45 | M-v | 2 | MPC | 00458 | 2003 $OT_{21}$ |
| 2003 $OA_{27}$ | 16.6 | 0.15 | 20060922 | 289.09802 | 175.07821 | 186.37240 | 4.94287 | 0.2044102 | 2.3159747 | 45 | 4 | 2002–2006 | 0.48 | M-v | 2 | MPC | 00459 | 2003 $OA_{27}$ |
| 2003 $OL_{28}$ | 16.1 | 0.15 | 20060922 | 329.17105 | 238.60118 | 32.99582 | 2.91908 | 0.0661404 | 2.5234886 | 45 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 02151 | 2003 $OL_{28}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $OO_{28}$ | 16.4 | 0.15 | 20060922 | 310.16742 | 283.54838 | 36.26470 | 1.81829 | 0.1925222 | 2.3802418 | 48 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 00460 | 2003 $OO_{28}$ |
| 2003 $OL_{30}$ | 16.9 | 0.15 | 20060922 | 343.90707 | 170.04930 | 98.71357 | 3.23780 | 0.1547968 | 2.4263415 | 38 | 3 | 1999–2006 | 0.40 | M-v | 2 | MPC | 02151 | 2003 $OL_{30}$ |
| 2003 $OJ_{32}$ | 16.6 | 0.15 | 20060922 | 119.07456 | 356.23245 | 258.98243 | 18.12608 | 0.0447719 | 1.9807124 | 32 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 77698 | 2003 $OJ_{32}$ |
| 2003 $OE_{33}$ | 15.5 | 0.15 | 20060922 | 240.94564 | 69.43405 | 248.20469 | 9.57392 | 0.1055897 | 2.9144027 | 18 | 1 | 68 days | 0.40 | M-v | 4 | MPC | | 2003 $OE_{33}$ |
| 2003 $OF_{33}$ | 16.0 | 0.15 | 20030809 | 359.00239 | 34.36161 | 290.24188 | 17.61987 | 0.2710450 | 3.1047442 | 17 | 1 | 41 days | 0.40 | | | MPC | | 2003 $OF_{33}$ |
| 2003 $OH_{33}$ | 17.8 | 0.15 | 20030809 | 342.31760 | 220.97147 | 128.80223 | 4.22056 | 0.2305003 | 2.3318571 | 17 | 1 | 38 days | 0.58 | | | MPC | | 2003 $OH_{33}$ |
| 2003 $OJ_{33}$ | 16.3 | 0.15 | 20060922 | 267.77610 | 165.01004 | 145.56307 | 2.88161 | 0.1981322 | 2.6564909 | 18 | 1 | 92 days | 0.35 | M-v | 3 | MPC | | 2003 $OJ_{33}$ |
| 2003 $OK_{33}$ | 17.2 | 0.15 | 20030809 | 333.37572 | 214.97435 | 149.64083 | 13.21961 | 0.1983216 | 2.5535534 | 20 | 1 | 38 days | 0.60 | | | MPC | | 2003 $OK_{33}$ |
| 2003 $OL_{33}$ | 15.6 | 0.15 | 20060922 | 169.85927 | 196.17220 | 161.39155 | 10.66770 | 0.0697165 | 3.2138819 | 16 | 1 | 69 days | 0.27 | M-v | 4 | MPC | | 2003 $OL_{33}$ |
| 2003 $ON_{33}$ | 17.0 | 0.15 | 20030829 | 342.21539 | 283.57130 | 81.57168 | 6.17265 | 0.1889530 | 2.2976734 | 19 | 1 | 59 days | 0.35 | | | MPC | | 2003 $ON_{33}$ |
| 2003 $OO_{33}$ | 16.4 | 0.15 | 20060922 | 227.72511 | 77.20999 | 258.11253 | 13.16875 | 0.2132465 | 2.9688693 | 16 | 1 | 89 days | 0.33 | M-v | 4 | MPC | | 2003 $OO_{33}$ |
| 2003 $OP_{33}$ | 17.2 | 0.15 | 20030829 | 26.90674 | 354.24759 | 296.43286 | 13.71460 | 0.2487248 | 2.3775459 | 16 | 1 | 54 days | 0.49 | | | MPC | | 2003 $OP_{33}$ |
| 2003 $OS_{33}$ | 7.8 | 0.15 | 20030630 | 9.63744 | 163.10871 | 131.50240 | 20.74223 | 0.5258942 | 69.5196176 | 23 | 1 | 57 days | 0.07 | | | MPC | | 2003 $OS_{33}$ |
| 2003 PA | 17.4 | 0.15 | 20060922 | 346.80823 | 249.40828 | 83.39538 | 4.33891 | 0.2744546 | 2.1609836 | 35 | 2 | 2000–2003 | 0.46 | M-v | 3 | MPC | 53740 | 2003 PA |
| 2003 $PO_2$ | 14.2 | 0.15 | 20060922 | 232.77999 | 318.73976 | 310.85145 | 12.89914 | 0.1248960 | 3.1467920 | 41 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 97661 | 2003 $PO_2$ |
| 2003 $PP_2$ | 16.5 | 0.15 | 20060922 | 271.04429 | 217.25804 | 129.88132 | 1.39448 | 0.2288773 | 2.4474089 | 45 | 5 | 1992–2006 | 0.55 | M-v | 1 | MPC | 04257 | 2003 $PP_2$ |
| 2003 $PS_2$ | 16.4 | 0.15 | 20060922 | 280.90777 | 56.71738 | 298.19344 | 5.60510 | 0.2626683 | 2.3802168 | 45 | 3 | 1996–2005 | 0.57 | M-v | 2 | MPC | 53740 | 2003 $PS_2$ |
| 2003 $PR_3$ | 16.5 | 0.15 | 20060922 | 299.95433 | 35.97398 | 328.83063 | 8.42506 | 0.1512582 | 2.2701577 | 57 | 3 | 2000–2005 | 0.51 | M-v | 3 | MPC | 53741 | 2003 $PR_3$ |
| 2003 $PF_4$ | 16.3 | 0.15 | 20060922 | 300.42499 | 28.55052 | 317.87103 | 6.91792 | 0.2353197 | 2.3504295 | 93 | 3 | 1993–2005 | 0.43 | M-v | 2 | MPC | 57919 | 2003 $PF_4$ |
| 2003 $PX_4$ | 15.9 | 0.15 | 20060922 | 290.04191 | 206.79547 | 134.75569 | 8.81764 | 0.2325629 | 2.3753847 | 72 | 5 | 1996–2006 | 0.62 | M-v | 1 | MPC | 02152 | 2003 $PX_4$ |
| 2003 $PK_5$ | 16.5 | 0.15 | 20060922 | 264.40950 | 157.58514 | 123.14726 | 5.11040 | 0.1766335 | 2.7798662 | 23 | 4 | 1999–2006 | 0.34 | M-v | 1 | MPC | 97661 | 2003 $PK_5$ |
| 2003 $PP_5$ | 16.7 | 0.15 | 20060922 | 285.89315 | 159.26942 | 188.56672 | 5.41393 | 0.2177583 | 2.4036318 | 73 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 00462 | 2003 $PP_5$ |
| 2003 $PV_5$ | 16.9 | 0.15 | 20060922 | 307.14453 | 135.87198 | 184.58856 | 5.15572 | 0.2441214 | 2.3875575 | 73 | 3 | 2002–2006 | 0.61 | M-v | 3 | MPC | 00462 | 2003 $PV_5$ |
| 2003 $PW_5$ | 17.2 | 0.15 | 20060922 | 339.03566 | 53.51464 | 239.18085 | 3.17543 | 0.2894126 | 2.3011875 | 47 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 00462 | 2003 $PW_5$ |
| 2003 $PA_7$ | 16.6 | 0.15 | 20060922 | 265.42463 | 90.18835 | 266.22539 | 5.20175 | 0.2102690 | 2.4148807 | 24 | 3 | 2000–2005 | 0.38 | M-v | 2 | MPC | 56751 | 2003 $PA_7$ |
| 2003 $PD_7$ | 16.7 | 0.15 | 20060922 | 298.99615 | 136.85282 | 195.35168 | 4.48011 | 0.2393322 | 2.3444792 | 39 | 4 | 1996–2006 | 0.52 | M-v | 1 | MPC | 00463 | 2003 $PD_7$ |
| 2003 $PM_7$ | 16.4 | 0.15 | 20060922 | 300.39366 | 164.67974 | 162.84480 | 5.63558 | 0.2349981 | 2.3984613 | 65 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 00463 | 2003 $PM_7$ |
| 2003 $PN_7$ | 15.2 | 0.15 | 20060922 | 207.32182 | 18.93489 | 290.80334 | 8.64454 | 0.2003726 | 3.0730823 | 45 | 5 | 1996–2006 | 0.61 | M-v | 1 | MPC | 95027 | 2003 $PN_7$ |
| 2003 $PY_8$ | 16.9 | 0.15 | 20060922 | 321.09742 | 20.21944 | 288.50112 | 1.65295 | 0.2115056 | 2.3355001 | 64 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 02152 | 2003 $PY_8$ |
| 2003 $PJ_{11}$ | 15.8 | 0.15 | 20060922 | 193.91568 | 186.99106 | 151.52658 | 16.62934 | 0.0599543 | 3.0477360 | 35 | 4 | 2001–2004 | 0.58 | M-v | 1 | MPC | 72791 | 2003 $PJ_{11}$ |
| 2003 $PV_{12}$ | 17.5 | 0.15 | 20030829 | 8.89094 | 45.88632 | 274.95790 | 4.66436 | 0.1848526 | 2.2876894 | 25 | 1 | 59 days | 0.53 | | | MPC | | 2003 $PV_{12}$ |
| 2003 $PW_{12}$ | 16.9 | 0.15 | 20030829 | 323.29488 | 254.54039 | 126.75965 | 3.38056 | 0.1822796 | 2.3271201 | 24 | 1 | 41 days | 0.59 | | | MPC | | 2003 $PW_{12}$ |
| 2003 $PX_{12}$ | 18.3 | 0.15 | 20030829 | 1.12100 | 162.88834 | 167.85391 | 2.77238 | 0.2977180 | 2.7121335 | 16 | 1 | 58 days | 0.43 | | | MPC | | 2003 $PX_{12}$ |
| 2003 $PY_{12}$ | 18.3 | 0.15 | 20030829 | 7.35338 | 106.13087 | 211.04604 | 3.10829 | 0.2779696 | 2.4016882 | 17 | 1 | 58 days | 0.39 | | | MPC | | 2003 $PY_{12}$ |
| 2003 QF | 16.6 | 0.15 | 20060922 | 203.45595 | 173.94132 | 189.31008 | 2.59266 | 0.2265297 | 2.8973477 | 41 | 4 | 1998–2006 | 0.44 | M-v | 1 | MPC | 02152 | 2003 QF |
| 2003 $QL_1$ | 16.4 | 0.15 | 20060922 | 335.02768 | 336.39730 | 311.13200 | 4.70923 | 0.1987744 | 2.4013094 | 46 | 2 | 2002–2003 | 0.49 | M-v | 4 | MPC | 53124 | 2003 $QL_1$ |
| 2003 $QX_1$ | 15.6 | 0.15 | 20060922 | 139.27772 | 243.60634 | 191.99394 | 1.57908 | 0.0859868 | 2.9255958 | 48 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 00464 | 2003 $QX_1$ |
| 2003 $QB_2$ | 15.4 | 0.15 | 20060922 | 183.24672 | 96.93692 | 293.41158 | 0.83761 | 0.0915113 | 2.9106150 | 53 | 4 | 1998–2006 | 0.38 | M-v | 0 | MPC | 02153 | 2003 $QB_2$ |
| 2003 $QB_5$ | 17.3 | 0.15 | 20060922 | 307.94708 | 66.02441 | 235.76478 | 1.65413 | 0.1778672 | 2.4690464 | 33 | 3 | 2002–2006 | 0.30 | M-v | 3 | MPC | 02153 | 2003 $QB_5$ |
| 2003 $QO_5$ | 15.9 | 0.15 | 20060922 | 229.12255 | 45.48336 | 327.83085 | 11.00310 | 0.1944934 | 2.6354036 | 35 | 3 | 1999–2005 | 0.42 | M-v | 3 | MPC | 53743 | 2003 $QO_5$ |
| 2003 $QV_5$ | 16.7 | 0.15 | 20060922 | 340.62897 | 249.23554 | 27.44699 | 5.68797 | 0.2496748 | 2.3666361 | 70 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 00466 | 2003 $QV_5$ |
| 2003 $QN_6$ | 16.8 | 0.15 | 20060922 | 276.18067 | 20.78905 | 358.83167 | 0.41073 | 0.1745830 | 2.3656271 | 63 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 02153 | 2003 $QN_6$ |
| 2003 $QP_6$ | 15.7 | 0.15 | 20060922 | 321.42534 | 339.44992 | 348.34669 | 6.44213 | 0.1582910 | 2.3685143 | 102 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 02153 | 2003 $QP_6$ |
| 2003 $QV_6$ | 17.8 | 0.15 | 20060922 | 14.38883 | 42.13017 | 262.30778 | 1.27606 | 0.1890550 | 2.1361207 | 47 | 5 | 2000–2006 | 0.47 | M-v | 2 | MPC | 02153 | 2003 $QV_6$ |
| 2003 $QW_7$ | 17.1 | 0.15 | 20060922 | 268.86590 | 16.31064 | 347.82044 | 0.76527 | 0.2089792 | 2.4624426 | 32 | 2 | 2003–2006 | 0.51 | M-v | 4 | MPC | 03508 | 2003 $QW_7$ |
| 2003 $QT_9$ | 15.2 | 0.15 | 20060922 | 169.08673 | 53.14500 | 325.73630 | 12.09159 | 0.2100284 | 3.1051754 | 36 | 2 | 2003–2006 | 0.41 | M-v | 3 | MPC | 95030 | 2003 $QT_9$ |
| 2003 $QW_9$ | 16.7 | 0.15 | 20060922 | 319.11495 | 223.14645 | 90.63087 | 7.23495 | 0.2041492 | 2.3340156 | 30 | 4 | 1999–2005 | 0.61 | M-v | 1 | MPC | 86056 | 2003 $QW_9$ |
| 2003 $QE_{11}$ | 16.5 | 0.15 | 20060922 | 294.38249 | 10.84151 | 343.70384 | 9.77353 | 0.1482934 | 2.3471030 | 65 | 4 | 1998–2005 | 0.59 | M-v | 2 | MPC | 56753 | 2003 $QE_{11}$ |
| 2003 $QC_{12}$ | 16.3 | 0.15 | 20060922 | 295.26637 | 129.31423 | 203.12925 | 0.59870 | 0.1990108 | 2.4207048 | 63 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 00467 | 2003 $QC_{12}$ |
| 2003 $QK_{14}$ | 15.9 | 0.15 | 20060922 | 178.28759 | 96.20585 | 283.81935 | 8.03968 | 0.2329202 | 3.0725247 | 51 | 3 | 1998–2005 | 0.51 | M-v | 2 | MPC | 86057 | 2003 $QK_{14}$ |
| 2003 $QK_{15}$ | 15.5 | 0.15 | 20060922 | 216.83596 | 89.09613 | 250.80025 | 8.53736 | 0.1188203 | 2.9628356 | 28 | 2 | 2001–2003 | 0.54 | M-v | 3 | MPC | 53135 | 2003 $QK_{15}$ |
| 2003 $QQ_{15}$ | 16.8 | 0.15 | 20060922 | 280.39455 | 20.51891 | 309.69500 | 9.71818 | 0.1247410 | 2.5446507 | 61 | 4 | 1993–2005 | 0.51 | M-v | 3 | MPC | 04257 | 2003 $QQ_{15}$ |
| 2003 $QT_{15}$ | 16.7 | 0.15 | 20060922 | 320.88981 | 34.75587 | 307.96524 | 6.00219 | 0.1391915 | 2.2702512 | 76 | 3 | 2000–2005 | 0.53 | M-v | 2 | MPC | 86057 | 2003 $QT_{15}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $QY_{15}$ | 15.7 | 0.15 | 20060922 | 215.30998 | 190.30474 | 186.83951 | 13.55884 | 0.2498241 | 2.7961730 | 85 | 3 | 1997–2006 | 0.58 | M-v | 2 | MPC | 00468 | 2003 $QY_{15}$ |
| 2003 $QD_{18}$ | 16.9 | 0.15 | 20060922 | 311.56824 | 279.95165 | 56.94017 | 2.82740 | 0.2239277 | 2.3223405 | 64 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 02154 | 2003 $QD_{18}$ |
| 2003 $QG_{18}$ | 16.3 | 0.15 | 20060922 | 340.36008 | 174.15163 | 100.70267 | 3.63482 | 0.1830865 | 2.4084060 | 33 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 00469 | 2003 $QG_{18}$ |
| 2003 $QG_{19}$ | 16.8 | 0.15 | 20060922 | 317.76203 | 194.90579 | 119.13869 | 3.44561 | 0.1930183 | 2.3860386 | 60 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 02154 | 2003 $QG_{19}$ |
| 2003 $QG_{20}$ | 16.5 | 0.15 | 20060922 | 348.97704 | 318.62808 | 353.74457 | 7.20295 | 0.1729682 | 2.2500599 | 85 | 4 | 1992–2005 | 0.59 | M-v | 2 | MPC | 04257 | 2003 $QG_{20}$ |
| 2003 $QK_{20}$ | 16.7 | 0.15 | 20060922 | 282.50257 | 253.25100 | 109.63660 | 2.37908 | 0.2002500 | 2.4121408 | 44 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 03508 | 2003 $QK_{20}$ |
| 2003 $QZ_{20}$ | 16.1 | 0.15 | 20060922 | 331.83686 | 230.11153 | 54.94319 | 4.61326 | 0.1675422 | 2.4712824 | 51 | 2 | 2003–2006 | 0.57 | M-v | 4 | MPC | 00470 | 2003 $QZ_{20}$ |
| 2003 $QK_{22}$ | 16.4 | 0.15 | 20060922 | 18.56187 | 0.03318 | 276.11366 | 6.24093 | 0.0913662 | 2.2724107 | 47 | 5 | 1999–2005 | 0.57 | M-v | 1 | MPC | 86059 | 2003 $QK_{22}$ |
| 2003 $QZ_{22}$ | 16.3 | 0.15 | 20060922 | 300.14716 | 75.06588 | 273.25845 | 2.77583 | 0.1687730 | 2.3602910 | 80 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 02154 | 2003 $QZ_{22}$ |
| 2003 $QE_{23}$ | 17.0 | 0.15 | 20060922 | 351.65612 | 81.37409 | 197.75456 | 4.40717 | 0.1604096 | 2.3687432 | 72 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 00471 | 2003 $QE_{23}$ |
| 2003 $QX_{24}$ | 17.1 | 0.15 | 20060922 | 303.81483 | 141.68856 | 211.80191 | 2.30939 | 0.1207481 | 2.2859536 | 46 | 3 | 2002–2005 | 0.46 | M-v | 3 | MPC | 53146 | 2003 $QX_{24}$ |
| 2003 $QC_{25}$ | 16.3 | 0.15 | 20060922 | 265.65784 | 207.77302 | 192.34841 | 5.61633 | 0.2394890 | 2.3440389 | 88 | 4 | 1996–2005 | 0.56 | M-v | 1 | MPC | 77699 | 2003 $QC_{25}$ |
| 2003 $QJ_{25}$ | 16.0 | 0.15 | 20060922 | 296.63073 | 321.60386 | 317.90559 | 9.09298 | 0.1709359 | 2.6701653 | 39 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 95036 | 2003 $QJ_{25}$ |
| 2003 $QR_{25}$ | 15.5 | 0.15 | 20060922 | 204.39800 | 145.86687 | 181.00225 | 9.64144 | 0.0941136 | 3.1729562 | 22 | 4 | 1992–2003 | 0.48 | M-v | 1 | MPC | 57922 | 2003 $QR_{25}$ |
| 2003 $QR_{29}$ | 17.5 | 0.15 | 20060922 | 28.89315 | 265.54321 | 346.59917 | 3.94593 | 0.1039945 | 2.2918615 | 48 | 4 | 1993–2004 | 0.49 | M-v | 1 | MPC | 74264 | 2003 $QR_{29}$ |
| 2003 $QU_{30}$ | 16.5 | 0.15 | 20060922 | 136.62496 | 83.25541 | 166.49717 | 22.69841 | 0.0542796 | 1.9288532 | 103 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 75893 | 2003 $QU_{30}$ |
| 2003 $QH_{31}$ | 15.6 | 0.15 | 20060922 | 169.80126 | 202.68773 | 181.64615 | 10.75279 | 0.2396745 | 3.0943558 | 23 | 3 | 2003–2006 | 0.61 | M-v | 3 | MPC | 95038 | 2003 $QH_{31}$ |
| 2003 $QP_{31}$ | 16.4 | 0.15 | 20060922 | 253.39389 | 3.82222 | 340.68497 | 6.22444 | 0.2569487 | 2.6180692 | 51 | 3 | 1999–2005 | 0.61 | M-v | 2 | MPC | 53749 | 2003 $QP_{31}$ |
| 2003 $QH_{32}$ | 16.3 | 0.15 | 20060922 | 258.81947 | 47.67929 | 345.68539 | 5.10726 | 0.1317521 | 2.3627945 | 57 | 3 | 1996–2005 | 0.63 | M-v | 3 | MPC | 77699 | 2003 $QH_{32}$ |
| 2003 $QN_{32}$ | 16.8 | 0.15 | 20060922 | 300.54456 | 341.51469 | 337.89528 | 0.57561 | 0.1863220 | 2.4491578 | 62 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 00473 | 2003 $QN_{32}$ |
| 2003 $QS_{36}$ | 17.1 | 0.15 | 20060922 | 332.66679 | 333.57799 | 344.45366 | 5.44018 | 0.1831834 | 2.3090606 | 73 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 02155 | 2003 $QS_{36}$ |
| 2003 $QN_{37}$ | 16.9 | 0.15 | 20060922 | 305.42158 | 50.90843 | 297.97253 | 1.44817 | 0.2336926 | 2.3215405 | 102 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 02155 | 2003 $QN_{37}$ |
| 2003 $QP_{37}$ | 17.9 | 0.15 | 20060922 | 37.62093 | 115.83152 | 167.50396 | 3.37310 | 0.1679770 | 2.1199435 | 53 | 4 | 2000–2006 | 0.42 | M-v | 3 | MPC | 03509 | 2003 $QP_{37}$ |
| 2003 $QR_{37}$ | 17.0 | 0.15 | 20060922 | 311.78846 | 171.81744 | 171.69321 | 5.63759 | 0.1836054 | 2.3098976 | 51 | 3 | 1996–2006 | 0.46 | M-v | 3 | MPC | 00475 | 2003 $QR_{37}$ |
| 2003 $QT_{38}$ | 17.1 | 0.15 | 20060922 | 298.00856 | 265.45513 | 96.02110 | 0.71744 | 0.0924004 | 2.3020330 | 37 | 4 | 2000–2005 | 0.41 | M-v | 1 | MPC | 57923 | 2003 $QT_{38}$ |
| 2003 $QQ_{39}$ | 17.4 | 0.15 | 20060922 | 299.17684 | 61.49127 | 288.37554 | 0.09990 | 0.2778940 | 2.3591112 | 77 | 4 | 1996–2006 | 0.54 | M-v | 2 | MPC | 02155 | 2003 $QQ_{39}$ |
| 2003 $QD_{42}$ | 16.4 | 0.15 | 20060922 | 317.16871 | 175.64875 | 179.33157 | 9.86345 | 0.2401629 | 2.3084494 | 75 | 4 | 1996–2006 | 0.60 | M-v | 2 | MPC | 02155 | 2003 $QD_{42}$ |
| 2003 $QN_{42}$ | 16.0 | 0.15 | 20060922 | 269.61002 | 154.34858 | 186.90951 | 10.16619 | 0.2610074 | 2.6643479 | 101 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 00476 | 2003 $QN_{42}$ |
| 2003 $QH_{43}$ | 15.3 | 0.15 | 20060922 | 143.58222 | 215.36862 | 196.40872 | 12.95851 | 0.1128108 | 3.0622362 | 31 | 3 | 2003–2006 | 0.46 | M-v | 3 | MPC | 00477 | 2003 $QH_{43}$ |
| 2003 $QW_{43}$ | 17.1 | 0.15 | 20060922 | 10.78525 | 148.89493 | 149.03872 | 3.06013 | 0.1766481 | 2.2101397 | 47 | 3 | 2002–2005 | 0.45 | M-v | 3 | MPC | 57924 | 2003 $QW_{43}$ |
| 2003 $QS_{44}$ | 17.4 | 0.15 | 20060922 | 325.76315 | 34.41592 | 300.67418 | 2.28355 | 0.1547483 | 2.2709068 | 27 | 3 | 1998–2005 | 0.54 | M-v | 4 | MPC | 53751 | 2003 $QS_{44}$ |
| 2003 $QQ_{45}$ | 17.4 | 0.15 | 20060922 | 349.77237 | 123.58602 | 144.54680 | 2.69285 | 0.1905131 | 2.3810255 | 34 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 03509 | 2003 $QQ_{45}$ |
| 2003 $QC_{48}$ | 17.3 | 0.15 | 20060922 | 336.39193 | 71.88446 | 240.62270 | 5.99172 | 0.1386074 | 2.3087474 | 33 | 3 | 1999–2006 | 0.28 | M-v | 1 | MPC | 00478 | 2003 $QC_{48}$ |
| 2003 $QF_{48}$ | 15.1 | 0.15 | 20060922 | 299.46453 | 305.52762 | 300.61456 | 10.77475 | 0.1422764 | 2.9410494 | 56 | 4 | 1995–2006 | 0.47 | M-v | 2 | MPC | 02156 | 2003 $QF_{48}$ |
| 2003 $QS_{49}$ | 17.6 | 0.15 | 20060922 | 349.74579 | 193.32275 | 131.46536 | 2.63010 | 0.1994449 | 2.1896272 | 56 | 6 | 1996–2005 | 0.60 | M-v | 1 | MPC | 77701 | 2003 $QS_{49}$ |
| 2003 $QX_{50}$ | 17.2 | 0.15 | 20060922 | 351.49081 | 187.72879 | 95.01850 | 3.51591 | 0.2130802 | 2.3583657 | 41 | 2 | 2003–2006 | 0.51 | M-v | 4 | MPC | 04257 | 2003 $QX_{50}$ |
| 2003 $QM_{51}$ | 15.3 | 0.15 | 20060922 | 273.27927 | 346.28072 | 351.20791 | 9.31358 | 0.1988805 | 2.6503824 | 90 | 4 | 1993–2005 | 0.62 | M-v | 2 | MPC | 74266 | 2003 $QM_{51}$ |
| 2003 $QR_{51}$ | 16.6 | 0.15 | 20060922 | 275.84166 | 261.73868 | 91.27294 | 2.50050 | 0.1920756 | 2.4302680 | 28 | 3 | 2003–2006 | 0.39 | M-v | 3 | MPC | 00479 | 2003 $QR_{51}$ |
| 2003 $QJ_{52}$ | 17.3 | 0.15 | 20060922 | 319.70108 | 303.23020 | 18.48093 | 3.11995 | 0.2644483 | 2.3105351 | 63 | 3 | 1999–2006 | 0.37 | M-v | 2 | MPC | 00480 | 2003 $QJ_{52}$ |
| 2003 $QK_{52}$ | 16.7 | 0.15 | 20060922 | 256.05938 | 226.67710 | 130.64330 | 6.07021 | 0.2992132 | 2.5603704 | 29 | 2 | 1999–2003 | 0.52 | M-v | 3 | MPC | 03509 | 2003 $QK_{52}$ |
| 2003 $QO_{52}$ | 17.5 | 0.15 | 20060922 | 337.08742 | 295.41102 | 5.06924 | 4.55155 | 0.2339343 | 2.2940811 | 40 | 1 | 82 days | 0.41 | M-v | 4 | MPC | 53753 | 2003 $QO_{52}$ |
| 2003 $QC_{53}$ | 17.2 | 0.15 | 20060922 | 310.86347 | 260.73020 | 79.48895 | 3.42792 | 0.2336849 | 2.3179595 | 44 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 00480 | 2003 $QC_{53}$ |
| 2003 $QH_{54}$ | 15.8 | 0.15 | 20060922 | 194.72913 | 292.41802 | 61.71839 | 5.03385 | 0.2612803 | 3.0896017 | 31 | 4 | 1998–2004 | 0.45 | M-v | 1 | MPC | 57925 | 2003 $QH_{54}$ |
| 2003 $QA_{55}$ | 16.6 | 0.15 | 20060922 | 324.51703 | 229.05169 | 91.17970 | 3.15556 | 0.1130572 | 2.3385769 | 57 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 00481 | 2003 $QA_{55}$ |
| 2003 $QW_{55}$ | 16.1 | 0.15 | 20060922 | 276.74701 | 201.86951 | 136.04836 | 10.65162 | 0.2485544 | 2.5311215 | 39 | 3 | 1999–2005 | 0.57 | M-v | 3 | MPC | 53754 | 2003 $QW_{55}$ |
| 2003 $QU_{56}$ | 16.5 | 0.15 | 20060922 | 310.87749 | 266.90991 | 52.72440 | 4.70314 | 0.2033784 | 2.4127537 | 49 | 3 | 2002–2006 | 0.38 | M-v | 3 | MPC | 00482 | 2003 $QU_{56}$ |
| 2003 $QM_{57}$ | 16.9 | 0.15 | 20060922 | 289.52153 | 326.03567 | 48.71805 | 1.57460 | 0.2211836 | 2.2902932 | 44 | 5 | 2000–2006 | 0.55 | M-v | 2 | MPC | 77701 | 2003 $QM_{57}$ |
| 2003 $QS_{57}$ | 15.4 | 0.15 | 20060922 | 347.48635 | 111.34586 | 138.71533 | 12.62219 | 0.1158347 | 2.5763358 | 72 | 5 | 1998–2006 | 0.61 | M-v | 2 | MPC | 00483 | 2003 $QS_{57}$ |
| 2003 $QY_{57}$ | 16.4 | 0.15 | 20060922 | 235.90223 | 4.36049 | 38.24017 | 3.20970 | 0.2117628 | 2.4884309 | 34 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 02157 | 2003 $QY_{57}$ |
| 2003 $QB_{58}$ | 17.3 | 0.15 | 20060922 | 304.50873 | 234.18442 | 95.41958 | 1.93816 | 0.1902345 | 2.3928464 | 37 | 3 | 2000–2006 | 0.62 | M-v | 3 | MPC | 00483 | 2003 $QB_{58}$ |
| 2003 $QS_{58}$ | 16.6 | 0.15 | 20060922 | 269.53064 | 214.51454 | 73.45933 | 3.43600 | 0.2430851 | 2.7840899 | 24 | 3 | 1999–2006 | 0.49 | M-v | 3 | MPC | 95044 | 2003 $QS_{58}$ |
| 2003 $QV_{59}$ | 17.3 | 0.15 | 20060922 | 334.97419 | 281.73055 | 22.48858 | 5.72848 | 0.2556460 | 2.3330695 | 53 | 4 | 1995–2006 | 0.47 | M-v | 2 | MPC | 00483 | 2003 $QV_{59}$ |
| 2003 $QX_{60}$ | 15.8 | 0.15 | 20060922 | 342.34934 | 292.57191 | 31.51817 | 5.20111 | 0.1980771 | 2.2594254 | 89 | 3 | 2002–2005 | 0.55 | M-v | 2 | MPC | 57926 | 2003 $QX_{60}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $QB_{61}$ | 15.0 | 0.15 | 20060922 | 182.53753 | 255.31475 | 133.28360 | 8.83741 | 0.2558605 | 3.1078378 | 88 | 5 | 1996–2006 | 0.58 | M-v | 0 | MPC | 02157 | 2003 $QB_{61}$ |
| 2003 $QP_{62}$ | 16.2 | 0.15 | 20060922 | 288.05234 | 219.34222 | 160.96027 | 11.86300 | 0.2494354 | 2.3978718 | 53 | 4 | 1994–2005 | 0.54 | M-v | 1 | MPC | 03510 | 2003 $QP_{62}$ |
| 2003 $QG_{64}$ | 16.2 | 0.15 | 20060922 | 261.22584 | 265.63041 | 90.23808 | 3.69839 | 0.3048017 | 2.6813673 | 85 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 02157 | 2003 $QG_{64}$ |
| 2003 $QK_{67}$ | 14.4 | 0.15 | 20060922 | 190.22990 | 234.63784 | 144.91088 | 10.73127 | 0.0815518 | 3.0704824 | 36 | 4 | 1996–2003 | 0.58 | M-v | 1 | MPC | 65498 | 2003 $QK_{67}$ |
| 2003 $QR_{67}$ | 16.5 | 0.15 | 20060922 | 334.90713 | 5.28011 | 309.34944 | 6.80322 | 0.1308107 | 2.2738740 | 49 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 53756 | 2003 $QR_{67}$ |
| 2003 $QE_{68}$ | 14.6 | 0.15 | 20060922 | 259.46921 | 284.61738 | 330.91155 | 14.28665 | 0.1985209 | 3.1044386 | 45 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 75903 | 2003 $QE_{68}$ |
| 2003 $QK_{68}$ | 16.6 | 0.15 | 20060922 | 211.15719 | 95.66250 | 322.29562 | 4.38755 | 0.2392919 | 2.5663257 | 49 | 4 | 1995–2005 | 0.53 | M-v | 2 | MPC | 77702 | 2003 $QK_{68}$ |
| 2003 $QU_{69}$ | 16.2 | 0.15 | 20060922 | 218.26108 | 242.99649 | 167.67453 | 15.79204 | 0.1944770 | 2.5735216 | 55 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 02157 | 2003 $QU_{69}$ |
| 2003 $QM_{70}$ | 15.0 | 0.15 | 20060922 | 288.21175 | 63.35867 | 10.04034 | 22.67852 | 0.3256436 | 2.3398446 | 81 | 4 | 1992–2006 | 0.53 | M-v | 1 | MPC | 04257 | 2003 $QM_{70}$ |
| 2003 $QT_{70}$ | 16.4 | 0.15 | 20060922 | 230.98416 | 304.33963 | 96.15122 | 6.01131 | 0.1969086 | 2.5371943 | 39 | 3 | 1997–2006 | 0.46 | M-v | 3 | MPC | 00490 | 2003 $QT_{70}$ |
| 2003 $QO_{72}$ | 16.0 | 0.15 | 20060922 | 298.88942 | 284.96375 | 352.40785 | 12.45569 | 0.2580951 | 2.6142468 | 56 | 3 | 1998–2003 | 0.76 | M-v | 2 | MPC | 53207 | 2003 $QO_{72}$ |
| 2003 $QV_{72}$ | 16.2 | 0.15 | 20060922 | 213.59506 | 115.72656 | 208.42525 | 9.48930 | 0.3615508 | 3.0154892 | 61 | 3 | 1998–2003 | 0.62 | M-v | 2 | MPC | 57928 | 2003 $QV_{72}$ |
| 2003 $QC_{74}$ | 16.7 | 0.15 | 20060922 | 337.75233 | 65.65656 | 212.02798 | 4.17605 | 0.2144134 | 2.3760476 | 30 | 3 | 1996–2006 | 0.57 | M-v | 3 | MPC | 00491 | 2003 $QC_{74}$ |
| 2003 $QK_{74}$ | 16.6 | 0.15 | 20060922 | 307.45270 | 67.88800 | 284.58059 | 4.37262 | 0.2192778 | 2.2872803 | 51 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 02157 | 2003 $QK_{74}$ |
| 2003 $QU_{75}$ | 16.7 | 0.15 | 20060922 | 329.72158 | 133.30531 | 213.57372 | 4.84882 | 0.1961148 | 2.2273709 | 77 | 4 | 1998–2003 | 0.59 | M-v | 2 | MPC | 57928 | 2003 $QU_{75}$ |
| 2003 $QH_{76}$ | 17.2 | 0.15 | 20060922 | 325.43479 | 31.79528 | 293.33713 | 3.72233 | 0.1676211 | 2.2995390 | 52 | 4 | 1996–2006 | 0.74 | M-v | 1 | MPC | 02157 | 2003 $QH_{76}$ |
| 2003 $QR_{76}$ | 15.6 | 0.15 | 20060922 | 259.35184 | 45.64215 | 277.81509 | 3.79378 | 0.1478083 | 2.7055748 | 38 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 02157 | 2003 $QR_{76}$ |
| 2003 $QS_{76}$ | 16.7 | 0.15 | 20060922 | 307.96680 | 137.45000 | 175.67671 | 15.98078 | 0.2258890 | 2.4527874 | 54 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 00491 | 2003 $QS_{76}$ |
| 2003 $QG_{80}$ | 17.7 | 0.15 | 20060922 | 275.77795 | 280.72684 | 106.81448 | 2.16859 | 0.2081502 | 2.3186493 | 21 | 3 | 1996–2003 | 0.46 | M-v | 2 | MPC | 69549 | 2003 $QG_{80}$ |
| 2003 $QH_{80}$ | 16.5 | 0.15 | 20060922 | 178.53402 | 51.52026 | 332.39378 | 1.26307 | 0.0754946 | 2.9024683 | 34 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 02158 | 2003 $QH_{80}$ |
| 2003 $QB_{82}$ | 16.3 | 0.15 | 20060922 | 222.72930 | 316.29122 | 76.64752 | 3.01367 | 0.0804980 | 2.5628510 | 47 | 8 | 1995–2006 | 0.50 | M-v | 0 | MPC | 02158 | 2003 $QB_{82}$ |
| 2003 $QO_{84}$ | 17.5 | 0.15 | 20060922 | 256.40398 | 0.01374 | 24.72275 | 1.11006 | 0.1862832 | 2.4243888 | 26 | 4 | 2000–2006 | 0.35 | M-v | 2 | MPC | 02158 | 2003 $QO_{84}$ |
| 2003 $QZ_{84}$ | 15.5 | 0.15 | 20060922 | 167.11625 | 86.27661 | 317.69564 | 8.49778 | 0.1180588 | 2.9867606 | 66 | 4 | 1995–2005 | 0.55 | M-v | 2 | MPC | 86076 | 2003 $QZ_{84}$ |
| 2003 $QM_{85}$ | 15.2 | 0.15 | 20060922 | 178.40864 | 211.52584 | 155.32219 | 5.85904 | 0.1447300 | 3.2065405 | 57 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 95048 | 2003 $QM_{85}$ |
| 2003 $QW_{86}$ | 16.6 | 0.15 | 20060922 | 249.76511 | 211.79236 | 188.93404 | 2.51668 | 0.1755019 | 2.3789942 | 41 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 02158 | 2003 $QW_{86}$ |
| 2003 $QC_{89}$ | 15.5 | 0.15 | 20060922 | 148.60983 | 72.09228 | 330.83626 | 9.42728 | 0.1550169 | 3.1481560 | 25 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 02158 | 2003 $QC_{89}$ |
| 2003 $QA_{91}$ | 5.4 | 0.15 | 20060922 | 260.00374 | 331.86424 | 104.64275 | 2.41316 | 0.0651126 | 44.3724637 | 17 | 3 | 2003–2006 | 0.17 | M-v | 4 | MPC | 87585 | 2003 $QA_{91}$ |
| 2003 $QD_{91}$ | 7.1 | 0.15 | 20060922 | 31.40229 | 225.04774 | 80.65200 | 2.22205 | 0.0329362 | 43.2151154 | 10 | 2 | 2003–2004 | 0.14 | M-v | 5 | MPC | 72816 | 2003 $QD_{91}$ |
| 2003 $QA_{92}$ | 6.3 | 0.15 | 20060922 | 288.59041 | 297.13913 | 109.74537 | 3.42893 | 0.0583473 | 38.2042149 | 19 | 3 | 2003–2006 | 0.22 | M-v | 4 | MPC | 69549 | 2003 $QA_{92}$ |
| 2003 $QU_{92}$ | 15.3 | 0.15 | 20060922 | 170.13513 | 235.99528 | 141.91098 | 16.76949 | 0.1294198 | 3.1587280 | 34 | 3 | 2000–2006 | 0.66 | M-v | 3 | MPC | 95049 | 2003 $QU_{92}$ |
| 2003 $QH_{99}$ | 17.4 | 0.15 | 20060922 | 261.97231 | 79.00830 | 255.76259 | 2.55964 | 0.2426859 | 2.6205444 | 47 | 2 | 1999–2003 | 0.49 | M-v | 3 | MPC | 53761 | 2003 $QH_{99}$ |
| 2003 $QS_{99}$ | 16.8 | 0.15 | 20060922 | 302.13319 | 162.69060 | 173.36015 | 6.50925 | 0.1443455 | 2.3792745 | 43 | 2 | 2002–2003 | 0.54 | M-v | 3 | MPC | 57931 | 2003 $QS_{99}$ |
| 2003 $QU_{100}$ | 16.4 | 0.15 | 20060922 | 274.36064 | 134.68586 | 179.00569 | 10.40224 | 0.0731282 | 2.6216010 | 32 | 3 | 1999–2006 | 0.34 | M-v | 3 | MPC | 02159 | 2003 $QU_{100}$ |
| 2003 $QF_{101}$ | 15.3 | 0.15 | 20060922 | 202.08998 | 357.37443 | 344.83222 | 9.03208 | 0.1024588 | 3.1023244 | 55 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 95051 | 2003 $QF_{101}$ |
| 2003 $QD_{103}$ | 16.1 | 0.15 | 20060922 | 177.72557 | 255.62095 | 140.44789 | 2.82329 | 0.0908199 | 2.8527289 | 50 | 5 | 1996–2006 | 0.39 | M-v | 0 | MPC | 02159 | 2003 $QD_{103}$ |
| 2003 $QF_{103}$ | 15.4 | 0.15 | 20060922 | 237.14447 | 292.16420 | 53.89398 | 12.49180 | 0.1590243 | 2.8040705 | 47 | 4 | 1999–2005 | 0.64 | M-v | 1 | MPC | 57931 | 2003 $QF_{103}$ |
| 2003 $QT_{103}$ | 15.9 | 0.15 | 20060922 | 267.51062 | 194.62115 | 132.12964 | 7.63876 | 0.1241743 | 2.7014132 | 44 | 4 | 2001–2004 | 0.55 | M-v | 1 | MPC | 57931 | 2003 $QT_{103}$ |
| 2003 $QG_{105}$ | 17.3 | 0.15 | 20060922 | 316.79178 | 328.95098 | 17.35396 | 4.15470 | 0.2375162 | 2.3032814 | 69 | 3 | 1995–2003 | 0.62 | M-v | 2 | MPC | 86079 | 2003 $QG_{105}$ |
| 2003 $QM_{107}$ | 16.4 | 0.15 | 20060922 | 267.80705 | 316.22609 | 34.55595 | 9.54304 | 0.2349140 | 2.5367980 | 61 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 02159 | 2003 $QM_{107}$ |
| 2003 $QD_{111}$ | 16.3 | 0.15 | 20060922 | 356.64828 | 211.27517 | 95.65441 | 6.85420 | 0.1557270 | 2.2246056 | 31 | 4 | 2000–2005 | 0.46 | M-v | 2 | MPC | 57932 | 2003 $QD_{111}$ |
| 2003 $QW_{111}$ | 6.2 | 0.15 | 20060922 | 263.59395 | 20.86293 | 68.50320 | 2.66666 | 0.1116936 | 43.6573551 | 15 | 4 | 2003–2006 | 0.35 | M-v | 4 | MPC | 04258 | 2003 $QW_{111}$ |
| 2003 $QV_{112}$ | 16.4 | 0.15 | 20060922 | 310.08334 | 163.31426 | 277.41325 | 20.36102 | 0.0741227 | 1.9443132 | 27 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 61722 | 2003 $QV_{112}$ |
| 2003 $QF_{113}$ | 6.5 | 0.15 | 20060922 | 9.39570 | 196.54899 | 114.13397 | 4.45778 | 0.0300151 | 43.8698428 | 14 | 4 | 2003–2006 | 0.19 | M-v | 4 | MPC | 87585 | 2003 $QF_{113}$ |
| 2003 $QX_{113}$ | 4.9 | 0.15 | 20060922 | 127.58381 | 25.04027 | 158.05866 | 6.76200 | 0.2522222 | 49.5665024 | 14 | 4 | 2003–2006 | 0.18 | M-v | 5 | MPC | 00498 | 2003 $QX_{113}$ |
| 2003 $QU_{114}$ | 15.6 | 0.15 | 20030829 | 30.35618 | 114.50976 | 176.37934 | 16.30047 | 0.2112261 | 3.0920891 | 18 | 1 | 38 days | 0.60 | | | MPC | | 2003 $QU_{114}$ |
| 2003 $QV_{114}$ | 18.9 | 0.15 | 20030918 | 17.48082 | 237.11445 | 85.45865 | 7.07127 | 0.3425747 | 2.2889280 | 16 | 1 | 44 days | 0.53 | | | MPC | | 2003 $QV_{114}$ |
| 2003 $QW_{114}$ | 16.8 | 0.15 | 20030918 | 29.85655 | 359.71598 | 321.22165 | 4.30737 | 0.0692085 | 2.9501066 | 16 | 1 | 58 days | 0.52 | | | MPC | | 2003 $QW_{114}$ |
| 2003 $QX_{114}$ | 17.6 | 0.15 | 20030918 | 46.09620 | 307.91105 | 338.51690 | 2.11912 | 0.2181237 | 2.3410748 | 15 | 1 | 56 days | 0.36 | | | MPC | | 2003 $QX_{114}$ |
| 2003 $QY_{114}$ | 17.5 | 0.15 | 20030918 | 18.36921 | 218.20165 | 112.21389 | 3.31703 | 0.2229349 | 2.3702479 | 18 | 1 | 57 days | 0.58 | | | MPC | | 2003 $QY_{114}$ |
| 2003 $QZ_{114}$ | 17.4 | 0.15 | 20060922 | 268.24911 | 139.41408 | 200.29833 | 9.26270 | 0.1667837 | 2.6262372 | 16 | 1 | 85 days | 0.33 | M-v | 3 | MPC | | 2003 $QZ_{114}$ |
| 2003 $QA_{115}$ | 17.9 | 0.15 | 20030918 | 10.13154 | 194.02330 | 136.49789 | 9.89639 | 0.2506489 | 2.4097714 | 21 | 1 | 33 days | 0.60 | | | MPC | | 2003 $QA_{115}$ |
| 2003 $QB_{115}$ | 18.0 | 0.15 | 20060922 | 7.86093 | 34.21793 | 273.22681 | 5.10414 | 0.2232214 | 2.1599786 | 23 | 1 | 61 days | 0.26 | M-v | 3 | MPC | | 2003 $QB_{115}$ |
| 2003 $QC_{115}$ | 16.7 | 0.15 | 20030918 | 350.52569 | 240.94117 | 132.39701 | 9.17404 | 0.2694193 | 2.7316344 | 26 | 1 | 54 days | 0.61 | | | MPC | | 2003 $QC_{115}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $QD_{115}$ | 16.9 | 0.15 | 20030918 | 28.89105 | 82.72886 | 216.88613 | 13.52103 | 0.0616584 | 2.6984962 | 12 | 1 | 59 days | 0.11 | | | MPC | | 2003 $QD_{115}$ |
| 2003 $QE_{115}$ | 16.6 | 0.15 | 20060922 | 259.80279 | 302.21892 | 24.35737 | 11.28350 | 0.2973131 | 2.7548864 | 24 | 1 | 63 days | 0.39 | M-v | 4 | MPC | | 2003 $QE_{115}$ |
| 2003 $QF_{115}$ | 17.4 | 0.15 | 20030918 | 359.48322 | 136.88276 | 206.49381 | 12.95639 | 0.2879656 | 2.6303220 | 18 | 1 | 51 days | 0.55 | | | MPC | | 2003 $QF_{115}$ |
| 2003 $QG_{115}$ | 15.0 | 0.15 | 20060922 | 167.48207 | 171.62501 | 238.68211 | 13.41697 | 0.1020516 | 3.0475092 | 30 | 1 | 84 days | 0.51 | M-v | 4 | MPC | | 2003 $QG_{115}$ |
| 2003 $QH_{115}$ | 17.3 | 0.15 | 20030918 | 30.65413 | 108.13968 | 194.72292 | 12.13589 | 0.2708285 | 2.6957339 | 22 | 1 | 57 days | 0.51 | | | MPC | | 2003 $QH_{115}$ |
| 2003 $QJ_{115}$ | 17.1 | 0.15 | 20030918 | 4.93994 | 253.98815 | 92.70494 | 7.84870 | 0.1514833 | 2.2647258 | 24 | 1 | 52 days | 0.68 | | | MPC | | 2003 $QJ_{115}$ |
| 2003 $QL_{115}$ | 15.6 | 0.15 | 20030918 | 331.54726 | 334.83028 | 63.27297 | 11.64727 | 0.2182815 | 3.1486856 | 17 | 1 | 46 days | 0.61 | | | MPC | | 2003 $QL_{115}$ |
| 2003 $RK_3$ | 15.4 | 0.15 | 20060922 | 244.17655 | 99.68119 | 265.07085 | 10.59892 | 0.1925036 | 2.6352904 | 89 | 3 | 1999–2005 | 0.57 | M-v | 2 | MPC | 57933 | 2003 $RK_3$ |
| 2003 $RL_3$ | 15.8 | 0.15 | 20030829 | 55.50064 | 284.77245 | 352.97152 | 4.47746 | 0.0444248 | 2.7695743 | 9 | 1 | 9 days | 0.41 | | E | MPC | 00498 | 2003 $RL_3$ |
| 2003 $RN_4$ | 15.3 | 0.15 | 20060922 | 298.31128 | 44.23676 | 248.94947 | 13.27418 | 0.1428029 | 2.6451810 | 50 | 3 | 1998–2003 | 0.53 | M-v | 2 | MPC | 53250 | 2003 $RN_4$ |
| 2003 $RT_6$ | 16.6 | 0.15 | 20060922 | 297.92713 | 64.53466 | 291.14926 | 5.64181 | 0.1241610 | 2.3965241 | 65 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 53255 | 2003 $RT_6$ |
| 2003 $RX_6$ | 17.7 | 0.15 | 20060922 | 24.58515 | 296.55899 | 329.80793 | 3.82154 | 0.1422038 | 2.2533804 | 29 | 2 | 2002–2003 | 0.32 | M-v | 4 | MPC | 74271 | 2003 $RX_6$ |
| 2003 $RO_7$ | 14.6 | 0.15 | 20060922 | 189.66246 | 179.26531 | 194.96551 | 13.94267 | 0.1011797 | 3.2199794 | 101 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 00499 | 2003 $RO_7$ |
| 2003 $RY_7$ | 17.3 | 0.15 | 20060922 | 146.43358 | 68.67829 | 182.29260 | 21.91625 | 0.0487343 | 1.9056298 | 97 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 86085 | 2003 $RY_7$ |
| 2003 $RA_8$ | 15.6 | 0.15 | 20060922 | 249.04160 | 58.32493 | 316.74174 | 15.86520 | 0.3260407 | 2.6692439 | 43 | 3 | 1996–2003 | 0.50 | M-v | 2 | MPC | 57934 | 2003 $RA_8$ |
| 2003 $RN_8$ | 17.1 | 0.15 | 20060922 | 248.25631 | 340.72853 | 29.99224 | 2.99272 | 0.1550519 | 2.5967309 | 57 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 02159 | 2003 $RN_8$ |
| 2003 $RT_8$ | 15.8 | 0.15 | 20060922 | 261.23638 | 232.05899 | 144.36706 | 15.17291 | 0.2115871 | 2.5331923 | 44 | 3 | 1999–2005 | 0.62 | M-v | 2 | MPC | 57934 | 2003 $RT_8$ |
| 2003 $RV_8$ | 16.6 | 0.15 | 20060922 | 331.33181 | 118.93776 | 195.67125 | 21.48386 | 0.3261672 | 2.3258559 | 97 | 2 | 2003–2006 | 0.53 | M-v | 3 | MPC | 00500 | 2003 $RV_8$ |
| 2003 $RX_8$ | 17.0 | 0.15 | 20060922 | 266.02665 | 311.19577 | 81.92216 | 3.49516 | 0.1846020 | 2.3658738 | 43 | 4 | 1998–2005 | 0.65 | M-v | 1 | MPC | 62447 | 2003 $RX_8$ |
| 2003 $RY_8$ | 17.0 | 0.15 | 20060922 | 297.94680 | 215.27803 | 139.34030 | 3.26855 | 0.1403679 | 2.3443785 | 43 | 4 | 1995–2006 | 0.54 | M-v | 2 | MPC | 00500 | 2003 $RY_8$ |
| 2003 $RB_9$ | 16.4 | 0.15 | 20060922 | 244.14922 | 39.35158 | 341.17758 | 8.66409 | 0.1500106 | 2.5434488 | 50 | 3 | 1999–2005 | 0.57 | M-v | 3 | MPC | 53258 | 2003 $RB_9$ |
| 2003 $RF_{11}$ | 16.0 | 0.15 | 20060922 | 229.32963 | 0.31420 | 16.77958 | 10.63259 | 0.3234403 | 2.6978881 | 82 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 02160 | 2003 $RF_{11}$ |
| 2003 $RJ_{11}$ | 16.5 | 0.15 | 20060922 | 275.82356 | 40.14436 | 292.68030 | 6.97160 | 0.1797628 | 2.5749969 | 52 | 3 | 1999–2005 | 0.46 | M-v | 3 | MPC | 53261 | 2003 $RJ_{11}$ |
| 2003 $RA_{12}$ | 16.7 | 0.15 | 20060922 | 319.06863 | 123.44534 | 191.72826 | 6.10601 | 0.2522353 | 2.3339987 | 83 | 3 | 1996–2006 | 0.57 | M-v | 2 | MPC | 00501 | 2003 $RA_{12}$ |
| 2003 $RF_{12}$ | 17.0 | 0.15 | 20060922 | 258.61946 | 280.92970 | 82.58163 | 5.22404 | 0.2342046 | 2.5300684 | 23 | 3 | 1999–2006 | 0.76 | M-v | 4 | MPC | 56774 | 2003 $RF_{12}$ |
| 2003 $RN_{13}$ | 16.5 | 0.15 | 20060922 | 217.65749 | 179.16407 | 204.56347 | 5.17505 | 0.0467822 | 2.6826994 | 29 | 4 | 2001–2006 | 0.35 | M-v | 1 | MPC | 00501 | 2003 $RN_{13}$ |
| 2003 $RU_{13}$ | 15.5 | 0.15 | 20060922 | 203.70637 | 185.69053 | 244.27977 | 10.25896 | 0.2763680 | 2.7084450 | 60 | 3 | 1999–2003 | 0.65 | M-v | 3 | MPC | 56774 | 2003 $RU_{13}$ |
| 2003 $RM_{14}$ | 16.2 | 0.15 | 20060922 | 231.53917 | 162.01754 | 195.96809 | 8.56235 | 0.3099774 | 2.7858156 | 94 | 1 | 112 days | 0.44 | M-v | 3 | MPC | 57935 | 2003 $RM_{14}$ |
| 2003 $RY_{14}$ | 17.0 | 0.15 | 20060922 | 324.95411 | 297.00088 | 17.95907 | 2.73478 | 0.1897570 | 2.3403529 | 60 | 4 | 1996–2006 | 0.55 | M-v | 2 | MPC | 04258 | 2003 $RY_{14}$ |
| 2003 $RJ_{17}$ | 16.3 | 0.15 | 20060922 | 252.78138 | 104.31629 | 258.18833 | 7.79351 | 0.1183262 | 2.5303937 | 51 | 4 | 1995–2004 | 0.57 | M-v | 2 | MPC | 86087 | 2003 $RJ_{17}$ |
| 2003 $RO_{17}$ | 14.2 | 0.15 | 20060922 | 127.35615 | 145.16123 | 301.63565 | 9.40067 | 0.1695205 | 3.1985986 | 99 | 4 | 1998–2005 | 0.61 | M-v | 0 | MPC | 74271 | 2003 $RO_{17}$ |
| 2003 $RP_{17}$ | 15.2 | 0.15 | 20060922 | 236.59133 | 38.37655 | 239.81293 | 12.98630 | 0.2340157 | 3.1431664 | 28 | 3 | 2002–2004 | 0.60 | M-v | 3 | MPC | 53270 | 2003 $RP_{17}$ |
| 2003 $RM_{20}$ | 16.9 | 0.15 | 20060922 | 331.93733 | 159.67981 | 139.29034 | 2.76071 | 0.2113317 | 2.3952008 | 70 | 5 | 1996–2006 | 0.62 | M-v | 1 | MPC | 02160 | 2003 $RM_{20}$ |
| 2003 $RD_{22}$ | 15.8 | 0.15 | 20060922 | 264.77286 | 115.62346 | 281.54852 | 5.39172 | 0.2518828 | 2.3981339 | 79 | 3 | 2001–2005 | 0.52 | M-v | 2 | MPC | 57936 | 2003 $RD_{22}$ |
| 2003 $RP_{23}$ | 16.1 | 0.15 | 20060922 | 176.59778 | 250.87498 | 122.90700 | 1.74212 | 0.1827062 | 3.1319195 | 32 | 4 | 1998–2006 | 0.45 | M-v | 1 | MPC | 02160 | 2003 $RP_{23}$ |
| 2003 $RV_{23}$ | 16.1 | 0.15 | 20060922 | 244.85966 | 274.28306 | 256.96874 | 18.41914 | 0.0837153 | 1.9220029 | 66 | 4 | 2002–2006 | 0.42 | M-v | 1 | MPC | 87585 | 2003 $RV_{23}$ |
| 2003 $RZ_{25}$ | 15.4 | 0.15 | 20060922 | 259.26432 | 77.73692 | 259.13710 | 11.13506 | 0.2189194 | 2.7140769 | 71 | 2 | 1999–2003 | 0.49 | M-v | 3 | MPC | 57937 | 2003 $RZ_{25}$ |
| 2003 $RG_{27}$ | 15.9 | 0.15 | 20030918 | 345.17835 | 254.05969 | 137.54360 | 14.04380 | 0.3008894 | 3.1876571 | 21 | 1 | 46 days | 0.80 | | | MPC | | 2003 $RG_{27}$ |
| 2003 $RH_{27}$ | 15.5 | 0.15 | 20030918 | 65.54521 | 308.90992 | 321.88613 | 14.97586 | 0.1002986 | 3.1477116 | 15 | 1 | 45 days | 0.46 | | | MPC | | 2003 $RH_{27}$ |
| 2003 $RJ_{27}$ | 17.6 | 0.15 | 20060922 | 339.86131 | 327.20860 | 322.33802 | 4.99416 | 0.2138063 | 2.3727215 | 24 | 1 | 78 days | 0.38 | M-v | 4 | MPC | | 2003 $RJ_{27}$ |
| 2003 $RK_{27}$ | 18.0 | 0.15 | 20031008 | 6.20756 | 188.82297 | 179.53774 | 2.85413 | 0.2472774 | 2.5777375 | 20 | 1 | 49 days | 0.45 | | | MPC | | 2003 $RK_{27}$ |
| 2003 $RL_{27}$ | 17.0 | 0.15 | 20031008 | 342.99755 | 80.73377 | 318.12516 | 6.32089 | 0.1548614 | 2.5477610 | 16 | 1 | 50 days | 0.69 | | | MPC | | 2003 $RL_{27}$ |
| 2003 $RM_{27}$ | 18.0 | 0.15 | 20060922 | 226.75607 | 82.44574 | 332.12917 | 7.70298 | 0.2329927 | 2.5375366 | 13 | 1 | 66 days | 0.19 | M-v | 4 | MPC | | 2003 $RM_{27}$ |
| 2003 $SG_3$ | 15.8 | 0.15 | 20060922 | 248.44095 | 18.68395 | 349.28581 | 8.97603 | 0.0230129 | 2.6574211 | 59 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 02160 | 2003 $SG_3$ |
| 2003 $SA_4$ | 16.6 | 0.15 | 20060922 | 133.42270 | 276.05928 | 177.69213 | 2.08014 | 0.0286705 | 2.9141466 | 39 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 00504 | 2003 $SA_4$ |
| 2003 $SE_4$ | 16.7 | 0.15 | 20060922 | 217.08302 | 95.95944 | 6.19913 | 1.51734 | 0.1452150 | 2.3635678 | 48 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 03513 | 2003 $SE_4$ |
| 2003 $SP_4$ | 17.0 | 0.15 | 20060922 | 36.97417 | 214.36733 | 66.27274 | 4.59524 | 0.1507201 | 2.1656136 | 53 | 4 | 2000–2006 | 0.39 | M-v | 2 | MPC | 03513 | 2003 $SP_4$ |
| 2003 $SR_4$ | 17.6 | 0.15 | 20060922 | 308.17524 | 232.64905 | 86.15589 | 3.28349 | 0.2193340 | 2.4359502 | 31 | 3 | 1999–2006 | 0.43 | M-v | 2 | MPC | 00504 | 2003 $SR_4$ |
| 2003 $SK_5$ | 20.0 | 0.15 | 20060922 | 21.89790 | 318.57842 | 336.44149 | 6.64766 | 0.4562553 | 2.0973525 | 178 | 2 | 2003–2006 | 0.41 | M-v | 0 | MPC | 03513 | 2003 $SK_5$ |
| 2003 $SL_5$ | 19.3 | 0.15 | 20060922 | 6.41536 | 279.71538 | 39.95347 | 6.10459 | 0.4738436 | 2.1126165 | 177 | 2 | 2003–2006 | 0.47 | M-v | 1 | MPC | 00505 | 2003 $SL_5$ |
| 2003 $SU_5$ | 17.0 | 0.15 | 20060922 | 300.97148 | 157.85420 | 200.45365 | 4.06220 | 0.2383028 | 2.3403610 | 92 | 4 | 1996–2006 | 0.53 | M-v | 2 | MPC | 04258 | 2003 $SU_5$ |
| 2003 $SQ_6$ | 16.3 | 0.15 | 20060922 | 257.41866 | 155.94817 | 186.74968 | 11.91733 | 0.1243939 | 2.7000143 | 60 | 3 | 1997–2006 | 0.46 | M-v | 3 | MPC | 02161 | 2003 $SQ_6$ |
| 2003 $SD_7$ | 16.7 | 0.15 | 20060922 | 346.52202 | 287.33824 | 5.55165 | 6.29800 | 0.2568904 | 2.3418409 | 80 | 3 | 2002–2006 | 0.62 | M-v | 3 | MPC | 00506 | 2003 $SD_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SB_{9}$ | 15.6 | 0.15 | 20060922 | 0.89416 | 206.01529 | 356.13521 | 7.48905 | 0.0382375 | 3.1185048 | 43 | 3 | 1995–2006 | 0.41 | M-v | 2 | MPC | 02161 | 2003 $SB_{9}$ |
| 2003 $SL_{9}$ | 18.1 | 0.15 | 20060922 | 336.55321 | 113.80537 | 214.14833 | 4.19524 | 0.2342746 | 2.2524036 | 66 | 2 | 2003–2006 | 0.43 | M-v | 3 | MPC | 03514 | 2003 $SL_{9}$ |
| 2003 $SG_{11}$ | 16.1 | 0.15 | 20060922 | 355.51716 | 169.78695 | 250.09107 | 18.53574 | 0.0828232 | 1.9420982 | 72 | 3 | 2003–2006 | 0.60 | M-v | 3 | MPC | 75924 | 2003 $SG_{11}$ |
| 2003 $SE_{12}$ | 16.4 | 0.15 | 20060922 | 234.75778 | 12.75960 | 359.94617 | 2.14986 | 0.1982261 | 2.6682204 | 27 | 3 | 1999–2005 | 0.53 | M-v | 4 | MPC | 57938 | 2003 $SE_{12}$ |
| 2003 $SW_{13}$ | 18.3 | 0.15 | 20060922 | 10.45160 | 216.08212 | 107.45094 | 1.61113 | 0.2020325 | 2.1239000 | 42 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 03515 | 2003 $SW_{13}$ |
| 2003 $SL_{15}$ | 16.3 | 0.15 | 20060922 | 237.68540 | 180.89425 | 166.39435 | 3.78117 | 0.1101708 | 2.7869976 | 57 | 4 | 1996–2006 | 0.41 | M-v | 1 | MPC | 00508 | 2003 $SL_{15}$ |
| 2003 $SC_{16}$ | 18.2 | 0.15 | 20060922 | 33.47218 | 36.02756 | 198.35759 | 2.53722 | 0.1422034 | 2.4032833 | 27 | 3 | 2002–2006 | 0.21 | M-v | 3 | MPC | 00508 | 2003 $SC_{16}$ |
| 2003 $SV_{17}$ | 15.5 | 0.15 | 20060922 | 242.75474 | 112.20554 | 195.94394 | 5.42658 | 0.1487184 | 3.0342054 | 60 | 3 | 1996–2003 | 0.57 | M-v | 2 | MPC | 86100 | 2003 $SV_{17}$ |
| 2003 $SY_{17}$ | 18.1 | 0.15 | 20060922 | 94.94542 | 218.47006 | 350.58898 | 33.08200 | 0.5806172 | 2.0457259 | 53 | 2 | 2003–2006 | 0.42 | M-v | 3 | MPC | 03515 | 2003 $SY_{17}$ |
| 2003 $SC_{18}$ | 16.9 | 0.15 | 20060922 | 62.36479 | 159.03687 | 175.45647 | 22.47591 | 0.0511873 | 1.9319150 | 86 | 5 | 1994–2006 | 0.57 | M-v | 1 | MPC | 77706 | 2003 $SC_{18}$ |
| 2003 $SQ_{20}$ | 16.9 | 0.15 | 20060922 | 248.51190 | 339.44933 | 349.14880 | 4.61732 | 0.1570153 | 2.7922913 | 24 | 3 | 2002–2006 | 0.34 | M-v | 4 | MPC | 02161 | 2003 $SQ_{20}$ |
| 2003 $SL_{22}$ | 15.4 | 0.15 | 20060922 | 180.61151 | 88.71273 | 353.15979 | 4.85969 | 0.0913043 | 2.7465637 | 105 | 5 | 1994–2005 | 0.47 | M-v | 0 | MPC | 77706 | 2003 $SL_{22}$ |
| 2003 $SQ_{22}$ | 16.3 | 0.15 | 20060922 | 211.45089 | 85.07661 | 343.86283 | 1.60264 | 0.1943960 | 2.6626020 | 78 | 4 | 1996–2005 | 0.66 | M-v | 2 | MPC | 75928 | 2003 $SQ_{22}$ |
| 2003 $SV_{26}$ | 18.0 | 0.15 | 20060922 | 6.84133 | 29.61232 | 251.65744 | 5.35033 | 0.1631822 | 2.2546579 | 22 | 3 | 2002–2006 | 0.30 | M-v | 2 | MPC | 00509 | 2003 $SV_{26}$ |
| 2003 $SR_{28}$ | 14.6 | 0.15 | 20060922 | 187.92024 | 45.67862 | 340.46820 | 8.18230 | 0.0730657 | 3.0314138 | 88 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97668 | 2003 $SR_{28}$ |
| 2003 $SL_{29}$ | 17.7 | 0.15 | 20060922 | 222.69287 | 330.86587 | 200.14539 | 20.72741 | 0.0419985 | 1.9771161 | 31 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 75932 | 2003 $SL_{29}$ |
| 2003 $SF_{30}$ | 15.6 | 0.15 | 20060922 | 154.99211 | 101.03405 | 332.96849 | 3.62932 | 0.0862904 | 2.8112503 | 44 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 04259 | 2003 $SF_{30}$ |
| 2003 $SV_{30}$ | 15.4 | 0.15 | 20060922 | 294.27375 | 293.29786 | 17.32246 | 7.61448 | 0.0703811 | 2.7442595 | 90 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 02162 | 2003 $SV_{30}$ |
| 2003 $SW_{31}$ | 17.1 | 0.15 | 20060922 | 134.39470 | 349.15890 | 205.13760 | 5.24289 | 0.1213394 | 2.3040486 | 51 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 75933 | 2003 $SW_{31}$ |
| 2003 $SX_{32}$ | 16.4 | 0.15 | 20060922 | 312.73423 | 196.30365 | 124.88766 | 3.33103 | 0.1661937 | 2.4515277 | 62 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 02162 | 2003 $SX_{32}$ |
| 2003 $SZ_{32}$ | 17.4 | 0.15 | 20060922 | 275.47092 | 344.49214 | 40.18290 | 7.01509 | 0.1401407 | 2.4250201 | 110 | 3 | 2001–2005 | 0.58 | M-v | 3 | MPC | 56784 | 2003 $SZ_{32}$ |
| 2003 $SH_{34}$ | 16.8 | 0.15 | 20060922 | 244.11962 | 228.28244 | 60.92296 | 1.26998 | 0.1626813 | 3.1948715 | 26 | 3 | 1998–2006 | 0.53 | M-v | 4 | MPC | 95064 | 2003 $SH_{34}$ |
| 2003 $ST_{36}$ | 16.4 | 0.15 | 20060922 | 252.80008 | 182.04362 | 190.58278 | 3.78208 | 0.2159155 | 2.6243717 | 86 | 4 | 1999–2006 | 0.48 | M-v | 2 | MPC | 02162 | 2003 $ST_{36}$ |
| 2003 $SG_{39}$ | 17.5 | 0.15 | 20060922 | 6.69129 | 116.30096 | 212.52358 | 2.92278 | 0.1969729 | 2.1510628 | 95 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 03517 | 2003 $SG_{39}$ |
| 2003 $SM_{39}$ | 16.7 | 0.15 | 20060922 | 283.48908 | 8.27751 | 4.21245 | 7.19578 | 0.2107907 | 2.4120072 | 94 | 3 | 1973–2005 | 0.56 | M-v | 2 | MPC | 57941 | 2003 $SM_{39}$ |
| 2003 $SG_{42}$ | 16.0 | 0.15 | 20060922 | 344.24758 | 146.24132 | 284.84970 | 17.27497 | 0.0941649 | 1.9490792 | 47 | 4 | 1999–2006 | 0.65 | M-v | 2 | MPC | 56786 | 2003 $SG_{42}$ |
| 2003 $SQ_{43}$ | 17.4 | 0.15 | 20060922 | 312.27234 | 54.49015 | 328.03552 | 4.83626 | 0.1009318 | 2.1640162 | 38 | 4 | 2000–2006 | 0.39 | M-v | 3 | MPC | 04259 | 2003 $SQ_{43}$ |
| 2003 $SQ_{44}$ | 15.5 | 0.15 | 20060922 | 226.55521 | 98.57806 | 283.19977 | 4.26517 | 0.0760354 | 2.7121130 | 112 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 02163 | 2003 $SQ_{44}$ |
| 2003 $SC_{45}$ | 15.5 | 0.15 | 20060922 | 216.71117 | 159.30683 | 180.95287 | 4.61385 | 0.1253664 | 3.0958692 | 76 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 00513 | 2003 $SC_{45}$ |
| 2003 $SQ_{45}$ | 15.4 | 0.15 | 20060922 | 176.09419 | 336.58881 | 42.62419 | 6.90210 | 0.1648277 | 3.1943171 | 53 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 97669 | 2003 $SQ_{45}$ |
| 2003 $SU_{47}$ | 15.3 | 0.15 | 20060922 | 185.27058 | 96.58107 | 281.46794 | 8.58066 | 0.2261357 | 3.0322245 | 66 | 3 | 1998–2005 | 0.58 | M-v | 2 | MPC | 77707 | 2003 $SU_{47}$ |
| 2003 $SD_{49}$ | 16.2 | 0.15 | 20060922 | 223.43428 | 175.01687 | 206.02415 | 2.75345 | 0.1920950 | 2.7824484 | 75 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 02163 | 2003 $SD_{49}$ |
| 2003 $SQ_{51}$ | 16.7 | 0.15 | 20060922 | 243.00643 | 312.47875 | 138.22045 | 5.99695 | 0.0775677 | 2.2554797 | 56 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 04259 | 2003 $SQ_{51}$ |
| 2003 $SB_{52}$ | 15.3 | 0.15 | 20060922 | 217.19985 | 207.58915 | 146.69637 | 5.06238 | 0.1216043 | 3.0286591 | 69 | 5 | 1996–2006 | 0.56 | M-v | 1 | MPC | 97670 | 2003 $SB_{52}$ |
| 2003 $SD_{52}$ | 16.5 | 0.15 | 20060922 | 289.04465 | 287.79383 | 40.98786 | 5.20414 | 0.1635004 | 2.5740584 | 75 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 00515 | 2003 $SD_{52}$ |
| 2003 $SU_{52}$ | 16.4 | 0.15 | 20060922 | 313.50876 | 139.69695 | 212.04807 | 4.69990 | 0.2427863 | 2.3265490 | 87 | 3 | 1996–2006 | 0.41 | M-v | 2 | MPC | 02163 | 2003 $SU_{52}$ |
| 2003 $SC_{53}$ | 15.9 | 0.15 | 20060922 | 248.26639 | 253.68964 | 213.96154 | 23.26423 | 0.2055856 | 2.2611054 | 92 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87586 | 2003 $SC_{53}$ |
| 2003 $SU_{53}$ | 16.5 | 0.15 | 20060922 | 19.45664 | 6.14472 | 192.62017 | 8.78567 | 0.0870268 | 2.7995769 | 35 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 02163 | 2003 $SU_{53}$ |
| 2003 $SF_{54}$ | 16.4 | 0.15 | 20060922 | 10.85485 | 21.38642 | 251.84055 | 6.29258 | 0.1045885 | 2.3462591 | 79 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 00515 | 2003 $SF_{54}$ |
| 2003 $SX_{56}$ | 18.0 | 0.15 | 20060922 | 345.20700 | 37.18446 | 313.87129 | 2.59194 | 0.1462717 | 2.1564661 | 55 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 04259 | 2003 $SX_{56}$ |
| 2003 $SQ_{57}$ | 16.1 | 0.15 | 20060922 | 281.65531 | 296.32250 | 12.47986 | 11.29160 | 0.3139148 | 2.6822929 | 94 | 2 | 2002–2003 | 0.46 | M-v | 3 | MPC | 57944 | 2003 $SQ_{57}$ |
| 2003 $SW_{57}$ | 16.5 | 0.15 | 20060922 | 281.13340 | 192.65557 | 181.69767 | 2.35591 | 0.2056411 | 2.4398971 | 97 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 02163 | 2003 $SW_{57}$ |
| 2003 $SF_{59}$ | 16.0 | 0.15 | 20060922 | 229.57396 | 79.49179 | 295.71456 | 11.08863 | 0.2071759 | 2.6727775 | 34 | 3 | 1999–2005 | 0.53 | M-v | 2 | MPC | 56790 | 2003 $SF_{59}$ |
| 2003 $SD_{61}$ | 15.5 | 0.15 | 20060922 | 237.87244 | 298.36758 | 59.03886 | 3.60519 | 0.1940533 | 2.7218813 | 56 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 97670 | 2003 $SD_{61}$ |
| 2003 $SJ_{61}$ | 14.3 | 0.15 | 20060922 | 104.04203 | 295.38481 | 106.88997 | 3.99977 | 0.2393134 | 3.9826978 | 63 | 4 | 1995–2006 | 0.63 | M-v | 0 | MPC | 97670 | 2003 $SJ_{61}$ |
| 2003 $SX_{61}$ | 15.9 | 0.15 | 20060922 | 221.37643 | 248.17293 | 155.48646 | 10.14105 | 0.1880135 | 2.6210627 | 54 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 02163 | 2003 $SX_{61}$ |
| 2003 $SX_{63}$ | 15.6 | 0.15 | 20060922 | 203.13082 | 114.06230 | 310.41491 | 11.97914 | 0.2508335 | 2.6490224 | 39 | 3 | 1999–2005 | 0.59 | M-v | 2 | MPC | 56791 | 2003 $SX_{63}$ |
| 2003 $SU_{64}$ | 16.1 | 0.15 | 20060922 | 266.26750 | 265.28712 | 86.53638 | 5.55322 | 0.1744863 | 2.6038922 | 57 | 4 | 1999–2006 | 0.59 | M-v | 2 | MPC | 02163 | 2003 $SU_{64}$ |
| 2003 $SB_{66}$ | 16.1 | 0.15 | 20060922 | 326.41019 | 267.51061 | 51.76132 | 8.12604 | 0.1926730 | 2.3715516 | 61 | 4 | 1995–2006 | 0.63 | M-v | 1 | MPC | 02164 | 2003 $SB_{66}$ |
| 2003 $SE_{72}$ | 17.3 | 0.15 | 20060922 | 276.10915 | 154.31938 | 228.86521 | 3.61546 | 0.1394463 | 2.3667021 | 54 | 4 | 1996–2003 | 0.60 | M-v | 2 | MPC | 87587 | 2003 $SE_{72}$ |
| 2003 $SV_{72}$ | 17.4 | 0.15 | 20060922 | 343.70145 | 263.17026 | 353.27628 | 6.05494 | 0.1534321 | 2.6458406 | 31 | 3 | 2001–2006 | 0.27 | M-v | 1 | MPC | 00518 | 2003 $SV_{72}$ |
| 2003 $SX_{73}$ | 15.4 | 0.15 | 20060922 | 195.66444 | 12.73588 | 359.05239 | 11.83252 | 0.1838527 | 3.0813382 | 90 | 3 | 1995–2006 | 0.51 | M-v | 3 | MPC | 02164 | 2003 $SX_{73}$ |
| 2003 $SJ_{75}$ | 14.4 | 0.15 | 20060922 | 129.56758 | 230.91307 | 199.44573 | 5.03010 | 0.1132082 | 3.2544218 | 101 | 6 | 1998–2006 | 0.69 | M-v | 1 | MPC | 02164 | 2003 $SJ_{75}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SY_{75}$ | 17.1 | 0.15 | 20060922 | 349.43285 | 125.86446 | 168.93582 | 5.38976 | 0.1891142 | 2.3449547 | 64 | 6 | 1995–2006 | 0.68 | M-v | 0 | MPC | 02164 | 2003 $SY_{75}$ |
| 2003 $SU_{77}$ | 15.9 | 0.15 | 20060922 | 344.41585 | 35.86475 | 225.37710 | 7.15549 | 0.1943538 | 2.5262305 | 67 | 3 | 2002–2006 | 0.61 | M-v | 2 | MPC | 02164 | 2003 $SU_{77}$ |
| 2003 $SB_{79}$ | 17.7 | 0.15 | 20060922 | 78.21144 | 286.92604 | 313.00078 | 6.55448 | 0.1580553 | 2.2054397 | 42 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 03518 | 2003 $SB_{79}$ |
| 2003 $SM_{79}$ | 15.6 | 0.15 | 20060922 | 218.65710 | 80.31517 | 339.73148 | 11.46157 | 0.1863287 | 2.5955710 | 62 | 3 | 1999–2005 | 0.50 | M-v | 3 | MPC | 75952 | 2003 $SM_{79}$ |
| 2003 $SQ_{79}$ | 17.1 | 0.15 | 20060922 | 352.04495 | 12.51386 | 332.97559 | 7.65222 | 0.1291174 | 2.1688520 | 71 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04260 | 2003 $SQ_{79}$ |
| 2003 $SZ_{81}$ | 15.1 | 0.15 | 20060922 | 346.69368 | 196.65012 | 11.13358 | 9.44538 | 0.0357228 | 3.1709665 | 60 | 6 | 2000–2006 | 0.55 | M-v | 0 | MPC | 95072 | 2003 $SZ_{81}$ |
| 2003 $SP_{86}$ | 14.3 | 0.15 | 20060922 | 188.30232 | 101.19105 | 291.88442 | 9.49897 | 0.1548179 | 3.0511152 | 62 | 4 | 1998–2006 | 0.67 | M-v | 1 | MPC | 02165 | 2003 $SP_{86}$ |
| 2003 $SJ_{87}$ | 15.3 | 0.15 | 20060922 | 259.12370 | 303.76425 | 34.93360 | 11.36438 | 0.1512604 | 2.7131484 | 38 | 3 | 2002–2005 | 0.65 | M-v | 3 | MPC | 53370 | 2003 $SJ_{87}$ |
| 2003 $SO_{87}$ | 16.3 | 0.15 | 20060922 | 338.07923 | 214.55425 | 71.32673 | 7.10657 | 0.2306783 | 2.4165282 | 49 | 2 | 2003–2006 | 0.63 | M-v | 4 | MPC | 00522 | 2003 $SO_{87}$ |
| 2003 $SH_{88}$ | 16.0 | 0.15 | 20060922 | 172.49060 | 21.11309 | 10.09853 | 2.40456 | 0.2266046 | 3.2205928 | 41 | 3 | 2001–2005 | 0.46 | M-v | 3 | MPC | 72858 | 2003 $SH_{88}$ |
| 2003 $SH_{89}$ | 15.9 | 0.15 | 20060922 | 185.00994 | 190.97188 | 253.85715 | 8.98695 | 0.2341723 | 2.7104795 | 35 | 3 | 1999–2005 | 0.43 | M-v | 1 | MPC | 57948 | 2003 $SH_{89}$ |
| 2003 $SE_{90}$ | 15.8 | 0.15 | 20060922 | 241.27480 | 204.60825 | 113.45358 | 1.91442 | 0.1958625 | 2.9489606 | 66 | 6 | 1996–2006 | 0.64 | M-v | 1 | MPC | 04260 | 2003 $SE_{90}$ |
| 2003 $ST_{91}$ | 16.8 | 0.15 | 20060922 | 228.49343 | 86.76365 | 323.19089 | 5.87226 | 0.1257732 | 2.4749064 | 34 | 2 | 2003–2005 | 0.62 | M-v | 4 | MPC | 03519 | 2003 $ST_{91}$ |
| 2003 $SD_{92}$ | 17.1 | 0.15 | 20060922 | 221.08039 | 300.72949 | 173.45686 | 3.57137 | 0.0950282 | 2.2226224 | 58 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 04260 | 2003 $SD_{92}$ |
| 2003 $SF_{93}$ | 17.7 | 0.15 | 20060922 | 356.91730 | 127.83125 | 205.55823 | 5.74978 | 0.2300514 | 2.1987435 | 85 | 4 | 1999–2006 | 0.47 | M-v | 2 | MPC | 56801 | 2003 $SF_{93}$ |
| 2003 $SU_{93}$ | 15.7 | 0.15 | 20060922 | 337.70060 | 270.64330 | 11.58464 | 12.28551 | 0.1290009 | 2.6087158 | 83 | 3 | 2003–2006 | 0.57 | M-v | 3 | MPC | 04260 | 2003 $SU_{93}$ |
| 2003 $SH_{94}$ | 15.0 | 0.15 | 20060922 | 207.73544 | 136.09740 | 233.14010 | 7.98648 | 0.1286603 | 3.0078341 | 71 | 5 | 1993–2006 | 0.59 | M-v | 1 | MPC | 02165 | 2003 $SH_{94}$ |
| 2003 $SU_{94}$ | 15.6 | 0.15 | 20060922 | 261.57562 | 22.01905 | 268.67920 | 7.89827 | 0.0832715 | 3.0786383 | 59 | 4 | 2000–2004 | 0.52 | M-v | 1 | MPC | 87588 | 2003 $SU_{94}$ |
| 2003 $SE_{97}$ | 16.7 | 0.15 | 20060922 | 282.91052 | 328.06146 | 48.30128 | 2.70423 | 0.2141018 | 2.4182734 | 77 | 4 | 1996–2006 | 0.49 | M-v | 1 | MPC | 57949 | 2003 $SE_{97}$ |
| 2003 $SN_{99}$ | 15.5 | 0.15 | 20060922 | 277.80148 | 320.75232 | 8.18568 | 8.81173 | 0.1150167 | 2.6740177 | 89 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 00526 | 2003 $SN_{99}$ |
| 2003 $SX_{99}$ | 16.6 | 0.15 | 20060922 | 212.16929 | 157.89193 | 173.92557 | 2.42417 | 0.2028826 | 3.0055018 | 18 | 3 | 1998–2005 | 0.29 | M-v | 3 | MPC | 95075 | 2003 $SX_{99}$ |
| 2003 $SW_{104}$ | 15.1 | 0.15 | 20060922 | 170.57718 | 59.25750 | 8.92823 | 11.96304 | 0.0219438 | 2.8822617 | 66 | 6 | 1993–2006 | 0.76 | M-v | 1 | MPC | 02166 | 2003 $SW_{104}$ |
| 2003 $SM_{105}$ | 17.6 | 0.15 | 20060922 | 46.63804 | 248.83516 | 3.51482 | 4.45028 | 0.0828135 | 2.3482550 | 27 | 3 | 2002–2005 | 0.35 | M-v | 4 | MPC | 75958 | 2003 $SM_{105}$ |
| 2003 $SU_{107}$ | 16.5 | 0.15 | 20060922 | 337.91322 | 41.44661 | 268.21209 | 3.33509 | 0.1490314 | 2.4105314 | 49 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 00528 | 2003 $SU_{107}$ |
| 2003 $SW_{107}$ | 15.3 | 0.15 | 20060922 | 5.86478 | 271.80633 | 341.66585 | 14.21844 | 0.2040606 | 2.5633522 | 49 | 2 | 2003–2006 | 0.50 | M-v | 3 | MPC | 00528 | 2003 $SW_{107}$ |
| 2003 $SC_{108}$ | 16.7 | 0.15 | 20060922 | 234.35174 | 176.18418 | 294.04472 | 4.72301 | 0.0855897 | 2.2503543 | 76 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 04260 | 2003 $SC_{108}$ |
| 2003 $SN_{110}$ | 16.3 | 0.15 | 20060922 | 356.73538 | 19.50854 | 300.98714 | 2.19982 | 0.2375142 | 2.2492145 | 91 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 77710 | 2003 $SN_{110}$ |
| 2003 $SU_{110}$ | 16.6 | 0.15 | 20060922 | 249.81358 | 3.94797 | 13.69891 | 14.62694 | 0.1728508 | 2.6666730 | 72 | 4 | 1999–2005 | 0.46 | M-v | 1 | MPC | 89477 | 2003 $SU_{110}$ |
| 2003 $SC_{111}$ | 16.2 | 0.15 | 20060922 | 311.20762 | 236.61112 | 150.16029 | 4.79607 | 0.1967688 | 2.2951989 | 111 | 5 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04260 | 2003 $SC_{111}$ |
| 2003 $SW_{111}$ | 16.6 | 0.15 | 20060922 | 267.16557 | 97.53174 | 206.55179 | 8.28010 | 0.1498873 | 2.8042919 | 24 | 2 | 2002–2003 | 0.48 | M-v | 3 | MPC | 03520 | 2003 $SW_{111}$ |
| 2003 $SZ_{113}$ | 16.7 | 0.15 | 20060922 | 358.29621 | 337.21374 | 302.65978 | 2.67881 | 0.1651091 | 2.3268841 | 30 | 4 | 1998–2006 | 0.64 | M-v | 3 | MPC | 00529 | 2003 $SZ_{113}$ |
| 2003 $SN_{115}$ | 16.8 | 0.15 | 20060922 | 66.74987 | 297.86011 | 15.58130 | 20.67572 | 0.0930334 | 1.9462033 | 48 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 04261 | 2003 $SN_{115}$ |
| 2003 $SK_{116}$ | 17.1 | 0.15 | 20060922 | 250.90487 | 211.68259 | 162.91130 | 5.68004 | 0.3227912 | 2.6011429 | 66 | 3 | 1999–2005 | 0.52 | M-v | 2 | MPC | 53399 | 2003 $SK_{116}$ |
| 2003 $SN_{117}$ | 17.2 | 0.15 | 20060922 | 5.24712 | 268.72728 | 1.98134 | 4.12179 | 0.2987082 | 2.3796799 | 37 | 2 | 2003–2006 | 0.46 | M-v | 3 | MPC | 00530 | 2003 $SN_{117}$ |
| 2003 $SQ_{117}$ | 14.9 | 0.15 | 20060922 | 253.81636 | 294.29205 | 344.18969 | 14.56531 | 0.3231057 | 3.0822825 | 61 | 5 | 1992–2006 | 0.51 | M-v | 0 | MPC | 86115 | 2003 $SQ_{117}$ |
| 2003 $ST_{118}$ | 16.9 | 0.15 | 20060922 | 242.80259 | 330.25115 | 13.43690 | 5.48715 | 0.0763520 | 2.8734855 | 23 | 3 | 2003–2006 | 0.31 | M-v | 3 | MPC | 00531 | 2003 $ST_{118}$ |
| 2003 $SG_{120}$ | 15.9 | 0.15 | 20060922 | 270.12961 | 288.37267 | 31.55430 | 2.04451 | 0.0313602 | 2.7615842 | 55 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 00532 | 2003 $SG_{120}$ |
| 2003 $SU_{120}$ | 15.5 | 0.15 | 20060922 | 178.40649 | 50.35595 | 18.61405 | 13.67595 | 0.0754077 | 2.7114947 | 47 | 3 | 2001–2005 | 0.58 | M-v | 2 | MPC | 72868 | 2003 $SU_{120}$ |
| 2003 $SK_{122}$ | 16.6 | 0.15 | 20060922 | 312.78805 | 203.06343 | 117.14578 | 4.65513 | 0.1975087 | 2.4471892 | 44 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 02166 | 2003 $SK_{122}$ |
| 2003 $SR_{124}$ | 17.0 | 0.15 | 20060922 | 256.46794 | 156.62822 | 180.26531 | 1.85661 | 0.0865873 | 2.8479988 | 20 | 3 | 1998–2005 | 0.33 | M-v | 4 | MPC | 69555 | 2003 $SR_{124}$ |
| 2003 $ST_{125}$ | 17.1 | 0.15 | 20060922 | 10.92354 | 292.07786 | 25.31443 | 3.81568 | 0.1929726 | 2.1743987 | 96 | 5 | 2000–2006 | 0.40 | M-v | 1 | MPC | 04261 | 2003 $ST_{125}$ |
| 2003 $SH_{127}$ | 16.8 | 0.15 | 20060922 | 228.59217 | 320.72149 | 42.96865 | 2.58385 | 0.0562396 | 2.7671058 | 50 | 6 | 1996–2006 | 0.45 | M-v | 1 | MPC | 00534 | 2003 $SH_{127}$ |
| 2003 $SM_{127}$ | 17.1 | 0.15 | 20060922 | 103.15844 | 17.17507 | 255.71463 | 7.27100 | 0.1290710 | 1.9659120 | 78 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 75963 | 2003 $SM_{127}$ |
| 2003 $SU_{127}$ | 17.3 | 0.15 | 20060922 | 95.35076 | 109.26899 | 192.03208 | 21.51295 | 0.0837261 | 1.9310265 | 64 | 4 | 1995–2006 | 0.59 | M-v | 1 | MPC | 87588 | 2003 $SU_{127}$ |
| 2003 $SW_{129}$ | 16.7 | 0.15 | 20060922 | 18.18548 | 260.28032 | 47.00692 | 6.40667 | 0.2316348 | 2.2091326 | 83 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 03521 | 2003 $SW_{129}$ |
| 2003 $SJ_{132}$ | 15.2 | 0.15 | 20060922 | 7.37386 | 190.33453 | 23.31042 | 11.96570 | 0.0432122 | 3.0742080 | 61 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 00535 | 2003 $SJ_{132}$ |
| 2003 $SP_{132}$ | 17.5 | 0.15 | 20060922 | 352.68653 | 120.12811 | 171.17631 | 1.23715 | 0.1889865 | 2.4181101 | 32 | 4 | 1999–2006 | 0.28 | M-v | 0 | MPC | 00535 | 2003 $SP_{132}$ |
| 2003 $SC_{134}$ | 15.8 | 0.15 | 20060922 | 267.33185 | 188.93246 | 124.66726 | 6.72762 | 0.0715845 | 2.8470782 | 21 | 3 | 2002–2004 | 0.47 | M-v | 3 | MPC | 56816 | 2003 $SC_{134}$ |
| 2003 $SL_{134}$ | 16.3 | 0.15 | 20060922 | 193.16696 | 123.56703 | 299.03511 | 4.92989 | 0.1194348 | 2.6324896 | 43 | 3 | 1997–2005 | 0.50 | M-v | 2 | MPC | 72870 | 2003 $SL_{134}$ |
| 2003 $SN_{134}$ | 16.3 | 0.15 | 20060922 | 117.47819 | 199.38587 | 256.25413 | 4.62536 | 0.0227854 | 2.8906257 | 29 | 4 | 1996–2006 | 0.39 | M-v | 0 | MPC | 97674 | 2003 $SN_{134}$ |
| 2003 $SR_{134}$ | 16.4 | 0.15 | 20060922 | 168.11879 | 39.86296 | 31.07124 | 3.93437 | 0.0764100 | 2.8145401 | 35 | 4 | 2001–2006 | 0.68 | M-v | 0 | MPC | 02167 | 2003 $SR_{134}$ |
| 2003 $SH_{135}$ | 17.3 | 0.15 | 20060922 | 241.28099 | 52.41958 | 322.46768 | 4.81561 | 0.0206053 | 2.5537683 | 21 | 4 | 1997–2004 | 0.16 | M-v | 2 | MPC | 75965 | 2003 $SH_{135}$ |
| 2003 $SR_{135}$ | 16.2 | 0.15 | 20060922 | 193.68149 | 234.34754 | 160.45505 | 5.38121 | 0.1057832 | 2.8891763 | 24 | 3 | 2003–2006 | 0.42 | M-v | 3 | MPC | 00536 | 2003 $SR_{135}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SX_{136}$ | 17.7 | 0.15 | 20060922 | 334.17788 | 90.06330 | 188.88750 | 10.93290 | 0.1623677 | 2.4666609 | 29 | 3 | 2002–2006 | 0.30 | M-v | 2 | MPC | 00536 | 2003 $SX_{136}$ |
| 2003 $SO_{138}$ | 15.0 | 0.15 | 20060922 | 246.47188 | 74.88933 | 266.01548 | 3.92759 | 0.1111912 | 2.9199671 | 62 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 95081 | 2003 $SO_{138}$ |
| 2003 $SV_{138}$ | 16.0 | 0.15 | 20060922 | 264.25675 | 178.63463 | 250.02066 | 4.79255 | 0.1365164 | 2.3212588 | 98 | 4 | 2001–2006 | 0.59 | M-v | 2 | MPC | 04261 | 2003 $SV_{138}$ |
| 2003 $SA_{139}$ | 17.1 | 0.15 | 20060922 | 332.18675 | 43.99785 | 320.28471 | 3.60967 | 0.1524582 | 2.2238949 | 82 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 04261 | 2003 $SA_{139}$ |
| 2003 $SR_{139}$ | 16.5 | 0.15 | 20060922 | 301.77024 | 191.60390 | 98.16247 | 6.61358 | 0.2069113 | 2.6243165 | 21 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 95082 | 2003 $SR_{139}$ |
| 2003 $SU_{139}$ | 15.8 | 0.15 | 20060922 | 172.66342 | 213.25863 | 192.02390 | 10.68750 | 0.1019201 | 3.0107495 | 44 | 2 | 2001–2003 | 0.48 | M-v | 2 | MPC | 02167 | 2003 $SU_{139}$ |
| 2003 $SE_{140}$ | 15.7 | 0.15 | 20060922 | 255.39837 | 196.52105 | 171.07091 | 10.85297 | 0.0915769 | 2.6899326 | 60 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 00537 | 2003 $SE_{140}$ |
| 2003 $SN_{141}$ | 17.5 | 0.15 | 20060922 | 270.59184 | 271.71682 | 146.85059 | 2.34394 | 0.1928837 | 2.3457165 | 62 | 3 | 2001–2005 | 0.43 | M-v | 2 | MPC | 57954 | 2003 $SN_{141}$ |
| 2003 $SD_{142}$ | 17.1 | 0.15 | 20060922 | 297.52967 | 356.18242 | 54.23102 | 3.10112 | 0.1606966 | 2.2340687 | 51 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04261 | 2003 $SD_{142}$ |
| 2003 $SW_{143}$ | 17.4 | 0.15 | 20060922 | 344.73876 | 23.98697 | 327.41655 | 3.06470 | 0.1551706 | 2.2025522 | 69 | 4 | 1993–2006 | 0.51 | M-v | 1 | MPC | 04261 | 2003 $SW_{143}$ |
| 2003 $SX_{143}$ | 16.2 | 0.15 | 20060922 | 231.87661 | 72.21978 | 337.98444 | 4.14626 | 0.2445834 | 2.6169838 | 85 | 3 | 1999–2005 | 0.37 | M-v | 2 | MPC | 57954 | 2003 $SX_{143}$ |
| 2003 $SB_{144}$ | 15.3 | 0.15 | 20060922 | 74.79513 | 247.94051 | 270.69324 | 8.35582 | 0.0786969 | 2.9873976 | 57 | 6 | 2000–2006 | 0.55 | M-v | 0 | MPC | 02167 | 2003 $SB_{144}$ |
| 2003 $SC_{144}$ | 17.0 | 0.15 | 20060922 | 288.90860 | 77.42945 | 343.10951 | 7.45790 | 0.0965409 | 2.2067793 | 39 | 2 | 2003–2006 | 0.37 | M-v | 3 | MPC | 03522 | 2003 $SC_{144}$ |
| 2003 $SF_{145}$ | 16.0 | 0.15 | 20060922 | 328.78089 | 27.91853 | 329.42574 | 7.90433 | 0.2088380 | 2.2559156 | 90 | 5 | 1996–2005 | 0.50 | M-v | 1 | MPC | 77712 | 2003 $SF_{145}$ |
| 2003 $SP_{146}$ | 16.3 | 0.15 | 20060922 | 267.81639 | 74.23697 | 331.14451 | 6.40831 | 0.1072833 | 2.3911962 | 79 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 57955 | 2003 $SP_{146}$ |
| 2003 $SY_{147}$ | 14.9 | 0.15 | 20060922 | 203.17269 | 322.56934 | 13.80753 | 18.87240 | 0.2155973 | 3.0800217 | 33 | 3 | 1996–2003 | 0.46 | M-v | 2 | MPC | 56825 | 2003 $SY_{147}$ |
| 2003 $SR_{148}$ | 15.7 | 0.15 | 20060922 | 222.04481 | 105.28362 | 255.30745 | 3.08635 | 0.1161400 | 2.9922818 | 67 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 02167 | 2003 $SR_{148}$ |
| 2003 $ST_{149}$ | 15.6 | 0.15 | 20060922 | 231.86121 | 250.92832 | 57.03834 | 6.28327 | 0.1632813 | 3.1182604 | 41 | 3 | 1998–2003 | 0.60 | M-v | 2 | MPC | 57955 | 2003 $ST_{149}$ |
| 2003 $SX_{150}$ | 16.3 | 0.15 | 20060922 | 328.48356 | 238.23691 | 89.49946 | 7.65334 | 0.1449728 | 2.3249528 | 34 | 2 | 2003–2006 | 0.56 | M-v | 4 | MPC | 00539 | 2003 $SX_{150}$ |
| 2003 $SY_{150}$ | 17.3 | 0.15 | 20060922 | 342.05612 | 213.82118 | 112.07747 | 6.86893 | 0.1873135 | 2.2542172 | 27 | 5 | 1996–2005 | 0.50 | M-v | 1 | MPC | 89478 | 2003 $SY_{150}$ |
| 2003 $SJ_{151}$ | 15.0 | 0.15 | 20060922 | 229.66351 | 169.56508 | 153.83180 | 16.67700 | 0.0814224 | 3.1341517 | 51 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 95083 | 2003 $SJ_{151}$ |
| 2003 $SB_{155}$ | 18.3 | 0.15 | 20060922 | 9.92619 | 47.67549 | 289.26699 | 1.77223 | 0.2083162 | 2.1159811 | 78 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 04261 | 2003 $SB_{155}$ |
| 2003 $SQ_{155}$ | 17.8 | 0.15 | 20060922 | 356.42347 | 151.81667 | 201.70831 | 1.54002 | 0.1900371 | 2.1362787 | 102 | 3 | 2003–2006 | 0.47 | M-v | 2 | MPC | 04261 | 2003 $SQ_{155}$ |
| 2003 $SC_{156}$ | 15.7 | 0.15 | 20060922 | 235.40076 | 160.42324 | 189.42924 | 5.70536 | 0.0839465 | 2.9198033 | 67 | 4 | 1998–2006 | 0.50 | M-v | 3 | MPC | 00541 | 2003 $SC_{156}$ |
| 2003 $SE_{157}$ | 15.4 | 0.15 | 20060922 | 153.31422 | 234.71160 | 189.14380 | 9.34190 | 0.0940356 | 3.1097534 | 68 | 6 | 1995–2006 | 0.55 | M-v | 0 | MPC | 02168 | 2003 $SE_{157}$ |
| 2003 $SS_{159}$ | 17.5 | 0.15 | 20060922 | 320.94684 | 27.71106 | 314.79295 | 6.91238 | 0.1595531 | 2.2804008 | 38 | 3 | 1998–2005 | 0.54 | M-v | 3 | MPC | 53435 | 2003 $SS_{159}$ |
| 2003 $SF_{160}$ | 15.9 | 0.15 | 20060922 | 188.07311 | 117.37088 | 270.80600 | 1.00799 | 0.0756227 | 2.8706683 | 36 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 00542 | 2003 $SF_{160}$ |
| 2003 $SJ_{161}$ | 17.0 | 0.15 | 20060922 | 320.77045 | 169.71060 | 146.24308 | 5.95110 | 0.1863638 | 2.3985857 | 44 | 4 | 1995–2006 | 0.59 | M-v | 1 | MPC | 02168 | 2003 $SJ_{161}$ |
| 2003 $SM_{161}$ | 16.5 | 0.15 | 20060922 | 245.62257 | 43.28824 | 34.37274 | 5.03594 | 0.1145371 | 2.2881952 | 26 | 3 | 2002–2005 | 0.45 | M-v | 3 | MPC | 75975 | 2003 $SM_{161}$ |
| 2003 $SH_{162}$ | 15.6 | 0.15 | 20060922 | 205.04827 | 203.28792 | 175.25441 | 10.57331 | 0.1066138 | 3.0208382 | 41 | 3 | 1996–2006 | 0.53 | M-v | 3 | MPC | 00542 | 2003 $SH_{162}$ |
| 2003 $SZ_{162}$ | 15.6 | 0.15 | 20060922 | 225.83363 | 163.40018 | 193.11177 | 10.19083 | 0.1159239 | 2.9967609 | 77 | 2 | 2003–2006 | 0.49 | M-v | 3 | MPC | 00543 | 2003 $SZ_{162}$ |
| 2003 $SM_{163}$ | 15.4 | 0.15 | 20060922 | 289.58836 | 283.70798 | 32.19250 | 6.74953 | 0.0657665 | 2.7802579 | 76 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 00543 | 2003 $SM_{163}$ |
| 2003 $SO_{164}$ | 17.3 | 0.15 | 20060922 | 285.80785 | 66.87961 | 324.80475 | 0.83741 | 0.1913486 | 2.3585569 | 81 | 3 | 2001–2005 | 0.42 | M-v | 3 | MPC | 56831 | 2003 $SO_{164}$ |
| 2003 $SM_{166}$ | 16.7 | 0.15 | 20060922 | 347.62624 | 210.40296 | 51.20840 | 4.74199 | 0.1401795 | 2.5309872 | 36 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 00544 | 2003 $SM_{166}$ |
| 2003 $SB_{168}$ | 15.9 | 0.15 | 20060922 | 293.96577 | 309.03716 | 66.33592 | 4.73758 | 0.1908960 | 2.2899741 | 47 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 57958 | 2003 $SB_{168}$ |
| 2003 $SC_{168}$ | 16.2 | 0.15 | 20060922 | 273.36787 | 166.41856 | 147.99508 | 12.99846 | 0.1270541 | 2.6763136 | 31 | 3 | 1997–2003 | 0.49 | M-v | 2 | MPC | 89479 | 2003 $SC_{168}$ |
| 2003 $SR_{168}$ | 14.6 | 0.15 | 20060922 | 187.61536 | 237.99273 | 127.70901 | 10.18094 | 0.0985868 | 3.1729849 | 40 | 3 | 1996–2006 | 0.68 | M-v | 3 | MPC | 95086 | 2003 $SR_{168}$ |
| 2003 $ST_{168}$ | 15.8 | 0.15 | 20060922 | 241.14537 | 214.73717 | 147.00520 | 5.06884 | 0.1080056 | 2.7236715 | 74 | 4 | 1995–2006 | 0.68 | M-v | 1 | MPC | 02169 | 2003 $ST_{168}$ |
| 2003 $SX_{169}$ | 16.6 | 0.15 | 20060922 | 24.39337 | 78.57562 | 221.21295 | 6.00976 | 0.1224020 | 2.1982853 | 82 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 04261 | 2003 $SX_{169}$ |
| 2003 $SO_{170}$ | 17.4 | 0.15 | 20060922 | 343.23437 | 321.99070 | 8.08909 | 3.42948 | 0.1359492 | 2.2931908 | 50 | 3 | 2002–2005 | 0.59 | M-v | 3 | MPC | 53443 | 2003 $SO_{170}$ |
| 2003 $SH_{171}$ | 16.2 | 0.15 | 20060922 | 293.70903 | 333.71061 | 32.87788 | 7.34883 | 0.1517579 | 2.3722500 | 83 | 2 | 2002–2003 | 0.56 | M-v | 3 | MPC | 57958 | 2003 $SH_{171}$ |
| 2003 $SJ_{171}$ | 15.7 | 0.15 | 20060922 | 198.79160 | 347.46504 | 28.61999 | 7.30450 | 0.1582293 | 3.0215968 | 56 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 00545 | 2003 $SJ_{171}$ |
| 2003 $SP_{171}$ | 16.6 | 0.15 | 20060922 | 232.30396 | 99.07811 | 288.40382 | 4.00510 | 0.0959225 | 2.5937235 | 35 | 3 | 1999–2005 | 0.66 | M-v | 2 | MPC | 87590 | 2003 $SP_{171}$ |
| 2003 $SD_{172}$ | 16.8 | 0.15 | 20060922 | 302.69631 | 1.80381 | 5.29229 | 3.66181 | 0.1730632 | 2.2929471 | 43 | 3 | 2002–2005 | 0.70 | M-v | 3 | MPC | 53446 | 2003 $SD_{172}$ |
| 2003 $SF_{172}$ | 16.9 | 0.15 | 20060922 | 276.84259 | 322.58791 | 65.08472 | 2.25022 | 0.1957586 | 2.3555915 | 31 | 3 | 1996–2005 | 0.49 | M-v | 3 | MPC | 00546 | 2003 $SF_{172}$ |
| 2003 $SC_{174}$ | 15.4 | 0.15 | 20060922 | 253.83677 | 148.71461 | 140.53915 | 7.30935 | 0.1313237 | 3.1564682 | 35 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 97676 | 2003 $SC_{174}$ |
| 2003 $SV_{174}$ | 16.5 | 0.15 | 20060922 | 234.09494 | 182.04484 | 177.06595 | 3.86317 | 0.1101776 | 2.7867146 | 38 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 00546 | 2003 $SV_{174}$ |
| 2003 $SY_{174}$ | 16.9 | 0.15 | 20060922 | 235.47613 | 296.29490 | 172.17105 | 6.16148 | 0.1227817 | 2.2041022 | 67 | 6 | 1993–2006 | 0.60 | M-v | 1 | MPC | 77713 | 2003 $SY_{174}$ |
| 2003 $SR_{175}$ | 17.8 | 0.15 | 20060922 | 22.32905 | 250.82983 | 43.02276 | 2.19150 | 0.0551879 | 2.2417261 | 23 | 3 | 2002–2005 | 0.56 | M-v | 3 | MPC | 75981 | 2003 $SR_{175}$ |
| 2003 $SG_{176}$ | 17.3 | 0.15 | 20060922 | 328.13905 | 293.02949 | 6.69322 | 2.50800 | 0.1601747 | 2.4374977 | 37 | 3 | 1999–2006 | 0.43 | M-v | 2 | MPC | 03523 | 2003 $SG_{176}$ |
| 2003 $SW_{176}$ | 17.1 | 0.15 | 20060922 | 265.39631 | 197.75369 | 166.16323 | 3.03247 | 0.1320485 | 2.5509832 | 63 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 04261 | 2003 $SW_{176}$ |
| 2003 $SB_{177}$ | 17.3 | 0.15 | 20060922 | 44.31511 | 99.23585 | 167.63746 | 4.37212 | 0.1757176 | 2.2203224 | 57 | 3 | 2002–2006 | 0.60 | M-v | 1 | MPC | 04261 | 2003 $SB_{177}$ |
| 2003 $SK_{178}$ | 17.1 | 0.15 | 20060922 | 42.18043 | 31.83084 | 255.50284 | 3.78100 | 0.1399120 | 2.1688382 | 78 | 2 | 2003–2006 | 0.47 | M-v | 4 | MPC | 03523 | 2003 $SK_{178}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SN_{178}$ | 15.3 | 0.15 | 20060922 | 134.95271 | 274.45668 | 98.85576 | 4.41111 | 0.2451055 | 3.9391355 | 28 | 3 | 1995–2006 | 0.46 | M-v | 4 | MPC | 95088 | 2003 $SN_{178}$ |
| 2003 $SU_{179}$ | 17.2 | 0.15 | 20060922 | 301.19986 | 89.47121 | 259.76023 | 2.55946 | 0.1859642 | 2.3732479 | 48 | 4 | 1996–2006 | 0.43 | M-v | 1 | MPC | 00548 | 2003 $SU_{179}$ |
| 2003 $SO_{180}$ | 15.9 | 0.15 | 20060922 | 30.48642 | 23.26301 | 202.81155 | 17.99309 | 0.0618703 | 2.6159549 | 43 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 00548 | 2003 $SO_{180}$ |
| 2003 $SB_{181}$ | 16.7 | 0.15 | 20060922 | 6.84126 | 314.02243 | 331.39625 | 6.35708 | 0.1230100 | 2.3587798 | 32 | 3 | 1998–2005 | 0.50 | M-v | 4 | MPC | 53452 | 2003 $SB_{181}$ |
| 2003 $SF_{182}$ | 16.5 | 0.15 | 20060922 | 253.91053 | 272.94435 | 162.99460 | 8.32038 | 0.1462509 | 2.3929600 | 60 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 00549 | 2003 $SF_{182}$ |
| 2003 $SA_{183}$ | 16.8 | 0.15 | 20060922 | 24.22033 | 297.07754 | 349.65049 | 3.75732 | 0.2624623 | 2.1919427 | 88 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 04262 | 2003 $SA_{183}$ |
| 2003 $SD_{183}$ | 17.2 | 0.15 | 20060922 | 303.67526 | 292.80866 | 16.18685 | 8.48384 | 0.1263598 | 2.5480037 | 26 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 00549 | 2003 $SD_{183}$ |
| 2003 $ST_{184}$ | 16.0 | 0.15 | 20060922 | 188.49770 | 349.34002 | 47.49453 | 2.62520 | 0.0907486 | 2.9533887 | 52 | 4 | 1996–2006 | 0.47 | M-v | 0 | MPC | 00549 | 2003 $ST_{184}$ |
| 2003 $SW_{184}$ | 17.9 | 0.15 | 20060922 | 337.26204 | 195.02357 | 106.60880 | 2.17733 | 0.1803378 | 2.4008816 | 25 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03523 | 2003 $SW_{184}$ |
| 2003 $SV_{185}$ | 15.3 | 0.15 | 20060922 | 81.98721 | 267.41032 | 213.95949 | 6.07424 | 0.1051235 | 3.0794252 | 34 | 4 | 1993–2006 | 0.39 | M-v | 1 | MPC | 04262 | 2003 $SV_{185}$ |
| 2003 $SH_{186}$ | 17.7 | 0.15 | 20060922 | 233.52116 | 254.83125 | 119.06843 | 1.78484 | 0.1821893 | 2.6846743 | 25 | 4 | 1999–2005 | 0.46 | M-v | 1 | MPC | 74281 | 2003 $SH_{186}$ |
| 2003 $SM_{186}$ | 15.5 | 0.15 | 20060922 | 182.12307 | 28.08870 | 357.57160 | 16.94690 | 0.0339369 | 2.9502427 | 35 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 00550 | 2003 $SM_{186}$ |
| 2003 $SY_{186}$ | 17.3 | 0.15 | 20060922 | 339.22486 | 140.86381 | 151.08756 | 4.91809 | 0.1797109 | 2.4240198 | 66 | 5 | 1998–2006 | 0.52 | M-v | 0 | MPC | 02170 | 2003 $SY_{186}$ |
| 2003 $SO_{187}$ | 16.5 | 0.15 | 20060922 | 341.62009 | 233.30084 | 25.93003 | 9.78282 | 0.0986881 | 2.7050784 | 24 | 2 | 2003–2006 | 0.30 | M-v | 3 | MPC | 03524 | 2003 $SO_{187}$ |
| 2003 $SC_{188}$ | 16.6 | 0.15 | 20060922 | 349.27656 | 102.11311 | 234.76198 | 5.25820 | 0.2213136 | 2.2333876 | 63 | 3 | 1993–2005 | 0.48 | M-v | 3 | MPC | 89480 | 2003 $SC_{188}$ |
| 2003 $SK_{188}$ | 16.5 | 0.15 | 20060922 | 207.65594 | 82.34481 | 347.01292 | 6.94680 | 0.2389056 | 2.6742248 | 45 | 3 | 1999–2005 | 0.62 | M-v | 3 | MPC | 56839 | 2003 $SK_{188}$ |
| 2003 $SP_{190}$ | 17.4 | 0.15 | 20060922 | 248.91765 | 129.41184 | 311.04981 | 2.49974 | 0.0952246 | 2.2832018 | 39 | 3 | 2001–2005 | 0.51 | M-v | 2 | MPC | 53456 | 2003 $SP_{190}$ |
| 2003 $SR_{190}$ | 16.3 | 0.15 | 20060922 | 280.38278 | 119.14929 | 195.29191 | 4.77024 | 0.1138732 | 2.7352283 | 44 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 00551 | 2003 $SR_{190}$ |
| 2003 $SB_{192}$ | 16.7 | 0.15 | 20060922 | 309.74696 | 97.02615 | 306.03294 | 5.72059 | 0.1354184 | 2.2125711 | 124 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 04262 | 2003 $SB_{192}$ |
| 2003 $SE_{192}$ | 16.7 | 0.15 | 20060922 | 28.82235 | 5.82509 | 293.87060 | 4.40109 | 0.3071342 | 2.1524801 | 164 | 3 | 2002–2006 | 0.46 | M-v | 1 | MPC | 04262 | 2003 $SE_{192}$ |
| 2003 $SJ_{193}$ | 17.3 | 0.15 | 20060922 | 314.87424 | 106.25836 | 263.04129 | 5.42303 | 0.1286859 | 2.2821984 | 31 | 3 | 1996–2005 | 0.52 | M-v | 3 | MPC | 57961 | 2003 $SJ_{193}$ |
| 2003 $SG_{194}$ | 15.7 | 0.15 | 20060922 | 209.15648 | 331.86869 | 34.99712 | 2.83392 | 0.0904219 | 3.0945048 | 85 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 02170 | 2003 $SG_{194}$ |
| 2003 $SE_{195}$ | 17.8 | 0.15 | 20060922 | 22.38429 | 333.68211 | 339.53807 | 4.75174 | 0.1865205 | 2.1652185 | 72 | 2 | 2003–2006 | 0.48 | M-v | 3 | MPC | 03524 | 2003 $SE_{195}$ |
| 2003 $SW_{195}$ | 15.2 | 0.15 | 20060922 | 168.46358 | 168.81086 | 239.17092 | 7.91293 | 0.0367117 | 3.0775942 | 45 | 4 | 1998–2006 | 0.46 | M-v | 0 | MPC | 02170 | 2003 $SW_{195}$ |
| 2003 $SN_{196}$ | 16.4 | 0.15 | 20060922 | 19.44263 | 61.69664 | 252.91271 | 4.63716 | 0.1759188 | 2.1956753 | 122 | 2 | 2003–2006 | 0.58 | M-v | 2 | MPC | 04262 | 2003 $SN_{196}$ |
| 2003 $SF_{197}$ | 15.0 | 0.15 | 20060922 | 70.15927 | 290.74047 | 208.15116 | 10.40869 | 0.0917281 | 3.1561557 | 51 | 4 | 2000–2006 | 0.65 | M-v | 1 | MPC | 02170 | 2003 $SF_{197}$ |
| 2003 $SC_{198}$ | 17.4 | 0.15 | 20060922 | 312.79010 | 140.92001 | 174.21652 | 9.45719 | 0.1996644 | 2.4710885 | 34 | 3 | 1995–2003 | 0.64 | M-v | 2 | MPC | 87590 | 2003 $SC_{198}$ |
| 2003 $SS_{198}$ | 17.0 | 0.15 | 20060922 | 19.47340 | 15.43503 | 284.65076 | 4.54292 | 0.2290055 | 2.2114752 | 51 | 3 | 2003–2006 | 0.43 | M-v | 2 | MPC | 03524 | 2003 $SS_{198}$ |
| 2003 $SZ_{198}$ | 16.4 | 0.15 | 20060922 | 8.98281 | 15.09766 | 305.74217 | 4.57047 | 0.1965354 | 2.2065229 | 85 | 2 | 2003–2006 | 0.37 | M-v | 2 | MPC | 03524 | 2003 $SZ_{198}$ |
| 2003 $SM_{200}$ | 15.7 | 0.15 | 20060922 | 247.68047 | 267.01624 | 112.87981 | 15.97945 | 0.1097441 | 2.5629038 | 33 | 3 | 2003–2006 | 0.59 | M-v | 3 | MPC | 03525 | 2003 $SM_{200}$ |
| 2003 $SA_{201}$ | 17.0 | 0.15 | 20031008 | 8.70481 | 44.88691 | 308.52646 | 2.40705 | 0.2171308 | 2.6249502 | 19 | 1 | 27 days | 0.44 | | | MPC | | 2003 $SA_{201}$ |
| 2003 $SM_{201}$ | 16.7 | 0.15 | 20060922 | 143.67446 | 74.80008 | 185.94379 | 21.80306 | 0.0491470 | 1.9319087 | 92 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 77715 | 2003 $SM_{201}$ |
| 2003 $SP_{203}$ | 16.6 | 0.15 | 20060922 | 217.95436 | 1.68936 | 18.21552 | 4.07235 | 0.1207990 | 2.7722868 | 28 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 00555 | 2003 $SP_{203}$ |
| 2003 $SB_{204}$ | 17.0 | 0.15 | 20060922 | 328.83857 | 161.73151 | 212.77718 | 0.76387 | 0.1010531 | 2.2053763 | 96 | 5 | 2000–2006 | 0.49 | M-v | 2 | MPC | 04262 | 2003 $SB_{204}$ |
| 2003 $SN_{205}$ | 16.1 | 0.15 | 20060922 | 262.82354 | 354.33006 | 29.60600 | 6.74610 | 0.2004389 | 2.5280950 | 101 | 3 | 1999–2005 | 0.53 | M-v | 2 | MPC | 57962 | 2003 $SN_{205}$ |
| 2003 $SB_{206}$ | 15.3 | 0.15 | 20060922 | 212.01591 | 128.92371 | 194.05047 | 10.27401 | 0.1312025 | 3.1201575 | 26 | 3 | 2002–2005 | 0.38 | M-v | 3 | MPC | 56849 | 2003 $SB_{206}$ |
| 2003 $SL_{206}$ | 16.5 | 0.15 | 20060922 | 216.04255 | 352.14789 | 39.75988 | 3.25784 | 0.1159168 | 2.6927988 | 37 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 02171 | 2003 $SL_{206}$ |
| 2003 $SB_{207}$ | 15.6 | 0.15 | 20060922 | 163.47799 | 215.65098 | 178.42545 | 21.69345 | 0.0850080 | 3.1261999 | 32 | 3 | 2001–2006 | 0.37 | M-v | 2 | MPC | 00555 | 2003 $SB_{207}$ |
| 2003 $SV_{207}$ | 16.3 | 0.15 | 20060922 | 201.38091 | 300.83171 | 195.57802 | 10.85322 | 0.1261828 | 2.3368588 | 125 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 04262 | 2003 $SV_{207}$ |
| 2003 $SC_{209}$ | 14.1 | 0.15 | 20060922 | 216.43027 | 131.31365 | 166.92492 | 21.68798 | 0.0847464 | 3.1940190 | 51 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 70365 | 2003 $SC_{209}$ |
| 2003 $SV_{209}$ | 17.1 | 0.15 | 20060922 | 323.41717 | 82.01577 | 250.32637 | 2.92532 | 0.1893261 | 2.3469694 | 53 | 4 | 1996–2006 | 0.51 | M-v | 1 | MPC | 02171 | 2003 $SV_{209}$ |
| 2003 $SG_{210}$ | 16.1 | 0.15 | 20060922 | 221.96518 | 181.80827 | 177.78996 | 5.72826 | 0.1395860 | 2.9385292 | 77 | 3 | 1993–2006 | 0.64 | M-v | 3 | MPC | 00556 | 2003 $SG_{210}$ |
| 2003 $SR_{211}$ | 16.1 | 0.15 | 20060922 | 317.45028 | 193.82843 | 115.08587 | 7.70189 | 0.1679676 | 2.4192339 | 44 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 02171 | 2003 $SR_{211}$ |
| 2003 $SY_{211}$ | 16.6 | 0.15 | 20060922 | 258.21991 | 195.02868 | 114.17542 | 9.64907 | 0.2138835 | 2.8024383 | 23 | 4 | 2001–2004 | 0.53 | M-v | 1 | MPC | 86120 | 2003 $SY_{211}$ |
| 2003 $SU_{212}$ | 16.4 | 0.15 | 20060922 | 240.88514 | 333.72454 | 80.41557 | 8.97143 | 0.2342023 | 2.4445163 | 36 | 3 | 1998–2005 | 0.63 | M-v | 3 | MPC | 69559 | 2003 $SU_{212}$ |
| 2003 $SB_{215}$ | 17.0 | 0.15 | 20060922 | 167.63296 | 251.21975 | 260.63581 | 5.57872 | 0.0418214 | 2.2617147 | 31 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 00558 | 2003 $SB_{215}$ |
| 2003 $SL_{216}$ | 15.2 | 0.15 | 20060922 | 199.44546 | 291.03032 | 91.52723 | 2.29769 | 0.2096316 | 3.1065843 | 100 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 02171 | 2003 $SL_{216}$ |
| 2003 $SP_{217}$ | 17.0 | 0.15 | 20060922 | 173.30507 | 338.58948 | 122.20577 | 1.02155 | 0.1190756 | 2.7298497 | 45 | 4 | 1994–2005 | 0.60 | M-v | 0 | MPC | 04262 | 2003 $SP_{217}$ |
| 2003 $SS_{217}$ | 15.4 | 0.15 | 20060922 | 286.32754 | 14.17066 | 289.09280 | 10.37707 | 0.2312286 | 2.6166283 | 95 | 4 | 1999–2005 | 0.53 | M-v | 1 | MPC | 74283 | 2003 $SS_{217}$ |
| 2003 $SA_{218}$ | 17.3 | 0.15 | 20060922 | 318.20595 | 112.82665 | 188.65925 | 4.09289 | 0.0882018 | 2.6703934 | 37 | 3 | 1994–2006 | 0.32 | M-v | 2 | MPC | 04262 | 2003 $SA_{218}$ |
| 2003 $SD_{218}$ | 17.2 | 0.15 | 20060922 | 269.00123 | 274.49456 | 169.20022 | 1.85880 | 0.0526505 | 2.2137459 | 81 | 3 | 2003–2006 | 0.51 | M-v | 3 | MPC | 04262 | 2003 $SD_{218}$ |
| 2003 $SD_{220}$ | 16.9 | 0.15 | 20060922 | 130.70586 | 326.31260 | 274.20954 | 8.46158 | 0.2097396 | 0.8284236 | 105 | 4 | 2000–2006 | 0.46 | M-v | 3 | MPC | 97678 | 2003 $SD_{220}$ |
| 2003 $SD_{221}$ | 16.9 | 0.15 | 20060922 | 196.25437 | 37.92804 | 184.04050 | 21.94275 | 0.0787429 | 1.9069913 | 88 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 87591 | 2003 $SD_{221}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SZ_{221}$ | 16.8 | 0.15 | 20060922 | 332.85505 | 159.80866 | 203.51590 | 3.77798 | 0.2054479 | 2.2035995 | 72 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 03526 | 2003 $SZ_{221}$ |
| 2003 $SJ_{223}$ | 17.0 | 0.15 | 20060922 | 5.53268 | 119.15867 | 209.77480 | 7.25405 | 0.1713153 | 2.2472745 | 45 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 56861 | 2003 $SJ_{223}$ |
| 2003 $SF_{224}$ | 16.8 | 0.15 | 20060922 | 288.66799 | 67.69668 | 340.42356 | 4.90910 | 0.0943145 | 2.3050186 | 89 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04263 | 2003 $SF_{224}$ |
| 2003 $SM_{224}$ | 15.9 | 0.15 | 20060922 | 274.45657 | 277.95083 | 9.93040 | 11.88569 | 0.0850690 | 3.0711441 | 25 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 03527 | 2003 $SM_{224}$ |
| 2003 $SF_{225}$ | 15.7 | 0.15 | 20060922 | 219.33264 | 173.28138 | 197.19146 | 9.54670 | 0.0251881 | 2.9637389 | 84 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 00560 | 2003 $SF_{225}$ |
| 2003 $SH_{230}$ | 15.7 | 0.15 | 20060922 | 186.82397 | 235.75144 | 140.33562 | 9.64613 | 0.1388862 | 3.0137167 | 25 | 5 | 1995–2003 | 0.62 | M-v | 1 | MPC | 56866 | 2003 $SH_{230}$ |
| 2003 $SJ_{230}$ | 16.3 | 0.15 | 20060922 | 327.57765 | 172.43892 | 135.94587 | 7.16106 | 0.1319902 | 2.3783980 | 35 | 3 | 1998–2006 | 0.54 | M-v | 3 | MPC | 00563 | 2003 $SJ_{230}$ |
| 2003 $SD_{231}$ | 17.1 | 0.15 | 20060922 | 284.96360 | 238.40396 | 150.90509 | 6.28241 | 0.1010925 | 2.2834313 | 29 | 3 | 1995–2005 | 0.53 | M-v | 3 | MPC | 76004 | 2003 $SD_{231}$ |
| 2003 $SN_{231}$ | 16.6 | 0.15 | 20060922 | 346.78810 | 251.22089 | 51.72303 | 5.12379 | 0.1112100 | 2.3434867 | 26 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 00563 | 2003 $SN_{231}$ |
| 2003 $SP_{232}$ | 16.9 | 0.15 | 20060922 | 312.33484 | 205.88948 | 145.59305 | 3.01160 | 0.2321643 | 2.3542154 | 67 | 4 | 2002–2006 | 0.63 | M-v | 2 | MPC | 00563 | 2003 $SP_{232}$ |
| 2003 $ST_{232}$ | 17.0 | 0.15 | 20060922 | 305.34357 | 302.27171 | 21.62644 | 6.23459 | 0.2147222 | 2.3701116 | 29 | 4 | 1996–2006 | 0.47 | M-v | 3 | MPC | 00563 | 2003 $ST_{232}$ |
| 2003 $SJ_{236}$ | 16.6 | 0.15 | 20060922 | 248.71078 | 147.44796 | 192.09175 | 6.11981 | 0.0610726 | 2.8015812 | 42 | 3 | 1996–2006 | 0.54 | M-v | 3 | MPC | 00564 | 2003 $SJ_{236}$ |
| 2003 $SW_{238}$ | 17.8 | 0.15 | 20060922 | 67.62879 | 54.08860 | 211.52120 | 3.02025 | 0.1489051 | 2.1196981 | 46 | 6 | 1994–2006 | 0.39 | M-v | 1 | MPC | 03527 | 2003 $SW_{238}$ |
| 2003 $SD_{240}$ | 17.5 | 0.15 | 20060922 | 288.72341 | 59.77606 | 306.53445 | 1.90595 | 0.1928791 | 2.4448638 | 52 | 4 | 1997–2005 | 0.44 | M-v | 1 | MPC | 57968 | 2003 $SD_{240}$ |
| 2003 $SE_{240}$ | 16.3 | 0.15 | 20060922 | 316.50244 | 324.51315 | 339.77028 | 3.44243 | 0.2240781 | 2.5500177 | 38 | 4 | 1999–2005 | 0.46 | M-v | 1 | MPC | 57968 | 2003 $SE_{240}$ |
| 2003 $SU_{241}$ | 17.7 | 0.15 | 20060922 | 218.82164 | 31.77820 | 73.82029 | 1.06464 | 0.1923943 | 2.3628096 | 42 | 4 | 1996–2005 | 0.31 | M-v | 0 | MPC | 87591 | 2003 $SU_{241}$ |
| 2003 $SK_{242}$ | 16.3 | 0.15 | 20060922 | 265.43803 | 17.15194 | 321.48006 | 1.33232 | 0.0361150 | 2.8502645 | 45 | 3 | 2000–2005 | 0.44 | M-v | 4 | MPC | 72899 | 2003 $SK_{242}$ |
| 2003 $SL_{242}$ | 17.0 | 0.15 | 20060922 | 334.40676 | 251.20465 | 19.40829 | 14.37465 | 0.1681685 | 2.7195788 | 27 | 2 | 2003–2006 | 0.26 | M-v | 2 | MPC | 00566 | 2003 $SL_{242}$ |
| 2003 $SW_{242}$ | 18.3 | 0.15 | 20060922 | 348.30237 | 305.98971 | 58.74926 | 1.85322 | 0.0702214 | 2.1692402 | 27 | 4 | 2002–2006 | 0.41 | M-v | 2 | MPC | 03527 | 2003 $SW_{242}$ |
| 2003 $SM_{243}$ | 20.1 | 0.15 | 20030918 | 29.05578 | 55.53427 | 259.43414 | 0.53736 | 0.2047207 | 2.3884358 | 15 | 1 | 11 days | 0.26 | | | MPC | | 2003 $SM_{243}$ |
| 2003 $SV_{243}$ | 17.5 | 0.15 | 20060922 | 82.30834 | 52.13153 | 154.46404 | 1.71774 | 0.1110296 | 2.4016116 | 24 | 3 | 2002–2005 | 0.46 | M-v | 3 | MPC | 03527 | 2003 $SV_{243}$ |
| 2003 $SD_{244}$ | 16.5 | 0.15 | 20060922 | 253.87267 | 165.51022 | 190.58086 | 4.79939 | 0.1740120 | 2.7433236 | 54 | 5 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04263 | 2003 $SD_{244}$ |
| 2003 $SQ_{245}$ | 17.8 | 0.15 | 20060922 | 358.07564 | 55.20099 | 275.41997 | 0.29140 | 0.1293946 | 2.1883583 | 61 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 03527 | 2003 $SQ_{245}$ |
| 2003 $SO_{246}$ | 17.4 | 0.15 | 20060922 | 27.43466 | 72.94460 | 217.99371 | 2.07927 | 0.1506994 | 2.2235178 | 57 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 04263 | 2003 $SO_{246}$ |
| 2003 $SW_{246}$ | 16.4 | 0.15 | 20060922 | 248.21795 | 194.11647 | 183.26394 | 11.04148 | 0.1170116 | 2.6211030 | 39 | 3 | 1997–2005 | 0.57 | M-v | 3 | MPC | 87591 | 2003 $SW_{246}$ |
| 2003 $SX_{246}$ | 17.2 | 0.15 | 20060922 | 319.19489 | 152.24584 | 172.50597 | 4.75593 | 0.1957410 | 2.4051294 | 49 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 04263 | 2003 $SX_{246}$ |
| 2003 $SY_{246}$ | 17.1 | 0.15 | 20060922 | 12.54577 | 297.32562 | 30.90093 | 3.20319 | 0.1702572 | 2.1428674 | 108 | 5 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04263 | 2003 $SY_{246}$ |
| 2003 $SZ_{246}$ | 16.9 | 0.15 | 20060922 | 332.77229 | 347.39148 | 21.23519 | 3.00582 | 0.2176110 | 2.1853626 | 64 | 4 | 2000–2006 | 0.45 | M-v | 2 | MPC | 04263 | 2003 $SZ_{246}$ |
| 2003 $SG_{247}$ | 16.8 | 0.15 | 20060922 | 294.75362 | 135.06622 | 193.91031 | 12.61558 | 0.1902228 | 2.5465470 | 52 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 00567 | 2003 $SG_{247}$ |
| 2003 $SE_{248}$ | 17.5 | 0.15 | 20060922 | 313.31919 | 239.90061 | 155.25409 | 1.84315 | 0.1080634 | 2.1789342 | 89 | 5 | 2000–2006 | 0.55 | M-v | 2 | MPC | 04263 | 2003 $SE_{248}$ |
| 2003 $SH_{248}$ | 16.8 | 0.15 | 20060922 | 320.91924 | 344.88737 | 2.66847 | 3.04729 | 0.0928536 | 2.3384939 | 37 | 4 | 1960–2005 | 0.67 | M-v | 2 | MPC | 56872 | 2003 $SH_{248}$ |
| 2003 $SZ_{249}$ | 15.3 | 0.15 | 20060922 | 267.56894 | 144.84467 | 208.03004 | 13.61803 | 0.1217338 | 2.7106509 | 85 | 4 | 1994–2006 | 0.53 | M-v | 1 | MPC | 04263 | 2003 $SZ_{249}$ |
| 2003 $SS_{250}$ | 15.4 | 0.15 | 20060922 | 199.62403 | 3.82653 | 36.16046 | 14.93579 | 0.1972394 | 3.0351736 | 104 | 2 | 2003–2006 | 0.55 | M-v | 3 | MPC | 00570 | 2003 $SS_{250}$ |
| 2003 $SV_{250}$ | 16.4 | 0.15 | 20060922 | 208.16903 | 225.92507 | 191.19615 | 8.21642 | 0.1670721 | 2.7246794 | 50 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 00570 | 2003 $SV_{250}$ |
| 2003 $SV_{252}$ | 17.4 | 0.15 | 20060922 | 241.59429 | 260.58978 | 187.79251 | 4.76804 | 0.0319160 | 2.2116756 | 50 | 4 | 2002–2006 | 0.53 | M-v | 0 | MPC | 87592 | 2003 $SV_{252}$ |
| 2003 $SH_{253}$ | 16.0 | 0.15 | 20060922 | 259.27137 | 125.49303 | 200.96442 | 4.35621 | 0.0724017 | 2.7784724 | 34 | 4 | 2002–2006 | 0.41 | M-v | 0 | MPC | 00570 | 2003 $SH_{253}$ |
| 2003 $SJ_{253}$ | 16.0 | 0.15 | 20060922 | 168.82800 | 235.34045 | 162.43861 | 1.54873 | 0.0973933 | 3.0492845 | 44 | 4 | 2000–2006 | 0.37 | M-v | 0 | MPC | 02173 | 2003 $SJ_{253}$ |
| 2003 $SU_{253}$ | 16.5 | 0.15 | 20060922 | 221.42434 | 232.52986 | 199.58252 | 6.03949 | 0.2413522 | 2.6350383 | 50 | 3 | 2000–2005 | 0.46 | M-v | 2 | MPC | 57971 | 2003 $SU_{253}$ |
| 2003 $SJ_{254}$ | 16.9 | 0.15 | 20060922 | 29.28434 | 262.85144 | 22.36489 | 6.67348 | 0.1143632 | 2.2546790 | 27 | 3 | 2002–2006 | 0.64 | M-v | 2 | MPC | 03528 | 2003 $SJ_{254}$ |
| 2003 $SW_{254}$ | 15.8 | 0.15 | 20060922 | 146.66627 | 245.94409 | 187.99010 | 10.72910 | 0.0721998 | 3.0172812 | 48 | 2 | 2003–2006 | 0.44 | M-v | 2 | MPC | 00571 | 2003 $SW_{254}$ |
| 2003 $SE_{257}$ | 16.5 | 0.15 | 20060922 | 255.44742 | 136.38486 | 166.80764 | 10.77517 | 0.1562073 | 2.8997618 | 29 | 3 | 1998–2003 | 0.48 | M-v | 2 | MPC | 69560 | 2003 $SE_{257}$ |
| 2003 $SQ_{257}$ | 15.4 | 0.15 | 20060922 | 143.17172 | 290.50444 | 128.19784 | 2.59849 | 0.0912317 | 3.2486661 | 47 | 4 | 1994–2006 | 0.55 | M-v | 3 | MPC | 04263 | 2003 $SQ_{257}$ |
| 2003 $SZ_{257}$ | 14.9 | 0.15 | 20060922 | 244.21431 | 222.95800 | 95.71758 | 2.72878 | 0.1175322 | 3.1184804 | 69 | 3 | 1995–2006 | 0.56 | M-v | 4 | MPC | 02173 | 2003 $SZ_{257}$ |
| 2003 $SU_{259}$ | 17.4 | 0.15 | 20060922 | 330.97678 | 291.67161 | 93.86309 | 0.98872 | 0.1263182 | 2.1740761 | 89 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 04263 | 2003 $SU_{259}$ |
| 2003 $SY_{259}$ | 17.0 | 0.15 | 20060922 | 23.18138 | 289.94249 | 32.77454 | 7.22058 | 0.1368923 | 2.1631394 | 80 | 2 | 2003–2006 | 0.56 | M-v | 3 | MPC | 03528 | 2003 $SY_{259}$ |
| 2003 $SB_{260}$ | 16.0 | 0.15 | 20060922 | 249.75989 | 154.33827 | 212.20476 | 8.61483 | 0.1634873 | 2.7703515 | 58 | 3 | 1996–2006 | 0.52 | M-v | 3 | MPC | 04263 | 2003 $SB_{260}$ |
| 2003 $SQ_{262}$ | 16.5 | 0.15 | 20060922 | 211.53734 | 243.05765 | 149.54941 | 4.11612 | 0.1025530 | 2.7766330 | 44 | 4 | 2001–2006 | 0.42 | M-v | 0 | MPC | 00574 | 2003 $SQ_{262}$ |
| 2003 $SA_{266}$ | 17.5 | 0.15 | 20060922 | 260.41759 | 253.92808 | 163.68872 | 2.42222 | 0.2066752 | 2.3832666 | 51 | 3 | 1999–2005 | 0.57 | M-v | 3 | MPC | 53497 | 2003 $SA_{266}$ |
| 2003 $SZ_{266}$ | 15.5 | 0.15 | 20060922 | 242.11966 | 316.41061 | 7.26904 | 11.35134 | 0.1197347 | 3.0545734 | 40 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 02174 | 2003 $SZ_{266}$ |
| 2003 $SS_{267}$ | 17.0 | 0.15 | 20060922 | 248.26168 | 153.78198 | 195.28100 | 1.90619 | 0.0862595 | 2.7691174 | 27 | 4 | 2001–2006 | 0.29 | M-v | 0 | MPC | 00575 | 2003 $SS_{267}$ |
| 2003 $SF_{268}$ | 15.6 | 0.15 | 20060922 | 294.68577 | 45.62560 | 263.97899 | 2.58761 | 0.0841930 | 2.7897848 | 43 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 02174 | 2003 $SF_{268}$ |
| 2003 $SB_{269}$ | 16.1 | 0.15 | 20060922 | 223.27260 | 184.59504 | 199.14123 | 4.62758 | 0.0811162 | 2.8022215 | 52 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 00575 | 2003 $SB_{269}$ |
| 2003 $SL_{269}$ | 15.4 | 0.15 | 20060922 | 166.62122 | 320.98989 | 92.98306 | 3.20498 | 0.0829586 | 3.0478541 | 87 | 6 | 1995–2006 | 0.53 | M-v | 0 | MPC | 02174 | 2003 $SL_{269}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SX_{269}$ | 17.6 | 0.15 | 20060922 | 345.31327 | 205.53182 | 130.66846 | 6.65458 | 0.1499153 | 2.2594557 | 30 | 3 | 1998–2005 | 0.44 | M-v | 3 | MPC | 57973 | 2003 $SX_{269}$ |
| 2003 $SZ_{269}$ | 18.1 | 0.15 | 20060922 | 327.82229 | 221.28204 | 157.38152 | 8.44472 | 0.2092948 | 2.1929191 | 35 | 2 | 2003–2006 | 0.54 | M-v | 3 | MPC | 03529 | 2003 $SZ_{269}$ |
| 2003 $SC_{270}$ | 15.5 | 0.15 | 20060922 | 243.61830 | 322.24227 | 54.16322 | 15.42822 | 0.1110721 | 2.6847511 | 50 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 02174 | 2003 $SC_{270}$ |
| 2003 $SK_{270}$ | 15.0 | 0.15 | 20060922 | 201.10379 | 208.37599 | 166.25366 | 11.43478 | 0.1922062 | 3.0936318 | 68 | 6 | 1996–2006 | 0.58 | M-v | 1 | MPC | 02174 | 2003 $SK_{270}$ |
| 2003 $SF_{271}$ | 15.1 | 0.15 | 20060922 | 216.17278 | 225.03995 | 133.73299 | 12.09568 | 0.0956302 | 3.1083138 | 54 | 3 | 1996–2005 | 0.67 | M-v | 3 | MPC | 87592 | 2003 $SF_{271}$ |
| 2003 $SG_{271}$ | 15.2 | 0.15 | 20060922 | 227.54376 | 320.40943 | 73.78906 | 10.58929 | 0.1808959 | 2.7336086 | 83 | 4 | 1999–2006 | 0.50 | M-v | 2 | MPC | 02174 | 2003 $SG_{271}$ |
| 2003 $SX_{272}$ | 15.5 | 0.15 | 20060922 | 151.54441 | 163.59456 | 250.67661 | 5.71821 | 0.1046528 | 3.2428200 | 40 | 4 | 2001–2006 | 0.45 | M-v | 0 | MPC | 02174 | 2003 $SX_{272}$ |
| 2003 $SO_{273}$ | 15.8 | 0.15 | 20060922 | 198.42984 | 184.96127 | 200.37221 | 4.79606 | 0.1563391 | 3.0150406 | 60 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 02174 | 2003 $SO_{273}$ |
| 2003 $SD_{274}$ | 15.4 | 0.15 | 20060922 | 198.99615 | 221.16679 | 134.27692 | 2.36368 | 0.0757634 | 3.2343146 | 38 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 02174 | 2003 $SD_{274}$ |
| 2003 $SN_{274}$ | 16.9 | 0.15 | 20060922 | 279.46552 | 337.68291 | 343.07330 | 5.63198 | 0.1033860 | 2.7402523 | 23 | 3 | 2001–2005 | 0.64 | M-v | 3 | MPC | 69561 | 2003 $SN_{274}$ |
| 2003 $SP_{274}$ | 17.3 | 0.15 | 20060922 | 240.53218 | 318.23728 | 65.66644 | 2.12099 | 0.0616456 | 2.6607442 | 32 | 4 | 2001–2006 | 0.29 | M-v | 0 | MPC | 02174 | 2003 $SP_{274}$ |
| 2003 $SL_{278}$ | 15.0 | 0.15 | 20060922 | 219.09466 | 38.79196 | 336.41942 | 8.96670 | 0.0599026 | 2.9358403 | 62 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 97681 | 2003 $SL_{278}$ |
| 2003 $SS_{278}$ | 16.5 | 0.15 | 20060922 | 296.54149 | 302.82280 | 357.87792 | 12.39094 | 0.2671088 | 2.6824063 | 31 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 03529 | 2003 $SS_{278}$ |
| 2003 $SZ_{287}$ | 15.7 | 0.15 | 20060922 | 208.29336 | 119.66629 | 335.08888 | 9.11591 | 0.1677176 | 2.5575001 | 67 | 3 | 1999–2005 | 0.51 | M-v | 2 | MPC | 56899 | 2003 $SZ_{287}$ |
| 2003 $SM_{288}$ | 16.2 | 0.15 | 20060922 | 299.60253 | 123.73427 | 173.71191 | 12.05425 | 0.0895683 | 2.7523486 | 43 | 4 | 2000–2006 | 0.33 | M-v | 0 | MPC | 00579 | 2003 $SM_{288}$ |
| 2003 $SA_{290}$ | 16.0 | 0.15 | 20060922 | 329.11796 | 203.39339 | 68.80847 | 7.11597 | 0.0325838 | 2.7550215 | 27 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 00580 | 2003 $SA_{290}$ |
| 2003 $SU_{290}$ | 17.4 | 0.15 | 20060922 | 330.83880 | 153.66999 | 214.53251 | 4.41852 | 0.1123317 | 2.2570012 | 63 | 3 | 2003–2006 | 0.40 | M-v | 2 | MPC | 04264 | 2003 $SU_{290}$ |
| 2003 $SE_{292}$ | 17.7 | 0.15 | 20060922 | 325.31624 | 231.98470 | 208.60989 | 26.12374 | 0.0705391 | 1.9810692 | 24 | 3 | 2003–2006 | 0.60 | M-v | 3 | MPC | 87593 | 2003 $SE_{292}$ |
| 2003 $SD_{293}$ | 16.2 | 0.15 | 20060922 | 164.34683 | 198.56583 | 268.54441 | 5.02290 | 0.0825233 | 2.5894865 | 44 | 3 | 2000–2005 | 0.52 | M-v | 2 | MPC | 72911 | 2003 $SD_{293}$ |
| 2003 $SD_{294}$ | 16.5 | 0.15 | 20060922 | 76.66248 | 314.95221 | 34.45530 | 22.05149 | 0.1021326 | 1.9129884 | 82 | 5 | 1997–2006 | 0.55 | M-v | 2 | MPC | 77719 | 2003 $SD_{294}$ |
| 2003 $SN_{294}$ | 16.2 | 0.15 | 20060922 | 307.66717 | 165.82923 | 156.81076 | 5.16202 | 0.2696282 | 2.5324722 | 77 | 6 | 1997–2006 | 0.57 | M-v | 1 | MPC | 02175 | 2003 $SN_{294}$ |
| 2003 $SD_{295}$ | 16.7 | 0.15 | 20060922 | 336.80141 | 345.25661 | 53.22527 | 7.35687 | 0.1925514 | 2.1609253 | 122 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 77719 | 2003 $SD_{295}$ |
| 2003 $SQ_{296}$ | 15.9 | 0.15 | 20060922 | 347.09636 | 317.25285 | 317.26559 | 14.01025 | 0.1678465 | 2.5651393 | 27 | 2 | 2003–2006 | 0.44 | M-v | 4 | MPC | 00583 | 2003 $SQ_{296}$ |
| 2003 $SZ_{296}$ | 15.5 | 0.15 | 20060922 | 200.13429 | 77.06144 | 301.92417 | 11.01280 | 0.1362846 | 2.9879722 | 35 | 3 | 2000–2005 | 0.42 | M-v | 3 | MPC | 53506 | 2003 $SZ_{296}$ |
| 2003 $SE_{297}$ | 15.8 | 0.15 | 20060922 | 209.17363 | 211.31502 | 148.81090 | 2.25480 | 0.0446908 | 2.8905058 | 44 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 02175 | 2003 $SE_{297}$ |
| 2003 $SH_{298}$ | 17.4 | 0.15 | 20060922 | 352.48396 | 244.41719 | 103.35899 | 2.34016 | 0.1853530 | 2.1451085 | 54 | 4 | 2000–2006 | 0.51 | M-v | 3 | MPC | 04264 | 2003 $SH_{298}$ |
| 2003 $SW_{299}$ | 15.7 | 0.15 | 20060922 | 236.74401 | 155.82889 | 191.36883 | 9.12388 | 0.0244809 | 2.9921064 | 75 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 00583 | 2003 $SW_{299}$ |
| 2003 $SV_{301}$ | 16.5 | 0.15 | 20060922 | 226.25633 | 185.96146 | 203.76722 | 8.12170 | 0.0871126 | 2.6571553 | 43 | 3 | 1997–2006 | 0.45 | M-v | 2 | MPC | 04264 | 2003 $SV_{301}$ |
| 2003 $SA_{304}$ | 18.7 | 0.15 | 20060922 | 357.16093 | 135.85262 | 212.33280 | 2.07188 | 0.1778763 | 2.1550712 | 37 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 03530 | 2003 $SA_{304}$ |
| 2003 $SZ_{304}$ | 15.4 | 0.15 | 20060922 | 249.55085 | 25.38724 | 331.60807 | 3.76650 | 0.0839237 | 2.7915267 | 65 | 3 | 1998–2005 | 0.43 | M-v | 3 | MPC | 77720 | 2003 $SZ_{304}$ |
| 2003 $SD_{305}$ | 17.6 | 0.15 | 20060922 | 13.60614 | 29.09330 | 297.96664 | 1.29606 | 0.1812057 | 2.1622690 | 112 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 04264 | 2003 $SD_{305}$ |
| 2003 $SH_{305}$ | 16.9 | 0.15 | 20060922 | 342.88379 | 12.58021 | 336.48975 | 6.84894 | 0.1443869 | 2.2430172 | 58 | 3 | 2003–2006 | 0.51 | M-v | 3 | MPC | 04264 | 2003 $SH_{305}$ |
| 2003 $SV_{305}$ | 16.7 | 0.15 | 20060922 | 212.45526 | 140.62707 | 256.66000 | 7.20790 | 0.0923187 | 2.7003577 | 16 | 1 | 33 days | 0.29 | M-v | 5 | MPC | 57979 | 2003 $SV_{305}$ |
| 2003 $SU_{306}$ | 15.6 | 0.15 | 20060922 | 149.41551 | 201.38691 | 234.49633 | 10.90296 | 0.0819190 | 3.0837646 | 39 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 02175 | 2003 $SU_{306}$ |
| 2003 $SK_{307}$ | 15.9 | 0.15 | 20060922 | 262.61491 | 45.09696 | 315.82443 | 12.80622 | 0.1934920 | 2.6615862 | 27 | 2 | 2003–2005 | 0.38 | M-v | 3 | MPC | 53510 | 2003 $SK_{307}$ |
| 2003 $SJ_{308}$ | 16.5 | 0.15 | 20060922 | 4.55932 | 76.64208 | 341.06747 | 18.55623 | 0.1147699 | 1.9496447 | 40 | 4 | 1999–2006 | 0.61 | M-v | 2 | MPC | 56917 | 2003 $SJ_{308}$ |
| 2003 $SL_{308}$ | 17.3 | 0.15 | 20060922 | 270.19320 | 205.33343 | 232.90626 | 5.61356 | 0.1100486 | 2.1790326 | 26 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 69562 | 2003 $SL_{308}$ |
| 2003 $SN_{308}$ | 14.8 | 0.15 | 20060922 | 219.94919 | 55.80681 | 299.40586 | 15.11868 | 0.1265394 | 3.0682998 | 48 | 3 | 1997–2005 | 0.53 | M-v | 3 | MPC | 72916 | 2003 $SN_{308}$ |
| 2003 $SN_{309}$ | 18.4 | 0.15 | 20060922 | 341.67713 | 59.71116 | 302.70820 | 1.77161 | 0.1687276 | 2.1512340 | 35 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 04264 | 2003 $SN_{309}$ |
| 2003 $SQ_{309}$ | 16.2 | 0.15 | 20060922 | 332.12501 | 35.11047 | 242.80780 | 2.33450 | 0.0694944 | 2.6373122 | 26 | 4 | 1993–2006 | 0.39 | M-v | 1 | MPC | 02176 | 2003 $SQ_{309}$ |
| 2003 $SD_{311}$ | 16.8 | 0.15 | 20060922 | 232.46843 | 107.04011 | 9.38453 | 5.29560 | 0.0869088 | 2.1860918 | 36 | 4 | 2000–2006 | 0.59 | M-v | 3 | MPC | 86126 | 2003 $SD_{311}$ |
| 2003 $SX_{311}$ | 18.5 | 0.15 | 20060922 | 321.23751 | 249.87649 | 146.16334 | 1.29170 | 0.1142343 | 2.1287488 | 42 | 3 | 2000–2006 | 0.39 | M-v | 3 | MPC | 03530 | 2003 $SX_{311}$ |
| 2003 $SE_{312}$ | 15.6 | 0.15 | 20060922 | 88.60983 | 27.67698 | 112.99529 | 3.16150 | 0.0590010 | 2.9202496 | 52 | 6 | 1998–2006 | 0.64 | M-v | 0 | MPC | 00585 | 2003 $SE_{312}$ |
| 2003 $SJ_{313}$ | 17.2 | 0.15 | 20060922 | 358.13404 | 171.54643 | 167.14273 | 3.72606 | 0.2450423 | 2.1700814 | 95 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 04264 | 2003 $SJ_{313}$ |
| 2003 $SP_{314}$ | 16.1 | 0.15 | 20060922 | 273.88666 | 192.58261 | 100.62264 | 3.64491 | 0.1851779 | 2.8855259 | 26 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 97683 | 2003 $SP_{314}$ |
| 2003 $SA_{315}$ | 17.2 | 0.15 | 20060922 | 348.17244 | 196.51529 | 209.08731 | 21.52107 | 0.0851233 | 1.9641935 | 47 | 3 | 2003–2006 | 0.48 | M-v | 2 | MPC | 87593 | 2003 $SA_{315}$ |
| 2003 $SC_{315}$ | 15.2 | 0.15 | 20060922 | 153.72813 | 213.49450 | 264.71104 | 21.31777 | 0.0516165 | 2.6022921 | 26 | 3 | 1999–2005 | 0.51 | M-v | 3 | MPC | 65504 | 2003 $SC_{315}$ |
| 2003 $SK_{317}$ | 18.7 | 0.15 | 20031008 | 6.94155 | 222.57635 | 138.67155 | 3.10617 | 0.1842259 | 3.0394202 | 12 | 1 | 32 days | 0.21 | | | MPC | | 2003 $SK_{317}$ |
| 2003 $SR_{322}$ | 17.6 | 0.15 | 20031008 | 353.52759 | 288.80191 | 90.21474 | 3.59075 | 0.1778992 | 2.2458875 | 33 | 1 | 37 days | 0.63 | | D | MPC | | 2003 $SR_{322}$ |
| 2003 $ST_{322}$ | 15.6 | 0.15 | 20031008 | 346.54317 | 84.13370 | 274.52734 | 10.69932 | 0.0872182 | 3.1292869 | 13 | 1 | 37 days | 0.13 | | | MPC | | 2003 $ST_{322}$ |
| 2003 $SU_{322}$ | 17.2 | 0.15 | 20031008 | 33.01604 | 330.04913 | 336.74102 | 11.58757 | 0.2103915 | 2.5809059 | 18 | 1 | 36 days | 0.75 | | | MPC | | 2003 $SU_{322}$ |
| 2003 $SV_{322}$ | 16.6 | 0.15 | 20031008 | 326.19796 | 65.64459 | 334.14188 | 9.27187 | 0.1288591 | 3.1102076 | 13 | 1 | 37 days | 0.09 | | | MPC | | 2003 $SV_{322}$ |
| 2003 $SW_{322}$ | 17.5 | 0.15 | 20031008 | 162.65634 | 210.15921 | 340.68685 | 12.06564 | 0.1015648 | 2.5389496 | 13 | 1 | 38 days | 0.17 | | | MPC | | 2003 $SW_{322}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SX_{322}$ | 19.2 | 0.15 | 20031008 | 16.00912 | 358.88636 | 340.56968 | 7.04444 | 0.1400726 | 2.2765678 | 11 | 1 | 36 days | 0.14 | | MPC | 2003 $SX_{322}$ |
| 2003 $SY_{322}$ | 17.5 | 0.15 | 20060922 | 348.94501 | 33.41499 | 244.44281 | 3.63291 | 0.1965135 | 2.3976874 | 21 | 1 | 65 days | 0.41 | M-v 4 | MPC | 2003 $SY_{322}$ |
| 2003 $SZ_{322}$ | 17.4 | 0.15 | 20031008 | 320.94238 | 74.36813 | 332.71589 | 7.74388 | 0.1187772 | 3.0950257 | 16 | 1 | 37 days | 0.14 | | MPC | 2003 $SZ_{322}$ |
| 2003 $SA_{323}$ | 16.6 | 0.15 | 20031008 | 189.84372 | 189.35349 | 339.18007 | 9.98397 | 0.0527546 | 3.1737673 | 16 | 1 | 38 days | 0.23 | | MPC | 2003 $SA_{323}$ |
| 2003 $SC_{323}$ | 17.1 | 0.15 | 20031008 | 1.95876 | 15.56177 | 341.45994 | 11.48533 | 0.0935084 | 2.8916935 | 12 | 1 | 37 days | 0.12 | | MPC | 2003 $SC_{323}$ |
| 2003 $SD_{323}$ | 17.5 | 0.15 | 20060922 | 224.75937 | 93.96074 | 298.58417 | 2.84743 | 0.2200370 | 2.6670622 | 19 | 1 | 65 days | 0.14 | M-v 3 | MPC | 2003 $SD_{323}$ |
| 2003 $SG_{323}$ | 19.8 | 0.15 | 20031008 | 26.70700 | 51.61062 | 277.16320 | 1.82147 | 0.1217705 | 2.1329559 | 11 | 1 | 32 days | 0.17 | | MPC | 2003 $SG_{323}$ |
| 2003 $SH_{323}$ | 19.1 | 0.15 | 20031008 | 79.64246 | 291.14575 | 333.94941 | 5.68358 | 0.1431589 | 2.2041836 | 11 | 1 | 38 days | 0.16 | | MPC | 2003 $SH_{323}$ |
| 2003 $SJ_{323}$ | 19.9 | 0.15 | 20030918 | 1.31710 | 158.23396 | 195.12788 | 4.45567 | 0.1338548 | 2.1963686 | 12 | 1 | 13 days | 0.19 | | MPC | 2003 $SJ_{323}$ |
| 2003 $SK_{323}$ | 18.1 | 0.15 | 20031008 | 347.99807 | 113.00430 | 264.33723 | 1.86009 | 0.1352075 | 2.6275130 | 19 | 1 | 37 days | 0.17 | | MPC | 2003 $SK_{323}$ |
| 2003 $SL_{323}$ | 18.6 | 0.15 | 20031008 | 342.40804 | 144.49845 | 244.74539 | 2.08052 | 0.2045527 | 2.6672726 | 16 | 1 | 38 days | 0.14 | | MPC | 2003 $SL_{323}$ |
| 2003 $SM_{323}$ | 18.7 | 0.15 | 20031008 | 72.23210 | 317.27463 | 310.26665 | 2.28346 | 0.1900636 | 2.3011001 | 12 | 1 | 33 days | 0.12 | | MPC | 2003 $SM_{323}$ |
| 2003 $SN_{323}$ | 18.8 | 0.15 | 20031008 | 356.28460 | 124.07726 | 245.23052 | 1.66156 | 0.2302462 | 2.6320106 | 17 | 1 | 37 days | 0.15 | | MPC | 2003 $SN_{323}$ |
| 2003 $SO_{323}$ | 17.9 | 0.15 | 20031008 | 5.42708 | 51.71598 | 301.18240 | 1.57175 | 0.2092061 | 2.7819432 | 17 | 1 | 31 days | 0.49 | | MPC | 2003 $SO_{323}$ |
| 2003 $SP_{323}$ | 17.1 | 0.15 | 20031008 | 19.47474 | 347.01881 | 349.21145 | 9.64078 | 0.0894243 | 3.0369078 | 15 | 1 | 37 days | 0.21 | | MPC | 2003 $SP_{323}$ |
| 2003 $SQ_{323}$ | 19.0 | 0.15 | 20031008 | 330.61846 | 86.06687 | 318.26878 | 1.76974 | 0.1802171 | 2.3337072 | 13 | 1 | 31 days | 0.22 | | MPC | 2003 $SQ_{323}$ |
| 2003 $SS_{323}$ | 18.4 | 0.15 | 20031008 | 34.46344 | 335.87316 | 342.42520 | 5.90352 | 0.1232266 | 2.4508957 | 12 | 1 | 33 days | 0.16 | | MPC | 2003 $SS_{323}$ |
| 2003 $ST_{323}$ | 16.0 | 0.15 | 20060922 | 233.15218 | 320.46158 | 347.11757 | 14.85712 | 0.1567012 | 3.0991922 | 25 | 1 | 64 days | 0.30 | M-v 3 | MPC | 2003 $ST_{323}$ |
| 2003 $SU_{323}$ | 16.9 | 0.15 | 20060922 | 189.65119 | 25.87568 | 336.64996 | 6.49160 | 0.1724000 | 3.1375914 | 16 | 1 | 61 days | 0.14 | M-v 3 | MPC | 2003 $SU_{323}$ |
| 2003 $SV_{323}$ | 19.2 | 0.15 | 20031008 | 357.88744 | 23.85034 | 340.13690 | 6.51909 | 0.1175094 | 2.3832046 | 16 | 1 | 38 days | 0.29 | | MPC | 2003 $SV_{323}$ |
| 2003 $SW_{323}$ | 19.2 | 0.15 | 20031008 | 23.99291 | 329.49153 | 350.92663 | 13.62291 | 0.2576583 | 2.6952239 | 16 | 1 | 38 days | 0.24 | | MPC | 2003 $SW_{323}$ |
| 2003 $SX_{323}$ | 17.5 | 0.15 | 20031008 | 44.88729 | 298.26266 | 4.84599 | 6.93692 | 0.1340799 | 2.4179613 | 14 | 1 | 36 days | 0.20 | | MPC | 2003 $SX_{323}$ |
| 2003 $SY_{323}$ | 17.8 | 0.15 | 20031008 | 36.56232 | 332.86782 | 341.49708 | 4.30747 | 0.1435542 | 3.1031377 | 11 | 1 | 37 days | 0.12 | | MPC | 2003 $SY_{323}$ |
| 2003 $SZ_{323}$ | 17.7 | 0.15 | 20031008 | 3.82666 | 9.98826 | 348.55581 | 6.74713 | 0.0478157 | 2.6317714 | 11 | 1 | 37 days | 0.11 | | MPC | 2003 $SZ_{323}$ |
| 2003 $SA_{324}$ | 19.1 | 0.15 | 20031008 | 352.27084 | 73.11927 | 317.13643 | 2.62660 | 0.1803390 | 2.2324245 | 15 | 1 | 39 days | 0.26 | | MPC | 2003 $SA_{324}$ |
| 2003 $SB_{324}$ | 18.7 | 0.15 | 20031008 | 12.92280 | 156.91843 | 203.03605 | 0.85038 | 0.2041975 | 2.3336581 | 16 | 1 | 42 days | 0.21 | | MPC | 2003 $SB_{324}$ |
| 2003 $SC_{324}$ | 18.1 | 0.15 | 20031008 | 20.95130 | 156.92886 | 190.74203 | 1.00776 | 0.1991724 | 2.3847023 | 18 | 1 | 42 days | 0.40 | | MPC | 2003 $SC_{324}$ |
| 2003 $SD_{324}$ | 18.5 | 0.15 | 20031008 | 21.71012 | 172.81804 | 173.75347 | 2.87647 | 0.1861629 | 2.1789053 | 16 | 1 | 35 days | 0.55 | | MPC | 2003 $SD_{324}$ |
| 2003 $SE_{324}$ | 18.3 | 0.15 | 20060922 | 236.15331 | 229.19931 | 170.72940 | 1.76062 | 0.2443119 | 2.6021688 | 16 | 1 | 65 days | 0.43 | M-v 4 | MPC | 2003 $SE_{324}$ |
| 2003 $SG_{324}$ | 17.4 | 0.15 | 20060922 | 296.19341 | 89.62761 | 288.39305 | 2.34811 | 0.1755357 | 2.2959867 | 28 | 1 | 64 days | 0.31 | M-v 3 | MPC | 2003 $SG_{324}$ |
| 2003 $SJ_{324}$ | 18.4 | 0.15 | 20030918 | 341.41188 | 182.90189 | 201.93214 | 3.68186 | 0.2025354 | 2.6136577 | 12 | 1 | 12 days | 0.18 | | MPC | 2003 $SJ_{324}$ |
| 2003 $SK_{324}$ | 16.5 | 0.15 | 20030918 | 276.04490 | 263.26540 | 183.67653 | 10.90244 | 0.0543163 | 2.6637352 | 16 | 1 | 12 days | 0.26 | | MPC | 2003 $SK_{324}$ |
| 2003 $SL_{324}$ | 16.9 | 0.15 | 20031008 | 87.67402 | 257.54857 | 352.59845 | 15.30305 | 0.1905502 | 3.0930167 | 17 | 1 | 36 days | 0.30 | | MPC | 2003 $SL_{324}$ |
| 2003 $SM_{324}$ | 17.6 | 0.15 | 20031008 | 321.62085 | 59.63668 | 353.76524 | 16.90719 | 0.1729600 | 3.0989900 | 12 | 1 | 37 days | 0.24 | | MPC | 2003 $SM_{324}$ |
| 2003 $SN_{324}$ | 18.1 | 0.15 | 20031008 | 10.53201 | 56.87730 | 291.49799 | 0.82946 | 0.1290474 | 2.6107312 | 13 | 1 | 30 days | 0.23 | | MPC | 2003 $SN_{324}$ |
| 2003 $SO_{324}$ | 18.8 | 0.15 | 20030918 | 23.13225 | 44.35178 | 267.55019 | 0.51548 | 0.3081845 | 2.6030222 | 14 | 1 | 11 days | 0.54 | | MPC | 2003 $SO_{324}$ |
| 2003 $SP_{324}$ | 18.3 | 0.15 | 20031008 | 308.44046 | 69.70675 | 354.14352 | 10.98707 | 0.1128453 | 2.6247322 | 11 | 1 | 37 days | 0.18 | | MPC | 2003 $SP_{324}$ |
| 2003 $SQ_{324}$ | 16.6 | 0.15 | 20031008 | 136.08350 | 227.02485 | 352.35299 | 12.28498 | 0.0730185 | 2.6616371 | 20 | 1 | 37 days | 0.39 | | MPC | 2003 $SQ_{324}$ |
| 2003 $SR_{324}$ | 17.6 | 0.15 | 20060922 | 208.56506 | 51.82518 | 354.64829 | 8.77963 | 0.1864315 | 2.7045556 | 22 | 1 | 63 days | 0.18 | M-v 3 | MPC | 2003 $SR_{324}$ |
| 2003 $SS_{324}$ | 17.0 | 0.15 | 20060922 | 31.30127 | 245.80090 | 350.16189 | 5.53622 | 0.0806028 | 2.4770944 | 13 | 1 | 63 days | 0.08 | M-v 4 | MPC | 2003 $SS_{324}$ |
| 2003 $ST_{324}$ | 16.4 | 0.15 | 20060922 | 221.68201 | 321.24299 | 350.79015 | 3.95919 | 0.1826883 | 3.1947849 | 14 | 1 | 60 days | 0.46 | M-v 5 | MPC | 2003 $ST_{324}$ |
| 2003 $SU_{324}$ | 17.7 | 0.15 | 20060922 | 318.51315 | 310.88714 | 355.19856 | 6.42333 | 0.1797277 | 2.4544191 | 17 | 1 | 60 days | 0.28 | M-v 3 | MPC | 2003 $SU_{324}$ |
| 2003 $SV_{324}$ | 19.3 | 0.15 | 20031008 | 19.87417 | 341.27628 | 355.87713 | 5.86939 | 0.1513730 | 2.1830973 | 16 | 1 | 31 days | 0.32 | | MPC | 2003 $SV_{324}$ |
| 2003 $SW_{324}$ | 18.9 | 0.15 | 20031008 | 26.72472 | 306.99809 | 7.13180 | 4.27150 | 0.3111195 | 2.3087776 | 15 | 1 | 30 days | 0.16 | | MPC | 2003 $SW_{324}$ |
| 2003 $SX_{324}$ | 19.0 | 0.15 | 20031008 | 37.75428 | 79.71619 | 233.69328 | 2.63372 | 0.1692698 | 2.2290587 | 12 | 1 | 37 days | 0.28 | | MPC | 2003 $SX_{324}$ |
| 2003 $SY_{324}$ | 17.7 | 0.15 | 20031008 | 2.97226 | 258.59513 | 103.78491 | 3.16912 | 0.2264294 | 2.3634138 | 19 | 1 | 29 days | 0.53 | | MPC | 2003 $SY_{324}$ |
| 2003 $SZ_{324}$ | 17.2 | 0.15 | 20031008 | 341.25626 | 61.75009 | 323.43234 | 13.84642 | 0.1319590 | 2.5500373 | 15 | 1 | 34 days | 0.32 | | MPC | 2003 $SZ_{324}$ |
| 2003 $SA_{325}$ | 18.3 | 0.15 | 20031008 | 315.75635 | 210.10338 | 211.35330 | 8.16533 | 0.1982453 | 2.7790227 | 16 | 1 | 36 days | 0.20 | | MPC | 2003 $SA_{325}$ |
| 2003 $SB_{325}$ | 16.4 | 0.15 | 20060922 | 322.34981 | 56.69779 | 205.56833 | 10.50452 | 0.0724801 | 2.7361158 | 16 | 1 | 64 days | 0.13 | M-v 3 | MPC | 2003 $SB_{325}$ |
| 2003 $SD_{325}$ | 18.5 | 0.15 | 20031008 | 64.01871 | 23.64428 | 253.64125 | 3.09706 | 0.1645104 | 2.2034667 | 13 | 1 | 36 days | 0.08 | | MPC | 2003 $SD_{325}$ |
| 2003 $SF_{325}$ | 18.9 | 0.15 | 20031008 | 354.92627 | 70.25529 | 296.54576 | 3.56659 | 0.1742506 | 2.6887159 | 11 | 1 | 32 days | 0.12 | | MPC | 2003 $SF_{325}$ |
| 2003 $SG_{325}$ | 16.3 | 0.15 | 20031008 | 266.88854 | 238.05268 | 224.84856 | 4.53570 | 0.1238888 | 3.2111316 | 16 | 1 | 32 days | 0.19 | | MPC | 2003 $SG_{325}$ |
| 2003 $SH_{325}$ | 19.5 | 0.15 | 20030918 | 339.97367 | 204.45604 | 186.47436 | 10.88314 | 0.2965494 | 2.4254193 | 13 | 1 | 12 days | 0.20 | | MPC | 2003 $SH_{325}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SJ_{325}$ | 17.5 | 0.15 | 20031008 | 315.29615 | 76.43030 | 335.31284 | 9.45114 | 0.1034317 | 2.9740290 | 13 | 1 | 36 days | 0.10 | | | MPC | 2003 $SJ_{325}$ |
| 2003 $SL_{325}$ | 16.6 | 0.15 | 20060922 | 253.05382 | 352.81797 | 331.44944 | 6.72330 | 0.1220509 | 2.8126364 | 19 | 1 | 60 days | 0.17 | M-v | 3 | MPC | 2003 $SL_{325}$ |
| 2003 $SM_{325}$ | 18.3 | 0.15 | 20031008 | 5.15393 | 195.24114 | 172.97787 | 6.74402 | 0.2162503 | 2.3571585 | 16 | 1 | 42 days | 0.55 | | | MPC | 2003 $SM_{325}$ |
| 2003 $SP_{325}$ | 18.8 | 0.15 | 20031008 | 58.25859 | 133.03345 | 158.95945 | 3.58899 | 0.1819762 | 2.2875697 | 12 | 1 | 37 days | 0.34 | | | MPC | 2003 $SP_{325}$ |
| 2003 $SQ_{325}$ | 18.3 | 0.15 | 20031008 | 359.67555 | 208.24755 | 169.63956 | 6.69238 | 0.2985433 | 2.5773687 | 16 | 1 | 37 days | 0.26 | | | MPC | 2003 $SQ_{325}$ |
| 2003 $SR_{325}$ | 18.7 | 0.15 | 20031008 | 6.26075 | 56.04416 | 313.11443 | 3.47017 | 0.2034788 | 2.1875789 | 21 | 1 | 40 days | 0.46 | | | MPC | 2003 $SR_{325}$ |
| 2003 $SS_{325}$ | 15.9 | 0.15 | 20060922 | 107.37565 | 234.93654 | 215.42060 | 8.45854 | 0.0313419 | 3.1010827 | 13 | 1 | 63 days | 0.16 | M-v | 4 | MPC | 2003 $SS_{325}$ |
| 2003 $SU_{325}$ | 18.4 | 0.15 | 20031008 | 271.37004 | 139.14507 | 317.46867 | 5.37625 | 0.0691126 | 2.3638027 | 15 | 1 | 36 days | 0.28 | | | MPC | 2003 $SU_{325}$ |
| 2003 $SW_{325}$ | 17.0 | 0.15 | 20031008 | 10.95742 | 102.57810 | 250.03939 | 3.80830 | 0.1906454 | 3.1796107 | 15 | 1 | 36 days | 0.44 | | | MPC | 2003 $SW_{325}$ |
| 2003 $SX_{325}$ | 18.4 | 0.15 | 20031008 | 1.03567 | 23.56973 | 346.67053 | 4.26581 | 0.1465211 | 2.1660923 | 25 | 1 | 37 days | 0.53 | | | MPC | 2003 $SX_{325}$ |
| 2003 $SY_{325}$ | 18.3 | 0.15 | 20031008 | 92.81349 | 274.30024 | 359.07985 | 20.46630 | 0.0515713 | 1.8373491 | 19 | 1 | 39 days | 0.53 | | | MPC | 2003 $SY_{325}$ |
| 2003 $SZ_{325}$ | 18.1 | 0.15 | 20031008 | 359.43086 | 238.27572 | 133.19615 | 2.81336 | 0.2181206 | 2.3544844 | 16 | 1 | 30 days | 0.63 | | | MPC | 2003 $SZ_{325}$ |
| 2003 $SA_{326}$ | 18.7 | 0.15 | 20030918 | 22.51324 | 313.80977 | 13.94414 | 13.20004 | 0.1809934 | 2.2774509 | 15 | 1 | 36 days | 0.29 | | | MPC | 2003 $SA_{326}$ |
| 2003 $SD_{326}$ | 18.4 | 0.15 | 20060922 | 249.26382 | 62.50498 | 356.62453 | 3.69714 | 0.1882551 | 2.3934472 | 15 | 1 | 63 days | 0.10 | M-v | 3 | MPC | 2003 $SD_{326}$ |
| 2003 $SE_{326}$ | 17.7 | 0.15 | 20031008 | 307.69584 | 67.19021 | 354.04225 | 1.57777 | 0.0511557 | 2.8711401 | 13 | 1 | 35 days | 0.24 | | | MPC | 2003 $SE_{326}$ |
| 2003 $SF_{326}$ | 18.3 | 0.15 | 20060922 | 5.12176 | 35.05242 | 21.12042 | 11.92111 | 0.1459496 | 1.9097863 | 20 | 1 | 63 days | 0.33 | M-v | 4 | MPC | 2003 $SF_{326}$ |
| 2003 $SG_{326}$ | 18.4 | 0.15 | 20031008 | 39.80747 | 42.31648 | 267.60967 | 0.36246 | 0.1853519 | 2.4136395 | 16 | 1 | 36 days | 0.12 | | | MPC | 2003 $SG_{326}$ |
| 2003 $SH_{326}$ | 17.9 | 0.15 | 20031008 | 1.52816 | 1.76205 | 1.03360 | 1.60545 | 0.1465710 | 3.0400425 | 11 | 1 | 34 days | 0.22 | | | MPC | 2003 $SH_{326}$ |
| 2003 $SK_{326}$ | 17.1 | 0.15 | 20031008 | 162.19520 | 198.77946 | 1.37965 | 11.43768 | 0.0500569 | 3.0363419 | 12 | 1 | 31 days | 0.58 | | | MPC | 2003 $SK_{326}$ |
| 2003 $SL_{326}$ | 18.4 | 0.15 | 20031008 | 2.44718 | 2.51054 | 359.99657 | 1.94044 | 0.2189186 | 2.6821603 | 14 | 1 | 36 days | 0.19 | | | MPC | 2003 $SL_{326}$ |
| 2003 $SM_{326}$ | 16.9 | 0.15 | 20031008 | 302.06410 | 70.96009 | 0.61264 | 9.90540 | 0.0874838 | 3.1764127 | 12 | 1 | 31 days | 0.13 | | | MPC | 2003 $SM_{326}$ |
| 2003 $SN_{326}$ | 17.5 | 0.15 | 20031008 | 290.37560 | 261.53989 | 175.88398 | 0.58883 | 0.0247977 | 2.9903613 | 16 | 1 | 36 days | 0.16 | | | MPC | 2003 $SN_{326}$ |
| 2003 $SO_{326}$ | 17.7 | 0.15 | 20031008 | 339.15783 | 23.08273 | 6.87795 | 2.78452 | 0.0760907 | 2.7563938 | 11 | 1 | 35 days | 0.11 | | | MPC | 2003 $SO_{326}$ |
| 2003 $SP_{326}$ | 18.8 | 0.15 | 20031008 | 320.47179 | 38.00120 | 22.07554 | 1.61978 | 0.1717061 | 2.3702072 | 12 | 1 | 36 days | 0.26 | | | MPC | 2003 $SP_{326}$ |
| 2003 $SQ_{326}$ | 17.7 | 0.15 | 20031008 | 339.35413 | 27.00353 | 358.75530 | 11.66948 | 0.0473452 | 2.9047084 | 14 | 1 | 34 days | 0.18 | | | MPC | 2003 $SQ_{326}$ |
| 2003 $SR_{326}$ | 19.4 | 0.15 | 20030918 | 41.26864 | 292.17051 | 1.63235 | 1.67679 | 0.2430085 | 2.2654021 | 13 | 1 | 11 days | 0.33 | | | MPC | 2003 $SR_{326}$ |
| 2003 $SU_{326}$ | 17.0 | 0.15 | 20031008 | 339.42909 | 214.60566 | 185.50841 | 2.65175 | 0.2202578 | 3.9804231 | 13 | 1 | 36 days | 0.26 | | | MPC | 2003 $SU_{326}$ |
| 2003 $SV_{326}$ | 18.0 | 0.15 | 20031008 | 353.39609 | 12.12762 | 6.82510 | 8.68782 | 0.2530373 | 3.0744914 | 12 | 1 | 30 days | 0.16 | | | MPC | 2003 $SV_{326}$ |
| 2003 $SX_{326}$ | 17.9 | 0.15 | 20031008 | 103.41426 | 237.17449 | 9.61615 | 6.93964 | 0.1579424 | 2.5364163 | 16 | 1 | 36 days | 0.15 | | | MPC | 2003 $SX_{326}$ |
| 2003 $SY_{326}$ | 18.5 | 0.15 | 20031008 | 35.92566 | 305.88134 | 10.34706 | 6.36938 | 0.1915840 | 2.5331427 | 16 | 1 | 36 days | 0.14 | | | MPC | 2003 $SY_{326}$ |
| 2003 $SZ_{326}$ | 17.3 | 0.15 | 20031008 | 316.55067 | 68.65406 | 7.61700 | 13.23660 | 0.2577500 | 3.1154187 | 16 | 1 | 36 days | 0.25 | | | MPC | 2003 $SZ_{326}$ |
| 2003 $SA_{327}$ | 19.4 | 0.15 | 20031008 | 13.20417 | 323.59166 | 19.88716 | 3.26711 | 0.3045861 | 2.7335033 | 19 | 1 | 36 days | 0.34 | | | MPC | 2003 $SA_{327}$ |
| 2003 $SB_{327}$ | 19.5 | 0.15 | 20031008 | 4.33106 | 326.26870 | 36.13363 | 1.69498 | 0.1997132 | 2.4027993 | 12 | 1 | 35 days | 0.15 | | | MPC | 2003 $SB_{327}$ |
| 2003 $SC_{327}$ | 19.9 | 0.15 | 20030918 | 10.21397 | 171.35291 | 174.33897 | 4.32011 | 0.1440434 | 2.1864344 | 14 | 1 | 34 days | 0.32 | | | MPC | 2003 $SC_{327}$ |
| 2003 $SD_{327}$ | 18.6 | 0.15 | 20031008 | 345.10609 | 21.95257 | 3.57674 | 4.71048 | 0.1235296 | 2.7167524 | 14 | 1 | 35 days | 0.20 | | | MPC | 2003 $SD_{327}$ |
| 2003 $SE_{327}$ | 18.1 | 0.15 | 20031008 | 281.12152 | 85.73395 | 3.68412 | 9.71219 | 0.0411888 | 2.5622505 | 14 | 1 | 35 days | 0.22 | | | MPC | 2003 $SE_{327}$ |
| 2003 $SF_{327}$ | 17.5 | 0.15 | 20031008 | 349.31147 | 2.48021 | 16.78403 | 1.91770 | 0.0815761 | 2.8586417 | 14 | 1 | 36 days | 0.17 | | | MPC | 2003 $SF_{327}$ |
| 2003 $SG_{327}$ | 17.0 | 0.15 | 20060922 | 242.82619 | 354.40340 | 9.93032 | 6.30673 | 0.0298108 | 2.6872057 | 15 | 1 | 63 days | 0.15 | M-v | 3 | MPC | 2003 $SG_{327}$ |
| 2003 $SH_{327}$ | 18.6 | 0.15 | 20031008 | 9.26384 | 347.13147 | 7.72544 | 14.87444 | 0.1279753 | 2.5736321 | 11 | 1 | 35 days | 0.16 | | | MPC | 2003 $SH_{327}$ |
| 2003 $SJ_{327}$ | 17.0 | 0.15 | 20030918 | 303.13834 | 53.74087 | 9.48696 | 12.79977 | 0.0375662 | 2.8146997 | 10 | 1 | 11 days | 0.25 | | E | MPC | 2003 $SJ_{327}$ |
| 2003 $SK_{327}$ | 17.4 | 0.15 | 20031008 | 56.41813 | 258.73796 | 40.55066 | 2.48756 | 0.1113058 | 3.0461322 | 15 | 1 | 36 days | 0.16 | | | MPC | 2003 $SK_{327}$ |
| 2003 $SL_{327}$ | 16.6 | 0.15 | 20031008 | 52.29645 | 112.42903 | 206.13457 | 9.21559 | 0.1222828 | 3.0987148 | 15 | 1 | 38 days | 0.29 | | | MPC | 2003 $SL_{327}$ |
| 2003 $SM_{327}$ | 15.9 | 0.15 | 20031008 | 13.67446 | 125.37616 | 216.50135 | 25.31260 | 0.2617531 | 3.1607127 | 16 | 1 | 32 days | 0.38 | | | MPC | 2003 $SM_{327}$ |
| 2003 $SN_{327}$ | 17.0 | 0.15 | 20060922 | 215.18409 | 115.28850 | 202.95285 | 12.82070 | 0.3000515 | 3.1493840 | 13 | 1 | 62 days | 0.18 | M-v | 3 | MPC | 2003 $SN_{327}$ |
| 2003 $SO_{327}$ | 17.8 | 0.15 | 20031008 | 343.95732 | 169.15961 | 217.66958 | 4.60080 | 0.1728643 | 2.7609024 | 16 | 1 | 34 days | 0.20 | | | MPC | 2003 $SO_{327}$ |
| 2003 $SQ_{327}$ | 17.5 | 0.15 | 20031008 | 355.83653 | 133.54066 | 245.64346 | 12.33786 | 0.2066778 | 2.3563249 | 17 | 1 | 44 days | 0.77 | | | MPC | 2003 $SQ_{327}$ |
| 2003 $SR_{327}$ | 16.9 | 0.15 | 20060922 | 182.79673 | 29.26661 | 35.54857 | 5.87240 | 0.1115843 | 2.8067227 | 16 | 1 | 61 days | 0.25 | M-v | 4 | MPC | 2003 $SR_{327}$ |
| 2003 $SS_{327}$ | 17.8 | 0.15 | 20031008 | 337.67303 | 23.27463 | 23.85449 | 10.13173 | 0.2007348 | 2.5770483 | 14 | 1 | 35 days | 0.21 | | | MPC | 2003 $SS_{327}$ |
| 2003 $ST_{327}$ | 16.3 | 0.15 | 20060922 | 174.07221 | 13.45414 | 30.74756 | 11.06082 | 0.1362385 | 3.0650581 | 18 | 1 | 62 days | 0.41 | M-v | 4 | MPC | 2003 $ST_{327}$ |
| 2003 $SU_{327}$ | 17.1 | 0.15 | 20031008 | 12.02117 | 155.01281 | 190.08847 | 5.82622 | 0.1951580 | 2.9958275 | 20 | 1 | 35 days | 0.37 | | | MPC | 2003 $SU_{327}$ |
| 2003 $SV_{327}$ | 17.4 | 0.15 | 20031008 | 68.51845 | 346.73910 | 294.73051 | 5.99852 | 0.1820337 | 2.3362022 | 16 | 1 | 30 days | 0.55 | | | MPC | 2003 $SV_{327}$ |
| 2003 $SW_{327}$ | 18.2 | 0.15 | 20060922 | 302.72549 | 210.94780 | 161.24374 | 2.87869 | 0.2019401 | 2.3173368 | 20 | 1 | 62 days | 0.60 | M-v | 4 | MPC | 2003 $SW_{327}$ |
| 2003 $SX_{327}$ | 17.5 | 0.15 | 20031008 | 316.95766 | 236.79906 | 193.80926 | 6.53034 | 0.0827055 | 2.3665696 | 15 | 1 | 39 days | 0.35 | | | MPC | 2003 $SX_{327}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SY_{327}$ | 16.8 | 0.15 | 20031008 | 175.57125 | 178.16982 | 13.71880 | 1.02353 | 0.0890834 | 2.5460998 | 12 | 1 | 34 days | 0.29 | | MPC | 2003 $SY_{327}$ |
| 2003 $SZ_{327}$ | 15.7 | 0.15 | 20031008 | 77.73218 | 275.51131 | 9.58642 | 9.90654 | 0.0443202 | 3.1017781 | 18 | 1 | 34 days | 0.28 | | MPC | 2003 $SZ_{327}$ |
| 2003 $SA_{328}$ | 18.8 | 0.15 | 20031008 | 32.67903 | 281.77131 | 39.13296 | 1.86696 | 0.2016431 | 2.3843083 | 15 | 1 | 34 days | 0.25 | | MPC | 2003 $SA_{328}$ |
| 2003 $SB_{328}$ | 16.3 | 0.15 | 20031008 | 19.92838 | 163.16559 | 181.43507 | 7.88572 | 0.1864532 | 3.0046249 | 20 | 1 | 34 days | 0.49 | | MPC | 2003 $SB_{328}$ |
| 2003 $SC_{328}$ | 16.3 | 0.15 | 20031008 | 338.90133 | 36.74682 | 19.29340 | 28.52457 | 0.1178705 | 2.5954735 | 18 | 1 | 39 days | 0.59 | | MPC | 2003 $SC_{328}$ |
| 2003 $SF_{328}$ | 17.7 | 0.15 | 20060922 | 266.12419 | 56.76121 | 313.27135 | 5.01932 | 0.1140621 | 2.4630991 | 11 | 1 | 61 days | 0.15 | M-v 4 | MPC | 2003 $SF_{328}$ |
| 2003 $SG_{328}$ | 17.4 | 0.15 | 20031008 | 310.90256 | 116.86157 | 291.99907 | 4.25988 | 0.0421268 | 2.8033082 | 11 | 1 | 33 days | 0.11 | | MPC | 2003 $SG_{328}$ |
| 2003 $SH_{328}$ | 17.9 | 0.15 | 20031008 | 37.87800 | 339.45611 | 330.57008 | 6.03372 | 0.1333711 | 2.4196226 | 13 | 1 | 29 days | 0.75 | | MPC | 2003 $SH_{328}$ |
| 2003 $SJ_{328}$ | 18.4 | 0.15 | 20031008 | 357.53949 | 182.30589 | 194.20746 | 1.66340 | 0.2208579 | 2.4377541 | 15 | 1 | 34 days | 0.53 | | MPC | 2003 $SJ_{328}$ |
| 2003 $SK_{328}$ | 16.8 | 0.15 | 20031008 | 41.69153 | 119.70076 | 196.19176 | 27.08106 | 0.2969854 | 2.7920162 | 18 | 1 | 33 days | 0.49 | | MPC | 2003 $SK_{328}$ |
| 2003 $SM_{328}$ | 16.0 | 0.15 | 20031008 | 330.07051 | 128.53007 | 280.53928 | 11.82656 | 0.1806140 | 2.9349876 | 18 | 1 | 34 days | 0.32 | | MPC | 2003 $SM_{328}$ |
| 2003 $SN_{328}$ | 18.3 | 0.15 | 20031008 | 3.41308 | 7.03570 | 0.55472 | 6.75976 | 0.2121490 | 2.4370822 | 20 | 1 | 29 days | 0.63 | | MPC | 2003 $SN_{328}$ |
| 2003 $SO_{328}$ | 17.1 | 0.15 | 20031008 | 321.80562 | 1.35322 | 60.28342 | 5.51300 | 0.1128523 | 2.2244733 | 22 | 1 | 34 days | 0.48 | | MPC | 2003 $SO_{328}$ |
| 2003 $SP_{328}$ | 17.4 | 0.15 | 20031008 | 20.36739 | 36.31137 | 321.33548 | 6.08465 | 0.1279510 | 2.3474786 | 22 | 1 | 42 days | 0.65 | | MPC | 2003 $SP_{328}$ |
| 2003 $SQ_{328}$ | 17.2 | 0.15 | 20031008 | 68.72451 | 103.35751 | 185.14533 | 9.62215 | 0.1272371 | 3.0761917 | 13 | 1 | 33 days | 0.24 | | MPC | 2003 $SQ_{328}$ |
| 2003 $SR_{328}$ | 18.6 | 0.15 | 20031008 | 58.79710 | 146.58587 | 146.42890 | 1.91338 | 0.1839708 | 2.3556165 | 12 | 1 | 32 days | 0.20 | | MPC | 2003 $SR_{328}$ |
| 2003 $SS_{328}$ | 18.0 | 0.15 | 20031008 | 59.07904 | 244.87528 | 48.66151 | 2.04870 | 0.1773961 | 2.3527312 | 13 | 1 | 33 days | 0.16 | | MPC | 2003 $SS_{328}$ |
| 2003 $ST_{328}$ | 19.0 | 0.15 | 20031028 | 11.38991 | 207.98910 | 155.03939 | 2.23638 | 0.2468459 | 2.3580758 | 16 | 1 | 59 days | 0.47 | | MPC | 2003 $ST_{328}$ |
| 2003 $SU_{328}$ | 17.8 | 0.15 | 20031008 | 16.62664 | 298.63070 | 52.35079 | 2.92091 | 0.0867927 | 2.9140670 | 13 | 1 | 32 days | 0.16 | | MPC | 2003 $SU_{328}$ |
| 2003 $SV_{328}$ | 17.2 | 0.15 | 20031008 | 352.02513 | 307.10948 | 76.14387 | 2.72024 | 0.1979289 | 3.1197463 | 19 | 1 | 33 days | 0.42 | | MPC | 2003 $SV_{328}$ |
| 2003 $SW_{328}$ | 18.5 | 0.15 | 20031028 | 340.15368 | 14.16827 | 30.18841 | 4.92349 | 0.1347750 | 2.4003794 | 12 | 1 | 56 days | 0.08 | | MPC | 2003 $SW_{328}$ |
| 2003 $SX_{328}$ | 18.8 | 0.15 | 20031028 | 351.41340 | 354.80907 | 37.79292 | 3.96652 | 0.2093907 | 2.6018309 | 16 | 1 | 59 days | 0.18 | | MPC | 2003 $SX_{328}$ |
| 2003 $SY_{328}$ | 19.2 | 0.15 | 20031028 | 335.24314 | 354.79374 | 58.51411 | 2.57542 | 0.1647751 | 2.4360975 | 12 | 1 | 56 days | 0.16 | | MPC | 2003 $SY_{328}$ |
| 2003 $SZ_{328}$ | 17.7 | 0.15 | 20031008 | 43.83108 | 195.16028 | 124.40078 | 3.22117 | 0.0967565 | 2.8178893 | 12 | 1 | 28 days | 0.21 | | MPC | 2003 $SZ_{328}$ |
| 2003 $SA_{329}$ | 18.7 | 0.15 | 20031008 | 165.59034 | 180.70783 | 24.22737 | 8.35424 | 0.0479307 | 2.2720432 | 12 | 1 | 33 days | 0.26 | | MPC | 2003 $SA_{329}$ |
| 2003 $SB_{329}$ | 15.2 | 0.15 | 20031008 | 320.83448 | 239.87501 | 181.10796 | 18.23002 | 0.1103907 | 3.2319233 | 14 | 1 | 31 days | 0.20 | | MPC | 2003 $SB_{329}$ |
| 2003 $SC_{329}$ | 16.9 | 0.15 | 20060922 | 211.41672 | 189.96511 | 250.82739 | 6.55365 | 0.1618472 | 2.5706268 | 16 | 1 | 60 days | 0.23 | M-v 4 | MPC | 2003 $SC_{329}$ |
| 2003 $SD_{329}$ | 15.5 | 0.15 | 20031008 | 188.42225 | 343.05521 | 183.61580 | 22.08283 | 0.0544196 | 3.2246787 | 13 | 1 | 32 days | 0.48 | | MPC | 2003 $SD_{329}$ |
| 2003 $SF_{329}$ | 18.8 | 0.15 | 20031008 | 16.01832 | 339.50970 | 359.05405 | 5.27975 | 0.2491785 | 2.4408609 | 20 | 1 | 32 days | 0.36 | | MPC | 2003 $SF_{329}$ |
| 2003 $SG_{329}$ | 18.9 | 0.15 | 20031028 | 10.02991 | 27.03240 | 328.35332 | 2.96836 | 0.2256208 | 2.4410960 | 16 | 1 | 58 days | 0.29 | | MPC | 2003 $SG_{329}$ |
| 2003 $SH_{329}$ | 16.2 | 0.15 | 20031008 | 34.73967 | 252.84706 | 79.02121 | 5.88986 | 0.1179509 | 2.7196959 | 23 | 1 | 37 days | 0.63 | | MPC | 2003 $SH_{329}$ |
| 2003 $SJ_{329}$ | 18.6 | 0.15 | 20031008 | 345.74603 | 92.54621 | 305.66467 | 1.82210 | 0.1956904 | 2.2375598 | 19 | 1 | 34 days | 0.66 | | MPC | 2003 $SJ_{329}$ |
| 2003 $SK_{329}$ | 17.5 | 0.15 | 20031008 | 53.94668 | 114.45079 | 180.39488 | 4.30560 | 0.2082076 | 2.6447035 | 16 | 1 | 31 days | 0.43 | | MPC | 2003 $SK_{329}$ |
| 2003 $SL_{329}$ | 17.3 | 0.15 | 20031028 | 14.34919 | 336.13828 | 17.65598 | 11.94168 | 0.1841218 | 2.6945211 | 26 | 1 | 55 days | 0.37 | | MPC | 2003 $SL_{329}$ |
| 2003 $SN_{329}$ | 18.1 | 0.15 | 20060922 | 312.92071 | 326.53272 | 41.69910 | 7.43280 | 0.2271323 | 2.3000661 | 27 | 1 | 63 days | 0.57 | M-v 5 | MPC | 2003 $SN_{329}$ |
| 2003 $SO_{329}$ | 15.7 | 0.15 | 20031008 | 347.43423 | 228.19970 | 174.18144 | 10.72200 | 0.0896505 | 3.0193836 | 16 | 1 | 35 days | 0.43 | | MPC | 2003 $SO_{329}$ |
| 2003 $SP_{329}$ | 16.3 | 0.15 | 20060922 | 254.71612 | 234.08034 | 114.06095 | 8.91482 | 0.2324793 | 2.7953176 | 18 | 1 | 67 days | 0.47 | M-v 3 | MPC | 2003 $SP_{329}$ |
| 2003 $SQ_{329}$ | 19.0 | 0.15 | 20031008 | 350.51615 | 24.85489 | 17.67690 | 4.05719 | 0.2726376 | 2.7440388 | 15 | 1 | 33 days | 0.40 | | MPC | 2003 $SQ_{329}$ |
| 2003 $SR_{329}$ | 18.5 | 0.15 | 20031008 | 350.71063 | 19.61194 | 20.86383 | 2.19508 | 0.2193421 | 2.5916801 | 20 | 1 | 36 days | 0.50 | | MPC | 2003 $SR_{329}$ |
| 2003 $SS_{329}$ | 19.1 | 0.15 | 20031008 | 34.26958 | 340.69434 | 346.31938 | 3.35441 | 0.2506769 | 2.2696544 | 17 | 1 | 41 days | 0.54 | | MPC | 2003 $SS_{329}$ |
| 2003 $ST_{329}$ | 17.3 | 0.15 | 20031028 | 38.49540 | 266.55963 | 60.02366 | 6.19228 | 0.2166640 | 2.3124548 | 20 | 1 | 58 days | 0.55 | | MPC | 2003 $ST_{329}$ |
| 2003 $SU_{329}$ | 18.1 | 0.15 | 20031008 | 30.16924 | 295.38888 | 34.13904 | 7.92207 | 0.1978148 | 2.2595646 | 14 | 1 | 31 days | 0.31 | | MPC | 2003 $SU_{329}$ |
| 2003 $SV_{329}$ | 17.8 | 0.15 | 20031008 | 346.97012 | 237.10962 | 165.71496 | 7.09581 | 0.3277814 | 2.6260406 | 29 | 1 | 36 days | 0.48 | | MPC | 2003 $SV_{329}$ |
| 2003 $SW_{329}$ | 18.1 | 0.15 | 20031008 | 29.48603 | 282.95063 | 41.64217 | 13.25890 | 0.2880594 | 2.6743128 | 13 | 1 | 29 days | 0.40 | | MPC | 2003 $SW_{329}$ |
| 2003 $SX_{329}$ | 17.9 | 0.15 | 20031008 | 17.91278 | 1.02087 | 336.23697 | 8.11494 | 0.1089113 | 2.7613378 | 14 | 1 | 26 days | 0.18 | | MPC | 2003 $SX_{329}$ |
| 2003 $SY_{329}$ | 18.3 | 0.15 | 20031008 | 117.91923 | 258.26618 | 334.17660 | 4.57473 | 0.1053575 | 2.3336892 | 13 | 1 | 27 days | 0.11 | | MPC | 2003 $SY_{329}$ |
| 2003 $SZ_{329}$ | 17.9 | 0.15 | 20031008 | 28.44436 | 106.73032 | 221.82348 | 2.21606 | 0.0638638 | 2.7257283 | 13 | 1 | 21 days | 0.20 | | MPC | 2003 $SZ_{329}$ |
| 2003 $SA_{330}$ | 17.8 | 0.15 | 20031028 | 350.97089 | 50.42099 | 327.30276 | 2.82022 | 0.1070955 | 2.8060234 | 13 | 1 | 51 days | 0.11 | | MPC | 2003 $SA_{330}$ |
| 2003 $SB_{330}$ | 17.8 | 0.15 | 20031008 | 271.78482 | 113.86885 | 352.26392 | 10.98238 | 0.1448548 | 2.6369155 | 13 | 1 | 27 days | 0.11 | | MPC | 2003 $SB_{330}$ |
| 2003 $SC_{330}$ | 17.4 | 0.15 | 20031008 | 358.90869 | 6.25367 | 356.33795 | 17.88115 | 0.1045542 | 3.1408728 | 13 | 1 | 27 days | 0.14 | | MPC | 2003 $SC_{330}$ |
| 2003 $SD_{330}$ | 17.8 | 0.15 | 20031008 | 12.01518 | 104.14933 | 244.13788 | 1.37108 | 0.1003969 | 2.7351512 | 15 | 1 | 28 days | 0.13 | | MPC | 2003 $SD_{330}$ |
| 2003 $SE_{330}$ | 16.7 | 0.15 | 20031028 | 33.17988 | 318.14018 | 358.72133 | 10.01143 | 0.2218281 | 3.1636228 | 22 | 1 | 55 days | 0.25 | | MPC | 2003 $SE_{330}$ |
| 2003 $SF_{330}$ | 17.1 | 0.15 | 20031008 | 348.96059 | 73.23944 | 306.13823 | 0.71556 | 0.1864818 | 3.2083073 | 16 | 1 | 28 days | 0.33 | | MPC | 2003 $SF_{330}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SG_{330}$ | 18.1 | 0.15 | 20031028 | 319.76329 | 81.89721 | 355.30552 | 5.57240 | 0.2797101 | 2.6685003 | 15 | 1 | 54 days | 0.13 | | MPC | 2003 $SG_{330}$ |
| 2003 $SH_{330}$ | 18.3 | 0.15 | 20031008 | 7.86388 | 119.06947 | 235.12024 | 0.95965 | 0.0749456 | 2.7716257 | 11 | 1 | 23 days | 0.10 | | MPC | 2003 $SH_{330}$ |
| 2003 $SK_{330}$ | 19.2 | 0.15 | 20031008 | 306.59273 | 29.49180 | 49.70411 | 1.91828 | 0.1580576 | 2.3643145 | 15 | 1 | 28 days | 0.12 | | MPC | 2003 $SK_{330}$ |
| 2003 $SL_{330}$ | 18.6 | 0.15 | 20031008 | 334.60864 | 0.78925 | 36.21355 | 3.23040 | 0.0439190 | 2.6259472 | 13 | 1 | 28 days | 0.14 | | MPC | 2003 $SL_{330}$ |
| 2003 $SM_{330}$ | 17.1 | 0.15 | 20031028 | 146.75358 | 205.08845 | 18.49937 | 15.00433 | 0.0497005 | 2.5914103 | 13 | 1 | 55 days | 0.07 | | MPC | 2003 $SM_{330}$ |
| 2003 $SN_{330}$ | 17.7 | 0.15 | 20031008 | 6.90355 | 341.66059 | 18.56553 | 12.85002 | 0.1433026 | 3.1572894 | 12 | 1 | 27 days | 0.24 | | MPC | 2003 $SN_{330}$ |
| 2003 $SO_{330}$ | 17.0 | 0.15 | 20031008 | 210.90053 | 144.62631 | 15.15951 | 16.65045 | 0.0200826 | 3.0861060 | 13 | 1 | 28 days | 0.33 | | MPC | 2003 $SO_{330}$ |
| 2003 $SQ_{330}$ | 19.7 | 0.15 | 20031008 | 16.14282 | 316.55950 | 38.08836 | 5.06124 | 0.0352079 | 2.1321424 | 11 | 1 | 28 days | 0.15 | | MPC | 2003 $SQ_{330}$ |
| 2003 $SR_{330}$ | 19.0 | 0.15 | 20031008 | 39.84895 | 229.27598 | 92.32531 | 2.59743 | 0.1295950 | 2.5560974 | 11 | 1 | 26 days | 0.20 | | MPC | 2003 $SR_{330}$ |
| 2003 $SS_{330}$ | 17.5 | 0.15 | 20031008 | 43.17385 | 291.01617 | 25.50343 | 13.16347 | 0.1329636 | 3.1000254 | 11 | 1 | 27 days | 0.10 | | MPC | 2003 $SS_{330}$ |
| 2003 $ST_{330}$ | 17.7 | 0.15 | 20031028 | 34.71637 | 289.54907 | 30.98988 | 8.53938 | 0.2594761 | 3.1193123 | 11 | 1 | 51 days | 0.19 | | MPC | 2003 $ST_{330}$ |
| 2003 $SU_{330}$ | 16.9 | 0.15 | 20031028 | 51.72149 | 279.90020 | 31.12717 | 11.50481 | 0.1311199 | 3.1885101 | 13 | 1 | 55 days | 0.13 | | MPC | 2003 $SU_{330}$ |
| 2003 $SV_{330}$ | 19.4 | 0.15 | 20031008 | 27.23391 | 278.01074 | 45.87680 | 5.78834 | 0.2922954 | 2.6285700 | 11 | 1 | 28 days | 0.09 | | MPC | 2003 $SV_{330}$ |
| 2003 $SW_{330}$ | 16.6 | 0.15 | 20031028 | 33.54801 | 299.01857 | 36.86049 | 12.51222 | 0.1545053 | 2.7397910 | 23 | 1 | 51 days | 0.58 | | MPC | 2003 $SW_{330}$ |
| 2003 $SX_{330}$ | 17.7 | 0.15 | 20031008 | 10.96828 | 223.98729 | 135.52541 | 4.50308 | 0.2059089 | 2.4228699 | 19 | 1 | 31 days | 0.59 | | MPC | 2003 $SX_{330}$ |
| 2003 $SY_{330}$ | 19.0 | 0.15 | 20031008 | 4.14561 | 310.44908 | 59.27626 | 5.77305 | 0.2731199 | 2.3054205 | 19 | 1 | 28 days | 0.54 | | MPC | 2003 $SY_{330}$ |
| 2003 $SZ_{330}$ | 17.5 | 0.15 | 20031008 | 89.40009 | 226.47761 | 51.75456 | 13.02133 | 0.1122534 | 3.0579040 | 11 | 1 | 28 days | 0.13 | | MPC | 2003 $SZ_{330}$ |
| 2003 $SA_{331}$ | 18.5 | 0.15 | 20031008 | 346.72123 | 349.59357 | 53.47786 | 11.02703 | 0.2684665 | 3.0705534 | 11 | 1 | 28 days | 0.16 | | MPC | 2003 $SA_{331}$ |
| 2003 $SB_{331}$ | 16.9 | 0.15 | 20031008 | 264.32218 | 68.23722 | 60.32944 | 10.16751 | 0.1078914 | 2.7460444 | 13 | 1 | 28 days | 0.10 | | MPC | 2003 $SB_{331}$ |
| 2003 $SC_{331}$ | 18.2 | 0.15 | 20031028 | 23.22564 | 272.24072 | 87.99310 | 7.41223 | 0.0584685 | 2.7531448 | 11 | 1 | 55 days | 0.20 | | MPC | 2003 $SC_{331}$ |
| 2003 $SD_{331}$ | 18.7 | 0.15 | 20031028 | 45.11715 | 234.89935 | 86.50712 | 6.46515 | 0.2139980 | 2.2181528 | 17 | 1 | 55 days | 0.31 | | MPC | 2003 $SD_{331}$ |
| 2003 $SE_{331}$ | 17.5 | 0.15 | 20031028 | 7.02808 | 314.92490 | 63.29112 | 10.25911 | 0.1088774 | 2.9755475 | 11 | 1 | 55 days | 0.19 | | MPC | 2003 $SE_{331}$ |
| 2003 $SF_{331}$ | 16.0 | 0.15 | 20031008 | 36.24794 | 229.72131 | 106.68452 | 7.69149 | 0.1334793 | 3.0637315 | 16 | 1 | 31 days | 0.48 | | MPC | 2003 $SF_{331}$ |
| 2003 $SG_{331}$ | 16.9 | 0.15 | 20031008 | 27.13800 | 169.85199 | 172.82404 | 16.24776 | 0.2113630 | 2.7888525 | 16 | 1 | 31 days | 0.56 | | MPC | 2003 $SG_{331}$ |
| 2003 $SH_{331}$ | 16.8 | 0.15 | 20060922 | 217.32797 | 292.72098 | 65.07870 | 11.95283 | 0.1148024 | 3.0881523 | 15 | 1 | 63 days | 0.13 | M-v 2 | MPC | 2003 $SH_{331}$ |
| 2003 $SJ_{331}$ | 17.4 | 0.15 | 20060922 | 13.07771 | 214.85905 | 80.04839 | 8.21463 | 0.1522267 | 2.3142030 | 22 | 1 | 63 days | 0.17 | M-v 3 | MPC | 2003 $SJ_{331}$ |
| 2003 $SK_{331}$ | 16.4 | 0.15 | 20031008 | 45.58015 | 269.62194 | 53.90312 | 17.91231 | 0.1587038 | 2.8886053 | 14 | 1 | 31 days | 0.52 | | MPC | 2003 $SK_{331}$ |
| 2003 $SM_{331}$ | 18.0 | 0.15 | 20031008 | 13.16846 | 271.60828 | 89.19197 | 7.89858 | 0.2629087 | 2.4734188 | 13 | 1 | 31 days | 0.45 | | MPC | 2003 $SM_{331}$ |
| 2003 $SN_{331}$ | 16.4 | 0.15 | 20031008 | 18.49062 | 259.42711 | 98.23097 | 10.57756 | 0.2220993 | 3.1016700 | 14 | 1 | 31 days | 0.71 | | MPC | 2003 $SN_{331}$ |
| 2003 $SO_{331}$ | 18.7 | 0.15 | 20031028 | 316.28376 | 142.81611 | 284.59941 | 1.58307 | 0.1370555 | 2.1615486 | 14 | 1 | 54 days | 0.15 | | MPC | 2003 $SO_{331}$ |
| 2003 $SP_{331}$ | 17.7 | 0.15 | 20031008 | 21.54951 | 160.93853 | 180.43087 | 4.86936 | 0.1390213 | 3.0859858 | 12 | 1 | 25 days | 0.15 | | MPC | 2003 $SP_{331}$ |
| 2003 $SR_{331}$ | 17.1 | 0.15 | 20031008 | 290.65745 | 281.26789 | 185.66062 | 10.44142 | 0.2387962 | 3.0452924 | 16 | 1 | 27 days | 0.22 | | MPC | 2003 $SR_{331}$ |
| 2003 $SS_{331}$ | 18.0 | 0.15 | 20031008 | 37.04059 | 132.59098 | 186.50368 | 8.11147 | 0.1772428 | 2.6979949 | 12 | 1 | 26 days | 0.15 | | MPC | 2003 $SS_{331}$ |
| 2003 $ST_{331}$ | 17.6 | 0.15 | 20031008 | 261.00629 | 106.41374 | 17.64490 | 7.67226 | 0.1493393 | 2.6481322 | 14 | 1 | 26 days | 0.17 | | MPC | 2003 $ST_{331}$ |
| 2003 $SU_{331}$ | 17.1 | 0.15 | 20031028 | 302.77311 | 72.20190 | 18.07560 | 9.63485 | 0.1836669 | 3.2104864 | 16 | 1 | 50 days | 0.15 | | MPC | 2003 $SU_{331}$ |
| 2003 $SW_{331}$ | 15.8 | 0.15 | 20060922 | 292.04174 | 341.22458 | 18.57357 | 10.74063 | 0.2598370 | 2.5423053 | 26 | 1 | 94 days | 0.44 | M-v 4 | MPC | 2003 $SW_{331}$ |
| 2003 $SX_{331}$ | 16.7 | 0.15 | 20031028 | 358.50505 | 327.74531 | 59.65906 | 11.33603 | 0.1218167 | 3.0242305 | 19 | 1 | 54 days | 0.63 | | MPC | 2003 $SX_{331}$ |
| 2003 $SY_{331}$ | 19.5 | 0.15 | 20031008 | 339.79906 | 339.14598 | 66.16096 | 7.58854 | 0.1113332 | 2.3567224 | 13 | 1 | 27 days | 0.13 | | MPC | 2003 $SY_{331}$ |
| 2003 $SZ_{331}$ | 19.2 | 0.15 | 20031028 | 0.85824 | 59.85614 | 331.66359 | 2.52074 | 0.2272804 | 2.2646722 | 20 | 1 | 57 days | 0.29 | | MPC | 2003 $SZ_{331}$ |
| 2003 $SA_{332}$ | 17.4 | 0.15 | 20031008 | 2.36968 | 336.21197 | 41.21873 | 19.74146 | 0.1108979 | 3.0564823 | 13 | 1 | 27 days | 0.14 | | MPC | 2003 $SA_{332}$ |
| 2003 $SB_{332}$ | 17.3 | 0.15 | 20031028 | 329.26548 | 0.29815 | 67.30737 | 7.55305 | 0.1413398 | 2.3419254 | 20 | 1 | 54 days | 0.38 | | MPC | 2003 $SB_{332}$ |
| 2003 $SC_{332}$ | 18.8 | 0.15 | 20031028 | 359.04393 | 15.34793 | 17.54459 | 6.08001 | 0.2116745 | 2.4126916 | 17 | 1 | 56 days | 0.30 | | MPC | 2003 $SC_{332}$ |
| 2003 $SD_{332}$ | 17.5 | 0.15 | 20060922 | 88.69040 | 159.47841 | 56.83481 | 14.55819 | 0.0792850 | 2.4166207 | 13 | 1 | 62 days | 0.17 | M-v 3 | MPC | 2003 $SD_{332}$ |
| 2003 $SE_{332}$ | 16.9 | 0.15 | 20031028 | 21.72431 | 299.96020 | 57.95948 | 12.21616 | 0.1993716 | 2.3520961 | 28 | 1 | 52 days | 0.65 | | MPC | 2003 $SE_{332}$ |
| 2003 $SF_{332}$ | 16.8 | 0.15 | 20031028 | 343.27517 | 17.91872 | 37.89526 | 9.05888 | 0.3305586 | 2.8522476 | 27 | 1 | 54 days | 0.38 | | MPC | 2003 $SF_{332}$ |
| 2003 $SG_{332}$ | 18.3 | 0.15 | 20031028 | 335.09306 | 341.47730 | 79.78481 | 4.88909 | 0.1668971 | 2.1808211 | 15 | 1 | 53 days | 0.27 | | MPC | 2003 $SG_{332}$ |
| 2003 $SH_{332}$ | 17.8 | 0.15 | 20031028 | 355.38112 | 253.20146 | 139.18132 | 3.83909 | 0.1908932 | 2.4262308 | 19 | 1 | 49 days | 0.58 | | MPC | 2003 $SH_{332}$ |
| 2003 $SJ_{332}$ | 16.6 | 0.15 | 20031028 | 35.78696 | 192.79498 | 146.92044 | 5.76637 | 0.1224712 | 2.7225578 | 17 | 1 | 53 days | 0.39 | | MPC | 2003 $SJ_{332}$ |
| 2003 $SM_{332}$ | 17.3 | 0.15 | 20031028 | 357.35274 | 199.15392 | 190.20490 | 10.52846 | 0.2150990 | 3.1620466 | 14 | 1 | 53 days | 0.27 | | MPC | 2003 $SM_{332}$ |
| 2003 $SN_{332}$ | 16.4 | 0.15 | 20060922 | 211.21773 | 203.88545 | 152.80413 | 9.31472 | 0.2513607 | 3.1095574 | 15 | 1 | 76 days | 0.57 | M-v 4 | MPC | 2003 $SN_{332}$ |
| 2003 $SP_{332}$ | 17.4 | 0.15 | 20031008 | 347.16052 | 299.78143 | 101.39766 | 8.14919 | 0.1046480 | 2.5689658 | 11 | 1 | 25 days | 0.12 | | MPC | 2003 $SP_{332}$ |
| 2003 $SQ_{332}$ | 17.2 | 0.15 | 20031028 | 18.39796 | 204.35222 | 155.93071 | 11.60666 | 0.3123990 | 2.7419520 | 20 | 1 | 56 days | 0.60 | | MPC | 2003 $SQ_{332}$ |
| 2003 $SR_{332}$ | 18.7 | 0.15 | 20031028 | 345.68650 | 153.04187 | 245.21906 | 1.61455 | 0.2157135 | 2.3085319 | 18 | 1 | 51 days | 0.25 | | MPC | 2003 $SR_{332}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $SS_{332}$ | 18.7 | 0.15 | 20031028 | 336.44344 | 160.93435 | 251.83929 | 2.94751 | 0.2969125 | 2.5363969 | 13 | 1 | 48 days | 0.12 | | | MPC | | 2003 $SS_{332}$ |
| 2003 $ST_{332}$ | 18.7 | 0.15 | 20031008 | 11.99304 | 122.06821 | 221.26046 | 3.43597 | 0.2094230 | 2.6486866 | 11 | 1 | 25 days | 0.12 | | | MPC | | 2003 $ST_{332}$ |
| 2003 $SU_{332}$ | 17.8 | 0.15 | 20031008 | 271.18542 | 273.74969 | 190.96323 | 5.70937 | 0.0677026 | 2.3953900 | 13 | 1 | 25 days | 0.54 | | | MPC | | 2003 $SU_{332}$ |
| 2003 $SV_{332}$ | 17.1 | 0.15 | 20031008 | 340.20437 | 232.70867 | 173.02604 | 3.11405 | 0.2985117 | 3.9474754 | 14 | 1 | 25 days | 0.15 | | | MPC | | 2003 $SV_{332}$ |
| 2003 $SW_{332}$ | 18.2 | 0.15 | 20031028 | 274.84477 | 146.16476 | 316.16019 | 4.01647 | 0.0913423 | 2.2441401 | 14 | 1 | 47 days | 0.18 | | | MPC | | 2003 $SW_{332}$ |
| 2003 $SX_{332}$ | 14.9 | 0.15 | 20060922 | 170.46345 | 68.07263 | 9.43149 | 16.37436 | 0.2166846 | 3.1091788 | 29 | 1 | 105 days | 0.57 | M-v | 4 | MPC | | 2003 $SX_{332}$ |
| 2003 $SY_{332}$ | 18.5 | 0.15 | 20031008 | 79.24423 | 89.79245 | 185.21159 | 11.70696 | 0.1904339 | 2.5323267 | 12 | 1 | 24 days | 0.28 | | | MPC | | 2003 $SY_{332}$ |
| 2003 $SZ_{332}$ | 18.2 | 0.15 | 20031008 | 333.83524 | 319.48129 | 92.86913 | 2.37704 | 0.1765515 | 2.3776888 | 13 | 1 | 24 days | 0.16 | | | MPC | | 2003 $SZ_{332}$ |
| 2003 $SA_{333}$ | 17.2 | 0.15 | 20060922 | 280.65707 | 268.67743 | 115.34682 | 7.26703 | 0.2944578 | 2.5404246 | 17 | 1 | 120 days | 0.37 | M-v | 4 | MPC | | 2003 $SA_{333}$ |
| 2003 $SB_{333}$ | 17.2 | 0.15 | 20031028 | 1.70884 | 149.07905 | 238.64899 | 5.51158 | 0.0502082 | 2.7833350 | 16 | 1 | 55 days | 0.39 | | | MPC | | 2003 $SB_{333}$ |
| 2003 TU | 16.8 | 0.15 | 20060922 | 295.41334 | 245.54655 | 231.88567 | 21.18842 | 0.0766968 | 1.9381782 | 78 | 3 | 2003–2006 | 0.56 | M-v | 2 | MPC | 87593 | 2003 TU |
| 2003 $TJ_2$ | 19.1 | 0.15 | 20060922 | 21.48802 | 298.85554 | 341.57800 | 17.44147 | 0.4742857 | 1.3181688 | 91 | 3 | 2003–2006 | 0.37 | M-v | 2 | MPC | 95110 | 2003 $TJ_2$ |
| 2003 $TJ_4$ | 17.8 | 0.15 | 20060922 | 2.59658 | 154.57879 | 178.63916 | 4.29477 | 0.1814027 | 2.2113875 | 38 | 2 | 2003–2006 | 0.45 | M-v | 3 | MPC | 03531 | 2003 $TJ_4$ |
| 2003 $TY_4$ | 17.2 | 0.15 | 20060922 | 33.58593 | 58.14815 | 225.91269 | 6.23202 | 0.1769012 | 2.2387764 | 69 | 5 | 1993–2006 | 0.57 | M-v | 1 | MPC | 04264 | 2003 $TY_4$ |
| 2003 $TE_5$ | 16.3 | 0.15 | 20060922 | 300.58660 | 342.88533 | 51.88273 | 6.21356 | 0.1670091 | 2.2995314 | 100 | 5 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04264 | 2003 $TE_5$ |
| 2003 $TA_7$ | 15.5 | 0.15 | 20060922 | 291.45545 | 246.58934 | 73.28968 | 14.49165 | 0.1278266 | 2.6331086 | 36 | 3 | 1999–2003 | 0.72 | M-v | 2 | MPC | 95111 | 2003 $TA_7$ |
| 2003 $TT_8$ | 16.5 | 0.15 | 20060922 | 277.06664 | 105.72236 | 314.46651 | 6.56868 | 0.0768383 | 2.3210617 | 49 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 03531 | 2003 $TT_8$ |
| 2003 $TD_9$ | 15.5 | 0.15 | 20060922 | 354.57552 | 296.59880 | 330.36023 | 12.66299 | 0.2497878 | 2.5731398 | 32 | 2 | 2003–2006 | 0.42 | M-v | 3 | MPC | 00589 | 2003 $TD_9$ |
| 2003 $TE_{11}$ | 16.3 | 0.15 | 20060922 | 306.41559 | 316.88671 | 71.54926 | 7.02709 | 0.1590971 | 2.2829315 | 57 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 03531 | 2003 $TE_{11}$ |
| 2003 $TD_{12}$ | 15.8 | 0.15 | 20060922 | 320.87317 | 255.72289 | 42.20913 | 12.37495 | 0.1216058 | 2.6306859 | 105 | 4 | 1999–2006 | 0.67 | M-v | 1 | MPC | 04265 | 2003 $TD_{12}$ |
| 2003 $TS_{13}$ | 15.7 | 0.15 | 20060922 | 253.46541 | 139.98683 | 233.37574 | 7.90036 | 0.3966248 | 2.6177507 | 122 | 3 | 1999–2004 | 0.45 | M-v | 1 | MPC | 57983 | 2003 $TS_{13}$ |
| 2003 $TX_{13}$ | 16.8 | 0.15 | 20060922 | 41.45111 | 63.07038 | 303.21917 | 17.30329 | 0.0630260 | 1.9178599 | 32 | 4 | 1994–2006 | 0.42 | M-v | 2 | MPC | 61728 | 2003 $TX_{13}$ |
| 2003 $TZ_{16}$ | 17.9 | 0.15 | 20060922 | 347.28095 | 318.75070 | 47.08022 | 2.45416 | 0.1088616 | 2.1574011 | 52 | 4 | 2000–2006 | 0.66 | M-v | 3 | MPC | 56935 | 2003 $TZ_{16}$ |
| 2003 $TC_{17}$ | 15.0 | 0.15 | 20060922 | 226.89313 | 306.73787 | 41.05495 | 10.38425 | 0.0993245 | 3.0784998 | 62 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 00590 | 2003 $TC_{17}$ |
| 2003 $TA_{18}$ | 15.1 | 0.15 | 20060922 | 200.65063 | 198.42232 | 238.25048 | 10.96915 | 0.1561061 | 2.6097822 | 44 | 3 | 1999–2005 | 0.53 | M-v | 2 | MPC | 57984 | 2003 $TA_{18}$ |
| 2003 $TX_{18}$ | 17.7 | 0.15 | 20060922 | 31.02747 | 301.78592 | 357.57935 | 3.68717 | 0.1654760 | 2.1731477 | 58 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 03531 | 2003 $TX_{18}$ |
| 2003 $TV_{19}$ | 15.1 | 0.15 | 20060922 | 127.50961 | 61.65656 | 338.93765 | 2.04173 | 0.2725134 | 3.9984704 | 49 | 5 | 1995–2005 | 0.52 | M-v | 0 | MPC | 56938 | 2003 $TV_{19}$ |
| 2003 $TX_{19}$ | 17.7 | 0.15 | 20060922 | 348.14039 | 80.69423 | 276.76527 | 0.29315 | 0.2211784 | 2.1663133 | 93 | 2 | 2003–2006 | 0.46 | M-v | 2 | MPC | 03531 | 2003 $TX_{19}$ |
| 2003 $TB_{20}$ | 15.3 | 0.15 | 20060922 | 314.56545 | 344.32562 | 295.40477 | 10.79194 | 0.0680925 | 2.7198721 | 32 | 4 | 1995–2006 | 0.58 | M-v | 1 | MPC | 76038 | 2003 $TB_{20}$ |
| 2003 $TF_{20}$ | 15.7 | 0.15 | 20060922 | 252.48979 | 93.40787 | 251.08420 | 10.82635 | 0.1915650 | 2.7528773 | 34 | 1 | 84 days | 0.41 | M-v | 4 | MPC | 57984 | 2003 $TF_{20}$ |
| 2003 $TN_{28}$ | 15.8 | 0.15 | 20060922 | 25.12077 | 285.49981 | 263.81833 | 1.65078 | 0.0656557 | 3.1175952 | 31 | 6 | 1998–2006 | 0.32 | M-v | 0 | MPC | 00591 | 2003 $TN_{28}$ |
| 2003 $TN_{30}$ | 16.6 | 0.15 | 20060922 | 204.74490 | 327.60717 | 55.16149 | 2.83074 | 0.0876388 | 2.9729120 | 23 | 3 | 2003–2006 | 0.35 | M-v | 3 | MPC | 00592 | 2003 $TN_{30}$ |
| 2003 $TO_{31}$ | 16.8 | 0.15 | 20060922 | 227.39180 | 333.78169 | 23.23059 | 9.59388 | 0.0571454 | 2.9651473 | 21 | 2 | 2003–2006 | 0.33 | M-v | 3 | MPC | 00592 | 2003 $TO_{31}$ |
| 2003 $TZ_{33}$ | 17.6 | 0.15 | 20060922 | 132.48561 | 35.77509 | 167.20033 | 5.18077 | 0.1012535 | 2.2372512 | 34 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 95113 | 2003 $TZ_{33}$ |
| 2003 $TY_{37}$ | 15.6 | 0.15 | 20060922 | 111.85843 | 217.62915 | 261.92271 | 8.41324 | 0.0388591 | 2.9837032 | 51 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 02177 | 2003 $TY_{37}$ |
| 2003 $TP_{38}$ | 16.7 | 0.15 | 20060922 | 167.10416 | 84.72013 | 319.64127 | 7.99237 | 0.0702925 | 3.1684878 | 22 | 3 | 2003–2006 | 0.35 | M-v | 3 | MPC | 86128 | 2003 $TP_{38}$ |
| 2003 $TS_{42}$ | 17.9 | 0.15 | 20060922 | 283.86497 | 79.45575 | 342.97177 | 4.07827 | 0.1057449 | 2.2256221 | 22 | 3 | 2003–2006 | 0.31 | M-v | 3 | MPC | 76041 | 2003 $TS_{42}$ |
| 2003 $TS_{45}$ | 15.8 | 0.15 | 20060922 | 293.54450 | 344.99269 | 296.18697 | 5.11807 | 0.0761574 | 3.0359524 | 27 | 5 | 1995–2004 | 0.26 | M-v | 1 | MPC | 76041 | 2003 $TS_{45}$ |
| 2003 $TB_{49}$ | 16.9 | 0.15 | 20060922 | 87.85054 | 294.84575 | 303.37285 | 5.87410 | 0.1866729 | 2.3104310 | 40 | 3 | 2003–2006 | 0.51 | M-v | 2 | MPC | 04265 | 2003 $TB_{49}$ |
| 2003 $TL_{51}$ | 15.3 | 0.15 | 20060922 | 267.82523 | 31.91321 | 285.44779 | 13.73988 | 0.1740994 | 2.7866628 | 32 | 4 | 1998–2004 | 0.53 | M-v | 2 | MPC | 72924 | 2003 $TL_{51}$ |
| 2003 $TR_{51}$ | 16.9 | 0.15 | 20060922 | 266.43656 | 274.52175 | 229.91850 | 19.33140 | 0.0836152 | 1.9372529 | 60 | 3 | 2003–2006 | 0.56 | M-v | 2 | MPC | 86130 | 2003 $TR_{51}$ |
| 2003 $TB_{53}$ | 17.7 | 0.15 | 20060922 | 31.66405 | 228.99141 | 72.62351 | 4.54151 | 0.1649510 | 2.1744755 | 29 | 5 | 2000–2006 | 0.56 | M-v | 2 | MPC | 04265 | 2003 $TB_{53}$ |
| 2003 $TA_{54}$ | 16.5 | 0.15 | 20060922 | 233.80617 | 242.71458 | 130.00708 | 5.15767 | 0.0517813 | 2.7915682 | 25 | 3 | 2003–2006 | 0.22 | M-v | 3 | MPC | 00593 | 2003 $TA_{54}$ |
| 2003 $TD_{54}$ | 15.5 | 0.15 | 20060922 | 83.48518 | 76.12862 | 52.81402 | 10.11760 | 0.0472967 | 3.1768019 | 30 | 3 | 2000–2005 | 0.37 | M-v | 2 | MPC | 03532 | 2003 $TD_{54}$ |
| 2003 $TE_{54}$ | 16.3 | 0.15 | 20060922 | 122.75016 | 49.39309 | 78.47053 | 5.82696 | 0.0152413 | 2.7775210 | 39 | 5 | 1996–2006 | 0.40 | M-v | 0 | MPC | 02177 | 2003 $TE_{54}$ |
| 2003 $TT_{55}$ | 15.5 | 0.15 | 20060922 | 41.48297 | 100.40121 | 67.54017 | 9.83664 | 0.0292111 | 3.1863675 | 27 | 3 | 2003–2006 | 0.53 | M-v | 2 | MPC | 00593 | 2003 $TT_{55}$ |
| 2003 $TH_{57}$ | 14.8 | 0.15 | 20060922 | 175.99879 | 101.43366 | 302.65022 | 10.59988 | 0.0779843 | 3.1388337 | 64 | 4 | 1993–2005 | 0.59 | M-v | 1 | MPC | 04265 | 2003 $TH_{57}$ |
| 2003 $TX_{58}$ | 19.1 | 0.15 | 20031008 | 1.26785 | 51.37960 | 326.96360 | 2.81206 | 0.1863076 | 2.1792327 | 19 | 1 | 26 days | 0.37 | | | MPC | | 2003 $TX_{58}$ |
| 2003 $TY_{58}$ | 15.8 | 0.15 | 20060922 | 250.46642 | 91.64738 | 286.78707 | 11.88691 | 0.2269228 | 2.6745529 | 16 | 1 | 88 days | 0.32 | M-v | 3 | MPC | | 2003 $TY_{58}$ |
| 2003 $TZ_{58}$ | 16.8 | 0.15 | 20031028 | 19.90182 | 341.74286 | 27.98213 | 5.15383 | 0.1707302 | 3.2244517 | 19 | 1 | 59 days | 0.37 | | | MPC | | 2003 $TZ_{58}$ |
| 2003 $TA_{59}$ | 16.4 | 0.15 | 20031028 | 84.12298 | 264.92427 | 40.32485 | 9.89409 | 0.0679749 | 3.0350592 | 15 | 1 | 49 days | 0.35 | | | MPC | | 2003 $TA_{59}$ |
| 2003 $TB_{59}$ | 15.7 | 0.15 | 20060922 | 83.38937 | 168.66164 | 346.33231 | 9.39597 | 0.0526097 | 3.0713358 | 16 | 1 | 76 days | 0.25 | M-v | 4 | MPC | | 2003 $TB_{59}$ |
| 2003 $TC_{59}$ | 17.4 | 0.15 | 20031008 | 345.40275 | 218.00278 | 180.35510 | 10.32790 | 0.1150828 | 2.5682768 | 15 | 1 | 22 days | 0.57 | | | MPC | | 2003 $TC_{59}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $TD_{59}$ | 17.9 | 0.15 | 20031028 | 12.77717 | 231.24876 | 132.63906 | 5.23935 | 0.2295038 | 3.0256149 | 11 | 1 | 46 days | 0.12 | | | MPC | | 2003 $TD_{59}$ |
| 2003 $TE_{59}$ | 17.4 | 0.15 | 20031028 | 334.07854 | 233.31099 | 186.72588 | 15.81207 | 0.1506019 | 2.6167732 | 14 | 1 | 9 days | 0.20 | | | MPC | | 2003 $TE_{59}$ |
| 2003 $TF_{59}$ | 16.1 | 0.15 | 20031028 | 60.75080 | 271.92814 | 38.63788 | 7.97771 | 0.0749038 | 3.0057626 | 12 | 1 | 35 days | 0.10 | | | MPC | | 2003 $TF_{59}$ |
| 2003 UQ | 14.4 | 0.15 | 20060922 | 198.31434 | 86.96383 | 266.47510 | 24.67525 | 0.3175924 | 3.1914193 | 34 | 1 | 199 days | 0.53 | M-v | 3 | MPC | 97684 | 2003 UQ |
| 2003 $UE_1$ | 16.7 | 0.15 | 20060922 | 295.00588 | 77.04261 | 328.21743 | 5.82896 | 0.0961696 | 2.2483456 | 43 | 2 | 2003–2006 | 0.36 | M-v | 3 | MPC | 03532 | 2003 $UE_1$ |
| 2003 $UO_1$ | 16.9 | 0.15 | 20060922 | 209.58666 | 156.81143 | 318.48564 | 5.56753 | 0.0519258 | 2.3384841 | 33 | 6 | 1996–2006 | 0.39 | M-v | 0 | MPC | 76043 | 2003 $UO_1$ |
| 2003 $UA_5$ | 16.2 | 0.15 | 20060922 | 93.34979 | 269.34002 | 67.36963 | 23.41416 | 0.1060100 | 1.8872317 | 87 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 87594 | 2003 $UA_5$ |
| 2003 $UL_6$ | 16.0 | 0.15 | 20060922 | 296.04649 | 248.96159 | 246.48030 | 18.92266 | 0.0920966 | 1.9089017 | 42 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87595 | 2003 $UL_6$ |
| 2003 $UA_8$ | 18.2 | 0.15 | 20060922 | 196.22581 | 52.83526 | 111.32751 | 1.28050 | 0.1342450 | 2.1559690 | 39 | 3 | 2003–2006 | 0.32 | M-v | 2 | MPC | 04265 | 2003 $UA_8$ |
| 2003 $UM_8$ | 16.9 | 0.15 | 20060922 | 27.92105 | 9.90731 | 331.56457 | 4.32513 | 0.1062387 | 2.1362958 | 95 | 5 | 1992–2006 | 0.42 | M-v | 1 | MPC | 04265 | 2003 $UM_8$ |
| 2003 $UK_9$ | 16.8 | 0.15 | 20060922 | 315.58318 | 346.79431 | 51.51595 | 7.86158 | 0.1019312 | 2.2899075 | 51 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04265 | 2003 $UK_9$ |
| 2003 $UV_9$ | 16.9 | 0.15 | 20060922 | 288.49366 | 213.90924 | 207.10928 | 1.32592 | 0.0657771 | 2.2653964 | 113 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 04265 | 2003 $UV_9$ |
| 2003 $UY_9$ | 17.4 | 0.15 | 20060922 | 16.29547 | 316.27731 | 24.14192 | 7.56853 | 0.1384451 | 2.2037573 | 71 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 03532 | 2003 $UY_9$ |
| 2003 $UZ_9$ | 17.7 | 0.15 | 20060922 | 72.95978 | 166.67210 | 109.40024 | 4.57673 | 0.1475309 | 2.1217029 | 40 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 87595 | 2003 $UZ_9$ |
| 2003 $UD_{10}$ | 16.8 | 0.15 | 20060922 | 310.76936 | 193.90323 | 195.90045 | 5.85174 | 0.1066248 | 2.2520030 | 89 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 04265 | 2003 $UD_{10}$ |
| 2003 $UA_{11}$ | 16.2 | 0.15 | 20060922 | 161.05616 | 233.38996 | 213.58248 | 4.65833 | 0.2880226 | 3.1550961 | 52 | 3 | 1997–2005 | 0.38 | M-v | 2 | MPC | 56949 | 2003 $UA_{11}$ |
| 2003 $UJ_{11}$ | 16.9 | 0.15 | 20060922 | 103.92496 | 267.72697 | 42.95890 | 22.15948 | 0.0805311 | 1.9398165 | 91 | 3 | 2003–2006 | 0.50 | M-v | 2 | MPC | 76048 | 2003 $UJ_{11}$ |
| 2003 $UJ_{12}$ | 15.9 | 0.15 | 20060922 | 293.22509 | 282.55863 | 43.81186 | 5.65291 | 0.1455765 | 2.7160144 | 78 | 4 | 1994–2006 | 0.47 | M-v | 1 | MPC | 04265 | 2003 $UJ_{12}$ |
| 2003 $UN_{12}$ | 18.5 | 0.15 | 20060922 | 21.06465 | 257.28342 | 40.86158 | 6.90814 | 0.4032402 | 2.1570569 | 76 | 2 | 2003–2006 | 0.43 | M-v | 2 | MPC | 03533 | 2003 $UN_{12}$ |
| 2003 $US_{13}$ | 16.9 | 0.15 | 20060922 | 277.49799 | 118.36267 | 35.77069 | 21.51960 | 0.0696607 | 1.9212866 | 63 | 4 | 1995–2006 | 0.56 | M-v | 2 | MPC | 56951 | 2003 $US_{13}$ |
| 2003 $UD_{14}$ | 16.0 | 0.15 | 20060922 | 118.59997 | 26.26185 | 258.40515 | 18.95208 | 0.0494295 | 1.9576388 | 86 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 87595 | 2003 $UD_{14}$ |
| 2003 $UE_{14}$ | 16.5 | 0.15 | 20060922 | 338.05686 | 244.74891 | 48.44979 | 14.36168 | 0.2824483 | 2.4055625 | 47 | 2 | 2003–2006 | 0.54 | M-v | 4 | MPC | 00596 | 2003 $UE_{14}$ |
| 2003 $UD_{15}$ | 15.9 | 0.15 | 20060922 | 250.96478 | 312.70582 | 22.08332 | 11.86631 | 0.0968878 | 2.9821034 | 56 | 3 | 2001–2006 | 0.33 | M-v | 2 | MPC | 00597 | 2003 $UD_{15}$ |
| 2003 $UG_{15}$ | 17.9 | 0.15 | 20060922 | 42.97469 | 260.80500 | 18.29737 | 7.67263 | 0.2529181 | 2.1984671 | 45 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 04265 | 2003 $UG_{15}$ |
| 2003 $UO_{15}$ | 16.9 | 0.15 | 20060922 | 23.42245 | 77.21237 | 246.39780 | 1.97809 | 0.2129574 | 2.1637185 | 142 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 03533 | 2003 $UO_{15}$ |
| 2003 $UX_{17}$ | 16.4 | 0.15 | 20060922 | 302.54009 | 298.11459 | 359.59533 | 1.59618 | 0.0421521 | 2.8869027 | 39 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 00598 | 2003 $UX_{17}$ |
| 2003 $UG_{19}$ | 16.5 | 0.15 | 20060922 | 281.85410 | 309.05557 | 84.57596 | 3.57153 | 0.2024982 | 2.4333425 | 98 | 3 | 1993–2003 | 0.54 | M-v | 2 | MPC | 56955 | 2003 $UG_{19}$ |
| 2003 $UJ_{20}$ | 17.1 | 0.15 | 20060922 | 19.17982 | 54.68473 | 258.15338 | 5.33983 | 0.2416818 | 2.1888705 | 77 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 03533 | 2003 $UJ_{20}$ |
| 2003 $US_{22}$ | 16.8 | 0.15 | 20060922 | 308.40013 | 253.98030 | 153.17356 | 3.94414 | 0.1733047 | 2.2119076 | 96 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04265 | 2003 $US_{22}$ |
| 2003 $UG_{23}$ | 16.9 | 0.15 | 20060922 | 3.43411 | 291.95801 | 37.80141 | 6.08808 | 0.1937585 | 2.2384553 | 73 | 2 | 2003–2006 | 0.47 | M-v | 3 | MPC | 03533 | 2003 $UG_{23}$ |
| 2003 $UL_{23}$ | 17.0 | 0.15 | 20060922 | 347.33685 | 320.29341 | 23.22893 | 3.05462 | 0.1820300 | 2.2602929 | 72 | 4 | 1996–2006 | 0.55 | M-v | 1 | MPC | 04265 | 2003 $UL_{23}$ |
| 2003 $UJ_{24}$ | 17.1 | 0.15 | 20060922 | 17.61077 | 82.07798 | 233.65864 | 5.42843 | 0.1889930 | 2.2181185 | 59 | 2 | 2003–2006 | 0.40 | M-v | 3 | MPC | 03534 | 2003 $UJ_{24}$ |
| 2003 $UM_{25}$ | 16.4 | 0.15 | 20060922 | 44.28750 | 68.74916 | 240.18785 | 7.03142 | 0.2686502 | 2.1367146 | 172 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 76054 | 2003 $UM_{25}$ |
| 2003 $UB_{26}$ | 16.3 | 0.15 | 20060922 | 27.94767 | 59.68817 | 246.49552 | 7.47650 | 0.2300450 | 2.2145489 | 97 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04265 | 2003 $UB_{26}$ |
| 2003 $UQ_{26}$ | 17.3 | 0.15 | 20060922 | 339.84545 | 241.40691 | 130.72944 | 7.65789 | 0.1933378 | 2.1973784 | 95 | 4 | 1999–2006 | 0.58 | M-v | 2 | MPC | 04265 | 2003 $UQ_{26}$ |
| 2003 $UH_{27}$ | 17.5 | 0.15 | 20060922 | 358.44473 | 216.39239 | 115.78438 | 6.18734 | 0.1706441 | 2.2346752 | 112 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04265 | 2003 $UH_{27}$ |
| 2003 $UN_{27}$ | 16.7 | 0.15 | 20060922 | 353.53088 | 251.21098 | 39.96880 | 6.74810 | 0.2485730 | 2.3485314 | 146 | 4 | 1996–2006 | 0.57 | M-v | 1 | MPC | 04265 | 2003 $UN_{27}$ |
| 2003 $UA_{28}$ | 15.9 | 0.15 | 20060922 | 257.37453 | 326.77032 | 28.77252 | 6.67698 | 0.0492604 | 2.6941198 | 71 | 5 | 1994–2006 | 0.63 | M-v | 1 | MPC | 04266 | 2003 $UA_{28}$ |
| 2003 $UD_{28}$ | 15.2 | 0.15 | 20060922 | 138.64449 | 196.76147 | 248.30833 | 8.59832 | 0.0117296 | 3.1068456 | 36 | 5 | 2000–2006 | 0.40 | M-v | 0 | MPC | 02178 | 2003 $UD_{28}$ |
| 2003 $US_{28}$ | 16.5 | 0.15 | 20060922 | 212.81978 | 35.46993 | 68.09885 | 2.81547 | 0.1707536 | 2.4601954 | 55 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 76057 | 2003 $US_{28}$ |
| 2003 $UX_{28}$ | 17.2 | 0.15 | 20060922 | 265.73288 | 124.74990 | 301.01729 | 0.58202 | 0.1664217 | 2.3774557 | 34 | 3 | 2000–2005 | 0.47 | M-v | 2 | MPC | 56965 | 2003 $UX_{28}$ |
| 2003 $UY_{28}$ | 16.8 | 0.15 | 20060922 | 194.89204 | 166.48774 | 221.09497 | 16.54770 | 0.2047168 | 3.1560460 | 18 | 2 | 1992–2003 | 0.41 | M-v | 3 | MPC | 61729 | 2003 $UY_{28}$ |
| 2003 $UB_{29}$ | 17.0 | 0.15 | 20060922 | 268.33957 | 59.44333 | 40.76468 | 6.26263 | 0.0882191 | 2.2102212 | 46 | 3 | 2003–2006 | 0.58 | M-v | 3 | MPC | 76057 | 2003 $UB_{29}$ |
| 2003 $UX_{29}$ | 17.1 | 0.15 | 20060922 | 284.23221 | 244.46884 | 95.92770 | 5.87329 | 0.1969627 | 2.5987998 | 76 | 5 | 1999–2006 | 0.65 | M-v | 1 | MPC | 02178 | 2003 $UX_{29}$ |
| 2003 $UE_{34}$ | 15.4 | 0.15 | 20060922 | 103.63129 | 265.67434 | 219.77348 | 15.92469 | 0.1347203 | 3.1581930 | 29 | 4 | 1995–2006 | 0.44 | M-v | 0 | MPC | 02179 | 2003 $UE_{34}$ |
| 2003 $UA_{35}$ | 16.7 | 0.15 | 20060922 | 15.18619 | 118.73293 | 204.07456 | 7.09031 | 0.1957895 | 2.2168399 | 109 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 03535 | 2003 $UA_{35}$ |
| 2003 $UB_{35}$ | 17.3 | 0.15 | 20060922 | 9.36032 | 305.80014 | 27.97886 | 1.20122 | 0.2530197 | 2.1823784 | 119 | 3 | 2003–2006 | 0.49 | M-v | 2 | MPC | 04266 | 2003 $UB_{35}$ |
| 2003 $UN_{35}$ | 16.8 | 0.15 | 20060922 | 305.49372 | 331.29448 | 67.37162 | 5.36152 | 0.1208897 | 2.1951780 | 40 | 5 | 1997–2006 | 0.66 | M-v | 3 | MPC | 03535 | 2003 $UN_{35}$ |
| 2003 $UK_{36}$ | 17.4 | 0.15 | 20060922 | 12.28807 | 11.16547 | 305.78896 | 6.91686 | 0.1685282 | 2.2288589 | 42 | 4 | 1998–2006 | 0.34 | M-v | 1 | MPC | 03535 | 2003 $UK_{36}$ |
| 2003 $UZ_{36}$ | 16.0 | 0.15 | 20060922 | 248.80913 | 121.48234 | 313.24289 | 6.10920 | 0.0815924 | 2.4053800 | 75 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 04266 | 2003 $UZ_{36}$ |
| 2003 $UC_{38}$ | 17.1 | 0.15 | 20060922 | 342.98482 | 179.84918 | 173.56747 | 2.72991 | 0.1339484 | 2.2937942 | 69 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 04266 | 2003 $UC_{38}$ |
| 2003 $UH_{41}$ | 16.7 | 0.15 | 20060922 | 345.49193 | 296.22718 | 65.81959 | 3.77674 | 0.2297072 | 2.1914726 | 114 | 5 | 2001–2006 | 0.42 | M-v | 2 | MPC | 04266 | 2003 $UH_{41}$ |
| 2003 $UJ_{41}$ | 16.6 | 0.15 | 20060922 | 325.24494 | 333.85639 | 27.50618 | 5.01987 | 0.1705875 | 2.3187961 | 71 | 4 | 1996–2006 | 0.51 | M-v | 1 | MPC | 03536 | 2003 $UJ_{41}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $UQ_{45}$ | 16.5 | 0.15 | 20060922 | 252.51947 | 319.55461 | 127.77977 | 1.96733 | 0.1547345 | 2.3943692 | 60 | 5 | 1997–2006 | 0.55 | M-v | 2 | MPC | 77724 | 2003 $UQ_{45}$ |
| 2003 $UV_{45}$ | 15.9 | 0.15 | 20060922 | 318.66419 | 87.08225 | 200.71741 | 3.96875 | 0.0855831 | 2.8103745 | 45 | 3 | 2003–2006 | 0.35 | M-v | 3 | MPC | 00605 | 2003 $UV_{45}$ |
| 2003 $UO_{46}$ | 16.5 | 0.15 | 20060922 | 315.40069 | 245.92599 | 36.91946 | 2.43265 | 0.0416374 | 2.8571052 | 49 | 4 | 2001–2006 | 0.33 | M-v | 0 | MPC | 02179 | 2003 $UO_{46}$ |
| 2003 $UA_{47}$ | 15.4 | 0.15 | 20060922 | 220.75476 | 269.66204 | 82.55625 | 10.48880 | 0.0896988 | 3.1668445 | 61 | 4 | 2002–2006 | 0.73 | M-v | 1 | MPC | 02179 | 2003 $UA_{47}$ |
| 2003 $UE_{47}$ | 17.2 | 0.15 | 20060922 | 11.07307 | 350.75152 | 68.77908 | 25.04651 | 0.1160317 | 1.9595901 | 66 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 56975 | 2003 $UE_{47}$ |
| 2003 $UG_{47}$ | 17.1 | 0.15 | 20060922 | 339.00661 | 214.94269 | 139.46477 | 7.18735 | 0.1410581 | 2.2598760 | 78 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 04266 | 2003 $UG_{47}$ |
| 2003 $UQ_{47}$ | 16.7 | 0.15 | 20060922 | 335.50324 | 220.11017 | 216.19820 | 20.28274 | 0.0881842 | 1.9915193 | 54 | 5 | 2000–2006 | 0.44 | M-v | 2 | MPC | 86133 | 2003 $UQ_{47}$ |
| 2003 $UT_{47}$ | 15.2 | 0.15 | 20060922 | 206.81322 | 244.73829 | 225.89811 | 21.36835 | 0.1188010 | 2.5674135 | 89 | 3 | 2001–2005 | 0.59 | M-v | 2 | MPC | 77724 | 2003 $UT_{47}$ |
| 2003 $UJ_{48}$ | 16.7 | 0.15 | 20060922 | 277.47838 | 213.91779 | 180.34070 | 7.99330 | 0.1550947 | 2.4417816 | 55 | 3 | 1999–2005 | 0.61 | M-v | 3 | MPC | 56977 | 2003 $UJ_{48}$ |
| 2003 $UP_{48}$ | 15.2 | 0.15 | 20060922 | 263.66248 | 305.61865 | 80.01468 | 10.49091 | 0.0636187 | 2.5975244 | 58 | 3 | 1999–2005 | 0.64 | M-v | 3 | MPC | 56977 | 2003 $UP_{48}$ |
| 2003 $UT_{48}$ | 16.3 | 0.15 | 20060922 | 338.75697 | 267.66746 | 84.74791 | 8.25639 | 0.1360114 | 2.2831398 | 46 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03536 | 2003 $UT_{48}$ |
| 2003 $UO_{49}$ | 16.9 | 0.15 | 20060922 | 358.13270 | 69.10989 | 274.90802 | 8.70430 | 0.2013972 | 2.1844804 | 46 | 2 | 2003–2006 | 0.40 | M-v | 3 | MPC | 03536 | 2003 $UO_{49}$ |
| 2003 $US_{49}$ | 15.6 | 0.15 | 20060922 | 204.87893 | 97.81303 | 326.05876 | 12.24358 | 0.1893554 | 2.8048061 | 39 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 56979 | 2003 $US_{49}$ |
| 2003 $UL_{50}$ | 16.7 | 0.15 | 20060922 | 12.14684 | 325.80517 | 342.26591 | 7.88830 | 0.1891033 | 2.3126844 | 40 | 3 | 2003–2006 | 0.38 | M-v | 2 | MPC | 04266 | 2003 $UL_{50}$ |
| 2003 $UE_{51}$ | 15.2 | 0.15 | 20060922 | 175.53074 | 169.38542 | 289.35786 | 12.74195 | 0.0929912 | 2.6541373 | 39 | 3 | 1999–2005 | 0.54 | M-v | 2 | MPC | 95121 | 2003 $UE_{51}$ |
| 2003 $UJ_{53}$ | 16.9 | 0.15 | 20060922 | 318.18894 | 79.13409 | 317.85307 | 6.28565 | 0.1352673 | 2.2064891 | 89 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 03536 | 2003 $UJ_{53}$ |
| 2003 $UL_{53}$ | 17.2 | 0.15 | 20060922 | 324.21328 | 79.86298 | 303.72903 | 6.21044 | 0.1734675 | 2.2234064 | 65 | 3 | 2000–2006 | 0.43 | M-v | 3 | MPC | 03537 | 2003 $UL_{53}$ |
| 2003 $UW_{53}$ | 16.4 | 0.15 | 20060922 | 349.84598 | 43.53590 | 292.41212 | 5.32398 | 0.1372717 | 2.2943924 | 74 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 03537 | 2003 $UW_{53}$ |
| 2003 $UD_{54}$ | 16.8 | 0.15 | 20060922 | 263.73473 | 94.56612 | 345.71325 | 7.06946 | 0.0705889 | 2.3065687 | 62 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 04266 | 2003 $UD_{54}$ |
| 2003 $UG_{55}$ | 15.2 | 0.15 | 20060922 | 295.35594 | 68.02059 | 260.51787 | 12.99360 | 0.0691729 | 2.7743571 | 54 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 03537 | 2003 $UG_{55}$ |
| 2003 $UM_{55}$ | 17.1 | 0.15 | 20060922 | 1.97863 | 68.14806 | 273.42108 | 4.24696 | 0.1761079 | 2.2209676 | 94 | 3 | 2003–2006 | 0.48 | M-v | 2 | MPC | 03537 | 2003 $UM_{55}$ |
| 2003 $UR_{55}$ | 16.7 | 0.15 | 20060922 | 305.86059 | 73.59285 | 342.48019 | 4.30144 | 0.0901042 | 2.2296415 | 79 | 5 | 1993–2006 | 0.49 | M-v | 1 | MPC | 04266 | 2003 $UR_{55}$ |
| 2003 $UM_{56}$ | 16.4 | 0.15 | 20060922 | 274.33500 | 340.03769 | 14.51258 | 1.96663 | 0.2183449 | 2.6335711 | 45 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 03538 | 2003 $UM_{56}$ |
| 2003 $UQ_{57}$ | 14.9 | 0.15 | 20060922 | 114.97655 | 138.87176 | 326.05383 | 4.98896 | 0.1183100 | 3.1916540 | 73 | 3 | 2002–2005 | 0.51 | M-v | 3 | MPC | 72935 | 2003 $UQ_{57}$ |
| 2003 $UC_{58}$ | 16.7 | 0.15 | 20060922 | 233.18487 | 161.37708 | 307.11594 | 5.02587 | 0.0761524 | 2.2482242 | 46 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 04266 | 2003 $UC_{58}$ |
| 2003 $UL_{58}$ | 17.1 | 0.15 | 20060922 | 266.25574 | 85.19189 | 255.87235 | 4.93074 | 0.1461679 | 2.7123386 | 38 | 3 | 1999–2005 | 0.52 | M-v | 3 | MPC | 56987 | 2003 $UL_{58}$ |
| 2003 $UQ_{60}$ | 14.9 | 0.15 | 20060922 | 168.64116 | 338.89793 | 48.41840 | 8.11510 | 0.1414207 | 3.2195608 | 56 | 3 | 2001–2005 | 0.67 | M-v | 3 | MPC | 72937 | 2003 $UQ_{60}$ |
| 2003 $UA_{61}$ | 17.4 | 0.15 | 20060922 | 273.35824 | 284.65598 | 142.92373 | 5.44477 | 0.1699828 | 2.2752473 | 40 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 03538 | 2003 $UA_{61}$ |
| 2003 $UG_{61}$ | 16.0 | 0.15 | 20060922 | 244.34106 | 283.11153 | 92.18576 | 8.36022 | 0.2112840 | 2.6757910 | 31 | 3 | 1999–2003 | 0.47 | M-v | 3 | MPC | 56989 | 2003 $UG_{61}$ |
| 2003 $UK_{61}$ | 17.8 | 0.15 | 20060922 | 347.66759 | 198.61929 | 145.75696 | 4.68781 | 0.1795039 | 2.1933205 | 53 | 3 | 2003–2006 | 0.47 | M-v | 2 | MPC | 03538 | 2003 $UK_{61}$ |
| 2003 $UH_{62}$ | 15.2 | 0.15 | 20060922 | 256.75627 | 286.35843 | 68.14434 | 11.86274 | 0.1500632 | 2.7088860 | 75 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 02180 | 2003 $UH_{62}$ |
| 2003 $UT_{62}$ | 15.9 | 0.15 | 20060922 | 326.34676 | 223.32459 | 112.55299 | 4.12487 | 0.1817211 | 2.3108175 | 95 | 8 | 1989–2006 | 0.66 | M-v | 1 | MPC | 04266 | 2003 $UT_{62}$ |
| 2003 $UU_{65}$ | 15.5 | 0.15 | 20060922 | 265.93078 | 265.04988 | 95.78359 | 10.37415 | 0.1235164 | 2.6379640 | 29 | 5 | 1997–2006 | 0.60 | M-v | 1 | MPC | 00608 | 2003 $UU_{65}$ |
| 2003 $UD_{67}$ | 16.7 | 0.15 | 20060922 | 154.64894 | 255.94044 | 208.07288 | 13.00428 | 0.0354622 | 2.6777378 | 28 | 3 | 2003–2006 | 0.21 | M-v | 2 | MPC | 00608 | 2003 $UD_{67}$ |
| 2003 $UT_{67}$ | 16.8 | 0.15 | 20060922 | 233.85354 | 13.37371 | 11.99844 | 3.08822 | 0.1013008 | 2.7240655 | 43 | 4 | 1996–2005 | 0.53 | M-v | 1 | MPC | 74291 | 2003 $UT_{67}$ |
| 2003 $UZ_{67}$ | 15.9 | 0.15 | 20060922 | 245.27281 | 159.99004 | 164.35983 | 11.89119 | 0.0810955 | 3.1315330 | 23 | 3 | 1997–2006 | 0.27 | M-v | 3 | MPC | 00609 | 2003 $UZ_{67}$ |
| 2003 $UJ_{68}$ | 16.2 | 0.15 | 20060922 | 234.54789 | 250.45102 | 218.22421 | 3.59448 | 0.1641636 | 2.3695192 | 90 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 76068 | 2003 $UJ_{68}$ |
| 2003 $UC_{69}$ | 17.5 | 0.15 | 20060922 | 209.16333 | 211.35990 | 180.19715 | 4.33114 | 0.0767945 | 2.7964928 | 34 | 4 | 2001–2006 | 0.30 | M-v | 0 | MPC | 00609 | 2003 $UC_{69}$ |
| 2003 $UC_{70}$ | 18.8 | 0.15 | 20060922 | 194.18177 | 194.91146 | 309.97867 | 2.44976 | 0.0368479 | 2.2539183 | 24 | 4 | 1996–2005 | 0.32 | M-v | 1 | MPC | 76069 | 2003 $UC_{70}$ |
| 2003 $UT_{70}$ | 16.7 | 0.15 | 20060922 | 192.22461 | 278.83118 | 178.64376 | 5.48286 | 0.2369564 | 2.6803329 | 42 | 3 | 1996–2005 | 0.34 | M-v | 2 | MPC | 76069 | 2003 $UT_{70}$ |
| 2003 $UL_{71}$ | 16.5 | 0.15 | 20060922 | 196.83343 | 244.11201 | 175.66951 | 3.35198 | 0.0523412 | 2.7180795 | 38 | 4 | 1994–2006 | 0.42 | M-v | 1 | MPC | 02180 | 2003 $UL_{71}$ |
| 2003 $UB_{72}$ | 16.1 | 0.15 | 20060922 | 262.07061 | 234.29280 | 101.19447 | 6.90443 | 0.0600345 | 2.8646894 | 32 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 02180 | 2003 $UB_{72}$ |
| 2003 $UQ_{72}$ | 16.5 | 0.15 | 20060922 | 163.29772 | 219.17664 | 221.83067 | 8.82704 | 0.0539820 | 3.0136706 | 26 | 3 | 2000–2006 | 0.43 | M-v | 3 | MPC | 03538 | 2003 $UQ_{72}$ |
| 2003 $UU_{72}$ | 17.8 | 0.15 | 20060922 | 66.69079 | 48.63834 | 221.50683 | 4.81017 | 0.1704328 | 2.2347037 | 29 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 56997 | 2003 $UU_{72}$ |
| 2003 $UJ_{73}$ | 16.7 | 0.15 | 20060922 | 344.33749 | 259.13895 | 53.92734 | 1.98835 | 0.0582877 | 2.5137836 | 33 | 3 | 1999–2005 | 0.27 | M-v | 3 | MPC | 56997 | 2003 $UJ_{73}$ |
| 2003 $UL_{73}$ | 17.3 | 0.15 | 20060922 | 113.26713 | 153.42961 | 44.25155 | 7.64796 | 0.0384394 | 2.4846533 | 26 | 3 | 1999–2005 | 0.44 | M-v | 3 | MPC | 76070 | 2003 $UL_{73}$ |
| 2003 $UO_{73}$ | 16.8 | 0.15 | 20060922 | 250.75272 | 62.59247 | 43.31832 | 8.51157 | 0.0564463 | 2.2513351 | 66 | 3 | 2003–2006 | 0.40 | M-v | 2 | MPC | 04266 | 2003 $UO_{73}$ |
| 2003 $UW_{73}$ | 17.1 | 0.15 | 20060922 | 201.54250 | 186.86866 | 37.21781 | 20.83795 | 0.0366906 | 1.9282828 | 84 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 56998 | 2003 $UW_{73}$ |
| 2003 $UA_{74}$ | 16.9 | 0.15 | 20060922 | 279.45085 | 231.09197 | 105.94578 | 4.39247 | 0.0814816 | 2.6830387 | 37 | 5 | 1994–2006 | 0.31 | M-v | 0 | MPC | 04266 | 2003 $UA_{74}$ |
| 2003 $UT_{74}$ | 17.5 | 0.15 | 20060922 | 28.81060 | 57.10583 | 238.32827 | 6.26575 | 0.1633456 | 2.2316352 | 27 | 2 | 2003–2006 | 0.34 | M-v | 3 | MPC | 03539 | 2003 $UT_{74}$ |
| 2003 $UH_{75}$ | 16.7 | 0.15 | 20060922 | 310.24327 | 251.02243 | 211.14663 | 20.68514 | 0.0822403 | 1.9657336 | 48 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 77726 | 2003 $UH_{75}$ |
| 2003 $UZ_{75}$ | 16.4 | 0.15 | 20060922 | 187.11194 | 168.79392 | 300.23069 | 2.99507 | 0.2209760 | 2.6209705 | 40 | 5 | 1992–2005 | 0.49 | M-v | 1 | MPC | 76071 | 2003 $UZ_{75}$ |
| 2003 $UV_{76}$ | 15.2 | 0.15 | 20060922 | 206.09851 | 89.92154 | 284.22550 | 9.22761 | 0.1223163 | 3.0424745 | 32 | 3 | 1997–2005 | 0.56 | M-v | 3 | MPC | 72940 | 2003 $UV_{76}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $UA_{77}$ | 17.6 | 0.15 | 20060922 | 344.63398 | 15.82906 | 331.91690 | 6.81129 | 0.1637616 | 2.2431463 | 31 | 4 | 1996–2006 | 0.39 | M-v | 1 | MPC | 03539 | 2003 $UA_{77}$ |
| 2003 $UF_{77}$ | 17.4 | 0.15 | 20060922 | 341.40099 | 73.73970 | 302.76387 | 4.74932 | 0.1296072 | 2.1626345 | 64 | 2 | 2003–2006 | 0.52 | M-v | 3 | MPC | 03539 | 2003 $UF_{77}$ |
| 2003 $UT_{79}$ | 14.9 | 0.15 | 20060922 | 181.07270 | 340.08458 | 65.77205 | 6.10304 | 0.1446773 | 3.1835921 | 56 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 00611 | 2003 $UT_{79}$ |
| 2003 $UY_{79}$ | 15.3 | 0.15 | 20060922 | 159.18297 | 257.68450 | 191.32283 | 20.56182 | 0.2576435 | 3.2037925 | 57 | 3 | 2003–2006 | 0.55 | M-v | 2 | MPC | 76073 | 2003 $UY_{79}$ |
| 2003 $UB_{80}$ | 18.1 | 0.15 | 20060922 | 334.81388 | 243.74515 | 126.64249 | 6.20051 | 0.1038828 | 2.2188641 | 44 | 2 | 2003–2006 | 0.61 | M-v | 4 | MPC | 03539 | 2003 $UB_{80}$ |
| 2003 $UN_{80}$ | 16.4 | 0.15 | 20060922 | 295.76330 | 275.98378 | 42.28980 | 5.57670 | 0.0912652 | 2.6766308 | 36 | 2 | 2003–2006 | 0.56 | M-v | 3 | MPC | 00611 | 2003 $UN_{80}$ |
| 2003 $UR_{81}$ | 16.1 | 0.15 | 20060922 | 241.07136 | 280.69912 | 117.96599 | 6.69323 | 0.2738425 | 2.6611164 | 60 | 3 | 1996–2003 | 0.45 | M-v | 2 | MPC | 58000 | 2003 $UR_{81}$ |
| 2003 $UX_{81}$ | 16.3 | 0.15 | 20060922 | 187.72913 | 116.22591 | 35.99621 | 8.17919 | 0.0570312 | 2.2428214 | 77 | 4 | 2000–2006 | 0.63 | M-v | 2 | MPC | 04267 | 2003 $UX_{81}$ |
| 2003 $UH_{83}$ | 14.8 | 0.15 | 20060922 | 265.95232 | 57.52827 | 266.39184 | 9.38536 | 0.0709516 | 2.9860660 | 48 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 02181 | 2003 $UH_{83}$ |
| 2003 $UX_{85}$ | 17.0 | 0.15 | 20060922 | 351.66011 | 14.38762 | 339.76061 | 3.58251 | 0.1666171 | 2.2294387 | 64 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 03540 | 2003 $UX_{85}$ |
| 2003 $UM_{86}$ | 18.0 | 0.15 | 20060922 | 342.15378 | 247.63527 | 131.26771 | 2.87776 | 0.2731451 | 2.1478624 | 93 | 2 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03540 | 2003 $UM_{86}$ |
| 2003 $UZ_{86}$ | 16.8 | 0.15 | 20060922 | 309.59090 | 220.06289 | 169.83439 | 6.32419 | 0.1417058 | 2.2965497 | 53 | 4 | 1998–2006 | 0.49 | M-v | 1 | MPC | 76075 | 2003 $UZ_{86}$ |
| 2003 $UJ_{87}$ | 16.6 | 0.15 | 20060922 | 328.14402 | 125.44420 | 321.95463 | 18.15050 | 0.0837495 | 1.9205741 | 36 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 86136 | 2003 $UJ_{87}$ |
| 2003 $UV_{90}$ | 16.6 | 0.15 | 20060922 | 212.23680 | 314.93129 | 171.04226 | 6.97284 | 0.0433086 | 2.2902906 | 51 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 04267 | 2003 $UV_{90}$ |
| 2003 $UC_{91}$ | 16.2 | 0.15 | 20060922 | 201.27681 | 273.01951 | 153.20102 | 6.60514 | 0.1506118 | 2.7660862 | 58 | 6 | 1998–2006 | 0.57 | M-v | 0 | MPC | 02181 | 2003 $UC_{91}$ |
| 2003 $UR_{91}$ | 17.0 | 0.15 | 20060922 | 194.52305 | 6.54447 | 154.89057 | 3.24107 | 0.1355254 | 2.2321725 | 47 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 95125 | 2003 $UR_{91}$ |
| 2003 $UK_{92}$ | 15.6 | 0.15 | 20060922 | 254.64393 | 109.48009 | 248.55761 | 11.62276 | 0.1400343 | 2.7704935 | 41 | 4 | 1994–2006 | 0.54 | M-v | 1 | MPC | 03541 | 2003 $UK_{92}$ |
| 2003 $UV_{92}$ | 15.9 | 0.15 | 20060922 | 219.23472 | 353.50350 | 30.11189 | 8.90639 | 0.1549590 | 2.9307509 | 75 | 2 | 2003–2006 | 0.45 | M-v | 3 | MPC | 04267 | 2003 $UV_{92}$ |
| 2003 $UV_{93}$ | 15.9 | 0.15 | 20060922 | 178.59177 | 206.97257 | 203.66662 | 1.55320 | 0.1864023 | 3.0407696 | 46 | 4 | 1998–2005 | 0.54 | M-v | 1 | MPC | 77727 | 2003 $UV_{93}$ |
| 2003 $UH_{94}$ | 16.1 | 0.15 | 20060922 | 191.95829 | 155.70815 | 237.21665 | 1.60188 | 0.1975030 | 3.0739311 | 47 | 3 | 1960–2003 | 0.57 | M-v | 3 | MPC | 58002 | 2003 $UH_{94}$ |
| 2003 $UL_{95}$ | 16.7 | 0.15 | 20060922 | 239.53139 | 44.85183 | 27.02978 | 2.94872 | 0.1087648 | 2.4359235 | 55 | 3 | 1997–2005 | 0.53 | M-v | 3 | MPC | 76078 | 2003 $UL_{95}$ |
| 2003 $UC_{96}$ | 17.1 | 0.15 | 20060922 | 22.22950 | 129.16954 | 168.13585 | 1.77918 | 0.1949565 | 2.2303634 | 63 | 3 | 2003–2006 | 0.36 | M-v | 2 | MPC | 04267 | 2003 $UC_{96}$ |
| 2003 $UE_{96}$ | 16.1 | 0.15 | 20060922 | 253.02483 | 309.04996 | 45.68467 | 5.17991 | 0.0826361 | 2.7784426 | 45 | 3 | 1996–2006 | 0.44 | M-v | 3 | MPC | 00615 | 2003 $UE_{96}$ |
| 2003 $UQ_{96}$ | 15.4 | 0.15 | 20060922 | 210.79280 | 128.45883 | 205.60295 | 26.57375 | 0.1714141 | 3.1435780 | 23 | 3 | 1996–2003 | 0.29 | M-v | 2 | MPC | 57017 | 2003 $UQ_{96}$ |
| 2003 $UV_{96}$ | 14.6 | 0.15 | 20060922 | 63.32180 | 146.81884 | 10.99076 | 9.02552 | 0.0731455 | 3.0405218 | 58 | 4 | 2000–2006 | 0.68 | M-v | 1 | MPC | 00616 | 2003 $UV_{96}$ |
| 2003 $UC_{97}$ | 16.9 | 0.15 | 20060922 | 298.09526 | 123.51610 | 242.36000 | 0.98781 | 0.2334643 | 2.3974549 | 55 | 1 | 60 days | 0.42 | M-v | 4 | MPC | 58003 | 2003 $UC_{97}$ |
| 2003 $UE_{97}$ | 16.3 | 0.15 | 20060922 | 301.32811 | 286.07071 | 29.99826 | 13.76382 | 0.1395600 | 2.6763014 | 50 | 3 | 1997–2006 | 0.38 | M-v | 2 | MPC | 00616 | 2003 $UE_{97}$ |
| 2003 $UN_{97}$ | 15.8 | 0.15 | 20060922 | 194.65087 | 181.23399 | 197.79718 | 5.81977 | 0.1191328 | 3.1986153 | 47 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 00616 | 2003 $UN_{97}$ |
| 2003 $UO_{97}$ | 17.2 | 0.15 | 20060922 | 250.47593 | 260.59032 | 202.98302 | 6.15420 | 0.1866978 | 2.2917143 | 49 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 77727 | 2003 $UO_{97}$ |
| 2003 $UZ_{97}$ | 15.5 | 0.15 | 20060922 | 241.84308 | 283.74699 | 70.74811 | 2.96798 | 0.0817418 | 2.9300069 | 74 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 02181 | 2003 $UZ_{97}$ |
| 2003 $UA_{98}$ | 16.4 | 0.15 | 20060922 | 305.55516 | 301.20123 | 96.77359 | 7.63909 | 0.1100141 | 2.3065388 | 61 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 03541 | 2003 $UA_{98}$ |
| 2003 $UM_{98}$ | 17.8 | 0.15 | 20060922 | 279.25547 | 237.24782 | 183.97083 | 10.12648 | 0.2302127 | 2.3499995 | 37 | 3 | 1992–2005 | 0.51 | M-v | 3 | MPC | 57019 | 2003 $UM_{98}$ |
| 2003 $UN_{98}$ | 16.6 | 0.15 | 20060922 | 5.33537 | 238.19884 | 96.57364 | 7.41800 | 0.1548493 | 2.2419891 | 60 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04267 | 2003 $UN_{98}$ |
| 2003 $UY_{99}$ | 15.6 | 0.15 | 20060922 | 251.11184 | 179.68998 | 191.46692 | 11.21472 | 0.1719225 | 2.7489766 | 52 | 5 | 1994–2006 | 0.59 | M-v | 1 | MPC | 04267 | 2003 $UY_{99}$ |
| 2003 $UC_{100}$ | 16.1 | 0.15 | 20060922 | 195.03930 | 30.29477 | 68.29663 | 12.80736 | 0.1591135 | 2.6882143 | 35 | 3 | 1999–2003 | 0.54 | M-v | 3 | MPC | 57023 | 2003 $UC_{100}$ |
| 2003 $UO_{100}$ | 14.8 | 0.15 | 20060922 | 243.18853 | 242.20351 | 89.95814 | 6.09784 | 0.1869139 | 3.0650669 | 79 | 4 | 1996–2005 | 0.66 | M-v | 1 | MPC | 74292 | 2003 $UO_{100}$ |
| 2003 $UW_{100}$ | 16.9 | 0.15 | 20060922 | 312.07366 | 238.32112 | 222.10042 | 19.72593 | 0.0955061 | 1.9507162 | 44 | 3 | 2003–2006 | 0.42 | M-v | 2 | MPC | 87596 | 2003 $UW_{100}$ |
| 2003 $UP_{102}$ | 17.5 | 0.15 | 20060922 | 331.09038 | 23.49947 | 359.25885 | 7.03663 | 0.1373204 | 2.1708664 | 28 | 2 | 2003–2006 | 0.42 | M-v | 3 | MPC | 03542 | 2003 $UP_{102}$ |
| 2003 $UU_{102}$ | 15.8 | 0.15 | 20060922 | 276.84862 | 268.12502 | 54.68671 | 5.37322 | 0.1095626 | 2.8144136 | 41 | 3 | 2003–2006 | 0.40 | M-v | 3 | MPC | 00617 | 2003 $UU_{102}$ |
| 2003 $UC_{103}$ | 15.7 | 0.15 | 20060922 | 161.90511 | 347.15965 | 96.79159 | 2.92870 | 0.2018837 | 3.0215688 | 59 | 4 | 1999–2006 | 0.57 | M-v | 0 | MPC | 02182 | 2003 $UC_{103}$ |
| 2003 $UT_{103}$ | 16.4 | 0.15 | 20060922 | 258.70762 | 342.11460 | 90.21427 | 3.33597 | 0.2035927 | 2.4103589 | 85 | 3 | 1999–2005 | 0.54 | M-v | 2 | MPC | 57029 | 2003 $UT_{103}$ |
| 2003 $UC_{104}$ | 15.4 | 0.15 | 20060922 | 106.38040 | 229.34549 | 294.30504 | 11.61725 | 0.0737839 | 2.7286610 | 74 | 5 | 1996–2005 | 0.56 | M-v | 1 | MPC | 77728 | 2003 $UC_{104}$ |
| 2003 $UK_{106}$ | 15.7 | 0.15 | 20060922 | 357.82168 | 190.69397 | 41.15190 | 10.54007 | 0.0289384 | 2.9798528 | 39 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 00618 | 2003 $UK_{106}$ |
| 2003 $UL_{106}$ | 15.7 | 0.15 | 20060922 | 120.24373 | 100.94460 | 42.29299 | 7.75203 | 0.1323980 | 2.8134721 | 54 | 4 | 1999–2005 | 0.58 | M-v | 1 | MPC | 76083 | 2003 $UL_{106}$ |
| 2003 $UD_{107}$ | 17.4 | 0.15 | 20060922 | 269.47077 | 45.76020 | 31.97929 | 4.34117 | 0.1039171 | 2.2232970 | 41 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | 04267 | 2003 $UD_{107}$ |
| 2003 $UR_{107}$ | 17.6 | 0.15 | 20060922 | 7.90416 | 93.12782 | 226.88603 | 2.19286 | 0.1185638 | 2.2604140 | 41 | 2 | 2003–2006 | 0.43 | M-v | 3 | MPC | 03542 | 2003 $UR_{107}$ |
| 2003 $UQ_{110}$ | 16.4 | 0.15 | 20060922 | 143.95304 | 88.61154 | 53.68106 | 8.19101 | 0.1727500 | 2.7828817 | 40 | 4 | 1998–2005 | 0.52 | M-v | 1 | MPC | 76085 | 2003 $UQ_{110}$ |
| 2003 $UT_{110}$ | 17.3 | 0.15 | 20060922 | 275.85445 | 243.10321 | 169.05296 | 2.04358 | 0.1600188 | 2.3788708 | 45 | 3 | 2001–2005 | 0.58 | M-v | 3 | MPC | 57032 | 2003 $UT_{110}$ |
| 2003 $UZ_{110}$ | 17.7 | 0.15 | 20060922 | 268.62856 | 262.24306 | 149.82852 | 1.74128 | 0.1354994 | 2.4189637 | 28 | 4 | 1997–2005 | 0.35 | M-v | 3 | MPC | 57032 | 2003 $UZ_{110}$ |
| 2003 $UF_{111}$ | 15.9 | 0.15 | 20060922 | 285.23657 | 300.08914 | 318.95359 | 10.91582 | 0.0819585 | 3.1253491 | 23 | 3 | 1995–2006 | 0.26 | M-v | 2 | MPC | 95127 | 2003 $UF_{111}$ |
| 2003 $UY_{111}$ | 16.3 | 0.15 | 20060922 | 280.84798 | 255.59421 | 80.70111 | 3.79224 | 0.1221746 | 2.6791135 | 65 | 3 | 1999–2006 | 0.49 | M-v | 3 | MPC | 00618 | 2003 $UY_{111}$ |
| 2003 $UR_{112}$ | 15.1 | 0.15 | 20060922 | 282.94996 | 123.74072 | 181.25222 | 9.96643 | 0.0844374 | 2.9832095 | 62 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 00619 | 2003 $UR_{112}$ |
| 2003 $UU_{112}$ | 14.7 | 0.15 | 20060922 | 209.10342 | 312.02574 | 61.21098 | 11.39941 | 0.1238172 | 3.0773560 | 46 | 4 | 1998–2006 | 0.62 | M-v | 1 | MPC | 02182 | 2003 $UU_{112}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $UO_{113}$ | 16.9 | 0.15 | 20060922 | 331.39893 | 178.53269 | 141.66590 | 5.05173 | 0.2286929 | 2.3982230 | 39 | 3 | 1999–2006 | 0.66 | M-v | 1 | MPC | 00619 | 2003 $UO_{113}$ |
| 2003 $UE_{116}$ | 17.6 | 0.15 | 20060922 | 334.53149 | 251.71917 | 104.57822 | 3.37275 | 0.1862710 | 2.2518826 | 37 | 3 | 2000–2006 | 0.43 | M-v | 3 | MPC | 03543 | 2003 $UE_{116}$ |
| 2003 $UM_{116}$ | 17.3 | 0.15 | 20060922 | 292.14103 | 264.18469 | 148.75404 | 2.50621 | 0.2022173 | 2.2744248 | 63 | 4 | 2001–2006 | 0.44 | M-v | 2 | MPC | 76086 | 2003 $UM_{116}$ |
| 2003 $UV_{116}$ | 17.9 | 0.15 | 20060922 | 347.52286 | 181.94024 | 179.88138 | 5.02430 | 0.2460431 | 2.1633544 | 66 | 2 | 2003–2006 | 0.42 | M-v | 2 | MPC | 03543 | 2003 $UV_{116}$ |
| 2003 $UB_{117}$ | 16.3 | 0.15 | 20060922 | 310.17581 | 257.02426 | 101.13272 | 3.67691 | 0.1481059 | 2.3897549 | 61 | 4 | 1998–2005 | 0.47 | M-v | 2 | MPC | 77729 | 2003 $UB_{117}$ |
| 2003 $UJ_{117}$ | 15.1 | 0.15 | 20060922 | 260.93641 | 268.10608 | 60.54375 | 10.40291 | 0.0749345 | 2.9895673 | 43 | 5 | 1996–2005 | 0.59 | M-v | 1 | MPC | 74292 | 2003 $UJ_{117}$ |
| 2003 $UT_{117}$ | 16.8 | 0.15 | 20060922 | 5.25780 | 128.62361 | 201.00826 | 5.47506 | 0.2255954 | 2.2205762 | 107 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04268 | 2003 $UT_{117}$ |
| 2003 $UB_{118}$ | 17.2 | 0.15 | 20060922 | 20.59447 | 8.85902 | 294.80728 | 2.28224 | 0.1829491 | 2.2222407 | 54 | 2 | 2003–2006 | 0.48 | M-v | 3 | MPC | 04268 | 2003 $UB_{118}$ |
| 2003 $US_{118}$ | 18.0 | 0.15 | 20060922 | 26.75994 | 31.26841 | 286.49798 | 2.05778 | 0.1749148 | 2.1284919 | 66 | 3 | 2003–2006 | 0.56 | M-v | 3 | MPC | 03543 | 2003 $US_{118}$ |
| 2003 $UM_{123}$ | 17.6 | 0.15 | 20060922 | 213.63418 | 85.84705 | 40.87845 | 5.25825 | 0.1745699 | 2.4156679 | 32 | 3 | 2001–2005 | 0.33 | M-v | 2 | MPC | 76089 | 2003 $UM_{123}$ |
| 2003 $UO_{123}$ | 17.2 | 0.15 | 20060922 | 214.88440 | 296.68071 | 220.86077 | 6.77746 | 0.0980362 | 2.2035949 | 37 | 4 | 2001–2006 | 0.40 | M-v | 2 | MPC | 86138 | 2003 $UO_{123}$ |
| 2003 $UJ_{124}$ | 14.7 | 0.15 | 20060922 | 146.08741 | 185.69919 | 249.57114 | 11.52700 | 0.1458639 | 3.1172429 | 35 | 3 | 1998–2005 | 0.47 | M-v | 2 | MPC | 72949 | 2003 $UJ_{124}$ |
| 2003 $UW_{124}$ | 16.8 | 0.15 | 20060922 | 273.06726 | 272.19965 | 63.92646 | 6.87189 | 0.1453325 | 2.7103980 | 33 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 03543 | 2003 $UW_{124}$ |
| 2003 $UG_{127}$ | 16.8 | 0.15 | 20060922 | 246.64901 | 68.81865 | 43.78458 | 5.59675 | 0.0780147 | 2.2251424 | 58 | 3 | 2003–2006 | 0.59 | M-v | 2 | MPC | 04268 | 2003 $UG_{127}$ |
| 2003 $UZ_{127}$ | 17.1 | 0.15 | 20060922 | 293.19509 | 124.19402 | 288.93692 | 4.74870 | 0.1820970 | 2.2707664 | 44 | 3 | 1996–2006 | 0.50 | M-v | 3 | MPC | 03544 | 2003 $UZ_{127}$ |
| 2003 $UD_{129}$ | 17.5 | 0.15 | 20060922 | 225.76472 | 272.38821 | 205.22104 | 5.99555 | 0.0514802 | 2.2934829 | 35 | 3 | 2003–2006 | 0.36 | M-v | 2 | MPC | 04268 | 2003 $UD_{129}$ |
| 2003 $UO_{129}$ | 17.1 | 0.15 | 20060922 | 1.16642 | 15.24392 | 311.36889 | 6.33059 | 0.1976470 | 2.2407814 | 35 | 3 | 1996–2006 | 0.42 | M-v | 2 | MPC | 04268 | 2003 $UO_{129}$ |
| 2003 $UQ_{129}$ | 16.6 | 0.15 | 20060922 | 47.81504 | 340.83419 | 309.95881 | 6.59955 | 0.1354440 | 2.2201610 | 77 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 04268 | 2003 $UQ_{129}$ |
| 2003 $UW_{129}$ | 17.3 | 0.15 | 20060922 | 351.17266 | 99.90733 | 257.93079 | 5.37829 | 0.1878131 | 2.1972561 | 59 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 03544 | 2003 $UW_{129}$ |
| 2003 $UZ_{129}$ | 15.0 | 0.15 | 20060922 | 220.32902 | 96.54182 | 274.49750 | 8.87857 | 0.0903013 | 3.1026009 | 65 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 57047 | 2003 $UZ_{129}$ |
| 2003 $UM_{131}$ | 15.6 | 0.15 | 20060922 | 299.45031 | 15.15439 | 292.27978 | 8.22375 | 0.1181820 | 2.8539014 | 43 | 4 | 1999–2006 | 0.63 | M-v | 1 | MPC | 02183 | 2003 $UM_{131}$ |
| 2003 $UN_{131}$ | 16.9 | 0.15 | 20060922 | 172.72608 | 219.13274 | 317.90906 | 6.67525 | 0.0406552 | 2.2775869 | 46 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04268 | 2003 $UN_{131}$ |
| 2003 $UP_{131}$ | 15.6 | 0.15 | 20060922 | 242.54086 | 337.79777 | 355.68335 | 10.26730 | 0.1673802 | 3.1416243 | 40 | 3 | 1997–2006 | 0.33 | M-v | 3 | MPC | 02183 | 2003 $UP_{131}$ |
| 2003 $UV_{131}$ | 16.4 | 0.15 | 20060922 | 354.93882 | 99.30744 | 252.93534 | 6.31771 | 0.2076617 | 2.1946083 | 119 | 3 | 1998–2006 | 0.46 | M-v | 2 | MPC | 04268 | 2003 $UV_{131}$ |
| 2003 $UC_{132}$ | 14.8 | 0.15 | 20060922 | 308.24124 | 230.23959 | 84.25374 | 14.70179 | 0.1985674 | 2.7352722 | 93 | 5 | 1995–2006 | 0.70 | M-v | 1 | MPC | 00623 | 2003 $UC_{132}$ |
| 2003 $UK_{133}$ | 16.5 | 0.15 | 20060922 | 358.62935 | 171.73789 | 146.58150 | 4.14730 | 0.1726356 | 2.2727220 | 52 | 5 | 1992–2005 | 0.62 | M-v | 2 | MPC | 89483 | 2003 $UK_{133}$ |
| 2003 $UL_{133}$ | 15.7 | 0.15 | 20060922 | 333.28244 | 312.23628 | 335.68380 | 13.75529 | 0.1449444 | 2.5880928 | 31 | 2 | 2003–2006 | 0.51 | M-v | 4 | MPC | 00623 | 2003 $UL_{133}$ |
| 2003 $UM_{133}$ | 16.7 | 0.15 | 20060922 | 220.24949 | 14.69330 | 106.47098 | 7.27793 | 0.0512377 | 2.2901815 | 63 | 4 | 2000–2006 | 0.71 | M-v | 1 | MPC | 04268 | 2003 $UM_{133}$ |
| 2003 $UT_{134}$ | 16.6 | 0.15 | 20060922 | 304.40161 | 167.98588 | 244.95671 | 5.20063 | 0.1846476 | 2.2344756 | 100 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 03544 | 2003 $UT_{134}$ |
| 2003 $UU_{134}$ | 16.2 | 0.15 | 20060922 | 331.60574 | 49.42972 | 286.62076 | 4.41728 | 0.1441955 | 2.4071930 | 62 | 3 | 1999–2005 | 0.62 | M-v | 3 | MPC | 57056 | 2003 $UU_{134}$ |
| 2003 $UO_{135}$ | 16.3 | 0.15 | 20060922 | 245.33665 | 308.85489 | 49.82368 | 4.24428 | 0.1033913 | 2.8017043 | 46 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 03545 | 2003 $UO_{135}$ |
| 2003 $UP_{135}$ | 15.2 | 0.15 | 20060922 | 195.59921 | 114.10106 | 281.20880 | 8.43392 | 0.0675665 | 3.1379792 | 37 | 3 | 2002–2005 | 0.46 | M-v | 3 | MPC | 57058 | 2003 $UP_{135}$ |
| 2003 $UQ_{135}$ | 16.9 | 0.15 | 20060922 | 22.16962 | 340.60861 | 338.23209 | 4.96325 | 0.1561569 | 2.2152770 | 116 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 04268 | 2003 $UQ_{135}$ |
| 2003 $UU_{136}$ | 16.6 | 0.15 | 20060922 | 146.15936 | 161.32233 | 33.65845 | 6.80014 | 0.0474271 | 2.2475626 | 53 | 3 | 2003–2006 | 0.60 | M-v | 3 | MPC | 76095 | 2003 $UU_{136}$ |
| 2003 $UB_{139}$ | 15.0 | 0.15 | 20060922 | 223.25601 | 191.64555 | 150.13841 | 11.31864 | 0.0700058 | 3.1120054 | 41 | 3 | 1995–2006 | 0.51 | M-v | 2 | MPC | 02183 | 2003 $UB_{139}$ |
| 2003 $UA_{140}$ | 17.5 | 0.15 | 20060922 | 307.08478 | 260.33551 | 122.94453 | 6.99119 | 0.1192162 | 2.2772729 | 33 | 2 | 2003–2006 | 0.44 | M-v | 3 | MPC | 03545 | 2003 $UA_{140}$ |
| 2003 $UG_{140}$ | 14.8 | 0.15 | 20060922 | 126.03752 | 35.02782 | 64.51823 | 10.01657 | 0.0663881 | 3.0047842 | 42 | 5 | 2000–2006 | 0.72 | M-v | 1 | MPC | 00625 | 2003 $UG_{140}$ |
| 2003 $UM_{140}$ | 15.9 | 0.15 | 20060922 | 270.92807 | 171.33310 | 143.34788 | 7.19533 | 0.1583904 | 2.8010866 | 33 | 4 | 1995–2006 | 0.64 | M-v | 1 | MPC | 97688 | 2003 $UM_{140}$ |
| 2003 $US_{140}$ | 16.9 | 0.15 | 20060922 | 209.39034 | 323.91842 | 147.39602 | 7.58990 | 0.0506391 | 2.3521496 | 40 | 3 | 1999–2005 | 0.53 | M-v | 2 | MPC | 87596 | 2003 $US_{140}$ |
| 2003 $UA_{142}$ | 16.8 | 0.15 | 20060922 | 332.37662 | 241.09580 | 113.25069 | 6.97569 | 0.1354844 | 2.2325219 | 26 | 3 | 2000–2006 | 0.46 | M-v | 4 | MPC | 03545 | 2003 $UA_{142}$ |
| 2003 $UZ_{143}$ | 17.2 | 0.15 | 20060922 | 340.30919 | 16.74629 | 15.39884 | 4.42230 | 0.1357967 | 2.1500026 | 109 | 3 | 2003–2006 | 0.42 | M-v | 3 | MPC | 76098 | 2003 $UZ_{143}$ |
| 2003 $UU_{144}$ | 16.7 | 0.15 | 20060922 | 296.63208 | 111.92214 | 294.19217 | 5.36137 | 0.1132203 | 2.2976701 | 66 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 03545 | 2003 $UU_{144}$ |
| 2003 $UW_{146}$ | 16.9 | 0.15 | 20060922 | 338.77174 | 304.84693 | 91.82164 | 5.84988 | 0.1599794 | 2.1420217 | 134 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 77731 | 2003 $UW_{146}$ |
| 2003 $UL_{147}$ | 17.2 | 0.15 | 20060922 | 319.36011 | 284.65364 | 66.21486 | 5.00602 | 0.3020289 | 2.3582653 | 75 | 3 | 1995–2006 | 0.50 | M-v | 2 | MPC | 00626 | 2003 $UL_{147}$ |
| 2003 $UQ_{147}$ | 16.8 | 0.15 | 20060922 | 318.73352 | 348.60708 | 14.87936 | 4.50665 | 0.2323959 | 2.3418853 | 72 | 4 | 1992–2005 | 0.46 | M-v | 2 | MPC | 03545 | 2003 $UQ_{147}$ |
| 2003 $UV_{147}$ | 15.3 | 0.15 | 20060922 | 175.81590 | 274.57443 | 141.75311 | 5.27799 | 0.1379021 | 3.1548391 | 37 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 00627 | 2003 $UV_{147}$ |
| 2003 $UW_{147}$ | 15.4 | 0.15 | 20060922 | 257.95060 | 280.51993 | 113.53419 | 6.58141 | 0.1348425 | 2.5676128 | 55 | 3 | 1999–2005 | 0.54 | M-v | 3 | MPC | 57078 | 2003 $UW_{147}$ |
| 2003 $UN_{148}$ | 17.0 | 0.15 | 20060922 | 351.47992 | 182.87344 | 153.76858 | 6.36799 | 0.2154207 | 2.2669211 | 48 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 03546 | 2003 $UN_{148}$ |
| 2003 $UD_{149}$ | 16.6 | 0.15 | 20060922 | 296.57845 | 184.81908 | 227.57929 | 5.87620 | 0.0823691 | 2.2637687 | 80 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04268 | 2003 $UD_{149}$ |
| 2003 $UW_{149}$ | 17.0 | 0.15 | 20060922 | 14.49209 | 158.18019 | 150.57901 | 4.10014 | 0.1594327 | 2.2288138 | 77 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 04268 | 2003 $UW_{149}$ |
| 2003 $UZ_{149}$ | 18.1 | 0.15 | 20060922 | 308.89740 | 250.70067 | 156.12880 | 5.61636 | 0.0966211 | 2.1733379 | 58 | 4 | 1995–2006 | 0.37 | M-v | 2 | MPC | 03546 | 2003 $UZ_{149}$ |
| 2003 $UQ_{152}$ | 16.7 | 0.15 | 20060922 | 214.67196 | 255.25947 | 189.12080 | 8.31612 | 0.1341589 | 2.5708141 | 37 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 87596 | 2003 $UQ_{152}$ |
| 2003 $UE_{153}$ | 17.2 | 0.15 | 20060922 | 287.29597 | 213.45463 | 173.96960 | 1.96829 | 0.1702172 | 2.4109927 | 51 | 3 | 1999–2005 | 0.47 | M-v | 3 | MPC | 57085 | 2003 $UE_{153}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $UR_{153}$ | 16.2 | 0.15 | 20060922 | 220.93113 | 63.09009 | 301.91035 | 12.09103 | 0.1299905 | 2.8493009 | 27 | 3 | 1998–2005 | 0.57 | M-v | 3 | MPC | 76105 | 2003 $UR_{153}$ |
| 2003 $UX_{153}$ | 16.4 | 0.15 | 20060922 | 305.14993 | 271.57677 | 35.47247 | 4.34671 | 0.0777603 | 2.7676019 | 36 | 3 | 2003–2006 | 0.34 | M-v | 3 | MPC | 00629 | 2003 $UX_{153}$ |
| 2003 $UD_{154}$ | 17.1 | 0.15 | 20060922 | 21.35224 | 277.03397 | 47.79654 | 4.25605 | 0.1685080 | 2.1843570 | 91 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04268 | 2003 $UD_{154}$ |
| 2003 $UC_{156}$ | 18.0 | 0.15 | 20060922 | 33.90557 | 209.50904 | 84.96460 | 5.83290 | 0.1813736 | 2.1865895 | 33 | 3 | 1999–2006 | 0.27 | M-v | 1 | MPC | 03546 | 2003 $UC_{156}$ |
| 2003 $UJ_{156}$ | 16.9 | 0.15 | 20060922 | 254.22053 | 187.29882 | 165.54769 | 4.48909 | 0.0842921 | 2.7679600 | 31 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 02184 | 2003 $UJ_{156}$ |
| 2003 $UG_{157}$ | 15.4 | 0.15 | 20060922 | 204.20713 | 259.50934 | 113.42625 | 6.01993 | 0.1638646 | 3.1443492 | 44 | 3 | 1995–2005 | 0.55 | M-v | 3 | MPC | 72956 | 2003 $UG_{157}$ |
| 2003 $UN_{157}$ | 15.6 | 0.15 | 20060922 | 149.97813 | 178.25244 | 266.68691 | 8.97613 | 0.0873982 | 3.0310622 | 24 | 2 | 2003–2005 | 0.42 | M-v | 3 | MPC | 72957 | 2003 $UN_{157}$ |
| 2003 $UD_{158}$ | 17.1 | 0.15 | 20060922 | 246.52942 | 148.20901 | 302.09205 | 1.63351 | 0.1815602 | 2.4167714 | 44 | 3 | 1997–2003 | 0.56 | M-v | 3 | MPC | 57087 | 2003 $UD_{158}$ |
| 2003 $UR_{159}$ | 16.1 | 0.15 | 20060922 | 106.62604 | 136.04943 | 58.14823 | 12.39059 | 0.1453689 | 2.6356342 | 32 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 76108 | 2003 $UR_{159}$ |
| 2003 $UV_{160}$ | 17.6 | 0.15 | 20060922 | 10.79254 | 113.82417 | 239.14676 | 1.84518 | 0.0988662 | 2.1307740 | 61 | 4 | 2000–2006 | 0.44 | M-v | 3 | MPC | 76109 | 2003 $UV_{160}$ |
| 2003 $UE_{161}$ | 15.3 | 0.15 | 20060922 | 148.89547 | 29.77120 | 45.88133 | 10.09832 | 0.0587278 | 3.1805821 | 40 | 3 | 1995–2006 | 0.56 | M-v | 3 | MPC | 00630 | 2003 $UE_{161}$ |
| 2003 $UK_{161}$ | 17.5 | 0.15 | 20060922 | 269.87839 | 171.79327 | 249.21172 | 2.30994 | 0.1835475 | 2.3519060 | 77 | 4 | 1992–2005 | 0.70 | M-v | 1 | MPC | 03546 | 2003 $UK_{161}$ |
| 2003 $UL_{161}$ | 17.0 | 0.15 | 20060922 | 277.99129 | 19.25972 | 43.19060 | 2.96066 | 0.1877592 | 2.2997354 | 61 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 57088 | 2003 $UL_{161}$ |
| 2003 $UR_{161}$ | 15.0 | 0.15 | 20060922 | 139.19785 | 238.81686 | 150.75542 | 1.46524 | 0.2673089 | 3.9350196 | 84 | 4 | 1995–2006 | 0.61 | M-v | 1 | MPC | 02184 | 2003 $UR_{161}$ |
| 2003 $UZ_{161}$ | 16.0 | 0.15 | 20060922 | 279.19642 | 149.08496 | 176.78932 | 4.66249 | 0.0997252 | 2.7923350 | 61 | 4 | 1994–2006 | 0.48 | M-v | 2 | MPC | 04269 | 2003 $UZ_{161}$ |
| 2003 $UE_{162}$ | 16.5 | 0.15 | 20060922 | 242.07007 | 342.78741 | 56.17457 | 4.53453 | 0.1112714 | 2.6027844 | 43 | 3 | 1999–2006 | 0.55 | M-v | 4 | MPC | 58017 | 2003 $UE_{162}$ |
| 2003 $UL_{162}$ | 16.4 | 0.15 | 20060922 | 337.86758 | 209.10149 | 114.27213 | 3.57709 | 0.1748433 | 2.3843304 | 59 | 6 | 1999–2006 | 0.60 | M-v | 1 | MPC | 02184 | 2003 $UL_{162}$ |
| 2003 $US_{162}$ | 16.4 | 0.15 | 20060922 | 266.20918 | 266.64531 | 99.15356 | 3.37918 | 0.2252080 | 2.6142560 | 40 | 2 | 2003–2006 | 0.44 | M-v | 4 | MPC | 03547 | 2003 $US_{162}$ |
| 2003 $UA_{164}$ | 16.6 | 0.15 | 20060922 | 320.78226 | 278.63776 | 94.40253 | 4.34654 | 0.1670527 | 2.2703072 | 42 | 2 | 2003–2006 | 0.45 | M-v | 3 | MPC | 03547 | 2003 $UA_{164}$ |
| 2003 $UK_{164}$ | 17.4 | 0.15 | 20060922 | 292.30851 | 263.86128 | 133.44375 | 2.80039 | 0.1645220 | 2.3333673 | 54 | 4 | 1999–2005 | 0.44 | M-v | 1 | MPC | 58017 | 2003 $UK_{164}$ |
| 2003 $UY_{164}$ | 15.8 | 0.15 | 20060922 | 213.15712 | 73.01860 | 301.83420 | 1.91923 | 0.1470713 | 3.0089462 | 40 | 3 | 2000–2004 | 0.52 | M-v | 4 | MPC | 57093 | 2003 $UY_{164}$ |
| 2003 $UT_{166}$ | 15.5 | 0.15 | 20060922 | 311.82317 | 261.38653 | 43.93736 | 5.25187 | 0.0557958 | 2.7762726 | 61 | 6 | 1996–2006 | 0.47 | M-v | 0 | MPC | 02185 | 2003 $UT_{166}$ |
| 2003 $UX_{166}$ | 16.0 | 0.15 | 20060922 | 121.22532 | 15.47886 | 191.09006 | 2.08772 | 0.1731841 | 2.3050930 | 98 | 4 | 1998–2006 | 0.49 | M-v | 1 | MPC | 04269 | 2003 $UX_{166}$ |
| 2003 $UF_{167}$ | 16.7 | 0.15 | 20060922 | 307.82303 | 133.82272 | 267.27054 | 6.20706 | 0.0923578 | 2.2207064 | 52 | 2 | 2003–2006 | 0.57 | M-v | 3 | MPC | 03547 | 2003 $UF_{167}$ |
| 2003 $UV_{167}$ | 16.0 | 0.15 | 20060922 | 186.17487 | 208.56627 | 251.95829 | 7.60038 | 0.2067489 | 2.7171329 | 26 | 3 | 2000–2005 | 0.64 | M-v | 2 | MPC | 69574 | 2003 $UV_{167}$ |
| 2003 $UJ_{168}$ | 17.1 | 0.15 | 20060922 | 337.78072 | 118.31399 | 246.04591 | 3.65896 | 0.2000116 | 2.2225558 | 81 | 2 | 2003–2006 | 0.44 | M-v | 3 | MPC | 03547 | 2003 $UJ_{168}$ |
| 2003 $UL_{168}$ | 18.0 | 0.15 | 20060922 | 324.87681 | 53.93530 | 3.22884 | 3.39932 | 0.2138412 | 2.1265956 | 98 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 57097 | 2003 $UL_{168}$ |
| 2003 $UB_{169}$ | 15.7 | 0.15 | 20060922 | 212.60450 | 216.93044 | 234.69672 | 12.11252 | 0.1293631 | 2.6047504 | 76 | 3 | 1999–2005 | 0.53 | M-v | 2 | MPC | 57099 | 2003 $UB_{169}$ |
| 2003 $UF_{170}$ | 15.8 | 0.15 | 20060922 | 291.62657 | 294.43908 | 29.09165 | 7.89171 | 0.1442206 | 2.7517853 | 51 | 2 | 2003–2006 | 0.64 | M-v | 4 | MPC | 00631 | 2003 $UF_{170}$ |
| 2003 $UK_{170}$ | 16.1 | 0.15 | 20060922 | 280.19123 | 138.17448 | 214.16108 | 5.64348 | 0.0299078 | 2.7008831 | 34 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 03548 | 2003 $UK_{170}$ |
| 2003 $UO_{170}$ | 17.3 | 0.15 | 20060922 | 354.81164 | 258.49533 | 74.92006 | 2.42855 | 0.1790372 | 2.2601546 | 31 | 2 | 2003–2006 | 0.42 | M-v | 4 | MPC | 03548 | 2003 $UO_{170}$ |
| 2003 $UF_{171}$ | 16.7 | 0.15 | 20060922 | 231.49521 | 189.44447 | 273.75372 | 1.51821 | 0.1674860 | 2.4230835 | 40 | 3 | 1997–2005 | 0.55 | M-v | 3 | MPC | 76115 | 2003 $UF_{171}$ |
| 2003 $UQ_{171}$ | 18.3 | 0.15 | 20060922 | 68.08133 | 275.26455 | 347.07943 | 3.12427 | 0.1697111 | 2.1484921 | 37 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 04269 | 2003 $UQ_{171}$ |
| 2003 $UA_{175}$ | 16.1 | 0.15 | 20060922 | 180.71967 | 265.19021 | 170.40602 | 2.61005 | 0.1450124 | 2.8934527 | 28 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 02185 | 2003 $UA_{175}$ |
| 2003 $UC_{175}$ | 17.2 | 0.15 | 20060922 | 18.05114 | 263.75418 | 44.83610 | 7.66837 | 0.1818123 | 2.2344929 | 44 | 2 | 2003–2006 | 0.49 | M-v | 3 | MPC | 03548 | 2003 $UC_{175}$ |
| 2003 $UF_{175}$ | 16.2 | 0.15 | 20060922 | 198.74628 | 6.45817 | 66.49974 | 5.34993 | 0.1905724 | 2.7851950 | 48 | 3 | 2003–2006 | 0.65 | M-v | 3 | MPC | 76117 | 2003 $UF_{175}$ |
| 2003 $UO_{175}$ | 16.4 | 0.15 | 20060922 | 212.00642 | 260.07655 | 222.59211 | 6.57618 | 0.0570843 | 2.3190612 | 51 | 4 | 1996–2005 | 0.46 | M-v | 1 | MPC | 77732 | 2003 $UO_{175}$ |
| 2003 $UH_{177}$ | 17.0 | 0.15 | 20060922 | 323.94882 | 305.21205 | 87.53287 | 7.74837 | 0.1054328 | 2.2028238 | 50 | 3 | 2000–2006 | 0.58 | M-v | 4 | MPC | 04269 | 2003 $UH_{177}$ |
| 2003 $UM_{178}$ | 15.7 | 0.15 | 20060922 | 226.34288 | 31.84556 | 344.39818 | 1.90635 | 0.1895860 | 2.8862808 | 73 | 4 | 1993–2005 | 0.55 | M-v | 3 | MPC | 57107 | 2003 $UM_{178}$ |
| 2003 $UQ_{178}$ | 17.3 | 0.15 | 20060922 | 220.09474 | 135.05771 | 281.17838 | 1.79437 | 0.1200536 | 2.6433958 | 36 | 4 | 1994–2006 | 0.40 | M-v | 1 | MPC | 76118 | 2003 $UQ_{178}$ |
| 2003 $UJ_{180}$ | 17.1 | 0.15 | 20060922 | 350.79143 | 250.19837 | 122.75311 | 4.32182 | 0.1445073 | 2.1463529 | 87 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 03549 | 2003 $UJ_{180}$ |
| 2003 $UM_{181}$ | 16.0 | 0.15 | 20060922 | 230.85925 | 229.85815 | 159.25738 | 4.26842 | 0.1053331 | 2.8100555 | 47 | 5 | 1998–2006 | 0.66 | M-v | 1 | MPC | 58020 | 2003 $UM_{181}$ |
| 2003 $UB_{182}$ | 16.7 | 0.15 | 20060922 | 271.17430 | 336.65804 | 92.44241 | 5.98395 | 0.1236279 | 2.3179984 | 52 | 3 | 1998–2003 | 0.65 | M-v | 3 | MPC | 57110 | 2003 $UB_{182}$ |
| 2003 $UE_{182}$ | 15.9 | 0.15 | 20060922 | 63.38915 | 139.81183 | 36.20296 | 11.67153 | 0.0367621 | 2.9488144 | 38 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 03549 | 2003 $UE_{182}$ |
| 2003 $UH_{183}$ | 16.7 | 0.15 | 20060922 | 16.45466 | 250.65652 | 59.38748 | 3.76169 | 0.1908623 | 2.2281874 | 66 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04269 | 2003 $UH_{183}$ |
| 2003 $UK_{183}$ | 17.2 | 0.15 | 20060922 | 293.87736 | 10.61889 | 58.18900 | 3.86314 | 0.1195101 | 2.1935857 | 56 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 76121 | 2003 $UK_{183}$ |
| 2003 $UC_{184}$ | 18.0 | 0.15 | 20060922 | 332.42622 | 177.92370 | 199.11783 | 3.83921 | 0.1901530 | 2.2046228 | 48 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 04269 | 2003 $UC_{184}$ |
| 2003 $UD_{184}$ | 16.4 | 0.15 | 20060922 | 296.55911 | 283.74272 | 43.23128 | 12.07093 | 0.2820108 | 2.5669660 | 63 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 02186 | 2003 $UD_{184}$ |
| 2003 $UT_{185}$ | 16.8 | 0.15 | 20060922 | 205.20761 | 162.44505 | 274.20634 | 1.31418 | 0.1762358 | 2.5667404 | 60 | 4 | 1995–2005 | 0.51 | M-v | 1 | MPC | 87597 | 2003 $UT_{185}$ |
| 2003 $UA_{188}$ | 15.3 | 0.15 | 20060922 | 331.26030 | 263.90427 | 35.23145 | 27.13945 | 0.1447328 | 2.6257167 | 64 | 2 | 2003–2006 | 0.58 | M-v | 3 | MPC | 00634 | 2003 $UA_{188}$ |
| 2003 $UQ_{188}$ | 16.5 | 0.15 | 20060922 | 195.61012 | 241.69495 | 264.87252 | 8.96916 | 0.1563393 | 2.3674071 | 38 | 4 | 2001–2005 | 0.56 | M-v | 1 | MPC | 69575 | 2003 $UQ_{188}$ |
| 2003 $UY_{188}$ | 16.7 | 0.15 | 20060922 | 172.02642 | 272.23113 | 278.70367 | 4.34839 | 0.1203787 | 2.2046377 | 45 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 76127 | 2003 $UY_{188}$ |
| 2003 $UD_{189}$ | 15.5 | 0.15 | 20060922 | 261.09025 | 84.19358 | 277.63458 | 3.07594 | 0.1163810 | 2.7127323 | 70 | 5 | 1995–2006 | 0.66 | M-v | 1 | MPC | 02186 | 2003 $UD_{189}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $UY_{189}$ | 16.0 | 0.15 | 20060922 | 220.44056 | 27.63142 | 356.48279 | 1.75099 | 0.0973080 | 2.9522090 | 34 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 02186 | 2003 $UY_{189}$ |
| 2003 $UB_{190}$ | 15.0 | 0.15 | 20060922 | 234.03033 | 79.09847 | 255.76792 | 3.45797 | 0.1674243 | 3.1785052 | 65 | 4 | 1992–2006 | 0.55 | M-v | 1 | MPC | 04269 | 2003 $UB_{190}$ |
| 2003 $UW_{190}$ | 17.7 | 0.15 | 20060922 | 8.75140 | 154.79715 | 184.51763 | 3.95122 | 0.2421642 | 2.1527858 | 105 | 2 | 2003–2006 | 0.49 | M-v | 2 | MPC | 03549 | 2003 $UW_{190}$ |
| 2003 $UZ_{190}$ | 15.6 | 0.15 | 20060922 | 150.05332 | 261.88812 | 183.82455 | 4.48593 | 0.1211040 | 3.1493011 | 44 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 02186 | 2003 $UZ_{190}$ |
| 2003 $UV_{191}$ | 17.0 | 0.15 | 20060922 | 338.75069 | 349.63205 | 14.77929 | 11.13023 | 0.0729185 | 2.2687524 | 33 | 3 | 1996–2005 | 0.48 | M-v | 3 | MPC | 76128 | 2003 $UV_{191}$ |
| 2003 $UU_{192}$ | 16.8 | 0.15 | 20060922 | 33.02207 | 323.71818 | 8.90430 | 5.41876 | 0.0144639 | 2.1671636 | 107 | 4 | 2000–2006 | 0.48 | M-v | 3 | MPC | 76129 | 2003 $UU_{192}$ |
| 2003 $UX_{193}$ | 16.2 | 0.15 | 20060922 | 221.81732 | 325.50729 | 72.74848 | 3.43613 | 0.2001745 | 2.7524031 | 56 | 4 | 1994–2006 | 0.41 | M-v | 1 | MPC | 04269 | 2003 $UX_{193}$ |
| 2003 $UH_{194}$ | 17.1 | 0.15 | 20060922 | 342.72338 | 297.10543 | 54.34033 | 3.85291 | 0.2077014 | 2.2018816 | 47 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03550 | 2003 $UH_{194}$ |
| 2003 $UZ_{195}$ | 15.3 | 0.15 | 20060922 | 202.55906 | 311.44778 | 71.72707 | 6.00273 | 0.1373686 | 3.1880377 | 61 | 4 | 1995–2006 | 0.66 | M-v | 1 | MPC | 02186 | 2003 $UZ_{195}$ |
| 2003 $UK_{196}$ | 16.9 | 0.15 | 20060922 | 314.74523 | 128.51968 | 225.32795 | 6.32679 | 0.1343386 | 2.3920849 | 47 | 5 | 1999–2005 | 0.61 | M-v | 1 | MPC | 86143 | 2003 $UK_{196}$ |
| 2003 $UM_{199}$ | 15.5 | 0.15 | 20060922 | 256.77042 | 297.66709 | 14.95005 | 2.05531 | 0.0886816 | 3.1007514 | 53 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 00637 | 2003 $UM_{199}$ |
| 2003 $UU_{201}$ | 16.0 | 0.15 | 20060922 | 358.64557 | 243.02467 | 58.03053 | 5.49294 | 0.1340424 | 2.4125019 | 26 | 3 | 1999–2003 | 0.65 | M-v | 3 | MPC | 03550 | 2003 $UU_{201}$ |
| 2003 $UB_{206}$ | 16.2 | 0.15 | 20060922 | 217.04804 | 206.77963 | 237.40998 | 4.65099 | 0.1597294 | 2.6053941 | 74 | 3 | 1999–2005 | 0.56 | M-v | 3 | MPC | 57132 | 2003 $UB_{206}$ |
| 2003 $UC_{206}$ | 17.1 | 0.15 | 20060922 | 347.35116 | 129.60473 | 223.54456 | 3.59524 | 0.2361592 | 2.2122103 | 71 | 2 | 2003–2006 | 0.44 | M-v | 3 | MPC | 03550 | 2003 $UC_{206}$ |
| 2003 $UJ_{208}$ | 17.2 | 0.15 | 20060922 | 237.52833 | 71.72650 | 54.40702 | 5.25466 | 0.0416637 | 2.1993988 | 38 | 5 | 1992–2006 | 0.46 | M-v | 0 | MPC | 76138 | 2003 $UJ_{208}$ |
| 2003 $UT_{208}$ | 17.5 | 0.15 | 20060922 | 308.86779 | 284.27648 | 120.23348 | 1.47963 | 0.1214055 | 2.2328301 | 54 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04270 | 2003 $UT_{208}$ |
| 2003 $UO_{209}$ | 16.0 | 0.15 | 20060922 | 295.30120 | 144.96623 | 128.15473 | 3.40507 | 0.1120678 | 3.0559800 | 38 | 6 | 1996–2006 | 0.34 | M-v | 0 | MPC | 95134 | 2003 $UO_{209}$ |
| 2003 $UY_{209}$ | 16.3 | 0.15 | 20060922 | 299.10912 | 79.90993 | 272.47477 | 3.45611 | 0.1199026 | 2.5419258 | 53 | 4 | 1991–2005 | 0.60 | M-v | 4 | MPC | 57138 | 2003 $UY_{209}$ |
| 2003 $UB_{210}$ | 16.2 | 0.15 | 20060922 | 127.24920 | 189.75160 | 30.83534 | 5.24543 | 0.0392743 | 2.2706054 | 140 | 3 | 2003–2006 | 0.57 | M-v | 3 | MPC | 04270 | 2003 $UB_{210}$ |
| 2003 $UX_{211}$ | 15.8 | 0.15 | 20060922 | 191.72746 | 117.11993 | 273.69315 | 0.73443 | 0.1510299 | 3.2363037 | 48 | 4 | 1999–2005 | 0.40 | M-v | 0 | MPC | 57141 | 2003 $UX_{211}$ |
| 2003 $UY_{212}$ | 15.8 | 0.15 | 20060922 | 233.98870 | 119.87973 | 249.29255 | 8.95338 | 0.1125175 | 3.0430361 | 40 | 3 | 1997–2003 | 0.53 | M-v | 2 | MPC | 86145 | 2003 $UY_{212}$ |
| 2003 $UZ_{212}$ | 17.3 | 0.15 | 20060922 | 336.43504 | 136.56400 | 245.03609 | 5.45781 | 0.1352953 | 2.2259339 | 67 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03551 | 2003 $UZ_{212}$ |
| 2003 $UL_{214}$ | 17.0 | 0.15 | 20060922 | 55.77249 | 40.47935 | 237.70642 | 4.57678 | 0.2554598 | 2.1603377 | 122 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 04270 | 2003 $UL_{214}$ |
| 2003 $UN_{215}$ | 15.2 | 0.15 | 20060922 | 131.33369 | 257.51747 | 200.00488 | 15.47080 | 0.0930690 | 3.1568963 | 50 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 00641 | 2003 $UN_{215}$ |
| 2003 $UV_{216}$ | 16.7 | 0.15 | 20060922 | 283.33441 | 24.60996 | 346.51946 | 5.04828 | 0.0580728 | 2.4447554 | 36 | 4 | 1999–2005 | 0.61 | M-v | 1 | MPC | 65509 | 2003 $UV_{216}$ |
| 2003 $UY_{216}$ | 15.3 | 0.15 | 20060922 | 237.55579 | 321.39753 | 9.17065 | 10.43176 | 0.0373376 | 3.1794297 | 42 | 3 | 2003–2006 | 0.39 | M-v | 3 | MPC | 00641 | 2003 $UY_{216}$ |
| 2003 $UV_{217}$ | 15.8 | 0.15 | 20060922 | 179.77012 | 295.65063 | 114.26730 | 4.03189 | 0.0554236 | 3.0477222 | 46 | 5 | 1998–2006 | 0.48 | M-v | 0 | MPC | 02187 | 2003 $UV_{217}$ |
| 2003 $UF_{218}$ | 17.4 | 0.15 | 20060922 | 309.65082 | 217.52389 | 182.70279 | 4.48658 | 0.1604594 | 2.2404131 | 51 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 04270 | 2003 $UF_{218}$ |
| 2003 $UL_{218}$ | 17.4 | 0.15 | 20060922 | 293.46909 | 271.68986 | 137.43721 | 3.37051 | 0.1605402 | 2.2954770 | 51 | 4 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04270 | 2003 $UL_{218}$ |
| 2003 $UP_{219}$ | 18.0 | 0.15 | 20060922 | 273.54312 | 30.82721 | 7.31414 | 5.35814 | 0.1193062 | 2.4279251 | 25 | 3 | 1999–2005 | 0.33 | M-v | 3 | MPC | 76143 | 2003 $UP_{219}$ |
| 2003 $UR_{219}$ | 17.0 | 0.15 | 20060922 | 238.48330 | 189.32026 | 289.62828 | 2.71681 | 0.1923660 | 2.2943418 | 22 | 3 | 2001–2006 | 0.37 | M-v | 5 | MPC | 61732 | 2003 $UR_{219}$ |
| 2003 $UT_{219}$ | 16.1 | 0.15 | 20060922 | 247.43707 | 301.72661 | 78.31451 | 6.13474 | 0.1247175 | 2.7164725 | 28 | 2 | 2003–2006 | 0.61 | M-v | 4 | MPC | 03552 | 2003 $UT_{219}$ |
| 2003 $UG_{220}$ | 16.4 | 0.15 | 20060922 | 169.42173 | 296.26708 | 236.26569 | 6.23002 | 0.0510223 | 2.2965421 | 36 | 3 | 2003–2006 | 0.64 | M-v | 3 | MPC | 04270 | 2003 $UG_{220}$ |
| 2003 $US_{221}$ | 17.1 | 0.15 | 20060922 | 348.24480 | 191.77839 | 114.96636 | 3.28371 | 0.2305893 | 2.3675273 | 42 | 6 | 1992–2006 | 0.61 | M-v | 1 | MPC | 00642 | 2003 $US_{221}$ |
| 2003 $UA_{224}$ | 16.7 | 0.15 | 20060922 | 20.51543 | 66.15682 | 273.15002 | 2.72889 | 0.1794578 | 2.1439420 | 112 | 4 | 2000–2006 | 0.46 | M-v | 2 | MPC | 77735 | 2003 $UA_{224}$ |
| 2003 $UT_{224}$ | 17.6 | 0.15 | 20060922 | 250.50374 | 128.49371 | 343.95577 | 3.46887 | 0.1538779 | 2.2533465 | 39 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 04270 | 2003 $UT_{224}$ |
| 2003 $UJ_{226}$ | 15.9 | 0.15 | 20060922 | 244.46923 | 332.91481 | 25.80728 | 11.54118 | 0.2047683 | 2.8580148 | 49 | 3 | 1998–2006 | 0.63 | M-v | 3 | MPC | 86146 | 2003 $UJ_{226}$ |
| 2003 $UL_{226}$ | 15.8 | 0.15 | 20060922 | 76.11221 | 220.31855 | 25.63265 | 9.87832 | 0.1990232 | 2.3402774 | 62 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 03552 | 2003 $UL_{226}$ |
| 2003 $UY_{226}$ | 17.6 | 0.15 | 20060922 | 266.62382 | 119.74778 | 326.64622 | 3.30745 | 0.1234734 | 2.2790265 | 36 | 3 | 2001–2006 | 0.52 | M-v | 4 | MPC | 04270 | 2003 $UY_{226}$ |
| 2003 $UY_{227}$ | 16.0 | 0.15 | 20060922 | 352.07940 | 41.24665 | 268.42293 | 4.20898 | 0.1049973 | 2.4395453 | 45 | 3 | 2002–2005 | 0.60 | M-v | 2 | MPC | 57158 | 2003 $UY_{227}$ |
| 2003 $UZ_{228}$ | 17.3 | 0.15 | 20060922 | 237.23198 | 37.13297 | 19.15113 | 5.45265 | 0.3608329 | 2.6373288 | 73 | 4 | 1960–2003 | 0.61 | M-v | 2 | MPC | 57159 | 2003 $UZ_{228}$ |
| 2003 $UB_{229}$ | 17.2 | 0.15 | 20060922 | 344.28822 | 354.06488 | 9.45501 | 4.21150 | 0.1417796 | 2.2218057 | 46 | 2 | 2003–2006 | 0.65 | M-v | 4 | MPC | 03552 | 2003 $UB_{229}$ |
| 2003 $UX_{229}$ | 17.9 | 0.15 | 20060922 | 282.94457 | 117.53941 | 303.83677 | 2.34527 | 0.1463253 | 2.2876260 | 34 | 4 | 1999–2005 | 0.38 | M-v | 1 | MPC | 86147 | 2003 $UX_{229}$ |
| 2003 $UX_{230}$ | 16.4 | 0.15 | 20060922 | 293.61078 | 43.32858 | 261.94554 | 3.38255 | 0.1268396 | 2.7645715 | 35 | 4 | 1996–2006 | 0.45 | M-v | 2 | MPC | 02188 | 2003 $UX_{230}$ |
| 2003 $UK_{232}$ | 16.3 | 0.15 | 20060922 | 252.11871 | 25.21991 | 350.90676 | 2.31262 | 0.0938474 | 2.6746621 | 42 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 02188 | 2003 $UK_{232}$ |
| 2003 $UV_{232}$ | 17.3 | 0.15 | 20060922 | 253.10040 | 233.89854 | 224.25267 | 2.41419 | 0.0289228 | 2.2255819 | 38 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 76151 | 2003 $UV_{232}$ |
| 2003 $UC_{233}$ | 16.7 | 0.15 | 20060922 | 28.22574 | 51.70611 | 258.66875 | 5.79092 | 0.1587457 | 2.2250794 | 56 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 03553 | 2003 $UC_{233}$ |
| 2003 $UB_{234}$ | 16.3 | 0.15 | 20060922 | 257.40660 | 126.07505 | 338.38012 | 6.82547 | 0.0597008 | 2.2611194 | 81 | 4 | 1998–2006 | 0.66 | M-v | 2 | MPC | 57161 | 2003 $UB_{234}$ |
| 2003 $UC_{234}$ | 15.1 | 0.15 | 20060922 | 304.30081 | 109.81574 | 234.38619 | 21.16719 | 0.0711965 | 2.6195142 | 84 | 4 | 1999–2005 | 0.55 | M-v | 1 | MPC | 77736 | 2003 $UC_{234}$ |
| 2003 $UD_{234}$ | 17.1 | 0.15 | 20060922 | 243.89783 | 205.19920 | 260.53105 | 2.16261 | 0.0397173 | 2.3183305 | 44 | 3 | 2003–2006 | 0.36 | M-v | 2 | MPC | 04270 | 2003 $UD_{234}$ |
| 2003 $UV_{235}$ | 16.6 | 0.15 | 20060922 | 176.30542 | 213.03587 | 304.76348 | 6.95923 | 0.1537685 | 2.3001047 | 33 | 3 | 2003–2006 | 0.60 | M-v | 3 | MPC | 76152 | 2003 $UV_{235}$ |
| 2003 $UL_{236}$ | 17.1 | 0.15 | 20060922 | 346.43410 | 243.81482 | 102.48415 | 3.29741 | 0.2211630 | 2.2479105 | 64 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 03553 | 2003 $UL_{236}$ |
| 2003 $UE_{237}$ | 16.1 | 0.15 | 20060922 | 180.54930 | 27.37618 | 73.16183 | 10.03533 | 0.0628908 | 2.6702957 | 23 | 3 | 2001–2005 | 0.43 | M-v | 1 | MPC | 57164 | 2003 $UE_{237}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $UW_{240}$ | 17.5 | 0.15 | 20060922 | 356.08279 | 4.58816 | 337.06315 | 3.35260 | 0.1501004 | 2.2437281 | 39 | 4 | 1998–2006 | 0.38 | M-v | 1 | MPC | 04270 | 2003 $UW_{240}$ |
| 2003 $UY_{240}$ | 16.8 | 0.15 | 20060922 | 262.15210 | 117.09124 | 274.53924 | 4.06909 | 0.1504973 | 2.5580253 | 51 | 3 | 1999–2005 | 0.50 | M-v | 3 | MPC | 57167 | 2003 $UY_{240}$ |
| 2003 $UJ_{242}$ | 16.9 | 0.15 | 20060922 | 242.97033 | 63.01629 | 62.04216 | 5.55274 | 0.0848111 | 2.2123204 | 26 | 3 | 2003–2006 | 0.56 | M-v | 2 | MPC | 76155 | 2003 $UJ_{242}$ |
| 2003 $UB_{244}$ | 17.1 | 0.15 | 20060922 | 316.36456 | 23.22589 | 14.24186 | 2.48551 | 0.1270895 | 2.2736742 | 60 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04270 | 2003 $UB_{244}$ |
| 2003 $UZ_{245}$ | 15.1 | 0.15 | 20060922 | 167.27972 | 189.47523 | 223.51708 | 16.42383 | 0.1425219 | 3.3692090 | 75 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 02188 | 2003 $UZ_{245}$ |
| 2003 $UB_{249}$ | 15.9 | 0.15 | 20060922 | 10.99746 | 216.74207 | 32.03238 | 9.10813 | 0.0711087 | 2.7078502 | 50 | 2 | 2003–2006 | 0.44 | M-v | 3 | MPC | 00646 | 2003 $UB_{249}$ |
| 2003 $UE_{249}$ | 15.2 | 0.15 | 20060922 | 252.39824 | 15.35598 | 295.56368 | 3.50869 | 0.1606347 | 3.1381379 | 40 | 3 | 2000–2005 | 0.66 | M-v | 4 | MPC | 57178 | 2003 $UE_{249}$ |
| 2003 $UQ_{252}$ | 17.6 | 0.15 | 20060922 | 313.38039 | 12.42459 | 40.69531 | 2.99186 | 0.1549730 | 2.2272232 | 57 | 4 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04271 | 2003 $UQ_{252}$ |
| 2003 $UB_{254}$ | 17.1 | 0.15 | 20060922 | 231.25404 | 224.19196 | 186.29244 | 2.06106 | 0.1728123 | 2.6401279 | 35 | 5 | 1994–2006 | 0.30 | M-v | 0 | MPC | 02188 | 2003 $UB_{254}$ |
| 2003 $UN_{254}$ | 17.3 | 0.15 | 20060922 | 283.40975 | 48.96868 | 36.14342 | 5.03260 | 0.1062246 | 2.1731219 | 39 | 4 | 2000–2006 | 0.40 | M-v | 3 | MPC | 77737 | 2003 $UN_{254}$ |
| 2003 $UR_{254}$ | 16.2 | 0.15 | 20060922 | 201.06324 | 345.48316 | 39.07430 | 6.48113 | 0.0598628 | 3.0873286 | 39 | 2 | 2003–2006 | 0.39 | M-v | 3 | MPC | 00648 | 2003 $UR_{254}$ |
| 2003 $UK_{256}$ | 16.0 | 0.15 | 20060922 | 246.66848 | 315.42304 | 66.67942 | 7.89087 | 0.0719492 | 2.7556337 | 40 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 00648 | 2003 $UK_{256}$ |
| 2003 $UF_{259}$ | 16.3 | 0.15 | 20060922 | 260.39824 | 230.78341 | 178.56767 | 3.66184 | 0.2526422 | 2.5195288 | 82 | 4 | 1995–2005 | 0.56 | M-v | 2 | MPC | 57189 | 2003 $UF_{259}$ |
| 2003 $UK_{259}$ | 16.7 | 0.15 | 20060922 | 263.83115 | 284.47764 | 109.84092 | 3.87103 | 0.2659080 | 2.5557269 | 66 | 3 | 1992–2003 | 0.55 | M-v | 3 | MPC | 57189 | 2003 $UK_{259}$ |
| 2003 $UO_{261}$ | 17.6 | 0.15 | 20060922 | 246.30156 | 257.56221 | 211.77953 | 5.11997 | 0.0652884 | 2.2263516 | 29 | 3 | 2003–2006 | 0.47 | M-v | 2 | MPC | 04271 | 2003 $UO_{261}$ |
| 2003 $UU_{261}$ | 17.1 | 0.15 | 20060922 | 274.81802 | 315.20489 | 36.54878 | 3.52589 | 0.2225513 | 2.6132363 | 45 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03555 | 2003 $UU_{261}$ |
| 2003 $UX_{261}$ | 15.5 | 0.15 | 20060922 | 237.78792 | 346.51141 | 97.16637 | 24.22978 | 0.1134679 | 2.4080816 | 61 | 3 | 1996–2005 | 0.71 | M-v | 2 | MPC | 76164 | 2003 $UX_{261}$ |
| 2003 $UB_{262}$ | 17.5 | 0.15 | 20060922 | 338.24254 | 136.36795 | 243.62126 | 5.04043 | 0.2706919 | 2.1851773 | 90 | 2 | 2003–2006 | 0.55 | M-v | 3 | MPC | 03555 | 2003 $UB_{262}$ |
| 2003 $UK_{262}$ | 17.3 | 0.15 | 20060922 | 357.42872 | 21.00306 | 336.38714 | 3.10737 | 0.1896124 | 2.1596411 | 143 | 2 | 2003–2006 | 0.47 | M-v | 2 | MPC | 03555 | 2003 $UK_{262}$ |
| 2003 $UY_{263}$ | 17.3 | 0.15 | 20060922 | 338.55087 | 66.68467 | 318.88945 | 4.00761 | 0.1378102 | 2.1445436 | 110 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 04271 | 2003 $UY_{263}$ |
| 2003 $UV_{264}$ | 16.9 | 0.15 | 20060922 | 340.24976 | 296.66651 | 74.08516 | 7.86548 | 0.1707087 | 2.2240876 | 85 | 2 | 2003–2006 | 0.57 | M-v | 3 | MPC | 03555 | 2003 $UV_{264}$ |
| 2003 $UC_{265}$ | 16.7 | 0.15 | 20060922 | 297.87158 | 249.72492 | 151.70316 | 5.57505 | 0.0952318 | 2.3310086 | 62 | 6 | 1998–2006 | 0.46 | M-v | 1 | MPC | 04271 | 2003 $UC_{265}$ |
| 2003 $UV_{265}$ | 16.5 | 0.15 | 20060922 | 300.39116 | 27.74233 | 42.32217 | 4.92187 | 0.0484129 | 2.1788853 | 90 | 4 | 2000–2006 | 0.53 | M-v | 3 | MPC | 77738 | 2003 $UV_{265}$ |
| 2003 $UK_{267}$ | 16.4 | 0.15 | 20060922 | 316.96222 | 184.19251 | 195.04279 | 2.46322 | 0.0796920 | 2.3185190 | 77 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04271 | 2003 $UK_{267}$ |
| 2003 $UQ_{267}$ | 17.2 | 0.15 | 20060922 | 315.87902 | 312.32530 | 46.57169 | 2.01417 | 0.2047993 | 2.3737904 | 59 | 5 | 1999–2005 | 0.60 | M-v | 1 | MPC | 86150 | 2003 $UQ_{267}$ |
| 2003 $UO_{268}$ | 17.8 | 0.15 | 20060922 | 348.82634 | 141.43453 | 216.72554 | 4.52707 | 0.1941966 | 2.2094221 | 37 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 03556 | 2003 $UO_{268}$ |
| 2003 $UQ_{268}$ | 17.7 | 0.15 | 20060922 | 286.04216 | 158.30554 | 238.23502 | 1.90785 | 0.1973002 | 2.3986361 | 39 | 4 | 1997–2005 | 0.51 | M-v | 1 | MPC | 03556 | 2003 $UQ_{268}$ |
| 2003 $UL_{269}$ | 15.7 | 0.15 | 20060922 | 234.63095 | 125.83518 | 235.97875 | 6.46990 | 0.1613539 | 2.9749275 | 37 | 2 | 1998–2003 | 0.53 | M-v | 4 | MPC | 57202 | 2003 $UL_{269}$ |
| 2003 $UP_{269}$ | 17.2 | 0.15 | 20060922 | 343.12399 | 3.71994 | 5.94114 | 1.79891 | 0.0457606 | 2.2145134 | 50 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 03556 | 2003 $UP_{269}$ |
| 2003 $UA_{270}$ | 16.1 | 0.15 | 20060922 | 131.42291 | 187.94452 | 280.16645 | 4.50765 | 0.1036892 | 3.1222510 | 26 | 3 | 1997–2005 | 0.32 | M-v | 3 | MPC | 76169 | 2003 $UA_{270}$ |
| 2003 $UG_{270}$ | 16.4 | 0.15 | 20060922 | 307.24622 | 94.05057 | 324.18324 | 20.56472 | 0.3081089 | 2.2727345 | 58 | 2 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03557 | 2003 $UG_{270}$ |
| 2003 $UY_{270}$ | 16.0 | 0.15 | 20060922 | 236.35593 | 252.12728 | 83.04199 | 10.17978 | 0.0640523 | 3.1135611 | 21 | 3 | 2002–2004 | 0.38 | M-v | 3 | MPC | 87597 | 2003 $UY_{270}$ |
| 2003 $UV_{271}$ | 16.2 | 0.15 | 20060922 | 257.35854 | 331.52607 | 34.26660 | 6.84915 | 0.0922277 | 2.7478876 | 40 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 00651 | 2003 $UV_{271}$ |
| 2003 $UP_{272}$ | 15.6 | 0.15 | 20060922 | 182.47760 | 277.40403 | 139.04729 | 5.33850 | 0.1007343 | 3.0784926 | 32 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 02189 | 2003 $UP_{272}$ |
| 2003 $UZ_{272}$ | 15.0 | 0.15 | 20060922 | 187.86158 | 14.02791 | 34.91475 | 9.98700 | 0.0710894 | 3.1102763 | 77 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 04271 | 2003 $UZ_{272}$ |
| 2003 $UD_{273}$ | 15.7 | 0.15 | 20060922 | 186.93570 | 6.82159 | 37.31579 | 15.90965 | 0.0827297 | 3.1072856 | 40 | 2 | 2003–2006 | 0.47 | M-v | 3 | MPC | 00652 | 2003 $UD_{273}$ |
| 2003 $UX_{273}$ | 14.2 | 0.15 | 20060922 | 213.57586 | 159.00866 | 270.97102 | 18.36977 | 0.2989379 | 3.0723106 | 62 | 2 | 2002–2004 | 0.52 | M-v | 4 | MPC | 62451 | 2003 $UX_{273}$ |
| 2003 $UH_{274}$ | 16.6 | 0.15 | 20060922 | 282.25955 | 137.49264 | 296.31686 | 5.29352 | 0.1012449 | 2.2129869 | 64 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 04271 | 2003 $UH_{274}$ |
| 2003 $UQ_{274}$ | 15.7 | 0.15 | 20060922 | 266.49800 | 127.97863 | 232.38820 | 8.23268 | 0.0989322 | 2.6628259 | 39 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 00652 | 2003 $UQ_{274}$ |
| 2003 $UR_{275}$ | 17.0 | 0.15 | 20060922 | 346.94399 | 319.46726 | 33.74631 | 1.92340 | 0.1709153 | 2.2431877 | 87 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 04271 | 2003 $UR_{275}$ |
| 2003 $UR_{276}$ | 16.4 | 0.15 | 20060922 | 323.89242 | 112.79402 | 279.15585 | 5.38544 | 0.0746581 | 2.2140454 | 95 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04271 | 2003 $UR_{276}$ |
| 2003 $UB_{277}$ | 16.4 | 0.15 | 20060922 | 19.90235 | 275.16704 | 58.52736 | 4.09365 | 0.2227064 | 2.1719182 | 160 | 5 | 1990–2006 | 0.54 | M-v | 1 | MPC | 04271 | 2003 $UB_{277}$ |
| 2003 $UG_{277}$ | 16.2 | 0.15 | 20060922 | 126.19067 | 227.41319 | 270.51110 | 2.97039 | 0.0471094 | 2.7713156 | 40 | 5 | 1993–2006 | 0.44 | M-v | 0 | MPC | 04271 | 2003 $UG_{277}$ |
| 2003 $UX_{278}$ | 15.0 | 0.15 | 20060922 | 167.44215 | 26.20347 | 42.05353 | 17.32976 | 0.0778144 | 3.2055098 | 38 | 3 | 2003–2006 | 0.36 | M-v | 2 | MPC | 00653 | 2003 $UX_{278}$ |
| 2003 $UJ_{279}$ | 15.5 | 0.15 | 20060922 | 190.81777 | 343.46397 | 51.25694 | 10.08643 | 0.0773305 | 3.0014373 | 56 | 4 | 1996–2005 | 0.49 | M-v | 0 | MPC | 87597 | 2003 $UJ_{279}$ |
| 2003 $UE_{280}$ | 16.9 | 0.15 | 20060922 | 308.93018 | 210.26977 | 176.23915 | 6.96259 | 0.1382425 | 2.3307838 | 43 | 3 | 2003–2006 | 0.60 | M-v | 3 | MPC | 02190 | 2003 $UE_{280}$ |
| 2003 $UG_{281}$ | 16.9 | 0.15 | 20060922 | 306.06641 | 186.42955 | 226.23690 | 6.72358 | 0.0901520 | 2.2456418 | 73 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04271 | 2003 $UG_{281}$ |
| 2003 $UN_{282}$ | 15.6 | 0.15 | 20060922 | 301.27878 | 162.18930 | 186.57962 | 8.84687 | 0.1747081 | 2.5721830 | 51 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 77739 | 2003 $UN_{282}$ |
| 2003 $UW_{282}$ | 17.0 | 0.15 | 20060922 | 341.76850 | 247.20419 | 124.43411 | 7.36589 | 0.1293784 | 2.2368425 | 49 | 2 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03558 | 2003 $UW_{282}$ |
| 2003 $UA_{283}$ | 16.3 | 0.15 | 20060922 | 357.36210 | 223.80206 | 108.49369 | 7.46332 | 0.2190694 | 2.2769613 | 82 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04271 | 2003 $UA_{283}$ |
| 2003 $UM_{283}$ | 16.9 | 0.15 | 20060922 | 280.05754 | 102.42109 | 331.59163 | 5.22222 | 0.1864317 | 2.3090471 | 64 | 4 | 1994–2006 | 0.35 | M-v | 1 | MPC | 04271 | 2003 $UM_{283}$ |
| 2003 $UO_{283}$ | 16.6 | 0.15 | 20060922 | 340.09595 | 72.50122 | 327.95890 | 3.96641 | 0.1270672 | 2.1507027 | 101 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 04271 | 2003 $UO_{283}$ |
| 2003 $UU_{283}$ | 17.0 | 0.15 | 20060922 | 317.96697 | 51.96630 | 2.82124 | 4.25183 | 0.1125217 | 2.1924139 | 97 | 4 | 1995–2006 | 0.44 | M-v | 2 | MPC | 57222 | 2003 $UU_{283}$ |

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| 2003 $UV_{283}$ | 17.5 | 0.15 | 20060922 | 307.05849 | 60.98038 | 358.77998 | 3.59158 | 0.2598405 | 2.2276515 | 56 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03558 | 2003 $UV_{283}$ |
| 2003 $UQ_{288}$ | 17.8 | 0.15 | 20060922 | 246.79104 | 174.25788 | 227.41607 | 1.79371 | 0.1461975 | 2.5741434 | 28 | 3 | 1999–2005 | 0.33 | M-v | 3 | MPC | 86151 | 2003 $UQ_{288}$ |
| 2003 $UP_{290}$ | 17.3 | 0.15 | 20060922 | 196.65511 | 137.40998 | 13.04075 | 2.45699 | 0.1399385 | 2.3792301 | 35 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04271 | 2003 $UP_{290}$ |
| 2003 $UR_{290}$ | 17.0 | 0.15 | 20060922 | 122.96677 | 179.55614 | 53.80571 | 5.56712 | 0.0721003 | 2.2347959 | 36 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 86152 | 2003 $UR_{290}$ |
| 2003 $UF_{294}$ | 15.0 | 0.15 | 20060922 | 254.78956 | 328.21103 | 349.11788 | 10.15368 | 0.1078471 | 2.9659508 | 59 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 02190 | 2003 $UF_{294}$ |
| 2003 $UM_{296}$ | 16.3 | 0.15 | 20060922 | 263.97569 | 139.99155 | 196.35839 | 3.37503 | 0.1011339 | 2.8054557 | 49 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 00654 | 2003 $UM_{296}$ |
| 2003 $UN_{297}$ | 16.9 | 0.15 | 20060922 | 198.51525 | 144.65172 | 9.47706 | 6.29747 | 0.1251357 | 2.2571707 | 38 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04271 | 2003 $UN_{297}$ |
| 2003 $UG_{298}$ | 17.7 | 0.15 | 20060922 | 205.98110 | 257.32748 | 226.50384 | 1.69543 | 0.1632688 | 2.4060869 | 35 | 5 | 1992–2005 | 0.34 | M-v | 0 | MPC | 69580 | 2003 $UG_{298}$ |
| 2003 $UR_{298}$ | 16.9 | 0.15 | 20060922 | 34.39836 | 261.61012 | 3.49736 | 3.09529 | 0.1449337 | 2.3878616 | 36 | 4 | 1999–2005 | 0.56 | M-v | 1 | MPC | 76177 | 2003 $UR_{298}$ |
| 2003 $UW_{303}$ | 17.7 | 0.15 | 20060922 | 232.80354 | 107.32992 | 354.03216 | 6.37092 | 0.1961565 | 2.3987178 | 21 | 3 | 1999–2003 | 0.36 | M-v | 2 | MPC | 76178 | 2003 $UW_{303}$ |
| 2003 $UO_{306}$ | 16.5 | 0.15 | 20060922 | 338.36896 | 249.87375 | 6.63404 | 12.99543 | 0.1769003 | 2.7852367 | 38 | 2 | 2003–2006 | 0.31 | M-v | 2 | MPC | 00656 | 2003 $UO_{306}$ |
| 2003 $UT_{309}$ | 15.6 | 0.15 | 20060922 | 131.44950 | 63.26259 | 39.77857 | 12.64675 | 0.0345316 | 2.9229911 | 67 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 00656 | 2003 $UT_{309}$ |
| 2003 $UX_{309}$ | 15.7 | 0.15 | 20060922 | 255.91121 | 67.50803 | 281.75946 | 6.85947 | 0.0748128 | 2.8103209 | 26 | 4 | 1993–2005 | 0.52 | M-v | 2 | MPC | 04272 | 2003 $UX_{309}$ |
| 2003 $UH_{315}$ | 19.3 | 0.15 | 20031008 | 7.11416 | 341.45448 | 17.21567 | 2.00711 | 0.1652431 | 2.5714013 | 12 | 1 | 25 days | 0.16 | | | MPC | | 2003 $UH_{315}$ |
| 2003 $UJ_{315}$ | 18.5 | 0.15 | 20060922 | 264.34009 | 169.18913 | 188.00089 | 5.77275 | 0.2798681 | 2.5863854 | 23 | 1 | 60 days | 0.16 | M-v | 3 | MPC | | 2003 $UJ_{315}$ |
| 2003 $UL_{315}$ | 18.0 | 0.15 | 20060922 | 304.95438 | 335.10807 | 58.99387 | 5.82251 | 0.2294750 | 2.3293867 | 28 | 1 | 72 days | 0.60 | M-v | 4 | MPC | | 2003 $UL_{315}$ |
| 2003 $UM_{315}$ | 17.1 | 0.15 | 20031028 | 67.61621 | 262.87908 | 39.64361 | 4.83091 | 0.0560740 | 2.7158791 | 11 | 1 | 32 days | 0.35 | | | MPC | | 2003 $UM_{315}$ |
| 2003 $UN_{315}$ | 17.1 | 0.15 | 20060922 | 264.34454 | 317.07007 | 62.86165 | 13.18554 | 0.2476811 | 2.6004690 | 25 | 1 | 65 days | 0.59 | M-v | 4 | MPC | | 2003 $UN_{315}$ |
| 2003 $UO_{315}$ | 18.7 | 0.15 | 20031028 | 70.48590 | 208.35964 | 88.37603 | 4.86596 | 0.1576377 | 2.3206913 | 11 | 1 | 32 days | 0.23 | | | MPC | | 2003 $UO_{315}$ |
| 2003 $UP_{315}$ | 16.6 | 0.15 | 20031028 | 0.18272 | 255.96569 | 151.88623 | 10.30598 | 0.2132624 | 3.1584491 | 20 | 1 | 36 days | 0.72 | | | MPC | | 2003 $UP_{315}$ |
| 2003 $UQ_{315}$ | 17.4 | 0.15 | 20031028 | 77.47371 | 87.35660 | 218.95787 | 3.85093 | 0.1526489 | 2.3185629 | 16 | 1 | 32 days | 0.66 | | | MPC | | 2003 $UQ_{315}$ |
| 2003 $UR_{315}$ | 17.1 | 0.15 | 20031008 | 346.96638 | 277.04612 | 113.82213 | 3.52611 | 0.0535839 | 2.3841959 | 11 | 1 | 5 days | 0.33 | | | MPC | | 2003 $UR_{315}$ |
| 2003 $US_{315}$ | 18.2 | 0.15 | 20031117 | 353.96698 | 308.25821 | 96.49660 | 5.05535 | 0.1823213 | 2.4519031 | 15 | 1 | 39 days | 0.55 | | | MPC | | 2003 $US_{315}$ |
| 2003 $UT_{315}$ | 18.1 | 0.15 | 20031117 | 10.37976 | 244.18662 | 139.14622 | 5.29293 | 0.2307597 | 2.3958107 | 13 | 1 | 39 days | 0.32 | | | MPC | | 2003 $UT_{315}$ |
| 2003 $UU_{315}$ | 16.5 | 0.15 | 20031028 | 355.41608 | 233.45289 | 175.10845 | 14.20226 | 0.2776292 | 3.1875107 | 20 | 1 | 35 days | 0.44 | | | MPC | | 2003 $UU_{315}$ |
| 2003 $UV_{315}$ | 17.0 | 0.15 | 20031028 | 334.00017 | 248.97469 | 186.03137 | 15.20020 | 0.2285163 | 2.8654238 | 18 | 1 | 35 days | 0.62 | | | MPC | | 2003 $UV_{315}$ |
| 2003 $UW_{315}$ | 16.4 | 0.15 | 20031028 | 308.15821 | 270.12442 | 191.42301 | 24.42514 | 0.1885427 | 3.2106768 | 13 | 1 | 7 days | 0.52 | | | MPC | | 2003 $UW_{315}$ |
| 2003 $UX_{315}$ | 17.4 | 0.15 | 20031028 | 321.81446 | 266.17278 | 176.19827 | 11.41691 | 0.1617122 | 2.6840553 | 13 | 1 | 6 days | 0.36 | | | MPC | | 2003 $UX_{315}$ |
| 2003 $UY_{315}$ | 18.6 | 0.15 | 20031117 | 15.59826 | 262.21421 | 115.78313 | 5.16993 | 0.1540064 | 2.2146762 | 11 | 1 | 38 days | 0.10 | | | MPC | | 2003 $UY_{315}$ |
| 2003 $UA_{316}$ | 18.0 | 0.15 | 20060922 | 315.52333 | 273.85623 | 133.37835 | 5.68988 | 0.1972151 | 2.2221929 | 21 | 1 | 60 days | 0.50 | M-v | 4 | MPC | | 2003 $UA_{316}$ |
| 2003 $UB_{316}$ | 16.1 | 0.15 | 20060922 | 233.99013 | 92.85798 | 303.13430 | 7.97511 | 0.3056988 | 2.7292518 | 32 | 1 | 81 days | 0.40 | M-v | 4 | MPC | | 2003 $UB_{316}$ |
| 2003 $UC_{316}$ | 15.6 | 0.15 | 20031117 | 58.47742 | 192.59534 | 139.05742 | 8.77845 | 0.0652714 | 3.1309059 | 12 | 1 | 37 days | 0.29 | | | MPC | | 2003 $UC_{316}$ |
| 2003 $UD_{316}$ | 16.8 | 0.15 | 20031117 | 16.39749 | 350.88299 | 42.72426 | 18.06738 | 0.2157943 | 2.7025905 | 25 | 1 | 56 days | 0.57 | | | MPC | | 2003 $UD_{316}$ |
| 2003 $UE_{316}$ | 16.9 | 0.15 | 20060922 | 206.26565 | 302.12326 | 83.74268 | 0.97549 | 0.2217609 | 3.0909048 | 20 | 1 | 113 days | 0.41 | M-v | 4 | MPC | | 2003 $UE_{316}$ |
| 2003 $UG_{316}$ | 18.2 | 0.15 | 20031117 | 341.27021 | 206.54364 | 241.12819 | 5.57705 | 0.2927485 | 2.5741860 | 21 | 1 | 59 days | 0.50 | | | MPC | | 2003 $UG_{316}$ |
| 2003 $UH_{316}$ | 16.8 | 0.15 | 20031117 | 4.74309 | 6.54141 | 37.28511 | 11.57639 | 0.1920954 | 3.2009598 | 16 | 1 | 39 days | 0.54 | | | MPC | | 2003 $UH_{316}$ |
| 2003 $UK_{316}$ | 18.7 | 0.15 | 20031117 | 28.12960 | 98.04679 | 264.77556 | 1.53469 | 0.2870751 | 2.4250878 | 19 | 1 | 36 days | 0.52 | | | MPC | | 2003 $UK_{316}$ |
| 2003 $UN_{316}$ | 17.0 | 0.15 | 20031117 | 355.27038 | 174.63267 | 244.69089 | 2.39453 | 0.1020525 | 2.8588861 | 15 | 1 | 58 days | 0.59 | | | MPC | | 2003 $UN_{316}$ |
| 2003 $UO_{316}$ | 16.4 | 0.15 | 20031117 | 341.20692 | 44.97925 | 43.70490 | 13.87837 | 0.1740147 | 2.7967284 | 20 | 1 | 54 days | 0.46 | | | MPC | | 2003 $UO_{316}$ |
| 2003 $UP_{316}$ | 16.7 | 0.15 | 20031117 | 39.71246 | 237.53827 | 118.97981 | 4.86673 | 0.2878488 | 2.5977794 | 22 | 1 | 56 days | 0.55 | | | MPC | | 2003 $UP_{316}$ |
| 2003 $UQ_{316}$ | 16.8 | 0.15 | 20060922 | 235.66434 | 112.60801 | 328.93850 | 6.74113 | 0.2404129 | 2.5403683 | 22 | 1 | 63 days | 0.39 | M-v | 4 | MPC | | 2003 $UQ_{316}$ |
| 2003 $UR_{316}$ | 15.8 | 0.15 | 20060922 | 264.08899 | 80.75050 | 291.60823 | 7.90736 | 0.1288759 | 2.6837833 | 27 | 1 | 62 days | 0.62 | M-v | 4 | MPC | | 2003 $UR_{316}$ |
| 2003 $US_{316}$ | 16.3 | 0.15 | 20031117 | 330.55518 | 71.76426 | 30.91248 | 3.48375 | 0.1505229 | 3.1358397 | 20 | 1 | 56 days | 0.38 | | | MPC | | 2003 $US_{316}$ |
| 2003 $UT_{316}$ | 16.9 | 0.15 | 20060922 | 236.77775 | 340.58694 | 116.65945 | 3.43371 | 0.1412095 | 2.4342248 | 18 | 1 | 114 days | 0.68 | M-v | 5 | MPC | | 2003 $UT_{316}$ |
| 2003 VE | 16.9 | 0.15 | 20060922 | 317.24074 | 235.72063 | 257.40104 | 16.04840 | 0.0765160 | 1.8802033 | 57 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 57223 | 2003 VE |
| 2003 VT | 16.6 | 0.15 | 20060922 | 350.90742 | 150.42787 | 286.00513 | 18.04608 | 0.0914516 | 1.9622330 | 39 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 69581 | 2003 VT |
| 2003 VV | 15.3 | 0.15 | 20060922 | 243.76340 | 138.92072 | 314.57884 | 24.11316 | 0.1482098 | 2.4236477 | 33 | 3 | 1999–2006 | 0.52 | M-v | 3 | MPC | 04272 | 2003 VV |
| 2003 $VW_1$ | 16.6 | 0.15 | 20060922 | 4.96595 | 81.47796 | 254.08920 | 6.23556 | 0.1385358 | 2.2357670 | 66 | 2 | 2003–2006 | 0.58 | M-v | 3 | MPC | 03558 | 2003 $VW_1$ |
| 2003 $VY_1$ | 17.2 | 0.15 | 20060922 | 309.73994 | 296.25209 | 127.73965 | 2.30678 | 0.0886582 | 2.1759499 | 85 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 77740 | 2003 $VY_1$ |
| 2003 $VK_2$ | 16.4 | 0.15 | 20060922 | 0.59440 | 59.30716 | 275.02731 | 3.92608 | 0.1260501 | 2.2679675 | 90 | 3 | 2003–2006 | 0.63 | M-v | 3 | MPC | 04272 | 2003 $VK_2$ |
| 2003 $VW_3$ | 16.4 | 0.15 | 20060922 | 5.24432 | 63.79003 | 250.57830 | 5.79118 | 0.1372423 | 2.3428432 | 40 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 03558 | 2003 $VW_3$ |
| 2003 $VT_4$ | 16.6 | 0.15 | 20060922 | 106.43613 | 203.64155 | 39.63633 | 6.98644 | 0.0701896 | 2.2799087 | 86 | 3 | 2003–2006 | 0.73 | M-v | 3 | MPC | 76181 | 2003 $VT_4$ |
| 2003 $VT_5$ | 15.9 | 0.15 | 20060922 | 310.08288 | 248.65887 | 57.76043 | 5.59068 | 0.1449467 | 2.7894575 | 48 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 00658 | 2003 $VT_5$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $VC_6$ | 16.9 | 0.15 | 20060922 | 343.15781 | 87.20377 | 277.02361 | 8.69878 | 0.1741947 | 2.2431794 | 51 | 2 | 2003–2006 | 0.48 | M-v | 3 | MPC | 03558 | 2003 $VC_6$ |
| 2003 $VD_6$ | 17.7 | 0.15 | 20060922 | 331.24445 | 337.48628 | 58.88782 | 10.32427 | 0.1416495 | 2.1935057 | 47 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 76181 | 2003 $VD_6$ |
| 2003 $VA_8$ | 17.1 | 0.15 | 20060922 | 343.33379 | 300.46188 | 63.25010 | 7.83939 | 0.1326762 | 2.2942778 | 34 | 4 | 1996–2006 | 0.57 | M-v | 1 | MPC | 04272 | 2003 $VA_8$ |
| 2003 $VD_8$ | 16.8 | 0.15 | 20060922 | 325.61880 | 53.41596 | 333.61336 | 8.57888 | 0.1714758 | 2.2350099 | 47 | 2 | 2003–2006 | 0.52 | M-v | 3 | MPC | 03559 | 2003 $VD_8$ |
| 2003 $VW_8$ | 17.5 | 0.15 | 20060922 | 258.97829 | 55.52597 | 42.94537 | 5.43016 | 0.0898114 | 2.2402853 | 26 | 3 | 2003–2006 | 0.27 | M-v | 2 | MPC | 76183 | 2003 $VW_8$ |
| 2003 $VF_9$ | 16.1 | 0.15 | 20060922 | 317.36954 | 64.48566 | 64.32765 | 24.71571 | 0.0998046 | 1.9641587 | 83 | 4 | 1999–2006 | 0.54 | M-v | 2 | MPC | 57234 | 2003 $VF_9$ |
| 2003 $VM_9$ | 17.0 | 0.15 | 20060922 | 286.80694 | 3.56016 | 70.52411 | 5.98721 | 0.1132404 | 2.2807704 | 65 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 76184 | 2003 $VM_9$ |
| 2003 $VC_{10}$ | 16.4 | 0.15 | 20060922 | 190.72276 | 142.14297 | 34.41027 | 25.65394 | 0.1610157 | 2.2891839 | 23 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 00659 | 2003 $VC_{10}$ |
| 2003 $VE_{10}$ | 16.4 | 0.15 | 20060922 | 7.05134 | 265.54565 | 61.15362 | 7.78933 | 0.2501511 | 2.2495773 | 63 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 04272 | 2003 $VE_{10}$ |
| 2003 $VN_{10}$ | 17.0 | 0.15 | 20060922 | 26.84837 | 38.44410 | 264.04647 | 4.61834 | 0.1651285 | 2.2976268 | 54 | 4 | 1999–2006 | 0.67 | M-v | 1 | MPC | 04272 | 2003 $VN_{10}$ |
| 2003 $VM_{12}$ | 16.4 | 0.15 | 20031207 | 29.26327 | 286.44904 | 91.05221 | 7.83223 | 0.3110263 | 2.3475624 | 23 | 1 | 56 days | 0.54 | | | MPC | | 2003 $VM_{12}$ |
| 2003 $VN_{12}$ | 16.4 | 0.15 | 20031207 | 50.78748 | 38.24997 | 314.51207 | 11.22212 | 0.1680735 | 2.5932696 | 18 | 1 | 54 days | 0.76 | | | MPC | | 2003 $VN_{12}$ |
| 2003 $VO_{12}$ | 15.7 | 0.15 | 20031117 | 23.71766 | 82.35627 | 288.92436 | 16.25684 | 0.2121341 | 3.0395575 | 22 | 1 | 43 days | 0.52 | | | MPC | | 2003 $VO_{12}$ |
| 2003 WY | 17.6 | 0.15 | 20060922 | 340.73516 | 150.19626 | 219.05721 | 1.67025 | 0.1656205 | 2.2331558 | 67 | 4 | 2001–2006 | 0.42 | M-v | 2 | MPC | 03559 | 2003 WY |
| 2003 $WV_2$ | 15.7 | 0.15 | 20060922 | 191.95465 | 313.66139 | 110.28175 | 11.06391 | 0.0760421 | 2.9967080 | 55 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 02191 | 2003 $WV_2$ |
| 2003 $WM_3$ | 16.9 | 0.15 | 20060922 | 295.11198 | 214.37171 | 212.42822 | 5.86642 | 0.0634405 | 2.2462726 | 71 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 04272 | 2003 $WM_3$ |
| 2003 $WU_5$ | 17.2 | 0.15 | 20060922 | 290.17239 | 337.76884 | 86.17691 | 2.90118 | 0.2307054 | 2.2995813 | 69 | 4 | 1997–2006 | 0.49 | M-v | 2 | MPC | 03559 | 2003 $WU_5$ |
| 2003 $WC_6$ | 16.4 | 0.15 | 20060922 | 262.73847 | 114.45669 | 277.31964 | 1.24996 | 0.2295031 | 2.6050326 | 81 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 02191 | 2003 $WC_6$ |
| 2003 $WP_6$ | 17.1 | 0.15 | 20060922 | 8.68195 | 83.60609 | 245.53961 | 6.54806 | 0.1923182 | 2.2375643 | 43 | 2 | 2003–2006 | 0.47 | M-v | 3 | MPC | 03560 | 2003 $WP_6$ |
| 2003 $WZ_6$ | 16.5 | 0.15 | 20060922 | 352.86513 | 230.80295 | 120.83252 | 6.21557 | 0.1778557 | 2.2593269 | 71 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 03560 | 2003 $WZ_6$ |
| 2003 $WJ_7$ | 17.5 | 0.15 | 20060922 | 6.40535 | 48.16070 | 282.73405 | 5.41780 | 0.2978048 | 2.1964679 | 79 | 2 | 2003–2006 | 0.45 | M-v | 2 | MPC | 04272 | 2003 $WJ_7$ |
| 2003 $WO_7$ | 18.9 | 0.15 | 20060922 | 5.31122 | 245.64982 | 91.35414 | 7.66963 | 0.4347927 | 2.1524063 | 105 | 2 | 2003–2006 | 0.45 | M-v | 1 | MPC | 04272 | 2003 $WO_7$ |
| 2003 $WX_7$ | 16.1 | 0.15 | 20060922 | 143.50778 | 252.69997 | 235.16473 | 1.36192 | 0.1862742 | 3.0572207 | 39 | 3 | 2000–2005 | 0.47 | M-v | 2 | MPC | 76190 | 2003 $WX_7$ |
| 2003 $WN_8$ | 16.8 | 0.15 | 20060922 | 346.10590 | 67.73935 | 306.37102 | 5.82567 | 0.1085630 | 2.2014114 | 70 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 03560 | 2003 $WN_8$ |
| 2003 $WY_8$ | 17.0 | 0.15 | 20060922 | 351.32671 | 7.60130 | 336.60021 | 5.04391 | 0.1631609 | 2.2744020 | 42 | 3 | 2003–2006 | 0.35 | M-v | 2 | MPC | 03561 | 2003 $WY_8$ |
| 2003 $WY_9$ | 16.7 | 0.15 | 20060922 | 203.56257 | 183.26092 | 321.08973 | 6.27578 | 0.0503250 | 2.3403826 | 34 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 04272 | 2003 $WY_9$ |
| 2003 $WB_{10}$ | 16.9 | 0.15 | 20060922 | 15.71153 | 308.47966 | 7.22957 | 7.70972 | 0.1369491 | 2.3168698 | 47 | 5 | 1992–2006 | 0.31 | M-v | 1 | MPC | 04272 | 2003 $WB_{10}$ |
| 2003 $WC_{10}$ | 16.7 | 0.15 | 20060922 | 165.37902 | 256.39876 | 311.49500 | 6.42017 | 0.0912136 | 2.2131273 | 50 | 3 | 2003–2006 | 0.51 | M-v | 2 | MPC | 87598 | 2003 $WC_{10}$ |
| 2003 $WW_{10}$ | 17.1 | 0.15 | 20060922 | 329.24944 | 30.90052 | 342.39865 | 6.52724 | 0.1120789 | 2.2380675 | 33 | 2 | 2003–2006 | 0.31 | M-v | 3 | MPC | 03561 | 2003 $WW_{10}$ |
| 2003 $WZ_{10}$ | 16.8 | 0.15 | 20060922 | 67.25529 | 347.89709 | 277.15257 | 5.91518 | 0.0814085 | 2.2796490 | 42 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 03561 | 2003 $WZ_{10}$ |
| 2003 $WL_{11}$ | 17.2 | 0.15 | 20060922 | 337.70820 | 46.14430 | 306.12800 | 6.47034 | 0.1352743 | 2.3421710 | 50 | 3 | 1999–2006 | 0.38 | M-v | 1 | MPC | 04272 | 2003 $WL_{11}$ |
| 2003 $WP_{11}$ | 16.5 | 0.15 | 20060922 | 259.64382 | 139.07882 | 311.60196 | 7.00188 | 0.1665256 | 2.3590367 | 49 | 5 | 1992–2006 | 0.48 | M-v | 1 | MPC | 04272 | 2003 $WP_{11}$ |
| 2003 $WD_{12}$ | 16.1 | 0.15 | 20060922 | 244.24106 | 162.55903 | 320.86579 | 5.24249 | 0.1639439 | 2.3127368 | 67 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 04272 | 2003 $WD_{12}$ |
| 2003 $WF_{14}$ | 17.1 | 0.15 | 20060922 | 52.95066 | 23.37378 | 230.87450 | 2.28267 | 0.1602366 | 2.4464221 | 40 | 4 | 1998–2006 | 0.27 | M-v | 0 | MPC | 03561 | 2003 $WF_{14}$ |
| 2003 $WH_{16}$ | 17.5 | 0.15 | 20060922 | 50.17484 | 76.19133 | 221.47963 | 3.56974 | 0.1699338 | 2.1951304 | 69 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 57253 | 2003 $WH_{16}$ |
| 2003 $WH_{18}$ | 17.2 | 0.15 | 20060922 | 294.05168 | 91.91162 | 325.29479 | 6.99854 | 0.0764718 | 2.2790794 | 46 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04272 | 2003 $WH_{18}$ |
| 2003 $WM_{18}$ | 16.4 | 0.15 | 20060922 | 232.39440 | 164.64059 | 321.11606 | 7.07314 | 0.0390793 | 2.2833948 | 83 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 04272 | 2003 $WM_{18}$ |
| 2003 $WQ_{19}$ | 16.3 | 0.15 | 20060922 | 166.96984 | 189.77278 | 296.41795 | 7.11638 | 0.1684277 | 2.8041449 | 34 | 5 | 1995–2005 | 0.38 | M-v | 0 | MPC | 89489 | 2003 $WQ_{19}$ |
| 2003 $WR_{19}$ | 17.1 | 0.15 | 20060922 | 340.60314 | 29.82338 | 343.46682 | 4.72346 | 0.1764231 | 2.2225273 | 139 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 03562 | 2003 $WR_{19}$ |
| 2003 $WW_{22}$ | 17.5 | 0.15 | 20060922 | 72.85499 | 206.95913 | 79.88284 | 3.26569 | 0.0272851 | 2.2389266 | 35 | 3 | 2003–2006 | 0.52 | M-v | 2 | MPC | 89489 | 2003 $WW_{22}$ |
| 2003 $WC_{24}$ | 16.8 | 0.15 | 20060922 | 302.31948 | 201.21609 | 224.51677 | 4.93450 | 0.1270783 | 2.2355351 | 92 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 04273 | 2003 $WC_{24}$ |
| 2003 $WF_{24}$ | 17.1 | 0.15 | 20060922 | 17.21318 | 284.13494 | 38.86062 | 3.93934 | 0.1912400 | 2.2475283 | 54 | 2 | 2003–2006 | 0.48 | M-v | 3 | MPC | 03562 | 2003 $WF_{24}$ |
| 2003 $WK_{24}$ | 16.6 | 0.15 | 20060922 | 46.52831 | 72.91908 | 247.96076 | 4.29369 | 0.1833846 | 2.1454617 | 97 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 76196 | 2003 $WK_{24}$ |
| 2003 $WO_{24}$ | 17.3 | 0.15 | 20060922 | 16.61926 | 357.89574 | 344.62586 | 3.66117 | 0.2205712 | 2.1647414 | 80 | 3 | 2003–2006 | 0.49 | M-v | 2 | MPC | 03562 | 2003 $WO_{24}$ |
| 2003 $WX_{24}$ | 16.4 | 0.15 | 20060922 | 140.11362 | 255.99904 | 35.92735 | 23.51283 | 0.0576937 | 1.9406375 | 34 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 66317 | 2003 $WX_{24}$ |
| 2003 $WK_{25}$ | 17.0 | 0.15 | 20060922 | 102.82921 | 333.06349 | 272.60317 | 5.95334 | 0.0995623 | 2.2506778 | 57 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 04273 | 2003 $WK_{25}$ |
| 2003 $WU_{26}$ | 18.1 | 0.15 | 20060922 | 22.87714 | 101.33309 | 213.75912 | 5.40870 | 0.3657593 | 2.1529412 | 124 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04273 | 2003 $WU_{26}$ |
| 2003 $WC_{27}$ | 13.4 | 0.15 | 20060922 | 159.53008 | 38.62518 | 297.57170 | 6.35091 | 0.0456283 | 5.1520377 | 59 | 5 | 2001–2006 | 0.35 | M-v | 1 | MPC | 95140 | 2003 $WC_{27}$ |
| 2003 $WT_{27}$ | 14.9 | 0.15 | 20060922 | 76.03316 | 273.23719 | 251.15386 | 13.61914 | 0.0965903 | 3.2156796 | 39 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 03562 | 2003 $WT_{27}$ |
| 2003 $WR_{28}$ | 17.0 | 0.15 | 20060922 | 192.21732 | 232.07656 | 288.58764 | 2.14589 | 0.1024400 | 2.3308391 | 40 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04273 | 2003 $WR_{28}$ |
| 2003 $WX_{28}$ | 16.8 | 0.15 | 20060922 | 20.94737 | 300.00980 | 8.46037 | 5.86114 | 0.1807285 | 2.3021804 | 61 | 6 | 1996–2006 | 0.44 | M-v | 1 | MPC | 04273 | 2003 $WX_{28}$ |
| 2003 $WT_{29}$ | 15.9 | 0.15 | 20060922 | 219.52193 | 359.41622 | 26.19146 | 8.79244 | 0.1260024 | 3.0169908 | 36 | 2 | 2003–2006 | 0.43 | M-v | 3 | MPC | 03563 | 2003 $WT_{29}$ |
| 2003 $WM_{30}$ | 14.8 | 0.15 | 20060922 | 115.28722 | 101.84970 | 45.17763 | 16.71438 | 0.1986346 | 3.1421534 | 112 | 3 | 1998–2005 | 0.60 | M-v | 2 | MPC | 77742 | 2003 $WM_{30}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $WY_{31}$ | 15.3 | 0.15 | 20060922 | 269.08778 | 76.05444 | 246.32380 | 9.18710 | 0.1084551 | 2.9833029 | 38 | 3 | 1997–2003 | 0.47 | M-v | 3 | MPC | 00664 | 2003 $WY_{31}$ |
| 2003 $WP_{32}$ | 17.0 | 0.15 | 20060922 | 11.49622 | 290.05062 | 41.76986 | 5.27181 | 0.1566083 | 2.2497458 | 63 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 04273 | 2003 $WP_{32}$ |
| 2003 $WK_{33}$ | 17.4 | 0.15 | 20060922 | 205.65816 | 187.52372 | 304.55749 | 1.27692 | 0.0748488 | 2.3915729 | 32 | 5 | 1992–2006 | 0.40 | M-v | 0 | MPC | 03563 | 2003 $WK_{33}$ |
| 2003 $WR_{34}$ | 16.6 | 0.15 | 20060922 | 16.56328 | 273.33947 | 47.59235 | 6.91783 | 0.0969134 | 2.3273750 | 49 | 3 | 2003–2006 | 0.46 | M-v | 3 | MPC | 03563 | 2003 $WR_{34}$ |
| 2003 $WS_{34}$ | 15.2 | 0.15 | 20060922 | 115.55671 | 232.98398 | 267.62106 | 4.61588 | 0.0324286 | 3.0543066 | 47 | 4 | 2002–2006 | 0.84 | M-v | 2 | MPC | 02192 | 2003 $WS_{34}$ |
| 2003 $WE_{36}$ | 17.0 | 0.15 | 20060922 | 305.04777 | 141.16757 | 262.75014 | 5.05964 | 0.1605654 | 2.2998066 | 74 | 4 | 1997–2006 | 0.58 | M-v | 1 | MPC | 03563 | 2003 $WE_{36}$ |
| 2003 $WM_{36}$ | 15.9 | 0.15 | 20060922 | 234.35892 | 325.47359 | 52.45850 | 10.52704 | 0.0572073 | 3.0397180 | 24 | 2 | 2003–2006 | 0.52 | M-v | 4 | MPC | 00665 | 2003 $WM_{36}$ |
| 2003 $WH_{38}$ | 16.4 | 0.15 | 20060922 | 286.68091 | 71.83193 | 1.73656 | 7.16813 | 0.0696665 | 2.2936240 | 60 | 3 | 2001–2006 | 0.55 | M-v | 4 | MPC | 04273 | 2003 $WH_{38}$ |
| 2003 $WE_{39}$ | 15.9 | 0.15 | 20060922 | 294.78238 | 331.57555 | 0.80719 | 6.25315 | 0.1639780 | 2.6831121 | 34 | 4 | 1998–2005 | 0.42 | M-v | 2 | MPC | 57273 | 2003 $WE_{39}$ |
| 2003 $WX_{39}$ | 17.0 | 0.15 | 20060922 | 210.10909 | 231.75908 | 277.06121 | 4.28629 | 0.1721148 | 2.3245840 | 42 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04273 | 2003 $WX_{39}$ |
| 2003 $WW_{40}$ | 18.2 | 0.15 | 20060922 | 298.16835 | 120.01661 | 319.52945 | 1.93240 | 0.1182756 | 2.2119975 | 32 | 4 | 1996–2006 | 0.41 | M-v | 1 | MPC | 89489 | 2003 $WW_{40}$ |
| 2003 $WY_{41}$ | 16.6 | 0.15 | 20060922 | 351.53318 | 66.30681 | 292.16569 | 4.82406 | 0.2223314 | 2.2286734 | 87 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 03564 | 2003 $WY_{41}$ |
| 2003 $WA_{42}$ | 17.2 | 0.15 | 20060922 | 347.64108 | 68.69529 | 275.72183 | 5.01718 | 0.2166792 | 2.3107099 | 59 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 00666 | 2003 $WA_{42}$ |
| 2003 $WC_{42}$ | 17.5 | 0.15 | 20060922 | 327.09702 | 246.06556 | 125.73081 | 3.42350 | 0.2249382 | 2.2993118 | 47 | 4 | 1996–2006 | 0.39 | M-v | 1 | MPC | 03564 | 2003 $WC_{42}$ |
| 2003 $WB_{44}$ | 17.7 | 0.15 | 20060922 | 294.39573 | 24.14687 | 2.29908 | 6.14317 | 0.1409602 | 2.4285923 | 28 | 4 | 1999–2005 | 0.43 | M-v | 1 | MPC | 76205 | 2003 $WB_{44}$ |
| 2003 $WL_{44}$ | 15.1 | 0.15 | 20060922 | 177.49992 | 62.12675 | 352.54101 | 11.79524 | 0.1063450 | 3.1958865 | 41 | 4 | 1994–2006 | 0.41 | M-v | 1 | MPC | 04273 | 2003 $WL_{44}$ |
| 2003 $WF_{45}$ | 17.0 | 0.15 | 20060922 | 18.55291 | 74.40201 | 253.10220 | 3.93839 | 0.2182603 | 2.2194538 | 76 | 3 | 2003–2006 | 0.52 | M-v | 2 | MPC | 03564 | 2003 $WF_{45}$ |
| 2003 $WU_{45}$ | 16.9 | 0.15 | 20060922 | 241.93894 | 180.84639 | 321.60118 | 2.13598 | 0.1531748 | 2.1912670 | 67 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 77743 | 2003 $WU_{45}$ |
| 2003 $WD_{46}$ | 16.6 | 0.15 | 20060922 | 354.81462 | 322.52699 | 36.36394 | 7.83519 | 0.2130545 | 2.2177628 | 64 | 3 | 1993–2006 | 0.42 | M-v | 2 | MPC | 03565 | 2003 $WD_{46}$ |
| 2003 $WY_{46}$ | 15.8 | 0.15 | 20060922 | 308.35182 | 260.43180 | 43.77179 | 5.58783 | 0.1433858 | 2.7636471 | 35 | 3 | 1998–2006 | 0.59 | M-v | 3 | MPC | 00667 | 2003 $WY_{46}$ |
| 2003 $WH_{47}$ | 17.6 | 0.15 | 20060922 | 128.68645 | 344.26193 | 245.76467 | 0.17611 | 0.0857535 | 2.2263462 | 36 | 4 | 1998–2006 | 0.31 | M-v | 1 | MPC | 03565 | 2003 $WH_{47}$ |
| 2003 $WP_{49}$ | 16.7 | 0.15 | 20060922 | 334.33064 | 61.49095 | 308.12877 | 5.08142 | 0.0223178 | 2.2617422 | 42 | 4 | 1996–2006 | 0.51 | M-v | 1 | MPC | 04273 | 2003 $WP_{49}$ |
| 2003 $WZ_{49}$ | 17.5 | 0.15 | 20060922 | 328.04007 | 38.85995 | 3.29423 | 5.98025 | 0.1318894 | 2.1662824 | 61 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 76206 | 2003 $WZ_{49}$ |
| 2003 $WO_{51}$ | 16.9 | 0.15 | 20060922 | 337.17275 | 260.80199 | 114.53816 | 5.07768 | 0.1958417 | 2.2086596 | 62 | 2 | 2003–2006 | 0.53 | M-v | 3 | MPC | 03565 | 2003 $WO_{51}$ |
| 2003 $WN_{55}$ | 16.7 | 0.15 | 20060922 | 20.73536 | 17.09739 | 313.24607 | 2.89180 | 0.1361648 | 2.2423099 | 112 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04274 | 2003 $WN_{55}$ |
| 2003 $WT_{55}$ | 17.0 | 0.15 | 20060922 | 290.09670 | 85.62320 | 330.96925 | 2.03827 | 0.1567168 | 2.3375755 | 52 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 04274 | 2003 $WT_{55}$ |
| 2003 $WA_{56}$ | 16.5 | 0.15 | 20060922 | 167.62629 | 295.84303 | 271.20654 | 6.83282 | 0.0512680 | 2.2262130 | 53 | 3 | 2003–2006 | 0.66 | M-v | 3 | MPC | 86162 | 2003 $WA_{56}$ |
| 2003 $WF_{56}$ | 17.2 | 0.15 | 20060922 | 288.68210 | 67.82365 | 17.52157 | 3.09240 | 0.1769043 | 2.2379414 | 49 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 57284 | 2003 $WF_{56}$ |
| 2003 $WK_{56}$ | 16.3 | 0.15 | 20060922 | 1.77747 | 319.20918 | 336.57225 | 3.17471 | 0.1581761 | 2.5653419 | 31 | 4 | 2001–2005 | 0.32 | M-v | 0 | MPC | 87598 | 2003 $WK_{56}$ |
| 2003 $WM_{56}$ | 16.7 | 0.15 | 20060922 | 122.40415 | 340.46042 | 274.11145 | 6.34298 | 0.1262177 | 2.1862071 | 66 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 76209 | 2003 $WM_{56}$ |
| 2003 $WT_{56}$ | 15.4 | 0.15 | 20060922 | 331.81777 | 103.34726 | 256.21266 | 21.07783 | 0.2387479 | 2.3513038 | 46 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 57285 | 2003 $WT_{56}$ |
| 2003 $WF_{57}$ | 16.7 | 0.15 | 20060922 | 207.51466 | 106.08193 | 62.20837 | 3.22481 | 0.0559003 | 2.1637867 | 103 | 4 | 2000–2006 | 0.52 | M-v | 3 | MPC | 76209 | 2003 $WF_{57}$ |
| 2003 $WO_{57}$ | 17.1 | 0.15 | 20060922 | 261.84201 | 10.40623 | 19.52696 | 2.35608 | 0.1234823 | 2.6294568 | 31 | 3 | 1996–2005 | 0.60 | M-v | 4 | MPC | 89489 | 2003 $WO_{57}$ |
| 2003 $WA_{58}$ | 17.3 | 0.15 | 20060922 | 234.73214 | 239.28863 | 239.82879 | 4.14934 | 0.1820805 | 2.3749911 | 48 | 3 | 2003–2006 | 0.32 | M-v | 2 | MPC | 03565 | 2003 $WA_{58}$ |
| 2003 $WD_{58}$ | 17.2 | 0.15 | 20060922 | 317.84468 | 349.47766 | 48.65952 | 4.71286 | 0.1071324 | 2.2543754 | 53 | 3 | 2003–2006 | 0.40 | M-v | 3 | MPC | 04274 | 2003 $WD_{58}$ |
| 2003 $WF_{58}$ | 16.6 | 0.15 | 20060922 | 224.85273 | 61.56075 | 51.86929 | 8.12428 | 0.1923931 | 2.4691454 | 44 | 4 | 1999–2005 | 0.45 | M-v | 1 | MPC | 03566 | 2003 $WF_{58}$ |
| 2003 $WG_{58}$ | 16.2 | 0.15 | 20060922 | 274.76637 | 124.46341 | 246.36643 | 2.43616 | 0.0669337 | 2.6786573 | 39 | 3 | 2003–2006 | 0.57 | M-v | 4 | MPC | 86162 | 2003 $WG_{58}$ |
| 2003 $WL_{59}$ | 17.1 | 0.15 | 20060922 | 358.03166 | 271.33502 | 64.81339 | 7.23959 | 0.1787385 | 2.2784897 | 32 | 2 | 2003–2006 | 0.42 | M-v | 4 | MPC | 03566 | 2003 $WL_{59}$ |
| 2003 $WM_{59}$ | 16.2 | 0.15 | 20060922 | 328.64350 | 246.57342 | 67.39702 | 8.50042 | 0.1720830 | 2.5918032 | 33 | 3 | 1999–2006 | 0.33 | M-v | 1 | MPC | 00669 | 2003 $WM_{59}$ |
| 2003 $WH_{60}$ | 16.4 | 0.15 | 20060922 | 269.85832 | 8.97422 | 68.15899 | 7.46226 | 0.0755268 | 2.3342124 | 53 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 03566 | 2003 $WH_{60}$ |
| 2003 $WP_{60}$ | 16.6 | 0.15 | 20060922 | 262.49556 | 230.21547 | 258.88087 | 4.54324 | 0.0402482 | 2.1588499 | 104 | 4 | 2000–2006 | 0.42 | M-v | 2 | MPC | 87598 | 2003 $WP_{60}$ |
| 2003 $WJ_{61}$ | 17.2 | 0.15 | 20060922 | 273.60950 | 134.42527 | 245.30331 | 0.49538 | 0.1763763 | 2.5883103 | 31 | 3 | 2000–2005 | 0.48 | M-v | 4 | MPC | 57288 | 2003 $WJ_{61}$ |
| 2003 $WP_{61}$ | 18.3 | 0.15 | 20060922 | 349.34631 | 125.94209 | 228.07850 | 2.43900 | 0.1833223 | 2.2479865 | 36 | 2 | 2003–2006 | 0.45 | M-v | 3 | MPC | 03566 | 2003 $WP_{61}$ |
| 2003 $WH_{62}$ | 16.3 | 0.15 | 20060922 | 270.99192 | 198.01048 | 231.15007 | 5.69542 | 0.1419326 | 2.3815635 | 71 | 4 | 1994–2005 | 0.59 | M-v | 1 | MPC | 57289 | 2003 $WH_{62}$ |
| 2003 $WL_{63}$ | 15.8 | 0.15 | 20060922 | 202.98520 | 160.90010 | 250.38928 | 8.37517 | 0.0396323 | 3.0436114 | 42 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 00670 | 2003 $WL_{63}$ |
| 2003 $WR_{63}$ | 17.1 | 0.15 | 20060922 | 303.53853 | 5.17347 | 55.22538 | 5.71115 | 0.1737011 | 2.2509571 | 57 | 3 | 2003–2006 | 0.41 | M-v | 3 | MPC | 76213 | 2003 $WR_{63}$ |
| 2003 $WV_{63}$ | 16.7 | 0.15 | 20060922 | 132.71492 | 353.78580 | 244.96010 | 6.08824 | 0.0194819 | 2.2224200 | 62 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 76213 | 2003 $WV_{63}$ |
| 2003 $WW_{63}$ | 16.2 | 0.15 | 20060922 | 244.71768 | 124.88627 | 258.46437 | 1.04779 | 0.0769106 | 2.8690736 | 33 | 4 | 2002–2006 | 0.39 | M-v | 1 | MPC | 00670 | 2003 $WW_{63}$ |
| 2003 $WB_{64}$ | 16.3 | 0.15 | 20060922 | 185.97383 | 292.65936 | 239.48872 | 10.48828 | 0.2043363 | 2.4093882 | 53 | 5 | 2001–2006 | 0.43 | M-v | 0 | MPC | 87598 | 2003 $WB_{64}$ |
| 2003 $WE_{64}$ | 16.2 | 0.15 | 20060922 | 269.35432 | 142.03796 | 238.91168 | 5.38947 | 0.0620653 | 2.6791773 | 33 | 4 | 1994–2005 | 0.45 | M-v | 1 | MPC | 57291 | 2003 $WE_{64}$ |
| 2003 $WU_{64}$ | 16.4 | 0.15 | 20060922 | 11.84730 | 1.60880 | 339.50551 | 5.02766 | 0.1644702 | 2.2198389 | 117 | 4 | 1996–2006 | 0.48 | M-v | 1 | MPC | 03566 | 2003 $WU_{64}$ |
| 2003 $WB_{65}$ | 16.2 | 0.15 | 20060922 | 248.00023 | 287.65249 | 78.55701 | 3.06733 | 0.1356043 | 2.9168842 | 51 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 02193 | 2003 $WB_{65}$ |
| 2003 $WY_{65}$ | 17.1 | 0.15 | 20060922 | 292.04542 | 306.09257 | 119.14608 | 1.96720 | 0.1898089 | 2.2857680 | 67 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 03567 | 2003 $WY_{65}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $WZ_{65}$ | 18.1 | 0.15 | 20060922 | 274.93112 | 283.06683 | 173.91187 | 1.92227 | 0.2066874 | 2.2680271 | 49 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 57293 | 2003 $WZ_{65}$ |
| 2003 $WB_{66}$ | 16.5 | 0.15 | 20060922 | 219.57712 | 123.98453 | 350.14228 | 6.41487 | 0.0733212 | 2.4604813 | 36 | 6 | 1997–2006 | 0.49 | M-v | 1 | MPC | 04274 | 2003 $WB_{66}$ |
| 2003 $WG_{69}$ | 17.3 | 0.15 | 20060922 | 17.47647 | 109.48028 | 228.01131 | 3.73269 | 0.1890799 | 2.2043633 | 81 | 4 | 1993–2006 | 0.46 | M-v | 1 | MPC | 04274 | 2003 $WG_{69}$ |
| 2003 $WN_{69}$ | 16.0 | 0.15 | 20060922 | 247.98576 | 120.80985 | 233.75711 | 8.10182 | 0.1055560 | 3.0802365 | 27 | 4 | 1997–2006 | 0.37 | M-v | 0 | MPC | 02193 | 2003 $WN_{69}$ |
| 2003 $WT_{71}$ | 17.3 | 0.15 | 20060922 | 271.53230 | 194.92958 | 248.11377 | 5.21610 | 0.0413182 | 2.2571218 | 31 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 76218 | 2003 $WT_{71}$ |
| 2003 $WY_{71}$ | 15.6 | 0.15 | 20060922 | 257.07115 | 359.25094 | 6.78018 | 13.95226 | 0.2011150 | 2.7677985 | 32 | 3 | 1998–2003 | 0.58 | M-v | 4 | MPC | 57300 | 2003 $WY_{71}$ |
| 2003 $WA_{72}$ | 14.9 | 0.15 | 20060922 | 229.33563 | 354.43825 | 28.88920 | 9.70107 | 0.0492441 | 3.0542680 | 42 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 03567 | 2003 $WA_{72}$ |
| 2003 $WY_{72}$ | 15.0 | 0.15 | 20060922 | 287.65812 | 1.34419 | 344.49256 | 11.50234 | 0.0954754 | 2.7716430 | 74 | 5 | 1998–2005 | 0.66 | M-v | 1 | MPC | 77745 | 2003 $WY_{72}$ |
| 2003 $WM_{73}$ | 16.0 | 0.15 | 20060922 | 196.22648 | 125.47605 | 17.55989 | 2.65764 | 0.1412952 | 2.5233150 | 54 | 3 | 2002–2005 | 0.56 | M-v | 3 | MPC | 65515 | 2003 $WM_{73}$ |
| 2003 $WO_{73}$ | 16.8 | 0.15 | 20060922 | 8.96126 | 351.56469 | 352.73698 | 2.26011 | 0.2108049 | 2.2220720 | 123 | 3 | 2000–2006 | 0.44 | M-v | 2 | MPC | 03567 | 2003 $WO_{73}$ |
| 2003 $WS_{73}$ | 16.7 | 0.15 | 20060922 | 340.62799 | 318.29836 | 52.01669 | 6.95842 | 0.1466226 | 2.2853120 | 48 | 2 | 2003–2006 | 0.59 | M-v | 4 | MPC | 03568 | 2003 $WS_{73}$ |
| 2003 $WS_{74}$ | 16.1 | 0.15 | 20060922 | 261.91501 | 157.17449 | 297.76928 | 12.83305 | 0.0621286 | 2.3339847 | 50 | 5 | 1999–2006 | 0.72 | M-v | 1 | MPC | 04274 | 2003 $WS_{74}$ |
| 2003 $WX_{75}$ | 17.1 | 0.15 | 20060922 | 282.13126 | 133.66200 | 288.88418 | 6.13685 | 0.0711343 | 2.2925250 | 25 | 3 | 2001–2006 | 0.41 | M-v | 4 | MPC | 03568 | 2003 $WX_{75}$ |
| 2003 $WY_{75}$ | 16.7 | 0.15 | 20060922 | 30.44441 | 303.80486 | 349.03423 | 6.71266 | 0.1087471 | 2.3328885 | 45 | 5 | 1999–2006 | 0.36 | M-v | 1 | MPC | 04274 | 2003 $WY_{75}$ |
| 2003 $WP_{76}$ | 16.9 | 0.15 | 20060922 | 351.22271 | 30.81508 | 329.27631 | 4.81274 | 0.1807188 | 2.2372026 | 121 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 03568 | 2003 $WP_{76}$ |
| 2003 $WU_{77}$ | 16.9 | 0.15 | 20060922 | 126.41086 | 24.59610 | 255.39469 | 16.99479 | 0.0450625 | 1.9731015 | 43 | 3 | 2003–2006 | 0.55 | M-v | 3 | MPC | 86164 | 2003 $WU_{77}$ |
| 2003 $WC_{78}$ | 17.2 | 0.15 | 20060922 | 19.97152 | 326.89870 | 3.79130 | 4.10725 | 0.0692738 | 2.2599653 | 70 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04274 | 2003 $WC_{78}$ |
| 2003 $WW_{79}$ | 17.7 | 0.15 | 20060922 | 252.40482 | 151.40511 | 292.73573 | 2.73049 | 0.1854945 | 2.4370336 | 33 | 4 | 1995–2006 | 0.49 | M-v | 2 | MPC | 57308 | 2003 $WW_{79}$ |
| 2003 $WX_{80}$ | 16.2 | 0.15 | 20060922 | 358.33272 | 318.97892 | 19.25537 | 5.83593 | 0.2072157 | 2.2812948 | 55 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 04274 | 2003 $WX_{80}$ |
| 2003 $WH_{81}$ | 17.2 | 0.15 | 20060922 | 348.88436 | 48.93538 | 334.02549 | 2.49023 | 0.0473238 | 2.1921684 | 65 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 04274 | 2003 $WH_{81}$ |
| 2003 $WL_{81}$ | 15.7 | 0.15 | 20060922 | 112.42684 | 244.77470 | 267.47809 | 9.14056 | 0.0491081 | 2.9917561 | 40 | 3 | 2002–2005 | 0.67 | M-v | 3 | MPC | 57310 | 2003 $WL_{81}$ |
| 2003 $WG_{82}$ | 15.7 | 0.15 | 20060922 | 274.95555 | 212.24597 | 115.48331 | 10.98654 | 0.0984229 | 2.9308575 | 25 | 3 | 2002–2005 | 0.63 | M-v | 3 | MPC | 76222 | 2003 $WG_{82}$ |
| 2003 $WF_{85}$ | 15.5 | 0.15 | 20060922 | 77.11062 | 291.27163 | 228.27867 | 8.15136 | 0.0973839 | 3.2072026 | 42 | 4 | 2002–2006 | 0.63 | M-v | 0 | MPC | 02193 | 2003 $WF_{85}$ |
| 2003 $WO_{85}$ | 15.5 | 0.15 | 20060922 | 157.10092 | 239.72933 | 259.60258 | 9.08526 | 0.1483242 | 2.7589188 | 46 | 3 | 2000–2005 | 0.68 | M-v | 3 | MPC | 57315 | 2003 $WO_{85}$ |
| 2003 $WQ_{85}$ | 15.6 | 0.15 | 20060922 | 176.27545 | 216.07777 | 307.13250 | 4.73466 | 0.1354963 | 2.4757872 | 63 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 77746 | 2003 $WQ_{85}$ |
| 2003 $WY_{85}$ | 17.3 | 0.15 | 20060922 | 339.97416 | 76.68658 | 288.09320 | 4.59632 | 0.2528651 | 2.2346125 | 57 | 2 | 2003–2006 | 0.39 | M-v | 3 | MPC | 04274 | 2003 $WY_{85}$ |
| 2003 $WQ_{86}$ | 17.3 | 0.15 | 20060922 | 341.94615 | 310.62259 | 67.62658 | 5.36917 | 0.1985808 | 2.2114722 | 59 | 4 | 1993–2006 | 0.57 | M-v | 1 | MPC | 04274 | 2003 $WQ_{86}$ |
| 2003 $WY_{86}$ | 17.3 | 0.15 | 20060922 | 322.98531 | 352.43011 | 59.41409 | 7.25816 | 0.1512458 | 2.2026655 | 54 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 76224 | 2003 $WY_{86}$ |
| 2003 $WK_{88}$ | 16.4 | 0.15 | 20060922 | 50.48208 | 17.47136 | 285.80271 | 5.18627 | 0.2356664 | 2.1576341 | 73 | 6 | 1993–2006 | 0.52 | M-v | 1 | MPC | 77746 | 2003 $WK_{88}$ |
| 2003 $WY_{88}$ | 17.3 | 0.15 | 20060922 | 356.02063 | 287.34768 | 69.64207 | 6.72597 | 0.2040098 | 2.1910579 | 44 | 2 | 2003–2006 | 0.55 | M-v | 3 | MPC | 03569 | 2003 $WY_{88}$ |
| 2003 $WF_{89}$ | 16.4 | 0.15 | 20060922 | 298.45804 | 82.78498 | 242.99659 | 2.85875 | 0.0976305 | 2.7767854 | 30 | 3 | 2003–2006 | 0.57 | M-v | 3 | MPC | 03569 | 2003 $WF_{89}$ |
| 2003 $WM_{89}$ | 17.3 | 0.15 | 20060922 | 296.29335 | 184.60902 | 227.97949 | 3.43852 | 0.0983022 | 2.3076967 | 35 | 3 | 2003–2006 | 0.52 | M-v | 4 | MPC | 03569 | 2003 $WM_{89}$ |
| 2003 $WP_{89}$ | 17.3 | 0.15 | 20060922 | 311.36588 | 159.88023 | 255.48901 | 2.00176 | 0.1567159 | 2.2200545 | 66 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 03569 | 2003 $WP_{89}$ |
| 2003 $WX_{89}$ | 17.2 | 0.15 | 20060922 | 341.01787 | 121.78267 | 251.10299 | 2.62347 | 0.1541504 | 2.2089603 | 73 | 2 | 2003–2006 | 0.48 | M-v | 3 | MPC | 03569 | 2003 $WX_{89}$ |
| 2003 $WT_{90}$ | 17.8 | 0.15 | 20060922 | 274.68378 | 93.81754 | 355.49567 | 3.55545 | 0.1122512 | 2.2256431 | 27 | 3 | 1996–2006 | 0.46 | M-v | 4 | MPC | 04274 | 2003 $WT_{90}$ |
| 2003 $WL_{91}$ | 16.7 | 0.15 | 20060922 | 256.19233 | 9.84634 | 87.98388 | 7.22980 | 0.0526220 | 2.2923972 | 36 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 04275 | 2003 $WL_{91}$ |
| 2003 $WN_{91}$ | 15.9 | 0.15 | 20060922 | 173.48274 | 357.55091 | 147.38238 | 4.69172 | 0.1903275 | 2.6210963 | 69 | 5 | 1994–2005 | 0.54 | M-v | 0 | MPC | 04275 | 2003 $WN_{91}$ |
| 2003 $WA_{92}$ | 17.8 | 0.15 | 20060922 | 324.22336 | 262.45546 | 136.21453 | 3.96844 | 0.1802013 | 2.2055231 | 36 | 2 | 2003–2006 | 0.55 | M-v | 3 | MPC | 03570 | 2003 $WA_{92}$ |
| 2003 $WG_{92}$ | 16.6 | 0.15 | 20060922 | 312.36688 | 247.11505 | 123.35557 | 6.31283 | 0.2265872 | 2.3727123 | 61 | 2 | 1999–2004 | 0.58 | M-v | 3 | MPC | 57323 | 2003 $WG_{92}$ |
| 2003 $WM_{92}$ | 16.4 | 0.15 | 20060922 | 316.40915 | 234.32470 | 149.27343 | 6.34050 | 0.1153711 | 2.3506644 | 84 | 6 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04275 | 2003 $WM_{92}$ |
| 2003 $WT_{92}$ | 16.1 | 0.15 | 20060922 | 106.89213 | 339.45186 | 274.37345 | 5.92903 | 0.1362211 | 2.2235616 | 45 | 6 | 1993–2006 | 0.61 | M-v | 1 | MPC | 77746 | 2003 $WT_{92}$ |
| 2003 $WX_{92}$ | 17.4 | 0.15 | 20060922 | 352.35952 | 84.14514 | 275.60230 | 4.45416 | 0.1855853 | 2.2087720 | 65 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 03570 | 2003 $WX_{92}$ |
| 2003 $WK_{93}$ | 16.9 | 0.15 | 20060922 | 301.01377 | 156.14418 | 267.14654 | 1.59546 | 0.1019341 | 2.2400912 | 74 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 04275 | 2003 $WK_{93}$ |
| 2003 $WV_{93}$ | 16.6 | 0.15 | 20060922 | 252.14015 | 14.68552 | 14.17596 | 3.21389 | 0.1411731 | 2.6726611 | 35 | 3 | 1994–2005 | 0.50 | M-v | 3 | MPC | 57325 | 2003 $WV_{93}$ |
| 2003 $WX_{94}$ | 16.8 | 0.15 | 20060922 | 297.76435 | 173.06401 | 243.33849 | 6.13348 | 0.0780249 | 2.2750675 | 56 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 03570 | 2003 $WX_{94}$ |
| 2003 $WF_{95}$ | 16.7 | 0.15 | 20060922 | 344.92074 | 295.08421 | 61.97795 | 7.11847 | 0.1440291 | 2.2802591 | 63 | 4 | 1994–2006 | 0.62 | M-v | 1 | MPC | 03570 | 2003 $WF_{95}$ |
| 2003 $WU_{96}$ | 17.0 | 0.15 | 20060922 | 353.30148 | 125.55211 | 203.92926 | 4.04939 | 0.1930846 | 2.3053339 | 50 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 57327 | 2003 $WU_{96}$ |
| 2003 $WW_{96}$ | 16.1 | 0.15 | 20060922 | 109.15311 | 334.81479 | 220.42546 | 14.36213 | 0.1118956 | 2.6127952 | 37 | 4 | 2001–2005 | 0.71 | M-v | 1 | MPC | 69591 | 2003 $WW_{96}$ |
| 2003 $WD_{97}$ | 18.1 | 0.15 | 20060922 | 347.25413 | 254.28986 | 100.98799 | 3.90540 | 0.1999783 | 2.2352048 | 24 | 2 | 2003–2006 | 0.53 | M-v | 5 | MPC | 03571 | 2003 $WD_{97}$ |
| 2003 $WB_{98}$ | 15.7 | 0.15 | 20060922 | 63.12571 | 132.17837 | 280.22122 | 17.99152 | 0.0920044 | 1.9400454 | 135 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90188 | 2003 $WB_{98}$ |
| 2003 $WD_{99}$ | 14.7 | 0.15 | 20060922 | 5.96609 | 29.85244 | 246.85002 | 32.28662 | 0.1719768 | 2.6303593 | 61 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04275 | 2003 $WD_{99}$ |
| 2003 $WH_{99}$ | 17.0 | 0.15 | 20060922 | 200.80694 | 163.12160 | 346.11866 | 2.07055 | 0.1581965 | 2.4169014 | 42 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 04275 | 2003 $WH_{99}$ |
| 2003 $WD_{100}$ | 17.4 | 0.15 | 20060922 | 307.05500 | 356.30753 | 54.11134 | 8.31892 | 0.2275682 | 2.2723757 | 39 | 3 | 1996–2003 | 0.52 | M-v | 3 | MPC | 65515 | 2003 $WD_{100}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $WE_{101}$ | 16.7 | 0.15 | 20060922 | 70.98798 | 316.77280 | 309.00721 | 6.70105 | 0.1357801 | 2.2608908 | 53 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 04275 | 2003 $WE_{101}$ |
| 2003 $WZ_{101}$ | 16.1 | 0.15 | 20060922 | 189.98898 | 249.41644 | 201.59574 | 3.38942 | 0.0680444 | 2.7705101 | 53 | 3 | 1996–2005 | 0.57 | M-v | 3 | MPC | 76231 | 2003 $WZ_{101}$ |
| 2003 $WD_{103}$ | 17.1 | 0.15 | 20060922 | 330.00528 | 286.52458 | 76.87367 | 6.10025 | 0.1455617 | 2.3577977 | 27 | 3 | 1998–2006 | 0.41 | M-v | 3 | MPC | 03571 | 2003 $WD_{103}$ |
| 2003 $WH_{103}$ | 16.5 | 0.15 | 20060922 | 328.70467 | 150.42925 | 240.63007 | 5.46532 | 0.1238859 | 2.2539842 | 71 | 2 | 2003–2006 | 0.50 | M-v | 3 | MPC | 03571 | 2003 $WH_{103}$ |
| 2003 $WL_{103}$ | 15.1 | 0.15 | 20060922 | 249.13843 | 287.94189 | 57.29503 | 6.97854 | 0.1962395 | 3.0882696 | 56 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 02194 | 2003 $WL_{103}$ |
| 2003 $WO_{104}$ | 17.0 | 0.15 | 20060922 | 342.78800 | 297.85626 | 89.16636 | 2.84418 | 0.1901870 | 2.1832549 | 136 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 77747 | 2003 $WO_{104}$ |
| 2003 $WV_{105}$ | 17.1 | 0.15 | 20060922 | 199.97021 | 245.24151 | 269.70839 | 4.50941 | 0.0765038 | 2.3804680 | 26 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 86167 | 2003 $WV_{105}$ |
| 2003 $WJ_{106}$ | 16.6 | 0.15 | 20060922 | 210.15830 | 45.14469 | 61.51699 | 5.64599 | 0.2616592 | 2.6845771 | 55 | 4 | 1994–2005 | 0.60 | M-v | 1 | MPC | 04275 | 2003 $WJ_{106}$ |
| 2003 $WK_{106}$ | 15.5 | 0.15 | 20060922 | 303.23868 | 24.86609 | 41.87390 | 24.66960 | 0.2028041 | 2.2731258 | 60 | 4 | 2001–2006 | 0.40 | M-v | 2 | MPC | 04275 | 2003 $WK_{106}$ |
| 2003 $WL_{106}$ | 15.9 | 0.15 | 20060922 | 335.44886 | 82.47238 | 299.25498 | 23.92344 | 0.2360481 | 2.2702017 | 47 | 4 | 1999–2006 | 0.63 | M-v | 1 | MPC | 04275 | 2003 $WL_{106}$ |
| 2003 $WH_{109}$ | 16.9 | 0.15 | 20060922 | 220.19829 | 98.63204 | 38.49931 | 5.99067 | 0.0457465 | 2.2718755 | 43 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 76234 | 2003 $WH_{109}$ |
| 2003 $WB_{111}$ | 15.9 | 0.15 | 20060922 | 73.87411 | 345.39802 | 281.87236 | 5.76448 | 0.0936026 | 2.3289028 | 59 | 3 | 2003–2006 | 0.54 | M-v | 2 | MPC | 04275 | 2003 $WB_{111}$ |
| 2003 $WO_{112}$ | 16.8 | 0.15 | 20060922 | 290.61485 | 145.65666 | 268.80001 | 5.64735 | 0.0784649 | 2.3426754 | 51 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 03572 | 2003 $WO_{112}$ |
| 2003 $WP_{112}$ | 16.9 | 0.15 | 20060922 | 256.29288 | 100.28267 | 295.92815 | 3.44473 | 0.1049766 | 2.6498982 | 22 | 3 | 2000–2005 | 0.39 | M-v | 3 | MPC | 00678 | 2003 $WP_{112}$ |
| 2003 $WZ_{112}$ | 15.0 | 0.15 | 20060922 | 198.39327 | 71.76333 | 321.89491 | 3.83213 | 0.1163018 | 3.2376578 | 49 | 5 | 1997–2006 | 0.50 | M-v | 0 | MPC | 02194 | 2003 $WZ_{112}$ |
| 2003 $WZ_{113}$ | 17.3 | 0.15 | 20060922 | 213.09036 | 182.13736 | 330.59707 | 3.70755 | 0.1203033 | 2.2973462 | 48 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 95144 | 2003 $WZ_{113}$ |
| 2003 $WJ_{114}$ | 16.4 | 0.15 | 20060922 | 147.26523 | 211.06960 | 330.35745 | 4.83035 | 0.1655731 | 2.5582423 | 44 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04275 | 2003 $WJ_{114}$ |
| 2003 $WU_{114}$ | 17.6 | 0.15 | 20060922 | 329.44799 | 102.52851 | 262.12182 | 5.76461 | 0.1368990 | 2.3466799 | 37 | 3 | 1999–2006 | 0.43 | M-v | 2 | MPC | 03572 | 2003 $WU_{114}$ |
| 2003 $WP_{115}$ | 18.1 | 0.15 | 20060922 | 347.93544 | 78.76415 | 291.99662 | 4.13769 | 0.2072830 | 2.2032357 | 39 | 2 | 2003–2006 | 0.53 | M-v | 3 | MPC | 03572 | 2003 $WP_{115}$ |
| 2003 $WX_{115}$ | 17.0 | 0.15 | 20060922 | 41.32861 | 341.60954 | 349.64669 | 3.27189 | 0.0949473 | 2.1791057 | 57 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 04275 | 2003 $WX_{115}$ |
| 2003 $WX_{116}$ | 16.4 | 0.15 | 20060922 | 352.71351 | 62.27220 | 294.06848 | 5.65274 | 0.1605132 | 2.2687386 | 95 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03573 | 2003 $WX_{116}$ |
| 2003 $WL_{117}$ | 16.2 | 0.15 | 20060922 | 215.02218 | 199.37143 | 307.57566 | 4.65611 | 0.1719716 | 2.3987000 | 42 | 4 | 2001–2006 | 0.51 | M-v | 2 | MPC | 86168 | 2003 $WL_{117}$ |
| 2003 $WY_{117}$ | 16.9 | 0.15 | 20060922 | 332.49146 | 335.28582 | 47.49449 | 8.80111 | 0.1477385 | 2.2682333 | 44 | 2 | 2003–2006 | 0.65 | M-v | 4 | MPC | 03573 | 2003 $WY_{117}$ |
| 2003 $WE_{118}$ | 16.8 | 0.15 | 20060922 | 297.31984 | 135.01300 | 290.58950 | 5.58763 | 0.1931734 | 2.2797809 | 52 | 2 | 2003–2006 | 0.39 | M-v | 3 | MPC | 03573 | 2003 $WE_{118}$ |
| 2003 $WQ_{118}$ | 15.3 | 0.15 | 20060922 | 231.79905 | 148.68457 | 286.37607 | 8.17799 | 0.1487225 | 2.6527598 | 40 | 3 | 2000–2003 | 0.64 | M-v | 4 | MPC | 57346 | 2003 $WQ_{118}$ |
| 2003 $WQ_{119}$ | 16.2 | 0.15 | 20060922 | 207.37758 | 85.50430 | 36.95328 | 4.83140 | 0.1533589 | 2.5846802 | 33 | 3 | 2000–2005 | 0.48 | M-v | 3 | MPC | 76240 | 2003 $WQ_{119}$ |
| 2003 $WY_{119}$ | 16.7 | 0.15 | 20060922 | 312.91570 | 103.14164 | 292.59902 | 2.18465 | 0.1669281 | 2.3225454 | 89 | 5 | 1999–2006 | 0.44 | M-v | 0 | MPC | 04275 | 2003 $WY_{119}$ |
| 2003 $WA_{120}$ | 16.7 | 0.15 | 20060922 | 337.89997 | 106.50185 | 270.78762 | 5.36584 | 0.1520131 | 2.2735199 | 75 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 04275 | 2003 $WA_{120}$ |
| 2003 $WG_{120}$ | 16.3 | 0.15 | 20060922 | 8.79473 | 322.53650 | 22.56118 | 5.89852 | 0.1453528 | 2.2742919 | 129 | 3 | 2003–2006 | 0.50 | M-v | 2 | MPC | 04275 | 2003 $WG_{120}$ |
| 2003 $WK_{120}$ | 17.0 | 0.15 | 20060922 | 309.51180 | 132.14706 | 295.88617 | 4.31024 | 0.0728689 | 2.2318092 | 63 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 57349 | 2003 $WK_{120}$ |
| 2003 $WL_{120}$ | 17.4 | 0.15 | 20060922 | 330.99958 | 20.11158 | 23.53644 | 3.14627 | 0.1334471 | 2.2129283 | 92 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 86168 | 2003 $WL_{120}$ |
| 2003 $WQ_{120}$ | 16.3 | 0.15 | 20060922 | 346.56047 | 48.45658 | 315.54067 | 3.28011 | 0.2142271 | 2.2629767 | 124 | 4 | 1994–2006 | 0.43 | M-v | 1 | MPC | 04275 | 2003 $WQ_{120}$ |
| 2003 $WL_{121}$ | 15.6 | 0.15 | 20060922 | 263.48582 | 217.79024 | 264.42859 | 23.35815 | 0.2079036 | 2.2875846 | 74 | 4 | 1997–2006 | 0.51 | M-v | 2 | MPC | 62454 | 2003 $WL_{121}$ |
| 2003 $WN_{121}$ | 16.0 | 0.15 | 20060922 | 260.10758 | 128.25139 | 320.73616 | 5.54445 | 0.0970802 | 2.4299159 | 64 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 03573 | 2003 $WN_{121}$ |
| 2003 $WC_{122}$ | 16.9 | 0.15 | 20060922 | 164.57511 | 182.75943 | 16.13364 | 6.50169 | 0.0487719 | 2.2943797 | 57 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 77748 | 2003 $WC_{122}$ |
| 2003 $WO_{122}$ | 16.8 | 0.15 | 20060922 | 310.79573 | 35.39051 | 5.03770 | 4.61490 | 0.1406117 | 2.2997425 | 54 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 04275 | 2003 $WO_{122}$ |
| 2003 $WX_{122}$ | 15.1 | 0.15 | 20060922 | 206.86402 | 16.25478 | 10.85730 | 4.91545 | 0.1707464 | 3.2229502 | 43 | 4 | 1997–2005 | 0.53 | M-v | 0 | MPC | 74302 | 2003 $WX_{122}$ |
| 2003 $WG_{123}$ | 17.1 | 0.15 | 20060922 | 346.78491 | 6.95072 | 14.44243 | 4.81539 | 0.1335441 | 2.2121223 | 105 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 04275 | 2003 $WG_{123}$ |
| 2003 $WZ_{123}$ | 16.1 | 0.15 | 20060922 | 244.84601 | 193.29458 | 289.44930 | 5.55686 | 0.1153536 | 2.3491264 | 76 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 04275 | 2003 $WZ_{123}$ |
| 2003 $WL_{124}$ | 15.6 | 0.15 | 20060922 | 314.18195 | 8.56313 | 330.94266 | 4.56776 | 0.0139863 | 2.7253352 | 49 | 4 | 2000–2005 | 0.60 | M-v | 1 | MPC | 76243 | 2003 $WL_{124}$ |
| 2003 $WW_{126}$ | 16.9 | 0.15 | 20060922 | 305.99952 | 1.83590 | 51.53010 | 4.81703 | 0.1402020 | 2.3356116 | 35 | 3 | 2003–2006 | 0.55 | M-v | 4 | MPC | 86169 | 2003 $WW_{126}$ |
| 2003 $WX_{126}$ | 16.1 | 0.15 | 20060922 | 342.54799 | 60.10155 | 304.85869 | 3.58832 | 0.2656231 | 2.2838158 | 80 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04275 | 2003 $WX_{126}$ |
| 2003 $WM_{127}$ | 16.2 | 0.15 | 20060922 | 22.07736 | 26.94439 | 311.35118 | 6.32021 | 0.2132732 | 2.2360609 | 91 | 3 | 1999–2006 | 0.42 | M-v | 3 | MPC | 03574 | 2003 $WM_{127}$ |
| 2003 $WW_{127}$ | 15.7 | 0.15 | 20060922 | 161.34723 | 162.78754 | 17.86218 | 14.10274 | 0.1749660 | 2.6452449 | 37 | 6 | 1998–2006 | 0.64 | M-v | 1 | MPC | 77749 | 2003 $WW_{127}$ |
| 2003 $WL_{129}$ | 16.5 | 0.15 | 20060922 | 326.38203 | 197.43842 | 123.16846 | 1.55672 | 0.1555041 | 2.5541082 | 46 | 3 | 2003–2006 | 0.49 | M-v | 4 | MPC | 00679 | 2003 $WL_{129}$ |
| 2003 $WM_{129}$ | 17.2 | 0.15 | 20060922 | 197.08396 | 303.07571 | 209.45550 | 4.12531 | 0.0958557 | 2.3492690 | 37 | 5 | 1992–2006 | 0.46 | M-v | 0 | MPC | 04276 | 2003 $WM_{129}$ |
| 2003 $WP_{130}$ | 17.4 | 0.15 | 20060922 | 288.15479 | 58.88055 | 8.53062 | 1.91084 | 0.1867812 | 2.3408217 | 65 | 6 | 1994–2006 | 0.49 | M-v | 1 | MPC | 76246 | 2003 $WP_{130}$ |
| 2003 $WO_{131}$ | 16.8 | 0.15 | 20060922 | 355.40201 | 303.27800 | 50.23000 | 7.24815 | 0.1585294 | 2.2609906 | 64 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 04276 | 2003 $WO_{131}$ |
| 2003 $WY_{132}$ | 16.4 | 0.15 | 20060922 | 138.82088 | 170.17210 | 70.54744 | 8.03996 | 0.0663511 | 2.1714126 | 99 | 3 | 2003–2006 | 0.63 | M-v | 2 | MPC | 76248 | 2003 $WY_{132}$ |
| 2003 $WL_{133}$ | 17.6 | 0.15 | 20060922 | 351.14521 | 136.75581 | 233.03244 | 2.93989 | 0.1729957 | 2.1995784 | 88 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 04276 | 2003 $WL_{133}$ |
| 2003 $WN_{133}$ | 16.3 | 0.15 | 20060922 | 201.22381 | 28.21544 | 81.82997 | 4.41764 | 0.1253498 | 2.6346721 | 32 | 4 | 1996–2005 | 0.34 | M-v | 1 | MPC | 57369 | 2003 $WN_{133}$ |
| 2003 $WO_{133}$ | 16.5 | 0.15 | 20060922 | 219.84869 | 64.55231 | 74.72242 | 7.18021 | 0.0435629 | 2.3058142 | 44 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 76248 | 2003 $WO_{133}$ |
| 2003 $WG_{134}$ | 17.2 | 0.15 | 20060922 | 293.08345 | 189.42103 | 237.30793 | 3.57913 | 0.2030861 | 2.2865752 | 66 | 2 | 2003–2006 | 0.40 | M-v | 3 | MPC | 03574 | 2003 $WG_{134}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $WK_{134}$ | 16.6 | 0.15 | 20060922 | 330.61202 | 148.73258 | 234.64830 | 6.58226 | 0.0969908 | 2.2819878 | 54 | 3 | 2003–2006 | 0.61 | M-v | 3 | MPC | 04276 | 2003 $WK_{134}$ |
| 2003 $WM_{134}$ | 16.5 | 0.15 | 20060922 | 297.26465 | 297.93644 | 61.69400 | 4.26088 | 0.1725613 | 2.5592852 | 30 | 5 | 1993–2006 | 0.68 | M-v | 1 | MPC | 89491 | 2003 $WM_{134}$ |
| 2003 $WB_{135}$ | 16.9 | 0.15 | 20060922 | 322.29762 | 119.11391 | 259.14629 | 2.19847 | 0.1897380 | 2.3184171 | 54 | 3 | 2003–2006 | 0.43 | M-v | 2 | MPC | 04276 | 2003 $WB_{135}$ |
| 2003 $WV_{135}$ | 17.0 | 0.15 | 20060922 | 346.44480 | 304.99355 | 59.13927 | 6.81139 | 0.1944274 | 2.2529776 | 53 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03574 | 2003 $WV_{135}$ |
| 2003 $WE_{136}$ | 17.5 | 0.15 | 20060922 | 331.08889 | 133.68138 | 252.40073 | 2.95468 | 0.1538012 | 2.2597737 | 57 | 3 | 1998–2006 | 0.59 | M-v | 3 | MPC | 03574 | 2003 $WE_{136}$ |
| 2003 $WH_{138}$ | 17.0 | 0.15 | 20060922 | 316.16796 | 146.55664 | 258.79807 | 10.23017 | 0.1089536 | 2.2871761 | 53 | 4 | 1996–2006 | 0.51 | M-v | 1 | MPC | 04276 | 2003 $WH_{138}$ |
| 2003 $WN_{138}$ | 17.0 | 0.15 | 20060922 | 305.13566 | 174.18627 | 247.38099 | 5.50330 | 0.1171932 | 2.2723112 | 54 | 2 | 2003–2006 | 0.53 | M-v | 4 | MPC | 03575 | 2003 $WN_{138}$ |
| 2003 $WC_{139}$ | 16.2 | 0.15 | 20060922 | 337.93008 | 138.22004 | 240.93023 | 4.26250 | 0.1724074 | 2.2658337 | 96 | 3 | 2003–2006 | 0.44 | M-v | 2 | MPC | 04276 | 2003 $WC_{139}$ |
| 2003 $WG_{139}$ | 16.2 | 0.15 | 20060922 | 233.80914 | 192.79181 | 265.23281 | 10.00516 | 0.0539274 | 2.5234374 | 49 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 04276 | 2003 $WG_{139}$ |
| 2003 $WH_{139}$ | 14.9 | 0.15 | 20060922 | 313.49009 | 273.41830 | 71.03605 | 16.04537 | 0.0968132 | 2.6822001 | 36 | 3 | 1994–2003 | 0.59 | M-v | 3 | MPC | 86171 | 2003 $WH_{139}$ |
| 2003 $WR_{139}$ | 15.9 | 0.15 | 20060922 | 280.40972 | 193.78240 | 248.78145 | 4.55392 | 0.1694302 | 2.3316136 | 59 | 5 | 1978–2006 | 0.56 | M-v | 1 | MPC | 04276 | 2003 $WR_{139}$ |
| 2003 $WT_{139}$ | 17.1 | 0.15 | 20060922 | 341.84461 | 163.76576 | 244.68793 | 5.21690 | 0.1497414 | 2.1531923 | 87 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 86171 | 2003 $WT_{139}$ |
| 2003 $WQ_{140}$ | 16.4 | 0.15 | 20060922 | 319.55823 | 131.92466 | 269.89407 | 6.17954 | 0.0959951 | 2.2884150 | 82 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04276 | 2003 $WQ_{140}$ |
| 2003 $WK_{142}$ | 16.2 | 0.15 | 20060922 | 359.59093 | 108.88870 | 252.24317 | 7.39604 | 0.2305648 | 2.2360821 | 105 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 04276 | 2003 $WK_{142}$ |
| 2003 $WT_{142}$ | 16.7 | 0.15 | 20060922 | 239.24727 | 190.87833 | 289.23912 | 1.33447 | 0.1726915 | 2.3790456 | 67 | 5 | 1977–2006 | 0.52 | M-v | 1 | MPC | 04276 | 2003 $WT_{142}$ |
| 2003 $WY_{142}$ | 16.8 | 0.15 | 20060922 | 180.42969 | 135.86805 | 78.93284 | 2.07127 | 0.0946107 | 2.1438553 | 70 | 3 | 2003–2006 | 0.46 | M-v | 4 | MPC | 86171 | 2003 $WY_{142}$ |
| 2003 $WC_{143}$ | 15.4 | 0.15 | 20060922 | 305.59811 | 224.14374 | 71.95505 | 12.06380 | 0.0386991 | 3.1886053 | 31 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 00681 | 2003 $WC_{143}$ |
| 2003 $WU_{143}$ | 17.1 | 0.15 | 20060922 | 239.80713 | 89.55796 | 3.75046 | 3.57973 | 0.0645479 | 2.4074662 | 28 | 3 | 2001–2005 | 0.57 | M-v | 3 | MPC | 76254 | 2003 $WU_{143}$ |
| 2003 $WJ_{144}$ | 17.8 | 0.15 | 20060922 | 350.86406 | 293.98673 | 56.20158 | 7.44655 | 0.1702638 | 2.2467613 | 31 | 2 | 2003–2006 | 0.44 | M-v | 5 | MPC | 03575 | 2003 $WJ_{144}$ |
| 2003 $WS_{144}$ | 16.3 | 0.15 | 20060922 | 184.63103 | 84.85087 | 0.09971 | 1.33938 | 0.0244491 | 2.8487528 | 43 | 5 | 2001–2006 | 0.46 | M-v | 0 | MPC | 76255 | 2003 $WS_{144}$ |
| 2003 $WA_{145}$ | 15.5 | 0.15 | 20060922 | 234.87691 | 305.06644 | 65.69663 | 12.92302 | 0.0399047 | 3.0687903 | 37 | 2 | 2003–2006 | 0.53 | M-v | 3 | MPC | 03576 | 2003 $WA_{145}$ |
| 2003 $WE_{145}$ | 16.1 | 0.15 | 20060922 | 183.94431 | 229.37354 | 242.32280 | 1.43288 | 0.0372044 | 2.6811790 | 43 | 4 | 2000–2005 | 0.53 | M-v | 0 | MPC | 76256 | 2003 $WE_{145}$ |
| 2003 $WM_{145}$ | 16.0 | 0.15 | 20060922 | 276.63179 | 143.69041 | 218.09827 | 5.13184 | 0.1205476 | 2.7057407 | 34 | 2 | 2003–2006 | 0.63 | M-v | 4 | MPC | 03576 | 2003 $WM_{145}$ |
| 2003 $WS_{145}$ | 15.7 | 0.15 | 20060922 | 95.79588 | 137.62897 | 60.12298 | 6.33617 | 0.2045334 | 2.7863954 | 41 | 4 | 1996–2006 | 0.59 | M-v | 1 | MPC | 02195 | 2003 $WS_{145}$ |
| 2003 $WX_{146}$ | 16.2 | 0.15 | 20060922 | 240.60600 | 199.00964 | 232.86296 | 4.07326 | 0.2287550 | 2.6007360 | 41 | 3 | 2000–2005 | 0.69 | M-v | 3 | MPC | 57391 | 2003 $WX_{146}$ |
| 2003 $WG_{147}$ | 16.8 | 0.15 | 20060922 | 307.57576 | 337.83060 | 72.84132 | 9.38256 | 0.1170281 | 2.2968222 | 52 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04276 | 2003 $WG_{147}$ |
| 2003 $WH_{147}$ | 15.6 | 0.15 | 20060922 | 90.02044 | 19.82225 | 233.79921 | 23.19586 | 0.1738824 | 2.3643945 | 33 | 3 | 1998–2006 | 0.56 | M-v | 3 | MPC | 57391 | 2003 $WH_{147}$ |
| 2003 $WP_{147}$ | 15.2 | 0.15 | 20060922 | 228.29097 | 171.79174 | 199.13114 | 9.28688 | 0.1431356 | 3.1057064 | 45 | 4 | 2002–2006 | 0.64 | M-v | 1 | MPC | 02195 | 2003 $WP_{147}$ |
| 2003 $WR_{147}$ | 17.5 | 0.15 | 20060922 | 9.55651 | 174.01364 | 173.28394 | 5.61014 | 0.1892229 | 2.1969298 | 93 | 4 | 1999–2006 | 0.37 | M-v | 0 | MPC | 04276 | 2003 $WR_{147}$ |
| 2003 $WU_{147}$ | 16.9 | 0.15 | 20060922 | 337.78959 | 233.47075 | 143.83509 | 5.39333 | 0.1695949 | 2.2410720 | 76 | 2 | 2003–2006 | 0.66 | M-v | 4 | MPC | 03576 | 2003 $WU_{147}$ |
| 2003 $WH_{149}$ | 16.3 | 0.15 | 20060922 | 221.70302 | 263.56201 | 157.23285 | 12.60417 | 0.1445255 | 2.7142581 | 29 | 3 | 1996–2005 | 0.47 | M-v | 2 | MPC | 86173 | 2003 $WH_{149}$ |
| 2003 $WG_{150}$ | 15.9 | 0.15 | 20060922 | 247.55860 | 269.00001 | 120.78414 | 6.80283 | 0.0611155 | 2.7894304 | 34 | 3 | 2000–2006 | 0.40 | M-v | 3 | MPC | 00681 | 2003 $WG_{150}$ |
| 2003 $WN_{150}$ | 17.1 | 0.15 | 20060922 | 258.77710 | 285.50827 | 190.27550 | 6.77786 | 0.0919243 | 2.2351191 | 45 | 4 | 2001–2006 | 0.40 | M-v | 2 | MPC | 76260 | 2003 $WN_{150}$ |
| 2003 $WO_{150}$ | 16.1 | 0.15 | 20060922 | 223.31342 | 253.93100 | 162.68951 | 5.02456 | 0.0699830 | 2.7845096 | 28 | 2 | 2003–2005 | 0.66 | M-v | 4 | MPC | 89491 | 2003 $WO_{150}$ |
| 2003 $WS_{150}$ | 17.0 | 0.15 | 20060922 | 325.87580 | 244.85498 | 141.02755 | 4.64565 | 0.1346741 | 2.2681393 | 54 | 3 | 1999–2006 | 0.67 | M-v | 3 | MPC | 03576 | 2003 $WS_{150}$ |
| 2003 $WE_{151}$ | 14.0 | 0.15 | 20060922 | 146.55944 | 268.56514 | 269.50288 | 24.10096 | 0.2198792 | 3.1293658 | 41 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04276 | 2003 $WE_{151}$ |
| 2003 $WL_{151}$ | 16.1 | 0.15 | 20060922 | 130.39082 | 28.35473 | 98.74981 | 11.42744 | 0.0420367 | 3.0431818 | 24 | 4 | 1993–2006 | 0.40 | M-v | 1 | MPC | 04276 | 2003 $WL_{151}$ |
| 2003 $WQ_{151}$ | 16.8 | 0.15 | 20060922 | 239.29850 | 217.18902 | 283.28609 | 1.61266 | 0.1471794 | 2.4135184 | 63 | 3 | 1995–2006 | 0.50 | M-v | 3 | MPC | 62455 | 2003 $WQ_{151}$ |
| 2003 $WS_{151}$ | 16.4 | 0.15 | 20060922 | 204.24658 | 235.00907 | 190.04116 | 7.55746 | 0.0812859 | 2.8856913 | 29 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 00682 | 2003 $WS_{151}$ |
| 2003 $WZ_{153}$ | 16.4 | 0.15 | 20060922 | 275.32500 | 145.77220 | 12.20115 | 19.93241 | 0.0515440 | 1.9568862 | 44 | 5 | 1999–2006 | 0.63 | M-v | 2 | MPC | 57399 | 2003 $WZ_{153}$ |
| 2003 $WB_{154}$ | 17.2 | 0.15 | 20060922 | 81.33127 | 259.33954 | 90.93836 | 25.16149 | 0.0817714 | 1.9429250 | 58 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 87599 | 2003 $WB_{154}$ |
| 2003 $WU_{154}$ | 15.2 | 0.15 | 20060922 | 184.33129 | 200.68499 | 224.65179 | 18.24618 | 0.0773322 | 3.1038561 | 37 | 2 | 2003–2006 | 0.52 | M-v | 3 | MPC | 03577 | 2003 $WU_{154}$ |
| 2003 $WC_{155}$ | 15.7 | 0.15 | 20060922 | 224.76117 | 285.76773 | 98.48657 | 11.57024 | 0.1289712 | 3.0040890 | 23 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03577 | 2003 $WC_{155}$ |
| 2003 $WL_{158}$ | 16.6 | 0.15 | 20060922 | 215.08672 | 31.91272 | 350.88366 | 1.46325 | 0.1110890 | 2.9538611 | 36 | 4 | 1998–2006 | 0.44 | M-v | 1 | MPC | 02195 | 2003 $WL_{158}$ |
| 2003 $WW_{158}$ | 17.0 | 0.15 | 20060922 | 83.97611 | 15.22947 | 242.61602 | 2.12369 | 0.0677641 | 2.3115286 | 58 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 04276 | 2003 $WW_{158}$ |
| 2003 $WR_{159}$ | 14.9 | 0.15 | 20060922 | 197.93944 | 231.22687 | 296.93488 | 11.78658 | 0.2029070 | 2.6760911 | 106 | 6 | 1997–2006 | 0.51 | M-v | 1 | MPC | 66319 | 2003 $WR_{159}$ |
| 2003 $WO_{160}$ | 17.3 | 0.15 | 20060922 | 215.82113 | 303.07239 | 190.38503 | 0.79547 | 0.1278710 | 2.4130209 | 41 | 4 | 1999–2006 | 0.38 | M-v | 0 | MPC | 04277 | 2003 $WO_{160}$ |
| 2003 $WQ_{160}$ | 17.5 | 0.15 | 20060922 | 62.40720 | 198.17059 | 102.93030 | 1.18801 | 0.1304517 | 2.2003628 | 48 | 4 | 2002–2006 | 0.28 | M-v | 1 | MPC | 69596 | 2003 $WQ_{160}$ |
| 2003 $WA_{162}$ | 17.8 | 0.15 | 20060922 | 212.85191 | 319.27022 | 193.18733 | 1.01974 | 0.0775652 | 2.2728456 | 37 | 3 | 2003–2006 | 0.32 | M-v | 3 | MPC | 00683 | 2003 $WA_{162}$ |
| 2003 $WM_{162}$ | 16.1 | 0.15 | 20060922 | 253.80673 | 211.41547 | 171.96732 | 2.12618 | 0.0597614 | 2.7520882 | 42 | 5 | 1996–2005 | 0.45 | M-v | 1 | MPC | 76265 | 2003 $WM_{162}$ |
| 2003 $WW_{162}$ | 16.7 | 0.15 | 20060922 | 289.20431 | 246.19103 | 128.56324 | 2.82433 | 0.1002231 | 2.5362349 | 31 | 4 | 1999–2005 | 0.36 | M-v | 3 | MPC | 57405 | 2003 $WW_{162}$ |
| 2003 $WX_{162}$ | 16.3 | 0.15 | 20060922 | 354.49142 | 267.73984 | 79.34018 | 7.78503 | 0.1959792 | 2.2480044 | 79 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 03577 | 2003 $WX_{162}$ |
| 2003 $WF_{163}$ | 17.1 | 0.15 | 20060922 | 112.07332 | 125.75214 | 80.34197 | 3.20930 | 0.1012164 | 2.5728306 | 32 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 76265 | 2003 $WF_{163}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $WE_{164}$ | 18.0 | 0.15 | 20060922 | 349.17344 | 144.11306 | 233.51651 | 1.21353 | 0.1289115 | 2.2004666 | 51 | 5 | 2000–2006 | 0.36 | M-v | 1 | MPC | 86175 | 2003 $WE_{164}$ |
| 2003 $WW_{164}$ | 17.7 | 0.15 | 20060922 | 320.64504 | 172.12434 | 231.41825 | 1.70417 | 0.1478628 | 2.2371676 | 58 | 2 | 2003–2006 | 0.58 | M-v | 4 | MPC | 03577 | 2003 $WW_{164}$ |
| 2003 $WB_{165}$ | 16.3 | 0.15 | 20060922 | 307.93657 | 107.29877 | 236.10146 | 2.42046 | 0.1694459 | 2.5967772 | 31 | 2 | 2003–2006 | 0.53 | M-v | 4 | MPC | 03577 | 2003 $WB_{165}$ |
| 2003 $WW_{165}$ | 17.0 | 0.15 | 20060922 | 288.17691 | 214.38678 | 204.02303 | 1.64985 | 0.1897443 | 2.3453695 | 51 | 4 | 2001–2006 | 0.37 | M-v | 1 | MPC | 04277 | 2003 $WW_{165}$ |
| 2003 $WF_{166}$ | 16.4 | 0.15 | 20060922 | 359.84019 | 19.29717 | 332.54943 | 4.95269 | 0.2843097 | 2.2101311 | 170 | 5 | 1983–2006 | 0.51 | M-v | 1 | MPC | 03578 | 2003 $WF_{166}$ |
| 2003 $WT_{168}$ | 17.5 | 0.15 | 20060922 | 210.32525 | 312.57943 | 186.47193 | 7.72963 | 0.0973051 | 2.3429819 | 39 | 5 | 1999–2006 | 0.45 | M-v | 0 | MPC | 87599 | 2003 $WT_{168}$ |
| 2003 $WV_{168}$ | 16.5 | 0.15 | 20060922 | 64.62031 | 101.61297 | 152.65227 | 6.77754 | 0.0959076 | 2.4303468 | 43 | 5 | 1991–2006 | 0.46 | M-v | 1 | MPC | 04277 | 2003 $WV_{168}$ |
| 2003 $WO_{169}$ | 15.5 | 0.15 | 20060922 | 196.68175 | 80.14560 | 62.60330 | 13.91833 | 0.2590453 | 2.7647810 | 69 | 3 | 1998–2004 | 0.64 | M-v | 1 | MPC | 62455 | 2003 $WO_{169}$ |
| 2003 $WT_{169}$ | 16.0 | 0.15 | 20060922 | 247.95251 | 261.00408 | 173.29001 | 9.73668 | 0.1255049 | 2.5167914 | 46 | 3 | 1999–2005 | 0.59 | M-v | 3 | MPC | 57409 | 2003 $WT_{169}$ |
| 2003 $WF_{170}$ | 17.7 | 0.15 | 20060922 | 277.97190 | 284.23020 | 158.76796 | 9.41796 | 0.1490508 | 2.2904717 | 40 | 3 | 2000–2006 | 0.63 | M-v | 4 | MPC | 04277 | 2003 $WF_{170}$ |
| 2003 $WN_{171}$ | 16.4 | 0.15 | 20060922 | 358.48104 | 202.67963 | 138.40091 | 6.57420 | 0.1638976 | 2.2774914 | 78 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 03578 | 2003 $WN_{171}$ |
| 2003 $WX_{171}$ | 15.2 | 0.15 | 20060922 | 281.09417 | 242.54276 | 121.58498 | 16.41012 | 0.2114026 | 2.6022935 | 46 | 3 | 2002–2006 | 0.65 | M-v | 2 | MPC | 00684 | 2003 $WX_{171}$ |
| 2003 $WT_{173}$ | 16.3 | 0.15 | 20060922 | 247.59664 | 284.03269 | 72.56108 | 4.06322 | 0.1010625 | 3.0025049 | 41 | 5 | 2000–2006 | 0.35 | M-v | 0 | MPC | 00684 | 2003 $WT_{173}$ |
| 2003 $WG_{178}$ | 16.0 | 0.15 | 20060922 | 279.26990 | 132.83671 | 183.97247 | 1.63331 | 0.0690265 | 2.8696718 | 34 | 4 | 1996–2006 | 0.51 | M-v | 1 | MPC | 02196 | 2003 $WG_{178}$ |
| 2003 $WL_{183}$ | 17.0 | 0.15 | 20060922 | 105.30251 | 309.37006 | 335.27589 | 3.94968 | 0.0491847 | 2.1437715 | 51 | 4 | 1995–2006 | 0.43 | M-v | 2 | MPC | 86177 | 2003 $WL_{183}$ |
| 2003 $WX_{189}$ | 14.9 | 0.15 | 20060922 | 211.28836 | 102.65532 | 335.96640 | 16.97159 | 0.1369396 | 2.6968432 | 27 | 3 | 1999–2005 | 0.65 | M-v | 3 | MPC | 86178 | 2003 $WX_{189}$ |
| 2003 $WU_{192}$ | 17.4 | 0.15 | 20031207 | 13.75189 | 254.34816 | 151.04045 | 3.52555 | 0.2867405 | 2.6199566 | 19 | 1 | 55 days | 0.51 | | | MPC | | 2003 $WU_{192}$ |
| 2003 $WW_{192}$ | 17.7 | 0.15 | 20031207 | 28.49997 | 345.06575 | 53.48110 | 4.77119 | 0.2529122 | 2.2926770 | 21 | 1 | 38 days | 0.68 | | | MPC | | 2003 $WW_{192}$ |
| 2003 $WX_{192}$ | 18.0 | 0.15 | 20031207 | 354.23309 | 18.91454 | 58.52954 | 1.23973 | 0.1550733 | 2.4822659 | 19 | 1 | 36 days | 0.51 | | | MPC | | 2003 $WX_{192}$ |
| 2003 $WY_{192}$ | 16.5 | 0.15 | 20031207 | 31.84572 | 132.41179 | 250.58688 | 25.16157 | 0.2095842 | 3.1162312 | 17 | 1 | 36 days | 0.42 | | | MPC | | 2003 $WY_{192}$ |
| 2003 $WZ_{192}$ | 16.6 | 0.15 | 20031207 | 336.50653 | 223.98246 | 239.70851 | 13.48654 | 0.1545591 | 2.9064889 | 17 | 1 | 26 days | 0.74 | | | MPC | | 2003 $WZ_{192}$ |
| 2003 $WB_{193}$ | 17.0 | 0.15 | 20031207 | 346.85978 | 183.89072 | 263.83505 | 8.70791 | 0.1138922 | 2.6554624 | 18 | 1 | 35 days | 0.50 | | | MPC | | 2003 $WB_{193}$ |
| 2003 $WC_{193}$ | 16.2 | 0.15 | 20031227 | 64.25729 | 54.09663 | 314.41670 | 3.90410 | 0.2134875 | 2.5226588 | 23 | 1 | 59 days | 0.52 | | | MPC | | 2003 $WC_{193}$ |
| 2003 XF | 15.5 | 0.15 | 20060922 | 27.68723 | 32.58759 | 304.29902 | 8.88632 | 0.2271436 | 2.1753561 | 106 | 6 | 1997–2006 | 0.46 | M-v | 1 | MPC | 04277 | 2003 XF |
| 2003 XO | 17.0 | 0.15 | 20060922 | 85.86675 | 275.68578 | 81.91148 | 23.78095 | 0.1453569 | 1.8966555 | 45 | 3 | 2003–2006 | 0.46 | M-v | 1 | MPC | 86178 | 2003 XO |
| 2003 XR | 16.8 | 0.15 | 20060922 | 6.40351 | 45.31849 | 299.49318 | 6.52630 | 0.2485142 | 2.2090677 | 89 | 3 | 1996–2006 | 0.47 | M-v | 2 | MPC | 03578 | 2003 XR |
| 2003 XT | 16.8 | 0.15 | 20060922 | 0.28011 | 176.45676 | 275.98679 | 19.54539 | 0.0548413 | 1.9434439 | 54 | 4 | 1997–2006 | 0.53 | M-v | 2 | MPC | 87599 | 2003 XT |
| 2003 XU | 16.7 | 0.15 | 20060922 | 351.07465 | 273.22955 | 96.57711 | 6.62546 | 0.2266859 | 2.2303001 | 69 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04277 | 2003 XU |
| 2003 $XD_1$ | 16.7 | 0.15 | 20060922 | 281.08960 | 80.56174 | 341.55560 | 6.81489 | 0.0774978 | 2.3459631 | 48 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 04277 | 2003 $XD_1$ |
| 2003 $XN_2$ | 16.7 | 0.15 | 20060922 | 337.36967 | 298.95823 | 80.95730 | 10.85818 | 0.1016937 | 2.2578582 | 46 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03579 | 2003 $XN_2$ |
| 2003 $XQ_2$ | 16.7 | 0.15 | 20060922 | 303.13610 | 320.57116 | 94.59307 | 5.75302 | 0.1387503 | 2.2815786 | 57 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 04277 | 2003 $XQ_2$ |
| 2003 $XC_3$ | 16.7 | 0.15 | 20060922 | 312.85031 | 216.75218 | 187.96004 | 5.79382 | 0.1032524 | 2.2891376 | 97 | 3 | 2003–2006 | 0.41 | M-v | 3 | MPC | 04277 | 2003 $XC_3$ |
| 2003 $XG_3$ | 16.6 | 0.15 | 20060922 | 3.36376 | 254.87191 | 103.90764 | 5.65882 | 0.1927693 | 2.1940430 | 93 | 6 | 1996–2006 | 0.42 | M-v | 1 | MPC | 04277 | 2003 $XG_3$ |
| 2003 $XY_3$ | 17.1 | 0.15 | 20060922 | 245.68031 | 13.18831 | 100.49293 | 3.14221 | 0.1621551 | 2.3455461 | 55 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 57418 | 2003 $XY_3$ |
| 2003 $XB_4$ | 16.3 | 0.15 | 20060922 | 230.98287 | 342.21956 | 133.21418 | 2.16375 | 0.1376226 | 2.4418734 | 57 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 04277 | 2003 $XB_4$ |
| 2003 $XD_4$ | 16.7 | 0.15 | 20060922 | 194.14252 | 19.08008 | 110.26822 | 5.77668 | 0.1732448 | 2.5971512 | 25 | 3 | 1992–2005 | 0.61 | M-v | 2 | MPC | 57419 | 2003 $XD_4$ |
| 2003 $XF_4$ | 16.3 | 0.15 | 20060922 | 254.70834 | 335.65821 | 113.44703 | 6.01944 | 0.1283815 | 2.4076876 | 66 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04277 | 2003 $XF_4$ |
| 2003 $XK_4$ | 15.4 | 0.15 | 20060922 | 166.47151 | 355.30979 | 109.01185 | 8.27618 | 0.1555734 | 3.0212935 | 40 | 4 | 1993–2005 | 0.58 | M-v | 1 | MPC | 04277 | 2003 $XK_4$ |
| 2003 $XP_5$ | 16.5 | 0.15 | 20060922 | 12.85139 | 157.34769 | 256.83778 | 18.87307 | 0.0804195 | 1.9631510 | 70 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 77753 | 2003 $XP_5$ |
| 2003 $XR_5$ | 16.4 | 0.15 | 20060922 | 271.79752 | 157.66426 | 286.07664 | 7.08608 | 0.0698829 | 2.3032609 | 66 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 04277 | 2003 $XR_5$ |
| 2003 $XY_6$ | 15.4 | 0.15 | 20060922 | 225.35962 | 98.81522 | 20.80603 | 14.53149 | 0.1560612 | 2.5884114 | 42 | 2 | 2002–2004 | 0.55 | M-v | 3 | MPC | 89493 | 2003 $XY_6$ |
| 2003 $XD_7$ | 15.1 | 0.15 | 20060922 | 237.23278 | 121.80821 | 7.84768 | 31.33947 | 0.2798006 | 2.6197109 | 123 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 66319 | 2003 $XD_7$ |
| 2003 $XS_7$ | 17.4 | 0.15 | 20060922 | 356.30343 | 249.21792 | 114.81045 | 7.32958 | 0.2168972 | 2.2091068 | 55 | 4 | 2001–2006 | 0.39 | M-v | 2 | MPC | 04277 | 2003 $XS_7$ |
| 2003 $XU_7$ | 15.0 | 0.15 | 20060922 | 241.14956 | 63.49991 | 313.03566 | 9.33663 | 0.0965873 | 2.9993745 | 36 | 3 | 2002–2005 | 0.49 | M-v | 3 | MPC | 57426 | 2003 $XU_7$ |
| 2003 $XV_9$ | 15.2 | 0.15 | 20060922 | 266.33646 | 8.95488 | 15.12668 | 14.64016 | 0.2015832 | 2.7056452 | 38 | 5 | 1996–2005 | 0.53 | M-v | 1 | MPC | 77754 | 2003 $XV_9$ |
| 2003 $XE_{12}$ | 17.1 | 0.15 | 20060922 | 337.79491 | 213.19535 | 159.83881 | 3.33810 | 0.2168691 | 2.2535061 | 59 | 3 | 1996–2006 | 0.41 | M-v | 1 | MPC | 03580 | 2003 $XE_{12}$ |
| 2003 $XF_{12}$ | 16.3 | 0.15 | 20060922 | 273.15668 | 273.06383 | 196.39093 | 3.82719 | 0.1728060 | 2.2491262 | 109 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04277 | 2003 $XF_{12}$ |
| 2003 $XM_{12}$ | 16.5 | 0.15 | 20060922 | 259.88717 | 123.33173 | 332.67982 | 11.36571 | 0.2080830 | 2.4319295 | 40 | 3 | 1999–2006 | 0.56 | M-v | 3 | MPC | 69597 | 2003 $XM_{12}$ |
| 2003 $XV_{12}$ | 15.6 | 0.15 | 20060922 | 186.73156 | 98.51796 | 358.68594 | 12.50904 | 0.1165933 | 3.0338759 | 37 | 5 | 1992–2005 | 0.41 | M-v | 0 | MPC | 04277 | 2003 $XV_{12}$ |
| 2003 $XB_{13}$ | 16.2 | 0.15 | 20060922 | 39.41163 | 326.15603 | 282.38996 | 4.66005 | 0.1406875 | 2.7778911 | 27 | 4 | 2000–2005 | 0.56 | M-v | 0 | MPC | 69598 | 2003 $XB_{13}$ |
| 2003 $XD_{16}$ | 16.3 | 0.15 | 20060922 | 13.50432 | 250.99029 | 63.68927 | 7.39636 | 0.1269853 | 2.4291122 | 55 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 04277 | 2003 $XD_{16}$ |
| 2003 $XJ_{16}$ | 16.4 | 0.15 | 20060922 | 318.66087 | 160.27898 | 199.17031 | 6.02235 | 0.1354125 | 2.4691387 | 33 | 3 | 1999–2005 | 0.51 | M-v | 3 | MPC | 65521 | 2003 $XJ_{16}$ |
| 2003 $XK_{16}$ | 15.2 | 0.15 | 20060922 | 88.06000 | 326.91910 | 225.63741 | 13.90880 | 0.1056366 | 2.9766189 | 37 | 5 | 1997–2005 | 0.49 | M-v | 1 | MPC | 76282 | 2003 $XK_{16}$ |

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| 2003 $XO_{17}$ | 16.4 | 0.15 | 20060922 | 28.21630 | 144.92726 | 164.31325 | 2.62990 | 0.1265718 | 2.3698789 | 106 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 04278 | 2003 $XO_{17}$ |
| 2003 $XW_{17}$ | 16.3 | 0.15 | 20060922 | 355.31509 | 346.03446 | 352.78429 | 8.77581 | 0.2608300 | 2.4229738 | 52 | 4 | 1999–2006 | 0.42 | M-v | 1 | MPC | 04278 | 2003 $XW_{17}$ |
| 2003 $XX_{17}$ | 16.5 | 0.15 | 20060922 | 221.09017 | 158.99909 | 3.72505 | 7.64519 | 0.1748888 | 2.3928203 | 49 | 3 | 1997–2006 | 0.51 | M-v | 4 | MPC | 57436 | 2003 $XX_{17}$ |
| 2003 $XY_{17}$ | 15.5 | 0.15 | 20060922 | 84.85644 | 220.56566 | 81.28988 | 26.17587 | 0.2428838 | 2.2450054 | 81 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 76283 | 2003 $XY_{17}$ |
| 2003 $XC_{18}$ | 16.2 | 0.15 | 20060922 | 297.28350 | 74.88786 | 359.21493 | 7.26984 | 0.0749386 | 2.3545220 | 103 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 57437 | 2003 $XC_{18}$ |
| 2003 $XF_{19}$ | 15.5 | 0.15 | 20060922 | 272.02136 | 297.74151 | 76.51669 | 14.73172 | 0.1211508 | 2.7027968 | 44 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 02196 | 2003 $XF_{19}$ |
| 2003 $XA_{20}$ | 16.0 | 0.15 | 20060922 | 159.97949 | 208.64846 | 353.73424 | 5.08190 | 0.2516297 | 2.6178838 | 36 | 4 | 1996–2006 | 0.50 | M-v | 3 | MPC | 62457 | 2003 $XA_{20}$ |
| 2003 $XG_{21}$ | 16.0 | 0.15 | 20060922 | 239.27469 | 171.15312 | 333.43777 | 5.42432 | 0.1286492 | 2.3504759 | 51 | 3 | 2002–2006 | 0.62 | M-v | 3 | MPC | 62457 | 2003 $XG_{21}$ |
| 2003 $XN_{21}$ | 17.4 | 0.15 | 20060922 | 314.28436 | 8.17948 | 46.44246 | 4.22161 | 0.1586895 | 2.3109998 | 56 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 76285 | 2003 $XN_{21}$ |
| 2003 $XO_{21}$ | 16.6 | 0.15 | 20060922 | 183.97034 | 223.67448 | 316.08708 | 5.65585 | 0.0672130 | 2.4638200 | 30 | 4 | 1998–2006 | 0.50 | M-v | 3 | MPC | 57440 | 2003 $XO_{21}$ |
| 2003 $XR_{21}$ | 16.5 | 0.15 | 20060922 | 330.30617 | 331.82772 | 73.84058 | 8.13895 | 0.1032226 | 2.2944080 | 76 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 77755 | 2003 $XR_{21}$ |
| 2003 $XY_{21}$ | 16.6 | 0.15 | 20060922 | 309.45769 | 339.81161 | 99.33957 | 3.43965 | 0.1400809 | 2.2208658 | 76 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 87600 | 2003 $XY_{21}$ |
| 2003 $XN_{23}$ | 17.7 | 0.15 | 20060922 | 260.34769 | 60.83765 | 74.29031 | 3.21298 | 0.0946776 | 2.1604409 | 46 | 4 | 1992–2006 | 0.41 | M-v | 2 | MPC | 03580 | 2003 $XN_{23}$ |
| 2003 $XQ_{23}$ | 17.1 | 0.15 | 20060922 | 33.06165 | 237.52896 | 69.47077 | 8.71146 | 0.1727289 | 2.2940443 | 30 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 04278 | 2003 $XQ_{23}$ |
| 2003 $XB_{25}$ | 16.3 | 0.15 | 20060922 | 174.43368 | 293.93186 | 225.29004 | 13.22758 | 0.1613851 | 2.5389225 | 41 | 5 | 1997–2005 | 0.60 | M-v | 1 | MPC | 76285 | 2003 $XB_{25}$ |
| 2003 $XA_{26}$ | 17.2 | 0.15 | 20060922 | 342.20792 | 214.31011 | 169.65474 | 4.33282 | 0.1295199 | 2.2202709 | 97 | 3 | 2003–2006 | 0.35 | M-v | 2 | MPC | 04278 | 2003 $XA_{26}$ |
| 2003 $XG_{26}$ | 18.4 | 0.15 | 20060922 | 269.66374 | 301.47298 | 161.20121 | 4.56653 | 0.1755203 | 2.2945709 | 19 | 3 | 2001–2006 | 0.30 | M-v | 3 | MPC | 00687 | 2003 $XG_{26}$ |
| 2003 $XJ_{27}$ | 17.7 | 0.15 | 20060922 | 230.91312 | 335.71666 | 158.65901 | 5.12596 | 0.1263476 | 2.3423605 | 24 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 86182 | 2003 $XJ_{27}$ |
| 2003 $XD_{28}$ | 17.4 | 0.15 | 20060922 | 216.47426 | 215.68813 | 284.07832 | 2.21572 | 0.1383992 | 2.3840653 | 28 | 5 | 1997–2006 | 0.29 | M-v | 1 | MPC | 04278 | 2003 $XD_{28}$ |
| 2003 $XZ_{28}$ | 17.0 | 0.15 | 20060922 | 79.60073 | 25.84096 | 252.05841 | 4.40419 | 0.1278822 | 2.2496796 | 39 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 86182 | 2003 $XZ_{28}$ |
| 2003 $XL_{30}$ | 16.2 | 0.15 | 20060922 | 25.31130 | 348.32954 | 244.74714 | 16.05496 | 0.1050698 | 3.0520126 | 20 | 2 | 2003–2006 | 0.21 | M-v | 3 | MPC | 00687 | 2003 $XL_{30}$ |
| 2003 $XP_{30}$ | 16.6 | 0.15 | 20060922 | 21.27318 | 64.06234 | 247.85096 | 4.78663 | 0.2538227 | 2.2730590 | 80 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04278 | 2003 $XP_{30}$ |
| 2003 $XF_{31}$ | 18.1 | 0.15 | 20060922 | 252.95879 | 236.53102 | 247.62135 | 5.17761 | 0.1044089 | 2.2486079 | 21 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 86183 | 2003 $XF_{31}$ |
| 2003 $XQ_{31}$ | 16.0 | 0.15 | 20060922 | 291.54892 | 208.03426 | 102.04787 | 2.63397 | 0.1489542 | 3.0225607 | 32 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 02196 | 2003 $XQ_{31}$ |
| 2003 $XX_{31}$ | 16.4 | 0.15 | 20060922 | 196.88219 | 201.05348 | 201.15272 | 1.49272 | 0.1149445 | 3.1810059 | 26 | 4 | 2002–2006 | 0.25 | M-v | 1 | MPC | 04278 | 2003 $XX_{31}$ |
| 2003 $XD_{34}$ | 18.3 | 0.15 | 20060922 | 272.97098 | 329.61208 | 121.73362 | 2.23802 | 0.0616933 | 2.2754579 | 25 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 89493 | 2003 $XD_{34}$ |
| 2003 $XW_{36}$ | 16.8 | 0.15 | 20060922 | 2.02927 | 317.43887 | 40.19455 | 7.95110 | 0.1386222 | 2.2948967 | 34 | 3 | 2003–2006 | 0.38 | M-v | 3 | MPC | 76287 | 2003 $XW_{36}$ |
| 2003 $XQ_{37}$ | 15.6 | 0.15 | 20060922 | 233.21092 | 53.87133 | 36.99233 | 13.07483 | 0.1250846 | 2.5691632 | 44 | 4 | 1999–2005 | 0.49 | M-v | 2 | MPC | 76288 | 2003 $XQ_{37}$ |
| 2003 $XG_{38}$ | 16.6 | 0.15 | 20060922 | 236.67033 | 135.52152 | 2.71266 | 2.98421 | 0.1933951 | 2.3470045 | 44 | 5 | 1996–2006 | 0.37 | M-v | 2 | MPC | 04278 | 2003 $XG_{38}$ |
| 2003 $XS_{38}$ | 17.1 | 0.15 | 20060922 | 301.43640 | 21.24760 | 45.27579 | 4.20176 | 0.2049886 | 2.2779740 | 41 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 03580 | 2003 $XS_{38}$ |
| 2003 $XX_{38}$ | 16.7 | 0.15 | 20060922 | 335.58155 | 45.74049 | 3.45121 | 3.95549 | 0.1392125 | 2.1924388 | 96 | 4 | 1993–2006 | 0.53 | M-v | 1 | MPC | 04278 | 2003 $XX_{38}$ |
| 2003 $XY_{38}$ | 16.9 | 0.15 | 20060922 | 316.72868 | 23.79224 | 48.50406 | 6.61694 | 0.1268061 | 2.2014198 | 80 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 86185 | 2003 $XY_{38}$ |
| 2003 $XB_{39}$ | 14.9 | 0.15 | 20060922 | 209.06709 | 4.03567 | 64.28682 | 6.99297 | 0.1414866 | 3.0422318 | 30 | 3 | 2002–2005 | 0.70 | M-v | 3 | MPC | 65522 | 2003 $XB_{39}$ |
| 2003 $XR_{40}$ | 15.2 | 0.15 | 20060922 | 10.71146 | 216.98360 | 75.35926 | 14.58917 | 0.1493084 | 2.5435914 | 32 | 5 | 1999–2005 | 0.49 | M-v | 1 | MPC | 76288 | 2003 $XR_{40}$ |
| 2003 $XF_{41}$ | 16.5 | 0.15 | 20060922 | 184.56240 | 173.56256 | 261.24701 | 1.77663 | 0.1637494 | 3.0761806 | 26 | 3 | 1999–2005 | 0.47 | M-v | 4 | MPC | 69604 | 2003 $XF_{41}$ |
| 2003 $XN_{41}$ | 16.6 | 0.15 | 20060922 | 13.94212 | 99.69846 | 234.38030 | 6.03112 | 0.2314097 | 2.2497242 | 77 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 04278 | 2003 $XN_{41}$ |
| 2003 $XE_{43}$ | 15.8 | 0.15 | 20060922 | 121.05515 | 222.12805 | 2.83072 | 14.45198 | 0.0543761 | 2.5817316 | 52 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 65522 | 2003 $XE_{43}$ |
| 2003 $XN_{43}$ | 15.8 | 0.15 | 20031227 | 8.90429 | 134.59128 | 306.26647 | 15.12030 | 0.3187891 | 3.8859409 | 20 | 1 | 47 days | 0.73 | | | MPC | | 2003 $XN_{43}$ |
| 2003 YE | 17.2 | 0.15 | 20060922 | 296.66920 | 256.62980 | 203.51667 | 23.33677 | 0.3226595 | 2.1920550 | 53 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 61740 | 2003 YE |
| 2003 YF | 15.8 | 0.15 | 20060922 | 55.91866 | 232.17489 | 126.76855 | 24.77712 | 0.0940107 | 1.9818452 | 54 | 4 | 1996–2005 | 0.62 | M-v | 2 | MPC | 87600 | 2003 YF |
| 2003 YO | 16.2 | 0.15 | 20060922 | 255.16608 | 7.87610 | 127.45459 | 13.27947 | 0.2004784 | 2.3974567 | 107 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 87600 | 2003 YO |
| 2003 YP | 14.8 | 0.15 | 20060922 | 145.02827 | 254.06853 | 293.07409 | 13.89866 | 0.1451393 | 2.9731556 | 117 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87600 | 2003 YP |
| 2003 YY | 16.5 | 0.15 | 20060922 | 43.51948 | 111.16998 | 288.64834 | 17.51222 | 0.0938756 | 1.9583298 | 56 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 57443 | 2003 YY |
| 2003 $YB_1$ | 16.0 | 0.15 | 20060922 | 3.42276 | 12.70307 | 343.12331 | 6.08356 | 0.2423599 | 2.2412402 | 193 | 5 | 1996–2006 | 0.41 | M-v | 1 | MPC | 04278 | 2003 $YB_1$ |
| 2003 $YG_1$ | 17.1 | 0.15 | 20060922 | 244.95156 | 288.15098 | 308.80654 | 18.10709 | 0.0984084 | 1.9034417 | 53 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 95148 | 2003 $YG_1$ |
| 2003 $YH_2$ | 16.4 | 0.15 | 20060922 | 24.21426 | 280.25662 | 74.85904 | 5.66718 | 0.2128566 | 2.1872290 | 86 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 76289 | 2003 $YH_2$ |
| 2003 $YJ_2$ | 16.6 | 0.15 | 20060922 | 9.01632 | 154.83112 | 281.64372 | 16.36730 | 0.0940890 | 1.9839837 | 56 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 62458 | 2003 $YJ_2$ |
| 2003 $YK_2$ | 16.5 | 0.15 | 20060922 | 8.62032 | 103.27359 | 255.49954 | 3.58073 | 0.2029419 | 2.1997624 | 152 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 04278 | 2003 $YK_2$ |
| 2003 $YD_3$ | 15.2 | 0.15 | 20060922 | 166.16056 | 131.94557 | 341.56714 | 15.85566 | 0.0710070 | 3.1360129 | 38 | 3 | 2002–2005 | 0.47 | M-v | 2 | MPC | 87600 | 2003 $YD_3$ |
| 2003 $YM_3$ | 15.8 | 0.15 | 20060922 | 121.08414 | 201.62008 | 35.00824 | 15.88140 | 0.0573235 | 2.5669424 | 72 | 3 | 2002–2006 | 0.46 | M-v | 1 | MPC | 66320 | 2003 $YM_3$ |
| 2003 $YN_3$ | 16.8 | 0.15 | 20060922 | 359.50725 | 82.53519 | 292.13048 | 6.29407 | 0.3034395 | 2.1899281 | 91 | 2 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03581 | 2003 $YN_3$ |
| 2003 $YB_4$ | 16.8 | 0.15 | 20060922 | 283.96897 | 253.59740 | 183.39281 | 6.15784 | 0.0530791 | 2.2950032 | 59 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04278 | 2003 $YB_4$ |
| 2003 $YG_4$ | 17.1 | 0.15 | 20060922 | 172.74805 | 80.21990 | 126.39599 | 5.94913 | 0.0939897 | 2.2396339 | 37 | 5 | 1998–2006 | 0.57 | M-v | 2 | MPC | 87600 | 2003 $YG_4$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $YJ_4$ | 16.8 | 0.15 | 20060922 | 348.63023 | 265.55357 | 113.72649 | 6.38227 | 0.1174986 | 2.2164045 | 100 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 04278 | 2003 $YJ_4$ |
| 2003 $YQ_4$ | 16.4 | 0.15 | 20060922 | 27.06247 | 345.90967 | 359.27091 | 5.81436 | 0.1988792 | 2.1949820 | 86 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 04278 | 2003 $YQ_4$ |
| 2003 $YA_5$ | 17.1 | 0.15 | 20060922 | 328.25381 | 208.76908 | 172.13850 | 5.33986 | 0.1646402 | 2.2770418 | 50 | 3 | 2003–2006 | 0.51 | M-v | 3 | MPC | 04278 | 2003 $YA_5$ |
| 2003 $YQ_5$ | 16.9 | 0.15 | 20060922 | 269.38690 | 80.20676 | 23.47743 | 2.65626 | 0.1771847 | 2.3875935 | 75 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04278 | 2003 $YQ_5$ |
| 2003 $YW_6$ | 16.5 | 0.15 | 20060922 | 238.42232 | 179.33109 | 326.75286 | 6.42598 | 0.1580336 | 2.3559903 | 41 | 4 | 1997–2006 | 0.60 | M-v | 3 | MPC | 57449 | 2003 $YW_6$ |
| 2003 $YB_7$ | 16.1 | 0.15 | 20060922 | 358.44115 | 0.07851 | 352.06825 | 7.33289 | 0.1410239 | 2.3991368 | 101 | 6 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04278 | 2003 $YB_7$ |
| 2003 $YG_7$ | 16.7 | 0.15 | 20060922 | 333.49745 | 78.07471 | 289.26518 | 1.22090 | 0.2077381 | 2.4255874 | 61 | 3 | 1999–2006 | 0.30 | M-v | 1 | MPC | 03581 | 2003 $YG_7$ |
| 2003 $YU_7$ | 16.6 | 0.15 | 20060922 | 137.60350 | 319.65420 | 268.75258 | 4.21244 | 0.0734484 | 2.4366267 | 32 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 76293 | 2003 $YU_7$ |
| 2003 $YV_8$ | 16.9 | 0.15 | 20060922 | 337.47143 | 275.58542 | 107.66259 | 5.98173 | 0.2912107 | 2.2705584 | 52 | 2 | 2003–2006 | 0.50 | M-v | 3 | MPC | 03581 | 2003 $YV_8$ |
| 2003 $YF_9$ | 17.4 | 0.15 | 20060922 | 293.69932 | 96.60246 | 346.72492 | 2.06224 | 0.1859996 | 2.3174778 | 52 | 3 | 1999–2006 | 0.40 | M-v | 3 | MPC | 57450 | 2003 $YF_9$ |
| 2003 $YG_{11}$ | 16.8 | 0.15 | 20060922 | 324.58960 | 75.92014 | 318.45991 | 6.58656 | 0.2555867 | 2.2688235 | 101 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04278 | 2003 $YG_{11}$ |
| 2003 $YW_{12}$ | 16.0 | 0.15 | 20060922 | 350.45034 | 44.45771 | 345.67273 | 5.00292 | 0.1591678 | 2.2420805 | 120 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 04279 | 2003 $YW_{12}$ |
| 2003 $YX_{12}$ | 16.1 | 0.15 | 20060922 | 248.74615 | 150.87920 | 337.61607 | 5.08637 | 0.1197862 | 2.3727658 | 92 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04279 | 2003 $YX_{12}$ |
| 2003 $YY_{12}$ | 16.7 | 0.15 | 20060922 | 283.42101 | 94.13365 | 337.71810 | 4.34712 | 0.2098709 | 2.4093789 | 46 | 4 | 1995–2006 | 0.58 | M-v | 2 | MPC | 03582 | 2003 $YY_{12}$ |
| 2003 $YZ_{12}$ | 16.7 | 0.15 | 20060922 | 277.76644 | 38.92166 | 40.22635 | 2.44250 | 0.1457766 | 2.4365004 | 43 | 5 | 1991–2006 | 0.58 | M-v | 1 | MPC | 04279 | 2003 $YZ_{12}$ |
| 2003 $YX_{13}$ | 16.6 | 0.15 | 20060922 | 246.39381 | 82.33598 | 65.70758 | 9.61741 | 0.1300455 | 2.3346651 | 52 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 62458 | 2003 $YX_{13}$ |
| 2003 $YH_{14}$ | 16.2 | 0.15 | 20060922 | 220.87990 | 82.19758 | 57.64025 | 8.46537 | 0.0844081 | 2.3376439 | 74 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04279 | 2003 $YH_{14}$ |
| 2003 $YN_{14}$ | 15.1 | 0.15 | 20060922 | 179.78321 | 124.09189 | 47.66178 | 13.96101 | 0.0895186 | 2.5656153 | 70 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87600 | 2003 $YN_{14}$ |
| 2003 $YW_{14}$ | 16.9 | 0.15 | 20060922 | 315.99404 | 44.91916 | 335.25217 | 4.90548 | 0.2206888 | 2.4088676 | 49 | 3 | 1995–2004 | 0.60 | M-v | 3 | MPC | 86191 | 2003 $YW_{14}$ |
| 2003 $YX_{14}$ | 17.5 | 0.15 | 20060922 | 251.66843 | 113.07447 | 12.56949 | 5.01738 | 0.1884019 | 2.3617559 | 43 | 3 | 1999–2006 | 0.40 | M-v | 3 | MPC | 04279 | 2003 $YX_{14}$ |
| 2003 $YE_{15}$ | 16.7 | 0.15 | 20060922 | 290.15159 | 57.86853 | 21.99125 | 6.17598 | 0.0286654 | 2.3689070 | 37 | 5 | 2001–2006 | 0.43 | M-v | 1 | MPC | 86191 | 2003 $YE_{15}$ |
| 2003 $YD_{16}$ | 16.7 | 0.15 | 20060922 | 336.44654 | 20.28816 | 23.97351 | 3.29087 | 0.1454518 | 2.2842518 | 120 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 77756 | 2003 $YD_{16}$ |
| 2003 $YE_{16}$ | 16.5 | 0.15 | 20060922 | 354.17246 | 73.10597 | 320.35533 | 6.96085 | 0.1186456 | 2.2612507 | 84 | 4 | 1994–2006 | 0.48 | M-v | 2 | MPC | 04279 | 2003 $YE_{16}$ |
| 2003 $YJ_{16}$ | 20.7 | 0.15 | 20060922 | 15.24797 | 322.28380 | 62.84468 | 6.41430 | 0.1331405 | 2.1946440 | 81 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 87600 | 2003 $YJ_{16}$ |
| 2003 $YP_{16}$ | 16.1 | 0.15 | 20060922 | 256.53274 | 99.07612 | 307.03159 | 3.43609 | 0.1123201 | 2.8121216 | 36 | 4 | 2000–2005 | 0.53 | M-v | 0 | MPC | 66320 | 2003 $YP_{16}$ |
| 2003 $YU_{16}$ | 16.9 | 0.15 | 20060922 | 226.89977 | 238.55051 | 289.82844 | 6.37186 | 0.1191694 | 2.3155944 | 49 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 66320 | 2003 $YU_{16}$ |
| 2003 $YE_{17}$ | 16.1 | 0.15 | 20060922 | 236.75563 | 87.78577 | 42.61644 | 2.59697 | 0.1308357 | 2.4716168 | 75 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 04279 | 2003 $YE_{17}$ |
| 2003 $YG_{17}$ | 14.9 | 0.15 | 20060922 | 175.70418 | 10.76211 | 100.72701 | 19.11555 | 0.1921401 | 3.1404642 | 53 | 4 | 2001–2005 | 0.46 | M-v | 1 | MPC | 89494 | 2003 $YG_{17}$ |
| 2003 $YH_{17}$ | 17.0 | 0.15 | 20060922 | 270.70535 | 105.39201 | 347.47870 | 1.98283 | 0.1743103 | 2.4263946 | 70 | 3 | 1999–2006 | 0.58 | M-v | 3 | MPC | 57462 | 2003 $YH_{17}$ |
| 2003 $YK_{17}$ | 16.1 | 0.15 | 20060922 | 307.34379 | 45.01428 | 335.90055 | 2.80608 | 0.2341679 | 2.5255285 | 49 | 3 | 2000–2005 | 0.48 | M-v | 3 | MPC | 57462 | 2003 $YK_{17}$ |
| 2003 $YY_{17}$ | 15.7 | 0.15 | 20060922 | 330.64235 | 110.43830 | 288.75572 | 23.00099 | 0.2936906 | 2.2581865 | 81 | 3 | 1999–2006 | 0.52 | M-v | 1 | MPC | 04279 | 2003 $YY_{17}$ |
| 2003 $YC_{18}$ | 15.7 | 0.15 | 20060922 | 205.47531 | 64.79044 | 102.46332 | 7.85598 | 0.0750347 | 2.4552869 | 73 | 5 | 2000–2006 | 0.66 | M-v | 1 | MPC | 62459 | 2003 $YC_{18}$ |
| 2003 $YR_{19}$ | 15.2 | 0.15 | 20060922 | 84.68982 | 165.40241 | 96.32703 | 15.36653 | 0.1476603 | 2.6616244 | 82 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 87600 | 2003 $YR_{19}$ |
| 2003 $YT_{19}$ | 15.2 | 0.15 | 20060922 | 111.81309 | 151.21800 | 88.32333 | 9.66809 | 0.0665483 | 2.5973259 | 66 | 4 | 2002–2006 | 0.66 | M-v | 1 | MPC | 87600 | 2003 $YT_{19}$ |
| 2003 $YU_{19}$ | 15.7 | 0.15 | 20060922 | 357.41485 | 11.39448 | 314.48559 | 7.59071 | 0.0719463 | 2.7287107 | 72 | 5 | 1997–2006 | 0.46 | M-v | 1 | MPC | 04279 | 2003 $YU_{19}$ |
| 2003 $YX_{19}$ | 17.5 | 0.15 | 20060922 | 321.93770 | 323.40922 | 77.40821 | 4.99781 | 0.1640758 | 2.3621382 | 70 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04279 | 2003 $YX_{19}$ |
| 2003 $YC_{20}$ | 16.6 | 0.15 | 20060922 | 264.57742 | 342.47415 | 79.58287 | 5.76255 | 0.1372842 | 2.6504337 | 33 | 4 | 2001–2005 | 0.34 | M-v | 1 | MPC | 57465 | 2003 $YC_{20}$ |
| 2003 $YH_{20}$ | 17.3 | 0.15 | 20060922 | 338.97087 | 357.79226 | 10.88522 | 2.57513 | 0.2048258 | 2.4190392 | 36 | 2 | 2003–2006 | 0.38 | M-v | 3 | MPC | 03582 | 2003 $YH_{20}$ |
| 2003 $YT_{20}$ | 15.6 | 0.15 | 20060922 | 188.24501 | 141.20786 | 313.12933 | 4.60672 | 0.0812701 | 3.1645688 | 36 | 4 | 1999–2005 | 0.45 | M-v | 0 | MPC | 61742 | 2003 $YT_{20}$ |
| 2003 $YU_{20}$ | 16.2 | 0.15 | 20060922 | 252.52636 | 354.08192 | 48.16867 | 2.27371 | 0.2362703 | 2.8054927 | 40 | 4 | 1993–2004 | 0.55 | M-v | 1 | MPC | 04279 | 2003 $YU_{20}$ |
| 2003 $YV_{20}$ | 17.2 | 0.15 | 20060922 | 214.26338 | 175.74264 | 345.05559 | 1.08270 | 0.1254788 | 2.4563763 | 51 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 87600 | 2003 $YV_{20}$ |
| 2003 $YW_{20}$ | 16.6 | 0.15 | 20060922 | 226.39774 | 141.46879 | 10.10769 | 1.35831 | 0.1238923 | 2.4261287 | 92 | 4 | 1997–2006 | 0.44 | M-v | 2 | MPC | 04279 | 2003 $YW_{20}$ |
| 2003 $YX_{20}$ | 16.5 | 0.15 | 20060922 | 302.82565 | 70.53923 | 304.97418 | 4.03882 | 0.2374629 | 2.5861225 | 28 | 3 | 2000–2004 | 0.47 | M-v | 2 | MPC | 89495 | 2003 $YX_{20}$ |
| 2003 $YE_{21}$ | 16.6 | 0.15 | 20060922 | 248.52098 | 187.18590 | 309.65629 | 3.08792 | 0.0841974 | 2.3573961 | 74 | 4 | 1997–2006 | 0.55 | M-v | 2 | MPC | 62459 | 2003 $YE_{21}$ |
| 2003 $YF_{21}$ | 16.5 | 0.15 | 20060922 | 346.26949 | 284.07391 | 85.24497 | 5.68775 | 0.1188965 | 2.4339167 | 69 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04279 | 2003 $YF_{21}$ |
| 2003 $YK_{21}$ | 16.3 | 0.15 | 20060922 | 306.82351 | 48.07975 | 314.78308 | 3.59572 | 0.1974516 | 2.7050684 | 49 | 4 | 1998–2004 | 0.42 | M-v | 1 | MPC | 57466 | 2003 $YK_{21}$ |
| 2003 $YN_{21}$ | 16.6 | 0.15 | 20060922 | 335.18030 | 95.63521 | 293.20524 | 13.83802 | 0.0720215 | 2.4157002 | 42 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 87600 | 2003 $YN_{21}$ |
| 2003 $YO_{21}$ | 17.2 | 0.15 | 20060922 | 354.58235 | 286.53853 | 92.80966 | 6.27968 | 0.0861275 | 2.3467055 | 41 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 87600 | 2003 $YO_{21}$ |
| 2003 $YQ_{21}$ | 16.7 | 0.15 | 20060922 | 241.79526 | 75.20566 | 85.41508 | 3.63419 | 0.1550770 | 2.3102808 | 78 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 03583 | 2003 $YQ_{21}$ |
| 2003 $YU_{21}$ | 16.9 | 0.15 | 20060922 | 233.19384 | 86.59205 | 79.25489 | 3.64023 | 0.1417093 | 2.3295331 | 58 | 5 | 1992–2006 | 0.40 | M-v | 1 | MPC | 86192 | 2003 $YU_{21}$ |
| 2003 $YD_{22}$ | 16.4 | 0.15 | 20060922 | 69.68982 | 21.75400 | 264.16127 | 6.13944 | 0.1123773 | 2.2942251 | 57 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04279 | 2003 $YD_{22}$ |
| 2003 $YQ_{22}$ | 16.6 | 0.15 | 20060922 | 227.46666 | 207.39032 | 323.72823 | 4.46134 | 0.0612403 | 2.3060454 | 69 | 4 | 1996–2006 | 0.49 | M-v | 2 | MPC | 62459 | 2003 $YQ_{22}$ |
| 2003 $YX_{22}$ | 17.7 | 0.15 | 20060922 | 297.21897 | 278.52108 | 144.78484 | 2.16229 | 0.1958784 | 2.2874831 | 31 | 4 | 2001–2006 | 0.45 | M-v | 2 | MPC | 77757 | 2003 $YX_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $YC_{23}$ | 14.9 | 0.15 | 20060922 | 240.09368 | 291.12191 | 114.74043 | 6.35315 | 0.2816667 | 2.8428122 | 53 | 2 | 2003–2006 | 0.54 | M-v | 3 | MPC | 03583 | 2003 $YC_{23}$ |
| 2003 $YF_{25}$ | 16.8 | 0.15 | 20060922 | 287.74495 | 141.91493 | 289.23122 | 3.70562 | 0.1497508 | 2.3585587 | 52 | 4 | 1997–2006 | 0.69 | M-v | 1 | MPC | 04279 | 2003 $YF_{25}$ |
| 2003 $YP_{25}$ | 16.4 | 0.15 | 20060922 | 46.22755 | 9.27715 | 332.86113 | 2.64396 | 0.1302599 | 2.1956388 | 57 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 86193 | 2003 $YP_{25}$ |
| 2003 $YW_{25}$ | 15.3 | 0.15 | 20060922 | 164.85704 | 47.95715 | 77.62777 | 6.07137 | 0.2229959 | 3.1117239 | 53 | 3 | 1997–2005 | 0.45 | M-v | 3 | MPC | 76302 | 2003 $YW_{25}$ |
| 2003 $YD_{26}$ | 16.5 | 0.15 | 20060922 | 90.43397 | 66.22938 | 294.91241 | 16.73326 | 0.0716068 | 1.9823524 | 89 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 87600 | 2003 $YD_{26}$ |
| 2003 $YG_{26}$ | 15.9 | 0.15 | 20060922 | 266.11417 | 36.43473 | 77.12243 | 7.50143 | 0.1116150 | 2.3691621 | 64 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 62459 | 2003 $YG_{26}$ |
| 2003 $YJ_{26}$ | 16.6 | 0.15 | 20060922 | 350.45048 | 67.69026 | 320.07480 | 4.09947 | 0.1651371 | 2.2192463 | 77 | 4 | 1996–2006 | 0.48 | M-v | 2 | MPC | 04279 | 2003 $YJ_{26}$ |
| 2003 $YW_{28}$ | 17.0 | 0.15 | 20060922 | 232.09175 | 9.58412 | 116.37067 | 2.19028 | 0.1349369 | 2.3893605 | 26 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04280 | 2003 $YW_{28}$ |
| 2003 $YC_{29}$ | 15.5 | 0.15 | 20060922 | 224.95402 | 211.35931 | 266.31319 | 2.65462 | 0.1607384 | 2.6035926 | 65 | 6 | 1994–2006 | 0.55 | M-v | 1 | MPC | 04280 | 2003 $YC_{29}$ |
| 2003 $YE_{29}$ | 16.7 | 0.15 | 20060922 | 321.92600 | 297.15498 | 103.74080 | 7.95773 | 0.1859287 | 2.3337502 | 46 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 03584 | 2003 $YE_{29}$ |
| 2003 $YJ_{29}$ | 16.6 | 0.15 | 20060922 | 204.58875 | 96.47466 | 95.68998 | 7.14097 | 0.0776374 | 2.2952770 | 45 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 57475 | 2003 $YJ_{29}$ |
| 2003 $YX_{29}$ | 16.7 | 0.15 | 20060922 | 289.62352 | 94.74458 | 29.39690 | 4.92154 | 0.1353136 | 2.2497919 | 76 | 4 | 1994–2006 | 0.56 | M-v | 1 | MPC | 66321 | 2003 $YX_{29}$ |
| 2003 $YA_{30}$ | 16.9 | 0.15 | 20060922 | 301.61737 | 149.26053 | 279.10102 | 4.21854 | 0.1329721 | 2.2714458 | 109 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 04280 | 2003 $YA_{30}$ |
| 2003 $YG_{30}$ | 15.3 | 0.15 | 20060922 | 158.11167 | 208.19462 | 282.72765 | 6.42859 | 0.1817930 | 2.9774710 | 55 | 4 | 1994–2005 | 0.60 | M-v | 1 | MPC | 57476 | 2003 $YG_{30}$ |
| 2003 $YW_{30}$ | 15.0 | 0.15 | 20060922 | 144.75324 | 288.09952 | 280.49165 | 5.99941 | 0.2346758 | 2.5439859 | 77 | 6 | 1993–2006 | 0.65 | M-v | 1 | MPC | 87601 | 2003 $YW_{30}$ |
| 2003 $YO_{31}$ | 17.3 | 0.15 | 20060922 | 220.19579 | 144.29871 | 19.69116 | 1.81651 | 0.1960472 | 2.3384819 | 37 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 74303 | 2003 $YO_{31}$ |
| 2003 $YA_{32}$ | 16.9 | 0.15 | 20060922 | 290.63028 | 355.66931 | 97.91002 | 6.26792 | 0.1221557 | 2.3019437 | 58 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 77757 | 2003 $YA_{32}$ |
| 2003 $YC_{32}$ | 16.6 | 0.15 | 20060922 | 170.83402 | 245.92303 | 325.66786 | 6.47379 | 0.0631484 | 2.3122117 | 53 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 65525 | 2003 $YC_{32}$ |
| 2003 $YH_{32}$ | 15.4 | 0.15 | 20060922 | 223.75182 | 108.44033 | 309.10083 | 6.18161 | 0.0505204 | 3.0174827 | 31 | 4 | 1998–2005 | 0.54 | M-v | 1 | MPC | 62460 | 2003 $YH_{32}$ |
| 2003 $YM_{32}$ | 16.8 | 0.15 | 20060922 | 298.08192 | 3.10701 | 88.03478 | 8.35912 | 0.1119723 | 2.1881306 | 75 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 87601 | 2003 $YM_{32}$ |
| 2003 $YO_{32}$ | 16.9 | 0.15 | 20060922 | 261.39498 | 52.17056 | 81.56980 | 1.04188 | 0.1438747 | 2.2827883 | 71 | 5 | 1994–2006 | 0.44 | M-v | 1 | MPC | 76305 | 2003 $YO_{32}$ |
| 2003 $YC_{33}$ | 16.8 | 0.15 | 20060922 | 299.81882 | 246.82711 | 165.88296 | 6.59710 | 0.0925501 | 2.3207752 | 62 | 4 | 1999–2006 | 0.49 | M-v | 0 | MPC | 04280 | 2003 $YC_{33}$ |
| 2003 $YK_{33}$ | 15.8 | 0.15 | 20060922 | 201.24042 | 307.15028 | 219.69565 | 5.26619 | 0.1409191 | 2.5531072 | 66 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 66321 | 2003 $YK_{33}$ |
| 2003 $YT_{33}$ | 17.1 | 0.15 | 20060922 | 353.78572 | 183.60404 | 172.94641 | 6.13231 | 0.2149634 | 2.2277671 | 101 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 03584 | 2003 $YT_{33}$ |
| 2003 $YL_{34}$ | 17.4 | 0.15 | 20060922 | 329.71312 | 59.88967 | 324.33582 | 2.05697 | 0.1878758 | 2.2816230 | 50 | 3 | 1994–2006 | 0.65 | M-v | 2 | MPC | 03584 | 2003 $YL_{34}$ |
| 2003 $YO_{34}$ | 16.6 | 0.15 | 20060922 | 351.69765 | 320.13698 | 33.64947 | 3.06838 | 0.1898697 | 2.3045744 | 76 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04280 | 2003 $YO_{34}$ |
| 2003 $YP_{34}$ | 16.7 | 0.15 | 20060922 | 251.88296 | 197.44895 | 284.81212 | 4.67934 | 0.1767675 | 2.3359028 | 52 | 4 | 1997–2006 | 0.41 | M-v | 2 | MPC | 57479 | 2003 $YP_{34}$ |
| 2003 $YY_{34}$ | 16.2 | 0.15 | 20060922 | 339.97006 | 79.87714 | 299.67968 | 5.21750 | 0.1410319 | 2.3750893 | 117 | 3 | 1999–2006 | 0.54 | M-v | 2 | MPC | 04280 | 2003 $YY_{34}$ |
| 2003 $YA_{35}$ | 14.2 | 0.15 | 20060922 | 142.60358 | 68.62919 | 130.43814 | 18.10680 | 0.1581453 | 3.0832048 | 104 | 5 | 1999–2006 | 0.61 | M-v | 1 | MPC | 04280 | 2003 $YA_{35}$ |
| 2003 $YH_{35}$ | 16.9 | 0.15 | 20060922 | 231.61569 | 195.35312 | 256.98449 | 1.85948 | 0.0899815 | 2.5867783 | 39 | 3 | 1998–2005 | 0.56 | M-v | 4 | MPC | 76306 | 2003 $YH_{35}$ |
| 2003 $YO_{35}$ | 15.1 | 0.15 | 20060922 | 221.71087 | 291.33781 | 87.16931 | 6.37931 | 0.1449604 | 3.2224463 | 57 | 5 | 1997–2006 | 0.59 | M-v | 0 | MPC | 02197 | 2003 $YO_{35}$ |
| 2003 $YX_{35}$ | 16.3 | 0.15 | 20060922 | 350.84231 | 259.75182 | 93.47718 | 5.95310 | 0.1787351 | 2.2861111 | 58 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 03584 | 2003 $YX_{35}$ |
| 2003 $YZ_{35}$ | 16.9 | 0.15 | 20060922 | 274.79024 | 252.99649 | 216.95778 | 1.58184 | 0.1540541 | 2.3201166 | 67 | 5 | 1996–2006 | 0.43 | M-v | 1 | MPC | 66321 | 2003 $YZ_{35}$ |
| 2003 $YA_{36}$ | 16.8 | 0.15 | 20060922 | 322.54497 | 63.60010 | 319.98094 | 6.60363 | 0.2420469 | 2.3986015 | 58 | 3 | 1999–2006 | 0.43 | M-v | 2 | MPC | 04280 | 2003 $YA_{36}$ |
| 2003 $YK_{36}$ | 16.7 | 0.15 | 20060922 | 4.07858 | 15.83754 | 2.63342 | 2.84899 | 0.2082518 | 2.1714202 | 137 | 3 | 1998–2006 | 0.44 | M-v | 1 | MPC | 03584 | 2003 $YK_{36}$ |
| 2003 $YR_{36}$ | 15.5 | 0.15 | 20060922 | 222.10386 | 92.87099 | 51.55450 | 3.26839 | 0.1438163 | 2.5254261 | 133 | 5 | 1996–2006 | 0.52 | M-v | 2 | MPC | 66321 | 2003 $YR_{36}$ |
| 2003 $YX_{36}$ | 17.5 | 0.15 | 20060922 | 179.08947 | 201.70182 | 20.50305 | 2.46500 | 0.1622529 | 2.3458738 | 39 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 65526 | 2003 $YX_{36}$ |
| 2003 $YF_{37}$ | 18.5 | 0.15 | 20040116 | 1.73405 | 50.70495 | 62.20856 | 2.39639 | 0.1364492 | 2.3347878 | 13 | 1 | 44 days | 0.58 | | | MPC | | 2003 $YF_{37}$ |
| 2003 $YJ_{37}$ | 17.9 | 0.15 | 20060922 | 313.23706 | 1.44725 | 82.35340 | 3.49415 | 0.1165349 | 2.2399403 | 36 | 3 | 1994–2006 | 0.34 | M-v | 2 | MPC | 87601 | 2003 $YJ_{37}$ |
| 2003 $YL_{37}$ | 16.7 | 0.15 | 20060922 | 13.12404 | 287.28167 | 91.93440 | 7.15834 | 0.1064797 | 2.2330996 | 56 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 76307 | 2003 $YL_{37}$ |
| 2003 $YP_{37}$ | 17.1 | 0.15 | 20060922 | 177.21586 | 115.39176 | 73.88995 | 4.39173 | 0.0863711 | 2.2571667 | 36 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 87601 | 2003 $YP_{37}$ |
| 2003 $YS_{37}$ | 16.9 | 0.15 | 20060922 | 134.84994 | 15.22985 | 221.72351 | 2.01068 | 0.1158070 | 2.1993586 | 119 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 76308 | 2003 $YS_{37}$ |
| 2003 $YV_{37}$ | 15.4 | 0.15 | 20060922 | 218.98221 | 132.04336 | 306.92350 | 9.27877 | 0.0847274 | 2.9603936 | 64 | 4 | 1999–2005 | 0.64 | M-v | 1 | MPC | 57482 | 2003 $YV_{37}$ |
| 2003 $YW_{37}$ | 14.8 | 0.15 | 20060922 | 196.40793 | 140.82773 | 319.40728 | 9.24255 | 0.0839533 | 3.0752190 | 58 | 2 | 2002–2004 | 0.46 | M-v | 3 | MPC | 86195 | 2003 $YW_{37}$ |
| 2003 $YK_{38}$ | 16.8 | 0.15 | 20060922 | 318.38003 | 227.31654 | 108.46305 | 0.72708 | 0.1366611 | 2.5659199 | 22 | 3 | 2001–2005 | 0.35 | M-v | 4 | MPC | 95149 | 2003 $YK_{38}$ |
| 2003 $YT_{38}$ | 16.4 | 0.15 | 20060922 | 212.69549 | 117.32503 | 339.73356 | 1.41202 | 0.1619354 | 2.6306067 | 29 | 3 | 1996–2005 | 0.51 | M-v | 3 | MPC | 86195 | 2003 $YT_{38}$ |
| 2003 $YK_{39}$ | 18.1 | 0.15 | 20060922 | 278.38854 | 177.87035 | 320.45251 | 3.73518 | 0.0847436 | 2.1868107 | 29 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 65526 | 2003 $YK_{39}$ |
| 2003 $YE_{40}$ | 16.0 | 0.15 | 20060922 | 146.36384 | 290.78118 | 295.54701 | 14.20918 | 0.1666173 | 2.5414925 | 47 | 4 | 2000–2006 | 0.68 | M-v | 2 | MPC | 04280 | 2003 $YE_{40}$ |
| 2003 $YG_{40}$ | 17.5 | 0.15 | 20060922 | 29.25010 | 254.85119 | 105.31780 | 4.68699 | 0.1713907 | 2.2039375 | 43 | 3 | 2003–2006 | 0.36 | M-v | 2 | MPC | 87601 | 2003 $YG_{40}$ |
| 2003 $YK_{41}$ | 16.6 | 0.15 | 20060922 | 15.94632 | 212.88124 | 107.07701 | 3.50199 | 0.0611066 | 2.6536284 | 28 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 04280 | 2003 $YK_{41}$ |
| 2003 $YR_{41}$ | 17.4 | 0.15 | 20060922 | 94.55526 | 200.91303 | 100.55822 | 7.93032 | 0.1173251 | 2.2703434 | 43 | 4 | 2002–2006 | 0.27 | M-v | 0 | MPC | 87601 | 2003 $YR_{41}$ |
| 2003 $YS_{41}$ | 17.0 | 0.15 | 20060922 | 249.39397 | 47.17557 | 82.76687 | 2.35733 | 0.1194193 | 2.3959678 | 49 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 66321 | 2003 $YS_{41}$ |
| 2003 $YU_{41}$ | 16.8 | 0.15 | 20060922 | 292.66428 | 43.71768 | 324.86343 | 1.05924 | 0.2411713 | 2.7330160 | 37 | 6 | 1998–2006 | 0.47 | M-v | 0 | MPC | 87601 | 2003 $YU_{41}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $YC_{42}$ | 17.7 | 0.15 | 20060922 | 237.69183 | 62.61532 | 98.67396 | 4.77759 | 0.1807828 | 2.3427911 | 33 | 3 | 1997–2006 | 0.46 | M-v | 3 | MPC | 57484 | 2003 $YC_{42}$ |
| 2003 $YG_{42}$ | 17.5 | 0.15 | 20060922 | 211.49850 | 299.56902 | 186.22417 | 1.39572 | 0.0362120 | 2.6561014 | 32 | 5 | 1998–2006 | 0.34 | M-v | 0 | MPC | 87601 | 2003 $YG_{42}$ |
| 2003 $YJ_{42}$ | 17.9 | 0.15 | 20060922 | 212.45027 | 310.45852 | 224.08292 | 0.71353 | 0.1182503 | 2.3854076 | 55 | 4 | 1993–2006 | 0.36 | M-v | 1 | MPC | 03585 | 2003 $YJ_{42}$ |
| 2003 $YL_{43}$ | 15.0 | 0.15 | 20060922 | 175.13815 | 330.28746 | 147.86531 | 1.60721 | 0.1472908 | 3.1074557 | 72 | 5 | 1991–2005 | 0.52 | M-v | 0 | MPC | 04280 | 2003 $YL_{43}$ |
| 2003 $YT_{43}$ | 17.2 | 0.15 | 20060922 | 213.19677 | 47.67564 | 119.69771 | 5.96188 | 0.1452301 | 2.4355426 | 38 | 3 | 1993–2006 | 0.65 | M-v | 3 | MPC | 87601 | 2003 $YT_{43}$ |
| 2003 $YX_{43}$ | 16.4 | 0.15 | 20060922 | 22.70945 | 33.56219 | 304.79625 | 7.23155 | 0.2720174 | 2.3334870 | 72 | 5 | 1988–2006 | 0.49 | M-v | 1 | MPC | 04280 | 2003 $YX_{43}$ |
| 2003 $YN_{44}$ | 16.2 | 0.15 | 20060922 | 89.21140 | 285.57026 | 300.50665 | 11.04907 | 0.1968302 | 3.1315770 | 41 | 3 | 2003–2006 | 0.42 | M-v | 2 | MPC | 87601 | 2003 $YN_{44}$ |
| 2003 $YB_{45}$ | 15.7 | 0.15 | 20060922 | 84.04104 | 172.63172 | 80.36702 | 24.62387 | 0.1631028 | 2.3515393 | 53 | 5 | 1998–2006 | 0.74 | M-v | 1 | MPC | 77758 | 2003 $YB_{45}$ |
| 2003 $YE_{46}$ | 15.8 | 0.15 | 20060922 | 19.72460 | 241.63757 | 72.98404 | 22.87833 | 0.0606756 | 2.6048734 | 43 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 03585 | 2003 $YE_{46}$ |
| 2003 $YR_{46}$ | 16.0 | 0.15 | 20060922 | 209.01593 | 11.55201 | 14.78498 | 2.63717 | 0.2089338 | 3.1935318 | 39 | 5 | 1997–2006 | 0.42 | M-v | 1 | MPC | 02197 | 2003 $YR_{46}$ |
| 2003 $YV_{46}$ | 16.4 | 0.15 | 20060922 | 138.02940 | 142.19530 | 77.81619 | 6.88554 | 0.0740663 | 2.3633032 | 73 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 76312 | 2003 $YV_{46}$ |
| 2003 $YJ_{47}$ | 16.1 | 0.15 | 20060922 | 240.31680 | 338.43055 | 151.25315 | 3.14304 | 0.1078722 | 2.4273095 | 48 | 4 | 1999–2006 | 0.54 | M-v | 2 | MPC | 57489 | 2003 $YJ_{47}$ |
| 2003 $YK_{47}$ | 16.9 | 0.15 | 20060922 | 6.80886 | 109.25045 | 270.73927 | 1.84080 | 0.2359269 | 2.2118571 | 93 | 5 | 1993–2006 | 0.50 | M-v | 1 | MPC | 87601 | 2003 $YK_{47}$ |
| 2003 $YP_{47}$ | 16.5 | 0.15 | 20060922 | 329.61405 | 118.30835 | 267.07476 | 6.40830 | 0.1273368 | 2.2926122 | 64 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 03585 | 2003 $YP_{47}$ |
| 2003 $YZ_{47}$ | 16.4 | 0.15 | 20060922 | 199.17256 | 162.14651 | 300.10765 | 1.08909 | 0.1814582 | 2.7951038 | 39 | 5 | 1995–2005 | 0.67 | M-v | 1 | MPC | 76313 | 2003 $YZ_{47}$ |
| 2003 $YA_{48}$ | 16.0 | 0.15 | 20060922 | 176.37830 | 93.01758 | 61.98475 | 1.23448 | 0.0207426 | 2.5335704 | 65 | 6 | 1997–2006 | 0.50 | M-v | 0 | MPC | 04280 | 2003 $YA_{48}$ |
| 2003 $YO_{48}$ | 16.8 | 0.15 | 20060922 | 316.64664 | 314.11494 | 77.86023 | 3.37698 | 0.0991326 | 2.3684639 | 71 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 04280 | 2003 $YO_{48}$ |
| 2003 $YY_{48}$ | 14.8 | 0.15 | 20060922 | 217.31088 | 155.69132 | 268.70585 | 10.87016 | 0.0360857 | 2.9431980 | 52 | 4 | 2000–2005 | 0.80 | M-v | 1 | MPC | 57490 | 2003 $YY_{48}$ |
| 2003 $YR_{50}$ | 17.5 | 0.15 | 20060922 | 320.00309 | 66.46852 | 344.54284 | 1.81975 | 0.1581240 | 2.2522497 | 78 | 4 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04281 | 2003 $YR_{50}$ |
| 2003 $YX_{50}$ | 15.4 | 0.15 | 20060922 | 289.32494 | 268.02804 | 88.92570 | 13.85726 | 0.2057790 | 2.7830062 | 30 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 00691 | 2003 $YX_{50}$ |
| 2003 $YJ_{51}$ | 16.8 | 0.15 | 20060922 | 258.19669 | 37.93030 | 89.71571 | 3.84878 | 0.1013598 | 2.3064706 | 42 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 00691 | 2003 $YJ_{51}$ |
| 2003 $YT_{51}$ | 16.3 | 0.15 | 20060922 | 345.02329 | 275.74248 | 90.80317 | 7.05951 | 0.1517949 | 2.3838093 | 42 | 3 | 1997–2006 | 0.49 | M-v | 3 | MPC | 03585 | 2003 $YT_{51}$ |
| 2003 $YW_{51}$ | 16.1 | 0.15 | 20060922 | 240.62977 | 45.26887 | 92.88173 | 6.83977 | 0.0551496 | 2.3509319 | 72 | 5 | 1994–2006 | 0.56 | M-v | 2 | MPC | 76316 | 2003 $YW_{51}$ |
| 2003 $YA_{52}$ | 16.9 | 0.15 | 20060922 | 253.76282 | 185.06734 | 281.73421 | 2.52746 | 0.1559630 | 2.4169493 | 29 | 3 | 1999–2006 | 0.49 | M-v | 4 | MPC | 03585 | 2003 $YA_{52}$ |
| 2003 $YF_{52}$ | 16.4 | 0.15 | 20060922 | 345.05693 | 326.20953 | 69.27308 | 7.22663 | 0.1029234 | 2.2933882 | 64 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 86196 | 2003 $YF_{52}$ |
| 2003 $YJ_{52}$ | 15.0 | 0.15 | 20060922 | 192.69007 | 254.87271 | 284.93493 | 10.29866 | 0.2450825 | 2.6180947 | 104 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87601 | 2003 $YJ_{52}$ |
| 2003 $YU_{52}$ | 16.1 | 0.15 | 20060922 | 248.00202 | 124.44296 | 324.03323 | 7.07088 | 0.0296695 | 2.4633702 | 42 | 6 | 1999–2006 | 0.50 | M-v | 1 | MPC | 03585 | 2003 $YU_{52}$ |
| 2003 $YA_{53}$ | 17.6 | 0.15 | 20060922 | 329.88717 | 135.64072 | 246.86470 | 5.10716 | 0.1485806 | 2.2686089 | 58 | 2 | 2003–2006 | 0.52 | M-v | 3 | MPC | 03586 | 2003 $YA_{53}$ |
| 2003 $YK_{53}$ | 15.7 | 0.15 | 20060922 | 184.34333 | 359.59971 | 89.21056 | 3.15185 | 0.0715125 | 2.9326872 | 42 | 3 | 1995–2005 | 0.55 | M-v | 3 | MPC | 76317 | 2003 $YK_{53}$ |
| 2003 $YU_{53}$ | 16.6 | 0.15 | 20060922 | 239.57623 | 228.02341 | 256.29845 | 5.12946 | 0.1709601 | 2.3656969 | 42 | 4 | 1996–2006 | 0.49 | M-v | 1 | MPC | 77759 | 2003 $YU_{53}$ |
| 2003 $YZ_{54}$ | 16.3 | 0.15 | 20060922 | 227.74735 | 198.12201 | 242.13149 | 3.01620 | 0.2013645 | 2.6628573 | 34 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 65527 | 2003 $YZ_{54}$ |
| 2003 $YW_{55}$ | 16.4 | 0.15 | 20060922 | 334.72806 | 281.39006 | 94.42815 | 6.19230 | 0.1796699 | 2.2929136 | 35 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 03586 | 2003 $YW_{55}$ |
| 2003 $YE_{56}$ | 15.6 | 0.15 | 20060922 | 151.69924 | 20.09151 | 116.29567 | 2.94347 | 0.0278808 | 2.8808310 | 53 | 4 | 1993–2005 | 0.70 | M-v | 1 | MPC | 04281 | 2003 $YE_{56}$ |
| 2003 $YR_{57}$ | 17.0 | 0.15 | 20060922 | 308.47759 | 1.63814 | 91.06709 | 3.91137 | 0.0654898 | 2.1604209 | 67 | 4 | 1995–2006 | 0.53 | M-v | 3 | MPC | 69610 | 2003 $YR_{57}$ |
| 2003 $YK_{58}$ | 15.8 | 0.15 | 20060922 | 204.73159 | 20.86713 | 101.41795 | 5.34327 | 0.1258772 | 2.6532863 | 27 | 3 | 2002–2005 | 0.31 | M-v | 3 | MPC | 86197 | 2003 $YK_{58}$ |
| 2003 $YH_{59}$ | 16.7 | 0.15 | 20060922 | 243.20011 | 278.87968 | 230.36886 | 2.81236 | 0.1889578 | 2.2959535 | 44 | 3 | 2001–2006 | 0.37 | M-v | 3 | MPC | 76320 | 2003 $YH_{59}$ |
| 2003 $YA_{60}$ | 16.6 | 0.15 | 20060922 | 185.91475 | 69.67264 | 73.27201 | 3.48276 | 0.1033967 | 2.5684285 | 36 | 6 | 1992–2006 | 0.38 | M-v | 0 | MPC | 86198 | 2003 $YA_{60}$ |
| 2003 $YX_{60}$ | 16.2 | 0.15 | 20060922 | 233.96044 | 57.87265 | 95.30848 | 7.06396 | 0.0692294 | 2.2989398 | 51 | 5 | 1997–2006 | 0.51 | M-v | 1 | MPC | 74304 | 2003 $YX_{60}$ |
| 2003 $YB_{61}$ | 16.2 | 0.15 | 20060922 | 315.41422 | 170.01741 | 257.15179 | 2.26105 | 0.1454645 | 2.2497662 | 90 | 6 | 1998–2006 | 0.50 | M-v | 1 | MPC | 77759 | 2003 $YB_{61}$ |
| 2003 $YC_{61}$ | 17.1 | 0.15 | 20060922 | 298.17896 | 253.72665 | 166.65164 | 2.73957 | 0.2102703 | 2.3205932 | 53 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 03586 | 2003 $YC_{61}$ |
| 2003 $YN_{61}$ | 16.0 | 0.15 | 20060922 | 188.56305 | 39.03884 | 127.66582 | 1.46704 | 0.0682267 | 2.5142802 | 64 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 77759 | 2003 $YN_{61}$ |
| 2003 $YS_{61}$ | 14.8 | 0.15 | 20060922 | 177.63124 | 325.16382 | 117.03782 | 6.28819 | 0.1343389 | 3.2118924 | 45 | 3 | 2003–2006 | 0.63 | M-v | 4 | MPC | 76321 | 2003 $YS_{61}$ |
| 2003 $YY_{61}$ | 16.2 | 0.15 | 20060922 | 339.43400 | 299.18565 | 105.74217 | 4.93855 | 0.1609147 | 2.2215559 | 70 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 87601 | 2003 $YY_{61}$ |
| 2003 $YB_{62}$ | 16.7 | 0.15 | 20060922 | 319.68488 | 314.95506 | 94.72289 | 5.43392 | 0.1877926 | 2.2962355 | 64 | 2 | 2003–2006 | 0.54 | M-v | 4 | MPC | 03586 | 2003 $YB_{62}$ |
| 2003 $YO_{62}$ | 17.1 | 0.15 | 20060922 | 304.82866 | 126.57812 | 293.55711 | 1.45802 | 0.1983754 | 2.3412621 | 46 | 3 | 1999–2006 | 0.45 | M-v | 2 | MPC | 03587 | 2003 $YO_{62}$ |
| 2003 $YP_{62}$ | 16.4 | 0.15 | 20060922 | 201.71944 | 93.94089 | 103.48604 | 4.71762 | 0.2060754 | 2.3738031 | 72 | 6 | 1995–2006 | 0.43 | M-v | 1 | MPC | 87601 | 2003 $YP_{62}$ |
| 2003 $YE_{63}$ | 16.8 | 0.15 | 20060922 | 325.23330 | 298.51256 | 107.31506 | 5.75217 | 0.1138929 | 2.3577511 | 73 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 76322 | 2003 $YE_{63}$ |
| 2003 $YA_{64}$ | 16.5 | 0.15 | 20060922 | 153.80722 | 302.89482 | 283.50674 | 5.60200 | 0.0769113 | 2.3612216 | 33 | 4 | 1998–2006 | 0.73 | M-v | 1 | MPC | 95151 | 2003 $YA_{64}$ |
| 2003 $YK_{64}$ | 17.2 | 0.15 | 20060922 | 348.90770 | 288.54834 | 108.22197 | 4.33013 | 0.1898948 | 2.2115015 | 71 | 3 | 2003–2006 | 0.48 | M-v | 3 | MPC | 76323 | 2003 $YK_{64}$ |
| 2003 $YC_{65}$ | 16.9 | 0.15 | 20060922 | 343.20774 | 114.84861 | 294.79238 | 5.28412 | 0.1590469 | 2.2287693 | 85 | 3 | 1994–2006 | 0.36 | M-v | 2 | MPC | 87601 | 2003 $YC_{65}$ |
| 2003 $YF_{65}$ | 15.9 | 0.15 | 20060922 | 337.91008 | 312.54169 | 105.53240 | 5.11263 | 0.1524334 | 2.2262374 | 140 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 77759 | 2003 $YF_{65}$ |
| 2003 $YK_{65}$ | 17.1 | 0.15 | 20060922 | 285.83489 | 335.35535 | 112.62113 | 6.49523 | 0.2291585 | 2.3515372 | 66 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 04281 | 2003 $YK_{65}$ |
| 2003 $YT_{66}$ | 15.8 | 0.15 | 20060922 | 226.80870 | 178.50310 | 320.16141 | 10.99447 | 0.0965970 | 2.6572443 | 83 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04281 | 2003 $YT_{66}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $YR_{67}$ | 17.5 | 0.15 | 20060922 | 81.20932 | 196.85373 | 87.21349 | 3.84351 | 0.1155362 | 2.2363440 | 32 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 76325 | 2003 $YR_{67}$ |
| 2003 $YA_{68}$ | 16.7 | 0.15 | 20060922 | 330.19627 | 233.04349 | 104.76209 | 2.17979 | 0.0474036 | 2.5957197 | 16 | 3 | 2002–2005 | 0.24 | M-v | 3 | MPC | 00692 | 2003 $YA_{68}$ |
| 2003 $YK_{68}$ | 16.8 | 0.15 | 20060922 | 249.80231 | 217.45606 | 241.19012 | 3.51613 | 0.1152989 | 2.5526724 | 40 | 6 | 1994–2006 | 0.54 | M-v | 1 | MPC | 04281 | 2003 $YK_{68}$ |
| 2003 $YL_{68}$ | 16.8 | 0.15 | 20060922 | 226.72999 | 267.08210 | 267.52696 | 7.24746 | 0.0769441 | 2.2886122 | 47 | 3 | 2002–2006 | 0.49 | M-v | 1 | MPC | 87601 | 2003 $YL_{68}$ |
| 2003 $YS_{68}$ | 17.0 | 0.15 | 20060922 | 283.44032 | 162.61146 | 287.81115 | 5.55023 | 0.0769516 | 2.3961513 | 44 | 3 | 2002–2006 | 0.47 | M-v | 1 | MPC | 87602 | 2003 $YS_{68}$ |
| 2003 $YL_{70}$ | 15.9 | 0.15 | 20060922 | 249.13357 | 307.19708 | 161.27978 | 8.88180 | 0.2794480 | 2.6052388 | 116 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 04281 | 2003 $YL_{70}$ |
| 2003 $YO_{70}$ | 16.8 | 0.15 | 20060922 | 352.43311 | 222.35122 | 149.64294 | 3.16988 | 0.2301152 | 2.2618136 | 156 | 8 | 1994–2006 | 0.47 | M-v | 1 | MPC | 04281 | 2003 $YO_{70}$ |
| 2003 $YG_{71}$ | 15.8 | 0.15 | 20060922 | 185.57779 | 234.30959 | 286.13482 | 5.41318 | 0.0724451 | 2.4593253 | 30 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 86199 | 2003 $YG_{71}$ |
| 2003 $YU_{71}$ | 15.8 | 0.15 | 20060922 | 291.60141 | 313.26960 | 59.33195 | 2.52494 | 0.1134803 | 2.6194738 | 49 | 6 | 1994–2005 | 0.60 | M-v | 1 | MPC | 04281 | 2003 $YU_{71}$ |
| 2003 $YQ_{73}$ | 16.9 | 0.15 | 20060922 | 268.60149 | 60.69315 | 38.58558 | 2.19199 | 0.1412096 | 2.3590363 | 42 | 4 | 1999–2006 | 0.62 | M-v | 1 | MPC | 66323 | 2003 $YQ_{73}$ |
| 2003 $YT_{73}$ | 17.3 | 0.15 | 20060922 | 341.01335 | 73.91599 | 282.93377 | 5.39345 | 0.1992506 | 2.2971169 | 28 | 2 | 2003–2006 | 0.37 | M-v | 3 | MPC | 03587 | 2003 $YT_{73}$ |
| 2003 $YV_{73}$ | 17.3 | 0.15 | 20060922 | 229.54947 | 106.24729 | 27.84394 | 1.91881 | 0.1260218 | 2.3650366 | 33 | 3 | 1995–2006 | 0.38 | M-v | 4 | MPC | 57512 | 2003 $YV_{73}$ |
| 2003 $YC_{74}$ | 16.1 | 0.15 | 20060922 | 319.73167 | 313.03528 | 47.47347 | 3.56017 | 0.0151595 | 2.5706123 | 52 | 5 | 1997–2005 | 0.48 | M-v | 1 | MPC | 76329 | 2003 $YC_{74}$ |
| 2003 $YG_{74}$ | 14.9 | 0.15 | 20060922 | 114.71945 | 256.89106 | 268.10722 | 13.47172 | 0.1030964 | 3.0802040 | 50 | 4 | 1996–2005 | 0.61 | M-v | 1 | MPC | 86200 | 2003 $YG_{74}$ |
| 2003 $YD_{75}$ | 17.1 | 0.15 | 20060922 | 317.14915 | 89.05196 | 303.79976 | 4.63378 | 0.1923411 | 2.3274616 | 49 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 04281 | 2003 $YD_{75}$ |
| 2003 $YE_{75}$ | 17.0 | 0.15 | 20060922 | 281.24033 | 163.63872 | 296.22730 | 6.29991 | 0.1121100 | 2.2652472 | 50 | 4 | 1994–2006 | 0.44 | M-v | 1 | MPC | 66323 | 2003 $YE_{75}$ |
| 2003 $YJ_{75}$ | 16.9 | 0.15 | 20060922 | 310.78807 | 24.06020 | 54.98216 | 3.35893 | 0.0980154 | 2.2034326 | 90 | 5 | 1998–2006 | 0.46 | M-v | 2 | MPC | 77760 | 2003 $YJ_{75}$ |
| 2003 $YL_{75}$ | 16.2 | 0.15 | 20060922 | 276.26197 | 179.94861 | 278.76735 | 9.42930 | 0.1452840 | 2.3033531 | 58 | 4 | 1999–2006 | 0.77 | M-v | 1 | MPC | 66323 | 2003 $YL_{75}$ |
| 2003 $YP_{75}$ | 16.8 | 0.15 | 20060922 | 262.20914 | 80.37543 | 36.29839 | 3.55637 | 0.1119437 | 2.3057523 | 48 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 57514 | 2003 $YP_{75}$ |
| 2003 $YV_{75}$ | 15.9 | 0.15 | 20060922 | 170.38294 | 179.84192 | 349.70545 | 3.16502 | 0.1320452 | 2.6173565 | 34 | 4 | 2000–2006 | 0.61 | M-v | 2 | MPC | 04281 | 2003 $YV_{75}$ |
| 2003 $YD_{76}$ | 15.9 | 0.15 | 20060922 | 189.52637 | 92.80991 | 66.95949 | 4.14371 | 0.0956526 | 2.5329274 | 40 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 04281 | 2003 $YD_{76}$ |
| 2003 $YY_{76}$ | 16.5 | 0.15 | 20060922 | 344.29968 | 36.85488 | 12.56546 | 1.86592 | 0.1209516 | 2.1774374 | 100 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 57515 | 2003 $YY_{76}$ |
| 2003 $YE_{77}$ | 16.0 | 0.15 | 20060922 | 231.69770 | 178.89908 | 313.20379 | 4.75556 | 0.1597748 | 2.4392609 | 54 | 6 | 1998–2006 | 0.45 | M-v | 1 | MPC | 87602 | 2003 $YE_{77}$ |
| 2003 $YH_{77}$ | 17.0 | 0.15 | 20060922 | 241.17997 | 109.43970 | 27.32365 | 1.79040 | 0.1339270 | 2.3638743 | 27 | 3 | 1999–2006 | 0.41 | M-v | 4 | MPC | 57515 | 2003 $YH_{77}$ |
| 2003 $YS_{77}$ | 16.1 | 0.15 | 20060922 | 201.13484 | 53.05227 | 82.91865 | 4.18198 | 0.1550188 | 2.6524730 | 36 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 57516 | 2003 $YS_{77}$ |
| 2003 $YE_{78}$ | 15.1 | 0.15 | 20060922 | 235.53995 | 283.27531 | 90.40017 | 11.33535 | 0.2501264 | 3.1558043 | 42 | 3 | 1997–2004 | 0.48 | M-v | 2 | MPC | 57516 | 2003 $YE_{78}$ |
| 2003 $YK_{78}$ | 17.0 | 0.15 | 20060922 | 5.19069 | 54.14003 | 310.02624 | 5.16726 | 0.0280497 | 2.3371619 | 47 | 4 | 1996–2006 | 0.56 | M-v | 1 | MPC | 57516 | 2003 $YK_{78}$ |
| 2003 $YW_{78}$ | 16.6 | 0.15 | 20060922 | 311.57146 | 92.96609 | 304.44544 | 4.63917 | 0.1864125 | 2.3751975 | 42 | 3 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04281 | 2003 $YW_{78}$ |
| 2003 $YD_{79}$ | 15.6 | 0.15 | 20060922 | 281.37788 | 341.69124 | 68.52248 | 6.45550 | 0.1454154 | 2.5280407 | 43 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 57518 | 2003 $YD_{79}$ |
| 2003 $YM_{79}$ | 15.8 | 0.15 | 20060922 | 221.93454 | 97.31122 | 316.50376 | 5.00122 | 0.1432059 | 3.0549444 | 49 | 3 | 1999–2004 | 0.52 | M-v | 1 | MPC | 66323 | 2003 $YM_{79}$ |
| 2003 $YV_{79}$ | 16.7 | 0.15 | 20060922 | 333.68512 | 324.89120 | 67.80105 | 4.24814 | 0.2182702 | 2.2890424 | 70 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 03587 | 2003 $YV_{79}$ |
| 2003 $YY_{79}$ | 15.9 | 0.15 | 20060922 | 337.69113 | 56.21792 | 316.78176 | 5.76051 | 0.1609416 | 2.4029404 | 94 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 04281 | 2003 $YY_{79}$ |
| 2003 $YP_{80}$ | 16.2 | 0.15 | 20060922 | 265.29094 | 141.31940 | 322.63656 | 5.77142 | 0.0815781 | 2.4261817 | 81 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04281 | 2003 $YP_{80}$ |
| 2003 $YQ_{80}$ | 17.3 | 0.15 | 20060922 | 314.24655 | 356.48205 | 60.35693 | 3.35225 | 0.1893786 | 2.3233806 | 32 | 4 | 1978–2006 | 0.57 | M-v | 1 | MPC | 62461 | 2003 $YQ_{80}$ |
| 2003 $YX_{80}$ | 16.6 | 0.15 | 20060922 | 244.20221 | 47.26267 | 59.38203 | 4.39934 | 0.1196384 | 2.5675872 | 45 | 3 | 2002–2006 | 0.63 | M-v | 3 | MPC | 00693 | 2003 $YX_{80}$ |
| 2003 $YK_{81}$ | 14.7 | 0.15 | 20060922 | 77.97699 | 280.24865 | 284.82593 | 13.35144 | 0.1042603 | 3.1954462 | 34 | 3 | 2002–2005 | 0.59 | M-v | 3 | MPC | 89496 | 2003 $YK_{81}$ |
| 2003 $YC_{82}$ | 16.8 | 0.15 | 20060922 | 301.55482 | 101.90009 | 327.74346 | 3.68998 | 0.1001239 | 2.3558653 | 89 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 04282 | 2003 $YC_{82}$ |
| 2003 $YE_{82}$ | 16.9 | 0.15 | 20060922 | 332.85753 | 80.08210 | 349.40927 | 1.86975 | 0.0604646 | 2.2057128 | 67 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 57522 | 2003 $YE_{82}$ |
| 2003 $YH_{82}$ | 16.0 | 0.15 | 20060922 | 199.52513 | 104.68503 | 48.09253 | 3.46536 | 0.0750923 | 2.5697418 | 42 | 6 | 1992–2006 | 0.55 | M-v | 1 | MPC | 77761 | 2003 $YH_{82}$ |
| 2003 $YK_{82}$ | 17.2 | 0.15 | 20060922 | 303.94604 | 116.46156 | 339.68263 | 3.23064 | 0.0876254 | 2.2295173 | 85 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 00693 | 2003 $YK_{82}$ |
| 2003 $YO_{82}$ | 17.1 | 0.15 | 20060922 | 337.96793 | 341.13331 | 39.29426 | 2.93933 | 0.2135173 | 2.2938283 | 48 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04282 | 2003 $YO_{82}$ |
| 2003 $YP_{82}$ | 17.2 | 0.15 | 20060922 | 332.44330 | 357.50589 | 39.30074 | 3.22094 | 0.1594325 | 2.2802827 | 90 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03587 | 2003 $YP_{82}$ |
| 2003 $YR_{82}$ | 17.7 | 0.15 | 20060922 | 280.48212 | 33.24119 | 34.70075 | 3.06156 | 0.1637286 | 2.4449126 | 17 | 3 | 1995–2006 | 0.38 | M-v | 3 | MPC | 86201 | 2003 $YR_{82}$ |
| 2003 $YJ_{83}$ | 15.7 | 0.15 | 20060922 | 221.81775 | 277.63688 | 211.47838 | 3.64017 | 0.2187498 | 2.5849781 | 47 | 5 | 1994–2006 | 0.57 | M-v | 1 | MPC | 04282 | 2003 $YJ_{83}$ |
| 2003 $YW_{83}$ | 16.9 | 0.15 | 20060922 | 201.37325 | 123.30475 | 34.77771 | 1.70354 | 0.1230969 | 2.3743994 | 47 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 57524 | 2003 $YW_{83}$ |
| 2003 $YM_{84}$ | 15.9 | 0.15 | 20060922 | 274.61945 | 333.54236 | 112.54093 | 6.14849 | 0.1591286 | 2.3501798 | 51 | 4 | 1999–2005 | 0.51 | M-v | 1 | MPC | 86202 | 2003 $YM_{84}$ |
| 2003 $YR_{84}$ | 17.5 | 0.15 | 20060922 | 241.08615 | 103.72379 | 4.64929 | 1.98532 | 0.1406148 | 2.4201824 | 31 | 4 | 1993–2005 | 0.55 | M-v | 1 | MPC | 74304 | 2003 $YR_{84}$ |
| 2003 $YF_{85}$ | 17.1 | 0.15 | 20060922 | 293.15418 | 301.22502 | 116.78241 | 7.10624 | 0.1056838 | 2.3752361 | 22 | 4 | 1997–2006 | 0.49 | M-v | 1 | MPC | 04282 | 2003 $YF_{85}$ |
| 2003 $YQ_{85}$ | 17.1 | 0.15 | 20060922 | 214.34442 | 354.60711 | 167.46897 | 3.74422 | 0.1775553 | 2.3765982 | 29 | 3 | 1995–2006 | 0.34 | M-v | 5 | MPC | 57525 | 2003 $YQ_{85}$ |
| 2003 $YY_{85}$ | 17.0 | 0.15 | 20060922 | 293.95034 | 235.67736 | 185.26459 | 3.55014 | 0.1983789 | 2.3452143 | 32 | 5 | 1994–2006 | 0.38 | M-v | 0 | MPC | 04282 | 2003 $YY_{85}$ |
| 2003 $YG_{86}$ | 17.6 | 0.15 | 20060922 | 310.34106 | 308.53949 | 106.94957 | 3.24632 | 0.2090497 | 2.3084545 | 26 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 03588 | 2003 $YG_{86}$ |
| 2003 $YM_{88}$ | 17.4 | 0.15 | 20060922 | 304.60278 | 177.45849 | 282.09614 | 1.44644 | 0.0762041 | 2.2043643 | 59 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 69613 | 2003 $YM_{88}$ |
| 2003 $YK_{89}$ | 16.0 | 0.15 | 20060922 | 288.45564 | 98.47495 | 304.14646 | 15.96016 | 0.1878241 | 2.6205427 | 51 | 4 | 1998–2004 | 0.55 | M-v | 1 | MPC | 66323 | 2003 $YK_{89}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $YQ_{89}$ | 16.4 | 0.15 | 20060922 | 225.62637 | 69.27395 | 66.61622 | 2.86434 | 0.0580344 | 2.5086781 | 78 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 87602 | 2003 $YQ_{89}$ |
| 2003 $YT_{89}$ | 16.4 | 0.15 | 20060922 | 285.34479 | 37.05056 | 67.26661 | 2.81694 | 0.1740009 | 2.3020074 | 127 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 62462 | 2003 $YT_{89}$ |
| 2003 $YG_{90}$ | 16.3 | 0.15 | 20060922 | 169.82587 | 145.73770 | 98.56829 | 7.38976 | 0.1339649 | 2.2635737 | 49 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 87602 | 2003 $YG_{90}$ |
| 2003 $YJ_{90}$ | 16.8 | 0.15 | 20060922 | 328.11401 | 341.51703 | 66.19558 | 2.26506 | 0.2146620 | 2.2805910 | 142 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 03588 | 2003 $YJ_{90}$ |
| 2003 $YQ_{90}$ | 15.7 | 0.15 | 20060922 | 263.96604 | 272.08459 | 90.26754 | 15.91350 | 0.2492461 | 2.7211175 | 42 | 3 | 1995–2006 | 0.50 | M-v | 2 | MPC | 00694 | 2003 $YQ_{90}$ |
| 2003 $YJ_{91}$ | 16.4 | 0.15 | 20060922 | 293.46440 | 221.04563 | 218.05856 | 5.18341 | 0.1342664 | 2.2884514 | 102 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04282 | 2003 $YJ_{91}$ |
| 2003 $YU_{91}$ | 17.2 | 0.15 | 20060922 | 320.45221 | 35.09240 | 89.46251 | 23.12613 | 0.0768200 | 1.9171676 | 28 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 57532 | 2003 $YU_{91}$ |
| 2003 $YW_{92}$ | 17.0 | 0.15 | 20060922 | 265.92878 | 129.89823 | 327.76626 | 2.02914 | 0.1310806 | 2.3513697 | 43 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 04282 | 2003 $YW_{92}$ |
| 2003 $YY_{92}$ | 16.6 | 0.15 | 20060922 | 57.05989 | 261.26802 | 70.25258 | 2.83152 | 0.0158232 | 2.1984310 | 71 | 4 | 1998–2006 | 0.44 | M-v | 1 | MPC | 76336 | 2003 $YY_{92}$ |
| 2003 $YM_{93}$ | 15.6 | 0.15 | 20060922 | 101.04333 | 148.53844 | 70.02019 | 12.45878 | 0.1158178 | 2.7097210 | 56 | 2 | 2003–2005 | 0.66 | M-v | 4 | MPC | 76336 | 2003 $YM_{93}$ |
| 2003 $YQ_{93}$ | 16.7 | 0.15 | 20060922 | 128.56202 | 320.96293 | 305.89862 | 5.73955 | 0.1180824 | 2.3212029 | 29 | 4 | 1997–2006 | 0.48 | M-v | 2 | MPC | 87602 | 2003 $YQ_{93}$ |
| 2003 $YS_{93}$ | 17.3 | 0.15 | 20060922 | 277.44169 | 1.36856 | 95.10229 | 5.59613 | 0.1012023 | 2.3339673 | 56 | 6 | 1997–2006 | 0.57 | M-v | 1 | MPC | 90188 | 2003 $YS_{93}$ |
| 2003 $YA_{94}$ | 16.5 | 0.15 | 20060922 | 316.57463 | 84.38015 | 318.71943 | 6.51891 | 0.1980425 | 2.3890549 | 62 | 3 | 1999–2006 | 0.65 | M-v | 2 | MPC | 03588 | 2003 $YA_{94}$ |
| 2003 $YC_{94}$ | 16.6 | 0.15 | 20060922 | 257.89244 | 200.94013 | 302.25339 | 3.89997 | 0.1831679 | 2.3129634 | 76 | 4 | 1995–2006 | 0.39 | M-v | 2 | MPC | 62462 | 2003 $YC_{94}$ |
| 2003 $YG_{94}$ | 15.1 | 0.15 | 20060922 | 315.22982 | 147.04099 | 305.48595 | 25.31085 | 0.2432437 | 2.2913470 | 79 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 66323 | 2003 $YG_{94}$ |
| 2003 $YH_{94}$ | 14.1 | 0.15 | 20060922 | 149.43679 | 237.20054 | 300.59424 | 17.37442 | 0.1242564 | 3.2086812 | 62 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 04282 | 2003 $YH_{94}$ |
| 2003 $YX_{98}$ | 16.6 | 0.15 | 20060922 | 349.85654 | 283.26667 | 117.52394 | 4.59710 | 0.1103734 | 2.2004790 | 70 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 86204 | 2003 $YX_{98}$ |
| 2003 $YT_{99}$ | 15.6 | 0.15 | 20060922 | 196.87800 | 195.26707 | 255.13960 | 6.21767 | 0.1408261 | 2.9869231 | 30 | 4 | 1997–2005 | 0.41 | M-v | 1 | MPC | 66323 | 2003 $YT_{99}$ |
| 2003 $YJ_{101}$ | 16.7 | 0.15 | 20060922 | 272.62085 | 287.19293 | 187.50212 | 2.63109 | 0.0894532 | 2.2410354 | 74 | 4 | 2001–2006 | 0.39 | M-v | 2 | MPC | 87602 | 2003 $YJ_{101}$ |
| 2003 $YP_{101}$ | 15.2 | 0.15 | 20060922 | 180.22916 | 88.66289 | 98.82528 | 14.32071 | 0.1026580 | 2.6158481 | 83 | 5 | 1998–2006 | 0.67 | M-v | 2 | MPC | 66323 | 2003 $YP_{101}$ |
| 2003 $YY_{101}$ | 16.8 | 0.15 | 20060922 | 304.18251 | 192.63316 | 249.78483 | 2.80369 | 0.1045916 | 2.2730000 | 76 | 6 | 1996–2006 | 0.48 | M-v | 1 | MPC | 77762 | 2003 $YY_{101}$ |
| 2003 $YZ_{101}$ | 16.6 | 0.15 | 20060922 | 9.59254 | 254.55609 | 115.16654 | 7.77267 | 0.1240101 | 2.2613048 | 44 | 4 | 1994–2006 | 0.54 | M-v | 2 | MPC | 77762 | 2003 $YZ_{101}$ |
| 2003 $YO_{102}$ | 17.0 | 0.15 | 20060922 | 355.12567 | 117.30570 | 264.11309 | 4.44930 | 0.1658300 | 2.2698742 | 69 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04282 | 2003 $YO_{102}$ |
| 2003 $YW_{102}$ | 17.2 | 0.15 | 20060922 | 327.03026 | 146.12415 | 263.25195 | 6.98808 | 0.2156246 | 2.2619008 | 55 | 3 | 1996–2006 | 0.50 | M-v | 1 | MPC | 04282 | 2003 $YW_{102}$ |
| 2003 $YA_{103}$ | 16.1 | 0.15 | 20060922 | 179.69265 | 353.94522 | 180.18112 | 3.85193 | 0.1721891 | 2.6164374 | 38 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 69613 | 2003 $YA_{103}$ |
| 2003 $YC_{103}$ | 17.2 | 0.15 | 20060922 | 292.89642 | 244.30187 | 201.99114 | 2.02960 | 0.1469814 | 2.3176097 | 40 | 4 | 1996–2006 | 0.43 | M-v | 2 | MPC | 03589 | 2003 $YC_{103}$ |
| 2003 $YE_{103}$ | 15.1 | 0.15 | 20060922 | 170.64513 | 256.19504 | 283.16489 | 21.34148 | 0.0155776 | 2.5722398 | 42 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04282 | 2003 $YE_{103}$ |
| 2003 $YM_{103}$ | 14.1 | 0.15 | 20060922 | 112.14691 | 270.14256 | 297.11320 | 20.60478 | 0.1320930 | 3.1191083 | 76 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04282 | 2003 $YM_{103}$ |
| 2003 $YO_{103}$ | 16.9 | 0.15 | 20060922 | 349.76184 | 263.75691 | 98.46931 | 5.79449 | 0.1862950 | 2.2202503 | 56 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 04282 | 2003 $YO_{103}$ |
| 2003 $YQ_{103}$ | 16.0 | 0.15 | 20060922 | 237.19438 | 186.19287 | 215.90986 | 5.32682 | 0.0925793 | 2.7905281 | 29 | 3 | 2002–2005 | 0.56 | M-v | 3 | MPC | 57538 | 2003 $YQ_{103}$ |
| 2003 $YP_{105}$ | 16.0 | 0.15 | 20060922 | 225.39234 | 295.94236 | 176.47664 | 4.39564 | 0.1006569 | 2.5254359 | 47 | 5 | 1993–2006 | 0.59 | M-v | 1 | MPC | 04282 | 2003 $YP_{105}$ |
| 2003 $YZ_{105}$ | 16.6 | 0.15 | 20060922 | 330.19538 | 304.26424 | 87.51463 | 9.07072 | 0.2146786 | 2.2854563 | 54 | 2 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03589 | 2003 $YZ_{105}$ |
| 2003 $YN_{106}$ | 16.7 | 0.15 | 20060922 | 263.65398 | 331.74291 | 127.69489 | 6.68518 | 0.1083599 | 2.4502909 | 41 | 5 | 1993–2006 | 0.62 | M-v | 1 | MPC | 86205 | 2003 $YN_{106}$ |
| 2003 $YT_{106}$ | 16.7 | 0.15 | 20060922 | 290.59354 | 68.97956 | 5.49071 | 3.10176 | 0.1538758 | 2.3341393 | 39 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 03589 | 2003 $YT_{106}$ |
| 2003 $YX_{106}$ | 15.5 | 0.15 | 20060922 | 288.17877 | 290.54529 | 122.85920 | 22.26604 | 0.0739229 | 2.6379167 | 70 | 3 | 2003–2006 | 0.58 | M-v | 3 | MPC | 04282 | 2003 $YX_{106}$ |
| 2003 $YZ_{106}$ | 17.4 | 0.15 | 20060922 | 288.82133 | 270.59460 | 171.96014 | 2.66020 | 0.2082321 | 2.3583946 | 57 | 3 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04282 | 2003 $YZ_{106}$ |
| 2003 $YU_{108}$ | 16.1 | 0.15 | 20060922 | 204.57618 | 76.05222 | 41.05604 | 3.72978 | 0.0965916 | 2.6182324 | 26 | 4 | 1996–2005 | 0.53 | M-v | 2 | MPC | 76339 | 2003 $YU_{108}$ |
| 2003 $YY_{109}$ | 16.3 | 0.15 | 20060922 | 262.69631 | 113.78421 | 333.45812 | 4.73147 | 0.2121016 | 2.3889761 | 59 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 77762 | 2003 $YY_{109}$ |
| 2003 $YB_{111}$ | 17.7 | 0.15 | 20060922 | 330.17603 | 265.98679 | 118.76509 | 3.30249 | 0.1765435 | 2.4058435 | 42 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 03589 | 2003 $YB_{111}$ |
| 2003 $YF_{111}$ | 16.2 | 0.15 | 20060922 | 318.50278 | 222.67533 | 111.90280 | 6.22293 | 0.0091132 | 2.7617916 | 40 | 4 | 1996–2005 | 0.41 | M-v | 0 | MPC | 95151 | 2003 $YF_{111}$ |
| 2003 $YK_{111}$ | 15.2 | 0.15 | 20060922 | 204.61689 | 190.40979 | 202.80775 | 16.32767 | 0.1762531 | 3.1583718 | 48 | 5 | 1995–2006 | 0.52 | M-v | 0 | MPC | 02199 | 2003 $YK_{111}$ |
| 2003 $YQ_{111}$ | 17.0 | 0.15 | 20060922 | 355.28357 | 40.97112 | 326.25351 | 5.78508 | 0.2069497 | 2.2052586 | 101 | 3 | 1983–2006 | 0.45 | M-v | 2 | MPC | 04282 | 2003 $YQ_{111}$ |
| 2003 $YM_{112}$ | 16.9 | 0.15 | 20060922 | 302.54119 | 68.04921 | 25.62917 | 5.23347 | 0.1098470 | 2.2086129 | 54 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 86207 | 2003 $YM_{112}$ |
| 2003 $YT_{112}$ | 17.4 | 0.15 | 20060922 | 321.93779 | 31.72152 | 357.32202 | 3.29418 | 0.1501712 | 2.3257574 | 32 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 03590 | 2003 $YT_{112}$ |
| 2003 $YD_{113}$ | 17.2 | 0.15 | 20060922 | 247.77309 | 130.30384 | 16.57634 | 5.08261 | 0.0991603 | 2.2983272 | 61 | 5 | 1992–2006 | 0.36 | M-v | 1 | MPC | 95151 | 2003 $YD_{113}$ |
| 2003 $YG_{113}$ | 15.6 | 0.15 | 20060922 | 144.78050 | 131.51424 | 85.07966 | 14.37383 | 0.2046944 | 2.6547540 | 44 | 6 | 2000–2006 | 0.59 | M-v | 1 | MPC | 77762 | 2003 $YG_{113}$ |
| 2003 $YS_{113}$ | 15.4 | 0.15 | 20060922 | 294.68703 | 332.94517 | 109.84698 | 15.74589 | 0.0696903 | 2.5242460 | 72 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87602 | 2003 $YS_{113}$ |
| 2003 $YP_{114}$ | 17.7 | 0.15 | 20060922 | 272.11609 | 246.49704 | 231.13214 | 1.56777 | 0.1731815 | 2.3123470 | 42 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 87602 | 2003 $YP_{114}$ |
| 2003 $YO_{115}$ | 15.5 | 0.15 | 20060922 | 35.57207 | 141.43150 | 121.01828 | 6.53878 | 0.1015488 | 3.1291640 | 35 | 4 | 2000–2005 | 0.54 | M-v | 1 | MPC | 76342 | 2003 $YO_{115}$ |
| 2003 $YV_{115}$ | 16.9 | 0.15 | 20060922 | 266.88514 | 153.36275 | 302.34706 | 5.65474 | 0.0765697 | 2.4441919 | 36 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 04283 | 2003 $YV_{115}$ |
| 2003 $YD_{116}$ | 17.1 | 0.15 | 20060922 | 308.48875 | 349.08458 | 91.20318 | 3.62844 | 0.0608853 | 2.2899419 | 42 | 3 | 2001–2006 | 0.48 | M-v | 4 | MPC | 57547 | 2003 $YD_{116}$ |
| 2003 $YL_{116}$ | 16.8 | 0.15 | 20060922 | 321.04591 | 316.85842 | 74.59668 | 3.46765 | 0.1892109 | 2.4206370 | 41 | 3 | 1995–2006 | 0.37 | M-v | 2 | MPC | 03590 | 2003 $YL_{116}$ |
| 2003 $YE_{117}$ | 16.6 | 0.15 | 20060922 | 25.77263 | 283.27870 | 89.82153 | 3.65360 | 0.0608300 | 2.2366993 | 86 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 86207 | 2003 $YE_{117}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $YV_{117}$ | 15.2 | 0.15 | 20060922 | 316.50347 | 351.15963 | 153.91340 | 27.99350 | 0.3365596 | 2.1696706 | 105 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 87602 | 2003 $YV_{117}$ |
| 2003 $YW_{117}$ | 15.9 | 0.15 | 20060922 | 104.46359 | 39.18829 | 319.19498 | 19.19317 | 0.0992921 | 1.9347337 | 77 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 90188 | 2003 $YW_{117}$ |
| 2003 $YG_{118}$ | 17.1 | 0.15 | 20060922 | 247.59075 | 232.19708 | 348.59952 | 8.12884 | 0.6444054 | 2.2831110 | 321 | 4 | 2003–2006 | 0.42 | M-v | 1 | MPC | 90188 | 2003 $YG_{118}$ |
| 2003 $YF_{119}$ | 14.6 | 0.15 | 20060922 | 113.92265 | 183.19370 | 350.73021 | 3.89006 | 0.1184078 | 3.2129154 | 101 | 5 | 1996–2005 | 0.60 | M-v | 0 | MPC | 77763 | 2003 $YF_{119}$ |
| 2003 $YL_{119}$ | 16.5 | 0.15 | 20060922 | 288.63366 | 50.69460 | 41.76629 | 7.71558 | 0.0809965 | 2.3194198 | 59 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 69614 | 2003 $YL_{119}$ |
| 2003 $YM_{119}$ | 16.8 | 0.15 | 20060922 | 14.13323 | 303.36442 | 51.70555 | 4.95184 | 0.1505534 | 2.2835150 | 98 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 86209 | 2003 $YM_{119}$ |
| 2003 $YN_{119}$ | 16.0 | 0.15 | 20060922 | 188.76942 | 81.24240 | 356.20258 | 4.13753 | 0.1527665 | 3.2047201 | 49 | 4 | 1999–2005 | 0.48 | M-v | 0 | MPC | 57548 | 2003 $YN_{119}$ |
| 2003 $YT_{119}$ | 16.2 | 0.15 | 20060922 | 34.49390 | 282.80340 | 72.57240 | 4.30616 | 0.2091456 | 2.2077092 | 77 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 77763 | 2003 $YT_{119}$ |
| 2003 $YW_{119}$ | 17.3 | 0.15 | 20060922 | 262.07528 | 61.99486 | 73.54459 | 3.44044 | 0.1527540 | 2.3264758 | 62 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 03590 | 2003 $YW_{119}$ |
| 2003 $YD_{120}$ | 17.2 | 0.15 | 20060922 | 60.15842 | 11.02535 | 326.43630 | 4.42930 | 0.0848587 | 2.1954410 | 27 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 86209 | 2003 $YD_{120}$ |
| 2003 $YO_{120}$ | 16.2 | 0.15 | 20060922 | 273.67661 | 101.13205 | 339.74097 | 7.25642 | 0.1208468 | 2.4733903 | 54 | 4 | 1999–2006 | 0.62 | M-v | 2 | MPC | 04283 | 2003 $YO_{120}$ |
| 2003 $YP_{120}$ | 16.6 | 0.15 | 20060922 | 340.55269 | 336.01732 | 28.95009 | 6.61500 | 0.1634437 | 2.4558692 | 51 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04283 | 2003 $YP_{120}$ |
| 2003 $YK_{122}$ | 16.6 | 0.15 | 20060922 | 156.64022 | 105.99490 | 62.50022 | 4.17355 | 0.1531239 | 2.6284622 | 34 | 2 | 2003–2005 | 0.56 | M-v | 3 | MPC | 86210 | 2003 $YK_{122}$ |
| 2003 $YK_{123}$ | 17.9 | 0.15 | 20060922 | 325.92762 | 96.15248 | 300.13781 | 2.55658 | 0.2769787 | 2.2798817 | 29 | 2 | 2003–2006 | 0.38 | M-v | 4 | MPC | 03590 | 2003 $YK_{123}$ |
| 2003 $YG_{124}$ | 15.7 | 0.15 | 20060922 | 288.28332 | 296.97007 | 72.19499 | 3.07214 | 0.0853974 | 2.8779200 | 38 | 4 | 1995–2005 | 0.50 | M-v | 1 | MPC | 77763 | 2003 $YG_{124}$ |
| 2003 $YH_{125}$ | 16.7 | 0.15 | 20060922 | 331.55674 | 45.60208 | 333.70918 | 5.44181 | 0.1823542 | 2.2672001 | 77 | 4 | 1996–2006 | 0.41 | M-v | 1 | MPC | 03591 | 2003 $YH_{125}$ |
| 2003 $YJ_{125}$ | 16.5 | 0.15 | 20060922 | 295.68123 | 77.42442 | 343.88247 | 6.29996 | 0.1045833 | 2.3096653 | 62 | 3 | 2001–2006 | 0.56 | M-v | 4 | MPC | 03591 | 2003 $YJ_{125}$ |
| 2003 $YZ_{126}$ | 16.2 | 0.15 | 20060922 | 304.11109 | 45.65073 | 355.89944 | 5.84841 | 0.1505370 | 2.4282799 | 34 | 2 | 2003–2006 | 0.44 | M-v | 4 | MPC | 03591 | 2003 $YZ_{126}$ |
| 2003 $YG_{127}$ | 14.9 | 0.15 | 20060922 | 216.77770 | 86.99384 | 315.54099 | 10.87658 | 0.1201902 | 3.0989846 | 26 | 3 | 2002–2005 | 0.52 | M-v | 3 | MPC | 57553 | 2003 $YG_{127}$ |
| 2003 $YT_{127}$ | 16.6 | 0.15 | 20060922 | 228.32359 | 108.62694 | 62.73385 | 10.25079 | 0.1911649 | 2.3436150 | 45 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 69615 | 2003 $YT_{127}$ |
| 2003 $YX_{127}$ | 15.6 | 0.15 | 20060922 | 2.38572 | 305.04839 | 37.19448 | 7.60871 | 0.2428310 | 2.4288025 | 74 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 04283 | 2003 $YX_{127}$ |
| 2003 $YA_{128}$ | 16.2 | 0.15 | 20060922 | 358.09403 | 14.79716 | 349.28887 | 7.06711 | 0.1293352 | 2.3832711 | 123 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04283 | 2003 $YA_{128}$ |
| 2003 $YB_{128}$ | 16.8 | 0.15 | 20060922 | 289.11208 | 136.08684 | 322.59395 | 9.95318 | 0.0538706 | 2.3123454 | 47 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 57554 | 2003 $YB_{128}$ |
| 2003 $YX_{128}$ | 14.8 | 0.15 | 20060922 | 229.44912 | 92.45547 | 340.04502 | 10.79509 | 0.0381683 | 3.0179412 | 64 | 4 | 2001–2005 | 0.59 | M-v | 1 | MPC | 62464 | 2003 $YX_{128}$ |
| 2003 $YA_{129}$ | 15.7 | 0.15 | 20060922 | 231.98169 | 53.74936 | 70.46957 | 8.28562 | 0.1535299 | 2.5752099 | 67 | 4 | 2000–2006 | 0.64 | M-v | 2 | MPC | 61754 | 2003 $YA_{129}$ |
| 2003 $YD_{129}$ | 14.7 | 0.15 | 20060922 | 279.20124 | 309.94015 | 88.55639 | 14.78160 | 0.1590934 | 2.7523584 | 43 | 3 | 2002–2005 | 0.66 | M-v | 3 | MPC | 62464 | 2003 $YD_{129}$ |
| 2003 $YH_{129}$ | 16.7 | 0.15 | 20060922 | 336.56865 | 33.16060 | 2.78429 | 6.15553 | 0.2935425 | 2.2679700 | 149 | 5 | 1994–2006 | 0.47 | M-v | 1 | MPC | 04283 | 2003 $YH_{129}$ |
| 2003 $YK_{129}$ | 15.2 | 0.15 | 20060922 | 197.34611 | 79.38322 | 89.03385 | 13.43987 | 0.1304914 | 2.6054933 | 59 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 66324 | 2003 $YK_{129}$ |
| 2003 $YG_{130}$ | 15.5 | 0.15 | 20060922 | 223.96268 | 34.63542 | 95.10941 | 10.31214 | 0.1092720 | 2.7483472 | 73 | 3 | 2002–2006 | 0.66 | M-v | 2 | MPC | 04283 | 2003 $YG_{130}$ |
| 2003 $YC_{131}$ | 17.3 | 0.15 | 20060922 | 334.30182 | 65.88084 | 328.85280 | 4.79061 | 0.1814638 | 2.2779398 | 98 | 3 | 1999–2006 | 0.46 | M-v | 1 | MPC | 03591 | 2003 $YC_{131}$ |
| 2003 $YD_{131}$ | 16.7 | 0.15 | 20060922 | 295.96062 | 137.09134 | 325.52886 | 5.95235 | 0.1034653 | 2.2184724 | 41 | 4 | 1996–2006 | 0.56 | M-v | 1 | MPC | 69615 | 2003 $YD_{131}$ |
| 2003 $YP_{133}$ | 16.5 | 0.15 | 20060922 | 341.23466 | 7.46917 | 2.45336 | 6.07656 | 0.2154568 | 2.3791810 | 93 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03591 | 2003 $YP_{133}$ |
| 2003 $YC_{134}$ | 16.9 | 0.15 | 20060922 | 342.05260 | 35.64363 | 343.59393 | 5.83008 | 0.2001784 | 2.3430162 | 96 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 03592 | 2003 $YC_{134}$ |
| 2003 $YE_{134}$ | 17.1 | 0.15 | 20060922 | 204.16730 | 171.25772 | 13.96672 | 5.19622 | 0.1453124 | 2.4069782 | 53 | 4 | 1995–2006 | 0.33 | M-v | 1 | MPC | 69616 | 2003 $YE_{134}$ |
| 2003 $YP_{134}$ | 16.4 | 0.15 | 20060922 | 190.43618 | 230.63155 | 343.18035 | 10.11347 | 0.1495319 | 2.3325676 | 30 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 86213 | 2003 $YP_{134}$ |
| 2003 $YT_{134}$ | 17.0 | 0.15 | 20060922 | 315.88650 | 80.82165 | 343.34822 | 10.78133 | 0.1517684 | 2.3014962 | 99 | 4 | 1994–2006 | 0.54 | M-v | 1 | MPC | 04283 | 2003 $YT_{134}$ |
| 2003 $YR_{136}$ | 16.8 | 0.15 | 20060922 | 332.70575 | 258.01295 | 126.05503 | 2.96182 | 0.2362157 | 2.3613029 | 68 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 04283 | 2003 $YR_{136}$ |
| 2003 $YT_{136}$ | 16.6 | 0.15 | 20060922 | 317.38226 | 327.67422 | 119.50630 | 8.11237 | 0.0742677 | 2.2378600 | 89 | 6 | 1994–2006 | 0.55 | M-v | 1 | MPC | 62465 | 2003 $YT_{136}$ |
| 2003 $YE_{137}$ | 15.6 | 0.15 | 20060922 | 48.87151 | 338.21853 | 286.94459 | 8.57096 | 0.0386185 | 2.8990253 | 42 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 03592 | 2003 $YE_{137}$ |
| 2003 $YN_{137}$ | 17.3 | 0.15 | 20060922 | 344.28015 | 306.53796 | 103.08026 | 5.42062 | 0.1041301 | 2.2250705 | 52 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 76351 | 2003 $YN_{137}$ |
| 2003 $YB_{138}$ | 16.8 | 0.15 | 20060922 | 217.44740 | 146.17012 | 30.91858 | 2.80887 | 0.1296851 | 2.3949204 | 55 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 61757 | 2003 $YB_{138}$ |
| 2003 $YW_{138}$ | 15.9 | 0.15 | 20060922 | 303.99858 | 356.65307 | 124.50689 | 25.90127 | 0.2217264 | 2.2687666 | 73 | 3 | 2003–2006 | 0.56 | M-v | 2 | MPC | 86213 | 2003 $YW_{138}$ |
| 2003 $YO_{139}$ | 16.2 | 0.15 | 20060922 | 328.06916 | 46.00536 | 343.15113 | 7.86610 | 0.1620297 | 2.2504686 | 124 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 04284 | 2003 $YO_{139}$ |
| 2003 $YC_{140}$ | 15.3 | 0.15 | 20060922 | 154.52592 | 144.90644 | 59.01557 | 6.96547 | 0.1325647 | 2.5307595 | 44 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 77764 | 2003 $YC_{140}$ |
| 2003 $YK_{140}$ | 15.0 | 0.15 | 20060922 | 156.65743 | 161.63232 | 307.77663 | 14.66934 | 0.1461626 | 3.1809494 | 27 | 4 | 1993–2004 | 0.64 | M-v | 1 | MPC | 04284 | 2003 $YK_{140}$ |
| 2003 $YB_{141}$ | 15.7 | 0.15 | 20060922 | 207.90452 | 40.70351 | 28.38022 | 10.72465 | 0.1028853 | 3.0178523 | 31 | 4 | 1997–2005 | 0.42 | M-v | 1 | MPC | 57565 | 2003 $YB_{141}$ |
| 2003 $YT_{141}$ | 16.4 | 0.15 | 20060922 | 173.20214 | 197.92346 | 42.06933 | 5.86124 | 0.1364422 | 2.1644982 | 41 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 95153 | 2003 $YT_{141}$ |
| 2003 $YU_{141}$ | 17.2 | 0.15 | 20060922 | 348.10707 | 358.06333 | 28.11273 | 4.35323 | 0.1926172 | 2.2133312 | 76 | 2 | 2003–2006 | 0.43 | M-v | 3 | MPC | 03592 | 2003 $YU_{141}$ |
| 2003 $YB_{142}$ | 14.9 | 0.15 | 20060922 | 218.86129 | 71.46902 | 19.97965 | 8.35466 | 0.1789629 | 2.7690299 | 74 | 4 | 1998–2004 | 0.51 | M-v | 1 | MPC | 66325 | 2003 $YB_{142}$ |
| 2003 $YU_{142}$ | 16.3 | 0.15 | 20060922 | 328.58692 | 32.21161 | 343.09626 | 10.75624 | 0.2024496 | 2.4036496 | 29 | 2 | 2003–2006 | 0.58 | M-v | 4 | MPC | 03592 | 2003 $YU_{142}$ |
| 2003 $YN_{143}$ | 16.7 | 0.15 | 20060922 | 19.23736 | 311.17560 | 48.96773 | 11.47548 | 0.1181308 | 2.2345793 | 72 | 3 | 2003–2006 | 0.43 | M-v | 3 | MPC | 76355 | 2003 $YN_{143}$ |
| 2003 $YF_{144}$ | 16.0 | 0.15 | 20060922 | 230.28077 | 94.12481 | 40.25956 | 3.46468 | 0.0918994 | 2.5220051 | 85 | 4 | 1992–2006 | 0.56 | M-v | 3 | MPC | 04284 | 2003 $YF_{144}$ |
| 2003 $YK_{144}$ | 17.2 | 0.15 | 20060922 | 203.13415 | 74.29597 | 112.07886 | 3.94774 | 0.1132579 | 2.3416211 | 22 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 95153 | 2003 $YK_{144}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $YL_{144}$ | 16.5 | 0.15 | 20060922 | 2.38592 | 25.19208 | 352.11895 | 6.55450 | 0.1873558 | 2.2274321 | 70 | 2 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03592 | 2003 $YL_{144}$ |
| 2003 $YS_{144}$ | 15.9 | 0.15 | 20060922 | 301.77208 | 10.21105 | 9.20176 | 10.13240 | 0.0811272 | 2.6794053 | 24 | 3 | 2002–2005 | 0.41 | M-v | 3 | MPC | 76356 | 2003 $YS_{144}$ |
| 2003 $YJ_{145}$ | 15.5 | 0.15 | 20060922 | 184.91019 | 154.34822 | 25.09714 | 8.13172 | 0.1394047 | 2.5984917 | 71 | 5 | 2000–2006 | 0.60 | M-v | 2 | MPC | 66325 | 2003 $YJ_{145}$ |
| 2003 $YN_{145}$ | 17.1 | 0.15 | 20060922 | 339.50656 | 47.34062 | 15.58563 | 7.35394 | 0.1525706 | 2.2076174 | 33 | 3 | 1996–2006 | 0.41 | M-v | 3 | MPC | 57569 | 2003 $YN_{145}$ |
| 2003 $YJ_{146}$ | 15.5 | 0.15 | 20060922 | 204.90389 | 173.21929 | 38.34334 | 8.74160 | 0.1780789 | 2.3321815 | 63 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 86214 | 2003 $YJ_{146}$ |
| 2003 $YD_{147}$ | 15.8 | 0.15 | 20060922 | 137.86384 | 228.22635 | 322.46744 | 12.29089 | 0.1892546 | 2.6414423 | 53 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 04284 | 2003 $YD_{147}$ |
| 2003 $YA_{149}$ | 15.7 | 0.15 | 20060922 | 241.07951 | 60.13457 | 28.11752 | 12.92721 | 0.1322780 | 2.6576372 | 32 | 3 | 2000–2005 | 0.48 | M-v | 4 | MPC | 65538 | 2003 $YA_{149}$ |
| 2003 $YC_{149}$ | 15.7 | 0.15 | 20060922 | 101.01537 | 169.70286 | 83.92886 | 28.16462 | 0.0211764 | 2.5475733 | 46 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 76357 | 2003 $YC_{149}$ |
| 2003 $YN_{150}$ | 17.5 | 0.15 | 20060922 | 293.55536 | 25.19190 | 48.08326 | 5.77196 | 0.2070924 | 2.3629524 | 60 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 57572 | 2003 $YN_{150}$ |
| 2003 $YB_{151}$ | 15.9 | 0.15 | 20060922 | 185.57025 | 167.49963 | 2.89794 | 12.88069 | 0.1636857 | 2.6438816 | 47 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 62466 | 2003 $YB_{151}$ |
| 2003 $YL_{151}$ | 14.3 | 0.15 | 20060922 | 104.45708 | 236.82590 | 328.16453 | 25.72636 | 0.2073241 | 3.1502612 | 75 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 03593 | 2003 $YL_{151}$ |
| 2003 $YD_{152}$ | 16.9 | 0.15 | 20060922 | 0.68819 | 342.63614 | 35.15684 | 9.47198 | 0.1446339 | 2.2665318 | 69 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 89499 | 2003 $YD_{152}$ |
| 2003 $YK_{152}$ | 15.6 | 0.15 | 20060922 | 108.99573 | 100.13160 | 83.19925 | 10.16123 | 0.0455869 | 3.0834567 | 29 | 4 | 1997–2005 | 0.57 | M-v | 0 | MPC | 87603 | 2003 $YK_{152}$ |
| 2003 $YE_{153}$ | 14.8 | 0.15 | 20060922 | 254.50822 | 6.02036 | 122.16327 | 29.96213 | 0.0327635 | 2.5885727 | 59 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 61760 | 2003 $YE_{153}$ |
| 2003 $YK_{153}$ | 15.4 | 0.15 | 20060922 | 322.71092 | 181.14955 | 286.97043 | 17.73096 | 0.0713226 | 1.9663949 | 78 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 62466 | 2003 $YK_{153}$ |
| 2003 $YS_{153}$ | 16.4 | 0.15 | 20060922 | 345.68827 | 20.58287 | 4.53812 | 10.66676 | 0.2112046 | 2.2761223 | 163 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04284 | 2003 $YS_{153}$ |
| 2003 $YL_{154}$ | 16.2 | 0.15 | 20060922 | 241.15950 | 121.62921 | 4.34312 | 12.21556 | 0.1301108 | 2.5199762 | 46 | 5 | 1994–2006 | 0.54 | M-v | 3 | MPC | 86215 | 2003 $YL_{154}$ |
| 2003 $YM_{154}$ | 15.1 | 0.15 | 20060922 | 151.21516 | 158.92171 | 68.48997 | 14.07208 | 0.1156064 | 2.5513470 | 83 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 77765 | 2003 $YM_{154}$ |
| 2003 $YQ_{154}$ | 14.9 | 0.15 | 20060922 | 327.93834 | 191.87319 | 325.38637 | 19.70552 | 0.0564798 | 1.9226756 | 186 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 02199 | 2003 $YQ_{154}$ |
| 2003 $YR_{155}$ | 15.6 | 0.15 | 20060922 | 275.41172 | 220.61506 | 193.09967 | 10.31087 | 0.2343913 | 2.5841443 | 53 | 6 | 1996–2005 | 0.46 | M-v | 1 | MPC | 77765 | 2003 $YR_{155}$ |
| 2003 $YT_{155}$ | 15.3 | 0.15 | 20060922 | 187.99274 | 284.29653 | 246.29285 | 10.52395 | 0.1411306 | 2.6357275 | 45 | 4 | 2000–2006 | 0.62 | M-v | 2 | MPC | 65539 | 2003 $YT_{155}$ |
| 2003 $YY_{155}$ | 17.1 | 0.15 | 20060922 | 305.69484 | 241.94792 | 188.53610 | 6.00657 | 0.2484234 | 2.2316517 | 57 | 3 | 2003–2006 | 0.49 | M-v | 2 | MPC | 03593 | 2003 $YY_{155}$ |
| 2003 $YL_{157}$ | 16.3 | 0.15 | 20060922 | 337.30418 | 70.35339 | 298.96648 | 5.70064 | 0.1484737 | 2.4442973 | 77 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 04284 | 2003 $YL_{157}$ |
| 2003 $YM_{157}$ | 17.3 | 0.15 | 20060922 | 277.33568 | 77.32758 | 359.57050 | 2.16865 | 0.1482464 | 2.4587692 | 26 | 3 | 2003–2006 | 0.46 | M-v | 4 | MPC | 76361 | 2003 $YM_{157}$ |
| 2003 $YW_{158}$ | 14.8 | 0.15 | 20060922 | 222.45383 | 6.75198 | 23.26021 | 9.89498 | 0.0989199 | 3.1094987 | 31 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 02199 | 2003 $YW_{158}$ |
| 2003 $YJ_{161}$ | 16.5 | 0.15 | 20060922 | 338.45568 | 333.16247 | 49.97125 | 9.71790 | 0.0259790 | 2.3290520 | 29 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 89499 | 2003 $YJ_{161}$ |
| 2003 $YA_{163}$ | 15.5 | 0.15 | 20060922 | 164.87458 | 204.62641 | 315.08659 | 8.28360 | 0.0599388 | 2.7148228 | 37 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 03593 | 2003 $YA_{163}$ |
| 2003 $YQ_{163}$ | 17.9 | 0.15 | 20060922 | 357.16991 | 342.88205 | 47.67649 | 3.35926 | 0.1254066 | 2.1389755 | 75 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 03594 | 2003 $YQ_{163}$ |
| 2003 $YR_{163}$ | 15.1 | 0.15 | 20060922 | 56.83449 | 303.31631 | 261.90798 | 14.27309 | 0.0711537 | 3.1207937 | 31 | 5 | 1999–2006 | 0.66 | M-v | 1 | MPC | 04284 | 2003 $YR_{163}$ |
| 2003 $YT_{163}$ | 17.4 | 0.15 | 20060922 | 349.51377 | 51.35145 | 305.29696 | 2.05720 | 0.1722719 | 2.2884990 | 52 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 03594 | 2003 $YT_{163}$ |
| 2003 $YD_{164}$ | 16.9 | 0.15 | 20060922 | 41.32491 | 38.07701 | 273.22706 | 5.40049 | 0.1452118 | 2.2831864 | 48 | 5 | 1994–2006 | 0.57 | M-v | 1 | MPC | 04284 | 2003 $YD_{164}$ |
| 2003 $YX_{164}$ | 17.0 | 0.15 | 20060922 | 220.23306 | 221.69665 | 277.70021 | 1.33052 | 0.1156846 | 2.3886254 | 33 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 04284 | 2003 $YX_{164}$ |
| 2003 $YO_{167}$ | 15.3 | 0.15 | 20060922 | 184.02803 | 108.38012 | 315.23281 | 9.89799 | 0.2656823 | 3.0420093 | 27 | 1 | 70 days | 0.27 | M-v | 4 | MPC | | 2003 $YO_{167}$ |
| 2003 $YP_{168}$ | 17.1 | 0.15 | 20060922 | 313.03559 | 117.43939 | 291.94919 | 4.87131 | 0.1492436 | 2.3053519 | 49 | 2 | 2003–2006 | 0.61 | M-v | 4 | MPC | 03594 | 2003 $YP_{168}$ |
| 2003 $YT_{168}$ | 16.3 | 0.15 | 20060922 | 314.92371 | 331.89153 | 79.99243 | 13.23785 | 0.1035743 | 2.3272031 | 37 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 87603 | 2003 $YT_{168}$ |
| 2003 $YB_{169}$ | 16.5 | 0.15 | 20060922 | 183.13956 | 175.67441 | 1.01579 | 4.62351 | 0.1431005 | 2.5257802 | 56 | 6 | 1994–2006 | 0.46 | M-v | 3 | MPC | 04284 | 2003 $YB_{169}$ |
| 2003 $YE_{169}$ | 15.4 | 0.15 | 20060922 | 240.36216 | 78.42301 | 333.88787 | 6.33385 | 0.1575640 | 2.8606407 | 37 | 4 | 1993–2005 | 0.48 | M-v | 1 | MPC | 72992 | 2003 $YE_{169}$ |
| 2003 $YF_{169}$ | 16.4 | 0.15 | 20060922 | 308.60014 | 86.92003 | 322.94421 | 5.57290 | 0.1075101 | 2.3962004 | 54 | 2 | 2003–2006 | 0.59 | M-v | 4 | MPC | 03594 | 2003 $YF_{169}$ |
| 2003 $YQ_{169}$ | 16.0 | 0.15 | 20060922 | 296.80982 | 77.28686 | 326.76128 | 5.62956 | 0.1091697 | 2.4812495 | 42 | 5 | 1993–2006 | 0.50 | M-v | 1 | MPC | 04284 | 2003 $YQ_{169}$ |
| 2003 $YM_{170}$ | 15.9 | 0.15 | 20060922 | 301.86645 | 52.60089 | 335.46978 | 4.74431 | 0.1915734 | 2.4889622 | 33 | 3 | 1999–2005 | 0.51 | M-v | 4 | MPC | 69619 | 2003 $YM_{170}$ |
| 2003 $YV_{170}$ | 17.2 | 0.15 | 20060922 | 295.51167 | 112.20086 | 354.71544 | 3.68921 | 0.1142338 | 2.2239526 | 70 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 89500 | 2003 $YV_{170}$ |
| 2003 $YU_{171}$ | 16.6 | 0.15 | 20060922 | 358.20375 | 25.23054 | 335.16818 | 6.78502 | 0.1161189 | 2.3855533 | 84 | 6 | 1995–2006 | 0.50 | M-v | 1 | MPC | 03594 | 2003 $YU_{171}$ |
| 2003 $YN_{172}$ | 16.2 | 0.15 | 20060922 | 156.22595 | 163.78682 | 78.25389 | 6.01197 | 0.0962773 | 2.2783608 | 51 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 72993 | 2003 $YN_{172}$ |
| 2003 $YN_{173}$ | 17.2 | 0.15 | 20060922 | 143.37283 | 144.73052 | 353.71593 | 1.27892 | 0.1629346 | 3.0078905 | 26 | 4 | 2000–2005 | 0.34 | M-v | 0 | MPC | 76365 | 2003 $YN_{173}$ |
| 2003 $YG_{174}$ | 16.2 | 0.15 | 20060922 | 72.42408 | 147.16426 | 96.41180 | 4.12596 | 0.1098852 | 2.6002910 | 57 | 5 | 1992–2006 | 0.67 | M-v | 1 | MPC | 04284 | 2003 $YG_{174}$ |
| 2003 $YS_{174}$ | 15.9 | 0.15 | 20060922 | 139.83600 | 271.09687 | 317.03886 | 5.13129 | 0.1293841 | 2.4404312 | 38 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 86217 | 2003 $YS_{174}$ |
| 2003 $YC_{175}$ | 16.3 | 0.15 | 20060922 | 0.08085 | 237.67841 | 92.45097 | 6.60427 | 0.1131630 | 2.6815395 | 47 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 04285 | 2003 $YC_{175}$ |
| 2003 $YU_{177}$ | 17.8 | 0.15 | 20031227 | 27.22574 | 138.09368 | 295.17422 | 11.87323 | 0.1454329 | 2.6245924 | 14 | 1 | 33 days | 0.26 | | | MPC | | 2003 $YU_{177}$ |
| 2003 $YV_{180}$ | 16.9 | 0.15 | 20040116 | 17.01671 | 40.27271 | 50.81674 | 4.82434 | 0.1989364 | 2.5525329 | 30 | 1 | 45 days | 0.65 | | | MPC | | 2003 $YV_{180}$ |
| 2003 $YW_{180}$ | 16.3 | 0.15 | 20031227 | 33.84941 | 321.08722 | 108.73177 | 6.86438 | 0.0430572 | 2.7190413 | 20 | 1 | 35 days | 0.68 | | | MPC | | 2003 $YW_{180}$ |
| 2003 $YY_{180}$ | 16.5 | 0.15 | 20040116 | 4.51709 | 121.74453 | 344.03759 | 3.32376 | 0.2002098 | 2.7359847 | 28 | 1 | 44 days | 0.78 | | | MPC | | 2003 $YY_{180}$ |
| 2003 $YZ_{180}$ | 17.3 | 0.15 | 20040116 | 48.55798 | 283.96510 | 116.11960 | 8.29839 | 0.2843616 | 2.5315705 | 15 | 1 | 57 days | 0.30 | | | MPC | | 2003 $YZ_{180}$ |
| 2003 $YA_{181}$ | 16.2 | 0.15 | 20031227 | 335.20461 | 42.01222 | 100.75652 | 11.83683 | 0.1095973 | 2.9983809 | 20 | 1 | 34 days | 0.69 | | | MPC | | 2003 $YA_{181}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 $YB_{181}$ | 17.3 | 0.15 | 20060922 | 193.98421 | 143.32658 | 312.09114 | 16.20491 | 0.3285279 | 3.0395004 | 24 | 1 | 88 days | 0.64 | M-v | 3 | MPC | | 2003 $YB_{181}$ |
| 2003 $YC_{181}$ | 19.4 | 0.15 | 20040116 | 31.88737 | 339.30446 | 93.25966 | 3.63838 | 0.1829041 | 2.2334554 | 19 | 1 | 37 days | 0.50 | | | MPC | | 2003 $YC_{181}$ |
| 2003 $YD_{181}$ | 16.2 | 0.15 | 20060922 | 234.09959 | 310.53893 | 116.02103 | 7.90213 | 0.2006601 | 2.9650719 | 21 | 1 | 63 days | 0.48 | M-v | 5 | MPC | | 2003 $YD_{181}$ |
| 2003 $YE_{181}$ | 16.7 | 0.15 | 20040116 | 38.63142 | 142.14979 | 274.38985 | 11.44099 | 0.3841061 | 2.7599898 | 22 | 1 | 59 days | 0.52 | | | MPC | | 2003 $YE_{181}$ |
| 2003 $YF_{181}$ | 16.5 | 0.15 | 20040116 | 322.69866 | 48.38862 | 116.21586 | 6.78917 | 0.0846437 | 3.0353625 | 16 | 1 | 51 days | 0.37 | | | MPC | | 2003 $YF_{181}$ |
| 2003 $YG_{181}$ | 16.4 | 0.15 | 20040116 | 33.22184 | 314.94907 | 118.57046 | 10.67999 | 0.1612356 | 3.0434825 | 17 | 1 | 53 days | 0.64 | | | MPC | | 2003 $YG_{181}$ |
| 2003 $YJ_{181}$ | 16.2 | 0.15 | 20060922 | 191.43737 | 242.92583 | 270.59178 | 7.65369 | 0.1683813 | 2.6912292 | 21 | 1 | 113 days | 0.40 | M-v | 4 | MPC | | 2003 $YJ_{181}$ |
| 2003 $YL_{181}$ | 17.5 | 0.15 | 20040116 | 0.76223 | 354.13082 | 127.37053 | 14.75702 | 0.1198866 | 2.6267107 | 15 | 1 | 50 days | 0.48 | | | MPC | | 2003 $YL_{181}$ |
| 2004 $AE_1$ | 15.6 | 0.15 | 20060922 | 222.53044 | 228.91763 | 260.68461 | 10.62686 | 0.2228847 | 2.6741938 | 75 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 04285 | 2004 $AE_1$ |
| 2004 $AO_1$ | 16.6 | 0.15 | 20060922 | 239.94839 | 90.52189 | 56.43741 | 1.91252 | 0.1322605 | 2.4073890 | 90 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 87603 | 2004 $AO_1$ |
| 2004 $AP_1$ | 16.7 | 0.15 | 20060922 | 303.05025 | 90.40757 | 341.43848 | 4.12234 | 0.1305743 | 2.3834105 | 122 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 04285 | 2004 $AP_1$ |
| 2004 $AD_2$ | 17.4 | 0.15 | 20060922 | 246.54731 | 54.37409 | 84.68573 | 1.67302 | 0.1498389 | 2.3853617 | 44 | 4 | 1997–2006 | 0.39 | M-v | 1 | MPC | 03595 | 2004 $AD_2$ |
| 2004 $AH_2$ | 16.0 | 0.15 | 20060922 | 191.67840 | 195.94600 | 300.58606 | 3.16276 | 0.0394655 | 2.7838336 | 41 | 4 | 1997–2005 | 0.43 | M-v | 1 | MPC | 69620 | 2004 $AH_2$ |
| 2004 $AN_2$ | 16.7 | 0.15 | 20060922 | 21.20590 | 257.26354 | 120.68843 | 5.13019 | 0.1080980 | 2.2060719 | 50 | 3 | 2003–2006 | 0.52 | M-v | 2 | MPC | 89500 | 2004 $AN_2$ |
| 2004 $AQ_2$ | 16.2 | 0.15 | 20060922 | 170.83889 | 91.53314 | 127.97385 | 7.91494 | 0.0631400 | 2.3682864 | 39 | 4 | 1997–2006 | 0.58 | M-v | 1 | MPC | 69620 | 2004 $AQ_2$ |
| 2004 $AS_2$ | 15.4 | 0.15 | 20060922 | 134.30251 | 117.02040 | 122.14488 | 13.41850 | 0.1391050 | 2.5321182 | 62 | 6 | 2000–2006 | 0.60 | M-v | 1 | MPC | 86218 | 2004 $AS_2$ |
| 2004 $AF_3$ | 15.4 | 0.15 | 20060922 | 213.97216 | 154.50248 | 321.34774 | 10.48441 | 0.0787051 | 2.7381479 | 52 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 04285 | 2004 $AF_3$ |
| 2004 $AM_3$ | 15.8 | 0.15 | 20060922 | 241.57362 | 96.26395 | 337.31791 | 6.90060 | 0.2086098 | 2.7536221 | 65 | 3 | 1995–2004 | 0.55 | M-v | 2 | MPC | 77766 | 2004 $AM_3$ |
| 2004 $AQ_3$ | 16.6 | 0.15 | 20060922 | 281.71171 | 124.03936 | 315.60125 | 7.57963 | 0.1866897 | 2.4041832 | 48 | 2 | 2003–2006 | 0.53 | M-v | 3 | MPC | 03595 | 2004 $AQ_3$ |
| 2004 $AR_3$ | 16.4 | 0.15 | 20060922 | 209.65045 | 227.15978 | 317.99673 | 7.27438 | 0.0742186 | 2.3168801 | 43 | 4 | 1996–2006 | 0.48 | M-v | 2 | MPC | 89501 | 2004 $AR_3$ |
| 2004 $AV_3$ | 16.3 | 0.15 | 20060922 | 148.49009 | 300.42838 | 300.67088 | 5.81364 | 0.0632819 | 2.3807404 | 56 | 4 | 1993–2006 | 0.54 | M-v | 1 | MPC | 95155 | 2004 $AV_3$ |
| 2004 $AW_3$ | 16.1 | 0.15 | 20060922 | 172.52411 | 89.54068 | 124.06123 | 3.40604 | 0.1278508 | 2.4608821 | 62 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 95156 | 2004 $AW_3$ |
| 2004 $AW_4$ | 17.3 | 0.15 | 20060922 | 270.85083 | 337.58080 | 127.86928 | 3.39248 | 0.1505744 | 2.4069035 | 48 | 2 | 2003–2006 | 0.50 | M-v | 3 | MPC | 03595 | 2004 $AW_4$ |
| 2004 $AJ_5$ | 16.8 | 0.15 | 20060922 | 326.85100 | 108.71817 | 330.02161 | 2.62865 | 0.1400018 | 2.2268071 | 121 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 66326 | 2004 $AJ_5$ |
| 2004 $AK_5$ | 16.9 | 0.15 | 20060922 | 286.10912 | 1.46598 | 95.04228 | 2.97637 | 0.2190430 | 2.3544168 | 72 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 66326 | 2004 $AK_5$ |
| 2004 $AM_5$ | 16.0 | 0.15 | 20060922 | 301.78007 | 108.28794 | 314.48829 | 4.50149 | 0.1902339 | 2.4288729 | 111 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 04285 | 2004 $AM_5$ |
| 2004 $AO_5$ | 16.8 | 0.15 | 20060922 | 280.35431 | 296.32556 | 152.36868 | 1.36769 | 0.1965405 | 2.4167944 | 95 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 04285 | 2004 $AO_5$ |
| 2004 $AZ_5$ | 17.2 | 0.15 | 20060922 | 253.70942 | 77.44939 | 79.41326 | 4.95907 | 0.1207030 | 2.2966715 | 59 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 87604 | 2004 $AZ_5$ |
| 2004 $AC_6$ | 16.1 | 0.15 | 20060922 | 207.46870 | 237.80303 | 325.72623 | 7.56641 | 0.1619655 | 2.3529120 | 93 | 3 | 2003–2006 | 0.51 | M-v | 2 | MPC | 86218 | 2004 $AC_6$ |
| 2004 $AM_7$ | 16.7 | 0.15 | 20060922 | 274.30912 | 354.97379 | 113.89351 | 7.21034 | 0.0628599 | 2.3920945 | 87 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 95156 | 2004 $AM_7$ |
| 2004 $AO_7$ | 16.0 | 0.15 | 20060922 | 218.47820 | 210.87614 | 323.35650 | 6.64117 | 0.0555790 | 2.3775634 | 77 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 61765 | 2004 $AO_7$ |
| 2004 $AQ_7$ | 16.4 | 0.15 | 20060922 | 208.49100 | 276.75302 | 267.24007 | 1.40720 | 0.1196391 | 2.4126843 | 77 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87604 | 2004 $AQ_7$ |
| 2004 $AS_7$ | 16.7 | 0.15 | 20060922 | 233.36515 | 231.97559 | 249.75010 | 4.19565 | 0.2083679 | 2.5897393 | 60 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 04285 | 2004 $AS_7$ |
| 2004 $AP_8$ | 15.0 | 0.15 | 20060922 | 165.66660 | 285.72123 | 174.56813 | 13.48817 | 0.1509508 | 3.0926665 | 77 | 4 | 1999–2005 | 0.67 | M-v | 1 | MPC | 77766 | 2004 $AP_8$ |
| 2004 $AK_9$ | 16.6 | 0.15 | 20060922 | 198.96196 | 322.92060 | 183.74322 | 9.23405 | 0.2028726 | 2.7273586 | 41 | 5 | 2000–2006 | 0.42 | M-v | 0 | MPC | 04285 | 2004 $AK_9$ |
| 2004 $AW_9$ | 17.6 | 0.15 | 20060922 | 351.37189 | 283.99541 | 128.89783 | 2.70163 | 0.1190656 | 2.1815782 | 63 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 69622 | 2004 $AW_9$ |
| 2004 $AA_{10}$ | 17.8 | 0.15 | 20060922 | 208.99077 | 120.22034 | 75.97504 | 1.80534 | 0.1686089 | 2.3423247 | 50 | 6 | 2000–2006 | 0.35 | M-v | 0 | MPC | 87604 | 2004 $AA_{10}$ |
| 2004 $AG_{10}$ | 16.6 | 0.15 | 20060922 | 359.30188 | 70.92978 | 302.17656 | 5.24514 | 0.1657086 | 2.3278114 | 57 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 66326 | 2004 $AG_{10}$ |
| 2004 $AS_{10}$ | 17.3 | 0.15 | 20060922 | 204.98810 | 89.29517 | 109.61344 | 9.66937 | 0.1082464 | 2.2932373 | 31 | 3 | 2003–2006 | 0.45 | M-v | 2 | MPC | 86220 | 2004 $AS_{10}$ |
| 2004 $AB_{11}$ | 15.7 | 0.15 | 20060922 | 233.97091 | 18.52461 | 23.88228 | 5.95281 | 0.1178595 | 3.0509976 | 41 | 4 | 1997–2005 | 0.55 | M-v | 1 | MPC | 69622 | 2004 $AB_{11}$ |
| 2004 $AH_{13}$ | 17.1 | 0.15 | 20060922 | 245.68098 | 22.21674 | 109.30375 | 4.36945 | 0.0272186 | 2.3832681 | 46 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 00699 | 2004 $AH_{13}$ |
| 2004 $AT_{13}$ | 15.8 | 0.15 | 20060922 | 286.11680 | 251.14345 | 125.32310 | 4.30094 | 0.0618832 | 2.8799695 | 27 | 3 | 2002–2005 | 0.44 | M-v | 2 | MPC | 76369 | 2004 $AT_{13}$ |
| 2004 $AZ_{13}$ | 17.1 | 0.15 | 20060922 | 238.93838 | 4.89760 | 112.40048 | 6.69121 | 0.0292664 | 2.5172140 | 31 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 86220 | 2004 $AZ_{13}$ |
| 2004 $AJ_{14}$ | 15.6 | 0.15 | 20060922 | 170.01081 | 45.57306 | 152.08272 | 5.64382 | 0.1360303 | 2.5302508 | 54 | 4 | 1998–2006 | 0.46 | M-v | 4 | MPC | 95158 | 2004 $AJ_{14}$ |
| 2004 $AT_{18}$ | 18.3 | 0.15 | 20060922 | 266.81683 | 289.62047 | 216.03344 | 1.55488 | 0.1022607 | 2.2276128 | 36 | 6 | 1996–2006 | 0.31 | M-v | 0 | MPC | 86221 | 2004 $AT_{18}$ |
| 2004 $AL_{19}$ | 16.1 | 0.15 | 20060922 | 90.67404 | 306.19587 | 309.48951 | 12.46744 | 0.1789127 | 2.7289821 | 42 | 5 | 2000–2006 | 0.58 | M-v | 0 | MPC | 87604 | 2004 $AL_{19}$ |
| 2004 $AO_{19}$ | 17.4 | 0.15 | 20060922 | 132.50008 | 247.83949 | 326.35313 | 4.31112 | 0.0918785 | 2.6924019 | 18 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 00699 | 2004 $AO_{19}$ |
| 2004 $AU_{21}$ | 16.3 | 0.15 | 20060922 | 95.10691 | 152.73140 | 97.25276 | 1.52198 | 0.0722872 | 2.6809206 | 39 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 86221 | 2004 $AU_{21}$ |
| 2004 $AY_{21}$ | 16.5 | 0.15 | 20060922 | 22.38927 | 1.92627 | 309.72311 | 3.68330 | 0.0945420 | 2.7019126 | 51 | 4 | 2000–2006 | 0.41 | M-v | 1 | MPC | 04285 | 2004 $AY_{21}$ |
| 2004 $AK_{22}$ | 17.0 | 0.15 | 20060922 | 34.74408 | 182.20067 | 125.72462 | 3.49580 | 0.1500491 | 2.6180301 | 41 | 7 | 1993–2006 | 0.56 | M-v | 0 | MPC | 04285 | 2004 $AK_{22}$ |
| 2004 $AF_{23}$ | 17.2 | 0.15 | 20060922 | 291.66010 | 246.26296 | 169.34074 | 2.77688 | 0.0602341 | 2.5620259 | 26 | 4 | 1998–2006 | 0.31 | M-v | 0 | MPC | 86221 | 2004 $AF_{23}$ |
| 2004 $AD_{26}$ | 16.7 | 0.15 | 20060922 | 260.27826 | 167.95130 | 217.28241 | 7.90638 | 0.2308316 | 2.6763972 | 39 | 4 | 1994–2006 | 0.37 | M-v | 1 | MPC | 03596 | 2004 $AD_{26}$ |
| 2004 $AY_{26}$ | 16.4 | 0.15 | 20060922 | 233.21342 | 60.44549 | 72.86138 | 14.28709 | 0.1189194 | 2.5960764 | 20 | 1 | 121 days | 0.51 | M-v | 3 | MPC | | 2004 $AY_{26}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 BN | 17.5 | 0.15 | 20060922 | 8.07660 | 358.17805 | 5.85868 | 3.00633 | 0.1975635 | 2.2808769 | 89 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 03596 | 2004 BN |
| 2004 $BE_1$ | 17.9 | 0.15 | 20060922 | 179.58239 | 320.29606 | 269.10635 | 3.15527 | 0.1306522 | 2.3240298 | 30 | 3 | 2004–2006 | 0.44 | M-v | 3 | MPC | 86222 | 2004 $BE_1$ |
| 2004 $BJ_2$ | 17.4 | 0.15 | 20060922 | 313.57166 | 318.12986 | 136.04254 | 2.26250 | 0.0806476 | 2.2307986 | 83 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 87604 | 2004 $BJ_2$ |
| 2004 $BK_2$ | 17.5 | 0.15 | 20060922 | 230.72085 | 5.99913 | 156.37167 | 1.55470 | 0.1189509 | 2.3746669 | 60 | 5 | 1993–2006 | 0.38 | M-v | 0 | MPC | 95158 | 2004 $BK_2$ |
| 2004 $BU_2$ | 16.3 | 0.15 | 20060922 | 178.61692 | 132.17407 | 37.56413 | 2.97714 | 0.0586549 | 2.6581436 | 45 | 5 | 1996–2006 | 0.43 | M-v | 1 | MPC | 04285 | 2004 $BU_2$ |
| 2004 $BF_3$ | 16.6 | 0.15 | 20060922 | 332.69518 | 109.52993 | 310.38363 | 6.87041 | 0.1280663 | 2.2741274 | 85 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 61768 | 2004 $BF_3$ |
| 2004 $BG_3$ | 15.8 | 0.15 | 20060922 | 218.38126 | 242.21626 | 308.39806 | 5.60490 | 0.0739429 | 2.2990778 | 91 | 6 | 1997–2006 | 0.47 | M-v | 1 | MPC | 87604 | 2004 $BG_3$ |
| 2004 $BH_3$ | 16.3 | 0.15 | 20060922 | 123.97460 | 145.20889 | 117.33386 | 3.16183 | 0.1621119 | 2.4693046 | 46 | 6 | 1997–2006 | 0.49 | M-v | 1 | MPC | 74307 | 2004 $BH_3$ |
| 2004 $BJ_3$ | 17.3 | 0.15 | 20060922 | 258.37887 | 3.67596 | 144.39661 | 2.13938 | 0.1245349 | 2.2940174 | 71 | 4 | 2001–2006 | 0.43 | M-v | 2 | MPC | 87604 | 2004 $BJ_3$ |
| 2004 $BR_3$ | 17.4 | 0.15 | 20060922 | 335.95305 | 18.35431 | 28.08491 | 3.05720 | 0.1646610 | 2.2942448 | 83 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 57590 | 2004 $BR_3$ |
| 2004 $BT_3$ | 17.1 | 0.15 | 20060922 | 296.01427 | 343.73875 | 91.16016 | 2.45939 | 0.1565938 | 2.3983358 | 75 | 6 | 1995–2006 | 0.51 | M-v | 0 | MPC | 04285 | 2004 $BT_3$ |
| 2004 $BD_4$ | 16.7 | 0.15 | 20060922 | 286.57849 | 155.25836 | 277.94825 | 1.22440 | 0.1990309 | 2.4558422 | 32 | 3 | 2000–2006 | 0.50 | M-v | 4 | MPC | 57590 | 2004 $BD_4$ |
| 2004 $BR_4$ | 17.1 | 0.15 | 20060922 | 327.25204 | 270.21078 | 128.50424 | 6.37061 | 0.2831153 | 2.3324156 | 68 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 03596 | 2004 $BR_4$ |
| 2004 $BW_4$ | 17.5 | 0.15 | 20060922 | 290.56520 | 71.80496 | 9.88065 | 2.20995 | 0.1790288 | 2.3995962 | 63 | 6 | 1993–2006 | 0.47 | M-v | 0 | MPC | 04286 | 2004 $BW_4$ |
| 2004 $BB_5$ | 17.5 | 0.15 | 20060922 | 289.73334 | 357.80310 | 94.51101 | 3.53075 | 0.1552150 | 2.3615860 | 70 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 87605 | 2004 $BB_5$ |
| 2004 $BD_5$ | 17.0 | 0.15 | 20060922 | 195.69182 | 156.05240 | 9.26288 | 3.90195 | 0.1097899 | 2.6202645 | 39 | 3 | 2000–2006 | 0.44 | M-v | 2 | MPC | 04286 | 2004 $BD_5$ |
| 2004 $BF_5$ | 15.5 | 0.15 | 20060922 | 145.47285 | 237.86248 | 324.89218 | 8.60558 | 0.0663537 | 2.7340147 | 66 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 04286 | 2004 $BF_5$ |
| 2004 $BO_5$ | 16.0 | 0.15 | 20060922 | 10.32064 | 3.83346 | 320.37739 | 4.40664 | 0.0547625 | 2.7145325 | 75 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 04286 | 2004 $BO_5$ |
| 2004 $BV_5$ | 17.1 | 0.15 | 20060922 | 324.80152 | 270.78486 | 120.22011 | 10.80469 | 0.2089777 | 2.4064050 | 59 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03596 | 2004 $BV_5$ |
| 2004 $BW_5$ | 16.9 | 0.15 | 20060922 | 249.51020 | 8.06680 | 116.48911 | 3.53594 | 0.1485989 | 2.4468051 | 68 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 04286 | 2004 $BW_5$ |
| 2004 $BZ_5$ | 17.3 | 0.15 | 20060922 | 162.03227 | 67.80464 | 159.10459 | 1.45601 | 0.1242517 | 2.4366748 | 49 | 4 | 1998–2006 | 0.36 | M-v | 2 | MPC | 61769 | 2004 $BZ_5$ |
| 2004 $BF_6$ | 18.2 | 0.15 | 20060922 | 261.29275 | 217.63674 | 267.70451 | 1.97491 | 0.1809142 | 2.3721428 | 26 | 3 | 1999–2006 | 0.52 | M-v | 2 | MPC | 87605 | 2004 $BF_6$ |
| 2004 $BH_6$ | 17.4 | 0.15 | 20060922 | 354.88361 | 270.28749 | 128.11813 | 5.53893 | 0.1746514 | 2.2225784 | 41 | 3 | 2004–2006 | 0.47 | M-v | 3 | MPC | 76372 | 2004 $BH_6$ |
| 2004 $BO_6$ | 16.5 | 0.15 | 20060922 | 333.84393 | 295.50353 | 101.60494 | 8.73908 | 0.2511986 | 2.3272947 | 55 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 04286 | 2004 $BO_6$ |
| 2004 $BE_7$ | 16.4 | 0.15 | 20060922 | 14.98209 | 239.10449 | 66.58932 | 4.20535 | 0.0567219 | 2.7806045 | 32 | 4 | 1995–2006 | 0.27 | M-v | 0 | MPC | 04286 | 2004 $BE_7$ |
| 2004 $BD_8$ | 16.9 | 0.15 | 20060922 | 298.39779 | 329.70695 | 77.35638 | 4.37833 | 0.1137780 | 2.5133184 | 35 | 4 | 1999–2006 | 0.36 | M-v | 2 | MPC | 04286 | 2004 $BD_8$ |
| 2004 $BE_8$ | 15.4 | 0.15 | 20060922 | 60.29156 | 324.37266 | 311.23395 | 12.59059 | 0.1710748 | 2.7255008 | 72 | 5 | 1997–2006 | 0.55 | M-v | 0 | MPC | 04286 | 2004 $BE_8$ |
| 2004 $BH_9$ | 16.5 | 0.15 | 20060922 | 266.69498 | 97.51153 | 55.68571 | 9.84604 | 0.0534388 | 2.2267562 | 74 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 87605 | 2004 $BH_9$ |
| 2004 $BU_{10}$ | 16.1 | 0.15 | 20060922 | 253.47264 | 201.73119 | 260.20697 | 6.72132 | 0.1429058 | 2.5334853 | 37 | 4 | 1996–2006 | 0.45 | M-v | 3 | MPC | 66326 | 2004 $BU_{10}$ |
| 2004 $BZ_{10}$ | 17.6 | 0.15 | 20060922 | 281.48847 | 4.48890 | 134.90240 | 6.17228 | 0.1559174 | 2.2481170 | 120 | 4 | 2001–2006 | 0.45 | M-v | 2 | MPC | 86224 | 2004 $BZ_{10}$ |
| 2004 $BN_{11}$ | 17.4 | 0.15 | 20060922 | 301.31060 | 245.22313 | 172.61737 | 1.97077 | 0.1641090 | 2.4433550 | 35 | 3 | 1996–2006 | 0.31 | M-v | 1 | MPC | 03597 | 2004 $BN_{11}$ |
| 2004 $BE_{12}$ | 17.4 | 0.15 | 20060922 | 194.71861 | 118.52902 | 73.53058 | 2.14543 | 0.1247350 | 2.4630321 | 64 | 4 | 1994–2006 | 0.47 | M-v | 1 | MPC | 76373 | 2004 $BE_{12}$ |
| 2004 $BJ_{12}$ | 17.3 | 0.15 | 20060922 | 325.95428 | 315.58222 | 96.27386 | 3.20103 | 0.2334674 | 2.2975771 | 133 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 03597 | 2004 $BJ_{12}$ |
| 2004 $BL_{12}$ | 18.2 | 0.15 | 20060922 | 301.43206 | 169.14449 | 268.58915 | 1.80552 | 0.1751784 | 2.3376294 | 34 | 3 | 1999–2006 | 0.41 | M-v | 2 | MPC | 04286 | 2004 $BL_{12}$ |
| 2004 $BV_{12}$ | 17.4 | 0.15 | 20060922 | 285.41708 | 166.27402 | 308.22667 | 2.39649 | 0.1032263 | 2.2881996 | 72 | 3 | 1999–2006 | 0.42 | M-v | 3 | MPC | 62471 | 2004 $BV_{12}$ |
| 2004 $BS_{13}$ | 17.0 | 0.15 | 20060922 | 169.26049 | 264.09348 | 323.46279 | 7.18639 | 0.0345725 | 2.3386577 | 39 | 4 | 1997–2006 | 0.43 | M-v | 1 | MPC | 03597 | 2004 $BS_{13}$ |
| 2004 $BC_{14}$ | 17.3 | 0.15 | 20060922 | 289.16360 | 48.81719 | 34.75182 | 2.15011 | 0.1611262 | 2.4047643 | 52 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 87605 | 2004 $BC_{14}$ |
| 2004 $BT_{14}$ | 16.2 | 0.15 | 20060922 | 175.18441 | 305.20996 | 278.48918 | 3.22809 | 0.0829465 | 2.3544365 | 75 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 87605 | 2004 $BT_{14}$ |
| 2004 $BW_{14}$ | 16.6 | 0.15 | 20060922 | 299.71526 | 93.50526 | 318.80971 | 1.49063 | 0.2012764 | 2.4526940 | 90 | 6 | 1993–2006 | 0.43 | M-v | 0 | MPC | 04286 | 2004 $BW_{14}$ |
| 2004 $BZ_{14}$ | 15.7 | 0.15 | 20060922 | 197.86134 | 305.45325 | 140.42447 | 6.24898 | 0.1493726 | 3.2090657 | 40 | 3 | 1999–2005 | 0.36 | M-v | 3 | MPC | 61772 | 2004 $BZ_{14}$ |
| 2004 $BA_{15}$ | 17.1 | 0.15 | 20060922 | 292.16462 | 322.26947 | 115.06276 | 2.22222 | 0.1620640 | 2.4132382 | 67 | 4 | 1991–2006 | 0.64 | M-v | 1 | MPC | 04286 | 2004 $BA_{15}$ |
| 2004 $BL_{15}$ | 15.6 | 0.15 | 20060922 | 308.34884 | 255.46449 | 120.88264 | 17.09328 | 0.2017130 | 2.6213732 | 51 | 3 | 1998–2004 | 0.53 | M-v | 2 | MPC | 61772 | 2004 $BL_{15}$ |
| 2004 $BM_{15}$ | 17.1 | 0.15 | 20060922 | 297.39999 | 307.93089 | 126.06545 | 2.74105 | 0.1119527 | 2.3992484 | 58 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 04286 | 2004 $BM_{15}$ |
| 2004 $BT_{15}$ | 16.9 | 0.15 | 20060922 | 339.20360 | 312.54244 | 112.02148 | 4.64609 | 0.1023308 | 2.2182412 | 62 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 69630 | 2004 $BT_{15}$ |
| 2004 $BC_{16}$ | 16.0 | 0.15 | 20060922 | 208.99060 | 27.75964 | 119.36919 | 13.71344 | 0.0896815 | 2.6985316 | 83 | 5 | 2000–2006 | 0.70 | M-v | 1 | MPC | 87605 | 2004 $BC_{16}$ |
| 2004 $BK_{16}$ | 14.5 | 0.15 | 20060922 | 129.49501 | 85.78709 | 115.98012 | 14.64673 | 0.1748875 | 3.1478512 | 79 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 61773 | 2004 $BK_{16}$ |
| 2004 $BS_{16}$ | 16.3 | 0.15 | 20060922 | 241.21444 | 115.98940 | 14.31507 | 7.25190 | 0.1565738 | 2.4481144 | 58 | 4 | 1999–2006 | 0.48 | M-v | 2 | MPC | 03597 | 2004 $BS_{16}$ |
| 2004 $BG_{18}$ | 15.7 | 0.15 | 20060922 | 321.22553 | 344.55538 | 45.22002 | 14.98125 | 0.0096991 | 2.6767984 | 38 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 04286 | 2004 $BG_{18}$ |
| 2004 $BJ_{19}$ | 16.7 | 0.15 | 20060922 | 11.19030 | 341.32807 | 43.36214 | 3.66793 | 0.1713852 | 2.2177017 | 74 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 76376 | 2004 $BJ_{19}$ |
| 2004 $BM_{19}$ | 17.0 | 0.15 | 20060922 | 265.96118 | 346.41740 | 127.01864 | 5.28875 | 0.1450412 | 2.4161583 | 60 | 6 | 1993–2006 | 0.58 | M-v | 1 | MPC | 87605 | 2004 $BM_{19}$ |
| 2004 $BO_{19}$ | 16.7 | 0.15 | 20060922 | 310.26750 | 60.12910 | 17.46253 | 6.18870 | 0.0945872 | 2.3528207 | 115 | 3 | 2002–2006 | 0.46 | M-v | 1 | MPC | 87605 | 2004 $BO_{19}$ |
| 2004 $BT_{19}$ | 16.1 | 0.15 | 20060922 | 298.33699 | 6.55674 | 56.49685 | 8.65808 | 0.2465236 | 2.4531691 | 55 | 3 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04286 | 2004 $BT_{19}$ |
| 2004 $BK_{20}$ | 16.1 | 0.15 | 20060922 | 9.78143 | 15.67040 | 11.63690 | 3.48679 | 0.1775770 | 2.1606426 | 87 | 5 | 1993–2006 | 0.56 | M-v | 1 | MPC | 77768 | 2004 $BK_{20}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $BO_{20}$ | 16.6 | 0.15 | 20060922 | 14.86330 | 332.99757 | 51.34991 | 3.88661 | 0.1947083 | 2.1627062 | 33 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 76376 | 2004 $BO_{20}$ |
| 2004 $BU_{20}$ | 16.8 | 0.15 | 20060922 | 172.79767 | 207.45209 | 344.18316 | 3.15422 | 0.1414172 | 2.6052978 | 26 | 3 | 2000–2006 | 0.57 | M-v | 4 | MPC | 69631 | 2004 $BU_{20}$ |
| 2004 $BW_{20}$ | 17.1 | 0.15 | 20060922 | 234.02470 | 55.49199 | 92.82591 | 4.47389 | 0.1084972 | 2.4167961 | 40 | 4 | 1995–2006 | 0.41 | M-v | 2 | MPC | 66327 | 2004 $BW_{20}$ |
| 2004 $BZ_{20}$ | 17.0 | 0.15 | 20060922 | 205.14332 | 38.79832 | 138.93218 | 3.41554 | 0.1127826 | 2.4481282 | 46 | 3 | 1997–2006 | 0.41 | M-v | 3 | MPC | 87605 | 2004 $BZ_{20}$ |
| 2004 $BP_{21}$ | 16.2 | 0.15 | 20060922 | 225.37157 | 329.65116 | 136.69658 | 12.95469 | 0.1005349 | 2.7329025 | 33 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | 03598 | 2004 $BP_{21}$ |
| 2004 $BR_{21}$ | 17.0 | 0.15 | 20060922 | 241.99672 | 82.22047 | 63.06526 | 3.54793 | 0.1197197 | 2.3722378 | 55 | 3 | 1999–2006 | 0.59 | M-v | 3 | MPC | 03598 | 2004 $BR_{21}$ |
| 2004 $BX_{21}$ | 17.0 | 0.15 | 20060922 | 170.12841 | 336.76291 | 348.57916 | 18.97772 | 0.0350410 | 1.8869156 | 84 | 2 | 2004–2005 | 0.54 | M-v | 3 | MPC | 90188 | 2004 $BX_{21}$ |
| 2004 $BF_{22}$ | 17.1 | 0.15 | 20060922 | 82.38346 | 201.21933 | 135.61052 | 0.65363 | 0.1890429 | 2.1237753 | 35 | 5 | 1993–2006 | 0.44 | M-v | 1 | MPC | 77768 | 2004 $BF_{22}$ |
| 2004 $BU_{22}$ | 17.5 | 0.15 | 20060922 | 291.72705 | 272.58251 | 184.11053 | 2.50392 | 0.1640874 | 2.3052976 | 62 | 3 | 1999–2006 | 0.49 | M-v | 1 | MPC | 87605 | 2004 $BU_{22}$ |
| 2004 $BH_{23}$ | 17.1 | 0.15 | 20060922 | 336.75680 | 235.85300 | 201.79661 | 3.06936 | 0.0828143 | 2.1825272 | 37 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 87606 | 2004 $BH_{23}$ |
| 2004 $BL_{23}$ | 16.3 | 0.15 | 20060922 | 172.40112 | 192.39811 | 329.22887 | 1.15377 | 0.1149090 | 2.8886330 | 47 | 3 | 1994–2006 | 0.53 | M-v | 3 | MPC | 62473 | 2004 $BL_{23}$ |
| 2004 $BY_{23}$ | 17.3 | 0.15 | 20060922 | 215.50160 | 222.39928 | 298.16736 | 1.39132 | 0.1398143 | 2.4746985 | 47 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 03598 | 2004 $BY_{23}$ |
| 2004 $BZ_{23}$ | 15.3 | 0.15 | 20060922 | 237.29739 | 303.07711 | 111.86845 | 4.11171 | 0.1062712 | 3.0122046 | 47 | 4 | 1998–2005 | 0.50 | M-v | 1 | MPC | 86226 | 2004 $BZ_{23}$ |
| 2004 $BD_{24}$ | 18.2 | 0.15 | 20060922 | 246.59705 | 237.97343 | 284.39607 | 0.96773 | 0.1793772 | 2.2915914 | 35 | 4 | 1994–2006 | 0.33 | M-v | 1 | MPC | 03598 | 2004 $BD_{24}$ |
| 2004 $BH_{24}$ | 16.1 | 0.15 | 20060922 | 170.70952 | 55.41608 | 150.43104 | 2.38199 | 0.1652348 | 2.5340430 | 73 | 6 | 1996–2006 | 0.46 | M-v | 0 | MPC | 69632 | 2004 $BH_{24}$ |
| 2004 $BJ_{24}$ | 15.8 | 0.15 | 20060922 | 335.75311 | 68.57342 | 286.36494 | 5.04889 | 0.2335449 | 2.5223308 | 66 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 00701 | 2004 $BJ_{24}$ |
| 2004 $BX_{25}$ | 15.3 | 0.15 | 20060922 | 112.68815 | 276.09270 | 305.11869 | 10.77564 | 0.0919734 | 2.7542714 | 62 | 4 | 2000–2006 | 0.67 | M-v | 1 | MPC | 03599 | 2004 $BX_{25}$ |
| 2004 $BZ_{25}$ | 16.4 | 0.15 | 20060922 | 219.28912 | 258.17459 | 153.74001 | 16.57816 | 0.2313720 | 3.1324666 | 35 | 3 | 2002–2005 | 0.69 | M-v | 3 | MPC | 87606 | 2004 $BZ_{25}$ |
| 2004 $BB_{26}$ | 16.4 | 0.15 | 20060922 | 264.33644 | 268.61845 | 159.04758 | 14.17451 | 0.0591715 | 2.7090913 | 41 | 4 | 2002–2006 | 0.62 | M-v | 1 | MPC | 04287 | 2004 $BB_{26}$ |
| 2004 $BA_{27}$ | 16.2 | 0.15 | 20060922 | 311.87012 | 302.98616 | 130.35383 | 23.06850 | 0.2757267 | 2.2716055 | 119 | 2 | 2003–2006 | 0.39 | M-v | 2 | MPC | 03599 | 2004 $BA_{27}$ |
| 2004 $BE_{27}$ | 17.1 | 0.15 | 20060922 | 285.56745 | 211.42497 | 253.99328 | 1.10469 | 0.1942122 | 2.3397581 | 87 | 5 | 1995–2006 | 0.42 | M-v | 1 | MPC | 66327 | 2004 $BE_{27}$ |
| 2004 $BT_{27}$ | 16.9 | 0.15 | 20060922 | 227.02525 | 113.39458 | 58.85448 | 2.11069 | 0.1243287 | 2.3861187 | 60 | 5 | 1995–2006 | 0.43 | M-v | 0 | MPC | 87606 | 2004 $BT_{27}$ |
| 2004 $BP_{28}$ | 16.7 | 0.15 | 20060922 | 315.73499 | 96.72620 | 330.92122 | 6.53057 | 0.0954584 | 2.3709718 | 58 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 77768 | 2004 $BP_{28}$ |
| 2004 $BA_{29}$ | 16.8 | 0.15 | 20060922 | 324.60593 | 301.61247 | 101.93435 | 4.28404 | 0.1892375 | 2.4063882 | 48 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 03599 | 2004 $BA_{29}$ |
| 2004 $BG_{29}$ | 16.8 | 0.15 | 20060922 | 208.47876 | 215.57370 | 349.20024 | 5.08783 | 0.1518541 | 2.3610074 | 56 | 5 | 1993–2006 | 0.44 | M-v | 1 | MPC | 87606 | 2004 $BG_{29}$ |
| 2004 $BK_{29}$ | 17.8 | 0.15 | 20060922 | 305.04564 | 75.23112 | 11.88348 | 2.69988 | 0.1708321 | 2.3143181 | 57 | 3 | 1999–2006 | 0.34 | M-v | 1 | MPC | 89502 | 2004 $BK_{29}$ |
| 2004 $BQ_{29}$ | 16.0 | 0.15 | 20060922 | 234.27822 | 345.48149 | 96.66348 | 3.35649 | 0.1622146 | 2.8959381 | 44 | 4 | 1998–2005 | 0.65 | M-v | 1 | MPC | 86228 | 2004 $BQ_{29}$ |
| 2004 $BV_{29}$ | 15.0 | 0.15 | 20060922 | 126.32718 | 222.95121 | 332.56692 | 8.21790 | 0.1916461 | 3.1717453 | 49 | 2 | 2004–2006 | 0.37 | M-v | 3 | MPC | 03599 | 2004 $BV_{29}$ |
| 2004 $BA_{30}$ | 17.2 | 0.15 | 20060922 | 255.30623 | 179.74162 | 336.58777 | 2.43482 | 0.1141538 | 2.3063830 | 52 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 86229 | 2004 $BA_{30}$ |
| 2004 $BE_{30}$ | 16.6 | 0.15 | 20060922 | 288.54104 | 132.08072 | 344.65411 | 3.91719 | 0.0687483 | 2.3092954 | 70 | 6 | 1992–2006 | 0.51 | M-v | 1 | MPC | 89503 | 2004 $BE_{30}$ |
| 2004 $BU_{30}$ | 15.7 | 0.15 | 20060922 | 94.04621 | 204.86707 | 80.41938 | 2.25075 | 0.0964631 | 2.5548519 | 104 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 65544 | 2004 $BU_{30}$ |
| 2004 $BF_{31}$ | 17.4 | 0.15 | 20060922 | 226.94059 | 88.20167 | 107.02817 | 5.03048 | 0.1907529 | 2.3427022 | 50 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 87606 | 2004 $BF_{31}$ |
| 2004 $BT_{31}$ | 16.3 | 0.15 | 20060922 | 339.00818 | 56.41205 | 310.28941 | 11.85573 | 0.1940464 | 2.4723382 | 53 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 03600 | 2004 $BT_{31}$ |
| 2004 $BB_{32}$ | 17.1 | 0.15 | 20060922 | 341.69332 | 286.20129 | 99.40121 | 5.80433 | 0.2361407 | 2.3229912 | 73 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 04287 | 2004 $BB_{32}$ |
| 2004 $BJ_{32}$ | 16.8 | 0.15 | 20060922 | 97.20146 | 224.28634 | 91.80678 | 4.28112 | 0.1424178 | 2.2083042 | 55 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 65544 | 2004 $BJ_{32}$ |
| 2004 $BO_{32}$ | 16.3 | 0.15 | 20060922 | 91.75335 | 224.57162 | 27.38232 | 2.83414 | 0.0279073 | 2.6988566 | 34 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 76379 | 2004 $BO_{32}$ |
| 2004 $BS_{32}$ | 18.2 | 0.15 | 20060922 | 294.17352 | 151.59655 | 338.63774 | 3.74812 | 0.0333778 | 2.1742498 | 29 | 6 | 1996–2006 | 0.39 | M-v | 1 | MPC | 97696 | 2004 $BS_{32}$ |
| 2004 $BC_{33}$ | 16.3 | 0.15 | 20060922 | 167.81892 | 49.48225 | 78.21265 | 2.14795 | 0.1384456 | 3.1697623 | 30 | 4 | 1993–2005 | 0.33 | M-v | 0 | MPC | 04287 | 2004 $BC_{33}$ |
| 2004 $BV_{34}$ | 17.1 | 0.15 | 20060922 | 273.07901 | 62.48628 | 7.36183 | 1.95679 | 0.0558891 | 2.6554957 | 29 | 5 | 2000–2006 | 0.36 | M-v | 0 | MPC | 00701 | 2004 $BV_{34}$ |
| 2004 $BX_{34}$ | 17.1 | 0.15 | 20060922 | 333.19727 | 286.79648 | 101.70036 | 3.74339 | 0.1784520 | 2.4135128 | 46 | 3 | 2000–2006 | 0.37 | M-v | 2 | MPC | 03600 | 2004 $BX_{34}$ |
| 2004 $BQ_{35}$ | 15.7 | 0.15 | 20060922 | 236.52439 | 44.68138 | 39.33702 | 2.48276 | 0.0165896 | 2.9012857 | 31 | 3 | 2002–2005 | 0.50 | M-v | 3 | MPC | 03600 | 2004 $BQ_{35}$ |
| 2004 $BZ_{35}$ | 16.5 | 0.15 | 20060922 | 150.94342 | 127.22695 | 30.70480 | 2.95354 | 0.0849650 | 3.0956211 | 44 | 4 | 1994–2005 | 0.41 | M-v | 0 | MPC | 04287 | 2004 $BZ_{35}$ |
| 2004 $BG_{36}$ | 16.5 | 0.15 | 20060922 | 289.42824 | 306.30422 | 82.07579 | 3.79874 | 0.3000124 | 2.6306429 | 33 | 3 | 1998–2005 | 0.49 | M-v | 4 | MPC | 61782 | 2004 $BG_{36}$ |
| 2004 $BL_{36}$ | 16.9 | 0.15 | 20060922 | 118.60034 | 321.58567 | 320.27986 | 5.21298 | 0.1235271 | 2.3428821 | 37 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 95161 | 2004 $BL_{36}$ |
| 2004 $BV_{36}$ | 16.7 | 0.15 | 20060922 | 246.50375 | 46.43452 | 99.35821 | 2.28906 | 0.1249578 | 2.3792014 | 91 | 5 | 1993–2006 | 0.57 | M-v | 1 | MPC | 66327 | 2004 $BV_{36}$ |
| 2004 $BA_{37}$ | 17.3 | 0.15 | 20060922 | 204.89284 | 146.70982 | 94.74116 | 1.69804 | 0.1480060 | 2.1546694 | 44 | 6 | 1998–2006 | 0.37 | M-v | 1 | MPC | 87606 | 2004 $BA_{37}$ |
| 2004 $BB_{37}$ | 16.7 | 0.15 | 20060922 | 110.46866 | 292.98231 | 345.51700 | 2.35629 | 0.1660989 | 2.4460824 | 34 | 6 | 1999–2006 | 0.41 | M-v | 1 | MPC | 87606 | 2004 $BB_{37}$ |
| 2004 $BG_{37}$ | 17.5 | 0.15 | 20060922 | 286.19009 | 75.85368 | 16.72930 | 1.56434 | 0.1403027 | 2.3869996 | 37 | 4 | 1995–2006 | 0.35 | M-v | 1 | MPC | 03601 | 2004 $BG_{37}$ |
| 2004 $BM_{37}$ | 17.3 | 0.15 | 20060922 | 217.25133 | 187.91623 | 320.35133 | 5.90796 | 0.0222404 | 2.5424943 | 22 | 4 | 1994–2006 | 0.41 | M-v | 2 | MPC | 04287 | 2004 $BM_{37}$ |
| 2004 $BX_{37}$ | 16.3 | 0.15 | 20060922 | 204.29303 | 232.81859 | 325.37814 | 6.54434 | 0.0552288 | 2.3836436 | 76 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 61783 | 2004 $BX_{37}$ |
| 2004 $BY_{37}$ | 15.8 | 0.15 | 20060922 | 322.27987 | 263.93096 | 133.43673 | 22.57089 | 0.0578605 | 2.6031861 | 41 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04288 | 2004 $BY_{37}$ |
| 2004 $BZ_{37}$ | 17.1 | 0.15 | 20060922 | 255.18151 | 79.58720 | 53.18273 | 2.05381 | 0.1359487 | 2.4340476 | 69 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 62475 | 2004 $BZ_{37}$ |
| 2004 $BB_{38}$ | 17.1 | 0.15 | 20060922 | 258.08458 | 121.60054 | 23.75887 | 2.42304 | 0.1435677 | 2.3617783 | 73 | 4 | 1995–2006 | 0.41 | M-v | 2 | MPC | 61783 | 2004 $BB_{38}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $BG_{38}$ | 16.9 | 0.15 | 20060922 | 291.37689 | 21.43830 | 66.55327 | 2.97191 | 0.1697710 | 2.4300523 | 62 | 3 | 1999–2006 | 0.44 | M-v | 1 | MPC | 04288 | 2004 $BG_{38}$ |
| 2004 $BY_{38}$ | 16.1 | 0.15 | 20060922 | 301.91587 | 279.75681 | 100.52865 | 6.66530 | 0.1075155 | 2.6976149 | 37 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 03601 | 2004 $BY_{38}$ |
| 2004 $BG_{39}$ | 17.2 | 0.15 | 20060922 | 207.19181 | 32.70241 | 135.70979 | 3.20973 | 0.1151342 | 2.4436556 | 28 | 3 | 1995–2006 | 0.49 | M-v | 4 | MPC | 87606 | 2004 $BG_{39}$ |
| 2004 $BB_{40}$ | 17.5 | 0.15 | 20060922 | 256.64354 | 236.53978 | 265.98453 | 1.97081 | 0.1662263 | 2.3144689 | 56 | 4 | 1996–2006 | 0.44 | M-v | 2 | MPC | 03601 | 2004 $BB_{40}$ |
| 2004 $BH_{40}$ | 16.8 | 0.15 | 20060922 | 304.89336 | 128.99896 | 297.72421 | 2.37376 | 0.1572738 | 2.4012544 | 82 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 61784 | 2004 $BH_{40}$ |
| 2004 $BJ_{40}$ | 17.1 | 0.15 | 20060922 | 277.64382 | 335.20474 | 152.08318 | 3.16299 | 0.1020036 | 2.2906669 | 82 | 5 | 1995–2006 | 0.46 | M-v | 1 | MPC | 69638 | 2004 $BJ_{40}$ |
| 2004 $BM_{40}$ | 17.0 | 0.15 | 20060922 | 267.52330 | 15.22703 | 125.17734 | 6.89517 | 0.0510812 | 2.2860128 | 82 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87606 | 2004 $BM_{40}$ |
| 2004 $BV_{40}$ | 17.6 | 0.15 | 20060922 | 301.67743 | 324.62149 | 128.73161 | 2.60583 | 0.1631392 | 2.2979924 | 71 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 61784 | 2004 $BV_{40}$ |
| 2004 $BX_{41}$ | 16.9 | 0.15 | 20060922 | 283.21098 | 131.45956 | 347.66628 | 6.81386 | 0.1143629 | 2.3282101 | 69 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 95162 | 2004 $BX_{41}$ |
| 2004 $BJ_{42}$ | 16.3 | 0.15 | 20060922 | 276.60467 | 202.17108 | 284.22569 | 6.50683 | 0.0623571 | 2.3324549 | 85 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 66327 | 2004 $BJ_{42}$ |
| 2004 $BP_{42}$ | 15.2 | 0.15 | 20060922 | 161.34792 | 136.48978 | 63.80854 | 14.01953 | 0.0844965 | 2.5905389 | 53 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 95164 | 2004 $BP_{42}$ |
| 2004 $BV_{42}$ | 14.7 | 0.15 | 20060922 | 130.31300 | 222.64091 | 328.64048 | 12.02023 | 0.1034977 | 3.1662889 | 100 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 03601 | 2004 $BV_{42}$ |
| 2004 $BY_{42}$ | 17.0 | 0.15 | 20060922 | 335.43254 | 261.45484 | 180.11748 | 6.48472 | 0.0623955 | 2.2298031 | 46 | 4 | 2001–2006 | 0.53 | M-v | 2 | MPC | 61786 | 2004 $BY_{42}$ |
| 2004 $BA_{43}$ | 16.8 | 0.15 | 20060922 | 247.60900 | 332.02799 | 171.07884 | 7.74526 | 0.1545027 | 2.4287939 | 79 | 4 | 1997–2006 | 0.53 | M-v | 1 | MPC | 61786 | 2004 $BA_{43}$ |
| 2004 $BK_{43}$ | 16.2 | 0.15 | 20060922 | 195.60406 | 91.20145 | 75.76849 | 3.12324 | 0.0641086 | 2.6645350 | 75 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 61787 | 2004 $BK_{43}$ |
| 2004 $BL_{43}$ | 16.5 | 0.15 | 20060922 | 260.14792 | 152.77221 | 333.91882 | 6.00927 | 0.1015033 | 2.4397529 | 64 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 61787 | 2004 $BL_{43}$ |
| 2004 $BO_{43}$ | 17.2 | 0.15 | 20060922 | 299.14902 | 3.46047 | 82.47597 | 2.25141 | 0.1594860 | 2.3829960 | 73 | 3 | 1999–2006 | 0.57 | M-v | 1 | MPC | 87607 | 2004 $BO_{43}$ |
| 2004 $BR_{43}$ | 16.3 | 0.15 | 20060922 | 184.62211 | 223.86411 | 340.53966 | 6.53676 | 0.1006147 | 2.5184989 | 39 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 72993 | 2004 $BR_{43}$ |
| 2004 $BT_{43}$ | 17.6 | 0.15 | 20060922 | 238.28927 | 168.23332 | 15.77245 | 2.77564 | 0.0831185 | 2.2859832 | 51 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 87607 | 2004 $BT_{43}$ |
| 2004 $BW_{43}$ | 15.5 | 0.15 | 20060922 | 220.72631 | 110.55372 | 13.18916 | 3.58070 | 0.0505583 | 2.8068187 | 72 | 6 | 1992–2006 | 0.62 | M-v | 1 | MPC | 04288 | 2004 $BW_{43}$ |
| 2004 $BY_{43}$ | 16.7 | 0.15 | 20060922 | 292.06635 | 120.74501 | 341.20616 | 8.78144 | 0.0814511 | 2.3960454 | 46 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 61789 | 2004 $BY_{43}$ |
| 2004 $BJ_{44}$ | 16.9 | 0.15 | 20060922 | 240.42345 | 37.73176 | 139.44885 | 6.93637 | 0.0507097 | 2.3432300 | 53 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 87607 | 2004 $BJ_{44}$ |
| 2004 $BR_{44}$ | 17.1 | 0.15 | 20060922 | 345.13051 | 304.58683 | 117.45047 | 7.38829 | 0.0973649 | 2.2709361 | 56 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 87607 | 2004 $BR_{44}$ |
| 2004 $BY_{44}$ | 16.4 | 0.15 | 20060922 | 155.50993 | 116.56997 | 123.68206 | 7.02832 | 0.0616164 | 2.2995312 | 43 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97696 | 2004 $BY_{44}$ |
| 2004 $BT_{45}$ | 16.7 | 0.15 | 20060922 | 306.77735 | 334.85044 | 109.72942 | 6.42275 | 0.1186672 | 2.2526267 | 58 | 3 | 2003–2006 | 0.57 | M-v | 3 | MPC | 03601 | 2004 $BT_{45}$ |
| 2004 $BU_{45}$ | 15.9 | 0.15 | 20060922 | 167.89116 | 212.00317 | 296.82438 | 3.28162 | 0.0129970 | 2.8034797 | 31 | 3 | 2003–2006 | 0.50 | M-v | 2 | MPC | 04288 | 2004 $BU_{45}$ |
| 2004 $BM_{46}$ | 15.2 | 0.15 | 20060922 | 226.95445 | 244.81967 | 225.17626 | 3.43616 | 0.0643770 | 2.7574822 | 79 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04288 | 2004 $BM_{46}$ |
| 2004 $BR_{46}$ | 16.2 | 0.15 | 20060922 | 213.31862 | 291.33158 | 255.72554 | 2.21544 | 0.1750291 | 2.4201076 | 75 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 86231 | 2004 $BR_{46}$ |
| 2004 $BT_{46}$ | 15.4 | 0.15 | 20060922 | 204.05880 | 223.94098 | 296.92167 | 10.57888 | 0.1292769 | 2.6224314 | 94 | 5 | 2000–2006 | 0.59 | M-v | 2 | MPC | 61793 | 2004 $BT_{46}$ |
| 2004 $BZ_{46}$ | 15.8 | 0.15 | 20060922 | 247.33778 | 206.07555 | 281.15279 | 5.73421 | 0.0463616 | 2.3959487 | 43 | 3 | 2002–2006 | 0.53 | M-v | 4 | MPC | 95164 | 2004 $BZ_{46}$ |
| 2004 $BH_{47}$ | 17.0 | 0.15 | 20060922 | 183.92873 | 30.19423 | 114.81745 | 9.09017 | 0.1676362 | 2.8025319 | 29 | 3 | 2000–2005 | 0.30 | M-v | 2 | MPC | 89503 | 2004 $BH_{47}$ |
| 2004 $BX_{47}$ | 17.2 | 0.15 | 20060922 | 268.13797 | 103.99132 | 329.47127 | 1.75464 | 0.1062538 | 2.5748206 | 36 | 3 | 1996–2004 | 0.53 | M-v | 3 | MPC | 95164 | 2004 $BX_{47}$ |
| 2004 $BY_{47}$ | 17.2 | 0.15 | 20060922 | 206.65909 | 235.70234 | 286.39475 | 3.30638 | 0.2440134 | 2.5667168 | 41 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 87607 | 2004 $BY_{47}$ |
| 2004 $BD_{48}$ | 17.1 | 0.15 | 20040116 | 295.88996 | 262.31527 | 295.36726 | 3.19134 | 0.1447503 | 2.2790151 | 11 | 1 | 6 days | 0.53 | | | MPC | | 2004 $BD_{48}$ |
| 2004 $BF_{48}$ | 15.2 | 0.15 | 20060922 | 46.40566 | 113.11236 | 129.20574 | 8.71128 | 0.0438217 | 3.2315004 | 36 | 3 | 2002–2005 | 0.58 | M-v | 3 | MPC | 03602 | 2004 $BF_{48}$ |
| 2004 $BH_{48}$ | 15.9 | 0.15 | 20060922 | 290.24925 | 270.18414 | 125.96226 | 7.22968 | 0.0141535 | 2.7694973 | 51 | 4 | 1995–2006 | 0.37 | M-v | 0 | MPC | 03602 | 2004 $BH_{48}$ |
| 2004 $BV_{48}$ | 17.0 | 0.15 | 20060922 | 160.08075 | 325.53897 | 283.08700 | 3.04076 | 0.1353956 | 2.3015115 | 46 | 6 | 1995–2006 | 0.59 | M-v | 1 | MPC | 87607 | 2004 $BV_{48}$ |
| 2004 $BE_{49}$ | 16.4 | 0.15 | 20060922 | 174.02026 | 162.09970 | 27.06942 | 0.70116 | 0.0925153 | 2.5714446 | 49 | 5 | 1994–2006 | 0.44 | M-v | 1 | MPC | 74307 | 2004 $BE_{49}$ |
| 2004 $BK_{49}$ | 16.7 | 0.15 | 20060922 | 26.81440 | 232.47633 | 132.44137 | 5.71604 | 0.1575047 | 2.2356732 | 43 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 69641 | 2004 $BK_{49}$ |
| 2004 $BL_{49}$ | 17.6 | 0.15 | 20060922 | 322.59389 | 280.74086 | 153.91207 | 1.99374 | 0.1148211 | 2.2496871 | 62 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 61795 | 2004 $BL_{49}$ |
| 2004 $BO_{49}$ | 15.3 | 0.15 | 20060922 | 74.72835 | 119.55723 | 121.03551 | 13.32530 | 0.1050517 | 3.0201108 | 50 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 04288 | 2004 $BO_{49}$ |
| 2004 $BJ_{50}$ | 16.0 | 0.15 | 20060922 | 309.86066 | 81.52260 | 303.57930 | 13.62134 | 0.1325722 | 2.6265597 | 41 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03602 | 2004 $BJ_{50}$ |
| 2004 $BQ_{50}$ | 16.1 | 0.15 | 20060922 | 216.33055 | 38.04884 | 129.15755 | 6.42527 | 0.0116386 | 2.4184113 | 77 | 3 | 2002–2006 | 0.63 | M-v | 3 | MPC | 61796 | 2004 $BQ_{50}$ |
| 2004 $BC_{51}$ | 15.0 | 0.15 | 20060922 | 92.83925 | 294.22501 | 300.51535 | 9.30290 | 0.1849793 | 3.1121637 | 46 | 4 | 2000–2006 | 0.65 | M-v | 1 | MPC | 04288 | 2004 $BC_{51}$ |
| 2004 $BE_{51}$ | 15.6 | 0.15 | 20060922 | 162.86787 | 275.35250 | 308.32510 | 5.36955 | 0.0934714 | 2.4797452 | 73 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 97697 | 2004 $BE_{51}$ |
| 2004 $BF_{51}$ | 16.9 | 0.15 | 20060922 | 312.73477 | 128.56839 | 296.91965 | 4.65083 | 0.2100249 | 2.3343872 | 48 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 95165 | 2004 $BF_{51}$ |
| 2004 $BH_{51}$ | 16.1 | 0.15 | 20060922 | 269.64427 | 179.73600 | 280.64039 | 2.37908 | 0.1579517 | 2.4618994 | 78 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 04288 | 2004 $BH_{51}$ |
| 2004 $BC_{52}$ | 17.2 | 0.15 | 20060922 | 293.06378 | 335.60571 | 131.98782 | 6.53721 | 0.1416700 | 2.2978226 | 74 | 5 | 1994–2006 | 0.60 | M-v | 1 | MPC | 89503 | 2004 $BC_{52}$ |
| 2004 $BF_{52}$ | 17.1 | 0.15 | 20060922 | 198.49406 | 243.91395 | 331.68820 | 1.48231 | 0.1636354 | 2.3658606 | 39 | 6 | 1993–2006 | 0.56 | M-v | 1 | MPC | 87607 | 2004 $BF_{52}$ |
| 2004 $BJ_{52}$ | 15.8 | 0.15 | 20060922 | 227.23685 | 194.02252 | 277.18216 | 0.83746 | 0.1004573 | 2.7657621 | 71 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 04288 | 2004 $BJ_{52}$ |
| 2004 $BL_{52}$ | 15.9 | 0.15 | 20060922 | 254.26087 | 308.96776 | 101.33071 | 3.05718 | 0.0457221 | 2.8878120 | 24 | 2 | 2003–2005 | 0.61 | M-v | 4 | MPC | 03602 | 2004 $BL_{52}$ |
| 2004 $BP_{52}$ | 17.0 | 0.15 | 20060922 | 221.35668 | 317.76742 | 160.97548 | 1.07176 | 0.1408047 | 2.6766035 | 24 | 4 | 1998–2005 | 0.51 | M-v | 0 | MPC | 87607 | 2004 $BP_{52}$ |
| 2004 $BQ_{52}$ | 16.4 | 0.15 | 20060922 | 149.39437 | 340.41918 | 164.08862 | 1.80617 | 0.0723522 | 3.1814117 | 30 | 3 | 1999–2005 | 0.42 | M-v | 3 | MPC | 03602 | 2004 $BQ_{52}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $BU_{52}$ | 16.4 | 0.15 | 20060922 | 329.70734 | 256.08859 | 126.24129 | 3.12134 | 0.2179069 | 2.4417094 | 57 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 04289 | 2004 $BU_{52}$ |
| 2004 $BR_{53}$ | 15.6 | 0.15 | 20060922 | 20.37095 | 1.77029 | 308.53965 | 8.04980 | 0.0498431 | 2.7473101 | 64 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 03603 | 2004 $BR_{53}$ |
| 2004 $BV_{53}$ | 16.9 | 0.15 | 20060922 | 296.09737 | 74.21449 | 321.66494 | 3.97089 | 0.1133163 | 2.6647745 | 51 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 77770 | 2004 $BV_{53}$ |
| 2004 $BZ_{53}$ | 17.4 | 0.15 | 20060922 | 191.27453 | 141.80401 | 92.59881 | 4.16305 | 0.1693737 | 2.2706706 | 36 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 87607 | 2004 $BZ_{53}$ |
| 2004 $BG_{54}$ | 15.3 | 0.15 | 20060922 | 50.67079 | 331.23579 | 322.05797 | 10.93321 | 0.1385156 | 2.7266132 | 70 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 03603 | 2004 $BG_{54}$ |
| 2004 $BK_{54}$ | 17.3 | 0.15 | 20060922 | 307.08474 | 90.51566 | 331.44933 | 3.70536 | 0.2088730 | 2.3792312 | 29 | 2 | 2004–2006 | 0.45 | M-v | 4 | MPC | 03603 | 2004 $BK_{54}$ |
| 2004 $BO_{54}$ | 16.7 | 0.15 | 20060922 | 257.20522 | 161.63462 | 346.19870 | 2.12792 | 0.1578514 | 2.3279547 | 127 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 61798 | 2004 $BO_{54}$ |
| 2004 $BP_{54}$ | 15.6 | 0.15 | 20060922 | 158.76834 | 121.07523 | 73.16646 | 2.65342 | 0.0373225 | 2.6939652 | 81 | 6 | 2000–2006 | 0.59 | M-v | 1 | MPC | 04289 | 2004 $BP_{54}$ |
| 2004 $BW_{54}$ | 16.4 | 0.15 | 20060922 | 140.12889 | 206.29446 | 46.87944 | 2.85949 | 0.1449462 | 2.4377948 | 55 | 7 | 1993–2006 | 0.48 | M-v | 1 | MPC | 87607 | 2004 $BW_{54}$ |
| 2004 $BH_{56}$ | 16.5 | 0.15 | 20060922 | 246.83688 | 339.16234 | 166.04137 | 4.22122 | 0.1823248 | 2.4283749 | 128 | 3 | 2003–2006 | 0.44 | M-v | 2 | MPC | 76386 | 2004 $BH_{56}$ |
| 2004 $BJ_{56}$ | 17.2 | 0.15 | 20060922 | 253.35224 | 339.41359 | 173.55486 | 1.99610 | 0.1283790 | 2.3514277 | 91 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 87607 | 2004 $BJ_{56}$ |
| 2004 $BL_{56}$ | 16.7 | 0.15 | 20060922 | 203.03661 | 298.38263 | 280.68117 | 1.47161 | 0.1596921 | 2.3520189 | 69 | 4 | 1998–2006 | 0.46 | M-v | 1 | MPC | 90189 | 2004 $BL_{56}$ |
| 2004 $BR_{56}$ | 15.4 | 0.15 | 20060922 | 145.63296 | 50.82002 | 144.94575 | 13.03850 | 0.0650070 | 2.9221530 | 60 | 3 | 2004–2006 | 0.60 | M-v | 2 | MPC | 03603 | 2004 $BR_{56}$ |
| 2004 $BS_{56}$ | 15.9 | 0.15 | 20060922 | 266.95819 | 110.97023 | 322.39734 | 11.08174 | 0.1720646 | 2.7058953 | 61 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 04289 | 2004 $BS_{56}$ |
| 2004 $BA_{57}$ | 15.1 | 0.15 | 20060922 | 108.57419 | 80.96205 | 138.72532 | 9.97934 | 0.1488327 | 3.0927388 | 64 | 3 | 2004–2006 | 0.59 | M-v | 3 | MPC | 04289 | 2004 $BA_{57}$ |
| 2004 $BB_{57}$ | 17.4 | 0.15 | 20060922 | 346.24122 | 67.36839 | 10.34300 | 4.62229 | 0.0977023 | 2.1835956 | 26 | 3 | 2001–2004 | 0.75 | M-v | 3 | MPC | 69644 | 2004 $BB_{57}$ |
| 2004 $BC_{57}$ | 15.8 | 0.15 | 20060922 | 138.72901 | 148.69882 | 109.70475 | 8.86965 | 0.1190237 | 2.4782136 | 45 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 86234 | 2004 $BC_{57}$ |
| 2004 $BQ_{57}$ | 15.1 | 0.15 | 20060922 | 217.84977 | 179.15107 | 272.57145 | 9.81545 | 0.0253322 | 2.9996988 | 37 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 04289 | 2004 $BQ_{57}$ |
| 2004 $BR_{57}$ | 16.0 | 0.15 | 20060922 | 43.31522 | 66.59824 | 251.96015 | 5.09518 | 0.0513928 | 2.5179298 | 81 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 77770 | 2004 $BR_{57}$ |
| 2004 $BX_{57}$ | 15.8 | 0.15 | 20060922 | 154.61643 | 80.14191 | 152.69558 | 9.91840 | 0.0815734 | 2.5663895 | 53 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 61803 | 2004 $BX_{57}$ |
| 2004 $BD_{58}$ | 16.4 | 0.15 | 20060922 | 129.92117 | 85.27214 | 165.79817 | 8.00176 | 0.0222789 | 2.4379210 | 51 | 3 | 2004–2006 | 0.56 | M-v | 3 | MPC | 86235 | 2004 $BD_{58}$ |
| 2004 $BN_{58}$ | 15.9 | 0.15 | 20060922 | 207.77560 | 337.21220 | 151.81856 | 8.80645 | 0.1710114 | 2.7722078 | 78 | 5 | 1995–2006 | 0.52 | M-v | 0 | MPC | 87608 | 2004 $BN_{58}$ |
| 2004 $BS_{59}$ | 17.3 | 0.15 | 20060922 | 23.97898 | 28.89347 | 316.57037 | 5.43051 | 0.1985388 | 2.2790089 | 35 | 3 | 1999–2006 | 0.38 | M-v | 3 | MPC | 86235 | 2004 $BS_{59}$ |
| 2004 $BA_{60}$ | 16.4 | 0.15 | 20060922 | 167.28739 | 296.62960 | 273.70343 | 5.05798 | 0.2353752 | 2.5757698 | 45 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 87608 | 2004 $BA_{60}$ |
| 2004 $BE_{60}$ | 16.8 | 0.15 | 20060922 | 189.50181 | 41.29180 | 159.20629 | 1.52646 | 0.1288049 | 2.3998850 | 46 | 6 | 1997–2006 | 0.43 | M-v | 1 | MPC | 66327 | 2004 $BE_{60}$ |
| 2004 $BJ_{60}$ | 16.1 | 0.15 | 20060922 | 303.60101 | 97.32696 | 297.31348 | 12.54296 | 0.0108696 | 2.6485227 | 37 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 76387 | 2004 $BJ_{60}$ |
| 2004 $BM_{60}$ | 15.9 | 0.15 | 20060922 | 6.58660 | 27.14676 | 297.21901 | 17.35269 | 0.1967092 | 2.6536199 | 55 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04289 | 2004 $BM_{60}$ |
| 2004 $BQ_{60}$ | 16.7 | 0.15 | 20060922 | 6.34560 | 217.55477 | 122.75934 | 16.01142 | 0.1310955 | 2.5390247 | 40 | 5 | 1996–2006 | 0.42 | M-v | 2 | MPC | 04289 | 2004 $BQ_{60}$ |
| 2004 $BW_{61}$ | 15.7 | 0.15 | 20060922 | 307.96656 | 287.56531 | 59.92941 | 2.29554 | 0.0674342 | 2.9867356 | 33 | 4 | 2000–2005 | 0.53 | M-v | 1 | MPC | 76388 | 2004 $BW_{61}$ |
| 2004 $BJ_{62}$ | 16.6 | 0.15 | 20060922 | 129.84070 | 164.56364 | 100.33913 | 7.36125 | 0.0894766 | 2.3281258 | 37 | 6 | 1997–2006 | 0.42 | M-v | 1 | MPC | 76388 | 2004 $BJ_{62}$ |
| 2004 $BS_{62}$ | 15.8 | 0.15 | 20060922 | 27.81074 | 197.25592 | 98.10501 | 5.41561 | 0.0813492 | 2.8137732 | 43 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 04289 | 2004 $BS_{62}$ |
| 2004 $BW_{62}$ | 16.6 | 0.15 | 20060922 | 171.49591 | 197.39489 | 15.97332 | 2.58730 | 0.1462939 | 2.4652886 | 54 | 3 | 1998–2006 | 0.35 | M-v | 3 | MPC | 62479 | 2004 $BW_{62}$ |
| 2004 $BC_{63}$ | 17.2 | 0.15 | 20060922 | 350.72802 | 281.66229 | 94.01971 | 2.46148 | 0.0874439 | 2.4096444 | 54 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 76389 | 2004 $BC_{63}$ |
| 2004 $BK_{63}$ | 17.3 | 0.15 | 20060922 | 204.05390 | 219.21993 | 326.87158 | 3.33873 | 0.1603604 | 2.4270898 | 26 | 5 | 1993–2006 | 0.39 | M-v | 3 | MPC | 86236 | 2004 $BK_{63}$ |
| 2004 $BR_{64}$ | 16.6 | 0.15 | 20060922 | 220.92423 | 51.03604 | 85.74312 | 2.53869 | 0.0644646 | 2.5624850 | 44 | 6 | 1998–2006 | 0.56 | M-v | 1 | MPC | 77770 | 2004 $BR_{64}$ |
| 2004 $BO_{65}$ | 16.5 | 0.15 | 20060922 | 71.64623 | 260.40344 | 2.13611 | 3.56669 | 0.0521806 | 2.7704675 | 30 | 5 | 2000–2006 | 0.40 | M-v | 0 | MPC | 04289 | 2004 $BO_{65}$ |
| 2004 $BZ_{65}$ | 17.5 | 0.15 | 20060922 | 271.77205 | 279.10727 | 152.56327 | 2.74990 | 0.1340740 | 2.5539038 | 23 | 4 | 1996–2004 | 0.34 | M-v | 3 | MPC | 69646 | 2004 $BZ_{65}$ |
| 2004 $BB_{66}$ | 16.1 | 0.15 | 20060922 | 313.10817 | 265.14561 | 99.12642 | 5.91297 | 0.2528831 | 2.6017119 | 27 | 4 | 1996–2004 | 0.57 | M-v | 1 | MPC | 95166 | 2004 $BB_{66}$ |
| 2004 $BD_{67}$ | 16.7 | 0.15 | 20060922 | 267.39390 | 12.39728 | 122.76811 | 8.11916 | 0.0451744 | 2.2700658 | 50 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 61806 | 2004 $BD_{67}$ |
| 2004 $BN_{67}$ | 17.1 | 0.15 | 20060922 | 213.16228 | 249.59560 | 294.85129 | 6.14993 | 0.0333569 | 2.2962562 | 38 | 5 | 1992–2006 | 0.52 | M-v | 1 | MPC | 04289 | 2004 $BN_{67}$ |
| 2004 $BF_{68}$ | 19.4 | 0.15 | 20060922 | 72.80999 | 2.40478 | 202.30018 | 4.59922 | 0.4535167 | 1.6268441 | 170 | 3 | 2004–2006 | 0.44 | M-v | 0 | MPC | 04289 | 2004 $BF_{68}$ |
| 2004 $BY_{68}$ | 15.9 | 0.15 | 20060922 | 323.00376 | 182.17366 | 255.64705 | 25.12933 | 0.1736743 | 2.2964303 | 39 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 61807 | 2004 $BY_{68}$ |
| 2004 $BH_{70}$ | 16.8 | 0.15 | 20060922 | 329.75573 | 300.28906 | 104.93285 | 5.61942 | 0.1400498 | 2.3580499 | 77 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 76390 | 2004 $BH_{70}$ |
| 2004 $BT_{70}$ | 17.0 | 0.15 | 20060922 | 262.20278 | 149.44225 | 347.01298 | 2.33745 | 0.1050216 | 2.3454284 | 60 | 3 | 1995–2006 | 0.39 | M-v | 3 | MPC | 61808 | 2004 $BT_{70}$ |
| 2004 $BB_{71}$ | 16.9 | 0.15 | 20060922 | 296.57516 | 139.99034 | 331.45961 | 3.87526 | 0.0794231 | 2.2851657 | 63 | 3 | 2002–2006 | 0.55 | M-v | 4 | MPC | 61809 | 2004 $BB_{71}$ |
| 2004 $BC_{71}$ | 16.0 | 0.15 | 20060922 | 54.30680 | 274.10699 | 95.04268 | 3.38312 | 0.1713376 | 2.1394217 | 61 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 87608 | 2004 $BC_{71}$ |
| 2004 $BG_{71}$ | 16.6 | 0.15 | 20060922 | 343.88185 | 47.97100 | 350.86498 | 8.55339 | 0.1342168 | 2.3203757 | 85 | 3 | 1999–2006 | 0.43 | M-v | 2 | MPC | 04289 | 2004 $BG_{71}$ |
| 2004 $BZ_{71}$ | 16.1 | 0.15 | 20060922 | 210.58051 | 351.27663 | 147.70406 | 12.43698 | 0.1188988 | 2.6557270 | 56 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 03604 | 2004 $BZ_{71}$ |
| 2004 $BG_{72}$ | 16.7 | 0.15 | 20060922 | 190.29232 | 299.04267 | 259.00778 | 4.95286 | 0.0576109 | 2.4322448 | 58 | 3 | 2002–2006 | 0.38 | M-v | 3 | MPC | 86238 | 2004 $BG_{72}$ |
| 2004 $BL_{72}$ | 16.4 | 0.15 | 20060922 | 267.03659 | 237.08406 | 243.01548 | 3.50163 | 0.1503702 | 2.3908466 | 54 | 4 | 1999–2006 | 0.59 | M-v | 2 | MPC | 62480 | 2004 $BL_{72}$ |
| 2004 $BZ_{72}$ | 15.8 | 0.15 | 20060922 | 202.54483 | 270.90812 | 290.87035 | 9.68506 | 0.1994179 | 2.4055986 | 94 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 86238 | 2004 $BZ_{72}$ |
| 2004 $BN_{73}$ | 15.6 | 0.15 | 20060922 | 96.21145 | 331.79689 | 250.34407 | 1.79235 | 0.0209969 | 3.0113581 | 47 | 6 | 1991–2006 | 0.46 | M-v | 0 | MPC | 04290 | 2004 $BN_{73}$ |
| 2004 $BR_{73}$ | 16.3 | 0.15 | 20060922 | 194.50702 | 353.52601 | 159.69834 | 3.04446 | 0.1149415 | 2.7486869 | 33 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 89504 | 2004 $BR_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $BT_{73}$ | 16.6 | 0.15 | 20060922 | 264.72856 | 269.84407 | 207.33944 | 3.16731 | 0.0229685 | 2.4039851 | 102 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 62480 | 2004 $BT_{73}$ |
| 2004 $BA_{74}$ | 17.0 | 0.15 | 20060922 | 208.45904 | 132.71702 | 69.55160 | 0.20254 | 0.1582106 | 2.3846520 | 53 | 6 | 1997–2006 | 0.51 | M-v | 1 | MPC | 87608 | 2004 $BA_{74}$ |
| 2004 $BC_{74}$ | 15.6 | 0.15 | 20060922 | 39.56893 | 20.05056 | 310.83337 | 14.32313 | 0.0987806 | 2.5461666 | 79 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 04290 | 2004 $BC_{74}$ |
| 2004 $BD_{75}$ | 17.3 | 0.15 | 20060922 | 245.36543 | 52.04206 | 104.81722 | 3.04571 | 0.1526658 | 2.3459518 | 41 | 5 | 1995–2006 | 0.43 | M-v | 1 | MPC | 89504 | 2004 $BD_{75}$ |
| 2004 $BE_{75}$ | 17.3 | 0.15 | 20060922 | 296.79398 | 62.36686 | 22.31247 | 1.75041 | 0.1566827 | 2.3659985 | 49 | 5 | 1995–2006 | 0.46 | M-v | 1 | MPC | 86239 | 2004 $BE_{75}$ |
| 2004 $BH_{76}$ | 17.2 | 0.15 | 20060922 | 235.60421 | 38.54677 | 139.19033 | 3.07401 | 0.1595576 | 2.3060504 | 81 | 6 | 1996–2006 | 0.52 | M-v | 1 | MPC | 87608 | 2004 $BH_{76}$ |
| 2004 $BJ_{76}$ | 16.6 | 0.15 | 20060922 | 220.99244 | 55.29598 | 139.40973 | 2.68800 | 0.2036830 | 2.3361145 | 63 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 87608 | 2004 $BJ_{76}$ |
| 2004 $BO_{76}$ | 15.1 | 0.15 | 20060922 | 157.31481 | 315.01424 | 250.56081 | 13.10489 | 0.0497355 | 2.6260135 | 48 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 86239 | 2004 $BO_{76}$ |
| 2004 $BE_{77}$ | 16.4 | 0.15 | 20060922 | 2.73536 | 274.31532 | 61.99022 | 2.65402 | 0.1004391 | 2.6460696 | 46 | 5 | 1998–2006 | 0.42 | M-v | 1 | MPC | 04290 | 2004 $BE_{77}$ |
| 2004 $BF_{77}$ | 17.3 | 0.15 | 20060922 | 67.19204 | 292.47327 | 53.88020 | 2.16066 | 0.1845948 | 2.1384387 | 44 | 5 | 1998–2006 | 0.40 | M-v | 2 | MPC | 89505 | 2004 $BF_{77}$ |
| 2004 $BH_{77}$ | 17.5 | 0.15 | 20060922 | 318.05367 | 85.19430 | 329.47733 | 2.20517 | 0.1679845 | 2.3468997 | 44 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 86239 | 2004 $BH_{77}$ |
| 2004 $BS_{77}$ | 16.6 | 0.15 | 20060922 | 234.53817 | 20.68848 | 83.52108 | 3.06290 | 0.0318870 | 2.7104051 | 45 | 6 | 1996–2006 | 0.41 | M-v | 0 | MPC | 04290 | 2004 $BS_{77}$ |
| 2004 $BY_{77}$ | 16.8 | 0.15 | 20060922 | 156.34073 | 272.13269 | 328.66474 | 6.83408 | 0.0719960 | 2.3804425 | 26 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 86239 | 2004 $BY_{77}$ |
| 2004 $BE_{78}$ | 16.3 | 0.15 | 20060922 | 291.61310 | 281.98716 | 103.50198 | 3.17402 | 0.0765782 | 2.8747816 | 28 | 6 | 1995–2006 | 0.45 | M-v | 0 | MPC | 03604 | 2004 $BE_{78}$ |
| 2004 $BB_{79}$ | 15.8 | 0.15 | 20060922 | 63.38215 | 298.79867 | 319.66467 | 14.02196 | 0.1705094 | 3.0941952 | 29 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 03604 | 2004 $BB_{79}$ |
| 2004 $BE_{79}$ | 16.5 | 0.15 | 20060922 | 106.85528 | 231.44841 | 4.17813 | 3.55893 | 0.0419278 | 2.7689833 | 34 | 5 | 1995–2006 | 0.51 | M-v | 0 | MPC | 04290 | 2004 $BE_{79}$ |
| 2004 $BT_{79}$ | 16.0 | 0.15 | 20060922 | 187.29943 | 5.07060 | 177.97221 | 6.69157 | 0.2219606 | 2.6810959 | 101 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87608 | 2004 $BT_{79}$ |
| 2004 $BD_{80}$ | 15.6 | 0.15 | 20060922 | 138.78989 | 17.78294 | 155.57519 | 1.72943 | 0.1039582 | 3.1029367 | 51 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 04290 | 2004 $BD_{80}$ |
| 2004 $BF_{80}$ | 16.9 | 0.15 | 20060922 | 350.56645 | 244.76576 | 140.14131 | 5.95077 | 0.0220568 | 2.4337973 | 57 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87608 | 2004 $BF_{80}$ |
| 2004 $BL_{80}$ | 16.0 | 0.15 | 20060922 | 40.98628 | 335.11340 | 328.05900 | 1.48442 | 0.0527970 | 2.7071816 | 45 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04290 | 2004 $BL_{80}$ |
| 2004 $BN_{80}$ | 16.8 | 0.15 | 20060922 | 202.11816 | 290.95788 | 284.79959 | 2.85691 | 0.1332161 | 2.3026905 | 50 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87608 | 2004 $BN_{80}$ |
| 2004 $BO_{80}$ | 15.6 | 0.15 | 20060922 | 13.04209 | 184.46847 | 143.85090 | 3.31212 | 0.0872120 | 2.7173504 | 89 | 6 | 1997–2006 | 0.54 | M-v | 1 | MPC | 04290 | 2004 $BO_{80}$ |
| 2004 $BL_{81}$ | 15.5 | 0.15 | 20060922 | 54.73811 | 121.28664 | 131.49791 | 16.55331 | 0.0627409 | 3.1363287 | 31 | 5 | 1993–2006 | 0.40 | M-v | 1 | MPC | 03604 | 2004 $BL_{81}$ |
| 2004 $BM_{81}$ | 17.1 | 0.15 | 20060922 | 296.49682 | 144.03096 | 329.59894 | 7.69822 | 0.1002923 | 2.2244501 | 51 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 87608 | 2004 $BM_{81}$ |
| 2004 $BS_{81}$ | 15.9 | 0.15 | 20060922 | 321.49817 | 284.82261 | 81.63043 | 7.20099 | 0.0619965 | 2.7424269 | 32 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 04290 | 2004 $BS_{81}$ |
| 2004 $BA_{83}$ | 15.6 | 0.15 | 20060922 | 351.07409 | 227.53360 | 119.57959 | 14.51475 | 0.2056150 | 2.6341902 | 91 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04290 | 2004 $BA_{83}$ |
| 2004 $BR_{83}$ | 16.5 | 0.15 | 20060922 | 257.07251 | 321.70672 | 172.33928 | 6.64971 | 0.0495379 | 2.3850008 | 73 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 87608 | 2004 $BR_{83}$ |
| 2004 $BW_{83}$ | 15.8 | 0.15 | 20060922 | 199.22964 | 252.27214 | 313.98693 | 14.14392 | 0.2319399 | 2.5627022 | 91 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87608 | 2004 $BW_{83}$ |
| 2004 $BX_{83}$ | 15.6 | 0.15 | 20060922 | 260.16676 | 156.12244 | 319.53526 | 13.37771 | 0.1380298 | 2.6032503 | 61 | 4 | 1993–2006 | 0.61 | M-v | 1 | MPC | 04290 | 2004 $BX_{83}$ |
| 2004 $BB_{84}$ | 16.3 | 0.15 | 20060922 | 12.59448 | 40.82067 | 287.18894 | 2.95495 | 0.0377310 | 2.7144333 | 33 | 5 | 1993–2006 | 0.31 | M-v | 0 | MPC | 04290 | 2004 $BB_{84}$ |
| 2004 $BD_{84}$ | 16.9 | 0.15 | 20060922 | 257.46921 | 0.79701 | 125.42773 | 3.68878 | 0.1301573 | 2.4297984 | 74 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 61822 | 2004 $BD_{84}$ |
| 2004 $BS_{84}$ | 16.0 | 0.15 | 20060922 | 193.04775 | 345.10062 | 200.30061 | 13.00238 | 0.1585239 | 2.5564889 | 72 | 4 | 2000–2006 | 0.45 | M-v | 2 | MPC | 00703 | 2004 $BS_{84}$ |
| 2004 $BY_{84}$ | 17.4 | 0.15 | 20060922 | 227.38971 | 51.88637 | 131.91988 | 2.97053 | 0.1509701 | 2.3473839 | 46 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 86241 | 2004 $BY_{84}$ |
| 2004 $BA_{86}$ | 16.0 | 0.15 | 20060922 | 2.39371 | 226.45377 | 152.77151 | 23.71687 | 0.2255515 | 2.2929582 | 58 | 3 | 1999–2006 | 0.60 | M-v | 3 | MPC | 69651 | 2004 $BA_{86}$ |
| 2004 $BA_{87}$ | 16.6 | 0.15 | 20060922 | 303.02775 | 356.37750 | 130.93395 | 7.75440 | 0.1824187 | 2.2022056 | 68 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 87609 | 2004 $BA_{87}$ |
| 2004 $BE_{87}$ | 15.5 | 0.15 | 20060922 | 178.93654 | 311.66402 | 229.44148 | 8.68155 | 0.0333246 | 2.6721525 | 36 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 87609 | 2004 $BE_{87}$ |
| 2004 $BR_{87}$ | 17.8 | 0.15 | 20060922 | 258.62363 | 325.02655 | 207.58415 | 1.73075 | 0.1634242 | 2.2399790 | 40 | 4 | 1999–2006 | 0.42 | M-v | 1 | MPC | 76393 | 2004 $BR_{87}$ |
| 2004 $BU_{87}$ | 16.4 | 0.15 | 20060922 | 278.64638 | 16.50605 | 105.31933 | 4.95252 | 0.1876407 | 2.3602583 | 57 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 65548 | 2004 $BU_{87}$ |
| 2004 $BV_{87}$ | 15.7 | 0.15 | 20060922 | 184.00845 | 220.72211 | 339.04628 | 25.84268 | 0.2894093 | 2.7321534 | 78 | 1 | 153 days | 0.54 | M-v | 3 | MPC | 87609 | 2004 $BV_{87}$ |
| 2004 $BX_{87}$ | 16.2 | 0.15 | 20060922 | 346.88817 | 161.52566 | 242.37918 | 5.41926 | 0.1635260 | 2.2393092 | 109 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 04290 | 2004 $BX_{87}$ |
| 2004 $BZ_{87}$ | 16.4 | 0.15 | 20060922 | 268.81671 | 270.48809 | 170.25367 | 6.13634 | 0.1650570 | 2.5373917 | 43 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 77771 | 2004 $BZ_{87}$ |
| 2004 $BF_{88}$ | 17.3 | 0.15 | 20060922 | 281.75599 | 219.67113 | 240.36297 | 3.38039 | 0.1807580 | 2.3631834 | 43 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 61827 | 2004 $BF_{88}$ |
| 2004 $BH_{88}$ | 16.5 | 0.15 | 20060922 | 282.90542 | 198.24853 | 247.96091 | 5.53044 | 0.0982269 | 2.4542709 | 53 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 04290 | 2004 $BH_{88}$ |
| 2004 $BT_{88}$ | 16.3 | 0.15 | 20060922 | 188.21733 | 322.74270 | 264.12745 | 6.24096 | 0.1701904 | 2.3646018 | 37 | 3 | 2004–2006 | 0.38 | M-v | 2 | MPC | 86241 | 2004 $BT_{88}$ |
| 2004 $BV_{88}$ | 16.9 | 0.15 | 20060922 | 284.56421 | 256.70234 | 192.97297 | 4.69918 | 0.2060156 | 2.4034945 | 37 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 03605 | 2004 $BV_{88}$ |
| 2004 $BH_{89}$ | 14.8 | 0.15 | 20060922 | 105.39915 | 304.52038 | 279.79235 | 7.19026 | 0.1288924 | 3.0988884 | 49 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 04290 | 2004 $BH_{89}$ |
| 2004 $BK_{89}$ | 15.1 | 0.15 | 20060922 | 129.20857 | 40.17816 | 160.99696 | 15.06204 | 0.2257367 | 3.1693556 | 68 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04290 | 2004 $BK_{89}$ |
| 2004 $BP_{89}$ | 15.3 | 0.15 | 20060922 | 206.84009 | 208.54854 | 305.77071 | 15.07935 | 0.0598152 | 2.6862978 | 50 | 4 | 2001–2006 | 0.70 | M-v | 2 | MPC | 04290 | 2004 $BP_{89}$ |
| 2004 $BQ_{89}$ | 15.2 | 0.15 | 20060922 | 231.02954 | 214.44772 | 265.50936 | 6.61339 | 0.0846921 | 2.7286934 | 58 | 5 | 1998–2006 | 0.67 | M-v | 1 | MPC | 61829 | 2004 $BQ_{89}$ |
| 2004 $BX_{89}$ | 17.1 | 0.15 | 20060922 | 348.09826 | 173.87762 | 247.56597 | 4.20133 | 0.1070489 | 2.2152620 | 51 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 95168 | 2004 $BX_{89}$ |
| 2004 $BA_{90}$ | 15.3 | 0.15 | 20060922 | 279.32480 | 136.86469 | 302.19206 | 13.46128 | 0.0949838 | 2.6454352 | 51 | 3 | 2002–2006 | 0.53 | M-v | 1 | MPC | 04290 | 2004 $BA_{90}$ |
| 2004 $BK_{90}$ | 15.5 | 0.15 | 20060922 | 203.09130 | 353.61287 | 143.49125 | 7.97374 | 0.1470184 | 2.7822511 | 72 | 4 | 1998–2006 | 0.58 | M-v | 1 | MPC | 04290 | 2004 $BK_{90}$ |
| 2004 $BL_{90}$ | 14.9 | 0.15 | 20060922 | 111.76201 | 264.96823 | 296.85005 | 6.34602 | 0.1051008 | 3.1899872 | 65 | 6 | 1998–2006 | 0.43 | M-v | 0 | MPC | 04290 | 2004 $BL_{90}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $BT_{90}$ | 16.3 | 0.15 | 20060922 | 172.26894 | 263.71775 | 284.94750 | 2.19567 | 0.1296748 | 2.7397722 | 45 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 74308 | 2004 $BT_{90}$ |
| 2004 $BV_{90}$ | 15.2 | 0.15 | 20060922 | 156.66072 | 212.30835 | 310.96780 | 4.30862 | 0.1102967 | 3.1124336 | 57 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 03605 | 2004 $BV_{90}$ |
| 2004 $BG_{91}$ | 17.0 | 0.15 | 20060922 | 207.35593 | 295.66055 | 299.78133 | 4.32838 | 0.1008357 | 2.1946113 | 48 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 90189 | 2004 $BG_{91}$ |
| 2004 $BH_{91}$ | 16.2 | 0.15 | 20060922 | 119.30980 | 302.02877 | 312.82101 | 9.33619 | 0.1316968 | 2.6461959 | 49 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87609 | 2004 $BH_{91}$ |
| 2004 $BL_{91}$ | 17.0 | 0.15 | 20060922 | 253.69886 | 23.35898 | 152.98397 | 4.96847 | 0.1320470 | 2.2300634 | 81 | 5 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90189 | 2004 $BL_{91}$ |
| 2004 $BP_{91}$ | 14.7 | 0.15 | 20060922 | 143.33211 | 25.14549 | 150.84373 | 22.15709 | 0.0345621 | 3.1326905 | 80 | 5 | 1994–2006 | 0.54 | M-v | 1 | MPC | 04291 | 2004 $BP_{91}$ |
| 2004 $BR_{91}$ | 15.8 | 0.15 | 20060922 | 78.02501 | 5.82463 | 260.43635 | 4.03370 | 0.0188978 | 2.7228872 | 62 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 04291 | 2004 $BR_{91}$ |
| 2004 $BW_{91}$ | 17.4 | 0.15 | 20060922 | 244.84768 | 290.39403 | 231.45520 | 4.27720 | 0.1366255 | 2.2958523 | 49 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 86242 | 2004 $BW_{91}$ |
| 2004 $BX_{91}$ | 15.8 | 0.15 | 20060922 | 189.11819 | 259.28761 | 208.62034 | 4.28797 | 0.1204588 | 3.1202563 | 27 | 3 | 2002–2005 | 0.50 | M-v | 3 | MPC | 86242 | 2004 $BX_{91}$ |
| 2004 $BF_{92}$ | 16.4 | 0.15 | 20060922 | 325.68187 | 122.56110 | 306.25264 | 5.62342 | 0.0867223 | 2.3451893 | 72 | 3 | 2002–2006 | 0.50 | M-v | 1 | MPC | 87609 | 2004 $BF_{92}$ |
| 2004 $BL_{92}$ | 16.1 | 0.15 | 20060922 | 169.98927 | 299.27128 | 261.47553 | 11.97102 | 0.1044264 | 2.5623812 | 26 | 3 | 2000–2006 | 0.36 | M-v | 2 | MPC | 95169 | 2004 $BL_{92}$ |
| 2004 $BO_{92}$ | 15.2 | 0.15 | 20060922 | 159.63173 | 301.75961 | 271.52311 | 11.68385 | 0.1532127 | 2.6225151 | 60 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 77772 | 2004 $BO_{92}$ |
| 2004 $BY_{92}$ | 15.5 | 0.15 | 20060922 | 162.41832 | 336.73684 | 185.57903 | 10.47318 | 0.1380209 | 2.9767749 | 56 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 87609 | 2004 $BY_{92}$ |
| 2004 $BB_{93}$ | 16.1 | 0.15 | 20060922 | 211.38524 | 314.22644 | 180.39982 | 13.50733 | 0.0999034 | 2.7175201 | 43 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 77772 | 2004 $BB_{93}$ |
| 2004 $BF_{93}$ | 16.0 | 0.15 | 20060922 | 347.25215 | 186.64657 | 189.78274 | 12.23723 | 0.2610822 | 2.3986963 | 113 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 04291 | 2004 $BF_{93}$ |
| 2004 $BO_{93}$ | 14.6 | 0.15 | 20060922 | 261.92894 | 185.80258 | 267.98509 | 21.03154 | 0.0403145 | 2.6514374 | 56 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 66328 | 2004 $BO_{93}$ |
| 2004 $BX_{93}$ | 16.1 | 0.15 | 20060922 | 184.11043 | 328.04314 | 229.50147 | 5.41322 | 0.0807003 | 2.5358748 | 67 | 4 | 2000–2006 | 0.41 | M-v | 2 | MPC | 61838 | 2004 $BX_{93}$ |
| 2004 $BU_{94}$ | 15.7 | 0.15 | 20060922 | 184.23672 | 298.84495 | 248.14954 | 10.31985 | 0.1582083 | 2.6810785 | 53 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87609 | 2004 $BU_{94}$ |
| 2004 $BJ_{95}$ | 15.1 | 0.15 | 20060922 | 205.18219 | 236.11554 | 286.50068 | 13.28645 | 0.1588481 | 2.7136585 | 43 | 4 | 1998–2006 | 0.67 | M-v | 3 | MPC | 61840 | 2004 $BJ_{95}$ |
| 2004 $BW_{95}$ | 16.8 | 0.15 | 20060922 | 283.08825 | 105.28858 | 9.14468 | 22.81390 | 0.2366856 | 2.3373791 | 77 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 87609 | 2004 $BW_{95}$ |
| 2004 $BJ_{96}$ | 16.7 | 0.15 | 20060922 | 295.56951 | 180.83745 | 223.57140 | 1.28831 | 0.2410149 | 2.5243240 | 37 | 3 | 1995–2005 | 0.58 | M-v | 4 | MPC | 89505 | 2004 $BJ_{96}$ |
| 2004 $BL_{96}$ | 17.0 | 0.15 | 20060922 | 357.55547 | 81.20298 | 299.87851 | 4.56286 | 0.1981734 | 2.3098223 | 66 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 04291 | 2004 $BL_{96}$ |
| 2004 $BN_{96}$ | 17.2 | 0.15 | 20060922 | 245.08956 | 346.28343 | 167.98046 | 2.71511 | 0.1003807 | 2.3411273 | 61 | 5 | 1999–2006 | 0.35 | M-v | 0 | MPC | 69654 | 2004 $BN_{96}$ |
| 2004 $BS_{96}$ | 17.1 | 0.15 | 20060922 | 301.86530 | 216.58285 | 219.03862 | 0.70091 | 0.1658882 | 2.3828144 | 75 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04291 | 2004 $BS_{96}$ |
| 2004 $BT_{96}$ | 16.9 | 0.15 | 20060922 | 216.81331 | 286.42168 | 226.67997 | 0.82274 | 0.0221801 | 2.5441700 | 56 | 5 | 2000–2006 | 0.32 | M-v | 1 | MPC | 87609 | 2004 $BT_{96}$ |
| 2004 $BB_{97}$ | 16.5 | 0.15 | 20060922 | 179.45760 | 256.06650 | 310.31244 | 3.58843 | 0.0163185 | 2.4338884 | 36 | 4 | 1993–2006 | 0.52 | M-v | 3 | MPC | 61843 | 2004 $BB_{97}$ |
| 2004 $BG_{97}$ | 16.2 | 0.15 | 20060922 | 336.03412 | 267.91033 | 157.00302 | 5.87769 | 0.0776126 | 2.2891175 | 73 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 61844 | 2004 $BG_{97}$ |
| 2004 $BQ_{97}$ | 17.3 | 0.15 | 20060922 | 295.89416 | 306.79956 | 139.11251 | 6.72059 | 0.1359882 | 2.3569486 | 36 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 89506 | 2004 $BQ_{97}$ |
| 2004 $BV_{97}$ | 17.1 | 0.15 | 20060922 | 334.49763 | 273.52297 | 159.60594 | 7.06971 | 0.0833788 | 2.3905581 | 39 | 4 | 1997–2006 | 0.30 | M-v | 1 | MPC | 65550 | 2004 $BV_{97}$ |
| 2004 $BM_{98}$ | 15.5 | 0.15 | 20060922 | 314.58366 | 208.58796 | 167.35618 | 10.78053 | 0.0807198 | 3.1601356 | 41 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 04291 | 2004 $BM_{98}$ |
| 2004 $BF_{99}$ | 16.7 | 0.15 | 20060922 | 146.14623 | 185.61657 | 124.90200 | 7.06209 | 0.1615662 | 2.2385175 | 93 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 90189 | 2004 $BF_{99}$ |
| 2004 $BO_{99}$ | 17.0 | 0.15 | 20060922 | 327.87523 | 344.54761 | 108.45175 | 4.70836 | 0.1430263 | 2.2789638 | 63 | 3 | 2004–2006 | 0.44 | M-v | 3 | MPC | 87609 | 2004 $BO_{99}$ |
| 2004 $BV_{99}$ | 17.4 | 0.15 | 20060922 | 239.26248 | 99.65568 | 91.46662 | 3.60626 | 0.1842607 | 2.3608947 | 73 | 3 | 1995–2006 | 0.41 | M-v | 2 | MPC | 61847 | 2004 $BV_{99}$ |
| 2004 $BX_{99}$ | 16.7 | 0.15 | 20060922 | 144.94432 | 236.14820 | 0.89064 | 14.84708 | 0.0432262 | 2.6983928 | 32 | 3 | 2003–2006 | 0.28 | M-v | 2 | MPC | 89506 | 2004 $BX_{99}$ |
| 2004 $BK_{101}$ | 17.7 | 0.15 | 20060922 | 214.31011 | 74.17689 | 131.97313 | 2.45704 | 0.0949933 | 2.2514361 | 36 | 6 | 1994–2006 | 0.41 | M-v | 1 | MPC | 87610 | 2004 $BK_{101}$ |
| 2004 $BV_{101}$ | 16.2 | 0.15 | 20060922 | 164.36571 | 116.57222 | 137.87711 | 5.48642 | 0.1972079 | 2.3879472 | 69 | 3 | 2004–2006 | 0.52 | M-v | 3 | MPC | 86245 | 2004 $BV_{101}$ |
| 2004 $BW_{101}$ | 16.0 | 0.15 | 20060922 | 170.64083 | 315.24174 | 252.44975 | 2.92476 | 0.1231625 | 2.6103681 | 61 | 6 | 1999–2006 | 0.51 | M-v | 1 | MPC | 77772 | 2004 $BW_{101}$ |
| 2004 $BL_{102}$ | 16.6 | 0.15 | 20060922 | 280.55564 | 199.48821 | 300.80114 | 2.95625 | 0.1287151 | 2.3248492 | 101 | 3 | 2003–2006 | 0.44 | M-v | 2 | MPC | 86245 | 2004 $BL_{102}$ |
| 2004 $BX_{102}$ | 16.0 | 0.15 | 20060922 | 305.66238 | 85.18692 | 354.58187 | 19.36868 | 0.4133498 | 2.2978164 | 113 | 2 | 2003–2006 | 0.45 | M-v | 2 | MPC | 03605 | 2004 $BX_{102}$ |
| 2004 $BY_{102}$ | 15.7 | 0.15 | 20060922 | 297.30473 | 42.29177 | 72.99382 | 24.91280 | 0.3473759 | 2.3250424 | 111 | 3 | 1999–2006 | 0.50 | M-v | 1 | MPC | 66329 | 2004 $BY_{102}$ |
| 2004 $BB_{103}$ | 17.2 | 0.15 | 20060922 | 22.41602 | 71.50639 | 271.19405 | 55.88567 | 0.6214498 | 1.9073845 | 58 | 3 | 2004–2006 | 0.56 | M-v | 2 | MPC | 00704 | 2004 $BB_{103}$ |
| 2004 $BD_{104}$ | 16.2 | 0.15 | 20060922 | 237.64139 | 53.68846 | 106.69555 | 6.57462 | 0.1347934 | 2.4509088 | 71 | 5 | 1991–2006 | 0.54 | M-v | 1 | MPC | 87610 | 2004 $BD_{104}$ |
| 2004 $BM_{104}$ | 16.7 | 0.15 | 20060922 | 261.92409 | 284.47615 | 163.99290 | 5.50175 | 0.1531511 | 2.5391986 | 34 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 86246 | 2004 $BM_{104}$ |
| 2004 $BS_{104}$ | 15.6 | 0.15 | 20060922 | 7.73376 | 67.62955 | 287.06050 | 14.21845 | 0.0269882 | 2.5513203 | 40 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 61851 | 2004 $BS_{104}$ |
| 2004 $BX_{104}$ | 17.3 | 0.15 | 20060922 | 241.43300 | 0.61156 | 144.00794 | 2.76372 | 0.1493770 | 2.3926048 | 50 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 61851 | 2004 $BX_{104}$ |
| 2004 $BA_{105}$ | 17.1 | 0.15 | 20060922 | 232.74111 | 18.54119 | 151.41571 | 6.54673 | 0.1731204 | 2.3625690 | 53 | 3 | 2004–2006 | 0.46 | M-v | 2 | MPC | 86246 | 2004 $BA_{105}$ |
| 2004 $BE_{105}$ | 16.7 | 0.15 | 20060922 | 204.27968 | 298.47574 | 250.50447 | 1.42768 | 0.1244573 | 2.4336387 | 75 | 5 | 1998–2006 | 0.40 | M-v | 0 | MPC | 90189 | 2004 $BE_{105}$ |
| 2004 $BG_{105}$ | 16.3 | 0.15 | 20060922 | 252.45134 | 194.21414 | 302.19834 | 5.54892 | 0.0595399 | 2.4066047 | 47 | 3 | 2002–2006 | 0.64 | M-v | 3 | MPC | 69657 | 2004 $BG_{105}$ |
| 2004 $BK_{105}$ | 17.3 | 0.15 | 20060922 | 296.61468 | 323.84541 | 128.46060 | 2.74607 | 0.1786212 | 2.3369526 | 69 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 61851 | 2004 $BK_{105}$ |
| 2004 $BM_{105}$ | 14.9 | 0.15 | 20060922 | 308.54295 | 230.60556 | 139.67266 | 11.80896 | 0.0263227 | 2.9942577 | 50 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 61852 | 2004 $BM_{105}$ |
| 2004 $BA_{106}$ | 16.4 | 0.15 | 20060922 | 174.37060 | 152.90964 | 67.11877 | 4.24751 | 0.1476278 | 2.4418108 | 37 | 5 | 1994–2006 | 0.45 | M-v | 1 | MPC | 95169 | 2004 $BA_{106}$ |
| 2004 $BF_{106}$ | 15.1 | 0.15 | 20060922 | 188.70399 | 182.87190 | 338.30846 | 6.87249 | 0.2311493 | 2.7567114 | 99 | 4 | 1998–2006 | 0.45 | M-v | 1 | MPC | 03606 | 2004 $BF_{106}$ |
| 2004 $BJ_{106}$ | 16.8 | 0.15 | 20060922 | 210.70301 | 87.46181 | 102.82757 | 5.58310 | 0.1689065 | 2.4132461 | 49 | 5 | 1997–2006 | 0.40 | M-v | 1 | MPC | 04291 | 2004 $BJ_{106}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $BO_{106}$ | 16.6 | 0.15 | 20060922 | 311.35593 | 153.61070 | 280.52192 | 5.56386 | 0.0765331 | 2.3556885 | 48 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 61853 | 2004 $BO_{106}$ |
| 2004 $BT_{106}$ | 16.4 | 0.15 | 20060922 | 281.16485 | 100.05762 | 327.34216 | 12.37500 | 0.1667526 | 2.5845296 | 54 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 03606 | 2004 $BT_{106}$ |
| 2004 $BY_{106}$ | 16.3 | 0.15 | 20060922 | 185.54574 | 114.99953 | 95.23682 | 4.64123 | 0.0870785 | 2.3620734 | 46 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 65552 | 2004 $BY_{106}$ |
| 2004 $BZ_{106}$ | 16.0 | 0.15 | 20060922 | 43.40275 | 182.28955 | 102.84705 | 5.49772 | 0.0337968 | 2.7974413 | 39 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 04291 | 2004 $BZ_{106}$ |
| 2004 $BB_{107}$ | 16.6 | 0.15 | 20060922 | 189.79016 | 186.22478 | 16.05200 | 1.96411 | 0.1089733 | 2.4175644 | 64 | 3 | 1997–2006 | 0.38 | M-v | 3 | MPC | 87610 | 2004 $BB_{107}$ |
| 2004 $BN_{107}$ | 16.8 | 0.15 | 20060922 | 229.65921 | 140.87043 | 25.38678 | 5.31570 | 0.1383873 | 2.4216044 | 59 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 74308 | 2004 $BN_{107}$ |
| 2004 $BQ_{107}$ | 16.6 | 0.15 | 20060922 | 201.19532 | 143.01289 | 54.03045 | 6.82204 | 0.0594661 | 2.4035623 | 66 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 87610 | 2004 $BQ_{107}$ |
| 2004 $BR_{107}$ | 16.1 | 0.15 | 20060922 | 167.22686 | 198.95203 | 350.58414 | 12.84912 | 0.1298835 | 2.7491132 | 33 | 2 | 2004–2006 | 0.40 | M-v | 3 | MPC | 03606 | 2004 $BR_{107}$ |
| 2004 $BV_{107}$ | 15.5 | 0.15 | 20060922 | 281.92386 | 104.30397 | 325.85793 | 27.99519 | 0.1002221 | 2.5949341 | 63 | 3 | 2002–2006 | 0.63 | M-v | 1 | MPC | 04291 | 2004 $BV_{107}$ |
| 2004 $BW_{107}$ | 15.4 | 0.15 | 20060922 | 82.55668 | 155.11498 | 124.04109 | 29.04363 | 0.0607121 | 2.6596866 | 27 | 3 | 2004–2006 | 0.61 | M-v | 3 | MPC | 89506 | 2004 $BW_{107}$ |
| 2004 $BD_{108}$ | 16.3 | 0.15 | 20060922 | 216.08926 | 99.24738 | 60.09971 | 3.60802 | 0.0866404 | 2.5360214 | 53 | 6 | 1992–2006 | 0.57 | M-v | 2 | MPC | 69658 | 2004 $BD_{108}$ |
| 2004 $BM_{108}$ | 16.6 | 0.15 | 20060922 | 271.49682 | 60.88811 | 92.17544 | 6.69613 | 0.0654554 | 2.2330159 | 31 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 61856 | 2004 $BM_{108}$ |
| 2004 $BS_{108}$ | 16.8 | 0.15 | 20060922 | 234.67609 | 165.65227 | 20.44020 | 5.94956 | 0.0980023 | 2.2991201 | 53 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 87610 | 2004 $BS_{108}$ |
| 2004 $BT_{108}$ | 17.2 | 0.15 | 20060922 | 264.43174 | 106.39318 | 34.03200 | 5.20001 | 0.1667662 | 2.3457021 | 71 | 3 | 1995–2006 | 0.38 | M-v | 3 | MPC | 61857 | 2004 $BT_{108}$ |
| 2004 $BX_{108}$ | 16.6 | 0.15 | 20060922 | 225.56602 | 166.65390 | 39.56995 | 6.20259 | 0.1551920 | 2.2759798 | 26 | 3 | 2001–2006 | 0.51 | M-v | 4 | MPC | 61857 | 2004 $BX_{108}$ |
| 2004 $BA_{109}$ | 16.1 | 0.15 | 20060922 | 146.21864 | 191.94728 | 69.75501 | 8.23190 | 0.0838893 | 2.3822691 | 55 | 5 | 2001–2006 | 0.39 | M-v | 1 | MPC | 87610 | 2004 $BA_{109}$ |
| 2004 $BC_{109}$ | 16.7 | 0.15 | 20060922 | 162.99907 | 201.83979 | 30.47099 | 1.58724 | 0.1416827 | 2.4452098 | 42 | 6 | 1998–2006 | 0.52 | M-v | 0 | MPC | 87610 | 2004 $BC_{109}$ |
| 2004 $BR_{109}$ | 16.3 | 0.15 | 20060922 | 336.28706 | 238.31457 | 159.07652 | 23.53197 | 0.2624963 | 2.2750513 | 130 | 3 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04291 | 2004 $BR_{109}$ |
| 2004 $BA_{110}$ | 15.1 | 0.15 | 20060922 | 279.97556 | 87.28572 | 350.56283 | 21.74544 | 0.0577499 | 2.6537964 | 96 | 3 | 2002–2006 | 0.47 | M-v | 1 | MPC | 61858 | 2004 $BA_{110}$ |
| 2004 $BC_{110}$ | 15.9 | 0.15 | 20060922 | 315.28598 | 4.32574 | 58.16622 | 11.08477 | 0.1517635 | 2.4513547 | 69 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 61858 | 2004 $BC_{110}$ |
| 2004 $BP_{110}$ | 16.2 | 0.15 | 20060922 | 258.30150 | 96.61629 | 55.01507 | 7.88624 | 0.0548075 | 2.3422117 | 66 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 69659 | 2004 $BP_{110}$ |
| 2004 $BR_{110}$ | 16.3 | 0.15 | 20060922 | 267.86295 | 70.74326 | 55.20738 | 5.48617 | 0.1803205 | 2.3914205 | 65 | 4 | 1997–2006 | 0.59 | M-v | 1 | MPC | 61859 | 2004 $BR_{110}$ |
| 2004 $BS_{110}$ | 16.1 | 0.15 | 20060922 | 284.28037 | 41.95169 | 71.41669 | 7.46734 | 0.0424558 | 2.3916374 | 52 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 86247 | 2004 $BS_{110}$ |
| 2004 $BL_{111}$ | 15.8 | 0.15 | 20060922 | 217.03159 | 39.57108 | 112.77744 | 14.96994 | 0.0622860 | 2.6731040 | 62 | 4 | 2000–2006 | 0.69 | M-v | 1 | MPC | 87610 | 2004 $BL_{111}$ |
| 2004 $BD_{112}$ | 16.6 | 0.15 | 20060922 | 251.54488 | 298.18438 | 134.20951 | 3.54722 | 0.0799816 | 2.8787428 | 29 | 4 | 1999–2005 | 0.48 | M-v | 1 | MPC | 76399 | 2004 $BD_{112}$ |
| 2004 $BH_{112}$ | 17.3 | 0.15 | 20060922 | 123.54901 | 209.71438 | 138.70426 | 24.49458 | 0.0796159 | 1.9821279 | 57 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 86248 | 2004 $BH_{112}$ |
| 2004 $BL_{113}$ | 15.6 | 0.15 | 20060922 | 220.68290 | 316.12300 | 192.79528 | 12.98209 | 0.2022736 | 2.5479383 | 66 | 5 | 1996–2006 | 0.52 | M-v | 2 | MPC | 65554 | 2004 $BL_{113}$ |
| 2004 $BQ_{113}$ | 15.1 | 0.15 | 20060922 | 140.29283 | 188.59975 | 351.18328 | 15.09023 | 0.1319705 | 3.1734527 | 47 | 3 | 1995–2004 | 0.52 | M-v | 3 | MPC | 61863 | 2004 $BQ_{113}$ |
| 2004 $BY_{113}$ | 16.8 | 0.15 | 20060922 | 181.86448 | 61.70252 | 173.35602 | 3.16380 | 0.1293917 | 2.3376082 | 54 | 6 | 1997–2006 | 0.45 | M-v | 1 | MPC | 87610 | 2004 $BY_{113}$ |
| 2004 $BH_{114}$ | 14.6 | 0.15 | 20060922 | 109.98985 | 105.55131 | 133.41651 | 26.27540 | 0.2589539 | 3.1979392 | 78 | 5 | 1998–2006 | 0.53 | M-v | 0 | MPC | 87610 | 2004 $BH_{114}$ |
| 2004 $BJ_{114}$ | 16.6 | 0.15 | 20060922 | 293.82635 | 202.10825 | 305.07706 | 5.64546 | 0.1130361 | 2.1997441 | 108 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 90189 | 2004 $BJ_{114}$ |
| 2004 $BK_{114}$ | 16.1 | 0.15 | 20060922 | 270.87476 | 152.59404 | 299.93129 | 5.85278 | 0.2404610 | 2.5604162 | 73 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 04292 | 2004 $BK_{114}$ |
| 2004 $BQ_{114}$ | 16.5 | 0.15 | 20060922 | 272.63876 | 286.37333 | 216.48614 | 7.09983 | 0.1032201 | 2.3203549 | 60 | 4 | 1995–2006 | 0.45 | M-v | 2 | MPC | 03606 | 2004 $BQ_{114}$ |
| 2004 $BK_{115}$ | 15.8 | 0.15 | 20060922 | 175.34071 | 234.27445 | 342.77394 | 4.87876 | 0.1305333 | 2.4829968 | 82 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 65554 | 2004 $BK_{115}$ |
| 2004 $BV_{115}$ | 16.8 | 0.15 | 20060922 | 266.27030 | 17.74026 | 130.43642 | 7.91657 | 0.0580485 | 2.2819449 | 37 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 86249 | 2004 $BV_{115}$ |
| 2004 $BF_{116}$ | 15.8 | 0.15 | 20060922 | 220.15614 | 342.68751 | 98.95082 | 11.19870 | 0.0854248 | 3.0344971 | 27 | 3 | 2000–2004 | 0.44 | M-v | 1 | MPC | 61867 | 2004 $BF_{116}$ |
| 2004 $BG_{116}$ | 16.5 | 0.15 | 20060922 | 171.21932 | 144.12642 | 84.91584 | 7.50825 | 0.0674241 | 2.3519294 | 42 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 61867 | 2004 $BG_{116}$ |
| 2004 $BT_{116}$ | 13.7 | 0.15 | 20060922 | 139.94971 | 95.44557 | 98.52233 | 23.94422 | 0.1335181 | 3.2233984 | 111 | 4 | 1999–2006 | 0.59 | M-v | 1 | MPC | 04292 | 2004 $BT_{116}$ |
| 2004 $BY_{116}$ | 16.2 | 0.15 | 20060922 | 332.72931 | 354.73350 | 65.93688 | 7.43856 | 0.1015860 | 2.3073846 | 85 | 5 | 1992–2006 | 0.54 | M-v | 1 | MPC | 69660 | 2004 $BY_{116}$ |
| 2004 $BF_{117}$ | 16.1 | 0.15 | 20060922 | 155.17271 | 232.22912 | 354.51655 | 12.85410 | 0.1397542 | 2.5698036 | 40 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 87610 | 2004 $BF_{117}$ |
| 2004 $BL_{117}$ | 15.8 | 0.15 | 20060922 | 182.73638 | 102.13451 | 93.01569 | 13.03480 | 0.1042060 | 2.5760828 | 54 | 6 | 1994–2006 | 0.49 | M-v | 1 | MPC | 61870 | 2004 $BL_{117}$ |
| 2004 $BM_{117}$ | 16.9 | 0.15 | 20060922 | 351.43381 | 356.90774 | 66.10942 | 6.82947 | 0.0569843 | 2.2345683 | 59 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87610 | 2004 $BM_{117}$ |
| 2004 $BX_{117}$ | 16.2 | 0.15 | 20060922 | 278.44641 | 245.88275 | 236.68791 | 6.06616 | 0.0931813 | 2.3028959 | 97 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 66329 | 2004 $BX_{117}$ |
| 2004 $BE_{118}$ | 16.3 | 0.15 | 20060922 | 208.27089 | 285.31539 | 235.65242 | 5.34426 | 0.1034263 | 2.5931737 | 52 | 4 | 1998–2006 | 0.35 | M-v | 1 | MPC | 61871 | 2004 $BE_{118}$ |
| 2004 $BF_{118}$ | 16.2 | 0.15 | 20060922 | 271.17411 | 138.40726 | 302.91610 | 14.34174 | 0.1730737 | 2.5874488 | 51 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 04292 | 2004 $BF_{118}$ |
| 2004 $BH_{118}$ | 15.0 | 0.15 | 20060922 | 156.56811 | 8.25141 | 150.82583 | 28.52625 | 0.1163007 | 3.1300108 | 55 | 3 | 2004–2006 | 0.56 | M-v | 2 | MPC | 04292 | 2004 $BH_{118}$ |
| 2004 $BJ_{118}$ | 16.0 | 0.15 | 20060922 | 199.34959 | 336.46676 | 217.65826 | 5.46224 | 0.1799567 | 2.4614438 | 54 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 86250 | 2004 $BJ_{118}$ |
| 2004 $BL_{118}$ | 16.2 | 0.15 | 20060922 | 243.52254 | 109.39259 | 82.17381 | 6.78163 | 0.1641188 | 2.3106590 | 70 | 3 | 2003–2006 | 0.52 | M-v | 2 | MPC | 86250 | 2004 $BL_{118}$ |
| 2004 $BA_{119}$ | 16.1 | 0.15 | 20060922 | 313.96892 | 133.49926 | 323.64381 | 6.46481 | 0.0541361 | 2.2690903 | 67 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 61872 | 2004 $BA_{119}$ |
| 2004 $BK_{119}$ | 16.0 | 0.15 | 20060922 | 145.86886 | 269.02361 | 342.94231 | 6.40145 | 0.1671298 | 2.4583204 | 59 | 3 | 2004–2006 | 0.44 | M-v | 2 | MPC | 90189 | 2004 $BK_{119}$ |
| 2004 $BN_{119}$ | 15.7 | 0.15 | 20060922 | 256.65580 | 51.28541 | 51.96190 | 14.41023 | 0.0498301 | 2.6205820 | 56 | 6 | 1998–2006 | 0.67 | M-v | 1 | MPC | 95170 | 2004 $BN_{119}$ |
| 2004 $BF_{120}$ | 16.1 | 0.15 | 20060922 | 161.46820 | 10.23784 | 180.23966 | 3.51021 | 0.0948819 | 2.7957310 | 49 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 61874 | 2004 $BF_{120}$ |
| 2004 $BS_{120}$ | 16.4 | 0.15 | 20060922 | 209.93260 | 155.50477 | 8.48258 | 13.38401 | 0.1049187 | 2.5671109 | 53 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 87611 | 2004 $BS_{120}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $BW_{120}$ | 14.7 | 0.15 | 20060922 | 184.72261 | 37.81886 | 96.90688 | 17.83896 | 0.1613612 | 3.0394275 | 64 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 04292 | 2004 $BW_{120}$ |
| 2004 $BZ_{120}$ | 15.3 | 0.15 | 20060922 | 238.68492 | 67.28234 | 76.63260 | 15.81224 | 0.0613847 | 2.5336444 | 73 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 87611 | 2004 $BZ_{120}$ |
| 2004 $BC_{121}$ | 15.5 | 0.15 | 20060922 | 158.45499 | 150.53355 | 49.02990 | 13.25861 | 0.1297560 | 2.7983605 | 50 | 3 | 2002–2006 | 0.67 | M-v | 2 | MPC | 04292 | 2004 $BC_{121}$ |
| 2004 $BP_{122}$ | 16.7 | 0.15 | 20060922 | 301.23894 | 61.49256 | 18.74408 | 1.19361 | 0.0895147 | 2.5731365 | 63 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 69662 | 2004 $BP_{122}$ |
| 2004 $BR_{122}$ | 16.4 | 0.15 | 20060922 | 175.89837 | 178.46731 | 349.60435 | 2.91945 | 0.0588252 | 3.0398096 | 43 | 4 | 2001–2006 | 0.24 | M-v | 1 | MPC | 04292 | 2004 $BR_{122}$ |
| 2004 $BF_{124}$ | 17.3 | 0.15 | 20060922 | 270.35167 | 220.58181 | 250.17136 | 4.05878 | 0.1240275 | 2.3787416 | 39 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 95170 | 2004 $BF_{124}$ |
| 2004 $BJ_{124}$ | 15.2 | 0.15 | 20060922 | 122.36470 | 167.19497 | 34.09112 | 6.91890 | 0.0960315 | 3.0650266 | 39 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 86252 | 2004 $BJ_{124}$ |
| 2004 $BN_{124}$ | 17.7 | 0.15 | 20060922 | 262.63871 | 142.54505 | 331.08962 | 1.80225 | 0.1412151 | 2.3953591 | 32 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | 69663 | 2004 $BN_{124}$ |
| 2004 $BR_{124}$ | 16.4 | 0.15 | 20060922 | 151.31515 | 201.51602 | 328.00062 | 9.92553 | 0.0777881 | 2.9074608 | 30 | 2 | 2003–2006 | 0.47 | M-v | 3 | MPC | 03606 | 2004 $BR_{124}$ |
| 2004 $BA_{126}$ | 18.9 | 0.15 | 20040116 | 359.24496 | 79.31903 | 41.74764 | 2.34413 | 0.0922987 | 2.3707800 | 9 | 1 | 26 days | 0.19 | | | MPC | | 2004 $BA_{126}$ |
| 2004 $BS_{127}$ | 16.8 | 0.15 | 20060922 | 61.01125 | 315.60197 | 339.04611 | 2.16906 | 0.1127471 | 2.5901637 | 44 | 4 | 2000–2006 | 0.32 | M-v | 1 | MPC | 04292 | 2004 $BS_{127}$ |
| 2004 $BG_{128}$ | 17.2 | 0.15 | 20060922 | 154.22017 | 101.77946 | 133.15652 | 2.17281 | 0.1445499 | 2.4424556 | 26 | 4 | 1994–2006 | 0.31 | M-v | 1 | MPC | 76401 | 2004 $BG_{128}$ |
| 2004 $BL_{130}$ | 16.3 | 0.15 | 20060922 | 71.46826 | 101.36386 | 142.84741 | 4.11867 | 0.1606113 | 3.0948942 | 18 | 3 | 2004–2006 | 0.21 | M-v | 2 | MPC | 00704 | 2004 $BL_{130}$ |
| 2004 $BS_{130}$ | 16.3 | 0.15 | 20060922 | 69.93780 | 354.53378 | 298.21547 | 14.12809 | 0.1462868 | 2.5440682 | 30 | 4 | 1995–2006 | 0.31 | M-v | 2 | MPC | 87611 | 2004 $BS_{130}$ |
| 2004 $BW_{131}$ | 17.4 | 0.15 | 20060922 | 4.50628 | 162.62875 | 165.71242 | 2.74580 | 0.0685275 | 2.7176374 | 24 | 4 | 2000–2006 | 0.26 | M-v | 0 | MPC | 00705 | 2004 $BW_{131}$ |
| 2004 $BH_{133}$ | 15.1 | 0.15 | 20060922 | 201.31317 | 18.88930 | 63.90707 | 5.66489 | 0.1149512 | 3.1979327 | 33 | 3 | 2002–2005 | 0.43 | M-v | 3 | MPC | 69663 | 2004 $BH_{133}$ |
| 2004 $BS_{133}$ | 15.9 | 0.15 | 20060922 | 292.93023 | 45.37776 | 22.54423 | 5.25929 | 0.0890330 | 2.4434692 | 61 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 04292 | 2004 $BS_{133}$ |
| 2004 $BO_{134}$ | 16.3 | 0.15 | 20060922 | 272.03282 | 263.76725 | 207.68685 | 8.39800 | 0.1718623 | 2.3890261 | 39 | 3 | 1999–2006 | 0.61 | M-v | 3 | MPC | 69664 | 2004 $BO_{134}$ |
| 2004 $BP_{134}$ | 16.1 | 0.15 | 20060922 | 30.10599 | 218.87010 | 92.01696 | 6.93079 | 0.0534419 | 2.7506232 | 37 | 4 | 2002–2006 | 0.67 | M-v | 1 | MPC | 04292 | 2004 $BP_{134}$ |
| 2004 $BV_{134}$ | 18.0 | 0.15 | 20060922 | 297.84043 | 66.56298 | 15.89786 | 3.70409 | 0.2114904 | 2.3438855 | 36 | 3 | 1999–2006 | 0.40 | M-v | 1 | MPC | 04292 | 2004 $BV_{134}$ |
| 2004 $BY_{136}$ | 16.3 | 0.15 | 20060922 | 53.79803 | 334.86692 | 317.43893 | 9.40774 | 0.2238195 | 2.7107767 | 42 | 3 | 2003–2006 | 0.38 | M-v | 2 | MPC | 04292 | 2004 $BY_{136}$ |
| 2004 $BJ_{137}$ | 17.2 | 0.15 | 20060922 | 0.83286 | 58.10170 | 321.13164 | 4.90331 | 0.1779394 | 2.2957767 | 46 | 3 | 1999–2006 | 0.29 | M-v | 3 | MPC | 69664 | 2004 $BJ_{137}$ |
| 2004 $BT_{137}$ | 17.1 | 0.15 | 20060922 | 73.78483 | 185.16817 | 97.00620 | 3.65991 | 0.0974584 | 2.6290031 | 22 | 3 | 2004–2006 | 0.27 | M-v | 3 | MPC | 95171 | 2004 $BT_{137}$ |
| 2004 $BH_{138}$ | 16.7 | 0.15 | 20060922 | 218.67468 | 155.80797 | 289.51450 | 0.74651 | 0.0205927 | 3.0373331 | 25 | 4 | 1999–2005 | 0.31 | M-v | 0 | MPC | 76402 | 2004 $BH_{138}$ |
| 2004 $BA_{143}$ | 16.0 | 0.15 | 20060922 | 274.30321 | 44.04753 | 326.43078 | 5.66282 | 0.2088255 | 3.0441982 | 35 | 3 | 1999–2004 | 0.52 | M-v | 3 | MPC | 69665 | 2004 $BA_{143}$ |
| 2004 $BO_{143}$ | 17.2 | 0.15 | 20060922 | 352.74761 | 267.77976 | 87.53280 | 4.61120 | 0.1653955 | 2.5496929 | 24 | 3 | 1998–2006 | 0.44 | M-v | 3 | MPC | 87611 | 2004 $BO_{143}$ |
| 2004 $BL_{144}$ | 18.1 | 0.15 | 20060922 | 321.78772 | 56.73543 | 343.92065 | 1.61124 | 0.1981315 | 2.4031916 | 39 | 3 | 1995–2006 | 0.42 | M-v | 2 | MPC | 03607 | 2004 $BL_{144}$ |
| 2004 $BU_{145}$ | 16.5 | 0.15 | 20060922 | 290.61563 | 310.10127 | 140.50282 | 6.92875 | 0.0649446 | 2.3453052 | 48 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 86254 | 2004 $BU_{145}$ |
| 2004 $BN_{146}$ | 15.6 | 0.15 | 20060922 | 227.66493 | 70.25115 | 15.25260 | 1.36973 | 0.0536819 | 3.0037897 | 38 | 5 | 1994–2005 | 0.44 | M-v | 0 | MPC | 04292 | 2004 $BN_{146}$ |
| 2004 $BP_{146}$ | 16.4 | 0.15 | 20060922 | 286.34809 | 309.40294 | 108.96360 | 5.27704 | 0.0993530 | 2.6482936 | 31 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 04292 | 2004 $BP_{146}$ |
| 2004 $BT_{146}$ | 16.9 | 0.15 | 20060922 | 319.82669 | 9.75505 | 33.43153 | 1.87767 | 0.1872613 | 2.4450852 | 59 | 4 | 1999–2006 | 0.35 | M-v | 1 | MPC | 04292 | 2004 $BT_{146}$ |
| 2004 $BC_{147}$ | 16.5 | 0.15 | 20060922 | 125.55761 | 303.58962 | 337.87236 | 3.57896 | 0.0818663 | 2.3693377 | 45 | 7 | 1993–2006 | 0.56 | M-v | 1 | MPC | 86255 | 2004 $BC_{147}$ |
| 2004 $BE_{147}$ | 15.5 | 0.15 | 20060922 | 327.97183 | 53.18446 | 325.60571 | 13.66004 | 0.1168731 | 2.6784785 | 66 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 04292 | 2004 $BE_{147}$ |
| 2004 $BB_{148}$ | 16.7 | 0.15 | 20060922 | 185.07818 | 230.24037 | 327.81985 | 5.90203 | 0.0538671 | 2.3713654 | 27 | 3 | 1997–2006 | 0.36 | M-v | 3 | MPC | 69665 | 2004 $BB_{148}$ |
| 2004 $BF_{148}$ | 16.5 | 0.15 | 20060922 | 289.57981 | 303.79818 | 84.54456 | 4.84264 | 0.2197163 | 2.7001711 | 31 | 4 | 1998–2004 | 0.63 | M-v | 1 | MPC | 95172 | 2004 $BF_{148}$ |
| 2004 $BM_{148}$ | 15.1 | 0.15 | 20060922 | 23.40840 | 166.75626 | 107.04553 | 11.03870 | 0.0788628 | 3.1470424 | 26 | 4 | 2000–2005 | 0.60 | M-v | 1 | MPC | 76403 | 2004 $BM_{148}$ |
| 2004 $BF_{149}$ | 17.6 | 0.15 | 20060922 | 335.75401 | 42.05485 | 15.55183 | 1.05574 | 0.0474520 | 2.2922624 | 73 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 04292 | 2004 $BF_{149}$ |
| 2004 $BJ_{149}$ | 16.4 | 0.15 | 20060922 | 169.21637 | 197.23603 | 338.46836 | 1.64771 | 0.1149390 | 2.7340764 | 28 | 3 | 2000–2006 | 0.48 | M-v | 4 | MPC | 04292 | 2004 $BJ_{149}$ |
| 2004 $BR_{149}$ | 16.6 | 0.15 | 20060922 | 134.83131 | 234.90927 | 20.19155 | 0.43175 | 0.1703814 | 2.4443686 | 41 | 5 | 1998–2006 | 0.36 | M-v | 1 | MPC | 86256 | 2004 $BR_{149}$ |
| 2004 $BS_{149}$ | 16.5 | 0.15 | 20060922 | 111.66229 | 137.76795 | 143.19308 | 2.69713 | 0.1646585 | 2.3700466 | 46 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 86256 | 2004 $BS_{149}$ |
| 2004 $BH_{150}$ | 16.8 | 0.15 | 20060922 | 228.85071 | 51.61244 | 97.72211 | 5.66139 | 0.0960158 | 2.4573258 | 35 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 86257 | 2004 $BH_{150}$ |
| 2004 $BK_{150}$ | 17.7 | 0.15 | 20060922 | 207.45247 | 162.78327 | 347.35346 | 1.70936 | 0.1454397 | 2.6417743 | 28 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 04292 | 2004 $BK_{150}$ |
| 2004 $BL_{150}$ | 16.0 | 0.15 | 20060922 | 219.83826 | 325.22786 | 100.95262 | 3.49376 | 0.1018004 | 3.2092119 | 23 | 4 | 1998–2005 | 0.37 | M-v | 1 | MPC | 86257 | 2004 $BL_{150}$ |
| 2004 $BS_{150}$ | 14.8 | 0.15 | 20060922 | 164.95793 | 350.51078 | 137.93953 | 16.33317 | 0.0512191 | 3.1640718 | 43 | 4 | 2001–2005 | 0.71 | M-v | 1 | MPC | 76404 | 2004 $BS_{150}$ |
| 2004 $BO_{151}$ | 15.0 | 0.15 | 20060922 | 25.72990 | 41.68335 | 286.42712 | 13.79748 | 0.0744881 | 2.5727953 | 48 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 04293 | 2004 $BO_{151}$ |
| 2004 $BU_{151}$ | 16.6 | 0.15 | 20060922 | 182.20444 | 86.92650 | 107.18225 | 2.15810 | 0.0445648 | 2.5184381 | 40 | 3 | 2000–2006 | 0.42 | M-v | 4 | MPC | 69667 | 2004 $BU_{151}$ |
| 2004 $BD_{152}$ | 16.8 | 0.15 | 20060922 | 217.12150 | 321.18498 | 248.06539 | 3.64611 | 0.1636294 | 2.2568139 | 40 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 86257 | 2004 $BD_{152}$ |
| 2004 $BE_{152}$ | 16.1 | 0.15 | 20060922 | 144.45102 | 42.25417 | 187.19454 | 4.17352 | 0.1742903 | 2.5730982 | 61 | 3 | 2001–2006 | 0.41 | M-v | 1 | MPC | 00706 | 2004 $BE_{152}$ |
| 2004 $BQ_{152}$ | 16.5 | 0.15 | 20060922 | 324.30550 | 329.38993 | 69.78857 | 6.32343 | 0.0984272 | 2.4595147 | 50 | 4 | 1991–2006 | 0.52 | M-v | 1 | MPC | 04293 | 2004 $BQ_{152}$ |
| 2004 $BG_{153}$ | 16.3 | 0.15 | 20060922 | 35.91734 | 28.78875 | 286.45266 | 4.95612 | 0.1709308 | 2.5569042 | 64 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 69667 | 2004 $BG_{153}$ |
| 2004 $BM_{156}$ | 16.8 | 0.15 | 20060922 | 356.19035 | 31.60187 | 312.93126 | 11.29317 | 0.2071381 | 2.6099350 | 48 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 04293 | 2004 $BM_{156}$ |
| 2004 $BE_{159}$ | 17.4 | 0.15 | 20060922 | 124.63169 | 297.28831 | 349.80600 | 2.81484 | 0.2300991 | 2.6229497 | 31 | 3 | 2001–2005 | 0.29 | M-v | 3 | MPC | 86258 | 2004 $BE_{159}$ |
| 2004 $BG_{162}$ | 16.3 | 0.15 | 20040225 | 42.80171 | 23.61939 | 62.57743 | 6.18210 | 0.1430296 | 2.7855064 | 19 | 1 | 59 days | 0.70 | | | MPC | | 2004 $BG_{162}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $BH_{162}$ | 16.3 | 0.15 | 20060922 | 263.43580 | 357.16277 | 105.32792 | 6.12516 | 0.1889563 | 2.5775567 | 19 | 1 | 60 days | 0.64 | M-v | 5 | MPC | | 2004 $BH_{162}$ |
| 2004 $BJ_{162}$ | 16.7 | 0.15 | 20060922 | 218.00915 | 76.38134 | 89.77936 | 13.31313 | 0.1541273 | 2.6596194 | 19 | 1 | 77 days | 0.61 | M-v | 4 | MPC | | 2004 $BJ_{162}$ |
| 2004 $BK_{162}$ | 16.4 | 0.15 | 20040225 | 119.65743 | 49.77314 | 323.04386 | 21.54614 | 0.0349170 | 2.6228185 | 16 | 1 | 48 days | 0.70 | | | MPC | | 2004 $BK_{162}$ |
| 2004 CE | 16.1 | 0.15 | 20060922 | 301.07635 | 79.82661 | 357.03255 | 22.26542 | 0.2757409 | 2.3009618 | 60 | 3 | 1999–2006 | 0.57 | M-v | 2 | MPC | 03607 | 2004 CE |
| 2004 CK | 16.3 | 0.15 | 20060922 | 241.85845 | 133.59738 | 337.79676 | 12.09510 | 0.2100171 | 2.6436622 | 76 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 61877 | 2004 CK |
| 2004 CN | 15.8 | 0.15 | 20060922 | 253.53180 | 88.33483 | 44.19860 | 23.99790 | 0.2359623 | 2.4402859 | 79 | 3 | 1999–2006 | 0.61 | M-v | 1 | MPC | 87611 | 2004 CN |
| 2004 $CN_1$ | 15.7 | 0.15 | 20060922 | 109.28880 | 340.14713 | 298.39281 | 7.01265 | 0.1250190 | 2.5335890 | 46 | 4 | 1993–2006 | 0.53 | M-v | 1 | MPC | 61879 | 2004 $CN_1$ |
| 2004 $CQ_1$ | 16.5 | 0.15 | 20060922 | 200.99909 | 242.58556 | 286.21125 | 3.14690 | 0.1497760 | 2.6187392 | 58 | 3 | 2000–2006 | 0.56 | M-v | 2 | MPC | 87611 | 2004 $CQ_1$ |
| 2004 $CV_1$ | 16.5 | 0.15 | 20060922 | 235.69461 | 24.09911 | 96.71963 | 14.09831 | 0.1485658 | 2.6268613 | 30 | 2 | 2002–2004 | 0.49 | M-v | 3 | MPC | 89507 | 2004 $CV_1$ |
| 2004 $CX_1$ | 16.0 | 0.15 | 20060922 | 179.99161 | 181.91832 | 42.14727 | 3.26018 | 0.1528567 | 2.4389184 | 84 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 87611 | 2004 $CX_1$ |
| 2004 $CC_2$ | 16.4 | 0.15 | 20060922 | 230.52314 | 327.83696 | 219.76095 | 4.44652 | 0.1714153 | 2.3661369 | 97 | 7 | 1991–2006 | 0.46 | M-v | 1 | MPC | 86259 | 2004 $CC_2$ |
| 2004 $CF_2$ | 16.7 | 0.15 | 20060922 | 183.79759 | 233.75877 | 324.24127 | 12.94469 | 0.1035593 | 2.5638120 | 51 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 76405 | 2004 $CF_2$ |
| 2004 $CG_2$ | 16.5 | 0.15 | 20060922 | 218.68330 | 72.81228 | 120.08604 | 3.86384 | 0.1332983 | 2.3731243 | 73 | 6 | 1993–2006 | 0.42 | M-v | 1 | MPC | 89507 | 2004 $CG_2$ |
| 2004 $CJ_2$ | 15.5 | 0.15 | 20060922 | 158.99666 | 102.12173 | 77.43007 | 17.53950 | 0.1810299 | 3.0807075 | 35 | 2 | 2002–2004 | 0.53 | M-v | 3 | MPC | 89507 | 2004 $CJ_2$ |
| 2004 $CL_2$ | 15.9 | 0.15 | 20060922 | 287.28082 | 298.12601 | 126.54078 | 22.52144 | 0.1544882 | 2.6334615 | 42 | 3 | 2000–2006 | 0.56 | M-v | 2 | MPC | 03607 | 2004 $CL_2$ |
| 2004 $CQ_2$ | 17.1 | 0.15 | 20060922 | 203.18199 | 86.32658 | 119.45774 | 3.11469 | 0.1119613 | 2.3955775 | 62 | 5 | 1991–2006 | 0.56 | M-v | 1 | MPC | 87611 | 2004 $CQ_2$ |
| 2004 $CK_3$ | 16.2 | 0.15 | 20060922 | 134.43813 | 280.24602 | 318.15240 | 9.33601 | 0.1302882 | 2.6100693 | 55 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 86260 | 2004 $CK_3$ |
| 2004 $CN_3$ | 15.9 | 0.15 | 20060922 | 104.82806 | 186.01423 | 66.39199 | 13.98104 | 0.0413636 | 2.6414289 | 37 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 86260 | 2004 $CN_3$ |
| 2004 $CV_3$ | 16.9 | 0.15 | 20060922 | 279.81955 | 157.29987 | 313.12325 | 6.44801 | 0.0667960 | 2.3888695 | 41 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 90189 | 2004 $CV_3$ |
| 2004 $CE_4$ | 17.6 | 0.15 | 20060922 | 260.38929 | 48.97084 | 92.43466 | 1.68457 | 0.1574690 | 2.3383872 | 49 | 3 | 1999–2006 | 0.46 | M-v | 3 | MPC | 61881 | 2004 $CE_4$ |
| 2004 $CG_4$ | 15.9 | 0.15 | 20060922 | 253.36351 | 56.34709 | 41.51531 | 3.92892 | 0.1063711 | 2.6216893 | 45 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 04293 | 2004 $CG_4$ |
| 2004 $CJ_4$ | 17.0 | 0.15 | 20060922 | 295.71741 | 63.42069 | 16.28926 | 2.55483 | 0.1716969 | 2.3999609 | 64 | 4 | 1995–2006 | 0.54 | M-v | 1 | MPC | 61882 | 2004 $CJ_4$ |
| 2004 $CL_4$ | 16.5 | 0.15 | 20060922 | 315.37021 | 89.56323 | 342.65132 | 6.40689 | 0.1572790 | 2.3261531 | 85 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 04293 | 2004 $CL_4$ |
| 2004 $CB_5$ | 17.9 | 0.15 | 20060922 | 245.05503 | 25.64579 | 126.68119 | 1.92178 | 0.1329589 | 2.3938547 | 62 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 87611 | 2004 $CB_5$ |
| 2004 $CD_5$ | 15.7 | 0.15 | 20060922 | 252.04491 | 336.24866 | 123.87832 | 15.83532 | 0.0456777 | 2.6772314 | 70 | 4 | 2002–2006 | 0.63 | M-v | 0 | MPC | 04293 | 2004 $CD_5$ |
| 2004 $CM_5$ | 15.8 | 0.15 | 20060922 | 280.13525 | 350.39775 | 77.73638 | 6.28219 | 0.0439369 | 2.7113780 | 42 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 76406 | 2004 $CM_5$ |
| 2004 $CS_5$ | 16.9 | 0.15 | 20060922 | 266.05974 | 11.90961 | 131.54697 | 6.07179 | 0.0578596 | 2.3128711 | 65 | 4 | 1994–2006 | 0.53 | M-v | 1 | MPC | 87612 | 2004 $CS_5$ |
| 2004 $CY_5$ | 16.9 | 0.15 | 20060922 | 274.17172 | 336.81771 | 128.26334 | 3.15047 | 0.1545652 | 2.4499914 | 67 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 61883 | 2004 $CY_5$ |
| 2004 $CD_6$ | 15.9 | 0.15 | 20060922 | 220.11190 | 3.51635 | 67.88923 | 6.40954 | 0.2560473 | 3.0668534 | 37 | 4 | 1997–2005 | 0.61 | M-v | 1 | MPC | 90189 | 2004 $CD_6$ |
| 2004 $CG_6$ | 16.5 | 0.15 | 20060922 | 222.75924 | 88.76163 | 103.38720 | 7.06200 | 0.0621013 | 2.3241938 | 53 | 3 | 2004–2006 | 0.31 | M-v | 3 | MPC | 86260 | 2004 $CG_6$ |
| 2004 $CT_6$ | 17.9 | 0.15 | 20060922 | 268.63461 | 322.90869 | 175.96733 | 2.25837 | 0.1503202 | 2.3247250 | 66 | 3 | 1999–2006 | 0.46 | M-v | 3 | MPC | 61883 | 2004 $CT_6$ |
| 2004 $CV_6$ | 16.4 | 0.15 | 20060922 | 155.89086 | 330.05601 | 213.09210 | 2.80007 | 0.2118270 | 2.9782073 | 33 | 2 | 2004–2006 | 0.54 | M-v | 4 | MPC | 03607 | 2004 $CV_6$ |
| 2004 $CW_6$ | 17.2 | 0.15 | 20060922 | 207.43478 | 259.61122 | 329.16244 | 8.01128 | 0.0652217 | 2.2201686 | 48 | 3 | 2002–2005 | 0.51 | M-v | 2 | MPC | 86261 | 2004 $CW_6$ |
| 2004 $CC_7$ | 16.9 | 0.15 | 20060922 | 194.27259 | 199.65720 | 13.93689 | 3.11958 | 0.1600610 | 2.3780916 | 56 | 4 | 1997–2006 | 0.61 | M-v | 1 | MPC | 87612 | 2004 $CC_7$ |
| 2004 $CK_7$ | 15.8 | 0.15 | 20060922 | 122.60218 | 115.62366 | 132.07646 | 8.38374 | 0.0959872 | 2.6695639 | 41 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 69669 | 2004 $CK_7$ |
| 2004 $CR_7$ | 17.1 | 0.15 | 20060922 | 206.80235 | 90.94075 | 118.85161 | 3.87238 | 0.0913449 | 2.3366990 | 69 | 6 | 1995–2006 | 0.42 | M-v | 0 | MPC | 86261 | 2004 $CR_7$ |
| 2004 $CJ_8$ | 17.2 | 0.15 | 20060922 | 299.02452 | 294.33581 | 123.93141 | 6.16596 | 0.1430157 | 2.5256244 | 31 | 4 | 2001–2005 | 0.36 | M-v | 0 | MPC | 00706 | 2004 $CJ_8$ |
| 2004 $CH_9$ | 15.2 | 0.15 | 20060922 | 157.82375 | 289.21785 | 291.48691 | 10.09395 | 0.1242564 | 2.6252060 | 49 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 87612 | 2004 $CH_9$ |
| 2004 $CO_9$ | 17.0 | 0.15 | 20060922 | 308.47073 | 56.03799 | 339.92303 | 5.71497 | 0.0359749 | 2.6716736 | 44 | 4 | 2000–2006 | 0.38 | M-v | 0 | MPC | 87612 | 2004 $CO_9$ |
| 2004 $CW_9$ | 15.5 | 0.15 | 20060922 | 109.96939 | 316.50902 | 238.60352 | 1.86460 | 0.0696332 | 3.1636250 | 44 | 4 | 2001–2006 | 0.35 | M-v | 0 | MPC | 04293 | 2004 $CW_9$ |
| 2004 $CX_9$ | 15.5 | 0.15 | 20060922 | 186.61112 | 186.47377 | 295.37417 | 9.39982 | 0.0701143 | 3.0207302 | 43 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 03608 | 2004 $CX_9$ |
| 2004 $CC_{10}$ | 17.3 | 0.15 | 20060922 | 318.14466 | 120.43744 | 334.22853 | 6.02149 | 0.1535490 | 2.2114446 | 37 | 3 | 1999–2006 | 0.39 | M-v | 2 | MPC | 89508 | 2004 $CC_{10}$ |
| 2004 $CE_{10}$ | 16.3 | 0.15 | 20060922 | 207.60692 | 330.70575 | 119.91356 | 7.90297 | 0.1454243 | 3.1020597 | 43 | 3 | 2002–2005 | 0.45 | M-v | 3 | MPC | 61886 | 2004 $CE_{10}$ |
| 2004 $CJ_{10}$ | 18.2 | 0.15 | 20060922 | 298.35531 | 99.02764 | 358.35961 | 3.56605 | 0.2514195 | 2.2847796 | 42 | 3 | 1999–2006 | 0.40 | M-v | 2 | MPC | 76407 | 2004 $CJ_{10}$ |
| 2004 $CM_{10}$ | 17.1 | 0.15 | 20060922 | 310.74969 | 317.76111 | 116.25352 | 2.86835 | 0.1961726 | 2.3289895 | 66 | 6 | 1992–2006 | 0.55 | M-v | 1 | MPC | 04293 | 2004 $CM_{10}$ |
| 2004 $CR_{10}$ | 17.1 | 0.15 | 20060922 | 202.09375 | 71.39774 | 149.25283 | 3.12514 | 0.1145106 | 2.3039070 | 43 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 86262 | 2004 $CR_{10}$ |
| 2004 $CT_{10}$ | 17.1 | 0.15 | 20060922 | 235.71843 | 353.32380 | 166.85291 | 3.39801 | 0.1312072 | 2.4199273 | 52 | 5 | 1995–2006 | 0.36 | M-v | 0 | MPC | 61886 | 2004 $CT_{10}$ |
| 2004 $CW_{10}$ | 16.2 | 0.15 | 20060922 | 263.76093 | 132.15500 | 308.49949 | 5.63134 | 0.0327096 | 2.7525101 | 33 | 3 | 2001–2006 | 0.34 | M-v | 3 | MPC | 03608 | 2004 $CW_{10}$ |
| 2004 $CB_{11}$ | 17.2 | 0.15 | 20060922 | 207.79218 | 263.60977 | 308.33808 | 2.87434 | 0.1268626 | 2.3216594 | 50 | 4 | 1997–2006 | 0.59 | M-v | 1 | MPC | 87612 | 2004 $CB_{11}$ |
| 2004 $CD_{11}$ | 15.6 | 0.15 | 20060922 | 19.93134 | 3.83127 | 318.07996 | 11.50748 | 0.0461136 | 2.8056733 | 44 | 5 | 2000–2006 | 0.57 | M-v | 0 | MPC | 04293 | 2004 $CD_{11}$ |
| 2004 $CU_{11}$ | 16.0 | 0.15 | 20060922 | 132.47604 | 47.06759 | 149.47085 | 5.55127 | 0.0944406 | 3.0530906 | 34 | 3 | 2004–2006 | 0.49 | M-v | 3 | MPC | 04293 | 2004 $CU_{11}$ |
| 2004 $CF_{12}$ | 15.0 | 0.15 | 20060922 | 141.53009 | 69.77780 | 131.10069 | 10.40959 | 0.0732302 | 2.9983761 | 60 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04293 | 2004 $CF_{12}$ |
| 2004 $CG_{12}$ | 16.2 | 0.15 | 20060922 | 223.65325 | 154.04309 | 32.76122 | 1.58039 | 0.1327107 | 2.3919241 | 101 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 61887 | 2004 $CG_{12}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $CC_{13}$ | 15.3 | 0.15 | 20060922 | 41.69427 | 8.94171 | 322.49777 | 14.42586 | 0.1224080 | 2.5711381 | 70 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 86262 | 2004 $CC_{13}$ |
| 2004 $CG_{13}$ | 16.9 | 0.15 | 20060922 | 315.17144 | 250.06758 | 171.61839 | 1.30577 | 0.1740807 | 2.4154377 | 71 | 3 | 2002–2006 | 0.38 | M-v | 1 | MPC | 04293 | 2004 $CG_{13}$ |
| 2004 $CU_{13}$ | 15.3 | 0.15 | 20060922 | 109.67261 | 246.58627 | 327.67239 | 8.41625 | 0.0263104 | 3.0915686 | 46 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04293 | 2004 $CU_{13}$ |
| 2004 $CB_{14}$ | 16.6 | 0.15 | 20060922 | 186.38046 | 127.32525 | 109.76110 | 3.50607 | 0.1348711 | 2.3500074 | 55 | 4 | 1993–2006 | 0.50 | M-v | 1 | MPC | 86263 | 2004 $CB_{14}$ |
| 2004 $CK_{16}$ | 17.5 | 0.15 | 20060922 | 260.04902 | 323.50766 | 132.73315 | 3.46899 | 0.1107221 | 2.6419126 | 26 | 4 | 1996–2006 | 0.37 | M-v | 0 | MPC | 03608 | 2004 $CK_{16}$ |
| 2004 $CN_{16}$ | 16.8 | 0.15 | 20060922 | 282.10563 | 348.82466 | 125.52786 | 2.13644 | 0.1340115 | 2.3706964 | 77 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 66331 | 2004 $CN_{16}$ |
| 2004 $CT_{16}$ | 15.6 | 0.15 | 20060922 | 38.88187 | 339.33375 | 336.59444 | 6.31326 | 0.0836574 | 2.7620286 | 80 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03608 | 2004 $CT_{16}$ |
| 2004 $CF_{17}$ | 15.8 | 0.15 | 20060922 | 103.84762 | 143.30564 | 136.70584 | 7.12540 | 0.0762163 | 2.5671426 | 59 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 66331 | 2004 $CF_{17}$ |
| 2004 $CP_{17}$ | 17.3 | 0.15 | 20060922 | 243.15780 | 271.51232 | 253.27082 | 1.33429 | 0.1497318 | 2.3660716 | 65 | 4 | 1999–2006 | 0.35 | M-v | 1 | MPC | 86264 | 2004 $CP_{17}$ |
| 2004 $CX_{17}$ | 17.0 | 0.15 | 20060922 | 307.20854 | 103.53926 | 356.91383 | 4.43189 | 0.0961960 | 2.2866266 | 101 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 72995 | 2004 $CX_{17}$ |
| 2004 $CZ_{17}$ | 16.9 | 0.15 | 20060922 | 225.61253 | 63.61652 | 122.91651 | 6.74765 | 0.0683585 | 2.3300675 | 59 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87612 | 2004 $CZ_{17}$ |
| 2004 $CC_{18}$ | 15.7 | 0.15 | 20060922 | 351.03718 | 25.76923 | 332.09372 | 15.07385 | 0.1285036 | 2.6617103 | 80 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03608 | 2004 $CC_{18}$ |
| 2004 $CQ_{18}$ | 16.8 | 0.15 | 20060922 | 269.86814 | 34.48705 | 83.77660 | 3.95765 | 0.1384989 | 2.4124933 | 45 | 5 | 1993–2006 | 0.45 | M-v | 1 | MPC | 66331 | 2004 $CQ_{18}$ |
| 2004 $CS_{18}$ | 16.4 | 0.15 | 20060922 | 242.12126 | 51.49813 | 47.60431 | 5.33815 | 0.1290697 | 2.7459123 | 31 | 3 | 2000–2004 | 0.50 | M-v | 2 | MPC | 61892 | 2004 $CS_{18}$ |
| 2004 $CY_{18}$ | 16.1 | 0.15 | 20060922 | 166.73998 | 232.27852 | 318.08764 | 12.42136 | 0.1216220 | 2.6488452 | 46 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 66331 | 2004 $CY_{18}$ |
| 2004 $CG_{19}$ | 17.1 | 0.15 | 20060922 | 178.54690 | 102.32202 | 133.48549 | 7.22257 | 0.1636921 | 2.3218710 | 42 | 5 | 1994–2006 | 0.40 | M-v | 1 | MPC | 87612 | 2004 $CG_{19}$ |
| 2004 $CP_{19}$ | 17.0 | 0.15 | 20060922 | 256.47822 | 23.45058 | 102.17418 | 3.11055 | 0.1338489 | 2.4241265 | 61 | 4 | 1993–2006 | 0.48 | M-v | 1 | MPC | 61893 | 2004 $CP_{19}$ |
| 2004 $CS_{19}$ | 18.2 | 0.15 | 20060922 | 6.98380 | 19.81334 | 19.49774 | 2.16915 | 0.1692779 | 2.1874002 | 20 | 3 | 2001–2006 | 0.26 | M-v | 2 | MPC | 95174 | 2004 $CS_{19}$ |
| 2004 $CH_{20}$ | 16.9 | 0.15 | 20060922 | 96.48619 | 168.59206 | 89.49323 | 3.89307 | 0.0522860 | 2.6836135 | 24 | 4 | 1996–2006 | 0.37 | M-v | 0 | MPC | 03609 | 2004 $CH_{20}$ |
| 2004 $CL_{20}$ | 14.9 | 0.15 | 20060922 | 63.38275 | 301.25850 | 322.70298 | 22.89405 | 0.2025068 | 3.0879364 | 45 | 4 | 2001–2006 | 0.69 | M-v | 1 | MPC | 04293 | 2004 $CL_{20}$ |
| 2004 $CN_{20}$ | 16.9 | 0.15 | 20060922 | 118.69334 | 165.21504 | 115.95554 | 7.39465 | 0.1061805 | 2.3800795 | 45 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 87612 | 2004 $CN_{20}$ |
| 2004 $CV_{20}$ | 17.5 | 0.15 | 20060922 | 251.84315 | 58.24688 | 54.70591 | 2.14570 | 0.0252179 | 2.5442225 | 33 | 4 | 2002–2006 | 0.30 | M-v | 0 | MPC | 77774 | 2004 $CV_{20}$ |
| 2004 $CP_{21}$ | 16.6 | 0.15 | 20060922 | 351.08494 | 73.20938 | 308.28357 | 1.19068 | 0.2267713 | 2.3868847 | 102 | 5 | 2000–2006 | 0.40 | M-v | 1 | MPC | 04293 | 2004 $CP_{21}$ |
| 2004 $CQ_{21}$ | 15.8 | 0.15 | 20060922 | 205.99230 | 341.77352 | 159.05417 | 4.61424 | 0.0658726 | 2.7765598 | 48 | 3 | 2004–2006 | 0.60 | M-v | 3 | MPC | 03609 | 2004 $CQ_{21}$ |
| 2004 $CZ_{21}$ | 16.6 | 0.15 | 20060922 | 10.22121 | 225.39036 | 158.76863 | 7.30488 | 0.1284935 | 2.3293437 | 42 | 6 | 1995–2006 | 0.54 | M-v | 1 | MPC | 95174 | 2004 $CZ_{21}$ |
| 2004 $CC_{22}$ | 16.7 | 0.15 | 20060922 | 225.13042 | 25.07218 | 187.63050 | 2.25953 | 0.1762928 | 2.2951531 | 77 | 3 | 1998–2005 | 0.37 | M-v | 3 | MPC | 86265 | 2004 $CC_{22}$ |
| 2004 $CD_{22}$ | 17.0 | 0.15 | 20060922 | 208.47056 | 18.87649 | 163.26250 | 7.03460 | 0.2340715 | 2.5657996 | 52 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 66331 | 2004 $CD_{22}$ |
| 2004 $CE_{22}$ | 16.3 | 0.15 | 20060922 | 210.33601 | 298.26717 | 220.05841 | 2.94087 | 0.1042968 | 2.6454147 | 52 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 76410 | 2004 $CE_{22}$ |
| 2004 $CJ_{22}$ | 16.6 | 0.15 | 20060922 | 231.15760 | 80.34734 | 68.22880 | 4.84635 | 0.1406035 | 2.5542151 | 64 | 5 | 1992–2006 | 0.59 | M-v | 2 | MPC | 66331 | 2004 $CJ_{22}$ |
| 2004 $CW_{22}$ | 16.9 | 0.15 | 20060922 | 296.81519 | 12.01294 | 47.88901 | 2.84523 | 0.1737448 | 2.4779575 | 60 | 4 | 1993–2006 | 0.39 | M-v | 1 | MPC | 03609 | 2004 $CW_{22}$ |
| 2004 $CE_{24}$ | 16.7 | 0.15 | 20060922 | 168.71952 | 323.49393 | 288.92659 | 2.11148 | 0.1125636 | 2.3719242 | 84 | 6 | 1997–2006 | 0.50 | M-v | 0 | MPC | 90189 | 2004 $CE_{24}$ |
| 2004 $CK_{24}$ | 16.5 | 0.15 | 20060922 | 142.50141 | 96.32804 | 172.19100 | 1.34604 | 0.1607935 | 2.4152853 | 73 | 5 | 1994–2006 | 0.39 | M-v | 0 | MPC | 86265 | 2004 $CK_{24}$ |
| 2004 $CO_{24}$ | 16.0 | 0.15 | 20060922 | 89.67257 | 94.58618 | 151.38975 | 11.48888 | 0.0823244 | 2.9913788 | 33 | 4 | 2001–2006 | 0.32 | M-v | 0 | MPC | 04293 | 2004 $CO_{24}$ |
| 2004 $CW_{24}$ | 15.2 | 0.15 | 20060922 | 100.82726 | 285.90564 | 304.32291 | 10.08441 | 0.0178272 | 3.0422388 | 44 | 5 | 1993–2006 | 0.59 | M-v | 1 | MPC | 04293 | 2004 $CW_{24}$ |
| 2004 $CA_{25}$ | 16.6 | 0.15 | 20060922 | 241.95881 | 299.82705 | 164.92296 | 8.99637 | 0.1312610 | 2.7585692 | 50 | 4 | 2002–2006 | 0.39 | M-v | 0 | MPC | 87612 | 2004 $CA_{25}$ |
| 2004 $CD_{25}$ | 18.1 | 0.15 | 20060922 | 261.49693 | 210.95377 | 297.30045 | 0.68613 | 0.1266857 | 2.3438858 | 32 | 3 | 1995–2006 | 0.40 | M-v | 3 | MPC | 61896 | 2004 $CD_{25}$ |
| 2004 $CG_{26}$ | 16.3 | 0.15 | 20060922 | 230.05152 | 316.87795 | 149.43804 | 6.38324 | 0.0402582 | 2.9189326 | 36 | 3 | 1999–2006 | 0.47 | M-v | 3 | MPC | 03609 | 2004 $CG_{26}$ |
| 2004 $CK_{26}$ | 17.8 | 0.15 | 20060922 | 314.40880 | 101.37215 | 329.81632 | 1.88353 | 0.1343060 | 2.4170132 | 36 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 74308 | 2004 $CK_{26}$ |
| 2004 $CQ_{26}$ | 17.0 | 0.15 | 20060922 | 258.21565 | 213.49168 | 323.21285 | 1.88602 | 0.0794545 | 2.2305437 | 82 | 6 | 1999–2006 | 0.45 | M-v | 1 | MPC | 86266 | 2004 $CQ_{26}$ |
| 2004 $CT_{26}$ | 15.8 | 0.15 | 20060922 | 198.68828 | 223.27966 | 325.21534 | 14.77048 | 0.1066987 | 2.5560038 | 44 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 86266 | 2004 $CT_{26}$ |
| 2004 $CV_{26}$ | 16.7 | 0.15 | 20060922 | 186.38827 | 288.11427 | 313.68989 | 2.86133 | 0.0887341 | 2.3060169 | 56 | 6 | 1997–2006 | 0.52 | M-v | 1 | MPC | 86266 | 2004 $CV_{26}$ |
| 2004 $CX_{26}$ | 16.0 | 0.15 | 20060922 | 167.39136 | 220.54927 | 346.45690 | 8.04150 | 0.0949729 | 2.6694751 | 72 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 61896 | 2004 $CX_{26}$ |
| 2004 $CC_{27}$ | 17.4 | 0.15 | 20060922 | 248.49413 | 354.74964 | 148.47758 | 2.51078 | 0.1319599 | 2.4539104 | 43 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 89509 | 2004 $CC_{27}$ |
| 2004 $CF_{27}$ | 15.0 | 0.15 | 20060922 | 68.33544 | 118.34690 | 142.91014 | 10.73994 | 0.0540523 | 3.0938794 | 59 | 6 | 1996–2006 | 0.55 | M-v | 0 | MPC | 04294 | 2004 $CF_{27}$ |
| 2004 $CR_{27}$ | 16.4 | 0.15 | 20060922 | 115.47914 | 200.18734 | 17.46054 | 2.26361 | 0.1104703 | 2.8997007 | 25 | 3 | 1994–2006 | 0.40 | M-v | 3 | MPC | 03609 | 2004 $CR_{27}$ |
| 2004 $CB_{28}$ | 16.7 | 0.15 | 20060922 | 267.22563 | 38.97503 | 58.10726 | 2.01513 | 0.0653994 | 2.5116753 | 47 | 6 | 1996–2006 | 0.42 | M-v | 0 | MPC | 04294 | 2004 $CB_{28}$ |
| 2004 $CC_{28}$ | 16.9 | 0.15 | 20060922 | 157.19195 | 158.25118 | 79.81255 | 2.26430 | 0.1400258 | 2.4358764 | 39 | 6 | 1997–2006 | 0.48 | M-v | 0 | MPC | 87612 | 2004 $CC_{28}$ |
| 2004 $CY_{28}$ | 16.6 | 0.15 | 20060922 | 118.74320 | 280.72271 | 310.88591 | 1.82938 | 0.0438155 | 2.6692848 | 36 | 3 | 2000–2006 | 0.38 | M-v | 1 | MPC | 95174 | 2004 $CY_{28}$ |
| 2004 $CZ_{29}$ | 17.5 | 0.15 | 20060922 | 187.03625 | 88.87254 | 132.40115 | 2.71015 | 0.1497751 | 2.3634274 | 44 | 5 | 1995–2006 | 0.43 | M-v | 0 | MPC | 86268 | 2004 $CZ_{29}$ |
| 2004 $CY_{31}$ | 17.4 | 0.15 | 20060922 | 57.36512 | 56.04321 | 293.53537 | 3.49201 | 0.2189108 | 2.1823324 | 27 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 86268 | 2004 $CY_{31}$ |
| 2004 $CF_{33}$ | 17.2 | 0.15 | 20060922 | 305.38168 | 279.67046 | 116.05630 | 4.82788 | 0.2061660 | 2.5497909 | 28 | 3 | 2000–2004 | 0.34 | M-v | 2 | MPC | 89509 | 2004 $CF_{33}$ |
| 2004 $CA_{34}$ | 16.8 | 0.15 | 20060922 | 294.77144 | 149.55991 | 312.06685 | 4.02457 | 0.1152138 | 2.3856631 | 68 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 89509 | 2004 $CA_{34}$ |
| 2004 $CA_{35}$ | 15.8 | 0.15 | 20060922 | 359.45350 | 247.96994 | 113.32478 | 9.13169 | 0.2951777 | 2.3813567 | 81 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 04294 | 2004 $CA_{35}$ |

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| 2004 $CE_{35}$ | 16.1 | 0.15 | 20060922 | 273.05274 | 8.48188 | 118.49772 | 7.36401 | 0.1111094 | 2.3378440 | 65 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 89509 | 2004 $CE_{35}$ |
| 2004 $CL_{35}$ | 15.8 | 0.15 | 20060922 | 78.04866 | 335.50391 | 348.27668 | 6.14509 | 0.1162127 | 2.4534658 | 34 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 90189 | 2004 $CL_{35}$ |
| 2004 $CP_{35}$ | 15.9 | 0.15 | 20060922 | 217.96531 | 147.27065 | 47.37048 | 3.14415 | 0.1127038 | 2.4027378 | 81 | 5 | 1993–2006 | 0.49 | M-v | 1 | MPC | 87612 | 2004 $CP_{35}$ |
| 2004 $CV_{35}$ | 16.5 | 0.15 | 20060922 | 266.77494 | 190.35571 | 332.76283 | 3.11467 | 0.1155445 | 2.2646704 | 86 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 86268 | 2004 $CV_{35}$ |
| 2004 $CX_{35}$ | 17.0 | 0.15 | 20060922 | 278.40716 | 152.93954 | 335.81113 | 5.07410 | 0.1730193 | 2.3451031 | 98 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 89509 | 2004 $CX_{35}$ |
| 2004 $CC_{36}$ | 16.2 | 0.15 | 20060922 | 179.58957 | 213.73268 | 345.27161 | 11.26505 | 0.1235204 | 2.6694719 | 55 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 89509 | 2004 $CC_{36}$ |
| 2004 $CE_{36}$ | 15.3 | 0.15 | 20060922 | 264.50505 | 19.86783 | 65.33867 | 11.21829 | 0.0998204 | 2.6922810 | 49 | 4 | 1996–2005 | 0.71 | M-v | 1 | MPC | 77775 | 2004 $CE_{36}$ |
| 2004 $CQ_{36}$ | 17.0 | 0.15 | 20060922 | 283.35690 | 61.00671 | 39.36057 | 2.04027 | 0.1414446 | 2.4198412 | 96 | 5 | 1995–2006 | 0.46 | M-v | 1 | MPC | 86269 | 2004 $CQ_{36}$ |
| 2004 $CJ_{37}$ | 16.0 | 0.15 | 20060922 | 159.97600 | 287.95517 | 295.95777 | 5.06745 | 0.1014810 | 2.5909376 | 47 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 86269 | 2004 $CJ_{37}$ |
| 2004 $CO_{37}$ | 16.2 | 0.15 | 20060922 | 287.25350 | 310.32329 | 175.06230 | 10.89895 | 0.0785144 | 2.3463323 | 65 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 66332 | 2004 $CO_{37}$ |
| 2004 $CQ_{37}$ | 17.0 | 0.15 | 20060922 | 276.57349 | 184.07704 | 295.55377 | 9.31601 | 0.1395838 | 2.3615145 | 40 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 90189 | 2004 $CQ_{37}$ |
| 2004 $CX_{37}$ | 16.3 | 0.15 | 20060922 | 194.06066 | 161.32538 | 27.18619 | 8.09148 | 0.1477022 | 2.6074826 | 48 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 03610 | 2004 $CX_{37}$ |
| 2004 $CH_{40}$ | 16.3 | 0.15 | 20060922 | 224.17739 | 14.77456 | 179.47627 | 3.96905 | 0.2167974 | 2.3872790 | 78 | 6 | 1995–2006 | 0.44 | M-v | 1 | MPC | 87613 | 2004 $CH_{40}$ |
| 2004 $CO_{40}$ | 16.9 | 0.15 | 20060922 | 280.66433 | 324.45114 | 142.30753 | 5.23491 | 0.1761559 | 2.4041905 | 58 | 3 | 1993–2006 | 0.53 | M-v | 2 | MPC | 61903 | 2004 $CO_{40}$ |
| 2004 $CS_{40}$ | 17.3 | 0.15 | 20060922 | 280.25548 | 272.99456 | 202.44346 | 1.84728 | 0.1666587 | 2.3689333 | 66 | 4 | 1993–2006 | 0.47 | M-v | 1 | MPC | 66332 | 2004 $CS_{40}$ |
| 2004 $CC_{42}$ | 17.7 | 0.15 | 20060922 | 253.70831 | 58.93632 | 105.97111 | 3.63822 | 0.1280878 | 2.2910737 | 49 | 3 | 2001–2006 | 0.36 | M-v | 4 | MPC | 76413 | 2004 $CC_{42}$ |
| 2004 $CE_{42}$ | 16.6 | 0.15 | 20060922 | 190.88712 | 123.99998 | 84.37082 | 7.33133 | 0.0891633 | 2.4178058 | 35 | 4 | 1994–2006 | 0.44 | M-v | 2 | MPC | 04294 | 2004 $CE_{42}$ |
| 2004 $CJ_{42}$ | 16.4 | 0.15 | 20060922 | 271.12784 | 343.53672 | 115.62323 | 6.00631 | 0.1338013 | 2.5226870 | 49 | 5 | 1992–2006 | 0.48 | M-v | 2 | MPC | 89510 | 2004 $CJ_{42}$ |
| 2004 $CW_{42}$ | 16.7 | 0.15 | 20060922 | 206.68497 | 123.16890 | 81.22644 | 2.91807 | 0.1264033 | 2.4065408 | 54 | 4 | 1993–2006 | 0.55 | M-v | 1 | MPC | 61904 | 2004 $CW_{42}$ |
| 2004 $CH_{43}$ | 16.3 | 0.15 | 20060922 | 62.30611 | 193.67678 | 115.42991 | 7.59403 | 0.0705857 | 2.5635901 | 45 | 3 | 2004–2006 | 0.39 | M-v | 2 | MPC | 87613 | 2004 $CH_{43}$ |
| 2004 $CK_{43}$ | 17.8 | 0.15 | 20060922 | 197.54851 | 55.60943 | 157.24455 | 1.57495 | 0.1337781 | 2.4532430 | 22 | 3 | 2000–2006 | 0.39 | M-v | 4 | MPC | 76413 | 2004 $CK_{43}$ |
| 2004 $CU_{44}$ | 18.1 | 0.15 | 20060922 | 309.76598 | 167.40666 | 292.98052 | 3.96320 | 0.0737744 | 2.2106187 | 27 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 65561 | 2004 $CU_{44}$ |
| 2004 $CQ_{45}$ | 16.3 | 0.15 | 20060922 | 162.72733 | 27.02746 | 123.94944 | 11.67671 | 0.1801125 | 3.1385919 | 21 | 3 | 2002–2005 | 0.51 | M-v | 3 | MPC | 89510 | 2004 $CQ_{45}$ |
| 2004 $CS_{45}$ | 16.1 | 0.15 | 20060922 | 180.15497 | 256.41663 | 357.84549 | 6.07954 | 0.1564853 | 2.2653102 | 77 | 4 | 2001–2005 | 0.61 | M-v | 1 | MPC | 90189 | 2004 $CS_{45}$ |
| 2004 $CO_{47}$ | 16.2 | 0.15 | 20060922 | 185.68284 | 126.59364 | 107.15047 | 7.88818 | 0.1934921 | 2.3728992 | 32 | 4 | 1993–2006 | 0.30 | M-v | 1 | MPC | 87613 | 2004 $CO_{47}$ |
| 2004 $CY_{48}$ | 16.8 | 0.15 | 20060922 | 188.42191 | 99.61177 | 126.39479 | 7.08896 | 0.0874685 | 2.3697306 | 48 | 4 | 2002–2006 | 0.45 | M-v | 0 | MPC | 86271 | 2004 $CY_{48}$ |
| 2004 $CZ_{49}$ | 15.4 | 0.15 | 20060922 | 107.30876 | 322.99592 | 330.15288 | 13.23350 | 0.0239826 | 2.4384656 | 66 | 6 | 1998–2006 | 0.60 | M-v | 1 | MPC | 87613 | 2004 $CZ_{49}$ |
| 2004 $CK_{50}$ | 15.4 | 0.15 | 20060922 | 247.85604 | 106.55580 | 353.96153 | 23.02000 | 0.2977162 | 2.6776949 | 103 | 3 | 1998–2004 | 0.57 | M-v | 2 | MPC | 86272 | 2004 $CK_{50}$ |
| 2004 $CQ_{50}$ | 15.3 | 0.15 | 20060922 | 191.08854 | 284.20330 | 225.21770 | 8.10293 | 0.1759292 | 2.9730669 | 72 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 66332 | 2004 $CQ_{50}$ |
| 2004 $CZ_{50}$ | 14.9 | 0.15 | 20060922 | 46.18683 | 11.52330 | 322.79918 | 13.54866 | 0.2213008 | 2.5592080 | 50 | 6 | 1981–2006 | 0.57 | M-v | 1 | MPC | 87613 | 2004 $CZ_{50}$ |
| 2004 $CG_{51}$ | 17.2 | 0.15 | 20060922 | 256.05223 | 307.37687 | 192.03106 | 4.03377 | 0.1050202 | 2.4054526 | 48 | 4 | 1998–2006 | 0.37 | M-v | 3 | MPC | 89510 | 2004 $CG_{51}$ |
| 2004 $CJ_{51}$ | 15.0 | 0.15 | 20060922 | 102.28484 | 74.03075 | 153.10077 | 22.62925 | 0.1693501 | 3.0982087 | 81 | 3 | 2003–2006 | 0.57 | M-v | 2 | MPC | 04294 | 2004 $CJ_{51}$ |
| 2004 $CL_{51}$ | 16.3 | 0.15 | 20060922 | 291.00061 | 334.53662 | 158.57885 | 6.73263 | 0.0466724 | 2.2948095 | 91 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 87613 | 2004 $CL_{51}$ |
| 2004 $CP_{51}$ | 16.6 | 0.15 | 20060922 | 291.70031 | 74.79705 | 169.47723 | 26.42135 | 0.0741647 | 1.8194223 | 63 | 3 | 2000–2005 | 0.61 | M-v | 2 | MPC | 89510 | 2004 $CP_{51}$ |
| 2004 $CU_{51}$ | 15.8 | 0.15 | 20060922 | 6.75835 | 234.06559 | 147.63386 | 21.90403 | 0.3044827 | 2.3033403 | 70 | 5 | 1997–2006 | 0.60 | M-v | 2 | MPC | 04294 | 2004 $CU_{51}$ |
| 2004 $CP_{52}$ | 15.8 | 0.15 | 20060922 | 144.12297 | 87.41217 | 120.26441 | 2.86863 | 0.1105720 | 2.9136923 | 47 | 3 | 1999–2006 | 0.46 | M-v | 3 | MPC | 03610 | 2004 $CP_{52}$ |
| 2004 $CD_{53}$ | 16.9 | 0.15 | 20060922 | 23.28307 | 58.05732 | 304.78113 | 4.86870 | 0.1341097 | 2.3391656 | 38 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 86274 | 2004 $CD_{53}$ |
| 2004 $CO_{53}$ | 15.2 | 0.15 | 20060922 | 72.96168 | 286.50632 | 340.44898 | 6.87801 | 0.0869649 | 3.0405924 | 62 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04294 | 2004 $CO_{53}$ |
| 2004 $CR_{53}$ | 16.2 | 0.15 | 20060922 | 32.35565 | 193.70556 | 141.27131 | 3.87768 | 0.1535489 | 2.6828568 | 55 | 4 | 1996–2006 | 0.40 | M-v | 0 | MPC | 87613 | 2004 $CR_{53}$ |
| 2004 $CJ_{54}$ | 16.9 | 0.15 | 20060922 | 142.65657 | 206.41584 | 26.00109 | 1.77143 | 0.1769131 | 2.7884042 | 25 | 4 | 2001–2006 | 0.33 | M-v | 0 | MPC | 86275 | 2004 $CJ_{54}$ |
| 2004 $CM_{54}$ | 16.7 | 0.15 | 20060922 | 302.21459 | 176.60927 | 273.60873 | 1.53333 | 0.1528190 | 2.3833745 | 98 | 3 | 2002–2006 | 0.46 | M-v | 1 | MPC | 86275 | 2004 $CM_{54}$ |
| 2004 $CU_{54}$ | 16.6 | 0.15 | 20060922 | 196.00238 | 220.54343 | 4.74618 | 3.27450 | 0.0896576 | 2.3537814 | 63 | 4 | 1997–2006 | 0.46 | M-v | 1 | MPC | 90190 | 2004 $CU_{54}$ |
| 2004 $CV_{54}$ | 16.9 | 0.15 | 20060922 | 178.37567 | 168.82020 | 39.21531 | 3.72810 | 0.1191284 | 2.6019839 | 48 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 89511 | 2004 $CV_{54}$ |
| 2004 $CY_{54}$ | 16.2 | 0.15 | 20060922 | 160.57143 | 187.74349 | 48.09680 | 6.90398 | 0.1602517 | 2.5695047 | 49 | 6 | 1996–2006 | 0.55 | M-v | 1 | MPC | 86275 | 2004 $CY_{54}$ |
| 2004 $CZ_{54}$ | 17.2 | 0.15 | 20060922 | 329.77110 | 106.84932 | 274.43689 | 1.43808 | 0.0544023 | 2.7788936 | 20 | 3 | 1999–2006 | 0.24 | M-v | 3 | MPC | 76415 | 2004 $CZ_{54}$ |
| 2004 $CV_{55}$ | 16.3 | 0.15 | 20060922 | 336.08368 | 337.46481 | 106.85256 | 7.03163 | 0.0818429 | 2.2460567 | 72 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 87613 | 2004 $CV_{55}$ |
| 2004 $CF_{56}$ | 16.1 | 0.15 | 20060922 | 180.25874 | 66.94307 | 165.76387 | 7.91598 | 0.1654880 | 2.4733944 | 60 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87613 | 2004 $CF_{56}$ |
| 2004 $CG_{56}$ | 17.1 | 0.15 | 20060922 | 217.04924 | 49.86167 | 148.78467 | 1.84623 | 0.1193110 | 2.3909832 | 53 | 4 | 1997–2006 | 0.39 | M-v | 4 | MPC | 61910 | 2004 $CG_{56}$ |
| 2004 $CJ_{56}$ | 17.1 | 0.15 | 20060922 | 229.70347 | 50.87902 | 120.08397 | 2.21999 | 0.1272877 | 2.4572915 | 57 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87613 | 2004 $CJ_{56}$ |
| 2004 $CV_{57}$ | 17.3 | 0.15 | 20060922 | 248.30609 | 123.80954 | 11.71756 | 5.29335 | 0.1667262 | 2.4125381 | 45 | 3 | 1995–2006 | 0.52 | M-v | 3 | MPC | 65562 | 2004 $CV_{57}$ |
| 2004 $CL_{58}$ | 16.7 | 0.15 | 20060922 | 267.39075 | 13.52035 | 87.66209 | 6.65148 | 0.1611105 | 2.4578197 | 38 | 3 | 2000–2004 | 0.55 | M-v | 2 | MPC | 66333 | 2004 $CL_{58}$ |
| 2004 $CQ_{58}$ | 15.0 | 0.15 | 20060922 | 190.87434 | 132.24351 | 339.67950 | 9.90017 | 0.0899235 | 3.1207826 | 43 | 3 | 1996–2004 | 0.54 | M-v | 2 | MPC | 86276 | 2004 $CQ_{58}$ |
| 2004 $CW_{58}$ | 14.9 | 0.15 | 20060922 | 92.21136 | 133.92433 | 120.66536 | 15.74352 | 0.2205235 | 2.9745820 | 68 | 3 | 2004–2006 | 0.53 | M-v | 2 | MPC | 87613 | 2004 $CW_{58}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $CX_{58}$ | 17.2 | 0.15 | 20060922 | 322.91959 | 24.85755 | 53.40227 | 3.75180 | 0.1915986 | 2.2441427 | 68 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 86276 | 2004 $CX_{58}$ |
| 2004 $CZ_{58}$ | 15.4 | 0.15 | 20060922 | 153.00924 | 97.93419 | 121.80934 | 15.53539 | 0.0613759 | 2.5779272 | 31 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 86276 | 2004 $CZ_{58}$ |
| 2004 $CL_{59}$ | 16.9 | 0.15 | 20060922 | 297.63426 | 327.18633 | 121.06567 | 11.87574 | 0.1810972 | 2.3603782 | 55 | 5 | 1999–2006 | 0.51 | M-v | 0 | MPC | 86277 | 2004 $CL_{59}$ |
| 2004 $CV_{60}$ | 15.9 | 0.15 | 20060922 | 89.64984 | 304.36238 | 358.53492 | 12.51770 | 0.1192219 | 2.4467817 | 25 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 95176 | 2004 $CV_{60}$ |
| 2004 $CQ_{61}$ | 16.3 | 0.15 | 20060922 | 270.11517 | 27.45431 | 84.27876 | 5.26148 | 0.1390570 | 2.4189428 | 49 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 97698 | 2004 $CQ_{61}$ |
| 2004 $CK_{62}$ | 16.8 | 0.15 | 20060922 | 217.53329 | 148.09621 | 41.75796 | 7.42184 | 0.0699536 | 2.3924154 | 48 | 3 | 1997–2006 | 0.41 | M-v | 3 | MPC | 69671 | 2004 $CK_{62}$ |
| 2004 $CU_{62}$ | 15.5 | 0.15 | 20060922 | 105.86365 | 153.04674 | 111.50358 | 15.12546 | 0.0679262 | 2.7002947 | 37 | 4 | 2000–2006 | 0.76 | M-v | 2 | MPC | 65562 | 2004 $CU_{62}$ |
| 2004 $CB_{63}$ | 15.6 | 0.15 | 20060922 | 138.75254 | 237.60807 | 352.59057 | 14.94282 | 0.1034380 | 2.6726306 | 50 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 66333 | 2004 $CB_{63}$ |
| 2004 $CF_{63}$ | 16.5 | 0.15 | 20060922 | 300.84793 | 63.65233 | 58.28830 | 6.95957 | 0.0469676 | 2.2388369 | 34 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 69672 | 2004 $CF_{63}$ |
| 2004 $CE_{64}$ | 17.5 | 0.15 | 20060922 | 228.71729 | 110.21973 | 53.64565 | 5.21347 | 0.1683994 | 2.4533100 | 21 | 3 | 1999–2004 | 0.31 | M-v | 2 | MPC | 69672 | 2004 $CE_{64}$ |
| 2004 $CP_{64}$ | 16.5 | 0.15 | 20060922 | 318.27324 | 282.30878 | 124.72977 | 15.20726 | 0.1039868 | 2.5214059 | 31 | 4 | 1997–2006 | 0.41 | M-v | 0 | MPC | 03610 | 2004 $CP_{64}$ |
| 2004 $CJ_{66}$ | 17.4 | 0.15 | 20060922 | 220.13600 | 67.98731 | 78.24802 | 4.48883 | 0.1364672 | 2.5962233 | 17 | 3 | 1996–2004 | 0.52 | M-v | 2 | MPC | 00707 | 2004 $CJ_{66}$ |
| 2004 $CN_{66}$ | 17.3 | 0.15 | 20060922 | 243.46874 | 79.67176 | 92.93084 | 7.76916 | 0.0470649 | 2.2773476 | 43 | 4 | 1996–2006 | 0.56 | M-v | 1 | MPC | 87613 | 2004 $CN_{66}$ |
| 2004 $CS_{66}$ | 16.7 | 0.15 | 20060922 | 215.23108 | 164.87766 | 356.16263 | 12.23942 | 0.1891241 | 2.5897726 | 50 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 61912 | 2004 $CS_{66}$ |
| 2004 $CC_{67}$ | 15.4 | 0.15 | 20060922 | 324.62478 | 332.92391 | 55.95683 | 6.67953 | 0.0396564 | 2.7033610 | 36 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 95176 | 2004 $CC_{67}$ |
| 2004 $CH_{67}$ | 16.7 | 0.15 | 20060922 | 215.10979 | 212.22637 | 310.20813 | 3.60164 | 0.1561160 | 2.5349354 | 40 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 76416 | 2004 $CH_{67}$ |
| 2004 $CM_{67}$ | 16.0 | 0.15 | 20060922 | 109.11623 | 174.95575 | 121.68066 | 8.05458 | 0.1070713 | 2.3557361 | 49 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 69672 | 2004 $CM_{67}$ |
| 2004 $CE_{68}$ | 17.0 | 0.15 | 20060922 | 327.95249 | 258.35904 | 141.71394 | 7.77504 | 0.1917309 | 2.3569253 | 106 | 3 | 1999–2006 | 0.48 | M-v | 1 | MPC | 04294 | 2004 $CE_{68}$ |
| 2004 $CH_{68}$ | 16.7 | 0.15 | 20060922 | 310.60429 | 254.91078 | 156.55158 | 7.85938 | 0.2224462 | 2.3883941 | 54 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 04294 | 2004 $CH_{68}$ |
| 2004 $CL_{68}$ | 16.8 | 0.15 | 20060922 | 249.16054 | 259.30717 | 173.57042 | 3.01997 | 0.1624739 | 2.7910453 | 25 | 4 | 2000–2005 | 0.32 | M-v | 0 | MPC | 86278 | 2004 $CL_{68}$ |
| 2004 $CQ_{68}$ | 16.2 | 0.15 | 20060922 | 266.91496 | 40.26187 | 19.97404 | 4.91070 | 0.1565015 | 2.7766123 | 49 | 4 | 1995–2004 | 0.56 | M-v | 0 | MPC | 76417 | 2004 $CQ_{68}$ |
| 2004 $CW_{68}$ | 16.2 | 0.15 | 20060922 | 154.40563 | 170.67093 | 25.30258 | 3.64157 | 0.0615455 | 2.7708928 | 39 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 74308 | 2004 $CW_{68}$ |
| 2004 $CL_{69}$ | 16.9 | 0.15 | 20060922 | 338.81208 | 25.25333 | 61.36752 | 4.09274 | 0.0644792 | 2.2314113 | 45 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87613 | 2004 $CL_{69}$ |
| 2004 $CN_{69}$ | 16.1 | 0.15 | 20060922 | 342.95258 | 265.85272 | 105.12546 | 7.10979 | 0.0636099 | 2.7400061 | 68 | 4 | 2000–2006 | 0.71 | M-v | 1 | MPC | 03611 | 2004 $CN_{69}$ |
| 2004 $CO_{69}$ | 16.3 | 0.15 | 20060922 | 174.74931 | 83.20960 | 123.16390 | 14.40959 | 0.0854775 | 2.5987836 | 44 | 4 | 2000–2004 | 0.57 | M-v | 1 | MPC | 66333 | 2004 $CO_{69}$ |
| 2004 $CP_{69}$ | 16.3 | 0.15 | 20060922 | 296.77358 | 91.43468 | 13.98320 | 6.80220 | 0.0737261 | 2.3561675 | 86 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 61914 | 2004 $CP_{69}$ |
| 2004 $CX_{69}$ | 17.3 | 0.15 | 20060922 | 252.57024 | 115.79538 | 41.03234 | 4.62778 | 0.1666450 | 2.3738595 | 65 | 5 | 1993–2006 | 0.48 | M-v | 1 | MPC | 87613 | 2004 $CX_{69}$ |
| 2004 $CZ_{69}$ | 16.5 | 0.15 | 20060922 | 311.27172 | 24.72247 | 70.03554 | 6.85698 | 0.0583373 | 2.3710634 | 50 | 3 | 1995–2006 | 0.45 | M-v | 2 | MPC | 61914 | 2004 $CZ_{69}$ |
| 2004 $CA_{70}$ | 16.0 | 0.15 | 20060922 | 179.81610 | 159.48181 | 81.85901 | 7.18198 | 0.0638015 | 2.3641488 | 26 | 3 | 2004–2006 | 0.46 | M-v | 2 | MPC | 86279 | 2004 $CA_{70}$ |
| 2004 $CK_{70}$ | 17.3 | 0.15 | 20060922 | 315.44627 | 332.54582 | 124.66194 | 6.26134 | 0.0738075 | 2.2527948 | 36 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 72995 | 2004 $CK_{70}$ |
| 2004 $CL_{70}$ | 16.4 | 0.15 | 20060922 | 231.43822 | 148.33784 | 339.72768 | 7.19616 | 0.0955712 | 2.6192789 | 46 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 04294 | 2004 $CL_{70}$ |
| 2004 $CY_{70}$ | 15.9 | 0.15 | 20060922 | 71.52490 | 241.49565 | 39.62923 | 2.53539 | 0.0516160 | 2.7038282 | 72 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 04294 | 2004 $CY_{70}$ |
| 2004 $CB_{71}$ | 16.7 | 0.15 | 20060922 | 318.44745 | 67.05094 | 4.83096 | 3.44627 | 0.0322926 | 2.4230483 | 69 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 04294 | 2004 $CB_{71}$ |
| 2004 $CW_{71}$ | 16.2 | 0.15 | 20060922 | 178.15023 | 210.17535 | 35.14888 | 6.46281 | 0.1170866 | 2.3776107 | 37 | 3 | 1997–2005 | 0.55 | M-v | 1 | MPC | 86280 | 2004 $CW_{71}$ |
| 2004 $CN_{72}$ | 15.9 | 0.15 | 20060922 | 170.68622 | 117.43592 | 99.92153 | 7.31068 | 0.1168009 | 2.5458699 | 57 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87614 | 2004 $CN_{72}$ |
| 2004 $CP_{72}$ | 16.1 | 0.15 | 20060922 | 175.57571 | 123.64601 | 101.97041 | 7.03624 | 0.0834458 | 2.4401834 | 29 | 3 | 2004–2006 | 0.50 | M-v | 3 | MPC | 86280 | 2004 $CP_{72}$ |
| 2004 $CY_{72}$ | 16.2 | 0.15 | 20060922 | 147.63398 | 268.40408 | 357.64440 | 5.47196 | 0.0739929 | 2.3432135 | 52 | 7 | 1995–2006 | 0.55 | M-v | 1 | MPC | 86280 | 2004 $CY_{72}$ |
| 2004 $CL_{73}$ | 15.5 | 0.15 | 20060922 | 251.79270 | 258.38814 | 210.95080 | 9.87301 | 0.1456791 | 2.6248133 | 66 | 3 | 2000–2004 | 0.58 | M-v | 2 | MPC | 66333 | 2004 $CL_{73}$ |
| 2004 $CO_{73}$ | 17.1 | 0.15 | 20060922 | 185.77079 | 144.78636 | 85.81142 | 3.29175 | 0.1678364 | 2.3955197 | 52 | 4 | 1997–2006 | 0.46 | M-v | 2 | MPC | 87614 | 2004 $CO_{73}$ |
| 2004 $CA_{74}$ | 16.5 | 0.15 | 20060922 | 228.93097 | 104.18636 | 91.85760 | 9.68879 | 0.1347798 | 2.3524220 | 67 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87614 | 2004 $CA_{74}$ |
| 2004 $CN_{74}$ | 15.6 | 0.15 | 20060922 | 222.93066 | 270.31245 | 157.29574 | 8.90720 | 0.1473377 | 3.1139173 | 33 | 3 | 2002–2005 | 0.47 | M-v | 3 | MPC | 87614 | 2004 $CN_{74}$ |
| 2004 $CO_{74}$ | 16.0 | 0.15 | 20060922 | 241.07850 | 140.84400 | 331.33890 | 4.33586 | 0.1145684 | 2.7111669 | 71 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 04295 | 2004 $CO_{74}$ |
| 2004 $CR_{74}$ | 18.3 | 0.15 | 20060922 | 3.30531 | 326.90077 | 156.86064 | 6.32107 | 0.1318077 | 1.9189970 | 25 | 3 | 1996–2005 | 0.57 | M-v | 4 | MPC | 95176 | 2004 $CR_{74}$ |
| 2004 $CT_{74}$ | 17.1 | 0.15 | 20060922 | 258.43925 | 166.76787 | 344.96376 | 2.03087 | 0.0328599 | 2.3593863 | 47 | 5 | 1993–2006 | 0.47 | M-v | 1 | MPC | 04295 | 2004 $CT_{74}$ |
| 2004 $CG_{75}$ | 17.8 | 0.15 | 20060922 | 215.81403 | 29.73462 | 171.23725 | 2.09641 | 0.1640740 | 2.3487855 | 33 | 4 | 1997–2006 | 0.43 | M-v | 2 | MPC | 69673 | 2004 $CG_{75}$ |
| 2004 $CM_{75}$ | 17.7 | 0.15 | 20060922 | 308.14110 | 228.11434 | 212.86836 | 2.22176 | 0.1998854 | 2.3091169 | 68 | 4 | 1999–2006 | 0.45 | M-v | 0 | MPC | 65565 | 2004 $CM_{75}$ |
| 2004 $CR_{75}$ | 16.5 | 0.15 | 20060922 | 345.75921 | 109.83265 | 298.49007 | 4.09341 | 0.1053897 | 2.3317601 | 80 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 69673 | 2004 $CR_{75}$ |
| 2004 $CS_{75}$ | 16.8 | 0.15 | 20060922 | 284.59965 | 258.11864 | 188.55943 | 2.22016 | 0.0749758 | 2.5158639 | 57 | 5 | 1998–2006 | 0.41 | M-v | 2 | MPC | 04295 | 2004 $CS_{75}$ |
| 2004 $CV_{75}$ | 17.1 | 0.15 | 20060922 | 242.00340 | 339.06402 | 157.25985 | 3.66093 | 0.1372599 | 2.4852369 | 37 | 4 | 2000–2006 | 0.48 | M-v | 2 | MPC | 66334 | 2004 $CV_{75}$ |
| 2004 $CG_{76}$ | 16.8 | 0.15 | 20060922 | 179.86203 | 21.56217 | 215.07400 | 2.09214 | 0.1070379 | 2.3517772 | 32 | 5 | 1991–2006 | 0.37 | M-v | 1 | MPC | 04295 | 2004 $CG_{76}$ |
| 2004 $CJ_{76}$ | 16.5 | 0.15 | 20060922 | 181.95098 | 307.27213 | 296.60524 | 4.08274 | 0.1896976 | 2.3555604 | 50 | 3 | 2004–2006 | 0.46 | M-v | 2 | MPC | 86281 | 2004 $CJ_{76}$ |
| 2004 $CL_{76}$ | 16.3 | 0.15 | 20060922 | 277.08795 | 272.31934 | 153.97292 | 12.72929 | 0.1590269 | 2.6658523 | 38 | 4 | 1993–2006 | 0.57 | M-v | 1 | MPC | 04295 | 2004 $CL_{76}$ |
| 2004 $CO_{76}$ | 16.6 | 0.15 | 20060922 | 213.66199 | 256.31283 | 293.80658 | 4.21000 | 0.1360946 | 2.4019633 | 37 | 3 | 2004–2006 | 0.36 | M-v | 3 | MPC | 86281 | 2004 $CO_{76}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $CP_{76}$ | 17.3 | 0.15 | 20060922 | 298.06892 | 146.49092 | 311.65283 | 6.40115 | 0.0715600 | 2.3636800 | 27 | 3 | 2002–2006 | 0.45 | M-v | 1 | MPC | 95176 | 2004 $CP_{76}$ |
| 2004 $CS_{76}$ | 15.3 | 0.15 | 20060922 | 218.37039 | 127.40408 | 320.53950 | 8.54224 | 0.0751507 | 3.1317831 | 48 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 02202 | 2004 $CS_{76}$ |
| 2004 $CV_{76}$ | 17.3 | 0.15 | 20060922 | 282.58714 | 284.55133 | 157.03809 | 5.61919 | 0.1664044 | 2.5235580 | 34 | 4 | 1998–2006 | 0.30 | M-v | 2 | MPC | 04295 | 2004 $CV_{76}$ |
| 2004 $CZ_{76}$ | 15.9 | 0.15 | 20060922 | 226.40083 | 99.89458 | 342.59046 | 9.85842 | 0.1421680 | 3.0843709 | 44 | 3 | 1996–2004 | 0.57 | M-v | 2 | MPC | 86282 | 2004 $CZ_{76}$ |
| 2004 $CD_{77}$ | 15.7 | 0.15 | 20060922 | 249.45501 | 131.25653 | 327.37377 | 6.92996 | 0.1690040 | 2.7112121 | 68 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 76419 | 2004 $CD_{77}$ |
| 2004 $CE_{77}$ | 16.9 | 0.15 | 20060922 | 239.59455 | 22.41180 | 161.43956 | 5.27943 | 0.1315851 | 2.3295507 | 83 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 86282 | 2004 $CE_{77}$ |
| 2004 $CH_{77}$ | 17.2 | 0.15 | 20060922 | 176.01483 | 225.71436 | 339.42785 | 3.54685 | 0.1289217 | 2.6083305 | 27 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 87614 | 2004 $CH_{77}$ |
| 2004 $CO_{77}$ | 15.3 | 0.15 | 20060922 | 100.81396 | 109.43767 | 148.07598 | 3.16514 | 0.0290068 | 2.7373658 | 60 | 6 | 1995–2006 | 0.54 | M-v | 0 | MPC | 77775 | 2004 $CO_{77}$ |
| 2004 $CT_{77}$ | 17.8 | 0.15 | 20060922 | 328.50664 | 125.64524 | 306.75042 | 2.29122 | 0.1484564 | 2.2931379 | 40 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 86282 | 2004 $CT_{77}$ |
| 2004 $CV_{77}$ | 15.7 | 0.15 | 20060922 | 27.91377 | 176.12565 | 151.68865 | 9.68800 | 0.0972063 | 2.7253222 | 53 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 03611 | 2004 $CV_{77}$ |
| 2004 $CA_{78}$ | 16.8 | 0.15 | 20060922 | 177.52965 | 259.80393 | 337.38741 | 7.00676 | 0.0831971 | 2.3652385 | 53 | 3 | 2002–2005 | 0.47 | M-v | 1 | MPC | 86282 | 2004 $CA_{78}$ |
| 2004 $CL_{78}$ | 16.3 | 0.15 | 20060922 | 284.49633 | 310.49108 | 129.42276 | 5.16869 | 0.1681905 | 2.5321305 | 41 | 4 | 2000–2006 | 0.62 | M-v | 2 | MPC | 04295 | 2004 $CL_{78}$ |
| 2004 $CM_{78}$ | 17.0 | 0.15 | 20060922 | 293.98406 | 104.69111 | 339.64750 | 2.13131 | 0.1607246 | 2.4420796 | 47 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 04295 | 2004 $CM_{78}$ |
| 2004 $CP_{78}$ | 15.8 | 0.15 | 20060922 | 297.21334 | 85.79261 | 331.43976 | 13.36597 | 0.1571975 | 2.6092478 | 54 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 04295 | 2004 $CP_{78}$ |
| 2004 $CW_{78}$ | 16.7 | 0.15 | 20060922 | 282.29185 | 68.97799 | 38.10524 | 1.70101 | 0.1458875 | 2.4202457 | 117 | 5 | 1991–2006 | 0.53 | M-v | 1 | MPC | 66334 | 2004 $CW_{78}$ |
| 2004 $CA_{79}$ | 16.8 | 0.15 | 20060922 | 257.90009 | 70.64158 | 86.40042 | 3.17951 | 0.1118303 | 2.3353949 | 61 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 87614 | 2004 $CA_{79}$ |
| 2004 $CC_{79}$ | 16.0 | 0.15 | 20060922 | 117.34774 | 172.87393 | 39.08341 | 0.77843 | 0.1443920 | 3.2004305 | 42 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 03611 | 2004 $CC_{79}$ |
| 2004 $CN_{79}$ | 15.6 | 0.15 | 20060922 | 258.78963 | 0.35457 | 101.27975 | 4.72248 | 0.0688073 | 2.6808314 | 24 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 76421 | 2004 $CN_{79}$ |
| 2004 $CV_{79}$ | 16.7 | 0.15 | 20060922 | 148.75957 | 156.30715 | 128.55437 | 8.45508 | 0.0607228 | 2.2625752 | 37 | 3 | 2002–2005 | 0.46 | M-v | 3 | MPC | 86283 | 2004 $CV_{79}$ |
| 2004 $CA_{80}$ | 17.2 | 0.15 | 20060922 | 259.69157 | 76.79853 | 68.96604 | 2.25113 | 0.1317932 | 2.3970567 | 80 | 6 | 1995–2006 | 0.48 | M-v | 0 | MPC | 61921 | 2004 $CA_{80}$ |
| 2004 $CR_{80}$ | 14.6 | 0.15 | 20060922 | 69.27087 | 257.57317 | 67.69083 | 4.75557 | 0.2228136 | 2.5644137 | 60 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 77776 | 2004 $CR_{80}$ |
| 2004 $CK_{81}$ | 16.6 | 0.15 | 20060922 | 174.61409 | 212.79080 | 25.78353 | 1.73057 | 0.1253164 | 2.3932772 | 51 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 89512 | 2004 $CK_{81}$ |
| 2004 $CU_{81}$ | 16.9 | 0.15 | 20060922 | 249.82893 | 345.09751 | 127.56296 | 3.46877 | 0.1457929 | 2.5909334 | 34 | 5 | 1994–2006 | 0.48 | M-v | 0 | MPC | 74308 | 2004 $CU_{81}$ |
| 2004 $CO_{82}$ | 15.2 | 0.15 | 20060922 | 245.30971 | 100.19975 | 323.00627 | 14.63731 | 0.0138036 | 3.2065144 | 29 | 3 | 2001–2004 | 0.68 | M-v | 3 | MPC | 03611 | 2004 $CO_{82}$ |
| 2004 $CP_{82}$ | 16.8 | 0.15 | 20060922 | 195.79549 | 36.78267 | 182.64968 | 1.05918 | 0.1359661 | 2.3853487 | 36 | 3 | 2004–2006 | 0.35 | M-v | 3 | MPC | 03611 | 2004 $CP_{82}$ |
| 2004 $CX_{82}$ | 16.1 | 0.15 | 20060922 | 349.45857 | 11.65667 | 349.80275 | 3.63418 | 0.0396855 | 2.7476220 | 57 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04295 | 2004 $CX_{82}$ |
| 2004 $CY_{82}$ | 15.2 | 0.15 | 20060922 | 136.79280 | 294.89022 | 263.36532 | 6.08642 | 0.1027768 | 3.1065960 | 65 | 3 | 2001–2004 | 0.59 | M-v | 3 | MPC | 66334 | 2004 $CY_{82}$ |
| 2004 $CP_{83}$ | 17.4 | 0.15 | 20060922 | 288.07231 | 177.30095 | 281.12780 | 0.61348 | 0.0948990 | 2.4350620 | 54 | 4 | 2000–2006 | 0.31 | M-v | 0 | MPC | 61922 | 2004 $CP_{83}$ |
| 2004 $CF_{84}$ | 17.4 | 0.15 | 20060922 | 213.64851 | 357.10508 | 169.65503 | 4.67294 | 0.2099800 | 2.6067052 | 48 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 61923 | 2004 $CF_{84}$ |
| 2004 $CL_{84}$ | 16.5 | 0.15 | 20060922 | 329.82559 | 246.41917 | 142.65581 | 7.61613 | 0.2796213 | 2.4348351 | 65 | 4 | 1991–2006 | 0.52 | M-v | 2 | MPC | 04295 | 2004 $CL_{84}$ |
| 2004 $CQ_{84}$ | 16.9 | 0.15 | 20060922 | 196.75833 | 47.67968 | 156.66264 | 2.20976 | 0.1324708 | 2.4543151 | 34 | 3 | 2004–2006 | 0.51 | M-v | 3 | MPC | 86284 | 2004 $CQ_{84}$ |
| 2004 $CF_{85}$ | 15.3 | 0.15 | 20060922 | 99.90853 | 304.63848 | 296.53445 | 9.51711 | 0.1523304 | 2.9704519 | 50 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 69674 | 2004 $CF_{85}$ |
| 2004 $CR_{85}$ | 16.2 | 0.15 | 20060922 | 119.61323 | 132.30111 | 124.62602 | 3.46728 | 0.0843413 | 2.6591667 | 53 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 76423 | 2004 $CR_{85}$ |
| 2004 $CQ_{86}$ | 16.8 | 0.15 | 20060922 | 299.51826 | 1.28730 | 126.12476 | 3.99901 | 0.1178771 | 2.2399713 | 66 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 86286 | 2004 $CQ_{86}$ |
| 2004 $CX_{89}$ | 17.0 | 0.15 | 20060922 | 332.53890 | 266.15860 | 153.72624 | 7.58201 | 0.1715058 | 2.3542083 | 59 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 86287 | 2004 $CX_{89}$ |
| 2004 $CZ_{89}$ | 15.0 | 0.15 | 20060922 | 55.55669 | 1.62264 | 312.15148 | 12.46119 | 0.1877333 | 2.6432885 | 61 | 7 | 1997–2006 | 0.47 | M-v | 1 | MPC | 04295 | 2004 $CZ_{89}$ |
| 2004 $CM_{90}$ | 16.5 | 0.15 | 20060922 | 257.55064 | 252.03662 | 239.68306 | 5.81669 | 0.0571439 | 2.4484131 | 65 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 86287 | 2004 $CM_{90}$ |
| 2004 $CS_{90}$ | 15.6 | 0.15 | 20060922 | 104.93047 | 319.54690 | 266.26821 | 4.33548 | 0.1160292 | 3.1364869 | 23 | 4 | 1995–2005 | 0.45 | M-v | 1 | MPC | 86287 | 2004 $CS_{90}$ |
| 2004 $CC_{91}$ | 17.5 | 0.15 | 20060922 | 221.89454 | 15.41961 | 169.99083 | 7.40299 | 0.0525729 | 2.3768576 | 26 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 89512 | 2004 $CC_{91}$ |
| 2004 $CP_{91}$ | 17.1 | 0.15 | 20060922 | 250.71042 | 304.54536 | 209.51456 | 3.34623 | 0.1037006 | 2.3433804 | 58 | 5 | 1995–2006 | 0.38 | M-v | 1 | MPC | 95177 | 2004 $CP_{91}$ |
| 2004 $CQ_{92}$ | 15.6 | 0.15 | 20060922 | 26.62498 | 193.08100 | 161.23640 | 21.98143 | 0.0188919 | 2.5877969 | 64 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 61926 | 2004 $CQ_{92}$ |
| 2004 $CM_{93}$ | 17.1 | 0.15 | 20060922 | 252.28973 | 279.20374 | 203.95337 | 6.03499 | 0.0736838 | 2.4713002 | 30 | 4 | 1993–2006 | 0.53 | M-v | 1 | MPC | 04295 | 2004 $CM_{93}$ |
| 2004 $CQ_{93}$ | 16.3 | 0.15 | 20060922 | 186.22951 | 308.95230 | 237.98110 | 6.28276 | 0.1449692 | 2.6294969 | 33 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 76424 | 2004 $CQ_{93}$ |
| 2004 $CK_{94}$ | 16.4 | 0.15 | 20060922 | 208.80839 | 158.02513 | 45.27210 | 1.85489 | 0.1325300 | 2.4412583 | 95 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 74308 | 2004 $CK_{94}$ |
| 2004 $CU_{94}$ | 15.9 | 0.15 | 20060922 | 195.00100 | 288.57960 | 206.50461 | 2.70380 | 0.0933424 | 3.0008475 | 46 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 77776 | 2004 $CU_{94}$ |
| 2004 $CW_{94}$ | 15.5 | 0.15 | 20060922 | 152.64914 | 347.28389 | 182.75181 | 5.23125 | 0.1334317 | 3.1961653 | 62 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87614 | 2004 $CW_{94}$ |
| 2004 $CX_{94}$ | 17.6 | 0.15 | 20060922 | 305.74778 | 271.37307 | 188.27163 | 2.70457 | 0.1936810 | 2.3005056 | 74 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 61927 | 2004 $CX_{94}$ |
| 2004 $CE_{95}$ | 17.1 | 0.15 | 20060922 | 229.53973 | 298.99879 | 258.33648 | 1.58239 | 0.1526617 | 2.3236753 | 59 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 87614 | 2004 $CE_{95}$ |
| 2004 $CJ_{95}$ | 16.0 | 0.15 | 20060922 | 273.16427 | 293.98489 | 160.38341 | 9.03774 | 0.1526364 | 2.6124000 | 59 | 3 | 2002–2006 | 0.56 | M-v | 1 | MPC | 04295 | 2004 $CJ_{95}$ |
| 2004 $CB_{96}$ | 15.0 | 0.15 | 20060922 | 162.34329 | 197.69434 | 321.87621 | 4.26747 | 0.1037380 | 3.1356871 | 51 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 66334 | 2004 $CB_{96}$ |
| 2004 $CC_{96}$ | 16.4 | 0.15 | 20060922 | 131.39314 | 82.41049 | 155.25930 | 5.82374 | 0.1072860 | 2.7515621 | 37 | 4 | 1995–2006 | 0.34 | M-v | 0 | MPC | 66334 | 2004 $CC_{96}$ |
| 2004 $CD_{96}$ | 15.6 | 0.15 | 20060922 | 300.24792 | 103.85214 | 322.52118 | 13.04894 | 0.0984036 | 2.5757891 | 75 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04295 | 2004 $CD_{96}$ |
| 2004 $CK_{96}$ | 14.8 | 0.15 | 20060922 | 153.69938 | 204.98629 | 330.78292 | 15.22389 | 0.0341375 | 3.1159444 | 53 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04295 | 2004 $CK_{96}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $CU_{96}$ | 16.6 | 0.15 | 20060922 | 216.98562 | 324.10903 | 190.00657 | 12.65512 | 0.2173852 | 2.5866531 | 46 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 69675 | 2004 $CU_{96}$ |
| 2004 $CW_{96}$ | 16.8 | 0.15 | 20060922 | 258.41567 | 299.67907 | 201.77029 | 6.57144 | 0.0808247 | 2.4189296 | 54 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 69675 | 2004 $CW_{96}$ |
| 2004 $CX_{96}$ | 15.9 | 0.15 | 20060922 | 176.86452 | 259.52415 | 294.19374 | 7.15723 | 0.0510738 | 2.6896607 | 41 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 76425 | 2004 $CX_{96}$ |
| 2004 $CE_{98}$ | 15.5 | 0.15 | 20060922 | 114.48472 | 180.46086 | 81.67680 | 13.54684 | 0.1206716 | 2.6325040 | 35 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 86291 | 2004 $CE_{98}$ |
| 2004 $CN_{98}$ | 16.1 | 0.15 | 20060922 | 152.76807 | 2.01837 | 173.33128 | 1.63146 | 0.1496945 | 3.0894153 | 45 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 76426 | 2004 $CN_{98}$ |
| 2004 $CS_{98}$ | 16.6 | 0.15 | 20060922 | 246.73970 | 169.28179 | 356.24253 | 4.57573 | 0.1139788 | 2.4118287 | 85 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 76426 | 2004 $CS_{98}$ |
| 2004 $CX_{98}$ | 14.8 | 0.15 | 20060922 | 138.01624 | 215.77561 | 342.80806 | 9.34037 | 0.0859575 | 3.1234871 | 68 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 04295 | 2004 $CX_{98}$ |
| 2004 $CZ_{98}$ | 17.3 | 0.15 | 20060922 | 228.60112 | 40.96083 | 164.55581 | 3.14897 | 0.1747312 | 2.3374292 | 64 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 87614 | 2004 $CZ_{98}$ |
| 2004 $CB_{99}$ | 15.5 | 0.15 | 20060922 | 191.87102 | 199.81864 | 333.58293 | 11.41419 | 0.0884914 | 2.7647745 | 65 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 66335 | 2004 $CB_{99}$ |
| 2004 $CO_{99}$ | 16.0 | 0.15 | 20060922 | 209.91719 | 98.27420 | 103.76841 | 3.09373 | 0.1553192 | 2.4664749 | 99 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 86291 | 2004 $CO_{99}$ |
| 2004 $CS_{99}$ | 16.5 | 0.15 | 20060922 | 298.46979 | 34.55030 | 75.77605 | 3.18419 | 0.1503113 | 2.3446480 | 92 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 66335 | 2004 $CS_{99}$ |
| 2004 $CZ_{99}$ | 16.1 | 0.15 | 20060922 | 270.71738 | 55.18299 | 88.24572 | 3.64253 | 0.1113468 | 2.3592844 | 102 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 87614 | 2004 $CZ_{99}$ |
| 2004 $CB_{100}$ | 16.1 | 0.15 | 20060922 | 120.57764 | 220.37778 | 83.42650 | 4.38729 | 0.1331394 | 2.3907503 | 56 | 3 | 2004–2006 | 0.51 | M-v | 3 | MPC | 86291 | 2004 $CB_{100}$ |
| 2004 $CJ_{100}$ | 15.6 | 0.15 | 20060922 | 155.89813 | 136.81612 | 78.83808 | 4.63207 | 0.2570539 | 2.9040758 | 92 | 4 | 2003–2006 | 0.53 | M-v | 1 | MPC | 97699 | 2004 $CJ_{100}$ |
| 2004 $CK_{100}$ | 16.5 | 0.15 | 20060922 | 273.82107 | 52.33082 | 92.21305 | 4.70676 | 0.1317903 | 2.3337240 | 76 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 61931 | 2004 $CK_{100}$ |
| 2004 $CR_{100}$ | 16.8 | 0.15 | 20060922 | 326.34857 | 357.15482 | 103.77612 | 4.16569 | 0.0463251 | 2.2714124 | 64 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 87614 | 2004 $CR_{100}$ |
| 2004 $CS_{100}$ | 16.6 | 0.15 | 20060922 | 256.25259 | 100.01340 | 49.16277 | 3.19570 | 0.1389878 | 2.4121947 | 85 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 61932 | 2004 $CS_{100}$ |
| 2004 $CT_{100}$ | 16.1 | 0.15 | 20060922 | 198.63194 | 104.33328 | 125.74590 | 5.52704 | 0.1130626 | 2.3637855 | 55 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 86292 | 2004 $CT_{100}$ |
| 2004 $CV_{100}$ | 14.9 | 0.15 | 20060922 | 115.55517 | 235.22301 | 357.51128 | 16.16880 | 0.1871142 | 3.1382540 | 75 | 3 | 2004–2006 | 0.48 | M-v | 2 | MPC | 04296 | 2004 $CV_{100}$ |
| 2004 $CD_{101}$ | 15.8 | 0.15 | 20060922 | 311.39763 | 272.70786 | 169.84527 | 9.44608 | 0.0264190 | 2.5851072 | 127 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 65568 | 2004 $CD_{101}$ |
| 2004 $CJ_{103}$ | 16.4 | 0.15 | 20060922 | 188.46883 | 310.59868 | 271.75004 | 6.30128 | 0.0651543 | 2.4034802 | 70 | 4 | 2002–2006 | 0.56 | M-v | 0 | MPC | 86293 | 2004 $CJ_{103}$ |
| 2004 $CL_{103}$ | 15.1 | 0.15 | 20060922 | 122.18567 | 321.77094 | 255.92210 | 7.06455 | 0.0660072 | 3.0332819 | 44 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04296 | 2004 $CL_{103}$ |
| 2004 $CP_{103}$ | 16.2 | 0.15 | 20060922 | 341.90952 | 226.69201 | 192.95089 | 7.27211 | 0.1111084 | 2.3558713 | 71 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 66335 | 2004 $CP_{103}$ |
| 2004 $CQ_{103}$ | 16.5 | 0.15 | 20060922 | 201.13916 | 323.53669 | 209.58002 | 4.30018 | 0.1245363 | 2.6744912 | 67 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 76427 | 2004 $CQ_{103}$ |
| 2004 $CT_{103}$ | 16.4 | 0.15 | 20060922 | 186.20173 | 294.23861 | 297.52356 | 4.04866 | 0.1349749 | 2.4259473 | 57 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90190 | 2004 $CT_{103}$ |
| 2004 $CJ_{104}$ | 16.9 | 0.15 | 20060922 | 256.74563 | 231.16918 | 286.24560 | 5.98287 | 0.0523215 | 2.3302486 | 54 | 3 | 2004–2006 | 0.42 | M-v | 3 | MPC | 86294 | 2004 $CJ_{104}$ |
| 2004 $CN_{104}$ | 16.2 | 0.15 | 20060922 | 261.66741 | 284.24221 | 170.70111 | 11.64581 | 0.1648751 | 2.6363096 | 53 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 61935 | 2004 $CN_{104}$ |
| 2004 $CR_{104}$ | 15.2 | 0.15 | 20060922 | 210.96130 | 328.68228 | 180.58660 | 9.35590 | 0.0885220 | 2.7810385 | 70 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 65569 | 2004 $CR_{104}$ |
| 2004 $CS_{104}$ | 15.4 | 0.15 | 20060922 | 239.92155 | 181.21741 | 317.37246 | 8.79973 | 0.1076493 | 2.6071677 | 79 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 86295 | 2004 $CS_{104}$ |
| 2004 $CW_{104}$ | 16.8 | 0.15 | 20060922 | 285.42962 | 187.27192 | 308.40703 | 2.64362 | 0.1750219 | 2.3025548 | 110 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87614 | 2004 $CW_{104}$ |
| 2004 $CA_{105}$ | 15.1 | 0.15 | 20060922 | 41.04779 | 13.90760 | 341.60935 | 14.44086 | 0.1047627 | 2.5396917 | 70 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 86295 | 2004 $CA_{105}$ |
| 2004 $CD_{105}$ | 15.4 | 0.15 | 20060922 | 154.25177 | 88.82253 | 152.67515 | 7.17704 | 0.2217535 | 2.7713488 | 121 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 87614 | 2004 $CD_{105}$ |
| 2004 $CF_{105}$ | 17.1 | 0.15 | 20060922 | 228.71565 | 5.02492 | 180.05836 | 1.67538 | 0.1164203 | 2.4314278 | 72 | 5 | 1998–2006 | 0.41 | M-v | 1 | MPC | 86296 | 2004 $CF_{105}$ |
| 2004 $CG_{105}$ | 15.9 | 0.15 | 20060922 | 262.20569 | 73.92775 | 10.29632 | 14.98253 | 0.1296914 | 2.8410737 | 43 | 3 | 1997–2004 | 0.41 | M-v | 2 | MPC | 61936 | 2004 $CG_{105}$ |
| 2004 $CR_{105}$ | 16.0 | 0.15 | 20060922 | 292.34158 | 15.65443 | 63.59289 | 16.09973 | 0.0910643 | 2.5543715 | 31 | 3 | 2002–2006 | 0.55 | M-v | 1 | MPC | 86296 | 2004 $CR_{105}$ |
| 2004 $CU_{105}$ | 15.9 | 0.15 | 20060922 | 218.33964 | 299.30627 | 256.39491 | 8.09738 | 0.1509600 | 2.4055305 | 44 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87615 | 2004 $CU_{105}$ |
| 2004 $CJ_{106}$ | 14.7 | 0.15 | 20060922 | 57.80358 | 347.43166 | 293.17877 | 13.31125 | 0.0686711 | 3.0485464 | 55 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 04296 | 2004 $CJ_{106}$ |
| 2004 $CW_{106}$ | 15.4 | 0.15 | 20060922 | 250.84297 | 301.00548 | 228.64793 | 6.25533 | 0.0894595 | 2.3541455 | 123 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 87615 | 2004 $CW_{106}$ |
| 2004 $CA_{107}$ | 14.2 | 0.15 | 20060922 | 119.68019 | 275.51800 | 299.72815 | 9.66242 | 0.0668865 | 3.1978234 | 70 | 5 | 2000–2006 | 0.67 | M-v | 1 | MPC | 04296 | 2004 $CA_{107}$ |
| 2004 $CF_{107}$ | 16.3 | 0.15 | 20060922 | 314.87190 | 166.99066 | 311.56999 | 6.94739 | 0.0760148 | 2.2604244 | 55 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 87615 | 2004 $CF_{107}$ |
| 2004 $CG_{107}$ | 16.3 | 0.15 | 20060922 | 186.82187 | 234.25191 | 333.41808 | 6.04098 | 0.2277727 | 2.6599507 | 60 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 86296 | 2004 $CG_{107}$ |
| 2004 $CM_{107}$ | 16.0 | 0.15 | 20060922 | 89.76479 | 98.62986 | 142.97750 | 11.67264 | 0.0202751 | 3.0422089 | 26 | 3 | 2004–2006 | 0.43 | M-v | 3 | MPC | 03611 | 2004 $CM_{107}$ |
| 2004 $CO_{107}$ | 15.9 | 0.15 | 20060922 | 335.23447 | 43.77363 | 334.92683 | 12.59828 | 0.2292249 | 2.5996238 | 89 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04296 | 2004 $CO_{107}$ |
| 2004 $CW_{107}$ | 16.4 | 0.15 | 20060922 | 82.82331 | 156.69156 | 156.58719 | 3.80531 | 0.0953719 | 2.4765820 | 54 | 7 | 1993–2006 | 0.48 | M-v | 1 | MPC | 86297 | 2004 $CW_{107}$ |
| 2004 $CX_{107}$ | 17.3 | 0.15 | 20060922 | 257.61783 | 302.30142 | 164.42339 | 2.05342 | 0.1392101 | 2.6014029 | 29 | 5 | 1996–2006 | 0.43 | M-v | 1 | MPC | 76428 | 2004 $CX_{107}$ |
| 2004 $CA_{108}$ | 16.1 | 0.15 | 20060922 | 300.10350 | 80.38086 | 327.69279 | 3.66466 | 0.0683427 | 2.7688597 | 40 | 4 | 1997–2006 | 0.63 | M-v | 1 | MPC | 04296 | 2004 $CA_{108}$ |
| 2004 $CB_{108}$ | 16.4 | 0.15 | 20060922 | 255.83530 | 290.91067 | 227.28060 | 4.33529 | 0.0791203 | 2.3688364 | 70 | 6 | 1991–2006 | 0.43 | M-v | 1 | MPC | 90190 | 2004 $CB_{108}$ |
| 2004 $CC_{108}$ | 17.1 | 0.15 | 20060922 | 225.67148 | 322.13914 | 222.37142 | 3.99207 | 0.1488664 | 2.4368348 | 56 | 4 | 1994–2006 | 0.44 | M-v | 3 | MPC | 76429 | 2004 $CC_{108}$ |
| 2004 $CE_{108}$ | 14.9 | 0.15 | 20060922 | 118.46644 | 246.65801 | 324.04288 | 8.05551 | 0.0486930 | 3.1721663 | 63 | 4 | 1993–2006 | 0.48 | M-v | 1 | MPC | 03612 | 2004 $CE_{108}$ |
| 2004 $CF_{108}$ | 16.1 | 0.15 | 20060922 | 235.17334 | 118.13188 | 3.31252 | 10.11278 | 0.0597098 | 2.6774913 | 47 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87615 | 2004 $CF_{108}$ |
| 2004 $CO_{108}$ | 17.7 | 0.15 | 20060922 | 295.01807 | 305.92629 | 188.53111 | 5.78845 | 0.1029683 | 2.2400348 | 20 | 3 | 1995–2005 | 0.45 | M-v | 3 | MPC | 00708 | 2004 $CO_{108}$ |
| 2004 $CQ_{108}$ | 17.2 | 0.15 | 20060922 | 275.85295 | 219.75129 | 289.99255 | 4.53466 | 0.0725971 | 2.2745007 | 23 | 3 | 1997–2005 | 0.40 | M-v | 4 | MPC | 89513 | 2004 $CQ_{108}$ |
| 2004 $CZ_{108}$ | 14.9 | 0.15 | 20060922 | 125.40504 | 50.31630 | 170.33175 | 27.01406 | 0.1984083 | 3.0929155 | 56 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04296 | 2004 $CZ_{108}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $CM_{109}$ | 15.2 | 0.15 | 20060922 | 187.47488 | 94.03316 | 74.37669 | 14.96170 | 0.0375353 | 2.6466922 | 50 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 77776 | 2004 $CM_{109}$ |
| 2004 $CN_{109}$ | 15.9 | 0.15 | 20060922 | 151.37007 | 159.14572 | 65.99396 | 14.94256 | 0.1220081 | 2.5939627 | 42 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 86298 | 2004 $CN_{109}$ |
| 2004 $CX_{109}$ | 17.1 | 0.15 | 20060922 | 232.63225 | 114.43834 | 10.33598 | 8.01482 | 0.2608326 | 2.6938844 | 50 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 61939 | 2004 $CX_{109}$ |
| 2004 $CA_{110}$ | 15.2 | 0.15 | 20060922 | 100.95964 | 344.23155 | 244.38782 | 10.61795 | 0.0248988 | 3.0905418 | 35 | 5 | 1995–2006 | 0.63 | M-v | 0 | MPC | 04296 | 2004 $CA_{110}$ |
| 2004 $CJ_{111}$ | 17.6 | 0.15 | 20060922 | 226.33838 | 304.94812 | 190.01033 | 2.99694 | 0.0536964 | 2.6993436 | 27 | 3 | 2000–2006 | 0.31 | M-v | 3 | MPC | 04296 | 2004 $CJ_{111}$ |
| 2004 $CQ_{112}$ | 16.6 | 0.15 | 20060922 | 226.51851 | 74.26790 | 96.72959 | 7.72822 | 0.0542467 | 2.3403276 | 29 | 4 | 2000–2006 | 0.37 | M-v | 0 | MPC | 65570 | 2004 $CQ_{112}$ |
| 2004 $CP_{113}$ | 16.9 | 0.15 | 20060922 | 218.84499 | 286.00319 | 204.28534 | 4.77352 | 0.1134579 | 2.7167650 | 33 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 04296 | 2004 $CP_{113}$ |
| 2004 $CR_{115}$ | 16.6 | 0.15 | 20060922 | 159.80128 | 161.88530 | 15.11232 | 4.11882 | 0.0409396 | 2.8038586 | 28 | 4 | 1995–2004 | 0.54 | M-v | 1 | MPC | 87615 | 2004 $CR_{115}$ |
| 2004 $CZ_{115}$ | 17.0 | 0.15 | 20060922 | 182.10475 | 234.06068 | 347.49264 | 2.28728 | 0.0959594 | 2.3885850 | 36 | 4 | 1997–2006 | 0.33 | M-v | 0 | MPC | 87615 | 2004 $CZ_{115}$ |
| 2004 $CU_{116}$ | 16.2 | 0.15 | 20060922 | 221.39186 | 328.14008 | 148.17451 | 13.70707 | 0.1084021 | 2.7595649 | 28 | 3 | 2004–2006 | 0.59 | M-v | 3 | MPC | 86300 | 2004 $CU_{116}$ |
| 2004 $CS_{117}$ | 16.8 | 0.15 | 20060922 | 296.94798 | 104.30989 | 303.54005 | 1.80871 | 0.0771243 | 2.6703274 | 30 | 5 | 2000–2006 | 0.49 | M-v | 0 | MPC | 04296 | 2004 $CS_{117}$ |
| 2004 $CA_{118}$ | 17.1 | 0.15 | 20060922 | 284.43997 | 182.48548 | 263.77977 | 1.67406 | 0.1707905 | 2.4467283 | 41 | 4 | 2000–2006 | 0.36 | M-v | 1 | MPC | 04296 | 2004 $CA_{118}$ |
| 2004 $CS_{118}$ | 17.6 | 0.15 | 20060922 | 300.33241 | 286.24218 | 169.37144 | 2.99982 | 0.1967004 | 2.3431805 | 57 | 4 | 1997–2006 | 0.41 | M-v | 0 | MPC | 69677 | 2004 $CS_{118}$ |
| 2004 $CS_{122}$ | 17.0 | 0.15 | 20060922 | 355.68876 | 260.62092 | 152.02430 | 3.61819 | 0.1105812 | 2.2740042 | 35 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 69677 | 2004 $CS_{122}$ |
| 2004 $CW_{122}$ | 16.4 | 0.15 | 20060922 | 1.98899 | 201.18801 | 149.12649 | 6.66254 | 0.0652471 | 2.7366490 | 39 | 4 | 2000–2006 | 0.67 | M-v | 1 | MPC | 04296 | 2004 $CW_{122}$ |
| 2004 $CY_{122}$ | 17.8 | 0.15 | 20060922 | 311.35434 | 115.47935 | 323.45325 | 1.70220 | 0.1682910 | 2.3524495 | 44 | 3 | 1995–2006 | 0.34 | M-v | 1 | MPC | 69678 | 2004 $CY_{122}$ |
| 2004 $CJ_{123}$ | 17.0 | 0.15 | 20060922 | 170.62898 | 281.69610 | 324.24243 | 2.27041 | 0.1530207 | 2.4092276 | 24 | 4 | 1994–2005 | 0.30 | M-v | 1 | MPC | 04296 | 2004 $CJ_{123}$ |
| 2004 $CL_{123}$ | 16.7 | 0.15 | 20060922 | 64.08101 | 351.42250 | 311.48968 | 1.49298 | 0.0683872 | 2.6743940 | 44 | 4 | 1997–2006 | 0.33 | M-v | 1 | MPC | 69678 | 2004 $CL_{123}$ |
| 2004 $CV_{123}$ | 18.2 | 0.15 | 20060922 | 336.53735 | 93.35879 | 335.45535 | 2.54142 | 0.1632825 | 2.2661581 | 38 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 69678 | 2004 $CV_{123}$ |
| 2004 $CZ_{127}$ | 18.1 | 0.15 | 20060922 | 9.72573 | 271.11796 | 134.50372 | 11.12292 | 0.1792791 | 2.2863249 | 20 | 3 | 1997–2004 | 0.40 | M-v | 2 | MPC | 00708 | 2004 $CZ_{127}$ |
| 2004 $CS_{128}$ | 15.9 | 0.15 | 20060922 | 9.75774 | 2.64994 | 342.60585 | 12.31712 | 0.1293003 | 2.7217029 | 75 | 2 | 2004–2006 | 0.43 | M-v | 3 | MPC | 03612 | 2004 $CS_{128}$ |
| 2004 DG | 16.4 | 0.15 | 20060922 | 269.90603 | 222.16385 | 279.52336 | 7.73031 | 0.1208291 | 2.3762466 | 79 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 77776 | 2004 DG |
| 2004 DJ | 16.2 | 0.15 | 20060922 | 239.37145 | 183.71624 | 315.50117 | 11.63999 | 0.1683925 | 2.5961620 | 44 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 61941 | 2004 DJ |
| 2004 DK | 16.6 | 0.15 | 20060922 | 261.69835 | 304.51906 | 221.81049 | 5.22216 | 0.1316125 | 2.3117597 | 65 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 87615 | 2004 DK |
| 2004 DM | 15.9 | 0.15 | 20060922 | 211.02111 | 142.52759 | 353.94019 | 10.86001 | 0.0417324 | 2.9226920 | 55 | 3 | 2001–2006 | 0.62 | M-v | 3 | MPC | 04296 | 2004 DM |
| 2004 DO | 16.0 | 0.15 | 20060922 | 332.94996 | 60.92320 | 9.01659 | 23.61272 | 0.2374966 | 2.3072499 | 175 | 3 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04296 | 2004 DO |
| 2004 DP | 17.0 | 0.15 | 20060922 | 261.38037 | 53.62028 | 69.98572 | 3.25312 | 0.1603820 | 2.4532938 | 44 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 87615 | 2004 DP |
| 2004 $DB_1$ | 16.7 | 0.15 | 20060922 | 210.49447 | 228.29056 | 349.35260 | 3.94072 | 0.1849191 | 2.3613904 | 65 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87615 | 2004 $DB_1$ |
| 2004 $DD_1$ | 17.5 | 0.15 | 20060922 | 238.09401 | 199.04988 | 330.95189 | 2.05740 | 0.1221799 | 2.3274056 | 52 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 89514 | 2004 $DD_1$ |
| 2004 $DE_1$ | 16.9 | 0.15 | 20060922 | 302.63112 | 142.36644 | 301.48386 | 7.72028 | 0.2042139 | 2.3596722 | 53 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 02202 | 2004 $DE_1$ |
| 2004 $DG_1$ | 16.0 | 0.15 | 20060922 | 160.49816 | 211.79550 | 335.17999 | 17.07647 | 0.0946721 | 2.9683247 | 44 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 89514 | 2004 $DG_1$ |
| 2004 $DB_2$ | 15.3 | 0.15 | 20060922 | 282.19849 | 85.03464 | 354.77443 | 11.18760 | 0.0740422 | 2.6861466 | 105 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 04296 | 2004 $DB_2$ |
| 2004 $DD_2$ | 16.2 | 0.15 | 20060922 | 207.89528 | 304.74601 | 189.22205 | 11.53570 | 0.1043518 | 2.7883609 | 57 | 5 | 1997–2006 | 0.50 | M-v | 0 | MPC | 87615 | 2004 $DD_2$ |
| 2004 $DZ_2$ | 16.6 | 0.15 | 20060922 | 160.21968 | 134.57483 | 125.75506 | 3.83662 | 0.1738820 | 2.4353420 | 42 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 86303 | 2004 $DZ_2$ |
| 2004 $DK_3$ | 16.2 | 0.15 | 20060922 | 298.41107 | 110.86348 | 305.84142 | 2.49733 | 0.1070695 | 2.6954342 | 44 | 4 | 1995–2006 | 0.65 | M-v | 1 | MPC | 04296 | 2004 $DK_3$ |
| 2004 $DG_4$ | 16.5 | 0.15 | 20060922 | 341.73611 | 161.79435 | 11.21527 | 19.85775 | 0.0432583 | 1.9163596 | 110 | 3 | 1997–2005 | 0.53 | M-v | 2 | MPC | 89514 | 2004 $DG_4$ |
| 2004 $DH_4$ | 16.0 | 0.15 | 20060922 | 242.06200 | 42.36376 | 100.86411 | 13.48575 | 0.1228369 | 2.6170514 | 56 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 65572 | 2004 $DH_4$ |
| 2004 $DJ_4$ | 14.9 | 0.15 | 20060922 | 115.10684 | 151.85283 | 85.23254 | 15.17864 | 0.1283139 | 3.1803631 | 52 | 6 | 1999–2006 | 0.88 | M-v | 1 | MPC | 95180 | 2004 $DJ_4$ |
| 2004 $DL_4$ | 15.3 | 0.15 | 20060922 | 220.80429 | 338.51939 | 93.26000 | 7.53612 | 0.1992049 | 3.1732461 | 31 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 76432 | 2004 $DL_4$ |
| 2004 $DY_4$ | 14.9 | 0.15 | 20060922 | 136.62564 | 178.23539 | 24.99866 | 15.70658 | 0.1344206 | 3.1478716 | 48 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 65573 | 2004 $DY_4$ |
| 2004 $DA_5$ | 16.7 | 0.15 | 20060922 | 260.68630 | 48.04156 | 99.25438 | 6.66820 | 0.0506993 | 2.3549205 | 49 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87615 | 2004 $DA_5$ |
| 2004 $DD_5$ | 15.8 | 0.15 | 20060922 | 215.39409 | 20.24022 | 145.50127 | 14.36324 | 0.1000917 | 2.5988669 | 35 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 61945 | 2004 $DD_5$ |
| 2004 $DG_5$ | 16.5 | 0.15 | 20060922 | 158.72734 | 137.84221 | 129.18575 | 4.54820 | 0.1505914 | 2.3917720 | 40 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 86304 | 2004 $DG_5$ |
| 2004 $DH_5$ | 16.9 | 0.15 | 20060922 | 311.33364 | 73.08968 | 5.65371 | 5.30334 | 0.1331881 | 2.3402172 | 76 | 5 | 1995–2006 | 0.44 | M-v | 0 | MPC | 04296 | 2004 $DH_5$ |
| 2004 $DV_5$ | 16.5 | 0.15 | 20060922 | 301.05617 | 258.18038 | 144.98955 | 4.63664 | 0.1032966 | 2.8053305 | 42 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04296 | 2004 $DV_5$ |
| 2004 $DX_5$ | 16.4 | 0.15 | 20060922 | 346.13738 | 17.00659 | 348.80229 | 5.23657 | 0.1021154 | 2.7823412 | 38 | 3 | 1997–2006 | 0.35 | M-v | 3 | MPC | 04296 | 2004 $DX_5$ |
| 2004 $DD_6$ | 16.9 | 0.15 | 20060922 | 325.29182 | 295.86468 | 143.51195 | 5.02436 | 0.1143338 | 2.3368951 | 65 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 66336 | 2004 $DD_6$ |
| 2004 $DV_6$ | 15.1 | 0.15 | 20060922 | 153.58369 | 151.44301 | 42.28163 | 0.84743 | 0.1815797 | 3.0097921 | 69 | 6 | 1994–2006 | 0.46 | M-v | 1 | MPC | 72996 | 2004 $DV_6$ |
| 2004 $DZ_6$ | 16.2 | 0.15 | 20060922 | 252.23799 | 178.34740 | 308.72561 | 3.11749 | 0.0419031 | 2.5856733 | 73 | 5 | 1993–2006 | 0.48 | M-v | 1 | MPC | 04296 | 2004 $DZ_6$ |
| 2004 $DF_7$ | 17.0 | 0.15 | 20060922 | 223.46612 | 85.24573 | 117.67054 | 4.11667 | 0.1933516 | 2.3588956 | 30 | 3 | 1995–2006 | 0.39 | M-v | 4 | MPC | 65573 | 2004 $DF_7$ |
| 2004 $DJ_7$ | 16.4 | 0.15 | 20060922 | 42.46777 | 286.45385 | 32.47905 | 3.94223 | 0.0831662 | 2.6572539 | 44 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 69679 | 2004 $DJ_7$ |
| 2004 $DB_8$ | 17.4 | 0.15 | 20060922 | 204.88764 | 228.31831 | 340.79269 | 2.20367 | 0.1287986 | 2.4141841 | 22 | 3 | 2000–2006 | 0.39 | M-v | 4 | MPC | 61946 | 2004 $DB_8$ |
| 2004 $DY_8$ | 17.4 | 0.15 | 20060922 | 290.53136 | 268.45557 | 202.14594 | 1.71975 | 0.1728693 | 2.3512915 | 96 | 6 | 1997–2006 | 0.49 | M-v | 1 | MPC | 76433 | 2004 $DY_8$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $DF_{9}$ | 16.8 | 0.15 | 20060922 | 277.77218 | 95.36028 | 34.73839 | 2.73712 | 0.0876875 | 2.3645764 | 86 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 61947 | 2004 $DF_{9}$ |
| 2004 $DR_{9}$ | 16.4 | 0.15 | 20060922 | 243.61961 | 62.70292 | 115.83004 | 8.40089 | 0.0966136 | 2.3805870 | 64 | 4 | 1997–2006 | 0.53 | M-v | 2 | MPC | 61947 | 2004 $DR_{9}$ |
| 2004 $DS_{9}$ | 16.0 | 0.15 | 20060922 | 198.88910 | 163.61151 | 87.89094 | 8.91788 | 0.1006747 | 2.2770925 | 69 | 5 | 1994–2006 | 0.55 | M-v | 1 | MPC | 87615 | 2004 $DS_{9}$ |
| 2004 $DF_{10}$ | 17.9 | 0.15 | 20060922 | 256.49060 | 299.75498 | 171.32261 | 7.48823 | 0.2209503 | 2.5340238 | 43 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 04296 | 2004 $DF_{10}$ |
| 2004 $DJ_{10}$ | 16.6 | 0.15 | 20060922 | 237.60609 | 205.14370 | 275.58531 | 2.55654 | 0.1270878 | 2.6852983 | 57 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04296 | 2004 $DJ_{10}$ |
| 2004 $DK_{10}$ | 15.7 | 0.15 | 20060922 | 253.12778 | 262.50227 | 172.70781 | 9.10975 | 0.0928738 | 2.9039411 | 48 | 5 | 1995–2005 | 0.51 | M-v | 1 | MPC | 77777 | 2004 $DK_{10}$ |
| 2004 $DL_{10}$ | 15.9 | 0.15 | 20060922 | 251.02328 | 171.18892 | 259.76805 | 3.63001 | 0.1200927 | 2.9445797 | 50 | 6 | 1992–2005 | 0.65 | M-v | 1 | MPC | 87615 | 2004 $DL_{10}$ |
| 2004 $DY_{10}$ | 15.7 | 0.15 | 20060922 | 108.93898 | 122.87122 | 135.93349 | 6.47077 | 0.0427211 | 2.7781730 | 63 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 66336 | 2004 $DY_{10}$ |
| 2004 $DF_{11}$ | 16.8 | 0.15 | 20060922 | 305.10159 | 316.71980 | 142.31779 | 5.92568 | 0.1568385 | 2.3297553 | 47 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 76433 | 2004 $DF_{11}$ |
| 2004 $DH_{11}$ | 16.2 | 0.15 | 20060922 | 172.43167 | 252.27414 | 345.99558 | 1.60147 | 0.1052353 | 2.4527746 | 54 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 87615 | 2004 $DH_{11}$ |
| 2004 $DK_{11}$ | 16.5 | 0.15 | 20060922 | 216.81712 | 44.60119 | 158.23663 | 5.39749 | 0.1505628 | 2.3982955 | 62 | 4 | 1993–2006 | 0.49 | M-v | 1 | MPC | 87615 | 2004 $DK_{11}$ |
| 2004 $DM_{11}$ | 17.3 | 0.15 | 20060922 | 251.54606 | 344.41309 | 196.44268 | 2.41804 | 0.0998416 | 2.2762181 | 41 | 5 | 1997–2006 | 0.43 | M-v | 1 | MPC | 87615 | 2004 $DM_{11}$ |
| 2004 $DP_{11}$ | 16.5 | 0.15 | 20060922 | 265.84534 | 326.61686 | 177.78608 | 6.57983 | 0.1868681 | 2.3116228 | 113 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 86306 | 2004 $DP_{11}$ |
| 2004 $DS_{11}$ | 17.1 | 0.15 | 20060922 | 309.91028 | 107.75747 | 324.51815 | 4.02946 | 0.2258854 | 2.3917530 | 69 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 04296 | 2004 $DS_{11}$ |
| 2004 $DB_{12}$ | 15.5 | 0.15 | 20060922 | 174.79705 | 281.95775 | 262.53312 | 8.72618 | 0.1829972 | 2.7080421 | 53 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 65573 | 2004 $DB_{12}$ |
| 2004 $DJ_{12}$ | 15.6 | 0.15 | 20060922 | 221.49601 | 119.66767 | 25.19269 | 4.48665 | 0.2057840 | 2.7281647 | 122 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 65573 | 2004 $DJ_{12}$ |
| 2004 $DQ_{12}$ | 16.2 | 0.15 | 20060922 | 260.46848 | 350.75093 | 138.89538 | 3.60078 | 0.0735819 | 2.5461039 | 67 | 4 | 1996–2006 | 0.46 | M-v | 2 | MPC | 61950 | 2004 $DQ_{12}$ |
| 2004 $DT_{12}$ | 16.3 | 0.15 | 20060922 | 238.81913 | 126.95822 | 11.80137 | 4.58411 | 0.2168080 | 2.6067382 | 97 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 66336 | 2004 $DT_{12}$ |
| 2004 $DA_{13}$ | 15.2 | 0.15 | 20060922 | 144.63116 | 251.26331 | 349.66984 | 12.68419 | 0.1665896 | 2.7963162 | 83 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87615 | 2004 $DA_{13}$ |
| 2004 $DD_{13}$ | 15.1 | 0.15 | 20060922 | 93.06932 | 94.91417 | 164.39391 | 16.09529 | 0.1015795 | 3.1200014 | 102 | 5 | 1999–2006 | 0.62 | M-v | 0 | MPC | 65574 | 2004 $DD_{13}$ |
| 2004 $DH_{13}$ | 14.9 | 0.15 | 20060922 | 170.88870 | 194.72580 | 341.95966 | 17.93112 | 0.2139047 | 3.1034401 | 53 | 2 | 2004–2006 | 0.52 | M-v | 3 | MPC | 03612 | 2004 $DH_{13}$ |
| 2004 $DF_{14}$ | 15.3 | 0.15 | 20060922 | 177.37066 | 157.45156 | 357.12160 | 8.25799 | 0.1921844 | 3.1224975 | 97 | 3 | 2001–2004 | 0.59 | M-v | 2 | MPC | 66336 | 2004 $DF_{14}$ |
| 2004 $DH_{14}$ | 16.3 | 0.15 | 20060922 | 285.41238 | 83.94008 | 54.46113 | 2.74583 | 0.0738769 | 2.3490166 | 112 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 66336 | 2004 $DH_{14}$ |
| 2004 $DN_{14}$ | 16.0 | 0.15 | 20060922 | 247.19659 | 276.20428 | 198.94077 | 6.23051 | 0.3006476 | 2.6246294 | 65 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 65575 | 2004 $DN_{14}$ |
| 2004 $DT_{14}$ | 15.7 | 0.15 | 20060922 | 159.42098 | 335.29164 | 255.81777 | 13.99016 | 0.1959863 | 2.5918846 | 41 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87615 | 2004 $DT_{14}$ |
| 2004 $DX_{15}$ | 16.2 | 0.15 | 20060922 | 152.24721 | 111.17133 | 129.68566 | 6.03135 | 0.1099826 | 2.6051843 | 45 | 3 | 2004–2006 | 0.51 | M-v | 3 | MPC | 86308 | 2004 $DX_{15}$ |
| 2004 $DG_{16}$ | 16.2 | 0.15 | 20060922 | 192.05949 | 101.25372 | 158.16890 | 6.65560 | 0.0999509 | 2.2978446 | 103 | 6 | 1998–2005 | 0.62 | M-v | 1 | MPC | 86309 | 2004 $DG_{16}$ |
| 2004 $DH_{16}$ | 15.7 | 0.15 | 20060922 | 219.14367 | 340.61906 | 156.33889 | 6.29110 | 0.0830103 | 2.9262416 | 92 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 04297 | 2004 $DH_{16}$ |
| 2004 $DK_{16}$ | 16.7 | 0.15 | 20060922 | 260.82484 | 1.79665 | 164.36266 | 2.60128 | 0.1364929 | 2.3365984 | 92 | 5 | 1998–2006 | 0.39 | M-v | 1 | MPC | 87616 | 2004 $DK_{16}$ |
| 2004 $DW_{16}$ | 16.6 | 0.15 | 20060922 | 296.82480 | 315.97147 | 157.59505 | 3.88454 | 0.0655653 | 2.3249671 | 73 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 66336 | 2004 $DW_{16}$ |
| 2004 $DD_{17}$ | 17.3 | 0.15 | 20060922 | 167.82315 | 96.90365 | 170.17867 | 7.60124 | 0.1332432 | 2.2722381 | 37 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 90190 | 2004 $DD_{17}$ |
| 2004 $DN_{17}$ | 15.9 | 0.15 | 20060922 | 114.56363 | 328.94057 | 298.18497 | 12.56750 | 0.0909417 | 2.6040258 | 41 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87616 | 2004 $DN_{17}$ |
| 2004 $DS_{17}$ | 16.0 | 0.15 | 20060922 | 72.99710 | 90.80141 | 214.14649 | 7.07832 | 0.0674314 | 2.5912936 | 87 | 6 | 1997–2006 | 0.43 | M-v | 0 | MPC | 87616 | 2004 $DS_{17}$ |
| 2004 $DV_{17}$ | 17.3 | 0.15 | 20060922 | 275.12639 | 339.14251 | 135.05489 | 1.86375 | 0.1491751 | 2.4497092 | 41 | 3 | 1999–2006 | 0.40 | M-v | 2 | MPC | 66336 | 2004 $DV_{17}$ |
| 2004 $DC_{18}$ | 16.2 | 0.15 | 20060922 | 257.32352 | 75.18669 | 31.05826 | 2.83560 | 0.1165271 | 2.6710122 | 32 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 86310 | 2004 $DC_{18}$ |
| 2004 $DE_{18}$ | 16.5 | 0.15 | 20060922 | 296.78923 | 356.15743 | 108.73748 | 2.44229 | 0.1390238 | 2.3766969 | 70 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 61956 | 2004 $DE_{18}$ |
| 2004 $DF_{18}$ | 15.2 | 0.15 | 20060922 | 135.56637 | 49.98704 | 185.40067 | 13.82577 | 0.0636815 | 2.7361431 | 48 | 3 | 2001–2006 | 0.72 | M-v | 3 | MPC | 66336 | 2004 $DF_{18}$ |
| 2004 $DU_{18}$ | 16.4 | 0.15 | 20060922 | 225.15892 | 22.45984 | 141.29549 | 4.86956 | 0.1016444 | 2.6298793 | 63 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 86310 | 2004 $DU_{18}$ |
| 2004 $DC_{19}$ | 16.4 | 0.15 | 20060922 | 304.81883 | 8.96677 | 52.17943 | 7.23953 | 0.1322869 | 2.4584366 | 69 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04297 | 2004 $DC_{19}$ |
| 2004 $DK_{19}$ | 15.4 | 0.15 | 20060922 | 25.08658 | 168.91060 | 138.69578 | 11.29276 | 0.0414730 | 2.9975910 | 38 | 2 | 2004–2006 | 0.36 | M-v | 3 | MPC | 03612 | 2004 $DK_{19}$ |
| 2004 $DM_{19}$ | 16.3 | 0.15 | 20060922 | 284.17854 | 120.53160 | 331.36383 | 7.27529 | 0.0021831 | 2.5773085 | 44 | 3 | 2000–2006 | 0.60 | M-v | 2 | MPC | 61958 | 2004 $DM_{19}$ |
| 2004 $DR_{19}$ | 16.4 | 0.15 | 20060922 | 122.50832 | 201.32929 | 1.87781 | 2.30771 | 0.1266175 | 3.1680493 | 37 | 5 | 1995–2006 | 0.35 | M-v | 0 | MPC | 89515 | 2004 $DR_{19}$ |
| 2004 $DP_{20}$ | 17.0 | 0.15 | 20060922 | 271.82640 | 92.14068 | 43.52616 | 5.22647 | 0.1704964 | 2.3651299 | 52 | 3 | 1997–2006 | 0.54 | M-v | 3 | MPC | 61959 | 2004 $DP_{20}$ |
| 2004 $DS_{20}$ | 15.6 | 0.15 | 20060922 | 238.89859 | 214.10468 | 281.80772 | 10.15724 | 0.0865264 | 2.6323420 | 53 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 66337 | 2004 $DS_{20}$ |
| 2004 $DT_{20}$ | 16.0 | 0.15 | 20060922 | 241.86529 | 210.53986 | 265.37021 | 8.47227 | 0.1381828 | 2.7199764 | 31 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 86311 | 2004 $DT_{20}$ |
| 2004 $DE_{21}$ | 15.0 | 0.15 | 20060922 | 231.24827 | 161.28685 | 338.02717 | 24.39149 | 0.0497249 | 2.7151754 | 70 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 66337 | 2004 $DE_{21}$ |
| 2004 $DG_{21}$ | 16.8 | 0.15 | 20060922 | 256.85803 | 216.85878 | 306.92062 | 3.25051 | 0.1071275 | 2.3553777 | 66 | 3 | 2003–2006 | 0.47 | M-v | 2 | MPC | 86312 | 2004 $DG_{21}$ |
| 2004 $DJ_{21}$ | 17.3 | 0.15 | 20060922 | 268.71363 | 331.22725 | 176.87580 | 6.11600 | 0.1224346 | 2.3589638 | 67 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 86312 | 2004 $DJ_{21}$ |
| 2004 $DP_{21}$ | 16.5 | 0.15 | 20060922 | 204.50631 | 18.84403 | 207.40052 | 5.78729 | 0.0901672 | 2.3491611 | 42 | 4 | 1995–2005 | 0.63 | M-v | 2 | MPC | 86312 | 2004 $DP_{21}$ |
| 2004 $DQ_{21}$ | 16.5 | 0.15 | 20060922 | 212.19249 | 339.15042 | 248.01586 | 4.34023 | 0.0953269 | 2.3073740 | 38 | 4 | 1995–2005 | 0.72 | M-v | 2 | MPC | 86313 | 2004 $DQ_{21}$ |
| 2004 $DV_{21}$ | 15.9 | 0.15 | 20060922 | 191.21525 | 266.44859 | 280.56976 | 7.70468 | 0.1375104 | 2.7391871 | 44 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 77777 | 2004 $DV_{21}$ |
| 2004 $DA_{22}$ | 17.2 | 0.15 | 20060922 | 227.53553 | 41.19253 | 113.74963 | 6.18249 | 0.2393878 | 2.6039583 | 42 | 3 | 2000–2004 | 0.60 | M-v | 2 | MPC | 89516 | 2004 $DA_{22}$ |
| 2004 $DC_{22}$ | 16.7 | 0.15 | 20060922 | 288.30212 | 337.21838 | 134.58282 | 5.98559 | 0.1951682 | 2.3909085 | 68 | 3 | 2000–2006 | 0.47 | M-v | 1 | MPC | 66337 | 2004 $DC_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $DG_{22}$ | 16.3 | 0.15 | 20060922 | 244.64856 | 68.67943 | 77.99909 | 4.42657 | 0.1301452 | 2.5493858 | 63 | 4 | 1996–2006 | 0.49 | M-v | 3 | MPC | 76435 | 2004 $DG_{22}$ |
| 2004 $DO_{22}$ | 16.9 | 0.15 | 20060922 | 47.82147 | 212.33136 | 171.85127 | 2.08623 | 0.0932966 | 2.1801754 | 46 | 4 | 2001–2006 | 0.42 | M-v | 3 | MPC | 66337 | 2004 $DO_{22}$ |
| 2004 $DK_{23}$ | 16.0 | 0.15 | 20060922 | 258.66649 | 313.79621 | 166.47883 | 14.04089 | 0.1140210 | 2.6666251 | 69 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 65576 | 2004 $DK_{23}$ |
| 2004 $DO_{23}$ | 16.4 | 0.15 | 20060922 | 227.57638 | 107.75109 | 115.51691 | 4.48314 | 0.1241416 | 2.2943797 | 78 | 3 | 2002–2005 | 0.50 | M-v | 2 | MPC | 86313 | 2004 $DO_{23}$ |
| 2004 $DQ_{23}$ | 15.5 | 0.15 | 20060922 | 216.48681 | 346.13611 | 148.25914 | 10.97831 | 0.0729095 | 3.0168563 | 60 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 61964 | 2004 $DQ_{23}$ |
| 2004 $DU_{23}$ | 16.5 | 0.15 | 20060922 | 211.21716 | 278.91464 | 240.03464 | 10.29457 | 0.2368983 | 2.6492130 | 30 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 61964 | 2004 $DU_{23}$ |
| 2004 $DA_{24}$ | 16.8 | 0.15 | 20060922 | 228.81289 | 271.19975 | 215.71914 | 6.04605 | 0.1530722 | 2.6913952 | 44 | 4 | 1998–2004 | 0.54 | M-v | 1 | MPC | 61964 | 2004 $DA_{24}$ |
| 2004 $DG_{24}$ | 15.2 | 0.15 | 20060922 | 115.60065 | 141.50859 | 87.47187 | 2.58360 | 0.1926247 | 3.1833302 | 53 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 66337 | 2004 $DG_{24}$ |
| 2004 $DL_{24}$ | 16.5 | 0.15 | 20060922 | 207.52271 | 26.94607 | 184.73488 | 4.06243 | 0.0867873 | 2.4083407 | 55 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 90190 | 2004 $DL_{24}$ |
| 2004 $DP_{24}$ | 14.3 | 0.15 | 20060922 | 121.05375 | 251.91084 | 333.59843 | 10.33662 | 0.0780206 | 3.0889121 | 95 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 04297 | 2004 $DP_{24}$ |
| 2004 $DW_{24}$ | 16.7 | 0.15 | 20060922 | 193.56613 | 337.59556 | 335.04420 | 19.30388 | 0.0726551 | 1.8956875 | 41 | 2 | 2004–2005 | 0.57 | M-v | 3 | MPC | 90190 | 2004 $DW_{24}$ |
| 2004 $DN_{25}$ | 15.8 | 0.15 | 20060922 | 67.34030 | 141.27402 | 135.94911 | 7.82044 | 0.0962149 | 2.7779886 | 49 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 87616 | 2004 $DN_{25}$ |
| 2004 $DO_{25}$ | 17.7 | 0.15 | 20060922 | 253.54462 | 159.15409 | 343.86994 | 2.21205 | 0.1485441 | 2.3906635 | 41 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 89516 | 2004 $DO_{25}$ |
| 2004 $DS_{25}$ | 15.8 | 0.15 | 20060922 | 96.26681 | 228.77516 | 10.38638 | 9.98691 | 0.0391522 | 3.0899040 | 30 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04297 | 2004 $DS_{25}$ |
| 2004 $DB_{26}$ | 16.9 | 0.15 | 20060922 | 318.02115 | 79.09598 | 342.53965 | 6.90046 | 0.1147931 | 2.4136707 | 52 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 95181 | 2004 $DB_{26}$ |
| 2004 $DC_{26}$ | 17.5 | 0.15 | 20060922 | 308.41926 | 313.90182 | 123.97079 | 5.77093 | 0.2102770 | 2.3337289 | 41 | 4 | 1992–2006 | 0.63 | M-v | 1 | MPC | 86315 | 2004 $DC_{26}$ |
| 2004 $DB_{28}$ | 15.8 | 0.15 | 20060922 | 97.82999 | 150.92155 | 87.76550 | 1.43186 | 0.1435838 | 3.2088221 | 36 | 5 | 1995–2006 | 0.36 | M-v | 0 | MPC | 76436 | 2004 $DB_{28}$ |
| 2004 $DN_{28}$ | 14.5 | 0.15 | 20060922 | 96.48334 | 59.01345 | 121.67131 | 4.00499 | 0.1071686 | 3.9685094 | 26 | 4 | 2001–2005 | 0.55 | M-v | 2 | MPC | 89516 | 2004 $DN_{28}$ |
| 2004 $DW_{28}$ | 15.4 | 0.15 | 20060922 | 225.52390 | 352.75371 | 106.62685 | 3.21378 | 0.0689897 | 3.0299423 | 28 | 3 | 2002–2005 | 0.43 | M-v | 3 | MPC | 95181 | 2004 $DW_{28}$ |
| 2004 $DA_{29}$ | 15.4 | 0.15 | 20060922 | 104.87224 | 153.18760 | 136.80622 | 7.16656 | 0.0781624 | 2.5206712 | 55 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 61968 | 2004 $DA_{29}$ |
| 2004 $DF_{29}$ | 15.7 | 0.15 | 20060922 | 276.47609 | 46.67203 | 15.95757 | 2.19405 | 0.0313625 | 2.9094264 | 44 | 6 | 1994–2006 | 0.51 | M-v | 1 | MPC | 04297 | 2004 $DF_{29}$ |
| 2004 $DK_{29}$ | 14.5 | 0.15 | 20060922 | 254.61308 | 257.72106 | 146.01194 | 10.41434 | 0.2177574 | 3.1493676 | 60 | 4 | 1998–2004 | 0.61 | M-v | 1 | MPC | 66337 | 2004 $DK_{29}$ |
| 2004 $DT_{29}$ | 16.5 | 0.15 | 20060922 | 250.75091 | 0.89878 | 123.38666 | 3.60261 | 0.0460370 | 2.5374409 | 42 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 86316 | 2004 $DT_{29}$ |
| 2004 $DX_{29}$ | 17.1 | 0.15 | 20060922 | 336.44317 | 57.64448 | 349.44921 | 5.50682 | 0.2310250 | 2.3402048 | 96 | 3 | 1999–2006 | 0.63 | M-v | 3 | MPC | 04297 | 2004 $DX_{29}$ |
| 2004 $DL_{30}$ | 16.8 | 0.15 | 20060922 | 257.48677 | 99.89898 | 41.86745 | 3.12002 | 0.1486125 | 2.4201219 | 65 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 69680 | 2004 $DL_{30}$ |
| 2004 $DQ_{30}$ | 14.8 | 0.15 | 20060922 | 132.63379 | 220.83139 | 347.92843 | 13.73508 | 0.2304635 | 3.1691173 | 89 | 3 | 2003–2006 | 0.49 | M-v | 2 | MPC | 86317 | 2004 $DQ_{30}$ |
| 2004 $DV_{30}$ | 16.1 | 0.15 | 20060922 | 313.06301 | 242.38714 | 147.21016 | 15.25075 | 0.1808126 | 2.6662333 | 49 | 5 | 1993–2006 | 0.32 | M-v | 0 | MPC | 04297 | 2004 $DV_{30}$ |
| 2004 $DW_{30}$ | 15.5 | 0.15 | 20060922 | 95.50738 | 245.76842 | 346.89032 | 6.37622 | 0.1150490 | 3.1590996 | 38 | 4 | 1995–2006 | 0.49 | M-v | 0 | MPC | 04297 | 2004 $DW_{30}$ |
| 2004 $DH_{32}$ | 15.9 | 0.15 | 20060922 | 251.72801 | 211.35116 | 304.40660 | 12.88931 | 0.0661459 | 2.3548551 | 43 | 5 | 1993–2006 | 0.57 | M-v | 2 | MPC | 69680 | 2004 $DH_{32}$ |
| 2004 $DJ_{32}$ | 16.0 | 0.15 | 20060922 | 163.99918 | 294.48981 | 261.46536 | 4.72678 | 0.2329342 | 2.8503532 | 37 | 3 | 2004–2006 | 0.45 | M-v | 3 | MPC | 86318 | 2004 $DJ_{32}$ |
| 2004 $DN_{32}$ | 16.3 | 0.15 | 20060922 | 170.88624 | 256.39811 | 347.85957 | 5.69039 | 0.1055080 | 2.4258553 | 46 | 4 | 1994–2006 | 0.43 | M-v | 0 | MPC | 90190 | 2004 $DN_{32}$ |
| 2004 $DZ_{32}$ | 16.0 | 0.15 | 20060922 | 117.65431 | 272.42409 | 34.65165 | 2.48929 | 0.2015708 | 2.4259103 | 86 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 90190 | 2004 $DZ_{32}$ |
| 2004 $DA_{33}$ | 16.8 | 0.15 | 20060922 | 276.00750 | 29.94803 | 74.11142 | 2.06465 | 0.1439590 | 2.5291877 | 41 | 4 | 2000–2006 | 0.58 | M-v | 2 | MPC | 61969 | 2004 $DA_{33}$ |
| 2004 $DB_{33}$ | 15.7 | 0.15 | 20060922 | 120.39777 | 124.63428 | 120.15454 | 3.05848 | 0.1750941 | 2.9645686 | 70 | 3 | 2004–2006 | 0.42 | M-v | 3 | MPC | 87616 | 2004 $DB_{33}$ |
| 2004 $DK_{33}$ | 15.5 | 0.15 | 20060922 | 134.73562 | 87.98220 | 158.40286 | 15.56275 | 0.2227899 | 2.8775745 | 97 | 6 | 1999–2006 | 0.52 | M-v | 0 | MPC | 90190 | 2004 $DK_{33}$ |
| 2004 $DL_{33}$ | 16.3 | 0.15 | 20060922 | 192.32596 | 240.17095 | 1.69979 | 4.86499 | 0.1218572 | 2.3631061 | 69 | 3 | 2004–2006 | 0.54 | M-v | 2 | MPC | 97699 | 2004 $DL_{33}$ |
| 2004 $DO_{33}$ | 16.5 | 0.15 | 20060922 | 200.57308 | 102.56503 | 146.88715 | 6.38795 | 0.1653487 | 2.2986695 | 63 | 3 | 1998–2005 | 0.57 | M-v | 3 | MPC | 86319 | 2004 $DO_{33}$ |
| 2004 $DS_{33}$ | 15.7 | 0.15 | 20060922 | 142.64543 | 71.34716 | 121.72503 | 2.38871 | 0.1282484 | 3.2037310 | 59 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 04297 | 2004 $DS_{33}$ |
| 2004 $DU_{33}$ | 17.3 | 0.15 | 20060922 | 258.63136 | 26.93284 | 140.79581 | 5.39674 | 0.1684288 | 2.3375725 | 54 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 61970 | 2004 $DU_{33}$ |
| 2004 $DY_{33}$ | 15.8 | 0.15 | 20060922 | 260.04715 | 251.79059 | 218.63385 | 12.47549 | 0.1332337 | 2.5843902 | 38 | 4 | 1998–2006 | 0.68 | M-v | 3 | MPC | 69680 | 2004 $DY_{33}$ |
| 2004 $DA_{34}$ | 15.8 | 0.15 | 20060922 | 319.27842 | 36.02156 | 357.22402 | 7.91417 | 0.0494081 | 2.7744001 | 49 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 04297 | 2004 $DA_{34}$ |
| 2004 $DN_{34}$ | 15.5 | 0.15 | 20060922 | 219.37409 | 313.48011 | 122.47448 | 6.01934 | 0.1746209 | 3.1509581 | 42 | 4 | 1999–2005 | 0.57 | M-v | 0 | MPC | 69681 | 2004 $DN_{34}$ |
| 2004 $DS_{34}$ | 16.5 | 0.15 | 20060922 | 1.46987 | 317.94333 | 80.50787 | 2.70006 | 0.0617388 | 2.3462962 | 79 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 86320 | 2004 $DS_{34}$ |
| 2004 $DB_{35}$ | 16.2 | 0.15 | 20060922 | 154.03292 | 42.33974 | 216.12070 | 6.46460 | 0.0951493 | 2.3777061 | 33 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 87616 | 2004 $DB_{35}$ |
| 2004 $DJ_{35}$ | 16.4 | 0.15 | 20060922 | 204.37309 | 323.89709 | 213.38375 | 5.75091 | 0.1092275 | 2.5839749 | 59 | 4 | 1997–2006 | 0.38 | M-v | 2 | MPC | 76437 | 2004 $DJ_{35}$ |
| 2004 $DR_{35}$ | 17.4 | 0.15 | 20060922 | 264.01122 | 306.31795 | 198.04898 | 6.13637 | 0.0949175 | 2.3645982 | 21 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 95181 | 2004 $DR_{35}$ |
| 2004 $DZ_{35}$ | 16.2 | 0.15 | 20060922 | 191.56126 | 349.82669 | 198.58081 | 6.40545 | 0.1276054 | 2.6478747 | 31 | 3 | 2000–2006 | 0.52 | M-v | 4 | MPC | 61971 | 2004 $DZ_{35}$ |
| 2004 $DD_{36}$ | 15.1 | 0.15 | 20060922 | 103.15265 | 37.67284 | 201.12520 | 5.26720 | 0.1354284 | 3.1664402 | 46 | 3 | 1995–2006 | 0.60 | M-v | 3 | MPC | 61971 | 2004 $DD_{36}$ |
| 2004 $DH_{36}$ | 17.1 | 0.15 | 20060922 | 219.28523 | 300.73317 | 227.23216 | 3.10251 | 0.1406487 | 2.5815769 | 35 | 3 | 1998–2006 | 0.42 | M-v | 3 | MPC | 86320 | 2004 $DH_{36}$ |
| 2004 $DS_{36}$ | 15.7 | 0.15 | 20060922 | 209.72543 | 28.08264 | 171.05113 | 10.84028 | 0.1245423 | 2.4769494 | 78 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 90190 | 2004 $DS_{36}$ |
| 2004 $DX_{36}$ | 15.1 | 0.15 | 20060922 | 221.92432 | 321.80792 | 149.58790 | 6.20462 | 0.0680566 | 3.1018104 | 57 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 04297 | 2004 $DX_{36}$ |
| 2004 $DH_{37}$ | 16.6 | 0.15 | 20060922 | 252.49675 | 66.40742 | 138.33748 | 3.69140 | 0.1474629 | 2.2423381 | 137 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 86321 | 2004 $DH_{37}$ |
| 2004 $DJ_{37}$ | 16.5 | 0.15 | 20060922 | 214.75657 | 151.07238 | 89.19391 | 3.40007 | 0.1141105 | 2.2767565 | 96 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 86321 | 2004 $DJ_{37}$ |

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| 2004 $DP_{37}$ | 15.0 | 0.15 | 20060922 | 126.20249 | 55.05388 | 162.42330 | 15.59016 | 0.0111949 | 3.0995196 | 80 | 5 | 1999–2006 | 0.70 | M-v | 1 | MPC | 04297 | 2004 $DP_{37}$ |
| 2004 $DS_{37}$ | 16.7 | 0.15 | 20060922 | 274.04101 | 353.51528 | 119.80145 | 4.15439 | 0.1355930 | 2.5631501 | 54 | 5 | 1996–2006 | 0.61 | M-v | 1 | MPC | 66338 | 2004 $DS_{37}$ |
| 2004 $DT_{37}$ | 14.9 | 0.15 | 20060922 | 47.93791 | 331.06099 | 22.22685 | 8.21304 | 0.1883104 | 2.6236747 | 119 | 6 | 1997–2006 | 0.50 | M-v | 1 | MPC | 66338 | 2004 $DT_{37}$ |
| 2004 $DV_{37}$ | 16.5 | 0.15 | 20060922 | 340.40742 | 251.53878 | 175.57815 | 6.57088 | 0.2120453 | 2.2816123 | 66 | 5 | 1992–2006 | 0.62 | M-v | 1 | MPC | 86322 | 2004 $DV_{37}$ |
| 2004 $DW_{37}$ | 15.7 | 0.15 | 20060922 | 217.55553 | 38.01315 | 78.08734 | 1.58040 | 0.1789499 | 2.9974219 | 47 | 3 | 1996–2004 | 0.54 | M-v | 2 | MPC | 66338 | 2004 $DW_{37}$ |
| 2004 $DD_{38}$ | 15.0 | 0.15 | 20060922 | 158.75952 | 240.13165 | 298.43760 | 8.02180 | 0.0441008 | 3.0749026 | 59 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 04297 | 2004 $DD_{38}$ |
| 2004 $DJ_{38}$ | 15.9 | 0.15 | 20060922 | 281.78530 | 305.72194 | 141.99614 | 6.47864 | 0.0520141 | 2.6556324 | 90 | 6 | 1996–2006 | 0.64 | M-v | 1 | MPC | 86322 | 2004 $DJ_{38}$ |
| 2004 $DR_{38}$ | 16.3 | 0.15 | 20060922 | 119.59004 | 187.18076 | 75.39648 | 2.38044 | 0.0398344 | 2.6152679 | 56 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 76438 | 2004 $DR_{38}$ |
| 2004 $DV_{38}$ | 17.3 | 0.15 | 20060922 | 333.94437 | 79.22668 | 342.99311 | 5.68079 | 0.1021903 | 2.3546986 | 35 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 76438 | 2004 $DV_{38}$ |
| 2004 $DC_{39}$ | 16.9 | 0.15 | 20060922 | 301.68530 | 264.23301 | 145.92128 | 13.19812 | 0.1796069 | 2.6115167 | 26 | 3 | 2002–2006 | 0.29 | M-v | 2 | MPC | 03612 | 2004 $DC_{39}$ |
| 2004 $DK_{39}$ | 16.9 | 0.15 | 20060922 | 327.21698 | 73.22342 | 348.25581 | 3.48366 | 0.1503113 | 2.3744308 | 81 | 3 | 2002–2006 | 0.45 | M-v | 1 | MPC | 04297 | 2004 $DK_{39}$ |
| 2004 $DV_{39}$ | 15.8 | 0.15 | 20060922 | 110.05945 | 97.51696 | 159.65359 | 4.53988 | 0.2421652 | 2.9751309 | 79 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97699 | 2004 $DV_{39}$ |
| 2004 $DB_{40}$ | 16.5 | 0.15 | 20060922 | 146.18222 | 16.28415 | 267.68696 | 1.49025 | 0.1976249 | 2.3651752 | 97 | 3 | 1998–2005 | 0.49 | M-v | 2 | MPC | 90190 | 2004 $DB_{40}$ |
| 2004 $DD_{40}$ | 18.1 | 0.15 | 20060922 | 244.58818 | 218.89333 | 292.91940 | 1.23806 | 0.1682871 | 2.4529633 | 27 | 3 | 2004–2006 | 0.40 | M-v | 4 | MPC | 86323 | 2004 $DD_{40}$ |
| 2004 $DH_{40}$ | 16.6 | 0.15 | 20060922 | 243.80956 | 342.82822 | 182.76012 | 3.40173 | 0.1115953 | 2.3920329 | 82 | 6 | 1991–2006 | 0.46 | M-v | 1 | MPC | 04297 | 2004 $DH_{40}$ |
| 2004 $DJ_{40}$ | 16.8 | 0.15 | 20060922 | 264.60568 | 209.74746 | 320.10953 | 4.98378 | 0.0904382 | 2.2367689 | 73 | 6 | 1994–2006 | 0.48 | M-v | 1 | MPC | 90190 | 2004 $DJ_{40}$ |
| 2004 $DO_{40}$ | 17.2 | 0.15 | 20060922 | 319.69571 | 160.77594 | 265.01341 | 2.25520 | 0.1561509 | 2.3976749 | 66 | 5 | 1991–2006 | 0.54 | M-v | 0 | MPC | 76439 | 2004 $DO_{40}$ |
| 2004 $DK_{41}$ | 16.0 | 0.15 | 20060922 | 206.41780 | 165.68613 | 62.80594 | 4.97488 | 0.2122920 | 2.4183701 | 121 | 6 | 1993–2006 | 0.53 | M-v | 1 | MPC | 87616 | 2004 $DK_{41}$ |
| 2004 $DN_{41}$ | 15.4 | 0.15 | 20060922 | 245.87530 | 117.90290 | 3.48864 | 24.50589 | 0.0956315 | 2.7389708 | 114 | 3 | 1997–2006 | 0.59 | M-v | 2 | MPC | 04297 | 2004 $DN_{41}$ |
| 2004 $DV_{41}$ | 16.7 | 0.15 | 20060922 | 206.09654 | 242.20460 | 311.74122 | 4.23077 | 0.1462346 | 2.5417024 | 78 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 86325 | 2004 $DV_{41}$ |
| 2004 $DY_{41}$ | 16.9 | 0.15 | 20060922 | 303.91431 | 150.06847 | 324.06346 | 6.48652 | 0.1312547 | 2.3050114 | 51 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 66338 | 2004 $DY_{41}$ |
| 2004 $DC_{42}$ | 16.6 | 0.15 | 20060922 | 229.68276 | 348.83407 | 209.49790 | 1.97662 | 0.1008519 | 2.3652198 | 62 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 90190 | 2004 $DC_{42}$ |
| 2004 $DE_{42}$ | 17.4 | 0.15 | 20060922 | 281.93861 | 48.17436 | 123.14341 | 4.58892 | 0.1219080 | 2.2101067 | 66 | 5 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87617 | 2004 $DE_{42}$ |
| 2004 $DF_{42}$ | 15.5 | 0.15 | 20060922 | 213.24614 | 42.59494 | 111.81212 | 5.63298 | 0.1193782 | 2.8188849 | 64 | 5 | 1994–2006 | 0.63 | M-v | 2 | MPC | 04297 | 2004 $DF_{42}$ |
| 2004 $DL_{42}$ | 15.3 | 0.15 | 20060922 | 126.33848 | 267.72695 | 337.41982 | 14.19174 | 0.1151979 | 2.8585794 | 59 | 6 | 1996–2006 | 0.66 | M-v | 1 | MPC | 87617 | 2004 $DL_{42}$ |
| 2004 $DP_{42}$ | 15.9 | 0.15 | 20060922 | 199.26998 | 41.98158 | 144.99050 | 9.24252 | 0.1354418 | 2.7609685 | 62 | 3 | 2004–2006 | 0.45 | M-v | 3 | MPC | 86326 | 2004 $DP_{42}$ |
| 2004 $DV_{42}$ | 16.2 | 0.15 | 20060922 | 109.51000 | 69.10690 | 187.31850 | 9.92767 | 0.0203844 | 2.6974567 | 44 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 00709 | 2004 $DV_{42}$ |
| 2004 $DY_{42}$ | 15.4 | 0.15 | 20060922 | 112.72055 | 130.91323 | 104.80641 | 2.20102 | 0.1188097 | 2.9050669 | 47 | 3 | 2001–2006 | 0.32 | M-v | 3 | MPC | 04297 | 2004 $DY_{42}$ |
| 2004 $DB_{43}$ | 16.1 | 0.15 | 20060922 | 37.40603 | 279.81187 | 48.19069 | 2.95733 | 0.0797280 | 2.6541784 | 52 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 86326 | 2004 $DB_{43}$ |
| 2004 $DK_{43}$ | 15.0 | 0.15 | 20060922 | 101.80814 | 27.38546 | 218.27693 | 4.63826 | 0.1535653 | 3.1903956 | 53 | 6 | 1995–2006 | 0.65 | M-v | 1 | MPC | 86326 | 2004 $DK_{43}$ |
| 2004 $DO_{43}$ | 15.0 | 0.15 | 20060922 | 44.27373 | 153.31651 | 154.75605 | 12.53882 | 0.0156133 | 2.9236501 | 34 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 04297 | 2004 $DO_{43}$ |
| 2004 $DH_{44}$ | 17.8 | 0.15 | 20060922 | 223.11007 | 283.36315 | 285.93591 | 1.81839 | 0.1779425 | 2.3554014 | 76 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87617 | 2004 $DH_{44}$ |
| 2004 $DP_{44}$ | 16.6 | 0.15 | 20060922 | 219.90558 | 177.44528 | 314.14277 | 2.60925 | 0.0450344 | 2.8111485 | 32 | 4 | 1997–2006 | 0.44 | M-v | 2 | MPC | 04297 | 2004 $DP_{44}$ |
| 2004 $DS_{44}$ | 16.2 | 0.15 | 20060922 | 269.67692 | 267.76807 | 163.47838 | 13.43384 | 0.1886008 | 2.7128404 | 47 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 66338 | 2004 $DS_{44}$ |
| 2004 $DK_{45}$ | 15.2 | 0.15 | 20060922 | 169.65737 | 178.53500 | 83.27638 | 15.32233 | 0.2138481 | 2.6660843 | 114 | 6 | 1999–2006 | 0.53 | M-v | 1 | MPC | 90191 | 2004 $DK_{45}$ |
| 2004 $DQ_{45}$ | 16.5 | 0.15 | 20060922 | 192.34430 | 69.32783 | 157.64431 | 4.59836 | 0.2509903 | 2.6072188 | 110 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 90191 | 2004 $DQ_{45}$ |
| 2004 $DV_{46}$ | 16.6 | 0.15 | 20060922 | 181.39195 | 35.85907 | 223.89847 | 5.33046 | 0.1629700 | 2.3131321 | 59 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 90191 | 2004 $DV_{46}$ |
| 2004 $DA_{47}$ | 16.3 | 0.15 | 20060922 | 213.90529 | 34.84954 | 167.30133 | 7.55461 | 0.1466222 | 2.4329476 | 46 | 6 | 1993–2006 | 0.53 | M-v | 1 | MPC | 04298 | 2004 $DA_{47}$ |
| 2004 $DC_{47}$ | 15.6 | 0.15 | 20060922 | 213.96700 | 339.75633 | 180.13905 | 12.56606 | 0.0882953 | 2.6693673 | 49 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 04298 | 2004 $DC_{47}$ |
| 2004 $DG_{47}$ | 16.7 | 0.15 | 20060922 | 227.74845 | 251.82891 | 298.37807 | 5.27936 | 0.0710336 | 2.3887652 | 54 | 4 | 2000–2006 | 0.39 | M-v | 0 | MPC | 86329 | 2004 $DG_{47}$ |
| 2004 $DH_{47}$ | 16.6 | 0.15 | 20060922 | 216.19932 | 10.88949 | 193.45320 | 6.18379 | 0.0753818 | 2.3792305 | 43 | 4 | 1997–2005 | 0.67 | M-v | 1 | MPC | 86329 | 2004 $DH_{47}$ |
| 2004 $DL_{47}$ | 16.7 | 0.15 | 20060922 | 231.23098 | 288.34222 | 223.23448 | 5.19043 | 0.1135650 | 2.5710120 | 52 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 86330 | 2004 $DL_{47}$ |
| 2004 $DS_{47}$ | 17.1 | 0.15 | 20060922 | 306.00877 | 280.89441 | 172.60650 | 6.31376 | 0.0735270 | 2.4216678 | 35 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 66338 | 2004 $DS_{47}$ |
| 2004 $DT_{47}$ | 16.5 | 0.15 | 20060922 | 233.02218 | 350.96188 | 188.32305 | 8.16367 | 0.1834437 | 2.4522890 | 67 | 4 | 1994–2006 | 0.53 | M-v | 1 | MPC | 65581 | 2004 $DT_{47}$ |
| 2004 $DF_{48}$ | 16.7 | 0.15 | 20060922 | 230.21271 | 28.77896 | 160.37174 | 2.72855 | 0.1376776 | 2.4069162 | 60 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87617 | 2004 $DF_{48}$ |
| 2004 $DQ_{48}$ | 14.8 | 0.15 | 20060922 | 73.52004 | 288.92087 | 337.09554 | 10.02386 | 0.0590178 | 3.1228123 | 65 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 04298 | 2004 $DQ_{48}$ |
| 2004 $DT_{48}$ | 16.4 | 0.15 | 20060922 | 250.48565 | 173.74780 | 353.84653 | 0.86524 | 0.1274959 | 2.3722253 | 107 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 87617 | 2004 $DT_{48}$ |
| 2004 $DB_{49}$ | 15.6 | 0.15 | 20060922 | 177.57623 | 357.76244 | 175.10816 | 9.63604 | 0.1236938 | 2.9910610 | 95 | 4 | 1999–2006 | 0.51 | M-v | 2 | MPC | 04298 | 2004 $DB_{49}$ |
| 2004 $DT_{49}$ | 16.0 | 0.15 | 20060922 | 135.32547 | 116.90356 | 116.08167 | 5.86226 | 0.0417609 | 2.7663086 | 32 | 4 | 1995–2006 | 0.61 | M-v | 1 | MPC | 66338 | 2004 $DT_{49}$ |
| 2004 $DU_{49}$ | 16.0 | 0.15 | 20060922 | 68.82027 | 254.30111 | 127.91366 | 23.99199 | 0.1313568 | 1.9468719 | 32 | 4 | 2000–2006 | 0.50 | M-v | 2 | MPC | 69681 | 2004 $DU_{49}$ |
| 2004 $DE_{50}$ | 17.1 | 0.15 | 20060922 | 244.95264 | 14.21979 | 162.69834 | 6.79155 | 0.0437241 | 2.2882586 | 34 | 3 | 1997–2005 | 0.45 | M-v | 3 | MPC | 86330 | 2004 $DE_{50}$ |
| 2004 $DG_{50}$ | 16.6 | 0.15 | 20060922 | 291.34075 | 150.12265 | 292.50221 | 1.91369 | 0.1076543 | 2.5213790 | 34 | 5 | 1994–2006 | 0.55 | M-v | 2 | MPC | 65582 | 2004 $DG_{50}$ |
| 2004 $DH_{50}$ | 15.2 | 0.15 | 20060922 | 96.14587 | 271.89197 | 318.05798 | 10.57541 | 0.0358039 | 3.0995852 | 62 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 03613 | 2004 $DH_{50}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $DK_{50}$ | 15.9 | 0.15 | 20060922 | 292.12522 | 225.81867 | 155.18489 | 14.35297 | 0.2671651 | 2.6774396 | 46 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 95182 | 2004 $DK_{50}$ |
| 2004 $DO_{50}$ | 15.8 | 0.15 | 20060922 | 268.37804 | 120.74429 | 297.69481 | 6.06776 | 0.2916612 | 2.7170814 | 30 | 2 | 2002–2004 | 0.53 | M-v | 4 | MPC | 66338 | 2004 $DO_{50}$ |
| 2004 $DQ_{50}$ | 16.0 | 0.15 | 20060922 | 128.20247 | 146.50712 | 126.55598 | 3.09798 | 0.1008310 | 2.3974850 | 45 | 5 | 1991–2006 | 0.45 | M-v | 1 | MPC | 04298 | 2004 $DQ_{50}$ |
| 2004 $DZ_{50}$ | 16.6 | 0.15 | 20060922 | 169.42760 | 99.99536 | 120.05583 | 2.51830 | 0.0604276 | 2.5443181 | 37 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 00709 | 2004 $DZ_{50}$ |
| 2004 $DL_{51}$ | 15.5 | 0.15 | 20060922 | 134.71116 | 207.05755 | 2.48505 | 9.19629 | 0.1140602 | 3.1216222 | 51 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 65582 | 2004 $DL_{51}$ |
| 2004 $DP_{51}$ | 15.3 | 0.15 | 20060922 | 319.64974 | 32.39241 | 358.43822 | 6.16711 | 0.0846833 | 2.8996298 | 86 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04298 | 2004 $DP_{51}$ |
| 2004 $DQ_{51}$ | 16.8 | 0.15 | 20060922 | 210.29682 | 43.71843 | 131.64215 | 2.86946 | 0.1330438 | 2.6442903 | 51 | 3 | 2004–2006 | 0.40 | M-v | 3 | MPC | 86331 | 2004 $DQ_{51}$ |
| 2004 $DT_{51}$ | 15.3 | 0.15 | 20060922 | 150.36015 | 37.89507 | 150.85091 | 9.40270 | 0.0486781 | 3.1494464 | 52 | 5 | 1993–2006 | 0.55 | M-v | 1 | MPC | 04298 | 2004 $DT_{51}$ |
| 2004 $DU_{51}$ | 15.3 | 0.15 | 20060922 | 170.36798 | 19.63319 | 143.45910 | 6.52492 | 0.0668454 | 3.1873086 | 74 | 5 | 1993–2006 | 0.58 | M-v | 0 | MPC | 04298 | 2004 $DU_{51}$ |
| 2004 $DV_{51}$ | 16.8 | 0.15 | 20060922 | 290.69980 | 313.26478 | 143.04605 | 6.26733 | 0.1858287 | 2.4801999 | 53 | 4 | 1996–2006 | 0.64 | M-v | 2 | MPC | 66339 | 2004 $DV_{51}$ |
| 2004 $DY_{51}$ | 15.4 | 0.15 | 20060922 | 237.56934 | 307.79344 | 155.15205 | 11.13974 | 0.0769976 | 3.0335134 | 94 | 5 | 1999–2006 | 0.63 | M-v | 0 | MPC | 04298 | 2004 $DY_{51}$ |
| 2004 $DC_{52}$ | 16.8 | 0.15 | 20060922 | 248.84671 | 168.22481 | 351.09803 | 1.63346 | 0.1829100 | 2.4127350 | 55 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 86331 | 2004 $DC_{52}$ |
| 2004 $DO_{52}$ | 17.2 | 0.15 | 20060922 | 242.49842 | 319.31077 | 248.70264 | 1.41285 | 0.0886519 | 2.2009486 | 65 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 87617 | 2004 $DO_{52}$ |
| 2004 $DP_{52}$ | 15.6 | 0.15 | 20060922 | 259.78798 | 175.34364 | 304.47836 | 2.85472 | 0.0488074 | 2.5860662 | 61 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 86331 | 2004 $DP_{52}$ |
| 2004 $DL_{53}$ | 16.7 | 0.15 | 20060922 | 53.10354 | 236.91868 | 86.38952 | 2.25027 | 0.1555399 | 2.6207826 | 22 | 3 | 2002–2006 | 0.53 | M-v | 4 | MPC | 89517 | 2004 $DL_{53}$ |
| 2004 $DP_{53}$ | 16.3 | 0.15 | 20060922 | 230.34377 | 170.38759 | 56.60360 | 4.04774 | 0.1892914 | 2.2868282 | 122 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 97699 | 2004 $DP_{53}$ |
| 2004 $DK_{54}$ | 17.1 | 0.15 | 20060922 | 161.04374 | 138.09745 | 128.98088 | 2.93240 | 0.1781965 | 2.3530250 | 46 | 3 | 1998–2005 | 0.37 | M-v | 2 | MPC | 90191 | 2004 $DK_{54}$ |
| 2004 $DV_{54}$ | 17.0 | 0.15 | 20060922 | 30.35496 | 163.33677 | 149.93712 | 2.61371 | 0.0525675 | 2.8701945 | 28 | 3 | 2001–2006 | 0.34 | M-v | 4 | MPC | 04298 | 2004 $DV_{54}$ |
| 2004 $DK_{55}$ | 16.4 | 0.15 | 20060922 | 47.83352 | 164.90536 | 160.08535 | 7.54946 | 0.1349187 | 2.6115592 | 38 | 4 | 2002–2006 | 0.54 | M-v | 0 | MPC | 95182 | 2004 $DK_{55}$ |
| 2004 $DG_{56}$ | 17.8 | 0.15 | 20060922 | 228.56303 | 311.62855 | 228.40198 | 1.83203 | 0.1539274 | 2.4047098 | 29 | 4 | 1993–2006 | 0.35 | M-v | 1 | MPC | 66339 | 2004 $DG_{56}$ |
| 2004 $DR_{56}$ | 16.2 | 0.15 | 20060922 | 3.53299 | 140.65369 | 195.72519 | 2.39514 | 0.0821333 | 2.8881346 | 29 | 4 | 2001–2006 | 0.31 | M-v | 0 | MPC | 04298 | 2004 $DR_{56}$ |
| 2004 $DG_{57}$ | 15.9 | 0.15 | 20060922 | 25.54359 | 5.37818 | 323.62829 | 13.78622 | 0.1131274 | 2.6211041 | 74 | 3 | 2002–2006 | 0.61 | M-v | 3 | MPC | 04298 | 2004 $DG_{57}$ |
| 2004 $DG_{58}$ | 16.5 | 0.15 | 20060922 | 162.96443 | 127.87215 | 89.02644 | 2.72502 | 0.0416831 | 2.5994538 | 70 | 5 | 1999–2006 | 0.42 | M-v | 1 | MPC | 66339 | 2004 $DG_{58}$ |
| 2004 $DN_{58}$ | 16.2 | 0.15 | 20060922 | 60.53772 | 327.32700 | 334.37997 | 12.37122 | 0.0785513 | 2.7045017 | 31 | 3 | 2001–2006 | 0.33 | M-v | 3 | MPC | 86332 | 2004 $DN_{58}$ |
| 2004 $DU_{58}$ | 16.4 | 0.15 | 20060922 | 101.17953 | 116.51880 | 147.85222 | 7.91804 | 0.1030246 | 2.7849572 | 35 | 4 | 1995–2006 | 0.58 | M-v | 1 | MPC | 95182 | 2004 $DU_{58}$ |
| 2004 $DY_{58}$ | 17.7 | 0.15 | 20060922 | 217.53671 | 113.92303 | 127.69263 | 3.94909 | 0.1404752 | 2.1816256 | 25 | 3 | 2001–2005 | 0.55 | M-v | 2 | MPC | 86333 | 2004 $DY_{58}$ |
| 2004 $DD_{59}$ | 16.0 | 0.15 | 20060922 | 137.35396 | 74.93181 | 138.05610 | 5.15561 | 0.1014948 | 3.0263453 | 39 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 04298 | 2004 $DD_{59}$ |
| 2004 $DG_{59}$ | 14.8 | 0.15 | 20060922 | 140.20438 | 40.20218 | 157.24871 | 19.31225 | 0.0407323 | 3.1316707 | 61 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 03613 | 2004 $DG_{59}$ |
| 2004 $DT_{59}$ | 17.0 | 0.15 | 20060922 | 198.99349 | 75.16938 | 143.26148 | 4.80414 | 0.1490414 | 2.3899523 | 50 | 4 | 1998–2006 | 0.40 | M-v | 0 | MPC | 90191 | 2004 $DT_{59}$ |
| 2004 $DX_{59}$ | 16.4 | 0.15 | 20060922 | 85.79680 | 306.55987 | 333.66016 | 3.15284 | 0.0630238 | 2.7651786 | 42 | 4 | 1999–2006 | 0.46 | M-v | 0 | MPC | 61990 | 2004 $DX_{59}$ |
| 2004 $DA_{60}$ | 17.0 | 0.15 | 20060922 | 303.42064 | 145.10348 | 322.27367 | 1.69496 | 0.1715521 | 2.2638432 | 81 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 66339 | 2004 $DA_{60}$ |
| 2004 $DG_{60}$ | 14.9 | 0.15 | 20060922 | 56.74979 | 307.95591 | 331.95377 | 25.86913 | 0.2077660 | 3.2195353 | 57 | 3 | 2000–2006 | 0.51 | M-v | 2 | MPC | 04298 | 2004 $DG_{60}$ |
| 2004 $DH_{60}$ | 15.6 | 0.15 | 20060922 | 92.59523 | 283.87739 | 317.56808 | 3.87467 | 0.0826910 | 3.0996738 | 48 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04298 | 2004 $DH_{60}$ |
| 2004 $DJ_{60}$ | 16.4 | 0.15 | 20060922 | 302.88653 | 99.39856 | 310.73010 | 3.04552 | 0.1551530 | 2.6437015 | 63 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 04298 | 2004 $DJ_{60}$ |
| 2004 $DL_{60}$ | 17.0 | 0.15 | 20060922 | 49.05679 | 193.16325 | 161.35333 | 7.94619 | 0.0617705 | 2.3890987 | 43 | 3 | 1998–2004 | 0.51 | M-v | 3 | MPC | 66339 | 2004 $DL_{60}$ |
| 2004 $DN_{60}$ | 17.1 | 0.15 | 20060922 | 270.17640 | 301.33295 | 148.28640 | 4.55401 | 0.1531456 | 2.6101661 | 27 | 4 | 2000–2006 | 0.49 | M-v | 0 | MPC | 04298 | 2004 $DN_{60}$ |
| 2004 $DO_{60}$ | 16.4 | 0.15 | 20060922 | 157.85522 | 106.54626 | 152.22720 | 3.46896 | 0.1569901 | 2.4391113 | 50 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 90191 | 2004 $DO_{60}$ |
| 2004 $DQ_{60}$ | 16.1 | 0.15 | 20060922 | 142.74953 | 259.52428 | 332.72125 | 3.52556 | 0.1442723 | 2.7476883 | 64 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 76443 | 2004 $DQ_{60}$ |
| 2004 $DU_{60}$ | 18.4 | 0.15 | 20060922 | 283.51525 | 226.92173 | 269.44434 | 0.74595 | 0.1486357 | 2.2836653 | 35 | 4 | 1997–2006 | 0.47 | M-v | 1 | MPC | 89517 | 2004 $DU_{60}$ |
| 2004 $DM_{61}$ | 16.9 | 0.15 | 20060922 | 254.23836 | 122.21810 | 352.25197 | 2.53563 | 0.1393366 | 2.6067538 | 45 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 76443 | 2004 $DM_{61}$ |
| 2004 $DT_{61}$ | 16.7 | 0.15 | 20060922 | 161.33560 | 230.30524 | 47.97140 | 3.14098 | 0.1665133 | 2.3623192 | 46 | 3 | 2002–2005 | 0.51 | M-v | 2 | MPC | 90191 | 2004 $DT_{61}$ |
| 2004 $DA_{62}$ | 13.0 | 0.15 | 20060922 | 45.92068 | 162.50552 | 32.04172 | 52.23613 | 0.4659790 | 7.6966290 | 149 | 3 | 1983–2004 | 0.53 | M-v | 0 | MPC | 69683 | 2004 $DA_{62}$ |
| 2004 $DG_{62}$ | 17.3 | 0.15 | 20060922 | 242.53090 | 33.65136 | 138.32515 | 2.84192 | 0.1263738 | 2.3795864 | 52 | 3 | 2004–2006 | 0.46 | M-v | 4 | MPC | 86333 | 2004 $DG_{62}$ |
| 2004 $DM_{62}$ | 15.1 | 0.15 | 20060922 | 310.38084 | 35.35230 | 42.49092 | 24.45396 | 0.3086189 | 2.4260862 | 77 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 04298 | 2004 $DM_{62}$ |
| 2004 $DS_{62}$ | 16.5 | 0.15 | 20060922 | 6.94073 | 81.67200 | 309.36621 | 3.49654 | 0.1569208 | 2.3420678 | 99 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04298 | 2004 $DS_{62}$ |
| 2004 $DX_{62}$ | 16.6 | 0.15 | 20060922 | 329.47842 | 290.47903 | 115.94409 | 3.72659 | 0.2417874 | 2.4013337 | 66 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 04298 | 2004 $DX_{62}$ |
| 2004 $DM_{63}$ | 17.6 | 0.15 | 20060922 | 323.74947 | 274.93942 | 156.07662 | 3.46318 | 0.1049482 | 2.3859383 | 39 | 5 | 1995–2006 | 0.33 | M-v | 0 | MPC | 76443 | 2004 $DM_{63}$ |
| 2004 $DV_{65}$ | 15.7 | 0.15 | 20060922 | 83.35743 | 264.74781 | 330.93538 | 6.01836 | 0.1103152 | 3.1713477 | 31 | 3 | 1996–2006 | 0.48 | M-v | 3 | MPC | 04298 | 2004 $DV_{65}$ |
| 2004 $DF_{66}$ | 16.5 | 0.15 | 20060922 | 178.99397 | 168.02923 | 89.25311 | 3.39364 | 0.1769350 | 2.4382156 | 83 | 6 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87617 | 2004 $DF_{66}$ |
| 2004 $DH_{70}$ | 19.0 | 0.15 | 20060922 | 310.83463 | 57.24475 | 14.06682 | 1.37436 | 0.1669704 | 2.3657604 | 29 | 3 | 1995–2006 | 0.30 | M-v | 2 | MPC | 00710 | 2004 $DH_{70}$ |
| 2004 $DP_{70}$ | 17.8 | 0.15 | 20060922 | 228.70571 | 183.78434 | 51.12901 | 0.82195 | 0.0892658 | 2.1704613 | 40 | 4 | 1999–2005 | 0.50 | M-v | 3 | MPC | 86335 | 2004 $DP_{70}$ |
| 2004 $DR_{70}$ | 16.5 | 0.15 | 20060922 | 119.56251 | 106.02937 | 158.73040 | 3.54405 | 0.0482344 | 2.6701871 | 62 | 6 | 1995–2006 | 0.62 | M-v | 0 | MPC | 61993 | 2004 $DR_{70}$ |
| 2004 $DJ_{71}$ | 7.4 | 0.15 | 20060922 | 351.16340 | 56.85120 | 101.66486 | 11.31593 | 0.3870829 | 53.3456072 | 13 | 3 | 2004–2005 | 0.18 | M-v | 4 | MPC | 97699 | 2004 $DJ_{71}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $DV_{71}$ | 15.9 | 0.15 | 20060922 | 136.28553 | 141.45191 | 128.58515 | 15.81009 | 0.0953372 | 2.5408828 | 49 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87617 | 2004 $DV_{71}$ |
| 2004 $DW_{71}$ | 16.1 | 0.15 | 20060922 | 38.48321 | 313.13099 | 338.94324 | 10.24436 | 0.0466021 | 3.2308939 | 54 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 04298 | 2004 $DW_{71}$ |
| 2004 $DC_{72}$ | 16.4 | 0.15 | 20060922 | 262.12643 | 279.06957 | 165.38693 | 12.97795 | 0.0832912 | 2.7782127 | 28 | 5 | 1995–2006 | 0.54 | M-v | 0 | MPC | 69683 | 2004 $DC_{72}$ |
| 2004 $DP_{72}$ | 16.2 | 0.15 | 20060922 | 275.84586 | 274.91002 | 123.34649 | 0.97489 | 0.1368342 | 3.1158974 | 30 | 4 | 2001–2005 | 0.50 | M-v | 1 | MPC | 74308 | 2004 $DP_{72}$ |
| 2004 $DU_{72}$ | 16.0 | 0.15 | 20060922 | 141.92236 | 301.88524 | 313.10154 | 5.22591 | 0.1020351 | 2.4010896 | 50 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 69684 | 2004 $DU_{72}$ |
| 2004 $DY_{74}$ | 16.5 | 0.15 | 20060922 | 320.11593 | 228.09374 | 165.97512 | 2.62913 | 0.0931934 | 2.7124627 | 53 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 04298 | 2004 $DY_{74}$ |
| 2004 $DO_{75}$ | 15.9 | 0.15 | 20060922 | 56.93111 | 41.70543 | 271.70293 | 1.99494 | 0.0671454 | 2.6831826 | 62 | 4 | 1995–2006 | 0.38 | M-v | 1 | MPC | 00710 | 2004 $DO_{75}$ |
| 2004 $DV_{75}$ | 16.1 | 0.15 | 20060922 | 151.72513 | 44.69419 | 136.97584 | 1.03518 | 0.1203068 | 2.9997384 | 33 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04298 | 2004 $DV_{75}$ |
| 2004 $DX_{75}$ | 16.7 | 0.15 | 20060922 | 336.34045 | 64.93273 | 333.21757 | 1.80034 | 0.2122689 | 2.4192844 | 125 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 04298 | 2004 $DX_{75}$ |
| 2004 $DC_{76}$ | 16.7 | 0.15 | 20060922 | 161.23425 | 9.60467 | 170.37960 | 9.46786 | 0.0782472 | 3.0167451 | 24 | 3 | 1999–2006 | 0.39 | M-v | 3 | MPC | 04298 | 2004 $DC_{76}$ |
| 2004 $DD_{77}$ | 16.8 | 0.15 | 20060922 | 256.18096 | 139.42006 | 8.40711 | 1.39632 | 0.1266480 | 2.4249651 | 54 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 86336 | 2004 $DD_{77}$ |
| 2004 $DK_{77}$ | 17.1 | 0.15 | 20060922 | 2.84816 | 337.10973 | 71.89212 | 3.27596 | 0.1892494 | 2.2922977 | 36 | 6 | 1992–2006 | 0.51 | M-v | 1 | MPC | 04298 | 2004 $DK_{77}$ |
| 2004 $DY_{78}$ | 15.5 | 0.15 | 20040316 | 92.28049 | 240.17289 | 161.12467 | 27.32127 | 0.2577873 | 3.1733187 | 18 | 1 | 43 days | 0.36 | | | MPC | | 2004 $DY_{78}$ |
| 2004 ED | 15.3 | 0.15 | 20060922 | 179.49205 | 118.15790 | 71.77089 | 13.72895 | 0.1258627 | 2.7539221 | 37 | 3 | 2000–2004 | 0.52 | M-v | 4 | MPC | 89518 | 2004 ED |
| 2004 $EB_1$ | 15.5 | 0.15 | 20060922 | 340.70540 | 224.24582 | 185.53113 | 14.87897 | 0.1075010 | 2.6118241 | 99 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 65583 | 2004 $EB_1$ |
| 2004 $EP_1$ | 17.0 | 0.15 | 20060922 | 207.89649 | 81.70052 | 139.71301 | 1.86419 | 0.1376218 | 2.3762786 | 39 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 87617 | 2004 $EP_1$ |
| 2004 $EV_1$ | 16.5 | 0.15 | 20060922 | 265.02638 | 293.36713 | 163.58394 | 13.35234 | 0.1398653 | 2.6905369 | 81 | 3 | 2002–2006 | 0.44 | M-v | 1 | MPC | 04298 | 2004 $EV_1$ |
| 2004 $EY_1$ | 16.5 | 0.15 | 20060922 | 265.99418 | 278.41856 | 178.82502 | 10.55858 | 0.1171719 | 2.7052030 | 39 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04298 | 2004 $EY_1$ |
| 2004 $EK_2$ | 16.0 | 0.15 | 20060922 | 180.86776 | 98.11322 | 125.15330 | 6.53611 | 0.1524341 | 2.6630370 | 64 | 6 | 1995–2006 | 0.46 | M-v | 1 | MPC | 87617 | 2004 $EK_2$ |
| 2004 $EV_2$ | 15.4 | 0.15 | 20060922 | 248.10448 | 16.91434 | 101.05744 | 12.91525 | 0.1466457 | 2.6431808 | 40 | 3 | 2002–2006 | 0.71 | M-v | 2 | MPC | 90191 | 2004 $EV_2$ |
| 2004 $EF_3$ | 15.2 | 0.15 | 20060922 | 171.98557 | 51.66878 | 122.30806 | 13.32911 | 0.1219111 | 2.9878885 | 53 | 3 | 2001–2004 | 0.52 | M-v | 2 | MPC | 89519 | 2004 $EF_3$ |
| 2004 $ER_3$ | 16.0 | 0.15 | 20060922 | 262.48130 | 22.71138 | 96.59531 | 8.10285 | 0.1382437 | 2.5598490 | 55 | 5 | 1994–2006 | 0.60 | M-v | 1 | MPC | 04299 | 2004 $ER_3$ |
| 2004 $ES_3$ | 15.8 | 0.15 | 20060922 | 265.64958 | 343.92322 | 132.84665 | 12.72572 | 0.1382981 | 2.5576731 | 49 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 66340 | 2004 $ES_3$ |
| 2004 $EA_4$ | 18.0 | 0.15 | 20060922 | 21.04250 | 5.74683 | 143.71194 | 22.81163 | 0.0553808 | 1.8760463 | 30 | 3 | 2002–2005 | 0.32 | M-v | 2 | MPC | 00710 | 2004 $EA_4$ |
| 2004 $EF_4$ | 16.1 | 0.15 | 20060922 | 299.72752 | 100.09599 | 16.12716 | 22.97014 | 0.1714580 | 2.3106498 | 53 | 3 | 1997–2006 | 0.52 | M-v | 1 | MPC | 61997 | 2004 $EF_4$ |
| 2004 $EQ_4$ | 15.5 | 0.15 | 20060922 | 115.84339 | 129.27397 | 97.01908 | 2.38405 | 0.1323021 | 3.1127332 | 52 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 61998 | 2004 $EQ_4$ |
| 2004 $EV_4$ | 16.3 | 0.15 | 20060922 | 205.46211 | 345.38411 | 159.06111 | 2.40408 | 0.0872006 | 2.9263412 | 88 | 4 | 1994–2006 | 0.40 | M-v | 2 | MPC | 03613 | 2004 $EV_4$ |
| 2004 $EZ_4$ | 16.8 | 0.15 | 20060922 | 263.84045 | 341.04454 | 135.49883 | 1.45929 | 0.1399364 | 2.5807765 | 67 | 4 | 1998–2006 | 0.44 | M-v | 1 | MPC | 65585 | 2004 $EZ_4$ |
| 2004 $EA_5$ | 16.3 | 0.15 | 20060922 | 202.95782 | 176.45022 | 15.30720 | 3.65559 | 0.0543022 | 2.5775896 | 78 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 61998 | 2004 $EA_5$ |
| 2004 $EP_5$ | 15.4 | 0.15 | 20060922 | 160.54291 | 21.62844 | 157.95106 | 10.33215 | 0.0484386 | 3.1246031 | 49 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 03614 | 2004 $EP_5$ |
| 2004 $EX_5$ | 16.4 | 0.15 | 20060922 | 162.85764 | 108.36568 | 133.91414 | 5.29678 | 0.2597254 | 2.7086598 | 65 | 3 | 2004–2006 | 0.48 | M-v | 2 | MPC | 86338 | 2004 $EX_5$ |
| 2004 $EB_6$ | 15.6 | 0.15 | 20060922 | 193.34968 | 81.81753 | 93.57918 | 7.07777 | 0.0910501 | 2.7941512 | 51 | 5 | 2000–2006 | 0.73 | M-v | 1 | MPC | 61999 | 2004 $EB_6$ |
| 2004 $EJ_6$ | 17.6 | 0.15 | 20060922 | 210.54250 | 290.85921 | 327.32464 | 2.01190 | 0.1527629 | 2.1993702 | 37 | 3 | 2001–2005 | 0.36 | M-v | 2 | MPC | 89519 | 2004 $EJ_6$ |
| 2004 $ET_6$ | 17.7 | 0.15 | 20060922 | 182.01501 | 61.21045 | 191.26859 | 4.97312 | 0.1037468 | 2.3783512 | 28 | 3 | 1997–2005 | 0.52 | M-v | 2 | MPC | 86339 | 2004 $ET_6$ |
| 2004 $EA_7$ | 16.4 | 0.15 | 20060922 | 181.18851 | 37.28874 | 140.57220 | 2.74045 | 0.0442329 | 2.9329207 | 76 | 4 | 1991–2006 | 0.51 | M-v | 3 | MPC | 04299 | 2004 $EA_7$ |
| 2004 $EB_7$ | 17.7 | 0.15 | 20060922 | 249.85581 | 209.18688 | 356.81211 | 3.40968 | 0.1062343 | 2.2314505 | 53 | 4 | 1995–2005 | 0.51 | M-v | 1 | MPC | 87618 | 2004 $EB_7$ |
| 2004 $EC_7$ | 15.0 | 0.15 | 20060922 | 245.10121 | 61.89652 | 5.78999 | 9.59182 | 0.2298926 | 3.1522087 | 54 | 5 | 1993–2004 | 0.49 | M-v | 1 | MPC | 04299 | 2004 $EC_7$ |
| 2004 $EO_7$ | 16.1 | 0.15 | 20060922 | 153.17693 | 160.33427 | 145.04981 | 2.68152 | 0.2087969 | 2.3290426 | 111 | 7 | 1991–2006 | 0.57 | M-v | 1 | MPC | 90191 | 2004 $EO_7$ |
| 2004 $EQ_7$ | 17.1 | 0.15 | 20060922 | 258.73305 | 133.27828 | 30.39172 | 1.84635 | 0.1244881 | 2.3940097 | 39 | 3 | 1998–2006 | 0.37 | M-v | 3 | MPC | 89519 | 2004 $EQ_7$ |
| 2004 $EK_8$ | 15.5 | 0.15 | 20060922 | 228.61592 | 140.43341 | 357.74815 | 12.44843 | 0.1272187 | 2.8039297 | 60 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04299 | 2004 $EK_8$ |
| 2004 $EL_8$ | 15.9 | 0.15 | 20060922 | 128.47294 | 52.39414 | 175.78507 | 7.07395 | 0.2307719 | 3.2208572 | 60 | 5 | 1994–2006 | 0.49 | M-v | 0 | MPC | 86340 | 2004 $EL_8$ |
| 2004 $ET_8$ | 16.7 | 0.15 | 20060922 | 227.65354 | 348.36810 | 169.61772 | 2.42611 | 0.1411454 | 2.6714121 | 66 | 3 | 2004–2006 | 0.43 | M-v | 3 | MPC | 86340 | 2004 $ET_8$ |
| 2004 $EW_8$ | 16.2 | 0.15 | 20060922 | 153.30667 | 58.93263 | 133.16077 | 3.80868 | 0.1115934 | 2.9713511 | 27 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 03614 | 2004 $EW_8$ |
| 2004 $EX_9$ | 15.0 | 0.15 | 20060922 | 197.95772 | 311.38991 | 174.89754 | 11.11521 | 0.0420989 | 3.2122133 | 35 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 86341 | 2004 $EX_9$ |
| 2004 $EY_9$ | 14.7 | 0.15 | 20060922 | 51.77670 | 322.09115 | 347.22924 | 15.90469 | 0.2050179 | 3.0032547 | 63 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 86341 | 2004 $EY_9$ |
| 2004 $EF_{10}$ | 16.8 | 0.15 | 20060922 | 209.37572 | 11.89113 | 178.61381 | 11.55210 | 0.0669567 | 2.5140551 | 39 | 2 | 2000–2004 | 0.60 | M-v | 4 | MPC | 86341 | 2004 $EF_{10}$ |
| 2004 $EO_{10}$ | 16.9 | 0.15 | 20060922 | 279.04972 | 310.27458 | 192.11605 | 1.41702 | 0.1083780 | 2.3724768 | 65 | 3 | 2004–2006 | 0.44 | M-v | 4 | MPC | 86341 | 2004 $EO_{10}$ |
| 2004 $ES_{10}$ | 16.7 | 0.15 | 20060922 | 242.17970 | 93.62460 | 61.61125 | 3.09173 | 0.0814478 | 2.5663654 | 71 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87618 | 2004 $ES_{10}$ |
| 2004 $EU_{10}$ | 15.4 | 0.15 | 20060922 | 127.67334 | 121.08611 | 106.53195 | 2.54803 | 0.0981213 | 3.0659007 | 80 | 5 | 1983–2006 | 0.60 | M-v | 1 | MPC | 66340 | 2004 $EU_{10}$ |
| 2004 $EG_{11}$ | 14.7 | 0.15 | 20060922 | 63.87310 | 269.34140 | 11.96285 | 10.15428 | 0.1440117 | 3.1017842 | 85 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04299 | 2004 $EG_{11}$ |
| 2004 $EP_{11}$ | 16.6 | 0.15 | 20060922 | 269.94790 | 85.17536 | 89.51024 | 5.56216 | 0.0749320 | 2.2301703 | 65 | 6 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87618 | 2004 $EP_{11}$ |
| 2004 $ER_{11}$ | 16.0 | 0.15 | 20060922 | 244.62868 | 78.47123 | 67.56434 | 6.12861 | 0.0732237 | 2.5617674 | 46 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 76446 | 2004 $ER_{11}$ |
| 2004 $ED_{12}$ | 16.8 | 0.15 | 20060922 | 282.60543 | 354.08902 | 138.20418 | 2.64681 | 0.1617190 | 2.3173261 | 49 | 3 | 2004–2006 | 0.50 | M-v | 4 | MPC | 86342 | 2004 $ED_{12}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $ER_{12}$ | 15.7 | 0.15 | 20060922 | 120.45611 | 52.10176 | 168.64738 | 0.57304 | 0.1276345 | 3.1881032 | 73 | 5 | 1993–2006 | 0.43 | M-v | 1 | MPC | 86342 | 2004 $ER_{12}$ |
| 2004 $EA_{13}$ | 16.2 | 0.15 | 20060922 | 196.33782 | 60.75879 | 90.03296 | 1.24767 | 0.1179360 | 2.9592889 | 56 | 3 | 1999–2006 | 0.47 | M-v | 3 | MPC | 04299 | 2004 $EA_{13}$ |
| 2004 $EN_{13}$ | 16.8 | 0.15 | 20060922 | 133.83529 | 241.97921 | 36.71613 | 2.33009 | 0.1202778 | 2.5456692 | 51 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 87618 | 2004 $EN_{13}$ |
| 2004 $ER_{13}$ | 16.1 | 0.15 | 20060922 | 150.28576 | 260.73449 | 28.34264 | 6.43051 | 0.1500470 | 2.3687905 | 44 | 2 | 2004–2005 | 0.52 | M-v | 4 | MPC | 89520 | 2004 $ER_{13}$ |
| 2004 $EU_{13}$ | 15.9 | 0.15 | 20060922 | 231.87912 | 108.45494 | 39.53624 | 6.95384 | 0.0803190 | 2.6594896 | 68 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 62008 | 2004 $EU_{13}$ |
| 2004 $EG_{14}$ | 14.8 | 0.15 | 20060922 | 74.40709 | 151.28565 | 133.87783 | 10.55655 | 0.0497264 | 2.9876737 | 59 | 5 | 1992–2006 | 0.59 | M-v | 1 | MPC | 04299 | 2004 $EG_{14}$ |
| 2004 $EH_{14}$ | 15.8 | 0.15 | 20060922 | 145.17313 | 189.42407 | 113.48158 | 3.62009 | 0.1758057 | 2.3580499 | 106 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 97700 | 2004 $EH_{14}$ |
| 2004 $EL_{14}$ | 15.4 | 0.15 | 20060922 | 118.37649 | 103.68651 | 149.49014 | 7.84946 | 0.0684875 | 2.9050834 | 53 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 62009 | 2004 $EL_{14}$ |
| 2004 $EO_{14}$ | 15.2 | 0.15 | 20060922 | 149.74392 | 159.22297 | 76.37408 | 6.04091 | 0.0951084 | 2.7802173 | 64 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 87618 | 2004 $EO_{14}$ |
| 2004 $EQ_{14}$ | 14.9 | 0.15 | 20060922 | 107.67771 | 102.29152 | 141.18047 | 13.95340 | 0.1129339 | 3.1657676 | 70 | 6 | 1998–2006 | 0.65 | M-v | 1 | MPC | 04299 | 2004 $EQ_{14}$ |
| 2004 $ES_{14}$ | 14.6 | 0.15 | 20060922 | 188.17968 | 23.06671 | 143.84442 | 12.27292 | 0.0870849 | 2.9670190 | 59 | 3 | 2003–2006 | 0.50 | M-v | 2 | MPC | 62010 | 2004 $ES_{14}$ |
| 2004 $EX_{14}$ | 16.5 | 0.15 | 20060922 | 241.47749 | 85.08449 | 62.00413 | 6.80187 | 0.1105477 | 2.6126912 | 39 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 76447 | 2004 $EX_{14}$ |
| 2004 $EY_{14}$ | 16.5 | 0.15 | 20060922 | 275.71115 | 13.04133 | 93.55363 | 7.79668 | 0.1415243 | 2.5460888 | 60 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87618 | 2004 $EY_{14}$ |
| 2004 $EA_{15}$ | 14.9 | 0.15 | 20060922 | 248.27379 | 52.46587 | 42.46819 | 10.04503 | 0.0582205 | 2.9856477 | 69 | 5 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04299 | 2004 $EA_{15}$ |
| 2004 $EF_{15}$ | 16.1 | 0.15 | 20060922 | 193.46184 | 159.86992 | 87.57706 | 7.77293 | 0.0823000 | 2.3284985 | 58 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 86344 | 2004 $EF_{15}$ |
| 2004 $EM_{15}$ | 16.1 | 0.15 | 20060922 | 268.45305 | 50.50279 | 61.13022 | 11.98855 | 0.1635390 | 2.5904380 | 41 | 5 | 1996–2006 | 0.71 | M-v | 1 | MPC | 86344 | 2004 $EM_{15}$ |
| 2004 $EN_{15}$ | 16.2 | 0.15 | 20060922 | 178.16401 | 7.85271 | 188.17335 | 12.07272 | 0.1352117 | 2.5931783 | 55 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 62012 | 2004 $EN_{15}$ |
| 2004 $EO_{15}$ | 14.6 | 0.15 | 20060922 | 248.14214 | 243.88102 | 176.13259 | 12.01152 | 0.1003146 | 3.2045882 | 44 | 4 | 2001–2005 | 0.48 | M-v | 1 | MPC | 66341 | 2004 $EO_{15}$ |
| 2004 $EP_{15}$ | 16.9 | 0.15 | 20060922 | 233.78362 | 271.96181 | 277.65992 | 2.66791 | 0.0832745 | 2.3316222 | 47 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 87618 | 2004 $EP_{15}$ |
| 2004 $EQ_{15}$ | 16.0 | 0.15 | 20060922 | 234.53208 | 187.40766 | 302.00018 | 2.56787 | 0.0860989 | 2.6967389 | 52 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 89520 | 2004 $EQ_{15}$ |
| 2004 $ET_{15}$ | 17.0 | 0.15 | 20060922 | 233.76573 | 271.24075 | 259.13019 | 1.60101 | 0.1490043 | 2.4461654 | 46 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 87618 | 2004 $ET_{15}$ |
| 2004 $EF_{16}$ | 15.6 | 0.15 | 20060922 | 130.05154 | 234.63432 | 341.58294 | 9.31419 | 0.0385625 | 2.9960906 | 49 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04299 | 2004 $EF_{16}$ |
| 2004 $EH_{16}$ | 16.4 | 0.15 | 20060922 | 220.75803 | 327.78248 | 186.99240 | 2.91705 | 0.0213824 | 2.6803279 | 68 | 4 | 2000–2006 | 0.41 | M-v | 1 | MPC | 66341 | 2004 $EH_{16}$ |
| 2004 $ET_{16}$ | 17.4 | 0.15 | 20060922 | 276.89397 | 46.11811 | 90.34640 | 4.53445 | 0.2109032 | 2.3757295 | 39 | 3 | 1995–2006 | 0.41 | M-v | 3 | MPC | 76448 | 2004 $ET_{16}$ |
| 2004 $EV_{16}$ | 15.8 | 0.15 | 20060922 | 159.27013 | 214.52103 | 24.36758 | 13.85276 | 0.1460887 | 2.7125730 | 68 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87618 | 2004 $EV_{16}$ |
| 2004 $EW_{16}$ | 17.6 | 0.15 | 20060922 | 231.95489 | 199.67996 | 34.28332 | 7.98693 | 0.1412484 | 2.2304970 | 32 | 4 | 1995–2005 | 0.44 | M-v | 2 | MPC | 03614 | 2004 $EW_{16}$ |
| 2004 $EB_{17}$ | 15.2 | 0.15 | 20060922 | 168.82088 | 69.59738 | 117.95524 | 10.03297 | 0.0834163 | 3.0148545 | 49 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 65590 | 2004 $EB_{17}$ |
| 2004 $ED_{17}$ | 16.5 | 0.15 | 20060922 | 283.24219 | 50.83241 | 46.94170 | 10.18104 | 0.1988592 | 2.5591525 | 38 | 4 | 1998–2006 | 0.71 | M-v | 1 | MPC | 65590 | 2004 $ED_{17}$ |
| 2004 $EK_{17}$ | 16.0 | 0.15 | 20060922 | 354.43807 | 359.42334 | 70.99021 | 7.86744 | 0.0910338 | 2.3573413 | 45 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 95184 | 2004 $EK_{17}$ |
| 2004 $EM_{17}$ | 14.7 | 0.15 | 20060922 | 119.71075 | 222.24651 | 32.69502 | 18.85157 | 0.2745145 | 3.1339676 | 88 | 3 | 2004–2006 | 0.51 | M-v | 2 | MPC | 86345 | 2004 $EM_{17}$ |
| 2004 $EO_{17}$ | 16.0 | 0.15 | 20060922 | 229.98701 | 46.90297 | 119.05145 | 8.41197 | 0.1433011 | 2.6082011 | 46 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 86345 | 2004 $EO_{17}$ |
| 2004 $EQ_{17}$ | 15.7 | 0.15 | 20060922 | 90.79593 | 243.75208 | 62.31246 | 10.74177 | 0.0425822 | 2.6857805 | 54 | 3 | 2000–2006 | 0.50 | M-v | 2 | MPC | 69687 | 2004 $EQ_{17}$ |
| 2004 $EX_{17}$ | 14.8 | 0.15 | 20060922 | 146.50319 | 70.23555 | 144.66806 | 16.58383 | 0.1279603 | 3.1070406 | 40 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 86345 | 2004 $EX_{17}$ |
| 2004 $EO_{18}$ | 14.1 | 0.15 | 20060922 | 202.39683 | 91.28564 | 43.08564 | 26.52996 | 0.1771548 | 3.1407334 | 71 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 65591 | 2004 $EO_{18}$ |
| 2004 $EW_{18}$ | 14.8 | 0.15 | 20060922 | 110.11598 | 202.23770 | 54.85407 | 13.29437 | 0.2573039 | 3.0458974 | 49 | 5 | 1999–2006 | 0.67 | M-v | 1 | MPC | 86346 | 2004 $EW_{18}$ |
| 2004 $EG_{19}$ | 17.9 | 0.15 | 20060922 | 273.19052 | 344.78831 | 152.84991 | 3.28585 | 0.1240856 | 2.3796759 | 32 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 62015 | 2004 $EG_{19}$ |
| 2004 $EK_{19}$ | 15.9 | 0.15 | 20060922 | 66.89735 | 330.26281 | 359.28646 | 10.41761 | 0.0738937 | 2.5519903 | 51 | 4 | 1977–2006 | 0.57 | M-v | 3 | MPC | 74309 | 2004 $EK_{19}$ |
| 2004 $ET_{19}$ | 15.7 | 0.15 | 20060922 | 352.57756 | 24.07610 | 349.50846 | 5.47648 | 0.0339503 | 2.7713045 | 66 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 04299 | 2004 $ET_{19}$ |
| 2004 $EA_{20}$ | 16.5 | 0.15 | 20060922 | 235.76952 | 357.76425 | 141.06690 | 8.77447 | 0.2085422 | 2.6997755 | 51 | 4 | 1995–2004 | 0.65 | M-v | 0 | MPC | 66341 | 2004 $EA_{20}$ |
| 2004 $EB_{20}$ | 15.5 | 0.15 | 20060922 | 196.28990 | 125.96612 | 61.76146 | 7.95735 | 0.0791577 | 2.7628593 | 63 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 66341 | 2004 $EB_{20}$ |
| 2004 $EF_{20}$ | 16.1 | 0.15 | 20060922 | 51.65931 | 160.40237 | 184.98999 | 3.59441 | 0.0930842 | 2.5233799 | 60 | 5 | 1998–2006 | 0.45 | M-v | 3 | MPC | 86347 | 2004 $EF_{20}$ |
| 2004 $EJ_{20}$ | 16.8 | 0.15 | 20060922 | 174.55431 | 311.20677 | 332.59707 | 4.53187 | 0.1695764 | 2.2416382 | 91 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 97700 | 2004 $EJ_{20}$ |
| 2004 $EB_{21}$ | 17.4 | 0.15 | 20060922 | 197.48867 | 63.81270 | 168.08468 | 1.60660 | 0.1378284 | 2.3674923 | 35 | 5 | 1994–2006 | 0.54 | M-v | 1 | MPC | 86348 | 2004 $EB_{21}$ |
| 2004 $EE_{21}$ | 17.4 | 0.15 | 20060922 | 259.73058 | 6.00581 | 165.13926 | 2.01615 | 0.1464385 | 2.3254415 | 68 | 4 | 1997–2006 | 0.42 | M-v | 1 | MPC | 62016 | 2004 $EE_{21}$ |
| 2004 $EH_{21}$ | 15.8 | 0.15 | 20060922 | 183.97322 | 338.77509 | 178.83723 | 5.24791 | 0.0952640 | 3.0793415 | 42 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 62017 | 2004 $EH_{21}$ |
| 2004 $EQ_{21}$ | 18.4 | 0.15 | 20060922 | 292.24252 | 109.05704 | 17.44202 | 1.45768 | 0.1354275 | 2.3403665 | 39 | 4 | 1995–2006 | 0.36 | M-v | 0 | MPC | 66341 | 2004 $EQ_{21}$ |
| 2004 $EY_{21}$ | 16.8 | 0.15 | 20060922 | 171.77788 | 143.35855 | 127.57009 | 4.63633 | 0.1246068 | 2.3377568 | 43 | 5 | 1998–2006 | 0.52 | M-v | 0 | MPC | 86348 | 2004 $EY_{21}$ |
| 2004 $EC_{22}$ | 15.7 | 0.15 | 20060922 | 116.56301 | 72.87441 | 173.27595 | 1.93780 | 0.0135081 | 2.8651864 | 76 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 04299 | 2004 $EC_{22}$ |
| 2004 $EE_{22}$ | 16.9 | 0.15 | 20060922 | 265.13531 | 5.53934 | 120.88580 | 5.92865 | 0.1143526 | 2.5258024 | 43 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 89521 | 2004 $EE_{22}$ |
| 2004 $EQ_{22}$ | 17.5 | 0.15 | 20060922 | 256.96737 | 45.17832 | 123.82792 | 1.97587 | 0.1299246 | 2.3631279 | 64 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 66341 | 2004 $EQ_{22}$ |
| 2004 $EB_{23}$ | 16.1 | 0.15 | 20060922 | 118.83089 | 107.22119 | 169.59408 | 15.70267 | 0.3227725 | 2.9371090 | 62 | 3 | 2000–2005 | 0.62 | M-v | 2 | MPC | 86349 | 2004 $EB_{23}$ |
| 2004 $EB_{24}$ | 16.4 | 0.15 | 20060922 | 318.11087 | 86.80484 | 356.84196 | 6.72857 | 0.0946380 | 2.4550519 | 66 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 86350 | 2004 $EB_{24}$ |
| 2004 $EF_{24}$ | 16.9 | 0.15 | 20060922 | 225.21830 | 149.95689 | 47.10097 | 4.20723 | 0.1504524 | 2.4140162 | 78 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 86350 | 2004 $EF_{24}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $EH_{24}$ | 16.4 | 0.15 | 20060922 | 231.45690 | 63.06815 | 101.47459 | 5.73997 | 0.1694165 | 2.5539158 | 57 | 4 | 1992–2006 | 0.53 | M-v | 2 | MPC | 66341 | 2004 $EH_{24}$ |
| 2004 $EM_{24}$ | 15.4 | 0.15 | 20060922 | 202.06416 | 324.93211 | 175.65453 | 21.90259 | 0.0428434 | 3.1090854 | 61 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 04299 | 2004 $EM_{24}$ |
| 2004 $EO_{24}$ | 15.9 | 0.15 | 20060922 | 232.75080 | 129.91987 | 5.76607 | 28.76940 | 0.1206468 | 2.6298580 | 40 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 62019 | 2004 $EO_{24}$ |
| 2004 $EP_{24}$ | 16.2 | 0.15 | 20060922 | 243.02890 | 79.05724 | 30.41488 | 13.43766 | 0.2820065 | 2.6457546 | 31 | 1 | 200 days | 0.52 | M-v | 4 | MPC | 97700 | 2004 $EP_{24}$ |
| 2004 $EA_{25}$ | 16.7 | 0.15 | 20060922 | 196.13128 | 239.21216 | 13.74373 | 6.98840 | 0.1885565 | 2.3209690 | 97 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 90191 | 2004 $EA_{25}$ |
| 2004 $EK_{25}$ | 17.2 | 0.15 | 20040316 | 14.01191 | 337.80959 | 174.99054 | 9.78042 | 0.1532867 | 2.7373137 | 9 | 1 | 18 days | 0.25 | | | MPC | | 2004 $EK_{25}$ |
| 2004 $EM_{25}$ | 15.7 | 0.15 | 20060922 | 308.32184 | 218.39886 | 207.99751 | 11.64286 | 0.1624310 | 2.5325446 | 49 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 95184 | 2004 $EM_{25}$ |
| 2004 $EB_{27}$ | 16.4 | 0.15 | 20060922 | 289.06734 | 34.46879 | 108.02149 | 0.43243 | 0.1577632 | 2.3373372 | 105 | 5 | 1993–2006 | 0.55 | M-v | 0 | MPC | 87619 | 2004 $EB_{27}$ |
| 2004 $EX_{27}$ | 17.5 | 0.15 | 20060922 | 114.62580 | 249.70565 | 356.88933 | 1.55099 | 0.0165299 | 2.8721479 | 40 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 74309 | 2004 $EX_{27}$ |
| 2004 $EC_{28}$ | 16.9 | 0.15 | 20060922 | 109.32008 | 320.91166 | 356.13555 | 1.11688 | 0.1909222 | 2.4351670 | 70 | 4 | 2000–2006 | 0.33 | M-v | 1 | MPC | 97700 | 2004 $EC_{28}$ |
| 2004 $EO_{28}$ | 17.7 | 0.15 | 20060922 | 317.36816 | 285.32802 | 166.33023 | 2.02015 | 0.1804524 | 2.3299997 | 65 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 66342 | 2004 $EO_{28}$ |
| 2004 $EP_{28}$ | 16.5 | 0.15 | 20060922 | 70.03728 | 344.23853 | 1.39345 | 3.17860 | 0.2081005 | 2.4393732 | 28 | 3 | 2002–2006 | 0.32 | M-v | 4 | MPC | 00711 | 2004 $EP_{28}$ |
| 2004 $EQ_{28}$ | 17.0 | 0.15 | 20060922 | 192.54542 | 348.20151 | 151.68391 | 1.51225 | 0.0615817 | 3.1477438 | 40 | 5 | 1996–2004 | 0.26 | M-v | 1 | MPC | 66342 | 2004 $EQ_{28}$ |
| 2004 $EW_{28}$ | 17.1 | 0.15 | 20060922 | 255.50120 | 342.57124 | 140.06200 | 1.02562 | 0.1419376 | 2.6056434 | 48 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 66342 | 2004 $EW_{28}$ |
| 2004 $EV_{29}$ | 17.1 | 0.15 | 20060922 | 109.12547 | 138.87925 | 139.04428 | 1.42509 | 0.1150375 | 2.7483628 | 39 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 86352 | 2004 $EV_{29}$ |
| 2004 $ED_{30}$ | 16.9 | 0.15 | 20060922 | 94.74677 | 154.26226 | 165.11129 | 6.40830 | 0.1737434 | 2.5251527 | 37 | 3 | 2001–2005 | 0.45 | M-v | 2 | MPC | 89521 | 2004 $ED_{30}$ |
| 2004 $EJ_{31}$ | 14.7 | 0.15 | 20060922 | 150.80790 | 300.12431 | 254.73527 | 9.00125 | 0.0535191 | 3.1065789 | 35 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 66342 | 2004 $EJ_{31}$ |
| 2004 $EN_{31}$ | 16.8 | 0.15 | 20060922 | 200.62918 | 18.50508 | 239.30909 | 6.73986 | 0.1036727 | 2.2714582 | 27 | 3 | 1995–2005 | 0.52 | M-v | 2 | MPC | 86353 | 2004 $EN_{31}$ |
| 2004 $EO_{31}$ | 16.4 | 0.15 | 20060922 | 196.09281 | 345.88785 | 250.56919 | 6.37697 | 0.1349430 | 2.4326223 | 65 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87619 | 2004 $EO_{31}$ |
| 2004 $ER_{31}$ | 15.8 | 0.15 | 20060922 | 197.20324 | 234.16769 | 311.94414 | 6.75658 | 0.1531945 | 2.7543340 | 70 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 87619 | 2004 $ER_{31}$ |
| 2004 $EX_{31}$ | 16.1 | 0.15 | 20060922 | 274.77369 | 112.52476 | 355.00048 | 11.19436 | 0.2265448 | 2.5995781 | 44 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 66342 | 2004 $EX_{31}$ |
| 2004 $EG_{32}$ | 16.2 | 0.15 | 20060922 | 161.90827 | 309.10584 | 281.28632 | 2.77630 | 0.0294944 | 2.6436924 | 84 | 5 | 2001–2006 | 0.53 | M-v | 0 | MPC | 87619 | 2004 $EG_{32}$ |
| 2004 $EH_{32}$ | 17.2 | 0.15 | 20060922 | 179.66343 | 75.66481 | 222.63729 | 3.73060 | 0.1989164 | 2.1991538 | 52 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 97700 | 2004 $EH_{32}$ |
| 2004 $EV_{32}$ | 16.4 | 0.15 | 20060922 | 292.66197 | 225.46982 | 260.73330 | 10.57520 | 0.1244652 | 2.3850221 | 46 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87619 | 2004 $EV_{32}$ |
| 2004 $ED_{33}$ | 15.7 | 0.15 | 20060922 | 184.92333 | 353.15302 | 246.45903 | 13.02971 | 0.1389527 | 2.5259000 | 47 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 65596 | 2004 $ED_{33}$ |
| 2004 $EU_{33}$ | 15.5 | 0.15 | 20060922 | 6.94927 | 261.38140 | 110.11914 | 7.08454 | 0.0425345 | 2.7003880 | 58 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 74309 | 2004 $EU_{33}$ |
| 2004 $EY_{33}$ | 16.0 | 0.15 | 20060922 | 336.12677 | 227.30241 | 177.24839 | 22.05050 | 0.0961223 | 2.6036866 | 41 | 2 | 2004–2006 | 0.48 | M-v | 3 | MPC | 03614 | 2004 $EY_{33}$ |
| 2004 $EE_{34}$ | 16.4 | 0.15 | 20060922 | 212.71136 | 173.11418 | 339.83702 | 4.61308 | 0.1111390 | 2.7855272 | 34 | 3 | 1997–2006 | 0.49 | M-v | 3 | MPC | 62026 | 2004 $EE_{34}$ |
| 2004 $EO_{34}$ | 15.8 | 0.15 | 20060922 | 205.51881 | 156.47604 | 349.37353 | 2.33064 | 0.0825950 | 2.9601467 | 62 | 5 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04299 | 2004 $EO_{34}$ |
| 2004 $ER_{34}$ | 17.0 | 0.15 | 20060922 | 241.50610 | 140.91359 | 56.29573 | 3.14939 | 0.1439878 | 2.3511298 | 79 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 87619 | 2004 $ER_{34}$ |
| 2004 $ET_{34}$ | 16.7 | 0.15 | 20060922 | 239.00652 | 34.92960 | 132.44843 | 5.13899 | 0.1455809 | 2.5198874 | 50 | 5 | 1996–2006 | 0.39 | M-v | 1 | MPC | 86354 | 2004 $ET_{34}$ |
| 2004 $EV_{34}$ | 17.3 | 0.15 | 20060922 | 238.48641 | 105.50772 | 87.53061 | 3.09977 | 0.1056063 | 2.3888163 | 42 | 3 | 2000–2006 | 0.63 | M-v | 3 | MPC | 66342 | 2004 $EV_{34}$ |
| 2004 $EW_{34}$ | 17.0 | 0.15 | 20060922 | 249.58350 | 113.21043 | 34.62342 | 6.37726 | 0.1396496 | 2.5496005 | 75 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 66342 | 2004 $EW_{34}$ |
| 2004 $ED_{35}$ | 16.7 | 0.15 | 20060922 | 195.94598 | 75.11570 | 138.42123 | 5.09980 | 0.2180936 | 2.6243902 | 75 | 3 | 2004–2006 | 0.43 | M-v | 3 | MPC | 86355 | 2004 $ED_{35}$ |
| 2004 $EF_{35}$ | 16.0 | 0.15 | 20060922 | 169.65061 | 223.06079 | 20.07644 | 17.42124 | 0.1456088 | 2.6266955 | 55 | 3 | 1997–2005 | 0.52 | M-v | 2 | MPC | 89522 | 2004 $EF_{35}$ |
| 2004 $EW_{35}$ | 15.3 | 0.15 | 20060922 | 219.32541 | 248.60274 | 275.58801 | 8.21636 | 0.0669690 | 2.5803871 | 54 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 65598 | 2004 $EW_{35}$ |
| 2004 $ED_{36}$ | 16.5 | 0.15 | 20060922 | 271.25579 | 284.40559 | 204.85053 | 4.39406 | 0.0639952 | 2.4503125 | 53 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 87619 | 2004 $ED_{36}$ |
| 2004 $EL_{36}$ | 17.2 | 0.15 | 20060922 | 231.81331 | 295.11038 | 263.54956 | 1.42261 | 0.1445603 | 2.3767150 | 59 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 03614 | 2004 $EL_{36}$ |
| 2004 $EN_{36}$ | 16.8 | 0.15 | 20060922 | 308.48031 | 157.53542 | 319.26416 | 3.59271 | 0.1392808 | 2.3077453 | 47 | 6 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87619 | 2004 $EN_{36}$ |
| 2004 $EP_{37}$ | 15.4 | 0.15 | 20060922 | 234.29755 | 295.75174 | 216.07439 | 12.64362 | 0.1375571 | 2.5374006 | 68 | 4 | 2000–2006 | 0.60 | M-v | 2 | MPC | 66342 | 2004 $EP_{37}$ |
| 2004 $ES_{37}$ | 15.6 | 0.15 | 20060922 | 228.60355 | 232.58603 | 263.12320 | 7.85183 | 0.1777468 | 2.7067062 | 31 | 3 | 1998–2004 | 0.48 | M-v | 3 | MPC | 69688 | 2004 $ES_{37}$ |
| 2004 $EA_{38}$ | 15.0 | 0.15 | 20060922 | 142.02316 | 253.07479 | 336.53291 | 12.34709 | 0.1034089 | 2.9759909 | 46 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 87619 | 2004 $EA_{38}$ |
| 2004 $EC_{38}$ | 16.1 | 0.15 | 20060922 | 240.18029 | 279.39908 | 208.24820 | 14.25374 | 0.2821009 | 2.6815428 | 77 | 3 | 2000–2004 | 0.69 | M-v | 2 | MPC | 66342 | 2004 $EC_{38}$ |
| 2004 $EF_{39}$ | 17.3 | 0.15 | 20060922 | 333.33066 | 321.88751 | 129.91428 | 2.91675 | 0.1247924 | 2.2671374 | 30 | 3 | 1997–2004 | 0.59 | M-v | 3 | MPC | 69688 | 2004 $EF_{39}$ |
| 2004 $EH_{39}$ | 16.1 | 0.15 | 20060922 | 271.58600 | 91.13216 | 352.90771 | 10.48723 | 0.1149331 | 2.7835411 | 45 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 04299 | 2004 $EH_{39}$ |
| 2004 $EQ_{39}$ | 15.7 | 0.15 | 20060922 | 136.43181 | 318.14187 | 266.29098 | 1.89773 | 0.1149997 | 2.9715651 | 51 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 76449 | 2004 $EQ_{39}$ |
| 2004 $EY_{39}$ | 16.6 | 0.15 | 20060922 | 212.47671 | 26.07932 | 191.47260 | 1.89656 | 0.1596999 | 2.3557039 | 59 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 86356 | 2004 $EY_{39}$ |
| 2004 $EO_{40}$ | 15.7 | 0.15 | 20060922 | 178.21215 | 2.39693 | 154.11957 | 1.60434 | 0.1202793 | 3.1473117 | 71 | 8 | 1993–2006 | 0.50 | M-v | 0 | MPC | 65601 | 2004 $EO_{40}$ |
| 2004 $ER_{40}$ | 17.0 | 0.15 | 20060922 | 191.05216 | 295.98004 | 317.30930 | 1.62366 | 0.1861577 | 2.3732290 | 60 | 5 | 2000–2006 | 0.48 | M-v | 0 | MPC | 87619 | 2004 $ER_{40}$ |
| 2004 $EE_{41}$ | 16.4 | 0.15 | 20060922 | 266.67931 | 312.71533 | 164.10597 | 2.87268 | 0.0960306 | 2.6106128 | 74 | 5 | 1996–2006 | 0.46 | M-v | 0 | MPC | 65602 | 2004 $EE_{41}$ |
| 2004 $EG_{41}$ | 16.7 | 0.15 | 20060922 | 176.92488 | 203.51178 | 27.39382 | 10.65135 | 0.2023779 | 2.5721629 | 47 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 87619 | 2004 $EG_{41}$ |
| 2004 $EJ_{41}$ | 16.9 | 0.15 | 20060922 | 169.44488 | 268.55168 | 322.31490 | 2.44257 | 0.1382115 | 2.6407572 | 51 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 65602 | 2004 $EJ_{41}$ |
| 2004 $EN_{41}$ | 16.8 | 0.15 | 20060922 | 230.87026 | 206.06895 | 351.32187 | 3.82618 | 0.1307608 | 2.3937800 | 70 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 86357 | 2004 $EN_{41}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $ES_{41}$ | 17.5 | 0.15 | 20060922 | 290.89755 | 142.11757 | 348.73185 | 2.29699 | 0.1479428 | 2.3281395 | 57 | 4 | 1995–2006 | 0.45 | M-v | 0 | MPC | 62035 | 2004 | $ES_{41}$ |
| 2004 $EV_{41}$ | 15.9 | 0.15 | 20060922 | 169.37307 | 325.96455 | 201.45503 | 4.81597 | 0.1152777 | 3.1391279 | 46 | 4 | 1993–2006 | 0.57 | M-v | 1 | MPC | 65603 | 2004 | $EV_{41}$ |
| 2004 $EZ_{41}$ | 15.9 | 0.15 | 20060922 | 74.13359 | 160.91830 | 132.47867 | 5.93706 | 0.0053457 | 2.7824483 | 29 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 86358 | 2004 | $EZ_{41}$ |
| 2004 $EW_{42}$ | 16.8 | 0.15 | 20060922 | 189.39388 | 113.85951 | 124.35500 | 3.13746 | 0.1298398 | 2.4697736 | 63 | 6 | 1992–2006 | 0.64 | M-v | 1 | MPC | 04299 | 2004 | $EW_{42}$ |
| 2004 $EB_{43}$ | 16.5 | 0.15 | 20060922 | 194.90089 | 220.70315 | 47.06343 | 3.66933 | 0.2086906 | 2.3069949 | 101 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 97700 | 2004 | $EB_{43}$ |
| 2004 $ED_{43}$ | 16.9 | 0.15 | 20060922 | 227.32720 | 8.16571 | 164.31240 | 5.96989 | 0.2221633 | 2.5583446 | 84 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 62037 | 2004 | $ED_{43}$ |
| 2004 $EG_{43}$ | 15.2 | 0.15 | 20060922 | 91.68166 | 107.90841 | 169.36326 | 10.94519 | 0.1034434 | 2.9897271 | 79 | 5 | 2000–2006 | 0.62 | M-v | 0 | MPC | 86358 | 2004 | $EG_{43}$ |
| 2004 $EH_{43}$ | 16.3 | 0.15 | 20060922 | 260.87036 | 47.34907 | 95.58903 | 5.89212 | 0.0544107 | 2.4816338 | 33 | 5 | 1992–2006 | 0.52 | M-v | 2 | MPC | 66343 | 2004 | $EH_{43}$ |
| 2004 $EU_{43}$ | 15.6 | 0.15 | 20060922 | 58.40305 | 159.99341 | 141.77930 | 5.43040 | 0.1063477 | 2.9522750 | 62 | 4 | 1996–2006 | 0.56 | M-v | 2 | MPC | 69688 | 2004 | $EU_{43}$ |
| 2004 $EE_{44}$ | 15.9 | 0.15 | 20060922 | 104.21271 | 70.39254 | 186.03348 | 13.11186 | 0.0445672 | 2.9936914 | 78 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 65605 | 2004 | $EE_{44}$ |
| 2004 $EF_{44}$ | 17.1 | 0.15 | 20060922 | 217.84443 | 229.14763 | 355.47232 | 6.61743 | 0.1404350 | 2.3565265 | 40 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 90192 | 2004 | $EF_{44}$ |
| 2004 $ER_{44}$ | 17.3 | 0.15 | 20060922 | 163.14248 | 215.56635 | 82.73460 | 2.53662 | 0.1991327 | 2.2477872 | 34 | 4 | 1998–2005 | 0.72 | M-v | 1 | MPC | 95184 | 2004 | $ER_{44}$ |
| 2004 $EB_{45}$ | 15.7 | 0.15 | 20060922 | 154.85805 | 332.14426 | 156.50011 | 0.88102 | 0.0604401 | 3.9320648 | 50 | 3 | 1997–2005 | 0.46 | M-v | 3 | MPC | 76450 | 2004 | $EB_{45}$ |
| 2004 $EK_{45}$ | 15.7 | 0.15 | 20060922 | 249.26362 | 87.24073 | 5.21866 | 1.97929 | 0.0930276 | 2.9467080 | 61 | 4 | 1999–2006 | 0.60 | M-v | 0 | MPC | 04299 | 2004 | $EK_{45}$ |
| 2004 $EQ_{45}$ | 16.3 | 0.15 | 20060922 | 122.40735 | 256.96361 | 1.56709 | 4.79194 | 0.0651542 | 2.7398585 | 54 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 65605 | 2004 | $EQ_{45}$ |
| 2004 $EB_{46}$ | 17.9 | 0.15 | 20060922 | 200.61381 | 55.54536 | 188.10968 | 4.21153 | 0.1237760 | 2.2422311 | 30 | 4 | 1994–2005 | 0.48 | M-v | 1 | MPC | 04299 | 2004 | $EB_{46}$ |
| 2004 $ED_{46}$ | 17.4 | 0.15 | 20060922 | 247.23756 | 352.46774 | 179.64151 | 6.70974 | 0.0572017 | 2.3185512 | 30 | 5 | 2001–2006 | 0.40 | M-v | 0 | MPC | 86360 | 2004 | $ED_{46}$ |
| 2004 $EK_{46}$ | 16.4 | 0.15 | 20060922 | 154.46503 | 139.22716 | 123.23656 | 9.06067 | 0.0904055 | 2.4583038 | 40 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87620 | 2004 | $EK_{46}$ |
| 2004 $ED_{47}$ | 15.8 | 0.15 | 20060922 | 6.59158 | 336.44648 | 2.73945 | 10.37857 | 0.1097923 | 3.0856951 | 38 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 04299 | 2004 | $ED_{47}$ |
| 2004 $EG_{47}$ | 17.6 | 0.15 | 20060922 | 318.44154 | 301.82179 | 149.74899 | 2.48624 | 0.1706620 | 2.3380200 | 56 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 62039 | 2004 | $EG_{47}$ |
| 2004 $EC_{48}$ | 16.6 | 0.15 | 20060922 | 235.52073 | 202.23399 | 311.01754 | 2.00565 | 0.0306476 | 2.6373672 | 44 | 3 | 1997–2006 | 0.36 | M-v | 3 | MPC | 62040 | 2004 | $EC_{48}$ |
| 2004 $EG_{48}$ | 16.6 | 0.15 | 20060922 | 258.25094 | 299.77854 | 153.53761 | 9.96003 | 0.1734534 | 2.7585772 | 38 | 3 | 2002–2006 | 0.39 | M-v | 1 | MPC | 04300 | 2004 | $EG_{48}$ |
| 2004 $EH_{48}$ | 17.5 | 0.15 | 20060922 | 289.08130 | 47.19794 | 58.56089 | 3.38294 | 0.1342869 | 2.4555372 | 35 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 89523 | 2004 | $EH_{48}$ |
| 2004 $EU_{48}$ | 17.5 | 0.15 | 20060922 | 276.68073 | 296.75814 | 244.20640 | 1.62834 | 0.0992889 | 2.1981623 | 51 | 4 | 2002–2006 | 0.58 | M-v | 2 | MPC | 86360 | 2004 | $EU_{48}$ |
| 2004 $EG_{49}$ | 17.1 | 0.15 | 20060922 | 165.25399 | 209.03745 | 83.80066 | 6.54273 | 0.1133009 | 2.2222344 | 48 | 4 | 2001–2005 | 0.65 | M-v | 1 | MPC | 86360 | 2004 | $EG_{49}$ |
| 2004 $EM_{49}$ | 15.8 | 0.15 | 20060922 | 104.06454 | 88.30171 | 168.77036 | 11.15176 | 0.0606896 | 3.0230466 | 44 | 4 | 1994–2006 | 0.55 | M-v | 0 | MPC | 04300 | 2004 | $EM_{49}$ |
| 2004 $EN_{50}$ | 17.2 | 0.15 | 20060922 | 6.71178 | 317.87432 | 100.00219 | 1.85612 | 0.1426744 | 2.2371520 | 38 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 65606 | 2004 | $EN_{50}$ |
| 2004 $EE_{51}$ | 16.2 | 0.15 | 20060922 | 242.64799 | 209.09744 | 216.21929 | 0.35983 | 0.1706023 | 3.2001201 | 38 | 6 | 1996–2005 | 0.44 | M-v | 0 | MPC | 69689 | 2004 | $EE_{51}$ |
| 2004 $ES_{51}$ | 15.3 | 0.15 | 20060922 | 311.13111 | 78.43505 | 347.37868 | 21.69153 | 0.0908097 | 2.5950978 | 84 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04300 | 2004 | $ES_{51}$ |
| 2004 $EJ_{52}$ | 16.8 | 0.15 | 20060922 | 194.26302 | 197.26276 | 38.97493 | 2.76178 | 0.1571953 | 2.3859121 | 39 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 87620 | 2004 | $EJ_{52}$ |
| 2004 $EQ_{52}$ | 16.1 | 0.15 | 20060922 | 115.60601 | 224.83729 | 72.47626 | 4.26723 | 0.0972932 | 2.5274888 | 71 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 90192 | 2004 | $EQ_{52}$ |
| 2004 $EV_{52}$ | 14.8 | 0.15 | 20060922 | 356.06822 | 5.13719 | 5.98263 | 17.65301 | 0.1523226 | 2.7797210 | 169 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 03615 | 2004 | $EV_{52}$ |
| 2004 $EW_{52}$ | 15.6 | 0.15 | 20060922 | 3.85262 | 5.76195 | 12.15138 | 10.44036 | 0.0811997 | 2.6648283 | 72 | 5 | 1993–2006 | 0.51 | M-v | 1 | MPC | 04300 | 2004 | $EW_{52}$ |
| 2004 $EX_{52}$ | 17.2 | 0.15 | 20060922 | 241.94329 | 332.52943 | 158.88525 | 6.47517 | 0.2368441 | 2.6237351 | 40 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 66343 | 2004 | $EX_{52}$ |
| 2004 $EZ_{52}$ | 15.8 | 0.15 | 20060922 | 186.05260 | 165.05651 | 43.86187 | 6.83958 | 0.0577062 | 2.6060238 | 88 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 65606 | 2004 | $EZ_{52}$ |
| 2004 $ES_{53}$ | 15.7 | 0.15 | 20060922 | 307.51448 | 333.30563 | 108.51846 | 7.55367 | 0.1969866 | 2.5516884 | 83 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 69689 | 2004 | $ES_{53}$ |
| 2004 $EB_{54}$ | 17.4 | 0.15 | 20060922 | 166.14126 | 61.25161 | 168.60277 | 4.96634 | 0.1401285 | 2.6206322 | 30 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 89524 | 2004 | $EB_{54}$ |
| 2004 $ED_{54}$ | 15.8 | 0.15 | 20060922 | 94.53359 | 79.34170 | 172.23651 | 11.41521 | 0.1046448 | 3.1023757 | 66 | 4 | 1995–2006 | 0.51 | M-v | 0 | MPC | 04300 | 2004 | $ED_{54}$ |
| 2004 $EJ_{54}$ | 16.9 | 0.15 | 20060922 | 248.13351 | 25.37199 | 119.80567 | 3.68338 | 0.1026990 | 2.5936610 | 51 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 86362 | 2004 | $EJ_{54}$ |
| 2004 $ES_{54}$ | 15.4 | 0.15 | 20060922 | 133.80636 | 322.62006 | 290.13187 | 13.53362 | 0.0729709 | 2.6563616 | 53 | 5 | 2001–2006 | 0.65 | M-v | 1 | MPC | 87620 | 2004 | $ES_{54}$ |
| 2004 $EW_{54}$ | 15.7 | 0.15 | 20060922 | 208.51125 | 249.15836 | 263.87392 | 11.38090 | 0.1085524 | 2.7978060 | 31 | 3 | 2002–2006 | 0.64 | M-v | 3 | MPC | 86363 | 2004 | $EW_{54}$ |
| 2004 $EY_{54}$ | 15.2 | 0.15 | 20060922 | 167.30571 | 321.95452 | 251.92924 | 9.17197 | 0.2031976 | 2.7681039 | 76 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 87620 | 2004 | $EY_{54}$ |
| 2004 $ER_{55}$ | 14.6 | 0.15 | 20060922 | 73.88838 | 285.07120 | 41.49784 | 9.32719 | 0.1782907 | 2.5361552 | 55 | 4 | 2000–2006 | 0.56 | M-v | 3 | MPC | 86363 | 2004 | $ER_{55}$ |
| 2004 $EX_{55}$ | 17.1 | 0.15 | 20060922 | 239.20233 | 317.85744 | 272.07715 | 4.46540 | 0.1268930 | 2.2057119 | 53 | 3 | 2004–2006 | 0.43 | M-v | 2 | MPC | 86363 | 2004 | $EX_{55}$ |
| 2004 $EY_{55}$ | 15.7 | 0.15 | 20060922 | 176.59623 | 323.19748 | 218.07343 | 8.61583 | 0.1314062 | 2.9976837 | 43 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 65607 | 2004 | $EY_{55}$ |
| 2004 $EZ_{55}$ | 15.9 | 0.15 | 20060922 | 196.61193 | 324.39160 | 213.99575 | 12.90195 | 0.1294650 | 2.8114574 | 44 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 66343 | 2004 | $EZ_{55}$ |
| 2004 $EC_{56}$ | 16.6 | 0.15 | 20060922 | 185.86984 | 352.27143 | 284.13642 | 4.06514 | 0.1210809 | 2.2721308 | 88 | 6 | 1995–2006 | 0.59 | M-v | 0 | MPC | 90192 | 2004 | $EC_{56}$ |
| 2004 $EN_{56}$ | 16.4 | 0.15 | 20060922 | 245.81637 | 308.44629 | 191.19568 | 3.65966 | 0.2260544 | 2.6350898 | 64 | 6 | 1993–2006 | 0.49 | M-v | 1 | MPC | 90192 | 2004 | $EN_{56}$ |
| 2004 $EP_{56}$ | 16.3 | 0.15 | 20060922 | 221.49611 | 177.99142 | 12.16270 | 7.49029 | 0.1274775 | 2.6006679 | 74 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 86364 | 2004 | $EP_{56}$ |
| 2004 $EV_{56}$ | 14.8 | 0.15 | 20060922 | 156.26210 | 179.08131 | 26.83808 | 28.40410 | 0.1188230 | 3.1759144 | 91 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 66344 | 2004 | $EV_{56}$ |
| 2004 $EZ_{56}$ | 15.3 | 0.15 | 20060922 | 98.67695 | 243.24200 | 7.24857 | 8.58898 | 0.0863702 | 3.0990158 | 81 | 2 | 2004–2006 | 0.46 | M-v | 3 | MPC | 03615 | 2004 | $EZ_{56}$ |
| 2004 $EE_{57}$ | 15.8 | 0.15 | 20060922 | 229.54954 | 313.69030 | 204.95288 | 24.59752 | 0.1864275 | 2.5630452 | 31 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 00711 | 2004 | $EE_{57}$ |
| 2004 $EL_{57}$ | 14.7 | 0.15 | 20060922 | 148.14654 | 322.21532 | 232.80575 | 17.74441 | 0.1440121 | 3.1606172 | 43 | 5 | 1996–2006 | 0.70 | M-v | 1 | MPC | 65608 | 2004 | $EL_{57}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $EM_{57}$ | 15.6 | 0.15 | 20060922 | 95.22470 | 81.97530 | 169.09703 | 2.13036 | 0.0843333 | 3.0273890 | 68 | 5 | 1994–2006 | 0.55 | M-v | 1 | MPC | 62044 | 2004 $EM_{57}$ |
| 2004 $EY_{57}$ | 17.0 | 0.15 | 20060922 | 230.96518 | 120.26940 | 108.27181 | 7.35288 | 0.0813725 | 2.1971227 | 62 | 6 | 1993–2006 | 0.51 | M-v | 1 | MPC | 87620 | 2004 $EY_{57}$ |
| 2004 $ED_{58}$ | 16.0 | 0.15 | 20060922 | 107.57321 | 208.40821 | 90.27957 | 2.48116 | 0.0820567 | 2.5324136 | 64 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 87620 | 2004 $ED_{58}$ |
| 2004 $EF_{58}$ | 16.0 | 0.15 | 20060922 | 181.87194 | 94.12984 | 111.32587 | 3.01615 | 0.0210946 | 2.6449517 | 66 | 4 | 2000–2006 | 0.43 | M-v | 0 | MPC | 87620 | 2004 $EF_{58}$ |
| 2004 $EH_{58}$ | 16.0 | 0.15 | 20060922 | 177.06709 | 78.78553 | 138.23917 | 5.63136 | 0.0847419 | 2.6344208 | 51 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87620 | 2004 $EH_{58}$ |
| 2004 $EO_{58}$ | 16.7 | 0.15 | 20060922 | 278.75035 | 293.62552 | 161.49856 | 12.60862 | 0.1418623 | 2.6365783 | 43 | 3 | 2002–2006 | 0.72 | M-v | 2 | MPC | 04300 | 2004 $EO_{58}$ |
| 2004 $EY_{58}$ | 15.6 | 0.15 | 20060922 | 159.55004 | 325.01031 | 282.88580 | 10.37381 | 0.1555275 | 2.6657636 | 46 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 90192 | 2004 $EY_{58}$ |
| 2004 $EZ_{58}$ | 15.4 | 0.15 | 20060922 | 200.87642 | 227.22720 | 307.89922 | 11.53477 | 0.0447843 | 2.7920217 | 53 | 4 | 1994–2006 | 0.67 | M-v | 1 | MPC | 65609 | 2004 $EZ_{58}$ |
| 2004 $EC_{59}$ | 15.1 | 0.15 | 20060922 | 116.89266 | 210.15047 | 18.18877 | 6.27972 | 0.0955113 | 3.2261653 | 83 | 6 | 1992–2006 | 0.58 | M-v | 1 | MPC | 04300 | 2004 $EC_{59}$ |
| 2004 $EG_{59}$ | 16.2 | 0.15 | 20060922 | 145.61986 | 171.27332 | 38.57980 | 4.34094 | 0.1229533 | 3.0171231 | 59 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87620 | 2004 $EG_{59}$ |
| 2004 $EH_{59}$ | 16.5 | 0.15 | 20060922 | 165.34883 | 190.61419 | 86.49076 | 3.15545 | 0.1470649 | 2.3607638 | 68 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87620 | 2004 $EH_{59}$ |
| 2004 $EB_{60}$ | 15.2 | 0.15 | 20060922 | 149.25351 | 15.93882 | 209.63156 | 16.84556 | 0.2107176 | 3.0634374 | 96 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 65610 | 2004 $EB_{60}$ |
| 2004 $EO_{60}$ | 17.4 | 0.15 | 20060922 | 297.63662 | 113.48267 | 12.33886 | 0.18461 | 0.0306122 | 2.3319535 | 52 | 5 | 1993–2006 | 0.41 | M-v | 1 | MPC | 87620 | 2004 $EO_{60}$ |
| 2004 $EP_{60}$ | 16.0 | 0.15 | 20060922 | 175.82045 | 35.76105 | 131.36562 | 2.30916 | 0.1023853 | 3.0477845 | 61 | 2 | 2004–2006 | 0.45 | M-v | 3 | MPC | 03615 | 2004 $EP_{60}$ |
| 2004 $ET_{60}$ | 16.7 | 0.15 | 20060922 | 314.42869 | 203.82617 | 255.32973 | 2.65235 | 0.1103511 | 2.3054174 | 59 | 4 | 1999–2006 | 0.48 | M-v | 1 | MPC | 00711 | 2004 $ET_{60}$ |
| 2004 $EY_{60}$ | 16.1 | 0.15 | 20060922 | 295.11302 | 258.79937 | 173.44012 | 11.74559 | 0.0500826 | 2.6767286 | 62 | 5 | 1996–2006 | 0.46 | M-v | 0 | MPC | 04300 | 2004 $EY_{60}$ |
| 2004 $EO_{61}$ | 16.1 | 0.15 | 20060922 | 33.40267 | 183.59501 | 178.52599 | 11.37082 | 0.1523348 | 2.5392153 | 53 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87620 | 2004 $EO_{61}$ |
| 2004 $ET_{61}$ | 15.7 | 0.15 | 20060922 | 107.04866 | 55.42891 | 190.11514 | 5.22614 | 0.1108385 | 3.1258823 | 49 | 5 | 1998–2006 | 0.39 | M-v | 0 | MPC | 89524 | 2004 $ET_{61}$ |
| 2004 $EA_{62}$ | 17.5 | 0.15 | 20060922 | 188.29144 | 68.90135 | 192.09681 | 1.67967 | 0.2325800 | 2.3780579 | 43 | 3 | 2001–2005 | 0.40 | M-v | 3 | MPC | 90192 | 2004 $EA_{62}$ |
| 2004 $EC_{62}$ | 17.7 | 0.15 | 20060922 | 253.46935 | 343.53245 | 168.06976 | 2.65489 | 0.1379625 | 2.4629433 | 41 | 4 | 1996–2006 | 0.47 | M-v | 2 | MPC | 65611 | 2004 $EC_{62}$ |
| 2004 $EF_{62}$ | 16.4 | 0.15 | 20060922 | 288.45386 | 80.42215 | 353.76312 | 3.91214 | 0.0888769 | 2.8055460 | 54 | 5 | 1994–2006 | 0.41 | M-v | 1 | MPC | 66344 | 2004 $EF_{62}$ |
| 2004 $EX_{62}$ | 16.6 | 0.15 | 20060922 | 156.76096 | 8.66102 | 209.75941 | 5.82509 | 0.1989614 | 2.8510140 | 35 | 3 | 2004–2006 | 0.42 | M-v | 2 | MPC | 86366 | 2004 $EX_{62}$ |
| 2004 $EY_{62}$ | 17.0 | 0.15 | 20060922 | 248.82719 | 299.33142 | 184.90847 | 7.62818 | 0.1386114 | 2.6309928 | 30 | 3 | 2000–2006 | 0.43 | M-v | 4 | MPC | 00712 | 2004 $EY_{62}$ |
| 2004 $EZ_{62}$ | 15.8 | 0.15 | 20060922 | 283.24816 | 182.97592 | 243.17335 | 1.28999 | 0.0721035 | 2.8705542 | 37 | 4 | 1994–2006 | 0.35 | M-v | 0 | MPC | 00712 | 2004 $EZ_{62}$ |
| 2004 $ED_{63}$ | 16.0 | 0.15 | 20060922 | 144.94634 | 355.90094 | 193.90198 | 8.60990 | 0.0749868 | 3.2141715 | 50 | 7 | 1995–2006 | 0.50 | M-v | 0 | MPC | 87620 | 2004 $ED_{63}$ |
| 2004 $EF_{63}$ | 16.5 | 0.15 | 20060922 | 295.13351 | 269.98634 | 208.37723 | 5.94850 | 0.0707371 | 2.4113397 | 62 | 4 | 2002–2006 | 0.52 | M-v | 1 | MPC | 87620 | 2004 $EF_{63}$ |
| 2004 $EL_{63}$ | 15.4 | 0.15 | 20060922 | 115.13498 | 35.87557 | 195.91273 | 4.71131 | 0.0848585 | 3.1811233 | 64 | 7 | 1993–2006 | 0.53 | M-v | 0 | MPC | 86366 | 2004 $EL_{63}$ |
| 2004 $EQ_{63}$ | 15.8 | 0.15 | 20060922 | 121.09674 | 15.18790 | 308.57845 | 2.11651 | 0.2074300 | 2.3852327 | 117 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 97700 | 2004 $EQ_{63}$ |
| 2004 $EV_{63}$ | 15.7 | 0.15 | 20060922 | 61.33184 | 117.61898 | 179.46856 | 10.44784 | 0.0951612 | 3.1258275 | 63 | 5 | 1995–2006 | 0.56 | M-v | 0 | MPC | 04300 | 2004 $EV_{63}$ |
| 2004 $EY_{63}$ | 16.4 | 0.15 | 20060922 | 186.36617 | 87.30270 | 191.01095 | 3.86602 | 0.1447805 | 2.2884812 | 86 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 90192 | 2004 $EY_{63}$ |
| 2004 $EZ_{63}$ | 16.8 | 0.15 | 20060922 | 174.63993 | 353.14783 | 204.61883 | 1.52831 | 0.1310034 | 2.9005789 | 57 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 86367 | 2004 $EZ_{63}$ |
| 2004 $ED_{64}$ | 15.4 | 0.15 | 20060922 | 111.13891 | 161.43106 | 98.46472 | 10.50558 | 0.1158322 | 2.7742926 | 45 | 5 | 2000–2006 | 0.65 | M-v | 1 | MPC | 86367 | 2004 $ED_{64}$ |
| 2004 $EP_{64}$ | 16.3 | 0.15 | 20060922 | 240.63081 | 353.50684 | 124.54601 | 14.83464 | 0.1404373 | 2.7111317 | 46 | 5 | 1998–2006 | 0.79 | M-v | 1 | MPC | 77779 | 2004 $EP_{64}$ |
| 2004 $EW_{64}$ | 16.2 | 0.15 | 20060922 | 170.06787 | 148.75941 | 76.46589 | 11.66354 | 0.0733685 | 2.5699231 | 46 | 6 | 2000–2006 | 0.59 | M-v | 1 | MPC | 86367 | 2004 $EW_{64}$ |
| 2004 $EZ_{64}$ | 15.2 | 0.15 | 20060922 | 324.44355 | 338.00489 | 64.27684 | 14.05741 | 0.1820490 | 2.6078811 | 72 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 04300 | 2004 $EZ_{64}$ |
| 2004 $EE_{65}$ | 15.2 | 0.15 | 20060922 | 84.13583 | 155.02945 | 120.91175 | 18.35383 | 0.1732301 | 3.0938639 | 41 | 6 | 1999–2006 | 0.63 | M-v | 0 | MPC | 77779 | 2004 $EE_{65}$ |
| 2004 $EH_{65}$ | 15.7 | 0.15 | 20060922 | 180.04556 | 121.82303 | 106.76425 | 14.17675 | 0.1298722 | 2.5573484 | 60 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87621 | 2004 $EH_{65}$ |
| 2004 $EU_{65}$ | 15.1 | 0.15 | 20060922 | 53.96293 | 276.28397 | 45.96132 | 17.24165 | 0.1092709 | 2.7437240 | 79 | 6 | 1997–2006 | 0.69 | M-v | 1 | MPC | 65612 | 2004 $EU_{65}$ |
| 2004 $EX_{65}$ | 16.9 | 0.15 | 20060922 | 139.66873 | 342.78020 | 329.60229 | 1.66487 | 0.1234913 | 2.2424635 | 87 | 5 | 1998–2006 | 0.49 | M-v | 2 | MPC | 97700 | 2004 $EX_{65}$ |
| 2004 $ED_{66}$ | 16.1 | 0.15 | 20060922 | 216.13328 | 256.19857 | 274.32346 | 1.17201 | 0.0311909 | 2.6163341 | 123 | 5 | 1994–2006 | 0.54 | M-v | 1 | MPC | 66344 | 2004 $ED_{66}$ |
| 2004 $EV_{66}$ | 14.9 | 0.15 | 20060922 | 92.22562 | 86.39818 | 191.69630 | 8.83609 | 0.1096769 | 3.0733984 | 105 | 6 | 1999–2006 | 0.56 | M-v | 0 | MPC | 04300 | 2004 $EV_{66}$ |
| 2004 $EK_{67}$ | 15.6 | 0.15 | 20060922 | 354.84673 | 164.17686 | 175.63628 | 8.43468 | 0.0595428 | 3.1778634 | 59 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 04300 | 2004 $EK_{67}$ |
| 2004 $EM_{67}$ | 17.4 | 0.15 | 20060922 | 225.56377 | 17.71826 | 169.38358 | 2.46282 | 0.1454547 | 2.4596051 | 39 | 4 | 1996–2006 | 0.52 | M-v | 2 | MPC | 62052 | 2004 $EM_{67}$ |
| 2004 $ER_{67}$ | 16.4 | 0.15 | 20060922 | 306.81898 | 71.53242 | 354.75443 | 11.06640 | 0.1096653 | 2.6464121 | 44 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 76452 | 2004 $ER_{67}$ |
| 2004 $EX_{67}$ | 16.5 | 0.15 | 20060922 | 190.66098 | 346.45162 | 282.75102 | 5.67755 | 0.1636215 | 2.2087386 | 32 | 3 | 2001–2005 | 0.50 | M-v | 2 | MPC | 90192 | 2004 $EX_{67}$ |
| 2004 $EH_{68}$ | 17.0 | 0.15 | 20060922 | 245.35717 | 247.85722 | 296.91130 | 1.94859 | 0.1181769 | 2.2982517 | 43 | 4 | 1997–2006 | 0.46 | M-v | 1 | MPC | 87621 | 2004 $EH_{68}$ |
| 2004 $EM_{68}$ | 15.0 | 0.15 | 20060922 | 84.33684 | 284.51008 | 333.67416 | 10.63203 | 0.0656556 | 3.0429814 | 61 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 04300 | 2004 $EM_{68}$ |
| 2004 $EP_{68}$ | 15.5 | 0.15 | 20060922 | 244.76346 | 141.18823 | 343.44601 | 12.45064 | 0.1194917 | 2.6446315 | 48 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04300 | 2004 $EP_{68}$ |
| 2004 $EZ_{68}$ | 16.5 | 0.15 | 20060922 | 291.82356 | 257.63644 | 168.61068 | 13.57148 | 0.0869908 | 2.6714700 | 52 | 5 | 2000–2006 | 0.42 | M-v | 0 | MPC | 04300 | 2004 $EZ_{68}$ |
| 2004 $EU_{69}$ | 17.3 | 0.15 | 20060922 | 225.46936 | 163.99765 | 348.47341 | 3.19284 | 0.1299464 | 2.6699865 | 29 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 65613 | 2004 $EU_{69}$ |
| 2004 $EC_{70}$ | 17.8 | 0.15 | 20060922 | 276.72287 | 341.66670 | 159.13195 | 2.14454 | 0.1509308 | 2.3572093 | 54 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 89525 | 2004 $EC_{70}$ |
| 2004 $EF_{70}$ | 17.1 | 0.15 | 20060922 | 195.26484 | 66.96105 | 169.83056 | 2.53112 | 0.1402395 | 2.4101843 | 44 | 3 | 2000–2005 | 0.50 | M-v | 3 | MPC | 86370 | 2004 $EF_{70}$ |
| 2004 $EB_{71}$ | 17.2 | 0.15 | 20060922 | 217.14625 | 261.23858 | 273.45478 | 0.99212 | 0.1185961 | 2.5967662 | 32 | 3 | 2004–2006 | 0.62 | M-v | 3 | MPC | 95186 | 2004 $EB_{71}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $EM_{71}$ | 17.5 | 0.15 | 20060922 | 247.72107 | 332.34230 | 204.38227 | 0.86739 | 0.1205643 | 2.3732495 | 49 | 3 | 1998–2006 | 0.43 | M-v | 4 | MPC | 65613 | 2004 $EM_{71}$ |
| 2004 $ER_{71}$ | 15.8 | 0.15 | 20060922 | 336.69420 | 40.70033 | 354.29872 | 6.08110 | 0.0613542 | 2.7511568 | 68 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 04301 | 2004 $ER_{71}$ |
| 2004 $EU_{71}$ | 17.5 | 0.15 | 20060922 | 286.43171 | 189.86195 | 283.56852 | 1.46190 | 0.1690418 | 2.4310471 | 46 | 5 | 1991–2006 | 0.37 | M-v | 0 | MPC | 65614 | 2004 $EU_{71}$ |
| 2004 $EE_{72}$ | 16.6 | 0.15 | 20060922 | 178.87389 | 254.18668 | 354.04909 | 0.58170 | 0.0372543 | 2.3546730 | 56 | 8 | 1991–2006 | 0.63 | M-v | 1 | MPC | 87621 | 2004 $EE_{72}$ |
| 2004 $EU_{72}$ | 17.0 | 0.15 | 20060922 | 42.32268 | 287.18793 | 118.10593 | 3.79187 | 0.0889416 | 2.1973852 | 49 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 90192 | 2004 $EU_{72}$ |
| 2004 $EA_{73}$ | 15.9 | 0.15 | 20060922 | 337.35692 | 4.52084 | 29.11888 | 6.33729 | 0.0153088 | 2.7390972 | 69 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 66345 | 2004 $EA_{73}$ |
| 2004 $EH_{73}$ | 16.4 | 0.15 | 20060922 | 265.69449 | 294.86748 | 185.63862 | 4.48439 | 0.1624309 | 2.5806931 | 74 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 66345 | 2004 $EH_{73}$ |
| 2004 $EJ_{73}$ | 16.7 | 0.15 | 20060922 | 200.93160 | 5.45661 | 183.22890 | 1.99140 | 0.0258191 | 2.6872936 | 62 | 6 | 1993–2006 | 0.41 | M-v | 0 | MPC | 86372 | 2004 $EJ_{73}$ |
| 2004 $EL_{73}$ | 17.6 | 0.15 | 20060922 | 254.80595 | 353.37598 | 197.10806 | 1.48308 | 0.1599569 | 2.2968990 | 30 | 3 | 2004–2006 | 0.53 | M-v | 3 | MPC | 95186 | 2004 $EL_{73}$ |
| 2004 $EM_{73}$ | 17.0 | 0.15 | 20060922 | 231.77243 | 24.36257 | 180.44062 | 2.09309 | 0.1563412 | 2.3771781 | 56 | 3 | 1993–2006 | 0.49 | M-v | 3 | MPC | 65614 | 2004 $EM_{73}$ |
| 2004 $EP_{73}$ | 17.5 | 0.15 | 20060922 | 286.62871 | 110.67521 | 26.10322 | 2.47341 | 0.1649188 | 2.3380438 | 70 | 4 | 1995–2006 | 0.36 | M-v | 0 | MPC | 66345 | 2004 $EP_{73}$ |
| 2004 $EJ_{74}$ | 15.6 | 0.15 | 20060922 | 145.08358 | 43.88658 | 268.74090 | 3.81456 | 0.2650721 | 2.3400318 | 142 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 97701 | 2004 $EJ_{74}$ |
| 2004 $EL_{74}$ | 15.3 | 0.15 | 20060922 | 156.76132 | 108.51315 | 87.43903 | 2.59088 | 0.1079362 | 3.1365620 | 53 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 04301 | 2004 $EL_{74}$ |
| 2004 $EP_{74}$ | 15.8 | 0.15 | 20060922 | 231.06445 | 344.08915 | 159.79832 | 3.97126 | 0.0750493 | 2.8099767 | 51 | 4 | 1994–2006 | 0.52 | M-v | 1 | MPC | 65615 | 2004 $EP_{74}$ |
| 2004 $EQ_{74}$ | 15.5 | 0.15 | 20060922 | 312.59382 | 257.90706 | 184.33075 | 21.81526 | 0.0479977 | 2.6595900 | 73 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 86373 | 2004 $EQ_{74}$ |
| 2004 $EK_{75}$ | 16.0 | 0.15 | 20060922 | 148.54133 | 125.12009 | 82.14166 | 2.64920 | 0.1396719 | 3.1304907 | 53 | 5 | 1995–2006 | 0.54 | M-v | 0 | MPC | 87621 | 2004 $EK_{75}$ |
| 2004 $EV_{75}$ | 15.8 | 0.15 | 20060922 | 139.72894 | 117.81078 | 151.01338 | 5.42608 | 0.1273662 | 2.7792481 | 110 | 4 | 2003–2006 | 0.47 | M-v | 0 | MPC | 86374 | 2004 $EV_{75}$ |
| 2004 $EZ_{75}$ | 15.5 | 0.15 | 20060922 | 88.34936 | 136.83687 | 131.96111 | 2.39219 | 0.1618933 | 3.1042431 | 66 | 5 | 1995–2006 | 0.46 | M-v | 0 | MPC | 66345 | 2004 $EZ_{75}$ |
| 2004 $EE_{76}$ | 16.3 | 0.15 | 20060922 | 171.93182 | 123.34244 | 138.37670 | 3.34482 | 0.1736226 | 2.4062496 | 34 | 4 | 2000–2005 | 0.77 | M-v | 1 | MPC | 95186 | 2004 $EE_{76}$ |
| 2004 $EF_{76}$ | 16.0 | 0.15 | 20060922 | 177.38902 | 350.72380 | 250.94998 | 3.71565 | 0.1290462 | 2.3791469 | 53 | 3 | 2004–2006 | 0.49 | M-v | 2 | MPC | 86374 | 2004 $EF_{76}$ |
| 2004 $EJ_{76}$ | 17.1 | 0.15 | 20060922 | 227.49601 | 181.15058 | 29.14864 | 2.75850 | 0.1403269 | 2.3346329 | 56 | 3 | 1997–2005 | 0.49 | M-v | 3 | MPC | 86375 | 2004 $EJ_{76}$ |
| 2004 $EP_{76}$ | 17.3 | 0.15 | 20060922 | 299.36417 | 302.79927 | 162.23099 | 5.56571 | 0.1662981 | 2.3862872 | 57 | 5 | 1997–2006 | 0.53 | M-v | 1 | MPC | 86375 | 2004 $EP_{76}$ |
| 2004 $EQ_{76}$ | 17.4 | 0.15 | 20060922 | 270.70478 | 5.26544 | 132.40237 | 1.69142 | 0.1329222 | 2.4160485 | 50 | 3 | 2000–2006 | 0.41 | M-v | 2 | MPC | 62057 | 2004 $EQ_{76}$ |
| 2004 $EV_{76}$ | 16.2 | 0.15 | 20060922 | 149.57634 | 94.87596 | 142.84099 | 4.94689 | 0.0685482 | 2.6799452 | 39 | 6 | 1997–2006 | 0.58 | M-v | 1 | MPC | 86375 | 2004 $EV_{76}$ |
| 2004 $EK_{77}$ | 15.5 | 0.15 | 20060922 | 158.82135 | 196.72027 | 18.85965 | 3.61008 | 0.0321882 | 2.7408949 | 78 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 62058 | 2004 $EK_{77}$ |
| 2004 $EQ_{77}$ | 14.9 | 0.15 | 20060922 | 134.84346 | 172.32854 | 37.21864 | 5.31955 | 0.1188894 | 3.1798040 | 92 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 02202 | 2004 $EQ_{77}$ |
| 2004 $ER_{77}$ | 17.2 | 0.15 | 20060922 | 253.88367 | 119.16050 | 9.78412 | 13.10647 | 0.2226272 | 2.5573236 | 33 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 62058 | 2004 $ER_{77}$ |
| 2004 $EX_{77}$ | 17.9 | 0.15 | 20060922 | 326.27744 | 209.39679 | 270.53975 | 1.69027 | 0.1511410 | 2.1896594 | 39 | 6 | 1994–2006 | 0.53 | M-v | 1 | MPC | 87621 | 2004 $EX_{77}$ |
| 2004 $EB_{78}$ | 16.9 | 0.15 | 20060922 | 291.53988 | 347.08187 | 118.17012 | 2.29604 | 0.1934677 | 2.4640357 | 65 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 62059 | 2004 $EB_{78}$ |
| 2004 $EC_{78}$ | 16.4 | 0.15 | 20060922 | 156.31425 | 62.33485 | 178.50935 | 14.40548 | 0.0781278 | 2.6769280 | 53 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 87621 | 2004 $EC_{78}$ |
| 2004 $ED_{78}$ | 16.1 | 0.15 | 20060922 | 199.69648 | 357.12858 | 142.61321 | 2.37200 | 0.1732859 | 3.0717845 | 36 | 5 | 1991–2006 | 0.55 | M-v | 1 | MPC | 89526 | 2004 $ED_{78}$ |
| 2004 $EN_{78}$ | 16.1 | 0.15 | 20060922 | 119.23477 | 284.91051 | 31.53257 | 4.66007 | 0.1283203 | 2.4067870 | 82 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 97701 | 2004 $EN_{78}$ |
| 2004 $EQ_{78}$ | 17.0 | 0.15 | 20060922 | 225.94456 | 159.33079 | 34.64385 | 3.35538 | 0.1496007 | 2.4604013 | 71 | 6 | 1994–2006 | 0.43 | M-v | 1 | MPC | 65616 | 2004 $EQ_{78}$ |
| 2004 $ES_{78}$ | 16.6 | 0.15 | 20060922 | 185.14449 | 184.41114 | 33.20766 | 3.48137 | 0.0975497 | 2.6002106 | 44 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 86376 | 2004 $ES_{78}$ |
| 2004 $EU_{79}$ | 15.9 | 0.15 | 20060922 | 347.47772 | 334.30919 | 90.84758 | 10.65437 | 0.1728705 | 2.3545429 | 55 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 74309 | 2004 $EU_{79}$ |
| 2004 $EB_{80}$ | 15.7 | 0.15 | 20060922 | 170.89045 | 197.20603 | 47.89278 | 7.14456 | 0.0988893 | 2.4193061 | 83 | 4 | 2002–2006 | 0.65 | M-v | 1 | MPC | 87621 | 2004 $EB_{80}$ |
| 2004 $EK_{80}$ | 15.2 | 0.15 | 20060922 | 175.28828 | 42.87025 | 113.77700 | 11.37960 | 0.1767933 | 3.1283009 | 27 | 3 | 1998–2004 | 0.49 | M-v | 3 | MPC | 69693 | 2004 $EK_{80}$ |
| 2004 $EL_{80}$ | 14.8 | 0.15 | 20060922 | 13.11017 | 255.06480 | 82.32782 | 10.85351 | 0.0654720 | 2.9929829 | 47 | 6 | 1993–2006 | 0.59 | M-v | 1 | MPC | 04301 | 2004 $EL_{80}$ |
| 2004 $ET_{80}$ | 16.2 | 0.15 | 20060922 | 290.12923 | 320.64003 | 118.50201 | 4.43598 | 0.1692732 | 2.5590112 | 39 | 4 | 1998–2006 | 0.61 | M-v | 2 | MPC | 00712 | 2004 $ET_{80}$ |
| 2004 $EU_{80}$ | 16.4 | 0.15 | 20060922 | 257.95625 | 28.36010 | 89.70207 | 4.50440 | 0.0912070 | 2.6089253 | 50 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 66345 | 2004 $EU_{80}$ |
| 2004 $EW_{80}$ | 16.8 | 0.15 | 20060922 | 193.26963 | 91.99260 | 132.81216 | 6.53161 | 0.0831197 | 2.4184894 | 27 | 3 | 2000–2005 | 0.43 | M-v | 3 | MPC | 95187 | 2004 $EW_{80}$ |
| 2004 $EU_{81}$ | 17.1 | 0.15 | 20060922 | 191.44254 | 235.96860 | 31.94678 | 6.26926 | 0.1828394 | 2.2999594 | 33 | 2 | 2004–2005 | 0.53 | M-v | 4 | MPC | 03616 | 2004 $EU_{81}$ |
| 2004 $EH_{83}$ | 14.6 | 0.15 | 20060922 | 131.14856 | 231.26111 | 353.50096 | 11.45712 | 0.0541130 | 3.0865434 | 73 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04301 | 2004 $EH_{83}$ |
| 2004 $EN_{83}$ | 15.9 | 0.15 | 20060922 | 168.92626 | 142.44981 | 54.55100 | 8.16534 | 0.0735503 | 2.9656303 | 24 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 95188 | 2004 $EN_{83}$ |
| 2004 $EP_{83}$ | 16.5 | 0.15 | 20060922 | 290.00868 | 85.90680 | 47.52132 | 5.59912 | 0.0853306 | 2.3888843 | 23 | 3 | 2004–2006 | 0.33 | M-v | 3 | MPC | 86378 | 2004 $EP_{83}$ |
| 2004 $EX_{83}$ | 14.7 | 0.15 | 20060922 | 10.74298 | 31.77536 | 5.99372 | 14.50842 | 0.1993339 | 2.5248994 | 55 | 4 | 1998–2006 | 0.65 | M-v | 3 | MPC | 86378 | 2004 $EX_{83}$ |
| 2004 $EG_{84}$ | 17.5 | 0.15 | 20060922 | 237.90230 | 32.00611 | 176.98585 | 5.76303 | 0.1244927 | 2.2683838 | 46 | 3 | 1995–2005 | 0.64 | M-v | 3 | MPC | 86379 | 2004 $EG_{84}$ |
| 2004 $EH_{84}$ | 16.2 | 0.15 | 20060922 | 194.15439 | 229.77097 | 304.97626 | 3.28707 | 0.0069620 | 2.7825059 | 35 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 03616 | 2004 $EH_{84}$ |
| 2004 $EJ_{84}$ | 16.6 | 0.15 | 20060922 | 190.43849 | 37.71084 | 189.01100 | 6.43318 | 0.0665370 | 2.4465102 | 26 | 3 | 2004–2006 | 0.37 | M-v | 2 | MPC | 95188 | 2004 $EJ_{84}$ |
| 2004 $EN_{84}$ | 16.8 | 0.15 | 20060922 | 188.21947 | 220.02748 | 41.20101 | 4.25242 | 0.1777999 | 2.2906448 | 49 | 4 | 1995–2005 | 0.56 | M-v | 1 | MPC | 97701 | 2004 $EN_{84}$ |
| 2004 $EP_{84}$ | 16.7 | 0.15 | 20060922 | 185.57427 | 312.77385 | 245.90787 | 2.68592 | 0.0547104 | 2.5453353 | 56 | 4 | 1998–2006 | 0.43 | M-v | 3 | MPC | 65620 | 2004 $EP_{84}$ |
| 2004 $EG_{85}$ | 16.1 | 0.15 | 20060922 | 252.00704 | 124.83339 | 21.23077 | 9.14852 | 0.0526433 | 2.5275493 | 89 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 04301 | 2004 $EG_{85}$ |
| 2004 $EK_{85}$ | 16.7 | 0.15 | 20060922 | 264.39393 | 28.14283 | 121.45144 | 4.67065 | 0.0891318 | 2.4227450 | 49 | 4 | 1993–2006 | 0.53 | M-v | 1 | MPC | 86380 | 2004 $EK_{85}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $ER_{85}$ | 15.2 | 0.15 | 20060922 | 95.62194 | 111.54143 | 155.61416 | 12.97397 | 0.0566459 | 3.0047771 | 59 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 62064 | 2004 $ER_{85}$ |
| 2004 $EV_{85}$ | 16.4 | 0.15 | 20060922 | 247.23733 | 112.26862 | 66.77329 | 4.19384 | 0.0912606 | 2.3883339 | 64 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 90193 | 2004 $EV_{85}$ |
| 2004 $EW_{85}$ | 16.6 | 0.15 | 20060922 | 229.35119 | 149.57796 | 70.60603 | 3.82173 | 0.0651689 | 2.2769539 | 61 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 87621 | 2004 $EW_{85}$ |
| 2004 $EY_{85}$ | 15.8 | 0.15 | 20060922 | 177.89023 | 106.23913 | 97.38036 | 4.88710 | 0.0447778 | 2.7648068 | 39 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 77779 | 2004 $EY_{85}$ |
| 2004 $EA_{86}$ | 16.5 | 0.15 | 20060922 | 318.46185 | 33.42967 | 82.88845 | 4.48346 | 0.1620929 | 2.2502433 | 65 | 5 | 1997–2006 | 0.56 | M-v | 1 | MPC | 65620 | 2004 $EA_{86}$ |
| 2004 $EN_{86}$ | 15.6 | 0.15 | 20060922 | 285.62642 | 316.67473 | 123.43962 | 3.03680 | 0.0559364 | 2.8470205 | 40 | 4 | 2001–2006 | 0.81 | M-v | 1 | MPC | 69694 | 2004 $EN_{86}$ |
| 2004 $EP_{86}$ | 15.8 | 0.15 | 20060922 | 286.60250 | 66.34342 | 20.93747 | 11.70506 | 0.0497661 | 2.6907249 | 53 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 86380 | 2004 $EP_{86}$ |
| 2004 $EY_{86}$ | 15.8 | 0.15 | 20060922 | 254.64311 | 63.01026 | 93.16749 | 5.67830 | 0.0620312 | 2.5897463 | 61 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 87621 | 2004 $EY_{86}$ |
| 2004 $EF_{88}$ | 15.4 | 0.15 | 20060922 | 95.14414 | 271.64688 | 343.03960 | 9.91676 | 0.0658767 | 3.0424013 | 38 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 86381 | 2004 $EF_{88}$ |
| 2004 $EH_{90}$ | 16.8 | 0.15 | 20060922 | 242.18129 | 137.29473 | 34.72037 | 7.32525 | 0.0980496 | 2.4890170 | 54 | 3 | 1998–2006 | 0.41 | M-v | 3 | MPC | 62066 | 2004 $EH_{90}$ |
| 2004 $EK_{90}$ | 17.7 | 0.15 | 20060922 | 290.71820 | 59.25889 | 77.58574 | 3.44118 | 0.1572347 | 2.3322175 | 42 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 62066 | 2004 $EK_{90}$ |
| 2004 $EL_{90}$ | 17.3 | 0.15 | 20060922 | 347.08095 | 326.20451 | 130.61724 | 4.47347 | 0.0896018 | 2.2550925 | 26 | 4 | 1997–2006 | 0.20 | M-v | 0 | MPC | 95188 | 2004 $EL_{90}$ |
| 2004 $EV_{90}$ | 16.3 | 0.15 | 20060922 | 225.08041 | 323.94552 | 170.19166 | 9.83465 | 0.0418298 | 3.0121032 | 26 | 4 | 1995–2006 | 0.35 | M-v | 0 | MPC | 72999 | 2004 $EV_{90}$ |
| 2004 $EY_{90}$ | 16.2 | 0.15 | 20060922 | 359.93098 | 199.45451 | 164.94699 | 16.44991 | 0.1193208 | 2.7760909 | 39 | 3 | 2004–2006 | 0.50 | M-v | 2 | MPC | 04301 | 2004 $EY_{90}$ |
| 2004 $EF_{91}$ | 17.2 | 0.15 | 20060922 | 306.31768 | 318.00354 | 130.23936 | 2.16451 | 0.1463299 | 2.4368260 | 58 | 3 | 2000–2006 | 0.42 | M-v | 2 | MPC | 66345 | 2004 $EF_{91}$ |
| 2004 $EJ_{92}$ | 16.6 | 0.15 | 20060922 | 274.89320 | 93.69920 | 346.13544 | 5.24502 | 0.2126908 | 2.6858272 | 51 | 4 | 1993–2006 | 0.38 | M-v | 0 | MPC | 66345 | 2004 $EJ_{92}$ |
| 2004 $EO_{92}$ | 16.3 | 0.15 | 20060922 | 314.65591 | 43.70089 | 348.13794 | 11.26316 | 0.0390031 | 2.9820573 | 26 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 86381 | 2004 $EO_{92}$ |
| 2004 $EP_{92}$ | 17.1 | 0.15 | 20060922 | 325.28233 | 196.88014 | 247.47109 | 1.69509 | 0.1314751 | 2.3532297 | 66 | 6 | 1995–2006 | 0.45 | M-v | 0 | MPC | 04301 | 2004 $EP_{92}$ |
| 2004 $EY_{92}$ | 16.2 | 0.15 | 20060922 | 203.99436 | 157.70975 | 52.88896 | 15.68250 | 0.0295560 | 2.5466488 | 56 | 5 | 1992–2006 | 0.56 | M-v | 2 | MPC | 66345 | 2004 $EY_{92}$ |
| 2004 $EU_{93}$ | 16.4 | 0.15 | 20060922 | 148.19685 | 106.54221 | 146.84151 | 6.06797 | 0.0799240 | 2.5809994 | 52 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 86381 | 2004 $EU_{93}$ |
| 2004 $EV_{93}$ | 16.0 | 0.15 | 20060922 | 80.90984 | 227.96401 | 52.80194 | 2.16266 | 0.1619113 | 3.0737811 | 54 | 5 | 1995–2006 | 0.43 | M-v | 0 | MPC | 69694 | 2004 $EV_{93}$ |
| 2004 $EG_{94}$ | 16.9 | 0.15 | 20060922 | 206.85358 | 171.12791 | 56.09832 | 2.49591 | 0.1459920 | 2.4164631 | 36 | 6 | 1994–2006 | 0.57 | M-v | 1 | MPC | 04301 | 2004 $EG_{94}$ |
| 2004 $EX_{94}$ | 15.6 | 0.15 | 20060922 | 229.24794 | 104.35839 | 52.77588 | 14.17134 | 0.1601468 | 2.6783928 | 53 | 3 | 2002–2006 | 0.67 | M-v | 3 | MPC | 66346 | 2004 $EX_{94}$ |
| 2004 $EJ_{95}$ | 15.8 | 0.15 | 20060922 | 287.94019 | 64.22293 | 70.76925 | 7.30795 | 0.0674341 | 2.3789227 | 57 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 87622 | 2004 $EJ_{95}$ |
| 2004 $EK_{95}$ | 15.4 | 0.15 | 20060922 | 141.01310 | 157.34484 | 84.27965 | 7.39417 | 0.2156212 | 2.9274448 | 58 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 86382 | 2004 $EK_{95}$ |
| 2004 $EE_{96}$ | 15.4 | 0.15 | 20060922 | 321.01263 | 304.50283 | 149.46649 | 22.59020 | 0.0873809 | 2.5593692 | 45 | 4 | 2003–2006 | 0.51 | M-v | 1 | MPC | 90193 | 2004 $EE_{96}$ |
| 2004 $EA_{100}$ | 17.3 | 0.15 | 20060922 | 108.49361 | 318.02013 | 307.59972 | 1.13899 | 0.0383209 | 2.7806594 | 32 | 5 | 1999–2006 | 0.46 | M-v | 0 | MPC | 86383 | 2004 $EA_{100}$ |
| 2004 $ER_{102}$ | 17.2 | 0.15 | 20060922 | 3.33034 | 267.83043 | 124.07627 | 3.32027 | 0.2018860 | 2.4494654 | 64 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 95190 | 2004 $ER_{102}$ |
| 2004 $EF_{106}$ | 15.8 | 0.15 | 20060922 | 9.40903 | 13.63696 | 353.05185 | 10.89082 | 0.2193784 | 2.6774350 | 70 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 04301 | 2004 $EF_{106}$ |
| 2004 $EY_{107}$ | 17.5 | 0.15 | 20060922 | 310.96688 | 257.86503 | 171.78581 | 8.68250 | 0.1446801 | 2.5676041 | 30 | 4 | 2000–2006 | 0.34 | M-v | 1 | MPC | 95190 | 2004 $EY_{107}$ |
| 2004 $EH_{108}$ | 16.1 | 0.15 | 20060922 | 17.24830 | 63.40468 | 263.79668 | 0.98649 | 0.0697623 | 3.1132901 | 43 | 6 | 1999–2006 | 0.38 | M-v | 0 | MPC | 04301 | 2004 $EH_{108}$ |
| 2004 $ER_{111}$ | 17.0 | 0.15 | 20060922 | 247.73048 | 62.91026 | 67.90897 | 4.18398 | 0.1625954 | 2.6236740 | 24 | 3 | 1998–2004 | 0.55 | M-v | 3 | MPC | 69695 | 2004 $ER_{111}$ |
| 2004 $EY_{112}$ | 15.9 | 0.15 | 20060922 | 259.26503 | 286.73225 | 148.29185 | 10.24693 | 0.0481033 | 3.1250916 | 26 | 3 | 2004–2006 | 0.25 | M-v | 3 | MPC | 04301 | 2004 $EY_{112}$ |
| 2004 $ES_{114}$ | 15.2 | 0.15 | 20060922 | 109.75191 | 167.12125 | 103.25094 | 15.01069 | 0.1165860 | 2.8679712 | 31 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 86384 | 2004 $ES_{114}$ |
| 2004 $EC_{115}$ | 17.7 | 0.15 | 20060922 | 317.33952 | 129.12486 | 330.14608 | 0.51768 | 0.0496104 | 2.3198147 | 27 | 4 | 2002–2006 | 0.30 | M-v | 0 | MPC | 86384 | 2004 $EC_{115}$ |
| 2004 $EE_{115}$ | 17.2 | 0.15 | 20060922 | 335.59445 | 250.51876 | 168.49925 | 1.87562 | 0.2004514 | 2.3436715 | 90 | 5 | 1992–2006 | 0.42 | M-v | 1 | MPC | 04301 | 2004 $EE_{115}$ |
| 2004 $FG_{2}$ | 16.7 | 0.15 | 20060922 | 189.57113 | 1.22556 | 174.39750 | 3.96534 | 0.1806538 | 2.8420070 | 68 | 4 | 1994–2006 | 0.57 | M-v | 2 | MPC | 65624 | 2004 $FG_{2}$ |
| 2004 $FJ_{2}$ | 16.6 | 0.15 | 20060922 | 255.21756 | 164.30408 | 17.29111 | 4.28708 | 0.1295926 | 2.3337396 | 67 | 6 | 1991–2006 | 0.53 | M-v | 1 | MPC | 86385 | 2004 $FJ_{2}$ |
| 2004 $FL_{2}$ | 16.6 | 0.15 | 20060922 | 191.39837 | 28.84461 | 250.80931 | 4.16387 | 0.2463447 | 2.2688937 | 41 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 95190 | 2004 $FL_{2}$ |
| 2004 $FU_{2}$ | 16.7 | 0.15 | 20060922 | 5.87370 | 269.20374 | 157.30871 | 3.62414 | 0.2821476 | 2.1895167 | 46 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 65624 | 2004 $FU_{2}$ |
| 2004 $FR_{3}$ | 17.2 | 0.15 | 20060922 | 213.68062 | 59.95781 | 182.83252 | 8.15686 | 0.2270542 | 2.2965956 | 73 | 5 | 1997–2005 | 0.65 | M-v | 1 | MPC | 90193 | 2004 $FR_{3}$ |
| 2004 $FW_{3}$ | 17.2 | 0.15 | 20060922 | 312.61711 | 279.16317 | 180.25375 | 23.28106 | 0.2444304 | 2.3210027 | 39 | 3 | 1995–2006 | 0.52 | M-v | 1 | MPC | 62070 | 2004 $FW_{3}$ |
| 2004 $FE_{5}$ | 20.0 | 0.15 | 20060922 | 335.88662 | 243.27305 | 189.57152 | 18.31382 | 0.6004882 | 1.2451404 | 78 | 2 | 2004–2006 | 0.59 | M-v | 2 | MPC | 03616 | 2004 $FE_{5}$ |
| 2004 $FA_{6}$ | 16.7 | 0.15 | 20060922 | 204.07134 | 214.25072 | 68.61743 | 7.81399 | 0.1485440 | 2.1564883 | 40 | 3 | 2001–2005 | 0.76 | M-v | 3 | MPC | 62071 | 2004 $FA_{6}$ |
| 2004 $FD_{6}$ | 17.3 | 0.15 | 20060922 | 209.00977 | 194.45675 | 61.67897 | 1.47597 | 0.1136534 | 2.1919512 | 72 | 5 | 1994–2006 | 0.44 | M-v | 1 | MPC | 04301 | 2004 $FD_{6}$ |
| 2004 $FT_{7}$ | 16.9 | 0.15 | 20060922 | 239.75335 | 137.82819 | 39.75019 | 1.77119 | 0.1217127 | 2.4442020 | 58 | 4 | 1996–2006 | 0.45 | M-v | 1 | MPC | 03616 | 2004 $FT_{7}$ |
| 2004 $FU_{7}$ | 16.4 | 0.15 | 20060922 | 183.47296 | 37.48059 | 180.47946 | 5.75876 | 0.1078594 | 2.6060787 | 66 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87622 | 2004 $FU_{7}$ |
| 2004 $FD_{8}$ | 16.0 | 0.15 | 20060922 | 152.34994 | 2.56969 | 271.29116 | 13.35938 | 0.2267883 | 2.6622535 | 31 | 3 | 2004–2006 | 0.50 | M-v | 2 | MPC | 86387 | 2004 $FD_{8}$ |
| 2004 $FU_{8}$ | 15.8 | 0.15 | 20060922 | 148.57468 | 97.27403 | 127.33482 | 4.66312 | 0.1156658 | 2.7951962 | 52 | 5 | 1992–2006 | 0.43 | M-v | 0 | MPC | 87622 | 2004 $FU_{8}$ |
| 2004 $FG_{9}$ | 15.8 | 0.15 | 20060922 | 193.84336 | 58.30816 | 132.44759 | 5.57078 | 0.0487350 | 2.7807812 | 70 | 6 | 1999–2006 | 0.46 | M-v | 0 | MPC | 86388 | 2004 $FG_{9}$ |
| 2004 $FX_{9}$ | 17.4 | 0.15 | 20060922 | 22.99187 | 253.07576 | 165.89658 | 3.13876 | 0.0947969 | 2.1719678 | 46 | 6 | 1999–2006 | 0.47 | M-v | 0 | MPC | 87622 | 2004 $FX_{9}$ |
| 2004 $FB_{10}$ | 16.0 | 0.15 | 20060922 | 126.81260 | 216.30864 | 45.95607 | 4.09194 | 0.0312826 | 2.6673937 | 43 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 00713 | 2004 $FB_{10}$ |
| 2004 $FS_{10}$ | 17.6 | 0.15 | 20060922 | 169.83690 | 75.01728 | 144.72600 | 1.87294 | 0.1377667 | 2.4470849 | 30 | 4 | 1993–2006 | 0.30 | M-v | 0 | MPC | 03616 | 2004 $FS_{10}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $FL_{11}$ | 15.6 | 0.15 | 20060922 | 112.56763 | 356.81093 | 289.63089 | 4.55519 | 0.2124020 | 2.7756914 | 51 | 3 | 2004–2006 | 0.61 | M-v | 3 | MPC | 90193 | 2004 $FL_{11}$ |
| 2004 $FR_{11}$ | 16.4 | 0.15 | 20060922 | 212.67387 | 337.92241 | 267.25952 | 4.76893 | 0.1133159 | 2.2628751 | 43 | 3 | 2002–2005 | 0.49 | M-v | 3 | MPC | 02203 | 2004 $FR_{11}$ |
| 2004 $FU_{11}$ | 16.2 | 0.15 | 20060922 | 319.74771 | 165.31979 | 305.09837 | 5.23173 | 0.1066489 | 2.2974382 | 51 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 87622 | 2004 $FU_{11}$ |
| 2004 $FU_{12}$ | 15.4 | 0.15 | 20060922 | 151.05131 | 295.89395 | 276.78622 | 5.34482 | 0.1558970 | 3.0147493 | 40 | 3 | 2004–2006 | 0.64 | M-v | 3 | MPC | 86389 | 2004 $FU_{12}$ |
| 2004 $FC_{13}$ | 15.0 | 0.15 | 20060922 | 147.92466 | 10.69797 | 192.29389 | 27.66748 | 0.1011070 | 3.1162388 | 46 | 4 | 1993–2006 | 0.57 | M-v | 1 | MPC | 66347 | 2004 $FC_{13}$ |
| 2004 $FM_{13}$ | 16.0 | 0.15 | 20060922 | 193.26786 | 179.22369 | 332.55378 | 8.75209 | 0.0509743 | 3.0660792 | 22 | 2 | 2004–2006 | 0.26 | M-v | 3 | MPC | 03617 | 2004 $FM_{13}$ |
| 2004 $FN_{13}$ | 16.1 | 0.15 | 20060922 | 227.14599 | 316.72956 | 195.29822 | 13.26979 | 0.1137021 | 2.6805118 | 87 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 65627 | 2004 $FN_{13}$ |
| 2004 $FG_{14}$ | 16.1 | 0.15 | 20060922 | 202.22775 | 247.07415 | 285.29413 | 7.01464 | 0.0892509 | 2.7758323 | 47 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87622 | 2004 $FG_{14}$ |
| 2004 $FU_{14}$ | 15.2 | 0.15 | 20060922 | 223.64354 | 142.83057 | 7.76916 | 7.85320 | 0.1637162 | 2.7993918 | 85 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 04301 | 2004 $FU_{14}$ |
| 2004 $FX_{14}$ | 15.9 | 0.15 | 20060922 | 236.14705 | 167.60588 | 342.95344 | 2.99491 | 0.1981405 | 2.6527758 | 97 | 5 | 1997–2006 | 0.50 | M-v | 1 | MPC | 87622 | 2004 $FX_{14}$ |
| 2004 $FY_{14}$ | 16.7 | 0.15 | 20060922 | 300.62658 | 200.10873 | 288.98378 | 1.55289 | 0.1512542 | 2.3170861 | 48 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 87622 | 2004 $FY_{14}$ |
| 2004 $FZ_{14}$ | 16.7 | 0.15 | 20060922 | 344.52067 | 187.33807 | 292.93615 | 2.25017 | 0.0248043 | 2.1890205 | 85 | 6 | 1996–2006 | 0.50 | M-v | 1 | MPC | 90193 | 2004 $FZ_{14}$ |
| 2004 $FE_{15}$ | 16.9 | 0.15 | 20060922 | 236.51845 | 326.41172 | 269.01666 | 1.37381 | 0.1611118 | 2.2422355 | 94 | 4 | 1992–2006 | 0.47 | M-v | 2 | MPC | 04301 | 2004 $FE_{15}$ |
| 2004 $FK_{15}$ | 15.3 | 0.15 | 20060922 | 189.47251 | 269.51550 | 287.96527 | 12.10115 | 0.1535709 | 2.7238124 | 71 | 4 | 1998–2006 | 0.40 | M-v | 1 | MPC | 87622 | 2004 $FK_{15}$ |
| 2004 $FH_{17}$ | 15.2 | 0.15 | 20060922 | 207.38830 | 338.84024 | 164.58838 | 11.45808 | 0.0555875 | 3.0882138 | 63 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04301 | 2004 $FH_{17}$ |
| 2004 $FO_{17}$ | 17.6 | 0.15 | 20060922 | 40.66299 | 297.22600 | 188.20671 | 20.40366 | 0.1014187 | 1.8909596 | 54 | 3 | 1999–2005 | 0.66 | M-v | 2 | MPC | 90193 | 2004 $FO_{17}$ |
| 2004 $FL_{18}$ | 17.6 | 0.15 | 20060922 | 228.07072 | 82.91660 | 100.63120 | 6.02412 | 0.2266707 | 2.5688119 | 41 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 62079 | 2004 $FL_{18}$ |
| 2004 $FO_{18}$ | 15.7 | 0.15 | 20060922 | 70.27974 | 276.56977 | 26.46392 | 5.53216 | 0.1208593 | 3.2159798 | 50 | 3 | 2000–2006 | 0.44 | M-v | 1 | MPC | 04301 | 2004 $FO_{18}$ |
| 2004 $FW_{18}$ | 15.0 | 0.15 | 20060922 | 161.75489 | 121.94955 | 105.11739 | 10.17638 | 0.0988585 | 2.7288189 | 66 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87623 | 2004 $FW_{18}$ |
| 2004 $FF_{19}$ | 17.0 | 0.15 | 20060922 | 220.13817 | 349.65449 | 243.35328 | 2.98700 | 0.0932593 | 2.2658764 | 46 | 3 | 2004–2006 | 0.54 | M-v | 3 | MPC | 03617 | 2004 $FF_{19}$ |
| 2004 $FG_{19}$ | 17.1 | 0.15 | 20060922 | 181.65004 | 8.30469 | 259.68558 | 2.18128 | 0.1539994 | 2.3408880 | 56 | 3 | 1998–2005 | 0.53 | M-v | 2 | MPC | 90193 | 2004 $FG_{19}$ |
| 2004 $FK_{19}$ | 15.2 | 0.15 | 20060922 | 230.44589 | 202.68533 | 301.32192 | 6.69973 | 0.1336225 | 2.6904793 | 46 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 69698 | 2004 $FK_{19}$ |
| 2004 $FS_{19}$ | 15.7 | 0.15 | 20060922 | 80.33180 | 95.85172 | 173.93030 | 11.76382 | 0.0770074 | 3.0574425 | 57 | 4 | 1994–2006 | 0.36 | M-v | 0 | MPC | 04301 | 2004 $FS_{19}$ |
| 2004 $FU_{19}$ | 16.0 | 0.15 | 20060922 | 286.52980 | 107.51316 | 338.15342 | 11.02555 | 0.1595292 | 2.5864676 | 62 | 3 | 2002–2006 | 0.58 | M-v | 1 | MPC | 04301 | 2004 $FU_{19}$ |
| 2004 $FC_{20}$ | 14.9 | 0.15 | 20060922 | 140.90381 | 2.37764 | 210.01791 | 4.27642 | 0.1473903 | 3.0589162 | 48 | 3 | 1996–2006 | 0.43 | M-v | 3 | MPC | 65629 | 2004 $FC_{20}$ |
| 2004 $FG_{20}$ | 16.8 | 0.15 | 20060922 | 250.45871 | 233.60711 | 299.72619 | 1.71931 | 0.1426461 | 2.3801285 | 53 | 3 | 2004–2006 | 0.46 | M-v | 4 | MPC | 86392 | 2004 $FG_{20}$ |
| 2004 $FK_{20}$ | 15.7 | 0.15 | 20060922 | 77.14105 | 348.53376 | 353.35229 | 7.32391 | 0.2508800 | 2.4848514 | 45 | 5 | 1996–2005 | 0.52 | M-v | 1 | MPC | 86393 | 2004 $FK_{20}$ |
| 2004 $FO_{20}$ | 15.6 | 0.15 | 20060922 | 200.82009 | 324.37281 | 189.67973 | 9.36798 | 0.1197147 | 2.9990946 | 58 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 66347 | 2004 $FO_{20}$ |
| 2004 $FR_{20}$ | 16.3 | 0.15 | 20060922 | 255.78542 | 275.91313 | 266.94440 | 1.11235 | 0.1404855 | 2.3265964 | 107 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 87623 | 2004 $FR_{20}$ |
| 2004 $FS_{20}$ | 17.2 | 0.15 | 20060922 | 237.86576 | 328.17271 | 206.61595 | 3.79723 | 0.1377547 | 2.4884716 | 68 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87623 | 2004 $FS_{20}$ |
| 2004 $FL_{21}$ | 17.1 | 0.15 | 20060922 | 351.09986 | 126.20272 | 316.75897 | 3.57399 | 0.1342197 | 2.2295676 | 39 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 87623 | 2004 $FL_{21}$ |
| 2004 $FM_{21}$ | 16.6 | 0.15 | 20060922 | 196.97271 | 11.24123 | 192.89427 | 8.66327 | 0.1033835 | 2.5789894 | 55 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 62082 | 2004 $FM_{21}$ |
| 2004 $FP_{21}$ | 16.3 | 0.15 | 20060922 | 105.21897 | 336.48248 | 295.53485 | 2.70211 | 0.0576526 | 2.8074855 | 52 | 3 | 2001–2006 | 0.32 | M-v | 2 | MPC | 65630 | 2004 $FP_{21}$ |
| 2004 $FR_{21}$ | 16.6 | 0.15 | 20060922 | 275.48892 | 234.88594 | 229.59830 | 2.56664 | 0.2273971 | 2.5275827 | 67 | 5 | 1994–2006 | 0.48 | M-v | 2 | MPC | 74309 | 2004 $FR_{21}$ |
| 2004 $FU_{21}$ | 16.7 | 0.15 | 20060922 | 208.99055 | 337.89807 | 256.50568 | 3.17768 | 0.0290947 | 2.2803588 | 38 | 2 | 2004–2005 | 0.46 | M-v | 4 | MPC | 89529 | 2004 $FU_{21}$ |
| 2004 $FA_{22}$ | 14.9 | 0.15 | 20060922 | 133.17530 | 197.31693 | 24.78684 | 6.21410 | 0.1152478 | 3.2215283 | 72 | 6 | 1995–2006 | 0.55 | M-v | 0 | MPC | 66347 | 2004 $FA_{22}$ |
| 2004 $FB_{22}$ | 16.0 | 0.15 | 20060922 | 266.49223 | 9.88236 | 182.70689 | 5.55748 | 0.0886790 | 2.2468643 | 86 | 5 | 2000–2006 | 0.70 | M-v | 1 | MPC | 97702 | 2004 $FB_{22}$ |
| 2004 $FE_{22}$ | 16.0 | 0.15 | 20060922 | 183.37329 | 51.06911 | 214.95505 | 6.08699 | 0.0788719 | 2.3717438 | 87 | 6 | 1993–2005 | 0.61 | M-v | 1 | MPC | 97702 | 2004 $FE_{22}$ |
| 2004 $FF_{22}$ | 15.0 | 0.15 | 20060922 | 124.21395 | 247.01563 | 0.09073 | 15.97664 | 0.1705057 | 3.0990989 | 83 | 3 | 2004–2006 | 0.56 | M-v | 3 | MPC | 86393 | 2004 $FF_{22}$ |
| 2004 $FL_{22}$ | 15.7 | 0.15 | 20060922 | 201.03345 | 277.65479 | 290.17774 | 11.41261 | 0.1333378 | 2.5877025 | 55 | 3 | 2004–2006 | 0.44 | M-v | 3 | MPC | 89529 | 2004 $FL_{22}$ |
| 2004 $FU_{22}$ | 17.9 | 0.15 | 20060922 | 258.00487 | 323.75930 | 174.68640 | 2.23188 | 0.1279057 | 2.4222206 | 41 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 69698 | 2004 $FU_{22}$ |
| 2004 $FJ_{23}$ | 16.3 | 0.15 | 20060922 | 129.55976 | 27.54654 | 200.63345 | 0.53035 | 0.1028771 | 3.0434998 | 54 | 7 | 1995–2006 | 0.49 | M-v | 0 | MPC | 66347 | 2004 $FJ_{23}$ |
| 2004 $FS_{23}$ | 17.3 | 0.15 | 20060922 | 209.68797 | 63.96537 | 160.33202 | 2.49159 | 0.1291018 | 2.3913540 | 35 | 3 | 2004–2006 | 0.39 | M-v | 3 | MPC | 97702 | 2004 $FS_{23}$ |
| 2004 $FX_{23}$ | 16.4 | 0.15 | 20060922 | 45.71006 | 350.78426 | 347.28389 | 4.07658 | 0.0392435 | 2.7154493 | 56 | 5 | 1997–2006 | 0.41 | M-v | 1 | MPC | 69698 | 2004 $FX_{23}$ |
| 2004 $FZ_{23}$ | 16.4 | 0.15 | 20060922 | 158.19724 | 183.22564 | 0.95003 | 0.60651 | 0.1410174 | 3.1612150 | 34 | 5 | 1996–2006 | 0.63 | M-v | 1 | MPC | 86394 | 2004 $FZ_{23}$ |
| 2004 $FC_{24}$ | 16.1 | 0.15 | 20060922 | 112.24016 | 56.15583 | 200.82417 | 6.32626 | 0.1644649 | 3.0379170 | 42 | 4 | 2000–2006 | 0.36 | M-v | 0 | MPC | 03617 | 2004 $FC_{24}$ |
| 2004 $FH_{24}$ | 16.5 | 0.15 | 20060922 | 168.34304 | 280.70385 | 344.05050 | 2.19505 | 0.1575223 | 2.4027379 | 58 | 6 | 1998–2006 | 0.47 | M-v | 0 | MPC | 87623 | 2004 $FH_{24}$ |
| 2004 $FJ_{24}$ | 16.1 | 0.15 | 20060922 | 206.96925 | 326.44941 | 184.95803 | 1.25955 | 0.0170174 | 2.8565607 | 43 | 5 | 1994–2006 | 0.39 | M-v | 1 | MPC | 65631 | 2004 $FJ_{24}$ |
| 2004 $FM_{24}$ | 13.7 | 0.15 | 20060922 | 80.28207 | 274.14889 | 328.12881 | 17.40779 | 0.2503244 | 3.9485907 | 67 | 4 | 2003–2006 | 0.53 | M-v | 1 | MPC | 03617 | 2004 $FM_{24}$ |
| 2004 $FN_{24}$ | 15.2 | 0.15 | 20060922 | 131.86724 | 288.49254 | 323.42923 | 14.01482 | 0.1185247 | 2.8684667 | 40 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 86395 | 2004 $FN_{24}$ |
| 2004 $FO_{24}$ | 14.6 | 0.15 | 20060922 | 140.80828 | 332.02909 | 238.77065 | 10.63173 | 0.1401583 | 3.0782833 | 56 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 86395 | 2004 $FO_{24}$ |
| 2004 $FP_{24}$ | 15.7 | 0.15 | 20060922 | 263.27905 | 207.59607 | 278.13810 | 9.02486 | 0.1257923 | 2.5533747 | 47 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 69698 | 2004 $FP_{24}$ |
| 2004 $FW_{24}$ | 15.0 | 0.15 | 20060922 | 191.43279 | 184.99030 | 325.66467 | 12.47929 | 0.0409680 | 3.0954323 | 48 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 04301 | 2004 $FW_{24}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $FX_{24}$ | 15.7 | 0.15 | 20060922 | 223.71359 | 240.06522 | 293.06235 | 13.83884 | 0.0496173 | 2.6145464 | 43 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 86395 | 2004 $FX_{24}$ |
| 2004 $FJ_{25}$ | 15.8 | 0.15 | 20040316 | 336.89571 | 346.60192 | 226.12163 | 14.24585 | 0.1342983 | 3.1054125 | 17 | 1 | 30 days | 0.51 | | | MPC | | 2004 $FJ_{25}$ |
| 2004 $FK_{25}$ | 17.0 | 0.15 | 20060922 | 294.84860 | 254.52336 | 242.92916 | 7.41642 | 0.1307607 | 2.3012576 | 40 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 65631 | 2004 $FK_{25}$ |
| 2004 $FN_{25}$ | 15.2 | 0.15 | 20060922 | 22.11700 | 3.93465 | 15.70497 | 14.58173 | 0.0905677 | 2.6196108 | 53 | 7 | 1993–2006 | 0.68 | M-v | 1 | MPC | 87623 | 2004 $FN_{25}$ |
| 2004 $FO_{25}$ | 17.2 | 0.15 | 20060922 | 259.38097 | 19.68772 | 149.97796 | 1.61569 | 0.1215153 | 2.3900546 | 44 | 3 | 1999–2006 | 0.49 | M-v | 3 | MPC | 66348 | 2004 $FO_{25}$ |
| 2004 $FU_{25}$ | 16.3 | 0.15 | 20060922 | 292.94520 | 139.60379 | 8.20042 | 5.03500 | 0.1808838 | 2.2899482 | 88 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 74309 | 2004 $FU_{25}$ |
| 2004 $FD_{26}$ | 16.3 | 0.15 | 20060922 | 288.11898 | 279.48067 | 236.18925 | 3.37143 | 0.1139006 | 2.3183379 | 87 | 6 | 1995–2006 | 0.53 | M-v | 1 | MPC | 87623 | 2004 $FD_{26}$ |
| 2004 $FK_{26}$ | 16.1 | 0.15 | 20060922 | 137.47910 | 230.29266 | 8.16646 | 3.50997 | 0.0387277 | 2.8155752 | 54 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 04301 | 2004 $FK_{26}$ |
| 2004 $FO_{26}$ | 15.6 | 0.15 | 20060922 | 341.91874 | 359.69386 | 28.92073 | 1.90080 | 0.0827845 | 2.7939212 | 105 | 5 | 1992–2006 | 0.56 | M-v | 1 | MPC | 04301 | 2004 $FO_{26}$ |
| 2004 $FX_{26}$ | 15.8 | 0.15 | 20060922 | 114.57469 | 54.40773 | 183.76344 | 8.25541 | 0.0394686 | 3.0744987 | 44 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 86396 | 2004 $FX_{26}$ |
| 2004 $FK_{27}$ | 17.0 | 0.15 | 20060922 | 160.17368 | 264.80545 | 338.76365 | 3.94211 | 0.1715011 | 2.6795966 | 33 | 4 | 1995–2005 | 0.46 | M-v | 1 | MPC | 86396 | 2004 $FK_{27}$ |
| 2004 $FP_{27}$ | 17.8 | 0.15 | 20060922 | 300.40081 | 145.06109 | 334.87632 | 1.71223 | 0.0871742 | 2.3752779 | 40 | 4 | 1991–2006 | 0.34 | M-v | 0 | MPC | 86396 | 2004 $FP_{27}$ |
| 2004 $FU_{27}$ | 15.7 | 0.15 | 20060922 | 85.18309 | 28.47134 | 244.27536 | 1.53241 | 0.0884864 | 3.1160738 | 68 | 6 | 1993–2006 | 0.40 | M-v | 0 | MPC | 04302 | 2004 $FU_{27}$ |
| 2004 $FW_{27}$ | 16.8 | 0.15 | 20060922 | 199.94052 | 239.42392 | 332.12786 | 1.85545 | 0.1396555 | 2.5523713 | 62 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 87623 | 2004 $FW_{27}$ |
| 2004 $FZ_{27}$ | 17.9 | 0.15 | 20060922 | 351.41827 | 85.59679 | 339.64094 | 1.11778 | 0.1659209 | 2.3480394 | 30 | 4 | 1995–2006 | 0.33 | M-v | 1 | MPC | 76456 | 2004 $FZ_{27}$ |
| 2004 $FA_{28}$ | 15.9 | 0.15 | 20060922 | 34.70775 | 358.38600 | 357.41928 | 5.58090 | 0.0463291 | 2.6794302 | 60 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 89530 | 2004 $FA_{28}$ |
| 2004 $FM_{29}$ | 15.9 | 0.15 | 20060922 | 216.32460 | 112.24180 | 73.31482 | 4.11012 | 0.1633965 | 2.6910885 | 107 | 6 | 1995–2006 | 0.48 | M-v | 1 | MPC | 87623 | 2004 $FM_{29}$ |
| 2004 $FV_{29}$ | 15.5 | 0.15 | 20060922 | 172.35556 | 124.14029 | 117.86200 | 8.36132 | 0.1508068 | 2.7627304 | 37 | 3 | 2004–2006 | 0.52 | M-v | 3 | MPC | 86397 | 2004 $FV_{29}$ |
| 2004 $FX_{30}$ | 16.8 | 0.15 | 20060922 | 181.21969 | 232.47242 | 54.93343 | 25.32881 | 0.1548213 | 2.2756596 | 30 | 4 | 1977–2006 | 0.68 | M-v | 1 | MPC | 90194 | 2004 $FX_{30}$ |
| 2004 $FC_{31}$ | 15.2 | 0.15 | 20060922 | 355.75506 | 25.90316 | 47.34709 | 29.16684 | 0.2072771 | 2.2737829 | 91 | 3 | 1999–2006 | 0.44 | M-v | 2 | MPC | 66348 | 2004 $FC_{31}$ |
| 2004 $FD_{31}$ | 15.6 | 0.15 | 20060922 | 307.31832 | 356.27032 | 124.18963 | 23.72561 | 0.1571447 | 2.3021139 | 84 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 87623 | 2004 $FD_{31}$ |
| 2004 $FP_{31}$ | 15.2 | 0.15 | 20060922 | 118.15984 | 269.20788 | 55.99638 | 25.72659 | 0.2071229 | 2.3557600 | 71 | 5 | 1991–2006 | 0.58 | M-v | 2 | MPC | 95194 | 2004 $FP_{31}$ |
| 2004 $FX_{31}$ | 17.5 | 0.15 | 20060922 | 315.50867 | 285.67968 | 169.25488 | 24.74825 | 0.4420446 | 1.2608464 | 429 | 3 | 2000–2006 | 0.41 | M-v | 1 | MPC | 04302 | 2004 $FX_{31}$ |
| 2004 $FK_{32}$ | 17.0 | 0.15 | 20060922 | 228.88393 | 338.98861 | 253.43276 | 1.51769 | 0.1004539 | 2.2799909 | 80 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 90194 | 2004 $FK_{32}$ |
| 2004 $FQ_{32}$ | 15.1 | 0.15 | 20060922 | 252.20673 | 229.19611 | 234.53294 | 18.12879 | 0.1999789 | 2.5475408 | 43 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 87623 | 2004 $FQ_{32}$ |
| 2004 $FE_{33}$ | 15.8 | 0.15 | 20060922 | 262.48419 | 129.60651 | 334.49629 | 12.30584 | 0.1302006 | 2.7199864 | 45 | 4 | 1998–2006 | 0.79 | M-v | 1 | MPC | 95194 | 2004 $FE_{33}$ |
| 2004 $FM_{33}$ | 16.4 | 0.15 | 20060922 | 331.97647 | 195.79670 | 247.45656 | 5.04664 | 0.1097962 | 2.3548723 | 60 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 74309 | 2004 $FM_{33}$ |
| 2004 $FB_{34}$ | 15.3 | 0.15 | 20060922 | 0.90177 | 141.46352 | 223.11163 | 4.59440 | 0.0641475 | 2.7750004 | 85 | 7 | 1997–2006 | 0.52 | M-v | 1 | MPC | 86399 | 2004 $FB_{34}$ |
| 2004 $FJ_{34}$ | 15.5 | 0.15 | 20060922 | 153.51354 | 8.51966 | 192.50478 | 22.20661 | 0.0657301 | 3.0694834 | 67 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 04302 | 2004 $FJ_{34}$ |
| 2004 $FL_{34}$ | 16.1 | 0.15 | 20060922 | 115.18593 | 253.49068 | 66.89771 | 4.38161 | 0.1077743 | 2.3960899 | 60 | 6 | 1993–2006 | 0.49 | M-v | 1 | MPC | 87623 | 2004 $FL_{34}$ |
| 2004 $FT_{34}$ | 15.9 | 0.15 | 20060922 | 253.38140 | 328.79592 | 161.39657 | 7.87704 | 0.1493777 | 2.6048343 | 54 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 86399 | 2004 $FT_{34}$ |
| 2004 $FW_{34}$ | 17.3 | 0.15 | 20060922 | 240.16207 | 87.76648 | 136.97023 | 4.00852 | 0.1084801 | 2.2138645 | 48 | 3 | 2004–2006 | 0.44 | M-v | 3 | MPC | 86399 | 2004 $FW_{34}$ |
| 2004 $FE_{35}$ | 14.8 | 0.15 | 20060922 | 336.22492 | 21.98002 | 343.76112 | 21.32769 | 0.0174263 | 3.1326416 | 69 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 03617 | 2004 $FE_{35}$ |
| 2004 $FJ_{35}$ | 15.9 | 0.15 | 20060922 | 182.57897 | 28.13342 | 198.96972 | 10.92654 | 0.0750510 | 2.5310068 | 75 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 86400 | 2004 $FJ_{35}$ |
| 2004 $FL_{35}$ | 16.5 | 0.15 | 20060922 | 260.74439 | 302.27535 | 177.91627 | 14.60239 | 0.2317923 | 2.6045992 | 61 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 89531 | 2004 $FL_{35}$ |
| 2004 $FM_{35}$ | 15.8 | 0.15 | 20060922 | 262.99292 | 274.82195 | 179.33582 | 16.48802 | 0.1977230 | 2.7987755 | 38 | 5 | 2001–2006 | 0.61 | M-v | 0 | MPC | 86400 | 2004 $FM_{35}$ |
| 2004 $FW_{35}$ | 15.8 | 0.15 | 20060922 | 189.43361 | 106.72385 | 79.41802 | 2.89302 | 0.1804978 | 2.8532055 | 94 | 5 | 1994–2006 | 0.43 | M-v | 1 | MPC | 87623 | 2004 $FW_{35}$ |
| 2004 $FY_{35}$ | 15.6 | 0.15 | 20060922 | 152.24963 | 135.04477 | 105.14389 | 5.50897 | 0.0733294 | 2.7820700 | 63 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 86401 | 2004 $FY_{35}$ |
| 2004 $FE_{36}$ | 17.2 | 0.15 | 20060922 | 267.06851 | 147.60276 | 29.33430 | 7.73310 | 0.0488889 | 2.2915981 | 48 | 4 | 1995–2005 | 0.64 | M-v | 2 | MPC | 86401 | 2004 $FE_{36}$ |
| 2004 $FH_{36}$ | 17.2 | 0.15 | 20060922 | 202.38293 | 183.77898 | 79.14744 | 3.35866 | 0.1464182 | 2.2846246 | 38 | 4 | 1998–2005 | 0.56 | M-v | 1 | MPC | 89531 | 2004 $FH_{36}$ |
| 2004 $FK_{36}$ | 16.8 | 0.15 | 20060922 | 213.78796 | 168.12472 | 70.73798 | 3.18754 | 0.1533750 | 2.3424473 | 70 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 97702 | 2004 $FK_{36}$ |
| 2004 $FY_{36}$ | 17.1 | 0.15 | 20060922 | 247.87522 | 102.28485 | 75.10898 | 4.36784 | 0.1065029 | 2.4846473 | 52 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 66349 | 2004 $FY_{36}$ |
| 2004 $FB_{37}$ | 15.6 | 0.15 | 20060922 | 36.76508 | 191.90292 | 169.02111 | 12.04543 | 0.1963120 | 2.5686639 | 67 | 5 | 2000–2006 | 0.50 | M-v | 0 | MPC | 87623 | 2004 $FB_{37}$ |
| 2004 $FC_{37}$ | 17.6 | 0.15 | 20060922 | 298.17563 | 59.33244 | 43.81191 | 1.89137 | 0.1464826 | 2.4314648 | 64 | 3 | 2002–2006 | 0.33 | M-v | 1 | MPC | 95195 | 2004 $FC_{37}$ |
| 2004 $FD_{37}$ | 17.6 | 0.15 | 20060922 | 189.71189 | 220.36185 | 23.47348 | 2.68989 | 0.1550614 | 2.4261915 | 42 | 3 | 1996–2005 | 0.52 | M-v | 3 | MPC | 86402 | 2004 $FD_{37}$ |
| 2004 $FH_{37}$ | 16.8 | 0.15 | 20060922 | 338.05450 | 27.30664 | 50.74386 | 2.16811 | 0.1458860 | 2.3237235 | 64 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 65637 | 2004 $FH_{37}$ |
| 2004 $FO_{37}$ | 15.8 | 0.15 | 20060922 | 347.48312 | 221.48272 | 168.30279 | 13.33446 | 0.0403522 | 2.7330617 | 59 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 65638 | 2004 $FO_{37}$ |
| 2004 $FS_{37}$ | 16.2 | 0.15 | 20060922 | 77.71985 | 181.05218 | 168.47536 | 10.16119 | 0.0855974 | 2.3541796 | 38 | 4 | 1998–2005 | 0.59 | M-v | 1 | MPC | 03618 | 2004 $FS_{37}$ |
| 2004 $FD_{38}$ | 15.2 | 0.15 | 20060922 | 58.26676 | 150.04001 | 137.59759 | 4.24570 | 0.0186970 | 3.2054953 | 36 | 2 | 2004–2006 | 0.61 | M-v | 3 | MPC | 03618 | 2004 $FD_{38}$ |
| 2004 $FF_{38}$ | 15.0 | 0.15 | 20060922 | 199.98524 | 299.14649 | 207.88045 | 13.61036 | 0.0675811 | 3.0916520 | 29 | 4 | 1995–2006 | 0.67 | M-v | 1 | MPC | 69699 | 2004 $FF_{38}$ |
| 2004 $FH_{38}$ | 16.0 | 0.15 | 20060922 | 192.34867 | 288.52644 | 331.82854 | 6.13370 | 0.0944065 | 2.3103973 | 68 | 5 | 1998–2005 | 0.61 | M-v | 1 | MPC | 90194 | 2004 $FH_{38}$ |
| 2004 $FM_{38}$ | 14.5 | 0.15 | 20060922 | 207.95257 | 185.70842 | 322.60969 | 7.08753 | 0.0943468 | 2.9876846 | 58 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 04302 | 2004 $FM_{38}$ |
| 2004 $FE_{39}$ | 17.1 | 0.15 | 20060922 | 217.88564 | 94.52746 | 106.29902 | 2.10971 | 0.1276257 | 2.4675867 | 45 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 89532 | 2004 $FE_{39}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $FG_{39}$ | 16.2 | 0.15 | 20060922 | 322.87825 | 281.91685 | 129.56460 | 3.08471 | 0.0309650 | 2.7762053 | 39 | 3 | 1999–2006 | 0.40 | M-v | 3 | MPC | 69699 | 2004 $FG_{39}$ |
| 2004 $FE_{40}$ | 16.8 | 0.15 | 20060922 | 211.02024 | 312.13905 | 290.52245 | 4.91620 | 0.0543573 | 2.2470081 | 59 | 3 | 2004–2006 | 0.40 | M-v | 2 | MPC | 86403 | 2004 $FE_{40}$ |
| 2004 $FN_{40}$ | 16.0 | 0.15 | 20060922 | 299.60421 | 70.87823 | 344.33395 | 11.51722 | 0.0959210 | 2.7253901 | 61 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 04302 | 2004 $FN_{40}$ |
| 2004 $FE_{41}$ | 16.6 | 0.15 | 20060922 | 332.95745 | 79.73223 | 3.43816 | 2.28352 | 0.1915117 | 2.3297788 | 66 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 66349 | 2004 $FE_{41}$ |
| 2004 $FF_{41}$ | 17.2 | 0.15 | 20060922 | 211.94348 | 189.78273 | 34.96710 | 3.06358 | 0.0777362 | 2.3753886 | 26 | 3 | 1998–2004 | 0.57 | M-v | 4 | MPC | 89532 | 2004 $FF_{41}$ |
| 2004 $FK_{41}$ | 16.6 | 0.15 | 20060922 | 179.58738 | 41.17343 | 170.66441 | 6.73213 | 0.0248944 | 2.6695514 | 32 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 95195 | 2004 $FK_{41}$ |
| 2004 $FP_{41}$ | 16.6 | 0.15 | 20060922 | 210.66331 | 116.60420 | 120.08858 | 3.21670 | 0.1694382 | 2.3848710 | 75 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 86404 | 2004 $FP_{41}$ |
| 2004 $FZ_{41}$ | 16.3 | 0.15 | 20060922 | 252.34793 | 315.55347 | 145.84424 | 9.99331 | 0.1913877 | 2.7785365 | 25 | 3 | 1999–2004 | 0.32 | M-v | 1 | MPC | 69699 | 2004 $FZ_{41}$ |
| 2004 $FM_{42}$ | 17.7 | 0.15 | 20060922 | 234.70665 | 9.59450 | 146.78864 | 1.64648 | 0.1318297 | 2.4699053 | 25 | 4 | 1998–2006 | 0.38 | M-v | 1 | MPC | 00713 | 2004 $FM_{42}$ |
| 2004 $FP_{42}$ | 15.8 | 0.15 | 20060922 | 94.63498 | 337.58838 | 254.31096 | 2.44666 | 0.0949080 | 3.1569032 | 29 | 5 | 2001–2006 | 0.46 | M-v | 0 | MPC | 04302 | 2004 $FP_{42}$ |
| 2004 $FR_{43}$ | 16.3 | 0.15 | 20060922 | 131.43495 | 254.75780 | 62.36759 | 3.93368 | 0.1583081 | 2.3376530 | 55 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 95195 | 2004 $FR_{43}$ |
| 2004 $FF_{44}$ | 15.2 | 0.15 | 20060922 | 160.03401 | 223.67503 | 349.28827 | 4.97037 | 0.0841694 | 2.9216391 | 51 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 62098 | 2004 $FF_{44}$ |
| 2004 $FG_{44}$ | 16.9 | 0.15 | 20060922 | 218.13517 | 228.72677 | 314.42557 | 2.75076 | 0.1535906 | 2.5893976 | 36 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 03618 | 2004 $FG_{44}$ |
| 2004 $FN_{44}$ | 15.9 | 0.15 | 20060922 | 144.71645 | 83.89716 | 163.06763 | 11.83203 | 0.0644252 | 2.7100565 | 44 | 4 | 1992–2006 | 0.66 | M-v | 1 | MPC | 65640 | 2004 $FN_{44}$ |
| 2004 $FO_{44}$ | 15.3 | 0.15 | 20060922 | 143.89322 | 184.67536 | 30.26174 | 11.25521 | 0.0986264 | 3.0595322 | 55 | 4 | 1996–2006 | 0.59 | M-v | 3 | MPC | 66349 | 2004 $FO_{44}$ |
| 2004 $FP_{44}$ | 16.1 | 0.15 | 20060922 | 222.91206 | 108.13474 | 137.65454 | 4.97796 | 0.1559859 | 2.2382191 | 95 | 6 | 1997–2006 | 0.57 | M-v | 1 | MPC | 90194 | 2004 $FP_{44}$ |
| 2004 $FG_{45}$ | 17.1 | 0.15 | 20060922 | 286.95092 | 66.44286 | 80.85768 | 3.74521 | 0.1049122 | 2.3297538 | 59 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 87624 | 2004 $FG_{45}$ |
| 2004 $FT_{45}$ | 16.8 | 0.15 | 20060922 | 253.48992 | 22.09897 | 147.20494 | 5.81573 | 0.1231313 | 2.4785073 | 31 | 3 | 2000–2006 | 0.45 | M-v | 2 | MPC | 65642 | 2004 $FT_{45}$ |
| 2004 $FW_{45}$ | 16.4 | 0.15 | 20060922 | 190.96664 | 195.13686 | 72.87726 | 5.18049 | 0.1331782 | 2.3773471 | 88 | 7 | 1993–2006 | 0.52 | M-v | 1 | MPC | 97702 | 2004 $FW_{45}$ |
| 2004 $FN_{46}$ | 16.1 | 0.15 | 20060922 | 168.92209 | 14.02076 | 208.10816 | 8.52874 | 0.2485258 | 2.8528555 | 78 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 87624 | 2004 $FN_{46}$ |
| 2004 $FO_{46}$ | 16.7 | 0.15 | 20060922 | 247.49085 | 302.39317 | 283.41936 | 1.87731 | 0.1367958 | 2.2077914 | 65 | 5 | 1998–2006 | 0.64 | M-v | 2 | MPC | 90194 | 2004 $FO_{46}$ |
| 2004 $FQ_{46}$ | 15.7 | 0.15 | 20060922 | 132.84496 | 275.58157 | 307.98889 | 3.46372 | 0.1289351 | 3.1962734 | 58 | 7 | 1994–2006 | 0.51 | M-v | 0 | MPC | 87624 | 2004 $FQ_{46}$ |
| 2004 $FS_{46}$ | 17.0 | 0.15 | 20060922 | 265.15297 | 271.56919 | 311.05940 | 2.19108 | 0.1078217 | 2.1419628 | 60 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 89532 | 2004 $FS_{46}$ |
| 2004 $FX_{46}$ | 16.4 | 0.15 | 20060922 | 236.79485 | 246.53023 | 3.44967 | 6.08014 | 0.1675567 | 2.2129417 | 62 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 89532 | 2004 $FX_{46}$ |
| 2004 $FG_{47}$ | 16.6 | 0.15 | 20060922 | 186.76766 | 164.62336 | 114.06827 | 5.50624 | 0.1491406 | 2.2367657 | 34 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 62101 | 2004 $FG_{47}$ |
| 2004 $FD_{48}$ | 14.6 | 0.15 | 20060922 | 342.23423 | 34.59204 | 333.81250 | 13.24837 | 0.2026693 | 2.7666774 | 133 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04302 | 2004 $FD_{48}$ |
| 2004 $FP_{48}$ | 17.9 | 0.15 | 20060922 | 288.42205 | 315.86487 | 171.95095 | 4.48996 | 0.1243005 | 2.3548422 | 35 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 65643 | 2004 $FP_{48}$ |
| 2004 $FZ_{48}$ | 15.7 | 0.15 | 20060922 | 120.90434 | 253.08702 | 327.81723 | 6.69468 | 0.0905596 | 3.1899470 | 45 | 4 | 1998–2006 | 0.44 | M-v | 1 | MPC | 03618 | 2004 $FZ_{48}$ |
| 2004 $FC_{49}$ | 15.4 | 0.15 | 20060922 | 230.30120 | 267.03043 | 197.11752 | 9.03805 | 0.1134362 | 3.0474500 | 40 | 4 | 2001–2005 | 0.63 | M-v | 1 | MPC | 89533 | 2004 $FC_{49}$ |
| 2004 $FH_{49}$ | 16.0 | 0.15 | 20060922 | 123.56826 | 21.84016 | 235.46018 | 2.16081 | 0.0207411 | 2.7393770 | 90 | 5 | 1997–2006 | 0.46 | M-v | 0 | MPC | 66349 | 2004 $FH_{49}$ |
| 2004 $FV_{49}$ | 18.0 | 0.15 | 20060922 | 278.31918 | 312.81869 | 210.25026 | 4.75372 | 0.1854184 | 2.2713318 | 44 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 65644 | 2004 $FV_{49}$ |
| 2004 $FE_{50}$ | 17.8 | 0.15 | 20060922 | 254.01623 | 234.40581 | 310.84704 | 1.52022 | 0.1519809 | 2.3346276 | 28 | 3 | 1998–2004 | 0.44 | M-v | 3 | MPC | 87624 | 2004 $FE_{50}$ |
| 2004 $FN_{50}$ | 16.5 | 0.15 | 20060922 | 259.94292 | 218.10651 | 336.77491 | 2.98265 | 0.1678722 | 2.2926572 | 84 | 5 | 1995–2006 | 0.43 | M-v | 1 | MPC | 87624 | 2004 $FN_{50}$ |
| 2004 $FO_{50}$ | 14.9 | 0.15 | 20060922 | 173.99402 | 184.39472 | 7.36993 | 5.19731 | 0.1075728 | 3.0635846 | 77 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 66349 | 2004 $FO_{50}$ |
| 2004 $FR_{50}$ | 15.5 | 0.15 | 20060922 | 94.30893 | 122.61278 | 158.31254 | 11.54288 | 0.1171541 | 3.0454698 | 44 | 5 | 1999–2006 | 0.59 | M-v | 0 | MPC | 86407 | 2004 $FR_{50}$ |
| 2004 $FC_{51}$ | 16.8 | 0.15 | 20060922 | 220.86390 | 144.51992 | 95.23262 | 4.48109 | 0.1338915 | 2.2928391 | 59 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 90194 | 2004 $FC_{51}$ |
| 2004 $FG_{51}$ | 16.6 | 0.15 | 20060922 | 203.81572 | 182.68423 | 22.04950 | 6.65455 | 0.0755236 | 2.4163467 | 36 | 5 | 1993–2006 | 0.43 | M-v | 2 | MPC | 86408 | 2004 $FG_{51}$ |
| 2004 $FP_{51}$ | 16.5 | 0.15 | 20060922 | 138.26677 | 55.86922 | 150.44623 | 14.59488 | 0.1682117 | 3.0988909 | 29 | 3 | 1999–2004 | 0.53 | M-v | 2 | MPC | 73000 | 2004 $FP_{51}$ |
| 2004 $FZ_{51}$ | 15.7 | 0.15 | 20060922 | 126.14348 | 84.24874 | 152.87149 | 5.38443 | 0.1430931 | 3.0784071 | 27 | 3 | 2004–2006 | 0.66 | M-v | 3 | MPC | 86408 | 2004 $FZ_{51}$ |
| 2004 $FD_{52}$ | 16.7 | 0.15 | 20060922 | 267.82825 | 9.89707 | 163.41736 | 5.27872 | 0.1300644 | 2.3106675 | 51 | 4 | 1995–2005 | 0.49 | M-v | 2 | MPC | 86408 | 2004 $FD_{52}$ |
| 2004 $FH_{52}$ | 15.7 | 0.15 | 20060922 | 145.47913 | 36.31288 | 200.64059 | 8.33900 | 0.2156741 | 2.8598635 | 47 | 3 | 2004–2006 | 0.49 | M-v | 3 | MPC | 86408 | 2004 $FH_{52}$ |
| 2004 $FL_{52}$ | 16.3 | 0.15 | 20060922 | 116.91550 | 148.82924 | 99.50328 | 2.99380 | 0.1385892 | 3.0678183 | 35 | 3 | 2004–2006 | 0.49 | M-v | 3 | MPC | 89533 | 2004 $FL_{52}$ |
| 2004 $FO_{52}$ | 15.3 | 0.15 | 20060922 | 185.58425 | 1.75302 | 172.84953 | 13.39310 | 0.0267342 | 2.9735057 | 55 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04302 | 2004 $FO_{52}$ |
| 2004 $FC_{53}$ | 16.7 | 0.15 | 20060922 | 296.23507 | 55.93677 | 94.20473 | 3.89113 | 0.0705738 | 2.3167647 | 42 | 6 | 1993–2006 | 0.51 | M-v | 1 | MPC | 87624 | 2004 $FC_{53}$ |
| 2004 $FF_{53}$ | 16.1 | 0.15 | 20060922 | 196.68854 | 293.20312 | 212.36636 | 1.34770 | 0.0566785 | 3.0049518 | 25 | 3 | 1996–2006 | 0.42 | M-v | 4 | MPC | 89533 | 2004 $FF_{53}$ |
| 2004 $FJ_{53}$ | 16.9 | 0.15 | 20060922 | 121.05490 | 40.33172 | 171.15841 | 9.43292 | 0.0397292 | 3.0294108 | 20 | 3 | 2001–2005 | 0.44 | M-v | 2 | MPC | 86409 | 2004 $FJ_{53}$ |
| 2004 $FU_{53}$ | 17.0 | 0.15 | 20060922 | 324.30362 | 21.27190 | 22.72432 | 6.27768 | 0.0289401 | 2.7423699 | 37 | 3 | 1997–2006 | 0.30 | M-v | 2 | MPC | 76457 | 2004 $FU_{53}$ |
| 2004 $FZ_{53}$ | 15.9 | 0.15 | 20060922 | 343.64829 | 46.26169 | 339.97682 | 5.31282 | 0.0736114 | 2.7087211 | 60 | 5 | 1993–2006 | 0.41 | M-v | 1 | MPC | 74310 | 2004 $FZ_{53}$ |
| 2004 $FU_{55}$ | 16.0 | 0.15 | 20060922 | 216.89476 | 58.03164 | 112.04054 | 5.67059 | 0.0510162 | 2.7263454 | 51 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 86409 | 2004 $FU_{55}$ |
| 2004 $FA_{56}$ | 15.3 | 0.15 | 20060922 | 346.64071 | 241.88489 | 163.79840 | 9.44946 | 0.0940545 | 2.6462165 | 59 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 69701 | 2004 $FA_{56}$ |
| 2004 $FM_{56}$ | 15.8 | 0.15 | 20060922 | 161.11154 | 31.94422 | 180.58722 | 10.00291 | 0.0158333 | 2.9594946 | 43 | 3 | 2001–2006 | 0.29 | M-v | 2 | MPC | 04302 | 2004 $FM_{56}$ |
| 2004 $FR_{56}$ | 15.3 | 0.15 | 20060922 | 138.60595 | 147.35312 | 95.86510 | 5.66608 | 0.1388736 | 3.0408681 | 56 | 4 | 1999–2006 | 0.72 | M-v | 1 | MPC | 65647 | 2004 $FR_{56}$ |
| 2004 $FH_{58}$ | 16.8 | 0.15 | 20060922 | 188.76647 | 196.39930 | 58.11952 | 1.82530 | 0.1392345 | 2.3998167 | 66 | 5 | 1998–2006 | 0.41 | M-v | 1 | MPC | 02203 | 2004 $FH_{58}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $FK_{58}$ | 16.9 | 0.15 | 20060922 | 265.22419 | 69.22548 | 121.27014 | 1.30194 | 0.1425732 | 2.2781844 | 92 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 90194 | 2004 $FK_{58}$ |
| 2004 $FO_{58}$ | 15.6 | 0.15 | 20060922 | 109.17777 | 112.21434 | 134.53339 | 1.98308 | 0.0636557 | 3.0827032 | 48 | 6 | 1999–2006 | 0.39 | M-v | 0 | MPC | 66350 | 2004 $FO_{58}$ |
| 2004 $FP_{58}$ | 16.7 | 0.15 | 20060922 | 149.07056 | 100.68173 | 162.74032 | 4.17210 | 0.1387606 | 2.6052471 | 33 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 87624 | 2004 $FP_{58}$ |
| 2004 $FJ_{59}$ | 16.1 | 0.15 | 20060922 | 327.61777 | 331.65445 | 101.97791 | 6.55307 | 0.2115151 | 2.3482012 | 82 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 03618 | 2004 $FJ_{59}$ |
| 2004 $FP_{59}$ | 15.6 | 0.15 | 20060922 | 82.35185 | 88.47781 | 182.03241 | 16.07656 | 0.0366152 | 3.1062195 | 39 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 76457 | 2004 $FP_{59}$ |
| 2004 $FQ_{59}$ | 16.5 | 0.15 | 20060922 | 141.67286 | 75.39750 | 182.15490 | 1.21606 | 0.2079938 | 2.7906587 | 37 | 3 | 1999–2005 | 0.55 | M-v | 3 | MPC | 89534 | 2004 $FQ_{59}$ |
| 2004 $FO_{60}$ | 16.9 | 0.15 | 20060922 | 290.30894 | 100.36113 | 38.49958 | 2.96453 | 0.1318775 | 2.3515151 | 63 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 62106 | 2004 $FO_{60}$ |
| 2004 $FG_{61}$ | 16.8 | 0.15 | 20060922 | 178.44383 | 159.64491 | 30.25046 | 1.68107 | 0.1680924 | 2.8588284 | 29 | 4 | 1999–2006 | 0.65 | M-v | 2 | MPC | 03619 | 2004 $FG_{61}$ |
| 2004 $FH_{61}$ | 17.1 | 0.15 | 20060922 | 293.49156 | 321.35407 | 138.50320 | 2.95397 | 0.1685757 | 2.4707277 | 59 | 5 | 1995–2006 | 0.54 | M-v | 0 | MPC | 73000 | 2004 $FH_{61}$ |
| 2004 $FP_{61}$ | 16.0 | 0.15 | 20060922 | 57.97772 | 327.56252 | 6.56973 | 22.05881 | 0.0536555 | 2.6596232 | 37 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87624 | 2004 $FP_{61}$ |
| 2004 $FV_{61}$ | 17.1 | 0.15 | 20060922 | 203.51085 | 174.79378 | 64.15058 | 2.36921 | 0.0846407 | 2.3401676 | 43 | 4 | 1998–2006 | 0.46 | M-v | 1 | MPC | 86410 | 2004 $FV_{61}$ |
| 2004 $FY_{61}$ | 15.9 | 0.15 | 20060922 | 185.74836 | 137.48366 | 46.74168 | 4.86592 | 0.0294896 | 2.8643112 | 37 | 4 | 1992–2006 | 0.56 | M-v | 2 | MPC | 03619 | 2004 $FY_{61}$ |
| 2004 $FH_{62}$ | 16.9 | 0.15 | 20060922 | 211.10203 | 140.58328 | 79.29176 | 3.32246 | 0.1473629 | 2.4502050 | 54 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 86410 | 2004 $FH_{62}$ |
| 2004 $FR_{62}$ | 15.6 | 0.15 | 20060922 | 225.40604 | 108.60261 | 45.33961 | 4.34175 | 0.0352489 | 2.7749527 | 91 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 62107 | 2004 $FR_{62}$ |
| 2004 $FS_{62}$ | 16.8 | 0.15 | 20060922 | 271.20449 | 101.35363 | 32.76649 | 3.88005 | 0.0770839 | 2.5233527 | 70 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 62107 | 2004 $FS_{62}$ |
| 2004 $FT_{62}$ | 15.9 | 0.15 | 20060922 | 152.91226 | 117.89328 | 86.09017 | 2.26690 | 0.1640679 | 3.1009152 | 44 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 89534 | 2004 $FT_{62}$ |
| 2004 $FW_{62}$ | 15.5 | 0.15 | 20060922 | 101.79999 | 190.21003 | 150.45892 | 3.29158 | 0.1919444 | 2.3999848 | 146 | 6 | 1997–2006 | 0.60 | M-v | 1 | MPC | 97702 | 2004 $FW_{62}$ |
| 2004 $FC_{63}$ | 16.1 | 0.15 | 20060922 | 162.53361 | 104.74538 | 104.10384 | 2.80008 | 0.0803176 | 2.9966096 | 42 | 5 | 1993–2006 | 0.45 | M-v | 0 | MPC | 87624 | 2004 $FC_{63}$ |
| 2004 $FJ_{63}$ | 16.1 | 0.15 | 20060922 | 162.68646 | 229.36128 | 23.96011 | 7.38142 | 0.1129241 | 2.6166762 | 69 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 87624 | 2004 $FJ_{63}$ |
| 2004 $FM_{63}$ | 15.9 | 0.15 | 20060922 | 173.60126 | 62.27067 | 159.25547 | 5.21519 | 0.1123283 | 2.7616155 | 60 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 87625 | 2004 $FM_{63}$ |
| 2004 $FP_{63}$ | 15.7 | 0.15 | 20060922 | 198.85583 | 351.61882 | 171.48255 | 11.60018 | 0.0739583 | 3.0064976 | 71 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04302 | 2004 $FP_{63}$ |
| 2004 $FT_{63}$ | 16.3 | 0.15 | 20060922 | 162.98735 | 86.20636 | 175.23001 | 12.52134 | 0.1457095 | 2.5896573 | 63 | 3 | 2001–2005 | 0.56 | M-v | 2 | MPC | 97702 | 2004 $FT_{63}$ |
| 2004 $FU_{63}$ | 16.8 | 0.15 | 20060922 | 201.90129 | 166.15909 | 83.30630 | 2.43868 | 0.1553984 | 2.3810110 | 50 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 90194 | 2004 $FU_{63}$ |
| 2004 $FV_{63}$ | 15.5 | 0.15 | 20060922 | 186.76755 | 150.68844 | 31.52169 | 10.52402 | 0.0372200 | 2.9785446 | 46 | 4 | 1996–2006 | 0.56 | M-v | 3 | MPC | 65649 | 2004 $FV_{63}$ |
| 2004 $FC_{64}$ | 16.5 | 0.15 | 20060922 | 215.17110 | 105.22358 | 156.99612 | 3.47351 | 0.1220441 | 2.2282171 | 109 | 4 | 1998–2005 | 0.64 | M-v | 2 | MPC | 90194 | 2004 $FC_{64}$ |
| 2004 $FH_{64}$ | 17.0 | 0.15 | 20060922 | 211.58614 | 205.70710 | 48.63202 | 5.11982 | 0.1347647 | 2.2914085 | 43 | 4 | 1998–2005 | 0.51 | M-v | 1 | MPC | 90194 | 2004 $FH_{64}$ |
| 2004 $FL_{64}$ | 16.1 | 0.15 | 20060922 | 270.27179 | 286.95315 | 186.27597 | 14.10149 | 0.1715995 | 2.6866613 | 49 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 87625 | 2004 $FL_{64}$ |
| 2004 $FM_{64}$ | 16.9 | 0.15 | 20060922 | 319.72497 | 46.46995 | 71.56667 | 3.29825 | 0.1177144 | 2.3231282 | 32 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 86412 | 2004 $FM_{64}$ |
| 2004 $FF_{65}$ | 17.5 | 0.15 | 20060922 | 333.73648 | 0.80629 | 120.05574 | 3.23715 | 0.0793375 | 2.2247840 | 35 | 4 | 2001–2005 | 0.66 | M-v | 1 | MPC | 03619 | 2004 $FF_{65}$ |
| 2004 $FM_{65}$ | 16.9 | 0.15 | 20060922 | 264.57079 | 66.93920 | 61.93766 | 4.66341 | 0.2327770 | 2.5480012 | 28 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 69701 | 2004 $FM_{65}$ |
| 2004 $FQ_{65}$ | 15.8 | 0.15 | 20060922 | 123.05512 | 80.34299 | 187.33918 | 10.34074 | 0.2440561 | 3.0818494 | 49 | 4 | 2003–2006 | 0.50 | M-v | 1 | MPC | 97702 | 2004 $FQ_{65}$ |
| 2004 $FR_{66}$ | 16.1 | 0.15 | 20060922 | 149.10143 | 124.57075 | 125.90502 | 4.78471 | 0.0593120 | 2.6260226 | 36 | 3 | 2004–2006 | 0.45 | M-v | 3 | MPC | 86413 | 2004 $FR_{66}$ |
| 2004 $FB_{67}$ | 16.3 | 0.15 | 20060922 | 189.37909 | 196.81638 | 20.09725 | 15.36935 | 0.0645651 | 2.5683191 | 46 | 4 | 2000–2006 | 0.62 | M-v | 2 | MPC | 66350 | 2004 $FB_{67}$ |
| 2004 $FP_{67}$ | 16.9 | 0.15 | 20060922 | 154.09555 | 101.81255 | 143.04738 | 3.91810 | 0.0998479 | 2.6812662 | 45 | 5 | 1995–2006 | 0.49 | M-v | 0 | MPC | 86413 | 2004 $FP_{67}$ |
| 2004 $FW_{67}$ | 15.9 | 0.15 | 20060922 | 206.45779 | 74.38722 | 134.50205 | 5.30260 | 0.1371708 | 2.6030081 | 59 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90194 | 2004 $FW_{67}$ |
| 2004 $FZ_{67}$ | 15.9 | 0.15 | 20060922 | 256.84589 | 21.06729 | 116.74462 | 5.46929 | 0.2109264 | 2.5964125 | 49 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 87625 | 2004 $FZ_{67}$ |
| 2004 $FZ_{68}$ | 17.4 | 0.15 | 20060922 | 208.88252 | 310.12910 | 220.90533 | 3.60839 | 0.0690671 | 2.7103135 | 33 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 76459 | 2004 $FZ_{68}$ |
| 2004 $FP_{69}$ | 17.6 | 0.15 | 20060922 | 320.80700 | 51.06568 | 47.55414 | 2.92503 | 0.1669695 | 2.3849848 | 52 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 89535 | 2004 $FP_{69}$ |
| 2004 $FR_{69}$ | 16.8 | 0.15 | 20060922 | 155.39080 | 205.97705 | 59.93051 | 2.18539 | 0.1390939 | 2.6230972 | 44 | 5 | 1999–2006 | 0.55 | M-v | 0 | MPC | 86414 | 2004 $FR_{69}$ |
| 2004 $FF_{70}$ | 16.4 | 0.15 | 20060922 | 253.02042 | 270.89324 | 213.25371 | 1.88338 | 0.1338844 | 2.7729707 | 48 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 65652 | 2004 $FF_{70}$ |
| 2004 $FY_{72}$ | 16.5 | 0.15 | 20060922 | 101.00981 | 80.96532 | 183.19284 | 4.97442 | 0.1388767 | 3.0360319 | 25 | 4 | 1995–2006 | 0.52 | M-v | 0 | MPC | 77780 | 2004 $FY_{72}$ |
| 2004 $FM_{74}$ | 16.7 | 0.15 | 20060922 | 145.15289 | 287.65026 | 328.38273 | 1.90663 | 0.0721718 | 2.6133548 | 42 | 5 | 1997–2006 | 0.46 | M-v | 0 | MPC | 86415 | 2004 $FM_{74}$ |
| 2004 $FN_{74}$ | 16.0 | 0.15 | 20060922 | 355.88806 | 161.76116 | 185.62833 | 9.79484 | 0.0660491 | 3.1426247 | 25 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 86415 | 2004 $FN_{74}$ |
| 2004 $FT_{75}$ | 16.5 | 0.15 | 20060922 | 325.25810 | 99.75325 | 298.32151 | 0.95375 | 0.0739815 | 2.8664964 | 35 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 04302 | 2004 $FT_{75}$ |
| 2004 $FR_{76}$ | 16.0 | 0.15 | 20060922 | 208.70437 | 322.15695 | 177.45941 | 11.52289 | 0.0475555 | 2.9720643 | 45 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 04302 | 2004 $FR_{76}$ |
| 2004 $FB_{77}$ | 16.5 | 0.15 | 20060922 | 118.58232 | 86.66583 | 180.47480 | 8.84188 | 0.0985028 | 2.7635763 | 33 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 73001 | 2004 $FB_{77}$ |
| 2004 $FW_{77}$ | 16.6 | 0.15 | 20060922 | 295.54485 | 2.71236 | 112.33384 | 2.12318 | 0.1388981 | 2.3695853 | 102 | 3 | 2000–2006 | 0.55 | M-v | 2 | MPC | 62114 | 2004 $FW_{77}$ |
| 2004 $FP_{78}$ | 17.4 | 0.15 | 20060922 | 166.37959 | 279.61845 | 3.81382 | 4.03764 | 0.1350627 | 2.3526541 | 40 | 2 | 2004–2005 | 0.29 | M-v | 3 | MPC | 90194 | 2004 $FP_{78}$ |
| 2004 $FW_{78}$ | 17.5 | 0.15 | 20060922 | 202.00009 | 253.74198 | 7.30524 | 3.81350 | 0.0973145 | 2.2455687 | 46 | 4 | 1994–2005 | 0.34 | M-v | 1 | MPC | 04302 | 2004 $FW_{78}$ |
| 2004 $FQ_{79}$ | 16.8 | 0.15 | 20060922 | 286.30186 | 265.26224 | 187.73431 | 13.12953 | 0.1522806 | 2.5790480 | 44 | 4 | 2000–2006 | 0.39 | M-v | 0 | MPC | 69702 | 2004 $FQ_{79}$ |
| 2004 $FO_{80}$ | 17.2 | 0.15 | 20060922 | 203.66463 | 125.50473 | 125.95892 | 2.10475 | 0.1566547 | 2.3657234 | 32 | 4 | 2000–2005 | 0.59 | M-v | 1 | MPC | 87625 | 2004 $FO_{80}$ |
| 2004 $FQ_{80}$ | 16.8 | 0.15 | 20060922 | 225.04840 | 172.26582 | 42.28699 | 2.77434 | 0.1536687 | 2.4132141 | 70 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 97703 | 2004 $FQ_{80}$ |
| 2004 $FZ_{80}$ | 15.2 | 0.15 | 20060922 | 136.59266 | 116.61719 | 105.51130 | 6.95616 | 0.1148442 | 3.2023584 | 54 | 6 | 1992–2006 | 0.57 | M-v | 0 | MPC | 87625 | 2004 $FZ_{80}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $FD_{81}$ | 14.8 | 0.15 | 20060922 | 123.31444 | 181.79688 | 58.41348 | 16.20209 | 0.0303450 | 3.1160928 | 63 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 02203 | 2004 $FD_{81}$ |
| 2004 $FF_{81}$ | 16.4 | 0.15 | 20060922 | 169.71895 | 92.50844 | 127.61281 | 5.79663 | 0.0979366 | 2.7870107 | 47 | 3 | 2004–2006 | 0.48 | M-v | 2 | MPC | 86417 | 2004 $FF_{81}$ |
| 2004 $FH_{81}$ | 15.1 | 0.15 | 20060922 | 356.41603 | 229.54298 | 177.19167 | 28.65883 | 0.1558384 | 2.5655843 | 40 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 69702 | 2004 $FH_{81}$ |
| 2004 $FO_{81}$ | 15.5 | 0.15 | 20060922 | 177.21661 | 117.71407 | 102.21079 | 6.23435 | 0.0814799 | 2.7190486 | 47 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 86417 | 2004 $FO_{81}$ |
| 2004 $FC_{82}$ | 16.4 | 0.15 | 20060922 | 8.49916 | 326.59131 | 74.00760 | 6.80710 | 0.0892355 | 2.3795152 | 48 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 65653 | 2004 $FC_{82}$ |
| 2004 $FE_{82}$ | 15.4 | 0.15 | 20060922 | 110.09592 | 202.34082 | 67.60332 | 7.88072 | 0.0962022 | 2.7487851 | 49 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 69703 | 2004 $FE_{82}$ |
| 2004 $FH_{82}$ | 15.9 | 0.15 | 20060922 | 115.34496 | 214.97333 | 55.91473 | 8.77649 | 0.1906161 | 2.8062761 | 65 | 3 | 2004–2006 | 0.41 | M-v | 2 | MPC | 86417 | 2004 $FH_{82}$ |
| 2004 $FJ_{82}$ | 16.3 | 0.15 | 20060922 | 331.79400 | 36.44921 | 21.47630 | 14.94928 | 0.0499623 | 2.5417424 | 45 | 3 | 2002–2006 | 0.62 | M-v | 3 | MPC | 69703 | 2004 $FJ_{82}$ |
| 2004 $FM_{82}$ | 16.1 | 0.15 | 20060922 | 74.56440 | 159.92711 | 145.07438 | 13.68736 | 0.1324508 | 2.7726306 | 34 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 86417 | 2004 $FM_{82}$ |
| 2004 $FH_{83}$ | 17.7 | 0.15 | 20060922 | 226.50972 | 50.10384 | 178.81048 | 2.13000 | 0.0947738 | 2.1631340 | 31 | 3 | 2002–2005 | 0.45 | M-v | 3 | MPC | 86418 | 2004 $FH_{83}$ |
| 2004 $FR_{83}$ | 15.6 | 0.15 | 20060922 | 140.61811 | 158.97964 | 82.23275 | 9.98054 | 0.0787484 | 2.6204663 | 24 | 3 | 2001–2006 | 0.39 | M-v | 2 | MPC | 86418 | 2004 $FR_{83}$ |
| 2004 $FR_{84}$ | 16.6 | 0.15 | 20060922 | 173.91102 | 261.03807 | 319.82884 | 3.26914 | 0.0738661 | 2.6811815 | 46 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 86418 | 2004 $FR_{84}$ |
| 2004 $FP_{85}$ | 16.2 | 0.15 | 20060922 | 237.96968 | 81.39943 | 60.23126 | 6.32530 | 0.1324487 | 2.7265628 | 32 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 65654 | 2004 $FP_{85}$ |
| 2004 $FT_{85}$ | 17.3 | 0.15 | 20060922 | 352.21180 | 337.08705 | 108.69690 | 7.42482 | 0.0448039 | 2.1968742 | 36 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 87625 | 2004 $FT_{85}$ |
| 2004 $FX_{85}$ | 16.9 | 0.15 | 20060922 | 332.91156 | 11.39260 | 67.38535 | 6.38528 | 0.1263155 | 2.3033417 | 45 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 73001 | 2004 $FX_{85}$ |
| 2004 $FB_{86}$ | 15.7 | 0.15 | 20060922 | 133.78667 | 127.94760 | 135.83950 | 15.33438 | 0.0778717 | 2.5616059 | 47 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87625 | 2004 $FB_{86}$ |
| 2004 $FU_{86}$ | 16.9 | 0.15 | 20060922 | 46.10885 | 316.21508 | 68.00162 | 7.15549 | 0.0448400 | 2.2967725 | 44 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87625 | 2004 $FU_{86}$ |
| 2004 $FV_{87}$ | 17.3 | 0.15 | 20060922 | 265.64771 | 92.69196 | 49.81211 | 3.11460 | 0.1409454 | 2.4525661 | 44 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 69704 | 2004 $FV_{87}$ |
| 2004 $FX_{89}$ | 16.1 | 0.15 | 20060922 | 277.08624 | 329.43668 | 156.10544 | 11.24051 | 0.0330799 | 2.5686162 | 38 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 86419 | 2004 $FX_{89}$ |
| 2004 $FZ_{89}$ | 15.4 | 0.15 | 20060922 | 266.74605 | 291.19841 | 168.79840 | 16.06812 | 0.1654173 | 2.7853603 | 64 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04302 | 2004 $FZ_{89}$ |
| 2004 $FC_{90}$ | 17.2 | 0.15 | 20060922 | 212.63196 | 161.14415 | 98.05271 | 5.04191 | 0.1382106 | 2.2569017 | 43 | 4 | 1999–2006 | 0.57 | M-v | 2 | MPC | 89535 | 2004 $FC_{90}$ |
| 2004 $FQ_{90}$ | 15.4 | 0.15 | 20060922 | 219.72081 | 265.06710 | 249.87544 | 23.57760 | 0.1650040 | 2.7111048 | 29 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 65654 | 2004 $FQ_{90}$ |
| 2004 $FF_{91}$ | 16.6 | 0.15 | 20060922 | 178.29147 | 129.58948 | 131.61609 | 6.95923 | 0.1152826 | 2.4224686 | 46 | 4 | 1995–2005 | 0.62 | M-v | 2 | MPC | 86420 | 2004 $FF_{91}$ |
| 2004 $FO_{91}$ | 17.7 | 0.15 | 20060922 | 300.63985 | 352.90504 | 159.98324 | 4.48202 | 0.0497262 | 2.2165500 | 37 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 95198 | 2004 $FO_{91}$ |
| 2004 $FP_{91}$ | 16.1 | 0.15 | 20060922 | 254.18323 | 77.19492 | 35.15434 | 4.74533 | 0.0794101 | 2.8077818 | 38 | 5 | 1992–2006 | 0.54 | M-v | 1 | MPC | 04302 | 2004 $FP_{91}$ |
| 2004 $FW_{91}$ | 16.0 | 0.15 | 20060922 | 237.66339 | 125.89020 | 39.69431 | 7.02325 | 0.1115616 | 2.6145139 | 88 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 66351 | 2004 $FW_{91}$ |
| 2004 $FL_{92}$ | 15.8 | 0.15 | 20060922 | 220.83425 | 311.32846 | 180.36718 | 12.60902 | 0.0297052 | 3.0413600 | 29 | 5 | 1995–2006 | 0.49 | M-v | 0 | MPC | 89536 | 2004 $FL_{92}$ |
| 2004 $FV_{92}$ | 15.8 | 0.15 | 20060922 | 151.76778 | 209.47165 | 346.30426 | 0.67542 | 0.1153383 | 3.2155941 | 54 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 66351 | 2004 $FV_{92}$ |
| 2004 $FW_{92}$ | 16.0 | 0.15 | 20060922 | 130.48612 | 266.03693 | 334.54168 | 3.13755 | 0.1145668 | 2.9874342 | 42 | 5 | 1993–2006 | 0.48 | M-v | 1 | MPC | 04303 | 2004 $FW_{92}$ |
| 2004 $FY_{92}$ | 16.0 | 0.15 | 20060922 | 74.24662 | 162.23336 | 191.30740 | 2.15012 | 0.2090166 | 2.4392834 | 65 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 97703 | 2004 $FY_{92}$ |
| 2004 $FR_{93}$ | 17.3 | 0.15 | 20060922 | 247.92762 | 43.87596 | 141.03821 | 3.17972 | 0.1200435 | 2.3728787 | 38 | 4 | 1998–2006 | 0.46 | M-v | 1 | MPC | 89536 | 2004 $FR_{93}$ |
| 2004 $FA_{94}$ | 16.4 | 0.15 | 20060922 | 289.10760 | 4.85449 | 122.58717 | 3.84650 | 0.1208094 | 2.4454015 | 65 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 86421 | 2004 $FA_{94}$ |
| 2004 $FB_{94}$ | 17.3 | 0.15 | 20060922 | 264.62799 | 128.93824 | 45.34652 | 5.98819 | 0.1265415 | 2.3699719 | 61 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 65656 | 2004 $FB_{94}$ |
| 2004 $FH_{94}$ | 15.2 | 0.15 | 20060922 | 90.18468 | 81.06957 | 181.86360 | 9.13583 | 0.0457819 | 3.1682329 | 55 | 5 | 1998–2006 | 0.46 | M-v | 0 | MPC | 04303 | 2004 $FH_{94}$ |
| 2004 $FM_{94}$ | 15.9 | 0.15 | 20060922 | 210.21640 | 11.61458 | 199.11034 | 6.72712 | 0.1819349 | 2.5937678 | 97 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 86422 | 2004 $FM_{94}$ |
| 2004 $FV_{94}$ | 14.6 | 0.15 | 20060922 | 115.47958 | 158.43574 | 83.46304 | 11.89419 | 0.0563266 | 2.9665531 | 43 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 69704 | 2004 $FV_{94}$ |
| 2004 $FB_{96}$ | 16.4 | 0.15 | 20060922 | 292.86163 | 73.63285 | 34.29357 | 10.45213 | 0.0620166 | 2.4317140 | 75 | 5 | 1993–2006 | 0.50 | M-v | 1 | MPC | 97703 | 2004 $FB_{96}$ |
| 2004 $FG_{96}$ | 16.7 | 0.15 | 20060922 | 186.96936 | 161.92496 | 91.66994 | 8.14016 | 0.0916766 | 2.3229563 | 33 | 6 | 1995–2006 | 0.60 | M-v | 1 | MPC | 86422 | 2004 $FG_{96}$ |
| 2004 $FS_{96}$ | 16.0 | 0.15 | 20060922 | 143.13088 | 193.40723 | 104.65995 | 9.65759 | 0.1400883 | 2.3726212 | 57 | 3 | 2004–2006 | 0.49 | M-v | 2 | MPC | 90195 | 2004 $FS_{96}$ |
| 2004 $FK_{97}$ | 15.6 | 0.15 | 20060922 | 98.16251 | 249.15649 | 39.95845 | 10.46376 | 0.0587988 | 2.7451965 | 57 | 3 | 2001–2006 | 0.43 | M-v | 1 | MPC | 65656 | 2004 $FK_{97}$ |
| 2004 $FR_{97}$ | 16.7 | 0.15 | 20060922 | 306.87126 | 34.17692 | 108.91974 | 7.03578 | 0.0627393 | 2.2342662 | 59 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 86423 | 2004 $FR_{97}$ |
| 2004 $FQ_{98}$ | 15.8 | 0.15 | 20060922 | 71.91064 | 248.18878 | 58.05398 | 3.58425 | 0.0914740 | 2.7933114 | 54 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 65657 | 2004 $FQ_{98}$ |
| 2004 $FR_{98}$ | 15.8 | 0.15 | 20060922 | 325.26834 | 249.84722 | 157.49948 | 5.57468 | 0.1210012 | 2.7283797 | 61 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 04303 | 2004 $FR_{98}$ |
| 2004 $FU_{98}$ | 17.8 | 0.15 | 20060922 | 340.79445 | 307.06626 | 158.81805 | 3.40160 | 0.0949354 | 2.2138710 | 26 | 4 | 2001–2006 | 0.38 | M-v | 2 | MPC | 73002 | 2004 $FU_{98}$ |
| 2004 $FB_{99}$ | 16.2 | 0.15 | 20060922 | 149.59081 | 230.74928 | 16.09145 | 5.13343 | 0.1095224 | 2.5408235 | 42 | 5 | 2000–2006 | 0.38 | M-v | 0 | MPC | 86424 | 2004 $FB_{99}$ |
| 2004 $FL_{99}$ | 16.3 | 0.15 | 20060922 | 185.21518 | 120.65300 | 93.39655 | 9.24063 | 0.1063857 | 2.8474764 | 28 | 5 | 2001–2006 | 0.44 | M-v | 1 | MPC | 95198 | 2004 $FL_{99}$ |
| 2004 $FD_{100}$ | 16.6 | 0.15 | 20060922 | 13.90192 | 64.32054 | 305.92425 | 0.87167 | 0.1063122 | 2.7055813 | 59 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 66351 | 2004 $FD_{100}$ |
| 2004 $FV_{101}$ | 16.7 | 0.15 | 20060922 | 308.10000 | 45.66780 | 38.29089 | 3.34815 | 0.1089652 | 2.5471279 | 73 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 69705 | 2004 $FV_{101}$ |
| 2004 $FZ_{101}$ | 15.6 | 0.15 | 20060922 | 212.87499 | 265.77071 | 290.82117 | 9.57222 | 0.1257128 | 2.6249025 | 52 | 4 | 2001–2006 | 0.61 | M-v | 2 | MPC | 87626 | 2004 $FZ_{101}$ |
| 2004 $FA_{102}$ | 15.6 | 0.15 | 20060922 | 216.93577 | 213.33086 | 326.82808 | 9.53703 | 0.2180182 | 2.7060589 | 58 | 5 | 2001–2006 | 0.65 | M-v | 1 | MPC | 86424 | 2004 $FA_{102}$ |
| 2004 $FQ_{102}$ | 16.5 | 0.15 | 20060922 | 297.60382 | 53.99324 | 55.21146 | 3.14900 | 0.1106170 | 2.3628584 | 85 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 65658 | 2004 $FQ_{102}$ |
| 2004 $FR_{102}$ | 17.0 | 0.15 | 20060922 | 347.42784 | 14.93126 | 45.86411 | 4.01830 | 0.1329528 | 2.3676748 | 55 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 69705 | 2004 $FR_{102}$ |
| 2004 $FA_{103}$ | 16.7 | 0.15 | 20060922 | 303.46162 | 229.54062 | 165.96326 | 1.27719 | 0.0562920 | 3.0736740 | 31 | 3 | 2001–2006 | 0.36 | M-v | 3 | MPC | 04303 | 2004 $FA_{103}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $FN_{103}$ | 16.0 | 0.15 | 20060922 | 182.07065 | 0.18227 | 177.38403 | 2.62928 | 0.0503910 | 2.9949664 | 47 | 4 | 1991–2006 | 0.47 | M-v | 1 | MPC | 04303 | 2004 $FN_{103}$ |
| 2004 $FK_{104}$ | 16.4 | 0.15 | 20060922 | 186.66632 | 10.52525 | 172.06842 | 3.79694 | 0.0359670 | 2.8092577 | 69 | 4 | 1997–2006 | 0.42 | M-v | 2 | MPC | 62122 | 2004 $FK_{104}$ |
| 2004 $FV_{104}$ | 15.8 | 0.15 | 20060922 | 115.96661 | 195.60217 | 46.85319 | 10.04260 | 0.0870811 | 3.0705380 | 26 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 62122 | 2004 $FV_{104}$ |
| 2004 $FX_{104}$ | 16.6 | 0.15 | 20060922 | 279.85950 | 70.69731 | 88.55424 | 7.09412 | 0.1453111 | 2.3426496 | 56 | 4 | 1997–2006 | 0.46 | M-v | 1 | MPC | 66352 | 2004 $FX_{104}$ |
| 2004 $FE_{105}$ | 14.9 | 0.15 | 20060922 | 139.12012 | 194.09849 | 18.38229 | 2.57896 | 0.0577544 | 3.2333042 | 39 | 6 | 1992–2006 | 0.60 | M-v | 1 | MPC | 86425 | 2004 $FE_{105}$ |
| 2004 $FN_{105}$ | 15.3 | 0.15 | 20060922 | 261.45066 | 262.63721 | 227.48762 | 20.96871 | 0.1269660 | 2.6472501 | 65 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 66352 | 2004 $FN_{105}$ |
| 2004 $FB_{106}$ | 17.2 | 0.15 | 20060922 | 321.27238 | 325.59482 | 120.71508 | 6.94140 | 0.0747665 | 2.4166258 | 29 | 3 | 2002–2006 | 0.44 | M-v | 1 | MPC | 00714 | 2004 $FB_{106}$ |
| 2004 $FH_{106}$ | 16.1 | 0.15 | 20060922 | 166.87327 | 217.75505 | 14.82662 | 12.84301 | 0.1405476 | 2.7798410 | 57 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87626 | 2004 $FH_{106}$ |
| 2004 $FR_{106}$ | 16.4 | 0.15 | 20060922 | 200.06020 | 187.67157 | 65.63235 | 4.37998 | 0.0613998 | 2.3166260 | 60 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 87626 | 2004 $FR_{106}$ |
| 2004 $FV_{106}$ | 16.6 | 0.15 | 20060922 | 300.70812 | 184.35189 | 280.85577 | 1.54992 | 0.1357109 | 2.4648328 | 54 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 73002 | 2004 $FV_{106}$ |
| 2004 $FA_{107}$ | 16.0 | 0.15 | 20060922 | 158.96285 | 53.11222 | 200.61503 | 10.20748 | 0.1482714 | 2.6637719 | 32 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 97703 | 2004 $FA_{107}$ |
| 2004 $FC_{107}$ | 16.6 | 0.15 | 20060922 | 162.37151 | 290.56485 | 335.68045 | 3.61511 | 0.2322077 | 2.6184054 | 35 | 4 | 1995–2005 | 0.75 | M-v | 2 | MPC | 90195 | 2004 $FC_{107}$ |
| 2004 $FJ_{107}$ | 14.9 | 0.15 | 20060922 | 141.00779 | 227.52505 | 6.63436 | 12.12613 | 0.0548586 | 2.9754419 | 79 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04303 | 2004 $FJ_{107}$ |
| 2004 $FL_{107}$ | 16.6 | 0.15 | 20060922 | 227.46203 | 354.56457 | 228.98991 | 1.79330 | 0.1199836 | 2.3562425 | 87 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 97703 | 2004 $FL_{107}$ |
| 2004 $FO_{107}$ | 16.5 | 0.15 | 20060922 | 335.54954 | 170.70742 | 297.70247 | 1.40350 | 0.0925333 | 2.2752764 | 46 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 66352 | 2004 $FO_{107}$ |
| 2004 $FS_{107}$ | 16.9 | 0.15 | 20060922 | 201.77606 | 251.84459 | 38.32295 | 4.54421 | 0.1553350 | 2.1877731 | 75 | 4 | 1995–2005 | 0.62 | M-v | 1 | MPC | 97703 | 2004 $FS_{107}$ |
| 2004 $FW_{107}$ | 15.3 | 0.15 | 20060922 | 58.25276 | 284.75531 | 24.21087 | 9.17082 | 0.0581732 | 3.0507245 | 49 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 86426 | 2004 $FW_{107}$ |
| 2004 $FM_{108}$ | 16.8 | 0.15 | 20060922 | 282.29429 | 93.37259 | 352.51784 | 5.09334 | 0.1942831 | 2.6296250 | 34 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 03619 | 2004 $FM_{108}$ |
| 2004 $FT_{108}$ | 16.3 | 0.15 | 20060922 | 127.41930 | 237.38797 | 44.06003 | 3.16649 | 0.1380382 | 2.7453146 | 41 | 5 | 1993–2006 | 0.39 | M-v | 0 | MPC | 89537 | 2004 $FT_{108}$ |
| 2004 $FH_{109}$ | 15.4 | 0.15 | 20060922 | 218.10020 | 121.44374 | 35.74586 | 2.47803 | 0.0315890 | 2.8429474 | 56 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 66352 | 2004 $FH_{109}$ |
| 2004 $FJ_{109}$ | 15.2 | 0.15 | 20060922 | 192.98235 | 329.94463 | 189.18753 | 12.85198 | 0.0583695 | 3.1352185 | 70 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 04303 | 2004 $FJ_{109}$ |
| 2004 $FL_{109}$ | 17.3 | 0.15 | 20060922 | 246.85883 | 192.10906 | 4.80489 | 3.66533 | 0.1751985 | 2.3347722 | 34 | 3 | 1998–2005 | 0.63 | M-v | 4 | MPC | 86427 | 2004 $FL_{109}$ |
| 2004 $FM_{109}$ | 16.6 | 0.15 | 20060922 | 286.06136 | 114.45248 | 14.97267 | 7.12597 | 0.1558031 | 2.4125858 | 82 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 66352 | 2004 $FM_{109}$ |
| 2004 $FV_{109}$ | 16.0 | 0.15 | 20060922 | 207.79375 | 350.86491 | 190.35740 | 14.61007 | 0.1676767 | 2.7522127 | 58 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 65661 | 2004 $FV_{109}$ |
| 2004 $FB_{110}$ | 16.1 | 0.15 | 20060922 | 179.10374 | 26.17082 | 216.10534 | 13.33015 | 0.1926560 | 2.6407028 | 52 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 65661 | 2004 $FB_{110}$ |
| 2004 $FF_{110}$ | 15.9 | 0.15 | 20060922 | 170.28242 | 59.97131 | 193.74043 | 2.19446 | 0.2055169 | 2.6804223 | 105 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 87626 | 2004 $FF_{110}$ |
| 2004 $FN_{110}$ | 15.8 | 0.15 | 20060922 | 298.89169 | 8.31488 | 85.53533 | 3.80646 | 0.1827269 | 2.5504741 | 66 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 86427 | 2004 $FN_{110}$ |
| 2004 $FX_{110}$ | 17.2 | 0.15 | 20060922 | 261.21184 | 305.29759 | 233.31840 | 1.01108 | 0.1254045 | 2.3454184 | 45 | 6 | 1993–2006 | 0.48 | M-v | 1 | MPC | 87626 | 2004 $FX_{110}$ |
| 2004 $FK_{111}$ | 16.0 | 0.15 | 20060922 | 225.28010 | 295.05664 | 213.44748 | 5.51317 | 0.0140616 | 2.8053150 | 79 | 6 | 1992–2006 | 0.51 | M-v | 1 | MPC | 66352 | 2004 $FK_{111}$ |
| 2004 $FC_{112}$ | 16.0 | 0.15 | 20060922 | 185.75901 | 336.16798 | 181.25721 | 10.68758 | 0.0413564 | 3.1569400 | 31 | 3 | 2001–2006 | 0.30 | M-v | 2 | MPC | 04303 | 2004 $FC_{112}$ |
| 2004 $FE_{112}$ | 16.2 | 0.15 | 20060922 | 303.24658 | 35.85642 | 24.39153 | 1.95202 | 0.0611515 | 2.8775229 | 33 | 4 | 1999–2006 | 0.36 | M-v | 1 | MPC | 04303 | 2004 $FE_{112}$ |
| 2004 $FM_{112}$ | 17.2 | 0.15 | 20060922 | 198.72725 | 264.66536 | 358.55806 | 6.79811 | 0.1026983 | 2.2534618 | 49 | 2 | 2004–2005 | 0.44 | M-v | 3 | MPC | 90195 | 2004 $FM_{112}$ |
| 2004 $FQ_{112}$ | 16.2 | 0.15 | 20060922 | 109.59992 | 78.60582 | 193.10535 | 6.30597 | 0.0269165 | 2.7923539 | 57 | 3 | 2001–2006 | 0.37 | M-v | 2 | MPC | 62128 | 2004 $FQ_{112}$ |
| 2004 $FX_{115}$ | 15.3 | 0.15 | 20060922 | 161.04586 | 133.76429 | 56.49854 | 11.10002 | 0.0430396 | 3.1035267 | 45 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 04303 | 2004 $FX_{115}$ |
| 2004 $FZ_{115}$ | 15.6 | 0.15 | 20060922 | 274.48577 | 318.72072 | 139.70946 | 10.57017 | 0.0975390 | 2.7669318 | 40 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 74310 | 2004 $FZ_{115}$ |
| 2004 $FC_{116}$ | 16.7 | 0.15 | 20060922 | 190.82654 | 228.22551 | 64.17064 | 7.44291 | 0.2056851 | 2.2258150 | 54 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 97703 | 2004 $FC_{116}$ |
| 2004 $FO_{116}$ | 15.6 | 0.15 | 20060922 | 190.32188 | 75.66242 | 125.99067 | 10.02832 | 0.0638907 | 2.7495900 | 49 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 86428 | 2004 $FO_{116}$ |
| 2004 $FK_{117}$ | 16.8 | 0.15 | 20060922 | 276.28033 | 290.16968 | 247.48028 | 3.23425 | 0.0104633 | 2.2114076 | 43 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 90195 | 2004 $FK_{117}$ |
| 2004 $FZ_{117}$ | 16.7 | 0.15 | 20060922 | 262.75076 | 92.81546 | 46.93687 | 3.17715 | 0.0961049 | 2.5389716 | 57 | 6 | 1996–2006 | 0.62 | M-v | 1 | MPC | 65664 | 2004 $FZ_{117}$ |
| 2004 $FB_{118}$ | 15.7 | 0.15 | 20060922 | 263.54836 | 21.78231 | 83.61416 | 3.23868 | 0.0168799 | 2.8932747 | 37 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 86429 | 2004 $FB_{118}$ |
| 2004 $FK_{118}$ | 16.5 | 0.15 | 20060922 | 279.01698 | 35.18322 | 117.15638 | 3.32776 | 0.1216817 | 2.3599460 | 40 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 87626 | 2004 $FK_{118}$ |
| 2004 $FN_{118}$ | 15.9 | 0.15 | 20060922 | 215.58023 | 55.33263 | 114.39306 | 2.99233 | 0.1529093 | 2.7916184 | 55 | 6 | 1994–2006 | 0.46 | M-v | 1 | MPC | 86429 | 2004 $FN_{118}$ |
| 2004 $FU_{118}$ | 15.3 | 0.15 | 20060922 | 230.31898 | 314.67598 | 174.45295 | 8.97781 | 0.0623054 | 3.1000319 | 44 | 6 | 1998–2006 | 0.53 | M-v | 0 | MPC | 86429 | 2004 $FU_{118}$ |
| 2004 $FC_{119}$ | 16.7 | 0.15 | 20060922 | 266.59618 | 84.91966 | 20.51311 | 3.42153 | 0.1296586 | 2.6353484 | 40 | 3 | 2002–2006 | 0.49 | M-v | 2 | MPC | 04303 | 2004 $FC_{119}$ |
| 2004 $FS_{119}$ | 16.1 | 0.15 | 20060922 | 325.88138 | 4.21268 | 16.82955 | 1.73265 | 0.0568523 | 3.1333405 | 33 | 5 | 1993–2006 | 0.45 | M-v | 1 | MPC | 04303 | 2004 $FS_{119}$ |
| 2004 $FR_{120}$ | 15.2 | 0.15 | 20060922 | 174.92061 | 17.85849 | 159.83768 | 14.44413 | 0.1155646 | 3.1625936 | 47 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 65665 | 2004 $FR_{120}$ |
| 2004 $FZ_{120}$ | 15.2 | 0.15 | 20060922 | 150.62122 | 65.81826 | 139.84229 | 7.96802 | 0.0966633 | 3.1765488 | 49 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 04303 | 2004 $FZ_{120}$ |
| 2004 $FD_{121}$ | 16.1 | 0.15 | 20060922 | 149.93449 | 110.65223 | 152.07765 | 13.36697 | 0.1077943 | 2.6744625 | 49 | 5 | 1995–2005 | 0.66 | M-v | 1 | MPC | 86430 | 2004 $FD_{121}$ |
| 2004 $FS_{121}$ | 16.3 | 0.15 | 20060922 | 237.84756 | 314.79938 | 178.75289 | 8.64959 | 0.0921931 | 2.8133891 | 44 | 6 | 1994–2006 | 0.41 | M-v | 0 | MPC | 66353 | 2004 $FS_{121}$ |
| 2004 $FR_{122}$ | 15.9 | 0.15 | 20060922 | 255.13661 | 240.43819 | 243.79864 | 13.18856 | 0.1878639 | 2.6719984 | 53 | 5 | 1998–2006 | 0.61 | M-v | 1 | MPC | 66353 | 2004 $FR_{122}$ |
| 2004 $FW_{122}$ | 15.5 | 0.15 | 20060922 | 199.18653 | 255.52628 | 306.40006 | 7.69981 | 0.1293812 | 2.6746948 | 49 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 90195 | 2004 $FW_{122}$ |
| 2004 $FF_{123}$ | 16.0 | 0.15 | 20060922 | 82.45524 | 114.22998 | 177.64606 | 5.06353 | 0.1955548 | 3.0452436 | 44 | 5 | 1995–2006 | 0.34 | M-v | 0 | MPC | 87626 | 2004 $FF_{123}$ |
| 2004 $FF_{124}$ | 17.6 | 0.15 | 20060922 | 313.67122 | 172.83098 | 297.27343 | 0.95816 | 0.1405082 | 2.3556472 | 31 | 4 | 2000–2006 | 0.37 | M-v | 0 | MPC | 69708 | 2004 $FF_{124}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $FS_{124}$ | 15.0 | 0.15 | 20060922 | 47.38737 | 120.44539 | 179.48248 | 8.51145 | 0.0621940 | 3.1763733 | 73 | 3 | 1993–2006 | 0.47 | M-v | 2 | MPC | 03619 | 2004 $FS_{124}$ |
| 2004 $FX_{124}$ | 15.8 | 0.15 | 20060922 | 321.84935 | 225.80944 | 201.58773 | 5.31358 | 0.0285490 | 2.7023822 | 87 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 65667 | 2004 $FX_{124}$ |
| 2004 $FN_{125}$ | 16.1 | 0.15 | 20060922 | 9.08663 | 217.84631 | 166.13794 | 2.25529 | 0.1102916 | 2.6444148 | 86 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 66353 | 2004 $FN_{125}$ |
| 2004 $FS_{125}$ | 16.7 | 0.15 | 20060922 | 150.12110 | 121.04527 | 187.23006 | 7.34750 | 0.1303418 | 2.3085840 | 98 | 3 | 1998–2005 | 0.57 | M-v | 2 | MPC | 97703 | 2004 $FS_{125}$ |
| 2004 $FY_{125}$ | 15.9 | 0.15 | 20060922 | 266.23014 | 107.05134 | 8.66638 | 12.94038 | 0.1673433 | 2.6374455 | 68 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 65667 | 2004 $FY_{125}$ |
| 2004 $FD_{126}$ | 16.0 | 0.15 | 20060922 | 347.30259 | 39.87724 | 15.70319 | 7.72478 | 0.0810945 | 2.5553583 | 44 | 3 | 2000–2006 | 0.57 | M-v | 4 | MPC | 69708 | 2004 $FD_{126}$ |
| 2004 $FU_{126}$ | 16.1 | 0.15 | 20060922 | 293.07139 | 267.28870 | 176.50494 | 4.47765 | 0.0567921 | 2.7965504 | 46 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04303 | 2004 $FU_{126}$ |
| 2004 $FD_{127}$ | 16.0 | 0.15 | 20060922 | 34.81064 | 338.20932 | 17.83896 | 3.31199 | 0.1017670 | 2.6632616 | 48 | 3 | 2001–2006 | 0.57 | M-v | 4 | MPC | 69709 | 2004 $FD_{127}$ |
| 2004 $FJ_{127}$ | 16.5 | 0.15 | 20060922 | 170.75751 | 269.80051 | 307.47721 | 2.05160 | 0.1050676 | 2.7946043 | 46 | 4 | 1994–2006 | 0.38 | M-v | 0 | MPC | 04303 | 2004 $FJ_{127}$ |
| 2004 $FT_{127}$ | 15.7 | 0.15 | 20060922 | 122.41965 | 280.94624 | 9.56309 | 12.64571 | 0.2032744 | 2.7249476 | 42 | 3 | 1995–2005 | 0.60 | M-v | 2 | MPC | 97703 | 2004 $FT_{127}$ |
| 2004 $FW_{127}$ | 17.2 | 0.15 | 20060922 | 188.15440 | 102.61378 | 107.32480 | 0.88717 | 0.0446228 | 2.6658003 | 45 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 90195 | 2004 $FW_{127}$ |
| 2004 $FX_{127}$ | 17.0 | 0.15 | 20060922 | 244.76690 | 271.48782 | 295.54416 | 2.41806 | 0.1059904 | 2.2911861 | 46 | 3 | 2004–2006 | 0.50 | M-v | 3 | MPC | 86435 | 2004 $FX_{127}$ |
| 2004 $FJ_{128}$ | 16.9 | 0.15 | 20060922 | 153.68891 | 69.83534 | 199.76620 | 12.36849 | 0.2404861 | 2.6653539 | 29 | 2 | 2004–2005 | 0.40 | M-v | 3 | MPC | 90195 | 2004 $FJ_{128}$ |
| 2004 $FQ_{128}$ | 16.0 | 0.15 | 20060922 | 202.13127 | 112.42502 | 106.22059 | 11.15171 | 0.1621374 | 2.5626799 | 71 | 4 | 1996–2006 | 0.48 | M-v | 3 | MPC | 66353 | 2004 $FQ_{128}$ |
| 2004 $FR_{129}$ | 16.4 | 0.15 | 20060922 | 216.52920 | 290.67289 | 311.90914 | 4.71427 | 0.0564361 | 2.2283113 | 43 | 3 | 2004–2006 | 0.58 | M-v | 3 | MPC | 86436 | 2004 $FR_{129}$ |
| 2004 $FS_{129}$ | 14.9 | 0.15 | 20060922 | 112.48375 | 336.16223 | 272.12891 | 4.92089 | 0.0378793 | 3.0319497 | 55 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 66353 | 2004 $FS_{129}$ |
| 2004 $FV_{129}$ | 16.0 | 0.15 | 20060922 | 202.50859 | 122.23300 | 73.82531 | 13.61078 | 0.1141486 | 2.6445248 | 46 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 87626 | 2004 $FV_{129}$ |
| 2004 $FF_{130}$ | 16.2 | 0.15 | 20060922 | 248.00711 | 352.85613 | 161.93033 | 13.85800 | 0.0847829 | 2.6133715 | 53 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 86436 | 2004 $FF_{130}$ |
| 2004 $FG_{130}$ | 16.9 | 0.15 | 20060922 | 315.61379 | 21.77449 | 120.07004 | 6.73862 | 0.0829706 | 2.2158353 | 47 | 6 | 1997–2006 | 0.43 | M-v | 0 | MPC | 87626 | 2004 $FG_{130}$ |
| 2004 $FR_{130}$ | 15.8 | 0.15 | 20060922 | 149.05497 | 184.11875 | 111.00250 | 9.39604 | 0.1615886 | 2.4751729 | 77 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 90195 | 2004 $FR_{130}$ |
| 2004 $FX_{130}$ | 15.5 | 0.15 | 20060922 | 217.60991 | 40.42676 | 125.32975 | 13.61779 | 0.0745667 | 2.7739475 | 33 | 4 | 2003–2006 | 0.61 | M-v | 1 | MPC | 86437 | 2004 $FX_{130}$ |
| 2004 $FW_{131}$ | 16.7 | 0.15 | 20060922 | 49.20372 | 183.50537 | 151.82639 | 2.14699 | 0.0933980 | 2.6683583 | 38 | 3 | 2001–2006 | 0.33 | M-v | 3 | MPC | 62135 | 2004 $FW_{131}$ |
| 2004 $FZ_{131}$ | 17.4 | 0.15 | 20060922 | 121.17407 | 94.73531 | 162.79375 | 4.78526 | 0.0635757 | 2.7591888 | 40 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 65670 | 2004 $FZ_{131}$ |
| 2004 $FJ_{132}$ | 15.9 | 0.15 | 20060922 | 39.92019 | 90.37381 | 213.11202 | 1.61074 | 0.0624095 | 3.1303577 | 34 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 03620 | 2004 $FJ_{132}$ |
| 2004 $FK_{133}$ | 16.8 | 0.15 | 20060922 | 343.00050 | 319.13422 | 108.97746 | 7.09718 | 0.0885949 | 2.4067636 | 44 | 3 | 2002–2006 | 0.67 | M-v | 2 | MPC | 69709 | 2004 $FK_{133}$ |
| 2004 $FB_{134}$ | 16.6 | 0.15 | 20060922 | 358.83258 | 133.98451 | 307.63904 | 6.36388 | 0.0996707 | 2.2387713 | 47 | 5 | 1997–2006 | 0.50 | M-v | 1 | MPC | 87627 | 2004 $FB_{134}$ |
| 2004 $FH_{134}$ | 15.7 | 0.15 | 20060922 | 129.80477 | 27.40229 | 223.53953 | 13.89135 | 0.1625532 | 2.9526345 | 59 | 6 | 1996–2006 | 0.44 | M-v | 0 | MPC | 86437 | 2004 $FH_{134}$ |
| 2004 $FK_{134}$ | 15.4 | 0.15 | 20060922 | 189.68392 | 245.92950 | 322.53033 | 11.64111 | 0.1082884 | 2.7043321 | 65 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 90196 | 2004 $FK_{134}$ |
| 2004 $FM_{134}$ | 15.2 | 0.15 | 20060922 | 165.75925 | 285.05528 | 270.04669 | 5.79224 | 0.2311351 | 3.0764702 | 60 | 4 | 2002–2006 | 0.42 | M-v | 1 | MPC | 86438 | 2004 $FM_{134}$ |
| 2004 $FN_{134}$ | 16.1 | 0.15 | 20060922 | 205.32562 | 15.82967 | 244.17357 | 9.04948 | 0.1067811 | 2.2818806 | 80 | 3 | 2002–2005 | 0.56 | M-v | 2 | MPC | 90196 | 2004 $FN_{134}$ |
| 2004 $FP_{134}$ | 16.6 | 0.15 | 20060922 | 264.28842 | 280.53871 | 216.95049 | 14.53089 | 0.1168787 | 2.5444034 | 32 | 4 | 1994–2006 | 0.35 | M-v | 2 | MPC | 73003 | 2004 $FP_{134}$ |
| 2004 $FW_{134}$ | 15.8 | 0.15 | 20060922 | 168.29603 | 246.10931 | 356.15462 | 11.27850 | 0.1347741 | 2.7007318 | 42 | 3 | 2001–2005 | 0.47 | M-v | 2 | MPC | 66353 | 2004 $FW_{134}$ |
| 2004 $FX_{134}$ | 16.6 | 0.15 | 20060922 | 232.83073 | 292.69812 | 315.05761 | 5.87082 | 0.1641043 | 2.2243165 | 66 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 90196 | 2004 $FX_{134}$ |
| 2004 $FF_{135}$ | 16.8 | 0.15 | 20060922 | 151.48499 | 101.55869 | 194.05045 | 5.97534 | 0.1602994 | 2.3199662 | 48 | 4 | 1997–2005 | 0.53 | M-v | 1 | MPC | 02203 | 2004 $FF_{135}$ |
| 2004 $FX_{135}$ | 17.2 | 0.15 | 20060922 | 309.29354 | 125.80067 | 8.47196 | 1.77694 | 0.0500099 | 2.2807468 | 32 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 89540 | 2004 $FX_{135}$ |
| 2004 $FZ_{135}$ | 17.2 | 0.15 | 20060922 | 211.43643 | 74.25071 | 179.69914 | 3.00048 | 0.1716368 | 2.3005152 | 32 | 4 | 1997–2005 | 0.58 | M-v | 1 | MPC | 95199 | 2004 $FZ_{135}$ |
| 2004 $FL_{136}$ | 15.5 | 0.15 | 20060922 | 225.16565 | 58.69070 | 129.83421 | 13.74101 | 0.1066062 | 2.6201876 | 59 | 5 | 1995–2006 | 0.61 | M-v | 1 | MPC | 87627 | 2004 $FL_{136}$ |
| 2004 $FV_{136}$ | 14.8 | 0.15 | 20060922 | 101.13808 | 145.10122 | 133.53487 | 17.51258 | 0.1682985 | 3.1829834 | 77 | 6 | 1999–2006 | 0.54 | M-v | 0 | MPC | 87627 | 2004 $FV_{136}$ |
| 2004 $FE_{137}$ | 15.5 | 0.15 | 20060922 | 185.08267 | 84.09835 | 128.63453 | 11.17021 | 0.0677752 | 2.7652764 | 32 | 3 | 2004–2006 | 0.41 | M-v | 3 | MPC | 86439 | 2004 $FE_{137}$ |
| 2004 $FQ_{138}$ | 16.0 | 0.15 | 20060922 | 158.86358 | 42.05343 | 201.10077 | 9.52937 | 0.0563955 | 2.6891131 | 70 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 86439 | 2004 $FQ_{138}$ |
| 2004 $FB_{139}$ | 16.5 | 0.15 | 20060922 | 197.59375 | 217.69424 | 353.00858 | 11.42469 | 0.1395363 | 2.6339879 | 40 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 87627 | 2004 $FB_{139}$ |
| 2004 $FC_{139}$ | 17.5 | 0.15 | 20060922 | 273.20019 | 299.90130 | 172.68666 | 3.56868 | 0.1669096 | 2.5199312 | 47 | 6 | 1994–2006 | 0.44 | M-v | 2 | MPC | 65671 | 2004 $FC_{139}$ |
| 2004 $FF_{139}$ | 15.6 | 0.15 | 20060922 | 106.57472 | 202.46353 | 58.70282 | 2.92630 | 0.0514124 | 3.1234264 | 51 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 65672 | 2004 $FF_{139}$ |
| 2004 $FH_{139}$ | 15.7 | 0.15 | 20060922 | 226.94936 | 105.07807 | 46.41928 | 8.13208 | 0.1660604 | 2.7948683 | 86 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 66354 | 2004 $FH_{139}$ |
| 2004 $FY_{139}$ | 15.4 | 0.15 | 20060922 | 189.91209 | 328.99438 | 271.49746 | 10.76338 | 0.2046302 | 2.5850132 | 63 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 86440 | 2004 $FY_{139}$ |
| 2004 $FZ_{139}$ | 15.8 | 0.15 | 20060922 | 175.18994 | 197.81700 | 41.44974 | 11.58447 | 0.0764389 | 2.7301917 | 42 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 65673 | 2004 $FZ_{139}$ |
| 2004 $FG_{140}$ | 15.3 | 0.15 | 20060922 | 250.07616 | 194.05032 | 290.26461 | 9.24409 | 0.1888765 | 2.5979246 | 70 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 76461 | 2004 $FG_{140}$ |
| 2004 $FQ_{140}$ | 14.8 | 0.15 | 20060922 | 249.53438 | 161.63055 | 321.52223 | 7.74315 | 0.0976513 | 2.8101012 | 47 | 5 | 1994–2006 | 0.60 | M-v | 1 | MPC | 86440 | 2004 $FQ_{140}$ |
| 2004 $FU_{140}$ | 16.9 | 0.15 | 20060922 | 318.74260 | 86.53324 | 3.69421 | 1.11770 | 0.1415932 | 2.3745977 | 64 | 5 | 1991–2006 | 0.53 | M-v | 0 | MPC | 74310 | 2004 $FU_{140}$ |
| 2004 $FZ_{140}$ | 17.3 | 0.15 | 20060922 | 231.53121 | 236.28045 | 344.29457 | 2.12566 | 0.1076463 | 2.3045101 | 40 | 4 | 1998–2006 | 0.54 | M-v | 1 | MPC | 90196 | 2004 $FZ_{140}$ |
| 2004 $FM_{141}$ | 15.6 | 0.15 | 20060922 | 169.81358 | 143.99401 | 41.44135 | 0.95831 | 0.1174732 | 3.1163233 | 44 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 04303 | 2004 $FM_{141}$ |
| 2004 $FS_{141}$ | 16.4 | 0.15 | 20060922 | 151.28800 | 280.05511 | 313.36385 | 2.03073 | 0.2243128 | 3.0163072 | 46 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 86441 | 2004 $FS_{141}$ |
| 2004 $FW_{141}$ | 16.9 | 0.15 | 20060922 | 203.61447 | 301.26659 | 309.81368 | 2.21164 | 0.1686488 | 2.3703829 | 39 | 6 | 1993–2006 | 0.44 | M-v | 0 | MPC | 04303 | 2004 $FW_{141}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $FE_{142}$ | 16.6 | 0.15 | 20060922 | 235.78126 | 13.11416 | 193.39600 | 2.27769 | 0.1507159 | 2.3671786 | 69 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 04303 | 2004 $FE_{142}$ |
| 2004 $FF_{142}$ | 16.2 | 0.15 | 20060922 | 155.10321 | 260.72171 | 15.21966 | 12.07924 | 0.2009210 | 2.6121150 | 60 | 2 | 2004–2005 | 0.66 | M-v | 3 | MPC | 90196 | 2004 $FF_{142}$ |
| 2004 $FD_{143}$ | 16.4 | 0.15 | 20060922 | 220.81270 | 152.46401 | 97.94810 | 6.57429 | 0.1326464 | 2.2889470 | 72 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 90196 | 2004 $FD_{143}$ |
| 2004 $FL_{143}$ | 15.4 | 0.15 | 20060922 | 223.44876 | 223.89336 | 292.17753 | 8.09939 | 0.1570090 | 2.7120017 | 68 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 87627 | 2004 $FL_{143}$ |
| 2004 $FV_{143}$ | 14.8 | 0.15 | 20060922 | 107.06598 | 90.71733 | 191.30447 | 11.69126 | 0.1569502 | 3.1406139 | 74 | 4 | 2000–2006 | 0.55 | M-v | 0 | MPC | 90196 | 2004 $FV_{143}$ |
| 2004 $FZ_{143}$ | 14.8 | 0.15 | 20060922 | 243.32580 | 77.21634 | 45.88586 | 10.90435 | 0.0952010 | 3.0138380 | 75 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 66354 | 2004 $FZ_{143}$ |
| 2004 $FN_{145}$ | 16.4 | 0.15 | 20060922 | 128.38325 | 190.13455 | 35.03594 | 2.37859 | 0.0056129 | 2.9317438 | 20 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 69710 | 2004 $FN_{145}$ |
| 2004 $FU_{145}$ | 15.9 | 0.15 | 20060922 | 161.84833 | 212.82190 | 320.50629 | 3.22531 | 0.0246094 | 3.1553419 | 28 | 3 | 1998–2006 | 0.44 | M-v | 3 | MPC | 03620 | 2004 $FU_{145}$ |
| 2004 $FW_{145}$ | 16.3 | 0.15 | 20060922 | 148.25644 | 320.64750 | 295.31541 | 1.83814 | 0.0404589 | 2.5331641 | 44 | 5 | 2000–2006 | 0.38 | M-v | 0 | MPC | 86443 | 2004 $FW_{145}$ |
| 2004 $FY_{145}$ | 17.0 | 0.15 | 20060922 | 262.84303 | 153.03595 | 17.47601 | 4.83270 | 0.0999511 | 2.3797535 | 46 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 66354 | 2004 $FY_{145}$ |
| 2004 $FA_{146}$ | 18.9 | 0.15 | 20060922 | 287.32391 | 95.33984 | 49.97418 | 3.24721 | 0.1002934 | 2.2966004 | 21 | 3 | 1995–2006 | 0.28 | M-v | 2 | MPC | 73004 | 2004 $FA_{146}$ |
| 2004 $FU_{146}$ | 17.5 | 0.15 | 20040316 | 2.39959 | 163.63241 | 32.31284 | 17.70394 | 0.1584552 | 3.0059903 | 9 | 1 | 31 days | 0.22 | | | MPC | | 2004 $FU_{146}$ |
| 2004 $FC_{148}$ | 14.4 | 0.15 | 20060922 | 139.05891 | 225.37183 | 352.88593 | 15.86593 | 0.0958646 | 3.2029261 | 47 | 6 | 1998–2006 | 0.64 | M-v | 1 | MPC | 87627 | 2004 $FC_{148}$ |
| 2004 $FK_{148}$ | 15.7 | 0.15 | 20060922 | 141.72333 | 167.86788 | 66.07264 | 19.06447 | 0.0799773 | 3.1072122 | 20 | 3 | 2001–2006 | 0.71 | M-v | 3 | MPC | 65679 | 2004 $FK_{148}$ |
| 2004 $FM_{148}$ | 16.2 | 0.15 | 20060922 | 275.47451 | 68.66142 | 48.92497 | 20.02400 | 0.3372566 | 2.4310063 | 52 | 4 | 1995–2006 | 0.61 | M-v | 1 | MPC | 65679 | 2004 $FM_{148}$ |
| 2004 $FW_{149}$ | 15.7 | 0.15 | 20060922 | 108.72487 | 8.76785 | 256.64956 | 6.90618 | 0.0346796 | 2.7338402 | 37 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 69710 | 2004 $FW_{149}$ |
| 2004 $FZ_{151}$ | 17.8 | 0.15 | 20060922 | 271.02854 | 20.33061 | 103.15238 | 1.21440 | 0.1468570 | 2.4095958 | 37 | 3 | 2000–2006 | 0.35 | M-v | 3 | MPC | 73004 | 2004 $FZ_{151}$ |
| 2004 $FS_{154}$ | 15.6 | 0.15 | 20060922 | 227.51683 | 189.27631 | 327.62302 | 12.96430 | 0.1263850 | 2.7128811 | 44 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 86444 | 2004 $FS_{154}$ |
| 2004 $FC_{158}$ | 16.5 | 0.15 | 20060922 | 190.61264 | 233.44830 | 291.30586 | 1.56939 | 0.0008535 | 3.0135026 | 31 | 4 | 1998–2006 | 0.38 | M-v | 1 | MPC | 69711 | 2004 $FC_{158}$ |
| 2004 $FP_{158}$ | 16.7 | 0.15 | 20060922 | 145.09750 | 152.90106 | 120.61561 | 3.72648 | 0.1884251 | 2.4144771 | 39 | 3 | 2000–2005 | 0.34 | M-v | 2 | MPC | 89540 | 2004 $FP_{158}$ |
| 2004 $FW_{158}$ | 16.5 | 0.15 | 20060922 | 197.11564 | 343.04261 | 189.63606 | 3.57982 | 0.0507209 | 2.6479190 | 41 | 5 | 1996–2006 | 0.33 | M-v | 1 | MPC | 86444 | 2004 $FW_{158}$ |
| 2004 $FG_{160}$ | 15.3 | 0.15 | 20060922 | 62.93289 | 169.09884 | 162.02046 | 15.14986 | 0.1986996 | 2.5559569 | 45 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 86445 | 2004 $FG_{160}$ |
| 2004 $FH_{160}$ | 16.3 | 0.15 | 20060922 | 259.42240 | 37.69612 | 83.54708 | 12.54264 | 0.1406703 | 2.5793640 | 39 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 97704 | 2004 $FH_{160}$ |
| 2004 $FL_{160}$ | 17.0 | 0.15 | 20060922 | 201.03766 | 147.68022 | 39.11149 | 0.99126 | 0.0564424 | 2.5501858 | 47 | 5 | 1998–2006 | 0.40 | M-v | 2 | MPC | 86445 | 2004 $FL_{160}$ |
| 2004 $FG_{161}$ | 16.3 | 0.15 | 20060922 | 108.57067 | 272.70770 | 39.74068 | 2.59469 | 0.1728898 | 2.4294670 | 44 | 5 | 1990–2006 | 0.45 | M-v | 1 | MPC | 90196 | 2004 $FG_{161}$ |
| 2004 $FT_{161}$ | 16.5 | 0.15 | 20060922 | 88.76085 | 88.53413 | 178.63287 | 2.18253 | 0.0518338 | 2.9360199 | 35 | 4 | 1999–2006 | 0.33 | M-v | 0 | MPC | 86445 | 2004 $FT_{161}$ |
| 2004 $FU_{161}$ | 17.4 | 0.15 | 20060922 | 305.23791 | 254.60675 | 218.51663 | 1.67772 | 0.1704226 | 2.3554661 | 68 | 4 | 2002–2006 | 0.50 | M-v | 0 | MPC | 87627 | 2004 $FU_{161}$ |
| 2004 $FN_{162}$ | 17.3 | 0.15 | 20060922 | 0.66618 | 356.42410 | 101.90740 | 3.92816 | 0.0871739 | 2.1840752 | 33 | 6 | 1994–2006 | 0.51 | M-v | 1 | MPC | 87627 | 2004 $FN_{162}$ |
| 2004 $FH_{165}$ | 16.3 | 0.15 | 20040405 | 273.60094 | 197.31396 | 93.19472 | 24.80123 | 0.1462116 | 2.3995134 | 16 | 1 | 56 days | 0.51 | | | MPC | | 2004 $FH_{165}$ |
| 2004 GG | 14.9 | 0.15 | 20060922 | 93.24385 | 187.30906 | 105.04400 | 4.70067 | 0.2154345 | 3.1439866 | 79 | 4 | 2003–2006 | 0.40 | M-v | 1 | MPC | 90196 | 2004 GG |
| 2004 GM | 16.8 | 0.15 | 20060922 | 14.32740 | 5.95237 | 32.05990 | 1.88500 | 0.1755477 | 2.5767989 | 28 | 4 | 1995–2006 | 0.42 | M-v | 2 | MPC | 89540 | 2004 GM |
| 2004 GV | 16.9 | 0.15 | 20060922 | 245.74967 | 64.50848 | 117.59385 | 3.33936 | 0.1298918 | 2.4304049 | 28 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 62141 | 2004 GV |
| 2004 $GO_1$ | 16.1 | 0.15 | 20060922 | 209.88469 | 139.33651 | 131.68427 | 11.46216 | 0.1832153 | 2.3173848 | 65 | 4 | 2000–2006 | 0.65 | M-v | 1 | MPC | 66355 | 2004 $GO_1$ |
| 2004 $GR_1$ | 17.1 | 0.15 | 20060922 | 166.24086 | 42.72768 | 210.03875 | 1.35961 | 0.1649165 | 2.6626959 | 73 | 5 | 1992–2006 | 0.46 | M-v | 0 | MPC | 90196 | 2004 $GR_1$ |
| 2004 $GX_1$ | 15.4 | 0.15 | 20060922 | 123.71648 | 60.14215 | 196.72118 | 9.73568 | 0.1723072 | 3.1478890 | 58 | 3 | 2004–2006 | 0.41 | M-v | 2 | MPC | 86446 | 2004 $GX_1$ |
| 2004 $GK_2$ | 15.7 | 0.15 | 20060922 | 237.72060 | 179.61544 | 358.96115 | 14.07813 | 0.1177376 | 2.5758191 | 43 | 4 | 2003–2006 | 0.49 | M-v | 1 | MPC | 86446 | 2004 $GK_2$ |
| 2004 $GH_3$ | 17.6 | 0.15 | 20060922 | 269.59360 | 192.43322 | 20.04104 | 1.29557 | 0.0763439 | 2.1556570 | 80 | 6 | 1999–2006 | 0.48 | M-v | 1 | MPC | 90196 | 2004 $GH_3$ |
| 2004 $GK_3$ | 17.4 | 0.15 | 20060922 | 275.05231 | 350.82666 | 188.42172 | 2.15275 | 0.0489375 | 2.2872098 | 30 | 3 | 1997–2005 | 0.49 | M-v | 3 | MPC | 86447 | 2004 $GK_3$ |
| 2004 $GT_3$ | 16.3 | 0.15 | 20060922 | 190.28719 | 1.20641 | 200.91689 | 11.40867 | 0.0478860 | 2.7673382 | 56 | 5 | 1999–2006 | 0.45 | M-v | 0 | MPC | 86447 | 2004 $GT_3$ |
| 2004 $GU_3$ | 15.1 | 0.15 | 20060922 | 76.90885 | 114.40663 | 196.10555 | 15.73103 | 0.2506506 | 3.1398611 | 60 | 5 | 1999–2006 | 0.65 | M-v | 1 | MPC | 87628 | 2004 $GU_3$ |
| 2004 $GJ_4$ | 16.2 | 0.15 | 20060922 | 69.24277 | 138.87119 | 198.56884 | 12.79501 | 0.1849989 | 2.7855077 | 41 | 4 | 1996–2005 | 0.60 | M-v | 1 | MPC | 86447 | 2004 $GJ_4$ |
| 2004 $GY_4$ | 16.3 | 0.15 | 20060922 | 234.84470 | 321.88314 | 194.99522 | 12.78590 | 0.1292149 | 2.7657172 | 29 | 4 | 1999–2006 | 0.33 | M-v | 0 | MPC | 73004 | 2004 $GY_4$ |
| 2004 $GF_5$ | 15.3 | 0.15 | 20060922 | 121.70672 | 209.50890 | 89.61121 | 9.06196 | 0.2007714 | 2.7972340 | 58 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 90196 | 2004 $GF_5$ |
| 2004 $GO_5$ | 17.4 | 0.15 | 20060922 | 246.37560 | 192.00397 | 17.43558 | 8.15081 | 0.1309279 | 2.3201600 | 36 | 3 | 1998–2005 | 0.52 | M-v | 3 | MPC | 89541 | 2004 $GO_5$ |
| 2004 $GX_5$ | 15.9 | 0.15 | 20060922 | 196.64036 | 260.23630 | 288.94039 | 6.49573 | 0.1163829 | 2.7476639 | 27 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 95200 | 2004 $GX_5$ |
| 2004 $GS_7$ | 17.1 | 0.15 | 20060922 | 271.55059 | 105.95198 | 23.55539 | 2.39489 | 0.0658418 | 2.6410164 | 61 | 4 | 1995–2006 | 0.40 | M-v | 0 | MPC | 03620 | 2004 $GS_7$ |
| 2004 $GT_7$ | 17.1 | 0.15 | 20060922 | 226.66404 | 138.51146 | 49.15361 | 1.46830 | 0.1221515 | 2.5601053 | 46 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 65682 | 2004 $GT_7$ |
| 2004 $GX_7$ | 17.2 | 0.15 | 20060922 | 162.55323 | 37.26150 | 238.66223 | 2.45004 | 0.1560182 | 2.5306456 | 57 | 2 | 2004–2005 | 0.39 | M-v | 3 | MPC | 97704 | 2004 $GX_7$ |
| 2004 $GZ_7$ | 16.7 | 0.15 | 20060922 | 220.86907 | 278.51531 | 205.81426 | 13.26504 | 0.1876990 | 3.0813879 | 38 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 65683 | 2004 $GZ_7$ |
| 2004 $GC_8$ | 16.1 | 0.15 | 20060922 | 248.22838 | 129.79808 | 12.95829 | 5.15932 | 0.0576693 | 2.7291098 | 25 | 3 | 2001–2006 | 0.49 | M-v | 3 | MPC | 69713 | 2004 $GC_8$ |
| 2004 $GK_8$ | 18.2 | 0.15 | 20060922 | 186.01388 | 252.05647 | 27.30417 | 6.47087 | 0.1235034 | 2.3220689 | 26 | 2 | 2004–2005 | 0.25 | M-v | 3 | MPC | 89541 | 2004 $GK_8$ |
| 2004 $GL_8$ | 16.1 | 0.15 | 20060922 | 11.98313 | 195.35099 | 196.51141 | 3.25877 | 0.1818251 | 2.6538341 | 61 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 65683 | 2004 $GL_8$ |
| 2004 $GP_8$ | 17.5 | 0.15 | 20060922 | 123.76010 | 293.47332 | 15.58645 | 3.24281 | 0.1544801 | 2.5838024 | 32 | 3 | 2001–2005 | 0.36 | M-v | 3 | MPC | 89541 | 2004 $GP_8$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $GS_8$ | 17.2 | 0.15 | 20060922 | 176.22038 | 24.36955 | 208.51635 | 10.86030 | 0.1012304 | 2.6838705 | 29 | 4 | 2001–2006 | 0.22 | M-v | 1 | MPC | 02203 | 2004 $GS_8$ |
| 2004 $GW_8$ | 16.8 | 0.15 | 20060922 | 90.64758 | 22.93539 | 350.93895 | 3.57366 | 0.1161532 | 2.2718874 | 57 | 4 | 1995–2005 | 0.63 | M-v | 1 | MPC | 97704 | 2004 $GW_8$ |
| 2004 $GB_9$ | 16.8 | 0.15 | 20060922 | 114.72845 | 46.05125 | 218.32502 | 9.78318 | 0.0512336 | 3.0191495 | 46 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 76462 | 2004 $GB_9$ |
| 2004 $GF_9$ | 15.2 | 0.15 | 20060922 | 155.65726 | 355.77360 | 221.14412 | 17.08048 | 0.1615505 | 3.1377601 | 82 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 86449 | 2004 $GF_9$ |
| 2004 $GH_9$ | 16.2 | 0.15 | 20060922 | 321.12592 | 229.07809 | 207.56892 | 12.43501 | 0.1302496 | 2.6237867 | 95 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 86449 | 2004 $GH_9$ |
| 2004 $GT_9$ | 15.2 | 0.15 | 20060922 | 314.16717 | 320.21200 | 129.50718 | 15.15545 | 0.0729702 | 2.6142497 | 75 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87628 | 2004 $GT_9$ |
| 2004 $GX_9$ | 17.1 | 0.15 | 20060922 | 309.74165 | 247.73261 | 187.61105 | 10.51900 | 0.0341348 | 2.8101233 | 25 | 4 | 1999–2006 | 0.21 | M-v | 0 | MPC | 73004 | 2004 $GX_9$ |
| 2004 $GJ_{11}$ | 15.6 | 0.15 | 20060922 | 131.73991 | 7.45191 | 282.01255 | 8.04682 | 0.2007802 | 2.7238748 | 81 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 90196 | 2004 $GJ_{11}$ |
| 2004 $GN_{11}$ | 15.0 | 0.15 | 20060922 | 123.16236 | 201.10683 | 123.54684 | 33.73268 | 0.1660243 | 2.6445642 | 50 | 4 | 2003–2006 | 0.58 | M-v | 1 | MPC | 90196 | 2004 $GN_{11}$ |
| 2004 $GD_{13}$ | 15.7 | 0.15 | 20060922 | 151.83871 | 316.55196 | 261.87515 | 3.05847 | 0.1554682 | 3.1507924 | 54 | 4 | 2003–2006 | 0.40 | M-v | 0 | MPC | 86451 | 2004 $GD_{13}$ |
| 2004 $GG_{13}$ | 14.9 | 0.15 | 20060922 | 180.50498 | 111.60990 | 82.09131 | 6.08967 | 0.1394069 | 3.0770340 | 68 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 66357 | 2004 $GG_{13}$ |
| 2004 $GL_{13}$ | 16.1 | 0.15 | 20060922 | 260.05620 | 153.25182 | 354.41425 | 14.60074 | 0.1135176 | 2.6070883 | 22 | 4 | 1997–2006 | 0.63 | M-v | 0 | MPC | 02203 | 2004 $GL_{13}$ |
| 2004 $GP_{13}$ | 14.7 | 0.15 | 20060922 | 224.56985 | 266.73799 | 237.44496 | 11.43442 | 0.0485972 | 2.9774075 | 64 | 5 | 1991–2006 | 0.47 | M-v | 1 | MPC | 65686 | 2004 $GP_{13}$ |
| 2004 $GY_{13}$ | 16.3 | 0.15 | 20060922 | 175.74220 | 207.61214 | 93.33719 | 8.04378 | 0.1296489 | 2.3054824 | 57 | 3 | 2001–2005 | 0.69 | M-v | 2 | MPC | 89542 | 2004 $GY_{13}$ |
| 2004 $GH_{14}$ | 15.7 | 0.15 | 20060922 | 246.08497 | 3.45557 | 169.29244 | 9.55426 | 0.1087775 | 2.5841274 | 64 | 6 | 2000–2006 | 0.52 | M-v | 1 | MPC | 90196 | 2004 $GH_{14}$ |
| 2004 $GJ_{14}$ | 15.6 | 0.15 | 20060922 | 299.54914 | 12.52375 | 104.30622 | 9.01920 | 0.1035899 | 2.5737624 | 56 | 6 | 1998–2006 | 0.61 | M-v | 1 | MPC | 95201 | 2004 $GJ_{14}$ |
| 2004 $GN_{14}$ | 15.3 | 0.15 | 20060922 | 178.96488 | 6.05766 | 189.18155 | 9.53408 | 0.0952305 | 3.0575736 | 65 | 5 | 1996–2006 | 0.40 | M-v | 0 | MPC | 87628 | 2004 $GN_{14}$ |
| 2004 $GV_{14}$ | 15.1 | 0.15 | 20060922 | 213.90743 | 316.85125 | 247.11764 | 13.31311 | 0.2546200 | 2.5997304 | 116 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 66357 | 2004 $GV_{14}$ |
| 2004 $GW_{14}$ | 15.7 | 0.15 | 20060922 | 175.08374 | 290.22786 | 317.97261 | 11.69591 | 0.1408347 | 2.6534947 | 46 | 3 | 1999–2005 | 0.47 | M-v | 2 | MPC | 86452 | 2004 $GW_{14}$ |
| 2004 $GA_{15}$ | 14.6 | 0.15 | 20060922 | 86.30804 | 4.00677 | 271.80193 | 15.86281 | 0.0995366 | 3.2433269 | 39 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 77781 | 2004 $GA_{15}$ |
| 2004 $GL_{15}$ | 16.2 | 0.15 | 20060922 | 206.68814 | 140.98381 | 137.84553 | 22.82613 | 0.2057594 | 2.3213358 | 92 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 77781 | 2004 $GL_{15}$ |
| 2004 $GX_{15}$ | 15.5 | 0.15 | 20060922 | 137.18480 | 42.31774 | 182.49976 | 9.46523 | 0.0418534 | 3.1755126 | 51 | 3 | 1995–2006 | 0.40 | M-v | 2 | MPC | 69713 | 2004 $GX_{15}$ |
| 2004 $GC_{16}$ | 15.1 | 0.15 | 20060922 | 270.91854 | 37.31001 | 62.29652 | 7.23508 | 0.0289295 | 2.8374176 | 42 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 86453 | 2004 $GC_{16}$ |
| 2004 $GF_{16}$ | 16.9 | 0.15 | 20060922 | 240.86009 | 124.58815 | 99.92989 | 6.48135 | 0.1178546 | 2.2683271 | 76 | 6 | 2000–2006 | 0.45 | M-v | 1 | MPC | 90196 | 2004 $GF_{16}$ |
| 2004 $GH_{16}$ | 15.0 | 0.15 | 20060922 | 138.32467 | 110.59101 | 154.97516 | 16.18750 | 0.1129576 | 2.7864243 | 71 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 02203 | 2004 $GH_{16}$ |
| 2004 $GP_{16}$ | 15.8 | 0.15 | 20060922 | 194.50106 | 89.67114 | 108.66525 | 10.41794 | 0.0445226 | 2.7960627 | 43 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 03621 | 2004 $GP_{16}$ |
| 2004 $GS_{16}$ | 15.5 | 0.15 | 20060922 | 161.69699 | 177.51017 | 71.70667 | 16.57971 | 0.1877349 | 2.7522251 | 67 | 3 | 1995–2006 | 0.52 | M-v | 3 | MPC | 65690 | 2004 $GS_{16}$ |
| 2004 $GW_{16}$ | 15.2 | 0.15 | 20060922 | 230.17828 | 31.39591 | 142.27068 | 13.58767 | 0.0961948 | 2.6648934 | 72 | 3 | 2004–2006 | 0.51 | M-v | 3 | MPC | 90197 | 2004 $GW_{16}$ |
| 2004 $GZ_{17}$ | 15.0 | 0.15 | 20060922 | 91.27778 | 126.22981 | 151.29062 | 13.70396 | 0.1507865 | 3.1817617 | 56 | 6 | 1999–2006 | 0.55 | M-v | 0 | MPC | 97704 | 2004 $GZ_{17}$ |
| 2004 $GA_{18}$ | 15.3 | 0.15 | 20060922 | 215.99902 | 120.06225 | 51.61395 | 16.46738 | 0.1240465 | 2.7272009 | 49 | 4 | 1999–2006 | 0.61 | M-v | 2 | MPC | 65690 | 2004 $GA_{18}$ |
| 2004 $GO_{18}$ | 15.3 | 0.15 | 20060922 | 131.37840 | 209.35962 | 79.01428 | 14.72248 | 0.2282167 | 2.7007899 | 60 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 90197 | 2004 $GO_{18}$ |
| 2004 $GW_{19}$ | 17.0 | 0.15 | 20060922 | 231.68944 | 52.75277 | 215.56768 | 7.96189 | 0.2116746 | 2.2082461 | 57 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 90197 | 2004 $GW_{19}$ |
| 2004 $GC_{20}$ | 17.6 | 0.15 | 20060922 | 257.36090 | 316.96718 | 231.02557 | 1.86151 | 0.1615001 | 2.3503013 | 46 | 1 | 64 days | 0.62 | M-v | 4 D | MPC | 66358 | 2004 $GC_{20}$ |
| 2004 $GE_{20}$ | 16.4 | 0.15 | 20060922 | 261.66680 | 274.50448 | 241.35842 | 2.78872 | 0.0955919 | 2.5425696 | 72 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 86455 | 2004 $GE_{20}$ |
| 2004 $GM_{20}$ | 17.0 | 0.15 | 20060922 | 196.28415 | 183.43630 | 86.21027 | 3.14658 | 0.2184469 | 2.3708285 | 36 | 2 | 2004–2005 | 0.58 | M-v | 4 | MPC | 89543 | 2004 $GM_{20}$ |
| 2004 $GS_{20}$ | 16.1 | 0.15 | 20060922 | 263.72881 | 356.68338 | 149.12398 | 12.38961 | 0.2333790 | 2.5552646 | 47 | 3 | 2002–2006 | 0.57 | M-v | 1 | MPC | 66358 | 2004 $GS_{20}$ |
| 2004 $GU_{20}$ | 15.6 | 0.15 | 20060922 | 159.33044 | 178.76490 | 97.38925 | 18.58508 | 0.1786317 | 2.7125394 | 85 | 3 | 2003–2005 | 0.64 | M-v | 2 | MPC | 90197 | 2004 $GU_{20}$ |
| 2004 $GH_{21}$ | 16.4 | 0.15 | 20060922 | 8.09775 | 341.66940 | 117.14062 | 6.38343 | 0.0797495 | 2.2281954 | 35 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 87628 | 2004 $GH_{21}$ |
| 2004 $GK_{21}$ | 15.4 | 0.15 | 20060922 | 127.61559 | 58.77374 | 187.35418 | 19.04400 | 0.1073266 | 3.2161285 | 44 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 87628 | 2004 $GK_{21}$ |
| 2004 $GN_{21}$ | 16.1 | 0.15 | 20060922 | 249.68392 | 92.47371 | 76.89702 | 14.39133 | 0.0777416 | 2.5836197 | 32 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 66358 | 2004 $GN_{21}$ |
| 2004 $GY_{21}$ | 16.1 | 0.15 | 20060922 | 262.27999 | 328.29301 | 138.88486 | 2.72390 | 0.0081028 | 2.8593748 | 37 | 5 | 1992–2006 | 0.46 | M-v | 0 | MPC | 77781 | 2004 $GY_{21}$ |
| 2004 $GZ_{21}$ | 17.0 | 0.15 | 20060922 | 211.39266 | 1.68891 | 214.00810 | 6.26219 | 0.1198491 | 2.5309711 | 31 | 3 | 2000–2006 | 0.40 | M-v | 3 | MPC | 69714 | 2004 $GZ_{21}$ |
| 2004 $GK_{22}$ | 16.3 | 0.15 | 20060922 | 258.73440 | 310.04003 | 200.42660 | 16.95668 | 0.0957901 | 2.5925909 | 55 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 89543 | 2004 $GK_{22}$ |
| 2004 $GO_{22}$ | 16.0 | 0.15 | 20060922 | 2.37646 | 211.93391 | 200.31030 | 13.21661 | 0.0869282 | 2.5944228 | 36 | 5 | 2001–2006 | 0.49 | M-v | 0 | MPC | 87629 | 2004 $GO_{22}$ |
| 2004 $GR_{22}$ | 17.3 | 0.15 | 20060922 | 236.78223 | 59.12137 | 169.72728 | 3.19714 | 0.1266530 | 2.2920387 | 56 | 3 | 1998–2005 | 0.40 | M-v | 3 | MPC | 90197 | 2004 $GR_{22}$ |
| 2004 $GK_{23}$ | 16.0 | 0.15 | 20060922 | 159.01539 | 29.47275 | 196.31972 | 6.88753 | 0.1038796 | 2.9305166 | 56 | 6 | 1994–2006 | 0.48 | M-v | 1 | MPC | 87629 | 2004 $GK_{23}$ |
| 2004 $GT_{23}$ | 15.9 | 0.15 | 20060922 | 147.32812 | 217.00211 | 21.56443 | 8.62869 | 0.0377985 | 2.8625094 | 50 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 87629 | 2004 $GT_{23}$ |
| 2004 $GX_{23}$ | 15.8 | 0.15 | 20060922 | 238.51786 | 29.28681 | 146.30120 | 8.94619 | 0.1348725 | 2.5984684 | 36 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87629 | 2004 $GX_{23}$ |
| 2004 $GC_{24}$ | 16.2 | 0.15 | 20060922 | 205.39571 | 90.44162 | 129.93456 | 4.93661 | 0.1550524 | 2.5732189 | 56 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 86457 | 2004 $GC_{24}$ |
| 2004 $GV_{25}$ | 18.1 | 0.15 | 20060922 | 289.23428 | 91.60893 | 76.09237 | 0.40550 | 0.1571069 | 2.2532264 | 23 | 4 | 1999–2006 | 0.33 | M-v | 1 | MPC | 03621 | 2004 $GV_{25}$ |
| 2004 $GW_{25}$ | 16.4 | 0.15 | 20060922 | 251.15740 | 294.28178 | 274.40414 | 4.74492 | 0.1557027 | 2.3198627 | 84 | 6 | 2000–2006 | 0.59 | M-v | 1 | MPC | 87629 | 2004 $GW_{25}$ |
| 2004 $GJ_{26}$ | 15.6 | 0.15 | 20060922 | 200.24617 | 112.01925 | 91.91654 | 4.50164 | 0.1291598 | 2.7412895 | 66 | 5 | 1997–2006 | 0.48 | M-v | 1 | MPC | 87629 | 2004 $GJ_{26}$ |
| 2004 $GT_{26}$ | 15.8 | 0.15 | 20060922 | 143.42208 | 203.08382 | 91.98537 | 13.09467 | 0.1109678 | 2.6286317 | 52 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 90197 | 2004 $GT_{26}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $GU_{26}$ | 15.1 | 0.15 | 20060922 | 213.15894 | 131.39870 | 84.84159 | 15.12962 | 0.1003321 | 2.6061037 | 72 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 87629 | 2004 $GU_{26}$ |
| 2004 $GV_{26}$ | 15.2 | 0.15 | 20060922 | 187.86041 | 111.80542 | 123.82084 | 12.80175 | 0.1248528 | 2.7265662 | 95 | 7 | 1995–2006 | 0.48 | M-v | 1 | MPC | 87629 | 2004 $GV_{26}$ |
| 2004 $GF_{27}$ | 15.1 | 0.15 | 20060922 | 179.10953 | 63.03607 | 146.81058 | 15.81975 | 0.0934448 | 2.8472367 | 79 | 4 | 1994–2006 | 0.60 | M-v | 1 | MPC | 86457 | 2004 $GF_{27}$ |
| 2004 $GN_{27}$ | 15.1 | 0.15 | 20060922 | 142.77540 | 118.50170 | 115.34009 | 11.23995 | 0.0477210 | 3.0670893 | 54 | 5 | 1999–2006 | 0.66 | M-v | 1 | MPC | 86458 | 2004 $GN_{27}$ |
| 2004 $GL_{28}$ | 15.7 | 0.15 | 20060922 | 54.44416 | 256.33403 | 105.04729 | 21.91847 | 0.0464837 | 2.5798817 | 26 | 3 | 1998–2004 | 0.48 | M-v | 3 | MPC | 89544 | 2004 $GL_{28}$ |
| 2004 $GU_{28}$ | 15.9 | 0.15 | 20060922 | 265.48641 | 7.93979 | 100.86452 | 11.22942 | 0.0569756 | 2.9290536 | 31 | 3 | 2002–2006 | 0.69 | M-v | 2 | MPC | 86458 | 2004 $GU_{28}$ |
| 2004 $GJ_{29}$ | 17.7 | 0.15 | 20060922 | 302.88036 | 320.79160 | 189.92226 | 1.85969 | 0.1113224 | 2.2593476 | 42 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 97705 | 2004 $GJ_{29}$ |
| 2004 $GU_{29}$ | 15.4 | 0.15 | 20060922 | 210.10023 | 319.81432 | 209.42935 | 9.70743 | 0.0420938 | 2.9665188 | 75 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 65702 | 2004 $GU_{29}$ |
| 2004 $GX_{29}$ | 16.5 | 0.15 | 20060922 | 165.17553 | 165.41364 | 85.82376 | 1.95818 | 0.0862720 | 2.6314848 | 48 | 5 | 1999–2006 | 0.41 | M-v | 0 | MPC | 97705 | 2004 $GX_{29}$ |
| 2004 $GK_{30}$ | 15.6 | 0.15 | 20060922 | 7.86722 | 196.27047 | 208.50625 | 9.21983 | 0.0742793 | 2.5970274 | 51 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 77782 | 2004 $GK_{30}$ |
| 2004 $GL_{30}$ | 15.8 | 0.15 | 20060922 | 184.44762 | 22.51451 | 207.17882 | 11.25804 | 0.0680267 | 2.6353929 | 58 | 3 | 2000–2006 | 0.40 | M-v | 2 | MPC | 00716 | 2004 $GL_{30}$ |
| 2004 $GN_{30}$ | 16.7 | 0.15 | 20060922 | 294.64872 | 295.16924 | 227.56879 | 3.36324 | 0.0859169 | 2.2592445 | 64 | 5 | 1992–2006 | 0.44 | M-v | 1 | MPC | 87629 | 2004 $GN_{30}$ |
| 2004 $GY_{30}$ | 16.0 | 0.15 | 20060922 | 179.35946 | 344.20904 | 188.42762 | 2.08418 | 0.0408736 | 3.2329876 | 42 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04303 | 2004 $GY_{30}$ |
| 2004 $GJ_{31}$ | 15.7 | 0.15 | 20060922 | 197.03412 | 21.76957 | 140.30343 | 1.32899 | 0.1084480 | 3.1090716 | 47 | 6 | 1995–2006 | 0.48 | M-v | 0 | MPC | 69715 | 2004 $GJ_{31}$ |
| 2004 $GL_{31}$ | 17.3 | 0.15 | 20060922 | 208.01940 | 214.15319 | 65.28039 | 3.12891 | 0.1331044 | 2.2140913 | 35 | 2 | 2004–2005 | 0.42 | M-v | 4 | MPC | 89545 | 2004 $GL_{31}$ |
| 2004 $GU_{31}$ | 17.1 | 0.15 | 20060922 | 251.25532 | 353.84664 | 192.79761 | 1.45176 | 0.1493089 | 2.4001109 | 43 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 66359 | 2004 $GU_{31}$ |
| 2004 $GW_{31}$ | 15.6 | 0.15 | 20060922 | 208.18937 | 296.36570 | 226.88038 | 7.21831 | 0.1569175 | 2.8790971 | 57 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 77782 | 2004 $GW_{31}$ |
| 2004 $GH_{32}$ | 15.2 | 0.15 | 20060922 | 151.23673 | 349.78420 | 247.94936 | 11.96317 | 0.1250271 | 2.7712151 | 56 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97705 | 2004 $GH_{32}$ |
| 2004 $GK_{32}$ | 15.7 | 0.15 | 20060922 | 147.50374 | 4.15123 | 271.31628 | 6.94893 | 0.1977869 | 2.5892358 | 57 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 90197 | 2004 $GK_{32}$ |
| 2004 $GM_{32}$ | 16.2 | 0.15 | 20060922 | 303.90913 | 210.77194 | 294.97068 | 7.27914 | 0.0740007 | 2.2446922 | 58 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 87629 | 2004 $GM_{32}$ |
| 2004 $GR_{32}$ | 14.9 | 0.15 | 20060922 | 192.50268 | 182.62136 | 335.74736 | 10.18911 | 0.0778512 | 3.0883484 | 60 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04303 | 2004 $GR_{32}$ |
| 2004 $GS_{32}$ | 15.9 | 0.15 | 20060922 | 196.38512 | 136.35751 | 16.03499 | 10.50533 | 0.1780299 | 3.1407912 | 43 | 4 | 1996–2006 | 0.47 | M-v | 2 | MPC | 65705 | 2004 $GS_{32}$ |
| 2004 $GG_{33}$ | 17.1 | 0.15 | 20060922 | 257.06734 | 168.04944 | 55.31120 | 1.55516 | 0.1192209 | 2.2007913 | 60 | 3 | 2002–2005 | 0.44 | M-v | 3 | MPC | 90197 | 2004 $GG_{33}$ |
| 2004 $GH_{33}$ | 16.9 | 0.15 | 20060922 | 236.13183 | 34.17043 | 202.03788 | 4.23924 | 0.0976365 | 2.2670444 | 61 | 4 | 1997–2005 | 0.56 | M-v | 2 | MPC | 90197 | 2004 $GH_{33}$ |
| 2004 $GJ_{33}$ | 16.6 | 0.15 | 20060922 | 239.11556 | 12.22663 | 215.18839 | 5.02909 | 0.1222366 | 2.3030284 | 74 | 4 | 1997–2005 | 0.58 | M-v | 2 | MPC | 97705 | 2004 $GJ_{33}$ |
| 2004 $GL_{33}$ | 15.9 | 0.15 | 20060922 | 243.19453 | 284.95012 | 225.31681 | 1.01637 | 0.0267734 | 2.7623334 | 77 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 87629 | 2004 $GL_{33}$ |
| 2004 $GT_{33}$ | 15.7 | 0.15 | 20060922 | 167.10922 | 209.19127 | 43.84744 | 9.53170 | 0.2014569 | 2.7714254 | 64 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 87629 | 2004 $GT_{33}$ |
| 2004 $GZ_{33}$ | 15.6 | 0.15 | 20060922 | 167.66390 | 173.07489 | 38.55831 | 11.27246 | 0.1611072 | 3.1558594 | 43 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 86462 | 2004 $GZ_{33}$ |
| 2004 $GE_{34}$ | 15.5 | 0.15 | 20060922 | 215.70884 | 287.74493 | 259.96960 | 10.47001 | 0.1315817 | 2.6658751 | 42 | 5 | 1993–2006 | 0.68 | M-v | 1 | MPC | 04304 | 2004 $GE_{34}$ |
| 2004 $GR_{34}$ | 16.3 | 0.15 | 20060922 | 248.87276 | 275.03906 | 224.56067 | 3.23559 | 0.1342633 | 2.6827269 | 41 | 4 | 1997–2006 | 0.46 | M-v | 1 | MPC | 03621 | 2004 $GR_{34}$ |
| 2004 $GS_{34}$ | 16.7 | 0.15 | 20060922 | 216.85679 | 286.17891 | 279.34778 | 3.40753 | 0.0516966 | 2.5404611 | 40 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 90197 | 2004 $GS_{34}$ |
| 2004 $GB_{35}$ | 16.1 | 0.15 | 20060922 | 206.04694 | 299.23734 | 302.34292 | 5.87586 | 0.0737664 | 2.3808840 | 45 | 4 | 2000–2005 | 0.70 | M-v | 1 | MPC | 86463 | 2004 $GB_{35}$ |
| 2004 $GC_{35}$ | 15.9 | 0.15 | 20060922 | 173.83139 | 315.71389 | 266.48736 | 6.56924 | 0.1573795 | 2.7975109 | 47 | 5 | 1993–2006 | 0.46 | M-v | 1 | MPC | 87630 | 2004 $GC_{35}$ |
| 2004 $GF_{35}$ | 16.6 | 0.15 | 20060922 | 117.90368 | 145.56145 | 122.70369 | 0.42681 | 0.2217542 | 3.0914829 | 30 | 4 | 2000–2006 | 0.28 | M-v | 0 | MPC | 86463 | 2004 $GF_{35}$ |
| 2004 $GP_{35}$ | 15.8 | 0.15 | 20060922 | 239.57005 | 229.23950 | 302.34097 | 6.92891 | 0.1759481 | 2.5518455 | 54 | 6 | 2000–2006 | 0.50 | M-v | 1 | MPC | 87630 | 2004 $GP_{35}$ |
| 2004 $GZ_{35}$ | 16.6 | 0.15 | 20060922 | 302.76429 | 260.83202 | 217.89814 | 20.71067 | 0.2604053 | 2.3482689 | 74 | 3 | 1999–2006 | 0.43 | M-v | 1 | MPC | 65708 | 2004 $GZ_{35}$ |
| 2004 $GH_{36}$ | 15.7 | 0.15 | 20060922 | 239.96511 | 329.48774 | 199.27024 | 5.14026 | 0.2031505 | 2.6242227 | 66 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 65708 | 2004 $GH_{36}$ |
| 2004 $GT_{36}$ | 16.1 | 0.15 | 20060922 | 263.30782 | 270.58681 | 236.86422 | 9.66594 | 0.2316026 | 2.5553245 | 64 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 66360 | 2004 $GT_{36}$ |
| 2004 $GZ_{36}$ | 14.7 | 0.15 | 20060922 | 74.14638 | 93.69179 | 213.69474 | 24.43477 | 0.2209869 | 3.1813062 | 42 | 4 | 1999–2006 | 0.64 | M-v | 1 | MPC | 86463 | 2004 $GZ_{36}$ |
| 2004 $GO_{37}$ | 15.1 | 0.15 | 20060922 | 244.66692 | 181.65888 | 320.85870 | 8.28394 | 0.0698579 | 2.7780034 | 61 | 3 | 2001–2006 | 0.67 | M-v | 3 | MPC | 69716 | 2004 $GO_{37}$ |
| 2004 $GP_{37}$ | 15.4 | 0.15 | 20060922 | 266.88423 | 233.76907 | 287.36343 | 6.98112 | 0.0552743 | 2.4592713 | 50 | 6 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87630 | 2004 $GP_{37}$ |
| 2004 $GV_{37}$ | 16.2 | 0.15 | 20060922 | 209.82188 | 188.54940 | 358.89635 | 7.76012 | 0.1491556 | 2.7770416 | 40 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 89545 | 2004 $GV_{37}$ |
| 2004 $GX_{37}$ | 16.7 | 0.15 | 20060922 | 298.62838 | 92.52593 | 93.87890 | 5.23113 | 0.0442649 | 2.1859659 | 56 | 6 | 1997–2006 | 0.57 | M-v | 1 | MPC | 87630 | 2004 $GX_{37}$ |
| 2004 $GC_{38}$ | 16.1 | 0.15 | 20060922 | 207.72970 | 127.99055 | 102.20516 | 13.07954 | 0.1394203 | 2.5561910 | 48 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 65711 | 2004 $GC_{38}$ |
| 2004 $GG_{38}$ | 15.0 | 0.15 | 20060922 | 129.61315 | 346.19733 | 241.75332 | 9.02121 | 0.0580183 | 3.0949969 | 40 | 4 | 1999–2006 | 0.68 | M-v | 1 | MPC | 76463 | 2004 $GG_{38}$ |
| 2004 $GX_{38}$ | 15.3 | 0.15 | 20060922 | 336.93979 | 37.58145 | 35.44352 | 4.94961 | 0.1465927 | 2.5764516 | 83 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 89545 | 2004 $GX_{38}$ |
| 2004 $GJ_{39}$ | 15.7 | 0.15 | 20060922 | 147.25525 | 197.17550 | 59.04095 | 1.60381 | 0.2453231 | 3.0142243 | 68 | 5 | 1993–2006 | 0.53 | M-v | 1 | MPC | 02203 | 2004 $GJ_{39}$ |
| 2004 $GM_{39}$ | 16.2 | 0.15 | 20060922 | 240.48168 | 203.57928 | 1.50031 | 2.28694 | 0.1508439 | 2.4143955 | 75 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 97705 | 2004 $GM_{39}$ |
| 2004 $GD_{40}$ | 16.1 | 0.15 | 20060922 | 185.26200 | 118.67979 | 89.29536 | 4.16053 | 0.0794723 | 2.7539857 | 40 | 3 | 1997–2006 | 0.40 | M-v | 3 | MPC | 03621 | 2004 $GD_{40}$ |
| 2004 $GG_{40}$ | 15.8 | 0.15 | 20060922 | 206.08497 | 99.92562 | 119.09395 | 8.94112 | 0.1834642 | 2.6651280 | 89 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 65713 | 2004 $GG_{40}$ |
| 2004 $GR_{40}$ | 16.3 | 0.15 | 20060922 | 174.23099 | 17.22609 | 170.99355 | 1.22893 | 0.1048696 | 3.1045008 | 44 | 4 | 2000–2006 | 0.28 | M-v | 0 | MPC | 97705 | 2004 $GR_{40}$ |
| 2004 $GV_{40}$ | 16.3 | 0.15 | 20060922 | 139.36946 | 200.97499 | 28.37056 | 1.55793 | 0.1248601 | 3.1461964 | 42 | 3 | 2004–2006 | 0.22 | M-v | 2 | MPC | 86464 | 2004 $GV_{40}$ |
| 2004 $GZ_{40}$ | 15.3 | 0.15 | 20060922 | 206.48472 | 269.78580 | 290.52928 | 12.96801 | 0.1320601 | 2.6043567 | 49 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 86464 | 2004 $GZ_{40}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $GJ_{41}$ | 15.1 | 0.15 | 20060922 | 107.77989 | 41.20256 | 243.98177 | 16.38474 | 0.1917665 | 3.0842464 | 42 | 4 | 1995–2006 | 0.48 | M-v | 0 | MPC | 86464 | 2004 $GJ_{41}$ |
| 2004 $GK_{41}$ | 15.4 | 0.15 | 20060922 | 171.57759 | 304.28427 | 294.39660 | 7.60448 | 0.2231393 | 2.7830319 | 47 | 4 | 2000–2006 | 0.53 | M-v | 2 | MPC | 87630 | 2004 $GK_{41}$ |
| 2004 $GV_{41}$ | 17.6 | 0.15 | 20060922 | 227.12732 | 131.91347 | 54.61175 | 4.88027 | 0.1521224 | 2.5599270 | 25 | 3 | 2000–2006 | 0.26 | M-v | 2 | MPC | 65715 | 2004 $GV_{41}$ |
| 2004 $GA_{42}$ | 14.9 | 0.15 | 20060922 | 168.95419 | 184.06632 | 17.34742 | 27.31782 | 0.0916268 | 3.1615343 | 65 | 3 | 2003–2006 | 0.45 | M-v | 2 | MPC | 86465 | 2004 $GA_{42}$ |
| 2004 $GC_{42}$ | 15.9 | 0.15 | 20060922 | 324.68015 | 20.82089 | 32.33144 | 9.10162 | 0.0428301 | 2.9826101 | 57 | 3 | 2001–2006 | 0.35 | M-v | 3 | MPC | 65715 | 2004 $GC_{42}$ |
| 2004 $GE_{42}$ | 16.5 | 0.15 | 20060922 | 162.11671 | 152.54762 | 146.84195 | 7.33457 | 0.2161824 | 2.4389738 | 46 | 3 | 2001–2005 | 0.64 | M-v | 1 | MPC | 90198 | 2004 $GE_{42}$ |
| 2004 $GS_{43}$ | 16.4 | 0.15 | 20060922 | 260.26232 | 163.50902 | 341.57824 | 1.98861 | 0.0814183 | 2.6067875 | 61 | 6 | 1997–2006 | 0.43 | M-v | 0 | MPC | 87630 | 2004 $GS_{43}$ |
| 2004 $GB_{44}$ | 16.9 | 0.15 | 20060922 | 93.66896 | 253.55963 | 67.85164 | 1.64045 | 0.0453251 | 2.5160779 | 35 | 5 | 1998–2006 | 0.45 | M-v | 0 | MPC | 87630 | 2004 $GB_{44}$ |
| 2004 $GD_{44}$ | 15.8 | 0.15 | 20060922 | 316.74263 | 60.12321 | 24.11648 | 4.52782 | 0.0540499 | 2.6597310 | 89 | 4 | 1995–2006 | 0.49 | M-v | 2 | MPC | 66361 | 2004 $GD_{44}$ |
| 2004 $GU_{44}$ | 16.8 | 0.15 | 20060922 | 114.58775 | 282.73604 | 329.51538 | 2.82723 | 0.1535726 | 3.0924829 | 24 | 4 | 2000–2006 | 0.33 | M-v | 0 | MPC | 86467 | 2004 $GU_{44}$ |
| 2004 $GM_{45}$ | 16.4 | 0.15 | 20060922 | 184.99000 | 345.52774 | 218.05530 | 4.19502 | 0.0553859 | 2.7263062 | 55 | 5 | 1997–2006 | 0.34 | M-v | 1 | MPC | 87630 | 2004 $GM_{45}$ |
| 2004 $GX_{45}$ | 16.9 | 0.15 | 20060922 | 24.53678 | 177.42306 | 190.94998 | 5.57442 | 0.0609053 | 2.8083287 | 35 | 4 | 2001–2006 | 0.28 | M-v | 0 | MPC | 87630 | 2004 $GX_{45}$ |
| 2004 $GE_{46}$ | 17.3 | 0.15 | 20060922 | 192.57917 | 239.47128 | 41.91557 | 6.00358 | 0.1575722 | 2.2935864 | 53 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 97705 | 2004 $GE_{46}$ |
| 2004 $GQ_{46}$ | 16.5 | 0.15 | 20060922 | 164.60465 | 205.41782 | 48.54200 | 4.48253 | 0.1101079 | 2.6428789 | 40 | 6 | 1997–2006 | 0.37 | M-v | 0 | MPC | 87630 | 2004 $GQ_{46}$ |
| 2004 $GU_{46}$ | 15.6 | 0.15 | 20060922 | 325.14307 | 190.44074 | 202.63016 | 9.86208 | 0.0509692 | 3.1797464 | 47 | 3 | 1995–2006 | 0.42 | M-v | 2 | MPC | 04304 | 2004 $GU_{46}$ |
| 2004 $GN_{47}$ | 16.1 | 0.15 | 20060922 | 333.47633 | 24.39106 | 28.69783 | 8.00513 | 0.0760788 | 2.8111160 | 66 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 95204 | 2004 $GN_{47}$ |
| 2004 $GY_{47}$ | 15.7 | 0.15 | 20060922 | 100.14905 | 64.73241 | 201.40921 | 17.66702 | 0.0344623 | 3.1405666 | 36 | 4 | 1995–2006 | 0.40 | M-v | 0 | MPC | 65717 | 2004 $GY_{47}$ |
| 2004 $GB_{48}$ | 16.9 | 0.15 | 20060922 | 238.59379 | 17.23032 | 139.74361 | 1.27473 | 0.0448572 | 2.7349226 | 45 | 6 | 1993–2006 | 0.33 | M-v | 0 | MPC | 86468 | 2004 $GB_{48}$ |
| 2004 $GF_{49}$ | 17.1 | 0.15 | 20060922 | 136.25375 | 110.20133 | 219.74502 | 4.85212 | 0.1766503 | 2.3480430 | 62 | 3 | 1998–2006 | 0.49 | M-v | 2 | MPC | 97706 | 2004 $GF_{49}$ |
| 2004 $GC_{50}$ | 16.5 | 0.15 | 20060922 | 81.43476 | 135.60873 | 224.67751 | 6.16520 | 0.1265609 | 2.4406387 | 30 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 86469 | 2004 $GC_{50}$ |
| 2004 $GD_{50}$ | 17.1 | 0.15 | 20060922 | 51.16706 | 23.39705 | 12.22555 | 9.59469 | 0.1380538 | 2.3441172 | 24 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 66361 | 2004 $GD_{50}$ |
| 2004 $GR_{50}$ | 17.3 | 0.15 | 20060922 | 309.09130 | 199.24300 | 308.35768 | 1.99270 | 0.0953405 | 2.2458945 | 36 | 5 | 1997–2006 | 0.45 | M-v | 1 | MPC | 87630 | 2004 $GR_{50}$ |
| 2004 $GE_{51}$ | 16.0 | 0.15 | 20060922 | 11.34954 | 353.45636 | 37.11612 | 9.29137 | 0.0809759 | 2.6679124 | 43 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 65717 | 2004 $GE_{51}$ |
| 2004 $GV_{52}$ | 16.9 | 0.15 | 20060922 | 77.32301 | 277.48901 | 43.37292 | 2.47026 | 0.0839293 | 2.8133768 | 28 | 3 | 2001–2006 | 0.26 | M-v | 3 | MPC | 66362 | 2004 $GV_{52}$ |
| 2004 $GW_{52}$ | 16.1 | 0.15 | 20060922 | 274.37176 | 18.69926 | 75.60836 | 2.09222 | 0.0257816 | 3.0062973 | 38 | 5 | 1999–2006 | 0.41 | M-v | 0 | MPC | 65717 | 2004 $GW_{52}$ |
| 2004 $GX_{52}$ | 16.3 | 0.15 | 20060922 | 87.82872 | 98.09280 | 189.31327 | 4.71168 | 0.1096927 | 3.1172157 | 34 | 4 | 2000–2006 | 0.34 | M-v | 0 | MPC | 86469 | 2004 $GX_{52}$ |
| 2004 $GG_{53}$ | 16.7 | 0.15 | 20060922 | 319.26610 | 242.55207 | 196.00118 | 12.68396 | 0.2249991 | 2.5350575 | 61 | 4 | 1998–2006 | 0.48 | M-v | 3 | MPC | 95204 | 2004 $GG_{53}$ |
| 2004 $GB_{55}$ | 16.9 | 0.15 | 20060922 | 134.66495 | 332.53924 | 274.75400 | 0.80393 | 0.0703592 | 2.9522182 | 29 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 89547 | 2004 $GB_{55}$ |
| 2004 $GD_{55}$ | 16.7 | 0.15 | 20060922 | 269.63284 | 241.53786 | 208.36555 | 6.91926 | 0.0461641 | 3.0971614 | 32 | 4 | 2000–2006 | 0.40 | M-v | 0 | MPC | 04304 | 2004 $GD_{55}$ |
| 2004 $GV_{55}$ | 16.4 | 0.15 | 20060922 | 309.91661 | 55.73853 | 348.29835 | 3.39393 | 0.0799697 | 3.1935088 | 35 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 04304 | 2004 $GV_{55}$ |
| 2004 $GJ_{56}$ | 16.4 | 0.15 | 20060922 | 196.41024 | 224.86079 | 329.54423 | 2.79083 | 0.0308530 | 2.8019336 | 68 | 5 | 1999–2006 | 0.37 | M-v | 0 | MPC | 87630 | 2004 $GJ_{56}$ |
| 2004 $GG_{57}$ | 17.5 | 0.15 | 20060922 | 213.13562 | 201.24731 | 10.51042 | 1.11646 | 0.1308974 | 2.4667495 | 21 | 3 | 2000–2006 | 0.36 | M-v | 4 | MPC | 65718 | 2004 $GG_{57}$ |
| 2004 $GJ_{57}$ | 16.7 | 0.15 | 20060922 | 286.20236 | 233.09066 | 215.94843 | 2.68095 | 0.0634712 | 2.7729260 | 40 | 5 | 1992–2006 | 0.37 | M-v | 0 | MPC | 66362 | 2004 $GJ_{57}$ |
| 2004 $GA_{59}$ | 16.8 | 0.15 | 20060922 | 153.93005 | 280.01113 | 59.09019 | 5.13582 | 0.2130834 | 2.2368196 | 74 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 95204 | 2004 $GA_{59}$ |
| 2004 $GJ_{59}$ | 16.0 | 0.15 | 20060922 | 171.74812 | 140.53956 | 101.92970 | 3.59860 | 0.1396043 | 2.7597000 | 63 | 6 | 1999–2006 | 0.49 | M-v | 1 | MPC | 86471 | 2004 $GJ_{59}$ |
| 2004 $GR_{59}$ | 16.0 | 0.15 | 20060922 | 141.00772 | 40.41209 | 186.05972 | 9.46661 | 0.1420020 | 3.0978184 | 30 | 4 | 1993–2006 | 0.49 | M-v | 2 | MPC | 65719 | 2004 $GR_{59}$ |
| 2004 $GV_{59}$ | 17.1 | 0.15 | 20060922 | 324.18040 | 244.20848 | 250.67874 | 2.95603 | 0.0707803 | 2.2311774 | 45 | 5 | 1995–2006 | 0.46 | M-v | 1 | MPC | 90198 | 2004 $GV_{59}$ |
| 2004 $GE_{60}$ | 17.4 | 0.15 | 20060922 | 196.77706 | 212.91961 | 58.63721 | 5.36355 | 0.2152290 | 2.3557487 | 20 | 2 | 2004–2005 | 0.32 | M-v | 4 | MPC | 89548 | 2004 $GE_{60}$ |
| 2004 $GJ_{60}$ | 16.7 | 0.15 | 20060922 | 187.67981 | 169.12165 | 59.55710 | 4.27077 | 0.1365359 | 2.6303722 | 40 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 66362 | 2004 $GJ_{60}$ |
| 2004 $GK_{60}$ | 16.3 | 0.15 | 20060922 | 226.02789 | 222.41323 | 4.72302 | 6.75352 | 0.0969374 | 2.3715695 | 62 | 4 | 2000–2005 | 0.50 | M-v | 1 | MPC | 90198 | 2004 $GK_{60}$ |
| 2004 $GM_{60}$ | 17.1 | 0.15 | 20060922 | 218.64312 | 52.83565 | 179.80872 | 6.58097 | 0.1244206 | 2.3826346 | 47 | 3 | 1994–2005 | 0.45 | M-v | 3 | MPC | 90198 | 2004 $GM_{60}$ |
| 2004 $GQ_{60}$ | 16.9 | 0.15 | 20060922 | 316.62563 | 355.91520 | 136.73747 | 2.43137 | 0.0989637 | 2.2891849 | 35 | 3 | 2004–2006 | 0.42 | M-v | 3 | MPC | 95205 | 2004 $GQ_{60}$ |
| 2004 $GU_{60}$ | 16.5 | 0.15 | 20060922 | 148.70163 | 85.78957 | 173.68633 | 4.62864 | 0.1176458 | 2.7673881 | 38 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 86471 | 2004 $GU_{60}$ |
| 2004 $GC_{61}$ | 15.3 | 0.15 | 20060922 | 251.50361 | 298.73860 | 211.88825 | 23.17464 | 0.1215490 | 2.7122891 | 84 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 65719 | 2004 $GC_{61}$ |
| 2004 $GM_{62}$ | 16.6 | 0.15 | 20060922 | 47.20792 | 175.45496 | 160.68472 | 2.23382 | 0.0888567 | 2.9325085 | 40 | 4 | 2001–2006 | 0.29 | M-v | 0 | MPC | 95205 | 2004 $GM_{62}$ |
| 2004 $GV_{65}$ | 16.8 | 0.15 | 20060922 | 82.89584 | 186.79439 | 185.91819 | 3.66293 | 0.1313494 | 2.3024038 | 67 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 97706 | 2004 $GV_{65}$ |
| 2004 $GU_{66}$ | 16.6 | 0.15 | 20060922 | 162.15305 | 1.15211 | 204.88154 | 3.45690 | 0.0473013 | 3.0439175 | 31 | 6 | 1995–2006 | 0.34 | M-v | 1 | MPC | 86472 | 2004 $GU_{66}$ |
| 2004 $GX_{66}$ | 17.1 | 0.15 | 20060922 | 272.97468 | 137.98893 | 10.76085 | 1.47306 | 0.1214407 | 2.4466303 | 33 | 5 | 1994–2006 | 0.31 | M-v | 0 | MPC | 86472 | 2004 $GX_{66}$ |
| 2004 $GY_{66}$ | 17.7 | 0.15 | 20060922 | 345.94301 | 227.72369 | 237.90524 | 2.70234 | 0.1342072 | 2.2244921 | 21 | 4 | 1997–2006 | 0.28 | M-v | 1 | MPC | 73005 | 2004 $GY_{66}$ |
| 2004 $GB_{67}$ | 16.3 | 0.15 | 20060922 | 49.49558 | 303.21008 | 15.72249 | 13.02156 | 0.0420523 | 3.0947674 | 29 | 3 | 1995–2006 | 0.28 | M-v | 2 | MPC | 73005 | 2004 $GB_{67}$ |
| 2004 $GQ_{68}$ | 15.9 | 0.15 | 20060922 | 168.59234 | 101.56597 | 130.07234 | 5.29253 | 0.0142827 | 2.7911114 | 53 | 5 | 1996–2006 | 0.43 | M-v | 0 | MPC | 86473 | 2004 $GQ_{68}$ |
| 2004 $GR_{69}$ | 15.2 | 0.15 | 20060922 | 333.90680 | 215.01875 | 183.37160 | 10.26678 | 0.0610765 | 3.1071093 | 57 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 65720 | 2004 $GR_{69}$ |
| 2004 $GE_{70}$ | 16.3 | 0.15 | 20060922 | 283.46103 | 45.16065 | 75.69895 | 4.41946 | 0.1195670 | 2.6239303 | 52 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 73005 | 2004 $GE_{70}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $GR_{71}$ | 16.0 | 0.15 | 20060922 | 133.29204 | 150.02991 | 101.27004 | 5.06255 | 0.2638864 | 3.0845737 | 37 | 4 | 2003–2006 | 0.58 | M-v | 1 | MPC | 86473 | 2004 $GR_{71}$ |
| 2004 $GG_{72}$ | 14.9 | 0.15 | 20060922 | 93.27207 | 169.08266 | 103.85337 | 5.90350 | 0.0846194 | 3.2223593 | 46 | 5 | 1995–2006 | 0.47 | M-v | 0 | MPC | 86473 | 2004 $GG_{72}$ |
| 2004 $GL_{72}$ | 16.4 | 0.15 | 20060922 | 276.47716 | 84.28155 | 48.40983 | 10.82816 | 0.0497139 | 2.6011081 | 48 | 3 | 2000–2006 | 0.31 | M-v | 2 | MPC | 00717 | 2004 $GL_{72}$ |
| 2004 $GP_{72}$ | 16.1 | 0.15 | 20060922 | 106.39745 | 240.04397 | 56.01413 | 9.80098 | 0.0940554 | 2.8118833 | 36 | 4 | 2001–2006 | 0.45 | M-v | 0 | MPC | 73005 | 2004 $GP_{72}$ |
| 2004 $GZ_{72}$ | 16.2 | 0.15 | 20060922 | 226.38381 | 91.83758 | 97.79385 | 5.16194 | 0.1196402 | 2.6315216 | 40 | 4 | 1998–2006 | 0.44 | M-v | 1 | MPC | 65720 | 2004 $GZ_{72}$ |
| 2004 $GP_{73}$ | 15.4 | 0.15 | 20060922 | 35.70175 | 172.35985 | 148.49318 | 3.19260 | 0.1505573 | 3.1784492 | 49 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 69718 | 2004 $GP_{73}$ |
| 2004 $GC_{74}$ | 15.1 | 0.15 | 20060922 | 134.40518 | 346.37691 | 281.97995 | 10.67521 | 0.1545527 | 2.9344575 | 49 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90198 | 2004 $GC_{74}$ |
| 2004 $GL_{74}$ | 16.2 | 0.15 | 20060922 | 175.22699 | 109.01572 | 133.15752 | 6.08980 | 0.0830451 | 2.5863917 | 51 | 7 | 1994–2006 | 0.55 | M-v | 1 | MPC | 90198 | 2004 $GL_{74}$ |
| 2004 $GO_{74}$ | 16.3 | 0.15 | 20060922 | 341.76104 | 58.86034 | 55.97611 | 8.93514 | 0.0638806 | 2.2402193 | 42 | 4 | 1999–2005 | 0.63 | M-v | 2 | MPC | 95206 | 2004 $GO_{74}$ |
| 2004 $GQ_{74}$ | 17.3 | 0.15 | 20060922 | 280.32956 | 55.56230 | 86.27435 | 6.42702 | 0.2544243 | 2.3296756 | 48 | 4 | 1997–2006 | 0.50 | M-v | 1 | MPC | 66363 | 2004 $GQ_{74}$ |
| 2004 $GW_{74}$ | 15.2 | 0.15 | 20060922 | 171.78520 | 88.11927 | 152.07284 | 15.85955 | 0.0337778 | 2.7180446 | 39 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 87631 | 2004 $GW_{74}$ |
| 2004 $GD_{75}$ | 15.6 | 0.15 | 20060922 | 107.33611 | 324.30685 | 331.94626 | 5.47149 | 0.1097925 | 2.7839171 | 40 | 3 | 2004–2006 | 0.55 | M-v | 3 | MPC | 90199 | 2004 $GD_{75}$ |
| 2004 $GM_{75}$ | 17.0 | 0.15 | 20060922 | 213.53155 | 41.93412 | 196.03692 | 5.58805 | 0.1032534 | 2.3891995 | 31 | 2 | 2004–2005 | 0.52 | M-v | 3 | MPC | 03621 | 2004 $GM_{75}$ |
| 2004 $GQ_{75}$ | 16.8 | 0.15 | 20060922 | 265.44593 | 338.67815 | 221.51489 | 3.29805 | 0.1137086 | 2.2872357 | 46 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 90199 | 2004 $GQ_{75}$ |
| 2004 $GT_{76}$ | 15.1 | 0.15 | 20060922 | 142.67945 | 168.50013 | 57.13620 | 18.03515 | 0.0849932 | 3.0912368 | 37 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 03621 | 2004 $GT_{76}$ |
| 2004 $GL_{77}$ | 16.4 | 0.15 | 20060922 | 183.44536 | 143.77130 | 89.57183 | 16.45731 | 0.0735285 | 2.5263054 | 38 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87631 | 2004 $GL_{77}$ |
| 2004 $GJ_{78}$ | 16.2 | 0.15 | 20060922 | 58.83962 | 178.02224 | 183.76323 | 5.13038 | 0.0606845 | 2.5334603 | 51 | 6 | 1996–2005 | 0.54 | M-v | 2 | MPC | 90199 | 2004 $GJ_{78}$ |
| 2004 $GS_{78}$ | 16.9 | 0.15 | 20060922 | 252.80729 | 206.10146 | 339.34691 | 0.85191 | 0.1264433 | 2.3644987 | 25 | 4 | 1993–2006 | 0.53 | M-v | 2 | MPC | 69718 | 2004 $GS_{78}$ |
| 2004 $GW_{78}$ | 15.3 | 0.15 | 20060922 | 137.49320 | 34.82220 | 186.80132 | 13.74001 | 0.0275526 | 3.1206209 | 39 | 4 | 1998–2006 | 0.42 | M-v | 2 | MPC | 73005 | 2004 $GW_{78}$ |
| 2004 $GY_{78}$ | 17.5 | 0.15 | 20060922 | 308.14042 | 293.42891 | 199.97178 | 2.10527 | 0.1576378 | 2.2786698 | 28 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 89548 | 2004 $GY_{78}$ |
| 2004 $GZ_{79}$ | 15.9 | 0.15 | 20060922 | 163.08751 | 196.86243 | 15.60838 | 4.51105 | 0.1564650 | 3.0590662 | 44 | 3 | 2004–2006 | 0.38 | M-v | 3 | MPC | 86475 | 2004 $GZ_{79}$ |
| 2004 $GM_{80}$ | 16.0 | 0.15 | 20060922 | 80.05802 | 265.78888 | 6.77095 | 15.73394 | 0.1585713 | 3.1881218 | 28 | 3 | 2000–2006 | 0.35 | M-v | 1 | MPC | 65724 | 2004 $GM_{80}$ |
| 2004 $GD_{81}$ | 16.9 | 0.15 | 20060922 | 163.22793 | 338.86370 | 246.53808 | 1.88987 | 0.0319061 | 2.6566942 | 40 | 4 | 1995–2006 | 0.39 | M-v | 0 | MPC | 87631 | 2004 $GD_{81}$ |
| 2004 $GF_{81}$ | 16.8 | 0.15 | 20060922 | 140.59491 | 79.06656 | 191.11622 | 5.90334 | 0.1191059 | 2.5705114 | 39 | 7 | 1992–2006 | 0.38 | M-v | 1 | MPC | 87631 | 2004 $GF_{81}$ |
| 2004 $GY_{81}$ | 16.3 | 0.15 | 20060922 | 164.28861 | 107.70160 | 141.70978 | 7.34267 | 0.0909902 | 2.6998747 | 41 | 5 | 1999–2006 | 0.36 | M-v | 0 | MPC | 86476 | 2004 $GY_{81}$ |
| 2004 $GG_{82}$ | 13.4 | 0.15 | 20060922 | 121.80948 | 151.71931 | 13.73800 | 8.68094 | 0.0261477 | 5.2217929 | 22 | 3 | 1997–2004 | 0.53 | M-v | 3 | MPC | 95207 | 2004 $GG_{82}$ |
| 2004 $GM_{82}$ | 15.8 | 0.15 | 20060922 | 349.15817 | 220.42851 | 184.00979 | 13.68000 | 0.1255168 | 2.6009662 | 50 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 86476 | 2004 $GM_{82}$ |
| 2004 $GD_{86}$ | 16.2 | 0.15 | 20060922 | 1.35590 | 355.43481 | 53.94795 | 8.43099 | 0.1332099 | 2.5957638 | 38 | 3 | 2003–2006 | 0.46 | M-v | 3 | MPC | 76464 | 2004 $GD_{86}$ |
| 2004 $GP_{86}$ | 16.8 | 0.15 | 20060922 | 197.55071 | 73.54379 | 118.77596 | 2.91261 | 0.0520889 | 2.8359746 | 26 | 3 | 2004–2006 | 0.26 | M-v | 3 | MPC | 86476 | 2004 $GP_{86}$ |
| 2004 $GG_{87}$ | 15.5 | 0.15 | 20060922 | 204.07944 | 250.89666 | 311.83523 | 8.33392 | 0.1258068 | 2.7343724 | 32 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 95207 | 2004 $GG_{87}$ |
| 2004 $GD_{88}$ | 15.1 | 0.15 | 20060922 | 155.79921 | 289.49984 | 299.85567 | 12.84669 | 0.1295194 | 3.0083857 | 45 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 86477 | 2004 $GD_{88}$ |
| 2004 $GF_{88}$ | 16.6 | 0.15 | 20060922 | 264.75623 | 235.98558 | 284.51467 | 5.51602 | 0.1448693 | 2.4265801 | 65 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 86477 | 2004 $GF_{88}$ |
| 2004 HF | 15.8 | 0.15 | 20060922 | 127.71258 | 142.44700 | 124.19727 | 8.05935 | 0.1590310 | 2.8129098 | 36 | 3 | 2004–2006 | 0.47 | M-v | 3 | MPC | 86477 | 2004 HF |
| 2004 $HD_1$ | 14.8 | 0.15 | 20060922 | 283.00482 | 112.01447 | 22.35471 | 28.80682 | 0.1460645 | 2.5745661 | 55 | 3 | 2002–2006 | 0.40 | M-v | 1 | MPC | 04304 | 2004 $HD_1$ |
| 2004 $HH_1$ | 16.2 | 0.15 | 20060922 | 169.00844 | 335.88573 | 332.71872 | 4.35978 | 0.2000864 | 2.2734591 | 52 | 5 | 1991–2005 | 0.73 | M-v | 1 | MPC | 04304 | 2004 $HH_1$ |
| 2004 $HU_1$ | 17.1 | 0.15 | 20060922 | 80.64427 | 256.34171 | 122.18750 | 6.64059 | 0.1168796 | 2.3177681 | 51 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 86477 | 2004 $HU_1$ |
| 2004 $HV_1$ | 17.1 | 0.15 | 20060922 | 236.93287 | 33.51055 | 209.05553 | 7.29921 | 0.1116589 | 2.2502318 | 64 | 4 | 2001–2005 | 0.47 | M-v | 1 | MPC | 95208 | 2004 $HV_1$ |
| 2004 $HF_2$ | 16.7 | 0.15 | 20060922 | 190.19580 | 120.43805 | 188.40472 | 3.57599 | 0.2037622 | 2.1997539 | 35 | 3 | 1998–2005 | 0.57 | M-v | 2 | MPC | 69719 | 2004 $HF_2$ |
| 2004 $HH_3$ | 15.5 | 0.15 | 20060922 | 212.02806 | 331.58990 | 234.45578 | 12.56546 | 0.1265516 | 2.6159250 | 76 | 7 | 1993–2006 | 0.47 | M-v | 1 | MPC | 87631 | 2004 $HH_3$ |
| 2004 $HJ_3$ | 16.2 | 0.15 | 20060922 | 257.08515 | 234.03849 | 304.93845 | 6.34159 | 0.1424228 | 2.3973806 | 61 | 5 | 2000–2006 | 0.65 | M-v | 1 | MPC | 87631 | 2004 $HJ_3$ |
| 2004 $HX_3$ | 15.7 | 0.15 | 20060922 | 155.58173 | 192.47862 | 109.48075 | 10.12773 | 0.1742328 | 2.5941764 | 80 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97706 | 2004 $HX_3$ |
| 2004 $HA_4$ | 14.7 | 0.15 | 20060922 | 173.74265 | 118.69638 | 75.99864 | 10.43360 | 0.0638018 | 3.0943242 | 54 | 6 | 1998–2006 | 0.65 | M-v | 1 | MPC | 87631 | 2004 $HA_4$ |
| 2004 $HE_4$ | 16.4 | 0.15 | 20060922 | 231.60644 | 340.86616 | 227.42899 | 6.07620 | 0.1962314 | 2.3444818 | 61 | 5 | 1995–2006 | 0.51 | M-v | 2 | MPC | 65729 | 2004 $HE_4$ |
| 2004 $HQ_4$ | 16.3 | 0.15 | 20060922 | 321.03910 | 46.95129 | 42.47259 | 13.65581 | 0.1383165 | 2.5439689 | 82 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 86478 | 2004 $HQ_4$ |
| 2004 $HR_4$ | 16.4 | 0.15 | 20060922 | 197.00349 | 16.42486 | 186.23284 | 8.07084 | 0.1655520 | 2.7494692 | 27 | 3 | 1981–2006 | 0.59 | M-v | 3 | MPC | 62164 | 2004 $HR_4$ |
| 2004 $HB_5$ | 17.1 | 0.15 | 20060922 | 305.63277 | 59.49213 | 62.86395 | 3.08374 | 0.1271024 | 2.4107119 | 48 | 5 | 1998–2006 | 0.48 | M-v | 0 | MPC | 65730 | 2004 $HB_5$ |
| 2004 $HC_5$ | 16.1 | 0.15 | 20060922 | 181.27563 | 79.56725 | 135.25994 | 2.60484 | 0.0877961 | 2.7894148 | 46 | 3 | 2004–2006 | 0.45 | M-v | 3 | MPC | 89550 | 2004 $HC_5$ |
| 2004 $HV_5$ | 15.6 | 0.15 | 20060922 | 204.58260 | 123.91306 | 58.13290 | 4.82205 | 0.1521470 | 2.8321949 | 56 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 65730 | 2004 $HV_5$ |
| 2004 $HY_5$ | 16.9 | 0.15 | 20060922 | 316.34848 | 29.70437 | 81.35054 | 7.30957 | 0.1394271 | 2.4007782 | 41 | 5 | 1993–2006 | 0.55 | M-v | 1 | MPC | 95208 | 2004 $HY_5$ |
| 2004 $HC_6$ | 15.6 | 0.15 | 20060922 | 210.15448 | 152.79947 | 56.13568 | 12.85546 | 0.1283263 | 2.6963622 | 134 | 5 | 2001–2006 | 0.44 | M-v | 1 | MPC | 87631 | 2004 $HC_6$ |
| 2004 $HG_6$ | 16.4 | 0.15 | 20060922 | 221.16834 | 150.59897 | 79.50404 | 4.34786 | 0.1642459 | 2.4720837 | 51 | 4 | 1996–2006 | 0.56 | M-v | 3 | MPC | 65731 | 2004 $HG_6$ |
| 2004 $HY_6$ | 16.3 | 0.15 | 20060922 | 233.58439 | 25.31075 | 160.44415 | 12.69610 | 0.2062796 | 2.6175898 | 55 | 3 | 2004–2006 | 0.43 | M-v | 3 | MPC | 86480 | 2004 $HY_6$ |
| 2004 $HZ_6$ | 15.6 | 0.15 | 20060922 | 179.16216 | 24.02725 | 157.05776 | 5.23445 | 0.1351587 | 3.1779342 | 47 | 4 | 2003–2006 | 0.46 | M-v | 1 | MPC | 04304 | 2004 $HZ_6$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $HO_{7}$ | 16.9 | 0.15 | 20060922 | 170.49848 | 73.17979 | 171.86299 | 4.46806 | 0.1452595 | 2.6152840 | 35 | 4 | 2001–2006 | 0.44 | M-v | 0 | MPC | 87631 | 2004 $HO_{7}$ |
| 2004 $HE_{8}$ | 16.3 | 0.15 | 20060922 | 170.94871 | 254.71285 | 349.62604 | 3.31631 | 0.0317286 | 2.6375597 | 46 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 87632 | 2004 $HE_{8}$ |
| 2004 $HO_{8}$ | 14.9 | 0.15 | 20060922 | 109.25637 | 125.38544 | 149.25020 | 6.71672 | 0.1143157 | 3.1588202 | 64 | 6 | 1998–2006 | 0.58 | M-v | 0 | MPC | 90199 | 2004 $HO_{8}$ |
| 2004 $HT_{8}$ | 16.3 | 0.15 | 20060922 | 294.32136 | 80.46209 | 68.31075 | 6.43831 | 0.0688421 | 2.3706381 | 29 | 5 | 1993–2006 | 0.67 | M-v | 1 | MPC | 87632 | 2004 $HT_{8}$ |
| 2004 $HG_{9}$ | 15.9 | 0.15 | 20060922 | 177.03427 | 179.60180 | 0.51787 | 5.58513 | 0.1563808 | 3.1954012 | 47 | 6 | 1998–2006 | 0.64 | M-v | 1 | MPC | 04304 | 2004 $HG_{9}$ |
| 2004 $HL_{9}$ | 15.7 | 0.15 | 20060922 | 110.91124 | 27.82926 | 238.69774 | 13.80552 | 0.1910268 | 3.1606895 | 37 | 3 | 2004–2006 | 0.39 | M-v | 3 | MPC | 00718 | 2004 $HL_{9}$ |
| 2004 $HS_{9}$ | 16.6 | 0.15 | 20060922 | 257.59343 | 219.34543 | 337.06622 | 1.78001 | 0.1574558 | 2.3479065 | 62 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 87632 | 2004 $HS_{9}$ |
| 2004 $HE_{10}$ | 15.3 | 0.15 | 20060922 | 167.29863 | 69.62335 | 185.51371 | 6.70563 | 0.1389657 | 2.7803406 | 116 | 6 | 1999–2006 | 0.49 | M-v | 1 | MPC | 97706 | 2004 $HE_{10}$ |
| 2004 $HG_{10}$ | 16.9 | 0.15 | 20060922 | 286.43276 | 169.80548 | 356.75894 | 2.28593 | 0.1482141 | 2.3357782 | 40 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 87632 | 2004 $HG_{10}$ |
| 2004 $HN_{10}$ | 15.5 | 0.15 | 20060922 | 123.81926 | 186.23586 | 115.11985 | 4.98124 | 0.0652505 | 2.7378274 | 41 | 3 | 2004–2006 | 0.43 | M-v | 3 | MPC | 86482 | 2004 $HN_{10}$ |
| 2004 $HW_{10}$ | 16.2 | 0.15 | 20060922 | 168.00332 | 198.95809 | 57.83853 | 10.17817 | 0.1095055 | 2.6106395 | 22 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 89550 | 2004 $HW_{10}$ |
| 2004 $HB_{11}$ | 17.0 | 0.15 | 20060922 | 211.57906 | 12.03873 | 246.23124 | 3.29570 | 0.1072109 | 2.2928381 | 47 | 5 | 1992–2006 | 0.59 | M-v | 1 | MPC | 04304 | 2004 $HB_{11}$ |
| 2004 $HH_{12}$ | 15.6 | 0.15 | 20060922 | 228.88997 | 350.91320 | 158.78211 | 11.75352 | 0.0977691 | 2.8979926 | 39 | 4 | 1999–2006 | 0.60 | M-v | 2 | MPC | 65737 | 2004 $HH_{12}$ |
| 2004 $HW_{12}$ | 16.1 | 0.15 | 20060922 | 341.84348 | 349.66128 | 89.49773 | 7.11146 | 0.1732754 | 2.3097822 | 49 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 65738 | 2004 $HW_{12}$ |
| 2004 $HD_{13}$ | 16.3 | 0.15 | 20060922 | 206.54715 | 336.05685 | 161.83835 | 13.28783 | 0.1321152 | 3.0220948 | 22 | 4 | 1993–2006 | 0.35 | M-v | 0 | MPC | 04304 | 2004 $HD_{13}$ |
| 2004 $HO_{15}$ | 16.3 | 0.15 | 20060922 | 92.55427 | 293.01309 | 21.80925 | 3.91966 | 0.0893276 | 2.7921046 | 42 | 4 | 2001–2006 | 0.41 | M-v | 0 | MPC | 90199 | 2004 $HO_{15}$ |
| 2004 $HW_{15}$ | 15.7 | 0.15 | 20060922 | 146.83827 | 180.50296 | 91.90413 | 12.66409 | 0.1253710 | 2.7182127 | 31 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87632 | 2004 $HW_{15}$ |
| 2004 $HZ_{15}$ | 14.5 | 0.15 | 20060922 | 92.48301 | 186.48775 | 107.73820 | 15.10948 | 0.1280197 | 3.2446143 | 72 | 3 | 2004–2006 | 0.56 | M-v | 3 | MPC | 86483 | 2004 $HZ_{15}$ |
| 2004 $HF_{16}$ | 17.4 | 0.15 | 20060922 | 240.28299 | 226.15904 | 2.73965 | 2.26188 | 0.1980570 | 2.3401414 | 53 | 3 | 2001–2005 | 0.43 | M-v | 2 | MPC | 89551 | 2004 $HF_{16}$ |
| 2004 $HY_{16}$ | 16.0 | 0.15 | 20060922 | 184.64126 | 165.68293 | 27.51658 | 10.66926 | 0.0391275 | 2.9652361 | 51 | 4 | 1996–2006 | 0.47 | M-v | 3 | MPC | 00718 | 2004 $HY_{16}$ |
| 2004 $HA_{17}$ | 16.0 | 0.15 | 20060922 | 228.68062 | 125.68597 | 26.39359 | 15.44478 | 0.0887725 | 2.8648576 | 43 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 89551 | 2004 $HA_{17}$ |
| 2004 $HE_{17}$ | 16.7 | 0.15 | 20060922 | 200.67843 | 256.85126 | 6.27139 | 5.53044 | 0.1149537 | 2.3461397 | 38 | 3 | 2001–2005 | 0.44 | M-v | 3 | MPC | 90199 | 2004 $HE_{17}$ |
| 2004 $HQ_{17}$ | 16.3 | 0.15 | 20060922 | 272.87257 | 207.05820 | 280.34223 | 3.50096 | 0.1688555 | 2.5467325 | 52 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 87632 | 2004 $HQ_{17}$ |
| 2004 $HY_{17}$ | 16.8 | 0.15 | 20060922 | 266.38829 | 208.50645 | 337.57401 | 4.05479 | 0.0723200 | 2.3342803 | 49 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97707 | 2004 $HY_{17}$ |
| 2004 $HF_{18}$ | 16.0 | 0.15 | 20060922 | 223.27235 | 337.16152 | 228.31999 | 3.77295 | 0.1285005 | 2.6124301 | 56 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87632 | 2004 $HF_{18}$ |
| 2004 $HN_{18}$ | 16.6 | 0.15 | 20060922 | 226.90576 | 320.25708 | 285.07689 | 3.45215 | 0.0572302 | 2.2644848 | 58 | 3 | 2004–2006 | 0.56 | M-v | 3 | MPC | 90199 | 2004 $HN_{18}$ |
| 2004 $HU_{18}$ | 14.4 | 0.15 | 20060922 | 121.48056 | 359.29486 | 249.61058 | 24.51214 | 0.1896694 | 3.1099584 | 52 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 87632 | 2004 $HU_{18}$ |
| 2004 $HM_{19}$ | 15.5 | 0.15 | 20060922 | 356.99246 | 28.77044 | 15.89359 | 9.10827 | 0.0498574 | 2.6119641 | 48 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 86484 | 2004 $HM_{19}$ |
| 2004 $HD_{20}$ | 15.5 | 0.15 | 20060922 | 265.36169 | 52.15167 | 116.73532 | 6.03031 | 0.1665239 | 2.5409322 | 65 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 65742 | 2004 $HD_{20}$ |
| 2004 $HJ_{20}$ | 17.2 | 0.15 | 20060922 | 202.34950 | 115.69005 | 111.85963 | 6.57179 | 0.1854078 | 2.5347068 | 48 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 65742 | 2004 $HJ_{20}$ |
| 2004 $HT_{20}$ | 17.2 | 0.15 | 20060922 | 262.93047 | 25.14537 | 147.56984 | 2.74345 | 0.1515469 | 2.4298909 | 19 | 3 | 2004–2006 | 0.48 | M-v | 4 | MPC | 86485 | 2004 $HT_{20}$ |
| 2004 $HW_{21}$ | 15.9 | 0.15 | 20060922 | 135.21917 | 191.96698 | 38.46691 | 4.37730 | 0.0493076 | 3.1704357 | 37 | 6 | 1995–2006 | 0.38 | M-v | 0 | MPC | 66366 | 2004 $HW_{21}$ |
| 2004 $HH_{22}$ | 16.1 | 0.15 | 20060922 | 72.47427 | 126.83008 | 186.05196 | 1.81299 | 0.0665049 | 3.0040436 | 49 | 3 | 2004–2006 | 0.29 | M-v | 3 | MPC | 86485 | 2004 $HH_{22}$ |
| 2004 $HP_{24}$ | 16.1 | 0.15 | 20060922 | 194.24161 | 182.56482 | 65.72948 | 13.55996 | 0.1336572 | 2.5981610 | 65 | 4 | 2001–2005 | 0.57 | M-v | 1 | MPC | 89553 | 2004 $HP_{24}$ |
| 2004 $HQ_{24}$ | 16.0 | 0.15 | 20060922 | 69.40915 | 116.95563 | 178.42466 | 7.18988 | 0.1367905 | 3.0924170 | 41 | 3 | 1995–2006 | 0.36 | M-v | 2 | MPC | 76465 | 2004 $HQ_{24}$ |
| 2004 $HZ_{24}$ | 16.6 | 0.15 | 20060922 | 164.67079 | 68.35341 | 189.27417 | 8.18229 | 0.2897154 | 2.6945087 | 42 | 2 | 2004–2005 | 0.48 | M-v | 4 | MPC | 90199 | 2004 $HZ_{24}$ |
| 2004 $HP_{25}$ | 14.9 | 0.15 | 20060922 | 97.58297 | 224.92288 | 55.86680 | 7.41704 | 0.1039993 | 3.2240054 | 67 | 5 | 2000–2006 | 0.40 | M-v | 0 | MPC | 86486 | 2004 $HP_{25}$ |
| 2004 $HR_{25}$ | 17.0 | 0.15 | 20060922 | 265.07800 | 27.47480 | 143.48682 | 3.27708 | 0.1175700 | 2.4415768 | 42 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 90200 | 2004 $HR_{25}$ |
| 2004 $HS_{25}$ | 16.1 | 0.15 | 20060922 | 178.18110 | 167.44265 | 67.40071 | 6.42803 | 0.0684476 | 2.7295085 | 62 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 89553 | 2004 $HS_{25}$ |
| 2004 $HB_{26}$ | 16.5 | 0.15 | 20060922 | 203.42213 | 124.64090 | 88.47137 | 3.39377 | 0.1443593 | 2.6845011 | 47 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 76465 | 2004 $HB_{26}$ |
| 2004 $HK_{26}$ | 15.2 | 0.15 | 20060922 | 100.70832 | 82.30374 | 208.89969 | 14.01631 | 0.1600191 | 3.1219598 | 34 | 5 | 1999–2006 | 0.47 | M-v | 0 | MPC | 89553 | 2004 $HK_{26}$ |
| 2004 $HL_{26}$ | 17.1 | 0.15 | 20060922 | 238.03331 | 144.48489 | 107.06836 | 2.83110 | 0.1287004 | 2.2032668 | 46 | 3 | 1995–2005 | 0.48 | M-v | 3 | MPC | 97707 | 2004 $HL_{26}$ |
| 2004 $HO_{26}$ | 15.4 | 0.15 | 20060922 | 200.76251 | 91.83325 | 93.72632 | 5.54672 | 0.0106658 | 2.8047757 | 47 | 4 | 2001–2006 | 0.72 | M-v | 1 | MPC | 76466 | 2004 $HO_{26}$ |
| 2004 $HB_{27}$ | 12.7 | 0.15 | 20060922 | 313.48388 | 238.10716 | 105.30452 | 7.27996 | 0.0654936 | 5.1477083 | 40 | 7 | 1992–2005 | 0.54 | M-v | 0 | MPC | 04304 | 2004 $HB_{27}$ |
| 2004 $HC_{27}$ | 15.3 | 0.15 | 20060922 | 225.71916 | 136.11594 | 41.25631 | 14.79077 | 0.0283542 | 2.6610414 | 67 | 6 | 1999–2006 | 0.56 | M-v | 1 | MPC | 87632 | 2004 $HC_{27}$ |
| 2004 $HS_{27}$ | 16.7 | 0.15 | 20060922 | 227.44649 | 79.98232 | 159.60406 | 5.12333 | 0.1118917 | 2.3221195 | 54 | 7 | 1994–2006 | 0.47 | M-v | 1 | MPC | 87632 | 2004 $HS_{27}$ |
| 2004 $HC_{28}$ | 16.5 | 0.15 | 20060922 | 188.66749 | 177.80779 | 55.36056 | 12.82100 | 0.1356885 | 2.6710789 | 35 | 3 | 2001–2006 | 0.36 | M-v | 2 | MPC | 65747 | 2004 $HC_{28}$ |
| 2004 $HD_{28}$ | 16.1 | 0.15 | 20060922 | 246.78481 | 71.45335 | 97.93533 | 4.46022 | 0.1253693 | 2.6056455 | 51 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 65747 | 2004 $HD_{28}$ |
| 2004 $HJ_{28}$ | 15.9 | 0.15 | 20060922 | 161.38623 | 80.50237 | 142.32247 | 3.97618 | 0.2120791 | 3.0620779 | 60 | 6 | 1993–2006 | 0.44 | M-v | 1 | MPC | 95211 | 2004 $HJ_{28}$ |
| 2004 $HT_{28}$ | 16.1 | 0.15 | 20060922 | 228.48839 | 95.09747 | 112.65432 | 5.00846 | 0.1388409 | 2.5457475 | 54 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 87632 | 2004 $HT_{28}$ |
| 2004 $HQ_{29}$ | 15.5 | 0.15 | 20060922 | 122.03549 | 63.38865 | 229.48930 | 8.45772 | 0.1927986 | 2.7622989 | 50 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 02203 | 2004 $HQ_{29}$ |
| 2004 $HU_{29}$ | 16.8 | 0.15 | 20060922 | 186.62369 | 11.93712 | 270.29111 | 2.60351 | 0.2094161 | 2.3883457 | 39 | 3 | 2001–2005 | 0.43 | M-v | 2 | MPC | 89554 | 2004 $HU_{29}$ |
| 2004 $HD_{30}$ | 15.9 | 0.15 | 20060922 | 165.36130 | 352.36294 | 208.88888 | 4.67042 | 0.0957269 | 3.1327270 | 42 | 5 | 1995–2006 | 0.34 | M-v | 0 | MPC | 87632 | 2004 $HD_{30}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $HF_{30}$ | 15.9 | 0.15 | 20060922 | 220.08577 | 145.19624 | 37.01909 | 10.93173 | 0.0495390 | 2.7196909 | 58 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 69721 | 2004 $HF_{30}$ |
| 2004 $HJ_{30}$ | 15.7 | 0.15 | 20060922 | 182.42798 | 157.87153 | 37.67307 | 2.85194 | 0.1359040 | 3.0072889 | 51 | 4 | 1996–2006 | 0.39 | M-v | 1 | MPC | 65751 | 2004 $HJ_{30}$ |
| 2004 $HM_{30}$ | 15.1 | 0.15 | 20060922 | 215.07445 | 307.76093 | 216.66219 | 8.46694 | 0.0890926 | 3.0076136 | 70 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 65751 | 2004 $HM_{30}$ |
| 2004 $HN_{30}$ | 16.9 | 0.15 | 20060922 | 232.10852 | 170.70628 | 54.43594 | 3.79544 | 0.1196605 | 2.3804590 | 52 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 87633 | 2004 $HN_{30}$ |
| 2004 $HW_{30}$ | 16.2 | 0.15 | 20060922 | 154.28603 | 93.28642 | 204.30158 | 15.26600 | 0.2350741 | 2.6510673 | 35 | 3 | 1996–2005 | 0.52 | M-v | 2 | MPC | 65752 | 2004 $HW_{30}$ |
| 2004 $HK_{31}$ | 15.3 | 0.15 | 20060922 | 185.30749 | 62.28587 | 151.57869 | 11.11306 | 0.0689564 | 2.9512306 | 50 | 3 | 1998–2005 | 0.59 | M-v | 3 | MPC | 90200 | 2004 $HK_{31}$ |
| 2004 $HL_{31}$ | 15.7 | 0.15 | 20060922 | 286.56972 | 3.21818 | 76.34463 | 8.68955 | 0.1248448 | 2.9758127 | 38 | 4 | 2001–2006 | 0.76 | M-v | 1 | MPC | 65753 | 2004 $HL_{31}$ |
| 2004 $HO_{31}$ | 16.1 | 0.15 | 20060922 | 19.68249 | 332.61573 | 47.99881 | 4.48907 | 0.0591333 | 2.6144016 | 64 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 86488 | 2004 $HO_{31}$ |
| 2004 $HT_{31}$ | 15.3 | 0.15 | 20060922 | 102.35707 | 228.40199 | 53.79195 | 7.06976 | 0.1049373 | 3.0420910 | 47 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 65753 | 2004 $HT_{31}$ |
| 2004 $HA_{33}$ | 17.2 | 0.15 | 20060922 | 243.93632 | 82.63467 | 100.06643 | 5.67763 | 0.1345818 | 2.4508942 | 36 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87633 | 2004 $HA_{33}$ |
| 2004 $HN_{33}$ | 14.9 | 0.15 | 20060922 | 110.42352 | 83.56181 | 199.36807 | 25.00267 | 0.2465007 | 3.1799064 | 48 | 3 | 2004–2006 | 0.58 | M-v | 2 | MPC | 90200 | 2004 $HN_{33}$ |
| 2004 $HP_{34}$ | 15.7 | 0.15 | 20060922 | 162.81093 | 44.77155 | 156.95025 | 10.72200 | 0.1616978 | 3.1425202 | 53 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 87633 | 2004 $HP_{34}$ |
| 2004 $HU_{34}$ | 16.5 | 0.15 | 20060922 | 54.05095 | 132.21899 | 208.13637 | 6.30994 | 0.0423209 | 2.6717814 | 35 | 5 | 1997–2006 | 0.45 | M-v | 0 | MPC | 86489 | 2004 $HU_{34}$ |
| 2004 $HA_{35}$ | 16.6 | 0.15 | 20060922 | 146.40443 | 40.53991 | 207.66059 | 4.28086 | 0.0572430 | 2.7119691 | 35 | 3 | 2004–2006 | 0.37 | M-v | 3 | MPC | 86489 | 2004 $HA_{35}$ |
| 2004 $HU_{35}$ | 15.9 | 0.15 | 20060922 | 279.16537 | 333.39145 | 224.66091 | 23.50766 | 0.1584115 | 2.3010072 | 65 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 97707 | 2004 $HU_{35}$ |
| 2004 $HP_{36}$ | 15.6 | 0.15 | 20060922 | 91.30859 | 222.20644 | 119.70596 | 7.77473 | 0.1394108 | 2.4433132 | 58 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 90200 | 2004 $HP_{36}$ |
| 2004 $HU_{36}$ | 14.6 | 0.15 | 20060922 | 103.74564 | 190.53458 | 78.32952 | 23.43429 | 0.1535841 | 3.2126426 | 61 | 5 | 1995–2006 | 0.60 | M-v | 1 | MPC | 77782 | 2004 $HU_{36}$ |
| 2004 $HV_{36}$ | 16.1 | 0.15 | 20060922 | 208.86979 | 346.17306 | 203.90711 | 16.53042 | 0.1231228 | 2.7735504 | 33 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 65757 | 2004 $HV_{36}$ |
| 2004 $HW_{36}$ | 14.7 | 0.15 | 20060922 | 95.48489 | 219.28263 | 55.78364 | 27.24537 | 0.1248543 | 3.1721531 | 45 | 3 | 2004–2006 | 0.55 | M-v | 2 | MPC | 86490 | 2004 $HW_{36}$ |
| 2004 $HK_{37}$ | 15.4 | 0.15 | 20060922 | 91.87967 | 185.68609 | 116.21794 | 11.91663 | 0.1674816 | 3.0442829 | 46 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87633 | 2004 $HK_{37}$ |
| 2004 $HS_{37}$ | 15.3 | 0.15 | 20060922 | 220.13357 | 91.67902 | 74.43119 | 14.87783 | 0.1886191 | 2.7257393 | 72 | 4 | 1999–2005 | 0.62 | M-v | 1 | MPC | 87633 | 2004 $HS_{37}$ |
| 2004 $HT_{37}$ | 14.9 | 0.15 | 20060922 | 23.73322 | 171.46960 | 169.54676 | 21.20160 | 0.0262399 | 3.1700420 | 53 | 6 | 1992–2006 | 0.64 | M-v | 1 | MPC | 04305 | 2004 $HT_{37}$ |
| 2004 $HC_{38}$ | 16.0 | 0.15 | 20060922 | 248.33217 | 120.99211 | 34.79690 | 16.16443 | 0.0715820 | 2.7044722 | 75 | 3 | 1997–2006 | 0.51 | M-v | 2 | MPC | 89555 | 2004 $HC_{38}$ |
| 2004 $HE_{38}$ | 15.3 | 0.15 | 20060922 | 134.24963 | 174.21648 | 104.74648 | 10.55062 | 0.1259183 | 2.7699639 | 41 | 4 | 1995–2005 | 0.64 | M-v | 1 | MPC | 86491 | 2004 $HE_{38}$ |
| 2004 $HN_{38}$ | 15.0 | 0.15 | 20060922 | 110.47863 | 90.73412 | 176.84413 | 16.07777 | 0.0222997 | 3.1779697 | 46 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 87633 | 2004 $HN_{38}$ |
| 2004 $HD_{39}$ | 14.2 | 0.15 | 20060922 | 174.89160 | 301.28193 | 232.42046 | 25.59929 | 0.2432380 | 3.1499234 | 88 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 66368 | 2004 $HD_{39}$ |
| 2004 $HB_{41}$ | 15.8 | 0.15 | 20060922 | 186.82958 | 142.41613 | 48.82896 | 9.68003 | 0.0790183 | 3.0003657 | 38 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 02203 | 2004 $HB_{41}$ |
| 2004 $HE_{41}$ | 17.1 | 0.15 | 20060922 | 11.30172 | 331.69256 | 71.66045 | 2.09369 | 0.0925680 | 2.5674995 | 24 | 3 | 2004–2006 | 0.22 | M-v | 3 | MPC | 86491 | 2004 $HE_{41}$ |
| 2004 $HG_{41}$ | 17.0 | 0.15 | 20060922 | 231.50436 | 161.12690 | 92.61892 | 2.78374 | 0.2069915 | 2.2955720 | 37 | 2 | 2004–2005 | 0.52 | M-v | 4 | MPC | 89555 | 2004 $HG_{41}$ |
| 2004 $HL_{42}$ | 17.1 | 0.15 | 20060922 | 237.11069 | 239.08816 | 347.14118 | 1.69061 | 0.1381005 | 2.3126892 | 53 | 3 | 1997–2005 | 0.59 | M-v | 3 | MPC | 90200 | 2004 $HL_{42}$ |
| 2004 $HY_{42}$ | 16.0 | 0.15 | 20060922 | 285.43667 | 122.32154 | 15.89472 | 2.06056 | 0.0754373 | 2.5728012 | 44 | 5 | 1997–2006 | 0.51 | M-v | 0 | MPC | 89556 | 2004 $HY_{42}$ |
| 2004 $HB_{43}$ | 16.9 | 0.15 | 20060922 | 168.89941 | 0.13656 | 272.15056 | 1.20952 | 0.1460138 | 2.5991072 | 54 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 02203 | 2004 $HB_{43}$ |
| 2004 $HP_{43}$ | 17.5 | 0.15 | 20060922 | 270.11677 | 302.15794 | 243.87454 | 0.19096 | 0.1489991 | 2.2932777 | 32 | 3 | 2002–2005 | 0.47 | M-v | 3 | MPC | 89556 | 2004 $HP_{43}$ |
| 2004 $HV_{43}$ | 16.3 | 0.15 | 20060922 | 223.68565 | 293.65622 | 268.06742 | 3.71771 | 0.1598630 | 2.5344012 | 42 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 86491 | 2004 $HV_{43}$ |
| 2004 $HF_{44}$ | 15.4 | 0.15 | 20060922 | 67.09183 | 333.66724 | 359.87034 | 6.02836 | 0.1023884 | 2.9035068 | 61 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 86491 | 2004 $HF_{44}$ |
| 2004 $HK_{44}$ | 16.8 | 0.15 | 20060922 | 254.39721 | 313.98597 | 280.92063 | 3.90998 | 0.0825211 | 2.1752528 | 47 | 3 | 2002–2005 | 0.61 | M-v | 3 | MPC | 89556 | 2004 $HK_{44}$ |
| 2004 $HR_{45}$ | 16.1 | 0.15 | 20060922 | 240.45854 | 356.23602 | 192.48214 | 1.76015 | 0.0976129 | 2.5573840 | 55 | 5 | 1971–2006 | 0.44 | M-v | 0 | MPC | 87633 | 2004 $HR_{45}$ |
| 2004 $HX_{45}$ | 15.7 | 0.15 | 20060922 | 198.86013 | 178.67779 | 54.33964 | 14.88040 | 0.1640308 | 2.6820971 | 50 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87633 | 2004 $HX_{45}$ |
| 2004 $HF_{46}$ | 16.1 | 0.15 | 20060922 | 216.37016 | 222.77937 | 339.60382 | 11.10017 | 0.1222814 | 2.6261587 | 31 | 2 | 2004–2005 | 0.53 | M-v | 3 | MPC | 89556 | 2004 $HF_{46}$ |
| 2004 $HW_{46}$ | 15.5 | 0.15 | 20060922 | 154.68905 | 262.86794 | 1.07039 | 13.05444 | 0.1800384 | 2.7233400 | 46 | 3 | 1996–2005 | 0.60 | M-v | 2 | MPC | 86492 | 2004 $HW_{46}$ |
| 2004 $HX_{46}$ | 17.3 | 0.15 | 20060922 | 267.45989 | 195.10737 | 10.97905 | 8.51042 | 0.0981344 | 2.2282456 | 40 | 3 | 1995–2005 | 0.44 | M-v | 3 | MPC | 97707 | 2004 $HX_{46}$ |
| 2004 $HM_{47}$ | 16.7 | 0.15 | 20060922 | 185.22151 | 192.86446 | 56.01318 | 6.30190 | 0.0753246 | 2.5998140 | 32 | 3 | 2001–2005 | 0.44 | M-v | 2 | MPC | 89557 | 2004 $HM_{47}$ |
| 2004 $HS_{47}$ | 15.9 | 0.15 | 20060922 | 162.18555 | 138.95101 | 156.65316 | 11.33094 | 0.1230485 | 2.5534317 | 60 | 4 | 2001–2005 | 0.56 | M-v | 1 | MPC | 90200 | 2004 $HS_{47}$ |
| 2004 $HX_{47}$ | 15.3 | 0.15 | 20060922 | 225.44114 | 209.58852 | 322.63550 | 8.22852 | 0.0869406 | 2.7543594 | 44 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 65765 | 2004 $HX_{47}$ |
| 2004 $HY_{47}$ | 16.2 | 0.15 | 20060922 | 264.03980 | 178.44778 | 327.50160 | 7.14233 | 0.1438075 | 2.5831891 | 38 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 87633 | 2004 $HY_{47}$ |
| 2004 $HE_{48}$ | 15.3 | 0.15 | 20060922 | 127.72374 | 18.61612 | 302.57682 | 12.35724 | 0.2653333 | 2.5666843 | 98 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 95213 | 2004 $HE_{48}$ |
| 2004 $HR_{48}$ | 15.2 | 0.15 | 20060922 | 233.12016 | 164.38164 | 358.98370 | 14.57374 | 0.0851361 | 2.7876843 | 39 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 76466 | 2004 $HR_{48}$ |
| 2004 $HN_{49}$ | 16.7 | 0.15 | 20060922 | 189.44930 | 176.98301 | 86.26646 | 6.33993 | 0.1171541 | 2.3512394 | 41 | 6 | 1997–2006 | 0.47 | M-v | 1 | MPC | 87633 | 2004 $HN_{49}$ |
| 2004 $HT_{49}$ | 16.1 | 0.15 | 20060922 | 117.12572 | 187.33752 | 83.94720 | 4.22871 | 0.2028873 | 3.0899766 | 41 | 5 | 1993–2006 | 0.44 | M-v | 0 | MPC | 87633 | 2004 $HT_{49}$ |
| 2004 $HF_{50}$ | 15.9 | 0.15 | 20060922 | 315.06893 | 31.26933 | 99.86610 | 6.67242 | 0.0566175 | 2.4031341 | 39 | 5 | 2000–2006 | 0.69 | M-v | 1 | MPC | 95214 | 2004 $HF_{50}$ |
| 2004 $HK_{50}$ | 15.4 | 0.15 | 20060922 | 181.50348 | 131.50880 | 107.97461 | 13.51594 | 0.1466167 | 2.6213561 | 58 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 65766 | 2004 $HK_{50}$ |
| 2004 $HS_{50}$ | 17.5 | 0.15 | 20060922 | 210.53953 | 134.45737 | 131.55986 | 7.31334 | 0.0705091 | 2.2820008 | 22 | 4 | 2000–2006 | 0.24 | M-v | 1 | MPC | 73006 | 2004 $HS_{50}$ |
| 2004 $HY_{50}$ | 15.3 | 0.15 | 20060922 | 269.05984 | 188.87598 | 286.13563 | 14.80072 | 0.2314129 | 2.5856740 | 55 | 3 | 2002–2006 | 0.59 | M-v | 2 | MPC | 65767 | 2004 $HY_{50}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $HZ_{50}$ | 15.3 | 0.15 | 20060922 | 141.86362 | 345.59674 | 284.81659 | 12.29868 | 0.1596949 | 2.7311617 | 51 | 2 | 2004–2005 | 0.74 | M-v | 4 | MPC | 03622 | 2004 $HZ_{50}$ |
| 2004 $HA_{51}$ | 15.8 | 0.15 | 20060922 | 144.39075 | 283.77526 | 310.63128 | 14.04380 | 0.1314866 | 3.0039735 | 28 | 3 | 2000–2005 | 0.55 | M-v | 2 | MPC | 86493 | 2004 $HA_{51}$ |
| 2004 $HJ_{52}$ | 16.6 | 0.15 | 20060922 | 202.67156 | 35.18372 | 180.43284 | 14.61211 | 0.2059077 | 2.6818945 | 38 | 4 | 1992–2005 | 0.52 | M-v | 1 | MPC | 03622 | 2004 $HJ_{52}$ |
| 2004 $HV_{52}$ | 14.6 | 0.15 | 20060922 | 117.49478 | 295.61908 | 320.82471 | 12.35002 | 0.1627411 | 3.1571492 | 50 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 86494 | 2004 $HV_{52}$ |
| 2004 $HB_{53}$ | 14.7 | 0.15 | 20060922 | 78.70769 | 176.88932 | 103.85264 | 20.63616 | 0.0536321 | 3.1985254 | 52 | 4 | 2001–2006 | 0.65 | M-v | 0 | MPC | 65768 | 2004 $HB_{53}$ |
| 2004 $HC_{53}$ | 14.8 | 0.15 | 20060922 | 125.78016 | 186.55161 | 54.44351 | 26.41944 | 0.2365871 | 3.1631064 | 48 | 4 | 1993–2005 | 0.66 | M-v | 1 | MPC | 03622 | 2004 $HC_{53}$ |
| 2004 $HJ_{54}$ | 15.9 | 0.15 | 20060922 | 227.01459 | 302.43776 | 273.28617 | 7.91130 | 0.1890621 | 2.4080605 | 56 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 87633 | 2004 $HJ_{54}$ |
| 2004 $HL_{54}$ | 15.9 | 0.15 | 20060922 | 239.21374 | 300.93897 | 246.24924 | 3.06472 | 0.0637873 | 2.5653883 | 51 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 90200 | 2004 $HL_{54}$ |
| 2004 $HY_{54}$ | 15.7 | 0.15 | 20060922 | 224.12855 | 353.30845 | 220.94000 | 5.58305 | 0.1156026 | 2.5440316 | 84 | 6 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97707 | 2004 $HY_{54}$ |
| 2004 $HZ_{55}$ | 14.8 | 0.15 | 20060922 | 104.57558 | 149.45551 | 128.75186 | 15.11941 | 0.1539780 | 3.1802002 | 52 | 5 | 1999–2006 | 0.54 | M-v | 0 | MPC | 86495 | 2004 $HZ_{55}$ |
| 2004 $HH_{56}$ | 16.9 | 0.15 | 20060922 | 206.41084 | 344.34593 | 263.27076 | 6.72040 | 0.0708550 | 2.4171658 | 35 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 89557 | 2004 $HH_{56}$ |
| 2004 $HY_{56}$ | 15.3 | 0.15 | 20060922 | 141.91703 | 188.69739 | 128.80148 | 19.24786 | 0.2102040 | 2.6046782 | 53 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 97707 | 2004 $HY_{56}$ |
| 2004 $HC_{58}$ | 16.8 | 0.15 | 20060922 | 293.68813 | 257.35452 | 205.81515 | 1.42698 | 0.0492481 | 2.8502671 | 39 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 87634 | 2004 $HC_{58}$ |
| 2004 $HD_{58}$ | 16.6 | 0.15 | 20060922 | 70.30195 | 128.58937 | 215.42417 | 2.03856 | 0.0874142 | 2.8143855 | 46 | 7 | 1994–2006 | 0.35 | M-v | 0 | MPC | 90201 | 2004 $HD_{58}$ |
| 2004 $HH_{58}$ | 16.2 | 0.15 | 20060922 | 39.00546 | 348.30911 | 45.83813 | 4.25524 | 0.0781706 | 2.5736985 | 39 | 5 | 2001–2006 | 0.44 | M-v | 1 | MPC | 86495 | 2004 $HH_{58}$ |
| 2004 $HP_{58}$ | 16.4 | 0.15 | 20060922 | 254.87878 | 163.90119 | 329.99741 | 0.92383 | 0.0442405 | 2.6852989 | 57 | 6 | 1999–2006 | 0.49 | M-v | 0 | MPC | 86496 | 2004 $HP_{58}$ |
| 2004 $HG_{59}$ | 15.9 | 0.15 | 20060922 | 181.74409 | 8.70015 | 238.16076 | 10.77975 | 0.1326707 | 2.6784045 | 61 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 87634 | 2004 $HG_{59}$ |
| 2004 $HU_{59}$ | 15.8 | 0.15 | 20060922 | 258.05305 | 86.49541 | 46.14656 | 17.71536 | 0.1667136 | 2.6951747 | 37 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 66371 | 2004 $HU_{59}$ |
| 2004 $HB_{60}$ | 15.0 | 0.15 | 20060922 | 150.51474 | 152.71066 | 83.58508 | 12.20229 | 0.1541021 | 3.1137136 | 58 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87634 | 2004 $HB_{60}$ |
| 2004 $HD_{60}$ | 15.7 | 0.15 | 20060922 | 177.60763 | 2.97773 | 240.25579 | 13.83927 | 0.1277394 | 2.6541586 | 33 | 3 | 2004–2006 | 0.51 | M-v | 2 | MPC | 86496 | 2004 $HD_{60}$ |
| 2004 $HH_{60}$ | 17.3 | 0.15 | 20060922 | 219.19751 | 42.44305 | 240.78300 | 3.84217 | 0.2660095 | 2.2634527 | 56 | 3 | 2001–2005 | 0.58 | M-v | 3 | MPC | 65775 | 2004 $HH_{60}$ |
| 2004 $HN_{60}$ | 15.8 | 0.15 | 20060922 | 251.27408 | 142.40047 | 21.82367 | 6.70333 | 0.2490320 | 2.5582735 | 52 | 5 | 1971–2006 | 0.50 | M-v | 2 | MPC | 65775 | 2004 $HN_{60}$ |
| 2004 $HP_{60}$ | 14.8 | 0.15 | 20060922 | 162.88742 | 346.36153 | 227.48937 | 16.60276 | 0.1421838 | 3.0838282 | 62 | 6 | 1999–2006 | 0.57 | M-v | 1 | MPC | 87634 | 2004 $HP_{60}$ |
| 2004 $HF_{61}$ | 15.8 | 0.15 | 20060922 | 236.82021 | 145.07916 | 21.18931 | 12.16544 | 0.1812943 | 2.6654036 | 58 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 65776 | 2004 $HF_{61}$ |
| 2004 $HG_{61}$ | 15.8 | 0.15 | 20060922 | 277.04097 | 87.42579 | 54.42834 | 12.28931 | 0.1268606 | 2.6126401 | 98 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 86496 | 2004 $HG_{61}$ |
| 2004 $HQ_{61}$ | 16.2 | 0.15 | 20060922 | 229.62605 | 177.71673 | 64.71429 | 7.91184 | 0.0769677 | 2.3372561 | 68 | 5 | 2000–2006 | 0.63 | M-v | 1 | MPC | 90201 | 2004 $HQ_{61}$ |
| 2004 $HU_{61}$ | 15.6 | 0.15 | 20060922 | 249.41207 | 172.04818 | 0.15757 | 5.93640 | 0.1411598 | 2.5495723 | 59 | 6 | 2000–2006 | 0.51 | M-v | 1 | MPC | 86497 | 2004 $HU_{61}$ |
| 2004 $HX_{61}$ | 16.8 | 0.15 | 20060922 | 258.37260 | 258.80337 | 336.29681 | 4.30703 | 0.0697969 | 2.1718597 | 61 | 7 | 1992–2006 | 0.51 | M-v | 1 | MPC | 97708 | 2004 $HX_{61}$ |
| 2004 $HF_{62}$ | 15.6 | 0.15 | 20060922 | 154.48883 | 43.52265 | 243.72530 | 14.14081 | 0.1206709 | 2.6044370 | 59 | 3 | 2001–2005 | 0.47 | M-v | 2 | MPC | 89558 | 2004 $HF_{62}$ |
| 2004 $HJ_{62}$ | 16.5 | 0.15 | 20060922 | 176.88116 | 276.73615 | 1.46667 | 5.95523 | 0.2151764 | 2.5484835 | 49 | 3 | 2001–2005 | 0.52 | M-v | 3 | MPC | 89559 | 2004 $HJ_{62}$ |
| 2004 $HW_{63}$ | 15.5 | 0.15 | 20060922 | 305.75015 | 46.08290 | 59.31044 | 16.56892 | 0.1220467 | 2.5967630 | 102 | 5 | 1999–2006 | 0.55 | M-v | 2 | MPC | 86498 | 2004 $HW_{63}$ |
| 2004 $HZ_{63}$ | 15.5 | 0.15 | 20060922 | 123.47688 | 63.97618 | 210.81232 | 26.41581 | 0.1744039 | 3.1291057 | 23 | 3 | 2000–2005 | 0.47 | M-v | 2 | MPC | 65780 | 2004 $HZ_{63}$ |
| 2004 $HC_{65}$ | 16.0 | 0.15 | 20060922 | 309.03249 | 70.74751 | 23.91025 | 22.32780 | 0.0508378 | 2.6588094 | 28 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 69722 | 2004 $HC_{65}$ |
| 2004 $HD_{65}$ | 18.0 | 0.15 | 20060922 | 210.19571 | 270.93035 | 327.49217 | 1.68321 | 0.1393397 | 2.4050678 | 19 | 3 | 2000–2005 | 0.63 | M-v | 3 | MPC | 69722 | 2004 $HD_{65}$ |
| 2004 $HM_{65}$ | 16.5 | 0.15 | 20060922 | 187.93467 | 300.34243 | 357.87495 | 9.96532 | 0.1113219 | 2.2249619 | 35 | 4 | 1998–2006 | 0.64 | M-v | 1 | MPC | 90201 | 2004 $HM_{65}$ |
| 2004 $HT_{65}$ | 16.9 | 0.15 | 20060922 | 317.95510 | 91.13205 | 19.15500 | 3.75105 | 0.2013263 | 2.2636408 | 32 | 5 | 1992–2006 | 0.77 | M-v | 1 | MPC | 69723 | 2004 $HT_{65}$ |
| 2004 $HD_{66}$ | 16.4 | 0.15 | 20060922 | 240.90273 | 168.37494 | 10.94706 | 4.06119 | 0.0662233 | 2.5841455 | 33 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 87634 | 2004 $HD_{66}$ |
| 2004 $HB_{67}$ | 15.6 | 0.15 | 20060922 | 97.06462 | 239.47764 | 63.32973 | 9.85273 | 0.0784844 | 3.0512962 | 52 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 76467 | 2004 $HB_{67}$ |
| 2004 $HC_{67}$ | 17.1 | 0.15 | 20060922 | 291.64578 | 66.98552 | 79.04884 | 1.83343 | 0.1643129 | 2.4321010 | 34 | 5 | 1992–2006 | 0.54 | M-v | 0 | MPC | 86498 | 2004 $HC_{67}$ |
| 2004 $HL_{71}$ | 17.0 | 0.15 | 20040425 | 358.75478 | 190.86254 | 18.75279 | 4.05593 | 0.1340389 | 3.0949827 | 9 | 1 | 28 days | 0.10 | | | MPC | | 2004 $HL_{71}$ |
| 2004 $HQ_{71}$ | 14.7 | 0.15 | 20060922 | 157.36883 | 200.62486 | 15.73231 | 18.52699 | 0.1532422 | 3.1538232 | 50 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 87634 | 2004 $HQ_{71}$ |
| 2004 $HZ_{71}$ | 17.3 | 0.15 | 20060922 | 317.77891 | 303.01555 | 190.92179 | 1.62288 | 0.1411461 | 2.3197922 | 21 | 3 | 2000–2006 | 0.46 | M-v | 4 | MPC | 73007 | 2004 $HZ_{71}$ |
| 2004 JV | 15.1 | 0.15 | 20060922 | 92.30042 | 229.71649 | 64.16941 | 2.33695 | 0.1042048 | 3.2591967 | 109 | 6 | 1992–2006 | 0.49 | M-v | 0 | MPC | 04305 | 2004 JV |
| 2004 $JE_1$ | 16.1 | 0.15 | 20060922 | 169.52012 | 45.25432 | 234.18030 | 3.73630 | 0.2438150 | 2.6833704 | 61 | 3 | 2000–2005 | 0.53 | M-v | 3 | MPC | 89560 | 2004 $JE_1$ |
| 2004 $JS_1$ | 16.1 | 0.15 | 20060922 | 156.57217 | 319.26944 | 326.60655 | 11.01549 | 0.1836047 | 2.6408094 | 42 | 4 | 1992–2005 | 0.60 | M-v | 1 | MPC | 04305 | 2004 $JS_1$ |
| 2004 $JT_1$ | 15.9 | 0.15 | 20060922 | 169.57455 | 222.86118 | 355.06543 | 9.38757 | 0.1018872 | 3.0543436 | 20 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 65783 | 2004 $JT_1$ |
| 2004 $JV_1$ | 14.8 | 0.15 | 20060922 | 121.82629 | 6.09376 | 264.95088 | 13.15915 | 0.1031466 | 3.1147030 | 36 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87634 | 2004 $JV_1$ |
| 2004 $JK_2$ | 17.6 | 0.15 | 20060922 | 179.94134 | 36.97439 | 232.34109 | 3.59031 | 0.1301436 | 2.5507972 | 40 | 4 | 2001–2005 | 0.55 | M-v | 0 | MPC | 86501 | 2004 $JK_2$ |
| 2004 $JD_4$ | 15.7 | 0.15 | 20060922 | 272.83102 | 302.62879 | 210.02200 | 12.68337 | 0.1146482 | 2.5684018 | 47 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 65785 | 2004 $JD_4$ |
| 2004 $JQ_4$ | 17.3 | 0.15 | 20060922 | 253.92020 | 340.82232 | 223.76143 | 5.00421 | 0.1340328 | 2.3111247 | 35 | 4 | 1995–2005 | 0.58 | M-v | 1 | MPC | 87634 | 2004 $JQ_4$ |
| 2004 $JU_4$ | 16.1 | 0.15 | 20060922 | 129.55495 | 261.70650 | 53.99865 | 14.16663 | 0.1921314 | 2.6851428 | 31 | 2 | 2004–2005 | 0.57 | M-v | 3 | MPC | 90201 | 2004 $JU_4$ |
| 2004 $JM_5$ | 15.1 | 0.15 | 20060922 | 76.17537 | 170.21314 | 167.42181 | 17.95078 | 0.2092753 | 3.1175766 | 118 | 4 | 2000–2005 | 0.49 | M-v | 1 | MPC | 04305 | 2004 $JM_5$ |
| 2004 $JO_6$ | 15.3 | 0.15 | 20060922 | 258.73328 | 291.70279 | 238.28956 | 9.43371 | 0.0601255 | 2.6074824 | 59 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 02203 | 2004 $JO_6$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $JV_6$ | 18.1 | 0.15 | 20060922 | 266.87341 | 105.90559 | 100.12405 | 1.88333 | 0.0480044 | 2.2977410 | 44 | 4 | 1998–2005 | 0.39 | M-v | 1 | MPC | 90201 | 2004 $JV_6$ |
| 2004 $JJ_7$ | 17.7 | 0.15 | 20060922 | 260.60898 | 102.15605 | 73.55723 | 3.27357 | 0.1500177 | 2.4291431 | 38 | 3 | 2000–2006 | 0.31 | M-v | 2 | MPC | 65789 | 2004 $JJ_7$ |
| 2004 $JU_7$ | 17.1 | 0.15 | 20060922 | 351.54686 | 258.76142 | 198.01540 | 3.91609 | 0.0932598 | 2.3530068 | 35 | 5 | 1998–2005 | 0.64 | M-v | 1 | MPC | 95217 | 2004 $JU_7$ |
| 2004 $JG_8$ | 15.1 | 0.15 | 20060922 | 133.22397 | 26.63567 | 213.25402 | 11.64751 | 0.1024948 | 3.2023795 | 58 | 7 | 1995–2006 | 0.53 | M-v | 1 | MPC | 87634 | 2004 $JG_8$ |
| 2004 $JQ_8$ | 16.8 | 0.15 | 20060922 | 279.34864 | 224.86643 | 332.31690 | 4.39222 | 0.0806114 | 2.2466928 | 54 | 5 | 2001–2006 | 0.41 | M-v | 1 | MPC | 90201 | 2004 $JQ_8$ |
| 2004 $JZ_8$ | 14.6 | 0.15 | 20060922 | 68.53331 | 244.66577 | 88.40211 | 14.68108 | 0.1804863 | 3.1597618 | 39 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 86503 | 2004 $JZ_8$ |
| 2004 $JD_{10}$ | 16.1 | 0.15 | 20060922 | 240.27195 | 83.39206 | 136.65954 | 11.31497 | 0.0524914 | 2.4172198 | 47 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 90201 | 2004 $JD_{10}$ |
| 2004 $JF_{10}$ | 15.3 | 0.15 | 20060922 | 231.09745 | 43.36531 | 146.87385 | 13.16937 | 0.1987906 | 2.6837350 | 51 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 87635 | 2004 $JF_{10}$ |
| 2004 $JT_{10}$ | 15.1 | 0.15 | 20060922 | 125.66478 | 207.64055 | 101.29838 | 13.64613 | 0.1746751 | 2.7766177 | 74 | 5 | 2000–2006 | 0.59 | M-v | 0 | MPC | 97708 | 2004 $JT_{10}$ |
| 2004 $JJ_{11}$ | 14.9 | 0.15 | 20060922 | 140.52288 | 132.23239 | 112.57621 | 18.02620 | 0.1231186 | 3.2412972 | 56 | 6 | 1998–2006 | 0.60 | M-v | 0 | MPC | 87635 | 2004 $JJ_{11}$ |
| 2004 $JK_{11}$ | 15.0 | 0.15 | 20060922 | 95.61302 | 192.98057 | 92.62817 | 10.40153 | 0.1221654 | 3.2532143 | 30 | 3 | 2004–2006 | 0.54 | M-v | 3 | MPC | 86504 | 2004 $JK_{11}$ |
| 2004 $JN_{11}$ | 15.8 | 0.15 | 20060922 | 141.12265 | 152.92112 | 141.54170 | 9.22106 | 0.1973138 | 2.7896920 | 28 | 2 | 2004–2005 | 0.62 | M-v | 3 | MPC | 89562 | 2004 $JN_{11}$ |
| 2004 $JT_{11}$ | 16.4 | 0.15 | 20060922 | 234.18738 | 194.77656 | 125.96318 | 24.17252 | 0.0623458 | 1.9310583 | 24 | 3 | 1998–2004 | 0.68 | M-v | 3 | MPC | 65795 | 2004 $JT_{11}$ |
| 2004 $JV_{11}$ | 15.7 | 0.15 | 20060922 | 255.84900 | 47.84254 | 121.60843 | 19.88741 | 0.1292098 | 2.5547286 | 36 | 3 | 2000–2006 | 0.69 | M-v | 2 | MPC | 65795 | 2004 $JV_{11}$ |
| 2004 $JA_{12}$ | 15.7 | 0.15 | 20060922 | 133.14009 | 41.42113 | 240.87862 | 1.29356 | 0.2444067 | 3.0616853 | 55 | 4 | 1994–2005 | 0.45 | M-v | 1 | MPC | 04305 | 2004 $JA_{12}$ |
| 2004 $JC_{12}$ | 16.0 | 0.15 | 20060922 | 163.42082 | 16.49240 | 249.16168 | 8.27070 | 0.2202119 | 2.6547758 | 54 | 3 | 2001–2005 | 0.55 | M-v | 2 | MPC | 90201 | 2004 $JC_{12}$ |
| 2004 $JH_{12}$ | 15.3 | 0.15 | 20060922 | 202.91423 | 318.32832 | 247.49600 | 11.06932 | 0.1174102 | 2.7052295 | 41 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 86505 | 2004 $JH_{12}$ |
| 2004 $JQ_{12}$ | 16.5 | 0.15 | 20060922 | 142.60642 | 103.15897 | 205.55705 | 7.53485 | 0.2927836 | 2.7646342 | 47 | 4 | 1991–2005 | 0.58 | M-v | 1 | MPC | 65796 | 2004 $JQ_{12}$ |
| 2004 $JQ_{13}$ | 15.7 | 0.15 | 20060922 | 137.49988 | 54.44055 | 194.86548 | 4.54952 | 0.0885888 | 3.0805604 | 55 | 5 | 1998–2006 | 0.47 | M-v | 0 | MPC | 87635 | 2004 $JQ_{13}$ |
| 2004 $JR_{13}$ | 17.1 | 0.15 | 20060922 | 201.35432 | 216.93772 | 66.72168 | 6.42689 | 0.1647908 | 2.3028727 | 29 | 3 | 2001–2005 | 0.37 | M-v | 2 | MPC | 97708 | 2004 $JR_{13}$ |
| 2004 $JS_{13}$ | 16.6 | 0.15 | 20060922 | 247.07105 | 166.31596 | 76.46959 | 1.34099 | 0.0841408 | 2.1957940 | 95 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 97708 | 2004 $JS_{13}$ |
| 2004 $JD_{14}$ | 17.1 | 0.15 | 20060922 | 199.34771 | 348.39122 | 283.18092 | 0.55117 | 0.1525610 | 2.4027799 | 57 | 4 | 2001–2006 | 0.40 | M-v | 2 | MPC | 97708 | 2004 $JD_{14}$ |
| 2004 $JV_{14}$ | 16.2 | 0.15 | 20060922 | 192.53874 | 35.06689 | 215.23378 | 7.25879 | 0.1406004 | 2.5972940 | 47 | 4 | 1996–2005 | 0.51 | M-v | 1 | MPC | 87635 | 2004 $JV_{14}$ |
| 2004 $JX_{14}$ | 16.2 | 0.15 | 20060922 | 201.84846 | 139.99463 | 79.89409 | 13.71267 | 0.1360946 | 2.7397949 | 31 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 86506 | 2004 $JX_{14}$ |
| 2004 $JL_{15}$ | 15.7 | 0.15 | 20060922 | 136.39105 | 82.95150 | 192.35736 | 2.15929 | 0.1981048 | 3.0200164 | 87 | 4 | 2003–2006 | 0.43 | M-v | 0 | MPC | 86506 | 2004 $JL_{15}$ |
| 2004 $JQ_{15}$ | 15.7 | 0.15 | 20060922 | 197.80293 | 183.75916 | 67.11024 | 5.25899 | 0.1537602 | 2.5688517 | 82 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 90201 | 2004 $JQ_{15}$ |
| 2004 $JY_{15}$ | 16.7 | 0.15 | 20060922 | 234.12467 | 176.29464 | 75.09193 | 5.94245 | 0.1273701 | 2.3115271 | 35 | 4 | 2000–2005 | 0.70 | M-v | 1 | MPC | 89564 | 2004 $JY_{15}$ |
| 2004 $JD_{16}$ | 17.2 | 0.15 | 20060922 | 229.14934 | 49.99132 | 204.78720 | 5.93234 | 0.1366679 | 2.2557453 | 58 | 3 | 1995–2005 | 0.52 | M-v | 3 | MPC | 97708 | 2004 $JD_{16}$ |
| 2004 $JG_{16}$ | 16.8 | 0.15 | 20060922 | 262.93664 | 49.36534 | 177.93575 | 2.84426 | 0.0841483 | 2.1899897 | 44 | 4 | 1995–2005 | 0.42 | M-v | 1 | MPC | 90201 | 2004 $JG_{16}$ |
| 2004 $JR_{16}$ | 17.4 | 0.15 | 20060922 | 209.07310 | 64.88565 | 211.55861 | 2.54874 | 0.1933253 | 2.3140809 | 26 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 03623 | 2004 $JR_{16}$ |
| 2004 $JF_{17}$ | 16.6 | 0.15 | 20060922 | 228.47519 | 247.51069 | 3.61222 | 6.33154 | 0.0935683 | 2.2653265 | 43 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 89565 | 2004 $JF_{17}$ |
| 2004 $JG_{17}$ | 15.2 | 0.15 | 20060922 | 128.66608 | 232.17886 | 24.88539 | 12.35275 | 0.0650147 | 3.1063972 | 55 | 5 | 2001–2006 | 0.39 | M-v | 1 | MPC | 89565 | 2004 $JG_{17}$ |
| 2004 $JO_{17}$ | 16.1 | 0.15 | 20060922 | 171.96967 | 150.67419 | 56.12134 | 1.87495 | 0.1283484 | 3.1559630 | 37 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 89565 | 2004 $JO_{17}$ |
| 2004 $JB_{18}$ | 15.9 | 0.15 | 20060922 | 220.93020 | 309.46178 | 250.46252 | 7.47750 | 0.0601036 | 2.6203221 | 43 | 5 | 1993–2006 | 0.41 | M-v | 1 | MPC | 87635 | 2004 $JB_{18}$ |
| 2004 $JC_{18}$ | 16.5 | 0.15 | 20060922 | 232.17505 | 218.10190 | 21.60226 | 3.23979 | 0.0541566 | 2.3161605 | 58 | 4 | 2001–2006 | 0.64 | M-v | 2 | MPC | 90202 | 2004 $JC_{18}$ |
| 2004 $JH_{18}$ | 16.2 | 0.15 | 20060922 | 337.95248 | 273.59979 | 212.21513 | 6.76352 | 0.0387761 | 2.3386531 | 59 | 6 | 1991–2005 | 0.50 | M-v | 1 | MPC | 97709 | 2004 $JH_{18}$ |
| 2004 $JE_{19}$ | 15.0 | 0.15 | 20060922 | 115.77392 | 251.36145 | 30.86203 | 8.93729 | 0.0341457 | 3.0033730 | 65 | 5 | 2001–2006 | 0.42 | M-v | 0 | MPC | 87635 | 2004 $JE_{19}$ |
| 2004 $JN_{19}$ | 17.5 | 0.15 | 20060922 | 217.47931 | 216.07317 | 53.93416 | 7.84503 | 0.1373714 | 2.2880075 | 62 | 3 | 1997–2005 | 0.51 | M-v | 3 | MPC | 97709 | 2004 $JN_{19}$ |
| 2004 $JW_{19}$ | 15.1 | 0.15 | 20060922 | 110.17370 | 226.07759 | 70.42448 | 14.66040 | 0.1850203 | 3.2135715 | 47 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 00721 | 2004 $JW_{19}$ |
| 2004 $JD_{20}$ | 16.1 | 0.15 | 20060922 | 238.71976 | 156.60006 | 23.69781 | 5.50658 | 0.1683211 | 2.6320505 | 37 | 6 | 1993–2006 | 0.44 | M-v | 1 | MPC | 89566 | 2004 $JD_{20}$ |
| 2004 $JH_{20}$ | 16.4 | 0.15 | 20060922 | 204.46205 | 42.56079 | 199.66673 | 4.10365 | 0.1931106 | 2.5621505 | 39 | 2 | 2004–2005 | 0.46 | M-v | 4 | MPC | 86508 | 2004 $JH_{20}$ |
| 2004 $JM_{20}$ | 17.0 | 0.15 | 20060922 | 230.17171 | 202.97418 | 70.75405 | 7.72533 | 0.1348385 | 2.2248250 | 79 | 4 | 1995–2006 | 0.34 | M-v | 1 | MPC | 97709 | 2004 $JM_{20}$ |
| 2004 $JP_{20}$ | 17.6 | 0.15 | 20060922 | 30.11646 | 261.34298 | 226.72542 | 23.92152 | 0.1068352 | 1.9894090 | 29 | 2 | 2004–2005 | 0.53 | M-v | 4 | MPC | 89566 | 2004 $JP_{20}$ |
| 2004 $JF_{21}$ | 16.4 | 0.15 | 20060922 | 287.36174 | 25.76053 | 72.82427 | 2.11858 | 0.0777496 | 2.9460816 | 50 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 76468 | 2004 $JF_{21}$ |
| 2004 $JO_{21}$ | 16.2 | 0.15 | 20060922 | 291.37554 | 223.08285 | 224.46725 | 7.53982 | 0.0389059 | 3.0889038 | 40 | 4 | 2000–2006 | 0.38 | M-v | 0 | MPC | 69726 | 2004 $JO_{21}$ |
| 2004 $JT_{21}$ | 16.0 | 0.15 | 20060922 | 175.98342 | 347.00779 | 215.40764 | 1.70045 | 0.0684634 | 3.1078504 | 55 | 5 | 1995–2006 | 0.29 | M-v | 0 | MPC | 89566 | 2004 $JT_{21}$ |
| 2004 $JV_{21}$ | 16.3 | 0.15 | 20060922 | 312.81593 | 247.66381 | 216.01239 | 3.48401 | 0.1122531 | 2.6134125 | 75 | 4 | 2003–2006 | 0.38 | M-v | 1 | MPC | 86508 | 2004 $JV_{21}$ |
| 2004 $JX_{21}$ | 17.8 | 0.15 | 20060922 | 158.52514 | 68.13299 | 222.56012 | 5.76968 | 0.0956265 | 2.5188365 | 30 | 3 | 2000–2005 | 0.30 | M-v | 2 | MPC | 90202 | 2004 $JX_{21}$ |
| 2004 $JZ_{21}$ | 16.8 | 0.15 | 20060922 | 86.78544 | 269.55292 | 52.05696 | 4.18047 | 0.1602618 | 3.0042352 | 19 | 3 | 2003–2005 | 0.37 | M-v | 3 | MPC | 89567 | 2004 $JZ_{21}$ |
| 2004 $JM_{22}$ | 15.9 | 0.15 | 20060922 | 112.82795 | 7.92569 | 271.88151 | 2.09017 | 0.0482875 | 3.0277103 | 31 | 3 | 1995–2006 | 0.26 | M-v | 3 | MPC | 76469 | 2004 $JM_{22}$ |
| 2004 $JV_{22}$ | 16.5 | 0.15 | 20060922 | 168.47201 | 59.35658 | 197.42992 | 3.24557 | 0.1340157 | 2.6984923 | 40 | 6 | 1992–2006 | 0.49 | M-v | 0 | MPC | 86509 | 2004 $JV_{22}$ |
| 2004 $JB_{23}$ | 15.5 | 0.15 | 20060922 | 67.53610 | 283.36503 | 52.44561 | 14.67121 | 0.1503399 | 3.1220635 | 51 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 87635 | 2004 $JB_{23}$ |
| 2004 $JW_{23}$ | 16.6 | 0.15 | 20060922 | 154.96445 | 73.08989 | 247.45432 | 3.68390 | 0.1148633 | 2.3273039 | 135 | 6 | 1995–2006 | 0.56 | M-v | 1 | MPC | 97709 | 2004 $JW_{23}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $JC_{24}$ | 16.3 | 0.15 | 20060922 | 269.39876 | 287.39650 | 205.65199 | 1.65546 | 0.2237107 | 2.6535089 | 69 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 69726 | 2004 $JC_{24}$ |
| 2004 $JG_{24}$ | 16.4 | 0.15 | 20060922 | 170.91018 | 39.78872 | 212.26676 | 2.11366 | 0.1435097 | 2.7659249 | 50 | 6 | 1992–2006 | 0.46 | M-v | 1 | MPC | 97709 | 2004 $JG_{24}$ |
| 2004 $JK_{25}$ | 17.0 | 0.15 | 20060922 | 258.94204 | 0.79648 | 200.98536 | 1.74349 | 0.1780019 | 2.3435113 | 54 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 87636 | 2004 $JK_{25}$ |
| 2004 $JM_{25}$ | 14.9 | 0.15 | 20060922 | 120.45100 | 172.75982 | 108.54208 | 11.69402 | 0.1748450 | 3.1726387 | 62 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 86510 | 2004 $JM_{25}$ |
| 2004 $JR_{25}$ | 16.6 | 0.15 | 20060922 | 201.74091 | 208.86481 | 64.55553 | 7.38956 | 0.1039067 | 2.3676180 | 54 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 97709 | 2004 $JR_{25}$ |
| 2004 $JB_{26}$ | 16.5 | 0.15 | 20060922 | 159.44548 | 260.02041 | 21.17950 | 1.80662 | 0.1730861 | 2.6965912 | 45 | 4 | 1994–2006 | 0.36 | M-v | 1 | MPC | 04305 | 2004 $JB_{26}$ |
| 2004 $JK_{26}$ | 15.6 | 0.15 | 20060922 | 231.15085 | 132.97444 | 66.77547 | 4.90125 | 0.1146248 | 2.6214070 | 54 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 65808 | 2004 $JK_{26}$ |
| 2004 $JQ_{26}$ | 17.2 | 0.15 | 20060922 | 224.15047 | 230.52880 | 51.53537 | 7.53612 | 0.2642367 | 2.2564754 | 37 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 65809 | 2004 $JQ_{26}$ |
| 2004 $JM_{27}$ | 15.1 | 0.15 | 20060922 | 89.91379 | 261.58346 | 53.95000 | 7.30844 | 0.1627939 | 3.2291542 | 65 | 4 | 1992–2006 | 0.60 | M-v | 0 | MPC | 89570 | 2004 $JM_{27}$ |
| 2004 $JQ_{27}$ | 16.4 | 0.15 | 20060922 | 212.47177 | 349.70400 | 244.49716 | 2.82465 | 0.2182769 | 2.5653236 | 58 | 6 | 1994–2006 | 0.43 | M-v | 1 | MPC | 04305 | 2004 $JQ_{27}$ |
| 2004 $JZ_{27}$ | 15.1 | 0.15 | 20060922 | 160.00943 | 246.47185 | 318.61862 | 15.18743 | 0.1904757 | 3.1570095 | 33 | 3 | 1998–2005 | 0.76 | M-v | 3 | MPC | 89570 | 2004 $JZ_{27}$ |
| 2004 $JA_{29}$ | 16.3 | 0.15 | 20060922 | 173.66500 | 173.58631 | 64.82187 | 9.55849 | 0.1781016 | 2.8080006 | 35 | 4 | 1992–2006 | 0.48 | M-v | 1 | MPC | 65811 | 2004 $JA_{29}$ |
| 2004 $JK_{29}$ | 15.5 | 0.15 | 20060922 | 152.91184 | 44.25070 | 218.18509 | 11.71555 | 0.0577905 | 2.8420664 | 35 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 87636 | 2004 $JK_{29}$ |
| 2004 $JL_{29}$ | 15.0 | 0.15 | 20060922 | 135.91967 | 57.32867 | 210.15050 | 7.13815 | 0.2262322 | 3.0940629 | 43 | 3 | 2004–2006 | 0.40 | M-v | 2 | MPC | 00722 | 2004 $JL_{29}$ |
| 2004 $JH_{30}$ | 16.7 | 0.15 | 20060922 | 271.70515 | 51.49134 | 135.34391 | 2.88082 | 0.1471756 | 2.3670948 | 27 | 4 | 1993–2006 | 0.49 | M-v | 1 | MPC | 04305 | 2004 $JH_{30}$ |
| 2004 $JJ_{30}$ | 16.5 | 0.15 | 20060922 | 156.51064 | 192.39815 | 108.70340 | 3.54287 | 0.0617646 | 2.5165757 | 51 | 6 | 1997–2006 | 0.54 | M-v | 0 | MPC | 02204 | 2004 $JJ_{30}$ |
| 2004 $JN_{30}$ | 16.9 | 0.15 | 20060922 | 270.79110 | 102.49246 | 107.92162 | 3.50206 | 0.0996564 | 2.2779285 | 33 | 3 | 1995–2005 | 0.30 | M-v | 3 | MPC | 97709 | 2004 $JN_{30}$ |
| 2004 $JX_{30}$ | 16.1 | 0.15 | 20060922 | 272.31761 | 119.92108 | 97.09231 | 3.63488 | 0.0990788 | 2.2449286 | 90 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 90202 | 2004 $JX_{30}$ |
| 2004 $JY_{30}$ | 15.6 | 0.15 | 20060922 | 264.29956 | 68.81687 | 98.51233 | 4.65845 | 0.1855313 | 2.5506275 | 57 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 65813 | 2004 $JY_{30}$ |
| 2004 $JG_{31}$ | 15.0 | 0.15 | 20060922 | 133.96835 | 45.09786 | 229.27131 | 10.03174 | 0.1381638 | 3.0994890 | 52 | 3 | 2004–2006 | 0.53 | M-v | 3 | MPC | 86513 | 2004 $JG_{31}$ |
| 2004 $JB_{32}$ | 15.4 | 0.15 | 20060922 | 82.89719 | 165.94663 | 147.27634 | 6.12339 | 0.1279523 | 3.1286247 | 53 | 6 | 1992–2006 | 0.49 | M-v | 1 | MPC | 04305 | 2004 $JB_{32}$ |
| 2004 $JO_{32}$ | 15.5 | 0.15 | 20060922 | 173.43051 | 142.10129 | 91.89797 | 5.53379 | 0.0137683 | 2.7947258 | 62 | 5 | 2001–2006 | 0.33 | M-v | 0 | MPC | 86513 | 2004 $JO_{32}$ |
| 2004 $JG_{33}$ | 16.6 | 0.15 | 20060922 | 214.79388 | 352.21753 | 214.97733 | 12.64351 | 0.1173092 | 2.6760648 | 39 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 65815 | 2004 $JG_{33}$ |
| 2004 $JD_{34}$ | 17.2 | 0.15 | 20060922 | 239.74841 | 61.36093 | 198.36421 | 5.94630 | 0.1457670 | 2.2285864 | 37 | 4 | 1998–2005 | 0.40 | M-v | 2 | MPC | 89571 | 2004 $JD_{34}$ |
| 2004 $JG_{34}$ | 16.8 | 0.15 | 20060922 | 156.29549 | 137.66769 | 178.50697 | 4.70840 | 0.1946071 | 2.5248490 | 32 | 3 | 2000–2005 | 0.51 | M-v | 2 | MPC | 00722 | 2004 $JG_{34}$ |
| 2004 $JM_{34}$ | 15.8 | 0.15 | 20060922 | 146.13049 | 173.03663 | 140.34321 | 5.34869 | 0.1674119 | 2.6180901 | 61 | 5 | 1995–2005 | 0.58 | M-v | 0 | MPC | 89572 | 2004 $JM_{34}$ |
| 2004 $JO_{34}$ | 16.5 | 0.15 | 20060922 | 195.95002 | 170.61466 | 111.65571 | 7.00851 | 0.1270425 | 2.4337154 | 58 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 97710 | 2004 $JO_{34}$ |
| 2004 $JA_{35}$ | 15.8 | 0.15 | 20060922 | 251.24845 | 65.25222 | 114.88572 | 5.31824 | 0.1508184 | 2.6004069 | 49 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 65817 | 2004 $JA_{35}$ |
| 2004 $JF_{35}$ | 15.6 | 0.15 | 20060922 | 171.93174 | 179.28948 | 80.34367 | 17.53881 | 0.1545159 | 2.7975824 | 63 | 6 | 1999–2006 | 0.57 | M-v | 1 | MPC | 90203 | 2004 $JF_{35}$ |
| 2004 $JJ_{35}$ | 16.7 | 0.15 | 20060922 | 198.20916 | 163.20334 | 105.66845 | 6.90807 | 0.0962836 | 2.4733928 | 41 | 6 | 2000–2006 | 0.42 | M-v | 0 | MPC | 90203 | 2004 $JJ_{35}$ |
| 2004 $JM_{35}$ | 15.7 | 0.15 | 20060922 | 239.07595 | 103.49837 | 96.59424 | 6.79834 | 0.1855062 | 2.5609790 | 70 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 87636 | 2004 $JM_{35}$ |
| 2004 $JW_{35}$ | 16.0 | 0.15 | 20060922 | 329.24437 | 333.80937 | 110.75603 | 5.60697 | 0.0408479 | 2.7872159 | 41 | 5 | 1992–2006 | 0.40 | M-v | 1 | MPC | 65820 | 2004 $JW_{35}$ |
| 2004 $JZ_{35}$ | 15.4 | 0.15 | 20060922 | 195.08958 | 356.96397 | 173.70698 | 6.01239 | 0.1208278 | 3.1782049 | 41 | 6 | 1992–2006 | 0.52 | M-v | 1 | MPC | 87636 | 2004 $JZ_{35}$ |
| 2004 $JF_{36}$ | 16.4 | 0.15 | 20060922 | 356.81232 | 184.78019 | 269.93231 | 6.87249 | 0.0736756 | 2.4170286 | 35 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 87636 | 2004 $JF_{36}$ |
| 2004 $JH_{36}$ | 16.0 | 0.15 | 20060922 | 236.64794 | 97.42140 | 91.84163 | 13.46792 | 0.0846396 | 2.6362310 | 33 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 65821 | 2004 $JH_{36}$ |
| 2004 $JR_{36}$ | 16.2 | 0.15 | 20060922 | 157.36299 | 11.71560 | 251.58056 | 11.83995 | 0.1389406 | 2.7662186 | 30 | 5 | 2001–2006 | 0.59 | M-v | 0 | MPC | 89572 | 2004 $JR_{36}$ |
| 2004 $JU_{36}$ | 17.2 | 0.15 | 20060922 | 149.14178 | 46.82706 | 218.14831 | 4.18425 | 0.1891416 | 2.8982925 | 28 | 3 | 2000–2005 | 0.35 | M-v | 2 | MPC | 89572 | 2004 $JU_{36}$ |
| 2004 $JW_{36}$ | 16.3 | 0.15 | 20060922 | 327.55909 | 31.40196 | 59.44907 | 9.60653 | 0.0778189 | 2.6903824 | 40 | 4 | 1997–2006 | 0.37 | M-v | 1 | MPC | 65821 | 2004 $JW_{36}$ |
| 2004 $JZ_{36}$ | 15.5 | 0.15 | 20060922 | 84.97609 | 95.22405 | 222.19214 | 5.64599 | 0.1648635 | 3.1385804 | 59 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 87636 | 2004 $JZ_{36}$ |
| 2004 $JG_{37}$ | 16.5 | 0.15 | 20060922 | 262.75075 | 311.66328 | 269.33955 | 5.34032 | 0.1507151 | 2.2411166 | 73 | 6 | 2000–2006 | 0.54 | M-v | 1 | MPC | 90203 | 2004 $JG_{37}$ |
| 2004 $JX_{37}$ | 16.1 | 0.15 | 20060922 | 236.74196 | 126.91266 | 106.46638 | 12.46006 | 0.2223149 | 2.3802964 | 56 | 3 | 2000–2006 | 0.41 | M-v | 2 | MPC | 65822 | 2004 $JX_{37}$ |
| 2004 $JA_{40}$ | 14.5 | 0.15 | 20060922 | 302.62057 | 272.86736 | 146.62124 | 10.50433 | 0.0538243 | 3.4833261 | 40 | 5 | 1996–2006 | 0.61 | M-v | 1 | MPC | 65823 | 2004 $JA_{40}$ |
| 2004 $JV_{40}$ | 15.9 | 0.15 | 20060922 | 358.34934 | 273.53761 | 109.71949 | 10.95809 | 0.0320798 | 3.2025208 | 20 | 4 | 2003–2006 | 0.25 | M-v | 1 | MPC | 86515 | 2004 $JV_{40}$ |
| 2004 $JP_{41}$ | 17.2 | 0.15 | 20060922 | 310.44742 | 26.81676 | 131.17580 | 2.41791 | 0.0999899 | 2.2548280 | 42 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 90203 | 2004 $JP_{41}$ |
| 2004 $JT_{41}$ | 16.8 | 0.15 | 20060922 | 274.45738 | 120.75036 | 71.55941 | 2.84459 | 0.1680201 | 2.3128151 | 53 | 4 | 2000–2006 | 0.64 | M-v | 1 | MPC | 97710 | 2004 $JT_{41}$ |
| 2004 $JP_{42}$ | 15.8 | 0.15 | 20060922 | 154.28050 | 145.26050 | 81.03013 | 6.39856 | 0.1411909 | 3.1877723 | 34 | 6 | 1992–2006 | 0.43 | M-v | 1 | MPC | 87636 | 2004 $JP_{42}$ |
| 2004 $JR_{42}$ | 15.6 | 0.15 | 20060922 | 83.25467 | 223.86611 | 102.40853 | 4.12375 | 0.0986927 | 2.9906540 | 51 | 7 | 1993–2006 | 0.52 | M-v | 0 | MPC | 95223 | 2004 $JR_{42}$ |
| 2004 $JT_{42}$ | 16.3 | 0.15 | 20060922 | 264.00447 | 76.13236 | 84.42535 | 4.18836 | 0.1223060 | 2.5313170 | 51 | 4 | 1996–2006 | 0.46 | M-v | 2 | MPC | 65825 | 2004 $JT_{42}$ |
| 2004 $JZ_{42}$ | 14.9 | 0.15 | 20060922 | 106.19168 | 222.01773 | 79.43071 | 7.10917 | 0.1429148 | 3.0824404 | 46 | 5 | 1993–2006 | 0.72 | M-v | 1 | MPC | 04305 | 2004 $JZ_{42}$ |
| 2004 $JH_{43}$ | 16.0 | 0.15 | 20060922 | 260.36805 | 123.77958 | 97.63461 | 5.16038 | 0.1717383 | 2.2946831 | 37 | 5 | 1997–2006 | 0.62 | M-v | 2 | MPC | 90203 | 2004 $JH_{43}$ |
| 2004 $JX_{43}$ | 15.2 | 0.15 | 20060922 | 87.38652 | 259.20260 | 47.59720 | 8.19203 | 0.1527073 | 3.2096236 | 43 | 5 | 1994–2006 | 0.43 | M-v | 0 | MPC | 86516 | 2004 $JX_{43}$ |
| 2004 $JM_{44}$ | 16.3 | 0.15 | 20060922 | 215.99973 | 32.03365 | 179.05837 | 4.30412 | 0.1365632 | 2.5892644 | 38 | 3 | 2004–2006 | 0.42 | M-v | 3 | MPC | 03623 | 2004 $JM_{44}$ |
| 2004 $JP_{44}$ | 16.3 | 0.15 | 20060922 | 316.91606 | 0.47824 | 164.09976 | 4.07987 | 0.0958333 | 2.2225214 | 60 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97710 | 2004 $JP_{44}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $JB_{45}$ | 16.7 | 0.15 | 20060922 | 87.11125 | 247.96490 | 121.39364 | 13.01792 | 0.1192092 | 2.6212018 | 31 | 5 | 2001–2006 | 0.51 | M-v | 0 | MPC | 87636 | 2004 $JB_{45}$ |
| 2004 $JN_{45}$ | 15.1 | 0.15 | 20060922 | 99.49560 | 236.54439 | 56.02580 | 27.01162 | 0.1592867 | 3.2033184 | 33 | 3 | 2004–2006 | 0.48 | M-v | 2 | MPC | 86516 | 2004 $JN_{45}$ |
| 2004 $JS_{48}$ | 15.7 | 0.15 | 20060922 | 135.07738 | 183.33420 | 72.73637 | 4.96828 | 0.0937886 | 3.1074837 | 29 | 5 | 2001–2006 | 0.24 | M-v | 0 | MPC | 95224 | 2004 $JS_{48}$ |
| 2004 $JN_{51}$ | 15.2 | 0.15 | 20060922 | 119.80052 | 208.15445 | 86.28386 | 10.23193 | 0.1316298 | 2.7962202 | 56 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 90203 | 2004 $JN_{51}$ |
| 2004 $JT_{51}$ | 16.8 | 0.15 | 20060922 | 101.08148 | 248.00082 | 99.21148 | 14.72687 | 0.0752662 | 2.5211322 | 32 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 87636 | 2004 $JT_{51}$ |
| 2004 $JP_{53}$ | 16.1 | 0.15 | 20060922 | 52.91713 | 311.46156 | 37.50452 | 8.84614 | 0.1206462 | 3.0161651 | 35 | 6 | 1993–2006 | 0.36 | M-v | 0 | MPC | 87636 | 2004 $JP_{53}$ |
| 2004 $JW_{54}$ | 15.7 | 0.15 | 20060922 | 287.86999 | 51.23989 | 52.43479 | 5.02229 | 0.0336336 | 2.7608155 | 54 | 5 | 1995–2006 | 0.52 | M-v | 0 | MPC | 86518 | 2004 $JW_{54}$ |
| 2004 $JE_{55}$ | 16.4 | 0.15 | 20060922 | 127.16201 | 256.11630 | 358.27829 | 2.15060 | 0.1590728 | 3.0673615 | 23 | 5 | 1995–2006 | 0.51 | M-v | 0 | MPC | 69728 | 2004 $JE_{55}$ |
| 2004 KJ | 15.3 | 0.15 | 20060922 | 94.05170 | 249.92094 | 40.23081 | 14.17916 | 0.1551781 | 3.2155352 | 50 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 89573 | 2004 KJ |
| 2004 KY | 16.6 | 0.15 | 20060922 | 215.11067 | 192.83678 | 34.43187 | 5.27140 | 0.1377502 | 2.5543943 | 53 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 97710 | 2004 KY |
| 2004 $KR_1$ | 15.5 | 0.15 | 20060922 | 77.87966 | 270.65041 | 95.79892 | 15.52911 | 0.0902687 | 2.5822762 | 45 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 87636 | 2004 $KR_1$ |
| 2004 $KK_3$ | 16.9 | 0.15 | 20060922 | 182.01566 | 217.82751 | 45.23978 | 1.34096 | 0.1272234 | 2.6036514 | 49 | 5 | 1995–2005 | 0.51 | M-v | 0 | MPC | 89573 | 2004 $KK_3$ |
| 2004 $KC_4$ | 15.0 | 0.15 | 20060922 | 118.18190 | 46.17400 | 250.36595 | 16.29739 | 0.1881644 | 3.1464834 | 65 | 4 | 2000–2006 | 0.53 | M-v | 0 | MPC | 90203 | 2004 $KC_4$ |
| 2004 $KL_4$ | 16.0 | 0.15 | 20060922 | 153.35445 | 194.74459 | 56.95008 | 0.75113 | 0.1292173 | 2.9739000 | 29 | 3 | 2004–2006 | 0.42 | M-v | 3 | MPC | 95225 | 2004 $KL_4$ |
| 2004 $KO_4$ | 16.5 | 0.15 | 20060922 | 222.94514 | 352.38334 | 208.98484 | 5.27105 | 0.1781333 | 2.6523145 | 47 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 87637 | 2004 $KO_4$ |
| 2004 $KX_5$ | 17.5 | 0.15 | 20060922 | 236.18455 | 152.26826 | 89.00767 | 3.51444 | 0.1909034 | 2.3456874 | 30 | 4 | 1998–2005 | 0.50 | M-v | 1 | MPC | 95225 | 2004 $KX_5$ |
| 2004 $KC_6$ | 16.1 | 0.15 | 20060922 | 153.51852 | 166.64757 | 87.64214 | 3.04665 | 0.0807510 | 2.9287384 | 35 | 6 | 1999–2006 | 0.48 | M-v | 0 | MPC | 87637 | 2004 $KC_6$ |
| 2004 $KM_6$ | 17.6 | 0.15 | 20060922 | 182.78379 | 166.07544 | 127.33178 | 3.22607 | 0.2074677 | 2.3827201 | 24 | 3 | 2001–2005 | 0.38 | M-v | 1 | MPC | 89574 | 2004 $KM_6$ |
| 2004 $KN_6$ | 13.2 | 0.15 | 20060922 | 151.38362 | 41.36761 | 115.49886 | 8.16280 | 0.0114717 | 5.1258009 | 35 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 03624 | 2004 $KN_6$ |
| 2004 $KP_6$ | 15.2 | 0.15 | 20060922 | 165.46968 | 101.23084 | 116.71379 | 6.28958 | 0.1065161 | 3.1705593 | 39 | 3 | 2004–2006 | 0.40 | M-v | 3 | MPC | 89574 | 2004 $KP_6$ |
| 2004 $KR_6$ | 16.3 | 0.15 | 20060922 | 95.80748 | 194.13853 | 147.60064 | 5.48203 | 0.1260543 | 2.7476847 | 66 | 6 | 1996–2005 | 0.56 | M-v | 0 | MPC | 86519 | 2004 $KR_6$ |
| 2004 $KV_6$ | 16.0 | 0.15 | 20060922 | 310.37325 | 34.14399 | 83.32372 | 3.20740 | 0.0949478 | 2.5324181 | 48 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 69729 | 2004 $KV_6$ |
| 2004 $KY_6$ | 16.0 | 0.15 | 20060922 | 71.32975 | 111.69453 | 225.35730 | 9.03959 | 0.0984089 | 2.9704382 | 35 | 3 | 2004–2006 | 0.43 | M-v | 3 | MPC | 86519 | 2004 $KY_6$ |
| 2004 $KN_8$ | 16.8 | 0.15 | 20060922 | 234.06773 | 154.03828 | 103.53068 | 3.88212 | 0.0918161 | 2.2162976 | 27 | 4 | 1995–2005 | 0.48 | M-v | 1 | MPC | 76471 | 2004 $KN_8$ |
| 2004 $KO_8$ | 14.9 | 0.15 | 20060922 | 101.44019 | 79.68951 | 194.83394 | 9.72922 | 0.1678140 | 3.4261640 | 44 | 4 | 1993–2006 | 0.46 | M-v | 0 | MPC | 86519 | 2004 $KO_8$ |
| 2004 $KU_8$ | 16.4 | 0.15 | 20060922 | 237.20230 | 47.27239 | 185.08518 | 5.90958 | 0.0847280 | 2.3153279 | 33 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 95226 | 2004 $KU_8$ |
| 2004 $KN_9$ | 16.7 | 0.15 | 20060922 | 165.04375 | 230.40622 | 40.61716 | 8.52921 | 0.2746169 | 2.7828062 | 21 | 2 | 2004–2005 | 0.33 | M-v | 3 | MPC | 89574 | 2004 $KN_9$ |
| 2004 $KU_9$ | 16.2 | 0.15 | 20060922 | 225.30045 | 321.06901 | 276.83892 | 4.84570 | 0.1662441 | 2.4166416 | 55 | 4 | 1997–2006 | 0.50 | M-v | 1 | MPC | 65836 | 2004 $KU_9$ |
| 2004 $KM_{10}$ | 17.2 | 0.15 | 20060922 | 252.48367 | 331.71173 | 232.78888 | 1.66485 | 0.1572932 | 2.4171505 | 72 | 5 | 1998–2005 | 0.57 | M-v | 1 | MPC | 90203 | 2004 $KM_{10}$ |
| 2004 $KP_{10}$ | 17.0 | 0.15 | 20060922 | 198.27394 | 192.02475 | 122.40065 | 5.45630 | 0.0973551 | 2.1641920 | 27 | 3 | 2000–2005 | 0.57 | M-v | 3 | MPC | 00723 | 2004 $KP_{10}$ |
| 2004 $KG_{11}$ | 16.0 | 0.15 | 20060922 | 266.50419 | 45.52536 | 116.31711 | 9.64251 | 0.1047435 | 2.5806959 | 27 | 3 | 2003–2006 | 0.38 | M-v | 1 | MPC | 00723 | 2004 $KG_{11}$ |
| 2004 $KJ_{11}$ | 15.6 | 0.15 | 20060922 | 137.49515 | 212.56311 | 53.57972 | 5.72450 | 0.0664422 | 3.0095254 | 63 | 5 | 1993–2006 | 0.47 | M-v | 1 | MPC | 86520 | 2004 $KJ_{11}$ |
| 2004 $KH_{12}$ | 16.1 | 0.15 | 20060922 | 183.30685 | 11.18140 | 215.91614 | 11.70107 | 0.1242475 | 2.7558776 | 48 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 76471 | 2004 $KH_{12}$ |
| 2004 $KW_{14}$ | 16.6 | 0.15 | 20060922 | 163.49683 | 77.77935 | 204.25632 | 14.54434 | 0.1076060 | 2.6470285 | 34 | 3 | 1996–2005 | 0.21 | M-v | 2 | MPC | 97710 | 2004 $KW_{14}$ |
| 2004 $KB_{15}$ | 16.5 | 0.15 | 20060922 | 155.19903 | 198.39840 | 85.75036 | 15.34010 | 0.2344709 | 2.6701851 | 42 | 4 | 2000–2006 | 0.57 | M-v | 3 | MPC | 65840 | 2004 $KB_{15}$ |
| 2004 $KG_{15}$ | 15.2 | 0.15 | 20060922 | 73.88866 | 280.23543 | 72.60117 | 16.73648 | 0.1525903 | 2.6420026 | 69 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 87637 | 2004 $KG_{15}$ |
| 2004 $KU_{15}$ | 17.3 | 0.15 | 20060922 | 268.77926 | 232.83763 | 312.19640 | 1.98002 | 0.0709978 | 2.3160305 | 31 | 5 | 1998–2006 | 0.35 | M-v | 0 | MPC | 87637 | 2004 $KU_{15}$ |
| 2004 $KB_{16}$ | 15.1 | 0.15 | 20060922 | 226.69905 | 52.55426 | 131.96077 | 10.70124 | 0.2056973 | 2.7683186 | 33 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 65841 | 2004 $KB_{16}$ |
| 2004 $KQ_{16}$ | 14.9 | 0.15 | 20060922 | 120.90860 | 230.09288 | 127.24937 | 16.40143 | 0.2076370 | 3.0850270 | 68 | 4 | 1996–2004 | 0.52 | M-v | 1 | MPC | 70366 | 2004 $KQ_{16}$ |
| 2004 $KX_{16}$ | 15.8 | 0.15 | 20060922 | 208.97092 | 107.73656 | 105.74872 | 14.69927 | 0.0410212 | 2.7724523 | 25 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 95228 | 2004 $KX_{16}$ |
| 2004 $KN_{17}$ | 15.2 | 0.15 | 20060922 | 194.77796 | 340.98107 | 302.84765 | 10.25350 | 0.3335680 | 2.7300397 | 100 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 70366 | 2004 $KN_{17}$ |
| 2004 $KH_{18}$ | 16.7 | 0.15 | 20040604 | 355.16141 | 188.52084 | 63.21657 | 13.00570 | 0.1509400 | 2.6232003 | 18 | 1 | 29 days | 0.80 | | | MPC | | 2004 $KH_{18}$ |
| 2004 $KJ_{18}$ | 16.2 | 0.15 | 20060922 | 186.04344 | 283.18865 | 359.10884 | 12.65932 | 0.3075182 | 2.6862032 | 20 | 1 | 81 days | 0.36 | M-v | 4 | MPC | | 2004 $KJ_{18}$ |
| 2004 LL | 18.1 | 0.15 | 20060922 | 217.72768 | 34.10909 | 226.54726 | 1.71786 | 0.1691060 | 2.3597199 | 26 | 4 | 1993–2004 | 0.39 | M-v | 1 | MPC | 04305 | 2004 LL |
| 2004 LT | 15.8 | 0.15 | 20060922 | 128.64441 | 80.37338 | 193.21163 | 19.97666 | 0.1923867 | 3.1347703 | 27 | 3 | 1999–2005 | 0.49 | M-v | 2 | MPC | 95229 | 2004 LT |
| 2004 $LG_2$ | 16.1 | 0.15 | 20060922 | 203.75284 | 182.31978 | 62.04415 | 8.18726 | 0.0562545 | 2.6100122 | 29 | 2 | 2004–2005 | 0.54 | M-v | 4 | MPC | 90204 | 2004 $LG_2$ |
| 2004 $LM_2$ | 15.7 | 0.15 | 20060922 | 218.79272 | 87.25022 | 138.64838 | 10.85083 | 0.1460099 | 2.5648214 | 47 | 4 | 1995–2005 | 0.46 | M-v | 1 | MPC | 86524 | 2004 $LM_2$ |
| 2004 $LB_3$ | 15.5 | 0.15 | 20060922 | 242.36827 | 67.55634 | 119.50461 | 12.76203 | 0.2390916 | 2.5837125 | 35 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 69730 | 2004 $LB_3$ |
| 2004 $LT_3$ | 16.0 | 0.15 | 20060922 | 197.39802 | 166.75967 | 89.48443 | 5.65304 | 0.1736698 | 2.5840139 | 68 | 5 | 1994–2006 | 0.43 | M-v | 1 | MPC | 90204 | 2004 $LT_3$ |
| 2004 $LD_4$ | 15.3 | 0.15 | 20060922 | 159.56364 | 153.04612 | 161.90130 | 14.92676 | 0.2113528 | 2.8569527 | 54 | 1 | 122 days | 0.56 | M-v | 3 | MPC | 70366 | 2004 $LD_4$ |
| 2004 $LM_4$ | 15.9 | 0.15 | 20060922 | 211.09923 | 218.77797 | 24.73959 | 2.00546 | 0.2075517 | 2.5405257 | 90 | 5 | 1997–2006 | 0.43 | M-v | 1 | MPC | 97711 | 2004 $LM_4$ |
| 2004 $LX_4$ | 15.9 | 0.15 | 20060922 | 110.61150 | 151.06349 | 192.81853 | 14.55595 | 0.0931223 | 2.6434295 | 78 | 4 | 1995–2005 | 0.55 | M-v | 1 | MPC | 02204 | 2004 $LX_4$ |
| 2004 $LV_5$ | 15.1 | 0.15 | 20060922 | 120.30113 | 159.82810 | 135.45262 | 10.27724 | 0.1055966 | 3.0243601 | 78 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 90204 | 2004 $LV_5$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $LB_6$ | 18.5 | 0.15 | 20060922 | 359.70999 | 190.50548 | 182.86963 | 4.09706 | 0.4906750 | 1.6184493 | 366 | 4 | 2004–2006 | 0.37 | M-v | 1 | MPC | 04305 | 2004 $LB_6$ |
| 2004 $LG_6$ | 15.6 | 0.15 | 20060922 | 215.06824 | 92.16958 | 101.81300 | 14.49291 | 0.4636694 | 2.7417525 | 40 | 3 | 1998–2006 | 0.62 | M-v | 2 | MPC | 65852 | 2004 $LG_6$ |
| 2004 $LJ_9$ | 15.1 | 0.15 | 20060922 | 31.82065 | 260.08983 | 122.56053 | 12.98221 | 0.0740326 | 2.9516880 | 52 | 6 | 2000–2006 | 0.47 | M-v | 1 | MPC | 86525 | 2004 $LJ_9$ |
| 2004 $LK_9$ | 15.5 | 0.15 | 20060922 | 170.51503 | 10.11373 | 254.29321 | 11.78167 | 0.1115133 | 2.7416946 | 42 | 3 | 2001–2005 | 0.70 | M-v | 3 | MPC | 90204 | 2004 $LK_9$ |
| 2004 $LD_{10}$ | 15.8 | 0.15 | 20060922 | 154.41346 | 358.79795 | 262.44763 | 13.81499 | 0.2667939 | 3.0102613 | 35 | 4 | 1999–2006 | 0.42 | M-v | 2 | MPC | 65856 | 2004 $LD_{10}$ |
| 2004 $LO_{10}$ | 16.2 | 0.15 | 20060922 | 120.15627 | 229.14800 | 70.86537 | 6.38732 | 0.0314208 | 2.7455645 | 41 | 5 | 1992–2006 | 0.47 | M-v | 0 | MPC | 04305 | 2004 $LO_{10}$ |
| 2004 $LX_{10}$ | 15.9 | 0.15 | 20060922 | 151.51931 | 358.38305 | 250.85036 | 4.40989 | 0.1388698 | 3.0414053 | 35 | 3 | 2004–2006 | 0.52 | M-v | 3 | MPC | 95231 | 2004 $LX_{10}$ |
| 2004 $LZ_{10}$ | 14.3 | 0.15 | 20060922 | 256.47768 | 225.99531 | 248.30736 | 23.24633 | 0.2217691 | 3.1304608 | 59 | 6 | 1976–2006 | 0.57 | M-v | 1 | MPC | 69732 | 2004 $LZ_{10}$ |
| 2004 $LF_{11}$ | 17.3 | 0.15 | 20060922 | 221.05557 | 107.04013 | 177.46636 | 4.11966 | 0.1281722 | 2.2265366 | 35 | 4 | 1997–2005 | 0.53 | M-v | 1 | MPC | 03624 | 2004 $LF_{11}$ |
| 2004 $LO_{11}$ | 17.5 | 0.15 | 20060922 | 247.82367 | 195.38170 | 54.90327 | 2.11326 | 0.1569647 | 2.2239089 | 45 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 95231 | 2004 $LO_{11}$ |
| 2004 $LQ_{11}$ | 14.7 | 0.15 | 20060922 | 138.25206 | 7.42310 | 256.07764 | 16.66113 | 0.1680333 | 3.0992571 | 42 | 3 | 2004–2006 | 0.54 | M-v | 2 | MPC | 86526 | 2004 $LQ_{11}$ |
| 2004 $LS_{11}$ | 16.3 | 0.15 | 20060922 | 247.70139 | 324.93275 | 265.11993 | 5.78342 | 0.1196246 | 2.3177248 | 63 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 95231 | 2004 $LS_{11}$ |
| 2004 $LJ_{14}$ | 14.9 | 0.15 | 20060922 | 214.69660 | 43.38100 | 134.12025 | 17.11281 | 0.0595994 | 3.1969505 | 38 | 4 | 2003–2006 | 0.48 | M-v | 1 | MPC | 87637 | 2004 $LJ_{14}$ |
| 2004 $LH_{15}$ | 15.4 | 0.15 | 20060922 | 178.16645 | 207.59032 | 83.39705 | 10.90188 | 0.2336541 | 2.6879359 | 38 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 69733 | 2004 $LH_{15}$ |
| 2004 $LO_{15}$ | 14.9 | 0.15 | 20060922 | 103.84749 | 204.91306 | 91.49863 | 13.38356 | 0.1157837 | 3.1547381 | 46 | 6 | 1998–2006 | 0.48 | M-v | 0 | MPC | 90204 | 2004 $LO_{15}$ |
| 2004 $LT_{15}$ | 16.9 | 0.15 | 20060922 | 239.96970 | 31.32442 | 203.42901 | 5.27670 | 0.1729182 | 2.3819841 | 29 | 3 | 2000–2005 | 0.48 | M-v | 4 | MPC | 65859 | 2004 $LT_{15}$ |
| 2004 $LG_{18}$ | 15.6 | 0.15 | 20060922 | 341.44554 | 188.71792 | 320.71281 | 25.87627 | 0.1834173 | 2.3208163 | 36 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 69734 | 2004 $LG_{18}$ |
| 2004 $LL_{18}$ | 16.6 | 0.15 | 20060922 | 16.06602 | 298.15792 | 236.26898 | 19.55758 | 0.1410672 | 1.9356467 | 51 | 3 | 2001–2006 | 0.50 | M-v | 1 | MPC | 95233 | 2004 $LL_{18}$ |
| 2004 $LY_{19}$ | 17.1 | 0.15 | 20060922 | 167.09356 | 338.48210 | 284.77402 | 2.27875 | 0.1525513 | 2.7327870 | 28 | 4 | 1999–2005 | 0.55 | M-v | 1 | MPC | 95233 | 2004 $LY_{19}$ |
| 2004 $LB_{22}$ | 15.2 | 0.15 | 20060922 | 72.11805 | 199.14045 | 135.95715 | 10.56687 | 0.0936422 | 3.1426974 | 41 | 6 | 1997–2006 | 0.57 | M-v | 0 | MPC | 86527 | 2004 $LB_{22}$ |
| 2004 $LW_{23}$ | 15.6 | 0.15 | 20060922 | 197.62075 | 167.24004 | 133.89671 | 6.52243 | 0.1147704 | 2.4584551 | 57 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 95234 | 2004 $LW_{23}$ |
| 2004 $LS_{29}$ | 16.1 | 0.15 | 20060922 | 231.41807 | 67.56562 | 167.39264 | 4.57114 | 0.0065278 | 2.7983922 | 42 | 6 | 1991–2006 | 0.45 | M-v | 0 | MPC | 00725 | 2004 $LS_{29}$ |
| 2004 $LC_{31}$ | 14.7 | 0.15 | 20060922 | 135.40883 | 211.31805 | 100.22247 | 15.33257 | 0.1435604 | 3.1983130 | 67 | 3 | 2004–2006 | 0.46 | M-v | 2 | MPC | 97712 | 2004 $LC_{31}$ |
| 2004 $LP_{31}$ | 16.3 | 0.15 | 20060922 | 189.37449 | 64.28466 | 222.75136 | 6.56890 | 0.2932517 | 2.7185779 | 22 | 1 | 93 days | 0.57 | M-v | 5 | MPC | | 2004 $LP_{31}$ |
| 2004 ML | 15.6 | 0.15 | 20060922 | 114.30275 | 202.83554 | 123.76130 | 5.98846 | 0.1158654 | 2.7241191 | 74 | 6 | 2000–2006 | 0.58 | M-v | 0 | MPC | 97712 | 2004 ML |
| 2004 MT | 17.0 | 0.15 | 20060922 | 265.61446 | 60.64515 | 176.01418 | 4.13650 | 0.0819897 | 2.2048427 | 36 | 3 | 2001–2005 | 0.45 | M-v | 3 | MPC | 89579 | 2004 MT |
| 2004 $MA_1$ | 15.7 | 0.15 | 20060922 | 271.59393 | 103.52505 | 111.56073 | 23.07711 | 0.2004131 | 2.3556139 | 22 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 73009 | 2004 $MA_1$ |
| 2004 $MX_1$ | 16.2 | 0.15 | 20060922 | 189.72611 | 182.28009 | 78.32920 | 7.27423 | 0.2020622 | 2.7769334 | 36 | 4 | 1999–2006 | 0.69 | M-v | 2 | MPC | 90204 | 2004 $MX_1$ |
| 2004 $MH_3$ | 14.9 | 0.15 | 20060922 | 279.81621 | 301.85675 | 256.38988 | 13.22258 | 0.1424145 | 2.5641759 | 105 | 7 | 1997–2006 | 0.57 | M-v | 1 | MPC | 95236 | 2004 $MH_3$ |
| 2004 $MV_4$ | 16.1 | 0.15 | 20060922 | 244.97084 | 172.15195 | 58.78761 | 9.60448 | 0.2025918 | 2.4645931 | 32 | 3 | 2001–2005 | 0.46 | M-v | 4 | MPC | 97712 | 2004 $MV_4$ |
| 2004 $MW_6$ | 17.2 | 0.15 | 20060922 | 215.89883 | 241.13326 | 60.52356 | 3.34216 | 0.2213952 | 2.3347760 | 33 | 2 | 2001–2004 | 0.48 | M-v | 4 | MPC | 65875 | 2004 $MW_6$ |
| 2004 $MT_7$ | 15.9 | 0.15 | 20060922 | 204.33676 | 236.02072 | 45.32065 | 13.45464 | 0.1880574 | 2.6081106 | 39 | 4 | 2000–2005 | 0.64 | M-v | 1 | MPC | 90205 | 2004 $MT_7$ |
| 2004 NF | 15.3 | 0.15 | 20060922 | 153.15834 | 222.87957 | 64.23286 | 12.99817 | 0.1130889 | 3.0023118 | 25 | 2 | 2004–2005 | 0.58 | M-v | 4 | MPC | 89580 | 2004 NF |
| 2004 $NR_1$ | 15.7 | 0.15 | 20060922 | 247.39218 | 135.75447 | 116.07235 | 15.15473 | 0.1012279 | 2.4605930 | 43 | 5 | 1994–2006 | 0.45 | M-v | 1 | MPC | 90205 | 2004 $NR_1$ |
| 2004 $NF_2$ | 17.4 | 0.15 | 20060922 | 213.79111 | 307.43566 | 348.60347 | 3.78854 | 0.1778713 | 2.4031253 | 34 | 4 | 1997–2005 | 0.63 | M-v | 2 | MPC | 76473 | 2004 $NF_2$ |
| 2004 $NS_2$ | 15.1 | 0.15 | 20060922 | 127.11503 | 37.68480 | 296.10272 | 10.41074 | 0.1015058 | 3.1008275 | 60 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 97712 | 2004 $NS_2$ |
| 2004 $NX_3$ | 16.6 | 0.15 | 20060922 | 212.05266 | 117.31189 | 188.29275 | 2.01872 | 0.2050358 | 2.3576537 | 47 | 4 | 1997–2004 | 0.63 | M-v | 1 | MPC | 65883 | 2004 $NX_3$ |
| 2004 $ND_5$ | 16.6 | 0.15 | 20060922 | 231.67778 | 337.18805 | 282.89719 | 1.25427 | 0.1829210 | 2.4327288 | 64 | 7 | 1998–2006 | 0.55 | M-v | 1 | MPC | 97712 | 2004 $ND_5$ |
| 2004 $NB_6$ | 14.9 | 0.15 | 20060922 | 185.53593 | 105.23177 | 135.55029 | 24.84191 | 0.3129752 | 3.2236251 | 66 | 3 | 1998–2004 | 0.55 | M-v | 1 | MPC | 70368 | 2004 $NB_6$ |
| 2004 $NT_6$ | 16.8 | 0.15 | 20060922 | 187.57847 | 192.13534 | 119.86353 | 9.91643 | 0.3142153 | 2.6581227 | 50 | 3 | 1999–2004 | 0.54 | M-v | 2 | MPC | 89581 | 2004 $NT_6$ |
| 2004 $NF_9$ | 15.3 | 0.15 | 20060922 | 166.90357 | 319.02782 | 294.42110 | 3.35428 | 0.1822546 | 3.1770411 | 39 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 87638 | 2004 $NF_9$ |
| 2004 $NP_{12}$ | 15.8 | 0.15 | 20060922 | 157.96120 | 286.02179 | 32.89112 | 4.08096 | 0.0927341 | 2.8081006 | 44 | 6 | 1998–2006 | 0.43 | M-v | 0 | MPC | 97713 | 2004 $NP_{12}$ |
| 2004 $NQ_{12}$ | 14.4 | 0.15 | 20060922 | 130.77921 | 231.78956 | 104.78636 | 11.35587 | 0.1082454 | 2.9848555 | 100 | 6 | 2000–2006 | 0.51 | M-v | 0 | MPC | 95243 | 2004 $NQ_{12}$ |
| 2004 $NF_{13}$ | 15.0 | 0.15 | 20060922 | 115.19463 | 210.53862 | 121.90889 | 15.16235 | 0.1500631 | 3.1105762 | 43 | 6 | 1993–2005 | 0.50 | M-v | 0 | MPC | 04306 | 2004 $NF_{13}$ |
| 2004 $NR_{13}$ | 17.0 | 0.15 | 20040714 | 337.74292 | 49.31903 | 284.09456 | 16.53293 | 0.2562822 | 2.6671221 | 11 | 1 | 7 days | 0.39 | | | MPC | 00726 | 2004 $NR_{13}$ |
| 2004 $NY_{13}$ | 16.9 | 0.15 | 20060922 | 205.18963 | 220.95896 | 108.60245 | 7.90320 | 0.1593513 | 2.3536835 | 35 | 3 | 2001–2005 | 0.57 | M-v | 3 | MPC | 00726 | 2004 $NY_{13}$ |
| 2004 $ND_{14}$ | 16.0 | 0.15 | 20060922 | 140.95553 | 84.38360 | 226.05496 | 2.41865 | 0.2520838 | 3.0372488 | 41 | 4 | 1994–2005 | 0.53 | M-v | 2 | MPC | 04306 | 2004 $ND_{14}$ |
| 2004 $NF_{14}$ | 15.1 | 0.15 | 20060922 | 124.63734 | 45.50079 | 277.98067 | 10.04259 | 0.0907527 | 3.0752434 | 65 | 5 | 1999–2006 | 0.59 | M-v | 0 | MPC | 97713 | 2004 $NF_{14}$ |
| 2004 $NJ_{14}$ | 16.2 | 0.15 | 20060922 | 164.92369 | 178.44949 | 144.13203 | 5.02688 | 0.1067863 | 2.6232870 | 39 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 00727 | 2004 $NJ_{14}$ |
| 2004 $NK_{14}$ | 15.4 | 0.15 | 20060922 | 171.35484 | 90.98460 | 174.21874 | 4.06766 | 0.1212462 | 3.0892443 | 31 | 3 | 2003–2005 | 0.56 | M-v | 3 | MPC | 89581 | 2004 $NK_{14}$ |
| 2004 $NS_{14}$ | 15.5 | 0.15 | 20060922 | 110.34353 | 66.32780 | 285.30314 | 7.42017 | 0.1380357 | 3.0102460 | 48 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 95244 | 2004 $NS_{14}$ |
| 2004 $NW_{15}$ | 17.0 | 0.15 | 20060922 | 189.63812 | 87.85484 | 219.59122 | 2.95197 | 0.1847496 | 2.5540026 | 39 | 3 | 2000–2005 | 0.45 | M-v | 2 | MPC | 65898 | 2004 $NW_{15}$ |
| 2004 $ND_{16}$ | 15.1 | 0.15 | 20060922 | 137.55533 | 169.84242 | 150.90936 | 4.24379 | 0.1056861 | 3.0119968 | 70 | 7 | 1998–2006 | 0.49 | M-v | 0 | MPC | 95244 | 2004 $ND_{16}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $NF_{18}$ | 15.9 | 0.15 | 20060922 | 165.54289 | 8.16232 | 246.06052 | 5.94509 | 0.3063987 | 3.0840492 | 27 | 3 | 2003–2005 | 0.46 | M-v | 3 | MPC | 89582 | 2004 $NF_{18}$ |
| 2004 $NZ_{18}$ | 15.0 | 0.15 | 20060922 | 90.47646 | 131.91906 | 181.25164 | 5.02624 | 0.2847180 | 3.9655297 | 45 | 3 | 2003–2005 | 0.72 | M-v | 3 | MPC | 89582 | 2004 $NZ_{18}$ |
| 2004 $NJ_{20}$ | 16.4 | 0.15 | 20060922 | 250.83639 | 93.95125 | 136.52574 | 13.14938 | 0.2240184 | 2.4674629 | 24 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 73013 | 2004 $NJ_{20}$ |
| 2004 $NW_{20}$ | 15.2 | 0.15 | 20060922 | 97.58449 | 72.30378 | 274.86242 | 12.06788 | 0.0809082 | 3.1426324 | 53 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 95245 | 2004 $NW_{20}$ |
| 2004 $NY_{21}$ | 15.1 | 0.15 | 20060922 | 100.18023 | 256.28837 | 92.55036 | 14.21139 | 0.1312510 | 3.1704044 | 51 | 4 | 2000–2005 | 0.53 | M-v | 0 | MPC | 97714 | 2004 $NY_{21}$ |
| 2004 $NE_{23}$ | 15.9 | 0.15 | 20060922 | 152.81505 | 16.41531 | 314.38023 | 20.20535 | 0.1210603 | 2.9252822 | 48 | 4 | 1999–2006 | 0.60 | M-v | 3 | MPC | 69745 | 2004 $NE_{23}$ |
| 2004 $NZ_{23}$ | 17.2 | 0.15 | 20060922 | 240.80130 | 78.31757 | 234.68541 | 3.81017 | 0.2444507 | 2.1990913 | 54 | 2 | 2001–2004 | 0.48 | M-v | 3 | MPC | 70370 | 2004 $NZ_{23}$ |
| 2004 $NC_{24}$ | 15.8 | 0.15 | 20060922 | 149.98320 | 159.22919 | 163.85267 | 6.22049 | 0.0839319 | 2.7698166 | 41 | 3 | 2003–2005 | 0.49 | M-v | 3 | MPC | 97714 | 2004 $NC_{24}$ |
| 2004 $ND_{24}$ | 15.2 | 0.15 | 20060922 | 119.34990 | 52.52508 | 302.20313 | 15.40345 | 0.0799906 | 3.1093017 | 83 | 6 | 1996–2006 | 0.49 | M-v | 1 | MPC | 70370 | 2004 $ND_{24}$ |
| 2004 $NU_{24}$ | 16.2 | 0.15 | 20060922 | 195.74976 | 340.36870 | 331.90354 | 13.12234 | 0.1661348 | 2.6554139 | 89 | 3 | 1998–2004 | 0.52 | M-v | 2 | MPC | 74312 | 2004 $NU_{24}$ |
| 2004 $NS_{25}$ | 15.8 | 0.15 | 20060922 | 125.36439 | 172.31011 | 152.42074 | 5.71580 | 0.1697107 | 3.0683768 | 31 | 4 | 1998–2005 | 0.46 | M-v | 0 | MPC | 90205 | 2004 $NS_{25}$ |
| 2004 $NS_{27}$ | 18.7 | 0.15 | 20060922 | 254.75162 | 69.58762 | 221.07758 | 1.41434 | 0.1822834 | 2.1700226 | 27 | 2 | 2001–2004 | 0.55 | M-v | 3 | MPC | 65913 | 2004 $NS_{27}$ |
| 2004 $NX_{27}$ | 17.3 | 0.15 | 20060922 | 280.40637 | 2.81805 | 252.11320 | 3.55782 | 0.1193929 | 2.2111015 | 33 | 5 | 2000–2005 | 0.52 | M-v | 1 | MPC | 65913 | 2004 $NX_{27}$ |
| 2004 $NA_{28}$ | 16.4 | 0.15 | 20060922 | 238.50778 | 126.55026 | 135.32611 | 10.04237 | 0.1738770 | 2.4415349 | 35 | 4 | 1996–2006 | 0.52 | M-v | 2 | MPC | 70370 | 2004 $NA_{28}$ |
| 2004 $ND_{30}$ | 14.8 | 0.15 | 20060922 | 98.80926 | 290.27396 | 6.98128 | 25.85818 | 0.2504716 | 3.2333407 | 79 | 4 | 1998–2005 | 0.56 | M-v | 1 | MPC | 97714 | 2004 $ND_{30}$ |
| 2004 $NL_{31}$ | 14.9 | 0.15 | 20060922 | 128.15349 | 216.84644 | 117.12532 | 23.35230 | 0.1744411 | 3.1308959 | 30 | 3 | 2004–2006 | 0.54 | M-v | 2 | MPC | 95248 | 2004 $NL_{31}$ |
| 2004 $NC_{33}$ | 15.0 | 0.15 | 20060922 | 18.85628 | 301.47538 | 137.73831 | 16.79456 | 0.0763424 | 3.1062378 | 36 | 5 | 2000–2005 | 0.58 | M-v | 1 | MPC | 65917 | 2004 $NC_{33}$ |
| 2004 $NQ_{33}$ | 17.1 | 0.15 | 20040803 | 349.61810 | 12.23730 | 314.97240 | 16.30079 | 0.2099235 | 2.4499261 | 21 | 1 | 41 days | 0.64 | | | MPC | | 2004 $NQ_{33}$ |
| 2004 $NR_{33}$ | 17.4 | 0.15 | 20060922 | 170.66201 | 265.66523 | 71.93375 | 13.69847 | 0.3002315 | 2.6202547 | 20 | 1 | 62 days | 0.38 | M-v | 4 | MPC | | 2004 $NR_{33}$ |
| 2004 $NS_{33}$ | 15.0 | 0.15 | 20060922 | 124.82336 | 291.12249 | 67.24243 | 21.18868 | 0.2545358 | 3.1646360 | 28 | 1 | 83 days | 0.40 | M-v | 3 | MPC | | 2004 $NS_{33}$ |
| 2004 $OL_{2}$ | 14.5 | 0.15 | 20060922 | 137.88146 | 13.75326 | 282.44630 | 10.68629 | 0.0969525 | 3.2433952 | 71 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 97715 | 2004 $OL_{2}$ |
| 2004 $OT_{2}$ | 14.5 | 0.15 | 20060922 | 54.22139 | 286.77813 | 117.77613 | 16.44695 | 0.1834221 | 3.1375389 | 86 | 6 | 2000–2006 | 0.51 | M-v | 1 | MPC | 95250 | 2004 $OT_{2}$ |
| 2004 $OQ_{4}$ | 15.9 | 0.15 | 20060922 | 161.87556 | 195.52857 | 120.07433 | 10.15157 | 0.1264822 | 2.7178383 | 67 | 7 | 1996–2006 | 0.60 | M-v | 0 | MPC | 97715 | 2004 $OQ_{4}$ |
| 2004 $OE_{5}$ | 15.5 | 0.15 | 20060922 | 169.80363 | 194.10083 | 115.19725 | 8.25664 | 0.1497688 | 2.7260340 | 69 | 7 | 1995–2006 | 0.50 | M-v | 1 | MPC | 97715 | 2004 $OE_{5}$ |
| 2004 $OJ_{5}$ | 16.6 | 0.15 | 20060922 | 196.73665 | 174.40256 | 128.36888 | 7.25204 | 0.2091520 | 2.5299455 | 41 | 3 | 2000–2005 | 0.55 | M-v | 3 | MPC | 65924 | 2004 $OJ_{5}$ |
| 2004 $OK_{6}$ | 15.9 | 0.15 | 20060922 | 150.08315 | 2.17699 | 289.43598 | 4.27921 | 0.1502730 | 3.0248232 | 39 | 5 | 1997–2006 | 0.36 | M-v | 0 | MPC | 90206 | 2004 $OK_{6}$ |
| 2004 $OH_{7}$ | 16.1 | 0.15 | 20060922 | 207.90789 | 153.83580 | 126.89217 | 7.19697 | 0.0887475 | 2.5428703 | 40 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 97715 | 2004 $OH_{7}$ |
| 2004 $OK_{7}$ | 17.2 | 0.15 | 20060922 | 241.55709 | 292.98368 | 324.25359 | 4.01591 | 0.1220655 | 2.4109894 | 23 | 3 | 1993–2005 | 0.35 | M-v | 3 | MPC | 04306 | 2004 $OK_{7}$ |
| 2004 $OQ_{8}$ | 14.8 | 0.15 | 20060922 | 124.62952 | 217.86874 | 133.80691 | 14.04997 | 0.2120523 | 3.1248561 | 95 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 70371 | 2004 $OQ_{8}$ |
| 2004 $OQ_{9}$ | 16.2 | 0.15 | 20060922 | 211.56311 | 345.83667 | 313.92213 | 15.05970 | 0.2967972 | 2.3944111 | 88 | 3 | 2000–2004 | 0.50 | M-v | 2 | MPC | 70372 | 2004 $OQ_{9}$ |
| 2004 $OV_{9}$ | 16.9 | 0.15 | 20060922 | 172.54587 | 258.55512 | 72.01588 | 5.21422 | 0.1897218 | 2.5354400 | 36 | 4 | 1995–2006 | 0.42 | M-v | 0 | MPC | 95254 | 2004 $OV_{9}$ |
| 2004 $OY_{9}$ | 16.2 | 0.15 | 20060922 | 239.53974 | 204.14778 | 23.66113 | 5.65601 | 0.2173757 | 2.5990519 | 31 | 4 | 1999–2005 | 0.53 | M-v | 1 | MPC | 95255 | 2004 $OY_{9}$ |
| 2004 $OT_{11}$ | 17.3 | 0.15 | 20060922 | 267.13194 | 326.13663 | 295.28856 | 19.89384 | 0.5640335 | 2.1528734 | 233 | 3 | 2004–2006 | 0.45 | M-v | 2 | MPC | 89586 | 2004 $OT_{11}$ |
| 2004 $OQ_{12}$ | 15.8 | 0.15 | 20060922 | 153.25489 | 209.14440 | 73.54089 | 2.17286 | 0.1500644 | 3.1029792 | 33 | 4 | 1998–2005 | 0.29 | M-v | 0 | MPC | 95255 | 2004 $OQ_{12}$ |
| 2004 $OS_{14}$ | 15.7 | 0.15 | 20060922 | 128.53825 | 171.27852 | 155.09964 | 2.43080 | 0.0334525 | 2.9731972 | 50 | 5 | 2002–2006 | 0.47 | M-v | 0 | MPC | 95255 | 2004 $OS_{14}$ |
| 2004 $OG_{15}$ | 16.5 | 0.15 | 20060922 | 158.34883 | 187.35053 | 130.04193 | 5.41376 | 0.2624056 | 3.0356360 | 14 | 1 | 79 days | 0.26 | M-v | 4 | MPC | | 2004 $OG_{15}$ |
| 2004 $OH_{15}$ | 15.5 | 0.15 | 20060922 | 155.26437 | 282.74192 | 41.98211 | 22.57609 | 0.2258161 | 3.0851488 | 28 | 1 | 113 days | 0.61 | M-v | 4 | MPC | | 2004 $OH_{15}$ |
| 2004 $PO_{1}$ | 16.4 | 0.15 | 20060922 | 36.15409 | 311.67275 | 164.09243 | 15.65384 | 0.1136040 | 2.5783849 | 58 | 4 | 1996–2006 | 0.41 | M-v | 3 | MPC | 97716 | 2004 $PO_{1}$ |
| 2004 $PX_{1}$ | 16.2 | 0.15 | 20060922 | 237.66434 | 211.68929 | 59.90279 | 3.69100 | 0.1480114 | 2.4134316 | 52 | 3 | 2001–2006 | 0.50 | M-v | 4 | MPC | 97716 | 2004 $PX_{1}$ |
| 2004 $PE_{2}$ | 16.7 | 0.15 | 20060922 | 243.32503 | 305.30814 | 347.91990 | 6.97446 | 0.1847496 | 2.2477260 | 54 | 3 | 2000–2004 | 0.55 | M-v | 2 | MPC | 70373 | 2004 $PE_{2}$ |
| 2004 $PV_{2}$ | 16.5 | 0.15 | 20060922 | 258.11332 | 204.60731 | 41.25988 | 2.92195 | 0.1808211 | 2.3978071 | 53 | 4 | 2001–2006 | 0.34 | M-v | 1 | MPC | 97716 | 2004 $PV_{2}$ |
| 2004 $PX_{3}$ | 15.2 | 0.15 | 20060922 | 109.54594 | 250.68343 | 116.11733 | 6.98044 | 0.1093142 | 2.9100941 | 74 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 97716 | 2004 $PX_{3}$ |
| 2004 $PY_{5}$ | 17.1 | 0.15 | 20060922 | 200.27204 | 41.11570 | 300.47216 | 6.36158 | 0.1248044 | 2.3067751 | 41 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 95258 | 2004 $PY_{5}$ |
| 2004 $PJ_{6}$ | 17.0 | 0.15 | 20060922 | 230.65812 | 328.43021 | 284.09218 | 4.22996 | 0.2090902 | 2.5860570 | 32 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 76483 | 2004 $PJ_{6}$ |
| 2004 $PW_{7}$ | 15.6 | 0.15 | 20060922 | 142.48185 | 166.06644 | 161.23354 | 17.31105 | 0.1049773 | 3.0517144 | 41 | 3 | 2002–2005 | 0.57 | M-v | 2 | MPC | 69757 | 2004 $PW_{7}$ |
| 2004 $PN_{9}$ | 14.9 | 0.15 | 20060922 | 169.37507 | 116.77671 | 147.04679 | 16.80382 | 0.1911568 | 3.1062128 | 25 | 3 | 1998–2004 | 0.51 | M-v | 2 | MPC | 65940 | 2004 $PN_{9}$ |
| 2004 $PQ_{9}$ | 15.2 | 0.15 | 20060922 | 38.47429 | 119.52449 | 303.72855 | 7.30722 | 0.0666626 | 3.1838636 | 62 | 5 | 1999–2006 | 0.52 | M-v | 0 | MPC | 95259 | 2004 $PQ_{9}$ |
| 2004 $PP_{10}$ | 13.3 | 0.15 | 20060922 | 115.60664 | 69.59185 | 235.77296 | 8.35352 | 0.1477860 | 3.9452834 | 210 | 4 | 2002–2006 | 0.45 | M-v | 0 | MPC | 97716 | 2004 $PP_{10}$ |
| 2004 $PW_{10}$ | 15.6 | 0.15 | 20060922 | 235.86160 | 326.87832 | 298.74764 | 6.05243 | 0.1046913 | 2.4649577 | 44 | 3 | 2001–2004 | 0.53 | M-v | 3 | MPC | 03625 | 2004 $PW_{10}$ |
| 2004 $PX_{11}$ | 17.1 | 0.15 | 20060922 | 272.35041 | 67.81876 | 161.36358 | 2.63236 | 0.1534854 | 2.4276260 | 42 | 4 | 2003–2006 | 0.41 | M-v | 0 | MPC | 03625 | 2004 $PX_{11}$ |
| 2004 $PR_{12}$ | 14.8 | 0.15 | 20060922 | 90.04047 | 236.74075 | 141.74102 | 4.84830 | 0.0856621 | 3.1510870 | 74 | 6 | 1997–2006 | 0.53 | M-v | 0 | MPC | 97717 | 2004 $PR_{12}$ |
| 2004 $PL_{13}$ | 16.5 | 0.15 | 20060922 | 210.98378 | 167.81166 | 130.50738 | 3.93717 | 0.1935154 | 2.4855845 | 56 | 3 | 2000–2004 | 0.47 | M-v | 2 | MPC | 70374 | 2004 $PL_{13}$ |
| 2004 $PP_{13}$ | 15.8 | 0.15 | 20060922 | 144.72039 | 201.35129 | 129.10196 | 5.84694 | 0.2394421 | 2.9761317 | 68 | 3 | 1999–2005 | 0.48 | M-v | 3 | MPC | 74313 | 2004 $PP_{13}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $PC_{14}$ | 15.4 | 0.15 | 20060922 | 145.12379 | 247.00924 | 67.73374 | 2.18320 | 0.1725862 | 3.1450947 | 66 | 5 | 1999–2005 | 0.47 | M-v | 0 | MPC | 97717 | 2004 $PC_{14}$ |
| 2004 $PL_{15}$ | 15.1 | 0.15 | 20060922 | 147.85997 | 180.96762 | 138.11144 | 14.65583 | 0.1522942 | 3.1652639 | 47 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 73015 | 2004 $PL_{15}$ |
| 2004 $PX_{15}$ | 15.0 | 0.15 | 20060922 | 122.41895 | 28.58044 | 334.62748 | 9.93684 | 0.0600260 | 3.0303867 | 65 | 4 | 1999–2006 | 0.55 | M-v | 2 | MPC | 74313 | 2004 $PX_{15}$ |
| 2004 $PX_{17}$ | 15.9 | 0.15 | 20060922 | 177.30645 | 226.81973 | 62.42282 | 4.05818 | 0.0930556 | 2.9425567 | 66 | 6 | 2000–2006 | 0.40 | M-v | 0 | MPC | 97717 | 2004 $PX_{17}$ |
| 2004 $PX_{18}$ | 16.1 | 0.15 | 20060922 | 203.52382 | 170.08405 | 149.79574 | 11.75646 | 0.0921991 | 2.4598132 | 75 | 3 | 1995–2004 | 0.49 | M-v | 2 | MPC | 77784 | 2004 $PX_{18}$ |
| 2004 $PY_{19}$ | 14.9 | 0.15 | 20060922 | 177.45739 | 188.39767 | 113.37364 | 13.26712 | 0.0416178 | 3.0996039 | 35 | 5 | 1997–2006 | 0.43 | M-v | 1 | MPC | 03625 | 2004 $PY_{19}$ |
| 2004 $PB_{21}$ | 17.0 | 0.15 | 20060922 | 282.52920 | 90.67117 | 153.57500 | 6.85054 | 0.1396505 | 2.2711932 | 23 | 3 | 2000–2004 | 0.52 | M-v | 4 | MPC | 89587 | 2004 $PB_{21}$ |
| 2004 $PK_{21}$ | 17.0 | 0.15 | 20060922 | 92.04907 | 187.73835 | 344.53922 | 20.93980 | 0.0448402 | 1.8966140 | 53 | 4 | 1998–2006 | 0.62 | M-v | 2 | MPC | 00731 | 2004 $PK_{21}$ |
| 2004 $PS_{21}$ | 15.1 | 0.15 | 20060922 | 90.70636 | 56.90763 | 319.92352 | 10.42846 | 0.0967717 | 3.0617051 | 43 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 97717 | 2004 $PS_{21}$ |
| 2004 $PV_{21}$ | 16.8 | 0.15 | 20060922 | 287.46058 | 120.20715 | 137.37535 | 6.35891 | 0.1025513 | 2.1755431 | 33 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 97717 | 2004 $PV_{21}$ |
| 2004 $PF_{22}$ | 17.6 | 0.15 | 20060922 | 194.48378 | 226.35101 | 132.13676 | 6.01905 | 0.2147177 | 2.2752804 | 27 | 2 | 2004–2006 | 0.48 | M-v | 3 | MPC | 95267 | 2004 $PF_{22}$ |
| 2004 $PN_{22}$ | 15.7 | 0.15 | 20060922 | 180.15589 | 115.12092 | 156.76391 | 8.90165 | 0.1249819 | 3.0173861 | 37 | 4 | 1999–2005 | 0.64 | M-v | 1 | MPC | 90207 | 2004 $PN_{22}$ |
| 2004 $PU_{22}$ | 16.1 | 0.15 | 20060922 | 217.63357 | 116.94374 | 141.82008 | 5.75455 | 0.1181265 | 2.7149586 | 34 | 4 | 2000–2005 | 0.63 | M-v | 1 | MPC | 95267 | 2004 $PU_{22}$ |
| 2004 $PD_{25}$ | 15.6 | 0.15 | 20060922 | 130.58099 | 273.66004 | 65.01982 | 2.05738 | 0.0932352 | 3.0345748 | 52 | 5 | 1994–2006 | 0.46 | M-v | 0 | MPC | 95268 | 2004 $PD_{25}$ |
| 2004 $PM_{27}$ | 16.4 | 0.15 | 20060922 | 189.57272 | 248.63788 | 25.52677 | 5.80963 | 0.2969984 | 2.7719006 | 52 | 5 | 1999–2005 | 0.67 | M-v | 1 | MPC | 90207 | 2004 $PM_{27}$ |
| 2004 $PB_{28}$ | 16.3 | 0.15 | 20060922 | 211.74086 | 128.12487 | 198.29612 | 6.28414 | 0.1528113 | 2.3282559 | 83 | 3 | 2000–2004 | 0.60 | M-v | 2 | MPC | 70377 | 2004 $PB_{28}$ |
| 2004 $PC_{28}$ | 15.7 | 0.15 | 20060922 | 263.44106 | 291.93255 | 292.77409 | 12.84441 | 0.1467797 | 2.6386886 | 48 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 86533 | 2004 $PC_{28}$ |
| 2004 $PY_{28}$ | 16.9 | 0.15 | 20060922 | 173.80279 | 54.49900 | 333.65442 | 6.84526 | 0.2872203 | 2.3890592 | 66 | 3 | 2002–2005 | 0.52 | M-v | 3 | MPC | 69779 | 2004 $PY_{28}$ |
| 2004 $PC_{30}$ | 15.5 | 0.15 | 20060922 | 171.62867 | 329.11250 | 321.00705 | 7.81986 | 0.1014757 | 3.1030838 | 35 | 5 | 1993–2005 | 0.47 | M-v | 0 | MPC | 04306 | 2004 $PC_{30}$ |
| 2004 $PO_{32}$ | 16.4 | 0.15 | 20060922 | 245.10035 | 153.96531 | 115.41722 | 3.01179 | 0.1955503 | 2.4049525 | 65 | 5 | 1999–2006 | 0.58 | M-v | 1 | MPC | 97718 | 2004 $PO_{32}$ |
| 2004 $PP_{32}$ | 14.8 | 0.15 | 20060922 | 172.93356 | 297.36309 | 349.63098 | 7.13486 | 0.1141983 | 3.1235652 | 34 | 1 | 63 days | 0.54 | M-v | 5 | MPC | 70377 | 2004 $PP_{32}$ |
| 2004 $PR_{32}$ | 16.9 | 0.15 | 20060922 | 239.34678 | 193.36053 | 92.59590 | 2.51116 | 0.1725861 | 2.3711551 | 58 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 97718 | 2004 $PR_{32}$ |
| 2004 $PS_{32}$ | 15.3 | 0.15 | 20060922 | 112.78882 | 297.07739 | 63.47325 | 5.07434 | 0.0709163 | 2.9936003 | 88 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 97718 | 2004 $PS_{32}$ |
| 2004 $PW_{32}$ | 15.8 | 0.15 | 20060922 | 199.88881 | 267.18010 | 24.31755 | 5.21023 | 0.1417111 | 2.7132255 | 72 | 4 | 2000–2005 | 0.62 | M-v | 1 | MPC | 97718 | 2004 $PW_{32}$ |
| 2004 $PC_{33}$ | 16.8 | 0.15 | 20060922 | 55.25091 | 163.01750 | 326.37182 | 5.68975 | 0.0242487 | 2.2916162 | 37 | 3 | 2003–2006 | 0.70 | M-v | 4 | MPC | 95273 | 2004 $PC_{33}$ |
| 2004 $PB_{35}$ | 16.0 | 0.15 | 20060922 | 123.90513 | 28.93454 | 341.04901 | 10.34481 | 0.1587358 | 2.9731395 | 75 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 69785 | 2004 $PB_{35}$ |
| 2004 $PP_{38}$ | 17.5 | 0.15 | 20060922 | 232.19033 | 163.65229 | 144.20059 | 5.10471 | 0.1780552 | 2.2840626 | 44 | 3 | 1997–2006 | 0.46 | M-v | 3 | MPC | 00733 | 2004 $PP_{38}$ |
| 2004 $PO_{39}$ | 15.6 | 0.15 | 20060922 | 228.61521 | 296.43720 | 326.86120 | 8.63704 | 0.1358850 | 2.7114318 | 52 | 3 | 2003–2006 | 0.47 | M-v | 2 | MPC | 69792 | 2004 $PO_{39}$ |
| 2004 $PU_{39}$ | 14.8 | 0.15 | 20060922 | 124.24155 | 36.61269 | 320.45011 | 9.05933 | 0.1349611 | 3.1220064 | 90 | 6 | 1999–2006 | 0.48 | M-v | 1 | MPC | 97719 | 2004 $PU_{39}$ |
| 2004 $PA_{40}$ | 15.8 | 0.15 | 20060922 | 150.79069 | 188.73688 | 169.45824 | 4.25245 | 0.1148419 | 2.7164177 | 60 | 5 | 1991–2004 | 0.61 | M-v | 1 | MPC | 04306 | 2004 $PA_{40}$ |
| 2004 $PO_{42}$ | 16.2 | 0.15 | 20060922 | 85.00326 | 201.48882 | 185.70279 | 11.96769 | 0.0847658 | 3.1230122 | 40 | 3 | 2002–2005 | 0.57 | M-v | 3 | MPC | 95279 | 2004 $PO_{42}$ |
| 2004 $PV_{42}$ | 16.8 | 0.15 | 20060922 | 176.28417 | 267.45134 | 57.55362 | 5.47953 | 0.2240607 | 2.6123927 | 41 | 4 | 2000–2005 | 0.42 | M-v | 1 | MPC | 70380 | 2004 $PV_{42}$ |
| 2004 $PN_{44}$ | 15.9 | 0.15 | 20060922 | 291.74252 | 250.01851 | 303.92757 | 13.05455 | 0.1114066 | 2.6007887 | 41 | 6 | 2000–2006 | 0.59 | M-v | 1 | MPC | 95281 | 2004 $PN_{44}$ |
| 2004 $PA_{48}$ | 17.4 | 0.15 | 20060922 | 167.27556 | 174.96794 | 197.52080 | 2.61245 | 0.2013013 | 2.3839011 | 31 | 5 | 1993–2006 | 0.70 | M-v | 1 | MPC | 04306 | 2004 $PA_{48}$ |
| 2004 $PC_{51}$ | 16.3 | 0.15 | 20060922 | 243.75345 | 258.61546 | 5.45858 | 4.67944 | 0.1657050 | 2.4076653 | 40 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 00734 | 2004 $PC_{51}$ |
| 2004 $PN_{51}$ | 17.0 | 0.15 | 20060922 | 198.04726 | 249.10335 | 84.36412 | 3.63038 | 0.2240267 | 2.4180387 | 76 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 97720 | 2004 $PN_{51}$ |
| 2004 $PR_{52}$ | 16.3 | 0.15 | 20060922 | 141.65475 | 276.09387 | 43.85730 | 4.38944 | 0.3082306 | 3.1545289 | 37 | 3 | 2003–2005 | 0.49 | M-v | 3 | MPC | 69803 | 2004 $PR_{52}$ |
| 2004 $PB_{53}$ | 15.1 | 0.15 | 20060922 | 129.13824 | 219.77307 | 128.91560 | 10.72520 | 0.1113873 | 3.0975780 | 42 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 69804 | 2004 $PB_{53}$ |
| 2004 $PL_{54}$ | 16.2 | 0.15 | 20060922 | 161.69726 | 96.46837 | 231.65498 | 2.43964 | 0.1900034 | 2.8063429 | 45 | 3 | 2003–2005 | 0.48 | M-v | 3 | MPC | 74316 | 2004 $PL_{54}$ |
| 2004 $PO_{54}$ | 15.3 | 0.15 | 20060922 | 121.61516 | 184.86635 | 163.37696 | 13.21867 | 0.1341267 | 3.1167898 | 42 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 70381 | 2004 $PO_{54}$ |
| 2004 $PX_{54}$ | 14.7 | 0.15 | 20060922 | 278.09447 | 62.58037 | 123.70391 | 10.23821 | 0.0224375 | 3.1722908 | 42 | 6 | 1998–2006 | 0.59 | M-v | 1 | MPC | 97720 | 2004 $PX_{54}$ |
| 2004 $PF_{55}$ | 16.2 | 0.15 | 20060922 | 127.55224 | 250.75568 | 99.69459 | 5.20571 | 0.0752052 | 2.9797695 | 26 | 3 | 2003–2005 | 0.39 | M-v | 3 | MPC | 95287 | 2004 $PF_{55}$ |
| 2004 $PO_{55}$ | 14.7 | 0.15 | 20060922 | 121.19760 | 230.04608 | 126.63078 | 8.75993 | 0.1057865 | 3.1085348 | 61 | 6 | 2000–2006 | 0.53 | M-v | 0 | MPC | 97720 | 2004 $PO_{55}$ |
| 2004 $PD_{56}$ | 14.8 | 0.15 | 20060922 | 98.45660 | 51.05574 | 321.08607 | 12.15053 | 0.0587308 | 3.1992034 | 44 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 97720 | 2004 $PD_{56}$ |
| 2004 $PH_{57}$ | 16.5 | 0.15 | 20060922 | 157.30597 | 176.91808 | 164.02620 | 8.18292 | 0.2594367 | 2.7301608 | 39 | 1 | 66 days | 0.54 | M-v | 4 | MPC | 70382 | 2004 $PH_{57}$ |
| 2004 $PE_{58}$ | 14.7 | 0.15 | 20060922 | 162.27514 | 8.24593 | 279.71098 | 3.56057 | 0.1009308 | 3.2098379 | 86 | 5 | 1999–2006 | 0.53 | M-v | 0 | MPC | 90207 | 2004 $PE_{58}$ |
| 2004 $PH_{58}$ | 18.4 | 0.15 | 20060922 | 216.94916 | 166.33950 | 150.65522 | 6.62008 | 0.3041980 | 2.3275467 | 31 | 1 | 64 days | 0.59 | M-v | 4 | MPC | 70382 | 2004 $PH_{58}$ |
| 2004 $PW_{58}$ | 14.7 | 0.15 | 20060922 | 102.40827 | 46.95554 | 315.46705 | 8.46513 | 0.0486915 | 3.1882828 | 49 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 00735 | 2004 $PW_{58}$ |
| 2004 $PR_{60}$ | 16.6 | 0.15 | 20060922 | 147.32748 | 130.11157 | 223.82444 | 3.61289 | 0.0848930 | 2.7968436 | 29 | 4 | 1995–2004 | 0.60 | M-v | 1 | MPC | 73019 | 2004 $PR_{60}$ |
| 2004 $PN_{61}$ | 15.2 | 0.15 | 20060922 | 149.92583 | 5.35047 | 324.78307 | 10.54051 | 0.1266085 | 3.0553804 | 52 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 74316 | 2004 $PN_{61}$ |
| 2004 $PO_{62}$ | 15.0 | 0.15 | 20060922 | 82.94215 | 82.89592 | 302.76769 | 9.25862 | 0.1322791 | 3.0909726 | 64 | 5 | 1993–2006 | 0.49 | M-v | 0 | MPC | 00736 | 2004 $PO_{62}$ |
| 2004 $PY_{62}$ | 14.8 | 0.15 | 20060922 | 119.62268 | 31.64559 | 298.76878 | 10.89330 | 0.0981696 | 3.1730584 | 72 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 97721 | 2004 $PY_{62}$ |
| 2004 $PJ_{63}$ | 15.9 | 0.15 | 20060922 | 100.30369 | 282.11527 | 110.57566 | 6.31758 | 0.0676321 | 2.7770093 | 33 | 4 | 2002–2005 | 0.50 | M-v | 1 | MPC | 69813 | 2004 $PJ_{63}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $PU_{63}$ | 16.2 | 0.15 | 20060922 | 284.37240 | 256.39281 | 303.97935 | 4.50141 | 0.0745639 | 2.6815231 | 48 | 6 | 2000–2006 | 0.47 | M-v | 1 | MPC | 00736 | 2004 $PU_{63}$ |
| 2004 $PK_{64}$ | 15.4 | 0.15 | 20060922 | 161.41913 | 37.13735 | 244.74205 | 6.64492 | 0.1335494 | 3.2301517 | 43 | 4 | 1996–2005 | 0.48 | M-v | 0 | MPC | 90207 | 2004 $PK_{64}$ |
| 2004 $PX_{64}$ | 16.5 | 0.15 | 20060922 | 168.84021 | 319.69527 | 312.37457 | 2.75428 | 0.2741192 | 3.1349864 | 29 | 3 | 2003–2005 | 0.73 | M-v | 3 | MPC | 69814 | 2004 $PX_{64}$ |
| 2004 $PJ_{66}$ | 15.5 | 0.15 | 20060922 | 124.41636 | 47.11051 | 294.88837 | 8.49548 | 0.0831976 | 2.9711660 | 56 | 5 | 2000–2006 | 0.55 | M-v | 0 | MPC | 97721 | 2004 $PJ_{66}$ |
| 2004 $PZ_{66}$ | 14.4 | 0.15 | 20060922 | 237.03885 | 290.53036 | 285.50306 | 20.67751 | 0.0448674 | 3.1613867 | 50 | 6 | 1998–2006 | 0.50 | M-v | 0 | MPC | 90207 | 2004 $PZ_{66}$ |
| 2004 $PR_{69}$ | 14.4 | 0.15 | 20060922 | 251.45965 | 254.81422 | 323.61472 | 17.05388 | 0.0733325 | 3.1624631 | 76 | 6 | 1996–2006 | 0.61 | M-v | 1 | MPC | 69818 | 2004 $PR_{69}$ |
| 2004 $PD_{70}$ | 15.9 | 0.15 | 20060922 | 220.84684 | 139.20675 | 110.59269 | 8.61702 | 0.2088053 | 2.5901959 | 41 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 86535 | 2004 $PD_{70}$ |
| 2004 $PR_{71}$ | 16.5 | 0.15 | 20060922 | 243.59613 | 256.64352 | 339.77066 | 2.79338 | 0.1882248 | 2.5928151 | 44 | 5 | 1999–2006 | 0.45 | M-v | 0 | MPC | 90208 | 2004 $PR_{71}$ |
| 2004 $PS_{71}$ | 17.1 | 0.15 | 20060922 | 214.08062 | 312.98965 | 354.88425 | 1.35538 | 0.1771393 | 2.3859135 | 32 | 4 | 1997–2005 | 0.53 | M-v | 1 | MPC | 73021 | 2004 $PS_{71}$ |
| 2004 $PX_{71}$ | 14.8 | 0.15 | 20060922 | 290.10668 | 216.93601 | 327.21220 | 14.16738 | 0.1441065 | 2.7536537 | 36 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 95293 | 2004 $PX_{71}$ |
| 2004 $PE_{73}$ | 14.4 | 0.15 | 20060922 | 86.53343 | 255.65000 | 129.81035 | 11.74095 | 0.1424262 | 3.1871360 | 96 | 6 | 1999–2006 | 0.55 | M-v | 0 | MPC | 97722 | 2004 $PE_{73}$ |
| 2004 $PX_{74}$ | 16.6 | 0.15 | 20060922 | 152.93109 | 180.41416 | 166.60029 | 6.54798 | 0.0310055 | 2.6974042 | 39 | 3 | 1995–2004 | 0.54 | M-v | 3 | MPC | 69821 | 2004 $PX_{74}$ |
| 2004 $PH_{75}$ | 15.1 | 0.15 | 20060922 | 124.08596 | 212.52917 | 132.18156 | 10.57840 | 0.0802812 | 3.0818259 | 62 | 6 | 1996–2006 | 0.48 | M-v | 0 | MPC | 97722 | 2004 $PH_{75}$ |
| 2004 $PL_{75}$ | 16.9 | 0.15 | 20060922 | 275.94223 | 183.85647 | 177.07290 | 22.28920 | 0.0713624 | 1.9169188 | 83 | 3 | 1996–2006 | 0.61 | M-v | 2 | MPC | 00738 | 2004 $PL_{75}$ |
| 2004 $PR_{75}$ | 15.2 | 0.15 | 20060922 | 162.23603 | 115.28607 | 173.60201 | 12.73602 | 0.3359697 | 3.0699424 | 93 | 2 | 2003–2004 | 0.43 | M-v | 3 | MPC | 70385 | 2004 $PR_{75}$ |
| 2004 $PB_{76}$ | 15.9 | 0.15 | 20060922 | 157.24917 | 117.93393 | 185.15799 | 5.62734 | 0.1432752 | 2.9502032 | 38 | 4 | 1995–2005 | 0.51 | M-v | 0 | MPC | 97722 | 2004 $PB_{76}$ |
| 2004 $PK_{76}$ | 15.3 | 0.15 | 20060922 | 36.81406 | 290.78886 | 134.12416 | 11.74044 | 0.0684300 | 3.1657808 | 42 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 95294 | 2004 $PK_{76}$ |
| 2004 $PM_{77}$ | 14.6 | 0.15 | 20060922 | 111.55701 | 55.89425 | 298.01684 | 10.55026 | 0.0921338 | 3.0906716 | 69 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 95295 | 2004 $PM_{77}$ |
| 2004 $PP_{77}$ | 16.5 | 0.15 | 20060922 | 224.51505 | 90.22254 | 159.60515 | 13.63164 | 0.1092068 | 2.7663970 | 23 | 3 | 1995–2004 | 0.56 | M-v | 2 | MPC | 77785 | 2004 $PP_{77}$ |
| 2004 $PR_{77}$ | 15.1 | 0.15 | 20060922 | 113.92441 | 64.99603 | 291.48171 | 8.23615 | 0.0428053 | 3.0058015 | 60 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 97722 | 2004 $PR_{77}$ |
| 2004 $PA_{79}$ | 15.1 | 0.15 | 20060922 | 133.12477 | 114.52500 | 243.00897 | 5.74780 | 0.1297716 | 2.8927106 | 54 | 4 | 1997–2005 | 0.44 | M-v | 1 | MPC | 70385 | 2004 $PA_{79}$ |
| 2004 $PE_{81}$ | 16.3 | 0.15 | 20060922 | 200.75918 | 288.44378 | 357.99327 | 4.11800 | 0.0898743 | 2.7627190 | 28 | 4 | 1995–2005 | 0.48 | M-v | 1 | MPC | 69828 | 2004 $PE_{81}$ |
| 2004 $PH_{82}$ | 16.6 | 0.15 | 20060922 | 161.87145 | 326.46700 | 5.47561 | 4.27496 | 0.1175001 | 2.7665332 | 22 | 3 | 2003–2005 | 0.46 | M-v | 3 | MPC | 95297 | 2004 $PH_{82}$ |
| 2004 $PD_{83}$ | 14.9 | 0.15 | 20060922 | 113.00222 | 25.77294 | 345.85558 | 17.92339 | 0.1006145 | 3.1323183 | 70 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 97722 | 2004 $PD_{83}$ |
| 2004 $PW_{92}$ | 17.8 | 0.15 | 20060922 | 214.83380 | 94.50209 | 236.63446 | 1.68081 | 0.2454291 | 2.3701609 | 77 | 1 | 89 days | 0.51 | M-v | 4 | MPC | 70387 | 2004 $PW_{92}$ |
| 2004 $PR_{93}$ | 15.9 | 0.15 | 20060922 | 172.31339 | 25.97685 | 266.67995 | 4.16816 | 0.1806881 | 2.9969804 | 39 | 3 | 2004–2006 | 0.40 | M-v | 3 | MPC | 97723 | 2004 $PR_{93}$ |
| 2004 $PR_{94}$ | 15.0 | 0.15 | 20060922 | 173.75877 | 178.63482 | 109.96332 | 6.72250 | 0.1632112 | 3.1684927 | 50 | 4 | 2000–2005 | 0.74 | M-v | 1 | MPC | 69849 | 2004 $PR_{94}$ |
| 2004 $PH_{95}$ | 15.0 | 0.15 | 20060922 | 186.45182 | 342.95327 | 295.99276 | 6.97185 | 0.0755767 | 3.1001151 | 42 | 6 | 1999–2006 | 0.70 | M-v | 1 | MPC | 97723 | 2004 $PH_{95}$ |
| 2004 $PP_{97}$ | 18.3 | 0.15 | 20060922 | 325.31584 | 68.47088 | 15.23161 | 15.53489 | 0.3167362 | 1.4840837 | 66 | 4 | 1977–2006 | 0.49 | M-v | 2 | MPC | 87639 | 2004 $PP_{97}$ |
| 2004 $PC_{98}$ | 15.5 | 0.15 | 20060922 | 149.15768 | 204.81178 | 105.15996 | 15.82762 | 0.0990427 | 3.1160544 | 16 | 3 | 2003–2006 | 0.53 | M-v | 4 | MPC | 65976 | 2004 $PC_{98}$ |
| 2004 $PF_{98}$ | 16.2 | 0.15 | 20060922 | 156.59207 | 297.02440 | 59.93282 | 7.98963 | 0.1826627 | 2.5780521 | 35 | 3 | 2000–2004 | 0.46 | M-v | 3 | MPC | 70388 | 2004 $PF_{98}$ |
| 2004 $PU_{99}$ | 17.0 | 0.15 | 20060922 | 240.66610 | 222.14099 | 102.60185 | 4.34878 | 0.2402787 | 2.2378887 | 61 | 2 | 2004–2006 | 0.47 | M-v | 3 | MPC | 97724 | 2004 $PU_{99}$ |
| 2004 $PL_{104}$ | 16.9 | 0.15 | 20060922 | 283.59308 | 27.61248 | 225.65346 | 5.25356 | 0.0732134 | 2.3056707 | 29 | 4 | 1996–2004 | 0.49 | M-v | 2 | MPC | 00741 | 2004 $PL_{104}$ |
| 2004 $PA_{105}$ | 16.0 | 0.15 | 20060922 | 248.91387 | 27.57447 | 297.95841 | 5.73129 | 0.1400961 | 2.2288141 | 103 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 95304 | 2004 $PA_{105}$ |
| 2004 $PB_{105}$ | 15.0 | 0.15 | 20060922 | 195.77206 | 352.72438 | 269.77429 | 9.46180 | 0.1764781 | 3.1506844 | 56 | 5 | 2000–2006 | 0.58 | M-v | 0 | MPC | 69862 | 2004 $PB_{105}$ |
| 2004 $PJ_{105}$ | 16.4 | 0.15 | 20060922 | 141.31234 | 192.55232 | 164.34150 | 2.56319 | 0.1613208 | 2.7701632 | 37 | 6 | 1996–2005 | 0.53 | M-v | 1 | MPC | 97724 | 2004 $PJ_{105}$ |
| 2004 $PM_{106}$ | 15.1 | 0.15 | 20060922 | 170.52055 | 357.05159 | 295.41547 | 10.65084 | 0.1476660 | 3.0917445 | 59 | 4 | 2002–2006 | 0.56 | M-v | 1 | MPC | 69865 | 2004 $PM_{106}$ |
| 2004 $PW_{107}$ | 6.4 | 0.15 | 20060922 | 333.89114 | 185.59454 | 198.07861 | 2.83353 | 0.1309083 | 43.6522059 | 17 | 3 | 2004–2006 | 0.66 | M-v | 5 | MPC | 04306 | 2004 $PW_{107}$ |
| 2004 $PZ_{107}$ | 7.3 | 0.15 | 20060922 | 334.25960 | 43.46742 | 297.34005 | 10.85299 | 0.1900994 | 45.8328906 | 14 | 3 | 2004–2006 | 0.45 | M-v | 5 | MPC | 97724 | 2004 $PZ_{107}$ |
| 2004 $PT_{108}$ | 16.3 | 0.15 | 20060922 | 237.69820 | 287.08148 | 335.81370 | 2.28450 | 0.2023559 | 2.5589281 | 63 | 5 | 1996–2005 | 0.53 | M-v | 1 | MPC | 69867 | 2004 $PT_{108}$ |
| 2004 $PK_{111}$ | 16.0 | 0.15 | 20060922 | 180.08633 | 265.01561 | 44.90549 | 2.35925 | 0.1161083 | 2.8449064 | 34 | 3 | 2003–2005 | 0.57 | M-v | 3 | MPC | 73032 | 2004 $PK_{111}$ |
| 2004 $PE_{114}$ | 18.6 | 0.15 | 20040823 | 3.99034 | 49.83095 | 277.75816 | 5.86178 | 0.2309507 | 2.2185776 | 27 | 1 | 44 days | 0.72 | | | MPC | | 2004 $PE_{114}$ |
| 2004 $PF_{114}$ | 18.5 | 0.15 | 20040823 | 336.20560 | 262.10163 | 105.13603 | 2.18032 | 0.2148140 | 2.3575050 | 15 | 1 | 46 days | 0.41 | | | MPC | | 2004 $PF_{114}$ |
| 2004 $PG_{114}$ | 17.6 | 0.15 | 20040823 | 346.20107 | 347.99740 | 7.41531 | 4.18962 | 0.3084972 | 2.7387406 | 20 | 1 | 46 days | 0.49 | | | MPC | | 2004 $PG_{114}$ |
| 2004 $PH_{114}$ | 17.6 | 0.15 | 20060922 | 220.99171 | 308.16333 | 21.02346 | 5.65567 | 0.2295143 | 2.2707576 | 24 | 1 | 95 days | 0.60 | M-v | 4 | MPC | | 2004 $PH_{114}$ |
| 2004 $PJ_{114}$ | 16.7 | 0.15 | 20040823 | 324.01775 | 358.14007 | 27.70663 | 6.66275 | 0.2167309 | 2.5487199 | 19 | 1 | 44 days | 0.65 | | | MPC | | 2004 $PJ_{114}$ |
| 2004 $PK_{114}$ | 18.3 | 0.15 | 20060922 | 211.34358 | 329.11350 | 13.03037 | 7.07188 | 0.2676159 | 2.2974357 | 18 | 1 | 61 days | 0.61 | M-v | 5 | MPC | | 2004 $PK_{114}$ |
| 2004 $PL_{114}$ | 16.3 | 0.15 | 20040912 | 45.23848 | 144.44697 | 144.53304 | 13.71622 | 0.2776184 | 2.5359699 | 21 | 1 | 58 days | 0.69 | | | MPC | | 2004 $PL_{114}$ |
| 2004 $PM_{114}$ | 16.6 | 0.15 | 20060922 | 194.02556 | 275.77600 | 26.84812 | 12.86156 | 0.2765047 | 2.6573496 | 19 | 1 | 61 days | 0.56 | M-v | 5 | MPC | | 2004 $PM_{114}$ |
| 2004 $PP_{114}$ | 15.8 | 0.15 | 20040823 | 354.74993 | 149.64201 | 192.71003 | 19.39163 | 0.1941413 | 3.1815908 | 20 | 1 | 42 days | 0.64 | | | MPC | | 2004 $PP_{114}$ |
| 2004 $PQ_{114}$ | 18.0 | 0.15 | 20040823 | 8.97104 | 6.59929 | 321.21178 | 11.31118 | 0.2030496 | 2.4212839 | 21 | 1 | 41 days | 0.55 | | | MPC | | 2004 $PQ_{114}$ |
| 2004 $PR_{114}$ | 16.8 | 0.15 | 20060922 | 271.07831 | 62.02843 | 212.13134 | 5.83484 | 0.1571938 | 2.2995818 | 20 | 1 | 61 days | 0.43 | M-v | 5 | MPC | | 2004 $PR_{114}$ |
| 2004 $PS_{114}$ | 17.8 | 0.15 | 20040823 | 353.96311 | 100.52539 | 246.04897 | 5.81378 | 0.1867681 | 2.3649594 | 19 | 1 | 37 days | 0.85 | | | MPC | | 2004 $PS_{114}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $PT_{114}$ | 16.8 | 0.15 | 20040912 | 1.21228 | 209.81189 | 141.87498 | 4.62770 | 0.2814293 | 3.0712983 | 18 | 1 | 54 days | 0.41 | | | MPC | | 2004 $PT_{114}$ |
| 2004 QZ | 15.8 | 0.15 | 20060922 | 168.31557 | 85.33634 | 285.66870 | 8.80572 | 0.1868382 | 2.6237699 | 53 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 73032 | 2004 QZ |
| 2004 $QF_1$ | 18.2 | 0.15 | 20060922 | 206.56750 | 173.96392 | 333.00681 | 17.83014 | 0.2900436 | 1.0504078 | 360 | 3 | 2004–2006 | 0.45 | M-v | 2 | MPC | 04306 | 2004 $QF_1$ |
| 2004 $QF_2$ | 14.9 | 0.15 | 20060922 | 112.51826 | 263.48277 | 97.26916 | 9.99427 | 0.1073269 | 3.1608742 | 66 | 6 | 1999–2006 | 0.50 | M-v | 1 | MPC | 97725 | 2004 $QF_2$ |
| 2004 $QJ_2$ | 16.5 | 0.15 | 20060922 | 169.71214 | 332.98940 | 36.61975 | 5.82591 | 0.1419542 | 2.3694068 | 25 | 3 | 1997–2004 | 0.59 | M-v | 4 | MPC | 70391 | 2004 $QJ_2$ |
| 2004 $QL_2$ | 14.9 | 0.15 | 20060922 | 187.12666 | 153.24121 | 191.34484 | 12.37095 | 0.1825051 | 2.6826615 | 134 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 97725 | 2004 $QL_2$ |
| 2004 $QP_2$ | 15.8 | 0.15 | 20060922 | 137.33051 | 325.78022 | 6.42516 | 1.93285 | 0.0724594 | 3.0256951 | 49 | 6 | 1999–2006 | 0.33 | M-v | 0 | MPC | 97725 | 2004 $QP_2$ |
| 2004 $QU_3$ | 14.7 | 0.15 | 20060922 | 226.18750 | 42.52764 | 191.77043 | 9.34456 | 0.0524001 | 3.1299238 | 30 | 3 | 2002–2005 | 0.52 | M-v | 2 | MPC | 95307 | 2004 $QU_3$ |
| 2004 $QW_3$ | 15.0 | 0.15 | 20060922 | 143.05265 | 209.57573 | 107.32918 | 11.44536 | 0.1250120 | 3.0769049 | 60 | 4 | 2003–2006 | 0.51 | M-v | 1 | MPC | 97725 | 2004 $QW_3$ |
| 2004 $QY_3$ | 16.8 | 0.15 | 20060922 | 194.34428 | 272.47672 | 24.27807 | 5.31147 | 0.2614333 | 2.5962374 | 42 | 4 | 1996–2005 | 0.60 | M-v | 2 | MPC | 97725 | 2004 $QY_3$ |
| 2004 $QL_6$ | 17.0 | 0.15 | 20060922 | 162.76206 | 176.73791 | 177.27490 | 4.97325 | 0.1174866 | 2.5447774 | 26 | 4 | 1995–2004 | 0.52 | M-v | 3 | MPC | 74322 | 2004 $QL_6$ |
| 2004 $QH_7$ | 16.0 | 0.15 | 20060922 | 137.73462 | 22.19005 | 345.41480 | 10.37075 | 0.1297262 | 3.0382846 | 34 | 3 | 1996–2006 | 0.36 | M-v | 3 | MPC | 95309 | 2004 $QH_7$ |
| 2004 $QZ_9$ | 15.9 | 0.15 | 20060922 | 132.97859 | 247.17835 | 134.16805 | 15.85685 | 0.1817391 | 2.7580989 | 45 | 2 | 2004–2006 | 0.50 | M-v | 3 | MPC | 95311 | 2004 $QZ_9$ |
| 2004 $QO_{10}$ | 15.1 | 0.15 | 20060922 | 262.39039 | 106.01297 | 101.77600 | 11.65948 | 0.0259852 | 3.2287384 | 37 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 69879 | 2004 $QO_{10}$ |
| 2004 $QY_{10}$ | 15.4 | 0.15 | 20060922 | 191.43604 | 163.97409 | 99.95845 | 11.68004 | 0.1789756 | 3.1531795 | 40 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 95311 | 2004 $QY_{10}$ |
| 2004 $QQ_{13}$ | 16.8 | 0.15 | 20060922 | 193.00713 | 296.80441 | 12.69726 | 13.17861 | 0.1838569 | 2.6187645 | 24 | 4 | 2000–2004 | 0.37 | M-v | 1 | MPC | 03628 | 2004 $QQ_{13}$ |
| 2004 $QY_{13}$ | 14.1 | 0.15 | 20060922 | 179.46447 | 359.67402 | 261.77992 | 24.04383 | 0.2018685 | 3.1306223 | 59 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 97725 | 2004 $QY_{13}$ |
| 2004 $QD_{14}$ | 20.6 | 0.15 | 20060922 | 210.80334 | 109.19707 | 75.46300 | 6.24781 | 0.3380368 | 0.9431238 | 76 | 3 | 2004–2006 | 0.44 | M-v | 3 | MPC | 97725 | 2004 $QD_{14}$ |
| 2004 $QU_{14}$ | 16.3 | 0.15 | 20060922 | 108.66607 | 114.69361 | 268.86760 | 6.44958 | 0.1877630 | 3.0320919 | 30 | 3 | 1999–2005 | 0.70 | M-v | 2 | MPC | 69884 | 2004 $QU_{14}$ |
| 2004 $QR_{16}$ | 16.4 | 0.15 | 20060922 | 330.05157 | 81.70836 | 93.87655 | 5.13655 | 0.0394914 | 2.6062893 | 31 | 5 | 1994–2005 | 0.64 | M-v | 1 | MPC | 04307 | 2004 $QR_{16}$ |
| 2004 $QB_{20}$ | 17.6 | 0.15 | 20060922 | 174.22793 | 129.96196 | 220.72968 | 2.06016 | 0.2358562 | 2.6045123 | 60 | 3 | 2000–2004 | 0.62 | M-v | 3 | MPC | 74323 | 2004 $QB_{20}$ |
| 2004 $QE_{20}$ | 20.2 | 0.15 | 20060922 | 39.87041 | 74.19142 | 272.67570 | 6.48307 | 0.2052419 | 1.5052030 | 109 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 00743 | 2004 $QE_{20}$ |
| 2004 $QQ_{20}$ | 17.3 | 0.15 | 20060922 | 192.47385 | 161.83848 | 134.64629 | 5.38141 | 0.0902887 | 2.7229730 | 22 | 4 | 1998–2004 | 0.50 | M-v | 1 | MPC | 73037 | 2004 $QQ_{20}$ |
| 2004 $QS_{20}$ | 14.2 | 0.15 | 20060922 | 150.65773 | 27.04553 | 287.90185 | 16.90963 | 0.1499119 | 3.2040357 | 65 | 4 | 1999–2006 | 0.46 | M-v | 2 | MPC | 97726 | 2004 $QS_{20}$ |
| 2004 $QN_{24}$ | 15.2 | 0.15 | 20060922 | 160.41584 | 164.15770 | 187.52225 | 7.81154 | 0.2483687 | 3.0474255 | 57 | 4 | 1992–2004 | 0.62 | M-v | 1 | MPC | 04307 | 2004 $QN_{24}$ |
| 2004 $QC_{25}$ | 16.2 | 0.15 | 20060922 | 131.38703 | 24.44292 | 353.26716 | 1.49100 | 0.0874678 | 2.8604113 | 38 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 95317 | 2004 $QC_{25}$ |
| 2004 $QE_{27}$ | 16.7 | 0.15 | 20040912 | 47.07430 | 248.31018 | 42.64466 | 12.94015 | 0.2257346 | 2.4156877 | 19 | 1 | 52 days | 0.78 | | | MPC | | 2004 $QE_{27}$ |
| 2004 $QG_{27}$ | 15.8 | 0.15 | 20040912 | 48.25772 | 47.51495 | 238.38629 | 14.68118 | 0.2067881 | 2.6752412 | 20 | 1 | 47 days | 0.59 | | | MPC | | 2004 $QG_{27}$ |
| 2004 $QH_{27}$ | 15.6 | 0.15 | 20060922 | 159.85075 | 154.23623 | 184.81888 | 17.28736 | 0.2208724 | 3.1095412 | 28 | 1 | 84 days | 0.75 | M-v | 4 | MPC | | 2004 $QH_{27}$ |
| 2004 $QK_{27}$ | 16.0 | 0.15 | 20040912 | 356.00131 | 352.00065 | 348.21465 | 14.09515 | 0.1409532 | 2.7579604 | 23 | 1 | 30 days | 0.50 | | | MPC | | 2004 $QK_{27}$ |
| 2004 $QM_{27}$ | 17.0 | 0.15 | 20060922 | 175.02845 | 219.52219 | 132.95459 | 6.38873 | 0.2781403 | 2.6668204 | 21 | 1 | 70 days | 0.49 | M-v | 4 | MPC | | 2004 $QM_{27}$ |
| 2004 $QN_{27}$ | 16.3 | 0.15 | 20040912 | 105.15208 | 281.36869 | 305.46441 | 14.20370 | 0.0882557 | 2.5595265 | 14 | 1 | 40 days | 0.73 | | | MPC | | 2004 $QN_{27}$ |
| 2004 $QO_{27}$ | 19.3 | 0.15 | 20040912 | 346.54857 | 177.15083 | 192.71912 | 4.58880 | 0.2287281 | 2.1810697 | 16 | 1 | 51 days | 0.27 | | | MPC | | 2004 $QO_{27}$ |
| 2004 $QP_{27}$ | 17.9 | 0.15 | 20040912 | 359.96772 | 248.96201 | 105.21420 | 7.17810 | 0.2380363 | 2.2557032 | 22 | 1 | 41 days | 0.47 | | | MPC | | 2004 $QP_{27}$ |
| 2004 $QQ_{27}$ | 15.6 | 0.15 | 20040912 | 356.58576 | 223.24834 | 139.30127 | 16.53996 | 0.1809259 | 3.0955673 | 27 | 1 | 48 days | 0.63 | | | MPC | | 2004 $QQ_{27}$ |
| 2004 $QR_{27}$ | 17.6 | 0.15 | 20041002 | 7.42204 | 217.25450 | 140.11960 | 9.00824 | 0.2667812 | 2.3294423 | 27 | 1 | 54 days | 0.60 | | | MPC | | 2004 $QR_{27}$ |
| 2004 $RO_2$ | 14.4 | 0.15 | 20060922 | 153.34930 | 87.56761 | 190.42557 | 7.96302 | 0.0783220 | 3.9794385 | 36 | 3 | 2002–2005 | 0.41 | M-v | 3 | MPC | 89592 | 2004 $RO_2$ |
| 2004 $RQ_2$ | 18.0 | 0.15 | 20060922 | 242.81254 | 98.56782 | 207.86167 | 3.36295 | 0.0967710 | 2.3078980 | 29 | 2 | 2003–2004 | 0.48 | M-v | 4 | MPC | 69899 | 2004 $RQ_2$ |
| 2004 $RA_5$ | 16.6 | 0.15 | 20060922 | 229.29418 | 280.96009 | 36.65078 | 7.46014 | 0.1326076 | 2.3445758 | 46 | 5 | 1996–2006 | 0.58 | M-v | 1 | MPC | 73039 | 2004 $RA_5$ |
| 2004 $RB_5$ | 15.1 | 0.15 | 20060922 | 118.72169 | 345.57400 | 29.67979 | 10.19849 | 0.0652794 | 3.0331527 | 39 | 3 | 1997–2004 | 0.52 | M-v | 3 | MPC | 69901 | 2004 $RB_5$ |
| 2004 $RC_6$ | 15.1 | 0.15 | 20060922 | 106.28124 | 246.29808 | 128.04264 | 16.46650 | 0.0507760 | 3.1070654 | 43 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 97726 | 2004 $RC_6$ |
| 2004 $RT_6$ | 15.8 | 0.15 | 20060922 | 190.08884 | 197.56533 | 71.21649 | 9.89553 | 0.1880569 | 3.1204486 | 33 | 4 | 2000–2005 | 0.39 | M-v | 1 | MPC | 95322 | 2004 $RT_6$ |
| 2004 $RD_8$ | 16.8 | 0.15 | 20060922 | 205.41681 | 297.76623 | 11.22915 | 2.75582 | 0.1077837 | 2.5160122 | 45 | 5 | 1995–2005 | 0.47 | M-v | 1 | MPC | 74325 | 2004 $RD_8$ |
| 2004 $RF_9$ | 16.3 | 0.15 | 20060922 | 245.27241 | 97.83937 | 152.01525 | 14.00171 | 0.1312238 | 2.6733451 | 46 | 3 | 1998–2004 | 0.63 | M-v | 3 | MPC | 95322 | 2004 $RF_9$ |
| 2004 $RL_{14}$ | 15.3 | 0.15 | 20060922 | 286.10824 | 36.81992 | 167.29419 | 12.27817 | 0.1008676 | 2.7669694 | 68 | 4 | 1995–2004 | 0.72 | M-v | 2 | MPC | 69910 | 2004 $RL_{14}$ |
| 2004 $RZ_{14}$ | 17.7 | 0.15 | 20060922 | 238.29874 | 137.98901 | 172.43275 | 1.97111 | 0.2078391 | 2.2518401 | 43 | 3 | 1994–2006 | 0.55 | M-v | 3 | MPC | 03628 | 2004 $RZ_{14}$ |
| 2004 $RG_{16}$ | 16.4 | 0.15 | 20060922 | 131.94274 | 62.73093 | 316.39718 | 2.97169 | 0.1114349 | 2.7615811 | 60 | 7 | 1995–2006 | 0.39 | M-v | 0 | MPC | 97727 | 2004 $RG_{16}$ |
| 2004 $RW_{16}$ | 17.0 | 0.15 | 20060922 | 162.18889 | 25.21222 | 14.33935 | 8.84897 | 0.1971853 | 2.3475093 | 50 | 4 | 1999–2006 | 0.44 | M-v | 0 | MPC | 95325 | 2004 $RW_{16}$ |
| 2004 $RY_{17}$ | 16.7 | 0.15 | 20060922 | 47.84285 | 192.12371 | 290.06076 | 1.13591 | 0.0187013 | 2.5133753 | 42 | 3 | 2002–2006 | 0.44 | M-v | 4 | MPC | 95326 | 2004 $RY_{17}$ |
| 2004 $RU_{18}$ | 17.0 | 0.15 | 20060922 | 176.51304 | 141.68747 | 184.63755 | 1.60100 | 0.0552525 | 2.7641376 | 25 | 3 | 2000–2004 | 0.44 | M-v | 4 | MPC | 73044 | 2004 $RU_{18}$ |
| 2004 $RP_{20}$ | 17.5 | 0.15 | 20060922 | 250.01721 | 345.58160 | 291.90953 | 1.48214 | 0.1949165 | 2.3798859 | 43 | 4 | 2001–2005 | 0.49 | M-v | 1 | MPC | 03628 | 2004 $RP_{20}$ |
| 2004 $RX_{20}$ | 17.5 | 0.15 | 20060922 | 182.90315 | 61.91314 | 313.29206 | 1.84441 | 0.1948504 | 2.3607979 | 58 | 4 | 1997–2006 | 0.59 | M-v | 2 | MPC | 02207 | 2004 $RX_{20}$ |
| 2004 $RQ_{21}$ | 16.7 | 0.15 | 20060922 | 220.51817 | 108.34522 | 172.47111 | 5.36974 | 0.0528539 | 2.7664176 | 25 | 3 | 1995–2004 | 0.48 | M-v | 2 | MPC | 73046 | 2004 $RQ_{21}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $RG_{22}$ | 16.9 | 0.15 | 20060922 | 177.11864 | 334.99519 | 348.63250 | 3.07560 | 0.1972290 | 2.7351811 | 35 | 3 | 2003–2005 | 0.61 | M-v | 3 | MPC | 00748 | 2004 $RG_{22}$ |
| 2004 $RG_{23}$ | 16.6 | 0.15 | 20060922 | 280.71066 | 95.94693 | 144.24289 | 4.80623 | 0.0858806 | 2.5169767 | 24 | 2 | 2003–2004 | 0.43 | M-v | 3 | MPC | 73047 | 2004 $RG_{23}$ |
| 2004 $RM_{23}$ | 14.9 | 0.15 | 20060922 | 181.76922 | 285.50779 | 355.05645 | 11.50385 | 0.1235942 | 3.1820271 | 50 | 3 | 2002–2005 | 0.60 | M-v | 3 | MPC | 73048 | 2004 $RM_{23}$ |
| 2004 $RP_{26}$ | 15.0 | 0.15 | 20060922 | 61.09501 | 64.31318 | 354.18802 | 8.57824 | 0.0882790 | 3.1780763 | 33 | 3 | 2004–2006 | 0.51 | M-v | 2 | MPC | 00749 | 2004 $RP_{26}$ |
| 2004 $RX_{27}$ | 15.8 | 0.15 | 20060922 | 71.10063 | 287.40107 | 134.89292 | 1.89251 | 0.1642754 | 3.0865436 | 34 | 5 | 1996–2005 | 0.55 | M-v | 0 | MPC | 76495 | 2004 $RX_{27}$ |
| 2004 $RR_{29}$ | 16.6 | 0.15 | 20060922 | 259.84725 | 102.06396 | 146.49616 | 7.90606 | 0.1611958 | 2.4495510 | 55 | 6 | 1992–2006 | 0.55 | M-v | 1 | MPC | 73050 | 2004 $RR_{29}$ |
| 2004 $RB_{30}$ | 16.2 | 0.15 | 20060922 | 140.23852 | 220.59092 | 142.07579 | 3.51611 | 0.0833321 | 2.7355491 | 42 | 5 | 2000–2005 | 0.59 | M-v | 1 | MPC | 73050 | 2004 $RB_{30}$ |
| 2004 $RD_{30}$ | 18.1 | 0.15 | 20060922 | 194.05487 | 180.75289 | 175.99940 | 2.29312 | 0.2555032 | 2.3514978 | 53 | 1 | 67 days | 0.54 | M-v | 4 | MPC | 74327 | 2004 $RD_{30}$ |
| 2004 $RT_{31}$ | 15.4 | 0.15 | 20060922 | 189.27146 | 288.09050 | 19.77716 | 5.54911 | 0.0481137 | 2.7665353 | 28 | 4 | 2000–2005 | 0.62 | M-v | 1 | MPC | 73051 | 2004 $RT_{31}$ |
| 2004 $RL_{32}$ | 16.9 | 0.15 | 20060922 | 161.92196 | 29.74939 | 16.80120 | 2.90989 | 0.2405877 | 2.3616695 | 63 | 5 | 1995–2006 | 0.67 | M-v | 1 | MPC | 02207 | 2004 $RL_{32}$ |
| 2004 $RT_{34}$ | 15.0 | 0.15 | 20060922 | 166.88196 | 213.97959 | 98.13988 | 4.55116 | 0.0819536 | 3.0551164 | 58 | 6 | 1996–2006 | 0.43 | M-v | 1 | MPC | 97729 | 2004 $RT_{34}$ |
| 2004 $RR_{36}$ | 15.1 | 0.15 | 20060922 | 107.35633 | 233.67047 | 143.21687 | 16.37234 | 0.0714802 | 3.0580088 | 45 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 97729 | 2004 $RR_{36}$ |
| 2004 $RF_{42}$ | 17.0 | 0.15 | 20060922 | 104.10695 | 328.52209 | 116.68764 | 0.85974 | 0.1091567 | 2.7240202 | 46 | 5 | 1995–2006 | 0.32 | M-v | 0 | MPC | 97729 | 2004 $RF_{42}$ |
| 2004 $RK_{43}$ | 14.6 | 0.15 | 20060922 | 85.15956 | 65.34416 | 336.30103 | 15.33816 | 0.1351490 | 3.1463725 | 51 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 97729 | 2004 $RK_{43}$ |
| 2004 $RU_{44}$ | 14.9 | 0.15 | 20060922 | 63.22333 | 66.49250 | 350.65876 | 8.24890 | 0.0923743 | 3.2389242 | 38 | 4 | 1993–2006 | 0.47 | M-v | 0 | MPC | 95335 | 2004 $RU_{44}$ |
| 2004 $RB_{48}$ | 16.5 | 0.15 | 20060922 | 200.58302 | 145.32453 | 160.62038 | 4.35056 | 0.1544819 | 2.6645176 | 46 | 3 | 2000–2004 | 0.50 | M-v | 3 | MPC | 73057 | 2004 $RB_{48}$ |
| 2004 $RP_{50}$ | 16.9 | 0.15 | 20060922 | 194.99437 | 263.89423 | 49.97045 | 2.70618 | 0.2033470 | 2.6332304 | 73 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 97730 | 2004 $RP_{50}$ |
| 2004 $RW_{50}$ | 15.1 | 0.15 | 20060922 | 205.52947 | 119.68032 | 155.05787 | 10.39872 | 0.0560385 | 3.0839886 | 42 | 3 | 2002–2005 | 0.57 | M-v | 3 | MPC | 73059 | 2004 $RW_{50}$ |
| 2004 $RG_{51}$ | 17.0 | 0.15 | 20060922 | 175.92803 | 202.76423 | 132.95801 | 4.75228 | 0.1930165 | 2.6888694 | 46 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 95339 | 2004 $RG_{51}$ |
| 2004 $RO_{52}$ | 15.1 | 0.15 | 20060922 | 165.99812 | 149.77982 | 167.47816 | 11.03458 | 0.0917651 | 3.0665414 | 50 | 4 | 1993–2004 | 0.58 | M-v | 1 | MPC | 04307 | 2004 $RO_{52}$ |
| 2004 $RD_{54}$ | 14.8 | 0.15 | 20060922 | 182.53676 | 220.35325 | 73.07059 | 4.53008 | 0.1199066 | 3.1066708 | 87 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 97730 | 2004 $RD_{54}$ |
| 2004 $RV_{54}$ | 14.9 | 0.15 | 20060922 | 67.70383 | 272.41941 | 158.99042 | 11.12951 | 0.0717687 | 3.0664147 | 45 | 5 | 1996–2006 | 0.62 | M-v | 1 | MPC | 74330 | 2004 $RV_{54}$ |
| 2004 $RA_{55}$ | 16.3 | 0.15 | 20060922 | 228.59064 | 285.05064 | 7.15123 | 7.66140 | 0.1340664 | 2.5497756 | 39 | 3 | 2000–2004 | 0.52 | M-v | 3 | MPC | 73062 | 2004 $RA_{55}$ |
| 2004 $RJ_{57}$ | 17.4 | 0.15 | 20060922 | 177.99592 | 207.44847 | 192.13421 | 6.94018 | 0.1068221 | 2.2232062 | 44 | 2 | 2004–2006 | 0.59 | M-v | 3 | MPC | 00753 | 2004 $RJ_{57}$ |
| 2004 $RF_{58}$ | 15.3 | 0.15 | 20060922 | 171.87131 | 142.30473 | 157.63085 | 7.79053 | 0.1483139 | 3.2000578 | 41 | 3 | 1996–2004 | 0.50 | M-v | 3 | MPC | 73063 | 2004 $RF_{58}$ |
| 2004 $RE_{60}$ | 17.0 | 0.15 | 20060922 | 153.99274 | 220.17077 | 181.05554 | 4.35419 | 0.1461067 | 2.4335127 | 45 | 3 | 2002–2006 | 0.33 | M-v | 3 | MPC | 02208 | 2004 $RE_{60}$ |
| 2004 $RF_{61}$ | 15.8 | 0.15 | 20060922 | 222.05105 | 291.96811 | 343.88535 | 11.19752 | 0.1462143 | 2.7320559 | 61 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 73067 | 2004 $RF_{61}$ |
| 2004 $RG_{64}$ | 16.5 | 0.15 | 20060922 | 151.30151 | 36.53204 | 333.82786 | 2.64846 | 0.2090599 | 2.7339558 | 57 | 3 | 1995–2006 | 0.44 | M-v | 3 | MPC | 95346 | 2004 $RG_{64}$ |
| 2004 $RK_{65}$ | 17.0 | 0.15 | 20060922 | 168.66259 | 225.39847 | 166.15174 | 8.72262 | 0.1464459 | 2.4075377 | 52 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 95346 | 2004 $RK_{65}$ |
| 2004 $RW_{65}$ | 16.9 | 0.15 | 20060922 | 240.94923 | 119.64563 | 177.23847 | 2.78118 | 0.1929897 | 2.3759875 | 48 | 3 | 2003–2006 | 0.71 | M-v | 4 | MPC | 73069 | 2004 $RW_{65}$ |
| 2004 $RE_{71}$ | 16.5 | 0.15 | 20060922 | 147.53804 | 336.09831 | 29.26628 | 4.33915 | 0.1153922 | 2.8150224 | 28 | 3 | 1999–2004 | 0.56 | M-v | 3 | MPC | 73073 | 2004 $RE_{71}$ |
| 2004 $RO_{71}$ | 14.2 | 0.15 | 20060922 | 44.25714 | 278.78552 | 152.01039 | 9.58508 | 0.2229523 | 3.9715547 | 70 | 6 | 1999–2006 | 0.57 | M-v | 0 | MPC | 97731 | 2004 $RO_{71}$ |
| 2004 $RB_{73}$ | 15.8 | 0.15 | 20060922 | 86.38694 | 34.72689 | 27.54660 | 0.86229 | 0.2203233 | 3.2036806 | 88 | 3 | 1995–2006 | 0.56 | M-v | 1 | MPC | 95352 | 2004 $RB_{73}$ |
| 2004 $RJ_{74}$ | 16.7 | 0.15 | 20060922 | 147.23355 | 244.81460 | 173.59340 | 6.98392 | 0.0880495 | 2.3543742 | 42 | 3 | 2003–2006 | 0.63 | M-v | 2 | MPC | 02209 | 2004 $RJ_{74}$ |
| 2004 $RL_{74}$ | 16.4 | 0.15 | 20060922 | 180.21784 | 323.76028 | 17.32083 | 3.73950 | 0.1032900 | 2.6621515 | 44 | 4 | 1994–2006 | 0.56 | M-v | 3 | MPC | 03630 | 2004 $RL_{74}$ |
| 2004 $RN_{74}$ | 16.4 | 0.15 | 20060922 | 254.77765 | 188.04250 | 89.30426 | 7.77248 | 0.1110156 | 2.3967758 | 42 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 95354 | 2004 $RN_{74}$ |
| 2004 $RQ_{74}$ | 17.0 | 0.15 | 20060922 | 344.46569 | 111.28446 | 171.03873 | 23.58999 | 0.0614907 | 1.9192674 | 58 | 3 | 1996–2006 | 0.57 | M-v | 1 | MPC | 00757 | 2004 $RQ_{74}$ |
| 2004 $RR_{74}$ | 16.3 | 0.15 | 20060922 | 138.70998 | 296.51887 | 104.62293 | 3.68706 | 0.1821788 | 2.6726967 | 56 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 00757 | 2004 $RR_{74}$ |
| 2004 $RN_{75}$ | 17.4 | 0.15 | 20060922 | 174.82637 | 291.82457 | 103.60072 | 1.44766 | 0.2172413 | 2.3933312 | 79 | 3 | 2002–2005 | 0.62 | M-v | 3 | MPC | 73077 | 2004 $RN_{75}$ |
| 2004 $RW_{75}$ | 15.3 | 0.15 | 20060922 | 165.82176 | 144.47270 | 166.62758 | 12.24223 | 0.2394855 | 3.1081545 | 46 | 3 | 1996–2004 | 0.53 | M-v | 2 | MPC | 74334 | 2004 $RW_{75}$ |
| 2004 $RF_{77}$ | 16.0 | 0.15 | 20060922 | 187.09063 | 161.35063 | 162.34494 | 9.87808 | 0.2295957 | 2.7347844 | 49 | 3 | 1998–2004 | 0.54 | M-v | 2 | MPC | 73079 | 2004 $RF_{77}$ |
| 2004 $RY_{77}$ | 16.3 | 0.15 | 20060922 | 216.32906 | 303.96036 | 33.71806 | 9.79394 | 0.1403289 | 2.4230632 | 118 | 4 | 1999–2004 | 0.63 | M-v | 1 | MPC | 74335 | 2004 $RY_{77}$ |
| 2004 $RG_{78}$ | 16.6 | 0.15 | 20060922 | 198.85572 | 324.33824 | 24.35556 | 8.03136 | 0.1405752 | 2.4561196 | 57 | 4 | 1999–2004 | 0.56 | M-v | 2 | MPC | 74335 | 2004 $RG_{78}$ |
| 2004 $RF_{80}$ | 17.8 | 0.15 | 20060922 | 178.12028 | 173.19898 | 202.93450 | 1.31863 | 0.2323049 | 2.3642803 | 30 | 2 | 1997–2004 | 0.61 | M-v | 3 | MPC | 03630 | 2004 $RF_{80}$ |
| 2004 $RO_{81}$ | 15.9 | 0.15 | 20060922 | 106.33143 | 60.69036 | 337.39707 | 3.95849 | 0.0927210 | 2.9599962 | 41 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 97732 | 2004 $RO_{81}$ |
| 2004 $RY_{82}$ | 15.3 | 0.15 | 20060922 | 57.79420 | 262.95556 | 168.98515 | 14.09376 | 0.0318933 | 3.1263775 | 37 | 5 | 1996–2004 | 0.64 | M-v | 1 | MPC | 69971 | 2004 $RY_{82}$ |
| 2004 $RA_{84}$ | 15.6 | 0.15 | 20060922 | 177.49461 | 115.00035 | 248.68935 | 9.35186 | 0.2223771 | 2.4381721 | 107 | 1 | 176 days | 0.45 | M-v | 3 D | MPC | 74336 | 2004 $RA_{84}$ |
| 2004 $RO_{86}$ | 15.3 | 0.15 | 20060922 | 174.22235 | 305.42950 | 345.29954 | 11.03888 | 0.0878141 | 3.0224909 | 32 | 4 | 1997–2004 | 0.53 | M-v | 1 | MPC | 73084 | 2004 $RO_{86}$ |
| 2004 $RT_{86}$ | 16.8 | 0.15 | 20060922 | 152.75904 | 286.58943 | 125.58305 | 8.13986 | 0.0919300 | 2.3255075 | 35 | 4 | 1996–2006 | 0.49 | M-v | 1 | MPC | 02209 | 2004 $RT_{86}$ |
| 2004 $RV_{88}$ | 15.6 | 0.15 | 20060922 | 137.24335 | 82.03692 | 234.86321 | 7.93429 | 0.2571942 | 3.1706029 | 37 | 3 | 1999–2005 | 0.37 | M-v | 2 | MPC | 69974 | 2004 $RV_{88}$ |
| 2004 $RX_{88}$ | 17.0 | 0.15 | 20060922 | 202.09869 | 126.37659 | 222.92371 | 6.27433 | 0.2108077 | 2.2828574 | 56 | 3 | 2000–2004 | 0.60 | M-v | 2 | MPC | 69974 | 2004 $RX_{88}$ |
| 2004 $RY_{88}$ | 16.7 | 0.15 | 20060922 | 180.83024 | 133.72436 | 179.17773 | 11.91869 | 0.3076420 | 2.6387052 | 29 | 1 | 114 days | 0.45 | M-v | 4 | MPC | 70419 | 2004 $RY_{88}$ |
| 2004 $RB_{89}$ | 16.5 | 0.15 | 20060922 | 207.78624 | 143.24531 | 194.89126 | 8.35431 | 0.1514201 | 2.2865131 | 56 | 4 | 2000–2004 | 0.64 | M-v | 1 | MPC | 69974 | 2004 $RB_{89}$ |

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| 2004 $RP_{89}$ | 15.1 | 0.15 | 20060922 | 12.28229 | 173.30875 | 294.57264 | 8.97572 | 0.0463834 | 3.0115526 | 40 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 95360 | 2004 $RP_{89}$ |
| 2004 $RZ_{89}$ | 16.3 | 0.15 | 20060922 | 165.17128 | 79.98381 | 302.82035 | 5.78357 | 0.1246829 | 2.3769162 | 57 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 95360 | 2004 $RZ_{89}$ |
| 2004 $RJ_{90}$ | 15.2 | 0.15 | 20060922 | 112.28509 | 175.42162 | 181.93915 | 12.57723 | 0.1261410 | 3.2027172 | 34 | 4 | 1993–2005 | 0.64 | M-v | 1 | MPC | 69975 | 2004 $RJ_{90}$ |
| 2004 $RX_{91}$ | 15.0 | 0.15 | 20060922 | 303.77708 | 266.58617 | 290.22528 | 11.13883 | 0.1073677 | 2.6571564 | 37 | 3 | 2001–2005 | 0.39 | M-v | 3 | MPC | 69977 | 2004 $RX_{91}$ |
| 2004 $RZ_{91}$ | 15.0 | 0.15 | 20060922 | 90.08960 | 131.47683 | 257.39211 | 7.58682 | 0.0833078 | 3.1050360 | 90 | 5 | 1993–2006 | 0.54 | M-v | 0 | MPC | 95361 | 2004 $RZ_{91}$ |
| 2004 $RS_{92}$ | 16.8 | 0.15 | 20060922 | 195.63576 | 127.67085 | 195.72563 | 7.88577 | 0.1895496 | 2.5114789 | 46 | 3 | 2000–2004 | 0.59 | M-v | 3 | MPC | 69977 | 2004 $RS_{92}$ |
| 2004 $RT_{92}$ | 15.3 | 0.15 | 20060922 | 152.95735 | 32.00695 | 288.91413 | 8.86221 | 0.0510472 | 3.0748790 | 48 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 02209 | 2004 $RT_{92}$ |
| 2004 $RP_{93}$ | 16.2 | 0.15 | 20060922 | 220.62898 | 41.62267 | 226.12849 | 8.34644 | 0.1574149 | 2.7139891 | 39 | 3 | 2003–2005 | 0.67 | M-v | 3 | MPC | 69979 | 2004 $RP_{93}$ |
| 2004 $RT_{94}$ | 16.7 | 0.15 | 20060922 | 196.20728 | 79.95353 | 281.59668 | 5.87862 | 0.1426391 | 2.3119456 | 42 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 97733 | 2004 $RT_{94}$ |
| 2004 $RW_{95}$ | 15.8 | 0.15 | 20060922 | 86.01541 | 129.37545 | 290.52283 | 11.03671 | 0.1125047 | 2.7765198 | 36 | 3 | 1996–2006 | 0.51 | M-v | 2 | MPC | 95363 | 2004 $RW_{95}$ |
| 2004 $RN_{96}$ | 17.3 | 0.15 | 20060922 | 191.03823 | 150.03739 | 230.15132 | 4.32975 | 0.1367133 | 2.2422735 | 34 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 69982 | 2004 $RN_{96}$ |
| 2004 $RD_{98}$ | 17.2 | 0.15 | 20060922 | 214.24141 | 10.30172 | 310.66519 | 6.56520 | 0.1373121 | 2.4122721 | 44 | 3 | 1995–2006 | 0.53 | M-v | 3 | MPC | 95365 | 2004 $RD_{98}$ |
| 2004 $RL_{100}$ | 16.8 | 0.15 | 20060922 | 153.54392 | 202.62428 | 188.27132 | 6.80665 | 0.1129617 | 2.4893089 | 41 | 3 | 1995–2004 | 0.49 | M-v | 3 | MPC | 73089 | 2004 $RL_{100}$ |
| 2004 $RZ_{103}$ | 16.9 | 0.15 | 20060922 | 232.04260 | 91.82845 | 225.48214 | 4.57447 | 0.1670202 | 2.3428375 | 64 | 4 | 1997–2006 | 0.54 | M-v | 1 | MPC | 04307 | 2004 $RZ_{103}$ |
| 2004 $RH_{104}$ | 16.0 | 0.15 | 20060922 | 209.75260 | 59.93836 | 226.04300 | 7.14347 | 0.2017718 | 2.7757807 | 37 | 3 | 2003–2005 | 0.64 | M-v | 3 | MPC | 73091 | 2004 $RH_{104}$ |
| 2004 $RY_{106}$ | 16.2 | 0.15 | 20060922 | 195.52678 | 333.74896 | 338.83695 | 11.96537 | 0.1811775 | 2.5479102 | 47 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 69995 | 2004 $RY_{106}$ |
| 2004 $RH_{107}$ | 14.2 | 0.15 | 20060922 | 11.40201 | 182.42599 | 274.86786 | 4.90377 | 0.2464099 | 3.9546467 | 94 | 4 | 1997–2006 | 0.45 | M-v | 1 | MPC | 97734 | 2004 $RH_{107}$ |
| 2004 $RY_{109}$ | 19.1 | 0.15 | 20060922 | 18.89919 | 306.71610 | 352.46786 | 26.12172 | 0.4251170 | 1.6275141 | 109 | 2 | 2004–2006 | 0.49 | M-v | 1 | MPC | 02209 | 2004 $RY_{109}$ |
| 2004 $RO_{110}$ | 17.3 | 0.15 | 20060922 | 271.71944 | 157.78799 | 193.62879 | 21.88710 | 0.0708587 | 1.9382875 | 57 | 2 | 2004–2006 | 0.47 | M-v | 3 | MPC | 00761 | 2004 $RO_{110}$ |
| 2004 $RP_{110}$ | 17.0 | 0.15 | 20060922 | 359.31354 | 71.23954 | 201.19174 | 18.92102 | 0.0476189 | 1.8819405 | 71 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 00761 | 2004 $RP_{110}$ |
| 2004 $RW_{110}$ | 17.8 | 0.15 | 20060922 | 225.55265 | 85.72654 | 235.50371 | 1.20968 | 0.2217047 | 2.3344718 | 61 | 3 | 1997–2006 | 0.66 | M-v | 4 | MPC | 00761 | 2004 $RW_{110}$ |
| 2004 $RY_{110}$ | 16.9 | 0.15 | 20060922 | 207.37010 | 80.98099 | 220.27314 | 4.04668 | 0.0817100 | 2.7132998 | 67 | 4 | 2000–2005 | 0.53 | M-v | 0 | MPC | 74339 | 2004 $RY_{110}$ |
| 2004 $RZ_{114}$ | 16.0 | 0.15 | 20060922 | 83.83604 | 299.55809 | 116.95022 | 3.81783 | 0.1832681 | 3.1006132 | 39 | 3 | 1996–2006 | 0.47 | M-v | 2 | MPC | 95374 | 2004 $RZ_{114}$ |
| 2004 $RD_{121}$ | 16.8 | 0.15 | 20060922 | 134.49814 | 231.09996 | 130.88439 | 3.16580 | 0.0175853 | 2.8577717 | 28 | 4 | 1997–2005 | 0.38 | M-v | 1 | MPC | 97734 | 2004 $RD_{121}$ |
| 2004 $RF_{124}$ | 15.7 | 0.15 | 20060922 | 118.51099 | 294.74153 | 71.91051 | 13.71258 | 0.1958169 | 3.1825082 | 21 | 1 | 81 days | 0.39 | M-v | 4 | MPC | 70426 | 2004 $RF_{124}$ |
| 2004 $RO_{125}$ | 17.8 | 0.15 | 20060922 | 33.94232 | 347.65905 | 187.06031 | 5.13897 | 0.0639198 | 2.2184092 | 23 | 3 | 2003–2006 | 0.33 | M-v | 3 | MPC | 95375 | 2004 $RO_{125}$ |
| 2004 $RF_{138}$ | 15.1 | 0.15 | 20060922 | 131.43967 | 42.89094 | 299.34730 | 20.18765 | 0.0810944 | 3.1548008 | 33 | 4 | 1998–2006 | 0.35 | M-v | 1 | MPC | 74339 | 2004 $RF_{138}$ |
| 2004 $RU_{138}$ | 15.8 | 0.15 | 20060922 | 65.77701 | 181.30315 | 256.43110 | 10.82641 | 0.0528969 | 2.8636765 | 32 | 4 | 1999–2005 | 0.58 | M-v | 1 | MPC | 70005 | 2004 $RU_{138}$ |
| 2004 $RH_{139}$ | 15.8 | 0.15 | 20060922 | 170.82604 | 182.72448 | 115.84232 | 1.91773 | 0.1522482 | 3.0750955 | 29 | 5 | 2002–2006 | 0.31 | M-v | 1 | MPC | 97735 | 2004 $RH_{139}$ |
| 2004 $RV_{140}$ | 15.2 | 0.15 | 20060922 | 146.95328 | 355.02064 | 335.88300 | 3.68528 | 0.1328879 | 3.1355712 | 72 | 6 | 1993–2005 | 0.48 | M-v | 1 | MPC | 97735 | 2004 $RV_{140}$ |
| 2004 $RX_{143}$ | 14.9 | 0.15 | 20060922 | 175.02279 | 174.14458 | 146.05621 | 9.96543 | 0.0952401 | 3.0877297 | 55 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 73102 | 2004 $RX_{143}$ |
| 2004 $RF_{144}$ | 17.5 | 0.15 | 20041002 | 37.87227 | 276.19212 | 41.95113 | 5.61495 | 0.1810919 | 2.2285713 | 25 | 1 | 56 days | 0.58 | | | MPC | | 2004 $RF_{144}$ |
| 2004 $RG_{145}$ | 16.5 | 0.15 | 20060922 | 213.76966 | 295.50397 | 21.42690 | 5.28554 | 0.2211567 | 2.3912010 | 42 | 1 | 62 days | 0.60 | M-v | 4 | MPC | 70428 | 2004 $RG_{145}$ |
| 2004 $RJ_{146}$ | 16.1 | 0.15 | 20060922 | 273.34865 | 231.27548 | 353.61670 | 7.84488 | 0.1120914 | 2.7473329 | 55 | 4 | 1998–2006 | 0.63 | M-v | 0 | MPC | 74341 | 2004 $RJ_{146}$ |
| 2004 $RS_{146}$ | 16.5 | 0.15 | 20060922 | 174.31759 | 182.36345 | 145.74034 | 2.98513 | 0.0717761 | 2.8095424 | 29 | 3 | 2002–2005 | 0.36 | M-v | 3 | MPC | 70011 | 2004 $RS_{146}$ |
| 2004 $RP_{147}$ | 17.3 | 0.15 | 20060922 | 168.93847 | 173.70793 | 212.32723 | 0.72603 | 0.1984231 | 2.4585387 | 68 | 3 | 2003–2006 | 0.58 | M-v | 3 | MPC | 00765 | 2004 $RP_{147}$ |
| 2004 $RW_{148}$ | 15.7 | 0.15 | 20060922 | 197.49858 | 2.10362 | 297.47026 | 1.06008 | 0.0416201 | 2.8790176 | 27 | 3 | 1999–2005 | 0.40 | M-v | 4 | MPC | 00766 | 2004 $RW_{148}$ |
| 2004 $RY_{149}$ | 15.7 | 0.15 | 20060922 | 299.39911 | 197.35649 | 0.58369 | 12.21979 | 0.0506198 | 2.8734160 | 32 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 73103 | 2004 $RY_{149}$ |
| 2004 $RG_{150}$ | 16.2 | 0.15 | 20060922 | 170.25043 | 288.61531 | 79.85799 | 4.60318 | 0.0690975 | 2.5663581 | 45 | 3 | 2000–2006 | 0.66 | M-v | 3 | MPC | 76500 | 2004 $RG_{150}$ |
| 2004 $RC_{152}$ | 13.7 | 0.15 | 20060922 | 277.40897 | 249.72916 | 296.57665 | 21.57238 | 0.0595767 | 3.1495682 | 106 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 97736 | 2004 $RC_{152}$ |
| 2004 $RX_{152}$ | 17.1 | 0.15 | 20060922 | 202.06125 | 92.38838 | 216.57816 | 8.32584 | 0.1226449 | 2.6413201 | 23 | 3 | 1996–2004 | 0.52 | M-v | 3 | MPC | 03631 | 2004 $RX_{152}$ |
| 2004 $RZ_{153}$ | 14.5 | 0.15 | 20060922 | 102.14491 | 150.37712 | 237.10626 | 8.82446 | 0.0419524 | 3.1074276 | 60 | 5 | 1999–2005 | 0.55 | M-v | 1 | MPC | 97736 | 2004 $RZ_{153}$ |
| 2004 $RE_{154}$ | 15.0 | 0.15 | 20060922 | 355.80750 | 166.57977 | 332.65587 | 10.70437 | 0.0576656 | 2.9749164 | 56 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 97736 | 2004 $RE_{154}$ |
| 2004 $RV_{154}$ | 16.6 | 0.15 | 20060922 | 221.31808 | 37.92050 | 252.01021 | 4.92341 | 0.1807703 | 2.5623989 | 31 | 4 | 2000–2005 | 0.53 | M-v | 1 | MPC | 70021 | 2004 $RV_{154}$ |
| 2004 $RS_{155}$ | 15.8 | 0.15 | 20060922 | 179.45442 | 117.32292 | 211.70677 | 7.68581 | 0.0940820 | 2.7440687 | 60 | 3 | 2000–2004 | 0.54 | M-v | 3 | MPC | 74342 | 2004 $RS_{155}$ |
| 2004 $RL_{157}$ | 14.5 | 0.15 | 20060922 | 311.70358 | 284.33042 | 248.03091 | 9.45021 | 0.0559483 | 3.1463035 | 83 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 95384 | 2004 $RL_{157}$ |
| 2004 $RS_{158}$ | 16.5 | 0.15 | 20060922 | 227.05015 | 98.69930 | 187.84480 | 10.10675 | 0.0702863 | 2.6619618 | 22 | 3 | 1995–2004 | 0.49 | M-v | 2 | MPC | 73110 | 2004 $RS_{158}$ |
| 2004 $RV_{158}$ | 17.3 | 0.15 | 20060922 | 158.34197 | 105.18666 | 329.65710 | 4.56049 | 0.0836945 | 2.1704079 | 36 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 97736 | 2004 $RV_{158}$ |
| 2004 $RP_{167}$ | 14.9 | 0.15 | 20060922 | 221.72242 | 21.23762 | 263.15387 | 8.34280 | 0.0900714 | 2.7993127 | 66 | 3 | 2002–2005 | 0.61 | M-v | 3 | MPC | 70027 | 2004 $RP_{167}$ |
| 2004 $RT_{167}$ | 16.5 | 0.15 | 20060922 | 162.58533 | 101.85324 | 222.84243 | 7.72141 | 0.1245275 | 3.0385254 | 36 | 3 | 1999–2005 | 0.49 | M-v | 3 | MPC | 70028 | 2004 $RT_{167}$ |
| 2004 $RF_{171}$ | 17.0 | 0.15 | 20060922 | 230.84266 | 84.07175 | 177.97820 | 4.72956 | 0.2109258 | 2.5997452 | 34 | 5 | 1995–2005 | 0.43 | M-v | 0 | MPC | 73116 | 2004 $RF_{171}$ |
| 2004 $RF_{175}$ | 17.2 | 0.15 | 20060922 | 173.16631 | 119.95597 | 259.53887 | 6.10895 | 0.1304098 | 2.3733852 | 33 | 4 | 1997–2005 | 0.61 | M-v | 2 | MPC | 03632 | 2004 $RF_{175}$ |
| 2004 $RA_{176}$ | 15.8 | 0.15 | 20060922 | 157.16393 | 59.23261 | 264.56562 | 7.14436 | 0.0929794 | 3.0360321 | 64 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 97737 | 2004 $RA_{176}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $RQ_{177}$ | 15.5 | 0.15 | 20060922 | 338.15587 | 302.76890 | 232.33697 | 6.89357 | 0.0270736 | 2.7199772 | 50 | 3 | 2000–2004 | 0.47 | M-v | 2 | MPC | 70035 | 2004 $RQ_{177}$ |
| 2004 $RY_{178}$ | 14.8 | 0.15 | 20060922 | 141.87725 | 93.56409 | 253.48677 | 8.64205 | 0.0952717 | 3.0870061 | 51 | 4 | 1999–2004 | 0.52 | M-v | 2 | MPC | 74345 | 2004 $RY_{178}$ |
| 2004 $RB_{179}$ | 15.4 | 0.15 | 20060922 | 111.35287 | 154.11657 | 235.67789 | 9.15333 | 0.0675230 | 2.9938782 | 44 | 3 | 1999–2004 | 0.45 | M-v | 3 | MPC | 70036 | 2004 $RB_{179}$ |
| 2004 $RW_{179}$ | 16.1 | 0.15 | 20060922 | 123.51289 | 100.50430 | 261.73839 | 3.89822 | 0.1695544 | 3.1494952 | 41 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 95399 | 2004 $RW_{179}$ |
| 2004 $RF_{180}$ | 17.3 | 0.15 | 20060922 | 200.94756 | 153.33873 | 190.48239 | 8.73692 | 0.2025202 | 2.4046915 | 72 | 4 | 1996–2004 | 0.58 | M-v | 2 | MPC | 74345 | 2004 $RF_{180}$ |
| 2004 $RF_{182}$ | 16.8 | 0.15 | 20060922 | 229.20261 | 4.08043 | 333.25657 | 5.94542 | 0.1232691 | 2.2588110 | 65 | 3 | 2003–2006 | 0.55 | M-v | 3 | MPC | 00769 | 2004 $RF_{182}$ |
| 2004 $RO_{182}$ | 15.0 | 0.15 | 20060922 | 185.09685 | 357.06462 | 291.00331 | 4.07996 | 0.1201720 | 3.2030617 | 55 | 4 | 1993–2006 | 0.51 | M-v | 2 | MPC | 95400 | 2004 $RO_{182}$ |
| 2004 $RE_{184}$ | 16.5 | 0.15 | 20060922 | 109.48224 | 80.55695 | 302.70520 | 8.54732 | 0.2666453 | 3.1408102 | 23 | 3 | 1995–2006 | 0.45 | M-v | 3 | MPC | 00770 | 2004 $RE_{184}$ |
| 2004 $RY_{184}$ | 15.1 | 0.15 | 20060922 | 209.94087 | 33.71030 | 242.06630 | 9.75647 | 0.0640097 | 3.0619693 | 64 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 95401 | 2004 $RY_{184}$ |
| 2004 $RX_{186}$ | 14.6 | 0.15 | 20060922 | 182.63502 | 1.77979 | 302.50667 | 8.53655 | 0.0854120 | 3.0985536 | 69 | 3 | 2004–2006 | 0.56 | M-v | 3 | MPC | 00770 | 2004 $RX_{186}$ |
| 2004 $RN_{187}$ | 15.0 | 0.15 | 20060922 | 135.05650 | 43.15321 | 323.18923 | 10.06241 | 0.2169569 | 3.0316379 | 70 | 4 | 1999–2006 | 0.56 | M-v | 2 | MPC | 95402 | 2004 $RN_{187}$ |
| 2004 $RV_{188}$ | 14.5 | 0.15 | 20060922 | 171.77432 | 72.22932 | 247.03283 | 8.25565 | 0.0944052 | 3.1078608 | 41 | 4 | 1999–2005 | 0.60 | M-v | 1 | MPC | 70049 | 2004 $RV_{188}$ |
| 2004 $RY_{189}$ | 14.5 | 0.15 | 20060922 | 115.73210 | 177.78974 | 206.24516 | 18.02694 | 0.1714034 | 3.1856777 | 81 | 4 | 1998–2004 | 0.58 | M-v | 1 | MPC | 74347 | 2004 $RY_{189}$ |
| 2004 $RD_{190}$ | 14.8 | 0.15 | 20060922 | 168.09480 | 355.95356 | 335.58547 | 10.98080 | 0.0995977 | 3.0486648 | 48 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 74347 | 2004 $RD_{190}$ |
| 2004 $RV_{191}$ | 14.7 | 0.15 | 20060922 | 21.32912 | 135.95591 | 341.60841 | 8.42430 | 0.0113931 | 3.1110231 | 48 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 97738 | 2004 $RV_{191}$ |
| 2004 $RF_{193}$ | 17.1 | 0.15 | 20060922 | 223.87181 | 44.59616 | 284.07577 | 6.21782 | 0.2388688 | 2.3797093 | 69 | 4 | 1999–2004 | 0.41 | M-v | 1 | MPC | 74348 | 2004 $RF_{193}$ |
| 2004 $RD_{194}$ | 15.1 | 0.15 | 20060922 | 324.39666 | 358.24681 | 211.00515 | 12.81276 | 0.0492848 | 2.6563022 | 76 | 6 | 1994–2004 | 0.72 | M-v | 1 | MPC | 04308 | 2004 $RD_{194}$ |
| 2004 $RQ_{196}$ | 15.7 | 0.15 | 20060922 | 89.61579 | 213.96621 | 238.50536 | 8.38673 | 0.0469515 | 2.6421760 | 36 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 95406 | 2004 $RQ_{196}$ |
| 2004 $RM_{198}$ | 16.0 | 0.15 | 20060922 | 132.05535 | 52.68760 | 312.88314 | 8.60393 | 0.1165034 | 3.0992591 | 28 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 95408 | 2004 $RM_{198}$ |
| 2004 $RC_{199}$ | 15.5 | 0.15 | 20060922 | 177.76264 | 40.64332 | 307.15378 | 5.49178 | 0.2671064 | 2.7614922 | 93 | 3 | 1999–2006 | 0.59 | M-v | 2 | MPC | 97739 | 2004 $RC_{199}$ |
| 2004 $RK_{201}$ | 14.9 | 0.15 | 20060922 | 130.05243 | 63.97827 | 336.70617 | 13.05067 | 0.2037932 | 3.1621853 | 28 | 3 | 1998–2006 | 0.57 | M-v | 3 | MPC | 95410 | 2004 $RK_{201}$ |
| 2004 $RF_{207}$ | 16.2 | 0.15 | 20060922 | 178.66460 | 105.72713 | 223.94554 | 11.88244 | 0.2901884 | 2.6234760 | 46 | 1 | 95 days | 0.40 | M-v | 3 | MPC | 70444 | 2004 $RF_{207}$ |
| 2004 $RX_{208}$ | 14.7 | 0.15 | 20060922 | 245.14073 | 300.19227 | 294.68858 | 14.99509 | 0.0404977 | 2.9329716 | 47 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 00773 | 2004 $RX_{208}$ |
| 2004 $RA_{211}$ | 14.3 | 0.15 | 20060922 | 176.42781 | 344.02412 | 320.19849 | 17.09710 | 0.1155915 | 3.0797192 | 60 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 70070 | 2004 $RA_{211}$ |
| 2004 $RY_{214}$ | 14.1 | 0.15 | 20060922 | 203.16878 | 351.24562 | 286.07833 | 12.87669 | 0.1352665 | 3.0991231 | 59 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 97740 | 2004 $RY_{214}$ |
| 2004 $RQ_{215}$ | 14.7 | 0.15 | 20060922 | 209.79148 | 328.52622 | 322.21527 | 15.02425 | 0.0582616 | 2.9977370 | 52 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 86551 | 2004 $RQ_{215}$ |
| 2004 $RU_{216}$ | 14.2 | 0.15 | 20060922 | 189.61418 | 347.77982 | 294.41610 | 11.73280 | 0.2864278 | 3.0914958 | 52 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 97740 | 2004 $RU_{216}$ |
| 2004 $RX_{220}$ | 15.4 | 0.15 | 20060922 | 170.02181 | 66.18783 | 326.93537 | 14.09968 | 0.1810766 | 2.6017533 | 42 | 4 | 1993–2005 | 0.42 | M-v | 2 | MPC | 03632 | 2004 $RX_{220}$ |
| 2004 $RY_{220}$ | 14.9 | 0.15 | 20060922 | 152.02757 | 44.44287 | 325.43838 | 15.50695 | 0.1331391 | 3.1305649 | 45 | 3 | 1998–2006 | 0.57 | M-v | 3 | MPC | 02211 | 2004 $RY_{220}$ |
| 2004 $RC_{221}$ | 15.5 | 0.15 | 20060922 | 229.75537 | 337.34702 | 335.35872 | 13.44568 | 0.2222228 | 2.5561088 | 24 | 1 | 81 days | 0.69 | M-v | 5 | MPC | | 2004 $RC_{221}$ |
| 2004 $RL_{222}$ | 16.1 | 0.15 | 20060922 | 229.97772 | 84.73050 | 183.30104 | 10.08360 | 0.0206548 | 3.0972834 | 21 | 3 | 1997–2004 | 0.46 | M-v | 3 | MPC | 73150 | 2004 $RL_{222}$ |
| 2004 $RE_{224}$ | 16.0 | 0.15 | 20060922 | 256.01685 | 111.29996 | 156.17869 | 11.83314 | 0.1424798 | 2.6025124 | 36 | 4 | 1999–2004 | 0.61 | M-v | 1 | MPC | 03633 | 2004 $RE_{224}$ |
| 2004 $RB_{225}$ | 16.4 | 0.15 | 20060922 | 139.31055 | 15.27913 | 4.50508 | 4.17319 | 0.1394862 | 2.7620694 | 44 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 97740 | 2004 $RB_{225}$ |
| 2004 $RN_{226}$ | 15.9 | 0.15 | 20060922 | 93.47161 | 164.88168 | 250.93391 | 1.74301 | 0.0649089 | 3.1110903 | 25 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 95421 | 2004 $RN_{226}$ |
| 2004 $RT_{226}$ | 14.9 | 0.15 | 20060922 | 124.16775 | 198.15500 | 184.38006 | 11.26286 | 0.1121199 | 3.1853038 | 86 | 3 | 1998–2004 | 0.57 | M-v | 2 | MPC | 74352 | 2004 $RT_{226}$ |
| 2004 $RE_{227}$ | 14.9 | 0.15 | 20060922 | 188.72537 | 44.00001 | 256.82631 | 3.85485 | 0.1580347 | 3.1692508 | 44 | 5 | 1998–2006 | 0.65 | M-v | 1 | MPC | 73153 | 2004 $RE_{227}$ |
| 2004 $RJ_{227}$ | 15.5 | 0.15 | 20060922 | 247.51662 | 277.84152 | 335.06887 | 4.92843 | 0.1033660 | 3.1403595 | 30 | 5 | 1993–2005 | 0.64 | M-v | 0 | MPC | 04308 | 2004 $RJ_{227}$ |
| 2004 $RA_{229}$ | 16.6 | 0.15 | 20060922 | 183.85057 | 301.72456 | 358.84097 | 4.57115 | 0.2324408 | 3.1232594 | 23 | 3 | 1993–2004 | 0.18 | M-v | 2 | MPC | 70080 | 2004 $RA_{229}$ |
| 2004 $RN_{232}$ | 15.4 | 0.15 | 20060922 | 101.88025 | 39.25712 | 16.22901 | 7.76746 | 0.0174439 | 3.0093592 | 40 | 4 | 1996–2006 | 0.55 | M-v | 1 | MPC | 97741 | 2004 $RN_{232}$ |
| 2004 $RO_{233}$ | 17.7 | 0.15 | 20060922 | 167.96686 | 246.07841 | 127.39413 | 1.15038 | 0.1208969 | 2.6464786 | 26 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 97741 | 2004 $RO_{233}$ |
| 2004 $RP_{234}$ | 17.3 | 0.15 | 20060922 | 69.86309 | 280.62123 | 161.94010 | 14.75010 | 0.1104522 | 2.6987533 | 24 | 3 | 1995–2004 | 0.41 | M-v | 2 | MPC | 95425 | 2004 $RP_{234}$ |
| 2004 $RF_{236}$ | 16.8 | 0.15 | 20060922 | 264.36343 | 317.42722 | 343.93088 | 6.10346 | 0.1227741 | 2.2799132 | 27 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 70085 | 2004 $RF_{236}$ |
| 2004 $RN_{239}$ | 17.9 | 0.15 | 20060922 | 117.37552 | 139.86515 | 301.59766 | 1.06774 | 0.0596862 | 2.3814335 | 33 | 3 | 1999–2006 | 0.26 | M-v | 2 | MPC | 95426 | 2004 $RN_{239}$ |
| 2004 $RM_{241}$ | 15.7 | 0.15 | 20060922 | 10.31492 | 291.31384 | 191.70941 | 0.45814 | 0.1220409 | 3.1957340 | 60 | 6 | 1998–2006 | 0.33 | M-v | 0 | MPC | 95427 | 2004 $RM_{241}$ |
| 2004 $RR_{244}$ | 16.9 | 0.15 | 20060922 | 291.74129 | 101.64870 | 140.23278 | 2.52008 | 0.1492646 | 2.3828987 | 31 | 3 | 2003–2005 | 0.61 | M-v | 2 | MPC | 74354 | 2004 $RR_{244}$ |
| 2004 $RQ_{245}$ | 16.4 | 0.15 | 20060922 | 119.73333 | 283.13676 | 86.03515 | 2.04823 | 0.1880340 | 3.1448589 | 31 | 2 | 2004–2006 | 0.41 | M-v | 3 | MPC | 95428 | 2004 $RQ_{245}$ |
| 2004 $RR_{245}$ | 17.0 | 0.15 | 20060922 | 218.09452 | 204.48269 | 82.85033 | 1.97402 | 0.0697264 | 2.7534676 | 18 | 3 | 1995–2004 | 0.18 | M-v | 2 | MPC | 00776 | 2004 $RR_{245}$ |
| 2004 $RJ_{251}$ | 17.5 | 0.15 | 20060922 | 200.14256 | 135.82453 | 223.14226 | 2.25566 | 0.1879042 | 2.3955599 | 50 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 02212 | 2004 $RJ_{251}$ |
| 2004 $RQ_{253}$ | 14.7 | 0.15 | 20060922 | 150.57487 | 245.05624 | 75.32628 | 6.00298 | 0.1776495 | 3.1460245 | 58 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 97742 | 2004 $RQ_{253}$ |
| 2004 $RY_{255}$ | 13.9 | 0.15 | 20060922 | 177.22368 | 191.40821 | 129.91993 | 17.93072 | 0.1130393 | 3.1031097 | 49 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 73164 | 2004 $RY_{255}$ |
| 2004 $RK_{256}$ | 16.3 | 0.15 | 20060922 | 174.24698 | 9.08498 | 293.67881 | 2.07778 | 0.1958935 | 2.9829351 | 49 | 5 | 1999–2005 | 0.59 | M-v | 1 | MPC | 73165 | 2004 $RK_{256}$ |
| 2004 $RL_{256}$ | 17.7 | 0.15 | 20060922 | 230.39212 | 50.86276 | 5.59366 | 20.76126 | 0.0424611 | 1.8837852 | 86 | 4 | 1991–2004 | 0.65 | M-v | 2 | MPC | 04308 | 2004 $RL_{256}$ |
| 2004 $RB_{257}$ | 16.1 | 0.15 | 20060922 | 285.45395 | 234.99874 | 348.98905 | 9.19016 | 0.0504065 | 2.7070724 | 20 | 3 | 1995–2004 | 0.47 | M-v | 3 | MPC | 73165 | 2004 $RB_{257}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $RR_{257}$ | 14.5 | 0.15 | 20060922 | 135.35840 | 359.98276 | 356.05173 | 7.64863 | 0.0547870 | 3.2530372 | 64 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 74355 | 2004 $RR_{257}$ |
| 2004 $RR_{259}$ | 16.9 | 0.15 | 20060922 | 303.28197 | 283.00449 | 319.22429 | 2.17121 | 0.1688655 | 2.2936047 | 42 | 5 | 1997–2006 | 0.67 | M-v | 1 | MPC | 95433 | 2004 $RR_{259}$ |
| 2004 $RZ_{265}$ | 16.1 | 0.15 | 20060922 | 108.46941 | 346.08792 | 48.77803 | 2.72431 | 0.1124428 | 2.9722109 | 33 | 3 | 1996–2006 | 0.31 | M-v | 2 | MPC | 95433 | 2004 $RZ_{265}$ |
| 2004 $RZ_{272}$ | 16.6 | 0.15 | 20060922 | 31.39649 | 331.92685 | 139.29757 | 2.82548 | 0.0123799 | 2.8678834 | 31 | 4 | 2000–2005 | 0.49 | M-v | 0 | MPC | 97742 | 2004 $RZ_{272}$ |
| 2004 $RV_{284}$ | 16.1 | 0.15 | 20060922 | 205.10921 | 112.05329 | 147.00233 | 4.17324 | 0.2427065 | 3.0405427 | 23 | 3 | 2003–2005 | 0.64 | M-v | 3 | MPC | 95436 | 2004 $RV_{284}$ |
| 2004 $RY_{287}$ | 16.3 | 0.15 | 20060922 | 204.44941 | 200.71068 | 188.86943 | 6.82897 | 0.1137955 | 2.2557556 | 75 | 3 | 2003–2006 | 0.64 | M-v | 3 | MPC | 02212 | 2004 $RY_{287}$ |
| 2004 $RS_{291}$ | 15.8 | 0.15 | 20060922 | 102.37179 | 345.66314 | 62.16011 | 6.41767 | 0.1186033 | 2.8724934 | 27 | 3 | 2002–2006 | 0.74 | M-v | 3 | MPC | 95438 | 2004 $RS_{291}$ |
| 2004 $RK_{292}$ | 16.0 | 0.15 | 20060922 | 154.92124 | 157.27886 | 190.62024 | 11.08100 | 0.1649083 | 2.9606940 | 49 | 3 | 1998–2004 | 0.52 | M-v | 3 | MPC | 74356 | 2004 $RK_{292}$ |
| 2004 $RA_{293}$ | 15.4 | 0.15 | 20060922 | 34.07536 | 143.25347 | 321.10951 | 4.87246 | 0.1490319 | 3.1428613 | 42 | 3 | 2001–2005 | 0.57 | M-v | 4 | MPC | 03634 | 2004 $RA_{293}$ |
| 2004 $RM_{301}$ | 17.5 | 0.15 | 20060922 | 272.12448 | 229.54072 | 37.05802 | 1.60717 | 0.2131522 | 2.3152321 | 36 | 6 | 1996–2006 | 0.36 | M-v | 0 | MPC | 97743 | 2004 $RM_{301}$ |
| 2004 $RU_{307}$ | 16.5 | 0.15 | 20060922 | 186.20502 | 352.67325 | 335.37851 | 2.66332 | 0.1913386 | 2.7332653 | 53 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 95442 | 2004 $RU_{307}$ |
| 2004 $RL_{309}$ | 16.0 | 0.15 | 20060922 | 178.06557 | 25.50666 | 337.10539 | 14.25412 | 0.1102213 | 2.5929171 | 38 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 03634 | 2004 $RL_{309}$ |
| 2004 $RZ_{309}$ | 16.4 | 0.15 | 20060922 | 194.37683 | 146.21796 | 214.40640 | 10.62253 | 0.2410902 | 2.5699587 | 100 | 5 | 1994–2004 | 0.56 | M-v | 1 | MPC | 04308 | 2004 $RZ_{309}$ |
| 2004 $RN_{312}$ | 15.0 | 0.15 | 20060922 | 155.22515 | 332.61715 | 20.08734 | 9.64085 | 0.0829978 | 3.1160245 | 61 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 97743 | 2004 $RN_{312}$ |
| 2004 $RF_{313}$ | 16.5 | 0.15 | 20060922 | 81.32102 | 275.31793 | 186.29859 | 12.58878 | 0.1218892 | 2.6396745 | 30 | 4 | 1998–2006 | 0.78 | M-v | 3 | MPC | 00780 | 2004 $RF_{313}$ |
| 2004 $RN_{313}$ | 14.7 | 0.15 | 20060922 | 263.57959 | 240.72049 | 351.36718 | 8.48465 | 0.0250253 | 3.0479584 | 50 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 97744 | 2004 $RN_{313}$ |
| 2004 $RC_{314}$ | 16.7 | 0.15 | 20060922 | 98.71901 | 108.88485 | 359.78547 | 18.77219 | 0.0636178 | 2.3593161 | 46 | 2 | 2004–2006 | 0.70 | M-v | 3 | MPC | 02212 | 2004 $RC_{314}$ |
| 2004 $RL_{315}$ | 14.9 | 0.15 | 20060922 | 116.79936 | 289.24419 | 84.05751 | 11.48239 | 0.1131945 | 2.9982716 | 35 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 95445 | 2004 $RL_{315}$ |
| 2004 $RE_{316}$ | 16.8 | 0.15 | 20060922 | 184.09162 | 218.45823 | 83.24852 | 0.66573 | 0.0859849 | 2.9973315 | 35 | 5 | 1994–2005 | 0.43 | M-v | 0 | MPC | 97744 | 2004 $RE_{316}$ |
| 2004 $RS_{318}$ | 15.9 | 0.15 | 20060922 | 275.10998 | 335.67525 | 255.65963 | 5.28273 | 0.1186551 | 2.6909951 | 37 | 4 | 2002–2006 | 0.88 | M-v | 2 | MPC | 00780 | 2004 $RS_{318}$ |
| 2004 $RT_{318}$ | 14.1 | 0.15 | 20060922 | 20.17413 | 233.25224 | 216.23574 | 8.06877 | 0.2176382 | 3.9988010 | 64 | 5 | 1997–2006 | 0.59 | M-v | 0 | MPC | 95446 | 2004 $RT_{318}$ |
| 2004 $RA_{320}$ | 14.7 | 0.15 | 20060922 | 27.15866 | 221.50371 | 241.82097 | 9.90081 | 0.0308940 | 3.1062759 | 39 | 5 | 1999–2005 | 0.55 | M-v | 1 | MPC | 95447 | 2004 $RA_{320}$ |
| 2004 $RH_{322}$ | 16.1 | 0.15 | 20060922 | 231.83192 | 43.13578 | 242.77994 | 4.09554 | 0.2967436 | 2.5864816 | 50 | 5 | 1996–2005 | 0.65 | M-v | 1 | MPC | 97744 | 2004 $RH_{322}$ |
| 2004 $RQ_{323}$ | 15.4 | 0.15 | 20060922 | 237.53914 | 11.67335 | 277.12296 | 8.10171 | 0.0947266 | 2.7191033 | 57 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 95449 | 2004 $RQ_{323}$ |
| 2004 $RB_{324}$ | 16.3 | 0.15 | 20060922 | 183.61585 | 8.55550 | 345.99005 | 14.90250 | 0.1434993 | 2.6754811 | 31 | 3 | 1995–2004 | 0.48 | M-v | 3 | MPC | 74358 | 2004 $RB_{324}$ |
| 2004 $RM_{324}$ | 16.4 | 0.15 | 20060922 | 121.60078 | 102.84734 | 310.85070 | 7.34321 | 0.1364478 | 2.7425859 | 43 | 3 | 1999–2006 | 0.46 | M-v | 3 | MPC | 00780 | 2004 $RM_{324}$ |
| 2004 $RB_{330}$ | 18.0 | 0.15 | 20060922 | 243.33229 | 70.52111 | 234.17933 | 5.10477 | 0.2566336 | 2.2336203 | 46 | 3 | 1997–2004 | 0.65 | M-v | 3 | MPC | 70110 | 2004 $RB_{330}$ |
| 2004 $RK_{334}$ | 15.0 | 0.15 | 20060922 | 143.86868 | 199.64237 | 137.61782 | 13.47093 | 0.0924210 | 3.1060129 | 39 | 6 | 1997–2006 | 0.46 | M-v | 1 | MPC | 97744 | 2004 $RK_{334}$ |
| 2004 $RJ_{337}$ | 16.8 | 0.15 | 20060922 | 211.93876 | 105.05083 | 209.49724 | 4.76668 | 0.0569419 | 2.7950729 | 25 | 3 | 2002–2006 | 0.62 | M-v | 4 | MPC | 00782 | 2004 $RJ_{337}$ |
| 2004 $RZ_{343}$ | 15.2 | 0.15 | 20060922 | 215.80368 | 118.12177 | 158.82039 | 8.62882 | 0.1809284 | 2.9043994 | 65 | 6 | 1998–2006 | 0.70 | M-v | 1 | MPC | 76507 | 2004 $RZ_{343}$ |
| 2004 $RE_{346}$ | 17.8 | 0.15 | 20041002 | 337.97983 | 211.05143 | 199.78887 | 3.27173 | 0.1702477 | 2.2635360 | 21 | 1 | 58 days | 0.56 | | | MPC | | 2004 $RE_{346}$ |
| 2004 $RF_{346}$ | 18.0 | 0.15 | 20040912 | 0.96410 | 246.98995 | 101.46620 | 2.70330 | 0.3177476 | 2.7436034 | 22 | 1 | 9 days | 0.62 | | | MPC | | 2004 $RF_{346}$ |
| 2004 $RG_{346}$ | 18.0 | 0.15 | 20040912 | 339.09460 | 328.82732 | 60.95737 | 2.82907 | 0.2909236 | 2.6609744 | 18 | 1 | 25 days | 0.56 | | | MPC | | 2004 $RG_{346}$ |
| 2004 $RH_{346}$ | 17.0 | 0.15 | 20040912 | 31.33730 | 237.23971 | 67.95726 | 2.16265 | 0.1764557 | 2.4650383 | 22 | 1 | 15 days | 0.67 | | | MPC | | 2004 $RH_{346}$ |
| 2004 $RJ_{346}$ | 15.7 | 0.15 | 20041002 | 23.14763 | 311.17243 | 19.97655 | 9.31705 | 0.0924405 | 3.1387899 | 21 | 1 | 42 days | 0.76 | | | MPC | | 2004 $RJ_{346}$ |
| 2004 $RK_{346}$ | 15.5 | 0.15 | 20041002 | 32.41806 | 262.05115 | 62.72965 | 9.29082 | 0.1364958 | 2.8884395 | 17 | 1 | 42 days | 0.65 | | | MPC | | 2004 $RK_{346}$ |
| 2004 $RL_{346}$ | 17.0 | 0.15 | 20041002 | 33.40980 | 151.43988 | 164.60770 | 9.99789 | 0.3586061 | 2.6833657 | 28 | 1 | 55 days | 0.87 | | | MPC | | 2004 $RL_{346}$ |
| 2004 $RM_{346}$ | 18.7 | 0.15 | 20041002 | 21.29066 | 104.48297 | 228.42598 | 5.89023 | 0.2663153 | 2.2651694 | 20 | 1 | 29 days | 0.56 | | | MPC | | 2004 $RM_{346}$ |
| 2004 $RN_{346}$ | 18.5 | 0.15 | 20041002 | 0.31369 | 144.72960 | 223.53447 | 5.63438 | 0.1922659 | 2.2065196 | 29 | 1 | 41 days | 0.64 | | | MPC | | 2004 $RN_{346}$ |
| 2004 $RO_{346}$ | 15.5 | 0.15 | 20060922 | 131.77181 | 187.34030 | 212.86474 | 13.26260 | 0.0489141 | 2.7906683 | 25 | 1 | 61 days | 0.68 | M-v | 5 | MPC | | 2004 $RO_{346}$ |
| 2004 $RP_{346}$ | 15.3 | 0.15 | 20060922 | 203.03393 | 335.26228 | 349.06227 | 14.80141 | 0.2582076 | 2.7300949 | 31 | 1 | 96 days | 0.65 | M-v | 4 | MPC | | 2004 $RP_{346}$ |
| 2004 $RR_{346}$ | 17.3 | 0.15 | 20060922 | 227.49149 | 93.04312 | 260.25563 | 6.88161 | 0.2793734 | 2.2554261 | 34 | 1 | 70 days | 0.60 | M-v | 5 | MPC | | 2004 $RR_{346}$ |
| 2004 $RS_{346}$ | 15.2 | 0.15 | 20060922 | 105.49718 | 62.61284 | 16.12140 | 26.07644 | 0.2508647 | 3.1206871 | 23 | 1 | 96 days | 0.44 | M-v | 3 | MPC | | 2004 $RS_{346}$ |
| 2004 $RT_{346}$ | 16.0 | 0.15 | 20041002 | 317.84622 | 147.70552 | 277.41304 | 11.78561 | 0.1657738 | 2.6719977 | 21 | 1 | 54 days | 0.65 | | | MPC | | 2004 $RT_{346}$ |
| 2004 $RU_{346}$ | 16.9 | 0.15 | 20041002 | 343.87695 | 90.57522 | 318.69163 | 13.85974 | 0.3144325 | 2.7622669 | 23 | 1 | 53 days | 0.62 | | | MPC | | 2004 $RU_{346}$ |
| 2004 $RW_{346}$ | 18.3 | 0.15 | 20041002 | 7.03871 | 109.34000 | 249.81065 | 3.07166 | 0.1896129 | 2.2240004 | 27 | 1 | 38 days | 0.58 | | | MPC | | 2004 $RW_{346}$ |
| 2004 $RX_{346}$ | 16.2 | 0.15 | 20041002 | 42.96385 | 110.58359 | 221.64870 | 13.96691 | 0.0705112 | 2.5710377 | 17 | 1 | 52 days | 0.76 | | | MPC | | 2004 $RX_{346}$ |
| 2004 $RY_{346}$ | 16.4 | 0.15 | 20041002 | 7.93756 | 132.49876 | 234.57526 | 11.73912 | 0.1386112 | 2.7829983 | 19 | 1 | 52 days | 0.72 | | | MPC | | 2004 $RY_{346}$ |
| 2004 $RZ_{346}$ | 16.1 | 0.15 | 20041002 | 4.78432 | 162.58170 | 201.12928 | 12.16253 | 0.1377445 | 3.2092450 | 18 | 1 | 27 days | 0.78 | | | MPC | | 2004 $RZ_{346}$ |
| 2004 $RA_{347}$ | 19.2 | 0.15 | 20041002 | 16.80178 | 38.87259 | 301.19395 | 1.75374 | 0.2544999 | 2.2142303 | 25 | 1 | 32 days | 0.53 | | | MPC | | 2004 $RA_{347}$ |
| 2004 $RB_{347}$ | 17.9 | 0.15 | 20041002 | 355.65807 | 59.06307 | 326.27140 | 12.30929 | 0.2876931 | 2.5966067 | 20 | 1 | 39 days | 0.52 | | | MPC | | 2004 $RB_{347}$ |
| 2004 $RC_{347}$ | 15.0 | 0.15 | 20060922 | 185.76306 | 154.11733 | 147.15288 | 11.62735 | 0.0948008 | 3.2152406 | 23 | 1 | 90 days | 0.68 | M-v | 5 | MPC | | 2004 $RC_{347}$ |
| 2004 $RE_{347}$ | 15.4 | 0.15 | 20041002 | 55.46430 | 99.62542 | 213.84808 | 15.48296 | 0.0636207 | 3.0880059 | 18 | 1 | 50 days | 0.43 | | | MPC | | 2004 $RE_{347}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $SU_4$ | 17.7 | 0.15 | 20060922 | 238.64105 | 4.34829 | 329.68863 | 2.73676 | 0.1698169 | 2.2844039 | 29 | 3 | 2003–2006 | 0.69 | M-v | 3 | MPC | 00784 | 2004 $SU_4$ |
| 2004 $ST_8$ | 15.8 | 0.15 | 20060922 | 94.69303 | 180.50417 | 233.81466 | 1.87446 | 0.0859806 | 2.9747110 | 74 | 6 | 1995–2006 | 0.51 | M-v | 0 | MPC | 97745 | 2004 $ST_8$ |
| 2004 $SJ_{15}$ | 16.3 | 0.15 | 20060922 | 206.04769 | 279.60792 | 43.23752 | 9.89234 | 0.1141033 | 2.5720978 | 36 | 2 | 2003–2004 | 0.63 | M-v | 3 | MPC | 03635 | 2004 $SJ_{15}$ |
| 2004 $SK_{20}$ | 15.1 | 0.15 | 20060922 | 163.98550 | 320.07290 | 19.30222 | 8.60841 | 0.1125651 | 3.1608592 | 56 | 4 | 1996–2006 | 0.58 | M-v | 1 | MPC | 73213 | 2004 $SK_{20}$ |
| 2004 $SX_{20}$ | 14.6 | 0.15 | 20060922 | 149.60005 | 190.88766 | 151.50431 | 32.29319 | 0.2003007 | 3.1240180 | 41 | 4 | 1998–2006 | 0.63 | M-v | 1 | MPC | 70120 | 2004 $SX_{20}$ |
| 2004 $SD_{22}$ | 16.8 | 0.15 | 20060922 | 172.23331 | 291.99488 | 74.63697 | 2.26543 | 0.1920789 | 2.4452341 | 35 | 3 | 2003–2006 | 0.61 | M-v | 3 | MPC | 02213 | 2004 $SD_{22}$ |
| 2004 $SQ_{24}$ | 17.1 | 0.15 | 20060922 | 146.88937 | 34.26957 | 329.56749 | 7.46853 | 0.1764844 | 2.7225840 | 23 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 95462 | 2004 $SQ_{24}$ |
| 2004 $SG_{25}$ | 18.0 | 0.15 | 20060922 | 106.50647 | 84.26982 | 30.40409 | 2.35179 | 0.1553968 | 2.4724794 | 31 | 4 | 1998–2006 | 0.31 | M-v | 2 | MPC | 00787 | 2004 $SG_{25}$ |
| 2004 $SZ_{27}$ | 16.5 | 0.15 | 20060922 | 192.14367 | 146.52361 | 160.41249 | 2.31047 | 0.0531620 | 2.8367529 | 22 | 3 | 1997–2005 | 0.36 | M-v | 4 | MPC | 73218 | 2004 $SZ_{27}$ |
| 2004 $SA_{32}$ | 17.7 | 0.15 | 20060922 | 257.32191 | 304.67639 | 12.95789 | 5.40740 | 0.1731696 | 2.1966625 | 51 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 89598 | 2004 $SA_{32}$ |
| 2004 $SE_{37}$ | 16.5 | 0.15 | 20060922 | 26.93342 | 174.91747 | 314.71791 | 7.73702 | 0.1442983 | 2.7839700 | 23 | 3 | 1997–2004 | 0.38 | M-v | 2 | MPC | 73225 | 2004 $SE_{37}$ |
| 2004 $SJ_{37}$ | 17.3 | 0.15 | 20060922 | 139.88263 | 142.69580 | 253.43361 | 2.91592 | 0.1920668 | 2.6125281 | 22 | 3 | 2000–2006 | 0.38 | M-v | 2 | MPC | 95465 | 2004 $SJ_{37}$ |
| 2004 $SJ_{42}$ | 16.6 | 0.15 | 20060922 | 232.16549 | 93.55852 | 216.77706 | 5.22381 | 0.1221708 | 2.3870415 | 39 | 3 | 2003–2005 | 0.58 | M-v | 3 | MPC | 73230 | 2004 $SJ_{42}$ |
| 2004 $SY_{44}$ | 16.2 | 0.15 | 20060922 | 162.62342 | 143.43548 | 219.42927 | 5.06177 | 0.0195713 | 2.7253750 | 31 | 4 | 1995–2006 | 0.66 | M-v | 2 | MPC | 73232 | 2004 $SY_{44}$ |
| 2004 $SC_{45}$ | 16.1 | 0.15 | 20060922 | 208.81982 | 306.66595 | 344.83618 | 9.93450 | 0.1109452 | 2.9169458 | 25 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 73232 | 2004 $SC_{45}$ |
| 2004 $SD_{48}$ | 14.9 | 0.15 | 20060922 | 99.96457 | 76.62219 | 20.56316 | 13.31422 | 0.1825038 | 2.9949763 | 80 | 4 | 1999–2006 | 0.57 | M-v | 1 | MPC | 00789 | 2004 $SD_{48}$ |
| 2004 $ST_{51}$ | 16.3 | 0.15 | 20060922 | 210.35233 | 270.64351 | 46.34907 | 7.96664 | 0.2096564 | 2.6071419 | 33 | 3 | 2000–2004 | 0.60 | M-v | 3 | MPC | 73238 | 2004 $ST_{51}$ |
| 2004 $SB_{52}$ | 16.5 | 0.15 | 20060922 | 182.35540 | 165.51308 | 189.60879 | 9.76255 | 0.2756932 | 2.7208060 | 33 | 4 | 1994–2004 | 0.55 | M-v | 1 | MPC | 04308 | 2004 $SB_{52}$ |
| 2004 $SK_{52}$ | 18.0 | 0.15 | 20060922 | 154.14594 | 102.33380 | 310.09713 | 5.04448 | 0.0998166 | 2.3550490 | 32 | 4 | 1995–2006 | 0.64 | M-v | 1 | MPC | 95472 | 2004 $SK_{52}$ |
| 2004 $SS_{52}$ | 16.1 | 0.15 | 20060922 | 122.29422 | 347.02638 | 97.61726 | 4.53452 | 0.1798133 | 2.4461970 | 37 | 4 | 1997–2006 | 0.60 | M-v | 2 | MPC | 00790 | 2004 $SS_{52}$ |
| 2004 $SQ_{54}$ | 15.8 | 0.15 | 20060922 | 155.00472 | 212.26920 | 180.36452 | 13.98841 | 0.1721332 | 2.7251905 | 59 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 00791 | 2004 $SQ_{54}$ |
| 2004 $SD_{58}$ | 15.6 | 0.15 | 20060922 | 151.80161 | 169.74163 | 182.99565 | 6.19133 | 0.1406528 | 3.1258531 | 49 | 5 | 1997–2006 | 0.55 | M-v | 1 | MPC | 97749 | 2004 $SD_{58}$ |
| 2004 $SG_{61}$ | 18.8 | 0.15 | 20041002 | 12.89755 | 320.26898 | 28.75464 | 2.99821 | 0.2364184 | 2.3535065 | 14 | 1 | 31 days | 0.69 | | | MPC | | 2004 $SG_{61}$ |
| 2004 $SH_{61}$ | 17.2 | 0.15 | 20041022 | 54.25768 | 219.67582 | 91.18847 | 3.67435 | 0.1944371 | 2.2473777 | 17 | 1 | 54 days | 0.69 | | | MPC | | 2004 $SH_{61}$ |
| 2004 $SJ_{61}$ | 18.3 | 0.15 | 20041002 | 13.46553 | 205.34840 | 150.85324 | 4.68375 | 0.2061267 | 2.2158775 | 25 | 1 | 22 days | 0.78 | | | MPC | | 2004 $SJ_{61}$ |
| 2004 $SL_{61}$ | 16.6 | 0.15 | 20041002 | 49.65389 | 233.85701 | 78.42970 | 7.26200 | 0.1448447 | 2.3645922 | 18 | 1 | 45 days | 0.66 | | | MPC | | 2004 $SL_{61}$ |
| 2004 $SM_{61}$ | 17.5 | 0.15 | 20041022 | 353.07099 | 161.81761 | 233.37752 | 6.73190 | 0.2480330 | 2.6301262 | 20 | 1 | 53 days | 0.66 | | | MPC | | 2004 $SM_{61}$ |
| 2004 $SN_{61}$ | 16.7 | 0.15 | 20060922 | 211.97760 | 25.67776 | 3.98056 | 7.95020 | 0.1397955 | 2.2563119 | 23 | 1 | 79 days | 0.50 | M-v | 4 | MPC | | 2004 $SN_{61}$ |
| 2004 TJ | 17.6 | 0.15 | 20060922 | 166.85311 | 7.14195 | 9.45575 | 5.60655 | 0.1544912 | 2.5613595 | 40 | 3 | 2000–2006 | 0.78 | M-v | 3 | MPC | 74367 | 2004 TJ |
| 2004 $TF_2$ | 17.9 | 0.15 | 20060922 | 199.61022 | 8.33520 | 19.37666 | 4.77336 | 0.1439536 | 2.2382429 | 42 | 2 | 2004–2006 | 0.52 | M-v | 4 | MPC | 00791 | 2004 $TF_2$ |
| 2004 $TN_2$ | 15.4 | 0.15 | 20060922 | 235.36919 | 75.58923 | 181.32321 | 9.42766 | 0.0436303 | 3.1711676 | 45 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 03635 | 2004 $TN_2$ |
| 2004 $TN_4$ | 15.9 | 0.15 | 20060922 | 71.67824 | 256.48575 | 204.41715 | 3.76764 | 0.1741371 | 3.1757992 | 29 | 4 | 1998–2006 | 0.44 | M-v | 0 | MPC | 95474 | 2004 $TN_4$ |
| 2004 $TO_4$ | 17.5 | 0.15 | 20060922 | 317.04100 | 64.80454 | 201.48509 | 2.80489 | 0.0284380 | 2.3321136 | 42 | 4 | 2000–2006 | 0.35 | M-v | 1 | MPC | 00792 | 2004 $TO_4$ |
| 2004 $TN_6$ | 15.7 | 0.15 | 20060922 | 189.11713 | 248.16462 | 90.86934 | 15.83835 | 0.1632612 | 2.6067628 | 50 | 4 | 1999–2004 | 0.54 | M-v | 1 | MPC | 73250 | 2004 $TN_6$ |
| 2004 $TD_7$ | 14.2 | 0.15 | 20060922 | 171.03772 | 247.30790 | 71.06382 | 16.17791 | 0.1668794 | 3.1048092 | 38 | 3 | 1999–2004 | 0.52 | M-v | 2 | MPC | 03636 | 2004 $TD_7$ |
| 2004 $TH_{10}$ | 18.6 | 0.15 | 20060922 | 64.74239 | 266.21411 | 271.78346 | 14.30141 | 0.8287878 | 1.2503437 | 65 | 4 | 2002–2006 | 0.60 | M-v | 3 | MPC | 04309 | 2004 $TH_{10}$ |
| 2004 $TS_{11}$ | 16.5 | 0.15 | 20060922 | 92.20534 | 54.30128 | 12.94314 | 2.04110 | 0.0789793 | 2.9961917 | 34 | 4 | 2000–2006 | 0.38 | M-v | 0 | MPC | 95478 | 2004 $TS_{11}$ |
| 2004 $TF_{12}$ | 16.6 | 0.15 | 20060922 | 155.37993 | 306.33735 | 74.63844 | 5.36634 | 0.1259257 | 2.7301121 | 69 | 4 | 2000–2006 | 0.68 | M-v | 1 | MPC | 95479 | 2004 $TF_{12}$ |
| 2004 $TU_{13}$ | 16.3 | 0.15 | 20060922 | 152.26772 | 189.69241 | 178.38700 | 2.24577 | 0.0973879 | 2.7751019 | 49 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 95480 | 2004 $TU_{13}$ |
| 2004 $TB_{14}$ | 15.0 | 0.15 | 20060922 | 73.29962 | 262.16708 | 174.67534 | 11.10785 | 0.0893051 | 3.2452936 | 39 | 4 | 1992–2006 | 0.62 | M-v | 1 | MPC | 03636 | 2004 $TB_{14}$ |
| 2004 $TK_{14}$ | 20.1 | 0.15 | 20060922 | 306.95909 | 71.87807 | 357.79711 | 10.21896 | 0.2351661 | 1.6203820 | 57 | 2 | 2004–2006 | 0.47 | M-v | 2 | MPC | 03636 | 2004 $TK_{14}$ |
| 2004 $TR_{14}$ | 16.0 | 0.15 | 20060922 | 257.98734 | 92.64064 | 54.97350 | 40.02451 | 0.2308117 | 1.7214372 | 201 | 3 | 1997–2006 | 0.43 | M-v | 1 | MPC | 00794 | 2004 $TR_{14}$ |
| 2004 $TE_{17}$ | 14.4 | 0.15 | 20060922 | 205.71991 | 356.74776 | 284.40504 | 26.68159 | 0.1737953 | 3.1673641 | 41 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 73261 | 2004 $TE_{17}$ |
| 2004 $TU_{19}$ | 16.1 | 0.15 | 20060922 | 116.30812 | 279.23695 | 122.48152 | 4.63869 | 0.2244917 | 3.0991342 | 63 | 3 | 1995–2006 | 0.58 | M-v | 2 | MPC | 95482 | 2004 $TU_{19}$ |
| 2004 $TJ_{20}$ | 18.1 | 0.15 | 20060922 | 227.58554 | 75.70879 | 5.74746 | 24.21775 | 0.1422763 | 1.8520758 | 29 | 2 | 2003–2004 | 0.49 | M-v | 4 | MPC | 03637 | 2004 $TJ_{20}$ |
| 2004 $TT_{27}$ | 16.6 | 0.15 | 20060922 | 128.45492 | 1.59559 | 19.61422 | 3.15555 | 0.0925287 | 3.0013889 | 28 | 3 | 2002–2006 | 0.34 | M-v | 4 | MPC | 95484 | 2004 $TT_{27}$ |
| 2004 $TN_{30}$ | 15.8 | 0.15 | 20060922 | 69.28462 | 31.75800 | 54.25029 | 3.35256 | 0.0692306 | 3.0049091 | 65 | 5 | 1996–2006 | 0.51 | M-v | 0 | MPC | 97751 | 2004 $TN_{30}$ |
| 2004 $TT_{32}$ | 16.6 | 0.15 | 20060922 | 275.57182 | 15.56987 | 273.06544 | 2.57757 | 0.1188845 | 2.3582325 | 20 | 3 | 2003–2006 | 0.35 | M-v | 2 | MPC | 95487 | 2004 $TT_{32}$ |
| 2004 $TP_{34}$ | 16.1 | 0.15 | 20060922 | 248.07797 | 46.20978 | 210.19554 | 8.16239 | 0.0679219 | 3.1193900 | 26 | 4 | 1999–2005 | 0.49 | M-v | 0 | MPC | 86565 | 2004 $TP_{34}$ |
| 2004 $TV_{34}$ | 16.5 | 0.15 | 20060922 | 280.88721 | 248.80531 | 21.88688 | 8.79358 | 0.1912430 | 2.3264567 | 45 | 3 | 1996–2004 | 0.56 | M-v | 1 | MPC | 73271 | 2004 $TV_{34}$ |
| 2004 $TK_{37}$ | 16.2 | 0.15 | 20041002 | 303.51330 | 57.78182 | 25.49423 | 10.06228 | 0.0538232 | 2.9953217 | 18 | 1 | 44 days | 0.31 | | | MPC | | 2004 $TK_{37}$ |
| 2004 $TS_{37}$ | 17.8 | 0.15 | 20060922 | 46.50542 | 158.73898 | 26.13856 | 1.10649 | 0.0774345 | 2.2683417 | 35 | 4 | 1999–2006 | 0.35 | M-v | 1 | MPC | 02215 | 2004 $TS_{37}$ |
| 2004 $TQ_{41}$ | 16.9 | 0.15 | 20060922 | 270.90070 | 0.39891 | 297.88242 | 2.91221 | 0.1965376 | 2.2915852 | 41 | 4 | 1997–2006 | 0.54 | M-v | 1 | MPC | 97752 | 2004 $TQ_{41}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $TT_{43}$ | 16.0 | 0.15 | 20060922 | 155.41079 | 100.84597 | 249.61655 | 3.78694 | 0.1633258 | 3.1388437 | 30 | 3 | 1995–2006 | 0.49 | M-v | 4 | MPC | 95492 | 2004 $TT_{43}$ |
| 2004 $TL_{48}$ | 16.2 | 0.15 | 20060922 | 161.34239 | 312.91758 | 53.30624 | 2.80528 | 0.1041727 | 2.9116176 | 45 | 4 | 1996–2006 | 0.53 | M-v | 1 | MPC | 95494 | 2004 $TL_{48}$ |
| 2004 $TC_{52}$ | 17.3 | 0.15 | 20060922 | 212.92009 | 124.74067 | 248.40272 | 1.65073 | 0.1828822 | 2.3132558 | 52 | 3 | 2003–2006 | 0.44 | M-v | 2 | MPC | 00797 | 2004 $TC_{52}$ |
| 2004 $TS_{52}$ | 18.1 | 0.15 | 20060922 | 246.63157 | 343.62568 | 27.48102 | 3.63077 | 0.0396598 | 2.1341236 | 25 | 3 | 2003–2006 | 0.31 | M-v | 4 | MPC | 00798 | 2004 $TS_{52}$ |
| 2004 $TG_{54}$ | 16.1 | 0.15 | 20060922 | 152.33361 | 194.54079 | 165.19466 | 1.24094 | 0.1930963 | 3.1422609 | 30 | 3 | 1998–2006 | 0.48 | M-v | 3 | MPC | 95496 | 2004 $TG_{54}$ |
| 2004 $TS_{60}$ | 16.1 | 0.15 | 20060922 | 77.44468 | 31.25494 | 59.77400 | 2.83532 | 0.0380524 | 2.7968425 | 64 | 4 | 2001–2006 | 0.59 | M-v | 0 | MPC | 02216 | 2004 $TS_{60}$ |
| 2004 $TV_{60}$ | 17.8 | 0.15 | 20060922 | 239.93389 | 189.75735 | 123.55771 | 2.90364 | 0.2247054 | 2.3081021 | 34 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 89600 | 2004 $TV_{60}$ |
| 2004 $TD_{61}$ | 16.6 | 0.15 | 20060922 | 252.04056 | 148.55586 | 155.28397 | 7.34593 | 0.1283703 | 2.3425425 | 51 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 97753 | 2004 $TD_{61}$ |
| 2004 $TJ_{61}$ | 16.5 | 0.15 | 20060922 | 182.39752 | 166.84185 | 180.63974 | 14.38038 | 0.1916556 | 2.6144427 | 44 | 1 | 68 days | 0.59 | M-v | 4 | MPC | 74378 | 2004 $TJ_{61}$ |
| 2004 $TH_{69}$ | 16.2 | 0.15 | 20060922 | 133.57225 | 242.05023 | 125.30796 | 4.33535 | 0.1879434 | 3.1246990 | 47 | 4 | 1993–2006 | 0.68 | M-v | 1 | MPC | 97754 | 2004 $TH_{69}$ |
| 2004 $TL_{69}$ | 16.4 | 0.15 | 20060922 | 137.62829 | 24.27980 | 38.72087 | 7.23171 | 0.0813030 | 2.4834674 | 35 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 95503 | 2004 $TL_{69}$ |
| 2004 $TU_{74}$ | 16.7 | 0.15 | 20060922 | 209.42197 | 124.92969 | 211.11749 | 6.57012 | 0.2383324 | 2.5374636 | 59 | 6 | 1995–2004 | 0.62 | M-v | 1 | MPC | 74381 | 2004 $TU_{74}$ |
| 2004 $TP_{77}$ | 16.3 | 0.15 | 20060922 | 16.08252 | 171.86372 | 17.67912 | 9.04932 | 0.0865758 | 2.5437172 | 31 | 3 | 2002–2006 | 0.70 | M-v | 4 | MPC | 00801 | 2004 $TP_{77}$ |
| 2004 $TD_{78}$ | 16.7 | 0.15 | 20060922 | 154.15516 | 108.28234 | 273.60165 | 3.35703 | 0.0577846 | 2.6527144 | 42 | 3 | 1995–2006 | 0.35 | M-v | 2 | MPC | 95506 | 2004 $TD_{78}$ |
| 2004 $TF_{78}$ | 15.2 | 0.15 | 20060922 | 178.87940 | 142.98689 | 162.77983 | 1.63619 | 0.1428476 | 3.1857494 | 31 | 4 | 2003–2006 | 0.44 | M-v | 1 | MPC | 00802 | 2004 $TF_{78}$ |
| 2004 $TX_{81}$ | 15.6 | 0.15 | 20060922 | 102.41016 | 40.41591 | 357.37405 | 5.82232 | 0.1042293 | 3.2424976 | 41 | 6 | 1992–2006 | 0.48 | M-v | 0 | MPC | 97754 | 2004 $TX_{81}$ |
| 2004 $TC_{82}$ | 17.4 | 0.15 | 20060922 | 318.11064 | 298.92483 | 276.29834 | 1.88931 | 0.0467137 | 2.6876358 | 44 | 4 | 2000–2006 | 0.33 | M-v | 0 | MPC | 95507 | 2004 $TC_{82}$ |
| 2004 $TR_{83}$ | 16.0 | 0.15 | 20060922 | 150.74047 | 170.84259 | 207.38170 | 4.86138 | 0.0705756 | 2.7542845 | 35 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 97754 | 2004 $TR_{83}$ |
| 2004 $TP_{91}$ | 17.0 | 0.15 | 20060922 | 173.33747 | 28.56388 | 316.75739 | 2.01358 | 0.2727423 | 2.7941211 | 26 | 3 | 1999–2005 | 0.38 | M-v | 4 | MPC | 95510 | 2004 $TP_{91}$ |
| 2004 $TR_{92}$ | 16.5 | 0.15 | 20060922 | 225.33557 | 296.83923 | 13.00329 | 3.59180 | 0.1917523 | 2.5706505 | 61 | 5 | 1999–2006 | 0.59 | M-v | 0 | MPC | 97755 | 2004 $TR_{92}$ |
| 2004 $TZ_{94}$ | 17.3 | 0.15 | 20060922 | 147.47143 | 243.19894 | 205.39395 | 6.13639 | 0.0533163 | 2.2629225 | 28 | 2 | 2004–2006 | 0.47 | M-v | 3 | MPC | 03638 | 2004 $TZ_{94}$ |
| 2004 $TE_{95}$ | 17.5 | 0.15 | 20060922 | 201.16943 | 312.47241 | 26.59800 | 2.26575 | 0.0889615 | 2.6566767 | 26 | 3 | 1995–2006 | 0.33 | M-v | 4 | MPC | 95511 | 2004 $TE_{95}$ |
| 2004 $TH_{96}$ | 16.9 | 0.15 | 20060922 | 177.33255 | 169.93227 | 190.41813 | 4.86350 | 0.0751187 | 2.7146847 | 21 | 3 | 1995–2004 | 0.24 | M-v | 3 | MPC | 73312 | 2004 $TH_{96}$ |
| 2004 $TN_{97}$ | 14.5 | 0.15 | 20060922 | 217.42324 | 239.52546 | 31.80137 | 10.50575 | 0.2048192 | 3.1551088 | 31 | 3 | 1998–2004 | 0.53 | M-v | 2 | MPC | 73312 | 2004 $TN_{97}$ |
| 2004 $TL_{99}$ | 15.8 | 0.15 | 20060922 | 238.94065 | 169.14445 | 92.77041 | 1.98729 | 0.1599447 | 3.0519936 | 42 | 6 | 1999–2006 | 0.48 | M-v | 0 | MPC | 97755 | 2004 $TL_{99}$ |
| 2004 $TL_{102}$ | 17.7 | 0.15 | 20060922 | 192.02767 | 236.80592 | 152.54677 | 1.27675 | 0.1836080 | 2.3785497 | 30 | 3 | 2002–2006 | 0.30 | M-v | 3 | MPC | 02217 | 2004 $TL_{102}$ |
| 2004 $TL_{103}$ | 16.3 | 0.15 | 20060922 | 127.97518 | 241.36475 | 210.55952 | 12.46875 | 0.2141872 | 2.5380722 | 74 | 5 | 1996–2006 | 0.49 | M-v | 2 | MPC | 02217 | 2004 $TL_{103}$ |
| 2004 $TT_{103}$ | 17.9 | 0.15 | 20060922 | 182.36173 | 220.92121 | 181.86587 | 5.84589 | 0.0972137 | 2.2831508 | 36 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 00804 | 2004 $TT_{103}$ |
| 2004 $TH_{107}$ | 16.0 | 0.15 | 20060922 | 126.84265 | 242.88707 | 188.93228 | 14.81620 | 0.0994807 | 2.5464386 | 40 | 3 | 2000–2006 | 0.68 | M-v | 3 | MPC | 02217 | 2004 $TH_{107}$ |
| 2004 $TM_{109}$ | 17.3 | 0.15 | 20060922 | 223.93864 | 229.26730 | 109.26785 | 4.97818 | 0.1923460 | 2.3525315 | 36 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03638 | 2004 $TM_{109}$ |
| 2004 $TG_{113}$ | 16.0 | 0.15 | 20060922 | 50.55577 | 123.51645 | 9.28637 | 0.66633 | 0.1675639 | 3.0934933 | 43 | 2 | 2004–2006 | 0.42 | M-v | 4 | MPC | 02217 | 2004 $TG_{113}$ |
| 2004 $TQ_{113}$ | 15.9 | 0.15 | 20060922 | 134.08854 | 257.79260 | 149.33769 | 2.61759 | 0.0971122 | 2.9263356 | 64 | 5 | 1996–2006 | 0.46 | M-v | 3 | MPC | 02217 | 2004 $TQ_{113}$ |
| 2004 $TW_{113}$ | 16.6 | 0.15 | 20060922 | 139.29380 | 47.93522 | 52.09464 | 3.41004 | 0.1462801 | 2.4158355 | 78 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04309 | 2004 $TW_{113}$ |
| 2004 $TM_{115}$ | 15.5 | 0.15 | 20060922 | 152.31832 | 125.99383 | 239.05445 | 9.51840 | 0.1075175 | 3.1502222 | 22 | 3 | 1993–2004 | 0.49 | M-v | 2 | MPC | 76518 | 2004 $TM_{115}$ |
| 2004 $TD_{116}$ | 15.0 | 0.15 | 20060922 | 25.98845 | 203.15530 | 282.70104 | 10.50846 | 0.0571065 | 3.0647696 | 42 | 4 | 2001–2005 | 0.45 | M-v | 1 | MPC | 97756 | 2004 $TD_{116}$ |
| 2004 $TA_{120}$ | 15.5 | 0.15 | 20060922 | 60.71290 | 139.61546 | 334.27132 | 8.15260 | 0.1425922 | 2.9170487 | 95 | 5 | 1996–2006 | 0.59 | M-v | 2 | MPC | 02218 | 2004 $TA_{120}$ |
| 2004 $TL_{121}$ | 17.8 | 0.15 | 20060922 | 173.66481 | 45.37879 | 351.90870 | 1.69751 | 0.1729710 | 2.4272007 | 31 | 3 | 2000–2006 | 0.35 | M-v | 2 | MPC | 00806 | 2004 $TL_{121}$ |
| 2004 $TV_{121}$ | 15.3 | 0.15 | 20060922 | 172.84611 | 108.16917 | 206.98765 | 6.54231 | 0.1687823 | 3.1541528 | 47 | 3 | 1998–2005 | 0.47 | M-v | 3 | MPC | 74390 | 2004 $TV_{121}$ |
| 2004 $TP_{122}$ | 16.7 | 0.15 | 20060922 | 239.53951 | 39.34589 | 245.28203 | 2.08874 | 0.1475302 | 2.6365351 | 37 | 5 | 1994–2006 | 0.59 | M-v | 1 | MPC | 04309 | 2004 $TP_{122}$ |
| 2004 $TO_{123}$ | 16.7 | 0.15 | 20060922 | 202.39591 | 244.00971 | 93.63523 | 3.82948 | 0.2266818 | 2.5905303 | 22 | 3 | 2003–2006 | 0.46 | M-v | 3 | MPC | 95523 | 2004 $TO_{123}$ |
| 2004 $TU_{123}$ | 17.0 | 0.15 | 20060922 | 131.69606 | 258.87050 | 146.31398 | 5.57691 | 0.1704922 | 2.7864947 | 33 | 3 | 1999–2006 | 0.64 | M-v | 4 | MPC | 00807 | 2004 $TU_{123}$ |
| 2004 $TJ_{124}$ | 15.4 | 0.15 | 20060922 | 192.18433 | 130.81107 | 158.40345 | 5.02591 | 0.1390331 | 3.1085432 | 32 | 3 | 2002–2006 | 0.42 | M-v | 3 | MPC | 73337 | 2004 $TJ_{124}$ |
| 2004 $TS_{125}$ | 16.4 | 0.15 | 20060922 | 158.44715 | 276.98896 | 92.40313 | 6.69221 | 0.0944743 | 2.7236231 | 24 | 3 | 2000–2006 | 0.59 | M-v | 3 | MPC | 95525 | 2004 $TS_{125}$ |
| 2004 $TD_{126}$ | 17.0 | 0.15 | 20060922 | 213.77032 | 233.81829 | 85.17138 | 3.85177 | 0.2359207 | 2.4890647 | 29 | 3 | 2000–2006 | 0.57 | M-v | 4 | MPC | 73339 | 2004 $TD_{126}$ |
| 2004 $TY_{134}$ | 16.2 | 0.15 | 20060922 | 218.07468 | 255.49383 | 47.19745 | 3.57492 | 0.0715210 | 2.6970458 | 24 | 4 | 1995–2005 | 0.37 | M-v | 1 | MPC | 95529 | 2004 $TY_{134}$ |
| 2004 $TA_{135}$ | 16.9 | 0.15 | 20060922 | 128.37135 | 249.30083 | 175.42053 | 4.51423 | 0.2234851 | 2.6432050 | 45 | 3 | 2000–2006 | 0.52 | M-v | 3 | MPC | 00809 | 2004 $TA_{135}$ |
| 2004 $TB_{135}$ | 16.1 | 0.15 | 20060922 | 85.44568 | 276.76639 | 157.93293 | 3.77847 | 0.1489115 | 2.9944281 | 53 | 4 | 1996–2006 | 0.60 | M-v | 2 | MPC | 95529 | 2004 $TB_{135}$ |
| 2004 $TK_{138}$ | 16.7 | 0.15 | 20060922 | 303.96026 | 329.05671 | 302.75566 | 7.19310 | 0.1063219 | 2.2481288 | 39 | 3 | 2003–2006 | 0.55 | M-v | 2 | MPC | 95531 | 2004 $TK_{138}$ |
| 2004 $TK_{141}$ | 17.4 | 0.15 | 20060922 | 152.86597 | 246.06040 | 178.33695 | 6.15063 | 0.1509439 | 2.3733446 | 35 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 00810 | 2004 $TK_{141}$ |
| 2004 $TR_{143}$ | 16.9 | 0.15 | 20060922 | 242.65244 | 105.80229 | 218.31595 | 2.94555 | 0.1735944 | 2.3412403 | 57 | 4 | 2000–2006 | 0.71 | M-v | 2 | MPC | 73358 | 2004 $TR_{143}$ |
| 2004 $TW_{146}$ | 17.4 | 0.15 | 20060922 | 135.07375 | 106.04130 | 353.39104 | 5.58887 | 0.0560953 | 2.2534362 | 25 | 2 | 2004–2006 | 0.28 | M-v | 3 | MPC | 02219 | 2004 $TW_{146}$ |
| 2004 $TK_{147}$ | 16.0 | 0.15 | 20060922 | 181.02298 | 108.22953 | 241.46232 | 4.13409 | 0.0699374 | 2.7566979 | 30 | 3 | 1995–2006 | 0.35 | M-v | 3 | MPC | 95534 | 2004 $TK_{147}$ |
| 2004 $TN_{147}$ | 17.3 | 0.15 | 20060922 | 276.57156 | 329.18398 | 313.48626 | 2.63036 | 0.1247334 | 2.3709578 | 29 | 3 | 2003–2006 | 0.37 | M-v | 2 | MPC | 95534 | 2004 $TN_{147}$ |

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| 2004 $TQ_{148}$ | 15.7 | 0.15 | 20060922 | 301.55945 | 244.28387 | 316.33933 | 2.34705 | 0.1086458 | 3.2348410 | 34 | 6 | 1992–2006 | 0.37 | M-v | 1 | MPC | 00811 | 2004 $TQ_{148}$ |
| 2004 $TS_{149}$ | 16.2 | 0.15 | 20060922 | 182.71762 | 44.38525 | 274.45025 | 1.94049 | 0.1800164 | 2.9726048 | 37 | 4 | 1999–2006 | 0.42 | M-v | 1 | MPC | 95535 | 2004 $TS_{149}$ |
| 2004 $TC_{152}$ | 15.9 | 0.15 | 20060922 | 20.19578 | 295.83901 | 205.65211 | 11.34393 | 0.0568681 | 3.0130426 | 22 | 2 | 2000–2004 | 0.35 | M-v | 2 | MPC | 03639 | 2004 $TC_{152}$ |
| 2004 $TM_{155}$ | 17.3 | 0.15 | 20060922 | 159.31355 | 183.50668 | 178.03977 | 1.72343 | 0.0826330 | 2.8731505 | 28 | 3 | 1999–2006 | 0.28 | M-v | 4 | MPC | 95538 | 2004 $TM_{155}$ |
| 2004 $TG_{160}$ | 15.9 | 0.15 | 20060922 | 226.88622 | 80.77550 | 240.50008 | 3.91464 | 0.0497970 | 2.7188660 | 53 | 5 | 1995–2006 | 0.55 | M-v | 1 | MPC | 97758 | 2004 $TG_{160}$ |
| 2004 $TK_{162}$ | 17.3 | 0.15 | 20060922 | 280.68734 | 88.90871 | 206.34190 | 6.19709 | 0.1151236 | 2.3478795 | 16 | 3 | 1999–2004 | 0.17 | M-v | 2 | MPC | 76521 | 2004 $TK_{162}$ |
| 2004 $TM_{162}$ | 17.8 | 0.15 | 20060922 | 288.67371 | 242.06500 | 41.02726 | 6.28628 | 0.1041874 | 2.4019092 | 18 | 3 | 2000–2004 | 0.48 | M-v | 3 | MPC | 03640 | 2004 $TM_{162}$ |
| 2004 $TL_{167}$ | 17.4 | 0.15 | 20060922 | 155.84418 | 40.89231 | 316.51285 | 1.09436 | 0.0743220 | 2.8588370 | 26 | 3 | 1999–2006 | 0.28 | M-v | 4 | MPC | 95540 | 2004 $TL_{167}$ |
| 2004 $TG_{171}$ | 16.9 | 0.15 | 20060922 | 149.10053 | 239.67096 | 247.22102 | 18.32357 | 0.0609003 | 1.9361585 | 31 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 03641 | 2004 $TG_{171}$ |
| 2004 $TQ_{176}$ | 16.1 | 0.15 | 20060922 | 143.39925 | 148.84237 | 211.68719 | 4.86907 | 0.1920637 | 3.1750410 | 35 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 95544 | 2004 $TQ_{176}$ |
| 2004 $TD_{185}$ | 17.6 | 0.15 | 20060922 | 6.83481 | 249.45843 | 14.19550 | 19.94015 | 0.0666115 | 1.9424513 | 32 | 3 | 2003–2006 | 0.38 | M-v | 2 | MPC | 00815 | 2004 $TD_{185}$ |
| 2004 $TH_{201}$ | 18.2 | 0.15 | 20060922 | 179.77024 | 248.70085 | 126.13976 | 1.49795 | 0.1464878 | 2.5674123 | 20 | 3 | 2000–2006 | 0.29 | M-v | 4 | MPC | 95549 | 2004 $TH_{201}$ |
| 2004 $TU_{202}$ | 15.4 | 0.15 | 20060922 | 253.29360 | 267.92504 | 38.61316 | 14.39733 | 0.0373934 | 2.7013815 | 55 | 4 | 1995–2006 | 0.56 | M-v | 1 | MPC | 97760 | 2004 $TU_{202}$ |
| 2004 $TE_{203}$ | 15.9 | 0.15 | 20060922 | 184.69867 | 305.73985 | 21.82214 | 4.77836 | 0.1750980 | 3.1872882 | 28 | 4 | 1998–2006 | 0.39 | M-v | 1 | MPC | 97760 | 2004 $TE_{203}$ |
| 2004 $TB_{205}$ | 16.8 | 0.15 | 20060922 | 228.39824 | 337.11436 | 39.27447 | 4.64743 | 0.0424439 | 2.2778711 | 49 | 3 | 2002–2006 | 0.33 | M-v | 3 | MPC | 00818 | 2004 $TB_{205}$ |
| 2004 $TO_{205}$ | 15.4 | 0.15 | 20060922 | 68.93143 | 261.38220 | 210.01105 | 1.41673 | 0.0560958 | 3.1486473 | 60 | 3 | 2001–2006 | 0.41 | M-v | 1 | MPC | 97760 | 2004 $TO_{205}$ |
| 2004 $TQ_{210}$ | 18.0 | 0.15 | 20060922 | 33.38498 | 175.53701 | 10.85734 | 6.74461 | 0.0536004 | 2.3448361 | 21 | 2 | 2004–2006 | 0.29 | M-v | 4 | MPC | 95553 | 2004 $TQ_{210}$ |
| 2004 $TV_{215}$ | 17.6 | 0.15 | 20060922 | 277.35119 | 282.52730 | 4.00099 | 3.40989 | 0.1600205 | 2.2912508 | 36 | 4 | 1996–2006 | 0.30 | M-v | 1 | MPC | 95555 | 2004 $TV_{215}$ |
| 2004 $TW_{217}$ | 16.2 | 0.15 | 20060922 | 79.75846 | 241.37746 | 195.59854 | 5.20803 | 0.1483527 | 3.1016504 | 21 | 3 | 2001–2006 | 0.20 | M-v | 1 | MPC | 03642 | 2004 $TW_{217}$ |
| 2004 $TH_{218}$ | 17.6 | 0.15 | 20060922 | 318.55501 | 83.68995 | 150.30852 | 1.65769 | 0.1142418 | 2.4178757 | 36 | 4 | 1995–2006 | 0.43 | M-v | 0 | MPC | 95556 | 2004 $TH_{218}$ |
| 2004 $TN_{219}$ | 16.8 | 0.15 | 20060922 | 145.92668 | 7.91925 | 26.78326 | 1.83004 | 0.0669111 | 2.7382011 | 32 | 3 | 1995–2006 | 0.33 | M-v | 4 | MPC | 00820 | 2004 $TN_{219}$ |
| 2004 $TF_{221}$ | 15.7 | 0.15 | 20060922 | 97.63275 | 27.96732 | 71.96702 | 10.86114 | 0.2200182 | 2.7155167 | 42 | 4 | 1997–2006 | 0.54 | M-v | 1 | MPC | 00820 | 2004 $TF_{221}$ |
| 2004 $TM_{221}$ | 14.3 | 0.15 | 20060922 | 232.23599 | 297.53380 | 324.33753 | 13.29955 | 0.1583003 | 3.1102501 | 36 | 4 | 1996–2006 | 0.59 | M-v | 1 | MPC | 73401 | 2004 $TM_{221}$ |
| 2004 $TY_{221}$ | 15.9 | 0.15 | 20060922 | 169.19010 | 222.84920 | 144.95070 | 12.38945 | 0.2002709 | 2.6991115 | 50 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 97761 | 2004 $TY_{221}$ |
| 2004 $TQ_{229}$ | 17.0 | 0.15 | 20060922 | 109.79401 | 228.92514 | 212.98113 | 0.23314 | 0.0452892 | 2.6434618 | 46 | 4 | 1995–2006 | 0.32 | M-v | 1 | MPC | 02221 | 2004 $TQ_{229}$ |
| 2004 $TW_{234}$ | 15.0 | 0.15 | 20060922 | 88.71404 | 66.55909 | 19.54145 | 18.58339 | 0.1230441 | 3.2066724 | 33 | 2 | 2004–2006 | 0.62 | M-v | 3 | MPC | 00821 | 2004 $TW_{234}$ |
| 2004 $TE_{247}$ | 14.8 | 0.15 | 20060922 | 133.01120 | 254.20344 | 128.56341 | 10.52293 | 0.1045817 | 3.1071509 | 60 | 4 | 1994–2006 | 0.65 | M-v | 1 | MPC | 04309 | 2004 $TE_{247}$ |
| 2004 $TM_{248}$ | 16.6 | 0.15 | 20060922 | 121.75966 | 116.43105 | 284.78499 | 1.12310 | 0.1941771 | 3.0613442 | 30 | 3 | 2000–2006 | 0.37 | M-v | 4 | MPC | 95562 | 2004 $TM_{248}$ |
| 2004 $TF_{253}$ | 16.7 | 0.15 | 20060922 | 154.08732 | 178.22931 | 201.53418 | 5.17364 | 0.0577402 | 2.7147858 | 24 | 4 | 1995–2006 | 0.35 | M-v | 1 | MPC | 97762 | 2004 $TF_{253}$ |
| 2004 $TD_{260}$ | 16.5 | 0.15 | 20060922 | 180.98443 | 165.39359 | 200.78895 | 2.23401 | 0.1504850 | 2.6546351 | 29 | 3 | 2002–2006 | 0.33 | M-v | 4 | MPC | 95564 | 2004 $TD_{260}$ |
| 2004 $TY_{262}$ | 16.7 | 0.15 | 20060922 | 139.72372 | 154.60050 | 253.64947 | 3.38419 | 0.0686745 | 2.7635525 | 19 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 00823 | 2004 $TY_{262}$ |
| 2004 $TO_{263}$ | 16.2 | 0.15 | 20060922 | 352.29158 | 264.45477 | 298.40186 | 2.03768 | 0.0142924 | 2.6757573 | 51 | 5 | 1991–2006 | 0.45 | M-v | 1 | MPC | 04309 | 2004 $TO_{263}$ |
| 2004 $TU_{263}$ | 18.4 | 0.15 | 20060922 | 194.28971 | 168.96285 | 236.80728 | 2.17199 | 0.1872587 | 2.2727505 | 18 | 3 | 1997–2004 | 0.47 | M-v | 4 | MPC | 73419 | 2004 $TU_{263}$ |
| 2004 $TA_{269}$ | 16.4 | 0.15 | 20060922 | 140.50803 | 302.50812 | 69.16911 | 2.26585 | 0.0928848 | 3.2129972 | 23 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 95566 | 2004 $TA_{269}$ |
| 2004 $TD_{276}$ | 16.8 | 0.15 | 20060922 | 137.21073 | 232.07000 | 217.66868 | 4.54989 | 0.2359439 | 2.5762605 | 57 | 4 | 2000–2006 | 0.46 | M-v | 2 | MPC | 04309 | 2004 $TD_{276}$ |
| 2004 $TE_{276}$ | 16.2 | 0.15 | 20060922 | 326.42052 | 185.29053 | 52.62820 | 3.85741 | 0.0671503 | 2.6368530 | 36 | 4 | 1995–2006 | 0.49 | M-v | 2 | MPC | 97762 | 2004 $TE_{276}$ |
| 2004 $TL_{282}$ | 14.0 | 0.15 | 20060922 | 41.90390 | 7.47431 | 78.27370 | 3.28115 | 0.1700871 | 3.9381435 | 52 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 95569 | 2004 $TL_{282}$ |
| 2004 $TH_{285}$ | 18.0 | 0.15 | 20060922 | 45.38441 | 348.20739 | 195.86050 | 7.01414 | 0.0785551 | 2.2712158 | 28 | 3 | 1997–2006 | 0.29 | M-v | 3 | MPC | 00826 | 2004 $TH_{285}$ |
| 2004 $TK_{286}$ | 17.0 | 0.15 | 20060922 | 144.91464 | 53.20083 | 33.06947 | 2.35178 | 0.1757191 | 2.4606262 | 70 | 6 | 1994–2006 | 0.47 | M-v | 1 | MPC | 04310 | 2004 $TK_{286}$ |
| 2004 $TR_{287}$ | 16.4 | 0.15 | 20060922 | 172.56982 | 41.61169 | 44.02983 | 25.82671 | 0.1893700 | 2.2759112 | 74 | 4 | 1997–2004 | 0.55 | M-v | 1 | MPC | 73433 | 2004 $TR_{287}$ |
| 2004 $TQ_{288}$ | 16.5 | 0.15 | 20060922 | 88.63601 | 108.16305 | 309.33624 | 1.82971 | 0.0766159 | 3.0950642 | 26 | 3 | 2001–2005 | 0.38 | M-v | 2 | MPC | 95571 | 2004 $TQ_{288}$ |
| 2004 $TE_{291}$ | 16.6 | 0.15 | 20060922 | 150.87342 | 147.38397 | 205.96506 | 8.88824 | 0.1027141 | 3.1115111 | 20 | 3 | 2002–2006 | 0.30 | M-v | 3 | MPC | 73434 | 2004 $TE_{291}$ |
| 2004 $TO_{302}$ | 16.6 | 0.15 | 20060922 | 145.83965 | 231.92549 | 174.35448 | 4.86311 | 0.1689217 | 2.6972605 | 35 | 3 | 1995–2006 | 0.59 | M-v | 4 | MPC | 02222 | 2004 $TO_{302}$ |
| 2004 $TS_{308}$ | 16.3 | 0.15 | 20060922 | 83.27604 | 101.41077 | 0.31804 | 4.85697 | 0.0700566 | 2.7244820 | 30 | 4 | 1993–2006 | 0.62 | M-v | 1 | MPC | 04310 | 2004 $TS_{308}$ |
| 2004 $TV_{317}$ | 15.3 | 0.15 | 20060922 | 196.90735 | 95.51056 | 220.38629 | 10.71358 | 0.1420848 | 2.9592085 | 45 | 3 | 1999–2004 | 0.53 | M-v | 2 | MPC | 73447 | 2004 $TV_{317}$ |
| 2004 $TY_{320}$ | 17.7 | 0.15 | 20060922 | 129.10174 | 302.03685 | 168.15999 | 2.44994 | 0.0530644 | 2.2645104 | 31 | 3 | 1999–2006 | 0.43 | M-v | 2 | MPC | 02223 | 2004 $TY_{320}$ |
| 2004 $TD_{323}$ | 17.6 | 0.15 | 20060922 | 296.33971 | 84.89615 | 220.74328 | 2.24851 | 0.0330090 | 2.2992072 | 32 | 2 | 2004–2006 | 0.25 | M-v | 3 | MPC | 00831 | 2004 $TD_{323}$ |
| 2004 $TB_{325}$ | 17.3 | 0.15 | 20060922 | 64.19274 | 158.65066 | 24.16739 | 6.95204 | 0.0938535 | 2.2183407 | 44 | 3 | 2001–2006 | 0.58 | M-v | 3 | MPC | 00831 | 2004 $TB_{325}$ |
| 2004 $TC_{326}$ | 16.1 | 0.15 | 20060922 | 87.49212 | 102.16805 | 338.61840 | 13.25176 | 0.1493934 | 3.0366711 | 38 | 3 | 2001–2006 | 0.69 | M-v | 2 | MPC | 95579 | 2004 $TC_{326}$ |
| 2004 $TK_{328}$ | 16.5 | 0.15 | 20060922 | 178.58326 | 278.06122 | 96.93620 | 7.90235 | 0.1764770 | 2.5241815 | 38 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 73451 | 2004 $TK_{328}$ |
| 2004 $TO_{328}$ | 16.3 | 0.15 | 20060922 | 144.05209 | 304.06008 | 100.26001 | 5.84161 | 0.1877529 | 2.5482536 | 32 | 3 | 2000–2004 | 0.68 | M-v | 4 | MPC | 73451 | 2004 $TO_{328}$ |
| 2004 $TV_{332}$ | 18.0 | 0.15 | 20060922 | 139.82602 | 67.51527 | 29.38880 | 3.04899 | 0.1169448 | 2.4076391 | 35 | 4 | 2000–2006 | 0.28 | M-v | 0 | MPC | 00833 | 2004 $TV_{332}$ |
| 2004 $TO_{339}$ | 16.1 | 0.15 | 20060922 | 85.58092 | 254.88010 | 213.72601 | 5.10611 | 0.0890291 | 2.7038270 | 36 | 3 | 2002–2006 | 0.67 | M-v | 3 | MPC | 03644 | 2004 $TO_{339}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $TQ_{342}$ | 17.5 | 0.15 | 20060922 | 153.82223 | 38.57299 | 40.43730 | 13.43162 | 0.1699370 | 2.4457886 | 27 | 3 | 2000–2006 | 0.43 | M-v | 3 | MPC | 00834 | 2004 $TQ_{342}$ |
| 2004 $TR_{344}$ | 16.3 | 0.15 | 20060922 | 210.13835 | 298.99333 | 55.78003 | 4.76766 | 0.1603828 | 2.4149370 | 28 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 73459 | 2004 $TR_{344}$ |
| 2004 $TX_{344}$ | 15.2 | 0.15 | 20060922 | 166.50193 | 321.96159 | 46.90642 | 9.45219 | 0.1042592 | 3.0000078 | 39 | 2 | 2002–2004 | 0.57 | M-v | 3 | MPC | 97765 | 2004 $TX_{344}$ |
| 2004 $TB_{345}$ | 15.8 | 0.15 | 20060922 | 169.67758 | 357.22147 | 52.42808 | 15.50704 | 0.0937464 | 2.5657947 | 53 | 4 | 2000–2006 | 0.63 | M-v | 2 | MPC | 02223 | 2004 $TB_{345}$ |
| 2004 $TD_{345}$ | 16.3 | 0.15 | 20060922 | 157.54054 | 197.76868 | 207.90346 | 4.54254 | 0.2752967 | 2.6848903 | 79 | 4 | 1995–2006 | 0.56 | M-v | 2 | MPC | 02223 | 2004 $TD_{345}$ |
| 2004 $TF_{345}$ | 16.2 | 0.15 | 20060922 | 260.79195 | 116.97080 | 219.78761 | 6.57683 | 0.2281495 | 2.2097139 | 68 | 4 | 1996–2004 | 0.61 | M-v | 1 | MPC | 73462 | 2004 $TF_{345}$ |
| 2004 $TL_{347}$ | 17.4 | 0.15 | 20041022 | 347.51588 | 138.90688 | 269.87057 | 5.13049 | 0.1525658 | 2.2959125 | 18 | 1 | 31 days | 0.63 | | | MPC | | 2004 $TL_{347}$ |
| 2004 $TO_{349}$ | 17.0 | 0.15 | 20060922 | 168.71292 | 187.64249 | 191.75569 | 4.23886 | 0.2178534 | 2.6982087 | 26 | 3 | 1995–2006 | 0.47 | M-v | 3 | MPC | 76529 | 2004 $TO_{349}$ |
| 2004 $TA_{350}$ | 17.4 | 0.15 | 20060922 | 117.98640 | 240.95713 | 143.61147 | 2.65577 | 0.1077789 | 2.9164032 | 19 | 3 | 1999–2004 | 0.28 | M-v | 4 | MPC | 76529 | 2004 $TA_{350}$ |
| 2004 $TR_{351}$ | 17.9 | 0.15 | 20060922 | 49.23602 | 21.00628 | 186.32974 | 4.52713 | 0.0996627 | 2.2202049 | 47 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 02223 | 2004 $TR_{351}$ |
| 2004 $TU_{353}$ | 16.6 | 0.15 | 20060922 | 84.48813 | 83.62918 | 70.78544 | 5.60930 | 0.1930622 | 2.5483485 | 33 | 2 | 2004–2006 | 0.46 | M-v | 3 | MPC | 00835 | 2004 $TU_{353}$ |
| 2004 $TO_{354}$ | 17.1 | 0.15 | 20060922 | 121.67795 | 281.51207 | 139.08611 | 1.40289 | 0.1130322 | 3.0799663 | 25 | 3 | 2001–2006 | 0.28 | M-v | 3 | MPC | 00836 | 2004 $TO_{354}$ |
| 2004 $TV_{357}$ | 6.5 | 0.15 | 20060922 | 336.13408 | 201.90011 | 250.16490 | 9.77566 | 0.2740468 | 47.4796321 | 22 | 3 | 2004–2006 | 0.26 | M-v | 4 | MPC | 97765 | 2004 $TV_{357}$ |
| 2004 $TF_{359}$ | 15.2 | 0.15 | 20060922 | 76.86067 | 17.65886 | 29.25180 | 1.50408 | 0.1464582 | 3.9569740 | 28 | 4 | 1996–2006 | 0.47 | M-v | 0 | MPC | 00836 | 2004 $TF_{359}$ |
| 2004 $TA_{364}$ | 15.2 | 0.15 | 20060922 | 129.57212 | 260.22384 | 103.46312 | 3.51680 | 0.0166546 | 2.9434354 | 54 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 95584 | 2004 $TA_{364}$ |
| 2004 $TB_{367}$ | 18.1 | 0.15 | 20041022 | 36.42479 | 103.36838 | 231.73614 | 5.33562 | 0.2414909 | 2.2899452 | 16 | 1 | 31 days | 0.35 | | | MPC | | 2004 $TB_{367}$ |
| 2004 $TC_{367}$ | 17.8 | 0.15 | 20041022 | 9.57448 | 21.29265 | 356.74774 | 3.84834 | 0.1763660 | 2.2339239 | 17 | 1 | 46 days | 0.76 | | | MPC | | 2004 $TC_{367}$ |
| 2004 $TD_{367}$ | 17.1 | 0.15 | 20041022 | 16.67700 | 133.89411 | 240.14543 | 3.45550 | 0.1995875 | 2.5640243 | 17 | 1 | 46 days | 0.41 | | | MPC | | 2004 $TD_{367}$ |
| 2004 $TE_{367}$ | 15.2 | 0.15 | 20060922 | 168.98378 | 82.56057 | 283.33246 | 8.69437 | 0.1136523 | 2.9797069 | 20 | 1 | 67 days | 0.44 | M-v | 5 | MPC | | 2004 $TE_{367}$ |
| 2004 $TF_{367}$ | 18.1 | 0.15 | 20041022 | 27.58439 | 350.11201 | 2.86110 | 4.66913 | 0.2309819 | 2.2171360 | 19 | 1 | 34 days | 0.49 | | | MPC | | 2004 $TF_{367}$ |
| 2004 $TG_{367}$ | 17.4 | 0.15 | 20041022 | 351.05161 | 333.01354 | 76.94888 | 2.62438 | 0.1875485 | 2.4512577 | 17 | 1 | 44 days | 0.84 | | | MPC | | 2004 $TG_{367}$ |
| 2004 $TH_{367}$ | 16.1 | 0.15 | 20060922 | 121.14062 | 158.04917 | 298.16120 | 13.36837 | 0.2061929 | 2.5885894 | 20 | 1 | 69 days | 0.65 | M-v | 5 | MPC | | 2004 $TH_{367}$ |
| 2004 $TJ_{367}$ | 17.7 | 0.15 | 20041022 | 357.64620 | 41.12060 | 1.69299 | 2.16648 | 0.1808319 | 2.4026364 | 15 | 1 | 42 days | 0.39 | | | MPC | | 2004 $TJ_{367}$ |
| 2004 $TK_{367}$ | 17.5 | 0.15 | 20041111 | 344.77507 | 308.11156 | 107.36807 | 4.84655 | 0.1415431 | 2.3575968 | 17 | 1 | 56 days | 0.76 | | | MPC | | 2004 $TK_{367}$ |
| 2004 $TL_{367}$ | 15.5 | 0.15 | 20041022 | 22.79920 | 140.06109 | 227.69807 | 11.74094 | 0.1219284 | 2.9232021 | 19 | 1 | 40 days | 0.70 | | | MPC | | 2004 $TL_{367}$ |
| 2004 $TM_{367}$ | 16.6 | 0.15 | 20060922 | 176.21128 | 168.07005 | 245.30585 | 6.78015 | 0.0994021 | 2.3805947 | 21 | 1 | 69 days | 0.61 | M-v | 4 | MPC | | 2004 $TM_{367}$ |
| 2004 $TN_{367}$ | 17.3 | 0.15 | 20041111 | 2.13935 | 15.52672 | 31.47266 | 6.23030 | 0.1270361 | 2.3612467 | 18 | 1 | 50 days | 0.51 | | | MPC | | 2004 $TN_{367}$ |
| 2004 $TO_{367}$ | 15.4 | 0.15 | 20060922 | 168.45612 | 285.18348 | 54.12771 | 12.94618 | 0.3419706 | 3.0445358 | 20 | 1 | 66 days | 0.55 | M-v | 5 | MPC | | 2004 $TO_{367}$ |
| 2004 $UF_2$ | 14.6 | 0.15 | 20060922 | 66.39642 | 292.05406 | 145.74826 | 9.86860 | 0.0578702 | 3.1719591 | 43 | 5 | 1995–2006 | 0.65 | M-v | 1 | MPC | 97766 | 2004 $UF_2$ |
| 2004 $UP_2$ | 16.1 | 0.15 | 20060922 | 213.53695 | 248.75886 | 69.60698 | 10.50945 | 0.2078294 | 2.5458330 | 87 | 6 | 1992–2005 | 0.62 | M-v | 1 | MPC | 04310 | 2004 $UP_2$ |
| 2004 $UD_3$ | 16.8 | 0.15 | 20060922 | 187.56914 | 263.22707 | 149.26895 | 8.45794 | 0.1320973 | 2.2456000 | 62 | 5 | 1999–2006 | 0.68 | M-v | 2 | MPC | 02224 | 2004 $UD_3$ |
| 2004 $UG_6$ | 15.5 | 0.15 | 20060922 | 207.57971 | 270.83433 | 63.54104 | 5.68410 | 0.1305159 | 2.7743060 | 72 | 8 | 1993–2006 | 0.58 | M-v | 1 | MPC | 97766 | 2004 $UG_6$ |
| 2004 $UG_9$ | 16.0 | 0.15 | 20060922 | 278.64102 | 290.94281 | 10.26659 | 7.51411 | 0.1677683 | 2.3054345 | 29 | 2 | 2003–2004 | 0.67 | M-v | 4 | MPC | 73485 | 2004 $UG_9$ |
| 2004 $UP_{10}$ | 8.9 | 0.15 | 20060922 | 331.27059 | 3.87971 | 34.74240 | 1.43326 | 0.0246433 | 30.0728423 | 14 | 3 | 2004–2006 | 0.37 | M-v | 5 | MPC | 97766 | 2004 $UP_{10}$ |
| 2004 $UB_{11}$ | 17.2 | 0.15 | 20041111 | 358.69140 | 334.70708 | 63.35246 | 12.44621 | 0.2454810 | 2.3838397 | 20 | 1 | 47 days | 0.79 | | | MPC | | 2004 $UB_{11}$ |
| 2004 $UC_{11}$ | 17.6 | 0.15 | 20060922 | 153.70853 | 311.88986 | 108.34113 | 7.33431 | 0.3267618 | 2.5763650 | 21 | 1 | 144 days | 0.63 | M-v | 4 | MPC | | 2004 $UC_{11}$ |
| 2004 $UE_{11}$ | 17.1 | 0.15 | 20041111 | 10.87046 | 10.42666 | 28.38957 | 11.24257 | 0.1900883 | 2.3150608 | 20 | 1 | 51 days | 0.87 | | | MPC | | 2004 $UE_{11}$ |
| 2004 VJ | 17.0 | 0.15 | 20060922 | 226.78904 | 255.20814 | 110.25718 | 5.54718 | 0.1938849 | 2.2018525 | 52 | 3 | 2001–2004 | 0.60 | M-v | 2 | MPC | 73487 | 2004 VJ |
| 2004 VP | 21.0 | 0.15 | 20060922 | 286.32743 | 70.81841 | 45.93198 | 11.70599 | 0.4289329 | 1.6549509 | 79 | 1 | 154 days | 0.37 | M-v | 4 | MPC | 74426 | 2004 VP |
| 2004 $VU_3$ | 14.7 | 0.15 | 20060922 | 5.28489 | 114.96515 | 48.47982 | 17.03645 | 0.0353682 | 3.1308993 | 64 | 4 | 1996–2006 | 0.62 | M-v | 2 | MPC | 95590 | 2004 $VU_3$ |
| 2004 $VA_4$ | 15.9 | 0.15 | 20060922 | 83.11727 | 286.69169 | 225.46800 | 7.65257 | 0.0577206 | 2.2847074 | 39 | 2 | 2004–2006 | 0.54 | M-v | 3 | MPC | 00839 | 2004 $VA_4$ |
| 2004 $VT_6$ | 17.0 | 0.15 | 20060922 | 161.10611 | 328.38223 | 92.71252 | 4.08444 | 0.1342401 | 2.5210859 | 32 | 3 | 2000–2004 | 0.62 | M-v | 3 | MPC | 73496 | 2004 $VT_6$ |
| 2004 $VF_8$ | 17.3 | 0.15 | 20060922 | 163.67707 | 318.48955 | 107.30599 | 2.71007 | 0.1737918 | 2.4431771 | 41 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 02224 | 2004 $VF_8$ |
| 2004 $VG_{10}$ | 16.3 | 0.15 | 20060922 | 295.26320 | 228.74413 | 43.96014 | 6.62119 | 0.1245372 | 2.3989347 | 31 | 5 | 1999–2004 | 0.69 | M-v | 1 | MPC | 76531 | 2004 $VG_{10}$ |
| 2004 $VF_{12}$ | 15.3 | 0.15 | 20060922 | 119.27649 | 313.76242 | 102.37114 | 5.02847 | 0.1719994 | 3.0743526 | 51 | 6 | 1995–2006 | 0.55 | M-v | 1 | MPC | 97767 | 2004 $VF_{12}$ |
| 2004 $VJ_{14}$ | 16.1 | 0.15 | 20060922 | 179.91233 | 288.22783 | 82.40973 | 3.45995 | 0.2050559 | 2.7165636 | 48 | 4 | 1993–2006 | 0.48 | M-v | 1 | MPC | 03644 | 2004 $VJ_{14}$ |
| 2004 $VV_{14}$ | 16.9 | 0.15 | 20060922 | 162.51199 | 309.15509 | 140.83717 | 5.26824 | 0.1898017 | 2.3650874 | 48 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 00843 | 2004 $VV_{14}$ |
| 2004 $VL_{15}$ | 16.9 | 0.15 | 20060922 | 238.62606 | 203.34691 | 106.26713 | 5.84750 | 0.1595835 | 2.5260862 | 41 | 3 | 2003–2006 | 0.45 | M-v | 2 | MPC | 97768 | 2004 $VL_{15}$ |
| 2004 $VK_{16}$ | 17.8 | 0.15 | 20060922 | 189.79676 | 127.05731 | 278.78458 | 1.75966 | 0.1873584 | 2.3343312 | 34 | 3 | 2000–2004 | 0.50 | M-v | 3 | MPC | 03644 | 2004 $VK_{16}$ |
| 2004 $VE_{19}$ | 17.6 | 0.15 | 20060922 | 236.44593 | 271.40474 | 101.94821 | 1.10704 | 0.1889252 | 2.1639509 | 32 | 3 | 1998–2006 | 0.56 | M-v | 3 | MPC | 00844 | 2004 $VE_{19}$ |
| 2004 $VA_{22}$ | 16.2 | 0.15 | 20060922 | 215.32562 | 137.76869 | 206.03006 | 3.00818 | 0.2054637 | 2.5595666 | 56 | 3 | 2002–2006 | 0.52 | M-v | 4 | MPC | 00845 | 2004 $VA_{22}$ |
| 2004 $VD_{22}$ | 16.2 | 0.15 | 20041111 | 36.14482 | 306.08239 | 64.83382 | 15.75018 | 0.1402524 | 2.7096944 | 16 | 1 | 45 days | 0.51 | | | MPC | 00845 | 2004 $VD_{22}$ |
| 2004 $VE_{22}$ | 16.4 | 0.15 | 20060922 | 145.43790 | 20.21503 | 85.07361 | 4.08676 | 0.1337712 | 2.3785363 | 46 | 5 | 1993–2006 | 0.64 | M-v | 1 | MPC | 02225 | 2004 $VE_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $VJ_{22}$ | 17.1 | 0.15 | 20060922 | 168.02946 | 89.92843 | 359.71361 | 2.14742 | 0.1637970 | 2.3366327 | 50 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 00845 | 2004 $VJ_{22}$ |
| 2004 $VR_{22}$ | 15.1 | 0.15 | 20060922 | 159.78354 | 115.73773 | 242.16931 | 7.56854 | 0.1449171 | 3.1890739 | 29 | 4 | 1998–2004 | 0.56 | M-v | 1 | MPC | 73518 | 2004 $VR_{22}$ |
| 2004 $VV_{22}$ | 15.2 | 0.15 | 20060922 | 136.35691 | 166.57466 | 227.21327 | 3.43560 | 0.1460407 | 3.1576452 | 50 | 4 | 1998–2006 | 0.57 | M-v | 0 | MPC | 97768 | 2004 $VV_{22}$ |
| 2004 $VL_{29}$ | 16.9 | 0.15 | 20060922 | 59.26597 | 112.71087 | 70.75176 | 3.72929 | 0.0913014 | 2.3592329 | 49 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 00846 | 2004 $VL_{29}$ |
| 2004 $VV_{29}$ | 18.0 | 0.15 | 20060922 | 169.80312 | 291.62132 | 125.58647 | 1.35202 | 0.2331679 | 2.4567089 | 30 | 3 | 1996–2004 | 0.59 | M-v | 3 | MPC | 73531 | 2004 $VV_{29}$ |
| 2004 $VE_{31}$ | 15.7 | 0.15 | 20060922 | 37.83222 | 47.92631 | 97.23397 | 3.64360 | 0.0363568 | 3.0420318 | 30 | 3 | 1999–2006 | 0.36 | M-v | 3 | MPC | 95598 | 2004 $VE_{31}$ |
| 2004 $VQ_{33}$ | 16.6 | 0.15 | 20060922 | 213.17034 | 165.31311 | 172.69372 | 4.10877 | 0.1411562 | 2.6610214 | 19 | 3 | 2002–2006 | 0.30 | M-v | 3 | MPC | 03645 | 2004 $VQ_{33}$ |
| 2004 $VL_{37}$ | 16.7 | 0.15 | 20060922 | 106.86868 | 218.50243 | 238.69046 | 2.83611 | 0.0684103 | 2.7505088 | 30 | 2 | 2004–2006 | 0.21 | M-v | 2 | MPC | 95599 | 2004 $VL_{37}$ |
| 2004 $VO_{37}$ | 16.5 | 0.15 | 20060922 | 223.51036 | 271.34331 | 54.27530 | 1.12505 | 0.0728711 | 2.7684933 | 36 | 3 | 1999–2006 | 0.23 | M-v | 2 | MPC | 02225 | 2004 $VO_{37}$ |
| 2004 $VV_{39}$ | 16.2 | 0.15 | 20060922 | 59.84634 | 309.28470 | 171.66507 | 2.14654 | 0.0437711 | 3.1167740 | 43 | 5 | 1996–2006 | 0.40 | M-v | 1 | MPC | 02225 | 2004 $VV_{39}$ |
| 2004 $VE_{43}$ | 17.1 | 0.15 | 20060922 | 332.20156 | 25.36688 | 221.26191 | 2.09118 | 0.1483998 | 2.4510686 | 41 | 4 | 1995–2006 | 0.34 | M-v | 2 | MPC | 95601 | 2004 $VE_{43}$ |
| 2004 $VP_{43}$ | 18.0 | 0.15 | 20060922 | 141.86472 | 46.90120 | 68.82088 | 8.20720 | 0.1059521 | 2.2836968 | 23 | 3 | 2002–2006 | 0.71 | M-v | 2 | MPC | 00848 | 2004 $VP_{43}$ |
| 2004 $VM_{45}$ | 17.3 | 0.15 | 20060922 | 159.12027 | 308.61722 | 90.81155 | 5.57788 | 0.1047710 | 2.7624488 | 19 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 95601 | 2004 $VM_{45}$ |
| 2004 $VP_{47}$ | 16.2 | 0.15 | 20060922 | 179.17014 | 201.41818 | 175.40668 | 4.54660 | 0.0872349 | 2.7970526 | 32 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 00849 | 2004 $VP_{47}$ |
| 2004 $VD_{54}$ | 15.7 | 0.15 | 20060922 | 165.13824 | 69.39315 | 309.66849 | 10.50125 | 0.0557743 | 2.7517537 | 33 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 03645 | 2004 $VD_{54}$ |
| 2004 $VC_{55}$ | 17.2 | 0.15 | 20060922 | 265.55310 | 256.21299 | 42.42933 | 3.43077 | 0.1781216 | 2.4031698 | 41 | 4 | 2000–2004 | 0.58 | M-v | 0 | MPC | 77792 | 2004 $VC_{55}$ |
| 2004 $VY_{56}$ | 16.6 | 0.15 | 20060922 | 200.71961 | 21.10378 | 329.17982 | 3.98760 | 0.1236849 | 2.7177551 | 30 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 95604 | 2004 $VY_{56}$ |
| 2004 $VX_{57}$ | 16.7 | 0.15 | 20060922 | 195.56588 | 319.67831 | 87.50960 | 3.50154 | 0.1833696 | 2.3671927 | 62 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 00850 | 2004 $VX_{57}$ |
| 2004 $VX_{63}$ | 17.4 | 0.15 | 20060922 | 196.89220 | 244.88691 | 167.22243 | 2.43437 | 0.1341449 | 2.3016371 | 22 | 2 | 2004–2006 | 0.41 | M-v | 6 | MPC | 00851 | 2004 $VX_{63}$ |
| 2004 $VE_{65}$ | 15.2 | 0.15 | 20060922 | 64.65256 | 55.63597 | 79.47944 | 11.05101 | 0.1795274 | 3.1715475 | 57 | 3 | 2001–2006 | 0.68 | M-v | 2 | MPC | 02226 | 2004 $VE_{65}$ |
| 2004 $VP_{65}$ | 14.8 | 0.15 | 20060922 | 106.14174 | 14.36835 | 56.00759 | 7.00858 | 0.1176938 | 3.2184756 | 40 | 3 | 1995–2006 | 0.52 | M-v | 3 | MPC | 97771 | 2004 $VP_{65}$ |
| 2004 $VR_{65}$ | 15.5 | 0.15 | 20060922 | 144.07512 | 203.13449 | 172.52713 | 4.53535 | 0.1395284 | 3.1282970 | 41 | 3 | 1998–2006 | 0.66 | M-v | 3 | MPC | 95607 | 2004 $VR_{65}$ |
| 2004 $VA_{70}$ | 15.8 | 0.15 | 20060922 | 161.90639 | 59.40715 | 345.23762 | 4.24769 | 0.1034950 | 2.8747623 | 56 | 5 | 2001–2006 | 0.42 | M-v | 1 | MPC | 02227 | 2004 $VA_{70}$ |
| 2004 $VS_{74}$ | 15.8 | 0.15 | 20060922 | 121.25915 | 309.18941 | 101.12762 | 6.31841 | 0.1710295 | 3.1626945 | 35 | 3 | 1998–2006 | 0.52 | M-v | 3 | MPC | 00853 | 2004 $VS_{74}$ |
| 2004 $VZ_{74}$ | 16.3 | 0.15 | 20060922 | 123.02187 | 314.63334 | 93.95200 | 2.34325 | 0.2813993 | 3.0657027 | 26 | 4 | 1995–2005 | 0.48 | M-v | 1 | MPC | 73563 | 2004 $VZ_{74}$ |
| 2004 $VT_{75}$ | 6.1 | 0.15 | 20060922 | 62.36874 | 271.19872 | 26.59983 | 12.86805 | 0.2098361 | 39.1555312 | 18 | 3 | 2004–2006 | 0.24 | M-v | 4 | MPC | 86590 | 2004 $VT_{75}$ |
| 2004 $VD_{77}$ | 16.2 | 0.15 | 20060922 | 143.04503 | 65.09149 | 324.36528 | 1.01471 | 0.1110079 | 3.0446687 | 28 | 4 | 1995–2006 | 0.38 | M-v | 1 | MPC | 02227 | 2004 $VD_{77}$ |
| 2004 $VY_{77}$ | 17.2 | 0.15 | 20060922 | 166.76052 | 125.62379 | 296.59203 | 6.49936 | 0.0647315 | 2.2951522 | 41 | 3 | 1993–2004 | 0.71 | M-v | 3 | MPC | 73567 | 2004 $VY_{77}$ |
| 2004 $VQ_{78}$ | 16.0 | 0.15 | 20060922 | 292.80189 | 17.66351 | 243.84907 | 8.58982 | 0.0582896 | 2.5908752 | 36 | 5 | 1995–2006 | 0.62 | M-v | 1 | MPC | 97771 | 2004 $VQ_{78}$ |
| 2004 $VL_{80}$ | 16.1 | 0.15 | 20060922 | 115.89931 | 270.60342 | 199.46491 | 8.59737 | 0.1587502 | 2.6268777 | 29 | 3 | 2003–2006 | 0.57 | M-v | 3 | MPC | 00854 | 2004 $VL_{80}$ |
| 2004 $VU_{81}$ | 17.7 | 0.15 | 20060922 | 178.35338 | 359.97916 | 58.44762 | 4.44437 | 0.1254235 | 2.3492223 | 28 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 00854 | 2004 $VU_{81}$ |
| 2004 $VP_{84}$ | 16.7 | 0.15 | 20060922 | 25.99373 | 29.89457 | 197.80180 | 5.30845 | 0.1233367 | 2.2188561 | 52 | 4 | 1996–2006 | 0.48 | M-v | 1 | MPC | 00855 | 2004 $VP_{84}$ |
| 2004 $VN_{86}$ | 17.4 | 0.15 | 20060922 | 216.59793 | 264.82637 | 77.26021 | 3.63402 | 0.2681843 | 2.5338933 | 18 | 3 | 2000–2004 | 0.22 | M-v | 2 | MPC | 76538 | 2004 $VN_{86}$ |
| 2004 $VC_{88}$ | 16.8 | 0.15 | 20060922 | 342.96436 | 283.79758 | 300.47020 | 3.09661 | 0.0415381 | 2.7025205 | 23 | 2 | 2004–2006 | 0.33 | M-v | 4 | MPC | 00856 | 2004 $VC_{88}$ |
| 2004 $VH_{105}$ | 18.9 | 0.15 | 20060922 | 69.92742 | 148.17631 | 41.22185 | 5.33229 | 0.0860276 | 2.1802885 | 22 | 2 | 2004–2006 | 0.18 | M-v | 4 | MPC | 00857 | 2004 $VH_{105}$ |
| 2004 $VD_{112}$ | 15.7 | 0.15 | 20041201 | 24.79148 | 302.90146 | 82.07446 | 14.12273 | 0.1917732 | 2.7008873 | 16 | 1 | 45 days | 0.61 | | | MPC | | 2004 $VD_{112}$ |
| 2004 $VE_{112}$ | 17.2 | 0.15 | 20041201 | 355.81804 | 346.98073 | 79.59975 | 6.09000 | 0.2158796 | 2.3187758 | 22 | 1 | 41 days | 0.70 | | | MPC | | 2004 $VE_{112}$ |
| 2004 $VG_{112}$ | 16.0 | 0.15 | 20060922 | 94.48989 | 190.72514 | 266.28470 | 4.89139 | 0.2535567 | 3.1758396 | 18 | 1 | 122 days | 0.50 | M-v | 4 | MPC | | 2004 $VG_{112}$ |
| 2004 $VH_{112}$ | 15.2 | 0.15 | 20041201 | 329.58268 | 66.48270 | 38.34696 | 11.09165 | 0.0682694 | 3.0060835 | 19 | 1 | 39 days | 0.62 | | | MPC | | 2004 $VH_{112}$ |
| 2004 WT | 17.8 | 0.15 | 20060922 | 182.97435 | 342.38110 | 90.88125 | 5.81612 | 0.1275615 | 2.2448838 | 25 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 00857 | 2004 WT |
| 2004 $WZ_1$ | 17.3 | 0.15 | 20060922 | 130.93205 | 58.62414 | 61.46332 | 10.13580 | 0.0503171 | 2.3252825 | 30 | 3 | 2002–2006 | 0.31 | M-v | 2 | MPC | 00859 | 2004 $WZ_1$ |
| 2004 $WX_2$ | 16.7 | 0.15 | 20060922 | 179.00069 | 255.57547 | 122.43404 | 3.31166 | 0.1201344 | 2.6698036 | 37 | 3 | 1995–2006 | 0.40 | M-v | 3 | MPC | 95614 | 2004 $WX_2$ |
| 2004 $WB_3$ | 16.2 | 0.15 | 20060922 | 101.91735 | 48.09154 | 88.57455 | 6.55300 | 0.2227325 | 2.5712794 | 42 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 00859 | 2004 $WB_3$ |
| 2004 $WG_5$ | 15.7 | 0.15 | 20060922 | 188.09900 | 272.32404 | 89.64519 | 5.07428 | 0.1321038 | 2.7513260 | 50 | 5 | 1999–2006 | 0.70 | M-v | 1 | MPC | 97772 | 2004 $WG_5$ |
| 2004 $WT_5$ | 18.3 | 0.15 | 20060922 | 131.82921 | 277.67872 | 204.00961 | 1.79789 | 0.1433860 | 2.3629333 | 22 | 4 | 2000–2006 | 0.30 | M-v | 0 | MPC | 00860 | 2004 $WT_5$ |
| 2004 $WU_9$ | 15.6 | 0.15 | 20060922 | 193.65747 | 257.81895 | 128.48099 | 12.01531 | 0.0900012 | 2.5768665 | 33 | 4 | 2001–2006 | 0.67 | M-v | 2 | MPC | 00861 | 2004 $WU_9$ |
| 2004 $WF_{10}$ | 15.8 | 0.15 | 20060922 | 95.38492 | 151.63042 | 304.23054 | 3.90414 | 0.1160830 | 3.2087784 | 26 | 3 | 2003–2006 | 0.44 | M-v | 2 | MPC | 02228 | 2004 $WF_{10}$ |
| 2004 $WL_{10}$ | 15.9 | 0.15 | 20060922 | 89.77169 | 270.03543 | 256.13854 | 11.19253 | 0.1378297 | 2.4073073 | 20 | 2 | 2004–2006 | 0.41 | M-v | 3 | MPC | 00861 | 2004 $WL_{10}$ |
| 2004 $WR_{11}$ | 15.8 | 0.15 | 20060922 | 222.03630 | 298.43663 | 16.38288 | 1.76069 | 0.0580624 | 3.0749131 | 34 | 5 | 1998–2006 | 0.28 | M-v | 0 | MPC | 95614 | 2004 $WR_{11}$ |
| 2004 $WM_{12}$ | 16.7 | 0.15 | 20041221 | 19.63248 | 252.58539 | 144.44972 | 13.10305 | 0.2729723 | 2.6328134 | 20 | 1 | 55 days | 0.75 | | | MPC | | 2004 $WM_{12}$ |
| 2004 $WN_{12}$ | 15.5 | 0.15 | 20060922 | 119.09845 | 63.36082 | 84.07784 | 13.47760 | 0.1815897 | 2.7044429 | 23 | 1 | 117 days | 0.62 | M-v | 4 | MPC | | 2004 $WN_{12}$ |
| 2004 $XC_2$ | 15.8 | 0.15 | 20060922 | 146.97886 | 107.38081 | 321.73523 | 8.26961 | 0.1487105 | 2.7593520 | 44 | 4 | 1999–2004 | 0.55 | M-v | 1 | MPC | 73584 | 2004 $XC_2$ |
| 2004 $XC_5$ | 16.5 | 0.15 | 20060922 | 134.29800 | 36.44351 | 51.04769 | 5.69727 | 0.1377669 | 2.7018749 | 24 | 3 | 2002–2006 | 0.47 | M-v | 4 | MPC | 00863 | 2004 $XC_5$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $XJ_{5}$ | 14.8 | 0.15 | 20060922 | 217.53136 | 253.83516 | 61.10052 | 22.69096 | 0.0798748 | 3.2328149 | 29 | 2 | 1998–2005 | 0.60 | M-v | 4 | MPC | 73589 | 2004 $XJ_{5}$ |
| 2004 $XW_{5}$ | 16.8 | 0.15 | 20060922 | 118.29720 | 91.92336 | 71.01676 | 21.93068 | 0.2077080 | 2.3130882 | 40 | 2 | 2002–2004 | 0.52 | M-v | 2 | MPC | 73591 | 2004 $XW_{5}$ |
| 2004 $XX_{7}$ | 15.9 | 0.15 | 20060922 | 202.92944 | 299.13514 | 88.72312 | 15.26584 | 0.0767420 | 2.5467956 | 37 | 4 | 2000–2006 | 0.50 | M-v | 3 | MPC | 73594 | 2004 $XX_{7}$ |
| 2004 $XB_{8}$ | 17.2 | 0.15 | 20060922 | 195.18076 | 223.88762 | 200.71947 | 5.73085 | 0.1164304 | 2.2365576 | 41 | 4 | 1996–2006 | 0.56 | M-v | 1 | MPC | 00864 | 2004 $XB_{8}$ |
| 2004 $XW_{9}$ | 16.3 | 0.15 | 20060922 | 147.87839 | 346.38988 | 54.25469 | 4.55529 | 0.1648921 | 3.0212569 | 37 | 2 | 2004–2006 | 0.53 | M-v | 3 | MPC | 95617 | 2004 $XW_{9}$ |
| 2004 $XW_{11}$ | 15.4 | 0.15 | 20060922 | 154.43601 | 250.65116 | 189.74060 | 13.30392 | 0.1456911 | 2.5901366 | 47 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 00865 | 2004 $XW_{11}$ |
| 2004 $XN_{12}$ | 14.9 | 0.15 | 20060922 | 53.13874 | 266.41097 | 253.03091 | 9.51354 | 0.1372878 | 3.1088839 | 60 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 02229 | 2004 $XN_{12}$ |
| 2004 $XF_{13}$ | 15.6 | 0.15 | 20060922 | 119.30845 | 17.63231 | 64.82746 | 2.87603 | 0.0755519 | 2.9939008 | 54 | 4 | 1996–2006 | 0.54 | M-v | 2 | MPC | 00865 | 2004 $XF_{13}$ |
| 2004 $XP_{14}$ | 19.4 | 0.15 | 20060922 | 142.38082 | 273.68271 | 281.07016 | 32.95090 | 0.1585143 | 1.0515213 | 974 | 2 | 2004–2006 | 0.49 | M-v | 2 | MPC | 04310 | 2004 $XP_{14}$ |
| 2004 $XH_{15}$ | 17.1 | 0.15 | 20060922 | 257.46467 | 269.63975 | 82.84747 | 7.46246 | 0.1582490 | 2.2560745 | 30 | 2 | 2003–2005 | 0.48 | M-v | 4 | MPC | 73605 | 2004 $XH_{15}$ |
| 2004 $XV_{17}$ | 15.0 | 0.15 | 20060922 | 164.47563 | 225.43503 | 145.82018 | 17.37020 | 0.1538146 | 3.0906525 | 43 | 3 | 1995–2006 | 0.55 | M-v | 3 | MPC | 95618 | 2004 $XV_{17}$ |
| 2004 $XD_{25}$ | 16.5 | 0.15 | 20060922 | 200.69617 | 331.26239 | 102.15702 | 7.70241 | 0.1770380 | 2.3007252 | 56 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 03646 | 2004 $XD_{25}$ |
| 2004 $XS_{27}$ | 15.9 | 0.15 | 20060922 | 53.54519 | 48.52658 | 102.03003 | 2.52510 | 0.1143612 | 3.1741199 | 41 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 04310 | 2004 $XS_{27}$ |
| 2004 $XU_{28}$ | 15.7 | 0.15 | 20060922 | 22.95855 | 89.20300 | 123.81295 | 11.37463 | 0.0238674 | 2.9876501 | 31 | 4 | 2000–2005 | 0.44 | M-v | 0 | MPC | 89609 | 2004 $XU_{28}$ |
| 2004 $XE_{30}$ | 17.1 | 0.15 | 20060922 | 202.03573 | 151.32143 | 206.50417 | 0.93093 | 0.2478709 | 2.5414662 | 30 | 4 | 2000–2004 | 0.46 | M-v | 2 | MPC | 03646 | 2004 $XE_{30}$ |
| 2004 $XU_{30}$ | 17.4 | 0.15 | 20060922 | 323.86621 | 309.31978 | 32.85115 | 21.14332 | 0.0847395 | 1.9234302 | 30 | 3 | 2001–2004 | 0.60 | M-v | 3 | MPC | 95620 | 2004 $XU_{30}$ |
| 2004 $XY_{33}$ | 15.8 | 0.15 | 20060922 | 301.13613 | 213.75645 | 80.60158 | 16.29446 | 0.1232519 | 2.4618965 | 41 | 5 | 1996–2006 | 0.64 | M-v | 1 | MPC | 00872 | 2004 $XY_{33}$ |
| 2004 $XB_{35}$ | 15.0 | 0.15 | 20060922 | 119.65945 | 12.28703 | 91.33251 | 14.25449 | 0.0403201 | 2.9931027 | 32 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 00872 | 2004 $XB_{35}$ |
| 2004 $XN_{35}$ | 18.5 | 0.15 | 20060922 | 17.51395 | 189.87795 | 133.03867 | 9.81572 | 0.6798472 | 1.5059310 | 101 | 4 | 1998–2006 | 0.47 | M-v | 2 | MPC | 95621 | 2004 $XN_{35}$ |
| 2004 $XX_{35}$ | 16.9 | 0.15 | 20060922 | 176.88942 | 209.89519 | 184.88321 | 11.92379 | 0.1902852 | 2.6220523 | 55 | 2 | 2004–2006 | 0.68 | M-v | 4 | MPC | 03647 | 2004 $XX_{35}$ |
| 2004 $XG_{38}$ | 15.5 | 0.15 | 20060922 | 116.75167 | 300.11722 | 138.55972 | 15.10709 | 0.1717889 | 3.0071880 | 36 | 3 | 2003–2006 | 0.59 | M-v | 3 | MPC | 00873 | 2004 $XG_{38}$ |
| 2004 $XE_{39}$ | 16.1 | 0.15 | 20060922 | 193.79792 | 228.37961 | 138.79214 | 13.94572 | 0.2045521 | 2.6285621 | 18 | 3 | 1995–2005 | 0.49 | M-v | 4 | MPC | 73630 | 2004 $XE_{39}$ |
| 2004 $XQ_{40}$ | 15.9 | 0.15 | 20060922 | 167.20415 | 320.29049 | 60.22876 | 2.02855 | 0.0802376 | 3.1385959 | 36 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | 02230 | 2004 $XQ_{40}$ |
| 2004 $XC_{41}$ | 17.0 | 0.15 | 20060922 | 223.40259 | 148.00156 | 274.86479 | 1.55449 | 0.1366708 | 2.2113954 | 73 | 3 | 2002–2006 | 0.54 | M-v | 4 | MPC | 73632 | 2004 $XC_{41}$ |
| 2004 $XU_{41}$ | 17.3 | 0.15 | 20060922 | 212.33170 | 288.93306 | 191.13046 | 3.39415 | 0.0269189 | 2.0206295 | 44 | 3 | 2002–2006 | 0.62 | M-v | 3 | MPC | 03647 | 2004 $XU_{41}$ |
| 2004 $XB_{44}$ | 16.5 | 0.15 | 20060922 | 164.54572 | 132.74553 | 249.70589 | 2.89614 | 0.1237213 | 2.9840007 | 23 | 4 | 1996–2004 | 0.34 | M-v | 0 | MPC | 73633 | 2004 $XB_{44}$ |
| 2004 $XJ_{44}$ | 15.8 | 0.15 | 20060922 | 235.67623 | 278.93571 | 89.42959 | 7.12498 | 0.0475728 | 2.7122278 | 29 | 2 | 2003–2005 | 0.38 | M-v | 3 | MPC | 00875 | 2004 $XJ_{44}$ |
| 2004 $XN_{48}$ | 16.8 | 0.15 | 20060922 | 285.09851 | 227.01446 | 93.23252 | 2.70324 | 0.1634761 | 2.4352805 | 25 | 3 | 1995–2006 | 0.38 | M-v | 3 | MPC | 00875 | 2004 $XN_{48}$ |
| 2004 $XH_{49}$ | 16.6 | 0.15 | 20060922 | 217.39843 | 311.40524 | 67.06937 | 5.83309 | 0.1161928 | 2.6184911 | 24 | 5 | 1991–2006 | 0.68 | M-v | 2 | MPC | 04311 | 2004 $XH_{49}$ |
| 2004 $XT_{51}$ | 16.8 | 0.15 | 20060922 | 155.15033 | 205.83001 | 243.34177 | 5.33386 | 0.0561106 | 2.4177364 | 24 | 3 | 1996–2006 | 0.28 | M-v | 3 | MPC | 00875 | 2004 $XT_{51}$ |
| 2004 $XV_{51}$ | 14.9 | 0.15 | 20060922 | 109.56970 | 231.84706 | 328.30439 | 30.98358 | 0.2375857 | 2.6329269 | 98 | 3 | 2002–2006 | 0.62 | M-v | 2 | MPC | 04311 | 2004 $XV_{51}$ |
| 2004 $XO_{53}$ | 15.6 | 0.15 | 20060922 | 162.94847 | 315.60268 | 87.50274 | 2.53376 | 0.0537539 | 2.9796553 | 36 | 3 | 2003–2006 | 0.33 | M-v | 3 | MPC | 02231 | 2004 $XO_{53}$ |
| 2004 $XK_{61}$ | 16.5 | 0.15 | 20060922 | 271.27480 | 30.14639 | 314.08388 | 5.65215 | 0.3101635 | 2.1927062 | 38 | 4 | 1999–2006 | 0.52 | M-v | 2 | MPC | 73642 | 2004 $XK_{61}$ |
| 2004 $XR_{62}$ | 15.9 | 0.15 | 20060922 | 133.14300 | 305.92291 | 102.38533 | 3.27575 | 0.2058822 | 3.0835821 | 29 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 00876 | 2004 $XR_{62}$ |
| 2004 $XT_{62}$ | 17.3 | 0.15 | 20060922 | 222.91724 | 199.45435 | 172.79665 | 1.50227 | 0.2234505 | 2.3063885 | 20 | 3 | 1995–2004 | 0.50 | M-v | 5 | MPC | 89610 | 2004 $XT_{62}$ |
| 2004 $XZ_{62}$ | 17.6 | 0.15 | 20060922 | 19.74915 | 174.50728 | 76.38463 | 4.33031 | 0.0864566 | 2.2475344 | 32 | 4 | 1997–2006 | 0.33 | M-v | 1 | MPC | 00876 | 2004 $XZ_{62}$ |
| 2004 $XO_{68}$ | 15.6 | 0.15 | 20060922 | 168.93442 | 168.70076 | 193.56241 | 16.12757 | 0.0539204 | 3.1921620 | 30 | 4 | 2001–2004 | 0.63 | M-v | 1 | MPC | 73647 | 2004 $XO_{68}$ |
| 2004 $XU_{68}$ | 15.5 | 0.15 | 20060922 | 113.46418 | 1.70697 | 80.01579 | 9.26232 | 0.0614632 | 3.0465170 | 36 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 95624 | 2004 $XU_{68}$ |
| 2004 $XK_{69}$ | 17.1 | 0.15 | 20060922 | 168.83816 | 199.21368 | 231.40048 | 4.88932 | 0.1592686 | 2.4370167 | 28 | 3 | 2000–2006 | 0.49 | M-v | 3 | MPC | 03649 | 2004 $XK_{69}$ |
| 2004 $XA_{70}$ | 16.4 | 0.15 | 20060922 | 237.52414 | 308.96432 | 11.65047 | 4.03638 | 0.2898981 | 2.6046435 | 16 | 3 | 2002–2006 | 0.15 | M-v | 4 | MPC | 95624 | 2004 $XA_{70}$ |
| 2004 $XE_{71}$ | 15.3 | 0.15 | 20060922 | 112.09472 | 248.20063 | 256.34059 | 13.07266 | 0.1461734 | 2.7271436 | 29 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 03649 | 2004 $XE_{71}$ |
| 2004 $XY_{76}$ | 16.8 | 0.15 | 20060922 | 180.35494 | 147.53046 | 266.69743 | 1.61237 | 0.1884467 | 2.4376429 | 43 | 3 | 1994–2004 | 0.45 | M-v | 3 | MPC | 73655 | 2004 $XY_{76}$ |
| 2004 $XU_{77}$ | 16.8 | 0.15 | 20060922 | 114.78558 | 106.37349 | 45.06423 | 1.99350 | 0.1253127 | 2.3643278 | 38 | 4 | 2002–2006 | 0.66 | M-v | 1 | MPC | 73656 | 2004 $XU_{77}$ |
| 2004 $XV_{77}$ | 17.2 | 0.15 | 20060922 | 152.43905 | 8.10211 | 76.38249 | 7.84879 | 0.1300254 | 2.5393044 | 23 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 00879 | 2004 $XV_{77}$ |
| 2004 $XO_{79}$ | 15.3 | 0.15 | 20060922 | 128.17432 | 352.51021 | 98.87711 | 6.14864 | 0.0323495 | 2.7799906 | 24 | 3 | 2001–2005 | 0.48 | M-v | 3 | MPC | 73658 | 2004 $XO_{79}$ |
| 2004 $XY_{81}$ | 15.2 | 0.15 | 20060922 | 163.71656 | 338.72541 | 98.21178 | 16.15043 | 0.0658986 | 2.6490214 | 45 | 4 | 2001–2006 | 0.59 | M-v | 2 | MPC | 00880 | 2004 $XY_{81}$ |
| 2004 $XZ_{82}$ | 15.7 | 0.15 | 20060922 | 240.65710 | 259.08920 | 73.37076 | 3.00478 | 0.0404342 | 2.8359903 | 53 | 6 | 1995–2006 | 0.61 | M-v | 0 | MPC | 00881 | 2004 $XZ_{82}$ |
| 2004 $XR_{83}$ | 14.3 | 0.15 | 20060922 | 243.08064 | 232.75214 | 91.21142 | 11.12386 | 0.0825462 | 3.0375461 | 34 | 4 | 2000–2006 | 0.72 | M-v | 1 | MPC | 73661 | 2004 $XR_{83}$ |
| 2004 $XD_{87}$ | 16.2 | 0.15 | 20060922 | 137.59477 | 252.04352 | 146.76946 | 2.86529 | 0.1621234 | 3.0985112 | 25 | 3 | 2001–2006 | 0.59 | M-v | 4 | MPC | 95626 | 2004 $XD_{87}$ |
| 2004 $XJ_{88}$ | 16.8 | 0.15 | 20060922 | 135.29487 | 0.30752 | 91.13356 | 3.60580 | 0.1013918 | 2.5756436 | 31 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 00882 | 2004 $XJ_{88}$ |
| 2004 $XK_{88}$ | 16.1 | 0.15 | 20060922 | 157.94451 | 47.72377 | 38.63097 | 2.41130 | 0.1186724 | 2.5231264 | 71 | 4 | 1994–2006 | 0.45 | M-v | 4 | MPC | 04311 | 2004 $XK_{88}$ |
| 2004 $XY_{88}$ | 15.6 | 0.15 | 20060922 | 236.66488 | 77.79577 | 273.53824 | 3.99482 | 0.0762789 | 2.7308462 | 43 | 2 | 2003–2004 | 0.54 | M-v | 4 | MPC | 95627 | 2004 $XY_{88}$ |
| 2004 $XL_{89}$ | 16.8 | 0.15 | 20060922 | 354.29730 | 302.66618 | 335.76922 | 2.93664 | 0.1539937 | 2.1619471 | 41 | 5 | 1997–2006 | 0.36 | M-v | 2 | MPC | 00882 | 2004 $XL_{89}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $XF_{92}$ | 17.1 | 0.15 | 20060922 | 197.24419 | 30.63409 | 33.18161 | 5.68779 | 0.1330381 | 2.2618384 | 42 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 00882 | 2004 $XF_{92}$ |
| 2004 $XL_{92}$ | 14.6 | 0.15 | 20060922 | 165.07010 | 300.59884 | 72.81165 | 24.43072 | 0.1957644 | 3.1074618 | 49 | 3 | 2000–2005 | 0.60 | M-v | 2 | MPC | 73667 | 2004 $XL_{92}$ |
| 2004 $XS_{92}$ | 17.1 | 0.15 | 20060922 | 211.92417 | 17.19758 | 9.54440 | 3.74141 | 0.1866810 | 2.3471335 | 31 | 3 | 2000–2004 | 0.68 | M-v | 4 | MPC | 03650 | 2004 $XS_{92}$ |
| 2004 $XV_{92}$ | 17.0 | 0.15 | 20060922 | 150.98947 | 82.46973 | 10.80020 | 2.92338 | 0.1437899 | 2.4732073 | 31 | 4 | 2000–2006 | 0.34 | M-v | 2 | MPC | 03650 | 2004 $XV_{92}$ |
| 2004 $XZ_{96}$ | 16.2 | 0.15 | 20060922 | 203.64040 | 335.25770 | 58.88155 | 4.45257 | 0.1269228 | 2.6296686 | 47 | 3 | 2003–2006 | 0.41 | M-v | 2 | MPC | 00883 | 2004 $XZ_{96}$ |
| 2004 $XC_{99}$ | 15.1 | 0.15 | 20060922 | 88.44222 | 40.67397 | 92.69212 | 9.02710 | 0.1252897 | 3.1532452 | 36 | 5 | 1998–2005 | 0.62 | M-v | 1 | MPC | 73670 | 2004 $XC_{99}$ |
| 2004 $XB_{100}$ | 16.7 | 0.15 | 20060922 | 217.11135 | 194.55600 | 197.59848 | 0.82919 | 0.1829315 | 2.4294850 | 47 | 4 | 1996–2006 | 0.60 | M-v | 4 | MPC | 00884 | 2004 $XB_{100}$ |
| 2004 $XL_{100}$ | 15.1 | 0.15 | 20060922 | 114.35193 | 349.87707 | 109.33055 | 13.48373 | 0.0837069 | 3.2187526 | 47 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 00884 | 2004 $XL_{100}$ |
| 2004 $XN_{101}$ | 16.0 | 0.15 | 20060922 | 233.33875 | 63.25575 | 274.07385 | 3.28436 | 0.0775774 | 2.8047528 | 39 | 4 | 1994–2006 | 0.49 | M-v | 0 | MPC | 04311 | 2004 $XN_{101}$ |
| 2004 $XN_{103}$ | 16.4 | 0.15 | 20060922 | 193.69447 | 0.79223 | 29.70020 | 2.78161 | 0.1771882 | 2.5403227 | 32 | 2 | 2004–2006 | 0.43 | M-v | 4 | MPC | 00885 | 2004 $XN_{103}$ |
| 2004 $XS_{106}$ | 16.0 | 0.15 | 20060922 | 54.71553 | 154.88223 | 22.08584 | 2.99767 | 0.0517693 | 2.6753551 | 45 | 5 | 2001–2006 | 0.40 | M-v | 0 | MPC | 00885 | 2004 $XS_{106}$ |
| 2004 $XR_{108}$ | 16.0 | 0.15 | 20060922 | 105.76068 | 72.01753 | 35.31918 | 5.87934 | 0.2352919 | 3.1450768 | 56 | 3 | 1998–2006 | 0.57 | M-v | 3 | MPC | 00885 | 2004 $XR_{108}$ |
| 2004 $XC_{109}$ | 16.7 | 0.15 | 20060922 | 203.65401 | 151.20327 | 248.91680 | 7.04983 | 0.1056356 | 2.3324778 | 24 | 2 | 2004–2006 | 0.46 | M-v | 3 | MPC | 00886 | 2004 $XC_{109}$ |
| 2004 $XX_{109}$ | 15.9 | 0.15 | 20060922 | 196.85441 | 0.16989 | 44.30030 | 6.03679 | 0.1893712 | 2.5300359 | 59 | 4 | 2000–2006 | 0.52 | M-v | 3 | MPC | 02233 | 2004 $XX_{109}$ |
| 2004 $XY_{116}$ | 15.1 | 0.15 | 20060922 | 216.82256 | 232.20285 | 103.04880 | 10.70673 | 0.0913579 | 3.1713015 | 24 | 3 | 2003–2006 | 0.54 | M-v | 4 | MPC | 73686 | 2004 $XY_{116}$ |
| 2004 $XV_{119}$ | 16.4 | 0.15 | 20060922 | 116.26445 | 8.00028 | 110.02061 | 2.17974 | 0.1151719 | 2.8994634 | 26 | 3 | 1996–2005 | 0.47 | M-v | 3 | MPC | 73687 | 2004 $XV_{119}$ |
| 2004 $XV_{120}$ | 17.1 | 0.15 | 20060922 | 233.50282 | 176.23184 | 207.81305 | 2.35563 | 0.1666831 | 2.2775323 | 30 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 95629 | 2004 $XV_{120}$ |
| 2004 $XH_{121}$ | 16.9 | 0.15 | 20060922 | 212.67848 | 162.22718 | 274.20856 | 7.01999 | 0.0948832 | 2.2108009 | 39 | 3 | 2000–2005 | 0.48 | M-v | 1 | MPC | 73689 | 2004 $XH_{121}$ |
| 2004 $XN_{122}$ | 17.0 | 0.15 | 20060922 | 346.52716 | 50.45044 | 248.73766 | 5.53496 | 0.0236788 | 2.1749711 | 44 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 02233 | 2004 $XN_{122}$ |
| 2004 $XA_{123}$ | 15.3 | 0.15 | 20060922 | 43.01801 | 79.05766 | 91.47874 | 10.87955 | 0.0987095 | 3.0195798 | 43 | 3 | 1996–2006 | 0.55 | M-v | 3 | MPC | 00887 | 2004 $XA_{123}$ |
| 2004 $XL_{126}$ | 15.0 | 0.15 | 20060922 | 163.92165 | 241.26970 | 110.63612 | 6.70106 | 0.1623085 | 3.1285170 | 46 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 95630 | 2004 $XL_{126}$ |
| 2004 $XR_{126}$ | 15.8 | 0.15 | 20060922 | 223.77052 | 271.30954 | 99.82245 | 13.62770 | 0.2120482 | 2.3256774 | 48 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 00888 | 2004 $XR_{126}$ |
| 2004 $XA_{129}$ | 15.7 | 0.15 | 20060922 | 193.30627 | 311.07950 | 52.30497 | 9.38856 | 0.1732131 | 2.7384539 | 51 | 2 | 1999–2004 | 0.61 | M-v | 3 | MPC | 73694 | 2004 $XA_{129}$ |
| 2004 $XB_{129}$ | 14.7 | 0.15 | 20060922 | 185.75087 | 335.20959 | 35.44873 | 10.26524 | 0.3050495 | 2.9444154 | 48 | 3 | 2000–2005 | 0.53 | M-v | 3 | MPC | 73694 | 2004 $XB_{129}$ |
| 2004 $XW_{130}$ | 16.7 | 0.15 | 20060922 | 141.32352 | 197.13907 | 355.20273 | 18.86336 | 0.0458874 | 1.9720661 | 37 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04311 | 2004 $XW_{130}$ |
| 2004 $XZ_{130}$ | 20.3 | 0.15 | 20060922 | 51.69348 | 4.73597 | 211.81508 | 2.95415 | 0.4545322 | 0.6175721 | 46 | 3 | 2004–2006 | 0.14 | M-v | 2 | MPC | 97776 | 2004 $XZ_{130}$ |
| 2004 $XC_{132}$ | 15.9 | 0.15 | 20060922 | 99.60864 | 263.18666 | 285.48919 | 20.09373 | 0.2458553 | 2.4177959 | 33 | 2 | 2004–2006 | 0.46 | M-v | 3 | MPC | 03651 | 2004 $XC_{132}$ |
| 2004 $XN_{135}$ | 15.4 | 0.15 | 20060922 | 143.16700 | 32.69729 | 21.99269 | 4.11388 | 0.1258745 | 3.0563350 | 58 | 6 | 1998–2006 | 0.55 | M-v | 0 | MPC | 02234 | 2004 $XN_{135}$ |
| 2004 $XK_{137}$ | 14.5 | 0.15 | 20060922 | 214.66905 | 264.29973 | 86.90104 | 10.00811 | 0.1478610 | 3.0332108 | 49 | 7 | 1994–2006 | 0.71 | M-v | 1 | MPC | 04311 | 2004 $XK_{137}$ |
| 2004 $XA_{140}$ | 16.0 | 0.15 | 20060922 | 199.21021 | 146.00637 | 256.70369 | 4.91536 | 0.0316605 | 2.7092292 | 34 | 3 | 1999–2005 | 0.42 | M-v | 2 | MPC | 73699 | 2004 $XA_{140}$ |
| 2004 $XF_{142}$ | 15.0 | 0.15 | 20060922 | 333.99661 | 171.73307 | 62.02552 | 13.01238 | 0.0466203 | 2.9740036 | 47 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 00890 | 2004 $XF_{142}$ |
| 2004 $XU_{154}$ | 17.2 | 0.15 | 20060922 | 222.40309 | 337.99336 | 52.64931 | 7.20494 | 0.1149525 | 2.3176617 | 34 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 00891 | 2004 $XU_{154}$ |
| 2004 $XT_{161}$ | 16.8 | 0.15 | 20060922 | 183.31748 | 131.05052 | 283.22538 | 13.26706 | 0.1203176 | 2.5807895 | 27 | 3 | 2000–2004 | 0.32 | M-v | 3 | MPC | 73709 | 2004 $XT_{161}$ |
| 2004 $XV_{162}$ | 16.5 | 0.15 | 20060922 | 269.38342 | 326.43267 | 58.60615 | 4.88143 | 0.1368137 | 2.1815655 | 60 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 73711 | 2004 $XV_{162}$ |
| 2004 $XC_{166}$ | 17.1 | 0.15 | 20060922 | 172.08790 | 8.04006 | 73.45445 | 3.63176 | 0.1151446 | 2.3138690 | 37 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 00893 | 2004 $XC_{166}$ |
| 2004 $XR_{167}$ | 15.9 | 0.15 | 20060922 | 151.74904 | 350.91484 | 70.67489 | 3.35344 | 0.0518540 | 2.8926589 | 26 | 3 | 2003–2006 | 0.48 | M-v | 3 | MPC | 00893 | 2004 $XR_{167}$ |
| 2004 $XE_{168}$ | 16.2 | 0.15 | 20060922 | 75.53030 | 48.74971 | 126.97014 | 3.60587 | 0.1716218 | 2.8652638 | 43 | 6 | 1996–2006 | 0.40 | M-v | 0 | MPC | 02235 | 2004 $XE_{168}$ |
| 2004 $XS_{173}$ | 16.3 | 0.15 | 20060922 | 191.61038 | 169.54423 | 234.75776 | 2.81177 | 0.1178227 | 2.5778167 | 20 | 3 | 2000–2006 | 0.52 | M-v | 5 | MPC | 00893 | 2004 $XS_{173}$ |
| 2004 $XH_{179}$ | 16.5 | 0.15 | 20060922 | 194.62214 | 278.89803 | 127.62413 | 5.58004 | 0.1057527 | 2.3818731 | 20 | 2 | 2000–2004 | 0.59 | M-v | 5 | MPC | 76568 | 2004 $XH_{179}$ |
| 2004 $XP_{186}$ | 15.4 | 0.15 | 20060922 | 64.36373 | 139.84137 | 62.90372 | 9.97598 | 0.1203849 | 2.5654701 | 59 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 02235 | 2004 $XP_{186}$ |
| 2004 $XN_{191}$ | 16.5 | 0.15 | 20050110 | 10.73473 | 31.59268 | 72.70133 | 10.41959 | 0.1746196 | 2.3145676 | 17 | 1 | 53 days | 0.50 | | | MPC | | 2004 $XN_{191}$ |
| 2004 $XR_{191}$ | 15.0 | 0.15 | 20060922 | 54.52526 | 229.38123 | 323.62400 | 25.95126 | 0.2199442 | 3.1654217 | 24 | 1 | 160 days | 0.61 | M-v | 4 | MPC | | 2004 $XR_{191}$ |
| 2004 $XS_{191}$ | 15.7 | 0.15 | 20060922 | 119.45489 | 81.39187 | 28.57859 | 14.90458 | 0.2420080 | 3.1298104 | 25 | 1 | 87 days | 0.47 | M-v | 4 | MPC | | 2004 $XS_{191}$ |
| 2004 $XT_{191}$ | 15.6 | 0.15 | 20050110 | 15.00313 | 348.95184 | 98.03325 | 13.64625 | 0.1753977 | 2.9830760 | 18 | 1 | 54 days | 0.24 | | | MPC | | 2004 $XT_{191}$ |
| 2004 $XU_{191}$ | 15.5 | 0.15 | 20060922 | 180.89149 | 42.42490 | 39.18116 | 16.27975 | 0.1725319 | 2.5709162 | 21 | 1 | 76 days | 0.44 | M-v | 4 | MPC | | 2004 $XU_{191}$ |
| 2004 YN | 15.3 | 0.15 | 20060922 | 157.61167 | 49.58571 | 38.92889 | 32.11786 | 0.2304489 | 2.6149966 | 40 | 4 | 1991–2006 | 0.58 | M-v | 2 | MPC | 03651 | 2004 YN |
| 2004 YZ | 16.5 | 0.15 | 20060922 | 195.45081 | 104.09151 | 74.12157 | 27.85311 | 0.0222846 | 1.8437594 | 45 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 77796 | 2004 YZ |
| 2004 $YC_1$ | 14.7 | 0.15 | 20060922 | 90.38565 | 101.14562 | 54.07434 | 27.10000 | 0.1515768 | 3.1416131 | 46 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 02235 | 2004 $YC_1$ |
| 2004 $YN_3$ | 17.6 | 0.15 | 20060922 | 210.96242 | 248.87668 | 139.77298 | 6.26015 | 0.2198750 | 2.3078171 | 31 | 4 | 1995–2004 | 0.64 | M-v | 1 | MPC | 73717 | 2004 $YN_3$ |
| 2004 $YY_5$ | 14.9 | 0.15 | 20060922 | 183.89792 | 264.58310 | 79.07662 | 8.13417 | 0.1690003 | 3.2087389 | 27 | 4 | 1996–2005 | 0.59 | M-v | 1 | MPC | 76572 | 2004 $YY_5$ |
| 2004 $YM_{13}$ | 15.9 | 0.15 | 20060922 | 66.83701 | 12.09027 | 205.07994 | 0.48419 | 0.1361918 | 2.4798154 | 51 | 5 | 1994–2005 | 0.57 | M-v | 1 | MPC | 04311 | 2004 $YM_{13}$ |
| 2004 $YL_{14}$ | 16.5 | 0.15 | 20060922 | 101.86515 | 57.81312 | 66.64069 | 1.35749 | 0.1875016 | 3.1709556 | 43 | 3 | 2000–2005 | 0.58 | M-v | 3 | MPC | 73722 | 2004 $YL_{14}$ |
| 2004 $YM_{18}$ | 15.0 | 0.15 | 20060922 | 39.11361 | 103.12328 | 112.78229 | 20.97146 | 0.2364378 | 3.1017912 | 62 | 5 | 1994–2006 | 0.47 | M-v | 1 | MPC | 04311 | 2004 $YM_{18}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2004 $YK_{19}$ | 16.4 | 0.15 | 20060922 | 210.62934 | 253.79560 | 109.49904 | 3.02774 | 0.1804742 | 3.0197826 | 39 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 02236 | 2004 $YK_{19}$ |
| 2004 $YH_{21}$ | 16.7 | 0.15 | 20060922 | 242.93206 | 261.07316 | 123.19859 | 3.00322 | 0.1697319 | 2.3855398 | 36 | 3 | 1998–2006 | 0.44 | M-v | 4 | MPC | 00896 | 2004 $YH_{21}$ |
| 2004 $YS_{21}$ | 16.3 | 0.15 | 20060922 | 310.95556 | 198.08521 | 113.70094 | 4.37254 | 0.0308830 | 2.6735112 | 30 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 00896 | 2004 $YS_{21}$ |
| 2004 $YV_{21}$ | 15.8 | 0.15 | 20060922 | 73.13670 | 293.16294 | 300.56420 | 6.27150 | 0.1790857 | 2.4043317 | 84 | 4 | 1995–2006 | 0.59 | M-v | 1 | MPC | 03652 | 2004 $YV_{21}$ |
| 2004 $YM_{26}$ | 17.6 | 0.15 | 20060922 | 101.67771 | 74.17490 | 123.27086 | 2.17236 | 0.1308805 | 2.3606060 | 37 | 4 | 1998–2004 | 0.50 | M-v | 1 | MPC | 95634 | 2004 $YM_{26}$ |
| 2004 $YA_{29}$ | 15.7 | 0.15 | 20060922 | 78.77301 | 359.14049 | 142.73180 | 3.21571 | 0.1253126 | 3.0216251 | 46 | 6 | 1995–2006 | 0.30 | M-v | 0 | MPC | 02236 | 2004 $YA_{29}$ |
| 2004 $YF_{31}$ | 14.6 | 0.15 | 20060922 | 201.81976 | 269.02990 | 125.95683 | 28.76964 | 0.1966133 | 2.6771680 | 87 | 5 | 1999–2005 | 0.51 | M-v | 1 | MPC | 76577 | 2004 $YF_{31}$ |
| 2004 $YM_{32}$ | 16.3 | 0.15 | 20060922 | 213.89372 | 165.12612 | 338.62318 | 18.14078 | 0.0677800 | 1.9583587 | 150 | 2 | 2004–2006 | 0.48 | M-v | 2 | MPC | 03652 | 2004 $YM_{32}$ |
| 2004 $YR_{33}$ | 16.5 | 0.15 | 20060922 | 345.96532 | 10.45303 | 332.49159 | 18.07458 | 0.0651643 | 1.9702427 | 84 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 04311 | 2004 $YR_{33}$ |
| 2004 $YW_{34}$ | 16.7 | 0.15 | 20060922 | 258.27401 | 101.67449 | 254.23594 | 1.04868 | 0.0462453 | 2.7496336 | 32 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 02236 | 2004 $YW_{34}$ |
| 2004 $YB_{35}$ | 16.1 | 0.15 | 20060922 | 150.08786 | 232.44408 | 204.60053 | 16.06904 | 0.1772277 | 2.6157230 | 40 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 00897 | 2004 $YB_{35}$ |
| 2004 $YJ_{36}$ | 16.1 | 0.15 | 20060922 | 215.55925 | 104.67634 | 318.38433 | 21.60428 | 0.0538292 | 2.6726211 | 16 | 1 | 80 days | 0.48 | M-v | 5 | MPC | | 2004 $YJ_{36}$ |
| 2004 $YK_{36}$ | 15.8 | 0.15 | 20060922 | 65.62791 | 226.79949 | 311.90636 | 26.75722 | 0.1865277 | 3.1657033 | 20 | 1 | 77 days | 0.70 | M-v | 4 | MPC | | 2004 $YK_{36}$ |
| 2005 AW | 16.7 | 0.15 | 20060922 | 24.99997 | 313.04779 | 273.78287 | 3.67265 | 0.0548827 | 2.7198213 | 33 | 4 | 1999–2006 | 0.35 | M-v | 1 | MPC | 73736 | 2005 AW |
| 2005 AX | 17.2 | 0.15 | 20060922 | 346.13844 | 47.33527 | 310.64417 | 18.94610 | 0.0798450 | 1.9179218 | 106 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04311 | 2005 AX |
| 2005 $AA_2$ | 16.7 | 0.15 | 20060922 | 231.58375 | 121.99987 | 296.95532 | 6.11322 | 0.1352166 | 2.2173243 | 55 | 4 | 1992–2005 | 0.63 | M-v | 1 | MPC | 04312 | 2005 $AA_2$ |
| 2005 $AM_2$ | 16.4 | 0.15 | 20060922 | 76.14857 | 169.15500 | 41.23206 | 7.11224 | 0.1297765 | 2.5548934 | 30 | 3 | 2002–2005 | 0.52 | M-v | 3 | MPC | 76580 | 2005 $AM_2$ |
| 2005 $AR_7$ | 16.2 | 0.15 | 20060922 | 213.21734 | 19.29717 | 25.74057 | 2.50796 | 0.1466588 | 2.5344904 | 47 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 02237 | 2005 $AR_7$ |
| 2005 $AW_8$ | 16.4 | 0.15 | 20060922 | 76.23573 | 115.99487 | 108.47597 | 13.07843 | 0.2271628 | 2.5568559 | 51 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04312 | 2005 $AW_8$ |
| 2005 $AZ_8$ | 16.5 | 0.15 | 20060922 | 209.20690 | 99.20773 | 303.77983 | 10.81262 | 0.0492898 | 2.5869823 | 28 | 3 | 1999–2005 | 0.49 | M-v | 1 | MPC | 03653 | 2005 $AZ_8$ |
| 2005 $AW_{10}$ | 16.0 | 0.15 | 20060922 | 133.29195 | 251.03875 | 305.02289 | 26.62700 | 0.2350019 | 2.2949457 | 46 | 3 | 1998–2006 | 0.51 | M-v | 2 | MPC | 77799 | 2005 $AW_{10}$ |
| 2005 $AR_{13}$ | 14.9 | 0.15 | 20060922 | 2.82837 | 143.38697 | 77.73533 | 12.34400 | 0.0881248 | 3.1715194 | 32 | 3 | 2003–2006 | 0.55 | M-v | 3 | MPC | 00899 | 2005 $AR_{13}$ |
| 2005 $AZ_{14}$ | 16.3 | 0.15 | 20060922 | 129.86812 | 151.92010 | 323.99396 | 2.43412 | 0.0453113 | 2.7859905 | 46 | 4 | 1998–2006 | 0.58 | M-v | 1 | MPC | 02237 | 2005 $AZ_{14}$ |
| 2005 $AH_{15}$ | 16.8 | 0.15 | 20060922 | 219.22446 | 331.93073 | 83.44934 | 6.69192 | 0.1536713 | 2.2965984 | 26 | 2 | 2005–2006 | 0.38 | M-v | 4 | MPC | 03653 | 2005 $AH_{15}$ |
| 2005 $AC_{18}$ | 15.6 | 0.15 | 20060922 | 86.41495 | 282.81212 | 309.98594 | 23.39900 | 0.2035169 | 2.3604483 | 72 | 3 | 1995–2006 | 0.54 | M-v | 1 | MPC | 03653 | 2005 $AC_{18}$ |
| 2005 $AM_{18}$ | 15.7 | 0.15 | 20060922 | 204.86852 | 98.14425 | 301.37583 | 6.20790 | 0.2715148 | 2.5647374 | 62 | 4 | 1997–2005 | 0.54 | M-v | 2 | MPC | 77800 | 2005 $AM_{18}$ |
| 2005 $AM_{19}$ | 15.7 | 0.15 | 20060922 | 226.83070 | 251.65993 | 113.55973 | 2.94737 | 0.0942815 | 2.9118838 | 48 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 00900 | 2005 $AM_{19}$ |
| 2005 $AQ_{20}$ | 15.6 | 0.15 | 20060922 | 58.10003 | 99.80728 | 112.61375 | 15.43154 | 0.0878199 | 2.6346421 | 40 | 3 | 2001–2006 | 0.51 | M-v | 3 | MPC | 02237 | 2005 $AQ_{20}$ |
| 2005 $AT_{20}$ | 15.2 | 0.15 | 20060922 | 149.49646 | 157.47132 | 279.47636 | 8.23961 | 0.1247471 | 3.0254124 | 40 | 3 | 1997–2005 | 0.42 | M-v | 2 | MPC | 73768 | 2005 $AT_{20}$ |
| 2005 $AW_{25}$ | 16.4 | 0.15 | 20060922 | 73.25222 | 318.78566 | 256.49582 | 3.47116 | 0.1400489 | 2.4585667 | 43 | 3 | 2000–2005 | 0.59 | M-v | 3 | MPC | 76588 | 2005 $AW_{25}$ |
| 2005 $AC_{26}$ | 16.7 | 0.15 | 20060922 | 179.14448 | 222.73959 | 230.56375 | 0.32733 | 0.1281344 | 2.4337957 | 53 | 4 | 2000–2005 | 0.47 | M-v | 1 | MPC | 73776 | 2005 $AC_{26}$ |
| 2005 $AT_{26}$ | 16.6 | 0.15 | 20060922 | 169.88578 | 169.10935 | 284.12529 | 6.81781 | 0.0722100 | 2.7020497 | 24 | 3 | 1995–2005 | 0.51 | M-v | 3 | MPC | 76589 | 2005 $AT_{26}$ |
| 2005 $AO_{27}$ | 17.4 | 0.15 | 20060922 | 330.95667 | 248.19550 | 110.59755 | 24.37459 | 0.0881048 | 1.9653031 | 38 | 4 | 2001–2006 | 0.63 | M-v | 1 | MPC | 00901 | 2005 $AO_{27}$ |
| 2005 $AH_{28}$ | 17.5 | 0.15 | 20060922 | 253.55823 | 144.49399 | 316.22859 | 19.69184 | 0.0816821 | 1.8728122 | 38 | 4 | 2000–2006 | 0.68 | M-v | 2 | MPC | 04312 | 2005 $AH_{28}$ |
| 2005 $AN_{28}$ | 16.6 | 0.15 | 20060922 | 57.54670 | 308.49537 | 305.28704 | 21.81858 | 0.1982901 | 2.2731543 | 38 | 2 | 2005–2006 | 0.38 | M-v | 3 | MPC | 03653 | 2005 $AN_{28}$ |
| 2005 $AU_{29}$ | 17.3 | 0.15 | 20060922 | 317.53247 | 228.62991 | 99.78449 | 3.45782 | 0.0622814 | 2.2929473 | 27 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 03653 | 2005 $AU_{29}$ |
| 2005 $AL_{30}$ | 15.2 | 0.15 | 20060922 | 86.16627 | 159.55963 | 14.66920 | 15.81518 | 0.1103867 | 2.9887830 | 42 | 3 | 2000–2005 | 0.55 | M-v | 3 | MPC | 76591 | 2005 $AL_{30}$ |
| 2005 $AS_{33}$ | 17.2 | 0.15 | 20060922 | 232.64235 | 207.29482 | 168.62796 | 2.54641 | 0.2162591 | 2.4238843 | 28 | 3 | 2001–2006 | 0.29 | M-v | 3 | MPC | 04312 | 2005 $AS_{33}$ |
| 2005 $AG_{34}$ | 17.2 | 0.15 | 20060922 | 220.69672 | 169.57044 | 216.67535 | 1.33160 | 0.1652837 | 2.5428897 | 23 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 76594 | 2005 $AG_{34}$ |
| 2005 $AZ_{34}$ | 17.1 | 0.15 | 20060922 | 164.80653 | 290.79204 | 169.35898 | 2.29644 | 0.1393162 | 2.4504361 | 38 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 02238 | 2005 $AZ_{34}$ |
| 2005 $AT_{35}$ | 16.6 | 0.15 | 20060922 | 212.01502 | 270.06880 | 157.33453 | 4.69780 | 0.1355358 | 2.3107799 | 36 | 5 | 1993–2005 | 0.67 | M-v | 1 | MPC | 04312 | 2005 $AT_{35}$ |
| 2005 $AZ_{36}$ | 15.3 | 0.15 | 20060922 | 108.72088 | 340.61314 | 135.18641 | 16.34390 | 0.0587832 | 3.1770271 | 25 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 03654 | 2005 $AZ_{36}$ |
| 2005 $AT_{38}$ | 16.6 | 0.15 | 20060922 | 91.50896 | 281.04678 | 273.19419 | 6.46927 | 0.0682723 | 2.4586807 | 25 | 3 | 2000–2005 | 0.47 | M-v | 3 | MPC | 76595 | 2005 $AT_{38}$ |
| 2005 $AS_{41}$ | 16.1 | 0.15 | 20060922 | 336.48857 | 116.96912 | 171.72680 | 5.12981 | 0.1094565 | 2.6112445 | 49 | 6 | 1993–2006 | 0.66 | M-v | 1 | MPC | 04312 | 2005 $AS_{41}$ |
| 2005 $AU_{41}$ | 16.1 | 0.15 | 20060922 | 183.45247 | 1.66678 | 62.94490 | 3.19859 | 0.0935701 | 2.6801861 | 50 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 00904 | 2005 $AU_{41}$ |
| 2005 $AP_{42}$ | 16.5 | 0.15 | 20060922 | 155.91751 | 85.62216 | 45.10649 | 9.59239 | 0.1423945 | 2.3191360 | 50 | 3 | 2000–2005 | 0.69 | M-v | 2 | MPC | 03654 | 2005 $AP_{42}$ |
| 2005 $AC_{44}$ | 16.4 | 0.15 | 20060922 | 126.21180 | 30.56250 | 79.92954 | 2.92732 | 0.0950329 | 3.0562614 | 30 | 3 | 2003–2006 | 0.30 | M-v | 3 | MPC | 02239 | 2005 $AC_{44}$ |
| 2005 $AR_{45}$ | 17.2 | 0.15 | 20060922 | 5.77317 | 33.71320 | 298.71337 | 16.82449 | 0.0801454 | 1.9444969 | 31 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 03654 | 2005 $AR_{45}$ |
| 2005 $AS_{45}$ | 17.3 | 0.15 | 20060922 | 196.31315 | 194.52892 | 318.10782 | 19.82945 | 0.0142435 | 1.8681271 | 33 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 03654 | 2005 $AS_{45}$ |
| 2005 $AC_{46}$ | 16.7 | 0.15 | 20060922 | 209.77646 | 163.80019 | 337.89753 | 20.20384 | 0.0658140 | 1.9145727 | 112 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04312 | 2005 $AC_{46}$ |
| 2005 $AL_{46}$ | 16.3 | 0.15 | 20060922 | 193.63655 | 317.24582 | 124.31864 | 2.29605 | 0.1584699 | 2.3706328 | 50 | 5 | 1994–2006 | 0.45 | M-v | 1 | MPC | 02239 | 2005 $AL_{46}$ |
| 2005 $AH_{47}$ | 15.9 | 0.15 | 20060922 | 39.00141 | 339.98527 | 224.47389 | 2.77829 | 0.1107237 | 3.0244985 | 46 | 4 | 1998–2006 | 0.45 | M-v | 1 | MPC | 04312 | 2005 $AH_{47}$ |
| 2005 $AD_{48}$ | 17.1 | 0.15 | 20060922 | 59.46487 | 115.35685 | 118.70304 | 6.83741 | 0.2811977 | 2.6235991 | 30 | 3 | 1997–2006 | 0.29 | M-v | 2 | MPC | 03655 | 2005 $AD_{48}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $AM_{50}$ | 15.8 | 0.15 | 20060922 | 180.03393 | 224.74580 | 190.36407 | 4.78675 | 0.1544956 | 2.7442561 | 44 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 04313 | 2005 $AM_{50}$ |
| 2005 $AF_{51}$ | 15.4 | 0.15 | 20060922 | 20.36759 | 68.17509 | 136.12191 | 10.93989 | 0.0194743 | 3.2029325 | 44 | 4 | 1995–2005 | 0.47 | M-v | 0 | MPC | 76602 | 2005 $AF_{51}$ |
| 2005 $AJ_{54}$ | 16.9 | 0.15 | 20060922 | 106.41452 | 235.16765 | 335.45895 | 4.45347 | 0.1667899 | 2.3713354 | 46 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 04313 | 2005 $AJ_{54}$ |
| 2005 $AR_{57}$ | 16.1 | 0.15 | 20060922 | 97.38102 | 153.91040 | 12.54148 | 12.43608 | 0.1457538 | 2.7665135 | 37 | 3 | 2001–2005 | 0.45 | M-v | 3 | MPC | 76606 | 2005 $AR_{57}$ |
| 2005 $AK_{60}$ | 15.8 | 0.15 | 20060922 | 228.56635 | 286.54021 | 93.50880 | 5.85569 | 0.1234448 | 2.7207523 | 43 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 02239 | 2005 $AK_{60}$ |
| 2005 $AP_{60}$ | 17.4 | 0.15 | 20060922 | 132.01385 | 184.84586 | 347.16928 | 2.09193 | 0.1453425 | 2.3465999 | 43 | 3 | 1996–2005 | 0.49 | M-v | 3 | MPC | 76607 | 2005 $AP_{60}$ |
| 2005 $AY_{63}$ | 16.1 | 0.15 | 20060922 | 269.78726 | 190.84663 | 140.65335 | 2.83478 | 0.0647468 | 2.8451719 | 41 | 5 | 1998–2006 | 0.47 | M-v | 0 | MPC | 00907 | 2005 $AY_{63}$ |
| 2005 $AJ_{64}$ | 17.7 | 0.15 | 20060922 | 195.54528 | 134.35120 | 279.75607 | 2.21910 | 0.0978005 | 2.6539025 | 21 | 3 | 1999–2005 | 0.33 | M-v | 2 | MPC | 76608 | 2005 $AJ_{64}$ |
| 2005 $AX_{64}$ | 14.1 | 0.15 | 20060922 | 64.36071 | 199.82941 | 268.28067 | 2.36064 | 0.0445594 | 5.2228435 | 29 | 4 | 2001–2006 | 0.35 | M-v | 1 | MPC | 95639 | 2005 $AX_{64}$ |
| 2005 $AS_{65}$ | 17.6 | 0.15 | 20060922 | 86.82591 | 300.95186 | 223.26799 | 0.81298 | 0.2544981 | 3.0570593 | 22 | 3 | 2000–2005 | 0.41 | M-v | 4 | MPC | 87646 | 2005 $AS_{65}$ |
| 2005 $AY_{65}$ | 16.0 | 0.15 | 20060922 | 142.94853 | 201.02742 | 247.12434 | 1.95780 | 0.0298096 | 3.0831210 | 27 | 4 | 2000–2006 | 0.47 | M-v | 0 | MPC | 03655 | 2005 $AY_{65}$ |
| 2005 $AU_{66}$ | 12.7 | 0.15 | 20060922 | 247.46207 | 160.01585 | 128.19098 | 10.11081 | 0.1376670 | 5.2147529 | 32 | 4 | 1993–2006 | 0.47 | M-v | 0 | MPC | 04313 | 2005 $AU_{66}$ |
| 2005 $AR_{67}$ | 17.0 | 0.15 | 20060922 | 200.56318 | 215.90494 | 191.90450 | 2.65255 | 0.1138023 | 2.6073508 | 32 | 5 | 1995–2006 | 0.56 | M-v | 0 | MPC | 02240 | 2005 $AR_{67}$ |
| 2005 $AK_{68}$ | 15.4 | 0.15 | 20060922 | 110.78929 | 49.85192 | 89.05573 | 6.82671 | 0.1803891 | 3.0260718 | 49 | 3 | 2003–2006 | 0.98 | M-v | 2 | MPC | 02240 | 2005 $AK_{68}$ |
| 2005 $AG_{69}$ | 16.5 | 0.15 | 20060922 | 235.19222 | 211.53572 | 166.17129 | 2.43286 | 0.2055678 | 2.4435201 | 47 | 4 | 1996–2006 | 0.48 | M-v | 3 | MPC | 00908 | 2005 $AG_{69}$ |
| 2005 $AH_{69}$ | 15.9 | 0.15 | 20060922 | 175.41926 | 249.18047 | 175.06173 | 2.06626 | 0.0517115 | 2.8772627 | 39 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 00908 | 2005 $AH_{69}$ |
| 2005 $AV_{74}$ | 16.6 | 0.15 | 20060922 | 61.11108 | 97.97967 | 119.81583 | 5.06213 | 0.0662542 | 2.5557660 | 41 | 3 | 1995–2005 | 0.34 | M-v | 2 | MPC | 77805 | 2005 $AV_{74}$ |
| 2005 $AK_{78}$ | 17.7 | 0.15 | 20060922 | 224.72486 | 161.51721 | 314.32887 | 16.99764 | 0.0682698 | 1.9944839 | 32 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 04313 | 2005 $AK_{78}$ |
| 2005 $AP_{78}$ | 15.7 | 0.15 | 20060922 | 307.45932 | 197.48895 | 103.01261 | 7.34486 | 0.0553243 | 3.0532658 | 39 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 04313 | 2005 $AP_{78}$ |
| 2005 $AV_{78}$ | 15.2 | 0.15 | 20060922 | 256.81644 | 295.05854 | 44.76062 | 2.97986 | 0.2260421 | 3.0151995 | 34 | 4 | 1992–2005 | 0.67 | M-v | 1 | MPC | 76612 | 2005 $AV_{78}$ |
| 2005 $AW_{80}$ | 16.2 | 0.15 | 20060922 | 34.16169 | 153.85023 | 103.91499 | 5.66204 | 0.2491781 | 2.6782614 | 38 | 4 | 1997–2006 | 0.39 | M-v | 1 | MPC | 00910 | 2005 $AW_{80}$ |
| 2005 $AF_{81}$ | 16.1 | 0.15 | 20060922 | 58.42625 | 160.52509 | 58.18329 | 3.21060 | 0.1118034 | 2.7532933 | 41 | 4 | 2001–2005 | 0.38 | M-v | 1 | MPC | 77805 | 2005 $AF_{81}$ |
| 2005 $AG_{81}$ | 17.1 | 0.15 | 20060922 | 343.76709 | 265.11559 | 96.76692 | 23.86208 | 0.1217904 | 1.8584754 | 58 | 2 | 2005–2006 | 0.58 | M-v | 3 | MPC | 03655 | 2005 $AG_{81}$ |
| 2005 $BV_{1}$ | 14.9 | 0.15 | 20060922 | 126.00679 | 41.27535 | 170.69564 | 33.14887 | 0.2306827 | 2.6314842 | 117 | 3 | 2002–2006 | 0.48 | M-v | 1 | MPC | 04313 | 2005 $BV_{1}$ |
| 2005 $BQ_{2}$ | 16.2 | 0.15 | 20060922 | 219.64481 | 114.12088 | 27.12927 | 21.19088 | 0.0553400 | 1.9490330 | 64 | 3 | 1998–2006 | 0.64 | M-v | 2 | MPC | 76615 | 2005 $BQ_{2}$ |
| 2005 $BV_{2}$ | 17.1 | 0.15 | 20060922 | 249.30365 | 316.39674 | 138.78749 | 23.25130 | 0.0605927 | 1.8954929 | 43 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 03656 | 2005 $BV_{2}$ |
| 2005 $BA_{4}$ | 15.0 | 0.15 | 20060922 | 9.09728 | 274.63822 | 318.99714 | 3.90724 | 0.1380219 | 3.1994187 | 51 | 5 | 1996–2006 | 0.64 | M-v | 1 | MPC | 04313 | 2005 $BA_{4}$ |
| 2005 $BR_{4}$ | 16.5 | 0.15 | 20060922 | 138.89801 | 58.42491 | 55.16584 | 3.39661 | 0.0306505 | 2.6808595 | 37 | 5 | 1992–2006 | 0.46 | M-v | 0 | MPC | 04313 | 2005 $BR_{4}$ |
| 2005 $BE_{5}$ | 17.2 | 0.15 | 20060922 | 228.39745 | 332.04744 | 50.59364 | 3.60668 | 0.1960122 | 2.4163088 | 38 | 4 | 1996–2006 | 0.38 | M-v | 3 | MPC | 00910 | 2005 $BE_{5}$ |
| 2005 $BW_{5}$ | 16.1 | 0.15 | 20060922 | 204.08350 | 355.02252 | 50.33137 | 4.16334 | 0.0524292 | 2.6776749 | 43 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 02240 | 2005 $BW_{5}$ |
| 2005 $BA_{6}$ | 18.3 | 0.15 | 20060922 | 165.69275 | 117.48788 | 17.31092 | 2.62603 | 0.1185785 | 2.2480282 | 27 | 3 | 2000–2005 | 0.50 | M-v | 3 | MPC | 95640 | 2005 $BA_{6}$ |
| 2005 $BD_{6}$ | 16.5 | 0.15 | 20060922 | 220.82124 | 318.80991 | 92.06701 | 5.59887 | 0.1585155 | 2.3314085 | 45 | 3 | 1995–2005 | 0.59 | M-v | 3 | MPC | 73810 | 2005 $BD_{6}$ |
| 2005 $BE_{8}$ | 16.9 | 0.15 | 20060922 | 100.68099 | 141.94318 | 29.03393 | 3.95727 | 0.0951870 | 2.6052489 | 26 | 3 | 1999–2005 | 0.54 | M-v | 4 | MPC | 73812 | 2005 $BE_{8}$ |
| 2005 $BP_{8}$ | 16.2 | 0.15 | 20060922 | 176.34790 | 347.33839 | 83.25835 | 6.77608 | 0.1389527 | 2.6860055 | 49 | 2 | 2004–2006 | 0.60 | M-v | 4 | MPC | 03656 | 2005 $BP_{8}$ |
| 2005 $BH_{9}$ | 15.4 | 0.15 | 20060922 | 99.50855 | 20.11628 | 115.99421 | 13.05254 | 0.0704812 | 3.2134344 | 48 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 00911 | 2005 $BH_{9}$ |
| 2005 $BB_{10}$ | 16.3 | 0.15 | 20060922 | 228.55722 | 332.85842 | 53.27269 | 3.64545 | 0.1863925 | 2.4728013 | 34 | 4 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03656 | 2005 $BB_{10}$ |
| 2005 $BF_{10}$ | 16.5 | 0.15 | 20060922 | 184.93385 | 182.04161 | 300.37087 | 8.66705 | 0.0540191 | 2.2206880 | 34 | 3 | 1995–2005 | 0.59 | M-v | 3 | MPC | 77806 | 2005 $BF_{10}$ |
| 2005 $BX_{10}$ | 16.2 | 0.15 | 20060922 | 325.26906 | 275.34104 | 132.01514 | 23.40266 | 0.0999784 | 1.9129689 | 59 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 04313 | 2005 $BX_{10}$ |
| 2005 $BP_{16}$ | 16.0 | 0.15 | 20060922 | 246.37251 | 280.27843 | 92.99720 | 7.13281 | 0.1267601 | 2.4463983 | 23 | 3 | 2003–2006 | 0.59 | M-v | 3 | MPC | 00912 | 2005 $BP_{16}$ |
| 2005 $BT_{16}$ | 15.8 | 0.15 | 20060922 | 140.08452 | 32.08846 | 63.84086 | 7.15108 | 0.0348811 | 2.9124974 | 48 | 6 | 1998–2006 | 0.59 | M-v | 0 | MPC | 00912 | 2005 $BT_{16}$ |
| 2005 $BX_{16}$ | 17.2 | 0.15 | 20060922 | 171.43995 | 31.55428 | 38.16440 | 3.14919 | 0.1747798 | 2.6122434 | 22 | 3 | 1995–2005 | 0.32 | M-v | 3 | MPC | 76620 | 2005 $BX_{16}$ |
| 2005 $BF_{19}$ | 16.5 | 0.15 | 20060922 | 194.46048 | 5.30650 | 49.23582 | 4.95145 | 0.1572852 | 2.6094946 | 34 | 4 | 1991–2006 | 0.58 | M-v | 1 | MPC | 00913 | 2005 $BF_{19}$ |
| 2005 $BO_{20}$ | 16.0 | 0.15 | 20060922 | 12.01514 | 297.83572 | 315.24421 | 7.83171 | 0.2224266 | 3.0518459 | 29 | 2 | 2005–2006 | 0.36 | M-v | 3 | MPC | 00913 | 2005 $BO_{20}$ |
| 2005 $BB_{21}$ | 14.8 | 0.15 | 20060922 | 353.79818 | 139.41907 | 99.54140 | 15.50950 | 0.0627772 | 3.2311282 | 41 | 4 | 2000–2006 | 0.73 | M-v | 1 | MPC | 00913 | 2005 $BB_{21}$ |
| 2005 $BJ_{21}$ | 16.8 | 0.15 | 20060922 | 226.46654 | 240.86194 | 137.80051 | 5.19475 | 0.0842220 | 2.7869762 | 18 | 3 | 1996–2005 | 0.26 | M-v | 3 | MPC | 95641 | 2005 $BJ_{21}$ |
| 2005 $BN_{21}$ | 16.4 | 0.15 | 20060922 | 85.25988 | 14.00663 | 158.17462 | 2.72442 | 0.0146124 | 2.7428029 | 31 | 5 | 1998–2006 | 0.24 | M-v | 0 | MPC | 00914 | 2005 $BN_{21}$ |
| 2005 $BL_{22}$ | 17.2 | 0.15 | 20060922 | 209.99190 | 67.49863 | 340.54932 | 2.54451 | 0.0554484 | 2.7185300 | 32 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 02241 | 2005 $BL_{22}$ |
| 2005 $BN_{23}$ | 15.5 | 0.15 | 20060922 | 219.46962 | 358.77822 | 16.66410 | 3.61221 | 0.0465608 | 3.2181342 | 39 | 3 | 2003–2006 | 0.34 | M-v | 3 | MPC | 02241 | 2005 $BN_{23}$ |
| 2005 $BX_{26}$ | 18.7 | 0.15 | 20060922 | 295.21515 | 269.19826 | 245.72281 | 5.63756 | 0.3226875 | 1.7054166 | 55 | 4 | 1987–2006 | 0.66 | M-v | 2 | MPC | 87648 | 2005 $BX_{26}$ |
| 2005 $BZ_{27}$ | 17.3 | 0.15 | 20060922 | 296.17216 | 260.35487 | 146.96670 | 23.74177 | 0.0996432 | 1.9557556 | 42 | 2 | 2005–2006 | 0.53 | M-v | 4 | MPC | 03657 | 2005 $BZ_{27}$ |
| 2005 $BL_{29}$ | 16.1 | 0.15 | 20060922 | 73.67303 | 163.03367 | 54.75521 | 7.08115 | 0.0698702 | 2.4750112 | 35 | 3 | 2001–2005 | 0.52 | M-v | 3 | MPC | 76627 | 2005 $BL_{29}$ |
| 2005 $BL_{32}$ | 18.1 | 0.15 | 20060922 | 327.16411 | 324.84846 | 351.05705 | 1.00383 | 0.2054702 | 2.3506102 | 29 | 5 | 1996–2006 | 0.43 | M-v | 1 | MPC | 02241 | 2005 $BL_{32}$ |
| 2005 $BH_{42}$ | 17.4 | 0.15 | 20060922 | 63.30214 | 263.14511 | 314.04864 | 1.90209 | 0.0392152 | 2.5166494 | 15 | 3 | 1997–2005 | 0.36 | M-v | 4 | MPC | 76628 | 2005 $BH_{42}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $BJ_{42}$ | 15.9 | 0.15 | 20060922 | 350.12026 | 139.96286 | 117.59424 | 2.43148 | 0.1473831 | 3.1509853 | 43 | 2 | 2004–2006 | 0.45 | M-v | 4 | MPC | 00915 | 2005 $BJ_{42}$ |
| 2005 $BM_{46}$ | 15.9 | 0.15 | 20060922 | 267.34592 | 211.15088 | 117.85046 | 3.37067 | 0.1483066 | 2.9873581 | 22 | 2 | 2005–2006 | 0.56 | M-v | 4 | MPC | 00916 | 2005 $BM_{46}$ |
| 2005 $BA_{48}$ | 17.0 | 0.15 | 20060922 | 157.49737 | 341.24794 | 118.65346 | 6.92479 | 0.1008324 | 2.6497478 | 28 | 3 | 2003–2006 | 0.32 | M-v | 3 | MPC | 00916 | 2005 $BA_{48}$ |
| 2005 $BO_{48}$ | 17.7 | 0.15 | 20050219 | 27.93752 | 284.30070 | 170.11022 | 3.71526 | 0.2357100 | 2.6142050 | 16 | 1 | 53 days | 0.57 | | | MPC | | 2005 $BO_{48}$ |
| 2005 $BP_{48}$ | 16.6 | 0.15 | 20060922 | 140.47129 | 307.02973 | 161.53380 | 8.64755 | 0.2666177 | 2.7578826 | 23 | 1 | 78 days | 0.37 | M-v | 4 | MPC | | 2005 $BP_{48}$ |
| 2005 $BQ_{48}$ | 17.3 | 0.15 | 20050219 | 88.47897 | 263.70558 | 143.48644 | 6.32917 | 0.1043157 | 2.2157950 | 16 | 1 | 50 days | 0.58 | | | MPC | | 2005 $BQ_{48}$ |
| 2005 $BR_{48}$ | 14.8 | 0.15 | 20050219 | 71.32806 | 272.36741 | 147.34429 | 15.67743 | 0.1482200 | 3.4268103 | 18 | 1 | 54 days | 0.45 | | | MPC | | 2005 $BR_{48}$ |
| 2005 $BS_{48}$ | 16.5 | 0.15 | 20050219 | 343.88815 | 251.78230 | 278.53133 | 3.14639 | 0.1992980 | 2.3307866 | 23 | 1 | 53 days | 0.84 | | | MPC | | 2005 $BS_{48}$ |
| 2005 CZ | 16.3 | 0.15 | 20060922 | 95.29467 | 34.06094 | 136.18611 | 17.82574 | 0.1091614 | 2.6995960 | 29 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 02241 | 2005 CZ |
| 2005 $CG_2$ | 17.8 | 0.15 | 20060922 | 122.53492 | 84.87749 | 120.62246 | 5.43655 | 0.1615746 | 2.2868276 | 42 | 3 | 2002–2005 | 0.59 | M-v | 3 | MPC | 89622 | 2005 $CG_2$ |
| 2005 $CT_2$ | 17.2 | 0.15 | 20060922 | 130.70892 | 112.03550 | 136.02104 | 23.01488 | 0.0844969 | 1.8881616 | 67 | 3 | 2000–2005 | 0.66 | M-v | 2 | MPC | 76631 | 2005 $CT_2$ |
| 2005 $CN_3$ | 17.6 | 0.15 | 20050130 | 349.84848 | 79.31909 | 78.50739 | 4.28838 | 0.1072641 | 2.7516993 | 9 | 1 | 3 days | 0.23 | | E | MPC | 89622 | 2005 $CN_3$ |
| 2005 $CC_4$ | 16.1 | 0.15 | 20060922 | 104.02283 | 109.59312 | 113.10252 | 5.99156 | 0.1553201 | 2.3474109 | 63 | 4 | 1998–2006 | 0.65 | M-v | 1 | MPC | 04313 | 2005 $CC_4$ |
| 2005 $CH_4$ | 16.4 | 0.15 | 20060922 | 87.96366 | 265.49416 | 329.76535 | 13.27315 | 0.1908901 | 2.3997885 | 105 | 5 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04314 | 2005 $CH_4$ |
| 2005 $CA_5$ | 16.9 | 0.15 | 20060922 | 97.19603 | 252.73518 | 330.25157 | 5.87497 | 0.1267066 | 2.3017707 | 49 | 3 | 2003–2006 | 0.47 | M-v | 2 | MPC | 03657 | 2005 $CA_5$ |
| 2005 $CV_5$ | 16.3 | 0.15 | 20060922 | 77.96116 | 257.70755 | 338.25092 | 5.73981 | 0.0931999 | 2.4713976 | 75 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 04314 | 2005 $CV_5$ |
| 2005 $CP_6$ | 16.9 | 0.15 | 20060922 | 312.82572 | 267.96858 | 137.25995 | 25.40607 | 0.0746735 | 1.9097505 | 53 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 04314 | 2005 $CP_6$ |
| 2005 $CU_6$ | 16.4 | 0.15 | 20060922 | 50.76940 | 180.11010 | 138.28913 | 24.76229 | 0.0390379 | 1.9118853 | 66 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 76638 | 2005 $CU_6$ |
| 2005 $CT_7$ | 17.0 | 0.15 | 20060922 | 272.40204 | 164.68209 | 275.82623 | 18.38274 | 0.0920876 | 1.9171484 | 19 | 2 | 2005–2006 | 0.46 | M-v | 5 | MPC | 03657 | 2005 $CT_7$ |
| 2005 $CH_8$ | 16.0 | 0.15 | 20060922 | 41.62398 | 217.37872 | 21.63193 | 2.01587 | 0.1497813 | 2.6463807 | 37 | 5 | 1994–2005 | 0.88 | M-v | 1 | MPC | 04314 | 2005 $CH_8$ |
| 2005 $CQ_8$ | 17.5 | 0.15 | 20060922 | 198.01425 | 34.52516 | 65.44000 | 1.38315 | 0.1425414 | 2.2711032 | 34 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 95643 | 2005 $CQ_8$ |
| 2005 $CX_8$ | 15.4 | 0.15 | 20060922 | 19.66135 | 146.06789 | 84.80731 | 6.24347 | 0.0917433 | 3.0940810 | 43 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 00917 | 2005 $CX_8$ |
| 2005 $CC_{13}$ | 17.2 | 0.15 | 20060922 | 81.12391 | 171.84061 | 63.15712 | 2.07856 | 0.1420446 | 2.3543334 | 21 | 3 | 1998–2005 | 0.55 | M-v | 3 | MPC | 76644 | 2005 $CC_{13}$ |
| 2005 $CR_{13}$ | 16.1 | 0.15 | 20060922 | 16.41512 | 180.36369 | 83.83490 | 5.85111 | 0.1152524 | 2.7772686 | 38 | 4 | 2001–2005 | 0.46 | M-v | 0 | MPC | 97779 | 2005 $CR_{13}$ |
| 2005 $CA_{14}$ | 17.0 | 0.15 | 20060922 | 81.38794 | 256.26067 | 339.02104 | 6.82248 | 0.0954258 | 2.3142893 | 42 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 04314 | 2005 $CA_{14}$ |
| 2005 $CD_{14}$ | 16.1 | 0.15 | 20060922 | 56.31233 | 290.49400 | 333.60396 | 9.12032 | 0.2120449 | 2.3907073 | 88 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04314 | 2005 $CD_{14}$ |
| 2005 $CH_{15}$ | 16.9 | 0.15 | 20060922 | 170.41776 | 350.51945 | 105.18100 | 2.86468 | 0.0594531 | 2.5541102 | 45 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 02242 | 2005 $CH_{15}$ |
| 2005 $CO_{15}$ | 16.8 | 0.15 | 20060922 | 157.26260 | 326.75121 | 126.16872 | 10.35450 | 0.1704589 | 2.7339776 | 20 | 3 | 1995–2005 | 0.44 | M-v | 3 | MPC | 89623 | 2005 $CO_{15}$ |
| 2005 $CK_{16}$ | 16.9 | 0.15 | 20060922 | 132.86845 | 9.84385 | 134.50393 | 1.80368 | 0.1351810 | 2.6072980 | 60 | 4 | 1995–2005 | 0.44 | M-v | 1 | MPC | 76647 | 2005 $CK_{16}$ |
| 2005 $CD_{17}$ | 15.9 | 0.15 | 20060922 | 0.85307 | 286.74435 | 315.05953 | 7.98985 | 0.0447418 | 3.1100774 | 22 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 97779 | 2005 $CD_{17}$ |
| 2005 $CC_{20}$ | 17.8 | 0.15 | 20060922 | 316.75361 | 74.80213 | 330.18372 | 19.70044 | 0.0762782 | 1.8954949 | 33 | 2 | 2005–2006 | 0.54 | M-v | 3 | MPC | 03658 | 2005 $CC_{20}$ |
| 2005 $CG_{22}$ | 15.5 | 0.15 | 20060922 | 81.02335 | 143.31476 | 68.90520 | 4.42769 | 0.1884933 | 2.7700259 | 69 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 03658 | 2005 $CG_{22}$ |
| 2005 $CF_{23}$ | 16.4 | 0.15 | 20060922 | 296.63474 | 59.44357 | 358.57245 | 19.47505 | 0.1083152 | 1.9104890 | 91 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04314 | 2005 $CF_{23}$ |
| 2005 $CS_{23}$ | 16.8 | 0.15 | 20060922 | 152.01995 | 258.61573 | 237.47313 | 5.21630 | 0.0960382 | 2.4488601 | 27 | 4 | 1995–2005 | 0.46 | M-v | 1 | MPC | 76659 | 2005 $CS_{23}$ |
| 2005 $CY_{24}$ | 16.3 | 0.15 | 20060922 | 155.97679 | 207.33020 | 254.55159 | 6.95717 | 0.1694341 | 2.7138887 | 31 | 3 | 1999–2005 | 0.56 | M-v | 3 | MPC | 76659 | 2005 $CY_{24}$ |
| 2005 $CF_{25}$ | 15.9 | 0.15 | 20060922 | 100.16059 | 190.10987 | 36.39861 | 13.16505 | 0.2446679 | 2.6602438 | 100 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 89623 | 2005 $CF_{25}$ |
| 2005 $CQ_{25}$ | 17.1 | 0.15 | 20060922 | 165.15755 | 353.44996 | 138.28690 | 1.90126 | 0.1203599 | 2.3857652 | 36 | 3 | 2001–2005 | 0.55 | M-v | 3 | MPC | 03659 | 2005 $CQ_{25}$ |
| 2005 $CW_{26}$ | 16.4 | 0.15 | 20060922 | 94.44192 | 210.17615 | 12.32867 | 2.20031 | 0.1558451 | 2.4275658 | 74 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04314 | 2005 $CW_{26}$ |
| 2005 $CA_{28}$ | 16.1 | 0.15 | 20060922 | 119.95233 | 345.05775 | 212.87312 | 9.43151 | 0.2268973 | 2.4155627 | 65 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 76664 | 2005 $CA_{28}$ |
| 2005 $CD_{29}$ | 17.8 | 0.15 | 20060922 | 57.66097 | 231.33076 | 31.73906 | 2.65285 | 0.1511009 | 2.3581684 | 23 | 4 | 2002–2006 | 0.26 | M-v | 0 | MPC | 03659 | 2005 $CD_{29}$ |
| 2005 $CV_{32}$ | 17.8 | 0.15 | 20060922 | 71.30976 | 225.98536 | 24.02123 | 2.27584 | 0.1778337 | 2.3333644 | 25 | 4 | 1998–2006 | 0.39 | M-v | 1 | MPC | 89624 | 2005 $CV_{32}$ |
| 2005 $CY_{32}$ | 17.2 | 0.15 | 20060922 | 27.87131 | 315.60704 | 338.35178 | 6.95811 | 0.1494819 | 2.2198895 | 49 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 04314 | 2005 $CY_{32}$ |
| 2005 $CA_{35}$ | 16.8 | 0.15 | 20060922 | 1.30585 | 168.06937 | 92.33188 | 3.27923 | 0.0196642 | 2.8665674 | 31 | 4 | 1996–2006 | 0.39 | M-v | 0 | MPC | 02243 | 2005 $CA_{35}$ |
| 2005 $CG_{36}$ | 15.6 | 0.15 | 20060922 | 64.34074 | 150.39442 | 41.50995 | 2.54088 | 0.1048884 | 3.0441486 | 27 | 3 | 2002–2005 | 0.33 | M-v | 3 | MPC | 76667 | 2005 $CG_{36}$ |
| 2005 $CL_{36}$ | 16.8 | 0.15 | 20060922 | 112.89244 | 96.78312 | 107.78826 | 3.13548 | 0.1528148 | 2.3485474 | 30 | 3 | 1998–2005 | 0.68 | M-v | 3 | MPC | 03659 | 2005 $CL_{36}$ |
| 2005 $CU_{36}$ | 16.4 | 0.15 | 20060922 | 91.22074 | 136.37763 | 101.65874 | 2.52380 | 0.2025089 | 2.3312179 | 53 | 5 | 1992–2006 | 0.59 | M-v | 1 | MPC | 04314 | 2005 $CU_{36}$ |
| 2005 $CY_{37}$ | 17.3 | 0.15 | 20060922 | 340.21959 | 47.11312 | 330.31219 | 19.76347 | 0.0993073 | 1.8966217 | 46 | 2 | 2005–2006 | 0.38 | M-v | 3 | MPC | 03659 | 2005 $CY_{37}$ |
| 2005 $CD_{38}$ | 16.8 | 0.15 | 20060922 | 63.90130 | 164.98152 | 145.26006 | 23.92686 | 0.0840921 | 1.8931193 | 62 | 5 | 1992–2006 | 0.69 | M-v | 2 | MPC | 89624 | 2005 $CD_{38}$ |
| 2005 $CM_{38}$ | 15.9 | 0.15 | 20060922 | 272.91198 | 180.23990 | 265.79349 | 18.27073 | 0.0898931 | 1.8906628 | 43 | 3 | 2001–2006 | 0.66 | M-v | 2 | MPC | 76671 | 2005 $CM_{38}$ |
| 2005 $CK_{39}$ | 16.0 | 0.15 | 20060922 | 72.11315 | 69.75371 | 113.04164 | 11.35388 | 0.0576268 | 2.9676406 | 39 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 00920 | 2005 $CK_{39}$ |
| 2005 $CU_{43}$ | 16.1 | 0.15 | 20060922 | 52.86042 | 95.83370 | 146.18672 | 8.25275 | 0.2514768 | 2.7918456 | 45 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 03660 | 2005 $CU_{43}$ |
| 2005 $CG_{44}$ | 17.1 | 0.15 | 20060922 | 99.21405 | 233.39072 | 354.11094 | 3.21081 | 0.1659074 | 2.3527999 | 34 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 04315 | 2005 $CG_{44}$ |
| 2005 $CG_{45}$ | 16.3 | 0.15 | 20060922 | 52.65778 | 74.12441 | 151.64618 | 8.54066 | 0.1224439 | 2.7667443 | 37 | 5 | 1996–2005 | 0.52 | M-v | 1 | MPC | 86632 | 2005 $CG_{45}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $CK_{45}$ | 16.6 | 0.15 | 20060922 | 82.86131 | 113.62657 | 120.86550 | 5.17448 | 0.1501835 | 2.4500878 | 22 | 2 | 2005–2006 | 0.46 | M-v | 4 | MPC | 03660 | 2005 $CK_{45}$ |
| 2005 $CU_{45}$ | 16.8 | 0.15 | 20060922 | 46.34310 | 291.20473 | 344.75633 | 2.01879 | 0.1757067 | 2.4122792 | 38 | 3 | 2003–2006 | 0.30 | M-v | 3 | MPC | 04315 | 2005 $CU_{45}$ |
| 2005 $CV_{48}$ | 15.7 | 0.15 | 20060922 | 302.17241 | 217.01815 | 136.87001 | 8.79845 | 0.0466883 | 2.4168617 | 34 | 4 | 1999–2005 | 0.61 | M-v | 2 | MPC | 76679 | 2005 $CV_{48}$ |
| 2005 $CV_{49}$ | 16.6 | 0.15 | 20060922 | 111.23107 | 270.86546 | 300.60935 | 3.92977 | 0.0890226 | 2.3043880 | 70 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 04315 | 2005 $CV_{49}$ |
| 2005 $CT_{50}$ | 16.3 | 0.15 | 20060922 | 118.84764 | 218.82513 | 315.61853 | 7.32168 | 0.1464498 | 2.6109260 | 41 | 3 | 2001–2005 | 0.57 | M-v | 3 | MPC | 77813 | 2005 $CT_{50}$ |
| 2005 $CD_{51}$ | 17.5 | 0.15 | 20060922 | 117.10587 | 1.83435 | 209.57475 | 1.83089 | 0.1708341 | 2.3525157 | 34 | 3 | 1994–2006 | 0.67 | M-v | 3 | MPC | 03660 | 2005 $CD_{51}$ |
| 2005 $CM_{56}$ | 17.4 | 0.15 | 20060922 | 88.56272 | 256.20448 | 353.21850 | 4.04468 | 0.1433652 | 2.2675800 | 34 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 76691 | 2005 $CM_{56}$ |
| 2005 $CO_{56}$ | 17.0 | 0.15 | 20060922 | 270.43464 | 257.93688 | 116.37947 | 7.30925 | 0.1110645 | 2.4570200 | 43 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 02243 | 2005 $CO_{56}$ |
| 2005 $CX_{56}$ | 17.3 | 0.15 | 20060922 | 130.11942 | 262.04107 | 272.50715 | 1.24460 | 0.1733703 | 2.3483434 | 58 | 6 | 1996–2006 | 0.54 | M-v | 1 | MPC | 76691 | 2005 $CX_{56}$ |
| 2005 $CW_{58}$ | 16.0 | 0.15 | 20060922 | 105.92298 | 15.81412 | 129.31851 | 2.67678 | 0.1364006 | 3.0900969 | 40 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 76694 | 2005 $CW_{58}$ |
| 2005 $CY_{58}$ | 15.1 | 0.15 | 20060922 | 71.66037 | 22.66493 | 162.81189 | 8.63695 | 0.1253183 | 3.1065953 | 53 | 5 | 1994–2006 | 0.69 | M-v | 0 | MPC | 03661 | 2005 $CY_{58}$ |
| 2005 $CJ_{59}$ | 15.7 | 0.15 | 20060922 | 95.04918 | 332.19041 | 181.75400 | 7.25421 | 0.1175391 | 3.1605460 | 29 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 00921 | 2005 $CJ_{59}$ |
| 2005 $CS_{60}$ | 16.0 | 0.15 | 20060922 | 116.31621 | 162.30508 | 331.92149 | 7.86818 | 0.1895349 | 2.9656352 | 26 | 3 | 2000–2005 | 0.48 | M-v | 3 | MPC | 77814 | 2005 $CS_{60}$ |
| 2005 $CS_{61}$ | 17.1 | 0.15 | 20060922 | 31.99590 | 188.24869 | 145.61803 | 24.54796 | 0.0741290 | 1.8949067 | 40 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 76696 | 2005 $CS_{61}$ |
| 2005 $CV_{61}$ | 17.2 | 0.15 | 20060922 | 149.71688 | 276.77134 | 294.90654 | 1.15950 | 0.1568083 | 2.4569083 | 39 | 5 | 1997–2006 | 0.37 | M-v | 1 | MPC | 89625 | 2005 $CV_{61}$ |
| 2005 $CZ_{62}$ | 15.8 | 0.15 | 20060922 | 81.07713 | 271.26470 | 336.37793 | 22.70624 | 0.1401078 | 2.3325180 | 132 | 3 | 1999–2006 | 0.63 | M-v | 1 | MPC | 03661 | 2005 $CZ_{62}$ |
| 2005 $CV_{63}$ | 15.4 | 0.15 | 20060922 | 354.64757 | 101.26545 | 173.53793 | 5.11188 | 0.1534556 | 3.0810683 | 43 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 00922 | 2005 $CV_{63}$ |
| 2005 $CM_{65}$ | 15.0 | 0.15 | 20060922 | 64.53360 | 69.91443 | 133.47086 | 11.95092 | 0.0330891 | 3.0386582 | 33 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 03662 | 2005 $CM_{65}$ |
| 2005 $CH_{66}$ | 15.3 | 0.15 | 20060922 | 7.65498 | 112.60694 | 143.52031 | 11.58053 | 0.0480811 | 3.0155559 | 30 | 2 | 2005–2006 | 0.51 | M-v | 3 | MPC | 00922 | 2005 $CH_{66}$ |
| 2005 $CM_{68}$ | 16.0 | 0.15 | 20060922 | 93.69658 | 269.75797 | 307.44721 | 9.72105 | 0.1114861 | 2.4231036 | 52 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 76703 | 2005 $CM_{68}$ |
| 2005 $CR_{69}$ | 15.3 | 0.15 | 20060922 | 209.51605 | 254.36239 | 135.19481 | 9.96695 | 0.0766317 | 3.1809031 | 38 | 4 | 1999–2005 | 0.59 | M-v | 1 | MPC | 95647 | 2005 $CR_{69}$ |
| 2005 $CF_{71}$ | 17.4 | 0.15 | 20060922 | 51.53710 | 183.84534 | 100.85245 | 4.09865 | 0.1520373 | 2.1944129 | 45 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 04315 | 2005 $CF_{71}$ |
| 2005 $CT_{73}$ | 17.9 | 0.15 | 20060922 | 111.42542 | 220.88515 | 353.48113 | 2.64719 | 0.0631745 | 2.2376425 | 26 | 4 | 2000–2005 | 0.43 | M-v | 1 | MPC | 76707 | 2005 $CT_{73}$ |
| 2005 $CE_{76}$ | 17.0 | 0.15 | 20060922 | 27.78064 | 137.59624 | 150.58902 | 1.37715 | 0.1805717 | 2.4183342 | 53 | 3 | 2002–2006 | 0.31 | M-v | 2 | MPC | 03663 | 2005 $CE_{76}$ |
| 2005 $CE_{77}$ | 16.5 | 0.15 | 20060922 | 165.45103 | 330.93190 | 232.66507 | 5.49513 | 0.1131201 | 2.3727082 | 67 | 5 | 1999–2006 | 0.42 | M-v | 1 | MPC | 86638 | 2005 $CE_{77}$ |
| 2005 $CO_{77}$ | 15.8 | 0.15 | 20060922 | 121.73803 | 15.52620 | 222.18911 | 11.03284 | 0.1067321 | 2.5718287 | 58 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 87652 | 2005 $CO_{77}$ |
| 2005 $CQ_{77}$ | 16.1 | 0.15 | 20060922 | 90.85616 | 81.17536 | 226.84952 | 4.75922 | 0.1731913 | 2.3089475 | 66 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 87652 | 2005 $CQ_{77}$ |
| 2005 $CV_{78}$ | 17.2 | 0.15 | 20050219 | 349.76975 | 110.69226 | 53.00953 | 2.13465 | 0.1269042 | 2.3887880 | 22 | 1 | 41 days | 0.66 | | | MPC | | 2005 $CV_{78}$ |
| 2005 $CW_{78}$ | 15.7 | 0.15 | 20060922 | 88.27086 | 187.61472 | 341.13763 | 9.91201 | 0.0415763 | 3.2042348 | 18 | 1 | 96 days | 0.31 | M-v | 4 | MPC | | 2005 $CW_{78}$ |
| 2005 $CY_{78}$ | 15.4 | 0.15 | 20050311 | 352.53273 | 359.39716 | 168.99877 | 18.57268 | 0.2331844 | 3.0739142 | 19 | 1 | 51 days | 0.46 | | | MPC | | 2005 $CY_{78}$ |
| 2005 $DB_{2}$ | 16.6 | 0.15 | 20060922 | 150.24131 | 162.65965 | 48.76710 | 22.56581 | 0.0399736 | 1.9492772 | 47 | 3 | 2001–2006 | 0.56 | M-v | 2 | MPC | 86638 | 2005 $DB_{2}$ |
| 2005 $EK_{1}$ | 17.4 | 0.15 | 20060922 | 326.47104 | 240.10801 | 161.64771 | 27.04787 | 0.0923432 | 1.8908598 | 91 | 4 | 1992–2006 | 0.56 | M-v | 1 | MPC | 03663 | 2005 $EK_{1}$ |
| 2005 $EN_{1}$ | 17.1 | 0.15 | 20060922 | 109.33969 | 132.30660 | 95.99507 | 1.23704 | 0.1280846 | 2.3297325 | 58 | 5 | 1992–2006 | 0.47 | M-v | 1 | MPC | 04315 | 2005 $EN_{1}$ |
| 2005 $ET_{1}$ | 16.1 | 0.15 | 20060922 | 92.74035 | 258.49470 | 346.83540 | 24.53851 | 0.1269758 | 2.2634398 | 121 | 2 | 2005–2006 | 0.58 | M-v | 3 | MPC | 03663 | 2005 $ET_{1}$ |
| 2005 $EU_{1}$ | 17.2 | 0.15 | 20060922 | 325.74866 | 56.72093 | 354.14518 | 20.52726 | 0.0894429 | 1.8813604 | 91 | 2 | 2005–2006 | 0.48 | M-v | 3 | MPC | 03663 | 2005 $EU_{1}$ |
| 2005 $EB_{2}$ | 16.3 | 0.15 | 20060922 | 257.65599 | 269.68033 | 195.16743 | 21.29956 | 0.0915992 | 1.9628748 | 88 | 3 | 2002–2006 | 0.51 | M-v | 1 | MPC | 03664 | 2005 $EB_{2}$ |
| 2005 $EH_{2}$ | 17.0 | 0.15 | 20060922 | 309.37258 | 64.48603 | 358.81130 | 20.77101 | 0.1048711 | 1.9138983 | 127 | 3 | 1998–2006 | 0.57 | M-v | 2 | MPC | 04315 | 2005 $EH_{2}$ |
| 2005 $EJ_{2}$ | 15.9 | 0.15 | 20060922 | 208.16565 | 349.22719 | 165.66702 | 23.14768 | 0.0593869 | 1.9751034 | 149 | 3 | 2003–2006 | 0.56 | M-v | 2 | MPC | 04315 | 2005 $EJ_{2}$ |
| 2005 $EW_{4}$ | 16.5 | 0.15 | 20060922 | 115.67478 | 74.33721 | 154.20614 | 7.62518 | 0.1411727 | 2.2789500 | 80 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 04315 | 2005 $EW_{4}$ |
| 2005 $EH_{5}$ | 15.6 | 0.15 | 20060922 | 116.33172 | 84.61642 | 74.45109 | 3.28425 | 0.1685448 | 3.0132644 | 60 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 76718 | 2005 $EH_{5}$ |
| 2005 $EB_{6}$ | 17.5 | 0.15 | 20060922 | 125.08284 | 218.60874 | 2.50780 | 6.33104 | 0.1296844 | 2.2616279 | 39 | 2 | 2005–2006 | 0.51 | M-v | 3 | MPC | 03664 | 2005 $EB_{6}$ |
| 2005 $EE_{6}$ | 16.9 | 0.15 | 20060922 | 13.45726 | 289.39829 | 29.30272 | 1.90917 | 0.1592274 | 2.4098973 | 35 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 03664 | 2005 $EE_{6}$ |
| 2005 $ES_{6}$ | 17.2 | 0.15 | 20060922 | 102.53207 | 218.55720 | 17.15120 | 1.08395 | 0.1497736 | 2.3636119 | 48 | 6 | 1995–2006 | 0.38 | M-v | 1 | MPC | 76721 | 2005 $ES_{6}$ |
| 2005 $EC_{7}$ | 16.3 | 0.15 | 20060922 | 97.82957 | 74.99430 | 161.34339 | 8.73618 | 0.1633411 | 2.4231646 | 67 | 3 | 2002–2006 | 0.62 | M-v | 2 | MPC | 04315 | 2005 $EC_{7}$ |
| 2005 $EM_{7}$ | 17.7 | 0.15 | 20060922 | 131.70402 | 56.82876 | 163.01678 | 3.80605 | 0.1020336 | 2.2215702 | 44 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 76723 | 2005 $EM_{7}$ |
| 2005 $EN_{7}$ | 16.1 | 0.15 | 20060922 | 217.30213 | 65.83276 | 9.29148 | 3.71880 | 0.0522675 | 2.7830572 | 33 | 4 | 1993–2005 | 0.31 | M-v | 1 | MPC | 04316 | 2005 $EN_{7}$ |
| 2005 $EO_{7}$ | 16.9 | 0.15 | 20060922 | 122.71472 | 39.05707 | 163.57822 | 3.16289 | 0.1212915 | 2.4763878 | 45 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 03664 | 2005 $EO_{7}$ |
| 2005 $ET_{7}$ | 16.0 | 0.15 | 20060922 | 27.12871 | 309.33990 | 2.55743 | 5.26563 | 0.1589527 | 2.4435829 | 129 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04316 | 2005 $ET_{7}$ |
| 2005 $EE_{8}$ | 17.6 | 0.15 | 20050311 | 319.74592 | 69.16538 | 167.07644 | 2.30797 | 0.1733455 | 2.3031500 | 15 | 1 | 34 days | 0.42 | | | MPC | | 2005 $EE_{8}$ |
| 2005 $EM_{8}$ | 17.4 | 0.15 | 20060922 | 82.16920 | 268.47588 | 338.04994 | 3.94751 | 0.0873291 | 2.4772780 | 52 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 04316 | 2005 $EM_{8}$ |
| 2005 $EE_{9}$ | 17.1 | 0.15 | 20060922 | 61.84074 | 107.63007 | 144.54041 | 7.39708 | 0.0829501 | 2.2852486 | 38 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 76726 | 2005 $EE_{9}$ |
| 2005 $EG_{9}$ | 16.9 | 0.15 | 20060922 | 105.24280 | 345.81400 | 245.42426 | 5.22261 | 0.1296232 | 2.2862102 | 53 | 5 | 1998–2006 | 0.64 | M-v | 1 | MPC | 04316 | 2005 $EG_{9}$ |
| 2005 $EM_{9}$ | 17.3 | 0.15 | 20060922 | 144.50815 | 317.05884 | 223.25956 | 2.41950 | 0.1171959 | 2.3345307 | 65 | 5 | 1998–2006 | 0.68 | M-v | 1 | MPC | 76726 | 2005 $EM_{9}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $ET_{9}$ | 17.0 | 0.15 | 20060922 | 84.32350 | 79.07241 | 181.12436 | 3.37835 | 0.1640536 | 2.3275030 | 77 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 04316 | 2005 $ET_{9}$ |
| 2005 $EE_{10}$ | 15.7 | 0.15 | 20060922 | 60.89173 | 261.01166 | 346.50889 | 6.88467 | 0.1787883 | 2.8041104 | 110 | 5 | 1997–2006 | 0.49 | M-v | 0 | MPC | 04316 | 2005 $EE_{10}$ |
| 2005 $EM_{10}$ | 15.7 | 0.15 | 20060922 | 47.35066 | 291.68466 | 330.20480 | 7.39676 | 0.1619984 | 2.7699086 | 72 | 4 | 2000–2006 | 0.52 | M-v | 1 | MPC | 04316 | 2005 $EM_{10}$ |
| 2005 $EP_{10}$ | 16.4 | 0.15 | 20060922 | 77.40259 | 316.60828 | 284.36271 | 1.46796 | 0.1091306 | 2.5418404 | 72 | 6 | 1993–2006 | 0.46 | M-v | 1 | MPC | 04316 | 2005 $EP_{10}$ |
| 2005 $ED_{11}$ | 17.0 | 0.15 | 20060922 | 102.42140 | 281.00416 | 320.96485 | 5.17377 | 0.1902462 | 2.3272493 | 46 | 5 | 1994–2006 | 0.57 | M-v | 1 | MPC | 76730 | 2005 $ED_{11}$ |
| 2005 $ED_{12}$ | 17.3 | 0.15 | 20060922 | 141.17879 | 107.07621 | 76.54229 | 2.96665 | 0.0814445 | 2.2758581 | 43 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 04316 | 2005 $ED_{12}$ |
| 2005 $EU_{12}$ | 15.9 | 0.15 | 20060922 | 58.29147 | 246.64842 | 9.92271 | 9.75015 | 0.2252256 | 2.7033272 | 78 | 5 | 1993–2006 | 0.56 | M-v | 1 | MPC | 04316 | 2005 $EU_{12}$ |
| 2005 $EE_{13}$ | 17.2 | 0.15 | 20060922 | 125.00085 | 172.32084 | 29.70552 | 2.74360 | 0.1452948 | 2.3301814 | 45 | 4 | 1996–2005 | 0.69 | M-v | 2 | MPC | 76736 | 2005 $EE_{13}$ |
| 2005 $ER_{13}$ | 16.4 | 0.15 | 20060922 | 63.48009 | 250.14145 | 20.18381 | 4.97991 | 0.1342116 | 2.3697959 | 47 | 3 | 1998–2006 | 0.68 | M-v | 2 | MPC | 04316 | 2005 $ER_{13}$ |
| 2005 $ES_{13}$ | 16.7 | 0.15 | 20060922 | 203.07556 | 108.51509 | 9.16496 | 7.22099 | 0.1023204 | 2.2719149 | 79 | 3 | 1993–2005 | 0.54 | M-v | 2 | MPC | 04316 | 2005 $ES_{13}$ |
| 2005 $EE_{14}$ | 16.7 | 0.15 | 20060922 | 88.31081 | 224.77682 | 21.11982 | 5.61706 | 0.1660040 | 2.4205136 | 58 | 4 | 1995–2006 | 0.74 | M-v | 1 | MPC | 76739 | 2005 $EE_{14}$ |
| 2005 $EG_{14}$ | 16.9 | 0.15 | 20060922 | 80.02774 | 242.51995 | 27.79252 | 5.75446 | 0.1596453 | 2.2607630 | 59 | 5 | 1996–2006 | 0.54 | M-v | 1 | MPC | 76739 | 2005 $EG_{14}$ |
| 2005 $EP_{14}$ | 16.5 | 0.15 | 20060922 | 127.94956 | 41.19085 | 153.28405 | 7.18668 | 0.0665128 | 2.3831116 | 59 | 4 | 1994–2006 | 0.67 | M-v | 1 | MPC | 04316 | 2005 $EP_{14}$ |
| 2005 $EX_{16}$ | 17.3 | 0.15 | 20060922 | 109.41567 | 245.19444 | 2.74411 | 1.78857 | 0.1710678 | 2.2201099 | 68 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 76743 | 2005 $EX_{16}$ |
| 2005 $EZ_{16}$ | 16.4 | 0.15 | 20060922 | 355.44761 | 298.99324 | 1.64865 | 1.07202 | 0.0395347 | 2.7728285 | 34 | 4 | 1998–2005 | 0.47 | M-v | 1 | MPC | 95649 | 2005 $EZ_{16}$ |
| 2005 $EQ_{18}$ | 17.1 | 0.15 | 20060922 | 48.12160 | 245.24250 | 33.51824 | 1.35627 | 0.1526816 | 2.5831320 | 43 | 5 | 1998–2006 | 0.37 | M-v | 0 | MPC | 04316 | 2005 $EQ_{18}$ |
| 2005 $EM_{19}$ | 16.4 | 0.15 | 20060922 | 150.66507 | 326.88489 | 147.52587 | 1.38312 | 0.1352632 | 3.0959767 | 29 | 4 | 1992–2005 | 0.28 | M-v | 0 | MPC | 04316 | 2005 $EM_{19}$ |
| 2005 $EC_{20}$ | 17.0 | 0.15 | 20060922 | 95.29967 | 87.80736 | 151.64523 | 3.03266 | 0.1297660 | 2.3073926 | 36 | 2 | 2005–2006 | 0.44 | M-v | 3 | MPC | 03665 | 2005 $EC_{20}$ |
| 2005 $EF_{20}$ | 17.1 | 0.15 | 20060922 | 60.95322 | 290.09688 | 344.65946 | 7.30315 | 0.1157386 | 2.2823888 | 46 | 3 | 2003–2006 | 0.39 | M-v | 2 | MPC | 04316 | 2005 $EF_{20}$ |
| 2005 $EG_{20}$ | 16.4 | 0.15 | 20060922 | 72.24410 | 103.48978 | 152.93909 | 3.40029 | 0.1040302 | 2.3461077 | 58 | 3 | 2003–2006 | 0.53 | M-v | 2 | MPC | 03666 | 2005 $EG_{20}$ |
| 2005 $EP_{20}$ | 16.1 | 0.15 | 20060922 | 30.76713 | 146.31894 | 143.88362 | 6.84861 | 0.1277047 | 2.4365094 | 60 | 4 | 1991–2006 | 0.53 | M-v | 1 | MPC | 04316 | 2005 $EP_{20}$ |
| 2005 $ES_{20}$ | 16.8 | 0.15 | 20060922 | 129.68588 | 96.23817 | 97.72937 | 2.08134 | 0.1181807 | 2.3546066 | 40 | 3 | 1998–2006 | 0.62 | M-v | 4 | MPC | 76747 | 2005 $ES_{20}$ |
| 2005 $EK_{21}$ | 15.5 | 0.15 | 20060922 | 52.14147 | 157.31832 | 59.39940 | 3.73085 | 0.0228081 | 3.1085003 | 40 | 4 | 2000–2006 | 0.71 | M-v | 1 | MPC | 76748 | 2005 $EK_{21}$ |
| 2005 $EN_{21}$ | 16.6 | 0.15 | 20060922 | 118.03350 | 124.40838 | 96.68953 | 3.27534 | 0.1191282 | 2.2704407 | 55 | 5 | 1995–2005 | 0.49 | M-v | 1 | MPC | 76749 | 2005 $EN_{21}$ |
| 2005 $EC_{22}$ | 17.3 | 0.15 | 20060922 | 117.86342 | 224.23885 | 341.31435 | 2.34313 | 0.1387223 | 2.3966097 | 55 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 76750 | 2005 $EC_{22}$ |
| 2005 $EZ_{22}$ | 17.2 | 0.15 | 20060922 | 126.51461 | 43.90721 | 171.32239 | 6.54171 | 0.1249073 | 2.2400941 | 62 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 04316 | 2005 $EZ_{22}$ |
| 2005 $EP_{23}$ | 17.4 | 0.15 | 20060922 | 127.51360 | 46.24439 | 169.01880 | 7.38224 | 0.0780685 | 2.2032405 | 62 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 04316 | 2005 $EP_{23}$ |
| 2005 $ES_{24}$ | 16.7 | 0.15 | 20060922 | 105.07650 | 218.43499 | 23.01913 | 7.34398 | 0.1011426 | 2.2411645 | 63 | 3 | 2003–2006 | 0.58 | M-v | 2 | MPC | 76756 | 2005 $ES_{24}$ |
| 2005 $EW_{24}$ | 16.6 | 0.15 | 20060922 | 231.74302 | 144.10597 | 358.84723 | 19.41682 | 0.0847050 | 1.9157215 | 147 | 3 | 1998–2006 | 0.54 | M-v | 2 | MPC | 04316 | 2005 $EW_{24}$ |
| 2005 $EG_{25}$ | 14.8 | 0.15 | 20060922 | 175.16944 | 306.99434 | 151.63577 | 11.58045 | 0.0241627 | 3.0365264 | 39 | 4 | 1994–2005 | 0.71 | M-v | 1 | MPC | 76757 | 2005 $EG_{25}$ |
| 2005 $EH_{25}$ | 16.4 | 0.15 | 20060922 | 93.01189 | 117.31033 | 122.52660 | 3.91715 | 0.1311445 | 2.4082898 | 62 | 4 | 2001–2006 | 0.78 | M-v | 1 | MPC | 04316 | 2005 $EH_{25}$ |
| 2005 $ES_{25}$ | 17.6 | 0.15 | 20060922 | 137.35905 | 67.77949 | 137.84130 | 2.55334 | 0.0905783 | 2.2145753 | 41 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 76759 | 2005 $ES_{25}$ |
| 2005 $ER_{27}$ | 16.7 | 0.15 | 20060922 | 140.72037 | 18.17633 | 152.61340 | 1.65567 | 0.1279982 | 2.4433895 | 72 | 6 | 1995–2006 | 0.55 | M-v | 1 | MPC | 04317 | 2005 $ER_{27}$ |
| 2005 $EB_{28}$ | 15.7 | 0.15 | 20060922 | 69.50808 | 59.65683 | 152.52588 | 0.70336 | 0.1357598 | 3.1563226 | 50 | 5 | 1999–2005 | 0.70 | M-v | 1 | MPC | 76762 | 2005 $EB_{28}$ |
| 2005 $EF_{28}$ | 16.8 | 0.15 | 20060922 | 118.18628 | 189.09771 | 31.85422 | 3.43915 | 0.1016583 | 2.3091939 | 62 | 4 | 1998–2006 | 0.60 | M-v | 1 | MPC | 04317 | 2005 $EF_{28}$ |
| 2005 $EG_{28}$ | 16.1 | 0.15 | 20060922 | 84.22312 | 234.31559 | 12.13609 | 8.28242 | 0.1197649 | 2.4566170 | 81 | 6 | 1991–2006 | 0.52 | M-v | 1 | MPC | 04317 | 2005 $EG_{28}$ |
| 2005 $EM_{28}$ | 15.9 | 0.15 | 20060922 | 98.79292 | 93.76820 | 153.46005 | 10.23309 | 0.1210658 | 2.3124530 | 113 | 2 | 2005–2006 | 0.53 | M-v | 3 | MPC | 03666 | 2005 $EM_{28}$ |
| 2005 $ET_{28}$ | 15.9 | 0.15 | 20060922 | 100.35073 | 192.83474 | 26.88877 | 7.99359 | 0.2494750 | 2.6878373 | 84 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04317 | 2005 $ET_{28}$ |
| 2005 $EW_{28}$ | 15.8 | 0.15 | 20060922 | 165.03047 | 30.67186 | 103.71643 | 3.95693 | 0.1221002 | 2.6422011 | 35 | 4 | 2000–2005 | 0.72 | M-v | 1 | MPC | 76764 | 2005 $EW_{28}$ |
| 2005 $EX_{28}$ | 17.0 | 0.15 | 20060922 | 142.37005 | 38.54430 | 150.34560 | 7.19472 | 0.0537002 | 2.3823584 | 56 | 5 | 1995–2006 | 0.57 | M-v | 1 | MPC | 04317 | 2005 $EX_{28}$ |
| 2005 $EY_{28}$ | 17.3 | 0.15 | 20060922 | 135.46310 | 33.62304 | 165.53978 | 13.04873 | 0.1713691 | 2.3744923 | 54 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 04317 | 2005 $EY_{28}$ |
| 2005 $EA_{29}$ | 16.5 | 0.15 | 20060922 | 108.62243 | 43.59540 | 166.76534 | 13.06580 | 0.2267300 | 2.6407695 | 62 | 4 | 1992–2006 | 0.67 | M-v | 1 | MPC | 04317 | 2005 $EA_{29}$ |
| 2005 $EH_{29}$ | 17.1 | 0.15 | 20060922 | 108.11702 | 46.91924 | 177.66669 | 6.58981 | 0.0740141 | 2.2814541 | 44 | 4 | 2002–2006 | 0.62 | M-v | 1 | MPC | 04317 | 2005 $EH_{29}$ |
| 2005 $EP_{29}$ | 16.0 | 0.15 | 20060922 | 89.70771 | 170.33194 | 58.52669 | 5.13782 | 0.1933217 | 2.7358309 | 77 | 4 | 1996–2005 | 0.66 | M-v | 1 | MPC | 76767 | 2005 $EP_{29}$ |
| 2005 $EF_{30}$ | 17.0 | 0.15 | 20060922 | 67.40481 | 93.93250 | 157.62163 | 7.57491 | 0.1941200 | 2.5271154 | 40 | 5 | 1998–2006 | 0.52 | M-v | 2 | MPC | 04317 | 2005 $EF_{30}$ |
| 2005 $EH_{30}$ | 16.8 | 0.15 | 20060922 | 81.09402 | 245.18623 | 6.87216 | 5.27002 | 0.1613273 | 2.3923804 | 72 | 5 | 1983–2006 | 0.44 | M-v | 0 | MPC | 04317 | 2005 $EH_{30}$ |
| 2005 $EL_{30}$ | 16.7 | 0.15 | 20060922 | 177.40132 | 183.08204 | 15.69554 | 21.64269 | 0.0400435 | 1.9569739 | 75 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 76769 | 2005 $EL_{30}$ |
| 2005 $EP_{30}$ | 16.8 | 0.15 | 20060922 | 5.05490 | 344.17631 | 347.63774 | 14.37661 | 0.1037357 | 2.6773000 | 39 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 03666 | 2005 $EP_{30}$ |
| 2005 $EC_{32}$ | 17.4 | 0.15 | 20060922 | 78.69537 | 263.21055 | 350.55348 | 1.71073 | 0.1715891 | 2.4047312 | 49 | 6 | 1991–2006 | 0.43 | M-v | 0 | MPC | 04317 | 2005 $EC_{32}$ |
| 2005 $ES_{32}$ | 16.3 | 0.15 | 20060922 | 27.42513 | 277.12559 | 20.65452 | 6.63100 | 0.1722924 | 2.4478045 | 42 | 3 | 1991–2006 | 0.44 | M-v | 3 | MPC | 03666 | 2005 $ES_{32}$ |
| 2005 $EL_{33}$ | 16.9 | 0.15 | 20060922 | 215.41276 | 163.56533 | 343.60772 | 18.15946 | 0.0633674 | 1.9554241 | 93 | 2 | 2005–2006 | 0.47 | M-v | 3 | MPC | 03666 | 2005 $EL_{33}$ |
| 2005 $EN_{33}$ | 17.4 | 0.15 | 20060922 | 318.24425 | 51.60961 | 351.78113 | 18.28128 | 0.1209059 | 1.9243243 | 78 | 3 | 1998–2006 | 0.60 | M-v | 2 | MPC | 04317 | 2005 $EN_{33}$ |
| 2005 $EM_{34}$ | 16.2 | 0.15 | 20060922 | 86.81017 | 45.47351 | 175.77858 | 4.80696 | 0.2371098 | 2.7266677 | 89 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04317 | 2005 $EM_{34}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $EO_{34}$ | 16.8 | 0.15 | 20060922 | 61.37834 | 333.09187 | 301.66492 | 4.72984 | 0.0458916 | 2.2433662 | 58 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 04317 | 2005 $EO_{34}$ |
| 2005 $EV_{34}$ | 16.4 | 0.15 | 20060922 | 142.65436 | 235.24096 | 332.56439 | 6.54467 | 0.0586391 | 2.2260380 | 58 | 3 | 2003–2006 | 0.56 | M-v | 3 | MPC | 04317 | 2005 $EV_{34}$ |
| 2005 $ED_{35}$ | 16.7 | 0.15 | 20060922 | 166.18619 | 300.72082 | 228.64597 | 5.00868 | 0.1024989 | 2.2940408 | 57 | 3 | 2003–2006 | 0.64 | M-v | 3 | MPC | 76777 | 2005 $ED_{35}$ |
| 2005 $EF_{35}$ | 15.9 | 0.15 | 20060922 | 146.41961 | 357.22105 | 190.41882 | 12.88451 | 0.0389909 | 2.3979167 | 88 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 76777 | 2005 $EF_{35}$ |
| 2005 $EO_{35}$ | 14.8 | 0.15 | 20060922 | 42.83412 | 288.71346 | 316.30694 | 3.79127 | 0.1309098 | 3.1834152 | 70 | 5 | 2000–2005 | 0.60 | M-v | 1 | MPC | 76778 | 2005 $EO_{35}$ |
| 2005 $EV_{35}$ | 15.9 | 0.15 | 20060922 | 130.61337 | 314.23367 | 203.58626 | 7.27233 | 0.1578612 | 2.7831457 | 33 | 3 | 1996–2005 | 0.58 | M-v | 3 | MPC | 76779 | 2005 $EV_{35}$ |
| 2005 $EZ_{35}$ | 16.7 | 0.15 | 20060922 | 106.42326 | 11.36087 | 230.26343 | 3.93760 | 0.3125949 | 2.4329916 | 68 | 4 | 1999–2006 | 0.42 | M-v | 2 | MPC | 76780 | 2005 $EZ_{35}$ |
| 2005 $EE_{36}$ | 16.7 | 0.15 | 20060922 | 139.83871 | 263.41072 | 284.28603 | 5.91903 | 0.1451431 | 2.3412213 | 33 | 4 | 1999–2006 | 0.61 | M-v | 1 | MPC | 76781 | 2005 $EE_{36}$ |
| 2005 $EG_{36}$ | 17.3 | 0.15 | 20060922 | 104.81108 | 4.17875 | 227.85131 | 5.90523 | 0.1904554 | 2.3820606 | 48 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 76781 | 2005 $EG_{36}$ |
| 2005 $EA_{37}$ | 15.8 | 0.15 | 20060922 | 113.71459 | 22.31083 | 177.62153 | 12.46967 | 0.1699179 | 2.7520936 | 92 | 4 | 2000–2006 | 0.72 | M-v | 2 | MPC | 04317 | 2005 $EA_{37}$ |
| 2005 $ED_{37}$ | 15.8 | 0.15 | 20060922 | 116.12585 | 131.41990 | 85.64698 | 4.70416 | 0.2256717 | 2.6563753 | 112 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 87653 | 2005 $ED_{37}$ |
| 2005 $EJ_{37}$ | 16.6 | 0.15 | 20060922 | 146.64849 | 4.12239 | 185.65313 | 2.71272 | 0.1393091 | 2.3536768 | 77 | 5 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04317 | 2005 $EJ_{37}$ |
| 2005 $EK_{37}$ | 16.4 | 0.15 | 20060922 | 350.10943 | 43.26877 | 357.65985 | 23.01577 | 0.0575773 | 1.8798086 | 34 | 5 | 1992–2006 | 0.64 | M-v | 1 | MPC | 86643 | 2005 $EK_{37}$ |
| 2005 $EN_{37}$ | 17.0 | 0.15 | 20060922 | 32.00645 | 324.17503 | 350.09437 | 10.09085 | 0.1356940 | 2.2127795 | 84 | 2 | 2005–2006 | 0.48 | M-v | 3 | MPC | 03667 | 2005 $EN_{37}$ |
| 2005 $EW_{37}$ | 17.6 | 0.15 | 20060922 | 177.74602 | 212.75432 | 277.80001 | 2.01258 | 0.1817078 | 2.4016482 | 65 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 04317 | 2005 $EW_{37}$ |
| 2005 $EG_{38}$ | 16.6 | 0.15 | 20060922 | 265.10631 | 312.76151 | 140.90101 | 24.05451 | 0.0829115 | 1.9515156 | 59 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 03667 | 2005 $EG_{38}$ |
| 2005 $EH_{38}$ | 17.2 | 0.15 | 20060922 | 339.38053 | 359.80285 | 22.07235 | 20.48208 | 0.1042855 | 1.9595847 | 53 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 76786 | 2005 $EH_{38}$ |
| 2005 $EL_{38}$ | 16.6 | 0.15 | 20060922 | 87.85900 | 296.98396 | 322.20098 | 5.78544 | 0.1842862 | 2.2127908 | 86 | 6 | 1998–2006 | 0.64 | M-v | 1 | MPC | 04317 | 2005 $EL_{38}$ |
| 2005 $EM_{38}$ | 15.9 | 0.15 | 20060922 | 52.86947 | 307.29305 | 336.67390 | 24.59880 | 0.2022643 | 2.3429559 | 115 | 3 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04317 | 2005 $EM_{38}$ |
| 2005 $EO_{38}$ | 16.9 | 0.15 | 20060922 | 297.90050 | 258.40845 | 169.72797 | 23.00153 | 0.1294979 | 1.9284516 | 93 | 3 | 1998–2006 | 0.65 | M-v | 2 | MPC | 04317 | 2005 $EO_{38}$ |
| 2005 $EQ_{38}$ | 16.8 | 0.15 | 20060922 | 161.76935 | 356.53021 | 169.81463 | 25.49193 | 0.1830027 | 2.3075309 | 85 | 3 | 1998–2006 | 0.59 | M-v | 2 | MPC | 76787 | 2005 $EQ_{38}$ |
| 2005 $ET_{39}$ | 16.9 | 0.15 | 20060922 | 318.14384 | 175.39092 | 149.55543 | 2.60847 | 0.0927314 | 2.4688645 | 40 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 02245 | 2005 $ET_{39}$ |
| 2005 $EQ_{40}$ | 16.7 | 0.15 | 20060922 | 60.19525 | 143.52588 | 137.40957 | 3.39657 | 0.1564296 | 2.3690122 | 65 | 6 | 1994–2006 | 0.60 | M-v | 1 | MPC | 04317 | 2005 $EQ_{40}$ |
| 2005 $ER_{40}$ | 16.4 | 0.15 | 20060922 | 79.15616 | 129.32769 | 135.11214 | 3.06091 | 0.1897798 | 2.4074361 | 78 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04317 | 2005 $ER_{40}$ |
| 2005 $EU_{40}$ | 17.4 | 0.15 | 20060922 | 95.36410 | 94.94261 | 148.47232 | 4.60720 | 0.1981060 | 2.4283060 | 35 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04317 | 2005 $EU_{40}$ |
| 2005 $ET_{42}$ | 16.5 | 0.15 | 20060922 | 268.25378 | 213.22967 | 146.49423 | 6.51677 | 0.0080313 | 2.6936339 | 28 | 4 | 1998–2006 | 0.34 | M-v | 0 | MPC | 00925 | 2005 $ET_{42}$ |
| 2005 $EW_{42}$ | 14.4 | 0.15 | 20060922 | 14.97054 | 88.95857 | 151.87968 | 13.67086 | 0.1641594 | 3.9432221 | 49 | 4 | 2000–2006 | 0.61 | M-v | 0 | MPC | 00925 | 2005 $EW_{42}$ |
| 2005 $EU_{43}$ | 18.1 | 0.15 | 20060922 | 163.26228 | 263.47386 | 268.67786 | 3.03665 | 0.0859701 | 2.2523645 | 18 | 3 | 2003–2006 | 0.24 | M-v | 3 | MPC | 76794 | 2005 $EU_{43}$ |
| 2005 $EG_{44}$ | 17.3 | 0.15 | 20060922 | 209.59596 | 156.51928 | 288.89622 | 0.34246 | 0.2183657 | 2.4148150 | 35 | 3 | 2000–2005 | 0.48 | M-v | 2 | MPC | 76795 | 2005 $EG_{44}$ |
| 2005 $EZ_{44}$ | 17.1 | 0.15 | 20060922 | 106.23814 | 320.39520 | 261.41018 | 1.44739 | 0.1648902 | 2.3311225 | 45 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 04317 | 2005 $EZ_{44}$ |
| 2005 $EA_{45}$ | 16.6 | 0.15 | 20060922 | 82.87693 | 288.44400 | 306.63491 | 2.21036 | 0.1379507 | 2.4162653 | 59 | 6 | 1998–2006 | 0.46 | M-v | 1 | MPC | 04317 | 2005 $EA_{45}$ |
| 2005 $EK_{46}$ | 16.9 | 0.15 | 20060922 | 124.12784 | 11.44662 | 191.06123 | 2.71532 | 0.1043586 | 2.3141042 | 69 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04318 | 2005 $EK_{46}$ |
| 2005 $EW_{46}$ | 16.9 | 0.15 | 20060922 | 137.88614 | 321.63293 | 227.25997 | 3.82791 | 0.0864065 | 2.2655760 | 32 | 4 | 2001–2005 | 0.66 | M-v | 1 | MPC | 76799 | 2005 $EW_{46}$ |
| 2005 $EZ_{46}$ | 17.6 | 0.15 | 20060922 | 116.46263 | 87.19173 | 146.18988 | 3.24581 | 0.1210779 | 2.2544130 | 29 | 5 | 1993–2006 | 0.36 | M-v | 1 | MPC | 04318 | 2005 $EZ_{46}$ |
| 2005 $EH_{47}$ | 17.0 | 0.15 | 20060922 | 110.61397 | 259.81279 | 327.66528 | 2.11551 | 0.1282828 | 2.3510712 | 53 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04318 | 2005 $EH_{47}$ |
| 2005 $ER_{48}$ | 16.3 | 0.15 | 20060922 | 116.54049 | 3.35956 | 199.40904 | 1.09692 | 0.1211754 | 2.4062349 | 70 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 76802 | 2005 $ER_{48}$ |
| 2005 $EJ_{49}$ | 15.3 | 0.15 | 20060922 | 89.81120 | 235.68219 | 338.06175 | 7.64801 | 0.2321951 | 2.7646281 | 91 | 3 | 2003–2006 | 0.49 | M-v | 2 | MPC | 04318 | 2005 $EJ_{49}$ |
| 2005 $EL_{49}$ | 17.0 | 0.15 | 20060922 | 112.04177 | 333.91959 | 234.12554 | 1.66892 | 0.1399209 | 2.4544501 | 59 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 76805 | 2005 $EL_{49}$ |
| 2005 $EQ_{49}$ | 16.7 | 0.15 | 20060922 | 98.21024 | 7.85941 | 220.38035 | 2.51704 | 0.1355929 | 2.4371577 | 50 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 76806 | 2005 $EQ_{49}$ |
| 2005 $EG_{50}$ | 16.7 | 0.15 | 20060922 | 180.31315 | 2.26111 | 149.70873 | 4.35801 | 0.0637880 | 2.2308535 | 46 | 4 | 1995–2006 | 0.51 | M-v | 2 | MPC | 04318 | 2005 $EG_{50}$ |
| 2005 $EQ_{50}$ | 16.3 | 0.15 | 20060922 | 132.60749 | 177.70870 | 347.45974 | 4.78439 | 0.1589129 | 2.6647468 | 100 | 6 | 1992–2005 | 0.64 | M-v | 1 | MPC | 04318 | 2005 $EQ_{50}$ |
| 2005 $EU_{50}$ | 16.9 | 0.15 | 20060922 | 106.97065 | 236.17494 | 339.07940 | 5.67032 | 0.0639471 | 2.4185097 | 84 | 5 | 1995–2006 | 0.65 | M-v | 1 | MPC | 04318 | 2005 $EU_{50}$ |
| 2005 $EJ_{51}$ | 16.5 | 0.15 | 20060922 | 118.08999 | 205.79620 | 21.19558 | 9.37760 | 0.1278879 | 2.2778275 | 82 | 3 | 2003–2006 | 0.55 | M-v | 3 | MPC | 04318 | 2005 $EJ_{51}$ |
| 2005 $EX_{51}$ | 17.3 | 0.15 | 20060922 | 204.71150 | 311.43795 | 184.72408 | 7.24293 | 0.1067014 | 2.2602396 | 47 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 76811 | 2005 $EX_{51}$ |
| 2005 $EN_{54}$ | 17.0 | 0.15 | 20060922 | 54.03678 | 283.55968 | 345.56565 | 3.52705 | 0.2015726 | 2.6177043 | 31 | 2 | 2005–2006 | 0.25 | M-v | 3 | MPC | 03668 | 2005 $EN_{54}$ |
| 2005 $EX_{54}$ | 16.8 | 0.15 | 20060922 | 358.97900 | 157.87672 | 170.93784 | 2.32428 | 0.1886997 | 2.3963504 | 58 | 5 | 1999–2006 | 0.37 | M-v | 1 | MPC | 04318 | 2005 $EX_{54}$ |
| 2005 $ED_{56}$ | 17.6 | 0.15 | 20060922 | 44.72818 | 111.20250 | 180.96621 | 1.26613 | 0.1734216 | 2.3692912 | 44 | 4 | 1995–2006 | 0.44 | M-v | 1 | MPC | 00926 | 2005 $ED_{56}$ |
| 2005 $EL_{58}$ | 17.2 | 0.15 | 20060922 | 39.49014 | 90.02238 | 194.87881 | 4.24190 | 0.0616539 | 2.4589815 | 48 | 6 | 1991–2006 | 0.37 | M-v | 0 | MPC | 04318 | 2005 $EL_{58}$ |
| 2005 $ER_{58}$ | 15.1 | 0.15 | 20060922 | 141.01111 | 129.65254 | 351.21924 | 10.63180 | 0.1523950 | 3.1355726 | 67 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 03668 | 2005 $ER_{58}$ |
| 2005 $EU_{58}$ | 16.7 | 0.15 | 20060922 | 114.07087 | 49.54860 | 174.62285 | 4.52934 | 0.2233325 | 2.4340052 | 61 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 04318 | 2005 $EU_{58}$ |
| 2005 $EY_{58}$ | 15.8 | 0.15 | 20060922 | 67.75563 | 268.98944 | 334.11405 | 5.26525 | 0.0823889 | 2.3976358 | 67 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04318 | 2005 $EY_{58}$ |
| 2005 $EN_{60}$ | 15.7 | 0.15 | 20060922 | 5.63405 | 41.49254 | 260.01730 | 2.09382 | 0.0923970 | 2.6641721 | 68 | 6 | 1993–2005 | 0.65 | M-v | 1 | MPC | 04318 | 2005 $EN_{60}$ |
| 2005 $ER_{60}$ | 17.8 | 0.15 | 20060922 | 129.22659 | 8.00359 | 210.87085 | 3.75915 | 0.0993270 | 2.2107586 | 39 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 76817 | 2005 $ER_{60}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $ES_{60}$ | 17.2 | 0.15 | 20060922 | 143.24649 | 232.76846 | 309.30376 | 1.94002 | 0.1297309 | 2.3798768 | 60 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 76817 | 2005 $ES_{60}$ |
| 2005 $EU_{60}$ | 17.3 | 0.15 | 20060922 | 172.52301 | 330.99234 | 196.38587 | 3.10156 | 0.1341213 | 2.2241467 | 61 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 76817 | 2005 $EU_{60}$ |
| 2005 $EH_{61}$ | 15.1 | 0.15 | 20060922 | 117.03454 | 191.51609 | 325.85575 | 10.35220 | 0.0726405 | 3.0313617 | 28 | 3 | 2002–2005 | 0.54 | M-v | 3 | MPC | 76818 | 2005 $EH_{61}$ |
| 2005 $EK_{61}$ | 16.7 | 0.15 | 20060922 | 163.33084 | 274.95017 | 232.74040 | 4.70076 | 0.1404975 | 2.4108518 | 47 | 4 | 1995–2005 | 0.50 | M-v | 1 | MPC | 76818 | 2005 $EK_{61}$ |
| 2005 $EL_{61}$ | 16.4 | 0.15 | 20060922 | 112.32171 | 299.28338 | 302.38591 | 5.86804 | 0.1912959 | 2.2432871 | 30 | 3 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03668 | 2005 $EL_{61}$ |
| 2005 $EJ_{63}$ | 17.3 | 0.15 | 20060922 | 143.66442 | 249.46354 | 244.74394 | 1.94692 | 0.1653989 | 2.7393291 | 25 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 76820 | 2005 $EJ_{63}$ |
| 2005 $EY_{63}$ | 16.6 | 0.15 | 20060922 | 247.41633 | 217.10183 | 167.01514 | 2.86415 | 0.0757972 | 2.8678620 | 30 | 3 | 2003–2006 | 0.31 | M-v | 3 | MPC | 03668 | 2005 $EY_{63}$ |
| 2005 $EL_{64}$ | 17.3 | 0.15 | 20060922 | 112.99444 | 55.14547 | 166.31201 | 2.75062 | 0.1035736 | 2.3388792 | 54 | 3 | 2003–2006 | 0.43 | M-v | 3 | MPC | 03668 | 2005 $EL_{64}$ |
| 2005 $EB_{66}$ | 17.1 | 0.15 | 20060922 | 83.20071 | 241.30952 | 352.14238 | 3.76885 | 0.1957846 | 2.6435061 | 45 | 5 | 1996–2006 | 0.62 | M-v | 1 | MPC | 04318 | 2005 $EB_{66}$ |
| 2005 $EL_{66}$ | 16.2 | 0.15 | 20060922 | 82.33185 | 108.83625 | 122.82603 | 15.21812 | 0.1280374 | 2.6581915 | 34 | 3 | 2001–2006 | 0.70 | M-v | 3 | MPC | 76823 | 2005 $EL_{66}$ |
| 2005 $EM_{66}$ | 16.4 | 0.15 | 20060922 | 77.22677 | 190.15376 | 79.67275 | 11.31555 | 0.2275993 | 2.4160499 | 54 | 5 | 1998–2006 | 0.60 | M-v | 1 | MPC | 76823 | 2005 $EM_{66}$ |
| 2005 $EZ_{67}$ | 17.0 | 0.15 | 20060922 | 162.57804 | 168.15795 | 353.46044 | 7.13690 | 0.0449395 | 2.2809311 | 54 | 3 | 1996–2005 | 0.54 | M-v | 3 | MPC | 76824 | 2005 $EZ_{67}$ |
| 2005 $ES_{68}$ | 16.7 | 0.15 | 20060922 | 149.29799 | 240.19042 | 300.54082 | 4.08728 | 0.0986900 | 2.3471753 | 45 | 4 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04318 | 2005 $ES_{68}$ |
| 2005 $ET_{68}$ | 15.1 | 0.15 | 20060922 | 84.10325 | 264.01568 | 292.38121 | 4.33785 | 0.0984678 | 3.1194207 | 38 | 4 | 1997–2005 | 0.51 | M-v | 1 | MPC | 76825 | 2005 $ET_{68}$ |
| 2005 $EW_{68}$ | 17.1 | 0.15 | 20060922 | 123.70881 | 250.50722 | 318.07853 | 3.69827 | 0.1227518 | 2.4148071 | 42 | 4 | 2001–2006 | 0.61 | M-v | 1 | MPC | 02245 | 2005 $EW_{68}$ |
| 2005 $EV_{69}$ | 17.2 | 0.15 | 20060922 | 104.39472 | 95.93125 | 187.20614 | 21.30536 | 0.0890104 | 1.9017045 | 48 | 4 | 2000–2006 | 0.65 | M-v | 1 | MPC | 76828 | 2005 $EV_{69}$ |
| 2005 $EC_{70}$ | 17.0 | 0.15 | 20060922 | 248.06498 | 94.53547 | 23.54787 | 20.72803 | 0.0943304 | 1.9554027 | 64 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 76828 | 2005 $EC_{70}$ |
| 2005 $EK_{70}$ | 17.5 | 0.15 | 20060922 | 8.53712 | 347.06414 | 329.84872 | 30.00238 | 0.1353783 | 0.9594535 | 34 | 3 | 2005–2006 | 0.43 | M-v | 3 | MPC | 02245 | 2005 $EK_{70}$ |
| 2005 $EC_{72}$ | 15.8 | 0.15 | 20060922 | 105.39375 | 88.23310 | 142.53218 | 21.72944 | 0.1840265 | 2.3168050 | 58 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 04318 | 2005 $EC_{72}$ |
| 2005 $EN_{72}$ | 15.0 | 0.15 | 20060922 | 63.61729 | 90.95451 | 111.98313 | 12.96207 | 0.0405967 | 3.0744149 | 33 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 00927 | 2005 $EN_{72}$ |
| 2005 $EQ_{73}$ | 16.7 | 0.15 | 20060922 | 72.03461 | 142.73943 | 114.53439 | 3.26708 | 0.0870363 | 2.3731724 | 42 | 3 | 2001–2005 | 0.63 | M-v | 3 | MPC | 76832 | 2005 $EQ_{73}$ |
| 2005 $ED_{77}$ | 16.8 | 0.15 | 20060922 | 65.87052 | 274.64518 | 342.85055 | 4.93320 | 0.1544985 | 2.5806600 | 37 | 3 | 2002–2006 | 0.31 | M-v | 1 | MPC | 04318 | 2005 $ED_{77}$ |
| 2005 $EE_{77}$ | 16.9 | 0.15 | 20060922 | 162.01026 | 130.18752 | 345.68884 | 5.44721 | 0.2064542 | 2.7156522 | 36 | 3 | 1996–2005 | 0.26 | M-v | 2 | MPC | 76836 | 2005 $EE_{77}$ |
| 2005 $EH_{77}$ | 18.1 | 0.15 | 20060922 | 209.99506 | 209.74638 | 247.07680 | 0.57233 | 0.1498509 | 2.3800796 | 38 | 4 | 1996–2005 | 0.31 | M-v | 1 | MPC | 76836 | 2005 $EH_{77}$ |
| 2005 $EM_{77}$ | 16.0 | 0.15 | 20060922 | 58.37109 | 237.76704 | 350.74673 | 8.93158 | 0.0544684 | 2.7862494 | 37 | 3 | 2002–2005 | 0.41 | M-v | 3 | MPC | 00927 | 2005 $EM_{77}$ |
| 2005 $EX_{77}$ | 16.2 | 0.15 | 20060922 | 100.46077 | 14.07054 | 179.19287 | 8.63806 | 0.2333301 | 2.7843926 | 43 | 3 | 2003–2006 | 0.56 | M-v | 3 | MPC | 03669 | 2005 $EX_{77}$ |
| 2005 $EN_{79}$ | 16.7 | 0.15 | 20060922 | 150.17920 | 84.43348 | 104.26916 | 7.12709 | 0.1399765 | 2.2817366 | 72 | 4 | 2000–2006 | 0.66 | M-v | 2 | MPC | 76839 | 2005 $EN_{79}$ |
| 2005 $EK_{81}$ | 16.9 | 0.15 | 20060922 | 14.98888 | 133.90425 | 177.51334 | 6.23726 | 0.1295354 | 2.3894427 | 53 | 3 | 1999–2006 | 0.34 | M-v | 2 | MPC | 03669 | 2005 $EK_{81}$ |
| 2005 $EV_{82}$ | 17.0 | 0.15 | 20060922 | 133.03798 | 280.32985 | 284.53293 | 1.50165 | 0.1466058 | 2.3182556 | 60 | 3 | 1998–2006 | 0.61 | M-v | 3 | MPC | 04318 | 2005 $EV_{82}$ |
| 2005 $EB_{83}$ | 17.9 | 0.15 | 20060922 | 93.88378 | 284.53049 | 319.01850 | 3.05869 | 0.1497734 | 2.4064066 | 27 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 76843 | 2005 $EB_{83}$ |
| 2005 $EJ_{83}$ | 17.7 | 0.15 | 20060922 | 190.46647 | 328.74271 | 176.69888 | 4.75235 | 0.0577799 | 2.2564744 | 50 | 4 | 1995–2006 | 0.58 | M-v | 1 | MPC | 04319 | 2005 $EJ_{83}$ |
| 2005 $EL_{83}$ | 17.5 | 0.15 | 20060922 | 76.65398 | 107.42540 | 174.65294 | 6.51219 | 0.1783028 | 2.2665161 | 43 | 5 | 1995–2006 | 0.27 | M-v | 0 | MPC | 86648 | 2005 $EL_{83}$ |
| 2005 $EO_{83}$ | 16.2 | 0.15 | 20060922 | 91.96491 | 249.99420 | 339.86677 | 4.70451 | 0.0603337 | 2.5102962 | 43 | 5 | 2001–2006 | 0.33 | M-v | 0 | MPC | 04319 | 2005 $EO_{83}$ |
| 2005 $EQ_{83}$ | 15.7 | 0.15 | 20060922 | 48.51669 | 284.00946 | 344.74001 | 8.63244 | 0.1670103 | 2.7456932 | 64 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 03669 | 2005 $EQ_{83}$ |
| 2005 $EF_{84}$ | 15.3 | 0.15 | 20060922 | 61.61234 | 240.80266 | 348.99533 | 16.39718 | 0.1438298 | 3.0929579 | 63 | 3 | 2003–2006 | 0.67 | M-v | 3 | MPC | 03669 | 2005 $EF_{84}$ |
| 2005 $EV_{84}$ | 15.6 | 0.15 | 20060922 | 135.10414 | 198.99044 | 17.65136 | 27.53098 | 0.1961159 | 2.2782897 | 134 | 3 | 2003–2006 | 0.59 | M-v | 2 | MPC | 87654 | 2005 $EV_{84}$ |
| 2005 $EL_{85}$ | 14.6 | 0.15 | 20060922 | 227.00445 | 254.65911 | 138.14947 | 10.34460 | 0.0685207 | 3.0941708 | 52 | 5 | 1995–2006 | 0.64 | M-v | 1 | MPC | 02246 | 2005 $EL_{85}$ |
| 2005 $EV_{85}$ | 16.6 | 0.15 | 20060922 | 172.76836 | 353.69910 | 151.86767 | 6.69552 | 0.0594104 | 2.3526203 | 56 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 76848 | 2005 $EV_{85}$ |
| 2005 $ED_{86}$ | 16.1 | 0.15 | 20060922 | 108.48888 | 112.75776 | 74.01048 | 4.29943 | 0.0542768 | 2.7555992 | 33 | 3 | 1996–2005 | 0.74 | M-v | 4 | MPC | 76849 | 2005 $ED_{86}$ |
| 2005 $EO_{86}$ | 16.7 | 0.15 | 20060922 | 88.04849 | 233.92630 | 34.59337 | 4.79037 | 0.1315785 | 2.2524047 | 66 | 3 | 2003–2006 | 0.50 | M-v | 2 | MPC | 76851 | 2005 $EO_{86}$ |
| 2005 $ET_{86}$ | 14.2 | 0.15 | 20060922 | 67.72580 | 86.14992 | 143.57506 | 25.10799 | 0.2678192 | 3.1639338 | 117 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 03669 | 2005 $ET_{86}$ |
| 2005 $EL_{87}$ | 17.6 | 0.15 | 20060922 | 59.98655 | 163.08221 | 123.28278 | 0.66775 | 0.2069587 | 2.4312080 | 42 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 76852 | 2005 $EL_{87}$ |
| 2005 $EF_{88}$ | 16.4 | 0.15 | 20060922 | 152.91461 | 349.86868 | 209.38721 | 5.44015 | 0.2020216 | 2.2573221 | 85 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 76852 | 2005 $EF_{88}$ |
| 2005 $EN_{88}$ | 16.0 | 0.15 | 20060922 | 279.48693 | 21.91494 | 337.83748 | 14.88392 | 0.1168470 | 2.9268140 | 25 | 4 | 1992–2005 | 0.52 | M-v | 3 | MPC | 04319 | 2005 $EN_{88}$ |
| 2005 $EA_{89}$ | 17.7 | 0.15 | 20060922 | 92.04675 | 81.10298 | 193.03724 | 6.67311 | 0.2036726 | 2.1826747 | 33 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 76853 | 2005 $EA_{89}$ |
| 2005 $EE_{89}$ | 17.0 | 0.15 | 20060922 | 90.05669 | 277.18131 | 334.11291 | 6.98434 | 0.0897069 | 2.2934865 | 35 | 3 | 2003–2006 | 0.36 | M-v | 3 | MPC | 04319 | 2005 $EE_{89}$ |
| 2005 $EG_{89}$ | 16.1 | 0.15 | 20060922 | 29.62655 | 323.85880 | 322.79424 | 5.48186 | 0.2086473 | 2.7645436 | 44 | 3 | 2000–2006 | 0.39 | M-v | 3 | MPC | 04319 | 2005 $EG_{89}$ |
| 2005 $EX_{89}$ | 16.7 | 0.15 | 20060922 | 76.91130 | 230.62601 | 27.85219 | 6.89411 | 0.1436199 | 2.4111470 | 29 | 3 | 2002–2006 | 0.74 | M-v | 2 | MPC | 76854 | 2005 $EX_{89}$ |
| 2005 $ES_{90}$ | 17.4 | 0.15 | 20060922 | 104.65959 | 56.30147 | 169.08096 | 6.64608 | 0.0676251 | 2.2815006 | 32 | 3 | 2003–2006 | 0.46 | M-v | 3 | MPC | 04319 | 2005 $ES_{90}$ |
| 2005 $EW_{90}$ | 16.8 | 0.15 | 20060922 | 166.03896 | 284.85431 | 240.37607 | 2.27434 | 0.0899488 | 2.3244727 | 61 | 6 | 1994–2006 | 0.63 | M-v | 1 | MPC | 76856 | 2005 $EW_{90}$ |
| 2005 $EF_{91}$ | 16.9 | 0.15 | 20060922 | 12.67279 | 13.98147 | 321.81823 | 9.00681 | 0.1896736 | 2.2541409 | 89 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 03670 | 2005 $EF_{91}$ |
| 2005 $EK_{91}$ | 16.8 | 0.15 | 20060922 | 18.85672 | 351.80550 | 319.02350 | 8.74467 | 0.2024525 | 2.5684614 | 78 | 4 | 1996–2006 | 0.43 | M-v | 2 | MPC | 03670 | 2005 $EK_{91}$ |
| 2005 $EV_{91}$ | 16.9 | 0.15 | 20060922 | 59.71133 | 289.88883 | 339.36205 | 4.31665 | 0.1703758 | 2.4282742 | 57 | 4 | 2001–2006 | 0.37 | M-v | 1 | MPC | 04319 | 2005 $EV_{91}$ |

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| 2005 $EX_{91}$ | 16.9 | 0.15 | 20060922 | 349.42821 | 22.57701 | 0.88512 | 20.00844 | 0.0818625 | 1.9514142 | 97 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 04319 | 2005 $EX_{91}$ |
| 2005 $EE_{92}$ | 17.1 | 0.15 | 20060922 | 114.38994 | 82.33617 | 146.69122 | 3.58469 | 0.1060823 | 2.3269247 | 38 | 6 | 1996–2006 | 0.57 | M-v | 1 | MPC | 76857 | 2005 $EE_{92}$ |
| 2005 $EG_{92}$ | 15.1 | 0.15 | 20060922 | 166.68207 | 276.31738 | 175.35763 | 25.07926 | 0.1819013 | 3.1658231 | 34 | 4 | 1999–2005 | 0.63 | M-v | 1 | MPC | 86649 | 2005 $EG_{92}$ |
| 2005 $EJ_{92}$ | 17.0 | 0.15 | 20060922 | 144.08033 | 43.19174 | 163.94598 | 5.92332 | 0.1047794 | 2.2342886 | 54 | 3 | 2002–2006 | 0.61 | M-v | 3 | MPC | 04319 | 2005 $EJ_{92}$ |
| 2005 $ER_{93}$ | 14.8 | 0.15 | 20060922 | 85.98232 | 95.58741 | 117.00938 | 14.79128 | 0.2231831 | 3.0855694 | 62 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 04319 | 2005 $ER_{93}$ |
| 2005 $EX_{93}$ | 16.4 | 0.15 | 20060922 | 274.96203 | 63.40932 | 42.14804 | 21.47343 | 0.1021198 | 1.9276529 | 95 | 3 | 2002–2006 | 0.55 | M-v | 1 | MPC | 76860 | 2005 $EX_{93}$ |
| 2005 $ER_{94}$ | 17.0 | 0.15 | 20060922 | 138.47794 | 136.09898 | 83.53660 | 4.51375 | 0.1465117 | 2.2278319 | 82 | 4 | 1995–2006 | 0.60 | M-v | 2 | MPC | 76861 | 2005 $ER_{94}$ |
| 2005 $EK_{95}$ | 17.2 | 0.15 | 20060922 | 291.99431 | 266.48430 | 166.35845 | 23.65177 | 0.0734978 | 1.9052168 | 49 | 2 | 2005–2006 | 0.55 | M-v | 4 | MPC | 03670 | 2005 $EK_{95}$ |
| 2005 $EA_{96}$ | 15.8 | 0.15 | 20060922 | 115.93674 | 309.60805 | 194.54892 | 11.72916 | 0.1133121 | 2.8492917 | 29 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 00929 | 2005 $EA_{96}$ |
| 2005 $EF_{96}$ | 16.1 | 0.15 | 20060922 | 126.84713 | 309.05383 | 189.53238 | 7.65952 | 0.1666527 | 2.8119035 | 48 | 4 | 1996–2005 | 0.64 | M-v | 1 | MPC | 76864 | 2005 $EF_{96}$ |
| 2005 $EW_{96}$ | 15.4 | 0.15 | 20060922 | 99.02042 | 265.48445 | 252.55754 | 8.94045 | 0.0978621 | 3.0561595 | 39 | 3 | 2003–2006 | 0.66 | M-v | 4 | MPC | 02246 | 2005 $EW_{96}$ |
| 2005 $ES_{97}$ | 16.7 | 0.15 | 20060922 | 114.32285 | 281.18941 | 290.50901 | 4.64142 | 0.1647440 | 2.3675303 | 37 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 04319 | 2005 $ES_{97}$ |
| 2005 $EY_{97}$ | 15.9 | 0.15 | 20060922 | 167.53497 | 267.14225 | 187.65114 | 10.08854 | 0.0818306 | 2.9258177 | 46 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 02246 | 2005 $EY_{97}$ |
| 2005 $ED_{99}$ | 17.5 | 0.15 | 20060922 | 213.95795 | 199.57826 | 251.02692 | 2.26529 | 0.0812928 | 2.3932932 | 21 | 3 | 2001–2005 | 0.42 | M-v | 2 | MPC | 86651 | 2005 $ED_{99}$ |
| 2005 $EZ_{99}$ | 16.4 | 0.15 | 20060922 | 50.80535 | 348.27327 | 286.22629 | 5.71673 | 0.2040726 | 2.5479840 | 61 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 04319 | 2005 $EZ_{99}$ |
| 2005 $EJ_{100}$ | 16.4 | 0.15 | 20060922 | 37.81858 | 109.43367 | 132.06685 | 1.61077 | 0.0920010 | 3.0348448 | 29 | 4 | 1994–2005 | 0.49 | M-v | 1 | MPC | 04319 | 2005 $EJ_{100}$ |
| 2005 $EM_{101}$ | 16.4 | 0.15 | 20060922 | 113.82953 | 140.94414 | 84.72731 | 10.39302 | 0.1556325 | 2.4439469 | 56 | 3 | 2003–2006 | 0.64 | M-v | 3 | MPC | 76871 | 2005 $EM_{101}$ |
| 2005 $ET_{101}$ | 14.5 | 0.15 | 20060922 | 120.31875 | 327.21063 | 195.17487 | 7.53409 | 0.0608130 | 3.2452187 | 61 | 5 | 1995–2005 | 0.58 | M-v | 1 | MPC | 76872 | 2005 $ET_{101}$ |
| 2005 $EV_{101}$ | 16.7 | 0.15 | 20060922 | 64.19584 | 289.60991 | 356.06375 | 2.36428 | 0.0824409 | 2.3665179 | 47 | 3 | 1999–2006 | 0.34 | M-v | 1 | MPC | 03671 | 2005 $EV_{101}$ |
| 2005 $EB_{102}$ | 16.6 | 0.15 | 20060922 | 111.66015 | 148.21104 | 105.26627 | 6.35295 | 0.1645750 | 2.2250347 | 66 | 4 | 2000–2006 | 0.57 | M-v | 2 | MPC | 76873 | 2005 $EB_{102}$ |
| 2005 $EE_{102}$ | 14.9 | 0.15 | 20060922 | 88.66538 | 103.20867 | 95.26769 | 6.08212 | 0.1187450 | 3.1969429 | 66 | 4 | 1996–2005 | 0.69 | M-v | 1 | MPC | 76873 | 2005 $EE_{102}$ |
| 2005 $EQ_{102}$ | 17.0 | 0.15 | 20060922 | 304.11703 | 62.25373 | 332.72654 | 17.49623 | 0.1122941 | 1.9531515 | 45 | 3 | 1998–2006 | 0.56 | M-v | 2 | MPC | 03671 | 2005 $EQ_{102}$ |
| 2005 $EV_{110}$ | 16.7 | 0.15 | 20060922 | 17.40070 | 200.11003 | 52.99738 | 0.99863 | 0.0660291 | 3.0266299 | 25 | 5 | 1994–2006 | 0.33 | M-v | 0 | MPC | 76876 | 2005 $EV_{110}$ |
| 2005 $ED_{112}$ | 16.8 | 0.15 | 20060922 | 208.19282 | 325.01416 | 152.22021 | 6.69558 | 0.0628913 | 2.3438896 | 46 | 4 | 1994–2006 | 0.58 | M-v | 1 | MPC | 04319 | 2005 $ED_{112}$ |
| 2005 $ES_{112}$ | 17.0 | 0.15 | 20060922 | 52.87759 | 262.86998 | 1.86891 | 1.94116 | 0.1616990 | 2.5697540 | 44 | 5 | 1997–2006 | 0.44 | M-v | 0 | MPC | 04319 | 2005 $ES_{112}$ |
| 2005 $ET_{113}$ | 14.7 | 0.15 | 20060922 | 252.55883 | 276.72997 | 106.69871 | 14.37674 | 0.0981506 | 2.9681636 | 39 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 02246 | 2005 $ET_{113}$ |
| 2005 $ED_{114}$ | 17.6 | 0.15 | 20060922 | 61.77058 | 304.57173 | 359.01769 | 2.73927 | 0.1805705 | 2.1243380 | 63 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 95654 | 2005 $ED_{114}$ |
| 2005 $EZ_{114}$ | 17.2 | 0.15 | 20060922 | 83.92661 | 113.82040 | 150.63397 | 2.98945 | 0.2620705 | 2.4328089 | 42 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 89634 | 2005 $EZ_{114}$ |
| 2005 $EL_{115}$ | 17.6 | 0.15 | 20060922 | 55.71815 | 110.95967 | 167.21425 | 6.98284 | 0.1558096 | 2.4766881 | 39 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 04319 | 2005 $EL_{115}$ |
| 2005 $ES_{115}$ | 17.0 | 0.15 | 20060922 | 147.56027 | 20.69388 | 164.84374 | 6.91133 | 0.1610279 | 2.3966571 | 68 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 04319 | 2005 $ES_{115}$ |
| 2005 $EA_{117}$ | 16.8 | 0.15 | 20060922 | 279.11276 | 10.60531 | 9.39771 | 6.36998 | 0.0476820 | 2.7367502 | 39 | 3 | 2002–2005 | 0.42 | M-v | 3 | MPC | 00930 | 2005 $EA_{117}$ |
| 2005 $EN_{117}$ | 16.2 | 0.15 | 20060922 | 84.75152 | 265.19002 | 9.49129 | 6.63975 | 0.1364596 | 2.2597407 | 96 | 3 | 1999–2006 | 0.53 | M-v | 2 | MPC | 76881 | 2005 $EN_{117}$ |
| 2005 $ET_{117}$ | 17.2 | 0.15 | 20060922 | 331.22119 | 186.54004 | 191.33296 | 6.15249 | 0.0619291 | 2.2010228 | 62 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 04319 | 2005 $ET_{117}$ |
| 2005 $EP_{119}$ | 16.6 | 0.15 | 20060922 | 313.05657 | 55.95601 | 21.60727 | 19.14663 | 0.1565199 | 1.8647835 | 151 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 76884 | 2005 $EP_{119}$ |
| 2005 $ES_{119}$ | 16.4 | 0.15 | 20060922 | 139.15479 | 269.38969 | 304.68955 | 7.79038 | 0.1247490 | 2.2394738 | 52 | 3 | 2003–2006 | 0.55 | M-v | 3 | MPC | 04319 | 2005 $ES_{119}$ |
| 2005 $EC_{120}$ | 16.7 | 0.15 | 20060922 | 134.76569 | 287.10472 | 229.52845 | 4.33498 | 0.1186962 | 2.6986067 | 34 | 3 | 2001–2005 | 0.40 | M-v | 2 | MPC | 76885 | 2005 $EC_{120}$ |
| 2005 $EH_{121}$ | 18.0 | 0.15 | 20060922 | 105.25102 | 21.04331 | 206.35308 | 1.91147 | 0.1792029 | 2.3599094 | 38 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 04319 | 2005 $EH_{121}$ |
| 2005 $EP_{121}$ | 16.5 | 0.15 | 20060922 | 74.39315 | 334.28461 | 270.45497 | 0.92264 | 0.1486556 | 2.6401005 | 53 | 5 | 1992–2006 | 0.62 | M-v | 0 | MPC | 04319 | 2005 $EP_{121}$ |
| 2005 $EY_{121}$ | 16.5 | 0.15 | 20060922 | 33.05770 | 111.78949 | 182.01388 | 8.87403 | 0.1345009 | 2.4413985 | 48 | 3 | 1990–2006 | 0.51 | M-v | 3 | MPC | 03671 | 2005 $EY_{121}$ |
| 2005 $EV_{122}$ | 14.5 | 0.15 | 20060922 | 337.74980 | 133.35789 | 159.04164 | 12.36063 | 0.1042960 | 3.0829381 | 65 | 5 | 1991–2006 | 0.61 | M-v | 1 | MPC | 04320 | 2005 $EV_{122}$ |
| 2005 $ED_{124}$ | 16.2 | 0.15 | 20060922 | 51.25903 | 244.41474 | 35.89380 | 5.21397 | 0.1529696 | 2.5600023 | 49 | 4 | 1998–2006 | 0.49 | M-v | 2 | MPC | 04320 | 2005 $ED_{124}$ |
| 2005 $EK_{124}$ | 16.5 | 0.15 | 20060922 | 102.47452 | 65.70481 | 167.77936 | 6.98613 | 0.0784713 | 2.4110370 | 69 | 6 | 1995–2006 | 0.71 | M-v | 1 | MPC | 04320 | 2005 $EK_{124}$ |
| 2005 $EY_{124}$ | 15.3 | 0.15 | 20060922 | 206.24330 | 271.49161 | 172.72094 | 1.76145 | 0.0533790 | 2.9251262 | 44 | 5 | 1995–2005 | 0.53 | M-v | 1 | MPC | 03671 | 2005 $EY_{124}$ |
| 2005 $EB_{125}$ | 16.6 | 0.15 | 20060922 | 203.37793 | 323.61560 | 169.80571 | 2.42173 | 0.0285230 | 2.3277457 | 62 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04320 | 2005 $EB_{125}$ |
| 2005 $EN_{125}$ | 16.7 | 0.15 | 20060922 | 131.25001 | 24.66146 | 181.42284 | 6.84718 | 0.0510105 | 2.3725296 | 42 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 04320 | 2005 $EN_{125}$ |
| 2005 $EP_{126}$ | 15.0 | 0.15 | 20060922 | 76.58010 | 218.51416 | 13.74841 | 7.90365 | 0.2143738 | 3.0642170 | 94 | 5 | 1994–2006 | 0.57 | M-v | 1 | MPC | 04320 | 2005 $EP_{126}$ |
| 2005 $EU_{126}$ | 17.0 | 0.15 | 20060922 | 153.87358 | 10.83547 | 187.25515 | 5.49473 | 0.1167269 | 2.2795717 | 74 | 4 | 1998–2006 | 0.65 | M-v | 2 | MPC | 76892 | 2005 $EU_{126}$ |
| 2005 $EC_{130}$ | 17.1 | 0.15 | 20050311 | 34.68048 | 251.85022 | 226.99844 | 2.97824 | 0.2123699 | 2.8023431 | 10 | 1 | 4 days | 0.47 | | E | MPC | 89635 | 2005 $EC_{130}$ |
| 2005 $EK_{130}$ | 17.5 | 0.15 | 20060922 | 135.78657 | 185.45300 | 304.93731 | 4.36032 | 0.0692656 | 2.7315270 | 19 | 3 | 1996–2005 | 0.29 | M-v | 3 | MPC | 76895 | 2005 $EK_{130}$ |
| 2005 $EP_{130}$ | 16.8 | 0.15 | 20060922 | 104.03987 | 55.65782 | 172.43628 | 3.06952 | 0.1712465 | 2.2770853 | 34 | 3 | 2002–2006 | 0.67 | M-v | 3 | MPC | 04320 | 2005 $EP_{130}$ |
| 2005 $EF_{131}$ | 17.2 | 0.15 | 20060922 | 41.00779 | 320.09970 | 315.43094 | 4.24461 | 0.1798245 | 2.4344080 | 38 | 3 | 1991–2006 | 0.38 | M-v | 3 | MPC | 03672 | 2005 $EF_{131}$ |
| 2005 $ER_{132}$ | 16.0 | 0.15 | 20060922 | 54.79134 | 315.95141 | 317.88440 | 6.98661 | 0.1760745 | 2.5928200 | 81 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 03672 | 2005 $ER_{132}$ |
| 2005 $ET_{132}$ | 15.8 | 0.15 | 20060922 | 26.92510 | 330.32235 | 324.12807 | 9.94996 | 0.1902724 | 2.7126020 | 57 | 5 | 1997–2006 | 0.39 | M-v | 1 | MPC | 03672 | 2005 $ET_{132}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $EW_{133}$ | 17.3 | 0.15 | 20060922 | 119.65716 | 67.13030 | 150.91706 | 6.47576 | 0.1253714 | 2.2467119 | 57 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 04320 | 2005 $EW_{133}$ |
| 2005 $EY_{133}$ | 16.9 | 0.15 | 20060922 | 55.12698 | 219.08001 | 37.76536 | 3.74113 | 0.0966068 | 2.5435423 | 33 | 5 | 1993–2005 | 0.60 | M-v | 1 | MPC | 00931 | 2005 $EY_{133}$ |
| 2005 $EG_{135}$ | 16.4 | 0.15 | 20060922 | 351.26027 | 92.73555 | 216.41703 | 1.73682 | 0.1264456 | 2.6847487 | 33 | 3 | 2001–2005 | 0.44 | M-v | 3 | MPC | 95655 | 2005 $EG_{135}$ |
| 2005 $EU_{135}$ | 17.2 | 0.15 | 20060922 | 109.66045 | 82.22354 | 142.37707 | 3.03826 | 0.1645072 | 2.4439158 | 45 | 3 | 1998–2006 | 0.52 | M-v | 3 | MPC | 03672 | 2005 $EU_{135}$ |
| 2005 $EW_{135}$ | 16.4 | 0.15 | 20060922 | 114.38159 | 86.61335 | 111.69114 | 3.39730 | 0.0982367 | 2.6272587 | 31 | 3 | 2001–2005 | 0.75 | M-v | 4 | MPC | 76899 | 2005 $EW_{135}$ |
| 2005 $EN_{136}$ | 17.1 | 0.15 | 20060922 | 85.43041 | 239.72669 | 28.17996 | 3.28162 | 0.1277300 | 2.2513752 | 41 | 6 | 1996–2006 | 0.47 | M-v | 0 | MPC | 76901 | 2005 $EN_{136}$ |
| 2005 $EU_{136}$ | 16.6 | 0.15 | 20060922 | 130.82457 | 312.92315 | 203.38183 | 1.34207 | 0.0595925 | 2.9582011 | 37 | 3 | 2000–2005 | 0.35 | M-v | 3 | MPC | 86655 | 2005 $EU_{136}$ |
| 2005 $EH_{137}$ | 16.4 | 0.15 | 20060922 | 106.51023 | 178.34055 | 52.15110 | 2.89587 | 0.1553489 | 2.5392825 | 62 | 6 | 1994–2006 | 0.63 | M-v | 2 | MPC | 04320 | 2005 $EH_{137}$ |
| 2005 $EP_{137}$ | 16.6 | 0.15 | 20060922 | 101.41899 | 80.50511 | 131.66120 | 9.40584 | 0.1278869 | 2.5845092 | 44 | 4 | 2002–2006 | 0.67 | M-v | 1 | MPC | 02247 | 2005 $EP_{137}$ |
| 2005 $EZ_{137}$ | 16.5 | 0.15 | 20060922 | 29.15260 | 118.47810 | 184.01616 | 8.75415 | 0.1536328 | 2.7766121 | 40 | 2 | 2005–2006 | 0.41 | M-v | 2 | MPC | 03673 | 2005 $EZ_{137}$ |
| 2005 $EG_{138}$ | 16.0 | 0.15 | 20060922 | 53.60096 | 136.66559 | 122.98633 | 10.45895 | 0.0812962 | 2.6616847 | 31 | 3 | 1996–2006 | 0.72 | M-v | 3 | MPC | 03673 | 2005 $EG_{138}$ |
| 2005 $EU_{138}$ | 17.9 | 0.15 | 20060922 | 119.65307 | 103.01109 | 144.14322 | 1.18074 | 0.1846483 | 2.2799589 | 46 | 5 | 1992–2006 | 0.40 | M-v | 1 | MPC | 76904 | 2005 $EU_{138}$ |
| 2005 $EV_{138}$ | 17.0 | 0.15 | 20060922 | 118.80273 | 195.01936 | 29.50131 | 2.86854 | 0.1434995 | 2.4510008 | 75 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 04320 | 2005 $EV_{138}$ |
| 2005 $EX_{138}$ | 16.5 | 0.15 | 20060922 | 10.27271 | 323.54461 | 21.47230 | 10.25233 | 0.1420275 | 2.3596284 | 95 | 3 | 1999–2006 | 0.46 | M-v | 3 | MPC | 76905 | 2005 $EX_{138}$ |
| 2005 $EZ_{138}$ | 17.5 | 0.15 | 20060922 | 127.39746 | 81.02935 | 147.96442 | 1.76415 | 0.1653757 | 2.3289466 | 53 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 76905 | 2005 $EZ_{138}$ |
| 2005 $EH_{139}$ | 16.3 | 0.15 | 20060922 | 85.62071 | 84.12179 | 162.66997 | 3.27343 | 0.0834625 | 2.6063406 | 57 | 4 | 1994–2006 | 0.41 | M-v | 0 | MPC | 04320 | 2005 $EH_{139}$ |
| 2005 $EJ_{139}$ | 15.3 | 0.15 | 20060922 | 108.80793 | 160.42675 | 27.36198 | 9.17819 | 0.0431493 | 3.1008417 | 41 | 3 | 2002–2005 | 0.54 | M-v | 3 | MPC | 76906 | 2005 $EJ_{139}$ |
| 2005 $EM_{139}$ | 16.7 | 0.15 | 20060922 | 103.94589 | 233.98359 | 28.01609 | 6.45723 | 0.2162589 | 2.3579107 | 106 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 76906 | 2005 $EM_{139}$ |
| 2005 $EY_{139}$ | 16.1 | 0.15 | 20060922 | 89.40074 | 196.67900 | 84.87363 | 8.94904 | 0.2962179 | 2.2913653 | 50 | 3 | 2002–2006 | 0.65 | M-v | 2 | MPC | 76908 | 2005 $EY_{139}$ |
| 2005 $EA_{141}$ | 16.9 | 0.15 | 20060922 | 243.46622 | 168.20196 | 255.71161 | 6.16806 | 0.0774087 | 2.2807538 | 30 | 4 | 1993–2005 | 0.59 | M-v | 1 | MPC | 04320 | 2005 $EA_{141}$ |
| 2005 $EK_{141}$ | 17.1 | 0.15 | 20060922 | 50.76632 | 121.85726 | 141.09175 | 3.16217 | 0.1646610 | 2.3944476 | 44 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 03673 | 2005 $EK_{141}$ |
| 2005 $EN_{142}$ | 17.7 | 0.15 | 20060922 | 132.46706 | 127.21306 | 114.15298 | 3.30010 | 0.1503399 | 2.1490997 | 47 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 76910 | 2005 $EN_{142}$ |
| 2005 $EP_{142}$ | 16.5 | 0.15 | 20060922 | 48.12646 | 237.49042 | 67.75375 | 5.04728 | 0.0881155 | 2.3251527 | 64 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 76910 | 2005 $EP_{142}$ |
| 2005 $EL_{143}$ | 16.4 | 0.15 | 20060922 | 242.12318 | 19.42059 | 25.62159 | 2.06023 | 0.0275260 | 2.8554692 | 28 | 4 | 1997–2005 | 0.68 | M-v | 1 | MPC | 89636 | 2005 $EL_{143}$ |
| 2005 $EP_{143}$ | 15.5 | 0.15 | 20060922 | 164.06443 | 292.07171 | 163.92530 | 5.44741 | 0.1269075 | 3.1537930 | 27 | 3 | 2002–2006 | 0.27 | M-v | 3 | MPC | 03674 | 2005 $EP_{143}$ |
| 2005 $EB_{145}$ | 17.7 | 0.15 | 20060922 | 91.34351 | 244.00719 | 12.27615 | 4.79675 | 0.1214339 | 2.3173541 | 54 | 5 | 1999–2006 | 0.41 | M-v | 0 | MPC | 76912 | 2005 $EB_{145}$ |
| 2005 $EG_{145}$ | 16.8 | 0.15 | 20060922 | 122.98562 | 46.19885 | 165.25268 | 6.84853 | 0.0402274 | 2.3455828 | 74 | 6 | 1998–2006 | 0.58 | M-v | 1 | MPC | 04320 | 2005 $EG_{145}$ |
| 2005 $EX_{145}$ | 16.3 | 0.15 | 20060922 | 187.95059 | 80.17277 | 37.54922 | 3.22202 | 0.0522838 | 2.5993623 | 47 | 4 | 1992–2005 | 0.58 | M-v | 1 | MPC | 04320 | 2005 $EX_{145}$ |
| 2005 $EC_{147}$ | 18.2 | 0.15 | 20060922 | 116.36286 | 236.50119 | 352.43719 | 2.39475 | 0.1428421 | 2.4005346 | 28 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 76913 | 2005 $EC_{147}$ |
| 2005 $EL_{148}$ | 16.5 | 0.15 | 20060922 | 355.92730 | 214.41841 | 143.95006 | 5.44301 | 0.2438988 | 2.2580113 | 119 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 03674 | 2005 $EL_{148}$ |
| 2005 $ET_{149}$ | 17.6 | 0.15 | 20060922 | 61.91194 | 202.50969 | 96.20842 | 4.20983 | 0.1596555 | 2.3284382 | 46 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 76916 | 2005 $ET_{149}$ |
| 2005 $ET_{150}$ | 17.5 | 0.15 | 20060922 | 50.58484 | 278.49444 | 36.42413 | 6.35845 | 0.1258620 | 2.2357742 | 60 | 3 | 2001–2006 | 0.39 | M-v | 2 | MPC | 76916 | 2005 $ET_{150}$ |
| 2005 $EY_{150}$ | 16.9 | 0.15 | 20060922 | 279.45516 | 256.10039 | 163.68833 | 6.44689 | 0.0892815 | 2.3006465 | 31 | 3 | 2003–2006 | 0.39 | M-v | 3 | MPC | 04320 | 2005 $EY_{150}$ |
| 2005 $EB_{151}$ | 17.6 | 0.15 | 20060922 | 84.92833 | 125.52680 | 153.79506 | 5.14118 | 0.1520213 | 2.2983743 | 30 | 4 | 1998–2006 | 0.37 | M-v | 1 | MPC | 89637 | 2005 $EB_{151}$ |
| 2005 $EY_{153}$ | 17.6 | 0.15 | 20060922 | 79.16781 | 287.09150 | 7.43969 | 17.15479 | 0.0623774 | 1.9928124 | 48 | 3 | 2003–2006 | 0.48 | M-v | 1 | MPC | 95656 | 2005 $EY_{153}$ |
| 2005 $EA_{154}$ | 15.7 | 0.15 | 20060922 | 66.70564 | 222.11516 | 33.81328 | 22.59868 | 0.1603954 | 2.4054031 | 36 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 04320 | 2005 $EA_{154}$ |
| 2005 $EF_{154}$ | 16.2 | 0.15 | 20060922 | 46.48346 | 298.61571 | 350.72329 | 5.30891 | 0.1155301 | 2.4086505 | 84 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 03674 | 2005 $EF_{154}$ |
| 2005 $ET_{156}$ | 16.3 | 0.15 | 20060922 | 104.98321 | 228.58085 | 347.70473 | 2.79569 | 0.1443556 | 2.5556229 | 50 | 3 | 2001–2006 | 0.53 | M-v | 3 | MPC | 76922 | 2005 $ET_{156}$ |
| 2005 $EH_{158}$ | 16.6 | 0.15 | 20060922 | 61.45801 | 271.28631 | 356.77062 | 7.89274 | 0.0939164 | 2.4713089 | 37 | 4 | 2001–2006 | 0.34 | M-v | 1 | MPC | 04320 | 2005 $EH_{158}$ |
| 2005 $EN_{158}$ | 15.8 | 0.15 | 20060922 | 202.35064 | 46.91627 | 11.49139 | 0.63621 | 0.1159912 | 3.2419192 | 26 | 4 | 2002–2006 | 0.32 | M-v | 0 | MPC | 02247 | 2005 $EN_{158}$ |
| 2005 $EV_{159}$ | 16.7 | 0.15 | 20060922 | 79.84254 | 82.95695 | 177.11400 | 13.21863 | 0.2485635 | 2.5658826 | 55 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 76923 | 2005 $EV_{159}$ |
| 2005 $EN_{160}$ | 17.7 | 0.15 | 20060922 | 112.41818 | 114.21134 | 127.09465 | 1.89803 | 0.1574047 | 2.3506109 | 37 | 4 | 1994–2006 | 0.49 | M-v | 1 | MPC | 76925 | 2005 $EN_{160}$ |
| 2005 $EA_{161}$ | 16.5 | 0.15 | 20060922 | 289.06786 | 256.41487 | 124.30465 | 1.39678 | 0.0839333 | 2.7682210 | 23 | 3 | 2002–2005 | 0.41 | M-v | 3 | MPC | 86657 | 2005 $EA_{161}$ |
| 2005 $EH_{161}$ | 16.9 | 0.15 | 20060922 | 6.70772 | 174.17496 | 174.18296 | 4.10339 | 0.1090377 | 2.2859063 | 73 | 3 | 2003–2006 | 0.41 | M-v | 3 | MPC | 03674 | 2005 $EH_{161}$ |
| 2005 $EO_{161}$ | 16.2 | 0.15 | 20060922 | 45.27366 | 222.01689 | 55.93195 | 2.96524 | 0.2591440 | 3.0646836 | 51 | 4 | 1996–2006 | 0.48 | M-v | 0 | MPC | 04320 | 2005 $EO_{161}$ |
| 2005 $ES_{161}$ | 17.5 | 0.15 | 20060922 | 99.65332 | 94.02790 | 170.23124 | 6.67711 | 0.1634121 | 2.3015375 | 35 | 4 | 1998–2006 | 0.41 | M-v | 1 | MPC | 76926 | 2005 $ES_{161}$ |
| 2005 $ET_{161}$ | 16.6 | 0.15 | 20060922 | 25.07685 | 142.05223 | 170.08977 | 5.29830 | 0.1388124 | 2.6048234 | 54 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03675 | 2005 $ET_{161}$ |
| 2005 $EZ_{161}$ | 17.1 | 0.15 | 20060922 | 143.70896 | 186.61084 | 24.80321 | 3.15522 | 0.1383888 | 2.2670109 | 68 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 76926 | 2005 $EZ_{161}$ |
| 2005 $EO_{162}$ | 17.4 | 0.15 | 20060922 | 151.30161 | 100.61628 | 22.68108 | 3.25885 | 0.1852633 | 2.8847191 | 30 | 3 | 1998–2005 | 0.35 | M-v | 3 | MPC | 76927 | 2005 $EO_{162}$ |
| 2005 $ET_{162}$ | 15.9 | 0.15 | 20060922 | 30.84844 | 244.23494 | 45.53755 | 1.82197 | 0.2066941 | 2.7866096 | 63 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 04321 | 2005 $ET_{162}$ |
| 2005 $EG_{164}$ | 16.8 | 0.15 | 20060922 | 121.23653 | 63.63473 | 191.47507 | 5.03375 | 0.1576157 | 2.2486520 | 80 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 76928 | 2005 $EG_{164}$ |
| 2005 $EQ_{164}$ | 17.4 | 0.15 | 20060922 | 54.41556 | 163.15739 | 126.90653 | 2.29986 | 0.1868624 | 2.4487401 | 45 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 00933 | 2005 $EQ_{164}$ |
| 2005 $EU_{165}$ | 16.9 | 0.15 | 20060922 | 89.94319 | 222.26978 | 25.36120 | 2.18767 | 0.0655579 | 2.3621179 | 50 | 4 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04321 | 2005 $EU_{165}$ |

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| 2005 $EX_{165}$ | 15.2 | 0.15 | 20060922 | 354.28751 | 303.56795 | 5.13463 | 14.03080 | 0.1540852 | 2.9712311 | 51 | 5 | 1995–2006 | 0.43 | M-v | 1 | MPC | 02247 | 2005 $EX_{165}$ |
| 2005 $ED_{166}$ | 16.8 | 0.15 | 20060922 | 326.85099 | 171.46304 | 168.63512 | 6.18749 | 0.0590101 | 2.7030825 | 31 | 4 | 1996–2005 | 0.45 | M-v | 1 | MPC | 76929 | 2005 $ED_{166}$ |
| 2005 $EG_{166}$ | 15.9 | 0.15 | 20060922 | 34.10005 | 108.78001 | 179.93025 | 9.11873 | 0.2039738 | 2.7015660 | 63 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 03675 | 2005 $EG_{166}$ |
| 2005 $EX_{168}$ | 16.9 | 0.15 | 20060922 | 79.65245 | 269.31085 | 347.37983 | 3.44602 | 0.1247757 | 2.5454251 | 52 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 04321 | 2005 $EX_{168}$ |
| 2005 $EY_{168}$ | 16.6 | 0.15 | 20060922 | 21.01749 | 342.76062 | 321.98561 | 1.59141 | 0.0746843 | 2.6425082 | 36 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 04321 | 2005 $EY_{168}$ |
| 2005 $EH_{170}$ | 16.5 | 0.15 | 20060922 | 60.16326 | 84.83884 | 170.33784 | 13.08026 | 0.1738799 | 2.7794143 | 39 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04321 | 2005 $EH_{170}$ |
| 2005 $ES_{170}$ | 15.9 | 0.15 | 20060922 | 136.15264 | 264.78365 | 254.99935 | 8.13485 | 0.1226553 | 2.5711867 | 22 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 76932 | 2005 $ES_{170}$ |
| 2005 $EM_{173}$ | 16.0 | 0.15 | 20060922 | 295.96871 | 3.89477 | 4.38632 | 11.28798 | 0.1364136 | 2.5737058 | 36 | 4 | 1999–2005 | 0.56 | M-v | 2 | MPC | 76935 | 2005 $EM_{173}$ |
| 2005 $EK_{174}$ | 16.5 | 0.15 | 20060922 | 56.29666 | 82.33455 | 191.09184 | 12.62276 | 0.2228173 | 2.6659414 | 56 | 3 | 2001–2006 | 0.46 | M-v | 1 | MPC | 03675 | 2005 $EK_{174}$ |
| 2005 $EQ_{174}$ | 15.2 | 0.15 | 20060922 | 192.33585 | 120.32147 | 324.40605 | 4.86488 | 0.0988372 | 2.9324310 | 47 | 4 | 1997–2005 | 0.60 | M-v | 1 | MPC | 76935 | 2005 $EQ_{174}$ |
| 2005 $EU_{174}$ | 16.8 | 0.15 | 20060922 | 63.99288 | 81.62012 | 191.98399 | 11.58527 | 0.2978804 | 2.6858261 | 47 | 5 | 1992–2006 | 0.32 | M-v | 0 | MPC | 89638 | 2005 $EU_{174}$ |
| 2005 $EK_{175}$ | 17.4 | 0.15 | 20060922 | 355.33445 | 147.04870 | 199.42462 | 6.37613 | 0.1339248 | 2.2932227 | 36 | 3 | 2003–2006 | 0.38 | M-v | 3 | MPC | 04321 | 2005 $EK_{175}$ |
| 2005 $EL_{175}$ | 16.3 | 0.15 | 20060922 | 339.82550 | 34.66438 | 316.40970 | 3.82243 | 0.1452910 | 2.4013944 | 46 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04321 | 2005 $EL_{175}$ |
| 2005 $EP_{175}$ | 16.0 | 0.15 | 20060922 | 350.90126 | 90.85523 | 250.78216 | 1.88705 | 0.2079108 | 2.4479248 | 57 | 2 | 2005–2006 | 0.29 | M-v | 3 | MPC | 04321 | 2005 $EP_{175}$ |
| 2005 $ES_{175}$ | 15.9 | 0.15 | 20060922 | 243.30346 | 50.48329 | 347.27777 | 9.04174 | 0.0433006 | 3.0486524 | 22 | 3 | 2002–2005 | 0.63 | M-v | 3 | MPC | 76936 | 2005 $ES_{175}$ |
| 2005 $EE_{176}$ | 17.0 | 0.15 | 20060922 | 133.89391 | 5.07806 | 197.93640 | 1.53194 | 0.1702065 | 2.3817263 | 82 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 04321 | 2005 $EE_{176}$ |
| 2005 $EH_{176}$ | 17.9 | 0.15 | 20060922 | 45.19840 | 61.30027 | 233.88531 | 0.52373 | 0.1911217 | 2.4120230 | 55 | 5 | 1991–2006 | 0.33 | M-v | 0 | MPC | 04321 | 2005 $EH_{176}$ |
| 2005 $EL_{176}$ | 17.3 | 0.15 | 20060922 | 34.99195 | 117.58252 | 174.15773 | 6.52635 | 0.0928233 | 2.4603662 | 34 | 5 | 2001–2006 | 0.39 | M-v | 0 | MPC | 04321 | 2005 $EL_{176}$ |
| 2005 $EN_{176}$ | 15.7 | 0.15 | 20060922 | 50.91159 | 277.21855 | 349.66544 | 7.12132 | 0.1842652 | 2.7564450 | 44 | 5 | 1997–2006 | 0.54 | M-v | 1 | MPC | 04321 | 2005 $EN_{176}$ |
| 2005 $EO_{176}$ | 16.0 | 0.15 | 20060922 | 58.60155 | 277.87337 | 356.64155 | 1.45228 | 0.1913886 | 2.6790823 | 57 | 6 | 2000–2006 | 0.45 | M-v | 0 | MPC | 04321 | 2005 $EO_{176}$ |
| 2005 $ES_{176}$ | 15.9 | 0.15 | 20060922 | 137.79660 | 105.42253 | 76.30650 | 15.16302 | 0.1164181 | 2.5519988 | 36 | 4 | 2000–2005 | 0.71 | M-v | 2 | MPC | 76937 | 2005 $ES_{176}$ |
| 2005 $EC_{177}$ | 16.7 | 0.15 | 20060922 | 118.45504 | 219.34587 | 7.34040 | 2.60765 | 0.1446673 | 2.4305824 | 54 | 5 | 1997–2006 | 0.46 | M-v | 1 | MPC | 04321 | 2005 $EC_{177}$ |
| 2005 $EH_{177}$ | 17.3 | 0.15 | 20060922 | 82.52800 | 260.24175 | 351.54592 | 0.38304 | 0.0923371 | 2.5898497 | 35 | 4 | 1998–2006 | 0.29 | M-v | 3 | MPC | 03675 | 2005 $EH_{177}$ |
| 2005 $EJ_{177}$ | 16.8 | 0.15 | 20060922 | 3.55938 | 323.28775 | 25.00098 | 1.88521 | 0.1671023 | 2.4088742 | 102 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 04321 | 2005 $EJ_{177}$ |
| 2005 $EQ_{177}$ | 16.1 | 0.15 | 20060922 | 165.76688 | 328.69086 | 181.85434 | 4.50630 | 0.1691058 | 2.5503968 | 62 | 6 | 1993–2005 | 0.55 | M-v | 1 | MPC | 04321 | 2005 $EQ_{177}$ |
| 2005 $EG_{179}$ | 17.3 | 0.15 | 20060922 | 22.61805 | 347.43643 | 335.22054 | 2.29391 | 0.1916580 | 2.2898300 | 73 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 04321 | 2005 $EG_{179}$ |
| 2005 $EM_{179}$ | 16.9 | 0.15 | 20060922 | 40.17451 | 275.19374 | 331.31699 | 1.13957 | 0.0276300 | 2.9419476 | 20 | 3 | 2002–2005 | 0.21 | M-v | 3 | MPC | 89639 | 2005 $EM_{179}$ |
| 2005 $EX_{180}$ | 16.5 | 0.15 | 20060922 | 81.24683 | 30.17326 | 159.06523 | 5.23214 | 0.0502590 | 2.7230320 | 41 | 4 | 1992–2006 | 0.37 | M-v | 1 | MPC | 03675 | 2005 $EX_{180}$ |
| 2005 $EG_{181}$ | 16.9 | 0.15 | 20060922 | 87.20790 | 239.28131 | 1.53321 | 5.65466 | 0.1376021 | 2.3275622 | 37 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 03676 | 2005 $EG_{181}$ |
| 2005 $ET_{181}$ | 15.6 | 0.15 | 20060922 | 39.04372 | 187.61144 | 49.26997 | 3.31297 | 0.0513371 | 2.9983432 | 27 | 3 | 2002–2005 | 0.59 | M-v | 4 | MPC | 76939 | 2005 $ET_{181}$ |
| 2005 $EJ_{182}$ | 16.6 | 0.15 | 20060922 | 120.82353 | 208.13962 | 9.13451 | 5.39732 | 0.1001376 | 2.3811935 | 68 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 76941 | 2005 $EJ_{182}$ |
| 2005 $EP_{182}$ | 16.6 | 0.15 | 20060922 | 49.32967 | 316.66790 | 350.26245 | 6.74569 | 0.1549998 | 2.2628863 | 73 | 2 | 2005–2006 | 0.58 | M-v | 4 | MPC | 03676 | 2005 $EP_{182}$ |
| 2005 $EZ_{182}$ | 16.9 | 0.15 | 20060922 | 22.44292 | 331.15412 | 352.33780 | 4.09979 | 0.1860666 | 2.3679078 | 90 | 2 | 2005–2006 | 0.39 | M-v | 3 | MPC | 03676 | 2005 $EZ_{182}$ |
| 2005 $ES_{183}$ | 16.5 | 0.15 | 20060922 | 73.89365 | 83.07147 | 182.86501 | 6.24068 | 0.0843736 | 2.3847084 | 55 | 4 | 1995–2006 | 0.44 | M-v | 0 | MPC | 03676 | 2005 $ES_{183}$ |
| 2005 $EH_{184}$ | 16.2 | 0.15 | 20060922 | 30.86040 | 294.53469 | 4.60717 | 1.83081 | 0.1861398 | 2.6535962 | 59 | 4 | 1996–2006 | 0.52 | M-v | 1 | MPC | 04321 | 2005 $EH_{184}$ |
| 2005 $EC_{185}$ | 17.8 | 0.15 | 20060922 | 130.08475 | 242.12126 | 331.71752 | 2.52617 | 0.1455437 | 2.3949304 | 26 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 76943 | 2005 $EC_{185}$ |
| 2005 $EG_{185}$ | 15.9 | 0.15 | 20060922 | 84.31745 | 7.94731 | 229.00002 | 12.74717 | 0.1363036 | 2.7079160 | 41 | 5 | 1998–2006 | 0.67 | M-v | 1 | MPC | 04321 | 2005 $EG_{185}$ |
| 2005 $ET_{185}$ | 15.5 | 0.15 | 20060922 | 56.18492 | 9.63804 | 254.11109 | 6.37014 | 0.2541096 | 2.7648078 | 32 | 2 | 2005–2006 | 0.55 | M-v | 4 | MPC | 03676 | 2005 $ET_{185}$ |
| 2005 $EK_{186}$ | 16.4 | 0.15 | 20060922 | 55.94319 | 153.40291 | 112.17275 | 3.94119 | 0.1443762 | 2.6406957 | 35 | 4 | 1996–2006 | 0.67 | M-v | 1 | MPC | 03677 | 2005 $EK_{186}$ |
| 2005 $EB_{187}$ | 18.0 | 0.15 | 20060922 | 86.13567 | 273.80775 | 358.06045 | 2.38388 | 0.1708863 | 2.3857431 | 36 | 3 | 2001–2006 | 0.39 | M-v | 2 | MPC | 76945 | 2005 $EB_{187}$ |
| 2005 $ED_{187}$ | 17.2 | 0.15 | 20060922 | 89.67742 | 31.54810 | 228.95044 | 1.71275 | 0.1593308 | 2.4489322 | 40 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 76945 | 2005 $ED_{187}$ |
| 2005 $EE_{187}$ | 17.5 | 0.15 | 20060922 | 103.62691 | 36.99709 | 217.01658 | 1.49859 | 0.1281011 | 2.3222247 | 29 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 86660 | 2005 $EE_{187}$ |
| 2005 $EW_{187}$ | 16.5 | 0.15 | 20060922 | 122.88308 | 188.67357 | 4.17166 | 0.97257 | 0.2139933 | 2.6939935 | 80 | 5 | 1996–2005 | 0.45 | M-v | 0 | MPC | 76946 | 2005 $EW_{187}$ |
| 2005 $EV_{191}$ | 17.7 | 0.15 | 20060922 | 196.12875 | 186.67852 | 287.36849 | 2.06507 | 0.1135821 | 2.3752703 | 23 | 4 | 1994–2005 | 0.30 | M-v | 0 | MPC | 04321 | 2005 $EV_{191}$ |
| 2005 $EH_{192}$ | 16.9 | 0.15 | 20060922 | 273.55676 | 168.52582 | 208.45039 | 2.52102 | 0.1007196 | 2.6910247 | 25 | 4 | 1994–2005 | 0.34 | M-v | 0 | MPC | 04321 | 2005 $EH_{192}$ |
| 2005 $EJ_{193}$ | 18.8 | 0.15 | 20050311 | 18.93612 | 312.62126 | 190.13452 | 1.78211 | 0.2226555 | 2.3662755 | 11 | 1 | 5 days | 0.25 | | E | MPC | 02247 | 2005 $EJ_{193}$ |
| 2005 $EQ_{193}$ | 18.0 | 0.15 | 20060922 | 153.12602 | 193.90779 | 347.81777 | 3.95465 | 0.1469644 | 2.2879297 | 23 | 1 | 64 days | 0.26 | M-v | 4 | MPC | 77844 | 2005 $EQ_{193}$ |
| 2005 $EY_{193}$ | 17.1 | 0.15 | 20060922 | 21.10316 | 116.36961 | 195.20772 | 3.79112 | 0.1312534 | 2.4132168 | 45 | 5 | 1994–2006 | 0.40 | M-v | 1 | MPC | 04321 | 2005 $EY_{193}$ |
| 2005 $EN_{195}$ | 17.6 | 0.15 | 20060922 | 61.40117 | 101.00444 | 198.43610 | 1.75548 | 0.2242549 | 2.3193980 | 43 | 3 | 1999–2006 | 0.30 | M-v | 3 | MPC | 95659 | 2005 $EN_{195}$ |
| 2005 $EP_{195}$ | 17.7 | 0.15 | 20060922 | 40.34671 | 76.78790 | 227.34172 | 0.82037 | 0.1657841 | 2.4176791 | 40 | 3 | 2002–2006 | 0.22 | M-v | 2 | MPC | 04321 | 2005 $EP_{195}$ |
| 2005 $EQ_{195}$ | 17.3 | 0.15 | 20060922 | 39.84570 | 334.58086 | 341.84301 | 2.48082 | 0.1843082 | 2.2904685 | 45 | 3 | 1999–2006 | 0.44 | M-v | 3 | MPC | 76951 | 2005 $EQ_{195}$ |
| 2005 $EC_{196}$ | 16.7 | 0.15 | 20060922 | 107.11230 | 285.45245 | 313.99557 | 1.30635 | 0.1845953 | 2.3877361 | 42 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 86661 | 2005 $EC_{196}$ |
| 2005 $EF_{196}$ | 16.6 | 0.15 | 20060922 | 359.77415 | 138.10494 | 195.10377 | 5.65602 | 0.1217431 | 2.4517109 | 32 | 3 | 1995–2006 | 0.24 | M-v | 3 | MPC | 04321 | 2005 $EF_{196}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $EZ_{196}$ | 15.2 | 0.15 | 20060922 | 93.26166 | 299.57994 | 253.04742 | 7.40784 | 0.2112401 | 3.0486787 | 45 | 3 | 2000–2005 | 0.67 | M-v | 4 | MPC | 76952 | 2005 $EZ_{196}$ |
| 2005 $EF_{197}$ | 16.3 | 0.15 | 20060922 | 155.25161 | 244.13124 | 306.74185 | 5.57818 | 0.1017632 | 2.2402509 | 77 | 4 | 2000–2006 | 0.65 | M-v | 2 | MPC | 04321 | 2005 $EF_{197}$ |
| 2005 $EE_{199}$ | 17.8 | 0.15 | 20060922 | 359.55362 | 197.48939 | 194.13616 | 21.63604 | 0.0916526 | 1.9388709 | 43 | 3 | 2003–2006 | 0.43 | M-v | 3 | MPC | 00934 | 2005 $EE_{199}$ |
| 2005 $ED_{202}$ | 15.7 | 0.15 | 20060922 | 80.59536 | 152.66307 | 86.84893 | 14.59294 | 0.1711644 | 2.4361253 | 41 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04322 | 2005 $ED_{202}$ |
| 2005 $EE_{203}$ | 17.2 | 0.15 | 20060922 | 81.67325 | 124.37278 | 144.09176 | 2.69851 | 0.1927590 | 2.4358674 | 23 | 4 | 1998–2006 | 0.33 | M-v | 2 | MPC | 00934 | 2005 $EE_{203}$ |
| 2005 $EK_{205}$ | 16.7 | 0.15 | 20060922 | 24.40922 | 348.55866 | 349.86495 | 7.43040 | 0.1622810 | 2.2193251 | 82 | 5 | 1996–2006 | 0.51 | M-v | 1 | MPC | 04322 | 2005 $EK_{205}$ |
| 2005 $EM_{205}$ | 17.4 | 0.15 | 20060922 | 108.48092 | 252.69263 | 357.20469 | 4.76313 | 0.0744080 | 2.2214401 | 45 | 3 | 2003–2006 | 0.38 | M-v | 3 | MPC | 00935 | 2005 $EM_{205}$ |
| 2005 $ES_{206}$ | 16.9 | 0.15 | 20060922 | 117.94432 | 320.95747 | 247.38751 | 3.02013 | 0.1761348 | 2.5631618 | 46 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04322 | 2005 $ES_{206}$ |
| 2005 $EM_{208}$ | 17.3 | 0.15 | 20060922 | 13.49150 | 345.29557 | 337.22660 | 3.53057 | 0.1507799 | 2.3021054 | 45 | 3 | 2003–2006 | 0.42 | M-v | 3 | MPC | 04322 | 2005 $EM_{208}$ |
| 2005 $EM_{210}$ | 17.2 | 0.15 | 20060922 | 122.08097 | 44.09242 | 180.80018 | 3.03099 | 0.1746172 | 2.3118532 | 60 | 5 | 1998–2006 | 0.57 | M-v | 1 | MPC | 86662 | 2005 $EM_{210}$ |
| 2005 $EC_{211}$ | 17.0 | 0.15 | 20060922 | 84.05396 | 29.90504 | 216.03254 | 3.31184 | 0.1703015 | 2.5515473 | 42 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 04322 | 2005 $EC_{211}$ |
| 2005 $EH_{211}$ | 16.7 | 0.15 | 20060922 | 157.22722 | 302.13046 | 229.04880 | 7.14672 | 0.0499845 | 2.2675107 | 39 | 4 | 2002–2006 | 0.66 | M-v | 1 | MPC | 04322 | 2005 $EH_{211}$ |
| 2005 $EY_{211}$ | 16.9 | 0.15 | 20060922 | 85.91289 | 125.71508 | 130.01376 | 5.50540 | 0.1536473 | 2.2719961 | 32 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 04322 | 2005 $EY_{211}$ |
| 2005 $EO_{212}$ | 15.6 | 0.15 | 20060922 | 73.25356 | 98.52238 | 143.38564 | 25.05805 | 0.1322118 | 2.7206809 | 46 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 03677 | 2005 $EO_{212}$ |
| 2005 $EN_{213}$ | 17.1 | 0.15 | 20060922 | 216.97894 | 275.37016 | 166.93678 | 2.95654 | 0.0520617 | 2.6925813 | 29 | 3 | 1998–2005 | 0.27 | M-v | 3 | MPC | 76967 | 2005 $EN_{213}$ |
| 2005 $EF_{214}$ | 16.5 | 0.15 | 20060922 | 111.31655 | 111.99648 | 59.38287 | 2.81948 | 0.1389208 | 3.0001786 | 32 | 3 | 2000–2005 | 0.65 | M-v | 4 | MPC | 76968 | 2005 $EF_{214}$ |
| 2005 $EM_{215}$ | 16.9 | 0.15 | 20060922 | 72.96899 | 284.00570 | 333.15776 | 6.48539 | 0.1108619 | 2.4173819 | 64 | 6 | 1995–2006 | 0.59 | M-v | 0 | MPC | 04322 | 2005 $EM_{215}$ |
| 2005 $EN_{215}$ | 15.8 | 0.15 | 20060922 | 56.77189 | 58.74201 | 206.83937 | 6.88485 | 0.2286073 | 2.8077046 | 24 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03677 | 2005 $EN_{215}$ |
| 2005 $ES_{215}$ | 16.6 | 0.15 | 20060922 | 66.84820 | 98.88901 | 156.53292 | 6.54355 | 0.1802103 | 2.6305906 | 33 | 4 | 1996–2006 | 0.67 | M-v | 1 | MPC | 03678 | 2005 $ES_{215}$ |
| 2005 $EP_{217}$ | 16.8 | 0.15 | 20060922 | 4.33919 | 162.74903 | 172.14347 | 5.26899 | 0.2242243 | 2.3697298 | 93 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 03678 | 2005 $EP_{217}$ |
| 2005 $EQ_{217}$ | 15.7 | 0.15 | 20060922 | 0.57350 | 113.90584 | 168.13925 | 0.67566 | 0.0384328 | 3.1516829 | 43 | 6 | 1996–2005 | 0.46 | M-v | 0 | MPC | 76971 | 2005 $EQ_{217}$ |
| 2005 $ER_{217}$ | 15.4 | 0.15 | 20060922 | 29.29052 | 97.48285 | 179.10276 | 21.10409 | 0.2533677 | 3.1850539 | 50 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 03678 | 2005 $ER_{217}$ |
| 2005 $EJ_{218}$ | 14.6 | 0.15 | 20060922 | 111.88571 | 224.83935 | 283.60406 | 9.52226 | 0.0419903 | 3.1300498 | 37 | 4 | 1999–2005 | 0.54 | M-v | 1 | MPC | 76972 | 2005 $EJ_{218}$ |
| 2005 $ED_{219}$ | 16.8 | 0.15 | 20060922 | 70.52392 | 243.24696 | 34.09448 | 2.44467 | 0.1987618 | 2.4505932 | 59 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 76973 | 2005 $ED_{219}$ |
| 2005 $EM_{219}$ | 18.1 | 0.15 | 20060922 | 209.09897 | 137.49213 | 4.06108 | 6.95867 | 0.0659559 | 2.2095166 | 22 | 3 | 1995–2005 | 0.20 | M-v | 2 | MPC | 76973 | 2005 $EM_{219}$ |
| 2005 $ET_{219}$ | 16.5 | 0.15 | 20060922 | 27.81777 | 129.76204 | 198.81167 | 3.75192 | 0.0385833 | 2.2705062 | 70 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 04322 | 2005 $ET_{219}$ |
| 2005 $EU_{219}$ | 16.8 | 0.15 | 20060922 | 81.43767 | 78.46037 | 198.53489 | 11.50369 | 0.2772183 | 2.5574859 | 61 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 76974 | 2005 $EU_{219}$ |
| 2005 $EA_{220}$ | 15.1 | 0.15 | 20060922 | 60.71182 | 266.52034 | 330.90499 | 24.30035 | 0.2653541 | 3.1864231 | 51 | 3 | 1999–2006 | 0.42 | M-v | 1 | MPC | 04322 | 2005 $EA_{220}$ |
| 2005 $EG_{220}$ | 15.1 | 0.15 | 20060922 | 33.35442 | 279.56812 | 330.39841 | 24.78667 | 0.2273341 | 3.1067972 | 45 | 2 | 2005–2006 | 0.66 | M-v | 3 | MPC | 03678 | 2005 $EG_{220}$ |
| 2005 $EH_{220}$ | 17.8 | 0.15 | 20060922 | 154.14845 | 63.39090 | 123.50102 | 2.40250 | 0.1339550 | 2.2689186 | 32 | 3 | 2000–2006 | 0.64 | M-v | 3 | MPC | 03678 | 2005 $EH_{220}$ |
| 2005 $ES_{223}$ | 17.6 | 0.15 | 20060922 | 174.06266 | 25.54205 | 155.02367 | 3.83437 | 0.0586774 | 2.2017524 | 33 | 4 | 2000–2006 | 0.46 | M-v | 2 | MPC | 04322 | 2005 $ES_{223}$ |
| 2005 $EU_{223}$ | 16.9 | 0.15 | 20060922 | 182.49070 | 354.11122 | 159.90817 | 4.85055 | 0.1203052 | 2.3214102 | 51 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 76979 | 2005 $EU_{223}$ |
| 2005 $EZ_{223}$ | 22.4 | 0.15 | 20060922 | 256.73617 | 97.69872 | 5.81498 | 3.93397 | 0.5406799 | 1.7543310 | 50 | 1 | 24 days | 1.08 | M-v | 6 | MPC | 77848 | 2005 $EZ_{223}$ |
| 2005 $EM_{226}$ | 15.1 | 0.15 | 20060922 | 310.05227 | 233.04053 | 87.61218 | 11.39697 | 0.0859870 | 3.0992807 | 48 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 02248 | 2005 $EM_{226}$ |
| 2005 $EN_{227}$ | 17.7 | 0.15 | 20060922 | 28.43575 | 157.65970 | 172.38363 | 3.35377 | 0.0963192 | 2.1564440 | 59 | 3 | 2002–2006 | 0.37 | M-v | 3 | MPC | 04322 | 2005 $EN_{227}$ |
| 2005 $EM_{230}$ | 16.9 | 0.15 | 20060922 | 31.50141 | 165.61752 | 138.73863 | 3.96859 | 0.1606614 | 2.2649965 | 79 | 4 | 1998–2006 | 0.39 | M-v | 1 | MPC | 03679 | 2005 $EM_{230}$ |
| 2005 $EV_{230}$ | 16.4 | 0.15 | 20060922 | 15.44888 | 304.43534 | 2.94884 | 5.06753 | 0.1811401 | 2.4023784 | 37 | 4 | 1995–2006 | 0.32 | M-v | 1 | MPC | 04322 | 2005 $EV_{230}$ |
| 2005 $EY_{230}$ | 16.1 | 0.15 | 20060922 | 85.56647 | 92.92896 | 148.85895 | 12.39708 | 0.1435731 | 2.5752373 | 50 | 4 | 1998–2006 | 0.59 | M-v | 1 | MPC | 03679 | 2005 $EY_{230}$ |
| 2005 $EC_{232}$ | 17.4 | 0.15 | 20060922 | 32.97921 | 254.83928 | 38.32162 | 1.94574 | 0.1775319 | 2.4754893 | 21 | 3 | 2002–2006 | 0.37 | M-v | 4 | MPC | 03679 | 2005 $EC_{232}$ |
| 2005 $EW_{233}$ | 16.7 | 0.15 | 20060922 | 107.25731 | 129.22394 | 105.73803 | 8.85929 | 0.2076865 | 2.4304974 | 41 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 03679 | 2005 $EW_{233}$ |
| 2005 $EX_{233}$ | 17.0 | 0.15 | 20060922 | 89.36209 | 151.77723 | 101.56083 | 7.66250 | 0.0967184 | 2.3297795 | 29 | 3 | 2003–2006 | 0.63 | M-v | 2 | MPC | 76982 | 2005 $EX_{233}$ |
| 2005 $EL_{235}$ | 17.5 | 0.15 | 20060922 | 72.17753 | 243.66434 | 24.71220 | 2.59060 | 0.1856045 | 2.4424516 | 38 | 3 | 2002–2006 | 0.29 | M-v | 1 | MPC | 76983 | 2005 $EL_{235}$ |
| 2005 $EY_{236}$ | 16.9 | 0.15 | 20060922 | 20.06098 | 203.65354 | 51.19936 | 3.58916 | 0.0654411 | 2.6675173 | 23 | 3 | 2003–2006 | 0.32 | M-v | 3 | MPC | 76983 | 2005 $EY_{236}$ |
| 2005 $EN_{240}$ | 16.9 | 0.15 | 20060922 | 66.12307 | 104.77227 | 155.97973 | 4.05927 | 0.1627196 | 2.5796326 | 39 | 4 | 1998–2006 | 0.38 | M-v | 0 | MPC | 03679 | 2005 $EN_{240}$ |
| 2005 $ET_{240}$ | 17.0 | 0.15 | 20060922 | 67.85579 | 77.41385 | 154.40965 | 13.30152 | 0.1401660 | 2.5246956 | 21 | 3 | 2002–2005 | 0.43 | M-v | 3 | MPC | 89643 | 2005 $ET_{240}$ |
| 2005 $EL_{241}$ | 17.0 | 0.15 | 20060922 | 88.39092 | 132.71782 | 112.42043 | 6.95607 | 0.0591927 | 2.2601103 | 38 | 3 | 2002–2005 | 0.68 | M-v | 2 | MPC | 95661 | 2005 $EL_{241}$ |
| 2005 $EQ_{241}$ | 16.1 | 0.15 | 20060922 | 107.76902 | 106.70812 | 102.84102 | 7.10710 | 0.0812046 | 2.4226489 | 36 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04323 | 2005 $EQ_{241}$ |
| 2005 $EM_{242}$ | 16.3 | 0.15 | 20060922 | 75.96021 | 217.45380 | 56.21946 | 8.72552 | 0.1947280 | 2.2928414 | 62 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 76986 | 2005 $EM_{242}$ |
| 2005 $EU_{244}$ | 17.7 | 0.15 | 20060922 | 223.91698 | 246.84330 | 198.44746 | 2.21041 | 0.1580345 | 2.3682220 | 24 | 3 | 1996–2005 | 0.29 | M-v | 2 | MPC | 76987 | 2005 $EU_{244}$ |
| 2005 $EA_{245}$ | 16.4 | 0.15 | 20060922 | 102.16762 | 75.56263 | 177.63602 | 6.83824 | 0.0682255 | 2.4316240 | 43 | 3 | 2002–2006 | 0.32 | M-v | 2 | MPC | 76987 | 2005 $EA_{245}$ |
| 2005 $EB_{246}$ | 17.4 | 0.15 | 20060922 | 71.74418 | 232.11640 | 49.82303 | 1.07976 | 0.1989195 | 2.3375080 | 44 | 4 | 1999–2006 | 0.39 | M-v | 0 | MPC | 76988 | 2005 $EB_{246}$ |
| 2005 $EB_{247}$ | 17.2 | 0.15 | 20060922 | 126.34463 | 184.47255 | 24.76826 | 1.70814 | 0.1279274 | 2.3836253 | 40 | 4 | 2001–2006 | 0.31 | M-v | 2 | MPC | 04323 | 2005 $EB_{247}$ |
| 2005 $EC_{247}$ | 16.7 | 0.15 | 20060922 | 75.53778 | 154.77237 | 60.48229 | 0.65219 | 0.1246840 | 3.0679779 | 21 | 3 | 1999–2005 | 0.38 | M-v | 4 | MPC | 76988 | 2005 $EC_{247}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $EX_{248}$ | 15.5 | 0.15 | 20060922 | 337.77227 | 269.58586 | 43.98672 | 6.09416 | 0.0608195 | 2.7340160 | 42 | 5 | 1992–2005 | 0.64 | M-v | 1 | MPC | 04323 | 2005 $EX_{248}$ |
| 2005 $EC_{249}$ | 18.0 | 0.15 | 20060922 | 214.86496 | 299.95367 | 177.90956 | 5.64743 | 0.0398023 | 2.2486436 | 29 | 3 | 1998–2005 | 0.20 | M-v | 2 | MPC | 89644 | 2005 $EC_{249}$ |
| 2005 $EL_{250}$ | 17.5 | 0.15 | 20060922 | 290.10958 | 252.85129 | 193.72004 | 21.73290 | 0.1256351 | 1.8903215 | 76 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 76991 | 2005 $EL_{250}$ |
| 2005 $ET_{251}$ | 17.3 | 0.15 | 20060922 | 315.40492 | 27.48485 | 28.35738 | 22.19575 | 0.1125698 | 1.9547857 | 70 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 76992 | 2005 $ET_{251}$ |
| 2005 $ED_{253}$ | 16.3 | 0.15 | 20060922 | 207.71415 | 343.68348 | 126.87645 | 12.36633 | 0.1823875 | 2.4440909 | 29 | 4 | 2001–2006 | 0.66 | M-v | 1 | MPC | 95662 | 2005 $ED_{253}$ |
| 2005 $EP_{253}$ | 16.2 | 0.15 | 20060922 | 57.40973 | 113.07099 | 151.06638 | 5.36962 | 0.1300055 | 2.6267384 | 25 | 2 | 2005–2006 | 0.44 | M-v | 4 | MPC | 03680 | 2005 $EP_{253}$ |
| 2005 $EL_{256}$ | 15.9 | 0.15 | 20060922 | 155.66207 | 242.35746 | 253.86529 | 1.10315 | 0.0308916 | 2.8791612 | 25 | 3 | 2000–2005 | 0.34 | M-v | 4 | MPC | 03680 | 2005 $EL_{256}$ |
| 2005 $EP_{256}$ | 16.1 | 0.15 | 20060922 | 139.03271 | 326.82812 | 225.45743 | 10.19286 | 0.1686676 | 2.3593596 | 58 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 76994 | 2005 $EP_{256}$ |
| 2005 $EA_{257}$ | 16.7 | 0.15 | 20060922 | 3.07254 | 66.52320 | 275.07605 | 1.44946 | 0.2358605 | 2.4012390 | 96 | 4 | 1991–2006 | 0.47 | M-v | 1 | MPC | 03680 | 2005 $EA_{257}$ |
| 2005 $EO_{262}$ | 16.5 | 0.15 | 20060922 | 232.17703 | 328.98740 | 118.34776 | 5.48421 | 0.1242251 | 2.2702370 | 38 | 3 | 2000–2005 | 0.66 | M-v | 4 | MPC | 76996 | 2005 $EO_{262}$ |
| 2005 $EH_{263}$ | 16.1 | 0.15 | 20060922 | 96.52617 | 335.37900 | 241.80913 | 1.08184 | 0.0440459 | 2.5969987 | 42 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 02248 | 2005 $EH_{263}$ |
| 2005 $EE_{264}$ | 16.7 | 0.15 | 20060922 | 324.37271 | 24.44378 | 343.80155 | 4.55315 | 0.2406085 | 2.3444902 | 44 | 4 | 1992–2005 | 0.63 | M-v | 1 | MPC | 76998 | 2005 $EE_{264}$ |
| 2005 $EA_{265}$ | 17.6 | 0.15 | 20060922 | 220.95807 | 233.69831 | 211.75989 | 3.45469 | 0.1078077 | 2.5217554 | 22 | 3 | 1999–2005 | 0.41 | M-v | 3 | MPC | 89645 | 2005 $EA_{265}$ |
| 2005 $EQ_{265}$ | 17.2 | 0.15 | 20060922 | 105.16845 | 71.81499 | 193.62020 | 3.89518 | 0.2292412 | 2.2098562 | 47 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 76999 | 2005 $EQ_{265}$ |
| 2005 $EV_{265}$ | 14.7 | 0.15 | 20060922 | 108.31843 | 182.33777 | 354.22006 | 4.83896 | 0.1010734 | 3.1180453 | 44 | 4 | 1996–2005 | 0.59 | M-v | 1 | MPC | 76999 | 2005 $EV_{265}$ |
| 2005 $EZ_{265}$ | 16.2 | 0.15 | 20060922 | 117.61614 | 16.42771 | 210.22322 | 6.18996 | 0.0699936 | 2.3446685 | 55 | 6 | 1998–2006 | 0.62 | M-v | 1 | MPC | 04323 | 2005 $EZ_{265}$ |
| 2005 $EO_{266}$ | 17.0 | 0.15 | 20060922 | 126.18637 | 213.53827 | 8.15999 | 4.79293 | 0.0757215 | 2.3527351 | 56 | 5 | 1994–2006 | 0.44 | M-v | 1 | MPC | 04323 | 2005 $EO_{266}$ |
| 2005 $EW_{266}$ | 16.4 | 0.15 | 20060922 | 247.28393 | 68.02408 | 358.33138 | 5.27755 | 0.0540241 | 2.7002524 | 24 | 4 | 1998–2005 | 0.42 | M-v | 1 | MPC | 89645 | 2005 $EW_{266}$ |
| 2005 $EL_{267}$ | 16.1 | 0.15 | 20060922 | 79.54338 | 271.55236 | 347.74296 | 4.29799 | 0.1455768 | 2.5733528 | 54 | 3 | 2002–2006 | 0.69 | M-v | 3 | MPC | 77000 | 2005 $EL_{267}$ |
| 2005 $EU_{268}$ | 17.2 | 0.15 | 20060922 | 53.83434 | 84.36371 | 236.39406 | 2.32525 | 0.1477573 | 2.1653870 | 75 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 77001 | 2005 $EU_{268}$ |
| 2005 $EN_{270}$ | 15.2 | 0.15 | 20060922 | 62.70582 | 296.55470 | 308.94376 | 15.41002 | 0.1930650 | 3.0880646 | 25 | 3 | 2004–2006 | 0.38 | M-v | 3 | MPC | 03681 | 2005 $EN_{270}$ |
| 2005 $ET_{271}$ | 15.8 | 0.15 | 20060922 | 77.29668 | 119.84440 | 87.32031 | 4.68149 | 0.0710340 | 2.9659599 | 32 | 4 | 1995–2005 | 0.70 | M-v | 1 | MPC | 77004 | 2005 $ET_{271}$ |
| 2005 $EO_{272}$ | 15.9 | 0.15 | 20060922 | 98.36668 | 120.68174 | 82.75806 | 12.92480 | 0.1306687 | 2.6989480 | 31 | 4 | 2001–2005 | 0.59 | M-v | 1 | MPC | 95663 | 2005 $EO_{272}$ |
| 2005 $EV_{274}$ | 16.7 | 0.15 | 20060922 | 121.16876 | 355.18316 | 228.48026 | 3.32905 | 0.1319164 | 2.3427009 | 41 | 5 | 1994–2005 | 0.54 | M-v | 1 | MPC | 04323 | 2005 $EV_{274}$ |
| 2005 $EB_{277}$ | 17.0 | 0.15 | 20060922 | 31.21940 | 138.32503 | 193.17013 | 3.35094 | 0.1880186 | 2.3539667 | 60 | 5 | 1995–2006 | 0.42 | M-v | 1 | MPC | 04323 | 2005 $EB_{277}$ |
| 2005 $EP_{278}$ | 15.7 | 0.15 | 20060922 | 58.85388 | 171.28875 | 95.99565 | 9.76558 | 0.2652714 | 2.7858753 | 46 | 3 | 2001–2006 | 0.68 | M-v | 2 | MPC | 77008 | 2005 $EP_{278}$ |
| 2005 $ES_{278}$ | 16.7 | 0.15 | 20060922 | 94.25169 | 42.85853 | 214.93946 | 5.36489 | 0.0779856 | 2.3114181 | 70 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 77009 | 2005 $ES_{278}$ |
| 2005 $EW_{278}$ | 16.7 | 0.15 | 20060922 | 63.18473 | 221.24837 | 53.89837 | 1.55476 | 0.1740585 | 2.6893722 | 41 | 2 | 2005–2006 | 0.42 | M-v | 3 | MPC | 03681 | 2005 $EW_{278}$ |
| 2005 $EY_{279}$ | 17.2 | 0.15 | 20060922 | 69.16278 | 164.17296 | 112.77818 | 7.61774 | 0.1141832 | 2.3730712 | 30 | 3 | 2002–2006 | 0.70 | M-v | 2 | MPC | 04323 | 2005 $EY_{279}$ |
| 2005 $ED_{280}$ | 16.2 | 0.15 | 20060922 | 68.13585 | 236.64579 | 46.09397 | 11.64644 | 0.2693830 | 2.5740653 | 47 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 77010 | 2005 $ED_{280}$ |
| 2005 $EB_{282}$ | 17.8 | 0.15 | 20060922 | 134.62314 | 115.12298 | 101.66583 | 3.18385 | 0.1505686 | 2.3241191 | 34 | 4 | 2001–2006 | 0.77 | M-v | 2 | MPC | 77012 | 2005 $EB_{282}$ |
| 2005 $EU_{283}$ | 17.9 | 0.15 | 20060922 | 188.44095 | 16.78801 | 114.91140 | 3.11147 | 0.1569757 | 2.3546108 | 20 | 3 | 2000–2005 | 0.65 | M-v | 3 | MPC | 03681 | 2005 $EU_{283}$ |
| 2005 $EC_{286}$ | 15.7 | 0.15 | 20060922 | 70.85948 | 248.71752 | 45.80570 | 22.58623 | 0.2998529 | 2.3169307 | 123 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 77014 | 2005 $EC_{286}$ |
| 2005 $EH_{286}$ | 16.2 | 0.15 | 20060922 | 126.36479 | 320.99487 | 255.47739 | 20.62390 | 0.1592510 | 2.3690232 | 36 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 77014 | 2005 $EH_{286}$ |
| 2005 $ED_{288}$ | 16.8 | 0.15 | 20060922 | 88.21352 | 318.46042 | 309.43808 | 2.49908 | 0.1309500 | 2.2568709 | 43 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 77015 | 2005 $ED_{288}$ |
| 2005 $EJ_{288}$ | 15.9 | 0.15 | 20060922 | 121.24376 | 212.67450 | 328.60746 | 4.01118 | 0.0667821 | 2.7499284 | 28 | 4 | 2000–2005 | 0.62 | M-v | 1 | MPC | 95664 | 2005 $EJ_{288}$ |
| 2005 $EL_{290}$ | 15.3 | 0.15 | 20060922 | 76.91098 | 323.06957 | 290.97569 | 8.55903 | 0.1510196 | 2.7152989 | 72 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 04323 | 2005 $EL_{290}$ |
| 2005 $EQ_{290}$ | 17.1 | 0.15 | 20060922 | 224.45239 | 204.25305 | 270.03134 | 2.49198 | 0.0375114 | 2.1467965 | 44 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 04323 | 2005 $EQ_{290}$ |
| 2005 $EB_{292}$ | 16.0 | 0.15 | 20060922 | 152.40000 | 83.84850 | 79.77602 | 11.61104 | 0.0933244 | 2.5983812 | 27 | 3 | 2001–2005 | 0.77 | M-v | 3 | MPC | 86671 | 2005 $EB_{292}$ |
| 2005 $EH_{292}$ | 16.6 | 0.15 | 20060922 | 86.39222 | 138.52806 | 121.07189 | 7.25819 | 0.1192228 | 2.4474513 | 44 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 95664 | 2005 $EH_{292}$ |
| 2005 $EU_{294}$ | 15.9 | 0.15 | 20060922 | 109.85360 | 105.95971 | 134.42223 | 14.73184 | 0.1181517 | 2.5533776 | 80 | 4 | 1994–2006 | 0.67 | M-v | 2 | MPC | 04323 | 2005 $EU_{294}$ |
| 2005 $EJ_{295}$ | 16.7 | 0.15 | 20060922 | 76.21074 | 72.73043 | 197.10473 | 5.68409 | 0.1329764 | 2.3512422 | 60 | 5 | 1998–2006 | 0.47 | M-v | 0 | MPC | 04323 | 2005 $EJ_{295}$ |
| 2005 $EQ_{295}$ | 16.2 | 0.15 | 20060922 | 60.15065 | 299.12523 | 331.16214 | 8.78386 | 0.0405001 | 2.4339442 | 47 | 4 | 2002–2006 | 0.41 | M-v | 0 | MPC | 04324 | 2005 $EQ_{295}$ |
| 2005 $EU_{296}$ | 17.5 | 0.15 | 20060922 | 71.22642 | 264.47538 | 24.32635 | 5.04976 | 0.1712553 | 2.3944105 | 57 | 3 | 2002–2006 | 0.30 | M-v | 1 | MPC | 86672 | 2005 $EU_{296}$ |
| 2005 $EL_{299}$ | 16.6 | 0.15 | 20060922 | 270.46540 | 205.22425 | 144.48514 | 3.59772 | 0.1548510 | 2.9862717 | 22 | 4 | 1997–2006 | 0.31 | M-v | 1 | MPC | 02248 | 2005 $EL_{299}$ |
| 2005 $EW_{302}$ | 16.3 | 0.15 | 20060922 | 311.42101 | 98.78453 | 247.19955 | 1.19670 | 0.0395916 | 3.0212789 | 22 | 4 | 1999–2005 | 0.37 | M-v | 1 | MPC | 89647 | 2005 $EW_{302}$ |
| 2005 $EC_{305}$ | 17.6 | 0.15 | 20060922 | 63.21698 | 293.35064 | 359.50779 | 4.01420 | 0.2283546 | 2.4133612 | 40 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 77020 | 2005 $EC_{305}$ |
| 2005 $EY_{305}$ | 16.3 | 0.15 | 20060922 | 219.56512 | 250.77544 | 160.71148 | 9.34613 | 0.1616830 | 2.7820922 | 32 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 00940 | 2005 $EY_{305}$ |
| 2005 $EY_{310}$ | 17.8 | 0.15 | 20060922 | 91.94088 | 241.52073 | 3.92035 | 2.24527 | 0.1329446 | 2.2477081 | 39 | 6 | 1995–2006 | 0.43 | M-v | 1 | MPC | 77021 | 2005 $EY_{310}$ |
| 2005 $EP_{312}$ | 16.9 | 0.15 | 20060922 | 11.73687 | 139.07404 | 183.41790 | 5.96850 | 0.1436839 | 2.3286036 | 54 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 04324 | 2005 $EP_{312}$ |
| 2005 $ER_{312}$ | 17.4 | 0.15 | 20060922 | 95.34356 | 49.67954 | 193.25382 | 3.00401 | 0.0613434 | 2.2717817 | 29 | 2 | 2005–2006 | 0.40 | M-v | 3 | MPC | 03682 | 2005 $ER_{312}$ |
| 2005 $ES_{312}$ | 16.9 | 0.15 | 20060922 | 23.49879 | 339.31466 | 338.33057 | 6.36179 | 0.2315933 | 2.3441799 | 86 | 3 | 1994–2006 | 0.40 | M-v | 2 | MPC | 03682 | 2005 $ES_{312}$ |
| 2005 $EB_{314}$ | 17.0 | 0.15 | 20060922 | 351.52559 | 200.95036 | 137.82355 | 2.01275 | 0.2000396 | 2.4539080 | 35 | 3 | 2001–2006 | 0.24 | M-v | 2 | MPC | 04324 | 2005 $EB_{314}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $EB_{315}$ | 15.6 | 0.15 | 20060922 | 281.31559 | 218.28476 | 111.60234 | 4.70064 | 0.0681803 | 3.1842094 | 37 | 6 | 1998–2006 | 0.35 | M-v | 0 | MPC | 02249 | 2005 $EB_{315}$ |
| 2005 $EV_{315}$ | 16.5 | 0.15 | 20060922 | 23.89665 | 196.28402 | 125.57717 | 2.21007 | 0.1949147 | 2.4050497 | 114 | 6 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04324 | 2005 $EV_{315}$ |
| 2005 $EX_{315}$ | 16.6 | 0.15 | 20060922 | 275.31696 | 21.24807 | 1.06551 | 17.61368 | 0.1983497 | 2.5496739 | 19 | 3 | 2001–2005 | 0.39 | M-v | 4 | MPC | 89648 | 2005 $EX_{315}$ |
| 2005 $EV_{317}$ | 16.7 | 0.15 | 20060922 | 75.03962 | 261.40598 | 357.58147 | 8.73949 | 0.1577634 | 2.5588919 | 43 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 89648 | 2005 $EV_{317}$ |
| 2005 $EJ_{318}$ | 16.5 | 0.15 | 20060922 | 125.67059 | 203.96954 | 60.07649 | 23.53805 | 0.0689769 | 1.9072057 | 75 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 00941 | 2005 $EJ_{318}$ |
| 2005 $EL_{318}$ | 15.3 | 0.15 | 20060922 | 23.07796 | 254.21592 | 51.75747 | 26.18612 | 0.1519171 | 2.5405200 | 40 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 03682 | 2005 $EL_{318}$ |
| 2005 $ED_{324}$ | 17.9 | 0.15 | 20060922 | 101.76085 | 219.91783 | 11.91892 | 4.17594 | 0.1407945 | 2.3945641 | 17 | 1 | 64 days | 0.44 | M-v | 5 | MPC | | 2005 $ED_{324}$ |
| 2005 $EE_{324}$ | 17.2 | 0.15 | 20050331 | 9.53745 | 99.60803 | 75.22519 | 6.97863 | 0.1733922 | 2.3564206 | 19 | 1 | 44 days | 0.72 | | | MPC | | 2005 $EE_{324}$ |
| 2005 $EH_{324}$ | 15.4 | 0.15 | 20050331 | 284.01746 | 189.68864 | 84.48366 | 7.80779 | 0.0902395 | 2.7478476 | 17 | 1 | 54 days | 0.65 | | | MPC | | 2005 $EH_{324}$ |
| 2005 $EK_{324}$ | 16.2 | 0.15 | 20060922 | 142.23268 | 311.11186 | 196.30853 | 11.03063 | 0.0526990 | 3.1416155 | 22 | 1 | 61 days | 0.58 | M-v | 5 | MPC | | 2005 $EK_{324}$ |
| 2005 $EM_{324}$ | 17.6 | 0.15 | 20060922 | 148.84398 | 341.17393 | 212.66180 | 2.78764 | 0.1831285 | 2.3685928 | 26 | 1 | 111 days | 0.45 | M-v | 3 | MPC | | 2005 $EM_{324}$ |
| 2005 $EQ_{324}$ | 16.1 | 0.15 | 20050331 | 351.87818 | 20.51926 | 201.77519 | 12.09323 | 0.1016702 | 2.6751501 | 17 | 1 | 50 days | 0.53 | | | MPC | | 2005 $EQ_{324}$ |
| 2005 $FV_1$ | 17.7 | 0.15 | 20060922 | 148.17016 | 131.29603 | 77.01339 | 2.06844 | 0.1789639 | 2.2820300 | 58 | 4 | 1998–2006 | 0.54 | M-v | 2 | MPC | 86674 | 2005 $FV_1$ |
| 2005 $FH_2$ | 16.7 | 0.15 | 20060922 | 194.69885 | 351.48284 | 148.51023 | 6.68722 | 0.0428895 | 2.3296517 | 42 | 2 | 2005–2006 | 0.56 | M-v | 4 | MPC | 03682 | 2005 $FH_2$ |
| 2005 $FL_2$ | 15.6 | 0.15 | 20060922 | 52.74563 | 87.42525 | 149.14386 | 5.92486 | 0.1053223 | 3.1696099 | 27 | 3 | 1996–2005 | 0.73 | M-v | 2 | MPC | 77022 | 2005 $FL_2$ |
| 2005 $FO_2$ | 15.9 | 0.15 | 20060922 | 61.05729 | 259.42438 | 11.29682 | 7.68394 | 0.1386545 | 2.6787276 | 44 | 3 | 2002–2006 | 0.63 | M-v | 2 | MPC | 03682 | 2005 $FO_2$ |
| 2005 $FW_2$ | 17.4 | 0.15 | 20060922 | 121.32793 | 186.65906 | 42.48920 | 6.75352 | 0.0715820 | 2.1949776 | 44 | 4 | 2002–2006 | 0.66 | M-v | 1 | MPC | 77023 | 2005 $FW_2$ |
| 2005 $FW_3$ | 14.5 | 0.15 | 20060922 | 38.58933 | 226.70178 | 39.70923 | 28.46090 | 0.1370319 | 3.1736231 | 86 | 3 | 2004–2006 | 0.59 | M-v | 2 | MPC | 04324 | 2005 $FW_3$ |
| 2005 $FY_3$ | 16.0 | 0.15 | 20060922 | 97.47532 | 110.69400 | 127.34844 | 10.63012 | 0.1235288 | 2.4669400 | 55 | 5 | 1993–2006 | 0.73 | M-v | 1 | MPC | 04324 | 2005 $FY_3$ |
| 2005 $FH_4$ | 16.5 | 0.15 | 20060922 | 93.26369 | 211.94178 | 57.04379 | 6.47364 | 0.1471081 | 2.2389237 | 50 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 77025 | 2005 $FH_4$ |
| 2005 $FS_4$ | 16.5 | 0.15 | 20060922 | 70.00485 | 327.58456 | 306.40524 | 5.95770 | 0.1142446 | 2.3789683 | 35 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 04324 | 2005 $FS_4$ |
| 2005 $FX_4$ | 15.1 | 0.15 | 20060922 | 104.22191 | 70.28545 | 116.70844 | 10.88111 | 0.1856382 | 3.1288404 | 68 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04324 | 2005 $FX_4$ |
| 2005 $FT_5$ | 15.3 | 0.15 | 20060922 | 81.73927 | 115.63514 | 130.20245 | 10.06649 | 0.1030560 | 2.7683525 | 54 | 4 | 2000–2006 | 0.67 | M-v | 1 | MPC | 04324 | 2005 $FT_5$ |
| 2005 $FU_5$ | 16.8 | 0.15 | 20060922 | 82.10961 | 278.14102 | 332.18556 | 8.59961 | 0.0846252 | 2.4625031 | 42 | 5 | 1993–2006 | 0.49 | M-v | 1 | MPC | 03683 | 2005 $FU_5$ |
| 2005 $FA_6$ | 15.1 | 0.15 | 20060922 | 114.06327 | 239.83167 | 284.22691 | 15.15626 | 0.2006348 | 3.1356140 | 26 | 3 | 1999–2005 | 0.38 | M-v | 2 | MPC | 77027 | 2005 $FA_6$ |
| 2005 $FE_6$ | 16.3 | 0.15 | 20060922 | 79.13396 | 312.48551 | 310.96233 | 8.43700 | 0.1319545 | 2.2587812 | 52 | 2 | 2005–2006 | 0.46 | M-v | 3 | MPC | 03683 | 2005 $FE_6$ |
| 2005 $FF_6$ | 16.9 | 0.15 | 20060922 | 205.76589 | 323.54040 | 169.16558 | 3.01459 | 0.0622187 | 2.2664630 | 30 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 04324 | 2005 $FF_6$ |
| 2005 $FV_6$ | 15.4 | 0.15 | 20060922 | 137.10106 | 50.01727 | 75.29717 | 10.09875 | 0.2725630 | 3.0947828 | 53 | 4 | 1998–2005 | 0.68 | M-v | 1 | MPC | 77028 | 2005 $FV_6$ |
| 2005 $FX_7$ | 15.5 | 0.15 | 20060922 | 77.99669 | 114.24250 | 132.34790 | 14.06883 | 0.1707107 | 2.7561363 | 48 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 04324 | 2005 $FX_7$ |
| 2005 $FY_8$ | 16.3 | 0.15 | 20060922 | 43.31096 | 120.24189 | 136.27060 | 4.99968 | 0.0117023 | 2.5551156 | 18 | 1 | 60 days | 0.64 | M-v | 5 | MPC | | 2005 $FY_8$ |
| 2005 $FN_{11}$ | 15.8 | 0.15 | 20050420 | 335.36887 | 147.95362 | 82.70450 | 14.67023 | 0.0884435 | 2.7435813 | 18 | 1 | 52 days | 0.78 | | | MPC | | 2005 $FN_{11}$ |
| 2005 $FO_{11}$ | 16.2 | 0.15 | 20050420 | 0.31752 | 110.24001 | 92.15942 | 10.29450 | 0.1675746 | 2.7982946 | 19 | 1 | 39 days | 0.76 | | | MPC | | 2005 $FO_{11}$ |
| 2005 GC | 15.7 | 0.15 | 20060922 | 31.17984 | 280.26566 | 23.43391 | 7.11222 | 0.2971628 | 2.7971347 | 126 | 2 | 2005–2006 | 0.47 | M-v | 3 | MPC | 03683 | 2005 GC |
| 2005 GM | 15.4 | 0.15 | 20060922 | 46.79969 | 104.24215 | 188.25590 | 19.92069 | 0.1884265 | 2.7850565 | 142 | 2 | 2005–2006 | 0.49 | M-v | 3 | MPC | 03683 | 2005 GM |
| 2005 GO | 15.1 | 0.15 | 20060922 | 43.33373 | 234.15084 | 43.62084 | 26.95769 | 0.1706284 | 3.1676585 | 61 | 3 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04324 | 2005 GO |
| 2005 GZ | 16.8 | 0.15 | 20060922 | 145.07639 | 14.43178 | 173.53199 | 5.39260 | 0.0867109 | 2.3838687 | 45 | 5 | 1999–2006 | 0.56 | M-v | 1 | MPC | 04324 | 2005 GZ |
| 2005 $GC_1$ | 16.0 | 0.15 | 20060922 | 51.95239 | 207.17199 | 72.67998 | 7.94853 | 0.0732510 | 2.6191445 | 48 | 5 | 1992–2006 | 0.63 | M-v | 1 | MPC | 04324 | 2005 $GC_1$ |
| 2005 $GM_1$ | 16.8 | 0.15 | 20060922 | 40.03579 | 313.49900 | 31.93505 | 21.63073 | 0.0997978 | 1.9259469 | 78 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 04324 | 2005 $GM_1$ |
| 2005 $GS_1$ | 15.3 | 0.15 | 20060922 | 25.79496 | 289.97637 | 7.86613 | 22.30235 | 0.2290669 | 2.4132108 | 71 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 03683 | 2005 $GS_1$ |
| 2005 $GH_2$ | 15.3 | 0.15 | 20060922 | 240.54884 | 300.36185 | 112.55425 | 16.26894 | 0.0695541 | 2.6732283 | 40 | 4 | 1999–2005 | 0.59 | M-v | 1 | MPC | 03683 | 2005 $GH_2$ |
| 2005 $GP_2$ | 16.9 | 0.15 | 20060922 | 59.67599 | 182.83086 | 123.98821 | 2.78002 | 0.0863605 | 2.2394421 | 59 | 4 | 1998–2006 | 0.35 | M-v | 0 | MPC | 77036 | 2005 $GP_2$ |
| 2005 $GV_2$ | 17.1 | 0.15 | 20060922 | 130.25386 | 206.15645 | 20.85875 | 5.85608 | 0.1025818 | 2.2904574 | 59 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 77036 | 2005 $GV_2$ |
| 2005 $GX_2$ | 16.7 | 0.15 | 20060922 | 145.77869 | 150.80519 | 53.61850 | 4.49358 | 0.1257599 | 2.3376764 | 86 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 77036 | 2005 $GX_2$ |
| 2005 $GH_3$ | 17.0 | 0.15 | 20060922 | 132.52649 | 147.12211 | 74.70784 | 6.13275 | 0.1818217 | 2.3447492 | 54 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 77037 | 2005 $GH_3$ |
| 2005 $GT_3$ | 17.5 | 0.15 | 20060922 | 96.38259 | 176.48321 | 97.25189 | 3.27301 | 0.2003767 | 2.3383027 | 35 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 77037 | 2005 $GT_3$ |
| 2005 $GZ_3$ | 16.6 | 0.15 | 20060922 | 67.14991 | 239.35467 | 52.53201 | 6.70981 | 0.1112405 | 2.3788144 | 53 | 5 | 1999–2006 | 0.56 | M-v | 0 | MPC | 86677 | 2005 $GZ_3$ |
| 2005 $GN_4$ | 15.5 | 0.15 | 20060922 | 40.29308 | 243.82621 | 34.35854 | 27.06496 | 0.1853705 | 3.1318613 | 58 | 3 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04324 | 2005 $GN_4$ |
| 2005 $GO_4$ | 16.7 | 0.15 | 20060922 | 338.07644 | 302.79917 | 65.07044 | 6.31959 | 0.1380272 | 2.4692860 | 31 | 3 | 2003–2006 | 0.29 | M-v | 3 | MPC | 03684 | 2005 $GO_4$ |
| 2005 $GQ_4$ | 16.8 | 0.15 | 20060922 | 105.09635 | 124.12850 | 150.81409 | 5.19801 | 0.1726048 | 2.2256594 | 45 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 77038 | 2005 $GQ_4$ |
| 2005 $GB_5$ | 17.4 | 0.15 | 20060922 | 99.38337 | 125.10330 | 164.29231 | 5.32658 | 0.1985297 | 2.1982762 | 34 | 3 | 1999–2006 | 0.41 | M-v | 2 | MPC | 77038 | 2005 $GB_5$ |
| 2005 $GG_5$ | 16.9 | 0.15 | 20060922 | 122.59210 | 19.69373 | 189.81792 | 15.10793 | 0.0442284 | 2.6170791 | 22 | 3 | 2002–2006 | 0.24 | M-v | 2 | MPC | 86677 | 2005 $GG_5$ |
| 2005 $GL_5$ | 16.8 | 0.15 | 20060922 | 40.23293 | 175.64984 | 142.60430 | 3.81913 | 0.2154738 | 2.5568425 | 61 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 77039 | 2005 $GL_5$ |
| 2005 $GS_5$ | 16.8 | 0.15 | 20060922 | 49.72861 | 259.10857 | 77.44190 | 4.16718 | 0.2392721 | 2.2332160 | 55 | 5 | 1994–2006 | 0.49 | M-v | 1 | MPC | 77039 | 2005 $GS_5$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $GL_6$ | 15.6 | 0.15 | 20060922 | 32.94212 | 235.28757 | 65.85748 | 6.00246 | 0.1022945 | 2.7454148 | 56 | 4 | 1996–2006 | 0.78 | M-v | 1 | MPC | 04324 | 2005 $GL_6$ |
| 2005 $GM_6$ | 16.7 | 0.15 | 20060922 | 65.75309 | 208.92271 | 82.65454 | 4.23102 | 0.1417186 | 2.4719347 | 41 | 4 | 2002–2006 | 0.46 | M-v | 0 | MPC | 03684 | 2005 $GM_6$ |
| 2005 $GV_6$ | 16.4 | 0.15 | 20060922 | 69.19480 | 87.40982 | 190.93549 | 15.12811 | 0.1341269 | 2.5597811 | 59 | 3 | 2002–2006 | 0.37 | M-v | 1 | MPC | 04324 | 2005 $GV_6$ |
| 2005 $GW_6$ | 17.8 | 0.15 | 20050420 | 346.29247 | 96.94372 | 128.85575 | 3.22943 | 0.1225458 | 2.2557819 | 9 | 1 | 42 days | 0.18 | | | MPC | | 2005 $GW_6$ |
| 2005 $GC_7$ | 17.1 | 0.15 | 20060922 | 126.59340 | 161.71329 | 80.79108 | 3.70456 | 0.1098102 | 2.2282463 | 59 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 77041 | 2005 $GC_7$ |
| 2005 $GV_7$ | 16.0 | 0.15 | 20060922 | 94.65022 | 78.10424 | 164.06764 | 12.61990 | 0.1466695 | 2.6663424 | 70 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 04324 | 2005 $GV_7$ |
| 2005 $GY_7$ | 16.0 | 0.15 | 20060922 | 51.30582 | 64.22667 | 212.31038 | 12.70059 | 0.1379386 | 2.7882566 | 41 | 3 | 1996–2006 | 0.45 | M-v | 2 | MPC | 03684 | 2005 $GY_7$ |
| 2005 $GA_8$ | 16.5 | 0.15 | 20060922 | 76.17088 | 289.08468 | 22.60997 | 4.64338 | 0.2119144 | 2.1864099 | 65 | 6 | 1992–2006 | 0.49 | M-v | 1 | MPC | 77042 | 2005 $GA_8$ |
| 2005 $GD_8$ | 15.1 | 0.15 | 20060922 | 93.71826 | 70.29395 | 184.90300 | 11.12098 | 0.1795087 | 2.6627812 | 131 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 86678 | 2005 $GD_8$ |
| 2005 $GH_8$ | 15.3 | 0.15 | 20060922 | 75.56841 | 11.97538 | 233.57866 | 17.11710 | 0.2133572 | 2.7283679 | 61 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 04324 | 2005 $GH_8$ |
| 2005 $GT_8$ | 16.3 | 0.15 | 20060922 | 72.05911 | 241.51407 | 37.84516 | 29.15668 | 0.2039511 | 2.5676456 | 68 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 77044 | 2005 $GT_8$ |
| 2005 $GG_9$ | 17.6 | 0.15 | 20060922 | 207.26300 | 2.64743 | 186.51431 | 21.39089 | 0.0765029 | 1.8613438 | 43 | 3 | 2000–2005 | 0.64 | M-v | 3 | MPC | 03684 | 2005 $GG_9$ |
| 2005 $GN_9$ | 16.1 | 0.15 | 20060922 | 357.05732 | 215.03647 | 91.85408 | 5.44560 | 0.0416808 | 2.7489426 | 34 | 4 | 2001–2006 | 0.73 | M-v | 1 | MPC | 02249 | 2005 $GN_9$ |
| 2005 $GX_9$ | 17.2 | 0.15 | 20060922 | 110.26134 | 157.73585 | 78.62690 | 5.95349 | 0.1543951 | 2.4234494 | 58 | 4 | 1995–2005 | 0.73 | M-v | 2 | MPC | 77046 | 2005 $GX_9$ |
| 2005 $GC_{10}$ | 15.7 | 0.15 | 20060922 | 228.22691 | 351.53676 | 97.89810 | 5.40398 | 0.0602985 | 2.6645766 | 42 | 6 | 1995–2006 | 0.63 | M-v | 1 | MPC | 03684 | 2005 $GC_{10}$ |
| 2005 $GE_{10}$ | 15.3 | 0.15 | 20060922 | 321.73955 | 320.46940 | 9.90682 | 10.23661 | 0.1643499 | 3.0459299 | 62 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 86679 | 2005 $GE_{10}$ |
| 2005 $GF_{10}$ | 15.6 | 0.15 | 20060922 | 44.91311 | 112.05897 | 167.17938 | 9.29581 | 0.2432703 | 3.1277539 | 48 | 2 | 2005–2006 | 0.62 | M-v | 3 | MPC | 03685 | 2005 $GF_{10}$ |
| 2005 $GF_{11}$ | 14.7 | 0.15 | 20060922 | 30.74807 | 113.14500 | 177.25625 | 25.59543 | 0.2902514 | 3.2023019 | 103 | 3 | 1999–2006 | 0.50 | M-v | 1 | MPC | 03685 | 2005 $GF_{11}$ |
| 2005 $GG_{11}$ | 15.6 | 0.15 | 20060922 | 88.39060 | 206.26001 | 42.13810 | 13.72128 | 0.2278831 | 2.6312025 | 108 | 3 | 1998–2006 | 0.53 | M-v | 2 | MPC | 77047 | 2005 $GG_{11}$ |
| 2005 $GH_{11}$ | 17.7 | 0.15 | 20060922 | 151.38649 | 49.32104 | 147.72890 | 6.74020 | 0.0521287 | 2.2823648 | 37 | 3 | 1998–2006 | 0.57 | M-v | 3 | MPC | 04324 | 2005 $GH_{11}$ |
| 2005 $GU_{11}$ | 15.6 | 0.15 | 20060922 | 234.69348 | 300.14496 | 134.44272 | 8.22971 | 0.0658549 | 2.7477626 | 53 | 4 | 2000–2005 | 0.53 | M-v | 1 | MPC | 95666 | 2005 $GU_{11}$ |
| 2005 $GF_{12}$ | 16.1 | 0.15 | 20060922 | 52.00651 | 140.30751 | 151.51131 | 5.83431 | 0.1954177 | 2.6201363 | 76 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 04325 | 2005 $GF_{12}$ |
| 2005 $GJ_{12}$ | 16.8 | 0.15 | 20060922 | 128.61865 | 113.88013 | 100.37920 | 2.24588 | 0.1340431 | 2.4101850 | 53 | 5 | 1995–2006 | 0.64 | M-v | 2 | MPC | 77049 | 2005 $GJ_{12}$ |
| 2005 $GL_{12}$ | 15.6 | 0.15 | 20060922 | 44.87576 | 253.45447 | 32.72359 | 14.06601 | 0.1405801 | 2.6870331 | 59 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 04325 | 2005 $GL_{12}$ |
| 2005 $GN_{12}$ | 17.1 | 0.15 | 20060922 | 128.04590 | 108.90801 | 113.13396 | 2.82180 | 0.1601719 | 2.3488489 | 42 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 77050 | 2005 $GN_{12}$ |
| 2005 $GW_{12}$ | 14.9 | 0.15 | 20060922 | 36.92916 | 276.04769 | 43.96391 | 16.62624 | 0.3525008 | 2.7577589 | 147 | 3 | 2004–2006 | 0.54 | M-v | 1 | MPC | 03685 | 2005 $GW_{12}$ |
| 2005 $GY_{12}$ | 16.5 | 0.15 | 20060922 | 131.75765 | 131.94407 | 96.19935 | 4.61357 | 0.1729134 | 2.3060445 | 70 | 4 | 1998–2006 | 0.69 | M-v | 2 | MPC | 77051 | 2005 $GY_{12}$ |
| 2005 $GZ_{12}$ | 15.6 | 0.15 | 20060922 | 102.15683 | 111.87460 | 103.95813 | 5.72902 | 0.0488954 | 2.7837853 | 65 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04325 | 2005 $GZ_{12}$ |
| 2005 $GE_{13}$ | 16.6 | 0.15 | 20060922 | 126.81870 | 137.35378 | 82.02533 | 3.34882 | 0.1618925 | 2.3826874 | 70 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 04325 | 2005 $GE_{13}$ |
| 2005 $GR_{13}$ | 15.7 | 0.15 | 20060922 | 69.32209 | 88.94077 | 151.24209 | 11.08019 | 0.0824055 | 3.0596270 | 52 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 77053 | 2005 $GR_{13}$ |
| 2005 $GV_{13}$ | 17.1 | 0.15 | 20060922 | 86.37349 | 96.49322 | 156.76059 | 9.74417 | 0.1524499 | 2.6853324 | 53 | 5 | 1996–2006 | 0.64 | M-v | 1 | MPC | 04325 | 2005 $GV_{13}$ |
| 2005 $GA_{14}$ | 16.6 | 0.15 | 20060922 | 130.50139 | 65.41168 | 161.71407 | 2.00098 | 0.1015378 | 2.2562756 | 86 | 4 | 1995–2006 | 0.57 | M-v | 1 | MPC | 77054 | 2005 $GA_{14}$ |
| 2005 $GB_{14}$ | 17.1 | 0.15 | 20060922 | 59.64878 | 113.33549 | 166.98341 | 4.93531 | 0.2210238 | 2.3652339 | 46 | 3 | 1995–2006 | 0.39 | M-v | 2 | MPC | 03685 | 2005 $GB_{14}$ |
| 2005 $GO_{14}$ | 16.3 | 0.15 | 20060922 | 68.82029 | 188.65903 | 79.53293 | 2.04996 | 0.1037363 | 2.5636756 | 46 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 77054 | 2005 $GO_{14}$ |
| 2005 $GD_{16}$ | 17.2 | 0.15 | 20060922 | 232.03677 | 261.57561 | 169.59333 | 6.46513 | 0.0915653 | 2.3839299 | 27 | 4 | 1996–2005 | 0.50 | M-v | 1 | MPC | 77054 | 2005 $GD_{16}$ |
| 2005 $GV_{16}$ | 17.3 | 0.15 | 20060922 | 189.05574 | 276.05498 | 178.58982 | 0.67317 | 0.0581489 | 2.7190371 | 27 | 4 | 1996–2005 | 0.33 | M-v | 0 | MPC | 77055 | 2005 $GV_{16}$ |
| 2005 $GP_{17}$ | 18.0 | 0.15 | 20060922 | 88.86165 | 265.74662 | 356.80390 | 7.09565 | 0.1690147 | 2.2759153 | 30 | 3 | 1999–2006 | 0.33 | M-v | 2 | MPC | 86681 | 2005 $GP_{17}$ |
| 2005 $GX_{17}$ | 16.0 | 0.15 | 20060922 | 127.07483 | 46.79799 | 154.75380 | 11.74784 | 0.1062580 | 2.6177119 | 48 | 6 | 1996–2006 | 0.54 | M-v | 1 | MPC | 04325 | 2005 $GX_{17}$ |
| 2005 $GK_{19}$ | 16.3 | 0.15 | 20060922 | 66.31537 | 111.49322 | 199.54801 | 5.45644 | 0.2012484 | 2.2676939 | 88 | 3 | 1999–2006 | 0.46 | M-v | 2 | MPC | 77055 | 2005 $GK_{19}$ |
| 2005 $GN_{19}$ | 17.0 | 0.15 | 20060922 | 103.92266 | 217.03966 | 22.45639 | 4.33570 | 0.2247001 | 2.5792712 | 40 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 86681 | 2005 $GN_{19}$ |
| 2005 $GP_{19}$ | 17.6 | 0.15 | 20060922 | 190.22717 | 125.97497 | 31.88627 | 2.13897 | 0.1185510 | 2.2680024 | 36 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04325 | 2005 $GP_{19}$ |
| 2005 $GK_{20}$ | 16.8 | 0.15 | 20060922 | 147.59064 | 179.00547 | 37.23606 | 6.16542 | 0.0750750 | 2.2432984 | 87 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 77058 | 2005 $GK_{20}$ |
| 2005 $GM_{20}$ | 16.5 | 0.15 | 20060922 | 143.97644 | 189.45162 | 32.94361 | 4.65326 | 0.0665408 | 2.2491458 | 87 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 77058 | 2005 $GM_{20}$ |
| 2005 $GS_{20}$ | 15.9 | 0.15 | 20060922 | 340.76952 | 315.76906 | 40.85029 | 9.55973 | 0.1239766 | 2.9054302 | 31 | 4 | 2000–2006 | 0.32 | M-v | 1 | MPC | 03686 | 2005 $GS_{20}$ |
| 2005 $GT_{20}$ | 16.2 | 0.15 | 20060922 | 3.64795 | 125.75676 | 213.85022 | 5.77720 | 0.0729932 | 2.7346265 | 49 | 4 | 1996–2006 | 0.48 | M-v | 1 | MPC | 03686 | 2005 $GT_{20}$ |
| 2005 $GD_{21}$ | 17.6 | 0.15 | 20060922 | 87.27540 | 61.58110 | 210.92095 | 5.72825 | 0.2009212 | 2.4162793 | 45 | 3 | 2002–2006 | 0.32 | M-v | 2 | MPC | 95667 | 2005 $GD_{21}$ |
| 2005 $GG_{21}$ | 18.0 | 0.15 | 20060922 | 121.85144 | 19.16815 | 212.65298 | 7.07485 | 0.1492418 | 2.3526649 | 31 | 4 | 1999–2006 | 0.34 | M-v | 1 | MPC | 87663 | 2005 $GG_{21}$ |
| 2005 $GH_{21}$ | 16.5 | 0.15 | 20060922 | 109.02635 | 225.20576 | 359.99832 | 4.94866 | 0.1260850 | 2.5677032 | 48 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04325 | 2005 $GH_{21}$ |
| 2005 $GS_{21}$ | 17.3 | 0.15 | 20060922 | 109.84421 | 112.98691 | 157.93768 | 5.15209 | 0.2392387 | 2.1868705 | 45 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 77060 | 2005 $GS_{21}$ |
| 2005 $GT_{21}$ | 18.0 | 0.15 | 20060922 | 263.69418 | 290.49536 | 201.72631 | 23.00912 | 0.1262088 | 1.8565619 | 91 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 77060 | 2005 $GT_{21}$ |
| 2005 $GJ_{22}$ | 15.9 | 0.15 | 20060922 | 47.04719 | 156.45380 | 130.08276 | 10.07498 | 0.1712861 | 2.7874475 | 40 | 4 | 1995–2006 | 0.57 | M-v | 1 | MPC | 86682 | 2005 $GJ_{22}$ |
| 2005 $GA_{23}$ | 16.9 | 0.15 | 20060922 | 118.37322 | 163.57622 | 76.45845 | 7.06247 | 0.0924381 | 2.2422805 | 52 | 4 | 1993–2006 | 0.75 | M-v | 2 | MPC | 77062 | 2005 $GA_{23}$ |
| 2005 $GF_{23}$ | 16.7 | 0.15 | 20060922 | 78.62828 | 126.21214 | 162.50152 | 4.95694 | 0.1362367 | 2.2909143 | 59 | 4 | 1998–2006 | 0.48 | M-v | 0 | MPC | 77062 | 2005 $GF_{23}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $GO_{23}$ | 15.9 | 0.15 | 20060922 | 69.82168 | 92.14255 | 177.58956 | 14.02273 | 0.1777192 | 2.6945922 | 78 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 03686 | 2005 $GO_{23}$ |
| 2005 $GR_{23}$ | 16.5 | 0.15 | 20060922 | 125.12262 | 32.54006 | 171.47959 | 7.83551 | 0.1457898 | 2.6124438 | 69 | 6 | 1998–2006 | 0.42 | M-v | 1 | MPC | 77063 | 2005 $GR_{23}$ |
| 2005 $GU_{23}$ | 16.6 | 0.15 | 20060922 | 101.17743 | 210.77815 | 69.27473 | 6.93357 | 0.1790386 | 2.2581555 | 74 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 77063 | 2005 $GU_{23}$ |
| 2005 $GB_{24}$ | 17.7 | 0.15 | 20050311 | 271.34562 | 280.08441 | 9.81963 | 2.27413 | 0.1945998 | 2.3693038 | 19 | 1 | 24 days | 0.38 | | | MPC | | 2005 $GB_{24}$ |
| 2005 $GR_{24}$ | 16.7 | 0.15 | 20060922 | 46.37338 | 307.56560 | 335.26695 | 4.45506 | 0.2184661 | 2.3934148 | 60 | 3 | 1998–2006 | 0.49 | M-v | 3 | MPC | 04325 | 2005 $GR_{24}$ |
| 2005 $GT_{24}$ | 15.9 | 0.15 | 20060922 | 46.50878 | 285.21169 | 356.64792 | 3.98791 | 0.1467576 | 2.6565800 | 65 | 4 | 1996–2006 | 0.38 | M-v | 1 | MPC | 04325 | 2005 $GT_{24}$ |
| 2005 $GW_{24}$ | 16.6 | 0.15 | 20060922 | 122.71266 | 82.62055 | 148.83211 | 4.59795 | 0.2241365 | 2.4139094 | 79 | 4 | 1995–2006 | 0.53 | M-v | 1 | MPC | 77064 | 2005 $GW_{24}$ |
| 2005 $GW_{26}$ | 16.7 | 0.15 | 20060922 | 147.24634 | 42.38827 | 173.69910 | 5.09499 | 0.1028962 | 2.2347186 | 67 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 87663 | 2005 $GW_{26}$ |
| 2005 $GZ_{26}$ | 15.7 | 0.15 | 20060922 | 147.04694 | 352.11300 | 188.84362 | 13.15392 | 0.1046082 | 2.6578844 | 55 | 2 | 2005–2006 | 0.54 | M-v | 3 | MPC | 03687 | 2005 $GZ_{26}$ |
| 2005 $GD_{27}$ | 16.5 | 0.15 | 20060922 | 139.86293 | 247.30747 | 304.33026 | 7.94795 | 0.1628826 | 2.4186693 | 28 | 4 | 2001–2006 | 0.67 | M-v | 2 | MPC | 86683 | 2005 $GD_{27}$ |
| 2005 $GQ_{27}$ | 16.8 | 0.15 | 20060922 | 131.42064 | 317.07271 | 245.53658 | 4.43611 | 0.1110259 | 2.4662864 | 49 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 04325 | 2005 $GQ_{27}$ |
| 2005 $GT_{27}$ | 15.7 | 0.15 | 20060922 | 85.07566 | 278.69681 | 331.31766 | 5.08958 | 0.1337452 | 2.6017730 | 72 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04325 | 2005 $GT_{27}$ |
| 2005 $GU_{27}$ | 17.2 | 0.15 | 20060922 | 130.69952 | 293.22251 | 275.94783 | 3.36359 | 0.1278274 | 2.4409916 | 35 | 6 | 1998–2006 | 0.47 | M-v | 1 | MPC | 04325 | 2005 $GU_{27}$ |
| 2005 $GV_{27}$ | 16.2 | 0.15 | 20060922 | 85.46823 | 285.88259 | 309.83569 | 4.01097 | 0.1234773 | 2.7836101 | 33 | 3 | 2000–2006 | 0.42 | M-v | 3 | MPC | 04325 | 2005 $GV_{27}$ |
| 2005 $GW_{27}$ | 17.0 | 0.15 | 20060922 | 107.51892 | 280.18662 | 309.65416 | 2.95133 | 0.1604214 | 2.5566152 | 35 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 77066 | 2005 $GW_{27}$ |
| 2005 $GY_{27}$ | 16.4 | 0.15 | 20060922 | 95.35514 | 234.41366 | 9.06627 | 11.55016 | 0.1418903 | 2.5715883 | 49 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 77066 | 2005 $GY_{27}$ |
| 2005 $GD_{28}$ | 17.3 | 0.15 | 20060922 | 206.14380 | 233.80558 | 261.33665 | 2.35012 | 0.1438460 | 2.2849166 | 34 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 77067 | 2005 $GD_{28}$ |
| 2005 $GE_{28}$ | 17.0 | 0.15 | 20060922 | 175.73459 | 297.51593 | 243.44638 | 2.64233 | 0.0805530 | 2.2284762 | 63 | 4 | 2000–2006 | 0.56 | M-v | 2 | MPC | 04325 | 2005 $GE_{28}$ |
| 2005 $GG_{28}$ | 15.5 | 0.15 | 20060922 | 73.22634 | 316.70196 | 298.65641 | 2.41370 | 0.1157014 | 2.7651777 | 74 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 04325 | 2005 $GG_{28}$ |
| 2005 $GH_{28}$ | 17.1 | 0.15 | 20060922 | 113.65157 | 245.96619 | 357.36882 | 2.38042 | 0.1916915 | 2.3637714 | 33 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04325 | 2005 $GH_{28}$ |
| 2005 $GK_{28}$ | 16.3 | 0.15 | 20060922 | 74.46554 | 58.65272 | 203.75538 | 17.09684 | 0.1720625 | 2.6503435 | 60 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 77067 | 2005 $GK_{28}$ |
| 2005 $GR_{28}$ | 16.1 | 0.15 | 20060922 | 315.70819 | 22.44073 | 1.85014 | 4.31842 | 0.1375667 | 2.4346318 | 62 | 6 | 1991–2006 | 0.43 | M-v | 1 | MPC | 04325 | 2005 $GR_{28}$ |
| 2005 $GW_{29}$ | 16.8 | 0.15 | 20060922 | 75.67432 | 232.83077 | 25.88600 | 13.99575 | 0.1535640 | 2.5986486 | 36 | 3 | 2002–2006 | 0.49 | M-v | 1 | MPC | 89651 | 2005 $GW_{29}$ |
| 2005 $GD_{30}$ | 16.6 | 0.15 | 20060922 | 163.59950 | 115.04108 | 73.24675 | 5.95581 | 0.0729264 | 2.2577064 | 62 | 4 | 2000–2006 | 0.82 | M-v | 2 | MPC | 04326 | 2005 $GD_{30}$ |
| 2005 $GN_{30}$ | 16.3 | 0.15 | 20060922 | 195.01110 | 313.94570 | 169.94993 | 6.77548 | 0.0281462 | 2.5373265 | 44 | 5 | 2001–2006 | 0.66 | M-v | 1 | MPC | 03687 | 2005 $GN_{30}$ |
| 2005 $GS_{30}$ | 17.2 | 0.15 | 20060922 | 101.56241 | 206.41729 | 50.34405 | 2.00343 | 0.1624449 | 2.3824937 | 71 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 00944 | 2005 $GS_{30}$ |
| 2005 $GC_{31}$ | 16.2 | 0.15 | 20060922 | 29.86490 | 186.28842 | 137.61197 | 5.89985 | 0.1607006 | 2.3377132 | 105 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 04326 | 2005 $GC_{31}$ |
| 2005 $GM_{31}$ | 15.7 | 0.15 | 20060922 | 93.39553 | 69.84211 | 132.35770 | 6.51287 | 0.1445734 | 3.0498536 | 35 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 04326 | 2005 $GM_{31}$ |
| 2005 $GR_{31}$ | 17.2 | 0.15 | 20060922 | 135.61739 | 286.78802 | 281.65015 | 1.31316 | 0.1277271 | 2.3899950 | 52 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 77070 | 2005 $GR_{31}$ |
| 2005 $GU_{31}$ | 15.8 | 0.15 | 20060922 | 53.99444 | 296.89365 | 8.05137 | 7.38722 | 0.3313795 | 2.5567563 | 67 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 03687 | 2005 $GU_{31}$ |
| 2005 $GD_{32}$ | 17.7 | 0.15 | 20060922 | 117.79151 | 343.53237 | 238.40017 | 0.61190 | 0.1398935 | 2.3955432 | 47 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 77071 | 2005 $GD_{32}$ |
| 2005 $GS_{32}$ | 16.7 | 0.15 | 20060922 | 175.66891 | 143.03676 | 38.26931 | 5.53654 | 0.0791416 | 2.2414381 | 101 | 5 | 1998–2006 | 0.66 | M-v | 2 | MPC | 04326 | 2005 $GS_{32}$ |
| 2005 $GT_{32}$ | 15.2 | 0.15 | 20060922 | 98.70053 | 172.84141 | 29.97702 | 1.85628 | 0.1199190 | 3.1104585 | 64 | 4 | 1999–2005 | 0.48 | M-v | 1 | MPC | 87664 | 2005 $GT_{32}$ |
| 2005 $GZ_{32}$ | 15.7 | 0.15 | 20060922 | 85.71815 | 214.91825 | 30.39378 | 12.43033 | 0.1484853 | 2.7465522 | 62 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 86684 | 2005 $GZ_{32}$ |
| 2005 $GF_{33}$ | 15.0 | 0.15 | 20060922 | 86.73903 | 74.74617 | 159.64229 | 25.94960 | 0.2409348 | 3.1604623 | 121 | 5 | 1999–2006 | 0.57 | M-v | 0 | MPC | 04326 | 2005 $GF_{33}$ |
| 2005 $GK_{33}$ | 15.7 | 0.15 | 20060922 | 118.72261 | 330.48760 | 163.63622 | 13.30204 | 0.1197098 | 3.1528588 | 21 | 1 | 63 days | 0.53 | M-v | 4 | MPC | 87664 | 2005 $GK_{33}$ |
| 2005 $GN_{33}$ | 16.4 | 0.15 | 20060922 | 171.31279 | 229.21105 | 306.40374 | 4.34518 | 0.0863536 | 2.2332415 | 70 | 5 | 1998–2006 | 0.75 | M-v | 2 | MPC | 04326 | 2005 $GN_{33}$ |
| 2005 $GA_{34}$ | 17.0 | 0.15 | 20060922 | 180.78926 | 335.91135 | 244.40240 | 23.42303 | 0.0852260 | 1.9054454 | 62 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 87664 | 2005 $GA_{34}$ |
| 2005 $GT_{34}$ | 14.7 | 0.15 | 20060922 | 74.18429 | 116.56626 | 124.84090 | 16.28098 | 0.2227055 | 3.1190820 | 101 | 3 | 2003–2006 | 0.61 | M-v | 2 | MPC | 04326 | 2005 $GT_{34}$ |
| 2005 $GL_{36}$ | 16.6 | 0.15 | 20060922 | 232.01179 | 57.02999 | 27.80840 | 3.83602 | 0.0450843 | 2.7004507 | 31 | 3 | 1998–2005 | 0.30 | M-v | 2 | MPC | 89652 | 2005 $GL_{36}$ |
| 2005 $GB_{37}$ | 15.8 | 0.15 | 20060922 | 68.63921 | 245.22518 | 70.01954 | 23.16532 | 0.2748815 | 2.3305196 | 61 | 4 | 1998–2006 | 0.64 | M-v | 1 | MPC | 77076 | 2005 $GB_{37}$ |
| 2005 $GE_{37}$ | 14.6 | 0.15 | 20060922 | 81.64146 | 77.97095 | 142.90734 | 18.16106 | 0.1362486 | 3.1571330 | 70 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 03687 | 2005 $GE_{37}$ |
| 2005 $GT_{37}$ | 15.8 | 0.15 | 20060922 | 171.84014 | 192.57232 | 314.76752 | 6.49009 | 0.1368012 | 2.5909361 | 52 | 6 | 1992–2006 | 0.50 | M-v | 1 | MPC | 04326 | 2005 $GT_{37}$ |
| 2005 $GS_{39}$ | 16.7 | 0.15 | 20060922 | 111.15027 | 204.10787 | 32.24158 | 12.70467 | 0.2229256 | 2.5419455 | 63 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 77079 | 2005 $GS_{39}$ |
| 2005 $GK_{40}$ | 17.7 | 0.15 | 20060922 | 173.25268 | 129.43117 | 40.17972 | 3.04126 | 0.1639290 | 2.3249486 | 41 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 77079 | 2005 $GK_{40}$ |
| 2005 $GQ_{40}$ | 16.2 | 0.15 | 20060922 | 352.94462 | 339.25972 | 35.70518 | 6.34918 | 0.1487806 | 2.2280321 | 105 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 04326 | 2005 $GQ_{40}$ |
| 2005 $GB_{41}$ | 17.0 | 0.15 | 20060922 | 166.05796 | 353.31200 | 185.03443 | 4.22598 | 0.1660535 | 2.3269337 | 57 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04326 | 2005 $GB_{41}$ |
| 2005 $GK_{43}$ | 16.5 | 0.15 | 20060922 | 89.91335 | 335.87293 | 299.88233 | 6.52165 | 0.1110083 | 2.2450538 | 39 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 77081 | 2005 $GK_{43}$ |
| 2005 $GT_{43}$ | 17.4 | 0.15 | 20060922 | 162.59592 | 191.51873 | 7.08054 | 6.68943 | 0.0596347 | 2.2305614 | 48 | 3 | 2003–2006 | 0.38 | M-v | 3 | MPC | 77081 | 2005 $GT_{43}$ |
| 2005 $GV_{43}$ | 17.0 | 0.15 | 20060922 | 90.32982 | 341.46376 | 296.70778 | 2.56345 | 0.1993609 | 2.3523415 | 47 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 95668 | 2005 $GV_{43}$ |
| 2005 $GF_{44}$ | 17.6 | 0.15 | 20060922 | 164.84753 | 201.75016 | 336.96152 | 3.75406 | 0.2193422 | 2.2807557 | 43 | 3 | 1998–2006 | 0.74 | M-v | 3 | MPC | 77082 | 2005 $GF_{44}$ |
| 2005 $GR_{44}$ | 16.0 | 0.15 | 20060922 | 21.37327 | 348.60800 | 291.00944 | 0.80414 | 0.1490134 | 3.0987265 | 46 | 5 | 1996–2006 | 0.60 | M-v | 1 | MPC | 02249 | 2005 $GR_{44}$ |
| 2005 $GO_{45}$ | 16.5 | 0.15 | 20060922 | 74.25774 | 86.74597 | 197.12185 | 9.47242 | 0.2112501 | 2.5312332 | 75 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 77082 | 2005 $GO_{45}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $GU_{45}$ | 17.7 | 0.15 | 20060922 | 272.77896 | 100.43460 | 333.79197 | 1.92336 | 0.0559761 | 2.1886176 | 41 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 03688 | 2005 $GU_{45}$ |
| 2005 $GP_{46}$ | 16.6 | 0.15 | 20060922 | 22.43490 | 345.03359 | 341.55879 | 1.05485 | 0.1932567 | 2.4025212 | 102 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 04326 | 2005 $GP_{46}$ |
| 2005 $GX_{46}$ | 17.4 | 0.15 | 20060922 | 203.67043 | 240.91090 | 250.95111 | 0.47841 | 0.0958428 | 2.2805498 | 35 | 4 | 1998–2006 | 0.29 | M-v | 1 | MPC | 77083 | 2005 $GX_{46}$ |
| 2005 $GF_{47}$ | 17.1 | 0.15 | 20060922 | 32.19166 | 310.46405 | 5.23535 | 4.46118 | 0.1485909 | 2.4038635 | 81 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 04326 | 2005 $GF_{47}$ |
| 2005 $GU_{47}$ | 15.3 | 0.15 | 20060922 | 22.18463 | 237.30389 | 68.01741 | 14.29072 | 0.2125065 | 2.8033741 | 63 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 03688 | 2005 $GU_{47}$ |
| 2005 $GC_{49}$ | 16.9 | 0.15 | 20060922 | 354.45263 | 159.25699 | 183.87924 | 4.17685 | 0.0816392 | 2.5892823 | 44 | 3 | 2002–2006 | 0.37 | M-v | 4 | MPC | 04326 | 2005 $GC_{49}$ |
| 2005 $GD_{50}$ | 16.6 | 0.15 | 20060922 | 266.41905 | 215.57175 | 189.81589 | 4.14346 | 0.0703262 | 2.8127317 | 36 | 4 | 1993–2005 | 0.36 | M-v | 2 | MPC | 04326 | 2005 $GD_{50}$ |
| 2005 $GR_{50}$ | 15.8 | 0.15 | 20060922 | 56.84135 | 151.22868 | 128.64279 | 15.34175 | 0.2539955 | 2.6932822 | 64 | 4 | 2001–2006 | 0.56 | M-v | 0 | MPC | 87665 | 2005 $GR_{50}$ |
| 2005 $GY_{50}$ | 15.1 | 0.15 | 20060922 | 65.05208 | 224.13529 | 84.02615 | 23.94454 | 0.2175011 | 2.4125501 | 75 | 3 | 2002–2006 | 0.55 | M-v | 1 | MPC | 77086 | 2005 $GY_{50}$ |
| 2005 $GL_{51}$ | 16.6 | 0.15 | 20060922 | 47.36287 | 122.23034 | 199.37490 | 6.23168 | 0.1628246 | 2.3180011 | 60 | 5 | 1992–2006 | 0.40 | M-v | 0 | MPC | 77087 | 2005 $GL_{51}$ |
| 2005 $GQ_{51}$ | 16.2 | 0.15 | 20060922 | 91.02694 | 122.84037 | 113.35564 | 5.05669 | 0.0750873 | 2.7320261 | 50 | 5 | 1996–2006 | 0.47 | M-v | 0 | MPC | 04326 | 2005 $GQ_{51}$ |
| 2005 $GR_{51}$ | 16.8 | 0.15 | 20060922 | 168.21040 | 25.37680 | 164.52691 | 7.18576 | 0.0662195 | 2.2724932 | 52 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 77087 | 2005 $GR_{51}$ |
| 2005 $GT_{51}$ | 17.1 | 0.15 | 20060922 | 356.57321 | 122.18224 | 213.78418 | 5.50039 | 0.0303420 | 2.7468061 | 22 | 4 | 1996–2006 | 0.34 | M-v | 1 | MPC | 04326 | 2005 $GT_{51}$ |
| 2005 $GZ_{51}$ | 17.7 | 0.15 | 20060922 | 175.29142 | 345.32657 | 200.51175 | 2.29283 | 0.1864647 | 2.2171506 | 35 | 4 | 1996–2006 | 0.33 | M-v | 1 | MPC | 77087 | 2005 $GZ_{51}$ |
| 2005 $GQ_{52}$ | 16.2 | 0.15 | 20060922 | 55.00739 | 82.44100 | 211.63792 | 5.56799 | 0.1132510 | 2.6580593 | 72 | 4 | 2002–2006 | 0.43 | M-v | 0 | MPC | 03688 | 2005 $GQ_{52}$ |
| 2005 $GW_{52}$ | 16.0 | 0.15 | 20060922 | 117.25224 | 15.78252 | 204.70270 | 3.65992 | 0.2122278 | 2.6505153 | 105 | 4 | 1992–2006 | 0.44 | M-v | 2 | MPC | 04326 | 2005 $GW_{52}$ |
| 2005 $GN_{53}$ | 17.9 | 0.15 | 20060922 | 76.77401 | 71.10158 | 221.66759 | 1.22274 | 0.1684461 | 2.4765729 | 42 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 86690 | 2005 $GN_{53}$ |
| 2005 $GP_{53}$ | 16.4 | 0.15 | 20060922 | 297.03897 | 28.54685 | 37.24198 | 8.04087 | 0.0825542 | 2.3056004 | 70 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 04326 | 2005 $GP_{53}$ |
| 2005 $GJ_{54}$ | 17.2 | 0.15 | 20060922 | 84.32416 | 20.64231 | 198.71748 | 2.89773 | 0.0347301 | 2.7767382 | 22 | 2 | 2002–2005 | 0.21 | M-v | 5 | MPC | 03688 | 2005 $GJ_{54}$ |
| 2005 $GD_{55}$ | 17.2 | 0.15 | 20060922 | 108.64067 | 40.95125 | 194.60429 | 6.50908 | 0.0571757 | 2.3322932 | 42 | 3 | 2003–2006 | 0.28 | M-v | 2 | MPC | 04327 | 2005 $GD_{55}$ |
| 2005 $GJ_{57}$ | 16.4 | 0.15 | 20060922 | 30.31299 | 151.55034 | 192.36857 | 4.85694 | 0.2714495 | 2.3296553 | 114 | 4 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04327 | 2005 $GJ_{57}$ |
| 2005 $GC_{58}$ | 17.4 | 0.15 | 20060922 | 148.72818 | 36.93810 | 174.54910 | 3.57989 | 0.0469196 | 2.2487228 | 54 | 3 | 2003–2006 | 0.31 | M-v | 3 | MPC | 77093 | 2005 $GC_{58}$ |
| 2005 $GV_{58}$ | 16.9 | 0.15 | 20060922 | 145.48803 | 75.13288 | 119.65874 | 5.48909 | 0.1396018 | 2.4292105 | 43 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 77094 | 2005 $GV_{58}$ |
| 2005 $GZ_{58}$ | 16.3 | 0.15 | 20060922 | 175.29982 | 350.29343 | 158.62426 | 11.03024 | 0.1879260 | 2.5575909 | 52 | 5 | 2001–2006 | 0.61 | M-v | 0 | MPC | 77094 | 2005 $GZ_{58}$ |
| 2005 $GK_{59}$ | 16.5 | 0.15 | 20060922 | 262.86543 | 64.92457 | 52.52084 | 22.09311 | 0.0937374 | 1.9801903 | 74 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 77095 | 2005 $GK_{59}$ |
| 2005 $GN_{59}$ | 17.2 | 0.15 | 20060922 | 359.06681 | 202.76156 | 219.15751 | 6.61744 | 0.4684065 | 1.6570378 | 70 | 3 | 1978–2006 | 0.54 | M-v | 2 | MPC | 04327 | 2005 $GN_{59}$ |
| 2005 $GB_{60}$ | 15.4 | 0.15 | 20060922 | 102.62418 | 66.27468 | 196.51680 | 29.61093 | 0.3293678 | 2.6310174 | 94 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 87665 | 2005 $GB_{60}$ |
| 2005 $GC_{60}$ | 16.0 | 0.15 | 20060922 | 68.65883 | 269.14458 | 9.11479 | 22.78876 | 0.1999328 | 2.2718989 | 93 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 04327 | 2005 $GC_{60}$ |
| 2005 $GT_{60}$ | 15.8 | 0.15 | 20060922 | 62.10368 | 47.42526 | 227.36029 | 12.62631 | 0.1382614 | 2.7994186 | 26 | 3 | 2001–2006 | 0.28 | M-v | 2 | MPC | 77098 | 2005 $GT_{60}$ |
| 2005 $GV_{60}$ | 16.1 | 0.15 | 20060922 | 113.09962 | 256.11785 | 319.69982 | 14.45389 | 0.1678543 | 2.6389756 | 34 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 03688 | 2005 $GV_{60}$ |
| 2005 $GN_{63}$ | 16.5 | 0.15 | 20060922 | 73.02381 | 122.76164 | 124.60042 | 13.71517 | 0.1172286 | 2.5679487 | 40 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 03689 | 2005 $GN_{63}$ |
| 2005 $GX_{63}$ | 15.9 | 0.15 | 20060922 | 103.25794 | 168.21624 | 34.81047 | 14.48741 | 0.2090882 | 2.6982106 | 40 | 1 | 79 days | 0.66 | M-v | 4 | MPC | 77864 | 2005 $GX_{63}$ |
| 2005 $GH_{64}$ | 17.0 | 0.15 | 20060922 | 70.21179 | 290.90840 | 18.87559 | 20.28391 | 0.0857570 | 1.9578076 | 60 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 77099 | 2005 $GH_{64}$ |
| 2005 $GQ_{64}$ | 15.6 | 0.15 | 20060922 | 40.01915 | 183.49600 | 122.20302 | 16.78581 | 0.2643622 | 2.6326092 | 51 | 5 | 2001–2006 | 0.56 | M-v | 1 | MPC | 77099 | 2005 $GQ_{64}$ |
| 2005 $GP_{65}$ | 18.0 | 0.15 | 20060922 | 48.34618 | 154.17028 | 182.56594 | 1.16401 | 0.1765400 | 2.1215222 | 42 | 4 | 1999–2006 | 0.35 | M-v | 3 | MPC | 86694 | 2005 $GP_{65}$ |
| 2005 $GJ_{66}$ | 18.1 | 0.15 | 20060922 | 163.57110 | 107.46118 | 51.55134 | 0.78394 | 0.1263187 | 2.5299935 | 29 | 5 | 1995–2005 | 0.29 | M-v | 2 | MPC | 03689 | 2005 $GJ_{66}$ |
| 2005 $GM_{66}$ | 17.0 | 0.15 | 20060922 | 1.53002 | 135.01985 | 191.58195 | 2.54003 | 0.0568724 | 2.6660191 | 36 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 04327 | 2005 $GM_{66}$ |
| 2005 $GX_{66}$ | 16.0 | 0.15 | 20060922 | 14.88529 | 112.89040 | 194.72714 | 1.39825 | 0.0699099 | 2.7962934 | 54 | 4 | 2000–2006 | 0.38 | M-v | 0 | MPC | 04327 | 2005 $GX_{66}$ |
| 2005 $GL_{67}$ | 16.9 | 0.15 | 20060922 | 58.36306 | 282.09814 | 20.56227 | 6.19822 | 0.1161881 | 2.3584035 | 42 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 89654 | 2005 $GL_{67}$ |
| 2005 $GG_{68}$ | 16.5 | 0.15 | 20060922 | 357.97229 | 347.31280 | 18.51727 | 3.53014 | 0.1537614 | 2.2688096 | 112 | 3 | 2003–2006 | 0.41 | M-v | 3 | MPC | 04327 | 2005 $GG_{68}$ |
| 2005 $GX_{68}$ | 14.7 | 0.15 | 20060922 | 17.22387 | 243.42272 | 60.92369 | 26.96875 | 0.2676100 | 3.1627882 | 79 | 3 | 2001–2006 | 0.48 | M-v | 1 | MPC | 04327 | 2005 $GX_{68}$ |
| 2005 $GJ_{69}$ | 16.5 | 0.15 | 20060922 | 103.05338 | 216.04511 | 30.92331 | 14.05813 | 0.1143930 | 2.5284844 | 47 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 89654 | 2005 $GJ_{69}$ |
| 2005 $GS_{69}$ | 15.1 | 0.15 | 20060922 | 73.04497 | 163.94483 | 74.60432 | 15.11411 | 0.1937473 | 3.1400466 | 64 | 2 | 2005–2006 | 0.64 | M-v | 3 | MPC | 03689 | 2005 $GS_{69}$ |
| 2005 $GY_{69}$ | 15.4 | 0.15 | 20050311 | 283.18707 | 275.11022 | 339.53668 | 5.16586 | 0.1101619 | 3.1127611 | 27 | 1 | 56 days | 0.16 | | | MPC | | 2005 $GY_{69}$ |
| 2005 $GQ_{70}$ | 17.8 | 0.15 | 20060922 | 236.36563 | 223.72457 | 245.72372 | 1.96690 | 0.0644118 | 2.2705919 | 30 | 4 | 2000–2006 | 0.31 | M-v | 1 | MPC | 86696 | 2005 $GQ_{70}$ |
| 2005 $GS_{70}$ | 16.3 | 0.15 | 20060922 | 345.10999 | 79.04978 | 282.82534 | 1.32309 | 0.2243835 | 2.4442561 | 49 | 3 | 2003–2006 | 0.48 | M-v | 3 | MPC | 04327 | 2005 $GS_{70}$ |
| 2005 $GG_{71}$ | 17.5 | 0.15 | 20060922 | 71.41891 | 126.57555 | 143.58744 | 2.51022 | 0.1917461 | 2.3573439 | 31 | 5 | 1994–2006 | 0.32 | M-v | 0 | MPC | 86697 | 2005 $GG_{71}$ |
| 2005 $GU_{71}$ | 17.1 | 0.15 | 20060922 | 58.83479 | 214.93291 | 101.52656 | 1.54113 | 0.1784845 | 2.1615978 | 48 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 02249 | 2005 $GU_{71}$ |
| 2005 $GJ_{72}$ | 17.8 | 0.15 | 20060922 | 98.63638 | 192.72374 | 50.26119 | 2.14480 | 0.1515908 | 2.4274822 | 24 | 2 | 2005–2006 | 0.45 | M-v | 4 | MPC | 03689 | 2005 $GJ_{72}$ |
| 2005 $GK_{72}$ | 16.6 | 0.15 | 20060922 | 165.82594 | 50.70383 | 100.59273 | 5.79788 | 0.0527991 | 2.5973003 | 20 | 3 | 2001–2005 | 0.47 | M-v | 4 | MPC | 86697 | 2005 $GK_{72}$ |
| 2005 $GY_{73}$ | 16.3 | 0.15 | 20060922 | 112.35534 | 69.79436 | 155.64630 | 15.16727 | 0.0497369 | 2.5852524 | 40 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 03689 | 2005 $GY_{73}$ |
| 2005 $GA_{74}$ | 16.6 | 0.15 | 20060922 | 75.04054 | 172.27984 | 102.22950 | 12.04969 | 0.1957839 | 2.6632746 | 32 | 3 | 2003–2006 | 0.50 | M-v | 2 | MPC | 89654 | 2005 $GA_{74}$ |
| 2005 $GF_{74}$ | 14.9 | 0.15 | 20060922 | 61.92813 | 160.19039 | 103.95789 | 16.32358 | 0.2323139 | 3.1815756 | 61 | 4 | 2000–2006 | 0.69 | M-v | 1 | MPC | 04327 | 2005 $GF_{74}$ |

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| 2005 $GG_{74}$ | 16.7 | 0.15 | 20060922 | 201.34971 | 306.92704 | 206.98220 | 20.54043 | 0.0882214 | 1.9539264 | 30 | 4 | 1998–2006 | 0.65 | M-v | 2 | MPC | 86697 | 2005 $GG_{74}$ |
| 2005 $GF_{75}$ | 16.0 | 0.15 | 20060922 | 49.81336 | 108.21335 | 204.91712 | 28.59261 | 0.3113961 | 2.6262150 | 33 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 86698 | 2005 $GF_{75}$ |
| 2005 $GM_{75}$ | 16.7 | 0.15 | 20060922 | 152.41014 | 135.33685 | 59.42017 | 3.76551 | 0.1442533 | 2.3341818 | 84 | 4 | 1996–2005 | 0.45 | M-v | 1 | MPC | 77107 | 2005 $GM_{75}$ |
| 2005 $GC_{76}$ | 17.5 | 0.15 | 20060922 | 213.31776 | 358.26993 | 193.49827 | 22.05462 | 0.0374553 | 1.9021377 | 52 | 3 | 2003–2006 | 0.56 | M-v | 2 | MPC | 77108 | 2005 $GC_{76}$ |
| 2005 $GG_{76}$ | 16.8 | 0.15 | 20060922 | 126.03283 | 139.68328 | 116.26655 | 5.15421 | 0.1396438 | 2.1815437 | 49 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 77108 | 2005 $GG_{76}$ |
| 2005 $GX_{76}$ | 17.8 | 0.15 | 20060922 | 121.41135 | 181.30360 | 44.68189 | 1.68841 | 0.1346004 | 2.4170392 | 32 | 5 | 1999–2006 | 0.33 | M-v | 1 | MPC | 86698 | 2005 $GX_{76}$ |
| 2005 $GZ_{77}$ | 15.4 | 0.15 | 20060922 | 121.10799 | 46.69583 | 151.80617 | 13.69678 | 0.1932638 | 2.6829390 | 72 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 04327 | 2005 $GZ_{77}$ |
| 2005 $GP_{78}$ | 15.8 | 0.15 | 20060922 | 62.79047 | 149.65610 | 130.18905 | 15.26646 | 0.1066458 | 2.6446292 | 41 | 5 | 1997–2006 | 0.75 | M-v | 1 | MPC | 04327 | 2005 $GP_{78}$ |
| 2005 $GD_{79}$ | 14.9 | 0.15 | 20060922 | 64.69483 | 114.36190 | 144.95285 | 16.60696 | 0.1886069 | 3.1232669 | 65 | 3 | 2004–2006 | 0.57 | M-v | 2 | MPC | 03690 | 2005 $GD_{79}$ |
| 2005 $GE_{79}$ | 17.3 | 0.15 | 20060922 | 86.21807 | 66.81772 | 196.81803 | 5.35716 | 0.1741550 | 2.5416784 | 35 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 77111 | 2005 $GE_{79}$ |
| 2005 $GK_{79}$ | 17.0 | 0.15 | 20060922 | 78.56650 | 120.72889 | 171.98685 | 2.27447 | 0.0890762 | 2.2172569 | 62 | 4 | 1995–2006 | 0.34 | M-v | 0 | MPC | 04327 | 2005 $GK_{79}$ |
| 2005 $GL_{79}$ | 17.9 | 0.15 | 20060922 | 104.13359 | 73.18661 | 188.99119 | 5.38111 | 0.1530783 | 2.3099380 | 38 | 3 | 1995–2006 | 0.32 | M-v | 3 | MPC | 77112 | 2005 $GL_{79}$ |
| 2005 $GT_{79}$ | 15.8 | 0.15 | 20060922 | 67.60775 | 135.34170 | 114.86918 | 15.16214 | 0.1049847 | 2.9802036 | 34 | 5 | 2000–2006 | 0.60 | M-v | 0 | MPC | 04328 | 2005 $GT_{79}$ |
| 2005 $GZ_{79}$ | 16.1 | 0.15 | 20060922 | 152.66235 | 0.12104 | 179.38773 | 14.33154 | 0.0734522 | 2.6314596 | 40 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 77113 | 2005 $GZ_{79}$ |
| 2005 $GB_{80}$ | 16.4 | 0.15 | 20060922 | 83.78023 | 38.27124 | 213.66028 | 3.30301 | 0.1586970 | 2.5269491 | 54 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 04328 | 2005 $GB_{80}$ |
| 2005 $GF_{80}$ | 16.9 | 0.15 | 20060922 | 95.60276 | 138.12873 | 142.78843 | 4.39088 | 0.0907218 | 2.2215135 | 54 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 77114 | 2005 $GF_{80}$ |
| 2005 $GX_{80}$ | 16.3 | 0.15 | 20060922 | 6.37355 | 69.77375 | 265.27533 | 0.93034 | 0.0986653 | 2.7281995 | 49 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 04328 | 2005 $GX_{80}$ |
| 2005 $GX_{84}$ | 16.7 | 0.15 | 20060922 | 19.65933 | 37.62421 | 283.49271 | 2.17209 | 0.0734470 | 2.5227779 | 66 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 03690 | 2005 $GX_{84}$ |
| 2005 $GC_{86}$ | 16.0 | 0.15 | 20060922 | 52.04977 | 102.02458 | 180.16404 | 8.99410 | 0.1659005 | 2.6400317 | 80 | 3 | 2001–2006 | 0.43 | M-v | 1 | MPC | 04328 | 2005 $GC_{86}$ |
| 2005 $GL_{86}$ | 15.9 | 0.15 | 20060922 | 75.33344 | 247.11075 | 24.96413 | 17.51815 | 0.1954484 | 2.5722988 | 78 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 77116 | 2005 $GL_{86}$ |
| 2005 $GM_{86}$ | 17.1 | 0.15 | 20060922 | 100.15068 | 80.47653 | 187.69017 | 6.04009 | 0.1108037 | 2.2487528 | 62 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 77116 | 2005 $GM_{86}$ |
| 2005 $GG_{87}$ | 16.6 | 0.15 | 20060922 | 191.61659 | 67.58271 | 53.88030 | 2.89903 | 0.1806112 | 2.6138021 | 48 | 4 | 1996–2005 | 0.46 | M-v | 1 | MPC | 87666 | 2005 $GG_{87}$ |
| 2005 $GL_{88}$ | 17.3 | 0.15 | 20060922 | 49.09723 | 300.12126 | 19.12238 | 7.97706 | 0.1978217 | 2.3934797 | 50 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 77117 | 2005 $GL_{88}$ |
| 2005 $GS_{88}$ | 16.8 | 0.15 | 20060922 | 85.93879 | 52.75686 | 202.71462 | 1.99780 | 0.1484978 | 2.6211588 | 44 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 87666 | 2005 $GS_{88}$ |
| 2005 $GY_{88}$ | 15.6 | 0.15 | 20060922 | 87.77818 | 76.51087 | 185.31065 | 12.58322 | 0.1479228 | 2.6219720 | 102 | 4 | 1996–2006 | 0.51 | M-v | 2 | MPC | 04328 | 2005 $GY_{88}$ |
| 2005 $GC_{89}$ | 17.9 | 0.15 | 20060922 | 179.86060 | 126.55550 | 56.01851 | 2.06445 | 0.0596063 | 2.1801694 | 34 | 4 | 1995–2006 | 0.34 | M-v | 2 | MPC | 77118 | 2005 $GC_{89}$ |
| 2005 $GF_{89}$ | 18.0 | 0.15 | 20060922 | 14.71833 | 139.56246 | 188.62185 | 7.60861 | 0.1426974 | 2.5902183 | 26 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 04328 | 2005 $GF_{89}$ |
| 2005 $GY_{89}$ | 16.9 | 0.15 | 20060922 | 95.64126 | 142.75841 | 141.58762 | 2.95612 | 0.2138318 | 2.3566570 | 114 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 89655 | 2005 $GY_{89}$ |
| 2005 $GZ_{89}$ | 16.5 | 0.15 | 20060922 | 40.02891 | 160.02643 | 152.82026 | 4.53618 | 0.1044766 | 2.6190201 | 41 | 4 | 2000–2006 | 0.39 | M-v | 0 | MPC | 86700 | 2005 $GZ_{89}$ |
| 2005 $GC_{90}$ | 16.3 | 0.15 | 20060922 | 56.32872 | 176.27179 | 113.32450 | 7.50125 | 0.1172616 | 2.3169475 | 63 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 86700 | 2005 $GC_{90}$ |
| 2005 $GE_{90}$ | 16.7 | 0.15 | 20060922 | 82.90551 | 305.28483 | 345.10323 | 5.13509 | 0.1898971 | 2.2806834 | 50 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 77119 | 2005 $GE_{90}$ |
| 2005 $GF_{93}$ | 17.1 | 0.15 | 20060922 | 10.75705 | 108.22334 | 238.50087 | 6.42287 | 0.1633612 | 2.3653361 | 73 | 4 | 1995–2006 | 0.47 | M-v | 1 | MPC | 04328 | 2005 $GF_{93}$ |
| 2005 $GN_{93}$ | 17.8 | 0.15 | 20060922 | 200.21458 | 182.63188 | 344.46766 | 4.42536 | 0.0518572 | 2.1360260 | 32 | 3 | 2003–2006 | 0.39 | M-v | 3 | MPC | 00946 | 2005 $GN_{93}$ |
| 2005 $GY_{93}$ | 16.3 | 0.15 | 20060922 | 101.63384 | 52.22416 | 211.00844 | 21.94764 | 0.1526255 | 2.3380439 | 98 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 77120 | 2005 $GY_{93}$ |
| 2005 $GW_{94}$ | 18.3 | 0.15 | 20060922 | 108.95161 | 187.40115 | 91.87030 | 1.81941 | 0.1368720 | 2.1286532 | 31 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 77121 | 2005 $GW_{94}$ |
| 2005 $GA_{95}$ | 17.3 | 0.15 | 20060922 | 105.38614 | 161.41333 | 94.12583 | 2.22440 | 0.1597126 | 2.3798822 | 54 | 5 | 1994–2006 | 0.39 | M-v | 1 | MPC | 77121 | 2005 $GA_{95}$ |
| 2005 $GJ_{95}$ | 16.2 | 0.15 | 20060922 | 56.74941 | 140.55967 | 122.28896 | 2.38095 | 0.1175310 | 2.9810164 | 44 | 4 | 2001–2006 | 0.41 | M-v | 0 | MPC | 04328 | 2005 $GJ_{95}$ |
| 2005 $GE_{96}$ | 16.0 | 0.15 | 20060922 | 48.06859 | 147.00355 | 154.37734 | 2.59194 | 0.1870032 | 2.6714665 | 48 | 4 | 1993–2006 | 0.37 | M-v | 0 | MPC | 04328 | 2005 $GE_{96}$ |
| 2005 $GU_{96}$ | 17.7 | 0.15 | 20060922 | 75.86540 | 261.53308 | 54.34047 | 3.40334 | 0.1930568 | 2.1459410 | 29 | 3 | 2002–2006 | 0.34 | M-v | 2 | MPC | 77123 | 2005 $GU_{96}$ |
| 2005 $GA_{99}$ | 16.5 | 0.15 | 20060922 | 132.95286 | 350.05012 | 219.46866 | 2.01281 | 0.1229646 | 2.5382855 | 52 | 5 | 1994–2006 | 0.39 | M-v | 3 | MPC | 04328 | 2005 $GA_{99}$ |
| 2005 $GB_{99}$ | 15.6 | 0.15 | 20060922 | 114.40846 | 2.74364 | 219.42125 | 3.79078 | 0.1158539 | 2.6673716 | 101 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04328 | 2005 $GB_{99}$ |
| 2005 $GM_{99}$ | 16.6 | 0.15 | 20060922 | 71.77524 | 25.50730 | 239.41041 | 0.56734 | 0.0400938 | 2.6955548 | 31 | 4 | 2000–2006 | 0.34 | M-v | 0 | MPC | 95669 | 2005 $GM_{99}$ |
| 2005 $GY_{99}$ | 16.1 | 0.15 | 20060922 | 124.66421 | 49.50544 | 152.85821 | 13.85829 | 0.2233082 | 2.6109756 | 49 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03690 | 2005 $GY_{99}$ |
| 2005 $GT_{100}$ | 16.7 | 0.15 | 20060922 | 17.96469 | 121.39244 | 193.32702 | 1.72089 | 0.0701367 | 2.6235158 | 50 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 04328 | 2005 $GT_{100}$ |
| 2005 $GV_{101}$ | 17.6 | 0.15 | 20060922 | 137.95484 | 74.91195 | 142.22103 | 2.01396 | 0.1181597 | 2.2410180 | 39 | 5 | 1999–2006 | 0.48 | M-v | 1 | MPC | 95669 | 2005 $GV_{101}$ |
| 2005 $GA_{102}$ | 17.0 | 0.15 | 20060922 | 117.18127 | 140.97971 | 95.17080 | 3.26573 | 0.1329292 | 2.3890892 | 57 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 77125 | 2005 $GA_{102}$ |
| 2005 $GB_{103}$ | 15.9 | 0.15 | 20060922 | 58.10899 | 264.50848 | 25.85375 | 3.58936 | 0.1178720 | 2.6457125 | 95 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 03691 | 2005 $GB_{103}$ |
| 2005 $GJ_{103}$ | 16.6 | 0.15 | 20060922 | 255.76638 | 270.08838 | 158.29232 | 1.67630 | 0.0067292 | 2.5974491 | 39 | 5 | 1994–2006 | 0.41 | M-v | 1 | MPC | 02250 | 2005 $GJ_{103}$ |
| 2005 $GB_{104}$ | 15.6 | 0.15 | 20060922 | 105.07420 | 264.35733 | 313.35421 | 12.52697 | 0.1454584 | 2.7355511 | 47 | 5 | 2000–2006 | 0.34 | M-v | 1 | MPC | 04328 | 2005 $GB_{104}$ |
| 2005 $GD_{105}$ | 15.8 | 0.15 | 20060922 | 37.40930 | 99.95376 | 192.09521 | 14.53555 | 0.1466373 | 2.8654115 | 49 | 5 | 1992–2006 | 0.65 | M-v | 1 | MPC | 02250 | 2005 $GD_{105}$ |
| 2005 $GE_{106}$ | 16.1 | 0.15 | 20060922 | 160.13914 | 105.68032 | 55.47175 | 6.27660 | 0.0293063 | 2.7226420 | 29 | 5 | 1998–2005 | 0.64 | M-v | 1 | MPC | 86703 | 2005 $GE_{106}$ |
| 2005 $GV_{109}$ | 15.7 | 0.15 | 20060922 | 6.11994 | 126.73898 | 210.59486 | 7.49008 | 0.2146801 | 2.8020107 | 72 | 3 | 1997–2006 | 0.42 | M-v | 2 | MPC | 04328 | 2005 $GV_{109}$ |
| 2005 $GQ_{110}$ | 18.1 | 0.15 | 20060922 | 167.72254 | 161.66817 | 13.66261 | 1.26520 | 0.1249506 | 2.4143484 | 38 | 5 | 1997–2006 | 0.37 | M-v | 2 | MPC | 04328 | 2005 $GQ_{110}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $GE_{111}$ | 16.0 | 0.15 | 20060922 | 84.06214 | 175.76657 | 107.77388 | 8.57556 | 0.2272251 | 2.4441460 | 56 | 4 | 2001–2006 | 0.64 | M-v | 1 | MPC | 77129 | 2005 $GE_{111}$ |
| 2005 $GS_{111}$ | 17.6 | 0.15 | 20060922 | 295.39482 | 207.27526 | 207.51581 | 5.83526 | 0.0808404 | 2.3242198 | 29 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 04328 | 2005 $GS_{111}$ |
| 2005 $GN_{112}$ | 16.2 | 0.15 | 20060922 | 300.22489 | 36.39063 | 345.88492 | 5.65113 | 0.0691694 | 2.7424632 | 41 | 5 | 2000–2006 | 0.49 | M-v | 0 | MPC | 04328 | 2005 $GN_{112}$ |
| 2005 $GP_{112}$ | 15.9 | 0.15 | 20060922 | 96.78400 | 234.61836 | 333.64763 | 4.73286 | 0.0689430 | 3.0508155 | 27 | 5 | 1994–2005 | 0.42 | M-v | 1 | MPC | 04328 | 2005 $GP_{112}$ |
| 2005 $GA_{113}$ | 15.4 | 0.15 | 20060922 | 61.37170 | 90.87028 | 171.97074 | 25.20169 | 0.2554258 | 3.1355995 | 74 | 2 | 2005–2006 | 0.74 | M-v | 3 | MPC | 03691 | 2005 $GA_{113}$ |
| 2005 $GO_{113}$ | 17.6 | 0.15 | 20060922 | 81.17050 | 314.18362 | 322.75151 | 2.53079 | 0.2179104 | 2.2141152 | 38 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 03691 | 2005 $GO_{113}$ |
| 2005 $GR_{113}$ | 16.8 | 0.15 | 20060922 | 73.99063 | 236.15736 | 67.92378 | 3.70592 | 0.1883392 | 2.2278784 | 72 | 3 | 1999–2006 | 0.62 | M-v | 2 | MPC | 77130 | 2005 $GR_{113}$ |
| 2005 $GX_{113}$ | 15.9 | 0.15 | 20060922 | 77.47568 | 226.01534 | 74.30563 | 9.92509 | 0.1553753 | 2.3102376 | 60 | 5 | 1998–2006 | 0.52 | M-v | 1 | MPC | 77131 | 2005 $GX_{113}$ |
| 2005 $GF_{114}$ | 16.9 | 0.15 | 20060922 | 240.98702 | 89.69068 | 61.54517 | 23.30188 | 0.0624549 | 1.9041894 | 47 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 86706 | 2005 $GF_{114}$ |
| 2005 $GG_{114}$ | 17.1 | 0.15 | 20060922 | 327.40336 | 251.01927 | 132.34835 | 2.26468 | 0.1654876 | 2.2722110 | 46 | 3 | 2003–2006 | 0.39 | M-v | 2 | MPC | 04328 | 2005 $GG_{114}$ |
| 2005 $GT_{115}$ | 16.8 | 0.15 | 20060922 | 88.59991 | 209.17782 | 41.73694 | 5.15812 | 0.1082887 | 2.5375202 | 37 | 4 | 1997–2006 | 0.52 | M-v | 2 | MPC | 77132 | 2005 $GT_{115}$ |
| 2005 $GD_{117}$ | 17.8 | 0.15 | 20060922 | 97.44780 | 275.01592 | 352.67123 | 2.15279 | 0.1805007 | 2.3861123 | 28 | 3 | 2002–2006 | 0.33 | M-v | 3 | MPC | 86706 | 2005 $GD_{117}$ |
| 2005 $GR_{117}$ | 16.3 | 0.15 | 20060922 | 244.66202 | 27.58805 | 38.91244 | 5.76652 | 0.0139329 | 2.7431083 | 29 | 4 | 1996–2005 | 0.46 | M-v | 2 | MPC | 86707 | 2005 $GR_{117}$ |
| 2005 $GK_{119}$ | 17.1 | 0.15 | 20060922 | 27.74577 | 306.10928 | 29.71131 | 7.52204 | 0.1523013 | 2.4260336 | 56 | 3 | 2002–2006 | 0.38 | M-v | 3 | MPC | 03692 | 2005 $GK_{119}$ |
| 2005 $GQ_{119}$ | 15.9 | 0.15 | 20060922 | 110.95675 | 258.15443 | 327.94605 | 10.92962 | 0.1932178 | 2.6313939 | 60 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 03692 | 2005 $GQ_{119}$ |
| 2005 $GT_{119}$ | 17.2 | 0.15 | 20060922 | 295.09581 | 246.93186 | 199.07526 | 21.42401 | 0.1124513 | 1.9532199 | 93 | 3 | 2003–2006 | 0.57 | M-v | 1 | MPC | 04328 | 2005 $GT_{119}$ |
| 2005 $GM_{121}$ | 16.0 | 0.15 | 20060922 | 67.96392 | 93.04370 | 169.96203 | 3.20266 | 0.2621008 | 3.0829559 | 47 | 4 | 2001–2006 | 0.34 | M-v | 0 | MPC | 77135 | 2005 $GM_{121}$ |
| 2005 $GK_{122}$ | 16.2 | 0.15 | 20060922 | 25.20247 | 91.25832 | 192.78613 | 4.65832 | 0.1329927 | 2.7836607 | 27 | 2 | 2005–2006 | 0.23 | M-v | 3 | MPC | 03692 | 2005 $GK_{122}$ |
| 2005 $GD_{123}$ | 17.2 | 0.15 | 20060922 | 267.93122 | 322.97853 | 109.69374 | 2.32722 | 0.1627291 | 2.4280840 | 27 | 3 | 2001–2005 | 0.48 | M-v | 4 | MPC | 86707 | 2005 $GD_{123}$ |
| 2005 $GK_{123}$ | 16.1 | 0.15 | 20060922 | 198.83462 | 67.86430 | 120.37842 | 23.98810 | 0.0849131 | 1.8932398 | 63 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 87667 | 2005 $GK_{123}$ |
| 2005 $GN_{123}$ | 15.5 | 0.15 | 20060922 | 64.89412 | 56.87213 | 218.53108 | 10.28087 | 0.2752859 | 3.0241697 | 117 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 97783 | 2005 $GN_{123}$ |
| 2005 $GX_{124}$ | 15.9 | 0.15 | 20060922 | 58.08308 | 80.76922 | 203.94320 | 13.32194 | 0.1334687 | 2.6366830 | 72 | 5 | 2000–2006 | 0.54 | M-v | 0 | MPC | 86708 | 2005 $GX_{124}$ |
| 2005 $GY_{124}$ | 14.9 | 0.15 | 20060922 | 88.55491 | 14.95913 | 164.43978 | 2.97679 | 0.1526900 | 3.9916419 | 34 | 4 | 1995–2005 | 0.34 | M-v | 0 | MPC | 86708 | 2005 $GY_{124}$ |
| 2005 $GM_{125}$ | 17.0 | 0.15 | 20060922 | 113.90922 | 208.88283 | 48.21883 | 3.38684 | 0.1318720 | 2.2939896 | 72 | 5 | 1998–2006 | 0.41 | M-v | 1 | MPC | 77137 | 2005 $GM_{125}$ |
| 2005 $GJ_{126}$ | 16.6 | 0.15 | 20060922 | 151.72702 | 81.99203 | 112.19047 | 5.32425 | 0.1145535 | 2.3387639 | 84 | 5 | 2000–2006 | 0.79 | M-v | 1 | MPC | 77137 | 2005 $GJ_{126}$ |
| 2005 $GO_{126}$ | 17.3 | 0.15 | 20060922 | 97.73072 | 37.87479 | 215.61426 | 1.47635 | 0.1259312 | 2.5213367 | 57 | 4 | 2001–2006 | 0.29 | M-v | 2 | MPC | 04329 | 2005 $GO_{126}$ |
| 2005 $GC_{127}$ | 16.5 | 0.15 | 20060922 | 112.63911 | 49.36072 | 165.11921 | 3.49795 | 0.0828505 | 2.7141512 | 30 | 4 | 1996–2005 | 0.30 | M-v | 1 | MPC | 03692 | 2005 $GC_{127}$ |
| 2005 $GK_{127}$ | 16.4 | 0.15 | 20060922 | 97.52968 | 226.17072 | 55.02818 | 26.21121 | 0.1769587 | 2.3041032 | 41 | 3 | 1998–2006 | 0.60 | M-v | 3 | MPC | 87667 | 2005 $GK_{127}$ |
| 2005 $GR_{127}$ | 17.0 | 0.15 | 20060922 | 38.21475 | 321.58330 | 33.97833 | 21.99819 | 0.0830265 | 1.9647273 | 44 | 3 | 2003–2006 | 0.78 | M-v | 3 | MPC | 77139 | 2005 $GR_{127}$ |
| 2005 $GT_{127}$ | 17.2 | 0.15 | 20060922 | 223.56874 | 334.07265 | 202.24279 | 21.96498 | 0.0167875 | 1.8960939 | 32 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 77139 | 2005 $GT_{127}$ |
| 2005 $GW_{127}$ | 17.4 | 0.15 | 20060922 | 165.60875 | 79.28445 | 119.16063 | 4.07334 | 0.0700713 | 2.1840214 | 44 | 6 | 1995–2006 | 0.70 | M-v | 1 | MPC | 86708 | 2005 $GW_{127}$ |
| 2005 $GY_{127}$ | 15.6 | 0.15 | 20060922 | 53.55120 | 235.75653 | 41.75997 | 15.13879 | 0.0781332 | 2.6430351 | 37 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 04329 | 2005 $GY_{127}$ |
| 2005 $GA_{128}$ | 15.8 | 0.15 | 20060922 | 2.20078 | 285.47309 | 48.44394 | 13.92402 | 0.0639862 | 2.5454553 | 38 | 5 | 2001–2006 | 0.69 | M-v | 1 | MPC | 04329 | 2005 $GA_{128}$ |
| 2005 $GQ_{128}$ | 16.5 | 0.15 | 20060922 | 325.14932 | 59.47264 | 22.85717 | 19.24120 | 0.1060247 | 1.8527965 | 53 | 4 | 2000–2006 | 0.66 | M-v | 2 | MPC | 04329 | 2005 $GQ_{128}$ |
| 2005 $GB_{129}$ | 16.1 | 0.15 | 20060922 | 95.66675 | 295.37991 | 301.55110 | 7.88775 | 0.1228451 | 2.5710271 | 41 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 03692 | 2005 $GB_{129}$ |
| 2005 $GW_{129}$ | 16.2 | 0.15 | 20060922 | 258.69707 | 8.32804 | 60.21617 | 9.40195 | 0.0419185 | 2.6547167 | 30 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 04329 | 2005 $GW_{129}$ |
| 2005 $GV_{131}$ | 17.2 | 0.15 | 20060922 | 62.82992 | 110.40263 | 158.38965 | 2.98612 | 0.1439888 | 2.7675325 | 36 | 4 | 1995–2006 | 0.46 | M-v | 0 | MPC | 04329 | 2005 $GV_{131}$ |
| 2005 $GR_{132}$ | 17.5 | 0.15 | 20060922 | 19.02307 | 154.93040 | 177.39911 | 6.34719 | 0.1121270 | 2.4550615 | 42 | 4 | 2001–2006 | 0.27 | M-v | 1 | MPC | 04329 | 2005 $GR_{132}$ |
| 2005 $GE_{133}$ | 16.9 | 0.15 | 20060922 | 42.14723 | 254.95232 | 86.10025 | 3.26569 | 0.1573239 | 2.1579871 | 65 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 77143 | 2005 $GE_{133}$ |
| 2005 $GB_{134}$ | 16.0 | 0.15 | 20060922 | 10.50306 | 141.46975 | 190.00686 | 9.24288 | 0.2332027 | 2.8118158 | 67 | 2 | 2005–2006 | 0.47 | M-v | 3 | MPC | 03692 | 2005 $GB_{134}$ |
| 2005 $GR_{134}$ | 17.1 | 0.15 | 20060922 | 90.97873 | 232.11839 | 24.57377 | 3.29357 | 0.1427677 | 2.5839152 | 41 | 5 | 1998–2006 | 0.35 | M-v | 1 | MPC | 89656 | 2005 $GR_{134}$ |
| 2005 $GT_{134}$ | 17.9 | 0.15 | 20060922 | 125.07779 | 346.46690 | 245.88781 | 0.49848 | 0.1427873 | 2.3885884 | 39 | 7 | 1995–2006 | 0.35 | M-v | 1 | MPC | 00947 | 2005 $GT_{134}$ |
| 2005 $GA_{135}$ | 18.0 | 0.15 | 20060922 | 99.90715 | 54.96807 | 214.34969 | 2.22413 | 0.1712909 | 2.3807214 | 45 | 3 | 2002–2006 | 0.33 | M-v | 3 | MPC | 03693 | 2005 $GA_{135}$ |
| 2005 $GH_{136}$ | 15.8 | 0.15 | 20060922 | 44.34327 | 108.13872 | 178.44913 | 9.90564 | 0.1979742 | 3.1412702 | 66 | 3 | 1999–2006 | 0.39 | M-v | 1 | MPC | 04329 | 2005 $GH_{136}$ |
| 2005 $GM_{136}$ | 17.0 | 0.15 | 20060922 | 99.58828 | 194.09116 | 96.84017 | 6.42459 | 0.1868601 | 2.2284677 | 66 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 77145 | 2005 $GM_{136}$ |
| 2005 $GT_{136}$ | 17.3 | 0.15 | 20060922 | 86.37476 | 184.55422 | 100.69383 | 5.49643 | 0.1743163 | 2.3979992 | 19 | 3 | 1995–2006 | 0.21 | M-v | 3 | MPC | 00947 | 2005 $GT_{136}$ |
| 2005 $GV_{136}$ | 15.9 | 0.15 | 20060922 | 91.45102 | 54.41327 | 188.81356 | 11.99750 | 0.1302730 | 2.7702323 | 53 | 5 | 2000–2006 | 0.39 | M-v | 0 | MPC | 04329 | 2005 $GV_{136}$ |
| 2005 $GA_{137}$ | 15.2 | 0.15 | 20060922 | 57.05789 | 139.16834 | 117.90364 | 6.20167 | 0.1111344 | 3.2291884 | 39 | 4 | 2001–2006 | 0.47 | M-v | 0 | MPC | 04329 | 2005 $GA_{137}$ |
| 2005 $GE_{137}$ | 18.0 | 0.15 | 20060922 | 217.17201 | 331.14029 | 165.93968 | 2.64282 | 0.0371420 | 2.2415177 | 30 | 4 | 1996–2006 | 0.23 | M-v | 0 | MPC | 04329 | 2005 $GE_{137}$ |
| 2005 $GR_{137}$ | 17.3 | 0.15 | 20060922 | 60.09194 | 81.80378 | 220.12043 | 5.62161 | 0.0986648 | 2.4113988 | 50 | 5 | 1997–2006 | 0.43 | M-v | 0 | MPC | 95671 | 2005 $GR_{137}$ |
| 2005 $GA_{138}$ | 17.4 | 0.15 | 20060922 | 49.15523 | 98.68919 | 223.04203 | 5.52963 | 0.1287334 | 2.3832340 | 53 | 7 | 1991–2006 | 0.35 | M-v | 0 | MPC | 89656 | 2005 $GA_{138}$ |
| 2005 $GP_{138}$ | 16.5 | 0.15 | 20060922 | 146.79772 | 112.90989 | 60.00630 | 4.59113 | 0.0675498 | 2.6564269 | 45 | 4 | 1998–2006 | 0.52 | M-v | 0 | MPC | 04329 | 2005 $GP_{138}$ |
| 2005 $GQ_{138}$ | 17.4 | 0.15 | 20060922 | 229.40843 | 316.04345 | 139.36204 | 2.91692 | 0.1597204 | 2.4067805 | 21 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 77146 | 2005 $GQ_{138}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $GC_{139}$ | 17.2 | 0.15 | 20060922 | 124.87409 | 314.19363 | 275.72367 | 0.67167 | 0.1497977 | 2.4438906 | 58 | 4 | 1997–2006 | 0.53 | M-v | 2 | MPC | 77147 | 2005 $GC_{139}$ |
| 2005 $GJ_{139}$ | 17.4 | 0.15 | 20060922 | 148.42524 | 348.84136 | 223.90513 | 4.23597 | 0.1091222 | 2.2727574 | 42 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 00948 | 2005 $GJ_{139}$ |
| 2005 $GK_{139}$ | 17.0 | 0.15 | 20060922 | 176.65245 | 80.78740 | 89.13694 | 4.48840 | 0.0912841 | 2.3830050 | 30 | 4 | 1992–2005 | 0.58 | M-v | 1 | MPC | 03693 | 2005 $GK_{139}$ |
| 2005 $GM_{139}$ | 16.9 | 0.15 | 20060922 | 62.33834 | 158.65959 | 165.64106 | 5.22461 | 0.1714164 | 2.2408023 | 33 | 3 | 1999–2006 | 0.48 | M-v | 2 | MPC | 86710 | 2005 $GM_{139}$ |
| 2005 $GE_{140}$ | 17.0 | 0.15 | 20060922 | 143.06028 | 157.30733 | 34.67600 | 0.96074 | 0.0509036 | 2.6033583 | 27 | 4 | 2000–2006 | 0.32 | M-v | 1 | MPC | 95672 | 2005 $GE_{140}$ |
| 2005 $GH_{140}$ | 15.6 | 0.15 | 20060922 | 72.30169 | 85.27171 | 183.44036 | 8.17680 | 0.1310429 | 2.6636998 | 100 | 4 | 1997–2006 | 0.50 | M-v | 1 | MPC | 03693 | 2005 $GH_{140}$ |
| 2005 $GU_{140}$ | 16.3 | 0.15 | 20060922 | 97.05894 | 74.35533 | 178.05041 | 17.20867 | 0.1793315 | 2.5906323 | 40 | 3 | 2001–2006 | 0.67 | M-v | 3 | MPC | 77148 | 2005 $GU_{140}$ |
| 2005 $GZ_{140}$ | 16.2 | 0.15 | 20060922 | 106.03455 | 250.79871 | 21.62997 | 10.30795 | 0.2511246 | 2.4052992 | 64 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 87667 | 2005 $GZ_{140}$ |
| 2005 $GD_{143}$ | 15.8 | 0.15 | 20060922 | 53.44159 | 168.68896 | 149.45542 | 2.35493 | 0.3141980 | 2.5780803 | 49 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 86710 | 2005 $GD_{143}$ |
| 2005 $GN_{143}$ | 16.8 | 0.15 | 20060922 | 111.30362 | 90.34045 | 171.88352 | 7.85206 | 0.1155293 | 2.2805918 | 40 | 4 | 1998–2006 | 0.61 | M-v | 1 | MPC | 77150 | 2005 $GN_{143}$ |
| 2005 $GS_{143}$ | 18.6 | 0.15 | 20060922 | 110.40903 | 103.88811 | 175.64750 | 7.68991 | 0.2205878 | 2.2367236 | 21 | 3 | 1995–2005 | 0.32 | M-v | 2 | MPC | 86711 | 2005 $GS_{143}$ |
| 2005 $GL_{144}$ | 16.6 | 0.15 | 20060922 | 54.25861 | 246.72840 | 73.31251 | 8.07584 | 0.1406400 | 2.3428444 | 53 | 4 | 1998–2006 | 0.52 | M-v | 1 | MPC | 00948 | 2005 $GL_{144}$ |
| 2005 $GS_{144}$ | 17.1 | 0.15 | 20060922 | 53.13052 | 245.37370 | 98.06929 | 5.76758 | 0.2144092 | 2.1789011 | 41 | 6 | 1999–2006 | 0.52 | M-v | 1 | MPC | 00948 | 2005 $GS_{144}$ |
| 2005 $GY_{146}$ | 16.8 | 0.15 | 20060922 | 40.00176 | 98.78181 | 228.38844 | 4.30659 | 0.1503440 | 2.3653954 | 63 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 86711 | 2005 $GY_{146}$ |
| 2005 $GO_{149}$ | 15.7 | 0.15 | 20060922 | 58.39228 | 83.71738 | 187.07526 | 9.19795 | 0.1641366 | 3.0738343 | 44 | 3 | 2001–2006 | 0.60 | M-v | 2 | MPC | 04329 | 2005 $GO_{149}$ |
| 2005 $GG_{150}$ | 16.1 | 0.15 | 20060922 | 48.67683 | 186.14016 | 110.32464 | 5.78195 | 0.2433514 | 2.9954332 | 24 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 00948 | 2005 $GG_{150}$ |
| 2005 $GL_{150}$ | 16.4 | 0.15 | 20060922 | 113.90738 | 187.20239 | 69.34311 | 7.34900 | 0.1665003 | 2.3683836 | 88 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 97783 | 2005 $GL_{150}$ |
| 2005 $GM_{151}$ | 17.0 | 0.15 | 20060922 | 113.55663 | 157.63385 | 91.52110 | 3.06928 | 0.1655154 | 2.4188115 | 37 | 3 | 2001–2006 | 0.47 | M-v | 3 | MPC | 77152 | 2005 $GM_{151}$ |
| 2005 $GS_{151}$ | 16.1 | 0.15 | 20060922 | 139.69792 | 346.34587 | 200.90669 | 3.69766 | 0.0439586 | 2.6531678 | 42 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 03693 | 2005 $GS_{151}$ |
| 2005 $GT_{151}$ | 15.9 | 0.15 | 20060922 | 115.10647 | 192.95382 | 30.38396 | 14.41813 | 0.0870866 | 2.5580998 | 45 | 2 | 2005–2006 | 0.51 | M-v | 3 | MPC | 03693 | 2005 $GT_{151}$ |
| 2005 $GE_{152}$ | 17.1 | 0.15 | 20060922 | 221.78687 | 258.41216 | 225.62485 | 3.15437 | 0.0902650 | 2.3035320 | 53 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04329 | 2005 $GE_{152}$ |
| 2005 $GQ_{152}$ | 15.9 | 0.15 | 20060922 | 31.26751 | 257.15439 | 59.58867 | 10.31183 | 0.1477285 | 2.7008255 | 60 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 95672 | 2005 $GQ_{152}$ |
| 2005 $GS_{152}$ | 16.1 | 0.15 | 20060922 | 137.74116 | 6.36608 | 185.76645 | 5.47061 | 0.1260448 | 2.6339183 | 46 | 7 | 1992–2006 | 0.51 | M-v | 1 | MPC | 86711 | 2005 $GS_{152}$ |
| 2005 $GV_{152}$ | 17.5 | 0.15 | 20060922 | 113.58175 | 154.06081 | 108.72707 | 2.52146 | 0.1665474 | 2.2583988 | 44 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 77153 | 2005 $GV_{152}$ |
| 2005 $GG_{153}$ | 16.9 | 0.15 | 20060922 | 137.27896 | 145.21951 | 88.94892 | 6.07965 | 0.1021024 | 2.2635770 | 47 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 77154 | 2005 $GG_{153}$ |
| 2005 $GA_{154}$ | 16.3 | 0.15 | 20060922 | 339.25051 | 266.14980 | 123.94524 | 6.60148 | 0.1896671 | 2.2838218 | 82 | 3 | 2003–2006 | 0.48 | M-v | 2 | MPC | 04329 | 2005 $GA_{154}$ |
| 2005 $GG_{154}$ | 15.1 | 0.15 | 20060922 | 60.64458 | 164.16747 | 67.34886 | 11.66577 | 0.0697526 | 3.2083298 | 30 | 1 | 78 days | 0.69 | M-v | 4 | MPC | 77874 | 2005 $GG_{154}$ |
| 2005 $GH_{154}$ | 15.7 | 0.15 | 20060922 | 92.29442 | 69.73926 | 164.41877 | 13.79538 | 0.0979582 | 2.6712265 | 70 | 2 | 2005–2006 | 0.57 | M-v | 3 | MPC | 03693 | 2005 $GH_{154}$ |
| 2005 $GN_{154}$ | 17.2 | 0.15 | 20060922 | 170.37757 | 62.08516 | 126.89644 | 3.00019 | 0.0687017 | 2.1921107 | 42 | 4 | 1995–2006 | 0.58 | M-v | 2 | MPC | 86711 | 2005 $GN_{154}$ |
| 2005 $GP_{154}$ | 15.7 | 0.15 | 20060922 | 54.91171 | 110.67463 | 145.16912 | 5.85889 | 0.1234851 | 3.0882054 | 34 | 4 | 1996–2006 | 0.52 | M-v | 2 | MPC | 04329 | 2005 $GP_{154}$ |
| 2005 $GG_{156}$ | 16.1 | 0.15 | 20060922 | 173.60065 | 303.51897 | 193.83286 | 4.18364 | 0.2179062 | 2.6248218 | 28 | 3 | 2000–2005 | 0.43 | M-v | 3 | MPC | 86712 | 2005 $GG_{156}$ |
| 2005 $GL_{156}$ | 16.3 | 0.15 | 20060922 | 71.09522 | 212.70093 | 113.27032 | 1.55255 | 0.4295661 | 2.4553441 | 67 | 6 | 1997–2006 | 0.47 | M-v | 2 | MPC | 87667 | 2005 $GL_{156}$ |
| 2005 $GH_{157}$ | 16.2 | 0.15 | 20060922 | 50.80679 | 252.50331 | 29.73873 | 3.41254 | 0.1626925 | 2.4738031 | 58 | 3 | 2002–2006 | 0.65 | M-v | 3 | MPC | 04329 | 2005 $GH_{157}$ |
| 2005 $GX_{157}$ | 17.8 | 0.15 | 20060922 | 178.38429 | 351.50857 | 175.31761 | 1.30600 | 0.1145090 | 2.3910016 | 30 | 4 | 1995–2006 | 0.34 | M-v | 1 | MPC | 04329 | 2005 $GX_{157}$ |
| 2005 $GN_{158}$ | 16.6 | 0.15 | 20060922 | 82.11103 | 266.50120 | 354.30916 | 3.85537 | 0.1589476 | 2.6417878 | 37 | 3 | 1996–2006 | 0.29 | M-v | 3 | MPC | 86713 | 2005 $GN_{158}$ |
| 2005 $GW_{158}$ | 16.6 | 0.15 | 20060922 | 161.94082 | 237.01376 | 297.39313 | 3.65999 | 0.1173351 | 2.4476289 | 24 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 95673 | 2005 $GW_{158}$ |
| 2005 $GH_{160}$ | 17.5 | 0.15 | 20060922 | 107.62797 | 176.87286 | 100.54567 | 3.08493 | 0.2297510 | 2.2763940 | 48 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 77156 | 2005 $GH_{160}$ |
| 2005 $GW_{160}$ | 15.2 | 0.15 | 20060922 | 113.95303 | 44.43221 | 150.53597 | 3.18167 | 0.2352106 | 3.0103395 | 83 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 03694 | 2005 $GW_{160}$ |
| 2005 $GX_{160}$ | 17.0 | 0.15 | 20060922 | 125.73965 | 208.07634 | 45.58756 | 5.44063 | 0.1781647 | 2.2614734 | 100 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 77157 | 2005 $GX_{160}$ |
| 2005 $GE_{161}$ | 16.2 | 0.15 | 20060922 | 53.61722 | 120.27857 | 175.43302 | 11.68792 | 0.2001704 | 2.6523744 | 89 | 6 | 1996–2006 | 0.44 | M-v | 0 | MPC | 04330 | 2005 $GE_{161}$ |
| 2005 $GF_{161}$ | 16.6 | 0.15 | 20060922 | 134.50984 | 86.31923 | 124.13925 | 6.24860 | 0.0815125 | 2.3832187 | 50 | 5 | 2001–2006 | 0.75 | M-v | 1 | MPC | 86713 | 2005 $GF_{161}$ |
| 2005 $GS_{161}$ | 15.8 | 0.15 | 20060922 | 13.55944 | 195.70524 | 149.24517 | 10.93113 | 0.1611534 | 2.3398726 | 81 | 6 | 1998–2006 | 0.57 | M-v | 1 | MPC | 04330 | 2005 $GS_{161}$ |
| 2005 $GA_{162}$ | 16.3 | 0.15 | 20060922 | 359.19325 | 117.82171 | 215.67853 | 1.33429 | 0.0976462 | 2.8708426 | 35 | 4 | 2002–2006 | 0.34 | M-v | 1 | MPC | 03694 | 2005 $GA_{162}$ |
| 2005 $GN_{162}$ | 16.0 | 0.15 | 20060922 | 117.99895 | 58.68600 | 114.60931 | 10.87987 | 0.2468444 | 3.1319746 | 24 | 1 | 66 days | 0.56 | M-v | 5 | MPC | | 2005 $GN_{162}$ |
| 2005 $GP_{162}$ | 15.9 | 0.15 | 20060922 | 94.50572 | 164.52721 | 83.10893 | 9.32279 | 0.1708575 | 2.6555382 | 57 | 4 | 2002–2006 | 0.67 | M-v | 1 | MPC | 87667 | 2005 $GP_{162}$ |
| 2005 $GM_{163}$ | 17.5 | 0.15 | 20060922 | 269.76581 | 230.07528 | 194.59747 | 1.53553 | 0.0175499 | 2.5394120 | 40 | 5 | 1998–2006 | 0.35 | M-v | 1 | MPC | 04330 | 2005 $GM_{163}$ |
| 2005 $GY_{163}$ | 16.8 | 0.15 | 20060922 | 70.41983 | 280.86097 | 26.54765 | 9.83269 | 0.1243672 | 2.2565443 | 47 | 5 | 1998–2006 | 0.42 | M-v | 0 | MPC | 95673 | 2005 $GY_{163}$ |
| 2005 $GV_{166}$ | 17.2 | 0.15 | 20060922 | 328.88259 | 359.83878 | 32.94293 | 6.95691 | 0.1070893 | 2.2733369 | 41 | 3 | 2003–2006 | 0.64 | M-v | 4 | MPC | 77159 | 2005 $GV_{166}$ |
| 2005 $GD_{167}$ | 16.8 | 0.15 | 20060922 | 101.03910 | 219.12028 | 51.39548 | 4.50652 | 0.1395048 | 2.3869009 | 95 | 5 | 2001–2006 | 0.42 | M-v | 1 | MPC | 77160 | 2005 $GD_{167}$ |
| 2005 $GE_{167}$ | 17.9 | 0.15 | 20060922 | 97.86534 | 85.40798 | 197.29241 | 1.75162 | 0.2021923 | 2.3699655 | 32 | 3 | 2001–2006 | 0.29 | M-v | 3 | MPC | 77161 | 2005 $GE_{167}$ |
| 2005 $GT_{167}$ | 17.2 | 0.15 | 20060922 | 178.61046 | 130.31360 | 42.93263 | 2.78306 | 0.1539671 | 2.3553081 | 28 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 77161 | 2005 $GT_{167}$ |
| 2005 $GW_{167}$ | 17.8 | 0.15 | 20060922 | 126.62288 | 198.68809 | 46.96866 | 2.12328 | 0.1679954 | 2.3354285 | 30 | 3 | 1999–2006 | 0.22 | M-v | 3 | MPC | 77161 | 2005 $GW_{167}$ |
| 2005 $GR_{170}$ | 15.2 | 0.15 | 20060922 | 110.67770 | 325.46599 | 225.94596 | 3.62422 | 0.1000472 | 3.1286266 | 49 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 02250 | 2005 $GR_{170}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $GS_{170}$ | 14.8 | 0.15 | 20060922 | 40.51469 | 227.03091 | 70.28772 | 22.95674 | 0.2629917 | 3.1760201 | 68 | 4 | 2001–2006 | 0.51 | M-v | 0 | MPC | 87668 | 2005 $GS_{170}$ |
| 2005 $GU_{170}$ | 16.0 | 0.15 | 20060922 | 48.52817 | 227.34237 | 67.35336 | 9.47315 | 0.0658144 | 2.5870593 | 43 | 5 | 2001–2006 | 0.76 | M-v | 1 | MPC | 95673 | 2005 $GU_{170}$ |
| 2005 $GW_{172}$ | 16.7 | 0.15 | 20060922 | 40.07241 | 116.85226 | 185.44734 | 7.24050 | 0.2090361 | 2.7803894 | 55 | 6 | 1996–2006 | 0.44 | M-v | 0 | MPC | 04330 | 2005 $GW_{172}$ |
| 2005 $GM_{173}$ | 16.7 | 0.15 | 20060922 | 58.32179 | 118.78499 | 155.49532 | 5.07719 | 0.0870567 | 2.7512831 | 33 | 4 | 1995–2006 | 0.47 | M-v | 0 | MPC | 04330 | 2005 $GM_{173}$ |
| 2005 $GO_{173}$ | 15.9 | 0.15 | 20060922 | 352.85648 | 165.68828 | 173.61650 | 7.58974 | 0.0905812 | 2.7627220 | 29 | 3 | 2004–2006 | 0.41 | M-v | 2 | MPC | 03694 | 2005 $GO_{173}$ |
| 2005 $GA_{175}$ | 17.3 | 0.15 | 20060922 | 135.62416 | 143.98671 | 77.62890 | 2.85400 | 0.1190048 | 2.3389729 | 34 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 77166 | 2005 $GA_{175}$ |
| 2005 $GG_{178}$ | 16.8 | 0.15 | 20060922 | 335.96868 | 269.41133 | 115.25705 | 5.07187 | 0.1245326 | 2.3015155 | 42 | 3 | 2003–2006 | 0.56 | M-v | 3 | MPC | 86717 | 2005 $GG_{178}$ |
| 2005 $GU_{178}$ | 15.6 | 0.15 | 20060922 | 64.22476 | 299.10569 | 318.16733 | 22.25911 | 0.2495907 | 3.0919702 | 22 | 3 | 1995–2006 | 0.37 | M-v | 2 | MPC | 00949 | 2005 $GU_{178}$ |
| 2005 $GZ_{178}$ | 16.7 | 0.15 | 20060922 | 130.49898 | 7.22372 | 211.54208 | 1.65098 | 0.1550348 | 2.4331540 | 60 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87668 | 2005 $GZ_{178}$ |
| 2005 $GC_{179}$ | 16.1 | 0.15 | 20060922 | 133.56882 | 89.19834 | 113.01726 | 9.94362 | 0.1330712 | 2.5763759 | 71 | 3 | 2001–2006 | 0.71 | M-v | 3 | MPC | 77168 | 2005 $GC_{179}$ |
| 2005 $GF_{179}$ | 16.6 | 0.15 | 20060922 | 161.31757 | 50.04906 | 143.14673 | 9.95533 | 0.1222702 | 2.3023787 | 59 | 5 | 1998–2006 | 0.75 | M-v | 1 | MPC | 77169 | 2005 $GF_{179}$ |
| 2005 $GN_{179}$ | 16.6 | 0.15 | 20060922 | 241.41825 | 251.80188 | 244.11930 | 17.93426 | 0.1047509 | 1.9745263 | 40 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 77169 | 2005 $GN_{179}$ |
| 2005 $GV_{179}$ | 16.4 | 0.15 | 20060922 | 323.98107 | 273.85335 | 137.79973 | 23.84739 | 0.1180245 | 1.9166761 | 41 | 3 | 2003–2006 | 0.38 | M-v | 2 | MPC | 86717 | 2005 $GV_{179}$ |
| 2005 $GR_{180}$ | 17.6 | 0.15 | 20060922 | 94.50754 | 101.48576 | 177.73299 | 4.79972 | 0.2350269 | 2.3126221 | 35 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 95674 | 2005 $GR_{180}$ |
| 2005 $GJ_{181}$ | 16.0 | 0.15 | 20060922 | 60.94634 | 66.48294 | 180.37565 | 10.10974 | 0.0982385 | 3.0455248 | 31 | 3 | 2000–2006 | 0.27 | M-v | 1 | MPC | 03694 | 2005 $GJ_{181}$ |
| 2005 $GN_{181}$ | 16.1 | 0.15 | 20060922 | 246.51317 | 248.49633 | 182.26727 | 8.42877 | 0.1468164 | 2.5636267 | 40 | 3 | 2000–2005 | 0.44 | M-v | 2 | MPC | 86718 | 2005 $GN_{181}$ |
| 2005 $GW_{181}$ | 15.2 | 0.15 | 20060922 | 5.23106 | 298.13788 | 27.49618 | 16.12142 | 0.3487797 | 3.1580283 | 63 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04330 | 2005 $GW_{181}$ |
| 2005 $GD_{182}$ | 16.4 | 0.15 | 20060922 | 137.07390 | 239.54859 | 324.84917 | 6.42864 | 0.0701333 | 2.3920046 | 65 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 04330 | 2005 $GD_{182}$ |
| 2005 $GK_{187}$ | 16.8 | 0.15 | 20060922 | 34.12650 | 138.66548 | 145.71221 | 1.74491 | 0.1757975 | 2.4356326 | 40 | 3 | 2003–2006 | 0.33 | M-v | 2 | MPC | 03695 | 2005 $GK_{187}$ |
| 2005 $GX_{201}$ | 16.1 | 0.15 | 20060922 | 47.69187 | 241.44959 | 34.92405 | 9.93871 | 0.2202040 | 3.1748428 | 36 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04330 | 2005 $GX_{201}$ |
| 2005 $GM_{202}$ | 17.3 | 0.15 | 20060922 | 175.97734 | 132.64109 | 54.81520 | 5.66026 | 0.1238668 | 2.2426509 | 40 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 77172 | 2005 $GM_{202}$ |
| 2005 $GT_{202}$ | 17.7 | 0.15 | 20050331 | 358.43049 | 23.85653 | 186.61867 | 4.80276 | 0.1272850 | 2.2841750 | 9 | 1 | 24 days | 0.23 | | | MPC | | 2005 $GT_{202}$ |
| 2005 $GJ_{205}$ | 17.5 | 0.15 | 20060922 | 144.60484 | 352.33255 | 225.49582 | 3.48366 | 0.1423222 | 2.2957037 | 36 | 4 | 2002–2006 | 0.36 | M-v | 1 | MPC | 87668 | 2005 $GJ_{205}$ |
| 2005 $GN_{206}$ | 16.7 | 0.15 | 20050420 | 240.92426 | 310.28217 | 33.90318 | 3.63787 | 0.0882541 | 2.6481969 | 13 | 1 | 35 days | 0.46 | | | MPC | | 2005 $GN_{206}$ |
| 2005 $GJ_{207}$ | 16.2 | 0.15 | 20060922 | 21.27150 | 140.98652 | 136.67696 | 24.73076 | 0.0640408 | 3.1619822 | 20 | 2 | 1995–2005 | 0.49 | M-v | 4 | MPC | 77172 | 2005 $GJ_{207}$ |
| 2005 $GT_{210}$ | 17.1 | 0.15 | 20060922 | 306.16452 | 23.95778 | 62.73110 | 23.86656 | 0.0778794 | 1.9325120 | 40 | 4 | 1998–2006 | 0.51 | M-v | 2 | MPC | 89657 | 2005 $GT_{210}$ |
| 2005 $GF_{215}$ | 16.2 | 0.15 | 20050420 | 341.18055 | 174.01845 | 66.37538 | 8.15744 | 0.1100146 | 2.5855662 | 16 | 1 | 28 days | 0.41 | | | MPC | | 2005 $GF_{215}$ |
| 2005 $GG_{215}$ | 17.4 | 0.15 | 20050420 | 339.97587 | 67.72512 | 178.27979 | 5.81260 | 0.1963611 | 2.3941561 | 19 | 1 | 43 days | 0.57 | | | MPC | | 2005 $GG_{215}$ |
| 2005 $GH_{215}$ | 14.9 | 0.15 | 20060922 | 139.57739 | 108.64235 | 59.80622 | 12.51890 | 0.1033476 | 3.0811750 | 22 | 1 | 70 days | 0.50 | M-v | 4 | MPC | | 2005 $GH_{215}$ |
| 2005 $GK_{215}$ | 15.7 | 0.15 | 20050420 | 11.45160 | 88.71904 | 106.54780 | 10.25449 | 0.1809882 | 3.1258497 | 15 | 1 | 34 days | 0.53 | | | MPC | | 2005 $GK_{215}$ |
| 2005 HQ | 16.6 | 0.15 | 20060922 | 332.53915 | 44.42382 | 327.36183 | 2.76283 | 0.2049803 | 2.5555159 | 57 | 6 | 1998–2006 | 0.50 | M-v | 1 | MPC | 04330 | 2005 HQ |
| 2005 $HJ_1$ | 16.4 | 0.15 | 20060922 | 182.40319 | 307.60302 | 190.65727 | 2.97125 | 0.0385340 | 2.7686287 | 32 | 5 | 2000–2006 | 0.50 | M-v | 0 | MPC | 04330 | 2005 $HJ_1$ |
| 2005 $HM_1$ | 16.5 | 0.15 | 20060922 | 329.70420 | 344.90376 | 35.79087 | 8.47651 | 0.1973400 | 2.4584469 | 57 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 03695 | 2005 $HM_1$ |
| 2005 $HV_1$ | 17.1 | 0.15 | 20060922 | 102.24132 | 230.73022 | 53.55167 | 6.56363 | 0.2143932 | 2.2969506 | 67 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 97783 | 2005 $HV_1$ |
| 2005 $HF_2$ | 17.9 | 0.15 | 20060922 | 98.47360 | 81.97248 | 210.10373 | 5.57222 | 0.2244182 | 2.2845973 | 55 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 77174 | 2005 $HF_2$ |
| 2005 $HG_2$ | 15.8 | 0.15 | 20060922 | 52.51873 | 140.65069 | 148.06885 | 5.60183 | 0.1375149 | 2.7160641 | 67 | 3 | 2004–2006 | 0.49 | M-v | 2 | MPC | 04330 | 2005 $HG_2$ |
| 2005 $HM_2$ | 17.6 | 0.15 | 20060922 | 103.68877 | 80.99441 | 178.15515 | 2.07591 | 0.1880067 | 2.3897970 | 63 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 77174 | 2005 $HM_2$ |
| 2005 $HN_2$ | 17.4 | 0.15 | 20060922 | 159.59376 | 119.51840 | 54.39125 | 1.81965 | 0.1306465 | 2.4671796 | 30 | 4 | 1995–2005 | 0.51 | M-v | 2 | MPC | 86720 | 2005 $HN_2$ |
| 2005 $HO_2$ | 17.3 | 0.15 | 20060922 | 121.38446 | 203.98413 | 32.33452 | 1.52907 | 0.1475840 | 2.3721061 | 48 | 5 | 1999–2006 | 0.42 | M-v | 1 | MPC | 77175 | 2005 $HO_2$ |
| 2005 $HP_3$ | 15.7 | 0.15 | 20060922 | 127.48742 | 349.37503 | 229.83689 | 13.33115 | 0.2107969 | 2.6318298 | 71 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 87668 | 2005 $HP_3$ |
| 2005 $HQ_3$ | 15.5 | 0.15 | 20060922 | 102.11656 | 263.57756 | 343.82249 | 3.03191 | 0.2243483 | 2.6192330 | 60 | 5 | 1992–2006 | 0.43 | M-v | 1 | MPC | 04330 | 2005 $HQ_3$ |
| 2005 $HT_3$ | 16.2 | 0.15 | 20060922 | 358.89721 | 189.16580 | 161.74895 | 6.10647 | 0.1373969 | 2.3932946 | 91 | 2 | 2005–2006 | 0.43 | M-v | 3 | MPC | 03696 | 2005 $HT_3$ |
| 2005 $HA_4$ | 16.0 | 0.15 | 20060922 | 123.96319 | 282.36227 | 297.00225 | 2.86861 | 0.1385164 | 2.6197587 | 69 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 03696 | 2005 $HA_4$ |
| 2005 $HK_4$ | 14.9 | 0.15 | 20060922 | 80.90701 | 345.69946 | 252.92398 | 10.89206 | 0.0802230 | 3.0334418 | 47 | 6 | 2000–2006 | 0.47 | M-v | 1 | MPC | 04330 | 2005 $HK_4$ |
| 2005 $HO_4$ | 17.5 | 0.15 | 20060922 | 91.60618 | 215.44037 | 78.28500 | 3.63214 | 0.2298478 | 2.2862774 | 46 | 5 | 1998–2006 | 0.29 | M-v | 0 | MPC | 86721 | 2005 $HO_4$ |
| 2005 $HW_4$ | 16.5 | 0.15 | 20060922 | 87.33668 | 123.87163 | 150.16655 | 4.76401 | 0.2649005 | 2.6374844 | 49 | 4 | 1996–2006 | 0.39 | M-v | 1 | MPC | 87669 | 2005 $HW_4$ |
| 2005 $HX_4$ | 16.8 | 0.15 | 20060922 | 96.14681 | 176.11872 | 116.20526 | 4.75506 | 0.1135292 | 2.2065210 | 53 | 6 | 1994–2006 | 0.65 | M-v | 1 | MPC | 04330 | 2005 $HX_4$ |
| 2005 $HN_5$ | 16.1 | 0.15 | 20060922 | 72.66209 | 169.06359 | 122.25830 | 3.82143 | 0.1760402 | 2.6037183 | 51 | 3 | 2004–2006 | 0.38 | M-v | 2 | MPC | 77179 | 2005 $HN_5$ |
| 2005 $HP_5$ | 17.0 | 0.15 | 20060922 | 133.43779 | 58.39966 | 180.68177 | 2.91312 | 0.1746051 | 2.3210940 | 57 | 4 | 2001–2006 | 0.36 | M-v | 1 | MPC | 86721 | 2005 $HP_5$ |
| 2005 $HX_5$ | 17.0 | 0.15 | 20060922 | 17.23514 | 195.28479 | 159.43875 | 7.88858 | 0.1957027 | 2.5783118 | 60 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 00951 | 2005 $HX_5$ |
| 2005 $HZ_5$ | 17.5 | 0.15 | 20060922 | 193.76676 | 24.35118 | 132.60650 | 6.19428 | 0.2010289 | 2.3527838 | 31 | 3 | 2001–2005 | 0.42 | M-v | 2 | MPC | 77179 | 2005 $HZ_5$ |
| 2005 $HH_6$ | 17.3 | 0.15 | 20060922 | 103.61864 | 109.69599 | 151.09532 | 5.85967 | 0.0385136 | 2.5211874 | 35 | 5 | 1998–2006 | 0.38 | M-v | 0 | MPC | 87669 | 2005 $HH_6$ |
| 2005 $HJ_6$ | 17.1 | 0.15 | 20060922 | 86.49005 | 213.43967 | 92.84231 | 8.34789 | 0.1281870 | 2.2895761 | 40 | 4 | 2002–2006 | 0.33 | M-v | 0 | MPC | 03696 | 2005 $HJ_6$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $HO_6$ | 17.1 | 0.15 | 20060922 | 121.24657 | 91.14307 | 169.50147 | 6.05519 | 0.0779237 | 2.2954221 | 41 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 77180 | 2005 $HO_6$ |
| 2005 $HG_7$ | 16.9 | 0.15 | 20060922 | 203.95407 | 116.69150 | 35.06739 | 6.34628 | 0.1049992 | 2.2527961 | 39 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 77181 | 2005 $HG_7$ |
| 2005 $HH_7$ | 17.4 | 0.15 | 20060922 | 82.61835 | 99.93967 | 167.08015 | 1.56735 | 0.1364178 | 2.3863916 | 33 | 4 | 2002–2006 | 0.28 | M-v | 1 | MPC | 95676 | 2005 $HH_7$ |
| 2005 $HV_7$ | 16.8 | 0.15 | 20060922 | 92.47950 | 178.20220 | 101.52021 | 5.16674 | 0.0959679 | 2.3198044 | 41 | 4 | 1998–2006 | 0.32 | M-v | 1 | MPC | 02250 | 2005 $HV_7$ |
| 2005 $HX_7$ | 16.2 | 0.15 | 20060922 | 86.55889 | 164.74943 | 121.16961 | 6.02854 | 0.1925361 | 2.4085966 | 29 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 77181 | 2005 $HX_7$ |
| 2005 $HG_9$ | 16.0 | 0.15 | 20050510 | 350.84490 | 124.42472 | 119.49351 | 9.26977 | 0.0731064 | 3.0018379 | 18 | 1 | 58 days | 0.28 | | | MPC | | 2005 $HG_9$ |
| 2005 $HH_9$ | 16.8 | 0.15 | 20050510 | 309.27788 | 223.82125 | 73.88243 | 14.83140 | 0.1572473 | 2.7028455 | 14 | 1 | 47 days | 0.59 | | | MPC | | 2005 $HH_9$ |
| 2005 $HJ_9$ | 17.6 | 0.15 | 20050510 | 356.07293 | 145.45735 | 91.50493 | 8.56366 | 0.1319834 | 2.4298301 | 15 | 1 | 56 days | 0.30 | | | MPC | | 2005 $HJ_9$ |
| 2005 $HK_9$ | 16.4 | 0.15 | 20050530 | 176.06603 | 326.72962 | 92.24063 | 13.11046 | 0.1094827 | 2.8117417 | 18 | 1 | 44 days | 0.31 | | | MPC | | 2005 $HK_9$ |
| 2005 JC | 16.3 | 0.15 | 20060922 | 193.96217 | 42.28818 | 106.59655 | 9.26584 | 0.1243489 | 2.5371751 | 52 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 77181 | 2005 JC |
| 2005 JE | 16.7 | 0.15 | 20060922 | 142.19872 | 258.49732 | 305.36743 | 5.03717 | 0.0716603 | 2.5397507 | 31 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 04331 | 2005 JE |
| 2005 JF | 16.7 | 0.15 | 20060922 | 125.31522 | 206.55542 | 50.49449 | 6.33486 | 0.2165306 | 2.3497655 | 46 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 86722 | 2005 JF |
| 2005 JG | 16.6 | 0.15 | 20060922 | 113.88822 | 23.54506 | 242.55998 | 12.14239 | 0.1886817 | 2.4037475 | 61 | 4 | 2001–2006 | 0.35 | M-v | 1 | MPC | 89658 | 2005 JG |
| 2005 JH | 15.5 | 0.15 | 20060922 | 143.85015 | 319.22241 | 243.52066 | 18.47115 | 0.1301910 | 2.6451808 | 66 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 89658 | 2005 JH |
| 2005 JS | 17.3 | 0.15 | 20060922 | 128.71006 | 57.47028 | 190.30865 | 8.26481 | 0.1894158 | 2.2978749 | 56 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 89658 | 2005 JS |
| 2005 JT | 16.5 | 0.15 | 20060922 | 102.26465 | 120.26747 | 125.36880 | 4.63298 | 0.2476826 | 2.6842777 | 64 | 6 | 1983–2006 | 0.50 | M-v | 1 | MPC | 87669 | 2005 JT |
| 2005 JU | 16.5 | 0.15 | 20060922 | 118.13783 | 91.75188 | 138.17548 | 5.04138 | 0.1198760 | 2.5880170 | 56 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 04331 | 2005 JU |
| 2005 JV | 17.6 | 0.15 | 20060922 | 131.42914 | 139.71948 | 107.27734 | 6.28000 | 0.0394140 | 2.2419659 | 40 | 4 | 2001–2005 | 0.31 | M-v | 1 | MPC | 89658 | 2005 JV |
| 2005 JW | 16.2 | 0.15 | 20060922 | 132.93714 | 55.66652 | 156.25405 | 5.89718 | 0.0947074 | 2.5758137 | 55 | 5 | 1998–2006 | 0.54 | M-v | 2 | MPC | 77183 | 2005 JW |
| 2005 JX | 15.6 | 0.15 | 20060922 | 101.26458 | 85.45453 | 148.72024 | 6.38398 | 0.0446610 | 2.7817517 | 60 | 6 | 2000–2006 | 0.51 | M-v | 0 | MPC | 04331 | 2005 JX |
| 2005 $JM_1$ | 15.7 | 0.15 | 20060922 | 78.85448 | 42.26429 | 221.64619 | 16.21755 | 0.4216798 | 3.0555606 | 93 | 3 | 2000–2006 | 0.45 | M-v | 1 | MPC | 87669 | 2005 $JM_1$ |
| 2005 $JW_1$ | 17.4 | 0.15 | 20060922 | 358.29586 | 235.86169 | 123.80437 | 4.43002 | 0.1866872 | 2.1698590 | 61 | 4 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04331 | 2005 $JW_1$ |
| 2005 $JY_1$ | 17.1 | 0.15 | 20060922 | 299.82687 | 35.89804 | 73.88486 | 24.03343 | 0.0461518 | 1.9101766 | 67 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 77185 | 2005 $JY_1$ |
| 2005 $JM_2$ | 16.4 | 0.15 | 20060922 | 26.60801 | 284.82776 | 22.88814 | 6.20075 | 0.1099089 | 2.5781407 | 38 | 3 | 2003–2006 | 0.32 | M-v | 3 | MPC | 03696 | 2005 $JM_2$ |
| 2005 $JR_2$ | 17.2 | 0.15 | 20060922 | 119.18736 | 44.23096 | 214.52599 | 3.85770 | 0.2403605 | 2.3284755 | 69 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 89659 | 2005 $JR_2$ |
| 2005 $JE_3$ | 17.1 | 0.15 | 20060922 | 113.28926 | 195.52302 | 78.69273 | 3.65109 | 0.2272464 | 2.3323528 | 66 | 5 | 1995–2006 | 0.47 | M-v | 1 | MPC | 87669 | 2005 $JE_3$ |
| 2005 $JT_3$ | 15.6 | 0.15 | 20060922 | 100.82306 | 281.08873 | 290.94858 | 6.73974 | 0.1651996 | 3.0843673 | 36 | 3 | 2003–2006 | 0.48 | M-v | 3 | MPC | 77186 | 2005 $JT_3$ |
| 2005 $JU_3$ | 15.9 | 0.15 | 20060922 | 64.10728 | 282.15724 | 338.78241 | 7.07748 | 0.1898518 | 3.1636307 | 27 | 2 | 2005–2006 | 0.30 | M-v | 3 | MPC | 03697 | 2005 $JU_3$ |
| 2005 $JW_3$ | 14.9 | 0.15 | 20060922 | 219.01356 | 35.45878 | 30.53593 | 13.01813 | 0.1645209 | 2.8489484 | 37 | 2 | 2003–2005 | 0.60 | M-v | 3 | MPC | 03697 | 2005 $JW_3$ |
| 2005 $JA_4$ | 16.9 | 0.15 | 20060922 | 90.49795 | 191.98543 | 68.26755 | 3.28125 | 0.1693769 | 2.4225283 | 48 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 97784 | 2005 $JA_4$ |
| 2005 $JE_4$ | 17.4 | 0.15 | 20060922 | 152.72465 | 1.43575 | 210.28012 | 3.76782 | 0.1926911 | 2.3525655 | 61 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 77186 | 2005 $JE_4$ |
| 2005 $JF_4$ | 15.9 | 0.15 | 20060922 | 132.16703 | 345.25023 | 228.73193 | 11.13978 | 0.1335160 | 2.6619282 | 58 | 4 | 1998–2006 | 0.37 | M-v | 3 | MPC | 89659 | 2005 $JF_4$ |
| 2005 $JK_4$ | 16.7 | 0.15 | 20060922 | 105.23171 | 212.69941 | 82.56312 | 5.97171 | 0.1443841 | 2.2145034 | 41 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 90214 | 2005 $JK_4$ |
| 2005 $JL_4$ | 15.9 | 0.15 | 20060922 | 74.51947 | 119.59021 | 180.29660 | 4.27261 | 0.2059606 | 2.5915425 | 94 | 5 | 1993–2006 | 0.45 | M-v | 0 | MPC | 87669 | 2005 $JL_4$ |
| 2005 $JQ_4$ | 16.7 | 0.15 | 20060922 | 41.84461 | 184.71645 | 143.57706 | 13.54858 | 0.1836402 | 2.6921809 | 25 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 77188 | 2005 $JQ_4$ |
| 2005 $JU_4$ | 15.4 | 0.15 | 20060922 | 97.70322 | 143.12115 | 107.18051 | 15.65807 | 0.0551353 | 2.7019235 | 55 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 87669 | 2005 $JU_4$ |
| 2005 $JZ_4$ | 15.7 | 0.15 | 20060922 | 78.55942 | 124.73123 | 121.24798 | 7.17213 | 0.0930921 | 3.0869329 | 31 | 4 | 1994–2006 | 0.31 | M-v | 0 | MPC | 03697 | 2005 $JZ_4$ |
| 2005 $JK_5$ | 17.4 | 0.15 | 20060922 | 66.44719 | 116.06515 | 215.05778 | 21.42949 | 0.0780644 | 1.9488594 | 30 | 4 | 1995–2006 | 0.48 | M-v | 2 | MPC | 89660 | 2005 $JK_5$ |
| 2005 $JX_6$ | 17.3 | 0.15 | 20060922 | 328.44734 | 348.33084 | 33.06117 | 7.26223 | 0.1464697 | 2.3694682 | 20 | 3 | 2003–2006 | 0.31 | M-v | 4 | MPC | 03697 | 2005 $JX_6$ |
| 2005 $JD_9$ | 17.8 | 0.15 | 20060922 | 0.58508 | 169.67070 | 191.33603 | 0.93043 | 0.1963633 | 2.3741813 | 69 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 89660 | 2005 $JD_9$ |
| 2005 $JW_{10}$ | 16.2 | 0.15 | 20060922 | 275.49128 | 4.05194 | 45.74001 | 3.30934 | 0.0787707 | 2.6574169 | 29 | 4 | 1999–2005 | 0.71 | M-v | 1 | MPC | 89660 | 2005 $JW_{10}$ |
| 2005 $JQ_{11}$ | 16.0 | 0.15 | 20060922 | 9.95296 | 274.62132 | 35.51914 | 2.19603 | 0.1203824 | 3.0552079 | 35 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 03697 | 2005 $JQ_{11}$ |
| 2005 $JZ_{13}$ | 16.0 | 0.15 | 20060922 | 124.37689 | 216.33041 | 352.86335 | 9.87916 | 0.0769830 | 2.5940595 | 40 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 04331 | 2005 $JZ_{13}$ |
| 2005 $JG_{14}$ | 16.0 | 0.15 | 20060922 | 97.64811 | 8.93713 | 220.83305 | 1.82670 | 0.1249050 | 2.7617730 | 37 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04331 | 2005 $JG_{14}$ |
| 2005 $JC_{15}$ | 17.1 | 0.15 | 20060922 | 95.79538 | 148.37490 | 125.69889 | 3.56347 | 0.1834757 | 2.3948187 | 29 | 5 | 1995–2006 | 0.31 | M-v | 0 | MPC | 00951 | 2005 $JC_{15}$ |
| 2005 $JT_{15}$ | 16.9 | 0.15 | 20060922 | 206.90529 | 101.79711 | 60.90469 | 3.41225 | 0.0981751 | 2.2022656 | 47 | 5 | 1995–2006 | 0.48 | M-v | 1 | MPC | 86723 | 2005 $JT_{15}$ |
| 2005 $JA_{16}$ | 16.4 | 0.15 | 20060922 | 232.38295 | 29.81113 | 74.59462 | 1.37204 | 0.1087000 | 2.5659702 | 31 | 5 | 1999–2006 | 0.29 | M-v | 1 | MPC | 86724 | 2005 $JA_{16}$ |
| 2005 $JC_{16}$ | 17.0 | 0.15 | 20060922 | 118.50499 | 190.44035 | 63.92794 | 6.90010 | 0.2331694 | 2.3384233 | 39 | 1 | 71 days | 0.46 | M-v | 4 | MPC | 77880 | 2005 $JC_{16}$ |
| 2005 $JA_{17}$ | 16.9 | 0.15 | 20060922 | 159.37354 | 248.47614 | 311.47221 | 5.10907 | 0.1229029 | 2.2680199 | 30 | 5 | 1996–2006 | 0.59 | M-v | 2 | MPC | 86724 | 2005 $JA_{17}$ |
| 2005 $JC_{17}$ | 17.3 | 0.15 | 20060922 | 122.06373 | 209.27393 | 47.07306 | 10.24716 | 0.1854177 | 2.3116845 | 77 | 3 | 1999–2006 | 0.36 | M-v | 3 | MPC | 77191 | 2005 $JC_{17}$ |
| 2005 $JE_{17}$ | 16.7 | 0.15 | 20060922 | 87.60863 | 81.31915 | 224.84392 | 6.73480 | 0.2942806 | 2.3757257 | 60 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 97784 | 2005 $JE_{17}$ |
| 2005 $JL_{17}$ | 16.7 | 0.15 | 20060922 | 83.95591 | 84.69557 | 177.70846 | 12.91721 | 0.1627034 | 2.6234823 | 34 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 03698 | 2005 $JL_{17}$ |
| 2005 $JN_{17}$ | 16.2 | 0.15 | 20060922 | 63.67219 | 232.84320 | 77.02797 | 12.97639 | 0.3159419 | 2.5561033 | 40 | 5 | 1997–2006 | 0.39 | M-v | 1 | MPC | 77192 | 2005 $JN_{17}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $JS_{17}$ | 16.6 | 0.15 | 20060922 | 261.52022 | 351.73010 | 106.53164 | 7.87958 | 0.0645385 | 2.3595696 | 45 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 77192 | 2005 $JS_{17}$ |
| 2005 $JV_{17}$ | 16.8 | 0.15 | 20060922 | 358.35993 | 345.26506 | 357.22958 | 0.26426 | 0.0651140 | 2.6926468 | 35 | 5 | 2000–2006 | 0.38 | M-v | 1 | MPC | 04331 | 2005 $JV_{17}$ |
| 2005 $JZ_{17}$ | 16.5 | 0.15 | 20060922 | 0.05184 | 322.03592 | 43.13789 | 4.98472 | 0.1149600 | 2.3870664 | 59 | 5 | 2001–2006 | 0.52 | M-v | 1 | MPC | 95676 | 2005 $JZ_{17}$ |
| 2005 $JQ_{19}$ | 16.2 | 0.15 | 20060922 | 43.05249 | 137.34364 | 163.05137 | 6.55368 | 0.1895489 | 2.9935041 | 55 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 04331 | 2005 $JQ_{19}$ |
| 2005 $JR_{19}$ | 16.7 | 0.15 | 20060922 | 84.03560 | 272.65833 | 35.39105 | 1.42782 | 0.1326114 | 2.1877218 | 73 | 5 | 1998–2006 | 0.39 | M-v | 0 | MPC | 77193 | 2005 $JR_{19}$ |
| 2005 $JS_{19}$ | 15.8 | 0.15 | 20060922 | 63.45750 | 189.80390 | 88.64103 | 14.83508 | 0.0651846 | 2.6316992 | 40 | 4 | 2002–2006 | 0.76 | M-v | 1 | MPC | 04331 | 2005 $JS_{19}$ |
| 2005 $JJ_{20}$ | 15.6 | 0.15 | 20060922 | 82.99796 | 64.97700 | 174.25347 | 13.90351 | 0.2475160 | 3.1756431 | 63 | 5 | 1999–2006 | 0.54 | M-v | 0 | MPC | 04331 | 2005 $JJ_{20}$ |
| 2005 $JP_{20}$ | 17.3 | 0.15 | 20060922 | 176.75342 | 168.84515 | 69.46346 | 22.43284 | 0.0408933 | 1.9026906 | 30 | 3 | 1998–2006 | 0.53 | M-v | 3 | MPC | 77193 | 2005 $JP_{20}$ |
| 2005 $JR_{20}$ | 15.6 | 0.15 | 20060922 | 73.67652 | 186.27474 | 95.69666 | 13.00793 | 0.1430254 | 2.6171238 | 59 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 77193 | 2005 $JR_{20}$ |
| 2005 $JV_{20}$ | 15.9 | 0.15 | 20060922 | 117.88286 | 28.72364 | 163.25163 | 12.70169 | 0.1056446 | 3.0468692 | 30 | 6 | 1999–2006 | 0.55 | M-v | 0 | MPC | 89661 | 2005 $JV_{20}$ |
| 2005 $JJ_{21}$ | 15.9 | 0.15 | 20060922 | 78.47973 | 319.63852 | 283.61053 | 0.78529 | 0.1098171 | 3.0366196 | 47 | 4 | 1994–2006 | 0.37 | M-v | 0 | MPC | 04331 | 2005 $JJ_{21}$ |
| 2005 $JO_{21}$ | 17.6 | 0.15 | 20060922 | 123.99229 | 242.62483 | 357.52233 | 1.88928 | 0.1620227 | 2.3962002 | 50 | 5 | 1999–2006 | 0.44 | M-v | 1 | MPC | 77195 | 2005 $JO_{21}$ |
| 2005 $JS_{21}$ | 17.8 | 0.15 | 20060922 | 147.67968 | 242.83799 | 336.57621 | 0.56121 | 0.1302449 | 2.3156323 | 45 | 5 | 2001–2006 | 0.36 | M-v | 1 | MPC | 00951 | 2005 $JS_{21}$ |
| 2005 $JV_{21}$ | 15.9 | 0.15 | 20060922 | 167.28231 | 345.97422 | 186.97591 | 13.37093 | 0.0621319 | 2.5952300 | 73 | 4 | 1998–2006 | 0.49 | M-v | 3 | MPC | 04331 | 2005 $JV_{21}$ |
| 2005 $JC_{22}$ | 15.8 | 0.15 | 20060922 | 33.06054 | 101.71396 | 225.53597 | 12.26100 | 0.2275716 | 2.7567368 | 128 | 2 | 2005–2006 | 0.50 | M-v | 3 | MPC | 03698 | 2005 $JC_{22}$ |
| 2005 $JS_{22}$ | 16.7 | 0.15 | 20060922 | 82.50239 | 305.02693 | 340.14776 | 4.95449 | 0.1599099 | 2.2996305 | 69 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 86725 | 2005 $JS_{22}$ |
| 2005 $JV_{22}$ | 16.6 | 0.15 | 20060922 | 179.16579 | 336.76581 | 200.60703 | 3.64976 | 0.1091417 | 2.3602059 | 43 | 6 | 1992–2006 | 0.47 | M-v | 1 | MPC | 77197 | 2005 $JV_{22}$ |
| 2005 $JO_{23}$ | 17.4 | 0.15 | 20060922 | 184.99388 | 7.32625 | 208.48391 | 21.35912 | 0.0762258 | 1.8927275 | 37 | 4 | 2000–2006 | 0.42 | M-v | 2 | MPC | 77197 | 2005 $JO_{23}$ |
| 2005 $JP_{23}$ | 16.1 | 0.15 | 20060922 | 358.27594 | 143.40930 | 207.18640 | 7.98977 | 0.2189466 | 2.4171263 | 84 | 3 | 1995–2006 | 0.43 | M-v | 2 | MPC | 04332 | 2005 $JP_{23}$ |
| 2005 $JA_{25}$ | 17.6 | 0.15 | 20060922 | 97.37235 | 114.00503 | 166.76636 | 1.33857 | 0.1712022 | 2.3564034 | 40 | 4 | 2001–2006 | 0.37 | M-v | 1 | MPC | 77198 | 2005 $JA_{25}$ |
| 2005 $JC_{25}$ | 16.3 | 0.15 | 20060922 | 159.57853 | 344.84448 | 215.80487 | 6.39587 | 0.0502379 | 2.3660438 | 68 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 77198 | 2005 $JC_{25}$ |
| 2005 $JG_{25}$ | 16.5 | 0.15 | 20060922 | 36.41267 | 215.74228 | 71.94018 | 2.67680 | 0.0877393 | 3.1437305 | 34 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 04332 | 2005 $JG_{25}$ |
| 2005 $JH_{25}$ | 17.1 | 0.15 | 20060922 | 110.50375 | 203.07502 | 59.31685 | 4.06988 | 0.1363334 | 2.3462709 | 55 | 5 | 1995–2006 | 0.37 | M-v | 1 | MPC | 86726 | 2005 $JH_{25}$ |
| 2005 $JU_{25}$ | 17.9 | 0.15 | 20060922 | 262.02167 | 87.61119 | 55.63653 | 23.28479 | 0.0450456 | 1.8608344 | 49 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 86726 | 2005 $JU_{25}$ |
| 2005 $JW_{25}$ | 16.8 | 0.15 | 20060922 | 25.19751 | 202.95729 | 127.15958 | 5.97003 | 0.1144853 | 2.7218917 | 38 | 3 | 2004–2006 | 0.43 | M-v | 2 | MPC | 86726 | 2005 $JW_{25}$ |
| 2005 $JB_{26}$ | 16.3 | 0.15 | 20060922 | 70.42855 | 139.00340 | 133.70696 | 5.95378 | 0.0462632 | 2.7686121 | 28 | 4 | 2002–2006 | 0.50 | M-v | 0 | MPC | 04332 | 2005 $JB_{26}$ |
| 2005 $JF_{26}$ | 17.0 | 0.15 | 20060922 | 180.27503 | 17.87091 | 162.72564 | 5.04564 | 0.1759443 | 2.2855509 | 65 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 87670 | 2005 $JF_{26}$ |
| 2005 $JG_{26}$ | 15.8 | 0.15 | 20060922 | 61.42141 | 187.69658 | 95.11349 | 8.14569 | 0.2081270 | 3.0115170 | 48 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 87670 | 2005 $JG_{26}$ |
| 2005 $JM_{26}$ | 16.6 | 0.15 | 20060922 | 310.68316 | 240.40935 | 182.98587 | 6.52097 | 0.0830728 | 2.2796622 | 83 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 04332 | 2005 $JM_{26}$ |
| 2005 $JK_{27}$ | 16.5 | 0.15 | 20060922 | 146.66760 | 141.56388 | 91.86163 | 4.68012 | 0.1048229 | 2.2029692 | 67 | 6 | 1995–2006 | 0.66 | M-v | 2 | MPC | 87670 | 2005 $JK_{27}$ |
| 2005 $JL_{27}$ | 16.7 | 0.15 | 20060922 | 95.85087 | 194.67552 | 80.48583 | 7.54291 | 0.1193054 | 2.3931148 | 35 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 86727 | 2005 $JL_{27}$ |
| 2005 $JM_{27}$ | 16.0 | 0.15 | 20060922 | 157.19480 | 81.22496 | 90.82769 | 4.16364 | 0.1938062 | 2.5987785 | 45 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 77201 | 2005 $JM_{27}$ |
| 2005 $JQ_{27}$ | 15.7 | 0.15 | 20060922 | 116.05158 | 66.92884 | 150.68406 | 19.20232 | 0.0829105 | 2.7525663 | 31 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 04332 | 2005 $JQ_{27}$ |
| 2005 $JE_{28}$ | 17.0 | 0.15 | 20060922 | 112.56501 | 89.88542 | 164.81751 | 3.34148 | 0.1677024 | 2.4010078 | 49 | 5 | 1997–2006 | 0.38 | M-v | 0 | MPC | 77201 | 2005 $JE_{28}$ |
| 2005 $JL_{28}$ | 16.0 | 0.15 | 20060922 | 80.41051 | 147.07543 | 128.50116 | 9.00655 | 0.2210686 | 2.7960254 | 56 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 86727 | 2005 $JL_{28}$ |
| 2005 $JS_{28}$ | 17.3 | 0.15 | 20060922 | 322.91693 | 228.31864 | 186.76266 | 10.09134 | 0.0844303 | 2.3338566 | 38 | 5 | 2001–2006 | 0.26 | M-v | 0 | MPC | 00952 | 2005 $JS_{28}$ |
| 2005 $JW_{28}$ | 17.5 | 0.15 | 20060922 | 126.57960 | 91.84296 | 167.23050 | 7.30144 | 0.1234131 | 2.2645077 | 29 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 86727 | 2005 $JW_{28}$ |
| 2005 $JA_{29}$ | 15.1 | 0.15 | 20060922 | 262.44784 | 289.28119 | 134.44995 | 9.00791 | 0.0338582 | 3.1524953 | 31 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 87670 | 2005 $JA_{29}$ |
| 2005 $JE_{29}$ | 15.1 | 0.15 | 20060922 | 69.39976 | 56.67316 | 204.02726 | 15.90781 | 0.0977462 | 3.1819697 | 37 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87670 | 2005 $JE_{29}$ |
| 2005 $JN_{29}$ | 16.3 | 0.15 | 20060922 | 145.19594 | 164.75355 | 66.34177 | 25.05928 | 0.1888695 | 2.3077192 | 64 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 87670 | 2005 $JN_{29}$ |
| 2005 $JQ_{29}$ | 16.0 | 0.15 | 20060922 | 119.80418 | 53.10064 | 177.76848 | 3.44316 | 0.1735953 | 2.5954025 | 89 | 3 | 1993–2006 | 0.38 | M-v | 3 | MPC | 87670 | 2005 $JQ_{29}$ |
| 2005 $JR_{29}$ | 16.2 | 0.15 | 20060922 | 129.81004 | 124.83211 | 106.39071 | 3.07585 | 0.1294747 | 2.4635464 | 65 | 4 | 1994–2006 | 0.60 | M-v | 1 | MPC | 87670 | 2005 $JR_{29}$ |
| 2005 $JS_{29}$ | 15.3 | 0.15 | 20060922 | 84.63448 | 185.07833 | 76.84162 | 10.37555 | 0.0928225 | 2.7693218 | 80 | 6 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87670 | 2005 $JS_{29}$ |
| 2005 $JG_{30}$ | 15.2 | 0.15 | 20060922 | 288.13489 | 192.95162 | 187.88905 | 8.07410 | 0.0814777 | 2.7305042 | 42 | 3 | 1996–2005 | 0.53 | M-v | 3 | MPC | 95677 | 2005 $JG_{30}$ |
| 2005 $JO_{30}$ | 16.7 | 0.15 | 20060922 | 77.44898 | 124.13781 | 164.23029 | 3.85689 | 0.1854800 | 2.5580079 | 41 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 86727 | 2005 $JO_{30}$ |
| 2005 $JQ_{30}$ | 16.7 | 0.15 | 20060922 | 101.29975 | 317.79131 | 308.59299 | 6.08059 | 0.1113143 | 2.2999595 | 31 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 86728 | 2005 $JQ_{30}$ |
| 2005 $JR_{30}$ | 15.3 | 0.15 | 20060922 | 56.63029 | 106.13446 | 211.27064 | 11.62913 | 0.2812341 | 2.6326907 | 88 | 3 | 2001–2006 | 0.52 | M-v | 1 | MPC | 86728 | 2005 $JR_{30}$ |
| 2005 $JU_{30}$ | 16.1 | 0.15 | 20060922 | 48.34742 | 91.39495 | 215.77176 | 14.42959 | 0.1113118 | 2.5913221 | 64 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 87670 | 2005 $JU_{30}$ |
| 2005 $JV_{30}$ | 16.4 | 0.15 | 20060922 | 58.60712 | 128.64458 | 181.40890 | 3.97562 | 0.2415825 | 2.6136954 | 61 | 4 | 1993–2006 | 0.47 | M-v | 0 | MPC | 77205 | 2005 $JV_{30}$ |
| 2005 $JM_{31}$ | 16.5 | 0.15 | 20060922 | 80.22676 | 5.12161 | 278.61603 | 7.12131 | 0.2364320 | 2.5500118 | 31 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87670 | 2005 $JM_{31}$ |
| 2005 $JP_{31}$ | 15.6 | 0.15 | 20060922 | 50.29354 | 272.78363 | 38.29191 | 14.37505 | 0.2121036 | 2.7204824 | 146 | 5 | 1997–2006 | 0.49 | M-v | 0 | MPC | 87670 | 2005 $JP_{31}$ |
| 2005 $JT_{31}$ | 17.1 | 0.15 | 20060922 | 127.60963 | 357.88005 | 245.04718 | 5.26543 | 0.1440162 | 2.3082489 | 49 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 77205 | 2005 $JT_{31}$ |
| 2005 $JY_{32}$ | 16.9 | 0.15 | 20060922 | 108.97990 | 113.56462 | 129.90132 | 4.70148 | 0.1568252 | 2.5674181 | 32 | 3 | 2002–2006 | 0.61 | M-v | 3 | MPC | 86728 | 2005 $JY_{32}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $JA_{33}$ | 16.0 | 0.15 | 20050420 | 314.68530 | 127.05680 | 161.38697 | 14.27290 | 0.2760355 | 3.1060762 | 12 | 1 | 26 days | 0.47 | | | MPC | | 2005 $JA_{33}$ |
| 2005 $JB_{33}$ | 16.8 | 0.15 | 20060922 | 105.68178 | 69.53202 | 167.85754 | 14.93530 | 0.0629549 | 2.5783234 | 44 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 04332 | 2005 $JB_{33}$ |
| 2005 $JH_{34}$ | 16.9 | 0.15 | 20060922 | 83.55551 | 232.89880 | 97.17180 | 8.72420 | 0.2447937 | 2.2192866 | 49 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 87671 | 2005 $JH_{34}$ |
| 2005 $JX_{34}$ | 16.4 | 0.15 | 20060922 | 91.10437 | 238.05778 | 34.60873 | 8.79105 | 0.1762271 | 2.5283690 | 58 | 4 | 1994–2006 | 0.42 | M-v | 3 | MPC | 87671 | 2005 $JX_{34}$ |
| 2005 $JC_{35}$ | 17.1 | 0.15 | 20060922 | 158.43248 | 67.16438 | 156.10167 | 5.25221 | 0.1164789 | 2.2506156 | 37 | 3 | 2002–2006 | 0.24 | M-v | 3 | MPC | 87671 | 2005 $JC_{35}$ |
| 2005 $JS_{35}$ | 15.6 | 0.15 | 20060922 | 328.20808 | 287.87352 | 86.00098 | 13.62832 | 0.1182172 | 3.0363824 | 28 | 4 | 2003–2006 | 0.50 | M-v | 1 | MPC | 03699 | 2005 $JS_{35}$ |
| 2005 $JX_{35}$ | 17.8 | 0.15 | 20060922 | 108.43441 | 91.06728 | 189.81505 | 5.89288 | 0.2603514 | 2.3686401 | 47 | 4 | 1998–2006 | 0.37 | M-v | 0 | MPC | 86729 | 2005 $JX_{35}$ |
| 2005 $JZ_{35}$ | 16.8 | 0.15 | 20060922 | 331.76615 | 307.40993 | 109.02050 | 6.18441 | 0.1189008 | 2.2001405 | 59 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 87671 | 2005 $JZ_{35}$ |
| 2005 $JE_{36}$ | 16.7 | 0.15 | 20060922 | 256.54262 | 319.34909 | 143.74739 | 5.99601 | 0.1322667 | 2.3878842 | 26 | 3 | 1999–2006 | 0.21 | M-v | 2 | MPC | 03699 | 2005 $JE_{36}$ |
| 2005 $JR_{36}$ | 17.1 | 0.15 | 20060922 | 115.18917 | 122.73871 | 134.32840 | 1.99050 | 0.1584305 | 2.4250592 | 53 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 77210 | 2005 $JR_{36}$ |
| 2005 $JX_{36}$ | 15.7 | 0.15 | 20060922 | 122.37799 | 183.13412 | 78.05044 | 25.66372 | 0.2222338 | 2.3347261 | 78 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 87671 | 2005 $JX_{36}$ |
| 2005 $JA_{37}$ | 16.5 | 0.15 | 20060922 | 48.79311 | 199.61512 | 112.76712 | 15.69341 | 0.1009223 | 2.7038546 | 23 | 4 | 2001–2006 | 0.33 | M-v | 0 | MPC | 87671 | 2005 $JA_{37}$ |
| 2005 $JS_{37}$ | 18.3 | 0.15 | 20060922 | 108.52707 | 67.27600 | 188.89364 | 4.13244 | 0.1380035 | 2.2298741 | 25 | 3 | 1995–2006 | 0.35 | M-v | 2 | MPC | 86729 | 2005 $JS_{37}$ |
| 2005 $JE_{38}$ | 16.7 | 0.15 | 20060922 | 136.50442 | 302.59181 | 291.83385 | 7.83283 | 0.1347541 | 2.2183849 | 50 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 00953 | 2005 $JE_{38}$ |
| 2005 $JF_{38}$ | 15.9 | 0.15 | 20060922 | 89.59212 | 110.08159 | 170.55341 | 14.07179 | 0.1742889 | 2.6097011 | 47 | 3 | 1996–2006 | 0.31 | M-v | 2 | MPC | 87671 | 2005 $JF_{38}$ |
| 2005 $JH_{38}$ | 15.7 | 0.15 | 20060922 | 43.44324 | 109.72236 | 196.45214 | 21.50266 | 0.1370224 | 3.0876920 | 73 | 3 | 2001–2006 | 0.41 | M-v | 0 | MPC | 04332 | 2005 $JH_{38}$ |
| 2005 $JG_{39}$ | 15.9 | 0.15 | 20060922 | 53.68058 | 96.57001 | 233.76410 | 10.79711 | 0.2929654 | 2.5475708 | 45 | 4 | 1997–2006 | 0.57 | M-v | 1 | MPC | 77211 | 2005 $JG_{39}$ |
| 2005 $JB_{40}$ | 17.9 | 0.15 | 20060922 | 76.98243 | 246.93900 | 59.52685 | 3.04670 | 0.1920474 | 2.3773931 | 42 | 5 | 1994–2006 | 0.27 | M-v | 0 | MPC | 87671 | 2005 $JB_{40}$ |
| 2005 $JB_{41}$ | 16.8 | 0.15 | 20060922 | 129.51252 | 16.35940 | 214.68369 | 5.77254 | 0.0925698 | 2.4199749 | 53 | 4 | 1997–2006 | 0.36 | M-v | 2 | MPC | 87671 | 2005 $JB_{41}$ |
| 2005 $JM_{42}$ | 16.8 | 0.15 | 20060922 | 115.52570 | 94.31537 | 164.00248 | 3.29759 | 0.1224456 | 2.3091902 | 33 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 86730 | 2005 $JM_{42}$ |
| 2005 $JR_{42}$ | 16.3 | 0.15 | 20060922 | 217.17982 | 70.53095 | 84.49933 | 6.86715 | 0.1066289 | 2.1682802 | 83 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 77212 | 2005 $JR_{42}$ |
| 2005 $JW_{42}$ | 15.6 | 0.15 | 20060922 | 62.68846 | 89.85271 | 198.29929 | 7.26342 | 0.1574322 | 2.7668182 | 74 | 5 | 2000–2006 | 0.51 | M-v | 0 | MPC | 86730 | 2005 $JW_{42}$ |
| 2005 $JA_{43}$ | 16.4 | 0.15 | 20060922 | 73.26588 | 202.48375 | 94.35081 | 6.27181 | 0.2207969 | 2.5852042 | 50 | 3 | 2004–2006 | 0.42 | M-v | 2 | MPC | 89662 | 2005 $JA_{43}$ |
| 2005 $JW_{43}$ | 16.1 | 0.15 | 20060922 | 146.04284 | 326.83462 | 233.75883 | 3.98836 | 0.0468362 | 2.4741568 | 34 | 6 | 1991–2006 | 0.49 | M-v | 1 | MPC | 04332 | 2005 $JW_{43}$ |
| 2005 $JG_{44}$ | 16.8 | 0.15 | 20060922 | 72.13768 | 65.34847 | 235.26889 | 6.71022 | 0.0894164 | 2.3727516 | 56 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 87671 | 2005 $JG_{44}$ |
| 2005 $JR_{44}$ | 17.2 | 0.15 | 20060922 | 83.74003 | 192.08625 | 111.93117 | 2.26524 | 0.1933133 | 2.3623637 | 47 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 86731 | 2005 $JR_{44}$ |
| 2005 $JW_{44}$ | 16.2 | 0.15 | 20060922 | 112.77667 | 69.99054 | 151.33061 | 9.97792 | 0.0677306 | 2.6503387 | 32 | 2 | 2005–2006 | 0.64 | M-v | 3 | MPC | 03699 | 2005 $JW_{44}$ |
| 2005 $JL_{45}$ | 16.5 | 0.15 | 20060922 | 63.77102 | 239.30788 | 118.96993 | 23.58118 | 0.0885951 | 1.8972342 | 68 | 6 | 1994–2006 | 0.65 | M-v | 1 | MPC | 04332 | 2005 $JL_{45}$ |
| 2005 $JP_{45}$ | 18.3 | 0.15 | 20060922 | 344.87566 | 339.27418 | 80.02987 | 20.64902 | 0.0639574 | 1.8305856 | 23 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 77214 | 2005 $JP_{45}$ |
| 2005 $JR_{47}$ | 17.0 | 0.15 | 20060922 | 331.79439 | 185.13827 | 192.10389 | 3.35734 | 0.0138179 | 2.5354182 | 31 | 5 | 1996–2006 | 0.28 | M-v | 0 | MPC | 04332 | 2005 $JR_{47}$ |
| 2005 $JD_{48}$ | 15.3 | 0.15 | 20060922 | 55.67461 | 163.62648 | 109.99499 | 7.50567 | 0.1048679 | 3.1813329 | 40 | 4 | 2001–2006 | 0.31 | M-v | 0 | MPC | 04332 | 2005 $JD_{48}$ |
| 2005 $JX_{48}$ | 15.7 | 0.15 | 20060922 | 67.81847 | 145.60620 | 106.04381 | 6.68061 | 0.1234403 | 3.1871345 | 28 | 5 | 1998–2006 | 0.59 | M-v | 0 | MPC | 03699 | 2005 $JX_{48}$ |
| 2005 $JL_{49}$ | 17.0 | 0.15 | 20060922 | 15.61095 | 209.84546 | 127.35073 | 3.40562 | 0.0541127 | 2.5686805 | 28 | 4 | 2000–2006 | 0.72 | M-v | 1 | MPC | 77217 | 2005 $JL_{49}$ |
| 2005 $JZ_{49}$ | 16.8 | 0.15 | 20060922 | 270.86328 | 26.09698 | 67.77459 | 7.62246 | 0.1342977 | 2.2052603 | 28 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 77217 | 2005 $JZ_{49}$ |
| 2005 $JN_{50}$ | 17.1 | 0.15 | 20060922 | 313.77455 | 193.24724 | 188.41690 | 4.54987 | 0.0201062 | 2.7264261 | 25 | 3 | 2000–2006 | 0.44 | M-v | 3 | MPC | 77218 | 2005 $JN_{50}$ |
| 2005 $JF_{51}$ | 16.9 | 0.15 | 20060922 | 342.18787 | 266.68181 | 101.59762 | 3.81599 | 0.1225106 | 2.6285262 | 41 | 4 | 1998–2006 | 0.63 | M-v | 3 | MPC | 03699 | 2005 $JF_{51}$ |
| 2005 $JO_{51}$ | 16.0 | 0.15 | 20060922 | 24.89948 | 225.18289 | 79.49200 | 6.11970 | 0.1251353 | 3.1056985 | 35 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 03699 | 2005 $JO_{51}$ |
| 2005 $JP_{51}$ | 15.7 | 0.15 | 20060922 | 48.12706 | 221.98090 | 63.11143 | 6.17799 | 0.1038405 | 2.9090384 | 45 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 77218 | 2005 $JP_{51}$ |
| 2005 $JX_{51}$ | 16.8 | 0.15 | 20060922 | 66.07528 | 141.50228 | 170.87232 | 2.39104 | 0.1918052 | 2.4094933 | 23 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 77219 | 2005 $JX_{51}$ |
| 2005 $JL_{52}$ | 15.7 | 0.15 | 20060922 | 44.40413 | 182.55531 | 99.42024 | 9.55095 | 0.0530250 | 3.0622244 | 24 | 3 | 2004–2006 | 0.21 | M-v | 2 | MPC | 03700 | 2005 $JL_{52}$ |
| 2005 $JS_{52}$ | 17.9 | 0.15 | 20060922 | 155.35962 | 145.93278 | 52.29914 | 2.02684 | 0.1314847 | 2.3627179 | 19 | 1 | 60 days | 0.31 | M-v | 4 | MPC | | 2005 $JS_{52}$ |
| 2005 $JU_{54}$ | 16.4 | 0.15 | 20060922 | 185.12572 | 130.14207 | 52.59117 | 7.70594 | 0.0539557 | 2.3288018 | 55 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 77220 | 2005 $JU_{54}$ |
| 2005 $JM_{55}$ | 16.6 | 0.15 | 20060922 | 358.30124 | 176.10870 | 175.75326 | 6.39690 | 0.0478925 | 2.7664740 | 42 | 3 | 2004–2006 | 0.30 | M-v | 2 | MPC | 04333 | 2005 $JM_{55}$ |
| 2005 $JS_{55}$ | 14.9 | 0.15 | 20060922 | 31.61237 | 239.95871 | 51.17466 | 16.84016 | 0.1415642 | 3.4566717 | 27 | 3 | 1992–2006 | 0.52 | M-v | 3 | MPC | 04333 | 2005 $JS_{55}$ |
| 2005 $JW_{55}$ | 16.2 | 0.15 | 20060922 | 68.26853 | 248.13373 | 64.95651 | 8.41439 | 0.1990509 | 2.5446967 | 53 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 77220 | 2005 $JW_{55}$ |
| 2005 $JB_{56}$ | 18.0 | 0.15 | 20060922 | 105.71298 | 79.70816 | 161.68622 | 1.62603 | 0.1303889 | 2.4241791 | 36 | 4 | 1999–2006 | 0.33 | M-v | 2 | MPC | 95677 | 2005 $JB_{56}$ |
| 2005 $JL_{56}$ | 16.4 | 0.15 | 20060922 | 17.29002 | 184.79238 | 174.53586 | 13.83115 | 0.1952444 | 2.6332005 | 57 | 5 | 1993–2006 | 0.49 | M-v | 1 | MPC | 77221 | 2005 $JL_{56}$ |
| 2005 $JN_{56}$ | 16.5 | 0.15 | 20060922 | 112.82270 | 75.94840 | 157.28905 | 12.21762 | 0.0165888 | 2.7457616 | 26 | 4 | 2002–2006 | 0.36 | M-v | 1 | MPC | 03700 | 2005 $JN_{56}$ |
| 2005 $JU_{57}$ | 17.3 | 0.15 | 20060922 | 161.35682 | 246.02047 | 292.36917 | 0.85418 | 0.0111930 | 2.7014084 | 24 | 3 | 2004–2006 | 0.26 | M-v | 2 | MPC | 04333 | 2005 $JU_{57}$ |
| 2005 $JT_{58}$ | 17.0 | 0.15 | 20060922 | 1.72082 | 145.78228 | 195.70898 | 3.10868 | 0.0982208 | 2.7695179 | 37 | 4 | 2000–2006 | 0.32 | M-v | 1 | MPC | 04333 | 2005 $JT_{58}$ |
| 2005 $JC_{59}$ | 16.2 | 0.15 | 20060922 | 21.91708 | 291.32723 | 357.99341 | 0.99120 | 0.2207402 | 3.1672165 | 21 | 1 | 65 days | 0.38 | M-v | 5 D | MPC | 77888 | 2005 $JC_{59}$ |
| 2005 $JH_{59}$ | 16.1 | 0.15 | 20060922 | 50.04602 | 268.51739 | 0.78920 | 2.76713 | 0.1618305 | 2.8701382 | 32 | 2 | 2005–2006 | 0.40 | M-v | 3 | MPC | 03700 | 2005 $JH_{59}$ |
| 2005 $JU_{59}$ | 17.5 | 0.15 | 20060922 | 175.09511 | 71.27770 | 124.90854 | 4.73015 | 0.0372814 | 2.2724650 | 28 | 3 | 1994–2006 | 0.31 | M-v | 3 | MPC | 77221 | 2005 $JU_{59}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $JK_{61}$ | 16.4 | 0.15 | 20060922 | 62.69322 | 136.25478 | 141.18069 | 5.56789 | 0.1443135 | 3.0590276 | 27 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 87672 | 2005 $JK_{61}$ |
| 2005 $JG_{63}$ | 16.5 | 0.15 | 20060922 | 311.94359 | 354.88997 | 103.59327 | 24.42465 | 0.0802655 | 1.9141685 | 42 | 4 | 1993–2006 | 0.55 | M-v | 2 | MPC | 77223 | 2005 $JG_{63}$ |
| 2005 $JM_{63}$ | 15.8 | 0.15 | 20060922 | 76.58860 | 68.86590 | 181.33724 | 26.15547 | 0.2369547 | 3.1863192 | 42 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 89663 | 2005 $JM_{63}$ |
| 2005 $JH_{64}$ | 16.7 | 0.15 | 20060922 | 129.98899 | 97.88321 | 143.83934 | 7.36310 | 0.0838065 | 2.3013251 | 65 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87672 | 2005 $JH_{64}$ |
| 2005 $JK_{64}$ | 15.6 | 0.15 | 20060922 | 35.06282 | 339.86116 | 319.44930 | 13.32494 | 0.1572058 | 2.6857802 | 78 | 4 | 2000–2006 | 0.47 | M-v | 2 | MPC | 03700 | 2005 $JK_{64}$ |
| 2005 $JN_{64}$ | 15.0 | 0.15 | 20060922 | 42.45774 | 299.80037 | 323.36863 | 13.04526 | 0.1314619 | 3.1532180 | 47 | 6 | 1993–2006 | 0.34 | M-v | 0 | MPC | 04333 | 2005 $JN_{64}$ |
| 2005 $JY_{65}$ | 16.1 | 0.15 | 20060922 | 71.00611 | 59.83577 | 196.48962 | 13.13595 | 0.1825602 | 3.1296609 | 27 | 4 | 1994–2006 | 0.36 | M-v | 1 | MPC | 77225 | 2005 $JY_{65}$ |
| 2005 $JQ_{66}$ | 15.6 | 0.15 | 20060922 | 43.54298 | 320.17662 | 10.01743 | 4.83963 | 0.2303362 | 2.5729827 | 76 | 3 | 2002–2006 | 0.37 | M-v | 1 | MPC | 04333 | 2005 $JQ_{66}$ |
| 2005 $JU_{66}$ | 17.4 | 0.15 | 20060922 | 190.82517 | 141.67685 | 20.28239 | 2.82061 | 0.1536233 | 2.3205458 | 42 | 4 | 2001–2006 | 0.31 | M-v | 1 | MPC | 04333 | 2005 $JU_{66}$ |
| 2005 $JB_{67}$ | 15.6 | 0.15 | 20060922 | 105.40589 | 54.91048 | 155.29086 | 10.48304 | 0.1350372 | 3.0866119 | 41 | 4 | 1995–2006 | 0.49 | M-v | 0 | MPC | 04333 | 2005 $JB_{67}$ |
| 2005 $JH_{67}$ | 15.5 | 0.15 | 20060922 | 31.01621 | 222.13659 | 85.26019 | 18.03218 | 0.1952737 | 3.0952601 | 27 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 89663 | 2005 $JH_{67}$ |
| 2005 $JW_{67}$ | 17.1 | 0.15 | 20060922 | 131.40298 | 355.63159 | 263.28332 | 3.83788 | 0.0598097 | 2.1682910 | 66 | 4 | 1999–2006 | 0.51 | M-v | 1 | MPC | 77227 | 2005 $JW_{67}$ |
| 2005 $JB_{68}$ | 16.6 | 0.15 | 20060922 | 48.30656 | 307.73093 | 27.70371 | 4.98760 | 0.0419921 | 2.2024681 | 60 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04333 | 2005 $JB_{68}$ |
| 2005 $JM_{68}$ | 17.2 | 0.15 | 20060922 | 126.16345 | 120.42520 | 133.74056 | 6.37540 | 0.2390777 | 2.3022559 | 53 | 3 | 1998–2006 | 0.60 | M-v | 2 | MPC | 87672 | 2005 $JM_{68}$ |
| 2005 $JT_{68}$ | 15.5 | 0.15 | 20060922 | 45.82274 | 198.47646 | 95.47143 | 13.50000 | 0.2379808 | 3.0833965 | 56 | 3 | 2001–2006 | 0.55 | M-v | 1 | MPC | 86734 | 2005 $JT_{68}$ |
| 2005 $JV_{68}$ | 15.9 | 0.15 | 20060922 | 68.40123 | 142.41517 | 138.02753 | 10.71718 | 0.1400158 | 2.7603851 | 52 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 87672 | 2005 $JV_{68}$ |
| 2005 $JQ_{69}$ | 17.2 | 0.15 | 20060922 | 98.19667 | 233.61124 | 50.82810 | 6.29078 | 0.2000096 | 2.2151068 | 30 | 5 | 1995–2006 | 0.40 | M-v | 1 | MPC | 00954 | 2005 $JQ_{69}$ |
| 2005 $JA_{70}$ | 16.3 | 0.15 | 20060922 | 95.19593 | 2.40907 | 244.94486 | 2.53868 | 0.1435202 | 2.7369185 | 54 | 5 | 1994–2006 | 0.40 | M-v | 0 | MPC | 04333 | 2005 $JA_{70}$ |
| 2005 $JY_{70}$ | 15.6 | 0.15 | 20060922 | 17.43875 | 138.79305 | 176.00121 | 7.67404 | 0.1820811 | 3.1955270 | 63 | 3 | 2000–2006 | 0.47 | M-v | 2 | MPC | 04333 | 2005 $JY_{70}$ |
| 2005 $JZ_{70}$ | 16.5 | 0.15 | 20060922 | 156.33994 | 349.01151 | 196.95727 | 13.22297 | 0.1002815 | 2.5406421 | 28 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 89663 | 2005 $JZ_{70}$ |
| 2005 $JA_{71}$ | 15.6 | 0.15 | 20060922 | 96.01525 | 120.19871 | 99.82371 | 9.32447 | 0.1386744 | 3.1186657 | 33 | 3 | 1994–2005 | 0.71 | M-v | 3 | MPC | 77229 | 2005 $JA_{71}$ |
| 2005 $JQ_{71}$ | 15.9 | 0.15 | 20060922 | 167.95038 | 8.33931 | 180.50741 | 11.89768 | 0.0189905 | 2.5979823 | 48 | 3 | 2002–2006 | 0.42 | M-v | 2 | MPC | 04333 | 2005 $JQ_{71}$ |
| 2005 $JX_{71}$ | 15.3 | 0.15 | 20060922 | 90.55154 | 325.03639 | 271.41896 | 11.73636 | 0.1290151 | 2.7173380 | 54 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 03700 | 2005 $JX_{71}$ |
| 2005 $JE_{72}$ | 17.8 | 0.15 | 20060922 | 126.85192 | 47.60838 | 185.57686 | 4.04344 | 0.1470489 | 2.2874926 | 46 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 03700 | 2005 $JE_{72}$ |
| 2005 $JO_{72}$ | 16.8 | 0.15 | 20060922 | 352.42880 | 188.01527 | 156.70221 | 2.48530 | 0.0741475 | 2.8647879 | 25 | 4 | 1997–2006 | 0.25 | M-v | 0 | MPC | 03701 | 2005 $JO_{72}$ |
| 2005 $JH_{73}$ | 16.5 | 0.15 | 20060922 | 157.90330 | 359.49271 | 207.60652 | 6.01054 | 0.0684913 | 2.3312993 | 51 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 95678 | 2005 $JH_{73}$ |
| 2005 $JF_{74}$ | 15.4 | 0.15 | 20060922 | 57.14105 | 55.43791 | 237.02897 | 13.45645 | 0.0948031 | 2.6606236 | 42 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 04333 | 2005 $JF_{74}$ |
| 2005 $JB_{75}$ | 16.5 | 0.15 | 20060922 | 96.23923 | 292.66850 | 345.12348 | 7.05132 | 0.1038795 | 2.2620411 | 64 | 5 | 1998–2006 | 0.59 | M-v | 1 | MPC | 87673 | 2005 $JB_{75}$ |
| 2005 $JD_{76}$ | 16.5 | 0.15 | 20060922 | 42.77530 | 88.59960 | 231.35719 | 12.16711 | 0.2141831 | 2.7297086 | 54 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 86735 | 2005 $JD_{76}$ |
| 2005 $JO_{76}$ | 15.9 | 0.15 | 20060922 | 62.69400 | 58.23509 | 233.58101 | 12.58922 | 0.1925978 | 2.7901060 | 57 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 86736 | 2005 $JO_{76}$ |
| 2005 $JE_{77}$ | 16.2 | 0.15 | 20060922 | 70.75254 | 278.42430 | 353.06045 | 11.41985 | 0.2042872 | 2.7647435 | 43 | 4 | 2000–2006 | 0.42 | M-v | 0 | MPC | 86736 | 2005 $JE_{77}$ |
| 2005 $JF_{77}$ | 17.2 | 0.15 | 20060922 | 138.93334 | 31.34947 | 178.17035 | 5.72736 | 0.0706245 | 2.2213057 | 55 | 6 | 1992–2006 | 0.43 | M-v | 1 | MPC | 86736 | 2005 $JF_{77}$ |
| 2005 $JZ_{78}$ | 16.4 | 0.15 | 20060922 | 35.70247 | 290.24191 | 45.56789 | 7.67205 | 0.1853828 | 2.5600499 | 67 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04333 | 2005 $JZ_{78}$ |
| 2005 $JP_{79}$ | 17.2 | 0.15 | 20060922 | 177.92363 | 322.15179 | 236.65172 | 6.57452 | 0.0618685 | 2.2148423 | 35 | 3 | 2003–2006 | 0.26 | M-v | 3 | MPC | 77231 | 2005 $JP_{79}$ |
| 2005 $JG_{80}$ | 17.1 | 0.15 | 20060922 | 88.90173 | 251.41429 | 67.99559 | 25.55378 | 0.0451185 | 1.8823215 | 36 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 86737 | 2005 $JG_{80}$ |
| 2005 $JZ_{81}$ | 16.6 | 0.15 | 20060922 | 76.00088 | 179.55969 | 100.10493 | 9.75370 | 0.0570287 | 2.5947408 | 41 | 4 | 2002–2006 | 0.38 | M-v | 0 | MPC | 77232 | 2005 $JZ_{81}$ |
| 2005 $JD_{82}$ | 15.5 | 0.15 | 20060922 | 50.29841 | 207.79483 | 97.23596 | 15.20064 | 0.1476604 | 2.6852075 | 60 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 87673 | 2005 $JD_{82}$ |
| 2005 $JL_{82}$ | 15.8 | 0.15 | 20060922 | 47.76689 | 136.98814 | 184.36132 | 11.70443 | 0.2049526 | 2.6567255 | 66 | 5 | 1996–2006 | 0.56 | M-v | 0 | MPC | 89664 | 2005 $JL_{82}$ |
| 2005 $JH_{83}$ | 16.9 | 0.15 | 20060922 | 87.31296 | 89.98220 | 183.88610 | 2.45275 | 0.1812135 | 2.5831678 | 47 | 5 | 1993–2006 | 0.30 | M-v | 0 | MPC | 86737 | 2005 $JH_{83}$ |
| 2005 $JK_{83}$ | 16.7 | 0.15 | 20060922 | 247.40386 | 345.84105 | 110.78382 | 2.38139 | 0.1032649 | 2.5139969 | 33 | 3 | 2003–2006 | 0.41 | M-v | 3 | MPC | 03701 | 2005 $JK_{83}$ |
| 2005 $JU_{83}$ | 16.3 | 0.15 | 20060922 | 55.08431 | 270.28005 | 69.77817 | 7.76332 | 0.1969662 | 2.2810445 | 74 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 87673 | 2005 $JU_{83}$ |
| 2005 $JC_{84}$ | 18.0 | 0.15 | 20060922 | 147.74669 | 162.99930 | 51.84679 | 3.24115 | 0.1587201 | 2.3342552 | 25 | 3 | 2003–2006 | 0.20 | M-v | 3 | MPC | 77233 | 2005 $JC_{84}$ |
| 2005 $JM_{84}$ | 18.2 | 0.15 | 20060922 | 81.27402 | 67.31127 | 214.35756 | 6.10321 | 0.1169437 | 2.3140179 | 27 | 3 | 1999–2006 | 0.31 | M-v | 2 | MPC | 86737 | 2005 $JM_{84}$ |
| 2005 $JN_{87}$ | 14.4 | 0.15 | 20060922 | 0.74064 | 236.52597 | 91.36950 | 23.76723 | 0.2141474 | 3.1742042 | 51 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 04333 | 2005 $JN_{87}$ |
| 2005 $JQ_{88}$ | 15.6 | 0.15 | 20060922 | 118.46078 | 8.64393 | 214.61286 | 7.03939 | 0.0972781 | 2.7233708 | 35 | 3 | 2003–2006 | 0.39 | M-v | 2 | MPC | 03701 | 2005 $JQ_{88}$ |
| 2005 $JU_{88}$ | 15.8 | 0.15 | 20060922 | 47.44345 | 170.54813 | 163.47729 | 4.54610 | 0.2639216 | 2.6093940 | 76 | 5 | 1993–2006 | 0.48 | M-v | 0 | MPC | 87673 | 2005 $JU_{88}$ |
| 2005 $JX_{88}$ | 15.9 | 0.15 | 20060922 | 133.46410 | 256.25570 | 292.51221 | 11.84988 | 0.1282903 | 2.6093467 | 38 | 4 | 2002–2006 | 0.38 | M-v | 1 | MPC | 87673 | 2005 $JX_{88}$ |
| 2005 $JR_{89}$ | 15.3 | 0.15 | 20060922 | 80.75905 | 1.83403 | 253.21339 | 13.44551 | 0.2832427 | 3.0817334 | 39 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 86738 | 2005 $JR_{89}$ |
| 2005 $JA_{90}$ | 16.9 | 0.15 | 20060922 | 59.72274 | 115.45649 | 198.45512 | 2.99830 | 0.1874898 | 2.4604930 | 59 | 5 | 1998–2006 | 0.41 | M-v | 0 | MPC | 00954 | 2005 $JA_{90}$ |
| 2005 $JF_{91}$ | 17.2 | 0.15 | 20060922 | 100.44150 | 253.52755 | 41.39140 | 4.08153 | 0.1740778 | 2.2474979 | 58 | 5 | 1998–2006 | 0.47 | M-v | 1 | MPC | 77235 | 2005 $JF_{91}$ |
| 2005 $JH_{91}$ | 15.3 | 0.15 | 20060922 | 340.69461 | 273.55588 | 87.70266 | 10.75996 | 0.2342240 | 3.1624795 | 41 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 03701 | 2005 $JH_{91}$ |
| 2005 $JQ_{91}$ | 16.9 | 0.15 | 20060922 | 155.06055 | 344.05083 | 238.63699 | 7.37766 | 0.0823805 | 2.2313828 | 46 | 4 | 2002–2006 | 0.32 | M-v | 1 | MPC | 87673 | 2005 $JQ_{91}$ |
| 2005 $JX_{91}$ | 16.0 | 0.15 | 20060922 | 72.47916 | 331.56794 | 308.34911 | 12.11587 | 0.2375393 | 2.6077671 | 41 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 87673 | 2005 $JX_{91}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $JE_{92}$ | 16.4 | 0.15 | 20060922 | 64.99666 | 357.95133 | 305.34775 | 5.43152 | 0.1821377 | 2.5451473 | 43 | 5 | 1996–2006 | 0.49 | M-v | 1 | MPC | 89664 | 2005 $JE_{92}$ |
| 2005 $JJ_{92}$ | 17.0 | 0.15 | 20060922 | 87.15678 | 332.87193 | 314.44708 | 6.83744 | 0.1028640 | 2.3477174 | 38 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 00954 | 2005 $JJ_{92}$ |
| 2005 $JK_{93}$ | 17.1 | 0.15 | 20060922 | 100.25729 | 327.39947 | 322.49132 | 3.06740 | 0.2149292 | 2.3212467 | 51 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 86739 | 2005 $JK_{93}$ |
| 2005 $JT_{93}$ | 15.9 | 0.15 | 20060922 | 62.07289 | 222.60503 | 58.44853 | 17.97244 | 0.1817943 | 3.0987208 | 28 | 3 | 2004–2006 | 0.45 | M-v | 2 | MPC | 95680 | 2005 $JT_{93}$ |
| 2005 $JK_{94}$ | 15.5 | 0.15 | 20060922 | 325.14402 | 322.80786 | 41.51006 | 9.86304 | 0.0906087 | 3.0439019 | 40 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 03702 | 2005 $JK_{94}$ |
| 2005 $JT_{95}$ | 17.1 | 0.15 | 20060922 | 88.67082 | 140.09351 | 155.16553 | 2.22521 | 0.2058672 | 2.3836610 | 48 | 4 | 1998–2006 | 0.54 | M-v | 1 | MPC | 03702 | 2005 $JT_{95}$ |
| 2005 $JD_{97}$ | 17.9 | 0.15 | 20060922 | 298.51628 | 48.71114 | 58.24560 | 21.98929 | 0.1003222 | 1.9191650 | 41 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 77237 | 2005 $JD_{97}$ |
| 2005 $JO_{97}$ | 16.1 | 0.15 | 20060922 | 44.82465 | 120.42064 | 166.69242 | 4.62239 | 0.1494971 | 3.1575313 | 53 | 3 | 2004–2006 | 0.34 | M-v | 2 | MPC | 03702 | 2005 $JO_{97}$ |
| 2005 $JR_{97}$ | 16.7 | 0.15 | 20060922 | 171.54384 | 23.28235 | 144.74091 | 3.34726 | 0.0669378 | 2.6313109 | 28 | 3 | 2000–2006 | 0.32 | M-v | 4 | MPC | 04334 | 2005 $JR_{97}$ |
| 2005 $JK_{99}$ | 15.8 | 0.15 | 20060922 | 11.30649 | 168.80665 | 171.91089 | 9.12736 | 0.2145153 | 3.0649474 | 93 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 04334 | 2005 $JK_{99}$ |
| 2005 $JX_{99}$ | 15.4 | 0.15 | 20060922 | 23.80595 | 150.48926 | 169.47026 | 9.46435 | 0.1379696 | 3.1071827 | 83 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 04334 | 2005 $JX_{99}$ |
| 2005 $JL_{100}$ | 16.8 | 0.15 | 20060922 | 166.71165 | 82.91025 | 102.27081 | 9.12614 | 0.0503725 | 2.5484723 | 29 | 5 | 1996–2006 | 0.49 | M-v | 0 | MPC | 87674 | 2005 $JL_{100}$ |
| 2005 $JO_{100}$ | 16.3 | 0.15 | 20060922 | 7.64004 | 208.67122 | 135.45964 | 7.06439 | 0.0334230 | 2.6853455 | 29 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 77238 | 2005 $JO_{100}$ |
| 2005 $JY_{100}$ | 15.6 | 0.15 | 20060922 | 201.77167 | 342.09523 | 154.37188 | 15.60221 | 0.0384004 | 2.5944061 | 53 | 4 | 2001–2006 | 0.64 | M-v | 2 | MPC | 04334 | 2005 $JY_{100}$ |
| 2005 $JE_{102}$ | 16.0 | 0.15 | 20060922 | 11.60831 | 239.33188 | 111.59482 | 10.13246 | 0.0809961 | 2.6461984 | 45 | 4 | 1995–2006 | 0.39 | M-v | 2 | MPC | 86740 | 2005 $JE_{102}$ |
| 2005 $JK_{102}$ | 17.3 | 0.15 | 20060922 | 164.58606 | 63.99144 | 131.08891 | 6.84640 | 0.1286379 | 2.4049328 | 29 | 5 | 1998–2005 | 0.51 | M-v | 1 | MPC | 86740 | 2005 $JK_{102}$ |
| 2005 $JA_{103}$ | 16.1 | 0.15 | 20060922 | 98.13529 | 161.81295 | 94.63655 | 15.06017 | 0.0870551 | 2.6797010 | 53 | 5 | 2000–2006 | 0.39 | M-v | 0 | MPC | 87674 | 2005 $JA_{103}$ |
| 2005 $JE_{103}$ | 16.8 | 0.15 | 20060922 | 46.86657 | 178.01070 | 142.77048 | 14.14401 | 0.0862572 | 2.6494290 | 30 | 3 | 2004–2006 | 0.22 | M-v | 1 | MPC | 86741 | 2005 $JE_{103}$ |
| 2005 $JK_{104}$ | 17.5 | 0.15 | 20060922 | 148.24205 | 5.97528 | 235.12366 | 4.08880 | 0.1057475 | 2.1638956 | 46 | 4 | 1998–2006 | 0.37 | M-v | 3 | MPC | 86741 | 2005 $JK_{104}$ |
| 2005 $JP_{104}$ | 16.5 | 0.15 | 20060922 | 170.87608 | 303.65729 | 225.47600 | 4.09791 | 0.1200166 | 2.5659514 | 41 | 5 | 2001–2006 | 0.40 | M-v | 1 | MPC | 89665 | 2005 $JP_{104}$ |
| 2005 $JR_{104}$ | 16.4 | 0.15 | 20060922 | 80.54525 | 99.81331 | 177.79231 | 12.36410 | 0.1654304 | 2.7266038 | 44 | 4 | 2000–2006 | 0.54 | M-v | 0 | MPC | 95681 | 2005 $JR_{104}$ |
| 2005 $JS_{104}$ | 16.0 | 0.15 | 20060922 | 45.04722 | 202.63340 | 84.41845 | 7.45697 | 0.0899746 | 2.7527160 | 45 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 03702 | 2005 $JS_{104}$ |
| 2005 $JM_{105}$ | 16.7 | 0.15 | 20060922 | 109.69554 | 216.82983 | 31.96350 | 5.00956 | 0.1580596 | 2.4216539 | 31 | 3 | 2001–2006 | 0.61 | M-v | 3 | MPC | 86742 | 2005 $JM_{105}$ |
| 2005 $JZ_{105}$ | 17.3 | 0.15 | 20060922 | 181.29521 | 30.53641 | 162.24673 | 2.36405 | 0.0397916 | 2.2313026 | 50 | 4 | 2001–2006 | 0.37 | M-v | 2 | MPC | 86742 | 2005 $JZ_{105}$ |
| 2005 $JD_{107}$ | 15.2 | 0.15 | 20060922 | 61.31939 | 160.62054 | 150.26324 | 14.04731 | 0.1851663 | 2.6315173 | 86 | 3 | 2004–2006 | 0.58 | M-v | 2 | MPC | 87674 | 2005 $JD_{107}$ |
| 2005 $JL_{107}$ | 16.5 | 0.15 | 20060922 | 105.61745 | 192.09919 | 72.87217 | 7.08658 | 0.0659868 | 2.3564280 | 44 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 86742 | 2005 $JL_{107}$ |
| 2005 $JP_{107}$ | 16.5 | 0.15 | 20060922 | 93.98263 | 69.97510 | 196.43571 | 4.68245 | 0.1175017 | 2.5339062 | 46 | 4 | 1997–2006 | 0.42 | M-v | 3 | MPC | 87674 | 2005 $JP_{107}$ |
| 2005 $JM_{108}$ | 16.4 | 0.15 | 20060922 | 26.05945 | 143.75358 | 173.91103 | 10.22428 | 0.0978526 | 3.0710730 | 39 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 89665 | 2005 $JM_{108}$ |
| 2005 $JK_{109}$ | 16.7 | 0.15 | 20060922 | 129.16146 | 201.41464 | 20.03440 | 6.67439 | 0.1519468 | 2.5517470 | 26 | 4 | 1998–2006 | 0.39 | M-v | 3 | MPC | 89666 | 2005 $JK_{109}$ |
| 2005 $JP_{109}$ | 15.7 | 0.15 | 20060922 | 72.85349 | 192.57541 | 97.43429 | 12.95910 | 0.1656433 | 2.6540630 | 39 | 4 | 2001–2006 | 0.60 | M-v | 1 | MPC | 87674 | 2005 $JP_{109}$ |
| 2005 $JC_{110}$ | 17.9 | 0.15 | 20060922 | 146.90849 | 93.25734 | 120.89322 | 4.62145 | 0.1072850 | 2.3775976 | 21 | 5 | 1994–2006 | 0.32 | M-v | 1 | MPC | 02251 | 2005 $JC_{110}$ |
| 2005 $JJ_{110}$ | 17.8 | 0.15 | 20060922 | 77.33744 | 93.65077 | 200.93318 | 2.07990 | 0.1920222 | 2.3922104 | 50 | 3 | 2002–2006 | 0.36 | M-v | 2 | MPC | 86743 | 2005 $JJ_{110}$ |
| 2005 $JG_{111}$ | 15.9 | 0.15 | 20060922 | 91.80249 | 192.95269 | 70.81379 | 13.18255 | 0.1571658 | 2.6811625 | 45 | 4 | 2002–2006 | 0.67 | M-v | 1 | MPC | 89666 | 2005 $JG_{111}$ |
| 2005 $JU_{111}$ | 17.1 | 0.15 | 20060922 | 112.06068 | 234.23798 | 34.08694 | 6.42222 | 0.1680714 | 2.2679147 | 66 | 5 | 1992–2006 | 0.39 | M-v | 1 | MPC | 86743 | 2005 $JU_{111}$ |
| 2005 $JV_{111}$ | 17.6 | 0.15 | 20060922 | 105.84619 | 30.76693 | 236.01441 | 4.73323 | 0.1711832 | 2.3502138 | 41 | 4 | 1999–2006 | 0.31 | M-v | 0 | MPC | 86743 | 2005 $JV_{111}$ |
| 2005 $JG_{112}$ | 16.2 | 0.15 | 20060922 | 133.52969 | 140.22046 | 96.35069 | 11.94779 | 0.0598771 | 2.4140849 | 46 | 4 | 2001–2006 | 0.63 | M-v | 2 | MPC | 95681 | 2005 $JG_{112}$ |
| 2005 $JQ_{112}$ | 15.9 | 0.15 | 20060922 | 67.87004 | 162.23352 | 164.34764 | 12.11984 | 0.2444281 | 2.5397436 | 57 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 87674 | 2005 $JQ_{112}$ |
| 2005 $JK_{114}$ | 19.3 | 0.15 | 20060922 | 59.00369 | 251.71184 | 21.91204 | 12.23881 | 0.1475622 | 2.9699846 | 43 | 4 | 2001–2006 | 0.57 | M-v | 0 | MPC | 04334 | 2005 $JK_{114}$ |
| 2005 $JL_{115}$ | 16.6 | 0.15 | 20060922 | 3.85952 | 215.16505 | 121.65337 | 7.06168 | 0.0416511 | 2.7880253 | 26 | 4 | 2000–2006 | 0.33 | M-v | 0 | MPC | 04334 | 2005 $JL_{115}$ |
| 2005 $JV_{115}$ | 16.4 | 0.15 | 20060922 | 63.66600 | 161.32190 | 125.30517 | 6.02638 | 0.0864898 | 2.6905271 | 36 | 4 | 1995–2006 | 0.42 | M-v | 0 | MPC | 04334 | 2005 $JV_{115}$ |
| 2005 $JG_{117}$ | 16.7 | 0.15 | 20060922 | 72.74545 | 151.52108 | 165.27836 | 5.38135 | 0.1880322 | 2.3856440 | 46 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 87674 | 2005 $JG_{117}$ |
| 2005 $JH_{117}$ | 17.5 | 0.15 | 20060922 | 141.40210 | 144.92263 | 101.24956 | 6.55982 | 0.1045116 | 2.1986805 | 26 | 3 | 2003–2006 | 0.33 | M-v | 3 | MPC | 77242 | 2005 $JH_{117}$ |
| 2005 $JM_{117}$ | 15.9 | 0.15 | 20060922 | 309.38554 | 266.38320 | 131.04380 | 6.97069 | 0.0712665 | 2.7543943 | 36 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 03703 | 2005 $JM_{117}$ |
| 2005 $JN_{117}$ | 16.0 | 0.15 | 20060922 | 12.06649 | 140.74483 | 196.38983 | 9.44617 | 0.0998562 | 2.8780715 | 62 | 4 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04334 | 2005 $JN_{117}$ |
| 2005 $JS_{117}$ | 15.9 | 0.15 | 20060922 | 15.70224 | 128.85077 | 212.81785 | 14.38748 | 0.1627563 | 2.8692153 | 57 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 77242 | 2005 $JS_{117}$ |
| 2005 $JD_{119}$ | 16.4 | 0.15 | 20060922 | 109.28488 | 78.08541 | 159.21031 | 5.09062 | 0.0552856 | 2.7140114 | 36 | 5 | 1997–2006 | 0.34 | M-v | 0 | MPC | 89667 | 2005 $JD_{119}$ |
| 2005 $JU_{120}$ | 16.2 | 0.15 | 20060922 | 315.32631 | 327.12761 | 74.26280 | 14.94883 | 0.1028931 | 2.5953113 | 35 | 6 | 1994–2006 | 0.39 | M-v | 0 | MPC | 89667 | 2005 $JU_{120}$ |
| 2005 $JD_{121}$ | 17.4 | 0.15 | 20060922 | 107.58708 | 168.00393 | 111.85582 | 4.07294 | 0.1742918 | 2.3024986 | 45 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 77243 | 2005 $JD_{121}$ |
| 2005 $JK_{121}$ | 15.3 | 0.15 | 20060922 | 31.47852 | 133.97962 | 163.24770 | 5.13273 | 0.0911121 | 3.2376079 | 43 | 2 | 2005–2006 | 0.33 | M-v | 3 | MPC | 03703 | 2005 $JK_{121}$ |
| 2005 $JZ_{122}$ | 16.8 | 0.15 | 20060922 | 49.17705 | 348.65736 | 331.94469 | 0.38622 | 0.1841246 | 2.5808066 | 32 | 3 | 1993–2006 | 0.44 | M-v | 3 | MPC | 89667 | 2005 $JZ_{122}$ |
| 2005 $JY_{124}$ | 15.8 | 0.15 | 20060922 | 23.72456 | 176.58194 | 180.82979 | 13.58027 | 0.2073584 | 2.5883222 | 49 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 86745 | 2005 $JY_{124}$ |
| 2005 $JG_{125}$ | 15.7 | 0.15 | 20060922 | 51.19677 | 52.47200 | 285.16843 | 3.65178 | 0.2870024 | 2.5331680 | 32 | 3 | 2002–2006 | 0.44 | M-v | 1 | MPC | 86745 | 2005 $JG_{125}$ |
| 2005 $JP_{125}$ | 15.8 | 0.15 | 20060922 | 21.46320 | 255.94710 | 95.28269 | 15.65730 | 0.1839987 | 2.6235444 | 52 | 3 | 2002–2006 | 0.64 | M-v | 2 | MPC | 77244 | 2005 $JP_{125}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $JQ_{126}$ | 17.1 | 0.15 | 20060922 | 90.76077 | 294.52811 | 350.13562 | 5.14283 | 0.2042000 | 2.4364721 | 20 | 3 | 1998–2006 | 0.46 | M-v | 3 | MPC | 86746 | 2005 $JQ_{126}$ |
| 2005 $JS_{126}$ | 17.5 | 0.15 | 20060922 | 61.57072 | 234.78587 | 78.23148 | 2.20392 | 0.1938084 | 2.4541774 | 36 | 3 | 2001–2006 | 0.34 | M-v | 2 | MPC | 86746 | 2005 $JS_{126}$ |
| 2005 $JX_{126}$ | 16.3 | 0.15 | 20060922 | 105.58775 | 148.01492 | 106.76215 | 11.01343 | 0.1756653 | 2.5761033 | 46 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 87675 | 2005 $JX_{126}$ |
| 2005 $JB_{127}$ | 16.5 | 0.15 | 20060922 | 83.62729 | 16.03682 | 275.08227 | 1.91283 | 0.1752147 | 2.4617722 | 73 | 6 | 1994–2006 | 0.38 | M-v | 0 | MPC | 86746 | 2005 $JB_{127}$ |
| 2005 $JM_{127}$ | 16.9 | 0.15 | 20060922 | 99.97724 | 116.05971 | 154.28129 | 3.65498 | 0.1763678 | 2.4746666 | 37 | 3 | 1998–2006 | 0.34 | M-v | 2 | MPC | 87675 | 2005 $JM_{127}$ |
| 2005 $JW_{127}$ | 17.2 | 0.15 | 20060922 | 189.17423 | 269.54382 | 252.20792 | 4.26739 | 0.1259864 | 2.3898218 | 29 | 6 | 1999–2006 | 0.32 | M-v | 0 | MPC | 00955 | 2005 $JW_{127}$ |
| 2005 $JY_{127}$ | 15.9 | 0.15 | 20060922 | 91.86175 | 202.45490 | 70.58737 | 13.26411 | 0.1357328 | 2.5859670 | 45 | 3 | 2003–2006 | 0.43 | M-v | 2 | MPC | 89667 | 2005 $JY_{127}$ |
| 2005 $JZ_{127}$ | 16.3 | 0.15 | 20060922 | 147.45835 | 354.32578 | 209.85149 | 9.57032 | 0.1433633 | 2.5431208 | 52 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 87675 | 2005 $JZ_{127}$ |
| 2005 $JB_{128}$ | 15.9 | 0.15 | 20060922 | 52.21496 | 144.47199 | 180.57284 | 7.94644 | 0.2002551 | 2.5614533 | 76 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 87675 | 2005 $JB_{128}$ |
| 2005 $JH_{128}$ | 16.4 | 0.15 | 20060922 | 121.86999 | 156.29590 | 95.57793 | 5.66678 | 0.1433918 | 2.4041333 | 51 | 4 | 2001–2006 | 0.39 | M-v | 1 | MPC | 86746 | 2005 $JH_{128}$ |
| 2005 $JR_{128}$ | 16.8 | 0.15 | 20060922 | 237.60782 | 295.08719 | 187.85870 | 5.78783 | 0.1171721 | 2.2896481 | 38 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 03703 | 2005 $JR_{128}$ |
| 2005 $JJ_{130}$ | 17.0 | 0.15 | 20060922 | 122.84231 | 166.67347 | 65.17731 | 3.36254 | 0.1551853 | 2.4549392 | 48 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 87675 | 2005 $JJ_{130}$ |
| 2005 $JX_{130}$ | 16.1 | 0.15 | 20060922 | 42.73265 | 226.74224 | 81.91899 | 15.40349 | 0.0681308 | 2.6924266 | 43 | 3 | 2004–2006 | 0.43 | M-v | 2 | MPC | 77247 | 2005 $JX_{130}$ |
| 2005 $JQ_{131}$ | 16.2 | 0.15 | 20060922 | 132.62259 | 109.81658 | 111.84969 | 14.13438 | 0.1086292 | 2.5568758 | 54 | 5 | 1992–2006 | 0.51 | M-v | 1 | MPC | 87675 | 2005 $JQ_{131}$ |
| 2005 $JT_{131}$ | 15.6 | 0.15 | 20060922 | 98.49686 | 104.35238 | 159.31007 | 7.63571 | 0.1708954 | 2.6116992 | 87 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 86747 | 2005 $JT_{131}$ |
| 2005 $JH_{132}$ | 15.6 | 0.15 | 20060922 | 67.10695 | 288.38419 | 9.06735 | 12.86411 | 0.1778186 | 2.6209978 | 63 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 04334 | 2005 $JH_{132}$ |
| 2005 $JC_{133}$ | 16.1 | 0.15 | 20060922 | 123.52007 | 35.23191 | 165.88068 | 5.29169 | 0.1554128 | 2.9680637 | 38 | 4 | 1994–2006 | 0.40 | M-v | 0 | MPC | 04334 | 2005 $JC_{133}$ |
| 2005 $JQ_{133}$ | 16.8 | 0.15 | 20060922 | 92.97213 | 198.84014 | 86.48412 | 7.84781 | 0.1110141 | 2.3823885 | 45 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 87675 | 2005 $JQ_{133}$ |
| 2005 $JX_{133}$ | 16.5 | 0.15 | 20060922 | 340.15007 | 251.35680 | 117.58147 | 5.57281 | 0.0854885 | 2.7661584 | 26 | 3 | 2004–2006 | 0.48 | M-v | 4 | MPC | 03704 | 2005 $JX_{133}$ |
| 2005 $JL_{135}$ | 16.4 | 0.15 | 20060922 | 175.99620 | 347.84374 | 221.06286 | 4.28941 | 0.0608101 | 2.2046798 | 92 | 4 | 2000–2006 | 0.39 | M-v | 2 | MPC | 87675 | 2005 $JL_{135}$ |
| 2005 $JY_{135}$ | 15.5 | 0.15 | 20060922 | 109.21128 | 120.51011 | 93.68229 | 6.10239 | 0.0547644 | 2.7232773 | 59 | 4 | 1995–2006 | 0.77 | M-v | 2 | MPC | 04334 | 2005 $JY_{135}$ |
| 2005 $JF_{136}$ | 15.8 | 0.15 | 20060922 | 116.66291 | 116.80450 | 100.02047 | 8.10639 | 0.0286564 | 2.6667932 | 48 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 04334 | 2005 $JF_{136}$ |
| 2005 $JL_{137}$ | 17.7 | 0.15 | 20060922 | 83.23119 | 148.34892 | 150.55374 | 2.92770 | 0.1813072 | 2.3732549 | 40 | 6 | 1991–2006 | 0.34 | M-v | 0 | MPC | 95682 | 2005 $JL_{137}$ |
| 2005 $JR_{138}$ | 16.8 | 0.15 | 20060922 | 48.51316 | 63.02458 | 221.56607 | 1.54193 | 0.0663063 | 3.0519101 | 33 | 5 | 1999–2006 | 0.44 | M-v | 0 | MPC | 04335 | 2005 $JR_{138}$ |
| 2005 $JA_{139}$ | 16.2 | 0.15 | 20060922 | 353.54083 | 122.31731 | 230.94916 | 9.43410 | 0.1120175 | 2.9198438 | 34 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04335 | 2005 $JA_{139}$ |
| 2005 $JF_{139}$ | 15.6 | 0.15 | 20060922 | 57.94403 | 132.58564 | 158.22607 | 12.76718 | 0.2247090 | 3.0052816 | 64 | 6 | 1996–2006 | 0.53 | M-v | 0 | MPC | 87676 | 2005 $JF_{139}$ |
| 2005 $JT_{142}$ | 15.1 | 0.15 | 20060922 | 40.39505 | 247.68158 | 80.40678 | 9.98283 | 0.3579094 | 2.7138998 | 81 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 87676 | 2005 $JT_{142}$ |
| 2005 $JU_{142}$ | 15.0 | 0.15 | 20060922 | 26.62995 | 219.88473 | 77.53524 | 11.41348 | 0.1939877 | 3.1896235 | 24 | 3 | 1994–2006 | 0.64 | M-v | 3 | MPC | 04335 | 2005 $JU_{142}$ |
| 2005 $JG_{143}$ | 16.4 | 0.15 | 20060922 | 68.50578 | 155.60071 | 163.63793 | 3.29425 | 0.2020880 | 2.4583518 | 42 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 86749 | 2005 $JG_{143}$ |
| 2005 $JJ_{143}$ | 12.8 | 0.15 | 20060922 | 282.57831 | 250.48252 | 121.75929 | 5.65787 | 0.1382294 | 5.2485295 | 46 | 7 | 1996–2005 | 0.59 | M-v | 1 | MPC | 87676 | 2005 $JJ_{143}$ |
| 2005 $JP_{143}$ | 18.0 | 0.15 | 20060922 | 121.59401 | 118.42048 | 158.55772 | 2.71597 | 0.1432742 | 2.1912249 | 27 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 77252 | 2005 $JP_{143}$ |
| 2005 $JV_{143}$ | 17.4 | 0.15 | 20060922 | 179.61837 | 41.67227 | 122.29100 | 3.91900 | 0.0609491 | 2.6905847 | 24 | 4 | 1996–2005 | 0.29 | M-v | 0 | MPC | 95682 | 2005 $JV_{143}$ |
| 2005 $JU_{144}$ | 17.3 | 0.15 | 20060922 | 124.00517 | 149.17186 | 96.97007 | 2.30117 | 0.1483347 | 2.4258967 | 58 | 5 | 1993–2006 | 0.39 | M-v | 1 | MPC | 87676 | 2005 $JU_{144}$ |
| 2005 $JB_{145}$ | 16.9 | 0.15 | 20060922 | 71.72435 | 99.09217 | 214.80624 | 3.98937 | 0.2075674 | 2.4823849 | 43 | 5 | 1994–2006 | 0.32 | M-v | 0 | MPC | 95682 | 2005 $JB_{145}$ |
| 2005 $JC_{145}$ | 15.7 | 0.15 | 20060922 | 45.68721 | 82.39630 | 230.93817 | 10.89691 | 0.1211199 | 2.7607449 | 60 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04335 | 2005 $JC_{145}$ |
| 2005 $JD_{145}$ | 15.6 | 0.15 | 20060922 | 16.00816 | 260.76096 | 70.80342 | 11.69890 | 0.1180147 | 2.9922853 | 36 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 04335 | 2005 $JD_{145}$ |
| 2005 $JT_{145}$ | 15.7 | 0.15 | 20060922 | 156.46242 | 146.71884 | 49.86031 | 13.97026 | 0.0729767 | 2.5540552 | 40 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 86750 | 2005 $JT_{145}$ |
| 2005 $JZ_{145}$ | 16.6 | 0.15 | 20060922 | 43.08994 | 121.55221 | 195.79099 | 1.00296 | 0.0901733 | 2.5893446 | 64 | 5 | 1996–2006 | 0.40 | M-v | 1 | MPC | 86750 | 2005 $JZ_{145}$ |
| 2005 $JC_{146}$ | 16.1 | 0.15 | 20060922 | 101.27416 | 169.57750 | 54.44939 | 4.88727 | 0.0483405 | 3.0494784 | 37 | 4 | 2002–2006 | 0.39 | M-v | 1 | MPC | 87676 | 2005 $JC_{146}$ |
| 2005 $JE_{147}$ | 15.1 | 0.15 | 20060922 | 348.29964 | 222.27929 | 134.37635 | 17.46516 | 0.1261293 | 3.0471077 | 34 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 03704 | 2005 $JE_{147}$ |
| 2005 $JL_{147}$ | 16.4 | 0.15 | 20060922 | 60.85041 | 176.96678 | 128.38288 | 15.11230 | 0.0960081 | 2.6610484 | 28 | 3 | 2004–2006 | 0.42 | M-v | 2 | MPC | 86751 | 2005 $JL_{147}$ |
| 2005 $JN_{147}$ | 15.6 | 0.15 | 20060922 | 72.13675 | 171.89680 | 112.37294 | 18.97689 | 0.2404119 | 2.9475183 | 59 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 86751 | 2005 $JN_{147}$ |
| 2005 $JR_{147}$ | 15.2 | 0.15 | 20060922 | 12.79027 | 196.44590 | 157.14036 | 14.31223 | 0.1766111 | 2.6982732 | 61 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04335 | 2005 $JR_{147}$ |
| 2005 $JX_{147}$ | 17.0 | 0.15 | 20060922 | 118.30383 | 44.26586 | 181.43410 | 12.92520 | 0.1712384 | 2.6203857 | 27 | 3 | 2002–2006 | 0.31 | M-v | 2 | MPC | 04335 | 2005 $JX_{147}$ |
| 2005 $JG_{149}$ | 17.0 | 0.15 | 20060922 | 51.26530 | 274.52048 | 58.43352 | 7.46287 | 0.1747792 | 2.3266352 | 40 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 95683 | 2005 $JG_{149}$ |
| 2005 $JQ_{149}$ | 17.9 | 0.15 | 20050420 | 40.02664 | 334.32146 | 200.27768 | 2.51169 | 0.0786580 | 2.2202361 | 10 | 1 | 31 days | 0.14 | | | MPC | | 2005 $JQ_{149}$ |
| 2005 $JV_{149}$ | 17.4 | 0.15 | 20060922 | 203.02218 | 343.31060 | 180.29219 | 6.98139 | 0.0517306 | 2.3249906 | 43 | 5 | 1995–2006 | 0.31 | M-v | 1 | MPC | 87676 | 2005 $JV_{149}$ |
| 2005 $JS_{151}$ | 16.1 | 0.15 | 20060922 | 159.54955 | 140.24672 | 349.42933 | 1.61766 | 0.0322843 | 2.6851315 | 41 | 3 | 2002–2005 | 0.47 | M-v | 3 | MPC | 03704 | 2005 $JS_{151}$ |
| 2005 $JB_{152}$ | 17.9 | 0.15 | 20060922 | 131.57271 | 352.74918 | 205.47670 | 2.17651 | 0.1315579 | 2.3934786 | 28 | 3 | 1994–2005 | 0.41 | M-v | 3 | MPC | 86751 | 2005 $JB_{152}$ |
| 2005 $JY_{153}$ | 17.1 | 0.15 | 20060922 | 114.45144 | 94.68376 | 173.17414 | 6.87697 | 0.0846104 | 2.2589728 | 22 | 4 | 1998–2006 | 0.39 | M-v | 1 | MPC | 87677 | 2005 $JY_{153}$ |
| 2005 $JR_{154}$ | 16.8 | 0.15 | 20060922 | 151.35988 | 325.70579 | 228.44744 | 1.36454 | 0.1455006 | 2.4590120 | 60 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04335 | 2005 $JR_{154}$ |
| 2005 $JB_{157}$ | 17.3 | 0.15 | 20060922 | 274.01238 | 286.06701 | 206.32837 | 21.31049 | 0.0454735 | 1.9516115 | 45 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 95683 | 2005 $JB_{157}$ |
| 2005 $JG_{157}$ | 15.2 | 0.15 | 20060922 | 0.29796 | 273.76839 | 84.92457 | 14.09317 | 0.3117186 | 3.1807237 | 54 | 4 | 1995–2006 | 0.39 | M-v | 1 | MPC | 04335 | 2005 $JG_{157}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $JP_{157}$ | 15.7 | 0.15 | 20060922 | 25.03192 | 313.27345 | 5.08481 | 1.69189 | 0.1701941 | 3.0741403 | 62 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04335 | 2005 $JP_{157}$ |
| 2005 $JS_{157}$ | 17.2 | 0.15 | 20060922 | 91.24347 | 49.35781 | 221.19354 | 11.71429 | 0.2469312 | 2.6949699 | 34 | 4 | 1997–2006 | 0.35 | M-v | 1 | MPC | 03704 | 2005 $JS_{157}$ |
| 2005 $JN_{158}$ | 17.5 | 0.15 | 20060922 | 158.54532 | 88.37096 | 127.85295 | 6.79344 | 0.0884220 | 2.2361007 | 31 | 4 | 1995–2005 | 0.55 | M-v | 2 | MPC | 86753 | 2005 $JN_{158}$ |
| 2005 $JQ_{158}$ | 16.4 | 0.15 | 20060922 | 82.37338 | 130.05968 | 143.04957 | 6.82461 | 0.1543184 | 2.6645661 | 45 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 87677 | 2005 $JQ_{158}$ |
| 2005 $JY_{159}$ | 16.8 | 0.15 | 20060922 | 357.49308 | 316.73076 | 42.14113 | 5.31494 | 0.1509904 | 2.5790160 | 38 | 4 | 1998–2006 | 0.41 | M-v | 3 | MPC | 86753 | 2005 $JY_{159}$ |
| 2005 $JA_{160}$ | 18.0 | 0.15 | 20060922 | 102.01189 | 336.56799 | 292.02556 | 0.63043 | 0.1653338 | 2.3912579 | 20 | 3 | 1998–2006 | 0.21 | M-v | 3 | MPC | 77257 | 2005 $JA_{160}$ |
| 2005 $JB_{160}$ | 16.2 | 0.15 | 20060922 | 156.14962 | 141.94638 | 30.35675 | 4.39549 | 0.0386634 | 2.7699379 | 37 | 3 | 2000–2005 | 0.31 | M-v | 2 | MPC | 03704 | 2005 $JB_{160}$ |
| 2005 $JC_{160}$ | 16.4 | 0.15 | 20060922 | 234.96536 | 63.83223 | 27.61762 | 3.30579 | 0.0413501 | 2.8036911 | 43 | 5 | 1995–2005 | 0.50 | M-v | 1 | MPC | 87677 | 2005 $JC_{160}$ |
| 2005 $JK_{160}$ | 15.9 | 0.15 | 20060922 | 96.12522 | 28.17054 | 199.57478 | 1.49007 | 0.1502957 | 3.0160584 | 69 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 04335 | 2005 $JK_{160}$ |
| 2005 $JP_{160}$ | 16.9 | 0.15 | 20060922 | 101.52008 | 112.89627 | 166.83017 | 5.46247 | 0.1116052 | 2.2963273 | 44 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 02251 | 2005 $JP_{160}$ |
| 2005 $JA_{161}$ | 17.2 | 0.15 | 20060922 | 29.48496 | 239.62946 | 126.44947 | 5.46327 | 0.1779719 | 2.2274419 | 32 | 4 | 1994–2006 | 0.57 | M-v | 1 | MPC | 89669 | 2005 $JA_{161}$ |
| 2005 $JC_{161}$ | 16.5 | 0.15 | 20060922 | 42.86283 | 149.84342 | 178.49034 | 6.53594 | 0.1415566 | 2.5260815 | 38 | 4 | 1993–2006 | 0.39 | M-v | 1 | MPC | 04335 | 2005 $JC_{161}$ |
| 2005 $JK_{162}$ | 16.9 | 0.15 | 20060922 | 11.23584 | 206.69295 | 138.19192 | 5.73251 | 0.0686883 | 2.7300647 | 29 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 04335 | 2005 $JK_{162}$ |
| 2005 $JQ_{162}$ | 17.4 | 0.15 | 20060922 | 344.81060 | 223.05283 | 172.47258 | 5.46168 | 0.0873623 | 2.3275006 | 53 | 6 | 1992–2006 | 0.35 | M-v | 0 | MPC | 04335 | 2005 $JQ_{162}$ |
| 2005 $JR_{162}$ | 16.1 | 0.15 | 20060922 | 338.09257 | 206.09445 | 166.88048 | 5.71041 | 0.0577850 | 2.7648904 | 43 | 6 | 1995–2006 | 0.36 | M-v | 0 | MPC | 04335 | 2005 $JR_{162}$ |
| 2005 $JB_{163}$ | 15.9 | 0.15 | 20060922 | 73.36511 | 66.28209 | 210.03124 | 4.63647 | 0.1247680 | 2.7805345 | 54 | 7 | 1995–2006 | 0.63 | M-v | 0 | MPC | 89669 | 2005 $JB_{163}$ |
| 2005 $JC_{163}$ | 16.8 | 0.15 | 20060922 | 104.87084 | 101.84578 | 179.04979 | 2.21372 | 0.0424192 | 2.2288047 | 55 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 04335 | 2005 $JC_{163}$ |
| 2005 $JE_{163}$ | 16.9 | 0.15 | 20060922 | 18.79371 | 178.81569 | 173.56370 | 1.77593 | 0.1152014 | 2.5178312 | 53 | 6 | 1994–2006 | 0.42 | M-v | 1 | MPC | 86754 | 2005 $JE_{163}$ |
| 2005 $JU_{163}$ | 16.2 | 0.15 | 20060922 | 16.50897 | 132.23078 | 185.84123 | 9.04205 | 0.0299485 | 3.0051557 | 34 | 6 | 1999–2006 | 0.36 | M-v | 0 | MPC | 02251 | 2005 $JU_{163}$ |
| 2005 $JX_{163}$ | 15.8 | 0.15 | 20060922 | 72.45498 | 234.91626 | 34.95070 | 15.11132 | 0.0830676 | 2.6503482 | 38 | 5 | 1992–2006 | 0.59 | M-v | 1 | MPC | 04335 | 2005 $JX_{163}$ |
| 2005 $JU_{164}$ | 16.2 | 0.15 | 20050510 | 160.66812 | 158.45652 | 266.78292 | 0.95857 | 0.1390021 | 2.8575545 | 11 | 1 | 3 days | 0.23 | | | MPC | | 2005 $JU_{164}$ |
| 2005 $JU_{166}$ | 15.6 | 0.15 | 20060922 | 51.49079 | 44.50124 | 235.02658 | 9.20499 | 0.0491156 | 3.0205567 | 30 | 3 | 2001–2006 | 0.36 | M-v | 1 | MPC | 86754 | 2005 $JU_{166}$ |
| 2005 $JL_{167}$ | 16.6 | 0.15 | 20060922 | 117.91254 | 165.32573 | 105.82420 | 4.52074 | 0.1598191 | 2.3032094 | 61 | 5 | 1995–2006 | 0.44 | M-v | 1 | MPC | 87677 | 2005 $JL_{167}$ |
| 2005 $JM_{167}$ | 16.5 | 0.15 | 20060922 | 112.60991 | 25.95331 | 222.47086 | 7.52020 | 0.1701333 | 2.5928135 | 54 | 5 | 1993–2006 | 0.40 | M-v | 1 | MPC | 87677 | 2005 $JM_{167}$ |
| 2005 $JE_{168}$ | 17.4 | 0.15 | 20060922 | 72.42866 | 247.66447 | 63.84917 | 3.33648 | 0.1357005 | 2.3868666 | 32 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 86755 | 2005 $JE_{168}$ |
| 2005 $JG_{168}$ | 16.4 | 0.15 | 20060922 | 183.28289 | 288.12310 | 222.03923 | 13.77334 | 0.0506464 | 2.5785380 | 25 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 03705 | 2005 $JG_{168}$ |
| 2005 $JJ_{168}$ | 16.1 | 0.15 | 20060922 | 52.56771 | 255.08782 | 64.69962 | 4.49105 | 0.1460366 | 2.5669853 | 70 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 77260 | 2005 $JJ_{168}$ |
| 2005 $JN_{174}$ | 17.0 | 0.15 | 20060922 | 181.92416 | 326.90723 | 198.10944 | 5.80967 | 0.0569799 | 2.3630989 | 45 | 5 | 1999–2006 | 0.38 | M-v | 1 | MPC | 04335 | 2005 $JN_{174}$ |
| 2005 $JT_{176}$ | 16.7 | 0.15 | 20060922 | 73.98602 | 161.33891 | 141.07093 | 13.08145 | 0.1813818 | 2.5350014 | 36 | 6 | 2000–2006 | 0.61 | M-v | 0 | MPC | 86756 | 2005 $JT_{176}$ |
| 2005 $JB_{177}$ | 18.0 | 0.15 | 20060922 | 148.36465 | 213.89344 | 14.18838 | 1.34933 | 0.1430128 | 2.3131243 | 28 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 77260 | 2005 $JB_{177}$ |
| 2005 $JC_{177}$ | 17.5 | 0.15 | 20060922 | 87.17874 | 241.89184 | 61.15216 | 1.91874 | 0.1783950 | 2.3906092 | 47 | 5 | 2001–2006 | 0.39 | M-v | 0 | MPC | 95684 | 2005 $JC_{177}$ |
| 2005 $JR_{177}$ | 15.8 | 0.15 | 20060922 | 42.42999 | 74.71146 | 212.49677 | 7.23547 | 0.0682220 | 3.0418147 | 46 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 86757 | 2005 $JR_{177}$ |
| 2005 $JD_{178}$ | 15.6 | 0.15 | 20060922 | 91.44962 | 18.06876 | 214.39455 | 8.82696 | 0.0537678 | 3.0960726 | 34 | 5 | 1994–2006 | 0.42 | M-v | 0 | MPC | 95684 | 2005 $JD_{178}$ |
| 2005 $JX_{178}$ | 17.4 | 0.15 | 20060922 | 192.73607 | 346.96815 | 170.73274 | 3.67408 | 0.1179427 | 2.3999916 | 44 | 5 | 1997–2006 | 0.49 | M-v | 1 | MPC | 04335 | 2005 $JX_{178}$ |
| 2005 $JY_{178}$ | 16.5 | 0.15 | 20060922 | 100.28797 | 192.66110 | 53.65828 | 2.81878 | 0.0568501 | 2.5380305 | 29 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 86758 | 2005 $JY_{178}$ |
| 2005 $JD_{179}$ | 16.1 | 0.15 | 20060922 | 2.47726 | 256.11526 | 85.18534 | 7.46188 | 0.0572140 | 2.7912860 | 39 | 6 | 2000–2006 | 0.57 | M-v | 1 | MPC | 04335 | 2005 $JD_{179}$ |
| 2005 $JG_{179}$ | 17.1 | 0.15 | 20060922 | 124.11406 | 166.60951 | 92.88353 | 5.54276 | 0.1554016 | 2.2718606 | 45 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 86758 | 2005 $JG_{179}$ |
| 2005 KD | 16.9 | 0.15 | 20060922 | 99.90485 | 6.46011 | 280.81073 | 4.72472 | 0.2285372 | 2.3691384 | 42 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 86759 | 2005 KD |
| 2005 KK | 17.5 | 0.15 | 20060922 | 122.74858 | 70.24613 | 157.86507 | 2.74160 | 0.1124149 | 2.5172968 | 60 | 6 | 1993–2006 | 0.33 | M-v | 3 | MPC | 00958 | 2005 KK |
| 2005 KL | 17.6 | 0.15 | 20060922 | 101.54994 | 154.62441 | 137.39058 | 3.98828 | 0.2473032 | 2.3332295 | 29 | 4 | 1991–2006 | 0.42 | M-v | 1 | MPC | 89670 | 2005 KL |
| 2005 KU | 16.2 | 0.15 | 20060922 | 102.02800 | 46.67570 | 195.48407 | 8.16205 | 0.2487302 | 2.7602301 | 80 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 87678 | 2005 KU |
| 2005 KW | 17.8 | 0.15 | 20060922 | 65.45580 | 146.99420 | 173.55471 | 6.54003 | 0.1564837 | 2.3749313 | 36 | 5 | 1991–2006 | 0.38 | M-v | 0 | MPC | 04335 | 2005 KW |
| 2005 $KD_1$ | 17.2 | 0.15 | 20060922 | 251.60959 | 336.32446 | 124.14657 | 7.25955 | 0.1085868 | 2.4625843 | 37 | 4 | 1998–2006 | 0.34 | M-v | 2 | MPC | 04335 | 2005 $KD_1$ |
| 2005 $KR_1$ | 16.4 | 0.15 | 20060922 | 314.61473 | 265.65777 | 133.51344 | 4.60206 | 0.1028422 | 2.6216995 | 31 | 3 | 2002–2005 | 0.59 | M-v | 3 | MPC | 95684 | 2005 $KR_1$ |
| 2005 $KB_2$ | 16.6 | 0.15 | 20060922 | 182.40618 | 340.04126 | 198.21757 | 6.00214 | 0.0707466 | 2.4259032 | 50 | 5 | 1991–2006 | 0.40 | M-v | 1 | MPC | 04335 | 2005 $KB_2$ |
| 2005 $KU_2$ | 17.3 | 0.15 | 20060922 | 109.07799 | 71.54554 | 204.65344 | 6.25235 | 0.1162526 | 2.2862245 | 50 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 77261 | 2005 $KU_2$ |
| 2005 $KM_3$ | 16.4 | 0.15 | 20060922 | 320.23082 | 248.71121 | 130.57690 | 2.36184 | 0.0841054 | 2.7065701 | 44 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 04335 | 2005 $KM_3$ |
| 2005 $KO_3$ | 15.7 | 0.15 | 20060922 | 242.49308 | 293.50500 | 131.01345 | 2.89598 | 0.0515097 | 3.2311331 | 29 | 4 | 1996–2005 | 0.57 | M-v | 1 | MPC | 03705 | 2005 $KO_3$ |
| 2005 $KF_4$ | 17.4 | 0.15 | 20060922 | 201.30842 | 334.93519 | 169.52004 | 2.41579 | 0.0658859 | 2.4392269 | 38 | 5 | 1999–2006 | 0.30 | M-v | 0 | MPC | 04335 | 2005 $KF_4$ |
| 2005 $KT_4$ | 17.0 | 0.15 | 20060922 | 48.31327 | 236.17461 | 105.84222 | 8.60231 | 0.2035619 | 2.4381085 | 27 | 5 | 2001–2006 | 0.41 | M-v | 0 | MPC | 89670 | 2005 $KT_4$ |
| 2005 $KG_5$ | 16.5 | 0.15 | 20060922 | 244.54779 | 257.77572 | 193.82049 | 1.66896 | 0.0315465 | 2.8668696 | 30 | 5 | 2000–2006 | 0.41 | M-v | 1 | MPC | 04336 | 2005 $KG_5$ |
| 2005 $KJ_5$ | 17.6 | 0.15 | 20060922 | 156.10795 | 297.01147 | 275.56849 | 0.92349 | 0.1555624 | 2.3083857 | 44 | 3 | 2003–2006 | 0.28 | M-v | 2 | MPC | 77262 | 2005 $KJ_5$ |
| 2005 $KB_6$ | 17.4 | 0.15 | 20060922 | 105.97568 | 196.83835 | 87.21007 | 3.84349 | 0.1155447 | 2.2364282 | 30 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 86760 | 2005 $KB_6$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $KG_6$ | 15.9 | 0.15 | 20060922 | 27.58658 | 315.43311 | 51.74896 | 11.42728 | 0.1829553 | 2.3078799 | 59 | 4 | 1999–2006 | 0.60 | M-v | 1 | MPC | 86760 | 2005 $KG_6$ |
| 2005 $KM_6$ | 17.6 | 0.15 | 20060922 | 147.06496 | 38.10252 | 195.60669 | 2.48059 | 0.1050006 | 2.2396864 | 59 | 5 | 1996–2006 | 0.29 | M-v | 1 | MPC | 87679 | 2005 $KM_6$ |
| 2005 $KO_6$ | 16.4 | 0.15 | 20060922 | 81.03157 | 52.86734 | 231.74444 | 4.12195 | 0.1182439 | 2.5495296 | 58 | 5 | 1998–2006 | 0.37 | M-v | 2 | MPC | 87679 | 2005 $KO_6$ |
| 2005 $KX_6$ | 16.9 | 0.15 | 20060922 | 108.88304 | 82.65687 | 193.93255 | 1.91831 | 0.1994989 | 2.3720833 | 61 | 6 | 1991–2006 | 0.49 | M-v | 1 | MPC | 87679 | 2005 $KX_6$ |
| 2005 $KZ_6$ | 16.4 | 0.15 | 20060922 | 109.33919 | 219.76362 | 42.65969 | 6.59506 | 0.1009965 | 2.4232369 | 77 | 5 | 2001–2006 | 0.36 | M-v | 1 | MPC | 89670 | 2005 $KZ_6$ |
| 2005 $KR_7$ | 14.8 | 0.15 | 20060922 | 102.40723 | 350.22628 | 235.76204 | 16.45225 | 0.1490579 | 3.1102737 | 77 | 3 | 2003–2006 | 0.48 | M-v | 2 | MPC | 04336 | 2005 $KR_7$ |
| 2005 $KU_7$ | 16.0 | 0.15 | 20060922 | 4.15970 | 267.98987 | 88.23182 | 7.27068 | 0.0486711 | 2.6805894 | 30 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 87679 | 2005 $KU_7$ |
| 2005 $KZ_7$ | 15.8 | 0.15 | 20060922 | 112.23908 | 15.02607 | 231.64791 | 14.56497 | 0.1165634 | 2.6500387 | 57 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 86761 | 2005 $KZ_7$ |
| 2005 $KC_8$ | 17.7 | 0.15 | 20060922 | 116.46430 | 146.14141 | 109.12301 | 4.52387 | 0.1259752 | 2.4645359 | 27 | 4 | 2002–2006 | 0.28 | M-v | 1 | MPC | 86762 | 2005 $KC_8$ |
| 2005 $KH_8$ | 15.6 | 0.15 | 20060922 | 54.48041 | 57.02887 | 233.79469 | 9.21778 | 0.1946481 | 3.1563826 | 41 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 86762 | 2005 $KH_8$ |
| 2005 $KP_8$ | 17.1 | 0.15 | 20060922 | 194.75442 | 169.49401 | 7.94492 | 0.88862 | 0.1098532 | 2.2235538 | 53 | 6 | 1998–2006 | 0.52 | M-v | 1 | MPC | 04336 | 2005 $KP_8$ |
| 2005 $KV_8$ | 17.2 | 0.15 | 20060922 | 123.05018 | 64.23731 | 167.05248 | 4.95155 | 0.1110474 | 2.6519551 | 42 | 4 | 1996–2006 | 0.32 | M-v | 1 | MPC | 86763 | 2005 $KV_8$ |
| 2005 $KA_9$ | 15.8 | 0.15 | 20060922 | 90.44281 | 108.20505 | 129.82509 | 3.97779 | 0.1512468 | 3.0748067 | 28 | 3 | 2004–2006 | 0.43 | M-v | 3 | MPC | 03706 | 2005 $KA_9$ |
| 2005 $KG_9$ | 16.0 | 0.15 | 20060922 | 338.13154 | 230.57534 | 134.39723 | 10.79477 | 0.1015302 | 2.9782403 | 43 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 03706 | 2005 $KG_9$ |
| 2005 $KY_9$ | 15.7 | 0.15 | 20060922 | 61.44919 | 242.92157 | 34.36585 | 17.20840 | 0.2114342 | 3.1321119 | 36 | 4 | 2001–2006 | 0.50 | M-v | 0 | MPC | 86763 | 2005 $KY_9$ |
| 2005 $KE_{10}$ | 16.6 | 0.15 | 20060922 | 92.58671 | 228.93169 | 68.11592 | 5.18142 | 0.1978236 | 2.3996089 | 32 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 86764 | 2005 $KE_{10}$ |
| 2005 $KK_{10}$ | 16.5 | 0.15 | 20060922 | 83.79516 | 78.89408 | 224.61372 | 1.49134 | 0.1741689 | 2.4388961 | 56 | 5 | 1997–2006 | 0.37 | M-v | 1 | MPC | 86764 | 2005 $KK_{10}$ |
| 2005 $KL_{10}$ | 17.6 | 0.15 | 20060922 | 122.01339 | 37.71102 | 240.66843 | 4.40210 | 0.1261807 | 2.1959831 | 46 | 3 | 2002–2006 | 0.26 | M-v | 2 | MPC | 86764 | 2005 $KL_{10}$ |
| 2005 $KO_{10}$ | 15.0 | 0.15 | 20060922 | 15.35151 | 265.36616 | 62.54386 | 11.74565 | 0.0518348 | 3.0541860 | 46 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 04336 | 2005 $KO_{10}$ |
| 2005 $KQ_{10}$ | 15.8 | 0.15 | 20060922 | 37.15929 | 117.64652 | 235.77866 | 3.71562 | 0.2871248 | 2.5545324 | 32 | 5 | 2000–2006 | 0.28 | M-v | 0 | MPC | 89671 | 2005 $KQ_{10}$ |
| 2005 $KS_{10}$ | 15.6 | 0.15 | 20060922 | 54.76905 | 126.43639 | 190.57521 | 20.05056 | 0.2971090 | 3.0537820 | 38 | 3 | 2000–2006 | 0.61 | M-v | 2 | MPC | 86764 | 2005 $KS_{10}$ |
| 2005 $KA_{11}$ | 15.4 | 0.15 | 20060922 | 133.94206 | 307.18423 | 264.34782 | 12.23592 | 0.1517346 | 2.6349967 | 40 | 5 | 2000–2006 | 0.60 | M-v | 1 | MPC | 86764 | 2005 $KA_{11}$ |
| 2005 $KB_{11}$ | 16.7 | 0.15 | 20060922 | 83.48187 | 325.40921 | 327.36685 | 3.32438 | 0.2292644 | 2.5760730 | 38 | 4 | 1993–2006 | 0.32 | M-v | 0 | MPC | 04336 | 2005 $KB_{11}$ |
| 2005 $KF_{11}$ | 15.0 | 0.15 | 20060922 | 39.84719 | 204.48443 | 115.38906 | 29.42592 | 0.0493229 | 2.6851632 | 53 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 86765 | 2005 $KF_{11}$ |
| 2005 $KG_{11}$ | 15.5 | 0.15 | 20060922 | 68.52559 | 199.12354 | 109.03316 | 34.25903 | 0.1742233 | 2.6198787 | 44 | 3 | 2001–2006 | 0.67 | M-v | 2 | MPC | 87679 | 2005 $KG_{11}$ |
| 2005 $KN_{11}$ | 16.1 | 0.15 | 20060922 | 145.50469 | 343.05373 | 269.19907 | 9.36511 | 0.1843969 | 2.3527357 | 36 | 4 | 2001–2006 | 0.58 | M-v | 2 | MPC | 86765 | 2005 $KN_{11}$ |
| 2005 $KS_{11}$ | 17.0 | 0.15 | 20060922 | 152.56678 | 212.95549 | 30.76373 | 0.82393 | 0.1011226 | 2.1741071 | 64 | 5 | 1995–2006 | 0.38 | M-v | 1 | MPC | 86765 | 2005 $KS_{11}$ |
| 2005 $KW_{11}$ | 16.3 | 0.15 | 20060922 | 72.57202 | 202.08566 | 73.08450 | 1.97883 | 0.2421199 | 3.0704707 | 50 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 87679 | 2005 $KW_{11}$ |
| 2005 $KY_{11}$ | 14.5 | 0.15 | 20060922 | 9.06924 | 242.51573 | 92.10425 | 14.76099 | 0.0829591 | 3.2040799 | 54 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04336 | 2005 $KY_{11}$ |
| 2005 $KB_{12}$ | 15.2 | 0.15 | 20060922 | 59.20555 | 161.43870 | 127.77617 | 18.06797 | 0.1730269 | 3.1396304 | 68 | 4 | 2000–2006 | 0.53 | M-v | 0 | MPC | 87679 | 2005 $KB_{12}$ |
| 2005 $KE_{13}$ | 16.2 | 0.15 | 20050530 | 17.57542 | 345.83117 | 224.63077 | 22.11688 | 0.2326939 | 3.1758972 | 16 | 1 | 41 days | 0.21 | | | MPC | | 2005 $KE_{13}$ |
| 2005 $KF_{13}$ | 16.9 | 0.15 | 20060922 | 101.94498 | 190.10014 | 136.46948 | 3.93188 | 0.1896265 | 2.4441926 | 24 | 1 | 99 days | 0.42 | M-v | 4 | MPC | | 2005 $KF_{13}$ |
| 2005 $KH_{13}$ | 12.3 | 0.15 | 20050619 | 239.48916 | 274.94704 | 100.13934 | 12.47316 | 0.0524296 | 5.2786074 | 21 | 1 | 51 days | 0.48 | | | MPC | | 2005 $KH_{13}$ |
| 2005 LA | 16.1 | 0.15 | 20060922 | 86.54477 | 181.01091 | 104.07837 | 8.75872 | 0.1904503 | 2.6931775 | 73 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 86766 | 2005 LA |
| 2005 LG | 16.1 | 0.15 | 20060922 | 158.36268 | 350.68575 | 196.01596 | 12.45558 | 0.1146249 | 2.5632957 | 44 | 4 | 2001–2006 | 0.46 | M-v | 2 | MPC | 87679 | 2005 LG |
| 2005 LJ | 16.6 | 0.15 | 20060922 | 21.64313 | 185.25104 | 156.76461 | 6.28389 | 0.0618498 | 2.6692521 | 54 | 6 | 1995–2006 | 0.45 | M-v | 0 | MPC | 86767 | 2005 LJ |
| 2005 LQ | 17.2 | 0.15 | 20060922 | 93.55993 | 119.17746 | 171.54370 | 3.43427 | 0.1593275 | 2.3940519 | 30 | 4 | 1997–2006 | 0.52 | M-v | 2 | MPC | 86767 | 2005 LQ |
| 2005 LS | 16.0 | 0.15 | 20060922 | 74.44739 | 86.54877 | 192.20179 | 24.60976 | 0.1293705 | 2.7965403 | 51 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 86767 | 2005 LS |
| 2005 LW | 18.9 | 0.15 | 20060922 | 298.18775 | 354.60577 | 138.20519 | 3.12802 | 0.6405448 | 1.4673371 | 139 | 2 | 2005–2006 | 0.47 | M-v | 2 | MPC | 03706 | 2005 LW |
| 2005 LZ | 17.7 | 0.15 | 20060922 | 108.93350 | 335.98200 | 315.78821 | 5.57325 | 0.1982838 | 2.2312582 | 18 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 86767 | 2005 LZ |
| 2005 $LB_1$ | 15.9 | 0.15 | 20060922 | 148.80253 | 9.61017 | 180.40128 | 3.87272 | 0.1422567 | 2.6821525 | 56 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 04336 | 2005 $LB_1$ |
| 2005 $LG_1$ | 16.9 | 0.15 | 20060922 | 100.38267 | 179.25826 | 117.43903 | 3.52918 | 0.2243839 | 2.3304071 | 35 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 97785 | 2005 $LG_1$ |
| 2005 $LK_1$ | 16.6 | 0.15 | 20060922 | 146.20722 | 36.31987 | 164.39985 | 9.22370 | 0.0630624 | 2.7230399 | 30 | 4 | 1997–2006 | 0.30 | M-v | 1 | MPC | 86768 | 2005 $LK_1$ |
| 2005 $LR_1$ | 15.4 | 0.15 | 20060922 | 10.35494 | 156.81125 | 170.66207 | 8.93844 | 0.1470375 | 3.4363000 | 57 | 5 | 1994–2006 | 0.41 | M-v | 0 | MPC | 04336 | 2005 $LR_1$ |
| 2005 $LZ_1$ | 16.0 | 0.15 | 20060922 | 53.94158 | 209.37181 | 97.45538 | 12.50718 | 0.1211913 | 2.8138927 | 61 | 4 | 2000–2006 | 0.42 | M-v | 0 | MPC | 86768 | 2005 $LZ_1$ |
| 2005 $LH_2$ | 15.7 | 0.15 | 20060922 | 67.58917 | 101.66578 | 174.73381 | 8.39060 | 0.2164470 | 3.1471826 | 46 | 4 | 2000–2006 | 0.53 | M-v | 0 | MPC | 04336 | 2005 $LH_2$ |
| 2005 $LJ_2$ | 15.6 | 0.15 | 20060922 | 48.07415 | 224.17071 | 105.38350 | 15.39157 | 0.1697838 | 2.6435820 | 47 | 3 | 2001–2006 | 0.40 | M-v | 1 | MPC | 87680 | 2005 $LJ_2$ |
| 2005 $LL_2$ | 16.1 | 0.15 | 20060922 | 65.68260 | 96.05691 | 213.54244 | 13.44771 | 0.1286630 | 2.5850469 | 59 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 89671 | 2005 $LL_2$ |
| 2005 $LP_2$ | 16.4 | 0.15 | 20060922 | 103.48477 | 105.05057 | 167.86819 | 6.91014 | 0.1245110 | 2.4477437 | 54 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 86769 | 2005 $LP_2$ |
| 2005 $LY_2$ | 17.1 | 0.15 | 20060922 | 167.99917 | 24.71769 | 192.86773 | 6.50406 | 0.0509526 | 2.2406665 | 62 | 7 | 1998–2006 | 0.45 | M-v | 1 | MPC | 86769 | 2005 $LY_2$ |
| 2005 $LJ_3$ | 17.1 | 0.15 | 20060922 | 101.29268 | 208.92078 | 87.25908 | 4.98484 | 0.1170724 | 2.1983872 | 35 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 87680 | 2005 $LJ_3$ |
| 2005 $LY_3$ | 15.6 | 0.15 | 20060922 | 58.18607 | 226.60992 | 87.08125 | 15.71402 | 0.2278124 | 2.7772748 | 57 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 86770 | 2005 $LY_3$ |
| 2005 $LD_5$ | 15.7 | 0.15 | 20060922 | 71.90818 | 100.41197 | 205.45989 | 7.92201 | 0.1841798 | 2.6072912 | 75 | 3 | 2004–2006 | 0.50 | M-v | 2 | MPC | 86770 | 2005 $LD_5$ |

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| 2005 $LH_5$ | 17.7 | 0.15 | 20060922 | 74.05892 | 177.79177 | 133.02980 | 7.19187 | 0.1268530 | 2.3644630 | 21 | 3 | 2004–2006 | 0.46 | M-v | 2 | MPC | 89671 | 2005 $LH_5$ |
| 2005 $LO_5$ | 17.1 | 0.15 | 20060922 | 130.15284 | 59.29264 | 210.32487 | 6.24665 | 0.1836594 | 2.2324613 | 67 | 5 | 1998–2006 | 0.39 | M-v | 1 | MPC | 86771 | 2005 $LO_5$ |
| 2005 $LP_5$ | 16.9 | 0.15 | 20060922 | 96.40962 | 44.00145 | 231.69507 | 12.24119 | 0.2292246 | 2.6270146 | 32 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 86771 | 2005 $LP_5$ |
| 2005 $LL_6$ | 16.3 | 0.15 | 20060922 | 169.26057 | 350.46433 | 182.31342 | 5.89636 | 0.1260262 | 2.5323453 | 44 | 5 | 1994–2006 | 0.49 | M-v | 1 | MPC | 04336 | 2005 $LL_6$ |
| 2005 $LO_6$ | 15.5 | 0.15 | 20060922 | 105.89982 | 21.20427 | 257.26431 | 8.69109 | 0.2020617 | 2.7230228 | 51 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 86772 | 2005 $LO_6$ |
| 2005 $LQ_6$ | 15.6 | 0.15 | 20060922 | 3.44151 | 171.68316 | 189.46772 | 25.80484 | 0.1283108 | 2.7269334 | 111 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 03707 | 2005 $LQ_6$ |
| 2005 $LY_6$ | 16.5 | 0.15 | 20060922 | 71.92031 | 117.68090 | 157.16626 | 4.03323 | 0.1122343 | 2.8917118 | 37 | 5 | 2000–2006 | 0.28 | M-v | 0 | MPC | 86773 | 2005 $LY_6$ |
| 2005 $LN_7$ | 15.8 | 0.15 | 20060922 | 56.62837 | 251.42873 | 68.53161 | 9.22232 | 0.1929687 | 2.5952487 | 63 | 3 | 2002–2006 | 0.53 | M-v | 2 | MPC | 86773 | 2005 $LN_7$ |
| 2005 $LS_7$ | 15.9 | 0.15 | 20060922 | 55.08779 | 112.51150 | 221.76900 | 9.13892 | 0.2110791 | 2.5265945 | 63 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 86773 | 2005 $LS_7$ |
| 2005 $LL_8$ | 17.0 | 0.15 | 20060922 | 169.48707 | 113.95180 | 102.14440 | 4.00648 | 0.1138617 | 2.2046486 | 36 | 6 | 1998–2006 | 0.40 | M-v | 1 | MPC | 86774 | 2005 $LL_8$ |
| 2005 $LR_8$ | 15.2 | 0.15 | 20060922 | 0.96008 | 269.10800 | 78.42796 | 16.93264 | 0.2384938 | 3.1245814 | 58 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 04336 | 2005 $LR_8$ |
| 2005 $LT_8$ | 15.7 | 0.15 | 20060922 | 24.60398 | 166.52346 | 143.95851 | 2.00786 | 0.1236130 | 3.2492084 | 52 | 6 | 2000–2006 | 0.44 | M-v | 0 | MPC | 04336 | 2005 $LT_8$ |
| 2005 $LW_8$ | 17.5 | 0.15 | 20060922 | 71.12357 | 194.34382 | 127.86896 | 2.06245 | 0.0726235 | 2.2342616 | 46 | 6 | 1998–2006 | 0.41 | M-v | 0 | MPC | 87681 | 2005 $LW_8$ |
| 2005 $LY_8$ | 15.3 | 0.15 | 20060922 | 245.64891 | 291.21501 | 158.59490 | 10.05412 | 0.0886841 | 2.9606603 | 32 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 03707 | 2005 $LY_8$ |
| 2005 $LU_9$ | 17.3 | 0.15 | 20060922 | 200.23735 | 1.96327 | 179.09556 | 5.94681 | 0.0487037 | 2.2876552 | 47 | 5 | 1992–2006 | 0.32 | M-v | 1 | MPC | 86775 | 2005 $LU_9$ |
| 2005 $LY_9$ | 17.4 | 0.15 | 20060922 | 128.98215 | 106.32464 | 148.59160 | 5.48856 | 0.2102609 | 2.3398731 | 45 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 87681 | 2005 $LY_9$ |
| 2005 $LZ_9$ | 15.6 | 0.15 | 20060922 | 61.28086 | 220.66448 | 101.08706 | 13.75883 | 0.1954235 | 2.6204519 | 54 | 3 | 2001–2006 | 0.43 | M-v | 1 | MPC | 86775 | 2005 $LZ_9$ |
| 2005 $LF_{10}$ | 15.9 | 0.15 | 20060922 | 48.70162 | 209.78000 | 88.98782 | 8.91041 | 0.1653212 | 3.0110083 | 33 | 3 | 2001–2006 | 0.39 | M-v | 2 | MPC | 04336 | 2005 $LF_{10}$ |
| 2005 $LG_{10}$ | 16.5 | 0.15 | 20060922 | 97.61215 | 144.46190 | 102.84301 | 3.87881 | 0.1086817 | 2.7926798 | 26 | 3 | 2004–2006 | 0.32 | M-v | 3 | MPC | 04336 | 2005 $LG_{10}$ |
| 2005 $LV_{10}$ | 16.9 | 0.15 | 20060922 | 34.40191 | 178.95464 | 156.83138 | 9.19234 | 0.1908471 | 2.8035095 | 31 | 3 | 2001–2006 | 0.58 | M-v | 2 | MPC | 77270 | 2005 $LV_{10}$ |
| 2005 $LW_{10}$ | 16.5 | 0.15 | 20060922 | 32.03320 | 172.24094 | 164.78724 | 8.89354 | 0.0905204 | 2.6334356 | 56 | 4 | 2000–2006 | 0.51 | M-v | 0 | MPC | 86775 | 2005 $LW_{10}$ |
| 2005 $LH_{11}$ | 14.5 | 0.15 | 20060922 | 24.60221 | 68.69588 | 278.48396 | 14.28543 | 0.0271808 | 3.1250067 | 52 | 6 | 2000–2006 | 0.47 | M-v | 0 | MPC | 86775 | 2005 $LH_{11}$ |
| 2005 $LJ_{11}$ | 16.0 | 0.15 | 20060922 | 140.36240 | 352.42762 | 267.93970 | 5.61727 | 0.1054837 | 2.4069771 | 45 | 4 | 2001–2006 | 0.36 | M-v | 1 | MPC | 86776 | 2005 $LJ_{11}$ |
| 2005 $LM_{11}$ | 15.8 | 0.15 | 20060922 | 264.10658 | 202.99984 | 277.79065 | 5.99111 | 0.0823847 | 2.7680989 | 41 | 6 | 1994–2006 | 0.46 | M-v | 1 | MPC | 89672 | 2005 $LM_{11}$ |
| 2005 $LH_{12}$ | 17.0 | 0.15 | 20060922 | 163.34672 | 11.98297 | 194.91739 | 5.06165 | 0.1041502 | 2.2897777 | 70 | 4 | 1996–2006 | 0.44 | M-v | 1 | MPC | 87681 | 2005 $LH_{12}$ |
| 2005 $LB_{13}$ | 16.9 | 0.15 | 20060922 | 153.88689 | 358.77695 | 210.12764 | 9.21689 | 0.0955334 | 2.4362792 | 34 | 3 | 2002–2006 | 0.28 | M-v | 3 | MPC | 86776 | 2005 $LB_{13}$ |
| 2005 $LV_{13}$ | 16.5 | 0.15 | 20060922 | 213.11882 | 322.80836 | 164.08571 | 4.93921 | 0.1651149 | 2.5929038 | 36 | 6 | 1994–2005 | 0.47 | M-v | 1 | MPC | 04336 | 2005 $LV_{13}$ |
| 2005 $LU_{14}$ | 15.9 | 0.15 | 20060922 | 37.01766 | 143.96728 | 193.88041 | 7.81669 | 0.2062326 | 2.6141910 | 85 | 5 | 2000–2006 | 0.56 | M-v | 0 | MPC | 04336 | 2005 $LU_{14}$ |
| 2005 $LK_{15}$ | 16.3 | 0.15 | 20060922 | 117.33671 | 142.54671 | 88.20901 | 3.85438 | 0.0914282 | 2.6542196 | 41 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 04336 | 2005 $LK_{15}$ |
| 2005 $LQ_{15}$ | 17.1 | 0.15 | 20060922 | 157.30198 | 75.23243 | 157.02923 | 4.35165 | 0.1384944 | 2.2156853 | 39 | 4 | 1998–2006 | 0.40 | M-v | 1 | MPC | 86777 | 2005 $LQ_{15}$ |
| 2005 $LN_{16}$ | 16.8 | 0.15 | 20060922 | 82.14210 | 50.41847 | 261.12997 | 3.90127 | 0.1068718 | 2.6947791 | 48 | 5 | 1997–2006 | 0.30 | M-v | 0 | MPC | 89672 | 2005 $LN_{16}$ |
| 2005 $LV_{16}$ | 16.8 | 0.15 | 20060922 | 193.81766 | 99.42184 | 77.04404 | 7.33930 | 0.0618121 | 2.3332408 | 27 | 3 | 2003–2006 | 0.55 | M-v | 3 | MPC | 77271 | 2005 $LV_{16}$ |
| 2005 $LY_{16}$ | 15.5 | 0.15 | 20060922 | 44.20363 | 261.37544 | 86.82780 | 5.65927 | 0.2907899 | 2.5791431 | 36 | 4 | 1996–2006 | 0.49 | M-v | 1 | MPC | 86777 | 2005 $LY_{16}$ |
| 2005 $LA_{18}$ | 16.6 | 0.15 | 20060922 | 309.55134 | 331.38016 | 107.05639 | 6.02907 | 0.0924787 | 2.1948774 | 69 | 5 | 1993–2006 | 0.53 | M-v | 1 | MPC | 04336 | 2005 $LA_{18}$ |
| 2005 $LB_{18}$ | 17.1 | 0.15 | 20060922 | 105.71732 | 86.61950 | 188.83974 | 3.89687 | 0.1452412 | 2.3926362 | 40 | 4 | 1997–2006 | 0.42 | M-v | 1 | MPC | 86778 | 2005 $LB_{18}$ |
| 2005 $LN_{18}$ | 18.1 | 0.15 | 20060922 | 106.03679 | 62.11386 | 223.84956 | 6.65018 | 0.1266582 | 2.3003652 | 26 | 3 | 2002–2006 | 0.23 | M-v | 1 | MPC | 86778 | 2005 $LN_{18}$ |
| 2005 $LB_{19}$ | 16.8 | 0.15 | 20060922 | 346.98185 | 262.05516 | 130.62381 | 8.21813 | 0.0389983 | 2.4157641 | 29 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 97785 | 2005 $LB_{19}$ |
| 2005 $LG_{19}$ | 15.6 | 0.15 | 20060922 | 293.36318 | 247.24885 | 162.46741 | 8.60964 | 0.1002517 | 3.1189900 | 40 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04336 | 2005 $LG_{19}$ |
| 2005 $LZ_{19}$ | 15.9 | 0.15 | 20060922 | 355.95180 | 318.76133 | 68.59031 | 24.17810 | 0.2303004 | 2.3601740 | 39 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 77272 | 2005 $LZ_{19}$ |
| 2005 $LR_{20}$ | 16.0 | 0.15 | 20060922 | 77.73073 | 73.80842 | 191.06892 | 5.94788 | 0.0916171 | 2.9417438 | 51 | 6 | 1994–2006 | 0.47 | M-v | 0 | MPC | 86779 | 2005 $LR_{20}$ |
| 2005 $LA_{21}$ | 16.9 | 0.15 | 20060922 | 114.30532 | 96.18831 | 147.85589 | 4.68142 | 0.1781163 | 2.6253605 | 37 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 03707 | 2005 $LA_{21}$ |
| 2005 $LK_{21}$ | 17.7 | 0.15 | 20060922 | 151.71966 | 359.00978 | 206.54577 | 0.75730 | 0.1388195 | 2.4320669 | 46 | 4 | 1997–2006 | 0.39 | M-v | 2 | MPC | 86779 | 2005 $LK_{21}$ |
| 2005 $LS_{21}$ | 15.7 | 0.15 | 20060922 | 263.55879 | 231.35586 | 247.58146 | 10.28289 | 0.0856956 | 2.9605091 | 40 | 5 | 2001–2006 | 0.43 | M-v | 0 | MPC | 95686 | 2005 $LS_{21}$ |
| 2005 $LZ_{21}$ | 15.5 | 0.15 | 20060922 | 68.88836 | 127.30357 | 164.96202 | 7.85383 | 0.2908433 | 3.0032938 | 55 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 86779 | 2005 $LZ_{21}$ |
| 2005 $LE_{22}$ | 17.3 | 0.15 | 20060922 | 96.61702 | 106.79598 | 180.15524 | 5.49384 | 0.1550557 | 2.4478334 | 34 | 3 | 1998–2006 | 0.37 | M-v | 3 | MPC | 95686 | 2005 $LE_{22}$ |
| 2005 $LF_{22}$ | 16.7 | 0.15 | 20060922 | 44.98593 | 178.35139 | 146.97301 | 3.90355 | 0.1514452 | 2.5465930 | 38 | 5 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04336 | 2005 $LF_{22}$ |
| 2005 $LG_{22}$ | 16.8 | 0.15 | 20060922 | 231.62475 | 302.83890 | 169.25077 | 4.53037 | 0.1142287 | 2.5154878 | 29 | 4 | 1993–2006 | 0.29 | M-v | 3 | MPC | 04336 | 2005 $LG_{22}$ |
| 2005 $LJ_{22}$ | 17.1 | 0.15 | 20060922 | 202.16610 | 335.43198 | 187.13520 | 5.16417 | 0.0916051 | 2.2895142 | 44 | 5 | 1999–2006 | 0.36 | M-v | 0 | MPC | 86780 | 2005 $LJ_{22}$ |
| 2005 $LL_{22}$ | 16.8 | 0.15 | 20060922 | 207.84465 | 356.19166 | 167.04146 | 3.49425 | 0.0686139 | 2.2552089 | 44 | 6 | 1998–2006 | 0.53 | M-v | 1 | MPC | 04336 | 2005 $LL_{22}$ |
| 2005 $LN_{22}$ | 18.2 | 0.15 | 20060922 | 125.16294 | 106.09663 | 154.63921 | 2.99585 | 0.2044178 | 2.2716904 | 26 | 3 | 2002–2006 | 0.20 | M-v | 2 | MPC | 87682 | 2005 $LN_{22}$ |
| 2005 $LW_{22}$ | 16.0 | 0.15 | 20060922 | 51.57447 | 47.50158 | 285.70345 | 1.23861 | 0.0736851 | 2.9177746 | 49 | 5 | 2001–2006 | 0.35 | M-v | 0 | MPC | 86780 | 2005 $LW_{22}$ |
| 2005 $LY_{22}$ | 15.4 | 0.15 | 20060922 | 42.28864 | 244.46732 | 94.94943 | 2.98830 | 0.1763768 | 3.2295712 | 59 | 5 | 2000–2006 | 0.34 | M-v | 0 | MPC | 89673 | 2005 $LY_{22}$ |
| 2005 $LD_{23}$ | 16.0 | 0.15 | 20060922 | 248.15748 | 199.97084 | 292.90944 | 8.08275 | 0.0990584 | 2.7827636 | 42 | 5 | 2001–2006 | 0.52 | M-v | 0 | MPC | 86781 | 2005 $LD_{23}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $LP_{23}$ | 16.4 | 0.15 | 20060922 | 42.94436 | 88.41866 | 236.26630 | 11.52575 | 0.1931757 | 2.6574596 | 61 | 4 | 1993–2006 | 0.43 | M-v | 0 | MPC | 86781 | 2005 $LP_{23}$ |
| 2005 $LV_{23}$ | 17.1 | 0.15 | 20060922 | 109.29614 | 147.73749 | 141.68459 | 3.46297 | 0.2233745 | 2.3455181 | 73 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 86781 | 2005 $LV_{23}$ |
| 2005 $LW_{23}$ | 16.0 | 0.15 | 20060922 | 126.90394 | 11.62041 | 228.20710 | 8.14075 | 0.1155830 | 2.5720246 | 60 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 86781 | 2005 $LW_{23}$ |
| 2005 $LY_{23}$ | 16.4 | 0.15 | 20060922 | 130.86538 | 23.59681 | 239.14571 | 23.97638 | 0.1432365 | 2.2750840 | 78 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 87682 | 2005 $LY_{23}$ |
| 2005 $LD_{24}$ | 15.8 | 0.15 | 20060922 | 113.60871 | 14.93557 | 269.77770 | 5.03799 | 0.2050429 | 2.4637264 | 49 | 5 | 1995–2006 | 0.40 | M-v | 2 | MPC | 86782 | 2005 $LD_{24}$ |
| 2005 $LX_{24}$ | 16.2 | 0.15 | 20060922 | 134.42062 | 157.45272 | 118.36210 | 4.59167 | 0.1829425 | 2.4178081 | 77 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 86782 | 2005 $LX_{24}$ |
| 2005 $LO_{25}$ | 13.6 | 0.15 | 20060922 | 336.05497 | 160.22169 | 155.20951 | 2.73198 | 0.0833257 | 5.1642346 | 28 | 5 | 1996–2005 | 0.29 | M-v | 0 | MPC | 86782 | 2005 $LO_{25}$ |
| 2005 $LS_{25}$ | 16.3 | 0.15 | 20060922 | 353.67149 | 283.75569 | 83.75093 | 7.67674 | 0.1051064 | 2.6664188 | 45 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 86783 | 2005 $LS_{25}$ |
| 2005 $LZ_{25}$ | 15.4 | 0.15 | 20060922 | 48.03078 | 154.37973 | 139.94486 | 9.51517 | 0.0577177 | 2.9886899 | 36 | 4 | 2001–2006 | 0.41 | M-v | 0 | MPC | 04336 | 2005 $LZ_{25}$ |
| 2005 $LH_{26}$ | 17.7 | 0.15 | 20060922 | 131.47103 | 98.68299 | 163.90169 | 5.69780 | 0.1413881 | 2.2177979 | 40 | 4 | 2001–2006 | 0.34 | M-v | 1 | MPC | 86783 | 2005 $LH_{26}$ |
| 2005 $LR_{26}$ | 16.4 | 0.15 | 20060922 | 277.52101 | 356.90877 | 113.94528 | 5.79082 | 0.0805691 | 2.7016495 | 42 | 5 | 1998–2006 | 0.48 | M-v | 1 | MPC | 89673 | 2005 $LR_{26}$ |
| 2005 $LG_{27}$ | 17.1 | 0.15 | 20060922 | 294.38538 | 280.94612 | 162.59881 | 6.77117 | 0.0783213 | 2.2016445 | 44 | 3 | 2003–2006 | 0.42 | M-v | 2 | MPC | 04336 | 2005 $LG_{27}$ |
| 2005 $LL_{27}$ | 17.2 | 0.15 | 20060922 | 55.90682 | 132.11817 | 162.37699 | 6.57651 | 0.2122890 | 2.9429594 | 23 | 4 | 2000–2006 | 0.28 | M-v | 1 | MPC | 86783 | 2005 $LL_{27}$ |
| 2005 $LW_{27}$ | 16.0 | 0.15 | 20060922 | 7.14834 | 196.41058 | 135.93865 | 5.82403 | 0.1447491 | 3.0909648 | 44 | 5 | 1999–2006 | 0.39 | M-v | 0 | MPC | 04336 | 2005 $LW_{27}$ |
| 2005 $LZ_{29}$ | 16.7 | 0.15 | 20060922 | 46.02763 | 239.01671 | 124.06729 | 7.20398 | 0.2229403 | 2.2206312 | 52 | 4 | 1999–2005 | 0.63 | M-v | 3 | MPC | 86784 | 2005 $LZ_{29}$ |
| 2005 $LC_{30}$ | 15.7 | 0.15 | 20060922 | 31.73624 | 85.91747 | 224.99476 | 13.23211 | 0.0755991 | 2.6760739 | 40 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 00958 | 2005 $LC_{30}$ |
| 2005 $LG_{30}$ | 15.7 | 0.15 | 20060922 | 45.31534 | 64.90954 | 276.68034 | 3.15609 | 0.2364035 | 3.2005548 | 60 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 86784 | 2005 $LG_{30}$ |
| 2005 $LK_{30}$ | 17.9 | 0.15 | 20060922 | 148.50151 | 350.87448 | 279.48721 | 7.62220 | 0.1229427 | 2.2135872 | 46 | 5 | 2001–2006 | 0.29 | M-v | 1 | MPC | 87683 | 2005 $LK_{30}$ |
| 2005 $LL_{30}$ | 15.7 | 0.15 | 20060922 | 90.78138 | 168.82245 | 106.64761 | 3.02161 | 0.2115064 | 3.0714459 | 47 | 4 | 2000–2006 | 0.34 | M-v | 0 | MPC | 86784 | 2005 $LL_{30}$ |
| 2005 $LO_{30}$ | 16.8 | 0.15 | 20060922 | 126.33841 | 175.36057 | 101.33647 | 3.52612 | 0.1466311 | 2.4140544 | 37 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 89674 | 2005 $LO_{30}$ |
| 2005 $LR_{30}$ | 16.9 | 0.15 | 20060922 | 122.80245 | 183.52335 | 105.03040 | 6.49649 | 0.0629916 | 2.3380852 | 30 | 5 | 2001–2006 | 0.47 | M-v | 0 | MPC | 86784 | 2005 $LR_{30}$ |
| 2005 $LU_{30}$ | 16.8 | 0.15 | 20060922 | 92.96580 | 202.45296 | 173.52642 | 9.79790 | 0.2370944 | 2.2695984 | 81 | 1 | 144 days | 0.35 | M-v | 3 | MPC | 90214 | 2005 $LU_{30}$ |
| 2005 $LW_{30}$ | 16.4 | 0.15 | 20060922 | 53.90208 | 156.93930 | 168.41034 | 16.08611 | 0.1818759 | 2.6571250 | 37 | 4 | 2000–2006 | 0.36 | M-v | 0 | MPC | 87683 | 2005 $LW_{30}$ |
| 2005 $LX_{30}$ | 16.7 | 0.15 | 20060922 | 116.06884 | 157.89880 | 92.90616 | 3.73182 | 0.1400915 | 2.5589068 | 41 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 87683 | 2005 $LX_{30}$ |
| 2005 $LZ_{30}$ | 15.7 | 0.15 | 20060922 | 151.34624 | 347.83308 | 223.12972 | 12.31630 | 0.1070672 | 2.5864264 | 45 | 4 | 1998–2006 | 0.53 | M-v | 1 | MPC | 86784 | 2005 $LZ_{30}$ |
| 2005 $LG_{31}$ | 15.7 | 0.15 | 20060922 | 43.07245 | 276.98746 | 73.86865 | 7.31552 | 0.2712863 | 2.5524662 | 28 | 4 | 2002–2006 | 0.25 | M-v | 0 | MPC | 04336 | 2005 $LG_{31}$ |
| 2005 $LM_{32}$ | 16.9 | 0.15 | 20060922 | 125.66357 | 43.90038 | 210.30777 | 6.26621 | 0.1050458 | 2.3268775 | 42 | 4 | 1999–2006 | 0.27 | M-v | 1 | MPC | 95686 | 2005 $LM_{32}$ |
| 2005 $LR_{32}$ | 17.2 | 0.15 | 20060922 | 167.68825 | 49.67656 | 156.54988 | 3.53788 | 0.0860035 | 2.2944677 | 39 | 6 | 1992–2006 | 0.28 | M-v | 1 | MPC | 95686 | 2005 $LR_{32}$ |
| 2005 $LZ_{32}$ | 17.4 | 0.15 | 20060922 | 164.04445 | 23.70239 | 178.87469 | 2.61775 | 0.1133940 | 2.3102644 | 75 | 5 | 1994–2006 | 0.28 | M-v | 1 | MPC | 04336 | 2005 $LZ_{32}$ |
| 2005 $LE_{33}$ | 17.1 | 0.15 | 20060922 | 111.93453 | 199.27395 | 86.18949 | 5.34282 | 0.1674852 | 2.2103791 | 36 | 4 | 1995–2006 | 0.41 | M-v | 1 | MPC | 86786 | 2005 $LE_{33}$ |
| 2005 $LJ_{33}$ | 16.6 | 0.15 | 20060922 | 75.57871 | 79.02294 | 187.69333 | 4.07668 | 0.0249583 | 2.7878972 | 29 | 5 | 2000–2006 | 0.26 | M-v | 0 | MPC | 04336 | 2005 $LJ_{33}$ |
| 2005 $LM_{33}$ | 17.1 | 0.15 | 20060922 | 32.70839 | 272.31876 | 84.88738 | 8.18733 | 0.1850837 | 2.3682586 | 46 | 4 | 1995–2006 | 0.34 | M-v | 0 | MPC | 89674 | 2005 $LM_{33}$ |
| 2005 $LH_{34}$ | 15.4 | 0.15 | 20060922 | 2.01768 | 110.51914 | 239.52812 | 10.15715 | 0.0440949 | 2.7453259 | 55 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 03707 | 2005 $LH_{34}$ |
| 2005 $LJ_{34}$ | 16.5 | 0.15 | 20060922 | 133.78243 | 352.95755 | 191.50489 | 1.83181 | 0.1445147 | 3.0592121 | 23 | 3 | 1999–2005 | 0.48 | M-v | 2 | MPC | 89674 | 2005 $LJ_{34}$ |
| 2005 $LS_{34}$ | 17.8 | 0.15 | 20060922 | 127.77763 | 88.94296 | 168.09147 | 4.66054 | 0.1759799 | 2.3323927 | 21 | 4 | 1995–2006 | 0.35 | M-v | 0 | MPC | 00959 | 2005 $LS_{34}$ |
| 2005 $LO_{35}$ | 16.8 | 0.15 | 20060922 | 107.62918 | 48.47164 | 227.19797 | 2.83128 | 0.1201968 | 2.7575589 | 40 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 86786 | 2005 $LO_{35}$ |
| 2005 $LD_{36}$ | 16.7 | 0.15 | 20060922 | 48.68060 | 207.90169 | 95.20436 | 2.50458 | 0.0240398 | 2.6039686 | 40 | 5 | 2000–2006 | 0.41 | M-v | 0 | MPC | 86787 | 2005 $LD_{36}$ |
| 2005 $LY_{36}$ | 16.6 | 0.15 | 20060922 | 87.38623 | 172.19368 | 114.22566 | 6.48056 | 0.1424466 | 2.5690687 | 29 | 3 | 2003–2006 | 0.40 | M-v | 3 | MPC | 86787 | 2005 $LY_{36}$ |
| 2005 $LK_{37}$ | 16.8 | 0.15 | 20060922 | 86.84013 | 10.47477 | 259.17509 | 3.04834 | 0.0690797 | 2.5856956 | 28 | 3 | 2004–2006 | 0.29 | M-v | 3 | MPC | 86788 | 2005 $LK_{37}$ |
| 2005 $LD_{38}$ | 16.2 | 0.15 | 20060922 | 231.77196 | 0.49562 | 101.26720 | 12.69904 | 0.0490393 | 3.0282027 | 31 | 4 | 2001–2005 | 0.32 | M-v | 1 | MPC | 86788 | 2005 $LD_{38}$ |
| 2005 $LL_{40}$ | 16.7 | 0.15 | 20060922 | 26.10308 | 123.11837 | 272.27602 | 8.36913 | 0.2090828 | 2.5885035 | 26 | 3 | 2001–2006 | 0.32 | M-v | 2 | MPC | 89674 | 2005 $LL_{40}$ |
| 2005 $LM_{40}$ | 17.2 | 0.15 | 20060922 | 165.68486 | 32.43852 | 202.40951 | 1.85006 | 0.1345208 | 2.3503777 | 53 | 5 | 2001–2006 | 0.41 | M-v | 1 | MPC | 86790 | 2005 $LM_{40}$ |
| 2005 $LY_{40}$ | 17.4 | 0.15 | 20060922 | 152.01281 | 133.73361 | 104.11521 | 6.68193 | 0.0555989 | 2.2254331 | 31 | 4 | 2002–2006 | 0.25 | M-v | 1 | MPC | 86791 | 2005 $LY_{40}$ |
| 2005 $LB_{41}$ | 16.7 | 0.15 | 20060922 | 74.55370 | 110.27882 | 158.76731 | 3.40883 | 0.2018201 | 3.0632119 | 32 | 5 | 1995–2006 | 0.58 | M-v | 0 | MPC | 86791 | 2005 $LB_{41}$ |
| 2005 $LG_{41}$ | 17.0 | 0.15 | 20060922 | 90.91026 | 125.14558 | 158.35993 | 2.67413 | 0.1719580 | 2.4600478 | 49 | 3 | 1998–2006 | 0.31 | M-v | 2 | MPC | 86791 | 2005 $LG_{41}$ |
| 2005 $LM_{41}$ | 16.3 | 0.15 | 20060922 | 238.94940 | 55.77291 | 100.61981 | 3.46333 | 0.0494939 | 2.5218089 | 46 | 3 | 2004–2006 | 0.45 | M-v | 4 | MPC | 86791 | 2005 $LM_{41}$ |
| 2005 $LR_{42}$ | 16.6 | 0.15 | 20060922 | 185.45697 | 333.69161 | 196.91353 | 2.30507 | 0.1665124 | 2.3272630 | 49 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 86792 | 2005 $LR_{42}$ |
| 2005 $LT_{42}$ | 17.3 | 0.15 | 20060922 | 157.69509 | 18.81814 | 185.83654 | 8.93123 | 0.1503703 | 2.4381698 | 36 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 86792 | 2005 $LT_{42}$ |
| 2005 $LJ_{43}$ | 17.2 | 0.15 | 20060922 | 126.07850 | 162.29536 | 121.64099 | 3.50913 | 0.0143319 | 2.3751805 | 59 | 5 | 1999–2006 | 0.37 | M-v | 1 | MPC | 86792 | 2005 $LJ_{43}$ |
| 2005 $LA_{44}$ | 15.8 | 0.15 | 20060922 | 76.37893 | 45.53756 | 254.14964 | 8.67303 | 0.1954232 | 2.5882918 | 41 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 86792 | 2005 $LA_{44}$ |
| 2005 $LD_{44}$ | 14.3 | 0.15 | 20060922 | 31.00024 | 66.82644 | 247.17943 | 25.64674 | 0.1569980 | 3.1233745 | 70 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04337 | 2005 $LD_{44}$ |
| 2005 $LZ_{44}$ | 15.8 | 0.15 | 20060922 | 345.55831 | 172.88205 | 205.69108 | 12.82075 | 0.1411515 | 2.7605408 | 80 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 03708 | 2005 $LZ_{44}$ |
| 2005 $LC_{45}$ | 15.8 | 0.15 | 20060922 | 43.81839 | 143.59725 | 203.74036 | 11.82353 | 0.2160402 | 2.5290444 | 33 | 3 | 2000–2006 | 0.39 | M-v | 1 | MPC | 86793 | 2005 $LC_{45}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $LE_{45}$ | 15.9 | 0.15 | 20060922 | 154.85295 | 351.44506 | 204.14446 | 11.44317 | 0.1218985 | 2.6132594 | 50 | 6 | 1993–2006 | 0.48 | M-v | 1 | MPC | 86793 | 2005 $LE_{45}$ |
| 2005 $LM_{45}$ | 16.0 | 0.15 | 20060922 | 115.10627 | 33.84734 | 187.81967 | 8.52934 | 0.1512341 | 2.9176935 | 27 | 4 | 2000–2006 | 0.34 | M-v | 0 | MPC | 04337 | 2005 $LM_{45}$ |
| 2005 $LW_{45}$ | 15.8 | 0.15 | 20060922 | 19.09149 | 223.89197 | 137.95820 | 13.09224 | 0.1873118 | 2.6586944 | 53 | 3 | 2004–2006 | 0.48 | M-v | 2 | MPC | 86794 | 2005 $LW_{45}$ |
| 2005 $LK_{46}$ | 16.7 | 0.15 | 20060922 | 120.55569 | 166.59570 | 112.15363 | 5.32027 | 0.1040180 | 2.5434683 | 31 | 4 | 1996–2006 | 0.38 | M-v | 1 | MPC | 03708 | 2005 $LK_{46}$ |
| 2005 $LR_{46}$ | 16.0 | 0.15 | 20060922 | 344.68102 | 293.83489 | 138.71377 | 11.76701 | 0.2164617 | 2.5703316 | 34 | 5 | 1995–2006 | 0.36 | M-v | 1 | MPC | 86794 | 2005 $LR_{46}$ |
| 2005 $LY_{47}$ | 16.3 | 0.15 | 20060922 | 107.72667 | 162.65807 | 115.89123 | 4.99152 | 0.1885270 | 2.6816571 | 43 | 6 | 1995–2006 | 0.48 | M-v | 0 | MPC | 86795 | 2005 $LY_{47}$ |
| 2005 $LL_{48}$ | 16.0 | 0.15 | 20060922 | 104.62159 | 2.25334 | 325.48905 | 5.24890 | 0.3143518 | 2.3740714 | 170 | 6 | 1996–2005 | 0.58 | M-v | 1 | MPC | 97785 | 2005 $LL_{48}$ |
| 2005 $LP_{48}$ | 14.4 | 0.15 | 20060922 | 48.83493 | 79.99755 | 278.35795 | 24.63345 | 0.3247593 | 3.1787768 | 58 | 3 | 2000–2006 | 0.37 | M-v | 1 | MPC | 90214 | 2005 $LP_{48}$ |
| 2005 $LR_{48}$ | 16.5 | 0.15 | 20060922 | 109.70767 | 35.41222 | 276.02700 | 4.31447 | 0.2290524 | 2.4027090 | 58 | 4 | 1994–2006 | 0.38 | M-v | 1 | MPC | 90214 | 2005 $LR_{48}$ |
| 2005 $LU_{48}$ | 17.1 | 0.15 | 20060922 | 208.23826 | 294.76730 | 214.07795 | 3.41304 | 0.0683768 | 2.4267939 | 39 | 5 | 1995–2006 | 0.34 | M-v | 0 | MPC | 86797 | 2005 $LU_{48}$ |
| 2005 $LF_{49}$ | 16.4 | 0.15 | 20060922 | 41.47306 | 87.51495 | 233.92193 | 11.21962 | 0.1730448 | 2.8813039 | 46 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 86798 | 2005 $LF_{49}$ |
| 2005 $LK_{49}$ | 15.6 | 0.15 | 20060922 | 23.50397 | 261.98856 | 88.94042 | 14.85237 | 0.2183484 | 2.6582019 | 44 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 86798 | 2005 $LK_{49}$ |
| 2005 $LO_{49}$ | 16.2 | 0.15 | 20060922 | 41.31176 | 202.73825 | 137.65379 | 6.12943 | 0.1717115 | 2.5772367 | 39 | 4 | 2002–2006 | 0.35 | M-v | 0 | MPC | 86798 | 2005 $LO_{49}$ |
| 2005 $LT_{49}$ | 17.3 | 0.15 | 20060922 | 161.04512 | 355.52500 | 222.38473 | 5.06927 | 0.1115487 | 2.3055210 | 58 | 5 | 1998–2006 | 0.40 | M-v | 0 | MPC | 86799 | 2005 $LT_{49}$ |
| 2005 $LA_{50}$ | 16.1 | 0.15 | 20060922 | 26.69425 | 153.28928 | 196.02431 | 10.20584 | 0.1294374 | 2.6525105 | 70 | 6 | 1996–2006 | 0.43 | M-v | 0 | MPC | 04337 | 2005 $LA_{50}$ |
| 2005 $LL_{50}$ | 16.9 | 0.15 | 20060922 | 123.61117 | 158.59684 | 92.44165 | 1.23209 | 0.0954757 | 2.4072323 | 58 | 5 | 1999–2006 | 0.33 | M-v | 1 | MPC | 04337 | 2005 $LL_{50}$ |
| 2005 $LP_{50}$ | 16.2 | 0.15 | 20060922 | 94.19103 | 219.63620 | 80.76480 | 4.53777 | 0.1786755 | 2.3877796 | 57 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 86800 | 2005 $LP_{50}$ |
| 2005 $LB_{51}$ | 16.6 | 0.15 | 20060922 | 66.79671 | 72.65745 | 288.39781 | 4.71348 | 0.1732358 | 2.4879090 | 51 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 90214 | 2005 $LB_{51}$ |
| 2005 $LO_{51}$ | 15.7 | 0.15 | 20060922 | 60.14492 | 113.80280 | 171.53399 | 9.85534 | 0.2027686 | 3.1577567 | 50 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 86801 | 2005 $LO_{51}$ |
| 2005 $LD_{53}$ | 15.5 | 0.15 | 20060922 | 82.52035 | 9.69689 | 302.30582 | 7.95497 | 0.2593684 | 3.1178800 | 32 | 1 | 144 days | 0.72 | M-v | 4 | MPC | | 2005 $LD_{53}$ |
| 2005 $LE_{53}$ | 18.5 | 0.15 | 20050709 | 350.22764 | 29.63748 | 285.67280 | 5.51068 | 0.2069246 | 2.2021621 | 17 | 1 | 53 days | 0.17 | | | MPC | | 2005 $LE_{53}$ |
| 2005 $LF_{53}$ | 17.3 | 0.15 | 20060922 | 116.94300 | 178.52964 | 124.34997 | 3.14865 | 0.2020703 | 2.4267272 | 25 | 1 | 146 days | 0.36 | M-v | 4 | MPC | | 2005 $LF_{53}$ |
| 2005 $LG_{53}$ | 18.0 | 0.15 | 20050709 | 343.25286 | 44.30268 | 290.86198 | 3.16632 | 0.2141847 | 2.4304654 | 22 | 1 | 59 days | 0.30 | | | MPC | | 2005 $LG_{53}$ |
| 2005 $LJ_{53}$ | 16.5 | 0.15 | 20060922 | 82.63449 | 142.35072 | 187.30536 | 9.85561 | 0.1015713 | 2.9735649 | 23 | 1 | 169 days | 0.28 | M-v | 3 | MPC | | 2005 $LJ_{53}$ |
| 2005 ME | 15.5 | 0.15 | 20060922 | 57.57237 | 149.64926 | 138.18119 | 13.88109 | 0.0906457 | 3.0363631 | 46 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04337 | 2005 ME |
| 2005 MU | 15.6 | 0.15 | 20060922 | 85.39892 | 5.25148 | 312.96046 | 4.37372 | 0.1307243 | 3.0228633 | 71 | 5 | 1993–2006 | 0.43 | M-v | 1 | MPC | 90214 | 2005 MU |
| 2005 $MK_1$ | 16.0 | 0.15 | 20060922 | 69.67783 | 152.01521 | 187.04389 | 0.49248 | 0.2536367 | 3.1452020 | 88 | 4 | 2000–2006 | 0.43 | M-v | 0 | MPC | 97785 | 2005 $MK_1$ |
| 2005 $MQ_1$ | 15.0 | 0.15 | 20060922 | 66.12279 | 232.13207 | 73.02816 | 23.44092 | 0.1772256 | 3.1714530 | 29 | 5 | 2001–2006 | 0.39 | M-v | 0 | MPC | 89675 | 2005 $MQ_1$ |
| 2005 $MV_1$ | 15.3 | 0.15 | 20060922 | 60.03726 | 193.24865 | 136.56673 | 30.12388 | 0.1567136 | 2.5619788 | 61 | 4 | 1993–2006 | 0.54 | M-v | 1 | MPC | 86803 | 2005 $MV_1$ |
| 2005 $MH_2$ | 15.0 | 0.15 | 20060922 | 84.52939 | 173.04756 | 81.21872 | 14.46343 | 0.1400698 | 3.0859497 | 54 | 4 | 1996–2006 | 0.52 | M-v | 0 | MPC | 04337 | 2005 $MH_2$ |
| 2005 $ML_2$ | 16.7 | 0.15 | 20060922 | 100.96263 | 183.05425 | 112.54356 | 3.90278 | 0.1746022 | 2.3452199 | 20 | 3 | 2004–2006 | 0.31 | M-v | 3 | MPC | 89675 | 2005 $ML_2$ |
| 2005 $MO_2$ | 15.9 | 0.15 | 20060922 | 329.56476 | 293.75074 | 106.65194 | 15.82166 | 0.1210203 | 2.5681362 | 45 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 86805 | 2005 $MO_2$ |
| 2005 $MB_3$ | 16.4 | 0.15 | 20060922 | 119.83860 | 217.92273 | 85.17967 | 3.33961 | 0.2262506 | 2.4077642 | 54 | 4 | 2001–2006 | 0.37 | M-v | 1 | MPC | 86806 | 2005 $MB_3$ |
| 2005 $MJ_3$ | 15.7 | 0.15 | 20060922 | 9.08294 | 213.15578 | 137.78891 | 6.23621 | 0.0929469 | 2.7768258 | 88 | 5 | 2001–2006 | 0.48 | M-v | 0 | MPC | 04337 | 2005 $MJ_3$ |
| 2005 $MK_4$ | 17.5 | 0.15 | 20060922 | 107.93959 | 149.38533 | 116.80122 | 3.20426 | 0.0647869 | 2.4388796 | 19 | 3 | 2004–2006 | 0.19 | M-v | 3 | MPC | 86807 | 2005 $MK_4$ |
| 2005 $MT_4$ | 16.0 | 0.15 | 20060922 | 60.99471 | 74.21636 | 301.64609 | 11.31318 | 0.2868166 | 2.6936086 | 59 | 4 | 2001–2006 | 0.54 | M-v | 2 | MPC | 90214 | 2005 $MT_4$ |
| 2005 $MW_4$ | 15.1 | 0.15 | 20060922 | 29.22956 | 249.88804 | 81.45577 | 22.80552 | 0.2229287 | 3.2172651 | 51 | 5 | 1999–2006 | 0.61 | M-v | 0 | MPC | 89676 | 2005 $MW_4$ |
| 2005 $MJ_5$ | 16.7 | 0.15 | 20060922 | 127.00582 | 107.61152 | 170.45240 | 2.14798 | 0.2006718 | 2.4296685 | 55 | 5 | 1994–2006 | 0.37 | M-v | 1 | MPC | 86808 | 2005 $MJ_5$ |
| 2005 $MC_6$ | 16.1 | 0.15 | 20060922 | 58.84485 | 176.98439 | 129.47473 | 9.89300 | 0.1318783 | 2.7329980 | 59 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 86809 | 2005 $MC_6$ |
| 2005 $ME_6$ | 16.6 | 0.15 | 20060922 | 342.10115 | 279.03036 | 134.53971 | 6.56040 | 0.0948198 | 2.2264654 | 41 | 4 | 1999–2006 | 0.46 | M-v | 1 | MPC | 86809 | 2005 $ME_6$ |
| 2005 $MR_6$ | 16.1 | 0.15 | 20060922 | 101.42475 | 190.81446 | 98.60531 | 3.03441 | 0.0350197 | 2.6821883 | 36 | 4 | 1999–2006 | 0.44 | M-v | 0 | MPC | 86810 | 2005 $MR_6$ |
| 2005 $MU_6$ | 16.3 | 0.15 | 20060922 | 49.85294 | 78.10870 | 293.24936 | 11.71355 | 0.2013996 | 2.5451690 | 37 | 7 | 1993–2006 | 0.54 | M-v | 1 | MPC | 86810 | 2005 $MU_6$ |
| 2005 $MW_6$ | 16.4 | 0.15 | 20060922 | 176.87172 | 2.00636 | 172.62463 | 5.84330 | 0.0331047 | 2.6730197 | 33 | 4 | 1996–2006 | 0.29 | M-v | 1 | MPC | 03708 | 2005 $MW_6$ |
| 2005 $MK_7$ | 16.7 | 0.15 | 20060922 | 228.11038 | 10.17980 | 125.61007 | 1.92179 | 0.1312841 | 2.3755083 | 35 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 89676 | 2005 $MK_7$ |
| 2005 $MZ_8$ | 15.6 | 0.15 | 20060922 | 164.13715 | 80.56753 | 137.94729 | 10.34287 | 0.0223463 | 2.9269648 | 58 | 7 | 1999–2006 | 0.42 | M-v | 0 | MPC | 95689 | 2005 $MZ_8$ |
| 2005 $MF_9$ | 17.3 | 0.15 | 20060922 | 148.05476 | 129.58047 | 135.20580 | 6.57861 | 0.1495246 | 2.2982854 | 47 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 86812 | 2005 $MF_9$ |
| 2005 $MJ_9$ | 18.0 | 0.15 | 20060922 | 209.29622 | 356.48169 | 218.01518 | 2.68688 | 0.0927718 | 2.1618894 | 35 | 5 | 1996–2006 | 0.24 | M-v | 0 | MPC | 86813 | 2005 $MJ_9$ |
| 2005 $ML_9$ | 16.9 | 0.15 | 20060922 | 80.26260 | 194.62330 | 152.04621 | 3.74544 | 0.1436932 | 2.3969075 | 33 | 5 | 1994–2005 | 0.34 | M-v | 1 | MPC | 04337 | 2005 $ML_9$ |
| 2005 $MO_9$ | 15.6 | 0.15 | 20060922 | 47.74877 | 231.64184 | 122.51753 | 12.00087 | 0.0703371 | 2.7168151 | 43 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 86813 | 2005 $MO_9$ |
| 2005 $MP_9$ | 16.5 | 0.15 | 20060922 | 116.27828 | 356.74727 | 306.66671 | 6.09908 | 0.1114568 | 2.3696549 | 51 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 90214 | 2005 $MP_9$ |
| 2005 $MX_9$ | 16.2 | 0.15 | 20060922 | 100.58628 | 196.67179 | 131.85511 | 2.15533 | 0.1942591 | 2.4285277 | 100 | 4 | 2003–2006 | 0.44 | M-v | 1 | MPC | 90215 | 2005 $MX_9$ |
| 2005 $MA_{10}$ | 14.9 | 0.15 | 20060922 | 159.98950 | 275.77980 | 312.75832 | 13.00625 | 0.1273828 | 2.8615787 | 83 | 6 | 2000–2006 | 0.58 | M-v | 1 | MPC | 89677 | 2005 $MA_{10}$ |
| 2005 $MG_{10}$ | 17.6 | 0.15 | 20060922 | 146.88502 | 52.64986 | 177.60143 | 6.53326 | 0.0699998 | 2.3387051 | 28 | 4 | 1995–2006 | 0.26 | M-v | 0 | MPC | 89677 | 2005 $MG_{10}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $MU_{11}$ | 16.8 | 0.15 | 20060922 | 71.21591 | 100.51405 | 198.73591 | 7.47285 | 0.1340300 | 2.6825390 | 41 | 5 | 1996–2006 | 0.33 | M-v | 0 | MPC | 89678 | 2005 $MU_{11}$ |
| 2005 $MW_{11}$ | 16.0 | 0.15 | 20060922 | 65.69354 | 172.77106 | 150.39299 | 0.34436 | 0.1333363 | 3.0602096 | 55 | 6 | 1995–2006 | 0.39 | M-v | 0 | MPC | 89678 | 2005 $MW_{11}$ |
| 2005 $MY_{11}$ | 15.9 | 0.15 | 20060922 | 333.85591 | 157.98985 | 232.64437 | 12.43098 | 0.1399261 | 2.7248476 | 57 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04337 | 2005 $MY_{11}$ |
| 2005 $MG_{12}$ | 17.6 | 0.15 | 20060922 | 155.34168 | 326.37733 | 282.71676 | 1.97504 | 0.2067122 | 2.3160958 | 31 | 5 | 1998–2006 | 0.39 | M-v | 1 | MPC | 86816 | 2005 $MG_{12}$ |
| 2005 $MH_{12}$ | 16.2 | 0.15 | 20060922 | 119.57972 | 306.36803 | 343.08617 | 4.61361 | 0.1830278 | 2.4590525 | 52 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 97786 | 2005 $MH_{12}$ |
| 2005 $MK_{12}$ | 15.0 | 0.15 | 20060922 | 64.31994 | 212.77259 | 113.22854 | 14.02857 | 0.1344644 | 3.0428695 | 32 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 86816 | 2005 $MK_{12}$ |
| 2005 $MN_{12}$ | 15.3 | 0.15 | 20060922 | 54.19117 | 5.81833 | 326.44999 | 3.87627 | 0.1243204 | 3.1867846 | 53 | 5 | 1997–2006 | 0.58 | M-v | 0 | MPC | 89678 | 2005 $MN_{12}$ |
| 2005 $MP_{12}$ | 16.8 | 0.15 | 20060922 | 156.95424 | 112.14380 | 143.75138 | 2.84800 | 0.1287593 | 2.3467243 | 43 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 86816 | 2005 $MP_{12}$ |
| 2005 $MR_{12}$ | 15.3 | 0.15 | 20060922 | 96.66936 | 223.64555 | 101.53589 | 15.60132 | 0.1632473 | 2.4548649 | 73 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 86816 | 2005 $MR_{12}$ |
| 2005 $MA_{13}$ | 16.8 | 0.15 | 20060922 | 150.78152 | 152.18321 | 116.06411 | 7.11698 | 0.1069237 | 2.3298322 | 46 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 86817 | 2005 $MA_{13}$ |
| 2005 $MD_{13}$ | 16.6 | 0.15 | 20060922 | 35.61762 | 286.46705 | 117.33689 | 7.16532 | 0.1262041 | 2.3681003 | 50 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 86818 | 2005 $MD_{13}$ |
| 2005 $MT_{13}$ | 15.8 | 0.15 | 20060922 | 95.28427 | 96.72564 | 140.26176 | 10.54776 | 0.0895610 | 3.1050822 | 36 | 5 | 1997–2006 | 0.61 | M-v | 0 | MPC | 04337 | 2005 $MT_{13}$ |
| 2005 $MZ_{13}$ | 15.6 | 0.15 | 20060922 | 88.45871 | 133.91686 | 116.71699 | 10.88275 | 0.0430313 | 3.0016752 | 43 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 04337 | 2005 $MZ_{13}$ |
| 2005 $MC_{14}$ | 15.8 | 0.15 | 20060922 | 86.36882 | 100.47362 | 152.65745 | 3.20851 | 0.0835703 | 3.0103444 | 40 | 3 | 2004–2006 | 0.47 | M-v | 3 | MPC | 04337 | 2005 $MC_{14}$ |
| 2005 $MD_{14}$ | 15.2 | 0.15 | 20060922 | 330.33787 | 135.40083 | 237.49186 | 21.62227 | 0.0880965 | 3.1422618 | 32 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 86819 | 2005 $MD_{14}$ |
| 2005 $ML_{14}$ | 15.4 | 0.15 | 20060922 | 77.96525 | 31.56102 | 274.05899 | 9.45903 | 0.0991347 | 3.0920939 | 36 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 86819 | 2005 $ML_{14}$ |
| 2005 $MU_{14}$ | 15.4 | 0.15 | 20060922 | 227.70733 | 317.22538 | 149.16778 | 10.44683 | 0.0423999 | 3.0157743 | 49 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 04337 | 2005 $MU_{14}$ |
| 2005 $MV_{14}$ | 14.8 | 0.15 | 20060922 | 72.78173 | 174.16459 | 135.03482 | 11.63505 | 0.1657511 | 3.1612738 | 57 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 86820 | 2005 $MV_{14}$ |
| 2005 $MY_{14}$ | 14.8 | 0.15 | 20060922 | 302.49804 | 150.15560 | 294.96207 | 13.85496 | 0.0176143 | 3.2011572 | 31 | 5 | 2000–2006 | 0.46 | M-v | 1 | MPC | 86820 | 2005 $MY_{14}$ |
| 2005 $MZ_{14}$ | 16.0 | 0.15 | 20060922 | 72.90824 | 171.29728 | 150.11612 | 4.69744 | 0.1237834 | 2.9946140 | 59 | 6 | 1998–2006 | 0.36 | M-v | 0 | MPC | 89678 | 2005 $MZ_{14}$ |
| 2005 $MB_{15}$ | 15.5 | 0.15 | 20060922 | 334.80103 | 142.53169 | 289.50316 | 9.71759 | 0.1023184 | 2.9447754 | 44 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 86820 | 2005 $MB_{15}$ |
| 2005 $MD_{15}$ | 16.4 | 0.15 | 20060922 | 94.36067 | 165.11705 | 153.03358 | 5.55377 | 0.0693830 | 2.5956570 | 47 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 90215 | 2005 $MD_{15}$ |
| 2005 $MF_{15}$ | 15.2 | 0.15 | 20060922 | 87.29102 | 87.69386 | 205.95639 | 1.84768 | 0.1379512 | 3.2321061 | 73 | 5 | 1994–2006 | 0.37 | M-v | 0 | MPC | 04337 | 2005 $MF_{15}$ |
| 2005 $MN_{15}$ | 15.9 | 0.15 | 20060922 | 108.15962 | 3.11464 | 292.50919 | 5.10186 | 0.0494979 | 2.7320465 | 38 | 5 | 1994–2006 | 0.43 | M-v | 1 | MPC | 90215 | 2005 $MN_{15}$ |
| 2005 $MT_{15}$ | 16.4 | 0.15 | 20060922 | 153.41123 | 120.14259 | 117.27153 | 2.53410 | 0.0473761 | 2.6782020 | 46 | 3 | 1998–2006 | 0.41 | M-v | 4 | MPC | 86822 | 2005 $MT_{15}$ |
| 2005 $MU_{16}$ | 16.2 | 0.15 | 20060922 | 122.23296 | 20.12487 | 252.13745 | 2.87425 | 0.1293835 | 2.6564603 | 36 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 86823 | 2005 $MU_{16}$ |
| 2005 $MA_{17}$ | 16.3 | 0.15 | 20060922 | 179.89190 | 294.02774 | 288.09559 | 7.12344 | 0.0249725 | 2.6368341 | 47 | 4 | 2001–2006 | 0.34 | M-v | 1 | MPC | 86823 | 2005 $MA_{17}$ |
| 2005 $MC_{17}$ | 16.5 | 0.15 | 20060922 | 104.24028 | 131.18905 | 162.83360 | 2.72932 | 0.1295709 | 2.7121392 | 55 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 86823 | 2005 $MC_{17}$ |
| 2005 $ME_{17}$ | 15.4 | 0.15 | 20060922 | 75.31087 | 167.18535 | 137.23396 | 2.29920 | 0.1419509 | 3.1949030 | 74 | 4 | 2000–2006 | 0.36 | M-v | 0 | MPC | 90215 | 2005 $ME_{17}$ |
| 2005 $ML_{17}$ | 17.4 | 0.15 | 20060922 | 59.74661 | 91.35015 | 295.39375 | 3.96642 | 0.1839504 | 2.3015160 | 26 | 4 | 1998–2006 | 0.42 | M-v | 1 | MPC | 89678 | 2005 $ML_{17}$ |
| 2005 $MT_{17}$ | 16.6 | 0.15 | 20060922 | 84.14010 | 18.32882 | 297.64827 | 4.70966 | 0.0468396 | 2.7541985 | 31 | 3 | 2001–2006 | 0.32 | M-v | 3 | MPC | 86824 | 2005 $MT_{17}$ |
| 2005 $MD_{18}$ | 16.8 | 0.15 | 20060922 | 60.77412 | 179.11575 | 166.57724 | 2.06125 | 0.0949181 | 2.6946678 | 43 | 5 | 1997–2006 | 0.39 | M-v | 0 | MPC | 86824 | 2005 $MD_{18}$ |
| 2005 $MH_{18}$ | 15.4 | 0.15 | 20060922 | 252.62021 | 289.30730 | 150.08768 | 10.02384 | 0.0748739 | 3.1614276 | 27 | 3 | 2004–2006 | 0.29 | M-v | 3 | MPC | 86824 | 2005 $MH_{18}$ |
| 2005 $ME_{19}$ | 16.9 | 0.15 | 20060922 | 243.52772 | 345.75016 | 153.37753 | 4.36499 | 0.0928912 | 2.2261497 | 43 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 00960 | 2005 $ME_{19}$ |
| 2005 $MK_{19}$ | 16.2 | 0.15 | 20060922 | 100.77198 | 72.64747 | 157.77367 | 11.82627 | 0.1476809 | 3.0719801 | 30 | 3 | 2004–2006 | 0.35 | M-v | 3 | MPC | 03708 | 2005 $MK_{19}$ |
| 2005 $MR_{20}$ | 15.0 | 0.15 | 20060922 | 90.89164 | 164.74418 | 122.44220 | 12.73960 | 0.0227076 | 3.2151199 | 45 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 86826 | 2005 $MR_{20}$ |
| 2005 $MT_{20}$ | 17.4 | 0.15 | 20060922 | 174.36894 | 110.83647 | 117.72715 | 2.04409 | 0.1441958 | 2.3889224 | 34 | 3 | 2004–2006 | 0.30 | M-v | 3 | MPC | 86826 | 2005 $MT_{20}$ |
| 2005 $MU_{20}$ | 16.7 | 0.15 | 20060922 | 359.57267 | 299.88673 | 117.26714 | 2.89360 | 0.1127995 | 2.6316674 | 45 | 6 | 1997–2006 | 0.45 | M-v | 0 | MPC | 89679 | 2005 $MU_{20}$ |
| 2005 $MY_{20}$ | 15.3 | 0.15 | 20060922 | 83.17129 | 124.98586 | 165.38060 | 9.89945 | 0.1466391 | 3.1361726 | 40 | 6 | 2000–2006 | 0.57 | M-v | 0 | MPC | 89679 | 2005 $MY_{20}$ |
| 2005 $ME_{21}$ | 17.1 | 0.15 | 20060922 | 89.43207 | 160.16799 | 167.01046 | 4.45310 | 0.0967716 | 2.5248750 | 40 | 5 | 2000–2006 | 0.39 | M-v | 1 | MPC | 89679 | 2005 $ME_{21}$ |
| 2005 $MQ_{21}$ | 15.7 | 0.15 | 20060922 | 176.21464 | 262.55435 | 304.06061 | 8.34442 | 0.0422944 | 3.1233225 | 32 | 3 | 2002–2006 | 0.42 | M-v | 1 | MPC | 86827 | 2005 $MQ_{21}$ |
| 2005 $MZ_{21}$ | 17.1 | 0.15 | 20060922 | 146.07751 | 312.05622 | 310.63064 | 1.63396 | 0.1759468 | 2.3803105 | 58 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 86828 | 2005 $MZ_{21}$ |
| 2005 $MF_{22}$ | 16.3 | 0.15 | 20060922 | 255.04131 | 213.60632 | 299.23972 | 3.48596 | 0.1242545 | 2.5266206 | 50 | 3 | 2004–2006 | 0.38 | M-v | 3 | MPC | 86828 | 2005 $MF_{22}$ |
| 2005 $ML_{22}$ | 17.9 | 0.15 | 20060922 | 198.56439 | 82.75300 | 123.04147 | 7.14051 | 0.1800063 | 2.3288625 | 43 | 5 | 1997–2006 | 0.40 | M-v | 1 | MPC | 86828 | 2005 $ML_{22}$ |
| 2005 $MR_{22}$ | 16.3 | 0.15 | 20060922 | 71.68151 | 207.77055 | 126.99273 | 3.70348 | 0.1130620 | 2.7379206 | 36 | 4 | 1995–2006 | 0.37 | M-v | 0 | MPC | 86828 | 2005 $MR_{22}$ |
| 2005 $MU_{22}$ | 17.2 | 0.15 | 20060922 | 145.92407 | 307.69980 | 306.06784 | 1.70335 | 0.1345607 | 2.5444883 | 41 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 86829 | 2005 $MU_{22}$ |
| 2005 $MJ_{23}$ | 15.4 | 0.15 | 20060922 | 27.93615 | 235.69741 | 92.48585 | 16.76057 | 0.2100809 | 3.1695756 | 24 | 3 | 1999–2006 | 0.36 | M-v | 1 | MPC | 86829 | 2005 $MJ_{23}$ |
| 2005 $ML_{23}$ | 15.2 | 0.15 | 20060922 | 6.22559 | 207.26870 | 125.40501 | 16.64189 | 0.0761200 | 3.2356761 | 27 | 3 | 2003–2006 | 0.35 | M-v | 2 | MPC | 03708 | 2005 $ML_{23}$ |
| 2005 $MQ_{23}$ | 15.2 | 0.15 | 20060922 | 51.35768 | 124.76532 | 205.18642 | 14.49032 | 0.1226055 | 2.6411019 | 90 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 86830 | 2005 $MQ_{23}$ |
| 2005 $MK_{24}$ | 15.9 | 0.15 | 20060922 | 3.90678 | 85.13522 | 303.00213 | 1.99455 | 0.0763057 | 3.0935969 | 62 | 5 | 1997–2006 | 0.34 | M-v | 0 | MPC | 86830 | 2005 $MK_{24}$ |
| 2005 $MO_{24}$ | 15.8 | 0.15 | 20060922 | 212.70458 | 55.82063 | 126.65681 | 12.75527 | 0.0635285 | 2.7347854 | 34 | 3 | 2004–2006 | 0.54 | M-v | 3 | MPC | 86830 | 2005 $MO_{24}$ |
| 2005 $MT_{24}$ | 16.3 | 0.15 | 20060922 | 169.87135 | 330.15970 | 247.89706 | 2.46973 | 0.3160113 | 2.4613643 | 27 | 3 | 2001–2006 | 0.57 | M-v | 4 | MPC | 89680 | 2005 $MT_{24}$ |
| 2005 $MF_{25}$ | 17.4 | 0.15 | 20060922 | 132.42145 | 126.05219 | 150.16693 | 1.66363 | 0.1832506 | 2.3649654 | 56 | 6 | 1998–2006 | 0.39 | M-v | 1 | MPC | 86831 | 2005 $MF_{25}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $MF_{26}$ | 16.3 | 0.15 | 20060922 | 6.22353 | 229.59806 | 133.87564 | 4.97063 | 0.1120769 | 2.6531131 | 87 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 86831 | 2005 $MF_{26}$ |
| 2005 $MN_{26}$ | 16.8 | 0.15 | 20060922 | 58.54824 | 53.52671 | 312.73991 | 1.83446 | 0.1767056 | 2.5264589 | 50 | 6 | 1997–2006 | 0.39 | M-v | 0 | MPC | 86832 | 2005 $MN_{26}$ |
| 2005 $MY_{26}$ | 15.5 | 0.15 | 20060922 | 22.97638 | 216.59764 | 143.24968 | 6.49802 | 0.0761686 | 3.2316116 | 56 | 5 | 1997–2006 | 0.55 | M-v | 0 | MPC | 89680 | 2005 $MY_{26}$ |
| 2005 $MJ_{27}$ | 16.4 | 0.15 | 20060922 | 148.41298 | 136.93429 | 122.86638 | 7.98699 | 0.0704278 | 2.4205554 | 49 | 4 | 2000–2006 | 0.35 | M-v | 1 | MPC | 86833 | 2005 $MJ_{27}$ |
| 2005 $MY_{27}$ | 17.0 | 0.15 | 20060922 | 70.07227 | 143.29661 | 221.46893 | 5.74274 | 0.1617714 | 2.3820071 | 39 | 5 | 1998–2006 | 0.53 | M-v | 1 | MPC | 86833 | 2005 $MY_{27}$ |
| 2005 $MX_{28}$ | 17.4 | 0.15 | 20060922 | 260.39452 | 319.06114 | 201.50106 | 5.85616 | 0.0558053 | 2.2920268 | 25 | 5 | 2001–2006 | 0.33 | M-v | 0 | MPC | 86833 | 2005 $MX_{28}$ |
| 2005 $MD_{29}$ | 17.3 | 0.15 | 20060922 | 103.19990 | 132.23263 | 164.66382 | 8.12714 | 0.1192313 | 2.7265501 | 31 | 3 | 2001–2006 | 0.25 | M-v | 2 | MPC | 86834 | 2005 $MD_{29}$ |
| 2005 $MZ_{29}$ | 15.9 | 0.15 | 20060922 | 75.98031 | 104.30033 | 206.84668 | 4.44121 | 0.1542956 | 3.1312803 | 34 | 4 | 2000–2006 | 0.33 | M-v | 0 | MPC | 95691 | 2005 $MZ_{29}$ |
| 2005 $MF_{30}$ | 17.2 | 0.15 | 20060922 | 115.61208 | 85.47686 | 233.26851 | 3.45733 | 0.1601993 | 2.2648387 | 54 | 3 | 1995–2005 | 0.50 | M-v | 2 | MPC | 86835 | 2005 $MF_{30}$ |
| 2005 $MK_{30}$ | 16.3 | 0.15 | 20060922 | 281.30581 | 350.46809 | 140.79583 | 15.25354 | 0.0433005 | 2.5563715 | 37 | 3 | 2004–2006 | 0.39 | M-v | 3 | MPC | 86835 | 2005 $MK_{30}$ |
| 2005 $MO_{30}$ | 17.0 | 0.15 | 20060922 | 63.97984 | 141.49839 | 201.11597 | 4.52382 | 0.0667760 | 2.7104437 | 38 | 4 | 2001–2006 | 0.35 | M-v | 0 | MPC | 97786 | 2005 $MO_{30}$ |
| 2005 $ML_{31}$ | 16.9 | 0.15 | 20060922 | 108.38366 | 96.12569 | 162.70375 | 7.24170 | 0.2340675 | 3.1020906 | 27 | 3 | 2000–2005 | 0.30 | M-v | 2 | MPC | 86836 | 2005 $ML_{31}$ |
| 2005 $MA_{32}$ | 15.5 | 0.15 | 20060922 | 46.48844 | 60.21044 | 326.98243 | 6.95354 | 0.1649624 | 2.4339261 | 54 | 4 | 1998–2006 | 0.59 | M-v | 2 | MPC | 86837 | 2005 $MA_{32}$ |
| 2005 $MB_{32}$ | 16.0 | 0.15 | 20060922 | 110.70009 | 283.96282 | 18.29157 | 2.46483 | 0.1809338 | 2.4647253 | 42 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 90215 | 2005 $MB_{32}$ |
| 2005 $MK_{32}$ | 15.4 | 0.15 | 20060922 | 62.08691 | 314.38289 | 12.57577 | 7.96175 | 0.2088197 | 3.1485630 | 43 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 86838 | 2005 $MK_{32}$ |
| 2005 $ML_{32}$ | 15.1 | 0.15 | 20060922 | 62.78167 | 271.66668 | 56.34639 | 7.90377 | 0.1176834 | 3.0609871 | 78 | 5 | 1995–2006 | 0.37 | M-v | 0 | MPC | 86838 | 2005 $ML_{32}$ |
| 2005 $MP_{32}$ | 16.9 | 0.15 | 20060922 | 200.79278 | 304.84796 | 314.00926 | 17.94462 | 0.0543554 | 1.9146590 | 47 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 86839 | 2005 $MP_{32}$ |
| 2005 $MS_{32}$ | 16.7 | 0.15 | 20060922 | 87.77394 | 305.18071 | 39.91581 | 3.16506 | 0.1988301 | 2.4075030 | 34 | 5 | 1998–2006 | 0.33 | M-v | 1 | MPC | 95691 | 2005 $MS_{32}$ |
| 2005 $MD_{33}$ | 17.3 | 0.15 | 20060922 | 140.41853 | 114.99803 | 150.41134 | 3.36007 | 0.2094676 | 2.3480883 | 66 | 7 | 1991–2006 | 0.49 | M-v | 1 | MPC | 90215 | 2005 $MD_{33}$ |
| 2005 $MO_{33}$ | 17.2 | 0.15 | 20060922 | 201.87854 | 17.93536 | 176.56349 | 2.21660 | 0.1589993 | 2.3724523 | 36 | 5 | 2000–2006 | 0.36 | M-v | 1 | MPC | 89681 | 2005 $MO_{33}$ |
| 2005 $MS_{33}$ | 17.2 | 0.15 | 20060922 | 74.39566 | 213.48140 | 152.79739 | 2.93752 | 0.1788213 | 2.2691418 | 40 | 4 | 2002–2006 | 0.54 | M-v | 2 | MPC | 90215 | 2005 $MS_{33}$ |
| 2005 $MF_{34}$ | 15.4 | 0.15 | 20060922 | 337.96560 | 288.01312 | 131.69960 | 11.83333 | 0.0563754 | 3.0313477 | 56 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 86840 | 2005 $MF_{34}$ |
| 2005 $MP_{34}$ | 16.3 | 0.15 | 20060922 | 99.53720 | 17.03151 | 307.20190 | 1.91209 | 0.1945933 | 2.4731718 | 73 | 4 | 2001–2006 | 0.36 | M-v | 1 | MPC | 97786 | 2005 $MP_{34}$ |
| 2005 $MR_{34}$ | 15.8 | 0.15 | 20060922 | 146.88165 | 113.39429 | 139.68948 | 4.25627 | 0.0418337 | 2.7948390 | 42 | 5 | 1992–2006 | 0.40 | M-v | 0 | MPC | 90215 | 2005 $MR_{34}$ |
| 2005 $MA_{35}$ | 16.7 | 0.15 | 20060922 | 19.52398 | 145.57499 | 202.49951 | 2.31295 | 0.1523170 | 2.7801441 | 63 | 4 | 1995–2006 | 0.39 | M-v | 0 | MPC | 86842 | 2005 $MA_{35}$ |
| 2005 $MC_{35}$ | 15.8 | 0.15 | 20060922 | 351.03561 | 281.26669 | 123.50214 | 10.92200 | 0.1106622 | 3.0310580 | 38 | 5 | 2001–2006 | 0.54 | M-v | 0 | MPC | 89681 | 2005 $MC_{35}$ |
| 2005 $MJ_{35}$ | 17.3 | 0.15 | 20060922 | 140.62069 | 187.14834 | 74.43990 | 0.03556 | 0.1934304 | 2.4097948 | 43 | 6 | 1998–2006 | 0.36 | M-v | 0 | MPC | 86842 | 2005 $MJ_{35}$ |
| 2005 $MQ_{35}$ | 16.2 | 0.15 | 20060922 | 116.99037 | 322.46161 | 312.50228 | 2.64114 | 0.0562936 | 2.8080511 | 56 | 3 | 2001–2006 | 0.29 | M-v | 3 | MPC | 86843 | 2005 $MQ_{35}$ |
| 2005 $MU_{35}$ | 15.6 | 0.15 | 20060922 | 58.47989 | 216.62186 | 118.90704 | 11.40814 | 0.1041127 | 2.9887932 | 44 | 5 | 2000–2006 | 0.47 | M-v | 0 | MPC | 86843 | 2005 $MU_{35}$ |
| 2005 $MC_{36}$ | 16.4 | 0.15 | 20060922 | 85.72392 | 323.40028 | 22.11088 | 1.62238 | 0.1959895 | 2.4044744 | 53 | 6 | 1998–2006 | 0.38 | M-v | 1 | MPC | 90215 | 2005 $MC_{36}$ |
| 2005 $MB_{37}$ | 16.7 | 0.15 | 20060922 | 54.91328 | 157.12720 | 188.07449 | 1.78643 | 0.0769210 | 2.8676538 | 46 | 4 | 2001–2006 | 0.40 | M-v | 0 | MPC | 86845 | 2005 $MB_{37}$ |
| 2005 $MJ_{37}$ | 16.8 | 0.15 | 20060922 | 35.26601 | 132.83965 | 236.62877 | 1.16188 | 0.0850104 | 2.8383207 | 45 | 5 | 2001–2006 | 0.38 | M-v | 0 | MPC | 86845 | 2005 $MJ_{37}$ |
| 2005 $MP_{37}$ | 17.2 | 0.15 | 20060922 | 178.21716 | 109.81552 | 130.20320 | 5.95468 | 0.1220542 | 2.2617440 | 30 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 86845 | 2005 $MP_{37}$ |
| 2005 $MQ_{37}$ | 16.6 | 0.15 | 20060922 | 212.95856 | 297.96974 | 258.26720 | 2.20327 | 0.0418806 | 2.5187688 | 49 | 3 | 2004–2006 | 0.40 | M-v | 3 | MPC | 86845 | 2005 $MQ_{37}$ |
| 2005 $MS_{37}$ | 15.2 | 0.15 | 20060922 | 161.90635 | 86.36785 | 133.70729 | 10.32212 | 0.0548150 | 3.0581345 | 43 | 4 | 2003–2006 | 0.57 | M-v | 1 | MPC | 90215 | 2005 $MS_{37}$ |
| 2005 $MX_{37}$ | 16.1 | 0.15 | 20060922 | 54.22038 | 212.47854 | 139.26242 | 6.99473 | 0.0315673 | 2.6989238 | 38 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 90215 | 2005 $MX_{37}$ |
| 2005 $MZ_{37}$ | 15.1 | 0.15 | 20060922 | 56.53519 | 202.52962 | 135.40064 | 8.65941 | 0.0617799 | 2.9861094 | 63 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 86846 | 2005 $MZ_{37}$ |
| 2005 $MO_{38}$ | 16.3 | 0.15 | 20060922 | 74.02373 | 116.71843 | 200.94248 | 0.61962 | 0.1540337 | 3.0436349 | 58 | 7 | 1995–2006 | 0.29 | M-v | 0 | MPC | 86846 | 2005 $MO_{38}$ |
| 2005 $MQ_{38}$ | 17.3 | 0.15 | 20060922 | 137.71372 | 326.44506 | 295.61083 | 3.29633 | 0.0169282 | 2.7894598 | 34 | 4 | 2001–2006 | 0.30 | M-v | 0 | MPC | 86847 | 2005 $MQ_{38}$ |
| 2005 $MX_{38}$ | 13.7 | 0.15 | 20060922 | 24.79959 | 51.79443 | 305.01485 | 4.00933 | 0.2074092 | 3.9513454 | 149 | 4 | 1997–2006 | 0.44 | M-v | 1 | MPC | 90215 | 2005 $MX_{38}$ |
| 2005 $MK_{39}$ | 17.3 | 0.15 | 20060922 | 163.25313 | 198.18984 | 47.04504 | 1.88894 | 0.1444627 | 2.3860495 | 36 | 5 | 1997–2006 | 0.32 | M-v | 0 | MPC | 86847 | 2005 $MK_{39}$ |
| 2005 $ML_{39}$ | 17.1 | 0.15 | 20060922 | 162.45763 | 281.36906 | 336.89343 | 3.25838 | 0.1418198 | 2.2580187 | 49 | 6 | 1995–2006 | 0.50 | M-v | 1 | MPC | 86848 | 2005 $ML_{39}$ |
| 2005 $MM_{39}$ | 16.5 | 0.15 | 20060922 | 83.19759 | 155.34313 | 165.59525 | 5.85701 | 0.0608566 | 2.7282580 | 38 | 4 | 2001–2006 | 0.30 | M-v | 0 | MPC | 86848 | 2005 $MM_{39}$ |
| 2005 $MN_{39}$ | 15.9 | 0.15 | 20060922 | 74.78615 | 345.05819 | 341.92642 | 5.08896 | 0.0418645 | 2.8041480 | 30 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 89682 | 2005 $MN_{39}$ |
| 2005 $MR_{39}$ | 15.2 | 0.15 | 20060922 | 70.12764 | 23.05556 | 294.97996 | 7.87012 | 0.0937542 | 3.1533026 | 29 | 3 | 2000–2006 | 0.47 | M-v | 3 | MPC | 97786 | 2005 $MR_{39}$ |
| 2005 $MH_{40}$ | 17.0 | 0.15 | 20060922 | 51.89783 | 152.71666 | 222.44736 | 3.90198 | 0.1243878 | 2.4458063 | 28 | 4 | 1998–2006 | 0.35 | M-v | 1 | MPC | 86849 | 2005 $MH_{40}$ |
| 2005 $MC_{41}$ | 15.5 | 0.15 | 20060922 | 301.96281 | 163.86155 | 305.30693 | 13.43075 | 0.1602361 | 2.5775616 | 58 | 4 | 1998–2006 | 0.53 | M-v | 3 | MPC | 86850 | 2005 $MC_{41}$ |
| 2005 $MF_{41}$ | 17.2 | 0.15 | 20060922 | 211.54814 | 305.38112 | 259.55843 | 4.97990 | 0.1115542 | 2.3059456 | 51 | 3 | 2003–2006 | 0.45 | M-v | 2 | MPC | 86851 | 2005 $MF_{41}$ |
| 2005 $MG_{41}$ | 16.4 | 0.15 | 20060922 | 150.77821 | 297.56918 | 307.95163 | 2.85524 | 0.1410479 | 2.6135687 | 55 | 4 | 2001–2006 | 0.48 | M-v | 0 | MPC | 90216 | 2005 $MG_{41}$ |
| 2005 $MM_{41}$ | 16.6 | 0.15 | 20060922 | 30.66601 | 263.70741 | 111.88431 | 3.26930 | 0.0810546 | 2.8615512 | 48 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 86852 | 2005 $MM_{41}$ |
| 2005 $MO_{41}$ | 16.7 | 0.15 | 20060922 | 59.55802 | 82.24433 | 300.89127 | 10.49761 | 0.2945638 | 2.5395181 | 44 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 86852 | 2005 $MO_{41}$ |
| 2005 $MP_{41}$ | 16.3 | 0.15 | 20060922 | 340.92620 | 83.97171 | 352.89700 | 0.73236 | 0.0498117 | 2.5437973 | 35 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 86852 | 2005 $MP_{41}$ |
| 2005 $MR_{41}$ | 15.7 | 0.15 | 20060922 | 77.72490 | 348.18172 | 311.64717 | 2.14621 | 0.0474371 | 3.3957211 | 52 | 5 | 1993–2006 | 0.34 | M-v | 0 | MPC | 89682 | 2005 $MR_{41}$ |

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| 2005 $MX_{41}$ | 16.7 | 0.15 | 20060922 | 335.32876 | 314.66779 | 128.35694 | 0.54378 | 0.1050137 | 2.5762019 | 33 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 89682 | 2005 $MX_{41}$ |
| 2005 $MA_{42}$ | 15.8 | 0.15 | 20060922 | 115.71523 | 49.16510 | 213.35952 | 6.74524 | 0.1220421 | 3.0671173 | 68 | 6 | 1998–2006 | 0.38 | M-v | 0 | MPC | 86853 | 2005 $MA_{42}$ |
| 2005 $MQ_{42}$ | 16.0 | 0.15 | 20060922 | 345.64848 | 273.25444 | 163.62469 | 9.26280 | 0.1027038 | 2.5741808 | 53 | 6 | 1993–2006 | 0.37 | M-v | 0 | MPC | 04337 | 2005 $MQ_{42}$ |
| 2005 $MY_{42}$ | 17.9 | 0.15 | 20060922 | 138.58072 | 58.62973 | 244.18436 | 2.15583 | 0.1287283 | 2.1575025 | 39 | 4 | 1996–2005 | 0.42 | M-v | 2 | MPC | 86854 | 2005 $MY_{42}$ |
| 2005 $MC_{43}$ | 16.6 | 0.15 | 20060922 | 119.54906 | 124.23293 | 146.37915 | 2.49278 | 0.1800528 | 2.7582878 | 37 | 4 | 2001–2006 | 0.42 | M-v | 0 | MPC | 86855 | 2005 $MC_{43}$ |
| 2005 $MH_{43}$ | 16.0 | 0.15 | 20060922 | 112.47403 | 15.00728 | 265.74498 | 11.26286 | 0.1616687 | 2.6898789 | 32 | 4 | 2001–2006 | 0.46 | M-v | 1 | MPC | 86855 | 2005 $MH_{43}$ |
| 2005 $MJ_{43}$ | 15.5 | 0.15 | 20060922 | 46.80923 | 126.36808 | 249.99514 | 13.95505 | 0.1518056 | 2.6075959 | 35 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 86855 | 2005 $MJ_{43}$ |
| 2005 $MW_{43}$ | 16.3 | 0.15 | 20060922 | 147.75346 | 54.81605 | 191.83217 | 3.02236 | 0.1188702 | 2.5507151 | 43 | 5 | 1993–2006 | 0.42 | M-v | 0 | MPC | 04337 | 2005 $MW_{43}$ |
| 2005 $MB_{44}$ | 16.2 | 0.15 | 20060922 | 128.56780 | 122.37267 | 147.90073 | 13.48417 | 0.0780789 | 2.6243295 | 46 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 86856 | 2005 $MB_{44}$ |
| 2005 $MU_{44}$ | 15.7 | 0.15 | 20060922 | 123.18313 | 22.01994 | 259.33261 | 8.69317 | 0.0906767 | 2.6444955 | 47 | 5 | 2000–2006 | 0.64 | M-v | 1 | MPC | 86856 | 2005 $MU_{44}$ |
| 2005 $MV_{44}$ | 16.2 | 0.15 | 20060922 | 31.18229 | 118.53984 | 275.91702 | 14.43191 | 0.1256104 | 2.5908096 | 33 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 00960 | 2005 $MV_{44}$ |
| 2005 $MN_{45}$ | 16.3 | 0.15 | 20060922 | 75.84808 | 173.34052 | 130.75266 | 1.39420 | 0.1977982 | 3.0515128 | 41 | 4 | 1999–2006 | 0.26 | M-v | 0 | MPC | 86857 | 2005 $MN_{45}$ |
| 2005 $MT_{45}$ | 16.6 | 0.15 | 20060922 | 117.67275 | 92.03168 | 181.09159 | 4.48329 | 0.1280495 | 2.6945437 | 27 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 89683 | 2005 $MT_{45}$ |
| 2005 $MS_{46}$ | 16.9 | 0.15 | 20060922 | 130.86198 | 107.09874 | 158.13704 | 5.70335 | 0.2081027 | 2.5428788 | 46 | 4 | 2000–2006 | 0.33 | M-v | 1 | MPC | 86858 | 2005 $MS_{46}$ |
| 2005 $MF_{47}$ | 16.4 | 0.15 | 20060922 | 87.04567 | 75.56662 | 247.08453 | 8.21522 | 0.1283924 | 2.6771334 | 30 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 86859 | 2005 $MF_{47}$ |
| 2005 $MW_{47}$ | 15.6 | 0.15 | 20060922 | 79.75024 | 59.19750 | 233.42277 | 2.06603 | 0.1010188 | 3.2267107 | 42 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 89683 | 2005 $MW_{47}$ |
| 2005 $MJ_{48}$ | 17.3 | 0.15 | 20060922 | 110.04248 | 131.17468 | 163.70636 | 7.21871 | 0.0978052 | 2.5507346 | 21 | 3 | 2004–2006 | 0.40 | M-v | 3 | MPC | 89683 | 2005 $MJ_{48}$ |
| 2005 $MC_{49}$ | 16.1 | 0.15 | 20060922 | 59.75228 | 89.94996 | 283.80024 | 13.85525 | 0.1762751 | 2.5395577 | 38 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 95691 | 2005 $MC_{49}$ |
| 2005 $MD_{49}$ | 16.3 | 0.15 | 20060922 | 89.66858 | 61.06692 | 265.68867 | 4.61906 | 0.0717824 | 2.5732952 | 50 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 86860 | 2005 $MD_{49}$ |
| 2005 $ME_{49}$ | 16.6 | 0.15 | 20060922 | 67.46605 | 96.41814 | 267.12953 | 6.81465 | 0.1810525 | 2.5422407 | 36 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 86860 | 2005 $ME_{49}$ |
| 2005 $MF_{49}$ | 15.7 | 0.15 | 20060922 | 140.03650 | 56.23747 | 206.41065 | 3.53910 | 0.1673535 | 2.5422860 | 33 | 3 | 2001–2006 | 0.43 | M-v | 4 | MPC | 89683 | 2005 $MF_{49}$ |
| 2005 $MG_{50}$ | 17.3 | 0.15 | 20060922 | 152.00780 | 301.14463 | 327.69440 | 4.68129 | 0.1421418 | 2.2257647 | 44 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 86861 | 2005 $MG_{50}$ |
| 2005 $MY_{50}$ | 15.8 | 0.15 | 20060922 | 120.83791 | 43.96635 | 245.33798 | 6.69891 | 0.1879862 | 2.5948871 | 56 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 86862 | 2005 $MY_{50}$ |
| 2005 $ML_{53}$ | 16.0 | 0.15 | 20060922 | 99.79729 | 294.69417 | 45.68599 | 24.36170 | 0.2374066 | 2.3813979 | 23 | 1 | 107 days | 0.48 | M-v | 3 | MPC | | 2005 $ML_{53}$ |
| 2005 $MM_{53}$ | 18.3 | 0.15 | 20060922 | 119.47725 | 41.23454 | 262.61402 | 1.23194 | 0.2237448 | 2.3891222 | 17 | 1 | 71 days | 0.27 | M-v | 4 | MPC | | 2005 $MM_{53}$ |
| 2005 $MN_{53}$ | 17.3 | 0.15 | 20060922 | 106.60478 | 188.87364 | 128.91801 | 3.85877 | 0.2048702 | 2.4604109 | 22 | 1 | 70 days | 0.46 | M-v | 4 | MPC | | 2005 $MN_{53}$ |
| 2005 $MO_{53}$ | 17.6 | 0.15 | 20060922 | 97.64020 | 40.48953 | 299.42313 | 2.21324 | 0.1345287 | 2.3792002 | 17 | 1 | 130 days | 0.22 | M-v | 3 | MPC | | 2005 $MO_{53}$ |
| 2005 $MP_{53}$ | 17.6 | 0.15 | 20060922 | 147.90852 | 152.12000 | 128.27578 | 4.61148 | 0.1863811 | 2.2769874 | 24 | 1 | 74 days | 0.47 | M-v | 5 | MPC | | 2005 $MP_{53}$ |
| 2005 $MT_{53}$ | 18.4 | 0.15 | 20060922 | 104.26017 | 10.57858 | 299.96356 | 3.53386 | 0.3240756 | 2.6223481 | 20 | 1 | 101 days | 0.60 | M-v | 4 | MPC | | 2005 $MT_{53}$ |
| 2005 $MU_{53}$ | 18.5 | 0.15 | 20060922 | 130.09299 | 185.14627 | 121.51679 | 1.08552 | 0.2113886 | 2.3074336 | 20 | 1 | 106 days | 0.40 | M-v | 4 | MPC | | 2005 $MU_{53}$ |
| 2005 $MV_{53}$ | 15.1 | 0.15 | 20060922 | 84.97516 | 248.84224 | 54.55282 | 25.09307 | 0.3256039 | 3.1866286 | 23 | 1 | 106 days | 0.39 | M-v | 4 | MPC | | 2005 $MV_{53}$ |
| 2005 $MW_{53}$ | 17.3 | 0.15 | 20060922 | 126.92352 | 133.06118 | 160.71378 | 2.57264 | 0.1775501 | 2.3768389 | 17 | 1 | 103 days | 0.35 | M-v | 4 | MPC | | 2005 $MW_{53}$ |
| 2005 $MX_{53}$ | 17.8 | 0.15 | 20060922 | 121.21987 | 145.03628 | 163.92666 | 1.28009 | 0.2419018 | 2.3118165 | 21 | 1 | 133 days | 0.43 | M-v | 4 | MPC | | 2005 $MX_{53}$ |
| 2005 $MZ_{53}$ | 17.2 | 0.15 | 20060922 | 53.04797 | 33.64502 | 331.63980 | 10.87989 | 0.2705182 | 3.1000475 | 19 | 1 | 97 days | 0.17 | M-v | 3 | MPC | | 2005 $MZ_{53}$ |
| 2005 $MA_{54}$ | 16.7 | 0.15 | 20060922 | 85.59580 | 274.54713 | 77.34402 | 8.74476 | 0.2100908 | 2.4540181 | 21 | 1 | 102 days | 0.27 | M-v | 3 | MPC | | 2005 $MA_{54}$ |
| 2005 $MB_{54}$ | 15.9 | 0.15 | 20060922 | 94.14375 | 195.56207 | 122.29671 | 14.05668 | 0.1728488 | 2.6475060 | 23 | 1 | 69 days | 0.49 | M-v | 4 | MPC | | 2005 $MB_{54}$ |
| 2005 $MD_{54}$ | 17.8 | 0.15 | 20060922 | 160.88415 | 324.72667 | 278.52408 | 0.84169 | 0.1541055 | 2.4042781 | 14 | 1 | 62 days | 0.36 | M-v | 5 | MPC | | 2005 $MD_{54}$ |
| 2005 $ME_{54}$ | 16.4 | 0.15 | 20060922 | 112.19168 | 123.10312 | 157.00659 | 14.83729 | 0.2214316 | 2.6747634 | 24 | 1 | 120 days | 0.43 | M-v | 3 | MPC | | 2005 $ME_{54}$ |
| 2005 $MF_{54}$ | 15.5 | 0.15 | 20060922 | 80.89469 | 150.81292 | 151.90852 | 17.41106 | 0.1773923 | 3.1533420 | 20 | 1 | 119 days | 0.22 | M-v | 3 | MPC | | 2005 $MF_{54}$ |
| 2005 $MG_{54}$ | 16.2 | 0.15 | 20060922 | 83.53880 | 133.48819 | 162.30963 | 17.19553 | 0.2042215 | 3.1300443 | 15 | 1 | 75 days | 0.20 | M-v | 3 | MPC | | 2005 $MG_{54}$ |
| 2005 $MJ_{54}$ | 16.8 | 0.15 | 20060922 | 77.95299 | 99.77742 | 260.52089 | 13.15276 | 0.2409167 | 2.4894231 | 19 | 1 | 87 days | 0.32 | M-v | 4 | MPC | | 2005 $MJ_{54}$ |
| 2005 NU | 15.2 | 0.15 | 20060922 | 11.68400 | 211.13548 | 155.46814 | 1.69303 | 0.1863612 | 3.9534300 | 68 | 3 | 1998–2006 | 0.36 | M-v | 2 | MPC | 86864 | 2005 NU |
| 2005 $NC_1$ | 14.9 | 0.15 | 20060922 | 59.20900 | 185.00220 | 151.44106 | 9.34833 | 0.2316168 | 2.9120231 | 51 | 7 | 1999–2006 | 0.53 | M-v | 0 | MPC | 86864 | 2005 $NC_1$ |
| 2005 $NM_1$ | 16.3 | 0.15 | 20060922 | 188.89548 | 330.96985 | 254.97938 | 6.35485 | 0.0652582 | 2.3228751 | 54 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 86865 | 2005 $NM_1$ |
| 2005 $NO_1$ | 16.3 | 0.15 | 20060922 | 10.46215 | 93.30916 | 300.34096 | 13.66289 | 0.0365103 | 2.7167860 | 33 | 3 | 2001–2005 | 0.54 | M-v | 2 | MPC | 89684 | 2005 $NO_1$ |
| 2005 $NT_1$ | 16.7 | 0.15 | 20050619 | 292.38402 | 225.94118 | 114.64544 | 16.10412 | 0.1525315 | 2.8689484 | 9 | 1 | 19 days | 0.16 | | | MPC | | 2005 $NT_1$ |
| 2005 $NG_2$ | 17.0 | 0.15 | 20060922 | 146.72353 | 140.68448 | 129.56853 | 4.13776 | 0.1333092 | 2.2885853 | 57 | 6 | 1997–2006 | 0.49 | M-v | 0 | MPC | 86866 | 2005 $NG_2$ |
| 2005 $NL_2$ | 16.5 | 0.15 | 20060922 | 139.31772 | 33.41255 | 268.22199 | 7.71339 | 0.1916005 | 2.2256198 | 71 | 5 | 1995–2006 | 0.56 | M-v | 2 | MPC | 90216 | 2005 $NL_2$ |
| 2005 $NL_3$ | 15.0 | 0.15 | 20060922 | 309.99510 | 319.79759 | 136.28091 | 17.90490 | 0.1886681 | 3.1354236 | 50 | 4 | 2001–2006 | 0.42 | M-v | 0 | MPC | 86867 | 2005 $NL_3$ |
| 2005 $NP_3$ | 15.4 | 0.15 | 20060922 | 333.48823 | 281.02568 | 140.63513 | 5.87797 | 0.0609724 | 3.1354501 | 48 | 5 | 1997–2006 | 0.39 | M-v | 1 | MPC | 86868 | 2005 $NP_3$ |
| 2005 $NR_3$ | 16.2 | 0.15 | 20060922 | 4.67764 | 276.86273 | 130.84971 | 12.27327 | 0.0037108 | 2.5711406 | 44 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 86868 | 2005 $NR_3$ |
| 2005 $NU_3$ | 16.5 | 0.15 | 20060922 | 139.40463 | 331.57086 | 307.33423 | 4.16301 | 0.2192605 | 2.3340950 | 82 | 4 | 2001–2006 | 0.43 | M-v | 2 | MPC | 90216 | 2005 $NU_3$ |
| 2005 $NM_4$ | 16.1 | 0.15 | 20060922 | 143.78480 | 316.63283 | 271.55214 | 3.45031 | 0.0756421 | 3.1082344 | 41 | 5 | 2000–2006 | 0.31 | M-v | 0 | MPC | 86869 | 2005 $NM_4$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $NB_5$ | 16.1 | 0.15 | 20060922 | 116.52934 | 126.42669 | 123.89149 | 5.82000 | 0.1213677 | 3.2342920 | 36 | 4 | 1995–2005 | 0.52 | M-v | 1 | MPC | 86869 | 2005 $NB_5$ |
| 2005 $NC_5$ | 16.3 | 0.15 | 20060922 | 267.93369 | 356.29819 | 124.72612 | 9.41329 | 0.0259142 | 2.9425535 | 41 | 6 | 1993–2006 | 0.46 | M-v | 0 | MPC | 00961 | 2005 $NC_5$ |
| 2005 $NZ_5$ | 16.1 | 0.15 | 20060922 | 33.78548 | 197.32276 | 151.62439 | 2.34916 | 0.2064486 | 2.6376041 | 77 | 4 | 2000–2006 | 0.47 | M-v | 0 | MPC | 86870 | 2005 $NZ_5$ |
| 2005 $NE_6$ | 16.6 | 0.15 | 20060922 | 76.31628 | 74.64408 | 247.04759 | 6.95190 | 0.2148594 | 2.8425892 | 32 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 86870 | 2005 $NE_6$ |
| 2005 $NK_6$ | 16.2 | 0.15 | 20060922 | 127.09825 | 354.71146 | 264.21779 | 3.32330 | 0.0925981 | 2.7513453 | 34 | 3 | 2004–2006 | 0.44 | M-v | 3 | MPC | 86870 | 2005 $NK_6$ |
| 2005 $NR_6$ | 16.3 | 0.15 | 20060922 | 58.74454 | 81.49658 | 272.69405 | 4.57750 | 0.0903093 | 2.5670861 | 32 | 5 | 1994–2006 | 0.41 | M-v | 1 | MPC | 89685 | 2005 $NR_6$ |
| 2005 $NT_7$ | 16.2 | 0.15 | 20060922 | 101.77995 | 68.51754 | 210.09327 | 3.68760 | 0.1035555 | 3.1277431 | 41 | 5 | 2000–2006 | 0.26 | M-v | 0 | MPC | 86872 | 2005 $NT_7$ |
| 2005 $NF_8$ | 17.3 | 0.15 | 20060922 | 48.91355 | 208.62144 | 173.01686 | 2.94257 | 0.1523882 | 2.5308011 | 34 | 5 | 1995–2006 | 0.29 | M-v | 1 | MPC | 86872 | 2005 $NF_8$ |
| 2005 $NT_8$ | 16.0 | 0.15 | 20060922 | 281.13424 | 355.27846 | 134.65913 | 11.42245 | 0.0237382 | 2.6267646 | 32 | 3 | 2004–2006 | 0.42 | M-v | 4 | MPC | 86873 | 2005 $NT_8$ |
| 2005 $NZ_8$ | 17.4 | 0.15 | 20060922 | 192.72270 | 295.38706 | 279.66371 | 3.26795 | 0.1937578 | 2.3254623 | 29 | 4 | 2001–2006 | 0.33 | M-v | 1 | MPC | 86873 | 2005 $NZ_8$ |
| 2005 $NK_9$ | 16.5 | 0.15 | 20060922 | 31.41593 | 224.84109 | 156.13354 | 4.03100 | 0.1050408 | 2.7639876 | 34 | 4 | 1992–2006 | 0.25 | M-v | 0 | MPC | 89685 | 2005 $NK_9$ |
| 2005 $NN_9$ | 16.7 | 0.15 | 20060922 | 56.88999 | 187.79108 | 168.23140 | 3.29745 | 0.0531209 | 2.6223180 | 33 | 5 | 2001–2006 | 0.37 | M-v | 0 | MPC | 89686 | 2005 $NN_9$ |
| 2005 $NW_9$ | 16.5 | 0.15 | 20060922 | 339.15510 | 270.99806 | 158.86058 | 4.15052 | 0.0842736 | 2.8160451 | 61 | 5 | 1994–2006 | 0.48 | M-v | 0 | MPC | 86874 | 2005 $NW_9$ |
| 2005 $NC_{10}$ | 17.0 | 0.15 | 20060922 | 101.88124 | 153.19104 | 136.86676 | 1.69613 | 0.1189220 | 2.6661404 | 50 | 5 | 2000–2006 | 0.48 | M-v | 0 | MPC | 97786 | 2005 $NC_{10}$ |
| 2005 $NJ_{10}$ | 17.6 | 0.15 | 20060922 | 210.61124 | 285.22122 | 276.09303 | 2.97561 | 0.0764456 | 2.2612933 | 39 | 4 | 2002–2006 | 0.32 | M-v | 0 | MPC | 86875 | 2005 $NJ_{10}$ |
| 2005 $NF_{11}$ | 16.2 | 0.15 | 20060922 | 141.12365 | 350.69739 | 270.01914 | 3.90737 | 0.0901604 | 2.4440091 | 50 | 4 | 2002–2006 | 0.35 | M-v | 1 | MPC | 86876 | 2005 $NF_{11}$ |
| 2005 $NM_{11}$ | 16.4 | 0.15 | 20060922 | 49.60305 | 263.30111 | 125.70158 | 7.94402 | 0.1795793 | 2.4185900 | 51 | 3 | 1998–2005 | 0.74 | M-v | 2 | MPC | 86876 | 2005 $NM_{11}$ |
| 2005 $NR_{11}$ | 16.5 | 0.15 | 20060922 | 81.78985 | 73.14432 | 253.10107 | 4.75274 | 0.2430550 | 2.3807808 | 19 | 3 | 1998–2005 | 0.37 | M-v | 3 | MPC | 95692 | 2005 $NR_{11}$ |
| 2005 $NU_{11}$ | 16.6 | 0.15 | 20060922 | 46.41290 | 234.95728 | 116.93168 | 2.75860 | 0.0878047 | 2.7908870 | 42 | 3 | 2001–2006 | 0.31 | M-v | 2 | MPC | 95692 | 2005 $NU_{11}$ |
| 2005 $NG_{12}$ | 16.1 | 0.15 | 20060922 | 56.24303 | 139.11271 | 221.15581 | 1.79341 | 0.1273109 | 2.5122012 | 37 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 90216 | 2005 $NG_{12}$ |
| 2005 $NJ_{12}$ | 13.6 | 0.15 | 20060922 | 311.82491 | 209.71736 | 179.42541 | 2.34946 | 0.0527257 | 5.2219368 | 38 | 5 | 1994–2006 | 0.26 | M-v | 0 | MPC | 04337 | 2005 $NJ_{12}$ |
| 2005 $NT_{12}$ | 15.8 | 0.15 | 20060922 | 84.86572 | 121.26573 | 176.33068 | 8.14240 | 0.1286416 | 2.5501366 | 30 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 03709 | 2005 $NT_{12}$ |
| 2005 $NC_{13}$ | 16.6 | 0.15 | 20060922 | 110.92895 | 108.08593 | 194.26000 | 1.94913 | 0.2181583 | 2.4348025 | 62 | 7 | 1993–2005 | 0.53 | M-v | 1 | MPC | 04337 | 2005 $NC_{13}$ |
| 2005 $NW_{13}$ | 17.6 | 0.15 | 20060922 | 148.65243 | 105.42877 | 171.98610 | 2.52067 | 0.2202131 | 2.3573792 | 27 | 1 | 116 days | 0.45 | M-v | 4 | MPC | | 2005 $NW_{13}$ |
| 2005 $NY_{13}$ | 16.2 | 0.15 | 20060922 | 52.56434 | 75.78707 | 319.86109 | 13.59385 | 0.2005935 | 2.6531275 | 45 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 95692 | 2005 $NY_{13}$ |
| 2005 $NF_{14}$ | 16.2 | 0.15 | 20060922 | 335.96516 | 248.46358 | 195.14227 | 2.18889 | 0.0635106 | 3.1062587 | 48 | 5 | 1997–2006 | 0.37 | M-v | 0 | MPC | 86878 | 2005 $NF_{14}$ |
| 2005 $NK_{14}$ | 16.0 | 0.15 | 20060922 | 125.37104 | 120.59299 | 165.04325 | 5.13482 | 0.1419711 | 2.8105173 | 59 | 5 | 1991–2006 | 0.50 | M-v | 1 | MPC | 97786 | 2005 $NK_{14}$ |
| 2005 $NV_{14}$ | 16.2 | 0.15 | 20060922 | 118.30738 | 49.72764 | 208.34459 | 12.44544 | 0.2088331 | 2.5998337 | 43 | 4 | 1997–2006 | 0.38 | M-v | 2 | MPC | 86879 | 2005 $NV_{14}$ |
| 2005 $NX_{14}$ | 15.0 | 0.15 | 20060922 | 81.73373 | 175.23770 | 124.56551 | 11.66801 | 0.1946194 | 3.1661190 | 64 | 4 | 1992–2006 | 0.53 | M-v | 1 | MPC | 86879 | 2005 $NX_{14}$ |
| 2005 $NB_{15}$ | 17.4 | 0.15 | 20060922 | 185.49430 | 91.91256 | 118.18714 | 2.05625 | 0.1353424 | 2.3667964 | 45 | 5 | 2001–2006 | 0.38 | M-v | 0 | MPC | 89686 | 2005 $NB_{15}$ |
| 2005 $ND_{15}$ | 14.7 | 0.15 | 20060922 | 79.46368 | 28.09637 | 280.54355 | 14.79964 | 0.2557423 | 3.2167565 | 71 | 3 | 1999–2006 | 0.56 | M-v | 2 | MPC | 86879 | 2005 $ND_{15}$ |
| 2005 $NU_{15}$ | 16.0 | 0.15 | 20060922 | 70.70182 | 17.61489 | 307.41677 | 4.88121 | 0.0359673 | 2.7383891 | 35 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 89687 | 2005 $NU_{15}$ |
| 2005 $NY_{15}$ | 16.3 | 0.15 | 20060922 | 101.64393 | 330.05793 | 321.12790 | 4.25072 | 0.0974513 | 2.7397306 | 31 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 86880 | 2005 $NY_{15}$ |
| 2005 $NL_{16}$ | 15.4 | 0.15 | 20060922 | 104.41891 | 165.37891 | 93.46180 | 6.36610 | 0.1851972 | 3.1777123 | 33 | 5 | 2001–2006 | 0.54 | M-v | 0 | MPC | 86880 | 2005 $NL_{16}$ |
| 2005 $NO_{16}$ | 17.3 | 0.15 | 20060922 | 179.60750 | 162.88126 | 65.69509 | 3.24014 | 0.0754608 | 2.3846294 | 29 | 3 | 2004–2006 | 0.33 | M-v | 2 | MPC | 86880 | 2005 $NO_{16}$ |
| 2005 $NA_{17}$ | 15.9 | 0.15 | 20060922 | 150.18863 | 173.21404 | 84.76926 | 12.89572 | 0.2517771 | 2.3069667 | 67 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 86881 | 2005 $NA_{17}$ |
| 2005 $NL_{17}$ | 16.6 | 0.15 | 20060922 | 225.54253 | 45.86094 | 129.89491 | 2.73037 | 0.0274614 | 2.6741168 | 25 | 4 | 1995–2006 | 0.37 | M-v | 1 | MPC | 89687 | 2005 $NL_{17}$ |
| 2005 $NY_{18}$ | 16.4 | 0.15 | 20060922 | 18.60802 | 247.64495 | 137.79491 | 6.78969 | 0.0741421 | 2.8054852 | 40 | 5 | 1999–2006 | 0.43 | M-v | 0 | MPC | 00961 | 2005 $NY_{18}$ |
| 2005 $NT_{20}$ | 16.8 | 0.15 | 20060922 | 128.73886 | 296.47003 | 346.52489 | 3.25314 | 0.2050047 | 2.3068094 | 32 | 3 | 2004–2006 | 0.40 | M-v | 3 | MPC | 86883 | 2005 $NT_{20}$ |
| 2005 $NB_{21}$ | 14.5 | 0.15 | 20060922 | 36.81281 | 311.05045 | 15.97321 | 5.94940 | 0.2579094 | 3.9775160 | 83 | 3 | 2003–2006 | 0.43 | M-v | 2 | MPC | 04337 | 2005 $NB_{21}$ |
| 2005 $NS_{21}$ | 15.9 | 0.15 | 20060922 | 88.83370 | 37.54919 | 269.17764 | 4.93154 | 0.0419493 | 2.8342838 | 52 | 5 | 1996–2006 | 0.36 | M-v | 0 | MPC | 89687 | 2005 $NS_{21}$ |
| 2005 $NT_{21}$ | 16.5 | 0.15 | 20060922 | 90.74047 | 69.40867 | 237.50826 | 3.40008 | 0.0548937 | 2.7933620 | 35 | 4 | 2001–2006 | 0.28 | M-v | 0 | MPC | 89687 | 2005 $NT_{21}$ |
| 2005 $NP_{22}$ | 16.7 | 0.15 | 20060922 | 172.33497 | 328.05846 | 276.95514 | 2.74152 | 0.0865459 | 2.3521872 | 43 | 3 | 2004–2006 | 0.37 | M-v | 2 | MPC | 86884 | 2005 $NP_{22}$ |
| 2005 $NS_{22}$ | 16.3 | 0.15 | 20060922 | 103.88091 | 13.07007 | 278.43293 | 3.91824 | 0.0953380 | 2.8162344 | 39 | 4 | 1999–2006 | 0.26 | M-v | 2 | MPC | 90216 | 2005 $NS_{22}$ |
| 2005 $NU_{22}$ | 15.2 | 0.15 | 20060922 | 108.05982 | 4.15789 | 294.63892 | 19.03910 | 0.2261894 | 2.7616426 | 53 | 1 | 216 days | 0.52 | M-v | 3 | MPC | 97786 | 2005 $NU_{22}$ |
| 2005 $NV_{22}$ | 16.3 | 0.15 | 20060922 | 48.68145 | 164.80953 | 148.77502 | 5.94272 | 0.0662109 | 2.7121133 | 35 | 6 | 1996–2006 | 0.57 | M-v | 0 | MPC | 86885 | 2005 $NV_{22}$ |
| 2005 $NF_{23}$ | 15.9 | 0.15 | 20060922 | 34.11166 | 113.59570 | 249.20969 | 8.72539 | 0.0195029 | 2.8175022 | 30 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 89687 | 2005 $NF_{23}$ |
| 2005 $NS_{23}$ | 15.4 | 0.15 | 20060922 | 170.67261 | 51.76008 | 162.82911 | 11.76457 | 0.0068871 | 3.0899420 | 43 | 6 | 1998–2006 | 0.61 | M-v | 0 | MPC | 86885 | 2005 $NS_{23}$ |
| 2005 $NT_{23}$ | 15.8 | 0.15 | 20060922 | 62.64846 | 135.67505 | 200.86888 | 6.25347 | 0.0653188 | 2.8498602 | 63 | 5 | 1996–2006 | 0.55 | M-v | 1 | MPC | 86885 | 2005 $NT_{23}$ |
| 2005 $NZ_{23}$ | 16.6 | 0.15 | 20060922 | 319.98882 | 301.36160 | 153.93735 | 9.57170 | 0.0959291 | 2.5884326 | 35 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 86886 | 2005 $NZ_{23}$ |
| 2005 $NQ_{24}$ | 15.7 | 0.15 | 20060922 | 91.19051 | 4.59099 | 293.91800 | 8.59717 | 0.0621633 | 2.9333649 | 41 | 6 | 1996–2006 | 0.51 | M-v | 1 | MPC | 86886 | 2005 $NQ_{24}$ |
| 2005 $NH_{26}$ | 16.3 | 0.15 | 20060922 | 89.69873 | 79.75829 | 213.15961 | 2.67790 | 0.1182049 | 2.9294719 | 46 | 5 | 1996–2006 | 0.33 | M-v | 0 | MPC | 89688 | 2005 $NH_{26}$ |
| 2005 $NB_{27}$ | 17.0 | 0.15 | 20060922 | 47.07852 | 93.08987 | 264.96076 | 4.59409 | 0.1005269 | 2.6743501 | 20 | 4 | 2001–2006 | 0.22 | M-v | 0 | MPC | 89688 | 2005 $NB_{27}$ |

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| 2005 $NE_{28}$ | 15.1 | 0.15 | 20060922 | 164.46710 | 42.38732 | 161.76675 | 10.34717 | 0.0223956 | 3.5331827 | 33 | 5 | 1999–2006 | 0.31 | M-v | 0 | MPC | 86887 | 2005 $NE_{28}$ |
| 2005 $NU_{29}$ | 17.0 | 0.15 | 20060922 | 153.57848 | 322.15092 | 288.90997 | 2.09960 | 0.0216129 | 2.5583818 | 24 | 3 | 2004–2006 | 0.45 | M-v | 4 | MPC | 86890 | 2005 $NU_{29}$ |
| 2005 $NW_{29}$ | 16.5 | 0.15 | 20060922 | 148.87186 | 117.28070 | 123.45903 | 4.86245 | 0.0831587 | 2.7361661 | 35 | 5 | 1995–2006 | 0.33 | M-v | 0 | MPC | 86890 | 2005 $NW_{29}$ |
| 2005 $ND_{30}$ | 16.2 | 0.15 | 20060922 | 47.12429 | 275.10469 | 121.80359 | 5.61106 | 0.2394753 | 2.3809859 | 49 | 4 | 1998–2006 | 0.50 | M-v | 1 | MPC | 89689 | 2005 $ND_{30}$ |
| 2005 $NE_{30}$ | 17.3 | 0.15 | 20060922 | 165.36711 | 118.36235 | 111.85738 | 3.38659 | 0.1580670 | 2.4492670 | 23 | 3 | 2004–2006 | 0.38 | M-v | 4 | MPC | 86890 | 2005 $NE_{30}$ |
| 2005 $NU_{30}$ | 16.4 | 0.15 | 20060922 | 62.55085 | 193.11383 | 140.02827 | 0.98896 | 0.0766467 | 2.7778931 | 42 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 86890 | 2005 $NU_{30}$ |
| 2005 $NV_{30}$ | 17.0 | 0.15 | 20060922 | 34.28792 | 155.99033 | 240.94972 | 0.39252 | 0.1833151 | 2.4456050 | 42 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 86890 | 2005 $NV_{30}$ |
| 2005 $NA_{31}$ | 16.7 | 0.15 | 20060922 | 66.97364 | 217.88535 | 146.17347 | 2.66559 | 0.2213471 | 2.4494353 | 28 | 3 | 1994–2006 | 0.32 | M-v | 3 | MPC | 89689 | 2005 $NA_{31}$ |
| 2005 $NR_{31}$ | 16.0 | 0.15 | 20060922 | 145.85655 | 129.17040 | 109.69579 | 4.49661 | 0.1384249 | 2.7437647 | 22 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 86891 | 2005 $NR_{31}$ |
| 2005 $NX_{31}$ | 15.7 | 0.15 | 20060922 | 342.71535 | 249.55363 | 185.17226 | 8.60606 | 0.1450701 | 2.5682909 | 40 | 6 | 1996–2006 | 0.53 | M-v | 1 | MPC | 86891 | 2005 $NX_{31}$ |
| 2005 $ND_{32}$ | 15.2 | 0.15 | 20060922 | 355.89534 | 238.20263 | 164.53561 | 11.83182 | 0.1496450 | 3.1098432 | 33 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 86891 | 2005 $ND_{32}$ |
| 2005 $NG_{32}$ | 16.6 | 0.15 | 20060922 | 164.81179 | 35.17959 | 208.23165 | 5.52918 | 0.1104876 | 2.3571732 | 34 | 5 | 2001–2006 | 0.36 | M-v | 1 | MPC | 86892 | 2005 $NG_{32}$ |
| 2005 $NR_{32}$ | 16.3 | 0.15 | 20060922 | 53.21198 | 210.98883 | 143.23441 | 15.01016 | 0.0611510 | 2.5790121 | 19 | 3 | 2001–2006 | 0.63 | M-v | 2 | MPC | 89690 | 2005 $NR_{32}$ |
| 2005 $NX_{32}$ | 15.7 | 0.15 | 20060922 | 126.45165 | 320.24186 | 293.61630 | 4.57092 | 0.1243109 | 2.8488831 | 62 | 3 | 2004–2006 | 0.47 | M-v | 3 | MPC | 86892 | 2005 $NX_{32}$ |
| 2005 $NS_{33}$ | 16.7 | 0.15 | 20060922 | 113.77159 | 153.61272 | 108.00383 | 2.40364 | 0.1308090 | 3.0494675 | 29 | 3 | 1995–2006 | 0.35 | M-v | 4 | MPC | 89690 | 2005 $NS_{33}$ |
| 2005 $NW_{33}$ | 16.3 | 0.15 | 20060922 | 327.55434 | 111.09868 | 313.73915 | 1.18857 | 0.0386508 | 2.9971214 | 45 | 6 | 1993–2006 | 0.39 | M-v | 0 | MPC | 86893 | 2005 $NW_{33}$ |
| 2005 $NF_{34}$ | 17.6 | 0.15 | 20060922 | 180.37146 | 277.30630 | 311.74886 | 5.02190 | 0.1399722 | 2.3217732 | 42 | 4 | 2001–2006 | 0.27 | M-v | 1 | MPC | 86893 | 2005 $NF_{34}$ |
| 2005 $NA_{35}$ | 16.9 | 0.15 | 20060922 | 170.76866 | 261.13181 | 308.12408 | 11.22335 | 0.2125409 | 2.6061260 | 27 | 3 | 2000–2005 | 0.52 | M-v | 1 | MPC | 86893 | 2005 $NA_{35}$ |
| 2005 $NB_{35}$ | 17.0 | 0.15 | 20060922 | 183.63198 | 104.52280 | 106.54354 | 5.07232 | 0.0520856 | 2.6879599 | 45 | 5 | 1999–2006 | 0.35 | M-v | 0 | MPC | 86893 | 2005 $NB_{35}$ |
| 2005 $NQ_{35}$ | 16.9 | 0.15 | 20060922 | 91.75024 | 7.97145 | 309.26499 | 3.43730 | 0.1607486 | 2.5866990 | 43 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 90217 | 2005 $NQ_{35}$ |
| 2005 $NC_{36}$ | 18.1 | 0.15 | 20060922 | 226.32381 | 358.68143 | 208.80964 | 0.98882 | 0.0986345 | 2.1424203 | 30 | 4 | 1999–2005 | 0.36 | M-v | 2 | MPC | 89690 | 2005 $NC_{36}$ |
| 2005 $NL_{36}$ | 16.4 | 0.15 | 20060922 | 135.82054 | 39.59590 | 186.83587 | 11.78405 | 0.1068702 | 2.5373863 | 39 | 4 | 1994–2006 | 0.43 | M-v | 2 | MPC | 86894 | 2005 $NL_{36}$ |
| 2005 $NM_{36}$ | 15.2 | 0.15 | 20060922 | 47.00656 | 112.93621 | 184.63888 | 12.71526 | 0.1002694 | 3.1025899 | 57 | 4 | 2001–2006 | 0.55 | M-v | 0 | MPC | 03710 | 2005 $NM_{36}$ |
| 2005 $NQ_{36}$ | 16.1 | 0.15 | 20060922 | 248.76048 | 19.74359 | 119.55995 | 4.72013 | 0.0425278 | 2.8074726 | 46 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 86894 | 2005 $NQ_{36}$ |
| 2005 $NS_{36}$ | 16.8 | 0.15 | 20060922 | 89.87256 | 14.14774 | 282.35893 | 0.94986 | 0.0784953 | 2.8736150 | 52 | 5 | 1996–2006 | 0.31 | M-v | 0 | MPC | 86894 | 2005 $NS_{36}$ |
| 2005 $NQ_{37}$ | 15.7 | 0.15 | 20060922 | 353.25730 | 119.10399 | 290.62322 | 8.78274 | 0.1255948 | 3.1738150 | 23 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 89690 | 2005 $NQ_{37}$ |
| 2005 $NJ_{38}$ | 14.9 | 0.15 | 20060922 | 40.79854 | 185.29015 | 145.27896 | 6.74578 | 0.1683502 | 3.9435465 | 37 | 3 | 2002–2006 | 0.39 | M-v | 2 | MPC | 90217 | 2005 $NJ_{38}$ |
| 2005 $NE_{39}$ | 16.5 | 0.15 | 20060922 | 113.36343 | 269.52938 | 13.83726 | 3.71904 | 0.1527866 | 2.5591254 | 63 | 6 | 1996–2006 | 0.43 | M-v | 1 | MPC | 86895 | 2005 $NE_{39}$ |
| 2005 $NF_{39}$ | 16.1 | 0.15 | 20060922 | 68.50991 | 239.70829 | 96.16078 | 12.12043 | 0.1566204 | 2.6863165 | 30 | 5 | 1998–2006 | 0.33 | M-v | 0 | MPC | 89690 | 2005 $NF_{39}$ |
| 2005 $NH_{39}$ | 17.0 | 0.15 | 20060922 | 142.06342 | 240.21730 | 27.66373 | 4.90137 | 0.1064490 | 2.3227187 | 30 | 6 | 1995–2006 | 0.49 | M-v | 1 | MPC | 86896 | 2005 $NH_{39}$ |
| 2005 $NL_{39}$ | 15.0 | 0.15 | 20060922 | 60.91433 | 342.20472 | 338.55399 | 9.49165 | 0.0947678 | 2.9759347 | 26 | 3 | 1998–2006 | 0.40 | M-v | 3 | MPC | 86896 | 2005 $NL_{39}$ |
| 2005 $NB_{40}$ | 16.7 | 0.15 | 20060922 | 87.81948 | 16.96230 | 271.46503 | 2.82738 | 0.0437429 | 3.0325068 | 30 | 3 | 2004–2006 | 0.37 | M-v | 3 | MPC | 86897 | 2005 $NB_{40}$ |
| 2005 $ND_{40}$ | 16.2 | 0.15 | 20060922 | 333.93765 | 135.74283 | 283.99427 | 3.25520 | 0.0611839 | 2.7915266 | 59 | 5 | 2001–2006 | 0.40 | M-v | 0 | MPC | 86897 | 2005 $ND_{40}$ |
| 2005 $NL_{40}$ | 16.5 | 0.15 | 20060922 | 348.54513 | 296.89712 | 120.88763 | 12.56363 | 0.0664780 | 2.6071443 | 46 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 04337 | 2005 $NL_{40}$ |
| 2005 $NR_{40}$ | 17.2 | 0.15 | 20060922 | 11.48924 | 147.41739 | 265.28012 | 2.58676 | 0.2036744 | 2.5421761 | 30 | 3 | 2003–2006 | 0.43 | M-v | 3 | MPC | 03710 | 2005 $NR_{40}$ |
| 2005 $NU_{40}$ | 16.2 | 0.15 | 20060922 | 18.04612 | 99.33089 | 271.46151 | 4.07334 | 0.0740251 | 2.9407128 | 55 | 4 | 2001–2006 | 0.53 | M-v | 0 | MPC | 86897 | 2005 $NU_{40}$ |
| 2005 $NW_{40}$ | 16.4 | 0.15 | 20060922 | 68.43900 | 200.31209 | 127.86329 | 5.43847 | 0.0568098 | 2.6784951 | 26 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 89691 | 2005 $NW_{40}$ |
| 2005 $NH_{41}$ | 16.4 | 0.15 | 20060922 | 21.23219 | 162.07533 | 199.04790 | 1.82095 | 0.0801921 | 3.1574545 | 40 | 3 | 2000–2006 | 0.38 | M-v | 3 | MPC | 89691 | 2005 $NH_{41}$ |
| 2005 $NL_{42}$ | 17.5 | 0.15 | 20060922 | 223.59905 | 47.60996 | 145.95152 | 5.82606 | 0.0912439 | 2.2598834 | 28 | 4 | 1995–2006 | 0.33 | M-v | 0 | MPC | 86898 | 2005 $NL_{42}$ |
| 2005 $NC_{43}$ | 15.7 | 0.15 | 20060922 | 22.55772 | 229.29279 | 147.77320 | 11.18430 | 0.1234254 | 3.0079873 | 32 | 4 | 2000–2006 | 0.40 | M-v | 0 | MPC | 86899 | 2005 $NC_{43}$ |
| 2005 $NE_{43}$ | 15.8 | 0.15 | 20060922 | 88.72278 | 60.44971 | 233.80994 | 4.01533 | 0.0985692 | 3.0616571 | 42 | 6 | 2000–2006 | 0.43 | M-v | 0 | MPC | 86899 | 2005 $NE_{43}$ |
| 2005 $NQ_{43}$ | 16.2 | 0.15 | 20060922 | 351.06393 | 274.87015 | 129.18982 | 6.78577 | 0.1031531 | 2.9279529 | 35 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 89691 | 2005 $NQ_{43}$ |
| 2005 $NU_{43}$ | 17.2 | 0.15 | 20060922 | 246.97427 | 42.89026 | 121.60318 | 7.07625 | 0.0475685 | 2.3552847 | 37 | 3 | 2004–2006 | 0.39 | M-v | 3 | MPC | 89692 | 2005 $NU_{43}$ |
| 2005 $NH_{44}$ | 15.9 | 0.15 | 20060922 | 90.05686 | 2.40558 | 289.43257 | 8.89742 | 0.0812236 | 2.9925505 | 26 | 4 | 1998–2006 | 0.57 | M-v | 1 | MPC | 86899 | 2005 $NH_{44}$ |
| 2005 $NC_{45}$ | 16.7 | 0.15 | 20060922 | 73.05734 | 207.00843 | 100.77946 | 5.41649 | 0.1593456 | 2.5217970 | 35 | 5 | 2001–2006 | 0.40 | M-v | 1 | MPC | 89692 | 2005 $NC_{45}$ |
| 2005 $NG_{45}$ | 16.8 | 0.15 | 20060922 | 144.97365 | 139.91517 | 101.19687 | 6.70801 | 0.0720067 | 2.2697049 | 44 | 3 | 2002–2006 | 0.39 | M-v | 3 | MPC | 00961 | 2005 $NG_{45}$ |
| 2005 $NP_{46}$ | 16.7 | 0.15 | 20060922 | 133.98455 | 13.75611 | 238.01248 | 4.79969 | 0.2460269 | 2.5481192 | 24 | 4 | 1996–2006 | 0.38 | M-v | 1 | MPC | 86900 | 2005 $NP_{46}$ |
| 2005 $NU_{47}$ | 16.9 | 0.15 | 20060922 | 120.03711 | 224.09824 | 63.70183 | 3.00519 | 0.1755715 | 2.4397794 | 30 | 5 | 1998–2006 | 0.34 | M-v | 1 | MPC | 86900 | 2005 $NU_{47}$ |
| 2005 $NV_{48}$ | 15.9 | 0.15 | 20060922 | 59.02251 | 158.09795 | 179.82105 | 10.27269 | 0.1042138 | 2.9725800 | 44 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 86901 | 2005 $NV_{48}$ |
| 2005 $NR_{49}$ | 16.1 | 0.15 | 20060922 | 90.27580 | 99.83680 | 235.66669 | 2.63026 | 0.2038656 | 2.4293871 | 62 | 3 | 2004–2006 | 0.52 | M-v | 2 | MPC | 89692 | 2005 $NR_{49}$ |
| 2005 $NX_{50}$ | 16.5 | 0.15 | 20060922 | 21.88321 | 124.53812 | 253.48831 | 4.25303 | 0.0317431 | 2.7600548 | 52 | 5 | 1999–2006 | 0.33 | M-v | 0 | MPC | 89693 | 2005 $NX_{50}$ |
| 2005 $NJ_{52}$ | 16.4 | 0.15 | 20060922 | 134.58603 | 225.72095 | 49.24657 | 2.55532 | 0.1746787 | 2.4304500 | 46 | 6 | 1993–2006 | 0.49 | M-v | 1 | MPC | 04338 | 2005 $NJ_{52}$ |
| 2005 $NS_{53}$ | 17.0 | 0.15 | 20060922 | 97.47894 | 128.98344 | 189.89195 | 1.62921 | 0.1760055 | 2.4461404 | 31 | 3 | 1998–2005 | 0.35 | M-v | 2 | MPC | 86905 | 2005 $NS_{53}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $ND_{54}$ | 17.2 | 0.15 | 20060922 | 112.01045 | 100.79420 | 190.97287 | 2.56255 | 0.1015128 | 2.6167003 | 44 | 6 | 1995–2006 | 0.37 | M-v | 0 | MPC | 89693 | 2005 $ND_{54}$ |
| 2005 $NL_{54}$ | 16.6 | 0.15 | 20060922 | 77.40270 | 50.77360 | 278.79440 | 5.41232 | 0.0748947 | 2.6794556 | 27 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 86905 | 2005 $NL_{54}$ |
| 2005 $NP_{54}$ | 16.8 | 0.15 | 20060922 | 48.85574 | 82.52308 | 270.03580 | 5.33366 | 0.0310210 | 2.7492698 | 30 | 3 | 1999–2006 | 0.26 | M-v | 2 | MPC | 86905 | 2005 $NP_{54}$ |
| 2005 $NU_{54}$ | 16.2 | 0.15 | 20060922 | 70.97704 | 93.96373 | 221.17400 | 2.86355 | 0.0726066 | 3.0866802 | 52 | 4 | 1995–2006 | 0.27 | M-v | 0 | MPC | 86905 | 2005 $NU_{54}$ |
| 2005 $NT_{55}$ | 15.8 | 0.15 | 20060922 | 110.37196 | 63.45324 | 224.22236 | 12.17661 | 0.2465355 | 2.6991213 | 60 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 86906 | 2005 $NT_{55}$ |
| 2005 $NH_{56}$ | 15.2 | 0.15 | 20060922 | 199.53344 | 259.32392 | 243.66823 | 15.86733 | 0.1327725 | 2.6221426 | 36 | 4 | 1999–2006 | 0.53 | M-v | 2 | MPC | 04338 | 2005 $NH_{56}$ |
| 2005 $NX_{57}$ | 15.7 | 0.15 | 20060922 | 219.34093 | 9.97772 | 147.20301 | 9.95087 | 0.0476131 | 3.1735354 | 33 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 89693 | 2005 $NX_{57}$ |
| 2005 $NF_{58}$ | 15.3 | 0.15 | 20060922 | 36.73015 | 82.99135 | 271.58362 | 8.46587 | 0.1093612 | 3.0479399 | 31 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 86908 | 2005 $NF_{58}$ |
| 2005 $NQ_{58}$ | 17.1 | 0.15 | 20060922 | 47.23382 | 188.64629 | 198.31848 | 1.46608 | 0.1111539 | 2.7765925 | 48 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 97787 | 2005 $NQ_{58}$ |
| 2005 $NT_{58}$ | 16.4 | 0.15 | 20060922 | 45.88389 | 219.35624 | 123.15076 | 2.92708 | 0.0857847 | 3.0411515 | 30 | 4 | 1995–2006 | 0.23 | M-v | 0 | MPC | 86909 | 2005 $NT_{58}$ |
| 2005 $NM_{59}$ | 16.5 | 0.15 | 20060922 | 286.87702 | 0.78006 | 106.96974 | 2.57022 | 0.0629565 | 2.8069366 | 33 | 4 | 1999–2006 | 0.26 | M-v | 1 | MPC | 86909 | 2005 $NM_{59}$ |
| 2005 $NF_{60}$ | 17.1 | 0.15 | 20060922 | 189.98270 | 178.40525 | 21.46428 | 0.93821 | 0.1329310 | 2.5942047 | 33 | 3 | 2004–2006 | 0.31 | M-v | 3 | MPC | 86909 | 2005 $NF_{60}$ |
| 2005 $NC_{61}$ | 17.3 | 0.15 | 20060922 | 160.93617 | 42.70765 | 190.36212 | 4.47457 | 0.0878945 | 2.5798369 | 33 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 86911 | 2005 $NC_{61}$ |
| 2005 $NY_{61}$ | 16.3 | 0.15 | 20060922 | 97.08042 | 281.07225 | 1.88618 | 0.17118 | 0.1407260 | 3.1211041 | 61 | 5 | 1993–2006 | 0.32 | M-v | 0 | MPC | 00961 | 2005 $NY_{61}$ |
| 2005 $NZ_{61}$ | 16.8 | 0.15 | 20060922 | 30.99960 | 263.45848 | 116.01103 | 3.32508 | 0.1632360 | 2.9420458 | 22 | 4 | 2001–2006 | 0.27 | M-v | 0 | MPC | 03710 | 2005 $NZ_{61}$ |
| 2005 $NG_{63}$ | 15.7 | 0.15 | 20060922 | 69.33772 | 56.58526 | 283.37328 | 11.12667 | 0.1693580 | 2.9096073 | 44 | 4 | 1995–2006 | 0.53 | M-v | 2 | MPC | 86913 | 2005 $NG_{63}$ |
| 2005 $NQ_{63}$ | 16.1 | 0.15 | 20060922 | 114.16827 | 37.84555 | 209.52308 | 9.42582 | 0.2319369 | 3.0271565 | 61 | 4 | 2000–2006 | 0.41 | M-v | 1 | MPC | 86914 | 2005 $NQ_{63}$ |
| 2005 $NA_{64}$ | 16.1 | 0.15 | 20060922 | 159.12965 | 340.27612 | 260.57668 | 6.29867 | 0.0814027 | 2.5555519 | 34 | 4 | 2001–2006 | 0.41 | M-v | 0 | MPC | 86914 | 2005 $NA_{64}$ |
| 2005 $NM_{64}$ | 17.4 | 0.15 | 20060922 | 230.73843 | 351.10111 | 201.49536 | 3.05368 | 0.0848572 | 2.2421140 | 27 | 5 | 1999–2006 | 0.23 | M-v | 0 | MPC | 86914 | 2005 $NM_{64}$ |
| 2005 $NP_{64}$ | 16.9 | 0.15 | 20060922 | 173.55336 | 313.23588 | 267.60986 | 4.63976 | 0.1508555 | 2.5374411 | 35 | 4 | 1996–2006 | 0.28 | M-v | 0 | MPC | 86914 | 2005 $NP_{64}$ |
| 2005 $NM_{65}$ | 16.2 | 0.15 | 20060922 | 77.20713 | 169.90229 | 158.83754 | 4.59738 | 0.1030007 | 2.7719765 | 32 | 3 | 2001–2006 | 0.33 | M-v | 2 | MPC | 97787 | 2005 $NM_{65}$ |
| 2005 $NP_{65}$ | 17.5 | 0.15 | 20060922 | 56.39264 | 186.08098 | 192.90285 | 1.38152 | 0.0565002 | 2.3276402 | 33 | 6 | 1991–2006 | 0.35 | M-v | 1 | MPC | 86915 | 2005 $NP_{65}$ |
| 2005 $NU_{65}$ | 16.3 | 0.15 | 20060922 | 31.78501 | 203.86633 | 171.52694 | 2.06724 | 0.0805876 | 2.8836751 | 49 | 6 | 1991–2006 | 0.37 | M-v | 0 | MPC | 02252 | 2005 $NU_{65}$ |
| 2005 $NN_{66}$ | 16.7 | 0.15 | 20060922 | 86.38780 | 230.41185 | 62.26847 | 1.65087 | 0.2133407 | 3.0167713 | 33 | 4 | 1995–2006 | 0.36 | M-v | 0 | MPC | 89694 | 2005 $NN_{66}$ |
| 2005 $NC_{67}$ | 16.1 | 0.15 | 20060922 | 142.59505 | 326.41939 | 285.83913 | 5.16610 | 0.1862363 | 2.5669671 | 42 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 90217 | 2005 $NC_{67}$ |
| 2005 $NF_{67}$ | 17.0 | 0.15 | 20060922 | 129.50124 | 15.24188 | 300.47143 | 1.96940 | 0.1775906 | 2.2347164 | 45 | 1 | 135 days | 0.46 | M-v | 4 | MPC | 90217 | 2005 $NF_{67}$ |
| 2005 $NK_{67}$ | 15.8 | 0.15 | 20060922 | 92.01936 | 45.00863 | 308.83477 | 7.78642 | 0.1415629 | 2.3912874 | 96 | 6 | 1998–2006 | 0.47 | M-v | 1 | MPC | 97787 | 2005 $NK_{67}$ |
| 2005 $NS_{67}$ | 15.7 | 0.15 | 20060922 | 74.45624 | 255.27875 | 76.40043 | 7.96435 | 0.1887525 | 2.7728721 | 50 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 86917 | 2005 $NS_{67}$ |
| 2005 $NU_{69}$ | 15.3 | 0.15 | 20060922 | 338.46794 | 295.11152 | 116.49286 | 10.04461 | 0.0823774 | 3.1687818 | 44 | 4 | 2000–2006 | 0.52 | M-v | 0 | MPC | 86919 | 2005 $NU_{69}$ |
| 2005 $NZ_{69}$ | 15.1 | 0.15 | 20060922 | 333.38646 | 133.65068 | 291.41997 | 9.17463 | 0.1064067 | 2.9910736 | 47 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 89694 | 2005 $NZ_{69}$ |
| 2005 $NL_{72}$ | 16.5 | 0.15 | 20060922 | 56.92074 | 272.91239 | 82.80817 | 9.90099 | 0.2214824 | 2.7176385 | 43 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 02252 | 2005 $NL_{72}$ |
| 2005 $NN_{72}$ | 16.6 | 0.15 | 20060922 | 117.82374 | 217.09971 | 72.50451 | 7.94417 | 0.2126801 | 2.4286406 | 48 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 86920 | 2005 $NN_{72}$ |
| 2005 $NB_{73}$ | 16.2 | 0.15 | 20060922 | 162.83615 | 56.33476 | 177.96790 | 6.19669 | 0.2602414 | 2.4196045 | 48 | 4 | 1997–2006 | 0.39 | M-v | 2 | MPC | 90218 | 2005 $NB_{73}$ |
| 2005 $NU_{73}$ | 16.4 | 0.15 | 20060922 | 33.88411 | 229.62986 | 132.25102 | 3.01682 | 0.0830697 | 2.8820023 | 24 | 3 | 2004–2006 | 0.44 | M-v | 3 | MPC | 89695 | 2005 $NU_{73}$ |
| 2005 $NJ_{74}$ | 17.7 | 0.15 | 20060922 | 167.01822 | 119.64225 | 121.28154 | 4.07341 | 0.1406778 | 2.3069904 | 23 | 4 | 2002–2006 | 0.28 | M-v | 0 | MPC | 86921 | 2005 $NJ_{74}$ |
| 2005 $NK_{74}$ | 16.7 | 0.15 | 20060922 | 156.06149 | 106.04692 | 124.31817 | 3.07860 | 0.0223357 | 2.8608010 | 36 | 5 | 1999–2006 | 0.33 | M-v | 0 | MPC | 86921 | 2005 $NK_{74}$ |
| 2005 $NR_{74}$ | 17.5 | 0.15 | 20060922 | 48.26545 | 96.45196 | 292.99195 | 7.03134 | 0.1081587 | 2.2467885 | 24 | 4 | 1995–2006 | 0.29 | M-v | 1 | MPC | 89695 | 2005 $NR_{74}$ |
| 2005 $NX_{74}$ | 15.8 | 0.15 | 20060922 | 191.55750 | 64.38626 | 125.81309 | 10.90316 | 0.0433907 | 2.9862258 | 39 | 7 | 1998–2006 | 0.46 | M-v | 0 | MPC | 00962 | 2005 $NX_{74}$ |
| 2005 $NR_{75}$ | 17.0 | 0.15 | 20060922 | 146.90747 | 320.12197 | 291.48716 | 1.48502 | 0.1515104 | 2.4204755 | 36 | 4 | 2000–2006 | 0.38 | M-v | 1 | MPC | 04338 | 2005 $NR_{75}$ |
| 2005 $NT_{75}$ | 17.5 | 0.15 | 20060922 | 29.78441 | 266.12417 | 134.35526 | 2.55672 | 0.1724985 | 2.4213219 | 46 | 7 | 1992–2006 | 0.52 | M-v | 1 | MPC | 95693 | 2005 $NT_{75}$ |
| 2005 $NL_{76}$ | 15.4 | 0.15 | 20060922 | 36.33563 | 207.25975 | 147.05869 | 10.90970 | 0.0852073 | 3.0928325 | 28 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 95693 | 2005 $NL_{76}$ |
| 2005 $NT_{76}$ | 17.4 | 0.15 | 20060922 | 116.46906 | 129.93723 | 156.48769 | 5.86737 | 0.1783708 | 2.5593395 | 28 | 4 | 2001–2006 | 0.36 | M-v | 1 | MPC | 86921 | 2005 $NT_{76}$ |
| 2005 $NU_{76}$ | 16.2 | 0.15 | 20060922 | 39.01394 | 103.73873 | 270.94639 | 4.44706 | 0.1033422 | 2.6805319 | 38 | 3 | 2001–2006 | 0.38 | M-v | 1 | MPC | 86921 | 2005 $NU_{76}$ |
| 2005 $NU_{77}$ | 16.3 | 0.15 | 20060922 | 53.68438 | 75.58068 | 277.09822 | 6.21600 | 0.1014243 | 2.7603955 | 30 | 3 | 2001–2006 | 0.26 | M-v | 2 | MPC | 95694 | 2005 $NU_{77}$ |
| 2005 $ND_{78}$ | 16.7 | 0.15 | 20060922 | 24.57028 | 79.68560 | 310.81006 | 2.94582 | 0.1083053 | 2.7620454 | 32 | 4 | 2001–2006 | 0.45 | M-v | 0 | MPC | 02252 | 2005 $ND_{78}$ |
| 2005 $NO_{78}$ | 17.9 | 0.15 | 20060922 | 99.81590 | 34.61495 | 282.10852 | 2.08862 | 0.1728167 | 2.3970078 | 30 | 5 | 1998–2005 | 0.26 | M-v | 1 | MPC | 86921 | 2005 $NO_{78}$ |
| 2005 $NA_{79}$ | 17.0 | 0.15 | 20060922 | 242.73672 | 35.30291 | 126.54774 | 3.38999 | 0.0197181 | 2.6948015 | 18 | 2 | 2004–2005 | 0.25 | M-v | 4 | MPC | 89695 | 2005 $NA_{79}$ |
| 2005 $NZ_{79}$ | 15.9 | 0.15 | 20060922 | 110.82588 | 215.81710 | 72.87714 | 9.46560 | 0.1971247 | 2.5400257 | 33 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 86922 | 2005 $NZ_{79}$ |
| 2005 $ND_{80}$ | 15.0 | 0.15 | 20060922 | 8.27013 | 4.91561 | 14.04552 | 9.09118 | 0.1008091 | 3.1297042 | 53 | 3 | 2000–2006 | 0.48 | M-v | 3 | MPC | 86923 | 2005 $ND_{80}$ |
| 2005 $NQ_{80}$ | 15.0 | 0.15 | 20060922 | 72.57604 | 221.27317 | 85.42287 | 6.48756 | 0.1476945 | 3.1258888 | 47 | 6 | 1993–2006 | 0.58 | M-v | 1 | MPC | 89696 | 2005 $NQ_{80}$ |
| 2005 $NU_{80}$ | 15.5 | 0.15 | 20060922 | 357.14101 | 215.71085 | 192.38334 | 12.50487 | 0.2124534 | 2.9977146 | 55 | 6 | 2000–2006 | 0.52 | M-v | 0 | MPC | 95694 | 2005 $NU_{80}$ |
| 2005 $NS_{81}$ | 16.5 | 0.15 | 20060922 | 320.49489 | 334.31195 | 116.96140 | 2.10756 | 0.0780548 | 2.5927995 | 51 | 4 | 1995–2006 | 0.43 | M-v | 0 | MPC | 86924 | 2005 $NS_{81}$ |
| 2005 $NB_{82}$ | 17.6 | 0.15 | 20060922 | 151.63490 | 140.36223 | 113.15370 | 10.84679 | 0.1920425 | 2.4359002 | 22 | 3 | 2004–2006 | 0.33 | M-v | 3 | MPC | 86924 | 2005 $NB_{82}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $NY_{83}$ | 15.9 | 0.15 | 20060922 | 191.30782 | 38.40780 | 167.11701 | 2.16768 | 0.0124434 | 2.8911205 | 45 | 5 | 2001–2006 | 0.34 | M-v | 0 | MPC | 86925 | 2005 $NY_{83}$ |
| 2005 $NB_{84}$ | 17.3 | 0.15 | 20060922 | 331.31044 | 234.12839 | 223.23748 | 1.17556 | 0.0493861 | 2.3801547 | 37 | 6 | 1991–2006 | 0.44 | M-v | 0 | MPC | 04338 | 2005 $NB_{84}$ |
| 2005 $NH_{85}$ | 16.0 | 0.15 | 20060922 | 12.99104 | 262.58599 | 118.41073 | 6.44044 | 0.0584644 | 2.7758845 | 30 | 4 | 2003–2006 | 0.36 | M-v | 1 | MPC | 86927 | 2005 $NH_{85}$ |
| 2005 $NU_{85}$ | 15.6 | 0.15 | 20060922 | 233.27684 | 208.47785 | 292.36095 | 9.01996 | 0.0651741 | 3.1219340 | 38 | 4 | 2001–2006 | 0.42 | M-v | 1 | MPC | 00962 | 2005 $NU_{85}$ |
| 2005 $NN_{86}$ | 17.8 | 0.15 | 20060922 | 191.17205 | 312.98921 | 257.25127 | 2.44916 | 0.1681478 | 2.2577071 | 23 | 5 | 1994–2006 | 0.42 | M-v | 0 | MPC | 02252 | 2005 $NN_{86}$ |
| 2005 $NW_{86}$ | 16.3 | 0.15 | 20060922 | 97.34227 | 35.78683 | 259.99243 | 0.89195 | 0.0511565 | 2.8481501 | 53 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 89697 | 2005 $NW_{86}$ |
| 2005 $ND_{87}$ | 17.2 | 0.15 | 20060922 | 14.24689 | 130.30842 | 293.20212 | 1.45836 | 0.1741242 | 2.4661544 | 26 | 3 | 2003–2006 | 0.32 | M-v | 3 | MPC | 00962 | 2005 $ND_{87}$ |
| 2005 $NU_{87}$ | 16.5 | 0.15 | 20060922 | 1.92284 | 141.28547 | 246.60345 | 0.95027 | 0.0221803 | 2.8933583 | 53 | 6 | 1994–2006 | 0.34 | M-v | 0 | MPC | 04338 | 2005 $NU_{87}$ |
| 2005 $NS_{89}$ | 16.2 | 0.15 | 20060922 | 359.45991 | 309.58063 | 110.01671 | 4.17728 | 0.0422746 | 2.5158292 | 39 | 5 | 1996–2006 | 0.44 | M-v | 1 | MPC | 86928 | 2005 $NS_{89}$ |
| 2005 $NJ_{91}$ | 16.6 | 0.15 | 20060922 | 163.71873 | 296.11819 | 284.81983 | 3.17594 | 0.2271046 | 2.5811017 | 27 | 3 | 2004–2006 | 0.28 | M-v | 3 | MPC | 89697 | 2005 $NJ_{91}$ |
| 2005 $NU_{93}$ | 16.0 | 0.15 | 20060922 | 192.53974 | 91.91890 | 114.37755 | 5.91784 | 0.0207795 | 2.5703073 | 42 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 86929 | 2005 $NU_{93}$ |
| 2005 $ND_{94}$ | 15.5 | 0.15 | 20060922 | 135.78408 | 299.54156 | 292.02280 | 9.99548 | 0.0397391 | 3.1727458 | 29 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 89697 | 2005 $ND_{94}$ |
| 2005 $NX_{94}$ | 15.8 | 0.15 | 20060922 | 74.76126 | 169.47000 | 163.08255 | 9.95300 | 0.0817269 | 3.1754840 | 19 | 1 | 92 days | 0.33 | M-v | 4 | MPC | | 2005 $NX_{94}$ |
| 2005 $NT_{95}$ | 17.6 | 0.15 | 20060922 | 43.58684 | 281.16309 | 111.27205 | 5.50270 | 0.1205009 | 2.2509696 | 21 | 3 | 2002–2005 | 0.57 | M-v | 3 | MPC | 95694 | 2005 $NT_{95}$ |
| 2005 $NE_{96}$ | 15.6 | 0.15 | 20060922 | 125.28407 | 347.69176 | 276.67794 | 10.65410 | 0.1386461 | 2.6449823 | 40 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 89697 | 2005 $NE_{96}$ |
| 2005 $NH_{96}$ | 15.6 | 0.15 | 20060922 | 21.69148 | 303.34450 | 73.81596 | 0.75265 | 0.1833051 | 3.0653286 | 64 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 89697 | 2005 $NH_{96}$ |
| 2005 $NX_{98}$ | 15.1 | 0.15 | 20060922 | 45.50409 | 30.35515 | 312.03904 | 7.85487 | 0.0434415 | 3.1249741 | 54 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 90218 | 2005 $NX_{98}$ |
| 2005 $NN_{99}$ | 16.2 | 0.15 | 20060922 | 59.66014 | 117.72715 | 221.36643 | 7.31388 | 0.1991367 | 3.0572120 | 25 | 3 | 2000–2006 | 0.26 | M-v | 2 | MPC | 86931 | 2005 $NN_{99}$ |
| 2005 $NT_{99}$ | 14.8 | 0.15 | 20060922 | 87.83455 | 35.02896 | 262.60809 | 13.96929 | 0.1435404 | 3.1763893 | 49 | 4 | 1999–2006 | 0.54 | M-v | 2 | MPC | 86932 | 2005 $NT_{99}$ |
| 2005 $NW_{99}$ | 16.5 | 0.15 | 20060922 | 83.17166 | 297.87049 | 54.52927 | 3.09300 | 0.2111251 | 2.4429522 | 62 | 3 | 2004–2006 | 0.37 | M-v | 2 | MPC | 90218 | 2005 $NW_{99}$ |
| 2005 $NL_{100}$ | 17.0 | 0.15 | 20060922 | 314.10273 | 309.05424 | 136.39214 | 0.98674 | 0.0415503 | 2.7687163 | 29 | 3 | 2001–2006 | 0.40 | M-v | 4 | MPC | 89697 | 2005 $NL_{100}$ |
| 2005 $NQ_{100}$ | 15.5 | 0.15 | 20060922 | 331.99335 | 308.97758 | 123.08428 | 18.77512 | 0.1921170 | 3.0781573 | 34 | 4 | 2002–2006 | 0.59 | M-v | 1 | MPC | 86932 | 2005 $NQ_{100}$ |
| 2005 $NT_{100}$ | 16.4 | 0.15 | 20060922 | 126.10141 | 18.79265 | 283.73920 | 6.51728 | 0.1816623 | 2.3840225 | 57 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 86932 | 2005 $NT_{100}$ |
| 2005 $NU_{100}$ | 16.4 | 0.15 | 20060922 | 95.06263 | 21.75191 | 324.53744 | 0.93396 | 0.1991917 | 2.4294873 | 109 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 90218 | 2005 $NU_{100}$ |
| 2005 $NK_{101}$ | 16.7 | 0.15 | 20060922 | 246.20556 | 204.76562 | 313.11457 | 2.81511 | 0.0239507 | 2.6469106 | 25 | 5 | 1999–2006 | 0.35 | M-v | 1 | MPC | 86934 | 2005 $NK_{101}$ |
| 2005 $NX_{101}$ | 16.4 | 0.15 | 20060922 | 44.26803 | 203.05119 | 161.40018 | 4.15017 | 0.1131005 | 2.7608766 | 34 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 86934 | 2005 $NX_{101}$ |
| 2005 $NW_{107}$ | 17.5 | 0.15 | 20060922 | 104.86839 | 110.53737 | 181.51184 | 1.07077 | 0.0826491 | 2.6008154 | 29 | 3 | 2001–2006 | 0.36 | M-v | 4 | MPC | 95694 | 2005 $NW_{107}$ |
| 2005 $NP_{108}$ | 16.2 | 0.15 | 20060922 | 40.15953 | 67.22377 | 279.05226 | 0.83000 | 0.0588469 | 2.9326788 | 73 | 6 | 2000–2006 | 0.43 | M-v | 0 | MPC | 00963 | 2005 $NP_{108}$ |
| 2005 $NG_{111}$ | 16.8 | 0.15 | 20060922 | 130.06591 | 115.52894 | 122.46791 | 3.89294 | 0.1473894 | 2.9401697 | 35 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 95694 | 2005 $NG_{111}$ |
| 2005 $NM_{115}$ | 16.5 | 0.15 | 20060922 | 343.13360 | 296.55720 | 129.78445 | 1.98482 | 0.1360908 | 2.6615195 | 84 | 4 | 2003–2006 | 0.49 | M-v | 1 | MPC | 95694 | 2005 $NM_{115}$ |
| 2005 $NF_{116}$ | 18.1 | 0.15 | 20060922 | 354.07091 | 301.37407 | 128.13021 | 4.35425 | 0.2251640 | 2.5624488 | 17 | 3 | 1999–2005 | 0.20 | M-v | 2 | MPC | 95694 | 2005 $NF_{116}$ |
| 2005 $NM_{122}$ | 17.5 | 0.15 | 20060922 | 87.97906 | 160.48108 | 157.13999 | 5.14123 | 0.2282206 | 2.6939034 | 16 | 1 | 90 days | 0.20 | M-v | 3 | MPC | | 2005 $NM_{122}$ |
| 2005 $NO_{122}$ | 16.7 | 0.15 | 20050729 | 356.48891 | 179.00777 | 136.91366 | 1.24960 | 0.2151633 | 3.0567239 | 21 | 1 | 59 days | 0.34 | | | MPC | | 2005 $NO_{122}$ |
| 2005 $NQ_{122}$ | 15.8 | 0.15 | 20060922 | 90.67434 | 58.43889 | 281.17479 | 13.26261 | 0.2154589 | 2.7885672 | 24 | 1 | 102 days | 0.45 | M-v | 4 | MPC | | 2005 $NQ_{122}$ |
| 2005 $NR_{122}$ | 16.1 | 0.15 | 20060922 | 129.30344 | 273.32829 | 12.28541 | 6.61426 | 0.1944335 | 2.4096265 | 15 | 1 | 62 days | 0.18 | M-v | 4 | MPC | | 2005 $NR_{122}$ |
| 2005 $NT_{122}$ | 15.3 | 0.15 | 20060922 | 74.17409 | 268.32704 | 42.66530 | 25.29787 | 0.3014310 | 3.2027302 | 28 | 1 | 90 days | 0.36 | M-v | 3 | MPC | | 2005 $NT_{122}$ |
| 2005 $NW_{122}$ | 16.4 | 0.15 | 20060922 | 87.07745 | 248.67808 | 102.88401 | 7.50924 | 0.1688271 | 2.3467319 | 22 | 1 | 64 days | 0.46 | M-v | 4 | MPC | | 2005 $NW_{122}$ |
| 2005 $NX_{122}$ | 17.0 | 0.15 | 20060922 | 89.59014 | 233.05553 | 128.61010 | 7.16840 | 0.1543875 | 2.2530669 | 21 | 1 | 64 days | 0.49 | M-v | 4 | MPC | | 2005 $NX_{122}$ |
| 2005 $NY_{122}$ | 14.9 | 0.15 | 20060922 | 48.84556 | 37.13698 | 319.19593 | 22.66244 | 0.2297535 | 3.1637193 | 21 | 1 | 65 days | 0.59 | M-v | 4 | MPC | | 2005 $NY_{122}$ |
| 2005 $NZ_{122}$ | 15.9 | 0.15 | 20050729 | 3.91168 | 239.73093 | 67.77652 | 19.97254 | 0.3244043 | 3.1611033 | 20 | 1 | 59 days | 0.47 | | | MPC | | 2005 $NZ_{122}$ |
| 2005 $NA_{123}$ | 16.3 | 0.15 | 20060922 | 77.84164 | 221.76616 | 119.88305 | 6.00668 | 0.1895382 | 3.1292913 | 17 | 1 | 92 days | 0.51 | M-v | 4 | MPC | | 2005 $NA_{123}$ |
| 2005 $NB_{123}$ | 17.0 | 0.15 | 20050729 | 9.31512 | 271.08220 | 21.81549 | 9.56724 | 0.2279238 | 2.3966702 | 21 | 1 | 50 days | 0.50 | | | MPC | | 2005 $NB_{123}$ |
| 2005 $NC_{123}$ | 16.8 | 0.15 | 20060922 | 99.96191 | 310.19185 | 28.79723 | 9.34237 | 0.2563158 | 2.3111774 | 19 | 1 | 89 days | 0.46 | M-v | 4 | MPC | | 2005 $NC_{123}$ |
| 2005 $ND_{123}$ | 17.0 | 0.15 | 20060922 | 181.09951 | 325.38968 | 278.82706 | 3.02286 | 0.0470397 | 2.6143926 | 16 | 1 | 118 days | 0.25 | M-v | 3 | MPC | | 2005 $ND_{123}$ |
| 2005 $NF_{123}$ | 15.5 | 0.15 | 20060922 | 83.19482 | 65.93989 | 238.20805 | 12.77468 | 0.2592833 | 3.2087904 | 18 | 1 | 119 days | 0.63 | M-v | 4 | MPC | | 2005 $NF_{123}$ |
| 2005 $NG_{123}$ | 17.9 | 0.15 | 20060922 | 127.95743 | 64.42070 | 238.61726 | 5.10475 | 0.1737629 | 2.2894029 | 19 | 1 | 116 days | 0.19 | M-v | 3 | MPC | | 2005 $NG_{123}$ |
| 2005 $NH_{123}$ | 17.6 | 0.15 | 20050729 | 7.50280 | 23.88470 | 278.38463 | 7.93931 | 0.2877197 | 2.6929750 | 16 | 1 | 49 days | 0.50 | | | MPC | | 2005 $NH_{123}$ |
| 2005 $NJ_{123}$ | 17.5 | 0.15 | 20050729 | 22.67215 | 49.66713 | 229.10362 | 3.88039 | 0.2200667 | 2.3385599 | 16 | 1 | 57 days | 0.40 | | | MPC | | 2005 $NJ_{123}$ |
| 2005 $NK_{123}$ | 16.7 | 0.15 | 20050729 | 299.36715 | 260.32084 | 137.78342 | 13.88020 | 0.2244241 | 2.6824691 | 15 | 1 | 54 days | 0.15 | | | MPC | | 2005 $NK_{123}$ |
| 2005 $NL_{123}$ | 17.6 | 0.15 | 20060922 | 87.01369 | 170.66459 | 184.90418 | 2.43812 | 0.2156036 | 2.3458552 | 21 | 1 | 139 days | 0.43 | M-v | 4 | MPC | | 2005 $NL_{123}$ |
| 2005 $NM_{123}$ | 17.3 | 0.15 | 20060922 | 81.31893 | 224.03688 | 139.66402 | 2.87898 | 0.2016286 | 2.3422342 | 23 | 1 | 117 days | 0.38 | M-v | 4 | MPC | | 2005 $NM_{123}$ |
| 2005 $NN_{123}$ | 15.7 | 0.15 | 20060922 | 40.70815 | 66.35503 | 290.00482 | 8.47700 | 0.1119080 | 3.0674768 | 18 | 1 | 65 days | 0.13 | M-v | 4 | MPC | | 2005 $NN_{123}$ |
| 2005 $NO_{123}$ | 17.4 | 0.15 | 20060922 | 133.15656 | 86.26975 | 191.57788 | 5.33496 | 0.1973892 | 2.4079869 | 15 | 1 | 66 days | 0.12 | M-v | 3 | MPC | | 2005 $NO_{123}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $NP_{123}$ | 17.9 | 0.15 | 20050729 | 345.35794 | 259.93607 | 72.28724 | 6.79829 | 0.2506144 | 2.3031341 | 23 | 1 | 45 days | 0.40 | | MPC | | 2005 $NP_{123}$ |
| 2005 $NQ_{123}$ | 16.7 | 0.15 | 20060922 | 78.52847 | 5.35487 | 330.50374 | 15.00871 | 0.2141330 | 2.6447586 | 29 | 1 | 108 days | 0.31 | M-v 3 | MPC | | 2005 $NQ_{123}$ |
| 2005 $NR_{123}$ | 17.2 | 0.15 | 20060922 | 62.57235 | 112.96096 | 279.80543 | 2.42384 | 0.1320005 | 2.3973888 | 24 | 1 | 110 days | 0.28 | M-v 3 | MPC | | 2005 $NR_{123}$ |
| 2005 $NS_{123}$ | 17.4 | 0.15 | 20060922 | 134.71834 | 327.61963 | 314.31855 | 1.76890 | 0.2165454 | 2.3761365 | 22 | 1 | 106 days | 0.50 | M-v 5 | MPC | | 2005 $NS_{123}$ |
| 2005 $NT_{123}$ | 16.6 | 0.15 | 20050729 | 8.50794 | 349.85827 | 315.77300 | 10.93462 | 0.1699299 | 2.6964131 | 18 | 1 | 48 days | 0.61 | | MPC | | 2005 $NT_{123}$ |
| 2005 $NU_{123}$ | 16.1 | 0.15 | 20050729 | 11.01675 | 143.70977 | 153.20281 | 15.90253 | 0.1603473 | 3.1745079 | 15 | 1 | 48 days | 0.38 | | MPC | | 2005 $NU_{123}$ |
| 2005 $OD_1$ | 15.8 | 0.15 | 20060922 | 58.71838 | 299.20438 | 82.89191 | 12.82860 | 0.2333844 | 2.5463245 | 25 | 3 | 1996–2005 | 0.59 | M-v 3 | MPC | 86937 | 2005 $OD_1$ |
| 2005 $OP_1$ | 16.9 | 0.15 | 20060922 | 97.01033 | 238.13855 | 106.25216 | 6.77224 | 0.1480149 | 2.3012363 | 54 | 5 | 2001–2006 | 0.48 | M-v 1 | MPC | 86937 | 2005 $OP_1$ |
| 2005 $OR_1$ | 16.1 | 0.15 | 20060922 | 70.83194 | 271.25012 | 86.27240 | 15.77316 | 0.1589844 | 2.5733961 | 39 | 4 | 2000–2006 | 0.33 | M-v 1 | MPC | 86938 | 2005 $OR_1$ |
| 2005 $OU_1$ | 20.2 | 0.15 | 20060922 | 202.77355 | 204.75018 | 309.81953 | 12.52353 | 0.3199785 | 0.9760143 | 114 | 2 | 2005–2006 | 0.50 | M-v 4 | MPC | 03710 | 2005 $OU_1$ |
| 2005 $OZ_1$ | 16.3 | 0.15 | 20060922 | 111.41720 | 298.93612 | 349.35586 | 5.26791 | 0.1530399 | 2.5415727 | 37 | 5 | 2000–2006 | 0.58 | M-v 1 | MPC | 86938 | 2005 $OZ_1$ |
| 2005 $OD_2$ | 16.7 | 0.15 | 20060922 | 136.98163 | 258.69704 | 11.82026 | 4.60277 | 0.1638143 | 2.4079081 | 32 | 3 | 2004–2006 | 0.44 | M-v 3 | MPC | 00963 | 2005 $OD_2$ |
| 2005 $OO_2$ | 13.7 | 0.15 | 20060922 | 78.05303 | 47.49740 | 265.22360 | 21.67703 | 0.1039283 | 3.2280238 | 53 | 5 | 1999–2006 | 0.49 | M-v 1 | MPC | 89699 | 2005 $OO_2$ |
| 2005 $OP_3$ | 15.0 | 0.15 | 20060922 | 53.13060 | 239.64214 | 99.88886 | 17.56437 | 0.1561069 | 3.0522440 | 37 | 3 | 2001–2006 | 0.60 | M-v 3 | MPC | 86939 | 2005 $OP_3$ |
| 2005 $OX_3$ | 16.6 | 0.15 | 20060922 | 65.06682 | 154.77837 | 191.71427 | 6.09747 | 0.0459184 | 2.6881487 | 34 | 5 | 1995–2006 | 0.46 | M-v 1 | MPC | 89699 | 2005 $OX_3$ |
| 2005 $OY_3$ | 15.5 | 0.15 | 20060922 | 51.95702 | 238.26192 | 103.83330 | 6.18991 | 0.1574085 | 3.1290661 | 43 | 4 | 1993–2006 | 0.39 | M-v 0 | MPC | 86940 | 2005 $OY_3$ |
| 2005 $OD_4$ | 17.5 | 0.15 | 20060922 | 147.36038 | 74.11069 | 185.13712 | 3.18259 | 0.2267007 | 2.3309089 | 33 | 4 | 2001–2006 | 0.34 | M-v 2 | MPC | 86940 | 2005 $OD_4$ |
| 2005 $OL_4$ | 15.7 | 0.15 | 20060922 | 51.22643 | 312.60792 | 80.77720 | 6.03040 | 0.1995254 | 2.5329667 | 54 | 5 | 1996–2006 | 0.48 | M-v 1 | MPC | 86941 | 2005 $OL_4$ |
| 2005 $OT_4$ | 17.1 | 0.15 | 20060922 | 219.23760 | 335.91630 | 221.29925 | 3.94483 | 0.0914757 | 2.3402574 | 46 | 3 | 2004–2006 | 0.29 | M-v 2 | MPC | 86941 | 2005 $OT_4$ |
| 2005 $OK_5$ | 17.0 | 0.15 | 20060922 | 39.79901 | 165.28726 | 239.62741 | 1.62014 | 0.1646233 | 2.4467135 | 26 | 4 | 2001–2006 | 0.51 | M-v 1 | MPC | 03711 | 2005 $OK_5$ |
| 2005 $OA_6$ | 15.2 | 0.15 | 20060922 | 131.48059 | 147.32108 | 125.59839 | 4.66871 | 0.0706994 | 2.9369079 | 34 | 5 | 2000–2006 | 0.37 | M-v 1 | MPC | 03711 | 2005 $OA_6$ |
| 2005 $OE_6$ | 18.3 | 0.15 | 20060922 | 99.50905 | 265.16753 | 90.07142 | 3.51476 | 0.1806970 | 2.2625294 | 36 | 3 | 1995–2005 | 0.21 | M-v 2 | MPC | 86942 | 2005 $OE_6$ |
| 2005 $OF_6$ | 16.2 | 0.15 | 20060922 | 55.87855 | 273.61946 | 120.88009 | 8.03991 | 0.1313001 | 2.4111011 | 28 | 3 | 2001–2005 | 0.35 | M-v 2 | MPC | 97787 | 2005 $OF_6$ |
| 2005 $OR_6$ | 15.7 | 0.15 | 20060922 | 49.85139 | 266.02259 | 99.20419 | 6.09205 | 0.2251283 | 3.1849911 | 58 | 5 | 1996–2006 | 0.38 | M-v 1 | MPC | 86943 | 2005 $OR_6$ |
| 2005 $ON_7$ | 16.6 | 0.15 | 20060922 | 75.08484 | 237.63483 | 114.32292 | 14.99040 | 0.2129640 | 2.6451519 | 35 | 3 | 2001–2006 | 0.39 | M-v 2 | MPC | 00964 | 2005 $ON_7$ |
| 2005 $OR_7$ | 13.9 | 0.15 | 20060922 | 27.30813 | 27.05038 | 319.48138 | 7.92705 | 0.2520466 | 3.9291913 | 73 | 4 | 1998–2006 | 0.47 | M-v 0 | MPC | 86944 | 2005 $OR_7$ |
| 2005 $OD_8$ | 14.4 | 0.15 | 20060922 | 101.12579 | 34.23874 | 249.41584 | 26.78952 | 0.1492177 | 3.2116990 | 48 | 3 | 2004–2006 | 0.45 | M-v 2 | MPC | 89699 | 2005 $OD_8$ |
| 2005 $OO_8$ | 15.4 | 0.15 | 20060922 | 1.92760 | 99.22480 | 296.44635 | 14.60447 | 0.0720339 | 3.0769757 | 46 | 5 | 2000–2006 | 0.45 | M-v 0 | MPC | 86945 | 2005 $OO_8$ |
| 2005 $OB_9$ | 16.4 | 0.15 | 20060922 | 47.73164 | 184.64499 | 165.08431 | 8.76741 | 0.0737565 | 2.9308612 | 28 | 5 | 1995–2006 | 0.48 | M-v 1 | MPC | 00964 | 2005 $OB_9$ |
| 2005 $OW_9$ | 17.0 | 0.15 | 20060922 | 146.64385 | 175.55889 | 88.47579 | 3.60508 | 0.2096052 | 2.4221483 | 33 | 3 | 2000–2006 | 0.27 | M-v 3 | MPC | 86947 | 2005 $OW_9$ |
| 2005 $OZ_9$ | 15.3 | 0.15 | 20060922 | 76.71080 | 199.78840 | 121.12191 | 11.45679 | 0.0194675 | 3.0899636 | 34 | 7 | 1992–2006 | 0.58 | M-v 0 | MPC | 00964 | 2005 $OZ_9$ |
| 2005 $OO_{10}$ | 15.9 | 0.15 | 20060922 | 102.43999 | 256.18003 | 51.12579 | 4.20817 | 0.1730616 | 2.7141663 | 68 | 5 | 2001–2006 | 0.45 | M-v 1 | MPC | 86948 | 2005 $OO_{10}$ |
| 2005 $OS_{10}$ | 16.0 | 0.15 | 20060922 | 114.24544 | 200.72092 | 102.89279 | 11.94252 | 0.1226305 | 2.5674015 | 33 | 4 | 2001–2006 | 0.47 | M-v 1 | MPC | 95695 | 2005 $OS_{10}$ |
| 2005 $OB_{11}$ | 15.5 | 0.15 | 20060922 | 76.29631 | 210.86895 | 126.37067 | 5.85558 | 0.1186233 | 2.7514381 | 68 | 5 | 2001–2006 | 0.45 | M-v 1 | MPC | 90219 | 2005 $OB_{11}$ |
| 2005 $OG_{11}$ | 16.9 | 0.15 | 20060922 | 114.01546 | 328.63966 | 345.85433 | 2.22146 | 0.2033763 | 2.3998444 | 52 | 5 | 1994–2006 | 0.44 | M-v 1 | MPC | 86949 | 2005 $OG_{11}$ |
| 2005 $OO_{11}$ | 16.3 | 0.15 | 20060922 | 121.44408 | 193.59246 | 128.19814 | 7.16673 | 0.1568906 | 2.2712914 | 56 | 4 | 1998–2006 | 0.56 | M-v 2 | MPC | 90219 | 2005 $OO_{11}$ |
| 2005 $OO_{13}$ | 17.6 | 0.15 | 20060922 | 182.22250 | 188.93946 | 74.45916 | 6.22920 | 0.1195607 | 2.1890596 | 30 | 4 | 1998–2006 | 0.41 | M-v 1 | MPC | 86952 | 2005 $OO_{13}$ |
| 2005 $OG_{14}$ | 16.3 | 0.15 | 20060922 | 85.82883 | 313.71988 | 31.09025 | 1.67239 | 0.2031760 | 2.4406589 | 56 | 3 | 2004–2006 | 0.42 | M-v 2 | MPC | 90219 | 2005 $OG_{14}$ |
| 2005 $OT_{14}$ | 16.8 | 0.15 | 20060922 | 100.42435 | 63.80214 | 292.66201 | 1.28698 | 0.2158142 | 2.3764020 | 93 | 5 | 1994–2005 | 0.49 | M-v 1 | MPC | 97788 | 2005 $OT_{14}$ |
| 2005 $OX_{14}$ | 15.9 | 0.15 | 20060922 | 64.40868 | 297.36523 | 66.14457 | 6.95566 | 0.1341272 | 2.4218676 | 47 | 5 | 1998–2006 | 0.55 | M-v 1 | MPC | 86956 | 2005 $OX_{14}$ |
| 2005 $OB_{15}$ | 16.1 | 0.15 | 20060922 | 86.21723 | 224.97068 | 86.15391 | 11.37437 | 0.1009141 | 2.7652752 | 43 | 4 | 2001–2006 | 0.53 | M-v 0 | MPC | 86956 | 2005 $OB_{15}$ |
| 2005 $OS_{15}$ | 14.7 | 0.15 | 20060922 | 254.21925 | 212.73660 | 282.58370 | 20.57015 | 0.0677799 | 3.1101930 | 25 | 5 | 1996–2006 | 0.50 | M-v 1 | MPC | 95696 | 2005 $OS_{15}$ |
| 2005 $OC_{16}$ | 16.4 | 0.15 | 20060922 | 91.63997 | 119.40423 | 180.52618 | 2.01462 | 0.2217604 | 3.0331439 | 38 | 5 | 1999–2006 | 0.45 | M-v 0 | MPC | 89702 | 2005 $OC_{16}$ |
| 2005 $OY_{16}$ | 15.6 | 0.15 | 20060922 | 54.08632 | 150.99940 | 194.69062 | 9.06241 | 0.0631321 | 3.0736225 | 24 | 3 | 1995–2006 | 0.30 | M-v 3 | MPC | 89702 | 2005 $OY_{16}$ |
| 2005 $OB_{17}$ | 15.3 | 0.15 | 20060922 | 50.07152 | 159.83662 | 188.41095 | 10.39052 | 0.0639124 | 3.1328279 | 33 | 5 | 2000–2006 | 0.36 | M-v 0 | MPC | 00965 | 2005 $OB_{17}$ |
| 2005 $OD_{18}$ | 15.5 | 0.15 | 20060922 | 71.41883 | 158.35235 | 177.22761 | 8.26575 | 0.0849336 | 3.1231822 | 38 | 5 | 2000–2006 | 0.30 | M-v 0 | MPC | 89702 | 2005 $OD_{18}$ |
| 2005 $OG_{18}$ | 16.1 | 0.15 | 20060922 | 121.05331 | 12.79132 | 272.72936 | 3.91734 | 0.0853450 | 2.9478845 | 28 | 5 | 2000–2006 | 0.53 | M-v 0 | MPC | 89702 | 2005 $OG_{18}$ |
| 2005 $OH_{18}$ | 16.8 | 0.15 | 20060922 | 129.02585 | 4.50397 | 298.83563 | 5.68744 | 0.1156931 | 2.4264655 | 30 | 3 | 2001–2005 | 0.37 | M-v 2 | MPC | 86960 | 2005 $OH_{18}$ |
| 2005 $OV_{18}$ | 15.6 | 0.15 | 20060922 | 101.68194 | 146.01229 | 162.43375 | 8.05802 | 0.1092263 | 3.0292146 | 70 | 5 | 1993–2006 | 0.44 | M-v 0 | MPC | 89703 | 2005 $OV_{18}$ |
| 2005 $OY_{18}$ | 16.0 | 0.15 | 20060922 | 96.62162 | 158.84561 | 160.03231 | 3.45742 | 0.1334930 | 2.6629750 | 37 | 3 | 2001–2006 | 0.38 | M-v 3 | MPC | 89703 | 2005 $OY_{18}$ |
| 2005 $OM_{19}$ | 16.3 | 0.15 | 20060922 | 98.75214 | 317.60230 | 350.34418 | 1.59775 | 0.0399335 | 2.8364721 | 39 | 6 | 1994–2006 | 0.35 | M-v 0 | MPC | 89703 | 2005 $OM_{19}$ |
| 2005 $OO_{20}$ | 16.8 | 0.15 | 20060922 | 62.02807 | 353.55775 | 9.19931 | 3.05667 | 0.1519562 | 2.7192469 | 37 | 4 | 2001–2006 | 0.38 | M-v 1 | MPC | 90220 | 2005 $OO_{20}$ |
| 2005 $OX_{20}$ | 16.0 | 0.15 | 20060922 | 64.91486 | 248.66100 | 128.15573 | 7.22160 | 0.1165590 | 2.4276607 | 66 | 6 | 1998–2006 | 0.45 | M-v 1 | MPC | 86963 | 2005 $OX_{20}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $OA_{21}$ | 17.1 | 0.15 | 20060922 | 63.87616 | 333.67165 | 31.51760 | 1.37130 | 0.0262257 | 2.5222784 | 31 | 5 | 1993–2005 | 0.40 | M-v | 3 | MPC | 04338 | 2005 $OA_{21}$ |
| 2005 $OG_{21}$ | 16.4 | 0.15 | 20060922 | 133.61877 | 164.67979 | 131.72281 | 8.70700 | 0.0777053 | 2.4103481 | 51 | 5 | 1993–2005 | 0.44 | M-v | 1 | MPC | 04338 | 2005 $OG_{21}$ |
| 2005 $OH_{21}$ | 16.8 | 0.15 | 20060922 | 58.36328 | 287.33082 | 118.17463 | 6.06216 | 0.1433612 | 2.2153307 | 41 | 4 | 2002–2006 | 0.43 | M-v | 2 | MPC | 86964 | 2005 $OH_{21}$ |
| 2005 $OM_{21}$ | 16.3 | 0.15 | 20060922 | 15.59405 | 279.21241 | 124.22879 | 7.16589 | 0.0308979 | 2.7737237 | 23 | 4 | 1999–2006 | 0.24 | M-v | 0 | MPC | 89703 | 2005 $OM_{21}$ |
| 2005 $OX_{21}$ | 15.9 | 0.15 | 20060922 | 289.76431 | 348.36800 | 145.12291 | 14.78675 | 0.0992596 | 2.6641389 | 28 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 89703 | 2005 $OX_{21}$ |
| 2005 $OZ_{21}$ | 16.8 | 0.15 | 20060922 | 64.68128 | 236.58789 | 140.84930 | 5.94822 | 0.0993828 | 2.4273352 | 43 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 86964 | 2005 $OZ_{21}$ |
| 2005 $OZ_{23}$ | 15.4 | 0.15 | 20060922 | 70.73743 | 157.81746 | 166.43746 | 10.33941 | 0.0817010 | 3.1549834 | 27 | 3 | 2003–2006 | 0.44 | M-v | 2 | MPC | 95697 | 2005 $OZ_{23}$ |
| 2005 $OG_{24}$ | 15.5 | 0.15 | 20060922 | 339.65235 | 261.75064 | 164.13565 | 12.34976 | 0.0764913 | 3.1244531 | 39 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 89704 | 2005 $OG_{24}$ |
| 2005 $OH_{24}$ | 15.9 | 0.15 | 20060922 | 18.48682 | 126.38132 | 259.13738 | 4.62207 | 0.0544893 | 3.1118814 | 54 | 5 | 1998–2006 | 0.41 | M-v | 0 | MPC | 89704 | 2005 $OH_{24}$ |
| 2005 $OM_{25}$ | 16.0 | 0.15 | 20060922 | 49.33647 | 201.71950 | 164.57870 | 5.68007 | 0.0604498 | 2.8107105 | 23 | 3 | 2004–2006 | 0.24 | M-v | 2 | MPC | 90220 | 2005 $OM_{25}$ |
| 2005 $OB_{26}$ | 15.0 | 0.15 | 20060922 | 42.66021 | 141.27937 | 195.96632 | 1.88952 | 0.2861136 | 3.9264406 | 73 | 4 | 1998–2006 | 0.42 | M-v | 0 | MPC | 97788 | 2005 $OB_{26}$ |
| 2005 $OC_{26}$ | 16.6 | 0.15 | 20060922 | 136.72810 | 12.71024 | 249.12125 | 1.37962 | 0.0720606 | 2.8162803 | 37 | 4 | 1999–2006 | 0.55 | M-v | 0 | MPC | 95697 | 2005 $OC_{26}$ |
| 2005 $OQ_{27}$ | 17.3 | 0.15 | 20060922 | 125.44752 | 302.79613 | 356.91972 | 9.73576 | 0.1920233 | 2.3197812 | 18 | 1 | 101 days | 0.55 | M-v | 4 | MPC | | 2005 $OQ_{27}$ |
| 2005 $OR_{27}$ | 16.0 | 0.15 | 20060922 | 69.31782 | 291.35681 | 69.18470 | 15.32560 | 0.1227315 | 2.5699229 | 19 | 1 | 66 days | 0.41 | M-v | 4 | MPC | | 2005 $OR_{27}$ |
| 2005 $OS_{27}$ | 16.8 | 0.15 | 20050818 | 10.82145 | 195.56670 | 113.11625 | 9.18659 | 0.3161838 | 2.5556019 | 20 | 1 | 45 days | 0.67 | | | MPC | | 2005 $OS_{27}$ |
| 2005 $OT_{27}$ | 17.3 | 0.15 | 20050818 | 341.65589 | 265.57435 | 89.30500 | 3.05843 | 0.1412116 | 2.3158883 | 16 | 1 | 56 days | 0.48 | | | MPC | | 2005 $OT_{27}$ |
| 2005 $OU_{27}$ | 18.2 | 0.15 | 20050818 | 14.36693 | 246.59595 | 59.46964 | 2.11689 | 0.2498670 | 2.2596970 | 16 | 1 | 39 days | 0.46 | | | MPC | | 2005 $OU_{27}$ |
| 2005 $OW_{27}$ | 17.1 | 0.15 | 20060922 | 118.65461 | 181.50140 | 172.42840 | 22.68274 | 0.0785537 | 1.9566924 | 25 | 1 | 100 days | 0.47 | M-v | 4 | MPC | | 2005 $OW_{27}$ |
| 2005 $OX_{27}$ | 17.3 | 0.15 | 20050818 | 21.23500 | 84.01009 | 205.03676 | 3.52876 | 0.2361231 | 2.3269427 | 18 | 1 | 40 days | 0.63 | | | MPC | | 2005 $OX_{27}$ |
| 2005 $OY_{27}$ | 15.3 | 0.15 | 20060922 | 93.32491 | 49.52175 | 295.55032 | 24.43600 | 0.0853449 | 2.7243087 | 17 | 1 | 92 days | 0.49 | M-v | 4 | MPC | | 2005 $OY_{27}$ |
| 2005 $OZ_{27}$ | 16.2 | 0.15 | 20060922 | 157.91930 | 264.98731 | 353.30744 | 8.56644 | 0.0876351 | 2.7385027 | 13 | 1 | 64 days | 0.16 | M-v | 4 | MPC | | 2005 $OZ_{27}$ |
| 2005 $OA_{28}$ | 17.1 | 0.15 | 20060922 | 112.55686 | 115.24317 | 204.41376 | 5.66957 | 0.1311853 | 2.3564980 | 17 | 1 | 92 days | 0.24 | M-v | 3 | MPC | | 2005 $OA_{28}$ |
| 2005 $OB_{28}$ | 16.7 | 0.15 | 20050818 | 26.96026 | 5.26877 | 290.79974 | 4.40322 | 0.1547394 | 2.7033565 | 15 | 1 | 55 days | 0.54 | | | MPC | | 2005 $OB_{28}$ |
| 2005 $OD_{28}$ | 17.3 | 0.15 | 20060922 | 138.73641 | 61.05083 | 225.42610 | 1.34907 | 0.1613712 | 2.4204822 | 23 | 1 | 62 days | 0.46 | M-v | 4 | MPC | | 2005 $OD_{28}$ |
| 2005 $OE_{28}$ | 17.7 | 0.15 | 20050818 | 19.47546 | 359.47737 | 308.53028 | 4.79113 | 0.1634352 | 2.5881094 | 15 | 1 | 57 days | 0.18 | | | MPC | | 2005 $OE_{28}$ |
| 2005 $OF_{28}$ | 17.1 | 0.15 | 20060922 | 148.86129 | 272.41682 | 345.27346 | 2.31302 | 0.2123508 | 2.6075113 | 15 | 1 | 61 days | 0.21 | M-v | 4 | MPC | | 2005 $OF_{28}$ |
| 2005 $OG_{28}$ | 16.9 | 0.15 | 20060922 | 79.70113 | 242.94941 | 141.34451 | 4.90668 | 0.1732426 | 2.2707085 | 21 | 1 | 63 days | 0.63 | M-v | 5 | MPC | | 2005 $OG_{28}$ |
| 2005 $OH_{28}$ | 18.2 | 0.15 | 20060922 | 111.48583 | 0.77701 | 329.04379 | 1.78239 | 0.2011625 | 2.3685992 | 19 | 1 | 62 days | 0.29 | M-v | 4 | MPC | | 2005 $OH_{28}$ |
| 2005 $OJ_{28}$ | 17.5 | 0.15 | 20060922 | 157.02709 | 301.38364 | 330.71831 | 5.49464 | 0.1330514 | 2.3970150 | 19 | 1 | 94 days | 0.22 | M-v | 4 | MPC | | 2005 $OJ_{28}$ |
| 2005 $OK_{28}$ | 17.4 | 0.15 | 20060922 | 72.45747 | 44.03638 | 299.39620 | 1.60803 | 0.1917764 | 3.0482338 | 17 | 1 | 94 days | 0.22 | M-v | 3 | MPC | | 2005 $OK_{28}$ |
| 2005 $OL_{28}$ | 16.2 | 0.15 | 20050818 | 308.25784 | 70.29151 | 335.15981 | 4.23484 | 0.1150128 | 2.7245441 | 25 | 1 | 55 days | 0.60 | | | MPC | | 2005 $OL_{28}$ |
| 2005 $OM_{28}$ | 17.3 | 0.15 | 20060922 | 134.18656 | 224.61089 | 70.84345 | 2.29017 | 0.1195433 | 2.5252544 | 16 | 1 | 96 days | 0.25 | M-v | 4 | MPC | | 2005 $OM_{28}$ |
| 2005 $ON_{28}$ | 17.3 | 0.15 | 20050818 | 5.49334 | 299.06001 | 29.67142 | 6.53918 | 0.1342418 | 2.3059676 | 17 | 1 | 57 days | 0.48 | | | MPC | | 2005 $ON_{28}$ |
| 2005 $OO_{28}$ | 18.9 | 0.15 | 20060922 | 124.21094 | 322.02702 | 5.88409 | 5.93807 | 0.2277613 | 2.2220078 | 19 | 1 | 68 days | 0.44 | M-v | 4 | MPC | | 2005 $OO_{28}$ |
| 2005 $OQ_{28}$ | 15.4 | 0.15 | 20060922 | 124.10484 | 335.21793 | 311.12147 | 12.67582 | 0.1778192 | 2.6989551 | 26 | 1 | 96 days | 0.48 | M-v | 4 | MPC | | 2005 $OQ_{28}$ |
| 2005 $OR_{28}$ | 16.7 | 0.15 | 20060922 | 115.63187 | 123.21142 | 202.54469 | 5.74200 | 0.1141717 | 2.3802476 | 32 | 1 | 122 days | 0.42 | M-v | 3 | MPC | | 2005 $OR_{28}$ |
| 2005 $OS_{28}$ | 16.0 | 0.15 | 20060922 | 35.48136 | 215.10473 | 170.30452 | 9.68482 | 0.1075273 | 3.0590601 | 20 | 1 | 90 days | 0.20 | M-v | 3 | MPC | | 2005 $OS_{28}$ |
| 2005 $OT_{28}$ | 18.9 | 0.15 | 20060922 | 131.05568 | 152.33608 | 165.89519 | 4.76882 | 0.2520159 | 2.2037712 | 19 | 1 | 67 days | 0.36 | M-v | 4 | MPC | | 2005 $OT_{28}$ |
| 2005 PX | 15.9 | 0.15 | 20060922 | 69.25612 | 310.05129 | 20.18857 | 5.50743 | 0.1712033 | 3.0921977 | 24 | 3 | 2000–2006 | 0.49 | M-v | 3 | MPC | 89705 | 2005 PX |
| 2005 $PC_1$ | 16.6 | 0.15 | 20060922 | 143.61443 | 208.84214 | 61.62592 | 3.33958 | 0.1724908 | 2.4298245 | 40 | 4 | 1998–2006 | 0.32 | M-v | 1 | MPC | 89705 | 2005 $PC_1$ |
| 2005 $PD_1$ | 17.3 | 0.15 | 20060922 | 74.83938 | 263.78359 | 111.17644 | 7.16689 | 0.1230667 | 2.2816484 | 34 | 4 | 1998–2005 | 0.36 | M-v | 1 | MPC | 86970 | 2005 $PD_1$ |
| 2005 $PE_1$ | 15.6 | 0.15 | 20060922 | 66.46303 | 4.08299 | 345.91434 | 8.59533 | 0.0788725 | 2.7380246 | 49 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 97788 | 2005 $PE_1$ |
| 2005 $PO_1$ | 16.6 | 0.15 | 20060922 | 89.80028 | 229.75477 | 120.27921 | 6.47049 | 0.1474904 | 2.3825487 | 47 | 4 | 2002–2006 | 0.35 | M-v | 1 | MPC | 86971 | 2005 $PO_1$ |
| 2005 $PU_1$ | 15.2 | 0.15 | 20060922 | 17.11672 | 271.12441 | 127.97894 | 10.76407 | 0.1063664 | 3.0232775 | 50 | 6 | 1997–2006 | 0.56 | M-v | 1 | MPC | 86971 | 2005 $PU_1$ |
| 2005 $PP_2$ | 16.6 | 0.15 | 20060922 | 89.21736 | 285.21056 | 56.37245 | 2.02029 | 0.1995064 | 2.4344134 | 61 | 4 | 1993–2006 | 0.45 | M-v | 1 | MPC | 90220 | 2005 $PP_2$ |
| 2005 $PU_2$ | 16.8 | 0.15 | 20060922 | 148.34209 | 208.97148 | 52.90947 | 1.81435 | 0.1684491 | 2.4026961 | 49 | 6 | 1998–2006 | 0.51 | M-v | 1 | MPC | 90221 | 2005 $PU_2$ |
| 2005 $PO_3$ | 15.9 | 0.15 | 20060922 | 118.77701 | 225.49756 | 48.23607 | 12.92967 | 0.1480952 | 2.7366232 | 46 | 4 | 1998–2006 | 0.31 | M-v | 1 | MPC | 86976 | 2005 $PO_3$ |
| 2005 $PS_3$ | 14.7 | 0.15 | 20060922 | 52.77893 | 248.31341 | 89.71219 | 15.28789 | 0.2192241 | 3.2109412 | 62 | 4 | 2000–2006 | 0.41 | M-v | 0 | MPC | 90221 | 2005 $PS_3$ |
| 2005 $PW_3$ | 15.9 | 0.15 | 20060922 | 108.08807 | 220.67959 | 75.18963 | 7.38364 | 0.2094058 | 2.5413820 | 46 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 89706 | 2005 $PW_3$ |
| 2005 $PU_4$ | 16.6 | 0.15 | 20060922 | 111.33426 | 224.59934 | 81.54700 | 10.80792 | 0.2654567 | 2.4046250 | 51 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 97788 | 2005 $PU_4$ |
| 2005 $PB_5$ | 16.4 | 0.15 | 20060922 | 120.52098 | 239.88667 | 54.57061 | 5.99770 | 0.1796762 | 2.4545481 | 54 | 7 | 1993–2006 | 0.46 | M-v | 1 | MPC | 86978 | 2005 $PB_5$ |
| 2005 $PU_5$ | 15.8 | 0.15 | 20060922 | 117.96123 | 133.20049 | 144.20991 | 1.76011 | 0.0254001 | 3.0604941 | 54 | 6 | 1995–2006 | 0.48 | M-v | 0 | MPC | 95697 | 2005 $PU_5$ |
| 2005 $PV_5$ | 16.9 | 0.15 | 20060922 | 147.11486 | 289.55669 | 338.03177 | 0.82624 | 0.1738387 | 2.3958936 | 38 | 4 | 2000–2006 | 0.33 | M-v | 1 | MPC | 03711 | 2005 $PV_5$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $PY_{5}$ | 15.1 | 0.15 | 20060922 | 299.44789 | 254.15950 | 206.89000 | 13.75826 | 0.0479161 | 3.0090761 | 82 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 89707 | 2005 $PY_{5}$ |
| 2005 $PE_{6}$ | 17.0 | 0.15 | 20060922 | 358.85147 | 290.65466 | 132.58820 | 2.70900 | 0.0690516 | 2.6650965 | 23 | 3 | 2001–2005 | 0.39 | M-v | 2 | MPC | 89707 | 2005 $PE_{6}$ |
| 2005 $PP_{6}$ | 15.7 | 0.15 | 20060922 | 72.88878 | 290.24482 | 70.13703 | 6.54386 | 0.1431736 | 2.4809323 | 50 | 4 | 2001–2006 | 0.45 | M-v | 2 | MPC | 90221 | 2005 $PP_{6}$ |
| 2005 $PO_{7}$ | 16.4 | 0.15 | 20060922 | 74.10298 | 216.78944 | 104.34010 | 2.68597 | 0.1554361 | 3.1360698 | 31 | 3 | 2004–2006 | 0.41 | M-v | 3 | MPC | 89707 | 2005 $PO_{7}$ |
| 2005 $PO_{8}$ | 16.5 | 0.15 | 20060922 | 172.03936 | 167.39669 | 73.71139 | 3.50289 | 0.1519740 | 2.4098302 | 58 | 5 | 1997–2006 | 0.38 | M-v | 1 | MPC | 95697 | 2005 $PO_{8}$ |
| 2005 $PZ_{9}$ | 15.2 | 0.15 | 20060922 | 357.23670 | 76.75420 | 333.14647 | 8.99730 | 0.0572118 | 3.0693400 | 39 | 5 | 1992–2006 | 0.48 | M-v | 1 | MPC | 03712 | 2005 $PZ_{9}$ |
| 2005 $PZ_{11}$ | 16.1 | 0.15 | 20060922 | 19.90246 | 268.73660 | 125.27094 | 4.32150 | 0.0864799 | 2.9865626 | 36 | 5 | 1998–2006 | 0.39 | M-v | 0 | MPC | 86982 | 2005 $PZ_{11}$ |
| 2005 $PW_{12}$ | 15.8 | 0.15 | 20060922 | 6.59160 | 322.94190 | 88.21217 | 7.48594 | 0.0207180 | 2.7741115 | 37 | 4 | 2003–2006 | 0.39 | M-v | 1 | MPC | 03712 | 2005 $PW_{12}$ |
| 2005 $PA_{14}$ | 15.2 | 0.15 | 20060922 | 70.58976 | 234.14041 | 105.61634 | 3.05870 | 0.0835626 | 2.9441709 | 46 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 90221 | 2005 $PA_{14}$ |
| 2005 $PO_{14}$ | 16.0 | 0.15 | 20060922 | 42.63564 | 268.85747 | 125.30992 | 8.20485 | 0.3345132 | 3.0090081 | 31 | 3 | 2000–2006 | 0.35 | M-v | 2 | MPC | 86983 | 2005 $PO_{14}$ |
| 2005 $PD_{15}$ | 16.2 | 0.15 | 20060922 | 27.18827 | 41.30049 | 26.63960 | 4.93218 | 0.2414073 | 2.5721107 | 29 | 4 | 2001–2006 | 0.58 | M-v | 1 | MPC | 95698 | 2005 $PD_{15}$ |
| 2005 $PH_{15}$ | 14.7 | 0.15 | 20060922 | 155.99863 | 253.90174 | 336.07053 | 19.52762 | 0.1652321 | 3.0592582 | 35 | 3 | 2000–2005 | 0.56 | M-v | 2 | MPC | 90221 | 2005 $PH_{15}$ |
| 2005 $PQ_{15}$ | 17.6 | 0.15 | 20060922 | 84.05526 | 247.05485 | 128.09535 | 5.28776 | 0.0989815 | 2.1967053 | 27 | 4 | 2001–2005 | 0.46 | M-v | 1 | MPC | 86984 | 2005 $PQ_{15}$ |
| 2005 $PZ_{15}$ | 15.9 | 0.15 | 20060922 | 75.33498 | 274.01260 | 59.19901 | 2.81240 | 0.1686271 | 2.9942511 | 50 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 90221 | 2005 $PZ_{15}$ |
| 2005 $PK_{16}$ | 17.0 | 0.15 | 20060922 | 105.13101 | 217.23394 | 124.11704 | 4.21344 | 0.1772252 | 2.2652924 | 56 | 4 | 2001–2005 | 0.57 | M-v | 1 | MPC | 86985 | 2005 $PK_{16}$ |
| 2005 $PN_{16}$ | 15.2 | 0.15 | 20060922 | 25.31690 | 326.05783 | 71.18746 | 11.66537 | 0.1167518 | 2.9302812 | 24 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 86985 | 2005 $PN_{16}$ |
| 2005 $PR_{17}$ | 14.9 | 0.15 | 20060922 | 35.59775 | 314.68018 | 41.95462 | 15.90507 | 0.0828849 | 3.1133221 | 76 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 89708 | 2005 $PR_{17}$ |
| 2005 $PT_{17}$ | 16.4 | 0.15 | 20060922 | 79.16204 | 262.44843 | 85.79989 | 16.21650 | 0.1924444 | 2.6818933 | 38 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 86986 | 2005 $PT_{17}$ |
| 2005 $PX_{17}$ | 16.1 | 0.15 | 20060922 | 329.76439 | 295.18017 | 154.30708 | 22.03759 | 0.0307194 | 2.6271170 | 49 | 4 | 1995–2006 | 0.48 | M-v | 1 | MPC | 90221 | 2005 $PX_{17}$ |
| 2005 $PC_{18}$ | 15.0 | 0.15 | 20060922 | 58.34704 | 351.65251 | 27.57789 | 16.47229 | 0.2226062 | 2.5355854 | 67 | 6 | 1999–2006 | 0.51 | M-v | 1 | MPC | 90221 | 2005 $PC_{18}$ |
| 2005 $PZ_{18}$ | 15.4 | 0.15 | 20060922 | 76.57566 | 184.17078 | 132.32940 | 10.07515 | 0.0652111 | 3.1883803 | 27 | 5 | 1997–2006 | 0.58 | M-v | 1 | MPC | 89708 | 2005 $PZ_{18}$ |
| 2005 $PL_{19}$ | 16.2 | 0.15 | 20060922 | 110.94845 | 144.35963 | 147.81467 | 1.82300 | 0.0237596 | 3.0134950 | 44 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 95698 | 2005 $PL_{19}$ |
| 2005 $PN_{19}$ | 16.2 | 0.15 | 20060922 | 103.55684 | 324.70430 | 345.75370 | 3.91769 | 0.0535063 | 2.7938448 | 35 | 4 | 2001–2006 | 0.43 | M-v | 0 | MPC | 97789 | 2005 $PN_{19}$ |
| 2005 $PR_{19}$ | 14.5 | 0.15 | 20060922 | 35.73149 | 225.29372 | 122.91094 | 1.83329 | 0.2985743 | 3.9994827 | 92 | 3 | 1998–2006 | 0.48 | M-v | 1 | MPC | 97789 | 2005 $PR_{19}$ |
| 2005 $PX_{19}$ | 17.5 | 0.15 | 20060922 | 135.18547 | 330.05674 | 318.21352 | 6.14973 | 0.1078069 | 2.4042483 | 28 | 3 | 2000–2005 | 0.27 | M-v | 3 | MPC | 86989 | 2005 $PX_{19}$ |
| 2005 $PE_{20}$ | 15.8 | 0.15 | 20060922 | 91.02264 | 234.52119 | 88.90322 | 12.70460 | 0.1456187 | 2.6243267 | 40 | 6 | 2000–2006 | 0.56 | M-v | 0 | MPC | 86990 | 2005 $PE_{20}$ |
| 2005 $PC_{22}$ | 15.7 | 0.15 | 20060922 | 133.11263 | 297.95416 | 325.52006 | 10.86053 | 0.1153287 | 2.9803735 | 17 | 1 | 87 days | 0.21 | M-v | 5 | MPC | 90222 | 2005 $PC_{22}$ |
| 2005 $PS_{23}$ | 18.3 | 0.15 | 20050818 | 344.97508 | 348.83808 | 358.34901 | 6.64157 | 0.2436664 | 2.2101698 | 16 | 1 | 28 days | 0.68 | | | MPC | | 2005 $PS_{23}$ |
| 2005 $PT_{23}$ | 16.3 | 0.15 | 20060922 | 107.78465 | 291.69979 | 6.43844 | 5.06760 | 0.1846937 | 2.7830965 | 23 | 1 | 85 days | 0.69 | M-v | 4 | MPC | | 2005 $PT_{23}$ |
| 2005 $PU_{23}$ | 15.9 | 0.15 | 20050907 | 23.93267 | 146.76546 | 155.74485 | 26.98772 | 0.1960407 | 3.1835997 | 26 | 1 | 51 days | 0.60 | | | MPC | | 2005 $PU_{23}$ |
| 2005 $PV_{23}$ | 16.4 | 0.15 | 20060922 | 40.70391 | 30.15435 | 345.50103 | 10.50033 | 0.0618495 | 2.9612477 | 17 | 1 | 80 days | 0.20 | M-v | 4 | MPC | | 2005 $PV_{23}$ |
| 2005 $PX_{23}$ | 16.8 | 0.15 | 20050907 | 223.07977 | 146.08262 | 341.61410 | 6.53826 | 0.1429282 | 2.3967442 | 13 | 1 | 52 days | 0.32 | | | MPC | | 2005 $PX_{23}$ |
| 2005 $PY_{23}$ | 18.3 | 0.15 | 20050907 | 352.79812 | 40.62673 | 313.23551 | 5.68972 | 0.1736419 | 2.4167018 | 12 | 1 | 49 days | 0.18 | | | MPC | | 2005 $PY_{23}$ |
| 2005 $PZ_{23}$ | 17.3 | 0.15 | 20050907 | 12.22502 | 158.16231 | 170.20977 | 2.90715 | 0.1194086 | 2.6763441 | 13 | 1 | 52 days | 0.22 | | | MPC | | 2005 $PZ_{23}$ |
| 2005 $PA_{24}$ | 16.4 | 0.15 | 20050907 | 2.16341 | 231.83579 | 112.91369 | 12.86341 | 0.2416393 | 2.6661045 | 20 | 1 | 55 days | 0.48 | | | MPC | | 2005 $PA_{24}$ |
| 2005 $PC_{24}$ | 16.5 | 0.15 | 20060922 | 59.83204 | 354.08552 | 23.87985 | 5.12573 | 0.0956580 | 2.7902220 | 17 | 1 | 114 days | 0.18 | M-v | 3 | MPC | | 2005 $PC_{24}$ |
| 2005 $PE_{24}$ | 17.1 | 0.15 | 20050907 | 2.87606 | 3.44000 | 335.34547 | 12.79954 | 0.1470473 | 2.8023176 | 12 | 1 | 47 days | 0.14 | | | MPC | | 2005 $PE_{24}$ |
| 2005 $PF_{24}$ | 17.8 | 0.15 | 20050907 | 28.69732 | 346.05941 | 314.48787 | 5.02777 | 0.2144309 | 2.2458522 | 12 | 1 | 48 days | 0.13 | | | MPC | | 2005 $PF_{24}$ |
| 2005 $PG_{24}$ | 17.1 | 0.15 | 20060922 | 20.36014 | 253.04144 | 167.78981 | 5.20317 | 0.1575721 | 2.7208111 | 16 | 1 | 80 days | 0.27 | M-v | 4 | MPC | | 2005 $PG_{24}$ |
| 2005 QJ | 15.6 | 0.15 | 20060922 | 63.73522 | 170.15609 | 166.95928 | 9.72019 | 0.0871348 | 3.1341625 | 41 | 4 | 1994–2006 | 0.40 | M-v | 1 | MPC | 86992 | 2005 QJ |
| 2005 QK | 15.2 | 0.15 | 20060922 | 285.94970 | 156.83249 | 331.11603 | 16.42625 | 0.1460280 | 3.0857933 | 65 | 6 | 1997–2006 | 0.42 | M-v | 1 | MPC | 89709 | 2005 QK |
| 2005 QT | 16.7 | 0.15 | 20060922 | 79.30026 | 202.38675 | 157.22217 | 2.29280 | 0.1947523 | 2.4268189 | 78 | 6 | 1994–2006 | 0.44 | M-v | 1 | MPC | 90222 | 2005 QT |
| 2005 QX | 15.3 | 0.15 | 20060922 | 33.47777 | 241.16225 | 133.22837 | 10.67351 | 0.0914120 | 3.0413889 | 53 | 5 | 2002–2006 | 0.46 | M-v | 1 | MPC | 86993 | 2005 QX |
| 2005 $QO_{1}$ | 16.2 | 0.15 | 20060922 | 9.77661 | 177.66040 | 250.35888 | 4.48781 | 0.1152458 | 2.5168513 | 35 | 4 | 2001–2006 | 0.39 | M-v | 2 | MPC | 03712 | 2005 $QO_{1}$ |
| 2005 $QR_{1}$ | 16.5 | 0.15 | 20060922 | 44.27568 | 208.15221 | 159.30975 | 11.54145 | 0.2335862 | 3.1515853 | 17 | 1 | 100 days | 0.24 | M-v | 4 | MPC | 90222 | 2005 $QR_{1}$ |
| 2005 $QX_{1}$ | 16.5 | 0.15 | 20060922 | 145.53803 | 328.54172 | 302.90027 | 6.27753 | 0.1452884 | 2.4683736 | 33 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 86994 | 2005 $QX_{1}$ |
| 2005 $QF_{2}$ | 15.3 | 0.15 | 20060922 | 44.77236 | 170.93259 | 182.92418 | 7.45075 | 0.1061404 | 3.1207577 | 41 | 3 | 2000–2006 | 0.43 | M-v | 2 | MPC | 95699 | 2005 $QF_{2}$ |
| 2005 $QJ_{2}$ | 16.6 | 0.15 | 20060922 | 57.22061 | 168.23536 | 214.02001 | 3.68637 | 0.1798702 | 2.4862745 | 37 | 4 | 2003–2006 | 0.45 | M-v | 1 | MPC | 90222 | 2005 $QJ_{2}$ |
| 2005 $QK_{2}$ | 15.9 | 0.15 | 20060922 | 71.85484 | 150.25608 | 170.64566 | 10.53417 | 0.2082254 | 3.1386287 | 48 | 6 | 1998–2006 | 0.47 | M-v | 0 | MPC | 97789 | 2005 $QK_{2}$ |
| 2005 $QT_{2}$ | 16.0 | 0.15 | 20060922 | 135.41776 | 7.66669 | 244.11360 | 7.37307 | 0.1214756 | 3.0629712 | 36 | 5 | 2001–2006 | 0.44 | M-v | 0 | MPC | 89709 | 2005 $QT_{2}$ |
| 2005 $QZ_{2}$ | 16.3 | 0.15 | 20060922 | 50.17166 | 186.57301 | 172.64316 | 5.15091 | 0.1256310 | 3.0459084 | 34 | 3 | 2000–2006 | 0.54 | M-v | 2 | MPC | 97789 | 2005 $QZ_{2}$ |
| 2005 $QB_{3}$ | 15.6 | 0.15 | 20060922 | 53.25464 | 48.84766 | 303.52851 | 4.77129 | 0.1848498 | 3.1846067 | 39 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 00965 | 2005 $QB_{3}$ |
| 2005 $QG_{3}$ | 15.0 | 0.15 | 20060922 | 280.18756 | 310.66268 | 175.25885 | 9.15775 | 0.0465755 | 3.1304758 | 34 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 86995 | 2005 $QG_{3}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $QX_3$ | 16.8 | 0.15 | 20060922 | 85.11019 | 200.58392 | 167.85960 | 4.54082 | 0.1917440 | 2.4122865 | 102 | 5 | 1996–2006 | 0.46 | M-v | 1 | MPC | 90222 | 2005 $QX_3$ |
| 2005 $QM_4$ | 16.6 | 0.15 | 20060922 | 66.89671 | 199.44511 | 194.94859 | 0.78658 | 0.1793313 | 2.4153406 | 92 | 6 | 1960–2006 | 0.53 | M-v | 1 | MPC | 97789 | 2005 $QM_4$ |
| 2005 $QP_4$ | 15.8 | 0.15 | 20060922 | 59.53278 | 197.54743 | 160.13202 | 16.14189 | 0.0870741 | 3.1432032 | 35 | 3 | 2002–2005 | 0.57 | M-v | 3 | MPC | 86998 | 2005 $QP_4$ |
| 2005 $QA_5$ | 21.3 | 0.15 | 20060922 | 220.43971 | 264.46044 | 93.40007 | 6.80171 | 0.2111684 | 1.3899866 | 49 | 1 | 153 days | 0.44 | M-v | 3 | MPC | 97789 | 2005 $QA_5$ |
| 2005 $QR_5$ | 15.9 | 0.15 | 20060922 | 47.37062 | 53.23370 | 317.59450 | 4.78516 | 0.2445441 | 3.1552592 | 46 | 4 | 1960–2006 | 0.55 | M-v | 1 | MPC | 97789 | 2005 $QR_5$ |
| 2005 $QY_5$ | 15.2 | 0.15 | 20060922 | 72.53920 | 1.91235 | 332.39469 | 5.07785 | 0.1224093 | 3.1675106 | 55 | 4 | 1960–2006 | 0.31 | M-v | 1 | MPC | 90222 | 2005 $QY_5$ |
| 2005 $QE_6$ | 15.6 | 0.15 | 20060922 | 30.19042 | 237.49224 | 163.20306 | 17.03678 | 0.2284748 | 3.1239917 | 57 | 3 | 2000–2005 | 0.67 | M-v | 3 | MPC | 87001 | 2005 $QE_6$ |
| 2005 $QL_6$ | 16.5 | 0.15 | 20060922 | 75.56035 | 38.96990 | 312.39890 | 2.72956 | 0.1088331 | 2.7721638 | 39 | 5 | 1998–2006 | 0.46 | M-v | 1 | MPC | 87002 | 2005 $QL_6$ |
| 2005 $QW_6$ | 16.7 | 0.15 | 20060922 | 47.36297 | 235.82471 | 139.76831 | 0.16025 | 0.1847293 | 3.1034456 | 32 | 3 | 2000–2005 | 0.43 | M-v | 4 | MPC | 97789 | 2005 $QW_6$ |
| 2005 $QB_7$ | 16.8 | 0.15 | 20060922 | 135.14650 | 115.33471 | 158.53091 | 10.45112 | 0.2537378 | 2.6103168 | 44 | 3 | 2000–2005 | 0.46 | M-v | 2 | MPC | 04338 | 2005 $QB_7$ |
| 2005 $QT_7$ | 16.3 | 0.15 | 20060922 | 101.05446 | 185.30897 | 143.66955 | 4.98432 | 0.0585542 | 2.7170673 | 40 | 5 | 1994–2005 | 0.48 | M-v | 1 | MPC | 04338 | 2005 $QT_7$ |
| 2005 $QH_8$ | 15.4 | 0.15 | 20060922 | 357.76064 | 268.59625 | 140.21555 | 10.45220 | 0.1020566 | 3.0919829 | 51 | 4 | 2000–2006 | 0.50 | M-v | 0 | MPC | 90223 | 2005 $QH_8$ |
| 2005 $QN_8$ | 16.5 | 0.15 | 20060922 | 96.91598 | 202.48358 | 140.37346 | 1.85747 | 0.2015762 | 2.4168235 | 74 | 5 | 1990–2006 | 0.46 | M-v | 1 | MPC | 97790 | 2005 $QN_8$ |
| 2005 $QP_8$ | 15.2 | 0.15 | 20060922 | 68.90261 | 160.76347 | 179.20623 | 4.52580 | 0.1456770 | 3.2001456 | 85 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 97790 | 2005 $QP_8$ |
| 2005 $QV_8$ | 15.7 | 0.15 | 20060922 | 60.72547 | 31.78746 | 323.51749 | 4.12688 | 0.2241841 | 3.1839031 | 56 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 89711 | 2005 $QV_8$ |
| 2005 $QB_9$ | 16.6 | 0.15 | 20060922 | 125.11835 | 339.09215 | 348.73214 | 11.31930 | 0.0482579 | 2.2980607 | 50 | 3 | 1997–2005 | 0.56 | M-v | 3 | MPC | 87006 | 2005 $QB_9$ |
| 2005 $QG_9$ | 15.1 | 0.15 | 20060922 | 53.13944 | 324.42560 | 39.83418 | 2.19721 | 0.1539449 | 3.3037103 | 68 | 6 | 1996–2006 | 0.48 | M-v | 0 | MPC | 02252 | 2005 $QG_9$ |
| 2005 $QM_9$ | 15.5 | 0.15 | 20060922 | 94.36888 | 167.81713 | 148.22999 | 5.85568 | 0.1436021 | 3.1335272 | 26 | 3 | 2004–2006 | 0.33 | M-v | 3 | MPC | 03712 | 2005 $QM_9$ |
| 2005 $QN_9$ | 16.6 | 0.15 | 20060922 | 102.04842 | 354.84361 | 2.34260 | 4.88104 | 0.1831055 | 2.3031358 | 71 | 3 | 1998–2005 | 0.51 | M-v | 2 | MPC | 02252 | 2005 $QN_9$ |
| 2005 $QS_9$ | 16.6 | 0.15 | 20060922 | 333.17856 | 183.91558 | 267.38205 | 5.14799 | 0.0438425 | 2.7346764 | 26 | 4 | 2001–2006 | 0.32 | M-v | 0 | MPC | 00966 | 2005 $QS_9$ |
| 2005 $QT_9$ | 16.3 | 0.15 | 20060922 | 146.74685 | 339.83275 | 297.25564 | 5.88207 | 0.1151725 | 2.4598955 | 26 | 3 | 2001–2006 | 0.50 | M-v | 4 | MPC | 03712 | 2005 $QT_9$ |
| 2005 $QB_{10}$ | 15.1 | 0.15 | 20060922 | 338.39175 | 255.87048 | 170.91434 | 17.35492 | 0.0763053 | 3.3709586 | 41 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 95700 | 2005 $QB_{10}$ |
| 2005 $QJ_{10}$ | 16.4 | 0.15 | 20060922 | 128.92844 | 145.73101 | 153.05087 | 2.47174 | 0.2105701 | 2.3912553 | 101 | 6 | 2000–2006 | 0.41 | M-v | 1 | MPC | 97790 | 2005 $QJ_{10}$ |
| 2005 $QE_{11}$ | 16.6 | 0.15 | 20060922 | 339.84739 | 299.30254 | 168.08733 | 9.96910 | 0.0419938 | 2.5489446 | 31 | 4 | 2001–2005 | 0.40 | M-v | 0 | MPC | 04338 | 2005 $QE_{11}$ |
| 2005 $QL_{11}$ | 15.6 | 0.15 | 20060922 | 81.62755 | 160.50357 | 145.88825 | 10.04655 | 0.0535523 | 3.1693848 | 26 | 3 | 2004–2006 | 0.49 | M-v | 3 | MPC | 95700 | 2005 $QL_{11}$ |
| 2005 $QZ_{11}$ | 16.6 | 0.15 | 20060922 | 81.37002 | 66.08941 | 282.45525 | 4.54936 | 0.0840048 | 2.5342682 | 39 | 4 | 2001–2006 | 0.43 | M-v | 2 | MPC | 87010 | 2005 $QZ_{11}$ |
| 2005 $QT_{13}$ | 16.9 | 0.15 | 20060922 | 112.46174 | 168.26013 | 159.31720 | 9.97045 | 0.1803626 | 2.3789898 | 58 | 3 | 1994–2005 | 0.59 | M-v | 3 | MPC | 87012 | 2005 $QT_{13}$ |
| 2005 $QN_{15}$ | 17.9 | 0.15 | 20060922 | 67.03845 | 185.33891 | 206.05011 | 2.20456 | 0.1914678 | 2.4138373 | 25 | 1 | 113 days | 0.19 | M-v | 3 | MPC | 90224 | 2005 $QN_{15}$ |
| 2005 $QV_{15}$ | 16.9 | 0.15 | 20060922 | 204.90499 | 24.47977 | 200.35372 | 2.87530 | 0.0531786 | 2.5581736 | 37 | 5 | 2000–2006 | 0.40 | M-v | 0 | MPC | 87014 | 2005 $QV_{15}$ |
| 2005 $QG_{16}$ | 16.4 | 0.15 | 20060922 | 87.88154 | 343.46705 | 335.11361 | 0.35831 | 0.1492383 | 3.1397006 | 36 | 6 | 1994–2006 | 0.38 | M-v | 1 | MPC | 97790 | 2005 $QG_{16}$ |
| 2005 $QY_{16}$ | 17.0 | 0.15 | 20060922 | 162.45136 | 269.17298 | 24.38600 | 2.02868 | 0.1116384 | 2.1918235 | 68 | 6 | 1992–2006 | 0.48 | M-v | 1 | MPC | 04339 | 2005 $QY_{16}$ |
| 2005 $QA_{17}$ | 15.3 | 0.15 | 20060922 | 67.97351 | 212.13655 | 141.49614 | 2.32989 | 0.0819596 | 3.1155103 | 79 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 97790 | 2005 $QA_{17}$ |
| 2005 $QF_{17}$ | 16.2 | 0.15 | 20060922 | 62.39955 | 46.89318 | 2.17216 | 6.67388 | 0.1197217 | 2.2861651 | 73 | 4 | 2000–2006 | 0.38 | M-v | 1 | MPC | 97790 | 2005 $QF_{17}$ |
| 2005 $QS_{17}$ | 16.9 | 0.15 | 20060922 | 158.13040 | 152.20455 | 129.39560 | 5.81298 | 0.1640045 | 2.3387783 | 41 | 4 | 1998–2005 | 0.63 | M-v | 1 | MPC | 87016 | 2005 $QS_{17}$ |
| 2005 $QM_{18}$ | 16.5 | 0.15 | 20060922 | 175.31425 | 83.33612 | 167.68439 | 8.92302 | 0.0297430 | 2.9864306 | 34 | 5 | 1998–2006 | 0.47 | M-v | 0 | MPC | 95701 | 2005 $QM_{18}$ |
| 2005 $QG_{19}$ | 15.8 | 0.15 | 20060922 | 140.32821 | 103.28232 | 164.27324 | 9.06059 | 0.0447572 | 2.9826968 | 35 | 6 | 2000–2006 | 0.36 | M-v | 0 | MPC | 89714 | 2005 $QG_{19}$ |
| 2005 $QH_{19}$ | 15.7 | 0.15 | 20060922 | 83.82710 | 149.07201 | 168.41726 | 5.57290 | 0.1221403 | 3.1856309 | 56 | 4 | 2003–2006 | 0.38 | M-v | 0 | MPC | 89714 | 2005 $QH_{19}$ |
| 2005 $QJ_{19}$ | 15.6 | 0.15 | 20060922 | 86.85068 | 158.08763 | 163.75942 | 6.74441 | 0.0466428 | 3.0526319 | 40 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 87017 | 2005 $QJ_{19}$ |
| 2005 $QQ_{19}$ | 16.1 | 0.15 | 20060922 | 114.51581 | 331.32261 | 316.11029 | 0.74751 | 0.1313211 | 2.9692487 | 50 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 03713 | 2005 $QQ_{19}$ |
| 2005 $QA_{20}$ | 16.1 | 0.15 | 20060922 | 86.25741 | 220.10431 | 136.05292 | 7.77256 | 0.1367205 | 2.3454974 | 71 | 5 | 1998–2006 | 0.41 | M-v | 1 | MPC | 90225 | 2005 $QA_{20}$ |
| 2005 $QK_{21}$ | 17.1 | 0.15 | 20060922 | 131.84751 | 253.12733 | 63.19238 | 2.89381 | 0.1990713 | 2.2350512 | 41 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 03713 | 2005 $QK_{21}$ |
| 2005 $QQ_{21}$ | 16.4 | 0.15 | 20060922 | 107.76683 | 237.12528 | 110.41258 | 5.41892 | 0.1601276 | 2.2843717 | 61 | 4 | 1995–2005 | 0.52 | M-v | 2 | MPC | 87020 | 2005 $QQ_{21}$ |
| 2005 $QS_{21}$ | 15.4 | 0.15 | 20060922 | 112.17879 | 209.90524 | 104.77859 | 14.61648 | 0.1765695 | 2.6088109 | 56 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 95701 | 2005 $QS_{21}$ |
| 2005 $QO_{22}$ | 17.2 | 0.15 | 20060922 | 135.85279 | 109.68904 | 173.28493 | 1.29248 | 0.1262236 | 2.6164229 | 39 | 5 | 1995–2005 | 0.49 | M-v | 1 | MPC | 89715 | 2005 $QO_{22}$ |
| 2005 $QX_{22}$ | 17.0 | 0.15 | 20060922 | 322.67652 | 164.80052 | 316.84796 | 4.29749 | 0.1216541 | 2.5197318 | 28 | 4 | 2001–2006 | 0.34 | M-v | 3 | MPC | 95702 | 2005 $QX_{22}$ |
| 2005 $QC_{25}$ | 15.9 | 0.15 | 20060922 | 53.12470 | 306.32210 | 73.18772 | 2.38087 | 0.1925738 | 3.1447133 | 40 | 4 | 1994–2005 | 0.37 | M-v | 1 | MPC | 04339 | 2005 $QC_{25}$ |
| 2005 $QQ_{25}$ | 16.4 | 0.15 | 20060922 | 115.43256 | 295.87256 | 20.20204 | 6.92834 | 0.0629846 | 2.8640041 | 43 | 3 | 2000–2005 | 0.46 | M-v | 2 | MPC | 89717 | 2005 $QQ_{25}$ |
| 2005 $QW_{25}$ | 16.0 | 0.15 | 20060922 | 209.63683 | 168.49222 | 61.40272 | 3.53921 | 0.0671166 | 2.6588399 | 35 | 5 | 1999–2005 | 0.54 | M-v | 1 | MPC | 90225 | 2005 $QW_{25}$ |
| 2005 $QA_{26}$ | 15.9 | 0.15 | 20060922 | 80.68793 | 284.19425 | 70.60866 | 3.03002 | 0.0775312 | 2.8757177 | 64 | 3 | 2000–2006 | 0.44 | M-v | 3 | MPC | 90225 | 2005 $QA_{26}$ |
| 2005 $QS_{26}$ | 17.0 | 0.15 | 20060922 | 10.58285 | 3.68853 | 83.38416 | 3.54142 | 0.0932541 | 2.6360981 | 25 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 87025 | 2005 $QS_{26}$ |
| 2005 $QT_{26}$ | 15.4 | 0.15 | 20060922 | 141.58747 | 235.81894 | 37.08563 | 5.49773 | 0.1191289 | 3.1534126 | 36 | 6 | 1992–2006 | 0.55 | M-v | 0 | MPC | 04339 | 2005 $QT_{26}$ |
| 2005 $QX_{26}$ | 16.2 | 0.15 | 20060922 | 134.22717 | 211.84419 | 95.92587 | 3.82270 | 0.2031173 | 2.3936620 | 55 | 5 | 1993–2006 | 0.56 | M-v | 2 | MPC | 04339 | 2005 $QX_{26}$ |
| 2005 $QO_{27}$ | 16.0 | 0.15 | 20060922 | 11.43847 | 37.27965 | 28.29687 | 9.83945 | 0.0442775 | 3.0173193 | 54 | 5 | 1995–2005 | 0.52 | M-v | 0 | MPC | 87025 | 2005 $QO_{27}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $QP_{27}$ | 17.1 | 0.15 | 20060922 | 327.51152 | 357.75601 | 130.53955 | 5.73049 | 0.0877494 | 2.6595752 | 30 | 4 | 2000–2006 | 0.33 | M-v | 2 | MPC | 87025 | 2005 $QP_{27}$ |
| 2005 $QS_{27}$ | 15.2 | 0.15 | 20060922 | 118.18538 | 175.81342 | 122.57330 | 6.16962 | 0.0919612 | 3.2533541 | 36 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 87026 | 2005 $QS_{27}$ |
| 2005 $QL_{28}$ | 15.8 | 0.15 | 20060922 | 132.28886 | 348.87979 | 290.22138 | 3.54877 | 0.0253325 | 2.7759969 | 49 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 87026 | 2005 $QL_{28}$ |
| 2005 $QU_{28}$ | 14.7 | 0.15 | 20060922 | 62.07739 | 149.47796 | 167.46150 | 8.95394 | 0.1606590 | 3.9279017 | 80 | 5 | 2002–2006 | 0.53 | M-v | 0 | MPC | 97791 | 2005 $QU_{28}$ |
| 2005 $QA_{30}$ | 16.3 | 0.15 | 20060922 | 103.58615 | 1.75862 | 323.49200 | 14.42167 | 0.2587952 | 2.6403614 | 57 | 1 | 70 days | 0.42 | M-v | 4 | MPC | 90226 | 2005 $QA_{30}$ |
| 2005 $QV_{30}$ | 15.9 | 0.15 | 20060922 | 28.32124 | 228.38344 | 153.43667 | 12.73982 | 0.0206618 | 2.9457251 | 35 | 5 | 2001–2006 | 0.54 | M-v | 0 | MPC | 87028 | 2005 $QV_{30}$ |
| 2005 $QY_{30}$ | 15.5 | 0.15 | 20060922 | 192.00750 | 51.19110 | 154.80727 | 9.73583 | 0.0214750 | 3.2253149 | 33 | 4 | 2003–2006 | 0.47 | M-v | 1 | MPC | 89719 | 2005 $QY_{30}$ |
| 2005 $QD_{32}$ | 14.8 | 0.15 | 20060922 | 88.76217 | 4.09384 | 308.55966 | 6.19053 | 0.1188355 | 3.2216298 | 74 | 5 | 2000–2006 | 0.35 | M-v | 0 | MPC | 87030 | 2005 $QD_{32}$ |
| 2005 $QN_{32}$ | 16.0 | 0.15 | 20060922 | 113.54554 | 159.91113 | 131.91563 | 2.64695 | 0.1761323 | 2.9850436 | 38 | 4 | 2000–2006 | 0.26 | M-v | 0 | MPC | 87030 | 2005 $QN_{32}$ |
| 2005 $QP_{32}$ | 16.1 | 0.15 | 20060922 | 109.39166 | 234.54139 | 93.54983 | 7.72606 | 0.1454567 | 2.3770523 | 46 | 6 | 1997–2006 | 0.52 | M-v | 1 | MPC | 87030 | 2005 $QP_{32}$ |
| 2005 $QX_{32}$ | 16.9 | 0.15 | 20060922 | 65.52749 | 211.06370 | 171.60116 | 2.50505 | 0.2103868 | 2.3857185 | 43 | 6 | 1998–2006 | 0.61 | M-v | 1 | MPC | 90226 | 2005 $QX_{32}$ |
| 2005 $QY_{32}$ | 16.2 | 0.15 | 20060922 | 58.74686 | 189.48377 | 196.84433 | 2.08705 | 0.1713738 | 2.4107180 | 62 | 6 | 1994–2006 | 0.51 | M-v | 1 | MPC | 97792 | 2005 $QY_{32}$ |
| 2005 $QR_{33}$ | 16.2 | 0.15 | 20060922 | 89.29269 | 347.79177 | 335.81932 | 1.27458 | 0.0639170 | 2.8634089 | 44 | 8 | 1994–2006 | 0.35 | M-v | 0 | MPC | 89720 | 2005 $QR_{33}$ |
| 2005 $QS_{33}$ | 17.4 | 0.15 | 20060922 | 112.00846 | 59.65786 | 273.70926 | 0.42406 | 0.1773589 | 2.2959336 | 35 | 1 | 132 days | 0.48 | M-v | 4 | MPC | 97792 | 2005 $QS_{33}$ |
| 2005 $QB_{34}$ | 15.8 | 0.15 | 20060922 | 45.07697 | 142.75787 | 205.52087 | 2.74302 | 0.2791990 | 3.9304815 | 40 | 4 | 1997–2006 | 0.31 | M-v | 0 | MPC | 87033 | 2005 $QB_{34}$ |
| 2005 $QB_{35}$ | 16.0 | 0.15 | 20060922 | 21.70957 | 266.84717 | 145.61552 | 2.69561 | 0.1000851 | 2.9352083 | 29 | 5 | 1992–2006 | 0.49 | M-v | 0 | MPC | 87033 | 2005 $QB_{35}$ |
| 2005 $QK_{35}$ | 16.7 | 0.15 | 20060922 | 81.47679 | 20.80742 | 357.07623 | 8.04723 | 0.1211429 | 2.3626783 | 66 | 4 | 1994–2005 | 0.55 | M-v | 1 | MPC | 89720 | 2005 $QK_{35}$ |
| 2005 $QL_{35}$ | 15.5 | 0.15 | 20060922 | 87.18511 | 327.91603 | 359.29085 | 11.38871 | 0.1315904 | 3.1073140 | 58 | 4 | 2000–2005 | 0.43 | M-v | 1 | MPC | 97792 | 2005 $QL_{35}$ |
| 2005 $QO_{35}$ | 17.2 | 0.15 | 20060922 | 101.60661 | 358.50176 | 352.32262 | 7.02921 | 0.1973780 | 2.3665849 | 48 | 1 | 93 days | 0.46 | M-v | 3 | MPC | 90226 | 2005 $QO_{35}$ |
| 2005 $QV_{35}$ | 17.4 | 0.15 | 20060922 | 109.14307 | 229.66994 | 92.05363 | 3.39453 | 0.2204343 | 2.5744130 | 41 | 4 | 1996–2005 | 0.58 | M-v | 1 | MPC | 89721 | 2005 $QV_{35}$ |
| 2005 $QR_{36}$ | 16.6 | 0.15 | 20060922 | 55.63102 | 212.32926 | 178.22648 | 8.11970 | 0.4143291 | 3.0459599 | 78 | 1 | 99 days | 0.49 | M-v | 3 | MPC | 97792 | 2005 $QR_{36}$ |
| 2005 $QW_{36}$ | 17.5 | 0.15 | 20060922 | 120.32590 | 8.86946 | 313.84503 | 1.83771 | 0.2315583 | 2.3889846 | 29 | 2 | 2004–2005 | 0.46 | M-v | 4 | MPC | 87036 | 2005 $QW_{36}$ |
| 2005 $QC_{37}$ | 15.1 | 0.15 | 20060922 | 79.83269 | 154.38197 | 187.26313 | 11.01714 | 0.1345556 | 3.0851514 | 79 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 89722 | 2005 $QC_{37}$ |
| 2005 $QE_{37}$ | 16.8 | 0.15 | 20060922 | 70.46093 | 83.17086 | 319.14023 | 2.67503 | 0.2312042 | 2.3901448 | 75 | 3 | 1998–2005 | 0.59 | M-v | 2 | MPC | 89722 | 2005 $QE_{37}$ |
| 2005 $QR_{37}$ | 16.1 | 0.15 | 20060922 | 35.73951 | 139.15534 | 264.83130 | 1.58148 | 0.1093745 | 2.9498561 | 31 | 4 | 2002–2006 | 0.38 | M-v | 1 | MPC | 03713 | 2005 $QR_{37}$ |
| 2005 $QX_{37}$ | 14.2 | 0.15 | 20060922 | 114.24777 | 292.95414 | 353.85330 | 25.26858 | 0.2240263 | 3.1733470 | 72 | 1 | 94 days | 0.45 | M-v | 4 | MPC | 90227 | 2005 $QX_{37}$ |
| 2005 $QB_{38}$ | 16.3 | 0.15 | 20060922 | 117.93107 | 75.60073 | 230.94779 | 2.95111 | 0.2094902 | 2.6950628 | 51 | 3 | 2001–2005 | 0.52 | M-v | 2 | MPC | 90227 | 2005 $QB_{38}$ |
| 2005 $QN_{38}$ | 16.0 | 0.15 | 20060922 | 111.24597 | 151.44119 | 151.43869 | 9.92974 | 0.1277129 | 2.7247915 | 55 | 5 | 2000–2006 | 0.45 | M-v | 0 | MPC | 90227 | 2005 $QN_{38}$ |
| 2005 $QB_{39}$ | 14.7 | 0.15 | 20060922 | 49.33708 | 297.29170 | 57.74987 | 10.56697 | 0.0226386 | 3.0685271 | 96 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 87041 | 2005 $QB_{39}$ |
| 2005 $QD_{40}$ | 16.6 | 0.15 | 20060922 | 171.43159 | 353.89677 | 268.41183 | 6.14202 | 0.0883715 | 2.3204817 | 23 | 3 | 2002–2005 | 0.60 | M-v | 2 | MPC | 87042 | 2005 $QD_{40}$ |
| 2005 $QD_{42}$ | 16.5 | 0.15 | 20060922 | 101.85224 | 14.52085 | 342.10069 | 7.05108 | 0.1506928 | 2.2984495 | 89 | 4 | 1991–2005 | 0.46 | M-v | 2 | MPC | 90227 | 2005 $QD_{42}$ |
| 2005 $QF_{42}$ | 15.5 | 0.15 | 20060922 | 94.55116 | 128.30262 | 184.58442 | 0.54988 | 0.2205527 | 3.0439478 | 109 | 6 | 1997–2005 | 0.42 | M-v | 0 | MPC | 97792 | 2005 $QF_{42}$ |
| 2005 $QG_{42}$ | 17.4 | 0.15 | 20060922 | 89.16306 | 25.00898 | 340.74788 | 4.75347 | 0.2398053 | 2.4282248 | 45 | 1 | 67 days | 0.50 | M-v | 4 | MPC | 90227 | 2005 $QG_{42}$ |
| 2005 $QH_{42}$ | 16.6 | 0.15 | 20060922 | 71.86255 | 199.22843 | 169.25762 | 14.02058 | 0.2341501 | 2.7311149 | 65 | 4 | 1999–2005 | 0.45 | M-v | 1 | MPC | 04339 | 2005 $QH_{42}$ |
| 2005 $QV_{42}$ | 17.3 | 0.15 | 20060922 | 90.92243 | 227.21476 | 129.69179 | 3.36427 | 0.1843458 | 2.4647998 | 41 | 3 | 2001–2005 | 0.45 | M-v | 3 | MPC | 87047 | 2005 $QV_{42}$ |
| 2005 $QZ_{42}$ | 15.6 | 0.15 | 20060922 | 97.47970 | 181.34987 | 148.85101 | 4.39583 | 0.2205304 | 2.6976695 | 86 | 5 | 1995–2005 | 0.49 | M-v | 1 | MPC | 02253 | 2005 $QZ_{42}$ |
| 2005 $QK_{43}$ | 16.3 | 0.15 | 20060922 | 57.13601 | 171.47536 | 187.58352 | 9.55602 | 0.1067376 | 3.0278464 | 41 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 90227 | 2005 $QK_{43}$ |
| 2005 $QB_{44}$ | 17.9 | 0.15 | 20060922 | 85.42247 | 332.85299 | 348.84392 | 6.74742 | 0.3302120 | 2.9163099 | 30 | 1 | 94 days | 0.43 | M-v | 4 | MPC | 90228 | 2005 $QB_{44}$ |
| 2005 $QU_{44}$ | 17.0 | 0.15 | 20060922 | 123.36506 | 283.19161 | 32.07110 | 3.27576 | 0.1484587 | 2.3757474 | 41 | 3 | 1998–2005 | 0.48 | M-v | 3 | MPC | 95704 | 2005 $QU_{44}$ |
| 2005 $QN_{45}$ | 14.8 | 0.15 | 20060922 | 162.63421 | 99.45082 | 148.06794 | 16.68402 | 0.0425953 | 3.1240352 | 47 | 4 | 2003–2006 | 0.53 | M-v | 1 | MPC | 89725 | 2005 $QN_{45}$ |
| 2005 $QG_{46}$ | 17.4 | 0.15 | 20060922 | 298.73410 | 50.83220 | 107.59375 | 2.89447 | 0.0571191 | 2.2838798 | 38 | 5 | 1995–2006 | 0.41 | M-v | 1 | MPC | 87049 | 2005 $QG_{46}$ |
| 2005 $QL_{46}$ | 15.0 | 0.15 | 20060922 | 286.13219 | 342.03548 | 156.76572 | 15.67729 | 0.1365095 | 3.1703012 | 25 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 87050 | 2005 $QL_{46}$ |
| 2005 $QP_{46}$ | 17.0 | 0.15 | 20060922 | 118.31951 | 344.22789 | 333.12670 | 6.13445 | 0.1757841 | 2.3442339 | 35 | 1 | 96 days | 0.45 | M-v | 4 | MPC | 90228 | 2005 $QP_{46}$ |
| 2005 $QR_{46}$ | 15.8 | 0.15 | 20060922 | 36.63326 | 313.76846 | 71.78340 | 2.26314 | 0.0782632 | 3.0709473 | 38 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 04340 | 2005 $QR_{46}$ |
| 2005 $QY_{46}$ | 17.7 | 0.15 | 20060922 | 242.28684 | 193.31108 | 8.34624 | 7.14403 | 0.0627426 | 2.3806856 | 40 | 3 | 1998–2005 | 0.50 | M-v | 3 | MPC | 87050 | 2005 $QY_{46}$ |
| 2005 $QZ_{46}$ | 17.8 | 0.15 | 20060922 | 124.29933 | 253.82732 | 61.13207 | 2.35774 | 0.1932128 | 2.3649508 | 29 | 3 | 1998–2005 | 0.25 | M-v | 3 | MPC | 04340 | 2005 $QZ_{46}$ |
| 2005 $QJ_{47}$ | 16.2 | 0.15 | 20060922 | 59.75427 | 281.87263 | 117.28761 | 4.04642 | 0.1278174 | 2.4022029 | 50 | 5 | 1992–2006 | 0.39 | M-v | 0 | MPC | 04340 | 2005 $QJ_{47}$ |
| 2005 $QP_{47}$ | 16.7 | 0.15 | 20060922 | 339.50296 | 99.19323 | 27.73267 | 4.41689 | 0.1183352 | 2.2850439 | 41 | 5 | 1995–2005 | 0.50 | M-v | 1 | MPC | 87051 | 2005 $QP_{47}$ |
| 2005 $QT_{47}$ | 15.3 | 0.15 | 20060922 | 52.55361 | 11.83303 | 358.31012 | 16.73373 | 0.1090417 | 3.0671071 | 41 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 89725 | 2005 $QT_{47}$ |
| 2005 $QZ_{47}$ | 16.6 | 0.15 | 20060922 | 44.72852 | 345.00048 | 74.48004 | 3.81798 | 0.1575904 | 2.4262183 | 40 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 87051 | 2005 $QZ_{47}$ |
| 2005 $QF_{48}$ | 14.4 | 0.15 | 20060922 | 68.57906 | 188.39149 | 124.28326 | 8.87883 | 0.2794932 | 3.9961931 | 49 | 4 | 2003–2006 | 0.49 | M-v | 1 | MPC | 00967 | 2005 $QF_{48}$ |
| 2005 $QM_{48}$ | 16.6 | 0.15 | 20060922 | 97.71719 | 256.42520 | 94.00037 | 3.24691 | 0.2406177 | 2.4255007 | 63 | 5 | 2001–2006 | 0.35 | M-v | 0 | MPC | 90228 | 2005 $QM_{48}$ |
| 2005 $QP_{48}$ | 16.7 | 0.15 | 20060922 | 123.32006 | 175.49942 | 123.05033 | 5.38581 | 0.0861838 | 2.8144461 | 28 | 3 | 1998–2005 | 0.36 | M-v | 2 | MPC | 89726 | 2005 $QP_{48}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $QQ_{48}$ | 15.1 | 0.15 | 20060922 | 142.75981 | 248.22111 | 15.64729 | 11.49242 | 0.0951138 | 3.1139151 | 56 | 3 | 2003–2006 | 0.51 | M-v | 2 | MPC | 97793 | 2005 $QQ_{48}$ |
| 2005 $QB_{49}$ | 16.8 | 0.15 | 20060922 | 34.59889 | 26.61600 | 19.52947 | 6.76838 | 0.0767074 | 2.7267761 | 37 | 5 | 1999–2006 | 0.38 | M-v | 0 | MPC | 02253 | 2005 $QB_{49}$ |
| 2005 $QM_{49}$ | 16.9 | 0.15 | 20060922 | 120.21058 | 243.17570 | 70.93081 | 3.58838 | 0.1302883 | 2.5552171 | 35 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 89726 | 2005 $QM_{49}$ |
| 2005 $QZ_{49}$ | 17.3 | 0.15 | 20060922 | 137.02810 | 260.01564 | 59.27047 | 6.30398 | 0.1141991 | 2.2559325 | 27 | 4 | 1995–2005 | 0.45 | M-v | 2 | MPC | 03714 | 2005 $QZ_{49}$ |
| 2005 $QB_{50}$ | 15.2 | 0.15 | 20060922 | 55.72940 | 258.58262 | 112.24891 | 6.43080 | 0.1985266 | 3.1951633 | 43 | 6 | 1993–2006 | 0.59 | M-v | 1 | MPC | 04340 | 2005 $QB_{50}$ |
| 2005 $QD_{50}$ | 16.6 | 0.15 | 20060922 | 83.69627 | 334.77001 | 51.45453 | 6.09182 | 0.1689048 | 2.3061329 | 48 | 4 | 1998–2005 | 0.62 | M-v | 1 | MPC | 90228 | 2005 $QD_{50}$ |
| 2005 $QH_{50}$ | 15.8 | 0.15 | 20060922 | 97.42620 | 176.58866 | 161.12334 | 17.28909 | 0.0667212 | 2.7527396 | 33 | 3 | 2003–2005 | 0.53 | M-v | 2 | MPC | 03714 | 2005 $QH_{50}$ |
| 2005 $QL_{50}$ | 16.0 | 0.15 | 20060922 | 43.81902 | 12.04855 | 11.92906 | 9.13533 | 0.1013512 | 3.1749660 | 40 | 1 | 150 days | 0.30 | M-v | 3 | MPC | 97793 | 2005 $QL_{50}$ |
| 2005 $QR_{50}$ | 16.9 | 0.15 | 20060922 | 121.48365 | 287.39565 | 30.50126 | 3.89767 | 0.2295712 | 2.4333285 | 80 | 3 | 2001–2005 | 0.51 | M-v | 3 | MPC | 90229 | 2005 $QR_{50}$ |
| 2005 $QT_{50}$ | 17.6 | 0.15 | 20060922 | 148.30794 | 136.46895 | 144.47997 | 7.46552 | 0.2796714 | 2.3376170 | 30 | 4 | 1998–2005 | 0.69 | M-v | 1 | MPC | 03714 | 2005 $QT_{50}$ |
| 2005 $QU_{50}$ | 17.5 | 0.15 | 20060922 | 146.51571 | 247.51649 | 46.77626 | 2.82511 | 0.2064699 | 2.3147694 | 36 | 3 | 1998–2005 | 0.63 | M-v | 2 | MPC | 97793 | 2005 $QU_{50}$ |
| 2005 $QF_{51}$ | 16.6 | 0.15 | 20060922 | 119.64635 | 170.10805 | 143.27982 | 14.55169 | 0.1840305 | 2.5775286 | 23 | 3 | 1995–2005 | 0.54 | M-v | 3 | MPC | 89727 | 2005 $QF_{51}$ |
| 2005 $QP_{51}$ | 15.3 | 0.15 | 20060922 | 26.01391 | 28.87852 | 30.61367 | 14.79115 | 0.1819510 | 2.5571047 | 46 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 95705 | 2005 $QP_{51}$ |
| 2005 $QQ_{51}$ | 16.7 | 0.15 | 20060922 | 86.61358 | 79.93202 | 214.16725 | 6.03558 | 0.1204061 | 3.1439241 | 37 | 4 | 2000–2006 | 0.35 | M-v | 0 | MPC | 87057 | 2005 $QQ_{51}$ |
| 2005 $QV_{51}$ | 15.6 | 0.15 | 20060922 | 19.79680 | 223.10450 | 175.89874 | 10.20206 | 0.0821532 | 3.0582004 | 36 | 3 | 2000–2005 | 0.57 | M-v | 3 | MPC | 90229 | 2005 $QV_{51}$ |
| 2005 $QB_{52}$ | 16.5 | 0.15 | 20060922 | 78.61663 | 149.76681 | 195.74015 | 2.96322 | 0.0978402 | 2.7464921 | 55 | 4 | 1996–2005 | 0.43 | M-v | 1 | MPC | 97793 | 2005 $QB_{52}$ |
| 2005 $QT_{52}$ | 16.6 | 0.15 | 20060922 | 80.39397 | 335.75473 | 25.50538 | 2.72863 | 0.2261329 | 2.3720519 | 44 | 6 | 1994–2006 | 0.49 | M-v | 1 | MPC | 87058 | 2005 $QT_{52}$ |
| 2005 $QB_{53}$ | 16.1 | 0.15 | 20060922 | 243.49633 | 314.19610 | 208.05245 | 1.08332 | 0.0174132 | 3.1533127 | 48 | 4 | 2000–2006 | 0.39 | M-v | 0 | MPC | 89727 | 2005 $QB_{53}$ |
| 2005 $QK_{53}$ | 15.7 | 0.15 | 20060922 | 89.70288 | 352.94501 | 345.45005 | 10.18633 | 0.1190398 | 2.6659778 | 67 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 90229 | 2005 $QK_{53}$ |
| 2005 $QO_{53}$ | 16.2 | 0.15 | 20060922 | 56.26901 | 329.39513 | 26.10664 | 1.48327 | 0.1707715 | 3.1727772 | 36 | 5 | 1999–2006 | 0.42 | M-v | 1 | MPC | 95705 | 2005 $QO_{53}$ |
| 2005 $QS_{53}$ | 16.8 | 0.15 | 20060922 | 113.43394 | 184.59890 | 148.89442 | 4.79053 | 0.0942422 | 2.2975516 | 54 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 87059 | 2005 $QS_{53}$ |
| 2005 $QV_{53}$ | 15.9 | 0.15 | 20060922 | 95.20473 | 310.93879 | 11.92714 | 1.92623 | 0.0384429 | 2.8283811 | 52 | 4 | 2001–2006 | 0.38 | M-v | 0 | MPC | 90229 | 2005 $QV_{53}$ |
| 2005 $QD_{55}$ | 16.4 | 0.15 | 20060922 | 92.22008 | 348.43426 | 2.86109 | 6.48482 | 0.1340979 | 2.4439216 | 59 | 4 | 1996–2005 | 0.45 | M-v | 1 | MPC | 97794 | 2005 $QD_{55}$ |
| 2005 $QM_{55}$ | 17.4 | 0.15 | 20060922 | 99.94556 | 340.67910 | 23.48696 | 4.81688 | 0.1694173 | 2.2569604 | 66 | 3 | 1995–2005 | 0.47 | M-v | 2 | MPC | 97794 | 2005 $QM_{55}$ |
| 2005 $QX_{55}$ | 17.0 | 0.15 | 20060922 | 66.77864 | 21.70350 | 23.09816 | 1.58961 | 0.1845329 | 2.3592236 | 83 | 7 | 1998–2006 | 0.51 | M-v | 1 | MPC | 97794 | 2005 $QX_{55}$ |
| 2005 $QG_{56}$ | 16.5 | 0.15 | 20060922 | 127.74458 | 183.01086 | 141.10376 | 3.03340 | 0.1775392 | 2.3231677 | 75 | 3 | 2000–2005 | 0.48 | M-v | 3 | MPC | 89728 | 2005 $QG_{56}$ |
| 2005 $QU_{56}$ | 17.5 | 0.15 | 20060922 | 147.27937 | 265.31611 | 13.96611 | 6.48696 | 0.1089541 | 2.4417515 | 34 | 3 | 2001–2005 | 0.38 | M-v | 3 | MPC | 87064 | 2005 $QU_{56}$ |
| 2005 $QX_{56}$ | 15.0 | 0.15 | 20060922 | 97.13322 | 31.88607 | 273.32676 | 8.23189 | 0.0495651 | 3.1697531 | 77 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 87064 | 2005 $QX_{56}$ |
| 2005 $QN_{57}$ | 15.4 | 0.15 | 20060922 | 119.35427 | 356.03278 | 283.29054 | 4.43058 | 0.0964413 | 3.1682849 | 40 | 5 | 1997–2006 | 0.39 | M-v | 0 | MPC | 04340 | 2005 $QN_{57}$ |
| 2005 $QA_{59}$ | 18.0 | 0.15 | 20050927 | 334.31593 | 295.87527 | 102.42782 | 3.40823 | 0.2006188 | 2.3455488 | 22 | 1 | 49 days | 0.57 | | | MPC | | 2005 $QA_{59}$ |
| 2005 $QO_{59}$ | 15.7 | 0.15 | 20060922 | 55.87006 | 198.83094 | 194.19972 | 8.05640 | 0.2288519 | 2.8094584 | 81 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 97794 | 2005 $QO_{59}$ |
| 2005 $QW_{59}$ | 17.7 | 0.15 | 20060922 | 102.63842 | 95.71187 | 271.68540 | 1.90218 | 0.1872381 | 2.2532665 | 54 | 4 | 2000–2005 | 0.41 | M-v | 2 | MPC | 90230 | 2005 $QW_{59}$ |
| 2005 $QT_{60}$ | 17.1 | 0.15 | 20060922 | 69.12010 | 202.18140 | 194.12795 | 2.23392 | 0.1174294 | 2.3155764 | 25 | 1 | 114 days | 0.42 | M-v | 4 | MPC | 04340 | 2005 $QT_{60}$ |
| 2005 $QC_{61}$ | 15.8 | 0.15 | 20060922 | 338.86714 | 154.21775 | 286.81079 | 4.97411 | 0.0401064 | 2.9646387 | 45 | 5 | 1997–2006 | 0.42 | M-v | 1 | MPC | 04340 | 2005 $QC_{61}$ |
| 2005 $QF_{61}$ | 16.1 | 0.15 | 20060922 | 163.75266 | 51.14142 | 183.60862 | 9.70569 | 0.1151912 | 3.0709494 | 22 | 3 | 1995–2006 | 0.25 | M-v | 3 | MPC | 95706 | 2005 $QF_{61}$ |
| 2005 $QM_{61}$ | 15.4 | 0.15 | 20060922 | 211.08530 | 249.42603 | 307.34256 | 8.71615 | 0.0506747 | 3.0657547 | 31 | 3 | 2003–2006 | 0.41 | M-v | 3 | MPC | 04340 | 2005 $QM_{61}$ |
| 2005 $QP_{61}$ | 16.2 | 0.15 | 20060922 | 140.85450 | 77.92651 | 188.05677 | 8.65261 | 0.1692975 | 2.7228942 | 36 | 3 | 2004–2006 | 0.30 | M-v | 2 | MPC | 87068 | 2005 $QP_{61}$ |
| 2005 $QH_{62}$ | 16.1 | 0.15 | 20060922 | 94.63739 | 173.97259 | 132.83448 | 2.33013 | 0.1527104 | 3.1499904 | 33 | 5 | 1994–2006 | 0.29 | M-v | 0 | MPC | 97794 | 2005 $QH_{62}$ |
| 2005 $QB_{63}$ | 15.9 | 0.15 | 20060922 | 13.08932 | 60.92257 | 352.36318 | 11.70270 | 0.0568175 | 2.9218594 | 36 | 4 | 1993–2005 | 0.43 | M-v | 2 | MPC | 04340 | 2005 $QB_{63}$ |
| 2005 $QS_{63}$ | 16.9 | 0.15 | 20060922 | 59.88841 | 22.75813 | 17.18633 | 2.37456 | 0.1804450 | 2.4245455 | 29 | 1 | 64 days | 0.26 | M-v | 4 | MPC | 04340 | 2005 $QS_{63}$ |
| 2005 $QG_{64}$ | 16.4 | 0.15 | 20060922 | 97.20013 | 213.64993 | 109.76690 | 3.18516 | 0.0661074 | 2.8625908 | 24 | 4 | 1993–2006 | 0.38 | M-v | 1 | MPC | 03714 | 2005 $QG_{64}$ |
| 2005 $QL_{64}$ | 16.9 | 0.15 | 20060922 | 81.25018 | 309.62229 | 37.06214 | 3.52735 | 0.2073106 | 2.7550686 | 31 | 1 | 97 days | 0.40 | M-v | 3 | MPC | 97794 | 2005 $QL_{64}$ |
| 2005 $QY_{64}$ | 17.0 | 0.15 | 20060922 | 164.25212 | 132.02369 | 136.75029 | 6.63071 | 0.1787601 | 2.4196873 | 25 | 4 | 2000–2005 | 0.58 | M-v | 1 | MPC | 89730 | 2005 $QY_{64}$ |
| 2005 $QZ_{64}$ | 15.8 | 0.15 | 20060922 | 44.65202 | 247.38590 | 139.08996 | 5.94882 | 0.2003904 | 3.2019932 | 36 | 3 | 1999–2005 | 0.61 | M-v | 3 | MPC | 97794 | 2005 $QZ_{64}$ |
| 2005 $QE_{66}$ | 16.8 | 0.15 | 20060922 | 122.49144 | 119.00929 | 193.55567 | 6.84149 | 0.1049503 | 2.4507257 | 55 | 3 | 2001–2005 | 0.42 | M-v | 2 | MPC | 97794 | 2005 $QE_{66}$ |
| 2005 $QF_{67}$ | 15.7 | 0.15 | 20060922 | 76.99594 | 294.59375 | 39.94539 | 2.88585 | 0.1138691 | 3.1410633 | 33 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 04340 | 2005 $QF_{67}$ |
| 2005 $QK_{69}$ | 16.7 | 0.15 | 20060922 | 137.51000 | 206.98306 | 93.89945 | 7.84901 | 0.1171662 | 2.3370449 | 43 | 3 | 2004–2006 | 0.47 | M-v | 3 | MPC | 87073 | 2005 $QK_{69}$ |
| 2005 $QN_{70}$ | 16.9 | 0.15 | 20060922 | 121.97480 | 172.72687 | 166.35116 | 6.67337 | 0.1683472 | 2.1938204 | 54 | 1 | 66 days | 0.48 | M-v | 4 | MPC | 90231 | 2005 $QN_{70}$ |
| 2005 $QO_{70}$ | 17.2 | 0.15 | 20060922 | 89.17466 | 206.39017 | 168.49774 | 7.02147 | 0.1296804 | 2.2760525 | 56 | 5 | 1994–2005 | 0.56 | M-v | 1 | MPC | 87074 | 2005 $QO_{70}$ |
| 2005 $QP_{70}$ | 17.1 | 0.15 | 20060922 | 98.28930 | 197.49240 | 170.79757 | 5.27639 | 0.1831482 | 2.2418268 | 73 | 4 | 1995–2005 | 0.45 | M-v | 1 | MPC | 95707 | 2005 $QP_{70}$ |
| 2005 $QQ_{70}$ | 16.6 | 0.15 | 20060922 | 79.05288 | 218.58505 | 167.99895 | 5.77137 | 0.2325983 | 2.3836647 | 68 | 3 | 1998–2005 | 0.42 | M-v | 2 | MPC | 87074 | 2005 $QQ_{70}$ |
| 2005 $QR_{70}$ | 14.8 | 0.15 | 20060922 | 91.59021 | 328.78653 | 355.19760 | 9.18956 | 0.0673640 | 3.1309132 | 74 | 3 | 2000–2005 | 0.44 | M-v | 2 | MPC | 97795 | 2005 $QR_{70}$ |
| 2005 $QY_{70}$ | 16.7 | 0.15 | 20060922 | 73.09949 | 54.83006 | 341.30141 | 4.52583 | 0.1154548 | 2.2524377 | 58 | 2 | 2002–2005 | 0.61 | M-v | 4 | MPC | 89733 | 2005 $QY_{70}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $QC_{71}$ | 17.0 | 0.15 | 20060922 | 149.83819 | 273.66252 | 9.54300 | 2.18747 | 0.1901427 | 2.3656884 | 54 | 5 | 1994–2005 | 0.60 | M-v | 1 | MPC | 97795 | 2005 $QC_{71}$ |
| 2005 $QG_{71}$ | 17.4 | 0.15 | 20060922 | 131.93420 | 334.08261 | 356.76330 | 7.11615 | 0.3311964 | 2.1762319 | 124 | 3 | 1960–2005 | 0.44 | M-v | 2 | MPC | 97795 | 2005 $QG_{71}$ |
| 2005 $QQ_{71}$ | 16.0 | 0.15 | 20060922 | 93.15131 | 341.90744 | 339.27238 | 4.03374 | 0.1632014 | 3.0424296 | 34 | 4 | 2000–2006 | 0.31 | M-v | 1 | MPC | 97795 | 2005 $QQ_{71}$ |
| 2005 $QT_{71}$ | 16.2 | 0.15 | 20060922 | 101.40157 | 138.52581 | 183.73469 | 5.05030 | 0.1662599 | 2.7613590 | 35 | 1 | 113 days | 0.44 | M-v | 4 | MPC | 04341 | 2005 $QT_{71}$ |
| 2005 $QV_{71}$ | 17.0 | 0.15 | 20060922 | 53.04193 | 226.92946 | 186.54664 | 2.16073 | 0.1846686 | 2.4304328 | 53 | 3 | 2001–2005 | 0.50 | M-v | 1 | MPC | 97795 | 2005 $QV_{71}$ |
| 2005 $QA_{72}$ | 17.8 | 0.15 | 20060922 | 107.89227 | 56.55630 | 282.79617 | 1.15837 | 0.2182133 | 2.3760546 | 30 | 1 | 116 days | 0.51 | M-v | 3 | MPC | 90231 | 2005 $QA_{72}$ |
| 2005 $QD_{72}$ | 16.8 | 0.15 | 20060922 | 130.24321 | 98.55393 | 205.54380 | 2.00688 | 0.1908912 | 2.3983176 | 70 | 4 | 1993–2005 | 0.52 | M-v | 1 | MPC | 04341 | 2005 $QD_{72}$ |
| 2005 $QR_{72}$ | 16.2 | 0.15 | 20060922 | 82.75805 | 24.78698 | 335.14571 | 7.41707 | 0.0778277 | 2.6922436 | 61 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 97795 | 2005 $QR_{72}$ |
| 2005 $QY_{72}$ | 15.9 | 0.15 | 20060922 | 84.26833 | 13.40276 | 346.49879 | 12.39786 | 0.1766967 | 2.6583887 | 67 | 1 | 81 days | 0.53 | M-v | 4 | MPC | 97795 | 2005 $QY_{72}$ |
| 2005 $QZ_{72}$ | 17.4 | 0.15 | 20050927 | 11.40927 | 158.42103 | 187.73145 | 4.44125 | 0.1491562 | 2.3013205 | 38 | 1 | 57 days | 0.53 | | | MPC | | 2005 $QZ_{72}$ |
| 2005 $QG_{73}$ | 16.1 | 0.15 | 20060922 | 80.29663 | 66.86503 | 288.36886 | 4.69198 | 0.0792183 | 2.8192758 | 37 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 87078 | 2005 $QG_{73}$ |
| 2005 $QQ_{73}$ | 16.4 | 0.15 | 20060922 | 118.88067 | 77.35567 | 246.69407 | 2.97536 | 0.2564337 | 2.4070942 | 101 | 1 | 170 days | 0.46 | M-v | 4 | MPC | 02253 | 2005 $QQ_{73}$ |
| 2005 $QF_{75}$ | 16.1 | 0.15 | 20060922 | 35.62670 | 81.83963 | 336.64602 | 14.40511 | 0.2321439 | 2.6968668 | 63 | 3 | 1998–2005 | 0.62 | M-v | 3 | MPC | 90232 | 2005 $QF_{75}$ |
| 2005 $QY_{76}$ | 16.2 | 0.15 | 20060922 | 94.82801 | 207.15838 | 87.92214 | 4.77087 | 0.2070473 | 3.1811704 | 36 | 3 | 2004–2006 | 0.33 | M-v | 3 | MPC | 89738 | 2005 $QY_{76}$ |
| 2005 $QG_{77}$ | 16.6 | 0.15 | 20060922 | 50.25880 | 206.37187 | 195.71113 | 6.63087 | 0.1824903 | 2.4029667 | 30 | 4 | 1994–2005 | 0.47 | M-v | 1 | MPC | 04341 | 2005 $QG_{77}$ |
| 2005 $QP_{77}$ | 15.3 | 0.15 | 20060922 | 108.65414 | 214.39952 | 72.66753 | 2.28816 | 0.0970038 | 3.2558925 | 53 | 7 | 1998–2006 | 0.43 | M-v | 0 | MPC | 87082 | 2005 $QP_{77}$ |
| 2005 $QE_{78}$ | 16.1 | 0.15 | 20060922 | 162.44317 | 307.98544 | 322.99647 | 3.58141 | 0.0273320 | 2.7658363 | 34 | 4 | 1994–2005 | 0.39 | M-v | 1 | MPC | 04341 | 2005 $QE_{78}$ |
| 2005 $QS_{78}$ | 15.9 | 0.15 | 20060922 | 146.13175 | 281.29705 | 356.43624 | 12.82167 | 0.1368961 | 2.7580487 | 54 | 5 | 1999–2005 | 0.52 | M-v | 0 | MPC | 90232 | 2005 $QS_{78}$ |
| 2005 $QT_{78}$ | 16.6 | 0.15 | 20060922 | 103.73230 | 54.48178 | 273.70521 | 1.60808 | 0.1869744 | 2.7090786 | 68 | 5 | 1996–2005 | 0.49 | M-v | 1 | MPC | 97796 | 2005 $QT_{78}$ |
| 2005 $QT_{79}$ | 15.4 | 0.15 | 20060922 | 64.36944 | 63.08715 | 303.61213 | 11.44429 | 0.1291319 | 2.7157696 | 51 | 2 | 2001–2005 | 0.44 | M-v | 3 | MPC | 04341 | 2005 $QT_{79}$ |
| 2005 $QC_{82}$ | 16.9 | 0.15 | 20060922 | 42.25062 | 297.65473 | 115.52033 | 3.20202 | 0.1654348 | 2.4355032 | 32 | 4 | 2003–2006 | 0.45 | M-v | 1 | MPC | 87087 | 2005 $QC_{82}$ |
| 2005 $QF_{82}$ | 16.8 | 0.15 | 20060922 | 133.73800 | 169.41752 | 112.33561 | 3.27516 | 0.1661003 | 2.5711574 | 47 | 6 | 1992–2006 | 0.53 | M-v | 0 | MPC | 87087 | 2005 $QF_{82}$ |
| 2005 $QP_{82}$ | 15.8 | 0.15 | 20060922 | 37.73830 | 123.80957 | 288.51294 | 14.18682 | 0.2013122 | 2.6921813 | 50 | 3 | 2001–2006 | 0.57 | M-v | 2 | MPC | 89739 | 2005 $QP_{82}$ |
| 2005 $QH_{84}$ | 16.1 | 0.15 | 20060922 | 29.50994 | 137.98496 | 295.17726 | 12.33601 | 0.2310528 | 2.6589151 | 47 | 3 | 2001–2006 | 0.64 | M-v | 2 | MPC | 95709 | 2005 $QH_{84}$ |
| 2005 $QO_{84}$ | 16.6 | 0.15 | 20060922 | 112.42967 | 325.56118 | 3.86017 | 2.39260 | 0.1089335 | 2.6537062 | 62 | 5 | 1992–2006 | 0.45 | M-v | 1 | MPC | 97796 | 2005 $QO_{84}$ |
| 2005 $QS_{84}$ | 16.9 | 0.15 | 20060922 | 224.74568 | 284.46860 | 277.02986 | 3.20247 | 0.1240932 | 2.5816407 | 29 | 3 | 2001–2006 | 0.50 | M-v | 3 | MPC | 87091 | 2005 $QS_{84}$ |
| 2005 $QU_{84}$ | 16.4 | 0.15 | 20060922 | 105.01369 | 35.49619 | 325.82672 | 9.12661 | 0.1722824 | 2.2180956 | 48 | 2 | 2002–2005 | 0.46 | M-v | 3 | MPC | 03715 | 2005 $QU_{84}$ |
| 2005 $QW_{84}$ | 14.3 | 0.15 | 20060922 | 64.14302 | 43.03739 | 290.95796 | 2.40297 | 0.1489787 | 3.9546149 | 85 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 95709 | 2005 $QW_{84}$ |
| 2005 $QJ_{86}$ | 16.2 | 0.15 | 20060922 | 104.91898 | 51.57565 | 303.49576 | 4.16450 | 0.0921409 | 2.9058215 | 36 | 4 | 2002–2006 | 0.43 | M-v | 0 | MPC | 97797 | 2005 $QJ_{86}$ |
| 2005 $QO_{86}$ | 16.2 | 0.15 | 20060922 | 82.36344 | 44.52099 | 297.49772 | 9.78398 | 0.1654175 | 2.7182522 | 42 | 5 | 1994–2006 | 0.46 | M-v | 1 | MPC | 90233 | 2005 $QO_{86}$ |
| 2005 $QZ_{86}$ | 15.5 | 0.15 | 20060922 | 68.86210 | 151.42856 | 198.32767 | 16.66400 | 0.2406648 | 3.1204337 | 78 | 3 | 1993–2005 | 0.56 | M-v | 2 | MPC | 97797 | 2005 $QZ_{86}$ |
| 2005 $QD_{88}$ | 18.3 | 0.15 | 20060922 | 73.37937 | 67.03948 | 327.07848 | 1.93950 | 0.2231768 | 2.3163992 | 57 | 3 | 1998–2005 | 0.41 | M-v | 2 | MPC | 90234 | 2005 $QD_{88}$ |
| 2005 $QT_{88}$ | 16.5 | 0.15 | 20060922 | 147.69850 | 235.09211 | 41.02988 | 1.85513 | 0.1609836 | 2.3917700 | 36 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 87096 | 2005 $QT_{88}$ |
| 2005 $QS_{89}$ | 15.5 | 0.15 | 20060922 | 35.64085 | 186.84622 | 186.65560 | 3.76959 | 0.0758347 | 2.9279195 | 56 | 6 | 2000–2006 | 0.45 | M-v | 0 | MPC | 90234 | 2005 $QS_{89}$ |
| 2005 $QX_{89}$ | 16.6 | 0.15 | 20060922 | 152.45961 | 91.16227 | 163.60923 | 3.97315 | 0.1009671 | 2.6888692 | 24 | 4 | 2001–2006 | 0.33 | M-v | 0 | MPC | 87098 | 2005 $QX_{89}$ |
| 2005 $QU_{90}$ | 16.6 | 0.15 | 20060922 | 85.10190 | 342.15065 | 3.87675 | 5.50305 | 0.0629077 | 2.8126474 | 30 | 4 | 1991–2005 | 0.30 | M-v | 1 | MPC | 04341 | 2005 $QU_{90}$ |
| 2005 $QL_{91}$ | 15.2 | 0.15 | 20060922 | 230.06304 | 205.23012 | 340.91460 | 25.37186 | 0.1009298 | 2.6772911 | 52 | 4 | 1999–2005 | 0.54 | M-v | 1 | MPC | 90234 | 2005 $QL_{91}$ |
| 2005 $QT_{91}$ | 15.9 | 0.15 | 20060922 | 30.90869 | 244.37804 | 180.60815 | 10.82846 | 0.2142384 | 2.7451093 | 44 | 3 | 2001–2005 | 0.61 | M-v | 3 | MPC | 87099 | 2005 $QT_{91}$ |
| 2005 $QJ_{92}$ | 17.9 | 0.15 | 20060922 | 117.42223 | 153.86605 | 173.88219 | 1.14864 | 0.1911449 | 2.3804842 | 23 | 2 | 2004–2005 | 0.32 | M-v | 4 | MPC | 87100 | 2005 $QJ_{92}$ |
| 2005 $QS_{92}$ | 15.9 | 0.15 | 20060922 | 84.57567 | 317.00532 | 24.49037 | 5.69139 | 0.0704560 | 2.7642597 | 35 | 3 | 2001–2005 | 0.40 | M-v | 3 | MPC | 95710 | 2005 $QS_{92}$ |
| 2005 $QK_{93}$ | 16.1 | 0.15 | 20060922 | 152.64460 | 184.15485 | 83.69041 | 3.28207 | 0.0479355 | 2.8379572 | 30 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 04341 | 2005 $QK_{93}$ |
| 2005 $QD_{94}$ | 16.4 | 0.15 | 20060922 | 88.65967 | 262.25598 | 92.92227 | 5.39434 | 0.2078363 | 2.5211828 | 60 | 4 | 1996–2006 | 0.56 | M-v | 2 | MPC | 89746 | 2005 $QD_{94}$ |
| 2005 $QB_{95}$ | 15.7 | 0.15 | 20060922 | 69.08524 | 324.32637 | 4.67634 | 3.27359 | 0.1979217 | 3.2213677 | 30 | 4 | 2003–2006 | 0.33 | M-v | 0 | MPC | 87102 | 2005 $QB_{95}$ |
| 2005 $QN_{95}$ | 16.4 | 0.15 | 20060922 | 298.76047 | 346.20881 | 136.17768 | 5.75833 | 0.0160288 | 2.7570645 | 27 | 5 | 1999–2006 | 0.25 | M-v | 0 | MPC | 87103 | 2005 $QN_{95}$ |
| 2005 $QL_{96}$ | 17.0 | 0.15 | 20060922 | 48.66360 | 12.66295 | 15.17897 | 3.41389 | 0.0627760 | 2.5524786 | 30 | 4 | 2001–2005 | 0.49 | M-v | 0 | MPC | 90234 | 2005 $QL_{96}$ |
| 2005 $QC_{97}$ | 16.3 | 0.15 | 20060922 | 55.49497 | 5.81333 | 353.47075 | 9.82402 | 0.0989950 | 3.0054249 | 27 | 4 | 1998–2005 | 0.46 | M-v | 1 | MPC | 95711 | 2005 $QC_{97}$ |
| 2005 $QF_{100}$ | 18.1 | 0.15 | 20060922 | 132.22903 | 103.29622 | 220.08267 | 3.12769 | 0.1997509 | 2.1616484 | 43 | 3 | 1995–2005 | 0.39 | M-v | 2 | MPC | 90235 | 2005 $QF_{100}$ |
| 2005 $QL_{100}$ | 17.2 | 0.15 | 20060922 | 206.39556 | 10.02748 | 223.17936 | 4.51404 | 0.0579476 | 2.4083323 | 21 | 3 | 1998–2005 | 0.26 | M-v | 2 | MPC | 03715 | 2005 $QL_{100}$ |
| 2005 $QN_{100}$ | 15.7 | 0.15 | 20060922 | 20.61606 | 108.08886 | 313.54895 | 8.77050 | 0.1209698 | 2.7354728 | 45 | 3 | 2000–2005 | 0.57 | M-v | 3 | MPC | 87105 | 2005 $QN_{100}$ |
| 2005 $QR_{100}$ | 14.7 | 0.15 | 20060922 | 101.12654 | 77.59954 | 221.30249 | 5.12964 | 0.1157761 | 3.2275702 | 84 | 7 | 1994–2006 | 0.48 | M-v | 0 | MPC | 87106 | 2005 $QR_{100}$ |
| 2005 $QD_{101}$ | 15.8 | 0.15 | 20060922 | 157.37852 | 348.26405 | 257.32542 | 3.76499 | 0.0953500 | 3.1046146 | 29 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 87106 | 2005 $QD_{101}$ |
| 2005 $QG_{101}$ | 16.4 | 0.15 | 20060922 | 42.98904 | 170.73905 | 205.80275 | 4.48358 | 0.1342807 | 3.1519644 | 26 | 3 | 2000–2005 | 0.47 | M-v | 2 | MPC | 97798 | 2005 $QG_{101}$ |
| 2005 $QJ_{101}$ | 16.3 | 0.15 | 20060922 | 285.83312 | 218.60668 | 307.07418 | 5.98904 | 0.0589284 | 2.3253573 | 27 | 4 | 2000–2006 | 0.45 | M-v | 1 | MPC | 00970 | 2005 $QJ_{101}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $QO_{101}$ | 15.6 | 0.15 | 20060922 | 307.12306 | 155.09398 | 318.16786 | 10.46793 | 0.0504583 | 3.1069142 | 28 | 4 | 1997–2006 | 0.59 | M-v | 3 | MPC | 02253 | 2005 $QO_{101}$ |
| 2005 $QA_{103}$ | 16.0 | 0.15 | 20060922 | 86.19710 | 161.48845 | 180.50491 | 5.28287 | 0.0799765 | 2.7504180 | 45 | 4 | 1992–2005 | 0.41 | M-v | 1 | MPC | 04341 | 2005 $QA_{103}$ |
| 2005 $QV_{103}$ | 16.1 | 0.15 | 20060922 | 332.11152 | 240.05940 | 237.75739 | 4.15490 | 0.0665701 | 2.4576360 | 53 | 6 | 2000–2006 | 0.50 | M-v | 1 | MPC | 87107 | 2005 $QV_{103}$ |
| 2005 $QH_{104}$ | 15.4 | 0.15 | 20060922 | 52.38522 | 126.76481 | 230.13560 | 4.44578 | 0.1016640 | 3.4043691 | 36 | 3 | 2003–2006 | 0.48 | M-v | 3 | MPC | 89747 | 2005 $QH_{104}$ |
| 2005 $QM_{104}$ | 15.1 | 0.15 | 20060922 | 284.57306 | 319.31164 | 174.05393 | 10.29143 | 0.0407630 | 3.1232585 | 46 | 4 | 1997–2006 | 0.51 | M-v | 1 | MPC | 97798 | 2005 $QM_{104}$ |
| 2005 $QD_{106}$ | 14.2 | 0.15 | 20060922 | 47.51683 | 340.44909 | 33.18281 | 7.65174 | 0.0659140 | 2.9364817 | 139 | 3 | 2003–2006 | 0.22 | M-v | 2 | MPC | 89748 | 2005 $QD_{106}$ |
| 2005 $QU_{106}$ | 17.7 | 0.15 | 20060922 | 116.88904 | 231.58214 | 95.54092 | 4.01120 | 0.2136947 | 2.3282270 | 27 | 4 | 1998–2005 | 0.45 | M-v | 1 | MPC | 87109 | 2005 $QU_{106}$ |
| 2005 $QK_{107}$ | 14.4 | 0.15 | 20060922 | 87.57353 | 277.53818 | 42.66041 | 6.94430 | 0.1386549 | 3.1725485 | 71 | 7 | 1999–2006 | 0.61 | M-v | 1 | MPC | 87110 | 2005 $QK_{107}$ |
| 2005 $QM_{107}$ | 16.4 | 0.15 | 20060922 | 89.76522 | 238.96166 | 110.64613 | 7.00628 | 0.0573074 | 2.5476505 | 53 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 95712 | 2005 $QM_{107}$ |
| 2005 $QF_{108}$ | 15.3 | 0.15 | 20060922 | 114.37404 | 117.61101 | 178.96287 | 9.28310 | 0.0705580 | 3.1286049 | 38 | 3 | 2003–2006 | 0.55 | M-v | 3 | MPC | 97798 | 2005 $QF_{108}$ |
| 2005 $QQ_{108}$ | 17.0 | 0.15 | 20060922 | 158.67038 | 32.82368 | 233.74777 | 1.77401 | 0.0988070 | 2.6678101 | 24 | 4 | 2001–2005 | 0.26 | M-v | 0 | MPC | 95712 | 2005 $QQ_{108}$ |
| 2005 $QZ_{108}$ | 17.1 | 0.15 | 20060922 | 38.69884 | 232.73542 | 178.63190 | 14.42033 | 0.1027513 | 2.5624788 | 26 | 3 | 2001–2005 | 0.45 | M-v | 3 | MPC | 90235 | 2005 $QZ_{108}$ |
| 2005 $QM_{109}$ | 15.9 | 0.15 | 20060922 | 33.07060 | 194.87878 | 196.76080 | 4.30451 | 0.1022217 | 3.1560057 | 41 | 6 | 1997–2006 | 0.54 | M-v | 1 | MPC | 95712 | 2005 $QM_{109}$ |
| 2005 $QD_{110}$ | 16.0 | 0.15 | 20060922 | 125.45309 | 104.41471 | 182.54364 | 8.92667 | 0.1051468 | 3.0132008 | 40 | 4 | 1995–2006 | 0.34 | M-v | 2 | MPC | 00971 | 2005 $QD_{110}$ |
| 2005 $QX_{111}$ | 16.7 | 0.15 | 20060922 | 70.87028 | 56.51334 | 308.14230 | 2.68446 | 0.1099563 | 2.7788237 | 39 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 87113 | 2005 $QX_{111}$ |
| 2005 $QD_{112}$ | 17.4 | 0.15 | 20060922 | 82.76574 | 31.55649 | 344.94857 | 1.93206 | 0.1313063 | 2.3691009 | 62 | 4 | 1994–2005 | 0.59 | M-v | 1 | MPC | 97798 | 2005 $QD_{112}$ |
| 2005 $QN_{112}$ | 15.8 | 0.15 | 20060922 | 343.56834 | 274.88084 | 170.38622 | 8.76123 | 0.0478198 | 3.0529206 | 37 | 3 | 2003–2006 | 0.41 | M-v | 3 | MPC | 02254 | 2005 $QN_{112}$ |
| 2005 $QH_{113}$ | 15.9 | 0.15 | 20060922 | 125.17710 | 282.09617 | 10.15787 | 3.01622 | 0.1761425 | 2.8999402 | 52 | 5 | 1995–2005 | 0.43 | M-v | 0 | MPC | 02254 | 2005 $QH_{113}$ |
| 2005 $QF_{114}$ | 16.9 | 0.15 | 20060922 | 254.98922 | 51.36966 | 143.38422 | 3.08389 | 0.0815962 | 2.5502798 | 35 | 5 | 1999–2006 | 0.42 | M-v | 2 | MPC | 03716 | 2005 $QF_{114}$ |
| 2005 $QL_{114}$ | 15.5 | 0.15 | 20060922 | 154.87800 | 130.73884 | 130.36321 | 2.76883 | 0.1103199 | 3.1663209 | 41 | 4 | 1997–2006 | 0.51 | M-v | 0 | MPC | 97798 | 2005 $QL_{114}$ |
| 2005 $QS_{114}$ | 17.2 | 0.15 | 20060922 | 162.63790 | 78.86641 | 212.25300 | 1.72578 | 0.1525696 | 2.2633968 | 66 | 5 | 1994–2006 | 0.47 | M-v | 2 | MPC | 90236 | 2005 $QS_{114}$ |
| 2005 $QX_{114}$ | 15.1 | 0.15 | 20060922 | 168.79874 | 114.42155 | 134.05853 | 1.74074 | 0.1233410 | 3.1384848 | 73 | 5 | 1993–2006 | 0.41 | M-v | 0 | MPC | 04341 | 2005 $QX_{114}$ |
| 2005 $QB_{115}$ | 15.1 | 0.15 | 20060922 | 116.80747 | 102.25629 | 194.57572 | 8.09027 | 0.1686539 | 3.0954875 | 90 | 6 | 1994–2006 | 0.53 | M-v | 0 | MPC | 04341 | 2005 $QB_{115}$ |
| 2005 $QZ_{116}$ | 16.7 | 0.15 | 20060922 | 312.57064 | 313.39106 | 154.73742 | 2.36061 | 0.0077705 | 2.8721325 | 24 | 3 | 2003–2006 | 0.28 | M-v | 3 | MPC | 89751 | 2005 $QZ_{116}$ |
| 2005 $QB_{118}$ | 17.2 | 0.15 | 20060922 | 149.13393 | 209.63448 | 60.96473 | 0.81743 | 0.0236005 | 2.7887080 | 28 | 4 | 1999–2006 | 0.34 | M-v | 0 | MPC | 87118 | 2005 $QB_{118}$ |
| 2005 $QJ_{118}$ | 17.0 | 0.15 | 20060922 | 43.10207 | 15.99508 | 34.62267 | 1.30680 | 0.1192747 | 2.4233565 | 35 | 4 | 1994–2006 | 0.47 | M-v | 1 | MPC | 87118 | 2005 $QJ_{118}$ |
| 2005 $QA_{119}$ | 16.2 | 0.15 | 20060922 | 357.46402 | 36.23948 | 23.03425 | 0.66487 | 0.0643551 | 3.0835248 | 48 | 6 | 1995–2006 | 0.42 | M-v | 0 | MPC | 89751 | 2005 $QA_{119}$ |
| 2005 $QC_{119}$ | 17.6 | 0.15 | 20060922 | 9.91882 | 94.70506 | 350.28499 | 3.51695 | 0.1829219 | 2.5209457 | 33 | 6 | 1995–2006 | 0.32 | M-v | 2 | MPC | 87118 | 2005 $QC_{119}$ |
| 2005 $QD_{119}$ | 15.7 | 0.15 | 20060922 | 20.55191 | 39.35911 | 345.10710 | 8.61649 | 0.0564310 | 3.3731362 | 24 | 4 | 1996–2005 | 0.26 | M-v | 1 | MPC | 87118 | 2005 $QD_{119}$ |
| 2005 $QF_{119}$ | 16.7 | 0.15 | 20060922 | 261.87759 | 182.69975 | 343.85692 | 2.60357 | 0.1217172 | 2.5961844 | 35 | 5 | 1993–2006 | 0.32 | M-v | 1 | MPC | 04341 | 2005 $QF_{119}$ |
| 2005 $QK_{119}$ | 17.2 | 0.15 | 20060922 | 67.43061 | 10.20588 | 351.81265 | 1.97208 | 0.0972903 | 2.6924132 | 35 | 4 | 1999–2006 | 0.36 | M-v | 1 | MPC | 97799 | 2005 $QK_{119}$ |
| 2005 $QX_{119}$ | 17.5 | 0.15 | 20060922 | 104.39733 | 145.93086 | 143.13583 | 1.14609 | 0.2107028 | 3.0301796 | 22 | 3 | 2004–2006 | 0.26 | M-v | 3 | MPC | 87119 | 2005 $QX_{119}$ |
| 2005 $QT_{120}$ | 18.4 | 0.15 | 20060922 | 54.10564 | 264.80608 | 148.70309 | 0.84465 | 0.2140007 | 2.3350888 | 32 | 4 | 1991–2005 | 0.37 | M-v | 1 | MPC | 04341 | 2005 $QT_{120}$ |
| 2005 $QQ_{121}$ | 16.9 | 0.15 | 20060922 | 256.43132 | 217.94047 | 334.04679 | 7.03159 | 0.0609936 | 2.2944771 | 32 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 87119 | 2005 $QQ_{121}$ |
| 2005 $QT_{121}$ | 17.0 | 0.15 | 20060922 | 276.11700 | 276.22337 | 244.47388 | 1.56712 | 0.1290228 | 2.5673823 | 33 | 6 | 1995–2006 | 0.29 | M-v | 0 | MPC | 87120 | 2005 $QT_{121}$ |
| 2005 $QX_{122}$ | 16.2 | 0.15 | 20060922 | 8.38684 | 232.78100 | 189.94050 | 1.77742 | 0.0793741 | 2.8867523 | 29 | 4 | 2000–2005 | 0.41 | M-v | 0 | MPC | 87120 | 2005 $QX_{122}$ |
| 2005 $QY_{122}$ | 16.5 | 0.15 | 20060922 | 136.47217 | 88.26772 | 185.98036 | 1.46304 | 0.0645969 | 3.0124163 | 33 | 6 | 1995–2006 | 0.31 | M-v | 0 | MPC | 87120 | 2005 $QY_{122}$ |
| 2005 $QR_{123}$ | 16.2 | 0.15 | 20060922 | 77.99445 | 181.64365 | 152.81137 | 0.63851 | 0.0228798 | 3.1819389 | 37 | 4 | 2002–2006 | 0.36 | M-v | 0 | MPC | 89751 | 2005 $QR_{123}$ |
| 2005 $QU_{123}$ | 18.1 | 0.15 | 20060922 | 153.19541 | 124.67877 | 164.83313 | 6.52953 | 0.1181999 | 2.3043452 | 25 | 4 | 1998–2005 | 0.32 | M-v | 0 | MPC | 95715 | 2005 $QU_{123}$ |
| 2005 $QS_{124}$ | 16.5 | 0.15 | 20060922 | 340.01187 | 305.89005 | 136.61202 | 2.37293 | 0.0372061 | 3.0216956 | 34 | 4 | 1995–2006 | 0.30 | M-v | 0 | MPC | 87120 | 2005 $QS_{124}$ |
| 2005 $QD_{126}$ | 16.9 | 0.15 | 20060922 | 15.37929 | 33.09418 | 17.10258 | 0.38148 | 0.0834119 | 3.0241017 | 35 | 5 | 2000–2006 | 0.49 | M-v | 0 | MPC | 95715 | 2005 $QD_{126}$ |
| 2005 $QM_{127}$ | 17.8 | 0.15 | 20060922 | 213.95820 | 63.96366 | 164.08639 | 4.76935 | 0.1338721 | 2.2418819 | 25 | 4 | 1995–2005 | 0.32 | M-v | 1 | MPC | 95716 | 2005 $QM_{127}$ |
| 2005 $QB_{128}$ | 17.1 | 0.15 | 20060922 | 67.81878 | 27.32678 | 356.50321 | 9.76985 | 0.3015832 | 2.6366734 | 64 | 3 | 2001–2005 | 0.47 | M-v | 2 | MPC | 89752 | 2005 $QB_{128}$ |
| 2005 $QR_{128}$ | 17.2 | 0.15 | 20060922 | 12.05410 | 356.55857 | 61.72889 | 2.83007 | 0.0573944 | 2.9079300 | 19 | 3 | 1998–2005 | 0.22 | M-v | 2 | MPC | 87122 | 2005 $QR_{128}$ |
| 2005 $QV_{128}$ | 15.8 | 0.15 | 20060922 | 285.58344 | 37.83151 | 105.05111 | 3.06397 | 0.0292039 | 2.8466482 | 28 | 3 | 2001–2006 | 0.37 | M-v | 4 | MPC | 87123 | 2005 $QV_{128}$ |
| 2005 $QY_{130}$ | 16.2 | 0.15 | 20060922 | 205.30850 | 94.63806 | 126.36863 | 6.21145 | 0.1525460 | 2.5577837 | 42 | 3 | 2004–2006 | 0.50 | M-v | 3 | MPC | 87123 | 2005 $QY_{130}$ |
| 2005 $QO_{132}$ | 17.1 | 0.15 | 20060922 | 17.68819 | 301.42309 | 131.24839 | 5.46185 | 0.1404756 | 2.6309643 | 30 | 5 | 1999–2006 | 0.33 | M-v | 0 | MPC | 87124 | 2005 $QO_{132}$ |
| 2005 $QH_{133}$ | 17.4 | 0.15 | 20060922 | 16.15878 | 101.18457 | 340.10318 | 0.88218 | 0.1470927 | 2.4457788 | 22 | 3 | 2001–2005 | 0.51 | M-v | 4 | MPC | 87125 | 2005 $QH_{133}$ |
| 2005 $QE_{134}$ | 17.0 | 0.15 | 20060922 | 359.74381 | 107.52499 | 6.66900 | 2.17227 | 0.1594665 | 2.3586134 | 32 | 4 | 1998–2006 | 0.39 | M-v | 2 | MPC | 97799 | 2005 $QE_{134}$ |
| 2005 $QQ_{134}$ | 16.9 | 0.15 | 20060922 | 271.19110 | 157.72684 | 6.67176 | 3.57934 | 0.0322926 | 2.8139002 | 22 | 3 | 2003–2006 | 0.29 | M-v | 3 | MPC | 89753 | 2005 $QQ_{134}$ |
| 2005 $QS_{135}$ | 17.7 | 0.15 | 20060922 | 80.61935 | 279.33674 | 90.84152 | 1.43499 | 0.1082977 | 2.5327731 | 37 | 3 | 1999–2005 | 0.55 | M-v | 2 | MPC | 90237 | 2005 $QS_{135}$ |
| 2005 $QY_{135}$ | 16.9 | 0.15 | 20060922 | 174.69385 | 115.88414 | 143.81319 | 1.87167 | 0.1604550 | 2.4587707 | 56 | 6 | 1997–2006 | 0.55 | M-v | 0 | MPC | 90237 | 2005 $QY_{135}$ |
| 2005 $QN_{136}$ | 17.0 | 0.15 | 20060922 | 3.07286 | 30.29530 | 68.81420 | 1.99270 | 0.1162820 | 2.5208016 | 34 | 4 | 2001–2006 | 0.42 | M-v | 2 | MPC | 95716 | 2005 $QN_{136}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $QD_{137}$ | 15.6 | 0.15 | 20060922 | 218.58793 | 172.52475 | 26.86939 | 5.66691 | 0.1099606 | 3.2091264 | 39 | 5 | 1994–2006 | 0.35 | M-v | 0 | MPC | 03716 | 2005 $QD_{137}$ |
| 2005 $QM_{137}$ | 16.6 | 0.15 | 20060922 | 151.21138 | 129.21477 | 137.59208 | 3.09550 | 0.0200599 | 3.2168399 | 29 | 4 | 2002–2006 | 0.41 | M-v | 0 | MPC | 89754 | 2005 $QM_{137}$ |
| 2005 $QQ_{137}$ | 17.2 | 0.15 | 20060922 | 26.13780 | 21.69507 | 40.48747 | 2.50281 | 0.0774200 | 2.6633847 | 30 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 95716 | 2005 $QQ_{137}$ |
| 2005 $QN_{138}$ | 14.8 | 0.15 | 20060922 | 167.24208 | 243.82601 | 7.92090 | 10.21544 | 0.0297353 | 3.1625212 | 62 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 97800 | 2005 $QN_{138}$ |
| 2005 $QY_{138}$ | 17.9 | 0.15 | 20060922 | 34.58801 | 13.31238 | 64.84953 | 1.13450 | 0.2214495 | 2.4868555 | 28 | 4 | 1995–2005 | 0.38 | M-v | 2 | MPC | 95716 | 2005 $QY_{138}$ |
| 2005 $QC_{139}$ | 16.3 | 0.15 | 20060922 | 172.59347 | 217.88862 | 24.52301 | 3.05739 | 0.1127547 | 2.9642406 | 32 | 5 | 1998–2006 | 0.24 | M-v | 0 | MPC | 95717 | 2005 $QC_{139}$ |
| 2005 $QL_{140}$ | 15.9 | 0.15 | 20060922 | 51.08460 | 337.26035 | 38.41159 | 1.46327 | 0.1922564 | 3.1513380 | 59 | 4 | 1960–2006 | 0.46 | M-v | 1 | MPC | 97800 | 2005 $QL_{140}$ |
| 2005 $QS_{140}$ | 16.4 | 0.15 | 20060922 | 310.44951 | 301.26147 | 166.41599 | 9.16567 | 0.0595405 | 3.1154048 | 21 | 3 | 1997–2005 | 0.30 | M-v | 2 | MPC | 89754 | 2005 $QS_{140}$ |
| 2005 $QW_{140}$ | 15.4 | 0.15 | 20060922 | 128.09187 | 114.74352 | 161.45544 | 6.00540 | 0.0945579 | 2.9399525 | 53 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 87128 | 2005 $QW_{140}$ |
| 2005 $QY_{140}$ | 17.4 | 0.15 | 20060922 | 35.30979 | 239.50610 | 166.05180 | 9.63292 | 0.0860739 | 2.6667452 | 22 | 4 | 1999–2005 | 0.21 | M-v | 1 | MPC | 89754 | 2005 $QY_{140}$ |
| 2005 $QM_{141}$ | 15.4 | 0.15 | 20060922 | 93.02678 | 73.72015 | 245.60134 | 14.64188 | 0.1312588 | 3.1166715 | 44 | 1 | 167 days | 0.47 | M-v | 4 | MPC | 97800 | 2005 $QM_{141}$ |
| 2005 $QX_{141}$ | 16.8 | 0.15 | 20060922 | 70.17059 | 169.84354 | 194.37203 | 9.53324 | 0.1131831 | 3.0118724 | 26 | 1 | 92 days | 0.29 | M-v | 3 | MPC | 97800 | 2005 $QX_{141}$ |
| 2005 $QC_{142}$ | 16.8 | 0.15 | 20060922 | 62.38351 | 255.83480 | 183.33396 | 20.24653 | 0.2738635 | 2.2008829 | 72 | 4 | 1995–2005 | 0.39 | M-v | 1 | MPC | 02254 | 2005 $QC_{142}$ |
| 2005 $QV_{142}$ | 15.9 | 0.15 | 20060922 | 72.01035 | 284.16328 | 69.81650 | 7.70479 | 0.1257050 | 2.4287361 | 50 | 6 | 1998–2006 | 0.47 | M-v | 1 | MPC | 87129 | 2005 $QV_{142}$ |
| 2005 $QC_{143}$ | 15.8 | 0.15 | 20060922 | 51.22725 | 115.56801 | 266.46055 | 8.60075 | 0.2521503 | 3.1351072 | 79 | 4 | 1994–2006 | 0.61 | M-v | 2 | MPC | 04342 | 2005 $QC_{143}$ |
| 2005 $QD_{143}$ | 15.8 | 0.15 | 20060922 | 126.50698 | 355.56372 | 317.36605 | 14.03498 | 0.0726353 | 2.5929533 | 42 | 3 | 1999–2005 | 0.59 | M-v | 3 | MPC | 87130 | 2005 $QD_{143}$ |
| 2005 $QF_{143}$ | 16.3 | 0.15 | 20060922 | 126.98026 | 352.21447 | 328.72616 | 12.57750 | 0.2386201 | 2.2622966 | 39 | 1 | 119 days | 0.52 | M-v | 4 | MPC | 97800 | 2005 $QF_{143}$ |
| 2005 $QO_{143}$ | 14.9 | 0.15 | 20060922 | 278.91024 | 136.28354 | 352.49943 | 9.34597 | 0.0200183 | 3.4807675 | 23 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 89756 | 2005 $QO_{143}$ |
| 2005 $QZ_{143}$ | 14.7 | 0.15 | 20060922 | 149.56482 | 116.12826 | 147.05162 | 16.74279 | 0.0193342 | 3.2427334 | 43 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 03716 | 2005 $QZ_{143}$ |
| 2005 $QA_{144}$ | 14.8 | 0.15 | 20060922 | 95.33412 | 287.02683 | 25.31299 | 7.62406 | 0.1086997 | 3.2207761 | 59 | 5 | 1999–2006 | 0.55 | M-v | 0 | MPC | 95717 | 2005 $QA_{144}$ |
| 2005 $QV_{145}$ | 16.6 | 0.15 | 20060922 | 111.15532 | 248.52138 | 87.04311 | 7.53485 | 0.1205064 | 2.4416255 | 40 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 97800 | 2005 $QV_{145}$ |
| 2005 $QE_{146}$ | 15.1 | 0.15 | 20060922 | 51.01701 | 258.81537 | 120.62342 | 13.48916 | 0.1815067 | 2.6368991 | 80 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 00972 | 2005 $QE_{146}$ |
| 2005 $QN_{146}$ | 16.0 | 0.15 | 20060922 | 84.37367 | 241.96516 | 86.87112 | 6.95854 | 0.0297264 | 2.7444423 | 51 | 5 | 1999–2006 | 0.40 | M-v | 0 | MPC | 87132 | 2005 $QN_{146}$ |
| 2005 $QP_{146}$ | 15.6 | 0.15 | 20060922 | 333.54928 | 322.67439 | 110.21617 | 10.09640 | 0.0410943 | 2.9823892 | 35 | 5 | 2001–2006 | 0.59 | M-v | 1 | MPC | 87132 | 2005 $QP_{146}$ |
| 2005 $QQ_{147}$ | 14.8 | 0.15 | 20060922 | 98.74890 | 255.41723 | 44.37908 | 9.40413 | 0.0262096 | 3.1780884 | 62 | 6 | 1992–2006 | 0.49 | M-v | 1 | MPC | 87132 | 2005 $QQ_{147}$ |
| 2005 $QA_{149}$ | 15.4 | 0.15 | 20060922 | 85.43244 | 47.51431 | 289.62459 | 7.23851 | 0.2712958 | 3.0228381 | 67 | 4 | 1994–2006 | 0.43 | M-v | 1 | MPC | 97800 | 2005 $QA_{149}$ |
| 2005 $QO_{149}$ | 15.8 | 0.15 | 20060922 | 130.77473 | 210.43438 | 66.21959 | 9.84177 | 0.1152037 | 2.7536219 | 46 | 4 | 2002–2006 | 0.46 | M-v | 0 | MPC | 90238 | 2005 $QO_{149}$ |
| 2005 $QR_{149}$ | 15.2 | 0.15 | 20060922 | 31.01274 | 328.34698 | 55.90615 | 10.64377 | 0.1137341 | 3.0825652 | 27 | 3 | 2000–2006 | 0.41 | M-v | 2 | MPC | 89757 | 2005 $QR_{149}$ |
| 2005 $QP_{150}$ | 16.5 | 0.15 | 20060922 | 155.76006 | 210.96186 | 42.64819 | 9.75683 | 0.1449324 | 2.5806114 | 33 | 4 | 2000–2006 | 0.40 | M-v | 0 | MPC | 87135 | 2005 $QP_{150}$ |
| 2005 $QY_{150}$ | 17.5 | 0.15 | 20060922 | 192.40265 | 94.47114 | 170.20556 | 6.97579 | 0.0965378 | 2.2728235 | 23 | 3 | 1998–2005 | 0.36 | M-v | 2 | MPC | 87135 | 2005 $QY_{150}$ |
| 2005 $QA_{152}$ | 15.7 | 0.15 | 20060922 | 354.72891 | 228.32092 | 182.42806 | 10.94864 | 0.1385490 | 3.0293141 | 42 | 3 | 2004–2006 | 0.40 | M-v | 2 | MPC | 87136 | 2005 $QA_{152}$ |
| 2005 $QG_{152}$ | 17.0 | 0.15 | 20060922 | 38.31224 | 80.16504 | 340.03490 | 6.06255 | 0.0905573 | 2.3889253 | 31 | 4 | 1994–2006 | 0.38 | M-v | 1 | MPC | 03716 | 2005 $QG_{152}$ |
| 2005 $QN_{154}$ | 16.4 | 0.15 | 20060922 | 155.27373 | 220.21034 | 62.06709 | 10.17490 | 0.1795163 | 2.3699150 | 35 | 3 | 2002–2005 | 0.59 | M-v | 2 | MPC | 87137 | 2005 $QN_{154}$ |
| 2005 $QX_{155}$ | 15.9 | 0.15 | 20060922 | 108.59411 | 17.25544 | 295.78719 | 8.74110 | 0.2430769 | 2.7144568 | 78 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 04342 | 2005 $QX_{155}$ |
| 2005 $QY_{155}$ | 17.2 | 0.15 | 20060922 | 78.02670 | 144.73058 | 206.82141 | 11.23463 | 0.2658095 | 2.8772306 | 33 | 2 | 2000–2005 | 0.47 | M-v | 3 | MPC | 95720 | 2005 $QY_{155}$ |
| 2005 $QQ_{156}$ | 14.8 | 0.15 | 20060922 | 18.71319 | 112.50049 | 295.60977 | 15.14083 | 0.1017578 | 3.1342605 | 46 | 3 | 2000–2005 | 0.65 | M-v | 3 | MPC | 03717 | 2005 $QQ_{156}$ |
| 2005 $QY_{156}$ | 16.6 | 0.15 | 20060922 | 171.99862 | 351.55864 | 283.07464 | 9.21695 | 0.1385452 | 2.2530389 | 44 | 6 | 1996–2006 | 0.61 | M-v | 1 | MPC | 95720 | 2005 $QY_{156}$ |
| 2005 $QH_{157}$ | 15.9 | 0.15 | 20060922 | 115.00934 | 49.17901 | 281.17222 | 3.00415 | 0.0546834 | 2.7584940 | 62 | 4 | 2000–2005 | 0.50 | M-v | 1 | MPC | 89759 | 2005 $QH_{157}$ |
| 2005 $QP_{157}$ | 17.2 | 0.15 | 20060922 | 97.10376 | 223.00198 | 157.62838 | 11.77801 | 0.2041260 | 2.3174877 | 82 | 4 | 1996–2005 | 0.51 | M-v | 1 | MPC | 97801 | 2005 $QP_{157}$ |
| 2005 $QZ_{157}$ | 16.4 | 0.15 | 20060922 | 141.27751 | 201.49199 | 88.84838 | 4.05743 | 0.0447077 | 2.7783260 | 40 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 00973 | 2005 $QZ_{157}$ |
| 2005 $QC_{158}$ | 17.5 | 0.15 | 20060922 | 94.61281 | 316.93429 | 47.81230 | 3.83153 | 0.1983721 | 2.3747822 | 48 | 4 | 1994–2005 | 0.43 | M-v | 1 | MPC | 00973 | 2005 $QC_{158}$ |
| 2005 $QN_{158}$ | 17.9 | 0.15 | 20060922 | 134.22333 | 199.56170 | 107.92425 | 3.59979 | 0.1825296 | 2.4012567 | 22 | 3 | 2001–2005 | 0.31 | M-v | 3 | MPC | 87140 | 2005 $QN_{158}$ |
| 2005 $QZ_{159}$ | 16.7 | 0.15 | 20060922 | 166.52394 | 321.14381 | 355.32996 | 20.75574 | 0.0638664 | 1.8949762 | 51 | 3 | 2000–2005 | 0.58 | M-v | 3 | MPC | 90239 | 2005 $QZ_{159}$ |
| 2005 $QL_{161}$ | 16.4 | 0.15 | 20060922 | 102.43847 | 247.19678 | 69.05072 | 6.79483 | 0.1316873 | 2.7391478 | 33 | 5 | 1995–2006 | 0.48 | M-v | 0 | MPC | 95721 | 2005 $QL_{161}$ |
| 2005 $QV_{161}$ | 17.0 | 0.15 | 20060922 | 76.35594 | 327.75991 | 29.96532 | 6.50783 | 0.1220533 | 2.5898539 | 24 | 3 | 2001–2005 | 0.33 | M-v | 2 | MPC | 89760 | 2005 $QV_{161}$ |
| 2005 $QZ_{161}$ | 16.0 | 0.15 | 20060922 | 54.30296 | 250.62151 | 131.27767 | 9.85235 | 0.1981709 | 2.7601642 | 41 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 00973 | 2005 $QZ_{161}$ |
| 2005 $QB_{162}$ | 16.4 | 0.15 | 20060922 | 130.28384 | 253.65303 | 56.58731 | 5.64802 | 0.0376873 | 2.3948530 | 34 | 4 | 2001–2005 | 0.65 | M-v | 1 | MPC | 89761 | 2005 $QB_{162}$ |
| 2005 $QK_{162}$ | 16.8 | 0.15 | 20060922 | 85.15726 | 218.30669 | 123.79740 | 7.50636 | 0.1477895 | 2.6236248 | 31 | 3 | 2001–2005 | 0.71 | M-v | 4 | MPC | 87142 | 2005 $QK_{162}$ |
| 2005 $QH_{164}$ | 15.5 | 0.15 | 20060922 | 97.94120 | 50.29153 | 297.02967 | 12.59363 | 0.2880747 | 2.5690163 | 155 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 97801 | 2005 $QH_{164}$ |
| 2005 $QG_{165}$ | 15.9 | 0.15 | 20060922 | 82.06215 | 244.47496 | 113.16124 | 5.04727 | 0.1171599 | 2.8077472 | 46 | 4 | 1993–2006 | 0.50 | M-v | 2 | MPC | 03717 | 2005 $QG_{165}$ |
| 2005 $QW_{165}$ | 15.1 | 0.15 | 20060922 | 78.13502 | 263.62237 | 96.01433 | 5.31281 | 0.0842337 | 3.1045216 | 49 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 95722 | 2005 $QW_{165}$ |
| 2005 $QX_{165}$ | 15.5 | 0.15 | 20060922 | 53.03713 | 238.01086 | 162.36180 | 13.31679 | 0.1672469 | 2.9237420 | 24 | 1 | 66 days | 0.58 | M-v | 4 | MPC | 90239 | 2005 $QX_{165}$ |
| 2005 $QL_{166}$ | 15.8 | 0.15 | 20060922 | 76.61947 | 77.41351 | 244.96008 | 8.32024 | 0.0656032 | 3.0373811 | 34 | 4 | 2001–2006 | 0.21 | M-v | 0 | MPC | 87144 | 2005 $QL_{166}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $QO_{166}$ | 14.5 | 0.15 | 20060922 | 13.10747 | 73.63675 | 344.25774 | 21.13188 | 0.0407326 | 3.1740671 | 36 | 3 | 2002–2006 | 0.47 | M-v | 2 | MPC | 89763 | 2005 $QO_{166}$ |
| 2005 $QL_{167}$ | 15.6 | 0.15 | 20060922 | 76.12735 | 108.46021 | 206.27932 | 18.75522 | 0.2156798 | 3.0931505 | 30 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 87144 | 2005 $QL_{167}$ |
| 2005 $QX_{168}$ | 16.1 | 0.15 | 20060922 | 33.40456 | 169.43124 | 248.12992 | 7.33231 | 0.1753311 | 2.8078078 | 48 | 4 | 1996–2005 | 0.56 | M-v | 1 | MPC | 89763 | 2005 $QX_{168}$ |
| 2005 $QK_{169}$ | 16.1 | 0.15 | 20060922 | 129.05751 | 221.89107 | 94.64691 | 7.24994 | 0.1579703 | 2.3372227 | 37 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 87145 | 2005 $QK_{169}$ |
| 2005 $QT_{169}$ | 15.0 | 0.15 | 20060922 | 62.61077 | 94.46992 | 268.17463 | 9.09231 | 0.0607133 | 3.2161594 | 65 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 89763 | 2005 $QT_{169}$ |
| 2005 $QY_{169}$ | 16.1 | 0.15 | 20060922 | 52.91010 | 58.36474 | 328.19259 | 10.72448 | 0.3033821 | 3.1720435 | 30 | 1 | 62 days | 0.44 | M-v | 4 | MPC | 90239 | 2005 $QY_{169}$ |
| 2005 $QC_{170}$ | 15.2 | 0.15 | 20060922 | 116.85502 | 57.87839 | 267.67841 | 13.57252 | 0.0874306 | 2.6614733 | 68 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 97802 | 2005 $QC_{170}$ |
| 2005 $QP_{170}$ | 15.0 | 0.15 | 20060922 | 161.84849 | 10.19064 | 240.52470 | 8.70344 | 0.0637289 | 3.0172615 | 64 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 03717 | 2005 $QP_{170}$ |
| 2005 $QX_{170}$ | 16.4 | 0.15 | 20060922 | 149.85854 | 14.50527 | 288.91596 | 5.90275 | 0.1267192 | 2.2436128 | 47 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 97802 | 2005 $QX_{170}$ |
| 2005 $QC_{171}$ | 15.5 | 0.15 | 20060922 | 88.28448 | 58.46505 | 292.87815 | 5.55338 | 0.1872904 | 2.6795729 | 60 | 2 | 2001–2005 | 0.42 | M-v | 4 | MPC | 97802 | 2005 $QC_{171}$ |
| 2005 $QD_{171}$ | 17.3 | 0.15 | 20050907 | 344.89192 | 48.52635 | 332.54966 | 12.61596 | 0.2887631 | 2.6426123 | 20 | 1 | 39 days | 0.55 | | | MPC | | 2005 $QD_{171}$ |
| 2005 $QX_{171}$ | 16.7 | 0.15 | 20060922 | 91.55262 | 134.94262 | 240.17157 | 4.51157 | 0.1122574 | 2.3291785 | 72 | 5 | 1998–2005 | 0.60 | M-v | 1 | MPC | 90240 | 2005 $QX_{171}$ |
| 2005 $QY_{171}$ | 17.5 | 0.15 | 20060922 | 88.06453 | 185.57955 | 188.95352 | 13.60001 | 0.1179694 | 2.3868131 | 27 | 1 | 69 days | 0.21 | M-v | 4 | MPC | 02254 | 2005 $QY_{171}$ |
| 2005 $QZ_{171}$ | 15.5 | 0.15 | 20060922 | 141.78476 | 356.80777 | 299.51239 | 5.01042 | 0.0297733 | 2.7854254 | 32 | 3 | 2001–2005 | 0.50 | M-v | 3 | MPC | 95724 | 2005 $QZ_{171}$ |
| 2005 $QM_{172}$ | 16.7 | 0.15 | 20060922 | 92.62669 | 115.26826 | 240.94124 | 2.37995 | 0.0823597 | 2.6093238 | 55 | 5 | 2001–2006 | 0.54 | M-v | 1 | MPC | 90240 | 2005 $QM_{172}$ |
| 2005 $QZ_{172}$ | 17.4 | 0.15 | 20060922 | 71.44975 | 134.21518 | 274.43424 | 2.59606 | 0.0411626 | 2.1887833 | 66 | 4 | 1997–2005 | 0.64 | M-v | 2 | MPC | 90240 | 2005 $QZ_{172}$ |
| 2005 $QO_{173}$ | 13.9 | 0.15 | 20060922 | 94.35946 | 291.55125 | 6.63118 | 8.15622 | 0.2386329 | 3.9530186 | 86 | 6 | 1997–2006 | 0.42 | M-v | 0 | MPC | 97802 | 2005 $QO_{173}$ |
| 2005 $QM_{174}$ | 14.3 | 0.15 | 20060922 | 340.67593 | 98.55126 | 333.49357 | 9.12082 | 0.0607051 | 3.5092810 | 37 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 89767 | 2005 $QM_{174}$ |
| 2005 $QG_{175}$ | 16.2 | 0.15 | 20060922 | 49.26432 | 47.97445 | 6.85749 | 12.69203 | 0.1751900 | 2.6311179 | 121 | 3 | 2001–2005 | 0.44 | M-v | 2 | MPC | 89768 | 2005 $QG_{175}$ |
| 2005 $QB_{176}$ | 16.4 | 0.15 | 20060922 | 127.49156 | 281.86396 | 40.75313 | 7.11909 | 0.0882487 | 2.4608747 | 26 | 3 | 2001–2005 | 0.42 | M-v | 3 | MPC | 00974 | 2005 $QB_{176}$ |
| 2005 $QH_{176}$ | 16.2 | 0.15 | 20060922 | 19.35527 | 90.46292 | 3.59101 | 6.60308 | 0.0772119 | 2.3579570 | 116 | 6 | 1996–2006 | 0.45 | M-v | 1 | MPC | 89769 | 2005 $QH_{176}$ |
| 2005 $QO_{176}$ | 17.6 | 0.15 | 20050907 | 348.01894 | 56.67540 | 317.77377 | 11.72014 | 0.2828308 | 2.6893787 | 16 | 1 | 38 days | 0.81 | | | MPC | | 2005 $QO_{176}$ |
| 2005 $QX_{176}$ | 17.3 | 0.15 | 20060922 | 95.47348 | 268.39067 | 83.98747 | 4.74258 | 0.1515109 | 2.4685248 | 30 | 4 | 2001–2006 | 0.52 | M-v | 2 | MPC | 95724 | 2005 $QX_{176}$ |
| 2005 $QA_{179}$ | 17.1 | 0.15 | 20060922 | 53.39676 | 68.29120 | 336.44074 | 3.20684 | 0.1331197 | 2.3758940 | 18 | 1 | 98 days | 0.35 | M-v | 4 | MPC | | 2005 $QA_{179}$ |
| 2005 $QB_{179}$ | 16.2 | 0.15 | 20060922 | 84.14336 | 339.25755 | 337.94432 | 10.10765 | 0.1723148 | 3.1230366 | 23 | 1 | 68 days | 0.32 | M-v | 4 | MPC | | 2005 $QB_{179}$ |
| 2005 $QC_{179}$ | 17.8 | 0.15 | 20060922 | 117.37432 | 345.41384 | 354.77472 | 7.36818 | 0.1593640 | 2.2531583 | 16 | 1 | 66 days | 0.47 | M-v | 4 | MPC | | 2005 $QC_{179}$ |
| 2005 $QD_{179}$ | 17.3 | 0.15 | 20050907 | 340.78516 | 3.19511 | 16.35335 | 5.07842 | 0.1859552 | 2.7189498 | 19 | 1 | 42 days | 0.53 | | | MPC | | 2005 $QD_{179}$ |
| 2005 $QE_{179}$ | 17.9 | 0.15 | 20050927 | 17.07799 | 323.49777 | 8.70034 | 6.81958 | 0.2033683 | 2.3623526 | 15 | 1 | 47 days | 0.17 | | | MPC | | 2005 $QE_{179}$ |
| 2005 $QF_{179}$ | 18.2 | 0.15 | 20050907 | 13.24834 | 246.38448 | 84.96546 | 2.39412 | 0.2041853 | 2.3471781 | 17 | 1 | 41 days | 0.60 | | | MPC | | 2005 $QF_{179}$ |
| 2005 $QH_{179}$ | 18.4 | 0.15 | 20050927 | 340.39637 | 44.41891 | 349.15476 | 2.65948 | 0.2348061 | 2.2867214 | 15 | 1 | 49 days | 0.34 | | | MPC | | 2005 $QH_{179}$ |
| 2005 $QK_{179}$ | 16.3 | 0.15 | 20060922 | 54.05988 | 192.78044 | 186.28839 | 4.84295 | 0.2189382 | 3.0796716 | 21 | 1 | 98 days | 0.33 | M-v | 4 | MPC | | 2005 $QK_{179}$ |
| 2005 $QM_{179}$ | 17.1 | 0.15 | 20050907 | 351.40486 | 19.08347 | 331.10133 | 2.52347 | 0.0791756 | 2.6805844 | 15 | 1 | 35 days | 0.50 | | | MPC | | 2005 $QM_{179}$ |
| 2005 $QN_{179}$ | 16.3 | 0.15 | 20060922 | 79.70990 | 133.39180 | 192.31429 | 9.08862 | 0.1965608 | 3.0695295 | 20 | 1 | 67 days | 0.34 | M-v | 3 | MPC | | 2005 $QN_{179}$ |
| 2005 $QP_{179}$ | 15.6 | 0.15 | 20050907 | 247.98538 | 175.53256 | 302.56525 | 20.99258 | 0.0613971 | 2.6864030 | 13 | 1 | 58 days | 0.50 | | | MPC | | 2005 $QP_{179}$ |
| 2005 $QQ_{179}$ | 16.5 | 0.15 | 20060922 | 63.91280 | 320.92699 | 31.71727 | 3.59244 | 0.2182106 | 3.1045308 | 17 | 1 | 69 days | 0.69 | M-v | 4 | MPC | | 2005 $QQ_{179}$ |
| 2005 $QR_{179}$ | 18.5 | 0.15 | 20050907 | 20.94740 | 308.08544 | 5.14322 | 8.08596 | 0.2309317 | 2.2682255 | 24 | 1 | 28 days | 0.58 | | | MPC | | 2005 $QR_{179}$ |
| 2005 $QS_{179}$ | 16.2 | 0.15 | 20050927 | 17.99111 | 214.07374 | 115.47698 | 5.47981 | 0.2370919 | 3.0354246 | 24 | 1 | 45 days | 0.79 | | | MPC | | 2005 $QS_{179}$ |
| 2005 $QT_{179}$ | 17.6 | 0.15 | 20050927 | 36.17794 | 216.30269 | 89.88240 | 3.76647 | 0.1919677 | 2.2901056 | 18 | 1 | 45 days | 0.69 | | | MPC | | 2005 $QT_{179}$ |
| 2005 $QU_{179}$ | 18.3 | 0.15 | 20060922 | 124.81722 | 281.21386 | 61.12735 | 3.58630 | 0.2278975 | 2.1397294 | 29 | 1 | 97 days | 0.67 | M-v | 4 | MPC | | 2005 $QU_{179}$ |
| 2005 $QV_{179}$ | 15.7 | 0.15 | 20050907 | 16.24445 | 245.27291 | 89.00146 | 7.15400 | 0.1009236 | 2.9254237 | 18 | 1 | 38 days | 0.57 | | | MPC | | 2005 $QV_{179}$ |
| 2005 $QW_{179}$ | 17.4 | 0.15 | 20060922 | 82.94821 | 341.37338 | 16.02229 | 13.52615 | 0.2014928 | 2.6749269 | 17 | 1 | 63 days | 0.39 | M-v | 4 | MPC | | 2005 $QW_{179}$ |
| 2005 $QX_{179}$ | 17.8 | 0.15 | 20050927 | 6.07229 | 292.27831 | 57.59157 | 3.95061 | 0.2478499 | 2.6658686 | 21 | 1 | 48 days | 0.48 | | | MPC | | 2005 $QX_{179}$ |
| 2005 $QZ_{179}$ | 16.3 | 0.15 | 20060922 | 106.85170 | 294.46615 | 29.78888 | 6.84811 | 0.0621257 | 2.8596842 | 17 | 1 | 97 days | 0.23 | M-v | 4 | MPC | | 2005 $QZ_{179}$ |
| 2005 $QC_{180}$ | 15.0 | 0.15 | 20050907 | 43.81763 | 7.91719 | 277.28543 | 23.17254 | 0.1316361 | 3.1310548 | 16 | 1 | 37 days | 0.55 | | | MPC | | 2005 $QC_{180}$ |
| 2005 $QD_{180}$ | 18.1 | 0.15 | 20050907 | 7.89551 | 83.34073 | 248.24857 | 3.90361 | 0.2473687 | 2.3741516 | 18 | 1 | 30 days | 0.55 | | | MPC | | 2005 $QD_{180}$ |
| 2005 $QF_{180}$ | 16.9 | 0.15 | 20050907 | 35.84799 | 327.34609 | 326.94335 | 7.06540 | 0.1299974 | 2.3334693 | 18 | 1 | 40 days | 0.68 | | | MPC | | 2005 $QF_{180}$ |
| 2005 $QK_{180}$ | 17.5 | 0.15 | 20060922 | 95.84417 | 330.56545 | 24.37969 | 9.45395 | 0.2690762 | 2.4469028 | 31 | 1 | 63 days | 0.61 | M-v | 4 | MPC | | 2005 $QK_{180}$ |
| 2005 $QL_{180}$ | 18.8 | 0.15 | 20060922 | 101.79087 | 44.20214 | 317.41793 | 2.31585 | 0.2464618 | 2.2741262 | 16 | 1 | 91 days | 0.26 | M-v | 3 | MPC | | 2005 $QL_{180}$ |
| 2005 $QM_{180}$ | 18.1 | 0.15 | 20060922 | 60.32316 | 46.27688 | 359.35793 | 8.15721 | 0.0376069 | 2.1965662 | 15 | 1 | 60 days | 0.21 | M-v | 4 | MPC | | 2005 $QM_{180}$ |
| 2005 $QN_{180}$ | 17.8 | 0.15 | 20050927 | 0.94753 | 296.17478 | 54.16990 | 5.95436 | 0.2419218 | 2.3772262 | 24 | 1 | 41 days | 0.62 | | | MPC | | 2005 $QN_{180}$ |
| 2005 $QP_{180}$ | 18.0 | 0.15 | 20060922 | 72.71310 | 19.46240 | 19.79162 | 4.44599 | 0.1254430 | 2.2813977 | 24 | 1 | 89 days | 0.30 | M-v | 4 | MPC | | 2005 $QP_{180}$ |
| 2005 $QQ_{180}$ | 16.7 | 0.15 | 20060922 | 89.83520 | 322.63791 | 17.15346 | 4.55317 | 0.1561186 | 2.8435442 | 24 | 1 | 89 days | 0.40 | M-v | 3 | MPC | | 2005 $QQ_{180}$ |
| 2005 $QR_{180}$ | 18.4 | 0.15 | 20050927 | 354.30197 | 355.13454 | 15.83388 | 3.65964 | 0.1764100 | 2.1974635 | 20 | 1 | 46 days | 0.74 | | | MPC | | 2005 $QR_{180}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $QT_{180}$ | 17.0 | 0.15 | 20050907 | 347.79116 | 29.31531 | 338.56754 | 12.96520 | 0.2794721 | 3.0887821 | 17 | 1 | 33 days | 0.57 | | MPC | | 2005 $QT_{180}$ |
| 2005 $QU_{180}$ | 16.1 | 0.15 | 20060922 | 72.15037 | 161.44937 | 189.70391 | 7.82528 | 0.0431724 | 2.8652354 | 21 | 1 | 95 days | 0.39 | M-v 3 | MPC | | 2005 $QU_{180}$ |
| 2005 $QV_{180}$ | 16.5 | 0.15 | 20060922 | 106.41555 | 312.91188 | 27.13280 | 14.68552 | 0.1491093 | 2.4421762 | 25 | 1 | 157 days | 0.53 | M-v 4 | MPC | | 2005 $QV_{180}$ |
| 2005 $QW_{180}$ | 16.5 | 0.15 | 20060922 | 23.66358 | 244.17665 | 182.02360 | 19.39073 | 0.2492454 | 3.1098410 | 17 | 1 | 66 days | 0.25 | M-v 4 | MPC | | 2005 $QW_{180}$ |
| 2005 $QX_{180}$ | 18.1 | 0.15 | 20060922 | 131.05194 | 140.90726 | 184.64551 | 7.53096 | 0.1866520 | 2.2291035 | 17 | 1 | 61 days | 0.32 | M-v 4 | MPC | | 2005 $QX_{180}$ |
| 2005 $QY_{180}$ | 17.3 | 0.15 | 20050927 | 355.61647 | 171.94265 | 194.74639 | 13.99988 | 0.2601274 | 2.6954407 | 21 | 1 | 52 days | 0.48 | | MPC | | 2005 $QY_{180}$ |
| 2005 $QA_{181}$ | 18.9 | 0.15 | 20060922 | 34.37057 | 127.64748 | 346.20843 | 24.03097 | 0.0863303 | 1.7995890 | 16 | 1 | 66 days | 0.23 | M-v 4 | MPC | | 2005 $QA_{181}$ |
| 2005 $QB_{181}$ | 15.9 | 0.15 | 20060922 | 57.66664 | 173.19545 | 198.25765 | 17.29503 | 0.2118708 | 3.0947219 | 23 | 1 | 87 days | 0.65 | M-v 4 | MPC | | 2005 $QB_{181}$ |
| 2005 $QE_{181}$ | 17.0 | 0.15 | 20050927 | 75.13510 | 0.41567 | 282.56470 | 4.41753 | 0.1352939 | 2.2394144 | 24 | 1 | 58 days | 0.63 | | MPC | | 2005 $QE_{181}$ |
| 2005 $QF_{181}$ | 16.4 | 0.15 | 20050927 | 346.24963 | 220.90054 | 160.52463 | 10.85618 | 0.2405869 | 3.1158194 | 18 | 1 | 41 days | 0.77 | | MPC | | 2005 $QF_{181}$ |
| 2005 $QG_{181}$ | 18.0 | 0.15 | 20060922 | 95.08773 | 255.50138 | 104.35953 | 2.30262 | 0.1865836 | 2.3993138 | 18 | 1 | 65 days | 0.44 | M-v 4 | MPC | | 2005 $QG_{181}$ |
| 2005 $QH_{181}$ | 16.2 | 0.15 | 20060922 | 43.46002 | 251.15339 | 183.88610 | 24.07129 | 0.2819177 | 2.7292551 | 30 | 1 | 87 days | 0.53 | M-v 4 | MPC | | 2005 $QH_{181}$ |
| 2005 $QJ_{181}$ | 17.2 | 0.15 | 20050927 | 315.04154 | 310.46430 | 107.36329 | 3.72197 | 0.1465890 | 2.3955344 | 22 | 1 | 44 days | 0.85 | | MPC | | 2005 $QJ_{181}$ |
| 2005 $QK_{181}$ | 15.7 | 0.15 | 20060922 | 87.14206 | 156.39132 | 177.51218 | 10.47981 | 0.0911138 | 3.1704767 | 22 | 1 | 60 days | 0.61 | M-v 5 | MPC | | 2005 $QK_{181}$ |
| 2005 $QL_{181}$ | 18.0 | 0.15 | 20050927 | 7.08862 | 177.82146 | 175.89414 | 9.61338 | 0.1349318 | 2.3288120 | 17 | 1 | 37 days | 0.42 | | MPC | | 2005 $QL_{181}$ |
| 2005 $QM_{181}$ | 17.0 | 0.15 | 20060922 | 40.51040 | 263.23037 | 168.66398 | 4.19859 | 0.0944220 | 2.3674927 | 17 | 1 | 60 days | 0.16 | M-v 4 | MPC | | 2005 $QM_{181}$ |
| 2005 $QN_{181}$ | 16.4 | 0.15 | 20060922 | 63.66337 | 324.15415 | 42.32829 | 2.38106 | 0.1796566 | 3.0826869 | 18 | 1 | 60 days | 0.33 | M-v 4 | MPC | | 2005 $QN_{181}$ |
| 2005 $QO_{181}$ | 16.9 | 0.15 | 20060922 | 114.53774 | 233.77967 | 131.44101 | 3.55949 | 0.0943125 | 2.2756690 | 24 | 1 | 79 days | 0.68 | M-v 5 | MPC | | 2005 $QO_{181}$ |
| 2005 $QP_{181}$ | 17.7 | 0.15 | 20060922 | 53.69088 | 86.96033 | 358.32844 | 5.15869 | 0.0873551 | 2.1848498 | 17 | 1 | 66 days | 0.50 | M-v 5 | MPC | | 2005 $QP_{181}$ |
| 2005 $QQ_{181}$ | 17.2 | 0.15 | 20060922 | 102.02962 | 17.20119 | 2.04395 | 7.02378 | 0.1130351 | 2.3090051 | 20 | 1 | 64 days | 0.60 | M-v 4 | MPC | | 2005 $QQ_{181}$ |
| 2005 $QR_{181}$ | 16.2 | 0.15 | 20060922 | 56.53498 | 212.79404 | 183.74476 | 9.35687 | 0.2348301 | 3.1385954 | 18 | 1 | 65 days | 0.42 | M-v 3 | MPC | | 2005 $QR_{181}$ |
| 2005 $QS_{181}$ | 18.1 | 0.15 | 20050927 | 15.36661 | 151.17196 | 186.74019 | 18.21866 | 0.0769160 | 1.8003393 | 19 | 1 | 50 days | 0.49 | | MPC | | 2005 $QS_{181}$ |
| 2005 $QT_{181}$ | 16.9 | 0.15 | 20060922 | 79.94399 | 60.72044 | 301.55976 | 11.66776 | 0.2848036 | 2.6235273 | 18 | 1 | 65 days | 0.47 | M-v 4 | MPC | | 2005 $QT_{181}$ |
| 2005 $QU_{181}$ | 17.5 | 0.15 | 20060922 | 115.25054 | 129.20427 | 208.96401 | 6.80718 | 0.1485565 | 2.2908885 | 22 | 1 | 95 days | 0.47 | M-v 3 | MPC | | 2005 $QU_{181}$ |
| 2005 $QV_{181}$ | 15.3 | 0.15 | 20060922 | 26.50105 | 94.96260 | 317.22156 | 12.44605 | 0.2148387 | 3.1099698 | 23 | 1 | 93 days | 0.72 | M-v 5 | MPC | | 2005 $QV_{181}$ |
| 2005 $QW_{181}$ | 17.7 | 0.15 | 20060922 | 63.94753 | 162.35770 | 241.15406 | 1.70266 | 0.1775433 | 2.3328606 | 16 | 1 | 62 days | 0.23 | M-v 4 | MPC | | 2005 $QW_{181}$ |
| 2005 $QX_{181}$ | 16.9 | 0.15 | 20050927 | 15.87635 | 13.39163 | 328.83594 | 13.67036 | 0.1939782 | 2.6189162 | 22 | 1 | 58 days | 0.66 | | MPC | | 2005 $QX_{181}$ |
| 2005 $QY_{181}$ | 16.7 | 0.15 | 20060922 | 22.40383 | 65.52572 | 352.63759 | 8.45058 | 0.0196297 | 2.7850190 | 15 | 1 | 62 days | 0.46 | M-v 4 | MPC | | 2005 $QY_{181}$ |
| 2005 $QZ_{181}$ | 16.9 | 0.15 | 20050927 | 315.62649 | 54.28031 | 359.68109 | 5.69434 | 0.0949776 | 2.6445802 | 17 | 1 | 57 days | 0.22 | | MPC | | 2005 $QZ_{181}$ |
| 2005 $QA_{182}$ | 16.8 | 0.15 | 20050927 | 74.48337 | 263.58466 | 15.90047 | 2.32213 | 0.0646215 | 2.7531269 | 17 | 1 | 55 days | 0.31 | | MPC | | 2005 $QA_{182}$ |
| 2005 $QC_{182}$ | 16.7 | 0.15 | 20060922 | 41.03037 | 307.14475 | 100.18743 | 3.07922 | 0.1378610 | 2.8950230 | 16 | 1 | 64 days | 0.36 | M-v 4 | MPC | | 2005 $QC_{182}$ |
| 2005 $QF_{182}$ | 16.1 | 0.15 | 20050927 | 2.87421 | 281.40681 | 86.67326 | 6.72012 | 0.0814506 | 2.8347651 | 23 | 1 | 40 days | 0.60 | | MPC | | 2005 $QF_{182}$ |
| 2005 $QG_{182}$ | 16.3 | 0.15 | 20060922 | 87.15416 | 284.65254 | 76.70331 | 5.33963 | 0.0819420 | 2.7866703 | 18 | 1 | 62 days | 0.62 | M-v 5 | MPC | | 2005 $QG_{182}$ |
| 2005 $QH_{182}$ | 16.0 | 0.15 | 20060922 | 6.52433 | 107.55994 | 348.20542 | 8.69770 | 0.1490417 | 2.7230616 | 18 | 1 | 64 days | 0.34 | M-v 4 | MPC | | 2005 $QH_{182}$ |
| 2005 $QK_{182}$ | 16.3 | 0.15 | 20060922 | 91.52493 | 150.58386 | 195.29687 | 3.32733 | 0.1082238 | 2.7672451 | 17 | 1 | 86 days | 0.21 | M-v 3 | MPC | | 2005 $QK_{182}$ |
| 2005 $QL_{182}$ | 17.7 | 0.15 | 20060922 | 72.08746 | 337.26898 | 50.14413 | 11.39216 | 0.3058725 | 2.7326558 | 18 | 1 | 95 days | 0.58 | M-v 4 | MPC | | 2005 $QL_{182}$ |
| 2005 RV | 15.0 | 0.15 | 20060922 | 73.43267 | 62.63727 | 281.77559 | 14.49243 | 0.0837254 | 3.1618821 | 42 | 3 | 2002–2006 | 0.44 | M-v 3 | MPC | 89770 | 2005 RV |
| 2005 $RG_1$ | 15.5 | 0.15 | 20060922 | 40.09745 | 255.14050 | 118.34175 | 6.61994 | 0.0610268 | 2.7075956 | 37 | 4 | 2001–2006 | 0.48 | M-v 1 | MPC | 95725 | 2005 $RG_1$ |
| 2005 $RL_1$ | 15.8 | 0.15 | 20060922 | 51.74977 | 225.85606 | 119.49742 | 10.44397 | 0.0986305 | 3.0961138 | 30 | 6 | 1993–2006 | 0.47 | M-v 0 | MPC | 87153 | 2005 $RL_1$ |
| 2005 $RK_2$ | 14.7 | 0.15 | 20060922 | 338.78075 | 216.34468 | 284.64304 | 14.13700 | 0.1050323 | 2.5599344 | 113 | 6 | 2000–2006 | 0.55 | M-v 1 | MPC | 95725 | 2005 $RK_2$ |
| 2005 $RO_2$ | 14.8 | 0.15 | 20060922 | 28.46246 | 126.01353 | 305.07046 | 16.18982 | 0.1308172 | 3.0852529 | 83 | 6 | 1996–2006 | 0.45 | M-v 0 | MPC | 97803 | 2005 $RO_2$ |
| 2005 $RF_3$ | 15.1 | 0.15 | 20060922 | 116.29903 | 114.74082 | 178.50070 | 10.21203 | 0.0569525 | 3.0900283 | 78 | 4 | 2003–2006 | 0.43 | M-v 1 | MPC | 04342 | 2005 $RF_3$ |
| 2005 $RG_3$ | 16.4 | 0.15 | 20060922 | 62.35718 | 246.30373 | 136.36087 | 1.87978 | 0.1986709 | 2.4283769 | 45 | 5 | 1994–2006 | 0.45 | M-v 1 | MPC | 04342 | 2005 $RG_3$ |
| 2005 $RL_3$ | 15.7 | 0.15 | 20060922 | 49.01854 | 156.10295 | 191.40901 | 9.87121 | 0.0627479 | 2.9590568 | 35 | 5 | 2000–2006 | 0.42 | M-v 0 | MPC | 87154 | 2005 $RL_3$ |
| 2005 $RQ_3$ | 17.0 | 0.15 | 20060922 | 147.49591 | 315.36938 | 355.79962 | 6.98681 | 0.1970921 | 2.3497643 | 57 | 3 | 2001–2005 | 0.58 | M-v 3 | MPC | 90241 | 2005 $RQ_3$ |
| 2005 $RG_4$ | 16.1 | 0.15 | 20060922 | 99.44992 | 25.22615 | 291.06580 | 7.96857 | 0.2740754 | 2.7678184 | 43 | 4 | 1998–2006 | 0.43 | M-v 2 | MPC | 87155 | 2005 $RG_4$ |
| 2005 $RM_4$ | 16.5 | 0.15 | 20060922 | 130.55058 | 301.16951 | 13.42858 | 2.40392 | 0.1296849 | 2.6025567 | 65 | 4 | 1995–2005 | 0.49 | M-v 2 | MPC | 89772 | 2005 $RM_4$ |
| 2005 $RT_4$ | 16.1 | 0.15 | 20060922 | 104.79369 | 226.95447 | 112.60567 | 22.79021 | 0.1712670 | 2.2911910 | 46 | 4 | 2002–2006 | 0.46 | M-v 1 | MPC | 87155 | 2005 $RT_4$ |
| 2005 $RC_5$ | 16.8 | 0.15 | 20060922 | 102.26901 | 213.04830 | 129.26602 | 4.44041 | 0.0316731 | 2.6310507 | 25 | 3 | 1995–2005 | 0.54 | M-v 3 | MPC | 87155 | 2005 $RC_5$ |
| 2005 $RF_5$ | 17.2 | 0.15 | 20060922 | 145.13214 | 213.58428 | 87.59361 | 3.61791 | 0.0866705 | 2.1206331 | 37 | 4 | 2002–2006 | 0.44 | M-v 2 | MPC | 90241 | 2005 $RF_5$ |
| 2005 $RD_6$ | 14.8 | 0.15 | 20060922 | 80.38474 | 178.07015 | 161.01877 | 8.84819 | 0.0611202 | 3.0655801 | 58 | 6 | 1993–2005 | 0.68 | M-v 1 | MPC | 04342 | 2005 $RD_6$ |
| 2005 $RX_6$ | 15.9 | 0.15 | 20060922 | 72.55503 | 63.01046 | 297.47376 | 7.25456 | 0.2249710 | 2.7608741 | 45 | 3 | 2001–2006 | 0.61 | M-v 3 | MPC | 02254 | 2005 $RX_6$ |
| 2005 $RG_7$ | 15.1 | 0.15 | 20060922 | 69.81590 | 102.45664 | 240.87527 | 5.10224 | 0.1517539 | 3.2118651 | 26 | 4 | 1998–2006 | 0.45 | M-v 2 | MPC | 03718 | 2005 $RG_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $RN_{7}$ | 16.3 | 0.15 | 20060922 | 59.13376 | 25.25382 | 349.89502 | 14.13579 | 0.2804904 | 3.0869975 | 41 | 1 | 62 days | 0.60 | M-v | 4 | MPC | 90242 | 2005 $RN_{7}$ |
| 2005 $RO_{7}$ | 15.6 | 0.15 | 20060922 | 89.58310 | 17.81158 | 332.13431 | 3.45201 | 0.0824962 | 2.7364731 | 94 | 7 | 1996–2006 | 0.51 | M-v | 1 | MPC | 02254 | 2005 $RO_{7}$ |
| 2005 $RR_{7}$ | 17.5 | 0.15 | 20060922 | 90.69498 | 22.71351 | 355.32038 | 3.08293 | 0.2094945 | 2.3329607 | 63 | 4 | 1996–2005 | 0.38 | M-v | 0 | MPC | 02254 | 2005 $RR_{7}$ |
| 2005 $RV_{7}$ | 15.6 | 0.15 | 20060922 | 97.92985 | 142.71396 | 185.12230 | 10.02951 | 0.1084359 | 3.0144043 | 52 | 4 | 1998–2005 | 0.67 | M-v | 2 | MPC | 02254 | 2005 $RV_{7}$ |
| 2005 $RX_{7}$ | 14.5 | 0.15 | 20060922 | 61.08792 | 163.01676 | 178.70278 | 6.75843 | 0.2274924 | 3.9604927 | 78 | 3 | 2003–2006 | 0.53 | M-v | 2 | MPC | 97804 | 2005 $RX_{7}$ |
| 2005 $RT_{8}$ | 16.1 | 0.15 | 20060922 | 64.86931 | 20.47681 | 5.78325 | 9.37676 | 0.1712366 | 2.7560991 | 93 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 89776 | 2005 $RT_{8}$ |
| 2005 $RP_{9}$ | 16.0 | 0.15 | 20060922 | 77.99262 | 19.80569 | 347.39641 | 14.21657 | 0.1163186 | 2.6784353 | 43 | 1 | 62 days | 0.48 | M-v | 4 | MPC | 90242 | 2005 $RP_{9}$ |
| 2005 $RU_{9}$ | 16.0 | 0.15 | 20060922 | 136.61032 | 315.65698 | 323.13300 | 8.52625 | 0.2053747 | 2.7176948 | 40 | 4 | 1999–2005 | 0.69 | M-v | 1 | MPC | 87162 | 2005 $RU_{9}$ |
| 2005 $RE_{11}$ | 14.5 | 0.15 | 20060922 | 137.40679 | 65.41393 | 226.76324 | 9.32309 | 0.0424679 | 3.0130485 | 73 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 97804 | 2005 $RE_{11}$ |
| 2005 $RJ_{12}$ | 16.6 | 0.15 | 20060922 | 189.55664 | 249.99175 | 339.60922 | 3.34414 | 0.0409074 | 2.7750438 | 27 | 5 | 2001–2006 | 0.29 | M-v | 0 | MPC | 89782 | 2005 $RJ_{12}$ |
| 2005 $RL_{12}$ | 16.9 | 0.15 | 20060922 | 285.21426 | 349.18327 | 163.50469 | 3.98061 | 0.0795758 | 2.5190020 | 35 | 2 | 2001–2005 | 0.31 | M-v | 5 | MPC | 87165 | 2005 $RL_{12}$ |
| 2005 $RC_{13}$ | 17.0 | 0.15 | 20060922 | 299.20042 | 143.03901 | 347.49451 | 2.53074 | 0.0463505 | 2.6625867 | 33 | 5 | 1999–2006 | 0.33 | M-v | 1 | MPC | 02254 | 2005 $RC_{13}$ |
| 2005 $RE_{15}$ | 16.4 | 0.15 | 20060922 | 315.69051 | 318.06532 | 152.80020 | 1.92434 | 0.1040058 | 3.0719118 | 39 | 6 | 1997–2006 | 0.51 | M-v | 0 | MPC | 89782 | 2005 $RE_{15}$ |
| 2005 $RK_{16}$ | 16.7 | 0.15 | 20060922 | 71.46935 | 351.43934 | 0.82345 | 1.75769 | 0.0794490 | 2.8517660 | 36 | 4 | 2000–2005 | 0.63 | M-v | 1 | MPC | 87165 | 2005 $RK_{16}$ |
| 2005 $RN_{16}$ | 16.0 | 0.15 | 20060922 | 80.92247 | 111.99786 | 237.51173 | 13.82566 | 0.1702837 | 2.8706489 | 38 | 2 | 2000–2005 | 0.71 | M-v | 3 | MPC | 03718 | 2005 $RN_{16}$ |
| 2005 $RO_{16}$ | 15.4 | 0.15 | 20060922 | 91.87420 | 47.98152 | 291.71474 | 12.69219 | 0.1967413 | 2.7341438 | 96 | 3 | 2001–2006 | 0.46 | M-v | 1 | MPC | 97805 | 2005 $RO_{16}$ |
| 2005 $RS_{18}$ | 15.9 | 0.15 | 20060922 | 162.71028 | 76.73062 | 166.85373 | 2.44382 | 0.1570115 | 3.1108789 | 53 | 6 | 1995–2006 | 0.50 | M-v | 0 | MPC | 97805 | 2005 $RS_{18}$ |
| 2005 $RD_{19}$ | 16.6 | 0.15 | 20060922 | 358.69151 | 76.60349 | 12.17375 | 3.11160 | 0.0494234 | 2.6542002 | 34 | 4 | 2001–2006 | 0.36 | M-v | 0 | MPC | 97805 | 2005 $RD_{19}$ |
| 2005 $RG_{20}$ | 16.6 | 0.15 | 20060922 | 161.19851 | 213.99430 | 56.65359 | 1.06252 | 0.0216536 | 2.7721881 | 32 | 4 | 1998–2006 | 0.39 | M-v | 1 | MPC | 95729 | 2005 $RG_{20}$ |
| 2005 $RX_{20}$ | 15.5 | 0.15 | 20060922 | 14.79218 | 136.67665 | 311.02700 | 8.49339 | 0.1129578 | 2.7362400 | 53 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 97805 | 2005 $RX_{20}$ |
| 2005 $RC_{21}$ | 15.5 | 0.15 | 20060922 | 93.46356 | 34.65298 | 305.60887 | 5.21240 | 0.1223472 | 2.7222740 | 44 | 5 | 1996–2006 | 0.73 | M-v | 1 | MPC | 95730 | 2005 $RC_{21}$ |
| 2005 $RR_{21}$ | 16.7 | 0.15 | 20060922 | 169.39604 | 24.55591 | 249.29288 | 2.23297 | 0.1518021 | 2.3155966 | 32 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 87168 | 2005 $RR_{21}$ |
| 2005 $RY_{21}$ | 17.3 | 0.15 | 20060922 | 86.14997 | 30.04773 | 352.65069 | 0.99456 | 0.2264725 | 2.3382618 | 48 | 3 | 1998–2005 | 0.52 | M-v | 3 | MPC | 89784 | 2005 $RY_{21}$ |
| 2005 $RA_{22}$ | 15.5 | 0.15 | 20060922 | 87.05452 | 223.30015 | 110.47434 | 1.31866 | 0.1389362 | 3.0225864 | 69 | 6 | 1997–2006 | 0.50 | M-v | 1 | MPC | 97805 | 2005 $RA_{22}$ |
| 2005 $RD_{22}$ | 15.7 | 0.15 | 20060922 | 63.65757 | 49.22339 | 342.04333 | 3.32096 | 0.1993834 | 3.0548000 | 112 | 5 | 1994–2006 | 0.45 | M-v | 1 | MPC | 97805 | 2005 $RD_{22}$ |
| 2005 $RR_{22}$ | 16.2 | 0.15 | 20060922 | 120.95646 | 10.98487 | 328.40962 | 5.63660 | 0.1682973 | 2.3660372 | 118 | 5 | 2000–2006 | 0.54 | M-v | 1 | MPC | 97805 | 2005 $RR_{22}$ |
| 2005 $RX_{22}$ | 15.8 | 0.15 | 20060922 | 54.62997 | 316.46876 | 59.89387 | 2.75674 | 0.0958759 | 2.8917297 | 65 | 6 | 2000–2006 | 0.38 | M-v | 0 | MPC | 87169 | 2005 $RX_{22}$ |
| 2005 $RB_{23}$ | 16.6 | 0.15 | 20060922 | 92.15175 | 145.43237 | 182.49051 | 12.13294 | 0.2202474 | 2.7579426 | 24 | 1 | 61 days | 0.48 | M-v | 4 | MPC | 90243 | 2005 $RB_{23}$ |
| 2005 $RG_{23}$ | 15.8 | 0.15 | 20060922 | 139.81118 | 356.23721 | 265.87968 | 11.05881 | 0.2036445 | 2.6452344 | 45 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 95731 | 2005 $RG_{23}$ |
| 2005 $RK_{23}$ | 16.4 | 0.15 | 20060922 | 146.71265 | 27.28659 | 265.41348 | 4.60016 | 0.1011646 | 2.3841679 | 41 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 87170 | 2005 $RK_{23}$ |
| 2005 $RM_{23}$ | 16.8 | 0.15 | 20060922 | 162.53026 | 351.86717 | 286.16799 | 4.98857 | 0.0884608 | 2.3724245 | 23 | 3 | 2004–2006 | 0.49 | M-v | 3 | MPC | 87170 | 2005 $RM_{23}$ |
| 2005 $RS_{23}$ | 15.7 | 0.15 | 20060922 | 116.66757 | 26.59748 | 294.51857 | 13.27698 | 0.1983679 | 2.7519558 | 43 | 3 | 2000–2006 | 0.50 | M-v | 3 | MPC | 89786 | 2005 $RS_{23}$ |
| 2005 $RC_{24}$ | 16.0 | 0.15 | 20060922 | 274.37160 | 151.33771 | 353.09096 | 4.96331 | 0.0882111 | 3.0493865 | 32 | 3 | 2000–2005 | 0.40 | M-v | 3 | MPC | 87171 | 2005 $RC_{24}$ |
| 2005 $RA_{26}$ | 16.0 | 0.15 | 20050927 | 21.14958 | 89.20437 | 244.27465 | 8.88238 | 0.1053179 | 3.0169745 | 26 | 1 | 51 days | 0.63 | | | MPC | | 2005 $RA_{26}$ |
| 2005 $RQ_{26}$ | 17.8 | 0.15 | 20060922 | 91.72971 | 211.06742 | 175.08988 | 5.13234 | 0.1549441 | 2.2016127 | 51 | 4 | 1995–2005 | 0.52 | M-v | 1 | MPC | 02255 | 2005 $RQ_{26}$ |
| 2005 $RG_{27}$ | 15.3 | 0.15 | 20060922 | 104.58980 | 31.25956 | 300.52297 | 10.79811 | 0.1958841 | 2.6907802 | 79 | 4 | 1994–2006 | 0.46 | M-v | 1 | MPC | 97806 | 2005 $RG_{27}$ |
| 2005 $RJ_{27}$ | 15.1 | 0.15 | 20060922 | 81.41114 | 47.16556 | 313.27715 | 8.91359 | 0.1920097 | 3.0520985 | 93 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 95734 | 2005 $RJ_{27}$ |
| 2005 $RV_{27}$ | 16.3 | 0.15 | 20060922 | 117.81674 | 49.27525 | 311.25653 | 7.29834 | 0.1437632 | 2.2948381 | 103 | 6 | 1998–2006 | 0.51 | M-v | 1 | MPC | 95734 | 2005 $RV_{27}$ |
| 2005 $RX_{27}$ | 15.7 | 0.15 | 20060922 | 126.63278 | 335.60365 | 300.46659 | 3.33352 | 0.1137329 | 3.0553923 | 34 | 5 | 2000–2006 | 0.39 | M-v | 0 | MPC | 87176 | 2005 $RX_{27}$ |
| 2005 $RS_{30}$ | 15.7 | 0.15 | 20060922 | 318.22283 | 106.96613 | 353.55475 | 8.26979 | 0.0467359 | 3.1074347 | 45 | 5 | 2000–2006 | 0.39 | M-v | 0 | MPC | 04342 | 2005 $RS_{30}$ |
| 2005 $RG_{31}$ | 17.2 | 0.15 | 20060922 | 80.44363 | 341.65003 | 26.19789 | 4.33386 | 0.2879185 | 2.6249986 | 60 | 2 | 2001–2005 | 0.38 | M-v | 3 | MPC | 90245 | 2005 $RG_{31}$ |
| 2005 $RP_{31}$ | 15.3 | 0.15 | 20060922 | 96.82359 | 51.12339 | 294.17084 | 12.23666 | 0.2326143 | 2.6928075 | 102 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 97806 | 2005 $RP_{31}$ |
| 2005 $RT_{31}$ | 16.0 | 0.15 | 20060922 | 134.38468 | 38.22974 | 262.10462 | 10.82952 | 0.1803193 | 2.6418305 | 48 | 5 | 2001–2006 | 0.53 | M-v | 1 | MPC | 89794 | 2005 $RT_{31}$ |
| 2005 $RF_{32}$ | 15.9 | 0.15 | 20060922 | 78.79649 | 157.50832 | 187.50881 | 1.78966 | 0.1952837 | 3.0439781 | 66 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 02255 | 2005 $RF_{32}$ |
| 2005 $RB_{33}$ | 15.5 | 0.15 | 20060922 | 61.08389 | 267.48490 | 122.76185 | 14.96914 | 0.3348364 | 3.0869735 | 54 | 4 | 1996–2006 | 0.56 | M-v | 1 | MPC | 95737 | 2005 $RB_{33}$ |
| 2005 $RD_{33}$ | 16.1 | 0.15 | 20060922 | 81.92929 | 232.96289 | 128.61896 | 14.40955 | 0.1615701 | 2.7505711 | 42 | 4 | 2000–2006 | 0.59 | M-v | 1 | MPC | 95737 | 2005 $RD_{33}$ |
| 2005 $RR_{33}$ | 17.2 | 0.15 | 20060922 | 47.10676 | 58.52826 | 348.68847 | 2.29858 | 0.0870962 | 2.4418866 | 37 | 5 | 1996–2006 | 0.39 | M-v | 1 | MPC | 87180 | 2005 $RR_{33}$ |
| 2005 $RA_{34}$ | 16.4 | 0.15 | 20060922 | 98.39933 | 146.87096 | 202.04841 | 1.19488 | 0.0910582 | 2.9143925 | 55 | 4 | 1995–2006 | 0.46 | M-v | 3 | MPC | 97807 | 2005 $RA_{34}$ |
| 2005 $RZ_{37}$ | 15.1 | 0.15 | 20060922 | 105.78440 | 76.51947 | 223.73148 | 8.53140 | 0.0498071 | 3.1716981 | 49 | 3 | 2004–2006 | 0.45 | M-v | 3 | MPC | 97807 | 2005 $RZ_{37}$ |
| 2005 $RH_{40}$ | 16.2 | 0.15 | 20060922 | 126.68322 | 279.42695 | 17.38004 | 3.73611 | 0.0794070 | 2.7583463 | 25 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 00976 | 2005 $RH_{40}$ |
| 2005 $RZ_{40}$ | 17.0 | 0.15 | 20060922 | 215.33050 | 180.79778 | 42.64832 | 3.37343 | 0.1778777 | 2.3165796 | 34 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 00977 | 2005 $RZ_{40}$ |
| 2005 $RD_{41}$ | 15.8 | 0.15 | 20060922 | 173.70230 | 93.48392 | 152.41557 | 6.87054 | 0.0873955 | 2.7715764 | 33 | 5 | 1994–2006 | 0.33 | M-v | 0 | MPC | 95739 | 2005 $RD_{41}$ |
| 2005 $RN_{41}$ | 15.4 | 0.15 | 20060922 | 352.37830 | 68.27777 | 15.31579 | 10.73282 | 0.0702406 | 2.9784005 | 50 | 4 | 2000–2005 | 0.55 | M-v | 1 | MPC | 95739 | 2005 $RN_{41}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $RY_{41}$ | 17.0 | 0.15 | 20060922 | 19.64127 | 249.16250 | 198.73251 | 6.54809 | 0.0760559 | 2.2869533 | 24 | 1 | 93 days | 0.58 | M-v | 4 | MPC | 97807 | 2005 $RY_{41}$ |
| 2005 $RL_{43}$ | 8.4 | 0.15 | 20060922 | 47.83010 | 167.45017 | 162.58356 | 12.26962 | 0.0417077 | 24.4506850 | 50 | 3 | 2003–2006 | 0.12 | M-v | 2 | MPC | 03719 | 2005 $RL_{43}$ |
| 2005 $RO_{43}$ | 7.2 | 0.15 | 20060922 | 302.20347 | 326.78545 | 198.23027 | 35.52518 | 0.5200071 | 28.7852925 | 64 | 3 | 2004–2006 | 0.12 | M-v | 3 | MPC | 03719 | 2005 $RO_{43}$ |
| 2005 $RO_{44}$ | 16.6 | 0.15 | 20060922 | 87.74174 | 219.66924 | 153.16800 | 14.32303 | 0.2652485 | 2.6333208 | 26 | 1 | 121 days | 0.49 | M-v | 4 | MPC | | 2005 $RO_{44}$ |
| 2005 $RP_{44}$ | 18.1 | 0.15 | 20060922 | 70.96330 | 31.09727 | 3.46670 | 1.41281 | 0.1935249 | 2.4149073 | 20 | 1 | 85 days | 0.31 | M-v | 4 | MPC | | 2005 $RP_{44}$ |
| 2005 $RQ_{44}$ | 17.1 | 0.15 | 20050927 | 319.61610 | 184.71517 | 232.99081 | 8.00148 | 0.1153975 | 2.3045878 | 17 | 1 | 56 days | 0.87 | | | MPC | | 2005 $RQ_{44}$ |
| 2005 $RR_{44}$ | 15.4 | 0.15 | 20050927 | 35.20467 | 47.75637 | 277.21156 | 8.73731 | 0.1514563 | 3.1400054 | 20 | 1 | 58 days | 0.64 | | | MPC | | 2005 $RR_{44}$ |
| 2005 $RS_{44}$ | 16.2 | 0.15 | 20060922 | 32.83602 | 126.58759 | 290.47045 | 8.54289 | 0.1137544 | 3.0063800 | 21 | 1 | 63 days | 0.51 | M-v | 4 | MPC | | 2005 $RS_{44}$ |
| 2005 $RU_{44}$ | 17.7 | 0.15 | 20060922 | 89.17970 | 89.82273 | 280.19499 | 10.40240 | 0.2856505 | 2.6042588 | 18 | 1 | 81 days | 0.61 | M-v | 4 | MPC | | 2005 $RU_{44}$ |
| 2005 $RV_{44}$ | 15.2 | 0.15 | 20050927 | 343.08918 | 100.56426 | 295.12142 | 13.94374 | 0.1102073 | 3.1021942 | 19 | 1 | 51 days | 0.67 | | | MPC | | 2005 $RV_{44}$ |
| 2005 $RW_{44}$ | 14.6 | 0.15 | 20050927 | 21.85478 | 177.65833 | 141.70349 | 9.58990 | 0.2741588 | 3.9719366 | 24 | 1 | 49 days | 0.63 | | | MPC | | 2005 $RW_{44}$ |
| 2005 $RX_{44}$ | 17.0 | 0.15 | 20050927 | 334.98145 | 334.87398 | 57.00837 | 6.77386 | 0.1150427 | 2.3390140 | 19 | 1 | 53 days | 0.64 | | | MPC | | 2005 $RX_{44}$ |
| 2005 $RY_{44}$ | 17.2 | 0.15 | 20050927 | 26.81115 | 55.43705 | 273.61060 | 11.63833 | 0.2154729 | 2.5987330 | 17 | 1 | 56 days | 0.66 | | | MPC | | 2005 $RY_{44}$ |
| 2005 $RZ_{44}$ | 16.0 | 0.15 | 20050927 | 33.97359 | 346.14099 | 336.59146 | 22.07508 | 0.2440086 | 2.7828839 | 15 | 1 | 56 days | 0.56 | | | MPC | | 2005 $RZ_{44}$ |
| 2005 $RA_{45}$ | 16.7 | 0.15 | 20050927 | 19.74259 | 97.72293 | 243.54998 | 13.32503 | 0.2454015 | 2.7478719 | 18 | 1 | 56 days | 0.58 | | | MPC | | 2005 $RA_{45}$ |
| 2005 $RB_{45}$ | 15.9 | 0.15 | 20060922 | 149.60954 | 14.25749 | 283.55960 | 9.29415 | 0.0871628 | 2.7285029 | 18 | 1 | 65 days | 0.69 | M-v | 5 | MPC | | 2005 $RB_{45}$ |
| 2005 $RC_{45}$ | 16.8 | 0.15 | 20051017 | 31.35738 | 353.61578 | 346.76885 | 3.29603 | 0.2475223 | 2.9894610 | 18 | 1 | 59 days | 0.52 | | | MPC | | 2005 $RC_{45}$ |
| 2005 $RD_{45}$ | 16.6 | 0.15 | 20060922 | 111.78110 | 20.83910 | 282.20973 | 3.25054 | 0.3064805 | 2.6730034 | 28 | 1 | 78 days | 0.70 | M-v | 5 | MPC | | 2005 $RD_{45}$ |
| 2005 $RF_{45}$ | 16.1 | 0.15 | 20060922 | 56.81290 | 164.02787 | 206.09631 | 10.34850 | 0.2288985 | 3.1215494 | 19 | 1 | 84 days | 0.33 | M-v | 4 | MPC | | 2005 $RF_{45}$ |
| 2005 $RG_{45}$ | 18.0 | 0.15 | 20060922 | 59.02090 | 345.61089 | 40.18276 | 1.43544 | 0.3527217 | 2.9979855 | 21 | 1 | 73 days | 0.29 | M-v | 4 | MPC | | 2005 $RG_{45}$ |
| 2005 $RH_{45}$ | 16.3 | 0.15 | 20060922 | 72.15857 | 239.00817 | 138.12691 | 13.67543 | 0.1825855 | 2.7789324 | 23 | 1 | 78 days | 0.66 | M-v | 4 | MPC | | 2005 $RH_{45}$ |
| 2005 $RJ_{45}$ | 16.2 | 0.15 | 20051017 | 8.99400 | 251.47733 | 107.01690 | 10.15511 | 0.1921125 | 2.8093780 | 18 | 1 | 53 days | 0.84 | | | MPC | | 2005 $RJ_{45}$ |
| 2005 $RL_{45}$ | 16.5 | 0.15 | 20051017 | 43.71308 | 347.41434 | 344.39526 | 13.57343 | 0.1752947 | 2.5549147 | 28 | 1 | 49 days | 0.60 | | | MPC | | 2005 $RL_{45}$ |
| 2005 SG | 19.1 | 0.15 | 20060922 | 110.17830 | 205.51954 | 23.56670 | 34.84030 | 0.2830876 | 0.9810636 | 189 | 3 | 2005–2006 | 0.42 | M-v | 3 | MPC | 00978 | 2005 SG |
| 2005 $SM_1$ | 17.6 | 0.15 | 20060922 | 80.91314 | 174.32200 | 190.40219 | 10.16323 | 0.3508321 | 2.6825091 | 89 | 1 | 72 days | 0.44 | M-v | 4 | MPC | 02255 | 2005 $SM_1$ |
| 2005 $SX_1$ | 16.9 | 0.15 | 20060922 | 118.98130 | 195.04502 | 129.71105 | 5.47252 | 0.0759496 | 2.5751293 | 57 | 5 | 1999–2005 | 0.36 | M-v | 0 | MPC | 04343 | 2005 $SX_1$ |
| 2005 $SW_2$ | 17.1 | 0.15 | 20060922 | 117.41380 | 323.64844 | 24.41701 | 6.83574 | 0.1354934 | 2.2960010 | 59 | 3 | 1998–2005 | 0.36 | M-v | 2 | MPC | 97808 | 2005 $SW_2$ |
| 2005 $SH_3$ | 17.1 | 0.15 | 20060922 | 61.62682 | 122.46204 | 304.99419 | 1.58389 | 0.1820014 | 2.3680618 | 75 | 3 | 2001–2005 | 0.48 | M-v | 1 | MPC | 97808 | 2005 $SH_3$ |
| 2005 $SQ_3$ | 15.9 | 0.15 | 20060922 | 104.86139 | 266.27266 | 81.20176 | 3.14042 | 0.1189687 | 2.8111471 | 87 | 5 | 1991–2006 | 0.56 | M-v | 1 | MPC | 04343 | 2005 $SQ_3$ |
| 2005 $SV_5$ | 15.3 | 0.15 | 20060922 | 87.61149 | 124.26292 | 209.92470 | 3.43845 | 0.1818121 | 3.1563925 | 112 | 6 | 1994–2006 | 0.47 | M-v | 0 | MPC | 95746 | 2005 $SV_5$ |
| 2005 $SR_7$ | 16.2 | 0.15 | 20060922 | 65.11774 | 135.48081 | 240.88569 | 1.30173 | 0.2379908 | 3.0941137 | 56 | 4 | 1994–2006 | 0.49 | M-v | 1 | MPC | 03721 | 2005 $SR_7$ |
| 2005 $SS_7$ | 17.2 | 0.15 | 20060922 | 3.64322 | 136.71751 | 333.93419 | 2.00923 | 0.1185651 | 2.5980388 | 37 | 3 | 2001–2005 | 0.41 | M-v | 2 | MPC | 90248 | 2005 $SS_7$ |
| 2005 $ST_7$ | 16.4 | 0.15 | 20060922 | 200.17473 | 248.34672 | 10.48740 | 1.63222 | 0.0120210 | 2.6912776 | 45 | 4 | 2001–2006 | 0.34 | M-v | 1 | MPC | 95748 | 2005 $ST_7$ |
| 2005 $SA_9$ | 14.6 | 0.15 | 20060922 | 118.63186 | 248.64711 | 34.93803 | 14.29048 | 0.1069051 | 3.1029128 | 41 | 6 | 1998–2006 | 0.56 | M-v | 1 | MPC | 87184 | 2005 $SA_9$ |
| 2005 $SG_{10}$ | 14.6 | 0.15 | 20060922 | 108.25969 | 241.61272 | 74.48053 | 27.58190 | 0.1246657 | 3.1156848 | 27 | 3 | 2001–2005 | 0.57 | M-v | 2 | MPC | 03721 | 2005 $SG_{10}$ |
| 2005 $SW_{10}$ | 17.5 | 0.15 | 20060922 | 116.47769 | 41.34336 | 303.19702 | 2.90599 | 0.1810471 | 2.3502897 | 86 | 3 | 1994–2005 | 0.62 | M-v | 3 | MPC | 97809 | 2005 $SW_{10}$ |
| 2005 $SA_{11}$ | 15.5 | 0.15 | 20060922 | 181.79132 | 356.38715 | 249.18698 | 3.70036 | 0.0881660 | 3.2040430 | 43 | 7 | 1993–2006 | 0.39 | M-v | 0 | MPC | 95751 | 2005 $SA_{11}$ |
| 2005 $SK_{11}$ | 15.6 | 0.15 | 20060922 | 165.56302 | 206.04350 | 55.34332 | 2.02811 | 0.0926038 | 3.2204064 | 35 | 3 | 2003–2006 | 0.34 | M-v | 3 | MPC | 95752 | 2005 $SK_{11}$ |
| 2005 $SP_{11}$ | 16.6 | 0.15 | 20060922 | 26.63381 | 53.95874 | 20.34131 | 12.47588 | 0.1566801 | 2.8932677 | 41 | 3 | 2000–2005 | 0.46 | M-v | 1 | MPC | 90249 | 2005 $SP_{11}$ |
| 2005 $SU_{11}$ | 15.6 | 0.15 | 20060922 | 11.61089 | 2.27297 | 82.87110 | 2.27235 | 0.1601866 | 3.1276597 | 74 | 6 | 1994–2006 | 0.36 | M-v | 0 | MPC | 95752 | 2005 $SU_{11}$ |
| 2005 $SV_{12}$ | 16.2 | 0.15 | 20060922 | 132.73164 | 300.26921 | 8.39831 | 5.62375 | 0.0448648 | 2.6900950 | 45 | 4 | 1996–2005 | 0.39 | M-v | 1 | MPC | 02255 | 2005 $SV_{12}$ |
| 2005 $SZ_{12}$ | 16.8 | 0.15 | 20060922 | 338.90482 | 208.11464 | 278.01752 | 1.17679 | 0.1346592 | 2.6856677 | 47 | 5 | 2000–2006 | 0.35 | M-v | 1 | MPC | 95753 | 2005 $SZ_{12}$ |
| 2005 $SE_{13}$ | 15.6 | 0.15 | 20060922 | 89.85360 | 56.93298 | 248.80320 | 1.74832 | 0.2120846 | 3.9462332 | 40 | 4 | 1997–2006 | 0.38 | M-v | 0 | MPC | 90249 | 2005 $SE_{13}$ |
| 2005 $SH_{13}$ | 17.0 | 0.15 | 20060922 | 131.53815 | 12.46556 | 305.97219 | 0.53703 | 0.2017745 | 2.3656872 | 105 | 3 | 1997–2005 | 0.46 | M-v | 3 | MPC | 97809 | 2005 $SH_{13}$ |
| 2005 $SU_{13}$ | 16.4 | 0.15 | 20060922 | 71.87522 | 210.04977 | 170.92444 | 2.77841 | 0.0863730 | 2.7324701 | 49 | 3 | 2001–2005 | 0.43 | M-v | 4 | MPC | 90249 | 2005 $SU_{13}$ |
| 2005 $SF_{15}$ | 16.9 | 0.15 | 20060922 | 352.03270 | 185.59100 | 275.74842 | 2.10644 | 0.0593126 | 2.7406805 | 23 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 95756 | 2005 $SF_{15}$ |
| 2005 $SL_{15}$ | 16.4 | 0.15 | 20060922 | 106.25355 | 124.46345 | 199.46474 | 9.05802 | 0.0429177 | 3.0977438 | 38 | 3 | 1997–2005 | 0.30 | M-v | 2 | MPC | 95756 | 2005 $SL_{15}$ |
| 2005 $SX_{15}$ | 16.5 | 0.15 | 20060922 | 297.74735 | 306.82300 | 198.48847 | 11.53100 | 0.1195084 | 3.1376084 | 21 | 3 | 2002–2005 | 0.43 | M-v | 2 | MPC | 89803 | 2005 $SX_{15}$ |
| 2005 $SQ_{16}$ | 15.6 | 0.15 | 20060922 | 207.37279 | 9.78741 | 209.11748 | 4.44262 | 0.0732872 | 3.2540846 | 51 | 6 | 1999–2006 | 0.53 | M-v | 1 | MPC | 95757 | 2005 $SQ_{16}$ |
| 2005 $SM_{18}$ | 16.5 | 0.15 | 20060922 | 358.04635 | 219.04453 | 227.55078 | 1.21254 | 0.0386138 | 2.9258174 | 46 | 5 | 1995–2005 | 0.30 | M-v | 0 | MPC | 90251 | 2005 $SM_{18}$ |
| 2005 $SS_{18}$ | 17.7 | 0.15 | 20060922 | 150.37195 | 84.03253 | 197.16171 | 1.45049 | 0.2105092 | 2.5640874 | 35 | 4 | 1996–2005 | 0.35 | M-v | 2 | MPC | 03722 | 2005 $SS_{18}$ |
| 2005 $SK_{19}$ | 15.4 | 0.15 | 20060922 | 113.19951 | 122.51790 | 201.67530 | 5.64254 | 0.1563909 | 3.0498056 | 123 | 5 | 1994–2006 | 0.53 | M-v | 1 | MPC | 04343 | 2005 $SK_{19}$ |
| 2005 $SO_{19}$ | 15.5 | 0.15 | 20060922 | 132.16958 | 270.76427 | 30.99318 | 7.70631 | 0.1428214 | 3.1266237 | 62 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 95758 | 2005 $SO_{19}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $SC_{20}$ | 17.0 | 0.15 | 20060922 | 178.20870 | 193.69820 | 96.78650 | 4.39228 | 0.1386899 | 2.2265149 | 45 | 4 | 2000–2005 | 0.58 | M-v | 1 | MPC | 89804 | 2005 $SC_{20}$ |
| 2005 $SB_{21}$ | 15.9 | 0.15 | 20060922 | 34.78020 | 221.92731 | 200.08161 | 8.62343 | 0.1736772 | 2.7380870 | 62 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 95760 | 2005 $SB_{21}$ |
| 2005 $SU_{21}$ | 16.7 | 0.15 | 20060922 | 117.65587 | 334.15003 | 8.12686 | 6.69902 | 0.1429086 | 2.3205327 | 95 | 4 | 1991–2005 | 0.56 | M-v | 3 | MPC | 04343 | 2005 $SU_{21}$ |
| 2005 $SV_{21}$ | 15.5 | 0.15 | 20060922 | 24.55233 | 127.63536 | 293.65593 | 8.05974 | 0.0638163 | 3.1317613 | 47 | 3 | 2004–2006 | 0.41 | M-v | 3 | MPC | 95761 | 2005 $SV_{21}$ |
| 2005 $SC_{22}$ | 16.8 | 0.15 | 20060922 | 12.20121 | 313.24766 | 137.70814 | 5.31240 | 0.1707870 | 2.7788475 | 40 | 6 | 1991–2006 | 0.53 | M-v | 0 | MPC | 00980 | 2005 $SC_{22}$ |
| 2005 $SS_{22}$ | 16.1 | 0.15 | 20060922 | 120.47261 | 293.43207 | 30.09467 | 8.72027 | 0.0437754 | 2.6919693 | 37 | 4 | 1997–2005 | 0.50 | M-v | 2 | MPC | 97811 | 2005 $SS_{22}$ |
| 2005 $ST_{23}$ | 17.1 | 0.15 | 20060922 | 64.75477 | 275.46208 | 127.08643 | 5.68038 | 0.1994762 | 2.4605701 | 34 | 4 | 1994–2005 | 0.58 | M-v | 1 | MPC | 03722 | 2005 $ST_{23}$ |
| 2005 $SB_{24}$ | 16.3 | 0.15 | 20060922 | 84.32532 | 287.64119 | 97.62159 | 3.15406 | 0.1841300 | 2.3745708 | 89 | 7 | 1993–2006 | 0.47 | M-v | 1 | MPC | 97811 | 2005 $SB_{24}$ |
| 2005 $SD_{24}$ | 16.8 | 0.15 | 20060922 | 22.02855 | 311.06169 | 149.98128 | 5.46834 | 0.0757023 | 2.1851673 | 47 | 5 | 1992–2005 | 0.62 | M-v | 1 | MPC | 03722 | 2005 $SD_{24}$ |
| 2005 $SK_{24}$ | 16.0 | 0.15 | 20060922 | 93.53843 | 246.67474 | 106.13619 | 6.86954 | 0.0349157 | 2.6874658 | 46 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 00980 | 2005 $SK_{24}$ |
| 2005 $SS_{24}$ | 15.9 | 0.15 | 20060922 | 83.68625 | 335.76417 | 46.53413 | 8.26328 | 0.2073932 | 2.4041790 | 69 | 6 | 1998–2006 | 0.48 | M-v | 1 | MPC | 97811 | 2005 $SS_{24}$ |
| 2005 $SV_{24}$ | 15.2 | 0.15 | 20060922 | 52.00745 | 325.26566 | 51.62709 | 9.97856 | 0.1030323 | 3.1331233 | 33 | 3 | 2000–2005 | 0.71 | M-v | 3 | MPC | 97811 | 2005 $SV_{24}$ |
| 2005 $SK_{25}$ | 15.7 | 0.15 | 20060922 | 52.12854 | 193.12905 | 173.96283 | 29.03065 | 0.1975576 | 3.1467865 | 31 | 1 | 63 days | 0.55 | M-v | 4 | MPC | 97811 | 2005 $SK_{25}$ |
| 2005 $SR_{25}$ | 16.0 | 0.15 | 20060922 | 133.00913 | 193.69166 | 105.01720 | 1.72251 | 0.0427916 | 2.7934875 | 66 | 5 | 1991–2006 | 0.57 | M-v | 1 | MPC | 95766 | 2005 $SR_{25}$ |
| 2005 $SR_{26}$ | 16.0 | 0.15 | 20060922 | 65.17806 | 349.31151 | 36.97946 | 4.04774 | 0.2037016 | 2.7394557 | 91 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 95766 | 2005 $SR_{26}$ |
| 2005 $SS_{26}$ | 16.8 | 0.15 | 20060922 | 117.90876 | 170.67529 | 166.77705 | 7.48293 | 0.1113376 | 2.4144906 | 53 | 3 | 2001–2005 | 0.45 | M-v | 2 | MPC | 95767 | 2005 $SS_{26}$ |
| 2005 $SE_{28}$ | 17.5 | 0.15 | 20060922 | 188.45124 | 33.57508 | 238.76871 | 4.12590 | 0.1444527 | 2.2567156 | 27 | 3 | 1995–2005 | 0.33 | M-v | 2 | MPC | 90253 | 2005 $SE_{28}$ |
| 2005 $SL_{28}$ | 17.0 | 0.15 | 20060922 | 157.80773 | 75.05299 | 217.41409 | 8.16981 | 0.1490688 | 2.4312530 | 30 | 3 | 2001–2005 | 0.51 | M-v | 2 | MPC | 03722 | 2005 $SL_{28}$ |
| 2005 $SZ_{28}$ | 16.8 | 0.15 | 20060922 | 201.93458 | 290.35921 | 334.90653 | 5.30892 | 0.0738795 | 2.2803436 | 41 | 3 | 1998–2005 | 0.58 | M-v | 3 | MPC | 95769 | 2005 $SZ_{28}$ |
| 2005 $SN_{29}$ | 14.7 | 0.15 | 20060922 | 336.94044 | 117.49134 | 8.46424 | 24.72387 | 0.2165993 | 3.1766297 | 65 | 3 | 2000–2006 | 0.58 | M-v | 3 | MPC | 90254 | 2005 $SN_{29}$ |
| 2005 $SQ_{29}$ | 16.0 | 0.15 | 20060922 | 137.58189 | 26.89654 | 273.97432 | 3.09918 | 0.0852749 | 2.8094644 | 55 | 3 | 2000–2006 | 0.48 | M-v | 4 | MPC | 90254 | 2005 $SQ_{29}$ |
| 2005 $SR_{29}$ | 16.5 | 0.15 | 20060922 | 26.24780 | 140.36136 | 296.97904 | 2.92703 | 0.0878558 | 2.6367451 | 53 | 5 | 1993–2006 | 0.54 | M-v | 1 | MPC | 95770 | 2005 $SR_{29}$ |
| 2005 $SW_{29}$ | 16.6 | 0.15 | 20060922 | 110.58730 | 112.79912 | 223.12393 | 5.86185 | 0.0427376 | 2.7724538 | 35 | 4 | 1996–2005 | 0.28 | M-v | 1 | MPC | 95770 | 2005 $SW_{29}$ |
| 2005 $SG_{30}$ | 17.2 | 0.15 | 20060922 | 142.75650 | 186.94461 | 124.58989 | 2.53688 | 0.1802167 | 2.3868461 | 57 | 3 | 2001–2005 | 0.46 | M-v | 2 | MPC | 95770 | 2005 $SG_{30}$ |
| 2005 $SQ_{30}$ | 15.5 | 0.15 | 20060922 | 104.07493 | 206.50710 | 128.30607 | 2.88034 | 0.0933881 | 2.9332856 | 58 | 7 | 1993–2006 | 0.48 | M-v | 1 | MPC | 90254 | 2005 $SQ_{30}$ |
| 2005 $SW_{30}$ | 17.4 | 0.15 | 20060922 | 156.31238 | 140.80361 | 158.52540 | 3.38339 | 0.1791272 | 2.2390918 | 54 | 3 | 1997–2005 | 0.51 | M-v | 3 | MPC | 97812 | 2005 $SW_{30}$ |
| 2005 $SQ_{31}$ | 17.0 | 0.15 | 20060922 | 291.03448 | 157.10605 | 36.90221 | 7.03035 | 0.1324536 | 2.2417984 | 28 | 4 | 1995–2005 | 0.41 | M-v | 1 | MPC | 95772 | 2005 $SQ_{31}$ |
| 2005 $SW_{31}$ | 17.1 | 0.15 | 20060922 | 63.34123 | 341.73249 | 72.51818 | 3.45771 | 0.0719180 | 2.3971946 | 34 | 4 | 1994–2005 | 0.40 | M-v | 1 | MPC | 90254 | 2005 $SW_{31}$ |
| 2005 $SW_{32}$ | 17.5 | 0.15 | 20060922 | 33.02652 | 327.06219 | 133.17357 | 2.89653 | 0.1656751 | 2.3856117 | 28 | 3 | 1997–2005 | 0.45 | M-v | 2 | MPC | 03723 | 2005 $SW_{32}$ |
| 2005 $SC_{33}$ | 16.0 | 0.15 | 20060922 | 89.87063 | 173.42216 | 177.99117 | 9.70958 | 0.0725970 | 3.1383691 | 26 | 4 | 1997–2005 | 0.40 | M-v | 0 | MPC | 89806 | 2005 $SC_{33}$ |
| 2005 $SE_{34}$ | 17.3 | 0.15 | 20060922 | 162.80518 | 168.88313 | 136.64194 | 3.73757 | 0.1721228 | 2.1888553 | 38 | 3 | 2002–2005 | 0.59 | M-v | 3 | MPC | 95774 | 2005 $SE_{34}$ |
| 2005 $SK_{35}$ | 16.0 | 0.15 | 20060922 | 347.34943 | 353.50794 | 112.11965 | 3.09594 | 0.0186070 | 2.8689736 | 46 | 4 | 2000–2006 | 0.48 | M-v | 2 | MPC | 90256 | 2005 $SK_{35}$ |
| 2005 $SN_{35}$ | 16.4 | 0.15 | 20060922 | 168.61662 | 203.44238 | 80.67095 | 3.51317 | 0.0590650 | 2.6470047 | 25 | 3 | 2001–2006 | 0.44 | M-v | 4 | MPC | 89807 | 2005 $SN_{35}$ |
| 2005 $SQ_{35}$ | 16.2 | 0.15 | 20060922 | 38.07597 | 316.90048 | 93.17938 | 3.44919 | 0.0594991 | 3.0503136 | 30 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 87196 | 2005 $SQ_{35}$ |
| 2005 $SW_{35}$ | 16.1 | 0.15 | 20060922 | 53.14348 | 264.53956 | 140.81558 | 4.27452 | 0.0979921 | 2.7909061 | 35 | 4 | 1996–2005 | 0.47 | M-v | 1 | MPC | 03723 | 2005 $SW_{35}$ |
| 2005 $SJ_{36}$ | 17.8 | 0.15 | 20060922 | 114.98488 | 329.62582 | 4.06660 | 0.90234 | 0.1888916 | 2.4530769 | 52 | 3 | 2001–2005 | 0.43 | M-v | 3 | MPC | 90256 | 2005 $SJ_{36}$ |
| 2005 $SP_{36}$ | 17.3 | 0.15 | 20060922 | 132.93737 | 160.07413 | 155.19340 | 1.38391 | 0.1987297 | 2.3657588 | 57 | 5 | 1997–2005 | 0.47 | M-v | 1 | MPC | 97813 | 2005 $SP_{36}$ |
| 2005 $SS_{36}$ | 15.9 | 0.15 | 20060922 | 174.06734 | 256.69583 | 10.89012 | 12.13541 | 0.0483041 | 2.7213979 | 44 | 3 | 1999–2005 | 0.46 | M-v | 3 | MPC | 95776 | 2005 $SS_{36}$ |
| 2005 $SE_{37}$ | 16.2 | 0.15 | 20060922 | 312.94134 | 119.63439 | 20.43280 | 3.09349 | 0.0918421 | 2.8049241 | 47 | 4 | 1998–2005 | 0.48 | M-v | 1 | MPC | 89807 | 2005 $SE_{37}$ |
| 2005 $SO_{37}$ | 15.0 | 0.15 | 20060922 | 177.37616 | 236.11191 | 15.01886 | 9.20983 | 0.0402144 | 3.1798917 | 53 | 4 | 1994–2006 | 0.57 | M-v | 1 | MPC | 04344 | 2005 $SO_{37}$ |
| 2005 $SB_{38}$ | 16.0 | 0.15 | 20060922 | 57.09652 | 330.65179 | 55.05866 | 2.31815 | 0.1049144 | 2.9057116 | 80 | 4 | 2002–2006 | 0.46 | M-v | 1 | MPC | 97813 | 2005 $SB_{38}$ |
| 2005 $SM_{38}$ | 16.0 | 0.15 | 20060922 | 134.00768 | 111.57224 | 194.15632 | 3.17473 | 0.0446534 | 2.8628257 | 41 | 4 | 1995–2005 | 0.42 | M-v | 1 | MPC | 97813 | 2005 $SM_{38}$ |
| 2005 $SU_{38}$ | 17.5 | 0.15 | 20060922 | 151.15956 | 285.37715 | 12.37698 | 2.59809 | 0.1869847 | 2.3549419 | 33 | 4 | 1998–2005 | 0.27 | M-v | 1 | MPC | 90257 | 2005 $SU_{38}$ |
| 2005 $SK_{39}$ | 17.7 | 0.15 | 20060922 | 47.94338 | 252.02367 | 146.98547 | 0.25227 | 0.2263234 | 3.1060293 | 33 | 3 | 1994–2005 | 0.39 | M-v | 2 | MPC | 89807 | 2005 $SK_{39}$ |
| 2005 $SQ_{39}$ | 17.1 | 0.15 | 20060922 | 265.06948 | 24.53760 | 186.38621 | 6.74691 | 0.0229806 | 2.2488236 | 54 | 4 | 1995–2005 | 0.32 | M-v | 1 | MPC | 95778 | 2005 $SQ_{39}$ |
| 2005 $SX_{39}$ | 16.0 | 0.15 | 20060922 | 186.25418 | 240.13211 | 23.02156 | 2.50207 | 0.0425840 | 2.6816837 | 58 | 5 | 2000–2006 | 0.40 | M-v | 0 | MPC | 97814 | 2005 $SX_{39}$ |
| 2005 $SZ_{39}$ | 16.8 | 0.15 | 20060922 | 161.97811 | 265.37042 | 14.55479 | 3.30038 | 0.1444433 | 2.5849398 | 37 | 3 | 2001–2005 | 0.47 | M-v | 3 | MPC | 95779 | 2005 $SZ_{39}$ |
| 2005 $SA_{41}$ | 16.2 | 0.15 | 20060922 | 220.24757 | 196.51462 | 16.50171 | 5.80395 | 0.0971357 | 3.0791471 | 35 | 4 | 2001–2006 | 0.31 | M-v | 0 | MPC | 89807 | 2005 $SA_{41}$ |
| 2005 $ST_{41}$ | 16.0 | 0.15 | 20060922 | 58.36217 | 113.34626 | 285.51476 | 3.16369 | 0.1537461 | 2.8088372 | 75 | 3 | 2002–2006 | 0.48 | M-v | 3 | MPC | 04344 | 2005 $ST_{41}$ |
| 2005 $SV_{41}$ | 16.5 | 0.15 | 20060922 | 120.79673 | 16.68040 | 302.87673 | 3.73020 | 0.0680957 | 2.9600862 | 22 | 3 | 1997–2005 | 0.50 | M-v | 4 | MPC | 03724 | 2005 $SV_{41}$ |
| 2005 $SL_{43}$ | 16.1 | 0.15 | 20060922 | 101.06279 | 358.79108 | 333.29339 | 3.37151 | 0.1222130 | 3.1221390 | 30 | 4 | 1999–2005 | 0.31 | M-v | 1 | MPC | 03724 | 2005 $SL_{43}$ |
| 2005 $SQ_{43}$ | 17.0 | 0.15 | 20060922 | 286.67398 | 202.33376 | 349.28585 | 4.55709 | 0.1278789 | 2.3495806 | 36 | 5 | 1994–2006 | 0.54 | M-v | 1 | MPC | 03724 | 2005 $SQ_{43}$ |
| 2005 $SB_{44}$ | 16.0 | 0.15 | 20060922 | 152.62692 | 69.96152 | 213.29109 | 10.68102 | 0.0647423 | 3.1520060 | 41 | 4 | 1994–2005 | 0.44 | M-v | 0 | MPC | 97814 | 2005 $SB_{44}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $SM_{45}$ | 15.6 | 0.15 | 20060922 | 327.31568 | 289.03044 | 208.83525 | 8.55853 | 0.0969800 | 2.7703705 | 75 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 95782 | 2005 $SM_{45}$ |
| 2005 $ST_{45}$ | 17.6 | 0.15 | 20060922 | 138.77230 | 313.11362 | 8.11867 | 6.98915 | 0.1309259 | 2.3995822 | 25 | 3 | 2001–2005 | 0.36 | M-v | 2 | MPC | 89808 | 2005 $ST_{45}$ |
| 2005 $SB_{46}$ | 16.8 | 0.15 | 20060922 | 169.64875 | 45.72228 | 241.34557 | 1.86708 | 0.1614519 | 2.3577953 | 45 | 3 | 1998–2005 | 0.42 | M-v | 2 | MPC | 90259 | 2005 $SB_{46}$ |
| 2005 $ST_{46}$ | 17.9 | 0.15 | 20060922 | 193.47429 | 274.62696 | 357.44077 | 3.89138 | 0.1489197 | 2.2254280 | 25 | 3 | 1995–2005 | 0.47 | M-v | 3 | MPC | 89808 | 2005 $ST_{46}$ |
| 2005 $SX_{46}$ | 15.6 | 0.15 | 20060922 | 344.67237 | 99.90616 | 10.57979 | 10.07376 | 0.1078217 | 3.1213096 | 27 | 2 | 2002–2005 | 0.46 | M-v | 4 | MPC | 03724 | 2005 $SX_{46}$ |
| 2005 $SK_{47}$ | 16.3 | 0.15 | 20060922 | 159.21243 | 323.35577 | 323.12379 | 2.38099 | 0.0654841 | 2.7576094 | 40 | 5 | 2000–2006 | 0.26 | M-v | 0 | MPC | 95784 | 2005 $SK_{47}$ |
| 2005 $SS_{47}$ | 17.4 | 0.15 | 20060922 | 137.99047 | 117.02845 | 208.63825 | 6.39769 | 0.1282182 | 2.3236694 | 55 | 4 | 1997–2005 | 0.40 | M-v | 1 | MPC | 97814 | 2005 $SS_{47}$ |
| 2005 $SL_{48}$ | 17.8 | 0.15 | 20060922 | 166.51293 | 72.53886 | 209.16644 | 6.21951 | 0.1759270 | 2.4401772 | 33 | 4 | 2000–2005 | 0.81 | M-v | 0 | MPC | 89809 | 2005 $SL_{48}$ |
| 2005 $SR_{48}$ | 15.9 | 0.15 | 20060922 | 122.86899 | 97.68589 | 233.05378 | 2.39640 | 0.1126597 | 2.6697676 | 84 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 97814 | 2005 $SR_{48}$ |
| 2005 $SC_{49}$ | 16.3 | 0.15 | 20060922 | 24.96387 | 244.32637 | 195.48466 | 4.73104 | 0.0359163 | 2.7226259 | 63 | 3 | 1998–2005 | 0.54 | M-v | 3 | MPC | 95785 | 2005 $SC_{49}$ |
| 2005 $SD_{51}$ | 16.0 | 0.15 | 20060922 | 53.98054 | 30.49817 | 2.80918 | 4.78923 | 0.1907561 | 3.1457957 | 70 | 3 | 1960–2005 | 0.66 | M-v | 3 | MPC | 03725 | 2005 $SD_{51}$ |
| 2005 $SJ_{51}$ | 16.9 | 0.15 | 20060922 | 144.35402 | 270.91604 | 37.15358 | 1.26467 | 0.1655100 | 2.5448063 | 56 | 3 | 2001–2005 | 0.51 | M-v | 2 | MPC | 95789 | 2005 $SJ_{51}$ |
| 2005 $SU_{51}$ | 18.0 | 0.15 | 20060922 | 139.49572 | 306.85151 | 29.74903 | 3.36740 | 0.1757601 | 2.2108739 | 75 | 3 | 2001–2005 | 0.54 | M-v | 3 | MPC | 97815 | 2005 $SU_{51}$ |
| 2005 $SQ_{52}$ | 15.8 | 0.15 | 20060922 | 83.92513 | 282.67727 | 58.49472 | 1.80276 | 0.1934890 | 3.1123110 | 84 | 5 | 2000–2006 | 0.42 | M-v | 1 | MPC | 97815 | 2005 $SQ_{52}$ |
| 2005 $SB_{53}$ | 16.5 | 0.15 | 20060922 | 109.62331 | 347.20069 | 330.54495 | 4.87660 | 0.1365804 | 3.1028665 | 31 | 2 | 1999–2005 | 0.36 | M-v | 3 | MPC | 03725 | 2005 $SB_{53}$ |
| 2005 $SG_{54}$ | 16.6 | 0.15 | 20060922 | 140.99482 | 293.55791 | 20.55955 | 2.60660 | 0.0998056 | 2.5514071 | 40 | 4 | 1960–2005 | 0.50 | M-v | 1 | MPC | 89810 | 2005 $SG_{54}$ |
| 2005 $SZ_{54}$ | 16.7 | 0.15 | 20060922 | 339.46992 | 109.44765 | 24.06735 | 4.65601 | 0.0555361 | 2.5427650 | 30 | 3 | 2001–2006 | 0.25 | M-v | 3 | MPC | 90262 | 2005 $SZ_{54}$ |
| 2005 $SJ_{55}$ | 14.9 | 0.15 | 20060922 | 211.41712 | 193.53217 | 35.43233 | 5.06305 | 0.0656131 | 3.2128434 | 76 | 5 | 2002–2006 | 0.46 | M-v | 0 | MPC | 95794 | 2005 $SJ_{55}$ |
| 2005 $SY_{56}$ | 14.5 | 0.15 | 20060922 | 68.71621 | 78.33420 | 285.65299 | 20.42895 | 0.0535232 | 3.1158099 | 46 | 4 | 1999–2005 | 0.62 | M-v | 1 | MPC | 97815 | 2005 $SY_{56}$ |
| 2005 $SA_{58}$ | 16.5 | 0.15 | 20060922 | 99.75994 | 330.59570 | 5.17038 | 2.38018 | 0.1977998 | 2.7487388 | 67 | 4 | 2000–2005 | 0.44 | M-v | 1 | MPC | 97816 | 2005 $SA_{58}$ |
| 2005 $SH_{59}$ | 16.8 | 0.15 | 20060922 | 100.59207 | 168.37899 | 187.98286 | 0.60631 | 0.0659610 | 2.6494370 | 32 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 89811 | 2005 $SH_{59}$ |
| 2005 $SO_{59}$ | 15.9 | 0.15 | 20060922 | 83.12005 | 340.81882 | 27.82765 | 2.28935 | 0.0088574 | 2.8581960 | 32 | 5 | 2000–2006 | 0.32 | M-v | 1 | MPC | 95797 | 2005 $SO_{59}$ |
| 2005 $SA_{60}$ | 16.8 | 0.15 | 20060922 | 178.60002 | 252.61696 | 21.34364 | 7.81019 | 0.2139201 | 2.3209511 | 32 | 3 | 1998–2005 | 0.44 | M-v | 2 | MPC | 89812 | 2005 $SA_{60}$ |
| 2005 $SF_{61}$ | 16.9 | 0.15 | 20060922 | 121.88550 | 149.54016 | 185.30080 | 2.24591 | 0.0605760 | 2.6066025 | 36 | 6 | 1995–2006 | 0.35 | M-v | 1 | MPC | 95799 | 2005 $SF_{61}$ |
| 2005 $SL_{61}$ | 14.7 | 0.15 | 20060922 | 98.01895 | 277.52085 | 28.70081 | 3.15026 | 0.1963096 | 3.9517260 | 44 | 4 | 2003–2006 | 0.36 | M-v | 1 | MPC | 95800 | 2005 $SL_{61}$ |
| 2005 $SG_{62}$ | 16.2 | 0.15 | 20060922 | 53.41714 | 342.85726 | 49.73941 | 0.77194 | 0.0505504 | 3.0232608 | 23 | 2 | 2002–2005 | 0.50 | M-v | 5 | MPC | 89813 | 2005 $SG_{62}$ |
| 2005 $SR_{62}$ | 16.8 | 0.15 | 20060922 | 12.17299 | 274.07534 | 169.02358 | 1.69893 | 0.0842735 | 2.9597001 | 25 | 3 | 2002–2005 | 0.33 | M-v | 4 | MPC | 03725 | 2005 $SR_{62}$ |
| 2005 $SH_{64}$ | 17.7 | 0.15 | 20060922 | 325.16024 | 135.03782 | 25.75370 | 2.09264 | 0.1690596 | 2.3448701 | 26 | 3 | 2000–2005 | 0.29 | M-v | 3 | MPC | 97816 | 2005 $SH_{64}$ |
| 2005 $SO_{64}$ | 16.6 | 0.15 | 20060922 | 108.47320 | 139.97107 | 191.36833 | 1.57259 | 0.0899691 | 2.9235755 | 24 | 4 | 1995–2005 | 0.30 | M-v | 3 | MPC | 89813 | 2005 $SO_{64}$ |
| 2005 $SP_{64}$ | 16.9 | 0.15 | 20060922 | 90.53049 | 340.16905 | 19.97599 | 2.64302 | 0.1088618 | 2.7289496 | 26 | 3 | 1996–2005 | 0.35 | M-v | 4 | MPC | 90264 | 2005 $SP_{64}$ |
| 2005 $SS_{66}$ | 18.3 | 0.15 | 20060922 | 141.88851 | 130.14198 | 205.71759 | 0.22904 | 0.1082437 | 2.1122440 | 49 | 4 | 1999–2005 | 0.27 | M-v | 2 | MPC | 97817 | 2005 $SS_{66}$ |
| 2005 $SF_{67}$ | 15.2 | 0.15 | 20060922 | 132.02669 | 266.81654 | 16.22534 | 6.71819 | 0.1725220 | 3.1442125 | 77 | 6 | 1994–2006 | 0.55 | M-v | 0 | MPC | 04345 | 2005 $SF_{67}$ |
| 2005 $SD_{68}$ | 16.2 | 0.15 | 20060922 | 6.02643 | 148.43486 | 309.14736 | 2.55992 | 0.0711819 | 2.6241498 | 85 | 5 | 1994–2006 | 0.49 | M-v | 1 | MPC | 04345 | 2005 $SD_{68}$ |
| 2005 $SE_{69}$ | 16.5 | 0.15 | 20060922 | 167.56064 | 21.90086 | 259.15192 | 2.15336 | 0.0726126 | 2.5588730 | 54 | 3 | 2001–2005 | 0.48 | M-v | 3 | MPC | 90266 | 2005 $SE_{69}$ |
| 2005 $SR_{69}$ | 14.6 | 0.15 | 20060922 | 26.26384 | 350.52720 | 81.00235 | 18.57240 | 0.2168025 | 3.1378268 | 56 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 95807 | 2005 $SR_{69}$ |
| 2005 $SZ_{69}$ | 17.5 | 0.15 | 20060922 | 65.49903 | 343.27819 | 85.15626 | 3.14223 | 0.1714629 | 2.2870855 | 63 | 4 | 1993–2005 | 0.52 | M-v | 1 | MPC | 04345 | 2005 $SZ_{69}$ |
| 2005 $SJ_{70}$ | 16.2 | 0.15 | 20060922 | 48.78254 | 73.06918 | 308.18754 | 0.69971 | 0.1208849 | 3.0172753 | 49 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 95808 | 2005 $SJ_{70}$ |
| 2005 $SX_{70}$ | 16.8 | 0.15 | 20060922 | 22.92052 | 336.10004 | 94.93476 | 4.66183 | 0.0680784 | 2.6204615 | 36 | 5 | 1996–2006 | 0.51 | M-v | 0 | MPC | 03726 | 2005 $SX_{70}$ |
| 2005 $SE_{71}$ | 18.1 | 0.15 | 20060922 | 261.11890 | 78.20323 | 39.18276 | 24.83267 | 0.1945484 | 1.0692076 | 132 | 2 | 2005–2006 | 0.39 | M-v | 2 | MPC | 04345 | 2005 $SE_{71}$ |
| 2005 $SE_{72}$ | 15.2 | 0.15 | 20060922 | 122.04718 | 131.93862 | 172.29529 | 11.30129 | 0.1178636 | 2.9771236 | 46 | 3 | 2003–2005 | 0.62 | M-v | 3 | MPC | 97818 | 2005 $SE_{72}$ |
| 2005 $SH_{72}$ | 15.7 | 0.15 | 20060922 | 41.89032 | 290.91559 | 110.14868 | 2.22735 | 0.1843353 | 3.1381876 | 89 | 6 | 1994–2006 | 0.42 | M-v | 0 | MPC | 95810 | 2005 $SH_{72}$ |
| 2005 $SK_{72}$ | 17.2 | 0.15 | 20060922 | 156.75471 | 257.07187 | 49.22579 | 4.21511 | 0.1113481 | 2.2427931 | 52 | 4 | 2001–2005 | 0.58 | M-v | 1 | MPC | 95810 | 2005 $SK_{72}$ |
| 2005 $SR_{72}$ | 15.8 | 0.15 | 20060922 | 98.84961 | 137.01278 | 183.56781 | 5.85287 | 0.1014542 | 3.1395016 | 49 | 4 | 1994–2005 | 0.45 | M-v | 1 | MPC | 04345 | 2005 $SR_{72}$ |
| 2005 $SJ_{73}$ | 17.3 | 0.15 | 20060922 | 98.14892 | 251.54913 | 122.04377 | 2.09805 | 0.2041099 | 2.4306960 | 86 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 89816 | 2005 $SJ_{73}$ |
| 2005 $SL_{73}$ | 14.7 | 0.15 | 20060922 | 47.31382 | 2.12538 | 41.70258 | 9.71573 | 0.1023012 | 3.1995647 | 125 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 95811 | 2005 $SL_{73}$ |
| 2005 $SN_{73}$ | 14.8 | 0.15 | 20060922 | 43.61933 | 244.27643 | 167.80249 | 5.30096 | 0.1251636 | 3.1964189 | 66 | 6 | 1999–2006 | 0.46 | M-v | 1 | MPC | 95812 | 2005 $SN_{73}$ |
| 2005 $SU_{73}$ | 15.6 | 0.15 | 20060922 | 108.67280 | 27.83875 | 331.83729 | 12.09473 | 0.1808488 | 2.3253036 | 164 | 4 | 1998–2006 | 0.48 | M-v | 2 | MPC | 95813 | 2005 $SU_{73}$ |
| 2005 $SX_{73}$ | 14.8 | 0.15 | 20060922 | 58.14835 | 96.90867 | 286.26824 | 8.62001 | 0.1100193 | 3.1110378 | 54 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 97818 | 2005 $SX_{73}$ |
| 2005 $SC_{75}$ | 15.6 | 0.15 | 20060922 | 148.45195 | 270.39431 | 0.54502 | 5.35383 | 0.0673449 | 3.2572761 | 42 | 5 | 1999–2006 | 0.52 | M-v | 0 | MPC | 95814 | 2005 $SC_{75}$ |
| 2005 $SJ_{75}$ | 16.5 | 0.15 | 20060922 | 340.34682 | 106.51065 | 0.82271 | 0.59814 | 0.1556205 | 3.1636941 | 24 | 3 | 2002–2006 | 0.36 | M-v | 4 | MPC | 03727 | 2005 $SJ_{75}$ |
| 2005 $SW_{75}$ | 17.8 | 0.15 | 20060922 | 158.23788 | 114.87881 | 176.26516 | 0.83495 | 0.1169756 | 2.4008921 | 41 | 5 | 1994–2005 | 0.26 | M-v | 0 | MPC | 04345 | 2005 $SW_{75}$ |
| 2005 $SB_{76}$ | 16.6 | 0.15 | 20060922 | 32.85605 | 232.58817 | 182.63108 | 0.42995 | 0.1530136 | 2.9872789 | 53 | 4 | 2000–2006 | 0.42 | M-v | 1 | MPC | 97819 | 2005 $SB_{76}$ |
| 2005 $SJ_{77}$ | 16.3 | 0.15 | 20060922 | 10.80058 | 289.38380 | 149.79582 | 1.80916 | 0.1857717 | 3.2010562 | 52 | 5 | 2000–2006 | 0.32 | M-v | 0 | MPC | 97819 | 2005 $SJ_{77}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $SN_{77}$ | 16.0 | 0.15 | 20060922 | 358.21682 | 292.99407 | 154.72593 | 2.49992 | 0.0321053 | 2.8679578 | 44 | 4 | 1995–2005 | 0.39 | M-v | 2 | MPC | 90268 | 2005 $SN_{77}$ |
| 2005 $SU_{77}$ | 16.4 | 0.15 | 20060922 | 174.85771 | 232.75787 | 33.96271 | 2.41024 | 0.0140502 | 2.8611749 | 38 | 5 | 2000–2006 | 0.53 | M-v | 0 | MPC | 89817 | 2005 $SU_{77}$ |
| 2005 $SA_{78}$ | 16.4 | 0.15 | 20060922 | 325.08633 | 318.34932 | 162.46991 | 2.27173 | 0.0224961 | 2.8574547 | 39 | 3 | 1995–2005 | 0.40 | M-v | 3 | MPC | 89817 | 2005 $SA_{78}$ |
| 2005 $SG_{78}$ | 17.2 | 0.15 | 20060922 | 143.80058 | 259.61651 | 39.41290 | 2.45946 | 0.0503526 | 2.6832925 | 24 | 4 | 1994–2005 | 0.26 | M-v | 0 | MPC | 04345 | 2005 $SG_{78}$ |
| 2005 $SM_{78}$ | 16.4 | 0.15 | 20060922 | 321.66365 | 345.47877 | 134.45392 | 2.81255 | 0.0236684 | 2.9118725 | 35 | 4 | 1998–2005 | 0.40 | M-v | 2 | MPC | 97819 | 2005 $SM_{78}$ |
| 2005 $SN_{79}$ | 16.9 | 0.15 | 20060922 | 340.71920 | 285.71438 | 183.03903 | 19.57179 | 0.0829619 | 2.8605004 | 28 | 3 | 2000–2005 | 0.27 | M-v | 1 | MPC | 03727 | 2005 $SN_{79}$ |
| 2005 $SZ_{79}$ | 16.8 | 0.15 | 20060922 | 349.94060 | 339.60655 | 125.22537 | 1.17652 | 0.0090412 | 2.5523436 | 38 | 4 | 2001–2006 | 0.28 | M-v | 2 | MPC | 03727 | 2005 $SZ_{79}$ |
| 2005 $SK_{80}$ | 16.9 | 0.15 | 20060922 | 7.27890 | 89.04627 | 25.71145 | 4.96231 | 0.2426777 | 2.5391306 | 25 | 4 | 1997–2005 | 0.30 | M-v | 2 | MPC | 90269 | 2005 $SK_{80}$ |
| 2005 $SD_{82}$ | 17.1 | 0.15 | 20060922 | 184.79575 | 37.11320 | 221.90302 | 2.00010 | 0.1043000 | 2.5827898 | 36 | 3 | 2001–2005 | 0.38 | M-v | 4 | MPC | 90270 | 2005 $SD_{82}$ |
| 2005 $SE_{82}$ | 17.5 | 0.15 | 20060922 | 67.32491 | 52.12923 | 322.77069 | 0.97264 | 0.0904036 | 2.9091422 | 28 | 3 | 2000–2005 | 0.21 | M-v | 4 | MPC | 95820 | 2005 $SE_{82}$ |
| 2005 $SF_{82}$ | 15.6 | 0.15 | 20060922 | 167.00255 | 53.82583 | 219.62244 | 1.20828 | 0.0227535 | 2.8703966 | 45 | 3 | 2000–2005 | 0.32 | M-v | 2 | MPC | 97819 | 2005 $SF_{82}$ |
| 2005 $SL_{82}$ | 16.0 | 0.15 | 20060922 | 82.42457 | 29.17731 | 331.70409 | 1.40503 | 0.0399666 | 2.8481090 | 57 | 6 | 1995–2006 | 0.42 | M-v | 1 | MPC | 97820 | 2005 $SL_{82}$ |
| 2005 $SV_{82}$ | 16.6 | 0.15 | 20060922 | 354.86568 | 127.50826 | 324.97663 | 1.28723 | 0.0417967 | 2.9028074 | 35 | 3 | 2002–2005 | 0.36 | M-v | 3 | MPC | 89818 | 2005 $SV_{82}$ |
| 2005 $SF_{84}$ | 14.5 | 0.15 | 20060922 | 166.93002 | 62.86116 | 193.57702 | 10.10213 | 0.0459371 | 3.4646744 | 55 | 5 | 2002–2006 | 0.51 | M-v | 1 | MPC | 97820 | 2005 $SF_{84}$ |
| 2005 $SW_{84}$ | 15.6 | 0.15 | 20060922 | 165.53624 | 225.03194 | 34.52841 | 1.06721 | 0.1295288 | 3.0669008 | 30 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 95821 | 2005 $SW_{84}$ |
| 2005 $SL_{85}$ | 15.9 | 0.15 | 20060922 | 233.59884 | 19.31628 | 189.92134 | 9.62516 | 0.0074243 | 2.9694924 | 29 | 3 | 1995–2005 | 0.27 | M-v | 3 | MPC | 95822 | 2005 $SL_{85}$ |
| 2005 $SM_{85}$ | 16.4 | 0.15 | 20060922 | 129.09956 | 110.01805 | 190.29057 | 9.30674 | 0.0846959 | 3.1103406 | 31 | 2 | 2003–2005 | 0.36 | M-v | 3 | MPC | 89819 | 2005 $SM_{85}$ |
| 2005 $SS_{85}$ | 16.2 | 0.15 | 20060922 | 226.64472 | 194.15471 | 27.49982 | 4.02552 | 0.0349987 | 2.7805405 | 41 | 5 | 1996–2006 | 0.44 | M-v | 1 | MPC | 90271 | 2005 $SS_{85}$ |
| 2005 $SD_{86}$ | 17.9 | 0.15 | 20060922 | 161.57568 | 261.68706 | 26.92613 | 6.05798 | 0.1410105 | 2.4221424 | 24 | 2 | 2004–2005 | 0.34 | M-v | 3 | MPC | 89819 | 2005 $SD_{86}$ |
| 2005 $SN_{86}$ | 16.8 | 0.15 | 20060922 | 60.00449 | 243.63884 | 145.30949 | 2.70250 | 0.0775995 | 2.8553200 | 31 | 3 | 2000–2005 | 0.37 | M-v | 3 | MPC | 90271 | 2005 $SN_{86}$ |
| 2005 $SO_{86}$ | 17.5 | 0.15 | 20060922 | 153.51927 | 131.07740 | 163.36465 | 2.95350 | 0.1690956 | 2.4252563 | 31 | 4 | 2000–2005 | 0.53 | M-v | 1 | MPC | 90271 | 2005 $SO_{86}$ |
| 2005 $SW_{86}$ | 17.0 | 0.15 | 20060922 | 41.03543 | 4.92598 | 41.33067 | 2.42564 | 0.0907309 | 2.9477745 | 31 | 3 | 1995–2005 | 0.31 | M-v | 4 | MPC | 87211 | 2005 $SW_{86}$ |
| 2005 $SF_{87}$ | 16.1 | 0.15 | 20060922 | 59.87394 | 228.07848 | 159.31709 | 2.27931 | 0.0738966 | 2.8704571 | 64 | 6 | 1995–2006 | 0.48 | M-v | 1 | MPC | 95823 | 2005 $SF_{87}$ |
| 2005 $SA_{88}$ | 16.6 | 0.15 | 20060922 | 264.06359 | 170.22153 | 22.31710 | 4.92015 | 0.0635093 | 2.5822523 | 33 | 3 | 2001–2005 | 0.39 | M-v | 3 | MPC | 95824 | 2005 $SA_{88}$ |
| 2005 $SO_{89}$ | 16.1 | 0.15 | 20060922 | 104.36134 | 123.73927 | 227.37753 | 1.19931 | 0.1029761 | 2.6989844 | 108 | 5 | 1999–2006 | 0.53 | M-v | 2 | MPC | 97821 | 2005 $SO_{89}$ |
| 2005 $SS_{89}$ | 16.7 | 0.15 | 20060922 | 311.85783 | 141.85342 | 356.00572 | 3.07060 | 0.0302633 | 3.1949801 | 22 | 3 | 2002–2006 | 0.35 | M-v | 4 | MPC | 03728 | 2005 $SS_{89}$ |
| 2005 $SV_{89}$ | 17.3 | 0.15 | 20060922 | 184.08044 | 267.66329 | 12.86838 | 3.13647 | 0.1934186 | 2.2250755 | 35 | 4 | 1994–2005 | 0.33 | M-v | 1 | MPC | 04345 | 2005 $SV_{89}$ |
| 2005 $SS_{90}$ | 16.3 | 0.15 | 20060922 | 167.65890 | 225.52185 | 49.25949 | 2.11245 | 0.1705057 | 2.7428130 | 57 | 6 | 1996–2006 | 0.38 | M-v | 1 | MPC | 95828 | 2005 $SS_{90}$ |
| 2005 $SW_{90}$ | 16.5 | 0.15 | 20060922 | 330.48541 | 137.91972 | 16.04385 | 3.09018 | 0.1197034 | 2.4479708 | 56 | 5 | 1997–2006 | 0.45 | M-v | 2 | MPC | 95828 | 2005 $SW_{90}$ |
| 2005 $SM_{91}$ | 16.8 | 0.15 | 20060922 | 339.53806 | 261.79669 | 222.28527 | 1.12349 | 0.0240701 | 2.6769211 | 43 | 5 | 2000–2006 | 0.26 | M-v | 0 | MPC | 95829 | 2005 $SM_{91}$ |
| 2005 $SQ_{92}$ | 16.8 | 0.15 | 20060922 | 262.94814 | 331.61758 | 225.90443 | 2.38462 | 0.0740318 | 2.6991335 | 39 | 5 | 2000–2006 | 0.31 | M-v | 0 | MPC | 95830 | 2005 $SQ_{92}$ |
| 2005 $SX_{93}$ | 16.1 | 0.15 | 20060922 | 342.27608 | 111.44533 | 27.41047 | 14.20914 | 0.1006215 | 2.6190666 | 57 | 3 | 2001–2005 | 0.53 | M-v | 2 | MPC | 89821 | 2005 $SX_{93}$ |
| 2005 $SG_{95}$ | 16.5 | 0.15 | 20060922 | 53.65235 | 11.34511 | 26.36890 | 4.44160 | 0.0678468 | 2.7527980 | 43 | 6 | 1996–2005 | 0.44 | M-v | 1 | MPC | 97822 | 2005 $SG_{95}$ |
| 2005 $SY_{95}$ | 15.5 | 0.15 | 20060922 | 159.31202 | 244.98986 | 29.16264 | 5.18742 | 0.1279344 | 2.7766131 | 47 | 6 | 1991–2005 | 0.62 | M-v | 1 | MPC | 04346 | 2005 $SY_{95}$ |
| 2005 $SD_{96}$ | 16.9 | 0.15 | 20060922 | 113.99693 | 274.09718 | 54.27748 | 2.31404 | 0.1744032 | 2.6223685 | 71 | 3 | 2001–2005 | 0.54 | M-v | 2 | MPC | 97822 | 2005 $SD_{96}$ |
| 2005 $SX_{96}$ | 16.1 | 0.15 | 20060922 | 138.01675 | 302.54426 | 343.76979 | 1.29058 | 0.0545842 | 3.0742094 | 27 | 3 | 2003–2006 | 0.46 | M-v | 3 | MPC | 03729 | 2005 $SX_{96}$ |
| 2005 $SB_{97}$ | 16.3 | 0.15 | 20060922 | 102.03446 | 307.54325 | 25.21121 | 9.75660 | 0.0656566 | 2.9642578 | 49 | 4 | 1995–2005 | 0.32 | M-v | 2 | MPC | 97822 | 2005 $SB_{97}$ |
| 2005 $SF_{97}$ | 15.7 | 0.15 | 20060922 | 32.11028 | 116.51924 | 309.50470 | 13.68143 | 0.0870078 | 2.6667446 | 39 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 95834 | 2005 $SF_{97}$ |
| 2005 $SO_{97}$ | 17.1 | 0.15 | 20060922 | 107.99700 | 321.73708 | 35.72898 | 5.19585 | 0.1323148 | 2.3186721 | 70 | 3 | 1997–2005 | 0.47 | M-v | 3 | MPC | 97822 | 2005 $SO_{97}$ |
| 2005 $SW_{97}$ | 17.0 | 0.15 | 20060922 | 131.38994 | 67.48589 | 257.08280 | 5.57878 | 0.1412093 | 2.4509635 | 35 | 2 | 2001–2005 | 0.55 | M-v | 4 | MPC | 03729 | 2005 $SW_{97}$ |
| 2005 $SF_{98}$ | 16.4 | 0.15 | 20060922 | 356.65921 | 161.18047 | 300.48936 | 5.28019 | 0.0316774 | 2.7649185 | 45 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 87213 | 2005 $SF_{98}$ |
| 2005 $SL_{98}$ | 16.8 | 0.15 | 20060922 | 181.60001 | 323.79780 | 314.87859 | 4.93098 | 0.1359569 | 2.3351361 | 39 | 5 | 1994–2006 | 0.52 | M-v | 1 | MPC | 95835 | 2005 $SL_{98}$ |
| 2005 $SM_{98}$ | 16.5 | 0.15 | 20060922 | 66.74143 | 31.83012 | 339.85713 | 7.57551 | 0.1641024 | 3.1856325 | 40 | 3 | 1999–2005 | 0.49 | M-v | 3 | MPC | 95835 | 2005 $SM_{98}$ |
| 2005 $SN_{98}$ | 16.9 | 0.15 | 20060922 | 253.33002 | 279.10623 | 300.88311 | 5.32822 | 0.1457142 | 2.2841899 | 37 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 97822 | 2005 $SN_{98}$ |
| 2005 $SK_{99}$ | 15.9 | 0.15 | 20060922 | 116.10994 | 26.91548 | 305.40222 | 4.22086 | 0.1186682 | 2.7170776 | 64 | 4 | 1998–2006 | 0.60 | M-v | 2 | MPC | 89822 | 2005 $SK_{99}$ |
| 2005 $SM_{100}$ | 17.0 | 0.15 | 20060922 | 172.10848 | 30.60769 | 262.51294 | 2.59457 | 0.1080366 | 2.3451265 | 31 | 3 | 2001–2005 | 0.49 | M-v | 2 | MPC | 95837 | 2005 $SM_{100}$ |
| 2005 $SK_{101}$ | 16.4 | 0.15 | 20060922 | 22.70981 | 125.00930 | 322.28495 | 3.12851 | 0.0763304 | 2.6296364 | 55 | 5 | 1992–2006 | 0.56 | M-v | 0 | MPC | 00985 | 2005 $SK_{101}$ |
| 2005 $SL_{101}$ | 16.4 | 0.15 | 20060922 | 129.19811 | 340.56548 | 345.42689 | 6.10956 | 0.1186732 | 2.5547828 | 47 | 3 | 1995–2005 | 0.51 | M-v | 3 | MPC | 97823 | 2005 $SL_{101}$ |
| 2005 $SA_{102}$ | 16.2 | 0.15 | 20060922 | 22.93397 | 118.53423 | 343.24909 | 6.48639 | 0.0607440 | 2.3145465 | 81 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 97823 | 2005 $SA_{102}$ |
| 2005 $SN_{102}$ | 16.1 | 0.15 | 20060922 | 213.59832 | 322.67796 | 276.89463 | 4.24797 | 0.0299808 | 2.7362141 | 39 | 4 | 2000–2005 | 0.45 | M-v | 1 | MPC | 87214 | 2005 $SN_{102}$ |
| 2005 $SO_{102}$ | 15.4 | 0.15 | 20060922 | 348.80417 | 222.57681 | 235.78369 | 7.73865 | 0.0576496 | 3.1709550 | 28 | 3 | 2002–2005 | 0.36 | M-v | 3 | MPC | 90275 | 2005 $SO_{102}$ |
| 2005 $SG_{103}$ | 15.9 | 0.15 | 20060922 | 109.04113 | 124.29926 | 213.17946 | 3.05030 | 0.1052495 | 2.7748293 | 54 | 4 | 1996–2006 | 0.45 | M-v | 1 | MPC | 97823 | 2005 $SG_{103}$ |
| 2005 $SM_{103}$ | 15.9 | 0.15 | 20060922 | 65.66154 | 173.40305 | 207.42559 | 1.00019 | 0.1373455 | 3.0795107 | 95 | 8 | 1994–2006 | 0.50 | M-v | 0 | MPC | 04346 | 2005 $SM_{103}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $ST_{103}$ | 16.7 | 0.15 | 20060922 | 121.47648 | 51.59281 | 284.60537 | 3.14802 | 0.1830754 | 2.5232633 | 55 | 3 | 1993–2005 | 0.62 | M-v | 4 | MPC | 04346 | 2005 $ST_{103}$ |
| 2005 $SX_{103}$ | 15.4 | 0.15 | 20060922 | 62.09773 | 49.55413 | 2.06460 | 13.77698 | 0.2197598 | 2.7003945 | 127 | 3 | 1996–2006 | 0.48 | M-v | 1 | MPC | 97823 | 2005 $SX_{103}$ |
| 2005 $SL_{104}$ | 15.4 | 0.15 | 20060922 | 50.00624 | 200.66475 | 197.36330 | 11.32804 | 0.0807150 | 3.1703622 | 57 | 4 | 1999–2005 | 0.56 | M-v | 1 | MPC | 90276 | 2005 $SL_{104}$ |
| 2005 $SQ_{104}$ | 15.9 | 0.15 | 20060922 | 79.78641 | 288.97836 | 75.18721 | 2.72160 | 0.1780647 | 2.9748229 | 78 | 4 | 1995–2006 | 0.55 | M-v | 3 | MPC | 97823 | 2005 $SQ_{104}$ |
| 2005 $SU_{105}$ | 15.7 | 0.15 | 20060922 | 101.03886 | 213.51042 | 151.92615 | 4.17027 | 0.2006170 | 2.6676348 | 102 | 6 | 1994–2006 | 0.52 | M-v | 1 | MPC | 04346 | 2005 $SU_{105}$ |
| 2005 $SR_{106}$ | 15.8 | 0.15 | 20060922 | 38.31915 | 40.49330 | 3.79273 | 1.95218 | 0.0853850 | 2.9978949 | 57 | 5 | 1992–2006 | 0.52 | M-v | 1 | MPC | 95844 | 2005 $SR_{106}$ |
| 2005 $SW_{106}$ | 15.5 | 0.15 | 20060922 | 358.21674 | 203.31109 | 250.50233 | 12.01125 | 0.1352737 | 2.6021829 | 46 | 4 | 2001–2006 | 0.56 | M-v | 1 | MPC | 95844 | 2005 $SW_{106}$ |
| 2005 $SP_{107}$ | 14.7 | 0.15 | 20060922 | 223.47135 | 271.00189 | 296.37141 | 11.12502 | 0.2157048 | 2.5739418 | 56 | 6 | 1998–2006 | 0.55 | M-v | 1 | MPC | 03730 | 2005 $SP_{107}$ |
| 2005 $SA_{108}$ | 15.1 | 0.15 | 20060922 | 137.83103 | 57.15090 | 215.81285 | 3.23602 | 0.1008173 | 4.0041141 | 29 | 4 | 2002–2006 | 0.29 | M-v | 1 | MPC | 97824 | 2005 $SA_{108}$ |
| 2005 $SD_{109}$ | 17.5 | 0.15 | 20060922 | 157.13555 | 75.52771 | 219.99440 | 0.67970 | 0.1840137 | 2.3689420 | 39 | 4 | 1998–2005 | 0.39 | M-v | 0 | MPC | 97824 | 2005 $SD_{109}$ |
| 2005 $SL_{109}$ | 16.1 | 0.15 | 20060922 | 227.82037 | 215.09533 | 5.01464 | 1.64137 | 0.0168015 | 2.9402086 | 47 | 5 | 1995–2006 | 0.43 | M-v | 1 | MPC | 95846 | 2005 $SL_{109}$ |
| 2005 $SC_{110}$ | 14.7 | 0.15 | 20060922 | 149.11410 | 242.62874 | 17.31974 | 7.94932 | 0.1637446 | 3.9778350 | 34 | 4 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04346 | 2005 $SC_{110}$ |
| 2005 $SL_{110}$ | 17.0 | 0.15 | 20060922 | 19.93884 | 56.47586 | 14.62586 | 2.52098 | 0.0517702 | 2.9504627 | 29 | 5 | 1995–2006 | 0.35 | M-v | 1 | MPC | 95846 | 2005 $SL_{110}$ |
| 2005 $SZ_{112}$ | 15.8 | 0.15 | 20060922 | 51.29481 | 75.04062 | 321.22335 | 8.18343 | 0.1848575 | 3.0234098 | 47 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 95850 | 2005 $SZ_{112}$ |
| 2005 $SH_{113}$ | 17.4 | 0.15 | 20060922 | 0.92958 | 280.10211 | 186.75850 | 4.11151 | 0.1391152 | 2.2948958 | 30 | 4 | 1995–2005 | 0.56 | M-v | 1 | MPC | 95850 | 2005 $SH_{113}$ |
| 2005 $SA_{114}$ | 16.0 | 0.15 | 20060922 | 253.73341 | 182.26190 | 356.11688 | 2.23487 | 0.0378429 | 3.1780633 | 52 | 6 | 1997–2006 | 0.44 | M-v | 0 | MPC | 89828 | 2005 $SA_{114}$ |
| 2005 $SC_{114}$ | 17.2 | 0.15 | 20060922 | 167.52084 | 89.58079 | 193.85047 | 5.79971 | 0.1524240 | 2.3220902 | 39 | 2 | 2004–2005 | 0.30 | M-v | 3 | MPC | 90279 | 2005 $SC_{114}$ |
| 2005 $SB_{115}$ | 18.1 | 0.15 | 20060922 | 23.79298 | 263.01432 | 209.41690 | 3.54697 | 0.1850871 | 2.3115826 | 35 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 89829 | 2005 $SB_{115}$ |
| 2005 $SL_{115}$ | 18.2 | 0.15 | 20051017 | 347.68403 | 196.67617 | 198.68833 | 3.75332 | 0.1348414 | 2.3565138 | 19 | 1 | 43 days | 0.20 | | | MPC | | 2005 $SL_{115}$ |
| 2005 $SR_{115}$ | 17.8 | 0.15 | 20060922 | 154.87722 | 319.08082 | 335.80221 | 0.81270 | 0.1881470 | 2.3675281 | 45 | 5 | 1994–2005 | 0.28 | M-v | 0 | MPC | 89829 | 2005 $SR_{115}$ |
| 2005 $ST_{115}$ | 18.2 | 0.15 | 20060922 | 0.56721 | 129.43755 | 3.54207 | 3.70576 | 0.1526962 | 2.2658267 | 42 | 5 | 1993–2005 | 0.42 | M-v | 1 | MPC | 04346 | 2005 $ST_{115}$ |
| 2005 $SN_{116}$ | 15.3 | 0.15 | 20060922 | 353.34883 | 188.40723 | 267.78622 | 8.94503 | 0.1009060 | 3.1137338 | 59 | 5 | 1999–2006 | 0.57 | M-v | 1 | MPC | 97825 | 2005 $SN_{116}$ |
| 2005 $SS_{116}$ | 16.4 | 0.15 | 20060922 | 96.46733 | 198.47142 | 157.39952 | 6.41198 | 0.0613715 | 2.6838975 | 56 | 6 | 1994–2005 | 0.61 | M-v | 1 | MPC | 04347 | 2005 $SS_{116}$ |
| 2005 $SN_{117}$ | 15.7 | 0.15 | 20060922 | 95.72886 | 219.17974 | 128.60817 | 6.63227 | 0.0468507 | 2.6853205 | 28 | 4 | 2001–2005 | 0.49 | M-v | 1 | MPC | 03730 | 2005 $SN_{117}$ |
| 2005 $SS_{118}$ | 16.4 | 0.15 | 20060922 | 101.86236 | 173.18119 | 159.01247 | 15.91716 | 0.1452635 | 2.8542473 | 21 | 3 | 2003–2005 | 0.50 | M-v | 2 | MPC | 03730 | 2005 $SS_{118}$ |
| 2005 $SL_{119}$ | 15.7 | 0.15 | 20060922 | 126.80745 | 207.39227 | 105.20047 | 8.43460 | 0.2074467 | 2.6270010 | 45 | 4 | 2000–2005 | 0.60 | M-v | 1 | MPC | 95854 | 2005 $SL_{119}$ |
| 2005 $SU_{119}$ | 15.1 | 0.15 | 20060922 | 27.36775 | 153.91565 | 242.56353 | 17.30637 | 0.1894626 | 3.0621537 | 43 | 3 | 2000–2005 | 0.55 | M-v | 2 | MPC | 97825 | 2005 $SU_{119}$ |
| 2005 $SD_{120}$ | 16.5 | 0.15 | 20060922 | 340.36905 | 263.79471 | 228.35894 | 5.77664 | 0.0480176 | 2.3258907 | 32 | 3 | 2004–2006 | 0.41 | M-v | 3 | MPC | 95856 | 2005 $SD_{120}$ |
| 2005 $SR_{120}$ | 15.0 | 0.15 | 20060922 | 120.80723 | 317.68911 | 352.90670 | 12.56113 | 0.0267156 | 3.1574016 | 52 | 4 | 1960–2005 | 0.46 | M-v | 1 | MPC | 97825 | 2005 $SR_{120}$ |
| 2005 $SL_{121}$ | 16.3 | 0.15 | 20060922 | 74.28576 | 165.24801 | 202.53125 | 12.53981 | 0.1563171 | 2.8570547 | 66 | 5 | 1999–2006 | 0.35 | M-v | 1 | MPC | 95856 | 2005 $SL_{121}$ |
| 2005 $SJ_{123}$ | 16.3 | 0.15 | 20060922 | 111.80351 | 107.35903 | 215.01042 | 4.07123 | 0.1881772 | 2.7060536 | 88 | 5 | 1994–2005 | 0.48 | M-v | 1 | MPC | 04347 | 2005 $SJ_{123}$ |
| 2005 $SS_{123}$ | 16.6 | 0.15 | 20060922 | 81.97493 | 127.46242 | 224.31199 | 5.52363 | 0.1108744 | 2.9484870 | 40 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 95859 | 2005 $SS_{123}$ |
| 2005 $SX_{123}$ | 17.5 | 0.15 | 20060922 | 90.14027 | 284.24531 | 102.12567 | 2.26891 | 0.2309511 | 2.2999811 | 60 | 3 | 1998–2005 | 0.54 | M-v | 2 | MPC | 97826 | 2005 $SX_{123}$ |
| 2005 $SE_{124}$ | 14.6 | 0.15 | 20060922 | 92.13002 | 118.43000 | 181.37439 | 9.18957 | 0.2076133 | 3.9506950 | 69 | 5 | 1997–2006 | 0.43 | M-v | 0 | MPC | 97826 | 2005 $SE_{124}$ |
| 2005 $SJ_{124}$ | 16.3 | 0.15 | 20060922 | 106.93872 | 347.71577 | 334.76647 | 8.90863 | 0.1602242 | 2.7973905 | 38 | 3 | 2000–2005 | 0.57 | M-v | 2 | MPC | 02256 | 2005 $SJ_{124}$ |
| 2005 $SU_{124}$ | 16.9 | 0.15 | 20060922 | 138.29451 | 84.75054 | 241.85357 | 2.03755 | 0.0792316 | 2.3727813 | 53 | 7 | 1996–2006 | 0.46 | M-v | 0 | MPC | 95860 | 2005 $SU_{124}$ |
| 2005 $SC_{125}$ | 17.0 | 0.15 | 20060922 | 109.71871 | 264.52647 | 84.06318 | 2.41327 | 0.1962015 | 2.3954395 | 88 | 3 | 1994–2005 | 0.51 | M-v | 2 | MPC | 95860 | 2005 $SC_{125}$ |
| 2005 $SM_{125}$ | 16.7 | 0.15 | 20060922 | 313.48424 | 314.22387 | 185.27674 | 4.77545 | 0.0592641 | 2.7244130 | 38 | 5 | 1992–2005 | 0.47 | M-v | 1 | MPC | 04347 | 2005 $SM_{125}$ |
| 2005 $SY_{126}$ | 17.2 | 0.15 | 20060922 | 282.03543 | 168.48495 | 17.03977 | 2.14489 | 0.1465916 | 2.4338558 | 36 | 4 | 1992–2005 | 0.43 | M-v | 3 | MPC | 89834 | 2005 $SY_{126}$ |
| 2005 $SW_{127}$ | 16.1 | 0.15 | 20060922 | 123.19263 | 110.47624 | 184.26668 | 1.07693 | 0.1582558 | 3.2326252 | 45 | 6 | 1999–2006 | 0.34 | M-v | 0 | MPC | 95862 | 2005 $SW_{127}$ |
| 2005 $SM_{128}$ | 15.1 | 0.15 | 20060922 | 127.42520 | 83.80958 | 213.28040 | 14.40530 | 0.1589803 | 3.1499343 | 48 | 4 | 1977–2005 | 0.61 | M-v | 0 | MPC | 97826 | 2005 $SM_{128}$ |
| 2005 $SA_{129}$ | 16.9 | 0.15 | 20060922 | 32.54546 | 62.61283 | 35.21021 | 2.77721 | 0.1533946 | 2.4168756 | 43 | 3 | 2001–2005 | 0.51 | M-v | 2 | MPC | 95863 | 2005 $SA_{129}$ |
| 2005 $SG_{129}$ | 15.6 | 0.15 | 20060922 | 82.91661 | 144.41324 | 202.01981 | 10.48908 | 0.2171742 | 3.1858271 | 81 | 3 | 1999–2005 | 0.60 | M-v | 3 | MPC | 97827 | 2005 $SG_{129}$ |
| 2005 $SV_{129}$ | 15.7 | 0.15 | 20060922 | 60.49271 | 352.66686 | 37.12650 | 2.60385 | 0.1050389 | 3.0609638 | 54 | 5 | 2002–2006 | 0.49 | M-v | 1 | MPC | 95864 | 2005 $SV_{129}$ |
| 2005 $SX_{129}$ | 16.1 | 0.15 | 20060922 | 54.79896 | 68.62580 | 332.99159 | 3.29937 | 0.1056626 | 2.7678743 | 64 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 95864 | 2005 $SX_{129}$ |
| 2005 $SZ_{129}$ | 16.9 | 0.15 | 20060922 | 151.40649 | 316.94203 | 355.64078 | 4.91094 | 0.1715672 | 2.2169089 | 82 | 5 | 1994–2005 | 0.48 | M-v | 1 | MPC | 04347 | 2005 $SZ_{129}$ |
| 2005 $SH_{130}$ | 16.5 | 0.15 | 20060922 | 68.83773 | 10.43130 | 48.25024 | 2.91081 | 0.1714275 | 2.3662244 | 123 | 6 | 1992–2006 | 0.47 | M-v | 1 | MPC | 04347 | 2005 $SH_{130}$ |
| 2005 $SB_{131}$ | 17.5 | 0.15 | 20060922 | 91.67521 | 12.87069 | 21.13204 | 3.26162 | 0.2202049 | 2.3046182 | 118 | 4 | 1991–2005 | 0.59 | M-v | 3 | MPC | 97827 | 2005 $SB_{131}$ |
| 2005 $SF_{131}$ | 15.6 | 0.15 | 20060922 | 92.46384 | 42.12364 | 341.21013 | 11.76670 | 0.1926184 | 2.5861184 | 65 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 95866 | 2005 $SF_{131}$ |
| 2005 $SL_{131}$ | 16.6 | 0.15 | 20060922 | 28.18506 | 208.83954 | 223.61336 | 1.73868 | 0.0437203 | 2.7711673 | 39 | 5 | 1994–2005 | 0.49 | M-v | 1 | MPC | 04347 | 2005 $SL_{131}$ |
| 2005 $SW_{132}$ | 17.3 | 0.15 | 20060922 | 49.53166 | 233.02966 | 207.70370 | 8.92100 | 0.3035218 | 2.6839690 | 65 | 3 | 1996–2005 | 0.58 | M-v | 1 | MPC | 89838 | 2005 $SW_{132}$ |
| 2005 $SP_{133}$ | 16.7 | 0.15 | 20060922 | 267.86806 | 342.04385 | 216.26889 | 4.84299 | 0.0497089 | 2.7076548 | 51 | 8 | 1992–2005 | 0.34 | M-v | 0 | MPC | 04348 | 2005 $SP_{133}$ |
| 2005 $SE_{134}$ | 16.4 | 0.15 | 20060922 | 68.13374 | 205.02342 | 183.83832 | 1.42568 | 0.1012934 | 2.8981075 | 79 | 5 | 2000–2006 | 0.45 | M-v | 1 | MPC | 95868 | 2005 $SE_{134}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $SK_{134}$ | 17.0 | 0.15 | 20060922 | 239.89139 | 260.33487 | 359.60410 | 18.53707 | 0.0524686 | 1.9191469 | 54 | 2 | 2004–2005 | 0.53 | M-v | 3 | MPC | 04348 | 2005 $SK_{134}$ |
| 2005 $SW_{134}$ | 16.1 | 0.15 | 20060922 | 169.18792 | 77.85674 | 202.03653 | 3.95014 | 0.0462009 | 3.0045141 | 37 | 3 | 1998–2005 | 0.52 | M-v | 3 | MPC | 95869 | 2005 $SW_{134}$ |
| 2005 $SZ_{135}$ | 16.5 | 0.15 | 20060922 | 7.72287 | 295.00725 | 142.37513 | 2.26806 | 0.0936079 | 3.0161438 | 26 | 2 | 2002–2005 | 0.38 | M-v | 3 | MPC | 89840 | 2005 $SZ_{135}$ |
| 2005 $SZ_{138}$ | 15.8 | 0.15 | 20060922 | 149.78446 | 143.75874 | 145.44974 | 2.79870 | 0.0730996 | 2.7764016 | 56 | 5 | 1994–2005 | 0.37 | M-v | 0 | MPC | 04348 | 2005 $SZ_{138}$ |
| 2005 $SS_{139}$ | 17.1 | 0.15 | 20060922 | 286.86969 | 145.81787 | 36.53641 | 4.91162 | 0.0866524 | 2.3718704 | 22 | 3 | 1998–2005 | 0.35 | M-v | 2 | MPC | 95871 | 2005 $SS_{139}$ |
| 2005 $SZ_{139}$ | 17.3 | 0.15 | 20060922 | 106.42361 | 200.56791 | 116.49009 | 1.99040 | 0.1465547 | 3.1060016 | 26 | 3 | 1994–2005 | 0.31 | M-v | 4 | MPC | 90285 | 2005 $SZ_{139}$ |
| 2005 $SA_{140}$ | 16.5 | 0.15 | 20060922 | 312.70510 | 80.14062 | 71.47488 | 2.29335 | 0.1719024 | 2.7359899 | 54 | 5 | 2001–2006 | 0.44 | M-v | 0 | MPC | 02256 | 2005 $SA_{140}$ |
| 2005 $SJ_{140}$ | 16.4 | 0.15 | 20060922 | 140.23600 | 253.31219 | 47.76322 | 3.54624 | 0.0670122 | 2.7710532 | 56 | 4 | 1999–2006 | 0.33 | M-v | 0 | MPC | 95871 | 2005 $SJ_{140}$ |
| 2005 $SL_{140}$ | 17.3 | 0.15 | 20060922 | 164.10889 | 204.79103 | 80.51542 | 2.43448 | 0.1621371 | 2.3724796 | 47 | 5 | 1994–2005 | 0.41 | M-v | 0 | MPC | 04348 | 2005 $SL_{140}$ |
| 2005 $SO_{141}$ | 15.8 | 0.15 | 20060922 | 5.60682 | 71.14065 | 26.14777 | 11.31004 | 0.1983221 | 3.0081111 | 40 | 3 | 2000–2005 | 0.57 | M-v | 2 | MPC | 03732 | 2005 $SO_{141}$ |
| 2005 $SV_{141}$ | 17.7 | 0.15 | 20060922 | 26.90972 | 318.85572 | 142.67471 | 2.63456 | 0.1695149 | 2.3736513 | 41 | 3 | 1994–2005 | 0.52 | M-v | 2 | MPC | 97828 | 2005 $SV_{141}$ |
| 2005 $SZ_{141}$ | 17.1 | 0.15 | 20060922 | 157.32751 | 208.17768 | 71.06811 | 3.47088 | 0.1714269 | 2.6193237 | 23 | 2 | 2004–2005 | 0.41 | M-v | 3 | MPC | 03732 | 2005 $SZ_{141}$ |
| 2005 $SS_{142}$ | 15.4 | 0.15 | 20060922 | 93.99459 | 306.40402 | 28.87453 | 13.67991 | 0.1101562 | 3.0579584 | 52 | 3 | 2000–2005 | 0.44 | M-v | 2 | MPC | 97828 | 2005 $SS_{142}$ |
| 2005 $SX_{142}$ | 16.4 | 0.15 | 20060922 | 135.79423 | 169.44866 | 124.85425 | 4.58668 | 0.2289101 | 2.6003192 | 54 | 5 | 2000–2005 | 0.53 | M-v | 1 | MPC | 97828 | 2005 $SX_{142}$ |
| 2005 $SD_{144}$ | 17.2 | 0.15 | 20060922 | 31.14876 | 317.90326 | 132.82110 | 3.45927 | 0.0970216 | 2.3180735 | 38 | 4 | 2000–2006 | 0.36 | M-v | 1 | MPC | 95873 | 2005 $SD_{144}$ |
| 2005 $SP_{144}$ | 16.4 | 0.15 | 20060922 | 5.81268 | 312.77031 | 136.25978 | 2.93712 | 0.0529359 | 2.7177949 | 47 | 6 | 1992–2006 | 0.44 | M-v | 0 | MPC | 04348 | 2005 $SP_{144}$ |
| 2005 $SC_{145}$ | 17.2 | 0.15 | 20060922 | 99.77754 | 169.26996 | 163.52390 | 6.46197 | 0.0881227 | 2.9997262 | 19 | 3 | 1997–2005 | 0.45 | M-v | 4 | MPC | 89841 | 2005 $SC_{145}$ |
| 2005 $SE_{146}$ | 17.7 | 0.15 | 20060922 | 149.84310 | 285.54257 | 26.43830 | 5.47061 | 0.1576052 | 2.2099260 | 62 | 3 | 2002–2005 | 0.44 | M-v | 2 | MPC | 97829 | 2005 $SE_{146}$ |
| 2005 $SP_{147}$ | 16.3 | 0.15 | 20060922 | 156.98942 | 243.62695 | 43.09760 | 3.70307 | 0.1446679 | 2.7265477 | 49 | 5 | 1999–2006 | 0.34 | M-v | 0 | MPC | 97829 | 2005 $SP_{147}$ |
| 2005 $SC_{148}$ | 17.0 | 0.15 | 20060922 | 71.08610 | 304.60506 | 68.28398 | 1.84770 | 0.1917867 | 3.0947681 | 31 | 3 | 2000–2005 | 0.27 | M-v | 3 | MPC | 97829 | 2005 $SC_{148}$ |
| 2005 $SJ_{148}$ | 16.7 | 0.15 | 20060922 | 353.82156 | 93.35969 | 45.10084 | 5.44968 | 0.2001303 | 2.5311929 | 57 | 3 | 2001–2005 | 0.43 | M-v | 2 | MPC | 97829 | 2005 $SJ_{148}$ |
| 2005 $SB_{149}$ | 16.6 | 0.15 | 20060922 | 55.62862 | 272.12831 | 128.34164 | 2.18171 | 0.1431850 | 2.9523463 | 40 | 3 | 2000–2005 | 0.47 | M-v | 3 | MPC | 89842 | 2005 $SB_{149}$ |
| 2005 $SB_{151}$ | 16.8 | 0.15 | 20060922 | 86.00685 | 203.71728 | 168.81151 | 2.81607 | 0.1051843 | 2.6722569 | 43 | 4 | 1996–2005 | 0.48 | M-v | 1 | MPC | 97830 | 2005 $SB_{151}$ |
| 2005 $SN_{151}$ | 17.6 | 0.15 | 20060922 | 166.39558 | 148.64258 | 141.33389 | 1.96522 | 0.1688643 | 2.3684425 | 27 | 4 | 1998–2005 | 0.43 | M-v | 1 | MPC | 95879 | 2005 $SN_{151}$ |
| 2005 $SQ_{151}$ | 17.3 | 0.15 | 20060922 | 50.17607 | 265.15027 | 168.84661 | 3.31032 | 0.1227973 | 2.4044738 | 31 | 3 | 2001–2005 | 0.58 | M-v | 2 | MPC | 03732 | 2005 $SQ_{151}$ |
| 2005 $SR_{151}$ | 16.7 | 0.15 | 20060922 | 148.36382 | 195.21265 | 136.00867 | 2.12960 | 0.0093272 | 2.2916426 | 45 | 6 | 1991–2006 | 0.51 | M-v | 1 | MPC | 04348 | 2005 $SR_{151}$ |
| 2005 $SX_{152}$ | 15.8 | 0.15 | 20060922 | 196.81880 | 55.33983 | 200.26658 | 10.62580 | 0.0472379 | 2.9901846 | 34 | 3 | 2002–2005 | 0.28 | M-v | 3 | MPC | 97830 | 2005 $SX_{152}$ |
| 2005 $SB_{153}$ | 17.7 | 0.15 | 20060922 | 187.46683 | 146.84001 | 142.03872 | 2.22636 | 0.1448851 | 2.1874932 | 33 | 3 | 1992–2005 | 0.50 | M-v | 2 | MPC | 04348 | 2005 $SB_{153}$ |
| 2005 $SG_{155}$ | 15.3 | 0.15 | 20060922 | 100.10831 | 294.21645 | 41.72724 | 13.71168 | 0.2919982 | 2.4809644 | 85 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 95882 | 2005 $SG_{155}$ |
| 2005 $SY_{155}$ | 16.8 | 0.15 | 20060922 | 286.70778 | 222.79410 | 324.74148 | 1.76632 | 0.1405657 | 2.4029175 | 50 | 7 | 1992–2006 | 0.55 | M-v | 1 | MPC | 04348 | 2005 $SY_{155}$ |
| 2005 $SF_{157}$ | 17.4 | 0.15 | 20060922 | 51.01210 | 262.32299 | 177.69177 | 3.52332 | 0.1779444 | 2.3660833 | 48 | 3 | 1994–2005 | 0.45 | M-v | 2 | MPC | 04348 | 2005 $SF_{157}$ |
| 2005 $SB_{158}$ | 18.0 | 0.15 | 20060922 | 196.24610 | 86.35661 | 185.91151 | 5.19563 | 0.1302032 | 2.2233754 | 33 | 4 | 1995–2005 | 0.30 | M-v | 0 | MPC | 89844 | 2005 $SB_{158}$ |
| 2005 $SQ_{159}$ | 14.8 | 0.15 | 20060922 | 114.81960 | 43.53034 | 266.03641 | 9.64994 | 0.0632729 | 3.2371978 | 47 | 6 | 1999–2006 | 0.60 | M-v | 1 | MPC | 95886 | 2005 $SQ_{159}$ |
| 2005 $SS_{159}$ | 15.7 | 0.15 | 20060922 | 50.18060 | 100.08820 | 292.88364 | 9.07028 | 0.1259252 | 3.0158742 | 48 | 6 | 1994–2006 | 0.61 | M-v | 1 | MPC | 95886 | 2005 $SS_{159}$ |
| 2005 $SV_{159}$ | 14.8 | 0.15 | 20060922 | 105.57959 | 72.80107 | 243.55609 | 9.11144 | 0.1400883 | 3.2295288 | 52 | 3 | 1999–2005 | 0.60 | M-v | 3 | MPC | 89845 | 2005 $SV_{159}$ |
| 2005 $SD_{160}$ | 16.4 | 0.15 | 20060922 | 296.81719 | 274.29086 | 233.15782 | 3.23175 | 0.1162996 | 3.0532823 | 37 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 95886 | 2005 $SD_{160}$ |
| 2005 $SA_{162}$ | 16.3 | 0.15 | 20060922 | 323.48790 | 154.55695 | 338.43970 | 3.29742 | 0.0493010 | 2.7853893 | 38 | 4 | 2000–2006 | 0.38 | M-v | 1 | MPC | 89846 | 2005 $SA_{162}$ |
| 2005 $SL_{163}$ | 16.7 | 0.15 | 20060922 | 67.92379 | 309.43296 | 81.09303 | 2.25443 | 0.1062570 | 2.7059594 | 44 | 4 | 1998–2005 | 0.62 | M-v | 2 | MPC | 97831 | 2005 $SL_{163}$ |
| 2005 $SN_{163}$ | 15.2 | 0.15 | 20060922 | 57.38282 | 288.25303 | 97.41138 | 11.98633 | 0.1749575 | 3.0544433 | 47 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 00989 | 2005 $SN_{163}$ |
| 2005 $SA_{165}$ | 16.7 | 0.15 | 20060922 | 46.37965 | 223.89848 | 188.53452 | 7.29464 | 0.1085499 | 2.4334546 | 46 | 6 | 1994–2005 | 0.51 | M-v | 0 | MPC | 95892 | 2005 $SA_{165}$ |
| 2005 $SP_{165}$ | 15.0 | 0.15 | 20060922 | 64.08857 | 313.25159 | 22.13583 | 3.86708 | 0.1365848 | 4.0200470 | 32 | 3 | 2002–2006 | 0.37 | M-v | 3 | MPC | 95892 | 2005 $SP_{165}$ |
| 2005 $SQ_{165}$ | 15.2 | 0.15 | 20060922 | 41.80150 | 254.35920 | 143.24340 | 11.02605 | 0.1946232 | 3.1108396 | 39 | 2 | 2000–2005 | 0.48 | M-v | 3 | MPC | 03733 | 2005 $SQ_{165}$ |
| 2005 $SV_{165}$ | 17.0 | 0.15 | 20060922 | 86.15633 | 269.64393 | 103.15457 | 4.13144 | 0.0386974 | 2.4608975 | 37 | 3 | 1996–2005 | 0.38 | M-v | 3 | MPC | 03733 | 2005 $SV_{165}$ |
| 2005 $SC_{166}$ | 15.3 | 0.15 | 20060922 | 44.00103 | 304.46777 | 88.24930 | 5.89362 | 0.0966233 | 3.1732201 | 50 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 95893 | 2005 $SC_{166}$ |
| 2005 $SL_{166}$ | 15.5 | 0.15 | 20060922 | 69.14300 | 256.51902 | 126.85449 | 10.47503 | 0.1539136 | 2.7500724 | 57 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 95893 | 2005 $SL_{166}$ |
| 2005 $SO_{166}$ | 15.2 | 0.15 | 20060922 | 98.19582 | 258.64015 | 74.34668 | 10.55750 | 0.1326699 | 3.0293404 | 63 | 6 | 1993–2006 | 0.54 | M-v | 1 | MPC | 95894 | 2005 $SO_{166}$ |
| 2005 $SS_{166}$ | 14.9 | 0.15 | 20060922 | 64.86436 | 267.02064 | 107.73148 | 10.36061 | 0.1075197 | 3.0874123 | 62 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 95894 | 2005 $SS_{166}$ |
| 2005 $SU_{166}$ | 15.9 | 0.15 | 20060922 | 138.33793 | 206.47892 | 104.70591 | 8.96114 | 0.2309594 | 2.3500834 | 61 | 3 | 2004–2006 | 0.50 | M-v | 2 | MPC | 97832 | 2005 $SU_{166}$ |
| 2005 $SO_{168}$ | 16.9 | 0.15 | 20060922 | 259.86638 | 349.40235 | 212.14955 | 9.26725 | 0.1006820 | 2.3843477 | 26 | 4 | 1998–2005 | 0.41 | M-v | 1 | MPC | 89848 | 2005 $SO_{168}$ |
| 2005 $SC_{169}$ | 17.1 | 0.15 | 20060922 | 324.42513 | 241.33970 | 271.31003 | 3.77699 | 0.1347859 | 2.3668707 | 34 | 3 | 2001–2005 | 0.41 | M-v | 3 | MPC | 89849 | 2005 $SC_{169}$ |
| 2005 $SU_{169}$ | 15.8 | 0.15 | 20060922 | 222.36734 | 336.12852 | 244.55845 | 3.87561 | 0.0887659 | 2.7671849 | 41 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 97832 | 2005 $SU_{169}$ |
| 2005 $SX_{169}$ | 17.4 | 0.15 | 20060922 | 52.54354 | 62.60251 | 353.33487 | 7.82239 | 0.1364818 | 2.5396956 | 26 | 3 | 2001–2005 | 0.34 | M-v | 3 | MPC | 03733 | 2005 $SX_{169}$ |
| 2005 $ST_{170}$ | 14.9 | 0.15 | 20060922 | 55.76464 | 114.54013 | 243.40597 | 7.32081 | 0.0618976 | 3.2508309 | 54 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 95897 | 2005 $ST_{170}$ |

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| 2005 $SQ_{172}$ | 16.2 | 0.15 | 20060922 | 211.47741 | 244.46370 | 344.05499 | 8.98819 | 0.0143143 | 2.8686675 | 17 | 3 | 2000–2005 | 0.26 | M-v | 3 | MPC | 95898 | 2005 $SQ_{172}$ |
| 2005 $SF_{173}$ | 17.1 | 0.15 | 20060922 | 358.71160 | 202.31989 | 252.91987 | 3.26701 | 0.0788534 | 2.7704705 | 35 | 6 | 1991–2006 | 0.42 | M-v | 1 | MPC | 95898 | 2005 $SF_{173}$ |
| 2005 $SS_{174}$ | 16.4 | 0.15 | 20060922 | 109.46747 | 42.49545 | 294.56712 | 4.46793 | 0.0857343 | 2.6958938 | 43 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 95899 | 2005 $SS_{174}$ |
| 2005 $SX_{175}$ | 17.7 | 0.15 | 20060922 | 110.55810 | 117.27506 | 232.59800 | 5.37120 | 0.0943084 | 2.4739151 | 28 | 2 | 2004–2005 | 0.29 | M-v | 3 | MPC | 89850 | 2005 $SX_{175}$ |
| 2005 $SB_{176}$ | 16.6 | 0.15 | 20060922 | 297.09885 | 308.07329 | 221.17442 | 9.11363 | 0.0977298 | 2.5657412 | 25 | 5 | 1997–2006 | 0.45 | M-v | 2 | MPC | 00990 | 2005 $SB_{176}$ |
| 2005 $SO_{178}$ | 17.3 | 0.15 | 20060922 | 49.24132 | 112.38032 | 320.71502 | 4.79630 | 0.1818721 | 2.3965161 | 29 | 4 | 1999–2005 | 0.65 | M-v | 1 | MPC | 90294 | 2005 $SO_{178}$ |
| 2005 $SA_{179}$ | 16.1 | 0.15 | 20060922 | 100.46823 | 355.81013 | 341.78359 | 1.84550 | 0.0695324 | 2.8201677 | 51 | 4 | 1993–2006 | 0.37 | M-v | 1 | MPC | 95901 | 2005 $SA_{179}$ |
| 2005 $SQ_{180}$ | 15.5 | 0.15 | 20060922 | 176.48298 | 88.35273 | 159.34677 | 2.87688 | 0.0928381 | 2.8651887 | 60 | 7 | 1991–2006 | 0.48 | M-v | 0 | MPC | 95903 | 2005 $SQ_{180}$ |
| 2005 $ST_{180}$ | 14.9 | 0.15 | 20060922 | 140.94225 | 91.58956 | 181.35869 | 10.87798 | 0.0872494 | 3.1843394 | 50 | 2 | 2003–2005 | 0.51 | M-v | 3 | MPC | 95904 | 2005 $ST_{180}$ |
| 2005 $SV_{180}$ | 17.2 | 0.15 | 20060922 | 155.39143 | 140.94663 | 158.10095 | 2.86795 | 0.1818464 | 2.2539707 | 71 | 5 | 1995–2005 | 0.50 | M-v | 1 | MPC | 97833 | 2005 $SV_{180}$ |
| 2005 $SR_{181}$ | 16.7 | 0.15 | 20060922 | 116.02300 | 92.05140 | 249.49675 | 2.82105 | 0.0239451 | 2.6514992 | 35 | 4 | 2000–2005 | 0.51 | M-v | 1 | MPC | 97833 | 2005 $SR_{181}$ |
| 2005 $SU_{181}$ | 16.7 | 0.15 | 20060922 | 328.51038 | 254.18992 | 247.31627 | 3.43056 | 0.0832642 | 2.6120142 | 27 | 3 | 2001–2006 | 0.39 | M-v | 4 | MPC | 00991 | 2005 $SU_{181}$ |
| 2005 $SZ_{182}$ | 18.1 | 0.15 | 20060922 | 169.87996 | 349.93612 | 293.17794 | 1.29889 | 0.1777833 | 2.4103909 | 27 | 3 | 2001–2005 | 0.40 | M-v | 1 | MPC | 95905 | 2005 $SZ_{182}$ |
| 2005 $SB_{183}$ | 16.9 | 0.15 | 20060922 | 114.52088 | 351.00776 | 330.72011 | 2.25449 | 0.0773330 | 3.1759361 | 18 | 2 | 1999–2005 | 0.22 | M-v | 4 | MPC | 89851 | 2005 $SB_{183}$ |
| 2005 $SP_{183}$ | 17.0 | 0.15 | 20060922 | 203.28322 | 9.94503 | 245.03811 | 1.89870 | 0.1482562 | 2.3961471 | 34 | 5 | 1994–2005 | 0.61 | M-v | 1 | MPC | 04349 | 2005 $SP_{183}$ |
| 2005 $SL_{184}$ | 18.2 | 0.15 | 20060922 | 180.57192 | 22.78095 | 264.11783 | 1.49886 | 0.1917896 | 2.1314429 | 21 | 3 | 2002–2005 | 0.20 | M-v | 3 | MPC | 97834 | 2005 $SL_{184}$ |
| 2005 $SP_{184}$ | 15.5 | 0.15 | 20060922 | 214.94496 | 236.81296 | 345.29357 | 3.96502 | 0.1021684 | 3.0829856 | 33 | 4 | 1994–2005 | 0.54 | M-v | 1 | MPC | 04349 | 2005 $SP_{184}$ |
| 2005 $SS_{184}$ | 17.8 | 0.15 | 20060922 | 270.03981 | 215.81086 | 348.20007 | 4.10152 | 0.1147140 | 2.3203594 | 21 | 2 | 2000–2005 | 0.34 | M-v | 4 | MPC | 89852 | 2005 $SS_{184}$ |
| 2005 $ST_{184}$ | 17.8 | 0.15 | 20060922 | 137.51266 | 107.43411 | 210.69157 | 5.29421 | 0.1608546 | 2.3927745 | 27 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 04349 | 2005 $ST_{184}$ |
| 2005 $SP_{185}$ | 16.3 | 0.15 | 20060922 | 143.10461 | 147.53736 | 124.36613 | 0.91938 | 0.1460875 | 3.1786569 | 29 | 5 | 1997–2006 | 0.45 | M-v | 1 | MPC | 89852 | 2005 $SP_{185}$ |
| 2005 $SA_{187}$ | 17.4 | 0.15 | 20060922 | 327.47550 | 260.88784 | 247.27732 | 5.25145 | 0.0726740 | 2.3546498 | 30 | 3 | 1996–2005 | 0.23 | M-v | 3 | MPC | 97834 | 2005 $SA_{187}$ |
| 2005 $SO_{187}$ | 15.6 | 0.15 | 20060922 | 138.55310 | 213.91971 | 86.49487 | 4.07289 | 0.1254251 | 2.8927431 | 73 | 5 | 1999–2006 | 0.54 | M-v | 0 | MPC | 97834 | 2005 $SO_{187}$ |
| 2005 $SX_{187}$ | 17.0 | 0.15 | 20060922 | 116.27300 | 151.34455 | 208.47183 | 5.28180 | 0.1724718 | 2.2640570 | 98 | 3 | 1998–2005 | 0.61 | M-v | 3 | MPC | 97834 | 2005 $SX_{187}$ |
| 2005 $SY_{187}$ | 18.4 | 0.15 | 20060922 | 55.82593 | 261.33399 | 168.12033 | 1.48861 | 0.1635334 | 2.3998473 | 27 | 3 | 2001–2005 | 0.39 | M-v | 2 | MPC | 95907 | 2005 $SY_{187}$ |
| 2005 $SE_{191}$ | 17.6 | 0.15 | 20060922 | 77.12082 | 258.67166 | 185.45145 | 21.37580 | 0.1351345 | 1.9352791 | 50 | 3 | 2000–2005 | 0.65 | M-v | 2 | MPC | 97835 | 2005 $SE_{191}$ |
| 2005 $SF_{191}$ | 14.9 | 0.15 | 20060922 | 127.66209 | 104.91835 | 188.55340 | 25.94998 | 0.1937987 | 3.1821954 | 50 | 4 | 1999–2005 | 0.56 | M-v | 1 | MPC | 95911 | 2005 $SF_{191}$ |
| 2005 $SW_{191}$ | 16.1 | 0.15 | 20060922 | 179.26968 | 242.50813 | 26.35125 | 2.68669 | 0.1409168 | 2.7660799 | 54 | 7 | 1994–2006 | 0.53 | M-v | 0 | MPC | 95911 | 2005 $SW_{191}$ |
| 2005 $SY_{191}$ | 17.2 | 0.15 | 20060922 | 57.13765 | 254.45710 | 189.58290 | 2.12555 | 0.2258660 | 2.3505976 | 93 | 4 | 1996–2006 | 0.56 | M-v | 1 | MPC | 97835 | 2005 $SY_{191}$ |
| 2005 $SC_{192}$ | 15.4 | 0.15 | 20060922 | 317.64655 | 341.75045 | 165.44221 | 1.24534 | 0.1269078 | 3.1669617 | 58 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 95912 | 2005 $SC_{192}$ |
| 2005 $SR_{192}$ | 16.0 | 0.15 | 20060922 | 84.62191 | 172.26868 | 190.66308 | 2.33433 | 0.1729127 | 3.0474379 | 102 | 4 | 1994–2006 | 0.45 | M-v | 2 | MPC | 95913 | 2005 $SR_{192}$ |
| 2005 $SU_{192}$ | 15.4 | 0.15 | 20060922 | 102.47391 | 318.15998 | 53.55565 | 15.07467 | 0.2565572 | 2.6529766 | 97 | 3 | 1995–2006 | 0.45 | M-v | 1 | MPC | 97835 | 2005 $SU_{192}$ |
| 2005 $SZ_{193}$ | 16.2 | 0.15 | 20060922 | 90.73269 | 356.91402 | 11.06657 | 4.47349 | 0.0642122 | 2.7855716 | 52 | 3 | 2000–2005 | 0.44 | M-v | 3 | MPC | 95914 | 2005 $SZ_{193}$ |
| 2005 $SA_{195}$ | 16.8 | 0.15 | 20060922 | 54.21094 | 28.50235 | 355.86001 | 3.23928 | 0.1066051 | 2.7125709 | 26 | 4 | 1996–2005 | 0.40 | M-v | 1 | MPC | 95915 | 2005 $SA_{195}$ |
| 2005 $SG_{195}$ | 15.9 | 0.15 | 20060922 | 42.45485 | 172.52447 | 243.85794 | 5.30872 | 0.0986447 | 2.3747646 | 54 | 5 | 1998–2005 | 0.69 | M-v | 1 | MPC | 02257 | 2005 $SG_{195}$ |
| 2005 $SG_{196}$ | 16.3 | 0.15 | 20060922 | 327.35390 | 358.31635 | 119.87448 | 0.91781 | 0.1534331 | 3.2677566 | 29 | 3 | 2000–2005 | 0.38 | M-v | 3 | MPC | 95915 | 2005 $SG_{196}$ |
| 2005 $SW_{200}$ | 18.0 | 0.15 | 20060922 | 187.20970 | 79.22576 | 184.33977 | 5.46127 | 0.1303225 | 2.4244365 | 32 | 3 | 2001–2005 | 0.24 | M-v | 2 | MPC | 89857 | 2005 $SW_{200}$ |
| 2005 $SE_{202}$ | 15.1 | 0.15 | 20060922 | 54.14429 | 77.37393 | 279.99858 | 8.86029 | 0.0926668 | 3.5064560 | 23 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 95917 | 2005 $SE_{202}$ |
| 2005 $SF_{202}$ | 15.9 | 0.15 | 20060922 | 55.63875 | 116.88691 | 259.34838 | 8.77679 | 0.1205912 | 2.9660877 | 29 | 2 | 2000–2005 | 0.64 | M-v | 5 | MPC | 95917 | 2005 $SF_{202}$ |
| 2005 $SY_{202}$ | 16.2 | 0.15 | 20060922 | 96.17741 | 28.14788 | 317.56124 | 8.98731 | 0.1168722 | 2.6040801 | 39 | 2 | 2001–2005 | 0.50 | M-v | 4 | MPC | 95918 | 2005 $SY_{202}$ |
| 2005 $SR_{203}$ | 17.0 | 0.15 | 20060922 | 139.04071 | 284.37597 | 29.63245 | 3.21568 | 0.1980698 | 2.3201563 | 88 | 4 | 1997–2005 | 0.47 | M-v | 1 | MPC | 97836 | 2005 $SR_{203}$ |
| 2005 $SW_{203}$ | 15.3 | 0.15 | 20060922 | 30.00061 | 48.35874 | 20.29204 | 21.97955 | 0.0733724 | 2.6843860 | 76 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 95918 | 2005 $SW_{203}$ |
| 2005 $SA_{205}$ | 16.3 | 0.15 | 20060922 | 78.64469 | 229.76105 | 136.61589 | 5.08633 | 0.2184563 | 2.7840658 | 56 | 6 | 1991–2006 | 0.50 | M-v | 1 | MPC | 95919 | 2005 $SA_{205}$ |
| 2005 $SQ_{205}$ | 15.9 | 0.15 | 20060922 | 154.11765 | 346.59524 | 286.65974 | 7.99459 | 0.1070746 | 2.7822906 | 38 | 3 | 2000–2006 | 0.53 | M-v | 5 | MPC | 95919 | 2005 $SQ_{205}$ |
| 2005 $SE_{206}$ | 15.0 | 0.15 | 20060922 | 127.19840 | 179.86925 | 116.03612 | 6.96899 | 0.1225774 | 2.9993674 | 57 | 6 | 2000–2006 | 0.63 | M-v | 0 | MPC | 95921 | 2005 $SE_{206}$ |
| 2005 $SW_{207}$ | 16.7 | 0.15 | 20060922 | 61.63198 | 111.80938 | 278.75919 | 11.79828 | 0.1739819 | 2.6007860 | 33 | 2 | 2001–2005 | 0.67 | M-v | 4 | MPC | 03734 | 2005 $SW_{207}$ |
| 2005 $SX_{207}$ | 15.6 | 0.15 | 20060922 | 44.00493 | 108.14511 | 298.72875 | 13.64432 | 0.1572845 | 2.6951850 | 50 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 95922 | 2005 $SX_{207}$ |
| 2005 $SY_{207}$ | 16.2 | 0.15 | 20060922 | 45.81053 | 79.37512 | 329.49772 | 5.15387 | 0.0934597 | 2.9392500 | 25 | 3 | 1997–2005 | 0.53 | M-v | 4 | MPC | 95923 | 2005 $SY_{207}$ |
| 2005 $SA_{208}$ | 16.2 | 0.15 | 20060922 | 28.35407 | 96.65383 | 332.30356 | 5.75402 | 0.1544983 | 3.0915758 | 30 | 3 | 1996–2005 | 0.48 | M-v | 3 | MPC | 89859 | 2005 $SA_{208}$ |
| 2005 $SD_{208}$ | 17.6 | 0.15 | 20060922 | 144.83626 | 25.16261 | 289.82316 | 2.65773 | 0.2056663 | 2.2930984 | 55 | 4 | 1991–2005 | 0.68 | M-v | 3 | MPC | 04350 | 2005 $SD_{208}$ |
| 2005 $SL_{208}$ | 14.5 | 0.15 | 20060922 | 66.50820 | 10.52830 | 6.46162 | 22.05205 | 0.0471469 | 3.0911575 | 102 | 5 | 1994–2006 | 0.49 | M-v | 1 | MPC | 97837 | 2005 $SL_{208}$ |
| 2005 $SB_{212}$ | 16.3 | 0.15 | 20060922 | 168.77593 | 13.42450 | 257.77403 | 0.84615 | 0.1202165 | 3.0117677 | 28 | 2 | 2003–2005 | 0.30 | M-v | 4 | MPC | 03734 | 2005 $SB_{212}$ |
| 2005 $SU_{213}$ | 16.2 | 0.15 | 20060922 | 138.76827 | 34.02805 | 293.37858 | 9.06199 | 0.0823383 | 2.3408506 | 36 | 3 | 2001–2005 | 0.61 | M-v | 3 | MPC | 97838 | 2005 $SU_{213}$ |
| 2005 $SF_{214}$ | 14.9 | 0.15 | 20060922 | 39.51160 | 109.84653 | 319.97419 | 3.68898 | 0.2517514 | 3.0809584 | 112 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 97838 | 2005 $SF_{214}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $SL_{214}$ | 15.8 | 0.15 | 20060922 | 45.91981 | 189.34247 | 223.15974 | 14.69753 | 0.2004592 | 3.1192374 | 70 | 3 | 1994–2005 | 0.60 | M-v | 3 | MPC | 97838 | 2005 $SL_{214}$ |
| 2005 $SM_{214}$ | 16.9 | 0.15 | 20060922 | 137.19395 | 29.93361 | 315.83122 | 3.74505 | 0.1138739 | 2.2095508 | 63 | 4 | 1997–2005 | 0.46 | M-v | 2 | MPC | 89862 | 2005 $SM_{214}$ |
| 2005 $SC_{215}$ | 15.0 | 0.15 | 20060922 | 132.87298 | 39.83411 | 257.84430 | 10.94705 | 0.0995898 | 3.0089274 | 53 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 97838 | 2005 $SC_{215}$ |
| 2005 $SZ_{216}$ | 16.0 | 0.15 | 20060922 | 120.82926 | 251.90827 | 83.25215 | 3.24565 | 0.0813466 | 2.7553909 | 108 | 6 | 1994–2006 | 0.43 | M-v | 1 | MPC | 97839 | 2005 $SZ_{216}$ |
| 2005 $ST_{219}$ | 16.4 | 0.15 | 20060922 | 241.42139 | 229.58942 | 336.60452 | 3.60968 | 0.0316745 | 2.6513340 | 46 | 3 | 2001–2005 | 0.49 | M-v | 4 | MPC | 95934 | 2005 $ST_{219}$ |
| 2005 $SW_{219}$ | 15.6 | 0.15 | 20060922 | 256.82531 | 88.62835 | 111.79983 | 13.99751 | 0.0353614 | 2.6561662 | 57 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 95934 | 2005 $SW_{219}$ |
| 2005 $SL_{220}$ | 14.9 | 0.15 | 20060922 | 156.73084 | 14.74876 | 281.18529 | 14.71200 | 0.1115798 | 2.6003159 | 64 | 5 | 2001–2006 | 0.46 | M-v | 1 | MPC | 95935 | 2005 $SL_{220}$ |
| 2005 $SR_{220}$ | 15.3 | 0.15 | 20060922 | 67.83468 | 83.65587 | 297.28360 | 9.23445 | 0.1157367 | 3.1666797 | 33 | 3 | 2004–2006 | 0.55 | M-v | 3 | MPC | 95935 | 2005 $SR_{220}$ |
| 2005 $SD_{221}$ | 17.8 | 0.15 | 20060922 | 114.48702 | 340.77642 | 13.02542 | 5.71816 | 0.1297161 | 2.4445866 | 25 | 2 | 2001–2005 | 0.42 | M-v | 4 | MPC | 89872 | 2005 $SD_{221}$ |
| 2005 $SR_{223}$ | 16.3 | 0.15 | 20060922 | 190.21610 | 205.09527 | 29.95986 | 0.75834 | 0.1069604 | 3.1817381 | 37 | 5 | 2002–2006 | 0.58 | M-v | 1 | MPC | 03735 | 2005 $SR_{223}$ |
| 2005 $SR_{224}$ | 17.7 | 0.15 | 20060922 | 17.13149 | 265.67682 | 194.81794 | 5.46943 | 0.1463982 | 2.5291118 | 32 | 5 | 1995–2005 | 0.35 | M-v | 1 | MPC | 89873 | 2005 $SR_{224}$ |
| 2005 $SP_{226}$ | 16.5 | 0.15 | 20060922 | 22.31542 | 120.91789 | 308.67569 | 0.59908 | 0.1485135 | 3.0522610 | 36 | 4 | 2000–2006 | 0.26 | M-v | 0 | MPC | 03735 | 2005 $SP_{226}$ |
| 2005 $SU_{226}$ | 16.3 | 0.15 | 20060922 | 318.32411 | 343.33976 | 146.63485 | 0.86405 | 0.1220431 | 3.2155305 | 23 | 3 | 2000–2005 | 0.35 | M-v | 3 | MPC | 03735 | 2005 $SU_{226}$ |
| 2005 $SP_{227}$ | 17.7 | 0.15 | 20060922 | 21.96486 | 37.14425 | 36.22335 | 3.14123 | 0.1312516 | 2.9269267 | 17 | 3 | 1997–2005 | 0.36 | M-v | 4 | MPC | 89875 | 2005 $SP_{227}$ |
| 2005 $SZ_{227}$ | 17.1 | 0.15 | 20060922 | 250.75464 | 166.29209 | 27.99038 | 2.22278 | 0.0142616 | 2.8560242 | 29 | 3 | 1995–2005 | 0.57 | M-v | 4 | MPC | 97840 | 2005 $SZ_{227}$ |
| 2005 $SN_{229}$ | 16.5 | 0.15 | 20060922 | 15.70884 | 86.76907 | 358.36949 | 4.30799 | 0.1710036 | 2.7770154 | 34 | 4 | 2000–2005 | 0.37 | M-v | 1 | MPC | 03735 | 2005 $SN_{229}$ |
| 2005 $SE_{230}$ | 16.3 | 0.15 | 20060922 | 33.03379 | 205.66357 | 204.10162 | 1.78817 | 0.0792805 | 3.0516488 | 34 | 5 | 2000–2006 | 0.43 | M-v | 1 | MPC | 95939 | 2005 $SE_{230}$ |
| 2005 $SZ_{230}$ | 16.6 | 0.15 | 20060922 | 332.74575 | 298.35557 | 188.13264 | 1.29871 | 0.0939117 | 2.7950118 | 35 | 5 | 1996–2006 | 0.35 | M-v | 1 | MPC | 95940 | 2005 $SZ_{230}$ |
| 2005 $SB_{233}$ | 16.1 | 0.15 | 20060922 | 78.22384 | 182.14066 | 203.51470 | 1.51506 | 0.0798802 | 2.8634284 | 78 | 5 | 2000–2006 | 0.38 | M-v | 1 | MPC | 97841 | 2005 $SB_{233}$ |
| 2005 $SR_{233}$ | 17.3 | 0.15 | 20060922 | 181.61239 | 53.65731 | 232.32364 | 0.58401 | 0.1720538 | 2.3896535 | 24 | 3 | 2001–2005 | 0.38 | M-v | 4 | MPC | 95942 | 2005 $SR_{233}$ |
| 2005 $SM_{236}$ | 16.6 | 0.15 | 20060922 | 191.33268 | 288.50822 | 339.00638 | 2.85758 | 0.0482834 | 2.7650529 | 21 | 3 | 2000–2005 | 0.24 | M-v | 2 | MPC | 89878 | 2005 $SM_{236}$ |
| 2005 $SV_{236}$ | 17.8 | 0.15 | 20060922 | 156.79540 | 355.57660 | 307.39010 | 1.77777 | 0.1738319 | 2.4072358 | 26 | 3 | 2001–2005 | 0.56 | M-v | 2 | MPC | 95943 | 2005 $SV_{236}$ |
| 2005 $SZ_{237}$ | 15.5 | 0.15 | 20060922 | 78.78668 | 103.93107 | 261.15817 | 2.13376 | 0.2222122 | 3.0953542 | 125 | 7 | 1995–2006 | 0.44 | M-v | 0 | MPC | 97842 | 2005 $SZ_{237}$ |
| 2005 $SG_{239}$ | 16.2 | 0.15 | 20060922 | 135.87118 | 126.66406 | 152.27076 | 1.95380 | 0.1454070 | 3.1227370 | 44 | 4 | 1994–2006 | 0.30 | M-v | 0 | MPC | 95944 | 2005 $SG_{239}$ |
| 2005 $SJ_{239}$ | 16.8 | 0.15 | 20060922 | 45.95380 | 320.64317 | 81.38838 | 1.78560 | 0.0779038 | 2.7897555 | 35 | 3 | 2001–2005 | 0.43 | M-v | 3 | MPC | 97842 | 2005 $SJ_{239}$ |
| 2005 $SW_{242}$ | 17.3 | 0.15 | 20060922 | 228.35883 | 229.87543 | 17.12163 | 1.10536 | 0.1035369 | 2.3074179 | 48 | 3 | 1998–2005 | 0.40 | M-v | 4 | MPC | 97842 | 2005 $SW_{242}$ |
| 2005 $SS_{243}$ | 15.9 | 0.15 | 20060922 | 42.12058 | 100.94735 | 321.39178 | 12.70014 | 0.2574788 | 2.6495431 | 43 | 2 | 2001–2005 | 0.54 | M-v | 3 | MPC | 03736 | 2005 $SS_{243}$ |
| 2005 $SX_{243}$ | 16.2 | 0.15 | 20060922 | 201.47430 | 268.54737 | 298.98750 | 1.58462 | 0.0262682 | 3.0218206 | 40 | 5 | 1992–2006 | 0.45 | M-v | 0 | MPC | 95945 | 2005 $SX_{243}$ |
| 2005 $SD_{245}$ | 16.4 | 0.15 | 20060922 | 227.16121 | 191.49065 | 22.36692 | 0.95448 | 0.1609294 | 2.9930232 | 30 | 4 | 1998–2005 | 0.46 | M-v | 2 | MPC | 95946 | 2005 $SD_{245}$ |
| 2005 $SL_{245}$ | 15.7 | 0.15 | 20060922 | 117.10917 | 47.49036 | 261.46287 | 0.26336 | 0.1347717 | 3.2183858 | 40 | 7 | 1993–2006 | 0.41 | M-v | 0 | MPC | 04352 | 2005 $SL_{245}$ |
| 2005 $SG_{246}$ | 17.4 | 0.15 | 20060922 | 305.80402 | 196.35206 | 342.65348 | 0.48595 | 0.1598036 | 2.4539133 | 34 | 3 | 2001–2005 | 0.29 | M-v | 5 | MPC | 95947 | 2005 $SG_{246}$ |
| 2005 $SD_{247}$ | 16.9 | 0.15 | 20060922 | 286.37286 | 167.34412 | 24.19481 | 4.69376 | 0.1516855 | 2.4754596 | 38 | 4 | 2001–2005 | 0.29 | M-v | 0 | MPC | 95947 | 2005 $SD_{247}$ |
| 2005 $SH_{247}$ | 18.0 | 0.15 | 20060922 | 134.87064 | 105.56948 | 220.15087 | 0.82484 | 0.1114127 | 2.4792370 | 26 | 3 | 2000–2005 | 0.32 | M-v | 3 | MPC | 95947 | 2005 $SH_{247}$ |
| 2005 $SV_{249}$ | 16.8 | 0.15 | 20060922 | 11.47165 | 295.98325 | 153.53067 | 7.30956 | 0.0691029 | 2.3705166 | 44 | 6 | 1996–2006 | 0.47 | M-v | 1 | MPC | 95949 | 2005 $SV_{249}$ |
| 2005 $SL_{250}$ | 16.2 | 0.15 | 20060922 | 45.57979 | 51.51399 | 341.46441 | 6.70673 | 0.1003719 | 2.9662958 | 30 | 4 | 1997–2005 | 0.53 | M-v | 1 | MPC | 02257 | 2005 $SL_{250}$ |
| 2005 $SX_{250}$ | 15.6 | 0.15 | 20060922 | 89.10269 | 212.50614 | 151.44667 | 6.01538 | 0.1001155 | 2.7696235 | 50 | 3 | 2000–2006 | 0.51 | M-v | 4 | MPC | 95951 | 2005 $SX_{250}$ |
| 2005 $SU_{252}$ | 15.5 | 0.15 | 20060922 | 32.59847 | 236.19305 | 178.80136 | 10.79346 | 0.0998818 | 2.9818745 | 43 | 4 | 2000–2005 | 0.58 | M-v | 1 | MPC | 97844 | 2005 $SU_{252}$ |
| 2005 $SE_{253}$ | 15.0 | 0.15 | 20060922 | 93.94984 | 221.68090 | 112.18795 | 6.68859 | 0.1900711 | 3.1986724 | 51 | 5 | 1995–2005 | 0.59 | M-v | 1 | MPC | 97844 | 2005 $SE_{253}$ |
| 2005 $SO_{253}$ | 16.5 | 0.15 | 20060922 | 115.92489 | 65.43042 | 277.54386 | 4.28189 | 0.1162175 | 2.2726456 | 55 | 5 | 1995–2005 | 0.46 | M-v | 1 | MPC | 97844 | 2005 $SO_{253}$ |
| 2005 $SS_{254}$ | 15.3 | 0.15 | 20060922 | 134.83634 | 281.82329 | 352.96365 | 7.32402 | 0.0512766 | 3.1654206 | 29 | 3 | 2003–2006 | 0.35 | M-v | 3 | MPC | 95953 | 2005 $SS_{254}$ |
| 2005 $SX_{254}$ | 16.7 | 0.15 | 20060922 | 174.56412 | 108.17358 | 146.66270 | 7.47576 | 0.0906878 | 2.5755844 | 34 | 5 | 1995–2005 | 0.54 | M-v | 1 | MPC | 95954 | 2005 $SX_{254}$ |
| 2005 $SA_{255}$ | 16.9 | 0.15 | 20060922 | 120.25803 | 129.58123 | 166.17486 | 14.12326 | 0.2101271 | 2.7317898 | 38 | 4 | 2001–2005 | 0.57 | M-v | 0 | MPC | 95954 | 2005 $SA_{255}$ |
| 2005 $SE_{255}$ | 15.6 | 0.15 | 20060922 | 76.19520 | 153.19692 | 193.76333 | 8.63398 | 0.0427646 | 3.0128711 | 40 | 3 | 1995–2006 | 0.28 | M-v | 2 | MPC | 95954 | 2005 $SE_{255}$ |
| 2005 $SJ_{255}$ | 16.8 | 0.15 | 20060922 | 71.50656 | 92.91418 | 281.28422 | 2.00679 | 0.1572033 | 2.6410259 | 28 | 2 | 2001–2005 | 0.54 | M-v | 4 | MPC | 03737 | 2005 $SJ_{255}$ |
| 2005 $SQ_{255}$ | 16.9 | 0.15 | 20060922 | 356.13476 | 241.39355 | 226.99267 | 0.78990 | 0.1017472 | 2.4193800 | 49 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 00997 | 2005 $SQ_{255}$ |
| 2005 $SG_{257}$ | 16.5 | 0.15 | 20060922 | 118.70096 | 206.40639 | 113.49881 | 3.70288 | 0.1558114 | 2.6045465 | 41 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 95956 | 2005 $SG_{257}$ |
| 2005 $SK_{259}$ | 15.6 | 0.15 | 20060922 | 132.40883 | 234.37343 | 56.91728 | 14.18558 | 0.0966253 | 3.0244569 | 35 | 3 | 2001–2005 | 0.66 | M-v | 2 | MPC | 03737 | 2005 $SK_{259}$ |
| 2005 $SK_{260}$ | 15.9 | 0.15 | 20060922 | 237.16326 | 10.14384 | 160.94245 | 11.16570 | 0.0460862 | 2.9978467 | 38 | 6 | 1993–2006 | 0.60 | M-v | 1 | MPC | 03737 | 2005 $SK_{260}$ |
| 2005 $ST_{260}$ | 16.7 | 0.15 | 20060922 | 10.95638 | 69.27760 | 14.63316 | 1.57139 | 0.1644647 | 3.1314145 | 28 | 3 | 2000–2006 | 0.33 | M-v | 3 | MPC | 95958 | 2005 $ST_{260}$ |
| 2005 $SJ_{261}$ | 16.0 | 0.15 | 20060922 | 107.55455 | 222.62800 | 114.87784 | 15.27895 | 0.1263393 | 2.7118953 | 40 | 6 | 1995–2006 | 0.49 | M-v | 1 | MPC | 00998 | 2005 $SJ_{261}$ |
| 2005 $SM_{261}$ | 15.8 | 0.15 | 20060922 | 229.03586 | 24.55319 | 172.72933 | 6.50554 | 0.0349425 | 2.7735048 | 54 | 4 | 2002–2006 | 0.41 | M-v | 0 | MPC | 95959 | 2005 $SM_{261}$ |
| 2005 $SB_{263}$ | 16.0 | 0.15 | 20060922 | 256.07849 | 77.44954 | 114.57574 | 3.04598 | 0.0089933 | 2.8760881 | 33 | 5 | 1998–2006 | 0.45 | M-v | 1 | MPC | 03737 | 2005 $SB_{263}$ |
| 2005 $SJ_{265}$ | 19.4 | 0.15 | 20060922 | 92.63325 | 31.34735 | 325.01957 | 6.52160 | 0.3134862 | 2.5342487 | 34 | 2 | 2001–2005 | 0.60 | M-v | 3 | MPC | 03738 | 2005 $SJ_{265}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $SR_{268}$ | 15.6 | 0.15 | 20060922 | 59.99750 | 275.97767 | 115.32168 | 4.96092 | 0.1087965 | 2.8100305 | 39 | 4 | 2000–2006 | 0.36 | M-v | 1 | MPC | 95963 | 2005 $SR_{268}$ |
| 2005 $SO_{269}$ | 14.2 | 0.15 | 20060922 | 151.32136 | 193.78104 | 71.23484 | 19.28957 | 0.1768644 | 3.0998747 | 44 | 5 | 1998–2006 | 0.63 | M-v | 1 | MPC | 95963 | 2005 $SO_{269}$ |
| 2005 $SR_{270}$ | 15.2 | 0.15 | 20060922 | 70.36576 | 302.91882 | 56.20009 | 6.00837 | 0.0938449 | 3.1420088 | 28 | 3 | 2000–2005 | 0.60 | M-v | 3 | MPC | 95964 | 2005 $SR_{270}$ |
| 2005 $SX_{271}$ | 17.1 | 0.15 | 20060922 | 269.93154 | 312.50056 | 229.89222 | 1.99019 | 0.0716254 | 2.6557076 | 22 | 4 | 2001–2006 | 0.35 | M-v | 1 | MPC | 01000 | 2005 $SX_{271}$ |
| 2005 $SN_{279}$ | 18.7 | 0.15 | 20051017 | 353.31174 | 336.98083 | 49.20896 | 3.33247 | 0.2519704 | 2.3132088 | 18 | 1 | 41 days | 0.39 | | | MPC | | 2005 $SN_{279}$ |
| 2005 $SO_{279}$ | 16.1 | 0.15 | 20060922 | 341.51616 | 81.00380 | 28.83280 | 10.47167 | 0.0580324 | 3.0148288 | 17 | 1 | 63 days | 0.27 | M-v | 4 | MPC | | 2005 $SO_{279}$ |
| 2005 $SQ_{279}$ | 16.9 | 0.15 | 20060922 | 64.07801 | 267.70634 | 105.44681 | 2.28214 | 0.1924947 | 3.1585966 | 21 | 1 | 68 days | 0.44 | M-v | 4 | MPC | | 2005 $SQ_{279}$ |
| 2005 $SR_{279}$ | 17.8 | 0.15 | 20060922 | 55.59315 | 13.81929 | 51.96143 | 3.29175 | 0.1876060 | 2.4507067 | 20 | 1 | 72 days | 0.35 | M-v | 4 | MPC | | 2005 $SR_{279}$ |
| 2005 $SS_{279}$ | 17.2 | 0.15 | 20060922 | 66.35945 | 302.81323 | 85.37684 | 2.82123 | 0.1381101 | 2.7771913 | 21 | 1 | 68 days | 0.24 | M-v | 4 | MPC | | 2005 $SS_{279}$ |
| 2005 $ST_{279}$ | 18.8 | 0.15 | 20060922 | 90.72464 | 257.58032 | 145.00046 | 2.61063 | 0.1623581 | 2.1505373 | 17 | 1 | 69 days | 0.23 | M-v | 4 | MPC | | 2005 $ST_{279}$ |
| 2005 $SU_{279}$ | 16.8 | 0.15 | 20060922 | 86.14649 | 291.30309 | 52.70885 | 3.33458 | 0.1843277 | 3.0822622 | 15 | 1 | 69 days | 0.17 | M-v | 4 | MPC | | 2005 $SU_{279}$ |
| 2005 $SV_{279}$ | 18.0 | 0.15 | 20051017 | 12.26141 | 27.83987 | 329.30401 | 4.72167 | 0.3082378 | 2.6238601 | 22 | 1 | 29 days | 0.58 | | | MPC | | 2005 $SV_{279}$ |
| 2005 $SW_{279}$ | 16.5 | 0.15 | 20051017 | 341.29227 | 80.08602 | 321.64981 | 8.01862 | 0.1626646 | 2.6965149 | 19 | 1 | 37 days | 0.73 | | | MPC | | 2005 $SW_{279}$ |
| 2005 $SX_{279}$ | 15.8 | 0.15 | 20051017 | 48.74128 | 141.52037 | 195.52844 | 15.09195 | 0.0507063 | 3.0221357 | 22 | 1 | 47 days | 0.76 | | | MPC | | 2005 $SX_{279}$ |
| 2005 $SY_{279}$ | 16.1 | 0.15 | 20060922 | 86.16118 | 317.20265 | 43.65172 | 10.80160 | 0.0776011 | 3.1242755 | 16 | 1 | 72 days | 0.33 | M-v | 4 | MPC | | 2005 $SY_{279}$ |
| 2005 $SZ_{279}$ | 17.7 | 0.15 | 20060922 | 66.57321 | 6.34280 | 52.47097 | 7.39357 | 0.0997129 | 2.3797188 | 17 | 1 | 66 days | 0.45 | M-v | 4 | MPC | | 2005 $SZ_{279}$ |
| 2005 $SA_{280}$ | 16.8 | 0.15 | 20051017 | 324.82934 | 91.60742 | 2.01555 | 28.57034 | 0.3473845 | 2.5873898 | 27 | 1 | 59 days | 0.68 | | | MPC | | 2005 $SA_{280}$ |
| 2005 $SB_{280}$ | 16.4 | 0.15 | 20051017 | 141.04315 | 35.86750 | 185.05390 | 3.76155 | 0.2147472 | 2.6010135 | 17 | 1 | 33 days | 0.44 | | | MPC | | 2005 $SB_{280}$ |
| 2005 $SC_{280}$ | 16.7 | 0.15 | 20060922 | 103.39566 | 304.15325 | 46.02517 | 15.11381 | 0.1565182 | 2.6050110 | 26 | 1 | 88 days | 0.56 | M-v | 4 | MPC | | 2005 $SC_{280}$ |
| 2005 $SD_{280}$ | 17.4 | 0.15 | 20060922 | 62.74678 | 349.04060 | 39.42010 | 5.21181 | 0.2210378 | 2.7995358 | 20 | 1 | 70 days | 0.41 | M-v | 4 | MPC | | 2005 $SD_{280}$ |
| 2005 $SE_{280}$ | 18.8 | 0.15 | 20051017 | 340.00869 | 16.86813 | 43.89201 | 5.52869 | 0.3710099 | 2.2695482 | 42 | 1 | 53 days | 0.53 | | | MPC | | 2005 $SE_{280}$ |
| 2005 $SF_{280}$ | 16.7 | 0.15 | 20051017 | 22.19726 | 341.95439 | 15.17464 | 4.45704 | 0.0849957 | 2.8136073 | 22 | 1 | 42 days | 0.49 | | | MPC | | 2005 $SF_{280}$ |
| 2005 $SG_{280}$ | 18.2 | 0.15 | 20051017 | 309.17565 | 57.42831 | 31.60277 | 7.69699 | 0.1458979 | 2.3504019 | 17 | 1 | 33 days | 0.35 | | | MPC | | 2005 $SG_{280}$ |
| 2005 $SH_{280}$ | 17.2 | 0.15 | 20051017 | 37.09014 | 197.52934 | 144.68689 | 4.10606 | 0.1585845 | 2.3429200 | 19 | 1 | 42 days | 0.71 | | | MPC | | 2005 $SH_{280}$ |
| 2005 $SJ_{280}$ | 17.9 | 0.15 | 20060922 | 145.17890 | 213.29985 | 111.42895 | 3.51854 | 0.1848319 | 2.3010418 | 17 | 1 | 67 days | 0.48 | M-v | 4 | MPC | | 2005 $SJ_{280}$ |
| 2005 $SL_{280}$ | 15.6 | 0.15 | 20060922 | 4.89983 | 12.77182 | 88.51425 | 6.61421 | 0.1141608 | 3.1270916 | 18 | 1 | 61 days | 0.65 | M-v | 5 | MPC | | 2005 $SL_{280}$ |
| 2005 $SM_{280}$ | 18.5 | 0.15 | 20051017 | 324.35269 | 246.53546 | 203.67759 | 21.39833 | 0.3073948 | 2.2834343 | 16 | 1 | 36 days | 0.38 | | | MPC | | 2005 $SM_{280}$ |
| 2005 $SN_{280}$ | 15.7 | 0.15 | 20060922 | 316.28333 | 277.11392 | 216.99891 | 10.09650 | 0.0376147 | 3.1716133 | 15 | 1 | 61 days | 0.53 | M-v | 4 | MPC | | 2005 $SN_{280}$ |
| 2005 $SO_{280}$ | 16.7 | 0.15 | 20060922 | 106.29385 | 114.30184 | 217.17036 | 8.23103 | 0.0836386 | 3.1735806 | 17 | 1 | 67 days | 0.37 | M-v | 4 | MPC | | 2005 $SO_{280}$ |
| 2005 $SQ_{280}$ | 17.4 | 0.15 | 20051017 | 48.44978 | 142.37632 | 169.00576 | 9.92666 | 0.2786260 | 2.2847699 | 31 | 1 | 35 days | 0.55 | | | MPC | | 2005 $SQ_{280}$ |
| 2005 $SR_{280}$ | 15.8 | 0.15 | 20060922 | 27.38745 | 310.46534 | 137.11126 | 5.76214 | 0.0812040 | 2.7184250 | 19 | 1 | 68 days | 0.56 | M-v | 5 | MPC | | 2005 $SR_{280}$ |
| 2005 $SS_{280}$ | 15.5 | 0.15 | 20051017 | 356.20063 | 111.67806 | 275.28633 | 14.92826 | 0.1421336 | 3.2131532 | 22 | 1 | 40 days | 0.66 | | | MPC | | 2005 $SS_{280}$ |
| 2005 $ST_{280}$ | 17.7 | 0.15 | 20060922 | 138.96816 | 129.66827 | 230.98062 | 18.94775 | 0.0938756 | 1.9757800 | 20 | 1 | 64 days | 0.51 | M-v | 4 | MPC | | 2005 $ST_{280}$ |
| 2005 $SU_{280}$ | 17.6 | 0.15 | 20060922 | 64.28394 | 157.46430 | 254.42259 | 10.58675 | 0.3018238 | 2.6308038 | 20 | 1 | 116 days | 0.63 | M-v | 4 | MPC | | 2005 $SU_{280}$ |
| 2005 $SW_{280}$ | 16.5 | 0.15 | 20051017 | 9.18917 | 28.97889 | 353.64800 | 9.61169 | 0.1961053 | 2.7472750 | 22 | 1 | 40 days | 0.71 | | | MPC | | 2005 $SW_{280}$ |
| 2005 $SX_{280}$ | 16.3 | 0.15 | 20051017 | 24.18953 | 28.24285 | 333.09359 | 9.06508 | 0.2011929 | 2.7240919 | 25 | 1 | 53 days | 0.72 | | | MPC | | 2005 $SX_{280}$ |
| 2005 $SY_{280}$ | 17.9 | 0.15 | 20060922 | 51.89052 | 16.59027 | 29.53882 | 11.12395 | 0.2743271 | 2.9810129 | 17 | 1 | 68 days | 0.20 | M-v | 3 | MPC | | 2005 $SY_{280}$ |
| 2005 $SZ_{280}$ | 16.1 | 0.15 | 20051017 | 314.37517 | 81.56591 | 357.59072 | 5.76015 | 0.0362130 | 2.8985968 | 21 | 1 | 37 days | 0.68 | | | MPC | | 2005 $SZ_{280}$ |
| 2005 $SA_{281}$ | 16.0 | 0.15 | 20051017 | 309.22478 | 73.64001 | 19.13387 | 12.41520 | 0.1036011 | 2.9637442 | 20 | 1 | 39 days | 0.60 | | | MPC | | 2005 $SA_{281}$ |
| 2005 $SC_{281}$ | 18.3 | 0.15 | 20051017 | 353.22846 | 23.22958 | 16.98399 | 4.85561 | 0.2143660 | 2.4069982 | 20 | 1 | 29 days | 0.41 | | | MPC | | 2005 $SC_{281}$ |
| 2005 $SF_{281}$ | 16.8 | 0.15 | 20051106 | 55.41113 | 212.98517 | 116.44787 | 5.54395 | 0.1884733 | 2.2512081 | 24 | 1 | 56 days | 0.56 | | | MPC | | 2005 $SF_{281}$ |
| 2005 $SG_{281}$ | 18.8 | 0.15 | 20060922 | 119.75026 | 325.30610 | 33.13264 | 5.86775 | 0.2720730 | 2.3053955 | 16 | 1 | 60 days | 0.23 | M-v | 4 | MPC | | 2005 $SG_{281}$ |
| 2005 $SH_{281}$ | 18.0 | 0.15 | 20060922 | 102.93623 | 346.33502 | 38.31600 | 8.33052 | 0.2951963 | 2.3646093 | 23 | 1 | 64 days | 0.40 | M-v | 4 | MPC | | 2005 $SH_{281}$ |
| 2005 $SJ_{281}$ | 16.9 | 0.15 | 20060922 | 133.16812 | 325.91316 | 35.88834 | 2.84639 | 0.1792341 | 2.2321081 | 22 | 1 | 67 days | 0.82 | M-v | 5 | MPC | | 2005 $SJ_{281}$ |
| 2005 $SK_{281}$ | 18.2 | 0.15 | 20051017 | 37.79291 | 318.23587 | 37.55811 | 2.90161 | 0.1962958 | 2.3298500 | 17 | 1 | 52 days | 0.28 | | | MPC | | 2005 $SK_{281}$ |
| 2005 $SL_{281}$ | 16.8 | 0.15 | 20060922 | 123.14898 | 305.98216 | 60.76497 | 5.23347 | 0.0842771 | 2.6189433 | 17 | 1 | 92 days | 0.55 | M-v | 5 | MPC | | 2005 $SL_{281}$ |
| 2005 $SM_{281}$ | 17.4 | 0.15 | 20060922 | 285.58608 | 159.28957 | 117.39126 | 3.20996 | 0.1671790 | 2.7456263 | 16 | 1 | 148 days | 0.27 | M-v | 5 | MPC | | 2005 $SM_{281}$ |
| 2005 $TA_1$ | 17.8 | 0.15 | 20050907 | 11.33154 | 15.54746 | 316.86921 | 6.80635 | 0.2700094 | 2.2541454 | 26 | 1 | 39 days | 0.48 | | | MPC | | 2005 $TA_1$ |
| 2005 $TG_1$ | 15.4 | 0.15 | 20060922 | 84.27757 | 62.34950 | 295.12846 | 5.54528 | 0.0675454 | 2.6949035 | 79 | 4 | 1994–2006 | 0.52 | M-v | 1 | MPC | 01001 | 2005 $TG_1$ |
| 2005 $TJ_1$ | 16.7 | 0.15 | 20050907 | 358.31145 | 17.35151 | 340.54816 | 7.22484 | 0.3212865 | 3.0636888 | 24 | 1 | 53 days | 0.61 | | | MPC | | 2005 $TJ_1$ |
| 2005 $TE_2$ | 16.0 | 0.15 | 20060922 | 210.67607 | 240.77810 | 344.37497 | 4.37165 | 0.0990340 | 2.7766343 | 57 | 5 | 1996–2006 | 0.37 | M-v | 0 | MPC | 01001 | 2005 $TE_2$ |
| 2005 $TQ_2$ | 15.7 | 0.15 | 20060922 | 232.98689 | 213.70826 | 356.87455 | 9.18149 | 0.0969271 | 2.7550582 | 50 | 4 | 1991–2005 | 0.51 | M-v | 1 | MPC | 04352 | 2005 $TQ_2$ |
| 2005 $TT_2$ | 15.7 | 0.15 | 20060922 | 343.04371 | 121.35358 | 4.44411 | 13.58190 | 0.1732211 | 2.7178553 | 66 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 95967 | 2005 $TT_2$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $TY_2$ | 16.0 | 0.15 | 20060922 | 256.87895 | 219.96979 | 326.35897 | 3.77827 | 0.0162970 | 2.8698907 | 53 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 95967 | 2005 $TY_2$ |
| 2005 $TE_5$ | 16.4 | 0.15 | 20060922 | 106.83100 | 73.26815 | 275.33645 | 3.36591 | 0.0856568 | 2.6169479 | 73 | 3 | 2001–2006 | 0.55 | M-v | 3 | MPC | 95968 | 2005 $TE_5$ |
| 2005 $TO_5$ | 15.1 | 0.15 | 20060922 | 85.59552 | 89.38710 | 261.59599 | 7.66275 | 0.1112715 | 3.1026447 | 50 | 3 | 2000–2006 | 0.56 | M-v | 4 | MPC | 97846 | 2005 $TO_5$ |
| 2005 $TX_5$ | 16.2 | 0.15 | 20060922 | 135.19606 | 47.04311 | 251.88459 | 7.84860 | 0.1966521 | 2.6908681 | 51 | 4 | 2001–2005 | 0.66 | M-v | 1 | MPC | 97846 | 2005 $TX_5$ |
| 2005 $TN_6$ | 15.2 | 0.15 | 20060922 | 107.70161 | 59.36952 | 271.36395 | 8.62131 | 0.0814934 | 3.0632216 | 42 | 4 | 2000–2006 | 0.44 | M-v | 2 | MPC | 01001 | 2005 $TN_6$ |
| 2005 $TR_6$ | 15.5 | 0.15 | 20060922 | 56.15021 | 105.81322 | 287.39733 | 8.39270 | 0.0365744 | 3.0102578 | 27 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 03739 | 2005 $TR_6$ |
| 2005 $TC_7$ | 17.4 | 0.15 | 20060922 | 152.30633 | 71.38749 | 236.85031 | 5.25149 | 0.1627845 | 2.3446217 | 33 | 3 | 1998–2005 | 0.51 | M-v | 3 | MPC | 97847 | 2005 $TC_7$ |
| 2005 $TH_8$ | 15.5 | 0.15 | 20060922 | 147.50378 | 94.47970 | 188.00676 | 9.87483 | 0.0631576 | 3.4943268 | 25 | 5 | 1998–2006 | 0.47 | M-v | 0 | MPC | 03740 | 2005 $TH_8$ |
| 2005 $TP_8$ | 16.3 | 0.15 | 20060922 | 102.72923 | 193.12992 | 158.77216 | 2.71703 | 0.0513671 | 2.7801586 | 45 | 4 | 1991–2006 | 0.41 | M-v | 1 | MPC | 95971 | 2005 $TP_8$ |
| 2005 $TM_9$ | 15.9 | 0.15 | 20060922 | 261.48338 | 36.55755 | 160.44596 | 3.30793 | 0.0303974 | 2.7461956 | 37 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97847 | 2005 $TM_9$ |
| 2005 $TW_9$ | 15.6 | 0.15 | 20060922 | 55.51188 | 263.02428 | 142.88430 | 3.16624 | 0.1893277 | 3.1146809 | 90 | 5 | 1994–2006 | 0.51 | M-v | 1 | MPC | 95972 | 2005 $TW_9$ |
| 2005 $TY_9$ | 15.6 | 0.15 | 20060922 | 30.84704 | 123.44573 | 289.03662 | 8.43531 | 0.0911226 | 3.1740304 | 36 | 3 | 1993–2006 | 0.48 | M-v | 2 | MPC | 89886 | 2005 $TY_9$ |
| 2005 $TJ_{10}$ | 15.3 | 0.15 | 20060922 | 66.23190 | 97.24858 | 278.90451 | 6.63014 | 0.1869557 | 3.1137057 | 79 | 6 | 1996–2006 | 0.59 | M-v | 1 | MPC | 95972 | 2005 $TJ_{10}$ |
| 2005 $TT_{10}$ | 16.5 | 0.15 | 20060922 | 157.45692 | 314.27287 | 3.30739 | 7.59771 | 0.1752399 | 2.2415868 | 63 | 3 | 1998–2005 | 0.57 | M-v | 3 | MPC | 97847 | 2005 $TT_{10}$ |
| 2005 $TS_{12}$ | 15.8 | 0.15 | 20060922 | 119.83959 | 143.34958 | 186.34808 | 4.98376 | 0.1693081 | 2.7171928 | 96 | 6 | 1960–2005 | 0.60 | M-v | 1 | MPC | 01002 | 2005 $TS_{12}$ |
| 2005 $TO_{13}$ | 16.9 | 0.15 | 20060922 | 81.63910 | 272.53486 | 58.52645 | 8.08179 | 0.4029758 | 3.0740428 | 31 | 1 | 167 days | 0.37 | M-v | 3 | MPC | 97848 | 2005 $TO_{13}$ |
| 2005 $TB_{14}$ | 15.7 | 0.15 | 20060922 | 39.04849 | 286.35875 | 105.30565 | 6.19837 | 0.1417997 | 3.1223817 | 39 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 95975 | 2005 $TB_{14}$ |
| 2005 $TL_{14}$ | 16.8 | 0.15 | 20060922 | 124.03928 | 226.80398 | 89.01563 | 6.45106 | 0.1525987 | 2.3492016 | 44 | 4 | 1998–2006 | 0.52 | M-v | 2 | MPC | 95975 | 2005 $TL_{14}$ |
| 2005 $TO_{14}$ | 17.3 | 0.15 | 20060922 | 84.15228 | 255.83467 | 119.58481 | 7.11210 | 0.1476442 | 2.3868803 | 32 | 3 | 2001–2005 | 0.70 | M-v | 2 | MPC | 03740 | 2005 $TO_{14}$ |
| 2005 $TK_{15}$ | 16.7 | 0.15 | 20060922 | 175.92641 | 323.87231 | 319.55834 | 7.22939 | 0.1234227 | 2.3854788 | 56 | 5 | 2000–2006 | 0.62 | M-v | 1 | MPC | 97848 | 2005 $TK_{15}$ |
| 2005 $TC_{16}$ | 16.4 | 0.15 | 20060922 | 89.77918 | 164.47216 | 160.36842 | 3.98324 | 0.0914196 | 2.8047495 | 27 | 3 | 2001–2006 | 0.37 | M-v | 3 | MPC | 95976 | 2005 $TC_{16}$ |
| 2005 $TN_{16}$ | 17.6 | 0.15 | 20060922 | 171.57756 | 277.10273 | 358.22040 | 6.37443 | 0.1547091 | 2.3612115 | 41 | 4 | 1994–2005 | 0.48 | M-v | 0 | MPC | 04353 | 2005 $TN_{16}$ |
| 2005 $TY_{16}$ | 18.1 | 0.15 | 20060922 | 108.09393 | 302.67314 | 57.35209 | 0.99177 | 0.2539142 | 2.2356164 | 50 | 3 | 1995–2005 | 0.54 | M-v | 2 | MPC | 02257 | 2005 $TY_{16}$ |
| 2005 $TB_{17}$ | 15.8 | 0.15 | 20060922 | 64.36995 | 335.04920 | 47.34136 | 2.92564 | 0.0755328 | 2.7258479 | 55 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 97848 | 2005 $TB_{17}$ |
| 2005 $TJ_{18}$ | 17.5 | 0.15 | 20060922 | 147.89733 | 143.23206 | 174.92866 | 4.42299 | 0.1979743 | 2.2083503 | 48 | 5 | 1995–2005 | 0.41 | M-v | 1 | MPC | 95977 | 2005 $TJ_{18}$ |
| 2005 $TN_{18}$ | 15.7 | 0.15 | 20060922 | 68.39829 | 223.46713 | 174.29867 | 3.37655 | 0.1084218 | 2.7509329 | 89 | 5 | 1991–2006 | 0.49 | M-v | 1 | MPC | 97849 | 2005 $TN_{18}$ |
| 2005 $TO_{21}$ | 16.0 | 0.15 | 20060922 | 80.59584 | 320.25682 | 50.22902 | 3.84600 | 0.0894033 | 2.7646494 | 62 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 97849 | 2005 $TO_{21}$ |
| 2005 $TB_{23}$ | 16.1 | 0.15 | 20060922 | 44.68558 | 76.00874 | 333.35905 | 4.33225 | 0.1286721 | 2.7322320 | 57 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 95979 | 2005 $TB_{23}$ |
| 2005 $TG_{23}$ | 14.9 | 0.15 | 20060922 | 40.13720 | 39.45558 | 44.72463 | 14.74460 | 0.3221794 | 3.1412755 | 116 | 3 | 1996–2006 | 0.54 | M-v | 2 | MPC | 97849 | 2005 $TG_{23}$ |
| 2005 $TZ_{23}$ | 16.8 | 0.15 | 20060922 | 57.84814 | 29.58834 | 29.51693 | 13.82973 | 0.1382501 | 2.5457461 | 65 | 4 | 1995–2005 | 0.57 | M-v | 2 | MPC | 97850 | 2005 $TZ_{23}$ |
| 2005 $TM_{26}$ | 16.6 | 0.15 | 20060922 | 29.91765 | 38.02548 | 45.79661 | 4.25468 | 0.0667095 | 2.8027758 | 53 | 6 | 1991–2006 | 0.39 | M-v | 0 | MPC | 04353 | 2005 $TM_{26}$ |
| 2005 $TL_{27}$ | 15.9 | 0.15 | 20060922 | 122.80717 | 166.68401 | 167.64195 | 6.59356 | 0.0479494 | 2.7308394 | 55 | 6 | 1997–2006 | 0.54 | M-v | 1 | MPC | 97850 | 2005 $TL_{27}$ |
| 2005 $TU_{27}$ | 17.3 | 0.15 | 20060922 | 83.62726 | 254.83862 | 146.00690 | 3.57390 | 0.1052918 | 2.3650853 | 69 | 5 | 1996–2005 | 0.57 | M-v | 1 | MPC | 97850 | 2005 $TU_{27}$ |
| 2005 $TZ_{28}$ | 17.4 | 0.15 | 20060922 | 141.30460 | 178.88919 | 134.16317 | 6.49398 | 0.2372653 | 2.3000160 | 27 | 3 | 1994–2005 | 0.54 | M-v | 3 | MPC | 97851 | 2005 $TZ_{28}$ |
| 2005 $TN_{29}$ | 17.0 | 0.15 | 20060922 | 97.76001 | 158.80081 | 214.77790 | 14.69313 | 0.1368268 | 2.5449330 | 61 | 3 | 1997–2005 | 0.53 | M-v | 3 | MPC | 89899 | 2005 $TN_{29}$ |
| 2005 $TP_{29}$ | 16.3 | 0.15 | 20060922 | 110.61959 | 21.08407 | 278.58539 | 4.19152 | 0.0696996 | 2.6432873 | 40 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 95984 | 2005 $TP_{29}$ |
| 2005 $TX_{33}$ | 17.4 | 0.15 | 20060922 | 341.26575 | 108.94065 | 29.85274 | 7.22709 | 0.0475980 | 2.2301126 | 35 | 4 | 1992–2005 | 0.34 | M-v | 1 | MPC | 04353 | 2005 $TX_{33}$ |
| 2005 $TK_{36}$ | 16.2 | 0.15 | 20060922 | 101.68334 | 265.62471 | 63.34935 | 0.89043 | 0.0705393 | 2.9698359 | 30 | 4 | 1995–2005 | 0.46 | M-v | 3 | MPC | 97851 | 2005 $TK_{36}$ |
| 2005 $TP_{36}$ | 17.0 | 0.15 | 20060922 | 22.41526 | 307.57730 | 131.34981 | 1.25513 | 0.0940033 | 2.6346830 | 39 | 4 | 1992–2005 | 0.52 | M-v | 1 | MPC | 04353 | 2005 $TP_{36}$ |
| 2005 $TU_{39}$ | 16.3 | 0.15 | 20060922 | 127.02429 | 218.43304 | 104.78354 | 2.99981 | 0.2044892 | 2.5913956 | 59 | 3 | 2001–2005 | 0.57 | M-v | 3 | MPC | 97852 | 2005 $TU_{39}$ |
| 2005 $TO_{40}$ | 17.9 | 0.15 | 20060922 | 56.92644 | 250.84120 | 175.94124 | 5.23157 | 0.2361410 | 2.5626795 | 22 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 89902 | 2005 $TO_{40}$ |
| 2005 $TT_{40}$ | 16.3 | 0.15 | 20060922 | 354.30184 | 304.26451 | 190.06959 | 11.80183 | 0.2411351 | 2.7586052 | 39 | 4 | 1998–2005 | 0.64 | M-v | 1 | MPC | 03741 | 2005 $TT_{40}$ |
| 2005 $TU_{40}$ | 15.7 | 0.15 | 20060922 | 106.20375 | 338.34124 | 10.68376 | 5.73237 | 0.0802686 | 2.9070800 | 81 | 4 | 1995–2005 | 0.57 | M-v | 3 | MPC | 89902 | 2005 $TU_{40}$ |
| 2005 $TK_{43}$ | 17.7 | 0.15 | 20060922 | 112.57775 | 172.65852 | 168.92551 | 1.15533 | 0.2013198 | 2.4052452 | 36 | 1 | 87 days | 0.43 | M-v | 4 | MPC | 97852 | 2005 $TK_{43}$ |
| 2005 $TV_{43}$ | 16.6 | 0.15 | 20060922 | 102.33108 | 182.80945 | 158.37570 | 3.75347 | 0.1935847 | 2.7784332 | 47 | 6 | 1991–2005 | 0.57 | M-v | 1 | MPC | 04354 | 2005 $TV_{43}$ |
| 2005 $TC_{45}$ | 17.8 | 0.15 | 20060922 | 63.97670 | 58.00478 | 22.28408 | 7.28834 | 0.2418831 | 2.2840347 | 57 | 3 | 1998–2005 | 0.50 | M-v | 1 | MPC | 97852 | 2005 $TC_{45}$ |
| 2005 $TJ_{45}$ | 16.0 | 0.15 | 20060922 | 97.47919 | 231.28071 | 131.31904 | 1.75621 | 0.2213897 | 2.6874173 | 129 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 95989 | 2005 $TJ_{45}$ |
| 2005 $TU_{45}$ | 16.9 | 0.15 | 20060922 | 158.19097 | 76.88303 | 120.28001 | 28.54298 | 0.4956864 | 1.9740036 | 68 | 2 | 2005–2006 | 0.14 | M-v | 2 | MPC | 03741 | 2005 $TU_{45}$ |
| 2005 $TA_{46}$ | 14.8 | 0.15 | 20060922 | 99.99089 | 178.71474 | 177.51229 | 9.33090 | 0.0527029 | 3.2268331 | 74 | 4 | 1999–2005 | 0.66 | M-v | 1 | MPC | 97853 | 2005 $TA_{46}$ |
| 2005 $TP_{47}$ | 16.3 | 0.15 | 20060922 | 155.93610 | 272.37802 | 20.95572 | 2.26022 | 0.1862761 | 2.6677758 | 44 | 3 | 2000–2005 | 0.61 | M-v | 3 | MPC | 97853 | 2005 $TP_{47}$ |
| 2005 $TB_{48}$ | 15.9 | 0.15 | 20060922 | 53.99313 | 47.72726 | 353.69886 | 6.42615 | 0.1171465 | 2.9217744 | 51 | 4 | 1997–2005 | 0.50 | M-v | 3 | MPC | 97853 | 2005 $TB_{48}$ |
| 2005 $TG_{48}$ | 16.0 | 0.15 | 20060922 | 38.55640 | 191.13345 | 238.85211 | 3.84833 | 0.0286228 | 2.7385451 | 53 | 3 | 2000–2005 | 0.52 | M-v | 3 | MPC | 97853 | 2005 $TG_{48}$ |
| 2005 $TV_{48}$ | 16.3 | 0.15 | 20060922 | 125.45081 | 192.42727 | 126.97677 | 2.95656 | 0.0421675 | 2.9196032 | 46 | 5 | 1993–2005 | 0.49 | M-v | 1 | MPC | 04354 | 2005 $TV_{48}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $TF_{49}$ | 19.1 | 0.15 | 20060922 | 28.04551 | 301.48626 | 25.77961 | 24.55349 | 0.0253208 | 1.0413433 | 431 | 2 | 1989–2006 | 0.39 | M-v | 0 | MPC | 02257 | 2005 $TF_{49}$ |
| 2005 $TH_{49}$ | 13.3 | 0.15 | 20060922 | 212.99047 | 164.08602 | 133.70113 | 13.01714 | 0.0650569 | 5.1819839 | 58 | 5 | 2001–2006 | 0.36 | M-v | 1 | MPC | 95991 | 2005 $TH_{49}$ |
| 2005 $TR_{49}$ | 16.7 | 0.15 | 20060922 | 81.45077 | 133.69615 | 245.20952 | 3.79011 | 0.1261475 | 2.7615976 | 51 | 4 | 1996–2005 | 0.54 | M-v | 1 | MPC | 89908 | 2005 $TR_{49}$ |
| 2005 $TV_{49}$ | 16.2 | 0.15 | 20060922 | 300.00932 | 292.32789 | 233.42603 | 7.30669 | 0.0830306 | 2.5774163 | 35 | 5 | 1993–2006 | 0.52 | M-v | 2 | MPC | 89908 | 2005 $TV_{49}$ |
| 2005 $TW_{49}$ | 16.0 | 0.15 | 20060922 | 211.10465 | 133.64757 | 113.19866 | 5.36732 | 0.0418011 | 2.6917969 | 61 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 02257 | 2005 $TW_{49}$ |
| 2005 $TZ_{49}$ | 17.4 | 0.15 | 20060922 | 4.55666 | 116.30302 | 9.98296 | 6.47419 | 0.0605852 | 2.3196077 | 39 | 3 | 2000–2005 | 0.67 | M-v | 4 | MPC | 03741 | 2005 $TZ_{49}$ |
| 2005 $TD_{50}$ | 16.1 | 0.15 | 20060922 | 128.50074 | 191.28019 | 136.86567 | 4.72078 | 0.2440502 | 2.6094681 | 56 | 3 | 2004–2006 | 0.49 | M-v | 3 | MPC | 95991 | 2005 $TD_{50}$ |
| 2005 $TY_{50}$ | 16.4 | 0.15 | 20060922 | 125.06158 | 34.10428 | 302.16666 | 6.03921 | 0.1199333 | 2.4027880 | 62 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 95992 | 2005 $TY_{50}$ |
| 2005 $TF_{51}$ | 15.9 | 0.15 | 20060922 | 233.78884 | 261.95819 | 319.65811 | 6.52430 | 0.0533270 | 2.4714642 | 52 | 3 | 2001–2005 | 0.63 | M-v | 4 | MPC | 95992 | 2005 $TF_{51}$ |
| 2005 $TH_{51}$ | 18.0 | 0.15 | 20060922 | 257.50122 | 280.65054 | 327.52003 | 17.85586 | 0.0740917 | 1.9253272 | 30 | 3 | 2002–2005 | 0.55 | M-v | 3 | MPC | 95993 | 2005 $TH_{51}$ |
| 2005 $TJ_{53}$ | 18.0 | 0.15 | 20060922 | 69.83305 | 60.52765 | 348.45697 | 2.10786 | 0.1933657 | 2.4563461 | 33 | 4 | 1995–2005 | 0.63 | M-v | 1 | MPC | 03742 | 2005 $TJ_{53}$ |
| 2005 $TP_{53}$ | 15.7 | 0.15 | 20060922 | 97.85808 | 81.29438 | 224.59176 | 8.90122 | 0.2171790 | 3.1543919 | 31 | 3 | 2004–2006 | 0.63 | M-v | 3 | MPC | 95994 | 2005 $TP_{53}$ |
| 2005 $TE_{54}$ | 16.1 | 0.15 | 20060922 | 82.39452 | 296.00533 | 66.42330 | 2.11270 | 0.0940245 | 2.9711759 | 50 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 95994 | 2005 $TE_{54}$ |
| 2005 $TZ_{54}$ | 14.9 | 0.15 | 20060922 | 91.33407 | 252.13234 | 103.55067 | 11.30872 | 0.1496318 | 3.0399334 | 65 | 4 | 2000–2006 | 0.49 | M-v | 2 | MPC | 95997 | 2005 $TZ_{54}$ |
| 2005 $TR_{55}$ | 15.9 | 0.15 | 20060922 | 346.57980 | 86.87743 | 31.23923 | 9.10165 | 0.1481364 | 2.7985708 | 66 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 97854 | 2005 $TR_{55}$ |
| 2005 $TB_{56}$ | 17.5 | 0.15 | 20060922 | 113.71176 | 206.77501 | 159.82846 | 3.11789 | 0.1888614 | 2.2633981 | 63 | 3 | 1998–2005 | 0.56 | M-v | 3 | MPC | 97855 | 2005 $TB_{56}$ |
| 2005 $TD_{56}$ | 15.1 | 0.15 | 20060922 | 162.70152 | 59.27539 | 212.39077 | 4.23505 | 0.0305579 | 3.1834877 | 54 | 6 | 1994–2006 | 0.48 | M-v | 0 | MPC | 04354 | 2005 $TD_{56}$ |
| 2005 $TZ_{56}$ | 17.6 | 0.15 | 20060922 | 3.48849 | 343.24301 | 127.98853 | 1.49020 | 0.0580241 | 2.4919243 | 25 | 3 | 1999–2005 | 0.26 | M-v | 3 | MPC | 03742 | 2005 $TZ_{56}$ |
| 2005 $TE_{57}$ | 15.8 | 0.15 | 20060922 | 39.50013 | 205.58262 | 199.24144 | 12.03003 | 0.1153282 | 3.1282866 | 42 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 97855 | 2005 $TE_{57}$ |
| 2005 $TN_{57}$ | 16.1 | 0.15 | 20060922 | 321.81863 | 124.25324 | 35.26713 | 4.33666 | 0.0493024 | 2.4163087 | 58 | 5 | 1996–2005 | 0.61 | M-v | 2 | MPC | 97855 | 2005 $TN_{57}$ |
| 2005 $TU_{60}$ | 16.3 | 0.15 | 20060922 | 7.28092 | 133.55646 | 314.33719 | 2.38917 | 0.1845079 | 3.1103634 | 44 | 3 | 2000–2006 | 0.42 | M-v | 2 | MPC | 97855 | 2005 $TU_{60}$ |
| 2005 $TT_{62}$ | 16.7 | 0.15 | 20060922 | 79.83176 | 209.72668 | 181.48596 | 4.03640 | 0.0345315 | 2.5893293 | 41 | 4 | 1999–2005 | 0.51 | M-v | 1 | MPC | 03742 | 2005 $TT_{62}$ |
| 2005 $TB_{64}$ | 16.5 | 0.15 | 20060922 | 275.18660 | 358.09636 | 188.86009 | 1.76065 | 0.0079715 | 2.6858577 | 47 | 4 | 1999–2005 | 0.54 | M-v | 1 | MPC | 97856 | 2005 $TB_{64}$ |
| 2005 $TC_{64}$ | 16.6 | 0.15 | 20060922 | 82.15496 | 43.43083 | 326.97972 | 1.78431 | 0.0775305 | 2.7202681 | 29 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 03742 | 2005 $TC_{64}$ |
| 2005 $TR_{64}$ | 16.4 | 0.15 | 20060922 | 3.17441 | 279.73348 | 191.63077 | 4.90221 | 0.0568176 | 2.6893877 | 55 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 97856 | 2005 $TR_{64}$ |
| 2005 $TT_{71}$ | 15.5 | 0.15 | 20060922 | 89.90992 | 236.73761 | 75.99411 | 7.27514 | 0.2029062 | 3.1429167 | 48 | 6 | 1999–2006 | 0.52 | M-v | 0 | MPC | 96004 | 2005 $TT_{71}$ |
| 2005 $TJ_{72}$ | 15.1 | 0.15 | 20060922 | 58.33810 | 262.19433 | 134.24632 | 10.33367 | 0.1428529 | 3.0991949 | 57 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 97857 | 2005 $TJ_{72}$ |
| 2005 $TG_{73}$ | 15.2 | 0.15 | 20060922 | 67.24056 | 255.39795 | 124.84761 | 11.23857 | 0.0599478 | 3.1286296 | 31 | 4 | 1995–2005 | 0.63 | M-v | 1 | MPC | 96007 | 2005 $TG_{73}$ |
| 2005 $TK_{73}$ | 15.0 | 0.15 | 20060922 | 43.72102 | 325.46132 | 85.57900 | 11.58656 | 0.0958616 | 3.1404888 | 57 | 4 | 1994–2005 | 0.60 | M-v | 1 | MPC | 97857 | 2005 $TK_{73}$ |
| 2005 $TP_{73}$ | 16.4 | 0.15 | 20060922 | 56.88928 | 281.46371 | 103.08282 | 4.02524 | 0.1083323 | 2.7365348 | 41 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 96007 | 2005 $TP_{73}$ |
| 2005 $TS_{73}$ | 17.6 | 0.15 | 20060922 | 102.36595 | 239.59693 | 127.07277 | 3.43108 | 0.2030048 | 2.2086193 | 51 | 4 | 1995–2005 | 0.47 | M-v | 1 | MPC | 97857 | 2005 $TS_{73}$ |
| 2005 $TO_{74}$ | 8.5 | 0.15 | 20060922 | 258.15092 | 307.63935 | 169.41554 | 5.25917 | 0.0520365 | 30.0538668 | 23 | 2 | 2005–2006 | 0.23 | M-v | 5 | MPC | 01008 | 2005 $TO_{74}$ |
| 2005 $TW_{74}$ | 15.4 | 0.15 | 20060922 | 37.53112 | 89.09419 | 333.11697 | 11.43406 | 0.2224384 | 3.0612334 | 59 | 3 | 2000–2005 | 0.54 | M-v | 2 | MPC | 97857 | 2005 $TW_{74}$ |
| 2005 $TF_{76}$ | 15.7 | 0.15 | 20060922 | 34.10317 | 304.35426 | 98.85983 | 10.29945 | 0.1416531 | 3.1376862 | 37 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 96011 | 2005 $TF_{76}$ |
| 2005 $TV_{77}$ | 15.9 | 0.15 | 20060922 | 167.07620 | 84.77402 | 203.27228 | 1.42939 | 0.0325036 | 2.8297558 | 57 | 3 | 2000–2005 | 0.53 | M-v | 3 | MPC | 97858 | 2005 $TV_{77}$ |
| 2005 $TD_{79}$ | 16.6 | 0.15 | 20060922 | 116.47322 | 312.23332 | 26.00827 | 2.78417 | 0.1208560 | 2.7083702 | 53 | 4 | 1996–2005 | 0.58 | M-v | 1 | MPC | 97858 | 2005 $TD_{79}$ |
| 2005 $TL_{81}$ | 15.2 | 0.15 | 20050927 | 89.67868 | 345.20850 | 279.34923 | 3.15668 | 0.1967135 | 3.9856455 | 9 | 1 | 10 days | 0.24 | | | MPC | | 2005 $TL_{81}$ |
| 2005 $TB_{90}$ | 15.8 | 0.15 | 20060922 | 19.01473 | 298.01879 | 126.41776 | 2.99850 | 0.0508227 | 2.8966333 | 44 | 5 | 1998–2006 | 0.38 | M-v | 0 | MPC | 96019 | 2005 $TB_{90}$ |
| 2005 $TE_{90}$ | 16.6 | 0.15 | 20060922 | 167.64343 | 264.67600 | 18.00269 | 3.10535 | 0.1927319 | 2.6371505 | 47 | 3 | 1996–2005 | 0.40 | M-v | 3 | MPC | 97859 | 2005 $TE_{90}$ |
| 2005 $TO_{91}$ | 16.5 | 0.15 | 20060922 | 12.17291 | 27.02373 | 51.09077 | 2.97410 | 0.0513967 | 2.7320433 | 32 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 03743 | 2005 $TO_{91}$ |
| 2005 $TO_{95}$ | 17.1 | 0.15 | 20060922 | 11.49910 | 172.04883 | 287.06515 | 4.03496 | 0.1266788 | 2.7159738 | 23 | 4 | 2000–2006 | 0.35 | M-v | 1 | MPC | 96021 | 2005 $TO_{95}$ |
| 2005 $TQ_{95}$ | 14.8 | 0.15 | 20060922 | 196.70787 | 236.27026 | 16.51731 | 13.32485 | 0.1702522 | 2.6488493 | 76 | 4 | 1995–2005 | 0.60 | M-v | 1 | MPC | 97859 | 2005 $TQ_{95}$ |
| 2005 $TW_{95}$ | 16.7 | 0.15 | 20060922 | 265.12392 | 186.40572 | 13.02110 | 10.20317 | 0.0666390 | 2.7643228 | 22 | 3 | 2000–2005 | 0.24 | M-v | 3 | MPC | 96021 | 2005 $TW_{95}$ |
| 2005 $TA_{98}$ | 17.2 | 0.15 | 20060922 | 181.64957 | 357.84918 | 279.73228 | 2.01868 | 0.2148589 | 2.4035329 | 29 | 3 | 2001–2005 | 0.33 | M-v | 2 | MPC | 89918 | 2005 $TA_{98}$ |
| 2005 $TV_{98}$ | 16.1 | 0.15 | 20060922 | 122.35968 | 103.16078 | 200.52622 | 10.43601 | 0.0867746 | 3.1128814 | 41 | 4 | 1994–2005 | 0.55 | M-v | 0 | MPC | 04354 | 2005 $TV_{98}$ |
| 2005 $TE_{99}$ | 15.4 | 0.15 | 20050927 | 331.53749 | 188.06673 | 213.81829 | 11.70131 | 0.1873532 | 3.1860024 | 29 | 1 | 58 days | 0.57 | | | MPC | | 2005 $TE_{99}$ |
| 2005 $TZ_{100}$ | 16.6 | 0.15 | 20060922 | 70.27981 | 171.75600 | 207.57202 | 2.10347 | 0.0845059 | 2.7679560 | 40 | 3 | 1996–2006 | 0.38 | M-v | 3 | MPC | 96025 | 2005 $TZ_{100}$ |
| 2005 $TJ_{102}$ | 16.1 | 0.15 | 20060922 | 23.66775 | 83.41364 | 354.76658 | 4.50713 | 0.1726082 | 3.1724263 | 42 | 4 | 1996–2006 | 0.35 | M-v | 1 | MPC | 96027 | 2005 $TJ_{102}$ |
| 2005 $TJ_{103}$ | 16.1 | 0.15 | 20060922 | 357.21955 | 250.70554 | 224.70037 | 8.29080 | 0.0904693 | 2.8500275 | 43 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 96027 | 2005 $TJ_{103}$ |
| 2005 $TP_{103}$ | 16.4 | 0.15 | 20060922 | 156.93772 | 12.45952 | 289.43678 | 5.76334 | 0.1362622 | 2.3810745 | 75 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 97861 | 2005 $TP_{103}$ |
| 2005 $TA_{105}$ | 15.1 | 0.15 | 20060922 | 41.18853 | 121.27489 | 299.66906 | 7.51523 | 0.0853870 | 3.0812581 | 64 | 3 | 2004–2006 | 0.63 | M-v | 3 | MPC | 97861 | 2005 $TA_{105}$ |
| 2005 $TB_{105}$ | 15.6 | 0.15 | 20060922 | 88.71093 | 48.13275 | 309.48947 | 4.73454 | 0.1874902 | 3.0924344 | 110 | 4 | 1999–2006 | 0.54 | M-v | 2 | MPC | 96029 | 2005 $TB_{105}$ |
| 2005 $TK_{105}$ | 15.6 | 0.15 | 20060922 | 52.85377 | 61.91457 | 7.20998 | 12.93714 | 0.1916943 | 2.7216386 | 54 | 2 | 2001–2005 | 0.67 | M-v | 3 | MPC | 03744 | 2005 $TK_{105}$ |

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| 2005 $TL_{105}$ | 16.9 | 0.15 | 20060922 | 135.20595 | 30.23453 | 313.34080 | 6.00180 | 0.2052728 | 2.2545088 | 62 | 2 | 1998–2005 | 0.73 | M-v | 3 | MPC | 03744 | 2005 $TL_{105}$ |
| 2005 $TT_{106}$ | 16.5 | 0.15 | 20060922 | 285.43648 | 164.73128 | 40.33115 | 6.07818 | 0.1070591 | 2.2470263 | 59 | 4 | 1997–2006 | 0.52 | M-v | 1 | MPC | 97861 | 2005 $TT_{106}$ |
| 2005 $TE_{107}$ | 17.2 | 0.15 | 20060922 | 169.71241 | 249.65368 | 38.39122 | 5.26829 | 0.2233037 | 2.3242498 | 46 | 4 | 1998–2005 | 0.68 | M-v | 1 | MPC | 97861 | 2005 $TE_{107}$ |
| 2005 $TA_{108}$ | 15.1 | 0.15 | 20060922 | 192.85343 | 295.99460 | 290.51552 | 5.06137 | 0.1428663 | 3.2023998 | 42 | 5 | 2002–2006 | 0.57 | M-v | 0 | MPC | 03745 | 2005 $TA_{108}$ |
| 2005 $TB_{110}$ | 15.9 | 0.15 | 20060922 | 253.36731 | 219.69523 | 320.24469 | 3.36751 | 0.0234702 | 3.2124977 | 34 | 4 | 1999–2006 | 0.27 | M-v | 1 | MPC | 03745 | 2005 $TB_{110}$ |
| 2005 $TF_{112}$ | 15.8 | 0.15 | 20060922 | 235.82384 | 208.21880 | 350.98608 | 4.53319 | 0.0775195 | 3.2119426 | 37 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 96033 | 2005 $TF_{112}$ |
| 2005 $TH_{112}$ | 17.1 | 0.15 | 20060922 | 332.45645 | 243.33875 | 249.98644 | 2.90840 | 0.1455443 | 2.7861052 | 21 | 3 | 2001–2006 | 0.36 | M-v | 5 | MPC | 96033 | 2005 $TH_{112}$ |
| 2005 $TD_{114}$ | 16.8 | 0.15 | 20060922 | 10.19344 | 88.76036 | 352.36742 | 1.56291 | 0.0367438 | 2.8695683 | 24 | 3 | 1995–2006 | 0.27 | M-v | 3 | MPC | 96034 | 2005 $TD_{114}$ |
| 2005 $TH_{114}$ | 17.1 | 0.15 | 20060922 | 91.75332 | 358.10704 | 354.55754 | 1.52261 | 0.0802794 | 2.8628823 | 30 | 3 | 1995–2005 | 0.31 | M-v | 4 | MPC | 01011 | 2005 $TH_{114}$ |
| 2005 $TX_{115}$ | 15.8 | 0.15 | 20060922 | 145.32889 | 25.33061 | 262.72702 | 1.07207 | 0.0879745 | 2.9311124 | 26 | 3 | 1995–2006 | 0.32 | M-v | 4 | MPC | 97862 | 2005 $TX_{115}$ |
| 2005 $TL_{116}$ | 17.1 | 0.15 | 20060922 | 39.86846 | 59.06118 | 349.97397 | 5.63363 | 0.0669468 | 2.8664027 | 25 | 3 | 1995–2005 | 0.23 | M-v | 2 | MPC | 03745 | 2005 $TL_{116}$ |
| 2005 $TM_{117}$ | 17.1 | 0.15 | 20060922 | 290.54725 | 301.53312 | 245.87262 | 1.50275 | 0.1474103 | 2.3255884 | 32 | 4 | 1993–2005 | 0.32 | M-v | 1 | MPC | 89922 | 2005 $TM_{117}$ |
| 2005 $TH_{121}$ | 16.0 | 0.15 | 20060922 | 203.04273 | 158.27252 | 73.17091 | 2.36387 | 0.1294093 | 3.1875139 | 28 | 5 | 2000–2006 | 0.38 | M-v | 0 | MPC | 89922 | 2005 $TH_{121}$ |
| 2005 $TQ_{124}$ | 16.1 | 0.15 | 20060922 | 91.02112 | 34.52476 | 323.75842 | 1.24390 | 0.0823640 | 2.9062587 | 39 | 3 | 2000–2005 | 0.50 | M-v | 5 | MPC | 97862 | 2005 $TQ_{124}$ |
| 2005 $TT_{124}$ | 16.9 | 0.15 | 20060922 | 296.15507 | 161.55573 | 16.42633 | 7.61486 | 0.1335683 | 2.5937604 | 30 | 3 | 1999–2005 | 0.49 | M-v | 3 | MPC | 96036 | 2005 $TT_{124}$ |
| 2005 $TN_{125}$ | 14.5 | 0.15 | 20060922 | 290.20297 | 138.84896 | 16.65526 | 2.68497 | 0.1444825 | 3.9510808 | 56 | 6 | 1996–2006 | 0.47 | M-v | 0 | MPC | 96036 | 2005 $TN_{125}$ |
| 2005 $TC_{126}$ | 17.9 | 0.15 | 20060922 | 47.86276 | 29.70271 | 39.92326 | 1.68875 | 0.1081058 | 2.5390896 | 29 | 3 | 1997–2005 | 0.30 | M-v | 3 | MPC | 03745 | 2005 $TC_{126}$ |
| 2005 $TG_{127}$ | 17.2 | 0.15 | 20060922 | 40.71100 | 88.04616 | 357.67147 | 1.17767 | 0.1493211 | 2.4498589 | 37 | 4 | 1999–2005 | 0.53 | M-v | 1 | MPC | 96038 | 2005 $TG_{127}$ |
| 2005 $TF_{128}$ | 16.8 | 0.15 | 20060922 | 45.76311 | 86.27548 | 323.89885 | 1.19035 | 0.0671316 | 2.8872178 | 27 | 5 | 2000–2006 | 0.29 | M-v | 0 | MPC | 01013 | 2005 $TF_{128}$ |
| 2005 $TP_{128}$ | 17.6 | 0.15 | 20060922 | 122.24965 | 127.20641 | 215.07737 | 2.53371 | 0.0575457 | 2.5894499 | 20 | 2 | 1999–2005 | 0.26 | M-v | 3 | MPC | 01014 | 2005 $TP_{128}$ |
| 2005 $TM_{129}$ | 17.3 | 0.15 | 20060922 | 293.11114 | 162.46930 | 32.27761 | 2.97006 | 0.0970996 | 2.3124061 | 30 | 4 | 1993–2005 | 0.53 | M-v | 2 | MPC | 04355 | 2005 $TM_{129}$ |
| 2005 $TO_{130}$ | 17.5 | 0.15 | 20060922 | 322.38424 | 347.70451 | 176.34093 | 3.53689 | 0.0506928 | 2.3889624 | 33 | 4 | 2000–2005 | 0.37 | M-v | 1 | MPC | 89923 | 2005 $TO_{130}$ |
| 2005 $TR_{130}$ | 16.2 | 0.15 | 20060922 | 252.21352 | 11.07792 | 193.20284 | 6.22371 | 0.0779547 | 3.0913951 | 35 | 4 | 1999–2005 | 0.36 | M-v | 0 | MPC | 01014 | 2005 $TR_{130}$ |
| 2005 $TU_{130}$ | 15.2 | 0.15 | 20060922 | 57.14102 | 218.44935 | 168.74137 | 3.98994 | 0.0970117 | 3.4435924 | 41 | 1 | 167 days | 0.50 | M-v | 3 | MPC | 97864 | 2005 $TU_{130}$ |
| 2005 $TF_{132}$ | 16.4 | 0.15 | 20060922 | 12.47186 | 247.53153 | 201.03469 | 7.57414 | 0.0935770 | 3.0208778 | 31 | 3 | 2000–2005 | 0.28 | M-v | 2 | MPC | 96040 | 2005 $TF_{132}$ |
| 2005 $TF_{133}$ | 15.0 | 0.15 | 20060922 | 82.28364 | 89.62639 | 264.30532 | 12.97623 | 0.0898548 | 3.1739105 | 53 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 96041 | 2005 $TF_{133}$ |
| 2005 $TN_{134}$ | 15.1 | 0.15 | 20060922 | 103.61665 | 103.22615 | 198.11091 | 2.58219 | 0.2042249 | 3.9810624 | 33 | 3 | 2004–2006 | 0.43 | M-v | 2 | MPC | 96041 | 2005 $TN_{134}$ |
| 2005 $TT_{134}$ | 17.9 | 0.15 | 20060922 | 103.01833 | 327.71873 | 19.52757 | 8.21758 | 0.1708154 | 2.5538673 | 32 | 3 | 1997–2005 | 0.30 | M-v | 3 | MPC | 01015 | 2005 $TT_{134}$ |
| 2005 $TF_{135}$ | 16.1 | 0.15 | 20060922 | 120.47836 | 269.78479 | 53.88534 | 3.18525 | 0.0646750 | 2.7923784 | 29 | 3 | 2001–2006 | 0.38 | M-v | 3 | MPC | 96041 | 2005 $TF_{135}$ |
| 2005 $TL_{135}$ | 16.5 | 0.15 | 20060922 | 298.90226 | 147.54985 | 7.29653 | 8.93798 | 0.0907362 | 2.6702529 | 40 | 2 | 2003–2005 | 0.58 | M-v | 3 | MPC | 03746 | 2005 $TL_{135}$ |
| 2005 $TN_{135}$ | 17.5 | 0.15 | 20060922 | 49.16735 | 256.88744 | 154.36421 | 2.12636 | 0.0984026 | 2.6091936 | 27 | 3 | 2001–2005 | 0.34 | M-v | 3 | MPC | 96042 | 2005 $TN_{135}$ |
| 2005 $TP_{136}$ | 16.8 | 0.15 | 20060922 | 253.20130 | 121.28630 | 77.66566 | 3.37907 | 0.0409900 | 2.6604308 | 27 | 4 | 1999–2006 | 0.20 | M-v | 2 | MPC | 96042 | 2005 $TP_{136}$ |
| 2005 $TW_{138}$ | 18.6 | 0.15 | 20060922 | 160.21806 | 134.13455 | 175.81743 | 4.61447 | 0.1593272 | 2.1816962 | 23 | 3 | 2001–2005 | 0.30 | M-v | 3 | MPC | 96043 | 2005 $TW_{138}$ |
| 2005 $TW_{140}$ | 17.6 | 0.15 | 20060922 | 144.42671 | 222.83672 | 111.79684 | 2.14638 | 0.0890038 | 2.2018966 | 37 | 4 | 1999–2005 | 0.49 | M-v | 1 | MPC | 97865 | 2005 $TW_{140}$ |
| 2005 $TY_{141}$ | 15.2 | 0.15 | 20060922 | 1.76360 | 270.04697 | 174.19628 | 7.81804 | 0.0865844 | 3.4264363 | 31 | 4 | 1998–2005 | 0.58 | M-v | 1 | MPC | 96043 | 2005 $TY_{141}$ |
| 2005 $TM_{144}$ | 16.0 | 0.15 | 20060922 | 294.95156 | 48.62456 | 107.78150 | 4.31931 | 0.0160690 | 2.9814195 | 47 | 8 | 1992–2006 | 0.48 | M-v | 0 | MPC | 04355 | 2005 $TM_{144}$ |
| 2005 $TS_{150}$ | 17.3 | 0.15 | 20060922 | 280.57893 | 105.47467 | 88.26859 | 3.39776 | 0.1091082 | 2.3867999 | 20 | 3 | 2000–2006 | 0.44 | M-v | 3 | MPC | 96044 | 2005 $TS_{150}$ |
| 2005 $TT_{151}$ | 18.2 | 0.15 | 20060922 | 67.19475 | 19.31824 | 31.17336 | 7.62470 | 0.3383011 | 2.5755466 | 38 | 2 | 2001–2005 | 0.52 | M-v | 3 | MPC | 03747 | 2005 $TT_{151}$ |
| 2005 $TF_{152}$ | 16.2 | 0.15 | 20060922 | 304.92046 | 69.31214 | 91.65352 | 2.71697 | 0.0188924 | 2.6912551 | 51 | 5 | 1998–2006 | 0.35 | M-v | 1 | MPC | 96045 | 2005 $TF_{152}$ |
| 2005 $TF_{154}$ | 15.2 | 0.15 | 20060922 | 90.19482 | 17.30503 | 332.11461 | 5.02313 | 0.1884893 | 3.0369129 | 81 | 6 | 1994–2006 | 0.50 | M-v | 1 | MPC | 96047 | 2005 $TF_{154}$ |
| 2005 $TB_{155}$ | 15.7 | 0.15 | 20060922 | 27.45717 | 68.41816 | 357.03909 | 10.21033 | 0.1680175 | 3.1198215 | 37 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 03747 | 2005 $TB_{155}$ |
| 2005 $TF_{155}$ | 16.7 | 0.15 | 20060922 | 105.58637 | 4.99779 | 340.13033 | 4.78135 | 0.0797345 | 2.6966423 | 42 | 3 | 2000–2005 | 0.42 | M-v | 3 | MPC | 03747 | 2005 $TF_{155}$ |
| 2005 $TT_{156}$ | 16.3 | 0.15 | 20060922 | 246.42761 | 351.47631 | 219.40326 | 10.43729 | 0.1534494 | 2.6001157 | 23 | 2 | 2001–2005 | 0.65 | M-v | 4 | MPC | 03747 | 2005 $TT_{156}$ |
| 2005 $TO_{159}$ | 15.7 | 0.15 | 20060922 | 264.28270 | 239.26301 | 322.08261 | 3.72965 | 0.0293741 | 2.6175163 | 46 | 5 | 1992–2005 | 0.51 | M-v | 1 | MPC | 04355 | 2005 $TO_{159}$ |
| 2005 $TV_{159}$ | 15.6 | 0.15 | 20060922 | 20.06639 | 199.48363 | 232.28808 | 8.51816 | 0.0621517 | 3.1364240 | 34 | 3 | 1994–2005 | 0.38 | M-v | 2 | MPC | 97867 | 2005 $TV_{159}$ |
| 2005 $TP_{160}$ | 16.9 | 0.15 | 20060922 | 301.61981 | 232.38249 | 295.49705 | 3.32888 | 0.0264354 | 2.5938455 | 30 | 4 | 2000–2005 | 0.45 | M-v | 1 | MPC | 01016 | 2005 $TP_{160}$ |
| 2005 $TT_{164}$ | 17.2 | 0.15 | 20060922 | 227.03725 | 275.62282 | 337.26581 | 1.91776 | 0.1014401 | 2.2808973 | 28 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 96049 | 2005 $TT_{164}$ |
| 2005 $TQ_{165}$ | 16.0 | 0.15 | 20060922 | 169.79718 | 306.96404 | 346.90258 | 1.97397 | 0.0332787 | 2.7231894 | 55 | 6 | 1998–2006 | 0.51 | M-v | 1 | MPC | 96050 | 2005 $TQ_{165}$ |
| 2005 $TF_{166}$ | 16.0 | 0.15 | 20060922 | 325.47410 | 275.43783 | 228.57612 | 4.43834 | 0.1207762 | 3.0820644 | 36 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 97869 | 2005 $TF_{166}$ |
| 2005 $TY_{166}$ | 16.1 | 0.15 | 20060922 | 100.45400 | 74.23272 | 280.83500 | 0.94111 | 0.0807834 | 2.8602757 | 51 | 5 | 1995–2006 | 0.55 | M-v | 2 | MPC | 97869 | 2005 $TY_{166}$ |
| 2005 $TQ_{167}$ | 15.8 | 0.15 | 20060922 | 99.11567 | 117.43230 | 233.35522 | 1.03460 | 0.1038968 | 2.9835381 | 60 | 6 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04356 | 2005 $TQ_{167}$ |
| 2005 $TT_{167}$ | 17.3 | 0.15 | 20060922 | 235.92571 | 26.59802 | 211.40306 | 4.60972 | 0.1852584 | 2.3608936 | 38 | 5 | 2000–2006 | 0.35 | M-v | 0 | MPC | 97869 | 2005 $TT_{167}$ |
| 2005 $TJ_{170}$ | 16.0 | 0.15 | 20060922 | 130.80942 | 299.03382 | 98.33204 | 7.45305 | 0.0479705 | 2.7971278 | 49 | 4 | 1992–2006 | 0.51 | M-v | 1 | MPC | 04356 | 2005 $TJ_{170}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $TJ_{172}$ | 14.8 | 0.15 | 20060922 | 33.83258 | 130.29105 | 295.03642 | 12.55819 | 0.1303739 | 3.1025905 | 71 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 97870 | 2005 $TJ_{172}$ |
| 2005 $TL_{174}$ | 16.1 | 0.15 | 20051106 | 165.18584 | 18.39155 | 209.46453 | 10.93432 | 0.0408593 | 2.7101049 | 19 | 1 | 59 days | 0.50 | | | MPC | | 2005 $TL_{174}$ |
| 2005 $TU_{175}$ | 14.7 | 0.15 | 20060922 | 329.80498 | 63.07322 | 58.36498 | 12.56749 | 0.1011026 | 2.9977303 | 60 | 6 | 1995–2006 | 0.56 | M-v | 0 | MPC | 96056 | 2005 $TU_{175}$ |
| 2005 $TB_{178}$ | 17.2 | 0.15 | 20060922 | 154.15950 | 227.55126 | 69.23915 | 3.31076 | 0.1386860 | 2.2487378 | 37 | 4 | 1997–2005 | 0.54 | M-v | 1 | MPC | 03749 | 2005 $TB_{178}$ |
| 2005 $TC_{178}$ | 16.3 | 0.15 | 20060922 | 74.28478 | 305.85150 | 71.23542 | 3.05644 | 0.0887415 | 2.8536878 | 32 | 6 | 1998–2006 | 0.46 | M-v | 1 | MPC | 01019 | 2005 $TC_{178}$ |
| 2005 $TK_{178}$ | 16.6 | 0.15 | 20060922 | 127.34044 | 156.95439 | 185.86673 | 14.94811 | 0.0359416 | 2.5456766 | 36 | 2 | 2001–2005 | 0.62 | M-v | 4 | MPC | 03750 | 2005 $TK_{178}$ |
| 2005 $TQ_{180}$ | 15.2 | 0.15 | 20060922 | 28.84390 | 290.16159 | 134.27464 | 6.00406 | 0.1617413 | 3.1640953 | 48 | 8 | 1994–2006 | 0.46 | M-v | 0 | MPC | 96058 | 2005 $TQ_{180}$ |
| 2005 $TW_{181}$ | 16.5 | 0.15 | 20060922 | 198.59574 | 20.59496 | 241.56547 | 9.36253 | 0.1125611 | 2.3292054 | 34 | 3 | 2001–2005 | 0.43 | M-v | 2 | MPC | 96058 | 2005 $TW_{181}$ |
| 2005 $TN_{183}$ | 15.0 | 0.15 | 20060922 | 123.73829 | 204.19886 | 126.49379 | 14.65038 | 0.1276543 | 2.7449231 | 41 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 96059 | 2005 $TN_{183}$ |
| 2005 $TP_{186}$ | 17.2 | 0.15 | 20051017 | 286.20503 | 170.40122 | 306.38769 | 3.86121 | 0.1160568 | 2.2314596 | 17 | 1 | 26 days | 0.71 | | | MPC | | 2005 $TP_{186}$ |
| 2005 $TA_{191}$ | 17.8 | 0.15 | 20060922 | 116.38481 | 327.16952 | 23.39318 | 7.92248 | 0.1420499 | 2.3485498 | 18 | 1 | 74 days | 0.29 | M-v | 4 | MPC | | 2005 $TA_{191}$ |
| 2005 $TB_{191}$ | 19.0 | 0.15 | 20051017 | 359.86805 | 343.35949 | 32.68352 | 3.69285 | 0.1831874 | 2.2388725 | 16 | 1 | 28 days | 0.34 | | | MPC | | 2005 $TB_{191}$ |
| 2005 $TC_{191}$ | 16.1 | 0.15 | 20060922 | 74.00682 | 338.13543 | 29.52391 | 9.78170 | 0.0498020 | 3.0810606 | 14 | 1 | 55 days | 0.26 | M-v | 4 | MPC | | 2005 $TC_{191}$ |
| 2005 $TD_{191}$ | 15.3 | 0.15 | 20051017 | 296.74464 | 258.86927 | 203.15363 | 16.02630 | 0.0109903 | 3.0715981 | 22 | 1 | 40 days | 0.66 | | | MPC | | 2005 $TD_{191}$ |
| 2005 $TE_{191}$ | 17.6 | 0.15 | 20060922 | 104.15831 | 282.45589 | 76.12470 | 3.94736 | 0.2239818 | 2.4187385 | 19 | 1 | 60 days | 0.65 | M-v | 5 | MPC | | 2005 $TE_{191}$ |
| 2005 $TF_{191}$ | 16.4 | 0.15 | 20051017 | 16.77471 | 279.72308 | 82.91683 | 5.11908 | 0.1189904 | 2.7894401 | 19 | 1 | 33 days | 0.84 | | | MPC | | 2005 $TF_{191}$ |
| 2005 $TG_{191}$ | 16.6 | 0.15 | 20060922 | 104.64209 | 306.82864 | 40.65952 | 14.79930 | 0.1655011 | 2.6188814 | 20 | 1 | 64 days | 0.58 | M-v | 4 | MPC | | 2005 $TG_{191}$ |
| 2005 $TJ_{191}$ | 16.6 | 0.15 | 20060922 | 295.00419 | 122.69167 | 34.20510 | 10.08316 | 0.0359485 | 3.2142898 | 19 | 1 | 62 days | 0.36 | M-v | 5 | MPC | | 2005 $TJ_{191}$ |
| 2005 $TL_{191}$ | 15.9 | 0.15 | 20051017 | 14.72787 | 256.85640 | 113.21465 | 6.30579 | 0.1680879 | 3.0884482 | 24 | 1 | 36 days | 0.77 | | | MPC | | 2005 $TL_{191}$ |
| 2005 $TM_{191}$ | 18.0 | 0.15 | 20060922 | 86.16126 | 5.69334 | 44.60046 | 3.03050 | 0.1764354 | 2.3955606 | 18 | 1 | 116 days | 0.25 | M-v | 3 | MPC | | 2005 $TM_{191}$ |
| 2005 $TN_{191}$ | 16.6 | 0.15 | 20060922 | 65.81184 | 336.39055 | 64.19508 | 1.82587 | 0.1970375 | 3.1557872 | 22 | 1 | 112 days | 0.29 | M-v | 3 | MPC | | 2005 $TN_{191}$ |
| 2005 $TO_{191}$ | 17.4 | 0.15 | 20060922 | 90.64838 | 252.41939 | 104.60470 | 2.25160 | 0.1960908 | 2.8639259 | 18 | 1 | 61 days | 0.64 | M-v | 4 | MPC | | 2005 $TO_{191}$ |
| 2005 $TP_{191}$ | 15.6 | 0.15 | 20051017 | 339.57186 | 264.75015 | 158.04566 | 9.92356 | 0.1143881 | 3.1423214 | 20 | 1 | 52 days | 0.73 | | | MPC | | 2005 $TP_{191}$ |
| 2005 $TQ_{191}$ | 17.8 | 0.15 | 20051017 | 26.89367 | 249.35365 | 107.74066 | 5.41504 | 0.1523475 | 2.2010580 | 23 | 1 | 52 days | 0.70 | | | MPC | | 2005 $TQ_{191}$ |
| 2005 $TS_{191}$ | 16.5 | 0.15 | 20060922 | 248.61966 | 187.72999 | 50.93333 | 15.67939 | 0.0981343 | 2.6449868 | 16 | 1 | 68 days | 0.34 | M-v | 4 | MPC | | 2005 $TS_{191}$ |
| 2005 $TT_{191}$ | 18.9 | 0.15 | 20060922 | 121.96536 | 235.05907 | 125.60923 | 0.37031 | 0.2331050 | 2.3304339 | 22 | 1 | 62 days | 0.35 | M-v | 5 | MPC | | 2005 $TT_{191}$ |
| 2005 $TU_{191}$ | 17.6 | 0.15 | 20051017 | 15.47126 | 83.70676 | 277.25339 | 5.25473 | 0.1380352 | 2.3715210 | 17 | 1 | 32 days | 0.75 | | | MPC | | 2005 $TU_{191}$ |
| 2005 $TV_{191}$ | 16.2 | 0.15 | 20060922 | 16.74185 | 213.41253 | 220.37267 | 8.59727 | 0.0283591 | 3.2153086 | 18 | 1 | 61 days | 0.33 | M-v | 5 | MPC | | 2005 $TV_{191}$ |
| 2005 $TW_{191}$ | 18.8 | 0.15 | 20051106 | 23.14953 | 143.51014 | 218.99220 | 3.28632 | 0.1997795 | 2.1961174 | 17 | 1 | 54 days | 0.54 | | | MPC | | 2005 $TW_{191}$ |
| 2005 $TZ_{191}$ | 18.2 | 0.15 | 20051106 | 15.41416 | 154.21918 | 213.35911 | 20.51668 | 0.0955893 | 1.9268841 | 19 | 1 | 55 days | 0.57 | | | MPC | | 2005 $TZ_{191}$ |
| 2005 $TA_{192}$ | 15.9 | 0.15 | 20060922 | 215.02696 | 17.44527 | 219.69505 | 15.34450 | 0.0677365 | 3.2063563 | 23 | 1 | 60 days | 0.23 | M-v | 4 | MPC | | 2005 $TA_{192}$ |
| 2005 $TB_{192}$ | 17.8 | 0.15 | 20051106 | 247.03276 | 312.93465 | 211.15644 | 4.93612 | 0.1091476 | 2.2903572 | 19 | 1 | 54 days | 0.38 | | | MPC | | 2005 $TB_{192}$ |
| 2005 $TC_{192}$ | 18.1 | 0.15 | 20051106 | 348.23815 | 196.02614 | 216.41913 | 14.11271 | 0.2359046 | 2.5952397 | 21 | 1 | 57 days | 0.25 | | | MPC | | 2005 $TC_{192}$ |
| 2005 $TD_{192}$ | 16.7 | 0.15 | 20060922 | 4.19899 | 278.81444 | 292.23812 | 5.48575 | 0.0662022 | 2.4146755 | 24 | 1 | 138 days | 0.31 | M-v | 4 | MPC | | 2005 $TD_{192}$ |
| 2005 $TE_{192}$ | 17.0 | 0.15 | 20060922 | 329.39977 | 310.18306 | 307.46904 | 2.51775 | 0.1652575 | 2.3290246 | 28 | 1 | 153 days | 0.30 | M-v | 4 | MPC | | 2005 $TE_{192}$ |
| 2005 $TF_{192}$ | 18.0 | 0.15 | 20051017 | 10.88931 | 7.12742 | 359.05018 | 9.83034 | 0.3542760 | 2.6683172 | 19 | 1 | 31 days | 0.64 | | | MPC | | 2005 $TF_{192}$ |
| 2005 $TG_{192}$ | 14.6 | 0.15 | 20060922 | 107.67575 | 225.76938 | 98.13193 | 17.74421 | 0.2131288 | 3.1357451 | 18 | 1 | 78 days | 0.69 | M-v | 5 | MPC | | 2005 $TG_{192}$ |
| 2005 $TJ_{192}$ | 16.0 | 0.15 | 20051017 | 30.82446 | 344.86311 | 10.01407 | 10.83856 | 0.0819084 | 2.9636851 | 18 | 1 | 26 days | 0.62 | | | MPC | | 2005 $TJ_{192}$ |
| 2005 $TK_{192}$ | 17.3 | 0.15 | 20051106 | 30.11656 | 294.20681 | 58.26393 | 12.30052 | 0.2082382 | 2.6082870 | 19 | 1 | 52 days | 0.70 | | | MPC | | 2005 $TK_{192}$ |
| 2005 $TL_{192}$ | 16.7 | 0.15 | 20051017 | 348.38831 | 220.93521 | 191.84097 | 12.94150 | 0.1685805 | 2.6169943 | 29 | 1 | 30 days | 0.74 | | | MPC | | 2005 $TL_{192}$ |
| 2005 UD | 17.6 | 0.15 | 20060922 | 267.20134 | 207.48086 | 19.83897 | 28.74797 | 0.8721911 | 1.2748607 | 249 | 4 | 1982–2006 | 0.43 | M-v | 3 | MPC | 96060 | 2005 UD |
| 2005 UL | 19.0 | 0.15 | 20060922 | 91.94508 | 213.11528 | 291.75373 | 7.89276 | 0.7178444 | 1.8771979 | 69 | 2 | 2005–2006 | 0.43 | M-v | 4 | MPC | 01020 | 2005 UL |
| 2005 UU | 15.6 | 0.15 | 20060922 | 105.94221 | 161.95169 | 176.15193 | 2.72308 | 0.2721241 | 2.9765940 | 103 | 3 | 2003–2006 | 0.48 | M-v | 3 | MPC | 96061 | 2005 UU |
| 2005 UW | 16.1 | 0.15 | 20060922 | 80.99624 | 167.69972 | 224.01100 | 4.63580 | 0.0246238 | 2.8117074 | 58 | 4 | 1995–2006 | 0.46 | M-v | 3 | MPC | 97871 | 2005 UW |
| 2005 $UK_1$ | 18.0 | 0.15 | 20060922 | 32.65599 | 345.88070 | 180.46819 | 0.78779 | 0.6952029 | 2.4997884 | 73 | 2 | 2005–2006 | 0.44 | M-v | 3 | MPC | 04356 | 2005 $UK_1$ |
| 2005 $UP_1$ | 16.6 | 0.15 | 20060922 | 12.26627 | 73.90674 | 31.10969 | 2.94808 | 0.1492922 | 2.9005517 | 46 | 4 | 1995–2005 | 0.34 | M-v | 2 | MPC | 96062 | 2005 $UP_1$ |
| 2005 $UR_1$ | 15.9 | 0.15 | 20060922 | 94.14077 | 345.71996 | 14.65678 | 2.16260 | 0.1057118 | 2.9566276 | 76 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 03750 | 2005 $UR_1$ |
| 2005 $UY_1$ | 15.8 | 0.15 | 20060922 | 16.99139 | 231.37817 | 219.93202 | 0.36687 | 0.1140766 | 3.0932636 | 64 | 6 | 1994–2006 | 0.45 | M-v | 0 | MPC | 96062 | 2005 $UY_1$ |
| 2005 $UO_2$ | 15.5 | 0.15 | 20060922 | 103.11444 | 305.14055 | 64.09871 | 6.01087 | 0.1407404 | 2.6685202 | 140 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 96064 | 2005 $UO_2$ |
| 2005 $UR_4$ | 15.8 | 0.15 | 20060922 | 29.87304 | 356.00674 | 82.65645 | 22.99288 | 0.0347794 | 2.5625682 | 48 | 2 | 2003–2005 | 0.60 | M-v | 3 | MPC | 03751 | 2005 $UR_4$ |
| 2005 $UY_6$ | 18.0 | 0.15 | 20060922 | 65.88876 | 180.66494 | 343.63715 | 12.28827 | 0.8724982 | 2.2492630 | 39 | 2 | 2005–2006 | 0.55 | M-v | 4 | MPC | 03751 | 2005 $UY_6$ |
| 2005 $UJ_8$ | 16.9 | 0.15 | 20060922 | 115.61643 | 284.47983 | 76.40538 | 3.49173 | 0.2327111 | 2.3698702 | 83 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 97873 | 2005 $UJ_8$ |
| 2005 $UK_9$ | 16.0 | 0.15 | 20060922 | 28.72021 | 332.69902 | 112.24135 | 4.78475 | 0.0483797 | 2.5616073 | 53 | 5 | 1998–2006 | 0.61 | M-v | 1 | MPC | 01022 | 2005 $UK_9$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $UP_{9}$ | 16.1 | 0.15 | 20060922 | 52.47886 | 351.18858 | 62.77552 | 2.93815 | 0.0877770 | 2.7018343 | 70 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 96071 | 2005 $UP_{9}$ |
| 2005 $UB_{10}$ | 16.9 | 0.15 | 20060922 | 111.58305 | 187.38255 | 160.13305 | 4.64495 | 0.1944425 | 2.5379702 | 47 | 3 | 2000–2005 | 0.64 | M-v | 3 | MPC | 03752 | 2005 $UB_{10}$ |
| 2005 $UD_{10}$ | 15.0 | 0.15 | 20060922 | 135.15790 | 204.13065 | 94.00404 | 7.50246 | 0.1574767 | 3.1062398 | 50 | 5 | 2000–2005 | 0.62 | M-v | 0 | MPC | 03752 | 2005 $UD_{10}$ |
| 2005 $UF_{10}$ | 14.7 | 0.15 | 20060922 | 142.94287 | 219.08596 | 54.11759 | 14.04797 | 0.3050650 | 3.0985021 | 50 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 97874 | 2005 $UF_{10}$ |
| 2005 $UX_{10}$ | 17.4 | 0.15 | 20060922 | 61.71692 | 235.82571 | 198.67145 | 5.86462 | 0.0502770 | 2.2497652 | 52 | 3 | 1995–2005 | 0.42 | M-v | 3 | MPC | 97874 | 2005 $UX_{10}$ |
| 2005 $UZ_{10}$ | 17.4 | 0.15 | 20060922 | 49.61884 | 250.32888 | 191.75129 | 4.52533 | 0.2207498 | 2.5648476 | 54 | 2 | 2001–2005 | 0.45 | M-v | 4 | MPC | 03752 | 2005 $UZ_{10}$ |
| 2005 $UD_{12}$ | 16.1 | 0.15 | 20060922 | 9.79905 | 317.50368 | 151.54634 | 2.41441 | 0.1288607 | 3.1584953 | 38 | 3 | 1999–2006 | 0.43 | M-v | 3 | MPC | 01024 | 2005 $UD_{12}$ |
| 2005 $UJ_{13}$ | 14.6 | 0.15 | 20060922 | 329.46844 | 90.61625 | 23.94408 | 4.05573 | 0.1286554 | 4.0164525 | 50 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 96073 | 2005 $UJ_{13}$ |
| 2005 $UW_{13}$ | 14.8 | 0.15 | 20060922 | 142.06351 | 63.01177 | 206.07498 | 2.23496 | 0.1714232 | 3.9880964 | 36 | 4 | 2002–2006 | 0.33 | M-v | 0 | MPC | 96073 | 2005 $UW_{13}$ |
| 2005 $UF_{14}$ | 16.4 | 0.15 | 20060922 | 43.46419 | 47.11318 | 37.73718 | 10.61023 | 0.0187517 | 2.3441489 | 75 | 3 | 2000–2005 | 0.58 | M-v | 2 | MPC | 96074 | 2005 $UF_{14}$ |
| 2005 $UQ_{14}$ | 16.7 | 0.15 | 20051106 | 237.45834 | 122.90151 | 41.24777 | 12.47172 | 0.0187981 | 3.0576082 | 23 | 1 | 44 days | 0.34 | | | MPC | | 2005 $UQ_{14}$ |
| 2005 $UY_{14}$ | 16.4 | 0.15 | 20060922 | 48.46587 | 353.92311 | 71.16878 | 2.19233 | 0.0626985 | 2.7159043 | 75 | 6 | 1998–2006 | 0.36 | M-v | 1 | MPC | 97875 | 2005 $UY_{14}$ |
| 2005 $UH_{15}$ | 18.2 | 0.15 | 20060922 | 353.52493 | 336.79249 | 169.36273 | 1.29816 | 0.1213359 | 2.3890585 | 32 | 2 | 2003–2005 | 0.29 | M-v | 4 | MPC | 03752 | 2005 $UH_{15}$ |
| 2005 $UB_{17}$ | 16.0 | 0.15 | 20060922 | 110.03125 | 16.98593 | 345.41453 | 5.61092 | 0.0686955 | 2.6759621 | 63 | 3 | 2001–2005 | 0.61 | M-v | 4 | MPC | 96076 | 2005 $UB_{17}$ |
| 2005 $UT_{17}$ | 15.6 | 0.15 | 20060922 | 201.89922 | 158.37827 | 114.88994 | 4.86936 | 0.0634264 | 2.6530942 | 57 | 6 | 1999–2006 | 0.58 | M-v | 1 | MPC | 97875 | 2005 $UT_{17}$ |
| 2005 $UJ_{18}$ | 16.3 | 0.15 | 20060922 | 295.62475 | 191.86916 | 3.75124 | 5.33209 | 0.1285230 | 2.2383556 | 58 | 6 | 1995–2005 | 0.55 | M-v | 1 | MPC | 97876 | 2005 $UJ_{18}$ |
| 2005 $UO_{18}$ | 16.4 | 0.15 | 20060922 | 53.42903 | 350.83685 | 78.14972 | 2.80708 | 0.1408359 | 2.8052825 | 49 | 2 | 2002–2006 | 0.37 | M-v | 3 | MPC | 97876 | 2005 $UO_{18}$ |
| 2005 $UL_{20}$ | 17.1 | 0.15 | 20060922 | 113.66217 | 328.65660 | 45.40110 | 5.84411 | 0.1235906 | 2.2952027 | 51 | 3 | 2001–2005 | 0.48 | M-v | 3 | MPC | 03753 | 2005 $UL_{20}$ |
| 2005 $UN_{20}$ | 17.1 | 0.15 | 20060922 | 57.78062 | 34.31164 | 40.85395 | 13.44184 | 0.2427249 | 2.5722630 | 78 | 2 | 2001–2005 | 0.58 | M-v | 3 | MPC | 03753 | 2005 $UN_{20}$ |
| 2005 $UT_{21}$ | 15.8 | 0.15 | 20060922 | 100.95100 | 339.85606 | 24.29702 | 6.58617 | 0.0571317 | 2.7306247 | 91 | 4 | 1996–2005 | 0.62 | M-v | 1 | MPC | 96080 | 2005 $UT_{21}$ |
| 2005 $UG_{22}$ | 17.7 | 0.15 | 20060922 | 11.46234 | 251.15351 | 230.33675 | 4.91767 | 0.1409626 | 2.5330096 | 33 | 3 | 2001–2005 | 0.33 | M-v | 1 | MPC | 03753 | 2005 $UG_{22}$ |
| 2005 $US_{22}$ | 15.0 | 0.15 | 20060922 | 306.84876 | 122.51250 | 32.04099 | 17.12875 | 0.0426645 | 3.1034014 | 64 | 4 | 1994–2005 | 0.46 | M-v | 1 | MPC | 97877 | 2005 $US_{22}$ |
| 2005 $UJ_{23}$ | 15.5 | 0.15 | 20060922 | 143.21261 | 325.75685 | 345.78269 | 1.38216 | 0.0760752 | 2.9043868 | 95 | 8 | 1993–2006 | 0.45 | M-v | 0 | MPC | 96081 | 2005 $UJ_{23}$ |
| 2005 $UH_{24}$ | 15.2 | 0.15 | 20060922 | 103.59846 | 117.93751 | 226.16804 | 9.43041 | 0.1125924 | 3.1156020 | 101 | 3 | 1994–2006 | 0.48 | M-v | 2 | MPC | 97877 | 2005 $UH_{24}$ |
| 2005 $UT_{24}$ | 16.3 | 0.15 | 20060922 | 108.97368 | 1.83998 | 355.93318 | 1.91330 | 0.1249025 | 2.6118878 | 68 | 4 | 1996–2005 | 0.58 | M-v | 1 | MPC | 97877 | 2005 $UT_{24}$ |
| 2005 $UP_{26}$ | 17.0 | 0.15 | 20060922 | 83.05689 | 328.37880 | 53.09675 | 7.11041 | 0.0742927 | 2.7825855 | 45 | 2 | 2001–2005 | 0.35 | M-v | 3 | MPC | 03754 | 2005 $UP_{26}$ |
| 2005 $UZ_{26}$ | 16.5 | 0.15 | 20060922 | 46.50660 | 197.79056 | 237.33109 | 1.56058 | 0.2092831 | 2.7902459 | 73 | 4 | 1991–2006 | 0.50 | M-v | 1 | MPC | 04357 | 2005 $UZ_{26}$ |
| 2005 $UT_{27}$ | 16.7 | 0.15 | 20060922 | 150.54994 | 295.29285 | 24.05147 | 5.88649 | 0.1880786 | 2.2923611 | 82 | 3 | 2002–2005 | 0.60 | M-v | 3 | MPC | 03755 | 2005 $UT_{27}$ |
| 2005 $UA_{30}$ | 15.2 | 0.15 | 20060922 | 87.80068 | 312.87162 | 51.98346 | 0.36916 | 0.1834168 | 3.1059069 | 101 | 6 | 1999–2006 | 0.49 | M-v | 0 | MPC | 96085 | 2005 $UA_{30}$ |
| 2005 $UD_{33}$ | 18.0 | 0.15 | 20060922 | 146.45623 | 149.66735 | 171.54485 | 0.55366 | 0.1296022 | 2.5173023 | 25 | 3 | 1997–2005 | 0.38 | M-v | 5 | MPC | 03755 | 2005 $UD_{33}$ |
| 2005 $UE_{33}$ | 17.5 | 0.15 | 20060922 | 30.74614 | 37.01584 | 45.15964 | 10.89955 | 0.0827676 | 2.8938460 | 22 | 2 | 2000–2005 | 0.30 | M-v | 4 | MPC | 89941 | 2005 $UE_{33}$ |
| 2005 $UQ_{33}$ | 18.2 | 0.15 | 20060922 | 40.61944 | 93.14031 | 14.49597 | 2.51343 | 0.1423331 | 2.3353021 | 30 | 3 | 2001–2005 | 0.21 | M-v | 2 | MPC | 03756 | 2005 $UQ_{33}$ |
| 2005 $UR_{38}$ | 13.9 | 0.15 | 20060922 | 42.34145 | 328.23431 | 86.66835 | 3.21872 | 0.0585388 | 3.9243898 | 62 | 5 | 1996–2006 | 0.44 | M-v | 0 | MPC | 96090 | 2005 $UR_{38}$ |
| 2005 $UQ_{39}$ | 16.9 | 0.15 | 20060922 | 244.48682 | 17.38663 | 224.18809 | 3.65133 | 0.0603488 | 2.7204712 | 35 | 3 | 2000–2005 | 0.49 | M-v | 3 | MPC | 03756 | 2005 $UQ_{39}$ |
| 2005 $UY_{40}$ | 14.8 | 0.15 | 20060922 | 13.41287 | 238.25429 | 230.10701 | 10.29327 | 0.0403615 | 3.0582963 | 56 | 5 | 1994–2006 | 0.58 | M-v | 1 | MPC | 04357 | 2005 $UY_{40}$ |
| 2005 $UE_{42}$ | 16.8 | 0.15 | 20060922 | 32.47070 | 354.98801 | 93.89518 | 1.40306 | 0.1254570 | 2.5088979 | 41 | 4 | 1995–2006 | 0.41 | M-v | 1 | MPC | 96095 | 2005 $UE_{42}$ |
| 2005 $UO_{42}$ | 15.4 | 0.15 | 20060922 | 77.80424 | 331.80888 | 39.68146 | 2.08617 | 0.1175041 | 3.1707866 | 88 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 96096 | 2005 $UO_{42}$ |
| 2005 $US_{43}$ | 15.0 | 0.15 | 20060922 | 84.77487 | 346.47401 | 28.62187 | 16.60237 | 0.0161799 | 3.1506946 | 49 | 3 | 2002–2005 | 0.53 | M-v | 2 | MPC | 96097 | 2005 $US_{43}$ |
| 2005 $UK_{44}$ | 16.7 | 0.15 | 20060922 | 222.94874 | 59.74863 | 195.77497 | 6.02595 | 0.0592703 | 2.5629774 | 35 | 4 | 1999–2005 | 0.43 | M-v | 2 | MPC | 97882 | 2005 $UK_{44}$ |
| 2005 $UM_{45}$ | 16.9 | 0.15 | 20060922 | 167.38642 | 160.63846 | 147.78067 | 2.92575 | 0.1453976 | 2.1936340 | 54 | 4 | 2001–2005 | 0.63 | M-v | 1 | MPC | 96098 | 2005 $UM_{45}$ |
| 2005 $UY_{45}$ | 16.1 | 0.15 | 20060922 | 104.42076 | 6.15731 | 350.29373 | 1.95120 | 0.0659539 | 2.7516862 | 44 | 3 | 2003–2006 | 0.52 | M-v | 3 | MPC | 03757 | 2005 $UY_{45}$ |
| 2005 $UJ_{46}$ | 17.0 | 0.15 | 20060922 | 52.76575 | 289.97277 | 143.81708 | 1.64053 | 0.0422208 | 2.6155419 | 38 | 3 | 2000–2005 | 0.32 | M-v | 4 | MPC | 97883 | 2005 $UJ_{46}$ |
| 2005 $UB_{48}$ | 16.7 | 0.15 | 20060922 | 83.19731 | 323.83315 | 58.91479 | 3.44795 | 0.1898126 | 2.7442754 | 67 | 3 | 1996–2006 | 0.60 | M-v | 3 | MPC | 97883 | 2005 $UB_{48}$ |
| 2005 $UG_{48}$ | 16.9 | 0.15 | 20060922 | 172.23226 | 240.13106 | 68.09901 | 5.68336 | 0.1593815 | 2.1612257 | 106 | 5 | 1998–2005 | 0.62 | M-v | 1 | MPC | 97883 | 2005 $UG_{48}$ |
| 2005 $UM_{49}$ | 15.6 | 0.15 | 20060922 | 77.88098 | 103.04408 | 269.93647 | 7.84528 | 0.1583212 | 3.0236938 | 58 | 3 | 2000–2006 | 0.49 | M-v | 3 | MPC | 97884 | 2005 $UM_{49}$ |
| 2005 $UX_{49}$ | 17.8 | 0.15 | 20060922 | 134.22334 | 325.35394 | 16.11755 | 6.70906 | 0.1106539 | 2.3792624 | 39 | 3 | 2000–2005 | 0.56 | M-v | 4 | MPC | 96101 | 2005 $UX_{49}$ |
| 2005 $UG_{51}$ | 16.3 | 0.15 | 20060922 | 335.84240 | 224.52269 | 302.26386 | 3.10097 | 0.1176655 | 2.2774908 | 61 | 3 | 2000–2005 | 0.61 | M-v | 4 | MPC | 97884 | 2005 $UG_{51}$ |
| 2005 $UY_{51}$ | 15.9 | 0.15 | 20060922 | 93.58418 | 80.65593 | 292.91852 | 5.05907 | 0.0624485 | 2.6955385 | 47 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 96103 | 2005 $UY_{51}$ |
| 2005 $UU_{53}$ | 15.7 | 0.15 | 20060922 | 16.99282 | 323.67809 | 133.42672 | 2.68972 | 0.1820409 | 3.0237704 | 71 | 3 | 2000–2006 | 0.45 | M-v | 2 | MPC | 96106 | 2005 $UU_{53}$ |
| 2005 $UC_{54}$ | 16.3 | 0.15 | 20060922 | 65.46946 | 314.03361 | 75.75782 | 3.14918 | 0.2023551 | 3.0764191 | 72 | 6 | 1994–2006 | 0.44 | M-v | 1 | MPC | 96107 | 2005 $UC_{54}$ |
| 2005 $UQ_{54}$ | 16.6 | 0.15 | 20060922 | 137.77766 | 109.24358 | 224.84119 | 5.74116 | 0.1514353 | 2.3548606 | 121 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 97885 | 2005 $UQ_{54}$ |
| 2005 $US_{54}$ | 15.5 | 0.15 | 20060922 | 119.61173 | 319.18159 | 29.22547 | 14.82961 | 0.1670586 | 2.6299953 | 115 | 4 | 2001–2006 | 0.42 | M-v | 2 | MPC | 96109 | 2005 $US_{54}$ |
| 2005 $UV_{54}$ | 16.1 | 0.15 | 20060922 | 97.22490 | 4.38497 | 8.05215 | 4.71416 | 0.2892479 | 2.5727053 | 123 | 3 | 1995–2006 | 0.57 | M-v | 2 | MPC | 97885 | 2005 $UV_{54}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $UW_{54}$ | 16.3 | 0.15 | 20060922 | 120.24486 | 58.95706 | 311.05894 | 2.93964 | 0.1979704 | 2.2318307 | 106 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 97885 | 2005 $UW_{54}$ |
| 2005 $UX_{54}$ | 15.4 | 0.15 | 20060922 | 42.57744 | 190.88473 | 241.50179 | 9.84306 | 0.2085304 | 3.1220801 | 104 | 3 | 1995–2006 | 0.53 | M-v | 2 | MPC | 97885 | 2005 $UX_{54}$ |
| 2005 $UN_{55}$ | 15.1 | 0.15 | 20060922 | 79.47713 | 149.44122 | 237.55461 | 9.09185 | 0.1112696 | 2.9735209 | 94 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 96110 | 2005 $UN_{55}$ |
| 2005 $UO_{55}$ | 15.6 | 0.15 | 20060922 | 58.53705 | 31.65645 | 16.65789 | 1.08427 | 0.1948971 | 3.1259945 | 118 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 01034 | 2005 $UO_{55}$ |
| 2005 $UT_{55}$ | 16.5 | 0.15 | 20060922 | 95.48301 | 324.51170 | 53.76622 | 3.08016 | 0.1428601 | 2.6278485 | 58 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 97885 | 2005 $UT_{55}$ |
| 2005 $UU_{55}$ | 16.4 | 0.15 | 20060922 | 55.57976 | 212.93184 | 217.38158 | 7.09514 | 0.1971524 | 2.7009526 | 74 | 3 | 1996–2005 | 0.52 | M-v | 2 | MPC | 96111 | 2005 $UU_{55}$ |
| 2005 $UM_{56}$ | 15.2 | 0.15 | 20060922 | 167.73495 | 63.52413 | 220.99822 | 11.86246 | 0.0899217 | 2.9643736 | 81 | 5 | 1995–2005 | 0.57 | M-v | 0 | MPC | 97886 | 2005 $UM_{56}$ |
| 2005 $UT_{56}$ | 15.7 | 0.15 | 20060922 | 168.03024 | 347.42137 | 308.47929 | 4.83336 | 0.1097791 | 2.5893331 | 52 | 4 | 2001–2006 | 0.56 | M-v | 2 | MPC | 96111 | 2005 $UT_{56}$ |
| 2005 $UT_{57}$ | 16.7 | 0.15 | 20060922 | 147.87004 | 149.70748 | 165.90505 | 1.62756 | 0.1594858 | 2.5389914 | 44 | 4 | 1997–2005 | 0.56 | M-v | 2 | MPC | 97886 | 2005 $UT_{57}$ |
| 2005 $UY_{57}$ | 15.7 | 0.15 | 20060922 | 205.36128 | 221.52525 | 34.97312 | 11.69275 | 0.0926240 | 3.0699033 | 31 | 3 | 1994–2005 | 0.40 | M-v | 3 | MPC | 97886 | 2005 $UY_{57}$ |
| 2005 $UV_{58}$ | 15.8 | 0.15 | 20060922 | 108.58221 | 80.20292 | 267.75057 | 1.62582 | 0.1640712 | 3.0229977 | 66 | 6 | 2000–2006 | 0.45 | M-v | 0 | MPC | 97886 | 2005 $UV_{58}$ |
| 2005 $UW_{58}$ | 15.4 | 0.15 | 20060922 | 333.52903 | 240.86491 | 262.18366 | 3.96699 | 0.0933997 | 3.2199201 | 43 | 4 | 2001–2006 | 0.29 | M-v | 0 | MPC | 96113 | 2005 $UW_{58}$ |
| 2005 $UX_{58}$ | 17.0 | 0.15 | 20060922 | 359.18325 | 261.63725 | 243.65382 | 5.45010 | 0.1418673 | 2.5348257 | 32 | 3 | 2001–2006 | 0.34 | M-v | 2 | MPC | 97886 | 2005 $UX_{58}$ |
| 2005 $UW_{62}$ | 16.1 | 0.15 | 20060922 | 153.82210 | 243.41762 | 75.05105 | 3.16738 | 0.0472133 | 2.8960209 | 45 | 5 | 2000–2006 | 0.61 | M-v | 0 | MPC | 96117 | 2005 $UW_{62}$ |
| 2005 $UK_{64}$ | 15.2 | 0.15 | 20060922 | 75.23334 | 298.58643 | 97.65313 | 7.71648 | 0.0887047 | 3.0290596 | 96 | 5 | 2002–2006 | 0.54 | M-v | 1 | MPC | 96119 | 2005 $UK_{64}$ |
| 2005 $UQ_{65}$ | 15.3 | 0.15 | 20060922 | 351.60480 | 193.46312 | 276.61414 | 21.09753 | 0.0721582 | 2.6248066 | 33 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 96120 | 2005 $UQ_{65}$ |
| 2005 $UT_{65}$ | 16.1 | 0.15 | 20060922 | 54.81082 | 97.08854 | 313.72258 | 6.01642 | 0.1806613 | 2.7219521 | 56 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 97888 | 2005 $UT_{65}$ |
| 2005 $UX_{65}$ | 15.9 | 0.15 | 20060922 | 125.98904 | 95.08032 | 229.56473 | 4.27590 | 0.1044034 | 2.7549427 | 70 | 6 | 1996–2006 | 0.58 | M-v | 1 | MPC | 97888 | 2005 $UX_{65}$ |
| 2005 $UF_{66}$ | 14.5 | 0.15 | 20060922 | 75.88520 | 43.38118 | 294.00886 | 4.20259 | 0.2170516 | 3.9625181 | 59 | 5 | 2000–2006 | 0.38 | M-v | 0 | MPC | 97888 | 2005 $UF_{66}$ |
| 2005 $UP_{66}$ | 15.3 | 0.15 | 20060922 | 107.92502 | 262.13533 | 70.27412 | 6.87939 | 0.0434727 | 3.1515190 | 47 | 5 | 2000–2006 | 0.36 | M-v | 0 | MPC | 97888 | 2005 $UP_{66}$ |
| 2005 $US_{66}$ | 15.3 | 0.15 | 20060922 | 73.72765 | 243.33767 | 122.70652 | 9.59435 | 0.2352472 | 3.1041318 | 71 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 96121 | 2005 $US_{66}$ |
| 2005 $UJ_{67}$ | 15.5 | 0.15 | 20060922 | 188.04133 | 79.35414 | 195.36498 | 9.27314 | 0.0300650 | 2.7052440 | 69 | 5 | 1992–2005 | 0.65 | M-v | 1 | MPC | 04358 | 2005 $UJ_{67}$ |
| 2005 $UC_{68}$ | 16.0 | 0.15 | 20060922 | 89.68006 | 242.77122 | 113.82770 | 2.68510 | 0.2098246 | 3.0021741 | 54 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 97888 | 2005 $UC_{68}$ |
| 2005 $UD_{68}$ | 15.3 | 0.15 | 20060922 | 70.75111 | 296.39381 | 90.44143 | 5.30168 | 0.1005925 | 3.0201918 | 76 | 6 | 2000–2006 | 0.55 | M-v | 1 | MPC | 96123 | 2005 $UD_{68}$ |
| 2005 $UM_{68}$ | 15.5 | 0.15 | 20060922 | 120.13905 | 220.25951 | 130.95993 | 12.49422 | 0.0246033 | 2.6445597 | 51 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 96123 | 2005 $UM_{68}$ |
| 2005 $UV_{68}$ | 16.6 | 0.15 | 20060922 | 15.58177 | 136.13408 | 345.85404 | 6.02077 | 0.1000806 | 2.2819288 | 48 | 4 | 2000–2005 | 0.57 | M-v | 2 | MPC | 97888 | 2005 $UV_{68}$ |
| 2005 $UH_{69}$ | 15.9 | 0.15 | 20060922 | 60.71386 | 81.25968 | 328.86865 | 2.50277 | 0.0908812 | 2.7675334 | 84 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 96124 | 2005 $UH_{69}$ |
| 2005 $UP_{69}$ | 16.1 | 0.15 | 20060922 | 161.44812 | 80.62204 | 227.84974 | 4.72676 | 0.0324564 | 2.6981542 | 30 | 3 | 1996–2005 | 0.34 | M-v | 2 | MPC | 96124 | 2005 $UP_{69}$ |
| 2005 $UY_{69}$ | 16.6 | 0.15 | 20060922 | 62.02071 | 84.84552 | 320.95256 | 8.38720 | 0.2480059 | 2.7432651 | 42 | 3 | 1993–2005 | 0.61 | M-v | 3 | MPC | 04358 | 2005 $UY_{69}$ |
| 2005 $UC_{70}$ | 16.3 | 0.15 | 20060922 | 106.23404 | 1.15381 | 343.70620 | 12.74662 | 0.1834880 | 2.6931703 | 40 | 3 | 1996–2005 | 0.51 | M-v | 3 | MPC | 96125 | 2005 $UC_{70}$ |
| 2005 $UW_{70}$ | 15.7 | 0.15 | 20060922 | 204.04957 | 238.20673 | 8.85296 | 10.60654 | 0.0286695 | 3.1335049 | 25 | 4 | 1997–2005 | 0.71 | M-v | 2 | MPC | 97889 | 2005 $UW_{70}$ |
| 2005 $UA_{71}$ | 15.8 | 0.15 | 20060922 | 328.58827 | 176.97142 | 342.17481 | 8.39047 | 0.1755045 | 2.6323608 | 46 | 6 | 1977–2005 | 0.51 | M-v | 1 | MPC | 03759 | 2005 $UA_{71}$ |
| 2005 $UC_{71}$ | 15.4 | 0.15 | 20060922 | 166.90021 | 301.89457 | 348.02841 | 10.93794 | 0.0583370 | 2.6849914 | 73 | 4 | 2000–2005 | 0.68 | M-v | 1 | MPC | 96125 | 2005 $UC_{71}$ |
| 2005 $UU_{72}$ | 15.2 | 0.15 | 20060922 | 106.70753 | 284.10014 | 61.02007 | 4.47620 | 0.1516261 | 3.0581524 | 66 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 96127 | 2005 $UU_{72}$ |
| 2005 $UO_{73}$ | 15.9 | 0.15 | 20060922 | 32.47784 | 236.47599 | 223.46021 | 21.67400 | 0.0645811 | 2.5492072 | 41 | 2 | 2001–2005 | 0.66 | M-v | 4 | MPC | 03760 | 2005 $UO_{73}$ |
| 2005 $UH_{75}$ | 15.2 | 0.15 | 20060922 | 111.38087 | 36.73633 | 298.19538 | 13.08542 | 0.2174840 | 2.6542691 | 79 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 97890 | 2005 $UH_{75}$ |
| 2005 $UY_{75}$ | 15.7 | 0.15 | 20060922 | 44.06486 | 106.06035 | 327.98828 | 13.48265 | 0.0689714 | 2.5811484 | 58 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 96130 | 2005 $UY_{75}$ |
| 2005 $UG_{76}$ | 14.5 | 0.15 | 20060922 | 103.75951 | 69.84444 | 276.46416 | 13.97833 | 0.0826635 | 3.1582138 | 65 | 5 | 1999–2006 | 0.60 | M-v | 1 | MPC | 96130 | 2005 $UG_{76}$ |
| 2005 $UP_{76}$ | 15.1 | 0.15 | 20060922 | 11.92287 | 135.82352 | 338.81712 | 10.88844 | 0.2114021 | 3.0761797 | 46 | 4 | 2000–2006 | 0.47 | M-v | 1 | MPC | 03760 | 2005 $UP_{76}$ |
| 2005 $UW_{76}$ | 15.7 | 0.15 | 20060922 | 88.69432 | 298.65473 | 85.74692 | 16.18164 | 0.1048818 | 2.5735490 | 49 | 3 | 2001–2005 | 0.53 | M-v | 3 | MPC | 96131 | 2005 $UW_{76}$ |
| 2005 $UY_{76}$ | 14.0 | 0.15 | 20060922 | 191.83624 | 176.11644 | 80.01684 | 21.77644 | 0.0870723 | 3.2093443 | 84 | 7 | 1999–2006 | 0.57 | M-v | 1 | MPC | 96131 | 2005 $UY_{76}$ |
| 2005 $UX_{78}$ | 14.8 | 0.15 | 20060922 | 30.18984 | 12.15719 | 68.55315 | 10.49944 | 0.0613629 | 3.1663355 | 53 | 1 | 88 days | 0.51 | M-v | 4 | MPC | 97891 | 2005 $UX_{78}$ |
| 2005 $UY_{82}$ | 16.5 | 0.15 | 20060922 | 130.31985 | 139.23971 | 173.46903 | 1.09495 | 0.1010951 | 3.1313517 | 38 | 6 | 1994–2005 | 0.60 | M-v | 1 | MPC | 04359 | 2005 $UY_{82}$ |
| 2005 $UC_{83}$ | 16.2 | 0.15 | 20060922 | 213.62857 | 210.10899 | 43.68181 | 4.89645 | 0.0743976 | 2.6063489 | 42 | 3 | 2001–2005 | 0.37 | M-v | 2 | MPC | 96139 | 2005 $UC_{83}$ |
| 2005 $UF_{86}$ | 16.5 | 0.15 | 20060922 | 357.57144 | 277.89690 | 196.28515 | 5.01978 | 0.0353700 | 2.7883075 | 29 | 3 | 2000–2005 | 0.33 | M-v | 2 | MPC | 96141 | 2005 $UF_{86}$ |
| 2005 $UL_{86}$ | 17.0 | 0.15 | 20060922 | 184.12999 | 225.59167 | 64.54753 | 2.58101 | 0.1545021 | 2.2499887 | 60 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 97893 | 2005 $UL_{86}$ |
| 2005 $UV_{86}$ | 18.1 | 0.15 | 20060922 | 163.61425 | 113.66859 | 178.72294 | 1.96271 | 0.2139190 | 2.4524457 | 25 | 4 | 1997–2005 | 0.31 | M-v | 2 | MPC | 89964 | 2005 $UV_{86}$ |
| 2005 $UN_{87}$ | 16.5 | 0.15 | 20060922 | 9.33588 | 352.12067 | 107.36994 | 1.66282 | 0.0311094 | 2.8137868 | 64 | 5 | 1995–2006 | 0.49 | M-v | 0 | MPC | 97893 | 2005 $UN_{87}$ |
| 2005 $UU_{87}$ | 15.7 | 0.15 | 20060922 | 120.92656 | 199.56016 | 124.20017 | 0.94972 | 0.0959372 | 3.0904218 | 36 | 4 | 1994–2005 | 0.49 | M-v | 1 | MPC | 04359 | 2005 $UU_{87}$ |
| 2005 $UU_{88}$ | 16.4 | 0.15 | 20060922 | 69.82980 | 217.62672 | 174.95449 | 2.01591 | 0.0758005 | 2.8607336 | 33 | 3 | 2000–2005 | 0.33 | M-v | 3 | MPC | 97893 | 2005 $UU_{88}$ |
| 2005 $UQ_{90}$ | 15.7 | 0.15 | 20060922 | 357.34400 | 189.96603 | 303.50936 | 4.66288 | 0.1183570 | 2.6543874 | 59 | 4 | 1997–2006 | 0.50 | M-v | 2 | MPC | 97894 | 2005 $UQ_{90}$ |
| 2005 $UH_{91}$ | 17.7 | 0.15 | 20060922 | 103.94528 | 53.12732 | 312.36181 | 4.47099 | 0.0921099 | 2.7110497 | 21 | 2 | 2000–2005 | 0.34 | M-v | 5 | MPC | 89965 | 2005 $UH_{91}$ |
| 2005 $UO_{91}$ | 16.9 | 0.15 | 20060922 | 85.41636 | 35.59070 | 352.20677 | 5.54203 | 0.0552423 | 2.7407709 | 30 | 3 | 1996–2005 | 0.46 | M-v | 4 | MPC | 97894 | 2005 $UO_{91}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $UY_{91}$ | 14.5 | 0.15 | 20060922 | 276.97789 | 170.08902 | 11.58631 | 8.59260 | 0.1334502 | 3.9926644 | 29 | 4 | 1992–2005 | 0.56 | M-v | 1 | MPC | 04359 | 2005 $UY_{91}$ |
| 2005 $UY_{92}$ | 16.9 | 0.15 | 20060922 | 177.64542 | 4.59159 | 290.93057 | 3.30127 | 0.1594170 | 2.3938019 | 23 | 3 | 2001–2005 | 0.36 | M-v | 2 | MPC | 89966 | 2005 $UY_{92}$ |
| 2005 $UU_{93}$ | 15.8 | 0.15 | 20060922 | 186.62025 | 231.42080 | 31.00428 | 17.32072 | 0.1798235 | 3.1209862 | 19 | 2 | 2003–2005 | 0.44 | M-v | 4 | MPC | 89966 | 2005 $UU_{93}$ |
| 2005 $UT_{94}$ | 16.7 | 0.15 | 20060922 | 102.56612 | 45.69352 | 306.68594 | 3.77259 | 0.1329193 | 2.9440780 | 19 | 3 | 1997–2005 | 0.26 | M-v | 4 | MPC | 89966 | 2005 $UT_{94}$ |
| 2005 $UL_{95}$ | 15.9 | 0.15 | 20060922 | 90.71732 | 251.52777 | 117.75893 | 3.01043 | 0.1239339 | 2.9510230 | 53 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97894 | 2005 $UL_{95}$ |
| 2005 $UM_{95}$ | 16.1 | 0.15 | 20060922 | 166.38851 | 192.32784 | 106.84791 | 3.37968 | 0.0756441 | 2.7701784 | 39 | 5 | 1998–2006 | 0.36 | M-v | 0 | MPC | 89966 | 2005 $UM_{95}$ |
| 2005 $UA_{96}$ | 16.3 | 0.15 | 20060922 | 203.29115 | 136.27835 | 119.38566 | 2.97915 | 0.0569881 | 3.1765089 | 24 | 3 | 2000–2005 | 0.17 | M-v | 3 | MPC | 97894 | 2005 $UA_{96}$ |
| 2005 $UQ_{98}$ | 16.4 | 0.15 | 20060922 | 99.39510 | 237.62950 | 124.82167 | 3.37589 | 0.1272439 | 2.9185427 | 36 | 3 | 1995–2006 | 0.46 | M-v | 3 | MPC | 03761 | 2005 $UQ_{98}$ |
| 2005 $UD_{101}$ | 15.9 | 0.15 | 20060922 | 107.32047 | 287.91270 | 62.97251 | 11.59857 | 0.1064227 | 2.9763943 | 65 | 3 | 2000–2006 | 0.55 | M-v | 1 | MPC | 96144 | 2005 $UD_{101}$ |
| 2005 $UX_{102}$ | 17.0 | 0.15 | 20060922 | 352.53941 | 100.77437 | 63.14342 | 5.93270 | 0.1597793 | 2.3368460 | 38 | 2 | 2003–2005 | 0.44 | M-v | 3 | MPC | 03762 | 2005 $UX_{102}$ |
| 2005 $UQ_{103}$ | 17.6 | 0.15 | 20060922 | 29.24829 | 300.02060 | 178.87465 | 2.35316 | 0.1481509 | 2.4586148 | 19 | 2 | 2003–2005 | 0.20 | M-v | 5 | MPC | 89968 | 2005 $UQ_{103}$ |
| 2005 $UQ_{104}$ | 15.5 | 0.15 | 20060922 | 333.59239 | 298.16020 | 219.05803 | 13.86589 | 0.0509499 | 2.6950625 | 77 | 5 | 1996–2005 | 0.55 | M-v | 1 | MPC | 97895 | 2005 $UQ_{104}$ |
| 2005 $UJ_{105}$ | 16.1 | 0.15 | 20060922 | 39.10340 | 246.67325 | 196.04832 | 5.24428 | 0.0950041 | 2.9159303 | 47 | 5 | 1992–2005 | 0.50 | M-v | 1 | MPC | 04359 | 2005 $UJ_{105}$ |
| 2005 $UY_{105}$ | 16.7 | 0.15 | 20060922 | 24.99550 | 297.72148 | 179.33432 | 4.31656 | 0.1226042 | 2.5284445 | 53 | 4 | 1995–2005 | 0.57 | M-v | 2 | MPC | 02259 | 2005 $UY_{105}$ |
| 2005 $UA_{106}$ | 16.3 | 0.15 | 20060922 | 196.54469 | 189.16791 | 96.26705 | 3.70073 | 0.0461195 | 2.6214639 | 48 | 5 | 2001–2006 | 0.43 | M-v | 0 | MPC | 97896 | 2005 $UA_{106}$ |
| 2005 $UU_{106}$ | 17.2 | 0.15 | 20060922 | 290.48990 | 99.27126 | 110.79037 | 2.74689 | 0.0861287 | 2.3610969 | 20 | 3 | 2001–2005 | 0.18 | M-v | 3 | MPC | 97896 | 2005 $UU_{106}$ |
| 2005 $UF_{109}$ | 16.0 | 0.15 | 20060922 | 40.81814 | 325.46766 | 100.89401 | 8.34852 | 0.2086120 | 2.9729367 | 33 | 3 | 2000–2006 | 0.53 | M-v | 3 | MPC | 96148 | 2005 $UF_{109}$ |
| 2005 $UF_{111}$ | 16.9 | 0.15 | 20060922 | 74.06482 | 67.95059 | 349.20904 | 1.91399 | 0.1882852 | 2.5981954 | 60 | 5 | 1992–2006 | 0.45 | M-v | 1 | MPC | 04359 | 2005 $UF_{111}$ |
| 2005 $UJ_{111}$ | 16.8 | 0.15 | 20060922 | 121.03102 | 106.18845 | 253.08316 | 5.36261 | 0.0860615 | 2.6882107 | 28 | 3 | 2000–2005 | 0.44 | M-v | 3 | MPC | 03762 | 2005 $UJ_{111}$ |
| 2005 $UZ_{112}$ | 15.4 | 0.15 | 20060922 | 246.55527 | 0.87847 | 238.30461 | 6.86011 | 0.0375279 | 2.7145372 | 64 | 6 | 1996–2006 | 0.44 | M-v | 1 | MPC | 96152 | 2005 $UZ_{112}$ |
| 2005 $UP_{113}$ | 15.6 | 0.15 | 20060922 | 56.25351 | 22.90098 | 40.71990 | 6.52096 | 0.0821751 | 2.9420957 | 38 | 4 | 2000–2005 | 0.44 | M-v | 1 | MPC | 97897 | 2005 $UP_{113}$ |
| 2005 $UN_{114}$ | 14.6 | 0.15 | 20060922 | 348.93741 | 49.42903 | 69.77906 | 17.21872 | 0.0959342 | 3.2053607 | 53 | 3 | 2000–2005 | 0.57 | M-v | 2 | MPC | 03762 | 2005 $UN_{114}$ |
| 2005 $UR_{115}$ | 15.6 | 0.15 | 20060922 | 357.70361 | 87.96983 | 28.39561 | 5.19966 | 0.1166886 | 3.1054380 | 41 | 3 | 2002–2005 | 0.44 | M-v | 3 | MPC | 97898 | 2005 $UR_{115}$ |
| 2005 $US_{115}$ | 17.2 | 0.15 | 20060922 | 147.38410 | 39.66684 | 288.86570 | 1.86697 | 0.1871251 | 2.2729982 | 45 | 3 | 1998–2005 | 0.51 | M-v | 3 | MPC | 97898 | 2005 $US_{115}$ |
| 2005 $UF_{116}$ | 15.7 | 0.15 | 20060922 | 10.65120 | 77.40031 | 26.56222 | 6.16439 | 0.1315309 | 3.0447714 | 36 | 3 | 1994–2005 | 0.52 | M-v | 3 | MPC | 97898 | 2005 $UF_{116}$ |
| 2005 $UZ_{116}$ | 16.0 | 0.15 | 20060922 | 88.96185 | 101.62939 | 281.80591 | 1.43393 | 0.1102278 | 2.6758734 | 57 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 96155 | 2005 $UZ_{116}$ |
| 2005 $UO_{121}$ | 16.6 | 0.15 | 20060922 | 222.20767 | 242.34890 | 8.42166 | 1.53776 | 0.0355725 | 2.6561752 | 45 | 5 | 2000–2005 | 0.51 | M-v | 0 | MPC | 97899 | 2005 $UO_{121}$ |
| 2005 $UX_{121}$ | 16.1 | 0.15 | 20060922 | 187.11693 | 237.21724 | 21.28141 | 2.20917 | 0.1770720 | 3.1606071 | 26 | 2 | 2003–2005 | 0.50 | M-v | 4 | MPC | 89975 | 2005 $UX_{121}$ |
| 2005 $UJ_{124}$ | 15.1 | 0.15 | 20060922 | 298.34677 | 138.24394 | 39.98328 | 12.00273 | 0.0992202 | 3.0594454 | 41 | 3 | 2000–2005 | 0.60 | M-v | 3 | MPC | 03763 | 2005 $UJ_{124}$ |
| 2005 $UW_{124}$ | 16.4 | 0.15 | 20060922 | 306.25660 | 209.64830 | 328.77312 | 1.27979 | 0.0661931 | 2.7285998 | 37 | 6 | 1994–2006 | 0.48 | M-v | 1 | MPC | 01044 | 2005 $UW_{124}$ |
| 2005 $UE_{125}$ | 18.2 | 0.15 | 20060922 | 250.66071 | 217.57813 | 20.23511 | 2.56055 | 0.1707438 | 2.4359973 | 44 | 3 | 2003–2005 | 0.40 | M-v | 2 | MPC | 03764 | 2005 $UE_{125}$ |
| 2005 $UX_{125}$ | 16.8 | 0.15 | 20060922 | 100.00334 | 334.46661 | 39.31564 | 2.79917 | 0.0812706 | 2.7523995 | 39 | 5 | 2000–2005 | 0.59 | M-v | 1 | MPC | 03764 | 2005 $UX_{125}$ |
| 2005 $UL_{126}$ | 16.0 | 0.15 | 20060922 | 56.08089 | 21.01683 | 38.56632 | 2.42339 | 0.0459785 | 2.8373218 | 46 | 5 | 1993–2006 | 0.30 | M-v | 1 | MPC | 96158 | 2005 $UL_{126}$ |
| 2005 $UR_{127}$ | 15.8 | 0.15 | 20060922 | 153.28299 | 47.81495 | 267.81966 | 1.05791 | 0.0210549 | 2.9131485 | 37 | 4 | 2002–2006 | 0.33 | M-v | 0 | MPC | 01045 | 2005 $UR_{127}$ |
| 2005 $UX_{128}$ | 16.9 | 0.15 | 20060922 | 263.40368 | 189.72152 | 37.07125 | 2.88560 | 0.1522434 | 2.4690197 | 34 | 3 | 2001–2005 | 0.27 | M-v | 4 | MPC | 03764 | 2005 $UX_{128}$ |
| 2005 $UC_{129}$ | 16.7 | 0.15 | 20060922 | 344.59786 | 169.08393 | 319.94180 | 0.77875 | 0.0637149 | 3.1130614 | 35 | 3 | 2002–2006 | 0.35 | M-v | 4 | MPC | 03764 | 2005 $UC_{129}$ |
| 2005 $UF_{130}$ | 15.2 | 0.15 | 20060922 | 64.08965 | 272.54611 | 122.13422 | 11.70661 | 0.1696585 | 3.0923463 | 57 | 6 | 1997–2006 | 0.53 | M-v | 1 | MPC | 96160 | 2005 $UF_{130}$ |
| 2005 $UV_{131}$ | 15.4 | 0.15 | 20060922 | 34.34742 | 327.89867 | 112.73196 | 11.25273 | 0.1449286 | 3.1365403 | 42 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 03765 | 2005 $UV_{131}$ |
| 2005 $UO_{133}$ | 17.0 | 0.15 | 20060922 | 155.33525 | 288.41494 | 1.93488 | 6.86642 | 0.1129847 | 2.3203269 | 44 | 3 | 1998–2005 | 0.54 | M-v | 2 | MPC | 96163 | 2005 $UO_{133}$ |
| 2005 $UX_{135}$ | 17.3 | 0.15 | 20060922 | 9.73339 | 101.72083 | 354.28132 | 1.82099 | 0.0531172 | 2.5908866 | 27 | 3 | 1999–2005 | 0.42 | M-v | 4 | MPC | 01045 | 2005 $UX_{135}$ |
| 2005 $UQ_{138}$ | 16.4 | 0.15 | 20060922 | 13.22209 | 272.73999 | 203.13769 | 2.51051 | 0.0631886 | 2.6694479 | 49 | 5 | 1992–2005 | 0.44 | M-v | 0 | MPC | 04359 | 2005 $UQ_{138}$ |
| 2005 $UA_{141}$ | 16.6 | 0.15 | 20060922 | 101.88374 | 148.61523 | 206.82776 | 8.28489 | 0.2180788 | 2.7943273 | 34 | 2 | 2000–2005 | 0.71 | M-v | 3 | MPC | 89978 | 2005 $UA_{141}$ |
| 2005 $UC_{141}$ | 16.5 | 0.15 | 20060922 | 110.62617 | 324.51714 | 61.52634 | 10.12067 | 0.1238527 | 2.2712165 | 67 | 1 | 66 days | 0.52 | M-v | 4 | MPC | 97903 | 2005 $UC_{141}$ |
| 2005 $US_{141}$ | 15.2 | 0.15 | 20060922 | 309.61498 | 95.11769 | 70.01555 | 11.35099 | 0.0794614 | 3.0470365 | 51 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 97903 | 2005 $US_{141}$ |
| 2005 $UT_{141}$ | 16.3 | 0.15 | 20060922 | 109.12835 | 233.47505 | 121.12394 | 5.36890 | 0.2079006 | 2.6175182 | 52 | 5 | 2001–2006 | 0.58 | M-v | 1 | MPC | 96165 | 2005 $UT_{141}$ |
| 2005 $UV_{141}$ | 15.5 | 0.15 | 20060922 | 48.85153 | 231.79510 | 200.48297 | 15.09264 | 0.0072636 | 2.6524257 | 32 | 2 | 2003–2005 | 0.62 | M-v | 4 | MPC | 03765 | 2005 $UV_{141}$ |
| 2005 $UE_{142}$ | 17.0 | 0.15 | 20060922 | 132.26654 | 191.08901 | 149.21882 | 7.07269 | 0.1525975 | 2.4691150 | 26 | 4 | 2001–2005 | 0.67 | M-v | 0 | MPC | 03765 | 2005 $UE_{142}$ |
| 2005 $UA_{148}$ | 16.6 | 0.15 | 20060922 | 280.46737 | 191.46113 | 13.80023 | 4.42650 | 0.0836781 | 2.6019440 | 23 | 4 | 1992–2005 | 0.38 | M-v | 2 | MPC | 04359 | 2005 $UA_{148}$ |
| 2005 $UD_{149}$ | 17.1 | 0.15 | 20060922 | 302.87463 | 309.88752 | 229.63467 | 8.30563 | 0.0818300 | 2.7386816 | 35 | 3 | 1996–2005 | 0.43 | M-v | 3 | MPC | 96170 | 2005 $UD_{149}$ |
| 2005 $UH_{150}$ | 16.0 | 0.15 | 20060922 | 20.59286 | 56.56939 | 25.30946 | 5.98343 | 0.1224950 | 2.7007853 | 33 | 2 | 2001–2005 | 0.45 | M-v | 4 | MPC | 03766 | 2005 $UH_{150}$ |
| 2005 $UW_{150}$ | 15.6 | 0.15 | 20060922 | 37.09247 | 51.96747 | 21.90107 | 1.67777 | 0.0938946 | 3.1673018 | 47 | 3 | 2001–2005 | 0.47 | M-v | 4 | MPC | 03766 | 2005 $UW_{150}$ |
| 2005 $UA_{153}$ | 16.6 | 0.15 | 20060922 | 163.11303 | 271.99429 | 38.23891 | 3.81917 | 0.0879921 | 2.7010111 | 23 | 3 | 1996–2005 | 0.29 | M-v | 3 | MPC | 89981 | 2005 $UA_{153}$ |
| 2005 $UQ_{153}$ | 17.6 | 0.15 | 20060922 | 171.81208 | 333.76015 | 347.39917 | 0.77390 | 0.0406913 | 2.3892150 | 27 | 3 | 2001–2005 | 0.40 | M-v | 4 | MPC | 03766 | 2005 $UQ_{153}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $UU_{154}$ | 15.4 | 0.15 | 20050927 | 270.09598 | 113.66320 | 53.33420 | 26.71455 | 0.2486561 | 3.1632145 | 14 | 1 | 29 days | 0.26 | | | MPC | | 2005 $UU_{154}$ |
| 2005 $UZ_{155}$ | 15.2 | 0.15 | 20060922 | 28.36775 | 312.46317 | 123.57476 | 11.87316 | 0.1076380 | 3.0593691 | 48 | 4 | 2002–2006 | 0.57 | M-v | 1 | MPC | 96174 | 2005 $UZ_{155}$ |
| 2005 $UN_{156}$ | 17.4 | 0.15 | 20060922 | 148.90000 | 279.72443 | 33.20257 | 2.33827 | 0.1402068 | 2.5217563 | 37 | 4 | 1997–2005 | 0.37 | M-v | 2 | MPC | 03766 | 2005 $UN_{156}$ |
| 2005 $UO_{159}$ | 16.0 | 0.15 | 20060922 | 94.23275 | 202.55547 | 156.18667 | 5.06542 | 0.1229906 | 2.8132237 | 47 | 4 | 2000–2006 | 0.52 | M-v | 2 | MPC | 01049 | 2005 $UO_{159}$ |
| 2005 $UY_{160}$ | 15.6 | 0.15 | 20060922 | 72.38003 | 340.56500 | 57.42568 | 12.79675 | 0.1477231 | 2.7630890 | 64 | 1 | 70 days | 0.53 | M-v | 4 | MPC | 97907 | 2005 $UY_{160}$ |
| 2005 $US_{161}$ | 15.3 | 0.15 | 20060922 | 73.97856 | 328.09494 | 54.60740 | 4.64407 | 0.2238719 | 3.0592106 | 90 | 4 | 2000–2006 | 0.38 | M-v | 1 | MPC | 96180 | 2005 $US_{161}$ |
| 2005 $UD_{162}$ | 16.1 | 0.15 | 20060922 | 347.55951 | 346.64436 | 135.80453 | 6.56074 | 0.0196893 | 2.6013701 | 44 | 3 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03767 | 2005 $UD_{162}$ |
| 2005 $UN_{162}$ | 14.9 | 0.15 | 20060922 | 9.67239 | 325.88513 | 136.94745 | 9.93341 | 0.1012677 | 3.0097185 | 42 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 96182 | 2005 $UN_{162}$ |
| 2005 $UO_{162}$ | 16.2 | 0.15 | 20060922 | 76.89331 | 239.83932 | 152.57909 | 6.79002 | 0.0995409 | 2.7158024 | 35 | 3 | 2003–2006 | 0.51 | M-v | 3 | MPC | 96182 | 2005 $UO_{162}$ |
| 2005 $UG_{163}$ | 16.0 | 0.15 | 20060922 | 306.12172 | 169.90437 | 354.93694 | 2.25517 | 0.0331744 | 2.8182141 | 63 | 7 | 1995–2006 | 0.59 | M-v | 0 | MPC | 96183 | 2005 $UG_{163}$ |
| 2005 $UE_{164}$ | 17.4 | 0.15 | 20051106 | 130.34658 | 253.97109 | 4.68856 | 3.31767 | 0.1468217 | 2.3167657 | 21 | 1 | 37 days | 0.33 | | | MPC | | 2005 $UE_{164}$ |
| 2005 $UK_{164}$ | 16.7 | 0.15 | 20060922 | 296.69386 | 309.12642 | 246.55916 | 3.15909 | 0.1019872 | 2.3845116 | 33 | 3 | 2000–2005 | 0.48 | M-v | 4 | MPC | 96184 | 2005 $UK_{164}$ |
| 2005 $UG_{166}$ | 16.0 | 0.15 | 20060922 | 180.64093 | 250.46537 | 19.07845 | 1.05748 | 0.0985533 | 3.0117995 | 50 | 4 | 2003–2006 | 0.29 | M-v | 0 | MPC | 96185 | 2005 $UG_{166}$ |
| 2005 $UX_{167}$ | 16.5 | 0.15 | 20060922 | 330.26308 | 302.39536 | 221.40398 | 11.28560 | 0.2159813 | 2.6277833 | 39 | 3 | 2001–2005 | 0.54 | M-v | 2 | MPC | 03767 | 2005 $UX_{167}$ |
| 2005 $UT_{169}$ | 16.2 | 0.15 | 20060922 | 8.84630 | 138.29426 | 335.02719 | 1.15642 | 0.0337547 | 2.6953849 | 45 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 01050 | 2005 $UT_{169}$ |
| 2005 $UG_{171}$ | 15.0 | 0.15 | 20060922 | 357.12332 | 190.71327 | 279.17505 | 2.26388 | 0.1720159 | 3.9516929 | 53 | 6 | 1998–2006 | 0.39 | M-v | 0 | MPC | 96187 | 2005 $UG_{171}$ |
| 2005 $US_{174}$ | 17.3 | 0.15 | 20060922 | 271.34179 | 258.21675 | 340.09154 | 1.97580 | 0.1294470 | 2.1725900 | 30 | 5 | 1994–2005 | 0.40 | M-v | 1 | MPC | 01051 | 2005 $US_{174}$ |
| 2005 $UX_{174}$ | 17.1 | 0.15 | 20060922 | 200.52195 | 294.87504 | 345.48201 | 3.30104 | 0.0590886 | 2.6924043 | 24 | 3 | 2003–2005 | 0.36 | M-v | 3 | MPC | 96188 | 2005 $UX_{174}$ |
| 2005 $UC_{176}$ | 17.7 | 0.15 | 20060922 | 261.62876 | 194.21203 | 44.44473 | 11.45270 | 0.1390290 | 2.3460453 | 19 | 3 | 2000–2005 | 0.48 | M-v | 4 | MPC | 96189 | 2005 $UC_{176}$ |
| 2005 $UU_{177}$ | 16.3 | 0.15 | 20060922 | 156.01194 | 330.16222 | 335.37300 | 2.30185 | 0.0761766 | 3.0668598 | 40 | 6 | 1994–2005 | 0.38 | M-v | 0 | MPC | 04360 | 2005 $UU_{177}$ |
| 2005 $UT_{178}$ | 15.3 | 0.15 | 20060922 | 107.02889 | 208.73118 | 146.34545 | 2.13652 | 0.1084987 | 3.1088754 | 67 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 96191 | 2005 $UT_{178}$ |
| 2005 $UL_{179}$ | 16.5 | 0.15 | 20060922 | 339.23920 | 28.64922 | 118.44494 | 2.50118 | 0.1083346 | 3.0905828 | 32 | 3 | 1999–2005 | 0.29 | M-v | 3 | MPC | 96191 | 2005 $UL_{179}$ |
| 2005 $US_{182}$ | 15.3 | 0.15 | 20060922 | 61.85351 | 346.20834 | 63.42968 | 3.22142 | 0.0982262 | 3.1839779 | 56 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 96194 | 2005 $US_{182}$ |
| 2005 $UV_{182}$ | 16.6 | 0.15 | 20060922 | 63.29384 | 181.44246 | 231.73744 | 2.35227 | 0.0709333 | 3.0415337 | 32 | 4 | 1995–2005 | 0.30 | M-v | 1 | MPC | 01052 | 2005 $UV_{182}$ |
| 2005 $UK_{190}$ | 15.6 | 0.15 | 20060922 | 22.68379 | 55.40174 | 47.22342 | 6.20799 | 0.2009678 | 3.0392702 | 54 | 2 | 2000–2005 | 0.46 | M-v | 3 | MPC | 03768 | 2005 $UK_{190}$ |
| 2005 $UT_{193}$ | 15.8 | 0.15 | 20060922 | 166.83987 | 104.41350 | 165.74905 | 2.09603 | 0.0202857 | 3.4638894 | 32 | 4 | 1999–2006 | 0.35 | M-v | 0 | MPC | 03769 | 2005 $UT_{193}$ |
| 2005 $UL_{199}$ | 15.7 | 0.15 | 20060922 | 240.59295 | 47.42903 | 178.30993 | 1.44012 | 0.1046008 | 3.1023239 | 27 | 3 | 2002–2006 | 0.56 | M-v | 4 | MPC | 03769 | 2005 $UL_{199}$ |
| 2005 $UT_{200}$ | 16.2 | 0.15 | 20060922 | 194.48512 | 67.58037 | 208.04802 | 4.38789 | 0.1239891 | 2.6823282 | 40 | 5 | 1999–2006 | 0.41 | M-v | 1 | MPC | 96202 | 2005 $UT_{200}$ |
| 2005 $UB_{202}$ | 16.0 | 0.15 | 20060922 | 219.51173 | 177.10518 | 83.42878 | 3.26817 | 0.0271475 | 2.6902994 | 56 | 6 | 1994–2006 | 0.46 | M-v | 1 | MPC | 01055 | 2005 $UB_{202}$ |
| 2005 $UG_{202}$ | 17.5 | 0.15 | 20060922 | 92.95073 | 313.60046 | 72.31324 | 3.17093 | 0.0837496 | 2.5990344 | 38 | 2 | 2001–2005 | 0.38 | M-v | 3 | MPC | 03770 | 2005 $UG_{202}$ |
| 2005 $UQ_{202}$ | 16.2 | 0.15 | 20060922 | 27.97990 | 30.80026 | 61.23820 | 4.97551 | 0.0688869 | 2.8016401 | 62 | 4 | 2002–2006 | 0.34 | M-v | 1 | MPC | 96203 | 2005 $UQ_{202}$ |
| 2005 $UZ_{202}$ | 17.8 | 0.15 | 20051106 | 21.21585 | 181.33418 | 202.99894 | 3.90268 | 0.0370941 | 2.3972734 | 17 | 1 | 12 days | 0.30 | | | MPC | | 2005 $UZ_{202}$ |
| 2005 $UW_{203}$ | 17.5 | 0.15 | 20060922 | 288.62305 | 63.24349 | 145.16348 | 0.43942 | 0.1360958 | 2.4241980 | 27 | 2 | 2003–2005 | 0.46 | M-v | 5 | MPC | 03770 | 2005 $UW_{203}$ |
| 2005 $UA_{204}$ | 17.0 | 0.15 | 20060922 | 92.43630 | 245.68213 | 132.65804 | 0.97582 | 0.0861036 | 2.8192962 | 35 | 3 | 2000–2005 | 0.41 | M-v | 4 | MPC | 01056 | 2005 $UA_{204}$ |
| 2005 $UD_{204}$ | 15.2 | 0.15 | 20060922 | 31.26299 | 272.81076 | 164.60412 | 1.24153 | 0.0261094 | 3.1035222 | 100 | 5 | 1994–2006 | 0.48 | M-v | 1 | MPC | 96204 | 2005 $UD_{204}$ |
| 2005 $UK_{205}$ | 15.9 | 0.15 | 20060922 | 294.68531 | 135.40439 | 65.04692 | 5.43083 | 0.1382624 | 2.6539611 | 62 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 96205 | 2005 $UK_{205}$ |
| 2005 $UH_{206}$ | 16.5 | 0.15 | 20060922 | 131.90174 | 261.43605 | 56.92162 | 2.94555 | 0.0499447 | 2.7455077 | 29 | 3 | 1999–2005 | 0.44 | M-v | 3 | MPC | 03770 | 2005 $UH_{206}$ |
| 2005 $UY_{213}$ | 17.8 | 0.15 | 20060922 | 107.81658 | 204.64358 | 201.01346 | 22.01846 | 0.0910672 | 2.0028984 | 35 | 2 | 2002–2005 | 0.63 | M-v | 3 | MPC | 03770 | 2005 $UY_{213}$ |
| 2005 $UH_{214}$ | 14.9 | 0.15 | 20060922 | 40.06698 | 312.23440 | 116.52601 | 13.09685 | 0.1000290 | 3.1221021 | 49 | 5 | 1996–2006 | 0.50 | M-v | 1 | MPC | 96209 | 2005 $UH_{214}$ |
| 2005 $UQ_{214}$ | 17.0 | 0.15 | 20060922 | 76.74956 | 315.13495 | 94.13824 | 5.33580 | 0.1534136 | 2.3322267 | 39 | 3 | 1999–2005 | 0.51 | M-v | 3 | MPC | 96209 | 2005 $UQ_{214}$ |
| 2005 $UY_{214}$ | 16.2 | 0.15 | 20060922 | 154.50602 | 205.76899 | 89.55188 | 6.66790 | 0.2706812 | 2.3494082 | 33 | 3 | 2001–2005 | 0.56 | M-v | 3 | MPC | 96210 | 2005 $UY_{214}$ |
| 2005 $UQ_{215}$ | 17.3 | 0.15 | 20060922 | 66.51948 | 297.96011 | 127.44382 | 2.82264 | 0.1807868 | 2.3874923 | 45 | 3 | 1999–2006 | 0.72 | M-v | 2 | MPC | 96210 | 2005 $UQ_{215}$ |
| 2005 $UX_{215}$ | 18.0 | 0.15 | 20060922 | 87.04203 | 330.34134 | 79.87122 | 3.66232 | 0.2395687 | 2.2958900 | 62 | 1 | 93 days | 0.63 | M-v | 3 | MPC | 97919 | 2005 $UX_{215}$ |
| 2005 $UD_{216}$ | 15.2 | 0.15 | 20060922 | 67.73901 | 301.75279 | 89.03306 | 3.11406 | 0.0723559 | 3.0768690 | 110 | 6 | 1992–2006 | 0.53 | M-v | 1 | MPC | 96212 | 2005 $UD_{216}$ |
| 2005 $UF_{222}$ | 18.1 | 0.15 | 20060922 | 346.05507 | 229.78398 | 289.00827 | 1.92213 | 0.0866123 | 2.2282757 | 31 | 4 | 1995–2005 | 0.27 | M-v | 1 | MPC | 03771 | 2005 $UF_{222}$ |
| 2005 $UF_{224}$ | 18.6 | 0.15 | 20051017 | 9.90146 | 124.28187 | 253.04946 | 3.61699 | 0.2387722 | 2.6615666 | 18 | 1 | 12 days | 0.23 | | | MPC | | 2005 $UF_{224}$ |
| 2005 $UK_{224}$ | 16.4 | 0.15 | 20051017 | 59.83086 | 290.49980 | 18.87665 | 6.94440 | 0.2465405 | 3.1507573 | 23 | 1 | 12 days | 0.43 | | | MPC | | 2005 $UK_{224}$ |
| 2005 $UY_{224}$ | 16.9 | 0.15 | 20060922 | 147.87932 | 13.53617 | 310.71544 | 2.40542 | 0.0451299 | 2.5383272 | 38 | 4 | 2001–2006 | 0.44 | M-v | 2 | MPC | 96219 | 2005 $UY_{224}$ |
| 2005 $UD_{226}$ | 16.1 | 0.15 | 20060922 | 122.98634 | 131.18523 | 203.19711 | 1.77485 | 0.0887173 | 3.0160203 | 54 | 7 | 1994–2006 | 0.54 | M-v | 0 | MPC | 04360 | 2005 $UD_{226}$ |
| 2005 $UW_{226}$ | 15.9 | 0.15 | 20060922 | 163.48691 | 92.51313 | 209.56944 | 3.60952 | 0.0368484 | 2.9434075 | 41 | 5 | 2002–2006 | 0.52 | M-v | 0 | MPC | 96220 | 2005 $UW_{226}$ |
| 2005 $UP_{227}$ | 17.2 | 0.15 | 20060922 | 185.35340 | 101.40696 | 201.22963 | 3.48036 | 0.1527682 | 2.1833451 | 34 | 3 | 1995–2005 | 0.27 | M-v | 2 | MPC | 01059 | 2005 $UP_{227}$ |
| 2005 $US_{229}$ | 16.0 | 0.15 | 20060922 | 284.12902 | 341.41535 | 207.56755 | 5.37728 | 0.0815354 | 3.0555448 | 27 | 4 | 1997–2006 | 0.44 | M-v | 3 | MPC | 03771 | 2005 $US_{229}$ |
| 2005 $UU_{230}$ | 16.4 | 0.15 | 20060922 | 142.57883 | 258.80896 | 45.88909 | 1.05407 | 0.1505770 | 3.0897452 | 41 | 5 | 1994–2005 | 0.40 | M-v | 0 | MPC | 04360 | 2005 $UU_{230}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $UM_{233}$ | 16.0 | 0.15 | 20060922 | 247.27931 | 24.98439 | 209.59692 | 11.59842 | 0.1420419 | 2.6468472 | 33 | 5 | 1996–2005 | 0.59 | M-v | 1 | MPC | 96226 | 2005 $UM_{233}$ |
| 2005 $UM_{237}$ | 15.9 | 0.15 | 20060922 | 109.61796 | 251.48025 | 105.18546 | 5.55078 | 0.0864520 | 2.9820516 | 39 | 5 | 1998–2005 | 0.43 | M-v | 0 | MPC | 03772 | 2005 $UM_{237}$ |
| 2005 $UT_{237}$ | 16.0 | 0.15 | 20060922 | 113.97327 | 278.36868 | 93.23899 | 5.55917 | 0.0312034 | 2.6018932 | 54 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 96227 | 2005 $UT_{237}$ |
| 2005 $UB_{238}$ | 16.9 | 0.15 | 20060922 | 29.29886 | 337.71686 | 136.19902 | 4.32913 | 0.1209692 | 2.5172234 | 33 | 3 | 1995–2005 | 0.46 | M-v | 2 | MPC | 96227 | 2005 $UB_{238}$ |
| 2005 $UX_{241}$ | 17.0 | 0.15 | 20060922 | 214.88828 | 289.34307 | 343.36523 | 2.96261 | 0.0490204 | 2.6919218 | 27 | 4 | 1998–2005 | 0.37 | M-v | 0 | MPC | 96229 | 2005 $UX_{241}$ |
| 2005 $UP_{242}$ | 17.9 | 0.15 | 20060922 | 68.48059 | 79.71163 | 8.70687 | 5.44214 | 0.1049944 | 2.2358473 | 22 | 3 | 1998–2005 | 0.38 | M-v | 2 | MPC | 03772 | 2005 $UP_{242}$ |
| 2005 $UU_{243}$ | 14.9 | 0.15 | 20060922 | 288.80076 | 244.47048 | 310.01102 | 3.69675 | 0.0684843 | 3.2577532 | 62 | 6 | 1993–2006 | 0.42 | M-v | 1 | MPC | 96229 | 2005 $UU_{243}$ |
| 2005 $UT_{244}$ | 16.7 | 0.15 | 20060922 | 100.95832 | 8.41677 | 19.14035 | 7.06261 | 0.0562555 | 2.7230670 | 31 | 4 | 1994–2005 | 0.36 | M-v | 1 | MPC | 04360 | 2005 $UT_{244}$ |
| 2005 $UQ_{248}$ | 16.1 | 0.15 | 20060922 | 177.81375 | 86.16964 | 192.84302 | 3.10596 | 0.0484836 | 3.3588458 | 27 | 3 | 1998–2005 | 0.31 | M-v | 4 | MPC | 01062 | 2005 $UQ_{248}$ |
| 2005 $UA_{250}$ | 16.2 | 0.15 | 20060922 | 89.78900 | 100.24160 | 267.88004 | 5.10983 | 0.0612414 | 2.7752501 | 59 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 96233 | 2005 $UA_{250}$ |
| 2005 $UF_{250}$ | 15.6 | 0.15 | 20060922 | 110.67787 | 24.73391 | 310.51929 | 12.78165 | 0.1847610 | 2.6325639 | 48 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 96233 | 2005 $UF_{250}$ |
| 2005 $UN_{250}$ | 15.7 | 0.15 | 20060922 | 50.94848 | 89.61621 | 308.73409 | 8.91026 | 0.0843841 | 3.0749826 | 38 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 96233 | 2005 $UN_{250}$ |
| 2005 $UR_{251}$ | 17.6 | 0.15 | 20060922 | 59.99445 | 221.70463 | 224.03143 | 3.82432 | 0.1007547 | 2.2399992 | 25 | 3 | 1995–2005 | 0.38 | M-v | 3 | MPC | 03773 | 2005 $UR_{251}$ |
| 2005 $UD_{255}$ | 16.0 | 0.15 | 20060922 | 148.35237 | 176.10339 | 103.43467 | 2.16090 | 0.1251299 | 3.2459289 | 39 | 5 | 1999–2005 | 0.40 | M-v | 0 | MPC | 96240 | 2005 $UD_{255}$ |
| 2005 $UO_{255}$ | 15.6 | 0.15 | 20060922 | 337.46548 | 324.61735 | 154.23042 | 2.05734 | 0.1132355 | 3.2359080 | 42 | 4 | 1999–2006 | 0.34 | M-v | 1 | MPC | 03773 | 2005 $UO_{255}$ |
| 2005 $UW_{258}$ | 16.1 | 0.15 | 20060922 | 273.81905 | 44.29260 | 145.82320 | 2.44683 | 0.0182611 | 3.0478735 | 31 | 3 | 2002–2006 | 0.28 | M-v | 3 | MPC | 03774 | 2005 $UW_{258}$ |
| 2005 $UE_{259}$ | 16.6 | 0.15 | 20060922 | 233.11703 | 147.25400 | 92.15698 | 3.05645 | 0.0287595 | 2.7335410 | 29 | 4 | 2003–2006 | 0.35 | M-v | 1 | MPC | 01064 | 2005 $UE_{259}$ |
| 2005 $UV_{260}$ | 16.4 | 0.15 | 20060922 | 149.25301 | 249.71329 | 74.60280 | 5.74661 | 0.1152846 | 2.7271093 | 38 | 5 | 1999–2006 | 0.47 | M-v | 0 | MPC | 96241 | 2005 $UV_{260}$ |
| 2005 $UA_{263}$ | 16.4 | 0.15 | 20060922 | 69.62356 | 230.92408 | 149.93278 | 2.48337 | 0.0828431 | 2.8623345 | 37 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 01064 | 2005 $UA_{263}$ |
| 2005 $UG_{265}$ | 16.3 | 0.15 | 20060922 | 337.49863 | 14.62759 | 132.36000 | 2.10348 | 0.1245734 | 3.1081897 | 37 | 4 | 2002–2006 | 0.37 | M-v | 1 | MPC | 96242 | 2005 $UG_{265}$ |
| 2005 $UG_{267}$ | 17.2 | 0.15 | 20060922 | 226.37434 | 78.27021 | 179.01970 | 3.26089 | 0.0203423 | 2.6206978 | 28 | 3 | 1996–2005 | 0.44 | M-v | 3 | MPC | 96243 | 2005 $UG_{267}$ |
| 2005 $UZ_{269}$ | 15.6 | 0.15 | 20060922 | 208.14301 | 212.94478 | 32.84547 | 13.25970 | 0.1305826 | 2.6834696 | 60 | 3 | 1999–2005 | 0.60 | M-v | 2 | MPC | 03774 | 2005 $UZ_{269}$ |
| 2005 $UK_{275}$ | 16.1 | 0.15 | 20060922 | 52.03245 | 135.01853 | 287.73239 | 1.80168 | 0.0763715 | 2.7240321 | 83 | 4 | 2000–2006 | 0.62 | M-v | 1 | MPC | 96247 | 2005 $UK_{275}$ |
| 2005 $UE_{278}$ | 17.1 | 0.15 | 20060922 | 160.52739 | 95.97884 | 208.88691 | 1.98332 | 0.0656840 | 2.7718993 | 25 | 4 | 2000–2005 | 0.54 | M-v | 0 | MPC | 96249 | 2005 $UE_{278}$ |
| 2005 $UQ_{279}$ | 17.1 | 0.15 | 20060922 | 99.60672 | 321.85184 | 48.85943 | 3.00549 | 0.0574321 | 2.7317668 | 24 | 3 | 1996–2005 | 0.33 | M-v | 2 | MPC | 96249 | 2005 $UQ_{279}$ |
| 2005 $UB_{282}$ | 19.2 | 0.15 | 20051106 | 12.92523 | 339.80887 | 54.92078 | 6.13548 | 0.1256509 | 2.2094272 | 20 | 1 | 41 days | 0.36 | | | MPC | | 2005 $UB_{282}$ |
| 2005 $UF_{289}$ | 15.2 | 0.15 | 20060922 | 93.27411 | 64.19497 | 303.48405 | 4.36881 | 0.0476573 | 3.2068674 | 38 | 4 | 1999–2006 | 0.47 | M-v | 0 | MPC | 96253 | 2005 $UF_{289}$ |
| 2005 $UD_{290}$ | 16.1 | 0.15 | 20060922 | 243.74843 | 326.30690 | 258.27758 | 7.00290 | 0.1255563 | 3.1541315 | 21 | 2 | 2004–2005 | 0.19 | M-v | 3 | MPC | 03775 | 2005 $UD_{290}$ |
| 2005 $UO_{290}$ | 15.6 | 0.15 | 20060922 | 288.84256 | 175.00065 | 9.16998 | 6.74244 | 0.1248968 | 3.2527370 | 23 | 3 | 2002–2005 | 0.39 | M-v | 4 | MPC | 96253 | 2005 $UO_{290}$ |
| 2005 $UG_{293}$ | 15.2 | 0.15 | 20060922 | 56.32151 | 151.82938 | 255.11513 | 6.52880 | 0.0305296 | 3.2434559 | 36 | 3 | 2004–2006 | 0.43 | M-v | 2 | MPC | 96254 | 2005 $UG_{293}$ |
| 2005 $UN_{293}$ | 16.7 | 0.15 | 20060922 | 257.17524 | 274.99110 | 309.74018 | 2.37427 | 0.1518875 | 2.7025454 | 39 | 4 | 2003–2006 | 0.61 | M-v | 1 | MPC | 96254 | 2005 $UN_{293}$ |
| 2005 $UO_{294}$ | 16.1 | 0.15 | 20060922 | 3.29728 | 163.50497 | 312.17802 | 2.29991 | 0.0866614 | 3.0139402 | 42 | 6 | 1999–2006 | 0.50 | M-v | 0 | MPC | 96254 | 2005 $UO_{294}$ |
| 2005 $UU_{301}$ | 15.4 | 0.15 | 20060922 | 358.48031 | 348.37187 | 138.36723 | 5.28103 | 0.0915820 | 3.0405930 | 31 | 3 | 2002–2006 | 0.52 | M-v | 2 | MPC | 96258 | 2005 $UU_{301}$ |
| 2005 $UJ_{302}$ | 17.0 | 0.15 | 20060922 | 103.31432 | 244.44503 | 139.72565 | 4.59596 | 0.1157302 | 2.5121573 | 31 | 3 | 2001–2005 | 0.49 | M-v | 3 | MPC | 03776 | 2005 $UJ_{302}$ |
| 2005 $UY_{305}$ | 17.2 | 0.15 | 20060922 | 88.30462 | 1.25932 | 24.10520 | 2.41215 | 0.0372961 | 2.6667434 | 30 | 3 | 2000–2005 | 0.37 | M-v | 3 | MPC | 96259 | 2005 $UY_{305}$ |
| 2005 $UE_{306}$ | 17.7 | 0.15 | 20060922 | 202.27488 | 49.33568 | 223.43380 | 10.50925 | 0.1950796 | 2.2853869 | 29 | 2 | 2001–2005 | 0.37 | M-v | 3 | MPC | 03777 | 2005 $UE_{306}$ |
| 2005 $UZ_{310}$ | 17.5 | 0.15 | 20060922 | 23.33428 | 293.35489 | 160.06692 | 2.24473 | 0.0961635 | 2.5903107 | 35 | 3 | 2001–2005 | 0.38 | M-v | 3 | MPC | 03777 | 2005 $UZ_{310}$ |
| 2005 $UT_{319}$ | 14.9 | 0.15 | 20060922 | 252.58581 | 177.68727 | 34.35036 | 12.09427 | 0.0900806 | 3.1071942 | 39 | 3 | 2002–2005 | 0.53 | M-v | 3 | MPC | 96265 | 2005 $UT_{319}$ |
| 2005 $UL_{320}$ | 16.2 | 0.15 | 20060922 | 326.68666 | 15.42341 | 153.21968 | 2.95291 | 0.1258857 | 2.6774801 | 24 | 2 | 2003–2005 | 0.64 | M-v | 3 | MPC | 03778 | 2005 $UL_{320}$ |
| 2005 $UX_{320}$ | 16.5 | 0.15 | 20060922 | 121.64827 | 159.28518 | 196.95980 | 5.69900 | 0.0438758 | 2.7011519 | 25 | 2 | 2003–2005 | 0.28 | M-v | 3 | MPC | 96265 | 2005 $UX_{320}$ |
| 2005 $UX_{322}$ | 17.3 | 0.15 | 20060922 | 102.65431 | 131.68160 | 235.07238 | 5.24234 | 0.1340359 | 2.6765246 | 32 | 3 | 1998–2005 | 0.33 | M-v | 2 | MPC | 03778 | 2005 $UX_{322}$ |
| 2005 $US_{323}$ | 14.2 | 0.15 | 20060922 | 94.28861 | 296.67022 | 91.65400 | 13.15198 | 0.2568581 | 3.0745964 | 140 | 7 | 1999–2006 | 0.59 | M-v | 0 | MPC | 96266 | 2005 $US_{323}$ |
| 2005 $UB_{327}$ | 15.9 | 0.15 | 20060922 | 30.49392 | 178.44736 | 273.18730 | 1.34143 | 0.2085025 | 2.9809536 | 65 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 96268 | 2005 $UB_{327}$ |
| 2005 $UH_{328}$ | 17.2 | 0.15 | 20060922 | 339.13156 | 99.04474 | 42.37397 | 2.05059 | 0.1351797 | 2.4327088 | 31 | 2 | 2003–2005 | 0.35 | M-v | 4 | MPC | 96269 | 2005 $UH_{328}$ |
| 2005 $UW_{329}$ | 14.9 | 0.15 | 20060922 | 29.06882 | 102.95558 | 341.26729 | 20.89616 | 0.1577403 | 3.0112160 | 36 | 3 | 2000–2005 | 0.54 | M-v | 3 | MPC | 96269 | 2005 $UW_{329}$ |
| 2005 $UY_{333}$ | 16.0 | 0.15 | 20060922 | 128.10876 | 159.46071 | 190.64245 | 2.65011 | 0.0378357 | 2.9800723 | 46 | 3 | 2002–2005 | 0.33 | M-v | 3 | MPC | 03778 | 2005 $UY_{333}$ |
| 2005 $UT_{334}$ | 17.3 | 0.15 | 20051126 | 152.89841 | 190.29529 | 75.70019 | 7.70093 | 0.1390724 | 2.2271910 | 22 | 1 | 57 days | 0.36 | | | MPC | | 2005 $UT_{334}$ |
| 2005 $UY_{336}$ | 16.6 | 0.15 | 20060922 | 158.96949 | 306.21997 | 58.63929 | 23.59915 | 0.0932918 | 1.9518352 | 77 | 3 | 1996–2005 | 0.45 | M-v | 2 | MPC | 96272 | 2005 $UY_{336}$ |
| 2005 $UE_{340}$ | 16.0 | 0.15 | 20060922 | 102.61262 | 253.89111 | 105.40015 | 3.15431 | 0.0770582 | 2.9808217 | 53 | 7 | 1999–2006 | 0.46 | M-v | 0 | MPC | 96274 | 2005 $UE_{340}$ |
| 2005 $UC_{343}$ | 15.5 | 0.15 | 20060922 | 79.61592 | 255.44655 | 108.47672 | 11.65464 | 0.1606356 | 2.9486634 | 51 | 5 | 1997–2006 | 0.56 | M-v | 2 | MPC | 96275 | 2005 $UC_{343}$ |
| 2005 $UJ_{348}$ | 15.4 | 0.15 | 20060922 | 128.16065 | 295.06148 | 120.83894 | 11.65394 | 0.0608261 | 3.0310438 | 38 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 96278 | 2005 $UJ_{348}$ |
| 2005 $UR_{348}$ | 15.4 | 0.15 | 20060922 | 323.39532 | 215.83834 | 276.72500 | 7.67532 | 0.0226945 | 3.1600332 | 47 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 01074 | 2005 $UR_{348}$ |
| 2005 $UV_{348}$ | 15.4 | 0.15 | 20060922 | 127.43950 | 98.31439 | 248.93212 | 13.89095 | 0.1404830 | 2.6265735 | 59 | 1 | 91 days | 0.59 | M-v | 4 | MPC | 97941 | 2005 $UV_{348}$ |

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| 2005 $UA_{350}$ | 15.9 | 0.15 | 20060922 | 76.01050 | 3.27819 | 30.31341 | 11.89333 | 0.2425373 | 2.9261662 | 35 | 2 | 2000–2005 | 0.53 | M-v | 5 | MPC | 03779 | 2005 $UA_{350}$ |
| 2005 $UY_{350}$ | 16.8 | 0.15 | 20060922 | 102.26643 | 123.28354 | 251.41758 | 6.84323 | 0.1270949 | 2.3607366 | 54 | 3 | 2001–2005 | 0.75 | M-v | 3 | MPC | 96280 | 2005 $UY_{350}$ |
| 2005 $US_{351}$ | 16.3 | 0.15 | 20060922 | 158.59061 | 343.10018 | 315.77097 | 3.60949 | 0.1480960 | 2.5543886 | 40 | 6 | 1997–2006 | 0.55 | M-v | 1 | MPC | 04361 | 2005 $US_{351}$ |
| 2005 $UD_{354}$ | 15.4 | 0.15 | 20060922 | 74.53890 | 35.23223 | 359.61492 | 5.98907 | 0.2120873 | 3.1054761 | 54 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 96284 | 2005 $UD_{354}$ |
| 2005 $UV_{355}$ | 15.6 | 0.15 | 20060922 | 171.63909 | 144.74807 | 159.26897 | 2.32655 | 0.0796563 | 2.9244485 | 37 | 5 | 2002–2006 | 0.62 | M-v | 1 | MPC | 01075 | 2005 $UV_{355}$ |
| 2005 $UY_{357}$ | 16.6 | 0.15 | 20060922 | 210.73825 | 259.07542 | 346.30267 | 6.47528 | 0.0849307 | 2.4137978 | 29 | 4 | 2000–2005 | 0.79 | M-v | 1 | MPC | 96286 | 2005 $UY_{357}$ |
| 2005 $UJ_{361}$ | 15.1 | 0.15 | 20060922 | 347.11411 | 261.80907 | 215.70774 | 8.77389 | 0.2322678 | 3.9749186 | 54 | 3 | 1997–2005 | 0.36 | M-v | 3 | MPC | 96288 | 2005 $UJ_{361}$ |
| 2005 $UV_{363}$ | 17.6 | 0.15 | 20060922 | 176.17771 | 96.14147 | 195.88906 | 5.03596 | 0.2223901 | 2.3638090 | 20 | 3 | 2001–2005 | 0.46 | M-v | 3 | MPC | 01076 | 2005 $UV_{363}$ |
| 2005 $UW_{363}$ | 16.1 | 0.15 | 20060922 | 147.20456 | 223.11618 | 77.80659 | 5.49299 | 0.1632768 | 3.0204638 | 37 | 6 | 2000–2006 | 0.45 | M-v | 0 | MPC | 96288 | 2005 $UW_{363}$ |
| 2005 $UW_{366}$ | 16.5 | 0.15 | 20060922 | 153.67271 | 211.17917 | 104.72358 | 5.75149 | 0.0585401 | 2.7755527 | 23 | 3 | 2001–2005 | 0.41 | M-v | 2 | MPC | 01077 | 2005 $UW_{366}$ |
| 2005 $UX_{367}$ | 16.3 | 0.15 | 20060922 | 300.02143 | 113.13714 | 67.31655 | 5.50038 | 0.0118585 | 2.7800396 | 49 | 5 | 1991–2006 | 0.38 | M-v | 0 | MPC | 96290 | 2005 $UX_{367}$ |
| 2005 $UP_{369}$ | 16.0 | 0.15 | 20060922 | 147.21259 | 104.38710 | 209.16726 | 9.45586 | 0.1129869 | 3.0451423 | 28 | 2 | 2003–2005 | 0.37 | M-v | 3 | MPC | 03779 | 2005 $UP_{369}$ |
| 2005 $UE_{372}$ | 16.6 | 0.15 | 20060922 | 147.38543 | 308.91263 | 32.84810 | 7.06571 | 0.1520176 | 2.2951625 | 49 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 01077 | 2005 $UE_{372}$ |
| 2005 $UW_{381}$ | 14.8 | 0.15 | 20060922 | 41.51752 | 292.50733 | 133.08844 | 16.41467 | 0.1165560 | 3.1514899 | 63 | 5 | 2001–2006 | 0.50 | M-v | 1 | MPC | 01078 | 2005 $UW_{381}$ |
| 2005 $UX_{381}$ | 14.6 | 0.15 | 20060922 | 51.86329 | 275.06962 | 116.95427 | 14.34041 | 0.1482627 | 3.1964853 | 43 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 96294 | 2005 $UX_{381}$ |
| 2005 $UH_{383}$ | 14.1 | 0.15 | 20060922 | 82.98612 | 292.51955 | 76.14917 | 27.58746 | 0.2114197 | 3.1571075 | 120 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 96295 | 2005 $UH_{383}$ |
| 2005 $UU_{383}$ | 15.3 | 0.15 | 20060922 | 85.00583 | 281.37032 | 75.32833 | 11.04007 | 0.0783541 | 3.1350027 | 37 | 3 | 2003–2005 | 0.67 | M-v | 3 | MPC | 03779 | 2005 $UU_{383}$ |
| 2005 $UC_{385}$ | 13.8 | 0.15 | 20060922 | 144.67807 | 223.32876 | 97.76982 | 22.93589 | 0.0029213 | 3.2472429 | 80 | 5 | 2000–2006 | 0.57 | M-v | 1 | MPC | 96296 | 2005 $UC_{385}$ |
| 2005 $UN_{386}$ | 16.4 | 0.15 | 20060922 | 58.23629 | 1.03420 | 75.34376 | 13.15623 | 0.2022733 | 2.3627302 | 39 | 3 | 2000–2005 | 0.44 | M-v | 2 | MPC | 96296 | 2005 $UN_{386}$ |
| 2005 $UF_{389}$ | 16.8 | 0.15 | 20060922 | 273.35379 | 121.66804 | 51.67753 | 2.81618 | 0.0255631 | 2.8469177 | 36 | 5 | 2000–2006 | 0.42 | M-v | 1 | MPC | 01079 | 2005 $UF_{389}$ |
| 2005 $UZ_{391}$ | 17.0 | 0.15 | 20060922 | 136.43339 | 178.15213 | 149.11484 | 3.01522 | 0.1251316 | 2.5225555 | 46 | 4 | 2001–2005 | 0.41 | M-v | 0 | MPC | 96298 | 2005 $UZ_{391}$ |
| 2005 $UB_{392}$ | 17.3 | 0.15 | 20060922 | 350.14414 | 347.13018 | 126.02477 | 2.95606 | 0.0149912 | 2.8683703 | 23 | 4 | 1995–2006 | 0.25 | M-v | 2 | MPC | 96299 | 2005 $UB_{392}$ |
| 2005 $UW_{394}$ | 17.3 | 0.15 | 20060922 | 184.12800 | 297.99780 | 314.08348 | 1.66908 | 0.1320469 | 2.2646272 | 41 | 5 | 1995–2005 | 0.42 | M-v | 0 | MPC | 96300 | 2005 $UW_{394}$ |
| 2005 $UD_{395}$ | 16.7 | 0.15 | 20060922 | 187.06697 | 200.71418 | 48.61919 | 6.05760 | 0.2026975 | 2.6973789 | 28 | 3 | 2004–2006 | 0.29 | M-v | 4 | MPC | 96300 | 2005 $UD_{395}$ |
| 2005 $UK_{395}$ | 17.2 | 0.15 | 20060922 | 153.77005 | 94.38043 | 185.27705 | 7.97736 | 0.1825206 | 2.7518864 | 21 | 3 | 1999–2005 | 0.31 | M-v | 2 | MPC | 96300 | 2005 $UK_{395}$ |
| 2005 $UY_{397}$ | 15.2 | 0.15 | 20060922 | 26.77485 | 32.00618 | 51.83647 | 3.95728 | 0.1935730 | 3.1891856 | 101 | 4 | 1996–2006 | 0.47 | M-v | 1 | MPC | 96303 | 2005 $UY_{397}$ |
| 2005 $UB_{398}$ | 15.5 | 0.15 | 20060922 | 81.32307 | 86.16222 | 302.85042 | 5.39026 | 0.0182107 | 2.7537584 | 63 | 4 | 2000–2005 | 0.67 | M-v | 1 | MPC | 96303 | 2005 $UB_{398}$ |
| 2005 $UG_{398}$ | 15.8 | 0.15 | 20060922 | 83.55716 | 246.17463 | 98.39527 | 13.76909 | 0.3950405 | 3.0610030 | 45 | 1 | 149 days | 0.42 | M-v | 3 | MPC | | 2005 $UG_{398}$ |
| 2005 $UM_{398}$ | 16.6 | 0.15 | 20060922 | 89.00047 | 317.25859 | 64.33638 | 7.80508 | 0.1109402 | 2.4070503 | 33 | 3 | 2001–2005 | 0.55 | M-v | 4 | MPC | 96304 | 2005 $UM_{398}$ |
| 2005 $UQ_{398}$ | 15.4 | 0.15 | 20060922 | 47.16395 | 150.20747 | 263.78452 | 6.93248 | 0.0340725 | 3.0534106 | 37 | 3 | 2002–2006 | 0.61 | M-v | 3 | MPC | 03780 | 2005 $UQ_{398}$ |
| 2005 $UQ_{402}$ | 16.3 | 0.15 | 20060922 | 234.75159 | 146.00386 | 87.22487 | 3.07913 | 0.0181799 | 2.6399490 | 39 | 4 | 2001–2006 | 0.49 | M-v | 2 | MPC | 96305 | 2005 $UQ_{402}$ |
| 2005 $UF_{403}$ | 15.2 | 0.15 | 20060922 | 14.18213 | 352.37206 | 103.56319 | 3.77614 | 0.1996244 | 3.9704124 | 39 | 5 | 1998–2006 | 0.28 | M-v | 0 | MPC | 96306 | 2005 $UF_{403}$ |
| 2005 $UM_{403}$ | 16.8 | 0.15 | 20060922 | 265.59254 | 42.14940 | 167.21384 | 2.73325 | 0.1343664 | 2.4472169 | 25 | 3 | 1996–2006 | 0.24 | M-v | 3 | MPC | 96306 | 2005 $UM_{403}$ |
| 2005 $UN_{407}$ | 16.9 | 0.15 | 20060922 | 336.86537 | 344.36361 | 140.31158 | 2.54032 | 0.0347662 | 2.8665561 | 34 | 5 | 1993–2006 | 0.39 | M-v | 0 | MPC | 04361 | 2005 $UN_{407}$ |
| 2005 $UV_{408}$ | 16.1 | 0.15 | 20060922 | 344.48235 | 64.68397 | 76.19599 | 3.19070 | 0.1443777 | 2.6592688 | 66 | 5 | 1997–2006 | 0.45 | M-v | 0 | MPC | 96307 | 2005 $UV_{408}$ |
| 2005 $UK_{413}$ | 15.6 | 0.15 | 20060922 | 64.40645 | 156.08748 | 245.25750 | 10.06395 | 0.1181798 | 2.9993747 | 43 | 3 | 2000–2006 | 0.45 | M-v | 2 | MPC | 96308 | 2005 $UK_{413}$ |
| 2005 $UD_{414}$ | 16.8 | 0.15 | 20060922 | 300.46630 | 92.67757 | 80.51144 | 3.76231 | 0.0016011 | 2.7281538 | 25 | 4 | 2000–2006 | 0.32 | M-v | 2 | MPC | 96309 | 2005 $UD_{414}$ |
| 2005 $UZ_{414}$ | 15.2 | 0.15 | 20060922 | 302.12260 | 51.19743 | 114.82689 | 2.71600 | 0.0869898 | 3.2224922 | 49 | 6 | 2000–2006 | 0.44 | M-v | 0 | MPC | 96309 | 2005 $UZ_{414}$ |
| 2005 $UB_{427}$ | 17.3 | 0.15 | 20051017 | 198.63326 | 133.10983 | 57.51662 | 2.02321 | 0.1180746 | 2.3724897 | 12 | 1 | 31 days | 0.22 | | | MPC | | 2005 $UB_{427}$ |
| 2005 $UV_{429}$ | 17.1 | 0.15 | 20060922 | 49.24704 | 112.48201 | 319.81595 | 1.18170 | 0.0473646 | 2.8387568 | 26 | 3 | 2000–2005 | 0.32 | M-v | 4 | MPC | 96311 | 2005 $UV_{429}$ |
| 2005 $UE_{433}$ | 18.0 | 0.15 | 20060922 | 28.97063 | 294.53259 | 191.80604 | 0.60382 | 0.1416093 | 2.3930263 | 25 | 3 | 1999–2005 | 0.31 | M-v | 4 | MPC | 03782 | 2005 $UE_{433}$ |
| 2005 $UL_{433}$ | 16.7 | 0.15 | 20060922 | 129.85794 | 125.98280 | 216.63682 | 0.85147 | 0.1999163 | 2.5516055 | 27 | 2 | 2001–2005 | 0.44 | M-v | 5 | MPC | 03782 | 2005 $UL_{433}$ |
| 2005 $US_{433}$ | 17.4 | 0.15 | 20060922 | 325.11051 | 335.38811 | 215.38273 | 2.10160 | 0.1085406 | 2.3286104 | 24 | 4 | 2001–2005 | 0.29 | M-v | 1 | MPC | 03782 | 2005 $US_{433}$ |
| 2005 $UB_{438}$ | 14.7 | 0.15 | 20060922 | 82.65689 | 87.99748 | 270.22509 | 16.40741 | 0.1160268 | 3.5738723 | 28 | 3 | 2004–2006 | 0.52 | M-v | 3 | MPC | 01085 | 2005 $UB_{438}$ |
| 2005 $UJ_{439}$ | 14.8 | 0.15 | 20060922 | 17.63941 | 126.10000 | 306.38548 | 10.22771 | 0.1524149 | 3.1939128 | 58 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 96316 | 2005 $UJ_{439}$ |
| 2005 $UY_{439}$ | 15.8 | 0.15 | 20060922 | 42.91633 | 135.70098 | 277.68371 | 11.09776 | 0.1213694 | 2.9356651 | 32 | 2 | 2002–2005 | 0.51 | M-v | 4 | MPC | 03782 | 2005 $UY_{439}$ |
| 2005 $UA_{440}$ | 14.9 | 0.15 | 20060922 | 347.36423 | 220.75356 | 249.04743 | 10.15945 | 0.1342254 | 3.1647236 | 47 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 96316 | 2005 $UA_{440}$ |
| 2005 $UQ_{440}$ | 16.5 | 0.15 | 20060922 | 242.82520 | 240.22024 | 2.27053 | 7.44565 | 0.0782849 | 2.2876713 | 31 | 3 | 2001–2006 | 0.52 | M-v | 4 | MPC | 96317 | 2005 $UQ_{440}$ |
| 2005 $UT_{440}$ | 14.6 | 0.15 | 20060922 | 4.85598 | 212.41548 | 253.86527 | 14.90753 | 0.1529730 | 3.1891712 | 50 | 3 | 2000–2006 | 0.64 | M-v | 3 | MPC | 01087 | 2005 $UT_{440}$ |
| 2005 $UU_{445}$ | 16.6 | 0.15 | 20060922 | 280.46651 | 162.91042 | 69.47839 | 10.04244 | 0.0520522 | 2.2274910 | 32 | 1 | 86 days | 0.41 | M-v | 4 | MPC | | 2005 $UU_{445}$ |
| 2005 $UM_{446}$ | 15.2 | 0.15 | 20060922 | 48.53690 | 145.97169 | 264.71568 | 8.00198 | 0.0569203 | 2.9856880 | 45 | 4 | 2000–2005 | 0.61 | M-v | 1 | MPC | 96324 | 2005 $UM_{446}$ |
| 2005 $UB_{448}$ | 15.3 | 0.15 | 20060922 | 301.72147 | 195.72264 | 332.11229 | 3.92767 | 0.0503987 | 2.7572755 | 50 | 7 | 1998–2006 | 0.60 | M-v | 1 | MPC | 96325 | 2005 $UB_{448}$ |
| 2005 $UK_{448}$ | 15.3 | 0.15 | 20060922 | 43.59207 | 136.85994 | 278.84810 | 6.94201 | 0.0681419 | 2.9200053 | 52 | 3 | 2000–2005 | 0.57 | M-v | 3 | MPC | 96325 | 2005 $UK_{448}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $UL_{448}$ | 17.5 | 0.15 | 20060922 | 81.05508 | 101.16890 | 299.50490 | 3.75054 | 0.1867619 | 2.4125822 | 45 | 3 | 1999–2005 | 0.54 | M-v | 2 | MPC | 03783 | 2005 $UL_{448}$ |
| 2005 $UK_{449}$ | 15.5 | 0.15 | 20060922 | 92.81304 | 24.40032 | 1.89020 | 7.78593 | 0.1937532 | 2.6369965 | 50 | 2 | 2001–2005 | 0.60 | M-v | 4 | MPC | 03783 | 2005 $UK_{449}$ |
| 2005 $UF_{450}$ | 14.7 | 0.15 | 20060922 | 135.46095 | 222.93885 | 77.35670 | 6.26541 | 0.1312949 | 3.2360565 | 66 | 6 | 1999–2006 | 0.61 | M-v | 0 | MPC | 96327 | 2005 $UF_{450}$ |
| 2005 $UJ_{454}$ | 15.4 | 0.15 | 20060922 | 81.09116 | 38.00359 | 338.91463 | 9.25356 | 0.0760208 | 3.0098474 | 38 | 3 | 1999–2005 | 0.67 | M-v | 4 | MPC | 96328 | 2005 $UJ_{454}$ |
| 2005 $US_{454}$ | 17.1 | 0.15 | 20060922 | 81.93842 | 237.46002 | 161.29944 | 6.26846 | 0.1125771 | 2.3898767 | 34 | 4 | 1994–2005 | 0.58 | M-v | 1 | MPC | 96328 | 2005 $US_{454}$ |
| 2005 $UD_{455}$ | 16.5 | 0.15 | 20060922 | 173.22057 | 199.72651 | 82.22634 | 5.02075 | 0.0642748 | 2.7628664 | 34 | 6 | 1999–2006 | 0.51 | M-v | 0 | MPC | 96328 | 2005 $UD_{455}$ |
| 2005 $UE_{455}$ | 17.1 | 0.15 | 20060922 | 107.68679 | 147.96174 | 245.86340 | 5.96894 | 0.1355716 | 2.2997020 | 66 | 4 | 1996–2005 | 0.44 | M-v | 1 | MPC | 03783 | 2005 $UE_{455}$ |
| 2005 $UD_{456}$ | 14.7 | 0.15 | 20060922 | 358.85112 | 165.11417 | 296.66591 | 7.48251 | 0.2289236 | 3.9609972 | 42 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 01089 | 2005 $UD_{456}$ |
| 2005 $UK_{456}$ | 15.9 | 0.15 | 20060922 | 4.79746 | 122.09864 | 3.05807 | 11.31987 | 0.1312057 | 2.6747945 | 33 | 3 | 2001–2005 | 0.60 | M-v | 3 | MPC | 96329 | 2005 $UK_{456}$ |
| 2005 $UW_{460}$ | 16.2 | 0.15 | 20060922 | 326.56846 | 142.31371 | 17.16507 | 1.85939 | 0.0567241 | 3.1579549 | 53 | 5 | 2001–2006 | 0.44 | M-v | 0 | MPC | 96332 | 2005 $UW_{460}$ |
| 2005 $UV_{468}$ | 15.0 | 0.15 | 20060922 | 341.77924 | 209.49014 | 282.19540 | 4.00516 | 0.0653289 | 3.1974587 | 40 | 5 | 2000–2006 | 0.44 | M-v | 0 | MPC | 96334 | 2005 $UV_{468}$ |
| 2005 $UK_{472}$ | 16.3 | 0.15 | 20060922 | 219.28297 | 209.55496 | 54.29455 | 2.60173 | 0.0215054 | 2.7119502 | 40 | 5 | 1996–2006 | 0.27 | M-v | 0 | MPC | 96334 | 2005 $UK_{472}$ |
| 2005 $UM_{472}$ | 17.4 | 0.15 | 20060922 | 98.24937 | 165.82280 | 230.18321 | 8.80143 | 0.0897555 | 2.4059364 | 20 | 1 | 93 days | 0.22 | M-v | 3 | MPC | | 2005 $UM_{472}$ |
| 2005 $UB_{476}$ | 15.9 | 0.15 | 20060922 | 60.32890 | 136.18886 | 268.47704 | 4.69352 | 0.0298713 | 2.7278647 | 34 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 96336 | 2005 $UB_{476}$ |
| 2005 $UG_{476}$ | 16.2 | 0.15 | 20060922 | 336.08294 | 229.25475 | 276.59508 | 2.08486 | 0.1249882 | 2.5594265 | 33 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 01090 | 2005 $UG_{476}$ |
| 2005 $UT_{479}$ | 16.4 | 0.15 | 20060922 | 38.52617 | 296.19080 | 162.59341 | 6.23717 | 0.2331173 | 2.6329640 | 37 | 3 | 1998–2005 | 0.56 | M-v | 4 | MPC | 03785 | 2005 $UT_{479}$ |
| 2005 $UN_{480}$ | 15.5 | 0.15 | 20060922 | 48.24736 | 93.41748 | 300.33481 | 20.03511 | 0.2329615 | 3.0004771 | 40 | 3 | 2000–2006 | 0.52 | M-v | 2 | MPC | 01091 | 2005 $UN_{480}$ |
| 2005 $UX_{480}$ | 15.7 | 0.15 | 20060922 | 105.61590 | 228.51123 | 117.92790 | 15.30047 | 0.1366820 | 2.6508946 | 40 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 96338 | 2005 $UX_{480}$ |
| 2005 $UK_{481}$ | 15.8 | 0.15 | 20051106 | 38.98495 | 175.03086 | 170.29161 | 19.38338 | 0.2681384 | 3.1174948 | 12 | 1 | 37 days | 0.75 | | | MPC | | 2005 $UK_{481}$ |
| 2005 $UV_{481}$ | 15.2 | 0.15 | 20060922 | 31.66325 | 336.60044 | 114.95156 | 22.89282 | 0.0455545 | 2.6157991 | 37 | 4 | 2001–2005 | 0.60 | M-v | 1 | MPC | 03785 | 2005 $UV_{481}$ |
| 2005 $UA_{482}$ | 16.0 | 0.15 | 20060922 | 138.42739 | 33.14930 | 284.85813 | 9.11212 | 0.0617641 | 2.3938500 | 54 | 6 | 1991–2006 | 0.54 | M-v | 1 | MPC | 96339 | 2005 $UA_{482}$ |
| 2005 $UL_{482}$ | 17.0 | 0.15 | 20060922 | 59.06691 | 279.31617 | 144.81448 | 6.17186 | 0.0807286 | 2.2174781 | 31 | 4 | 1995–2005 | 0.65 | M-v | 2 | MPC | 96339 | 2005 $UL_{482}$ |
| 2005 $UU_{482}$ | 15.9 | 0.15 | 20060922 | 79.59907 | 348.46720 | 14.22104 | 0.83102 | 0.1787118 | 3.1240752 | 41 | 1 | 97 days | 0.49 | M-v | 4 | D MPC | 97957 | 2005 $UU_{482}$ |
| 2005 $UH_{485}$ | 16.2 | 0.15 | 20060922 | 148.30788 | 189.69555 | 123.82201 | 6.09712 | 0.0246176 | 2.7500848 | 39 | 5 | 1998–2006 | 0.56 | M-v | 1 | MPC | 96340 | 2005 $UH_{485}$ |
| 2005 $UP_{485}$ | 16.5 | 0.15 | 20060922 | 72.09858 | 315.96807 | 96.84344 | 6.93115 | 0.0552925 | 2.4784013 | 41 | 3 | 2001–2005 | 0.71 | M-v | 3 | MPC | 96340 | 2005 $UP_{485}$ |
| 2005 $UB_{486}$ | 15.7 | 0.15 | 20060922 | 37.22681 | 69.97531 | 340.47339 | 25.06771 | 0.2709657 | 3.1773888 | 24 | 1 | 60 days | 0.40 | M-v | 4 | MPC | | 2005 $UB_{486}$ |
| 2005 $UK_{486}$ | 16.5 | 0.15 | 20060922 | 132.81996 | 65.46547 | 257.61866 | 3.88421 | 0.0684112 | 2.7469574 | 32 | 5 | 2000–2006 | 0.56 | M-v | 1 | MPC | 96340 | 2005 $UK_{486}$ |
| 2005 $UP_{486}$ | 16.4 | 0.15 | 20051017 | 359.20540 | 122.20123 | 257.86535 | 11.96231 | 0.3171559 | 3.1510755 | 32 | 1 | 51 days | 0.58 | | | MPC | | 2005 $UP_{486}$ |
| 2005 $UQ_{486}$ | 16.5 | 0.15 | 20060922 | 53.83501 | 95.74300 | 313.01473 | 12.18989 | 0.2058218 | 2.7312163 | 26 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 01093 | 2005 $UQ_{486}$ |
| 2005 $UR_{486}$ | 18.0 | 0.15 | 20050927 | 1.36043 | 81.34131 | 285.27121 | 7.82889 | 0.2482656 | 2.2638962 | 22 | 1 | 58 days | 0.66 | | | MPC | | 2005 $UR_{486}$ |
| 2005 $UU_{486}$ | 16.1 | 0.15 | 20060922 | 42.92630 | 130.82467 | 284.44733 | 12.73141 | 0.0878152 | 2.5602872 | 34 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 01093 | 2005 $UU_{486}$ |
| 2005 $UR_{487}$ | 17.1 | 0.15 | 20050927 | 26.58844 | 39.51071 | 293.52045 | 8.67424 | 0.2194966 | 2.3481828 | 21 | 1 | 56 days | 0.71 | | | MPC | | 2005 $UR_{487}$ |
| 2005 $UT_{488}$ | 16.4 | 0.15 | 20060922 | 117.13654 | 95.72323 | 246.75240 | 4.87379 | 0.0573430 | 2.7713607 | 35 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 96341 | 2005 $UT_{488}$ |
| 2005 $UX_{488}$ | 16.4 | 0.15 | 20051017 | 46.34679 | 327.86616 | 7.09123 | 14.74492 | 0.1077254 | 2.6753498 | 22 | 1 | 38 days | 0.74 | | | MPC | | 2005 $UX_{488}$ |
| 2005 $UH_{491}$ | 15.4 | 0.15 | 20060922 | 86.90836 | 256.11447 | 48.86548 | 13.57665 | 0.2804334 | 3.1878768 | 60 | 4 | 2000–2006 | 0.48 | M-v | 0 | MPC | 96342 | 2005 $UH_{491}$ |
| 2005 $UM_{491}$ | 16.5 | 0.15 | 20060922 | 109.09490 | 277.13848 | 52.50255 | 11.82894 | 0.2287948 | 2.4221817 | 34 | 1 | 101 days | 0.46 | M-v | 3 | MPC | | 2005 $UM_{491}$ |
| 2005 $UD_{492}$ | 15.4 | 0.15 | 20060922 | 132.56474 | 208.57749 | 117.13774 | 11.86125 | 0.1062539 | 2.9586347 | 46 | 6 | 1999–2006 | 0.62 | M-v | 0 | MPC | 01094 | 2005 $UD_{492}$ |
| 2005 $UM_{492}$ | 17.1 | 0.15 | 20060922 | 128.47002 | 342.95168 | 357.82092 | 8.27133 | 0.1033163 | 2.5413177 | 23 | 3 | 2001–2005 | 0.79 | M-v | 4 | MPC | 03785 | 2005 $UM_{492}$ |
| 2005 $UP_{493}$ | 15.2 | 0.15 | 20060922 | 318.12726 | 198.03032 | 326.37386 | 16.13988 | 0.0793166 | 2.6566865 | 48 | 6 | 2000–2006 | 0.52 | M-v | 1 | MPC | 01095 | 2005 $UP_{493}$ |
| 2005 $UL_{494}$ | 15.2 | 0.15 | 20060922 | 196.27626 | 68.53274 | 200.98831 | 12.56405 | 0.2342299 | 2.5968735 | 43 | 3 | 2000–2005 | 0.62 | M-v | 3 | MPC | 03786 | 2005 $UL_{494}$ |
| 2005 $UU_{494}$ | 14.6 | 0.15 | 20060922 | 52.05168 | 294.51660 | 119.60873 | 10.10192 | 0.0931113 | 3.0897763 | 60 | 7 | 1999–2006 | 0.53 | M-v | 1 | MPC | 96343 | 2005 $UU_{494}$ |
| 2005 $UV_{494}$ | 15.1 | 0.15 | 20060922 | 103.13593 | 252.71110 | 102.93237 | 10.92297 | 0.0798136 | 3.0980355 | 43 | 3 | 2003–2005 | 0.68 | M-v | 3 | MPC | 03786 | 2005 $UV_{494}$ |
| 2005 $UE_{495}$ | 15.3 | 0.15 | 20060922 | 98.58982 | 181.31918 | 137.95070 | 11.18110 | 0.1912220 | 3.1493908 | 63 | 5 | 1999–2005 | 0.68 | M-v | 1 | MPC | 96343 | 2005 $UE_{495}$ |
| 2005 $UJ_{495}$ | 15.1 | 0.15 | 20060922 | 18.14418 | 123.68726 | 328.34032 | 9.03427 | 0.1479689 | 3.0548117 | 44 | 5 | 2000–2006 | 0.55 | M-v | 1 | MPC | 01095 | 2005 $UJ_{495}$ |
| 2005 $UO_{496}$ | 15.1 | 0.15 | 20060922 | 194.36192 | 155.68870 | 107.42351 | 12.91750 | 0.1505128 | 2.6621988 | 40 | 5 | 1999–2005 | 0.66 | M-v | 1 | MPC | 03786 | 2005 $UO_{496}$ |
| 2005 $UA_{498}$ | 15.8 | 0.15 | 20051106 | 18.74626 | 286.50598 | 87.97767 | 6.31776 | 0.1716013 | 3.1175092 | 24 | 1 | 46 days | 0.71 | | | MPC | | 2005 $UA_{498}$ |
| 2005 $UD_{498}$ | 16.3 | 0.15 | 20060922 | 86.41054 | 225.30046 | 158.06314 | 5.32440 | 0.1241390 | 2.7189600 | 28 | 3 | 2000–2005 | 0.66 | M-v | 4 | MPC | 01096 | 2005 $UD_{498}$ |
| 2005 $UJ_{498}$ | 15.3 | 0.15 | 20060922 | 55.65431 | 292.80577 | 101.06791 | 10.94132 | 0.0767065 | 3.0864366 | 31 | 4 | 2000–2006 | 0.57 | M-v | 1 | MPC | 01096 | 2005 $UJ_{498}$ |
| 2005 $UK_{498}$ | 16.0 | 0.15 | 20060922 | 174.25415 | 159.07744 | 123.96461 | 10.24530 | 0.1156720 | 2.5752470 | 35 | 4 | 2001–2005 | 0.84 | M-v | 2 | MPC | 02260 | 2005 $UK_{498}$ |
| 2005 $UA_{501}$ | 16.0 | 0.15 | 20060922 | 218.00122 | 106.53659 | 150.63863 | 14.47287 | 0.0831129 | 2.6122611 | 39 | 5 | 2000–2006 | 0.67 | M-v | 1 | MPC | 96345 | 2005 $UA_{501}$ |
| 2005 $UB_{501}$ | 15.6 | 0.15 | 20060922 | 169.55534 | 179.90651 | 121.03157 | 12.64952 | 0.0665567 | 2.6771608 | 30 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 03786 | 2005 $UB_{501}$ |
| 2005 $UM_{501}$ | 16.6 | 0.15 | 20060922 | 71.06876 | 269.60189 | 142.17101 | 12.18038 | 0.0898428 | 2.7215029 | 24 | 3 | 2000–2005 | 0.62 | M-v | 2 | MPC | 96346 | 2005 $UM_{501}$ |
| 2005 $UP_{504}$ | 17.2 | 0.15 | 20060922 | 161.61583 | 313.49667 | 89.63020 | 1.23608 | 0.2033716 | 2.3431011 | 35 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 02260 | 2005 $UP_{504}$ |

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| 2005 $UQ_{504}$ | 15.7 | 0.15 | 20060922 | 22.03758 | 62.87346 | 135.39123 | 8.26621 | 0.2208586 | 3.0716820 | 30 | 1 | 160 days | 0.62 | M-v | 3 | MPC | 02260 | 2005 $UQ_{504}$ |
| 2005 $UL_{505}$ | 15.1 | 0.15 | 20060922 | 261.81382 | 167.05329 | 138.05423 | 11.38468 | 0.0767517 | 3.1536740 | 17 | 1 | 124 days | 0.32 | M-v | 6 | MPC | 97958 | 2005 $UL_{505}$ |
| 2005 $UC_{508}$ | 15.0 | 0.15 | 20060922 | 105.82738 | 89.59593 | 203.64518 | 13.72693 | 0.2268734 | 3.9617919 | 17 | 1 | 60 days | 0.27 | M-v | 5 | MPC | | 2005 $UC_{508}$ |
| 2005 $UM_{509}$ | 17.4 | 0.15 | 20060922 | 100.02188 | 296.60970 | 48.00154 | 5.84370 | 0.2152726 | 2.6772589 | 20 | 1 | 109 days | 0.36 | M-v | 4 | MPC | | 2005 $UM_{509}$ |
| 2005 $UP_{509}$ | 18.5 | 0.15 | 20051017 | 302.63537 | 196.83500 | 246.60785 | 1.65286 | 0.1104460 | 2.2511736 | 15 | 1 | 34 days | 0.16 | | | MPC | | 2005 $UP_{509}$ |
| 2005 $US_{509}$ | 20.0 | 0.15 | 20051106 | 10.67798 | 268.31919 | 113.70240 | 1.11222 | 0.2502803 | 2.1822024 | 16 | 1 | 14 days | 0.26 | | | MPC | | 2005 $US_{509}$ |
| 2005 $UU_{509}$ | 17.8 | 0.15 | 20051106 | 4.93262 | 199.91328 | 197.66410 | 4.93408 | 0.2218857 | 2.5452005 | 16 | 1 | 29 days | 0.55 | | | MPC | | 2005 $UU_{509}$ |
| 2005 $UV_{509}$ | 17.8 | 0.15 | 20051106 | 28.26204 | 224.40995 | 151.45335 | 2.24979 | 0.1034634 | 2.7282008 | 16 | 1 | 47 days | 0.23 | | | MPC | | 2005 $UV_{509}$ |
| 2005 $UX_{509}$ | 17.2 | 0.15 | 20051106 | 2.18403 | 75.69297 | 324.96477 | 5.55427 | 0.1981106 | 2.6347874 | 21 | 1 | 33 days | 0.67 | | | MPC | | 2005 $UX_{509}$ |
| 2005 $UY_{509}$ | 17.2 | 0.15 | 20051106 | 14.61210 | 13.68285 | 10.69646 | 13.92300 | 0.2585768 | 2.6132329 | 24 | 1 | 40 days | 0.82 | | | MPC | | 2005 $UY_{509}$ |
| 2005 $UZ_{509}$ | 16.4 | 0.15 | 20051106 | 36.46080 | 329.49768 | 10.02185 | 7.97706 | 0.3751804 | 2.6882408 | 19 | 1 | 41 days | 0.84 | | | MPC | | 2005 $UZ_{509}$ |
| 2005 $UA_{510}$ | 17.7 | 0.15 | 20051106 | 30.45512 | 107.41508 | 258.07547 | 7.24536 | 0.1552249 | 2.2673178 | 18 | 1 | 39 days | 0.65 | | | MPC | | 2005 $UA_{510}$ |
| 2005 $UB_{510}$ | 17.6 | 0.15 | 20051106 | 354.29827 | 17.08801 | 37.47774 | 10.74319 | 0.2647020 | 2.6941347 | 24 | 1 | 39 days | 0.79 | | | MPC | | 2005 $UB_{510}$ |
| 2005 $UC_{510}$ | 17.9 | 0.15 | 20051106 | 167.55603 | 0.41560 | 237.05097 | 6.43061 | 0.0799590 | 2.3153631 | 16 | 1 | 33 days | 0.17 | | | MPC | | 2005 $UC_{510}$ |
| 2005 $UD_{510}$ | 17.2 | 0.15 | 20060922 | 195.78559 | 56.51697 | 252.28237 | 3.75539 | 0.0241800 | 2.2471079 | 21 | 1 | 89 days | 0.49 | M-v | 4 | MPC | | 2005 $UD_{510}$ |
| 2005 $UE_{510}$ | 17.6 | 0.15 | 20051106 | 27.12140 | 12.16026 | 357.32016 | 1.68944 | 0.2212917 | 2.7343939 | 15 | 1 | 45 days | 0.20 | | | MPC | | 2005 $UE_{510}$ |
| 2005 $UF_{510}$ | 15.3 | 0.15 | 20060922 | 216.50929 | 185.89026 | 64.58372 | 18.84072 | 0.1650977 | 3.1661255 | 21 | 1 | 91 days | 0.19 | M-v | 4 | MPC | | 2005 $UF_{510}$ |
| 2005 $UJ_{510}$ | 18.2 | 0.15 | 20060922 | 77.69770 | 7.39750 | 48.27416 | 5.74034 | 0.1808758 | 2.4247934 | 25 | 1 | 66 days | 0.35 | M-v | 4 | MPC | | 2005 $UJ_{510}$ |
| 2005 $UK_{510}$ | 16.6 | 0.15 | 20051106 | 8.93512 | 210.74355 | 183.56260 | 13.10180 | 0.1597643 | 2.7431058 | 23 | 1 | 42 days | 0.61 | | | MPC | | 2005 $UK_{510}$ |
| 2005 $UL_{510}$ | 18.7 | 0.15 | 20060922 | 69.83001 | 351.74326 | 85.32480 | 5.91130 | 0.1995910 | 2.3592438 | 17 | 1 | 88 days | 0.51 | M-v | 4 | MPC | | 2005 $UL_{510}$ |
| 2005 $UN_{510}$ | 15.8 | 0.15 | 20051126 | 159.07772 | 200.82243 | 54.32882 | 11.78808 | 0.0586768 | 3.0087032 | 17 | 1 | 46 days | 0.26 | | | MPC | | 2005 $UN_{510}$ |
| 2005 $UO_{510}$ | 16.8 | 0.15 | 20051106 | 342.92127 | 6.10868 | 71.35620 | 2.30782 | 0.1671502 | 3.1525464 | 18 | 1 | 38 days | 0.43 | | | MPC | | 2005 $UO_{510}$ |
| 2005 $UP_{510}$ | 16.4 | 0.15 | 20051106 | 97.09816 | 262.17810 | 49.95267 | 2.63099 | 0.0744422 | 2.9193168 | 17 | 1 | 41 days | 0.38 | | | MPC | | 2005 $UP_{510}$ |
| 2005 $UQ_{510}$ | 15.6 | 0.15 | 20060922 | 206.13657 | 15.38124 | 244.16814 | 7.52325 | 0.0642205 | 3.4581554 | 18 | 1 | 61 days | 0.32 | M-v | 5 | MPC | | 2005 $UQ_{510}$ |
| 2005 $UR_{510}$ | 17.9 | 0.15 | 20060922 | 90.62790 | 179.07080 | 221.33275 | 1.73469 | 0.1280584 | 2.5784259 | 18 | 1 | 61 days | 0.25 | M-v | 4 | MPC | | 2005 $UR_{510}$ |
| 2005 $US_{510}$ | 17.4 | 0.15 | 20060922 | 87.86893 | 145.76505 | 253.57799 | 13.68177 | 0.1824623 | 2.5849696 | 17 | 1 | 73 days | 0.38 | M-v | 4 | MPC | | 2005 $US_{510}$ |
| 2005 $UT_{510}$ | 16.4 | 0.15 | 20051106 | 156.57843 | 193.41031 | 67.17443 | 16.06559 | 0.1420252 | 2.5768095 | 17 | 1 | 38 days | 0.22 | | | MPC | | 2005 $UT_{510}$ |
| 2005 $UU_{510}$ | 16.5 | 0.15 | 20060922 | 87.94061 | 276.24033 | 109.11122 | 2.73637 | 0.1183535 | 3.1132972 | 27 | 1 | 89 days | 0.34 | M-v | 4 | MPC | | 2005 $UU_{510}$ |
| 2005 $UW_{510}$ | 18.1 | 0.15 | 20051106 | 88.84004 | 71.67548 | 227.34060 | 4.44090 | 0.2055193 | 2.1655789 | 16 | 1 | 39 days | 0.27 | | | MPC | | 2005 $UW_{510}$ |
| 2005 $UX_{510}$ | 16.6 | 0.15 | 20060922 | 251.36925 | 3.27906 | 234.57273 | 8.61728 | 0.0810009 | 2.5828815 | 21 | 1 | 64 days | 0.54 | M-v | 5 | MPC | | 2005 $UX_{510}$ |
| 2005 $UY_{510}$ | 17.3 | 0.15 | 20060922 | 50.99686 | 227.72693 | 228.05315 | 5.90644 | 0.0786197 | 2.3425711 | 20 | 1 | 64 days | 0.19 | M-v | 4 | MPC | | 2005 $UY_{510}$ |
| 2005 $UZ_{510}$ | 18.6 | 0.15 | 20051126 | 310.68207 | 67.78632 | 46.76698 | 5.01065 | 0.0603079 | 2.1743999 | 15 | 1 | 45 days | 0.31 | | | MPC | | 2005 $UZ_{510}$ |
| 2005 $UA_{511}$ | 17.2 | 0.15 | 20051126 | 312.37137 | 245.72587 | 224.26939 | 3.32038 | 0.0618001 | 2.7513644 | 17 | 1 | 43 days | 0.48 | | | MPC | | 2005 $UA_{511}$ |
| 2005 $UB_{511}$ | 18.6 | 0.15 | 20051106 | 42.51446 | 233.62375 | 119.76958 | 0.36502 | 0.1515545 | 2.1387028 | 16 | 1 | 37 days | 0.34 | | | MPC | | 2005 $UB_{511}$ |
| 2005 $UD_{511}$ | 18.2 | 0.15 | 20051106 | 357.16941 | 334.56579 | 69.39991 | 0.79390 | 0.1897233 | 3.1657945 | 17 | 1 | 36 days | 0.38 | | | MPC | | 2005 $UD_{511}$ |
| 2005 $UE_{511}$ | 17.9 | 0.15 | 20060922 | 88.40036 | 137.37975 | 242.39961 | 2.78708 | 0.2653504 | 2.6067300 | 24 | 1 | 65 days | 0.49 | M-v | 5 | MPC | | 2005 $UE_{511}$ |
| 2005 $UG_{511}$ | 14.8 | 0.15 | 20060922 | 11.81607 | 37.94242 | 65.14748 | 18.56557 | 0.1290513 | 3.1331460 | 39 | 1 | 87 days | 0.63 | M-v | 4 | MPC | | 2005 $UG_{511}$ |
| 2005 $UJ_{511}$ | 16.7 | 0.15 | 20060922 | 53.01086 | 188.62679 | 233.85956 | 9.56218 | 0.0933818 | 3.0320673 | 21 | 1 | 63 days | 0.47 | M-v | 5 | MPC | | 2005 $UJ_{511}$ |
| 2005 $UK_{511}$ | 17.4 | 0.15 | 20051106 | 21.67467 | 146.92624 | 234.94248 | 16.18613 | 0.2180971 | 3.1659132 | 19 | 1 | 35 days | 0.30 | | | MPC | | 2005 $UK_{511}$ |
| 2005 $UL_{511}$ | 17.0 | 0.15 | 20060922 | 11.78978 | 177.23004 | 320.48583 | 0.88947 | 0.1373361 | 2.6169300 | 22 | 1 | 88 days | 0.25 | M-v | 4 | MPC | | 2005 $UL_{511}$ |
| 2005 $UM_{511}$ | 17.4 | 0.15 | 20060922 | 31.69504 | 195.28477 | 271.13290 | 1.89451 | 0.0765606 | 2.6842354 | 22 | 1 | 62 days | 0.34 | M-v | 4 | MPC | | 2005 $UM_{511}$ |
| 2005 $UN_{511}$ | 16.9 | 0.15 | 20060922 | 79.95754 | 87.46095 | 320.96134 | 1.07769 | 0.0885563 | 2.7239242 | 22 | 1 | 88 days | 0.37 | M-v | 4 | MPC | | 2005 $UN_{511}$ |
| 2005 $UO_{511}$ | 17.0 | 0.15 | 20060922 | 28.45903 | 54.20466 | 45.40527 | 1.81084 | 0.1364163 | 3.0992571 | 19 | 1 | 62 days | 0.36 | M-v | 4 | MPC | | 2005 $UO_{511}$ |
| 2005 $UP_{511}$ | 17.1 | 0.15 | 20060922 | 158.04947 | 190.26544 | 136.99127 | 4.85097 | 0.2223574 | 2.1618539 | 23 | 1 | 96 days | 0.62 | M-v | 5 | MPC | | 2005 $UP_{511}$ |
| 2005 $UQ_{511}$ | 15.2 | 0.15 | 20060922 | 327.02284 | 302.52174 | 239.50606 | 20.29791 | 0.3522422 | 3.1716670 | 17 | 1 | 91 days | 0.49 | M-v | 5 | MPC | | 2005 $UQ_{511}$ |
| 2005 $UR_{511}$ | 16.9 | 0.15 | 20060922 | 49.56370 | 122.19487 | 306.78308 | 1.52471 | 0.1825875 | 3.0457589 | 19 | 1 | 87 days | 0.34 | M-v | 4 | MPC | | 2005 $UR_{511}$ |
| 2005 $US_{511}$ | 17.6 | 0.15 | 20060922 | 60.72594 | 124.44271 | 321.74435 | 1.71716 | 0.1393588 | 2.3464846 | 16 | 1 | 89 days | 0.30 | M-v | 4 | MPC | | 2005 $US_{511}$ |
| 2005 $UU_{511}$ | 15.7 | 0.15 | 20060922 | 30.79039 | 203.77194 | 248.68087 | 7.64261 | 0.0982305 | 3.1415974 | 26 | 1 | 70 days | 0.40 | M-v | 4 | MPC | | 2005 $UU_{511}$ |
| 2005 $UV_{511}$ | 15.7 | 0.15 | 20060922 | 152.50246 | 69.10036 | 249.96686 | 10.95244 | 0.0660680 | 3.1236386 | 19 | 1 | 86 days | 0.24 | M-v | 4 | MPC | | 2005 $UV_{511}$ |
| 2005 $UW_{511}$ | 16.1 | 0.15 | 20060922 | 171.72196 | 252.06892 | 53.15465 | 9.21949 | 0.0590297 | 3.0350306 | 24 | 1 | 96 days | 0.29 | M-v | 4 | MPC | | 2005 $UW_{511}$ |
| 2005 $UX_{511}$ | 16.0 | 0.15 | 20060922 | 357.43946 | 245.53524 | 236.57821 | 8.77654 | 0.0646070 | 3.2152300 | 21 | 1 | 62 days | 0.38 | M-v | 4 | MPC | | 2005 $UX_{511}$ |
| 2005 $UY_{511}$ | 18.5 | 0.15 | 20051126 | 329.37546 | 96.67637 | 11.28065 | 1.50388 | 0.1477347 | 2.3376537 | 16 | 1 | 56 days | 0.23 | | | MPC | | 2005 $UY_{511}$ |
| 2005 $UZ_{511}$ | 17.0 | 0.15 | 20051106 | 321.91934 | 80.03368 | 30.16838 | 1.41716 | 0.0870679 | 2.9117271 | 16 | 1 | 37 days | 0.30 | | | MPC | | 2005 $UZ_{511}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $UA_{512}$ | 16.6 | 0.15 | 20060922 | 289.02859 | 172.84452 | 54.30224 | 5.26882 | 0.1145926 | 2.4209940 | 17 | 1 | 63 days | 0.21 | M-v | 4 | MPC | | 2005 $UA_{512}$ |
| 2005 $UB_{512}$ | 16.0 | 0.15 | 20060922 | 354.40193 | 68.80604 | 76.25126 | 9.87821 | 0.1501306 | 3.2053379 | 22 | 1 | 69 days | 0.29 | M-v | 4 | MPC | | 2005 $UB_{512}$ |
| 2005 $UC_{512}$ | 15.8 | 0.15 | 20060922 | 45.44780 | 200.57792 | 272.05838 | 11.45048 | 0.1463640 | 3.1121924 | 19 | 1 | 99 days | 0.35 | M-v | 3 | MPC | | 2005 $UC_{512}$ |
| 2005 $UD_{512}$ | 16.5 | 0.15 | 20060922 | 64.12014 | 166.18297 | 240.42541 | 12.40985 | 0.1942114 | 2.8064498 | 19 | 1 | 85 days | 0.69 | M-v | 4 | MPC | | 2005 $UD_{512}$ |
| 2005 $UE_{512}$ | 16.0 | 0.15 | 20051106 | 346.78251 | 220.08298 | 212.04956 | 15.93095 | 0.2008780 | 3.1674207 | 17 | 1 | 28 days | 0.60 | | | MPC | | 2005 $UE_{512}$ |
| 2005 $UG_{512}$ | 18.0 | 0.15 | 20051126 | 53.00593 | 261.56024 | 82.28528 | 2.97963 | 0.2485408 | 2.1971992 | 26 | 1 | 57 days | 0.58 | | | MPC | | 2005 $UG_{512}$ |
| 2005 $UH_{512}$ | 17.1 | 0.15 | 20051126 | 33.72802 | 114.43016 | 245.49979 | 12.00806 | 0.2969952 | 2.5801012 | 19 | 1 | 37 days | 0.60 | | | MPC | | 2005 $UH_{512}$ |
| 2005 $UJ_{512}$ | 17.2 | 0.15 | 20060922 | 72.15610 | 200.85575 | 250.95203 | 2.47589 | 0.0956553 | 2.6033046 | 18 | 1 | 63 days | 0.27 | M-v | 5 | MPC | | 2005 $UJ_{512}$ |
| 2005 $UK_{512}$ | 17.4 | 0.15 | 20060922 | 355.32907 | 284.76761 | 232.84636 | 3.91693 | 0.1947941 | 2.5580615 | 17 | 1 | 60 days | 0.22 | M-v | 4 | MPC | | 2005 $UK_{512}$ |
| 2005 $UL_{512}$ | 17.2 | 0.15 | 20051126 | 97.29619 | 244.66881 | 53.05319 | 9.86324 | 0.1872202 | 2.5918192 | 15 | 1 | 37 days | 0.34 | | | MPC | | 2005 $UL_{512}$ |
| 2005 $UM_{512}$ | 16.5 | 0.15 | 20060922 | 116.66113 | 229.37014 | 130.47979 | 5.99447 | 0.1401185 | 2.5967059 | 18 | 1 | 93 days | 0.60 | M-v | 5 | MPC | | 2005 $UM_{512}$ |
| 2005 $UN_{512}$ | 15.5 | 0.15 | 20060922 | 224.14811 | 1.67796 | 249.98212 | 16.32895 | 0.1126687 | 3.1237159 | 18 | 1 | 83 days | 0.25 | M-v | 4 | MPC | | 2005 $UN_{512}$ |
| 2005 $UO_{512}$ | 17.4 | 0.15 | 20060922 | 71.59749 | 124.64623 | 299.26604 | 2.03667 | 0.1605528 | 2.6099491 | 21 | 1 | 87 days | 0.44 | M-v | 3 | MPC | | 2005 $UO_{512}$ |
| 2005 $UP_{512}$ | 17.1 | 0.15 | 20060922 | 168.83071 | 44.78950 | 278.82568 | 3.03602 | 0.0955654 | 2.4498363 | 22 | 1 | 85 days | 0.25 | M-v | 4 | MPC | | 2005 $UP_{512}$ |
| 2005 $UQ_{512}$ | 16.7 | 0.15 | 20051106 | 48.64725 | 302.60402 | 43.99270 | 5.95810 | 0.2552382 | 2.6260345 | 19 | 1 | 33 days | 0.49 | | | MPC | | 2005 $UQ_{512}$ |
| 2005 $UR_{512}$ | 16.0 | 0.15 | 20060922 | 295.16231 | 312.78301 | 252.64461 | 12.36060 | 0.1405406 | 2.7409506 | 18 | 1 | 83 days | 0.28 | M-v | 4 | MPC | | 2005 $UR_{512}$ |
| 2005 $UT_{512}$ | 16.5 | 0.15 | 20060922 | 107.88520 | 284.58723 | 70.11056 | 12.11838 | 0.2107709 | 2.6905531 | 19 | 1 | 82 days | 0.37 | M-v | 4 | MPC | | 2005 $UT_{512}$ |
| 2005 $VR_1$ | 15.0 | 0.15 | 20060922 | 11.46303 | 220.02701 | 266.35856 | 11.61903 | 0.0805867 | 3.0209792 | 50 | 1 | 112 days | 0.32 | M-v | 4 | MPC | 97959 | 2005 $VR_1$ |
| 2005 $VL_2$ | 15.4 | 0.15 | 20060922 | 67.62292 | 82.46207 | 288.84680 | 21.42000 | 0.3157025 | 3.1152462 | 38 | 1 | 200 days | 0.44 | M-v | 3 | MPC | 97959 | 2005 $VL_2$ |
| 2005 $VY_3$ | 20.4 | 0.15 | 20060922 | 208.84497 | 255.07946 | 49.12702 | 30.23417 | 0.3448150 | 1.6720312 | 24 | 1 | 24 days | 0.53 | M-v | 6 | MPC | 97960 | 2005 $VY_3$ |
| 2005 $VT_4$ | 18.8 | 0.15 | 20051106 | 13.83544 | 88.97991 | 305.23821 | 4.13972 | 0.1544804 | 2.2471809 | 12 | 1 | 5 days | 0.33 | | | MPC | | 2005 $VT_4$ |
| 2005 $VU_4$ | 14.8 | 0.15 | 20060922 | 349.23737 | 138.06960 | 344.69534 | 6.00582 | 0.1382905 | 3.9558171 | 18 | 1 | 76 days | 0.21 | M-v | 5 | MPC | 97960 | 2005 $VU_4$ |
| 2005 $VZ_4$ | 16.2 | 0.15 | 20060922 | 151.40835 | 186.17729 | 126.67116 | 2.31585 | 0.1247316 | 2.6536734 | 57 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 96351 | 2005 $VZ_4$ |
| 2005 $VC_5$ | 18.1 | 0.15 | 20051017 | 330.54575 | 53.20863 | 37.87140 | 13.85241 | 0.1888157 | 2.5909269 | 14 | 1 | 19 days | 0.34 | | | MPC | | 2005 $VC_5$ |
| 2005 $VS_6$ | 17.0 | 0.15 | 20060922 | 91.19927 | 99.39853 | 297.61072 | 4.86752 | 0.0678344 | 2.6930411 | 24 | 3 | 2000–2005 | 0.29 | M-v | 2 | MPC | 89984 | 2005 $VS_6$ |
| 2005 $VU_6$ | 15.1 | 0.15 | 20060922 | 130.13520 | 295.20014 | 23.86993 | 1.76841 | 0.1427416 | 2.9977175 | 66 | 6 | 1999–2006 | 0.45 | M-v | 0 | MPC | 96353 | 2005 $VU_6$ |
| 2005 $VJ_7$ | 16.4 | 0.15 | 20060922 | 85.98346 | 299.78022 | 90.60471 | 4.25832 | 0.0500214 | 2.8436732 | 42 | 3 | 1998–2006 | 0.44 | M-v | 3 | MPC | 96354 | 2005 $VJ_7$ |
| 2005 $VD_{15}$ | 15.9 | 0.15 | 20060922 | 69.22776 | 4.87117 | 37.76196 | 0.86692 | 0.0678433 | 2.7511574 | 73 | 7 | 1991–2006 | 0.56 | M-v | 1 | MPC | 96358 | 2005 $VD_{15}$ |
| 2005 $VG_{15}$ | 14.3 | 0.15 | 20060922 | 309.29145 | 192.31254 | 332.23179 | 16.46550 | 0.1423262 | 3.1618709 | 57 | 5 | 1996–2005 | 0.56 | M-v | 1 | MPC | 96359 | 2005 $VG_{15}$ |
| 2005 $VZ_{15}$ | 16.2 | 0.15 | 20060922 | 146.58474 | 0.43520 | 313.22371 | 12.75860 | 0.1446526 | 2.5437028 | 29 | 5 | 1999–2006 | 0.60 | M-v | 3 | MPC | 96360 | 2005 $VZ_{15}$ |
| 2005 $VF_{16}$ | 15.5 | 0.15 | 20060922 | 44.03169 | 180.68116 | 234.15127 | 16.54801 | 0.2063457 | 3.1166760 | 60 | 1 | 79 days | 0.50 | M-v | 4 | MPC | 97962 | 2005 $VF_{16}$ |
| 2005 $VY_{16}$ | 15.9 | 0.15 | 20060922 | 25.86534 | 109.82590 | 343.56272 | 12.28872 | 0.0660138 | 2.6002412 | 38 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 01099 | 2005 $VY_{16}$ |
| 2005 $VZ_{17}$ | 14.7 | 0.15 | 20060922 | 305.37543 | 247.73449 | 264.31887 | 1.74173 | 0.1487777 | 3.9495842 | 30 | 4 | 1997–2006 | 0.27 | M-v | 1 | MPC | 96364 | 2005 $VZ_{17}$ |
| 2005 $VX_{23}$ | 16.1 | 0.15 | 20060922 | 178.33549 | 296.62950 | 357.15191 | 1.62232 | 0.0360593 | 2.8454667 | 41 | 4 | 2000–2005 | 0.43 | M-v | 1 | MPC | 96365 | 2005 $VX_{23}$ |
| 2005 $VX_{26}$ | 16.3 | 0.15 | 20060922 | 240.63249 | 347.77449 | 231.30395 | 9.93717 | 0.0533325 | 3.0208443 | 51 | 3 | 2002–2005 | 0.48 | M-v | 2 | MPC | 03788 | 2005 $VX_{26}$ |
| 2005 $VF_{30}$ | 17.8 | 0.15 | 20060922 | 214.89930 | 189.67480 | 98.22120 | 2.28046 | 0.1703336 | 2.1710012 | 31 | 2 | 2004–2005 | 0.25 | M-v | 3 | MPC | 03788 | 2005 $VF_{30}$ |
| 2005 $VB_{32}$ | 15.5 | 0.15 | 20060922 | 66.72769 | 337.10790 | 66.58797 | 6.74260 | 0.2276739 | 3.1399129 | 69 | 1 | 129 days | 0.54 | M-v | 3 | MPC | 97964 | 2005 $VB_{32}$ |
| 2005 $VY_{32}$ | 17.1 | 0.15 | 20060922 | 115.60278 | 151.42569 | 222.06116 | 4.55629 | 0.2438110 | 2.3311380 | 50 | 3 | 2001–2005 | 0.52 | M-v | 3 | MPC | 96370 | 2005 $VY_{32}$ |
| 2005 $VH_{33}$ | 14.8 | 0.15 | 20060922 | 11.00754 | 199.20831 | 270.37282 | 22.08935 | 0.1101653 | 2.5556120 | 102 | 6 | 1996–2006 | 0.64 | M-v | 1 | MPC | 02260 | 2005 $VH_{33}$ |
| 2005 $VQ_{34}$ | 16.0 | 0.15 | 20060922 | 128.26206 | 164.39854 | 161.50633 | 6.23289 | 0.1233136 | 2.7443445 | 53 | 6 | 1991–2006 | 0.64 | M-v | 1 | MPC | 01100 | 2005 $VQ_{34}$ |
| 2005 $VK_{35}$ | 17.3 | 0.15 | 20060922 | 289.32861 | 244.91724 | 315.89724 | 2.43586 | 0.1164397 | 2.3403852 | 24 | 3 | 1994–2005 | 0.51 | M-v | 4 | MPC | 96373 | 2005 $VK_{35}$ |
| 2005 $VW_{35}$ | 16.4 | 0.15 | 20060922 | 288.20919 | 322.79114 | 228.51077 | 12.01121 | 0.1246009 | 2.6095544 | 44 | 2 | 2001–2005 | 0.46 | M-v | 4 | MPC | 03789 | 2005 $VW_{35}$ |
| 2005 $VN_{39}$ | 13.6 | 0.15 | 20060922 | 292.20638 | 271.73001 | 249.98598 | 6.79481 | 0.1555822 | 3.9568716 | 87 | 7 | 1996–2006 | 0.54 | M-v | 1 | MPC | 96375 | 2005 $VN_{39}$ |
| 2005 $VK_{43}$ | 15.3 | 0.15 | 20060922 | 190.00564 | 205.20240 | 66.93835 | 18.51828 | 0.1463395 | 2.6603590 | 45 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 96380 | 2005 $VK_{43}$ |
| 2005 $VR_{44}$ | 16.1 | 0.15 | 20060922 | 32.02371 | 40.30792 | 51.13170 | 13.69477 | 0.0838705 | 2.7121604 | 49 | 3 | 2002–2005 | 0.39 | M-v | 3 | MPC | 96380 | 2005 $VR_{44}$ |
| 2005 $VJ_{50}$ | 16.3 | 0.15 | 20060922 | 68.85778 | 270.88419 | 145.97908 | 3.68008 | 0.0909820 | 2.6752414 | 35 | 3 | 2002–2006 | 0.74 | M-v | 3 | MPC | 96383 | 2005 $VJ_{50}$ |
| 2005 $VQ_{50}$ | 17.1 | 0.15 | 20060922 | 70.01961 | 260.57045 | 153.96612 | 7.52139 | 0.1074276 | 2.4074154 | 38 | 3 | 2001–2005 | 0.65 | M-v | 2 | MPC | 03790 | 2005 $VQ_{50}$ |
| 2005 $VH_{52}$ | 17.1 | 0.15 | 20060922 | 69.84476 | 274.86930 | 138.61695 | 5.69522 | 0.1768933 | 2.5416510 | 40 | 3 | 1999–2005 | 0.65 | M-v | 3 | MPC | 03790 | 2005 $VH_{52}$ |
| 2005 $VX_{55}$ | 16.7 | 0.15 | 20060922 | 251.27475 | 289.21132 | 295.78482 | 3.10168 | 0.1798271 | 2.5459237 | 37 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 01103 | 2005 $VX_{55}$ |
| 2005 $VS_{56}$ | 16.5 | 0.15 | 20060922 | 139.86256 | 270.07829 | 84.95667 | 7.52072 | 0.1464402 | 2.2298487 | 90 | 3 | 1995–2006 | 0.54 | M-v | 2 | MPC | 96388 | 2005 $VS_{56}$ |
| 2005 $VR_{58}$ | 16.6 | 0.15 | 20060922 | 66.41573 | 122.78776 | 281.78542 | 3.81598 | 0.0245787 | 2.7266511 | 39 | 5 | 2000–2006 | 0.40 | M-v | 0 | MPC | 96389 | 2005 $VR_{58}$ |
| 2005 $VW_{65}$ | 17.9 | 0.15 | 20060922 | 45.76857 | 26.75162 | 56.36181 | 9.06610 | 0.1206581 | 2.5364694 | 25 | 3 | 1999–2005 | 0.24 | M-v | 2 | MPC | 03791 | 2005 $VW_{65}$ |
| 2005 $VV_{67}$ | 16.5 | 0.15 | 20060922 | 36.97227 | 250.93309 | 212.87011 | 10.81400 | 0.1580249 | 2.5767746 | 48 | 3 | 2001–2005 | 0.48 | M-v | 3 | MPC | 03791 | 2005 $VV_{67}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $VV_{70}$ | 16.4 | 0.15 | 20060922 | 69.52210 | 268.71854 | 154.92557 | 2.59850 | 0.0793056 | 2.6311123 | 40 | 5 | 2000–2005 | 0.48 | M-v | 1 | MPC | 03791 | 2005 $VV_{70}$ |
| 2005 $VP_{71}$ | 17.5 | 0.15 | 20060922 | 36.64003 | 23.09705 | 93.25503 | 4.32298 | 0.1345427 | 2.4284277 | 36 | 1 | 82 days | 0.42 | M-v | 4 | MPC | | 2005 $VP_{71}$ |
| 2005 $VL_{72}$ | 15.9 | 0.15 | 20060922 | 90.81807 | 255.90326 | 114.11767 | 2.49555 | 0.2119981 | 3.0852249 | 52 | 4 | 2000–2005 | 0.48 | M-v | 1 | MPC | 96393 | 2005 $VL_{72}$ |
| 2005 $VG_{76}$ | 14.8 | 0.15 | 20060922 | 22.58680 | 133.21994 | 316.03993 | 8.35882 | 0.1146374 | 3.0094415 | 61 | 5 | 2000–2006 | 0.47 | M-v | 1 | MPC | 96397 | 2005 $VG_{76}$ |
| 2005 $VF_{77}$ | 16.6 | 0.15 | 20060922 | 28.35150 | 133.69497 | 322.67292 | 7.83662 | 0.1575357 | 2.5838730 | 34 | 2 | 2001–2005 | 0.58 | M-v | 4 | MPC | 03792 | 2005 $VF_{77}$ |
| 2005 $VG_{77}$ | 16.5 | 0.15 | 20060922 | 238.30978 | 260.01966 | 327.69493 | 1.59764 | 0.0468379 | 2.7521789 | 47 | 5 | 1994–2006 | 0.34 | M-v | 1 | MPC | 96398 | 2005 $VG_{77}$ |
| 2005 $VL_{77}$ | 15.1 | 0.15 | 20060922 | 4.05425 | 207.92359 | 263.01579 | 3.84987 | 0.1127860 | 3.2273312 | 49 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 96398 | 2005 $VL_{77}$ |
| 2005 $VF_{78}$ | 15.1 | 0.15 | 20060922 | 117.29766 | 87.84697 | 269.48020 | 7.90654 | 0.0719298 | 2.9982580 | 63 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 96399 | 2005 $VF_{78}$ |
| 2005 $VJ_{78}$ | 15.6 | 0.15 | 20060922 | 123.96849 | 41.48595 | 313.44135 | 3.48453 | 0.1774974 | 2.5786042 | 62 | 3 | 2001–2006 | 0.40 | M-v | 3 | MPC | 96400 | 2005 $VJ_{78}$ |
| 2005 $VN_{80}$ | 16.1 | 0.15 | 20060922 | 60.14186 | 250.89523 | 152.83222 | 2.46363 | 0.1119485 | 2.9711975 | 38 | 4 | 2001–2005 | 0.67 | M-v | 1 | MPC | 96402 | 2005 $VN_{80}$ |
| 2005 $VG_{81}$ | 18.0 | 0.15 | 20060922 | 109.39690 | 146.89761 | 234.57265 | 1.89743 | 0.1854613 | 2.4510340 | 43 | 3 | 1997–2005 | 0.36 | M-v | 3 | MPC | 03792 | 2005 $VG_{81}$ |
| 2005 $VJ_{96}$ | 15.7 | 0.15 | 20060922 | 145.30260 | 6.90021 | 315.42816 | 1.90358 | 0.0969063 | 2.6972940 | 58 | 5 | 2000–2006 | 0.51 | M-v | 1 | MPC | 96409 | 2005 $VJ_{96}$ |
| 2005 $VP_{97}$ | 16.1 | 0.15 | 20060922 | 251.37340 | 288.76703 | 302.02666 | 3.88846 | 0.0523479 | 2.7234205 | 27 | 4 | 2002–2006 | 0.34 | M-v | 1 | MPC | 96409 | 2005 $VP_{97}$ |
| 2005 $VE_{98}$ | 15.8 | 0.15 | 20060922 | 173.94304 | 246.02566 | 46.25968 | 2.20068 | 0.0457938 | 2.9716425 | 60 | 6 | 1998–2006 | 0.45 | M-v | 0 | MPC | 96410 | 2005 $VE_{98}$ |
| 2005 $VR_{98}$ | 14.8 | 0.15 | 20060922 | 86.57956 | 63.08582 | 329.63373 | 12.93472 | 0.1243842 | 2.6118457 | 70 | 5 | 1996–2006 | 0.40 | M-v | 1 | MPC | 96411 | 2005 $VR_{98}$ |
| 2005 $VX_{98}$ | 15.5 | 0.15 | 20060922 | 32.52198 | 172.74234 | 284.26290 | 13.05856 | 0.0316208 | 2.6731943 | 40 | 3 | 2001–2005 | 0.48 | M-v | 3 | MPC | 96411 | 2005 $VX_{98}$ |
| 2005 $VY_{101}$ | 15.7 | 0.15 | 20060922 | 134.89510 | 43.15292 | 292.44490 | 10.63065 | 0.0386866 | 2.6870368 | 36 | 5 | 1998–2006 | 0.58 | M-v | 1 | MPC | 96413 | 2005 $VY_{101}$ |
| 2005 $VF_{102}$ | 15.8 | 0.15 | 20060922 | 299.03385 | 242.57856 | 304.18644 | 8.88984 | 0.0932340 | 2.5413785 | 45 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 96413 | 2005 $VF_{102}$ |
| 2005 $VJ_{106}$ | 15.2 | 0.15 | 20060922 | 82.92593 | 353.25043 | 31.68076 | 1.53727 | 0.1884205 | 3.0781103 | 78 | 7 | 1994–2006 | 0.47 | M-v | 0 | MPC | 96415 | 2005 $VJ_{106}$ |
| 2005 $VQ_{106}$ | 15.0 | 0.15 | 20060922 | 356.25107 | 238.28010 | 222.82552 | 2.03196 | 0.1813950 | 3.9592031 | 54 | 4 | 1997–2006 | 0.32 | M-v | 0 | MPC | 96416 | 2005 $VQ_{106}$ |
| 2005 $VH_{107}$ | 16.2 | 0.15 | 20060922 | 237.76105 | 282.02905 | 308.74438 | 3.31138 | 0.0808191 | 3.1695680 | 28 | 3 | 2002–2005 | 0.29 | M-v | 2 | MPC | 96416 | 2005 $VH_{107}$ |
| 2005 $VY_{109}$ | 16.2 | 0.15 | 20060922 | 286.98632 | 146.43688 | 53.14022 | 7.12906 | 0.1021700 | 2.6165292 | 38 | 3 | 1999–2005 | 0.35 | M-v | 3 | MPC | 03793 | 2005 $VY_{109}$ |
| 2005 $VC_{112}$ | 17.9 | 0.15 | 20060922 | 75.64582 | 74.23576 | 0.37981 | 2.35709 | 0.1713451 | 2.3962425 | 37 | 2 | 2001–2005 | 0.71 | M-v | 4 | MPC | 03793 | 2005 $VC_{112}$ |
| 2005 $VO_{116}$ | 16.3 | 0.15 | 20060922 | 149.34563 | 334.84785 | 343.38050 | 4.19766 | 0.1360460 | 2.6889261 | 19 | 3 | 2000–2005 | 0.48 | M-v | 4 | MPC | 01110 | 2005 $VO_{116}$ |
| 2005 $VJ_{119}$ | 10.6 | 0.15 | 20060922 | 356.23373 | 245.56967 | 301.71713 | 6.95438 | 0.6879479 | 36.1205075 | 21 | 1 | 172 days | 0.20 | M-v | 2 | MPC | 02260 | 2005 $VJ_{119}$ |
| 2005 $VP_{119}$ | 17.1 | 0.15 | 20060922 | 44.44947 | 300.78296 | 134.99424 | 3.77269 | 0.0672063 | 2.7751668 | 27 | 3 | 1998–2005 | 0.44 | M-v | 4 | MPC | 96424 | 2005 $VP_{119}$ |
| 2005 $VW_{120}$ | 13.9 | 0.15 | 20060922 | 161.13835 | 356.87523 | 290.52434 | 20.54595 | 0.0923915 | 3.1426620 | 49 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 96427 | 2005 $VW_{120}$ |
| 2005 $VH_{122}$ | 15.4 | 0.15 | 20060922 | 47.73021 | 269.81397 | 127.39576 | 17.67154 | 0.2738538 | 3.1517657 | 38 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 96427 | 2005 $VH_{122}$ |
| 2005 $VP_{124}$ | 17.3 | 0.15 | 20060922 | 83.34277 | 153.87073 | 249.00793 | 8.37799 | 0.2594586 | 2.7005302 | 26 | 1 | 95 days | 0.39 | M-v | 4 | MPC | | 2005 $VP_{124}$ |
| 2005 $VQ_{124}$ | 18.1 | 0.15 | 20051126 | 356.46373 | 177.79471 | 239.19589 | 12.21694 | 0.2730058 | 2.6414706 | 18 | 1 | 57 days | 0.68 | | | MPC | | 2005 $VQ_{124}$ |
| 2005 $VR_{124}$ | 17.6 | 0.15 | 20051106 | 321.40517 | 284.34162 | 173.34306 | 5.04242 | 0.1618133 | 2.3849818 | 19 | 1 | 28 days | 0.73 | | | MPC | | 2005 $VR_{124}$ |
| 2005 $VT_{124}$ | 18.8 | 0.15 | 20051126 | 341.60456 | 183.08190 | 272.90088 | 1.68841 | 0.2381384 | 2.4784875 | 17 | 1 | 55 days | 0.30 | | | MPC | | 2005 $VT_{124}$ |
| 2005 $VU_{124}$ | 16.3 | 0.15 | 20060922 | 72.11175 | 143.90465 | 306.36710 | 12.33106 | 0.2475176 | 3.0998786 | 17 | 1 | 121 days | 0.52 | M-v | 4 | MPC | | 2005 $VU_{124}$ |
| 2005 $VW_{124}$ | 17.5 | 0.15 | 20051126 | 186.56781 | 3.16877 | 228.44361 | 2.85117 | 0.1749119 | 2.3086871 | 18 | 1 | 54 days | 0.36 | | | MPC | | 2005 $VW_{124}$ |
| 2005 $VX_{124}$ | 17.5 | 0.15 | 20051126 | 270.74851 | 243.90509 | 277.53618 | 4.67533 | 0.0296489 | 2.2965125 | 20 | 1 | 55 days | 0.42 | | | MPC | | 2005 $VX_{124}$ |
| 2005 $VZ_{124}$ | 17.5 | 0.15 | 20060922 | 1.72382 | 355.77024 | 226.28121 | 1.94292 | 0.1199589 | 2.3373724 | 18 | 1 | 136 days | 0.45 | M-v | 4 | MPC | | 2005 $VZ_{124}$ |
| 2005 $VA_{125}$ | 16.8 | 0.15 | 20060922 | 25.26356 | 11.73887 | 158.17090 | 4.23524 | 0.0683630 | 2.9344316 | 19 | 1 | 137 days | 0.34 | M-v | 4 | MPC | | 2005 $VA_{125}$ |
| 2005 $VB_{125}$ | 17.8 | 0.15 | 20060922 | 19.92072 | 35.87510 | 163.86272 | 3.22238 | 0.0993544 | 2.4012487 | 18 | 1 | 121 days | 0.55 | M-v | 6 | MPC | | 2005 $VB_{125}$ |
| 2005 $VC_{125}$ | 16.8 | 0.15 | 20060922 | 111.51349 | 117.94875 | 273.98518 | 12.16968 | 0.1815237 | 2.5825327 | 16 | 1 | 75 days | 0.29 | M-v | 4 | MPC | | 2005 $VC_{125}$ |
| 2005 $VD_{125}$ | 15.5 | 0.15 | 20060922 | 74.05154 | 113.20935 | 273.25015 | 24.05006 | 0.2171350 | 3.1587268 | 19 | 1 | 113 days | 0.53 | M-v | 4 | MPC | | 2005 $VD_{125}$ |
| 2005 $VE_{125}$ | 16.8 | 0.15 | 20060922 | 55.47223 | 177.24999 | 249.29862 | 15.10781 | 0.2532570 | 3.0525847 | 30 | 1 | 84 days | 0.61 | M-v | 4 | MPC | | 2005 $VE_{125}$ |
| 2005 $VF_{125}$ | 18.7 | 0.15 | 20051216 | 353.62948 | 47.74446 | 36.71138 | 2.11577 | 0.1512371 | 2.3358668 | 16 | 1 | 49 days | 0.26 | | | MPC | | 2005 $VF_{125}$ |
| 2005 $VG_{125}$ | 16.4 | 0.15 | 20060922 | 44.42963 | 228.89697 | 298.38673 | 12.23094 | 0.1963722 | 2.6428471 | 29 | 1 | 190 days | 0.69 | M-v | 3 | MPC | | 2005 $VG_{125}$ |
| 2005 $WE_{1}$ | 15.6 | 0.15 | 20060922 | 344.59294 | 142.82500 | 352.38524 | 11.33244 | 0.0334869 | 3.1229669 | 54 | 5 | 1996–2005 | 0.51 | M-v | 1 | MPC | 96429 | 2005 $WE_{1}$ |
| 2005 $WV_{2}$ | 14.9 | 0.15 | 20060922 | 86.15860 | 243.73541 | 137.63628 | 10.07832 | 0.0982074 | 3.1577198 | 45 | 4 | 2003–2006 | 0.45 | M-v | 1 | MPC | 96430 | 2005 $WV_{2}$ |
| 2005 $WA_{3}$ | 17.0 | 0.15 | 20060922 | 103.62268 | 279.60000 | 79.52987 | 13.09537 | 0.2812543 | 2.6103813 | 43 | 1 | 114 days | 0.42 | M-v | 4 | MPC | 97976 | 2005 $WA_{3}$ |
| 2005 $WY_{3}$ | 13.4 | 0.15 | 20060922 | 332.46676 | 309.22833 | 190.24389 | 29.41522 | 0.7354774 | 6.7392120 | 72 | 2 | 2005–2006 | 0.53 | M-v | 3 | MPC | 03794 | 2005 $WY_{3}$ |
| 2005 $WK_{4}$ | 20.2 | 0.15 | 20060922 | 163.51692 | 74.41294 | 138.34879 | 9.83285 | 0.2371734 | 1.0115565 | 78 | 2 | 2005–2006 | 0.47 | M-v | 3 | MPC | 03794 | 2005 $WK_{4}$ |
| 2005 $WJ_{6}$ | 15.0 | 0.15 | 20060922 | 352.08324 | 62.04512 | 75.68300 | 4.25431 | 0.1215766 | 3.2158155 | 57 | 5 | 1996–2006 | 0.42 | M-v | 1 | MPC | 96435 | 2005 $WJ_{6}$ |
| 2005 $WR_{7}$ | 16.2 | 0.15 | 20060922 | 100.80341 | 283.42139 | 96.52608 | 7.58195 | 0.1538329 | 2.6586494 | 29 | 3 | 2001–2005 | 0.46 | M-v | 3 | MPC | 03794 | 2005 $WR_{7}$ |
| 2005 $WD_{8}$ | 14.7 | 0.15 | 20060922 | 80.23651 | 60.84347 | 332.96696 | 21.02468 | 0.2436024 | 3.1603942 | 52 | 5 | 1999–2006 | 0.50 | M-v | 1 | MPC | 96439 | 2005 $WD_{8}$ |
| 2005 $WM_{10}$ | 17.3 | 0.15 | 20060922 | 5.31546 | 90.68636 | 55.78510 | 3.58464 | 0.1213371 | 2.4023297 | 34 | 2 | 2003–2005 | 0.36 | M-v | 4 | MPC | 03794 | 2005 $WM_{10}$ |
| 2005 $WH_{15}$ | 17.4 | 0.15 | 20060922 | 71.60620 | 0.45968 | 64.38278 | 5.62035 | 0.1973641 | 2.6036869 | 49 | 1 | 94 days | 0.40 | M-v | 3 | MPC | 97979 | 2005 $WH_{15}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $WS_{16}$ | 16.2 | 0.15 | 20060922 | 134.62712 | 250.40693 | 73.01425 | 5.11656 | 0.3520081 | 2.6360042 | 39 | 3 | 2000–2005 | 0.36 | M-v | 2 | MPC | 03795 | 2005 $WS_{16}$ |
| 2005 $WM_{18}$ | 17.0 | 0.15 | 20060922 | 102.44593 | 319.36315 | 72.74309 | 4.19771 | 0.1689710 | 2.5265415 | 57 | 4 | 1995–2005 | 0.51 | M-v | 3 | MPC | 96446 | 2005 $WM_{18}$ |
| 2005 $WZ_{18}$ | 16.2 | 0.15 | 20060922 | 48.91989 | 30.41688 | 76.01448 | 11.41855 | 0.2148808 | 2.6405683 | 74 | 2 | 2002–2006 | 0.52 | M-v | 3 | MPC | 03796 | 2005 $WZ_{18}$ |
| 2005 $WF_{19}$ | 17.0 | 0.15 | 20060922 | 105.12332 | 255.97054 | 131.89273 | 7.72385 | 0.2861799 | 2.3481275 | 35 | 3 | 1999–2006 | 0.43 | M-v | 1 | MPC | 96447 | 2005 $WF_{19}$ |
| 2005 $WD_{20}$ | 16.7 | 0.15 | 20060922 | 33.10742 | 100.45500 | 353.66975 | 2.88974 | 0.1025264 | 3.0262682 | 20 | 4 | 1996–2005 | 0.39 | M-v | 0 | MPC | 01116 | 2005 $WD_{20}$ |
| 2005 $WV_{21}$ | 15.1 | 0.15 | 20060922 | 86.79500 | 323.42297 | 60.82828 | 14.76761 | 0.1135019 | 3.1644856 | 42 | 1 | 69 days | 0.48 | M-v | 4 | MPC | 97981 | 2005 $WV_{21}$ |
| 2005 $WK_{22}$ | 16.7 | 0.15 | 20060922 | 359.69289 | 111.95857 | 33.33133 | 3.87409 | 0.1336600 | 2.7416189 | 32 | 3 | 2000–2005 | 0.41 | M-v | 3 | MPC | 03796 | 2005 $WK_{22}$ |
| 2005 $WN_{22}$ | 16.9 | 0.15 | 20060922 | 17.37499 | 99.46862 | 27.48150 | 2.66422 | 0.1942123 | 2.8688548 | 24 | 1 | 64 days | 0.27 | M-v | 4 | MPC | | 2005 $WN_{22}$ |
| 2005 $WZ_{23}$ | 15.6 | 0.15 | 20060922 | 97.93184 | 355.93209 | 11.80773 | 2.79137 | 0.1339371 | 3.1356717 | 24 | 1 | 64 days | 0.41 | M-v | 4 | MPC | 97981 | 2005 $WZ_{23}$ |
| 2005 $WZ_{24}$ | 16.6 | 0.15 | 20060922 | 105.67678 | 96.42342 | 275.14295 | 6.16795 | 0.0712211 | 3.0446005 | 23 | 3 | 1996–2005 | 0.26 | M-v | 2 | MPC | 96451 | 2005 $WZ_{24}$ |
| 2005 $WF_{25}$ | 17.2 | 0.15 | 20060922 | 13.31473 | 98.36011 | 30.28194 | 3.61506 | 0.1252355 | 2.8420743 | 40 | 3 | 1995–2006 | 0.42 | M-v | 2 | MPC | 01116 | 2005 $WF_{25}$ |
| 2005 $WV_{26}$ | 16.0 | 0.15 | 20060922 | 60.89625 | 130.09875 | 296.27093 | 1.89077 | 0.0800312 | 3.0098778 | 37 | 3 | 1999–2005 | 0.36 | M-v | 3 | MPC | 96453 | 2005 $WV_{26}$ |
| 2005 $WW_{27}$ | 15.8 | 0.15 | 20060922 | 11.07072 | 145.74911 | 337.61887 | 1.20353 | 0.1496307 | 3.2167341 | 29 | 3 | 2004–2006 | 0.33 | M-v | 2 | MPC | 96454 | 2005 $WW_{27}$ |
| 2005 $WF_{28}$ | 16.6 | 0.15 | 20060922 | 18.66176 | 192.41678 | 286.29232 | 2.80397 | 0.0357783 | 2.7254791 | 28 | 2 | 2002–2005 | 0.43 | M-v | 4 | MPC | 03797 | 2005 $WF_{28}$ |
| 2005 $WX_{29}$ | 17.6 | 0.15 | 20060922 | 73.04195 | 66.72216 | 16.59205 | 1.73938 | 0.1152230 | 2.3159628 | 65 | 4 | 1996–2006 | 0.50 | M-v | 1 | MPC | 96457 | 2005 $WX_{29}$ |
| 2005 $WQ_{30}$ | 17.0 | 0.15 | 20060922 | 60.85908 | 33.79007 | 49.20132 | 5.16078 | 0.1328604 | 2.6172132 | 23 | 1 | 72 days | 0.47 | M-v | 4 | MPC | | 2005 $WQ_{30}$ |
| 2005 $WE_{31}$ | 18.5 | 0.15 | 20060922 | 129.11233 | 40.53031 | 341.07387 | 1.67387 | 0.1631967 | 2.1641977 | 20 | 2 | 2000–2005 | 0.45 | M-v | 5 | MPC | 01118 | 2005 $WE_{31}$ |
| 2005 $WB_{34}$ | 15.7 | 0.15 | 20060922 | 67.48821 | 8.00574 | 49.71715 | 2.60577 | 0.2274444 | 3.0884539 | 51 | 3 | 2001–2005 | 0.67 | M-v | 4 | MPC | 03798 | 2005 $WB_{34}$ |
| 2005 $WF_{34}$ | 14.8 | 0.15 | 20060922 | 333.08917 | 278.05087 | 260.25704 | 14.52060 | 0.1937493 | 3.2052589 | 54 | 4 | 1997–2006 | 0.49 | M-v | 1 | MPC | 03798 | 2005 $WF_{34}$ |
| 2005 $WJ_{38}$ | 15.5 | 0.15 | 20060922 | 43.74995 | 328.19440 | 117.92981 | 3.18987 | 0.1196950 | 3.1992408 | 51 | 5 | 1996–2006 | 0.52 | M-v | 1 | MPC | 96467 | 2005 $WJ_{38}$ |
| 2005 $WQ_{38}$ | 16.8 | 0.15 | 20060922 | 161.44075 | 129.46288 | 204.51354 | 2.62614 | 0.1489870 | 2.5920438 | 25 | 3 | 2003–2005 | 0.32 | M-v | 3 | MPC | 96468 | 2005 $WQ_{38}$ |
| 2005 $WY_{40}$ | 16.3 | 0.15 | 20060922 | 68.58578 | 232.43306 | 169.30125 | 7.58757 | 0.2206258 | 2.9442755 | 28 | 3 | 2000–2005 | 0.66 | M-v | 4 | MPC | 96469 | 2005 $WY_{40}$ |
| 2005 $WQ_{43}$ | 15.9 | 0.15 | 20060922 | 86.88106 | 357.79482 | 38.87852 | 1.27850 | 0.0945468 | 2.9934803 | 40 | 6 | 1994–2006 | 0.51 | M-v | 0 | MPC | 04363 | 2005 $WQ_{43}$ |
| 2005 $WQ_{44}$ | 15.5 | 0.15 | 20060922 | 196.28564 | 30.84565 | 247.47793 | 8.60200 | 0.0098432 | 3.1488458 | 28 | 1 | 75 days | 0.22 | M-v | 4 | MPC | 97986 | 2005 $WQ_{44}$ |
| 2005 $WW_{44}$ | 16.2 | 0.15 | 20060922 | 64.34417 | 358.86601 | 60.47706 | 9.04494 | 0.0368427 | 2.9042904 | 28 | 3 | 1998–2006 | 0.33 | M-v | 3 | MPC | 01120 | 2005 $WW_{44}$ |
| 2005 $WN_{46}$ | 15.4 | 0.15 | 20060922 | 36.91155 | 304.94825 | 152.61476 | 13.12917 | 0.1370499 | 3.0206373 | 55 | 6 | 1996–2006 | 0.50 | M-v | 0 | MPC | 96473 | 2005 $WN_{46}$ |
| 2005 $WF_{47}$ | 17.0 | 0.15 | 20060922 | 155.10786 | 53.13931 | 287.80227 | 1.64166 | 0.0427660 | 2.6452856 | 33 | 4 | 1992–2006 | 0.37 | M-v | 0 | MPC | 01121 | 2005 $WF_{47}$ |
| 2005 $WS_{50}$ | 15.8 | 0.15 | 20060922 | 134.82945 | 74.80318 | 259.46103 | 1.66299 | 0.1231510 | 2.9149532 | 52 | 6 | 1979–2006 | 0.37 | M-v | 1 | MPC | 96474 | 2005 $WS_{50}$ |
| 2005 $WZ_{53}$ | 18.1 | 0.15 | 20060922 | 43.41349 | 72.57659 | 67.87154 | 23.19228 | 0.0716372 | 1.9332371 | 33 | 2 | 2004–2005 | 0.26 | M-v | 3 | MPC | 03800 | 2005 $WZ_{53}$ |
| 2005 $WJ_{54}$ | 16.2 | 0.15 | 20060922 | 22.95176 | 251.79892 | 248.43404 | 28.20356 | 0.3151169 | 2.6056496 | 42 | 2 | 2001–2005 | 0.55 | M-v | 3 | MPC | 03800 | 2005 $WJ_{54}$ |
| 2005 $WJ_{56}$ | 17.9 | 0.15 | 20060922 | 119.57924 | 297.85826 | 288.12200 | 21.62345 | 0.1519268 | 0.9585374 | 123 | 2 | 2005–2006 | 0.42 | M-v | 3 | MPC | 03800 | 2005 $WJ_{56}$ |
| 2005 $WJ_{57}$ | 14.2 | 0.15 | 20060922 | 27.88081 | 164.82969 | 290.81022 | 4.11002 | 0.1564368 | 3.9538740 | 74 | 3 | 2004–2006 | 0.44 | M-v | 2 | MPC | 96479 | 2005 $WJ_{57}$ |
| 2005 $WX_{59}$ | 15.5 | 0.15 | 20060922 | 130.50275 | 214.78347 | 132.06787 | 15.05470 | 0.0934972 | 2.6959240 | 68 | 6 | 1999–2006 | 0.59 | M-v | 1 | MPC | 96482 | 2005 $WX_{59}$ |
| 2005 $WU_{60}$ | 17.0 | 0.15 | 20060922 | 329.61752 | 117.80996 | 25.13168 | 2.66133 | 0.0723563 | 2.2329196 | 35 | 4 | 2002–2006 | 0.34 | M-v | 1 | MPC | 96483 | 2005 $WU_{60}$ |
| 2005 $WJ_{61}$ | 15.8 | 0.15 | 20051106 | 307.56153 | 78.63631 | 27.99083 | 9.93601 | 0.0734776 | 2.6952341 | 22 | 1 | 31 days | 0.63 | | | MPC | | 2005 $WJ_{61}$ |
| 2005 $WO_{62}$ | 15.2 | 0.15 | 20060922 | 236.08222 | 162.76015 | 80.82005 | 10.75734 | 0.0132150 | 3.0470524 | 37 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 01126 | 2005 $WO_{62}$ |
| 2005 $WA_{64}$ | 15.0 | 0.15 | 20060922 | 1.69199 | 84.99142 | 61.33706 | 5.09417 | 0.1039248 | 3.0448750 | 26 | 2 | 2000–2006 | 0.65 | M-v | 4 | MPC | 03801 | 2005 $WA_{64}$ |
| 2005 $WE_{65}$ | 15.4 | 0.15 | 20060922 | 58.70915 | 274.99814 | 141.69513 | 21.62018 | 0.1751428 | 3.0485269 | 42 | 4 | 2002–2006 | 0.50 | M-v | 1 | MPC | 96485 | 2005 $WE_{65}$ |
| 2005 $WL_{66}$ | 16.3 | 0.15 | 20060922 | 221.91606 | 187.64149 | 82.24064 | 4.02014 | 0.0610315 | 2.6615324 | 32 | 3 | 2003–2005 | 0.48 | M-v | 3 | MPC | 03801 | 2005 $WL_{66}$ |
| 2005 $WM_{66}$ | 17.1 | 0.15 | 20060922 | 310.91166 | 326.17158 | 234.90865 | 3.76438 | 0.0327634 | 2.3349000 | 41 | 5 | 2000–2005 | 0.35 | M-v | 1 | MPC | 03801 | 2005 $WM_{66}$ |
| 2005 $WL_{67}$ | 15.9 | 0.15 | 20060922 | 126.24603 | 118.25564 | 237.41823 | 8.15995 | 0.0429748 | 2.9215972 | 35 | 1 | 65 days | 0.28 | M-v | 4 | MPC | 97991 | 2005 $WL_{67}$ |
| 2005 $WB_{68}$ | 16.0 | 0.15 | 20060922 | 90.12062 | 196.83627 | 200.07180 | 1.43785 | 0.0796434 | 2.8993955 | 43 | 4 | 1997–2005 | 0.37 | M-v | 0 | MPC | 96487 | 2005 $WB_{68}$ |
| 2005 $WR_{69}$ | 16.7 | 0.15 | 20060922 | 108.93533 | 248.28913 | 135.38083 | 1.36084 | 0.1504569 | 2.5631373 | 36 | 4 | 1994–2005 | 0.57 | M-v | 3 | MPC | 96488 | 2005 $WR_{69}$ |
| 2005 $WN_{71}$ | 15.7 | 0.15 | 20060922 | 57.14364 | 151.82851 | 272.46601 | 9.15110 | 0.1865791 | 3.0519052 | 81 | 1 | 131 days | 0.61 | M-v | 3 | MPC | 97992 | 2005 $WN_{71}$ |
| 2005 $WO_{72}$ | 15.6 | 0.15 | 20060922 | 231.54769 | 0.26089 | 262.85378 | 10.65269 | 0.0361798 | 2.6716636 | 60 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 96492 | 2005 $WO_{72}$ |
| 2005 $WY_{74}$ | 16.1 | 0.15 | 20060922 | 214.92951 | 319.81491 | 291.07045 | 4.04824 | 0.1041885 | 3.0950740 | 23 | 3 | 2002–2005 | 0.50 | M-v | 2 | MPC | 96496 | 2005 $WY_{74}$ |
| 2005 $WG_{77}$ | 16.9 | 0.15 | 20060922 | 135.15535 | 313.56747 | 29.51579 | 2.56214 | 0.2128033 | 2.6483697 | 19 | 2 | 2001–2005 | 0.30 | M-v | 4 | MPC | 96497 | 2005 $WG_{77}$ |
| 2005 $WW_{80}$ | 16.1 | 0.15 | 20060922 | 98.70758 | 20.53568 | 355.44427 | 1.10347 | 0.1768649 | 3.0080937 | 28 | 3 | 1994–2006 | 0.30 | M-v | 3 | MPC | 03802 | 2005 $WW_{80}$ |
| 2005 $WP_{81}$ | 14.6 | 0.15 | 20060922 | 275.68588 | 147.29771 | 66.45479 | 21.41867 | 0.0954934 | 3.2028251 | 53 | 2 | 2002–2005 | 0.47 | M-v | 3 | MPC | 03803 | 2005 $WP_{81}$ |
| 2005 $WD_{82}$ | 17.7 | 0.15 | 20060922 | 98.09777 | 2.57865 | 38.75424 | 2.66889 | 0.2310022 | 2.3668378 | 60 | 1 | 63 days | 0.56 | M-v | 4 | MPC | 97994 | 2005 $WD_{82}$ |
| 2005 $WE_{85}$ | 14.5 | 0.15 | 20060922 | 112.46297 | 249.25660 | 41.80474 | 10.35303 | 0.2223429 | 3.9900956 | 36 | 3 | 2004–2006 | 0.36 | M-v | 2 | MPC | 01132 | 2005 $WE_{85}$ |
| 2005 $WP_{89}$ | 17.9 | 0.15 | 20060922 | 48.18126 | 28.36632 | 90.56583 | 3.24199 | 0.1606522 | 2.3578472 | 56 | 3 | 2001–2006 | 0.42 | M-v | 1 | MPC | 01134 | 2005 $WP_{89}$ |
| 2005 $WR_{89}$ | 16.0 | 0.15 | 20060922 | 149.34895 | 273.12909 | 80.15292 | 16.02807 | 0.0464412 | 2.5652709 | 62 | 5 | 2001–2006 | 0.45 | M-v | 0 | MPC | 96507 | 2005 $WR_{89}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $WG_{91}$ | 14.7 | 0.15 | 20060922 | 4.34452 | 170.08812 | 306.40769 | 1.63815 | 0.2180462 | 3.9352103 | 78 | 5 | 1996–2006 | 0.48 | M-v | 0 | MPC | 96509 | 2005 $WG_{91}$ |
| 2005 $WH_{91}$ | 17.2 | 0.15 | 20060922 | 77.16570 | 29.52957 | 48.75056 | 3.36070 | 0.1368054 | 2.2732771 | 50 | 1 | 92 days | 0.61 | M-v | 4 | MPC | 97996 | 2005 $WH_{91}$ |
| 2005 $WE_{94}$ | 18.4 | 0.15 | 20060922 | 100.00428 | 163.83202 | 240.18972 | 0.82450 | 0.1790276 | 2.3797549 | 28 | 2 | 2001–2006 | 0.34 | M-v | 2 | MPC | 03804 | 2005 $WE_{94}$ |
| 2005 $WK_{97}$ | 14.9 | 0.15 | 20060922 | 312.39266 | 114.26803 | 54.35567 | 3.51403 | 0.1201886 | 3.9722101 | 35 | 4 | 2000–2006 | 0.36 | M-v | 1 | MPC | 01136 | 2005 $WK_{97}$ |
| 2005 $WO_{97}$ | 15.3 | 0.15 | 20060922 | 147.57050 | 259.71524 | 67.53798 | 9.87784 | 0.0917241 | 3.0584771 | 33 | 2 | 2004–2005 | 0.41 | M-v | 3 | MPC | 03805 | 2005 $WO_{97}$ |
| 2005 $WD_{99}$ | 17.1 | 0.15 | 20060922 | 290.87776 | 347.40655 | 244.65498 | 6.02144 | 0.0750458 | 2.2693882 | 29 | 4 | 2000–2005 | 0.34 | M-v | 1 | MPC | 01137 | 2005 $WD_{99}$ |
| 2005 $WM_{99}$ | 15.9 | 0.15 | 20060922 | 123.97636 | 288.08669 | 81.00527 | 7.29245 | 0.0444495 | 2.7316657 | 46 | 3 | 2002–2005 | 0.41 | M-v | 3 | MPC | 96515 | 2005 $WM_{99}$ |
| 2005 $WX_{99}$ | 17.9 | 0.15 | 20051216 | 52.31570 | 276.45690 | 86.74550 | 2.50456 | 0.1918262 | 2.4696279 | 23 | 1 | 56 days | 0.43 | | | MPC | | 2005 $WX_{99}$ |
| 2005 $WS_{100}$ | 16.6 | 0.15 | 20060922 | 355.75946 | 75.70736 | 86.17973 | 3.31659 | 0.0473585 | 2.3039950 | 66 | 4 | 1993–2006 | 0.46 | M-v | 2 | MPC | 03805 | 2005 $WS_{100}$ |
| 2005 $WK_{101}$ | 17.4 | 0.15 | 20060922 | 55.11922 | 214.03817 | 230.51770 | 4.51895 | 0.1035352 | 2.5313176 | 21 | 1 | 66 days | 0.29 | M-v | 4 | MPC | | 2005 $WK_{101}$ |
| 2005 $WZ_{101}$ | 14.0 | 0.15 | 20060922 | 4.40258 | 23.77470 | 97.90596 | 4.19681 | 0.1973220 | 3.9331982 | 73 | 5 | 1992–2006 | 0.51 | M-v | 0 | MPC | 01138 | 2005 $WZ_{101}$ |
| 2005 $WL_{102}$ | 18.0 | 0.15 | 20060922 | 357.42920 | 285.15576 | 280.85100 | 5.14970 | 0.2043702 | 2.2000407 | 29 | 3 | 2000–2006 | 0.36 | M-v | 1 | MPC | 03805 | 2005 $WL_{102}$ |
| 2005 $WG_{104}$ | 15.5 | 0.15 | 20060922 | 73.09361 | 262.39753 | 148.55790 | 2.62409 | 0.0892062 | 2.9263553 | 53 | 5 | 2000–2006 | 0.58 | M-v | 1 | MPC | 02261 | 2005 $WG_{104}$ |
| 2005 $WE_{107}$ | 16.8 | 0.15 | 20060922 | 229.72673 | 108.80245 | 132.70064 | 1.93694 | 0.0758997 | 3.1480482 | 20 | 3 | 2002–2005 | 0.38 | M-v | 3 | MPC | 01140 | 2005 $WE_{107}$ |
| 2005 $WO_{108}$ | 17.7 | 0.15 | 20060922 | 66.22217 | 356.99349 | 89.66120 | 2.39857 | 0.1420502 | 2.3875079 | 46 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 03806 | 2005 $WO_{108}$ |
| 2005 $WU_{108}$ | 16.7 | 0.15 | 20060922 | 97.06337 | 278.79372 | 66.18694 | 7.02906 | 0.3092453 | 2.7645587 | 38 | 1 | 112 days | 0.50 | M-v | 4 | MPC | 98000 | 2005 $WU_{108}$ |
| 2005 $WG_{110}$ | 16.0 | 0.15 | 20060922 | 102.10598 | 281.93414 | 75.77064 | 4.41494 | 0.2359912 | 3.0701982 | 32 | 4 | 1994–2006 | 0.40 | M-v | 1 | MPC | 03806 | 2005 $WG_{110}$ |
| 2005 $WO_{112}$ | 17.1 | 0.15 | 20060922 | 32.57294 | 51.56736 | 76.82939 | 16.73404 | 0.2456019 | 2.6215458 | 48 | 2 | 2001–2006 | 0.58 | M-v | 2 | MPC | 03806 | 2005 $WO_{112}$ |
| 2005 $WE_{113}$ | 16.0 | 0.15 | 20060922 | 163.97836 | 207.47917 | 112.00137 | 11.19149 | 0.0466553 | 2.6939965 | 46 | 5 | 2000–2005 | 0.72 | M-v | 1 | MPC | 96525 | 2005 $WE_{113}$ |
| 2005 $WK_{113}$ | 16.8 | 0.15 | 20060922 | 39.65413 | 294.79481 | 185.14549 | 5.78499 | 0.2745991 | 2.5988103 | 26 | 2 | 2002–2005 | 0.52 | M-v | 4 | MPC | 03807 | 2005 $WK_{113}$ |
| 2005 $WE_{117}$ | 16.0 | 0.15 | 20060922 | 109.16022 | 96.99247 | 241.72222 | 28.34402 | 0.3047274 | 2.6033153 | 42 | 2 | 2001–2005 | 0.41 | M-v | 3 | MPC | 03807 | 2005 $WE_{117}$ |
| 2005 $WN_{117}$ | 16.5 | 0.15 | 20060922 | 24.76836 | 72.49031 | 43.24281 | 13.81690 | 0.1103662 | 2.6882269 | 34 | 3 | 2000–2005 | 0.56 | M-v | 3 | MPC | 03807 | 2005 $WN_{117}$ |
| 2005 $WT_{118}$ | 15.3 | 0.15 | 20060922 | 35.29804 | 283.27974 | 151.96950 | 1.52269 | 0.1774197 | 3.1728217 | 60 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 96530 | 2005 $WT_{118}$ |
| 2005 $WW_{119}$ | 16.1 | 0.15 | 20060922 | 61.25788 | 19.21886 | 47.61124 | 2.61113 | 0.0911999 | 2.9195695 | 29 | 3 | 2002–2005 | 0.34 | M-v | 3 | MPC | 03808 | 2005 $WW_{119}$ |
| 2005 $WM_{122}$ | 16.3 | 0.15 | 20060922 | 52.75303 | 2.28694 | 10.53776 | 1.61089 | 0.0679187 | 3.0571911 | 40 | 5 | 1998–2006 | 0.40 | M-v | 1 | MPC | 96535 | 2005 $WM_{122}$ |
| 2005 $WA_{123}$ | 16.7 | 0.15 | 20060922 | 42.72962 | 22.94806 | 38.79024 | 4.55056 | 0.0949328 | 2.7852238 | 41 | 5 | 2000–2006 | 0.43 | M-v | 0 | MPC | 96535 | 2005 $WA_{123}$ |
| 2005 $WS_{136}$ | 15.3 | 0.15 | 20060922 | 160.32571 | 59.59442 | 220.03144 | 12.47927 | 0.1003272 | 3.1503814 | 21 | 1 | 64 days | 0.23 | M-v | 4 | MPC | | 2005 $WS_{136}$ |
| 2005 $WB_{140}$ | 17.2 | 0.15 | 20060922 | 100.85490 | 91.06502 | 329.91664 | 0.96507 | 0.0376824 | 2.5867820 | 34 | 5 | 1996–2006 | 0.45 | M-v | 1 | MPC | 03809 | 2005 $WB_{140}$ |
| 2005 $WQ_{143}$ | 17.2 | 0.15 | 20060922 | 359.84630 | 80.02579 | 85.86204 | 1.93762 | 0.1396071 | 2.4158795 | 37 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 03810 | 2005 $WQ_{143}$ |
| 2005 $WO_{147}$ | 17.4 | 0.15 | 20060922 | 113.45087 | 238.00513 | 147.34711 | 6.53921 | 0.1337526 | 2.3027137 | 19 | 3 | 1996–2005 | 0.41 | M-v | 2 | MPC | 01148 | 2005 $WO_{147}$ |
| 2005 $WY_{148}$ | 16.6 | 0.15 | 20060922 | 133.71036 | 98.65177 | 284.51203 | 4.57094 | 0.0621520 | 2.1499932 | 88 | 3 | 1995–2006 | 0.53 | M-v | 2 | MPC | 02261 | 2005 $WY_{148}$ |
| 2005 $WF_{149}$ | 17.3 | 0.15 | 20060922 | 95.23866 | 23.88994 | 12.68541 | 4.54105 | 0.1751658 | 2.6094851 | 30 | 4 | 1994–2005 | 0.60 | M-v | 2 | MPC | 04365 | 2005 $WF_{149}$ |
| 2005 $WK_{153}$ | 16.9 | 0.15 | 20060922 | 190.69124 | 333.00372 | 331.50912 | 1.76301 | 0.1696330 | 2.3998177 | 24 | 4 | 1993–2005 | 0.57 | M-v | 2 | MPC | 96551 | 2005 $WK_{153}$ |
| 2005 $WA_{154}$ | 14.9 | 0.15 | 20060922 | 112.72954 | 237.69279 | 93.88442 | 6.07887 | 0.1567943 | 3.1819696 | 73 | 7 | 1999–2006 | 0.49 | M-v | 0 | MPC | 96551 | 2005 $WA_{154}$ |
| 2005 $WO_{154}$ | 16.2 | 0.15 | 20060922 | 197.29949 | 178.55476 | 111.60172 | 12.27934 | 0.0411643 | 2.6279561 | 32 | 6 | 1993–2006 | 0.45 | M-v | 0 | MPC | 96552 | 2005 $WO_{154}$ |
| 2005 $WU_{156}$ | 16.2 | 0.15 | 20060922 | 147.31210 | 9.98978 | 329.15232 | 1.42999 | 0.0934833 | 2.6447857 | 51 | 5 | 1992–2006 | 0.58 | M-v | 1 | MPC | 04365 | 2005 $WU_{156}$ |
| 2005 $WA_{159}$ | 15.1 | 0.15 | 20060922 | 42.33720 | 307.20267 | 131.35044 | 13.06817 | 0.1057390 | 3.0304621 | 44 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 96559 | 2005 $WA_{159}$ |
| 2005 $WZ_{159}$ | 15.6 | 0.15 | 20060922 | 77.78085 | 241.84464 | 127.78084 | 9.53339 | 0.2661055 | 2.7312495 | 74 | 6 | 1995–2006 | 0.51 | M-v | 1 | MPC | 96560 | 2005 $WZ_{159}$ |
| 2005 $WA_{160}$ | 15.1 | 0.15 | 20060922 | 54.40831 | 242.76302 | 176.42214 | 11.12916 | 0.1156466 | 3.1188769 | 50 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 96560 | 2005 $WA_{160}$ |
| 2005 $WD_{162}$ | 16.5 | 0.15 | 20051126 | 36.63222 | 293.49876 | 89.52835 | 4.02917 | 0.1623080 | 2.8953725 | 19 | 1 | 55 days | 0.19 | | | MPC | | 2005 $WD_{162}$ |
| 2005 $WD_{168}$ | 15.5 | 0.15 | 20060922 | 312.89626 | 101.21386 | 87.44492 | 2.45334 | 0.1097489 | 3.1360355 | 62 | 5 | 1999–2006 | 0.36 | M-v | 0 | MPC | 96565 | 2005 $WD_{168}$ |
| 2005 $WM_{176}$ | 17.1 | 0.15 | 20060922 | 128.25098 | 58.12817 | 322.03983 | 2.30401 | 0.0711791 | 2.7271309 | 24 | 3 | 1995–2006 | 0.27 | M-v | 4 | MPC | 96569 | 2005 $WM_{176}$ |
| 2005 $WE_{177}$ | 18.0 | 0.15 | 20060922 | 48.27676 | 135.44439 | 343.86864 | 2.35506 | 0.0944802 | 2.5535534 | 24 | 3 | 2002–2006 | 0.21 | M-v | 3 | MPC | 03811 | 2005 $WE_{177}$ |
| 2005 $WS_{178}$ | 15.2 | 0.15 | 20060922 | 25.51049 | 183.15713 | 274.74957 | 6.01920 | 0.0779484 | 3.0479021 | 37 | 3 | 2000–2005 | 0.58 | M-v | 4 | MPC | 96571 | 2005 $WS_{178}$ |
| 2005 $WK_{179}$ | 14.4 | 0.15 | 20060922 | 54.62816 | 321.67517 | 102.77702 | 12.73158 | 0.0447313 | 3.1644439 | 69 | 6 | 2001–2006 | 0.63 | M-v | 1 | MPC | 96572 | 2005 $WK_{179}$ |
| 2005 $WD_{181}$ | 14.8 | 0.15 | 20060922 | 99.92281 | 70.84949 | 270.33909 | 8.90073 | 0.0805027 | 3.0800865 | 33 | 3 | 2000–2006 | 0.53 | M-v | 4 | MPC | 03812 | 2005 $WD_{181}$ |
| 2005 $WR_{182}$ | 14.6 | 0.15 | 20060922 | 148.77112 | 14.00630 | 309.85776 | 11.66652 | 0.1935841 | 2.5878674 | 53 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 96575 | 2005 $WR_{182}$ |
| 2005 $WD_{184}$ | 15.1 | 0.15 | 20060922 | 44.26376 | 218.28071 | 223.16294 | 9.38855 | 0.1191309 | 3.0454347 | 22 | 1 | 93 days | 0.48 | M-v | 5 | MPC | 98015 | 2005 $WD_{184}$ |
| 2005 $WD_{189}$ | 16.5 | 0.15 | 20060922 | 53.46691 | 332.61385 | 113.38836 | 3.11849 | 0.2028499 | 2.8044591 | 29 | 3 | 2000–2006 | 0.57 | M-v | 2 | MPC | 96583 | 2005 $WD_{189}$ |
| 2005 $WE_{191}$ | 16.4 | 0.15 | 20060922 | 86.25539 | 281.18486 | 101.17941 | 11.48242 | 0.1193996 | 2.9890827 | 21 | 3 | 2001–2005 | 0.68 | M-v | 2 | MPC | 96586 | 2005 $WE_{191}$ |
| 2005 $WC_{194}$ | 14.5 | 0.15 | 20060922 | 313.82806 | 35.20107 | 121.70595 | 8.90626 | 0.0643327 | 3.1654556 | 51 | 5 | 2000–2006 | 0.50 | M-v | 1 | MPC | 03812 | 2005 $WC_{194}$ |
| 2005 $WA_{198}$ | 15.5 | 0.15 | 20051106 | 330.52875 | 248.60694 | 203.91268 | 16.00135 | 0.2213129 | 3.1345025 | 32 | 1 | 40 days | 0.65 | | | MPC | | 2005 $WA_{198}$ |
| 2005 $WT_{199}$ | 16.1 | 0.15 | 20060922 | 2.62432 | 96.97742 | 42.97329 | 2.74774 | 0.0655920 | 3.0620196 | 21 | 4 | 1999–2006 | 0.22 | M-v | 0 | MPC | 03813 | 2005 $WT_{199}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $WB_{208}$ | 16.2 | 0.15 | 20060922 | 26.83993 | 24.77106 | 91.77325 | 3.77217 | 0.1363815 | 3.0963769 | 17 | 1 | 90 days | 0.41 | M-v | 4 | MPC | | 2005 $WB_{208}$ |
| 2005 $WC_{208}$ | 16.1 | 0.15 | 20051216 | 246.35553 | 292.57212 | 258.75885 | 8.62692 | 0.0280483 | 2.9797254 | 18 | 1 | 41 days | 0.58 | | | MPC | | 2005 $WC_{208}$ |
| 2005 $WD_{208}$ | 17.3 | 0.15 | 20060922 | 45.70209 | 156.93020 | 311.56903 | 2.01535 | 0.0467849 | 2.5599388 | 18 | 1 | 61 days | 0.40 | M-v | 4 | MPC | | 2005 $WD_{208}$ |
| 2005 $WE_{208}$ | 15.0 | 0.15 | 20060922 | 31.50012 | 182.54154 | 278.98931 | 2.58701 | 0.0708892 | 3.2449763 | 21 | 1 | 120 days | 0.40 | M-v | 3 | MPC | | 2005 $WE_{208}$ |
| 2005 $WG_{208}$ | 15.4 | 0.15 | 20060922 | 340.27268 | 81.06978 | 76.69356 | 11.16333 | 0.0578417 | 3.1197735 | 23 | 1 | 98 days | 0.33 | M-v | 4 | MPC | | 2005 $WG_{208}$ |
| 2005 $WH_{208}$ | 16.6 | 0.15 | 20060922 | 280.19645 | 335.15717 | 292.13955 | 2.12741 | 0.0495256 | 2.7585398 | 19 | 1 | 90 days | 0.29 | M-v | 4 | MPC | | 2005 $WH_{208}$ |
| 2005 $WJ_{208}$ | 16.0 | 0.15 | 20060922 | 21.28428 | 31.18810 | 83.79027 | 11.22374 | 0.0821113 | 3.1632461 | 18 | 1 | 60 days | 0.34 | M-v | 5 | MPC | | 2005 $WJ_{208}$ |
| 2005 $WK_{208}$ | 17.2 | 0.15 | 20060922 | 54.41926 | 349.25585 | 95.62034 | 4.00153 | 0.2130631 | 2.9106373 | 16 | 1 | 71 days | 0.18 | M-v | 3 | MPC | | 2005 $WK_{208}$ |
| 2005 $WL_{208}$ | 15.7 | 0.15 | 20060922 | 62.26800 | 154.21604 | 281.72670 | 8.20546 | 0.1113448 | 2.8367894 | 19 | 1 | 87 days | 0.43 | M-v | 3 | MPC | | 2005 $WL_{208}$ |
| 2005 $WM_{208}$ | 16.8 | 0.15 | 20060922 | 97.27048 | 44.50574 | 348.22848 | 3.45362 | 0.2643669 | 2.5449449 | 19 | 1 | 65 days | 0.32 | M-v | 4 | MPC | | 2005 $WM_{208}$ |
| 2005 $XN_{1}$ | 15.6 | 0.15 | 20060922 | 342.81399 | 98.90829 | 51.75879 | 1.98359 | 0.1035276 | 3.2105282 | 56 | 6 | 1999–2006 | 0.39 | M-v | 0 | MPC | 96596 | 2005 $XN_{1}$ |
| 2005 $XM_{4}$ | 19.7 | 0.15 | 20060922 | 188.51382 | 345.12700 | 81.91710 | 34.14494 | 0.0641118 | 1.3037762 | 44 | 1 | 32 days | 0.46 | M-v | 6 | MPC | 98018 | 2005 $XM_{4}$ |
| 2005 $XN_{4}$ | 19.8 | 0.15 | 20060922 | 79.76393 | 93.61709 | 70.78124 | 58.04767 | 0.5814747 | 1.8775141 | 57 | 1 | 134 days | 0.44 | M-v | 3 | MPC | 02262 | 2005 $XN_{4}$ |
| 2005 $XW_{4}$ | 21.4 | 0.15 | 20060922 | 205.74063 | 145.36992 | 73.18405 | 18.20263 | 0.7093114 | 1.0377004 | 43 | 1 | 19 days | 0.58 | M-v | 8 | MPC | 98018 | 2005 $XW_{4}$ |
| 2005 $XN_{8}$ | 15.5 | 0.15 | 20060922 | 336.88406 | 233.11662 | 245.50703 | 1.86293 | 0.1766724 | 3.9672686 | 38 | 5 | 1997–2006 | 0.44 | M-v | 0 | MPC | 96604 | 2005 $XN_{8}$ |
| 2005 $XF_{9}$ | 15.3 | 0.15 | 20060922 | 271.02317 | 294.59576 | 289.61247 | 8.60820 | 0.1709126 | 3.1439154 | 30 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 96604 | 2005 $XF_{9}$ |
| 2005 $XF_{13}$ | 15.8 | 0.15 | 20060922 | 146.76551 | 220.07381 | 122.64164 | 4.43156 | 0.2012607 | 2.5595434 | 40 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 01158 | 2005 $XF_{13}$ |
| 2005 $XF_{14}$ | 15.2 | 0.15 | 20060922 | 81.73193 | 294.42939 | 92.25124 | 17.19860 | 0.2848177 | 3.1556179 | 53 | 2 | 1999–2006 | 0.52 | M-v | 3 | MPC | 96606 | 2005 $XF_{14}$ |
| 2005 $XT_{23}$ | 15.7 | 0.15 | 20060922 | 140.86503 | 295.44342 | 41.93479 | 5.17190 | 0.2278761 | 2.5908903 | 76 | 6 | 1995–2006 | 0.49 | M-v | 0 | MPC | 96611 | 2005 $XT_{23}$ |
| 2005 $XW_{27}$ | 17.5 | 0.15 | 20060922 | 325.17952 | 299.29489 | 264.97395 | 18.09433 | 0.0452321 | 1.9259726 | 23 | 3 | 1997–2006 | 0.63 | M-v | 3 | MPC | 96615 | 2005 $XW_{27}$ |
| 2005 $XF_{30}$ | 16.5 | 0.15 | 20060922 | 193.95331 | 61.79938 | 217.19335 | 5.78597 | 0.1942653 | 2.5365446 | 25 | 1 | 89 days | 0.23 | M-v | 4 | MPC | 98022 | 2005 $XF_{30}$ |
| 2005 $XG_{30}$ | 18.2 | 0.15 | 20060922 | 96.08138 | 178.48273 | 218.66686 | 3.82208 | 0.2067745 | 2.3474062 | 20 | 1 | 64 days | 0.33 | M-v | 4 | MPC | | 2005 $XG_{30}$ |
| 2005 $XF_{32}$ | 15.8 | 0.15 | 20060922 | 54.64531 | 225.75168 | 215.17844 | 1.25163 | 0.0807242 | 2.9307253 | 45 | 5 | 1997–2006 | 0.61 | M-v | 1 | MPC | 96618 | 2005 $XF_{32}$ |
| 2005 $XX_{32}$ | 14.7 | 0.15 | 20060922 | 214.79543 | 27.73176 | 244.51688 | 8.34557 | 0.0695027 | 3.1239533 | 35 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 96619 | 2005 $XX_{32}$ |
| 2005 $XE_{39}$ | 16.7 | 0.15 | 20060922 | 251.85944 | 267.39815 | 332.31948 | 1.35172 | 0.0397435 | 2.5277164 | 45 | 6 | 1999–2006 | 0.49 | M-v | 1 | MPC | 01160 | 2005 $XE_{39}$ |
| 2005 $XK_{51}$ | 16.9 | 0.15 | 20060922 | 88.47862 | 81.56079 | 341.77337 | 4.50804 | 0.1035348 | 2.7200773 | 30 | 4 | 2000–2005 | 0.32 | M-v | 0 | MPC | 96626 | 2005 $XK_{51}$ |
| 2005 $XE_{53}$ | 16.0 | 0.15 | 20060922 | 318.42234 | 93.53612 | 61.52786 | 2.29979 | 0.1086479 | 3.2107813 | 27 | 3 | 2002–2005 | 0.27 | M-v | 3 | MPC | 96627 | 2005 $XE_{53}$ |
| 2005 $XO_{56}$ | 16.1 | 0.15 | 20060922 | 139.06633 | 353.75753 | 352.03111 | 1.39579 | 0.0840103 | 2.9023596 | 26 | 3 | 1997–2005 | 0.20 | M-v | 3 | MPC | 96629 | 2005 $XO_{56}$ |
| 2005 $XA_{58}$ | 17.3 | 0.15 | 20060922 | 97.53265 | 133.77045 | 283.13634 | 7.64638 | 0.1131903 | 2.2926684 | 24 | 1 | 80 days | 0.30 | M-v | 3 | MPC | 98026 | 2005 $XA_{58}$ |
| 2005 $XY_{64}$ | 16.8 | 0.15 | 20060922 | 71.92533 | 211.07151 | 221.88182 | 9.14527 | 0.1975363 | 2.6014072 | 23 | 3 | 2000–2005 | 0.57 | M-v | 3 | MPC | 01162 | 2005 $XY_{64}$ |
| 2005 $XX_{65}$ | 16.1 | 0.15 | 20060922 | 50.19526 | 236.92298 | 247.40227 | 6.45741 | 0.0579032 | 2.2566719 | 46 | 5 | 2000–2006 | 0.82 | M-v | 2 | MPC | 96638 | 2005 $XX_{65}$ |
| 2005 $XY_{65}$ | 14.6 | 0.15 | 20060922 | 103.96690 | 245.36011 | 133.55202 | 11.88314 | 0.0861497 | 3.0820784 | 56 | 5 | 1999–2006 | 0.63 | M-v | 1 | MPC | 96638 | 2005 $XY_{65}$ |
| 2005 $XS_{67}$ | 16.3 | 0.15 | 20060922 | 51.78149 | 53.89546 | 29.36932 | 2.49944 | 0.0409634 | 2.9015441 | 27 | 3 | 2002–2005 | 0.51 | M-v | 3 | MPC | 96640 | 2005 $XS_{67}$ |
| 2005 $XS_{71}$ | 15.9 | 0.15 | 20060922 | 323.52038 | 172.88680 | 3.06234 | 2.40270 | 0.0132813 | 3.1901084 | 25 | 4 | 2001–2006 | 0.27 | M-v | 1 | MPC | 96643 | 2005 $XS_{71}$ |
| 2005 $XM_{76}$ | 16.4 | 0.15 | 20060922 | 65.92817 | 359.61854 | 104.15555 | 10.04626 | 0.1116360 | 2.7513366 | 44 | 3 | 1991–2006 | 0.43 | M-v | 2 | MPC | 96645 | 2005 $XM_{76}$ |
| 2005 $XN_{77}$ | 15.9 | 0.15 | 20060922 | 213.50356 | 216.33203 | 87.22680 | 16.23716 | 0.1376773 | 2.6066711 | 74 | 8 | 1996–2006 | 0.61 | M-v | 0 | MPC | 01163 | 2005 $XN_{77}$ |
| 2005 $XL_{80}$ | 18.2 | 0.15 | 20060922 | 76.19212 | 143.44530 | 53.46425 | 10.89491 | 0.4877305 | 1.7257671 | 142 | 1 | 251 days | 0.47 | M-v | 3 | MPC | 04366 | 2005 $XL_{80}$ |
| 2005 $XW_{97}$ | 16.1 | 0.15 | 20060922 | 6.25595 | 239.25030 | 203.04676 | 8.02550 | 0.1016398 | 3.4224035 | 17 | 1 | 64 days | 0.30 | M-v | 5 | MPC | | 2005 $XW_{97}$ |
| 2005 $XT_{98}$ | 17.9 | 0.15 | 20060922 | 59.64575 | 346.50988 | 44.84443 | 4.46519 | 0.3325538 | 3.0252547 | 17 | 1 | 62 days | 0.42 | M-v | 4 | MPC | | 2005 $XT_{98}$ |
| 2005 $XW_{101}$ | 16.6 | 0.15 | 20060922 | 242.47388 | 349.29699 | 308.26230 | 4.72588 | 0.0540434 | 2.8692753 | 17 | 1 | 66 days | 0.27 | M-v | 5 | MPC | | 2005 $XW_{101}$ |
| 2005 $XF_{102}$ | 16.6 | 0.15 | 20060922 | 54.62216 | 13.95467 | 113.66586 | 10.77377 | 0.1322469 | 2.7450747 | 26 | 1 | 137 days | 0.56 | M-v | 3 | MPC | 98030 | 2005 $XF_{102}$ |
| 2005 $XC_{109}$ | 16.7 | 0.15 | 20051126 | 32.17145 | 312.80844 | 76.07824 | 10.29831 | 0.1015290 | 3.1345142 | 26 | 1 | 28 days | 0.41 | | | MPC | | 2005 $XC_{109}$ |
| 2005 $XZ_{110}$ | 15.2 | 0.15 | 20060922 | 338.45693 | 93.34977 | 147.26891 | 5.47577 | 0.0840220 | 3.0773875 | 30 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 01165 | 2005 $XZ_{110}$ |
| 2005 $XD_{115}$ | 16.1 | 0.15 | 20051126 | 339.64027 | 8.88799 | 80.54379 | 7.59940 | 0.0899625 | 3.2295495 | 27 | 1 | 54 days | 0.32 | | | MPC | | 2005 $XD_{115}$ |
| 2005 $XG_{115}$ | 17.6 | 0.15 | 20060922 | 67.48194 | 128.28210 | 334.90045 | 6.27504 | 0.2411621 | 3.0212409 | 17 | 1 | 111 days | 0.21 | M-v | 4 | MPC | | 2005 $XG_{115}$ |
| 2005 $XH_{115}$ | 16.5 | 0.15 | 20060922 | 285.23973 | 298.60222 | 356.71069 | 3.32970 | 0.0482818 | 2.7639276 | 16 | 1 | 139 days | 0.13 | M-v | 4 | MPC | | 2005 $XH_{115}$ |
| 2005 $XJ_{115}$ | 15.1 | 0.15 | 20060105 | 94.68341 | 296.95278 | 82.75158 | 21.81489 | 0.0140391 | 3.2118354 | 18 | 1 | 50 days | 0.84 | | | MPC | | 2005 $XJ_{115}$ |
| 2005 $XK_{115}$ | 16.8 | 0.15 | 20060922 | 268.09961 | 342.56754 | 305.93026 | 3.54954 | 0.0705042 | 2.6330439 | 18 | 1 | 80 days | 0.29 | M-v | 5 | MPC | | 2005 $XK_{115}$ |
| 2005 $XM_{115}$ | 17.7 | 0.15 | 20060922 | 79.16379 | 162.65567 | 298.90807 | 9.01254 | 0.2309477 | 2.6192365 | 19 | 1 | 79 days | 0.59 | M-v | 4 | MPC | | 2005 $XM_{115}$ |
| 2005 $XN_{115}$ | 16.9 | 0.15 | 20060105 | 326.38451 | 203.00443 | 291.96826 | 1.85480 | 0.0974814 | 2.5536541 | 16 | 1 | 49 days | 0.55 | | | MPC | | 2005 $XN_{115}$ |
| 2005 $XO_{115}$ | 16.4 | 0.15 | 20060922 | 75.55190 | 148.14851 | 345.53278 | 11.96490 | 0.0786680 | 2.7368751 | 24 | 1 | 119 days | 0.43 | M-v | 3 | MPC | | 2005 $XO_{115}$ |
| 2005 $YH_{1}$ | 15.5 | 0.15 | 20060922 | 339.18021 | 192.52848 | 345.05829 | 6.98431 | 0.0857553 | 2.5245903 | 44 | 5 | 2000–2005 | 0.50 | M-v | 1 | MPC | 01166 | 2005 $YH_{1}$ |
| 2005 $YP_{3}$ | 17.9 | 0.15 | 20060105 | 359.01089 | 157.65296 | 289.42391 | 12.40647 | 0.1581178 | 2.6768913 | 22 | 1 | 41 days | 0.62 | | | MPC | | 2005 $YP_{3}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 $YM_{4}$ | 17.8 | 0.15 | 20060105 | 20.30981 | 337.90676 | 104.75612 | 6.01279 | 0.1352057 | 2.7247297 | 17 | 1 | 47 days | 0.32 | | | MPC | | 2005 $YM_{4}$ |
| 2005 $YU_{9}$ | 17.0 | 0.15 | 20060922 | 196.41974 | 188.69241 | 117.66225 | 4.20789 | 0.1808041 | 2.3236126 | 22 | 3 | 2001–2005 | 0.59 | M-v | 3 | MPC | 96668 | 2005 $YU_{9}$ |
| 2005 $YV_{10}$ | 16.8 | 0.15 | 20060922 | 89.43813 | 120.05858 | 291.31923 | 0.59750 | 0.1634977 | 2.6622194 | 33 | 3 | 2000–2006 | 0.45 | M-v | 3 | MPC | 96668 | 2005 $YV_{10}$ |
| 2005 $YK_{14}$ | 15.7 | 0.15 | 20060922 | 285.33187 | 135.78979 | 114.61751 | 8.84604 | 0.0696698 | 2.9094987 | 58 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 96672 | 2005 $YK_{14}$ |
| 2005 $YD_{15}$ | 16.0 | 0.15 | 20060922 | 79.51529 | 139.72303 | 299.23814 | 8.57862 | 0.1394837 | 2.9895371 | 58 | 3 | 1996–2006 | 0.36 | M-v | 2 | MPC | 96673 | 2005 $YD_{15}$ |
| 2005 $YZ_{24}$ | 17.1 | 0.15 | 20060922 | 129.67473 | 254.99567 | 143.73112 | 2.32867 | 0.0558736 | 2.5339027 | 49 | 5 | 1994–2006 | 0.47 | M-v | 1 | MPC | 96681 | 2005 $YZ_{24}$ |
| 2005 $YQ_{36}$ | 17.1 | 0.15 | 20060922 | 44.12544 | 141.76685 | 350.05773 | 1.03698 | 0.0579953 | 2.6746210 | 27 | 3 | 2002–2006 | 0.37 | M-v | 4 | MPC | 96699 | 2005 $YQ_{36}$ |
| 2005 $YM_{38}$ | 14.9 | 0.15 | 20060922 | 17.12615 | 193.31721 | 322.15086 | 15.79686 | 0.1333350 | 2.9253297 | 67 | 3 | 2000–2006 | 0.57 | M-v | 3 | MPC | 96700 | 2005 $YM_{38}$ |
| 2005 $YO_{43}$ | 16.0 | 0.15 | 20060922 | 106.27866 | 306.79651 | 126.84670 | 7.20918 | 0.1035108 | 2.5922477 | 88 | 4 | 1998–2006 | 0.53 | M-v | 2 | MPC | 96707 | 2005 $YO_{43}$ |
| 2005 $YB_{47}$ | 16.7 | 0.15 | 20060922 | 43.06831 | 171.58083 | 337.73533 | 2.19032 | 0.1405275 | 2.4097476 | 70 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 96712 | 2005 $YB_{47}$ |
| 2005 $YZ_{48}$ | 17.5 | 0.15 | 20060922 | 66.74263 | 0.42865 | 117.71022 | 4.87065 | 0.0850313 | 2.4345070 | 31 | 3 | 1995–2006 | 0.33 | M-v | 3 | MPC | 96717 | 2005 $YZ_{48}$ |
| 2005 $YS_{59}$ | 15.6 | 0.15 | 20060922 | 96.44193 | 261.20808 | 141.60780 | 15.67698 | 0.1513939 | 2.6381694 | 28 | 2 | 2002–2006 | 0.57 | M-v | 4 | MPC | 03818 | 2005 $YS_{59}$ |
| 2005 $YR_{60}$ | 16.9 | 0.15 | 20060922 | 114.10664 | 43.00612 | 346.25922 | 3.11735 | 0.2075561 | 2.9111757 | 31 | 3 | 2001–2006 | 0.35 | M-v | 2 | MPC | 01172 | 2005 $YR_{60}$ |
| 2005 $YA_{61}$ | 16.3 | 0.15 | 20060922 | 127.74315 | 269.36373 | 70.68107 | 11.52652 | 0.1234847 | 3.0545042 | 21 | 1 | 64 days | 0.25 | M-v | 4 | MPC | | 2005 $YA_{61}$ |
| 2005 $YE_{63}$ | 16.2 | 0.15 | 20060922 | 106.43545 | 314.44963 | 94.15950 | 7.03710 | 0.0473397 | 2.7827627 | 27 | 4 | 2000–2006 | 0.69 | M-v | 1 | MPC | 96732 | 2005 $YE_{63}$ |
| 2005 $YL_{67}$ | 16.1 | 0.15 | 20060922 | 225.93927 | 233.72542 | 63.40191 | 3.18167 | 0.0431459 | 2.7851443 | 24 | 4 | 1997–2006 | 0.35 | M-v | 1 | MPC | 96735 | 2005 $YL_{67}$ |
| 2005 $YB_{75}$ | 16.6 | 0.15 | 20060922 | 158.11697 | 331.97218 | 17.16486 | 2.03662 | 0.0858530 | 2.8567138 | 24 | 2 | 2004–2006 | 0.47 | M-v | 5 | MPC | 03819 | 2005 $YB_{75}$ |
| 2005 $YH_{76}$ | 14.2 | 0.15 | 20060922 | 17.06782 | 66.90093 | 56.97475 | 3.92636 | 0.0691893 | 3.9614724 | 38 | 5 | 2000–2006 | 0.42 | M-v | 0 | MPC | 96741 | 2005 $YH_{76}$ |
| 2005 $YP_{82}$ | 16.5 | 0.15 | 20060922 | 77.91414 | 241.48713 | 187.55211 | 0.66031 | 0.1668086 | 3.1607713 | 32 | 4 | 1999–2006 | 0.35 | M-v | 0 | MPC | 96745 | 2005 $YP_{82}$ |
| 2005 $YD_{87}$ | 17.5 | 0.15 | 20060922 | 298.11291 | 146.21425 | 103.07657 | 0.85436 | 0.0941264 | 2.3348753 | 36 | 4 | 2001–2005 | 0.32 | M-v | 0 | MPC | 96750 | 2005 $YD_{87}$ |
| 2005 $YK_{90}$ | 16.1 | 0.15 | 20060922 | 250.73431 | 82.18941 | 193.66835 | 1.73333 | 0.0759149 | 3.1505115 | 36 | 3 | 2001–2006 | 0.37 | M-v | 3 | MPC | 03819 | 2005 $YK_{90}$ |
| 2005 $YM_{90}$ | 15.8 | 0.15 | 20060922 | 271.69127 | 333.29780 | 285.73802 | 9.62678 | 0.0412818 | 3.0949348 | 24 | 1 | 62 days | 0.37 | M-v | 5 | MPC | | 2005 $YM_{90}$ |
| 2005 $YS_{91}$ | 17.5 | 0.15 | 20060922 | 123.20801 | 204.17526 | 198.92207 | 1.82823 | 0.1141972 | 2.5539179 | 38 | 4 | 1996–2006 | 0.39 | M-v | 1 | MPC | 96754 | 2005 $YS_{91}$ |
| 2005 $YM_{92}$ | 16.2 | 0.15 | 20060922 | 334.31146 | 81.80860 | 136.01747 | 1.21717 | 0.2540730 | 3.0067512 | 30 | 2 | 2003–2006 | 0.20 | M-v | 2 | MPC | 01176 | 2005 $YM_{92}$ |
| 2005 $YB_{93}$ | 17.0 | 0.15 | 20060922 | 21.70237 | 15.79319 | 138.24720 | 6.39944 | 0.0573767 | 2.7634730 | 39 | 3 | 1997–2006 | 0.49 | M-v | 2 | MPC | 03820 | 2005 $YB_{93}$ |
| 2005 $YY_{93}$ | 17.1 | 0.15 | 20060922 | 43.27329 | 309.91798 | 298.78519 | 23.34704 | 0.8835417 | 2.5853911 | 364 | 2 | 2005–2006 | 0.44 | M-v | 2 | MPC | 03820 | 2005 $YY_{93}$ |
| 2005 $YS_{94}$ | 15.4 | 0.15 | 20060922 | 57.37945 | 65.78254 | 350.99569 | 9.49605 | 0.1895056 | 3.0268540 | 22 | 1 | 61 days | 0.31 | M-v | 4 | MPC | | 2005 $YS_{94}$ |
| 2005 $YV_{94}$ | 14.9 | 0.15 | 20060922 | 104.31394 | 27.79909 | 342.44198 | 12.54499 | 0.1745854 | 2.6706668 | 65 | 5 | 1996–2006 | 0.57 | M-v | 1 | MPC | 03821 | 2005 $YV_{94}$ |
| 2005 $YL_{102}$ | 17.2 | 0.15 | 20060922 | 152.10885 | 159.86848 | 202.73624 | 1.26022 | 0.0091659 | 2.8921519 | 29 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 96763 | 2005 $YL_{102}$ |
| 2005 $YA_{108}$ | 17.0 | 0.15 | 20060922 | 112.64964 | 223.97698 | 175.33594 | 1.99406 | 0.0835234 | 2.8975197 | 24 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 01178 | 2005 $YA_{108}$ |
| 2005 $YT_{120}$ | 16.6 | 0.15 | 20060922 | 74.12608 | 314.82720 | 128.07953 | 12.25806 | 0.0866035 | 3.0996074 | 21 | 1 | 63 days | 0.22 | M-v | 4 | MPC | | 2005 $YT_{120}$ |
| 2005 $YF_{122}$ | 16.2 | 0.15 | 20060922 | 55.22339 | 102.84742 | 2.60239 | 2.58374 | 0.1337877 | 3.0643332 | 48 | 3 | 1996–2006 | 0.55 | M-v | 3 | MPC | 02265 | 2005 $YF_{122}$ |
| 2005 $YW_{124}$ | 15.5 | 0.15 | 20060105 | 154.45927 | 357.94040 | 309.17267 | 9.07724 | 0.1150180 | 3.1147823 | 19 | 1 | 29 days | 0.26 | | | MPC | | 2005 $YW_{124}$ |
| 2005 $YQ_{125}$ | 16.9 | 0.15 | 20060922 | 64.84328 | 158.50034 | 315.82940 | 5.20763 | 0.0847642 | 2.3564656 | 40 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 96781 | 2005 $YQ_{125}$ |
| 2005 $YN_{134}$ | 14.9 | 0.15 | 20060922 | 8.12268 | 187.69906 | 323.83941 | 9.08688 | 0.0689510 | 3.1825018 | 38 | 3 | 1992–2006 | 0.48 | M-v | 3 | MPC | 01183 | 2005 $YN_{134}$ |
| 2005 $YC_{146}$ | 18.6 | 0.15 | 20051216 | 27.75985 | 20.35510 | 40.32773 | 2.69291 | 0.1913294 | 2.4588261 | 10 | 1 | 9 days | 0.15 | | | MPC | 96797 | 2005 $YC_{146}$ |
| 2005 $YL_{151}$ | 17.1 | 0.15 | 20060922 | 284.81121 | 186.02189 | 86.60358 | 5.75399 | 0.1699630 | 2.3853170 | 26 | 3 | 2001–2006 | 0.48 | M-v | 3 | MPC | 96800 | 2005 $YL_{151}$ |
| 2005 $YY_{154}$ | 17.5 | 0.15 | 20060922 | 53.65093 | 115.99994 | 22.56722 | 2.91243 | 0.1294866 | 2.3485541 | 26 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 96804 | 2005 $YY_{154}$ |
| 2005 $YA_{157}$ | 15.7 | 0.15 | 20060922 | 22.74285 | 41.89711 | 109.53194 | 12.87796 | 0.1414097 | 2.6469234 | 39 | 2 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03823 | 2005 $YA_{157}$ |
| 2005 $YT_{160}$ | 15.9 | 0.15 | 20060922 | 358.63561 | 25.84487 | 132.18085 | 8.85592 | 0.0142893 | 3.1185666 | 29 | 4 | 2002–2006 | 0.29 | M-v | 1 | MPC | 03823 | 2005 $YT_{160}$ |
| 2005 $YP_{163}$ | 17.5 | 0.15 | 20060922 | 55.05843 | 120.57342 | 345.22383 | 2.23291 | 0.1472463 | 2.3997230 | 33 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 96808 | 2005 $YP_{163}$ |
| 2005 $YJ_{164}$ | 16.5 | 0.15 | 20060922 | 350.58077 | 212.78958 | 305.55293 | 0.70750 | 0.0741106 | 2.9650152 | 25 | 4 | 1997–2005 | 0.41 | M-v | 1 | MPC | 96808 | 2005 $YJ_{164}$ |
| 2005 $YL_{167}$ | 17.7 | 0.15 | 20060922 | 85.71443 | 297.73190 | 154.25707 | 2.67987 | 0.1826727 | 2.3346862 | 48 | 4 | 1999–2006 | 0.38 | M-v | 0 | MPC | 02266 | 2005 $YL_{167}$ |
| 2005 $YZ_{172}$ | 15.4 | 0.15 | 20060922 | 113.75597 | 15.88832 | 4.13279 | 5.61789 | 0.2639705 | 2.6191258 | 26 | 4 | 1996–2006 | 0.64 | M-v | 2 | MPC | 96816 | 2005 $YZ_{172}$ |
| 2005 $YT_{173}$ | 15.1 | 0.15 | 20060922 | 87.32857 | 161.83415 | 286.30779 | 10.91988 | 0.0728071 | 2.9887737 | 58 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 96817 | 2005 $YT_{173}$ |
| 2005 $YZ_{174}$ | 16.1 | 0.15 | 20060922 | 125.94311 | 230.35035 | 142.50946 | 4.86015 | 0.2004473 | 2.5418482 | 28 | 4 | 1994–2006 | 0.58 | M-v | 4 | MPC | 96820 | 2005 $YZ_{174}$ |
| 2005 $YA_{186}$ | 16.9 | 0.15 | 20051216 | 93.58006 | 266.34414 | 119.15882 | 12.19503 | 0.0144998 | 2.7606407 | 23 | 1 | 55 days | 0.31 | | | MPC | | 2005 $YA_{186}$ |
| 2005 $YE_{193}$ | 16.8 | 0.15 | 20060922 | 354.89718 | 204.39665 | 5.15950 | 0.63912 | 0.1346748 | 2.4136445 | 39 | 5 | 1995–2006 | 0.50 | M-v | 1 | MPC | 03825 | 2005 $YE_{193}$ |
| 2005 $YW_{196}$ | 17.7 | 0.15 | 20060922 | 78.38685 | 137.90998 | 306.34810 | 1.77943 | 0.0628636 | 2.7199571 | 26 | 3 | 1995–2006 | 0.28 | M-v | 3 | MPC | 96839 | 2005 $YW_{196}$ |
| 2005 $YU_{211}$ | 16.9 | 0.15 | 20060922 | 293.37968 | 195.45260 | 57.53054 | 5.45422 | 0.0053207 | 2.4048779 | 46 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 96853 | 2005 $YU_{211}$ |
| 2005 $YD_{214}$ | 17.0 | 0.15 | 20060922 | 85.71757 | 116.47678 | 308.85730 | 26.32998 | 0.2963359 | 2.6084536 | 23 | 1 | 83 days | 0.34 | M-v | 4 | MPC | | 2005 $YD_{214}$ |
| 2005 $YT_{220}$ | 16.1 | 0.15 | 20060922 | 151.69280 | 277.49221 | 87.33154 | 13.90653 | 0.1250039 | 2.6471376 | 36 | 4 | 2000–2006 | 0.64 | M-v | 1 | MPC | 03826 | 2005 $YT_{220}$ |
| 2005 $YA_{223}$ | 16.6 | 0.15 | 20060922 | 76.35959 | 329.52000 | 65.13425 | 12.09709 | 0.1647651 | 3.1339314 | 22 | 1 | 67 days | 0.22 | M-v | 4 | MPC | | 2005 $YA_{223}$ |

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| 2005 $YA_{241}$ | 17.3 | 0.15 | 20060922 | 295.04588 | 184.61002 | 77.12218 | 3.31082 | 0.0959895 | 2.3297138 | 23 | 3 | 2001–2006 | 0.25 | M-v | 3 | MPC | 96865 | 2005 $YA_{241}$ |
| 2005 $YE_{245}$ | 17.1 | 0.15 | 20060922 | 25.33360 | 30.93663 | 114.28997 | 2.50709 | 0.2007287 | 3.0775225 | 29 | 2 | 2001–2006 | 0.37 | M-v | 4 | MPC | 03828 | 2005 $YE_{245}$ |
| 2005 $YO_{246}$ | 17.0 | 0.15 | 20060922 | 57.53323 | 315.90743 | 149.45197 | 9.10278 | 0.2035805 | 3.0244872 | 21 | 1 | 85 days | 0.34 | M-v | 3 | MPC | | 2005 $YO_{246}$ |
| 2005 $YY_{250}$ | 17.2 | 0.15 | 20060922 | 120.32689 | 220.19550 | 174.68526 | 2.23578 | 0.0889692 | 2.9414839 | 23 | 4 | 1996–2006 | 0.25 | M-v | 2 | MPC | 96866 | 2005 $YY_{250}$ |
| 2005 $YR_{258}$ | 16.5 | 0.15 | 20060922 | 214.88495 | 281.55049 | 10.42863 | 0.78273 | 0.0916971 | 2.7882043 | 27 | 3 | 2002–2006 | 0.40 | M-v | 4 | MPC | 01195 | 2005 $YR_{258}$ |
| 2005 $YU_{266}$ | 17.0 | 0.15 | 20060922 | 314.58467 | 229.85057 | 12.50464 | 2.47087 | 0.1424758 | 2.4306241 | 46 | 6 | 1995–2006 | 0.46 | M-v | 0 | MPC | 96867 | 2005 $YU_{266}$ |
| 2005 $YA_{287}$ | 16.1 | 0.15 | 20060922 | 142.60504 | 267.46399 | 110.06890 | 10.68584 | 0.1246445 | 2.6589061 | 45 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 96877 | 2005 $YA_{287}$ |
| 2005 $YM_{290}$ | 17.3 | 0.15 | 20060922 | 349.98355 | 269.88945 | 292.54626 | 7.38836 | 0.1289306 | 2.7630882 | 24 | 1 | 69 days | 0.52 | M-v | 4 | MPC | | 2005 $YM_{290}$ |
| 2005 $YN_{290}$ | 16.2 | 0.15 | 20060922 | 95.41424 | 273.61544 | 153.96857 | 16.24031 | 0.2519658 | 3.1099455 | 15 | 1 | 67 days | 0.27 | M-v | 4 | MPC | | 2005 $YN_{290}$ |
| 2005 $YO_{290}$ | 17.6 | 0.15 | 20060922 | 70.27047 | 8.02520 | 130.54998 | 3.97949 | 0.1000259 | 2.2675236 | 19 | 1 | 67 days | 0.45 | M-v | 4 | MPC | | 2005 $YO_{290}$ |
| 2005 $YP_{290}$ | 17.8 | 0.15 | 20060922 | 101.55664 | 101.12176 | 309.02860 | 12.35649 | 0.2574373 | 2.5951241 | 20 | 1 | 60 days | 0.30 | M-v | 4 | MPC | | 2005 $YP_{290}$ |
| 2005 $YQ_{290}$ | 17.4 | 0.15 | 20060125 | 44.86213 | 271.68501 | 140.31010 | 7.51916 | 0.2669903 | 2.5314203 | 19 | 1 | 56 days | 0.63 | | | MPC | | 2005 $YQ_{290}$ |
| 2005 $YR_{290}$ | 15.9 | 0.15 | 20060922 | 212.79173 | 354.14082 | 320.85724 | 9.72235 | 0.0977628 | 2.9771614 | 18 | 1 | 64 days | 0.30 | M-v | 4 | MPC | | 2005 $YR_{290}$ |
| 2006 $AR_{2}$ | 19.8 | 0.15 | 20060922 | 83.17690 | 287.41306 | 278.27125 | 29.96469 | 0.4179888 | 1.4881431 | 118 | 1 | 242 days | 0.59 | M-v | 2 | MPC | 04368 | 2006 $AR_{2}$ |
| 2006 $AS_{2}$ | 20.3 | 0.15 | 20060922 | 62.73355 | 79.38203 | 126.23529 | 2.60539 | 0.6362833 | 2.0931077 | 66 | 3 | 2003–2006 | 0.65 | M-v | 1 | MPC | 96881 | 2006 $AS_{2}$ |
| 2006 $AV_{4}$ | 17.0 | 0.15 | 20060922 | 126.19430 | 7.18619 | 54.23275 | 8.86723 | 0.0774375 | 2.2074901 | 33 | 3 | 2001–2006 | 0.54 | M-v | 2 | MPC | 96885 | 2006 $AV_{4}$ |
| 2006 $AC_{5}$ | 18.0 | 0.15 | 20060922 | 99.10095 | 60.51628 | 19.72130 | 5.55771 | 0.1781714 | 2.1917712 | 31 | 3 | 1995–2006 | 0.35 | M-v | 1 | MPC | 01199 | 2006 $AC_{5}$ |
| 2006 $AT_{5}$ | 16.5 | 0.15 | 20060922 | 81.98066 | 53.16268 | 35.75548 | 13.30157 | 0.2332914 | 2.6742566 | 32 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 96886 | 2006 $AT_{5}$ |
| 2006 $AJ_{8}$ | 15.0 | 0.15 | 20060922 | 42.65416 | 105.18656 | 19.62062 | 10.37450 | 0.0827352 | 3.0769177 | 47 | 4 | 1993–2006 | 0.68 | M-v | 2 | MPC | 04368 | 2006 $AJ_{8}$ |
| 2006 $AR_{12}$ | 17.2 | 0.15 | 20060922 | 79.46804 | 168.76694 | 281.21009 | 4.08551 | 0.0765864 | 2.4661314 | 32 | 3 | 2001–2006 | 0.56 | M-v | 3 | MPC | 96895 | 2006 $AR_{12}$ |
| 2006 $AE_{14}$ | 16.5 | 0.15 | 20060125 | 96.95488 | 237.32906 | 148.90873 | 1.70840 | 0.0626353 | 2.9402662 | 22 | 1 | 59 days | 0.51 | | | MPC | | 2006 $AE_{14}$ |
| 2006 $AQ_{16}$ | 16.1 | 0.15 | 20060922 | 39.08135 | 20.70396 | 92.74064 | 15.33914 | 0.1253479 | 2.7124893 | 27 | 1 | 63 days | 0.48 | M-v | 4 | MPC | | 2006 $AQ_{16}$ |
| 2006 $AA_{22}$ | 16.8 | 0.15 | 20060922 | 331.20166 | 281.06651 | 337.38062 | 19.39091 | 0.0793071 | 1.8994216 | 54 | 3 | 1999–2006 | 0.59 | M-v | 3 | MPC | 96909 | 2006 $AA_{22}$ |
| 2006 $AR_{23}$ | 16.0 | 0.15 | 20060922 | 223.39450 | 197.66505 | 116.34909 | 3.13258 | 0.0591503 | 2.8632009 | 44 | 5 | 2001–2006 | 0.48 | M-v | 1 | MPC | 96911 | 2006 $AR_{23}$ |
| 2006 $AG_{26}$ | 17.4 | 0.15 | 20060922 | 42.39311 | 32.89496 | 101.13809 | 8.43136 | 0.1423098 | 2.6039309 | 20 | 1 | 67 days | 0.42 | M-v | 4 | MPC | | 2006 $AG_{26}$ |
| 2006 $AL_{26}$ | 17.9 | 0.15 | 20060922 | 305.84761 | 225.90792 | 21.36255 | 1.25220 | 0.1557176 | 2.3944628 | 19 | 3 | 2003–2006 | 0.48 | M-v | 4 | MPC | 96912 | 2006 $AL_{26}$ |
| 2006 $AT_{27}$ | 17.0 | 0.15 | 20060922 | 320.53257 | 74.65941 | 166.79381 | 2.79944 | 0.1294185 | 2.4036978 | 44 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 96914 | 2006 $AT_{27}$ |
| 2006 $AH_{32}$ | 14.7 | 0.15 | 20060922 | 335.56776 | 212.88629 | 348.30393 | 14.22887 | 0.0271030 | 2.9406435 | 48 | 3 | 2000–2006 | 0.68 | M-v | 4 | MPC | 96918 | 2006 $AH_{32}$ |
| 2006 $AP_{36}$ | 17.0 | 0.15 | 20060922 | 292.24350 | 251.28699 | 358.22441 | 2.27096 | 0.0271986 | 2.7161199 | 28 | 3 | 2002–2006 | 0.32 | M-v | 4 | MPC | 96922 | 2006 $AP_{36}$ |
| 2006 $AJ_{40}$ | 18.1 | 0.15 | 20060125 | 324.53579 | 214.11172 | 314.99890 | 2.36486 | 0.0787392 | 2.4358062 | 20 | 1 | 52 days | 0.26 | | | MPC | | 2006 $AJ_{40}$ |
| 2006 $AN_{40}$ | 16.3 | 0.15 | 20060922 | 128.87967 | 358.18986 | 38.85820 | 0.97983 | 0.0561678 | 3.0462201 | 46 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 96925 | 2006 $AN_{40}$ |
| 2006 $AY_{41}$ | 17.9 | 0.15 | 20060922 | 116.44489 | 240.29882 | 176.36929 | 2.49298 | 0.0564419 | 2.6842758 | 29 | 3 | 2000–2006 | 0.38 | M-v | 3 | MPC | 96927 | 2006 $AY_{41}$ |
| 2006 $AE_{47}$ | 15.9 | 0.15 | 20060922 | 111.59992 | 68.80435 | 339.17911 | 5.39047 | 0.0540407 | 2.8621737 | 26 | 4 | 1999–2006 | 0.32 | M-v | 1 | MPC | 01211 | 2006 $AE_{47}$ |
| 2006 $AR_{48}$ | 17.1 | 0.15 | 20060922 | 260.27661 | 135.53888 | 155.25846 | 3.18824 | 0.0697617 | 2.4056390 | 21 | 3 | 2003–2006 | 0.47 | M-v | 3 | MPC | 03832 | 2006 $AR_{48}$ |
| 2006 $AS_{57}$ | 16.1 | 0.15 | 20060922 | 118.81797 | 137.63813 | 256.44809 | 4.93538 | 0.2977118 | 2.5806227 | 32 | 3 | 2000–2006 | 0.61 | M-v | 3 | MPC | 96938 | 2006 $AS_{57}$ |
| 2006 $AG_{67}$ | 17.5 | 0.15 | 20060125 | 44.82534 | 278.91665 | 143.66457 | 5.78293 | 0.1763483 | 2.6522208 | 21 | 1 | 58 days | 0.38 | | | MPC | | 2006 $AG_{67}$ |
| 2006 $AR_{73}$ | 16.1 | 0.15 | 20060922 | 265.14571 | 167.24277 | 126.57979 | 23.90206 | 0.1648397 | 2.2766451 | 48 | 4 | 2000–2006 | 0.55 | M-v | 2 | MPC | 96952 | 2006 $AR_{73}$ |
| 2006 $AD_{81}$ | 15.4 | 0.15 | 20060922 | 8.88055 | 205.16972 | 324.21311 | 12.42556 | 0.0872994 | 3.1334346 | 39 | 3 | 1995–2006 | 0.49 | M-v | 2 | MPC | 96958 | 2006 $AD_{81}$ |
| 2006 $AY_{83}$ | 15.6 | 0.15 | 20060922 | 75.48912 | 80.20508 | 356.87621 | 5.18416 | 0.1512771 | 3.1918423 | 43 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 02270 | 2006 $AY_{83}$ |
| 2006 $AX_{95}$ | 17.4 | 0.15 | 20060922 | 140.67009 | 123.27172 | 262.81308 | 0.76549 | 0.1562029 | 2.5667024 | 39 | 5 | 1992–2006 | 0.46 | M-v | 1 | MPC | 96970 | 2006 $AX_{95}$ |
| 2006 $AM_{96}$ | 16.7 | 0.15 | 20060922 | 119.94758 | 206.17375 | 205.57454 | 5.68986 | 0.2208996 | 2.5463261 | 38 | 5 | 1992–2006 | 0.69 | M-v | 1 | MPC | 04368 | 2006 $AM_{96}$ |
| 2006 $AZ_{100}$ | 16.4 | 0.15 | 20060922 | 150.74651 | 70.39194 | 286.14078 | 5.20261 | 0.2196603 | 2.1623349 | 23 | 1 | 84 days | 0.47 | M-v | 5 | MPC | | 2006 $AZ_{100}$ |
| 2006 $AB_{101}$ | 16.6 | 0.15 | 20060125 | 59.63808 | 100.74511 | 312.20232 | 5.76508 | 0.2234942 | 3.0852128 | 18 | 1 | 50 days | 0.38 | | | MPC | | 2006 $AB_{101}$ |
| 2006 $AC_{101}$ | 16.7 | 0.15 | 20060125 | 87.98416 | 272.37119 | 134.23011 | 7.20342 | 0.0477852 | 2.7631138 | 18 | 1 | 59 days | 0.42 | | | MPC | | 2006 $AC_{101}$ |
| 2006 $AD_{101}$ | 16.1 | 0.15 | 20060125 | 211.38747 | 333.41439 | 308.40879 | 10.40737 | 0.0616541 | 3.0852527 | 18 | 1 | 48 days | 0.36 | | | MPC | | 2006 $AD_{101}$ |
| 2006 $AE_{101}$ | 17.1 | 0.15 | 20060125 | 118.40222 | 46.24812 | 315.41176 | 4.32664 | 0.0748580 | 2.6766815 | 21 | 1 | 55 days | 0.38 | | | MPC | | 2006 $AE_{101}$ |
| 2006 $AF_{101}$ | 18.6 | 0.15 | 20060922 | 100.07607 | 308.74745 | 141.08856 | 6.01370 | 0.1967208 | 2.3261633 | 17 | 1 | 60 days | 0.30 | M-v | 4 | MPC | | 2006 $AF_{101}$ |
| 2006 $AG_{101}$ | 18.2 | 0.15 | 20060125 | 22.33967 | 150.55779 | 312.17086 | 5.22666 | 0.1737294 | 2.3077138 | 19 | 1 | 48 days | 0.47 | | | MPC | | 2006 $AG_{101}$ |
| 2006 $AH_{101}$ | 16.6 | 0.15 | 20060125 | 120.86439 | 51.29088 | 324.18208 | 5.12207 | 0.0737106 | 2.7728814 | 22 | 1 | 44 days | 0.42 | | | MPC | | 2006 $AH_{101}$ |
| 2006 $AJ_{101}$ | 16.6 | 0.15 | 20060922 | 105.42336 | 287.96612 | 139.96636 | 6.76813 | 0.0445416 | 2.7664705 | 24 | 1 | 74 days | 0.33 | M-v | 4 | MPC | | 2006 $AJ_{101}$ |
| 2006 $AK_{101}$ | 18.2 | 0.15 | 20060922 | 138.80874 | 258.30231 | 152.73927 | 2.60845 | 0.1395857 | 2.1983997 | 17 | 1 | 112 days | 0.46 | M-v | 5 | MPC | | 2006 $AK_{101}$ |
| 2006 BG | 18.6 | 0.15 | 20060922 | 69.17617 | 341.00545 | 281.12182 | 4.81297 | 0.7323625 | 1.6824446 | 132 | 2 | 2006–2006 | 0.49 | M-v | 3 | MPC | 03835 | 2006 BG |
| 2006 $BD_{5}$ | 18.0 | 0.15 | 20060922 | 81.80370 | 155.29401 | 288.48275 | 1.12317 | 0.1804919 | 2.6577198 | 28 | 3 | 2000–2006 | 0.38 | M-v | 2 | MPC | 96978 | 2006 $BD_{5}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $BY_{5}$ | 16.8 | 0.15 | 20060922 | 115.73087 | 164.13384 | 246.68050 | 4.92496 | 0.1666064 | 2.4717780 | 34 | 3 | 2001–2006 | 0.67 | M-v | 3 | MPC | 96980 | 2006 $BY_{5}$ |
| 2006 $BN_{6}$ | 17.4 | 0.15 | 20060922 | 40.29800 | 336.52777 | 251.23747 | 17.94115 | 0.7078900 | 2.5477666 | 147 | 3 | 2002–2006 | 0.39 | M-v | 1 | MPC | 04368 | 2006 $BN_{6}$ |
| 2006 $BQ_{6}$ | 19.7 | 0.15 | 20060922 | 53.79840 | 304.60017 | 307.77315 | 12.99271 | 0.4048532 | 1.4718284 | 462 | 2 | 2006–2006 | 0.36 | M-v | 3 | MPC | 03837 | 2006 $BQ_{6}$ |
| 2006 $BR_{6}$ | 16.2 | 0.15 | 20060922 | 292.45366 | 314.46272 | 319.67358 | 4.66626 | 0.1745551 | 2.4596233 | 41 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 01224 | 2006 $BR_{6}$ |
| 2006 $BZ_{6}$ | 18.0 | 0.15 | 20060125 | 311.74794 | 252.62864 | 301.87323 | 1.28015 | 0.1573660 | 2.3540472 | 21 | 1 | 59 days | 0.32 | | | MPC | | 2006 $BZ_{6}$ |
| 2006 $BZ_{8}$ | 14.2 | 0.15 | 20060922 | 2.67914 | 82.17306 | 183.46112 | 165.27364 | 0.8037002 | 9.6674273 | 319 | 2 | 2006–2006 | 0.49 | M-v | 1 | MPC | 03838 | 2006 $BZ_{8}$ |
| 2006 $BC_{10}$ | 19.4 | 0.15 | 20060922 | 28.33836 | 233.37255 | 21.82720 | 0.93812 | 0.6604570 | 2.0136454 | 206 | 2 | 2006–2006 | 0.43 | M-v | 3 | MPC | 03839 | 2006 $BC_{10}$ |
| 2006 $BE_{12}$ | 16.5 | 0.15 | 20060922 | 189.05609 | 196.74251 | 135.15641 | 3.36246 | 0.0850205 | 3.0667435 | 22 | 3 | 2001–2006 | 0.24 | M-v | 4 | MPC | 96985 | 2006 $BE_{12}$ |
| 2006 $BN_{12}$ | 15.6 | 0.15 | 20060922 | 208.52885 | 225.68832 | 133.90410 | 9.46467 | 0.0543609 | 2.6895355 | 48 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 01226 | 2006 $BN_{12}$ |
| 2006 $BB_{14}$ | 16.9 | 0.15 | 20060922 | 48.27814 | 200.45282 | 306.22760 | 4.49077 | 0.1322109 | 2.3736828 | 65 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 02271 | 2006 $BB_{14}$ |
| 2006 $BS_{20}$ | 17.2 | 0.15 | 20060922 | 354.78222 | 67.24977 | 147.40967 | 2.85254 | 0.1548045 | 2.4230390 | 40 | 3 | 1999–2006 | 0.46 | M-v | 3 | MPC | 03839 | 2006 $BS_{20}$ |
| 2006 $BY_{20}$ | 15.4 | 0.15 | 20060922 | 16.48040 | 29.98381 | 134.98975 | 11.08909 | 0.0487948 | 3.0007535 | 43 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 96991 | 2006 $BY_{20}$ |
| 2006 $BQ_{22}$ | 16.0 | 0.15 | 20060125 | 346.27683 | 183.94104 | 324.71570 | 3.99702 | 0.0786345 | 3.1182720 | 23 | 1 | 46 days | 0.32 | | | MPC | | 2006 $BQ_{22}$ |
| 2006 $BS_{24}$ | 15.8 | 0.15 | 20060922 | 202.23044 | 168.24854 | 159.09016 | 2.29602 | 0.0751008 | 2.9163799 | 30 | 4 | 1994–2006 | 0.29 | M-v | 0 | MPC | 04369 | 2006 $BS_{24}$ |
| 2006 $BH_{26}$ | 15.9 | 0.15 | 20060922 | 95.41514 | 167.50296 | 281.84933 | 4.12383 | 0.0862478 | 2.6832193 | 31 | 4 | 1991–2006 | 0.56 | M-v | 1 | MPC | 04369 | 2006 $BH_{26}$ |
| 2006 $BC_{27}$ | 17.6 | 0.15 | 20060922 | 208.76208 | 243.55771 | 118.28820 | 5.03644 | 0.0778621 | 2.0057918 | 40 | 2 | 2002–2006 | 0.36 | M-v | 4 | MPC | 96996 | 2006 $BC_{27}$ |
| 2006 $BG_{31}$ | 15.5 | 0.15 | 20060922 | 46.17113 | 172.80903 | 319.54077 | 8.64649 | 0.0311070 | 3.1196009 | 41 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 97000 | 2006 $BG_{31}$ |
| 2006 $BB_{34}$ | 16.2 | 0.15 | 20060922 | 28.11762 | 207.23000 | 334.21275 | 9.56863 | 0.2022123 | 2.9152271 | 57 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 02272 | 2006 $BB_{34}$ |
| 2006 $BC_{34}$ | 16.8 | 0.15 | 20060922 | 320.07203 | 279.88267 | 357.19383 | 2.11031 | 0.1815802 | 2.3658292 | 53 | 6 | 1995–2006 | 0.45 | M-v | 1 | MPC | 02272 | 2006 $BC_{34}$ |
| 2006 $BA_{37}$ | 16.6 | 0.15 | 20060922 | 87.12710 | 337.72342 | 127.57883 | 5.30875 | 0.1010526 | 2.6683582 | 23 | 1 | 185 days | 0.38 | M-v | 4 | MPC | 02272 | 2006 $BA_{37}$ |
| 2006 $BZ_{41}$ | 17.1 | 0.15 | 20060922 | 136.21325 | 281.92903 | 145.13324 | 6.58908 | 0.1284599 | 2.4293460 | 33 | 3 | 1995–2006 | 1.01 | M-v | 4 | MPC | 01233 | 2006 $BZ_{41}$ |
| 2006 $BM_{43}$ | 16.5 | 0.15 | 20060922 | 36.35441 | 82.08995 | 73.49717 | 4.30897 | 0.0324125 | 2.8100556 | 28 | 5 | 2001–2006 | 0.45 | M-v | 1 | MPC | 03841 | 2006 $BM_{43}$ |
| 2006 $BR_{44}$ | 17.8 | 0.15 | 20060922 | 103.42402 | 317.73059 | 145.50045 | 6.28890 | 0.1847488 | 2.2710236 | 59 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 97014 | 2006 $BR_{44}$ |
| 2006 $BZ_{47}$ | 16.5 | 0.15 | 20060922 | 348.42540 | 98.69760 | 95.79630 | 2.71019 | 0.1237429 | 3.0640840 | 25 | 4 | 1998–2006 | 0.32 | M-v | 1 | MPC | 97018 | 2006 $BZ_{47}$ |
| 2006 $BE_{50}$ | 18.3 | 0.15 | 20060125 | 296.97843 | 112.85689 | 112.80882 | 7.43521 | 0.2925788 | 2.5096060 | 14 | 1 | 5 days | 0.29 | | | MPC | | 2006 $BE_{50}$ |
| 2006 $BJ_{50}$ | 15.9 | 0.15 | 20060922 | 281.64274 | 217.51944 | 44.89923 | 2.69096 | 0.0361938 | 2.7632816 | 42 | 4 | 1995–2006 | 0.50 | M-v | 1 | MPC | 01235 | 2006 $BJ_{50}$ |
| 2006 $BA_{51}$ | 16.3 | 0.15 | 20060922 | 322.97302 | 293.26027 | 317.16793 | 8.00935 | 0.2380346 | 2.4014428 | 58 | 5 | 1995–2006 | 0.56 | M-v | 1 | MPC | 02273 | 2006 $BA_{51}$ |
| 2006 $BQ_{51}$ | 16.4 | 0.15 | 20060922 | 316.58326 | 147.48681 | 110.11931 | 3.34636 | 0.1544936 | 2.4124595 | 38 | 4 | 1995–2006 | 0.51 | M-v | 1 | MPC | 01235 | 2006 $BQ_{51}$ |
| 2006 $BE_{52}$ | 16.4 | 0.15 | 20060922 | 78.25796 | 349.52415 | 99.99353 | 2.40096 | 0.1170200 | 3.1794704 | 38 | 5 | 1995–2006 | 0.44 | M-v | 0 | MPC | 97020 | 2006 $BE_{52}$ |
| 2006 $BC_{54}$ | 17.1 | 0.15 | 20060922 | 107.75341 | 113.63261 | 337.66183 | 1.85338 | 0.1624907 | 2.3884678 | 62 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 01236 | 2006 $BC_{54}$ |
| 2006 $BD_{56}$ | 16.9 | 0.15 | 20060922 | 276.82928 | 337.51011 | 328.97708 | 3.64742 | 0.1532851 | 2.2888215 | 40 | 3 | 1999–2006 | 0.46 | M-v | 4 | MPC | 01237 | 2006 $BD_{56}$ |
| 2006 $BN_{56}$ | 16.0 | 0.15 | 20060922 | 120.69843 | 301.33818 | 110.90272 | 13.31030 | 0.0948010 | 2.7233848 | 33 | 4 | 1997–2006 | 0.56 | M-v | 1 | MPC | 97023 | 2006 $BN_{56}$ |
| 2006 $BL_{57}$ | 16.7 | 0.15 | 20060922 | 341.81020 | 221.74261 | 6.54621 | 3.20706 | 0.1827315 | 2.5466570 | 35 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 97023 | 2006 $BL_{57}$ |
| 2006 $BK_{58}$ | 16.4 | 0.15 | 20060922 | 79.31369 | 107.20634 | 333.51960 | 16.04194 | 0.2358005 | 3.1483882 | 24 | 1 | 87 days | 0.47 | M-v | 4 | MPC | | 2006 $BK_{58}$ |
| 2006 $BX_{59}$ | 15.9 | 0.15 | 20060922 | 257.45865 | 307.09403 | 341.36024 | 3.01479 | 0.0738897 | 3.0588860 | 34 | 4 | 2001–2006 | 0.30 | M-v | 0 | MPC | 02274 | 2006 $BX_{59}$ |
| 2006 $BA_{60}$ | 17.8 | 0.15 | 20060922 | 86.65283 | 139.19072 | 348.71170 | 3.31830 | 0.1125632 | 2.2272499 | 41 | 4 | 1996–2006 | 0.48 | M-v | 1 | MPC | 02274 | 2006 $BA_{60}$ |
| 2006 $BO_{64}$ | 17.9 | 0.15 | 20060125 | 21.11689 | 151.26499 | 309.21807 | 8.60073 | 0.1534758 | 2.6752890 | 23 | 1 | 48 days | 0.28 | | | MPC | | 2006 $BO_{64}$ |
| 2006 $BF_{65}$ | 16.2 | 0.15 | 20060922 | 175.92965 | 217.43064 | 163.81441 | 2.27068 | 0.0849379 | 2.8510296 | 47 | 6 | 1994–2006 | 0.36 | M-v | 1 | MPC | 03843 | 2006 $BF_{65}$ |
| 2006 $BH_{69}$ | 17.0 | 0.15 | 20060922 | 199.04850 | 328.95323 | 16.14196 | 5.15555 | 0.0412344 | 2.7569243 | 19 | 3 | 2002–2006 | 0.23 | M-v | 4 | MPC | 97033 | 2006 $BH_{69}$ |
| 2006 $BC_{74}$ | 15.4 | 0.15 | 20060922 | 67.08379 | 33.31682 | 72.38736 | 4.43064 | 0.0855921 | 3.2139117 | 42 | 4 | 1995–2006 | 0.45 | M-v | 0 | MPC | 02274 | 2006 $BC_{74}$ |
| 2006 $BG_{79}$ | 15.5 | 0.15 | 20060922 | 232.91903 | 297.48403 | 30.92238 | 5.92821 | 0.1663462 | 3.1830848 | 33 | 4 | 1997–2006 | 0.41 | M-v | 0 | MPC | 02274 | 2006 $BG_{79}$ |
| 2006 $BY_{79}$ | 14.5 | 0.15 | 20060922 | 226.70677 | 205.54571 | 128.17485 | 11.82152 | 0.0298482 | 3.0935893 | 51 | 4 | 2001–2006 | 0.59 | M-v | 1 | MPC | 02274 | 2006 $BY_{79}$ |
| 2006 $BA_{80}$ | 16.3 | 0.15 | 20060922 | 60.00748 | 109.93402 | 29.60629 | 6.27599 | 0.0543086 | 2.9546169 | 18 | 2 | 2004–2006 | 0.20 | M-v | 3 | MPC | 97040 | 2006 $BA_{80}$ |
| 2006 $BC_{82}$ | 17.0 | 0.15 | 20060922 | 136.23117 | 66.62795 | 347.24584 | 8.64344 | 0.2298608 | 2.3300205 | 69 | 3 | 1999–2006 | 0.44 | M-v | 3 | MPC | 01242 | 2006 $BC_{82}$ |
| 2006 $BG_{83}$ | 15.3 | 0.15 | 20060922 | 85.06607 | 315.20799 | 127.00677 | 4.68013 | 0.1665517 | 3.2023653 | 52 | 4 | 1995–2006 | 0.50 | M-v | 0 | MPC | 02275 | 2006 $BG_{83}$ |
| 2006 $BR_{83}$ | 16.5 | 0.15 | 20051216 | 188.82660 | 177.65350 | 119.35600 | 12.56147 | 0.1276981 | 2.9890778 | 14 | 1 | 59 days | 0.48 | | | MPC | | 2006 $BR_{83}$ |
| 2006 $BT_{83}$ | 17.9 | 0.15 | 20060125 | 279.54667 | 250.51730 | 350.23304 | 3.10772 | 0.2748874 | 2.4396692 | 12 | 1 | 5 days | 0.20 | | | MPC | | 2006 $BT_{83}$ |
| 2006 $BT_{85}$ | 17.4 | 0.15 | 20060922 | 71.28770 | 73.64839 | 43.58001 | 1.80830 | 0.1334864 | 2.3576738 | 42 | 3 | 2001–2006 | 0.62 | M-v | 3 | MPC | 97044 | 2006 $BT_{85}$ |
| 2006 $BZ_{88}$ | 16.3 | 0.15 | 20060922 | 127.44871 | 279.84327 | 126.64139 | 6.14894 | 0.1075618 | 2.8459821 | 28 | 2 | 2004–2006 | 0.50 | M-v | 3 | MPC | 97046 | 2006 $BZ_{88}$ |
| 2006 $BT_{90}$ | 16.4 | 0.15 | 20060922 | 187.60894 | 263.25022 | 105.81055 | 3.08345 | 0.0973678 | 2.8619006 | 40 | 5 | 1999–2006 | 0.38 | M-v | 1 | MPC | 02275 | 2006 $BT_{90}$ |
| 2006 $BV_{92}$ | 16.3 | 0.15 | 20060922 | 131.82770 | 120.21905 | 299.24570 | 1.04550 | 0.0531004 | 2.8695560 | 27 | 4 | 1994–2006 | 0.55 | M-v | 4 | MPC | 04369 | 2006 $BV_{92}$ |
| 2006 $BH_{93}$ | 17.8 | 0.15 | 20060922 | 147.39414 | 85.34324 | 340.06569 | 5.81235 | 0.0787600 | 2.1862849 | 41 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 02275 | 2006 $BH_{93}$ |
| 2006 $BN_{95}$ | 16.2 | 0.15 | 20060922 | 240.86933 | 142.11011 | 181.36622 | 1.76476 | 0.0883430 | 2.9340226 | 38 | 5 | 1998–2006 | 0.30 | M-v | 0 | MPC | 01248 | 2006 $BN_{95}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $BU_{96}$ | 17.3 | 0.15 | 20060922 | 103.49296 | 151.53554 | 324.33781 | 6.46382 | 0.0347253 | 2.2751435 | 27 | 4 | 1999–2006 | 0.53 | M-v | 1 | MPC | 01249 | 2006 $BU_{96}$ |
| 2006 $BM_{97}$ | 15.9 | 0.15 | 20060922 | 0.36774 | 240.72839 | 352.33032 | 9.59625 | 0.0311656 | 2.5398429 | 52 | 5 | 1998–2006 | 0.62 | M-v | 1 | MPC | 01250 | 2006 $BM_{97}$ |
| 2006 $BJ_{98}$ | 15.9 | 0.15 | 20060922 | 6.68489 | 174.76359 | 63.09990 | 0.66054 | 0.2548015 | 3.0738369 | 70 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 01250 | 2006 $BJ_{98}$ |
| 2006 $BV_{98}$ | 15.2 | 0.15 | 20060922 | 122.94355 | 203.66595 | 197.28467 | 8.49963 | 0.0270961 | 3.2139870 | 38 | 4 | 1998–2006 | 0.64 | M-v | 1 | MPC | 02276 | 2006 $BV_{98}$ |
| 2006 $BJ_{99}$ | 17.0 | 0.15 | 20060922 | 317.02123 | 119.48171 | 137.60286 | 4.49190 | 0.1997813 | 2.5704785 | 41 | 4 | 1994–2006 | 0.47 | M-v | 2 | MPC | 03846 | 2006 $BJ_{99}$ |
| 2006 $BQ_{101}$ | 16.3 | 0.15 | 20060922 | 257.97463 | 170.68138 | 124.86234 | 11.90479 | 0.1858166 | 2.5183570 | 46 | 5 | 1995–2006 | 0.55 | M-v | 3 | MPC | 97059 | 2006 $BQ_{101}$ |
| 2006 $BQ_{102}$ | 17.0 | 0.15 | 20060922 | 314.58787 | 84.30386 | 184.82024 | 1.97240 | 0.1919824 | 2.3901587 | 43 | 5 | 1996–2006 | 0.32 | M-v | 2 | MPC | 02276 | 2006 $BQ_{102}$ |
| 2006 $BM_{103}$ | 16.9 | 0.15 | 20060922 | 281.69040 | 349.60271 | 309.69665 | 1.28676 | 0.1446387 | 2.5240755 | 48 | 5 | 1998–2006 | 0.34 | M-v | 3 | MPC | 02276 | 2006 $BM_{103}$ |
| 2006 $BL_{105}$ | 17.7 | 0.15 | 20060922 | 9.97967 | 199.99120 | 336.20074 | 4.54779 | 0.0462947 | 2.6849438 | 25 | 1 | 70 days | 0.42 | M-v | 4 | MPC | | 2006 $BL_{105}$ |
| 2006 $BN_{107}$ | 17.8 | 0.15 | 20060922 | 40.08399 | 89.37773 | 55.81339 | 1.63385 | 0.0352095 | 2.6271593 | 20 | 2 | 2004–2006 | 0.32 | M-v | 5 | MPC | 97062 | 2006 $BN_{107}$ |
| 2006 $BS_{108}$ | 16.5 | 0.15 | 20060922 | 313.71296 | 177.12752 | 63.88643 | 1.75420 | 0.1414528 | 3.0667675 | 21 | 3 | 2001–2006 | 0.34 | M-v | 3 | MPC | 97063 | 2006 $BS_{108}$ |
| 2006 $BO_{109}$ | 18.4 | 0.15 | 20060922 | 65.08558 | 142.34384 | 340.04139 | 4.32210 | 0.1910178 | 2.5602166 | 30 | 3 | 2002–2006 | 0.34 | M-v | 3 | MPC | 97063 | 2006 $BO_{109}$ |
| 2006 $BW_{112}$ | 17.2 | 0.15 | 20060922 | 256.96087 | 206.97273 | 90.50231 | 2.96486 | 0.0444979 | 2.6408102 | 20 | 3 | 2000–2006 | 0.22 | M-v | 2 | MPC | 97065 | 2006 $BW_{112}$ |
| 2006 $BQ_{113}$ | 17.7 | 0.15 | 20060922 | 315.87049 | 179.55832 | 89.03514 | 2.29028 | 0.2005486 | 2.2493382 | 32 | 3 | 2003–2006 | 0.49 | M-v | 3 | MPC | 97065 | 2006 $BQ_{113}$ |
| 2006 $BM_{116}$ | 13.6 | 0.15 | 20060922 | 162.97405 | 188.46572 | 176.89185 | 3.73737 | 0.0629849 | 5.1171170 | 29 | 3 | 2001–2006 | 0.31 | M-v | 2 | MPC | 01254 | 2006 $BM_{116}$ |
| 2006 $BZ_{116}$ | 17.5 | 0.15 | 20060922 | 3.23195 | 272.90820 | 315.51029 | 1.72593 | 0.1798063 | 2.3130764 | 27 | 1 | 209 days | 0.31 | M-v | 4 | MPC | 02277 | 2006 $BZ_{116}$ |
| 2006 $BD_{118}$ | 16.7 | 0.15 | 20060125 | 228.16767 | 29.38748 | 262.04134 | 2.54223 | 0.1400886 | 2.7498260 | 10 | 1 | 6 days | 0.12 | | D | MPC | | 2006 $BD_{118}$ |
| 2006 $BG_{118}$ | 16.1 | 0.15 | 20060922 | 83.28820 | 284.86858 | 159.42629 | 11.41716 | 0.2410908 | 3.1222797 | 40 | 2 | 2000–2006 | 0.41 | M-v | 3 | MPC | 02277 | 2006 $BG_{118}$ |
| 2006 $BV_{119}$ | 12.6 | 0.15 | 20060922 | 280.18596 | 99.25362 | 162.86269 | 11.21321 | 0.0979446 | 5.2351408 | 49 | 4 | 1995–2006 | 0.52 | M-v | 1 | MPC | 01255 | 2006 $BV_{119}$ |
| 2006 $BF_{120}$ | 16.2 | 0.15 | 20060922 | 46.36779 | 248.17250 | 259.96386 | 2.24301 | 0.0806648 | 2.9157986 | 50 | 4 | 2001–2006 | 0.44 | M-v | 1 | MPC | 01255 | 2006 $BF_{120}$ |
| 2006 $BY_{120}$ | 16.0 | 0.15 | 20060922 | 143.29537 | 213.87415 | 187.93988 | 3.96042 | 0.0448678 | 3.0988675 | 31 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 97070 | 2006 $BY_{120}$ |
| 2006 $BR_{122}$ | 16.0 | 0.15 | 20060922 | 52.11394 | 155.91761 | 347.24468 | 1.44477 | 0.0639875 | 2.9283625 | 36 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 02277 | 2006 $BR_{122}$ |
| 2006 $BW_{123}$ | 17.8 | 0.15 | 20060922 | 355.18699 | 253.08868 | 343.07919 | 2.90083 | 0.1198136 | 2.2305993 | 41 | 4 | 1997–2006 | 0.42 | M-v | 1 | MPC | 01257 | 2006 $BW_{123}$ |
| 2006 $BH_{131}$ | 15.4 | 0.15 | 20060922 | 330.51193 | 257.12855 | 341.59871 | 10.02294 | 0.0742794 | 3.0894852 | 61 | 4 | 1997–2006 | 0.42 | M-v | 1 | MPC | 01260 | 2006 $BH_{131}$ |
| 2006 $BT_{131}$ | 16.6 | 0.15 | 20060922 | 291.92595 | 304.97993 | 338.29360 | 1.50275 | 0.0660329 | 2.7497540 | 42 | 6 | 1994–2006 | 0.40 | M-v | 0 | MPC | 03848 | 2006 $BT_{131}$ |
| 2006 $BV_{131}$ | 16.8 | 0.15 | 20060922 | 347.82654 | 266.83997 | 335.44848 | 7.30886 | 0.1545757 | 2.5601568 | 36 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 01261 | 2006 $BV_{131}$ |
| 2006 $BW_{131}$ | 16.0 | 0.15 | 20060922 | 118.60680 | 300.12786 | 136.67646 | 2.21176 | 0.0522561 | 3.1072496 | 68 | 7 | 1992–2006 | 0.37 | M-v | 0 | MPC | 01261 | 2006 $BW_{131}$ |
| 2006 $BN_{132}$ | 17.3 | 0.15 | 20060922 | 288.86702 | 134.52525 | 177.95419 | 2.79843 | 0.2224277 | 2.1527166 | 29 | 5 | 2000–2006 | 0.42 | M-v | 1 | MPC | 01261 | 2006 $BN_{132}$ |
| 2006 $BW_{132}$ | 17.3 | 0.15 | 20060922 | 93.86904 | 219.07380 | 251.11757 | 0.75936 | 0.0611272 | 2.6932206 | 33 | 4 | 1995–2006 | 0.31 | M-v | 0 | MPC | 02278 | 2006 $BW_{132}$ |
| 2006 $BP_{138}$ | 17.0 | 0.15 | 20060922 | 339.26283 | 26.52469 | 225.50066 | 0.55955 | 0.1738954 | 2.3645757 | 57 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 02278 | 2006 $BP_{138}$ |
| 2006 $BS_{144}$ | 15.7 | 0.15 | 20060922 | 61.36595 | 307.21118 | 161.28371 | 16.73128 | 0.1994378 | 3.1441986 | 70 | 5 | 1995–2006 | 0.51 | M-v | 0 | MPC | 02279 | 2006 $BS_{144}$ |
| 2006 $BZ_{146}$ | 17.3 | 0.15 | 20060922 | 26.16572 | 5.95325 | 189.38312 | 2.94657 | 0.1731789 | 2.3348980 | 47 | 3 | 1999–2006 | 0.47 | M-v | 3 | MPC | 01266 | 2006 $BZ_{146}$ |
| 2006 $BL_{147}$ | 16.6 | 0.15 | 20060922 | 185.92204 | 274.87201 | 73.97945 | 3.28977 | 0.0795874 | 2.9098309 | 35 | 3 | 2001–2006 | 0.40 | M-v | 4 | MPC | 97086 | 2006 $BL_{147}$ |
| 2006 $BT_{148}$ | 17.3 | 0.15 | 20060125 | 317.92649 | 45.85874 | 139.11470 | 3.00590 | 0.1559060 | 2.4629292 | 22 | 1 | 30 days | 0.48 | | | MPC | | 2006 $BT_{148}$ |
| 2006 $BW_{151}$ | 17.6 | 0.15 | 20060922 | 230.99072 | 282.69833 | 49.07538 | 2.36950 | 0.1129354 | 2.2929983 | 28 | 5 | 1996–2006 | 0.48 | M-v | 1 | MPC | 97089 | 2006 $BW_{151}$ |
| 2006 $BV_{155}$ | 15.1 | 0.15 | 20060922 | 294.69945 | 127.49567 | 137.75924 | 10.63440 | 0.0513809 | 3.1763894 | 33 | 5 | 2000–2006 | 0.61 | M-v | 1 | MPC | 97092 | 2006 $BV_{155}$ |
| 2006 $BB_{157}$ | 17.2 | 0.15 | 20060922 | 332.63513 | 154.57547 | 99.12730 | 2.82128 | 0.1272104 | 2.5610605 | 40 | 4 | 1998–2006 | 0.50 | M-v | 2 | MPC | 01270 | 2006 $BB_{157}$ |
| 2006 $BC_{157}$ | 15.4 | 0.15 | 20060922 | 199.10495 | 212.92623 | 147.02801 | 16.03987 | 0.0472098 | 3.0883223 | 36 | 4 | 1995–2006 | 0.56 | M-v | 2 | MPC | 97093 | 2006 $BC_{157}$ |
| 2006 $BP_{157}$ | 15.3 | 0.15 | 20060922 | 51.25517 | 38.95125 | 107.10100 | 1.70562 | 0.1181442 | 3.0901558 | 87 | 6 | 1995–2006 | 0.50 | M-v | 0 | MPC | 02279 | 2006 $BP_{157}$ |
| 2006 $BY_{157}$ | 16.8 | 0.15 | 20060922 | 109.54633 | 331.02922 | 127.59523 | 2.95926 | 0.0203744 | 2.6917300 | 30 | 4 | 2000–2006 | 0.28 | M-v | 0 | MPC | 03851 | 2006 $BY_{157}$ |
| 2006 $BB_{158}$ | 17.3 | 0.15 | 20060922 | 334.66953 | 270.55659 | 353.48222 | 4.23928 | 0.1913958 | 2.3814934 | 23 | 3 | 2002–2006 | 0.33 | M-v | 3 | MPC | 01270 | 2006 $BB_{158}$ |
| 2006 $BE_{159}$ | 15.6 | 0.15 | 20060125 | 17.34153 | 332.94558 | 152.29468 | 12.32993 | 0.0644358 | 3.1316500 | 27 | 1 | 43 days | 0.53 | | | MPC | | 2006 $BE_{159}$ |
| 2006 $BK_{159}$ | 13.8 | 0.15 | 20060922 | 190.11072 | 157.79254 | 181.27369 | 4.08110 | 0.0673508 | 5.1782348 | 28 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 01271 | 2006 $BK_{159}$ |
| 2006 $BV_{163}$ | 15.4 | 0.15 | 20060922 | 288.95519 | 294.47243 | 321.87874 | 8.40741 | 0.0572980 | 3.1664242 | 32 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 03852 | 2006 $BV_{163}$ |
| 2006 $BD_{166}$ | 16.6 | 0.15 | 20060922 | 44.89002 | 178.43010 | 334.38230 | 1.92490 | 0.1200130 | 2.7834925 | 28 | 1 | 210 days | 0.31 | M-v | 3 | MPC | 02280 | 2006 $BD_{166}$ |
| 2006 $BZ_{166}$ | 15.5 | 0.15 | 20060922 | 134.65147 | 258.38963 | 144.17493 | 10.56945 | 0.1345029 | 2.9755393 | 39 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 97101 | 2006 $BZ_{166}$ |
| 2006 $BU_{179}$ | 16.2 | 0.15 | 20060922 | 316.58920 | 223.96900 | 20.88961 | 1.31663 | 0.1494535 | 2.9953063 | 28 | 1 | 231 days | 0.41 | M-v | 4 | MPC | 02280 | 2006 $BU_{179}$ |
| 2006 $BG_{183}$ | 15.5 | 0.15 | 20060922 | 280.12440 | 80.56631 | 202.66036 | 2.77715 | 0.0598965 | 3.0176963 | 47 | 3 | 2001–2006 | 0.30 | M-v | 2 | MPC | 02280 | 2006 $BG_{183}$ |
| 2006 $BR_{185}$ | 17.2 | 0.15 | 20060922 | 142.89363 | 123.02597 | 281.65701 | 2.89982 | 0.0639306 | 2.7519082 | 22 | 2 | 2004–2006 | 0.37 | M-v | 3 | MPC | 01279 | 2006 $BR_{185}$ |
| 2006 $BX_{185}$ | 16.6 | 0.15 | 20060922 | 266.20303 | 125.04878 | 168.17441 | 3.57677 | 0.0649474 | 2.7598993 | 30 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 97109 | 2006 $BX_{185}$ |
| 2006 $BX_{189}$ | 16.6 | 0.15 | 20060922 | 81.39224 | 46.71835 | 74.02007 | 3.10213 | 0.0198192 | 2.8619230 | 34 | 4 | 1999–2006 | 0.27 | M-v | 0 | MPC | 97110 | 2006 $BX_{189}$ |
| 2006 $BY_{190}$ | 15.5 | 0.15 | 20060922 | 51.53540 | 116.13366 | 74.53970 | 4.09063 | 0.1469743 | 3.0682394 | 47 | 4 | 1999–2006 | 0.35 | M-v | 0 | MPC | 01280 | 2006 $BY_{190}$ |
| 2006 $BC_{191}$ | 16.3 | 0.15 | 20060922 | 37.04341 | 201.85670 | 349.89827 | 8.91411 | 0.1057346 | 2.7696445 | 49 | 3 | 2001–2006 | 0.37 | M-v | 2 | MPC | 02281 | 2006 $BC_{191}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $BM_{195}$ | 17.0 | 0.15 | 20060922 | 236.99692 | 147.82440 | 179.17309 | 4.37896 | 0.1031712 | 2.4663951 | 27 | 3 | 2000–2006 | 0.39 | M-v | 4 | MPC | 97112 | 2006 $BM_{195}$ |
| 2006 $BQ_{196}$ | 15.8 | 0.15 | 20060922 | 203.31072 | 189.36475 | 164.01694 | 6.90268 | 0.0322255 | 2.8087178 | 39 | 5 | 1992–2006 | 0.45 | M-v | 1 | MPC | 04369 | 2006 $BQ_{196}$ |
| 2006 $BM_{199}$ | 16.4 | 0.15 | 20060922 | 17.04355 | 273.19077 | 276.70096 | 1.70270 | 0.1046539 | 2.8908904 | 25 | 4 | 1996–2006 | 0.42 | M-v | 1 | MPC | 01283 | 2006 $BM_{199}$ |
| 2006 $BZ_{201}$ | 16.1 | 0.15 | 20060922 | 55.72983 | 28.25593 | 103.29403 | 3.26548 | 0.0128496 | 2.9096362 | 34 | 4 | 1996–2006 | 0.36 | M-v | 2 | MPC | 02281 | 2006 $BZ_{201}$ |
| 2006 $BE_{208}$ | 15.8 | 0.15 | 20060922 | 157.39328 | 211.32785 | 171.74967 | 9.56385 | 0.1253410 | 3.0024554 | 37 | 4 | 1998–2006 | 0.47 | M-v | 1 | MPC | 01286 | 2006 $BE_{208}$ |
| 2006 $BG_{211}$ | 16.7 | 0.15 | 20060922 | 37.47433 | 73.41653 | 88.24378 | 2.35012 | 0.1272474 | 3.1151933 | 37 | 5 | 1995–2006 | 0.32 | M-v | 0 | MPC | 02281 | 2006 $BG_{211}$ |
| 2006 $BT_{211}$ | 17.4 | 0.15 | 20060922 | 317.20736 | 171.17099 | 105.84797 | 2.33781 | 0.1682344 | 2.4314497 | 38 | 5 | 1995–2006 | 0.28 | M-v | 0 | MPC | 02281 | 2006 $BT_{211}$ |
| 2006 $BH_{213}$ | 16.4 | 0.15 | 20060922 | 55.54059 | 124.10520 | 357.27019 | 13.56767 | 0.1397174 | 2.5315415 | 35 | 4 | 1996–2006 | 0.63 | M-v | 3 | MPC | 97119 | 2006 $BH_{213}$ |
| 2006 $BV_{217}$ | 15.5 | 0.15 | 20060922 | 48.98160 | 208.05327 | 306.48119 | 12.96402 | 0.0523838 | 2.7745143 | 36 | 4 | 2001–2006 | 0.72 | M-v | 2 | MPC | 97121 | 2006 $BV_{217}$ |
| 2006 $BM_{219}$ | 15.6 | 0.15 | 20060922 | 61.75750 | 117.68905 | 5.72745 | 14.75440 | 0.2285494 | 3.1145088 | 52 | 4 | 1998–2006 | 0.51 | M-v | 1 | MPC | 01290 | 2006 $BM_{219}$ |
| 2006 $BF_{221}$ | 17.2 | 0.15 | 20060922 | 350.43198 | 258.78836 | 324.84746 | 11.46599 | 0.2221131 | 2.6908395 | 23 | 1 | 67 days | 0.37 | M-v | 5 | MPC | | 2006 $BF_{221}$ |
| 2006 $BH_{222}$ | 15.3 | 0.15 | 20060922 | 229.49203 | 178.13014 | 144.94658 | 10.08548 | 0.1629882 | 2.7410899 | 47 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 97124 | 2006 $BH_{222}$ |
| 2006 $BY_{222}$ | 18.2 | 0.15 | 20060922 | 18.51342 | 266.23690 | 292.73707 | 0.69825 | 0.1306237 | 2.3324738 | 28 | 3 | 1999–2006 | 0.31 | M-v | 3 | MPC | 02282 | 2006 $BY_{222}$ |
| 2006 $BA_{224}$ | 17.0 | 0.15 | 20060922 | 256.32584 | 39.01326 | 267.83562 | 1.58212 | 0.1248760 | 2.5875044 | 30 | 3 | 1999–2006 | 0.38 | M-v | 2 | MPC | 01291 | 2006 $BA_{224}$ |
| 2006 $BV_{226}$ | 16.5 | 0.15 | 20060922 | 98.17739 | 271.39943 | 160.55467 | 10.04959 | 0.2270826 | 3.1570490 | 22 | 1 | 86 days | 0.29 | M-v | 4 | MPC | | 2006 $BV_{226}$ |
| 2006 $BH_{227}$ | 18.8 | 0.15 | 20060922 | 98.22917 | 335.72657 | 134.57416 | 1.04676 | 0.1470130 | 2.2799579 | 22 | 3 | 1999–2006 | 0.40 | M-v | 2 | MPC | 97127 | 2006 $BH_{227}$ |
| 2006 $BH_{231}$ | 16.2 | 0.15 | 20060922 | 323.66223 | 145.96107 | 78.50050 | 3.77897 | 0.0688356 | 2.9352962 | 36 | 4 | 1999–2006 | 0.41 | M-v | 0 | MPC | 97128 | 2006 $BH_{231}$ |
| 2006 $BC_{233}$ | 18.1 | 0.15 | 20060922 | 265.15942 | 207.20863 | 89.77799 | 3.40853 | 0.1140871 | 2.3280211 | 21 | 3 | 1996–2006 | 0.41 | M-v | 4 | MPC | 97129 | 2006 $BC_{233}$ |
| 2006 $BD_{233}$ | 18.4 | 0.15 | 20060214 | 343.11816 | 200.53053 | 321.16230 | 13.04835 | 0.1758256 | 2.5773185 | 23 | 1 | 41 days | 0.29 | | | MPC | | 2006 $BD_{233}$ |
| 2006 $BJ_{234}$ | 16.2 | 0.15 | 20060125 | 268.41212 | 274.38373 | 325.92900 | 10.16230 | 0.1514511 | 3.1316900 | 20 | 1 | 15 days | 0.48 | | | MPC | | 2006 $BJ_{234}$ |
| 2006 $BM_{234}$ | 19.2 | 0.15 | 20060125 | 46.61480 | 318.68888 | 114.86323 | 4.98985 | 0.1135920 | 2.2405996 | 20 | 1 | 15 days | 0.40 | | | MPC | | 2006 $BM_{234}$ |
| 2006 $BU_{234}$ | 17.7 | 0.15 | 20060922 | 354.76173 | 223.69931 | 350.26157 | 2.19941 | 0.1465068 | 2.4324446 | 20 | 3 | 1996–2006 | 0.24 | M-v | 2 | MPC | 97129 | 2006 $BU_{234}$ |
| 2006 $BX_{237}$ | 15.7 | 0.15 | 20060922 | 271.50826 | 278.21298 | 356.60492 | 3.99821 | 0.1293777 | 3.2022801 | 35 | 5 | 1995–2006 | 0.45 | M-v | 0 | MPC | 97130 | 2006 $BX_{237}$ |
| 2006 $BU_{240}$ | 15.9 | 0.15 | 20060922 | 293.93484 | 138.89071 | 129.61161 | 9.89390 | 0.1259866 | 2.7812282 | 26 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 97130 | 2006 $BU_{240}$ |
| 2006 $BH_{241}$ | 17.5 | 0.15 | 20060922 | 100.53352 | 121.77943 | 343.39108 | 5.31269 | 0.0527646 | 2.2093406 | 42 | 3 | 2003–2006 | 0.54 | M-v | 3 | MPC | 02282 | 2006 $BH_{241}$ |
| 2006 $BK_{241}$ | 17.4 | 0.15 | 20060922 | 346.60383 | 164.37226 | 73.84177 | 2.25830 | 0.1565694 | 2.2713696 | 49 | 6 | 1996–2006 | 0.49 | M-v | 1 | MPC | 02282 | 2006 $BK_{241}$ |
| 2006 $BQ_{242}$ | 15.7 | 0.15 | 20060922 | 307.14269 | 293.28009 | 334.41351 | 14.00055 | 0.2308996 | 2.7904882 | 41 | 3 | 1998–2006 | 0.40 | M-v | 1 | MPC | 02282 | 2006 $BQ_{242}$ |
| 2006 $BA_{243}$ | 15.6 | 0.15 | 20060922 | 234.85797 | 340.15220 | 333.97365 | 16.57094 | 0.1906337 | 3.1256405 | 29 | 3 | 1997–2006 | 0.41 | M-v | 3 | MPC | 97132 | 2006 $BA_{243}$ |
| 2006 $BX_{246}$ | 17.9 | 0.15 | 20060922 | 59.74595 | 167.35484 | 337.62788 | 2.12032 | 0.1226121 | 2.4103645 | 27 | 1 | 112 days | 0.26 | M-v | 3 | MPC | | 2006 $BX_{246}$ |
| 2006 $BC_{248}$ | 17.0 | 0.15 | 20060922 | 172.69698 | 242.87211 | 138.50493 | 5.96060 | 0.1247021 | 2.4636298 | 35 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 02282 | 2006 $BC_{248}$ |
| 2006 $BV_{249}$ | 17.6 | 0.15 | 20060922 | 78.66167 | 331.15712 | 142.13119 | 6.76572 | 0.0779083 | 2.4079269 | 29 | 3 | 1995–2006 | 0.50 | M-v | 4 | MPC | 97136 | 2006 $BV_{249}$ |
| 2006 $BM_{252}$ | 17.2 | 0.15 | 20060922 | 116.04875 | 69.23911 | 349.06901 | 1.22439 | 0.2006353 | 2.7517313 | 22 | 3 | 1995–2006 | 0.26 | M-v | 3 | MPC | 01296 | 2006 $BM_{252}$ |
| 2006 $BV_{252}$ | 13.4 | 0.15 | 20060922 | 292.21052 | 67.85801 | 177.96857 | 2.69387 | 0.0881739 | 5.2453111 | 46 | 4 | 1996–2006 | 0.28 | M-v | 0 | MPC | 02283 | 2006 $BV_{252}$ |
| 2006 $BT_{253}$ | 15.9 | 0.15 | 20060922 | 105.45339 | 103.93172 | 329.75368 | 0.86072 | 0.0729969 | 3.1803127 | 42 | 4 | 2000–2006 | 0.37 | M-v | 0 | MPC | 02283 | 2006 $BT_{253}$ |
| 2006 $BQ_{254}$ | 16.3 | 0.15 | 20060214 | 59.30612 | 268.87410 | 147.35067 | 16.29080 | 0.2800234 | 3.1485566 | 21 | 1 | 56 days | 0.29 | | | MPC | | 2006 $BQ_{254}$ |
| 2006 $BH_{255}$ | 16.4 | 0.15 | 20060922 | 84.60738 | 301.25239 | 167.32593 | 1.98751 | 0.0294302 | 2.7492725 | 48 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 97139 | 2006 $BH_{255}$ |
| 2006 $BK_{259}$ | 17.0 | 0.15 | 20060922 | 55.14061 | 22.90101 | 124.74187 | 3.91606 | 0.0606523 | 2.7117762 | 21 | 3 | 1995–2006 | 0.25 | M-v | 4 | MPC | 97141 | 2006 $BK_{259}$ |
| 2006 $BK_{260}$ | 16.0 | 0.15 | 20060922 | 261.68539 | 183.59915 | 115.48553 | 3.14086 | 0.0991619 | 3.1805461 | 19 | 4 | 1994–2006 | 0.46 | M-v | 1 | MPC | 01299 | 2006 $BK_{260}$ |
| 2006 $BJ_{261}$ | 15.8 | 0.15 | 20060922 | 213.09401 | 216.87311 | 123.78749 | 2.13713 | 0.0672975 | 3.0169768 | 25 | 4 | 1995–2006 | 0.35 | M-v | 0 | MPC | 02283 | 2006 $BJ_{261}$ |
| 2006 $BL_{261}$ | 16.1 | 0.15 | 20060922 | 157.47068 | 255.79489 | 126.70563 | 2.19142 | 0.1363814 | 3.1435377 | 33 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 01299 | 2006 $BL_{261}$ |
| 2006 $BJ_{264}$ | 16.3 | 0.15 | 20060922 | 236.92119 | 232.57250 | 97.15854 | 3.29405 | 0.0705934 | 2.8689750 | 38 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 01300 | 2006 $BJ_{264}$ |
| 2006 $BH_{266}$ | 15.7 | 0.15 | 20060922 | 34.97416 | 35.42969 | 176.00749 | 5.37631 | 0.1297611 | 3.1846669 | 82 | 4 | 2000–2006 | 0.48 | M-v | 1 | MPC | 01302 | 2006 $BH_{266}$ |
| 2006 $BQ_{266}$ | 16.6 | 0.15 | 20060125 | 135.94756 | 35.62803 | 328.73132 | 8.23689 | 0.0302424 | 3.1157884 | 9 | 1 | 2 days | 0.39 | | E | MPC | | 2006 $BQ_{266}$ |
| 2006 $BH_{267}$ | 16.8 | 0.15 | 20060922 | 108.29586 | 196.03996 | 266.71101 | 6.76009 | 0.1041714 | 2.2131259 | 39 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 97144 | 2006 $BH_{267}$ |
| 2006 $BT_{267}$ | 17.3 | 0.15 | 20060922 | 62.10336 | 59.98301 | 79.29053 | 6.51137 | 0.1229656 | 2.4299285 | 42 | 3 | 1995–2006 | 0.74 | M-v | 2 | MPC | 97144 | 2006 $BT_{267}$ |
| 2006 $BV_{267}$ | 16.4 | 0.15 | 20060922 | 110.40369 | 321.14960 | 116.53232 | 15.65646 | 0.1077550 | 2.6140721 | 36 | 4 | 2000–2006 | 0.63 | M-v | 1 | MPC | 97144 | 2006 $BV_{267}$ |
| 2006 $BB_{268}$ | 15.4 | 0.15 | 20060922 | 1.21400 | 71.17797 | 132.15974 | 26.13172 | 0.1762617 | 3.1746099 | 42 | 3 | 1996–2006 | 0.66 | M-v | 2 | MPC | 01303 | 2006 $BB_{268}$ |
| 2006 $BF_{268}$ | 14.9 | 0.15 | 20060922 | 49.61281 | 143.07425 | 356.02311 | 11.24582 | 0.0887502 | 3.1105296 | 62 | 5 | 1999–2006 | 0.71 | M-v | 1 | MPC | 02283 | 2006 $BF_{268}$ |
| 2006 $BB_{269}$ | 17.0 | 0.15 | 20060922 | 33.32521 | 178.04081 | 7.68295 | 11.97643 | 0.1840218 | 2.3912461 | 33 | 4 | 1995–2006 | 0.58 | M-v | 2 | MPC | 02283 | 2006 $BB_{269}$ |
| 2006 $BJ_{271}$ | 17.0 | 0.15 | 20060922 | 89.22243 | 347.52815 | 125.60473 | 5.98412 | 0.1753599 | 2.3378449 | 42 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 01305 | 2006 $BJ_{271}$ |
| 2006 $BT_{272}$ | 18.0 | 0.15 | 20060125 | 306.08828 | 265.83994 | 296.11178 | 1.90471 | 0.1348646 | 2.3673735 | 19 | 1 | 50 days | 0.21 | | | MPC | | 2006 $BT_{272}$ |
| 2006 $BR_{274}$ | 16.5 | 0.15 | 20060125 | 184.04458 | 345.63184 | 338.66557 | 14.18948 | 0.1082399 | 3.1666425 | 13 | 1 | 35 days | 0.47 | | | MPC | | 2006 $BR_{274}$ |
| 2006 $BS_{274}$ | 17.4 | 0.15 | 20060922 | 358.45497 | 256.96064 | 332.29494 | 8.04510 | 0.1751516 | 2.3369861 | 18 | 1 | 69 days | 0.44 | M-v | 5 | MPC | | 2006 $BS_{274}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $BU_{274}$ | 13.6 | 0.15 | 20060922 | 282.00194 | 262.00831 | 354.89195 | 10.07562 | 0.0446789 | 5.1615736 | 20 | 1 | 126 days | 0.31 | M-v | 4 | MPC | | 2006 $BU_{274}$ |
| 2006 $BX_{274}$ | 16.1 | 0.15 | 20060922 | 22.51147 | 199.69014 | 344.13677 | 9.21656 | 0.0752771 | 3.1087054 | 21 | 1 | 74 days | 0.24 | M-v | 3 | MPC | | 2006 $BX_{274}$ |
| 2006 $BY_{274}$ | 18.5 | 0.15 | 20060214 | 357.50342 | 187.01049 | 326.42797 | 6.03420 | 0.0817954 | 2.2461656 | 27 | 1 | 59 days | 0.43 | | | MPC | | 2006 $BY_{274}$ |
| 2006 $BZ_{274}$ | 17.1 | 0.15 | 20060214 | 242.86232 | 298.78420 | 334.16404 | 8.40750 | 0.0542887 | 2.7327592 | 22 | 1 | 57 days | 0.36 | | | MPC | | 2006 $BZ_{274}$ |
| 2006 $BA_{275}$ | 13.7 | 0.15 | 20060922 | 57.16082 | 141.16273 | 329.71523 | 14.67326 | 0.0924721 | 5.1816706 | 18 | 1 | 70 days | 0.38 | M-v | 4 | MPC | | 2006 $BA_{275}$ |
| 2006 $BB_{275}$ | 16.4 | 0.15 | 20060214 | 22.71069 | 144.90085 | 335.38825 | 4.50358 | 0.1055648 | 3.1452969 | 19 | 1 | 56 days | 0.35 | | | MPC | | 2006 $BB_{275}$ |
| 2006 $BC_{275}$ | 13.8 | 0.15 | 20060922 | 227.43475 | 157.32248 | 158.50801 | 26.55318 | 0.0766809 | 5.1466603 | 18 | 1 | 62 days | 0.25 | M-v | 5 | MPC | | 2006 $BC_{275}$ |
| 2006 $BD_{275}$ | 16.4 | 0.15 | 20060922 | 140.34144 | 250.80951 | 174.20855 | 6.48046 | 0.0542470 | 2.7884842 | 18 | 1 | 71 days | 0.35 | M-v | 5 | MPC | | 2006 $BD_{275}$ |
| 2006 $BH_{275}$ | 17.5 | 0.15 | 20060922 | 351.08721 | 221.23131 | 350.12686 | 5.31640 | 0.1156448 | 2.6864568 | 14 | 1 | 91 days | 0.23 | M-v | 4 | MPC | | 2006 $BH_{275}$ |
| 2006 $BK_{275}$ | 18.1 | 0.15 | 20060922 | 10.89588 | 254.30531 | 326.87542 | 2.19794 | 0.1593948 | 2.3698512 | 18 | 1 | 62 days | 0.23 | M-v | 4 | MPC | | 2006 $BK_{275}$ |
| 2006 $BL_{275}$ | 17.3 | 0.15 | 20060922 | 334.59062 | 277.74119 | 14.17549 | 5.21632 | 0.2088491 | 2.2762259 | 20 | 1 | 92 days | 0.40 | M-v | 5 | MPC | | 2006 $BL_{275}$ |
| 2006 $CZ_2$ | 18.0 | 0.15 | 20060922 | 233.15553 | 169.21002 | 156.00130 | 2.11270 | 0.1356964 | 2.2141615 | 40 | 5 | 1991–2006 | 0.41 | M-v | 1 | MPC | 04369 | 2006 $CZ_2$ |
| 2006 $CZ_5$ | 16.8 | 0.15 | 20060922 | 308.53119 | 43.98458 | 219.05770 | 1.58874 | 0.1676382 | 2.6639588 | 30 | 4 | 2002–2006 | 0.37 | M-v | 0 | MPC | 97149 | 2006 $CZ_5$ |
| 2006 $CZ_8$ | 16.3 | 0.15 | 20060922 | 208.09080 | 225.19254 | 119.82081 | 2.10225 | 0.0942088 | 2.7997942 | 31 | 3 | 2002–2006 | 0.35 | M-v | 4 | MPC | 01307 | 2006 $CZ_8$ |
| 2006 $CL_{11}$ | 15.8 | 0.15 | 20060922 | 223.61897 | 182.56586 | 131.58483 | 6.19597 | 0.1136273 | 2.7874526 | 30 | 5 | 1997–2006 | 0.59 | M-v | 1 | MPC | 97151 | 2006 $CL_{11}$ |
| 2006 $CK_{12}$ | 16.9 | 0.15 | 20060922 | 191.44611 | 93.20212 | 258.67162 | 0.54682 | 0.0746522 | 2.7307500 | 41 | 5 | 1993–2006 | 0.37 | M-v | 1 | MPC | 04369 | 2006 $CK_{12}$ |
| 2006 $CK_{15}$ | 16.1 | 0.15 | 20060922 | 0.08282 | 104.73763 | 92.63422 | 5.18753 | 0.0484025 | 2.6497116 | 29 | 3 | 1993–2006 | 0.67 | M-v | 5 | MPC | 97152 | 2006 $CK_{15}$ |
| 2006 $CD_{17}$ | 16.2 | 0.15 | 20060922 | 176.92818 | 204.58103 | 143.87131 | 11.49757 | 0.1435514 | 3.0194198 | 26 | 4 | 1998–2006 | 0.43 | M-v | 1 | MPC | 97153 | 2006 $CD_{17}$ |
| 2006 $CF_{19}$ | 17.3 | 0.15 | 20060922 | 345.15008 | 299.42334 | 269.77101 | 2.65197 | 0.0330244 | 2.5734820 | 31 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 01308 | 2006 $CF_{19}$ |
| 2006 $CX_{21}$ | 15.3 | 0.15 | 20060922 | 55.86114 | 138.46452 | 351.50555 | 16.75713 | 0.1810922 | 3.1145813 | 68 | 3 | 1995–2006 | 0.60 | M-v | 2 | MPC | 02285 | 2006 $CX_{21}$ |
| 2006 $CL_{22}$ | 16.1 | 0.15 | 20060922 | 119.48631 | 265.01051 | 161.18000 | 9.98492 | 0.0890507 | 3.0085835 | 40 | 3 | 1998–2006 | 0.42 | M-v | 2 | MPC | 02285 | 2006 $CL_{22}$ |
| 2006 $CD_{23}$ | 16.3 | 0.15 | 20060922 | 9.46736 | 234.06484 | 32.13557 | 11.87642 | 0.2662646 | 2.6583683 | 32 | 1 | 110 days | 0.29 | M-v | 3 | MPC | 02285 | 2006 $CD_{23}$ |
| 2006 $CD_{25}$ | 16.4 | 0.15 | 20060125 | 43.73587 | 316.39573 | 128.18161 | 15.24064 | 0.0458747 | 2.6826329 | 23 | 1 | 33 days | 0.25 | | | MPC | | 2006 $CD_{25}$ |
| 2006 $CL_{25}$ | 15.3 | 0.15 | 20060125 | 59.44374 | 105.66027 | 319.00092 | 8.26103 | 0.0823005 | 3.0458718 | 33 | 1 | 46 days | 0.62 | | | MPC | | 2006 $CL_{25}$ |
| 2006 $CM_{27}$ | 18.5 | 0.15 | 20060214 | 296.13994 | 257.34063 | 321.93577 | 1.36208 | 0.1591988 | 2.2777050 | 21 | 1 | 40 days | 0.36 | | | MPC | | 2006 $CM_{27}$ |
| 2006 $CF_{29}$ | 17.6 | 0.15 | 20060125 | 325.15846 | 240.41666 | 302.86986 | 4.10220 | 0.1486955 | 2.3901933 | 20 | 1 | 57 days | 0.29 | | | MPC | | 2006 $CF_{29}$ |
| 2006 $CC_{31}$ | 15.0 | 0.15 | 20060922 | 121.03037 | 232.83088 | 172.59153 | 6.12643 | 0.1767665 | 3.1305995 | 57 | 5 | 1999–2006 | 0.71 | M-v | 1 | MPC | 01311 | 2006 $CC_{31}$ |
| 2006 $CZ_{32}$ | 12.4 | 0.15 | 20060922 | 247.76071 | 355.39147 | 289.48688 | 9.18354 | 0.0711544 | 5.1986499 | 24 | 4 | 2001–2006 | 0.38 | M-v | 2 | MPC | 97160 | 2006 $CZ_{32}$ |
| 2006 $CQ_{33}$ | 16.0 | 0.15 | 20060922 | 210.54793 | 46.64008 | 276.21807 | 3.12911 | 0.1657331 | 3.0293259 | 26 | 4 | 1993–2006 | 0.36 | M-v | 2 | MPC | 04369 | 2006 $CQ_{33}$ |
| 2006 $CB_{38}$ | 17.2 | 0.15 | 20060306 | 26.11178 | 307.05895 | 171.66762 | 7.35586 | 0.2306340 | 2.7049280 | 24 | 1 | 52 days | 0.48 | | | MPC | | 2006 $CB_{38}$ |
| 2006 $CT_{38}$ | 16.2 | 0.15 | 20060922 | 344.98113 | 338.28671 | 271.88018 | 1.64033 | 0.1687088 | 2.3762223 | 61 | 4 | 1995–2006 | 0.62 | M-v | 2 | MPC | 01313 | 2006 $CT_{38}$ |
| 2006 $CN_{39}$ | 15.8 | 0.15 | 20060922 | 12.12605 | 305.39719 | 242.08064 | 4.00529 | 0.1114165 | 3.2199176 | 29 | 4 | 1994–2006 | 0.57 | M-v | 1 | MPC | 04369 | 2006 $CN_{39}$ |
| 2006 $CH_{40}$ | 17.2 | 0.15 | 20060922 | 335.79668 | 150.16001 | 113.32904 | 3.93599 | 0.1153526 | 2.2049505 | 44 | 2 | 2003–2006 | 0.43 | M-v | 4 | MPC | 97162 | 2006 $CH_{40}$ |
| 2006 $CC_{41}$ | 15.0 | 0.15 | 20060922 | 58.83164 | 270.85960 | 222.99497 | 4.14406 | 0.1075036 | 3.2314003 | 32 | 4 | 1998–2006 | 0.67 | M-v | 2 | MPC | 97163 | 2006 $CC_{41}$ |
| 2006 $CK_{41}$ | 17.2 | 0.15 | 20060922 | 293.14339 | 107.36541 | 197.12192 | 4.55879 | 0.1672062 | 2.2241540 | 31 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 01314 | 2006 $CK_{41}$ |
| 2006 $CR_{43}$ | 15.6 | 0.15 | 20060922 | 255.39020 | 296.94920 | 23.10231 | 6.19312 | 0.2068274 | 3.1336513 | 40 | 5 | 1995–2006 | 0.42 | M-v | 1 | MPC | 02285 | 2006 $CR_{43}$ |
| 2006 $CJ_{44}$ | 16.4 | 0.15 | 20060214 | 286.13491 | 94.10387 | 120.76492 | 16.93844 | 0.1978458 | 3.0948495 | 21 | 1 | 37 days | 0.27 | | | MPC | | 2006 $CJ_{44}$ |
| 2006 $CX_{45}$ | 17.9 | 0.15 | 20060125 | 323.11527 | 54.42803 | 128.24983 | 14.01532 | 0.1841180 | 2.6454053 | 23 | 1 | 16 days | 0.32 | | | MPC | | 2006 $CX_{45}$ |
| 2006 $CJ_{49}$ | 17.8 | 0.15 | 20060922 | 42.40269 | 220.37135 | 300.88434 | 4.94010 | 0.1426526 | 2.3701139 | 22 | 1 | 60 days | 0.40 | M-v | 4 | MPC | | 2006 $CJ_{49}$ |
| 2006 $CZ_{50}$ | 16.4 | 0.15 | 20060922 | 189.49426 | 48.71590 | 300.56119 | 2.93500 | 0.1132733 | 2.6833925 | 46 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 97166 | 2006 $CZ_{50}$ |
| 2006 $CC_{51}$ | 14.1 | 0.15 | 20060922 | 209.15519 | 162.73173 | 145.15927 | 4.76112 | 0.0934333 | 5.0808898 | 34 | 5 | 2000–2006 | 0.38 | M-v | 1 | MPC | 97166 | 2006 $CC_{51}$ |
| 2006 $CE_{51}$ | 15.9 | 0.15 | 20060922 | 304.48539 | 78.88538 | 167.86787 | 0.73182 | 0.1343886 | 3.1530981 | 36 | 5 | 1997–2006 | 0.42 | M-v | 0 | MPC | 01318 | 2006 $CE_{51}$ |
| 2006 $CG_{53}$ | 15.7 | 0.15 | 20060922 | 234.24555 | 354.14301 | 314.26694 | 1.91669 | 0.1276694 | 3.0380800 | 41 | 4 | 2002–2006 | 0.44 | M-v | 1 | MPC | 03858 | 2006 $CG_{53}$ |
| 2006 $CS_{53}$ | 16.4 | 0.15 | 20060922 | 255.96087 | 264.83035 | 37.69125 | 1.89744 | 0.2282418 | 2.5207027 | 48 | 6 | 1992–2006 | 0.66 | M-v | 1 | MPC | 97167 | 2006 $CS_{53}$ |
| 2006 $CT_{61}$ | 12.3 | 0.15 | 20060922 | 320.01213 | 217.89758 | 352.57135 | 21.13658 | 0.0578162 | 5.1628515 | 50 | 5 | 2001–2006 | 0.58 | M-v | 2 | MPC | 01319 | 2006 $CT_{61}$ |
| 2006 $CF_{62}$ | 15.3 | 0.15 | 20060922 | 28.70609 | 62.20636 | 146.96334 | 13.49602 | 0.1447369 | 2.7126406 | 81 | 3 | 2001–2006 | 0.69 | M-v | 2 | MPC | 01320 | 2006 $CF_{62}$ |
| 2006 $CT_{65}$ | 16.5 | 0.15 | 20060922 | 263.09372 | 333.46494 | 353.90636 | 5.44005 | 0.1866821 | 2.2848724 | 32 | 1 | 79 days | 0.29 | M-v | 4 | MPC | | 2006 $CT_{65}$ |
| 2006 $CU_{65}$ | 16.5 | 0.15 | 20060922 | 30.99637 | 130.65016 | 88.33879 | 3.75322 | 0.1731912 | 2.9844123 | 16 | 1 | 111 days | 0.23 | M-v | 3 | MPC | | 2006 $CU_{65}$ |
| 2006 $CX_{65}$ | 17.3 | 0.15 | 20060306 | 248.31657 | 128.84033 | 164.60194 | 5.17781 | 0.2345482 | 2.4188346 | 18 | 1 | 47 days | 0.28 | | | MPC | | 2006 $CX_{65}$ |
| 2006 $CY_{65}$ | 17.3 | 0.15 | 20060922 | 3.79020 | 46.59173 | 178.62528 | 8.38711 | 0.1836720 | 2.5929240 | 17 | 1 | 86 days | 0.37 | M-v | 4 | MPC | | 2006 $CY_{65}$ |
| 2006 $CA_{66}$ | 17.1 | 0.15 | 20060922 | 42.69870 | 261.53448 | 285.91347 | 3.85534 | 0.3073245 | 2.6363043 | 18 | 1 | 74 days | 0.35 | M-v | 3 | MPC | | 2006 $CA_{66}$ |
| 2006 DA | 16.5 | 0.15 | 20060922 | 21.81380 | 234.12102 | 349.15482 | 21.73101 | 0.3306303 | 2.4148588 | 148 | 3 | 2002–2006 | 0.55 | M-v | 1 | MPC | 01321 | 2006 DA |
| 2006 DT | 16.1 | 0.15 | 20060922 | 325.56171 | 157.66443 | 107.70581 | 3.30663 | 0.0754005 | 2.6117532 | 43 | 4 | 2002–2006 | 0.58 | M-v | 1 | MPC | 02286 | 2006 DT |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $DJ_{1}$ | 17.0 | 0.15 | 20060922 | 116.32972 | 6.02490 | 48.23090 | 7.82923 | 0.2553780 | 2.5573198 | 32 | 4 | 1988–2006 | 0.60 | M-v | 1 | MPC | 01322 | 2006 $DJ_{1}$ |
| 2006 $DY_{1}$ | 17.3 | 0.15 | 20060922 | 275.59191 | 313.23865 | 345.36797 | 6.79873 | 0.1004858 | 2.4070405 | 35 | 4 | 2000–2006 | 0.43 | M-v | 1 | MPC | 01322 | 2006 $DY_{1}$ |
| 2006 $DC_{2}$ | 17.3 | 0.15 | 20060922 | 342.24457 | 267.59934 | 335.65086 | 6.99751 | 0.1637759 | 2.5667603 | 42 | 3 | 2002–2006 | 0.31 | M-v | 1 | MPC | 01323 | 2006 $DC_{2}$ |
| 2006 $DT_{3}$ | 17.5 | 0.15 | 20060922 | 61.39238 | 117.85682 | 34.22752 | 1.67738 | 0.1547416 | 2.3403636 | 36 | 3 | 2000–2006 | 0.58 | M-v | 4 | MPC | 02287 | 2006 $DT_{3}$ |
| 2006 $DW_{3}$ | 15.6 | 0.15 | 20060922 | 59.60384 | 167.69646 | 325.86393 | 2.34043 | 0.1068775 | 3.1435413 | 55 | 4 | 1998–2006 | 0.64 | M-v | 1 | MPC | 01324 | 2006 $DW_{3}$ |
| 2006 $DQ_{5}$ | 16.6 | 0.15 | 20060922 | 69.63111 | 27.42278 | 83.74153 | 3.84047 | 0.1567554 | 3.0066843 | 23 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 97175 | 2006 $DQ_{5}$ |
| 2006 $DT_{5}$ | 16.4 | 0.15 | 20060922 | 207.23899 | 190.82984 | 155.05704 | 9.39133 | 0.2174159 | 2.6377494 | 25 | 4 | 1995–2006 | 0.34 | M-v | 1 | MPC | 97175 | 2006 $DT_{5}$ |
| 2006 $DC_{6}$ | 15.3 | 0.15 | 20060922 | 97.19603 | 316.83176 | 134.96903 | 16.00249 | 0.0415759 | 3.1475351 | 31 | 3 | 1997–2006 | 0.44 | M-v | 2 | MPC | 01326 | 2006 $DC_{6}$ |
| 2006 $DP_{6}$ | 16.7 | 0.15 | 20060922 | 71.55767 | 60.48334 | 84.94863 | 2.26390 | 0.1136064 | 2.5610731 | 46 | 5 | 1998–2006 | 0.68 | M-v | 2 | MPC | 01327 | 2006 $DP_{6}$ |
| 2006 $DL_{7}$ | 15.3 | 0.15 | 20060922 | 83.58064 | 305.54992 | 167.83273 | 6.75050 | 0.0786644 | 3.2063412 | 51 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 02287 | 2006 $DL_{7}$ |
| 2006 $DS_{7}$ | 17.6 | 0.15 | 20060922 | 30.37280 | 45.78574 | 158.62551 | 1.96788 | 0.1573553 | 2.4174550 | 53 | 3 | 2002–2006 | 0.33 | M-v | 2 | MPC | 02287 | 2006 $DS_{7}$ |
| 2006 $DT_{7}$ | 17.2 | 0.15 | 20060922 | 352.13829 | 245.62735 | 5.22597 | 2.33577 | 0.1449132 | 2.4197396 | 49 | 1 | 201 days | 0.40 | M-v | 4 | MPC | 02287 | 2006 $DT_{7}$ |
| 2006 $DE_{8}$ | 15.7 | 0.15 | 20060922 | 198.98049 | 245.77046 | 138.88942 | 3.67560 | 0.0885264 | 2.5823070 | 55 | 6 | 1995–2006 | 0.58 | M-v | 1 | MPC | 01328 | 2006 $DE_{8}$ |
| 2006 $DG_{8}$ | 15.8 | 0.15 | 20060922 | 54.19610 | 334.75522 | 176.51574 | 10.66597 | 0.1700628 | 3.1708236 | 44 | 3 | 2000–2006 | 0.72 | M-v | 1 | MPC | 03861 | 2006 $DG_{8}$ |
| 2006 $DP_{8}$ | 16.6 | 0.15 | 20060922 | 207.42640 | 205.55894 | 144.41479 | 11.44179 | 0.2611239 | 2.5301578 | 26 | 3 | 2000–2006 | 0.41 | M-v | 3 | MPC | 01329 | 2006 $DP_{8}$ |
| 2006 $DW_{8}$ | 16.7 | 0.15 | 20060922 | 15.12526 | 112.65198 | 107.01503 | 7.77716 | 0.1290712 | 2.2097551 | 67 | 3 | 2001–2006 | 0.63 | M-v | 3 | MPC | 01329 | 2006 $DW_{8}$ |
| 2006 $DD_{10}$ | 15.2 | 0.15 | 20060922 | 66.94016 | 20.96236 | 116.20312 | 7.03069 | 0.0383283 | 2.8968353 | 41 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 02287 | 2006 $DD_{10}$ |
| 2006 $DC_{12}$ | 16.2 | 0.15 | 20060922 | 29.31409 | 8.55019 | 170.28852 | 3.99177 | 0.0544082 | 2.7303836 | 50 | 3 | 1995–2006 | 0.59 | M-v | 2 | MPC | 01331 | 2006 $DC_{12}$ |
| 2006 $DT_{12}$ | 17.6 | 0.15 | 20060922 | 65.94217 | 166.49441 | 342.73943 | 2.10311 | 0.1257746 | 2.3743275 | 28 | 1 | 90 days | 0.37 | M-v | 3 | MPC | | 2006 $DT_{12}$ |
| 2006 $DG_{14}$ | 15.8 | 0.15 | 20060922 | 55.11348 | 27.73662 | 130.31557 | 9.09954 | 0.1578425 | 2.7429515 | 50 | 4 | 1992–2006 | 0.59 | M-v | 1 | MPC | 04369 | 2006 $DG_{14}$ |
| 2006 $DH_{14}$ | 16.0 | 0.15 | 20060922 | 60.26134 | 35.87213 | 118.20308 | 8.93492 | 0.1286288 | 2.7620738 | 61 | 3 | 1992–2006 | 0.75 | M-v | 2 | MPC | 04370 | 2006 $DH_{14}$ |
| 2006 $DT_{14}$ | 19.8 | 0.15 | 20060922 | 49.93851 | 178.17635 | 78.29824 | 8.65583 | 0.5667604 | 1.9111263 | 50 | 1 | 178 days | 0.43 | M-v | 3 | MPC | 04370 | 2006 $DT_{14}$ |
| 2006 $DU_{20}$ | 16.2 | 0.15 | 20060922 | 269.58275 | 339.97417 | 318.71735 | 5.46174 | 0.0940188 | 2.5695411 | 35 | 3 | 2002–2006 | 0.59 | M-v | 3 | MPC | 97181 | 2006 $DU_{20}$ |
| 2006 $DA_{21}$ | 16.6 | 0.15 | 20060922 | 319.58405 | 305.42091 | 334.19094 | 3.10372 | 0.1618680 | 2.4119529 | 37 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 02288 | 2006 $DA_{21}$ |
| 2006 $DL_{21}$ | 15.3 | 0.15 | 20060922 | 109.57675 | 53.04005 | 11.75397 | 13.55016 | 0.1072382 | 3.1299566 | 51 | 5 | 1998–2006 | 0.61 | M-v | 1 | MPC | 01335 | 2006 $DL_{21}$ |
| 2006 $DY_{21}$ | 17.2 | 0.15 | 20060922 | 153.35278 | 359.11761 | 43.88977 | 2.62227 | 0.0970050 | 2.8328647 | 20 | 3 | 1996–2006 | 0.26 | M-v | 3 | MPC | 02288 | 2006 $DY_{21}$ |
| 2006 $DY_{22}$ | 16.0 | 0.15 | 20060922 | 59.68147 | 141.79284 | 4.08720 | 4.85274 | 0.0981169 | 2.7682508 | 67 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 01336 | 2006 $DY_{22}$ |
| 2006 $DG_{23}$ | 16.8 | 0.15 | 20060922 | 309.29849 | 262.17103 | 27.25135 | 2.72120 | 0.1865849 | 2.4078495 | 45 | 6 | 1996–2006 | 0.58 | M-v | 1 | MPC | 02288 | 2006 $DG_{23}$ |
| 2006 $DK_{23}$ | 16.5 | 0.15 | 20060922 | 43.82373 | 65.66363 | 93.82099 | 1.72754 | 0.0210917 | 2.9645734 | 28 | 4 | 1998–2006 | 0.42 | M-v | 1 | MPC | 01336 | 2006 $DK_{23}$ |
| 2006 $DR_{24}$ | 17.0 | 0.15 | 20060922 | 10.45708 | 202.17898 | 356.14328 | 3.19973 | 0.0372263 | 2.7896280 | 39 | 4 | 1994–2006 | 0.32 | M-v | 3 | MPC | 03864 | 2006 $DR_{24}$ |
| 2006 $DT_{24}$ | 16.0 | 0.15 | 20060922 | 260.81528 | 312.85548 | 357.88156 | 5.70627 | 0.0599202 | 2.7237538 | 37 | 3 | 1999–2006 | 0.53 | M-v | 3 | MPC | 01337 | 2006 $DT_{24}$ |
| 2006 $DM_{25}$ | 17.3 | 0.15 | 20060922 | 112.62106 | 320.87185 | 127.92974 | 0.72292 | 0.0380154 | 2.7748126 | 30 | 3 | 2000–2006 | 0.35 | M-v | 3 | MPC | 97183 | 2006 $DM_{25}$ |
| 2006 $DG_{26}$ | 15.4 | 0.15 | 20060922 | 202.15111 | 18.75798 | 326.60224 | 9.77634 | 0.0460942 | 3.1087992 | 37 | 2 | 2003–2006 | 0.56 | M-v | 3 | MPC | 03864 | 2006 $DG_{26}$ |
| 2006 $DL_{28}$ | 16.9 | 0.15 | 20060922 | 156.08007 | 277.27180 | 142.27108 | 2.80541 | 0.0552608 | 2.5469321 | 33 | 3 | 2000–2006 | 0.36 | M-v | 4 | MPC | 01339 | 2006 $DL_{28}$ |
| 2006 $DQ_{29}$ | 18.1 | 0.15 | 20060214 | 81.90978 | 298.57737 | 118.07647 | 5.16381 | 0.0913962 | 2.1599117 | 19 | 1 | 32 days | 0.30 | | | MPC | | 2006 $DQ_{29}$ |
| 2006 $DU_{29}$ | 16.5 | 0.15 | 20060922 | 322.45071 | 275.85012 | 350.17132 | 4.28082 | 0.0995043 | 2.7325593 | 37 | 4 | 1994–2006 | 0.43 | M-v | 1 | MPC | 04370 | 2006 $DU_{29}$ |
| 2006 $DE_{31}$ | 15.9 | 0.15 | 20060922 | 82.45205 | 311.61041 | 172.57718 | 15.73719 | 0.1313385 | 2.6410302 | 37 | 2 | 2002–2006 | 0.61 | M-v | 4 | MPC | 01340 | 2006 $DE_{31}$ |
| 2006 $DF_{31}$ | 16.3 | 0.15 | 20060922 | 16.43881 | 229.99823 | 339.80112 | 10.22553 | 0.0539413 | 2.3196065 | 44 | 3 | 1999–2006 | 0.66 | M-v | 3 | MPC | 01341 | 2006 $DF_{31}$ |
| 2006 $DR_{31}$ | 17.0 | 0.15 | 20060922 | 299.38321 | 129.29662 | 169.72569 | 1.42321 | 0.1770858 | 2.4396002 | 39 | 5 | 1994–2006 | 0.49 | M-v | 1 | MPC | 04370 | 2006 $DR_{31}$ |
| 2006 $DS_{31}$ | 17.7 | 0.15 | 20060922 | 0.06211 | 253.91329 | 341.89766 | 2.41941 | 0.1555323 | 2.4634997 | 30 | 3 | 1998–2006 | 0.39 | M-v | 3 | MPC | 01342 | 2006 $DS_{31}$ |
| 2006 $DG_{32}$ | 16.3 | 0.15 | 20060922 | 20.15363 | 235.75330 | 316.76313 | 0.83936 | 0.1108734 | 3.0416156 | 49 | 6 | 1998–2006 | 0.40 | M-v | 0 | MPC | 01343 | 2006 $DG_{32}$ |
| 2006 $DY_{32}$ | 17.1 | 0.15 | 20060922 | 71.00255 | 342.47517 | 169.77427 | 1.78750 | 0.1066438 | 2.3977049 | 71 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 02289 | 2006 $DY_{32}$ |
| 2006 $DA_{33}$ | 17.3 | 0.15 | 20060922 | 298.38839 | 134.84271 | 171.86882 | 5.02185 | 0.1170858 | 2.2275491 | 44 | 3 | 2003–2006 | 0.43 | M-v | 2 | MPC | 01344 | 2006 $DA_{33}$ |
| 2006 $DN_{33}$ | 16.0 | 0.15 | 20060922 | 34.08437 | 142.32644 | 39.32834 | 0.85201 | 0.0528263 | 2.9915248 | 43 | 4 | 2001–2006 | 0.38 | M-v | 1 | MPC | 01344 | 2006 $DN_{33}$ |
| 2006 $DV_{33}$ | 17.0 | 0.15 | 20060922 | 239.88777 | 198.51331 | 152.26736 | 3.16239 | 0.0994915 | 2.4287901 | 43 | 5 | 1995–2006 | 0.40 | M-v | 1 | MPC | 01345 | 2006 $DV_{33}$ |
| 2006 $DZ_{33}$ | 15.5 | 0.15 | 20060922 | 155.55213 | 238.11845 | 174.56894 | 13.05819 | 0.0572130 | 3.2328081 | 39 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 01345 | 2006 $DZ_{33}$ |
| 2006 $DC_{34}$ | 16.9 | 0.15 | 20060922 | 229.82654 | 200.44830 | 161.39407 | 5.16071 | 0.2544302 | 2.3199502 | 37 | 6 | 1993–2006 | 0.47 | M-v | 1 | MPC | 04370 | 2006 $DC_{34}$ |
| 2006 $DE_{34}$ | 16.3 | 0.15 | 20060922 | 177.15297 | 249.72307 | 145.66195 | 2.25855 | 0.0708724 | 2.9825370 | 45 | 5 | 1998–2006 | 0.30 | M-v | 0 | MPC | 01346 | 2006 $DE_{34}$ |
| 2006 $DR_{34}$ | 17.4 | 0.15 | 20060922 | 342.45486 | 109.17304 | 158.61915 | 4.90883 | 0.1623737 | 2.4040645 | 24 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 01346 | 2006 $DR_{34}$ |
| 2006 $DU_{34}$ | 16.5 | 0.15 | 20060922 | 321.99377 | 313.57272 | 298.61545 | 0.74966 | 0.0475478 | 2.9330643 | 32 | 3 | 2001–2006 | 0.28 | M-v | 2 | MPC | 03865 | 2006 $DU_{34}$ |
| 2006 $DX_{34}$ | 17.4 | 0.15 | 20060306 | 250.01576 | 146.22407 | 160.87120 | 3.00201 | 0.1820083 | 2.3379881 | 20 | 1 | 46 days | 0.33 | | | MPC | | 2006 $DX_{34}$ |
| 2006 $DB_{35}$ | 16.3 | 0.15 | 20060922 | 57.53869 | 131.83110 | 16.92575 | 2.31742 | 0.1809541 | 3.1036643 | 31 | 1 | 60 days | 0.27 | M-v | 4 | MPC | 02290 | 2006 $DB_{35}$ |
| 2006 $DH_{36}$ | 15.8 | 0.15 | 20060922 | 128.29002 | 259.63724 | 177.06651 | 7.60681 | 0.0945353 | 3.0887354 | 35 | 3 | 2000–2006 | 0.45 | M-v | 2 | MPC | 01347 | 2006 $DH_{36}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $DA_{38}$ | 17.7 | 0.15 | 20060125 | 337.40800 | 47.59306 | 115.64750 | 3.79386 | 0.1264062 | 2.3925209 | 20 | 1 | 48 days | 0.31 | | | MPC | | 2006 $DA_{38}$ |
| 2006 $DK_{38}$ | 15.8 | 0.15 | 20060922 | 187.28313 | 211.01087 | 149.84634 | 11.64181 | 0.0182318 | 2.7736976 | 27 | 2 | 2002–2006 | 0.34 | M-v | 4 | MPC | 02290 | 2006 $DK_{38}$ |
| 2006 $DQ_{39}$ | 15.5 | 0.15 | 20060922 | 341.97854 | 197.80172 | 20.31536 | 13.50517 | 0.1042668 | 2.6271596 | 53 | 5 | 1991–2006 | 0.66 | M-v | 2 | MPC | 04370 | 2006 $DQ_{39}$ |
| 2006 $DY_{40}$ | 14.6 | 0.15 | 20060922 | 51.48049 | 0.63669 | 166.50920 | 20.51569 | 0.0213888 | 3.0481046 | 55 | 5 | 1992–2006 | 0.62 | M-v | 2 | MPC | 04370 | 2006 $DY_{40}$ |
| 2006 $DC_{41}$ | 16.4 | 0.15 | 20060922 | 44.62409 | 357.22528 | 186.40683 | 12.03260 | 0.1458023 | 2.2973542 | 54 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 01350 | 2006 $DC_{41}$ |
| 2006 $DX_{41}$ | 16.4 | 0.15 | 20060922 | 8.96068 | 228.92714 | 13.60095 | 8.04622 | 0.2324476 | 2.3036403 | 112 | 5 | 1993–2006 | 0.58 | M-v | 1 | MPC | 01351 | 2006 $DX_{41}$ |
| 2006 $DW_{42}$ | 17.8 | 0.15 | 20060922 | 316.17848 | 254.86289 | 26.85019 | 0.53630 | 0.2089633 | 2.2917201 | 32 | 5 | 1993–2006 | 0.39 | M-v | 1 | MPC | 04370 | 2006 $DW_{42}$ |
| 2006 $DB_{43}$ | 13.8 | 0.15 | 20060922 | 263.68532 | 125.54460 | 151.75455 | 9.08786 | 0.0467789 | 5.2333973 | 26 | 3 | 2000–2006 | 0.28 | M-v | 2 | MPC | 01352 | 2006 $DB_{43}$ |
| 2006 $DB_{45}$ | 17.5 | 0.15 | 20060922 | 72.00646 | 59.94706 | 82.30058 | 2.39749 | 0.1275122 | 2.3857973 | 38 | 4 | 1995–2006 | 0.55 | M-v | 1 | MPC | 01353 | 2006 $DB_{45}$ |
| 2006 $DG_{45}$ | 15.4 | 0.15 | 20060922 | 261.12562 | 315.03076 | 350.83731 | 4.37401 | 0.1186727 | 3.1426632 | 35 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 01353 | 2006 $DG_{45}$ |
| 2006 $DJ_{45}$ | 16.3 | 0.15 | 20060922 | 226.94989 | 179.28541 | 151.72510 | 6.45547 | 0.1365422 | 2.6639062 | 28 | 2 | 2002–2006 | 0.35 | M-v | 4 | MPC | 97194 | 2006 $DJ_{45}$ |
| 2006 $DG_{46}$ | 16.6 | 0.15 | 20060922 | 287.84398 | 262.67263 | 27.51074 | 2.25902 | 0.0360028 | 2.8612570 | 25 | 3 | 1999–2006 | 0.32 | M-v | 3 | MPC | 97194 | 2006 $DG_{46}$ |
| 2006 $DC_{47}$ | 16.9 | 0.15 | 20060306 | 263.94100 | 297.75636 | 348.68504 | 6.38002 | 0.1293410 | 2.3444856 | 21 | 1 | 54 days | 0.39 | | | MPC | | 2006 $DC_{47}$ |
| 2006 $DL_{47}$ | 15.4 | 0.15 | 20060922 | 241.91488 | 154.60656 | 160.02912 | 8.40923 | 0.0753201 | 3.1576625 | 30 | 3 | 1995–2006 | 0.40 | M-v | 3 | MPC | 03866 | 2006 $DL_{47}$ |
| 2006 $DS_{48}$ | 16.8 | 0.15 | 20060922 | 335.87243 | 236.84022 | 16.26998 | 6.73023 | 0.0845241 | 2.3348905 | 51 | 5 | 1999–2006 | 0.67 | M-v | 0 | MPC | 02291 | 2006 $DS_{48}$ |
| 2006 $DV_{48}$ | 16.1 | 0.15 | 20060306 | 338.81025 | 35.34949 | 153.60267 | 6.26996 | 0.0167649 | 2.7259439 | 20 | 1 | 36 days | 0.29 | | | MPC | | 2006 $DV_{48}$ |
| 2006 $DX_{48}$ | 17.8 | 0.15 | 20060922 | 333.13997 | 122.94290 | 147.48330 | 3.42683 | 0.1624640 | 2.2528320 | 27 | 3 | 2000–2006 | 0.32 | M-v | 3 | MPC | 02291 | 2006 $DX_{48}$ |
| 2006 $DE_{49}$ | 15.9 | 0.15 | 20060922 | 70.47336 | 128.28681 | 2.89104 | 9.20537 | 0.1020666 | 2.7691202 | 63 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 01355 | 2006 $DE_{49}$ |
| 2006 $DV_{49}$ | 15.9 | 0.15 | 20060922 | 120.45852 | 64.87811 | 353.32062 | 4.63466 | 0.1625854 | 2.9763432 | 35 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 01356 | 2006 $DV_{49}$ |
| 2006 $DT_{51}$ | 16.6 | 0.15 | 20060922 | 3.47740 | 150.80210 | 64.26878 | 3.45886 | 0.1029130 | 2.4263841 | 31 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 97197 | 2006 $DT_{51}$ |
| 2006 $DH_{52}$ | 16.9 | 0.15 | 20060922 | 94.80691 | 5.14201 | 107.56256 | 3.21414 | 0.0162455 | 2.6692115 | 37 | 3 | 2000–2006 | 0.29 | M-v | 2 | MPC | 97197 | 2006 $DH_{52}$ |
| 2006 $DM_{56}$ | 15.0 | 0.15 | 20060922 | 109.22595 | 41.98602 | 33.81041 | 5.37294 | 0.1316987 | 3.1342885 | 52 | 4 | 2000–2006 | 0.53 | M-v | 1 | MPC | 02292 | 2006 $DM_{56}$ |
| 2006 $DG_{57}$ | 14.7 | 0.15 | 20060922 | 101.72738 | 328.56645 | 134.93069 | 22.17935 | 0.0955893 | 3.1319835 | 36 | 3 | 2000–2006 | 0.62 | M-v | 2 | MPC | 01360 | 2006 $DG_{57}$ |
| 2006 $DB_{58}$ | 16.6 | 0.15 | 20060922 | 134.25463 | 88.07293 | 344.84254 | 4.44971 | 0.0939337 | 2.7405978 | 32 | 3 | 2001–2006 | 0.37 | M-v | 2 | MPC | 01361 | 2006 $DB_{58}$ |
| 2006 $DF_{59}$ | 16.7 | 0.15 | 20060922 | 144.49227 | 222.41889 | 204.08447 | 1.25613 | 0.0584499 | 2.8656494 | 39 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 01362 | 2006 $DF_{59}$ |
| 2006 $DG_{59}$ | 17.2 | 0.15 | 20060922 | 348.49454 | 276.03218 | 346.08467 | 3.28885 | 0.1649157 | 2.2830340 | 26 | 2 | 2000–2006 | 0.21 | M-v | 4 | MPC | 01363 | 2006 $DG_{59}$ |
| 2006 $DM_{59}$ | 17.0 | 0.15 | 20060922 | 144.01277 | 243.14140 | 184.94671 | 3.65414 | 0.0936733 | 2.6655314 | 28 | 4 | 2002–2006 | 0.35 | M-v | 1 | MPC | 01363 | 2006 $DM_{59}$ |
| 2006 $DO_{59}$ | 16.5 | 0.15 | 20060922 | 121.69751 | 171.60975 | 276.66178 | 0.47592 | 0.0569622 | 2.9597159 | 47 | 5 | 1998–2006 | 0.39 | M-v | 0 | MPC | 01363 | 2006 $DO_{59}$ |
| 2006 $DW_{59}$ | 16.2 | 0.15 | 20060922 | 123.85392 | 267.55061 | 181.61207 | 12.89417 | 0.1005719 | 2.7352574 | 45 | 3 | 2000–2006 | 0.54 | M-v | 1 | MPC | 01363 | 2006 $DW_{59}$ |
| 2006 $DH_{60}$ | 17.1 | 0.15 | 20060922 | 168.52292 | 215.11376 | 198.37247 | 2.25529 | 0.0786476 | 2.6931907 | 30 | 4 | 1995–2006 | 0.29 | M-v | 0 | MPC | 01364 | 2006 $DH_{60}$ |
| 2006 $DJ_{60}$ | 17.7 | 0.15 | 20060922 | 353.89861 | 42.47888 | 218.09594 | 0.63940 | 0.1659115 | 2.3580460 | 60 | 6 | 1995–2006 | 0.55 | M-v | 1 | MPC | 02292 | 2006 $DJ_{60}$ |
| 2006 $DY_{62}$ | 14.6 | 0.15 | 20060922 | 10.84582 | 167.29289 | 61.84319 | 24.03905 | 0.4276047 | 3.2615169 | 115 | 5 | 1994–2006 | 0.48 | M-v | 1 | MPC | 04370 | 2006 $DY_{62}$ |
| 2006 $DA_{63}$ | 16.0 | 0.15 | 20060922 | 38.24747 | 155.25558 | 21.79946 | 10.63201 | 0.1446942 | 2.6853081 | 40 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 01368 | 2006 $DA_{63}$ |
| 2006 $DJ_{63}$ | 16.8 | 0.15 | 20060922 | 12.95033 | 63.42150 | 159.65624 | 8.94145 | 0.1956796 | 2.6511128 | 31 | 3 | 1994–2006 | 0.62 | M-v | 3 | MPC | 01368 | 2006 $DJ_{63}$ |
| 2006 $DH_{65}$ | 16.3 | 0.15 | 20060922 | 50.59761 | 20.51765 | 165.57207 | 5.57254 | 0.0621933 | 2.2927661 | 74 | 3 | 1992–2006 | 0.54 | M-v | 2 | MPC | 01369 | 2006 $DH_{65}$ |
| 2006 $DM_{65}$ | 16.2 | 0.15 | 20060922 | 326.22945 | 218.51530 | 50.90951 | 8.78000 | 0.1985914 | 2.5250439 | 40 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 03868 | 2006 $DM_{65}$ |
| 2006 $DR_{65}$ | 17.0 | 0.15 | 20060922 | 8.60979 | 217.23558 | 10.56612 | 2.43009 | 0.1576399 | 2.3645968 | 38 | 4 | 1995–2006 | 0.49 | M-v | 2 | MPC | 03868 | 2006 $DR_{65}$ |
| 2006 $DD_{66}$ | 15.4 | 0.15 | 20060922 | 334.85224 | 194.01414 | 57.16927 | 14.51893 | 0.1253539 | 2.7925393 | 27 | 3 | 1999–2006 | 0.78 | M-v | 3 | MPC | 01370 | 2006 $DD_{66}$ |
| 2006 $DS_{66}$ | 17.2 | 0.15 | 20060922 | 83.66392 | 31.91474 | 84.26848 | 3.10313 | 0.1549729 | 2.4095711 | 38 | 3 | 1997–2006 | 0.61 | M-v | 4 | MPC | 03868 | 2006 $DS_{66}$ |
| 2006 $DV_{66}$ | 15.8 | 0.15 | 20060922 | 21.18932 | 17.25985 | 180.92810 | 12.98666 | 0.1304669 | 2.7351947 | 58 | 3 | 1999–2006 | 0.50 | M-v | 3 | MPC | 01370 | 2006 $DV_{66}$ |
| 2006 $DW_{66}$ | 15.2 | 0.15 | 20060922 | 133.14348 | 218.34228 | 208.65558 | 8.33192 | 0.0743099 | 2.9786970 | 33 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 01371 | 2006 $DW_{66}$ |
| 2006 $DE_{67}$ | 14.7 | 0.15 | 20060922 | 60.21919 | 309.74216 | 178.67599 | 10.09015 | 0.0752118 | 3.2049315 | 49 | 4 | 2001–2006 | 0.49 | M-v | 0 | MPC | 01371 | 2006 $DE_{67}$ |
| 2006 $DS_{68}$ | 15.3 | 0.15 | 20060922 | 55.07001 | 53.67686 | 88.77311 | 12.64415 | 0.0568661 | 3.1235521 | 29 | 2 | 2004–2006 | 0.64 | M-v | 3 | MPC | 01373 | 2006 $DS_{68}$ |
| 2006 $DT_{69}$ | 17.8 | 0.15 | 20060922 | 53.47362 | 356.99251 | 168.41124 | 2.41655 | 0.1726644 | 2.4219475 | 32 | 2 | 2001–2006 | 0.38 | M-v | 2 | MPC | 01374 | 2006 $DT_{69}$ |
| 2006 $DR_{70}$ | 18.2 | 0.15 | 20060922 | 121.45132 | 107.59019 | 329.21158 | 2.19419 | 0.1747497 | 2.2479434 | 26 | 1 | 76 days | 0.39 | M-v | 4 | MPC | | 2006 $DR_{70}$ |
| 2006 $DC_{71}$ | 15.8 | 0.15 | 20060922 | 120.42903 | 79.75045 | 338.92201 | 11.98499 | 0.0938136 | 3.1021473 | 24 | 1 | 60 days | 0.25 | M-v | 4 | MPC | | 2006 $DC_{71}$ |
| 2006 $DJ_{71}$ | 16.5 | 0.15 | 20060922 | 321.75075 | 279.45960 | 344.71299 | 7.84568 | 0.0984712 | 2.5885870 | 35 | 4 | 1999–2006 | 0.29 | M-v | 1 | MPC | 01376 | 2006 $DJ_{71}$ |
| 2006 $DH_{73}$ | 15.7 | 0.15 | 20060922 | 353.42774 | 239.20889 | 12.08722 | 10.34202 | 0.0498598 | 2.5485929 | 52 | 3 | 2002–2006 | 0.57 | M-v | 2 | MPC | 01377 | 2006 $DH_{73}$ |
| 2006 $DT_{75}$ | 16.3 | 0.15 | 20060922 | 99.74089 | 339.66935 | 116.31160 | 2.67516 | 0.0666273 | 2.9426050 | 36 | 4 | 1999–2006 | 0.27 | M-v | 1 | MPC | 01379 | 2006 $DT_{75}$ |
| 2006 $DL_{76}$ | 16.5 | 0.15 | 20060922 | 200.75335 | 340.67647 | 22.96744 | 3.85704 | 0.1233535 | 2.6856159 | 33 | 4 | 1995–2006 | 0.43 | M-v | 1 | MPC | 01379 | 2006 $DL_{76}$ |
| 2006 $DZ_{76}$ | 17.4 | 0.15 | 20060326 | 347.50687 | 191.07502 | 354.97429 | 8.66723 | 0.0895847 | 2.8063547 | 26 | 1 | 56 days | 0.34 | | | MPC | | 2006 $DZ_{76}$ |
| 2006 $DN_{77}$ | 17.3 | 0.15 | 20060922 | 122.84422 | 49.22379 | 22.55785 | 3.64658 | 0.1544099 | 2.6317984 | 27 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 01380 | 2006 $DN_{77}$ |
| 2006 $DH_{79}$ | 16.5 | 0.15 | 20060922 | 168.16068 | 207.56077 | 189.34916 | 1.82654 | 0.0251301 | 2.9288832 | 36 | 4 | 1996–2006 | 0.30 | M-v | 0 | MPC | 01380 | 2006 $DH_{79}$ |

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| 2006 $DK_{79}$ | 18.2 | 0.15 | 20060922 | 337.28616 | 35.97938 | 229.40937 | 1.49686 | 0.1350109 | 2.2190109 | 27 | 4 | 2001–2006 | 0.28 | M-v | 1 | MPC | 01381 | 2006 $DK_{79}$ |
| 2006 $DP_{79}$ | 16.6 | 0.15 | 20060922 | 115.47116 | 284.26603 | 176.23994 | 6.83065 | 0.0532901 | 2.3753100 | 54 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 01381 | 2006 $DP_{79}$ |
| 2006 $DS_{79}$ | 16.5 | 0.15 | 20060922 | 334.84593 | 46.43252 | 216.96896 | 0.89446 | 0.1603729 | 2.4253379 | 53 | 5 | 1995–2006 | 0.49 | M-v | 1 | MPC | 01381 | 2006 $DS_{79}$ |
| 2006 $DC_{80}$ | 17.2 | 0.15 | 20060922 | 180.00619 | 208.92106 | 182.19040 | 3.37938 | 0.0461015 | 2.6225732 | 37 | 4 | 1995–2006 | 0.30 | M-v | 3 | MPC | 01382 | 2006 $DC_{80}$ |
| 2006 $DG_{80}$ | 16.7 | 0.15 | 20060922 | 262.33891 | 87.20336 | 231.00565 | 0.41124 | 0.0750357 | 2.5775562 | 40 | 2 | 2004–2006 | 0.22 | M-v | 3 | MPC | 01382 | 2006 $DG_{80}$ |
| 2006 $DU_{80}$ | 16.6 | 0.15 | 20060922 | 256.56114 | 157.29113 | 172.71890 | 1.94551 | 0.2260984 | 2.5856562 | 50 | 4 | 1995–2006 | 0.42 | M-v | 3 | MPC | 01382 | 2006 $DU_{80}$ |
| 2006 $DY_{80}$ | 16.2 | 0.15 | 20060922 | 162.96106 | 82.58841 | 312.39950 | 1.56798 | 0.0930325 | 3.1118762 | 39 | 5 | 1997–2006 | 0.36 | M-v | 0 | MPC | 01382 | 2006 $DY_{80}$ |
| 2006 $DM_{81}$ | 17.6 | 0.15 | 20060922 | 314.36628 | 297.89179 | 353.16063 | 2.47322 | 0.1940966 | 2.3288330 | 31 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 01382 | 2006 $DM_{81}$ |
| 2006 $DR_{81}$ | 16.4 | 0.15 | 20060922 | 233.63553 | 165.49888 | 171.45785 | 11.08750 | 0.0400733 | 2.9844499 | 25 | 3 | 2001–2006 | 0.30 | M-v | 2 | MPC | 01383 | 2006 $DR_{81}$ |
| 2006 $DA_{82}$ | 15.8 | 0.15 | 20060922 | 100.97842 | 302.36838 | 158.70132 | 2.07859 | 0.0779406 | 2.9422385 | 45 | 7 | 1993–2006 | 0.47 | M-v | 0 | MPC | 04370 | 2006 $DA_{82}$ |
| 2006 $DH_{82}$ | 16.3 | 0.15 | 20060922 | 26.07415 | 122.87731 | 62.42433 | 0.71335 | 0.0429767 | 2.9658828 | 33 | 3 | 1998–2006 | 0.32 | M-v | 2 | MPC | 01384 | 2006 $DH_{82}$ |
| 2006 $DL_{82}$ | 16.2 | 0.15 | 20060922 | 108.38208 | 301.77837 | 160.29656 | 2.39228 | 0.0199218 | 2.8697733 | 38 | 3 | 1999–2006 | 0.32 | M-v | 3 | MPC | 01384 | 2006 $DL_{82}$ |
| 2006 $DE_{83}$ | 17.1 | 0.15 | 20060922 | 236.11577 | 41.77739 | 302.85178 | 1.17923 | 0.0013694 | 2.5425009 | 18 | 1 | 60 days | 0.25 | M-v | 4 | MPC | | 2006 $DE_{83}$ |
| 2006 $DF_{83}$ | 16.1 | 0.15 | 20060922 | 86.81264 | 261.60693 | 172.10686 | 19.51141 | 0.4220171 | 3.0471636 | 46 | 4 | 1999–2006 | 0.58 | M-v | 0 | MPC | 01385 | 2006 $DF_{83}$ |
| 2006 $DL_{83}$ | 16.3 | 0.15 | 20060922 | 284.76287 | 102.17604 | 209.51744 | 1.92400 | 0.1871872 | 2.4565135 | 51 | 5 | 2000–2006 | 0.31 | M-v | 1 | MPC | 01385 | 2006 $DL_{83}$ |
| 2006 $DZ_{83}$ | 15.9 | 0.15 | 20060922 | 267.66320 | 354.15002 | 312.58205 | 1.84928 | 0.0738779 | 3.0673637 | 34 | 4 | 1992–2006 | 0.31 | M-v | 0 | MPC | 01386 | 2006 $DZ_{83}$ |
| 2006 $DJ_{84}$ | 16.6 | 0.15 | 20060922 | 84.31735 | 142.69719 | 326.73347 | 5.46753 | 0.1330540 | 3.0715200 | 18 | 1 | 160 days | 0.23 | M-v | 3 | MPC | 02294 | 2006 $DJ_{84}$ |
| 2006 $DD_{85}$ | 16.2 | 0.15 | 20060922 | 226.30925 | 164.93847 | 182.03063 | 4.69925 | 0.0771426 | 2.7800205 | 31 | 3 | 1994–2006 | 0.25 | M-v | 3 | MPC | 01387 | 2006 $DD_{85}$ |
| 2006 $DQ_{86}$ | 17.2 | 0.15 | 20060922 | 12.05749 | 119.67936 | 109.19499 | 2.00751 | 0.2248726 | 2.5342684 | 45 | 4 | 1998–2006 | 0.47 | M-v | 3 | MPC | 01388 | 2006 $DQ_{86}$ |
| 2006 $DD_{87}$ | 15.4 | 0.15 | 20060922 | 18.40485 | 89.73539 | 108.43983 | 2.67911 | 0.1522332 | 3.1239138 | 77 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 02294 | 2006 $DD_{87}$ |
| 2006 $DM_{88}$ | 16.6 | 0.15 | 20060922 | 102.32584 | 285.37613 | 166.72295 | 0.81676 | 0.1358743 | 3.1247903 | 33 | 4 | 2000–2006 | 0.38 | M-v | 0 | MPC | 02294 | 2006 $DM_{88}$ |
| 2006 $DP_{88}$ | 16.7 | 0.15 | 20060922 | 264.31803 | 161.61524 | 169.55467 | 1.04374 | 0.1964343 | 2.4340129 | 29 | 3 | 2002–2006 | 0.32 | M-v | 3 | MPC | 01390 | 2006 $DP_{88}$ |
| 2006 $DR_{89}$ | 18.2 | 0.15 | 20060922 | 10.09652 | 359.56475 | 220.95133 | 1.33835 | 0.0859174 | 2.2472525 | 26 | 4 | 1996–2006 | 0.25 | M-v | 1 | MPC | 01391 | 2006 $DR_{89}$ |
| 2006 $DR_{90}$ | 19.0 | 0.15 | 20060922 | 101.84696 | 8.75215 | 101.25528 | 0.84546 | 0.1686655 | 2.4241660 | 20 | 3 | 2000–2006 | 0.57 | M-v | 4 | MPC | 01392 | 2006 $DR_{90}$ |
| 2006 $DN_{91}$ | 15.6 | 0.15 | 20060922 | 5.04666 | 62.19614 | 169.66312 | 13.92421 | 0.1670597 | 2.7129497 | 79 | 5 | 1994–2006 | 0.56 | M-v | 1 | MPC | 04370 | 2006 $DN_{91}$ |
| 2006 $DR_{91}$ | 16.6 | 0.15 | 20060922 | 351.52198 | 181.41516 | 48.69364 | 2.71265 | 0.0115952 | 2.8629745 | 34 | 3 | 2001–2006 | 0.29 | M-v | 3 | MPC | 01393 | 2006 $DR_{91}$ |
| 2006 $DO_{92}$ | 16.9 | 0.15 | 20060922 | 113.96607 | 85.71944 | 24.97524 | 1.20057 | 0.0258881 | 2.5727407 | 60 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 01393 | 2006 $DO_{92}$ |
| 2006 $DY_{92}$ | 16.5 | 0.15 | 20060922 | 273.00266 | 324.45963 | 1.96804 | 8.36677 | 0.1590973 | 2.5392959 | 44 | 6 | 1991–2006 | 0.39 | M-v | 0 | MPC | 01394 | 2006 $DY_{92}$ |
| 2006 $DZ_{93}$ | 15.7 | 0.15 | 20060922 | 222.44101 | 190.14942 | 177.66599 | 9.37382 | 0.2312274 | 2.5412976 | 38 | 3 | 1998–2006 | 0.40 | M-v | 4 | MPC | 01395 | 2006 $DZ_{93}$ |
| 2006 $DA_{94}$ | 16.1 | 0.15 | 20060922 | 107.77932 | 296.50531 | 177.81581 | 1.94567 | 0.0180092 | 2.8727092 | 61 | 4 | 2001–2006 | 0.54 | M-v | 0 | MPC | 01395 | 2006 $DA_{94}$ |
| 2006 $DB_{94}$ | 16.4 | 0.15 | 20060922 | 272.66028 | 296.24418 | 18.92767 | 2.07056 | 0.0346304 | 2.8344194 | 37 | 5 | 1998–2006 | 0.31 | M-v | 0 | MPC | 01395 | 2006 $DB_{94}$ |
| 2006 $DH_{94}$ | 17.5 | 0.15 | 20060922 | 57.58529 | 17.40998 | 154.52607 | 1.44483 | 0.0660185 | 2.5364389 | 35 | 3 | 2000–2006 | 0.37 | M-v | 3 | MPC | 01395 | 2006 $DH_{94}$ |
| 2006 $DX_{95}$ | 16.6 | 0.15 | 20060922 | 106.34690 | 84.57770 | 29.19542 | 0.75211 | 0.0564021 | 2.8601028 | 40 | 5 | 1996–2006 | 0.34 | M-v | 0 | MPC | 01397 | 2006 $DX_{95}$ |
| 2006 $DD_{96}$ | 17.9 | 0.15 | 20060922 | 136.15216 | 81.31520 | 1.34200 | 2.55684 | 0.1849496 | 2.2966155 | 26 | 2 | 2004–2006 | 0.27 | M-v | 4 | MPC | 01397 | 2006 $DD_{96}$ |
| 2006 $DJ_{96}$ | 16.6 | 0.15 | 20060922 | 15.14266 | 42.64051 | 169.75418 | 1.10084 | 0.1309778 | 3.1560444 | 18 | 2 | 2000–2006 | 0.33 | M-v | 4 | MPC | 01397 | 2006 $DJ_{96}$ |
| 2006 $DQ_{96}$ | 16.2 | 0.15 | 20060922 | 153.01158 | 244.91202 | 182.62697 | 1.86950 | 0.0460967 | 2.8704313 | 41 | 5 | 1993–2006 | 0.42 | M-v | 1 | MPC | 01397 | 2006 $DQ_{96}$ |
| 2006 $DA_{97}$ | 16.8 | 0.15 | 20060922 | 31.22924 | 98.33657 | 116.94145 | 0.30354 | 0.1542905 | 2.2773877 | 60 | 2 | 2004–2006 | 0.40 | M-v | 3 | MPC | 01398 | 2006 $DA_{97}$ |
| 2006 $DN_{100}$ | 15.6 | 0.15 | 20060922 | 6.58730 | 196.69673 | 355.68309 | 4.61407 | 0.0923607 | 3.1165601 | 42 | 5 | 1995–2006 | 0.52 | M-v | 1 | MPC | 01400 | 2006 $DN_{100}$ |
| 2006 $DX_{101}$ | 17.6 | 0.15 | 20060922 | 16.32067 | 196.19870 | 18.34957 | 3.44864 | 0.0968212 | 2.3227141 | 43 | 3 | 1999–2006 | 0.23 | M-v | 2 | MPC | 02296 | 2006 $DX_{101}$ |
| 2006 $DD_{103}$ | 16.7 | 0.15 | 20060922 | 310.55644 | 268.53086 | 0.97935 | 2.60696 | 0.0354245 | 2.5972473 | 65 | 5 | 1995–2006 | 0.46 | M-v | 1 | MPC | 02296 | 2006 $DD_{103}$ |
| 2006 $DQ_{107}$ | 17.5 | 0.15 | 20060922 | 331.56191 | 106.43539 | 170.84500 | 1.78110 | 0.1070259 | 2.1475930 | 29 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 01403 | 2006 $DQ_{107}$ |
| 2006 $DU_{107}$ | 17.6 | 0.15 | 20060214 | 302.44148 | 75.72454 | 167.56378 | 3.06136 | 0.1606034 | 2.3950749 | 27 | 1 | 59 days | 0.39 | | | MPC | | 2006 $DU_{107}$ |
| 2006 $DJ_{109}$ | 17.5 | 0.15 | 20060922 | 354.88412 | 269.46801 | 334.75903 | 6.29919 | 0.0772050 | 2.3001073 | 27 | 4 | 1999–2006 | 0.23 | M-v | 0 | MPC | 01403 | 2006 $DJ_{109}$ |
| 2006 $DN_{109}$ | 18.3 | 0.15 | 20060326 | 332.82190 | 23.02604 | 195.81252 | 3.66523 | 0.1876490 | 2.5823234 | 24 | 1 | 58 days | 0.40 | | | MPC | | 2006 $DN_{109}$ |
| 2006 $DF_{112}$ | 16.6 | 0.15 | 20060922 | 319.70572 | 94.43593 | 171.30227 | 14.93790 | 0.1259036 | 2.6113912 | 28 | 3 | 2002–2006 | 0.23 | M-v | 1 | MPC | 01406 | 2006 $DF_{112}$ |
| 2006 $DD_{114}$ | 16.9 | 0.15 | 20060922 | 28.30123 | 25.58291 | 160.85194 | 12.22900 | 0.0901740 | 2.5872792 | 27 | 3 | 1995–2006 | 0.49 | M-v | 3 | MPC | 01407 | 2006 $DD_{114}$ |
| 2006 $DT_{114}$ | 17.4 | 0.15 | 20060922 | 23.81291 | 93.33002 | 128.72526 | 4.18378 | 0.1072749 | 2.2028483 | 42 | 5 | 1993–2006 | 0.78 | M-v | 1 | MPC | 01408 | 2006 $DT_{114}$ |
| 2006 $DX_{114}$ | 16.0 | 0.15 | 20060922 | 228.47381 | 270.84413 | 81.36896 | 2.24719 | 0.1839685 | 3.1172138 | 30 | 3 | 2003–2006 | 0.34 | M-v | 3 | MPC | 01408 | 2006 $DX_{114}$ |
| 2006 $DZ_{115}$ | 17.2 | 0.15 | 20060922 | 37.05804 | 131.42362 | 59.46379 | 3.11854 | 0.0243851 | 2.6582786 | 28 | 3 | 2003–2006 | 0.30 | M-v | 4 | MPC | 01409 | 2006 $DZ_{115}$ |
| 2006 $DR_{116}$ | 15.4 | 0.15 | 20060922 | 349.14657 | 167.16308 | 62.18037 | 14.75367 | 0.1477764 | 2.7988145 | 49 | 3 | 1999–2006 | 0.51 | M-v | 3 | MPC | 01410 | 2006 $DR_{116}$ |
| 2006 $DS_{117}$ | 17.2 | 0.15 | 20060922 | 334.44927 | 167.50429 | 97.59762 | 2.16211 | 0.0758414 | 2.5489793 | 25 | 3 | 2002–2006 | 0.29 | M-v | 3 | MPC | 01411 | 2006 $DS_{117}$ |
| 2006 $DB_{118}$ | 16.8 | 0.15 | 20060922 | 303.91450 | 143.02546 | 166.86678 | 5.30548 | 0.1858822 | 2.3638382 | 37 | 3 | 1996–2006 | 0.42 | M-v | 3 | MPC | 01411 | 2006 $DB_{118}$ |
| 2006 $DQ_{118}$ | 16.1 | 0.15 | 20060922 | 186.20329 | 16.22686 | 14.27454 | 2.31125 | 0.0371540 | 2.7632006 | 56 | 4 | 2001–2006 | 0.46 | M-v | 0 | MPC | 01411 | 2006 $DQ_{118}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $DT_{118}$ | 17.1 | 0.15 | 20060922 | 45.16687 | 119.64793 | 68.38841 | 4.84786 | 0.1197767 | 2.3404698 | 42 | 2 | 2001–2006 | 0.63 | M-v | 3 | MPC | 01411 | 2006 $DT_{118}$ |
| 2006 $DZ_{120}$ | 15.4 | 0.15 | 20060922 | 312.06095 | 205.80776 | 35.49173 | 7.28655 | 0.0340743 | 3.0440490 | 30 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 01413 | 2006 $DZ_{120}$ |
| 2006 $DB_{122}$ | 15.9 | 0.15 | 20060922 | 102.16133 | 325.97142 | 145.40963 | 4.57383 | 0.1048483 | 2.5420923 | 41 | 2 | 2000–2006 | 0.65 | M-v | 5 | MPC | 01414 | 2006 $DB_{122}$ |
| 2006 $DJ_{122}$ | 15.0 | 0.15 | 20060922 | 314.35337 | 193.61092 | 76.38243 | 10.81095 | 0.1034819 | 2.9832530 | 37 | 6 | 2000–2006 | 0.55 | M-v | 0 | MPC | 01414 | 2006 $DJ_{122}$ |
| 2006 $DW_{122}$ | 16.0 | 0.15 | 20060922 | 71.10970 | 339.10054 | 168.89703 | 8.39888 | 0.1497731 | 2.7390519 | 61 | 3 | 2001–2006 | 0.66 | M-v | 3 | MPC | 01415 | 2006 $DW_{122}$ |
| 2006 $DU_{125}$ | 14.2 | 0.15 | 20060214 | 186.53938 | 357.14721 | 332.65011 | 29.32186 | 0.0650296 | 5.1749454 | 18 | 1 | 38 days | 0.36 | | | MPC | | 2006 $DU_{125}$ |
| 2006 $DM_{126}$ | 17.0 | 0.15 | 20060922 | 253.88813 | 89.12077 | 226.81707 | 2.60833 | 0.0990059 | 2.5345950 | 35 | 5 | 1994–2006 | 0.33 | M-v | 2 | MPC | 04370 | 2006 $DM_{126}$ |
| 2006 $DE_{129}$ | 16.3 | 0.15 | 20060922 | 244.84202 | 299.34788 | 25.73562 | 6.16809 | 0.1079964 | 2.7541442 | 24 | 4 | 1999–2006 | 0.29 | M-v | 1 | MPC | 02298 | 2006 $DE_{129}$ |
| 2006 $DX_{131}$ | 13.9 | 0.15 | 20060922 | 221.74020 | 231.94381 | 90.56578 | 4.68527 | 0.0419791 | 5.2527426 | 25 | 4 | 1996–2006 | 0.29 | M-v | 1 | MPC | 02298 | 2006 $DX_{131}$ |
| 2006 $DB_{134}$ | 15.9 | 0.15 | 20060922 | 161.48359 | 305.61649 | 83.74573 | 3.54377 | 0.0859774 | 3.1418043 | 31 | 4 | 1995–2006 | 0.27 | M-v | 1 | MPC | 97209 | 2006 $DB_{134}$ |
| 2006 $DL_{137}$ | 17.0 | 0.15 | 20060922 | 137.90902 | 349.11995 | 77.12849 | 3.08367 | 0.0309848 | 2.8753188 | 32 | 4 | 1994–2006 | 0.39 | M-v | 3 | MPC | 04370 | 2006 $DL_{137}$ |
| 2006 $DP_{137}$ | 15.2 | 0.15 | 20060922 | 152.81426 | 273.55018 | 122.99125 | 6.03610 | 0.1540614 | 3.1035334 | 31 | 5 | 1998–2006 | 0.55 | M-v | 0 | MPC | 02298 | 2006 $DP_{137}$ |
| 2006 $DN_{138}$ | 16.5 | 0.15 | 20060922 | 34.04822 | 59.19281 | 121.02067 | 4.33328 | 0.1262231 | 2.7450459 | 36 | 5 | 1995–2006 | 0.67 | M-v | 1 | MPC | 02298 | 2006 $DN_{138}$ |
| 2006 $DX_{140}$ | 17.1 | 0.15 | 20060922 | 343.05440 | 219.74253 | 40.86325 | 3.97331 | 0.1966808 | 2.4322297 | 31 | 4 | 2002–2006 | 0.37 | M-v | 1 | MPC | 02298 | 2006 $DX_{140}$ |
| 2006 $DD_{141}$ | 16.3 | 0.15 | 20060922 | 352.28025 | 161.54673 | 82.77760 | 3.67623 | 0.2750924 | 2.9848029 | 38 | 3 | 1996–2006 | 0.53 | M-v | 3 | MPC | 02298 | 2006 $DD_{141}$ |
| 2006 $DH_{143}$ | 16.2 | 0.15 | 20060922 | 27.34490 | 185.19938 | 353.56867 | 1.48260 | 0.0062121 | 2.8549302 | 46 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 01420 | 2006 $DH_{143}$ |
| 2006 $DX_{143}$ | 15.8 | 0.15 | 20060922 | 282.30525 | 297.83460 | 353.34066 | 4.32849 | 0.0501723 | 2.7675309 | 61 | 3 | 1999–2006 | 0.36 | M-v | 2 | MPC | 01420 | 2006 $DX_{143}$ |
| 2006 $DX_{144}$ | 17.0 | 0.15 | 20060922 | 109.83046 | 73.56089 | 13.74806 | 2.78086 | 0.1476569 | 2.6159663 | 45 | 4 | 2000–2006 | 0.39 | M-v | 0 | MPC | 01421 | 2006 $DX_{144}$ |
| 2006 $DR_{145}$ | 16.9 | 0.15 | 20060214 | 70.60539 | 284.93625 | 144.14944 | 5.51627 | 0.1472049 | 2.7920571 | 21 | 1 | 37 days | 0.28 | | | MPC | | 2006 $DR_{145}$ |
| 2006 $DZ_{145}$ | 16.3 | 0.15 | 20060922 | 249.22105 | 333.94865 | 0.20235 | 2.98488 | 0.1734040 | 2.5580151 | 35 | 1 | 83 days | 0.31 | M-v | 4 | MPC | | 2006 $DZ_{145}$ |
| 2006 $DC_{146}$ | 15.9 | 0.15 | 20060922 | 195.13856 | 13.56640 | 352.66392 | 10.74636 | 0.0930058 | 3.1937154 | 30 | 4 | 1997–2006 | 0.42 | M-v | 1 | MPC | 01422 | 2006 $DC_{146}$ |
| 2006 $DS_{146}$ | 16.5 | 0.15 | 20060922 | 27.72117 | 200.10305 | 346.77506 | 10.08795 | 0.0372072 | 2.8920294 | 44 | 3 | 2001–2006 | 0.29 | M-v | 2 | MPC | 01422 | 2006 $DS_{146}$ |
| 2006 $DM_{147}$ | 16.8 | 0.15 | 20060922 | 162.01121 | 272.11004 | 131.76859 | 1.01255 | 0.0731789 | 2.7742711 | 31 | 3 | 2002–2006 | 0.33 | M-v | 4 | MPC | 01422 | 2006 $DM_{147}$ |
| 2006 $DQ_{147}$ | 17.4 | 0.15 | 20060922 | 6.75244 | 12.69172 | 221.45122 | 1.08457 | 0.1575239 | 2.4027390 | 39 | 4 | 2000–2006 | 0.40 | M-v | 1 | MPC | 02298 | 2006 $DQ_{147}$ |
| 2006 $DR_{147}$ | 17.9 | 0.15 | 20060922 | 319.45683 | 333.55800 | 312.54417 | 1.42569 | 0.1637613 | 2.3822291 | 19 | 3 | 1996–2006 | 0.22 | M-v | 4 | MPC | 01423 | 2006 $DR_{147}$ |
| 2006 $DP_{149}$ | 15.4 | 0.15 | 20060922 | 238.72986 | 148.75969 | 189.17859 | 10.44592 | 0.1277165 | 3.1259056 | 31 | 3 | 1996–2006 | 0.48 | M-v | 3 | MPC | 03874 | 2006 $DP_{149}$ |
| 2006 $DV_{152}$ | 16.6 | 0.15 | 20060922 | 177.87634 | 155.05270 | 246.49853 | 1.02709 | 0.0793262 | 2.7578174 | 46 | 6 | 1999–2006 | 0.38 | M-v | 0 | MPC | 01424 | 2006 $DV_{152}$ |
| 2006 $DC_{153}$ | 16.8 | 0.15 | 20060922 | 346.73916 | 73.85141 | 195.31598 | 5.47603 | 0.1594677 | 2.2633939 | 42 | 5 | 1996–2006 | 0.59 | M-v | 1 | MPC | 01425 | 2006 $DC_{153}$ |
| 2006 $DM_{153}$ | 17.3 | 0.15 | 20060922 | 255.59298 | 155.25076 | 192.22141 | 6.47990 | 0.1612013 | 2.2372866 | 28 | 2 | 2003–2006 | 0.37 | M-v | 4 | MPC | 01425 | 2006 $DM_{153}$ |
| 2006 $DV_{155}$ | 16.1 | 0.15 | 20060214 | 349.03135 | 198.51846 | 317.55285 | 7.97682 | 0.0564080 | 2.7838484 | 23 | 1 | 30 days | 0.52 | | | MPC | | 2006 $DV_{155}$ |
| 2006 $DA_{159}$ | 16.6 | 0.15 | 20060214 | 19.60984 | 333.62168 | 165.07062 | 13.26787 | 0.1237234 | 2.7931890 | 20 | 1 | 57 days | 0.63 | | | MPC | | 2006 $DA_{159}$ |
| 2006 $DF_{159}$ | 16.1 | 0.15 | 20060922 | 334.92135 | 231.03271 | 5.75598 | 2.00120 | 0.0489052 | 3.0720459 | 48 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 01427 | 2006 $DF_{159}$ |
| 2006 $DY_{160}$ | 17.4 | 0.15 | 20060922 | 138.69694 | 75.76049 | 341.83742 | 1.84091 | 0.2049871 | 2.4215969 | 33 | 3 | 2002–2006 | 0.45 | M-v | 4 | MPC | 01428 | 2006 $DY_{160}$ |
| 2006 $DK_{161}$ | 17.1 | 0.15 | 20060922 | 147.79441 | 241.67723 | 173.24395 | 2.02521 | 0.0565588 | 2.8655474 | 20 | 2 | 1999–2006 | 0.25 | M-v | 4 | MPC | 01428 | 2006 $DK_{161}$ |
| 2006 $DP_{161}$ | 16.3 | 0.15 | 20060922 | 111.55916 | 311.47096 | 122.70090 | 0.33650 | 0.1581320 | 3.1235448 | 30 | 2 | 2000–2006 | 0.38 | M-v | 4 | MPC | 01428 | 2006 $DP_{161}$ |
| 2006 $DC_{164}$ | 17.7 | 0.15 | 20060922 | 92.70299 | 203.36695 | 269.62187 | 1.25041 | 0.1529042 | 2.4355564 | 40 | 4 | 2000–2006 | 0.35 | M-v | 1 | MPC | 01429 | 2006 $DC_{164}$ |
| 2006 $DD_{164}$ | 16.4 | 0.15 | 20060922 | 141.31228 | 110.77938 | 307.69435 | 2.90517 | 0.0900299 | 2.8124532 | 27 | 3 | 1999–2006 | 0.46 | M-v | 3 | MPC | 01429 | 2006 $DD_{164}$ |
| 2006 $DL_{164}$ | 16.5 | 0.15 | 20060922 | 342.47565 | 230.56190 | 9.00503 | 8.64511 | 0.1386801 | 3.0911769 | 25 | 1 | 86 days | 0.37 | M-v | 4 | MPC | | 2006 $DL_{164}$ |
| 2006 $DF_{165}$ | 16.3 | 0.15 | 20060922 | 327.64590 | 101.76608 | 157.57855 | 11.37937 | 0.1653399 | 3.1288923 | 25 | 3 | 2001–2006 | 0.35 | M-v | 3 | MPC | 01430 | 2006 $DF_{165}$ |
| 2006 $DR_{170}$ | 17.1 | 0.15 | 20060922 | 48.33417 | 126.25380 | 53.21677 | 3.75946 | 0.1134611 | 2.4210793 | 20 | 2 | 2004–2006 | 0.50 | M-v | 4 | MPC | 01431 | 2006 $DR_{170}$ |
| 2006 $DO_{172}$ | 17.4 | 0.15 | 20060922 | 88.63356 | 106.87398 | 19.70648 | 3.41899 | 0.1433541 | 2.3722269 | 32 | 3 | 1995–2006 | 0.49 | M-v | 2 | MPC | 01431 | 2006 $DO_{172}$ |
| 2006 $DC_{174}$ | 17.6 | 0.15 | 20060922 | 64.84955 | 10.46246 | 140.70758 | 3.22861 | 0.0493443 | 2.6470204 | 26 | 4 | 1995–2006 | 0.27 | M-v | 1 | MPC | 01432 | 2006 $DC_{174}$ |
| 2006 $DM_{174}$ | 17.7 | 0.15 | 20060922 | 12.26057 | 177.08227 | 48.24106 | 1.86962 | 0.1389835 | 2.3684598 | 41 | 6 | 1995–2006 | 0.47 | M-v | 1 | MPC | 01432 | 2006 $DM_{174}$ |
| 2006 $DW_{174}$ | 16.9 | 0.15 | 20060922 | 196.97516 | 348.17839 | 33.41664 | 2.94027 | 0.0623470 | 2.5102749 | 30 | 4 | 1994–2006 | 0.28 | M-v | 4 | MPC | 04370 | 2006 $DW_{174}$ |
| 2006 $DJ_{175}$ | 16.6 | 0.15 | 20060922 | 106.91406 | 305.89814 | 156.91080 | 6.70516 | 0.0951099 | 2.4110750 | 35 | 3 | 2000–2006 | 0.55 | M-v | 3 | MPC | 03876 | 2006 $DJ_{175}$ |
| 2006 $DN_{175}$ | 15.6 | 0.15 | 20060922 | 64.63084 | 346.16739 | 150.93338 | 10.25973 | 0.0398977 | 3.1166601 | 33 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 01432 | 2006 $DN_{175}$ |
| 2006 $DO_{179}$ | 16.3 | 0.15 | 20060922 | 171.08501 | 18.89534 | 16.79685 | 4.45158 | 0.0750046 | 2.7869044 | 30 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 01433 | 2006 $DO_{179}$ |
| 2006 $DT_{183}$ | 16.5 | 0.15 | 20060922 | 340.36424 | 166.42063 | 87.93081 | 3.50409 | 0.0585664 | 2.4788126 | 40 | 4 | 2000–2006 | 0.51 | M-v | 2 | MPC | 01433 | 2006 $DT_{183}$ |
| 2006 $DJ_{184}$ | 16.2 | 0.15 | 20060922 | 152.10174 | 36.89295 | 25.76744 | 7.02112 | 0.0697705 | 2.7779845 | 35 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 01433 | 2006 $DJ_{184}$ |
| 2006 $DZ_{184}$ | 17.1 | 0.15 | 20060922 | 46.21202 | 355.75113 | 190.16555 | 4.03652 | 0.1748188 | 2.3787640 | 47 | 4 | 2000–2006 | 0.49 | M-v | 1 | MPC | 01434 | 2006 $DZ_{184}$ |
| 2006 $DC_{186}$ | 16.3 | 0.15 | 20060922 | 182.67438 | 348.02524 | 41.55596 | 4.37942 | 0.0757971 | 3.1362208 | 35 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 01434 | 2006 $DC_{186}$ |
| 2006 $DD_{186}$ | 16.1 | 0.15 | 20060922 | 98.06946 | 52.23028 | 50.45567 | 4.09863 | 0.1046843 | 3.4143787 | 35 | 4 | 2000–2006 | 0.34 | M-v | 0 | MPC | 01435 | 2006 $DD_{186}$ |
| 2006 $DW_{188}$ | 17.3 | 0.15 | 20060922 | 85.32985 | 103.85181 | 27.28744 | 3.52453 | 0.1097571 | 2.5595326 | 37 | 4 | 1994–2006 | 0.41 | M-v | 3 | MPC | 04370 | 2006 $DW_{188}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $DX_{188}$ | 14.4 | 0.15 | 20060922 | 305.62167 | 249.81315 | 23.86512 | 4.31432 | 0.1170508 | 3.9727446 | 43 | 5 | 1997–2006 | 0.54 | M-v | 0 | MPC | 01436 | 2006 $DX_{188}$ |
| 2006 $DB_{189}$ | 15.8 | 0.15 | 20060922 | 303.39842 | 266.51455 | 10.31478 | 10.35044 | 0.0413070 | 3.0902157 | 36 | 3 | 1995–2006 | 0.29 | M-v | 1 | MPC | 01436 | 2006 $DB_{189}$ |
| 2006 $DT_{189}$ | 16.6 | 0.15 | 20060922 | 317.40895 | 257.79272 | 16.96836 | 5.18435 | 0.1067066 | 2.7698571 | 30 | 2 | 2003–2006 | 0.23 | M-v | 3 | MPC | 01437 | 2006 $DT_{189}$ |
| 2006 $DD_{190}$ | 17.2 | 0.15 | 20060922 | 54.88102 | 153.02651 | 27.21953 | 3.05156 | 0.0961556 | 2.3136387 | 41 | 4 | 1997–2006 | 0.27 | M-v | 1 | MPC | 01437 | 2006 $DD_{190}$ |
| 2006 $DJ_{190}$ | 16.8 | 0.15 | 20060922 | 106.70225 | 325.30697 | 140.83055 | 4.27793 | 0.1585448 | 2.5287289 | 39 | 3 | 1998–2006 | 0.46 | M-v | 4 | MPC | 01437 | 2006 $DJ_{190}$ |
| 2006 $DF_{191}$ | 16.0 | 0.15 | 20060922 | 38.19708 | 84.50540 | 102.14115 | 3.00372 | 0.0219604 | 2.8790321 | 28 | 3 | 2003–2006 | 0.42 | M-v | 3 | MPC | 01438 | 2006 $DF_{191}$ |
| 2006 $DV_{191}$ | 16.1 | 0.15 | 20060922 | 136.64795 | 34.66117 | 49.05142 | 4.83037 | 0.0912941 | 2.5890738 | 47 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 01439 | 2006 $DV_{191}$ |
| 2006 $DE_{192}$ | 16.8 | 0.15 | 20060326 | 50.77180 | 47.00838 | 75.08119 | 3.74143 | 0.1570456 | 2.8476081 | 9 | 1 | 53 days | 0.44 | | | MPC | | 2006 $DE_{192}$ |
| 2006 $DP_{192}$ | 16.9 | 0.15 | 20060922 | 338.77556 | 223.12346 | 59.83913 | 4.20288 | 0.1648176 | 2.2077645 | 48 | 6 | 1997–2006 | 0.58 | M-v | 1 | MPC | 01440 | 2006 $DP_{192}$ |
| 2006 $DX_{194}$ | 16.9 | 0.15 | 20060922 | 181.51540 | 85.99092 | 286.09287 | 0.94704 | 0.0878912 | 2.8594691 | 36 | 5 | 2001–2006 | 0.27 | M-v | 0 | MPC | 01441 | 2006 $DX_{194}$ |
| 2006 $DE_{195}$ | 16.0 | 0.15 | 20060922 | 56.42818 | 8.88919 | 130.50846 | 10.10629 | 0.0986571 | 2.7709723 | 25 | 1 | 130 days | 0.50 | M-v | 3 | MPC | | 2006 $DE_{195}$ |
| 2006 $DB_{196}$ | 16.5 | 0.15 | 20060922 | 6.11193 | 133.34133 | 94.67806 | 7.62150 | 0.1433546 | 2.2649500 | 46 | 4 | 1994–2006 | 0.61 | M-v | 2 | MPC | 04370 | 2006 $DB_{196}$ |
| 2006 $DK_{197}$ | 15.4 | 0.15 | 20060922 | 67.36171 | 246.58408 | 244.98924 | 11.78024 | 0.0481751 | 2.8683735 | 22 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 01444 | 2006 $DK_{197}$ |
| 2006 $DS_{197}$ | 16.8 | 0.15 | 20060922 | 27.11167 | 278.68445 | 294.14726 | 5.41454 | 0.1464911 | 2.2663520 | 33 | 3 | 2000–2006 | 0.53 | M-v | 2 | MPC | 01445 | 2006 $DS_{197}$ |
| 2006 $DY_{197}$ | 16.8 | 0.15 | 20060922 | 298.91259 | 288.46544 | 357.43635 | 2.11038 | 0.0432228 | 2.3137277 | 58 | 4 | 1999–2006 | 0.43 | M-v | 0 | MPC | 01445 | 2006 $DY_{197}$ |
| 2006 $DH_{198}$ | 15.7 | 0.15 | 20060922 | 347.54075 | 155.74432 | 107.31032 | 13.28811 | 0.2138436 | 2.4419125 | 41 | 5 | 1994–2006 | 0.65 | M-v | 1 | MPC | 04371 | 2006 $DH_{198}$ |
| 2006 $DL_{198}$ | 17.5 | 0.15 | 20060922 | 342.30194 | 120.46397 | 127.53896 | 3.15322 | 0.1758707 | 2.4241132 | 15 | 3 | 1995–2006 | 0.39 | M-v | 3 | MPC | 01446 | 2006 $DL_{198}$ |
| 2006 $DA_{199}$ | 16.5 | 0.15 | 20060922 | 52.83132 | 43.95587 | 148.10198 | 6.43533 | 0.1054306 | 2.2254319 | 63 | 2 | 2001–2006 | 0.46 | M-v | 3 | MPC | 01447 | 2006 $DA_{199}$ |
| 2006 $DC_{199}$ | 16.7 | 0.15 | 20060922 | 348.54378 | 221.83426 | 36.51428 | 5.99533 | 0.1363870 | 2.2636950 | 45 | 5 | 1996–2006 | 0.67 | M-v | 1 | MPC | 01447 | 2006 $DC_{199}$ |
| 2006 $DN_{200}$ | 16.9 | 0.15 | 20060922 | 2.13361 | 37.15397 | 198.68947 | 6.78381 | 0.0690866 | 2.2758729 | 34 | 4 | 1996–2006 | 0.60 | M-v | 1 | MPC | 01448 | 2006 $DN_{200}$ |
| 2006 $DY_{200}$ | 15.8 | 0.15 | 20060922 | 353.25953 | 223.79095 | 32.33229 | 13.88949 | 0.2261342 | 2.6581218 | 52 | 2 | 2003–2006 | 0.65 | M-v | 3 | MPC | 01449 | 2006 $DY_{200}$ |
| 2006 $DK_{201}$ | 14.8 | 0.15 | 20060922 | 27.63220 | 126.25153 | 48.91316 | 18.15415 | 0.0515196 | 3.1464240 | 33 | 3 | 1998–2006 | 0.73 | M-v | 3 | MPC | 01449 | 2006 $DK_{201}$ |
| 2006 $DN_{203}$ | 16.9 | 0.15 | 20060922 | 98.36092 | 249.49417 | 219.83072 | 6.35560 | 0.0518317 | 2.3833604 | 39 | 5 | 1997–2006 | 0.62 | M-v | 1 | MPC | 01451 | 2006 $DN_{203}$ |
| 2006 $DV_{203}$ | 15.7 | 0.15 | 20060922 | 357.61542 | 143.23421 | 86.80742 | 5.45589 | 0.0752535 | 2.5396268 | 45 | 4 | 1998–2006 | 0.81 | M-v | 3 | MPC | 01451 | 2006 $DV_{203}$ |
| 2006 $DO_{206}$ | 15.7 | 0.15 | 20060922 | 156.02003 | 224.90485 | 194.18276 | 5.03654 | 0.0430769 | 2.7107050 | 45 | 5 | 1995–2006 | 0.59 | M-v | 1 | MPC | 01453 | 2006 $DO_{206}$ |
| 2006 $DF_{207}$ | 15.9 | 0.15 | 20060922 | 326.18111 | 69.28581 | 185.55158 | 10.70257 | 0.0453707 | 3.2059518 | 34 | 4 | 2001–2006 | 0.32 | M-v | 1 | MPC | 01454 | 2006 $DF_{207}$ |
| 2006 $DP_{207}$ | 17.0 | 0.15 | 20060922 | 26.38750 | 30.94368 | 189.76910 | 4.24172 | 0.0650054 | 2.1964362 | 59 | 5 | 1993–2006 | 0.57 | M-v | 1 | MPC | 04371 | 2006 $DP_{207}$ |
| 2006 $DQ_{208}$ | 15.9 | 0.15 | 20060922 | 335.43677 | 293.14907 | 341.00589 | 6.74563 | 0.1674403 | 2.6648562 | 33 | 5 | 1994–2006 | 0.42 | M-v | 0 | MPC | 01455 | 2006 $DQ_{208}$ |
| 2006 $DC_{210}$ | 16.8 | 0.15 | 20060922 | 299.90636 | 305.26326 | 5.98450 | 3.40080 | 0.2178945 | 2.3424492 | 35 | 5 | 1999–2006 | 0.37 | M-v | 1 | MPC | 01456 | 2006 $DC_{210}$ |
| 2006 $DD_{210}$ | 16.9 | 0.15 | 20060922 | 337.48703 | 123.73387 | 145.65414 | 2.38035 | 0.1968366 | 2.6180337 | 28 | 3 | 2002–2006 | 0.27 | M-v | 2 | MPC | 01456 | 2006 $DD_{210}$ |
| 2006 $DE_{210}$ | 17.2 | 0.15 | 20060922 | 274.52093 | 301.62829 | 31.01174 | 1.91966 | 0.1791957 | 2.2194550 | 31 | 4 | 1997–2006 | 0.48 | M-v | 1 | MPC | 01456 | 2006 $DE_{210}$ |
| 2006 $DH_{210}$ | 17.2 | 0.15 | 20060922 | 134.93399 | 292.50506 | 146.25373 | 3.07767 | 0.0983357 | 2.6442931 | 28 | 3 | 1997–2006 | 0.30 | M-v | 3 | MPC | 01456 | 2006 $DH_{210}$ |
| 2006 $DJ_{210}$ | 17.2 | 0.15 | 20060922 | 0.35666 | 233.00372 | 15.65222 | 2.29676 | 0.1598013 | 2.3492466 | 40 | 3 | 1996–2006 | 0.40 | M-v | 1 | MPC | 01456 | 2006 $DJ_{210}$ |
| 2006 $DQ_{210}$ | 16.8 | 0.15 | 20060922 | 1.90578 | 310.07075 | 291.53623 | 2.53583 | 0.1211001 | 2.3182163 | 31 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 01457 | 2006 $DQ_{210}$ |
| 2006 $DY_{210}$ | 16.9 | 0.15 | 20060922 | 34.25115 | 322.58823 | 237.75694 | 3.45685 | 0.1003684 | 2.4044789 | 46 | 5 | 2000–2006 | 0.40 | M-v | 1 | MPC | 01457 | 2006 $DY_{210}$ |
| 2006 $DZ_{210}$ | 15.3 | 0.15 | 20060922 | 48.88602 | 332.39353 | 190.92418 | 22.55114 | 0.0839620 | 3.2163822 | 34 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04371 | 2006 $DZ_{210}$ |
| 2006 $DB_{212}$ | 17.1 | 0.15 | 20060922 | 345.11925 | 77.89289 | 183.32375 | 4.55644 | 0.1605726 | 2.4161355 | 35 | 5 | 1992–2006 | 0.37 | M-v | 1 | MPC | 04371 | 2006 $DB_{212}$ |
| 2006 $DG_{212}$ | 16.6 | 0.15 | 20060922 | 170.72098 | 78.06667 | 332.53806 | 2.74543 | 0.0977353 | 2.7216162 | 46 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 01459 | 2006 $DG_{212}$ |
| 2006 $DO_{212}$ | 16.9 | 0.15 | 20060922 | 231.24653 | 194.34966 | 157.43540 | 3.95941 | 0.0369111 | 2.7817391 | 28 | 5 | 1994–2006 | 0.28 | M-v | 0 | MPC | 01460 | 2006 $DO_{212}$ |
| 2006 $DD_{215}$ | 16.4 | 0.15 | 20060922 | 120.62763 | 81.05620 | 358.05965 | 9.52244 | 0.0869914 | 3.0422585 | 17 | 1 | 63 days | 0.25 | M-v | 4 | MPC | | 2006 $DD_{215}$ |
| 2006 $DE_{215}$ | 19.0 | 0.15 | 20060326 | 25.15426 | 135.98112 | 9.76988 | 2.62945 | 0.1753592 | 2.2933723 | 17 | 1 | 59 days | 0.43 | | | MPC | | 2006 $DE_{215}$ |
| 2006 $DF_{215}$ | 15.9 | 0.15 | 20060326 | 41.20339 | 305.03118 | 183.97167 | 13.57024 | 0.0795909 | 2.7909416 | 19 | 1 | 58 days | 0.40 | | | MPC | | 2006 $DF_{215}$ |
| 2006 $DH_{215}$ | 16.5 | 0.15 | 20060922 | 320.54726 | 93.54090 | 191.40976 | 6.36167 | 0.1001760 | 2.4129965 | 29 | 1 | 86 days | 0.25 | M-v | 4 | MPC | | 2006 $DH_{215}$ |
| 2006 $DK_{215}$ | 18.2 | 0.15 | 20060326 | 328.61831 | 213.22938 | 11.90497 | 7.66810 | 0.1473151 | 2.3248990 | 18 | 1 | 39 days | 0.28 | | | MPC | | 2006 $DK_{215}$ |
| 2006 $DL_{215}$ | 17.7 | 0.15 | 20060922 | 345.65387 | 245.21719 | 15.65014 | 4.68417 | 0.0918126 | 2.3425688 | 22 | 1 | 66 days | 0.35 | M-v | 4 | MPC | | 2006 $DL_{215}$ |
| 2006 EQ | 14.9 | 0.15 | 20060922 | 34.33066 | 144.98806 | 45.22028 | 10.42248 | 0.0726509 | 3.0825335 | 73 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 01461 | 2006 EQ |
| 2006 ES | 16.9 | 0.15 | 20060214 | 299.66212 | 73.79882 | 144.74112 | 8.27131 | 0.1550966 | 2.7571721 | 33 | 1 | 57 days | 0.33 | | | MPC | | 2006 ES |
| 2006 $EY_1$ | 17.3 | 0.15 | 20060922 | 320.29808 | 257.29678 | 24.51232 | 4.90563 | 0.1728453 | 2.5968306 | 25 | 2 | 2003–2006 | 0.47 | M-v | 3 | MPC | 01462 | 2006 $EY_1$ |
| 2006 $EF_3$ | 16.7 | 0.15 | 20060922 | 43.36046 | 4.38110 | 148.51986 | 7.67099 | 0.1133959 | 3.1254944 | 28 | 3 | 1995–2006 | 0.28 | M-v | 3 | MPC | 02303 | 2006 $EF_3$ |
| 2006 $EB_7$ | 16.1 | 0.15 | 20060922 | 117.88722 | 293.36250 | 150.48412 | 1.48543 | 0.0575481 | 3.0834409 | 27 | 4 | 1997–2006 | 0.49 | M-v | 0 | MPC | 01463 | 2006 $EB_7$ |
| 2006 $EM_8$ | 15.8 | 0.15 | 20060922 | 3.46520 | 100.10971 | 114.07444 | 1.44881 | 0.1480829 | 3.1791239 | 29 | 4 | 1995–2006 | 0.32 | M-v | 1 | MPC | 01464 | 2006 $EM_8$ |
| 2006 $ET_8$ | 15.7 | 0.15 | 20060922 | 145.72767 | 11.92185 | 42.09045 | 1.90994 | 0.0949091 | 3.1127661 | 51 | 5 | 1998–2006 | 0.49 | M-v | 0 | MPC | 01464 | 2006 $ET_8$ |
| 2006 $EL_9$ | 16.7 | 0.15 | 20060922 | 175.92532 | 264.05457 | 128.12269 | 2.82266 | 0.0674615 | 2.9378653 | 40 | 4 | 2001–2006 | 0.31 | M-v | 0 | MPC | 01465 | 2006 $EL_9$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $EW_{11}$ | 16.4 | 0.15 | 20060922 | 267.21856 | 294.51720 | 36.31062 | 1.92426 | 0.2021591 | 2.4186826 | 24 | 3 | 2002–2006 | 0.33 | M-v | 3 | MPC | 01466 | 2006 $EW_{11}$ |
| 2006 $EV_{12}$ | 17.0 | 0.15 | 20060922 | 191.45786 | 6.71051 | 18.29568 | 0.58618 | 0.1031325 | 2.5227438 | 33 | 4 | 1992–2006 | 0.25 | M-v | 3 | MPC | 01467 | 2006 $EV_{12}$ |
| 2006 $EL_{15}$ | 18.7 | 0.15 | 20060922 | 120.46003 | 303.57398 | 162.91057 | 4.36211 | 0.0884743 | 2.1924038 | 23 | 2 | 2004–2006 | 0.32 | M-v | 4 | MPC | 01468 | 2006 $EL_{15}$ |
| 2006 $EO_{15}$ | 17.6 | 0.15 | 20060922 | 104.92803 | 323.77203 | 146.40220 | 1.52321 | 0.1458774 | 2.3891181 | 37 | 4 | 1995–2006 | 0.39 | M-v | 0 | MPC | 01468 | 2006 $EO_{15}$ |
| 2006 $EG_{16}$ | 16.4 | 0.15 | 20060922 | 285.43330 | 267.56739 | 36.46462 | 2.86678 | 0.0604407 | 2.7045990 | 39 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 01469 | 2006 $EG_{16}$ |
| 2006 $EW_{16}$ | 16.0 | 0.15 | 20060922 | 44.60577 | 87.40312 | 80.74364 | 2.64062 | 0.1511843 | 3.2032383 | 33 | 3 | 2003–2006 | 0.31 | M-v | 3 | MPC | 01469 | 2006 $EW_{16}$ |
| 2006 $EX_{16}$ | 16.7 | 0.15 | 20060922 | 220.84365 | 293.86556 | 74.30557 | 1.80577 | 0.1455593 | 2.5399649 | 34 | 3 | 2000–2006 | 0.41 | M-v | 4 | MPC | 01470 | 2006 $EX_{16}$ |
| 2006 $ET_{17}$ | 18.0 | 0.15 | 20060922 | 342.46994 | 110.45944 | 166.92804 | 2.47714 | 0.2245691 | 2.3008151 | 32 | 3 | 1999–2006 | 0.36 | M-v | 3 | MPC | 01471 | 2006 $ET_{17}$ |
| 2006 $EB_{18}$ | 17.8 | 0.15 | 20060922 | 70.04474 | 85.80905 | 74.15180 | 2.28160 | 0.1364165 | 2.3488303 | 37 | 5 | 1999–2006 | 0.30 | M-v | 0 | MPC | 01471 | 2006 $EB_{18}$ |
| 2006 $EC_{18}$ | 16.4 | 0.15 | 20060922 | 6.63060 | 151.37442 | 70.51947 | 2.99659 | 0.1007875 | 2.9928763 | 44 | 6 | 1998–2006 | 0.38 | M-v | 0 | MPC | 01471 | 2006 $EC_{18}$ |
| 2006 $EJ_{19}$ | 16.3 | 0.15 | 20060922 | 313.59093 | 135.81758 | 168.11497 | 3.39745 | 0.1855024 | 2.3216986 | 53 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 01472 | 2006 $EJ_{19}$ |
| 2006 $EV_{20}$ | 16.5 | 0.15 | 20060922 | 81.12865 | 127.61820 | 337.39127 | 11.19229 | 0.1099663 | 2.6786259 | 35 | 4 | 1995–2006 | 0.40 | M-v | 1 | MPC | 01474 | 2006 $EV_{20}$ |
| 2006 $EX_{20}$ | 16.5 | 0.15 | 20060922 | 16.44189 | 204.67848 | 345.87432 | 6.95928 | 0.1456022 | 2.9198407 | 44 | 4 | 1996–2006 | 0.47 | M-v | 2 | MPC | 01475 | 2006 $EX_{20}$ |
| 2006 $EH_{24}$ | 17.4 | 0.15 | 20060922 | 83.29869 | 275.53347 | 185.93554 | 0.77974 | 0.1388190 | 3.0290918 | 24 | 2 | 2004–2006 | 0.32 | M-v | 3 | MPC | 01476 | 2006 $EH_{24}$ |
| 2006 $EM_{25}$ | 17.4 | 0.15 | 20060922 | 321.10543 | 92.48241 | 179.80229 | 2.39881 | 0.1517723 | 2.2956232 | 48 | 5 | 1993–2006 | 0.40 | M-v | 1 | MPC | 04371 | 2006 $EM_{25}$ |
| 2006 $EF_{27}$ | 14.8 | 0.15 | 20060922 | 8.74655 | 301.16554 | 260.82259 | 3.75805 | 0.1076718 | 3.2224122 | 36 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 01477 | 2006 $EF_{27}$ |
| 2006 $EQ_{28}$ | 16.7 | 0.15 | 20060922 | 121.13129 | 100.82421 | 348.40455 | 5.01352 | 0.1070932 | 2.3804927 | 39 | 3 | 1993–2006 | 0.54 | M-v | 2 | MPC | 04371 | 2006 $EQ_{28}$ |
| 2006 $EE_{30}$ | 18.0 | 0.15 | 20060922 | 101.91231 | 54.17642 | 35.55906 | 2.78345 | 0.2082911 | 2.6318003 | 29 | 3 | 2000–2006 | 0.37 | M-v | 2 | MPC | 03878 | 2006 $EE_{30}$ |
| 2006 $EG_{31}$ | 17.2 | 0.15 | 20060922 | 159.73172 | 289.04616 | 140.33657 | 4.98017 | 0.0528492 | 2.1341290 | 34 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 01479 | 2006 $EG_{31}$ |
| 2006 $EF_{32}$ | 15.8 | 0.15 | 20060922 | 76.53489 | 160.63691 | 329.94144 | 8.93465 | 0.0915965 | 2.6868590 | 25 | 3 | 2000–2006 | 0.54 | M-v | 3 | MPC | 01480 | 2006 $EF_{32}$ |
| 2006 $ES_{32}$ | 16.1 | 0.15 | 20060922 | 248.13641 | 55.67799 | 275.59583 | 2.50707 | 0.0664373 | 2.6681296 | 31 | 4 | 1999–2006 | 0.73 | M-v | 1 | MPC | 03878 | 2006 $ES_{32}$ |
| 2006 $EL_{33}$ | 16.4 | 0.15 | 20060922 | 130.65873 | 244.73176 | 193.27523 | 6.04808 | 0.0809821 | 2.6485255 | 34 | 4 | 1991–2006 | 0.39 | M-v | 1 | MPC | 03878 | 2006 $EL_{33}$ |
| 2006 $EQ_{34}$ | 17.4 | 0.15 | 20060922 | 121.82774 | 77.61992 | 19.73749 | 6.46165 | 0.0853635 | 2.4866014 | 36 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 01481 | 2006 $EQ_{34}$ |
| 2006 $EV_{34}$ | 15.7 | 0.15 | 20060922 | 269.53181 | 267.58921 | 53.77962 | 3.57309 | 0.1532973 | 3.0483749 | 47 | 5 | 2001–2006 | 0.50 | M-v | 0 | MPC | 01481 | 2006 $EV_{34}$ |
| 2006 $EF_{35}$ | 15.9 | 0.15 | 20060922 | 177.65226 | 310.24651 | 84.18011 | 2.61427 | 0.1416637 | 2.7950928 | 30 | 4 | 1999–2006 | 0.49 | M-v | 2 | MPC | 01482 | 2006 $EF_{35}$ |
| 2006 $EY_{36}$ | 16.0 | 0.15 | 20060922 | 95.49457 | 42.66664 | 45.24893 | 1.66667 | 0.2372903 | 3.0636017 | 41 | 4 | 1999–2006 | 0.35 | M-v | 0 | MPC | 01482 | 2006 $EY_{36}$ |
| 2006 $EU_{37}$ | 15.3 | 0.15 | 20060214 | 321.61803 | 38.54398 | 148.03535 | 23.90440 | 0.0984896 | 3.1148472 | 24 | 1 | 59 days | 0.64 | | | MPC | | 2006 $EU_{37}$ |
| 2006 $EB_{38}$ | 18.2 | 0.15 | 20060922 | 120.14771 | 91.74882 | 356.10452 | 5.70752 | 0.1264447 | 2.2208115 | 26 | 2 | 1996–2006 | 0.27 | M-v | 4 | MPC | 01483 | 2006 $EB_{38}$ |
| 2006 $EQ_{41}$ | 16.5 | 0.15 | 20060922 | 12.17700 | 272.52601 | 319.11398 | 4.52725 | 0.2225758 | 2.6961827 | 48 | 3 | 2001–2006 | 0.65 | M-v | 2 | MPC | 01484 | 2006 $EQ_{41}$ |
| 2006 $EZ_{41}$ | 16.5 | 0.15 | 20060922 | 51.48482 | 287.60870 | 238.27555 | 8.15329 | 0.1909732 | 2.7165730 | 27 | 3 | 1995–2006 | 0.48 | M-v | 3 | MPC | 01485 | 2006 $EZ_{41}$ |
| 2006 $EC_{43}$ | 14.7 | 0.15 | 20060922 | 65.44570 | 111.37923 | 38.35365 | 23.06433 | 0.1010359 | 3.2400779 | 41 | 3 | 2003–2006 | 0.69 | M-v | 3 | MPC | 01485 | 2006 $EC_{43}$ |
| 2006 $EO_{45}$ | 17.4 | 0.15 | 20060922 | 341.11049 | 139.54853 | 134.06935 | 3.06683 | 0.1564092 | 2.3412821 | 40 | 3 | 2002–2006 | 0.60 | M-v | 4 | MPC | 01486 | 2006 $EO_{45}$ |
| 2006 $EF_{46}$ | 17.5 | 0.15 | 20060922 | 84.68449 | 149.28279 | 321.75392 | 2.83303 | 0.1326208 | 2.3878677 | 40 | 2 | 2001–2006 | 0.53 | M-v | 4 | MPC | 01487 | 2006 $EF_{46}$ |
| 2006 $EQ_{46}$ | 17.4 | 0.15 | 20060922 | 102.99732 | 292.42826 | 141.90090 | 7.59824 | 0.2390087 | 2.7323798 | 23 | 1 | 60 days | 0.30 | M-v | 5 | MPC | | 2006 $EQ_{46}$ |
| 2006 $EJ_{47}$ | 16.6 | 0.15 | 20060922 | 267.03586 | 302.25351 | 0.93873 | 10.64825 | 0.1409709 | 3.0179716 | 24 | 2 | 2003–2006 | 0.38 | M-v | 3 | MPC | 01488 | 2006 $EJ_{47}$ |
| 2006 $EC_{50}$ | 17.4 | 0.15 | 20060922 | 163.87238 | 307.15520 | 91.11901 | 3.73817 | 0.2299202 | 2.3084733 | 26 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 02306 | 2006 $EC_{50}$ |
| 2006 $EM_{53}$ | 15.8 | 0.15 | 20060922 | 301.66675 | 323.90836 | 334.96888 | 6.32186 | 0.1964984 | 2.4155493 | 43 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 01490 | 2006 $EM_{53}$ |
| 2006 $EQ_{55}$ | 16.1 | 0.15 | 20060922 | 170.71849 | 133.39111 | 258.04173 | 2.46480 | 0.0288658 | 3.0750220 | 17 | 3 | 2003–2006 | 0.21 | M-v | 2 | MPC | 01490 | 2006 $EQ_{55}$ |
| 2006 $ET_{58}$ | 15.9 | 0.15 | 20060922 | 321.69456 | 30.75791 | 225.33386 | 4.99949 | 0.0218803 | 2.9234484 | 18 | 3 | 2003–2006 | 0.31 | M-v | 4 | MPC | 01492 | 2006 $ET_{58}$ |
| 2006 $EV_{60}$ | 16.1 | 0.15 | 20060922 | 132.58739 | 254.72968 | 186.45588 | 21.83533 | 0.0641473 | 2.6675055 | 30 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 01492 | 2006 $EV_{60}$ |
| 2006 $EK_{62}$ | 16.0 | 0.15 | 20060922 | 11.56487 | 20.03054 | 201.29014 | 7.63523 | 0.1579560 | 2.7881428 | 49 | 4 | 1997–2006 | 0.44 | M-v | 2 | MPC | 01493 | 2006 $EK_{62}$ |
| 2006 $EY_{62}$ | 15.6 | 0.15 | 20060922 | 155.29383 | 151.17276 | 267.87182 | 2.89135 | 0.0608131 | 3.0696418 | 38 | 5 | 1998–2006 | 0.30 | M-v | 0 | MPC | 01493 | 2006 $EY_{62}$ |
| 2006 $EJ_{63}$ | 17.0 | 0.15 | 20060922 | 32.09548 | 356.75507 | 208.92267 | 5.61036 | 0.0892716 | 2.4036023 | 48 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 01494 | 2006 $EJ_{63}$ |
| 2006 $EY_{64}$ | 17.2 | 0.15 | 20060922 | 354.47662 | 52.47662 | 205.53354 | 3.80771 | 0.2249039 | 2.5900102 | 41 | 4 | 1999–2006 | 0.32 | M-v | 1 | MPC | 01495 | 2006 $EY_{64}$ |
| 2006 $EB_{65}$ | 17.0 | 0.15 | 20060922 | 142.08178 | 152.65594 | 287.07743 | 2.45699 | 0.0448683 | 2.7524102 | 24 | 4 | 2001–2006 | 0.24 | M-v | 0 | MPC | 01495 | 2006 $EB_{65}$ |
| 2006 $EK_{66}$ | 15.7 | 0.15 | 20060922 | 148.87669 | 183.61846 | 235.42690 | 3.82662 | 0.1350414 | 3.0940003 | 32 | 3 | 2003–2006 | 0.32 | M-v | 2 | MPC | 01496 | 2006 $EK_{66}$ |
| 2006 $EP_{66}$ | 17.3 | 0.15 | 20060922 | 315.08167 | 321.89715 | 326.76345 | 2.76828 | 0.1224105 | 2.6192526 | 26 | 3 | 1999–2006 | 0.29 | M-v | 2 | MPC | 01496 | 2006 $EP_{66}$ |
| 2006 $EW_{66}$ | 19.4 | 0.15 | 20060922 | 32.34256 | 192.34787 | 5.95486 | 7.48333 | 0.2153938 | 2.4120471 | 15 | 1 | 66 days | 0.29 | M-v | 4 | MPC | 02307 | 2006 $EW_{66}$ |
| 2006 $EX_{67}$ | 17.8 | 0.15 | 20060922 | 145.74179 | 271.72609 | 141.08484 | 0.12074 | 0.0533716 | 2.5343999 | 24 | 3 | 2002–2006 | 0.28 | M-v | 4 | MPC | 01497 | 2006 $EX_{67}$ |
| 2006 $EZ_{67}$ | 16.5 | 0.15 | 20060922 | 187.38656 | 216.89779 | 149.95955 | 2.40948 | 0.0397056 | 2.8297148 | 32 | 3 | 1994–2006 | 0.28 | M-v | 4 | MPC | 01497 | 2006 $EZ_{67}$ |
| 2006 $EC_{72}$ | 16.6 | 0.15 | 20060922 | 56.45361 | 121.67221 | 76.42649 | 17.91433 | 0.1822688 | 2.6870438 | 17 | 1 | 92 days | 0.44 | M-v | 4 | MPC | | 2006 $EC_{72}$ |
| 2006 $ED_{72}$ | 16.5 | 0.15 | 20060415 | 28.39711 | 309.83414 | 183.47112 | 17.40102 | 0.2848039 | 3.1054753 | 18 | 1 | 56 days | 0.36 | | | MPC | | 2006 $ED_{72}$ |
| 2006 FO | 15.1 | 0.15 | 20060922 | 50.78563 | 358.37874 | 160.25290 | 7.74693 | 0.1251947 | 3.0769894 | 59 | 5 | 2000–2006 | 0.73 | M-v | 1 | MPC | 01498 | 2006 FO |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $FG_{1}$ | 18.9 | 0.15 | 20060922 | 348.26236 | 86.96182 | 174.51709 | 3.85488 | 0.0984060 | 2.1487015 | 26 | 3 | 2000–2006 | 0.39 | M-v | 3 | MPC | 01499 | 2006 $FG_{1}$ |
| 2006 $FT_{1}$ | 16.9 | 0.15 | 20060922 | 48.93125 | 150.56805 | 39.62927 | 5.41526 | 0.0786932 | 2.2260833 | 40 | 3 | 2001–2006 | 0.60 | M-v | 3 | MPC | 01500 | 2006 $FT_{1}$ |
| 2006 $FM_{2}$ | 16.2 | 0.15 | 20060922 | 354.89215 | 7.47328 | 204.02047 | 3.59605 | 0.1209721 | 2.9752426 | 30 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 01501 | 2006 $FM_{2}$ |
| 2006 $FR_{4}$ | 17.1 | 0.15 | 20060922 | 21.82291 | 111.73602 | 121.53505 | 3.17248 | 0.2587201 | 2.3227118 | 46 | 3 | 1999–2006 | 0.60 | M-v | 3 | MPC | 01504 | 2006 $FR_{4}$ |
| 2006 $FV_{4}$ | 12.9 | 0.15 | 20060922 | 358.06446 | 217.79302 | 25.21509 | 32.02464 | 0.7031317 | 10.9608577 | 105 | 2 | 2005–2006 | 0.62 | M-v | 2 | MPC | 01504 | 2006 $FV_{4}$ |
| 2006 $FY_{4}$ | 17.3 | 0.15 | 20060922 | 212.03470 | 15.62608 | 350.37165 | 2.29590 | 0.0224532 | 2.4107878 | 24 | 3 | 2002–2006 | 0.37 | M-v | 4 | MPC | 01504 | 2006 $FY_{4}$ |
| 2006 $FG_{6}$ | 17.4 | 0.15 | 20060922 | 49.73892 | 60.34010 | 129.08504 | 7.66110 | 0.1658709 | 2.3217083 | 46 | 2 | 1999–2006 | 0.64 | M-v | 3 | MPC | 01505 | 2006 $FG_{6}$ |
| 2006 $FK_{6}$ | 15.8 | 0.15 | 20060922 | 52.00946 | 115.95864 | 55.41360 | 9.85685 | 0.1774349 | 2.7437513 | 29 | 3 | 2001–2006 | 0.41 | M-v | 3 | MPC | 01505 | 2006 $FK_{6}$ |
| 2006 $FS_{7}$ | 16.3 | 0.15 | 20060922 | 64.46930 | 20.38338 | 141.20274 | 1.52096 | 0.1138018 | 3.1506759 | 30 | 3 | 2003–2006 | 0.29 | M-v | 3 | MPC | 01506 | 2006 $FS_{7}$ |
| 2006 $FC_{8}$ | 16.6 | 0.15 | 20060922 | 141.13499 | 256.66396 | 186.52583 | 2.77787 | 0.1182786 | 2.7784987 | 51 | 4 | 1996–2006 | 0.36 | M-v | 0 | MPC | 01507 | 2006 $FC_{8}$ |
| 2006 $FU_{8}$ | 16.7 | 0.15 | 20060922 | 300.91381 | 140.11251 | 187.04559 | 2.39018 | 0.1841170 | 2.3658107 | 51 | 4 | 1996–2006 | 0.42 | M-v | 3 | MPC | 01508 | 2006 $FU_{8}$ |
| 2006 $FB_{9}$ | 16.3 | 0.15 | 20060922 | 19.87248 | 117.05617 | 105.25202 | 1.98168 | 0.2294329 | 3.0684897 | 42 | 3 | 1995–2006 | 0.46 | M-v | 3 | MPC | 01509 | 2006 $FB_{9}$ |
| 2006 $FO_{10}$ | 15.4 | 0.15 | 20060922 | 51.59807 | 324.70742 | 193.08095 | 14.12958 | 0.2223811 | 2.7464624 | 86 | 5 | 1997–2006 | 0.62 | M-v | 1 | MPC | 01510 | 2006 $FO_{10}$ |
| 2006 $FD_{11}$ | 15.9 | 0.15 | 20060922 | 64.85253 | 87.00388 | 57.85656 | 3.59447 | 0.1227684 | 3.1322284 | 29 | 4 | 2000–2006 | 0.53 | M-v | 0 | MPC | 01511 | 2006 $FD_{11}$ |
| 2006 $FE_{11}$ | 15.9 | 0.15 | 20060922 | 234.76672 | 334.92327 | 18.10625 | 15.05016 | 0.0402579 | 2.6568921 | 44 | 5 | 1993–2006 | 0.34 | M-v | 1 | MPC | 01511 | 2006 $FE_{11}$ |
| 2006 $FL_{11}$ | 16.6 | 0.15 | 20060922 | 339.11534 | 236.12179 | 33.52230 | 7.29538 | 0.1100035 | 2.3345210 | 41 | 3 | 1999–2006 | 0.58 | M-v | 3 | MPC | 01512 | 2006 $FL_{11}$ |
| 2006 $FM_{11}$ | 15.7 | 0.15 | 20060922 | 338.02401 | 212.37053 | 46.50889 | 5.75927 | 0.1667934 | 3.1224796 | 33 | 5 | 1995–2006 | 0.58 | M-v | 1 | MPC | 01512 | 2006 $FM_{11}$ |
| 2006 $FW_{11}$ | 16.9 | 0.15 | 20060922 | 312.06208 | 284.71171 | 14.24300 | 12.73342 | 0.2035777 | 2.5865186 | 31 | 3 | 2002–2006 | 0.41 | M-v | 2 | MPC | 01512 | 2006 $FW_{11}$ |
| 2006 $FS_{12}$ | 15.4 | 0.15 | 20060922 | 257.14629 | 313.05879 | 30.66940 | 10.58986 | 0.1578456 | 3.0779425 | 25 | 3 | 1995–2006 | 0.42 | M-v | 3 | MPC | 01513 | 2006 $FS_{12}$ |
| 2006 $FV_{12}$ | 16.1 | 0.15 | 20060922 | 273.20330 | 258.00617 | 71.05468 | 3.05961 | 0.1114443 | 2.9375985 | 37 | 4 | 1998–2006 | 0.27 | M-v | 0 | MPC | 01513 | 2006 $FV_{12}$ |
| 2006 $FT_{13}$ | 18.0 | 0.15 | 20060922 | 58.97932 | 69.78686 | 106.39973 | 1.74952 | 0.1563994 | 2.4803219 | 22 | 3 | 1998–2006 | 0.35 | M-v | 3 | MPC | 01514 | 2006 $FT_{13}$ |
| 2006 $FC_{14}$ | 15.4 | 0.15 | 20060922 | 151.25033 | 256.17716 | 178.59371 | 5.52501 | 0.0088337 | 3.4377405 | 52 | 5 | 1993–2006 | 0.43 | M-v | 0 | MPC | 04371 | 2006 $FC_{14}$ |
| 2006 $FH_{14}$ | 16.3 | 0.15 | 20060922 | 331.56525 | 81.96773 | 187.32057 | 10.37727 | 0.1157333 | 3.1116604 | 35 | 4 | 2001–2006 | 0.28 | M-v | 1 | MPC | 01515 | 2006 $FH_{14}$ |
| 2006 $FJ_{15}$ | 17.3 | 0.15 | 20060306 | 213.72223 | 148.46738 | 173.15753 | 7.03670 | 0.1124839 | 2.4760665 | 20 | 1 | 37 days | 0.33 | | | MPC | | 2006 $FJ_{15}$ |
| 2006 $FT_{15}$ | 15.7 | 0.15 | 20060922 | 350.40298 | 241.41916 | 25.36432 | 15.99306 | 0.1683080 | 2.6044843 | 67 | 3 | 2002–2006 | 0.58 | M-v | 2 | MPC | 01516 | 2006 $FT_{15}$ |
| 2006 $FU_{15}$ | 17.3 | 0.15 | 20060922 | 357.11885 | 59.81254 | 186.30132 | 4.98535 | 0.1236218 | 2.4053638 | 45 | 4 | 1995–2006 | 0.42 | M-v | 0 | MPC | 01516 | 2006 $FU_{15}$ |
| 2006 $FA_{16}$ | 18.0 | 0.15 | 20060922 | 14.73175 | 36.55388 | 188.44541 | 4.52987 | 0.1584502 | 2.5533024 | 31 | 4 | 1994–2006 | 0.31 | M-v | 3 | MPC | 04371 | 2006 $FA_{16}$ |
| 2006 $FD_{16}$ | 16.1 | 0.15 | 20060922 | 10.34689 | 215.72990 | 2.39763 | 4.51539 | 0.0540530 | 2.7294417 | 47 | 3 | 2003–2006 | 0.39 | M-v | 3 | MPC | 01517 | 2006 $FD_{16}$ |
| 2006 $FJ_{16}$ | 16.3 | 0.15 | 20060922 | 301.77892 | 276.30628 | 10.95507 | 6.27199 | 0.0709657 | 2.9760707 | 34 | 4 | 2001–2006 | 0.32 | M-v | 0 | MPC | 01517 | 2006 $FJ_{16}$ |
| 2006 $FK_{16}$ | 16.5 | 0.15 | 20060922 | 109.33819 | 55.86031 | 37.73697 | 0.53655 | 0.1321081 | 3.1681145 | 34 | 5 | 1998–2006 | 0.35 | M-v | 0 | MPC | 01517 | 2006 $FK_{16}$ |
| 2006 $FL_{16}$ | 16.0 | 0.15 | 20060922 | 96.06991 | 268.56240 | 210.36400 | 2.59375 | 0.0473510 | 3.0094021 | 29 | 4 | 1995–2006 | 0.27 | M-v | 0 | MPC | 01517 | 2006 $FL_{16}$ |
| 2006 $FR_{17}$ | 16.9 | 0.15 | 20060922 | 238.01212 | 204.98115 | 168.10809 | 3.52001 | 0.0499145 | 2.4316307 | 24 | 3 | 2000–2006 | 0.34 | M-v | 3 | MPC | 01519 | 2006 $FR_{17}$ |
| 2006 $FC_{18}$ | 15.7 | 0.15 | 20060922 | 324.54375 | 86.60069 | 194.14519 | 10.04935 | 0.0727358 | 3.0417090 | 38 | 4 | 1997–2006 | 0.40 | M-v | 1 | MPC | 04371 | 2006 $FC_{18}$ |
| 2006 $FH_{18}$ | 18.0 | 0.15 | 20060922 | 34.05436 | 160.34532 | 65.09872 | 2.08473 | 0.0947393 | 2.1668463 | 38 | 3 | 1996–2006 | 0.50 | M-v | 3 | MPC | 01520 | 2006 $FH_{18}$ |
| 2006 $FP_{18}$ | 17.2 | 0.15 | 20060922 | 353.30553 | 219.38231 | 48.13513 | 3.33265 | 0.1408228 | 2.4443495 | 31 | 1 | 171 days | 0.31 | M-v | 4 | MPC | 02311 | 2006 $FP_{18}$ |
| 2006 $FB_{20}$ | 16.3 | 0.15 | 20060922 | 96.57360 | 318.24552 | 189.04040 | 1.75749 | 0.0120022 | 2.8706642 | 46 | 5 | 1998–2006 | 0.53 | M-v | 0 | MPC | 01521 | 2006 $FB_{20}$ |
| 2006 $FM_{20}$ | 16.4 | 0.15 | 20060922 | 354.86091 | 224.53459 | 32.72803 | 12.35636 | 0.0534291 | 2.8472312 | 36 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 01522 | 2006 $FM_{20}$ |
| 2006 $FU_{20}$ | 16.3 | 0.15 | 20060922 | 271.86330 | 272.03014 | 35.77871 | 2.96254 | 0.0767745 | 3.2467263 | 30 | 5 | 1997–2006 | 0.29 | M-v | 0 | MPC | 01523 | 2006 $FU_{20}$ |
| 2006 $FZ_{21}$ | 16.9 | 0.15 | 20060922 | 27.68275 | 192.43958 | 22.38497 | 2.29859 | 0.0764101 | 2.2455134 | 63 | 5 | 1976–2006 | 0.52 | M-v | 1 | MPC | 01523 | 2006 $FZ_{21}$ |
| 2006 $FV_{23}$ | 16.3 | 0.15 | 20060922 | 357.05459 | 89.57395 | 158.48728 | 2.59031 | 0.0504995 | 2.6531716 | 29 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 01526 | 2006 $FV_{23}$ |
| 2006 $FD_{24}$ | 17.1 | 0.15 | 20060922 | 19.50038 | 80.27895 | 152.41916 | 2.97238 | 0.0564564 | 2.3279744 | 38 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 01526 | 2006 $FD_{24}$ |
| 2006 $FG_{24}$ | 16.5 | 0.15 | 20060922 | 346.10919 | 102.18153 | 165.02790 | 3.58414 | 0.1094489 | 2.6157902 | 33 | 5 | 1995–2006 | 0.38 | M-v | 0 | MPC | 01527 | 2006 $FG_{24}$ |
| 2006 $FS_{24}$ | 16.7 | 0.15 | 20060922 | 342.66101 | 205.61740 | 54.87383 | 5.14429 | 0.0286755 | 2.7632526 | 41 | 4 | 2001–2006 | 0.35 | M-v | 0 | MPC | 01527 | 2006 $FS_{24}$ |
| 2006 $FC_{26}$ | 16.8 | 0.15 | 20060922 | 157.89090 | 43.14783 | 27.94674 | 3.14773 | 0.0647727 | 2.7981987 | 35 | 4 | 2001–2006 | 0.32 | M-v | 0 | MPC | 01528 | 2006 $FC_{26}$ |
| 2006 $FL_{26}$ | 15.7 | 0.15 | 20060922 | 24.82822 | 24.27658 | 192.32062 | 16.35918 | 0.0706476 | 2.6165079 | 47 | 3 | 1999–2006 | 0.50 | M-v | 3 | MPC | 01528 | 2006 $FL_{26}$ |
| 2006 $FN_{26}$ | 15.1 | 0.15 | 20060922 | 22.02645 | 111.45813 | 100.79853 | 3.95906 | 0.1722675 | 3.0804475 | 52 | 4 | 2002–2006 | 0.63 | M-v | 1 | MPC | 01529 | 2006 $FN_{26}$ |
| 2006 $FR_{26}$ | 17.5 | 0.15 | 20060922 | 134.49450 | 293.67945 | 158.56171 | 2.33321 | 0.1444959 | 2.4661627 | 30 | 4 | 1996–2006 | 0.37 | M-v | 3 | MPC | 01529 | 2006 $FR_{26}$ |
| 2006 $FZ_{27}$ | 16.7 | 0.15 | 20060922 | 6.28282 | 68.02082 | 190.27507 | 4.28812 | 0.1036116 | 2.2400005 | 66 | 5 | 1996–2006 | 0.53 | M-v | 1 | MPC | 01530 | 2006 $FZ_{27}$ |
| 2006 $FD_{28}$ | 16.8 | 0.15 | 20060922 | 236.15253 | 347.98196 | 32.97848 | 6.33832 | 0.1177470 | 2.3150146 | 50 | 3 | 1999–2006 | 0.41 | M-v | 3 | MPC | 04371 | 2006 $FD_{28}$ |
| 2006 $FS_{28}$ | 18.6 | 0.15 | 20060415 | 346.25015 | 33.56607 | 196.89869 | 4.94727 | 0.1842816 | 2.3552339 | 22 | 1 | 43 days | 0.51 | | | MPC | | 2006 $FS_{28}$ |
| 2006 $FV_{29}$ | 17.4 | 0.15 | 20060922 | 357.81002 | 99.40018 | 174.20532 | 1.61112 | 0.1497452 | 2.2910328 | 44 | 4 | 2000–2006 | 0.37 | M-v | 1 | MPC | 03883 | 2006 $FV_{29}$ |
| 2006 $FV_{30}$ | 16.1 | 0.15 | 20060922 | 87.63457 | 14.97536 | 99.44776 | 1.97525 | 0.0768294 | 3.0405179 | 36 | 5 | 1998–2006 | 0.43 | M-v | 0 | MPC | 01532 | 2006 $FV_{30}$ |
| 2006 $FD_{32}$ | 17.4 | 0.15 | 20060922 | 290.51514 | 285.25013 | 37.01287 | 2.31310 | 0.0666745 | 2.7119748 | 26 | 2 | 2003–2006 | 0.28 | M-v | 3 | MPC | 03883 | 2006 $FD_{32}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $FV_{32}$ | 16.5 | 0.15 | 20060922 | 280.18731 | 164.05008 | 172.58538 | 4.01581 | 0.1056539 | 2.7682079 | 45 | 6 | 1994–2006 | 0.37 | M-v | 0 | MPC | 04371 | 2006 $FV_{32}$ |
| 2006 $FW_{33}$ | 20.2 | 0.15 | 20060922 | 352.45663 | 349.34542 | 13.49670 | 8.33654 | 0.8032224 | 1.0302270 | 10 | 1 | 3 days | 0.33 | M-v | 9 | MPC | 02312 | 2006 $FW_{33}$ |
| 2006 $FP_{34}$ | 15.4 | 0.15 | 20060922 | 99.91589 | 130.55126 | 352.70269 | 13.55583 | 0.1638129 | 2.6269740 | 51 | 4 | 1995–2006 | 0.60 | M-v | 1 | MPC | 01537 | 2006 $FP_{34}$ |
| 2006 $FD_{35}$ | 15.3 | 0.15 | 20060922 | 1.25701 | 189.89064 | 32.47911 | 7.86445 | 0.1402096 | 3.1593788 | 33 | 3 | 2002–2006 | 0.58 | M-v | 3 | MPC | 01538 | 2006 $FD_{35}$ |
| 2006 $FY_{36}$ | 16.9 | 0.15 | 20060922 | 6.58220 | 201.90580 | 35.93254 | 21.44873 | 0.0422068 | 2.3073052 | 41 | 3 | 2001–2006 | 0.62 | M-v | 2 | MPC | 01540 | 2006 $FY_{36}$ |
| 2006 $FH_{37}$ | 16.8 | 0.15 | 20060922 | 31.26969 | 176.31870 | 34.77535 | 7.93086 | 0.0593887 | 2.2975503 | 55 | 3 | 2001–2006 | 0.59 | M-v | 3 | MPC | 01541 | 2006 $FH_{37}$ |
| 2006 $FP_{37}$ | 16.0 | 0.15 | 20060922 | 39.91044 | 247.84405 | 334.02265 | 5.09112 | 0.1576927 | 2.2782646 | 45 | 5 | 1992–2006 | 0.58 | M-v | 2 | MPC | 04371 | 2006 $FP_{37}$ |
| 2006 $FW_{37}$ | 17.3 | 0.15 | 20060326 | 259.28083 | 235.44699 | 57.34252 | 3.82901 | 0.0327673 | 2.6562577 | 12 | 1 | 50 days | 0.32 | | | MPC | | 2006 $FW_{37}$ |
| 2006 $FY_{37}$ | 15.6 | 0.15 | 20060922 | 300.88316 | 254.29784 | 47.31802 | 13.41922 | 0.1150337 | 3.1240529 | 30 | 4 | 1995–2006 | 0.58 | M-v | 1 | MPC | 01542 | 2006 $FY_{37}$ |
| 2006 $FG_{38}$ | 17.5 | 0.15 | 20060922 | 87.40293 | 86.20425 | 57.80371 | 2.96378 | 0.1052257 | 2.2197822 | 24 | 3 | 2001–2006 | 0.42 | M-v | 3 | MPC | 01542 | 2006 $FG_{38}$ |
| 2006 $FP_{39}$ | 16.4 | 0.15 | 20060922 | 305.50662 | 266.35435 | 3.64965 | 3.51485 | 0.0591517 | 2.7759083 | 44 | 4 | 2001–2006 | 0.45 | M-v | 1 | MPC | 01544 | 2006 $FP_{39}$ |
| 2006 $FW_{39}$ | 17.7 | 0.15 | 20060922 | 113.54571 | 54.44148 | 49.34503 | 3.89052 | 0.1380431 | 2.4376905 | 33 | 4 | 2000–2006 | 0.28 | M-v | 0 | MPC | 01544 | 2006 $FW_{39}$ |
| 2006 $FN_{40}$ | 16.2 | 0.15 | 20060922 | 200.59637 | 240.25922 | 141.72475 | 3.63649 | 0.1228467 | 2.6489546 | 37 | 5 | 1995–2006 | 0.53 | M-v | 1 | MPC | 01544 | 2006 $FN_{40}$ |
| 2006 $FS_{40}$ | 15.6 | 0.15 | 20060922 | 143.24104 | 26.19080 | 30.74243 | 2.25747 | 0.0621402 | 2.8643671 | 52 | 5 | 1999–2006 | 0.46 | M-v | 1 | MPC | 01544 | 2006 $FS_{40}$ |
| 2006 $FU_{40}$ | 17.8 | 0.15 | 20060922 | 54.32666 | 26.66353 | 166.17569 | 3.29892 | 0.1113936 | 2.2515925 | 26 | 2 | 1999–2006 | 0.32 | M-v | 3 | MPC | 01545 | 2006 $FU_{40}$ |
| 2006 $FY_{40}$ | 16.6 | 0.15 | 20060922 | 92.38598 | 90.30735 | 50.94227 | 9.61280 | 0.1099336 | 2.6868691 | 33 | 2 | 2004–2006 | 0.39 | M-v | 3 | MPC | 01545 | 2006 $FY_{40}$ |
| 2006 $FS_{41}$ | 17.2 | 0.15 | 20060922 | 35.15225 | 43.33494 | 179.18132 | 3.44763 | 0.1753970 | 2.2969862 | 64 | 2 | 1999–2006 | 0.57 | M-v | 3 | MPC | 04371 | 2006 $FS_{41}$ |
| 2006 $FF_{42}$ | 17.3 | 0.15 | 20060922 | 341.25807 | 109.40800 | 178.80075 | 4.18482 | 0.2035793 | 2.6706378 | 34 | 3 | 1993–2006 | 0.29 | M-v | 3 | MPC | 01547 | 2006 $FF_{42}$ |
| 2006 $FO_{42}$ | 16.0 | 0.15 | 20060922 | 81.43587 | 78.31676 | 66.06472 | 3.23996 | 0.0849739 | 3.0075406 | 38 | 4 | 2001–2006 | 0.25 | M-v | 0 | MPC | 01547 | 2006 $FO_{42}$ |
| 2006 $FK_{43}$ | 15.7 | 0.15 | 20060922 | 69.66468 | 0.65834 | 151.07097 | 3.71808 | 0.1422444 | 3.0190580 | 48 | 7 | 1995–2006 | 0.52 | M-v | 0 | MPC | 01548 | 2006 $FK_{43}$ |
| 2006 $FO_{43}$ | 15.7 | 0.15 | 20060922 | 21.27086 | 21.73980 | 194.67452 | 17.21210 | 0.3220344 | 3.0183116 | 89 | 1 | 118 days | 0.53 | M-v | 3 | MPC | 02313 | 2006 $FO_{43}$ |
| 2006 $FT_{43}$ | 17.1 | 0.15 | 20060922 | 46.73420 | 131.99122 | 40.91921 | 4.37861 | 0.1597259 | 2.5693392 | 37 | 3 | 2002–2006 | 0.55 | M-v | 3 | MPC | 01548 | 2006 $FT_{43}$ |
| 2006 $FL_{44}$ | 17.6 | 0.15 | 20060922 | 351.11334 | 241.76962 | 18.92800 | 0.80112 | 0.1246654 | 2.2465418 | 45 | 5 | 1997–2006 | 0.47 | M-v | 1 | MPC | 01548 | 2006 $FL_{44}$ |
| 2006 $FN_{44}$ | 15.3 | 0.15 | 20060922 | 24.51260 | 162.99836 | 52.67452 | 8.59456 | 0.1280941 | 3.0980045 | 91 | 4 | 1992–2006 | 0.66 | M-v | 2 | MPC | 04372 | 2006 $FN_{44}$ |
| 2006 $FV_{45}$ | 15.9 | 0.15 | 20060922 | 62.80206 | 331.93911 | 184.27763 | 7.03243 | 0.0818214 | 2.7977010 | 41 | 3 | 1994–2006 | 0.38 | M-v | 3 | MPC | 01551 | 2006 $FV_{45}$ |
| 2006 $FB_{46}$ | 16.0 | 0.15 | 20060922 | 6.05093 | 252.97356 | 340.43031 | 6.79499 | 0.1668359 | 2.7573211 | 57 | 4 | 1992–2006 | 0.58 | M-v | 1 | MPC | 04372 | 2006 $FB_{46}$ |
| 2006 $FD_{46}$ | 16.0 | 0.15 | 20060922 | 282.92673 | 117.95326 | 185.41614 | 11.37683 | 0.0661533 | 3.0170233 | 36 | 4 | 1992–2006 | 0.42 | M-v | 2 | MPC | 04372 | 2006 $FD_{46}$ |
| 2006 $FL_{46}$ | 15.5 | 0.15 | 20060922 | 27.76331 | 64.25879 | 130.87971 | 14.84783 | 0.2431022 | 3.1616281 | 31 | 2 | 2000–2006 | 0.57 | M-v | 3 | MPC | 03884 | 2006 $FL_{46}$ |
| 2006 $FT_{46}$ | 15.7 | 0.15 | 20060922 | 6.91522 | 82.88375 | 160.54712 | 11.18959 | 0.2343535 | 2.7141559 | 56 | 4 | 2001–2006 | 0.49 | M-v | 1 | MPC | 01552 | 2006 $FT_{46}$ |
| 2006 $FL_{47}$ | 16.4 | 0.15 | 20060922 | 31.21683 | 14.20619 | 194.38831 | 4.80298 | 0.1517369 | 2.3718737 | 69 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 01553 | 2006 $FL_{47}$ |
| 2006 $FJ_{49}$ | 15.7 | 0.15 | 20060922 | 33.77366 | 59.98360 | 133.84091 | 17.74176 | 0.1734744 | 3.0494476 | 43 | 4 | 2000–2006 | 0.73 | M-v | 1 | MPC | 01555 | 2006 $FJ_{49}$ |
| 2006 $FR_{49}$ | 15.0 | 0.15 | 20060922 | 51.26612 | 61.70096 | 104.73050 | 17.14269 | 0.2213796 | 3.1945428 | 44 | 3 | 2000–2006 | 0.64 | M-v | 2 | MPC | 01556 | 2006 $FR_{49}$ |
| 2006 $FU_{49}$ | 15.0 | 0.15 | 20060922 | 8.59655 | 90.83871 | 126.08109 | 6.30667 | 0.1138384 | 3.1666433 | 27 | 3 | 2003–2006 | 0.58 | M-v | 3 | MPC | 01556 | 2006 $FU_{49}$ |
| 2006 $FX_{50}$ | 17.2 | 0.15 | 20060922 | 104.53227 | 8.60628 | 140.08933 | 24.15219 | 0.0725008 | 1.9190707 | 34 | 2 | 2004–2006 | 0.61 | M-v | 3 | MPC | 01557 | 2006 $FX_{50}$ |
| 2006 $FF_{51}$ | 15.2 | 0.15 | 20060922 | 8.61170 | 41.24439 | 212.06180 | 15.20771 | 0.2833905 | 2.6751432 | 107 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 01558 | 2006 $FF_{51}$ |
| 2006 $FQ_{51}$ | 17.0 | 0.15 | 20060922 | 7.63440 | 47.98454 | 200.31928 | 13.03004 | 0.0943323 | 2.6824416 | 23 | 3 | 1997–2006 | 0.49 | M-v | 2 | MPC | 01559 | 2006 $FQ_{51}$ |
| 2006 $FB_{52}$ | 16.5 | 0.15 | 20060922 | 294.59088 | 261.79598 | 52.19278 | 6.82399 | 0.1367595 | 2.4825201 | 27 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 01559 | 2006 $FB_{52}$ |
| 2006 $FM_{53}$ | 16.9 | 0.15 | 20060922 | 41.94526 | 140.59802 | 60.46018 | 3.25687 | 0.1417727 | 2.6784883 | 17 | 1 | 60 days | 0.58 | M-v | 4 | MPC | | 2006 $FM_{53}$ |
| 2006 $FN_{53}$ | 16.4 | 0.15 | 20060415 | 11.08187 | 29.01628 | 165.25673 | 1.67891 | 0.1883938 | 3.0793644 | 18 | 1 | 42 days | 0.32 | | | MPC | | 2006 $FN_{53}$ |
| 2006 $FO_{53}$ | 15.8 | 0.15 | 20060415 | 316.67162 | 56.51015 | 204.68556 | 5.13842 | 0.1209469 | 3.1798992 | 16 | 1 | 41 days | 0.32 | | | MPC | | 2006 $FO_{53}$ |
| 2006 $FP_{53}$ | 17.5 | 0.15 | 20060922 | 352.73042 | 66.99066 | 203.15685 | 6.11589 | 0.1134739 | 2.3600918 | 20 | 1 | 62 days | 0.31 | M-v | 4 | MPC | | 2006 $FP_{53}$ |
| 2006 $FQ_{53}$ | 17.8 | 0.15 | 20060415 | 309.72941 | 78.27252 | 194.57699 | 2.26805 | 0.1731490 | 2.2873334 | 19 | 1 | 55 days | 0.44 | | | MPC | | 2006 $FQ_{53}$ |
| 2006 $FR_{53}$ | 17.8 | 0.15 | 20060415 | 337.72169 | 193.73588 | 50.59818 | 3.01912 | 0.1804498 | 2.3292046 | 18 | 1 | 58 days | 0.38 | | | MPC | | 2006 $FR_{53}$ |
| 2006 $FT_{53}$ | 16.8 | 0.15 | 20060415 | 21.63546 | 329.10485 | 201.86269 | 14.55528 | 0.1896943 | 3.0001810 | 24 | 1 | 54 days | 0.53 | | | MPC | | 2006 $FT_{53}$ |
| 2006 GK | 15.9 | 0.15 | 20060922 | 31.32811 | 55.72394 | 158.78278 | 9.18863 | 0.0848931 | 2.5789757 | 68 | 3 | 2002–2006 | 0.57 | M-v | 3 | MPC | 01560 | 2006 GK |
| 2006 GU | 17.6 | 0.15 | 20060922 | 357.55567 | 145.71728 | 149.48776 | 17.55721 | 0.5809739 | 2.7023807 | 40 | 1 | 155 days | 0.64 | M-v | 3 | MPC | 04372 | 2006 GU |
| 2006 GX | 15.9 | 0.15 | 20060922 | 159.05396 | 140.73200 | 273.70482 | 2.38737 | 0.0886531 | 2.8110556 | 47 | 5 | 1999–2006 | 0.53 | M-v | 1 | MPC | 01561 | 2006 GX |
| 2006 GZ | 19.6 | 0.15 | 20060922 | 5.11172 | 292.31131 | 25.72173 | 12.48436 | 0.3797619 | 1.5276031 | 57 | 1 | 231 days | 0.47 | M-v | 3 | MPC | 02314 | 2006 GZ |
| 2006 $GE_2$ | 15.7 | 0.15 | 20060922 | 34.96283 | 303.63144 | 258.36107 | 12.63958 | 0.1481293 | 2.6178007 | 38 | 4 | 2002–2006 | 0.42 | M-v | 1 | MPC | 01562 | 2006 $GE_2$ |
| 2006 $GA_4$ | 16.2 | 0.15 | 20060922 | 111.48121 | 137.62134 | 324.26091 | 2.37479 | 0.0265922 | 2.5865535 | 56 | 5 | 1999–2006 | 0.49 | M-v | 0 | MPC | 03885 | 2006 $GA_4$ |
| 2006 $GD_4$ | 15.6 | 0.15 | 20060922 | 100.11489 | 104.15606 | 344.51829 | 12.89086 | 0.1546220 | 3.1327691 | 30 | 1 | 123 days | 0.32 | M-v | 4 | MPC | | 2006 $GD_4$ |
| 2006 $GH_9$ | 16.6 | 0.15 | 20060922 | 53.38806 | 85.19381 | 92.81707 | 3.33379 | 0.0228244 | 2.6603141 | 46 | 6 | 1993–2006 | 0.62 | M-v | 1 | MPC | 01566 | 2006 $GH_9$ |
| 2006 $GK_{12}$ | 17.8 | 0.15 | 20060922 | 354.05922 | 184.78930 | 91.86059 | 2.99261 | 0.2132714 | 2.2873678 | 19 | 2 | 1999–2006 | 0.54 | M-v | 4 | MPC | 01567 | 2006 $GK_{12}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $GF_{13}$ | 16.7 | 0.15 | 20060922 | 312.34122 | 227.03693 | 75.23769 | 4.76900 | 0.1081249 | 2.5526714 | 29 | 4 | 2002–2006 | 0.54 | M-v | 1 | MPC | 01567 | 2006 $GF_{13}$ |
| 2006 $GD_{14}$ | 16.9 | 0.15 | 20060922 | 92.65965 | 339.39667 | 160.19223 | 3.79691 | 0.1789214 | 2.3199044 | 50 | 3 | 2001–2006 | 0.59 | M-v | 2 | MPC | 01568 | 2006 $GD_{14}$ |
| 2006 $GB_{18}$ | 15.8 | 0.15 | 20060922 | 2.61286 | 154.34697 | 83.68288 | 2.13127 | 0.1520247 | 3.1209750 | 46 | 5 | 1996–2006 | 0.42 | M-v | 0 | MPC | 01570 | 2006 $GB_{18}$ |
| 2006 $GJ_{19}$ | 17.4 | 0.15 | 20060922 | 26.60144 | 164.48914 | 67.01770 | 2.90471 | 0.1756553 | 2.3469103 | 50 | 3 | 2000–2006 | 0.63 | M-v | 2 | MPC | 01571 | 2006 $GJ_{19}$ |
| 2006 $GJ_{21}$ | 16.5 | 0.15 | 20060306 | 124.24042 | 42.41500 | 0.42232 | 9.87045 | 0.1659530 | 2.6260506 | 18 | 1 | 46 days | 0.23 | | | MPC | | 2006 $GJ_{21}$ |
| 2006 $GL_{21}$ | 15.5 | 0.15 | 20060922 | 273.31900 | 123.46002 | 192.92922 | 8.92943 | 0.1225168 | 3.0071120 | 40 | 5 | 1992–2006 | 0.44 | M-v | 0 | MPC | 01572 | 2006 $GL_{21}$ |
| 2006 $GR_{21}$ | 16.8 | 0.15 | 20060922 | 8.58432 | 19.53237 | 197.56172 | 6.17028 | 0.0600689 | 2.8612412 | 42 | 4 | 1994–2006 | 0.32 | M-v | 0 | MPC | 04372 | 2006 $GR_{21}$ |
| 2006 $GT_{22}$ | 15.6 | 0.15 | 20060922 | 295.87980 | 253.50600 | 57.39099 | 5.43333 | 0.0789913 | 3.1443521 | 41 | 4 | 1995–2006 | 0.37 | M-v | 0 | MPC | 01574 | 2006 $GT_{22}$ |
| 2006 $GD_{23}$ | 17.4 | 0.15 | 20060922 | 161.55975 | 330.23780 | 106.09120 | 2.45812 | 0.1561263 | 2.3799251 | 28 | 4 | 1998–2006 | 0.37 | M-v | 2 | MPC | 01574 | 2006 $GD_{23}$ |
| 2006 $GM_{23}$ | 15.7 | 0.15 | 20060922 | 84.70030 | 317.08017 | 194.97630 | 9.75531 | 0.0294173 | 3.1007395 | 53 | 5 | 1997–2006 | 0.34 | M-v | 0 | MPC | 01574 | 2006 $GM_{23}$ |
| 2006 $GK_{24}$ | 16.0 | 0.15 | 20060922 | 278.54136 | 289.83636 | 57.40658 | 1.96205 | 0.2024540 | 2.4193752 | 55 | 5 | 2000–2006 | 0.44 | M-v | 1 | MPC | 01575 | 2006 $GK_{24}$ |
| 2006 $GP_{25}$ | 16.8 | 0.15 | 20060922 | 325.66985 | 205.62418 | 72.66097 | 1.43617 | 0.0305875 | 2.7694005 | 39 | 4 | 2001–2006 | 0.37 | M-v | 0 | MPC | 01575 | 2006 $GP_{25}$ |
| 2006 $GR_{26}$ | 17.3 | 0.15 | 20060922 | 237.82159 | 312.92812 | 68.48476 | 2.39036 | 0.0306610 | 2.2347659 | 28 | 3 | 2002–2006 | 0.38 | M-v | 3 | MPC | 01576 | 2006 $GR_{26}$ |
| 2006 $GL_{30}$ | 16.2 | 0.15 | 20060922 | 326.97457 | 171.66964 | 105.34471 | 3.27458 | 0.0280864 | 2.8682010 | 31 | 4 | 1998–2006 | 0.32 | M-v | 1 | MPC | 01578 | 2006 $GL_{30}$ |
| 2006 $GR_{30}$ | 17.6 | 0.15 | 20060922 | 294.43783 | 266.30211 | 64.43032 | 4.36564 | 0.0696820 | 2.1440929 | 35 | 3 | 2001–2006 | 0.39 | M-v | 3 | MPC | 01578 | 2006 $GR_{30}$ |
| 2006 $GL_{31}$ | 17.7 | 0.15 | 20060922 | 19.79335 | 46.26160 | 211.46804 | 21.03031 | 0.0514621 | 1.9544430 | 44 | 3 | 2001–2006 | 0.46 | M-v | 2 | MPC | 01579 | 2006 $GL_{31}$ |
| 2006 $GF_{32}$ | 15.8 | 0.15 | 20060922 | 90.67201 | 95.25265 | 45.59916 | 7.03337 | 0.1600623 | 3.1703170 | 37 | 4 | 2000–2006 | 0.31 | M-v | 0 | MPC | 01581 | 2006 $GF_{32}$ |
| 2006 $GM_{34}$ | 17.1 | 0.15 | 20060922 | 345.93082 | 181.69112 | 99.39013 | 3.18545 | 0.1732084 | 2.4444850 | 42 | 3 | 2003–2006 | 0.58 | M-v | 4 | MPC | 01582 | 2006 $GM_{34}$ |
| 2006 $GF_{35}$ | 16.8 | 0.15 | 20060922 | 18.68785 | 57.47464 | 175.78828 | 4.62501 | 0.1465219 | 2.2885914 | 38 | 6 | 1992–2006 | 0.59 | M-v | 1 | MPC | 04372 | 2006 $GF_{35}$ |
| 2006 $GH_{35}$ | 16.3 | 0.15 | 20060922 | 353.80421 | 76.57201 | 183.36412 | 7.48183 | 0.1282768 | 2.3718640 | 41 | 4 | 1995–2006 | 0.54 | M-v | 2 | MPC | 03889 | 2006 $GH_{35}$ |
| 2006 $GU_{36}$ | 17.1 | 0.15 | 20060922 | 308.91768 | 135.54000 | 164.22006 | 3.49168 | 0.1045473 | 2.5766864 | 43 | 3 | 1999–2006 | 0.25 | M-v | 3 | MPC | 01586 | 2006 $GU_{36}$ |
| 2006 $GU_{38}$ | 16.0 | 0.15 | 20060922 | 346.94153 | 42.82210 | 247.49907 | 9.83206 | 0.2353652 | 2.6257367 | 45 | 4 | 1998–2006 | 0.56 | M-v | 2 | MPC | 01590 | 2006 $GU_{38}$ |
| 2006 $GL_{39}$ | 15.5 | 0.15 | 20060922 | 33.58483 | 122.63984 | 76.22622 | 14.96692 | 0.2328645 | 3.1633446 | 45 | 2 | 2004–2006 | 0.43 | M-v | 2 | MPC | 01592 | 2006 $GL_{39}$ |
| 2006 $GD_{40}$ | 16.5 | 0.15 | 20060922 | 42.24495 | 203.80359 | 1.91978 | 4.67167 | 0.1094493 | 2.3011602 | 34 | 2 | 2004–2006 | 0.71 | M-v | 4 | MPC | 01593 | 2006 $GD_{40}$ |
| 2006 $GF_{40}$ | 15.7 | 0.15 | 20060922 | 12.60387 | 234.23430 | 358.93797 | 7.43811 | 0.1726115 | 2.8011268 | 30 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 01593 | 2006 $GF_{40}$ |
| 2006 $GH_{40}$ | 16.1 | 0.15 | 20060922 | 24.68214 | 6.89282 | 224.34444 | 6.14733 | 0.0914753 | 2.2846035 | 56 | 5 | 1997–2006 | 0.62 | M-v | 1 | MPC | 01593 | 2006 $GH_{40}$ |
| 2006 $GH_{41}$ | 17.6 | 0.15 | 20060922 | 24.29376 | 245.99419 | 340.62204 | 0.93629 | 0.1247611 | 2.3175165 | 32 | 4 | 1994–2006 | 0.60 | M-v | 1 | MPC | 04372 | 2006 $GH_{41}$ |
| 2006 $GK_{41}$ | 15.1 | 0.15 | 20060922 | 49.87288 | 339.57880 | 201.03750 | 10.41857 | 0.1179575 | 3.0241046 | 51 | 3 | 2001–2006 | 0.43 | M-v | 3 | MPC | 01595 | 2006 $GK_{41}$ |
| 2006 $GW_{41}$ | 16.1 | 0.15 | 20060922 | 2.50841 | 152.25141 | 97.84452 | 14.72648 | 0.1625275 | 2.7786971 | 39 | 3 | 2002–2006 | 0.64 | M-v | 2 | MPC | 04372 | 2006 $GW_{41}$ |
| 2006 $GA_{42}$ | 15.3 | 0.15 | 20060922 | 64.02490 | 122.43730 | 46.89550 | 15.02561 | 0.1117250 | 2.7346528 | 50 | 2 | 2001–2006 | 0.57 | M-v | 4 | MPC | 04372 | 2006 $GA_{42}$ |
| 2006 $GO_{42}$ | 16.3 | 0.15 | 20060922 | 58.71268 | 352.77170 | 182.31174 | 9.23253 | 0.1926869 | 2.7786157 | 68 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04372 | 2006 $GO_{42}$ |
| 2006 $GT_{42}$ | 14.9 | 0.15 | 20060922 | 52.57576 | 305.81338 | 204.12748 | 23.16390 | 0.2048174 | 3.1856905 | 35 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 01598 | 2006 $GT_{42}$ |
| 2006 $GK_{46}$ | 15.1 | 0.15 | 20060922 | 21.75957 | 170.03981 | 59.44218 | 9.20779 | 0.0927158 | 3.0900193 | 55 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 01601 | 2006 $GK_{46}$ |
| 2006 $GL_{46}$ | 17.3 | 0.15 | 20060922 | 52.15953 | 51.17619 | 148.17793 | 2.56222 | 0.1341832 | 2.6402919 | 22 | 3 | 2003–2006 | 0.21 | M-v | 2 | MPC | 01601 | 2006 $GL_{46}$ |
| 2006 $GN_{46}$ | 17.2 | 0.15 | 20060922 | 152.21142 | 47.24092 | 57.41709 | 7.67306 | 0.0657960 | 2.2706025 | 33 | 3 | 2002–2006 | 0.23 | M-v | 2 | MPC | 01601 | 2006 $GN_{46}$ |
| 2006 $GG_{47}$ | 15.5 | 0.15 | 20060922 | 317.41727 | 255.00264 | 27.51312 | 9.26143 | 0.0597503 | 3.1068118 | 42 | 3 | 2002–2006 | 0.29 | M-v | 3 | MPC | 01602 | 2006 $GG_{47}$ |
| 2006 $GJ_{47}$ | 16.0 | 0.15 | 20060922 | 69.61111 | 106.51336 | 51.65342 | 8.44045 | 0.1644703 | 2.7875574 | 48 | 2 | 2004–2006 | 0.60 | M-v | 3 | MPC | 04373 | 2006 $GJ_{47}$ |
| 2006 $GU_{47}$ | 15.9 | 0.15 | 20060922 | 193.75926 | 200.32857 | 206.07718 | 15.23155 | 0.1177417 | 2.6081270 | 33 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 01602 | 2006 $GU_{47}$ |
| 2006 $GX_{48}$ | 16.4 | 0.15 | 20060922 | 108.06064 | 269.72417 | 218.50551 | 12.87655 | 0.1277080 | 2.5615564 | 62 | 5 | 1999–2006 | 0.57 | M-v | 0 | MPC | 04373 | 2006 $GX_{48}$ |
| 2006 $GO_{49}$ | 16.6 | 0.15 | 20060922 | 66.17643 | 278.80903 | 228.25426 | 1.46615 | 0.1886401 | 2.6575420 | 41 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 01605 | 2006 $GO_{49}$ |
| 2006 $GQ_{49}$ | 15.0 | 0.15 | 20060922 | 48.37851 | 117.68910 | 48.30974 | 10.60964 | 0.1668926 | 3.1378622 | 52 | 5 | 1995–2006 | 0.54 | M-v | 1 | MPC | 01605 | 2006 $GQ_{49}$ |
| 2006 $GJ_{51}$ | 16.0 | 0.15 | 20060922 | 15.20719 | 258.18034 | 337.36121 | 6.37375 | 0.2071506 | 2.5393173 | 37 | 3 | 2002–2006 | 0.74 | M-v | 3 | MPC | 01608 | 2006 $GJ_{51}$ |
| 2006 $GW_{52}$ | 16.6 | 0.15 | 20060922 | 40.65416 | 32.79856 | 168.26355 | 18.62529 | 0.1647140 | 2.6619354 | 25 | 3 | 1997–2006 | 0.59 | M-v | 2 | MPC | 03893 | 2006 $GW_{52}$ |
| 2006 $GJ_{53}$ | 16.1 | 0.15 | 20060922 | 39.77325 | 97.59485 | 67.33566 | 16.43252 | 0.1541984 | 3.0690153 | 35 | 3 | 2001–2006 | 0.65 | M-v | 3 | MPC | 01609 | 2006 $GJ_{53}$ |
| 2006 $GO_{53}$ | 15.8 | 0.15 | 20060922 | 20.60438 | 28.79818 | 281.14970 | 22.32349 | 0.3077988 | 2.2037983 | 87 | 2 | 2003–2006 | 0.50 | M-v | 2 | MPC | 04373 | 2006 $GO_{53}$ |
| 2006 $GC_{54}$ | 17.7 | 0.15 | 20060922 | 58.77114 | 139.02450 | 56.98650 | 4.22347 | 0.0691492 | 2.2980474 | 16 | 1 | 60 days | 0.23 | M-v | 4 | MPC | | 2006 $GC_{54}$ |
| 2006 $GD_{54}$ | 17.2 | 0.15 | 20060922 | 346.06869 | 254.33176 | 44.24037 | 9.72182 | 0.2913449 | 2.7783562 | 15 | 1 | 61 days | 0.24 | M-v | 4 | MPC | | 2006 $GD_{54}$ |
| 2006 $GF_{54}$ | 17.0 | 0.15 | 20060505 | 352.74498 | 182.26697 | 46.96224 | 7.62582 | 0.0511277 | 2.7658733 | 18 | 1 | 47 days | 0.25 | | | MPC | | 2006 $GF_{54}$ |
| 2006 HV | 16.0 | 0.15 | 20060922 | 107.78364 | 332.25630 | 149.51982 | 4.28668 | 0.1677715 | 2.5808832 | 66 | 4 | 2000–2006 | 0.60 | M-v | 1 | MPC | 01610 | 2006 HV |
| 2006 $HC_1$ | 15.1 | 0.15 | 20060922 | 49.93656 | 330.28471 | 209.24094 | 26.96611 | 0.1287915 | 3.1628438 | 45 | 4 | 1995–2006 | 0.61 | M-v | 1 | MPC | 04373 | 2006 $HC_1$ |
| 2006 $HD_1$ | 15.6 | 0.15 | 20060922 | 31.44460 | 355.36231 | 209.65000 | 4.44269 | 0.1640590 | 3.0678953 | 69 | 4 | 1997–2006 | 0.59 | M-v | 1 | MPC | 04373 | 2006 $HD_1$ |
| 2006 $HL_1$ | 17.5 | 0.15 | 20060505 | 343.54322 | 188.99236 | 31.17930 | 8.65413 | 0.0927473 | 2.4107831 | 17 | 1 | 37 days | 0.37 | | | MPC | | 2006 $HL_1$ |
| 2006 $HX_1$ | 16.7 | 0.15 | 20060922 | 54.43788 | 101.05640 | 81.52013 | 5.74425 | 0.2198834 | 2.5527090 | 69 | 4 | 2000–2006 | 0.59 | M-v | 2 | MPC | 04373 | 2006 $HX_1$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $HZ_{1}$ | 17.0 | 0.15 | 20060922 | 18.02138 | 176.03761 | 66.30685 | 6.97667 | 0.0858062 | 2.3247699 | 59 | 4 | 1999–2006 | 0.49 | M-v | 1 | MPC | 04373 | 2006 $HZ_{1}$ |
| 2006 $HC_{2}$ | 21.8 | 0.15 | 20060922 | 46.84233 | 66.44269 | 198.36598 | 3.74829 | 0.4870861 | 1.7098466 | 58 | 1 | 179 days | 0.69 | M-v | 4 | MPC | 02318 | 2006 $HC_{2}$ |
| 2006 $HG_{2}$ | 15.1 | 0.15 | 20060922 | 337.68647 | 241.97194 | 32.52890 | 19.50577 | 0.2242575 | 3.1428148 | 45 | 3 | 1995–2006 | 0.47 | M-v | 3 | MPC | 01613 | 2006 $HG_{2}$ |
| 2006 $HX_{2}$ | 16.3 | 0.15 | 20060922 | 311.83971 | 104.10724 | 190.34716 | 9.39993 | 0.0113120 | 2.7381098 | 35 | 3 | 2001–2006 | 0.26 | M-v | 2 | MPC | 01614 | 2006 $HX_{2}$ |
| 2006 $HX_{3}$ | 16.0 | 0.15 | 20060922 | 144.53994 | 307.85817 | 144.96202 | 5.30368 | 0.1016291 | 2.7511232 | 42 | 4 | 2001–2006 | 0.39 | M-v | 0 | MPC | 01615 | 2006 $HX_{3}$ |
| 2006 $HZ_{3}$ | 17.4 | 0.15 | 20060922 | 24.46157 | 52.11633 | 184.14901 | 2.06446 | 0.1638327 | 2.3495151 | 46 | 4 | 1996–2006 | 0.39 | M-v | 1 | MPC | 01616 | 2006 $HZ_{3}$ |
| 2006 $HK_{4}$ | 16.4 | 0.15 | 20060922 | 60.63694 | 341.42910 | 175.98382 | 3.46099 | 0.1300934 | 2.7430397 | 25 | 4 | 1995–2006 | 0.40 | M-v | 2 | MPC | 01616 | 2006 $HK_{4}$ |
| 2006 $HQ_{4}$ | 16.9 | 0.15 | 20060922 | 343.79362 | 128.35733 | 150.05424 | 2.89997 | 0.1495475 | 2.6504408 | 31 | 5 | 1998–2006 | 0.51 | M-v | 1 | MPC | 03894 | 2006 $HQ_{4}$ |
| 2006 $HZ_{5}$ | 24.5 | 0.15 | 20060922 | 157.65461 | 307.27815 | 202.93533 | 4.27856 | 0.2061609 | 1.2022512 | 58 | 1 | 40 days | 0.48 | M-v | 5 | MPC | 02319 | 2006 $HZ_{5}$ |
| 2006 $HS_{6}$ | 15.9 | 0.15 | 20060922 | 20.38676 | 349.69416 | 243.48307 | 6.24664 | 0.1036943 | 2.2940333 | 48 | 5 | 1999–2006 | 0.69 | M-v | 1 | MPC | 01618 | 2006 $HS_{6}$ |
| 2006 $HT_{6}$ | 16.2 | 0.15 | 20060922 | 18.79074 | 349.16406 | 242.83062 | 5.16882 | 0.0690806 | 2.3161354 | 29 | 3 | 2002–2006 | 0.44 | M-v | 4 | MPC | 01618 | 2006 $HT_{6}$ |
| 2006 $HH_{8}$ | 15.6 | 0.15 | 20060922 | 120.01484 | 107.76634 | 346.17303 | 1.79615 | 0.0476233 | 3.0250368 | 45 | 5 | 2000–2006 | 0.46 | M-v | 0 | MPC | 01620 | 2006 $HH_{8}$ |
| 2006 $HN_{8}$ | 16.1 | 0.15 | 20060922 | 265.96275 | 128.62719 | 194.72734 | 13.85669 | 0.0627930 | 2.8010620 | 38 | 3 | 1997–2006 | 0.36 | M-v | 2 | MPC | 01621 | 2006 $HN_{8}$ |
| 2006 $HW_{9}$ | 17.4 | 0.15 | 20060922 | 344.34319 | 133.86223 | 141.51396 | 6.97154 | 0.1565831 | 2.6549015 | 21 | 4 | 1998–2006 | 0.21 | M-v | 0 | MPC | 01621 | 2006 $HW_{9}$ |
| 2006 $HD_{11}$ | 18.2 | 0.15 | 20060922 | 72.79083 | 72.07096 | 104.45736 | 5.48681 | 0.1083121 | 2.2881602 | 15 | 3 | 1999–2006 | 0.22 | M-v | 4 | MPC | 01622 | 2006 $HD_{11}$ |
| 2006 $HO_{11}$ | 17.1 | 0.15 | 20060922 | 233.67275 | 235.60625 | 140.19394 | 7.62087 | 0.0638900 | 2.7420997 | 26 | 3 | 2001–2006 | 0.29 | M-v | 3 | MPC | 01623 | 2006 $HO_{11}$ |
| 2006 $HS_{12}$ | 17.8 | 0.15 | 20060922 | 1.70303 | 240.64781 | 16.03445 | 19.66707 | 0.0817084 | 1.9932635 | 33 | 4 | 2000–2006 | 0.54 | M-v | 2 | MPC | 01624 | 2006 $HS_{12}$ |
| 2006 $HY_{12}$ | 16.0 | 0.15 | 20060922 | 39.09231 | 44.91011 | 151.24281 | 6.49467 | 0.1284922 | 3.1954837 | 31 | 4 | 2002–2006 | 0.41 | M-v | 1 | MPC | 04373 | 2006 $HY_{12}$ |
| 2006 $HC_{13}$ | 17.0 | 0.15 | 20060922 | 357.76471 | 119.48636 | 146.10471 | 5.09789 | 0.1758022 | 2.6091102 | 25 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 01625 | 2006 $HC_{13}$ |
| 2006 $HL_{14}$ | 17.5 | 0.15 | 20060922 | 357.46536 | 46.40291 | 203.35317 | 2.73698 | 0.0522588 | 2.7613938 | 23 | 3 | 1996–2006 | 0.28 | M-v | 3 | MPC | 04373 | 2006 $HL_{14}$ |
| 2006 $HA_{15}$ | 17.0 | 0.15 | 20060922 | 166.77693 | 34.15137 | 35.30940 | 1.90339 | 0.0554312 | 3.0248377 | 28 | 2 | 2003–2006 | 0.47 | M-v | 4 | MPC | 03894 | 2006 $HA_{15}$ |
| 2006 $HL_{15}$ | 16.0 | 0.15 | 20060922 | 80.78214 | 351.79646 | 165.51860 | 5.32251 | 0.1988240 | 2.6459721 | 67 | 5 | 1997–2006 | 0.70 | M-v | 1 | MPC | 01626 | 2006 $HL_{15}$ |
| 2006 $HP_{15}$ | 16.1 | 0.15 | 20060922 | 70.17650 | 319.32824 | 146.48934 | 2.70966 | 0.0968795 | 3.0048140 | 28 | 1 | 141 days | 0.48 | M-v | 4 | MPC | | 2006 $HP_{15}$ |
| 2006 $HX_{15}$ | 16.9 | 0.15 | 20060922 | 92.17233 | 345.39064 | 167.13215 | 4.47488 | 0.0146544 | 2.7785959 | 33 | 4 | 1996–2006 | 0.25 | M-v | 1 | MPC | 01626 | 2006 $HX_{15}$ |
| 2006 $HF_{16}$ | 16.3 | 0.15 | 20060922 | 27.92097 | 52.04289 | 182.64370 | 4.19848 | 0.1626590 | 2.6070362 | 46 | 3 | 1995–2006 | 0.59 | M-v | 3 | MPC | 01627 | 2006 $HF_{16}$ |
| 2006 $HJ_{16}$ | 16.9 | 0.15 | 20060922 | 135.66986 | 279.38205 | 174.97555 | 5.54179 | 0.1087141 | 3.1027498 | 25 | 3 | 2003–2006 | 0.29 | M-v | 3 | MPC | 01627 | 2006 $HJ_{16}$ |
| 2006 $HP_{16}$ | 17.1 | 0.15 | 20060922 | 334.89422 | 174.82266 | 127.60216 | 4.99421 | 0.1849630 | 2.4578286 | 50 | 6 | 1999–2006 | 0.48 | M-v | 0 | MPC | 01627 | 2006 $HP_{16}$ |
| 2006 $HQ_{16}$ | 16.1 | 0.15 | 20060922 | 107.88900 | 84.56972 | 33.37081 | 10.36817 | 0.0553582 | 2.8958605 | 39 | 4 | 1996–2006 | 0.47 | M-v | 2 | MPC | 01627 | 2006 $HQ_{16}$ |
| 2006 $HV_{17}$ | 15.6 | 0.15 | 20060922 | 353.90088 | 117.15700 | 133.49147 | 7.75152 | 0.1609326 | 2.9742263 | 39 | 3 | 2001–2006 | 0.65 | M-v | 3 | MPC | 01629 | 2006 $HV_{17}$ |
| 2006 $HZ_{17}$ | 16.2 | 0.15 | 20060922 | 359.42069 | 156.18611 | 69.16233 | 1.98237 | 0.0376098 | 3.0147885 | 42 | 4 | 1998–2006 | 0.35 | M-v | 0 | MPC | 01629 | 2006 $HZ_{17}$ |
| 2006 $HF_{18}$ | 20.4 | 0.15 | 20060922 | 347.30036 | 100.64745 | 142.85413 | 4.52372 | 0.0492833 | 2.8126778 | 27 | 5 | 1995–2006 | 0.32 | M-v | 0 | MPC | 01630 | 2006 $HF_{18}$ |
| 2006 $HN_{18}$ | 17.1 | 0.15 | 20060922 | 325.47346 | 90.93706 | 202.68745 | 1.88223 | 0.1204793 | 2.7029949 | 33 | 3 | 2003–2006 | 0.36 | M-v | 3 | MPC | 03895 | 2006 $HN_{18}$ |
| 2006 $HQ_{18}$ | 17.1 | 0.15 | 20060922 | 130.17570 | 81.36733 | 33.74706 | 4.68665 | 0.0456999 | 2.4210696 | 38 | 4 | 2000–2006 | 0.50 | M-v | 1 | MPC | 01630 | 2006 $HQ_{18}$ |
| 2006 $HS_{18}$ | 17.5 | 0.15 | 20060922 | 92.93636 | 70.58221 | 77.85312 | 5.31061 | 0.1502998 | 2.4718773 | 33 | 3 | 2002–2006 | 0.34 | M-v | 2 | MPC | 01630 | 2006 $HS_{18}$ |
| 2006 $HD_{19}$ | 16.4 | 0.15 | 20060922 | 276.81312 | 304.77310 | 51.32452 | 11.78064 | 0.2630190 | 2.3987399 | 19 | 2 | 1995–2006 | 0.25 | M-v | 4 | MPC | 01631 | 2006 $HD_{19}$ |
| 2006 $HK_{19}$ | 17.3 | 0.15 | 20060922 | 327.74835 | 189.84117 | 119.43905 | 4.39890 | 0.2306938 | 2.5789271 | 24 | 4 | 1994–2006 | 0.46 | M-v | 2 | MPC | 01631 | 2006 $HK_{19}$ |
| 2006 $HB_{21}$ | 15.7 | 0.15 | 20060922 | 97.58995 | 52.76764 | 78.65206 | 5.14975 | 0.0842891 | 3.2228077 | 22 | 3 | 2000–2006 | 0.25 | M-v | 1 | MPC | 01633 | 2006 $HB_{21}$ |
| 2006 $HE_{21}$ | 17.2 | 0.15 | 20060922 | 25.88302 | 140.11823 | 94.98020 | 3.65197 | 0.0717411 | 2.2130815 | 39 | 3 | 2000–2006 | 0.50 | M-v | 4 | MPC | 01633 | 2006 $HE_{21}$ |
| 2006 $HG_{21}$ | 16.3 | 0.15 | 20060922 | 242.66779 | 218.12416 | 148.68164 | 5.00455 | 0.0835034 | 2.7813810 | 34 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 04373 | 2006 $HG_{21}$ |
| 2006 $HM_{21}$ | 16.9 | 0.15 | 20060922 | 318.64507 | 131.60845 | 179.83851 | 7.49943 | 0.2144196 | 2.8000000 | 26 | 3 | 2001–2006 | 0.28 | M-v | 3 | MPC | 01634 | 2006 $HM_{21}$ |
| 2006 $HA_{22}$ | 16.3 | 0.15 | 20060922 | 122.88787 | 358.50575 | 119.91238 | 3.36655 | 0.0429403 | 2.8056614 | 24 | 4 | 1996–2006 | 0.39 | M-v | 1 | MPC | 01634 | 2006 $HA_{22}$ |
| 2006 $HG_{22}$ | 16.8 | 0.15 | 20060922 | 140.41911 | 299.29916 | 161.41802 | 3.92987 | 0.0580466 | 2.7789341 | 36 | 6 | 1996–2006 | 0.36 | M-v | 0 | MPC | 01634 | 2006 $HG_{22}$ |
| 2006 $HO_{22}$ | 16.8 | 0.15 | 20060922 | 319.25985 | 165.28623 | 131.44032 | 2.61522 | 0.0727592 | 2.6541198 | 34 | 5 | 1999–2006 | 0.31 | M-v | 0 | MPC | 01634 | 2006 $HO_{22}$ |
| 2006 $HW_{22}$ | 15.7 | 0.15 | 20060922 | 89.11710 | 86.79902 | 52.50908 | 10.93405 | 0.1077332 | 3.1775679 | 35 | 4 | 1992–2006 | 0.38 | M-v | 0 | MPC | 04373 | 2006 $HW_{22}$ |
| 2006 $HJ_{23}$ | 16.0 | 0.15 | 20060922 | 99.94912 | 52.22165 | 77.66236 | 3.42158 | 0.0986240 | 3.0381874 | 41 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 01636 | 2006 $HJ_{23}$ |
| 2006 $HL_{23}$ | 16.3 | 0.15 | 20060922 | 357.98229 | 143.87434 | 105.50215 | 3.08380 | 0.0388374 | 2.7832637 | 33 | 5 | 1999–2006 | 0.42 | M-v | 0 | MPC | 01636 | 2006 $HL_{23}$ |
| 2006 $HT_{23}$ | 16.0 | 0.15 | 20060922 | 84.62288 | 331.40099 | 191.48607 | 3.95856 | 0.0234534 | 3.0446085 | 36 | 5 | 1995–2006 | 0.40 | M-v | 0 | MPC | 01636 | 2006 $HT_{23}$ |
| 2006 $HA_{24}$ | 17.3 | 0.15 | 20060922 | 10.88659 | 134.72156 | 114.53220 | 2.35402 | 0.0411007 | 2.5458747 | 28 | 3 | 1995–2006 | 0.34 | M-v | 3 | MPC | 01637 | 2006 $HA_{24}$ |
| 2006 $HB_{24}$ | 16.0 | 0.15 | 20060922 | 281.83340 | 127.52317 | 206.06921 | 9.42456 | 0.0491135 | 3.1069701 | 38 | 4 | 1992–2006 | 0.31 | M-v | 2 | MPC | 01637 | 2006 $HB_{24}$ |
| 2006 $HE_{24}$ | 17.2 | 0.15 | 20060922 | 349.60459 | 215.59466 | 74.70544 | 4.50884 | 0.1844618 | 2.4332883 | 22 | 3 | 2002–2006 | 0.22 | M-v | 1 | MPC | 01637 | 2006 $HE_{24}$ |
| 2006 $HX_{24}$ | 14.9 | 0.15 | 20060922 | 347.06453 | 68.40519 | 205.17215 | 9.38807 | 0.0734356 | 3.1138790 | 35 | 3 | 2000–2006 | 0.66 | M-v | 3 | MPC | 01638 | 2006 $HX_{24}$ |
| 2006 $HF_{25}$ | 16.5 | 0.15 | 20060922 | 144.33694 | 332.69326 | 133.57774 | 3.34980 | 0.1508094 | 2.4578322 | 43 | 4 | 1998–2006 | 0.42 | M-v | 1 | MPC | 01638 | 2006 $HF_{25}$ |
| 2006 $HM_{25}$ | 16.9 | 0.15 | 20060922 | 332.07761 | 192.19106 | 125.90385 | 3.59080 | 0.2084862 | 2.4449458 | 30 | 4 | 1995–2006 | 0.37 | M-v | 0 | MPC | 01639 | 2006 $HM_{25}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $HE_{28}$ | 16.3 | 0.15 | 20060922 | 137.08712 | 275.95395 | 200.41213 | 15.33150 | 0.0965392 | 2.7235620 | 28 | 3 | 2003–2006 | 0.34 | M-v | 2 | MPC | 01642 | 2006 $HE_{28}$ |
| 2006 $HL_{28}$ | 16.0 | 0.15 | 20060922 | 14.82088 | 88.56225 | 166.92936 | 16.20394 | 0.2037935 | 3.1532289 | 28 | 1 | 60 days | 0.45 | M-v | 3 | MPC | | 2006 $HL_{28}$ |
| 2006 $HC_{29}$ | 17.0 | 0.15 | 20060922 | 3.86994 | 75.10833 | 202.25690 | 3.49227 | 0.2202022 | 2.3703968 | 52 | 5 | 1996–2006 | 0.61 | M-v | 1 | MPC | 01643 | 2006 $HC_{29}$ |
| 2006 $HW_{29}$ | 16.4 | 0.15 | 20060922 | 339.28985 | 152.69005 | 120.82099 | 12.43392 | 0.1736557 | 2.6863389 | 34 | 3 | 2001–2006 | 0.66 | M-v | 3 | MPC | 01644 | 2006 $HW_{29}$ |
| 2006 $HB_{30}$ | 16.3 | 0.15 | 20060922 | 83.15070 | 45.47677 | 107.03830 | 5.03967 | 0.1821021 | 2.5591636 | 38 | 2 | 2000–2006 | 0.61 | M-v | 4 | MPC | 01644 | 2006 $HB_{30}$ |
| 2006 $HT_{30}$ | 20.2 | 0.15 | 20060922 | 11.02272 | 224.04980 | 73.65647 | 1.64168 | 0.6164662 | 2.5683430 | 68 | 1 | 187 days | 0.50 | M-v | 4 | MPC | 04374 | 2006 $HT_{30}$ |
| 2006 $HO_{31}$ | 16.1 | 0.15 | 20060922 | 59.41891 | 338.72565 | 200.55489 | 13.28296 | 0.0897968 | 2.7546279 | 42 | 3 | 2001–2006 | 0.53 | M-v | 2 | MPC | 04374 | 2006 $HO_{31}$ |
| 2006 $HV_{31}$ | 15.3 | 0.15 | 20060922 | 11.44862 | 210.17740 | 10.18166 | 3.66740 | 0.1268021 | 3.1202898 | 46 | 3 | 2003–2006 | 0.51 | M-v | 3 | MPC | 03896 | 2006 $HV_{31}$ |
| 2006 $HR_{34}$ | 16.2 | 0.15 | 20060922 | 76.48302 | 82.43677 | 71.91814 | 4.51989 | 0.2297645 | 2.5818559 | 49 | 3 | 2002–2006 | 0.53 | M-v | 3 | MPC | 04374 | 2006 $HR_{34}$ |
| 2006 $HM_{35}$ | 14.4 | 0.15 | 20060922 | 318.32546 | 209.86108 | 83.00894 | 12.00656 | 0.0532731 | 3.1035086 | 56 | 5 | 2000–2006 | 0.59 | M-v | 1 | MPC | 01650 | 2006 $HM_{35}$ |
| 2006 $HP_{35}$ | 16.8 | 0.15 | 20060922 | 43.59300 | 104.17213 | 110.45215 | 2.99774 | 0.1825921 | 2.3337999 | 55 | 4 | 1999–2006 | 0.58 | M-v | 1 | MPC | 01651 | 2006 $HP_{35}$ |
| 2006 $HT_{38}$ | 17.4 | 0.15 | 20060922 | 53.94784 | 119.31676 | 88.30262 | 4.84069 | 0.0952605 | 2.2673884 | 30 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 01654 | 2006 $HT_{38}$ |
| 2006 $HQ_{39}$ | 16.2 | 0.15 | 20060922 | 44.71626 | 129.96504 | 80.39956 | 3.70758 | 0.1078764 | 2.5317450 | 58 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 01655 | 2006 $HQ_{39}$ |
| 2006 $HF_{40}$ | 16.0 | 0.15 | 20060922 | 268.80299 | 197.13364 | 151.90477 | 5.38245 | 0.0451860 | 3.3597040 | 35 | 3 | 2001–2006 | 0.31 | M-v | 3 | MPC | 01657 | 2006 $HF_{40}$ |
| 2006 $HH_{41}$ | 16.2 | 0.15 | 20060922 | 276.71045 | 204.09860 | 153.60926 | 10.33580 | 0.1135989 | 2.6891090 | 23 | 3 | 2003–2006 | 0.33 | M-v | 3 | MPC | 01658 | 2006 $HH_{41}$ |
| 2006 $HU_{41}$ | 15.7 | 0.15 | 20060922 | 273.57297 | 177.38887 | 170.65537 | 12.24333 | 0.0392955 | 3.0913008 | 19 | 3 | 2002–2006 | 0.18 | M-v | 4 | MPC | 01658 | 2006 $HU_{41}$ |
| 2006 $HR_{45}$ | 15.8 | 0.15 | 20060922 | 335.44620 | 156.12357 | 108.98560 | 2.55640 | 0.1432125 | 3.1159874 | 25 | 3 | 1995–2006 | 0.25 | M-v | 3 | MPC | 01665 | 2006 $HR_{45}$ |
| 2006 $HT_{46}$ | 17.7 | 0.15 | 20060922 | 196.30992 | 308.06152 | 110.84883 | 4.81200 | 0.1052873 | 2.2121276 | 27 | 3 | 1996–2006 | 0.41 | M-v | 4 | MPC | 01666 | 2006 $HT_{46}$ |
| 2006 $HY_{46}$ | 16.8 | 0.15 | 20060922 | 292.37836 | 160.72206 | 167.13117 | 4.21774 | 0.1117043 | 2.6282038 | 30 | 3 | 2003–2006 | 0.41 | M-v | 3 | MPC | 01666 | 2006 $HY_{46}$ |
| 2006 $HZ_{46}$ | 16.8 | 0.15 | 20060922 | 316.04420 | 202.85792 | 109.81661 | 3.31206 | 0.1647596 | 2.5565525 | 40 | 3 | 2003–2006 | 0.43 | M-v | 3 | MPC | 01666 | 2006 $HZ_{46}$ |
| 2006 $HA_{47}$ | 17.7 | 0.15 | 20060922 | 80.69259 | 326.46225 | 186.30334 | 5.44956 | 0.1521876 | 2.6811585 | 24 | 3 | 1993–2006 | 0.37 | M-v | 3 | MPC | 04374 | 2006 $HA_{47}$ |
| 2006 $HK_{47}$ | 15.1 | 0.15 | 20060922 | 136.79869 | 47.94619 | 47.56210 | 15.07777 | 0.0623644 | 3.0634175 | 48 | 3 | 2003–2006 | 0.53 | M-v | 2 | MPC | 01667 | 2006 $HK_{47}$ |
| 2006 $HB_{48}$ | 16.7 | 0.15 | 20060922 | 329.57573 | 237.25630 | 74.84055 | 7.01431 | 0.2045524 | 2.2798371 | 51 | 5 | 1993–2006 | 0.65 | M-v | 1 | MPC | 04374 | 2006 $HB_{48}$ |
| 2006 $HC_{48}$ | 16.7 | 0.15 | 20060922 | 348.22349 | 122.75322 | 146.75873 | 4.36604 | 0.0727122 | 2.5932469 | 33 | 4 | 2002–2006 | 0.46 | M-v | 0 | MPC | 01668 | 2006 $HC_{48}$ |
| 2006 $HH_{49}$ | 16.5 | 0.15 | 20060922 | 344.67113 | 141.18953 | 127.05860 | 3.15354 | 0.1539589 | 2.5357546 | 43 | 4 | 1998–2006 | 0.55 | M-v | 2 | MPC | 01669 | 2006 $HH_{49}$ |
| 2006 $HK_{49}$ | 15.8 | 0.15 | 20060922 | 137.98287 | 334.25671 | 101.13322 | 3.54080 | 0.1308345 | 3.0555079 | 18 | 2 | 1995–2006 | 0.25 | M-v | 3 | MPC | 01669 | 2006 $HK_{49}$ |
| 2006 $HW_{49}$ | 16.0 | 0.15 | 20060922 | 89.34295 | 93.10473 | 31.68555 | 9.52041 | 0.1883661 | 2.7160149 | 49 | 4 | 1995–2006 | 0.42 | M-v | 0 | MPC | 01670 | 2006 $HW_{49}$ |
| 2006 $HW_{50}$ | 24.4 | 0.15 | 20060922 | 130.59977 | 323.26805 | 216.21875 | 5.54221 | 0.1907922 | 1.2353759 | 71 | 1 | 40 days | 0.62 | M-v | 6 | MPC | 02326 | 2006 $HW_{50}$ |
| 2006 $HT_{51}$ | 16.8 | 0.15 | 20060922 | 49.85910 | 256.98284 | 302.32903 | 9.40727 | 0.1906577 | 2.4458453 | 30 | 3 | 2002–2006 | 0.43 | M-v | 3 | MPC | 01671 | 2006 $HT_{51}$ |
| 2006 $HP_{52}$ | 16.0 | 0.15 | 20060505 | 353.95465 | 123.55866 | 94.96037 | 15.12208 | 0.1354659 | 2.7251168 | 26 | 1 | 54 days | 0.78 | | | MPC | | 2006 $HP_{52}$ |
| 2006 $HM_{53}$ | 16.7 | 0.15 | 20060922 | 13.36040 | 151.69778 | 91.91519 | 6.37467 | 0.1253978 | 2.6561425 | 36 | 4 | 2001–2006 | 0.52 | M-v | 0 | MPC | 01673 | 2006 $HM_{53}$ |
| 2006 $HK_{54}$ | 17.0 | 0.15 | 20060922 | 342.53461 | 69.15077 | 217.90171 | 2.19421 | 0.1673454 | 2.3648418 | 52 | 4 | 1996–2006 | 0.55 | M-v | 1 | MPC | 01674 | 2006 $HK_{54}$ |
| 2006 $HE_{57}$ | 16.5 | 0.15 | 20060922 | 6.42127 | 197.78974 | 59.49340 | 7.15214 | 0.0727724 | 2.2899742 | 44 | 3 | 2002–2006 | 0.60 | M-v | 3 | MPC | 01677 | 2006 $HE_{57}$ |
| 2006 $HJ_{57}$ | 17.0 | 0.15 | 20060922 | 61.43024 | 96.56840 | 102.26126 | 4.52303 | 0.0901238 | 2.1946302 | 51 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 01677 | 2006 $HJ_{57}$ |
| 2006 $HV_{57}$ | 18.5 | 0.15 | 20060922 | 12.09052 | 17.26167 | 265.02686 | 6.00137 | 0.5753251 | 2.7415904 | 131 | 1 | 183 days | 0.46 | M-v | 3 | MPC | 04374 | 2006 $HV_{57}$ |
| 2006 $HW_{57}$ | 20.3 | 0.15 | 20060922 | 23.25589 | 33.50061 | 251.25096 | 7.15397 | 0.5204699 | 2.1445673 | 308 | 1 | 166 days | 0.43 | M-v | 3 | MPC | 04374 | 2006 $HW_{57}$ |
| 2006 $HX_{57}$ | 25.2 | 0.15 | 20060922 | 41.98684 | 160.69793 | 110.55917 | 0.19691 | 0.4939928 | 1.8056498 | 83 | 1 | 6 days | 0.50 | M-v | 6 | MPC | 02327 | 2006 $HX_{57}$ |
| 2006 $HY_{57}$ | 20.8 | 0.15 | 20060922 | 31.01649 | 11.25216 | 221.06796 | 26.40924 | 0.5703737 | 2.6678677 | 78 | 1 | 88 days | 0.58 | M-v | 4 | MPC | 04374 | 2006 $HY_{57}$ |
| 2006 $HX_{59}$ | 15.5 | 0.15 | 20060922 | 55.90564 | 113.75196 | 71.68845 | 16.84624 | 0.1480866 | 3.0607378 | 37 | 3 | 1998–2006 | 0.61 | M-v | 2 | MPC | 01680 | 2006 $HX_{59}$ |
| 2006 $HF_{63}$ | 16.0 | 0.15 | 20060922 | 299.38420 | 168.45395 | 153.55781 | 2.54329 | 0.0794864 | 2.8686221 | 34 | 3 | 2002–2006 | 0.28 | M-v | 3 | MPC | 01683 | 2006 $HF_{63}$ |
| 2006 $HT_{63}$ | 16.6 | 0.15 | 20060922 | 302.20455 | 154.30324 | 167.15693 | 2.98751 | 0.0741651 | 2.7331397 | 33 | 4 | 1996–2006 | 0.35 | M-v | 1 | MPC | 01683 | 2006 $HT_{63}$ |
| 2006 $HK_{65}$ | 17.5 | 0.15 | 20060922 | 48.51286 | 152.52433 | 61.27407 | 6.64427 | 0.0435295 | 2.4290350 | 17 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 01684 | 2006 $HK_{65}$ |
| 2006 $HL_{66}$ | 17.6 | 0.15 | 20060922 | 305.37492 | 251.24119 | 64.65950 | 2.89478 | 0.0666642 | 2.8501802 | 24 | 3 | 2001–2006 | 0.26 | M-v | 3 | MPC | 01685 | 2006 $HL_{66}$ |
| 2006 $HZ_{66}$ | 18.5 | 0.15 | 20060922 | 4.55431 | 105.69307 | 165.42788 | 1.51681 | 0.1641931 | 2.3575841 | 21 | 3 | 2002–2006 | 0.35 | M-v | 2 | MPC | 01685 | 2006 $HZ_{66}$ |
| 2006 $HW_{70}$ | 16.5 | 0.15 | 20060922 | 298.72337 | 244.33230 | 59.04468 | 9.79173 | 0.0207141 | 3.0407388 | 23 | 2 | 2003–2006 | 0.21 | M-v | 3 | MPC | 01688 | 2006 $HW_{70}$ |
| 2006 $HZ_{70}$ | 16.2 | 0.15 | 20060922 | 11.97204 | 149.58993 | 91.91617 | 9.63923 | 0.1613772 | 2.7767741 | 33 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 03902 | 2006 $HZ_{70}$ |
| 2006 $HC_{74}$ | 17.1 | 0.15 | 20060922 | 114.57465 | 347.01338 | 145.73586 | 4.05423 | 0.1832000 | 2.2631834 | 29 | 3 | 2002–2006 | 0.44 | M-v | 1 | MPC | 01691 | 2006 $HC_{74}$ |
| 2006 $HL_{74}$ | 16.6 | 0.15 | 20060922 | 202.02727 | 338.94447 | 79.28823 | 7.06656 | 0.1221669 | 2.4110788 | 27 | 3 | 2000–2006 | 0.49 | M-v | 3 | MPC | 01691 | 2006 $HL_{74}$ |
| 2006 $HC_{76}$ | 16.8 | 0.15 | 20060922 | 298.35237 | 189.75609 | 137.27598 | 9.33854 | 0.0685283 | 2.8834730 | 18 | 3 | 2000–2006 | 0.26 | M-v | 3 | MPC | 01693 | 2006 $HC_{76}$ |
| 2006 $HM_{77}$ | 15.4 | 0.15 | 20060922 | 270.03206 | 266.69845 | 106.23197 | 13.31082 | 0.1869287 | 2.6383288 | 42 | 4 | 2000–2006 | 0.58 | M-v | 1 | MPC | 01694 | 2006 $HM_{77}$ |
| 2006 $HF_{78}$ | 16.9 | 0.15 | 20060922 | 39.00231 | 174.07276 | 46.65972 | 7.05572 | 0.0826105 | 2.3124936 | 34 | 3 | 1999–2006 | 0.48 | M-v | 3 | MPC | 01695 | 2006 $HF_{78}$ |
| 2006 $HS_{80}$ | 17.4 | 0.15 | 20060922 | 31.54636 | 188.60597 | 40.06382 | 4.20668 | 0.0619369 | 2.6239989 | 37 | 3 | 2003–2006 | 0.18 | M-v | 3 | MPC | 01697 | 2006 $HS_{80}$ |
| 2006 $HY_{86}$ | 17.5 | 0.15 | 20060922 | 313.86009 | 187.74631 | 120.85872 | 6.98257 | 0.0227652 | 2.8142519 | 29 | 4 | 1998–2006 | 0.36 | M-v | 0 | MPC | 01704 | 2006 $HY_{86}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $HH_{90}$ | 14.9 | 0.15 | 20060922 | 27.66801 | 344.06104 | 305.07651 | 18.26408 | 0.2175859 | 3.1236699 | 73 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 03904 | 2006 $HH_{90}$ |
| 2006 $HO_{90}$ | 17.3 | 0.15 | 20060922 | 3.71518 | 236.99554 | 30.07337 | 2.35491 | 0.0941542 | 2.3373007 | 28 | 3 | 2002–2006 | 0.37 | M-v | 3 | MPC | 01708 | 2006 $HO_{90}$ |
| 2006 $HV_{91}$ | 16.5 | 0.15 | 20060922 | 18.57260 | 110.67963 | 132.41413 | 5.88776 | 0.0662167 | 2.7441767 | 32 | 3 | 2002–2006 | 0.26 | M-v | 3 | MPC | 01709 | 2006 $HV_{91}$ |
| 2006 $HB_{95}$ | 16.3 | 0.15 | 20060922 | 47.63841 | 345.17130 | 177.08706 | 6.46168 | 0.0883704 | 2.7184823 | 33 | 1 | 112 days | 0.59 | M-v | 3 | MPC | | 2006 $HB_{95}$ |
| 2006 $HP_{100}$ | 17.3 | 0.15 | 20060922 | 16.40326 | 125.67927 | 138.09830 | 5.35654 | 0.1341507 | 2.1784868 | 47 | 3 | 1999–2006 | 0.55 | M-v | 3 | MPC | 01715 | 2006 $HP_{100}$ |
| 2006 $HW_{100}$ | 15.4 | 0.15 | 20060922 | 189.27472 | 358.98092 | 67.72896 | 16.33535 | 0.1205428 | 2.8716395 | 73 | 3 | 2003–2006 | 0.63 | M-v | 2 | MPC | 01715 | 2006 $HW_{100}$ |
| 2006 $HQ_{108}$ | 16.9 | 0.15 | 20060922 | 13.93560 | 144.17835 | 107.26172 | 7.37905 | 0.1076493 | 2.4159003 | 37 | 3 | 2002–2006 | 0.63 | M-v | 3 | MPC | 01721 | 2006 $HQ_{108}$ |
| 2006 $HF_{118}$ | 17.8 | 0.15 | 20060922 | 8.49531 | 105.90394 | 142.50230 | 3.02034 | 0.1689322 | 2.3716244 | 27 | 4 | 1995–2006 | 0.41 | M-v | 1 | MPC | 01728 | 2006 $HF_{118}$ |
| 2006 $HL_{120}$ | 15.7 | 0.15 | 20060922 | 304.41979 | 186.86959 | 145.77549 | 0.45258 | 0.1801949 | 3.0963846 | 50 | 7 | 1996–2006 | 0.53 | M-v | 0 | MPC | 01729 | 2006 $HL_{120}$ |
| 2006 $HL_{121}$ | 16.5 | 0.15 | 20060922 | 281.73847 | 218.45695 | 151.24557 | 12.86315 | 0.2716534 | 2.6236747 | 21 | 3 | 1994–2006 | 0.36 | M-v | 2 | MPC | 01730 | 2006 $HL_{121}$ |
| 2006 $HS_{122}$ | 7.4 | 0.15 | 20060614 | 307.05357 | 298.69888 | 18.09275 | 4.28907 | 0.3728758 | 45.0079637 | 8 | 1 | 119 days | 0.28 | | E | MPC | | 2006 $HS_{122}$ |
| 2006 $HT_{122}$ | 7.2 | 0.15 | 20060614 | 0.19997 | 50.38044 | 171.42515 | 7.18428 | 0.0059516 | 38.7709618 | 8 | 1 | 119 days | 0.23 | | E | MPC | | 2006 $HT_{122}$ |
| 2006 $HV_{122}$ | 6.0 | 0.15 | 20060614 | 343.34563 | 215.41651 | 40.69868 | 16.06011 | 0.3527340 | 65.9881040 | 8 | 1 | 118 days | 0.15 | | E | MPC | | 2006 $HV_{122}$ |
| 2006 $HW_{122}$ | 6.4 | 0.15 | 20060614 | 0.15284 | 182.38919 | 46.18491 | 1.53519 | 0.0434292 | 45.7503526 | 8 | 1 | 118 days | 0.14 | | E | MPC | | 2006 $HW_{122}$ |
| 2006 $HX_{122}$ | 5.9 | 0.15 | 20060614 | 48.82954 | 264.02775 | 250.65775 | 12.76096 | 0.2855429 | 59.1440590 | 8 | 1 | 118 days | 0.17 | | | MPC | | 2006 $HX_{122}$ |
| 2006 $HY_{122}$ | 6.5 | 0.15 | 20060614 | 0.16109 | 208.99083 | 29.32663 | 2.90807 | 0.0218148 | 44.1613232 | 6 | 1 | 118 days | 0.24 | | E | MPC | | 2006 $HY_{122}$ |
| 2006 $HZ_{122}$ | 7.2 | 0.15 | 20060614 | 0.15068 | 356.38367 | 242.49299 | 30.23179 | 0.1272681 | 46.1607320 | 8 | 1 | 118 days | 0.25 | | E | MPC | | 2006 $HZ_{122}$ |
| 2006 $HB_{123}$ | 6.9 | 0.15 | 20060614 | 0.15809 | 115.30006 | 115.69273 | 1.80265 | 0.0876935 | 44.1119935 | 8 | 1 | 117 days | 0.24 | | E | MPC | | 2006 $HB_{123}$ |
| 2006 $HE_{123}$ | 6.9 | 0.15 | 20060614 | 0.15664 | 151.93712 | 84.45484 | 4.22815 | 0.0737389 | 44.3713974 | 11 | 1 | 117 days | 0.15 | | E | MPC | | 2006 $HE_{123}$ |
| 2006 $HJ_{123}$ | 5.3 | 0.15 | 20060614 | 314.66802 | 97.40861 | 222.55074 | 12.37172 | 0.4404843 | 44.9948753 | 8 | 1 | 118 days | 0.14 | | E | MPC | | 2006 $HJ_{123}$ |
| 2006 $HA_{125}$ | 17.0 | 0.15 | 20060505 | 310.39739 | 246.89293 | 53.23370 | 6.39995 | 0.2233592 | 2.6099504 | 17 | 1 | 37 days | 0.25 | | | MPC | | 2006 $HA_{125}$ |
| 2006 $HQ_{129}$ | 18.4 | 0.15 | 20060922 | 47.47557 | 50.47122 | 112.03591 | 3.36007 | 0.1268287 | 2.4058448 | 17 | 1 | 94 days | 0.16 | M-v | 4 | MPC | | 2006 $HQ_{129}$ |
| 2006 $HR_{140}$ | 15.4 | 0.15 | 20060922 | 315.55331 | 292.69887 | 30.19387 | 0.68444 | 0.1542669 | 3.2165635 | 37 | 5 | 1994–2006 | 0.42 | M-v | 0 | MPC | 03907 | 2006 $HR_{140}$ |
| 2006 $HD_{152}$ | 18.4 | 0.15 | 20060505 | 343.05171 | 141.10599 | 101.03896 | 3.01249 | 0.1777618 | 2.3299830 | 18 | 1 | 39 days | 0.70 | | | MPC | | 2006 $HD_{152}$ |
| 2006 $HE_{152}$ | 18.4 | 0.15 | 20060505 | 210.90635 | 325.45895 | 57.48334 | 22.29403 | 0.0775686 | 1.9267531 | 18 | 1 | 39 days | 0.32 | | | MPC | | 2006 $HE_{152}$ |
| 2006 $HG_{152}$ | 16.1 | 0.15 | 20060505 | 332.46608 | 36.15230 | 223.76072 | 20.86170 | 0.0471613 | 3.1532192 | 20 | 1 | 41 days | 0.34 | | | MPC | | 2006 $HG_{152}$ |
| 2006 $HH_{152}$ | 16.9 | 0.15 | 20060922 | 11.74105 | 136.98714 | 118.32456 | 8.59600 | 0.1387753 | 2.6841409 | 16 | 1 | 63 days | 0.47 | M-v | 4 | MPC | | 2006 $HH_{152}$ |
| 2006 JL | 16.6 | 0.15 | 20060922 | 22.10623 | 222.31658 | 26.17384 | 8.54822 | 0.1267212 | 2.2781182 | 29 | 2 | 2000–2006 | 0.43 | M-v | 3 | MPC | 01732 | 2006 JL |
| 2006 JX | 19.9 | 0.15 | 20060922 | 81.16070 | 315.30514 | 233.40873 | 23.88286 | 0.2724708 | 1.7090325 | 81 | 1 | 123 days | 0.48 | M-v | 3 | MPC | 02338 | 2006 JX |
| 2006 $JK_2$ | 16.2 | 0.15 | 20060922 | 173.33097 | 0.82498 | 85.68082 | 9.86434 | 0.0978487 | 2.6293720 | 36 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 01734 | 2006 $JK_2$ |
| 2006 $JY_2$ | 16.7 | 0.15 | 20060922 | 197.42204 | 192.85780 | 220.48937 | 8.67750 | 0.0507689 | 2.5923752 | 32 | 3 | 2002–2006 | 0.35 | M-v | 3 | MPC | 01735 | 2006 $JY_2$ |
| 2006 $JL_5$ | 17.0 | 0.15 | 20060922 | 210.78273 | 191.75318 | 216.84174 | 6.15272 | 0.0818388 | 2.2971763 | 42 | 4 | 2000–2006 | 0.39 | M-v | 1 | MPC | 01736 | 2006 $JL_5$ |
| 2006 $JX_5$ | 17.1 | 0.15 | 20060922 | 331.69687 | 61.14966 | 244.76671 | 2.30722 | 0.1634953 | 2.6120011 | 40 | 4 | 1999–2006 | 0.31 | M-v | 1 | MPC | 03908 | 2006 $JX_5$ |
| 2006 $JD_7$ | 17.8 | 0.15 | 20060922 | 72.87162 | 16.23860 | 173.12336 | 2.73717 | 0.0868946 | 2.1913700 | 28 | 5 | 1991–2006 | 0.45 | M-v | 1 | MPC | 04375 | 2006 $JD_7$ |
| 2006 $JS_{15}$ | 16.0 | 0.15 | 20060922 | 24.31830 | 197.74586 | 31.53654 | 3.56778 | 0.0078682 | 2.6756688 | 31 | 3 | 1997–2006 | 0.32 | M-v | 3 | MPC | 01743 | 2006 $JS_{15}$ |
| 2006 $JT_{16}$ | 16.7 | 0.15 | 20060922 | 168.06966 | 292.33576 | 154.91411 | 2.87027 | 0.1319423 | 2.3687571 | 36 | 6 | 1993–2006 | 0.45 | M-v | 1 | MPC | 04375 | 2006 $JT_{16}$ |
| 2006 $JU_{16}$ | 16.4 | 0.15 | 20060922 | 59.64599 | 13.63550 | 173.37641 | 3.93950 | 0.1018193 | 3.0631902 | 23 | 3 | 2000–2006 | 0.44 | M-v | 3 | MPC | 01744 | 2006 $JU_{16}$ |
| 2006 $JY_{16}$ | 17.7 | 0.15 | 20060922 | 358.62590 | 215.57976 | 66.78783 | 6.07887 | 0.1595982 | 2.3528280 | 31 | 3 | 1995–2006 | 0.38 | M-v | 2 | MPC | 01745 | 2006 $JY_{16}$ |
| 2006 $JS_{17}$ | 17.2 | 0.15 | 20060922 | 283.84370 | 213.53835 | 141.56316 | 2.72034 | 0.1818568 | 2.6580730 | 26 | 4 | 1998–2006 | 0.36 | M-v | 1 | MPC | 01745 | 2006 $JS_{17}$ |
| 2006 $JV_{17}$ | 16.4 | 0.15 | 20060922 | 133.50869 | 5.40120 | 103.69586 | 3.28942 | 0.1666827 | 2.6933361 | 23 | 4 | 2001–2006 | 0.54 | M-v | 1 | MPC | 01746 | 2006 $JV_{17}$ |
| 2006 $JW_{18}$ | 16.7 | 0.15 | 20060922 | 299.40544 | 142.50137 | 185.02964 | 4.96939 | 0.0487712 | 2.7393049 | 38 | 5 | 1997–2006 | 0.34 | M-v | 0 | MPC | 01746 | 2006 $JW_{18}$ |
| 2006 $JZ_{25}$ | 19.0 | 0.15 | 20060922 | 24.23349 | 305.77405 | 338.02503 | 10.31270 | 0.5485406 | 2.4070312 | 155 | 1 | 173 days | 0.47 | M-v | 3 | MPC | 04375 | 2006 $JZ_{25}$ |
| 2006 $JH_{29}$ | 16.4 | 0.15 | 20060922 | 331.80008 | 221.91803 | 77.92224 | 5.14599 | 0.1633652 | 2.7268697 | 36 | 3 | 2002–2006 | 0.40 | M-v | 3 | MPC | 01753 | 2006 $JH_{29}$ |
| 2006 $JB_{30}$ | 16.2 | 0.15 | 20060922 | 128.10329 | 320.79250 | 152.38084 | 3.86818 | 0.1636943 | 2.5697228 | 35 | 5 | 1995–2006 | 0.39 | M-v | 1 | MPC | 01754 | 2006 $JB_{30}$ |
| 2006 $JY_{30}$ | 17.6 | 0.15 | 20060415 | 357.04144 | 192.47499 | 21.62168 | 3.00039 | 0.1696651 | 2.3263957 | 21 | 1 | 43 days | 0.21 | | | MPC | | 2006 $JY_{30}$ |
| 2006 $JD_{39}$ | 15.7 | 0.15 | 20060922 | 118.96009 | 30.26850 | 116.76912 | 3.10026 | 0.0137420 | 2.8701998 | 49 | 6 | 1996–2006 | 0.41 | M-v | 0 | MPC | 01762 | 2006 $JD_{39}$ |
| 2006 $JY_{39}$ | 15.5 | 0.15 | 20060922 | 266.80348 | 245.54043 | 123.04184 | 3.01445 | 0.0804460 | 2.9179281 | 61 | 5 | 2001–2006 | 0.37 | M-v | 0 | MPC | 01763 | 2006 $JY_{39}$ |
| 2006 $JC_{40}$ | 15.8 | 0.15 | 20060922 | 7.77137 | 106.00701 | 214.26131 | 11.70994 | 0.1743529 | 2.8153386 | 37 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 03914 | 2006 $JC_{40}$ |
| 2006 $JR_{40}$ | 16.6 | 0.15 | 20060922 | 343.71724 | 142.31030 | 131.25400 | 2.90108 | 0.0529734 | 2.8369308 | 27 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 01763 | 2006 $JR_{40}$ |
| 2006 $JF_{42}$ | 19.0 | 0.15 | 20060922 | 14.96334 | 17.67123 | 41.03962 | 5.97168 | 0.5815953 | 0.6719141 | 130 | 1 | 39 days | 0.45 | M-v | 7 | MPC | 02346 | 2006 $JF_{42}$ |
| 2006 $JL_{42}$ | 16.4 | 0.15 | 20060922 | 199.54891 | 261.39267 | 154.45676 | 3.19350 | 0.0638655 | 2.8178223 | 22 | 3 | 2003–2006 | 0.68 | M-v | 4 | MPC | 01764 | 2006 $JL_{42}$ |
| 2006 $JZ_{42}$ | 17.2 | 0.15 | 20060922 | 58.17350 | 127.51152 | 71.00051 | 6.88375 | 0.1611427 | 2.4051351 | 30 | 3 | 2002–2006 | 0.31 | M-v | 3 | MPC | 01765 | 2006 $JZ_{42}$ |
| 2006 $JB_{43}$ | 16.2 | 0.15 | 20060525 | 306.20867 | 215.30032 | 84.99988 | 14.13318 | 0.1245078 | 3.0679128 | 13 | 1 | 48 days | 0.35 | | | MPC | | 2006 $JB_{43}$ |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $JS_{45}$ | 15.6 | 0.15 | 20060922 | 12.65895 | 157.55642 | 144.50224 | 9.78354 | 0.0863487 | 3.0145424 | 47 | 3 | 2001–2006 | 0.34 | M-v | 2 | MPC | 04375 | 2006 $JS_{45}$ |
| 2006 $JB_{46}$ | 15.3 | 0.15 | 20060922 | 12.70330 | 63.50488 | 239.05272 | 8.71282 | 0.0638985 | 3.1215338 | 26 | 3 | 2001–2006 | 0.28 | M-v | 2 | MPC | 03914 | 2006 $JB_{46}$ |
| 2006 $JX_{46}$ | 15.5 | 0.15 | 20060922 | 19.12235 | 196.69343 | 97.18117 | 21.10922 | 0.2720575 | 2.5726518 | 58 | 1 | 151 days | 0.31 | M-v | 3 | MPC | 04376 | 2006 $JX_{46}$ |
| 2006 $JW_{49}$ | 17.4 | 0.15 | 20060415 | 309.28809 | 214.50894 | 55.26557 | 2.64599 | 0.1253266 | 2.2830849 | 23 | 1 | 57 days | 0.39 | | | MPC | | 2006 $JW_{49}$ |
| 2006 $JC_{51}$ | 17.3 | 0.15 | 20060922 | 284.95207 | 272.84217 | 83.03432 | 3.10584 | 0.2287029 | 2.3623079 | 26 | 4 | 2000–2006 | 0.34 | M-v | 1 | MPC | 01773 | 2006 $JC_{51}$ |
| 2006 $JB_{56}$ | 16.5 | 0.15 | 20060922 | 10.44077 | 144.87252 | 114.33845 | 13.73261 | 0.1505141 | 2.6103074 | 32 | 3 | 1998–2006 | 0.35 | M-v | 3 | MPC | 01776 | 2006 $JB_{56}$ |
| 2006 $JB_{61}$ | 16.5 | 0.15 | 20060922 | 107.21090 | 98.13422 | 38.74426 | 3.90705 | 0.1257806 | 3.1342383 | 23 | 4 | 2000–2006 | 0.40 | M-v | 0 | MPC | 01779 | 2006 $JB_{61}$ |
| 2006 $JR_{61}$ | 17.1 | 0.15 | 20060922 | 182.53985 | 29.07670 | 34.31339 | 1.96841 | 0.0431813 | 2.6430446 | 35 | 4 | 1995–2006 | 0.43 | M-v | 1 | MPC | 03917 | 2006 $JR_{61}$ |
| 2006 KE | 19.4 | 0.15 | 20060922 | 13.04992 | 69.90833 | 232.86999 | 19.48288 | 0.4936035 | 2.1873364 | 67 | 1 | 149 days | 0.49 | M-v | 3 | MPC | 04376 | 2006 KE |
| 2006 $KP_1$ | 20.9 | 0.15 | 20060922 | 14.74540 | 76.89140 | 219.62374 | 6.78306 | 0.5019152 | 2.1487288 | 46 | 1 | 154 days | 0.51 | M-v | 3 | MPC | 04376 | 2006 $KP_1$ |
| 2006 $KT_1$ | 16.6 | 0.15 | 20060922 | 345.10363 | 188.82192 | 138.76582 | 9.26429 | 0.4741765 | 2.3060976 | 98 | 1 | 119 days | 0.58 | M-v | 4 | MPC | 04376 | 2006 $KT_1$ |
| 2006 $KU_1$ | 15.8 | 0.15 | 20060922 | 30.77505 | 93.86847 | 137.07797 | 8.38175 | 0.1757533 | 2.7826238 | 63 | 4 | 2001–2006 | 0.62 | M-v | 1 | MPC | 01782 | 2006 $KU_1$ |
| 2006 $KL_4$ | 16.4 | 0.15 | 20060922 | 204.32385 | 336.94809 | 83.86248 | 3.12273 | 0.0379684 | 2.7234467 | 34 | 3 | 2000–2006 | 0.30 | M-v | 3 | MPC | 01785 | 2006 $KL_4$ |
| 2006 $KB_8$ | 16.7 | 0.15 | 20060922 | 218.00580 | 341.70094 | 66.81876 | 5.77135 | 0.0419942 | 2.7354354 | 26 | 3 | 1994–2006 | 0.43 | M-v | 4 | MPC | 01786 | 2006 $KB_8$ |
| 2006 $KZ_{13}$ | 15.4 | 0.15 | 20060922 | 86.70728 | 336.26117 | 183.92958 | 16.03112 | 0.0213482 | 3.1617550 | 20 | 3 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03919 | 2006 $KZ_{13}$ |
| 2006 $KE_{16}$ | 17.1 | 0.15 | 20060922 | 335.35371 | 213.11339 | 101.21817 | 7.47149 | 0.1351584 | 2.3039844 | 29 | 3 | 2000–2006 | 0.41 | M-v | 4 | MPC | 01793 | 2006 $KE_{16}$ |
| 2006 $KF_{16}$ | 15.0 | 0.15 | 20060922 | 0.84202 | 143.01925 | 133.63567 | 17.34450 | 0.2359376 | 3.0629876 | 67 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04376 | 2006 $KF_{16}$ |
| 2006 $KL_{21}$ | 20.7 | 0.15 | 20060922 | 9.37922 | 213.89206 | 117.31498 | 9.35521 | 0.1279081 | 1.2000074 | 60 | 1 | 150 days | 0.53 | M-v | 4 | MPC | 02355 | 2006 $KL_{21}$ |
| 2006 $KQ_{21}$ | 19.0 | 0.15 | 20060922 | 341.52157 | 163.99438 | 179.60963 | 6.28760 | 0.4633599 | 2.3067302 | 28 | 1 | 25 days | 0.30 | M-v | 5 | MPC | 02355 | 2006 $KQ_{21}$ |
| 2006 $KK_{23}$ | 18.0 | 0.15 | 20060922 | 39.86239 | 175.46036 | 56.11506 | 1.00267 | 0.2509595 | 2.3147994 | 38 | 3 | 1995–2006 | 0.46 | M-v | 3 | MPC | 01798 | 2006 $KK_{23}$ |
| 2006 $KL_{23}$ | 17.7 | 0.15 | 20060922 | 10.40042 | 44.17039 | 240.85801 | 6.31976 | 0.2876374 | 2.3115649 | 43 | 3 | 1999–2006 | 0.54 | M-v | 2 | MPC | 01799 | 2006 $KL_{23}$ |
| 2006 $KH_{28}$ | 17.3 | 0.15 | 20060922 | 325.87650 | 89.47324 | 229.54494 | 3.46779 | 0.1256002 | 2.2833160 | 32 | 5 | 1993–2006 | 0.44 | M-v | 1 | MPC | 01802 | 2006 $KH_{28}$ |
| 2006 $KZ_{37}$ | 19.2 | 0.15 | 20060922 | 4.72650 | 243.15216 | 95.73122 | 21.36974 | 0.2086910 | 1.2848399 | 111 | 2 | 1993–2006 | 0.46 | M-v | 2 | MPC | 04376 | 2006 $KZ_{37}$ |
| 2006 $KV_{38}$ | 16.6 | 0.15 | 20060922 | 10.32798 | 247.40764 | 62.30303 | 30.61852 | 0.4192786 | 2.5752851 | 34 | 1 | 120 days | 0.25 | M-v | 4 | MPC | | 2006 $KV_{38}$ |
| 2006 $KP_{39}$ | 18.2 | 0.15 | 20060505 | 328.89046 | 231.43595 | 51.17510 | 2.94137 | 0.1892969 | 2.3077575 | 10 | 1 | 5 days | 0.30 | | | MPC | | 2006 $KP_{39}$ |
| 2006 $KC_{40}$ | 23.2 | 0.15 | 20060922 | 19.98878 | 260.23065 | 78.08578 | 8.81570 | 0.5290299 | 1.6678915 | 33 | 1 | 21 days | 0.43 | M-v | 7 | MPC | 02359 | 2006 $KC_{40}$ |
| 2006 $KX_{43}$ | 15.7 | 0.15 | 20060525 | 343.47422 | 209.73640 | 65.77435 | 26.24184 | 0.2625794 | 3.1491233 | 21 | 1 | 37 days | 0.44 | | | MPC | | 2006 $KX_{43}$ |
| 2006 $KY_{53}$ | 15.5 | 0.15 | 20060922 | 95.11283 | 277.20081 | 229.22424 | 14.77886 | 0.1971937 | 3.1721051 | 33 | 4 | 2000–2006 | 0.51 | M-v | 0 | MPC | 01816 | 2006 $KY_{53}$ |
| 2006 $KN_{56}$ | 16.8 | 0.15 | 20060922 | 320.18099 | 211.59967 | 120.12827 | 3.95121 | 0.2089648 | 2.4166277 | 24 | 3 | 1999–2006 | 0.37 | M-v | 2 | MPC | 01817 | 2006 $KN_{56}$ |
| 2006 $KE_{63}$ | 17.3 | 0.15 | 20060922 | 114.23858 | 104.47324 | 28.00134 | 1.92533 | 0.0460293 | 2.5423243 | 47 | 5 | 1995–2006 | 0.29 | M-v | 0 | MPC | 04376 | 2006 $KE_{63}$ |
| 2006 $KE_{65}$ | 17.8 | 0.15 | 20060922 | 18.56226 | 47.08743 | 252.49924 | 2.70797 | 0.1076016 | 2.1925729 | 38 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 04377 | 2006 $KE_{65}$ |
| 2006 $KR_{66}$ | 18.0 | 0.15 | 20060525 | 29.09470 | 332.74655 | 227.57053 | 3.57977 | 0.1453677 | 2.2107094 | 16 | 1 | 12 days | 0.40 | | | MPC | 01821 | 2006 $KR_{66}$ |
| 2006 $KY_{67}$ | 23.0 | 0.15 | 20060922 | 26.33594 | 173.81292 | 117.28180 | 3.02439 | 0.5355267 | 2.0761991 | 31 | 1 | 77 days | 0.45 | M-v | 3 | MPC | 04377 | 2006 $KY_{67}$ |
| 2006 $KJ_{73}$ | 14.9 | 0.15 | 20060922 | 193.45759 | 296.91560 | 134.89733 | 11.01277 | 0.0224355 | 3.1089725 | 28 | 3 | 2002–2006 | 0.38 | M-v | 2 | MPC | 01825 | 2006 $KJ_{73}$ |
| 2006 $KC_{75}$ | 16.1 | 0.15 | 20060922 | 260.10952 | 220.81458 | 144.99365 | 14.53647 | 0.2016285 | 2.7676819 | 25 | 4 | 1998–2006 | 0.42 | M-v | 1 | MPC | 01826 | 2006 $KC_{75}$ |
| 2006 $KF_{79}$ | 16.6 | 0.15 | 20060922 | 18.92137 | 168.82056 | 139.47883 | 2.95555 | 0.2033786 | 2.4074962 | 79 | 6 | 1995–2006 | 0.47 | M-v | 1 | MPC | 03926 | 2006 $KF_{79}$ |
| 2006 $KL_{82}$ | 15.8 | 0.15 | 20060922 | 51.72366 | 3.69979 | 214.63998 | 17.82948 | 0.0667811 | 2.8554725 | 29 | 3 | 1993–2006 | 0.29 | M-v | 2 | MPC | 01828 | 2006 $KL_{82}$ |
| 2006 $KP_{82}$ | 17.5 | 0.15 | 20060922 | 48.84041 | 54.97390 | 197.10662 | 4.98540 | 0.2462597 | 2.2693865 | 39 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 04377 | 2006 $KP_{82}$ |
| 2006 $KE_{83}$ | 16.6 | 0.15 | 20060922 | 340.66973 | 240.97907 | 44.77659 | 5.65586 | 0.0775262 | 2.7691492 | 34 | 5 | 1996–2006 | 0.18 | M-v | 0 | MPC | 01829 | 2006 $KE_{83}$ |
| 2006 $KU_{86}$ | 15.3 | 0.15 | 20060922 | 48.83555 | 341.82008 | 289.41445 | 24.87539 | 0.1886891 | 2.6650028 | 29 | 1 | 102 days | 0.50 | M-v | 4 | MPC | 04377 | 2006 $KU_{86}$ |
| 2006 $KV_{86}$ | 18.7 | 0.15 | 20060922 | 297.23017 | 153.80736 | 220.10669 | 37.08763 | 0.3741012 | 1.5430303 | 47 | 1 | 32 days | 0.48 | M-v | 5 | MPC | 02370 | 2006 $KV_{86}$ |
| 2006 $KZ_{86}$ | 18.1 | 0.15 | 20060922 | 66.77111 | 359.89994 | 103.66234 | 14.17630 | 0.8595287 | 2.1984967 | 55 | 1 | 61 days | 0.52 | M-v | 5 | MPC | 02370 | 2006 $KZ_{86}$ |
| 2006 $KF_{89}$ | 18.5 | 0.15 | 20060922 | 5.70832 | 72.56361 | 246.32605 | 38.18001 | 0.3087716 | 1.8701600 | 102 | 1 | 105 days | 0.51 | M-v | 4 | MPC | 04377 | 2006 $KF_{89}$ |
| 2006 $KG_{89}$ | 12.7 | 0.15 | 20060922 | 214.77488 | 332.97996 | 350.00948 | 23.87285 | 0.0926921 | 5.2196868 | 29 | 4 | 2000–2006 | 0.51 | M-v | 1 | MPC | 01832 | 2006 $KG_{89}$ |
| 2006 $KJ_{89}$ | 23.9 | 0.15 | 20060922 | 28.32362 | 95.61348 | 163.50561 | 2.98943 | 0.5429459 | 2.3861834 | 37 | 1 | 61 days | 0.51 | M-v | 4 | MPC | 02370 | 2006 $KJ_{89}$ |
| 2006 $KV_{89}$ | 21.5 | 0.15 | 20060922 | 145.18586 | 87.71939 | 71.81546 | 3.55537 | 0.2728250 | 1.1502837 | 42 | 1 | 28 days | 0.56 | M-v | 7 | MPC | 02370 | 2006 $KV_{89}$ |
| 2006 $KD_{97}$ | 17.2 | 0.15 | 20060922 | 20.01540 | 81.30175 | 216.87777 | 1.93204 | 0.2059018 | 2.4546012 | 45 | 3 | 1991–2006 | 0.30 | M-v | 2 | MPC | 03927 | 2006 $KD_{97}$ |
| 2006 $KK_{97}$ | 16.4 | 0.15 | 20060922 | 315.10708 | 218.93582 | 164.26390 | 6.91992 | 0.1817919 | 2.3956794 | 34 | 3 | 1999–2006 | 0.60 | M-v | 3 | MPC | 04377 | 2006 $KK_{97}$ |
| 2006 $KW_{98}$ | 14.7 | 0.15 | 20060922 | 19.21298 | 177.62047 | 81.73025 | 18.60279 | 0.1986665 | 2.7601153 | 65 | 4 | 2001–2006 | 0.71 | M-v | 1 | MPC | 01835 | 2006 $KW_{98}$ |
| 2006 $KN_{99}$ | 16.5 | 0.15 | 20060922 | 347.08785 | 150.81545 | 158.05329 | 8.24899 | 0.2417966 | 2.4687903 | 44 | 5 | 1991–2006 | 0.65 | M-v | 1 | MPC | 01836 | 2006 $KN_{99}$ |
| 2006 $KU_{99}$ | 19.0 | 0.15 | 20060525 | 118.27300 | 276.90622 | 207.79509 | 20.31976 | 0.0903188 | 1.9292922 | 9 | 1 | 3 days | 0.29 | | | MPC | | 2006 $KU_{99}$ |
| 2006 $KA_{101}$ | 16.4 | 0.15 | 20060922 | 324.58031 | 253.57195 | 123.40476 | 3.23856 | 0.1860520 | 2.4159545 | 51 | 4 | 1999–2006 | 0.32 | M-v | 1 | MPC | 03928 | 2006 $KA_{101}$ |
| 2006 $KJ_{103}$ | 15.9 | 0.15 | 20060922 | 20.69944 | 273.79378 | 28.21981 | 14.70924 | 0.2408798 | 2.4265022 | 63 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 03928 | 2006 $KJ_{103}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $KM_{103}$ | 20.1 | 0.15 | 20060922 | 341.91056 | 196.79366 | 169.63583 | 11.67791 | 0.3766770 | 1.5737449 | 55 | 1 | 108 days | 0.51 | M-v | 4 | MPC | 04377 | 2006 $KM_{103}$ |
| 2006 $KR_{103}$ | 15.7 | 0.15 | 20060922 | 92.16905 | 76.71438 | 93.42325 | 10.59437 | 0.0484155 | 3.1681646 | 24 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 01838 | 2006 $KR_{103}$ |
| 2006 $KP_{104}$ | 18.7 | 0.15 | 20060525 | 130.64226 | 221.64181 | 238.96196 | 19.34517 | 0.0935467 | 1.8874310 | 8 | 1 | 4 days | 0.17 | | | MPC | | 2006 $KP_{104}$ |
| 2006 $KS_{104}$ | 16.0 | 0.15 | 20060922 | 159.53912 | 28.19359 | 68.16249 | 10.63874 | 0.0633277 | 3.0561825 | 27 | 2 | 2003–2006 | 0.42 | M-v | 3 | MPC | 03929 | 2006 $KS_{104}$ |
| 2006 $KK_{108}$ | 17.0 | 0.15 | 20060922 | 80.30913 | 112.93841 | 43.46923 | 13.91750 | 0.1577104 | 2.7259164 | 25 | 1 | 119 days | 0.24 | M-v | 3 | MPC | | 2006 $KK_{108}$ |
| 2006 $KB_{109}$ | 15.8 | 0.15 | 20060922 | 31.96313 | 178.41419 | 36.38975 | 9.01658 | 0.0692519 | 3.0210415 | 25 | 1 | 70 days | 0.23 | M-v | 4 | MPC | | 2006 $KB_{109}$ |
| 2006 $KZ_{112}$ | 16.7 | 0.15 | 20060922 | 42.61664 | 358.15691 | 166.25866 | 37.77940 | 0.8869819 | 2.5242463 | 106 | 1 | 92 days | 0.49 | M-v | 4 | MPC | 04377 | 2006 $KZ_{112}$ |
| 2006 $KU_{114}$ | 15.8 | 0.15 | 20060922 | 38.92599 | 288.56992 | 332.18749 | 16.26337 | 0.3092685 | 2.7558240 | 73 | 2 | 2005–2006 | 0.47 | M-v | 3 | MPC | 03930 | 2006 $KU_{114}$ |
| 2006 $KP_{116}$ | 16.8 | 0.15 | 20060525 | 333.22957 | 100.62383 | 200.89369 | 15.97689 | 0.3462433 | 2.7691322 | 12 | 1 | 22 days | 0.19 | | | MPC | | 2006 $KP_{116}$ |
| 2006 $KH_{118}$ | 15.5 | 0.15 | 20060922 | 356.43219 | 237.52090 | 104.68885 | 31.91421 | 0.3178127 | 2.6271597 | 51 | 3 | 1998–2006 | 0.48 | M-v | 2 | MPC | 03931 | 2006 $KH_{118}$ |
| 2006 $KU_{118}$ | 17.3 | 0.15 | 20060922 | 1.69637 | 134.75955 | 186.50082 | 2.48869 | 0.1788174 | 2.3039043 | 15 | 1 | 144 days | 0.17 | M-v | 5 | MPC | | 2006 $KU_{118}$ |
| 2006 $KX_{118}$ | 14.6 | 0.15 | 20060922 | 149.42329 | 242.20477 | 280.39319 | 20.55116 | 0.0606728 | 3.1557778 | 38 | 3 | 2002–2006 | 0.51 | M-v | 3 | MPC | 01842 | 2006 $KX_{118}$ |
| 2006 $KA_{119}$ | 16.0 | 0.15 | 20060922 | 36.98393 | 121.55760 | 145.10183 | 9.38469 | 0.1974915 | 2.7153451 | 45 | 3 | 2001–2006 | 0.41 | M-v | 2 | MPC | 03931 | 2006 $KA_{119}$ |
| 2006 $KB_{121}$ | 16.1 | 0.15 | 20060922 | 58.31430 | 77.77803 | 122.41832 | 13.25129 | 0.2115159 | 2.6691796 | 26 | 3 | 2000–2006 | 0.49 | M-v | 2 | MPC | 01843 | 2006 $KB_{121}$ |
| 2006 $KD_{121}$ | 15.5 | 0.15 | 20060922 | 16.90129 | 303.73649 | 354.78122 | 13.17329 | 0.2725161 | 2.4744680 | 50 | 1 | 183 days | 0.28 | M-v | 3 | MPC | 04377 | 2006 $KD_{121}$ |
| 2006 $KB_{122}$ | 16.2 | 0.15 | 20060922 | 9.90191 | 314.38980 | 348.95553 | 5.23039 | 0.3628757 | 2.7581870 | 49 | 3 | 2000–2006 | 0.48 | M-v | 2 | MPC | 04377 | 2006 $KB_{122}$ |
| 2006 $KX_{123}$ | 15.7 | 0.15 | 20060922 | 337.92322 | 133.25470 | 237.11149 | 8.81178 | 0.2498434 | 2.4440532 | 59 | 5 | 1991–2006 | 0.52 | M-v | 1 | MPC | 04377 | 2006 $KX_{123}$ |
| 2006 $KZ_{123}$ | 16.3 | 0.15 | 20060922 | 7.50084 | 295.10261 | 30.35871 | 21.86135 | 0.3205250 | 2.4139743 | 53 | 2 | 2003–2006 | 0.32 | M-v | 1 | MPC | 03932 | 2006 $KZ_{123}$ |
| 2006 $KB_{133}$ | 16.7 | 0.15 | 20060525 | 346.68870 | 205.41048 | 56.83133 | 1.63082 | 0.0834188 | 3.1522479 | 7 | 1 | 10 days | 0.16 | | | MPC | | 2006 $KB_{133}$ |
| 2006 $KC_{133}$ | 16.3 | 0.15 | 20060525 | 169.56934 | 187.65857 | 247.86044 | 10.79267 | 0.0797169 | 2.8595585 | 8 | 1 | 10 days | 0.20 | | | MPC | | 2006 $KC_{133}$ |
| 2006 $KH_{133}$ | 17.2 | 0.15 | 20060525 | 326.90422 | 217.52564 | 64.90370 | 6.69604 | 0.0474494 | 2.4034698 | 7 | 1 | 2 days | 0.27 | | | MPC | | 2006 $KH_{133}$ |
| 2006 $KK_{133}$ | 18.6 | 0.15 | 20060525 | 349.26946 | 357.59146 | 262.70105 | 1.38750 | 0.1358484 | 2.4799574 | 6 | 1 | 10 days | 0.22 | | | MPC | | 2006 $KK_{133}$ |
| 2006 LK | 19.6 | 0.15 | 20060922 | 354.47017 | 194.29283 | 157.79466 | 10.16842 | 0.6379160 | 2.8593346 | 41 | 1 | 172 days | 0.45 | M-v | 3 | MPC | 04377 | 2006 LK |
| 2006 LR | 17.5 | 0.15 | 20060525 | 331.23641 | 39.76021 | 252.68681 | 7.42225 | 0.2180691 | 3.0673237 | 15 | 1 | 10 days | 0.21 | | | MPC | | 2006 LR |
| 2006 LU | 15.8 | 0.15 | 20060922 | 11.63778 | 73.95796 | 239.81007 | 10.70503 | 0.2681864 | 2.6718390 | 40 | 1 | 170 days | 0.58 | M-v | 3 | MPC | 04377 | 2006 LU |
| 2006 $LK_1$ | 17.8 | 0.15 | 20060922 | 9.58211 | 282.32128 | 33.42730 | 0.82277 | 0.2042886 | 2.2457365 | 54 | 4 | 2000–2006 | 0.34 | M-v | 2 | MPC | 03933 | 2006 $LK_1$ |
| 2006 $LO_1$ | 16.4 | 0.15 | 20060922 | 15.54156 | 163.63637 | 109.48365 | 6.41290 | 0.1564602 | 2.3142871 | 34 | 4 | 2002–2006 | 0.60 | M-v | 1 | MPC | 01847 | 2006 $LO_1$ |
| 2006 $LS_1$ | 17.1 | 0.15 | 20060922 | 25.44125 | 93.00717 | 169.40862 | 3.27064 | 0.1468803 | 2.2845098 | 64 | 7 | 1992–2006 | 0.55 | M-v | 1 | MPC | 04378 | 2006 $LS_1$ |
| 2006 $LV_1$ | 16.1 | 0.15 | 20060922 | 38.80552 | 132.72644 | 125.38551 | 18.57727 | 0.2545329 | 2.7643087 | 41 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 04378 | 2006 $LV_1$ |
| 2006 $LG_3$ | 15.5 | 0.15 | 20060922 | 209.62522 | 281.72834 | 131.93511 | 11.61295 | 0.0594508 | 2.7189454 | 39 | 4 | 2000–2006 | 0.66 | M-v | 1 | MPC | 03935 | 2006 $LG_3$ |
| 2006 $LP_4$ | 16.0 | 0.15 | 20060922 | 56.86052 | 319.07952 | 278.53295 | 15.52265 | 0.2492566 | 2.7396943 | 27 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 03935 | 2006 $LP_4$ |
| 2006 $LR_4$ | 15.3 | 0.15 | 20060922 | 9.47207 | 249.75317 | 54.88101 | 16.46827 | 0.2162707 | 2.9281928 | 37 | 2 | 2002–2006 | 0.42 | M-v | 3 | MPC | 03936 | 2006 $LR_4$ |
| 2006 $LX_4$ | 17.1 | 0.15 | 20060922 | 5.04874 | 50.47604 | 277.01354 | 21.96123 | 0.5182491 | 3.0850331 | 263 | 1 | 135 days | 0.33 | M-v | 2 | MPC | 04378 | 2006 $LX_4$ |
| 2006 $LF_5$ | 16.8 | 0.15 | 20060922 | 28.06033 | 182.34373 | 110.34705 | 8.23068 | 0.1666840 | 2.2402236 | 33 | 4 | 2002–2006 | 0.34 | M-v | 1 | MPC | 04378 | 2006 $LF_5$ |
| 2006 $LB_6$ | 15.5 | 0.15 | 20060922 | 358.73109 | 210.70473 | 106.31541 | 12.35202 | 0.1266731 | 3.1394024 | 28 | 4 | 1997–2006 | 0.38 | M-v | 1 | MPC | 03937 | 2006 $LB_6$ |
| 2006 $LW_6$ | 18.1 | 0.15 | 20060922 | 14.95871 | 156.31148 | 152.59604 | 4.14101 | 0.3071447 | 2.2164812 | 25 | 1 | 131 days | 0.39 | M-v | 4 | MPC | 04378 | 2006 $LW_6$ |
| 2006 $LZ_6$ | 16.7 | 0.15 | 20060922 | 359.90716 | 97.09014 | 238.27352 | 1.56409 | 0.1970823 | 2.4242480 | 57 | 5 | 1991–2006 | 0.36 | M-v | 1 | MPC | 03937 | 2006 $LZ_6$ |
| 2006 $LD_7$ | 17.7 | 0.15 | 20060922 | 357.59705 | 210.25979 | 115.86185 | 6.74471 | 0.2377431 | 2.3603889 | 19 | 3 | 1999–2006 | 0.40 | M-v | 3 | MPC | 03937 | 2006 $LD_7$ |
| 2006 $LE_7$ | 14.7 | 0.15 | 20060922 | 346.81498 | 228.98416 | 104.81655 | 17.39675 | 0.0961165 | 3.0892193 | 41 | 5 | 2000–2006 | 0.48 | M-v | 1 | MPC | 03938 | 2006 $LE_7$ |
| 2006 $LF_7$ | 16.1 | 0.15 | 20060922 | 4.78052 | 6.90727 | 315.37013 | 6.71106 | 0.2148243 | 2.4158305 | 71 | 6 | 1991–2006 | 0.42 | M-v | 1 | MPC | 03938 | 2006 $LF_7$ |
| 2006 $LO_7$ | 14.5 | 0.15 | 20060922 | 52.01436 | 241.66850 | 3.43281 | 25.36632 | 0.0936980 | 3.1685004 | 42 | 4 | 2001–2006 | 0.67 | M-v | 1 | MPC | 03938 | 2006 $LO_7$ |
| 2006 $LR_7$ | 15.5 | 0.15 | 20060922 | 337.51768 | 356.82669 | 0.27493 | 13.77946 | 0.2687958 | 2.5564486 | 64 | 7 | 1994–2006 | 0.54 | M-v | 2 | MPC | 03938 | 2006 $LR_7$ |
| 2006 $LV_7$ | 15.0 | 0.15 | 20060922 | 340.31136 | 262.34967 | 67.97002 | 12.25997 | 0.2922887 | 2.5789003 | 29 | 2 | 2003–2006 | 0.56 | M-v | 3 | MPC | 03938 | 2006 $LV_7$ |
| 2006 $LZ_7$ | 15.6 | 0.15 | 20060922 | 32.42769 | 223.79996 | 44.56243 | 14.68485 | 0.2110251 | 2.5917033 | 23 | 1 | 111 days | 0.32 | M-v | 4 | MPC | | 2006 $LZ_7$ |
| 2006 MA | 18.8 | 0.15 | 20060922 | 2.58929 | 81.80084 | 241.11947 | 24.74465 | 0.5301326 | 2.6475922 | 83 | 1 | 146 days | 0.50 | M-v | 3 | MPC | 04378 | 2006 MA |
| 2006 MB | 22.6 | 0.15 | 20060922 | 150.39797 | 287.00603 | 257.68185 | 14.42846 | 0.0829947 | 1.1136658 | 92 | 1 | 78 days | 0.61 | M-v | 4 | MPC | 04378 | 2006 MB |
| 2006 $MU_1$ | 17.7 | 0.15 | 20060922 | 347.76101 | 55.91064 | 297.14529 | 2.32834 | 0.1923666 | 2.3524282 | 24 | 1 | 100 days | 0.47 | M-v | 4 | MPC | 04378 | 2006 $MU_1$ |
| 2006 $MQ_3$ | 16.2 | 0.15 | 20060922 | 3.48423 | 195.80455 | 141.18941 | 2.01877 | 0.2050306 | 2.4257317 | 90 | 4 | 1999–2006 | 0.44 | M-v | 2 | MPC | 03939 | 2006 $MQ_3$ |
| 2006 $MR_5$ | 17.3 | 0.15 | 20060922 | 21.93240 | 347.17327 | 302.11813 | 2.02241 | 0.1976812 | 2.4459187 | 22 | 3 | 2003–2006 | 0.23 | M-v | 2 | MPC | 03939 | 2006 $MR_5$ |
| 2006 $MA_6$ | 17.1 | 0.15 | 20060922 | 7.06268 | 62.41089 | 249.48993 | 1.25520 | 0.2025920 | 2.3365710 | 22 | 1 | 152 days | 0.33 | M-v | 4 | MPC | | 2006 $MA_6$ |
| 2006 $ME_6$ | 16.1 | 0.15 | 20060922 | 32.21380 | 173.01701 | 109.29992 | 7.58386 | 0.1056820 | 2.3768115 | 39 | 3 | 2002–2006 | 0.67 | M-v | 3 | MPC | 03939 | 2006 $ME_6$ |
| 2006 $ML_6$ | 15.8 | 0.15 | 20060922 | 7.54084 | 204.20449 | 128.95224 | 8.82930 | 0.1754089 | 2.4216821 | 76 | 5 | 1999–2006 | 0.59 | M-v | 1 | MPC | 04378 | 2006 $ML_6$ |
| 2006 $MN_6$ | 16.0 | 0.15 | 20060922 | 300.58516 | 276.04112 | 114.92966 | 8.96814 | 0.1479226 | 2.7961868 | 20 | 3 | 1998–2006 | 0.29 | M-v | 2 | MPC | 03939 | 2006 $MN_6$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $MP_6$ | 18.9 | 0.15 | 20060922 | 23.41876 | 26.21620 | 270.12497 | 7.12190 | 0.3176369 | 2.1232859 | 32 | 2 | 2003–2006 | 0.25 | M-v | 2 | MPC | 04378 | 2006 $MP_6$ |
| 2006 $MQ_6$ | 16.6 | 0.15 | 20060922 | 358.98542 | 164.43463 | 177.77130 | 5.38245 | 0.3247252 | 2.3778247 | 129 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 03939 | 2006 $MQ_6$ |
| 2006 $MS_6$ | 19.2 | 0.15 | 20060922 | 19.26899 | 187.38546 | 108.51857 | 21.38374 | 0.5697589 | 2.6371962 | 40 | 1 | 127 days | 0.62 | M-v | 4 | MPC | 04378 | 2006 $MS_6$ |
| 2006 $MT_6$ | 19.3 | 0.15 | 20060922 | 12.86752 | 195.15362 | 112.19415 | 6.08823 | 0.5470601 | 2.8129297 | 85 | 1 | 98 days | 0.50 | M-v | 4 | MPC | 04378 | 2006 $MT_6$ |
| 2006 $MJ_7$ | 16.1 | 0.15 | 20060922 | 8.04319 | 179.57146 | 124.69430 | 8.98013 | 0.1093009 | 3.0282483 | 34 | 4 | 2001–2006 | 0.34 | M-v | 1 | MPC | 03940 | 2006 $MJ_7$ |
| 2006 $MP_8$ | 17.3 | 0.15 | 20060922 | 355.73985 | 65.16974 | 267.44211 | 7.64221 | 0.2431225 | 2.7692606 | 17 | 1 | 80 days | 0.40 | M-v | 4 | MPC | 04378 | 2006 $MP_8$ |
| 2006 $MN_9$ | 12.3 | 0.15 | 20060922 | 341.97626 | 59.28051 | 271.63246 | 10.60854 | 0.0801947 | 5.1878587 | 16 | 1 | 136 days | 0.44 | M-v | 6 | MPC | | 2006 $MN_9$ |
| 2006 $MP_9$ | 16.6 | 0.15 | 20060922 | 7.14704 | 95.30600 | 221.60447 | 2.33319 | 0.2443493 | 2.4713403 | 59 | 3 | 1998–2006 | 0.36 | M-v | 2 | MPC | 04378 | 2006 $MP_9$ |
| 2006 $MR_9$ | 16.8 | 0.15 | 20060922 | 359.96674 | 112.31185 | 214.25929 | 6.19521 | 0.2451296 | 2.5309155 | 36 | 3 | 1998–2006 | 0.41 | M-v | 2 | MPC | 04379 | 2006 $MR_9$ |
| 2006 $MV_9$ | 16.8 | 0.15 | 20060922 | 5.41687 | 142.74906 | 173.08559 | 2.24477 | 0.2133653 | 2.4624651 | 47 | 2 | 2005–2006 | 0.26 | M-v | 2 | MPC | 03941 | 2006 $MV_9$ |
| 2006 $MJ_{10}$ | 18.7 | 0.15 | 20060922 | 6.42247 | 272.53375 | 106.20811 | 39.28511 | 0.5858826 | 1.8759465 | 38 | 1 | 149 days | 0.35 | M-v | 3 | MPC | 04379 | 2006 $MJ_{10}$ |
| 2006 $MG_{11}$ | 16.2 | 0.15 | 20060922 | 351.76439 | 200.31822 | 144.07996 | 14.79942 | 0.2657604 | 2.6388085 | 52 | 4 | 2000–2006 | 0.43 | M-v | 2 | MPC | 03941 | 2006 $MG_{11}$ |
| 2006 $MJ_{11}$ | 14.3 | 0.15 | 20060922 | 5.33762 | 64.06820 | 257.52413 | 11.93755 | 0.1896337 | 2.8578384 | 30 | 4 | 2000–2006 | 0.32 | M-v | 1 | MPC | 03942 | 2006 $MJ_{11}$ |
| 2006 $MD_{12}$ | 19.3 | 0.15 | 20060922 | 318.38739 | 174.50171 | 291.85790 | 27.26719 | 0.6051740 | 0.8386040 | 153 | 1 | 64 days | 0.63 | M-v | 6 | MPC | 04379 | 2006 $MD_{12}$ |
| 2006 $ME_{12}$ | 17.1 | 0.15 | 20060922 | 347.62002 | 343.39340 | 10.74047 | 10.94607 | 0.2201032 | 2.3893240 | 16 | 1 | 88 days | 0.42 | M-v | 4 | MPC | | 2006 $ME_{12}$ |
| 2006 $MX_{12}$ | 15.9 | 0.15 | 20060922 | 10.86112 | 15.79321 | 313.22417 | 13.25008 | 0.3232443 | 2.5881216 | 96 | 2 | 2002–2006 | 0.53 | M-v | 2 | MPC | 03942 | 2006 $MX_{12}$ |
| 2006 $ME_{13}$ | 17.3 | 0.15 | 20060922 | 15.41269 | 18.27500 | 282.13558 | 5.35744 | 0.0920097 | 2.4682287 | 25 | 3 | 2001–2006 | 0.32 | M-v | 3 | MPC | 04379 | 2006 $ME_{13}$ |
| 2006 $MF_{13}$ | 17.0 | 0.15 | 20060922 | 41.78058 | 158.86163 | 77.70306 | 7.28001 | 0.0776158 | 2.2610602 | 36 | 3 | 2002–2006 | 0.55 | M-v | 2 | MPC | 03943 | 2006 $MF_{13}$ |
| 2006 $MS_{13}$ | 16.0 | 0.15 | 20060922 | 335.92913 | 284.91470 | 83.44444 | 14.73464 | 0.2424242 | 2.5526263 | 22 | 1 | 90 days | 0.45 | M-v | 4 | MPC | | 2006 $MS_{13}$ |
| 2006 $MX_{13}$ | 19.7 | 0.15 | 20060922 | 9.34575 | 318.58376 | 8.41064 | 5.73401 | 0.4655232 | 2.1743846 | 191 | 1 | 121 days | 0.38 | M-v | 3 | MPC | 04379 | 2006 $MX_{13}$ |
| 2006 $MZ_{13}$ | 16.8 | 0.15 | 20060922 | 39.27803 | 192.98988 | 77.73312 | 26.58688 | 0.2420625 | 1.8727897 | 70 | 3 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04379 | 2006 $MZ_{13}$ |
| 2006 $MA_{14}$ | 21.5 | 0.15 | 20060922 | 26.35707 | 330.52054 | 311.70998 | 7.42257 | 0.4921340 | 2.1193864 | 37 | 1 | 89 days | 0.41 | M-v | 4 | MPC | 04379 | 2006 $MA_{14}$ |
| 2006 $MB_{14}$ | 25.4 | 0.15 | 20060922 | 157.61417 | 269.42219 | 276.60498 | 19.54552 | 0.1144296 | 1.0337455 | 52 | 1 | 26 days | 0.42 | M-v | 4 | MPC | 02377 | 2006 $MB_{14}$ |
| 2006 $MK_{14}$ | 16.1 | 0.15 | 20060922 | 347.40073 | 329.23533 | 24.06153 | 13.50427 | 0.2892361 | 2.5488874 | 45 | 4 | 1998–2006 | 0.45 | M-v | 2 | MPC | 03943 | 2006 $MK_{14}$ |
| 2006 $MM_{14}$ | 14.8 | 0.15 | 20060922 | 2.81347 | 26.33670 | 315.51947 | 14.36638 | 0.2357238 | 2.7446148 | 92 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 03944 | 2006 $MM_{14}$ |
| 2006 $MN_{14}$ | 15.5 | 0.15 | 20060922 | 324.49993 | 337.59910 | 33.00350 | 24.46254 | 0.2102768 | 2.4514228 | 54 | 4 | 1999–2006 | 0.41 | M-v | 1 | MPC | 03944 | 2006 $MN_{14}$ |
| 2006 $MP_{14}$ | 17.3 | 0.15 | 20060922 | 34.13654 | 307.28851 | 318.45493 | 4.04574 | 0.1432374 | 2.4304133 | 25 | 3 | 2003–2006 | 0.42 | M-v | 3 | MPC | 03944 | 2006 $MP_{14}$ |
| 2006 $MT_{14}$ | 17.7 | 0.15 | 20060922 | 17.89754 | 84.26401 | 214.71280 | 7.51900 | 0.4594262 | 2.7762011 | 56 | 3 | 1997–2006 | 0.50 | M-v | 1 | MPC | 03944 | 2006 $MT_{14}$ |
| 2006 $MY_{14}$ | 16.1 | 0.15 | 20060922 | 341.69023 | 147.61923 | 221.73237 | 9.36975 | 0.2866672 | 2.4572695 | 31 | 1 | 149 days | 0.46 | M-v | 4 | MPC | 04379 | 2006 $MY_{14}$ |
| 2006 $MA_{15}$ | 15.9 | 0.15 | 20060922 | 16.33401 | 210.95627 | 92.15445 | 15.94152 | 0.1779090 | 2.5672858 | 18 | 1 | 64 days | 0.29 | M-v | 4 | MPC | | 2006 $MA_{15}$ |
| 2006 $MB_{15}$ | 16.7 | 0.15 | 20060922 | 344.16071 | 83.49849 | 283.02474 | 18.20965 | 0.1308452 | 1.8896568 | 53 | 3 | 2001–2006 | 0.61 | M-v | 2 | MPC | 03945 | 2006 $MB_{15}$ |
| 2006 $MD_{15}$ | 14.2 | 0.15 | 20060922 | 334.88786 | 239.49283 | 103.16774 | 18.92284 | 0.2066415 | 3.2287528 | 39 | 4 | 2001–2006 | 0.62 | M-v | 2 | MPC | 03945 | 2006 $MD_{15}$ |
| 2006 NC | 16.6 | 0.15 | 20060922 | 14.24240 | 340.28902 | 346.26223 | 3.48565 | 0.2227458 | 2.4010736 | 138 | 2 | 2005–2006 | 0.41 | M-v | 3 | MPC | 03945 | 2006 NC |
| 2006 NF | 17.8 | 0.15 | 20060922 | 44.26510 | 156.98013 | 120.08479 | 9.14710 | 0.2647700 | 2.1829225 | 36 | 1 | 80 days | 0.38 | M-v | 4 | MPC | | 2006 NF |
| 2006 NH | 16.4 | 0.15 | 20060922 | 20.68702 | 238.13510 | 61.94958 | 4.69957 | 0.1878308 | 2.6217164 | 37 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 03946 | 2006 NH |
| 2006 NM | 16.4 | 0.15 | 20060922 | 5.71191 | 29.96218 | 292.67864 | 14.20048 | 0.6150583 | 2.7840235 | 983 | 1 | 151 days | 0.34 | M-v | 2 | MPC | 04379 | 2006 NM |
| 2006 NY | 15.7 | 0.15 | 20060922 | 331.05332 | 322.62536 | 49.63224 | 18.14097 | 0.1955440 | 2.5612072 | 53 | 6 | 1998–2006 | 0.44 | M-v | 2 | MPC | 03946 | 2006 NY |
| 2006 NZ | 16.1 | 0.15 | 20060922 | 24.59429 | 213.66778 | 76.25237 | 7.36539 | 0.1708849 | 2.2827436 | 48 | 4 | 1992–2006 | 0.45 | M-v | 1 | MPC | 03946 | 2006 NZ |
| 2006 $NB_1$ | 14.3 | 0.15 | 20060922 | 354.88113 | 355.36765 | 335.66319 | 14.48819 | 0.2363539 | 3.2084115 | 81 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03946 | 2006 $NB_1$ |
| 2006 OA | 16.3 | 0.15 | 20060922 | 250.96624 | 178.86662 | 262.17807 | 12.50843 | 0.1510721 | 2.6225282 | 42 | 4 | 2002–2006 | 0.55 | M-v | 1 | MPC | 03947 | 2006 OA |
| 2006 OB | 17.2 | 0.15 | 20060922 | 12.23804 | 208.01335 | 102.58084 | 3.57643 | 0.2045102 | 2.4022867 | 32 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 03947 | 2006 OB |
| 2006 OH | 15.7 | 0.15 | 20060922 | 305.58405 | 86.07280 | 296.09344 | 8.77298 | 0.1049148 | 3.1248319 | 43 | 4 | 2001–2006 | 0.57 | M-v | 1 | MPC | 03947 | 2006 OH |
| 2006 OL | 17.6 | 0.15 | 20060922 | 353.73221 | 14.17049 | 318.72755 | 1.91261 | 0.1794367 | 2.3080514 | 52 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 03947 | 2006 OL |
| 2006 OM | 16.0 | 0.15 | 20060922 | 350.25775 | 110.80246 | 217.43067 | 10.50771 | 0.0919840 | 3.0199473 | 40 | 3 | 1996–2006 | 0.49 | M-v | 3 | MPC | 03948 | 2006 OM |
| 2006 OV | 16.2 | 0.15 | 20060922 | 337.09573 | 116.49747 | 233.62367 | 10.09399 | 0.0536708 | 2.9671189 | 17 | 3 | 2000–2006 | 0.24 | M-v | 4 | MPC | 03948 | 2006 OV |
| 2006 OW | 16.4 | 0.15 | 20060922 | 341.45368 | 111.10570 | 245.39961 | 9.55082 | 0.1746612 | 2.5755611 | 31 | 2 | 2002–2006 | 0.44 | M-v | 4 | MPC | 03948 | 2006 OW |
| 2006 $OB_1$ | 19.9 | 0.15 | 20060922 | 6.07192 | 271.91806 | 65.34705 | 5.35985 | 0.4045272 | 2.2338119 | 39 | 1 | 70 days | 0.49 | M-v | 4 | MPC | 04380 | 2006 $OB_1$ |
| 2006 $OC_1$ | 16.6 | 0.15 | 20060922 | 351.29801 | 201.69973 | 165.64988 | 15.11219 | 0.2657465 | 2.6429300 | 69 | 2 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03948 | 2006 $OC_1$ |
| 2006 $OE_1$ | 15.8 | 0.15 | 20060922 | 23.77775 | 192.72580 | 120.31365 | 7.79786 | 0.0745388 | 2.6891056 | 35 | 4 | 2002–2006 | 0.48 | M-v | 1 | MPC | 03949 | 2006 $OE_1$ |
| 2006 $OG_1$ | 18.3 | 0.15 | 20060922 | 14.94050 | 8.50201 | 297.35202 | 6.04235 | 0.1058390 | 2.2507805 | 29 | 3 | 2003–2006 | 0.37 | M-v | 3 | MPC | 03949 | 2006 $OG_1$ |
| 2006 $OK_1$ | 15.8 | 0.15 | 20060922 | 329.73212 | 225.55244 | 126.65368 | 16.85532 | 0.0793581 | 3.1220667 | 31 | 3 | 2001–2006 | 0.35 | M-v | 3 | MPC | 03949 | 2006 $OK_1$ |
| 2006 $OM_1$ | 21.6 | 0.15 | 20060922 | 40.35301 | 323.90554 | 303.48768 | 33.29136 | 0.3878322 | 1.7405849 | 52 | 1 | 48 days | 0.66 | M-v | 4 | MPC | 04380 | 2006 $OM_1$ |
| 2006 $ON_1$ | 21.5 | 0.15 | 20060922 | 5.45044 | 50.75088 | 288.52488 | 3.53128 | 0.6126391 | 2.5498514 | 74 | 1 | 124 days | 0.38 | M-v | 4 | MPC | 04380 | 2006 $ON_1$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $OP_1$ | 17.3 | 0.15 | 20060922 | 14.52551 | 358.91677 | 314.39098 | 4.57608 | 0.2888371 | 2.3891631 | 71 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 03949 | 2006 $OP_1$ |
| 2006 $OX_1$ | 16.9 | 0.15 | 20060922 | 353.89041 | 277.61507 | 54.34022 | 2.16215 | 0.1975187 | 2.3879466 | 35 | 3 | 2003–2006 | 0.28 | M-v | 3 | MPC | 03950 | 2006 $OX_1$ |
| 2006 $OH_2$ | 14.8 | 0.15 | 20060922 | 347.01993 | 33.12931 | 322.66938 | 17.16453 | 0.2265671 | 2.7774435 | 111 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03950 | 2006 $OH_2$ |
| 2006 $OJ_2$ | 16.5 | 0.15 | 20060922 | 8.24293 | 190.00180 | 150.55247 | 5.74100 | 0.1893677 | 2.3916001 | 81 | 2 | 2005–2006 | 0.44 | M-v | 3 | MPC | 03950 | 2006 $OJ_2$ |
| 2006 $OM_2$ | 17.9 | 0.15 | 20060922 | 12.02042 | 16.02302 | 294.76350 | 1.39766 | 0.2244076 | 2.3592563 | 45 | 1 | 167 days | 0.35 | M-v | 3 | MPC | 04380 | 2006 $OM_2$ |
| 2006 $OP_2$ | 17.4 | 0.15 | 20060922 | 38.02606 | 312.38173 | 320.81021 | 9.47417 | 0.2681464 | 2.2774254 | 47 | 2 | 2003–2006 | 0.44 | M-v | 3 | MPC | 03951 | 2006 $OP_2$ |
| 2006 $OQ_2$ | 16.5 | 0.15 | 20060922 | 11.18065 | 216.54333 | 116.70054 | 5.18387 | 0.2126318 | 2.2599407 | 89 | 4 | 2001–2006 | 0.41 | M-v | 2 | MPC | 03951 | 2006 $OQ_2$ |
| 2006 $OT_2$ | 15.6 | 0.15 | 20060922 | 6.93149 | 2.85850 | 337.71081 | 13.90656 | 0.2618071 | 2.6242233 | 121 | 2 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03951 | 2006 $OT_2$ |
| 2006 $OU_2$ | 17.6 | 0.15 | 20060704 | 338.73301 | 213.54392 | 111.99458 | 8.67358 | 0.2681930 | 2.2493760 | 15 | 1 | 58 days | 0.46 | | | MPC | | 2006 $OU_2$ |
| 2006 $OY_2$ | 18.3 | 0.15 | 20060922 | 345.15020 | 198.57290 | 150.76676 | 1.86889 | 0.1941375 | 2.3810222 | 39 | 1 | 89 days | 0.31 | M-v | 5 | MPC | | 2006 $OY_2$ |
| 2006 $OO_3$ | 15.0 | 0.15 | 20060922 | 337.76247 | 50.11077 | 309.49951 | 15.55944 | 0.2863579 | 3.1357137 | 45 | 3 | 2001–2006 | 0.31 | M-v | 2 | MPC | 03952 | 2006 $OO_3$ |
| 2006 $OB_4$ | 17.2 | 0.15 | 20060922 | 24.51281 | 169.27265 | 152.86214 | 6.52077 | 0.2175820 | 2.3705818 | 36 | 1 | 93 days | 0.50 | M-v | 4 | MPC | | 2006 $OB_4$ |
| 2006 $OE_4$ | 16.2 | 0.15 | 20060922 | 351.95020 | 202.38924 | 169.54131 | 4.55875 | 0.1326054 | 2.7543093 | 64 | 1 | 119 days | 0.37 | M-v | 3 | MPC | | 2006 $OE_4$ |
| 2006 $OF_4$ | 16.7 | 0.15 | 20060922 | 59.50630 | 117.93913 | 161.82617 | 2.94899 | 0.2174959 | 2.3608617 | 73 | 5 | 1991–2006 | 0.50 | M-v | 1 | MPC | 03952 | 2006 $OF_4$ |
| 2006 $OK_4$ | 16.2 | 0.15 | 20060922 | 342.11536 | 52.78042 | 0.96467 | 13.00053 | 0.3045518 | 3.1521708 | 35 | 1 | 98 days | 0.51 | M-v | 4 | MPC | | 2006 $OK_4$ |
| 2006 $OL_4$ | 17.3 | 0.15 | 20060922 | 356.52304 | 190.89260 | 195.51610 | 0.65411 | 0.1931928 | 2.3628576 | 47 | 1 | 124 days | 0.38 | M-v | 3 | MPC | | 2006 $OL_4$ |
| 2006 $OM_4$ | 15.4 | 0.15 | 20060922 | 42.39745 | 304.27371 | 345.35520 | 16.69258 | 0.3064269 | 3.1033032 | 68 | 1 | 95 days | 0.50 | M-v | 4 | MPC | | 2006 $OM_4$ |
| 2006 $OW_4$ | 16.8 | 0.15 | 20060813 | 28.51895 | 324.82075 | 321.62004 | 32.28241 | 0.2324027 | 2.6138592 | 34 | 1 | 52 days | 0.43 | | | MPC | | 2006 $OW_4$ |
| 2006 $OX_4$ | 21.1 | 0.15 | 20060922 | 40.95128 | 342.19045 | 300.44257 | 18.52460 | 0.2638427 | 1.6043852 | 38 | 1 | 43 days | 0.33 | M-v | 5 | MPC | 04380 | 2006 $OX_4$ |
| 2006 $OY_4$ | 23.6 | 0.15 | 20060922 | 12.55618 | 231.51047 | 84.48472 | 2.94715 | 0.5388033 | 2.3639518 | 42 | 1 | 60 days | 0.52 | M-v | 4 | MPC | 04380 | 2006 $OY_4$ |
| 2006 $OA_5$ | 19.7 | 0.15 | 20060922 | 343.39412 | 87.27640 | 308.58893 | 10.83198 | 0.3786684 | 1.5238327 | 289 | 1 | 129 days | 0.40 | M-v | 4 | MPC | 04380 | 2006 $OA_5$ |
| 2006 $OC_5$ | 19.2 | 0.15 | 20060922 | 356.43597 | 245.71563 | 149.25284 | 4.74645 | 0.6517267 | 2.4011267 | 147 | 1 | 127 days | 0.32 | M-v | 3 | MPC | 04380 | 2006 $OC_5$ |
| 2006 $OD_5$ | 19.5 | 0.15 | 20060922 | 358.50130 | 223.67627 | 143.87044 | 10.37655 | 0.5453212 | 2.6691705 | 82 | 1 | 83 days | 0.50 | M-v | 4 | MPC | 04380 | 2006 $OD_5$ |
| 2006 $OF_5$ | 19.3 | 0.15 | 20060922 | 9.73219 | 194.89872 | 137.43991 | 10.15873 | 0.5368567 | 2.7529754 | 44 | 1 | 94 days | 0.43 | M-v | 4 | MPC | 04380 | 2006 $OF_5$ |
| 2006 $OL_5$ | 16.7 | 0.15 | 20060922 | 343.10718 | 242.09734 | 109.30083 | 14.07135 | 0.2794686 | 2.6628171 | 25 | 2 | 2002–2006 | 0.26 | M-v | 3 | MPC | 03952 | 2006 $OL_5$ |
| 2006 $ON_5$ | 17.1 | 0.15 | 20060922 | 3.35752 | 313.52473 | 7.66444 | 2.50561 | 0.2304170 | 2.3188601 | 38 | 3 | 1999–2006 | 0.18 | M-v | 2 | MPC | 03952 | 2006 $ON_5$ |
| 2006 $OR_5$ | 17.3 | 0.15 | 20060922 | 7.72811 | 190.97707 | 155.25072 | 4.53171 | 0.2486678 | 2.3983831 | 75 | 1 | 91 days | 0.40 | M-v | 3 | MPC | | 2006 $OR_5$ |
| 2006 $OS_5$ | 18.3 | 0.15 | 20060922 | 1.01885 | 58.30376 | 293.23093 | 26.45861 | 0.5905650 | 2.8645563 | 280 | 1 | 121 days | 0.34 | M-v | 3 | MPC | 04380 | 2006 $OS_5$ |
| 2006 $OT_5$ | 16.4 | 0.15 | 20060922 | 343.82932 | 91.87948 | 275.19533 | 15.93972 | 0.2012070 | 3.1415796 | 42 | 1 | 66 days | 0.30 | M-v | 4 | MPC | | 2006 $OT_5$ |
| 2006 $OV_5$ | 19.3 | 0.15 | 20060922 | 19.99918 | 153.97632 | 156.58895 | 15.23738 | 0.5736148 | 2.7014018 | 29 | 1 | 116 days | 0.47 | M-v | 3 | MPC | 04381 | 2006 $OV_5$ |
| 2006 $OZ_5$ | 16.7 | 0.15 | 20060922 | 40.89229 | 310.52838 | 310.37263 | 9.27315 | 0.1776414 | 2.3074822 | 32 | 4 | 1999–2006 | 0.36 | M-v | 1 | MPC | 03952 | 2006 $OZ_5$ |
| 2006 $ON_6$ | 16.9 | 0.15 | 20060922 | 345.13581 | 234.75775 | 160.45703 | 4.80203 | 0.3220867 | 2.6341979 | 75 | 1 | 126 days | 0.41 | M-v | 3 | MPC | | 2006 $ON_6$ |
| 2006 $OW_6$ | 16.0 | 0.15 | 20060922 | 252.77020 | 183.87891 | 255.67413 | 9.51595 | 0.0720745 | 3.1411877 | 38 | 4 | 1995–2006 | 0.49 | M-v | 1 | MPC | 03953 | 2006 $OW_6$ |
| 2006 $OZ_6$ | 15.5 | 0.15 | 20060813 | 17.48183 | 167.66129 | 143.32877 | 13.09018 | 0.1211544 | 3.0676062 | 26 | 1 | 52 days | 0.67 | | | MPC | | 2006 $OZ_6$ |
| 2006 $OA_7$ | 16.3 | 0.15 | 20060922 | 66.11867 | 7.63849 | 250.08435 | 12.81290 | 0.2190395 | 2.6341055 | 41 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 03953 | 2006 $OA_7$ |
| 2006 $OB_7$ | 23.9 | 0.15 | 20060922 | 15.82478 | 22.64837 | 289.90333 | 6.59316 | 0.5111880 | 2.1103323 | 38 | 1 | 18 days | 0.47 | M-v | 6 | MPC | 04381 | 2006 $OB_7$ |
| 2006 $OC_7$ | 22.7 | 0.15 | 20060922 | 24.09018 | 339.39934 | 298.78448 | 11.02167 | 0.5266435 | 2.1973078 | 50 | 1 | 31 days | 0.46 | M-v | 5 | MPC | 04381 | 2006 $OC_7$ |
| 2006 $OE_7$ | 20.3 | 0.15 | 20060922 | 2.14696 | 150.71081 | 291.62963 | 10.28785 | 0.7762499 | 1.5241691 | 24 | 1 | 9 days | 0.35 | M-v | 7 | MPC | 04381 | 2006 $OE_7$ |
| 2006 $OJ_7$ | 15.6 | 0.15 | 20060922 | 322.19362 | 80.64536 | 312.74737 | 12.09682 | 0.2376125 | 2.7281982 | 66 | 4 | 1997–2006 | 0.42 | M-v | 1 | MPC | 03953 | 2006 $OJ_7$ |
| 2006 $OK_7$ | 16.0 | 0.15 | 20060922 | 12.09206 | 6.61635 | 314.69088 | 11.06535 | 0.1839149 | 2.6948411 | 83 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03953 | 2006 $OK_7$ |
| 2006 $OM_7$ | 17.1 | 0.15 | 20060922 | 65.81372 | 298.31393 | 314.40260 | 1.63106 | 0.1748353 | 2.4153118 | 65 | 5 | 1999–2006 | 0.33 | M-v | 1 | MPC | 03954 | 2006 $OM_7$ |
| 2006 $OO_7$ | 18.1 | 0.15 | 20060922 | 0.50305 | 212.34505 | 140.63587 | 1.83949 | 0.2016227 | 2.3883184 | 31 | 3 | 1995–2006 | 0.50 | M-v | 2 | MPC | 03954 | 2006 $OO_7$ |
| 2006 $OT_7$ | 16.5 | 0.15 | 20060922 | 356.52950 | 66.99298 | 267.89892 | 3.58803 | 0.2487218 | 2.3992248 | 50 | 5 | 1997–2006 | 0.52 | M-v | 1 | MPC | 03954 | 2006 $OT_7$ |
| 2006 $OU_7$ | 15.6 | 0.15 | 20060922 | 12.06003 | 184.86292 | 119.83543 | 15.18014 | 0.1102571 | 2.7376760 | 32 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03955 | 2006 $OU_7$ |
| 2006 $OV_7$ | 17.4 | 0.15 | 20060922 | 2.87921 | 214.88569 | 110.19865 | 2.61400 | 0.2008892 | 2.3958105 | 47 | 5 | 2001–2006 | 0.30 | M-v | 1 | MPC | 03955 | 2006 $OV_7$ |
| 2006 $OW_7$ | 17.1 | 0.15 | 20060922 | 3.76077 | 130.64567 | 193.47758 | 1.89679 | 0.1927868 | 2.3933266 | 44 | 2 | 2005–2006 | 0.29 | M-v | 2 | MPC | 03955 | 2006 $OW_7$ |
| 2006 $OY_7$ | 16.7 | 0.15 | 20060922 | 17.16793 | 251.76762 | 55.11768 | 2.86661 | 0.2080965 | 2.4486099 | 24 | 1 | 127 days | 0.54 | M-v | 4 | MPC | | 2006 $OY_7$ |
| 2006 $OP_8$ | 18.1 | 0.15 | 20060922 | 5.82968 | 21.53596 | 299.99476 | 2.46015 | 0.2697601 | 2.2967582 | 20 | 1 | 94 days | 0.19 | M-v | 4 | MPC | | 2006 $OP_8$ |
| 2006 $OR_8$ | 15.2 | 0.15 | 20060922 | 316.67199 | 63.40462 | 304.08366 | 8.31335 | 0.0855129 | 3.1788436 | 43 | 5 | 1995–2006 | 0.45 | M-v | 1 | MPC | 03955 | 2006 $OR_8$ |
| 2006 $OW_8$ | 17.4 | 0.15 | 20060922 | 43.27769 | 221.12505 | 48.24298 | 1.90690 | 0.2074773 | 2.1558775 | 54 | 4 | 2000–2006 | 0.35 | M-v | 2 | MPC | 03955 | 2006 $OW_8$ |
| 2006 $OY_8$ | 16.9 | 0.15 | 20060922 | 22.37196 | 295.28234 | 5.22611 | 2.31571 | 0.2030871 | 2.3609059 | 65 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 03956 | 2006 $OY_8$ |
| 2006 $OA_9$ | 17.0 | 0.15 | 20060922 | 359.77433 | 30.60204 | 303.66802 | 1.30226 | 0.1826617 | 2.4304957 | 58 | 6 | 1991–2006 | 0.35 | M-v | 0 | MPC | 03956 | 2006 $OA_9$ |
| 2006 $OB_9$ | 16.6 | 0.15 | 20060922 | 357.93308 | 186.53475 | 154.38380 | 7.14580 | 0.1728622 | 2.2903606 | 54 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 03956 | 2006 $OB_9$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $OD_9$ | 17.4 | 0.15 | 20060922 | 60.90223 | 80.90662 | 175.41295 | 5.62806 | 0.1800893 | 2.1469765 | 78 | 4 | 1996–2006 | 0.42 | M-v | 2 | MPC | 03956 | 2006 $OD_9$ |
| 2006 $OE_9$ | 17.3 | 0.15 | 20060922 | 4.20397 | 69.81541 | 263.55209 | 0.76215 | 0.1984497 | 2.4307512 | 64 | 4 | 1994–2006 | 0.35 | M-v | 1 | MPC | 03956 | 2006 $OE_9$ |
| 2006 $OL_9$ | 15.5 | 0.15 | 20060922 | 3.37583 | 257.19665 | 59.69659 | 12.14515 | 0.1455308 | 3.0745566 | 34 | 4 | 2000–2006 | 0.46 | M-v | 0 | MPC | 03957 | 2006 $OL_9$ |
| 2006 $OO_9$ | 15.9 | 0.15 | 20060922 | 17.36968 | 187.42302 | 127.95285 | 11.86266 | 0.1304966 | 2.9690578 | 42 | 5 | 2000–2006 | 0.53 | M-v | 1 | MPC | 03957 | 2006 $OO_9$ |
| 2006 $OQ_9$ | 17.6 | 0.15 | 20060922 | 14.64420 | 9.92152 | 309.29247 | 10.34788 | 0.2528711 | 2.2030935 | 44 | 1 | 73 days | 0.51 | M-v | 4 | MPC | | 2006 $OQ_9$ |
| 2006 $OR_9$ | 15.7 | 0.15 | 20060922 | 28.38164 | 134.13450 | 145.29782 | 30.58601 | 0.3651302 | 3.1722632 | 56 | 2 | 2000–2006 | 0.56 | M-v | 3 | MPC | 03957 | 2006 $OR_9$ |
| 2006 $OS_9$ | 18.7 | 0.15 | 20060922 | 22.41998 | 35.88080 | 127.52424 | 21.12252 | 0.9016214 | 2.7330083 | 28 | 1 | 23 days | 0.61 | M-v | 7 | MPC | 04381 | 2006 $OS_9$ |
| 2006 $OT_9$ | 20.1 | 0.15 | 20060922 | 202.79975 | 193.94837 | 310.29713 | 14.56264 | 0.1818194 | 1.1237023 | 45 | 1 | 48 days | 0.41 | M-v | 5 | MPC | 04381 | 2006 $OT_9$ |
| 2006 $OY_9$ | 17.0 | 0.15 | 20060922 | 353.93679 | 164.96984 | 169.57409 | 2.12521 | 0.2271210 | 2.3172618 | 19 | 2 | 2005–2006 | 0.29 | M-v | 3 | MPC | 03957 | 2006 $OY_9$ |
| 2006 $OB_{10}$ | 15.5 | 0.15 | 20060922 | 323.78052 | 83.86597 | 311.01253 | 24.41434 | 0.2716774 | 3.2002430 | 38 | 2 | 2001–2006 | 0.44 | M-v | 3 | MPC | 03957 | 2006 $OB_{10}$ |
| 2006 $OC_{10}$ | 16.3 | 0.15 | 20060922 | 35.02272 | 348.71335 | 293.92330 | 11.62696 | 0.2346408 | 2.4236172 | 35 | 1 | 125 days | 0.47 | M-v | 4 | MPC | 04381 | 2006 $OC_{10}$ |
| 2006 $OD_{10}$ | 14.9 | 0.15 | 20060922 | 36.56088 | 331.98780 | 330.87824 | 33.00440 | 0.2192773 | 2.6217070 | 51 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 03958 | 2006 $OD_{10}$ |
| 2006 $OE_{10}$ | 24.8 | 0.15 | 20060922 | 29.71601 | 332.74526 | 323.88568 | 2.46547 | 0.3583376 | 1.6520606 | 43 | 1 | 34 days | 0.47 | M-v | 5 | MPC | 04381 | 2006 $OE_{10}$ |
| 2006 $OJ_{10}$ | 17.2 | 0.15 | 20060922 | 5.33358 | 204.64241 | 126.53564 | 6.23480 | 0.1915585 | 2.2459671 | 59 | 1 | 110 days | 0.39 | M-v | 3 | MPC | 04381 | 2006 $OJ_{10}$ |
| 2006 $OL_{10}$ | 16.9 | 0.15 | 20060922 | 22.95564 | 25.30461 | 284.22817 | 6.34451 | 0.1475514 | 2.2956078 | 68 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 03958 | 2006 $OL_{10}$ |
| 2006 $OO_{10}$ | 14.9 | 0.15 | 20060922 | 8.89362 | 166.93586 | 156.93818 | 18.10689 | 0.1875137 | 3.2030834 | 81 | 1 | 119 days | 0.55 | M-v | 3 | MPC | 04381 | 2006 $OO_{10}$ |
| 2006 $OQ_{10}$ | 17.6 | 0.15 | 20060922 | 8.95143 | 211.89431 | 110.47640 | 5.38867 | 0.1828747 | 2.2022360 | 48 | 2 | 2003–2006 | 0.48 | M-v | 2 | MPC | 03958 | 2006 $OQ_{10}$ |
| 2006 $OR_{10}$ | 16.8 | 0.15 | 20060813 | 20.03318 | 0.78413 | 294.73380 | 8.63421 | 0.1902419 | 2.2704053 | 35 | 1 | 59 days | 0.57 | | | MPC | | 2006 $OR_{10}$ |
| 2006 $OT_{10}$ | 17.3 | 0.15 | 20060813 | 41.98353 | 282.94838 | 326.12660 | 27.42652 | 0.3942818 | 2.6019063 | 20 | 1 | 53 days | 0.23 | | | MPC | | 2006 $OT_{10}$ |
| 2006 $OU_{10}$ | 17.8 | 0.15 | 20060922 | 219.14825 | 173.33150 | 335.29960 | 33.69839 | 0.3495843 | 1.7543862 | 41 | 1 | 117 days | 0.52 | M-v | 4 | MPC | | 2006 $OU_{10}$ |
| 2006 $OW_{10}$ | 17.5 | 0.15 | 20060922 | 13.20832 | 280.82384 | 40.80674 | 2.70103 | 0.2189157 | 2.4300830 | 32 | 2 | 2005–2006 | 0.40 | M-v | 4 | MPC | 03959 | 2006 $OW_{10}$ |
| 2006 $OX_{10}$ | 17.7 | 0.15 | 20060922 | 358.51443 | 338.97577 | 4.75922 | 4.01545 | 0.2087582 | 2.5503913 | 47 | 3 | 1998–2006 | 0.36 | M-v | 3 | MPC | 03959 | 2006 $OX_{10}$ |
| 2006 $OY_{10}$ | 18.8 | 0.15 | 20060922 | 356.77486 | 92.31946 | 234.18346 | 35.63127 | 0.5741857 | 1.8064663 | 36 | 1 | 130 days | 0.41 | M-v | 2 | MPC | 04381 | 2006 $OY_{10}$ |
| 2006 $OA_{11}$ | 16.5 | 0.15 | 20060922 | 3.77158 | 322.67841 | 10.00985 | 1.36632 | 0.2091390 | 2.4169324 | 68 | 3 | 1999–2006 | 0.36 | M-v | 2 | MPC | 03959 | 2006 $OA_{11}$ |
| 2006 $OE_{11}$ | 16.6 | 0.15 | 20060922 | 39.55388 | 324.81125 | 313.27201 | 14.28733 | 0.0852019 | 2.3802058 | 40 | 1 | 68 days | 0.21 | M-v | 4 | MPC | | 2006 $OE_{11}$ |
| 2006 $OF_{11}$ | 15.9 | 0.15 | 20060922 | 36.11241 | 313.46677 | 314.40816 | 13.49136 | 0.2301761 | 3.1358287 | 19 | 1 | 67 days | 0.19 | M-v | 4 | MPC | | 2006 $OF_{11}$ |
| 2006 $OH_{11}$ | 14.8 | 0.15 | 20060724 | 2.02971 | 0.21711 | 307.59167 | 27.16121 | 0.1850010 | 3.1810917 | 19 | 1 | 41 days | 0.32 | | | MPC | | 2006 $OH_{11}$ |
| 2006 $OK_{11}$ | 17.1 | 0.15 | 20060922 | 33.90108 | 341.11172 | 304.32327 | 11.77663 | 0.1606428 | 2.3404924 | 16 | 1 | 67 days | 0.22 | M-v | 4 | MPC | | 2006 $OK_{11}$ |
| 2006 $ON_{11}$ | 16.7 | 0.15 | 20060922 | 6.18529 | 186.60756 | 146.58480 | 7.36234 | 0.1544615 | 2.2885824 | 46 | 3 | 1999–2006 | 0.51 | M-v | 3 | MPC | 03960 | 2006 $ON_{11}$ |
| 2006 $OO_{11}$ | 17.0 | 0.15 | 20060922 | 17.33466 | 132.31992 | 185.29131 | 1.83240 | 0.2277212 | 2.3887906 | 97 | 4 | 1999–2006 | 0.42 | M-v | 1 | MPC | 03960 | 2006 $OO_{11}$ |
| 2006 $OP_{11}$ | 16.4 | 0.15 | 20060922 | 22.39283 | 184.45718 | 106.41053 | 7.30680 | 0.1502357 | 2.7419734 | 37 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 03960 | 2006 $OP_{11}$ |
| 2006 $OU_{11}$ | 15.8 | 0.15 | 20060922 | 339.38620 | 68.53114 | 305.70051 | 10.83823 | 0.3128267 | 2.4618310 | 63 | 4 | 2000–2006 | 0.56 | M-v | 1 | MPC | 03961 | 2006 $OU_{11}$ |
| 2006 $OW_{11}$ | 16.1 | 0.15 | 20060922 | 346.02083 | 212.48686 | 146.78354 | 12.68386 | 0.2023869 | 2.6821616 | 46 | 3 | 2002–2006 | 0.49 | M-v | 3 | MPC | 03961 | 2006 $OW_{11}$ |
| 2006 $OZ_{11}$ | 16.6 | 0.15 | 20060922 | 35.77236 | 333.77612 | 316.69753 | 10.20934 | 0.2390484 | 2.3846191 | 63 | 1 | 67 days | 0.46 | M-v | 4 | MPC | | 2006 $OZ_{11}$ |
| 2006 $OB_{12}$ | 15.4 | 0.15 | 20060922 | 44.06457 | 316.01523 | 329.43123 | 27.24521 | 0.1743952 | 3.1767085 | 56 | 2 | 2003–2006 | 0.47 | M-v | 2 | MPC | 03962 | 2006 $OB_{12}$ |
| 2006 $OC_{12}$ | 18.1 | 0.15 | 20060922 | 2.97147 | 212.64518 | 132.33019 | 5.41698 | 0.2402907 | 2.2753548 | 33 | 1 | 86 days | 0.38 | M-v | 3 | MPC | 04381 | 2006 $OC_{12}$ |
| 2006 $OD_{12}$ | 15.4 | 0.15 | 20060922 | 2.95588 | 201.05545 | 142.03030 | 10.29937 | 0.2829388 | 3.0692590 | 89 | 2 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03962 | 2006 $OD_{12}$ |
| 2006 $OE_{12}$ | 17.7 | 0.15 | 20060922 | 15.90175 | 223.63143 | 100.44027 | 1.49692 | 0.2679818 | 2.2567157 | 62 | 1 | 119 days | 0.53 | M-v | 4 | MPC | | 2006 $OE_{12}$ |
| 2006 $OG_{12}$ | 14.8 | 0.15 | 20060922 | 324.13270 | 244.68354 | 137.33230 | 18.07597 | 0.2353242 | 3.2087829 | 53 | 4 | 2001–2006 | 0.52 | M-v | 1 | MPC | 03962 | 2006 $OG_{12}$ |
| 2006 $OL_{12}$ | 17.4 | 0.15 | 20060922 | 6.82548 | 25.67279 | 295.71483 | 4.66035 | 0.1832833 | 2.3000801 | 58 | 4 | 1994–2006 | 0.40 | M-v | 1 | MPC | 03962 | 2006 $OL_{12}$ |
| 2006 $OM_{12}$ | 15.6 | 0.15 | 20060922 | 32.62659 | 220.48788 | 63.56707 | 11.36861 | 0.1255130 | 2.6095256 | 49 | 5 | 1997–2006 | 0.57 | M-v | 1 | MPC | 03963 | 2006 $OM_{12}$ |
| 2006 $OQ_{12}$ | 16.0 | 0.15 | 20060704 | 354.57687 | 298.11666 | 8.11525 | 12.18306 | 0.1987721 | 2.4216499 | 16 | 1 | 55 days | 0.20 | | | MPC | | 2006 $OQ_{12}$ |
| 2006 $OU_{12}$ | 15.3 | 0.15 | 20060922 | 358.19887 | 9.77329 | 329.92054 | 14.07518 | 0.1813005 | 3.1724017 | 55 | 2 | 2002–2006 | 0.42 | M-v | 3 | MPC | 03963 | 2006 $OU_{12}$ |
| 2006 $OX_{12}$ | 17.2 | 0.15 | 20060922 | 25.36426 | 197.45613 | 93.84499 | 3.62634 | 0.2225387 | 2.3892212 | 46 | 3 | 2002–2006 | 0.36 | M-v | 3 | MPC | 03963 | 2006 $OX_{12}$ |
| 2006 $OZ_{12}$ | 16.5 | 0.15 | 20060922 | 349.63764 | 56.09310 | 291.84166 | 5.83060 | 0.2021064 | 2.4074835 | 20 | 1 | 72 days | 0.38 | M-v | 4 | MPC | | 2006 $OZ_{12}$ |
| 2006 $OC_{13}$ | 16.1 | 0.15 | 20060922 | 12.90670 | 277.77491 | 36.82127 | 1.99971 | 0.1805969 | 2.4418192 | 70 | 6 | 1994–2006 | 0.53 | M-v | 1 | MPC | 03963 | 2006 $OC_{13}$ |
| 2006 $OH_{13}$ | 16.6 | 0.15 | 20060922 | 352.05153 | 48.13487 | 314.43826 | 7.04071 | 0.2915574 | 2.7371597 | 71 | 1 | 66 days | 0.51 | M-v | 4 | MPC | | 2006 $OH_{13}$ |
| 2006 $OJ_{13}$ | 17.0 | 0.15 | 20060922 | 28.70220 | 153.65841 | 151.95130 | 10.77473 | 0.2279496 | 2.3532232 | 58 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 03964 | 2006 $OJ_{13}$ |
| 2006 $OK_{13}$ | 17.9 | 0.15 | 20060922 | 20.69214 | 296.16568 | 19.53230 | 1.40881 | 0.2736578 | 2.2060588 | 90 | 3 | 2003–2006 | 0.44 | M-v | 2 | MPC | 03964 | 2006 $OK_{13}$ |
| 2006 $OM_{13}$ | 15.0 | 0.15 | 20060922 | 8.49680 | 11.47233 | 308.18715 | 16.72104 | 0.1399520 | 3.1921022 | 38 | 3 | 2001–2006 | 0.35 | M-v | 2 | MPC | 03964 | 2006 $OM_{13}$ |
| 2006 $OR_{13}$ | 17.8 | 0.15 | 20060922 | 18.91458 | 136.09963 | 165.54023 | 3.18592 | 0.1687611 | 2.3046422 | 24 | 3 | 2002–2006 | 0.26 | M-v | 2 | MPC | 03964 | 2006 $OR_{13}$ |
| 2006 $OS_{13}$ | 17.4 | 0.15 | 20060922 | 2.19716 | 188.80301 | 142.04416 | 6.63572 | 0.2314839 | 2.2115232 | 63 | 3 | 2003–2006 | 0.40 | M-v | 2 | MPC | 03964 | 2006 $OS_{13}$ |
| 2006 $OV_{13}$ | 16.5 | 0.15 | 20060922 | 357.03309 | 184.29585 | 147.65337 | 5.08817 | 0.2756652 | 3.0876238 | 20 | 1 | 90 days | 0.21 | M-v | 3 | MPC | | 2006 $OV_{13}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $OB_{14}$ | 15.9 | 0.15 | 20060922 | 5.57134 | 175.95699 | 146.29778 | 13.37217 | 0.1670102 | 2.6523686 | 54 | 5 | 2000–2006 | 0.69 | M-v | 1 | MPC | 03965 | 2006 $OB_{14}$ |
| 2006 $OC_{14}$ | 17.0 | 0.15 | 20060922 | 16.48379 | 185.19286 | 129.77194 | 4.07396 | 0.1745738 | 2.2427863 | 44 | 3 | 2003–2006 | 0.40 | M-v | 2 | MPC | 03965 | 2006 $OC_{14}$ |
| 2006 $OE_{14}$ | 16.9 | 0.15 | 20060922 | 16.95961 | 182.60592 | 130.20283 | 7.23453 | 0.1301675 | 2.3693328 | 39 | 4 | 1995–2006 | 0.46 | M-v | 1 | MPC | 03965 | 2006 $OE_{14}$ |
| 2006 $OK_{14}$ | 16.6 | 0.15 | 20060922 | 27.04533 | 325.47932 | 322.86587 | 5.09963 | 0.2696306 | 2.5586273 | 108 | 3 | 2002–2006 | 0.56 | M-v | 2 | MPC | 03965 | 2006 $OK_{14}$ |
| 2006 $OL_{14}$ | 17.5 | 0.15 | 20060922 | 31.13259 | 177.56157 | 116.48018 | 3.02499 | 0.1695394 | 2.2739015 | 54 | 5 | 1998–2006 | 0.44 | M-v | 1 | MPC | 03965 | 2006 $OL_{14}$ |
| 2006 $OM_{14}$ | 16.1 | 0.15 | 20060922 | 50.82335 | 303.21516 | 311.04408 | 12.48000 | 0.2884203 | 2.3995348 | 78 | 2 | 2005–2006 | 0.42 | M-v | 3 | MPC | 03966 | 2006 $OM_{14}$ |
| 2006 $ON_{14}$ | 16.9 | 0.15 | 20060922 | 359.71541 | 54.43337 | 286.36995 | 1.23771 | 0.2248766 | 2.3745640 | 51 | 3 | 1999–2006 | 0.43 | M-v | 3 | MPC | 03966 | 2006 $ON_{14}$ |
| 2006 $OO_{14}$ | 16.7 | 0.15 | 20060813 | 353.57455 | 27.19066 | 308.21205 | 7.42370 | 0.3154551 | 2.6985638 | 70 | 1 | 34 days | 0.39 | | | MPC | | 2006 $OO_{14}$ |
| 2006 $OP_{14}$ | 15.8 | 0.15 | 20060922 | 352.53649 | 194.31014 | 155.89780 | 12.54080 | 0.2314854 | 3.1251233 | 105 | 5 | 1999–2006 | 0.48 | M-v | 0 | MPC | 03966 | 2006 $OP_{14}$ |
| 2006 $OQ_{14}$ | 16.1 | 0.15 | 20060922 | 31.57116 | 126.86762 | 163.42270 | 17.02804 | 0.1760159 | 2.7034834 | 45 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 03966 | 2006 $OQ_{14}$ |
| 2006 $OR_{14}$ | 16.9 | 0.15 | 20060922 | 30.62133 | 172.30631 | 132.61459 | 13.83134 | 0.1545805 | 2.6859118 | 34 | 1 | 62 days | 0.47 | M-v | 4 | MPC | | 2006 $OR_{14}$ |
| 2006 $OT_{14}$ | 17.8 | 0.15 | 20060922 | 22.33186 | 298.44393 | 359.03974 | 3.86355 | 0.2547193 | 2.5800833 | 34 | 3 | 1994–2006 | 0.30 | M-v | 2 | MPC | 03966 | 2006 $OT_{14}$ |
| 2006 $OW_{14}$ | 16.7 | 0.15 | 20060922 | 340.40963 | 26.43618 | 332.90433 | 7.75232 | 0.2446379 | 2.3488358 | 43 | 3 | 1999–2006 | 0.44 | M-v | 2 | MPC | 03967 | 2006 $OW_{14}$ |
| 2006 $OA_{15}$ | 17.2 | 0.15 | 20060922 | 23.94413 | 204.68726 | 92.46891 | 7.11099 | 0.1754107 | 2.2145144 | 34 | 3 | 2000–2006 | 0.46 | M-v | 3 | MPC | 03967 | 2006 $OA_{15}$ |
| 2006 $OD_{15}$ | 15.7 | 0.15 | 20060922 | 352.03607 | 341.05144 | 359.49579 | 9.02319 | 0.2049047 | 2.9059349 | 43 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 03967 | 2006 $OD_{15}$ |
| 2006 $OF_{15}$ | 18.3 | 0.15 | 20060922 | 359.53487 | 246.08954 | 122.63407 | 23.19769 | 0.3540830 | 2.0083138 | 49 | 1 | 115 days | 0.49 | M-v | 4 | MPC | 04382 | 2006 $OF_{15}$ |
| 2006 $OG_{15}$ | 19.8 | 0.15 | 20060922 | 356.23058 | 264.10600 | 119.17951 | 17.15644 | 0.6264080 | 2.5468628 | 60 | 1 | 86 days | 0.39 | M-v | 4 | MPC | 04382 | 2006 $OG_{15}$ |
| 2006 $OK_{15}$ | 15.8 | 0.15 | 20060922 | 17.35343 | 275.83394 | 22.94128 | 7.04779 | 0.3221155 | 2.7811756 | 73 | 3 | 1996–2006 | 0.43 | M-v | 2 | MPC | 03967 | 2006 $OK_{15}$ |
| 2006 $OS_{15}$ | 16.1 | 0.15 | 20060922 | 83.26524 | 237.72715 | 353.46289 | 18.64201 | 0.0641678 | 1.9815837 | 49 | 5 | 1998–2006 | 0.49 | M-v | 1 | MPC | 03967 | 2006 $OS_{15}$ |
| 2006 $OW_{15}$ | 14.7 | 0.15 | 20060922 | 39.41425 | 353.09435 | 311.90060 | 26.45633 | 0.1016480 | 3.1395725 | 57 | 3 | 2000–2006 | 0.56 | M-v | 3 | MPC | 03968 | 2006 $OW_{15}$ |
| 2006 $OA_{16}$ | 15.6 | 0.15 | 20060922 | 190.74705 | 165.33475 | 327.17331 | 21.67502 | 0.0163457 | 2.6162384 | 46 | 5 | 1998–2006 | 0.54 | M-v | 1 | MPC | 03968 | 2006 $OA_{16}$ |
| 2006 $OH_{16}$ | 15.6 | 0.15 | 20060922 | 39.91833 | 330.09633 | 309.55175 | 5.67119 | 0.1565361 | 3.0159944 | 49 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 03968 | 2006 $OH_{16}$ |
| 2006 $OK_{16}$ | 16.9 | 0.15 | 20060922 | 353.04470 | 37.14787 | 327.90768 | 8.91079 | 0.2692170 | 2.7157998 | 55 | 1 | 97 days | 0.47 | M-v | 3 | MPC | | 2006 $OK_{16}$ |
| 2006 $ON_{16}$ | 16.2 | 0.15 | 20060922 | 26.89095 | 353.33450 | 291.88588 | 8.84768 | 0.2071682 | 2.7485194 | 49 | 4 | 2001–2006 | 0.43 | M-v | 1 | MPC | 03969 | 2006 $ON_{16}$ |
| 2006 $OR_{16}$ | 17.1 | 0.15 | 20060704 | 339.93053 | 33.72712 | 295.90129 | 12.89789 | 0.2708586 | 2.6400610 | 16 | 1 | 50 days | 0.17 | | | MPC | | 2006 $OR_{16}$ |
| 2006 $OW_{16}$ | 17.1 | 0.15 | 20060922 | 339.60789 | 58.64562 | 298.66845 | 3.43066 | 0.1547127 | 2.3488915 | 28 | 1 | 152 days | 0.28 | M-v | 3 | MPC | | 2006 $OW_{16}$ |
| 2006 $OZ_{16}$ | 16.9 | 0.15 | 20060922 | 328.60317 | 240.42278 | 137.43705 | 7.37480 | 0.1840751 | 2.5272573 | 45 | 6 | 1998–2006 | 0.56 | M-v | 1 | MPC | 03969 | 2006 $OZ_{16}$ |
| 2006 $OB_{17}$ | 16.1 | 0.15 | 20060922 | 31.57140 | 152.08456 | 158.59130 | 10.26812 | 0.2032373 | 2.7710080 | 50 | 1 | 90 days | 0.53 | M-v | 4 | MPC | | 2006 $OB_{17}$ |
| 2006 $OC_{17}$ | 17.0 | 0.15 | 20060922 | 15.23106 | 18.30786 | 309.80940 | 4.45914 | 0.3037316 | 2.4396615 | 86 | 3 | 2002–2006 | 0.60 | M-v | 2 | MPC | 03969 | 2006 $OC_{17}$ |
| 2006 $OE_{17}$ | 15.5 | 0.15 | 20060922 | 10.49572 | 180.70043 | 164.05828 | 16.71777 | 0.1674424 | 2.7255020 | 100 | 2 | 2004–2006 | 0.41 | M-v | 3 | MPC | 03969 | 2006 $OE_{17}$ |
| 2006 $OF_{17}$ | 17.0 | 0.15 | 20060922 | 8.36653 | 195.18837 | 150.60772 | 6.48705 | 0.2469807 | 2.2828975 | 122 | 5 | 1998–2006 | 0.53 | M-v | 2 | MPC | 03970 | 2006 $OF_{17}$ |
| 2006 $OG_{17}$ | 16.2 | 0.15 | 20060922 | 339.37361 | 246.83566 | 92.56757 | 10.98435 | 0.0885278 | 2.9879767 | 31 | 4 | 2001–2006 | 0.50 | M-v | 1 | MPC | 03970 | 2006 $OG_{17}$ |
| 2006 $OK_{17}$ | 17.1 | 0.15 | 20060813 | 14.96491 | 82.66422 | 217.08853 | 3.44476 | 0.1982286 | 2.6603586 | 21 | 1 | 52 days | 0.42 | | | MPC | | 2006 $OK_{17}$ |
| 2006 $OL_{17}$ | 17.0 | 0.15 | 20060922 | 40.54866 | 136.41514 | 145.44992 | 1.77511 | 0.1753507 | 2.4133770 | 45 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 03970 | 2006 $OL_{17}$ |
| 2006 $OO_{17}$ | 16.1 | 0.15 | 20060922 | 34.38614 | 212.07324 | 59.45711 | 15.09335 | 0.0767744 | 2.7026476 | 35 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 03970 | 2006 $OO_{17}$ |
| 2006 $OR_{17}$ | 16.0 | 0.15 | 20060922 | 352.95125 | 256.52945 | 69.49064 | 14.83632 | 0.1764792 | 2.6388985 | 28 | 4 | 1997–2006 | 0.55 | M-v | 1 | MPC | 03971 | 2006 $OR_{17}$ |
| 2006 $OO_{18}$ | 16.0 | 0.15 | 20060922 | 10.41784 | 257.64130 | 40.38356 | 17.71114 | 0.2497339 | 2.6322475 | 20 | 1 | 100 days | 0.37 | M-v | 3 | MPC | | 2006 $OO_{18}$ |
| 2006 $OR_{18}$ | 16.1 | 0.15 | 20060922 | 31.53426 | 300.38421 | 333.72826 | 10.93070 | 0.1433250 | 2.7185662 | 26 | 3 | 2002–2006 | 0.54 | M-v | 3 | MPC | 03971 | 2006 $OR_{18}$ |
| 2006 $OQ_{19}$ | 16.0 | 0.15 | 20060922 | 28.90941 | 312.42815 | 329.22958 | 16.51211 | 0.1430614 | 2.5311037 | 32 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 03971 | 2006 $OQ_{19}$ |
| 2006 $OR_{19}$ | 15.3 | 0.15 | 20060922 | 20.16679 | 249.72716 | 38.47220 | 12.76684 | 0.1279176 | 3.0870110 | 44 | 4 | 2000–2006 | 0.55 | M-v | 1 | MPC | 03971 | 2006 $OR_{19}$ |
| 2006 $OU_{19}$ | 15.5 | 0.15 | 20060922 | 335.83243 | 334.70559 | 36.09586 | 15.27820 | 0.1894027 | 2.7561618 | 36 | 2 | 2002–2006 | 0.47 | M-v | 3 | MPC | 03971 | 2006 $OU_{19}$ |
| 2006 $OV_{19}$ | 16.1 | 0.15 | 20060922 | 7.47129 | 264.38005 | 63.74044 | 15.53188 | 0.1715704 | 2.5285556 | 24 | 1 | 70 days | 0.48 | M-v | 4 | MPC | | 2006 $OV_{19}$ |
| 2006 $OX_{19}$ | 17.4 | 0.15 | 20060922 | 4.77049 | 159.09832 | 162.02596 | 12.37943 | 0.3756106 | 2.2989960 | 19 | 1 | 81 days | 0.43 | M-v | 4 | MPC | | 2006 $OX_{19}$ |
| 2006 $OA_{20}$ | 15.6 | 0.15 | 20060922 | 357.02716 | 280.78671 | 47.50302 | 7.89403 | 0.1470641 | 2.5841775 | 44 | 4 | 1998–2006 | 0.70 | M-v | 3 | MPC | 03971 | 2006 $OA_{20}$ |
| 2006 PB | 16.7 | 0.15 | 20060922 | 351.60334 | 137.05569 | 224.09473 | 2.96375 | 0.2390174 | 2.4015786 | 110 | 2 | 2005–2006 | 0.42 | M-v | 3 | MPC | 03972 | 2006 PB |
| 2006 PF | 16.4 | 0.15 | 20060922 | 337.09015 | 88.74892 | 280.27689 | 12.02502 | 0.2412228 | 2.7456510 | 39 | 2 | 2002–2006 | 0.41 | M-v | 3 | MPC | 03972 | 2006 PF |
| 2006 PJ | 16.0 | 0.15 | 20060922 | 32.84897 | 116.15868 | 174.47422 | 9.48571 | 0.0557704 | 3.1647418 | 37 | 3 | 2001–2006 | 0.47 | M-v | 1 | MPC | 03973 | 2006 PJ |
| 2006 PK | 19.2 | 0.15 | 20060922 | 12.50585 | 20.44649 | 296.59962 | 1.04545 | 0.2747302 | 2.1967653 | 35 | 1 | 68 days | 0.31 | M-v | 4 | MPC | | 2006 PK |
| 2006 PM | 16.0 | 0.15 | 20060813 | 9.89335 | 63.48417 | 263.10758 | 16.21562 | 0.0568731 | 3.0675667 | 26 | 1 | 45 days | 0.40 | | | MPC | | 2006 PM |
| 2006 PN | 17.2 | 0.15 | 20060813 | 4.97353 | 168.31810 | 154.13798 | 14.67554 | 0.2522893 | 2.6845059 | 58 | 1 | 44 days | 0.53 | | | MPC | | 2006 PN |
| 2006 PW | 18.1 | 0.15 | 20060922 | 314.12962 | 325.03058 | 133.02733 | 35.86215 | 0.6519421 | 1.3812479 | 34 | 1 | 66 days | 0.31 | M-v | 6 | MPC | 04383 | 2006 PW |
| 2006 PY | 15.1 | 0.15 | 20060922 | 21.67136 | 155.58609 | 157.28730 | 17.57357 | 0.1782675 | 3.0951704 | 94 | 3 | 2004–2006 | 0.49 | M-v | 2 | MPC | 03973 | 2006 PY |
| 2006 PZ | 16.2 | 0.15 | 20060922 | 11.02697 | 146.53125 | 170.53519 | 11.19311 | 0.1813759 | 2.4543257 | 77 | 4 | 2001–2006 | 0.55 | M-v | 2 | MPC | 03973 | 2006 PZ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $PA_1$ | 19.9 | 0.15 | 20060922 | 341.56359 | 85.39861 | 322.74891 | 2.43111 | 0.5509141 | 2.0343452 | 45 | 1 | 62 days | 0.37 | M-v | 5 | MPC | 04383 | 2006 $PA_1$ |
| 2006 $PB_1$ | 19.2 | 0.15 | 20060922 | 356.80026 | 276.92219 | 94.57124 | 15.33227 | 0.5920945 | 3.0149470 | 38 | 1 | 98 days | 0.44 | M-v | 3 | MPC | 04383 | 2006 $PB_1$ |
| 2006 $PD_1$ | 15.2 | 0.15 | 20060922 | 356.77751 | 332.55440 | 9.78507 | 10.45606 | 0.2105957 | 3.1849379 | 46 | 3 | 2001–2006 | 0.45 | M-v | 3 | MPC | 03974 | 2006 $PD_1$ |
| 2006 $PE_1$ | 17.4 | 0.15 | 20060922 | 9.29284 | 165.00535 | 151.10103 | 7.41376 | 0.2012125 | 2.3676605 | 24 | 1 | 108 days | 0.26 | M-v | 3 | MPC | | 2006 $PE_1$ |
| 2006 $PG_1$ | 17.7 | 0.15 | 20060922 | 320.23304 | 257.59459 | 143.94911 | 23.59232 | 0.1881359 | 1.8703033 | 36 | 3 | 2001–2006 | 0.29 | M-v | 2 | MPC | 03974 | 2006 $PG_1$ |
| 2006 $PJ_1$ | 13.6 | 0.15 | 20060922 | 29.45376 | 331.85450 | 307.05239 | 21.42061 | 0.0407721 | 5.1528334 | 16 | 1 | 89 days | 0.31 | M-v | 4 | MPC | 04383 | 2006 $PJ_1$ |
| 2006 $PR_1$ | 14.5 | 0.15 | 20060922 | 4.79283 | 357.54709 | 315.83703 | 16.85940 | 0.2343414 | 3.1553929 | 76 | 5 | 2001–2006 | 0.47 | M-v | 1 | MPC | 03974 | 2006 $PR_1$ |
| 2006 $PK_2$ | 17.6 | 0.15 | 20060922 | 4.96879 | 71.88719 | 250.90254 | 1.19719 | 0.2254810 | 2.3803072 | 43 | 5 | 1999–2006 | 0.35 | M-v | 1 | MPC | 03974 | 2006 $PK_2$ |
| 2006 $PP_2$ | 16.6 | 0.15 | 20060922 | 352.44069 | 198.24649 | 139.44469 | 8.05009 | 0.1852705 | 2.6934024 | 35 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 03974 | 2006 $PP_2$ |
| 2006 $PT_2$ | 17.2 | 0.15 | 20060922 | 357.79160 | 21.29517 | 315.64902 | 10.15420 | 0.2456734 | 2.3920915 | 17 | 1 | 66 days | 0.37 | M-v | 4 | MPC | | 2006 $PT_2$ |
| 2006 $PE_3$ | 16.2 | 0.15 | 20060922 | 28.71571 | 309.75046 | 334.39139 | 11.93478 | 0.1948996 | 2.7049845 | 44 | 3 | 2002–2006 | 0.45 | M-v | 2 | MPC | 03975 | 2006 $PE_3$ |
| 2006 $PF_3$ | 16.8 | 0.15 | 20060922 | 1.57978 | 4.93463 | 320.62316 | 11.38596 | 0.1927442 | 2.6496246 | 25 | 3 | 2000–2006 | 0.49 | M-v | 3 | MPC | 03975 | 2006 $PF_3$ |
| 2006 $PO_3$ | 18.0 | 0.15 | 20060922 | 329.15985 | 314.35293 | 59.30364 | 3.47680 | 0.1937813 | 2.4518126 | 21 | 2 | 2003–2006 | 0.15 | M-v | 3 | MPC | 03975 | 2006 $PO_3$ |
| 2006 $PS_3$ | 15.0 | 0.15 | 20060922 | 18.76104 | 44.28348 | 294.12663 | 25.61967 | 0.1322509 | 3.1938072 | 22 | 1 | 102 days | 0.50 | M-v | 4 | MPC | | 2006 $PS_3$ |
| 2006 $PZ_3$ | 17.4 | 0.15 | 20060922 | 354.55977 | 355.34487 | 355.80070 | 6.37129 | 0.2639354 | 2.2778510 | 41 | 1 | 74 days | 0.41 | M-v | 4 | MPC | | 2006 $PZ_3$ |
| 2006 $PC_4$ | 16.8 | 0.15 | 20060922 | 348.55878 | 277.48068 | 82.05324 | 5.72864 | 0.2541703 | 2.3990247 | 41 | 3 | 1999–2006 | 0.55 | M-v | 2 | MPC | 03976 | 2006 $PC_4$ |
| 2006 $PH_4$ | 17.3 | 0.15 | 20060813 | 358.77478 | 215.20135 | 110.20034 | 7.06653 | 0.2100696 | 2.2355864 | 21 | 1 | 31 days | 0.26 | | | MPC | | 2006 $PH_4$ |
| 2006 $PK_4$ | 17.6 | 0.15 | 20060813 | 7.73589 | 248.59145 | 64.01461 | 5.24148 | 0.2572784 | 2.3021388 | 31 | 1 | 33 days | 0.36 | | | MPC | | 2006 $PK_4$ |
| 2006 $PL_4$ | 16.4 | 0.15 | 20060724 | 39.86592 | 153.92411 | 94.24034 | 6.42299 | 0.2668631 | 2.6211108 | 16 | 1 | 30 days | 0.32 | | | MPC | | 2006 $PL_4$ |
| 2006 $PO_4$ | 17.0 | 0.15 | 20060922 | 8.52692 | 223.53427 | 105.89884 | 7.00178 | 0.2566689 | 2.5893403 | 28 | 2 | 2002–2006 | 0.48 | M-v | 4 | MPC | 03976 | 2006 $PO_4$ |
| 2006 $PP_4$ | 16.8 | 0.15 | 20060922 | 349.15260 | 16.60890 | 342.88211 | 1.66536 | 0.2231136 | 2.4498223 | 97 | 4 | 2001–2006 | 0.48 | M-v | 1 | MPC | 03976 | 2006 $PP_4$ |
| 2006 $PQ_4$ | 17.8 | 0.15 | 20060922 | 23.82922 | 147.75066 | 142.71445 | 4.81940 | 0.2537344 | 2.3265768 | 24 | 1 | 147 days | 0.22 | M-v | 3 | MPC | | 2006 $PQ_4$ |
| 2006 $PF_5$ | 17.5 | 0.15 | 20060922 | 11.68883 | 161.00625 | 154.61999 | 2.62017 | 0.2211527 | 2.3718634 | 24 | 1 | 143 days | 0.15 | M-v | 3 | MPC | | 2006 $PF_5$ |
| 2006 $PJ_5$ | 17.2 | 0.15 | 20060922 | 346.62979 | 311.16048 | 39.87531 | 3.86048 | 0.2045590 | 2.4246574 | 17 | 3 | 1995–2006 | 0.36 | M-v | 4 | MPC | 03976 | 2006 $PJ_5$ |
| 2006 $PK_5$ | 17.3 | 0.15 | 20060813 | 29.56004 | 316.32185 | 327.53786 | 17.94865 | 0.0401147 | 1.9564821 | 16 | 1 | 32 days | 0.35 | | | MPC | | 2006 $PK_5$ |
| 2006 $PM_5$ | 17.3 | 0.15 | 20060922 | 348.54208 | 322.27262 | 31.43713 | 2.81753 | 0.2383327 | 2.2969554 | 19 | 1 | 103 days | 0.16 | M-v | 5 | MPC | | 2006 $PM_5$ |
| 2006 $PQ_5$ | 17.2 | 0.15 | 20060922 | 326.53862 | 31.97750 | 356.37182 | 3.56602 | 0.2682878 | 2.4187398 | 29 | 2 | 2004–2006 | 0.31 | M-v | 3 | MPC | 03976 | 2006 $PQ_5$ |
| 2006 $PU_5$ | 16.4 | 0.15 | 20060922 | 331.97362 | 38.21649 | 330.80512 | 11.63883 | 0.1789357 | 2.6933487 | 39 | 3 | 2002–2006 | 0.34 | M-v | 2 | MPC | 03977 | 2006 $PU_5$ |
| 2006 $PA_6$ | 16.1 | 0.15 | 20060922 | 25.00825 | 158.59441 | 138.49025 | 6.22522 | 0.1270457 | 2.5453439 | 45 | 4 | 1993–2006 | 0.55 | M-v | 2 | MPC | 03977 | 2006 $PA_6$ |
| 2006 $PD_6$ | 17.3 | 0.15 | 20060922 | 25.89709 | 152.71410 | 143.97218 | 3.25744 | 0.1816277 | 2.3933354 | 27 | 2 | 2005–2006 | 0.23 | M-v | 4 | MPC | 03977 | 2006 $PD_6$ |
| 2006 $PM_6$ | 17.1 | 0.15 | 20060922 | 354.25421 | 350.16194 | 354.98978 | 10.65936 | 0.2705519 | 2.4051739 | 24 | 1 | 120 days | 0.31 | M-v | 3 | MPC | | 2006 $PM_6$ |
| 2006 $PU_6$ | 16.1 | 0.15 | 20060922 | 0.71871 | 257.39016 | 72.18867 | 3.29662 | 0.2187024 | 2.9719936 | 39 | 4 | 1991–2006 | 0.50 | M-v | 2 | MPC | 03977 | 2006 $PU_6$ |
| 2006 $PW_6$ | 16.3 | 0.15 | 20060922 | 347.29562 | 245.77304 | 99.29368 | 7.28048 | 0.1544594 | 3.1828674 | 32 | 5 | 2001–2006 | 0.67 | M-v | 1 | MPC | 03978 | 2006 $PW_6$ |
| 2006 $PY_6$ | 16.0 | 0.15 | 20060922 | 51.15947 | 214.42953 | 53.50152 | 2.65758 | 0.0761669 | 3.0269752 | 29 | 3 | 2004–2006 | 0.45 | M-v | 3 | MPC | 03978 | 2006 $PY_6$ |
| 2006 $PZ_6$ | 18.2 | 0.15 | 20060922 | 21.74653 | 305.16157 | 359.42749 | 2.63309 | 0.1903518 | 2.1823189 | 30 | 4 | 2000–2006 | 0.37 | M-v | 2 | MPC | 03978 | 2006 $PZ_6$ |
| 2006 $PE_7$ | 15.4 | 0.15 | 20060922 | 294.36017 | 80.42700 | 331.98833 | 14.08702 | 0.1693586 | 2.8315801 | 37 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 03978 | 2006 $PE_7$ |
| 2006 $PH_7$ | 17.0 | 0.15 | 20060724 | 339.55544 | 201.58946 | 137.52098 | 7.88915 | 0.1425187 | 2.2972161 | 19 | 1 | 37 days | 0.33 | | | MPC | | 2006 $PH_7$ |
| 2006 $PK_7$ | 15.7 | 0.15 | 20060902 | 356.39920 | 8.70041 | 320.10725 | 22.18897 | 0.1189354 | 3.1665162 | 17 | 1 | 47 days | 0.28 | | | MPC | | 2006 $PK_7$ |
| 2006 $PL_7$ | 16.9 | 0.15 | 20060922 | 6.70927 | 307.72295 | 17.76044 | 1.55206 | 0.2015823 | 2.4335417 | 34 | 1 | 87 days | 0.33 | M-v | 4 | MPC | | 2006 $PL_7$ |
| 2006 $PW_7$ | 15.9 | 0.15 | 20060922 | 353.47259 | 254.22390 | 87.08668 | 7.43505 | 0.1436080 | 2.4649077 | 43 | 3 | 1999–2006 | 0.37 | M-v | 3 | MPC | 03978 | 2006 $PW_7$ |
| 2006 $PB_8$ | 16.3 | 0.15 | 20060922 | 353.61080 | 19.20874 | 324.46665 | 9.00153 | 0.1428820 | 2.3017351 | 60 | 5 | 1999–2006 | 0.47 | M-v | 1 | MPC | 03978 | 2006 $PB_8$ |
| 2006 $PC_8$ | 16.8 | 0.15 | 20060922 | 60.36195 | 137.82233 | 115.80109 | 1.84126 | 0.1672641 | 2.4254428 | 57 | 6 | 1995–2006 | 0.32 | M-v | 1 | MPC | 03979 | 2006 $PC_8$ |
| 2006 $PD_8$ | 18.0 | 0.15 | 20060922 | 1.21024 | 10.75304 | 324.00631 | 3.98598 | 0.1835655 | 2.3608461 | 31 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 03979 | 2006 $PD_8$ |
| 2006 $PF_8$ | 17.9 | 0.15 | 20060922 | 6.60147 | 163.12002 | 155.88016 | 5.73691 | 0.2894844 | 2.3491323 | 33 | 3 | 1995–2006 | 0.35 | M-v | 1 | MPC | 03979 | 2006 $PF_8$ |
| 2006 $PL_8$ | 18.0 | 0.15 | 20060922 | 29.05636 | 319.08477 | 332.45604 | 4.60193 | 0.1735891 | 2.1755507 | 42 | 3 | 2003–2006 | 0.27 | M-v | 2 | MPC | 03979 | 2006 $PL_8$ |
| 2006 $PY_8$ | 17.1 | 0.15 | 20060813 | 342.10313 | 34.98499 | 313.75769 | 2.79757 | 0.1921649 | 2.6029105 | 23 | 1 | 54 days | 0.44 | | | MPC | | 2006 $PY_8$ |
| 2006 $PA_9$ | 16.6 | 0.15 | 20060922 | 7.60902 | 103.68673 | 223.34460 | 1.41826 | 0.2201319 | 2.4571725 | 79 | 4 | 1997–2006 | 0.50 | M-v | 1 | MPC | 03979 | 2006 $PA_9$ |
| 2006 $PC_9$ | 17.3 | 0.15 | 20060922 | 14.48368 | 178.28401 | 138.89526 | 6.10286 | 0.2078524 | 2.2975607 | 66 | 6 | 1996–2006 | 0.55 | M-v | 1 | MPC | 03979 | 2006 $PC_9$ |
| 2006 $PD_9$ | 17.9 | 0.15 | 20060922 | 9.10876 | 7.82290 | 317.92716 | 5.11750 | 0.1359397 | 2.3241299 | 28 | 5 | 1992–2006 | 0.46 | M-v | 1 | MPC | 03980 | 2006 $PD_9$ |
| 2006 $PH_9$ | 16.9 | 0.15 | 20060922 | 341.66332 | 56.14553 | 307.79626 | 1.57011 | 0.1859949 | 2.4139698 | 70 | 5 | 1997–2006 | 0.38 | M-v | 1 | MPC | 03980 | 2006 $PH_9$ |
| 2006 $PL_9$ | 16.2 | 0.15 | 20060922 | 0.83738 | 150.64350 | 182.90792 | 2.07838 | 0.1494376 | 3.1116974 | 46 | 4 | 1994–2006 | 0.41 | M-v | 1 | MPC | 03980 | 2006 $PL_9$ |
| 2006 $PR_9$ | 16.8 | 0.15 | 20060922 | 14.25270 | 206.56418 | 111.97520 | 2.36234 | 0.1985716 | 2.3827530 | 76 | 5 | 1994–2006 | 0.41 | M-v | 1 | MPC | 03980 | 2006 $PR_9$ |
| 2006 $PV_9$ | 17.2 | 0.15 | 20060922 | 45.69986 | 151.58085 | 128.30532 | 4.97394 | 0.1405898 | 2.2947439 | 48 | 3 | 2003–2006 | 0.37 | M-v | 2 | MPC | 03980 | 2006 $PV_9$ |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $PW_{9}$ | 17.7 | 0.15 | 20060922 | 73.97827 | 92.73566 | 158.79945 | 1.60446 | 0.1162452 | 2.1455438 | 41 | 3 | 2002–2006 | 0.46 | M-v | 1 | MPC | 03981 | 2006 $PW_{9}$ |
| 2006 $PA_{10}$ | 17.0 | 0.15 | 20060813 | 348.68243 | 189.71266 | 151.31511 | 6.01254 | 0.1813277 | 2.3795913 | 33 | 1 | 38 days | 0.40 | | | MPC | | 2006 $PA_{10}$ |
| 2006 $PB_{10}$ | 16.2 | 0.15 | 20060922 | 318.39079 | 139.37098 | 252.48644 | 0.83230 | 0.1622970 | 2.9197336 | 65 | 6 | 1999–2006 | 0.46 | M-v | 1 | MPC | 03981 | 2006 $PB_{10}$ |
| 2006 $PC_{10}$ | 17.6 | 0.15 | 20060902 | 349.84245 | 31.79311 | 321.97658 | 10.72190 | 0.3174496 | 2.7924579 | 25 | 1 | 41 days | 0.31 | | | MPC | | 2006 $PC_{10}$ |
| 2006 $PH_{10}$ | 17.3 | 0.15 | 20060922 | 344.10829 | 172.51132 | 191.24381 | 2.37425 | 0.2110629 | 2.7658725 | 24 | 1 | 124 days | 0.36 | M-v | 4 | MPC | | 2006 $PH_{10}$ |
| 2006 $PO_{10}$ | 17.8 | 0.15 | 20060902 | 38.80707 | 318.34640 | 319.39131 | 7.86020 | 0.1946604 | 2.2761141 | 33 | 1 | 46 days | 0.42 | | | MPC | | 2006 $PO_{10}$ |
| 2006 $PR_{10}$ | 16.7 | 0.15 | 20060922 | 337.75629 | 136.61845 | 238.33272 | 1.97681 | 0.2008992 | 2.4196780 | 61 | 4 | 1995–2006 | 0.45 | M-v | 1 | MPC | 03981 | 2006 $PR_{10}$ |
| 2006 $PU_{10}$ | 17.6 | 0.15 | 20060922 | 26.13494 | 89.85592 | 210.12256 | 2.28310 | 0.2317799 | 2.4012538 | 34 | 1 | 67 days | 0.62 | M-v | 5 | MPC | | 2006 $PU_{10}$ |
| 2006 $PV_{10}$ | 18.2 | 0.15 | 20060922 | 4.39684 | 158.72717 | 177.53498 | 2.54141 | 0.1823292 | 2.1885979 | 41 | 1 | 76 days | 0.31 | M-v | 4 | MPC | | 2006 $PV_{10}$ |
| 2006 $PW_{10}$ | 17.5 | 0.15 | 20060813 | 334.44294 | 208.96337 | 154.06883 | 8.52798 | 0.1954662 | 2.3479541 | 39 | 1 | 31 days | 0.45 | | | MPC | | 2006 $PW_{10}$ |
| 2006 $PY_{10}$ | 16.2 | 0.15 | 20060922 | 115.18492 | 261.45097 | 312.59153 | 8.49650 | 0.0828827 | 2.3567246 | 64 | 4 | 2001–2006 | 0.47 | M-v | 2 | MPC | 03981 | 2006 $PY_{10}$ |
| 2006 $PZ_{10}$ | 15.7 | 0.15 | 20060922 | 346.67754 | 160.76814 | 200.34734 | 2.36115 | 0.2817967 | 3.9679008 | 31 | 1 | 95 days | 0.35 | M-v | 4 | MPC | | 2006 $PZ_{10}$ |
| 2006 $PA_{11}$ | 16.3 | 0.15 | 20060902 | 334.82975 | 77.50506 | 295.45023 | 3.35741 | 0.2339077 | 3.2087821 | 16 | 1 | 45 days | 0.37 | | | MPC | | 2006 $PA_{11}$ |
| 2006 $PE_{11}$ | 17.5 | 0.15 | 20060922 | 9.27794 | 5.94303 | 321.81236 | 1.81224 | 0.2244604 | 2.4251264 | 40 | 1 | 95 days | 0.47 | M-v | 4 | MPC | | 2006 $PE_{11}$ |
| 2006 $PG_{11}$ | 15.5 | 0.15 | 20060922 | 26.39715 | 228.34074 | 71.56254 | 2.68066 | 0.1776450 | 3.2271108 | 36 | 5 | 1993–2006 | 0.30 | M-v | 0 | MPC | 03982 | 2006 $PG_{11}$ |
| 2006 $PM_{11}$ | 16.9 | 0.15 | 20060922 | 40.48533 | 279.05115 | 2.04482 | 4.23816 | 0.2072192 | 2.5794999 | 39 | 4 | 2001–2006 | 0.48 | M-v | 2 | MPC | 03982 | 2006 $PM_{11}$ |
| 2006 $PO_{11}$ | 16.6 | 0.15 | 20060922 | 4.81290 | 187.82050 | 145.32274 | 13.96978 | 0.1569700 | 2.6303390 | 35 | 3 | 2000–2006 | 0.51 | M-v | 3 | MPC | 03982 | 2006 $PO_{11}$ |
| 2006 $PQ_{11}$ | 17.1 | 0.15 | 20060813 | 322.08816 | 328.11620 | 48.80790 | 1.98816 | 0.1525269 | 2.3307505 | 31 | 1 | 32 days | 0.43 | | | MPC | | 2006 $PQ_{11}$ |
| 2006 $PR_{11}$ | 16.5 | 0.15 | 20060813 | 22.44842 | 148.26573 | 141.09567 | 14.43879 | 0.2507332 | 2.6895418 | 19 | 1 | 51 days | 0.21 | | | MPC | | 2006 $PR_{11}$ |
| 2006 $PS_{11}$ | 17.2 | 0.15 | 20060922 | 45.66322 | 139.49133 | 133.60730 | 6.10463 | 0.2234076 | 2.3680436 | 54 | 4 | 1999–2006 | 0.43 | M-v | 1 | MPC | 03983 | 2006 $PS_{11}$ |
| 2006 $PW_{11}$ | 16.8 | 0.15 | 20060922 | 22.91279 | 190.65168 | 119.42628 | 4.09484 | 0.1797021 | 2.3109357 | 53 | 5 | 1999–2006 | 0.51 | M-v | 1 | MPC | 03983 | 2006 $PW_{11}$ |
| 2006 $PA_{12}$ | 17.3 | 0.15 | 20060922 | 33.39557 | 5.33099 | 288.75303 | 3.25790 | 0.1936397 | 2.3631227 | 42 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 03983 | 2006 $PA_{12}$ |
| 2006 $PD_{12}$ | 15.8 | 0.15 | 20060922 | 42.52731 | 340.32469 | 312.64077 | 1.57339 | 0.0276273 | 2.8312062 | 50 | 5 | 2001–2006 | 0.61 | M-v | 1 | MPC | 03983 | 2006 $PD_{12}$ |
| 2006 $PE_{12}$ | 17.2 | 0.15 | 20060922 | 316.06420 | 173.29798 | 234.10046 | 2.02009 | 0.2202037 | 2.3067533 | 36 | 3 | 2003–2006 | 0.49 | M-v | 4 | MPC | 03984 | 2006 $PE_{12}$ |
| 2006 $PG_{12}$ | 16.5 | 0.15 | 20060922 | 34.26223 | 332.37820 | 324.75850 | 8.09120 | 0.1148535 | 2.7301971 | 20 | 2 | 1997–2006 | 0.56 | M-v | 5 | MPC | 03984 | 2006 $PG_{12}$ |
| 2006 $PK_{12}$ | 16.8 | 0.15 | 20060902 | 76.78339 | 278.91948 | 327.84520 | 11.68414 | 0.0969223 | 2.6859270 | 13 | 1 | 45 days | 0.17 | | | MPC | | 2006 $PK_{12}$ |
| 2006 $PM_{12}$ | 18.4 | 0.15 | 20060922 | 0.78532 | 179.34168 | 166.10287 | 2.75773 | 0.2673283 | 2.3167418 | 40 | 1 | 70 days | 0.45 | M-v | 4 | MPC | | 2006 $PM_{12}$ |
| 2006 $PO_{12}$ | 16.4 | 0.15 | 20060922 | 50.75865 | 338.70683 | 294.89074 | 4.00901 | 0.1622682 | 2.4310996 | 54 | 2 | 2005–2006 | 0.57 | M-v | 3 | MPC | 03984 | 2006 $PO_{12}$ |
| 2006 $PQ_{12}$ | 15.6 | 0.15 | 20060922 | 345.82159 | 191.74471 | 162.68367 | 10.02700 | 0.0671441 | 3.0990726 | 41 | 3 | 2004–2006 | 0.33 | M-v | 2 | MPC | 03984 | 2006 $PQ_{12}$ |
| 2006 $PS_{12}$ | 16.6 | 0.15 | 20060922 | 4.53934 | 171.52125 | 165.37064 | 2.53518 | 0.2039252 | 2.4284694 | 119 | 5 | 1991–2006 | 0.41 | M-v | 1 | MPC | 03984 | 2006 $PS_{12}$ |
| 2006 $PV_{12}$ | 15.8 | 0.15 | 20060922 | 29.16674 | 7.01838 | 297.62011 | 1.55944 | 0.0983225 | 3.0376806 | 51 | 4 | 2001–2006 | 0.45 | M-v | 0 | MPC | 03985 | 2006 $PV_{12}$ |
| 2006 $PF_{13}$ | 16.1 | 0.15 | 20060922 | 38.52856 | 117.02649 | 143.70117 | 30.15373 | 0.3203282 | 2.6054056 | 44 | 1 | 85 days | 0.45 | M-v | 4 | MPC | 04386 | 2006 $PF_{13}$ |
| 2006 $PH_{13}$ | 18.7 | 0.15 | 20060902 | 343.43779 | 178.08645 | 181.36756 | 4.58035 | 0.2946896 | 2.3745806 | 16 | 1 | 44 days | 0.37 | | | MPC | | 2006 $PH_{13}$ |
| 2006 $PP_{13}$ | 16.7 | 0.15 | 20060922 | 53.45995 | 64.30824 | 201.57533 | 5.39894 | 0.0980824 | 2.5615590 | 29 | 3 | 2002–2006 | 0.38 | M-v | 3 | MPC | 03985 | 2006 $PP_{13}$ |
| 2006 $PX_{13}$ | 17.3 | 0.15 | 20060813 | 356.89981 | 298.20042 | 27.98871 | 9.80961 | 0.2153235 | 2.5841496 | 21 | 1 | 58 days | 0.38 | | | MPC | | 2006 $PX_{13}$ |
| 2006 $PE_{14}$ | 17.2 | 0.15 | 20060922 | 1.87654 | 343.18921 | 351.95671 | 16.80602 | 0.2381035 | 2.4290405 | 20 | 1 | 69 days | 0.33 | M-v | 4 | MPC | | 2006 $PE_{14}$ |
| 2006 $PN_{14}$ | 15.5 | 0.15 | 20060922 | 324.56419 | 63.63337 | 321.76706 | 8.08515 | 0.2979030 | 2.7561639 | 57 | 3 | 1997–2006 | 0.45 | M-v | 1 | MPC | 03986 | 2006 $PN_{14}$ |
| 2006 $PP_{14}$ | 17.1 | 0.15 | 20060922 | 351.09147 | 170.28278 | 179.64234 | 4.22709 | 0.2602769 | 2.7568923 | 21 | 1 | 67 days | 0.43 | M-v | 5 | MPC | | 2006 $PP_{14}$ |
| 2006 $PA_{15}$ | 17.8 | 0.15 | 20060922 | 18.35596 | 335.97514 | 337.91973 | 7.19195 | 0.1193106 | 2.2488368 | 31 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 03986 | 2006 $PA_{15}$ |
| 2006 $PF_{15}$ | 15.9 | 0.15 | 20060922 | 339.90629 | 176.06040 | 184.74868 | 2.60886 | 0.0938290 | 2.9230829 | 28 | 3 | 2001–2006 | 0.48 | M-v | 4 | MPC | 03986 | 2006 $PF_{15}$ |
| 2006 $PG_{15}$ | 17.2 | 0.15 | 20060922 | 328.93304 | 160.05103 | 226.99610 | 1.82835 | 0.2004035 | 2.4455296 | 28 | 1 | 67 days | 0.45 | M-v | 5 | MPC | | 2006 $PG_{15}$ |
| 2006 $PH_{15}$ | 16.8 | 0.15 | 20060902 | 4.59235 | 3.05297 | 324.75846 | 11.26597 | 0.1926002 | 2.6504736 | 28 | 1 | 43 days | 0.56 | | | MPC | | 2006 $PH_{15}$ |
| 2006 $PJ_{15}$ | 16.7 | 0.15 | 20060902 | 358.80139 | 11.25596 | 325.54189 | 12.68837 | 0.1630117 | 2.6554409 | 24 | 1 | 46 days | 0.62 | | | MPC | | 2006 $PJ_{15}$ |
| 2006 $PR_{15}$ | 16.1 | 0.15 | 20060813 | 342.55043 | 232.36324 | 119.51492 | 8.49960 | 0.2127957 | 2.7713295 | 13 | 1 | 30 days | 0.13 | | | MPC | | 2006 $PR_{15}$ |
| 2006 $PY_{15}$ | 16.5 | 0.15 | 20060813 | 17.91969 | 325.33456 | 333.20659 | 32.18664 | 0.1949024 | 2.6044957 | 32 | 1 | 56 days | 0.59 | | | MPC | | 2006 $PY_{15}$ |
| 2006 $PZ_{15}$ | 17.3 | 0.15 | 20060813 | 41.58404 | 265.14787 | 354.52932 | 7.80877 | 0.2491117 | 2.2305008 | 15 | 1 | 13 days | 0.50 | | | MPC | | 2006 $PZ_{15}$ |
| 2006 $PA_{16}$ | 16.4 | 0.15 | 20060902 | 320.76202 | 268.70643 | 131.79180 | 13.65491 | 0.2876763 | 2.7096637 | 16 | 1 | 42 days | 0.37 | | | MPC | | 2006 $PA_{16}$ |
| 2006 $PF_{16}$ | 16.6 | 0.15 | 20060922 | 34.97179 | 291.41764 | 354.85910 | 8.33175 | 0.2613857 | 2.3674949 | 81 | 5 | 1999–2006 | 0.49 | M-v | 1 | MPC | 03987 | 2006 $PF_{16}$ |
| 2006 $PG_{16}$ | 17.0 | 0.15 | 20060922 | 34.85802 | 114.22141 | 178.98771 | 4.22856 | 0.2197649 | 2.2736323 | 69 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 03987 | 2006 $PG_{16}$ |
| 2006 $PJ_{16}$ | 17.0 | 0.15 | 20060922 | 7.30861 | 173.89436 | 161.53709 | 5.46148 | 0.2490778 | 2.3299622 | 95 | 3 | 1999–2006 | 0.43 | M-v | 2 | MPC | 03987 | 2006 $PJ_{16}$ |
| 2006 $PK_{16}$ | 17.1 | 0.15 | 20060922 | 9.55072 | 175.42265 | 154.81762 | 14.04415 | 0.2760825 | 2.5642214 | 104 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 03988 | 2006 $PK_{16}$ |
| 2006 $PL_{16}$ | 16.5 | 0.15 | 20060922 | 343.56797 | 248.29961 | 125.48779 | 8.71416 | 0.2494703 | 2.4177416 | 56 | 4 | 2000–2006 | 0.46 | M-v | 1 | MPC | 03988 | 2006 $PL_{16}$ |
| 2006 $PM_{16}$ | 16.5 | 0.15 | 20060902 | 19.41995 | 314.64246 | 349.18775 | 14.12993 | 0.2582370 | 3.1042362 | 30 | 1 | 46 days | 0.33 | | | MPC | | 2006 $PM_{16}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $PN_{16}$ | 16.2 | 0.15 | 20060922 | 354.21671 | 5.44640 | 351.01537 | 14.26478 | 0.2622745 | 2.4658306 | 67 | 1 | 67 days | 0.53 | M-v | 4 | MPC | | 2006 $PN_{16}$ |
| 2006 $PO_{16}$ | 17.0 | 0.15 | 20060922 | 4.12631 | 178.55094 | 162.86932 | 7.45986 | 0.1396251 | 2.3367334 | 41 | 1 | 104 days | 0.45 | M-v | 3 | MPC | | 2006 $PO_{16}$ |
| 2006 $PQ_{16}$ | 14.9 | 0.15 | 20060902 | 31.22253 | 11.50519 | 285.62225 | 3.32303 | 0.1626503 | 3.1309149 | 33 | 1 | 36 days | 0.49 | | | MPC | | 2006 $PQ_{16}$ |
| 2006 $PR_{16}$ | 16.7 | 0.15 | 20060922 | 46.92635 | 348.47416 | 300.92128 | 4.10274 | 0.1207828 | 2.2705356 | 62 | 5 | 1999–2006 | 0.54 | M-v | 1 | MPC | 03988 | 2006 $PR_{16}$ |
| 2006 $PS_{16}$ | 16.1 | 0.15 | 20060922 | 343.62270 | 41.19577 | 325.13577 | 8.50255 | 0.0875042 | 2.6788604 | 34 | 1 | 67 days | 0.52 | M-v | 4 | MPC | | 2006 $PS_{16}$ |
| 2006 $PV_{16}$ | 17.1 | 0.15 | 20060922 | 335.87611 | 57.19343 | 324.59634 | 3.88772 | 0.1527900 | 2.2687539 | 107 | 3 | 2001–2006 | 0.46 | M-v | 3 | MPC | 03989 | 2006 $PV_{16}$ |
| 2006 $PX_{16}$ | 16.2 | 0.15 | 20060922 | 25.26949 | 8.75458 | 308.38627 | 8.48286 | 0.1067660 | 2.7081584 | 62 | 4 | 2000–2006 | 0.44 | M-v | 1 | MPC | 03989 | 2006 $PX_{16}$ |
| 2006 $PY_{16}$ | 16.0 | 0.15 | 20060922 | 13.42110 | 154.12524 | 173.19259 | 12.80313 | 0.2852667 | 2.6638045 | 95 | 2 | 1993–2006 | 0.48 | M-v | 3 | MPC | 03989 | 2006 $PY_{16}$ |
| 2006 $PZ_{16}$ | 17.5 | 0.15 | 20060902 | 7.94906 | 156.06234 | 172.62224 | 11.79672 | 0.2647796 | 2.4133240 | 66 | 1 | 46 days | 0.54 | | | MPC | | 2006 $PZ_{16}$ |
| 2006 $PA_{17}$ | 16.5 | 0.15 | 20060922 | 338.93932 | 73.28266 | 304.61984 | 6.00304 | 0.1226047 | 2.2888580 | 66 | 2 | 2003–2006 | 0.56 | M-v | 4 | MPC | 03989 | 2006 $PA_{17}$ |
| 2006 $PC_{17}$ | 17.1 | 0.15 | 20060922 | 341.65302 | 36.77489 | 343.28541 | 5.11876 | 0.2175936 | 2.4159145 | 57 | 1 | 87 days | 0.44 | M-v | 4 | MPC | | 2006 $PC_{17}$ |
| 2006 $PD_{17}$ | 17.4 | 0.15 | 20060902 | 354.85393 | 13.97152 | 338.08629 | 12.76135 | 0.2228984 | 2.3643321 | 45 | 1 | 56 days | 0.48 | | | MPC | | 2006 $PD_{17}$ |
| 2006 $PG_{17}$ | 14.3 | 0.15 | 20060922 | 352.09829 | 213.35458 | 152.05386 | 5.08733 | 0.2517521 | 3.9704992 | 105 | 5 | 1991–2006 | 0.57 | M-v | 0 | MPC | 03989 | 2006 $PG_{17}$ |
| 2006 $PH_{17}$ | 15.3 | 0.15 | 20060922 | 18.92380 | 341.59371 | 343.31633 | 16.70447 | 0.1793551 | 3.1506314 | 60 | 2 | 2004–2006 | 0.45 | M-v | 3 | MPC | 03990 | 2006 $PH_{17}$ |
| 2006 $PJ_{17}$ | 16.2 | 0.15 | 20060902 | 33.55880 | 133.66496 | 157.97608 | 13.74726 | 0.2506633 | 2.6345957 | 36 | 1 | 48 days | 0.58 | | | MPC | | 2006 $PJ_{17}$ |
| 2006 $PL_{17}$ | 17.5 | 0.15 | 20060902 | 327.78308 | 53.61732 | 324.99186 | 4.92312 | 0.0908930 | 2.7427814 | 16 | 1 | 43 days | 0.23 | | | MPC | | 2006 $PL_{17}$ |
| 2006 $PP_{17}$ | 17.2 | 0.15 | 20060902 | 359.75038 | 171.21221 | 169.86485 | 2.55559 | 0.2241780 | 2.7373397 | 42 | 1 | 42 days | 0.59 | | | MPC | | 2006 $PP_{17}$ |
| 2006 $PR_{17}$ | 16.4 | 0.15 | 20060922 | 350.00883 | 131.58850 | 241.45642 | 3.13484 | 0.3032931 | 2.3977401 | 129 | 1 | 120 days | 0.44 | M-v | 3 | MPC | | 2006 $PR_{17}$ |
| 2006 $PS_{17}$ | 16.5 | 0.15 | 20060922 | 10.82109 | 47.67730 | 289.79080 | 3.36717 | 0.1577326 | 2.3579819 | 94 | 4 | 1997–2006 | 0.43 | M-v | 2 | MPC | 03990 | 2006 $PS_{17}$ |
| 2006 $PT_{17}$ | 15.9 | 0.15 | 20060922 | 49.80616 | 305.90963 | 323.81693 | 9.85866 | 0.2908794 | 2.6632436 | 65 | 4 | 2001–2006 | 0.68 | M-v | 1 | MPC | 03990 | 2006 $PT_{17}$ |
| 2006 $PU_{17}$ | 16.0 | 0.15 | 20060922 | 4.32357 | 175.37788 | 171.10995 | 13.05003 | 0.1815155 | 2.6282456 | 95 | 2 | 2002–2006 | 0.52 | M-v | 3 | MPC | 03990 | 2006 $PU_{17}$ |
| 2006 $PV_{17}$ | 16.0 | 0.15 | 20060922 | 333.19972 | 60.75353 | 333.48000 | 15.60584 | 0.1985748 | 2.6940881 | 42 | 1 | 85 days | 0.47 | M-v | 4 | MPC | | 2006 $PV_{17}$ |
| 2006 $PY_{17}$ | 19.2 | 0.15 | 20060922 | 333.86748 | 132.59224 | 310.50572 | 2.84469 | 0.6412917 | 1.8976790 | 86 | 1 | 41 days | 0.49 | M-v | 6 | MPC | 04387 | 2006 $PY_{17}$ |
| 2006 $PB_{18}$ | 17.1 | 0.15 | 20060922 | 16.53919 | 177.53557 | 140.03912 | 4.27329 | 0.2705800 | 2.2497964 | 66 | 2 | 2005–2006 | 0.45 | M-v | 3 | MPC | 03990 | 2006 $PB_{18}$ |
| 2006 $PO_{18}$ | 15.4 | 0.15 | 20060922 | 359.11573 | 191.34745 | 126.15607 | 10.10106 | 0.0884379 | 3.2370137 | 13 | 1 | 82 days | 0.18 | M-v | 4 | MPC | | 2006 $PO_{18}$ |
| 2006 $PU_{18}$ | 17.6 | 0.15 | 20060922 | 350.49700 | 351.33434 | 355.60437 | 2.25335 | 0.2201055 | 2.4129403 | 24 | 3 | 1995–2006 | 0.36 | M-v | 2 | MPC | 03991 | 2006 $PU_{18}$ |
| 2006 $PZ_{18}$ | 17.0 | 0.15 | 20060922 | 28.92129 | 340.13459 | 306.12334 | 9.28419 | 0.1680856 | 2.6853002 | 23 | 1 | 66 days | 0.23 | M-v | 4 | MPC | | 2006 $PZ_{18}$ |
| 2006 $PE_{19}$ | 17.8 | 0.15 | 20060922 | 10.93110 | 151.07255 | 172.59258 | 1.97576 | 0.2283494 | 2.2863901 | 45 | 4 | 2001–2006 | 0.41 | M-v | 1 | MPC | 03991 | 2006 $PE_{19}$ |
| 2006 $PH_{19}$ | 17.3 | 0.15 | 20060922 | 42.43432 | 112.57780 | 166.90053 | 2.36009 | 0.1693008 | 2.3978439 | 46 | 5 | 1994–2006 | 0.42 | M-v | 1 | MPC | 03991 | 2006 $PH_{19}$ |
| 2006 $PM_{19}$ | 16.9 | 0.15 | 20060922 | 353.42504 | 136.46223 | 212.66321 | 1.02259 | 0.2335182 | 2.8015359 | 42 | 1 | 129 days | 0.30 | M-v | 3 | MPC | 04387 | 2006 $PM_{19}$ |
| 2006 $PN_{19}$ | 15.7 | 0.15 | 20060922 | 330.71005 | 51.70824 | 325.73318 | 9.09899 | 0.1809738 | 3.1485932 | 41 | 1 | 94 days | 0.45 | M-v | 4 | MPC | | 2006 $PN_{19}$ |
| 2006 $PP_{19}$ | 15.9 | 0.15 | 20060922 | 35.24821 | 293.08186 | 356.70144 | 2.44082 | 0.1293402 | 3.1561411 | 31 | 4 | 2001–2006 | 0.31 | M-v | 0 | MPC | 03991 | 2006 $PP_{19}$ |
| 2006 $PS_{19}$ | 18.1 | 0.15 | 20060922 | 24.17428 | 264.80605 | 38.25303 | 0.86218 | 0.2202847 | 2.2873251 | 51 | 4 | 1996–2006 | 0.40 | M-v | 1 | MPC | 03991 | 2006 $PS_{19}$ |
| 2006 $PU_{19}$ | 17.2 | 0.15 | 20060922 | 20.18709 | 306.15394 | 4.40376 | 2.21948 | 0.1993571 | 2.4245304 | 45 | 2 | 2005–2006 | 0.48 | M-v | 3 | MPC | 03992 | 2006 $PU_{19}$ |
| 2006 $PY_{19}$ | 15.6 | 0.15 | 20060813 | 77.77030 | 95.70045 | 151.38845 | 28.64399 | 0.0386827 | 2.5849863 | 30 | 1 | 36 days | 0.54 | | | MPC | | 2006 $PY_{19}$ |
| 2006 $PZ_{19}$ | 16.8 | 0.15 | 20060922 | 351.85542 | 221.70268 | 142.77650 | 9.40492 | 0.2964770 | 2.3621457 | 61 | 1 | 95 days | 0.40 | M-v | 3 | MPC | | 2006 $PZ_{19}$ |
| 2006 $PA_{20}$ | 16.6 | 0.15 | 20060922 | 356.99908 | 255.73128 | 113.95850 | 16.68755 | 0.3626039 | 2.6692162 | 26 | 1 | 91 days | 0.29 | M-v | 3 | MPC | | 2006 $PA_{20}$ |
| 2006 $PB_{20}$ | 17.1 | 0.15 | 20060922 | 346.24085 | 204.05577 | 146.97782 | 6.76332 | 0.1347679 | 2.3170880 | 48 | 5 | 1999–2006 | 0.45 | M-v | 1 | MPC | 03992 | 2006 $PB_{20}$ |
| 2006 $PD_{20}$ | 17.5 | 0.15 | 20060922 | 17.25537 | 249.33771 | 60.77418 | 6.39280 | 0.2660365 | 2.3280924 | 37 | 3 | 1999–2006 | 0.50 | M-v | 2 | MPC | 03992 | 2006 $PD_{20}$ |
| 2006 $PE_{20}$ | 16.0 | 0.15 | 20060922 | 331.45242 | 281.45281 | 88.25956 | 12.97203 | 0.1307372 | 2.6051901 | 30 | 4 | 1994–2006 | 0.32 | M-v | 2 | MPC | 03992 | 2006 $PE_{20}$ |
| 2006 $PK_{20}$ | 16.5 | 0.15 | 20060922 | 9.99447 | 255.53364 | 62.70049 | 20.22255 | 0.3046321 | 2.7802669 | 31 | 2 | 2001–2006 | 0.35 | M-v | 3 | MPC | 03992 | 2006 $PK_{20}$ |
| 2006 $PL_{20}$ | 15.4 | 0.15 | 20060922 | 336.00829 | 311.99258 | 55.30907 | 27.29956 | 0.1645173 | 3.1686907 | 23 | 2 | 2001–2006 | 0.56 | M-v | 4 | MPC | 03993 | 2006 $PL_{20}$ |
| 2006 $PP_{20}$ | 16.4 | 0.15 | 20060922 | 33.32583 | 120.45664 | 146.35964 | 11.03989 | 0.2698643 | 3.0400109 | 16 | 1 | 66 days | 0.14 | M-v | 4 | MPC | | 2006 $PP_{20}$ |
| 2006 $PQ_{20}$ | 17.6 | 0.15 | 20060922 | 351.08625 | 13.65091 | 329.91760 | 3.89699 | 0.2106289 | 2.3212411 | 26 | 3 | 1999–2006 | 0.31 | M-v | 3 | MPC | 03993 | 2006 $PQ_{20}$ |
| 2006 $PB_{21}$ | 18.3 | 0.15 | 20060922 | 4.67692 | 175.51949 | 154.92189 | 6.76303 | 0.1955219 | 2.2575130 | 26 | 3 | 2003–2006 | 0.27 | M-v | 3 | MPC | 03993 | 2006 $PB_{21}$ |
| 2006 $PF_{21}$ | 17.9 | 0.15 | 20060922 | 352.75033 | 355.79211 | 351.86330 | 2.39395 | 0.1805660 | 2.2799922 | 24 | 2 | 2003–2006 | 0.55 | M-v | 5 | MPC | 03993 | 2006 $PF_{21}$ |
| 2006 $PH_{21}$ | 16.8 | 0.15 | 20060922 | 324.70448 | 257.29180 | 125.63488 | 5.01445 | 0.1579737 | 2.3041421 | 46 | 3 | 1999–2006 | 0.51 | M-v | 2 | MPC | 03993 | 2006 $PH_{21}$ |
| 2006 $PJ_{21}$ | 14.9 | 0.15 | 20060922 | 29.94263 | 328.25707 | 324.13400 | 26.82169 | 0.1267475 | 3.0916246 | 24 | 2 | 2004–2006 | 0.64 | M-v | 4 | MPC | 03994 | 2006 $PJ_{21}$ |
| 2006 $PP_{21}$ | 17.0 | 0.15 | 20060902 | 29.01116 | 280.96666 | 4.10799 | 1.03634 | 0.2312317 | 2.4185580 | 21 | 1 | 46 days | 0.43 | | | MPC | | 2006 $PP_{21}$ |
| 2006 $PV_{21}$ | 16.2 | 0.15 | 20060922 | 334.38110 | 359.37172 | 7.70317 | 2.50362 | 0.0852398 | 2.7646470 | 47 | 5 | 2000–2006 | 0.49 | M-v | 1 | MPC | 03994 | 2006 $PV_{21}$ |
| 2006 $PW_{21}$ | 15.7 | 0.15 | 20060902 | 29.32520 | 11.15967 | 283.92796 | 4.73702 | 0.1298363 | 3.0891830 | 20 | 1 | 42 days | 0.56 | | | MPC | | 2006 $PW_{21}$ |
| 2006 $PZ_{21}$ | 15.9 | 0.15 | 20060922 | 26.78175 | 166.98477 | 136.12287 | 13.83339 | 0.1078778 | 2.7161535 | 43 | 4 | 2002–2006 | 0.43 | M-v | 1 | MPC | 03994 | 2006 $PZ_{21}$ |
| 2006 $PB_{22}$ | 16.5 | 0.15 | 20060922 | 71.32898 | 165.56111 | 80.20700 | 3.15894 | 0.1755790 | 2.3747389 | 43 | 3 | 2003–2006 | 0.44 | M-v | 2 | MPC | 03994 | 2006 $PB_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $PF_{22}$ | 17.0 | 0.15 | 20060922 | 45.24693 | 86.79930 | 189.66637 | 3.21774 | 0.2379211 | 2.5786199 | 50 | 5 | 1998–2006 | 0.41 | M-v | 0 | MPC | 03994 | 2006 $PF_{22}$ |
| 2006 $PG_{22}$ | 16.7 | 0.15 | 20060922 | 11.39637 | 24.49528 | 306.91488 | 4.20867 | 0.2160806 | 2.3732816 | 76 | 3 | 1999–2006 | 0.49 | M-v | 2 | MPC | 03994 | 2006 $PG_{22}$ |
| 2006 $PH_{22}$ | 17.7 | 0.15 | 20060922 | 355.33885 | 51.02048 | 295.72343 | 5.13586 | 0.2035913 | 2.4020984 | 34 | 1 | 91 days | 0.47 | M-v | 4 | MPC | 04388 | 2006 $PH_{22}$ |
| 2006 $PK_{22}$ | 16.3 | 0.15 | 20060902 | 46.66730 | 326.60865 | 309.31846 | 8.39123 | 0.0749293 | 3.1747632 | 13 | 1 | 44 days | 0.28 | | | MPC | | 2006 $PK_{22}$ |
| 2006 $PL_{22}$ | 18.0 | 0.15 | 20060813 | 345.62225 | 37.27394 | 305.85690 | 6.43581 | 0.1243585 | 2.3850908 | 19 | 1 | 34 days | 0.26 | | | MPC | | 2006 $PL_{22}$ |
| 2006 $PV_{22}$ | 17.5 | 0.15 | 20060922 | 0.03520 | 126.22483 | 225.49784 | 0.40020 | 0.1994430 | 2.4236925 | 76 | 6 | 1995–2006 | 0.49 | M-v | 1 | MPC | 03995 | 2006 $PV_{22}$ |
| 2006 $PW_{22}$ | 17.2 | 0.15 | 20060922 | 39.39068 | 8.16250 | 292.87415 | 4.51347 | 0.1454403 | 2.1763682 | 72 | 3 | 1995–2006 | 0.40 | M-v | 2 | MPC | 03995 | 2006 $PW_{22}$ |
| 2006 $PX_{22}$ | 17.2 | 0.15 | 20060922 | 350.42127 | 181.46380 | 187.33196 | 4.81232 | 0.2165849 | 2.4113356 | 83 | 2 | 1995–2006 | 0.42 | M-v | 3 | MPC | 03995 | 2006 $PX_{22}$ |
| 2006 $PY_{22}$ | 17.1 | 0.15 | 20060922 | 14.53473 | 134.65404 | 190.20271 | 3.70901 | 0.3190637 | 2.7497814 | 71 | 1 | 98 days | 0.44 | M-v | 4 | MPC | | 2006 $PY_{22}$ |
| 2006 $PG_{23}$ | 17.6 | 0.15 | 20060922 | 36.37567 | 192.88124 | 86.59773 | 3.14978 | 0.2077555 | 2.3317905 | 25 | 4 | 2002–2006 | 0.72 | M-v | 1 | MPC | 03995 | 2006 $PG_{23}$ |
| 2006 $PJ_{23}$ | 16.2 | 0.15 | 20060922 | 350.85127 | 24.30178 | 318.91098 | 5.83758 | 0.2401610 | 3.1899276 | 21 | 1 | 71 days | 0.47 | M-v | 5 | MPC | | 2006 $PJ_{23}$ |
| 2006 $PQ_{23}$ | 17.0 | 0.15 | 20060922 | 47.42765 | 162.66957 | 105.54311 | 2.39153 | 0.1566997 | 2.4412401 | 25 | 3 | 2003–2006 | 0.45 | M-v | 3 | MPC | 03995 | 2006 $PQ_{23}$ |
| 2006 $PR_{23}$ | 17.0 | 0.15 | 20060922 | 30.39544 | 200.68760 | 91.53210 | 7.86759 | 0.1392029 | 2.2507212 | 38 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 03996 | 2006 $PR_{23}$ |
| 2006 $PY_{23}$ | 17.1 | 0.15 | 20060922 | 359.56600 | 288.54556 | 46.17616 | 2.62394 | 0.1515042 | 2.3335911 | 57 | 7 | 1992–2006 | 0.49 | M-v | 1 | MPC | 03996 | 2006 $PY_{23}$ |
| 2006 $PD_{24}$ | 16.0 | 0.15 | 20060922 | 354.06450 | 358.74700 | 341.45382 | 12.45984 | 0.1903689 | 2.7541907 | 51 | 3 | 2000–2006 | 0.39 | M-v | 2 | MPC | 03996 | 2006 $PD_{24}$ |
| 2006 $PL_{24}$ | 16.6 | 0.15 | 20060922 | 3.60866 | 352.11404 | 333.16213 | 9.65709 | 0.1589519 | 2.9753053 | 16 | 1 | 66 days | 0.35 | M-v | 5 | MPC | | 2006 $PL_{24}$ |
| 2006 $PA_{25}$ | 17.1 | 0.15 | 20060922 | 17.72472 | 166.07136 | 145.21084 | 2.45315 | 0.2245815 | 2.3335493 | 31 | 1 | 67 days | 0.36 | M-v | 4 | MPC | | 2006 $PA_{25}$ |
| 2006 $PE_{25}$ | 17.1 | 0.15 | 20060922 | 1.78913 | 180.21975 | 155.83220 | 1.97036 | 0.2015256 | 2.4186696 | 39 | 1 | 174 days | 0.46 | M-v | 3 | MPC | | 2006 $PE_{25}$ |
| 2006 $PO_{25}$ | 16.5 | 0.15 | 20060922 | 2.02090 | 197.18503 | 137.52207 | 6.13667 | 0.3100596 | 3.1814611 | 27 | 1 | 94 days | 0.24 | M-v | 3 | MPC | | 2006 $PO_{25}$ |
| 2006 $PT_{25}$ | 17.5 | 0.15 | 20060922 | 8.11024 | 40.80707 | 289.71133 | 3.59644 | 0.1827659 | 2.3973244 | 32 | 1 | 91 days | 0.39 | M-v | 3 | MPC | | 2006 $PT_{25}$ |
| 2006 $PU_{25}$ | 16.2 | 0.15 | 20060902 | 327.72706 | 249.56163 | 127.20750 | 5.78836 | 0.1415515 | 2.3344219 | 19 | 1 | 42 days | 0.68 | | | MPC | | 2006 $PU_{25}$ |
| 2006 $PV_{25}$ | 16.8 | 0.15 | 20060902 | 347.71147 | 10.11587 | 339.51803 | 6.07447 | 0.1419622 | 2.4050868 | 29 | 1 | 43 days | 0.52 | | | MPC | | 2006 $PV_{25}$ |
| 2006 $PX_{25}$ | 15.6 | 0.15 | 20060922 | 341.39082 | 230.12633 | 133.50653 | 5.60643 | 0.1374387 | 3.1816193 | 45 | 6 | 2000–2006 | 0.55 | M-v | 0 | MPC | 03997 | 2006 $PX_{25}$ |
| 2006 $PY_{25}$ | 17.9 | 0.15 | 20060922 | 15.75514 | 164.94486 | 152.39752 | 3.55814 | 0.2552942 | 2.3732937 | 37 | 1 | 70 days | 0.48 | M-v | 4 | MPC | | 2006 $PY_{25}$ |
| 2006 $PZ_{25}$ | 16.8 | 0.15 | 20060922 | 12.39729 | 7.55381 | 314.57997 | 7.87105 | 0.2506004 | 2.6254810 | 52 | 1 | 69 days | 0.45 | M-v | 4 | MPC | | 2006 $PZ_{25}$ |
| 2006 $PB_{26}$ | 15.5 | 0.15 | 20060902 | 359.63611 | 186.23623 | 149.52926 | 15.97348 | 0.1882476 | 3.0723527 | 30 | 1 | 43 days | 0.56 | | | MPC | | 2006 $PB_{26}$ |
| 2006 $PG_{26}$ | 17.6 | 0.15 | 20060922 | 26.43013 | 344.37447 | 315.44869 | 1.54629 | 0.2054370 | 2.3790589 | 46 | 5 | 1995–2006 | 0.43 | M-v | 1 | MPC | 03997 | 2006 $PG_{26}$ |
| 2006 $PH_{26}$ | 18.1 | 0.15 | 20060922 | 16.03165 | 28.09130 | 288.51156 | 1.33392 | 0.2033181 | 2.3856128 | 33 | 1 | 65 days | 0.48 | M-v | 5 | MPC | | 2006 $PH_{26}$ |
| 2006 $PJ_{26}$ | 18.0 | 0.15 | 20060813 | 358.97228 | 180.30474 | 149.21075 | 15.18768 | 0.2632367 | 2.6033682 | 24 | 1 | 55 days | 0.66 | | | MPC | | 2006 $PJ_{26}$ |
| 2006 $PO_{26}$ | 16.9 | 0.15 | 20060922 | 13.49168 | 241.43469 | 82.79582 | 3.33115 | 0.2178567 | 2.3560341 | 64 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 03998 | 2006 $PO_{26}$ |
| 2006 $PQ_{26}$ | 17.3 | 0.15 | 20060922 | 26.92588 | 88.44731 | 215.42957 | 3.54545 | 0.2280455 | 2.3181271 | 57 | 5 | 1992–2006 | 0.58 | M-v | 1 | MPC | 03998 | 2006 $PQ_{26}$ |
| 2006 $PX_{26}$ | 15.9 | 0.15 | 20060902 | 332.14848 | 69.41318 | 317.82723 | 12.81472 | 0.2284258 | 2.8014110 | 33 | 1 | 57 days | 0.55 | | | MPC | | 2006 $PX_{26}$ |
| 2006 $PY_{26}$ | 17.4 | 0.15 | 20060922 | 345.21170 | 152.46724 | 221.79970 | 2.83027 | 0.2013004 | 2.2171973 | 73 | 4 | 2001–2006 | 0.41 | M-v | 2 | MPC | 03998 | 2006 $PY_{26}$ |
| 2006 $PB_{27}$ | 17.0 | 0.15 | 20060922 | 0.55513 | 62.70211 | 289.00554 | 3.93224 | 0.2110972 | 2.4060068 | 58 | 1 | 69 days | 0.58 | M-v | 4 | MPC | | 2006 $PB_{27}$ |
| 2006 $PC_{27}$ | 17.3 | 0.15 | 20060922 | 35.04414 | 173.75162 | 120.71412 | 9.19719 | 0.2513133 | 2.1918703 | 40 | 4 | 1996–2006 | 0.46 | M-v | 1 | MPC | 03998 | 2006 $PC_{27}$ |
| 2006 $PE_{27}$ | 16.9 | 0.15 | 20060922 | 54.95628 | 320.68502 | 324.69061 | 3.93073 | 0.1432785 | 2.2427872 | 66 | 5 | 1999–2006 | 0.55 | M-v | 1 | MPC | 03998 | 2006 $PE_{27}$ |
| 2006 $PH_{27}$ | 17.0 | 0.15 | 20060922 | 337.13268 | 13.26171 | 350.74093 | 10.79329 | 0.2195628 | 2.2975330 | 18 | 1 | 110 days | 0.42 | M-v | 4 | MPC | | 2006 $PH_{27}$ |
| 2006 $PJ_{27}$ | 14.6 | 0.15 | 20060922 | 340.27628 | 288.91413 | 61.50675 | 19.12757 | 0.1853108 | 3.0983941 | 52 | 4 | 2001–2006 | 0.57 | M-v | 2 | MPC | 03998 | 2006 $PJ_{27}$ |
| 2006 $PQ_{27}$ | 17.4 | 0.15 | 20060902 | 349.24374 | 270.41564 | 85.54041 | 16.09514 | 0.3829192 | 2.5478891 | 15 | 1 | 46 days | 0.31 | | | MPC | | 2006 $PQ_{27}$ |
| 2006 $PS_{27}$ | 14.7 | 0.15 | 20060922 | 333.10263 | 285.37696 | 88.37368 | 26.96711 | 0.2062994 | 3.1363158 | 57 | 3 | 2001–2006 | 0.52 | M-v | 2 | MPC | 03999 | 2006 $PS_{27}$ |
| 2006 $PK_{28}$ | 16.6 | 0.15 | 20060922 | 350.11788 | 259.44027 | 91.76471 | 24.35032 | 0.0888546 | 1.9859996 | 40 | 2 | 2001–2006 | 0.50 | M-v | 3 | MPC | 03999 | 2006 $PK_{28}$ |
| 2006 $PO_{28}$ | 16.6 | 0.15 | 20060813 | 0.64539 | 249.94395 | 71.57312 | 15.25174 | 0.1431051 | 2.5323066 | 16 | 1 | 47 days | 0.54 | | | MPC | | 2006 $PO_{28}$ |
| 2006 $PP_{28}$ | 16.5 | 0.15 | 20060922 | 7.18663 | 236.65280 | 99.16912 | 23.50380 | 0.2610229 | 2.2821470 | 26 | 1 | 64 days | 0.30 | M-v | 4 | MPC | | 2006 $PP_{28}$ |
| 2006 $PY_{28}$ | 16.9 | 0.15 | 20060902 | 8.05748 | 220.43174 | 106.32851 | 22.83461 | 0.1966877 | 2.3342979 | 20 | 1 | 44 days | 0.48 | | | MPC | | 2006 $PY_{28}$ |
| 2006 $PN_{29}$ | 17.5 | 0.15 | 20060724 | 44.78572 | 285.40180 | 328.00235 | 18.05722 | 0.0864838 | 1.9773460 | 14 | 1 | 32 days | 0.30 | | | MPC | | 2006 $PN_{29}$ |
| 2006 $PT_{29}$ | 15.6 | 0.15 | 20060922 | 317.26002 | 74.26919 | 315.47739 | 14.52562 | 0.2334606 | 3.0554924 | 39 | 3 | 2001–2006 | 0.49 | M-v | 2 | MPC | 03999 | 2006 $PT_{29}$ |
| 2006 $PU_{29}$ | 17.0 | 0.15 | 20060922 | 6.86130 | 14.36251 | 310.32674 | 2.37119 | 0.2515788 | 2.3111977 | 62 | 2 | 1999–2006 | 0.52 | M-v | 3 | MPC | 03999 | 2006 $PU_{29}$ |
| 2006 $PW_{29}$ | 17.2 | 0.15 | 20060922 | 20.87935 | 50.21088 | 248.48619 | 0.71013 | 0.1942788 | 2.7290659 | 39 | 5 | 1997–2006 | 0.34 | M-v | 0 | MPC | 03999 | 2006 $PW_{29}$ |
| 2006 $PX_{29}$ | 15.8 | 0.15 | 20060922 | 69.64240 | 168.40454 | 78.87058 | 6.71889 | 0.0756198 | 2.4822599 | 43 | 4 | 2001–2006 | 0.70 | M-v | 1 | MPC | 03999 | 2006 $PX_{29}$ |
| 2006 $PY_{29}$ | 16.8 | 0.15 | 20060922 | 338.56338 | 279.07638 | 77.71819 | 7.01128 | 0.1256946 | 2.3887224 | 37 | 4 | 1998–2006 | 0.56 | M-v | 1 | MPC | 04000 | 2006 $PY_{29}$ |
| 2006 $PZ_{29}$ | 17.7 | 0.15 | 20060922 | 7.50683 | 245.39817 | 77.60454 | 2.94175 | 0.2184934 | 2.3242991 | 35 | 4 | 1999–2006 | 0.38 | M-v | 1 | MPC | 04000 | 2006 $PZ_{29}$ |
| 2006 $PA_{30}$ | 17.1 | 0.15 | 20060922 | 357.11577 | 202.14474 | 139.59582 | 8.94430 | 0.2332182 | 2.4286691 | 40 | 1 | 67 days | 0.38 | M-v | 4 | MPC | | 2006 $PA_{30}$ |
| 2006 $PB_{30}$ | 17.6 | 0.15 | 20060922 | 335.03652 | 52.44715 | 326.39591 | 5.29331 | 0.2731508 | 2.5583382 | 41 | 3 | 1998–2006 | 0.51 | M-v | 3 | MPC | 04000 | 2006 $PB_{30}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $PC_{30}$ | 18.0 | 0.15 | 20060922 | 32.59699 | 356.91222 | 295.06952 | 3.77462 | 0.2017962 | 2.2710323 | 28 | 1 | 88 days | 0.48 | M-v | 4 | MPC | | 2006 $PC_{30}$ |
| 2006 $PE_{30}$ | 16.9 | 0.15 | 20060902 | 350.52115 | 189.03333 | 154.70362 | 4.66346 | 0.1104039 | 2.8052849 | 20 | 1 | 46 days | 0.38 | | | MPC | | 2006 $PE_{30}$ |
| 2006 $PC_{31}$ | 16.6 | 0.15 | 20060902 | 22.22492 | 329.58335 | 328.02603 | 16.47078 | 0.2063645 | 3.1492175 | 27 | 1 | 46 days | 0.28 | | | MPC | | 2006 $PC_{31}$ |
| 2006 $PD_{31}$ | 15.7 | 0.15 | 20060922 | 357.97226 | 189.31652 | 149.32014 | 4.28421 | 0.1296655 | 3.1888391 | 32 | 3 | 2004–2006 | 0.31 | M-v | 3 | MPC | 04000 | 2006 $PD_{31}$ |
| 2006 $PF_{31}$ | 16.4 | 0.15 | 20060922 | 35.34176 | 118.24524 | 178.95361 | 4.32262 | 0.0442792 | 2.7831642 | 39 | 4 | 2000–2006 | 0.38 | M-v | 0 | MPC | 04000 | 2006 $PF_{31}$ |
| 2006 $PO_{31}$ | 16.8 | 0.15 | 20060922 | 6.76579 | 262.05417 | 60.08816 | 10.56629 | 0.2407494 | 2.6935285 | 14 | 1 | 67 days | 0.39 | M-v | 4 | MPC | | 2006 $PO_{31}$ |
| 2006 $PQ_{31}$ | 18.5 | 0.15 | 20060902 | 353.50388 | 184.48165 | 155.35895 | 4.79200 | 0.2624037 | 2.2119159 | 22 | 1 | 47 days | 0.36 | | | MPC | | 2006 $PQ_{31}$ |
| 2006 $PT_{31}$ | 17.6 | 0.15 | 20060922 | 43.78515 | 337.23726 | 293.73132 | 2.82819 | 0.1968555 | 2.2956267 | 21 | 1 | 100 days | 0.28 | M-v | 4 | MPC | 04390 | 2006 $PT_{31}$ |
| 2006 $PB_{32}$ | 16.8 | 0.15 | 20060902 | 327.19266 | 48.25127 | 322.59919 | 6.89570 | 0.2397897 | 2.8044203 | 17 | 1 | 43 days | 0.28 | | | MPC | | 2006 $PB_{32}$ |
| 2006 $PD_{32}$ | 14.6 | 0.15 | 20060922 | 229.52313 | 331.34553 | 134.68225 | 12.07686 | 0.0650769 | 3.1232001 | 28 | 3 | 2001–2006 | 0.42 | M-v | 2 | MPC | 04001 | 2006 $PD_{32}$ |
| 2006 $PK_{32}$ | 15.1 | 0.15 | 20060922 | 41.90118 | 297.35509 | 349.57776 | 14.17619 | 0.1204981 | 3.1420988 | 20 | 1 | 93 days | 0.44 | M-v | 4 | MPC | | 2006 $PK_{32}$ |
| 2006 $PL_{32}$ | 17.0 | 0.15 | 20060922 | 349.03975 | 252.99413 | 105.98009 | 7.36190 | 0.1388653 | 2.4273990 | 20 | 2 | 2003–2006 | 0.42 | M-v | 4 | MPC | 04001 | 2006 $PL_{32}$ |
| 2006 $PO_{32}$ | 14.4 | 0.15 | 20060902 | 347.58543 | 274.98812 | 92.64451 | 10.23761 | 0.2678039 | 3.9727504 | 21 | 1 | 58 days | 0.40 | | | MPC | | 2006 $PO_{32}$ |
| 2006 $PS_{32}$ | 15.6 | 0.15 | 20060813 | 17.52396 | 259.80982 | 51.44230 | 14.56621 | 0.1037864 | 2.6925282 | 23 | 1 | 59 days | 0.43 | | | MPC | | 2006 $PS_{32}$ |
| 2006 $PW_{32}$ | 15.8 | 0.15 | 20060922 | 21.36445 | 243.68972 | 72.55723 | 13.34819 | 0.1795122 | 2.5948638 | 33 | 3 | 1994–2006 | 0.50 | M-v | 3 | MPC | 04001 | 2006 $PW_{32}$ |
| 2006 $PY_{32}$ | 17.1 | 0.15 | 20060922 | 328.71560 | 223.12617 | 163.34857 | 6.21488 | 0.1093058 | 2.3839891 | 39 | 5 | 1995–2006 | 0.34 | M-v | 1 | MPC | 04001 | 2006 $PY_{32}$ |
| 2006 $PA_{33}$ | 16.7 | 0.15 | 20060922 | 16.89781 | 319.78326 | 4.38701 | 24.55702 | 0.2274077 | 2.3899164 | 38 | 1 | 83 days | 0.41 | M-v | 4 | MPC | | 2006 $PA_{33}$ |
| 2006 $PC_{33}$ | 15.8 | 0.15 | 20060922 | 330.33331 | 307.23514 | 61.34079 | 9.88191 | 0.1993077 | 2.5841218 | 31 | 4 | 1998–2006 | 0.60 | M-v | 3 | MPC | 04001 | 2006 $PC_{33}$ |
| 2006 $PE_{33}$ | 16.6 | 0.15 | 20060922 | 20.15847 | 224.21006 | 83.86781 | 13.05715 | 0.2511932 | 2.5517046 | 19 | 1 | 60 days | 0.59 | M-v | 4 | MPC | | 2006 $PE_{33}$ |
| 2006 $PF_{33}$ | 15.1 | 0.15 | 20060922 | 25.72928 | 215.22304 | 84.01336 | 16.01648 | 0.2478501 | 3.1971321 | 32 | 2 | 2005–2006 | 0.57 | M-v | 3 | MPC | 04001 | 2006 $PF_{33}$ |
| 2006 $PP_{33}$ | 16.9 | 0.15 | 20060922 | 347.56214 | 74.21049 | 276.02106 | 5.57895 | 0.1515832 | 2.2960507 | 35 | 2 | 2003–2006 | 0.42 | M-v | 3 | MPC | 04002 | 2006 $PP_{33}$ |
| 2006 $PG_{34}$ | 17.7 | 0.15 | 20060922 | 352.22051 | 61.37542 | 290.29442 | 1.71480 | 0.1940764 | 2.3019028 | 24 | 1 | 124 days | 0.25 | M-v | 3 | MPC | | 2006 $PG_{34}$ |
| 2006 $PM_{34}$ | 17.5 | 0.15 | 20060813 | 6.61644 | 261.74836 | 56.15187 | 5.54091 | 0.2588924 | 2.3074870 | 28 | 1 | 50 days | 0.40 | | | MPC | | 2006 $PM_{34}$ |
| 2006 $PP_{34}$ | 16.5 | 0.15 | 20060922 | 20.55783 | 333.47427 | 315.05452 | 12.42332 | 0.2185756 | 2.4498810 | 31 | 4 | 2001–2006 | 0.40 | M-v | 1 | MPC | 04002 | 2006 $PP_{34}$ |
| 2006 $PS_{34}$ | 16.9 | 0.15 | 20060922 | 25.96032 | 114.03326 | 172.22980 | 6.78612 | 0.2282088 | 2.6708978 | 35 | 5 | 1993–2006 | 0.30 | M-v | 0 | MPC | 04002 | 2006 $PS_{34}$ |
| 2006 $PD_{35}$ | 17.1 | 0.15 | 20060922 | 50.25699 | 175.19956 | 84.26126 | 7.38137 | 0.1787115 | 2.2393063 | 32 | 4 | 1999–2006 | 0.73 | M-v | 2 | MPC | 04002 | 2006 $PD_{35}$ |
| 2006 $PR_{35}$ | 17.1 | 0.15 | 20060922 | 345.02216 | 298.95203 | 58.80966 | 5.37037 | 0.2489098 | 2.3174017 | 27 | 3 | 1999–2006 | 0.34 | M-v | 3 | MPC | 04002 | 2006 $PR_{35}$ |
| 2006 $PS_{35}$ | 16.9 | 0.15 | 20060922 | 4.13332 | 243.84939 | 79.97374 | 7.57461 | 0.1429546 | 2.3187362 | 23 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 04002 | 2006 $PS_{35}$ |
| 2006 $PT_{35}$ | 16.9 | 0.15 | 20060922 | 351.40451 | 277.18303 | 70.03330 | 7.10828 | 0.2330058 | 2.2776832 | 38 | 2 | 2003–2006 | 0.52 | M-v | 3 | MPC | 04002 | 2006 $PT_{35}$ |
| 2006 $PH_{36}$ | 16.5 | 0.15 | 20060922 | 4.47013 | 188.67647 | 134.58479 | 7.42177 | 0.0984418 | 2.7844012 | 26 | 3 | 1996–2006 | 0.38 | M-v | 3 | MPC | 04003 | 2006 $PH_{36}$ |
| 2006 $PJ_{36}$ | 17.8 | 0.15 | 20060922 | 2.65796 | 15.42323 | 315.03679 | 0.44732 | 0.1866919 | 2.4221139 | 22 | 3 | 1991–2006 | 0.51 | M-v | 4 | MPC | 04003 | 2006 $PJ_{36}$ |
| 2006 $PV_{36}$ | 17.6 | 0.15 | 20060922 | 328.71250 | 352.25639 | 30.18789 | 2.93401 | 0.2211439 | 2.3046513 | 34 | 3 | 2003–2006 | 0.40 | M-v | 4 | MPC | 04003 | 2006 $PV_{36}$ |
| 2006 $PX_{36}$ | 15.0 | 0.15 | 20060922 | 336.73299 | 292.93499 | 60.41380 | 3.83041 | 0.0546747 | 3.0260409 | 43 | 5 | 2001–2006 | 0.60 | M-v | 1 | MPC | 04003 | 2006 $PX_{36}$ |
| 2006 $PA_{37}$ | 16.3 | 0.15 | 20060922 | 24.13835 | 325.94211 | 329.25366 | 12.37583 | 0.1605644 | 3.1284311 | 21 | 1 | 83 days | 0.45 | M-v | 4 | MPC | | 2006 $PA_{37}$ |
| 2006 $PD_{37}$ | 16.1 | 0.15 | 20060922 | 353.17708 | 16.58295 | 324.44814 | 16.80073 | 0.2025726 | 3.1650289 | 20 | 1 | 64 days | 0.27 | M-v | 4 | MPC | | 2006 $PD_{37}$ |
| 2006 $PE_{37}$ | 14.9 | 0.15 | 20060922 | 10.82344 | 214.92248 | 100.10040 | 14.16084 | 0.0739600 | 3.1760971 | 29 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04003 | 2006 $PE_{37}$ |
| 2006 $PH_{37}$ | 16.2 | 0.15 | 20060922 | 14.57713 | 246.04425 | 61.83039 | 6.11320 | 0.3117064 | 2.7533279 | 22 | 1 | 115 days | 0.30 | M-v | 3 | MPC | | 2006 $PH_{37}$ |
| 2006 $PA_{38}$ | 15.9 | 0.15 | 20060902 | 50.02459 | 107.37000 | 159.30385 | 12.81106 | 0.1396125 | 3.1478253 | 14 | 1 | 44 days | 0.36 | | | MPC | | 2006 $PA_{38}$ |
| 2006 $PM_{38}$ | 17.2 | 0.15 | 20060922 | 14.79913 | 311.69949 | 356.80283 | 1.16117 | 0.1877718 | 2.3554709 | 41 | 5 | 1999–2006 | 0.43 | M-v | 1 | MPC | 04003 | 2006 $PM_{38}$ |
| 2006 $PD_{39}$ | 15.7 | 0.15 | 20060922 | 35.25815 | 254.29852 | 10.17039 | 5.26564 | 0.1659784 | 3.1647858 | 35 | 3 | 2001–2006 | 0.32 | M-v | 3 | MPC | 04003 | 2006 $PD_{39}$ |
| 2006 $PJ_{39}$ | 15.8 | 0.15 | 20060922 | 344.19672 | 359.33657 | 339.39441 | 11.76288 | 0.0738134 | 2.8564225 | 25 | 3 | 2002–2006 | 0.34 | M-v | 2 | MPC | 04004 | 2006 $PJ_{39}$ |
| 2006 $PK_{39}$ | 15.9 | 0.15 | 20060922 | 291.11882 | 286.26649 | 130.21171 | 11.73986 | 0.2181768 | 2.6462453 | 32 | 4 | 1998–2006 | 0.44 | M-v | 2 | MPC | 04004 | 2006 $PK_{39}$ |
| 2006 $PQ_{39}$ | 15.9 | 0.15 | 20060922 | 320.90061 | 257.63707 | 129.02750 | 14.13529 | 0.2497871 | 3.1794456 | 25 | 3 | 1997–2006 | 0.39 | M-v | 2 | MPC | 04004 | 2006 $PQ_{39}$ |
| 2006 $PT_{39}$ | 16.8 | 0.15 | 20060922 | 357.31687 | 355.44983 | 339.04854 | 7.34321 | 0.1448806 | 2.3281745 | 34 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 04004 | 2006 $PT_{39}$ |
| 2006 $PC_{40}$ | 16.0 | 0.15 | 20060813 | 329.05581 | 237.70262 | 138.27654 | 7.31546 | 0.3243676 | 2.7761780 | 27 | 1 | 53 days | 0.46 | | | MPC | | 2006 $PC_{40}$ |
| 2006 $PJ_{40}$ | 19.2 | 0.15 | 20060902 | 15.93396 | 341.26764 | 319.29908 | 6.35510 | 0.2827565 | 2.2475868 | 14 | 1 | 45 days | 0.31 | | | MPC | | 2006 $PJ_{40}$ |
| 2006 $PT_{40}$ | 16.6 | 0.15 | 20060813 | 328.00367 | 258.83581 | 105.06198 | 4.67926 | 0.1634167 | 2.6304489 | 8 | 1 | 7 days | 0.15 | | | MPC | | 2006 $PT_{40}$ |
| 2006 $PZ_{40}$ | 16.2 | 0.15 | 20060813 | 13.98710 | 171.28774 | 131.44545 | 6.07488 | 0.1297344 | 2.6251460 | 8 | 1 | 7 days | 0.16 | | | MPC | | 2006 $PZ_{40}$ |
| 2006 $PE_{41}$ | 16.7 | 0.15 | 20060922 | 333.56278 | 218.71607 | 143.53990 | 13.02731 | 0.1546337 | 2.7612373 | 16 | 1 | 67 days | 0.25 | M-v | 4 | MPC | | 2006 $PE_{41}$ |
| 2006 $PB_{42}$ | 16.3 | 0.15 | 20060922 | 47.35747 | 104.94823 | 153.18505 | 14.31947 | 0.2525835 | 3.1355740 | 17 | 1 | 86 days | 0.46 | M-v | 5 | MPC | | 2006 $PB_{42}$ |
| 2006 $PF_{42}$ | 15.4 | 0.15 | 20060922 | 350.07330 | 346.74713 | 16.08058 | 17.57101 | 0.1979419 | 3.1271593 | 32 | 1 | 105 days | 0.44 | M-v | 3 | MPC | | 2006 $PF_{42}$ |
| 2006 $PM_{42}$ | 16.6 | 0.15 | 20060922 | 334.77904 | 214.57071 | 151.39685 | 7.84803 | 0.2005140 | 2.7897737 | 23 | 1 | 68 days | 0.35 | M-v | 5 | MPC | | 2006 $PM_{42}$ |
| 2006 $PB_{43}$ | 17.6 | 0.15 | 20060922 | 12.25989 | 92.22797 | 217.14821 | 3.95558 | 0.2517587 | 2.5433392 | 28 | 2 | 2002–2006 | 0.29 | M-v | 2 | MPC | 04004 | 2006 $PB_{43}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $PG_{43}$ | 15.1 | 0.15 | 20060902 | 344.07447 | 286.16007 | 74.16361 | 26.45941 | 0.0839239 | 3.1874261 | 15 | 1 | 46 days | 0.50 | | | MPC | | 2006 $PG_{43}$ |
| 2006 $PL_{43}$ | 15.1 | 0.15 | 20060813 | 102.91848 | 230.37452 | 329.67107 | 13.33192 | 0.2716264 | 2.8897256 | 10 | 1 | 32 days | 0.77 | | | MPC | | 2006 $PL_{43}$ |
| 2006 $PM_{43}$ | 16.9 | 0.15 | 20060902 | 334.35376 | 14.69327 | 346.65949 | 4.43169 | 0.0580153 | 2.5325635 | 11 | 1 | 46 days | 0.28 | | | MPC | | 2006 $PM_{43}$ |
| 2006 $PN_{43}$ | 16.3 | 0.15 | 20060922 | 3.69651 | 170.89200 | 159.44445 | 9.64881 | 0.1582295 | 2.7682255 | 18 | 1 | 68 days | 0.61 | M-v | 4 | MPC | | 2006 $PN_{43}$ |
| 2006 $PP_{43}$ | 16.2 | 0.15 | 20060922 | 23.49288 | 264.11995 | 67.53275 | 22.16728 | 0.2810185 | 2.3782496 | 28 | 1 | 108 days | 0.52 | M-v | 4 | MPC | | 2006 $PP_{43}$ |
| 2006 QA | 23.2 | 0.15 | 20060922 | 2.76334 | 216.40310 | 133.83877 | 5.34550 | 0.6279643 | 2.8051289 | 31 | 1 | 39 days | 0.76 | M-v | 5 | MPC | 04391 | 2006 QA |
| 2006 QB | 16.0 | 0.15 | 20060922 | 9.16055 | 107.95263 | 221.65384 | 14.65695 | 0.2971851 | 3.1175126 | 50 | 1 | 80 days | 0.52 | M-v | 3 | MPC | | 2006 QB |
| 2006 QD | 17.8 | 0.15 | 20060922 | 14.91420 | 331.61946 | 355.67061 | 4.25682 | 0.2564417 | 2.2813356 | 60 | 1 | 89 days | 0.48 | M-v | 4 | MPC | | 2006 QD |
| 2006 QE | 19.6 | 0.15 | 20060922 | 317.15358 | 129.35063 | 331.30387 | 27.21273 | 0.5034342 | 1.1386757 | 183 | 1 | 25 days | 0.50 | M-v | 6 | MPC | 04391 | 2006 QE |
| 2006 QG | 18.8 | 0.15 | 20060922 | 3.61308 | 26.01433 | 330.94922 | 5.46244 | 0.4000100 | 2.1828907 | 57 | 1 | 69 days | 0.50 | M-v | 4 | MPC | | 2006 QG |
| 2006 QJ | 15.7 | 0.15 | 20060813 | 11.60405 | 173.43606 | 134.44398 | 22.62585 | 0.1871495 | 2.8006528 | 16 | 1 | 55 days | 0.35 | | | MPC | | 2006 QJ |
| 2006 QR | 18.0 | 0.15 | 20060902 | 352.85661 | 315.81988 | 36.75671 | 6.91174 | 0.2689387 | 2.3058305 | 32 | 1 | 39 days | 0.51 | | | MPC | | 2006 QR |
| 2006 QS | 19.9 | 0.15 | 20060922 | 13.72256 | 142.99953 | 164.45722 | 4.58704 | 0.5115392 | 2.5476433 | 138 | 1 | 65 days | 0.42 | M-v | 4 | MPC | 04391 | 2006 QS |
| 2006 QT | 18.5 | 0.15 | 20060902 | 12.59175 | 149.01989 | 167.79209 | 7.40231 | 0.3853122 | 2.1689237 | 98 | 1 | 55 days | 0.50 | | | MPC | | 2006 QT |
| 2006 QU | 15.2 | 0.15 | 20060922 | 343.73737 | 94.20946 | 261.48369 | 17.32311 | 0.0940395 | 3.2513443 | 33 | 1 | 60 days | 0.28 | M-v | 5 | MPC | | 2006 QU |
| 2006 QV | 16.9 | 0.15 | 20060813 | 332.80311 | 117.34432 | 261.93566 | 14.78187 | 0.2344897 | 2.9694222 | 29 | 1 | 44 days | 0.42 | | | MPC | | 2006 QV |
| 2006 QW | 17.0 | 0.15 | 20060922 | 11.35017 | 0.20563 | 326.90023 | 13.82774 | 0.2607187 | 2.6193954 | 77 | 1 | 63 days | 0.57 | M-v | 4 | MPC | | 2006 QW |
| 2006 QX | 19.8 | 0.15 | 20060902 | 14.27125 | 80.94898 | 236.49873 | 1.36065 | 0.1898020 | 2.1230914 | 19 | 1 | 29 days | 0.82 | | | MPC | | 2006 QX |
| 2006 $QC_1$ | 19.0 | 0.15 | 20060813 | 16.30822 | 21.20832 | 283.20386 | 6.77407 | 0.1982327 | 2.2352495 | 17 | 1 | 6 days | 0.67 | | | MPC | | 2006 $QC_1$ |
| 2006 $QD_1$ | 17.1 | 0.15 | 20060922 | 6.51070 | 34.88719 | 301.94864 | 10.44051 | 0.1976469 | 2.2667464 | 51 | 3 | 2000–2006 | 0.46 | M-v | 2 | MPC | 04004 | 2006 $QD_1$ |
| 2006 $QF_1$ | 18.1 | 0.15 | 20060922 | 355.36982 | 57.35874 | 320.09777 | 0.42297 | 0.3690712 | 2.2049781 | 142 | 2 | 2003–2006 | 0.49 | M-v | 1 | MPC | 04005 | 2006 $QF_1$ |
| 2006 $QO_1$ | 17.5 | 0.15 | 20060922 | 29.97917 | 198.04282 | 95.99111 | 7.64576 | 0.2114330 | 2.3518090 | 28 | 2 | 2002–2006 | 0.35 | M-v | 3 | MPC | 04005 | 2006 $QO_1$ |
| 2006 $QQ_1$ | 17.8 | 0.15 | 20060922 | 6.77791 | 335.70279 | 356.66766 | 10.51051 | 0.3091884 | 2.6158469 | 21 | 1 | 60 days | 0.42 | M-v | 4 | MPC | | 2006 $QQ_1$ |
| 2006 $QR_1$ | 17.3 | 0.15 | 20060902 | 20.09311 | 76.45016 | 233.68014 | 3.63201 | 0.2050228 | 2.3905590 | 41 | 1 | 31 days | 0.58 | | | MPC | | 2006 $QR_1$ |
| 2006 $QV_1$ | 16.6 | 0.15 | 20060813 | 349.39204 | 282.97889 | 56.65830 | 2.35795 | 0.0813008 | 2.7025751 | 19 | 1 | 29 days | 0.43 | | | MPC | | 2006 $QV_1$ |
| 2006 $QW_1$ | 17.0 | 0.15 | 20060922 | 2.72784 | 257.13450 | 80.86999 | 3.05497 | 0.2345064 | 2.4251989 | 66 | 3 | 2003–2006 | 0.30 | M-v | 2 | MPC | 04005 | 2006 $QW_1$ |
| 2006 $QZ_1$ | 17.9 | 0.15 | 20060813 | 340.31594 | 64.56289 | 293.69435 | 2.65870 | 0.2617971 | 2.2241901 | 29 | 1 | 29 days | 0.42 | | | MPC | | 2006 $QZ_1$ |
| 2006 $QB_2$ | 15.9 | 0.15 | 20060922 | 7.84618 | 18.77275 | 307.21901 | 4.17879 | 0.1365708 | 3.1655967 | 27 | 1 | 99 days | 0.35 | M-v | 4 | MPC | 04391 | 2006 $QB_2$ |
| 2006 $QE_2$ | 16.1 | 0.15 | 20060813 | 9.86085 | 160.01532 | 158.22499 | 15.83784 | 0.1154775 | 2.7179611 | 24 | 1 | 32 days | 0.44 | | | MPC | | 2006 $QE_2$ |
| 2006 $QF_2$ | 17.4 | 0.15 | 20060922 | 14.91828 | 346.43818 | 331.55229 | 6.38007 | 0.3179011 | 2.3946427 | 77 | 1 | 83 days | 0.53 | M-v | 4 | MPC | | 2006 $QF_2$ |
| 2006 $QG_2$ | 17.0 | 0.15 | 20060922 | 11.06402 | 354.92228 | 332.60480 | 1.66600 | 0.2249016 | 2.3933446 | 69 | 1 | 86 days | 0.55 | M-v | 3 | MPC | | 2006 $QG_2$ |
| 2006 $QK_2$ | 15.0 | 0.15 | 20060922 | 3.68538 | 43.75988 | 292.39674 | 1.68697 | 0.2281860 | 3.9522626 | 28 | 1 | 91 days | 0.39 | M-v | 4 | MPC | | 2006 $QK_2$ |
| 2006 $QO_2$ | 17.0 | 0.15 | 20060922 | 19.15725 | 344.33331 | 330.48469 | 3.90727 | 0.2501119 | 2.3469107 | 96 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 04005 | 2006 $QO_2$ |
| 2006 $QT_2$ | 17.2 | 0.15 | 20060902 | 11.25620 | 347.72385 | 335.01186 | 2.74969 | 0.2224090 | 3.0135465 | 37 | 1 | 39 days | 0.43 | | | MPC | | 2006 $QT_2$ |
| 2006 $QU_2$ | 16.9 | 0.15 | 20060922 | 17.83550 | 349.57442 | 336.05427 | 3.34404 | 0.0142402 | 2.4400750 | 42 | 5 | 1995–2006 | 0.32 | M-v | 2 | MPC | 04006 | 2006 $QU_2$ |
| 2006 $QW_2$ | 16.1 | 0.15 | 20060922 | 24.42749 | 339.09238 | 337.37497 | 1.99886 | 0.0901512 | 3.0738616 | 27 | 2 | 2001–2006 | 0.44 | M-v | 4 | MPC | 04006 | 2006 $QW_2$ |
| 2006 $QX_2$ | 14.4 | 0.15 | 20060922 | 23.68796 | 339.43944 | 338.56021 | 20.47930 | 0.0749527 | 3.2281987 | 102 | 5 | 1998–2006 | 0.50 | M-v | 1 | MPC | 04006 | 2006 $QX_2$ |
| 2006 $QZ_2$ | 16.7 | 0.15 | 20060922 | 344.12708 | 227.47767 | 144.07265 | 4.05319 | 0.1736112 | 2.2450694 | 91 | 3 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04006 | 2006 $QZ_2$ |
| 2006 $QA_3$ | 17.6 | 0.15 | 20060922 | 9.57727 | 189.69879 | 145.82891 | 2.94371 | 0.2070364 | 2.4491903 | 38 | 1 | 101 days | 0.58 | M-v | 4 | MPC | | 2006 $QA_3$ |
| 2006 $QB_3$ | 17.5 | 0.15 | 20060902 | 327.69470 | 70.60911 | 342.11303 | 9.17119 | 0.3966106 | 2.7628409 | 27 | 1 | 43 days | 0.40 | | | MPC | | 2006 $QB_3$ |
| 2006 $QC_3$ | 14.7 | 0.15 | 20060922 | 352.44405 | 84.90807 | 287.01667 | 1.65190 | 0.2620525 | 3.9744846 | 66 | 1 | 90 days | 0.37 | M-v | 3 | MPC | | 2006 $QC_3$ |
| 2006 $QD_3$ | 16.0 | 0.15 | 20060922 | 349.80131 | 228.87592 | 142.94794 | 13.05243 | 0.2032377 | 2.3284215 | 75 | 2 | 1999–2006 | 0.53 | M-v | 3 | MPC | 04007 | 2006 $QD_3$ |
| 2006 $QF_3$ | 17.0 | 0.15 | 20060922 | 48.28394 | 299.51290 | 342.91979 | 6.48445 | 0.2676076 | 2.3638185 | 65 | 3 | 1995–2006 | 0.46 | M-v | 2 | MPC | 04007 | 2006 $QF_3$ |
| 2006 $QG_3$ | 17.3 | 0.15 | 20060922 | 5.44219 | 2.89535 | 347.43746 | 13.05244 | 0.2639075 | 2.5631432 | 71 | 1 | 67 days | 0.40 | M-v | 3 | MPC | | 2006 $QG_3$ |
| 2006 $QH_3$ | 16.4 | 0.15 | 20060922 | 19.21353 | 332.12742 | 353.81291 | 7.69528 | 0.2686114 | 2.7660315 | 81 | 2 | 2005–2006 | 0.42 | M-v | 3 | MPC | 04007 | 2006 $QH_3$ |
| 2006 $QJ_3$ | 16.7 | 0.15 | 20060922 | 36.05528 | 334.84981 | 344.30703 | 18.92199 | 0.0586569 | 1.9232168 | 89 | 3 | 1998–2006 | 0.59 | M-v | 2 | MPC | 04007 | 2006 $QJ_3$ |
| 2006 $QK_3$ | 15.9 | 0.15 | 20060922 | 8.45802 | 181.87520 | 165.35392 | 35.20885 | 0.2181763 | 2.6036782 | 61 | 1 | 72 days | 0.47 | M-v | 4 | MPC | | 2006 $QK_3$ |
| 2006 $QN_3$ | 16.0 | 0.15 | 20060922 | 355.31805 | 134.45006 | 217.35655 | 0.63165 | 0.2669383 | 2.8038012 | 112 | 3 | 2004–2006 | 0.45 | M-v | 2 | MPC | 04008 | 2006 $QN_3$ |
| 2006 $QO_3$ | 16.1 | 0.15 | 20060922 | 354.86273 | 187.72392 | 167.62494 | 9.70587 | 0.2302447 | 2.7218333 | 77 | 1 | 101 days | 0.52 | M-v | 3 | MPC | | 2006 $QO_3$ |
| 2006 $QP_3$ | 16.5 | 0.15 | 20060922 | 13.03664 | 8.66373 | 320.61975 | 8.18031 | 0.2197002 | 2.2411766 | 102 | 2 | 2003–2006 | 0.47 | M-v | 3 | MPC | 04008 | 2006 $QP_3$ |
| 2006 $QR_3$ | 16.5 | 0.15 | 20060922 | 349.06432 | 203.47782 | 163.45887 | 9.01766 | 0.2094093 | 2.2381008 | 100 | 2 | 2003–2006 | 0.45 | M-v | 3 | MPC | 04008 | 2006 $QR_3$ |
| 2006 $QT_3$ | 17.2 | 0.15 | 20060813 | 359.58767 | 126.50169 | 209.67919 | 0.68655 | 0.2252541 | 2.7364926 | 17 | 1 | 10 days | 0.65 | | | MPC | | 2006 $QT_3$ |
| 2006 $QV_3$ | 18.6 | 0.15 | 20060922 | 353.13224 | 30.08830 | 340.48823 | 5.31826 | 0.3566405 | 2.4212433 | 49 | 1 | 66 days | 0.42 | M-v | 4 | MPC | | 2006 $QV_3$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QW_3$ | 16.4 | 0.15 | 20060922 | 1.43244 | 189.27466 | 160.80254 | 2.99623 | 0.2452637 | 2.7174346 | 90 | 4 | 1999–2006 | 0.38 | M-v | 2 | MPC | 04008 | 2006 $QW_3$ |
| 2006 $QZ_3$ | 17.1 | 0.15 | 20060922 | 15.87325 | 184.45116 | 142.60528 | 2.59206 | 0.1943026 | 2.3973146 | 71 | 4 | 1995–2006 | 0.42 | M-v | 1 | MPC | 04009 | 2006 $QZ_3$ |
| 2006 $QE_4$ | 16.7 | 0.15 | 20060902 | 322.42346 | 252.17519 | 145.68858 | 4.93324 | 0.0774339 | 2.7720418 | 16 | 1 | 32 days | 0.59 | | | MPC | | 2006 $QE_4$ |
| 2006 $QG_4$ | 17.6 | 0.15 | 20060902 | 344.47465 | 227.92550 | 147.09421 | 4.96485 | 0.1910626 | 2.5857225 | 22 | 1 | 32 days | 0.60 | | | MPC | | 2006 $QG_4$ |
| 2006 $QH_4$ | 16.7 | 0.15 | 20060902 | 279.81828 | 89.44031 | 357.35920 | 12.83385 | 0.1232878 | 2.3526287 | 28 | 1 | 59 days | 0.47 | | | MPC | | 2006 $QH_4$ |
| 2006 $QJ_4$ | 17.0 | 0.15 | 20060922 | 357.01158 | 239.54798 | 123.12994 | 2.82776 | 0.1312177 | 2.6643797 | 18 | 1 | 97 days | 0.35 | M-v | 4 | MPC | | 2006 $QJ_4$ |
| 2006 $QK_4$ | 16.4 | 0.15 | 20060922 | 358.29805 | 261.19754 | 100.84789 | 2.15131 | 0.2169684 | 3.1400239 | 35 | 1 | 91 days | 0.45 | M-v | 3 | MPC | | 2006 $QK_4$ |
| 2006 $QM_4$ | 18.8 | 0.15 | 20060922 | 359.53821 | 155.65768 | 195.95660 | 4.81643 | 0.2995560 | 2.5870480 | 31 | 1 | 63 days | 0.58 | M-v | 4 | MPC | | 2006 $QM_4$ |
| 2006 $QN_4$ | 16.9 | 0.15 | 20060922 | 10.69223 | 64.70984 | 272.29810 | 7.73904 | 0.2415439 | 2.3627250 | 61 | 3 | 1995–2006 | 0.62 | M-v | 2 | MPC | 04009 | 2006 $QN_4$ |
| 2006 $QO_4$ | 16.0 | 0.15 | 20060922 | 9.52664 | 343.61650 | 334.01271 | 13.40422 | 0.2144673 | 3.1584443 | 85 | 1 | 66 days | 0.58 | M-v | 4 | MPC | | 2006 $QO_4$ |
| 2006 $QR_4$ | 16.9 | 0.15 | 20060922 | 1.84259 | 149.86346 | 181.07973 | 2.22157 | 0.1992687 | 2.4530144 | 65 | 3 | 2002–2006 | 0.31 | M-v | 2 | MPC | 04009 | 2006 $QR_4$ |
| 2006 $QS_4$ | 18.2 | 0.15 | 20060902 | 318.19769 | 305.29953 | 87.39279 | 2.59715 | 0.1861338 | 2.4377086 | 15 | 1 | 35 days | 0.28 | | | MPC | | 2006 $QS_4$ |
| 2006 $QU_4$ | 16.3 | 0.15 | 20060902 | 300.91890 | 78.43981 | 352.00583 | 12.87981 | 0.2921942 | 3.1623347 | 17 | 1 | 40 days | 0.39 | | | MPC | | 2006 $QU_4$ |
| 2006 $QW_4$ | 17.4 | 0.15 | 20060902 | 4.04361 | 182.68890 | 156.25917 | 14.74578 | 0.2139467 | 2.6919964 | 38 | 1 | 38 days | 0.36 | | | MPC | | 2006 $QW_4$ |
| 2006 $QY_4$ | 16.1 | 0.15 | 20060902 | 344.99808 | 217.24838 | 163.39649 | 28.69429 | 0.2903000 | 3.1509166 | 35 | 1 | 39 days | 0.46 | | | MPC | | 2006 $QY_4$ |
| 2006 $QD_5$ | 17.2 | 0.15 | 20060813 | 278.00566 | 270.28563 | 151.33130 | 6.45825 | 0.0604218 | 2.2825916 | 22 | 1 | 26 days | 0.50 | | | MPC | | 2006 $QD_5$ |
| 2006 $QG_5$ | 15.6 | 0.15 | 20060922 | 265.26973 | 272.69344 | 174.20748 | 9.51546 | 0.0754878 | 3.1610313 | 20 | 1 | 61 days | 0.13 | M-v | 4 | MPC | | 2006 $QG_5$ |
| 2006 $QK_5$ | 17.6 | 0.15 | 20060922 | 26.27827 | 136.90573 | 167.47645 | 8.92577 | 0.2364934 | 2.6838614 | 28 | 1 | 64 days | 0.37 | M-v | 4 | MPC | | 2006 $QK_5$ |
| 2006 $QL_5$ | 15.1 | 0.15 | 20060922 | 43.86668 | 316.14719 | 331.83252 | 21.97863 | 0.1457009 | 3.2095714 | 41 | 2 | 2004–2006 | 0.56 | M-v | 3 | MPC | 04009 | 2006 $QL_5$ |
| 2006 $QM_5$ | 17.3 | 0.15 | 20060922 | 356.32698 | 263.03806 | 95.00989 | 9.20690 | 0.3432697 | 2.6703789 | 17 | 1 | 75 days | 0.35 | M-v | 4 | MPC | | 2006 $QM_5$ |
| 2006 $QN_5$ | 16.9 | 0.15 | 20060902 | 356.69368 | 23.42131 | 320.77991 | 2.51894 | 0.1950309 | 2.7437243 | 23 | 1 | 40 days | 0.49 | | | MPC | | 2006 $QN_5$ |
| 2006 $QS_5$ | 16.5 | 0.15 | 20060922 | 343.97138 | 19.22844 | 352.87230 | 8.70802 | 0.3263121 | 2.7525080 | 45 | 1 | 91 days | 0.49 | M-v | 4 | MPC | | 2006 $QS_5$ |
| 2006 $QU_5$ | 16.3 | 0.15 | 20060922 | 1.38481 | 251.02336 | 90.89962 | 7.22370 | 0.1736129 | 2.3658899 | 31 | 2 | 1999–2006 | 0.39 | M-v | 4 | MPC | 04010 | 2006 $QU_5$ |
| 2006 $QW_5$ | 18.5 | 0.15 | 20060922 | 356.88499 | 179.87238 | 178.43145 | 6.41951 | 0.3483499 | 2.5826904 | 58 | 1 | 65 days | 0.55 | M-v | 4 | MPC | | 2006 $QW_5$ |
| 2006 $QX_5$ | 23.9 | 0.15 | 20060922 | 9.12731 | 6.36564 | 326.24338 | 5.98665 | 0.4535081 | 2.1228812 | 40 | 1 | 58 days | 0.55 | M-v | 4 | MPC | 04392 | 2006 $QX_5$ |
| 2006 $QY_5$ | 21.3 | 0.15 | 20060922 | 351.58370 | 227.46758 | 145.97270 | 1.72453 | 0.3423260 | 1.8982594 | 68 | 1 | 65 days | 0.52 | M-v | 4 | MPC | 04392 | 2006 $QY_5$ |
| 2006 $QZ_5$ | 18.7 | 0.15 | 20060902 | 255.59041 | 296.88753 | 157.19728 | 21.93446 | 0.1126678 | 1.8486893 | 24 | 1 | 28 days | 0.39 | | | MPC | | 2006 $QZ_5$ |
| 2006 $QA_6$ | 16.4 | 0.15 | 20060922 | 81.03253 | 310.73771 | 300.80519 | 13.81415 | 0.0744305 | 3.0787413 | 23 | 2 | 1995–2006 | 0.30 | M-v | 5 | MPC | 04010 | 2006 $QA_6$ |
| 2006 $QC_6$ | 18.9 | 0.15 | 20060902 | 39.55905 | 279.79260 | 5.07176 | 2.47228 | 0.2194374 | 2.2381983 | 30 | 1 | 38 days | 0.49 | | | MPC | | 2006 $QC_6$ |
| 2006 $QD_6$ | 18.3 | 0.15 | 20060902 | 325.76629 | 58.43802 | 324.81500 | 8.89028 | 0.1376178 | 2.5783229 | 36 | 1 | 27 days | 0.39 | | | MPC | | 2006 $QD_6$ |
| 2006 $QG_6$ | 17.5 | 0.15 | 20060922 | 13.89165 | 356.39203 | 341.66635 | 20.99143 | 0.1647134 | 1.8841217 | 68 | 1 | 65 days | 0.47 | M-v | 4 | MPC | | 2006 $QG_6$ |
| 2006 $QH_6$ | 17.9 | 0.15 | 20060902 | 354.45836 | 8.47232 | 333.51964 | 19.64568 | 0.0738630 | 1.9454097 | 23 | 1 | 33 days | 0.28 | | | MPC | | 2006 $QH_6$ |
| 2006 $QJ_6$ | 17.0 | 0.15 | 20060922 | 347.66328 | 227.66655 | 135.62254 | 2.78091 | 0.2016635 | 2.3811468 | 38 | 1 | 156 days | 0.48 | M-v | 4 | MPC | | 2006 $QJ_6$ |
| 2006 $QK_6$ | 15.5 | 0.15 | 20060922 | 6.70949 | 1.04689 | 344.52521 | 9.87915 | 0.2191925 | 2.7576136 | 77 | 2 | 2004–2006 | 0.41 | M-v | 3 | MPC | 04010 | 2006 $QK_6$ |
| 2006 $QL_6$ | 16.6 | 0.15 | 20060922 | 11.91696 | 177.24305 | 148.40063 | 9.80634 | 0.2572747 | 2.4419313 | 97 | 1 | 88 days | 0.46 | M-v | 3 | MPC | | 2006 $QL_6$ |
| 2006 $QM_6$ | 18.1 | 0.15 | 20060902 | 343.63096 | 213.60071 | 155.61021 | 15.68219 | 0.2785375 | 2.5530235 | 19 | 1 | 32 days | 0.49 | | | MPC | | 2006 $QM_6$ |
| 2006 $QO_6$ | 15.3 | 0.15 | 20060902 | 348.99557 | 199.51292 | 153.27618 | 9.93653 | 0.0722212 | 3.1685028 | 40 | 1 | 33 days | 0.39 | | | MPC | | 2006 $QO_6$ |
| 2006 $QS_6$ | 16.1 | 0.15 | 20060902 | 14.29335 | 167.03947 | 152.13412 | 17.14719 | 0.1675177 | 3.1782900 | 20 | 1 | 44 days | 0.54 | | | MPC | | 2006 $QS_6$ |
| 2006 $QT_6$ | 17.6 | 0.15 | 20060922 | 348.10033 | 222.62010 | 145.57406 | 6.82749 | 0.2377861 | 2.4090917 | 33 | 1 | 87 days | 0.41 | M-v | 5 | MPC | | 2006 $QT_6$ |
| 2006 $QU_6$ | 15.6 | 0.15 | 20060922 | 63.16210 | 287.39967 | 336.41465 | 8.17721 | 0.1652110 | 2.7281111 | 60 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04010 | 2006 $QU_6$ |
| 2006 $QV_6$ | 17.6 | 0.15 | 20060922 | 14.09281 | 344.54300 | 340.41378 | 2.85843 | 0.2393738 | 2.6552486 | 38 | 1 | 64 days | 0.34 | M-v | 4 | MPC | | 2006 $QV_6$ |
| 2006 $QX_6$ | 17.5 | 0.15 | 20060922 | 21.58638 | 161.03000 | 148.55690 | 5.16738 | 0.2960878 | 2.5964610 | 58 | 4 | 1993–2006 | 0.52 | M-v | 0 | MPC | 04010 | 2006 $QX_6$ |
| 2006 $QB_7$ | 17.0 | 0.15 | 20060902 | 28.70261 | 318.33106 | 342.11059 | 13.63463 | 0.1889990 | 2.5876898 | 29 | 1 | 43 days | 0.49 | | | MPC | | 2006 $QB_7$ |
| 2006 $QC_7$ | 17.8 | 0.15 | 20060902 | 354.21502 | 223.49443 | 126.76610 | 3.43800 | 0.2078593 | 2.4531254 | 17 | 1 | 32 days | 0.42 | | | MPC | | 2006 $QC_7$ |
| 2006 $QD_7$ | 15.9 | 0.15 | 20060902 | 354.32619 | 290.10660 | 65.18171 | 2.01476 | 0.3256364 | 3.9327677 | 17 | 1 | 33 days | 0.47 | | | MPC | | 2006 $QD_7$ |
| 2006 $QF_7$ | 16.6 | 0.15 | 20060922 | 356.73911 | 20.41799 | 347.75006 | 14.77817 | 0.2736089 | 2.6020905 | 81 | 1 | 67 days | 0.42 | M-v | 4 | MPC | | 2006 $QF_7$ |
| 2006 $QG_7$ | 15.4 | 0.15 | 20060922 | 300.69517 | 88.01771 | 348.71083 | 8.74799 | 0.1484834 | 2.7468910 | 84 | 5 | 1999–2006 | 0.52 | M-v | 1 | MPC | 04011 | 2006 $QG_7$ |
| 2006 $QH_7$ | 15.2 | 0.15 | 20060902 | 342.46458 | 35.21257 | 327.43579 | 16.13870 | 0.2147555 | 3.1486441 | 49 | 1 | 47 days | 0.66 | | | MPC | | 2006 $QH_7$ |
| 2006 $QJ_7$ | 16.6 | 0.15 | 20060922 | 46.38877 | 125.61704 | 155.48997 | 22.56010 | 0.1766404 | 2.2597510 | 66 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 04011 | 2006 $QJ_7$ |
| 2006 $QL_7$ | 18.0 | 0.15 | 20060902 | 23.10499 | 161.61345 | 148.03196 | 5.47259 | 0.1880509 | 2.2339701 | 26 | 1 | 43 days | 0.71 | | | MPC | | 2006 $QL_7$ |
| 2006 $QM_7$ | 16.3 | 0.15 | 20060902 | 338.01767 | 37.97753 | 345.43050 | 12.80786 | 0.2782287 | 2.6854544 | 57 | 1 | 59 days | 0.36 | | | MPC | | 2006 $QM_7$ |
| 2006 $QQ_7$ | 17.6 | 0.15 | 20060922 | 7.79183 | 351.00290 | 352.26328 | 5.97405 | 0.3488671 | 2.3837916 | 100 | 1 | 94 days | 0.42 | M-v | 3 | MPC | | 2006 $QQ_7$ |
| 2006 $QR_7$ | 17.2 | 0.15 | 20060922 | 317.83473 | 233.23282 | 166.25007 | 4.63495 | 0.1769312 | 2.3916033 | 33 | 1 | 70 days | 0.55 | M-v | 5 | MPC | | 2006 $QR_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QS_7$ | 17.7 | 0.15 | 20060922 | 21.18953 | 151.83519 | 162.18198 | 7.20363 | 0.1783840 | 2.2391769 | 31 | 1 | 64 days | 0.57 | M-v | 4 | MPC | | 2006 $QS_7$ |
| 2006 $QT_7$ | 18.2 | 0.15 | 20060902 | 29.54623 | 90.97723 | 200.46554 | 2.06941 | 0.2108748 | 2.3070931 | 13 | 1 | 31 days | 0.52 | | | MPC | | 2006 $QT_7$ |
| 2006 $QW_7$ | 17.6 | 0.15 | 20060902 | 37.28945 | 308.45661 | 328.86366 | 21.83019 | 0.2468380 | 2.3920170 | 30 | 1 | 45 days | 0.53 | | | MPC | | 2006 $QW_7$ |
| 2006 $QX_7$ | 19.2 | 0.15 | 20060813 | 341.75959 | 210.48559 | 156.59108 | 5.59154 | 0.3647040 | 2.3459454 | 28 | 1 | 27 days | 0.46 | | | MPC | | 2006 $QX_7$ |
| 2006 $QY_7$ | 15.9 | 0.15 | 20060922 | 80.02150 | 280.28924 | 328.57370 | 9.73213 | 0.1219069 | 2.6094349 | 79 | 4 | 1996–2006 | 0.62 | M-v | 2 | MPC | 04011 | 2006 $QY_7$ |
| 2006 $QZ_7$ | 17.8 | 0.15 | 20060922 | 16.63927 | 161.30288 | 158.86459 | 3.77094 | 0.2457780 | 2.2744886 | 65 | 1 | 69 days | 0.50 | M-v | 4 | MPC | | 2006 $QZ_7$ |
| 2006 $QA_8$ | 17.3 | 0.15 | 20060902 | 338.85991 | 226.44158 | 143.37130 | 1.44169 | 0.1868691 | 3.0803329 | 13 | 1 | 38 days | 0.16 | | | MPC | | 2006 $QA_8$ |
| 2006 $QB_8$ | 17.9 | 0.15 | 20060922 | 14.89874 | 305.18903 | 17.91005 | 0.65277 | 0.2296849 | 2.3017873 | 49 | 1 | 85 days | 0.42 | M-v | 4 | MPC | | 2006 $QB_8$ |
| 2006 $QC_8$ | 16.2 | 0.15 | 20060902 | 5.19755 | 179.11467 | 152.54156 | 8.92385 | 0.1231078 | 2.7644632 | 29 | 1 | 42 days | 0.46 | | | MPC | | 2006 $QC_8$ |
| 2006 $QH_8$ | 18.4 | 0.15 | 20060813 | 19.20298 | 328.95260 | 332.88410 | 11.06500 | 0.1900776 | 2.6156852 | 11 | 1 | 8 days | 0.26 | | | MPC | | 2006 $QH_8$ |
| 2006 $QL_8$ | 17.8 | 0.15 | 20060922 | 19.27031 | 125.14005 | 188.78062 | 0.57285 | 0.2375991 | 2.3336828 | 50 | 1 | 63 days | 0.50 | M-v | 4 | MPC | | 2006 $QL_8$ |
| 2006 $QM_8$ | 17.2 | 0.15 | 20060922 | 10.59854 | 177.01368 | 152.92762 | 6.58606 | 0.0215225 | 2.6750704 | 28 | 3 | 2000–2006 | 0.50 | M-v | 4 | MPC | 04011 | 2006 $QM_8$ |
| 2006 $QN_8$ | 18.7 | 0.15 | 20060902 | 332.82690 | 42.56313 | 333.25963 | 5.31230 | 0.1821718 | 2.3386416 | 13 | 1 | 39 days | 0.22 | | | MPC | | 2006 $QN_8$ |
| 2006 $QO_8$ | 15.7 | 0.15 | 20060813 | 186.37744 | 176.15888 | 333.88785 | 9.73237 | 0.2871042 | 2.8874823 | 11 | 1 | 8 days | 0.50 | | | MPC | | 2006 $QO_8$ |
| 2006 $QQ_8$ | 17.1 | 0.15 | 20060922 | 344.66372 | 148.14237 | 223.62807 | 1.58037 | 0.2003797 | 2.4182721 | 75 | 3 | 1991–2006 | 0.49 | M-v | 3 | MPC | 04011 | 2006 $QQ_8$ |
| 2006 $QW_8$ | 15.4 | 0.15 | 20060922 | 6.55402 | 7.18434 | 332.96772 | 8.22747 | 0.0517390 | 3.0887198 | 57 | 6 | 1995–2006 | 0.52 | M-v | 1 | MPC | 04012 | 2006 $QW_8$ |
| 2006 $QZ_8$ | 17.3 | 0.15 | 20060922 | 10.86855 | 174.24680 | 158.33992 | 1.61949 | 0.2172869 | 2.4175870 | 49 | 1 | 87 days | 0.43 | M-v | 3 | MPC | | 2006 $QZ_8$ |
| 2006 $QA_9$ | 15.7 | 0.15 | 20060813 | 319.20080 | 53.84310 | 336.23237 | 25.89672 | 0.1490985 | 3.0648438 | 28 | 1 | 30 days | 0.36 | | | MPC | | 2006 $QA_9$ |
| 2006 $QC_9$ | 17.0 | 0.15 | 20060902 | 352.93386 | 194.62275 | 156.43700 | 8.69648 | 0.1741811 | 2.6400832 | 29 | 1 | 35 days | 0.29 | | | MPC | | 2006 $QC_9$ |
| 2006 $QD_9$ | 16.4 | 0.15 | 20060922 | 340.55272 | 42.94479 | 330.34122 | 10.87070 | 0.1701296 | 2.6856233 | 37 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 04012 | 2006 $QD_9$ |
| 2006 $QH_9$ | 16.9 | 0.15 | 20060813 | 329.48086 | 50.32185 | 323.15753 | 5.64184 | 0.1158360 | 2.3856154 | 37 | 1 | 57 days | 0.56 | | | MPC | | 2006 $QH_9$ |
| 2006 $QJ_9$ | 18.1 | 0.15 | 20060813 | 344.49619 | 205.97286 | 159.85425 | 6.78366 | 0.3582961 | 2.6104534 | 22 | 1 | 26 days | 0.55 | | | MPC | | 2006 $QJ_9$ |
| 2006 $QK_9$ | 16.0 | 0.15 | 20060902 | 43.33684 | 305.18135 | 339.77769 | 10.92380 | 0.1951014 | 2.7419782 | 53 | 1 | 52 days | 0.51 | | | MPC | | 2006 $QK_9$ |
| 2006 $QL_9$ | 15.6 | 0.15 | 20060902 | 8.77885 | 167.90282 | 163.74885 | 17.72003 | 0.2170237 | 3.1616704 | 40 | 1 | 42 days | 0.51 | | | MPC | | 2006 $QL_9$ |
| 2006 $QM_9$ | 15.1 | 0.15 | 20060922 | 334.88827 | 49.64942 | 340.62978 | 17.70100 | 0.2174675 | 3.1531978 | 65 | 1 | 92 days | 0.53 | M-v | 4 | MPC | | 2006 $QM_9$ |
| 2006 $QQ_9$ | 16.8 | 0.15 | 20060902 | 353.09591 | 33.18094 | 316.78158 | 5.23386 | 0.1581967 | 2.7964184 | 28 | 1 | 32 days | 0.60 | | | MPC | | 2006 $QQ_9$ |
| 2006 $QR_9$ | 15.5 | 0.15 | 20060922 | 9.57046 | 2.67661 | 343.58811 | 14.07748 | 0.1001496 | 2.7217837 | 112 | 3 | 2002–2006 | 0.51 | M-v | 2 | MPC | 04012 | 2006 $QR_9$ |
| 2006 $QS_9$ | 17.2 | 0.15 | 20060922 | 14.51019 | 2.94631 | 333.10844 | 3.70397 | 0.2476480 | 2.3513410 | 85 | 1 | 95 days | 0.41 | M-v | 3 | MPC | | 2006 $QS_9$ |
| 2006 $QU_9$ | 15.2 | 0.15 | 20060922 | 343.39858 | 211.43004 | 174.07622 | 24.49485 | 0.1866586 | 3.0665732 | 80 | 1 | 71 days | 0.50 | M-v | 4 | MPC | | 2006 $QU_9$ |
| 2006 $QD_{10}$ | 15.2 | 0.15 | 20060922 | 344.28469 | 271.17834 | 97.60883 | 3.03685 | 0.0993399 | 2.6690286 | 20 | 1 | 99 days | 0.37 | M-v | 5 | MPC | | 2006 $QD_{10}$ |
| 2006 $QH_{10}$ | 16.9 | 0.15 | 20060902 | 350.01993 | 253.92708 | 99.03268 | 7.61269 | 0.2298995 | 2.3076970 | 25 | 1 | 56 days | 0.43 | | | MPC | | 2006 $QH_{10}$ |
| 2006 $QJ_{10}$ | 16.2 | 0.15 | 20060902 | 333.10362 | 283.27372 | 89.43421 | 8.68457 | 0.1477965 | 2.3555777 | 22 | 1 | 32 days | 0.35 | | | MPC | | 2006 $QJ_{10}$ |
| 2006 $QL_{10}$ | 16.6 | 0.15 | 20060922 | 354.70832 | 326.78444 | 30.17495 | 9.85291 | 0.2462373 | 2.4142880 | 40 | 1 | 103 days | 0.34 | M-v | 3 | MPC | | 2006 $QL_{10}$ |
| 2006 $QM_{10}$ | 17.0 | 0.15 | 20060922 | 358.83861 | 305.75282 | 38.91700 | 4.07577 | 0.2075569 | 2.3292922 | 58 | 4 | 1999–2006 | 0.50 | M-v | 1 | MPC | 04012 | 2006 $QM_{10}$ |
| 2006 $QO_{10}$ | 16.1 | 0.15 | 20060922 | 10.63399 | 211.55427 | 122.72157 | 4.24557 | 0.0953231 | 2.7814759 | 47 | 7 | 1997–2006 | 0.56 | M-v | 1 | MPC | 04013 | 2006 $QO_{10}$ |
| 2006 $QQ_{10}$ | 15.9 | 0.15 | 20060902 | 321.02730 | 68.49216 | 315.20695 | 24.95987 | 0.2432906 | 3.2218594 | 21 | 1 | 38 days | 0.22 | | | MPC | | 2006 $QQ_{10}$ |
| 2006 $QS_{10}$ | 16.9 | 0.15 | 20060922 | 348.77224 | 165.74300 | 209.17866 | 11.66053 | 0.3345323 | 2.7846392 | 54 | 1 | 73 days | 0.54 | M-v | 4 | MPC | | 2006 $QS_{10}$ |
| 2006 $QU_{10}$ | 18.5 | 0.15 | 20060922 | 355.47913 | 178.79125 | 169.06012 | 7.42281 | 0.2309921 | 2.1560913 | 57 | 3 | 2003–2006 | 0.35 | M-v | 3 | MPC | 04013 | 2006 $QU_{10}$ |
| 2006 $QX_{10}$ | 17.9 | 0.15 | 20060902 | 324.17503 | 199.45822 | 183.23310 | 3.84661 | 0.1095019 | 2.7971928 | 23 | 1 | 37 days | 0.48 | | | MPC | | 2006 $QX_{10}$ |
| 2006 $QY_{10}$ | 18.1 | 0.15 | 20060902 | 38.46637 | 164.08162 | 123.37757 | 7.26356 | 0.2190222 | 2.3709968 | 17 | 1 | 30 days | 0.44 | | | MPC | | 2006 $QY_{10}$ |
| 2006 $QZ_{10}$ | 16.5 | 0.15 | 20060902 | 335.36926 | 153.89555 | 228.81283 | 2.06154 | 0.2825348 | 4.0085410 | 30 | 1 | 37 days | 0.33 | | | MPC | | 2006 $QZ_{10}$ |
| 2006 $QB_{11}$ | 19.3 | 0.15 | 20060902 | 18.70112 | 140.21022 | 167.48796 | 5.54443 | 0.2429083 | 2.3364771 | 17 | 1 | 36 days | 0.20 | | | MPC | | 2006 $QB_{11}$ |
| 2006 $QD_{11}$ | 17.0 | 0.15 | 20060902 | 321.55901 | 113.11611 | 275.22228 | 2.21442 | 0.1359402 | 3.3046799 | 31 | 1 | 37 days | 0.42 | | D | MPC | | 2006 $QD_{11}$ |
| 2006 $QE_{11}$ | 16.8 | 0.15 | 20060902 | 70.20453 | 91.48047 | 163.16317 | 15.41823 | 0.1210985 | 3.1370332 | 18 | 1 | 35 days | 0.39 | | | MPC | | 2006 $QE_{11}$ |
| 2006 $QJ_{11}$ | 17.3 | 0.15 | 20060813 | 287.87372 | 303.06782 | 120.68972 | 5.55400 | 0.1998993 | 2.7864637 | 18 | 1 | 4 days | 0.87 | | | MPC | | 2006 $QJ_{11}$ |
| 2006 $QK_{11}$ | 16.2 | 0.15 | 20060922 | 325.16192 | 328.75092 | 50.19061 | 2.80680 | 0.0949530 | 3.0513209 | 31 | 3 | 2001–2006 | 0.38 | M-v | 2 | MPC | 04013 | 2006 $QK_{11}$ |
| 2006 $QR_{11}$ | 16.7 | 0.15 | 20060922 | 29.87135 | 181.28520 | 115.32713 | 7.73518 | 0.1027075 | 2.4004099 | 31 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04013 | 2006 $QR_{11}$ |
| 2006 $QU_{11}$ | 16.1 | 0.15 | 20060922 | 55.36965 | 282.82380 | 331.87029 | 19.55812 | 0.1882420 | 2.8013259 | 21 | 1 | 93 days | 0.29 | M-v | 4 | MPC | | 2006 $QU_{11}$ |
| 2006 $QY_{11}$ | 17.1 | 0.15 | 20060902 | 1.11881 | 343.80383 | 342.43446 | 9.31504 | 0.2027190 | 2.6177717 | 15 | 1 | 45 days | 0.36 | | | MPC | | 2006 $QY_{11}$ |
| 2006 $QZ_{11}$ | 17.4 | 0.15 | 20060922 | 7.70905 | 315.60009 | 10.98462 | 3.88298 | 0.1711232 | 2.2636173 | 31 | 4 | 2002–2006 | 0.47 | M-v | 1 | MPC | 04013 | 2006 $QZ_{11}$ |
| 2006 $QF_{12}$ | 16.6 | 0.15 | 20060922 | 59.02801 | 258.38720 | 7.37261 | 4.53756 | 0.0704748 | 2.6568370 | 34 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 04013 | 2006 $QF_{12}$ |
| 2006 $QG_{12}$ | 17.2 | 0.15 | 20060922 | 351.52613 | 286.08721 | 65.94708 | 3.01120 | 0.2192024 | 2.4141098 | 37 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04014 | 2006 $QG_{12}$ |
| 2006 $QG_{13}$ | 16.7 | 0.15 | 20060922 | 353.12306 | 257.92305 | 94.58414 | 6.49761 | 0.1766249 | 2.3498635 | 39 | 2 | 1999–2006 | 0.50 | M-v | 3 | MPC | 04014 | 2006 $QG_{13}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QH_{13}$ | 17.5 | 0.15 | 20060922 | 43.36967 | 163.62164 | 111.10535 | 8.47591 | 0.2380807 | 2.2532649 | 32 | 4 | 1999–2006 | 0.44 | M-v | 1 | MPC | 04014 | 2006 $QH_{13}$ |
| 2006 $QL_{13}$ | 18.1 | 0.15 | 20060902 | 181.83766 | 192.34696 | 317.81423 | 19.18994 | 0.0598178 | 1.9083449 | 16 | 1 | 32 days | 0.39 | | | MPC | | 2006 $QL_{13}$ |
| 2006 $QO_{13}$ | 16.5 | 0.15 | 20060922 | 357.83291 | 241.38899 | 104.89925 | 7.89468 | 0.1483415 | 2.3159962 | 36 | 3 | 2002–2006 | 0.37 | M-v | 2 | MPC | 04014 | 2006 $QO_{13}$ |
| 2006 $QR_{13}$ | 15.7 | 0.15 | 20060922 | 47.77358 | 320.92369 | 311.04460 | 11.28282 | 0.1050111 | 2.9530751 | 40 | 4 | 1999–2006 | 0.41 | M-v | 2 | MPC | 04014 | 2006 $QR_{13}$ |
| 2006 $QT_{13}$ | 17.3 | 0.15 | 20060922 | 359.55317 | 79.60107 | 260.88847 | 4.55726 | 0.2490351 | 2.3051240 | 34 | 1 | 96 days | 0.24 | M-v | 3 | MPC | | 2006 $QT_{13}$ |
| 2006 $QU_{13}$ | 15.4 | 0.15 | 20060922 | 336.83799 | 199.56223 | 162.39825 | 15.44095 | 0.1588921 | 3.1814426 | 47 | 5 | 1995–2006 | 0.37 | M-v | 0 | MPC | 04015 | 2006 $QU_{13}$ |
| 2006 $QX_{13}$ | 16.1 | 0.15 | 20060922 | 305.90876 | 51.72661 | 332.95470 | 8.91168 | 0.0463275 | 2.5401342 | 22 | 3 | 1994–2006 | 0.47 | M-v | 4 | MPC | 04015 | 2006 $QX_{13}$ |
| 2006 $QJ_{14}$ | 17.7 | 0.15 | 20060813 | 2.33467 | 292.94291 | 22.97960 | 2.44526 | 0.2268545 | 2.4272706 | 11 | 1 | 7 days | 0.13 | | | MPC | | 2006 $QJ_{14}$ |
| 2006 $QL_{14}$ | 17.0 | 0.15 | 20060922 | 350.02775 | 357.45492 | 355.66874 | 3.82028 | 0.2488803 | 2.4310479 | 20 | 1 | 64 days | 0.24 | M-v | 4 | MPC | | 2006 $QL_{14}$ |
| 2006 $QO_{14}$ | 16.5 | 0.15 | 20060922 | 44.59417 | 228.89727 | 55.25164 | 2.76454 | 0.0382183 | 2.4025901 | 31 | 2 | 2003–2006 | 0.51 | M-v | 4 | MPC | 04015 | 2006 $QO_{14}$ |
| 2006 $QZ_{14}$ | 15.3 | 0.15 | 20060922 | 332.59541 | 65.31783 | 307.16806 | 11.28128 | 0.2120446 | 3.3531476 | 25 | 2 | 2000–2006 | 0.38 | M-v | 4 | MPC | 04015 | 2006 $QZ_{14}$ |
| 2006 $QF_{15}$ | 16.4 | 0.15 | 20060902 | 12.08883 | 49.87473 | 261.28610 | 5.97312 | 0.1403377 | 3.0433061 | 16 | 1 | 33 days | 0.51 | | | MPC | | 2006 $QF_{15}$ |
| 2006 $QJ_{15}$ | 16.6 | 0.15 | 20060813 | 341.85584 | 108.57930 | 242.13801 | 2.66546 | 0.2147939 | 2.6010075 | 37 | 1 | 13 days | 0.57 | | | MPC | | 2006 $QJ_{15}$ |
| 2006 $QP_{15}$ | 17.2 | 0.15 | 20060922 | 20.22917 | 129.23389 | 179.31050 | 4.68997 | 0.1997588 | 2.3757297 | 24 | 1 | 65 days | 0.51 | M-v | 4 | MPC | | 2006 $QP_{15}$ |
| 2006 $QA_{16}$ | 15.6 | 0.15 | 20060922 | 315.21615 | 55.75842 | 327.89209 | 10.36680 | 0.0926587 | 3.0758638 | 20 | 1 | 94 days | 0.40 | M-v | 5 | MPC | | 2006 $QA_{16}$ |
| 2006 $QG_{16}$ | 16.4 | 0.15 | 20060922 | 34.42540 | 304.97442 | 339.26171 | 7.25101 | 0.2011572 | 2.7718525 | 24 | 1 | 65 days | 0.29 | M-v | 5 | MPC | | 2006 $QG_{16}$ |
| 2006 $QK_{16}$ | 16.0 | 0.15 | 20060922 | 8.43675 | 350.72384 | 335.39075 | 9.95105 | 0.2626535 | 2.3815490 | 120 | 5 | 1999–2006 | 0.47 | M-v | 2 | MPC | 04015 | 2006 $QK_{16}$ |
| 2006 $QL_{16}$ | 15.7 | 0.15 | 20060902 | 340.48241 | 31.29975 | 330.14474 | 17.54150 | 0.2447977 | 3.0775431 | 30 | 1 | 41 days | 0.39 | | | MPC | | 2006 $QL_{16}$ |
| 2006 $QO_{16}$ | 17.9 | 0.15 | 20060922 | 329.48303 | 34.98731 | 351.42374 | 3.53420 | 0.2236017 | 2.3162290 | 31 | 1 | 92 days | 0.26 | M-v | 4 | MPC | | 2006 $QO_{16}$ |
| 2006 $QS_{16}$ | 15.1 | 0.15 | 20060813 | 0.75239 | 187.98811 | 135.86487 | 16.48044 | 0.2285068 | 3.1971728 | 27 | 1 | 54 days | 0.42 | | | MPC | | 2006 $QS_{16}$ |
| 2006 $QU_{16}$ | 15.9 | 0.15 | 20060922 | 8.12717 | 238.57704 | 89.69911 | 2.37058 | 0.1988728 | 2.4348059 | 88 | 5 | 1991–2006 | 0.35 | M-v | 1 | MPC | 04016 | 2006 $QU_{16}$ |
| 2006 $QQ_{17}$ | 17.1 | 0.15 | 20060813 | 328.55146 | 302.37228 | 66.40429 | 3.67360 | 0.1892993 | 2.3218753 | 19 | 1 | 9 days | 0.40 | | D | MPC | | 2006 $QQ_{17}$ |
| 2006 $QA_{18}$ | 18.2 | 0.15 | 20060813 | 344.57939 | 281.54874 | 69.63656 | 4.03267 | 0.2682391 | 2.2908923 | 22 | 1 | 29 days | 0.25 | | | MPC | | 2006 $QA_{18}$ |
| 2006 $QJ_{18}$ | 16.6 | 0.15 | 20060922 | 43.54852 | 203.89048 | 82.17451 | 7.16901 | 0.1118343 | 2.4707449 | 44 | 4 | 1993–2006 | 0.39 | M-v | 2 | MPC | 04017 | 2006 $QJ_{18}$ |
| 2006 $QK_{18}$ | 15.5 | 0.15 | 20060922 | 43.94535 | 287.57775 | 358.32062 | 16.89867 | 0.0739939 | 2.9408869 | 38 | 4 | 2001–2006 | 0.47 | M-v | 1 | MPC | 04017 | 2006 $QK_{18}$ |
| 2006 $QL_{18}$ | 15.6 | 0.15 | 20060922 | 358.36300 | 309.56811 | 30.38696 | 9.79914 | 0.0612096 | 3.0688796 | 46 | 3 | 2001–2006 | 0.40 | M-v | 2 | MPC | 04017 | 2006 $QL_{18}$ |
| 2006 $QN_{18}$ | 16.6 | 0.15 | 20060813 | 24.31767 | 293.42493 | 2.90873 | 12.68004 | 0.1576189 | 2.7758516 | 12 | 1 | 28 days | 0.20 | | | MPC | | 2006 $QN_{18}$ |
| 2006 $QO_{18}$ | 15.8 | 0.15 | 20060922 | 53.67768 | 219.87194 | 58.47792 | 7.43916 | 0.1075185 | 2.5189192 | 60 | 4 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04017 | 2006 $QO_{18}$ |
| 2006 $QU_{18}$ | 17.8 | 0.15 | 20060813 | 22.10319 | 140.23294 | 154.38425 | 5.55473 | 0.2290543 | 2.3884339 | 25 | 1 | 29 days | 0.48 | | | MPC | | 2006 $QU_{18}$ |
| 2006 $QW_{18}$ | 16.6 | 0.15 | 20060922 | 26.01009 | 321.20749 | 354.49343 | 3.69099 | 0.2151747 | 2.6191894 | 67 | 3 | 2000–2006 | 0.44 | M-v | 2 | MPC | 04017 | 2006 $QW_{18}$ |
| 2006 $QA_{19}$ | 16.3 | 0.15 | 20060922 | 328.63529 | 248.78003 | 132.86619 | 7.57736 | 0.0848317 | 2.3337933 | 57 | 4 | 1999–2006 | 0.37 | M-v | 1 | MPC | 04018 | 2006 $QA_{19}$ |
| 2006 $QB_{19}$ | 17.1 | 0.15 | 20060922 | 4.05249 | 347.40365 | 353.79173 | 7.54896 | 0.1644518 | 2.2538356 | 59 | 2 | 2005–2006 | 0.40 | M-v | 3 | MPC | 04018 | 2006 $QB_{19}$ |
| 2006 $QD_{19}$ | 17.7 | 0.15 | 20060922 | 337.97786 | 348.26477 | 32.17301 | 3.09883 | 0.2037569 | 2.4352035 | 45 | 2 | 2004–2006 | 0.39 | M-v | 4 | MPC | 04018 | 2006 $QD_{19}$ |
| 2006 $QE_{19}$ | 18.0 | 0.15 | 20060813 | 343.32591 | 266.92276 | 91.90353 | 2.72801 | 0.2372247 | 2.4181226 | 26 | 1 | 28 days | 0.36 | | | MPC | | 2006 $QE_{19}$ |
| 2006 $QF_{19}$ | 18.0 | 0.15 | 20060813 | 353.32125 | 211.27538 | 129.04546 | 2.51072 | 0.2454877 | 2.2773067 | 36 | 1 | 31 days | 0.46 | | | MPC | | 2006 $QF_{19}$ |
| 2006 $QH_{19}$ | 17.5 | 0.15 | 20060922 | 23.31218 | 169.70012 | 143.11048 | 6.82707 | 0.1978338 | 2.2552582 | 46 | 1 | 69 days | 0.41 | M-v | 4 | MPC | | 2006 $QH_{19}$ |
| 2006 $QJ_{19}$ | 17.2 | 0.15 | 20060902 | 357.51275 | 204.51123 | 139.09985 | 9.08849 | 0.1441982 | 2.4145242 | 26 | 1 | 41 days | 0.36 | | | MPC | | 2006 $QJ_{19}$ |
| 2006 $QK_{19}$ | 17.2 | 0.15 | 20060813 | 321.90393 | 255.93824 | 136.43448 | 9.10642 | 0.2182728 | 2.7901757 | 19 | 1 | 29 days | 0.32 | | | MPC | | 2006 $QK_{19}$ |
| 2006 $QN_{19}$ | 17.4 | 0.15 | 20060922 | 8.52166 | 204.86932 | 128.68447 | 6.57774 | 0.2690508 | 2.5735052 | 43 | 2 | 1994–2006 | 0.38 | M-v | 2 | MPC | 04018 | 2006 $QN_{19}$ |
| 2006 $QQ_{19}$ | 15.7 | 0.15 | 20060922 | 46.44434 | 224.94325 | 63.81191 | 10.16310 | 0.1091093 | 2.7285389 | 39 | 4 | 1996–2006 | 0.65 | M-v | 1 | MPC | 04018 | 2006 $QQ_{19}$ |
| 2006 $QU_{19}$ | 14.6 | 0.15 | 20060922 | 3.09399 | 172.56517 | 158.22088 | 22.17302 | 0.1925019 | 3.1849672 | 75 | 4 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04018 | 2006 $QU_{19}$ |
| 2006 $QY_{19}$ | 14.9 | 0.15 | 20060922 | 350.83723 | 208.19500 | 156.67494 | 8.13650 | 0.3319248 | 3.9875906 | 78 | 1 | 103 days | 0.57 | M-v | 4 | MPC | | 2006 $QY_{19}$ |
| 2006 $QA_{20}$ | 17.3 | 0.15 | 20060922 | 39.18080 | 310.08461 | 329.52541 | 5.38562 | 0.2696617 | 2.3291094 | 62 | 3 | 2002–2006 | 0.56 | M-v | 3 | MPC | 04019 | 2006 $QA_{20}$ |
| 2006 $QD_{20}$ | 17.2 | 0.15 | 20060922 | 355.90536 | 204.17063 | 147.70481 | 9.50928 | 0.2708930 | 2.3949138 | 25 | 1 | 64 days | 0.75 | M-v | 4 | MPC | | 2006 $QD_{20}$ |
| 2006 $QK_{20}$ | 15.4 | 0.15 | 20060922 | 15.49462 | 337.24557 | 345.02142 | 7.40895 | 0.1562723 | 3.1551886 | 80 | 3 | 1993–2006 | 0.45 | M-v | 2 | MPC | 04019 | 2006 $QK_{20}$ |
| 2006 $QL_{20}$ | 15.5 | 0.15 | 20060922 | 4.45431 | 1.13848 | 336.76272 | 10.11630 | 0.2831770 | 3.1216398 | 69 | 1 | 71 days | 0.43 | M-v | 4 | MPC | | 2006 $QL_{20}$ |
| 2006 $QM_{20}$ | 16.5 | 0.15 | 20060902 | 18.82184 | 160.34465 | 152.34776 | 13.36270 | 0.1697617 | 2.6769180 | 45 | 1 | 47 days | 0.47 | | | MPC | | 2006 $QM_{20}$ |
| 2006 $QR_{20}$ | 16.0 | 0.15 | 20060922 | 358.72312 | 33.70257 | 326.65308 | 9.47375 | 0.1496449 | 2.4124909 | 85 | 3 | 2002–2006 | 0.44 | M-v | 3 | MPC | 04020 | 2006 $QR_{20}$ |
| 2006 $QU_{20}$ | 16.9 | 0.15 | 20060922 | 351.50623 | 201.72604 | 174.80527 | 6.43938 | 0.2642205 | 2.2018775 | 103 | 3 | 1993–2006 | 0.37 | M-v | 1 | MPC | 04020 | 2006 $QU_{20}$ |
| 2006 $QV_{20}$ | 15.5 | 0.15 | 20060922 | 359.12231 | 194.59193 | 168.88956 | 14.63018 | 0.1833079 | 2.6863536 | 121 | 5 | 2000–2006 | 0.52 | M-v | 1 | MPC | 04020 | 2006 $QV_{20}$ |
| 2006 $QZ_{20}$ | 16.2 | 0.15 | 20060922 | 9.69569 | 179.92116 | 160.02385 | 14.67148 | 0.2586020 | 2.6421088 | 62 | 1 | 67 days | 0.54 | M-v | 4 | MPC | | 2006 $QZ_{20}$ |
| 2006 $QA_{21}$ | 16.2 | 0.15 | 20060922 | 355.84662 | 181.03911 | 143.91374 | 13.56266 | 0.1490507 | 2.6994246 | 21 | 2 | 2000–2006 | 0.22 | M-v | 3 | MPC | 04020 | 2006 $QA_{21}$ |
| 2006 $QH_{21}$ | 17.8 | 0.15 | 20060902 | 331.92538 | 60.48950 | 323.38701 | 17.27850 | 0.3012340 | 3.0509894 | 18 | 1 | 40 days | 0.60 | | | MPC | | 2006 $QH_{21}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QJ_{21}$ | 18.2 | 0.15 | 20060902 | 322.90374 | 204.95147 | 183.03963 | 2.26018 | 0.2076658 | 2.2415188 | 16 | 1 | 38 days | 0.21 | | | MPC | | 2006 $QJ_{21}$ |
| 2006 $QN_{21}$ | 15.7 | 0.15 | 20060922 | 330.77318 | 231.72517 | 161.60625 | 17.22703 | 0.3312821 | 3.1387268 | 43 | 1 | 61 days | 0.65 | M-v | 5 | MPC | | 2006 $QN_{21}$ |
| 2006 $QS_{21}$ | 17.3 | 0.15 | 20060902 | 17.83976 | 344.15342 | 320.37548 | 5.68453 | 0.1366881 | 2.2675655 | 20 | 1 | 44 days | 0.48 | | | MPC | | 2006 $QS_{21}$ |
| 2006 $QT_{21}$ | 17.6 | 0.15 | 20060922 | 359.50973 | 110.77282 | 230.63789 | 0.61711 | 0.2440228 | 2.2473231 | 69 | 2 | 2003–2006 | 0.46 | M-v | 3 | MPC | 04020 | 2006 $QT_{21}$ |
| 2006 $QE_{22}$ | 16.5 | 0.15 | 20060922 | 10.65212 | 310.55470 | 13.53566 | 2.66719 | 0.2281761 | 2.4422950 | 64 | 1 | 114 days | 0.44 | M-v | 3 | MPC | | 2006 $QE_{22}$ |
| 2006 $QF_{22}$ | 15.3 | 0.15 | 20060902 | 38.21826 | 308.78331 | 331.60024 | 14.27291 | 0.1468499 | 3.2153470 | 18 | 1 | 38 days | 0.37 | | | MPC | | 2006 $QF_{22}$ |
| 2006 $QH_{22}$ | 17.5 | 0.15 | 20060922 | 13.47376 | 192.06226 | 130.00142 | 5.86182 | 0.2053207 | 2.2219229 | 41 | 2 | 2003–2006 | 0.47 | M-v | 3 | MPC | 04020 | 2006 $QH_{22}$ |
| 2006 $QP_{22}$ | 18.7 | 0.15 | 20060902 | 349.29379 | 25.03177 | 332.03253 | 5.60823 | 0.2424066 | 2.3261127 | 22 | 1 | 43 days | 0.35 | | | MPC | | 2006 $QP_{22}$ |
| 2006 $QS_{22}$ | 19.7 | 0.15 | 20060902 | 8.77289 | 45.76037 | 270.13312 | 1.81145 | 0.3466005 | 2.3160876 | 29 | 1 | 44 days | 0.25 | | | MPC | | 2006 $QS_{22}$ |
| 2006 $QX_{22}$ | 16.9 | 0.15 | 20060922 | 17.15085 | 345.79985 | 357.56111 | 5.80684 | 0.2243104 | 2.3510993 | 94 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04021 | 2006 $QX_{22}$ |
| 2006 $QZ_{22}$ | 16.2 | 0.15 | 20060922 | 356.30418 | 16.46612 | 357.28894 | 13.63084 | 0.2653268 | 2.6915978 | 106 | 2 | 2004–2006 | 0.46 | M-v | 2 | MPC | 04021 | 2006 $QZ_{22}$ |
| 2006 $QD_{23}$ | 15.9 | 0.15 | 20060902 | 28.98463 | 221.43559 | 77.66210 | 9.48264 | 0.2588158 | 2.7723620 | 29 | 1 | 51 days | 0.41 | | | MPC | | 2006 $QD_{23}$ |
| 2006 $QH_{23}$ | 17.4 | 0.15 | 20060902 | 325.01881 | 299.85007 | 97.93068 | 3.73454 | 0.2568772 | 2.4553980 | 23 | 1 | 25 days | 0.39 | | | MPC | | 2006 $QH_{23}$ |
| 2006 $QL_{23}$ | 17.0 | 0.15 | 20060922 | 354.24978 | 187.67075 | 175.23211 | 6.48888 | 0.1260198 | 2.2871415 | 94 | 4 | 1999–2006 | 0.52 | M-v | 1 | MPC | 04021 | 2006 $QL_{23}$ |
| 2006 $QN_{23}$ | 18.2 | 0.15 | 20060902 | 340.08933 | 91.58711 | 274.13196 | 1.86922 | 0.1509685 | 2.5225028 | 18 | 1 | 37 days | 0.28 | | D | MPC | | 2006 $QN_{23}$ |
| 2006 $QP_{23}$ | 17.5 | 0.15 | 20060922 | 1.40536 | 230.54259 | 134.67799 | 8.01336 | 0.4005344 | 2.5919929 | 89 | 1 | 96 days | 0.38 | M-v | 4 | MPC | | 2006 $QP_{23}$ |
| 2006 $QQ_{23}$ | 19.6 | 0.15 | 20060922 | 235.02336 | 124.76779 | 4.96526 | 3.43980 | 0.2845137 | 0.8037565 | 34 | 1 | 23 days | 0.44 | M-v | 8 | MPC | 04397 | 2006 $QQ_{23}$ |
| 2006 $QR_{23}$ | 19.2 | 0.15 | 20060902 | 336.88251 | 212.55386 | 156.93637 | 26.66101 | 0.2279627 | 1.8904240 | 49 | 1 | 26 days | 0.52 | | | MPC | | 2006 $QR_{23}$ |
| 2006 $QS_{23}$ | 20.3 | 0.15 | 20060922 | 321.01070 | 303.59722 | 154.91920 | 19.97095 | 0.5025853 | 1.1928467 | 58 | 1 | 14 days | 0.40 | M-v | 7 | MPC | 04397 | 2006 $QS_{23}$ |
| 2006 $QU_{23}$ | 17.0 | 0.15 | 20060902 | 341.10900 | 171.47884 | 188.12399 | 8.18256 | 0.1899795 | 2.7312382 | 15 | 1 | 32 days | 0.27 | | | MPC | | 2006 $QU_{23}$ |
| 2006 $QW_{23}$ | 17.3 | 0.15 | 20060922 | 14.59061 | 3.97191 | 315.67463 | 1.75529 | 0.1993311 | 2.3910733 | 30 | 1 | 67 days | 0.65 | M-v | 4 | MPC | | 2006 $QW_{23}$ |
| 2006 $QE_{24}$ | 16.3 | 0.15 | 20060922 | 356.85778 | 88.01796 | 273.56633 | 2.36871 | 0.2362191 | 2.7495267 | 80 | 3 | 1997–2006 | 0.45 | M-v | 3 | MPC | 04021 | 2006 $QE_{24}$ |
| 2006 $QF_{24}$ | 14.5 | 0.15 | 20060922 | 1.13836 | 5.43471 | 348.71415 | 14.34816 | 0.0785240 | 3.2259718 | 88 | 6 | 1998–2006 | 0.50 | M-v | 1 | MPC | 04021 | 2006 $QF_{24}$ |
| 2006 $QG_{24}$ | 17.7 | 0.15 | 20060902 | 352.22275 | 12.86395 | 340.21908 | 14.17215 | 0.2785612 | 2.6615316 | 23 | 1 | 43 days | 0.23 | | | MPC | | 2006 $QG_{24}$ |
| 2006 $QJ_{24}$ | 17.1 | 0.15 | 20060902 | 11.21277 | 212.71212 | 111.01038 | 3.29516 | 0.1810894 | 2.5801057 | 19 | 1 | 32 days | 0.42 | | | MPC | | 2006 $QJ_{24}$ |
| 2006 $QK_{24}$ | 17.3 | 0.15 | 20060922 | 48.34520 | 144.64457 | 138.92561 | 7.81729 | 0.1551248 | 2.2451276 | 41 | 4 | 2002–2006 | 0.53 | M-v | 1 | MPC | 04021 | 2006 $QK_{24}$ |
| 2006 $QL_{24}$ | 17.3 | 0.15 | 20060813 | 354.11529 | 279.59333 | 61.53492 | 3.23578 | 0.2079553 | 2.4513311 | 25 | 1 | 29 days | 0.35 | | | MPC | | 2006 $QL_{24}$ |
| 2006 $QN_{24}$ | 16.8 | 0.15 | 20060922 | 348.10465 | 39.55064 | 342.71406 | 6.09840 | 0.3966563 | 2.6901101 | 115 | 1 | 120 days | 0.41 | M-v | 3 | MPC | | 2006 $QN_{24}$ |
| 2006 $QO_{24}$ | 16.0 | 0.15 | 20060922 | 342.18155 | 39.93047 | 341.07997 | 5.86549 | 0.0970232 | 2.7075078 | 87 | 4 | 2001–2006 | 0.53 | M-v | 1 | MPC | 04022 | 2006 $QO_{24}$ |
| 2006 $QS_{24}$ | 16.2 | 0.15 | 20060922 | 353.43446 | 218.97174 | 152.27560 | 6.96884 | 0.1880360 | 2.2260507 | 73 | 1 | 125 days | 0.46 | M-v | 3 | MPC | | 2006 $QS_{24}$ |
| 2006 $QZ_{24}$ | 17.0 | 0.15 | 20060922 | 354.28133 | 68.16693 | 290.04778 | 5.15525 | 0.3382868 | 2.6356940 | 73 | 2 | 2002–2006 | 0.46 | M-v | 3 | MPC | 04022 | 2006 $QZ_{24}$ |
| 2006 $QA_{25}$ | 17.7 | 0.15 | 20060902 | 16.20289 | 0.76180 | 311.33807 | 6.75724 | 0.2412757 | 2.2104310 | 32 | 1 | 32 days | 0.53 | | | MPC | | 2006 $QA_{25}$ |
| 2006 $QB_{25}$ | 17.1 | 0.15 | 20060813 | 13.54415 | 339.85076 | 326.63590 | 17.32862 | 0.2748570 | 2.6534557 | 28 | 1 | 24 days | 0.64 | | | MPC | | 2006 $QB_{25}$ |
| 2006 $QC_{25}$ | 17.2 | 0.15 | 20060902 | 13.95829 | 147.34234 | 166.49218 | 12.75267 | 0.2490082 | 2.6028868 | 29 | 1 | 39 days | 0.47 | | | MPC | | 2006 $QC_{25}$ |
| 2006 $QL_{25}$ | 17.3 | 0.15 | 20060902 | 50.78030 | 276.25533 | 343.67026 | 11.64267 | 0.3160135 | 2.3518260 | 35 | 1 | 32 days | 0.56 | | | MPC | | 2006 $QL_{25}$ |
| 2006 $QM_{25}$ | 18.5 | 0.15 | 20060922 | 37.45697 | 291.75165 | 5.94648 | 2.60596 | 0.2042811 | 2.2756863 | 19 | 3 | 1995–2006 | 0.45 | M-v | 3 | MPC | 04023 | 2006 $QM_{25}$ |
| 2006 $QO_{25}$ | 18.8 | 0.15 | 20060902 | 16.22418 | 334.38118 | 340.05961 | 4.42798 | 0.2646356 | 2.1372162 | 43 | 1 | 43 days | 0.58 | | | MPC | | 2006 $QO_{25}$ |
| 2006 $QP_{25}$ | 16.5 | 0.15 | 20060922 | 349.65148 | 231.72853 | 140.12420 | 1.44361 | 0.1516350 | 2.6559117 | 81 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04023 | 2006 $QP_{25}$ |
| 2006 $QR_{25}$ | 17.5 | 0.15 | 20060922 | 9.66426 | 216.11494 | 127.47873 | 3.09570 | 0.2209891 | 2.4018201 | 44 | 1 | 97 days | 0.53 | M-v | 4 | MPC | | 2006 $QR_{25}$ |
| 2006 $QW_{25}$ | 16.8 | 0.15 | 20060813 | 4.73495 | 66.52833 | 249.43169 | 10.96972 | 0.2371227 | 2.6833504 | 27 | 1 | 23 days | 0.55 | | | MPC | | 2006 $QW_{25}$ |
| 2006 $QX_{25}$ | 17.4 | 0.15 | 20060902 | 10.74358 | 81.89885 | 229.94994 | 9.68544 | 0.2862947 | 2.6331993 | 25 | 1 | 38 days | 0.48 | | | MPC | | 2006 $QX_{25}$ |
| 2006 $QE_{26}$ | 18.4 | 0.15 | 20060902 | 4.94453 | 28.51605 | 303.90335 | 3.08651 | 0.2103732 | 2.4105581 | 19 | 1 | 29 days | 0.38 | | | MPC | | 2006 $QE_{26}$ |
| 2006 $QG_{26}$ | 17.6 | 0.15 | 20060902 | 341.14860 | 54.71969 | 314.34117 | 6.47771 | 0.2131385 | 2.2411251 | 46 | 1 | 38 days | 0.57 | | | MPC | | 2006 $QG_{26}$ |
| 2006 $QJ_{26}$ | 17.8 | 0.15 | 20060922 | 342.20164 | 70.53357 | 304.68924 | 2.05409 | 0.1885502 | 2.2810752 | 29 | 1 | 63 days | 0.57 | M-v | 5 | MPC | | 2006 $QJ_{26}$ |
| 2006 $QL_{26}$ | 17.7 | 0.15 | 20060922 | 17.11217 | 78.32657 | 245.32491 | 5.50915 | 0.1533119 | 2.2884707 | 43 | 3 | 2003–2006 | 0.44 | M-v | 3 | MPC | 04023 | 2006 $QL_{26}$ |
| 2006 $QP_{26}$ | 17.2 | 0.15 | 20060813 | 32.87923 | 114.89358 | 163.44181 | 21.45716 | 0.2499867 | 2.2830533 | 29 | 1 | 27 days | 0.57 | | | MPC | | 2006 $QP_{26}$ |
| 2006 $QQ_{26}$ | 16.2 | 0.15 | 20060813 | 36.91259 | 316.86592 | 331.57611 | 10.68001 | 0.1222878 | 2.7359502 | 23 | 1 | 25 days | 0.29 | | | MPC | | 2006 $QQ_{26}$ |
| 2006 $QR_{26}$ | 16.8 | 0.15 | 20060922 | 338.41163 | 206.05957 | 172.80633 | 3.27071 | 0.2016592 | 2.7735216 | 31 | 1 | 90 days | 0.41 | M-v | 4 | MPC | | 2006 $QR_{26}$ |
| 2006 $QS_{26}$ | 17.6 | 0.15 | 20060922 | 353.70317 | 66.77844 | 289.55874 | 1.27273 | 0.1769585 | 2.5183334 | 42 | 3 | 2002–2006 | 0.40 | M-v | 2 | MPC | 04023 | 2006 $QS_{26}$ |
| 2006 $QT_{26}$ | 17.9 | 0.15 | 20060922 | 353.56695 | 187.80803 | 170.56343 | 3.38527 | 0.1881542 | 2.2321325 | 36 | 1 | 62 days | 0.47 | M-v | 4 | MPC | | 2006 $QT_{26}$ |
| 2006 $QU_{26}$ | 17.7 | 0.15 | 20060902 | 351.15200 | 73.75340 | 282.76167 | 1.93206 | 0.2092910 | 2.2823571 | 49 | 1 | 42 days | 0.52 | | | MPC | | 2006 $QU_{26}$ |
| 2006 $QW_{26}$ | 17.6 | 0.15 | 20060922 | 346.65102 | 56.46677 | 326.46289 | 6.68405 | 0.3470477 | 2.6667818 | 62 | 1 | 75 days | 0.55 | M-v | 4 | MPC | | 2006 $QW_{26}$ |
| 2006 $QX_{26}$ | 17.3 | 0.15 | 20060922 | 21.79082 | 351.80050 | 326.56370 | 6.40107 | 0.2290119 | 2.3538278 | 53 | 1 | 74 days | 0.52 | M-v | 4 | MPC | | 2006 $QX_{26}$ |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QY_{26}$ | 16.1 | 0.15 | 20060922 | 10.42542 | 356.15073 | 341.40241 | 12.21944 | 0.1865824 | 3.0702527 | 34 | 1 | 60 days | 0.51 | M-v | 4 | MPC | | 2006 $QY_{26}$ |
| 2006 $QB_{27}$ | 18.1 | 0.15 | 20060902 | 346.33408 | 194.80353 | 170.91231 | 1.29980 | 0.2022625 | 2.4039401 | 30 | 1 | 31 days | 0.47 | | | MPC | | 2006 $QB_{27}$ |
| 2006 $QJ_{27}$ | 16.6 | 0.15 | 20060922 | 21.75923 | 304.57714 | 19.83386 | 6.56454 | 0.2805122 | 2.2455328 | 113 | 3 | 2002–2006 | 0.54 | M-v | 2 | MPC | 04023 | 2006 $QJ_{27}$ |
| 2006 $QN_{27}$ | 16.7 | 0.15 | 20060922 | 60.79770 | 322.85404 | 313.96043 | 5.51351 | 0.1531648 | 2.2798444 | 68 | 5 | 1999–2006 | 0.62 | M-v | 1 | MPC | 04023 | 2006 $QN_{27}$ |
| 2006 $QP_{27}$ | 18.9 | 0.15 | 20060902 | 345.21131 | 47.49676 | 324.75146 | 6.18474 | 0.2799870 | 2.2267133 | 36 | 1 | 36 days | 0.53 | | | MPC | | 2006 $QP_{27}$ |
| 2006 $QQ_{27}$ | 15.4 | 0.15 | 20060902 | 357.65836 | 21.69159 | 329.82148 | 9.23080 | 0.0786005 | 3.0623792 | 38 | 1 | 36 days | 0.72 | | | MPC | | 2006 $QQ_{27}$ |
| 2006 $QT_{27}$ | 16.2 | 0.15 | 20060902 | 2.23094 | 348.49161 | 348.16209 | 17.45455 | 0.1381485 | 2.8730886 | 22 | 1 | 37 days | 0.36 | | | MPC | | 2006 $QT_{27}$ |
| 2006 $QU_{27}$ | 17.1 | 0.15 | 20060902 | 6.74750 | 201.88105 | 129.26039 | 7.72476 | 0.1530630 | 2.2930796 | 31 | 1 | 43 days | 0.46 | | | MPC | | 2006 $QU_{27}$ |
| 2006 $QV_{27}$ | 16.9 | 0.15 | 20060922 | 51.33858 | 216.33032 | 57.36326 | 3.13427 | 0.2007636 | 2.3757809 | 45 | 8 | 1992–2006 | 0.46 | M-v | 0 | MPC | 04024 | 2006 $QV_{27}$ |
| 2006 $QX_{27}$ | 18.1 | 0.15 | 20060813 | 31.40283 | 250.07439 | 34.79921 | 2.77554 | 0.2110964 | 2.3926168 | 21 | 1 | 27 days | 0.18 | | | MPC | | 2006 $QX_{27}$ |
| 2006 $QB_{28}$ | 16.4 | 0.15 | 20060902 | 16.34866 | 317.56134 | 353.98534 | 13.55722 | 0.2567877 | 2.6454234 | 53 | 1 | 59 days | 0.54 | | | MPC | | 2006 $QB_{28}$ |
| 2006 $QD_{28}$ | 16.4 | 0.15 | 20060922 | 44.81421 | 267.58992 | 24.33427 | 5.20773 | 0.2252233 | 2.4116244 | 104 | 2 | 2005–2006 | 0.46 | M-v | 3 | MPC | 04024 | 2006 $QD_{28}$ |
| 2006 $QF_{28}$ | 16.9 | 0.15 | 20060922 | 14.76361 | 221.26708 | 116.44703 | 4.74601 | 0.2033382 | 2.6935801 | 43 | 2 | 2005–2006 | 0.47 | M-v | 3 | MPC | 04024 | 2006 $QF_{28}$ |
| 2006 $QL_{28}$ | 16.9 | 0.15 | 20060922 | 334.46067 | 227.98978 | 161.75614 | 2.66411 | 0.2192108 | 2.4070195 | 46 | 1 | 89 days | 0.48 | M-v | 4 | MPC | | 2006 $QL_{28}$ |
| 2006 $QM_{28}$ | 17.3 | 0.15 | 20060922 | 6.28494 | 74.36955 | 267.59540 | 1.36289 | 0.1684005 | 2.3091596 | 53 | 3 | 1999–2006 | 0.50 | M-v | 3 | MPC | 04024 | 2006 $QM_{28}$ |
| 2006 $QV_{28}$ | 16.3 | 0.15 | 20060902 | 331.82263 | 238.61067 | 143.14993 | 6.25967 | 0.1981221 | 2.6768629 | 35 | 1 | 52 days | 0.58 | | | MPC | | 2006 $QV_{28}$ |
| 2006 $QX_{28}$ | 17.9 | 0.15 | 20060902 | 11.86365 | 326.91580 | 348.71066 | 4.23620 | 0.3319905 | 2.7222263 | 35 | 1 | 59 days | 0.37 | | | MPC | | 2006 $QX_{28}$ |
| 2006 $QZ_{28}$ | 17.1 | 0.15 | 20060922 | 354.07140 | 5.90097 | 349.54714 | 6.90681 | 0.1411591 | 2.4087434 | 34 | 1 | 87 days | 0.38 | M-v | 4 | MPC | | 2006 $QZ_{28}$ |
| 2006 $QC_{29}$ | 18.1 | 0.15 | 20060902 | 355.29571 | 199.50369 | 146.65374 | 5.33383 | 0.1761749 | 2.3269037 | 20 | 1 | 24 days | 0.65 | | | MPC | | 2006 $QC_{29}$ |
| 2006 $QE_{29}$ | 17.0 | 0.15 | 20060922 | 41.24501 | 175.53477 | 113.85602 | 5.49294 | 0.1738094 | 2.2305087 | 52 | 6 | 1998–2006 | 0.63 | M-v | 1 | MPC | 04024 | 2006 $QE_{29}$ |
| 2006 $QF_{29}$ | 18.3 | 0.15 | 20060922 | 0.89505 | 333.94902 | 13.31180 | 2.39121 | 0.2423626 | 2.3517209 | 43 | 1 | 86 days | 0.38 | M-v | 4 | MPC | | 2006 $QF_{29}$ |
| 2006 $QL_{29}$ | 16.4 | 0.15 | 20060902 | 356.36337 | 266.93995 | 71.24648 | 3.54528 | 0.1989489 | 2.4370167 | 22 | 1 | 35 days | 0.38 | | | MPC | | 2006 $QL_{29}$ |
| 2006 $QM_{29}$ | 15.8 | 0.15 | 20060922 | 37.41326 | 203.76392 | 83.59654 | 4.53978 | 0.1539267 | 2.7174525 | 42 | 5 | 2001–2006 | 0.57 | M-v | 1 | MPC | 04025 | 2006 $QM_{29}$ |
| 2006 $QP_{29}$ | 15.3 | 0.15 | 20060922 | 332.12584 | 322.14965 | 47.77871 | 2.51692 | 0.1125638 | 2.9222316 | 61 | 5 | 1994–2006 | 0.50 | M-v | 1 | MPC | 04025 | 2006 $QP_{29}$ |
| 2006 $QR_{29}$ | 16.5 | 0.15 | 20060922 | 352.53251 | 345.35438 | 9.24855 | 3.88558 | 0.2167896 | 2.2821101 | 102 | 3 | 2003–2006 | 0.46 | M-v | 2 | MPC | 04025 | 2006 $QR_{29}$ |
| 2006 $QS_{29}$ | 15.9 | 0.15 | 20060922 | 19.29108 | 233.05013 | 79.37416 | 4.41882 | 0.1764263 | 2.7546594 | 23 | 2 | 2002–2006 | 0.35 | M-v | 4 | MPC | 04025 | 2006 $QS_{29}$ |
| 2006 $QU_{29}$ | 16.3 | 0.15 | 20060922 | 348.06372 | 24.23615 | 349.18663 | 13.79545 | 0.2564562 | 2.6427489 | 104 | 2 | 2002–2006 | 0.50 | M-v | 3 | MPC | 04025 | 2006 $QU_{29}$ |
| 2006 $QX_{29}$ | 16.9 | 0.15 | 20060922 | 326.15070 | 352.53065 | 35.46948 | 2.75532 | 0.2166521 | 2.4395892 | 35 | 3 | 2003–2006 | 0.36 | M-v | 3 | MPC | 04026 | 2006 $QX_{29}$ |
| 2006 $QY_{29}$ | 16.6 | 0.15 | 20060922 | 0.36764 | 350.87389 | 349.45493 | 2.77213 | 0.3465039 | 3.1060587 | 48 | 1 | 69 days | 0.36 | M-v | 4 | MPC | | 2006 $QY_{29}$ |
| 2006 $QZ_{29}$ | 16.3 | 0.15 | 20060813 | 13.33658 | 162.92619 | 141.94743 | 18.56028 | 0.2154853 | 2.6270170 | 26 | 1 | 58 days | 0.46 | | | MPC | | 2006 $QZ_{29}$ |
| 2006 $QA_{30}$ | 16.7 | 0.15 | 20060922 | 36.74971 | 185.74531 | 103.74527 | 3.52181 | 0.1910256 | 2.4072683 | 46 | 5 | 1998–2006 | 0.43 | M-v | 1 | MPC | 04026 | 2006 $QA_{30}$ |
| 2006 $QC_{30}$ | 14.6 | 0.15 | 20060922 | 348.88058 | 213.12269 | 168.08595 | 27.85415 | 0.1368531 | 3.1094343 | 48 | 1 | 65 days | 0.37 | M-v | 3 | MPC | | 2006 $QC_{30}$ |
| 2006 $QE_{30}$ | 17.2 | 0.15 | 20060922 | 331.96317 | 294.03486 | 79.90956 | 3.17021 | 0.2168626 | 2.2995980 | 33 | 4 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04026 | 2006 $QE_{30}$ |
| 2006 $QG_{30}$ | 16.2 | 0.15 | 20060922 | 12.51986 | 341.15851 | 335.01684 | 10.37460 | 0.2369356 | 2.4350752 | 64 | 1 | 93 days | 0.42 | M-v | 3 | MPC | | 2006 $QG_{30}$ |
| 2006 $QH_{30}$ | 17.1 | 0.15 | 20060922 | 27.60200 | 175.34314 | 121.42259 | 1.91761 | 0.1780935 | 2.4396510 | 49 | 6 | 1994–2006 | 0.35 | M-v | 1 | MPC | 04026 | 2006 $QH_{30}$ |
| 2006 $QJ_{30}$ | 16.9 | 0.15 | 20060922 | 325.09583 | 278.68198 | 109.59893 | 3.18010 | 0.1938903 | 2.4113076 | 28 | 3 | 1999–2006 | 0.54 | M-v | 3 | MPC | 04026 | 2006 $QJ_{30}$ |
| 2006 $QN_{30}$ | 17.7 | 0.15 | 20060922 | 341.24132 | 18.63735 | 356.65467 | 1.38463 | 0.2390309 | 2.2639184 | 50 | 1 | 92 days | 0.47 | M-v | 4 | MPC | | 2006 $QN_{30}$ |
| 2006 $QO_{30}$ | 15.7 | 0.15 | 20060922 | 17.66166 | 345.25136 | 333.54267 | 34.19085 | 0.0977417 | 2.5836909 | 69 | 2 | 2002–2006 | 0.51 | M-v | 3 | MPC | 04027 | 2006 $QO_{30}$ |
| 2006 $QR_{30}$ | 16.9 | 0.15 | 20060922 | 16.77222 | 223.88668 | 104.81559 | 2.44083 | 0.1997250 | 2.3617602 | 67 | 3 | 2001–2006 | 0.50 | M-v | 2 | MPC | 04027 | 2006 $QR_{30}$ |
| 2006 $QT_{30}$ | 15.9 | 0.15 | 20060922 | 351.32077 | 0.25727 | 1.23058 | 8.96130 | 0.2472650 | 2.7872398 | 71 | 1 | 89 days | 0.45 | M-v | 3 | MPC | | 2006 $QT_{30}$ |
| 2006 $QW_{30}$ | 17.2 | 0.15 | 20060902 | 8.73169 | 178.23811 | 153.04500 | 7.88224 | 0.3257223 | 2.5878444 | 63 | 1 | 47 days | 0.51 | | | MPC | | 2006 $QW_{30}$ |
| 2006 $QY_{30}$ | 17.4 | 0.15 | 20060902 | 340.55496 | 208.34249 | 150.07450 | 23.79591 | 0.0787376 | 1.9408159 | 30 | 1 | 44 days | 0.48 | | | MPC | | 2006 $QY_{30}$ |
| 2006 $QZ_{30}$ | 17.5 | 0.15 | 20060922 | 2.57441 | 337.30097 | 11.98289 | 15.47333 | 0.4110968 | 2.6995519 | 49 | 1 | 89 days | 0.46 | M-v | 4 | MPC | | 2006 $QZ_{30}$ |
| 2006 $QA_{31}$ | 19.9 | 0.15 | 20060922 | 315.59409 | 358.48285 | 95.91198 | 11.84932 | 0.4577075 | 1.1978820 | 29 | 1 | 29 days | 0.42 | M-v | 7 | MPC | 04399 | 2006 $QA_{31}$ |
| 2006 $QB_{31}$ | 21.0 | 0.15 | 20060922 | 70.34489 | 228.41304 | 341.08858 | 24.72094 | 0.6115585 | 1.1768320 | 58 | 1 | 33 days | 0.55 | M-v | 6 | MPC | 04399 | 2006 $QB_{31}$ |
| 2006 $QD_{31}$ | 15.1 | 0.15 | 20060922 | 350.77540 | 333.58930 | 16.26953 | 17.60925 | 0.2086771 | 3.1621205 | 43 | 3 | 2001–2006 | 0.43 | M-v | 2 | MPC | 04027 | 2006 $QD_{31}$ |
| 2006 $QJ_{31}$ | 16.0 | 0.15 | 20060922 | 329.17076 | 226.09214 | 152.63002 | 8.72171 | 0.2381537 | 2.8019594 | 69 | 3 | 1999–2006 | 0.45 | M-v | 3 | MPC | 04027 | 2006 $QJ_{31}$ |
| 2006 $QM_{31}$ | 19.5 | 0.15 | 20060902 | 338.08575 | 145.11548 | 228.53360 | 1.37793 | 0.2266394 | 2.2318773 | 31 | 1 | 36 days | 0.46 | | D | MPC | | 2006 $QM_{31}$ |
| 2006 $QN_{31}$ | 17.7 | 0.15 | 20060902 | 71.39304 | 298.43065 | 320.50076 | 7.04008 | 0.0736925 | 2.7268632 | 17 | 1 | 26 days | 0.43 | | | MPC | | 2006 $QN_{31}$ |
| 2006 $QP_{31}$ | 17.5 | 0.15 | 20060902 | 326.57021 | 269.03807 | 135.19908 | 10.25630 | 0.2789757 | 2.9232034 | 29 | 1 | 34 days | 0.74 | | | MPC | | 2006 $QP_{31}$ |
| 2006 $QQ_{31}$ | 17.0 | 0.15 | 20060902 | 326.85552 | 89.33551 | 291.04852 | 6.31984 | 0.1344070 | 2.3482040 | 19 | 1 | 33 days | 0.64 | | | MPC | | 2006 $QQ_{31}$ |
| 2006 $QS_{31}$ | 16.4 | 0.15 | 20060922 | 352.36657 | 123.17250 | 239.67621 | 2.01890 | 0.3515831 | 2.6948835 | 73 | 1 | 100 days | 0.49 | M-v | 4 | MPC | | 2006 $QS_{31}$ |
| 2006 $QU_{31}$ | 17.2 | 0.15 | 20060922 | 9.00483 | 157.51166 | 173.74754 | 6.53306 | 0.2714157 | 2.3628460 | 69 | 3 | 1977–2006 | 0.41 | M-v | 2 | MPC | 04027 | 2006 $QU_{31}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QW_{31}$ | 17.8 | 0.15 | 20060922 | 3.34068 | 49.30808 | 292.70828 | 3.33216 | 0.2451530 | 2.2253406 | 48 | 1 | 64 days | 0.57 | M-v | 4 | MPC | | 2006 $QW_{31}$ |
| 2006 $QX_{31}$ | 15.9 | 0.15 | 20060922 | 350.11112 | 65.84484 | 293.06738 | 5.36776 | 0.1670783 | 2.4162199 | 91 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04028 | 2006 $QX_{31}$ |
| 2006 $QY_{31}$ | 17.4 | 0.15 | 20060922 | 357.96645 | 69.59800 | 279.06011 | 3.35188 | 0.1824705 | 2.3452991 | 33 | 1 | 127 days | 0.51 | M-v | 4 | MPC | | 2006 $QY_{31}$ |
| 2006 $QA_{32}$ | 18.3 | 0.15 | 20060813 | 345.00989 | 180.38838 | 172.79061 | 4.90223 | 0.2625757 | 2.3240191 | 24 | 1 | 27 days | 0.60 | | | MPC | | 2006 $QA_{32}$ |
| 2006 $QB_{32}$ | 16.5 | 0.15 | 20060922 | 10.84451 | 162.78309 | 176.46241 | 18.63736 | 0.2611085 | 2.6182623 | 70 | 1 | 64 days | 0.52 | M-v | 4 | MPC | | 2006 $QB_{32}$ |
| 2006 $QE_{32}$ | 16.0 | 0.15 | 20060902 | 322.88053 | 85.95647 | 303.83145 | 6.23107 | 0.2350159 | 2.7936332 | 40 | 1 | 41 days | 0.54 | | | MPC | | 2006 $QE_{32}$ |
| 2006 $QH_{32}$ | 16.9 | 0.15 | 20060902 | 351.82199 | 38.41737 | 319.64174 | 11.25517 | 0.2424242 | 2.6354823 | 25 | 1 | 43 days | 0.57 | | | MPC | | 2006 $QH_{32}$ |
| 2006 $QJ_{32}$ | 15.5 | 0.15 | 20060922 | 339.49844 | 56.78624 | 329.84123 | 16.08762 | 0.2566951 | 3.0816346 | 77 | 3 | 2001–2006 | 0.55 | M-v | 2 | MPC | 04028 | 2006 $QJ_{32}$ |
| 2006 $QL_{32}$ | 16.5 | 0.15 | 20060922 | 3.89184 | 26.61789 | 321.47735 | 5.98145 | 0.1395744 | 2.3866813 | 75 | 2 | 2003–2006 | 0.53 | M-v | 3 | MPC | 04028 | 2006 $QL_{32}$ |
| 2006 $QM_{32}$ | 17.6 | 0.15 | 20060813 | 11.04301 | 28.54890 | 279.53771 | 4.95895 | 0.2168148 | 2.2266998 | 20 | 1 | 52 days | 0.49 | | | MPC | | 2006 $QM_{32}$ |
| 2006 $QN_{32}$ | 14.9 | 0.15 | 20060922 | 338.75284 | 64.74439 | 316.48454 | 10.73851 | 0.3136070 | 3.9876856 | 69 | 4 | 1998–2006 | 0.47 | M-v | 0 | MPC | 04028 | 2006 $QN_{32}$ |
| 2006 $QQ_{32}$ | 14.6 | 0.15 | 20060922 | 4.53601 | 57.04831 | 293.68872 | 4.83287 | 0.2873282 | 3.9387773 | 95 | 1 | 95 days | 0.43 | M-v | 3 | MPC | | 2006 $QQ_{32}$ |
| 2006 $QS_{32}$ | 16.1 | 0.15 | 20060902 | 337.63582 | 54.60321 | 318.02478 | 13.39437 | 0.1734045 | 2.7398411 | 26 | 1 | 33 days | 0.48 | | | MPC | | 2006 $QS_{32}$ |
| 2006 $QT_{32}$ | 17.3 | 0.15 | 20060902 | 345.95867 | 124.44321 | 239.58143 | 3.40588 | 0.2512238 | 2.3899681 | 49 | 1 | 38 days | 0.56 | | | MPC | | 2006 $QT_{32}$ |
| 2006 $QU_{32}$ | 16.0 | 0.15 | 20060922 | 10.58021 | 163.93716 | 167.97187 | 13.84732 | 0.1915598 | 2.8536998 | 49 | 1 | 97 days | 0.57 | M-v | 3 | MPC | | 2006 $QU_{32}$ |
| 2006 $QV_{32}$ | 17.2 | 0.15 | 20060902 | 27.63659 | 127.83729 | 167.51964 | 11.24189 | 0.2586894 | 2.4367587 | 38 | 1 | 39 days | 0.53 | | | MPC | | 2006 $QV_{32}$ |
| 2006 $QW_{32}$ | 15.9 | 0.15 | 20060813 | 5.40592 | 3.43481 | 324.48405 | 14.41335 | 0.2372670 | 3.2110828 | 45 | 1 | 59 days | 0.47 | | | MPC | | 2006 $QW_{32}$ |
| 2006 $QX_{32}$ | 15.8 | 0.15 | 20060922 | 45.09868 | 326.87681 | 318.20162 | 13.05576 | 0.1789748 | 2.7561145 | 65 | 4 | 2002–2006 | 0.51 | M-v | 1 | MPC | 04028 | 2006 $QX_{32}$ |
| 2006 $QC_{33}$ | 16.2 | 0.15 | 20060922 | 23.63286 | 330.48312 | 341.75047 | 6.92379 | 0.1167660 | 2.3513009 | 56 | 2 | 1999–2006 | 0.52 | M-v | 4 | MPC | 04029 | 2006 $QC_{33}$ |
| 2006 $QE_{33}$ | 16.7 | 0.15 | 20060902 | 15.14377 | 91.32976 | 206.37767 | 21.81888 | 0.3866107 | 2.6702608 | 17 | 1 | 23 days | 0.36 | | | MPC | | 2006 $QE_{33}$ |
| 2006 $QF_{33}$ | 16.3 | 0.15 | 20060922 | 15.56194 | 51.11067 | 283.46318 | 18.97128 | 0.0635507 | 1.9302441 | 62 | 3 | 2001–2006 | 0.45 | M-v | 2 | MPC | 04029 | 2006 $QF_{33}$ |
| 2006 $QG_{33}$ | 16.2 | 0.15 | 20060922 | 333.80752 | 245.40599 | 139.82637 | 13.08034 | 0.1428769 | 3.0930898 | 34 | 2 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04029 | 2006 $QG_{33}$ |
| 2006 $QJ_{33}$ | 16.9 | 0.15 | 20060902 | 25.94120 | 99.15690 | 200.09143 | 12.14919 | 0.2655796 | 2.6454223 | 28 | 1 | 56 days | 0.47 | | | MPC | | 2006 $QJ_{33}$ |
| 2006 $QL_{33}$ | 18.5 | 0.15 | 20060922 | 359.59314 | 164.92501 | 200.09951 | 6.95554 | 0.4461116 | 2.4181108 | 155 | 1 | 90 days | 0.48 | M-v | 4 | MPC | | 2006 $QL_{33}$ |
| 2006 $QM_{33}$ | 20.7 | 0.15 | 20060922 | 13.61342 | 174.06054 | 154.91539 | 40.29147 | 0.3102428 | 1.8018218 | 35 | 1 | 17 days | 0.58 | M-v | 7 | MPC | 04400 | 2006 $QM_{33}$ |
| 2006 $QN_{33}$ | 15.8 | 0.15 | 20060922 | 342.40909 | 219.00377 | 153.25921 | 11.23016 | 0.1146584 | 2.8932518 | 19 | 2 | 2001–2006 | 0.54 | M-v | 5 | MPC | 04029 | 2006 $QN_{33}$ |
| 2006 $QO_{33}$ | 17.0 | 0.15 | 20060902 | 3.84202 | 238.17173 | 100.39164 | 5.11542 | 0.1646678 | 2.3734282 | 35 | 1 | 47 days | 0.53 | | | MPC | | 2006 $QO_{33}$ |
| 2006 $QT_{33}$ | 15.8 | 0.15 | 20060902 | 347.45968 | 64.25930 | 320.54937 | 7.64064 | 0.1603750 | 3.0615759 | 16 | 1 | 49 days | 0.40 | | | MPC | | 2006 $QT_{33}$ |
| 2006 $QV_{33}$ | 15.6 | 0.15 | 20060922 | 312.95998 | 102.71718 | 336.58079 | 8.47648 | 0.2167352 | 2.7428593 | 27 | 1 | 59 days | 0.79 | | | MPC | | 2006 $QV_{33}$ |
| 2006 $QX_{33}$ | 16.1 | 0.15 | 20060902 | 348.29734 | 30.10317 | 323.33493 | 12.87898 | 0.1113816 | 2.8044793 | 30 | 1 | 39 days | 0.55 | | | MPC | | 2006 $QX_{33}$ |
| 2006 $QY_{33}$ | 17.0 | 0.15 | 20060902 | 339.35419 | 58.18602 | 317.92652 | 8.00020 | 0.2837354 | 2.7755158 | 27 | 1 | 45 days | 0.51 | | | MPC | | 2006 $QY_{33}$ |
| 2006 $QD_{34}$ | 16.2 | 0.15 | 20060922 | 357.74529 | 86.23309 | 253.35011 | 7.84432 | 0.1614517 | 2.7655850 | 31 | 2 | 2002–2006 | 0.50 | M-v | 4 | MPC | 04029 | 2006 $QD_{34}$ |
| 2006 $QE_{34}$ | 17.0 | 0.15 | 20060922 | 334.67850 | 221.57890 | 158.11442 | 2.84369 | 0.2185497 | 2.3309420 | 87 | 4 | 1996–2006 | 0.49 | M-v | 1 | MPC | 04029 | 2006 $QE_{34}$ |
| 2006 $QF_{34}$ | 16.8 | 0.15 | 20060922 | 2.87944 | 144.30120 | 187.88905 | 4.04721 | 0.2199669 | 2.6620889 | 34 | 1 | 93 days | 0.45 | M-v | 4 | MPC | | 2006 $QF_{34}$ |
| 2006 $QG_{34}$ | 16.9 | 0.15 | 20060922 | 13.07133 | 5.15987 | 324.88102 | 4.31700 | 0.1686457 | 2.7024734 | 29 | 4 | 2002–2006 | 0.42 | M-v | 1 | MPC | 04030 | 2006 $QG_{34}$ |
| 2006 $QH_{34}$ | 16.3 | 0.15 | 20060902 | 84.82632 | 63.99683 | 169.47659 | 5.24907 | 0.2157269 | 3.0062346 | 13 | 1 | 37 days | 0.24 | | | MPC | | 2006 $QH_{34}$ |
| 2006 $QJ_{34}$ | 18.9 | 0.15 | 20060922 | 15.00868 | 39.05529 | 291.03614 | 0.64879 | 0.1301883 | 2.1686399 | 25 | 2 | 2003–2006 | 0.20 | M-v | 3 | MPC | 04030 | 2006 $QJ_{34}$ |
| 2006 $QN_{34}$ | 17.0 | 0.15 | 20060922 | 34.79768 | 120.93088 | 177.54788 | 4.15073 | 0.1984912 | 2.4055702 | 41 | 2 | 2005–2006 | 0.48 | M-v | 4 | MPC | 04030 | 2006 $QN_{34}$ |
| 2006 $QR_{34}$ | 19.6 | 0.15 | 20060813 | 260.24134 | 29.74478 | 90.33519 | 13.58319 | 0.1118167 | 2.4416776 | 10 | 1 | 5 days | 0.04 | | | MPC | | 2006 $QR_{34}$ |
| 2006 $QU_{34}$ | 16.0 | 0.15 | 20060922 | 39.20769 | 125.46915 | 145.92005 | 12.02250 | 0.2586249 | 2.3801809 | 69 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04030 | 2006 $QU_{34}$ |
| 2006 $QV_{34}$ | 16.9 | 0.15 | 20060922 | 15.32112 | 251.75216 | 58.16067 | 2.95763 | 0.1735541 | 2.4083882 | 31 | 4 | 1999–2006 | 0.40 | M-v | 1 | MPC | 04030 | 2006 $QV_{34}$ |
| 2006 $QW_{34}$ | 17.1 | 0.15 | 20060922 | 0.85547 | 326.35365 | 10.70708 | 2.47187 | 0.2501926 | 2.2977734 | 51 | 5 | 1999–2006 | 0.39 | M-v | 1 | MPC | 04030 | 2006 $QW_{34}$ |
| 2006 $QA_{35}$ | 19.1 | 0.15 | 20060922 | 359.59394 | 357.94628 | 349.35391 | 5.45272 | 0.3493416 | 2.4108384 | 23 | 1 | 65 days | 0.20 | M-v | 4 | MPC | | 2006 $QA_{35}$ |
| 2006 $QF_{35}$ | 18.5 | 0.15 | 20060922 | 4.61792 | 255.34623 | 83.74105 | 5.02550 | 0.2587457 | 2.3076975 | 24 | 1 | 86 days | 0.47 | M-v | 4 | MPC | | 2006 $QF_{35}$ |
| 2006 $QJ_{35}$ | 16.2 | 0.15 | 20060922 | 337.45372 | 255.11757 | 119.13128 | 5.00436 | 0.1596512 | 2.3068887 | 55 | 2 | 1999–2006 | 0.60 | M-v | 5 | MPC | 04031 | 2006 $QJ_{35}$ |
| 2006 $QM_{35}$ | 17.2 | 0.15 | 20060922 | 342.03838 | 110.53795 | 260.96436 | 1.64263 | 0.1938488 | 2.4052351 | 34 | 1 | 94 days | 0.45 | M-v | 4 | MPC | | 2006 $QM_{35}$ |
| 2006 $QN_{35}$ | 17.2 | 0.15 | 20060922 | 349.63425 | 100.99089 | 261.88273 | 1.24682 | 0.2214432 | 2.4243744 | 39 | 1 | 66 days | 0.48 | M-v | 5 | MPC | | 2006 $QN_{35}$ |
| 2006 $QP_{35}$ | 18.2 | 0.15 | 20060922 | 14.43804 | 324.37095 | 359.25992 | 5.67550 | 0.2186175 | 2.3604620 | 27 | 1 | 71 days | 0.31 | M-v | 4 | MPC | | 2006 $QP_{35}$ |
| 2006 $QS_{35}$ | 17.4 | 0.15 | 20060902 | 4.49670 | 272.17525 | 58.11483 | 7.18325 | 0.3093718 | 2.6723730 | 20 | 1 | 35 days | 0.33 | | | MPC | | 2006 $QS_{35}$ |
| 2006 $QV_{35}$ | 17.1 | 0.15 | 20060902 | 19.96154 | 324.29119 | 345.97292 | 18.63571 | 0.2545558 | 2.5983111 | 46 | 1 | 46 days | 0.47 | | | MPC | | 2006 $QV_{35}$ |
| 2006 $QY_{35}$ | 17.2 | 0.15 | 20060922 | 18.38393 | 212.37541 | 116.77794 | 5.52789 | 0.2031331 | 2.2674468 | 37 | 1 | 68 days | 0.44 | M-v | 4 | MPC | | 2006 $QY_{35}$ |
| 2006 $QA_{36}$ | 15.7 | 0.15 | 20060902 | 11.52052 | 27.44183 | 293.49017 | 6.64863 | 0.2163941 | 2.8010204 | 42 | 1 | 53 days | 0.34 | | | MPC | | 2006 $QA_{36}$ |
| 2006 $QL_{36}$ | 17.3 | 0.15 | 20060922 | 32.38874 | 212.04281 | 78.89322 | 3.63348 | 0.1634729 | 2.2712934 | 27 | 4 | 2002–2006 | 0.39 | M-v | 1 | MPC | 04031 | 2006 $QL_{36}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QV_{36}$ | 16.8 | 0.15 | 20060922 | 41.13718 | 237.75643 | 40.24450 | 2.82395 | 0.1921516 | 2.3955572 | 40 | 7 | 1995–2006 | 0.51 | M-v | 1 | MPC | 04031 | 2006 $QV_{36}$ |
| 2006 $QD_{37}$ | 16.2 | 0.15 | 20060813 | 6.95679 | 331.96838 | 336.88394 | 15.33916 | 0.2892914 | 3.0884363 | 25 | 1 | 29 days | 0.58 | | | MPC | | 2006 $QD_{37}$ |
| 2006 $QE_{37}$ | 15.3 | 0.15 | 20060922 | 325.52723 | 47.44732 | 358.22772 | 15.87238 | 0.2246003 | 3.1725756 | 85 | 3 | 2001–2006 | 0.48 | M-v | 2 | MPC | 04032 | 2006 $QE_{37}$ |
| 2006 $QW_{37}$ | 17.3 | 0.15 | 20060813 | 9.00378 | 321.45193 | 345.85257 | 13.04011 | 0.3210769 | 2.6413897 | 32 | 1 | 57 days | 0.53 | | | MPC | | 2006 $QW_{37}$ |
| 2006 $QZ_{37}$ | 18.8 | 0.15 | 20060922 | 353.75854 | 10.17530 | 353.63638 | 12.71024 | 0.4618668 | 3.2477229 | 17 | 1 | 64 days | 0.40 | M-v | 4 | MPC | | 2006 $QZ_{37}$ |
| 2006 $QB_{38}$ | 16.5 | 0.15 | 20060922 | 357.00821 | 241.90563 | 104.99891 | 7.80102 | 0.1393476 | 2.3944943 | 33 | 6 | 1997–2006 | 0.50 | M-v | 1 | MPC | 04032 | 2006 $QB_{38}$ |
| 2006 $QE_{38}$ | 16.8 | 0.15 | 20060922 | 0.38953 | 322.78433 | 20.98058 | 7.88525 | 0.2663190 | 2.6745995 | 19 | 1 | 102 days | 0.51 | M-v | 4 | MPC | | 2006 $QE_{38}$ |
| 2006 $QG_{38}$ | 17.4 | 0.15 | 20060922 | 24.57296 | 23.50884 | 289.22696 | 4.22589 | 0.1931849 | 2.2383453 | 55 | 2 | 2003–2006 | 0.62 | M-v | 5 | MPC | 04032 | 2006 $QG_{38}$ |
| 2006 $QH_{38}$ | 15.9 | 0.15 | 20060922 | 10.83401 | 330.03803 | 3.36319 | 13.90778 | 0.2609169 | 2.6614503 | 98 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04032 | 2006 $QH_{38}$ |
| 2006 $QJ_{38}$ | 16.2 | 0.15 | 20060922 | 347.50131 | 184.32929 | 172.50321 | 13.44204 | 0.1590699 | 2.7611291 | 46 | 1 | 92 days | 0.52 | M-v | 4 | MPC | | 2006 $QJ_{38}$ |
| 2006 $QK_{38}$ | 15.8 | 0.15 | 20060922 | 35.98687 | 110.95636 | 175.38183 | 10.29133 | 0.2013863 | 3.1333742 | 68 | 3 | 2001–2006 | 0.45 | M-v | 1 | MPC | 04033 | 2006 $QK_{38}$ |
| 2006 $QL_{38}$ | 16.8 | 0.15 | 20060922 | 53.06946 | 9.01373 | 264.83406 | 4.14563 | 0.1601041 | 2.1967905 | 65 | 4 | 2002–2006 | 0.49 | M-v | 1 | MPC | 04033 | 2006 $QL_{38}$ |
| 2006 $QN_{38}$ | 15.8 | 0.15 | 20060902 | 34.42098 | 334.91787 | 313.62182 | 12.40553 | 0.1860900 | 2.7473495 | 51 | 1 | 41 days | 0.58 | | | MPC | | 2006 $QN_{38}$ |
| 2006 $QQ_{38}$ | 16.2 | 0.15 | 20060922 | 34.96335 | 334.58353 | 323.11268 | 23.43521 | 0.1360353 | 2.3641055 | 36 | 2 | 2005–2006 | 0.59 | M-v | 4 | MPC | 04033 | 2006 $QQ_{38}$ |
| 2006 $QS_{38}$ | 17.8 | 0.15 | 20060922 | 14.98047 | 332.05584 | 351.52177 | 4.26725 | 0.1791125 | 2.1886768 | 58 | 3 | 2002–2006 | 0.50 | M-v | 2 | MPC | 04033 | 2006 $QS_{38}$ |
| 2006 $QU_{38}$ | 16.6 | 0.15 | 20060922 | 35.53856 | 167.93046 | 124.66397 | 5.19974 | 0.2045464 | 2.3654461 | 54 | 3 | 2002–2006 | 0.41 | M-v | 3 | MPC | 04033 | 2006 $QU_{38}$ |
| 2006 $QV_{38}$ | 17.3 | 0.15 | 20060922 | 340.04026 | 235.54564 | 136.31768 | 7.17760 | 0.1393437 | 2.3574810 | 22 | 1 | 86 days | 0.52 | M-v | 4 | MPC | | 2006 $QV_{38}$ |
| 2006 $QW_{38}$ | 16.5 | 0.15 | 20060902 | 337.93743 | 224.58686 | 141.27357 | 13.23406 | 0.0957848 | 2.6377282 | 30 | 1 | 41 days | 0.55 | | | MPC | | 2006 $QW_{38}$ |
| 2006 $QX_{38}$ | 17.2 | 0.15 | 20060922 | 33.21304 | 2.15135 | 294.34542 | 6.10067 | 0.1568708 | 2.1997165 | 48 | 2 | 2003–2006 | 0.63 | M-v | 4 | MPC | 04033 | 2006 $QX_{38}$ |
| 2006 $QZ_{38}$ | 16.1 | 0.15 | 20060922 | 15.95944 | 182.23562 | 150.57058 | 9.30192 | 0.2789117 | 2.6813735 | 74 | 3 | 2002–2006 | 0.46 | M-v | 2 | MPC | 04034 | 2006 $QZ_{38}$ |
| 2006 $QA_{39}$ | 17.2 | 0.15 | 20060813 | 14.96480 | 73.00341 | 226.32061 | 5.92188 | 0.2120374 | 2.5975526 | 27 | 1 | 59 days | 0.53 | | | MPC | | 2006 $QA_{39}$ |
| 2006 $QC_{39}$ | 16.6 | 0.15 | 20060813 | 329.88466 | 211.32815 | 162.56499 | 14.74347 | 0.2354916 | 2.6728572 | 25 | 1 | 27 days | 0.63 | | | MPC | | 2006 $QC_{39}$ |
| 2006 $QL_{39}$ | 13.7 | 0.15 | 20060922 | 347.30712 | 254.10753 | 172.49775 | 13.33959 | 0.5999613 | 5.1284427 | 275 | 1 | 126 days | 0.31 | M-v | 2 | MPC | 04401 | 2006 $QL_{39}$ |
| 2006 $QO_{39}$ | 17.2 | 0.15 | 20060922 | 11.20427 | 331.48321 | 11.14717 | 13.69065 | 0.3905900 | 2.6429811 | 62 | 1 | 66 days | 0.45 | M-v | 3 | MPC | | 2006 $QO_{39}$ |
| 2006 $QP_{39}$ | 16.6 | 0.15 | 20060922 | 7.04747 | 162.42274 | 192.42367 | 5.55004 | 0.3193832 | 2.4031190 | 144 | 4 | 1998–2006 | 0.48 | M-v | 1 | MPC | 04034 | 2006 $QP_{39}$ |
| 2006 $QY_{39}$ | 17.1 | 0.15 | 20060922 | 8.34835 | 32.45433 | 314.09007 | 10.59231 | 0.2993855 | 2.4390876 | 52 | 2 | 2002–2006 | 0.61 | M-v | 3 | MPC | 04034 | 2006 $QY_{39}$ |
| 2006 $QA_{40}$ | 15.7 | 0.15 | 20060922 | 29.68626 | 175.11890 | 126.24787 | 17.43822 | 0.1604976 | 2.6541665 | 36 | 4 | 2001–2006 | 0.51 | M-v | 1 | MPC | 04034 | 2006 $QA_{40}$ |
| 2006 $QB_{40}$ | 17.6 | 0.15 | 20060902 | 353.53580 | 264.50054 | 88.92959 | 7.08337 | 0.3712704 | 2.6606612 | 16 | 1 | 56 days | 0.48 | | | MPC | | 2006 $QB_{40}$ |
| 2006 $QG_{40}$ | 16.8 | 0.15 | 20060902 | 5.00376 | 128.56596 | 198.64759 | 13.80062 | 0.2598667 | 2.7077829 | 17 | 1 | 17 days | 0.64 | | | MPC | | 2006 $QG_{40}$ |
| 2006 $QH_{40}$ | 19.7 | 0.15 | 20060922 | 351.92838 | 214.71541 | 164.66660 | 4.26106 | 0.4568613 | 2.4542130 | 51 | 1 | 64 days | 0.48 | M-v | 4 | MPC | | 2006 $QH_{40}$ |
| 2006 $QK_{40}$ | 24.0 | 0.15 | 20060922 | 22.29860 | 143.34403 | 133.73543 | 2.61994 | 0.5720595 | 2.1201953 | 27 | 1 | 25 days | 0.54 | M-v | 7 | MPC | 04401 | 2006 $QK_{40}$ |
| 2006 $QL_{40}$ | 16.9 | 0.15 | 20060902 | 22.50318 | 14.40558 | 307.02577 | 6.60338 | 0.1383065 | 2.2957819 | 17 | 1 | 23 days | 0.62 | | | MPC | | 2006 $QL_{40}$ |
| 2006 $QM_{40}$ | 17.6 | 0.15 | 20060902 | 327.07319 | 57.79010 | 324.29396 | 9.12768 | 0.1439190 | 2.9017454 | 24 | 1 | 34 days | 0.34 | | | MPC | | 2006 $QM_{40}$ |
| 2006 $QN_{40}$ | 15.7 | 0.15 | 20060902 | 338.62871 | 196.19195 | 168.60446 | 28.25644 | 0.1627104 | 3.2167556 | 24 | 1 | 58 days | 0.37 | | | MPC | | 2006 $QN_{40}$ |
| 2006 $QP_{40}$ | 18.6 | 0.15 | 20060902 | 359.47255 | 111.03577 | 222.46619 | 2.69956 | 0.2162705 | 2.3054911 | 20 | 1 | 43 days | 0.37 | | | MPC | | 2006 $QP_{40}$ |
| 2006 $QR_{40}$ | 16.8 | 0.15 | 20060922 | 356.99704 | 301.06241 | 41.14042 | 7.26195 | 0.1362106 | 2.3510815 | 18 | 1 | 61 days | 0.41 | M-v | 4 | MPC | | 2006 $QR_{40}$ |
| 2006 $QY_{40}$ | 17.7 | 0.15 | 20060813 | 93.00409 | 250.83193 | 333.20176 | 17.69569 | 0.0684159 | 1.9365543 | 29 | 1 | 29 days | 0.51 | | | MPC | | 2006 $QY_{40}$ |
| 2006 $QH_{41}$ | 15.5 | 0.15 | 20060922 | 3.25370 | 209.79189 | 124.04429 | 9.09664 | 0.1592619 | 3.1601943 | 47 | 5 | 1999–2006 | 0.37 | M-v | 0 | MPC | 04034 | 2006 $QH_{41}$ |
| 2006 $QK_{41}$ | 15.8 | 0.15 | 20060922 | 13.17266 | 9.88148 | 309.34653 | 17.68249 | 0.2805323 | 3.0862943 | 36 | 1 | 123 days | 0.39 | M-v | 3 | MPC | 04402 | 2006 $QK_{41}$ |
| 2006 $QM_{41}$ | 17.4 | 0.15 | 20060922 | 12.43701 | 102.39842 | 223.13157 | 6.22840 | 0.1960914 | 2.4627008 | 23 | 2 | 2002–2006 | 0.39 | M-v | 4 | MPC | 04035 | 2006 $QM_{41}$ |
| 2006 $QQ_{41}$ | 16.4 | 0.15 | 20060922 | 0.50940 | 136.81506 | 209.28531 | 6.37881 | 0.3090255 | 2.7453800 | 44 | 1 | 91 days | 0.33 | M-v | 3 | MPC | | 2006 $QQ_{41}$ |
| 2006 $QC_{42}$ | 15.7 | 0.15 | 20060922 | 5.43481 | 213.81625 | 120.03546 | 3.11522 | 0.0865699 | 2.9396487 | 30 | 4 | 1996–2006 | 0.40 | M-v | 1 | MPC | 04035 | 2006 $QC_{42}$ |
| 2006 $QG_{42}$ | 17.8 | 0.15 | 20060902 | 13.58906 | 332.41889 | 339.63815 | 11.93213 | 0.2772868 | 2.3852193 | 39 | 1 | 41 days | 0.51 | | | MPC | | 2006 $QG_{42}$ |
| 2006 $QH_{42}$ | 15.2 | 0.15 | 20060922 | 343.21868 | 247.35470 | 118.24565 | 5.98171 | 0.1990894 | 3.4408472 | 52 | 6 | 1998–2006 | 0.45 | M-v | 0 | MPC | 04035 | 2006 $QH_{42}$ |
| 2006 $QK_{42}$ | 17.0 | 0.15 | 20060922 | 350.61819 | 259.55424 | 101.73770 | 3.06090 | 0.2358341 | 2.4199077 | 57 | 4 | 1996–2006 | 0.43 | M-v | 1 | MPC | 04035 | 2006 $QK_{42}$ |
| 2006 $QL_{42}$ | 17.6 | 0.15 | 20060922 | 355.99829 | 285.88966 | 64.98763 | 2.81312 | 0.1844196 | 2.4259835 | 17 | 1 | 86 days | 0.50 | M-v | 5 | MPC | | 2006 $QL_{42}$ |
| 2006 $QO_{42}$ | 17.6 | 0.15 | 20060902 | 335.58303 | 286.74439 | 88.12698 | 3.56285 | 0.2097527 | 2.4183329 | 13 | 1 | 34 days | 0.56 | | | MPC | | 2006 $QO_{42}$ |
| 2006 $QQ_{42}$ | 16.1 | 0.15 | 20060922 | 329.74516 | 306.33856 | 78.36823 | 3.38804 | 0.1134599 | 2.8936061 | 21 | 1 | 102 days | 0.42 | M-v | 5 | MPC | | 2006 $QQ_{42}$ |
| 2006 $QR_{42}$ | 17.2 | 0.15 | 20060813 | 357.83746 | 260.45152 | 76.39183 | 2.85627 | 0.2235061 | 2.5345624 | 23 | 1 | 31 days | 0.50 | | | MPC | | 2006 $QR_{42}$ |
| 2006 $QU_{42}$ | 16.8 | 0.15 | 20060922 | 9.14750 | 249.21256 | 90.18759 | 1.88571 | 0.0971744 | 2.3246766 | 46 | 4 | 1999–2006 | 0.54 | M-v | 2 | MPC | 04035 | 2006 $QU_{42}$ |
| 2006 $QV_{42}$ | 16.5 | 0.15 | 20060922 | 346.94474 | 230.32009 | 137.77213 | 7.53970 | 0.1309961 | 2.3085396 | 42 | 3 | 1999–2006 | 0.52 | M-v | 3 | MPC | 04035 | 2006 $QV_{42}$ |
| 2006 $QW_{42}$ | 17.9 | 0.15 | 20060922 | 26.40429 | 185.10281 | 127.78511 | 7.02264 | 0.2135438 | 2.2097935 | 35 | 1 | 67 days | 0.55 | M-v | 4 | MPC | | 2006 $QW_{42}$ |
| 2006 $QY_{42}$ | 16.9 | 0.15 | 20060922 | 340.27087 | 43.14603 | 349.06710 | 4.71141 | 0.2286056 | 2.3692639 | 65 | 1 | 67 days | 0.48 | M-v | 4 | MPC | | 2006 $QY_{42}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QA_{43}$ | 17.4 | 0.15 | 20060922 | 344.83040 | 227.80747 | 163.55734 | 9.97578 | 0.2475517 | 2.3700589 | 52 | 1 | 98 days | 0.53 | M-v | 3 | MPC | | 2006 $QA_{43}$ |
| 2006 $QE_{43}$ | 17.8 | 0.15 | 20060922 | 350.35460 | 215.85667 | 153.36427 | 5.47038 | 0.2474402 | 2.4285069 | 28 | 1 | 67 days | 0.53 | M-v | 4 | MPC | | 2006 $QE_{43}$ |
| 2006 $QF_{43}$ | 17.5 | 0.15 | 20060922 | 328.27232 | 246.90752 | 147.22570 | 6.21731 | 0.1611824 | 2.2592129 | 37 | 3 | 2001–2006 | 0.47 | M-v | 4 | MPC | 04036 | 2006 $QF_{43}$ |
| 2006 $QG_{43}$ | 18.1 | 0.15 | 20060922 | 10.31761 | 352.25733 | 343.04069 | 6.21867 | 0.2657504 | 2.1586004 | 63 | 3 | 2003–2006 | 0.39 | M-v | 2 | MPC | 04036 | 2006 $QG_{43}$ |
| 2006 $QH_{43}$ | 18.0 | 0.15 | 20060922 | 357.60587 | 11.51115 | 345.81688 | 3.10391 | 0.3005938 | 2.6571044 | 44 | 1 | 88 days | 0.47 | M-v | 3 | MPC | | 2006 $QH_{43}$ |
| 2006 $QJ_{43}$ | 15.6 | 0.15 | 20060922 | 17.87702 | 164.80072 | 170.43048 | 13.26112 | 0.2445929 | 2.6605365 | 135 | 5 | 2000–2006 | 0.42 | M-v | 1 | MPC | 04036 | 2006 $QJ_{43}$ |
| 2006 $QN_{43}$ | 17.2 | 0.15 | 20060922 | 32.23851 | 166.41088 | 141.80806 | 5.77390 | 0.2367745 | 2.4071643 | 42 | 1 | 64 days | 0.58 | M-v | 4 | MPC | | 2006 $QN_{43}$ |
| 2006 $QR_{43}$ | 16.3 | 0.15 | 20060922 | 346.45498 | 22.88919 | 354.48518 | 11.22911 | 0.1922457 | 2.6622010 | 82 | 3 | 1993–2006 | 0.42 | M-v | 1 | MPC | 04036 | 2006 $QR_{43}$ |
| 2006 $QT_{43}$ | 15.9 | 0.15 | 20060922 | 298.50996 | 74.56567 | 358.42728 | 14.45062 | 0.1348576 | 2.8550356 | 23 | 1 | 88 days | 0.40 | M-v | 4 | MPC | | 2006 $QT_{43}$ |
| 2006 $QX_{43}$ | 16.7 | 0.15 | 20060922 | 314.87328 | 108.42450 | 284.97551 | 4.23324 | 0.1371320 | 3.0577579 | 36 | 3 | 2001–2006 | 0.37 | M-v | 3 | MPC | 04036 | 2006 $QX_{43}$ |
| 2006 $QZ_{43}$ | 15.5 | 0.15 | 20060922 | 34.01047 | 299.29414 | 327.84627 | 25.94882 | 0.2450830 | 3.2037487 | 14 | 1 | 82 days | 0.36 | M-v | 4 | MPC | | 2006 $QZ_{43}$ |
| 2006 $QA_{44}$ | 18.8 | 0.15 | 20060902 | 2.86988 | 140.83937 | 189.15433 | 1.73432 | 0.2403507 | 2.3510329 | 14 | 1 | 58 days | 0.36 | | | MPC | | 2006 $QA_{44}$ |
| 2006 $QJ_{44}$ | 17.3 | 0.15 | 20060902 | 41.46445 | 336.79307 | 296.78111 | 4.77358 | 0.1999429 | 2.1871151 | 25 | 1 | 31 days | 0.46 | | | MPC | | 2006 $QJ_{44}$ |
| 2006 $QO_{44}$ | 16.8 | 0.15 | 20060922 | 328.24071 | 208.07525 | 167.80487 | 6.13457 | 0.0925828 | 2.3803539 | 19 | 1 | 89 days | 0.40 | M-v | 5 | MPC | | 2006 $QO_{44}$ |
| 2006 $QP_{44}$ | 16.0 | 0.15 | 20060922 | 42.94562 | 131.18075 | 155.09211 | 4.68862 | 0.0748445 | 2.7879147 | 22 | 1 | 64 days | 0.57 | M-v | 5 | MPC | | 2006 $QP_{44}$ |
| 2006 $QT_{44}$ | 17.2 | 0.15 | 20060902 | 10.60661 | 344.52564 | 332.70418 | 9.31007 | 0.1822875 | 2.3917657 | 26 | 1 | 39 days | 0.46 | | | MPC | | 2006 $QT_{44}$ |
| 2006 $QV_{44}$ | 16.7 | 0.15 | 20060813 | 4.21156 | 253.82708 | 60.35731 | 7.29498 | 0.1873530 | 2.4295118 | 7 | 1 | 25 days | 0.38 | | | MPC | | 2006 $QV_{44}$ |
| 2006 $QZ_{44}$ | 17.9 | 0.15 | 20060922 | 339.67579 | 36.79131 | 343.62399 | 1.07388 | 0.2451460 | 2.2663370 | 41 | 1 | 94 days | 0.43 | M-v | 4 | MPC | | 2006 $QZ_{44}$ |
| 2006 $QC_{45}$ | 16.2 | 0.15 | 20060902 | 174.62048 | 359.67615 | 156.93660 | 12.28671 | 0.0110795 | 2.7771116 | 19 | 1 | 37 days | 0.35 | | | MPC | | 2006 $QC_{45}$ |
| 2006 $QD_{45}$ | 15.4 | 0.15 | 20060922 | 38.93730 | 157.99769 | 131.34639 | 16.05363 | 0.1515462 | 2.7869351 | 38 | 4 | 2002–2006 | 0.61 | M-v | 1 | MPC | 04036 | 2006 $QD_{45}$ |
| 2006 $QJ_{45}$ | 17.5 | 0.15 | 20060922 | 4.63738 | 161.89166 | 178.31707 | 3.44351 | 0.2014261 | 2.7397256 | 28 | 1 | 90 days | 0.46 | M-v | 3 | MPC | | 2006 $QJ_{45}$ |
| 2006 $QM_{45}$ | 17.7 | 0.15 | 20060922 | 42.92890 | 86.78817 | 200.92392 | 2.88712 | 0.1918016 | 2.1617664 | 82 | 4 | 1999–2006 | 0.45 | M-v | 1 | MPC | 04037 | 2006 $QM_{45}$ |
| 2006 $QN_{45}$ | 17.6 | 0.15 | 20060922 | 34.93179 | 331.12414 | 327.13493 | 0.43753 | 0.1805017 | 2.3947776 | 65 | 3 | 1999–2006 | 0.40 | M-v | 2 | MPC | 04037 | 2006 $QN_{45}$ |
| 2006 $QO_{45}$ | 17.1 | 0.15 | 20060902 | 334.54099 | 40.86479 | 335.00863 | 14.22573 | 0.1573504 | 2.6464781 | 16 | 1 | 29 days | 0.21 | | | MPC | | 2006 $QO_{45}$ |
| 2006 $QX_{45}$ | 16.9 | 0.15 | 20060922 | 351.40233 | 91.92931 | 276.61806 | 0.93529 | 0.2194600 | 2.3896342 | 96 | 4 | 1995–2006 | 0.51 | M-v | 2 | MPC | 04037 | 2006 $QX_{45}$ |
| 2006 $QY_{45}$ | 16.1 | 0.15 | 20060922 | 43.21040 | 266.40875 | 18.77173 | 10.69231 | 0.1880902 | 2.6906374 | 33 | 2 | 2005–2006 | 0.60 | M-v | 4 | MPC | 04037 | 2006 $QY_{45}$ |
| 2006 $QJ_{46}$ | 15.3 | 0.15 | 20060922 | 82.90823 | 240.10427 | 355.62894 | 8.65305 | 0.0897579 | 2.9801982 | 42 | 5 | 2000–2006 | 0.60 | M-v | 0 | MPC | 04037 | 2006 $QJ_{46}$ |
| 2006 $QM_{46}$ | 16.2 | 0.15 | 20060922 | 352.19366 | 150.25668 | 200.23712 | 3.69377 | 0.2190289 | 2.7693419 | 66 | 5 | 1996–2006 | 0.47 | M-v | 1 | MPC | 04037 | 2006 $QM_{46}$ |
| 2006 $QC_{47}$ | 17.5 | 0.15 | 20060902 | 352.00253 | 278.20163 | 70.56623 | 5.61661 | 0.2121219 | 2.4050619 | 16 | 1 | 36 days | 0.19 | | | MPC | | 2006 $QC_{47}$ |
| 2006 $QH_{47}$ | 15.1 | 0.15 | 20060922 | 311.77842 | 17.33634 | 22.21203 | 11.97915 | 0.1132318 | 2.9897361 | 44 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04038 | 2006 $QH_{47}$ |
| 2006 $QM_{47}$ | 18.1 | 0.15 | 20060902 | 344.08270 | 311.99072 | 50.99074 | 3.87637 | 0.1801119 | 2.2336075 | 13 | 1 | 25 days | 0.53 | | | MPC | | 2006 $QM_{47}$ |
| 2006 $QN_{47}$ | 17.4 | 0.15 | 20060902 | 15.52704 | 245.62359 | 68.49997 | 3.95759 | 0.2508106 | 2.6571341 | 17 | 1 | 25 days | 0.34 | | | MPC | | 2006 $QN_{47}$ |
| 2006 $QP_{47}$ | 17.1 | 0.15 | 20060813 | 21.96783 | 207.48647 | 91.35479 | 3.76705 | 0.2477279 | 2.9180603 | 13 | 1 | 27 days | 0.39 | | | MPC | | 2006 $QP_{47}$ |
| 2006 $QR_{47}$ | 17.0 | 0.15 | 20060922 | 356.10599 | 358.87232 | 7.23960 | 5.27547 | 0.3214423 | 2.6443267 | 115 | 2 | 2002–2006 | 0.43 | M-v | 2 | MPC | 04038 | 2006 $QR_{47}$ |
| 2006 $QS_{47}$ | 18.0 | 0.15 | 20060922 | 27.66467 | 309.36782 | 0.27705 | 6.51705 | 0.2694956 | 2.3295162 | 76 | 3 | 1999–2006 | 0.47 | M-v | 2 | MPC | 04038 | 2006 $QS_{47}$ |
| 2006 $QU_{47}$ | 16.7 | 0.15 | 20060922 | 328.23299 | 216.20168 | 177.34660 | 2.55115 | 0.2142575 | 2.2952309 | 103 | 4 | 1994–2006 | 0.45 | M-v | 1 | MPC | 04038 | 2006 $QU_{47}$ |
| 2006 $QB_{48}$ | 16.9 | 0.15 | 20060922 | 38.19161 | 141.54229 | 152.08594 | 11.68169 | 0.1842980 | 2.3252180 | 67 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04039 | 2006 $QB_{48}$ |
| 2006 $QD_{48}$ | 16.7 | 0.15 | 20060922 | 38.44320 | 146.78499 | 141.78667 | 5.33315 | 0.2325988 | 2.7521432 | 36 | 3 | 1996–2006 | 0.33 | M-v | 3 | MPC | 04039 | 2006 $QD_{48}$ |
| 2006 $QE_{48}$ | 15.1 | 0.15 | 20060902 | 352.44113 | 225.90305 | 128.18693 | 4.32675 | 0.2572422 | 3.9238028 | 31 | 1 | 45 days | 0.59 | | | MPC | | 2006 $QE_{48}$ |
| 2006 $QK_{48}$ | 16.7 | 0.15 | 20060922 | 324.40100 | 77.81883 | 349.19269 | 21.28847 | 0.3062252 | 2.3708532 | 69 | 2 | 2004–2006 | 0.53 | M-v | 3 | MPC | 04039 | 2006 $QK_{48}$ |
| 2006 $QN_{48}$ | 15.0 | 0.15 | 20060922 | 21.49786 | 327.57195 | 1.44397 | 16.79588 | 0.2827476 | 3.1513273 | 74 | 1 | 66 days | 0.41 | M-v | 4 | MPC | | 2006 $QN_{48}$ |
| 2006 $QO_{48}$ | 16.4 | 0.15 | 20060922 | 29.67949 | 330.55138 | 353.10871 | 9.32866 | 0.2368044 | 2.6235672 | 70 | 5 | 2001–2006 | 0.55 | M-v | 1 | MPC | 04039 | 2006 $QO_{48}$ |
| 2006 $QR_{48}$ | 17.8 | 0.15 | 20060813 | 0.41310 | 192.72768 | 136.55550 | 6.41686 | 0.2030437 | 2.3818416 | 19 | 1 | 29 days | 0.46 | | | MPC | | 2006 $QR_{48}$ |
| 2006 $QS_{48}$ | 15.2 | 0.15 | 20060922 | 6.01782 | 2.37002 | 4.03700 | 17.45211 | 0.3226584 | 3.0670180 | 102 | 1 | 87 days | 0.43 | M-v | 3 | MPC | | 2006 $QS_{48}$ |
| 2006 $QU_{48}$ | 17.1 | 0.15 | 20060813 | 354.52112 | 202.87895 | 137.98167 | 8.22832 | 0.1872222 | 2.3308931 | 31 | 1 | 51 days | 0.44 | | | MPC | | 2006 $QU_{48}$ |
| 2006 $QA_{49}$ | 17.1 | 0.15 | 20060922 | 26.79440 | 85.42880 | 232.52216 | 1.67769 | 0.2243854 | 2.1872628 | 87 | 3 | 2003–2006 | 0.43 | M-v | 2 | MPC | 04039 | 2006 $QA_{49}$ |
| 2006 $QB_{49}$ | 16.9 | 0.15 | 20060922 | 82.96035 | 258.48314 | 356.57581 | 19.72736 | 0.0842151 | 1.9613827 | 34 | 1 | 68 days | 0.55 | M-v | 4 | MPC | | 2006 $QB_{49}$ |
| 2006 $QE_{49}$ | 15.8 | 0.15 | 20060902 | 11.44971 | 195.67672 | 134.62783 | 23.68855 | 0.2524554 | 2.7788713 | 22 | 1 | 53 days | 0.32 | | | MPC | | 2006 $QE_{49}$ |
| 2006 $QG_{49}$ | 15.7 | 0.15 | 20060902 | 358.68094 | 194.41892 | 155.96285 | 18.76406 | 0.1980190 | 3.0857083 | 27 | 1 | 49 days | 0.55 | | | MPC | | 2006 $QG_{49}$ |
| 2006 $QN_{49}$ | 16.4 | 0.15 | 20060922 | 28.61598 | 131.42236 | 163.85771 | 12.91276 | 0.2032776 | 2.6627633 | 31 | 1 | 93 days | 0.46 | M-v | 4 | MPC | | 2006 $QN_{49}$ |
| 2006 $QQ_{49}$ | 17.5 | 0.15 | 20060902 | 2.59227 | 86.98526 | 245.84979 | 4.02650 | 0.2456199 | 2.3561705 | 39 | 1 | 41 days | 0.49 | | | MPC | | 2006 $QQ_{49}$ |
| 2006 $QR_{49}$ | 17.8 | 0.15 | 20060902 | 337.27565 | 125.94561 | 249.92837 | 4.10311 | 0.2429869 | 2.4151422 | 30 | 1 | 41 days | 0.64 | | | MPC | | 2006 $QR_{49}$ |
| 2006 $QS_{49}$ | 17.8 | 0.15 | 20060922 | 5.59336 | 322.25452 | 15.80814 | 5.50003 | 0.2677866 | 2.6495485 | 16 | 1 | 61 days | 0.19 | M-v | 4 | MPC | | 2006 $QS_{49}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QT_{49}$ | 17.7 | 0.15 | 20060922 | 333.18917 | 24.39108 | 5.85256 | 4.89850 | 0.2215262 | 2.3601584 | 34 | 1 | 87 days | 0.45 | M-v | 4 | MPC | | 2006 $QT_{49}$ |
| 2006 $QX_{49}$ | 17.7 | 0.15 | 20060902 | 347.02049 | 216.09110 | 145.91154 | 14.73730 | 0.2573290 | 2.6242930 | 16 | 1 | 41 days | 0.30 | | | MPC | | 2006 $QX_{49}$ |
| 2006 $QZ_{49}$ | 17.7 | 0.15 | 20060902 | 14.14977 | 171.20476 | 145.28474 | 5.43454 | 0.2287048 | 2.2814118 | 38 | 1 | 27 days | 0.45 | | | MPC | | 2006 $QZ_{49}$ |
| 2006 $QB_{50}$ | 15.5 | 0.15 | 20060922 | 19.24310 | 168.59752 | 152.71441 | 12.34391 | 0.1059216 | 3.1237936 | 30 | 5 | 1995–2006 | 0.35 | M-v | 0 | MPC | 04040 | 2006 $QB_{50}$ |
| 2006 $QD_{50}$ | 17.8 | 0.15 | 20060922 | 5.58578 | 45.52872 | 293.51564 | 1.62506 | 0.1920801 | 2.3736937 | 24 | 1 | 60 days | 0.67 | M-v | 5 | MPC | | 2006 $QD_{50}$ |
| 2006 $QE_{50}$ | 17.1 | 0.15 | 20060902 | 8.06358 | 71.77898 | 256.59650 | 2.21841 | 0.1963268 | 2.7434286 | 21 | 1 | 37 days | 0.46 | | | MPC | | 2006 $QE_{50}$ |
| 2006 $QN_{50}$ | 17.2 | 0.15 | 20060922 | 12.75292 | 224.00334 | 110.91938 | 3.33011 | 0.2158160 | 2.4070746 | 43 | 1 | 93 days | 0.37 | M-v | 4 | MPC | | 2006 $QN_{50}$ |
| 2006 $QT_{50}$ | 16.8 | 0.15 | 20060922 | 333.70332 | 17.93105 | 16.84644 | 6.31265 | 0.1897943 | 2.4131815 | 63 | 1 | 90 days | 0.45 | M-v | 4 | MPC | | 2006 $QT_{50}$ |
| 2006 $QU_{50}$ | 17.3 | 0.15 | 20060902 | 354.84044 | 188.02254 | 170.05128 | 14.89975 | 0.2678925 | 2.6186349 | 23 | 1 | 48 days | 0.47 | | | MPC | | 2006 $QU_{50}$ |
| 2006 $QA_{51}$ | 16.0 | 0.15 | 20060922 | 29.24776 | 306.78140 | 352.10803 | 8.75115 | 0.1438677 | 2.7967534 | 25 | 1 | 66 days | 0.46 | M-v | 5 | MPC | | 2006 $QA_{51}$ |
| 2006 $QB_{51}$ | 17.5 | 0.15 | 20060813 | 14.90863 | 322.13472 | 339.50451 | 10.26131 | 0.2527786 | 2.4060998 | 23 | 1 | 27 days | 0.50 | | | MPC | | 2006 $QB_{51}$ |
| 2006 $QC_{51}$ | 17.0 | 0.15 | 20060922 | 347.23907 | 6.88819 | 355.31561 | 6.00230 | 0.1832062 | 2.2862697 | 44 | 1 | 93 days | 0.41 | M-v | 4 | MPC | | 2006 $QC_{51}$ |
| 2006 $QD_{51}$ | 16.3 | 0.15 | 20060902 | 326.28694 | 241.03302 | 135.90787 | 15.80434 | 0.1140277 | 2.7381338 | 15 | 1 | 28 days | 0.58 | | | MPC | | 2006 $QD_{51}$ |
| 2006 $QF_{51}$ | 16.6 | 0.15 | 20060922 | 340.78234 | 2.67526 | 11.54813 | 3.25069 | 0.2353628 | 2.7766098 | 25 | 1 | 92 days | 0.41 | M-v | 4 | MPC | | 2006 $QF_{51}$ |
| 2006 $QG_{51}$ | 16.9 | 0.15 | 20060922 | 12.19178 | 260.85833 | 65.68352 | 2.30322 | 0.1950336 | 2.4139695 | 54 | 2 | 2005–2006 | 0.52 | M-v | 3 | MPC | 04040 | 2006 $QG_{51}$ |
| 2006 $QM_{51}$ | 17.3 | 0.15 | 20060813 | 356.45662 | 112.81595 | 215.30492 | 6.16139 | 0.1650799 | 2.2611273 | 34 | 1 | 51 days | 0.50 | | | MPC | | 2006 $QM_{51}$ |
| 2006 $QN_{51}$ | 16.8 | 0.15 | 20060922 | 35.29256 | 99.96679 | 172.94589 | 13.99613 | 0.3128899 | 2.6606390 | 25 | 1 | 92 days | 0.57 | M-v | 4 | MPC | | 2006 $QN_{51}$ |
| 2006 $QP_{51}$ | 18.7 | 0.15 | 20060724 | 0.41342 | 239.62268 | 67.73541 | 4.35894 | 0.3132341 | 2.3062207 | 19 | 1 | 41 days | 0.34 | | | MPC | | 2006 $QP_{51}$ |
| 2006 $QV_{51}$ | 18.9 | 0.15 | 20060902 | 339.16280 | 13.44599 | 351.02642 | 7.26945 | 0.2027095 | 2.2779058 | 12 | 1 | 39 days | 0.16 | | | MPC | | 2006 $QV_{51}$ |
| 2006 $QW_{51}$ | 16.2 | 0.15 | 20060922 | 329.57673 | 341.73535 | 30.28850 | 3.58438 | 0.0913635 | 2.9624984 | 21 | 3 | 2004–2006 | 0.17 | M-v | 3 | MPC | 04040 | 2006 $QW_{51}$ |
| 2006 $QX_{51}$ | 17.1 | 0.15 | 20060922 | 348.93675 | 4.00850 | 355.38702 | 14.28183 | 0.2649077 | 2.6709253 | 17 | 1 | 66 days | 0.21 | M-v | 5 | MPC | | 2006 $QX_{51}$ |
| 2006 $QD_{52}$ | 16.4 | 0.15 | 20060902 | 335.43886 | 290.56620 | 70.51671 | 2.91499 | 0.0746787 | 2.9715612 | 12 | 1 | 38 days | 0.15 | | | MPC | | 2006 $QD_{52}$ |
| 2006 $QJ_{52}$ | 16.1 | 0.15 | 20060922 | 350.53949 | 235.72086 | 120.01340 | 5.01966 | 0.1484804 | 2.4078679 | 41 | 1 | 86 days | 0.52 | M-v | 4 | MPC | | 2006 $QJ_{52}$ |
| 2006 $QL_{52}$ | 17.0 | 0.15 | 20060922 | 34.47557 | 194.92336 | 102.65557 | 2.81851 | 0.1446139 | 2.4060884 | 45 | 5 | 1995–2006 | 0.66 | M-v | 1 | MPC | 04040 | 2006 $QL_{52}$ |
| 2006 $QM_{52}$ | 16.4 | 0.15 | 20060902 | 1.63832 | 221.83801 | 112.15682 | 4.32871 | 0.0957491 | 2.6957171 | 14 | 1 | 22 days | 0.35 | | | MPC | | 2006 $QM_{52}$ |
| 2006 $QR_{52}$ | 16.0 | 0.15 | 20060922 | 45.54333 | 175.45929 | 114.91453 | 4.40136 | 0.0493887 | 2.7279949 | 40 | 4 | 1996–2006 | 0.39 | M-v | 0 | MPC | 04040 | 2006 $QR_{52}$ |
| 2006 $QT_{52}$ | 17.8 | 0.15 | 20060922 | 353.67597 | 359.70403 | 358.16933 | 6.83009 | 0.2828643 | 2.3660777 | 44 | 1 | 93 days | 0.44 | M-v | 4 | MPC | | 2006 $QT_{52}$ |
| 2006 $QV_{52}$ | 17.2 | 0.15 | 20060902 | 359.25693 | 237.91282 | 100.39559 | 3.26059 | 0.2347878 | 2.2510370 | 19 | 1 | 59 days | 0.37 | | | MPC | | 2006 $QV_{52}$ |
| 2006 $QZ_{52}$ | 15.7 | 0.15 | 20060922 | 6.03306 | 187.50945 | 169.59665 | 20.80070 | 0.2786936 | 3.1104763 | 48 | 1 | 98 days | 0.46 | M-v | 3 | MPC | | 2006 $QZ_{52}$ |
| 2006 $QD_{53}$ | 18.2 | 0.15 | 20060922 | 350.29295 | 22.08642 | 351.73430 | 6.29176 | 0.3584098 | 2.5956643 | 49 | 1 | 59 days | 0.64 | | | MPC | | 2006 $QD_{53}$ |
| 2006 $QE_{53}$ | 18.0 | 0.15 | 20060902 | 345.84552 | 268.74378 | 95.04594 | 2.30498 | 0.1984798 | 2.3601311 | 19 | 1 | 26 days | 0.35 | | | MPC | | 2006 $QE_{53}$ |
| 2006 $QF_{53}$ | 17.3 | 0.15 | 20060902 | 34.75883 | 177.21950 | 113.91654 | 3.45044 | 0.1999519 | 2.3859252 | 24 | 1 | 31 days | 0.43 | | | MPC | | 2006 $QF_{53}$ |
| 2006 $QG_{53}$ | 17.1 | 0.15 | 20060902 | 15.81355 | 187.58577 | 136.90937 | 6.37664 | 0.1058584 | 2.3751758 | 17 | 1 | 22 days | 0.36 | | | MPC | | 2006 $QG_{53}$ |
| 2006 $QH_{53}$ | 16.0 | 0.15 | 20060922 | 20.57046 | 16.47058 | 295.53706 | 14.80005 | 0.3308759 | 2.5680811 | 78 | 4 | 1996–2006 | 0.50 | M-v | 2 | MPC | 04040 | 2006 $QH_{53}$ |
| 2006 $QJ_{53}$ | 15.5 | 0.15 | 20060922 | 13.77072 | 4.92419 | 342.54075 | 14.11627 | 0.2667653 | 2.6649693 | 83 | 5 | 2000–2006 | 0.42 | M-v | 1 | MPC | 04041 | 2006 $QJ_{53}$ |
| 2006 $QL_{53}$ | 17.5 | 0.15 | 20060902 | 24.77209 | 320.82443 | 337.07265 | 5.34283 | 0.3184086 | 2.3863003 | 43 | 1 | 32 days | 0.51 | | | MPC | | 2006 $QL_{53}$ |
| 2006 $QM_{53}$ | 16.1 | 0.15 | 20060922 | 25.29206 | 150.95760 | 175.84704 | 13.48396 | 0.1652319 | 2.6714708 | 48 | 1 | 60 days | 0.62 | M-v | 4 | MPC | | 2006 $QM_{53}$ |
| 2006 $QO_{53}$ | 16.8 | 0.15 | 20060922 | 26.49995 | 220.70704 | 78.28233 | 6.96095 | 0.1883984 | 2.4046909 | 24 | 3 | 1998–2006 | 0.58 | M-v | 4 | MPC | 04041 | 2006 $QO_{53}$ |
| 2006 $QY_{53}$ | 16.1 | 0.15 | 20060922 | 9.73406 | 264.84416 | 57.74068 | 9.66325 | 0.1867285 | 2.7145045 | 32 | 3 | 1993–2006 | 0.78 | M-v | 3 | MPC | 04041 | 2006 $QY_{53}$ |
| 2006 $QJ_{54}$ | 16.3 | 0.15 | 20060922 | 13.39427 | 267.49004 | 57.30783 | 12.87049 | 0.1257077 | 2.5213841 | 22 | 3 | 2002–2006 | 0.45 | M-v | 3 | MPC | 04041 | 2006 $QJ_{54}$ |
| 2006 $QO_{54}$ | 17.6 | 0.15 | 20060813 | 3.64620 | 322.27868 | 6.24668 | 5.27585 | 0.1659239 | 2.3855923 | 22 | 1 | 31 days | 0.34 | | | MPC | | 2006 $QO_{54}$ |
| 2006 $QP_{54}$ | 15.1 | 0.15 | 20060922 | 350.72234 | 326.76372 | 35.82333 | 3.21578 | 0.2292320 | 3.9825922 | 21 | 1 | 102 days | 0.37 | M-v | 4 | MPC | | 2006 $QP_{54}$ |
| 2006 $QQ_{54}$ | 15.6 | 0.15 | 20060922 | 8.17683 | 193.99931 | 147.30490 | 11.31129 | 0.0729275 | 3.1295121 | 43 | 5 | 1998–2006 | 0.55 | M-v | 1 | MPC | 04041 | 2006 $QQ_{54}$ |
| 2006 $QU_{54}$ | 16.8 | 0.15 | 20060922 | 24.45467 | 141.94665 | 177.16949 | 12.28664 | 0.2994030 | 2.6628521 | 60 | 1 | 63 days | 0.55 | M-v | 4 | MPC | | 2006 $QU_{54}$ |
| 2006 $QY_{54}$ | 16.7 | 0.15 | 20060902 | 317.28095 | 228.60580 | 157.33995 | 15.59145 | 0.1453967 | 2.6363520 | 19 | 1 | 37 days | 0.60 | | | MPC | | 2006 $QY_{54}$ |
| 2006 $QC_{55}$ | 15.4 | 0.15 | 20060922 | 7.54253 | 345.05988 | 339.75033 | 16.82830 | 0.1868296 | 3.1365661 | 46 | 3 | 2001–2006 | 0.47 | M-v | 2 | MPC | 04042 | 2006 $QC_{55}$ |
| 2006 $QG_{55}$ | 18.4 | 0.15 | 20060922 | 11.05428 | 20.84331 | 297.53435 | 2.11350 | 0.1921599 | 2.1778517 | 30 | 3 | 2000–2006 | 0.31 | M-v | 2 | MPC | 04042 | 2006 $QG_{55}$ |
| 2006 $QH_{55}$ | 17.0 | 0.15 | 20060922 | 328.26172 | 73.60895 | 332.83034 | 12.13786 | 0.4073786 | 2.4084192 | 42 | 2 | 2000–2006 | 0.41 | M-v | 3 | MPC | 04042 | 2006 $QH_{55}$ |
| 2006 $QM_{55}$ | 17.5 | 0.15 | 20060922 | 359.28874 | 4.73349 | 342.04350 | 2.03772 | 0.1914120 | 2.4233243 | 39 | 1 | 70 days | 0.42 | M-v | 4 | MPC | | 2006 $QM_{55}$ |
| 2006 $QN_{55}$ | 16.9 | 0.15 | 20060922 | 40.30221 | 149.14884 | 149.94031 | 14.35401 | 0.0339070 | 2.6008439 | 18 | 1 | 70 days | 0.51 | M-v | 5 | MPC | | 2006 $QN_{55}$ |
| 2006 $QP_{55}$ | 19.0 | 0.15 | 20060922 | 348.38472 | 8.74716 | 2.06121 | 3.98359 | 0.2598590 | 2.1912946 | 31 | 1 | 70 days | 0.56 | M-v | 4 | MPC | | 2006 $QP_{55}$ |
| 2006 $QR_{55}$ | 17.6 | 0.15 | 20060922 | 10.40118 | 16.58508 | 320.63679 | 1.42559 | 0.2295079 | 2.3294315 | 69 | 2 | 1999–2006 | 0.49 | M-v | 3 | MPC | 04042 | 2006 $QR_{55}$ |
| 2006 $QS_{55}$ | 14.7 | 0.15 | 20060922 | 346.76341 | 357.53579 | 18.81076 | 2.75585 | 0.2681559 | 3.9671378 | 75 | 1 | 85 days | 0.53 | M-v | 4 | MPC | | 2006 $QS_{55}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QT_{55}$ | 16.3 | 0.15 | 20060922 | 357.88338 | 171.62139 | 208.62415 | 5.61486 | 0.2006528 | 2.2295283 | 159 | 6 | 1998–2006 | 0.50 | M-v | 1 | MPC | 04042 | 2006 $QT_{55}$ |
| 2006 $QX_{55}$ | 18.0 | 0.15 | 20060922 | 342.63705 | 22.48720 | 351.85650 | 5.47942 | 0.1903399 | 2.2621185 | 24 | 1 | 92 days | 0.33 | M-v | 4 | MPC | | 2006 $QX_{55}$ |
| 2006 $QY_{55}$ | 16.9 | 0.15 | 20060902 | 11.32581 | 337.46609 | 342.95044 | 13.80974 | 0.2611171 | 2.6637410 | 47 | 1 | 47 days | 0.59 | | | MPC | | 2006 $QY_{55}$ |
| 2006 $QZ_{55}$ | 16.4 | 0.15 | 20060922 | 346.00706 | 209.10052 | 163.27644 | 11.70740 | 0.2449140 | 3.1652747 | 34 | 1 | 101 days | 0.59 | M-v | 4 | MPC | | 2006 $QZ_{55}$ |
| 2006 $QE_{56}$ | 16.7 | 0.15 | 20060813 | 121.92492 | 43.22347 | 158.80466 | 8.02144 | 0.0769203 | 2.1715643 | 16 | 1 | 9 days | 0.58 | | | MPC | | 2006 $QE_{56}$ |
| 2006 $QL_{56}$ | 17.8 | 0.15 | 20060902 | 343.95548 | 44.88803 | 332.11791 | 12.86094 | 0.2913920 | 2.6249660 | 23 | 1 | 33 days | 0.73 | | | MPC | | 2006 $QL_{56}$ |
| 2006 $QM_{56}$ | 18.7 | 0.15 | 20060922 | 25.93997 | 345.97827 | 319.51879 | 8.10772 | 0.2993078 | 2.3720900 | 28 | 2 | 1995–2006 | 0.57 | M-v | 4 | MPC | 04042 | 2006 $QM_{56}$ |
| 2006 $QQ_{56}$ | 25.9 | 0.15 | 20060922 | 225.00962 | 332.95500 | 163.33055 | 2.82617 | 0.0465379 | 0.9867522 | 86 | 1 | 19 days | 0.41 | M-v | 5 | MPC | 04405 | 2006 $QQ_{56}$ |
| 2006 $QX_{56}$ | 17.1 | 0.15 | 20060922 | 78.60226 | 281.74023 | 343.79297 | 20.64194 | 0.0942284 | 1.8841293 | 73 | 3 | 2001–2006 | 0.57 | M-v | 3 | MPC | 04043 | 2006 $QX_{56}$ |
| 2006 $QY_{56}$ | 19.1 | 0.15 | 20060922 | 357.29573 | 187.90557 | 180.70912 | 16.53304 | 0.4725048 | 2.6796799 | 95 | 1 | 58 days | 0.48 | | | MPC | | 2006 $QY_{56}$ |
| 2006 $QZ_{56}$ | 18.4 | 0.15 | 20060813 | 86.80001 | 294.06631 | 293.32499 | 19.85114 | 0.0972772 | 1.9138781 | 9 | 1 | 10 days | 0.25 | | | MPC | | 2006 $QZ_{56}$ |
| 2006 $QB_{57}$ | 16.6 | 0.15 | 20060902 | 51.04960 | 107.82363 | 168.54597 | 1.41939 | 0.1174305 | 3.0724235 | 13 | 1 | 38 days | 0.26 | | | MPC | | 2006 $QB_{57}$ |
| 2006 $QF_{57}$ | 15.6 | 0.15 | 20060922 | 8.97806 | 107.79325 | 229.91330 | 12.06472 | 0.1868306 | 2.7884513 | 59 | 1 | 151 days | 0.54 | M-v | 3 | MPC | | 2006 $QF_{57}$ |
| 2006 $QJ_{57}$ | 17.0 | 0.15 | 20060922 | 359.30813 | 56.87965 | 292.52219 | 5.66896 | 0.1380977 | 2.2922404 | 50 | 1 | 71 days | 0.62 | M-v | 4 | MPC | | 2006 $QJ_{57}$ |
| 2006 $QM_{57}$ | 17.7 | 0.15 | 20060922 | 349.49892 | 164.57415 | 220.02862 | 1.85603 | 0.2058891 | 2.2599809 | 61 | 1 | 92 days | 0.38 | M-v | 3 | MPC | | 2006 $QM_{57}$ |
| 2006 $QV_{57}$ | 15.4 | 0.15 | 20060922 | 7.21612 | 24.54884 | 326.67202 | 9.29526 | 0.2588116 | 2.7314745 | 105 | 1 | 93 days | 0.45 | M-v | 3 | MPC | | 2006 $QV_{57}$ |
| 2006 $QY_{57}$ | 16.2 | 0.15 | 20060922 | 344.94821 | 337.96282 | 50.47659 | 9.49036 | 0.1151497 | 2.7590046 | 31 | 1 | 88 days | 0.53 | M-v | 4 | MPC | | 2006 $QY_{57}$ |
| 2006 $QZ_{57}$ | 22.7 | 0.15 | 20060922 | 20.96595 | 324.30037 | 271.07285 | 2.41228 | 0.7639058 | 2.4951136 | 28 | 1 | 6 days | 0.72 | M-v | 8 | MPC | 04406 | 2006 $QZ_{57}$ |
| 2006 $QA_{58}$ | 20.4 | 0.15 | 20060922 | 295.12092 | 283.61619 | 152.52369 | 26.60060 | 0.1728647 | 1.2494073 | 40 | 1 | 32 days | 0.44 | M-v | 6 | MPC | 04406 | 2006 $QA_{58}$ |
| 2006 $QB_{58}$ | 23.9 | 0.15 | 20060922 | 18.49820 | 325.15432 | 337.45440 | 5.89882 | 0.4803341 | 2.1163432 | 24 | 1 | 28 days | 0.43 | M-v | 6 | MPC | 04406 | 2006 $QB_{58}$ |
| 2006 $QD_{58}$ | 16.3 | 0.15 | 20060922 | 18.80540 | 324.56370 | 10.94711 | 11.82023 | 0.3775072 | 2.7521300 | 76 | 1 | 86 days | 0.50 | M-v | 3 | MPC | | 2006 $QD_{58}$ |
| 2006 $QE_{58}$ | 15.2 | 0.15 | 20060922 | 346.61551 | 190.78265 | 176.48102 | 19.72711 | 0.2666482 | 3.1630794 | 57 | 1 | 89 days | 0.42 | M-v | 3 | MPC | | 2006 $QE_{58}$ |
| 2006 $QF_{58}$ | 16.6 | 0.15 | 20060922 | 355.66657 | 110.60998 | 235.98206 | 13.56057 | 0.2371789 | 2.4233556 | 22 | 1 | 94 days | 0.53 | M-v | 4 | MPC | | 2006 $QF_{58}$ |
| 2006 $QJ_{58}$ | 17.7 | 0.15 | 20060922 | 341.65361 | 153.63967 | 232.53076 | 7.29138 | 0.2381037 | 2.2656386 | 50 | 1 | 78 days | 0.52 | M-v | 4 | MPC | | 2006 $QJ_{58}$ |
| 2006 $QP_{58}$ | 15.8 | 0.15 | 20060922 | 51.32441 | 219.08904 | 69.32863 | 6.30919 | 0.1253567 | 3.1928135 | 36 | 5 | 1993–2006 | 0.62 | M-v | 1 | MPC | 04043 | 2006 $QP_{58}$ |
| 2006 $QQ_{58}$ | 15.9 | 0.15 | 20060902 | 152.42648 | 184.67598 | 4.29811 | 23.59835 | 0.1205241 | 2.8822526 | 9 | 1 | 26 days | 0.42 | | | MPC | | 2006 $QQ_{58}$ |
| 2006 $QV_{58}$ | 17.2 | 0.15 | 20060922 | 34.37008 | 124.68314 | 161.35998 | 14.29282 | 0.2389553 | 2.7465528 | 19 | 1 | 67 days | 0.44 | M-v | 4 | MPC | | 2006 $QV_{58}$ |
| 2006 $QZ_{58}$ | 17.6 | 0.15 | 20060902 | 18.58930 | 89.63876 | 211.28012 | 2.30559 | 0.2205581 | 2.3937153 | 15 | 1 | 40 days | 0.29 | | | MPC | | 2006 $QZ_{58}$ |
| 2006 $QD_{59}$ | 17.6 | 0.15 | 20060922 | 343.51540 | 54.80782 | 310.84553 | 4.35187 | 0.2484976 | 2.4092747 | 34 | 1 | 69 days | 0.61 | M-v | 5 | MPC | | 2006 $QD_{59}$ |
| 2006 $QE_{59}$ | 16.2 | 0.15 | 20060922 | 21.71872 | 145.33841 | 153.33885 | 11.65403 | 0.2228926 | 3.0962625 | 23 | 1 | 93 days | 0.38 | M-v | 4 | MPC | | 2006 $QE_{59}$ |
| 2006 $QF_{59}$ | 16.5 | 0.15 | 20060922 | 347.57695 | 35.00247 | 321.31695 | 9.80740 | 0.1931382 | 2.2795711 | 41 | 2 | 2003–2006 | 0.41 | M-v | 4 | MPC | 04043 | 2006 $QF_{59}$ |
| 2006 $QJ_{59}$ | 17.2 | 0.15 | 20060922 | 26.47079 | 159.36368 | 141.81287 | 1.71212 | 0.1767160 | 2.3720216 | 26 | 1 | 124 days | 0.37 | M-v | 4 | MPC | | 2006 $QJ_{59}$ |
| 2006 $QL_{59}$ | 15.7 | 0.15 | 20060902 | 339.98531 | 28.77829 | 329.50800 | 10.78334 | 0.1210419 | 3.0955476 | 19 | 1 | 38 days | 0.53 | | | MPC | | 2006 $QL_{59}$ |
| 2006 $QR_{59}$ | 15.4 | 0.15 | 20060922 | 10.31353 | 27.01424 | 302.50086 | 15.04457 | 0.2272452 | 2.7355207 | 70 | 1 | 135 days | 0.43 | M-v | 3 | MPC | 04406 | 2006 $QR_{59}$ |
| 2006 $QS_{59}$ | 15.6 | 0.15 | 20060922 | 51.71205 | 327.40082 | 314.28159 | 8.56794 | 0.0836033 | 3.0721961 | 40 | 3 | 2001–2006 | 0.44 | M-v | 2 | MPC | 04043 | 2006 $QS_{59}$ |
| 2006 $QV_{59}$ | 17.3 | 0.15 | 20060902 | 29.91512 | 86.10523 | 203.54842 | 6.48627 | 0.2712528 | 2.2122312 | 25 | 1 | 33 days | 0.42 | | | MPC | | 2006 $QV_{59}$ |
| 2006 $QZ_{59}$ | 16.6 | 0.15 | 20060922 | 17.35330 | 17.08137 | 303.46647 | 7.10617 | 0.2788966 | 2.7970951 | 41 | 1 | 65 days | 0.37 | M-v | 4 | MPC | | 2006 $QZ_{59}$ |
| 2006 $QK_{60}$ | 16.8 | 0.15 | 20060922 | 341.36525 | 224.71339 | 141.46885 | 7.44008 | 0.2200376 | 2.3184748 | 36 | 2 | 1999–2006 | 0.54 | M-v | 4 | MPC | 04043 | 2006 $QK_{60}$ |
| 2006 $QO_{60}$ | 17.7 | 0.15 | 20060813 | 318.38761 | 258.20486 | 128.38077 | 3.55347 | 0.2279639 | 2.4807763 | 17 | 1 | 10 days | 0.62 | | D | MPC | | 2006 $QO_{60}$ |
| 2006 $QR_{60}$ | 15.7 | 0.15 | 20060813 | 16.05111 | 166.97059 | 139.59921 | 16.34621 | 0.1281674 | 2.9710868 | 13 | 1 | 27 days | 0.43 | | | MPC | | 2006 $QR_{60}$ |
| 2006 $QW_{60}$ | 16.6 | 0.15 | 20060813 | 311.00813 | 242.93801 | 146.72852 | 7.13673 | 0.1212131 | 2.3312944 | 26 | 1 | 51 days | 0.59 | | | MPC | | 2006 $QW_{60}$ |
| 2006 $QA_{61}$ | 17.4 | 0.15 | 20060813 | 32.04701 | 305.59781 | 344.32273 | 4.31246 | 0.1603208 | 2.2536602 | 19 | 1 | 7 days | 0.53 | | | MPC | | 2006 $QA_{61}$ |
| 2006 $QC_{61}$ | 17.0 | 0.15 | 20060902 | 16.37038 | 350.69676 | 310.54955 | 4.84305 | 0.3459146 | 3.1058972 | 21 | 1 | 40 days | 0.78 | | | MPC | | 2006 $QC_{61}$ |
| 2006 $QE_{61}$ | 16.4 | 0.15 | 20060922 | 54.31411 | 120.98669 | 149.80518 | 12.16184 | 0.1341539 | 2.7663176 | 34 | 4 | 2000–2006 | 0.61 | M-v | 1 | MPC | 04043 | 2006 $QE_{61}$ |
| 2006 $QG_{61}$ | 16.0 | 0.15 | 20060922 | 12.31357 | 349.96677 | 19.16613 | 10.37936 | 0.3277872 | 2.7078229 | 28 | 1 | 92 days | 0.53 | M-v | 4 | MPC | | 2006 $QG_{61}$ |
| 2006 $QM_{61}$ | 18.7 | 0.15 | 20060902 | 11.47650 | 329.40897 | 349.98350 | 6.16496 | 0.2631289 | 2.2395622 | 15 | 1 | 36 days | 0.46 | | | MPC | | 2006 $QM_{61}$ |
| 2006 $QN_{61}$ | 16.1 | 0.15 | 20060922 | 334.26408 | 177.22601 | 196.60542 | 5.62165 | 0.0649484 | 2.7825345 | 26 | 1 | 86 days | 0.50 | M-v | 5 | MPC | | 2006 $QN_{61}$ |
| 2006 $QO_{61}$ | 16.5 | 0.15 | 20060902 | 61.49081 | 318.60988 | 310.19308 | 5.13635 | 0.0838843 | 2.4164970 | 25 | 1 | 37 days | 0.64 | | | MPC | | 2006 $QO_{61}$ |
| 2006 $QP_{61}$ | 18.0 | 0.15 | 20060922 | 357.89837 | 58.05501 | 292.79986 | 1.67235 | 0.2186345 | 2.4026631 | 22 | 1 | 60 days | 0.45 | M-v | 5 | MPC | | 2006 $QP_{61}$ |
| 2006 $QT_{61}$ | 17.4 | 0.15 | 20060922 | 356.91848 | 65.94526 | 289.80640 | 5.56278 | 0.2544205 | 2.3710162 | 43 | 3 | 1995–2006 | 0.50 | M-v | 2 | MPC | 04044 | 2006 $QT_{61}$ |
| 2006 $QV_{61}$ | 16.9 | 0.15 | 20060922 | 338.64728 | 193.69212 | 189.61059 | 8.52338 | 0.2227211 | 2.2867401 | 73 | 1 | 91 days | 0.55 | M-v | 4 | MPC | | 2006 $QV_{61}$ |
| 2006 $QY_{61}$ | 17.8 | 0.15 | 20060922 | 349.57744 | 52.26212 | 320.49126 | 2.99449 | 0.2562959 | 2.3575965 | 49 | 1 | 90 days | 0.40 | M-v | 4 | MPC | | 2006 $QY_{61}$ |
| 2006 $QZ_{61}$ | 17.5 | 0.15 | 20060922 | 12.47211 | 98.64520 | 236.60006 | 0.48052 | 0.1978176 | 2.3879880 | 49 | 1 | 91 days | 0.47 | M-v | 4 | MPC | | 2006 $QZ_{61}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QA_{62}$ | 18.1 | 0.15 | 20060902 | 17.76290 | 341.87453 | 341.47958 | 18.92447 | 0.0969742 | 1.9559126 | 17 | 1 | 29 days | 0.58 | | | MPC | | 2006 $QA_{62}$ |
| 2006 $QB_{62}$ | 16.9 | 0.15 | 20060902 | 14.25035 | 161.14766 | 160.69745 | 14.16527 | 0.2634222 | 2.7040331 | 22 | 1 | 28 days | 0.72 | | | MPC | | 2006 $QB_{62}$ |
| 2006 $QE_{62}$ | 16.9 | 0.15 | 20060902 | 342.24919 | 205.74604 | 171.73936 | 9.62953 | 0.2343716 | 2.7285123 | 41 | 1 | 51 days | 0.50 | | | MPC | | 2006 $QE_{62}$ |
| 2006 $QH_{62}$ | 15.4 | 0.15 | 20060922 | 11.19926 | 256.27227 | 91.57072 | 5.85867 | 0.1896036 | 3.1387265 | 35 | 1 | 61 days | 0.48 | M-v | 4 | MPC | | 2006 $QH_{62}$ |
| 2006 $QM_{62}$ | 16.6 | 0.15 | 20060922 | 10.72573 | 245.83033 | 83.20390 | 4.17967 | 0.1921509 | 2.3600356 | 22 | 1 | 59 days | 0.42 | | | MPC | | 2006 $QM_{62}$ |
| 2006 $QP_{62}$ | 16.7 | 0.15 | 20060922 | 20.28540 | 266.45999 | 51.44603 | 4.04187 | 0.2250361 | 2.4225739 | 76 | 1 | 128 days | 0.45 | M-v | 4 | MPC | | 2006 $QP_{62}$ |
| 2006 $QQ_{62}$ | 17.1 | 0.15 | 20060922 | 14.90295 | 261.72996 | 65.22890 | 2.84662 | 0.2362092 | 2.2775267 | 61 | 3 | 1996–2006 | 0.43 | M-v | 2 | MPC | 04044 | 2006 $QQ_{62}$ |
| 2006 $QR_{62}$ | 16.4 | 0.15 | 20060922 | 303.81251 | 329.70857 | 96.90347 | 4.59689 | 0.1187198 | 2.2992673 | 80 | 3 | 2003–2006 | 0.49 | M-v | 4 | MPC | 04044 | 2006 $QR_{62}$ |
| 2006 $QU_{62}$ | 17.1 | 0.15 | 20060813 | 331.47231 | 247.96230 | 121.59134 | 5.73388 | 0.1953168 | 2.3953286 | 16 | 1 | 32 days | 0.51 | | | MPC | | 2006 $QU_{62}$ |
| 2006 $QV_{62}$ | 18.3 | 0.15 | 20060922 | 7.44609 | 302.76406 | 31.58766 | 2.50959 | 0.2256072 | 2.3269693 | 22 | 1 | 69 days | 0.64 | M-v | 4 | MPC | | 2006 $QV_{62}$ |
| 2006 $QG_{63}$ | 16.8 | 0.15 | 20060902 | 17.17140 | 357.82325 | 318.61472 | 5.72832 | 0.1378996 | 2.3347791 | 27 | 1 | 24 days | 0.57 | | | MPC | | 2006 $QG_{63}$ |
| 2006 $QK_{63}$ | 19.0 | 0.15 | 20060902 | 19.07713 | 337.35038 | 336.50289 | 18.62162 | 0.0843095 | 1.9025666 | 15 | 1 | 40 days | 0.52 | | | MPC | | 2006 $QK_{63}$ |
| 2006 $QU_{63}$ | 16.9 | 0.15 | 20060922 | 350.12228 | 183.72527 | 183.71355 | 3.79558 | 0.1350491 | 2.4062395 | 49 | 1 | 83 days | 0.50 | M-v | 4 | MPC | | 2006 $QU_{63}$ |
| 2006 $QZ_{63}$ | 17.4 | 0.15 | 20060922 | 337.97736 | 221.65040 | 169.35590 | 7.19893 | 0.2983014 | 2.6207634 | 27 | 1 | 58 days | 0.47 | | | MPC | | 2006 $QZ_{63}$ |
| 2006 $QA_{64}$ | 17.5 | 0.15 | 20060922 | 343.13725 | 217.39919 | 167.99574 | 11.79682 | 0.2648688 | 2.4309874 | 38 | 1 | 62 days | 0.47 | M-v | 4 | MPC | | 2006 $QA_{64}$ |
| 2006 $QB_{64}$ | 18.6 | 0.15 | 20060813 | 350.81784 | 186.60737 | 156.33544 | 4.33722 | 0.2083037 | 2.1662763 | 16 | 1 | 29 days | 0.34 | | | MPC | | 2006 $QB_{64}$ |
| 2006 $QD_{64}$ | 17.5 | 0.15 | 20060902 | 18.80961 | 142.32858 | 168.48828 | 8.62749 | 0.2679106 | 2.2522630 | 58 | 1 | 55 days | 0.51 | | | MPC | | 2006 $QD_{64}$ |
| 2006 $QE_{64}$ | 15.8 | 0.15 | 20060902 | 40.76563 | 309.17017 | 343.46778 | 12.58704 | 0.1677265 | 2.8469910 | 27 | 1 | 48 days | 0.52 | | | MPC | | 2006 $QE_{64}$ |
| 2006 $QG_{64}$ | 16.8 | 0.15 | 20060922 | 8.89147 | 196.57285 | 161.89177 | 6.25198 | 0.2140350 | 2.2251531 | 75 | 1 | 118 days | 0.50 | M-v | 3 | MPC | | 2006 $QG_{64}$ |
| 2006 $QP_{64}$ | 16.8 | 0.15 | 20060813 | 22.89154 | 107.54960 | 195.53677 | 1.40569 | 0.1143302 | 2.8369676 | 13 | 1 | 9 days | 0.92 | | | MPC | | 2006 $QP_{64}$ |
| 2006 $QX_{64}$ | 16.6 | 0.15 | 20060902 | 339.73546 | 207.89416 | 155.79506 | 9.35078 | 0.1376402 | 2.6549220 | 24 | 1 | 33 days | 0.54 | | | MPC | | 2006 $QX_{64}$ |
| 2006 $QB_{65}$ | 17.1 | 0.15 | 20060902 | 353.41571 | 180.60822 | 163.89224 | 4.10042 | 0.1472775 | 3.1344855 | 14 | 1 | 37 days | 0.93 | | | MPC | | 2006 $QB_{65}$ |
| 2006 $QJ_{65}$ | 22.0 | 0.15 | 20060922 | 349.80785 | 266.47973 | 153.13323 | 5.10138 | 0.6850134 | 2.6487528 | 40 | 1 | 22 days | 0.61 | M-v | 7 | MPC | | 2006 $QJ_{65}$ |
| 2006 $QN_{65}$ | 17.3 | 0.15 | 20060922 | 8.67776 | 169.12648 | 165.77667 | 8.50055 | 0.2208738 | 2.7984260 | 29 | 1 | 64 days | 0.69 | M-v | 4 | MPC | | 2006 $QN_{65}$ |
| 2006 $QT_{65}$ | 15.8 | 0.15 | 20060902 | 21.66013 | 340.20062 | 337.54936 | 9.33535 | 0.0981428 | 3.2164934 | 18 | 1 | 31 days | 0.61 | | | MPC | | 2006 $QT_{65}$ |
| 2006 $QV_{65}$ | 16.5 | 0.15 | 20060902 | 159.78238 | 35.63232 | 147.20613 | 4.88848 | 0.0542872 | 2.5747325 | 18 | 1 | 23 days | 0.63 | | | MPC | | 2006 $QV_{65}$ |
| 2006 $QY_{65}$ | 16.7 | 0.15 | 20060813 | 36.57782 | 229.59818 | 56.93819 | 5.55370 | 0.1948507 | 2.7037330 | 21 | 1 | 29 days | 0.49 | | | MPC | | 2006 $QY_{65}$ |
| 2006 $QZ_{65}$ | 16.7 | 0.15 | 20060902 | 57.05702 | 236.42713 | 30.25175 | 6.75271 | 0.1942916 | 2.3762009 | 20 | 1 | 20 days | 0.55 | | | MPC | | 2006 $QZ_{65}$ |
| 2006 $QF_{66}$ | 19.6 | 0.15 | 20060813 | 210.83191 | 149.02638 | 332.57453 | 18.53102 | 0.0519906 | 1.8727041 | 8 | 1 | 7 days | 0.54 | | | MPC | | 2006 $QF_{66}$ |
| 2006 $QG_{66}$ | 16.6 | 0.15 | 20060922 | 342.63520 | 218.37178 | 164.27829 | 4.32936 | 0.1810452 | 2.6618124 | 65 | 4 | 2002–2006 | 0.40 | M-v | 1 | MPC | 04044 | 2006 $QG_{66}$ |
| 2006 $QN_{66}$ | 15.8 | 0.15 | 20060902 | 353.05702 | 7.19967 | 336.17745 | 12.81046 | 0.0469999 | 3.0348768 | 24 | 1 | 40 days | 0.56 | | | MPC | | 2006 $QN_{66}$ |
| 2006 $QP_{66}$ | 17.0 | 0.15 | 20060902 | 14.06341 | 342.84521 | 336.24927 | 12.32384 | 0.2392546 | 2.5884080 | 30 | 1 | 31 days | 0.55 | | | MPC | | 2006 $QP_{66}$ |
| 2006 $QR_{66}$ | 16.1 | 0.15 | 20060902 | 319.69371 | 236.19293 | 164.93528 | 13.67580 | 0.2076145 | 2.7681479 | 36 | 1 | 41 days | 0.43 | | | MPC | | 2006 $QR_{66}$ |
| 2006 $QZ_{66}$ | 18.4 | 0.15 | 20060902 | 350.37779 | 198.96687 | 153.21424 | 6.71372 | 0.1368953 | 2.2993443 | 21 | 1 | 24 days | 0.46 | | | MPC | | 2006 $QZ_{66}$ |
| 2006 $QK_{67}$ | 16.9 | 0.15 | 20060902 | 9.55520 | 169.15377 | 159.27547 | 10.91872 | 0.1033677 | 3.1362343 | 14 | 1 | 40 days | 0.19 | | | MPC | | 2006 $QK_{67}$ |
| 2006 $QT_{67}$ | 17.0 | 0.15 | 20060902 | 308.31186 | 245.14736 | 154.59341 | 9.51795 | 0.0815071 | 3.0984875 | 13 | 1 | 40 days | 0.19 | | | MPC | | 2006 $QT_{67}$ |
| 2006 $QZ_{67}$ | 17.5 | 0.15 | 20060922 | 312.21503 | 258.69534 | 143.96086 | 3.05740 | 0.1000532 | 2.4455396 | 37 | 5 | 1995–2006 | 0.43 | M-v | 0 | MPC | 04044 | 2006 $QZ_{67}$ |
| 2006 $QL_{68}$ | 17.6 | 0.15 | 20060922 | 304.91281 | 74.25452 | 346.42753 | 2.72756 | 0.1844399 | 2.4628525 | 18 | 1 | 92 days | 0.33 | M-v | 5 | MPC | | 2006 $QL_{68}$ |
| 2006 $QM_{68}$ | 15.3 | 0.15 | 20060902 | 200.46983 | 167.68002 | 340.47352 | 24.14189 | 0.2493440 | 3.0378048 | 10 | 1 | 37 days | 0.72 | | | MPC | | 2006 $QM_{68}$ |
| 2006 $QN_{68}$ | 17.0 | 0.15 | 20060902 | 300.77079 | 252.08597 | 155.00792 | 6.28199 | 0.0698325 | 2.8003435 | 14 | 1 | 40 days | 0.20 | | | MPC | | 2006 $QN_{68}$ |
| 2006 $QQ_{68}$ | 17.9 | 0.15 | 20060902 | 320.58806 | 237.50911 | 142.90041 | 3.62696 | 0.0069911 | 2.6626168 | 13 | 1 | 40 days | 0.25 | | | MPC | | 2006 $QQ_{68}$ |
| 2006 $QT_{68}$ | 16.9 | 0.15 | 20060902 | 1.92847 | 198.66942 | 139.56767 | 2.78685 | 0.1117990 | 2.9186289 | 17 | 1 | 40 days | 0.54 | | | MPC | | 2006 $QT_{68}$ |
| 2006 $QX_{68}$ | 18.9 | 0.15 | 20060902 | 315.07307 | 308.28344 | 86.37359 | 0.58710 | 0.1049266 | 2.2587738 | 10 | 1 | 36 days | 0.32 | | | MPC | | 2006 $QX_{68}$ |
| 2006 $QZ_{68}$ | 15.9 | 0.15 | 20060902 | 273.08652 | 103.47319 | 341.34299 | 15.43659 | 0.1475907 | 3.0737652 | 21 | 1 | 37 days | 0.54 | | | MPC | | 2006 $QZ_{68}$ |
| 2006 $QC_{69}$ | 16.5 | 0.15 | 20060813 | 257.61398 | 339.77962 | 108.04646 | 1.51463 | 0.0716503 | 3.0516842 | 8 | 1 | 7 days | 0.18 | | | MPC | | 2006 $QC_{69}$ |
| 2006 $QD_{69}$ | 17.0 | 0.15 | 20060902 | 309.45061 | 268.76460 | 129.06219 | 2.45585 | 0.0647077 | 3.1642458 | 10 | 1 | 40 days | 0.25 | | | MPC | | 2006 $QD_{69}$ |
| 2006 $QL_{69}$ | 15.7 | 0.15 | 20060922 | 355.16518 | 206.97306 | 146.99973 | 3.49220 | 0.2347147 | 3.9657541 | 32 | 1 | 91 days | 0.48 | M-v | 4 | MPC | | 2006 $QL_{69}$ |
| 2006 $QT_{69}$ | 17.0 | 0.15 | 20060922 | 342.37531 | 31.16906 | 343.31306 | 6.30879 | 0.1972804 | 2.6367826 | 33 | 1 | 90 days | 0.54 | M-v | 4 | MPC | | 2006 $QT_{69}$ |
| 2006 $QV_{69}$ | 17.0 | 0.15 | 20060813 | 1.04710 | 199.35109 | 136.27537 | 3.11927 | 0.2671903 | 3.9521595 | 9 | 1 | 7 days | 0.24 | | | MPC | | 2006 $QV_{69}$ |
| 2006 $QZ_{69}$ | 18.5 | 0.15 | 20060813 | 21.47085 | 159.35751 | 147.11431 | 5.37675 | 0.1197352 | 2.2279455 | 8 | 1 | 7 days | 0.20 | | | MPC | | 2006 $QZ_{69}$ |
| 2006 $QC_{70}$ | 17.0 | 0.15 | 20060922 | 21.03518 | 324.26003 | 354.12014 | 4.72103 | 0.1554260 | 2.7808278 | 23 | 1 | 60 days | 0.27 | M-v | 4 | MPC | | 2006 $QC_{70}$ |
| 2006 $QD_{70}$ | 16.0 | 0.15 | 20060813 | 314.58747 | 60.86939 | 342.26769 | 25.72120 | 0.2105016 | 3.1970611 | 12 | 1 | 7 days | 0.59 | | | MPC | | 2006 $QD_{70}$ |
| 2006 $QE_{70}$ | 17.3 | 0.15 | 20060813 | 50.51594 | 144.75202 | 118.74094 | 2.13523 | 0.2231130 | 3.0147043 | 8 | 1 | 7 days | 0.15 | | | MPC | | 2006 $QE_{70}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QF_{70}$ | 17.3 | 0.15 | 20060902 | 270.27305 | 101.23134 | 342.15818 | 10.78392 | 0.1018056 | 2.6741614 | 13 | 1 | 37 days | 0.20 | | | MPC | | 2006 $QF_{70}$ |
| 2006 $QK_{70}$ | 17.8 | 0.15 | 20060813 | 79.44160 | 255.39110 | 345.86523 | 3.72354 | 0.1307138 | 2.2240406 | 8 | 1 | 6 days | 0.09 | | | MPC | | 2006 $QK_{70}$ |
| 2006 $QN_{70}$ | 19.5 | 0.15 | 20060813 | 42.94876 | 288.15196 | 341.69735 | 5.88140 | 0.2200689 | 2.2115130 | 8 | 1 | 6 days | 0.24 | | | MPC | | 2006 $QN_{70}$ |
| 2006 $QP_{70}$ | 16.8 | 0.15 | 20060922 | 10.48795 | 190.01626 | 141.90552 | 4.32070 | 0.2002950 | 2.9437516 | 22 | 2 | 2001–2006 | 0.54 | M-v | 5 | MPC | 04044 | 2006 $QP_{70}$ |
| 2006 $QQ_{70}$ | 17.5 | 0.15 | 20060902 | 320.12813 | 55.75472 | 344.42478 | 5.84965 | 0.2041843 | 2.6488090 | 12 | 1 | 37 days | 0.18 | | | MPC | | 2006 $QQ_{70}$ |
| 2006 $QR_{70}$ | 18.2 | 0.15 | 20060813 | 0.21926 | 354.05491 | 339.67896 | 17.86055 | 0.2287063 | 2.6229799 | 8 | 1 | 6 days | 0.25 | | | MPC | | 2006 $QR_{70}$ |
| 2006 $QV_{70}$ | 18.0 | 0.15 | 20060813 | 182.81625 | 169.90050 | 344.69968 | 6.47068 | 0.0838757 | 2.2348599 | 8 | 1 | 6 days | 0.24 | | | MPC | | 2006 $QV_{70}$ |
| 2006 $QW_{70}$ | 17.0 | 0.15 | 20060902 | 260.51404 | 110.85014 | 348.26102 | 8.78550 | 0.1604991 | 2.7083960 | 10 | 1 | 35 days | 0.22 | | | MPC | | 2006 $QW_{70}$ |
| 2006 $QY_{70}$ | 16.8 | 0.15 | 20060902 | 355.03565 | 354.60008 | 353.08100 | 5.31871 | 0.0463952 | 2.7115714 | 10 | 1 | 36 days | 0.32 | | | MPC | | 2006 $QY_{70}$ |
| 2006 $QO_{71}$ | 16.4 | 0.15 | 20060922 | 3.21456 | 211.02437 | 132.77428 | 2.50997 | 0.1865053 | 3.1154164 | 42 | 2 | 2001–2006 | 0.57 | M-v | 4 | MPC | 04044 | 2006 $QO_{71}$ |
| 2006 $QT_{71}$ | 17.6 | 0.15 | 20060922 | 350.81093 | 330.96068 | 30.25956 | 2.26821 | 0.1472403 | 2.6806068 | 13 | 1 | 60 days | 0.27 | M-v | 4 | MPC | | 2006 $QT_{71}$ |
| 2006 $QV_{71}$ | 16.4 | 0.15 | 20060922 | 6.49920 | 349.72583 | 350.25865 | 9.81467 | 0.1009934 | 2.8518318 | 24 | 1 | 64 days | 0.31 | M-v | 4 | MPC | | 2006 $QV_{71}$ |
| 2006 $QX_{71}$ | 16.7 | 0.15 | 20060902 | 347.06019 | 339.80537 | 19.85546 | 1.96036 | 0.1104354 | 2.9294947 | 10 | 1 | 40 days | 0.10 | | | MPC | | 2006 $QX_{71}$ |
| 2006 $QE_{72}$ | 16.8 | 0.15 | 20060813 | 21.30059 | 299.84151 | 5.59772 | 3.47909 | 0.1643642 | 2.7874053 | 15 | 1 | 10 days | 0.40 | | | MPC | | 2006 $QE_{72}$ |
| 2006 $QF_{72}$ | 18.7 | 0.15 | 20060813 | 12.20699 | 192.89772 | 120.76801 | 1.75235 | 0.1836543 | 2.1503649 | 10 | 1 | 7 days | 0.21 | | | MPC | | 2006 $QF_{72}$ |
| 2006 $QL_{72}$ | 18.2 | 0.15 | 20060813 | 345.76565 | 234.36940 | 119.08967 | 2.20812 | 0.1402192 | 2.5092671 | 8 | 1 | 7 days | 0.18 | | | MPC | | 2006 $QL_{72}$ |
| 2006 $QN_{72}$ | 17.5 | 0.15 | 20060902 | 340.61032 | 232.94973 | 136.57156 | 4.38117 | 0.1862672 | 2.6306203 | 10 | 1 | 24 days | 0.55 | | | MPC | | 2006 $QN_{72}$ |
| 2006 $QP_{72}$ | 17.3 | 0.15 | 20060813 | 304.01173 | 273.72818 | 146.89361 | 8.46240 | 0.2549457 | 2.8081964 | 8 | 1 | 7 days | 0.19 | | | MPC | | 2006 $QP_{72}$ |
| 2006 $QS_{72}$ | 17.9 | 0.15 | 20060922 | 0.69056 | 227.30750 | 120.58342 | 2.04692 | 0.1812648 | 2.4111273 | 21 | 1 | 62 days | 0.45 | M-v | 5 | MPC | | 2006 $QS_{72}$ |
| 2006 $QT_{72}$ | 17.4 | 0.15 | 20060813 | 4.99057 | 266.75668 | 61.73675 | 1.62928 | 0.1992931 | 3.0917320 | 8 | 1 | 7 days | 0.18 | | | MPC | | 2006 $QT_{72}$ |
| 2006 $QY_{72}$ | 18.9 | 0.15 | 20060813 | 23.88977 | 262.76011 | 27.61385 | 1.71763 | 0.2788676 | 2.4435137 | 7 | 1 | 7 days | 0.33 | | | MPC | | 2006 $QY_{72}$ |
| 2006 $QZ_{72}$ | 17.4 | 0.15 | 20060813 | 299.15567 | 63.64417 | 343.99602 | 13.56176 | 0.1094007 | 2.3521981 | 10 | 1 | 7 days | 0.20 | | | MPC | | 2006 $QZ_{72}$ |
| 2006 $QD_{73}$ | 17.6 | 0.15 | 20060813 | 173.18760 | 177.09899 | 346.17971 | 14.71378 | 0.0483074 | 2.5570905 | 8 | 1 | 7 days | 0.10 | | | MPC | | 2006 $QD_{73}$ |
| 2006 $QF_{73}$ | 17.2 | 0.15 | 20060902 | 326.39542 | 239.69802 | 146.90560 | 9.80004 | 0.1490381 | 2.8468985 | 6 | 1 | 35 days | 0.17 | | | MPC | | 2006 $QF_{73}$ |
| 2006 $QN_{73}$ | 16.2 | 0.15 | 20060902 | 294.65176 | 29.63138 | 26.95279 | 3.52034 | 0.0878003 | 2.7692687 | 10 | 1 | 40 days | 0.35 | | | MPC | | 2006 $QN_{73}$ |
| 2006 $QO_{73}$ | 18.5 | 0.15 | 20060902 | 333.48162 | 15.98918 | 2.17763 | 4.24253 | 0.1610985 | 2.6071124 | 10 | 1 | 40 days | 0.19 | | | MPC | | 2006 $QO_{73}$ |
| 2006 $QS_{73}$ | 18.6 | 0.15 | 20060922 | 4.28594 | 40.89566 | 299.44561 | 1.65260 | 0.2359267 | 2.3911456 | 29 | 1 | 64 days | 0.53 | M-v | 4 D | MPC | | 2006 $QS_{73}$ |
| 2006 $QN_{74}$ | 16.3 | 0.15 | 20060902 | 323.31673 | 245.60277 | 152.70407 | 12.85024 | 0.2374547 | 2.9938219 | 14 | 1 | 24 days | 0.59 | | | MPC | | 2006 $QN_{74}$ |
| 2006 $QT_{74}$ | 16.2 | 0.15 | 20060922 | 158.76222 | 178.62040 | 6.60976 | 2.60948 | 0.0323345 | 2.5140253 | 54 | 4 | 2002–2006 | 0.45 | M-v | 1 | MPC | 04045 | 2006 $QT_{74}$ |
| 2006 $QZ_{74}$ | 17.0 | 0.15 | 20060813 | 28.28862 | 307.92757 | 348.33749 | 6.41901 | 0.1638205 | 2.8056246 | 8 | 1 | 7 days | 0.10 | | | MPC | | 2006 $QZ_{74}$ |
| 2006 $QQ_{75}$ | 16.2 | 0.15 | 20060902 | 211.66383 | 148.73934 | 343.41997 | 12.34772 | 0.0881380 | 3.1343687 | 10 | 1 | 36 days | 0.26 | | | MPC | | 2006 $QQ_{75}$ |
| 2006 $QV_{75}$ | 18.2 | 0.15 | 20060902 | 18.11612 | 235.11065 | 67.51434 | 1.20542 | 0.3280704 | 3.0525209 | 21 | 1 | 45 days | 0.26 | | | MPC | | 2006 $QV_{75}$ |
| 2006 $QG_{76}$ | 17.5 | 0.15 | 20060922 | 15.63054 | 183.20042 | 140.65510 | 2.72656 | 0.1954379 | 2.3923082 | 36 | 1 | 150 days | 0.37 | M-v | 4 | MPC | | 2006 $QG_{76}$ |
| 2006 $QM_{76}$ | 17.9 | 0.15 | 20060902 | 340.65485 | 30.32092 | 343.07701 | 5.11580 | 0.2660761 | 2.6210163 | 13 | 1 | 37 days | 0.23 | | | MPC | | 2006 $QM_{76}$ |
| 2006 $QX_{76}$ | 15.2 | 0.15 | 20060922 | 52.50971 | 327.31211 | 311.81856 | 9.63378 | 0.0868932 | 3.0048964 | 48 | 3 | 2001–2006 | 0.52 | M-v | 3 | MPC | 04045 | 2006 $QX_{76}$ |
| 2006 $QA_{77}$ | 17.7 | 0.15 | 20060902 | 1.65340 | 0.36079 | 333.67408 | 12.66802 | 0.1618832 | 2.3462930 | 27 | 1 | 43 days | 0.50 | | | MPC | | 2006 $QA_{77}$ |
| 2006 $QE_{77}$ | 15.9 | 0.15 | 20060922 | 0.62297 | 181.46799 | 177.67643 | 18.01994 | 0.1732280 | 3.0666333 | 45 | 1 | 61 days | 0.44 | M-v | 4 | MPC | | 2006 $QE_{77}$ |
| 2006 $QJ_{77}$ | 15.8 | 0.15 | 20060902 | 347.36861 | 119.47261 | 225.51414 | 3.54457 | 0.0767747 | 2.7878618 | 13 | 1 | 37 days | 0.31 | | | MPC | | 2006 $QJ_{77}$ |
| 2006 $QU_{77}$ | 16.3 | 0.15 | 20060922 | 336.49015 | 224.59898 | 153.91859 | 5.58567 | 0.1889834 | 3.1974903 | 29 | 1 | 97 days | 0.42 | M-v | 4 | MPC | | 2006 $QU_{77}$ |
| 2006 $QX_{77}$ | 16.6 | 0.15 | 20060902 | 322.40903 | 228.12591 | 163.04198 | 13.61356 | 0.1839019 | 2.6188936 | 18 | 1 | 39 days | 0.30 | | | MPC | | 2006 $QX_{77}$ |
| 2006 $QY_{77}$ | 18.1 | 0.15 | 20060902 | 19.58341 | 136.32834 | 173.69838 | 6.31105 | 0.2002439 | 2.3118789 | 14 | 1 | 23 days | 0.50 | | | MPC | | 2006 $QY_{77}$ |
| 2006 $QC_{78}$ | 17.5 | 0.15 | 20060902 | 350.46522 | 198.59434 | 164.04129 | 17.29731 | 0.2722558 | 2.7369407 | 21 | 1 | 35 days | 0.58 | | | MPC | | 2006 $QC_{78}$ |
| 2006 $QE_{78}$ | 18.0 | 0.15 | 20060922 | 3.88920 | 309.94603 | 37.42927 | 0.74001 | 0.2196075 | 2.3662638 | 40 | 1 | 91 days | 0.47 | M-v | 3 | MPC | | 2006 $QE_{78}$ |
| 2006 $QM_{78}$ | 17.5 | 0.15 | 20060922 | 27.83902 | 271.64954 | 42.79215 | 1.90119 | 0.2324665 | 2.3032412 | 61 | 1 | 85 days | 0.39 | M-v | 4 D | MPC | | 2006 $QM_{78}$ |
| 2006 $QN_{78}$ | 18.1 | 0.15 | 20060902 | 11.42223 | 159.02324 | 164.96131 | 11.04897 | 0.3624413 | 2.6891241 | 20 | 1 | 39 days | 0.80 | | | MPC | | 2006 $QN_{78}$ |
| 2006 $QQ_{78}$ | 17.6 | 0.15 | 20060922 | 18.97322 | 332.59692 | 358.86005 | 6.61051 | 0.2306989 | 2.2528522 | 72 | 1 | 62 days | 0.44 | M-v | 4 | MPC | | 2006 $QQ_{78}$ |
| 2006 $QR_{78}$ | 15.1 | 0.15 | 20060922 | 5.91478 | 331.85983 | 21.80900 | 13.41571 | 0.2298002 | 3.1614017 | 59 | 1 | 60 days | 0.66 | M-v | 5 | MPC | | 2006 $QR_{78}$ |
| 2006 $QS_{78}$ | 17.0 | 0.15 | 20060922 | 355.59132 | 316.72354 | 38.41820 | 3.32097 | 0.2372817 | 2.3993193 | 74 | 3 | 2003–2006 | 0.53 | M-v | 3 | MPC | 04045 | 2006 $QS_{78}$ |
| 2006 $QT_{78}$ | 16.8 | 0.15 | 20060922 | 338.83062 | 326.74989 | 61.66491 | 1.70176 | 0.3185308 | 2.6950473 | 34 | 1 | 91 days | 0.49 | M-v | 5 | MPC | | 2006 $QT_{78}$ |
| 2006 $QW_{78}$ | 15.6 | 0.15 | 20060922 | 356.87059 | 1.50045 | 354.40413 | 13.76603 | 0.2012652 | 2.7783104 | 83 | 1 | 105 days | 0.46 | M-v | 3 | MPC | | 2006 $QW_{78}$ |
| 2006 $QF_{79}$ | 18.2 | 0.15 | 20060902 | 8.84391 | 332.67746 | 351.73353 | 6.53526 | 0.3473758 | 2.5824267 | 40 | 1 | 58 days | 0.54 | | | MPC | | 2006 $QF_{79}$ |
| 2006 $QO_{79}$ | 17.0 | 0.15 | 20060922 | 333.13626 | 215.21399 | 171.41748 | 10.36832 | 0.2227658 | 2.4377552 | 45 | 1 | 95 days | 0.56 | M-v | 4 | MPC | | 2006 $QO_{79}$ |
| 2006 $QP_{79}$ | 17.0 | 0.15 | 20060922 | 39.97084 | 15.99860 | 277.66671 | 3.24698 | 0.1322885 | 2.2102151 | 52 | 3 | 2003–2006 | 0.38 | M-v | 3 | MPC | 04045 | 2006 $QP_{79}$ |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QW_{79}$ | 17.2 | 0.15 | 20060902 | 34.04625 | 336.18461 | 311.26324 | 5.30505 | 0.1841844 | 2.2656496 | 20 | 1 | 21 days | 0.53 | | | MPC | | 2006 $QW_{79}$ |
| 2006 $QZ_{79}$ | 14.9 | 0.15 | 20060922 | 352.40627 | 182.90663 | 170.99518 | 9.34732 | 0.1892262 | 3.9427441 | 27 | 1 | 84 days | 0.39 | M-v | 4 | MPC | | 2006 $QZ_{79}$ |
| 2006 $QD_{80}$ | 16.3 | 0.15 | 20060902 | 322.91145 | 78.18157 | 318.15811 | 8.57028 | 0.2405503 | 3.1280207 | 18 | 1 | 39 days | 0.45 | | | MPC | | 2006 $QD_{80}$ |
| 2006 $QM_{80}$ | 16.4 | 0.15 | 20060922 | 49.52396 | 125.96060 | 144.96268 | 13.19678 | 0.2037598 | 2.6856285 | 34 | 3 | 2001–2006 | 0.51 | M-v | 2 | MPC | 04045 | 2006 $QM_{80}$ |
| 2006 $QN_{80}$ | 17.6 | 0.15 | 20060922 | 0.98206 | 236.26772 | 104.09821 | 1.70688 | 0.0865126 | 2.6731981 | 24 | 3 | 2002–2006 | 0.38 | M-v | 4 | MPC | 04046 | 2006 $QN_{80}$ |
| 2006 $QU_{80}$ | 17.0 | 0.15 | 20060922 | 8.07556 | 52.91347 | 290.58212 | 4.40878 | 0.2827906 | 2.3496033 | 109 | 4 | 1999–2006 | 0.47 | M-v | 1 | MPC | 04046 | 2006 $QU_{80}$ |
| 2006 $QV_{80}$ | 16.5 | 0.15 | 20060813 | 214.92021 | 333.57656 | 161.61099 | 3.74287 | 0.2474044 | 2.4186774 | 9 | 1 | 9 days | 0.39 | | | MPC | | 2006 $QV_{80}$ |
| 2006 $QX_{80}$ | 17.5 | 0.15 | 20060922 | 310.32114 | 24.51826 | 26.15820 | 2.98130 | 0.1691040 | 2.3790910 | 30 | 3 | 2001–2006 | 0.44 | M-v | 3 | MPC | 04046 | 2006 $QX_{80}$ |
| 2006 $QA_{81}$ | 16.7 | 0.15 | 20060902 | 350.76297 | 232.19378 | 119.01298 | 4.68125 | 0.1492967 | 3.1264048 | 10 | 1 | 21 days | 0.67 | | | MPC | | 2006 $QA_{81}$ |
| 2006 $QB_{81}$ | 18.0 | 0.15 | 20060902 | 27.95566 | 124.30197 | 179.78560 | 5.05278 | 0.1309241 | 2.2092775 | 26 | 1 | 53 days | 0.60 | | | MPC | | 2006 $QB_{81}$ |
| 2006 $QE_{81}$ | 18.0 | 0.15 | 20060922 | 2.06824 | 169.30504 | 176.77276 | 4.68077 | 0.1687393 | 2.3680767 | 29 | 1 | 85 days | 0.42 | M-v | 3 | MPC | | 2006 $QE_{81}$ |
| 2006 $QG_{81}$ | 16.8 | 0.15 | 20060902 | 8.63016 | 185.90537 | 144.40208 | 5.53445 | 0.1239823 | 2.4102363 | 22 | 1 | 33 days | 0.52 | | | MPC | | 2006 $QG_{81}$ |
| 2006 $QH_{81}$ | 17.2 | 0.15 | 20060902 | 334.64951 | 231.22868 | 157.08971 | 13.65798 | 0.2741171 | 2.6958722 | 13 | 1 | 49 days | 0.50 | | | MPC | | 2006 $QH_{81}$ |
| 2006 $QJ_{81}$ | 17.0 | 0.15 | 20060902 | 336.47117 | 225.94640 | 158.73197 | 13.36082 | 0.2569055 | 2.7116078 | 28 | 1 | 38 days | 0.70 | | | MPC | | 2006 $QJ_{81}$ |
| 2006 $QK_{81}$ | 16.9 | 0.15 | 20060902 | 292.79628 | 94.67780 | 344.02669 | 23.72430 | 0.2410262 | 2.2858118 | 18 | 1 | 24 days | 0.50 | | | MPC | | 2006 $QK_{81}$ |
| 2006 $QP_{81}$ | 16.6 | 0.15 | 20060922 | 9.16136 | 346.96824 | 355.75368 | 9.62872 | 0.1246599 | 2.3280507 | 96 | 3 | 1999–2006 | 0.49 | M-v | 3 | MPC | 04046 | 2006 $QP_{81}$ |
| 2006 $QR_{81}$ | 16.0 | 0.15 | 20060902 | 349.75646 | 195.32810 | 168.27237 | 13.78504 | 0.1982093 | 2.7335021 | 58 | 1 | 57 days | 0.50 | | | MPC | | 2006 $QR_{81}$ |
| 2006 $QS_{81}$ | 18.0 | 0.15 | 20060902 | 25.49407 | 339.74136 | 327.03699 | 5.37084 | 0.2174517 | 2.1777111 | 15 | 1 | 26 days | 0.64 | | | MPC | | 2006 $QS_{81}$ |
| 2006 $QW_{81}$ | 16.3 | 0.15 | 20060922 | 40.69000 | 306.36247 | 6.18282 | 6.23479 | 0.0499765 | 2.7229561 | 24 | 1 | 64 days | 0.40 | M-v | 4 | MPC | | 2006 $QW_{81}$ |
| 2006 $QX_{81}$ | 16.2 | 0.15 | 20060922 | 355.96584 | 193.43290 | 169.91124 | 5.00702 | 0.1445616 | 2.7430201 | 54 | 1 | 115 days | 0.44 | M-v | 3 | MPC | | 2006 $QX_{81}$ |
| 2006 $QA_{82}$ | 17.8 | 0.15 | 20060902 | 2.57892 | 178.78344 | 165.26477 | 6.90863 | 0.3156020 | 2.6203191 | 38 | 1 | 46 days | 0.52 | | | MPC | | 2006 $QA_{82}$ |
| 2006 $QC_{82}$ | 16.8 | 0.15 | 20060922 | 42.43166 | 263.53493 | 34.55128 | 4.47375 | 0.1989587 | 2.3811062 | 61 | 1 | 83 days | 0.48 | M-v | 4 | MPC | | 2006 $QC_{82}$ |
| 2006 $QD_{82}$ | 17.2 | 0.15 | 20060922 | 1.41393 | 176.80540 | 190.31474 | 5.50523 | 0.2406024 | 2.3676133 | 69 | 1 | 91 days | 0.40 | M-v | 3 | MPC | | 2006 $QD_{82}$ |
| 2006 $QE_{82}$ | 15.6 | 0.15 | 20060922 | 17.82434 | 357.99179 | 328.62339 | 25.22573 | 0.1682417 | 2.7412420 | 44 | 1 | 68 days | 0.59 | M-v | 4 | MPC | | 2006 $QE_{82}$ |
| 2006 $QG_{82}$ | 16.7 | 0.15 | 20060922 | 318.65408 | 63.20231 | 330.71754 | 4.22097 | 0.0739628 | 2.6639355 | 18 | 1 | 91 days | 0.32 | M-v | 4 | MPC | | 2006 $QG_{82}$ |
| 2006 $QJ_{82}$ | 16.5 | 0.15 | 20060902 | 6.29075 | 347.13313 | 338.24450 | 6.73321 | 0.2773387 | 3.1960529 | 26 | 1 | 38 days | 0.34 | | | MPC | | 2006 $QJ_{82}$ |
| 2006 $QK_{82}$ | 15.2 | 0.15 | 20060922 | 349.29973 | 348.36050 | 10.55529 | 2.48780 | 0.2315344 | 3.9708441 | 34 | 1 | 83 days | 0.63 | M-v | 5 | MPC | | 2006 $QK_{82}$ |
| 2006 $QN_{82}$ | 17.3 | 0.15 | 20060922 | 38.81503 | 156.71498 | 137.66430 | 2.57820 | 0.1673770 | 2.2858360 | 53 | 4 | 1999–2006 | 0.39 | M-v | 1 | MPC | 04046 | 2006 $QN_{82}$ |
| 2006 $QS_{82}$ | 15.6 | 0.15 | 20060922 | 19.66071 | 68.31204 | 237.48474 | 12.62771 | 0.2309129 | 2.7932889 | 33 | 1 | 117 days | 0.48 | M-v | 3 | MPC | | 2006 $QS_{82}$ |
| 2006 $QA_{83}$ | 16.5 | 0.15 | 20060813 | 322.70516 | 59.38094 | 332.30000 | 25.41026 | 0.2563899 | 3.1262725 | 14 | 1 | 24 days | 0.63 | | | MPC | | 2006 $QA_{83}$ |
| 2006 $QG_{83}$ | 16.1 | 0.15 | 20060902 | 13.62117 | 348.67988 | 330.81286 | 11.13919 | 0.1266755 | 3.0910206 | 25 | 1 | 43 days | 0.48 | | | MPC | | 2006 $QG_{83}$ |
| 2006 $QH_{83}$ | 17.1 | 0.15 | 20060902 | 353.55140 | 15.50732 | 331.97009 | 12.96822 | 0.1761538 | 2.6491247 | 17 | 1 | 45 days | 0.28 | | | MPC | | 2006 $QH_{83}$ |
| 2006 $QJ_{83}$ | 17.9 | 0.15 | 20060922 | 353.35049 | 89.48003 | 265.72176 | 0.73607 | 0.1610931 | 2.3512318 | 20 | 1 | 73 days | 0.44 | M-v | 4 | MPC | | 2006 $QJ_{83}$ |
| 2006 $QK_{83}$ | 18.1 | 0.15 | 20060922 | 340.04186 | 215.99612 | 159.60864 | 5.86059 | 0.1844519 | 2.2436149 | 32 | 2 | 2003–2006 | 0.46 | M-v | 4 | MPC | 04047 | 2006 $QK_{83}$ |
| 2006 $QO_{83}$ | 18.1 | 0.15 | 20060922 | 342.34762 | 176.18222 | 200.72249 | 0.84399 | 0.2396047 | 2.2890738 | 40 | 1 | 87 days | 0.39 | M-v | 4 | MPC | | 2006 $QO_{83}$ |
| 2006 $QF_{84}$ | 16.5 | 0.15 | 20060813 | 45.22573 | 288.42078 | 340.31709 | 16.61558 | 0.2010728 | 3.0983149 | 8 | 1 | 5 days | 0.25 | | | MPC | | 2006 $QF_{84}$ |
| 2006 $QY_{84}$ | 17.5 | 0.15 | 20060902 | 60.80212 | 107.64437 | 153.82650 | 16.68460 | 0.1402519 | 2.6491538 | 12 | 1 | 42 days | 0.15 | | | MPC | | 2006 $QY_{84}$ |
| 2006 $QH_{85}$ | 18.4 | 0.15 | 20060902 | 340.46477 | 39.65608 | 330.30701 | 5.64345 | 0.2516184 | 2.3366696 | 29 | 1 | 39 days | 0.49 | | | MPC | | 2006 $QH_{85}$ |
| 2006 $QV_{85}$ | 17.1 | 0.15 | 20060902 | 338.33705 | 209.41799 | 160.38555 | 3.91066 | 0.2069073 | 2.7420097 | 31 | 1 | 43 days | 0.44 | | | MPC | | 2006 $QV_{85}$ |
| 2006 $QA_{87}$ | 18.6 | 0.15 | 20060922 | 338.56281 | 206.95745 | 176.91859 | 4.32702 | 0.2331685 | 2.2225761 | 26 | 1 | 62 days | 0.49 | M-v | 4 | MPC | | 2006 $QA_{87}$ |
| 2006 $QO_{87}$ | 15.9 | 0.15 | 20060902 | 342.10988 | 206.92811 | 160.12271 | 28.29872 | 0.1659674 | 3.1919517 | 10 | 1 | 18 days | 0.45 | | | MPC | | 2006 $QO_{87}$ |
| 2006 $QY_{87}$ | 17.0 | 0.15 | 20060902 | 109.63863 | 245.64037 | 336.90220 | 14.23969 | 0.0733601 | 2.7215952 | 10 | 1 | 31 days | 0.80 | | | MPC | | 2006 $QY_{87}$ |
| 2006 $QD_{88}$ | 17.2 | 0.15 | 20060813 | 342.38191 | 198.69499 | 163.37288 | 13.83524 | 0.1649779 | 2.5993357 | 18 | 1 | 26 days | 0.44 | | | MPC | | 2006 $QD_{88}$ |
| 2006 $QH_{88}$ | 16.0 | 0.15 | 20060922 | 42.30475 | 305.39438 | 355.84303 | 3.78026 | 0.0852179 | 2.8141530 | 25 | 1 | 86 days | 0.49 | M-v | 5 | MPC | | 2006 $QH_{88}$ |
| 2006 $QL_{88}$ | 15.5 | 0.15 | 20060902 | 343.32475 | 210.66245 | 162.35577 | 18.77915 | 0.2172574 | 3.1629414 | 38 | 1 | 44 days | 0.54 | | | MPC | | 2006 $QL_{88}$ |
| 2006 $QM_{88}$ | 17.8 | 0.15 | 20060902 | 348.81868 | 13.83801 | 346.57052 | 8.75264 | 0.1338611 | 2.3315083 | 21 | 1 | 41 days | 0.53 | | | MPC | | 2006 $QM_{88}$ |
| 2006 $QN_{88}$ | 17.6 | 0.15 | 20060902 | 328.64301 | 262.77380 | 127.76348 | 2.12571 | 0.1910575 | 2.3607522 | 25 | 1 | 45 days | 0.62 | | | MPC | | 2006 $QN_{88}$ |
| 2006 $QO_{88}$ | 17.1 | 0.15 | 20060922 | 6.09347 | 343.79714 | 359.79259 | 4.21199 | 0.2124725 | 2.4221533 | 62 | 1 | 85 days | 0.47 | M-v | 3 | MPC | | 2006 $QO_{88}$ |
| 2006 $QU_{88}$ | 18.4 | 0.15 | 20060922 | 4.61810 | 350.93987 | 353.52287 | 4.65890 | 0.2262355 | 2.2970433 | 23 | 1 | 53 days | 0.44 | | | MPC | | 2006 $QU_{88}$ |
| 2006 $QX_{88}$ | 17.7 | 0.15 | 20060922 | 8.93930 | 330.23037 | 15.87639 | 4.52944 | 0.2022219 | 2.2492365 | 67 | 1 | 78 days | 0.46 | M-v | 4 | MPC | | 2006 $QX_{88}$ |
| 2006 $QB_{89}$ | 18.2 | 0.15 | 20060902 | 348.01560 | 225.70720 | 142.85320 | 5.65684 | 0.2222735 | 2.1811918 | 25 | 1 | 47 days | 0.53 | | | MPC | | 2006 $QB_{89}$ |
| 2006 $QD_{89}$ | 18.3 | 0.15 | 20060902 | 353.71735 | 213.23293 | 145.33423 | 3.79099 | 0.2015977 | 2.1923013 | 28 | 1 | 46 days | 0.48 | | | MPC | | 2006 $QD_{89}$ |
| 2006 $QE_{89}$ | 20.9 | 0.15 | 20060922 | 352.62591 | 75.79162 | 319.79802 | 20.98386 | 0.5657290 | 1.9555200 | 40 | 1 | 25 days | 0.36 | M-v | 7 | MPC | 04411 | 2006 $QE_{89}$ |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QL_{89}$ | 16.4 | 0.15 | 20060922 | 14.65211 | 144.94954 | 204.33493 | 14.11228 | 0.2070026 | 2.7308714 | 49 | 1 | 80 days | 0.52 | M-v | 4 | MPC | | 2006 $QL_{89}$ |
| 2006 $QP_{89}$ | 17.5 | 0.15 | 20060902 | 116.79686 | 257.25069 | 311.58161 | 6.92652 | 0.0662642 | 2.2820918 | 22 | 1 | 30 days | 0.33 | | | MPC | | 2006 $QP_{89}$ |
| 2006 $QQ_{89}$ | 16.6 | 0.15 | 20060922 | 11.99476 | 92.52879 | 257.04342 | 5.29535 | 0.2982030 | 3.0732932 | 34 | 1 | 54 days | 0.49 | | | MPC | | 2006 $QQ_{89}$ |
| 2006 $QR_{89}$ | 19.9 | 0.15 | 20060922 | 315.33205 | 263.42549 | 166.57840 | 9.23704 | 0.3675868 | 1.8889372 | 48 | 1 | 84 days | 0.52 | M-v | 4 | MPC | 04411 | 2006 $QR_{89}$ |
| 2006 $QS_{89}$ | 21.1 | 0.15 | 20060922 | 345.78997 | 229.97943 | 159.29591 | 16.60183 | 0.3659545 | 1.7782227 | 49 | 1 | 75 days | 0.50 | M-v | 5 | MPC | 04411 | 2006 $QS_{89}$ |
| 2006 $QT_{89}$ | 20.1 | 0.15 | 20060922 | 76.26284 | 56.15046 | 162.52043 | 24.55271 | 0.4734683 | 1.4839797 | 34 | 1 | 17 days | 0.49 | M-v | 7 | MPC | 04411 | 2006 $QT_{89}$ |
| 2006 $QU_{89}$ | 21.6 | 0.15 | 20060922 | 77.07140 | 79.22040 | 162.28671 | 14.78771 | 0.2744570 | 1.5304884 | 20 | 1 | 27 days | 0.50 | M-v | 6 | MPC | 04411 | 2006 $QU_{89}$ |
| 2006 $QV_{89}$ | 25.4 | 0.15 | 20060922 | 333.62428 | 236.59374 | 166.19416 | 1.06640 | 0.2239393 | 1.1912743 | 68 | 1 | 10 days | 0.49 | M-v | 6 | MPC | 04411 | 2006 $QV_{89}$ |
| 2006 $QW_{89}$ | 19.2 | 0.15 | 20060922 | 32.33733 | 136.27152 | 125.54708 | 4.87242 | 0.5665655 | 2.6171251 | 42 | 1 | 44 days | 0.42 | M-v | 5 | MPC | 04411 | 2006 $QW_{89}$ |
| 2006 $QX_{89}$ | 19.1 | 0.15 | 20060922 | 356.61290 | 82.08393 | 293.04027 | 5.99086 | 0.5574164 | 3.0304285 | 206 | 1 | 85 days | 0.38 | M-v | 3 | MPC | 04411 | 2006 $QX_{89}$ |
| 2006 $QY_{89}$ | 17.0 | 0.15 | 20060902 | 335.65351 | 254.75440 | 155.53777 | 22.13196 | 0.3636359 | 3.1672245 | 14 | 1 | 30 days | 0.41 | | | MPC | | 2006 $QY_{89}$ |
| 2006 $QB_{90}$ | 16.8 | 0.15 | 20060902 | 305.76367 | 67.40612 | 340.67608 | 7.20247 | 0.1229433 | 2.7945345 | 34 | 1 | 49 days | 0.48 | | | MPC | | 2006 $QB_{90}$ |
| 2006 $QC_{90}$ | 16.3 | 0.15 | 20060902 | 353.75339 | 125.78529 | 233.30856 | 8.30092 | 0.2384296 | 2.7470600 | 47 | 1 | 51 days | 0.52 | | | MPC | | 2006 $QC_{90}$ |
| 2006 $QF_{90}$ | 16.3 | 0.15 | 20060922 | 340.81853 | 58.44718 | 302.09544 | 6.56472 | 0.1341322 | 2.3279114 | 51 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 04047 | 2006 $QF_{90}$ |
| 2006 $QG_{90}$ | 18.0 | 0.15 | 20060922 | 10.73229 | 61.76580 | 265.67433 | 3.38909 | 0.2680320 | 2.1876160 | 31 | 1 | 114 days | 0.43 | M-v | 4 | MPC | | 2006 $QG_{90}$ |
| 2006 $QK_{90}$ | 16.6 | 0.15 | 20060922 | 359.19167 | 148.88897 | 203.84481 | 7.31160 | 0.3218261 | 2.8014514 | 65 | 1 | 87 days | 0.51 | M-v | 3 | MPC | | 2006 $QK_{90}$ |
| 2006 $QN_{90}$ | 17.6 | 0.15 | 20060922 | 24.71435 | 296.94458 | 11.52000 | 5.14532 | 0.1176548 | 2.4203545 | 24 | 3 | 1995–2006 | 0.26 | M-v | 3 | MPC | 04047 | 2006 $QN_{90}$ |
| 2006 $QU_{90}$ | 18.1 | 0.15 | 20060922 | 346.70656 | 49.96771 | 352.82518 | 7.74729 | 0.5172758 | 2.8193475 | 288 | 1 | 94 days | 0.38 | M-v | 3 | MPC | 04411 | 2006 $QU_{90}$ |
| 2006 $QQ_{92}$ | 16.6 | 0.15 | 20060922 | 23.58853 | 52.57475 | 246.27281 | 4.52585 | 0.2251658 | 2.6725218 | 30 | 1 | 86 days | 0.46 | M-v | 4 | MPC | 04412 | 2006 $QQ_{92}$ |
| 2006 $QX_{92}$ | 17.4 | 0.15 | 20060813 | 5.57957 | 358.45979 | 315.99906 | 17.90253 | 0.2135319 | 3.0108166 | 9 | 1 | 31 days | 0.74 | | | MPC | | 2006 $QX_{92}$ |
| 2006 $QC_{93}$ | 17.1 | 0.15 | 20060922 | 29.55057 | 118.68274 | 178.74146 | 6.43548 | 0.1223656 | 2.4041501 | 50 | 6 | 1995–2006 | 0.46 | M-v | 1 | MPC | 04047 | 2006 $QC_{93}$ |
| 2006 $QP_{93}$ | 15.1 | 0.15 | 20060813 | 22.24190 | 348.68394 | 303.81727 | 15.96661 | 0.1661294 | 3.1226403 | 23 | 1 | 59 days | 0.42 | | | MPC | | 2006 $QP_{93}$ |
| 2006 $QQ_{93}$ | 16.1 | 0.15 | 20060922 | 43.95660 | 100.56150 | 180.55126 | 9.05243 | 0.0778268 | 2.7547409 | 31 | 3 | 2002–2006 | 0.44 | M-v | 2 | MPC | 04047 | 2006 $QQ_{93}$ |
| 2006 $QV_{93}$ | 14.9 | 0.15 | 20060922 | 347.19897 | 117.89696 | 243.03294 | 5.14583 | 0.3162529 | 3.9663653 | 47 | 3 | 1999–2006 | 0.41 | M-v | 3 | MPC | 04047 | 2006 $QV_{93}$ |
| 2006 $QK_{94}$ | 16.9 | 0.15 | 20060902 | 330.90966 | 42.39946 | 332.91785 | 24.89465 | 0.1260124 | 2.7560376 | 16 | 1 | 34 days | 0.31 | | | MPC | | 2006 $QK_{94}$ |
| 2006 $QL_{94}$ | 17.6 | 0.15 | 20060922 | 14.03476 | 116.95158 | 207.17557 | 1.56384 | 0.2103398 | 2.3983962 | 50 | 3 | 1999–2006 | 0.42 | M-v | 2 | MPC | 04048 | 2006 $QL_{94}$ |
| 2006 $QN_{94}$ | 17.9 | 0.15 | 20060922 | 357.64838 | 201.34665 | 148.91461 | 2.63967 | 0.2739273 | 2.6944849 | 25 | 1 | 93 days | 0.36 | M-v | 4 | MPC | | 2006 $QN_{94}$ |
| 2006 $QR_{94}$ | 17.1 | 0.15 | 20060813 | 299.27220 | 50.45733 | 348.63981 | 14.38684 | 0.0438697 | 2.5484178 | 9 | 1 | 29 days | 0.35 | | | MPC | | 2006 $QR_{94}$ |
| 2006 $QS_{94}$ | 15.5 | 0.15 | 20060813 | 52.54600 | 116.71879 | 151.82454 | 16.38325 | 0.1310614 | 3.0591638 | 17 | 1 | 29 days | 0.45 | | | MPC | | 2006 $QS_{94}$ |
| 2006 $QT_{94}$ | 18.0 | 0.15 | 20060922 | 4.18186 | 323.42444 | 18.29929 | 1.79294 | 0.2067332 | 2.3533379 | 25 | 1 | 65 days | 0.57 | M-v | 4 | MPC | | 2006 $QT_{94}$ |
| 2006 $QD_{95}$ | 17.2 | 0.15 | 20060922 | 63.69187 | 144.84115 | 125.64531 | 7.85673 | 0.1187542 | 2.1752630 | 42 | 4 | 1999–2006 | 0.53 | M-v | 2 | MPC | 04048 | 2006 $QD_{95}$ |
| 2006 $QK_{95}$ | 16.9 | 0.15 | 20060922 | 16.78998 | 325.35768 | 355.94352 | 9.25997 | 0.2163992 | 2.7854519 | 31 | 1 | 92 days | 0.41 | M-v | 4 | MPC | | 2006 $QK_{95}$ |
| 2006 $QL_{95}$ | 16.9 | 0.15 | 20060922 | 31.91499 | 172.10499 | 126.34626 | 6.59709 | 0.2252257 | 2.6412471 | 35 | 2 | 2002–2006 | 0.40 | M-v | 3 | MPC | 04048 | 2006 $QL_{95}$ |
| 2006 $QN_{95}$ | 17.3 | 0.15 | 20060902 | 349.53815 | 257.08671 | 98.70985 | 4.68580 | 0.1538926 | 2.3243802 | 24 | 1 | 47 days | 0.76 | | | MPC | | 2006 $QN_{95}$ |
| 2006 $QP_{95}$ | 17.8 | 0.15 | 20060922 | 40.59681 | 298.57179 | 352.22994 | 4.61008 | 0.1859337 | 2.3130072 | 41 | 3 | 1992–2006 | 0.49 | M-v | 4 | MPC | 04048 | 2006 $QP_{95}$ |
| 2006 $QQ_{95}$ | 17.6 | 0.15 | 20060902 | 346.67490 | 226.03789 | 137.27614 | 8.07293 | 0.2313272 | 2.2250811 | 25 | 1 | 35 days | 0.52 | | | MPC | | 2006 $QQ_{95}$ |
| 2006 $QS_{95}$ | 17.3 | 0.15 | 20060922 | 335.95002 | 246.53953 | 140.69149 | 2.68430 | 0.2060364 | 2.3046515 | 64 | 4 | 1999–2006 | 0.55 | M-v | 1 | MPC | 04048 | 2006 $QS_{95}$ |
| 2006 $QU_{95}$ | 17.3 | 0.15 | 20060902 | 13.36819 | 246.14020 | 73.64918 | 6.96073 | 0.1748722 | 2.3626386 | 27 | 1 | 43 days | 0.57 | | | MPC | | 2006 $QU_{95}$ |
| 2006 $QZ_{95}$ | 16.1 | 0.15 | 20060922 | 320.61658 | 53.70964 | 355.30838 | 26.36847 | 0.2979395 | 3.1774152 | 36 | 1 | 92 days | 0.61 | M-v | 4 | MPC | | 2006 $QZ_{95}$ |
| 2006 $QG_{96}$ | 17.4 | 0.15 | 20060902 | 25.04803 | 239.94492 | 66.72934 | 8.20664 | 0.1662808 | 2.2442946 | 17 | 1 | 41 days | 0.46 | | | MPC | | 2006 $QG_{96}$ |
| 2006 $QJ_{96}$ | 17.4 | 0.15 | 20060813 | 344.38043 | 237.21305 | 125.58007 | 18.43147 | 0.2517091 | 2.5389624 | 16 | 1 | 27 days | 0.35 | | | MPC | | 2006 $QJ_{96}$ |
| 2006 $QM_{96}$ | 15.9 | 0.15 | 20060902 | 4.98412 | 294.98222 | 41.46315 | 14.46745 | 0.2019439 | 3.2320949 | 13 | 1 | 57 days | 0.40 | | | MPC | | 2006 $QM_{96}$ |
| 2006 $QP_{96}$ | 17.7 | 0.15 | 20060922 | 5.17693 | 358.72263 | 348.47712 | 8.68257 | 0.2398934 | 2.3575334 | 62 | 1 | 68 days | 0.47 | M-v | 4 | MPC | | 2006 $QP_{96}$ |
| 2006 $QT_{96}$ | 16.5 | 0.15 | 20060922 | 38.66798 | 208.98955 | 73.25865 | 5.94727 | 0.3411834 | 2.6152071 | 40 | 1 | 64 days | 0.51 | M-v | 4 | MPC | | 2006 $QT_{96}$ |
| 2006 $QX_{96}$ | 16.8 | 0.15 | 20060902 | 33.28389 | 150.24068 | 155.75318 | 14.11190 | 0.1962332 | 2.7229189 | 20 | 1 | 40 days | 0.51 | | | MPC | | 2006 $QX_{96}$ |
| 2006 $QY_{96}$ | 17.0 | 0.15 | 20060922 | 13.65071 | 326.95021 | 10.55442 | 10.50076 | 0.2483270 | 2.3451841 | 88 | 2 | 2005–2006 | 0.40 | M-v | 3 | MPC | 04049 | 2006 $QY_{96}$ |
| 2006 $QF_{97}$ | 17.5 | 0.15 | 20060902 | 326.89840 | 241.27202 | 155.86018 | 2.47673 | 0.2248818 | 2.3754972 | 32 | 1 | 51 days | 0.53 | | | MPC | | 2006 $QF_{97}$ |
| 2006 $QG_{97}$ | 17.8 | 0.15 | 20060902 | 326.74757 | 235.87854 | 162.33008 | 7.04596 | 0.2317684 | 2.3062514 | 25 | 1 | 31 days | 0.65 | | | MPC | | 2006 $QG_{97}$ |
| 2006 $QJ_{97}$ | 16.2 | 0.15 | 20060922 | 324.71050 | 192.80719 | 202.71255 | 5.76793 | 0.0895788 | 2.8538633 | 25 | 1 | 63 days | 0.34 | M-v | 4 | MPC | | 2006 $QJ_{97}$ |
| 2006 $QA_{98}$ | 17.1 | 0.15 | 20060902 | 0.56128 | 93.96467 | 238.76959 | 7.01685 | 0.2103225 | 2.7507937 | 19 | 1 | 32 days | 0.40 | | | MPC | | 2006 $QA_{98}$ |
| 2006 $QJ_{98}$ | 18.0 | 0.15 | 20060902 | 347.78242 | 59.74606 | 294.77668 | 4.49102 | 0.1370507 | 2.3315794 | 12 | 1 | 39 days | 0.17 | | | MPC | | 2006 $QJ_{98}$ |
| 2006 $QL_{98}$ | 17.7 | 0.15 | 20060902 | 348.56023 | 185.31983 | 180.71347 | 10.82372 | 0.3751084 | 2.6745592 | 35 | 1 | 59 days | 0.52 | | | MPC | | 2006 $QL_{98}$ |
| 2006 $QM_{98}$ | 18.0 | 0.15 | 20060902 | 359.62459 | 60.13223 | 280.74745 | 3.60727 | 0.2172460 | 2.1874138 | 29 | 1 | 30 days | 0.46 | | | MPC | | 2006 $QM_{98}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QN_{98}$ | 17.6 | 0.15 | 20060922 | 353.62145 | 48.92855 | 310.31690 | 4.17883 | 0.1943913 | 2.4011518 | 35 | 2 | 2004–2006 | 0.39 | M-v | 4 | MPC | 04049 | 2006 $QN_{98}$ |
| 2006 $QQ_{98}$ | 17.1 | 0.15 | 20060922 | 11.25352 | 86.20173 | 246.23555 | 4.03530 | 0.1578446 | 2.3937182 | 38 | 1 | 95 days | 0.45 | M-v | 3 | MPC | | 2006 $QQ_{98}$ |
| 2006 $QR_{98}$ | 15.0 | 0.15 | 20060902 | 307.68026 | 94.62748 | 333.58190 | 20.19991 | 0.2918735 | 3.1701996 | 29 | 1 | 39 days | 0.55 | | | MPC | | 2006 $QR_{98}$ |
| 2006 $QW_{98}$ | 18.3 | 0.15 | 20060922 | 13.23286 | 14.91485 | 318.25120 | 3.82635 | 0.2302733 | 2.2037850 | 40 | 1 | 62 days | 0.60 | M-v | 4 | MPC | | 2006 $QW_{98}$ |
| 2006 $QA_{99}$ | 18.0 | 0.15 | 20060922 | 2.66462 | 249.46716 | 105.88039 | 3.54760 | 0.2508872 | 2.2981212 | 48 | 1 | 95 days | 0.54 | M-v | 3 | MPC | | 2006 $QA_{99}$ |
| 2006 $QD_{99}$ | 15.9 | 0.15 | 20060902 | 353.96947 | 13.52023 | 343.39121 | 13.68623 | 0.2073886 | 3.0865930 | 39 | 1 | 42 days | 0.50 | | | MPC | | 2006 $QD_{99}$ |
| 2006 $QF_{99}$ | 15.7 | 0.15 | 20060902 | 326.05295 | 75.87582 | 319.61437 | 7.81182 | 0.1792610 | 3.0204856 | 38 | 1 | 33 days | 0.61 | | | MPC | | 2006 $QF_{99}$ |
| 2006 $QG_{99}$ | 17.4 | 0.15 | 20060902 | 26.95611 | 134.63804 | 154.93756 | 7.32391 | 0.3629188 | 2.5750500 | 22 | 1 | 38 days | 0.54 | | | MPC | | 2006 $QG_{99}$ |
| 2006 $QH_{99}$ | 17.5 | 0.15 | 20060902 | 340.38183 | 25.95410 | 343.31325 | 17.86808 | 0.0786252 | 1.9735973 | 48 | 1 | 55 days | 0.63 | | | MPC | | 2006 $QH_{99}$ |
| 2006 $QJ_{99}$ | 18.7 | 0.15 | 20060922 | 12.79368 | 193.45778 | 140.74159 | 3.09809 | 0.2468195 | 2.1431754 | 26 | 1 | 67 days | 0.80 | M-v | 5 | MPC | | 2006 $QJ_{99}$ |
| 2006 $QN_{99}$ | 17.0 | 0.15 | 20060922 | 47.20259 | 115.91753 | 173.52914 | 12.79853 | 0.1773711 | 2.3994394 | 39 | 2 | 2005–2006 | 0.49 | M-v | 4 | MPC | 04049 | 2006 $QN_{99}$ |
| 2006 $QP_{99}$ | 16.7 | 0.15 | 20060902 | 19.14675 | 247.26438 | 69.30489 | 7.72946 | 0.1363921 | 2.3889795 | 18 | 1 | 50 days | 0.39 | | | MPC | | 2006 $QP_{99}$ |
| 2006 $QR_{99}$ | 15.0 | 0.15 | 20060922 | 352.89325 | 35.06737 | 311.07840 | 26.48960 | 0.1715058 | 3.1699878 | 30 | 1 | 67 days | 0.52 | M-v | 4 | MPC | | 2006 $QR_{99}$ |
| 2006 $QY_{99}$ | 15.4 | 0.15 | 20060902 | 27.78323 | 336.30165 | 323.88290 | 15.92707 | 0.2512484 | 3.1032441 | 41 | 1 | 54 days | 0.43 | | | MPC | | 2006 $QY_{99}$ |
| 2006 $QZ_{99}$ | 17.5 | 0.15 | 20060922 | 11.41150 | 93.90327 | 242.02343 | 2.51152 | 0.2061393 | 2.2374251 | 63 | 1 | 82 days | 0.50 | M-v | 4 | MPC | | 2006 $QZ_{99}$ |
| 2006 $QB_{100}$ | 17.3 | 0.15 | 20060922 | 27.04832 | 112.98323 | 195.82125 | 5.79233 | 0.1358384 | 2.2850057 | 30 | 1 | 89 days | 0.48 | M-v | 4 | MPC | | 2006 $QB_{100}$ |
| 2006 $QD_{100}$ | 15.3 | 0.15 | 20060922 | 3.70101 | 126.88523 | 217.60583 | 19.81321 | 0.2297785 | 3.2270149 | 59 | 4 | 2000–2006 | 0.43 | M-v | 0 | MPC | 04049 | 2006 $QD_{100}$ |
| 2006 $QF_{100}$ | 15.9 | 0.15 | 20060902 | 18.06528 | 3.00441 | 316.70485 | 6.85123 | 0.2458045 | 2.7638583 | 61 | 1 | 38 days | 0.54 | | | MPC | | 2006 $QF_{100}$ |
| 2006 $QN_{100}$ | 16.6 | 0.15 | 20060922 | 344.96053 | 181.60039 | 183.25378 | 7.50003 | 0.1107404 | 2.8420733 | 24 | 1 | 89 days | 0.44 | M-v | 4 | MPC | | 2006 $QN_{100}$ |
| 2006 $QO_{100}$ | 16.8 | 0.15 | 20060922 | 353.39158 | 177.55721 | 209.95017 | 6.25460 | 0.2230729 | 2.2434923 | 98 | 1 | 107 days | 0.45 | M-v | 3 | MPC | | 2006 $QO_{100}$ |
| 2006 $QV_{100}$ | 17.5 | 0.15 | 20060902 | 352.13402 | 61.72485 | 304.93901 | 6.62935 | 0.3488101 | 2.6558278 | 30 | 1 | 46 days | 0.47 | | | MPC | | 2006 $QV_{100}$ |
| 2006 $QY_{100}$ | 14.8 | 0.15 | 20060902 | 10.95473 | 19.30038 | 316.31435 | 16.28479 | 0.2015570 | 3.1066092 | 37 | 1 | 46 days | 0.45 | | | MPC | | 2006 $QY_{100}$ |
| 2006 $QV_{101}$ | 19.2 | 0.15 | 20060902 | 338.37790 | 71.36655 | 296.10968 | 2.43133 | 0.1255614 | 2.1701051 | 10 | 1 | 32 days | 0.27 | | | MPC | | 2006 $QV_{101}$ |
| 2006 $QZ_{101}$ | 17.6 | 0.15 | 20060902 | 348.75041 | 164.74443 | 193.15198 | 2.82322 | 0.2211233 | 3.1165107 | 13 | 1 | 39 days | 0.15 | | | MPC | | 2006 $QZ_{101}$ |
| 2006 $QH_{102}$ | 17.9 | 0.15 | 20060902 | 23.87870 | 356.21490 | 314.78680 | 4.67310 | 0.1055327 | 2.6932354 | 13 | 1 | 40 days | 0.29 | | | MPC | | 2006 $QH_{102}$ |
| 2006 $QJ_{102}$ | 16.6 | 0.15 | 20060902 | 331.24736 | 50.24842 | 320.17274 | 5.06166 | 0.0229978 | 2.7993476 | 13 | 1 | 40 days | 0.16 | | | MPC | | 2006 $QJ_{102}$ |
| 2006 $QN_{102}$ | 17.3 | 0.15 | 20060902 | 36.01990 | 343.37565 | 310.89386 | 4.12512 | 0.1329731 | 2.7629925 | 13 | 1 | 40 days | 0.21 | | | MPC | | 2006 $QN_{102}$ |
| 2006 $QT_{102}$ | 19.2 | 0.15 | 20060902 | 331.45932 | 187.46502 | 195.19642 | 1.96653 | 0.2000958 | 2.3102916 | 13 | 1 | 39 days | 0.17 | | | MPC | | 2006 $QT_{102}$ |
| 2006 $QW_{102}$ | 16.2 | 0.15 | 20060902 | 10.30228 | 0.83636 | 328.52536 | 8.39071 | 0.0567904 | 3.1526752 | 13 | 1 | 40 days | 0.30 | | | MPC | | 2006 $QW_{102}$ |
| 2006 $QX_{102}$ | 16.3 | 0.15 | 20060922 | 140.74239 | 229.67779 | 325.01586 | 5.10315 | 0.1378375 | 2.7708314 | 37 | 4 | 1995–2006 | 0.35 | M-v | 1 | MPC | 04049 | 2006 $QX_{102}$ |
| 2006 $QB_{103}$ | 18.6 | 0.15 | 20060813 | 29.81546 | 111.38467 | 176.94166 | 5.02856 | 0.2117433 | 2.4687608 | 8 | 1 | 6 days | 0.46 | | | MPC | | 2006 $QB_{103}$ |
| 2006 $QC_{103}$ | 16.3 | 0.15 | 20060813 | 107.24438 | 250.91879 | 330.29362 | 10.53906 | 0.0795764 | 2.6481364 | 13 | 1 | 10 days | 0.76 | | | MPC | | 2006 $QC_{103}$ |
| 2006 $QE_{103}$ | 18.8 | 0.15 | 20060902 | 4.73333 | 2.59916 | 330.54995 | 5.26140 | 0.1921876 | 2.3419218 | 13 | 1 | 40 days | 0.22 | | | MPC | | 2006 $QE_{103}$ |
| 2006 $QJ_{103}$ | 16.5 | 0.15 | 20060902 | 269.56978 | 114.21358 | 332.30707 | 11.19289 | 0.1457806 | 2.8102917 | 13 | 1 | 39 days | 0.19 | | | MPC | | 2006 $QJ_{103}$ |
| 2006 $QM_{103}$ | 16.3 | 0.15 | 20060813 | 246.41430 | 288.48359 | 166.85968 | 10.53979 | 0.0526160 | 3.0429142 | 8 | 1 | 6 days | 0.33 | | | MPC | | 2006 $QM_{103}$ |
| 2006 $QO_{103}$ | 17.5 | 0.15 | 20060813 | 4.43050 | 127.20926 | 200.20294 | 1.43846 | 0.1585783 | 2.6417091 | 8 | 1 | 6 days | 0.28 | | | MPC | | 2006 $QO_{103}$ |
| 2006 $QQ_{103}$ | 16.5 | 0.15 | 20060902 | 79.71680 | 295.25457 | 322.80752 | 3.56412 | 0.0203957 | 2.7923300 | 13 | 1 | 39 days | 0.21 | | | MPC | | 2006 $QQ_{103}$ |
| 2006 $QC_{104}$ | 17.0 | 0.15 | 20060813 | 34.62493 | 142.03739 | 151.81180 | 10.28663 | 0.2376975 | 2.7345836 | 13 | 1 | 27 days | 0.75 | | | MPC | | 2006 $QC_{104}$ |
| 2006 $QE_{104}$ | 16.9 | 0.15 | 20060902 | 20.53206 | 188.74524 | 131.10218 | 4.71592 | 0.2247267 | 2.7672648 | 25 | 1 | 46 days | 0.58 | | | MPC | | 2006 $QE_{104}$ |
| 2006 $QJ_{104}$ | 15.8 | 0.15 | 20060922 | 166.27374 | 33.57284 | 157.27919 | 10.62982 | 0.0064722 | 3.1150273 | 27 | 5 | 1993–2006 | 0.37 | M-v | 1 | MPC | 04050 | 2006 $QJ_{104}$ |
| 2006 $QP_{104}$ | 15.5 | 0.15 | 20060922 | 339.64507 | 225.24268 | 136.65607 | 2.94901 | 0.0945106 | 3.2400664 | 51 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04050 | 2006 $QP_{104}$ |
| 2006 $QW_{104}$ | 16.0 | 0.15 | 20060902 | 11.84770 | 66.93586 | 246.52054 | 12.27400 | 0.1741993 | 2.7040375 | 13 | 1 | 14 days | 0.51 | | | MPC | | 2006 $QW_{104}$ |
| 2006 $QG_{105}$ | 17.0 | 0.15 | 20060902 | 308.08269 | 90.92674 | 316.18184 | 11.37396 | 0.1936128 | 2.6739877 | 22 | 1 | 33 days | 0.34 | | | MPC | | 2006 $QG_{105}$ |
| 2006 $QJ_{105}$ | 18.1 | 0.15 | 20060902 | 320.60136 | 87.27962 | 308.42737 | 7.90701 | 0.2242566 | 2.3977526 | 25 | 1 | 33 days | 0.32 | | | MPC | | 2006 $QJ_{105}$ |
| 2006 $QX_{105}$ | 17.7 | 0.15 | 20060922 | 338.61892 | 191.80454 | 187.41632 | 6.03353 | 0.2341266 | 2.5604302 | 27 | 2 | 2002–2006 | 0.42 | M-v | 4 | MPC | 04050 | 2006 $QX_{105}$ |
| 2006 $QA_{106}$ | 16.3 | 0.15 | 20060902 | 9.54378 | 158.36495 | 162.88237 | 18.11326 | 0.2195633 | 3.2295115 | 15 | 1 | 29 days | 0.66 | | | MPC | | 2006 $QA_{106}$ |
| 2006 $QH_{106}$ | 16.9 | 0.15 | 20060922 | 40.10678 | 100.91790 | 183.00992 | 6.59346 | 0.2278525 | 2.4211311 | 39 | 1 | 85 days | 0.47 | M-v | 4 | MPC | | 2006 $QH_{106}$ |
| 2006 $QK_{106}$ | 17.5 | 0.15 | 20060922 | 346.88783 | 43.45950 | 322.91631 | 2.95120 | 0.2483884 | 2.6114967 | 28 | 1 | 89 days | 0.45 | M-v | 4 | MPC | | 2006 $QK_{106}$ |
| 2006 $QL_{106}$ | 17.2 | 0.15 | 20060922 | 347.24164 | 18.50402 | 340.59577 | 7.04978 | 0.1403907 | 2.3521969 | 29 | 1 | 52 days | 0.63 | | | MPC | | 2006 $QL_{106}$ |
| 2006 $QM_{106}$ | 16.9 | 0.15 | 20060902 | 45.02094 | 2.00246 | 272.76128 | 1.75046 | 0.1869634 | 2.4017425 | 23 | 1 | 40 days | 0.71 | | | MPC | | 2006 $QM_{106}$ |
| 2006 $QQ_{106}$ | 16.5 | 0.15 | 20060902 | 313.82406 | 85.64013 | 304.67754 | 4.12769 | 0.0717284 | 2.7701672 | 19 | 1 | 33 days | 0.40 | | | MPC | | 2006 $QQ_{106}$ |
| 2006 $QT_{106}$ | 17.5 | 0.15 | 20060922 | 332.25544 | 194.67170 | 196.51786 | 4.06857 | 0.2406714 | 2.4069137 | 21 | 1 | 54 days | 0.45 | | | MPC | | 2006 $QT_{106}$ |
| 2006 $QW_{106}$ | 15.5 | 0.15 | 20060902 | 345.59465 | 27.19999 | 327.69633 | 12.27526 | 0.0701283 | 3.1027883 | 18 | 1 | 35 days | 0.41 | | | MPC | | 2006 $QW_{106}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QB_{107}$ | 16.9 | 0.15 | 20060922 | 26.21523 | 340.01859 | 320.98507 | 11.88315 | 0.2734728 | 2.3775766 | 50 | 2 | 2005–2006 | 0.54 | M-v | 4 | MPC | 04050 | 2006 $QB_{107}$ |
| 2006 $QM_{107}$ | 17.1 | 0.15 | 20060813 | 310.58798 | 239.84217 | 176.77563 | 4.23253 | 0.3041970 | 2.7503413 | 9 | 1 | 6 days | 0.39 | | | MPC | | 2006 $QM_{107}$ |
| 2006 $QO_{107}$ | 17.8 | 0.15 | 20060902 | 341.87930 | 204.97738 | 166.81227 | 14.35650 | 0.2631935 | 2.6632803 | 19 | 1 | 33 days | 0.65 | | | MPC | | 2006 $QO_{107}$ |
| 2006 $QT_{107}$ | 16.7 | 0.15 | 20060902 | 41.20970 | 348.58943 | 306.51415 | 4.90837 | 0.0829065 | 2.4087903 | 18 | 1 | 23 days | 0.75 | | | MPC | | 2006 $QT_{107}$ |
| 2006 $QU_{107}$ | 17.2 | 0.15 | 20060902 | 332.89790 | 51.41325 | 331.28370 | 12.37262 | 0.1921888 | 2.5984751 | 14 | 1 | 20 days | 0.45 | | | MPC | | 2006 $QU_{107}$ |
| 2006 $QV_{107}$ | 16.1 | 0.15 | 20060922 | 22.50674 | 143.52119 | 173.35773 | 15.11340 | 0.1624577 | 3.2476165 | 22 | 1 | 49 days | 0.52 | | | MPC | | 2006 $QV_{107}$ |
| 2006 $QB_{108}$ | 17.4 | 0.15 | 20060922 | 349.99083 | 94.40737 | 279.79716 | 2.57101 | 0.3488130 | 2.7407652 | 39 | 1 | 53 days | 0.48 | | | MPC | | 2006 $QB_{108}$ |
| 2006 $QG_{108}$ | 17.3 | 0.15 | 20060922 | 352.30842 | 82.41126 | 280.89725 | 1.19327 | 0.2049191 | 2.3732806 | 64 | 1 | 61 days | 0.55 | M-v | 4 | MPC | | 2006 $QG_{108}$ |
| 2006 $QL_{108}$ | 17.6 | 0.15 | 20060902 | 16.21202 | 52.74673 | 265.53405 | 2.63168 | 0.2544853 | 2.5918060 | 36 | 1 | 36 days | 0.61 | | | MPC | | 2006 $QL_{108}$ |
| 2006 $QM_{108}$ | 18.0 | 0.15 | 20060902 | 338.96360 | 91.61811 | 293.77103 | 3.02342 | 0.3012070 | 2.5603184 | 11 | 1 | 15 days | 0.60 | | | MPC | | 2006 $QM_{108}$ |
| 2006 $QN_{108}$ | 16.7 | 0.15 | 20060902 | 346.05131 | 204.08293 | 169.84886 | 31.53653 | 0.3098260 | 3.1439811 | 43 | 1 | 36 days | 0.58 | | | MPC | | 2006 $QN_{108}$ |
| 2006 $QO_{108}$ | 17.5 | 0.15 | 20060902 | 20.72805 | 74.06224 | 238.52515 | 1.68058 | 0.2300956 | 2.3824102 | 29 | 1 | 38 days | 0.57 | | | MPC | | 2006 $QO_{108}$ |
| 2006 $QQ_{108}$ | 16.4 | 0.15 | 20060922 | 332.65123 | 225.19581 | 178.46153 | 14.48270 | 0.2984869 | 3.1592003 | 26 | 1 | 53 days | 0.55 | | | MPC | | 2006 $QQ_{108}$ |
| 2006 $QS_{108}$ | 16.6 | 0.15 | 20060922 | 340.48787 | 187.09763 | 191.18150 | 4.34406 | 0.1215794 | 2.8133547 | 23 | 1 | 85 days | 0.41 | M-v | 4 | MPC | | 2006 $QS_{108}$ |
| 2006 $QT_{108}$ | 17.2 | 0.15 | 20060902 | 29.71389 | 6.88401 | 289.88127 | 7.59676 | 0.2996442 | 2.6011793 | 30 | 1 | 32 days | 0.57 | | | MPC | | 2006 $QT_{108}$ |
| 2006 $QU_{108}$ | 15.7 | 0.15 | 20060902 | 35.33822 | 120.77582 | 175.53275 | 21.86787 | 0.2379834 | 3.0802884 | 61 | 1 | 52 days | 0.65 | | | MPC | | 2006 $QU_{108}$ |
| 2006 $QV_{108}$ | 17.5 | 0.15 | 20060922 | 7.79471 | 9.82791 | 335.91321 | 11.01266 | 0.2431104 | 2.6133365 | 27 | 1 | 72 days | 0.75 | M-v | 4 | MPC | | 2006 $QV_{108}$ |
| 2006 $QO_{109}$ | 18.7 | 0.15 | 20060922 | 24.59578 | 74.35545 | 242.08584 | 1.53773 | 0.1925339 | 2.1659689 | 17 | 1 | 61 days | 0.23 | M-v | 4 | MPC | | 2006 $QO_{109}$ |
| 2006 $QT_{109}$ | 20.0 | 0.15 | 20060902 | 28.50103 | 348.25235 | 309.93098 | 2.46831 | 0.2354767 | 2.0963507 | 6 | 1 | 23 days | 0.12 | | | MPC | | 2006 $QT_{109}$ |
| 2006 $QH_{110}$ | 16.1 | 0.15 | 20060902 | 286.82374 | 261.90679 | 169.83986 | 17.09075 | 0.1232693 | 3.1818475 | 14 | 1 | 29 days | 0.20 | | | MPC | | 2006 $QH_{110}$ |
| 2006 $QO_{110}$ | 15.8 | 0.15 | 20060922 | 336.83885 | 287.10128 | 103.27184 | 5.24292 | 0.1486113 | 3.0787115 | 24 | 1 | 55 days | 0.70 | | | MPC | | 2006 $QO_{110}$ |
| 2006 $QS_{110}$ | 16.3 | 0.15 | 20060902 | 323.50259 | 226.20782 | 161.84306 | 10.66136 | 0.1903862 | 3.1323849 | 27 | 1 | 34 days | 0.38 | | | MPC | | 2006 $QS_{110}$ |
| 2006 $QT_{110}$ | 17.2 | 0.15 | 20060813 | 322.55363 | 139.73715 | 246.24069 | 1.21458 | 0.2130264 | 2.6842838 | 21 | 1 | 26 days | 0.41 | | | MPC | | 2006 $QT_{110}$ |
| 2006 $QV_{110}$ | 16.0 | 0.15 | 20060922 | 38.80875 | 14.37214 | 286.07224 | 12.46186 | 0.2286131 | 2.7258308 | 27 | 1 | 58 days | 0.54 | | | MPC | | 2006 $QV_{110}$ |
| 2006 $QX_{110}$ | 16.3 | 0.15 | 20060922 | 264.86255 | 132.64138 | 354.83881 | 23.87554 | 0.1715517 | 2.2779620 | 33 | 1 | 50 days | 0.40 | | | MPC | | 2006 $QX_{110}$ |
| 2006 $QZ_{110}$ | 14.7 | 0.15 | 20060922 | 304.15399 | 263.44983 | 229.42881 | 21.10724 | 0.2111738 | 3.1192377 | 48 | 1 | 86 days | 0.36 | M-v | 4 | MPC | | 2006 $QZ_{110}$ |
| 2006 $QC_{111}$ | 17.0 | 0.15 | 20060902 | 333.01497 | 250.78793 | 154.03137 | 18.30218 | 0.2963116 | 2.5700889 | 21 | 1 | 46 days | 0.37 | | | MPC | | 2006 $QC_{111}$ |
| 2006 $QE_{111}$ | 16.4 | 0.15 | 20060922 | 22.90568 | 276.27157 | 46.20015 | 8.05653 | 0.2547099 | 2.7615340 | 33 | 1 | 55 days | 0.66 | | | MPC | | 2006 $QE_{111}$ |
| 2006 $QG_{111}$ | 18.4 | 0.15 | 20060902 | 345.71270 | 271.86009 | 101.33784 | 6.65307 | 0.1475821 | 2.1679602 | 14 | 1 | 28 days | 0.37 | | | MPC | | 2006 $QG_{111}$ |
| 2006 $QN_{111}$ | 23.8 | 0.15 | 20060922 | 10.38501 | 171.77761 | 143.83429 | 11.73382 | 0.5971024 | 2.4817324 | 14 | 1 | 7 days | 0.57 | M-v | 8 | MPC | 04415 | 2006 $QN_{111}$ |
| 2006 $QT_{111}$ | 16.7 | 0.15 | 20060922 | 0.89200 | 66.39412 | 273.47507 | 9.17322 | 0.1620677 | 2.3328062 | 29 | 2 | 1999–2006 | 0.53 | M-v | 4 | MPC | 04050 | 2006 $QT_{111}$ |
| 2006 $QU_{111}$ | 17.0 | 0.15 | 20060902 | 2.16580 | 102.65040 | 227.35368 | 5.54785 | 0.2902287 | 2.7302678 | 23 | 1 | 39 days | 0.32 | | | MPC | | 2006 $QU_{111}$ |
| 2006 $QV_{111}$ | 18.0 | 0.15 | 20060902 | 0.37737 | 162.46488 | 173.40693 | 12.52534 | 0.3253902 | 2.4322062 | 25 | 1 | 36 days | 0.50 | | | MPC | | 2006 $QV_{111}$ |
| 2006 $QX_{111}$ | 16.9 | 0.15 | 20060902 | 339.93075 | 146.81340 | 217.12873 | 6.61373 | 0.1408551 | 2.3240682 | 22 | 1 | 28 days | 0.64 | | | MPC | | 2006 $QX_{111}$ |
| 2006 $QY_{111}$ | 17.7 | 0.15 | 20060922 | 355.00230 | 138.21720 | 215.09372 | 4.20294 | 0.1605665 | 2.2641030 | 22 | 1 | 90 days | 0.61 | M-v | 5 | MPC | | 2006 $QY_{111}$ |
| 2006 $QZ_{111}$ | 16.9 | 0.15 | 20060902 | 6.76290 | 21.40571 | 309.22951 | 13.17213 | 0.1517619 | 2.6845700 | 16 | 1 | 43 days | 0.41 | | | MPC | | 2006 $QZ_{111}$ |
| 2006 $QB_{112}$ | 17.7 | 0.15 | 20060922 | 346.18233 | 109.88040 | 264.67334 | 4.07062 | 0.2576306 | 2.2977752 | 49 | 1 | 61 days | 0.50 | M-v | 4 | MPC | | 2006 $QB_{112}$ |
| 2006 $QG_{112}$ | 16.4 | 0.15 | 20060902 | 13.99992 | 57.91495 | 252.32809 | 8.46228 | 0.2382613 | 2.7795070 | 13 | 1 | 32 days | 0.44 | | | MPC | | 2006 $QG_{112}$ |
| 2006 $QL_{112}$ | 18.1 | 0.15 | 20060902 | 345.37293 | 25.35009 | 347.10479 | 6.75601 | 0.2733615 | 2.2682677 | 52 | 1 | 58 days | 0.58 | | | MPC | | 2006 $QL_{112}$ |
| 2006 $QQ_{112}$ | 15.5 | 0.15 | 20060902 | 355.02180 | 206.27248 | 144.27611 | 16.63950 | 0.0956148 | 3.0661831 | 22 | 1 | 41 days | 0.44 | | | MPC | | 2006 $QQ_{112}$ |
| 2006 $QR_{112}$ | 16.9 | 0.15 | 20060922 | 2.87438 | 259.23476 | 88.40536 | 5.60264 | 0.2281715 | 2.3501740 | 27 | 1 | 88 days | 0.52 | M-v | 4 | MPC | | 2006 $QR_{112}$ |
| 2006 $QT_{112}$ | 15.6 | 0.15 | 20060922 | 335.46673 | 70.98521 | 316.19374 | 15.10079 | 0.2891537 | 3.0972267 | 63 | 2 | 2001–2006 | 0.50 | M-v | 3 | MPC | 04050 | 2006 $QT_{112}$ |
| 2006 $QV_{112}$ | 18.0 | 0.15 | 20060922 | 14.22267 | 88.42097 | 239.35532 | 3.20435 | 0.1933662 | 2.1977561 | 51 | 2 | 2003–2006 | 0.49 | M-v | 3 | MPC | 04051 | 2006 $QV_{112}$ |
| 2006 $QW_{112}$ | 15.8 | 0.15 | 20060902 | 343.35710 | 148.68518 | 212.04848 | 5.00725 | 0.1052917 | 2.7671357 | 25 | 1 | 30 days | 0.48 | | | MPC | | 2006 $QW_{112}$ |
| 2006 $QZ_{112}$ | 16.8 | 0.15 | 20060902 | 43.25495 | 315.90488 | 325.44349 | 15.62644 | 0.1980864 | 2.4205739 | 25 | 1 | 27 days | 0.46 | | | MPC | | 2006 $QZ_{112}$ |
| 2006 $QA_{113}$ | 17.9 | 0.15 | 20060922 | 351.68353 | 181.99272 | 183.37821 | 6.71895 | 0.2330325 | 2.2695377 | 46 | 1 | 62 days | 0.46 | M-v | 4 | MPC | | 2006 $QA_{113}$ |
| 2006 $QE_{113}$ | 16.1 | 0.15 | 20060902 | 20.28923 | 18.62310 | 298.26912 | 6.33813 | 0.1786873 | 2.7480471 | 29 | 1 | 47 days | 0.57 | | | MPC | | 2006 $QE_{113}$ |
| 2006 $QH_{113}$ | 15.0 | 0.15 | 20060902 | 77.48041 | 294.34043 | 329.51662 | 24.65172 | 0.0154277 | 3.1555678 | 26 | 1 | 44 days | 0.56 | | | MPC | | 2006 $QH_{113}$ |
| 2006 $QK_{113}$ | 16.9 | 0.15 | 20060922 | 55.46420 | 317.92197 | 323.41884 | 6.16565 | 0.1784025 | 2.2959964 | 52 | 4 | 1999–2006 | 0.54 | M-v | 1 | MPC | 04051 | 2006 $QK_{113}$ |
| 2006 $QN_{113}$ | 18.4 | 0.15 | 20060813 | 6.09046 | 284.14224 | 33.87752 | 4.99557 | 0.2857936 | 2.3093127 | 14 | 1 | 30 days | 0.59 | | | MPC | | 2006 $QN_{113}$ |
| 2006 $QR_{113}$ | 16.9 | 0.15 | 20060902 | 354.63542 | 353.43442 | 357.59605 | 6.89300 | 0.1412878 | 2.2962537 | 38 | 1 | 53 days | 0.54 | | | MPC | | 2006 $QR_{113}$ |
| 2006 $QY_{113}$ | 14.5 | 0.15 | 20060922 | 350.34677 | 236.42453 | 137.14257 | 3.67855 | 0.2812974 | 3.9844313 | 97 | 3 | 1998–2006 | 0.50 | M-v | 2 | MPC | 04051 | 2006 $QY_{113}$ |
| 2006 $QB_{114}$ | 16.9 | 0.15 | 20060902 | 37.76623 | 320.86982 | 323.81585 | 12.03204 | 0.3065289 | 2.6843028 | 25 | 1 | 33 days | 0.53 | | | MPC | | 2006 $QB_{114}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QC_{114}$ | 16.1 | 0.15 | 20060902 | 36.84455 | 351.70394 | 293.96177 | 14.94874 | 0.1969381 | 2.4272079 | 22 | 1 | 36 days | 0.50 | | | MPC | | 2006 $QC_{114}$ |
| 2006 $QG_{114}$ | 17.7 | 0.15 | 20060902 | 358.16607 | 81.47108 | 256.90968 | 6.46360 | 0.1427626 | 2.2807090 | 16 | 1 | 34 days | 0.53 | | | MPC | | 2006 $QG_{114}$ |
| 2006 $QJ_{114}$ | 17.1 | 0.15 | 20060902 | 21.13778 | 71.25032 | 235.41680 | 5.74414 | 0.1487113 | 2.4266578 | 20 | 1 | 44 days | 0.57 | | | MPC | | 2006 $QJ_{114}$ |
| 2006 $QL_{114}$ | 16.5 | 0.15 | 20060902 | 47.82833 | 85.02698 | 174.79378 | 13.12053 | 0.2454510 | 2.6208341 | 24 | 1 | 32 days | 0.41 | | | MPC | | 2006 $QL_{114}$ |
| 2006 $QM_{114}$ | 16.2 | 0.15 | 20060922 | 5.75176 | 157.32637 | 175.10015 | 13.15936 | 0.2372483 | 2.6950920 | 40 | 1 | 88 days | 0.49 | M-v | 3 | MPC | | 2006 $QM_{114}$ |
| 2006 $QS_{114}$ | 16.6 | 0.15 | 20060922 | 351.75209 | 102.83746 | 250.66175 | 5.62002 | 0.1214833 | 2.4045217 | 38 | 1 | 56 days | 0.60 | | | MPC | | 2006 $QS_{114}$ |
| 2006 $QT_{114}$ | 15.6 | 0.15 | 20060922 | 338.37080 | 178.30044 | 207.13124 | 7.30820 | 0.3116816 | 2.7294723 | 84 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04051 | 2006 $QT_{114}$ |
| 2006 $QZ_{114}$ | 15.6 | 0.15 | 20060922 | 2.91880 | 49.40105 | 295.55380 | 12.57414 | 0.1904030 | 2.7468578 | 36 | 1 | 102 days | 0.54 | M-v | 3 | MPC | | 2006 $QZ_{114}$ |
| 2006 $QA_{115}$ | 16.9 | 0.15 | 20060922 | 322.44705 | 119.70978 | 286.24811 | 9.10554 | 0.2199715 | 2.3539850 | 41 | 4 | 1995–2006 | 0.63 | M-v | 1 | MPC | 04051 | 2006 $QA_{115}$ |
| 2006 $QF_{115}$ | 15.3 | 0.15 | 20060922 | 7.12089 | 85.84133 | 250.62386 | 8.94078 | 0.1102019 | 3.1276790 | 29 | 3 | 2001–2006 | 0.60 | M-v | 4 | MPC | 04051 | 2006 $QF_{115}$ |
| 2006 $QG_{115}$ | 17.2 | 0.15 | 20060922 | 0.25250 | 100.19013 | 250.00524 | 5.65257 | 0.2462288 | 2.4306434 | 28 | 1 | 85 days | 0.33 | M-v | 3 | MPC | | 2006 $QG_{115}$ |
| 2006 $QN_{115}$ | 17.0 | 0.15 | 20060902 | 4.56408 | 161.32628 | 168.56968 | 20.44544 | 0.2890081 | 2.6325440 | 44 | 1 | 34 days | 0.46 | | | MPC | | 2006 $QN_{115}$ |
| 2006 $QQ_{115}$ | 17.5 | 0.15 | 20060922 | 7.35220 | 140.23457 | 195.93183 | 5.21475 | 0.2422751 | 2.3911422 | 50 | 1 | 95 days | 0.51 | M-v | 3 | MPC | | 2006 $QQ_{115}$ |
| 2006 $QS_{115}$ | 16.2 | 0.15 | 20060922 | 321.58686 | 230.25239 | 179.44300 | 9.56064 | 0.2632112 | 2.7220203 | 52 | 1 | 92 days | 0.32 | M-v | 4 | MPC | | 2006 $QS_{115}$ |
| 2006 $QT_{115}$ | 17.3 | 0.15 | 20060813 | 26.75376 | 340.68598 | 312.45877 | 6.09578 | 0.1964795 | 2.2219220 | 25 | 1 | 33 days | 0.58 | | | MPC | | 2006 $QT_{115}$ |
| 2006 $QV_{115}$ | 15.8 | 0.15 | 20060902 | 339.69603 | 44.19732 | 325.65196 | 13.78614 | 0.1511016 | 3.1715286 | 16 | 1 | 21 days | 0.80 | | | MPC | | 2006 $QV_{115}$ |
| 2006 $QW_{115}$ | 17.8 | 0.15 | 20060922 | 5.05449 | 53.83419 | 288.74533 | 2.86367 | 0.2122667 | 2.3511071 | 18 | 1 | 63 days | 0.62 | M-v | 4 | MPC | | 2006 $QW_{115}$ |
| 2006 $QX_{115}$ | 15.8 | 0.15 | 20060813 | 2.53702 | 87.25032 | 245.39768 | 5.08539 | 0.1443864 | 2.7774453 | 21 | 1 | 24 days | 0.53 | | | MPC | | 2006 $QX_{115}$ |
| 2006 $QY_{115}$ | 15.9 | 0.15 | 20060922 | 7.08081 | 23.48003 | 315.77862 | 13.54210 | 0.1431468 | 2.7220495 | 22 | 1 | 84 days | 0.63 | M-v | 4 | MPC | | 2006 $QY_{115}$ |
| 2006 $QB_{116}$ | 15.9 | 0.15 | 20060902 | 23.41931 | 39.69401 | 267.55578 | 6.91743 | 0.2112923 | 2.7779096 | 25 | 1 | 33 days | 0.46 | | | MPC | | 2006 $QB_{116}$ |
| 2006 $QE_{116}$ | 17.4 | 0.15 | 20060902 | 354.99306 | 50.15676 | 305.97419 | 3.24944 | 0.1786167 | 2.3395084 | 28 | 1 | 33 days | 0.62 | | | MPC | | 2006 $QE_{116}$ |
| 2006 $QK_{116}$ | 16.7 | 0.15 | 20060902 | 48.02591 | 299.15569 | 335.65009 | 11.32484 | 0.2508707 | 2.5828157 | 16 | 1 | 23 days | 0.66 | | | MPC | | 2006 $QK_{116}$ |
| 2006 $QN_{116}$ | 18.0 | 0.15 | 20060902 | 342.44247 | 81.15999 | 291.63801 | 4.20062 | 0.2068343 | 2.2819343 | 28 | 1 | 41 days | 0.68 | | | MPC | | 2006 $QN_{116}$ |
| 2006 $QP_{116}$ | 16.8 | 0.15 | 20060902 | 348.05925 | 124.48599 | 240.44536 | 3.34310 | 0.2545545 | 2.6779257 | 49 | 1 | 37 days | 0.70 | | | MPC | | 2006 $QP_{116}$ |
| 2006 $QS_{116}$ | 17.4 | 0.15 | 20060902 | 19.52109 | 98.54339 | 215.98615 | 4.00544 | 0.2186226 | 2.4143200 | 46 | 1 | 41 days | 0.62 | | | MPC | | 2006 $QS_{116}$ |
| 2006 $QV_{116}$ | 17.4 | 0.15 | 20060902 | 16.68044 | 20.30471 | 301.67703 | 5.67558 | 0.1312841 | 2.2836535 | 22 | 1 | 22 days | 0.62 | | | MPC | | 2006 $QV_{116}$ |
| 2006 $QZ_{116}$ | 17.3 | 0.15 | 20060813 | 18.03840 | 14.21035 | 293.13997 | 3.93063 | 0.2180900 | 2.5712621 | 22 | 1 | 33 days | 0.56 | | | MPC | | 2006 $QZ_{116}$ |
| 2006 $QB_{117}$ | 16.3 | 0.15 | 20060902 | 347.51576 | 167.19387 | 192.26642 | 6.28145 | 0.1302820 | 2.7138087 | 27 | 1 | 40 days | 0.49 | | | MPC | | 2006 $QB_{117}$ |
| 2006 $QK_{117}$ | 17.5 | 0.15 | 20060922 | 358.56339 | 45.43341 | 310.55604 | 1.22347 | 0.1889873 | 2.4005259 | 71 | 2 | 2003–2006 | 0.52 | M-v | 3 | MPC | 04052 | 2006 $QK_{117}$ |
| 2006 $QL_{117}$ | 15.0 | 0.15 | 20060922 | 345.89818 | 105.93728 | 272.37358 | 1.73203 | 0.2576381 | 3.9636920 | 46 | 1 | 79 days | 0.60 | M-v | 4 | MPC | | 2006 $QL_{117}$ |
| 2006 $QO_{117}$ | 17.3 | 0.15 | 20060902 | 33.57442 | 316.42665 | 341.97325 | 2.83578 | 0.1810892 | 2.2585358 | 26 | 1 | 32 days | 0.57 | | | MPC | | 2006 $QO_{117}$ |
| 2006 $QQ_{117}$ | 17.8 | 0.15 | 20060902 | 4.26986 | 348.65026 | 350.89596 | 2.46452 | 0.2070113 | 2.3577895 | 32 | 1 | 29 days | 0.56 | | | MPC | | 2006 $QQ_{117}$ |
| 2006 $QR_{117}$ | 18.0 | 0.15 | 20060902 | 28.61711 | 307.47964 | 350.20608 | 5.94282 | 0.2606545 | 2.1996040 | 29 | 1 | 38 days | 0.52 | | | MPC | | 2006 $QR_{117}$ |
| 2006 $QS_{117}$ | 18.0 | 0.15 | 20060902 | 341.11812 | 38.78559 | 334.32039 | 6.69263 | 0.2265077 | 2.2445918 | 28 | 1 | 36 days | 0.50 | | | MPC | | 2006 $QS_{117}$ |
| 2006 $QX_{117}$ | 16.4 | 0.15 | 20060922 | 26.78976 | 332.79707 | 341.86533 | 9.22255 | 0.1529356 | 2.7765981 | 32 | 1 | 72 days | 0.65 | M-v | 4 | MPC | | 2006 $QX_{117}$ |
| 2006 $QA_{118}$ | 15.6 | 0.15 | 20060922 | 332.61546 | 213.47113 | 170.62874 | 8.96807 | 0.1344425 | 3.2066736 | 34 | 1 | 92 days | 0.44 | M-v | 4 | MPC | | 2006 $QA_{118}$ |
| 2006 $QD_{118}$ | 16.5 | 0.15 | 20060922 | 11.04314 | 199.90658 | 140.46869 | 3.62634 | 0.1187370 | 2.7284233 | 49 | 4 | 2000–2006 | 0.54 | M-v | 1 | MPC | 04052 | 2006 $QD_{118}$ |
| 2006 $QP_{118}$ | 17.0 | 0.15 | 20060902 | 16.67093 | 356.86370 | 324.12058 | 9.67200 | 0.2376761 | 2.7279220 | 25 | 1 | 51 days | 0.61 | | | MPC | | 2006 $QP_{118}$ |
| 2006 $QQ_{118}$ | 14.8 | 0.15 | 20060902 | 354.03452 | 38.36092 | 320.92140 | 11.32529 | 0.1429391 | 3.1386180 | 26 | 1 | 33 days | 0.57 | | | MPC | | 2006 $QQ_{118}$ |
| 2006 $QS_{118}$ | 15.7 | 0.15 | 20060902 | 52.22068 | 309.80288 | 329.98118 | 12.54033 | 0.1878246 | 2.6017383 | 31 | 1 | 44 days | 0.68 | | | MPC | | 2006 $QS_{118}$ |
| 2006 $QU_{118}$ | 18.0 | 0.15 | 20060902 | 8.63293 | 154.41197 | 178.92762 | 14.24511 | 0.2704742 | 2.5807512 | 23 | 1 | 29 days | 0.62 | | | MPC | | 2006 $QU_{118}$ |
| 2006 $QV_{118}$ | 16.8 | 0.15 | 20060902 | 335.33052 | 248.50421 | 139.80573 | 13.17337 | 0.2576403 | 2.8033609 | 23 | 1 | 30 days | 0.48 | | | MPC | | 2006 $QV_{118}$ |
| 2006 $QY_{118}$ | 17.2 | 0.15 | 20060922 | 8.16467 | 137.42801 | 191.15077 | 10.41398 | 0.3104370 | 2.7173083 | 22 | 1 | 85 days | 0.45 | M-v | 3 | MPC | | 2006 $QY_{118}$ |
| 2006 $QF_{119}$ | 16.1 | 0.15 | 20060902 | 8.94298 | 191.58814 | 141.96392 | 10.33179 | 0.2147266 | 2.7247742 | 44 | 1 | 55 days | 0.66 | | | MPC | | 2006 $QF_{119}$ |
| 2006 $QH_{119}$ | 16.8 | 0.15 | 20060902 | 21.99415 | 340.78106 | 322.74975 | 12.24801 | 0.1728247 | 2.6251382 | 24 | 1 | 42 days | 0.65 | | | MPC | | 2006 $QH_{119}$ |
| 2006 $QK_{119}$ | 17.0 | 0.15 | 20060922 | 323.84574 | 223.63809 | 172.53766 | 2.16755 | 0.2039956 | 2.4315446 | 29 | 1 | 80 days | 0.51 | M-v | 5 | MPC | | 2006 $QK_{119}$ |
| 2006 $QM_{119}$ | 16.6 | 0.15 | 20060922 | 28.14027 | 100.90656 | 197.45426 | 10.89155 | 0.2999973 | 2.6440744 | 27 | 1 | 54 days | 0.66 | | | MPC | | 2006 $QM_{119}$ |
| 2006 $QN_{119}$ | 15.6 | 0.15 | 20060902 | 350.67501 | 49.63013 | 310.10974 | 12.76160 | 0.2162140 | 2.7397951 | 20 | 1 | 24 days | 0.45 | | | MPC | | 2006 $QN_{119}$ |
| 2006 $QP_{119}$ | 17.7 | 0.15 | 20060813 | 351.79720 | 199.36480 | 148.36616 | 7.46387 | 0.2157660 | 2.5608445 | 24 | 1 | 51 days | 0.61 | | | MPC | | 2006 $QP_{119}$ |
| 2006 $QW_{119}$ | 16.8 | 0.15 | 20060922 | 0.38615 | 166.86821 | 210.29964 | 4.38298 | 0.3401934 | 2.6429310 | 94 | 1 | 82 days | 0.44 | M-v | 3 | MPC | | 2006 $QW_{119}$ |
| 2006 $QD_{120}$ | 16.1 | 0.15 | 20060922 | 334.93956 | 70.63530 | 305.71162 | 7.66695 | 0.2611831 | 2.7385773 | 39 | 2 | 2002–2006 | 0.65 | M-v | 4 | MPC | 04052 | 2006 $QD_{120}$ |
| 2006 $QF_{120}$ | 17.1 | 0.15 | 20060922 | 32.96827 | 106.60059 | 173.01020 | 11.41970 | 0.2868603 | 2.6481429 | 32 | 1 | 66 days | 0.47 | M-v | 4 D | MPC | | 2006 $QF_{120}$ |
| 2006 $QG_{120}$ | 17.1 | 0.15 | 20060902 | 317.68359 | 102.60185 | 287.79459 | 5.10638 | 0.1847955 | 2.3357503 | 17 | 1 | 33 days | 0.44 | | | MPC | | 2006 $QG_{120}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QO_{120}$ | 18.2 | 0.15 | 20060813 | 354.90350 | 42.21776 | 294.21519 | 7.71211 | 0.2999914 | 2.3366829 | 15 | 1 | 25 days | 0.36 | | | MPC | | 2006 $QO_{120}$ |
| 2006 $QQ_{120}$ | 17.3 | 0.15 | 20060922 | 327.29713 | 179.38308 | 213.91635 | 5.83332 | 0.2034350 | 2.3128138 | 30 | 2 | 1999–2006 | 0.56 | M-v | 5 | MPC | 04052 | 2006 $QQ_{120}$ |
| 2006 $QW_{120}$ | 17.9 | 0.15 | 20060922 | 10.52401 | 130.52100 | 199.65099 | 4.64774 | 0.2151435 | 2.2492306 | 21 | 1 | 53 days | 0.48 | | | MPC | | 2006 $QW_{120}$ |
| 2006 $QC_{121}$ | 16.0 | 0.15 | 20060902 | 336.28146 | 102.93248 | 276.46590 | 6.29035 | 0.2419748 | 2.7947659 | 19 | 1 | 30 days | 0.45 | | | MPC | | 2006 $QC_{121}$ |
| 2006 $QM_{121}$ | 17.1 | 0.15 | 20060922 | 337.32119 | 133.00469 | 251.53714 | 3.20646 | 0.2041492 | 2.4095299 | 25 | 1 | 79 days | 0.52 | M-v | 5 | MPC | | 2006 $QM_{121}$ |
| 2006 $QN_{121}$ | 16.4 | 0.15 | 20060922 | 357.19947 | 167.42177 | 184.34142 | 14.85314 | 0.1116533 | 2.6673971 | 27 | 1 | 78 days | 0.65 | M-v | 4 | MPC | | 2006 $QN_{121}$ |
| 2006 $QP_{121}$ | 17.2 | 0.15 | 20060902 | 4.40473 | 231.71653 | 103.24618 | 4.81098 | 0.1899094 | 2.2828380 | 34 | 1 | 36 days | 0.52 | | | MPC | | 2006 $QP_{121}$ |
| 2006 $QT_{121}$ | 15.5 | 0.15 | 20060922 | 343.57130 | 16.06561 | 1.73700 | 15.08136 | 0.2808944 | 3.1627856 | 58 | 1 | 76 days | 0.57 | M-v | 4 | MPC | | 2006 $QT_{121}$ |
| 2006 $QU_{121}$ | 18.0 | 0.15 | 20060902 | 342.97748 | 31.24603 | 329.86030 | 15.01311 | 0.1182904 | 2.0078588 | 21 | 1 | 31 days | 0.60 | | | MPC | | 2006 $QU_{121}$ |
| 2006 $QX_{121}$ | 17.7 | 0.15 | 20060922 | 21.04259 | 133.36063 | 185.88977 | 9.00928 | 0.2146502 | 2.2653792 | 32 | 1 | 51 days | 0.52 | | | MPC | | 2006 $QX_{121}$ |
| 2006 $QZ_{121}$ | 16.0 | 0.15 | 20060902 | 353.30824 | 42.97663 | 313.01925 | 9.04267 | 0.2203379 | 3.1544683 | 20 | 1 | 37 days | 0.59 | | | MPC | | 2006 $QZ_{121}$ |
| 2006 $QB_{122}$ | 17.9 | 0.15 | 20060922 | 14.31128 | 138.87898 | 193.24415 | 6.00136 | 0.1435318 | 2.1947091 | 32 | 1 | 115 days | 0.50 | M-v | 4 | MPC | | 2006 $QB_{122}$ |
| 2006 $QD_{122}$ | 17.5 | 0.15 | 20060922 | 20.48386 | 121.97651 | 196.92931 | 6.01552 | 0.2630331 | 2.4462454 | 35 | 1 | 95 days | 0.50 | M-v | 4 | MPC | | 2006 $QD_{122}$ |
| 2006 $QO_{122}$ | 15.7 | 0.15 | 20060922 | 340.65147 | 192.88910 | 192.99553 | 8.38961 | 0.1728078 | 2.7643064 | 87 | 1 | 84 days | 0.54 | M-v | 4 | MPC | | 2006 $QO_{122}$ |
| 2006 $QP_{122}$ | 15.5 | 0.15 | 20060922 | 331.51872 | 67.00201 | 340.94828 | 15.38665 | 0.2496673 | 3.1541707 | 56 | 1 | 94 days | 0.37 | M-v | 3 | MPC | | 2006 $QP_{122}$ |
| 2006 $QU_{122}$ | 17.3 | 0.15 | 20060922 | 351.30255 | 61.44491 | 326.02670 | 4.09639 | 0.2543271 | 2.3440873 | 40 | 1 | 54 days | 0.49 | | | MPC | | 2006 $QU_{122}$ |
| 2006 $QW_{122}$ | 17.3 | 0.15 | 20060922 | 12.14097 | 159.62477 | 191.83226 | 12.70130 | 0.3067561 | 2.6391046 | 32 | 1 | 79 days | 0.46 | M-v | 4 | MPC | | 2006 $QW_{122}$ |
| 2006 $QX_{122}$ | 17.3 | 0.15 | 20060922 | 347.31528 | 73.51582 | 316.71438 | 6.58683 | 0.3539307 | 2.7697049 | 55 | 1 | 60 days | 0.71 | M-v | 4 | MPC | | 2006 $QX_{122}$ |
| 2006 $QD_{123}$ | 17.3 | 0.15 | 20060902 | 352.86017 | 79.06608 | 268.86796 | 6.29022 | 0.2364977 | 2.8003496 | 20 | 1 | 26 days | 0.52 | | | MPC | | 2006 $QD_{123}$ |
| 2006 $QG_{123}$ | 16.5 | 0.15 | 20060922 | 347.84953 | 191.92114 | 209.48363 | 13.72127 | 0.2441398 | 2.6944979 | 48 | 1 | 83 days | 0.56 | M-v | 3 | MPC | | 2006 $QG_{123}$ |
| 2006 $QL_{123}$ | 15.8 | 0.15 | 20060922 | 351.54371 | 186.42002 | 214.02753 | 13.30277 | 0.2541294 | 2.6488484 | 81 | 1 | 86 days | 0.42 | M-v | 3 | MPC | | 2006 $QL_{123}$ |
| 2006 $QS_{123}$ | 17.2 | 0.15 | 20060922 | 357.43105 | 213.14514 | 169.25373 | 8.85089 | 0.3991284 | 2.5757988 | 71 | 1 | 80 days | 0.38 | M-v | 4 | MPC | | 2006 $QS_{123}$ |
| 2006 $QW_{123}$ | 14.2 | 0.15 | 20060902 | 41.03225 | 354.67395 | 303.64605 | 20.78427 | 0.0791545 | 3.0828658 | 11 | 1 | 8 days | 0.54 | | | MPC | | 2006 $QW_{123}$ |
| 2006 $QX_{123}$ | 16.6 | 0.15 | 20060922 | 5.85770 | 121.59974 | 219.63201 | 11.17826 | 0.3016220 | 2.7380577 | 32 | 1 | 61 days | 0.48 | M-v | 4 | MPC | | 2006 $QX_{123}$ |
| 2006 $QZ_{123}$ | 17.4 | 0.15 | 20060902 | 24.98877 | 33.78661 | 279.45028 | 6.08858 | 0.2348776 | 2.3815180 | 33 | 1 | 43 days | 0.56 | | | MPC | | 2006 $QZ_{123}$ |
| 2006 $QA_{124}$ | 16.2 | 0.15 | 20060922 | 354.70427 | 95.12994 | 277.17513 | 5.16780 | 0.2089802 | 2.3567305 | 74 | 1 | 85 days | 0.57 | M-v | 3 | MPC | | 2006 $QA_{124}$ |
| 2006 $QH_{124}$ | 16.8 | 0.15 | 20060922 | 49.62195 | 333.43528 | 296.72475 | 3.67172 | 0.1300674 | 2.4494688 | 24 | 3 | 2002–2006 | 0.46 | M-v | 3 | MPC | 04052 | 2006 $QH_{124}$ |
| 2006 $QV_{124}$ | 16.3 | 0.15 | 20060902 | 345.83033 | 80.35111 | 270.66014 | 7.61386 | 0.1718585 | 3.1006066 | 13 | 1 | 33 days | 0.40 | | | MPC | | 2006 $QV_{124}$ |
| 2006 $QX_{124}$ | 17.3 | 0.15 | 20060902 | 349.76540 | 157.33450 | 191.00496 | 8.43038 | 0.2115080 | 2.8038683 | 16 | 1 | 41 days | 0.47 | | | MPC | | 2006 $QX_{124}$ |
| 2006 $QE_{125}$ | 16.9 | 0.15 | 20060902 | 359.18884 | 27.83007 | 310.89565 | 11.48060 | 0.2027633 | 2.7322090 | 19 | 1 | 34 days | 0.71 | | | MPC | | 2006 $QE_{125}$ |
| 2006 $QG_{125}$ | 15.3 | 0.15 | 20060902 | 17.02198 | 350.77975 | 324.23707 | 26.70784 | 0.1455915 | 3.1679198 | 33 | 1 | 41 days | 0.55 | | | MPC | | 2006 $QG_{125}$ |
| 2006 $QO_{125}$ | 18.3 | 0.15 | 20060902 | 295.58190 | 80.10040 | 334.22985 | 18.49300 | 0.1146690 | 1.9358976 | 15 | 1 | 45 days | 0.25 | | | MPC | | 2006 $QO_{125}$ |
| 2006 $QA_{126}$ | 17.6 | 0.15 | 20060922 | 359.30453 | 270.18246 | 79.43638 | 4.30427 | 0.1788990 | 2.2164544 | 23 | 2 | 2003–2006 | 0.51 | M-v | 4 | MPC | 04052 | 2006 $QA_{126}$ |
| 2006 $QF_{126}$ | 16.7 | 0.15 | 20060902 | 339.89430 | 262.48595 | 109.86786 | 14.56927 | 0.2013590 | 2.5350259 | 13 | 1 | 45 days | 0.32 | | | MPC | | 2006 $QF_{126}$ |
| 2006 $QG_{126}$ | 18.2 | 0.15 | 20060902 | 7.56569 | 229.02918 | 98.59703 | 9.69832 | 0.3353535 | 2.6744403 | 15 | 1 | 43 days | 0.55 | | | MPC | | 2006 $QG_{126}$ |
| 2006 $QJ_{126}$ | 16.3 | 0.15 | 20060902 | 24.50425 | 230.41970 | 72.38108 | 12.30672 | 0.2004667 | 2.6526379 | 15 | 1 | 57 days | 0.36 | | | MPC | | 2006 $QJ_{126}$ |
| 2006 $QM_{126}$ | 17.1 | 0.15 | 20060902 | 15.12682 | 232.49432 | 88.61958 | 4.55427 | 0.1884128 | 2.6195815 | 24 | 1 | 41 days | 0.63 | | | MPC | | 2006 $QM_{126}$ |
| 2006 $QP_{126}$ | 17.9 | 0.15 | 20060922 | 350.90854 | 290.43322 | 72.67639 | 2.93907 | 0.1683927 | 2.2737794 | 18 | 1 | 101 days | 0.40 | M-v | 4 | MPC | | 2006 $QP_{126}$ |
| 2006 $QQ_{126}$ | 15.8 | 0.15 | 20060902 | 354.95369 | 208.63669 | 142.43495 | 18.30515 | 0.2032661 | 3.1600346 | 15 | 1 | 41 days | 0.62 | | | MPC | | 2006 $QQ_{126}$ |
| 2006 $QV_{126}$ | 18.6 | 0.15 | 20060902 | 19.38281 | 285.14091 | 27.96170 | 5.84308 | 0.2257861 | 2.2323444 | 18 | 1 | 41 days | 0.55 | | | MPC | | 2006 $QV_{126}$ |
| 2006 $QY_{126}$ | 16.9 | 0.15 | 20060922 | 324.17274 | 40.57929 | 11.93971 | 9.91869 | 0.2665971 | 2.4233369 | 49 | 1 | 87 days | 0.47 | M-v | 4 | MPC | | 2006 $QY_{126}$ |
| 2006 $QK_{127}$ | 16.1 | 0.15 | 20060922 | 324.79071 | 359.52461 | 44.52170 | 8.68239 | 0.2898715 | 2.7388384 | 38 | 3 | 2002–2006 | 0.52 | M-v | 3 | MPC | 04053 | 2006 $QK_{127}$ |
| 2006 $QM_{127}$ | 16.7 | 0.15 | 20060922 | 11.64340 | 245.28227 | 80.88655 | 8.68892 | 0.2145944 | 2.3684272 | 19 | 3 | 1999–2006 | 0.29 | M-v | 2 | MPC | 04053 | 2006 $QM_{127}$ |
| 2006 $QE_{128}$ | 17.5 | 0.15 | 20060922 | 335.59040 | 99.34798 | 271.92719 | 6.35406 | 0.1011378 | 2.2990063 | 19 | 1 | 64 days | 0.42 | M-v | 5 | MPC | | 2006 $QE_{128}$ |
| 2006 $QZ_{128}$ | 16.8 | 0.15 | 20060902 | 349.51943 | 228.17474 | 135.22531 | 5.86805 | 0.3056505 | 3.1361852 | 14 | 1 | 44 days | 0.54 | | | MPC | | 2006 $QZ_{128}$ |
| 2006 $QF_{129}$ | 16.4 | 0.15 | 20060922 | 6.29020 | 203.90238 | 142.02803 | 8.71037 | 0.1764965 | 2.6212433 | 41 | 1 | 68 days | 0.52 | M-v | 4 | MPC | | 2006 $QF_{129}$ |
| 2006 $QH_{129}$ | 17.5 | 0.15 | 20060922 | 1.38640 | 287.83232 | 66.54742 | 3.16295 | 0.1819920 | 2.2980954 | 39 | 1 | 92 days | 0.51 | M-v | 4 | MPC | | 2006 $QH_{129}$ |
| 2006 $QK_{129}$ | 16.8 | 0.15 | 20060922 | 348.91861 | 278.73347 | 99.21789 | 5.28890 | 0.2442411 | 2.7065480 | 38 | 1 | 68 days | 0.44 | M-v | 4 | MPC | | 2006 $QK_{129}$ |
| 2006 $QL_{129}$ | 17.9 | 0.15 | 20060922 | 356.70011 | 31.62448 | 338.36662 | 5.15316 | 0.2584556 | 2.2111876 | 53 | 1 | 92 days | 0.46 | M-v | 3 | MPC | | 2006 $QL_{129}$ |
| 2006 $QU_{129}$ | 17.0 | 0.15 | 20060922 | 60.08378 | 319.59965 | 289.00100 | 6.91857 | 0.2343298 | 2.5858378 | 35 | 5 | 2001–2006 | 0.58 | M-v | 0 | MPC | 04053 | 2006 $QU_{129}$ |
| 2006 $QX_{129}$ | 17.3 | 0.15 | 20060902 | 8.01927 | 100.26722 | 221.82928 | 7.31568 | 0.3033908 | 2.7799499 | 22 | 1 | 59 days | 0.55 | | | MPC | | 2006 $QX_{129}$ |
| 2006 $QZ_{129}$ | 16.4 | 0.15 | 20060902 | 0.02424 | 57.72655 | 280.90579 | 10.52558 | 0.2018600 | 2.6865497 | 31 | 1 | 29 days | 0.48 | | | MPC | | 2006 $QZ_{129}$ |
| 2006 $QA_{130}$ | 15.9 | 0.15 | 20060902 | 349.59527 | 56.33046 | 296.11351 | 13.55551 | 0.1015255 | 2.6993393 | 16 | 1 | 31 days | 0.30 | | | MPC | | 2006 $QA_{130}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QC_{130}$ | 16.8 | 0.15 | 20060902 | 353.03441 | 88.95089 | 259.57377 | 3.74222 | 0.1248743 | 2.7119140 | 18 | 1 | 32 days | 0.60 | | | MPC | | 2006 $QC_{130}$ |
| 2006 $QF_{130}$ | 16.4 | 0.15 | 20060922 | 359.46134 | 134.38752 | 217.15893 | 8.20127 | 0.2109474 | 2.7861397 | 24 | 1 | 66 days | 0.55 | M-v | 4 | MPC | | 2006 $QF_{130}$ |
| 2006 $QV_{130}$ | 18.5 | 0.15 | 20060902 | 2.43066 | 240.34302 | 93.60535 | 7.19070 | 0.2804831 | 2.2370079 | 14 | 1 | 40 days | 0.35 | | | MPC | | 2006 $QV_{130}$ |
| 2006 $QA_{131}$ | 14.9 | 0.15 | 20060902 | 321.14581 | 262.34477 | 137.51594 | 21.47775 | 0.1258422 | 3.2180783 | 15 | 1 | 39 days | 0.48 | | | MPC | | 2006 $QA_{131}$ |
| 2006 $QB_{131}$ | 16.2 | 0.15 | 20060922 | 0.40693 | 264.14706 | 88.75616 | 8.32861 | 0.3079862 | 2.6934950 | 32 | 1 | 99 days | 0.47 | M-v | 3 | MPC | | 2006 $QB_{131}$ |
| 2006 $QC_{131}$ | 16.4 | 0.15 | 20060902 | 358.98375 | 294.19648 | 53.59809 | 8.79416 | 0.2232499 | 2.7463385 | 19 | 1 | 37 days | 0.45 | | | MPC | | 2006 $QC_{131}$ |
| 2006 $QF_{131}$ | 17.0 | 0.15 | 20060922 | 350.27969 | 188.75890 | 181.96833 | 19.46697 | 0.3895805 | 2.6852113 | 35 | 1 | 62 days | 0.59 | M-v | 4 | MPC | | 2006 $QF_{131}$ |
| 2006 $QK_{131}$ | 16.1 | 0.15 | 20060902 | 329.64264 | 164.81878 | 208.96460 | 10.75815 | 0.1590124 | 2.8757672 | 13 | 1 | 27 days | 0.40 | | | MPC | | 2006 $QK_{131}$ |
| 2006 $QN_{131}$ | 17.8 | 0.15 | 20060902 | 352.87268 | 82.10579 | 263.90483 | 5.33420 | 0.2040457 | 2.2981753 | 19 | 1 | 39 days | 0.45 | | | MPC | | 2006 $QN_{131}$ |
| 2006 $QQ_{131}$ | 16.1 | 0.15 | 20060922 | 350.01311 | 30.18867 | 320.38610 | 26.78883 | 0.1625165 | 3.2267415 | 14 | 1 | 62 days | 0.44 | M-v | 4 | MPC | | 2006 $QQ_{131}$ |
| 2006 $QR_{131}$ | 18.0 | 0.15 | 20060902 | 7.13916 | 76.03656 | 249.40067 | 5.39134 | 0.1350730 | 2.3422271 | 13 | 1 | 37 days | 0.38 | | | MPC | | 2006 $QR_{131}$ |
| 2006 $QX_{131}$ | 18.4 | 0.15 | 20060902 | 337.83612 | 259.92402 | 111.24117 | 3.33401 | 0.1569346 | 2.2498255 | 11 | 1 | 23 days | 0.67 | | | MPC | | 2006 $QX_{131}$ |
| 2006 $QY_{131}$ | 16.8 | 0.15 | 20060902 | 348.06617 | 6.43925 | 351.64541 | 17.19353 | 0.2096017 | 2.6650956 | 11 | 1 | 23 days | 0.54 | | | MPC | | 2006 $QY_{131}$ |
| 2006 $QZ_{131}$ | 18.0 | 0.15 | 20060902 | 348.24006 | 165.34435 | 191.58466 | 4.83553 | 0.2068364 | 2.1877864 | 28 | 1 | 40 days | 0.70 | | | MPC | | 2006 $QZ_{131}$ |
| 2006 $QA_{132}$ | 16.7 | 0.15 | 20060902 | 327.85974 | 97.67623 | 289.40348 | 7.60479 | 0.2002678 | 2.6178200 | 15 | 1 | 27 days | 0.40 | | | MPC | | 2006 $QA_{132}$ |
| 2006 $QD_{132}$ | 16.8 | 0.15 | 20060902 | 49.80811 | 164.70135 | 104.44001 | 5.80178 | 0.2133962 | 2.3864383 | 17 | 1 | 43 days | 0.58 | | | MPC | | 2006 $QD_{132}$ |
| 2006 $QG_{132}$ | 17.0 | 0.15 | 20060902 | 352.94095 | 352.68280 | 6.68354 | 14.83399 | 0.2708819 | 2.6297413 | 40 | 1 | 37 days | 0.54 | | | MPC | | 2006 $QG_{132}$ |
| 2006 $QH_{132}$ | 16.4 | 0.15 | 20060902 | 24.79805 | 221.71082 | 92.32189 | 6.18521 | 0.1629173 | 2.3789197 | 20 | 1 | 23 days | 0.49 | | | MPC | | 2006 $QH_{132}$ |
| 2006 $QJ_{132}$ | 15.3 | 0.15 | 20060922 | 2.35558 | 179.68778 | 172.32390 | 28.30555 | 0.1597938 | 3.2017921 | 55 | 1 | 63 days | 0.46 | M-v | 4 | MPC | | 2006 $QJ_{132}$ |
| 2006 $QU_{132}$ | 16.7 | 0.15 | 20060922 | 13.77110 | 276.31861 | 54.38979 | 2.88047 | 0.1858901 | 2.4121844 | 33 | 1 | 86 days | 0.70 | M-v | 4 | MPC | | 2006 $QU_{132}$ |
| 2006 $QE_{133}$ | 17.4 | 0.15 | 20060902 | 347.14886 | 292.27740 | 70.38066 | 7.51407 | 0.1672748 | 2.4191770 | 15 | 1 | 34 days | 0.56 | | | MPC | | 2006 $QE_{133}$ |
| 2006 $QF_{133}$ | 15.9 | 0.15 | 20060922 | 358.39670 | 359.53409 | 354.56773 | 17.43941 | 0.1612959 | 2.7170678 | 65 | 1 | 59 days | 0.45 | | | MPC | | 2006 $QF_{133}$ |
| 2006 $QG_{133}$ | 17.9 | 0.15 | 20060902 | 3.45814 | 330.63778 | 8.29444 | 5.07551 | 0.2648027 | 2.4456779 | 21 | 1 | 38 days | 0.50 | | | MPC | | 2006 $QG_{133}$ |
| 2006 $QL_{133}$ | 15.2 | 0.15 | 20060922 | 307.20907 | 298.98595 | 97.26809 | 28.12805 | 0.1706112 | 2.6121740 | 33 | 3 | 2003–2006 | 0.50 | M-v | 3 | MPC | 04053 | 2006 $QL_{133}$ |
| 2006 $QN_{133}$ | 18.1 | 0.15 | 20060902 | 13.70688 | 138.68942 | 171.22226 | 10.33172 | 0.2486609 | 2.4532533 | 17 | 1 | 34 days | 0.60 | | | MPC | | 2006 $QN_{133}$ |
| 2006 $QO_{133}$ | 17.4 | 0.15 | 20060902 | 14.70910 | 55.23008 | 257.38018 | 4.33042 | 0.2114131 | 2.4392285 | 19 | 1 | 34 days | 0.32 | | | MPC | | 2006 $QO_{133}$ |
| 2006 $QW_{133}$ | 17.5 | 0.15 | 20060902 | 7.67594 | 26.21406 | 309.53913 | 5.65018 | 0.2547951 | 2.3520684 | 40 | 1 | 44 days | 0.44 | | | MPC | | 2006 $QW_{133}$ |
| 2006 $QA_{134}$ | 18.1 | 0.15 | 20060902 | 5.48442 | 334.63046 | 359.49001 | 5.19574 | 0.2556619 | 2.3446301 | 35 | 1 | 37 days | 0.64 | | | MPC | | 2006 $QA_{134}$ |
| 2006 $QC_{134}$ | 17.1 | 0.15 | 20060922 | 13.92474 | 74.28268 | 280.17476 | 2.05409 | 0.3492587 | 2.3452650 | 84 | 1 | 90 days | 0.45 | M-v | 4 | MPC | | 2006 $QC_{134}$ |
| 2006 $QD_{134}$ | 17.4 | 0.15 | 20060922 | 19.84661 | 133.34622 | 193.39727 | 1.66056 | 0.1833386 | 2.4750488 | 38 | 1 | 89 days | 0.50 | M-v | 4 | MPC | | 2006 $QD_{134}$ |
| 2006 $QF_{134}$ | 16.6 | 0.15 | 20060922 | 27.53449 | 325.28599 | 358.53605 | 9.18722 | 0.2918991 | 2.7440592 | 46 | 1 | 58 days | 0.53 | | | MPC | | 2006 $QF_{134}$ |
| 2006 $QJ_{134}$ | 16.5 | 0.15 | 20060922 | 358.20079 | 98.51425 | 256.38590 | 12.41272 | 0.2553249 | 2.4813206 | 48 | 2 | 2002–2006 | 0.59 | M-v | 3 | MPC | 04053 | 2006 $QJ_{134}$ |
| 2006 $QS_{134}$ | 18.3 | 0.15 | 20060922 | 359.06266 | 166.83967 | 183.87793 | 11.55056 | 0.2469439 | 2.2991575 | 16 | 1 | 53 days | 0.61 | | | MPC | | 2006 $QS_{134}$ |
| 2006 $QA_{135}$ | 17.4 | 0.15 | 20060902 | 351.63700 | 84.95972 | 276.26388 | 3.44477 | 0.2429999 | 2.5731808 | 21 | 1 | 32 days | 0.61 | | | MPC | | 2006 $QA_{135}$ |
| 2006 $QC_{135}$ | 17.9 | 0.15 | 20060902 | 4.62156 | 352.30196 | 346.34521 | 5.69118 | 0.1836486 | 2.2965287 | 40 | 1 | 41 days | 0.61 | | | MPC | | 2006 $QC_{135}$ |
| 2006 $QD_{135}$ | 15.5 | 0.15 | 20060922 | 36.04216 | 314.78493 | 350.18496 | 13.73935 | 0.1594230 | 3.1950956 | 43 | 1 | 56 days | 0.59 | | | MPC | | 2006 $QD_{135}$ |
| 2006 $QJ_{135}$ | 17.5 | 0.15 | 20060902 | 6.05588 | 185.40015 | 152.04222 | 4.28546 | 0.2441539 | 2.5953002 | 21 | 1 | 36 days | 0.53 | | | MPC | | 2006 $QJ_{135}$ |
| 2006 $QO_{135}$ | 16.7 | 0.15 | 20060922 | 11.09594 | 170.40259 | 145.15443 | 7.29582 | 0.1332426 | 2.3714657 | 44 | 5 | 2001–2006 | 0.49 | M-v | 1 | MPC | 04053 | 2006 $QO_{135}$ |
| 2006 $QS_{135}$ | 16.8 | 0.15 | 20060922 | 20.37868 | 191.89927 | 130.83947 | 5.88680 | 0.2405305 | 2.4012628 | 61 | 1 | 94 days | 0.53 | M-v | 4 | MPC | | 2006 $QS_{135}$ |
| 2006 $QX_{135}$ | 15.4 | 0.15 | 20060902 | 36.53069 | 337.58405 | 317.22595 | 11.27688 | 0.0994958 | 3.0673685 | 15 | 1 | 22 days | 0.60 | | | MPC | | 2006 $QX_{135}$ |
| 2006 $QO_{136}$ | 16.4 | 0.15 | 20060902 | 51.67861 | 343.31600 | 288.03804 | 12.49719 | 0.2131020 | 2.6572269 | 22 | 1 | 29 days | 0.68 | | | MPC | | 2006 $QO_{136}$ |
| 2006 $QP_{136}$ | 18.2 | 0.15 | 20060922 | 350.52113 | 178.26942 | 197.04033 | 4.34509 | 0.2806193 | 2.2047671 | 88 | 1 | 78 days | 0.47 | M-v | 4 | MPC | | 2006 $QP_{136}$ |
| 2006 $QQ_{136}$ | 16.4 | 0.15 | 20060922 | 18.56792 | 143.09697 | 190.61799 | 14.58385 | 0.1363838 | 2.6296256 | 61 | 1 | 78 days | 0.66 | M-v | 4 | MPC | | 2006 $QQ_{136}$ |
| 2006 $QT_{136}$ | 17.5 | 0.15 | 20060922 | 356.02731 | 179.44059 | 161.95104 | 16.11842 | 0.2221980 | 2.6296765 | 19 | 1 | 67 days | 0.45 | M-v | 4 | MPC | | 2006 $QT_{136}$ |
| 2006 $QU_{136}$ | 15.1 | 0.15 | 20060922 | 285.22884 | 141.93703 | 275.29386 | 9.64274 | 0.1252889 | 2.9709446 | 28 | 3 | 2001–2006 | 0.54 | M-v | 3 | MPC | 04053 | 2006 $QU_{136}$ |
| 2006 $QV_{136}$ | 15.7 | 0.15 | 20060922 | 22.17551 | 0.61958 | 305.45028 | 3.01911 | 0.0552590 | 2.7832865 | 21 | 1 | 151 days | 0.51 | M-v | 4 | MPC | | 2006 $QV_{136}$ |
| 2006 $QW_{136}$ | 18.3 | 0.15 | 20060922 | 8.39220 | 125.73420 | 203.38674 | 3.91929 | 0.2046187 | 2.2582879 | 21 | 1 | 66 days | 0.50 | M-v | 4 | MPC | | 2006 $QW_{136}$ |
| 2006 $QX_{136}$ | 16.4 | 0.15 | 20060922 | 355.69423 | 244.56287 | 110.38342 | 9.87398 | 0.1893585 | 2.7120655 | 38 | 3 | 2002–2006 | 0.48 | M-v | 2 | MPC | 04053 | 2006 $QX_{136}$ |
| 2006 $QZ_{136}$ | 15.9 | 0.15 | 20060922 | 328.00603 | 312.37674 | 72.69693 | 2.91179 | 0.1012807 | 2.9508249 | 14 | 1 | 99 days | 0.48 | M-v | 6 | MPC | | 2006 $QZ_{136}$ |
| 2006 $QA_{137}$ | 16.7 | 0.15 | 20060922 | 341.64930 | 54.12352 | 318.22593 | 16.88671 | 0.2351355 | 2.6395661 | 31 | 1 | 64 days | 0.60 | M-v | 4 | MPC | | 2006 $QA_{137}$ |
| 2006 $QB_{137}$ | 16.3 | 0.15 | 20060922 | 50.73266 | 27.25541 | 257.52141 | 3.91323 | 0.1340839 | 2.7538235 | 43 | 4 | 2000–2006 | 0.42 | M-v | 0 | MPC | 04054 | 2006 $QB_{137}$ |
| 2006 $QE_{137}$ | 17.2 | 0.15 | 20060902 | 359.45229 | 200.45762 | 145.86900 | 15.33907 | 0.2008369 | 2.6762734 | 8 | 1 | 13 days | 0.52 | | | MPC | | 2006 $QE_{137}$ |
| 2006 $QH_{137}$ | 17.5 | 0.15 | 20060902 | 334.57846 | 232.96801 | 158.87252 | 14.62270 | 0.2829886 | 2.6157269 | 25 | 1 | 35 days | 0.73 | | | MPC | | 2006 $QH_{137}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QK_{137}$ | 17.6 | 0.15 | 20060922 | 315.67941 | 169.83698 | 252.91441 | 3.20276 | 0.1439055 | 2.2341774 | 47 | 1 | 81 days | 0.44 | M-v | 4 | MPC | | 2006 $QK_{137}$ |
| 2006 $QT_{137}$ | 17.6 | 0.15 | 20060902 | 25.93033 | 142.29946 | 139.79254 | 6.23861 | 0.1991513 | 2.4419930 | 13 | 1 | 49 days | 0.23 | | | MPC | | 2006 $QT_{137}$ |
| 2006 $QA_{138}$ | 13.0 | 0.15 | 20060922 | 317.46358 | 198.27539 | 171.52198 | 4.41648 | 0.0367415 | 5.1562704 | 14 | 1 | 94 days | 0.16 | M-v | 5 | MPC | | 2006 $QA_{138}$ |
| 2006 $QB_{138}$ | 18.8 | 0.15 | 20060902 | 350.80287 | 124.41962 | 222.38280 | 1.41253 | 0.2410011 | 2.3198339 | 13 | 1 | 42 days | 0.16 | | | MPC | | 2006 $QB_{138}$ |
| 2006 $QD_{138}$ | 17.0 | 0.15 | 20060922 | 55.74792 | 15.87122 | 243.33203 | 4.46660 | 0.1820607 | 2.5557450 | 18 | 3 | 1998–2006 | 0.46 | M-v | 4 | MPC | 04054 | 2006 $QD_{138}$ |
| 2006 $QE_{138}$ | 16.8 | 0.15 | 20060813 | 355.22564 | 195.97332 | 133.65781 | 5.76227 | 0.0833040 | 2.7293447 | 12 | 1 | 2 days | 0.13 | | D | MPC | | 2006 $QE_{138}$ |
| 2006 $QK_{138}$ | 16.9 | 0.15 | 20060922 | 45.82842 | 181.79559 | 105.39750 | 2.82861 | 0.1249150 | 2.3411155 | 17 | 3 | 1998–2006 | 0.28 | M-v | 3 | MPC | 04054 | 2006 $QK_{138}$ |
| 2006 $QQ_{138}$ | 15.9 | 0.15 | 20060813 | 355.77815 | 249.19344 | 92.20808 | 11.95819 | 0.1493950 | 2.9645235 | 9 | 1 | 12 days | 0.24 | | | MPC | | 2006 $QQ_{138}$ |
| 2006 $QR_{138}$ | 17.4 | 0.15 | 20060902 | 20.44741 | 261.38514 | 49.07667 | 10.63907 | 0.2175587 | 2.3784638 | 14 | 1 | 41 days | 0.59 | | | MPC | | 2006 $QR_{138}$ |
| 2006 $QT_{138}$ | 16.5 | 0.15 | 20060902 | 4.37341 | 255.51629 | 83.16479 | 10.73877 | 0.2599320 | 2.7160989 | 8 | 1 | 43 days | 0.22 | | | MPC | | 2006 $QT_{138}$ |
| 2006 $QL_{139}$ | 16.6 | 0.15 | 20060922 | 354.87316 | 209.27210 | 129.40840 | 3.11149 | 0.0946495 | 2.9480372 | 9 | 1 | 64 days | 0.18 | M-v | 6 | MPC | | 2006 $QL_{139}$ |
| 2006 $QC_{140}$ | 19.0 | 0.15 | 20060813 | 6.06092 | 58.92718 | 249.29367 | 0.96017 | 0.2334919 | 2.3161098 | 9 | 1 | 6 days | 0.14 | | | MPC | | 2006 $QC_{140}$ |
| 2006 $QD_{140}$ | 14.9 | 0.15 | 20060724 | 217.60041 | 165.02277 | 310.70046 | 2.65647 | 0.2861465 | 2.9713494 | 10 | 1 | 30 days | 0.34 | | | MPC | | 2006 $QD_{140}$ |
| 2006 $QF_{140}$ | 16.0 | 0.15 | 20060922 | 13.23769 | 155.21956 | 158.25719 | 14.46938 | 0.1690782 | 3.0891128 | 13 | 1 | 67 days | 0.13 | M-v | 4 | MPC | | 2006 $QF_{140}$ |
| 2006 $QF_{141}$ | 16.0 | 0.15 | 20060902 | 0.22705 | 56.59288 | 273.44325 | 3.84282 | 0.1289161 | 3.2520628 | 20 | 1 | 41 days | 0.27 | | | MPC | | 2006 $QF_{141}$ |
| 2006 $QK_{141}$ | 16.7 | 0.15 | 20060922 | 353.43857 | 157.57298 | 204.24895 | 7.90557 | 0.3025483 | 2.7657643 | 45 | 1 | 65 days | 0.46 | M-v | 4 | MPC | | 2006 $QK_{141}$ |
| 2006 $QL_{141}$ | 16.6 | 0.15 | 20060902 | 329.44353 | 76.37293 | 308.91065 | 11.97437 | 0.1824020 | 2.6008886 | 13 | 1 | 33 days | 0.40 | | | MPC | | 2006 $QL_{141}$ |
| 2006 $QM_{141}$ | 15.3 | 0.15 | 20060902 | 354.09420 | 82.16132 | 275.70795 | 8.77478 | 0.3055254 | 3.9704321 | 20 | 1 | 44 days | 0.39 | | | MPC | | 2006 $QM_{141}$ |
| 2006 $QN_{141}$ | 15.7 | 0.15 | 20060922 | 11.34689 | 30.74518 | 306.79676 | 8.73308 | 0.0883880 | 3.0907546 | 38 | 4 | 2001–2006 | 0.65 | M-v | 1 | MPC | 04054 | 2006 $QN_{141}$ |
| 2006 $QX_{141}$ | 17.5 | 0.15 | 20060922 | 25.97040 | 120.40887 | 183.84803 | 12.99614 | 0.3080183 | 2.6923694 | 30 | 1 | 91 days | 0.78 | M-v | 4 | MPC | | 2006 $QX_{141}$ |
| 2006 $QB_{142}$ | 16.4 | 0.15 | 20060902 | 28.98974 | 0.14938 | 304.11805 | 8.83705 | 0.2027421 | 2.7347085 | 29 | 1 | 42 days | 0.61 | | | MPC | | 2006 $QB_{142}$ |
| 2006 $QE_{142}$ | 17.7 | 0.15 | 20060902 | 25.34598 | 138.81931 | 166.86126 | 22.60004 | 0.2650641 | 2.3899406 | 18 | 1 | 45 days | 0.52 | | | MPC | | 2006 $QE_{142}$ |
| 2006 $QL_{142}$ | 16.7 | 0.15 | 20060922 | 351.71451 | 202.42115 | 173.53031 | 13.08921 | 0.2623459 | 2.6605501 | 45 | 1 | 65 days | 0.40 | M-v | 4 | MPC | | 2006 $QL_{142}$ |
| 2006 $QQ_{142}$ | 16.1 | 0.15 | 20060922 | 346.79015 | 171.33477 | 205.60254 | 16.46484 | 0.2745920 | 2.7418481 | 43 | 1 | 82 days | 0.48 | M-v | 4 | MPC | | 2006 $QQ_{142}$ |
| 2006 $QR_{142}$ | 15.3 | 0.15 | 20060902 | 340.39946 | 73.74084 | 309.33841 | 24.17277 | 0.3022594 | 3.1301121 | 17 | 1 | 22 days | 0.59 | | | MPC | | 2006 $QR_{142}$ |
| 2006 $QV_{142}$ | 18.2 | 0.15 | 20060902 | 349.11798 | 56.48905 | 309.67189 | 12.16698 | 0.3158278 | 2.6054182 | 26 | 1 | 54 days | 0.57 | | | MPC | | 2006 $QV_{142}$ |
| 2006 $QX_{142}$ | 18.0 | 0.15 | 20060902 | 359.48770 | 92.32388 | 244.88378 | 0.85448 | 0.2516316 | 2.7039840 | 12 | 1 | 14 days | 0.56 | | | MPC | | 2006 $QX_{142}$ |
| 2006 $QY_{142}$ | 17.2 | 0.15 | 20060813 | 1.65260 | 2.84598 | 325.68048 | 5.42725 | 0.1166465 | 2.8091683 | 12 | 1 | 15 days | 0.29 | | | MPC | | 2006 $QY_{142}$ |
| 2006 $QA_{143}$ | 16.7 | 0.15 | 20060902 | 55.47350 | 304.34876 | 340.36261 | 6.52341 | 0.1626111 | 2.4105005 | 10 | 1 | 3 days | 0.35 | | | MPC | | 2006 $QA_{143}$ |
| 2006 $QA_{144}$ | 16.6 | 0.15 | 20060813 | 335.76105 | 52.41123 | 313.58628 | 10.56649 | 0.0506417 | 2.6315356 | 8 | 1 | 4 days | 0.94 | | | MPC | | 2006 $QA_{144}$ |
| 2006 $QC_{144}$ | 18.8 | 0.15 | 20060902 | 347.84440 | 108.20507 | 254.93857 | 3.90558 | 0.2460513 | 2.2409952 | 10 | 1 | 13 days | 0.32 | | | MPC | | 2006 $QC_{144}$ |
| 2006 $QD_{144}$ | 16.0 | 0.15 | 20060902 | 21.34305 | 124.56282 | 193.34707 | 12.08776 | 0.0989095 | 3.0894488 | 9 | 1 | 20 days | 0.64 | | | MPC | | 2006 $QD_{144}$ |
| 2006 $QJ_{144}$ | 15.1 | 0.15 | 20060902 | 41.90750 | 46.63644 | 229.90770 | 14.31215 | 0.2337924 | 2.5641355 | 13 | 1 | 26 days | 0.68 | | | MPC | | 2006 $QJ_{144}$ |
| 2006 $QM_{144}$ | 16.3 | 0.15 | 20060922 | 355.60869 | 185.12462 | 200.01628 | 14.79248 | 0.2569298 | 2.6405462 | 84 | 1 | 82 days | 0.54 | M-v | 3 | MPC | | 2006 $QM_{144}$ |
| 2006 $QN_{144}$ | 17.3 | 0.15 | 20060813 | 10.12100 | 311.91677 | 356.41450 | 23.48698 | 0.2256960 | 2.3102666 | 5 | 1 | 11 days | 0.15 | | | MPC | | 2006 $QN_{144}$ |
| 2006 $QV_{144}$ | 16.9 | 0.15 | 20060922 | 6.93998 | 118.16631 | 224.90930 | 11.48901 | 0.2893540 | 2.6916313 | 36 | 1 | 55 days | 0.49 | | | MPC | | 2006 $QV_{144}$ |
| 2006 $QY_{144}$ | 16.2 | 0.15 | 20060902 | 341.24901 | 82.87950 | 297.12821 | 5.80202 | 0.2534282 | 2.6965369 | 22 | 1 | 31 days | 0.43 | | | MPC | | 2006 $QY_{144}$ |
| 2006 $QP_{145}$ | 16.4 | 0.15 | 20060922 | 295.45729 | 82.42050 | 347.55767 | 8.54489 | 0.1353844 | 2.8597976 | 22 | 1 | 64 days | 0.31 | M-v | 5 | MPC | | 2006 $QP_{145}$ |
| 2006 $QY_{145}$ | 17.1 | 0.15 | 20060922 | 321.26891 | 55.30514 | 350.05544 | 7.24462 | 0.1658854 | 2.5565714 | 22 | 1 | 62 days | 0.54 | M-v | 5 | MPC | | 2006 $QY_{145}$ |
| 2006 $QH_{146}$ | 18.0 | 0.15 | 20060902 | 314.75944 | 48.37231 | 355.65268 | 2.86173 | 0.1555158 | 2.3634031 | 10 | 1 | 59 days | 0.21 | | | MPC | | 2006 $QH_{146}$ |
| 2006 $QJ_{146}$ | 17.9 | 0.15 | 20060902 | 8.06220 | 208.66501 | 120.21986 | 2.06239 | 0.2887961 | 2.6648251 | 26 | 1 | 45 days | 0.63 | | | MPC | | 2006 $QJ_{146}$ |
| 2006 $QK_{146}$ | 17.9 | 0.15 | 20060922 | 326.35951 | 57.69485 | 346.67639 | 9.09249 | 0.2325300 | 2.4592563 | 19 | 1 | 72 days | 0.28 | M-v | 4 | MPC | | 2006 $QK_{146}$ |
| 2006 $QC_{147}$ | 15.9 | 0.15 | 20060902 | 175.24071 | 181.75746 | 347.70353 | 10.04487 | 0.0736033 | 3.1585881 | 10 | 1 | 38 days | 0.39 | | | MPC | | 2006 $QC_{147}$ |
| 2006 $QL_{147}$ | 15.7 | 0.15 | 20060813 | 307.92001 | 268.16634 | 137.94917 | 2.77766 | 0.0436876 | 3.0524025 | 8 | 1 | 9 days | 0.12 | | | MPC | | 2006 $QL_{147}$ |
| 2006 $QM_{147}$ | 18.3 | 0.15 | 20060922 | 20.37465 | 294.93971 | 32.85334 | 1.54074 | 0.1918837 | 2.3801123 | 26 | 1 | 63 days | 0.19 | M-v | 4 | MPC | | 2006 $QM_{147}$ |
| 2006 $QN_{147}$ | 17.7 | 0.15 | 20060813 | 309.34823 | 261.27024 | 152.86508 | 4.69281 | 0.1777966 | 2.4592704 | 8 | 1 | 9 days | 0.08 | | | MPC | | 2006 $QN_{147}$ |
| 2006 $QQ_{147}$ | 16.3 | 0.15 | 20060922 | 308.07744 | 259.84153 | 164.16113 | 13.01594 | 0.1369707 | 2.7659763 | 21 | 1 | 62 days | 0.55 | M-v | 4 | MPC | | 2006 $QQ_{147}$ |
| 2006 $QU_{147}$ | 17.6 | 0.15 | 20060902 | 24.51154 | 170.26045 | 152.64735 | 5.44009 | 0.1071195 | 2.7341267 | 10 | 1 | 31 days | 0.39 | | | MPC | | 2006 $QU_{147}$ |
| 2006 $QW_{147}$ | 17.3 | 0.15 | 20060922 | 322.42289 | 31.66487 | 20.12282 | 1.76745 | 0.1806553 | 2.4184514 | 44 | 1 | 85 days | 0.47 | M-v | 4 | MPC | | 2006 $QW_{147}$ |
| 2006 $QZ_{147}$ | 16.6 | 0.15 | 20060922 | 331.11041 | 32.64076 | 0.98140 | 9.62514 | 0.0947578 | 2.8347703 | 25 | 1 | 66 days | 0.47 | M-v | 4 | MPC | | 2006 $QZ_{147}$ |
| 2006 $QE_{149}$ | 17.8 | 0.15 | 20060902 | 7.38233 | 194.06211 | 143.96259 | 5.71562 | 0.2388756 | 2.4211565 | 30 | 1 | 46 days | 0.56 | | D | MPC | | 2006 $QE_{149}$ |
| 2006 $QP_{149}$ | 16.4 | 0.15 | 20060902 | 170.53834 | 41.70069 | 140.56900 | 4.79875 | 0.0646546 | 2.9855226 | 9 | 1 | 39 days | 0.17 | | | MPC | | 2006 $QP_{149}$ |
| 2006 $QS_{149}$ | 17.5 | 0.15 | 20060922 | 7.21480 | 218.01646 | 129.15079 | 2.87358 | 0.2055290 | 2.4155440 | 38 | 1 | 97 days | 0.50 | M-v | 3 | MPC | | 2006 $QS_{149}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QO_{150}$ | 16.9 | 0.15 | 20060902 | 294.21281 | 216.84485 | 192.09963 | 1.80862 | 0.0609519 | 2.8932898 | 10 | 1 | 38 days | 0.23 | | | MPC | | 2006 $QO_{150}$ |
| 2006 $QS_{150}$ | 17.6 | 0.15 | 20060813 | 329.21938 | 213.00692 | 155.19414 | 29.06352 | 0.0906634 | 2.7564339 | 8 | 1 | 8 days | 0.19 | | | MPC | | 2006 $QS_{150}$ |
| 2006 $QY_{150}$ | 16.2 | 0.15 | 20060902 | 95.68019 | 72.80859 | 160.18453 | 11.13062 | 0.0723052 | 2.9628111 | 10 | 1 | 38 days | 0.15 | | | MPC | | 2006 $QY_{150}$ |
| 2006 $QJ_{151}$ | 16.7 | 0.15 | 20060902 | 29.50156 | 330.85827 | 329.61386 | 9.38033 | 0.1205312 | 2.8500986 | 24 | 1 | 43 days | 0.25 | | | MPC | | 2006 $QJ_{151}$ |
| 2006 $QL_{151}$ | 18.0 | 0.15 | 20060902 | 32.49050 | 316.37326 | 329.24962 | 12.84557 | 0.2475671 | 2.6652926 | 16 | 1 | 44 days | 0.42 | | | MPC | | 2006 $QL_{151}$ |
| 2006 $QA_{152}$ | 17.4 | 0.15 | 20060902 | 350.30700 | 183.40323 | 168.06268 | 2.59014 | 0.1276498 | 3.1665026 | 10 | 1 | 37 days | 0.25 | | | MPC | | 2006 $QA_{152}$ |
| 2006 $QD_{152}$ | 17.3 | 0.15 | 20060902 | 287.24211 | 79.90465 | 336.74482 | 1.82471 | 0.0463954 | 3.0725356 | 10 | 1 | 37 days | 0.19 | | | MPC | | 2006 $QD_{152}$ |
| 2006 $QE_{152}$ | 16.4 | 0.15 | 20060902 | 25.45869 | 309.00850 | 1.15330 | 1.75196 | 0.0358110 | 2.8928015 | 10 | 1 | 38 days | 0.18 | | | MPC | | 2006 $QE_{152}$ |
| 2006 $QK_{152}$ | 17.4 | 0.15 | 20060902 | 17.28242 | 335.01573 | 343.13463 | 1.53661 | 0.0708935 | 2.7973235 | 10 | 1 | 37 days | 0.28 | | | MPC | | 2006 $QK_{152}$ |
| 2006 $QQ_{152}$ | 19.1 | 0.15 | 20060813 | 3.43559 | 328.77755 | 355.73519 | 2.27456 | 0.2221576 | 2.4165116 | 8 | 1 | 9 days | 0.22 | | | MPC | | 2006 $QQ_{152}$ |
| 2006 $QS_{152}$ | 17.6 | 0.15 | 20060902 | 315.84154 | 43.52845 | 348.36983 | 4.39452 | 0.1061984 | 2.7655968 | 10 | 1 | 37 days | 0.32 | | | MPC | | 2006 $QS_{152}$ |
| 2006 $QT_{152}$ | 17.3 | 0.15 | 20060902 | 277.22302 | 273.10769 | 147.50247 | 3.01259 | 0.0136101 | 2.8607950 | 10 | 1 | 42 days | 0.34 | | | MPC | | 2006 $QT_{152}$ |
| 2006 $QB_{153}$ | 16.8 | 0.15 | 20060902 | 353.84330 | 123.68907 | 225.52715 | 0.23183 | 0.2944059 | 3.9649100 | 13 | 1 | 37 days | 0.15 | | | MPC | | 2006 $QB_{153}$ |
| 2006 $QP_{154}$ | 17.4 | 0.15 | 20060902 | 11.00120 | 344.42547 | 345.53346 | 5.36365 | 0.2569208 | 2.4058576 | 51 | 1 | 52 days | 0.55 | | | MPC | | 2006 $QP_{154}$ |
| 2006 $QK_{155}$ | 18.0 | 0.15 | 20060922 | 355.44658 | 161.06549 | 200.63800 | 4.72103 | 0.2308547 | 2.3487397 | 23 | 1 | 85 days | 0.36 | M-v | 4 | MPC | | 2006 $QK_{155}$ |
| 2006 $QL_{155}$ | 16.5 | 0.15 | 20060902 | 358.01370 | 30.62369 | 319.72794 | 12.51928 | 0.1830812 | 2.6276205 | 23 | 1 | 54 days | 0.67 | | | MPC | | 2006 $QL_{155}$ |
| 2006 $QC_{156}$ | 17.2 | 0.15 | 20060902 | 156.12161 | 204.25721 | 331.28513 | 5.85049 | 0.0795585 | 2.3496754 | 14 | 1 | 38 days | 0.29 | | | MPC | | 2006 $QC_{156}$ |
| 2006 $QG_{156}$ | 16.9 | 0.15 | 20060902 | 321.88026 | 91.92400 | 295.23680 | 2.71708 | 0.1055896 | 2.8122897 | 14 | 1 | 40 days | 0.45 | | | MPC | | 2006 $QG_{156}$ |
| 2006 $QQ_{156}$ | 18.3 | 0.15 | 20060902 | 358.36709 | 24.02296 | 321.22682 | 4.31044 | 0.3430395 | 2.6378333 | 19 | 1 | 29 days | 0.37 | | | MPC | | 2006 $QQ_{156}$ |
| 2006 $QV_{156}$ | 18.5 | 0.15 | 20060902 | 26.05530 | 86.91000 | 217.42816 | 0.79464 | 0.1820817 | 2.4599754 | 14 | 1 | 39 days | 0.22 | | | MPC | | 2006 $QV_{156}$ |
| 2006 $QJ_{157}$ | 18.0 | 0.15 | 20060902 | 344.57919 | 206.48858 | 154.40379 | 2.42276 | 0.1114437 | 2.2990501 | 14 | 1 | 42 days | 0.15 | | | MPC | | 2006 $QJ_{157}$ |
| 2006 $QO_{157}$ | 16.3 | 0.15 | 20060902 | 358.19586 | 181.19117 | 162.21555 | 9.37009 | 0.0979660 | 3.2207051 | 14 | 1 | 42 days | 0.19 | | | MPC | | 2006 $QO_{157}$ |
| 2006 $QD_{158}$ | 16.0 | 0.15 | 20060813 | 119.21509 | 246.54232 | 329.46796 | 9.97949 | 0.0170740 | 3.1659086 | 8 | 1 | 8 days | 0.10 | | | MPC | | 2006 $QD_{158}$ |
| 2006 $QM_{158}$ | 18.1 | 0.15 | 20060922 | 321.32513 | 199.55024 | 204.74797 | 2.34653 | 0.1666776 | 2.2666210 | 21 | 1 | 84 days | 0.40 | M-v | 4 | MPC | | 2006 $QM_{158}$ |
| 2006 $QR_{158}$ | 17.1 | 0.15 | 20060902 | 358.70565 | 180.45051 | 166.83725 | 12.09158 | 0.1660901 | 2.5984590 | 18 | 1 | 44 days | 0.44 | | | MPC | | 2006 $QR_{158}$ |
| 2006 $QS_{158}$ | 15.7 | 0.15 | 20060922 | 356.43169 | 23.75838 | 333.07972 | 11.67883 | 0.1366462 | 3.1484216 | 37 | 1 | 84 days | 0.56 | M-v | 4 | MPC | | 2006 $QS_{158}$ |
| 2006 $QU_{158}$ | 18.4 | 0.15 | 20060922 | 3.20132 | 166.50155 | 182.14954 | 3.80259 | 0.1850409 | 2.2986125 | 18 | 1 | 62 days | 0.51 | M-v | 4 | MPC | | 2006 $QU_{158}$ |
| 2006 $QC_{159}$ | 18.2 | 0.15 | 20060902 | 16.40800 | 138.91162 | 175.02727 | 4.79517 | 0.3047090 | 2.6183572 | 22 | 1 | 37 days | 0.54 | | | MPC | | 2006 $QC_{159}$ |
| 2006 $QE_{159}$ | 17.4 | 0.15 | 20060922 | 333.83996 | 73.32170 | 318.12965 | 2.70813 | 0.1876332 | 2.3786297 | 23 | 1 | 87 days | 0.66 | M-v | 5 | MPC | | 2006 $QE_{159}$ |
| 2006 $QR_{159}$ | 17.0 | 0.15 | 20060922 | 8.43283 | 120.68633 | 220.02183 | 1.28758 | 0.2190558 | 2.6369051 | 35 | 1 | 94 days | 0.44 | M-v | 4 | MPC | | 2006 $QR_{159}$ |
| 2006 $QV_{159}$ | 16.5 | 0.15 | 20060813 | 51.35733 | 280.80954 | 344.05145 | 10.01622 | 0.2412862 | 2.8164426 | 14 | 1 | 9 days | 0.83 | | | MPC | | 2006 $QV_{159}$ |
| 2006 $QZ_{159}$ | 17.0 | 0.15 | 20060922 | 7.43860 | 183.78292 | 159.66867 | 2.80901 | 0.1006188 | 2.5986911 | 33 | 1 | 90 days | 0.61 | M-v | 4 | MPC | | 2006 $QZ_{159}$ |
| 2006 $QE_{160}$ | 16.6 | 0.15 | 20060902 | 48.79485 | 305.95513 | 332.48282 | 3.35318 | 0.1890611 | 3.2134442 | 10 | 1 | 39 days | 0.16 | | | MPC | | 2006 $QE_{160}$ |
| 2006 $QG_{160}$ | 18.0 | 0.15 | 20060902 | 83.53599 | 283.18555 | 316.95521 | 2.02000 | 0.1891259 | 2.3670476 | 10 | 1 | 39 days | 0.64 | | | MPC | | 2006 $QG_{160}$ |
| 2006 $QT_{160}$ | 18.3 | 0.15 | 20060902 | 9.58959 | 32.10367 | 294.47493 | 1.00750 | 0.3014723 | 2.6855152 | 14 | 1 | 40 days | 0.50 | | | MPC | | 2006 $QT_{160}$ |
| 2006 $QF_{161}$ | 16.3 | 0.15 | 20060922 | 336.64681 | 43.33049 | 333.05120 | 7.64697 | 0.0577801 | 3.1133615 | 16 | 1 | 109 days | 0.37 | M-v | 4 | MPC | | 2006 $QF_{161}$ |
| 2006 $QL_{161}$ | 15.8 | 0.15 | 20060902 | 202.97027 | 328.99090 | 180.84782 | 3.54563 | 0.1622765 | 3.0264048 | 10 | 1 | 37 days | 0.26 | | | MPC | | 2006 $QL_{161}$ |
| 2006 $QN_{161}$ | 16.3 | 0.15 | 20060922 | 12.56646 | 8.71774 | 332.65596 | 4.38955 | 0.1312202 | 2.7345712 | 40 | 1 | 65 days | 0.48 | M-v | 4 | MPC | | 2006 $QN_{161}$ |
| 2006 $QP_{161}$ | 16.2 | 0.15 | 20060922 | 244.43769 | 301.71109 | 175.12034 | 0.65725 | 0.0180178 | 2.9651507 | 21 | 1 | 62 days | 0.30 | M-v | 5 | D | MPC | 2006 $QP_{161}$ |
| 2006 $QS_{161}$ | 16.2 | 0.15 | 20060922 | 1.63324 | 357.44010 | 0.47496 | 1.73907 | 0.1116729 | 2.7802886 | 52 | 1 | 123 days | 0.47 | M-v | 3 | MPC | | 2006 $QS_{161}$ |
| 2006 $QT_{161}$ | 18.0 | 0.15 | 20060922 | 14.88223 | 355.03853 | 338.48304 | 4.43183 | 0.2555617 | 2.2605273 | 58 | 1 | 61 days | 0.58 | M-v | 4 | MPC | | 2006 $QT_{161}$ |
| 2006 $QD_{162}$ | 18.6 | 0.15 | 20060902 | 359.12370 | 340.85757 | 10.11003 | 4.83253 | 0.2482234 | 2.2784417 | 27 | 1 | 57 days | 0.33 | | | MPC | | 2006 $QD_{162}$ |
| 2006 $QE_{162}$ | 16.5 | 0.15 | 20060922 | 11.92388 | 238.40967 | 103.35487 | 3.68941 | 0.1703961 | 3.0813460 | 18 | 1 | 95 days | 0.37 | M-v | 4 | MPC | | 2006 $QE_{162}$ |
| 2006 $QO_{162}$ | 16.6 | 0.15 | 20060813 | 73.89264 | 96.07674 | 152.46502 | 14.80174 | 0.1233127 | 2.6743929 | 11 | 1 | 7 days | 0.18 | | | MPC | | 2006 $QO_{162}$ |
| 2006 $QR_{162}$ | 17.5 | 0.15 | 20060922 | 26.09194 | 121.44577 | 193.76528 | 6.99398 | 0.1990127 | 2.5763883 | 18 | 1 | 92 days | 0.63 | M-v | 4 | MPC | | 2006 $QR_{162}$ |
| 2006 $QU_{162}$ | 17.8 | 0.15 | 20060902 | 19.13623 | 51.89269 | 268.65352 | 3.95719 | 0.1474626 | 2.3122755 | 19 | 1 | 35 days | 0.67 | | | MPC | | 2006 $QU_{162}$ |
| 2006 $QY_{162}$ | 15.6 | 0.15 | 20060922 | 64.18364 | 283.18009 | 351.96712 | 25.21087 | 0.2016194 | 3.0543111 | 35 | 1 | 67 days | 0.46 | M-v | 4 | MPC | | 2006 $QY_{162}$ |
| 2006 $QK_{163}$ | 17.6 | 0.15 | 20060813 | 353.86971 | 12.78065 | 332.28705 | 15.41137 | 0.2360244 | 2.7270091 | 23 | 1 | 13 days | 0.61 | | | MPC | | 2006 $QK_{163}$ |
| 2006 $QM_{163}$ | 16.7 | 0.15 | 20060902 | 339.36148 | 120.87297 | 247.70393 | 2.69188 | 0.1197420 | 2.7379007 | 13 | 1 | 19 days | 0.55 | | | MPC | | 2006 $QM_{163}$ |
| 2006 $QS_{163}$ | 19.2 | 0.15 | 20060922 | 350.04746 | 204.07798 | 160.96159 | 1.51514 | 0.2057059 | 2.1645498 | 21 | 1 | 62 days | 0.57 | M-v | 5 | MPC | | 2006 $QS_{163}$ |
| 2006 $QX_{163}$ | 16.4 | 0.15 | 20060922 | 312.53485 | 222.98295 | 194.30398 | 7.68606 | 0.2190635 | 2.7737898 | 25 | 1 | 79 days | 0.60 | M-v | 5 | MPC | | 2006 $QX_{163}$ |
| 2006 $QB_{164}$ | 16.6 | 0.15 | 20060922 | 39.43002 | 330.87788 | 344.18408 | 15.68392 | 0.1518059 | 2.6349304 | 27 | 1 | 55 days | 0.48 | | | MPC | | 2006 $QB_{164}$ |
| 2006 $QC_{164}$ | 14.8 | 0.15 | 20060922 | 4.68657 | 26.65273 | 330.35778 | 17.08858 | 0.1484559 | 3.0909701 | 37 | 1 | 52 days | 0.49 | | | MPC | | 2006 $QC_{164}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QJ_{164}$ | 16.8 | 0.15 | 20060922 | 11.01580 | 78.89749 | 261.49356 | 9.74835 | 0.2588500 | 2.7687911 | 26 | 1 | 55 days | 0.55 | | | MPC | 2006 $QJ_{164}$ |
| 2006 $QM_{164}$ | 16.0 | 0.15 | 20060902 | 36.28392 | 59.22511 | 244.57141 | 12.67287 | 0.1185931 | 2.6312164 | 23 | 1 | 31 days | 0.53 | | | MPC | 2006 $QM_{164}$ |
| 2006 $QP_{164}$ | 15.1 | 0.15 | 20060902 | 25.94205 | 22.19222 | 298.20940 | 14.40122 | 0.1086207 | 3.1399980 | 16 | 1 | 31 days | 0.82 | | | MPC | 2006 $QP_{164}$ |
| 2006 $QQ_{164}$ | 17.9 | 0.15 | 20060902 | 2.03556 | 65.21890 | 278.37529 | 8.19678 | 0.3466820 | 2.7505593 | 16 | 1 | 29 days | 0.57 | | | MPC | 2006 $QQ_{164}$ |
| 2006 $QU_{164}$ | 17.3 | 0.15 | 20060922 | 343.30252 | 129.74851 | 257.47869 | 6.54099 | 0.2429640 | 2.3588017 | 39 | 1 | 55 days | 0.44 | | D | MPC | 2006 $QU_{164}$ |
| 2006 $QX_{164}$ | 17.2 | 0.15 | 20060902 | 2.78063 | 33.26465 | 311.52630 | 12.60924 | 0.1992433 | 2.7036549 | 16 | 1 | 24 days | 0.68 | | | MPC | 2006 $QX_{164}$ |
| 2006 $QY_{164}$ | 17.9 | 0.15 | 20060922 | 9.48063 | 129.71883 | 205.66589 | 11.62851 | 0.2874729 | 2.6261741 | 20 | 1 | 48 days | 0.77 | | | MPC | 2006 $QY_{164}$ |
| 2006 $QF_{165}$ | 16.1 | 0.15 | 20060922 | 351.81479 | 10.71994 | 350.58788 | 29.07685 | 0.2498086 | 3.1784961 | 33 | 1 | 68 days | 0.62 | M-v | 4 | MPC | 2006 $QF_{165}$ |
| 2006 $QH_{165}$ | 16.8 | 0.15 | 20060902 | 21.51490 | 3.03516 | 310.38099 | 7.38719 | 0.1927861 | 2.7519732 | 18 | 1 | 22 days | 0.54 | | | MPC | 2006 $QH_{165}$ |
| 2006 $QJ_{165}$ | 16.5 | 0.15 | 20060902 | 25.77166 | 355.37627 | 310.68219 | 8.15971 | 0.1941955 | 2.7866017 | 19 | 1 | 25 days | 0.41 | | | MPC | 2006 $QJ_{165}$ |
| 2006 $QM_{165}$ | 16.6 | 0.15 | 20060922 | 60.62641 | 7.72327 | 267.37711 | 3.52252 | 0.1309265 | 2.6379865 | 29 | 1 | 84 days | 0.39 | M-v | 4 | MPC | 2006 $QM_{165}$ |
| 2006 $QU_{165}$ | 17.4 | 0.15 | 20060922 | 354.90129 | 129.71524 | 233.87661 | 4.10778 | 0.1700486 | 2.3609016 | 33 | 1 | 77 days | 0.65 | M-v | 4 | MPC | 2006 $QU_{165}$ |
| 2006 $QG_{166}$ | 16.1 | 0.15 | 20060902 | 352.38739 | 180.46271 | 187.52232 | 27.90133 | 0.1326255 | 3.0991641 | 23 | 1 | 29 days | 0.55 | | | MPC | 2006 $QG_{166}$ |
| 2006 $QK_{166}$ | 16.0 | 0.15 | 20060922 | 0.11802 | 44.40122 | 329.06910 | 12.88116 | 0.1342011 | 2.6377012 | 25 | 1 | 59 days | 0.51 | | | MPC | 2006 $QK_{166}$ |
| 2006 $QL_{166}$ | 17.6 | 0.15 | 20060922 | 13.72058 | 133.48647 | 204.99917 | 13.23325 | 0.2817328 | 2.6919504 | 30 | 1 | 76 days | 0.47 | M-v | 4 | MPC | 2006 $QL_{166}$ |
| 2006 $QM_{166}$ | 14.9 | 0.15 | 20060922 | 5.35953 | 34.95419 | 323.06131 | 16.53041 | 0.1348327 | 3.1099320 | 20 | 1 | 52 days | 0.60 | | | MPC | 2006 $QM_{166}$ |
| 2006 $QQ_{166}$ | 16.7 | 0.15 | 20060922 | 60.03398 | 82.02878 | 188.14681 | 21.57793 | 0.2677195 | 2.3841617 | 31 | 1 | 88 days | 0.72 | M-v | 4 | MPC | 2006 $QQ_{166}$ |
| 2006 $QR_{166}$ | 16.8 | 0.15 | 20060922 | 34.54794 | 105.11754 | 197.04061 | 10.77137 | 0.2820157 | 2.6199215 | 47 | 1 | 78 days | 0.45 | M-v | 4 | MPC | 2006 $QR_{166}$ |
| 2006 $QS_{166}$ | 16.2 | 0.15 | 20060922 | 5.70438 | 80.70951 | 270.70284 | 8.14501 | 0.2555587 | 3.1364035 | 33 | 1 | 55 days | 0.67 | | | MPC | 2006 $QS_{166}$ |
| 2006 $QX_{166}$ | 15.5 | 0.15 | 20060922 | 26.40278 | 319.81940 | 44.00818 | 12.76128 | 0.1802427 | 2.6154210 | 58 | 1 | 85 days | 0.43 | M-v | 4 | MPC | 2006 $QX_{166}$ |
| 2006 $QR_{167}$ | 16.6 | 0.15 | 20060922 | 31.41262 | 342.01889 | 344.26883 | 7.89266 | 0.2014292 | 2.2237730 | 45 | 1 | 48 days | 0.65 | | | MPC | 2006 $QR_{167}$ |
| 2006 $QT_{167}$ | 16.9 | 0.15 | 20060902 | 332.22956 | 326.61660 | 61.61884 | 2.73603 | 0.2387407 | 2.7546174 | 19 | 1 | 31 days | 0.58 | | | MPC | 2006 $QT_{167}$ |
| 2006 $QD_{168}$ | 16.8 | 0.15 | 20060902 | 313.59467 | 275.66147 | 137.41176 | 9.74299 | 0.2213550 | 2.7897080 | 12 | 1 | 21 days | 0.52 | | | MPC | 2006 $QD_{168}$ |
| 2006 $QL_{168}$ | 17.0 | 0.15 | 20060922 | 25.99726 | 305.62303 | 7.05030 | 11.71180 | 0.2012848 | 2.6263568 | 33 | 1 | 97 days | 0.33 | M-v | 4 | MPC | 2006 $QL_{168}$ |
| 2006 $QP_{168}$ | 18.2 | 0.15 | 20060902 | 12.04791 | 274.09707 | 48.31097 | 5.48222 | 0.2690625 | 2.2119863 | 16 | 1 | 27 days | 0.47 | | | MPC | 2006 $QP_{168}$ |
| 2006 $QS_{168}$ | 17.0 | 0.15 | 20060902 | 42.84399 | 213.59575 | 68.84050 | 6.42877 | 0.2086461 | 2.5494625 | 16 | 1 | 27 days | 0.62 | | | MPC | 2006 $QS_{168}$ |
| 2006 $QV_{168}$ | 17.3 | 0.15 | 20060902 | 327.36740 | 285.75915 | 107.69934 | 5.88036 | 0.2453244 | 2.6303211 | 11 | 1 | 21 days | 0.69 | | | MPC | 2006 $QV_{168}$ |
| 2006 $QX_{168}$ | 15.7 | 0.15 | 20060922 | 24.87819 | 286.94808 | 22.90945 | 13.45538 | 0.2686187 | 3.2124505 | 23 | 1 | 87 days | 0.40 | M-v | 4 | MPC | 2006 $QX_{168}$ |
| 2006 $QZ_{168}$ | 16.8 | 0.15 | 20060902 | 340.07504 | 320.55584 | 53.92325 | 6.42765 | 0.1384472 | 2.5623236 | 22 | 1 | 42 days | 0.64 | | | MPC | 2006 $QZ_{168}$ |
| 2006 $QD_{169}$ | 17.6 | 0.15 | 20060902 | 6.39156 | 22.15366 | 311.30265 | 15.98006 | 0.2545350 | 2.6248661 | 20 | 1 | 28 days | 0.72 | | | MPC | 2006 $QD_{169}$ |
| 2006 $QF_{169}$ | 16.4 | 0.15 | 20060922 | 17.06523 | 355.87105 | 352.79846 | 9.09977 | 0.1817063 | 2.5995133 | 40 | 1 | 91 days | 0.42 | M-v | 4 | MPC | 2006 $QF_{169}$ |
| 2006 $QG_{169}$ | 18.2 | 0.15 | 20060922 | 359.96913 | 192.28226 | 172.44059 | 5.16227 | 0.3174809 | 2.3463145 | 48 | 1 | 57 days | 0.48 | | | MPC | 2006 $QG_{169}$ |
| 2006 $QR_{169}$ | 15.1 | 0.15 | 20060902 | 21.26465 | 2.86706 | 321.19811 | 14.97315 | 0.0649459 | 3.0583626 | 15 | 1 | 45 days | 0.52 | | | MPC | 2006 $QR_{169}$ |
| 2006 $QS_{169}$ | 17.7 | 0.15 | 20060922 | 352.46758 | 182.29926 | 175.51329 | 5.22127 | 0.2761672 | 2.6235669 | 33 | 1 | 93 days | 0.42 | M-v | 4 | MPC | 2006 $QS_{169}$ |
| 2006 $QT_{169}$ | 16.6 | 0.15 | 20060922 | 359.52208 | 181.24857 | 163.84787 | 8.71896 | 0.1628919 | 2.9041215 | 24 | 1 | 75 days | 0.59 | M-v | 4 | MPC | 2006 $QT_{169}$ |
| 2006 $QV_{169}$ | 16.6 | 0.15 | 20060902 | 330.95980 | 266.01776 | 121.00589 | 8.90404 | 0.2521120 | 2.5374343 | 19 | 1 | 42 days | 0.52 | | | MPC | 2006 $QV_{169}$ |
| 2006 $QZ_{169}$ | 17.1 | 0.15 | 20060922 | 6.45117 | 153.25946 | 192.44741 | 12.32550 | 0.3306586 | 2.7720560 | 49 | 1 | 86 days | 0.35 | M-v | 3 | MPC | 2006 $QZ_{169}$ |
| 2006 $QK_{170}$ | 16.0 | 0.15 | 20060922 | 19.35064 | 223.87175 | 98.33350 | 17.95885 | 0.3188020 | 2.6896632 | 27 | 1 | 91 days | 0.34 | M-v | 4 | MPC | 2006 $QK_{170}$ |
| 2006 $QQ_{170}$ | 18.0 | 0.15 | 20060922 | 332.31877 | 194.90955 | 196.57295 | 2.22223 | 0.1854781 | 2.3836327 | 19 | 1 | 93 days | 0.33 | M-v | 4 | MPC | 2006 $QQ_{170}$ |
| 2006 $QR_{170}$ | 16.5 | 0.15 | 20060902 | 345.85051 | 56.74512 | 306.44208 | 5.06507 | 0.0834528 | 2.7437607 | 17 | 1 | 51 days | 0.47 | | | MPC | 2006 $QR_{170}$ |
| 2006 $QS_{170}$ | 16.5 | 0.15 | 20060902 | 329.00912 | 43.52597 | 339.08293 | 14.33611 | 0.1581087 | 2.8378017 | 11 | 1 | 38 days | 0.38 | | | MPC | 2006 $QS_{170}$ |
| 2006 $QB_{172}$ | 17.5 | 0.15 | 20060902 | 342.65748 | 7.91708 | 352.97938 | 5.65338 | 0.0539450 | 2.7460012 | 6 | 1 | 59 days | 0.07 | | | MPC | 2006 $QB_{172}$ |
| 2006 $QD_{173}$ | 17.5 | 0.15 | 20060813 | 348.81490 | 350.67610 | 359.32565 | 4.12787 | 0.1025136 | 2.7354999 | 8 | 1 | 6 days | 0.51 | | | MPC | 2006 $QD_{173}$ |
| 2006 $QD_{176}$ | 15.8 | 0.15 | 20060902 | 132.23696 | 286.30584 | 291.20569 | 7.65602 | 0.1258773 | 2.5692293 | 11 | 1 | 36 days | 0.53 | | | MPC | 2006 $QD_{176}$ |
| 2006 $QN_{176}$ | 16.9 | 0.15 | 20060902 | 311.66372 | 205.74696 | 217.43499 | 9.19259 | 0.1849648 | 2.5743424 | 11 | 1 | 42 days | 0.37 | | | MPC | 2006 $QN_{176}$ |
| 2006 $QM_{177}$ | 17.1 | 0.15 | 20060813 | 353.80462 | 126.76269 | 215.94553 | 5.15569 | 0.0490415 | 2.7094481 | 10 | 1 | 8 days | 0.38 | | | MPC | 2006 $QM_{177}$ |
| 2006 $QP_{180}$ | 10.2 | 0.15 | 20060922 | 10.06958 | 51.70906 | 237.54035 | 4.95835 | 0.6649936 | 38.9541510 | 20 | 1 | 53 days | 0.10 | | | MPC | 2006 $QP_{180}$ |
| 2006 $QQ_{180}$ | 7.2 | 0.15 | 20060922 | 53.22242 | 149.10136 | 145.57537 | 9.37426 | 0.2446026 | 43.5438907 | 14 | 1 | 55 days | 0.10 | | | MPC | 2006 $QQ_{180}$ |
| 2006 $QY_{180}$ | 7.2 | 0.15 | 20060902 | 0.04265 | 318.16656 | 20.91383 | 2.64058 | 0.1612622 | 42.5527414 | 7 | 1 | 60 days | 0.13 | | E | MPC | 2006 $QY_{180}$ |
| 2006 $QA_{181}$ | 7.2 | 0.15 | 20060902 | 0.03975 | 203.27973 | 158.25682 | 4.67674 | 0.0887953 | 44.5995271 | 6 | 1 | 60 days | 0.27 | | E | MPC | 2006 $QA_{181}$ |
| 2006 $QB_{181}$ | 6.7 | 0.15 | 20060902 | 180.06711 | 117.07446 | 64.48309 | 2.19751 | 0.0401889 | 43.6867590 | 6 | 1 | 60 days | 0.14 | | E | MPC | 2006 $QB_{181}$ |
| 2006 $QC_{181}$ | 6.6 | 0.15 | 20060902 | 180.12044 | 5.31511 | 177.77601 | 22.62411 | 0.1268075 | 43.8516062 | 6 | 1 | 60 days | 0.44 | | E | MPC | 2006 $QC_{181}$ |
| 2006 $QG_{181}$ | 8.4 | 0.15 | 20060902 | 12.47162 | 322.26073 | 38.91479 | 7.30049 | 0.5211901 | 45.5421380 | 9 | 1 | 60 days | 0.09 | | E | MPC | 2006 $QG_{181}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $QH_{181}$ | 3.8 | 0.15 | 20060902 | 235.90702 | 141.81342 | 73.73945 | 19.32611 | 0.3832330 | 63.0503424 | 7 | 1 | 60 days | 0.20 | | E | MPC | | 2006 $QH_{181}$ |
| 2006 $QJ_{181}$ | 6.5 | 0.15 | 20060902 | 5.54632 | 158.42163 | 249.88073 | 19.86092 | 0.3611818 | 54.9984866 | 9 | 1 | 60 days | 0.12 | | E | MPC | | 2006 $QJ_{181}$ |
| 2006 $QK_{181}$ | 7.3 | 0.15 | 20060902 | 0.03847 | 170.84153 | 172.70048 | 19.61472 | 0.1246631 | 42.9299113 | 6 | 1 | 59 days | 0.22 | | E | MPC | | 2006 $QK_{181}$ |
| 2006 $QM_{181}$ | 6.8 | 0.15 | 20060902 | 0.03521 | 292.76765 | 51.33037 | 2.57336 | 0.0659042 | 45.5827589 | 9 | 1 | 59 days | 0.34 | | E | MPC | | 2006 $QM_{181}$ |
| 2006 $QO_{181}$ | 6.8 | 0.15 | 20060902 | 0.03729 | 247.76360 | 97.43950 | 2.92760 | 0.0292495 | 43.8487489 | 6 | 1 | 59 days | 0.19 | | E | MPC | | 2006 $QO_{181}$ |
| 2006 $QR_{181}$ | 7.1 | 0.15 | 20060902 | 0.03524 | 79.27767 | 290.87521 | 9.83204 | 0.1310996 | 45.4002767 | 6 | 1 | 59 days | 0.14 | | E | MPC | | 2006 $QR_{181}$ |
| 2006 $QS_{181}$ | 7.6 | 0.15 | 20060902 | 0.03892 | 140.02386 | 228.50610 | 15.48515 | 0.1180055 | 42.4531730 | 6 | 1 | 59 days | 0.29 | | E | MPC | | 2006 $QS_{181}$ |
| 2006 RD | 18.0 | 0.15 | 20060902 | 1.43867 | 156.31556 | 183.04394 | 5.01454 | 0.1061217 | 2.6176994 | 9 | 1 | 3 days | 0.08 | | | MPC | | 2006 RD |
| 2006 RE | 16.4 | 0.15 | 20060922 | 4.23896 | 43.89466 | 312.96400 | 10.72451 | 0.1295553 | 2.3072619 | 25 | 1 | 52 days | 0.58 | | | MPC | | 2006 RE |
| 2006 RF | 15.5 | 0.15 | 20060922 | 14.52801 | 25.77733 | 313.01239 | 11.42530 | 0.2461021 | 2.6889256 | 25 | 1 | 52 days | 0.48 | | | MPC | | 2006 RF |
| 2006 RH | 15.7 | 0.15 | 20060922 | 22.36788 | 343.47116 | 4.59199 | 13.87253 | 0.1587316 | 2.7206147 | 34 | 1 | 74 days | 0.49 | M-v | 4 | MPC | | 2006 RH |
| 2006 RK | 16.1 | 0.15 | 20060922 | 314.46307 | 92.31070 | 341.48541 | 12.38034 | 0.1600773 | 2.6625039 | 30 | 1 | 50 days | 0.45 | | | MPC | | 2006 RK |
| 2006 RN | 15.0 | 0.15 | 20060922 | 307.07384 | 139.17092 | 275.52516 | 11.51445 | 0.1575214 | 3.1842635 | 30 | 1 | 47 days | 0.48 | | | MPC | | 2006 RN |
| 2006 RO | 16.7 | 0.15 | 20060922 | 337.08106 | 153.59548 | 236.65790 | 7.77010 | 0.3000622 | 2.7705928 | 39 | 1 | 51 days | 0.58 | | | MPC | | 2006 RO |
| 2006 RQ | 18.2 | 0.15 | 20060902 | 15.45552 | 188.47166 | 135.92832 | 4.10472 | 0.1832988 | 2.2637309 | 16 | 1 | 23 days | 0.65 | | | MPC | | 2006 RQ |
| 2006 RR | 17.4 | 0.15 | 20060922 | 5.74498 | 125.68574 | 232.99682 | 16.26697 | 0.2196945 | 2.6404956 | 27 | 1 | 46 days | 0.38 | | | MPC | | 2006 RR |
| 2006 RS | 18.0 | 0.15 | 20060922 | 324.08190 | 60.09957 | 23.12650 | 6.26136 | 0.2868226 | 2.6103101 | 29 | 1 | 77 days | 0.33 | M-v | 4 | MPC | | 2006 RS |
| 2006 RV | 16.4 | 0.15 | 20060922 | 14.97023 | 338.70025 | 49.05429 | 4.26268 | 0.1835771 | 2.7188992 | 30 | 1 | 81 days | 0.34 | M-v | 4 | MPC | | 2006 RV |
| 2006 RW | 18.6 | 0.15 | 20060922 | 345.38787 | 25.01103 | 16.73128 | 5.90053 | 0.2295925 | 2.2305908 | 42 | 1 | 82 days | 0.25 | M-v | 3 | MPC | | 2006 RW |
| 2006 RY | 16.3 | 0.15 | 20060922 | 33.25557 | 313.41708 | 8.09281 | 13.70742 | 0.2131904 | 2.7173156 | 32 | 1 | 44 days | 0.52 | | | MPC | | 2006 RY |
| 2006 RZ | 20.4 | 0.15 | 20060922 | 347.99269 | 221.07365 | 197.57696 | 8.98868 | 0.6433219 | 2.4628730 | 835 | 1 | 36 days | 0.35 | M-v | 4 | MPC | | 2006 RZ |
| 2006 $RB_1$ | 17.7 | 0.15 | 20060922 | 349.79719 | 120.05550 | 261.60679 | 2.16922 | 0.2306243 | 2.5816733 | 27 | 1 | 47 days | 0.48 | | | MPC | | 2006 $RB_1$ |
| 2006 $RD_1$ | 16.9 | 0.15 | 20060922 | 6.87408 | 97.18496 | 257.08978 | 21.55821 | 0.2635778 | 2.2688188 | 41 | 1 | 77 days | 0.38 | M-v | 3 | MPC | | 2006 $RD_1$ |
| 2006 $RF_1$ | 17.3 | 0.15 | 20060922 | 7.86187 | 3.00007 | 348.26806 | 12.05509 | 0.2572552 | 2.6121392 | 49 | 1 | 49 days | 0.49 | | | MPC | | 2006 $RF_1$ |
| 2006 $RG_1$ | 15.6 | 0.15 | 20060922 | 359.51377 | 344.03231 | 305.68156 | 133.31289 | 0.9211664 | 25.5971319 | 30 | 1 | 25 days | 0.25 | M-v | 4 | MPC | | 2006 $RG_1$ |
| 2006 $RJ_1$ | 22.3 | 0.15 | 20060922 | 136.87364 | 110.27510 | 93.52444 | 1.41432 | 0.3007216 | 0.9507600 | 72 | 1 | 30 days | 0.47 | M-v | 6 | MPC | | 2006 $RJ_1$ |
| 2006 $RK_1$ | 21.8 | 0.15 | 20060922 | 22.24079 | 131.52960 | 153.99794 | 9.53880 | 0.5154763 | 1.9467968 | 45 | 1 | 18 days | 0.48 | M-v | 6 | MPC | | 2006 $RK_1$ |
| 2006 $RL_1$ | 16.7 | 0.15 | 20060922 | 30.41547 | 103.78003 | 198.56428 | 10.87904 | 0.3023871 | 2.6446487 | 90 | 1 | 76 days | 0.52 | M-v | 4 | MPC | | 2006 $RL_1$ |
| 2006 $RM_1$ | 18.1 | 0.15 | 20060922 | 14.62550 | 20.38664 | 311.93391 | 4.42764 | 0.2743091 | 2.3528085 | 44 | 1 | 30 days | 0.54 | | | MPC | | 2006 $RM_1$ |
| 2006 $RO_1$ | 19.1 | 0.15 | 20060922 | 6.15973 | 176.34060 | 170.39123 | 2.82306 | 0.2266824 | 2.1753165 | 56 | 1 | 82 days | 0.58 | M-v | 4 | MPC | | 2006 $RO_1$ |
| 2006 $RQ_1$ | 15.4 | 0.15 | 20060922 | 25.14975 | 17.36080 | 289.05363 | 17.47470 | 0.2433728 | 3.1032870 | 28 | 1 | 98 days | 0.38 | M-v | 4 | MPC | | 2006 $RQ_1$ |
| 2006 $RR_1$ | 18.3 | 0.15 | 20060922 | 6.59730 | 303.95282 | 31.75727 | 4.60247 | 0.2292745 | 2.3350162 | 20 | 1 | 43 days | 0.43 | | | MPC | | 2006 $RR_1$ |
| 2006 $RT_1$ | 19.0 | 0.15 | 20060902 | 0.02955 | 6.65919 | 333.71638 | 3.21794 | 0.2531825 | 2.2995628 | 15 | 1 | 36 days | 0.55 | | | MPC | | 2006 $RT_1$ |
| 2006 $RU_1$ | 18.6 | 0.15 | 20060902 | 356.66645 | 35.04903 | 310.91731 | 1.35123 | 0.2135271 | 2.2664250 | 11 | 1 | 30 days | 0.82 | | | MPC | | 2006 $RU_1$ |
| 2006 $RV_1$ | 19.1 | 0.15 | 20060922 | 343.38015 | 63.71635 | 353.74876 | 3.25829 | 0.5562201 | 3.1670494 | 30 | 1 | 38 days | 0.40 | M-v | 5 | MPC | | 2006 $RV_1$ |
| 2006 $RW_1$ | 18.9 | 0.15 | 20060902 | 333.45149 | 41.55936 | 338.61626 | 0.60788 | 0.1929430 | 2.3743876 | 25 | 1 | 29 days | 0.44 | | | MPC | | 2006 $RW_1$ |
| 2006 $RA_2$ | 16.5 | 0.15 | 20060922 | 332.04056 | 35.83856 | 6.70192 | 8.65363 | 0.2992741 | 2.7987741 | 29 | 1 | 83 days | 0.37 | M-v | 4 | MPC | | 2006 $RA_2$ |
| 2006 $RE_2$ | 17.7 | 0.15 | 20060922 | 8.57578 | 335.53690 | 358.90882 | 37.85088 | 0.3749594 | 2.5993722 | 70 | 1 | 26 days | 0.59 | | | MPC | | 2006 $RE_2$ |
| 2006 $RF_2$ | 17.8 | 0.15 | 20060922 | 0.79793 | 168.82931 | 192.86594 | 22.80489 | 0.4029456 | 2.4555189 | 54 | 1 | 44 days | 0.51 | | | MPC | | 2006 $RF_2$ |
| 2006 $RG_2$ | 18.2 | 0.15 | 20060922 | 339.43799 | 73.76492 | 32.22872 | 8.67107 | 0.6566777 | 2.6817223 | 289 | 1 | 64 days | 0.43 | M-v | 4 | MPC | | 2006 $RG_2$ |
| 2006 $RH_2$ | 27.2 | 0.15 | 20060922 | 329.24171 | 222.56308 | 172.38027 | 11.80712 | 0.0820938 | 1.0867167 | 30 | 1 | 1 days | 0.67 | M-v | 6 | MPC | | 2006 $RH_2$ |
| 2006 $RJ_2$ | 15.9 | 0.15 | 20060922 | 2.18655 | 160.56706 | 190.78249 | 164.65194 | 0.7639267 | 9.7807365 | 77 | 1 | 37 days | 0.54 | M-v | 5 | MPC | | 2006 $RJ_2$ |
| 2006 $RM_2$ | 19.2 | 0.15 | 20060902 | 10.77809 | 103.69590 | 209.87711 | 8.80670 | 0.2140530 | 2.2472486 | 12 | 1 | 13 days | 0.59 | | | MPC | | 2006 $RM_2$ |
| 2006 $RN_2$ | 18.5 | 0.15 | 20060902 | 352.73988 | 55.04899 | 286.39873 | 10.87919 | 0.2062011 | 2.5328224 | 15 | 1 | 10 days | 0.63 | | | MPC | | 2006 $RN_2$ |
| 2006 $RO_2$ | 16.0 | 0.15 | 20060902 | 358.85821 | 75.83946 | 252.99980 | 10.35999 | 0.1000756 | 3.1010914 | 18 | 1 | 34 days | 0.29 | | | MPC | | 2006 $RO_2$ |
| 2006 $RP_2$ | 17.5 | 0.15 | 20060902 | 37.57869 | 153.51915 | 130.84983 | 3.96093 | 0.2831680 | 2.6771653 | 10 | 1 | 22 days | 0.64 | | | MPC | | 2006 $RP_2$ |
| 2006 $RQ_2$ | 17.5 | 0.15 | 20060902 | 329.05375 | 118.89457 | 263.47761 | 3.83836 | 0.2396575 | 2.4227188 | 21 | 1 | 25 days | 0.40 | | | MPC | | 2006 $RQ_2$ |
| 2006 $RR_2$ | 15.8 | 0.15 | 20060922 | 42.76815 | 275.98079 | 1.98299 | 12.86602 | 0.2827569 | 2.4295751 | 74 | 1 | 172 days | 0.53 | M-v | 3 | MPC | | 2006 $RR_2$ |
| 2006 $RT_2$ | 16.2 | 0.15 | 20060922 | 20.22129 | 304.87251 | 14.46711 | 13.19278 | 0.2675883 | 2.6604812 | 50 | 1 | 51 days | 0.52 | | | MPC | | 2006 $RT_2$ |
| 2006 $RY_2$ | 16.9 | 0.15 | 20060902 | 243.27604 | 315.61969 | 173.31889 | 16.25080 | 0.2283421 | 2.7661536 | 13 | 1 | 11 days | 0.45 | | E | MPC | | 2006 $RY_2$ |
| 2006 $RB_3$ | 15.6 | 0.15 | 20060902 | 354.34757 | 51.16691 | 306.82426 | 14.19455 | 0.0350931 | 3.1227215 | 13 | 1 | 5 days | 0.63 | | | MPC | | 2006 $RB_3$ |
| 2006 $RE_3$ | 16.8 | 0.15 | 20060902 | 287.87483 | 358.52342 | 99.29445 | 12.63815 | 0.0888612 | 2.8479704 | 12 | 1 | 7 days | 0.07 | | | MPC | | 2006 $RE_3$ |
| 2006 $RF_3$ | 16.5 | 0.15 | 20060922 | 355.20365 | 312.33543 | 71.70219 | 13.51058 | 0.1559716 | 2.7414957 | 40 | 1 | 63 days | 0.50 | M-v | 4 | MPC | | 2006 $RF_3$ |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RG_3$ | 17.6 | 0.15 | 20060902 | 278.53102 | 344.31837 | 125.46207 | 13.69152 | 0.0838204 | 3.1918404 | 9 | 1 | 4 days | 0.05 | | | MPC | 2006 $RG_3$ |
| 2006 $RH_3$ | 15.9 | 0.15 | 20060922 | 319.02418 | 316.67349 | 111.43062 | 12.40394 | 0.0928422 | 2.7623989 | 33 | 1 | 64 days | 0.62 | M-v | 4 | MPC | 2006 $RH_3$ |
| 2006 $RJ_3$ | 18.2 | 0.15 | 20060902 | 41.24032 | 223.89120 | 85.38995 | 13.06393 | 0.2413966 | 2.9053451 | 8 | 1 | 4 days | 0.05 | | | MPC | 2006 $RJ_3$ |
| 2006 $RK_3$ | 19.0 | 0.15 | 20060902 | 51.30670 | 245.63110 | 61.35381 | 15.99741 | 0.1333259 | 2.5342206 | 7 | 1 | 4 days | 0.09 | | | MPC | 2006 $RK_3$ |
| 2006 $RS_3$ | 17.0 | 0.15 | 20060922 | 359.52913 | 107.12988 | 244.20994 | 7.79254 | 0.2173483 | 2.2545864 | 47 | 1 | 144 days | 0.52 | M-v | 4 | MPC | 2006 $RS_3$ |
| 2006 $RT_3$ | 15.6 | 0.15 | 20060902 | 356.80939 | 20.50716 | 335.74214 | 7.51701 | 0.3519380 | 3.9614821 | 27 | 1 | 17 days | 0.52 | | | MPC | 2006 $RT_3$ |
| 2006 $RU_3$ | 18.2 | 0.15 | 20060922 | 349.81134 | 191.34456 | 183.13992 | 6.37919 | 0.2718076 | 2.2787333 | 46 | 1 | 97 days | 0.47 | M-v | 3 | MPC | 2006 $RU_3$ |
| 2006 $RX_3$ | 17.6 | 0.15 | 20060902 | 47.25654 | 101.38395 | 174.46163 | 12.70097 | 0.2554611 | 2.6047252 | 20 | 1 | 13 days | 0.58 | | | MPC | 2006 $RX_3$ |
| 2006 $RY_3$ | 17.1 | 0.15 | 20060922 | 320.38930 | 239.14562 | 178.22615 | 9.01645 | 0.2394652 | 2.7400088 | 26 | 1 | 74 days | 0.43 | M-v | 5 | MPC | 2006 $RY_3$ |
| 2006 $RZ_3$ | 16.6 | 0.15 | 20060922 | 333.68184 | 46.26507 | 351.73337 | 7.60758 | 0.2355717 | 2.7454226 | 46 | 1 | 54 days | 0.56 | | | MPC | 2006 $RZ_3$ |
| 2006 $RA_4$ | 17.4 | 0.15 | 20060922 | 1.76624 | 357.34630 | 356.16530 | 4.30294 | 0.1254569 | 2.3816471 | 26 | 1 | 37 days | 0.48 | | | MPC | 2006 $RA_4$ |
| 2006 $RB_4$ | 16.9 | 0.15 | 20060922 | 294.41132 | 83.28750 | 352.68320 | 8.45108 | 0.1323194 | 2.2660491 | 38 | 1 | 90 days | 0.41 | M-v | 4 | MPC | 2006 $RB_4$ |
| 2006 $RD_4$ | 17.3 | 0.15 | 20060922 | 355.60136 | 195.79048 | 167.91321 | 2.46736 | 0.2258716 | 2.6391790 | 33 | 1 | 66 days | 0.47 | M-v | 4 | MPC | 2006 $RD_4$ |
| 2006 $RE_4$ | 17.3 | 0.15 | 20060922 | 102.47182 | 70.24470 | 175.39628 | 23.00899 | 0.0664661 | 1.9768171 | 53 | 1 | 51 days | 0.57 | | | MPC | 2006 $RE_4$ |
| 2006 $RF_4$ | 17.2 | 0.15 | 20060922 | 1.24385 | 171.37448 | 183.20753 | 4.16123 | 0.2775103 | 2.6351806 | 59 | 1 | 84 days | 0.42 | M-v | 3 | MPC | 2006 $RF_4$ |
| 2006 $RP_4$ | 17.5 | 0.15 | 20060922 | 349.19361 | 12.46540 | 9.02056 | 5.12363 | 0.2272157 | 2.3672897 | 78 | 1 | 64 days | 0.53 | M-v | 4 | MPC | 2006 $RP_4$ |
| 2006 $RR_4$ | 15.6 | 0.15 | 20060922 | 9.17620 | 347.51681 | 5.45391 | 12.66869 | 0.2089571 | 3.3831103 | 48 | 1 | 64 days | 0.54 | M-v | 4 | MPC | 2006 $RR_4$ |
| 2006 $RS_4$ | 16.8 | 0.15 | 20060922 | 106.69485 | 249.04130 | 3.67075 | 19.90058 | 0.0540562 | 1.9937700 | 47 | 1 | 55 days | 0.45 | | | MPC | 2006 $RS_4$ |
| 2006 $RV_4$ | 17.0 | 0.15 | 20060922 | 350.76350 | 9.66160 | 9.96728 | 11.94991 | 0.1248333 | 2.6345797 | 36 | 1 | 49 days | 0.48 | | | MPC | 2006 $RV_4$ |
| 2006 $RX_4$ | 15.9 | 0.15 | 20060902 | 32.99261 | 338.04336 | 306.90751 | 10.39284 | 0.1520163 | 3.0751954 | 13 | 1 | 19 days | 0.51 | | | MPC | 2006 $RX_4$ |
| 2006 $RA_5$ | 17.1 | 0.15 | 20060922 | 353.98157 | 104.43844 | 260.37848 | 4.97362 | 0.2673495 | 2.3634402 | 34 | 1 | 39 days | 0.43 | | | MPC | 2006 $RA_5$ |
| 2006 $RD_5$ | 15.4 | 0.15 | 20060922 | 11.04500 | 55.87504 | 283.84718 | 7.93117 | 0.1402751 | 3.1930036 | 25 | 1 | 38 days | 0.43 | | | MPC | 2006 $RD_5$ |
| 2006 $RH_5$ | 17.1 | 0.15 | 20060922 | 1.21093 | 86.34226 | 266.26140 | 7.18227 | 0.1733523 | 2.6022004 | 17 | 1 | 38 days | 0.51 | | | MPC | 2006 $RH_5$ |
| 2006 $RK_5$ | 16.1 | 0.15 | 20060922 | 354.42771 | 158.39771 | 203.87265 | 15.30829 | 0.2784361 | 3.1707513 | 34 | 1 | 55 days | 0.61 | | | MPC | 2006 $RK_5$ |
| 2006 $RL_5$ | 16.9 | 0.15 | 20060922 | 53.47868 | 63.43393 | 226.20809 | 8.66276 | 0.0959347 | 2.2059198 | 15 | 1 | 15 days | 0.64 | | | MPC | 2006 $RL_5$ |
| 2006 $RV_5$ | 18.2 | 0.15 | 20060922 | 30.20117 | 16.04895 | 310.54277 | 1.49566 | 0.2369294 | 2.3603735 | 53 | 1 | 66 days | 0.39 | M-v | 4 | MPC | 2006 $RV_5$ |
| 2006 $RW_5$ | 16.3 | 0.15 | 20060922 | 333.85751 | 185.85025 | 222.06548 | 4.33712 | 0.0440029 | 2.7755724 | 56 | 1 | 67 days | 0.30 | M-v | 3 | MPC | 2006 $RW_5$ |
| 2006 $RZ_5$ | 16.7 | 0.15 | 20060922 | 14.11458 | 155.42652 | 209.38996 | 9.59371 | 0.0523030 | 3.0496305 | 31 | 1 | 44 days | 0.31 | | | MPC | 2006 $RZ_5$ |
| 2006 $RA_6$ | 17.2 | 0.15 | 20060922 | 18.19654 | 350.70335 | 5.31056 | 7.85698 | 0.0987793 | 2.6320043 | 25 | 1 | 72 days | 0.34 | M-v | 4 | MPC | 2006 $RA_6$ |
| 2006 $RD_6$ | 16.2 | 0.15 | 20060922 | 0.80262 | 1.27645 | 8.15052 | 16.83309 | 0.2379012 | 3.0937022 | 33 | 1 | 37 days | 0.38 | | | MPC | 2006 $RD_6$ |
| 2006 $RE_6$ | 15.4 | 0.15 | 20060922 | 313.47694 | 229.49535 | 191.73887 | 11.99990 | 0.0205734 | 3.0883774 | 28 | 1 | 63 days | 0.53 | M-v | 5 | MPC | 2006 $RE_6$ |
| 2006 $RN_6$ | 15.8 | 0.15 | 20060922 | 319.57684 | 221.68046 | 197.31549 | 13.03767 | 0.0868645 | 3.0791463 | 24 | 1 | 61 days | 0.41 | M-v | 4 | MPC | 2006 $RN_6$ |
| 2006 $RO_6$ | 17.4 | 0.15 | 20060922 | 342.79202 | 34.33040 | 2.08976 | 14.45133 | 0.2361029 | 2.3677686 | 57 | 1 | 46 days | 0.51 | | | MPC | 2006 $RO_6$ |
| 2006 $RP_6$ | 17.1 | 0.15 | 20060922 | 36.75775 | 354.28458 | 323.02534 | 1.96616 | 0.1936262 | 2.5600928 | 24 | 1 | 37 days | 0.43 | | | MPC | 2006 $RP_6$ |
| 2006 $RR_6$ | 16.8 | 0.15 | 20060922 | 3.07783 | 169.98621 | 193.50212 | 10.24360 | 0.2930537 | 2.7300001 | 70 | 1 | 54 days | 0.54 | | | MPC | 2006 $RR_6$ |
| 2006 $RZ_6$ | 17.9 | 0.15 | 20060922 | 344.67992 | 25.15239 | 8.13183 | 6.14117 | 0.1183558 | 2.2052364 | 42 | 1 | 64 days | 0.46 | M-v | 4 | MPC | 2006 $RZ_6$ |
| 2006 $RG_7$ | 18.9 | 0.15 | 20060922 | 347.63266 | 191.98990 | 181.06902 | 22.01995 | 0.3500121 | 1.8846743 | 72 | 1 | 54 days | 0.36 | M-v | 5 | MPC | 2006 $RG_7$ |
| 2006 $RH_7$ | 20.7 | 0.15 | 20060922 | 338.09657 | 111.98466 | 0.21180 | 10.59186 | 0.7578134 | 2.2028237 | 73 | 1 | 29 days | 0.47 | M-v | 6 | MPC | 2006 $RH_7$ |
| 2006 $RJ_7$ | 23.7 | 0.15 | 20060922 | 342.33971 | 251.20766 | 176.98264 | 1.85549 | 0.5747615 | 1.8050963 | 23 | 1 | 4 days | 0.70 | M-v | 6 | MPC | 2006 $RJ_7$ |
| 2006 $RP_7$ | 17.3 | 0.15 | 20060902 | 3.48339 | 93.64174 | 245.06748 | 2.43251 | 0.2277839 | 2.7744328 | 11 | 1 | 5 days | 0.28 | | | MPC | 2006 $RP_7$ |
| 2006 $RQ_7$ | 18.7 | 0.15 | 20060902 | 342.47583 | 126.90741 | 244.00215 | 1.79978 | 0.1998293 | 2.2303209 | 11 | 1 | 7 days | 0.64 | | | MPC | 2006 $RQ_7$ |
| 2006 $RU_7$ | 17.8 | 0.15 | 20060902 | 3.78482 | 170.07513 | 168.03090 | 8.77222 | 0.2138068 | 2.6414710 | 10 | 1 | 4 days | 0.81 | | | MPC | 2006 $RU_7$ |
| 2006 $RY_7$ | 17.8 | 0.15 | 20060922 | 14.39739 | 170.84613 | 160.27255 | 1.39312 | 0.2041213 | 2.3849260 | 31 | 1 | 38 days | 0.54 | | | MPC | 2006 $RY_7$ |
| 2006 $RG_8$ | 18.4 | 0.15 | 20060922 | 336.16852 | 205.68082 | 190.73646 | 7.80268 | 0.2643448 | 2.2302953 | 41 | 1 | 88 days | 0.46 | M-v | 4 | MPC | 2006 $RG_8$ |
| 2006 $RO_8$ | 17.9 | 0.15 | 20060922 | 352.41197 | 357.68394 | 9.37076 | 4.63059 | 0.2075694 | 2.3553568 | 40 | 1 | 79 days | 0.63 | M-v | 4 | MPC | 2006 $RO_8$ |
| 2006 $RQ_8$ | 17.5 | 0.15 | 20060922 | 349.36348 | 198.78054 | 170.42894 | 6.79507 | 0.1215191 | 2.3009868 | 35 | 1 | 37 days | 0.54 | | | MPC | 2006 $RQ_8$ |
| 2006 $RR_8$ | 17.5 | 0.15 | 20060922 | 19.42802 | 346.23378 | 343.14789 | 9.80289 | 0.1636913 | 2.2451281 | 41 | 1 | 57 days | 0.59 | | | MPC | 2006 $RR_8$ |
| 2006 $RS_8$ | 17.1 | 0.15 | 20060922 | 27.12112 | 105.87003 | 204.09891 | 3.95827 | 0.2730168 | 2.6255603 | 49 | 1 | 66 days | 0.46 | M-v | 4 | MPC | 2006 $RS_8$ |
| 2006 $RU_8$ | 16.1 | 0.15 | 20060902 | 319.38272 | 213.09956 | 181.19045 | 21.78106 | 0.0316582 | 2.5974006 | 25 | 1 | 43 days | 0.75 | | | MPC | 2006 $RU_8$ |
| 2006 $RV_8$ | 17.2 | 0.15 | 20060922 | 339.56736 | 73.39223 | 316.27007 | 3.67949 | 0.2203662 | 2.6305608 | 42 | 1 | 40 days | 0.60 | | | MPC | 2006 $RV_8$ |
| 2006 $RW_8$ | 17.5 | 0.15 | 20060922 | 346.91966 | 85.36012 | 297.15430 | 1.50388 | 0.2631475 | 2.6112421 | 42 | 1 | 64 days | 0.51 | M-v | 4 | MPC | 2006 $RW_8$ |
| 2006 $RY_8$ | 18.2 | 0.15 | 20060922 | 28.58088 | 304.11960 | 10.65160 | 6.37921 | 0.2055464 | 2.2118710 | 32 | 1 | 61 days | 0.39 | M-v | 4 | MPC | 2006 $RY_8$ |
| 2006 $RZ_8$ | 17.9 | 0.15 | 20060922 | 22.11546 | 315.16272 | 7.81567 | 5.61767 | 0.2249951 | 2.2608003 | 56 | 1 | 80 days | 0.54 | M-v | 4 | MPC | 2006 $RZ_8$ |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RA_{9}$ | 18.0 | 0.15 | 20060922 | 355.72183 | 345.01520 | 20.20367 | 3.02449 | 0.2237590 | 2.2671394 | 54 | 1 | 76 days | 0.52 | M-v | 4 | MPC | | 2006 $RA_{9}$ |
| 2006 $RE_{9}$ | 16.8 | 0.15 | 20060922 | 348.69062 | 243.13664 | 133.49034 | 6.53832 | 0.1126306 | 2.3001066 | 38 | 1 | 55 days | 0.49 | | | MPC | | 2006 $RE_{9}$ |
| 2006 $RG_{9}$ | 17.4 | 0.15 | 20060922 | 25.69018 | 234.25803 | 86.17740 | 2.81309 | 0.2399848 | 2.3275827 | 53 | 1 | 60 days | 0.43 | M-v | 4 | MPC | | 2006 $RG_{9}$ |
| 2006 $RH_{9}$ | 16.5 | 0.15 | 20060922 | 330.90862 | 247.56632 | 163.49417 | 5.67869 | 0.2478806 | 2.6300646 | 41 | 1 | 127 days | 0.45 | M-v | 4 | MPC | | 2006 $RH_{9}$ |
| 2006 $RV_{9}$ | 18.1 | 0.15 | 20060922 | 15.17162 | 130.77025 | 196.62147 | 0.76084 | 0.3233679 | 2.3679265 | 50 | 1 | 75 days | 0.33 | M-v | 4 | MPC | | 2006 $RV_{9}$ |
| 2006 $RW_{9}$ | 17.2 | 0.15 | 20060922 | 0.58302 | 7.52351 | 348.57289 | 4.94423 | 0.2657294 | 2.6653242 | 51 | 1 | 64 days | 0.43 | M-v | 4 | MPC | | 2006 $RW_{9}$ |
| 2006 $RX_{9}$ | 17.2 | 0.15 | 20060922 | 341.72043 | 191.52225 | 197.68327 | 6.05439 | 0.2284478 | 2.2585785 | 58 | 1 | 63 days | 0.55 | M-v | 4 | MPC | | 2006 $RX_{9}$ |
| 2006 $RB_{10}$ | 18.2 | 0.15 | 20060922 | 2.89536 | 178.24259 | 175.66025 | 6.15049 | 0.2588498 | 2.3710506 | 52 | 1 | 53 days | 0.52 | | | MPC | | 2006 $RB_{10}$ |
| 2006 $RF_{10}$ | 15.6 | 0.15 | 20060922 | 325.64281 | 231.15817 | 176.75228 | 10.55083 | 0.1369290 | 3.0597198 | 33 | 1 | 73 days | 0.53 | M-v | 5 | MPC | | 2006 $RF_{10}$ |
| 2006 $RG_{10}$ | 17.9 | 0.15 | 20060922 | 353.70401 | 205.51951 | 168.31443 | 5.24971 | 0.2334797 | 2.3041245 | 43 | 1 | 38 days | 0.51 | | | MPC | | 2006 $RG_{10}$ |
| 2006 $RH_{10}$ | 17.6 | 0.15 | 20060902 | 343.10762 | 267.98007 | 102.22717 | 4.61015 | 0.1460914 | 2.2544510 | 22 | 1 | 13 days | 0.58 | | | MPC | | 2006 $RH_{10}$ |
| 2006 $RJ_{10}$ | 16.2 | 0.15 | 20060922 | 44.03341 | 304.11466 | 347.69280 | 9.61872 | 0.1922130 | 3.1508230 | 20 | 1 | 38 days | 0.20 | | | MPC | | 2006 $RJ_{10}$ |
| 2006 $RK_{10}$ | 17.0 | 0.15 | 20060902 | 320.04853 | 44.49003 | 351.02798 | 8.21913 | 0.0768892 | 2.6489144 | 13 | 1 | 11 days | 0.39 | | | MPC | | 2006 $RK_{10}$ |
| 2006 $RN_{10}$ | 18.9 | 0.15 | 20060902 | 357.42843 | 164.28958 | 186.34760 | 6.98193 | 0.2201390 | 2.3170350 | 10 | 1 | 5 days | 0.41 | | | MPC | | 2006 $RN_{10}$ |
| 2006 $RO_{10}$ | 18.8 | 0.15 | 20060922 | 305.69820 | 243.96507 | 176.12948 | 22.72934 | 0.1000874 | 1.8685542 | 14 | 1 | 18 days | 0.18 | | | MPC | | 2006 $RO_{10}$ |
| 2006 $RP_{10}$ | 17.5 | 0.15 | 20060902 | 344.54438 | 186.99522 | 182.76068 | 6.89033 | 0.1330873 | 2.4131256 | 19 | 1 | 9 days | 0.73 | | | MPC | | 2006 $RP_{10}$ |
| 2006 $RR_{10}$ | 17.8 | 0.15 | 20060922 | 1.15381 | 328.00357 | 28.56892 | 1.54172 | 0.2037966 | 2.4254876 | 22 | 1 | 60 days | 0.26 | M-v | 4 | MPC | | 2006 $RR_{10}$ |
| 2006 $RZ_{10}$ | 16.0 | 0.15 | 20060902 | 33.05200 | 21.51205 | 291.33183 | 4.70071 | 0.0390956 | 2.7488560 | 12 | 1 | 7 days | 0.60 | | | MPC | | 2006 $RZ_{10}$ |
| 2006 $RB_{11}$ | 18.2 | 0.15 | 20060922 | 11.68823 | 334.60036 | 356.84016 | 3.00206 | 0.3174080 | 2.5599954 | 36 | 1 | 52 days | 0.76 | | | MPC | | 2006 $RB_{11}$ |
| 2006 $RG_{11}$ | 17.1 | 0.15 | 20060922 | 24.11596 | 117.88689 | 195.81689 | 5.63360 | 0.2790711 | 2.6157928 | 57 | 1 | 83 days | 0.56 | M-v | 4 | MPC | | 2006 $RG_{11}$ |
| 2006 $RJ_{11}$ | 16.4 | 0.15 | 20060902 | 22.77676 | 18.41513 | 302.75841 | 4.21734 | 0.1429864 | 2.7556871 | 14 | 1 | 8 days | 0.79 | | | MPC | | 2006 $RJ_{11}$ |
| 2006 $RK_{11}$ | 16.2 | 0.15 | 20060922 | 355.81778 | 164.01451 | 200.98742 | 7.13326 | 0.2636804 | 3.1006730 | 62 | 1 | 87 days | 0.53 | M-v | 3 | MPC | | 2006 $RK_{11}$ |
| 2006 $RM_{11}$ | 17.1 | 0.15 | 20060922 | 9.39299 | 186.96001 | 151.68449 | 3.61066 | 0.3257187 | 2.6635882 | 63 | 1 | 100 days | 0.44 | M-v | 4 | MPC | | 2006 $RM_{11}$ |
| 2006 $RQ_{11}$ | 17.5 | 0.15 | 20060922 | 0.29152 | 52.38171 | 307.80389 | 1.41022 | 0.1945059 | 2.2880197 | 75 | 1 | 79 days | 0.45 | M-v | 4 | MPC | | 2006 $RQ_{11}$ |
| 2006 $RT_{11}$ | 17.5 | 0.15 | 20060902 | 331.99947 | 204.35506 | 179.47533 | 15.07074 | 0.1830090 | 2.6792732 | 10 | 1 | 4 days | 0.41 | | | MPC | | 2006 $RT_{11}$ |
| 2006 $RU_{11}$ | 17.2 | 0.15 | 20060902 | 350.67384 | 17.87797 | 341.86972 | 7.64379 | 0.2264520 | 2.7478288 | 19 | 1 | 15 days | 0.48 | | | MPC | | 2006 $RU_{11}$ |
| 2006 $RX_{11}$ | 14.9 | 0.15 | 20060922 | 350.39761 | 179.02131 | 194.86538 | 4.78518 | 0.2519942 | 3.9382338 | 57 | 1 | 86 days | 0.51 | M-v | 4 D | MPC | | 2006 $RX_{11}$ |
| 2006 $RB_{12}$ | 17.2 | 0.15 | 20060902 | 21.76312 | 350.47260 | 331.91816 | 2.60741 | 0.1866027 | 2.6188859 | 13 | 1 | 15 days | 0.37 | | | MPC | | 2006 $RB_{12}$ |
| 2006 $RC_{12}$ | 15.0 | 0.15 | 20060922 | 59.87808 | 279.36046 | 359.31732 | 15.27861 | 0.2131140 | 3.1649147 | 47 | 1 | 62 days | 0.48 | M-v | 4 | MPC | | 2006 $RC_{12}$ |
| 2006 $RF_{12}$ | 17.0 | 0.15 | 20060902 | 3.35944 | 52.00127 | 299.82765 | 8.93341 | 0.3659308 | 3.9947526 | 14 | 1 | 8 days | 0.31 | | | MPC | | 2006 $RF_{12}$ |
| 2006 $RJ_{12}$ | 16.4 | 0.15 | 20060902 | 293.58262 | 196.03427 | 212.55675 | 10.56670 | 0.1140497 | 3.2166705 | 9 | 1 | 4 days | 0.29 | | | MPC | | 2006 $RJ_{12}$ |
| 2006 $RO_{12}$ | 16.8 | 0.15 | 20060902 | 46.72231 | 53.33874 | 218.92492 | 8.42017 | 0.1291270 | 2.7927570 | 9 | 1 | 4 days | 0.14 | | | MPC | | 2006 $RO_{12}$ |
| 2006 $RP_{12}$ | 15.4 | 0.15 | 20060902 | 168.59211 | 222.74635 | 297.73338 | 16.37045 | 0.1137803 | 3.1175663 | 9 | 1 | 4 days | 0.16 | | | MPC | | 2006 $RP_{12}$ |
| 2006 $RQ_{12}$ | 17.2 | 0.15 | 20060902 | 293.48394 | 207.79096 | 209.52972 | 10.02829 | 0.1767844 | 2.9595039 | 9 | 1 | 3 days | 0.43 | | | MPC | | 2006 $RQ_{12}$ |
| 2006 $RR_{12}$ | 16.2 | 0.15 | 20060902 | 324.80590 | 67.28642 | 306.43927 | 16.02795 | 0.1034802 | 3.0532528 | 13 | 1 | 19 days | 0.46 | | | MPC | | 2006 $RR_{12}$ |
| 2006 $RS_{12}$ | 17.4 | 0.15 | 20060902 | 23.55900 | 67.79730 | 230.88911 | 6.51913 | 0.1683659 | 2.4743600 | 9 | 1 | 4 days | 0.10 | | | MPC | | 2006 $RS_{12}$ |
| 2006 $RU_{12}$ | 16.5 | 0.15 | 20060902 | 333.79467 | 100.12311 | 259.50314 | 7.01957 | 0.0447070 | 2.6185558 | 9 | 1 | 4 days | 0.15 | | | MPC | | 2006 $RU_{12}$ |
| 2006 $RW_{12}$ | 17.0 | 0.15 | 20060902 | 345.71377 | 144.28785 | 205.67379 | 9.00701 | 0.1522739 | 3.0615366 | 9 | 1 | 4 days | 0.13 | | | MPC | | 2006 $RW_{12}$ |
| 2006 $RY_{12}$ | 15.7 | 0.15 | 20060902 | 302.43050 | 106.58566 | 285.69097 | 9.73677 | 0.0419036 | 3.1209955 | 9 | 1 | 4 days | 0.11 | | | MPC | | 2006 $RY_{12}$ |
| 2006 $RE_{13}$ | 16.6 | 0.15 | 20060902 | 342.40991 | 123.41510 | 227.76507 | 9.92831 | 0.0463779 | 3.0692832 | 9 | 1 | 4 days | 0.22 | | | MPC | | 2006 $RE_{13}$ |
| 2006 $RH_{13}$ | 16.5 | 0.15 | 20060902 | 60.06390 | 41.62837 | 216.62862 | 10.50505 | 0.1280717 | 3.0537865 | 9 | 1 | 4 days | 0.16 | | | MPC | | 2006 $RH_{13}$ |
| 2006 $RJ_{13}$ | 16.0 | 0.15 | 20060902 | 9.47429 | 51.95870 | 266.86717 | 9.08829 | 0.1950117 | 3.1597161 | 13 | 1 | 22 days | 0.49 | | | MPC | | 2006 $RJ_{13}$ |
| 2006 $RK_{13}$ | 16.8 | 0.15 | 20060902 | 342.22314 | 87.95710 | 269.17713 | 9.31970 | 0.1453183 | 3.0134383 | 9 | 1 | 4 days | 0.09 | | | MPC | | 2006 $RK_{13}$ |
| 2006 $RL_{13}$ | 16.0 | 0.15 | 20060902 | 104.17768 | 341.42409 | 243.25432 | 9.70965 | 0.0320127 | 3.0919061 | 9 | 1 | 4 days | 0.16 | | | MPC | | 2006 $RL_{13}$ |
| 2006 $RN_{13}$ | 17.1 | 0.15 | 20060902 | 48.23432 | 81.58187 | 190.66053 | 14.58680 | 0.1222105 | 2.8569415 | 9 | 1 | 9 days | 0.20 | | | MPC | | 2006 $RN_{13}$ |
| 2006 $RP_{13}$ | 16.3 | 0.15 | 20060902 | 234.25632 | 235.63649 | 229.99056 | 10.07506 | 0.0887357 | 3.1167043 | 9 | 1 | 4 days | 0.14 | | | MPC | | 2006 $RP_{13}$ |
| 2006 $RQ_{13}$ | 17.3 | 0.15 | 20060902 | 43.39269 | 354.44745 | 280.07507 | 8.68642 | 0.1671399 | 2.8237173 | 9 | 1 | 4 days | 0.45 | | | MPC | | 2006 $RQ_{13}$ |
| 2006 $RU_{13}$ | 16.0 | 0.15 | 20060902 | 99.96182 | 313.62340 | 266.61704 | 8.17255 | 0.1158092 | 2.9317158 | 12 | 1 | 9 days | 0.29 | | | MPC | | 2006 $RU_{13}$ |
| 2006 $RV_{13}$ | 18.1 | 0.15 | 20060902 | 333.11776 | 192.51353 | 185.89999 | 13.96027 | 0.2534100 | 2.6719181 | 12 | 1 | 12 days | 0.23 | | | MPC | | 2006 $RV_{13}$ |
| 2006 $RW_{13}$ | 18.5 | 0.15 | 20060902 | 351.34545 | 48.86120 | 300.63815 | 8.86200 | 0.2408797 | 2.4920999 | 9 | 1 | 9 days | 0.14 | | | MPC | | 2006 $RW_{13}$ |
| 2006 $RX_{13}$ | 17.1 | 0.15 | 20060902 | 351.08724 | 86.49016 | 262.87184 | 7.29368 | 0.2506042 | 3.0212626 | 9 | 1 | 4 days | 0.10 | | | MPC | | 2006 $RX_{13}$ |
| 2006 $RB_{14}$ | 16.8 | 0.15 | 20060902 | 41.22828 | 42.21801 | 241.29785 | 7.57391 | 0.1021069 | 3.1116625 | 9 | 1 | 4 days | 0.24 | | | MPC | | 2006 $RB_{14}$ |
| 2006 $RC_{14}$ | 15.8 | 0.15 | 20060902 | 191.20951 | 289.91690 | 214.26823 | 12.03734 | 0.1048230 | 3.1497302 | 18 | 1 | 14 days | 0.20 | | | MPC | | 2006 $RC_{14}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RD_{14}$ | 18.4 | 0.15 | 20060902 | 22.50289 | 45.87289 | 260.07892 | 8.07164 | 0.1383357 | 2.4311428 | 12 | 1 | 6 days | 0.40 | | MPC | 2006 $RD_{14}$ |
| 2006 $RE_{14}$ | 16.2 | 0.15 | 20060902 | 310.71433 | 166.12503 | 225.29141 | 10.57926 | 0.0854382 | 3.1229319 | 28 | 1 | 33 days | 0.48 | | MPC | 2006 $RE_{14}$ |
| 2006 $RF_{14}$ | 16.8 | 0.15 | 20060922 | 12.43280 | 143.22359 | 175.11339 | 27.84236 | 0.2271176 | 3.1853192 | 12 | 1 | 16 days | 0.16 | | MPC | 2006 $RF_{14}$ |
| 2006 $RG_{14}$ | 18.1 | 0.15 | 20060902 | 56.51306 | 351.96890 | 271.69553 | 7.76558 | 0.1519539 | 2.2018923 | 15 | 1 | 12 days | 0.20 | | MPC | 2006 $RG_{14}$ |
| 2006 $RJ_{14}$ | 18.5 | 0.15 | 20060902 | 341.54595 | 110.98579 | 251.68074 | 6.55153 | 0.1766505 | 2.2841833 | 9 | 1 | 4 days | 0.17 | | MPC | 2006 $RJ_{14}$ |
| 2006 $RL_{14}$ | 16.8 | 0.15 | 20060902 | 34.48626 | 91.83304 | 197.56790 | 14.22227 | 0.1431525 | 3.0387524 | 18 | 1 | 12 days | 0.22 | | MPC | 2006 $RL_{14}$ |
| 2006 $RM_{14}$ | 16.0 | 0.15 | 20060902 | 273.96365 | 237.95417 | 192.91480 | 16.04033 | 0.0923470 | 3.1953006 | 16 | 1 | 33 days | 0.34 | | MPC | 2006 $RM_{14}$ |
| 2006 $RN_{14}$ | 16.9 | 0.15 | 20060902 | 17.48023 | 82.01214 | 232.31010 | 9.04090 | 0.0966196 | 3.0159665 | 15 | 1 | 12 days | 0.16 | | MPC | 2006 $RN_{14}$ |
| 2006 $RP_{14}$ | 18.0 | 0.15 | 20060902 | 345.56680 | 132.31991 | 223.69553 | 7.35719 | 0.1434925 | 2.3085193 | 15 | 1 | 8 days | 0.19 | | MPC | 2006 $RP_{14}$ |
| 2006 $RQ_{14}$ | 18.3 | 0.15 | 20060902 | 349.60961 | 74.27214 | 276.40556 | 7.32352 | 0.1326699 | 2.3451016 | 15 | 1 | 8 days | 0.33 | | MPC | 2006 $RQ_{14}$ |
| 2006 $RR_{14}$ | 17.1 | 0.15 | 20060902 | 244.81972 | 174.88147 | 295.66257 | 12.93444 | 0.1976118 | 2.6251001 | 9 | 1 | 4 days | 0.19 | | MPC | 2006 $RR_{14}$ |
| 2006 $RS_{14}$ | 16.2 | 0.15 | 20060902 | 17.87244 | 95.18725 | 219.78122 | 10.20354 | 0.0856480 | 2.9799765 | 12 | 1 | 6 days | 0.47 | | MPC | 2006 $RS_{14}$ |
| 2006 $RU_{14}$ | 16.1 | 0.15 | 20060902 | 220.74823 | 261.04260 | 219.46843 | 10.61086 | 0.0764267 | 3.0386599 | 9 | 1 | 4 days | 0.10 | | MPC | 2006 $RU_{14}$ |
| 2006 $RX_{14}$ | 15.8 | 0.15 | 20060902 | 218.35177 | 275.62326 | 208.37713 | 13.30058 | 0.0871535 | 3.0490763 | 9 | 1 | 4 days | 0.16 | | MPC | 2006 $RX_{14}$ |
| 2006 $RY_{14}$ | 17.1 | 0.15 | 20060902 | 247.21656 | 265.17408 | 194.37525 | 16.32301 | 0.0978740 | 2.5425352 | 9 | 1 | 4 days | 0.15 | | MPC | 2006 $RY_{14}$ |
| 2006 $RZ_{14}$ | 18.5 | 0.15 | 20060902 | 20.45496 | 42.33937 | 260.19648 | 6.27716 | 0.2672769 | 2.2446464 | 10 | 1 | 5 days | 0.46 | | MPC | 2006 $RZ_{14}$ |
| 2006 $RB_{15}$ | 17.4 | 0.15 | 20060902 | 281.94915 | 145.49075 | 295.16707 | 12.63671 | 0.2030762 | 2.6267992 | 9 | 1 | 4 days | 0.20 | | MPC | 2006 $RB_{15}$ |
| 2006 $RC_{15}$ | 17.2 | 0.15 | 20060902 | 297.21002 | 148.22142 | 268.47325 | 9.58276 | 0.1427229 | 3.0359149 | 9 | 1 | 6 days | 0.22 | | MPC | 2006 $RC_{15}$ |
| 2006 $RF_{15}$ | 16.9 | 0.15 | 20060902 | 299.89868 | 109.15038 | 310.35466 | 16.48816 | 0.1830840 | 2.9356207 | 9 | 1 | 6 days | 0.13 | | MPC | 2006 $RF_{15}$ |
| 2006 $RH_{15}$ | 16.3 | 0.15 | 20060902 | 331.13933 | 85.19004 | 295.43931 | 7.79578 | 0.2898192 | 2.9887904 | 10 | 1 | 4 days | 0.30 | | MPC | 2006 $RH_{15}$ |
| 2006 $RJ_{15}$ | 15.6 | 0.15 | 20060902 | 37.10703 | 320.20878 | 350.46545 | 23.50821 | 0.0149374 | 3.2068088 | 15 | 1 | 14 days | 0.57 | | MPC | 2006 $RJ_{15}$ |
| 2006 $RM_{15}$ | 16.7 | 0.15 | 20060922 | 353.51254 | 72.20202 | 292.06159 | 3.04659 | 0.1107174 | 2.5415309 | 20 | 1 | 36 days | 0.55 | | MPC | 2006 $RM_{15}$ |
| 2006 $RP_{15}$ | 18.1 | 0.15 | 20060902 | 2.10789 | 65.64404 | 276.74353 | 4.73064 | 0.2001944 | 2.2053064 | 18 | 1 | 41 days | 0.59 | | MPC | 2006 $RP_{15}$ |
| 2006 $RR_{15}$ | 15.9 | 0.15 | 20060902 | 332.58695 | 60.74797 | 339.14038 | 26.68861 | 0.2868830 | 3.1829075 | 27 | 1 | 45 days | 0.56 | | MPC | 2006 $RR_{15}$ |
| 2006 $RU_{15}$ | 15.7 | 0.15 | 20060902 | 328.63049 | 114.14235 | 277.06357 | 8.98628 | 0.1274319 | 3.0456276 | 29 | 1 | 43 days | 0.52 | | MPC | 2006 $RU_{15}$ |
| 2006 $RV_{15}$ | 15.9 | 0.15 | 20060902 | 335.02917 | 186.65365 | 196.60471 | 18.27237 | 0.1848828 | 3.0872516 | 11 | 1 | 8 days | 0.62 | | MPC | 2006 $RV_{15}$ |
| 2006 $RW_{15}$ | 15.1 | 0.15 | 20060902 | 1.96460 | 60.75711 | 284.12164 | 11.24534 | 0.1218853 | 3.2109632 | 24 | 1 | 29 days | 0.71 | | MPC | 2006 $RW_{15}$ |
| 2006 $RZ_{15}$ | 16.2 | 0.15 | 20060902 | 14.88020 | 49.40785 | 281.65810 | 9.99826 | 0.0922055 | 2.5909778 | 15 | 1 | 13 days | 0.56 | | MPC | 2006 $RZ_{15}$ |
| 2006 $RA_{16}$ | 16.6 | 0.15 | 20060902 | 351.26604 | 343.58151 | 19.23025 | 3.65210 | 0.2054859 | 2.7442667 | 23 | 1 | 12 days | 0.47 | | MPC | 2006 $RA_{16}$ |
| 2006 $RC_{16}$ | 16.3 | 0.15 | 20060922 | 12.51389 | 178.37586 | 163.96833 | 11.98916 | 0.0759133 | 2.3303361 | 24 | 1 | 40 days | 0.38 | | MPC | 2006 $RC_{16}$ |
| 2006 $RD_{16}$ | 17.9 | 0.15 | 20060922 | 344.18541 | 146.65711 | 236.23864 | 1.56288 | 0.2176547 | 2.3677790 | 46 | 1 | 60 days | 0.53 | M-v 5 | MPC | 2006 $RD_{16}$ |
| 2006 $RE_{16}$ | 16.5 | 0.15 | 20060922 | 328.24822 | 80.21223 | 333.89712 | 15.29034 | 0.2455168 | 3.0920698 | 33 | 1 | 38 days | 0.65 | | MPC | 2006 $RE_{16}$ |
| 2006 $RG_{16}$ | 16.3 | 0.15 | 20060922 | 26.76984 | 48.69337 | 272.44180 | 7.87634 | 0.2078038 | 2.7246623 | 31 | 1 | 39 days | 0.50 | | MPC | 2006 $RG_{16}$ |
| 2006 $RH_{16}$ | 16.8 | 0.15 | 20060922 | 328.76152 | 122.23365 | 286.58917 | 8.07930 | 0.1980880 | 2.7207357 | 23 | 1 | 33 days | 0.37 | | MPC | 2006 $RH_{16}$ |
| 2006 $RJ_{16}$ | 16.8 | 0.15 | 20060902 | 14.35824 | 10.49109 | 320.32075 | 11.97897 | 0.2580175 | 3.0450835 | 11 | 1 | 5 days | 0.40 | | MPC | 2006 $RJ_{16}$ |
| 2006 $RT_{16}$ | 16.3 | 0.15 | 20060922 | 35.43382 | 250.13591 | 65.33493 | 2.36576 | 0.0499063 | 2.6643024 | 16 | 1 | 18 days | 0.70 | | MPC | 2006 $RT_{16}$ |
| 2006 $RC_{17}$ | 17.7 | 0.15 | 20060922 | 11.29647 | 193.46347 | 146.20683 | 4.62951 | 0.1857350 | 2.2011022 | 23 | 1 | 62 days | 0.52 | M-v 4 | MPC | 2006 $RC_{17}$ |
| 2006 $RD_{17}$ | 15.9 | 0.15 | 20060922 | 334.59744 | 240.51037 | 162.01650 | 14.12167 | 0.2943844 | 3.1644248 | 37 | 1 | 58 days | 0.60 | | MPC | 2006 $RD_{17}$ |
| 2006 $RF_{17}$ | 15.6 | 0.15 | 20060922 | 352.42320 | 359.33451 | 8.01271 | 16.10370 | 0.2124792 | 3.0711070 | 57 | 1 | 43 days | 0.56 | | MPC | 2006 $RF_{17}$ |
| 2006 $RM_{17}$ | 15.3 | 0.15 | 20060922 | 34.96216 | 36.45369 | 285.78312 | 8.65126 | 0.0874176 | 3.0999668 | 30 | 1 | 56 days | 0.74 | | MPC | 2006 $RM_{17}$ |
| 2006 $RO_{17}$ | 17.5 | 0.15 | 20060922 | 7.77882 | 146.48485 | 199.83841 | 14.41047 | 0.3212181 | 2.6000022 | 35 | 1 | 79 days | 0.44 | M-v 4 | MPC | 2006 $RO_{17}$ |
| 2006 $RQ_{17}$ | 17.3 | 0.15 | 20060922 | 18.50269 | 290.20537 | 36.69296 | 5.70840 | 0.2474021 | 2.4109231 | 55 | 1 | 64 days | 0.51 | M-v 4 | MPC | 2006 $RQ_{17}$ |
| 2006 $RR_{17}$ | 16.2 | 0.15 | 20060922 | 343.88333 | 177.39336 | 212.75730 | 13.92608 | 0.2546799 | 2.6963819 | 54 | 1 | 85 days | 0.42 | M-v 3 | MPC | 2006 $RR_{17}$ |
| 2006 $RT_{17}$ | 16.7 | 0.15 | 20060922 | 303.73491 | 197.03466 | 239.46371 | 9.39739 | 0.1557996 | 2.5529294 | 17 | 1 | 38 days | 0.62 | | MPC | 2006 $RT_{17}$ |
| 2006 $RW_{17}$ | 16.8 | 0.15 | 20060922 | 352.50900 | 181.90789 | 195.98448 | 20.10571 | 0.2716231 | 2.7416373 | 41 | 1 | 88 days | 0.49 | M-v 4 | MPC | 2006 $RW_{17}$ |
| 2006 $RX_{17}$ | 16.2 | 0.15 | 20060922 | 329.12612 | 195.23729 | 214.31547 | 13.90276 | 0.1711774 | 2.7268092 | 38 | 1 | 39 days | 0.31 | | MPC | 2006 $RX_{17}$ |
| 2006 $RY_{17}$ | 17.0 | 0.15 | 20060922 | 8.48144 | 94.89154 | 258.68400 | 5.30109 | 0.1687592 | 2.3827999 | 25 | 1 | 33 days | 0.51 | | MPC | 2006 $RY_{17}$ |
| 2006 $RE_{18}$ | 15.1 | 0.15 | 20061012 | 15.44402 | 335.45327 | 10.55643 | 10.69845 | 0.2941518 | 3.9480812 | 45 | 1 | 58 days | 0.48 | | MPC | 2006 $RE_{18}$ |
| 2006 $RF_{18}$ | 16.8 | 0.15 | 20060922 | 347.63562 | 213.13195 | 180.90311 | 12.56646 | 0.2981295 | 2.6597025 | 74 | 1 | 61 days | 0.41 | M-v 3 | MPC | 2006 $RF_{18}$ |
| 2006 $RL_{18}$ | 14.6 | 0.15 | 20060922 | 17.91440 | 298.20197 | 49.22664 | 3.62161 | 0.2373677 | 3.9500521 | 49 | 1 | 67 days | 0.41 | M-v 4 | MPC | 2006 $RL_{18}$ |
| 2006 $RN_{18}$ | 16.1 | 0.15 | 20060922 | 347.53133 | 205.05952 | 187.67800 | 17.95753 | 0.1520935 | 2.7181644 | 49 | 1 | 80 days | 0.61 | M-v 4 | MPC | 2006 $RN_{18}$ |
| 2006 $RP_{18}$ | 17.7 | 0.15 | 20060922 | 35.81669 | 109.12132 | 205.37036 | 4.34448 | 0.2201100 | 2.1589540 | 39 | 1 | 47 days | 0.35 | | MPC | 2006 $RP_{18}$ |
| 2006 $RU_{18}$ | 15.0 | 0.15 | 20060922 | 338.56867 | 186.76216 | 217.89849 | 14.98360 | 0.2780832 | 3.1597421 | 89 | 1 | 85 days | 0.42 | M-v 3 | MPC | 2006 $RU_{18}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RW_{18}$ | 18.0 | 0.15 | 20060922 | 358.59264 | 88.16585 | 280.51502 | 6.93121 | 0.2238130 | 2.2264664 | 36 | 1 | 61 days | 0.45 | M-v | 4 | MPC | 2006 $RW_{18}$ |
| 2006 $RC_{19}$ | 15.4 | 0.15 | 20060922 | 38.80017 | 292.26475 | 31.32066 | 15.48621 | 0.1773345 | 2.7598358 | 69 | 1 | 68 days | 0.43 | M-v | 4 | MPC | 2006 $RC_{19}$ |
| 2006 $RD_{19}$ | 17.3 | 0.15 | 20060922 | 356.64259 | 215.53678 | 167.58019 | 6.02745 | 0.2752919 | 2.3260055 | 40 | 1 | 116 days | 0.47 | M-v | 3 | MPC | 2006 $RD_{19}$ |
| 2006 $RF_{19}$ | 16.4 | 0.15 | 20060922 | 22.31460 | 294.78754 | 35.69849 | 8.22508 | 0.2776662 | 2.2247101 | 137 | 1 | 88 days | 0.43 | M-v | 3 | MPC | 2006 $RF_{19}$ |
| 2006 $RG_{19}$ | 16.1 | 0.15 | 20060922 | 355.03730 | 196.92433 | 184.71609 | 6.28420 | 0.1974732 | 2.6807057 | 58 | 1 | 38 days | 0.53 | | | MPC | 2006 $RG_{19}$ |
| 2006 $RH_{19}$ | 17.2 | 0.15 | 20060922 | 38.30997 | 122.62757 | 186.03691 | 23.83517 | 0.2734933 | 2.3323823 | 38 | 1 | 44 days | 0.59 | | | MPC | 2006 $RH_{19}$ |
| 2006 $RO_{19}$ | 17.5 | 0.15 | 20060922 | 334.16040 | 26.19199 | 16.35670 | 6.47407 | 0.1231934 | 2.3412168 | 38 | 1 | 47 days | 0.44 | | | MPC | 2006 $RO_{19}$ |
| 2006 $RS_{19}$ | 17.0 | 0.15 | 20060902 | 15.00485 | 341.29684 | 346.55660 | 14.01424 | 0.1509924 | 2.6850503 | 18 | 1 | 8 days | 0.54 | | | MPC | 2006 $RS_{19}$ |
| 2006 $RU_{19}$ | 17.9 | 0.15 | 20060922 | 4.19345 | 163.11740 | 186.50839 | 6.02031 | 0.1748693 | 2.3437639 | 32 | 1 | 59 days | 0.63 | | D | MPC | 2006 $RU_{19}$ |
| 2006 $RV_{19}$ | 17.2 | 0.15 | 20060902 | 339.12102 | 155.82339 | 222.57335 | 1.53986 | 0.1708047 | 2.6170850 | 10 | 1 | 8 days | 0.43 | | | MPC | 2006 $RV_{19}$ |
| 2006 $RW_{19}$ | 17.8 | 0.15 | 20060922 | 4.45215 | 17.21187 | 332.25768 | 3.55132 | 0.1733694 | 2.3231315 | 16 | 1 | 16 days | 0.34 | | | MPC | 2006 $RW_{19}$ |
| 2006 $RZ_{19}$ | 18.7 | 0.15 | 20060902 | 20.52233 | 328.16128 | 351.54808 | 2.25860 | 0.1606597 | 2.0123486 | 18 | 1 | 8 days | 0.69 | | | MPC | 2006 $RZ_{19}$ |
| 2006 $RB_{20}$ | 18.0 | 0.15 | 20060902 | 354.48709 | 356.73846 | 359.67442 | 5.36062 | 0.1492441 | 2.2317191 | 18 | 1 | 8 days | 0.70 | | | MPC | 2006 $RB_{20}$ |
| 2006 $RC_{20}$ | 17.6 | 0.15 | 20060922 | 5.00459 | 153.65180 | 193.80469 | 2.24264 | 0.2319340 | 2.3471958 | 49 | 1 | 73 days | 0.46 | M-v | 4 | MPC | 2006 $RC_{20}$ |
| 2006 $RE_{20}$ | 17.3 | 0.15 | 20060902 | 316.12106 | 246.78425 | 174.00072 | 11.96830 | 0.2764415 | 2.6870724 | 25 | 1 | 11 days | 0.64 | | | MPC | 2006 $RE_{20}$ |
| 2006 $RL_{20}$ | 16.7 | 0.15 | 20060922 | 10.36608 | 112.15934 | 225.34912 | 7.48810 | 0.2845936 | 2.7193841 | 30 | 1 | 47 days | 0.55 | | | MPC | 2006 $RL_{20}$ |
| 2006 $RN_{20}$ | 15.4 | 0.15 | 20060922 | 358.41179 | 174.14264 | 184.68561 | 24.11789 | 0.2148818 | 3.0963750 | 80 | 1 | 57 days | 0.38 | | | MPC | 2006 $RN_{20}$ |
| 2006 $RO_{20}$ | 18.5 | 0.15 | 20060922 | 358.03032 | 201.92423 | 161.20338 | 5.12951 | 0.2548446 | 2.5903381 | 12 | 1 | 15 days | 0.36 | | | MPC | 2006 $RO_{20}$ |
| 2006 $RP_{20}$ | 16.4 | 0.15 | 20060902 | 76.76622 | 88.29598 | 171.50284 | 15.27110 | 0.1704142 | 2.8623070 | 10 | 1 | 4 days | 0.31 | | | MPC | 2006 $RP_{20}$ |
| 2006 $RS_{20}$ | 17.6 | 0.15 | 20060922 | 322.73347 | 270.79439 | 138.13219 | 0.71732 | 0.1619384 | 2.2791772 | 41 | 1 | 113 days | 0.39 | M-v | 4 | MPC | 2006 $RS_{20}$ |
| 2006 $RU_{20}$ | 16.8 | 0.15 | 20060922 | 340.18069 | 225.89126 | 194.46365 | 7.62398 | 0.4593678 | 2.8440418 | 93 | 1 | 66 days | 0.45 | M-v | 4 | MPC | 2006 $RU_{20}$ |
| 2006 $RV_{20}$ | 17.8 | 0.15 | 20060902 | 354.97324 | 181.25456 | 183.13924 | 15.36909 | 0.2654921 | 3.1352129 | 13 | 1 | 10 days | 0.19 | | | MPC | 2006 $RV_{20}$ |
| 2006 $RW_{20}$ | 16.3 | 0.15 | 20060902 | 246.17563 | 290.96581 | 187.78559 | 9.31364 | 0.0570028 | 3.1632597 | 19 | 1 | 12 days | 0.23 | | | MPC | 2006 $RW_{20}$ |
| 2006 $RY_{20}$ | 17.7 | 0.15 | 20060902 | 318.43487 | 217.32435 | 197.58762 | 1.94038 | 0.1900000 | 2.7308500 | 25 | 1 | 38 days | 0.24 | | | MPC | 2006 $RY_{20}$ |
| 2006 $RA_{21}$ | 19.1 | 0.15 | 20060922 | 350.98369 | 194.25244 | 183.32126 | 5.17537 | 0.2794173 | 2.2949835 | 19 | 1 | 13 days | 0.21 | | | MPC | 2006 $RA_{21}$ |
| 2006 $RD_{21}$ | 18.4 | 0.15 | 20060902 | 25.04576 | 95.34664 | 221.20611 | 0.59712 | 0.2015059 | 2.4449838 | 13 | 1 | 10 days | 0.25 | | | MPC | 2006 $RD_{21}$ |
| 2006 $RF_{21}$ | 16.3 | 0.15 | 20060922 | 348.46008 | 3.08049 | 21.25059 | 0.81555 | 0.2902278 | 3.2681233 | 41 | 1 | 31 days | 0.53 | | | MPC | 2006 $RF_{21}$ |
| 2006 $RG_{21}$ | 16.8 | 0.15 | 20060902 | 31.10143 | 263.20623 | 59.59316 | 0.45686 | 0.0669601 | 2.8117002 | 22 | 1 | 38 days | 0.30 | | | MPC | 2006 $RG_{21}$ |
| 2006 $RH_{21}$ | 16.8 | 0.15 | 20060902 | 58.87133 | 266.03108 | 9.62389 | 4.68496 | 0.2174512 | 2.9897398 | 19 | 1 | 12 days | 0.31 | | | MPC | 2006 $RH_{21}$ |
| 2006 $RJ_{21}$ | 18.9 | 0.15 | 20060922 | 329.17272 | 42.01494 | 1.97075 | 6.67350 | 0.1592566 | 2.2455685 | 20 | 1 | 38 days | 0.24 | | | MPC | 2006 $RJ_{21}$ |
| 2006 $RL_{21}$ | 16.8 | 0.15 | 20060922 | 21.10765 | 333.28635 | 2.59055 | 7.62058 | 0.1954720 | 2.7155989 | 31 | 1 | 46 days | 0.39 | | | MPC | 2006 $RL_{21}$ |
| 2006 $RM_{21}$ | 17.8 | 0.15 | 20060922 | 358.67618 | 186.29723 | 182.37847 | 1.08441 | 0.2049960 | 2.3791181 | 51 | 1 | 122 days | 0.41 | M-v | 3 | MPC | 2006 $RM_{21}$ |
| 2006 $RN_{21}$ | 15.6 | 0.15 | 20060922 | 338.28650 | 210.25067 | 188.25985 | 10.24798 | 0.1465520 | 3.0903387 | 99 | 1 | 62 days | 0.29 | M-v | 4 | MPC | 2006 $RN_{21}$ |
| 2006 $RP_{21}$ | 17.6 | 0.15 | 20060922 | 346.32968 | 208.05435 | 182.75648 | 12.76218 | 0.2752686 | 2.5913955 | 38 | 1 | 37 days | 0.56 | | | MPC | 2006 $RP_{21}$ |
| 2006 $RR_{21}$ | 15.8 | 0.15 | 20060922 | 37.84422 | 289.53022 | 9.40818 | 9.58582 | 0.2544730 | 3.1551174 | 21 | 1 | 35 days | 0.20 | | | MPC | 2006 $RR_{21}$ |
| 2006 $RY_{21}$ | 18.1 | 0.15 | 20060902 | 32.12286 | 355.44373 | 316.61794 | 18.96504 | 0.1026124 | 1.8624418 | 12 | 1 | 2 days | 0.51 | | | MPC | 2006 $RY_{21}$ |
| 2006 $RZ_{21}$ | 14.2 | 0.15 | 20060902 | 33.86499 | 29.90387 | 274.93471 | 18.44285 | 0.2021040 | 3.1105542 | 19 | 1 | 5 days | 0.57 | | | MPC | 2006 $RZ_{21}$ |
| 2006 $RB_{22}$ | 17.5 | 0.15 | 20060922 | 20.90656 | 148.23879 | 199.09751 | 24.61517 | 0.2362311 | 2.2629946 | 45 | 1 | 72 days | 0.56 | M-v | 4 | MPC | 2006 $RB_{22}$ |
| 2006 $RJ_{22}$ | 17.4 | 0.15 | 20060922 | 6.86595 | 292.41278 | 63.17260 | 5.38786 | 0.4291973 | 2.6819885 | 81 | 1 | 66 days | 0.39 | M-v | 4 | MPC | 2006 $RJ_{22}$ |
| 2006 $RN_{22}$ | 15.7 | 0.15 | 20060922 | 3.06188 | 121.49941 | 235.89146 | 8.49588 | 0.2922876 | 3.9448355 | 34 | 1 | 55 days | 0.66 | | | MPC | 2006 $RN_{22}$ |
| 2006 $RO_{22}$ | 16.9 | 0.15 | 20060922 | 344.83018 | 158.86243 | 232.30413 | 5.62265 | 0.2681740 | 2.6379962 | 59 | 1 | 66 days | 0.50 | M-v | 4 | MPC | 2006 $RO_{22}$ |
| 2006 $RP_{22}$ | 17.0 | 0.15 | 20060922 | 8.26987 | 359.19460 | 356.36928 | 13.22791 | 0.2478820 | 2.6278357 | 52 | 1 | 65 days | 0.59 | M-v | 4 | MPC | 2006 $RP_{22}$ |
| 2006 $RQ_{22}$ | 17.1 | 0.15 | 20060922 | 357.20046 | 160.28617 | 207.67404 | 10.03194 | 0.3315620 | 2.7611955 | 63 | 1 | 84 days | 0.45 | M-v | 4 | MPC | 2006 $RQ_{22}$ |
| 2006 $RS_{22}$ | 16.3 | 0.15 | 20060922 | 351.32670 | 59.55060 | 320.54920 | 7.17002 | 0.2369514 | 3.1788570 | 45 | 1 | 46 days | 0.73 | | | MPC | 2006 $RS_{22}$ |
| 2006 $RT_{22}$ | 19.4 | 0.15 | 20060922 | 4.24584 | 23.05214 | 332.49005 | 6.31044 | 0.2937187 | 2.1849506 | 26 | 1 | 27 days | 0.41 | | | MPC | 2006 $RT_{22}$ |
| 2006 $RX_{22}$ | 17.3 | 0.15 | 20060922 | 8.73993 | 346.42672 | 10.15183 | 4.63539 | 0.3194237 | 2.6305538 | 78 | 1 | 73 days | 0.42 | M-v | 4 | MPC | 2006 $RX_{22}$ |
| 2006 $RY_{22}$ | 16.7 | 0.15 | 20060922 | 357.50402 | 164.20225 | 181.54905 | 11.98058 | 0.2666265 | 3.0786831 | 25 | 1 | 79 days | 0.45 | M-v | 4 | MPC | 2006 $RY_{22}$ |
| 2006 $RD_{23}$ | 15.4 | 0.15 | 20060922 | 359.42768 | 3.62214 | 351.56968 | 23.32926 | 0.2205014 | 3.1623734 | 49 | 1 | 67 days | 0.53 | M-v | 4 | MPC | 2006 $RD_{23}$ |
| 2006 $RG_{23}$ | 17.8 | 0.15 | 20060922 | 359.94201 | 170.52098 | 185.92243 | 6.72327 | 0.2051960 | 2.3489006 | 44 | 1 | 91 days | 0.44 | M-v | 4 | MPC | 2006 $RG_{23}$ |
| 2006 $RK_{23}$ | 18.3 | 0.15 | 20060902 | 0.10579 | 11.55828 | 338.82840 | 5.24861 | 0.2459147 | 2.3543965 | 38 | 1 | 53 days | 0.52 | | | MPC | 2006 $RK_{23}$ |
| 2006 $RM_{23}$ | 17.4 | 0.15 | 20060922 | 345.65908 | 36.24259 | 352.23919 | 4.65291 | 0.2534081 | 2.6205661 | 32 | 1 | 69 days | 0.51 | M-v | 4 | MPC | 2006 $RM_{23}$ |
| 2006 $RN_{23}$ | 17.3 | 0.15 | 20060922 | 358.24665 | 12.17030 | 354.81520 | 4.26653 | 0.2308043 | 2.6883758 | 50 | 1 | 75 days | 0.55 | M-v | 4 | MPC | 2006 $RN_{23}$ |
| 2006 $RQ_{23}$ | 17.9 | 0.15 | 20060902 | 342.77515 | 194.62149 | 173.82037 | 14.46427 | 0.2581542 | 2.6836200 | 15 | 1 | 29 days | 0.52 | | | MPC | 2006 $RQ_{23}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RR_{23}$ | 17.0 | 0.15 | 20060902 | 3.52762 | 162.27410 | 172.49665 | 14.71098 | 0.1110105 | 2.6020600 | 11 | 1 | 7 days | 0.51 | | MPC | 2006 $RR_{23}$ |
| 2006 $RX_{23}$ | 17.1 | 0.15 | 20060922 | 355.35723 | 167.79255 | 202.72924 | 11.38647 | 0.3210082 | 2.7498657 | 41 | 1 | 45 days | 0.42 | | MPC | 2006 $RX_{23}$ |
| 2006 $RZ_{23}$ | 14.9 | 0.15 | 20060922 | 355.23311 | 102.57096 | 267.31235 | 4.80277 | 0.2956607 | 3.9439659 | 51 | 1 | 54 days | 0.45 | | MPC | 2006 $RZ_{23}$ |
| 2006 $RA_{24}$ | 17.0 | 0.15 | 20060922 | 327.37521 | 176.58989 | 232.15341 | 5.95978 | 0.2044726 | 2.3849414 | 46 | 1 | 66 days | 0.49 | M-v 4 | MPC | 2006 $RA_{24}$ |
| 2006 $RC_{24}$ | 17.0 | 0.15 | 20060922 | 324.09596 | 324.21421 | 83.70082 | 7.57090 | 0.1154477 | 2.2712423 | 21 | 1 | 45 days | 0.48 | | MPC | 2006 $RC_{24}$ |
| 2006 $RE_{24}$ | 17.0 | 0.15 | 20060902 | 40.20092 | 84.51938 | 206.04062 | 9.33739 | 0.0506577 | 2.9956672 | 9 | 1 | 5 days | 0.28 | | MPC | 2006 $RE_{24}$ |
| 2006 $RF_{24}$ | 16.9 | 0.15 | 20060902 | 346.34390 | 95.31249 | 260.39835 | 6.21941 | 0.1922859 | 3.1371183 | 19 | 1 | 27 days | 0.36 | | MPC | 2006 $RF_{24}$ |
| 2006 $RG_{24}$ | 18.4 | 0.15 | 20060902 | 17.52931 | 87.17642 | 221.95973 | 5.14491 | 0.2118709 | 2.1906152 | 9 | 1 | 5 days | 0.13 | | MPC | 2006 $RG_{24}$ |
| 2006 $RH_{24}$ | 18.9 | 0.15 | 20060902 | 42.10900 | 335.89586 | 294.93192 | 6.84549 | 0.2445028 | 2.3205747 | 9 | 1 | 5 days | 0.27 | | MPC | 2006 $RH_{24}$ |
| 2006 $RJ_{24}$ | 16.5 | 0.15 | 20060902 | 321.35906 | 107.41176 | 273.33059 | 7.26573 | 0.0826062 | 2.9618335 | 9 | 1 | 8 days | 0.11 | | MPC | 2006 $RJ_{24}$ |
| 2006 $RL_{24}$ | 16.2 | 0.15 | 20060902 | 238.44789 | 205.39850 | 258.99273 | 7.64997 | 0.0782029 | 3.0718330 | 9 | 1 | 5 days | 0.11 | | MPC | 2006 $RL_{24}$ |
| 2006 $RM_{24}$ | 16.9 | 0.15 | 20060902 | 84.86397 | 283.76907 | 304.93923 | 11.28866 | 0.1997240 | 2.6549517 | 9 | 1 | 5 days | 0.14 | | MPC | 2006 $RM_{24}$ |
| 2006 $RQ_{24}$ | 16.8 | 0.15 | 20060902 | 321.12006 | 200.85864 | 189.33217 | 8.59533 | 0.1896193 | 2.8043888 | 20 | 1 | 21 days | 0.33 | | MPC | 2006 $RQ_{24}$ |
| 2006 $RZ_{24}$ | | | 20060902 | 349.71283 | 120.78254 | 233.99921 | 2.92293 | 0.2562396 | 2.2324620 | 9 | 1 | 4 days | 0.72 | | MPC | 2006 $RZ_{24}$ |
| 2006 $RD_{25}$ | 17.4 | 0.15 | 20060902 | 328.05032 | 52.50149 | 325.48269 | 15.32497 | 0.1376302 | 2.9368724 | 9 | 1 | 5 days | 0.20 | | MPC | 2006 $RD_{25}$ |
| 2006 $RF_{25}$ | 18.6 | 0.15 | 20060902 | 314.19885 | 121.73672 | 277.07360 | 3.65534 | 0.1702088 | 2.3123352 | 12 | 1 | 5 days | 0.85 | | MPC | 2006 $RF_{25}$ |
| 2006 $RH_{25}$ | 17.5 | 0.15 | 20060902 | 246.32266 | 214.60241 | 248.24592 | 3.80892 | 0.1311179 | 2.4170592 | 12 | 1 | 21 days | 0.28 | | MPC | 2006 $RH_{25}$ |
| 2006 $RN_{25}$ | 18.5 | 0.15 | 20060902 | 359.94086 | 42.40556 | 294.59337 | 4.29646 | 0.2494331 | 2.5422849 | 12 | 1 | 21 days | 0.28 | | MPC | 2006 $RN_{25}$ |
| 2006 $RP_{25}$ | 17.1 | 0.15 | 20060902 | 73.61206 | 26.90345 | 219.38288 | 4.69396 | 0.1432800 | 2.6769373 | 9 | 1 | 4 days | 0.39 | | MPC | 2006 $RP_{25}$ |
| 2006 $RQ_{25}$ | 18.1 | 0.15 | 20060902 | 26.94671 | 53.94425 | 251.13741 | 3.62355 | 0.0779293 | 2.5724036 | 9 | 1 | 5 days | 0.28 | | MPC | 2006 $RQ_{25}$ |
| 2006 $RR_{25}$ | 16.2 | 0.15 | 20060902 | 89.11519 | 47.91394 | 185.28277 | 9.73770 | 0.1153915 | 3.1964269 | 12 | 1 | 5 days | 0.43 | | MPC | 2006 $RR_{25}$ |
| 2006 $RS_{25}$ | 16.2 | 0.15 | 20060902 | 290.97061 | 117.58038 | 302.14513 | 7.55551 | 0.1277631 | 3.0951299 | 12 | 1 | 21 days | 0.10 | | MPC | 2006 $RS_{25}$ |
| 2006 $RU_{25}$ | 16.8 | 0.15 | 20060902 | 275.53182 | 133.36491 | 300.09872 | 6.46182 | 0.1068968 | 2.6210777 | 9 | 1 | 5 days | 0.16 | | MPC | 2006 $RU_{25}$ |
| 2006 $RV_{25}$ | 16.8 | 0.15 | 20060902 | 310.96961 | 85.38982 | 316.64293 | 9.09297 | 0.1696054 | 3.0666771 | 24 | 1 | 21 days | 0.17 | | MPC | 2006 $RV_{25}$ |
| 2006 $RX_{25}$ | 17.8 | 0.15 | 20060902 | 316.44474 | 85.91324 | 316.18735 | 9.96974 | 0.2268450 | 3.0928928 | 12 | 1 | 5 days | 0.44 | | MPC | 2006 $RX_{25}$ |
| 2006 $RA_{26}$ | 17.9 | 0.15 | 20060902 | 29.23867 | 323.55851 | 323.08949 | 8.73952 | 0.2724343 | 2.5561093 | 23 | 1 | 30 days | 0.44 | | MPC | 2006 $RA_{26}$ |
| 2006 $RC_{26}$ | 16.9 | 0.15 | 20060902 | 146.22073 | 8.17379 | 176.18554 | 13.59202 | 0.0943662 | 2.5855806 | 9 | 1 | 5 days | 0.16 | | MPC | 2006 $RC_{26}$ |
| 2006 $RJ_{26}$ | 14.8 | 0.15 | 20060902 | 339.79098 | 250.82199 | 128.32776 | 7.82357 | 0.0922089 | 3.8281311 | 11 | 1 | 4 days | 0.69 | | MPC | 2006 $RJ_{26}$ |
| 2006 $RO_{26}$ | 15.9 | 0.15 | 20060922 | 68.88882 | 243.70222 | 56.18032 | 2.84377 | 0.0435610 | 2.8555441 | 35 | 1 | 61 days | 0.44 | M-v 5 | MPC | 2006 $RO_{26}$ |
| 2006 $RR_{26}$ | 17.1 | 0.15 | 20060922 | 337.33481 | 234.77943 | 178.34178 | 8.46184 | 0.2808592 | 3.0757296 | 16 | 1 | 38 days | 0.41 | | MPC | 2006 $RR_{26}$ |
| 2006 $RV_{26}$ | 17.8 | 0.15 | 20060922 | 348.76688 | 5.59196 | 19.84482 | 2.65687 | 0.2404417 | 2.3749579 | 63 | 1 | 74 days | 0.33 | M-v 3 | MPC | 2006 $RV_{26}$ |
| 2006 $RW_{26}$ | 15.8 | 0.15 | 20060922 | 12.92594 | 321.84984 | 15.87175 | 26.70623 | 0.1475136 | 3.1665861 | 25 | 1 | 40 days | 0.64 | | MPC | 2006 $RW_{26}$ |
| 2006 $RA_{27}$ | 17.1 | 0.15 | 20060922 | 358.88595 | 194.48065 | 178.61992 | 7.64822 | 0.3228828 | 2.7557471 | 39 | 1 | 37 days | 0.58 | | MPC | 2006 $RA_{27}$ |
| 2006 $RB_{27}$ | 16.1 | 0.15 | 20060922 | 24.48123 | 159.65691 | 184.48568 | 14.29991 | 0.1141193 | 2.9857175 | 26 | 1 | 18 days | 0.48 | | MPC | 2006 $RB_{27}$ |
| 2006 $RE_{27}$ | 17.5 | 0.15 | 20060922 | 8.57688 | 338.66828 | 18.31440 | 8.78244 | 0.2244733 | 2.2011632 | 76 | 1 | 80 days | 0.34 | M-v 3 | MPC | 2006 $RE_{27}$ |
| 2006 $RG_{27}$ | 16.5 | 0.15 | 20060922 | 1.31070 | 351.50512 | 19.36308 | 14.55352 | 0.2628325 | 2.6785112 | 47 | 1 | 63 days | 0.36 | M-v 4 | MPC | 2006 $RG_{27}$ |
| 2006 $RK_{27}$ | 18.0 | 0.15 | 20060922 | 6.65635 | 12.16904 | 346.66086 | 6.94135 | 0.1751998 | 2.2018356 | 39 | 1 | 39 days | 0.68 | | MPC | 2006 $RK_{27}$ |
| 2006 $RL_{27}$ | 16.0 | 0.15 | 20060922 | 352.60917 | 27.46778 | 356.02855 | 10.75203 | 0.1830125 | 3.0372757 | 35 | 1 | 92 days | 0.43 | M-v 3 | MPC | 2006 $RL_{27}$ |
| 2006 $RO_{27}$ | 17.7 | 0.15 | 20060922 | 1.56184 | 22.23620 | 346.50931 | 5.72568 | 0.1521925 | 2.1953846 | 42 | 1 | 92 days | 0.53 | M-v 4 | MPC | 2006 $RO_{27}$ |
| 2006 $RR_{27}$ | 16.9 | 0.15 | 20060902 | 8.50715 | 191.56611 | 146.37843 | 14.94619 | 0.2530231 | 2.6477846 | 24 | 1 | 43 days | 0.38 | | MPC | 2006 $RR_{27}$ |
| 2006 $RS_{27}$ | 16.7 | 0.15 | 20060922 | 341.02217 | 301.34367 | 96.19060 | 9.02794 | 0.3085189 | 2.7898131 | 35 | 1 | 66 days | 0.52 | M-v 4 | MPC | 2006 $RS_{27}$ |
| 2006 $RU_{27}$ | 15.9 | 0.15 | 20060922 | 347.63528 | 225.89420 | 156.16326 | 21.27428 | 0.2319274 | 3.0262201 | 21 | 1 | 68 days | 0.44 | M-v 4 | MPC | 2006 $RU_{27}$ |
| 2006 $RW_{27}$ | 15.5 | 0.15 | 20060902 | 17.70190 | 224.46480 | 104.87771 | 10.27150 | 0.1782199 | 2.7538419 | 14 | 1 | 12 days | 0.42 | | MPC | 2006 $RW_{27}$ |
| 2006 $RX_{27}$ | 15.9 | 0.15 | 20060922 | 345.45615 | 224.37907 | 159.59780 | 32.30510 | 0.1930628 | 2.6157280 | 26 | 1 | 44 days | 0.68 | | MPC | 2006 $RX_{27}$ |
| 2006 $RZ_{27}$ | 16.0 | 0.15 | 20060922 | 348.67678 | 25.20682 | 13.69311 | 16.43360 | 0.3023670 | 2.6114225 | 100 | 1 | 86 days | 0.49 | M-v 3 | MPC | 2006 $RZ_{27}$ |
| 2006 $RA_{28}$ | 16.8 | 0.15 | 20060922 | 292.92215 | 44.30256 | 65.84563 | 3.09525 | 0.2219630 | 2.9274741 | 13 | 1 | 63 days | 0.46 | M-v 6 | MPC | 2006 $RA_{28}$ |
| 2006 $RB_{28}$ | 16.0 | 0.15 | 20060922 | 310.32441 | 263.16353 | 180.59396 | 9.10173 | 0.1699593 | 2.7537035 | 43 | 1 | 93 days | 0.45 | M-v 4 | MPC | 2006 $RB_{28}$ |
| 2006 $RC_{28}$ | 17.7 | 0.15 | 20060922 | 32.63863 | 146.98993 | 177.64689 | 6.41276 | 0.2072575 | 2.5496574 | 13 | 1 | 38 days | 0.21 | | MPC | 2006 $RC_{28}$ |
| 2006 $RD_{28}$ | 16.7 | 0.15 | 20060902 | 58.63771 | 271.97058 | 32.60541 | 4.76463 | 0.0802734 | 2.9420379 | 12 | 1 | 11 days | 0.17 | | MPC | 2006 $RD_{28}$ |
| 2006 $RE_{28}$ | 16.5 | 0.15 | 20060922 | 312.84926 | 268.77652 | 161.74139 | 2.93209 | 0.0883745 | 2.8459290 | 24 | 1 | 63 days | 0.23 | M-v 4 | MPC | 2006 $RE_{28}$ |
| 2006 $RM_{28}$ | 18.8 | 0.15 | 20060922 | 1.17864 | 147.55993 | 192.77349 | 6.06744 | 0.2084335 | 2.2917799 | 13 | 1 | 36 days | 0.23 | | MPC | 2006 $RM_{28}$ |
| 2006 $RN_{28}$ | 17.4 | 0.15 | 20060902 | 288.31698 | 222.87836 | 196.88827 | 6.44838 | 0.1427737 | 2.5302091 | 9 | 1 | 8 days | 0.31 | | MPC | 2006 $RN_{28}$ |
| 2006 $RQ_{28}$ | 17.4 | 0.15 | 20060902 | 94.24609 | 306.83055 | 271.90076 | 4.50099 | 0.1754538 | 2.2981935 | 9 | 1 | 4 days | 0.22 | | MPC | 2006 $RQ_{28}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RR_{28}$ | 16.8 | 0.15 | 20060902 | 80.91224 | 305.19276 | 284.80403 | 5.44293 | 0.1790428 | 2.7576885 | 9 | 1 | 4 days | 0.53 | | MPC | 2006 $RR_{28}$ |
| 2006 $RU_{28}$ | 17.1 | 0.15 | 20060902 | 229.60467 | 192.84186 | 276.74694 | 5.43323 | 0.0752995 | 2.4134961 | 12 | 1 | 8 days | 0.43 | | MPC | 2006 $RU_{28}$ |
| 2006 $RV_{28}$ | 18.5 | 0.15 | 20060922 | 67.38868 | 321.37564 | 294.52003 | 6.93818 | 0.1551664 | 2.2219053 | 12 | 1 | 13 days | 0.18 | | MPC | 2006 $RV_{28}$ |
| 2006 $RC_{29}$ | 16.6 | 0.15 | 20060922 | 252.14336 | 144.09299 | 301.69071 | 6.00206 | 0.0197430 | 2.7547884 | 16 | 1 | 13 days | 0.22 | | MPC | 2006 $RC_{29}$ |
| 2006 $RE_{29}$ | 16.6 | 0.15 | 20060902 | 103.36737 | 354.93563 | 224.60375 | 3.78979 | 0.0750996 | 3.1253045 | 9 | 1 | 4 days | 0.27 | | MPC | 2006 $RE_{29}$ |
| 2006 $RJ_{29}$ | 16.7 | 0.15 | 20060902 | 171.81626 | 331.76283 | 187.25882 | 11.90546 | 0.1545420 | 2.6197124 | 9 | 1 | 4 days | 0.22 | | MPC | 2006 $RJ_{29}$ |
| 2006 $RN_{29}$ | 17.3 | 0.15 | 20060902 | 315.46562 | 220.20525 | 191.42973 | 10.02583 | 0.3103083 | 2.7532488 | 12 | 1 | 12 days | 0.11 | | MPC | 2006 $RN_{29}$ |
| 2006 $RO_{29}$ | 16.2 | 0.15 | 20060922 | 300.62700 | 230.60762 | 176.50175 | 16.30379 | 0.1021081 | 3.0934199 | 18 | 1 | 15 days | 0.24 | | MPC | 2006 $RO_{29}$ |
| 2006 $RQ_{29}$ | 16.6 | 0.15 | 20060902 | 316.95333 | 228.52654 | 167.63464 | 28.84787 | 0.2122415 | 3.1617809 | 12 | 1 | 12 days | 0.14 | | MPC | 2006 $RQ_{29}$ |
| 2006 $RR_{29}$ | 16.9 | 0.15 | 20060902 | 61.56207 | 298.05640 | 316.19452 | 12.14969 | 0.1563659 | 3.0061689 | 15 | 1 | 40 days | 0.22 | | MPC | 2006 $RR_{29}$ |
| 2006 $RT_{29}$ | 16.5 | 0.15 | 20060902 | 6.75737 | 159.76562 | 163.09088 | 27.56408 | 0.1455946 | 3.2235176 | 13 | 1 | 12 days | 0.27 | | MPC | 2006 $RT_{29}$ |
| 2006 $RU_{29}$ | 17.4 | 0.15 | 20060902 | 3.21559 | 6.63077 | 322.13991 | 14.33054 | 0.2332364 | 3.2045113 | 12 | 1 | 12 days | 0.17 | | MPC | 2006 $RU_{29}$ |
| 2006 $RW_{29}$ | 16.7 | 0.15 | 20060902 | 14.09835 | 137.15392 | 179.73151 | 9.28825 | 0.0697032 | 2.9342364 | 9 | 1 | 4 days | 0.36 | | MPC | 2006 $RW_{29}$ |
| 2006 $RX_{29}$ | 17.7 | 0.15 | 20060902 | 81.00496 | 280.19509 | 312.69782 | 6.44666 | 0.1807072 | 2.1789684 | 9 | 1 | 4 days | 0.20 | | MPC | 2006 $RX_{29}$ |
| 2006 $RY_{29}$ | 16.9 | 0.15 | 20060902 | 6.47952 | 149.48293 | 173.82920 | 11.79102 | 0.2012153 | 3.1911689 | 10 | 1 | 12 days | 0.19 | | MPC | 2006 $RY_{29}$ |
| 2006 $RZ_{29}$ | 16.6 | 0.15 | 20060922 | 298.16117 | 214.88557 | 204.08092 | 4.77705 | 0.1676187 | 2.6939836 | 13 | 1 | 13 days | 0.15 | | MPC | 2006 $RZ_{29}$ |
| 2006 $RA_{30}$ | 17.2 | 0.15 | 20060902 | 331.00323 | 200.89869 | 183.71375 | 16.65149 | 0.2681841 | 2.7716133 | 9 | 1 | 7 days | 0.13 | | MPC | 2006 $RA_{30}$ |
| 2006 $RB_{30}$ | 17.3 | 0.15 | 20060902 | 350.39834 | 67.27188 | 280.78642 | 9.03016 | 0.1226882 | 3.0962557 | 9 | 1 | 4 days | 0.20 | | MPC | 2006 $RB_{30}$ |
| 2006 $RC_{30}$ | 17.8 | 0.15 | 20060902 | 337.00113 | 110.62619 | 255.25095 | 6.31024 | 0.1239909 | 2.3468910 | 21 | 1 | 36 days | 0.21 | | MPC | 2006 $RC_{30}$ |
| 2006 $RE_{30}$ | 18.3 | 0.15 | 20060902 | 344.97282 | 70.70134 | 287.61838 | 7.60179 | 0.1806878 | 2.5773674 | 12 | 1 | 12 days | 0.20 | | MPC | 2006 $RE_{30}$ |
| 2006 $RF_{30}$ | 16.2 | 0.15 | 20060902 | 344.74565 | 105.47265 | 247.99108 | 8.05635 | 0.0781112 | 3.2163014 | 12 | 1 | 7 days | 0.35 | | MPC | 2006 $RF_{30}$ |
| 2006 $RG_{30}$ | 16.8 | 0.15 | 20060902 | 31.68586 | 55.12318 | 237.48388 | 7.82009 | 0.1579389 | 3.1684714 | 9 | 1 | 7 days | 0.22 | | MPC | 2006 $RG_{30}$ |
| 2006 $RH_{30}$ | 17.0 | 0.15 | 20060902 | 321.72871 | 102.38684 | 284.57355 | 8.84178 | 0.1541826 | 3.1753387 | 12 | 1 | 10 days | 0.18 | | MPC | 2006 $RH_{30}$ |
| 2006 $RJ_{30}$ | 17.2 | 0.15 | 20060902 | 313.75068 | 99.59435 | 298.34377 | 9.83055 | 0.1582959 | 2.6644793 | 12 | 1 | 10 days | 0.47 | | MPC | 2006 $RJ_{30}$ |
| 2006 $RK_{30}$ | 16.9 | 0.15 | 20060902 | 340.84911 | 138.28563 | 220.08999 | 8.19540 | 0.0888499 | 3.1849693 | 12 | 1 | 4 days | 0.26 | | MPC | 2006 $RK_{30}$ |
| 2006 $RL_{30}$ | 16.5 | 0.15 | 20060902 | 188.36113 | 222.19270 | 288.81661 | 9.58103 | 0.1621478 | 2.3170596 | 9 | 1 | 4 days | 0.23 | | MPC | 2006 $RL_{30}$ |
| 2006 $RN_{30}$ | 17.9 | 0.15 | 20060922 | 33.20107 | 82.95019 | 223.81382 | 1.42067 | 0.2129096 | 2.3753692 | 25 | 1 | 37 days | 0.73 | | MPC | 2006 $RN_{30}$ |
| 2006 $RO_{30}$ | 18.5 | 0.15 | 20060902 | 8.04725 | 10.84738 | 324.10748 | 1.61622 | 0.2395917 | 2.4234212 | 10 | 1 | 8 days | 0.40 | | MPC | 2006 $RO_{30}$ |
| 2006 $RS_{30}$ | 17.7 | 0.15 | 20060922 | 29.21216 | 314.93075 | 357.40473 | 11.43139 | 0.2399482 | 2.3207801 | 69 | 1 | 42 days | 0.44 | | MPC | 2006 $RS_{30}$ |
| 2006 $RT_{30}$ | 17.3 | 0.15 | 20060922 | 13.33324 | 338.49291 | 359.69056 | 3.44862 | 0.2272835 | 2.6093152 | 35 | 1 | 88 days | 0.49 | M-v 4 | MPC | 2006 $RT_{30}$ |
| 2006 $RZ_{30}$ | 17.3 | 0.15 | 20060922 | 356.03358 | 108.79604 | 258.52357 | 3.22067 | 0.2005042 | 2.2426787 | 38 | 1 | 38 days | 0.42 | | MPC | 2006 $RZ_{30}$ |
| 2006 $RJ_{31}$ | 17.1 | 0.15 | 20060922 | 2.97743 | 357.87592 | 1.03731 | 11.22614 | 0.1713442 | 2.4175967 | 40 | 1 | 38 days | 0.77 | | MPC | 2006 $RJ_{31}$ |
| 2006 $RQ_{31}$ | 18.8 | 0.15 | 20060922 | 336.77683 | 180.41036 | 220.11224 | 1.47931 | 0.2059496 | 2.2763595 | 26 | 1 | 43 days | 0.33 | | MPC | 2006 $RQ_{31}$ |
| 2006 $RU_{31}$ | 18.5 | 0.15 | 20060922 | 3.04022 | 180.01737 | 179.63584 | 2.31524 | 0.2404773 | 2.4198989 | 32 | 1 | 60 days | 0.22 | M-v 3 | MPC | 2006 $RU_{31}$ |
| 2006 $RV_{31}$ | 17.7 | 0.15 | 20060922 | 40.60609 | 128.12543 | 185.54001 | 4.20125 | 0.1429683 | 2.7255535 | 22 | 1 | 17 days | 0.26 | | MPC | 2006 $RV_{31}$ |
| 2006 $RW_{31}$ | 17.5 | 0.15 | 20060922 | 355.77200 | 244.05740 | 128.92429 | 0.31417 | 0.1826704 | 3.1616165 | 24 | 1 | 42 days | 0.32 | | MPC | 2006 $RW_{31}$ |
| 2006 $RX_{31}$ | 20.1 | 0.15 | 20060902 | 24.56284 | 315.26266 | 359.02322 | 3.41212 | 0.2572605 | 2.2703057 | 9 | 1 | 4 days | 0.14 | | MPC | 2006 $RX_{31}$ |
| 2006 $RY_{31}$ | 18.0 | 0.15 | 20060922 | 302.11112 | 73.07932 | 5.89037 | 6.27838 | 0.1437733 | 2.3587608 | 23 | 1 | 37 days | 0.21 | | MPC | 2006 $RY_{31}$ |
| 2006 $RB_{32}$ | 17.1 | 0.15 | 20060922 | 38.29831 | 119.52279 | 194.91242 | 12.13770 | 0.1903030 | 2.6675801 | 27 | 1 | 36 days | 0.28 | | MPC | 2006 $RB_{32}$ |
| 2006 $RC_{32}$ | 18.4 | 0.15 | 20060922 | 358.14042 | 165.65405 | 204.92359 | 4.47982 | 0.1970880 | 2.3806970 | 18 | 1 | 34 days | 0.33 | | MPC | 2006 $RC_{32}$ |
| 2006 $RD_{32}$ | 16.3 | 0.15 | 20060902 | 284.81739 | 102.13999 | 354.05197 | 9.20138 | 0.1115353 | 3.1629514 | 9 | 1 | 12 days | 0.45 | | MPC | 2006 $RD_{32}$ |
| 2006 $RE_{32}$ | 16.8 | 0.15 | 20060922 | 235.41336 | 146.88405 | 355.75305 | 8.43655 | 0.0717387 | 2.9226368 | 15 | 1 | 15 days | 0.19 | | MPC | 2006 $RE_{32}$ |
| 2006 $RH_{32}$ | 17.8 | 0.15 | 20060922 | 16.92378 | 128.96091 | 205.98633 | 4.18471 | 0.3122972 | 2.6132338 | 35 | 1 | 67 days | 0.33 | M-v 4 | MPC | 2006 $RH_{32}$ |
| 2006 $RM_{32}$ | 17.0 | 0.15 | 20060922 | 41.72560 | 94.77677 | 219.85337 | 1.80005 | 0.1567241 | 3.0972437 | 15 | 1 | 15 days | 0.60 | | MPC | 2006 $RM_{32}$ |
| 2006 $RN_{32}$ | 17.4 | 0.15 | 20060902 | 120.74302 | 239.29779 | 358.04737 | 8.27213 | 0.0627755 | 2.2868870 | 9 | 1 | 10 days | 0.13 | | MPC | 2006 $RN_{32}$ |
| 2006 $RQ_{32}$ | 16.3 | 0.15 | 20060922 | 11.54676 | 353.21960 | 2.45508 | 11.34212 | 0.0970256 | 2.6781228 | 40 | 1 | 36 days | 0.53 | | MPC | 2006 $RQ_{32}$ |
| 2006 $RT_{32}$ | 15.9 | 0.15 | 20060922 | 8.28288 | 132.43170 | 201.04388 | 28.26604 | 0.3566035 | 3.1507457 | 33 | 1 | 44 days | 0.46 | | MPC | 2006 $RT_{32}$ |
| 2006 $RU_{32}$ | 17.4 | 0.15 | 20060922 | 60.90106 | 83.60185 | 207.46490 | 11.93504 | 0.2091625 | 2.7376401 | 16 | 1 | 34 days | 0.32 | | MPC | 2006 $RU_{32}$ |
| 2006 $RV_{32}$ | 16.9 | 0.15 | 20060922 | 12.21814 | 350.06599 | 358.43622 | 10.62440 | 0.3097837 | 2.7401635 | 38 | 1 | 53 days | 0.51 | | MPC | 2006 $RV_{32}$ |
| 2006 $RX_{32}$ | 17.0 | 0.15 | 20060922 | 6.77121 | 0.68309 | 359.46526 | 5.52643 | 0.2831654 | 2.3477922 | 83 | 1 | 62 days | 0.48 | M-v 4 | MPC | 2006 $RX_{32}$ |
| 2006 $RA_{33}$ | 17.3 | 0.15 | 20060922 | 43.51113 | 28.26241 | 289.47902 | 1.44644 | 0.1302640 | 2.5204856 | 20 | 1 | 61 days | 0.18 | M-v 4 | MPC | 2006 $RA_{33}$ |
| 2006 $RB_{33}$ | 18.1 | 0.15 | 20060922 | 340.00018 | 44.66475 | 358.96249 | 5.49860 | 0.2344303 | 2.3330501 | 71 | 1 | 52 days | 0.53 | | MPC | 2006 $RB_{33}$ |
| 2006 $RF_{33}$ | 16.4 | 0.15 | 20060922 | 354.33539 | 160.35575 | 189.34727 | 29.74123 | 0.3891115 | 3.0912130 | 18 | 1 | 37 days | 0.78 | | MPC | 2006 $RF_{33}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RH_{33}$ | 17.0 | 0.15 | 20060902 | 25.34662 | 36.40809 | 269.98789 | 1.67995 | 0.2188309 | 2.6312091 | 22 | 1 | 28 days | 0.61 | | MPC | 2006 $RH_{33}$ |
| 2006 $RN_{33}$ | 17.4 | 0.15 | 20060922 | 7.99442 | 5.15654 | 347.45663 | 13.55511 | 0.2259222 | 2.5816515 | 37 | 1 | 51 days | 0.50 | | MPC | 2006 $RN_{33}$ |
| 2006 $RO_{33}$ | 17.9 | 0.15 | 20060902 | 27.07864 | 54.61427 | 246.43283 | 1.55420 | 0.1926655 | 2.2974529 | 17 | 1 | 57 days | 0.54 | | MPC | 2006 $RO_{33}$ |
| 2006 $RP_{33}$ | 16.6 | 0.15 | 20060922 | 11.41341 | 291.01524 | 43.83131 | 10.27699 | 0.3104128 | 2.7312520 | 35 | 1 | 117 days | 0.36 | M-v 3 | MPC | 2006 $RP_{33}$ |
| 2006 $RQ_{33}$ | 15.9 | 0.15 | 20060922 | 11.14455 | 150.63288 | 182.78837 | 21.57495 | 0.2418304 | 2.7836931 | 54 | 1 | 72 days | 0.45 | M-v 4 | MPC | 2006 $RQ_{33}$ |
| 2006 $RS_{33}$ | 17.6 | 0.15 | 20060922 | 340.48681 | 24.70003 | 359.87707 | 1.52976 | 0.2222156 | 2.4492959 | 42 | 1 | 95 days | 0.47 | M-v 4 | MPC | 2006 $RS_{33}$ |
| 2006 $RU_{33}$ | 16.4 | 0.15 | 20060902 | 48.83078 | 315.76920 | 330.33309 | 11.16623 | 0.1381859 | 2.6343638 | 30 | 1 | 41 days | 0.75 | | MPC | 2006 $RU_{33}$ |
| 2006 $RW_{33}$ | 18.0 | 0.15 | 20060922 | 349.81509 | 231.56774 | 140.65343 | 2.14633 | 0.2253938 | 2.4245966 | 33 | 1 | 82 days | 0.54 | M-v 4 | MPC | 2006 $RW_{33}$ |
| 2006 $RA_{34}$ | 16.4 | 0.15 | 20060902 | 342.09812 | 51.42033 | 327.51411 | 7.36038 | 0.1926262 | 2.7846631 | 43 | 1 | 32 days | 0.64 | | MPC | 2006 $RA_{34}$ |
| 2006 $RB_{34}$ | 16.8 | 0.15 | 20060922 | 16.71161 | 357.35503 | 342.50146 | 2.95432 | 0.1135626 | 2.6567687 | 43 | 1 | 117 days | 0.42 | M-v 4 | MPC | 2006 $RB_{34}$ |
| 2006 $RD_{34}$ | 17.5 | 0.15 | 20060922 | 12.12181 | 231.33456 | 107.98267 | 3.36149 | 0.2492143 | 2.3521275 | 44 | 1 | 55 days | 0.68 | | MPC | 2006 $RD_{34}$ |
| 2006 $RF_{34}$ | 18.0 | 0.15 | 20060922 | 19.67723 | 217.10924 | 112.74923 | 3.58052 | 0.2279797 | 2.2767602 | 33 | 1 | 74 days | 0.61 | M-v 5 | MPC | 2006 $RF_{34}$ |
| 2006 $RK_{34}$ | 17.8 | 0.15 | 20060922 | 352.83646 | 17.04510 | 357.89277 | 2.74133 | 0.2269455 | 2.2742919 | 77 | 1 | 70 days | 0.51 | M-v 4 | MPC | 2006 $RK_{34}$ |
| 2006 $RN_{34}$ | 16.1 | 0.15 | 20060922 | 358.95389 | 259.06246 | 108.33137 | 4.43858 | 0.2081012 | 2.7407065 | 52 | 1 | 39 days | 0.52 | | MPC | 2006 $RN_{34}$ |
| 2006 $RP_{34}$ | 15.5 | 0.15 | 20060902 | 355.95753 | 27.61035 | 321.36655 | 9.29480 | 0.0939586 | 3.2148637 | 14 | 1 | 23 days | 0.57 | | MPC | 2006 $RP_{34}$ |
| 2006 $RS_{34}$ | 16.2 | 0.15 | 20060922 | 354.25361 | 24.28022 | 343.96496 | 16.03241 | 0.1257680 | 3.0061468 | 19 | 1 | 40 days | 0.37 | | MPC | 2006 $RS_{34}$ |
| 2006 $RY_{34}$ | 15.4 | 0.15 | 20060902 | 85.21529 | 228.28594 | 25.43890 | 11.34856 | 0.0832860 | 2.9033863 | 11 | 1 | 12 days | 0.83 | | MPC | 2006 $RY_{34}$ |
| 2006 $RA_{35}$ | 15.5 | 0.15 | 20060902 | 16.88014 | 337.86534 | 352.82967 | 7.32663 | 0.0636235 | 3.0876233 | 23 | 1 | 11 days | 0.64 | | MPC | 2006 $RA_{35}$ |
| 2006 $RG_{35}$ | 17.0 | 0.15 | 20060922 | 353.92237 | 118.81440 | 252.87171 | 7.69101 | 0.2297346 | 2.8015824 | 26 | 1 | 56 days | 0.57 | | MPC | 2006 $RG_{35}$ |
| 2006 $RJ_{35}$ | 16.7 | 0.15 | 20060922 | 8.58308 | 322.82492 | 21.45405 | 4.94551 | 0.1245144 | 2.7039365 | 11 | 1 | 16 days | 0.52 | | MPC | 2006 $RJ_{35}$ |
| 2006 $RK_{35}$ | 17.0 | 0.15 | 20060902 | 355.67623 | 194.99417 | 160.74528 | 12.37439 | 0.2175977 | 2.5226136 | 26 | 1 | 37 days | 0.48 | | MPC | 2006 $RK_{35}$ |
| 2006 $RN_{35}$ | 17.5 | 0.15 | 20060922 | 100.89956 | 62.86131 | 195.23834 | 21.78671 | 0.0243915 | 1.8811192 | 50 | 1 | 61 days | 0.44 | M-v 4 | MPC | 2006 $RN_{35}$ |
| 2006 $RO_{35}$ | 15.1 | 0.15 | 20060922 | 300.94520 | 229.71456 | 208.35519 | 16.21415 | 0.1388283 | 3.0881372 | 30 | 1 | 33 days | 0.71 | | MPC | 2006 $RO_{35}$ |
| 2006 $RQ_{35}$ | 16.0 | 0.15 | 20060922 | 15.91306 | 309.26866 | 27.40280 | 10.50994 | 0.1545460 | 2.7231531 | 45 | 1 | 64 days | 0.51 | M-v 4 | MPC | 2006 $RQ_{35}$ |
| 2006 $RT_{35}$ | 16.8 | 0.15 | 20060922 | 8.72069 | 67.11829 | 286.40286 | 5.34613 | 0.1418679 | 2.6138884 | 26 | 1 | 39 days | 0.52 | | MPC | 2006 $RT_{35}$ |
| 2006 $RU_{35}$ | 16.1 | 0.15 | 20060902 | 354.74372 | 225.34529 | 133.67194 | 13.92041 | 0.1468462 | 2.7370051 | 18 | 1 | 12 days | 0.71 | | MPC | 2006 $RU_{35}$ |
| 2006 $RX_{35}$ | 16.1 | 0.15 | 20060922 | 356.36879 | 359.23173 | 20.12047 | 10.83783 | 0.1712291 | 2.6936520 | 66 | 1 | 66 days | 0.46 | M-v 4 | MPC | 2006 $RX_{35}$ |
| 2006 $RA_{36}$ | 17.3 | 0.15 | 20060922 | 343.74235 | 261.25446 | 120.63464 | 7.38536 | 0.1448456 | 2.2102327 | 17 | 1 | 39 days | 0.59 | | MPC | 2006 $RA_{36}$ |
| 2006 $RD_{36}$ | 16.2 | 0.15 | 20060922 | 348.23645 | 72.81557 | 310.59649 | 10.57570 | 0.1568424 | 2.7254265 | 20 | 1 | 39 days | 0.34 | | MPC | 2006 $RD_{36}$ |
| 2006 $RE_{36}$ | 18.2 | 0.15 | 20060922 | 348.98881 | 14.31263 | 21.04571 | 8.62372 | 0.3002779 | 2.2042008 | 65 | 1 | 61 days | 0.47 | M-v 4 | MPC | 2006 $RE_{36}$ |
| 2006 $RJ_{36}$ | 16.5 | 0.15 | 20060922 | 334.64515 | 83.51945 | 321.51517 | 7.85084 | 0.1401625 | 2.7417322 | 27 | 1 | 39 days | 0.42 | | MPC | 2006 $RJ_{36}$ |
| 2006 $RK_{36}$ | 15.8 | 0.15 | 20060902 | 321.79568 | 22.91269 | 4.02220 | 13.91968 | 0.2359635 | 2.8526467 | 11 | 1 | 11 days | 0.67 | | MPC | 2006 $RK_{36}$ |
| 2006 $RL_{36}$ | 16.0 | 0.15 | 20060902 | 4.83778 | 2.83649 | 342.91571 | 26.64842 | 0.1562630 | 3.3378357 | 11 | 1 | 7 days | 0.94 | | MPC | 2006 $RL_{36}$ |
| 2006 $RO_{36}$ | 17.9 | 0.15 | 20060922 | 144.28647 | 261.13774 | 271.01517 | 23.85406 | 0.2311052 | 0.9060123 | 52 | 1 | 72 days | 0.49 | M-v 5 | MPC | 2006 $RO_{36}$ |
| 2006 $RP_{36}$ | 17.0 | 0.15 | 20060922 | 35.02221 | 37.92474 | 272.14926 | 7.14633 | 0.1438857 | 2.3444315 | 26 | 1 | 38 days | 0.53 | | MPC | 2006 $RP_{36}$ |
| 2006 $RU_{36}$ | 16.1 | 0.15 | 20060902 | 330.65754 | 102.64052 | 291.20245 | 7.08175 | 0.2371022 | 3.1491366 | 19 | 1 | 30 days | 0.58 | | MPC | 2006 $RU_{36}$ |
| 2006 $RV_{36}$ | 17.7 | 0.15 | 20060922 | 340.20566 | 11.17851 | 16.14341 | 2.29776 | 0.2256115 | 2.4070738 | 38 | 1 | 75 days | 0.65 | M-v 5 | MPC | 2006 $RV_{36}$ |
| 2006 $RW_{36}$ | 15.5 | 0.15 | 20060922 | 300.96946 | 251.59626 | 184.75681 | 16.46982 | 0.1923711 | 2.7600155 | 51 | 1 | 88 days | 0.49 | M-v 4 | MPC | 2006 $RW_{36}$ |
| 2006 $RY_{36}$ | 17.6 | 0.15 | 20060902 | 358.51273 | 186.99779 | 166.20324 | 17.99797 | 0.2941199 | 2.7667561 | 12 | 1 | 7 days | 0.70 | | MPC | 2006 $RY_{36}$ |
| 2006 $RA_{37}$ | 16.5 | 0.15 | 20060922 | 8.32556 | 329.54241 | 15.69905 | 8.24400 | 0.2286482 | 2.8110997 | 64 | 1 | 84 days | 0.47 | M-v 3 | MPC | 2006 $RA_{37}$ |
| 2006 $RD_{37}$ | 17.8 | 0.15 | 20060922 | 346.60911 | 265.25794 | 114.42985 | 3.37364 | 0.2002934 | 2.4511907 | 18 | 1 | 55 days | 0.62 | | MPC | 2006 $RD_{37}$ |
| 2006 $RF_{37}$ | 16.1 | 0.15 | 20060922 | 355.22637 | 8.09696 | 1.41763 | 5.12768 | 0.0975684 | 2.7205782 | 49 | 1 | 27 days | 0.55 | | MPC | 2006 $RF_{37}$ |
| 2006 $RJ_{37}$ | 16.0 | 0.15 | 20060922 | 353.89709 | 353.41114 | 15.19007 | 13.90132 | 0.1535514 | 2.7568800 | 46 | 1 | 60 days | 0.78 | M-v 5 | MPC | 2006 $RJ_{37}$ |
| 2006 $RL_{37}$ | 15.3 | 0.15 | 20060922 | 327.15453 | 2.89925 | 48.27712 | 4.71639 | 0.1892895 | 3.2059260 | 45 | 1 | 61 days | 0.54 | M-v 4 | MPC | 2006 $RL_{37}$ |
| 2006 $RM_{37}$ | 17.6 | 0.15 | 20060922 | 354.33402 | 4.09015 | 9.45876 | 14.03450 | 0.2883483 | 2.6681470 | 38 | 1 | 40 days | 0.54 | | MPC | 2006 $RM_{37}$ |
| 2006 $RN_{37}$ | 15.3 | 0.15 | 20060902 | 11.74464 | 207.09915 | 136.76364 | 3.64749 | 0.2273482 | 3.9599831 | 17 | 1 | 18 days | 0.66 | | MPC | 2006 $RN_{37}$ |
| 2006 $RP_{37}$ | 17.5 | 0.15 | 20060922 | 20.29992 | 229.36266 | 101.83764 | 3.45384 | 0.2219006 | 2.3153722 | 31 | 1 | 72 days | 0.59 | M-v 5 | MPC | 2006 $RP_{37}$ |
| 2006 $RT_{37}$ | 16.5 | 0.15 | 20060902 | 4.56034 | 206.39311 | 143.80508 | 8.10053 | 0.2276617 | 2.6748956 | 22 | 1 | 35 days | 0.74 | | MPC | 2006 $RT_{37}$ |
| 2006 $RW_{37}$ | 16.6 | 0.15 | 20060922 | 340.52544 | 6.02672 | 25.07217 | 8.69394 | 0.1325579 | 2.3567442 | 39 | 1 | 70 days | 0.47 | M-v 4 | MPC | 2006 $RW_{37}$ |
| 2006 $RZ_{37}$ | 17.0 | 0.15 | 20060922 | 357.30267 | 358.23562 | 12.22343 | 13.48699 | 0.2960512 | 2.6423949 | 67 | 1 | 62 days | 0.45 | M-v 4 | MPC | 2006 $RZ_{37}$ |
| 2006 $RA_{38}$ | 15.7 | 0.15 | 20060922 | 3.11069 | 347.43232 | 16.59070 | 19.41302 | 0.1196744 | 3.2167410 | 36 | 1 | 62 days | 0.52 | M-v 4 | MPC | 2006 $RA_{38}$ |
| 2006 $RB_{38}$ | 17.1 | 0.15 | 20060922 | 350.73906 | 1.81548 | 23.06128 | 8.46251 | 0.3260132 | 2.7511625 | 68 | 1 | 66 days | 0.48 | M-v 4 | MPC | 2006 $RB_{38}$ |
| 2006 $RE_{38}$ | 17.7 | 0.15 | 20060902 | 11.20250 | 112.78605 | 215.29489 | 5.63572 | 0.1273491 | 2.2613646 | 11 | 1 | 20 days | 0.67 | | MPC | 2006 $RE_{38}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RH_{38}$ | 17.4 | 0.15 | 20060902 | 37.86263 | 43.95913 | 251.64138 | 4.67452 | 0.1486355 | 2.3824586 | 11 | 1 | 7 days | 0.47 | | MPC | 2006 $RH_{38}$ |
| 2006 $RL_{38}$ | 17.7 | 0.15 | 20060922 | 344.28377 | 111.77306 | 270.91254 | 5.25882 | 0.1553082 | 2.3190225 | 29 | 1 | 41 days | 0.50 | | MPC | 2006 $RL_{38}$ |
| 2006 $RM_{38}$ | 17.7 | 0.15 | 20060922 | 358.41973 | 286.14820 | 77.20960 | 3.56848 | 0.2365656 | 2.4130919 | 23 | 1 | 71 days | 0.40 | M-v 4 | MPC | 2006 $RM_{38}$ |
| 2006 $RP_{38}$ | 15.8 | 0.15 | 20060902 | 341.04865 | 120.30001 | 250.42152 | 7.37264 | 0.1369379 | 2.9771633 | 12 | 1 | 6 days | 0.72 | | MPC | 2006 $RP_{38}$ |
| 2006 $RQ_{38}$ | 15.5 | 0.15 | 20060922 | 21.98384 | 116.19494 | 208.88346 | 9.99766 | 0.1479640 | 3.2117790 | 24 | 1 | 38 days | 0.55 | | MPC | 2006 $RQ_{38}$ |
| 2006 $RS_{38}$ | 14.4 | 0.15 | 20060922 | 184.95691 | 60.45500 | 113.96262 | 5.61207 | 0.2775288 | 2.8908977 | 12 | 1 | 19 days | 0.68 | | MPC | 2006 $RS_{38}$ |
| 2006 $RV_{38}$ | 18.2 | 0.15 | 20060922 | 352.67100 | 263.06029 | 109.23185 | 3.59513 | 0.2795198 | 2.4730277 | 16 | 1 | 16 days | 0.76 | | MPC | 2006 $RV_{38}$ |
| 2006 $RE_{39}$ | 16.7 | 0.15 | 20060922 | 349.69562 | 16.28440 | 13.72462 | 14.27892 | 0.1758162 | 2.6562232 | 24 | 1 | 33 days | 0.38 | | MPC | 2006 $RE_{39}$ |
| 2006 $RK_{39}$ | 18.7 | 0.15 | 20060922 | 358.20386 | 189.33524 | 181.08406 | 4.87857 | 0.2413753 | 2.2600186 | 35 | 1 | 38 days | 0.48 | | MPC | 2006 $RK_{39}$ |
| 2006 $RL_{39}$ | 17.3 | 0.15 | 20061012 | 6.64370 | 157.71735 | 214.88159 | 6.03229 | 0.1311839 | 2.2324814 | 34 | 1 | 58 days | 0.55 | | MPC | 2006 $RL_{39}$ |
| 2006 $RN_{39}$ | 16.9 | 0.15 | 20060902 | 49.84628 | 6.23989 | 239.45536 | 5.68974 | 0.4310995 | 2.6475975 | 12 | 1 | 8 days | 0.82 | | MPC | 2006 $RN_{39}$ |
| 2006 $RR_{39}$ | 17.2 | 0.15 | 20060922 | 353.79527 | 189.41574 | 183.56366 | 4.47134 | 0.3082674 | 2.7024034 | 45 | 1 | 72 days | 0.56 | M-v 4 | MPC | 2006 $RR_{39}$ |
| 2006 $RS_{39}$ | 17.8 | 0.15 | 20060922 | 3.26697 | 162.18703 | 194.08266 | 3.74830 | 0.1727002 | 2.2482306 | 33 | 1 | 64 days | 0.53 | M-v 4 | MPC | 2006 $RS_{39}$ |
| 2006 $RT_{39}$ | 16.4 | 0.15 | 20060922 | 349.08847 | 266.02663 | 112.85820 | 4.40935 | 0.1894206 | 3.0379858 | 26 | 1 | 34 days | 0.54 | | MPC | 2006 $RT_{39}$ |
| 2006 $RW_{39}$ | 16.3 | 0.15 | 20060922 | 339.94323 | 239.36147 | 159.48390 | 5.00692 | 0.2337730 | 3.1813710 | 20 | 1 | 39 days | 0.51 | | MPC | 2006 $RW_{39}$ |
| 2006 $RY_{39}$ | 17.4 | 0.15 | 20060922 | 6.01068 | 187.01839 | 165.98243 | 14.50328 | 0.2716479 | 2.5968259 | 31 | 1 | 41 days | 0.60 | | MPC | 2006 $RY_{39}$ |
| 2006 $RG_{40}$ | 17.3 | 0.15 | 20060922 | 17.23319 | 304.15301 | 20.21896 | 11.98577 | 0.3927355 | 2.7096888 | 60 | 1 | 84 days | 0.40 | M-v 4 | MPC | 2006 $RG_{40}$ |
| 2006 $RJ_{40}$ | 16.5 | 0.15 | 20060922 | 5.28281 | 330.50638 | 23.21663 | 7.00771 | 0.1621464 | 2.6742810 | 40 | 1 | 40 days | 0.46 | | MPC | 2006 $RJ_{40}$ |
| 2006 $RP_{40}$ | 16.0 | 0.15 | 20060902 | 27.08390 | 28.68160 | 273.83398 | 9.16599 | 0.0617858 | 3.1564462 | 12 | 1 | 32 days | 0.15 | | MPC | 2006 $RP_{40}$ |
| 2006 $RS_{40}$ | 16.7 | 0.15 | 20060902 | 310.35534 | 150.69588 | 242.37680 | 9.58438 | 0.0912330 | 3.1582612 | 9 | 1 | 6 days | 0.20 | | MPC | 2006 $RS_{40}$ |
| 2006 $RW_{40}$ | 18.0 | 0.15 | 20060902 | 76.78519 | 296.19346 | 302.52624 | 5.73706 | 0.1774609 | 2.2324363 | 9 | 1 | 5 days | 0.59 | | MPC | 2006 $RW_{40}$ |
| 2006 $RX_{40}$ | 15.3 | 0.15 | 20060902 | 184.29630 | 274.34441 | 239.08769 | 10.10027 | 0.0346267 | 3.0834780 | 9 | 1 | 6 days | 0.07 | | MPC | 2006 $RX_{40}$ |
| 2006 $RZ_{40}$ | 16.3 | 0.15 | 20060902 | 20.40071 | 39.84356 | 267.77173 | 9.20435 | 0.2015502 | 3.1626550 | 16 | 1 | 12 days | 0.26 | | MPC | 2006 $RZ_{40}$ |
| 2006 $RA_{41}$ | 16.1 | 0.15 | 20060902 | 264.26679 | 173.66697 | 265.49170 | 9.87057 | 0.0436487 | 3.0175205 | 9 | 1 | 6 days | 0.12 | | MPC | 2006 $RA_{41}$ |
| 2006 $RK_{41}$ | 18.0 | 0.15 | 20060922 | 348.71434 | 190.57862 | 185.87480 | 0.97280 | 0.1938993 | 2.4377679 | 28 | 1 | 85 days | 0.51 | M-v 4 | MPC | 2006 $RK_{41}$ |
| 2006 $RL_{41}$ | 15.5 | 0.15 | 20060922 | 1.97582 | 253.69200 | 100.45322 | 4.21872 | 0.2835167 | 3.9494189 | 37 | 1 | 99 days | 0.55 | M-v 3 | MPC | 2006 $RL_{41}$ |
| 2006 $RM_{41}$ | 17.4 | 0.15 | 20060922 | 335.76536 | 356.25497 | 37.40923 | 5.99521 | 0.1976565 | 2.4769784 | 30 | 1 | 64 days | 0.44 | M-v 5 | MPC | 2006 $RM_{41}$ |
| 2006 $RP_{41}$ | 16.7 | 0.15 | 20060922 | 30.97316 | 141.39773 | 189.86726 | 14.37294 | 0.1141220 | 3.0520892 | 37 | 1 | 38 days | 0.21 | | MPC | 2006 $RP_{41}$ |
| 2006 $RQ_{41}$ | 17.0 | 0.15 | 20060922 | 346.49265 | 198.17849 | 187.99333 | 11.40368 | 0.0881572 | 3.1199839 | 36 | 1 | 38 days | 0.36 | | MPC | 2006 $RQ_{41}$ |
| 2006 $RS_{41}$ | 16.9 | 0.15 | 20060922 | 319.57989 | 246.82232 | 185.91038 | 8.74458 | 0.2438261 | 3.0511117 | 22 | 1 | 38 days | 0.27 | | MPC | 2006 $RS_{41}$ |
| 2006 $RT_{41}$ | 17.7 | 0.15 | 20060902 | 349.04954 | 11.90292 | 5.40019 | 4.09110 | 0.0803872 | 2.7602149 | 12 | 1 | 11 days | 0.48 | | MPC | 2006 $RT_{41}$ |
| 2006 $RU_{41}$ | 16.3 | 0.15 | 20060922 | 327.01767 | 225.13466 | 187.56673 | 22.68514 | 0.1348285 | 3.0857261 | 16 | 1 | 32 days | 0.34 | | MPC | 2006 $RU_{41}$ |
| 2006 $RV_{41}$ | 17.4 | 0.15 | 20060922 | 24.04660 | 316.45663 | 8.71078 | 4.97350 | 0.2922338 | 3.1989749 | 17 | 1 | 47 days | 0.21 | | MPC | 2006 $RV_{41}$ |
| 2006 $RW_{41}$ | 18.2 | 0.15 | 20060922 | 346.33563 | 210.26994 | 177.64849 | 2.46629 | 0.1985004 | 2.3722747 | 37 | 1 | 37 days | 0.22 | | MPC | 2006 $RW_{41}$ |
| 2006 $RY_{41}$ | 17.7 | 0.15 | 20060922 | 346.96853 | 191.68745 | 195.42168 | 0.67221 | 0.1890898 | 2.4405310 | 49 | 1 | 69 days | 0.43 | M-v 4 | MPC | 2006 $RY_{41}$ |
| 2006 $RZ_{41}$ | 16.3 | 0.15 | 20060922 | 39.08429 | 139.84414 | 185.17064 | 7.02883 | 0.0813736 | 3.1706301 | 32 | 1 | 37 days | 0.29 | | MPC | 2006 $RZ_{41}$ |
| 2006 $RB_{42}$ | 17.0 | 0.15 | 20060922 | 12.89023 | 164.83963 | 191.86770 | 5.91035 | 0.0176508 | 2.7379864 | 17 | 1 | 32 days | 0.23 | | MPC | 2006 $RB_{42}$ |
| 2006 $RC_{42}$ | 16.7 | 0.15 | 20060922 | 28.42751 | 147.82967 | 187.53855 | 16.40379 | 0.1058185 | 3.0397169 | 13 | 1 | 35 days | 0.14 | | MPC | 2006 $RC_{42}$ |
| 2006 $RE_{42}$ | 18.0 | 0.15 | 20060922 | 310.74841 | 309.53048 | 127.70149 | 0.57130 | 0.1877087 | 2.6038342 | 32 | 1 | 37 days | 0.24 | | MPC | 2006 $RE_{42}$ |
| 2006 $RF_{42}$ | 18.3 | 0.15 | 20060922 | 356.98202 | 188.16654 | 184.11414 | 5.51856 | 0.2507582 | 2.3685037 | 31 | 1 | 71 days | 0.41 | M-v 4 | MPC | 2006 $RF_{42}$ |
| 2006 $RJ_{42}$ | 16.2 | 0.15 | 20060902 | 128.76432 | 220.15097 | 16.47985 | 5.09892 | 0.0346059 | 3.2073332 | 10 | 1 | 11 days | 0.24 | | MPC | 2006 $RJ_{42}$ |
| 2006 $RK_{42}$ | 17.5 | 0.15 | 20060922 | 260.53249 | 288.81697 | 189.02930 | 7.32144 | 0.0771265 | 2.3850785 | 17 | 1 | 37 days | 0.20 | | MPC | 2006 $RK_{42}$ |
| 2006 $RL_{42}$ | 18.1 | 0.15 | 20060922 | 355.00920 | 201.16351 | 173.97423 | 2.37599 | 0.1309398 | 2.4356213 | 22 | 1 | 37 days | 0.20 | | MPC | 2006 $RL_{42}$ |
| 2006 $RO_{42}$ | 16.6 | 0.15 | 20060922 | 351.72266 | 7.86404 | 12.95897 | 8.28557 | 0.0766170 | 3.1095367 | 21 | 1 | 62 days | 0.26 | M-v 4 | MPC | 2006 $RO_{42}$ |
| 2006 $RR_{42}$ | 15.7 | 0.15 | 20060922 | 161.37571 | 24.42180 | 185.76381 | 9.40120 | 0.0083282 | 3.1435050 | 21 | 1 | 63 days | 0.42 | M-v 4 | MPC | 2006 $RR_{42}$ |
| 2006 $RV_{42}$ | 16.2 | 0.15 | 20060922 | 319.99100 | 44.88329 | 13.73134 | 12.13773 | 0.0855844 | 3.1668765 | 21 | 1 | 47 days | 0.55 | | MPC | 2006 $RV_{42}$ |
| 2006 $RW_{42}$ | 17.1 | 0.15 | 20060922 | 2.59436 | 181.10714 | 187.47855 | 9.80625 | 0.0812318 | 3.0761540 | 20 | 1 | 38 days | 0.20 | | MPC | 2006 $RW_{42}$ |
| 2006 $RX_{42}$ | 16.2 | 0.15 | 20060922 | 150.04626 | 32.50984 | 183.22373 | 8.81131 | 0.1080804 | 2.5784608 | 20 | 1 | 64 days | 0.22 | M-v 4 | MPC | 2006 $RX_{42}$ |
| 2006 $RZ_{42}$ | 16.7 | 0.15 | 20060922 | 3.76536 | 342.82978 | 23.51652 | 3.20355 | 0.1286228 | 3.1386967 | 21 | 1 | 43 days | 0.30 | | MPC | 2006 $RZ_{42}$ |
| 2006 $RA_{43}$ | 18.7 | 0.15 | 20060922 | 21.59507 | 327.48972 | 8.23943 | 7.46602 | 0.1957120 | 2.2606977 | 12 | 1 | 16 days | 0.12 | | MPC | 2006 $RA_{43}$ |
| 2006 $RC_{43}$ | 17.6 | 0.15 | 20060922 | 37.84705 | 133.13912 | 187.14003 | 8.95689 | 0.1478862 | 2.5551177 | 17 | 1 | 38 days | 0.22 | | MPC | 2006 $RC_{43}$ |
| 2006 $RD_{43}$ | 16.0 | 0.15 | 20060902 | 239.70463 | 114.55781 | 27.38629 | 2.32816 | 0.1414323 | 2.8637585 | 10 | 1 | 12 days | 0.50 | | MPC | 2006 $RD_{43}$ |
| 2006 $RE_{43}$ | 19.5 | 0.15 | 20060922 | 9.39148 | 324.19320 | 24.72056 | 1.64158 | 0.2972348 | 2.3333810 | 17 | 1 | 43 days | 0.31 | | MPC | 2006 $RE_{43}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RG_{43}$ | 15.9 | 0.15 | 20060922 | 297.15420 | 275.98565 | 181.74429 | 5.66094 | 0.2012935 | 3.1698425 | 17 | 1 | 63 days | 0.28 | M-v | 4 | MPC | 2006 $RG_{43}$ |
| 2006 $RL_{43}$ | 17.9 | 0.15 | 20060922 | 329.30574 | 25.41948 | 19.65800 | 6.31497 | 0.0527176 | 2.6681764 | 17 | 1 | 32 days | 0.27 | | | MPC | 2006 $RL_{43}$ |
| 2006 $RM_{43}$ | 17.7 | 0.15 | 20060922 | 349.76945 | 10.76006 | 16.64381 | 6.84038 | 0.2387219 | 2.9323384 | 28 | 1 | 62 days | 0.48 | M-v | 4 | MPC | 2006 $RM_{43}$ |
| 2006 $RN_{43}$ | 18.3 | 0.15 | 20060922 | 286.64649 | 293.02940 | 168.47084 | 2.43866 | 0.1523537 | 2.3921575 | 17 | 1 | 38 days | 0.23 | | | MPC | 2006 $RN_{43}$ |
| 2006 $RQ_{43}$ | 16.6 | 0.15 | 20060922 | 32.71562 | 150.26014 | 183.04952 | 10.84694 | 0.0940163 | 3.0757660 | 16 | 1 | 38 days | 0.27 | | | MPC | 2006 $RQ_{43}$ |
| 2006 $RR_{43}$ | 16.4 | 0.15 | 20060922 | 15.43534 | 164.46766 | 188.14047 | 19.52586 | 0.1205630 | 3.0404509 | 20 | 1 | 38 days | 0.56 | | | MPC | 2006 $RR_{43}$ |
| 2006 $RV_{43}$ | 17.4 | 0.15 | 20060922 | 262.10608 | 291.96522 | 181.16535 | 6.15551 | 0.0270715 | 2.6497841 | 21 | 1 | 63 days | 0.29 | M-v | 4 | MPC | 2006 $RV_{43}$ |
| 2006 $RX_{43}$ | 16.6 | 0.15 | 20060922 | 9.55344 | 337.91315 | 21.62994 | 5.01310 | 0.0947213 | 2.6215646 | 43 | 1 | 49 days | 0.35 | | | MPC | 2006 $RX_{43}$ |
| 2006 $RY_{43}$ | 17.3 | 0.15 | 20060922 | 31.54117 | 312.01235 | 17.43601 | 8.90371 | 0.1411635 | 2.6569621 | 28 | 1 | 62 days | 0.34 | M-v | 4 | MPC | 2006 $RY_{43}$ |
| 2006 $RZ_{43}$ | 17.1 | 0.15 | 20060922 | 11.32206 | 343.05220 | 14.46986 | 13.70574 | 0.0892798 | 2.6390322 | 24 | 1 | 35 days | 0.31 | | | MPC | 2006 $RZ_{43}$ |
| 2006 $RD_{44}$ | 18.1 | 0.15 | 20060922 | 341.28158 | 222.09585 | 177.04657 | 4.22070 | 0.2247855 | 2.3591330 | 33 | 1 | 71 days | 0.36 | M-v | 4 | MPC | 2006 $RD_{44}$ |
| 2006 $RE_{44}$ | 15.7 | 0.15 | 20060922 | 315.32850 | 242.99425 | 182.66507 | 9.74353 | 0.0822106 | 3.3923476 | 17 | 1 | 38 days | 0.57 | | | MPC | 2006 $RE_{44}$ |
| 2006 $RH_{44}$ | 17.0 | 0.15 | 20060922 | 22.46225 | 166.82436 | 168.60869 | 3.09492 | 0.2188465 | 2.6394628 | 33 | 1 | 38 days | 0.41 | | | MPC | 2006 $RH_{44}$ |
| 2006 $RJ_{44}$ | 17.2 | 0.15 | 20060922 | 310.84668 | 282.28714 | 153.41340 | 1.38127 | 0.1597543 | 2.3755912 | 20 | 1 | 61 days | 0.38 | M-v | 4 | MPC | 2006 $RJ_{44}$ |
| 2006 $RK_{44}$ | 15.9 | 0.15 | 20060922 | 10.31967 | 311.12460 | 43.96331 | 2.47178 | 0.2265989 | 3.1230639 | 50 | 1 | 61 days | 0.46 | M-v | 4 | MPC | 2006 $RK_{44}$ |
| 2006 $RL_{44}$ | 17.1 | 0.15 | 20060922 | 50.08707 | 123.82336 | 186.96070 | 16.29047 | 0.1218691 | 2.8172642 | 18 | 1 | 18 days | 0.18 | | | MPC | 2006 $RL_{44}$ |
| 2006 $RQ_{44}$ | 17.9 | 0.15 | 20060922 | 6.91907 | 334.95116 | 28.30380 | 4.63750 | 0.1165054 | 2.8025457 | 13 | 1 | 43 days | 0.33 | | | MPC | 2006 $RQ_{44}$ |
| 2006 $RR_{44}$ | 16.8 | 0.15 | 20060922 | 17.52195 | 298.36210 | 53.37911 | 2.37665 | 0.0820236 | 2.8039152 | 21 | 1 | 61 days | 0.41 | M-v | 4 | MPC | 2006 $RR_{44}$ |
| 2006 $RS_{44}$ | 17.1 | 0.15 | 20060922 | 348.45622 | 215.09183 | 172.94120 | 2.89583 | 0.1584586 | 2.7852613 | 23 | 1 | 38 days | 0.32 | | | MPC | 2006 $RS_{44}$ |
| 2006 $RV_{44}$ | 16.4 | 0.15 | 20060922 | 348.57555 | 201.65664 | 185.13584 | 10.16502 | 0.0590073 | 3.0709200 | 13 | 1 | 38 days | 0.18 | | | MPC | 2006 $RV_{44}$ |
| 2006 $RW_{44}$ | 17.6 | 0.15 | 20060902 | 310.99523 | 56.77640 | 17.73378 | 11.47819 | 0.1913280 | 2.6758578 | 13 | 1 | 12 days | 0.30 | | | MPC | 2006 $RW_{44}$ |
| 2006 $RX_{44}$ | 15.8 | 0.15 | 20060922 | 271.86588 | 298.32381 | 175.62084 | 5.30207 | 0.0980257 | 3.1129779 | 24 | 1 | 118 days | 0.35 | M-v | 4 | MPC | 2006 $RX_{44}$ |
| 2006 $RZ_{44}$ | 18.3 | 0.15 | 20060922 | 13.78066 | 324.06357 | 25.52084 | 2.85533 | 0.1941255 | 2.3725299 | 39 | 1 | 74 days | 0.24 | M-v | 3 | MPC | 2006 $RZ_{44}$ |
| 2006 $RA_{45}$ | 16.4 | 0.15 | 20060922 | 42.26881 | 138.53091 | 188.45335 | 13.02190 | 0.0662277 | 3.1410387 | 14 | 1 | 38 days | 0.37 | | | MPC | 2006 $RA_{45}$ |
| 2006 $RE_{45}$ | 18.3 | 0.15 | 20060902 | 44.22807 | 267.31467 | 34.82765 | 3.48673 | 0.1846488 | 2.2922549 | 9 | 1 | 11 days | 0.19 | | | MPC | 2006 $RE_{45}$ |
| 2006 $RJ_{45}$ | 18.8 | 0.15 | 20060922 | 11.63246 | 172.92032 | 175.95287 | 4.93565 | 0.2496912 | 2.1981375 | 24 | 1 | 38 days | 0.55 | | | MPC | 2006 $RJ_{45}$ |
| 2006 $RM_{45}$ | 17.3 | 0.15 | 20060922 | 37.75607 | 157.40447 | 172.78763 | 6.63401 | 0.0442076 | 2.7070320 | 12 | 1 | 18 days | 0.16 | | | MPC | 2006 $RM_{45}$ |
| 2006 $RN_{45}$ | 17.5 | 0.15 | 20060922 | 354.86185 | 213.40891 | 164.91055 | 4.93210 | 0.3032000 | 2.6276868 | 51 | 1 | 92 days | 0.38 | M-v | 3 | MPC | 2006 $RN_{45}$ |
| 2006 $RO_{45}$ | 16.2 | 0.15 | 20060922 | 31.52565 | 217.00927 | 116.91055 | 2.61870 | 0.1067984 | 3.4829574 | 20 | 1 | 63 days | 0.23 | M-v | 4 | MPC | 2006 $RO_{45}$ |
| 2006 $RR_{45}$ | 18.1 | 0.15 | 20060922 | 53.31329 | 277.62102 | 24.28093 | 6.75098 | 0.1417677 | 2.3673051 | 16 | 1 | 37 days | 0.18 | | | MPC | 2006 $RR_{45}$ |
| 2006 $RT_{45}$ | 17.0 | 0.15 | 20060922 | 327.28877 | 359.15979 | 50.94591 | 2.92802 | 0.0812389 | 2.8990961 | 13 | 1 | 38 days | 0.18 | | | MPC | 2006 $RT_{45}$ |
| 2006 $RU_{45}$ | 19.3 | 0.15 | 20060922 | 9.63013 | 187.79574 | 164.31325 | 3.50199 | 0.2302911 | 2.2375277 | 12 | 1 | 18 days | 0.14 | | | MPC | 2006 $RU_{45}$ |
| 2006 $RV_{45}$ | 17.0 | 0.15 | 20060922 | 7.21869 | 191.13857 | 169.80970 | 5.89638 | 0.1471164 | 2.7183993 | 25 | 1 | 37 days | 0.48 | | | MPC | 2006 $RV_{45}$ |
| 2006 $RX_{45}$ | 17.2 | 0.15 | 20060922 | 49.57445 | 246.51132 | 71.97943 | 2.37477 | 0.0371611 | 2.6241486 | 23 | 1 | 61 days | 0.29 | M-v | 4 | MPC | 2006 $RX_{45}$ |
| 2006 $RZ_{45}$ | 17.8 | 0.15 | 20060922 | 11.05992 | 317.86177 | 31.68447 | 3.04582 | 0.2417947 | 2.3122107 | 35 | 1 | 74 days | 0.35 | M-v | 4 | MPC | 2006 $RZ_{45}$ |
| 2006 $RB_{46}$ | 17.6 | 0.15 | 20060922 | 233.15010 | 338.64404 | 166.94349 | 5.32206 | 0.0898354 | 2.2662351 | 15 | 1 | 18 days | 0.19 | | | MPC | 2006 $RB_{46}$ |
| 2006 $RC_{46}$ | 17.1 | 0.15 | 20060922 | 349.13210 | 11.89464 | 17.66859 | 11.64222 | 0.2520871 | 3.0902005 | 25 | 1 | 62 days | 0.36 | M-v | 4 | MPC | 2006 $RC_{46}$ |
| 2006 $RH_{46}$ | 16.6 | 0.15 | 20060922 | 48.74149 | 296.22796 | 21.49804 | 10.82155 | 0.0681958 | 3.0124051 | 20 | 1 | 74 days | 0.37 | M-v | 4 | MPC | 2006 $RH_{46}$ |
| 2006 $RK_{46}$ | 16.9 | 0.15 | 20060922 | 327.51448 | 27.93839 | 17.60917 | 10.06624 | 0.0343778 | 3.0656036 | 26 | 1 | 43 days | 0.31 | | | MPC | 2006 $RK_{46}$ |
| 2006 $RN_{46}$ | 16.6 | 0.15 | 20060922 | 58.68172 | 271.88190 | 33.80460 | 3.61774 | 0.0576635 | 2.7559615 | 14 | 1 | 35 days | 0.16 | | | MPC | 2006 $RN_{46}$ |
| 2006 $RT_{46}$ | 18.6 | 0.15 | 20060922 | 318.82518 | 35.39581 | 24.12806 | 4.68049 | 0.1186682 | 2.2924142 | 13 | 1 | 32 days | 0.86 | | | MPC | 2006 $RT_{46}$ |
| 2006 $RU_{46}$ | 16.9 | 0.15 | 20060922 | 13.91632 | 332.55527 | 19.30313 | 6.29108 | 0.1266685 | 2.8105899 | 20 | 1 | 32 days | 0.18 | | | MPC | 2006 $RU_{46}$ |
| 2006 $RV_{46}$ | 18.3 | 0.15 | 20060922 | 355.15370 | 342.80308 | 33.03923 | 3.64413 | 0.1914931 | 2.6250109 | 14 | 1 | 35 days | 0.23 | | | MPC | 2006 $RV_{46}$ |
| 2006 $RW_{46}$ | 18.1 | 0.15 | 20060902 | 358.79571 | 352.37346 | 12.07282 | 18.94775 | 0.1201635 | 2.6081031 | 10 | 1 | 12 days | 0.15 | | | MPC | 2006 $RW_{46}$ |
| 2006 $RX_{46}$ | 16.8 | 0.15 | 20060922 | 253.05108 | 355.24591 | 131.25800 | 2.08199 | 0.0868772 | 2.5825435 | 23 | 1 | 63 days | 0.38 | M-v | 4 | MPC | 2006 $RX_{46}$ |
| 2006 $RZ_{46}$ | 16.2 | 0.15 | 20060922 | 17.92505 | 170.41051 | 179.22855 | 10.53335 | 0.0905489 | 3.1316103 | 19 | 1 | 87 days | 0.40 | M-v | 4 | MPC | 2006 $RZ_{46}$ |
| 2006 $RA_{47}$ | 18.0 | 0.15 | 20060922 | 26.09492 | 164.90137 | 163.71028 | 3.43022 | 0.2144824 | 2.5772303 | 12 | 1 | 18 days | 0.17 | | | MPC | 2006 $RA_{47}$ |
| 2006 $RB_{47}$ | 17.7 | 0.15 | 20060922 | 23.65465 | 151.28772 | 175.97971 | 5.62913 | 0.2677683 | 2.5479723 | 26 | 1 | 38 days | 0.66 | | | MPC | 2006 $RB_{47}$ |
| 2006 $RC_{47}$ | 17.7 | 0.15 | 20060922 | 32.75801 | 190.14897 | 129.96569 | 1.86048 | 0.1968967 | 2.3455943 | 19 | 1 | 32 days | 0.43 | | | MPC | 2006 $RC_{47}$ |
| 2006 $RE_{47}$ | 16.1 | 0.15 | 20060902 | 113.33812 | 218.12405 | 32.26944 | 4.03845 | 0.0489572 | 3.2059625 | 9 | 1 | 11 days | 0.15 | | | MPC | 2006 $RE_{47}$ |
| 2006 $RG_{47}$ | 17.2 | 0.15 | 20060922 | 2.82446 | 331.73495 | 36.03222 | 3.34784 | 0.0966656 | 3.1586944 | 13 | 1 | 37 days | 0.21 | | | MPC | 2006 $RG_{47}$ |
| 2006 $RH_{47}$ | 19.3 | 0.15 | 20060922 | 349.15631 | 229.16829 | 155.14595 | 1.87322 | 0.2011446 | 2.2783262 | 16 | 1 | 38 days | 0.23 | | | MPC | 2006 $RH_{47}$ |
| 2006 $RJ_{47}$ | 18.7 | 0.15 | 20060922 | 3.34203 | 346.18688 | 16.15368 | 8.41909 | 0.2629254 | 2.7039880 | 16 | 1 | 47 days | 0.17 | | | MPC | 2006 $RJ_{47}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RK_{47}$ | 17.9 | 0.15 | 20060922 | 336.95824 | 30.55421 | 14.52551 | 9.19455 | 0.2241972 | 2.5638231 | 20 | 1 | 47 days | 0.18 | | | MPC | 2006 $RK_{47}$ |
| 2006 $RQ_{47}$ | 17.6 | 0.15 | 20060922 | 5.75877 | 187.38785 | 170.43208 | 4.12409 | 0.2231265 | 2.5719230 | 17 | 1 | 81 days | 0.48 | M-v | 4 | MPC | 2006 $RQ_{47}$ |
| 2006 $RT_{47}$ | 17.6 | 0.15 | 20060922 | 42.98534 | 293.92751 | 15.77539 | 6.24387 | 0.1627552 | 2.2805022 | 59 | 1 | 44 days | 0.39 | | | MPC | 2006 $RT_{47}$ |
| 2006 $RF_{48}$ | 16.0 | 0.15 | 20060922 | 330.60736 | 223.37243 | 195.26446 | 17.17510 | 0.1998062 | 3.1049652 | 31 | 1 | 38 days | 0.57 | | | MPC | 2006 $RF_{48}$ |
| 2006 $RH_{48}$ | 17.7 | 0.15 | 20060922 | 19.84604 | 335.64163 | 357.46411 | 7.12435 | 0.2660803 | 2.3282918 | 31 | 1 | 45 days | 0.54 | | | MPC | 2006 $RH_{48}$ |
| 2006 $RL_{48}$ | 17.5 | 0.15 | 20060922 | 3.17082 | 322.40080 | 41.33878 | 5.71933 | 0.2337885 | 2.2884795 | 52 | 1 | 69 days | 0.50 | M-v | 4 | MPC | 2006 $RL_{48}$ |
| 2006 $RM_{48}$ | 18.1 | 0.15 | 20060922 | 339.93734 | 202.77440 | 199.78087 | 1.56210 | 0.2322282 | 2.3426180 | 38 | 1 | 69 days | 0.26 | M-v | 4 | MPC | 2006 $RM_{48}$ |
| 2006 $RP_{48}$ | 17.9 | 0.15 | 20060922 | 326.88534 | 229.28895 | 193.32531 | 5.23365 | 0.2216641 | 2.5672273 | 24 | 1 | 63 days | 0.19 | M-v | 4 | MPC | 2006 $RP_{48}$ |
| 2006 $RQ_{48}$ | 18.7 | 0.15 | 20060902 | 3.08195 | 90.49873 | 267.75595 | 0.38457 | 0.1906879 | 2.3981654 | 13 | 1 | 12 days | 0.21 | | | MPC | 2006 $RQ_{48}$ |
| 2006 $RR_{48}$ | 18.3 | 0.15 | 20060922 | 25.57708 | 136.51046 | 195.45722 | 3.29835 | 0.1940125 | 2.1472265 | 46 | 1 | 61 days | 0.47 | M-v | 4 | MPC | 2006 $RR_{48}$ |
| 2006 $RU_{48}$ | 17.4 | 0.15 | 20061012 | 6.63181 | 168.05174 | 202.51489 | 3.36551 | 0.1069726 | 2.7042361 | 22 | 1 | 58 days | 0.20 | | | MPC | 2006 $RU_{48}$ |
| 2006 $RW_{48}$ | 17.0 | 0.15 | 20060922 | 318.18917 | 72.37597 | 8.36487 | 10.30836 | 0.2571019 | 2.9770843 | 23 | 1 | 65 days | 0.38 | M-v | 4 | MPC | 2006 $RW_{48}$ |
| 2006 $RY_{48}$ | 16.9 | 0.15 | 20060922 | 329.89157 | 196.39261 | 212.51245 | 1.86501 | 0.0731719 | 2.7404386 | 16 | 1 | 19 days | 0.31 | | | MPC | 2006 $RY_{48}$ |
| 2006 $RZ_{48}$ | 19.4 | 0.15 | 20060922 | 357.89193 | 20.22374 | 353.41409 | 2.46844 | 0.2317220 | 2.2981919 | 24 | 1 | 43 days | 0.17 | | | MPC | 2006 $RZ_{48}$ |
| 2006 $RA_{49}$ | 15.8 | 0.15 | 20060922 | 193.60941 | 174.61944 | 10.93006 | 5.80291 | 0.1081176 | 3.0837842 | 24 | 1 | 117 days | 0.28 | M-v | 4 | MPC | 2006 $RA_{49}$ |
| 2006 $RB_{49}$ | 19.0 | 0.15 | 20060922 | 346.61450 | 37.40616 | 353.73878 | 1.16213 | 0.1943117 | 2.3435322 | 12 | 1 | 19 days | 0.23 | | | MPC | 2006 $RB_{49}$ |
| 2006 $RC_{49}$ | 17.3 | 0.15 | 20060922 | 359.58889 | 17.60937 | 355.51376 | 2.59724 | 0.1803778 | 2.5992549 | 47 | 1 | 65 days | 0.40 | M-v | 4 | MPC | 2006 $RC_{49}$ |
| 2006 $RF_{49}$ | 15.6 | 0.15 | 20060922 | 214.67350 | 153.72683 | 15.47017 | 5.18994 | 0.1177654 | 3.2112643 | 20 | 1 | 74 days | 0.28 | M-v | 4 | MPC | 2006 $RF_{49}$ |
| 2006 $RK_{49}$ | 17.8 | 0.15 | 20060922 | 306.52685 | 247.82900 | 193.77522 | 14.22334 | 0.1405759 | 2.5645228 | 21 | 1 | 38 days | 0.26 | | | MPC | 2006 $RK_{49}$ |
| 2006 $RM_{49}$ | 18.1 | 0.15 | 20060922 | 359.39355 | 18.11782 | 353.75789 | 1.49511 | 0.2159733 | 2.3300314 | 47 | 1 | 129 days | 0.40 | M-v | 3 | MPC | 2006 $RM_{49}$ |
| 2006 $RQ_{49}$ | 16.2 | 0.15 | 20060922 | 279.63228 | 91.61606 | 14.74430 | 16.33872 | 0.0838772 | 3.0737787 | 15 | 1 | 27 days | 0.17 | | | MPC | 2006 $RQ_{49}$ |
| 2006 $RR_{49}$ | 17.7 | 0.15 | 20060922 | 337.68268 | 227.90149 | 186.05226 | 1.18655 | 0.2987532 | 2.7229029 | 38 | 1 | 60 days | 0.28 | M-v | 4 | MPC | 2006 $RR_{49}$ |
| 2006 $RS_{49}$ | 17.2 | 0.15 | 20060922 | 354.46552 | 21.68136 | 359.42396 | 2.35855 | 0.1568850 | 2.5780774 | 64 | 1 | 62 days | 0.48 | M-v | 4 | MPC | 2006 $RS_{49}$ |
| 2006 $RT_{49}$ | 18.7 | 0.15 | 20060922 | 49.73377 | 87.07500 | 209.93912 | 1.12385 | 0.2411389 | 2.2447450 | 16 | 1 | 32 days | 0.24 | | | MPC | 2006 $RT_{49}$ |
| 2006 $RU_{49}$ | 18.6 | 0.15 | 20060922 | 350.99645 | 198.42404 | 185.56865 | 4.21195 | 0.1424145 | 2.2891215 | 22 | 1 | 63 days | 0.47 | M-v | 4 | MPC | 2006 $RU_{49}$ |
| 2006 $RV_{49}$ | 18.2 | 0.15 | 20060922 | 217.57686 | 328.66590 | 192.98735 | 2.99117 | 0.0804373 | 2.2225405 | 24 | 1 | 45 days | 0.34 | | | MPC | 2006 $RV_{49}$ |
| 2006 $RW_{49}$ | 17.4 | 0.15 | 20060922 | 352.38982 | 188.47316 | 194.88449 | 4.24149 | 0.1164048 | 2.5354767 | 28 | 1 | 63 days | 0.20 | M-v | 4 | MPC | 2006 $RW_{49}$ |
| 2006 $RX_{49}$ | 18.1 | 0.15 | 20061012 | 1.17299 | 168.54300 | 209.77551 | 0.86730 | 0.2037696 | 2.5914345 | 24 | 1 | 58 days | 0.24 | | | MPC | 2006 $RX_{49}$ |
| 2006 $RA_{50}$ | 16.6 | 0.15 | 20060922 | 256.22545 | 111.10839 | 29.40498 | 0.65722 | 0.2026208 | 2.5791638 | 9 | 1 | 15 days | 0.34 | | | MPC | 2006 $RA_{50}$ |
| 2006 $RC_{50}$ | 16.1 | 0.15 | 20060902 | 113.73314 | 230.93485 | 17.52352 | 12.86819 | 0.1235813 | 3.1139484 | 13 | 1 | 11 days | 0.25 | | | MPC | 2006 $RC_{50}$ |
| 2006 $RE_{50}$ | 18.0 | 0.15 | 20060922 | 338.17583 | 116.14267 | 287.43143 | 0.39855 | 0.1616660 | 2.4608711 | 15 | 1 | 48 days | 0.16 | | | MPC | 2006 $RE_{50}$ |
| 2006 $RF_{50}$ | 17.9 | 0.15 | 20060922 | 14.42561 | 342.68103 | 7.13714 | 2.36927 | 0.2312783 | 2.7157782 | 22 | 1 | 47 days | 0.23 | | | MPC | 2006 $RF_{50}$ |
| 2006 $RG_{50}$ | 17.6 | 0.15 | 20060922 | 357.55041 | 184.89341 | 192.06242 | 9.05410 | 0.1708260 | 2.5737933 | 24 | 1 | 38 days | 0.39 | | | MPC | 2006 $RG_{50}$ |
| 2006 $RH_{50}$ | 17.1 | 0.15 | 20061012 | 3.03028 | 194.53508 | 181.44662 | 0.61645 | 0.2001280 | 3.0866499 | 32 | 1 | 58 days | 0.43 | | | MPC | 2006 $RH_{50}$ |
| 2006 $RJ_{50}$ | 17.9 | 0.15 | 20060922 | 27.92580 | 307.70882 | 10.61317 | 20.79612 | 0.3303374 | 2.7706048 | 12 | 1 | 17 days | 0.23 | | | MPC | 2006 $RJ_{50}$ |
| 2006 $RO_{50}$ | 18.5 | 0.15 | 20060922 | 354.59466 | 192.10970 | 190.38581 | 3.42075 | 0.2435887 | 2.7375354 | 23 | 1 | 63 days | 0.35 | M-v | 4 | MPC | 2006 $RO_{50}$ |
| 2006 $RP_{50}$ | 16.6 | 0.15 | 20060922 | 49.91978 | 302.18912 | 17.44894 | 4.45316 | 0.0674817 | 2.7599650 | 19 | 1 | 32 days | 0.39 | | | MPC | 2006 $RP_{50}$ |
| 2006 $RU_{50}$ | 15.9 | 0.15 | 20060922 | 75.71841 | 95.02206 | 197.83873 | 8.90158 | 0.0871809 | 3.4565730 | 33 | 1 | 63 days | 0.32 | M-v | 4 | MPC | 2006 $RU_{50}$ |
| 2006 $RW_{50}$ | 18.8 | 0.15 | 20060922 | 323.35109 | 47.89778 | 19.20431 | 3.05694 | 0.2023422 | 2.4165775 | 23 | 1 | 47 days | 0.28 | | | MPC | 2006 $RW_{50}$ |
| 2006 $RX_{50}$ | 16.5 | 0.15 | 20060922 | 10.50430 | 168.84953 | 196.10655 | 9.53732 | 0.0728750 | 3.0686325 | 23 | 1 | 63 days | 0.30 | M-v | 4 | MPC | 2006 $RX_{50}$ |
| 2006 $RY_{50}$ | 17.0 | 0.15 | 20060922 | 25.85910 | 323.65743 | 14.19342 | 5.20620 | 0.1761972 | 2.6750922 | 29 | 1 | 62 days | 0.45 | M-v | 5 | MPC | 2006 $RY_{50}$ |
| 2006 $RC_{51}$ | 19.5 | 0.15 | 20060922 | 22.76422 | 323.27234 | 9.66489 | 4.43860 | 0.2560837 | 2.2973082 | 12 | 1 | 16 days | 0.15 | | | MPC | 2006 $RC_{51}$ |
| 2006 $RD_{51}$ | 18.2 | 0.15 | 20060922 | 334.65776 | 219.56618 | 187.87442 | 5.58916 | 0.1571913 | 2.2471326 | 35 | 1 | 37 days | 0.47 | | | MPC | 2006 $RD_{51}$ |
| 2006 $RE_{51}$ | 18.7 | 0.15 | 20061012 | 24.87678 | 153.08057 | 184.10503 | 5.10154 | 0.2705983 | 2.3401294 | 18 | 1 | 38 days | 0.40 | | D | MPC | 2006 $RE_{51}$ |
| 2006 $RF_{51}$ | 18.2 | 0.15 | 20060922 | 48.19907 | 132.09517 | 184.92310 | 3.36247 | 0.1128123 | 2.6737635 | 16 | 1 | 45 days | 0.33 | | | MPC | 2006 $RF_{51}$ |
| 2006 $RG_{51}$ | 17.4 | 0.15 | 20060922 | 11.66877 | 346.29185 | 15.33926 | 10.97496 | 0.1137740 | 2.8959509 | 23 | 1 | 64 days | 0.19 | M-v | 4 | MPC | 2006 $RG_{51}$ |
| 2006 $RJ_{51}$ | 18.7 | 0.15 | 20060922 | 19.35966 | 327.15934 | 16.65288 | 6.21041 | 0.2029527 | 2.4692248 | 22 | 1 | 36 days | 0.32 | | | MPC | 2006 $RJ_{51}$ |
| 2006 $RL_{51}$ | 16.1 | 0.15 | 20060922 | 68.39549 | 282.79208 | 17.50318 | 32.68653 | 0.0871824 | 3.2404665 | 12 | 1 | 27 days | 0.18 | | | MPC | 2006 $RL_{51}$ |
| 2006 $RM_{51}$ | 18.8 | 0.15 | 20060922 | 8.30821 | 349.91958 | 10.94465 | 2.75576 | 0.1922729 | 2.4348707 | 29 | 1 | 44 days | 0.35 | | | MPC | 2006 $RM_{51}$ |
| 2006 $RN_{51}$ | 17.1 | 0.15 | 20060922 | 8.32383 | 172.76897 | 191.84328 | 5.84045 | 0.1307882 | 2.7042060 | 40 | 1 | 48 days | 0.39 | | | MPC | 2006 $RN_{51}$ |
| 2006 $RR_{51}$ | 18.4 | 0.15 | 20060922 | 356.78359 | 1.38679 | 15.37538 | 3.90345 | 0.1453249 | 2.1667641 | 37 | 1 | 74 days | 0.30 | M-v | 4 | MPC | 2006 $RR_{51}$ |
| 2006 $RT_{51}$ | 16.5 | 0.15 | 20060922 | 346.66208 | 253.77022 | 138.58154 | 0.89730 | 0.0828590 | 2.8098320 | 25 | 1 | 98 days | 0.33 | M-v | 4 | MPC | 2006 $RT_{51}$ |
| 2006 $RX_{51}$ | 17.5 | 0.15 | 20060922 | 322.04847 | 233.21066 | 188.78502 | 2.06105 | 0.0969734 | 2.6947740 | 20 | 1 | 32 days | 0.31 | | | MPC | 2006 $RX_{51}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RY_{51}$ | 18.4 | 0.15 | 20060922 | 52.75797 | 132.69048 | 170.68623 | 0.81407 | 0.1807798 | 2.4005989 | 13 | 1 | 32 days | 0.29 | | MPC | 2006 $RY_{51}$ |
| 2006 $RZ_{51}$ | 16.3 | 0.15 | 20060922 | 266.75426 | 286.22136 | 194.27421 | 9.69335 | 0.0734549 | 3.0935542 | 20 | 1 | 65 days | 0.25 | M-v 4 | MPC | 2006 $RZ_{51}$ |
| 2006 $RC_{52}$ | 15.8 | 0.15 | 20060922 | 228.21824 | 142.40515 | 21.50267 | 10.79507 | 0.1630564 | 3.1299525 | 31 | 1 | 74 days | 0.26 | M-v 4 | MPC | 2006 $RC_{52}$ |
| 2006 $RD_{52}$ | 17.1 | 0.15 | 20060922 | 208.52227 | 146.49543 | 25.75668 | 2.39759 | 0.0932577 | 2.2200852 | 26 | 1 | 69 days | 0.43 | M-v 4 | MPC | 2006 $RD_{52}$ |
| 2006 $RE_{52}$ | 16.3 | 0.15 | 20060922 | 333.89301 | 28.59309 | 18.71845 | 13.13473 | 0.0777834 | 2.7714778 | 33 | 1 | 64 days | 0.36 | M-v 4 | MPC | 2006 $RE_{52}$ |
| 2006 $RH_{52}$ | 18.9 | 0.15 | 20060922 | 1.79913 | 183.30563 | 187.00725 | 11.32767 | 0.2900642 | 2.7177547 | 10 | 1 | 18 days | 0.10 | | MPC | 2006 $RH_{52}$ |
| 2006 $RJ_{52}$ | 16.5 | 0.15 | 20060922 | 11.29230 | 340.87329 | 20.97104 | 5.00054 | 0.1574697 | 3.0825101 | 33 | 1 | 60 days | 0.28 | M-v 4 | MPC | 2006 $RJ_{52}$ |
| 2006 $RL_{52}$ | 19.1 | 0.15 | 20061012 | 357.04891 | 9.70936 | 16.79028 | 2.41683 | 0.2059462 | 2.3902345 | 25 | 1 | 58 days | 0.50 | | MPC | 2006 $RL_{52}$ |
| 2006 $RM_{52}$ | 18.5 | 0.15 | 20060922 | 328.76189 | 28.79774 | 20.28410 | 3.86781 | 0.0466199 | 2.2123167 | 30 | 1 | 44 days | 0.35 | | MPC | 2006 $RM_{52}$ |
| 2006 $RP_{52}$ | 16.7 | 0.15 | 20060902 | 284.81829 | 82.07482 | 28.12773 | 1.85056 | 0.1780296 | 2.9256185 | 13 | 1 | 12 days | 0.65 | | MPC | 2006 $RP_{52}$ |
| 2006 $RR_{52}$ | 16.3 | 0.15 | 20060922 | 50.91546 | 257.70865 | 53.31707 | 1.40583 | 0.1675330 | 3.2504788 | 24 | 1 | 69 days | 0.33 | M-v 4 | MPC | 2006 $RR_{52}$ |
| 2006 $RS_{52}$ | 16.4 | 0.15 | 20060922 | 36.95024 | 315.58928 | 20.90737 | 15.45265 | 0.0681078 | 3.0771587 | 20 | 1 | 64 days | 0.24 | M-v 4 | MPC | 2006 $RS_{52}$ |
| 2006 $RV_{52}$ | 16.8 | 0.15 | 20060922 | 324.77501 | 224.27507 | 192.32545 | 5.82319 | 0.0462899 | 2.7925961 | 22 | 1 | 66 days | 0.25 | M-v 4 | MPC | 2006 $RV_{52}$ |
| 2006 $RW_{52}$ | 17.8 | 0.15 | 20060922 | 0.67032 | 350.16308 | 24.68570 | 5.47252 | 0.1718446 | 2.7103323 | 20 | 1 | 44 days | 0.25 | | MPC | 2006 $RW_{52}$ |
| 2006 $RY_{52}$ | 15.8 | 0.15 | 20060922 | 313.10247 | 255.45200 | 187.03447 | 5.92176 | 0.1739203 | 3.1675055 | 29 | 1 | 66 days | 0.48 | M-v 4 | MPC | 2006 $RY_{52}$ |
| 2006 $RB_{53}$ | 16.9 | 0.15 | 20060922 | 359.05079 | 355.84541 | 20.88526 | 6.63086 | 0.1056926 | 2.4375273 | 40 | 1 | 64 days | 0.38 | M-v 4 | MPC | 2006 $RB_{53}$ |
| 2006 $RF_{53}$ | 17.9 | 0.15 | 20060922 | 353.88648 | 1.37170 | 23.31420 | 8.03293 | 0.1079376 | 2.7422102 | 25 | 1 | 64 days | 0.38 | M-v 4 | MPC | 2006 $RF_{53}$ |
| 2006 $RG_{53}$ | 16.9 | 0.15 | 20060922 | 282.15161 | 77.70758 | 26.45984 | 6.09871 | 0.0686537 | 2.7859089 | 19 | 1 | 47 days | 0.33 | | MPC | 2006 $RG_{53}$ |
| 2006 $RL_{53}$ | 16.8 | 0.15 | 20060922 | 10.82036 | 174.56552 | 187.74653 | 11.08008 | 0.1389329 | 3.0347589 | 20 | 1 | 38 days | 0.52 | | MPC | 2006 $RL_{53}$ |
| 2006 $RM_{53}$ | 17.9 | 0.15 | 20060922 | 331.64983 | 233.76399 | 181.92990 | 7.38175 | 0.1873004 | 2.5933100 | 20 | 1 | 38 days | 0.22 | | MPC | 2006 $RM_{53}$ |
| 2006 $RO_{53}$ | 18.8 | 0.15 | 20060922 | 11.98493 | 335.76966 | 19.90113 | 6.63440 | 0.1517670 | 2.1667393 | 19 | 1 | 43 days | 0.36 | | MPC | 2006 $RO_{53}$ |
| 2006 $RP_{53}$ | 18.7 | 0.15 | 20060922 | 341.45283 | 8.34635 | 33.90144 | 3.07942 | 0.2150874 | 2.4514878 | 28 | 1 | 69 days | 0.26 | M-v 4 | MPC | 2006 $RP_{53}$ |
| 2006 $RQ_{53}$ | 18.3 | 0.15 | 20060922 | 353.73599 | 227.01300 | 155.19877 | 2.42730 | 0.1909775 | 2.3610690 | 26 | 1 | 38 days | 0.46 | | MPC | 2006 $RQ_{53}$ |
| 2006 $RW_{53}$ | 16.7 | 0.15 | 20060922 | 310.20902 | 16.69600 | 55.32594 | 2.79817 | 0.0522644 | 2.8876346 | 22 | 1 | 63 days | 0.30 | M-v 4 | MPC | 2006 $RW_{53}$ |
| 2006 $RX_{53}$ | 16.9 | 0.15 | 20060902 | 28.53209 | 183.42905 | 148.61959 | 2.58267 | 0.1794579 | 3.1970307 | 9 | 1 | 11 days | 0.22 | | MPC | 2006 $RX_{53}$ |
| 2006 $RZ_{53}$ | 18.7 | 0.15 | 20060922 | 36.04692 | 147.40882 | 173.99680 | 5.18346 | 0.1986295 | 2.4003169 | 16 | 1 | 38 days | 0.30 | | MPC | 2006 $RZ_{53}$ |
| 2006 $RA_{54}$ | 17.9 | 0.15 | 20060922 | 0.78143 | 351.67827 | 20.67788 | 10.33595 | 0.2137777 | 2.5736839 | 39 | 1 | 64 days | 0.40 | M-v 4 | MPC | 2006 $RA_{54}$ |
| 2006 $RC_{54}$ | 17.3 | 0.15 | 20060922 | 95.97800 | 92.24581 | 184.76694 | 7.24073 | 0.0352605 | 2.5872571 | 13 | 1 | 37 days | 0.16 | | MPC | 2006 $RC_{54}$ |
| 2006 $RD_{54}$ | 17.9 | 0.15 | 20060922 | 294.85098 | 292.12670 | 164.93213 | 3.50023 | 0.1379687 | 2.6512927 | 17 | 1 | 65 days | 0.33 | M-v 4 | MPC | 2006 $RD_{54}$ |
| 2006 $RE_{54}$ | 17.3 | 0.15 | 20061012 | 19.29311 | 219.23297 | 134.32443 | 1.83146 | 0.1877663 | 3.0485742 | 20 | 1 | 58 days | 0.36 | | MPC | 2006 $RE_{54}$ |
| 2006 $RJ_{54}$ | 18.4 | 0.15 | 20060922 | 337.75903 | 28.28642 | 10.22422 | 20.42986 | 0.1063924 | 1.8673671 | 34 | 1 | 62 days | 0.47 | M-v 4 | MPC | 2006 $RJ_{54}$ |
| 2006 $RL_{54}$ | 17.3 | 0.15 | 20060922 | 69.67662 | 262.60291 | 25.23360 | 12.44679 | 0.1671411 | 2.6959239 | 15 | 1 | 32 days | 0.15 | | MPC | 2006 $RL_{54}$ |
| 2006 $RM_{54}$ | 16.2 | 0.15 | 20060922 | 48.06004 | 128.46199 | 186.61837 | 8.24409 | 0.1576171 | 3.1675197 | 22 | 1 | 120 days | 0.23 | M-v 4 | MPC | 2006 $RM_{54}$ |
| 2006 $RN_{54}$ | 16.8 | 0.15 | 20060922 | 316.65957 | 16.99270 | 50.55565 | 2.69527 | 0.0713969 | 3.0039451 | 11 | 1 | 36 days | 0.27 | | MPC | 2006 $RN_{54}$ |
| 2006 $RP_{54}$ | 16.4 | 0.15 | 20060922 | 66.41625 | 255.42072 | 48.53671 | 2.72010 | 0.0752750 | 3.0087546 | 14 | 1 | 36 days | 0.16 | | MPC | 2006 $RP_{54}$ |
| 2006 $RR_{54}$ | 16.5 | 0.15 | 20060922 | 342.28506 | 357.23456 | 38.91545 | 3.54275 | 0.0195279 | 2.7269015 | 16 | 1 | 69 days | 0.27 | M-v 4 | MPC | 2006 $RR_{54}$ |
| 2006 $RS_{54}$ | 17.5 | 0.15 | 20060922 | 319.58740 | 35.32444 | 27.44040 | 6.90548 | 0.0668562 | 2.6392325 | 13 | 1 | 44 days | 0.30 | | MPC | 2006 $RS_{54}$ |
| 2006 $RT_{54}$ | 16.5 | 0.15 | 20060922 | 328.66373 | 224.98163 | 187.12144 | 9.85188 | 0.0723683 | 3.0143656 | 20 | 1 | 71 days | 0.18 | M-v 4 | MPC | 2006 $RT_{54}$ |
| 2006 $RU_{54}$ | 18.6 | 0.15 | 20060922 | 358.94180 | 355.62404 | 18.00520 | 5.58929 | 0.1879202 | 2.4102579 | 19 | 1 | 43 days | 0.30 | | MPC | 2006 $RU_{54}$ |
| 2006 $RX_{54}$ | 17.3 | 0.15 | 20060922 | 315.10746 | 242.64216 | 188.73921 | 13.37109 | 0.1302929 | 2.5909097 | 19 | 1 | 31 days | 0.33 | | MPC | 2006 $RX_{54}$ |
| 2006 $RY_{54}$ | 16.2 | 0.15 | 20060922 | 336.38404 | 24.36486 | 20.27938 | 9.90548 | 0.0919241 | 3.0976255 | 32 | 1 | 62 days | 0.26 | M-v 4 | MPC | 2006 $RY_{54}$ |
| 2006 $RZ_{54}$ | 16.8 | 0.15 | 20060922 | 348.09000 | 204.28698 | 185.88059 | 10.44882 | 0.0810436 | 3.0291629 | 16 | 1 | 38 days | 0.19 | | MPC | 2006 $RZ_{54}$ |
| 2006 $RA_{55}$ | 19.6 | 0.15 | 20060922 | 334.61979 | 60.47539 | 22.23697 | 1.81068 | 0.5020535 | 2.4294534 | 121 | 1 | 75 days | 0.37 | M-v 4 | MPC | 2006 $RA_{55}$ |
| 2006 $RF_{55}$ | 18.6 | 0.15 | 20060902 | 313.03801 | 257.02492 | 177.38492 | 5.57754 | 0.2112712 | 2.3925964 | 9 | 1 | 13 days | 0.20 | | MPC | 2006 $RF_{55}$ |
| 2006 $RG_{55}$ | 16.6 | 0.15 | 20060922 | 330.44104 | 28.33355 | 23.47094 | 10.69169 | 0.0972098 | 3.0156448 | 13 | 1 | 31 days | 0.26 | | MPC | 2006 $RG_{55}$ |
| 2006 $RJ_{55}$ | 17.0 | 0.15 | 20060922 | 13.79768 | 336.72248 | 21.04327 | 7.54491 | 0.1088544 | 2.6914029 | 25 | 1 | 62 days | 0.48 | M-v 4 | MPC | 2006 $RJ_{55}$ |
| 2006 $RK_{55}$ | 16.8 | 0.15 | 20060922 | 282.08327 | 85.58450 | 24.19909 | 5.53859 | 0.1410117 | 2.5700636 | 20 | 1 | 62 days | 0.43 | M-v 5 | MPC | 2006 $RK_{55}$ |
| 2006 $RN_{55}$ | 16.8 | 0.15 | 20060922 | 334.36121 | 15.45781 | 29.00255 | 6.21454 | 0.0637786 | 2.6645307 | 29 | 1 | 69 days | 0.27 | M-v 4 | MPC | 2006 $RN_{55}$ |
| 2006 $RO_{55}$ | 18.8 | 0.15 | 20060922 | 17.91761 | 200.85918 | 144.36059 | 1.69326 | 0.2016980 | 2.3720010 | 12 | 1 | 37 days | 0.21 | | MPC | 2006 $RO_{55}$ |
| 2006 $RQ_{55}$ | 18.2 | 0.15 | 20060922 | 313.33357 | 23.64993 | 52.69467 | 2.29242 | 0.1633205 | 2.4344616 | 19 | 1 | 47 days | 0.34 | | MPC | 2006 $RQ_{55}$ |
| 2006 $RT_{55}$ | 19.1 | 0.15 | 20060922 | 4.41822 | 343.20562 | 23.00364 | 4.64391 | 0.1544142 | 2.2504628 | 19 | 1 | 32 days | 0.25 | | MPC | 2006 $RT_{55}$ |
| 2006 $RV_{55}$ | 17.0 | 0.15 | 20060922 | 21.62888 | 191.93915 | 157.46094 | 2.87544 | 0.0890914 | 2.6101123 | 21 | 1 | 120 days | 0.17 | M-v 3 | MPC | 2006 $RV_{55}$ |
| 2006 $RW_{55}$ | 16.3 | 0.15 | 20060922 | 54.00463 | 290.68102 | 25.98746 | 11.06508 | 0.0676603 | 3.1032320 | 16 | 1 | 43 days | 0.20 | | MPC | 2006 $RW_{55}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RX_{55}$ | 18.5 | 0.15 | 20060922 | 25.52161 | 184.56317 | 146.07719 | 1.46465 | 0.2456209 | 2.4184469 | 16 | 1 | 47 days | 0.20 | | | MPC | 2006 $RX_{55}$ |
| 2006 $RZ_{55}$ | 17.1 | 0.15 | 20060922 | 327.68803 | 244.52691 | 177.83697 | 5.05635 | 0.2170987 | 2.3512362 | 33 | 1 | 60 days | 0.42 | M-v | 4 | MPC | 2006 $RZ_{55}$ |
| 2006 $RA_{56}$ | 18.1 | 0.15 | 20060922 | 354.29907 | 323.88728 | 57.41606 | 1.79707 | 0.2172116 | 2.3796725 | 36 | 1 | 63 days | 0.26 | M-v | 3 | MPC | 2006 $RA_{56}$ |
| 2006 $RB_{56}$ | 17.7 | 0.15 | 20060922 | 28.20406 | 240.31105 | 99.35537 | 1.68845 | 0.1303377 | 2.8899104 | 16 | 1 | 33 days | 0.22 | | D | MPC | 2006 $RB_{56}$ |
| 2006 $RC_{56}$ | 17.0 | 0.15 | 20060922 | 332.47332 | 309.56348 | 98.30336 | 1.31544 | 0.0692844 | 2.7629694 | 30 | 1 | 48 days | 0.31 | | | MPC | 2006 $RC_{56}$ |
| 2006 $RD_{56}$ | 16.4 | 0.15 | 20060922 | 279.59360 | 274.98384 | 189.39232 | 10.96228 | 0.0721440 | 3.1695967 | 20 | 1 | 38 days | 0.32 | | | MPC | 2006 $RD_{56}$ |
| 2006 $RE_{56}$ | 16.9 | 0.15 | 20061012 | 259.62693 | 301.00969 | 180.51642 | 1.86876 | 0.0170207 | 2.9034324 | 28 | 1 | 58 days | 0.26 | | | MPC | 2006 $RE_{56}$ |
| 2006 $RF_{56}$ | 16.7 | 0.15 | 20060922 | 21.48228 | 323.77199 | 24.21384 | 4.09859 | 0.0797509 | 2.5742690 | 32 | 1 | 43 days | 0.48 | | | MPC | 2006 $RF_{56}$ |
| 2006 $RM_{56}$ | 18.0 | 0.15 | 20060922 | 293.70929 | 81.12375 | 14.49466 | 5.53821 | 0.1460876 | 2.2985742 | 28 | 1 | 62 days | 0.24 | M-v | 4 | MPC | 2006 $RM_{56}$ |
| 2006 $RR_{56}$ | 16.4 | 0.15 | 20060922 | 301.78341 | 50.42276 | 25.03457 | 2.18262 | 0.0163825 | 2.8396985 | 22 | 1 | 32 days | 0.29 | | | MPC | 2006 $RR_{56}$ |
| 2006 $RS_{56}$ | 18.7 | 0.15 | 20060922 | 8.72754 | 332.06617 | 25.84250 | 2.92540 | 0.2017458 | 2.3908303 | 17 | 1 | 32 days | 0.20 | | | MPC | 2006 $RS_{56}$ |
| 2006 $RT_{56}$ | 19.0 | 0.15 | 20060922 | 20.30156 | 331.20217 | 13.91125 | 4.19501 | 0.1251724 | 2.1406382 | 17 | 1 | 35 days | 0.30 | | | MPC | 2006 $RT_{56}$ |
| 2006 $RU_{56}$ | 17.6 | 0.15 | 20060922 | 52.96274 | 134.82538 | 167.85542 | 2.66624 | 0.1616286 | 2.2728941 | 33 | 1 | 118 days | 0.27 | M-v | 4 | MPC | 2006 $RU_{56}$ |
| 2006 $RW_{56}$ | 17.7 | 0.15 | 20060922 | 18.95363 | 170.17958 | 176.81878 | 2.21954 | 0.1294286 | 2.1858316 | 44 | 1 | 61 days | 0.44 | M-v | 4 | MPC | 2006 $RW_{56}$ |
| 2006 $RX_{56}$ | 17.0 | 0.15 | 20060902 | 29.23166 | 262.99440 | 54.29619 | 1.24957 | 0.2992667 | 3.3967498 | 13 | 1 | 12 days | 0.39 | | | MPC | 2006 $RX_{56}$ |
| 2006 $RY_{56}$ | 16.2 | 0.15 | 20060922 | 343.27250 | 18.40329 | 18.06175 | 11.11591 | 0.0979411 | 3.1427085 | 29 | 1 | 62 days | 0.23 | M-v | 4 | MPC | 2006 $RY_{56}$ |
| 2006 $RB_{57}$ | 16.9 | 0.15 | 20060922 | 325.16223 | 238.74920 | 179.25626 | 3.71186 | 0.1647940 | 2.6330384 | 39 | 1 | 61 days | 0.48 | M-v | 4 | MPC | 2006 $RB_{57}$ |
| 2006 $RD_{57}$ | 18.0 | 0.15 | 20060922 | 355.13457 | 4.39655 | 12.83208 | 5.87961 | 0.2781091 | 2.5363907 | 41 | 1 | 37 days | 0.40 | | | MPC | 2006 $RD_{57}$ |
| 2006 $RE_{57}$ | 16.8 | 0.15 | 20061012 | 355.45236 | 180.04696 | 208.79438 | 8.94741 | 0.2962885 | 2.7708008 | 57 | 1 | 58 days | 0.47 | | | MPC | 2006 $RE_{57}$ |
| 2006 $RK_{57}$ | 17.0 | 0.15 | 20060922 | 351.45898 | 29.07264 | 316.44745 | 10.38986 | 0.0542010 | 2.5427815 | 10 | 1 | 13 days | 0.21 | | | MPC | 2006 $RK_{57}$ |
| 2006 $RQ_{57}$ | 17.1 | 0.15 | 20060922 | 20.00918 | 325.85337 | 5.74858 | 4.57589 | 0.1581982 | 2.6870533 | 33 | 1 | 66 days | 0.49 | M-v | 4 | MPC | 2006 $RQ_{57}$ |
| 2006 $RS_{57}$ | 18.0 | 0.15 | 20060922 | 7.23589 | 345.66278 | 3.77772 | 12.12602 | 0.2067151 | 2.5773068 | 21 | 1 | 66 days | 0.48 | M-v | 4 | MPC | 2006 $RS_{57}$ |
| 2006 $RT_{57}$ | 16.5 | 0.15 | 20060922 | 8.86840 | 198.99390 | 151.59090 | 2.53053 | 0.1072867 | 2.5902518 | 33 | 1 | 119 days | 0.36 | M-v | 3 | MPC | 2006 $RT_{57}$ |
| 2006 $RU_{57}$ | 15.3 | 0.15 | 20060902 | 346.33455 | 348.06844 | 29.74159 | 3.77266 | 0.1559891 | 3.8951545 | 11 | 1 | 11 days | 0.55 | | | MPC | 2006 $RU_{57}$ |
| 2006 $RV_{57}$ | 16.9 | 0.15 | 20060922 | 325.47528 | 39.57522 | 8.05107 | 8.84863 | 0.1537767 | 2.3545096 | 41 | 1 | 61 days | 0.54 | M-v | 5 | MPC | 2006 $RV_{57}$ |
| 2006 $RX_{57}$ | 15.7 | 0.15 | 20060922 | 2.52563 | 190.89295 | 165.31804 | 9.19539 | 0.2706727 | 3.9501142 | 26 | 1 | 127 days | 0.53 | M-v | 3 | MPC | 2006 $RX_{57}$ |
| 2006 $RZ_{57}$ | 17.0 | 0.15 | 20060922 | 357.09312 | 185.64097 | 180.38047 | 17.24256 | 0.1664290 | 2.5465812 | 30 | 1 | 31 days | 0.50 | | | MPC | 2006 $RZ_{57}$ |
| 2006 $RA_{58}$ | 16.2 | 0.15 | 20060922 | 339.21298 | 123.09350 | 278.18897 | 2.39973 | 0.2595814 | 2.6645507 | 53 | 1 | 68 days | 0.41 | M-v | 4 | MPC | 2006 $RA_{58}$ |
| 2006 $RC_{58}$ | 17.2 | 0.15 | 20060922 | 331.90528 | 233.61027 | 179.21075 | 13.58983 | 0.2839091 | 2.6335855 | 40 | 1 | 37 days | 0.40 | | | MPC | 2006 $RC_{58}$ |
| 2006 $RD_{58}$ | 17.3 | 0.15 | 20060922 | 3.15797 | 350.56903 | 9.61241 | 6.01805 | 0.1100280 | 2.4602274 | 31 | 1 | 61 days | 0.45 | M-v | 4 | MPC | 2006 $RD_{58}$ |
| 2006 $RE_{58}$ | 17.5 | 0.15 | 20060922 | 339.79168 | 225.17568 | 168.21114 | 5.26594 | 0.1778149 | 2.3187684 | 35 | 1 | 124 days | 0.59 | M-v | 4 | MPC | 2006 $RE_{58}$ |
| 2006 $RF_{58}$ | 16.4 | 0.15 | 20060922 | 29.85169 | 318.88169 | 4.45396 | 14.53732 | 0.1390990 | 2.6157496 | 48 | 1 | 38 days | 0.38 | | | MPC | 2006 $RF_{58}$ |
| 2006 $RJ_{58}$ | 16.5 | 0.15 | 20061012 | 32.76024 | 53.99920 | 283.92380 | 0.27867 | 0.0492711 | 3.0033244 | 28 | 1 | 57 days | 0.29 | | | MPC | 2006 $RJ_{58}$ |
| 2006 $RK_{58}$ | 17.4 | 0.15 | 20060922 | 149.95775 | 216.10609 | 356.82164 | 2.31503 | 0.1304222 | 2.4377939 | 18 | 1 | 17 days | 0.25 | | | MPC | 2006 $RK_{58}$ |
| 2006 $RQ_{58}$ | 18.6 | 0.15 | 20060902 | 301.63592 | 270.64961 | 180.16257 | 9.91371 | 0.2846343 | 2.3701826 | 8 | 1 | 11 days | 0.53 | | | MPC | 2006 $RQ_{58}$ |
| 2006 $RR_{58}$ | 17.6 | 0.15 | 20060922 | 42.06506 | 128.76082 | 179.36161 | 9.18419 | 0.1911018 | 2.7423069 | 12 | 1 | 15 days | 0.13 | | | MPC | 2006 $RR_{58}$ |
| 2006 $RS_{58}$ | 17.0 | 0.15 | 20060922 | 282.32532 | 65.91835 | 29.49912 | 1.72600 | 0.0757992 | 2.8151370 | 34 | 1 | 36 days | 0.23 | | | MPC | 2006 $RS_{58}$ |
| 2006 $RT_{58}$ | 15.8 | 0.15 | 20061012 | 94.98451 | 252.19348 | 15.84837 | 6.53167 | 0.0906923 | 3.1585479 | 53 | 1 | 57 days | 0.23 | | | MPC | 2006 $RT_{58}$ |
| 2006 $RU_{58}$ | 17.5 | 0.15 | 20060922 | 31.70457 | 305.60842 | 26.94788 | 2.14351 | 0.0735082 | 2.9107062 | 24 | 1 | 36 days | 0.26 | | | MPC | 2006 $RU_{58}$ |
| 2006 $RV_{58}$ | 16.7 | 0.15 | 20060922 | 24.42243 | 180.18119 | 154.49305 | 1.57308 | 0.1697720 | 3.1602715 | 21 | 1 | 93 days | 0.23 | M-v | 4 | MPC | 2006 $RV_{58}$ |
| 2006 $RX_{58}$ | 16.6 | 0.15 | 20060902 | 65.97935 | 266.72595 | 29.16777 | 3.24996 | 0.0244816 | 2.7526279 | 9 | 1 | 9 days | 0.22 | | | MPC | 2006 $RX_{58}$ |
| 2006 $RY_{58}$ | 16.1 | 0.15 | 20060922 | 52.31394 | 293.95589 | 14.31733 | 10.49470 | 0.0888580 | 3.0389936 | 33 | 1 | 31 days | 0.24 | | | MPC | 2006 $RY_{58}$ |
| 2006 $RC_{59}$ | 16.4 | 0.15 | 20060922 | 21.11645 | 342.23702 | 4.89815 | 13.28297 | 0.0978625 | 3.0102508 | 23 | 1 | 32 days | 0.41 | | | MPC | 2006 $RC_{59}$ |
| 2006 $RE_{59}$ | 16.4 | 0.15 | 20060922 | 30.53195 | 337.35547 | 357.57912 | 4.60084 | 0.1085205 | 2.6543453 | 29 | 1 | 34 days | 0.43 | | | MPC | 2006 $RE_{59}$ |
| 2006 $RF_{59}$ | 18.3 | 0.15 | 20060922 | 3.69015 | 172.22173 | 192.31651 | 7.25700 | 0.1622611 | 2.2152081 | 33 | 1 | 37 days | 0.41 | | | MPC | 2006 $RF_{59}$ |
| 2006 $RH_{59}$ | 17.5 | 0.15 | 20060922 | 8.91396 | 162.47328 | 197.01141 | 5.19493 | 0.1330955 | 2.3951502 | 40 | 1 | 46 days | 0.36 | | | MPC | 2006 $RH_{59}$ |
| 2006 $RJ_{59}$ | 16.8 | 0.15 | 20061012 | 7.34441 | 127.29200 | 240.13184 | 0.95352 | 0.1996707 | 3.1251841 | 25 | 1 | 59 days | 0.35 | | | MPC | 2006 $RJ_{59}$ |
| 2006 $RL_{59}$ | 16.8 | 0.15 | 20060922 | 343.34301 | 209.44080 | 185.89795 | 10.10504 | 0.1527970 | 2.7231935 | 25 | 1 | 36 days | 0.53 | | | MPC | 2006 $RL_{59}$ |
| 2006 $RM_{59}$ | 18.3 | 0.15 | 20060922 | 6.70380 | 175.65180 | 185.65898 | 22.31824 | 0.0902708 | 1.9362918 | 34 | 1 | 43 days | 0.55 | | | MPC | 2006 $RM_{59}$ |
| 2006 $RQ_{59}$ | 16.6 | 0.15 | 20060922 | 47.10214 | 135.19980 | 186.04935 | 3.66514 | 0.0638207 | 2.7460493 | 28 | 1 | 46 days | 0.28 | | | MPC | 2006 $RQ_{59}$ |
| 2006 $RR_{59}$ | 17.2 | 0.15 | 20060902 | 248.55299 | 126.28096 | 11.79652 | 4.07790 | 0.1842480 | 2.2957661 | 10 | 1 | 11 days | 0.60 | | | MPC | 2006 $RR_{59}$ |
| 2006 $RT_{59}$ | 16.9 | 0.15 | 20060902 | 58.47762 | 278.92681 | 24.74711 | 3.82169 | 0.0745511 | 2.8148505 | 16 | 1 | 10 days | 0.27 | | | MPC | 2006 $RT_{59}$ |
| 2006 $RV_{59}$ | 16.4 | 0.15 | 20061012 | 359.72931 | 295.74395 | 83.90549 | 0.70660 | 0.2111327 | 3.1884474 | 51 | 1 | 59 days | 0.32 | | | MPC | 2006 $RV_{59}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RW_{59}$ | 18.0 | 0.15 | 20060922 | 11.35915 | 333.92075 | 18.58257 | 3.27410 | 0.2246840 | 2.4614601 | 25 | 1 | 73 days | 0.34 | M-v | 4 | MPC | | 2006 $RW_{59}$ |
| 2006 $RZ_{59}$ | 17.2 | 0.15 | 20060922 | 30.40475 | 324.12765 | 353.40546 | 3.66871 | 0.2610274 | 2.6069449 | 38 | 1 | 46 days | 0.41 | | | MPC | | 2006 $RZ_{59}$ |
| 2006 $RD_{60}$ | 16.3 | 0.15 | 20060902 | 23.57967 | 327.90443 | 12.32536 | 15.76533 | 0.1485538 | 2.7265656 | 10 | 1 | 4 days | 0.74 | | | MPC | | 2006 $RD_{60}$ |
| 2006 $RJ_{60}$ | 17.4 | 0.15 | 20060922 | 336.58837 | 225.69425 | 186.38172 | 2.90254 | 0.2951345 | 2.6551069 | 38 | 1 | 37 days | 0.45 | | | MPC | | 2006 $RJ_{60}$ |
| 2006 $RL_{60}$ | 16.5 | 0.15 | 20060902 | 88.52262 | 237.46790 | 7.88968 | 0.25142 | 0.1544404 | 3.0502471 | 19 | 1 | 10 days | 0.52 | | | MPC | | 2006 $RL_{60}$ |
| 2006 $RN_{60}$ | 16.2 | 0.15 | 20060922 | 17.23496 | 161.73028 | 172.87387 | 10.29668 | 0.0632349 | 3.0767484 | 15 | 1 | 38 days | 0.53 | | | MPC | | 2006 $RN_{60}$ |
| 2006 $RQ_{60}$ | 18.2 | 0.15 | 20060922 | 12.98379 | 137.32165 | 197.74147 | 5.56196 | 0.3092692 | 2.5633530 | 23 | 1 | 44 days | 0.54 | | | MPC | | 2006 $RQ_{60}$ |
| 2006 $RS_{60}$ | 17.6 | 0.15 | 20060922 | 19.47214 | 60.63756 | 268.16187 | 3.88860 | 0.2261921 | 2.3788582 | 30 | 1 | 47 days | 0.36 | | | MPC | | 2006 $RS_{60}$ |
| 2006 $RT_{60}$ | 17.7 | 0.15 | 20060922 | 323.06489 | 305.74292 | 113.81415 | 7.15403 | 0.2131696 | 2.3230317 | 14 | 1 | 40 days | 0.61 | | | MPC | | 2006 $RT_{60}$ |
| 2006 $RX_{60}$ | 16.3 | 0.15 | 20060922 | 306.48372 | 278.44374 | 155.32549 | 4.56632 | 0.2172683 | 2.7952015 | 25 | 1 | 90 days | 0.64 | M-v | 5 | MPC | | 2006 $RX_{60}$ |
| 2006 $RY_{60}$ | 18.5 | 0.15 | 20060922 | 1.33927 | 172.51757 | 182.89523 | 12.49211 | 0.2791698 | 2.3798689 | 15 | 1 | 17 days | 0.46 | | | MPC | | 2006 $RY_{60}$ |
| 2006 $RA_{61}$ | 16.4 | 0.15 | 20060922 | 356.28942 | 100.18800 | 270.55851 | 6.73537 | 0.2133433 | 2.7863425 | 50 | 1 | 55 days | 0.55 | | | MPC | | 2006 $RA_{61}$ |
| 2006 $RB_{61}$ | 16.7 | 0.15 | 20060922 | 8.57502 | 81.96979 | 262.30697 | 5.02201 | 0.2211754 | 2.6622099 | 21 | 1 | 27 days | 0.54 | | | MPC | | 2006 $RB_{61}$ |
| 2006 $RC_{61}$ | 16.4 | 0.15 | 20060922 | 354.10806 | 54.35831 | 316.73836 | 8.13261 | 0.1623920 | 2.6964314 | 34 | 1 | 47 days | 0.90 | | | MPC | | 2006 $RC_{61}$ |
| 2006 $RE_{61}$ | 16.1 | 0.15 | 20060922 | 29.27493 | 3.24049 | 298.20123 | 12.85507 | 0.1534776 | 2.6652123 | 18 | 1 | 72 days | 0.58 | M-v | 4 | MPC | | 2006 $RE_{61}$ |
| 2006 $RF_{61}$ | 18.1 | 0.15 | 20060922 | 337.91618 | 64.90398 | 322.65882 | 1.13895 | 0.2401690 | 2.2522044 | 34 | 1 | 118 days | 0.58 | M-v | 4 | MPC | | 2006 $RF_{61}$ |
| 2006 $RG_{61}$ | 17.9 | 0.15 | 20060902 | 317.25408 | 215.61437 | 170.85399 | 23.41430 | 0.0801472 | 1.9003541 | 20 | 1 | 28 days | 0.70 | | | MPC | | 2006 $RG_{61}$ |
| 2006 $RK_{61}$ | 14.6 | 0.15 | 20060922 | 359.01905 | 75.16730 | 282.47532 | 20.69972 | 0.2464490 | 3.1507621 | 35 | 1 | 168 days | 0.52 | M-v | 3 | MPC | | 2006 $RK_{61}$ |
| 2006 $RO_{61}$ | 17.7 | 0.15 | 20060902 | 45.36271 | 295.16483 | 338.82753 | 2.07836 | 0.2623156 | 2.5102744 | 10 | 1 | 13 days | 0.45 | | | MPC | | 2006 $RO_{61}$ |
| 2006 $RR_{61}$ | 15.7 | 0.15 | 20060922 | 27.27301 | 127.09990 | 183.60113 | 16.44234 | 0.2145220 | 3.1804733 | 44 | 1 | 89 days | 0.44 | M-v | 4 | MPC | | 2006 $RR_{61}$ |
| 2006 $RV_{61}$ | 17.2 | 0.15 | 20060922 | 14.54776 | 144.13026 | 189.01440 | 11.26127 | 0.2041640 | 2.7246337 | 29 | 1 | 64 days | 0.48 | M-v | 4 | MPC | | 2006 $RV_{61}$ |
| 2006 $RA_{62}$ | 17.3 | 0.15 | 20060902 | 344.74814 | 40.64214 | 334.99691 | 5.81050 | 0.2573099 | 2.6707087 | 18 | 1 | 13 days | 0.61 | | | MPC | | 2006 $RA_{62}$ |
| 2006 $RE_{62}$ | 18.0 | 0.15 | 20060922 | 18.27090 | 130.90312 | 199.59247 | 5.96735 | 0.2009475 | 2.2507936 | 37 | 1 | 74 days | 0.48 | M-v | 4 | MPC | | 2006 $RE_{62}$ |
| 2006 $RN_{62}$ | 16.5 | 0.15 | 20060922 | 31.02556 | 146.32400 | 172.16515 | 12.22609 | 0.2210878 | 2.6966775 | 43 | 1 | 55 days | 0.63 | | | MPC | | 2006 $RN_{62}$ |
| 2006 $RU_{62}$ | 17.6 | 0.15 | 20060902 | 359.15940 | 347.14667 | 0.31850 | 8.02997 | 0.2686413 | 2.6085363 | 13 | 1 | 6 days | 0.72 | | | MPC | | 2006 $RU_{62}$ |
| 2006 $RV_{62}$ | 17.8 | 0.15 | 20060922 | 327.27371 | 11.11576 | 34.86613 | 3.14972 | 0.2248160 | 2.2700112 | 22 | 1 | 49 days | 0.80 | | | MPC | | 2006 $RV_{62}$ |
| 2006 $RW_{62}$ | 17.5 | 0.15 | 20060922 | 347.70841 | 257.25331 | 116.88551 | 2.98397 | 0.1971284 | 2.2426275 | 27 | 1 | 70 days | 0.56 | M-v | 5 | MPC | | 2006 $RW_{62}$ |
| 2006 $RX_{62}$ | 15.7 | 0.15 | 20060922 | 319.01484 | 58.41601 | 0.55971 | 19.87725 | 0.2489281 | 3.0512396 | 42 | 1 | 61 days | 0.53 | M-v | 5 | MPC | | 2006 $RX_{62}$ |
| 2006 $RJ_{63}$ | 18.1 | 0.15 | 20060922 | 11.49132 | 200.31414 | 133.49794 | 5.47832 | 0.3139634 | 2.5712126 | 15 | 1 | 16 days | 0.75 | | | MPC | | 2006 $RJ_{63}$ |
| 2006 $RL_{63}$ | 16.3 | 0.15 | 20060922 | 336.95990 | 244.24485 | 156.90680 | 14.12013 | 0.2985985 | 3.1623391 | 21 | 1 | 34 days | 0.77 | | D | MPC | | 2006 $RL_{63}$ |
| 2006 $RN_{63}$ | 17.8 | 0.15 | 20060922 | 355.70945 | 345.95741 | 22.97624 | 7.90774 | 0.3554802 | 2.5838967 | 43 | 1 | 62 days | 0.44 | M-v | 4 | MPC | | 2006 $RN_{63}$ |
| 2006 $RP_{63}$ | 17.5 | 0.15 | 20060922 | 4.95064 | 266.42297 | 80.41283 | 6.48165 | 0.1928668 | 2.2889506 | 37 | 1 | 62 days | 0.57 | M-v | 4 | MPC | | 2006 $RP_{63}$ |
| 2006 $RS_{63}$ | 15.9 | 0.15 | 20060922 | 341.11642 | 0.51133 | 22.59336 | 14.89521 | 0.2219984 | 3.2039543 | 29 | 1 | 95 days | 0.66 | M-v | 4 | MPC | | 2006 $RS_{63}$ |
| 2006 $RT_{63}$ | 16.7 | 0.15 | 20060902 | 339.27109 | 334.28048 | 39.31693 | 10.76627 | 0.1042383 | 2.7113663 | 15 | 1 | 12 days | 0.73 | | | MPC | | 2006 $RT_{63}$ |
| 2006 $RU_{63}$ | 18.1 | 0.15 | 20060902 | 354.22142 | 249.86650 | 106.02171 | 6.31497 | 0.2700945 | 2.2681188 | 18 | 1 | 12 days | 0.66 | | | MPC | | 2006 $RU_{63}$ |
| 2006 $RV_{63}$ | 15.3 | 0.15 | 20060922 | 336.22839 | 36.36046 | 8.46495 | 9.99807 | 0.0437579 | 3.0945269 | 41 | 1 | 121 days | 0.36 | M-v | 3 | MPC | | 2006 $RV_{63}$ |
| 2006 $RX_{63}$ | 16.5 | 0.15 | 20060922 | 30.68159 | 144.55530 | 168.85401 | 8.61444 | 0.1177298 | 2.6714384 | 35 | 1 | 89 days | 0.47 | M-v | 4 | MPC | | 2006 $RX_{63}$ |
| 2006 $RY_{63}$ | 16.0 | 0.15 | 20060902 | 6.37999 | 2.62548 | 337.33404 | 10.61255 | 0.0851749 | 3.0826317 | 27 | 1 | 44 days | 0.51 | | | MPC | | 2006 $RY_{63}$ |
| 2006 $RJ_{64}$ | 15.8 | 0.15 | 20060922 | 321.52055 | 79.92062 | 336.76309 | 8.83661 | 0.2277379 | 3.1348024 | 27 | 1 | 34 days | 0.76 | | | MPC | | 2006 $RJ_{64}$ |
| 2006 $RO_{64}$ | 16.8 | 0.15 | 20060922 | 323.62780 | 214.55390 | 202.81698 | 8.76350 | 0.2322237 | 2.7391244 | 35 | 1 | 55 days | 0.52 | | | MPC | | 2006 $RO_{64}$ |
| 2006 $RP_{64}$ | 18.9 | 0.15 | 20060902 | 2.70036 | 123.46390 | 207.69470 | 6.04598 | 0.2602117 | 2.3313185 | 16 | 1 | 36 days | 0.37 | | | MPC | | 2006 $RP_{64}$ |
| 2006 $RQ_{64}$ | 16.5 | 0.15 | 20060902 | 73.54799 | 322.50475 | 293.04774 | 9.32954 | 0.0542850 | 3.0519828 | 12 | 1 | 11 days | 0.25 | | | MPC | | 2006 $RQ_{64}$ |
| 2006 $RR_{64}$ | 15.8 | 0.15 | 20060902 | 219.56783 | 185.44514 | 295.47448 | 10.74965 | 0.0773334 | 3.2131027 | 9 | 1 | 8 days | 0.17 | | | MPC | | 2006 $RR_{64}$ |
| 2006 $RT_{64}$ | 18.3 | 0.15 | 20060902 | 340.94954 | 107.58416 | 254.49974 | 5.42753 | 0.1434111 | 2.2885701 | 9 | 1 | 8 days | 0.09 | | | MPC | | 2006 $RT_{64}$ |
| 2006 $RD_{65}$ | 17.7 | 0.15 | 20060902 | 325.44589 | 46.68383 | 355.40764 | 5.42292 | 0.2168011 | 3.0645835 | 9 | 1 | 8 days | 0.20 | | | MPC | | 2006 $RD_{65}$ |
| 2006 $RF_{65}$ | 17.6 | 0.15 | 20060922 | 17.68366 | 111.13689 | 220.53654 | 2.46032 | 0.1425483 | 2.3940345 | 22 | 1 | 53 days | 0.52 | | | MPC | | 2006 $RF_{65}$ |
| 2006 $RH_{65}$ | 16.7 | 0.15 | 20060922 | 312.14695 | 63.27744 | 1.07786 | 12.79833 | 0.2010232 | 2.7845108 | 34 | 1 | 77 days | 0.56 | M-v | 4 | MPC | | 2006 $RH_{65}$ |
| 2006 $RJ_{65}$ | 15.3 | 0.15 | 20060902 | 204.28670 | 158.90528 | 352.93290 | 4.74863 | 0.0540930 | 2.7704698 | 11 | 1 | 6 days | 0.57 | | | MPC | | 2006 $RJ_{65}$ |
| 2006 $RL_{65}$ | 17.9 | 0.15 | 20060922 | 356.47652 | 355.34576 | 2.99450 | 6.00919 | 0.1919175 | 2.2087363 | 20 | 1 | 32 days | 0.56 | | | MPC | | 2006 $RL_{65}$ |
| 2006 $RN_{65}$ | 16.8 | 0.15 | 20060922 | 34.11942 | 246.21764 | 57.85956 | 1.94599 | 0.1835369 | 2.4134771 | 15 | 1 | 36 days | 0.37 | | | MPC | | 2006 $RN_{65}$ |
| 2006 $RP_{65}$ | 17.9 | 0.15 | 20060922 | 3.63698 | 222.09322 | 127.44161 | 3.50532 | 0.2038046 | 2.3644222 | 16 | 1 | 16 days | 0.77 | | | MPC | | 2006 $RP_{65}$ |
| 2006 $RT_{65}$ | 16.6 | 0.15 | 20060922 | 335.75455 | 19.32210 | 14.84822 | 10.46904 | 0.2354741 | 2.9051765 | 30 | 1 | 68 days | 0.43 | M-v | 4 | MPC | | 2006 $RT_{65}$ |
| 2006 $RW_{65}$ | 17.9 | 0.15 | 20060902 | 323.73512 | 298.97065 | 97.80728 | 6.71057 | 0.1633052 | 2.3153212 | 12 | 1 | 6 days | 0.74 | | | MPC | | 2006 $RW_{65}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RX_{65}$ | 19.0 | 0.15 | 20060902 | 28.00039 | 309.29521 | 10.01570 | 1.10074 | 0.1935713 | 2.4484271 | 23 | 1 | 14 days | 0.35 | | | MPC | 2006 $RX_{65}$ |
| 2006 $RY_{65}$ | 17.8 | 0.15 | 20060922 | 7.73425 | 356.62999 | 1.65160 | 4.98930 | 0.1430382 | 2.5950377 | 17 | 1 | 47 days | 0.30 | | | MPC | 2006 $RY_{65}$ |
| 2006 $RZ_{65}$ | 16.1 | 0.15 | 20060922 | 122.64300 | 227.46756 | 12.88495 | 27.16349 | 0.1142879 | 3.1322434 | 19 | 1 | 35 days | 0.25 | | | MPC | 2006 $RZ_{65}$ |
| 2006 $RB_{66}$ | 18.4 | 0.15 | 20060922 | 337.06130 | 26.31609 | 15.36975 | 6.53216 | 0.1447010 | 2.3925247 | 20 | 1 | 62 days | 0.31 | M-v | 5 | MPC | 2006 $RB_{66}$ |
| 2006 $RD_{66}$ | 17.0 | 0.15 | 20060922 | 15.57747 | 228.05247 | 109.09803 | 6.30379 | 0.1545242 | 2.2919539 | 26 | 1 | 65 days | 0.43 | M-v | 4 | MPC | 2006 $RD_{66}$ |
| 2006 $RJ_{66}$ | 17.1 | 0.15 | 20060922 | 344.48342 | 209.89899 | 189.17764 | 16.59644 | 0.2767888 | 2.6338459 | 63 | 1 | 55 days | 0.46 | | | MPC | 2006 $RJ_{66}$ |
| 2006 $RL_{66}$ | 16.2 | 0.15 | 20060922 | 43.30081 | 320.30630 | 359.68441 | 4.88900 | 0.1330574 | 3.0884307 | 22 | 1 | 65 days | 0.32 | M-v | 4 | MPC | 2006 $RL_{66}$ |
| 2006 $RN_{66}$ | 17.7 | 0.15 | 20060922 | 92.56373 | 266.88862 | 3.27046 | 6.57259 | 0.0890840 | 2.2266662 | 16 | 1 | 35 days | 0.36 | | | MPC | 2006 $RN_{66}$ |
| 2006 $RP_{66}$ | 16.4 | 0.15 | 20060922 | 283.48822 | 89.36510 | 11.01036 | 8.85610 | 0.0641573 | 3.0238148 | 22 | 1 | 64 days | 0.26 | M-v | 4 | MPC | 2006 $RP_{66}$ |
| 2006 $RT_{66}$ | 16.4 | 0.15 | 20060922 | 76.19103 | 269.14996 | 13.56931 | 12.89953 | 0.1503458 | 2.5496661 | 19 | 1 | 65 days | 0.30 | M-v | 4 | MPC | 2006 $RT_{66}$ |
| 2006 $RU_{66}$ | 16.7 | 0.15 | 20060922 | 24.01656 | 327.75800 | 13.67550 | 5.00908 | 0.1744095 | 2.7173743 | 54 | 1 | 64 days | 0.35 | M-v | 4 | MPC | 2006 $RU_{66}$ |
| 2006 $RA_{67}$ | 16.4 | 0.15 | 20060922 | 78.25374 | 79.03094 | 176.81999 | 14.18290 | 0.0178350 | 2.6605726 | 16 | 1 | 62 days | 0.35 | M-v | 5 | MPC | 2006 $RA_{67}$ |
| 2006 $RB_{67}$ | 16.6 | 0.15 | 20060902 | 121.12454 | 276.45592 | 282.78960 | 7.26411 | 0.1376358 | 2.6058563 | 12 | 1 | 11 days | 0.27 | | | MPC | 2006 $RB_{67}$ |
| 2006 $RH_{67}$ | 16.1 | 0.15 | 20060922 | 55.59444 | 320.17212 | 303.82095 | 6.42784 | 0.1513068 | 3.0810192 | 10 | 1 | 13 days | 0.12 | | | MPC | 2006 $RH_{67}$ |
| 2006 $RK_{67}$ | 17.4 | 0.15 | 20060902 | 341.29947 | 172.74202 | 179.50549 | 6.33043 | 0.0463811 | 2.7192479 | 9 | 1 | 12 days | 0.20 | | | MPC | 2006 $RK_{67}$ |
| 2006 $RO_{67}$ | 17.0 | 0.15 | 20060902 | 309.96691 | 207.73281 | 194.64132 | 4.39628 | 0.1995033 | 2.9444612 | 10 | 1 | 12 days | 0.18 | | | MPC | 2006 $RO_{67}$ |
| 2006 $RQ_{67}$ | 18.1 | 0.15 | 20060902 | 28.63008 | 2.07825 | 295.55464 | 6.44982 | 0.1380665 | 2.3553660 | 9 | 1 | 7 days | 0.16 | | | MPC | 2006 $RQ_{67}$ |
| 2006 $RV_{67}$ | 18.2 | 0.15 | 20060902 | 350.65668 | 125.88602 | 235.05671 | 1.89866 | 0.2050703 | 2.4544564 | 16 | 1 | 34 days | 0.46 | | | MPC | 2006 $RV_{67}$ |
| 2006 $RX_{67}$ | 18.2 | 0.15 | 20060902 | 22.03942 | 328.16281 | 345.80808 | 9.66062 | 0.1989855 | 2.2931396 | 10 | 1 | 8 days | 0.54 | | | MPC | 2006 $RX_{67}$ |
| 2006 $RA_{68}$ | 16.3 | 0.15 | 20060922 | 10.49877 | 326.26189 | 16.64794 | 1.89790 | 0.1177010 | 2.9432305 | 25 | 1 | 67 days | 0.50 | M-v | 4 | MPC | 2006 $RA_{68}$ |
| 2006 $RB_{68}$ | 17.8 | 0.15 | 20060922 | 325.79931 | 242.25664 | 166.59642 | 2.60765 | 0.2141995 | 2.3792236 | 21 | 1 | 36 days | 0.28 | | | MPC | 2006 $RB_{68}$ |
| 2006 $RC_{68}$ | 15.4 | 0.15 | 20060922 | 265.73104 | 107.40775 | 350.34519 | 10.51334 | 0.0838811 | 3.0540365 | 17 | 1 | 60 days | 0.47 | M-v | 5 | MPC | 2006 $RC_{68}$ |
| 2006 $RD_{68}$ | 17.5 | 0.15 | 20060902 | 3.50080 | 168.84836 | 174.80264 | 9.29749 | 0.1579725 | 2.6934989 | 14 | 1 | 10 days | 0.46 | | | MPC | 2006 $RD_{68}$ |
| 2006 $RE_{68}$ | 17.6 | 0.15 | 20060902 | 62.73070 | 290.77509 | 339.14911 | 2.65660 | 0.1482389 | 2.2622194 | 14 | 1 | 11 days | 0.53 | | | MPC | 2006 $RE_{68}$ |
| 2006 $RF_{68}$ | 17.9 | 0.15 | 20060902 | 310.72885 | 236.30988 | 175.50297 | 2.47899 | 0.1464030 | 2.2361429 | 11 | 1 | 10 days | 0.39 | | | MPC | 2006 $RF_{68}$ |
| 2006 $RG_{68}$ | 15.6 | 0.15 | 20060922 | 9.15867 | 351.15856 | 352.63442 | 17.47784 | 0.0774438 | 3.1973477 | 27 | 1 | 37 days | 0.38 | | | MPC | 2006 $RG_{68}$ |
| 2006 $RK_{68}$ | 15.3 | 0.15 | 20060902 | 194.96531 | 151.59070 | 12.64529 | 8.09954 | 0.1299769 | 2.5815623 | 8 | 1 | 5 days | 0.35 | | | MPC | 2006 $RK_{68}$ |
| 2006 $RL_{68}$ | 16.3 | 0.15 | 20060922 | 283.99478 | 72.82973 | 8.05913 | 6.28679 | 0.0534816 | 2.8897915 | 10 | 1 | 15 days | 0.13 | | | MPC | 2006 $RL_{68}$ |
| 2006 $RN_{68}$ | 19.2 | 0.15 | 20060902 | 21.65646 | 291.10936 | 30.09809 | 1.72858 | 0.1624878 | 2.3081712 | 17 | 1 | 34 days | 0.44 | | | MPC | 2006 $RN_{68}$ |
| 2006 $RO_{68}$ | 16.1 | 0.15 | 20060922 | 20.13507 | 307.21685 | 20.77500 | 4.00406 | 0.2127269 | 3.9536464 | 19 | 1 | 63 days | 0.24 | M-v | 4 | MPC | 2006 $RO_{68}$ |
| 2006 $RS_{68}$ | 16.3 | 0.15 | 20060922 | 111.77901 | 96.48639 | 137.70521 | 2.18991 | 0.1387895 | 3.1348752 | 10 | 1 | 15 days | 0.21 | | | MPC | 2006 $RS_{68}$ |
| 2006 $RU_{68}$ | 17.6 | 0.15 | 20060922 | 341.73469 | 13.36567 | 12.58622 | 5.20063 | 0.1834318 | 2.5627653 | 27 | 1 | 63 days | 0.17 | M-v | 3 | MPC | 2006 $RU_{68}$ |
| 2006 $RV_{68}$ | 16.3 | 0.15 | 20060902 | 190.81643 | 230.62786 | 301.23420 | 1.04687 | 0.1566003 | 3.0388064 | 13 | 1 | 12 days | 0.85 | | | MPC | 2006 $RV_{68}$ |
| 2006 $RW_{68}$ | 19.9 | 0.15 | 20060902 | 354.84916 | 168.88953 | 191.77205 | 2.90724 | 0.2009079 | 2.3299548 | 9 | 1 | 8 days | 0.20 | | | MPC | 2006 $RW_{68}$ |
| 2006 $RX_{68}$ | 17.6 | 0.15 | 20060922 | 144.38929 | 6.96048 | 208.22857 | 1.81484 | 0.0418169 | 2.7532258 | 13 | 1 | 12 days | 0.30 | | D | MPC | 2006 $RX_{68}$ |
| 2006 $RY_{68}$ | 16.2 | 0.15 | 20060902 | 193.59943 | 176.93094 | 352.49894 | 5.09393 | 0.1332833 | 3.1041363 | 13 | 1 | 12 days | 0.47 | | | MPC | 2006 $RY_{68}$ |
| 2006 $RA_{69}$ | 17.2 | 0.15 | 20060922 | 301.48829 | 104.51060 | 336.58408 | 1.20963 | 0.1899378 | 2.6382109 | 23 | 1 | 35 days | 0.20 | | | MPC | 2006 $RA_{69}$ |
| 2006 $RC_{69}$ | 17.5 | 0.15 | 20060902 | 79.47885 | 273.90428 | 352.71506 | 5.55909 | 0.1024832 | 2.6845660 | 10 | 1 | 11 days | 0.29 | | | MPC | 2006 $RC_{69}$ |
| 2006 $RD_{69}$ | 16.6 | 0.15 | 20060902 | 8.14596 | 161.85558 | 186.79699 | 6.12455 | 0.0418291 | 2.7167454 | 19 | 1 | 12 days | 0.24 | | | MPC | 2006 $RD_{69}$ |
| 2006 $RE_{69}$ | 18.4 | 0.15 | 20060902 | 307.16833 | 215.57489 | 199.67128 | 1.49765 | 0.0556061 | 2.5962331 | 9 | 1 | 12 days | 0.28 | | | MPC | 2006 $RE_{69}$ |
| 2006 $RF_{69}$ | 19.1 | 0.15 | 20060902 | 358.74845 | 166.92471 | 189.16869 | 3.13998 | 0.1468778 | 2.3827428 | 16 | 1 | 12 days | 0.18 | | | MPC | 2006 $RF_{69}$ |
| 2006 $RG_{69}$ | 15.7 | 0.15 | 20060922 | 113.26661 | 242.26381 | 357.47423 | 10.12988 | 0.1011154 | 3.2192593 | 21 | 1 | 38 days | 0.28 | | | MPC | 2006 $RG_{69}$ |
| 2006 $RH_{69}$ | 18.1 | 0.15 | 20060902 | 5.61182 | 131.42703 | 217.91371 | 0.64646 | 0.1145555 | 2.6950415 | 9 | 1 | 12 days | 0.15 | | | MPC | 2006 $RH_{69}$ |
| 2006 $RN_{69}$ | 17.8 | 0.15 | 20060922 | 341.79390 | 196.87856 | 188.78038 | 3.11945 | 0.1331083 | 2.3623130 | 20 | 1 | 61 days | 0.24 | M-v | 5 | MPC | 2006 $RN_{69}$ |
| 2006 $RO_{69}$ | 16.7 | 0.15 | 20060922 | 133.89927 | 23.24505 | 200.17688 | 2.87324 | 0.0697933 | 2.6972919 | 25 | 1 | 42 days | 0.30 | | | MPC | 2006 $RO_{69}$ |
| 2006 $RR_{69}$ | 19.1 | 0.15 | 20060902 | 19.64696 | 335.53131 | 346.36448 | 1.96591 | 0.2494597 | 2.7060100 | 9 | 1 | 12 days | 0.31 | | | MPC | 2006 $RR_{69}$ |
| 2006 $RS_{69}$ | 17.0 | 0.15 | 20060902 | 188.83125 | 346.04143 | 186.51853 | 6.24881 | 0.1406085 | 2.6654674 | 10 | 1 | 10 days | 0.32 | | | MPC | 2006 $RS_{69}$ |
| 2006 $RT_{69}$ | 16.4 | 0.15 | 20060902 | 190.50816 | 344.76399 | 187.40239 | 8.47297 | 0.1780735 | 2.6446093 | 13 | 1 | 12 days | 0.65 | | | MPC | 2006 $RT_{69}$ |
| 2006 $RV_{69}$ | 18.4 | 0.15 | 20060902 | 44.62386 | 311.39398 | 342.67768 | 2.26179 | 0.1801463 | 2.4148736 | 20 | 1 | 12 days | 0.26 | | | MPC | 2006 $RV_{69}$ |
| 2006 $RW_{69}$ | 16.5 | 0.15 | 20060902 | 202.39309 | 320.57873 | 200.75073 | 1.78906 | 0.1082143 | 2.8249189 | 10 | 1 | 11 days | 0.45 | | | MPC | 2006 $RW_{69}$ |
| 2006 $RX_{69}$ | 19.2 | 0.15 | 20060922 | 344.43347 | 34.30071 | 349.34852 | 3.19204 | 0.1672372 | 2.2296135 | 21 | 1 | 38 days | 0.27 | | | MPC | 2006 $RX_{69}$ |
| 2006 $RA_{70}$ | 16.5 | 0.15 | 20060902 | 38.39220 | 130.59576 | 186.16254 | 9.10671 | 0.0493909 | 2.9954712 | 16 | 1 | 12 days | 0.29 | | | MPC | 2006 $RA_{70}$ |
| 2006 $RB_{70}$ | 18.5 | 0.15 | 20060902 | 342.61808 | 202.19876 | 185.15937 | 2.57904 | 0.2765657 | 3.1174428 | 13 | 1 | 12 days | 0.24 | | | MPC | 2006 $RB_{70}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RC_{70}$ | 15.8 | 0.15 | 20060902 | 34.56892 | 132.31220 | 184.50073 | 4.65090 | 0.1020730 | 3.1351602 | 20 | 1 | 12 days | 0.23 | | MPC | 2006 $RC_{70}$ |
| 2006 $RE_{70}$ | 17.8 | 0.15 | 20060922 | 0.93383 | 6.62319 | 354.69379 | 5.27999 | 0.1072509 | 2.5678081 | 17 | 1 | 63 days | 0.24 | M-v 4 | MPC | 2006 $RE_{70}$ |
| 2006 $RF_{70}$ | 18.3 | 0.15 | 20060922 | 285.48306 | 91.77036 | 356.97127 | 3.39157 | 0.1063984 | 2.2418141 | 15 | 1 | 60 days | 0.25 | M-v 4 | MPC | 2006 $RF_{70}$ |
| 2006 $RJ_{70}$ | 19.1 | 0.15 | 20060902 | 15.10665 | 16.61724 | 315.38612 | 1.03493 | 0.2185869 | 2.7431403 | 9 | 1 | 12 days | 0.32 | | MPC | 2006 $RJ_{70}$ |
| 2006 $RK_{70}$ | 18.8 | 0.15 | 20060922 | 354.54665 | 15.88819 | 355.56154 | 7.77137 | 0.2318068 | 2.7289897 | 17 | 1 | 38 days | 0.33 | | MPC | 2006 $RK_{70}$ |
| 2006 $RL_{70}$ | 17.0 | 0.15 | 20060902 | 316.70602 | 53.83982 | 354.61983 | 5.35199 | 0.0699627 | 3.0629406 | 13 | 1 | 12 days | 0.47 | | MPC | 2006 $RL_{70}$ |
| 2006 $RM_{70}$ | 16.6 | 0.15 | 20060922 | 92.19144 | 261.50056 | 359.64811 | 9.04312 | 0.0857944 | 2.7977404 | 17 | 1 | 38 days | 0.24 | | MPC | 2006 $RM_{70}$ |
| 2006 $RN_{70}$ | 18.7 | 0.15 | 20060902 | 20.91478 | 128.62074 | 190.26706 | 2.96004 | 0.2380621 | 2.2781064 | 16 | 1 | 12 days | 0.14 | | MPC | 2006 $RN_{70}$ |
| 2006 $RO_{70}$ | 15.7 | 0.15 | 20060922 | 316.87065 | 52.10547 | 359.86289 | 9.55385 | 0.0662117 | 3.0749788 | 17 | 1 | 38 days | 0.17 | | MPC | 2006 $RO_{70}$ |
| 2006 $RP_{70}$ | 17.5 | 0.15 | 20060922 | 59.19213 | 92.01096 | 185.04445 | 14.83336 | 0.2399300 | 2.8630736 | 17 | 1 | 37 days | 0.40 | | MPC | 2006 $RP_{70}$ |
| 2006 $RQ_{70}$ | 17.5 | 0.15 | 20060902 | 270.03845 | 267.90595 | 185.68975 | 1.18965 | 0.0447677 | 2.7081585 | 13 | 1 | 12 days | 0.27 | | MPC | 2006 $RQ_{70}$ |
| 2006 $RR_{70}$ | 17.3 | 0.15 | 20060922 | 260.65117 | 134.58243 | 345.07853 | 3.11120 | 0.1565597 | 2.6886005 | 14 | 1 | 38 days | 0.22 | | MPC | 2006 $RR_{70}$ |
| 2006 $RT_{70}$ | 16.8 | 0.15 | 20060902 | 289.41146 | 92.38952 | 354.67075 | 3.41671 | 0.1476097 | 3.0460726 | 16 | 1 | 12 days | 0.24 | | MPC | 2006 $RT_{70}$ |
| 2006 $RU_{70}$ | 18.1 | 0.15 | 20060902 | 210.31075 | 324.67207 | 188.86593 | 3.95493 | 0.1067892 | 2.2979774 | 10 | 1 | 11 days | 0.65 | | MPC | 2006 $RU_{70}$ |
| 2006 $RV_{70}$ | 17.4 | 0.15 | 20060922 | 5.72699 | 171.25727 | 183.88358 | 2.66663 | 0.1400758 | 2.6807732 | 20 | 1 | 17 days | 0.16 | | MPC | 2006 $RV_{70}$ |
| 2006 $RW_{70}$ | 16.3 | 0.15 | 20060922 | 6.81455 | 170.25791 | 182.29937 | 2.83658 | 0.2298612 | 3.9459433 | 29 | 1 | 34 days | 0.35 | | MPC | 2006 $RW_{70}$ |
| 2006 $RX_{70}$ | 18.9 | 0.15 | 20060902 | 28.36385 | 311.91560 | 0.80297 | 3.38974 | 0.2088715 | 2.5374795 | 12 | 1 | 12 days | 0.22 | | MPC | 2006 $RX_{70}$ |
| 2006 $RZ_{70}$ | 18.7 | 0.15 | 20060902 | 6.91174 | 162.72912 | 181.39162 | 6.59939 | 0.1944965 | 2.4241417 | 16 | 1 | 12 days | 0.34 | | MPC | 2006 $RZ_{70}$ |
| 2006 $RA_{71}$ | 17.7 | 0.15 | 20060922 | 21.59500 | 147.48876 | 189.54212 | 3.31081 | 0.0987244 | 2.7856950 | 17 | 1 | 17 days | 0.30 | | MPC | 2006 $RA_{71}$ |
| 2006 $RB_{71}$ | 16.9 | 0.15 | 20060922 | 304.19883 | 62.23117 | 5.94171 | 1.30406 | 0.0883978 | 2.9913886 | 27 | 1 | 37 days | 0.25 | | MPC | 2006 $RB_{71}$ |
| 2006 $RD_{71}$ | 18.2 | 0.15 | 20060922 | 332.40562 | 42.36979 | 0.52171 | 2.39783 | 0.1947180 | 2.2840283 | 24 | 1 | 61 days | 0.36 | M-v 4 | MPC | 2006 $RD_{71}$ |
| 2006 $RE_{71}$ | 17.5 | 0.15 | 20060902 | 346.40270 | 22.59378 | 352.46365 | 1.48293 | 0.0857749 | 2.9179023 | 13 | 1 | 12 days | 0.27 | | MPC | 2006 $RE_{71}$ |
| 2006 $RF_{71}$ | 17.8 | 0.15 | 20060902 | 295.71167 | 71.01370 | 2.48581 | 8.37221 | 0.0973265 | 2.7304218 | 10 | 1 | 11 days | 0.25 | | MPC | 2006 $RF_{71}$ |
| 2006 $RG_{71}$ | 17.0 | 0.15 | 20060902 | 107.16276 | 246.35036 | 0.04661 | 11.00745 | 0.0584725 | 2.7631648 | 13 | 1 | 11 days | 0.29 | | MPC | 2006 $RG_{71}$ |
| 2006 $RH_{71}$ | 18.9 | 0.15 | 20060922 | 348.23930 | 208.56102 | 172.69242 | 1.12416 | 0.2282068 | 2.3024817 | 27 | 1 | 36 days | 0.23 | | MPC | 2006 $RH_{71}$ |
| 2006 $RK_{71}$ | 17.6 | 0.15 | 20060922 | 33.97021 | 130.97177 | 188.50688 | 4.28946 | 0.1357861 | 2.7073916 | 17 | 1 | 31 days | 0.31 | | MPC | 2006 $RK_{71}$ |
| 2006 $RL_{71}$ | 17.2 | 0.15 | 20060922 | 284.98943 | 156.57346 | 285.36214 | 0.29219 | 0.0327983 | 2.3529649 | 24 | 1 | 67 days | 0.28 | M-v 5 | MPC | 2006 $RL_{71}$ |
| 2006 $RN_{71}$ | 18.0 | 0.15 | 20060922 | 351.35556 | 196.05063 | 179.86885 | 12.62094 | 0.1917104 | 2.6394439 | 22 | 1 | 31 days | 0.35 | | MPC | 2006 $RN_{71}$ |
| 2006 $RO_{71}$ | 16.3 | 0.15 | 20060922 | 301.67416 | 81.70308 | 2.13546 | 14.56109 | 0.1954502 | 3.1369913 | 16 | 1 | 46 days | 0.34 | | MPC | 2006 $RO_{71}$ |
| 2006 $RP_{71}$ | 19.3 | 0.15 | 20060902 | 315.39974 | 240.52610 | 179.78915 | 6.74666 | 0.2162951 | 2.2150664 | 16 | 1 | 12 days | 0.23 | | MPC | 2006 $RP_{71}$ |
| 2006 $RQ_{71}$ | 16.2 | 0.15 | 20060922 | 294.35941 | 271.92651 | 181.53036 | 11.64118 | 0.2130427 | 2.6684200 | 40 | 1 | 74 days | 0.38 | M-v 4 | MPC | 2006 $RQ_{71}$ |
| 2006 $RS_{71}$ | 16.0 | 0.15 | 20060922 | 327.75655 | 44.96831 | 0.74831 | 9.30439 | 0.1315905 | 3.1086386 | 23 | 1 | 37 days | 0.22 | | MPC | 2006 $RS_{71}$ |
| 2006 $RU_{71}$ | 15.7 | 0.15 | 20060922 | 315.02040 | 55.03824 | 1.88735 | 9.32802 | 0.0864536 | 3.1365020 | 21 | 1 | 37 days | 0.34 | | MPC | 2006 $RU_{71}$ |
| 2006 $RV_{71}$ | 18.1 | 0.15 | 20060902 | 49.61894 | 105.53950 | 184.27206 | 1.93512 | 0.1879716 | 2.7019493 | 13 | 1 | 12 days | 0.22 | | MPC | 2006 $RV_{71}$ |
| 2006 $RX_{71}$ | 16.7 | 0.15 | 20060902 | 63.95547 | 290.31184 | 4.25610 | 11.75597 | 0.0212839 | 3.1110069 | 10 | 1 | 10 days | 0.20 | | MPC | 2006 $RX_{71}$ |
| 2006 $RY_{71}$ | 16.4 | 0.15 | 20060922 | 338.77780 | 27.88093 | 1.11221 | 1.73274 | 0.0782918 | 2.9734808 | 25 | 1 | 88 days | 0.30 | M-v 4 | MPC | 2006 $RY_{71}$ |
| 2006 $RZ_{71}$ | 18.6 | 0.15 | 20060922 | 275.04646 | 277.27159 | 180.25885 | 2.82895 | 0.0802357 | 2.2850065 | 14 | 1 | 17 days | 0.28 | | MPC | 2006 $RZ_{71}$ |
| 2006 $RA_{72}$ | 18.2 | 0.15 | 20060922 | 351.12934 | 190.04683 | 184.88029 | 4.88151 | 0.1280241 | 2.4133889 | 21 | 1 | 62 days | 0.31 | M-v 4 | MPC | 2006 $RA_{72}$ |
| 2006 $RC_{72}$ | 18.0 | 0.15 | 20060922 | 314.60514 | 64.40308 | 1.58563 | 12.80767 | 0.1762217 | 2.6667499 | 16 | 1 | 17 days | 0.30 | | MPC | 2006 $RC_{72}$ |
| 2006 $RF_{72}$ | 16.6 | 0.15 | 20060902 | 275.57087 | 277.96435 | 181.59680 | 11.90987 | 0.1259162 | 2.9297029 | 16 | 1 | 12 days | 0.21 | | MPC | 2006 $RF_{72}$ |
| 2006 $RJ_{72}$ | 18.5 | 0.15 | 20060902 | 252.30875 | 116.14338 | 1.88142 | 4.50434 | 0.1075494 | 2.3865086 | 13 | 1 | 12 days | 0.31 | | MPC | 2006 $RJ_{72}$ |
| 2006 $RL_{72}$ | 16.6 | 0.15 | 20060922 | 344.38641 | 202.71758 | 183.05122 | 27.71303 | 0.1501683 | 3.1042467 | 24 | 1 | 35 days | 0.44 | | MPC | 2006 $RL_{72}$ |
| 2006 $RO_{72}$ | 17.5 | 0.15 | 20060922 | 5.79466 | 351.22407 | 5.54286 | 6.27750 | 0.1263036 | 2.9881584 | 24 | 1 | 17 days | 0.29 | | MPC | 2006 $RO_{72}$ |
| 2006 $RQ_{72}$ | 18.1 | 0.15 | 20060922 | 23.54557 | 328.91114 | 1.66096 | 14.90530 | 0.1666086 | 2.4476123 | 17 | 1 | 38 days | 0.35 | | MPC | 2006 $RQ_{72}$ |
| 2006 $RR_{72}$ | 18.0 | 0.15 | 20060922 | 355.37909 | 9.06697 | 0.11900 | 8.15988 | 0.1008401 | 2.2513215 | 14 | 1 | 17 days | 0.18 | | MPC | 2006 $RR_{72}$ |
| 2006 $RS_{72}$ | 17.6 | 0.15 | 20060902 | 72.40546 | 107.75797 | 177.61552 | 2.97861 | 0.0207966 | 2.7066462 | 10 | 1 | 10 days | 0.18 | | MPC | 2006 $RS_{72}$ |
| 2006 $RT_{72}$ | 15.9 | 0.15 | 20060902 | 23.02489 | 336.81923 | 354.04140 | 1.21156 | 0.1243921 | 3.0886088 | 14 | 1 | 11 days | 0.29 | | MPC | 2006 $RT_{72}$ |
| 2006 $RV_{72}$ | 19.5 | 0.15 | 20060902 | 22.63252 | 152.65546 | 168.17115 | 2.56813 | 0.2081037 | 2.3774083 | 13 | 1 | 12 days | 0.25 | | MPC | 2006 $RV_{72}$ |
| 2006 $RW_{72}$ | 19.2 | 0.15 | 20060922 | 359.11892 | 359.74898 | 4.69322 | 6.82730 | 0.1904525 | 2.3751593 | 17 | 1 | 17 days | 0.21 | | MPC | 2006 $RW_{72}$ |
| 2006 $RX_{72}$ | 18.3 | 0.15 | 20060922 | 10.40605 | 327.81358 | 22.45689 | 1.34019 | 0.1206548 | 2.4164729 | 24 | 1 | 31 days | 0.34 | | MPC | 2006 $RX_{72}$ |
| 2006 $RZ_{72}$ | 17.1 | 0.15 | 20060922 | 175.00113 | 201.90557 | 346.92312 | 0.71305 | 0.1312295 | 2.4483138 | 20 | 1 | 17 days | 0.29 | | MPC | 2006 $RZ_{72}$ |
| 2006 $RC_{73}$ | 17.4 | 0.15 | 20060922 | 341.01174 | 23.29282 | 3.99669 | 4.19455 | 0.0940034 | 2.6235464 | 34 | 1 | 43 days | 0.33 | | MPC | 2006 $RC_{73}$ |
| 2006 $RD_{73}$ | 16.5 | 0.15 | 20060902 | 101.92140 | 211.87293 | 35.65395 | 1.21432 | 0.1119632 | 2.9695204 | 16 | 1 | 12 days | 0.25 | | MPC | 2006 $RD_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RE_{73}$ | 16.2 | 0.15 | 20060902 | 233.75722 | 135.83153 | 1.74455 | 1.81937 | 0.1179429 | 2.6973762 | 13 | 1 | 8 days | 0.59 | | | MPC | 2006 $RE_{73}$ |
| 2006 $RG_{73}$ | 16.9 | 0.15 | 20060902 | 17.22399 | 329.04447 | 8.44478 | 6.31018 | 0.1378991 | 3.1598608 | 17 | 1 | 10 days | 0.46 | | | MPC | 2006 $RG_{73}$ |
| 2006 $RJ_{73}$ | 16.4 | 0.15 | 20060922 | 288.41877 | 86.77247 | 5.30734 | 1.40599 | 0.1339103 | 2.9878781 | 28 | 1 | 42 days | 0.34 | | | MPC | 2006 $RJ_{73}$ |
| 2006 $RK_{73}$ | 16.8 | 0.15 | 20060922 | 322.31559 | 238.87983 | 171.22096 | 4.00520 | 0.1017472 | 2.7831763 | 21 | 1 | 34 days | 0.21 | | | MPC | 2006 $RK_{73}$ |
| 2006 $RL_{73}$ | 17.3 | 0.15 | 20060902 | 304.28349 | 57.67634 | 8.41783 | 4.27025 | 0.0993132 | 2.8502138 | 12 | 1 | 12 days | 0.31 | | | MPC | 2006 $RL_{73}$ |
| 2006 $RO_{73}$ | 19.7 | 0.15 | 20060902 | 19.55253 | 141.08827 | 178.67762 | 4.11702 | 0.2703491 | 2.3519020 | 13 | 1 | 10 days | 0.24 | | | MPC | 2006 $RO_{73}$ |
| 2006 $RQ_{73}$ | 17.4 | 0.15 | 20060922 | 333.74130 | 229.63676 | 166.40804 | 2.35984 | 0.0870757 | 2.9081109 | 20 | 1 | 37 days | 0.40 | | | MPC | 2006 $RQ_{73}$ |
| 2006 $RR_{73}$ | 17.9 | 0.15 | 20060922 | 324.25557 | 48.61203 | 5.61585 | 2.48668 | 0.1800658 | 2.3673955 | 36 | 1 | 61 days | 0.41 | M-v | 4 | MPC | 2006 $RR_{73}$ |
| 2006 $RS_{73}$ | 19.8 | 0.15 | 20060902 | 2.52613 | 175.21500 | 176.27765 | 2.46458 | 0.1509625 | 2.1727553 | 16 | 1 | 12 days | 0.35 | | | MPC | 2006 $RS_{73}$ |
| 2006 $RT_{73}$ | 17.0 | 0.15 | 20060922 | 244.99684 | 308.74641 | 183.17887 | 5.88112 | 0.1251589 | 2.3436952 | 24 | 1 | 36 days | 0.29 | | | MPC | 2006 $RT_{73}$ |
| 2006 $RU_{73}$ | 18.4 | 0.15 | 20060922 | 13.65680 | 338.21084 | 2.35364 | 12.69875 | 0.2508538 | 2.6301618 | 20 | 1 | 37 days | 0.29 | | | MPC | 2006 $RU_{73}$ |
| 2006 $RW_{73}$ | 19.1 | 0.15 | 20060922 | 13.66815 | 339.66807 | 4.10913 | 1.06410 | 0.1843752 | 2.3954146 | 20 | 1 | 31 days | 0.36 | | | MPC | 2006 $RW_{73}$ |
| 2006 $RX_{73}$ | 19.2 | 0.15 | 20060922 | 8.16234 | 334.76787 | 16.24279 | 1.48716 | 0.2024514 | 2.3647104 | 17 | 1 | 42 days | 0.29 | | | MPC | 2006 $RX_{73}$ |
| 2006 $RY_{73}$ | 17.2 | 0.15 | 20060922 | 312.86647 | 63.74913 | 5.43522 | 16.91733 | 0.1731997 | 3.0753330 | 21 | 1 | 17 days | 0.17 | | | MPC | 2006 $RY_{73}$ |
| 2006 $RZ_{73}$ | 18.2 | 0.15 | 20060922 | 337.82427 | 28.65635 | 7.23949 | 8.67850 | 0.1756971 | 2.6770235 | 16 | 1 | 37 days | 0.24 | | | MPC | 2006 $RZ_{73}$ |
| 2006 $RA_{74}$ | 16.8 | 0.15 | 20060922 | 349.11480 | 358.15726 | 18.90680 | 2.17899 | 0.0184978 | 3.1201611 | 16 | 1 | 31 days | 0.88 | | | MPC | 2006 $RA_{74}$ |
| 2006 $RC_{74}$ | 18.6 | 0.15 | 20060922 | 8.35398 | 336.24837 | 14.41318 | 2.63304 | 0.2103746 | 2.3826308 | 35 | 1 | 43 days | 0.44 | | | MPC | 2006 $RC_{74}$ |
| 2006 $RD_{74}$ | 17.2 | 0.15 | 20060902 | 15.43401 | 161.23694 | 182.42190 | 13.91939 | 0.0691928 | 2.9805701 | 10 | 1 | 11 days | 0.20 | | | MPC | 2006 $RD_{74}$ |
| 2006 $RF_{74}$ | 16.3 | 0.15 | 20060922 | 208.03493 | 341.45100 | 178.22833 | 2.22640 | 0.0295512 | 2.9850088 | 27 | 1 | 42 days | 0.30 | | | MPC | 2006 $RF_{74}$ |
| 2006 $RG_{74}$ | 16.8 | 0.15 | 20060922 | 306.70193 | 74.78925 | 5.23940 | 13.31326 | 0.2031118 | 2.7624439 | 22 | 1 | 17 days | 0.32 | | | MPC | 2006 $RG_{74}$ |
| 2006 $RJ_{74}$ | 19.4 | 0.15 | 20060922 | 1.72633 | 356.41243 | 4.05265 | 5.62791 | 0.2491315 | 2.3068763 | 13 | 1 | 17 days | 0.21 | | | MPC | 2006 $RJ_{74}$ |
| 2006 $RM_{74}$ | 18.1 | 0.15 | 20060922 | 59.46610 | 102.28291 | 176.14617 | 6.41752 | 0.2370957 | 2.3211349 | 13 | 1 | 15 days | 0.14 | | | MPC | 2006 $RM_{74}$ |
| 2006 $RO_{74}$ | 17.6 | 0.15 | 20060902 | 281.44379 | 280.52218 | 171.23098 | 4.33184 | 0.1069322 | 2.6890807 | 16 | 1 | 12 days | 0.27 | | | MPC | 2006 $RO_{74}$ |
| 2006 $RP_{74}$ | 19.0 | 0.15 | 20060902 | 30.41833 | 136.54663 | 180.84487 | 6.97020 | 0.1415498 | 2.2999394 | 12 | 1 | 12 days | 0.23 | | | MPC | 2006 $RP_{74}$ |
| 2006 $RR_{74}$ | 16.3 | 0.15 | 20060922 | 231.35447 | 102.46270 | 42.62299 | 1.24442 | 0.1205784 | 3.0915410 | 14 | 1 | 31 days | 0.31 | | | MPC | 2006 $RR_{74}$ |
| 2006 $RT_{74}$ | 17.3 | 0.15 | 20060902 | 124.70124 | 47.58257 | 179.50411 | 12.75708 | 0.1189067 | 2.6534998 | 10 | 1 | 11 days | 0.17 | | | MPC | 2006 $RT_{74}$ |
| 2006 $RU_{74}$ | 19.4 | 0.15 | 20060922 | 9.12472 | 338.01859 | 11.59433 | 1.85921 | 0.2121691 | 2.3131254 | 22 | 1 | 31 days | 0.24 | | | MPC | 2006 $RU_{74}$ |
| 2006 $RY_{74}$ | 17.3 | 0.15 | 20060922 | 302.33989 | 5.49566 | 75.55976 | 0.55496 | 0.1598505 | 3.1003272 | 17 | 1 | 31 days | 0.43 | | | MPC | 2006 $RY_{74}$ |
| 2006 $RZ_{74}$ | 17.7 | 0.15 | 20060922 | 354.05840 | 3.94810 | 8.38029 | 9.87533 | 0.0969187 | 2.6058290 | 26 | 1 | 46 days | 0.38 | | | MPC | 2006 $RZ_{74}$ |
| 2006 $RA_{75}$ | 18.7 | 0.15 | 20060922 | 13.53168 | 168.00364 | 180.13762 | 19.10427 | 0.0671740 | 1.8725818 | 15 | 1 | 27 days | 0.29 | | | MPC | 2006 $RA_{75}$ |
| 2006 $RB_{75}$ | 16.9 | 0.15 | 20060922 | 356.71158 | 240.73656 | 129.26233 | 1.06708 | 0.1537990 | 2.8977934 | 27 | 1 | 31 days | 0.38 | | | MPC | 2006 $RB_{75}$ |
| 2006 $RD_{75}$ | 15.6 | 0.15 | 20060922 | 16.91298 | 308.58510 | 25.96914 | 1.32158 | 0.2975132 | 3.9237023 | 35 | 1 | 42 days | 0.37 | | | MPC | 2006 $RD_{75}$ |
| 2006 $RE_{75}$ | 18.4 | 0.15 | 20060922 | 1.36276 | 188.75998 | 173.30773 | 3.67969 | 0.2027670 | 2.3356284 | 26 | 1 | 26 days | 0.29 | | | MPC | 2006 $RE_{75}$ |
| 2006 $RF_{75}$ | 17.6 | 0.15 | 20060922 | 55.76964 | 285.54567 | 12.82685 | 7.24494 | 0.1093545 | 2.6030627 | 20 | 1 | 43 days | 0.31 | | | MPC | 2006 $RF_{75}$ |
| 2006 $RG_{75}$ | 17.9 | 0.15 | 20060922 | 345.62609 | 217.39325 | 174.58972 | 6.94815 | 0.3066364 | 2.5360316 | 20 | 1 | 37 days | 0.57 | | | MPC | 2006 $RG_{75}$ |
| 2006 $RM_{75}$ | 17.9 | 0.15 | 20060922 | 335.49776 | 230.61443 | 170.24962 | 3.78946 | 0.1856471 | 2.6948822 | 26 | 1 | 31 days | 0.50 | | | MPC | 2006 $RM_{75}$ |
| 2006 $RP_{75}$ | 17.0 | 0.15 | 20060922 | 303.66426 | 71.71132 | 11.23356 | 7.49946 | 0.1891090 | 3.0342271 | 20 | 1 | 43 days | 0.41 | | | MPC | 2006 $RP_{75}$ |
| 2006 $RQ_{75}$ | 18.5 | 0.15 | 20060902 | 64.60131 | 254.82326 | 27.48246 | 1.98027 | 0.1225445 | 2.5222020 | 13 | 1 | 12 days | 0.38 | | | MPC | 2006 $RQ_{75}$ |
| 2006 $RS_{75}$ | 18.9 | 0.15 | 20060922 | 12.34125 | 315.37062 | 30.04952 | 1.56568 | 0.2022916 | 2.3625200 | 21 | 1 | 36 days | 0.31 | | | MPC | 2006 $RS_{75}$ |
| 2006 $RT_{75}$ | 16.7 | 0.15 | 20060902 | 94.94487 | 101.20246 | 161.62169 | 2.30798 | 0.0340216 | 2.6665241 | 20 | 1 | 12 days | 0.48 | | | MPC | 2006 $RT_{75}$ |
| 2006 $RU_{75}$ | 19.7 | 0.15 | 20060902 | 20.72715 | 242.93397 | 76.48692 | 0.82107 | 0.2531980 | 2.2374809 | 17 | 1 | 11 days | 0.37 | | | MPC | 2006 $RU_{75}$ |
| 2006 $RV_{75}$ | 17.8 | 0.15 | 20060922 | 311.33813 | 47.43727 | 21.56289 | 3.84159 | 0.1571789 | 2.4498075 | 44 | 1 | 67 days | 0.35 | M-v | 4 | MPC | 2006 $RV_{75}$ |
| 2006 $RW_{75}$ | 18.5 | 0.15 | 20060922 | 4.88320 | 337.13300 | 21.02297 | 3.28549 | 0.1387492 | 2.4037408 | 27 | 1 | 36 days | 0.24 | | | MPC | 2006 $RW_{75}$ |
| 2006 $RY_{75}$ | 16.7 | 0.15 | 20060902 | 329.60765 | 217.14708 | 183.14963 | 11.03749 | 0.1144859 | 3.1238679 | 10 | 1 | 11 days | 0.35 | | | MPC | 2006 $RY_{75}$ |
| 2006 $RZ_{75}$ | 17.3 | 0.15 | 20060902 | 287.72602 | 286.51154 | 173.53329 | 5.41623 | 0.2333427 | 2.5789998 | 29 | 1 | 12 days | 0.40 | | | MPC | 2006 $RZ_{75}$ |
| 2006 $RA_{76}$ | 17.0 | 0.15 | 20060922 | 133.85446 | 205.51007 | 17.30066 | 3.86163 | 0.1291754 | 2.5208422 | 25 | 1 | 42 days | 0.26 | | | MPC | 2006 $RA_{76}$ |
| 2006 $RB_{76}$ | 17.1 | 0.15 | 20060922 | 2.09165 | 349.42198 | 14.64999 | 3.66546 | 0.0867498 | 3.0337302 | 25 | 1 | 42 days | 0.30 | | | MPC | 2006 $RB_{76}$ |
| 2006 $RC_{76}$ | 16.7 | 0.15 | 20060922 | 335.54164 | 34.09383 | 7.46652 | 16.14656 | 0.1853947 | 3.0490408 | 17 | 1 | 34 days | 0.26 | | | MPC | 2006 $RC_{76}$ |
| 2006 $RD_{76}$ | 15.8 | 0.15 | 20060922 | 55.38325 | 249.96740 | 48.11884 | 0.96263 | 0.1320166 | 3.2493898 | 14 | 1 | 42 days | 0.25 | | | MPC | 2006 $RD_{76}$ |
| 2006 $RE_{76}$ | 17.9 | 0.15 | 20060922 | 283.37274 | 80.31664 | 14.85583 | 2.74344 | 0.1146928 | 2.2611754 | 25 | 1 | 31 days | 0.42 | | | MPC | 2006 $RE_{76}$ |
| 2006 $RG_{76}$ | 16.5 | 0.15 | 20060922 | 13.76653 | 337.21255 | 9.61871 | 9.49630 | 0.1503475 | 2.7481758 | 33 | 1 | 43 days | 0.29 | | | MPC | 2006 $RG_{76}$ |
| 2006 $RK_{76}$ | 18.8 | 0.15 | 20060922 | 56.84253 | 276.28578 | 10.74825 | 4.57527 | 0.1931792 | 2.1919399 | 16 | 1 | 31 days | 0.22 | | | MPC | 2006 $RK_{76}$ |
| 2006 $RL_{76}$ | 18.5 | 0.15 | 20060922 | 28.18302 | 310.26879 | 16.56841 | 3.70296 | 0.1576460 | 2.5256554 | 27 | 1 | 31 days | 0.41 | | D | MPC | 2006 $RL_{76}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RM_{76}$ | 17.3 | 0.15 | 20060902 | 84.27236 | 238.16833 | 18.03766 | 7.41560 | 0.1764504 | 2.7443014 | 12 | 1 | 12 days | 0.21 | | MPC | 2006 $RM_{76}$ |
| 2006 $RN_{76}$ | 17.8 | 0.15 | 20060902 | 356.35878 | 222.39185 | 142.02682 | 2.78025 | 0.0790852 | 2.9030375 | 12 | 1 | 12 days | 0.25 | | MPC | 2006 $RN_{76}$ |
| 2006 $RO_{76}$ | 18.7 | 0.15 | 20060902 | 2.67176 | 215.52685 | 136.56604 | 1.93808 | 0.2175307 | 2.5972784 | 12 | 1 | 12 days | 0.21 | | MPC | 2006 $RO_{76}$ |
| 2006 $RQ_{76}$ | 17.1 | 0.15 | 20060922 | 340.10671 | 287.42411 | 100.78962 | 1.78026 | 0.0826448 | 2.7708369 | 12 | 1 | 15 days | 0.37 | | MPC | 2006 $RQ_{76}$ |
| 2006 $RR_{76}$ | 18.1 | 0.15 | 20060922 | 356.69181 | 348.47095 | 20.19070 | 3.10526 | 0.1866538 | 2.4097907 | 18 | 1 | 42 days | 0.33 | | MPC | 2006 $RR_{76}$ |
| 2006 $RS_{76}$ | 18.3 | 0.15 | 20060902 | 61.97763 | 265.95621 | 16.88490 | 5.33796 | 0.1232929 | 2.3200628 | 16 | 1 | 12 days | 0.37 | | MPC | 2006 $RS_{76}$ |
| 2006 $RT_{76}$ | 16.7 | 0.15 | 20060922 | 355.24747 | 331.79217 | 38.75550 | 2.23570 | 0.1097690 | 2.6440151 | 31 | 1 | 37 days | 0.38 | | MPC | 2006 $RT_{76}$ |
| 2006 $RU_{76}$ | 15.6 | 0.15 | 20060902 | 104.91412 | 200.62371 | 17.71978 | 10.01431 | 0.4528840 | 2.8666529 | 9 | 1 | 8 days | 0.33 | | MPC | 2006 $RU_{76}$ |
| 2006 $RW_{76}$ | 17.9 | 0.15 | 20060922 | 301.95480 | 302.61658 | 137.69117 | 1.77593 | 0.1655510 | 2.3879404 | 18 | 1 | 34 days | 0.46 | | MPC | 2006 $RW_{76}$ |
| 2006 $RX_{76}$ | 18.0 | 0.15 | 20060902 | 313.81483 | 247.95564 | 176.34902 | 9.88487 | 0.1883211 | 2.7909530 | 14 | 1 | 12 days | 0.27 | | MPC | 2006 $RX_{76}$ |
| 2006 $RY_{76}$ | 16.4 | 0.15 | 20060902 | 74.60627 | 99.59257 | 178.32817 | 14.55364 | 0.0821056 | 2.9338711 | 12 | 1 | 12 days | 0.13 | | MPC | 2006 $RY_{76}$ |
| 2006 $RZ_{76}$ | 17.3 | 0.15 | 20060902 | 58.49045 | 108.44116 | 176.93997 | 13.84070 | 0.1489941 | 2.5811174 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $RZ_{76}$ |
| 2006 $RA_{77}$ | 18.7 | 0.15 | 20060922 | 358.19711 | 347.83504 | 18.34060 | 3.44319 | 0.1888745 | 2.2180380 | 40 | 1 | 43 days | 0.61 | | MPC | 2006 $RA_{77}$ |
| 2006 $RC_{77}$ | 17.6 | 0.15 | 20060902 | 305.55582 | 253.51276 | 166.20788 | 6.49682 | 0.0453137 | 2.7805738 | 9 | 1 | 12 days | 0.24 | | MPC | 2006 $RC_{77}$ |
| 2006 $RF_{77}$ | 17.2 | 0.15 | 20060902 | 1.08699 | 205.60217 | 153.24759 | 3.79899 | 0.0746380 | 2.7521955 | 9 | 1 | 8 days | 0.16 | | MPC | 2006 $RF_{77}$ |
| 2006 $RG_{77}$ | 16.4 | 0.15 | 20060902 | 300.97526 | 256.15307 | 172.10948 | 6.97201 | 0.0656051 | 3.1822274 | 15 | 1 | 8 days | 0.46 | | MPC | 2006 $RG_{77}$ |
| 2006 $RH_{77}$ | 16.9 | 0.15 | 20060922 | 359.87162 | 344.08157 | 21.70049 | 5.67313 | 0.1265416 | 3.1979777 | 30 | 1 | 36 days | 0.42 | | MPC | 2006 $RH_{77}$ |
| 2006 $RO_{77}$ | 17.7 | 0.15 | 20060902 | 36.13739 | 260.61829 | 50.17200 | 2.75663 | 0.1512168 | 2.6059503 | 12 | 1 | 12 days | 0.19 | | MPC | 2006 $RO_{77}$ |
| 2006 $RP_{77}$ | 16.6 | 0.15 | 20060922 | 351.09780 | 205.29119 | 170.11397 | 6.13562 | 0.0483567 | 2.7094761 | 23 | 1 | 69 days | 0.27 | M-v 4 | MPC | 2006 $RP_{77}$ |
| 2006 $RQ_{77}$ | 18.1 | 0.15 | 20060922 | 35.87586 | 138.79557 | 168.06145 | 6.02197 | 0.2453655 | 2.3637752 | 13 | 1 | 15 days | 0.39 | | MPC | 2006 $RQ_{77}$ |
| 2006 $RR_{77}$ | 17.1 | 0.15 | 20060902 | 339.86659 | 235.93336 | 147.69012 | 2.76527 | 0.0514167 | 2.8808842 | 9 | 1 | 12 days | 0.20 | | MPC | 2006 $RR_{77}$ |
| 2006 $RS_{77}$ | 17.8 | 0.15 | 20060922 | 354.13934 | 227.46587 | 144.94108 | 2.26465 | 0.1866485 | 2.2410294 | 52 | 1 | 118 days | 0.34 | M-v 3 | MPC | 2006 $RS_{77}$ |
| 2006 $RW_{77}$ | 16.1 | 0.15 | 20060902 | 234.10177 | 327.81864 | 168.45226 | 7.36569 | 0.0801046 | 3.1527579 | 9 | 1 | 12 days | 0.99 | | MPC | 2006 $RW_{77}$ |
| 2006 $RA_{78}$ | 17.3 | 0.15 | 20060922 | 15.84024 | 323.06971 | 21.68999 | 5.47313 | 0.1242766 | 2.7211751 | 36 | 1 | 67 days | 0.38 | M-v 4 | MPC | 2006 $RA_{78}$ |
| 2006 $RB_{78}$ | 16.2 | 0.15 | 20060902 | 87.82723 | 177.22703 | 79.99623 | 1.89952 | 0.1624174 | 3.2174533 | 13 | 1 | 12 days | 0.21 | | MPC | 2006 $RB_{78}$ |
| 2006 $RD_{78}$ | 16.8 | 0.15 | 20060902 | 304.71625 | 344.57625 | 91.03834 | 2.42704 | 0.1768845 | 3.1068202 | 12 | 1 | 12 days | 0.15 | | MPC | 2006 $RD_{78}$ |
| 2006 $RE_{78}$ | 17.6 | 0.15 | 20060902 | 336.21090 | 256.41691 | 133.56422 | 2.88397 | 0.1114284 | 2.8302977 | 9 | 1 | 12 days | 0.20 | | MPC | 2006 $RE_{78}$ |
| 2006 $RF_{78}$ | 16.8 | 0.15 | 20060922 | 302.81077 | 58.95915 | 12.91348 | 9.56455 | 0.0879099 | 2.7236789 | 29 | 1 | 61 days | 0.42 | M-v 5 | MPC | 2006 $RF_{78}$ |
| 2006 $RJ_{78}$ | 16.9 | 0.15 | 20060922 | 80.60829 | 240.48321 | 32.45491 | 4.49980 | 0.1026217 | 2.5628302 | 12 | 1 | 32 days | 0.31 | | MPC | 2006 $RJ_{78}$ |
| 2006 $RK_{78}$ | 18.9 | 0.15 | 20060922 | 4.50884 | 225.38921 | 131.70935 | 2.04919 | 0.2007087 | 2.3411816 | 10 | 1 | 15 days | 0.30 | | MPC | 2006 $RK_{78}$ |
| 2006 $RP_{78}$ | 16.4 | 0.15 | 20060902 | 244.89727 | 106.62735 | 17.86701 | 11.51669 | 0.0682768 | 3.0151970 | 9 | 1 | 12 days | 0.13 | | MPC | 2006 $RP_{78}$ |
| 2006 $RQ_{78}$ | 17.0 | 0.15 | 20060922 | 326.51877 | 35.88718 | 8.74685 | 11.76625 | 0.1049359 | 3.0669692 | 17 | 1 | 37 days | 0.26 | | MPC | 2006 $RQ_{78}$ |
| 2006 $RR_{78}$ | 15.7 | 0.15 | 20060922 | 353.54162 | 195.09038 | 177.48715 | 11.30386 | 0.1296389 | 3.2246737 | 34 | 1 | 36 days | 0.24 | | MPC | 2006 $RR_{78}$ |
| 2006 $RT_{78}$ | 17.2 | 0.15 | 20060902 | 20.83009 | 160.40615 | 174.12435 | 6.36206 | 0.0843466 | 2.8705854 | 16 | 1 | 12 days | 0.19 | | MPC | 2006 $RT_{78}$ |
| 2006 $RW_{78}$ | 18.0 | 0.15 | 20060922 | 317.32849 | 77.01600 | 2.48125 | 21.86449 | 0.3304645 | 2.3516848 | 27 | 1 | 42 days | 0.44 | | MPC | 2006 $RW_{78}$ |
| 2006 $RX_{78}$ | 18.9 | 0.15 | 20060922 | 309.80252 | 27.77927 | 40.90187 | 1.73583 | 0.1576268 | 2.2699454 | 20 | 1 | 37 days | 0.28 | | MPC | 2006 $RX_{78}$ |
| 2006 $RY_{78}$ | 18.7 | 0.15 | 20060922 | 344.66966 | 233.69327 | 151.95893 | 1.70559 | 0.1910345 | 2.4079767 | 16 | 1 | 13 days | 0.34 | | MPC | 2006 $RY_{78}$ |
| 2006 $RA_{79}$ | 17.4 | 0.15 | 20060922 | 30.73968 | 286.12134 | 28.22254 | 2.14633 | 0.2353756 | 2.6271443 | 17 | 1 | 36 days | 0.19 | | MPC | 2006 $RA_{79}$ |
| 2006 $RB_{79}$ | 16.8 | 0.15 | 20060922 | 355.41228 | 238.40409 | 132.04703 | 1.89070 | 0.1713995 | 3.1545342 | 19 | 1 | 13 days | 0.26 | | MPC | 2006 $RB_{79}$ |
| 2006 $RE_{79}$ | 18.0 | 0.15 | 20060922 | 41.81126 | 278.80486 | 31.68715 | 2.64955 | 0.1308968 | 2.6884845 | 9 | 1 | 35 days | 0.17 | | MPC | 2006 $RE_{79}$ |
| 2006 $RF_{79}$ | 18.0 | 0.15 | 20060922 | 289.14483 | 307.15830 | 143.86815 | 1.74120 | 0.1464426 | 2.4058237 | 20 | 1 | 37 days | 0.28 | | MPC | 2006 $RF_{79}$ |
| 2006 $RH_{79}$ | 17.3 | 0.15 | 20060922 | 341.82295 | 249.70285 | 137.14972 | 2.12271 | 0.1104623 | 3.0124227 | 13 | 1 | 13 days | 0.17 | | MPC | 2006 $RH_{79}$ |
| 2006 $RJ_{79}$ | 18.6 | 0.15 | 20060902 | 109.06277 | 218.58905 | 20.72190 | 3.73455 | 0.0886406 | 2.1650074 | 10 | 1 | 11 days | 0.20 | | MPC | 2006 $RJ_{79}$ |
| 2006 $RK_{79}$ | 17.2 | 0.15 | 20060902 | 326.29926 | 30.45032 | 10.64734 | 8.81041 | 0.1091831 | 2.9752763 | 10 | 1 | 11 days | 0.58 | | MPC | 2006 $RK_{79}$ |
| 2006 $RN_{79}$ | 18.6 | 0.15 | 20060922 | 350.29360 | 356.64907 | 21.37069 | 1.77417 | 0.2052704 | 2.3730943 | 27 | 1 | 42 days | 0.23 | | MPC | 2006 $RN_{79}$ |
| 2006 $RO_{79}$ | 16.6 | 0.15 | 20060922 | 311.18506 | 31.55123 | 27.97716 | 2.10331 | 0.0675713 | 2.9040780 | 31 | 1 | 36 days | 0.45 | | MPC | 2006 $RO_{79}$ |
| 2006 $RQ_{79}$ | 17.0 | 0.15 | 20060922 | 346.91626 | 356.18554 | 24.86213 | 2.69930 | 0.1164900 | 2.9801424 | 24 | 1 | 31 days | 0.41 | | MPC | 2006 $RQ_{79}$ |
| 2006 $RS_{79}$ | 17.6 | 0.15 | 20060902 | 315.82037 | 231.17475 | 175.70652 | 6.61178 | 0.0310067 | 2.7606166 | 13 | 1 | 12 days | 0.26 | | MPC | 2006 $RS_{79}$ |
| 2006 $RU_{79}$ | 17.1 | 0.15 | 20060922 | 327.33048 | 239.16242 | 165.75256 | 5.14352 | 0.1157006 | 2.7147994 | 20 | 1 | 69 days | 0.25 | M-v 5 | MPC | 2006 $RU_{79}$ |
| 2006 $RV_{79}$ | 17.9 | 0.15 | 20060902 | 88.47401 | 94.81988 | 157.65183 | 2.93923 | 0.1616237 | 2.4148672 | 13 | 1 | 12 days | 0.28 | | MPC | 2006 $RV_{79}$ |
| 2006 $RW_{79}$ | 16.1 | 0.15 | 20060922 | 290.67757 | 85.61122 | 8.78739 | 13.40504 | 0.1780178 | 3.0350664 | 27 | 1 | 61 days | 0.35 | M-v 5 | MPC | 2006 $RW_{79}$ |
| 2006 $RX_{79}$ | 17.1 | 0.15 | 20060922 | 93.51135 | 86.43917 | 168.00228 | 4.07130 | 0.1520681 | 2.7915748 | 23 | 1 | 35 days | 0.25 | | MPC | 2006 $RX_{79}$ |
| 2006 $RY_{79}$ | 16.5 | 0.15 | 20060922 | 73.11076 | 256.88332 | 28.43337 | 2.52805 | 0.0559411 | 2.7525294 | 28 | 1 | 36 days | 0.39 | | MPC | 2006 $RY_{79}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RA_{80}$ | 19.2 | 0.15 | 20060922 | 16.63879 | 287.13298 | 47.74403 | 1.56869 | 0.2508791 | 2.4794100 | 17 | 1 | 36 days | 0.26 | | | MPC | 2006 $RA_{80}$ |
| 2006 $RB_{80}$ | 17.4 | 0.15 | 20060922 | 29.08383 | 238.35351 | 88.82399 | 1.29128 | 0.1221355 | 2.6335721 | 18 | 1 | 34 days | 0.18 | | | MPC | 2006 $RB_{80}$ |
| 2006 $RC_{80}$ | 16.6 | 0.15 | 20060902 | 321.93275 | 254.65561 | 158.12912 | 3.83659 | 0.1751062 | 3.1024889 | 12 | 1 | 12 days | 0.20 | | | MPC | 2006 $RC_{80}$ |
| 2006 $RE_{80}$ | 17.0 | 0.15 | 20060902 | 132.47151 | 70.87496 | 155.66534 | 3.14021 | 0.0163299 | 2.7102605 | 16 | 1 | 12 days | 0.41 | | | MPC | 2006 $RE_{80}$ |
| 2006 $RF_{80}$ | 17.4 | 0.15 | 20060922 | 335.04937 | 234.18331 | 161.18765 | 3.54870 | 0.1085868 | 2.7693961 | 12 | 1 | 13 days | 0.41 | | | MPC | 2006 $RF_{80}$ |
| 2006 $RK_{80}$ | 17.4 | 0.15 | 20060922 | 11.63368 | 183.30474 | 161.09441 | 4.79396 | 0.2457251 | 2.9678722 | 13 | 1 | 69 days | 0.31 | M-v | 5 | MPC | 2006 $RK_{80}$ |
| 2006 $RL_{80}$ | 16.3 | 0.15 | 20060922 | 28.92327 | 154.29714 | 176.74645 | 9.14631 | 0.0887637 | 3.1439794 | 16 | 1 | 32 days | 0.45 | | | MPC | 2006 $RL_{80}$ |
| 2006 $RN_{80}$ | 19.1 | 0.15 | 20060902 | 314.76966 | 47.67547 | 8.36826 | 2.50778 | 0.1633322 | 2.3800352 | 13 | 1 | 10 days | 0.20 | | | MPC | 2006 $RN_{80}$ |
| 2006 $RO_{80}$ | 17.6 | 0.15 | 20060922 | 348.91123 | 196.62688 | 178.53087 | 6.27171 | 0.0490338 | 2.7361385 | 21 | 1 | 37 days | 0.29 | | D | MPC | 2006 $RO_{80}$ |
| 2006 $RP_{80}$ | 16.4 | 0.15 | 20060902 | 124.18882 | 55.66343 | 170.28521 | 4.96817 | 0.0967372 | 2.6174712 | 10 | 1 | 11 days | 0.29 | | | MPC | 2006 $RP_{80}$ |
| 2006 $RQ_{80}$ | 17.2 | 0.15 | 20060922 | 337.04902 | 228.26903 | 162.42863 | 2.36082 | 0.0952852 | 3.0421905 | 14 | 1 | 37 days | 0.32 | | | MPC | 2006 $RQ_{80}$ |
| 2006 $RR_{80}$ | 17.7 | 0.15 | 20060902 | 323.49083 | 40.52024 | 6.24838 | 4.43418 | 0.1630361 | 2.7480463 | 9 | 1 | 10 days | 0.14 | | | MPC | 2006 $RR_{80}$ |
| 2006 $RS_{80}$ | 16.9 | 0.15 | 20060922 | 13.28243 | 169.88951 | 174.80648 | 4.23555 | 0.1455672 | 2.6730030 | 24 | 1 | 118 days | 0.30 | M-v | 3 | MPC | 2006 $RS_{80}$ |
| 2006 $RT_{80}$ | 16.8 | 0.15 | 20060902 | 330.17725 | 10.93699 | 18.39128 | 2.01378 | 0.0076888 | 2.8701790 | 16 | 1 | 12 days | 0.20 | | | MPC | 2006 $RT_{80}$ |
| 2006 $RU_{80}$ | 19.5 | 0.15 | 20060902 | 8.73730 | 330.89023 | 7.66957 | 3.49560 | 0.2357999 | 2.3732809 | 12 | 1 | 12 days | 0.21 | | | MPC | 2006 $RU_{80}$ |
| 2006 $RV_{80}$ | 19.8 | 0.15 | 20060902 | 5.30650 | 332.03395 | 13.20267 | 3.13360 | 0.1980015 | 2.3179202 | 20 | 1 | 12 days | 0.27 | | | MPC | 2006 $RV_{80}$ |
| 2006 $RW_{80}$ | 18.2 | 0.15 | 20060902 | 64.72743 | 105.42807 | 166.72410 | 2.01368 | 0.1756379 | 2.3353997 | 13 | 1 | 12 days | 0.36 | | | MPC | 2006 $RW_{80}$ |
| 2006 $RX_{80}$ | 16.9 | 0.15 | 20060902 | 10.76873 | 334.69714 | 9.60072 | 9.00624 | 0.1448569 | 3.3825302 | 9 | 1 | 12 days | 0.11 | | | MPC | 2006 $RX_{80}$ |
| 2006 $RY_{80}$ | 16.1 | 0.15 | 20060922 | 92.66214 | 86.89133 | 180.66807 | 20.68301 | 0.0295041 | 3.0161782 | 19 | 1 | 27 days | 0.23 | | | MPC | 2006 $RY_{80}$ |
| 2006 $RZ_{80}$ | 16.6 | 0.15 | 20060902 | 188.37983 | 162.19298 | 9.67609 | 4.89675 | 0.0524156 | 2.7634442 | 16 | 1 | 12 days | 0.19 | | | MPC | 2006 $RZ_{80}$ |
| 2006 $RC_{81}$ | 15.8 | 0.15 | 20060922 | 334.12787 | 27.15811 | 8.51325 | 10.42616 | 0.1181759 | 3.1274745 | 27 | 1 | 43 days | 0.43 | | | MPC | 2006 $RC_{81}$ |
| 2006 $RD_{81}$ | 17.6 | 0.15 | 20060902 | 318.60662 | 248.24167 | 167.57926 | 3.50250 | 0.1908244 | 2.7331372 | 21 | 1 | 55 days | 0.23 | | | MPC | 2006 $RD_{81}$ |
| 2006 $RE_{81}$ | 17.9 | 0.15 | 20060922 | 355.72288 | 2.06313 | 5.84583 | 6.59668 | 0.1158971 | 2.4366089 | 17 | 1 | 43 days | 0.17 | | | MPC | 2006 $RE_{81}$ |
| 2006 $RF_{81}$ | 19.0 | 0.15 | 20060902 | 49.08292 | 265.20873 | 14.65144 | 3.11510 | 0.2535102 | 2.3391720 | 17 | 1 | 12 days | 0.43 | | | MPC | 2006 $RF_{81}$ |
| 2006 $RH_{81}$ | 17.5 | 0.15 | 20060922 | 19.53078 | 326.79353 | 5.45093 | 4.72677 | 0.2092416 | 2.4166229 | 45 | 1 | 61 days | 0.49 | M-v | 5 | MPC | 2006 $RH_{81}$ |
| 2006 $RJ_{81}$ | 16.9 | 0.15 | 20060902 | 67.34784 | 105.38331 | 166.09747 | 2.38655 | 0.1842966 | 2.9958035 | 17 | 1 | 12 days | 0.32 | | | MPC | 2006 $RJ_{81}$ |
| 2006 $RK_{81}$ | 16.1 | 0.15 | 20060922 | 54.65947 | 242.73824 | 50.96350 | 1.69992 | 0.1466733 | 3.1336637 | 17 | 1 | 37 days | 0.25 | | | MPC | 2006 $RK_{81}$ |
| 2006 $RM_{81}$ | 16.2 | 0.15 | 20060922 | 48.37470 | 303.16137 | 6.48188 | 9.98765 | 0.0646937 | 3.1413064 | 27 | 1 | 37 days | 0.21 | | | MPC | 2006 $RM_{81}$ |
| 2006 $RO_{81}$ | 17.8 | 0.15 | 20060922 | 2.14809 | 185.46730 | 174.46105 | 9.93638 | 0.1899392 | 2.9759143 | 9 | 1 | 13 days | 0.09 | | | MPC | 2006 $RO_{81}$ |
| 2006 $RP_{81}$ | 16.3 | 0.15 | 20060922 | 197.76062 | 159.49557 | 7.67477 | 13.99194 | 0.0343630 | 3.1365194 | 28 | 1 | 37 days | 0.34 | | | MPC | 2006 $RP_{81}$ |
| 2006 $RT_{81}$ | 19.1 | 0.15 | 20060922 | 344.77184 | 18.15160 | 4.38489 | 7.50193 | 0.1354113 | 2.2401288 | 24 | 1 | 38 days | 0.30 | | | MPC | 2006 $RT_{81}$ |
| 2006 $RU_{81}$ | 18.8 | 0.15 | 20060922 | 353.63614 | 232.84001 | 139.16923 | 1.43321 | 0.2033048 | 2.3227290 | 26 | 1 | 62 days | 0.38 | M-v | 4 | MPC | 2006 $RU_{81}$ |
| 2006 $RV_{81}$ | 17.2 | 0.15 | 20060922 | 344.11349 | 221.57536 | 165.02418 | 1.74897 | 0.1766634 | 3.0969990 | 14 | 1 | 36 days | 0.24 | | | MPC | 2006 $RV_{81}$ |
| 2006 $RY_{81}$ | 18.0 | 0.15 | 20060902 | 65.76646 | 253.75340 | 11.28766 | 6.70863 | 0.2319274 | 2.3901257 | 13 | 1 | 11 days | 0.28 | | | MPC | 2006 $RY_{81}$ |
| 2006 $RA_{82}$ | 17.6 | 0.15 | 20060922 | 347.43739 | 211.77358 | 169.19634 | 4.78194 | 0.1708536 | 2.6297790 | 20 | 1 | 69 days | 0.31 | M-v | 5 | MPC | 2006 $RA_{82}$ |
| 2006 $RB_{82}$ | 16.3 | 0.15 | 20060902 | 227.16143 | 127.67438 | 11.16058 | 8.96452 | 0.0621270 | 3.1720882 | 13 | 1 | 12 days | 0.52 | | | MPC | 2006 $RB_{82}$ |
| 2006 $RG_{82}$ | 17.9 | 0.15 | 20060922 | 333.54646 | 44.00421 | 3.29689 | 18.87938 | 0.2077207 | 3.0369344 | 12 | 1 | 15 days | 0.24 | | | MPC | 2006 $RG_{82}$ |
| 2006 $RK_{82}$ | 17.4 | 0.15 | 20061012 | 301.14750 | 248.85788 | 194.23185 | 5.91260 | 0.1123957 | 2.4081833 | 27 | 1 | 57 days | 0.20 | | | MPC | 2006 $RK_{82}$ |
| 2006 $RL_{82}$ | 17.9 | 0.15 | 20060922 | 305.32344 | 236.94016 | 193.49320 | 5.53881 | 0.0969399 | 2.1973451 | 15 | 1 | 17 days | 0.20 | | | MPC | 2006 $RL_{82}$ |
| 2006 $RN_{82}$ | 18.6 | 0.15 | 20060902 | 24.85428 | 79.16548 | 239.52353 | 1.28757 | 0.2433924 | 2.6387913 | 9 | 1 | 9 days | 0.16 | | | MPC | 2006 $RN_{82}$ |
| 2006 $RR_{82}$ | 17.5 | 0.15 | 20060922 | 322.17564 | 58.74248 | 355.86587 | 6.20066 | 0.1179961 | 2.7114198 | 13 | 1 | 37 days | 0.29 | | | MPC | 2006 $RR_{82}$ |
| 2006 $RT_{82}$ | 17.5 | 0.15 | 20060922 | 356.08041 | 27.30240 | 345.10199 | 1.32914 | 0.1105767 | 2.8880792 | 12 | 1 | 13 days | 0.19 | | | MPC | 2006 $RT_{82}$ |
| 2006 $RV_{82}$ | 17.4 | 0.15 | 20060922 | 41.48162 | 303.00811 | 3.28337 | 11.47335 | 0.2083534 | 2.7388460 | 27 | 1 | 37 days | 0.30 | | | MPC | 2006 $RV_{82}$ |
| 2006 $RW_{82}$ | 18.5 | 0.15 | 20060922 | 335.01000 | 207.84709 | 195.74868 | 5.00073 | 0.2002422 | 2.4133951 | 15 | 1 | 17 days | 0.19 | | | MPC | 2006 $RW_{82}$ |
| 2006 $RX_{82}$ | 18.7 | 0.15 | 20060922 | 231.04687 | 313.54407 | 186.43014 | 22.40486 | 0.0605061 | 1.9361531 | 12 | 1 | 13 days | 0.19 | | | MPC | 2006 $RX_{82}$ |
| 2006 $RZ_{82}$ | 17.7 | 0.15 | 20060922 | 355.62299 | 178.16136 | 194.15988 | 2.33806 | 0.0454157 | 2.7017294 | 16 | 1 | 31 days | 0.39 | | | MPC | 2006 $RZ_{82}$ |
| 2006 $RA_{83}$ | 17.2 | 0.15 | 20060922 | 341.13739 | 38.31177 | 352.19668 | 3.29376 | 0.1043097 | 2.6194454 | 23 | 1 | 46 days | 0.24 | | | MPC | 2006 $RA_{83}$ |
| 2006 $RB_{83}$ | 16.7 | 0.15 | 20060922 | 346.52049 | 126.13619 | 258.51004 | 1.24057 | 0.0944152 | 3.0223849 | 27 | 1 | 46 days | 0.23 | | | MPC | 2006 $RB_{83}$ |
| 2006 $RC_{83}$ | 18.5 | 0.15 | 20060922 | 345.01866 | 32.19899 | 351.96710 | 4.09967 | 0.0916378 | 2.1576302 | 13 | 1 | 37 days | 0.26 | | | MPC | 2006 $RC_{83}$ |
| 2006 $RE_{83}$ | 18.9 | 0.15 | 20060922 | 329.10868 | 50.39602 | 357.30587 | 5.62067 | 0.1494622 | 2.3290586 | 13 | 1 | 37 days | 0.27 | | | MPC | 2006 $RE_{83}$ |
| 2006 $RG_{83}$ | 16.8 | 0.15 | 20060902 | 255.82047 | 171.24523 | 300.85860 | 0.54719 | 0.0267006 | 3.0283336 | 9 | 1 | 9 days | 0.34 | | | MPC | 2006 $RG_{83}$ |
| 2006 $RM_{83}$ | 19.6 | 0.15 | 20060922 | 6.48217 | 14.96347 | 340.64369 | 0.71712 | 0.2092377 | 2.3580403 | 12 | 1 | 17 days | 0.23 | | | MPC | 2006 $RM_{83}$ |
| 2006 $RN_{83}$ | 17.6 | 0.15 | 20060922 | 60.95755 | 92.78171 | 194.70455 | 1.76890 | 0.1662714 | 2.3011122 | 32 | 1 | 122 days | 0.28 | M-v | 4 | MPC | 2006 $RN_{83}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RP_{83}$ | 16.7 | 0.15 | 20060922 | 5.90357 | 166.00719 | 194.98876 | 5.99615 | 0.1017042 | 2.8729089 | 24 | 1 | 42 days | 0.23 | | MPC | 2006 $RP_{83}$ |
| 2006 $RQ_{83}$ | 17.6 | 0.15 | 20060922 | 14.83272 | 345.10941 | 1.90891 | 3.88357 | 0.1716230 | 3.1016724 | 17 | 1 | 46 days | 0.28 | | MPC | 2006 $RQ_{83}$ |
| 2006 $RT_{83}$ | 17.0 | 0.15 | 20060902 | 351.67040 | 9.59750 | 5.60159 | 19.60527 | 0.1298029 | 3.1863536 | 9 | 1 | 10 days | 0.14 | | MPC | 2006 $RT_{83}$ |
| 2006 $RV_{83}$ | 17.7 | 0.15 | 20060922 | 26.99075 | 143.28505 | 188.48921 | 12.89962 | 0.1556864 | 3.0971073 | 13 | 1 | 13 days | 0.20 | | MPC | 2006 $RV_{83}$ |
| 2006 $RW_{83}$ | 18.5 | 0.15 | 20060922 | 5.29725 | 168.06608 | 186.84143 | 2.13526 | 0.3255206 | 2.6837976 | 28 | 1 | 60 days | 0.30 | M-v 4 | MPC | 2006 $RW_{83}$ |
| 2006 $RY_{83}$ | 17.2 | 0.15 | 20060922 | 92.87460 | 264.03854 | 354.11893 | 2.60272 | 0.1559605 | 2.5492928 | 16 | 1 | 34 days | 0.13 | | MPC | 2006 $RY_{83}$ |
| 2006 $RA_{84}$ | 17.9 | 0.15 | 20060922 | 12.13992 | 66.18214 | 282.21670 | 0.54595 | 0.1917165 | 2.3947677 | 35 | 1 | 98 days | 0.38 | M-v 4 | MPC | 2006 $RA_{84}$ |
| 2006 $RB_{84}$ | 18.5 | 0.15 | 20060922 | 325.53232 | 244.85356 | 185.05948 | 17.44626 | 0.3134361 | 2.6481386 | 19 | 1 | 15 days | 0.21 | | MPC | 2006 $RB_{84}$ |
| 2006 $RC_{84}$ | 16.4 | 0.15 | 20060922 | 67.81546 | 85.93849 | 190.44417 | 15.65969 | 0.2199049 | 3.1890117 | 16 | 1 | 37 days | 0.21 | | MPC | 2006 $RC_{84}$ |
| 2006 $RD_{84}$ | 19.0 | 0.15 | 20060922 | 358.51455 | 181.89935 | 187.31106 | 9.96500 | 0.2141002 | 2.5793631 | 19 | 1 | 17 days | 0.27 | | MPC | 2006 $RD_{84}$ |
| 2006 $RG_{84}$ | 16.2 | 0.15 | 20060922 | 28.32669 | 144.87758 | 192.04116 | 9.37426 | 0.0669818 | 3.0161231 | 31 | 1 | 60 days | 0.51 | M-v 4 | MPC | 2006 $RG_{84}$ |
| 2006 $RH_{84}$ | 17.7 | 0.15 | 20060902 | 336.80471 | 31.88496 | 2.27217 | 9.35502 | 0.1595801 | 2.7328666 | 9 | 1 | 10 days | 0.14 | | MPC | 2006 $RH_{84}$ |
| 2006 $RK_{84}$ | 16.8 | 0.15 | 20060922 | 15.85025 | 153.24132 | 188.67076 | 15.77670 | 0.2425901 | 3.1709120 | 37 | 1 | 70 days | 0.27 | M-v 4 | MPC | 2006 $RK_{84}$ |
| 2006 $RN_{84}$ | 18.1 | 0.15 | 20060922 | 332.32718 | 195.50095 | 210.94400 | 0.78424 | 0.1806622 | 2.3585162 | 35 | 1 | 67 days | 0.27 | M-v 4 | MPC | 2006 $RN_{84}$ |
| 2006 $RO_{84}$ | 17.8 | 0.15 | 20060922 | 350.66882 | 190.92419 | 188.87261 | 9.17140 | 0.0894624 | 2.8314529 | 17 | 1 | 37 days | 0.36 | | MPC | 2006 $RO_{84}$ |
| 2006 $RS_{84}$ | 16.8 | 0.15 | 20060922 | 320.32104 | 62.61075 | 357.73706 | 1.53417 | 0.1383560 | 3.0231493 | 12 | 1 | 17 days | 0.13 | | MPC | 2006 $RS_{84}$ |
| 2006 $RT_{84}$ | 16.6 | 0.15 | 20060922 | 65.57626 | 333.85497 | 324.12539 | 0.99493 | 0.0526336 | 2.7505263 | 19 | 1 | 61 days | 0.21 | M-v 4 | MPC | 2006 $RT_{84}$ |
| 2006 $RU_{84}$ | 17.1 | 0.15 | 20060922 | 302.47957 | 76.17427 | 355.57085 | 1.60353 | 0.0492442 | 2.8686503 | 15 | 1 | 17 days | 0.28 | | MPC | 2006 $RU_{84}$ |
| 2006 $RW_{84}$ | 19.0 | 0.15 | 20060902 | 343.53972 | 27.75227 | 1.01528 | 6.37626 | 0.2822191 | 2.6427827 | 9 | 1 | 10 days | 0.28 | | MPC | 2006 $RW_{84}$ |
| 2006 $RX_{84}$ | 16.4 | 0.15 | 20060922 | 42.59915 | 121.28696 | 194.00461 | 7.11343 | 0.1326302 | 3.0891331 | 31 | 1 | 60 days | 0.32 | M-v 4 | MPC | 2006 $RX_{84}$ |
| 2006 $RB_{85}$ | 16.1 | 0.15 | 20060922 | 307.86791 | 240.19332 | 189.60785 | 8.48778 | 0.0815109 | 3.1652974 | 21 | 1 | 62 days | 0.21 | M-v 4 | MPC | 2006 $RB_{85}$ |
| 2006 $RD_{85}$ | 17.7 | 0.15 | 20060902 | 12.15226 | 96.02344 | 251.63480 | 0.23729 | 0.1432118 | 2.9974924 | 13 | 1 | 10 days | 0.22 | | MPC | 2006 $RD_{85}$ |
| 2006 $RH_{85}$ | 16.1 | 0.15 | 20060922 | 272.39326 | 97.32029 | 8.86439 | 3.67963 | 0.0940798 | 3.1544884 | 23 | 1 | 43 days | 0.27 | | MPC | 2006 $RH_{85}$ |
| 2006 $RJ_{85}$ | 20.0 | 0.15 | 20060922 | 351.56194 | 216.78582 | 160.98392 | 0.60721 | 0.2094087 | 2.2569720 | 16 | 1 | 13 days | 0.22 | | MPC | 2006 $RJ_{85}$ |
| 2006 $RK_{85}$ | 19.2 | 0.15 | 20060922 | 23.81370 | 318.68177 | 11.00506 | 2.22806 | 0.1979488 | 2.4035623 | 19 | 1 | 17 days | 0.24 | | MPC | 2006 $RK_{85}$ |
| 2006 $RL_{85}$ | 16.2 | 0.15 | 20060922 | 26.15001 | 311.68944 | 8.82180 | 4.38693 | 0.2753596 | 3.0004732 | 35 | 1 | 43 days | 0.39 | | MPC | 2006 $RL_{85}$ |
| 2006 $RM_{85}$ | 18.5 | 0.15 | 20060922 | 345.86471 | 19.68957 | 10.07522 | 2.69464 | 0.2576303 | 2.5792765 | 33 | 1 | 61 days | 0.41 | M-v 4 | MPC | 2006 $RM_{85}$ |
| 2006 $RN_{85}$ | 18.3 | 0.15 | 20060922 | 332.44759 | 40.71155 | 4.28670 | 1.99303 | 0.1793393 | 2.4173496 | 22 | 1 | 43 days | 0.16 | | MPC | 2006 $RN_{85}$ |
| 2006 $RO_{85}$ | 17.4 | 0.15 | 20060922 | 5.98553 | 353.55502 | 7.36222 | 4.79680 | 0.0032375 | 2.5962519 | 16 | 1 | 31 days | 0.32 | | MPC | 2006 $RO_{85}$ |
| 2006 $RP_{85}$ | 17.7 | 0.15 | 20060922 | 33.77060 | 117.67456 | 207.24570 | 0.95720 | 0.1174426 | 2.8237880 | 12 | 1 | 13 days | 0.17 | | MPC | 2006 $RP_{85}$ |
| 2006 $RQ_{85}$ | 18.6 | 0.15 | 20060922 | 27.03022 | 142.35542 | 179.31930 | 3.31492 | 0.2300644 | 2.1721476 | 30 | 1 | 62 days | 0.31 | M-v 4 | MPC | 2006 $RQ_{85}$ |
| 2006 $RR_{85}$ | 18.0 | 0.15 | 20060922 | 10.00258 | 334.34936 | 15.15897 | 1.70059 | 0.2065466 | 2.3334787 | 34 | 1 | 43 days | 0.29 | | MPC | 2006 $RR_{85}$ |
| 2006 $RS_{85}$ | 19.6 | 0.15 | 20060922 | 358.40564 | 199.23791 | 168.48022 | 1.15491 | 0.2020308 | 2.3901295 | 20 | 1 | 42 days | 0.29 | | MPC | 2006 $RS_{85}$ |
| 2006 $RU_{85}$ | 16.9 | 0.15 | 20060922 | 73.98302 | 294.08059 | 355.24559 | 1.55601 | 0.0405517 | 2.8470525 | 16 | 1 | 17 days | 0.26 | | MPC | 2006 $RU_{85}$ |
| 2006 $RV_{85}$ | 17.1 | 0.15 | 20060922 | 28.84206 | 146.13491 | 182.23091 | 5.79357 | 0.1473383 | 2.7920010 | 22 | 1 | 17 days | 0.23 | | MPC | 2006 $RV_{85}$ |
| 2006 $RX_{85}$ | 16.8 | 0.15 | 20060922 | 301.75632 | 253.64917 | 184.34774 | 12.16660 | 0.1179406 | 2.8093231 | 19 | 1 | 15 days | 0.15 | | MPC | 2006 $RX_{85}$ |
| 2006 $RY_{85}$ | 18.4 | 0.15 | 20060922 | 14.40400 | 344.49381 | 358.14278 | 2.44976 | 0.2191030 | 2.3916023 | 23 | 1 | 61 days | 0.23 | M-v 4 | MPC | 2006 $RY_{85}$ |
| 2006 $RZ_{85}$ | 17.4 | 0.15 | 20060922 | 337.02694 | 19.86065 | 11.39683 | 4.99073 | 0.0225097 | 2.6778904 | 22 | 1 | 31 days | 0.20 | | MPC | 2006 $RZ_{85}$ |
| 2006 $RA_{86}$ | 17.8 | 0.15 | 20060922 | 325.42880 | 52.20201 | 2.33562 | 4.43716 | 0.1687074 | 2.6171477 | 23 | 1 | 46 days | 0.24 | | MPC | 2006 $RA_{86}$ |
| 2006 $RB_{86}$ | 17.3 | 0.15 | 20060922 | 302.58627 | 64.99558 | 5.82819 | 15.05301 | 0.0669542 | 2.4159868 | 26 | 1 | 46 days | 0.22 | | MPC | 2006 $RB_{86}$ |
| 2006 $RC_{86}$ | 16.3 | 0.15 | 20060922 | 184.88102 | 175.48172 | 9.22480 | 15.92558 | 0.1144290 | 3.0708452 | 16 | 1 | 13 days | 0.22 | | MPC | 2006 $RC_{86}$ |
| 2006 $RD_{86}$ | 17.2 | 0.15 | 20060922 | 130.87441 | 227.70525 | 4.66525 | 4.37759 | 0.0551155 | 2.6452821 | 19 | 1 | 17 days | 0.24 | | MPC | 2006 $RD_{86}$ |
| 2006 $RF_{86}$ | 16.6 | 0.15 | 20060922 | 62.23675 | 285.96566 | 6.40423 | 10.58754 | 0.1269726 | 3.1273274 | 16 | 1 | 34 days | 0.25 | | MPC | 2006 $RF_{86}$ |
| 2006 $RG_{86}$ | 17.2 | 0.15 | 20060922 | 331.22148 | 43.78271 | 5.30027 | 6.08687 | 0.1848489 | 3.0481418 | 19 | 1 | 34 days | 0.20 | | MPC | 2006 $RG_{86}$ |
| 2006 $RJ_{86}$ | 17.5 | 0.15 | 20060922 | 10.85766 | 165.70128 | 184.39360 | 4.39941 | 0.1923896 | 2.6023067 | 38 | 1 | 36 days | 0.25 | | MPC | 2006 $RJ_{86}$ |
| 2006 $RK_{86}$ | 18.8 | 0.15 | 20060902 | 295.07809 | 68.55238 | 7.66765 | 4.27895 | 0.1050785 | 2.2351806 | 10 | 1 | 10 days | 0.27 | | MPC | 2006 $RK_{86}$ |
| 2006 $RM_{86}$ | 18.0 | 0.15 | 20060922 | 266.80517 | 104.27290 | 4.18714 | 5.85151 | 0.0710760 | 2.3826371 | 13 | 1 | 34 days | 0.22 | | MPC | 2006 $RM_{86}$ |
| 2006 $RU_{86}$ | 18.1 | 0.15 | 20060922 | 49.44449 | 109.72538 | 185.15330 | 3.37544 | 0.2144718 | 2.3413372 | 15 | 1 | 17 days | 0.24 | | MPC | 2006 $RU_{86}$ |
| 2006 $RX_{86}$ | 17.7 | 0.15 | 20060922 | 21.75390 | 143.37949 | 183.53284 | 13.62716 | 0.2843445 | 2.6802184 | 16 | 1 | 31 days | 0.49 | | MPC | 2006 $RX_{86}$ |
| 2006 $RZ_{86}$ | 16.9 | 0.15 | 20060922 | 347.61680 | 14.30488 | 8.69970 | 3.48925 | 0.1038695 | 2.7947058 | 13 | 1 | 32 days | 0.26 | | MPC | 2006 $RZ_{86}$ |
| 2006 $RA_{87}$ | 17.5 | 0.15 | 20060922 | 214.64423 | 147.25320 | 13.35722 | 4.53717 | 0.1314827 | 2.3871184 | 23 | 1 | 31 days | 0.22 | | MPC | 2006 $RA_{87}$ |
| 2006 $RF_{87}$ | 17.7 | 0.15 | 20060922 | 8.24652 | 325.14919 | 26.87213 | 1.91042 | 0.2756289 | 3.0626870 | 24 | 1 | 42 days | 0.24 | | MPC | 2006 $RF_{87}$ |
| 2006 $RG_{87}$ | 19.1 | 0.15 | 20060922 | 356.15225 | 191.48435 | 179.79247 | 7.30237 | 0.1842792 | 2.2250594 | 12 | 1 | 15 days | 0.12 | | MPC | 2006 $RG_{87}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RJ_{87}$ | 17.4 | 0.15 | 20060922 | 302.05780 | 59.42523 | 17.91393 | 2.15302 | 0.1060149 | 2.8367451 | 12 | 1 | 13 days | 0.79 | | MPC | 2006 $RJ_{87}$ |
| 2006 $RL_{87}$ | 18.5 | 0.15 | 20060922 | 19.63422 | 158.22408 | 179.04998 | 1.12691 | 0.1962021 | 2.4735973 | 22 | 1 | 17 days | 0.25 | | MPC | 2006 $RL_{87}$ |
| 2006 $RM_{87}$ | 17.6 | 0.15 | 20060922 | 58.73008 | 262.64570 | 15.60806 | 6.20595 | 0.2712354 | 2.7403693 | 20 | 1 | 31 days | 0.26 | | MPC | 2006 $RM_{87}$ |
| 2006 $RN_{87}$ | 18.6 | 0.15 | 20060922 | 338.75126 | 245.76314 | 151.63918 | 1.39171 | 0.1874497 | 2.3840289 | 19 | 1 | 17 days | 0.31 | | MPC | 2006 $RN_{87}$ |
| 2006 $RO_{87}$ | 19.1 | 0.15 | 20060922 | 17.54408 | 326.06037 | 13.99169 | 1.49166 | 0.1959163 | 2.3942973 | 17 | 1 | 31 days | 0.22 | | MPC | 2006 $RO_{87}$ |
| 2006 $RT_{87}$ | 16.8 | 0.15 | 20060922 | 337.66237 | 26.04898 | 8.95245 | 16.04659 | 0.0725836 | 3.1808666 | 12 | 1 | 13 days | 0.28 | | MPC | 2006 $RT_{87}$ |
| 2006 $RV_{87}$ | 18.3 | 0.15 | 20060922 | 341.01541 | 32.05914 | 5.50807 | 4.99976 | 0.2395183 | 2.3954094 | 25 | 1 | 34 days | 0.52 | | MPC | 2006 $RV_{87}$ |
| 2006 $RW_{87}$ | 17.5 | 0.15 | 20060902 | 10.24686 | 316.74199 | 35.92478 | 2.22109 | 0.0564600 | 2.9116935 | 9 | 1 | 9 days | 0.55 | | MPC | 2006 $RW_{87}$ |
| 2006 $RX_{87}$ | 17.5 | 0.15 | 20060922 | 4.47332 | 340.05274 | 18.63313 | 3.41768 | 0.2496342 | 2.5966619 | 45 | 1 | 46 days | 0.48 | | MPC | 2006 $RX_{87}$ |
| 2006 $RY_{87}$ | 18.0 | 0.15 | 20060922 | 193.64435 | 166.06724 | 9.28725 | 7.62588 | 0.0499781 | 2.2390160 | 19 | 1 | 17 days | 0.39 | | MPC | 2006 $RY_{87}$ |
| 2006 $RZ_{87}$ | 18.1 | 0.15 | 20060922 | 44.77631 | 113.43563 | 179.97085 | 6.52774 | 0.2730974 | 2.1795561 | 28 | 1 | 36 days | 0.40 | | MPC | 2006 $RZ_{87}$ |
| 2006 $RA_{88}$ | 17.1 | 0.15 | 20060922 | 199.50605 | 4.04671 | 168.69848 | 2.72572 | 0.0960491 | 2.6217697 | 13 | 1 | 13 days | 0.16 | | MPC | 2006 $RA_{88}$ |
| 2006 $RB_{88}$ | 18.3 | 0.15 | 20060922 | 88.83766 | 237.63977 | 24.12077 | 1.50817 | 0.1549886 | 2.4285033 | 13 | 1 | 13 days | 0.32 | | MPC | 2006 $RB_{88}$ |
| 2006 $RD_{88}$ | 17.0 | 0.15 | 20060922 | 44.96139 | 297.62337 | 8.15930 | 13.34802 | 0.1804100 | 2.6251679 | 20 | 1 | 46 days | 0.24 | | MPC | 2006 $RD_{88}$ |
| 2006 $RF_{88}$ | 16.8 | 0.15 | 20060922 | 351.21014 | 230.02359 | 149.47290 | 1.06399 | 0.1157313 | 2.7866753 | 42 | 1 | 116 days | 0.28 | M-v 3 | MPC | 2006 $RF_{88}$ |
| 2006 $RH_{88}$ | 18.7 | 0.15 | 20060922 | 16.01485 | 334.29667 | 10.98997 | 4.56343 | 0.1559741 | 2.4654979 | 17 | 1 | 13 days | 0.19 | | MPC | 2006 $RH_{88}$ |
| 2006 $RJ_{88}$ | 17.8 | 0.15 | 20060902 | 65.05454 | 21.29870 | 252.11328 | 2.06901 | 0.2172092 | 2.3142190 | 12 | 1 | 11 days | 0.37 | | MPC | 2006 $RJ_{88}$ |
| 2006 $RK_{88}$ | 16.9 | 0.15 | 20060922 | 109.29394 | 56.90033 | 196.43888 | 14.77636 | 0.0730655 | 2.5765426 | 12 | 1 | 15 days | 0.12 | | MPC | 2006 $RK_{88}$ |
| 2006 $RN_{88}$ | 17.6 | 0.15 | 20060902 | 18.12520 | 112.92357 | 225.37926 | 2.56002 | 0.1751227 | 2.8443248 | 9 | 1 | 11 days | 0.18 | | MPC | 2006 $RN_{88}$ |
| 2006 $RO_{88}$ | 16.5 | 0.15 | 20060902 | 300.35845 | 240.09301 | 199.48213 | 10.97012 | 0.1172441 | 3.1380249 | 9 | 1 | 11 days | 0.22 | | MPC | 2006 $RO_{88}$ |
| 2006 $RP_{88}$ | 17.0 | 0.15 | 20060922 | 349.46846 | 174.67642 | 213.90333 | 3.87410 | 0.2633871 | 3.0868781 | 30 | 1 | 62 days | 0.47 | M-v 4 | MPC | 2006 $RP_{88}$ |
| 2006 $RQ_{88}$ | 18.3 | 0.15 | 20060922 | 308.93952 | 88.09018 | 345.78959 | 3.97734 | 0.1379927 | 2.2861879 | 12 | 1 | 15 days | 0.17 | | MPC | 2006 $RQ_{88}$ |
| 2006 $RT_{88}$ | 17.3 | 0.15 | 20060902 | 31.29326 | 337.33870 | 353.72033 | 6.12207 | 0.0585777 | 2.7137946 | 9 | 1 | 11 days | 0.29 | | MPC | 2006 $RT_{88}$ |
| 2006 $RV_{88}$ | 15.7 | 0.15 | 20060922 | 358.83238 | 171.33469 | 201.83792 | 10.58871 | 0.0925201 | 3.1705299 | 24 | 1 | 48 days | 0.29 | | MPC | 2006 $RV_{88}$ |
| 2006 $RX_{88}$ | 15.5 | 0.15 | 20060902 | 296.65425 | 78.62290 | 2.98597 | 11.69876 | 0.0921986 | 3.0287510 | 9 | 1 | 5 days | 0.37 | | MPC | 2006 $RX_{88}$ |
| 2006 $RZ_{88}$ | 18.5 | 0.15 | 20060922 | 358.08840 | 175.08210 | 197.07890 | 7.09948 | 0.2282120 | 2.5701849 | 16 | 1 | 31 days | 0.25 | | MPC | 2006 $RZ_{88}$ |
| 2006 $RF_{89}$ | 18.4 | 0.15 | 20060922 | 11.34953 | 3.86020 | 347.42501 | 2.97884 | 0.1991093 | 2.2559204 | 26 | 1 | 92 days | 0.24 | M-v 3 | MPC | 2006 $RF_{89}$ |
| 2006 $RK_{89}$ | 16.8 | 0.15 | 20060922 | 77.91684 | 300.35607 | 336.80166 | 2.02754 | 0.1453438 | 2.5676120 | 23 | 1 | 62 days | 0.50 | M-v 4 | MPC | 2006 $RK_{89}$ |
| 2006 $RL_{89}$ | 17.3 | 0.15 | 20060922 | 284.35761 | 212.12426 | 246.86398 | 1.95986 | 0.1075736 | 2.3109034 | 23 | 1 | 61 days | 0.21 | M-v 4 | MPC | 2006 $RL_{89}$ |
| 2006 $RN_{89}$ | 16.8 | 0.15 | 20060922 | 330.35975 | 176.95176 | 232.10042 | 2.63691 | 0.1131005 | 2.7752676 | 18 | 1 | 61 days | 0.36 | M-v 5 | MPC | 2006 $RN_{89}$ |
| 2006 $RP_{89}$ | 18.3 | 0.15 | 20060922 | 349.88313 | 185.71129 | 199.16358 | 8.35648 | 0.1426573 | 2.6895054 | 22 | 1 | 46 days | 0.42 | | MPC | 2006 $RP_{89}$ |
| 2006 $RR_{89}$ | 18.0 | 0.15 | 20060922 | 352.60414 | 161.01341 | 220.29010 | 1.71631 | 0.2448660 | 2.3591444 | 27 | 1 | 73 days | 0.27 | M-v 3 | MPC | 2006 $RR_{89}$ |
| 2006 $RT_{89}$ | 16.6 | 0.15 | 20060922 | 0.42979 | 165.75681 | 206.35897 | 4.37292 | 0.1477444 | 3.0899585 | 20 | 1 | 46 days | 0.38 | | MPC | 2006 $RT_{89}$ |
| 2006 $RU_{89}$ | 18.0 | 0.15 | 20060922 | 34.46132 | 323.58660 | 352.11651 | 3.17020 | 0.2433353 | 2.5807021 | 12 | 1 | 15 days | 0.19 | | MPC | 2006 $RU_{89}$ |
| 2006 $RV_{89}$ | 19.2 | 0.15 | 20060922 | 22.25341 | 130.31807 | 194.69836 | 4.08272 | 0.3159182 | 2.3271468 | 24 | 1 | 46 days | 0.46 | | MPC | 2006 $RV_{89}$ |
| 2006 $RW_{89}$ | 18.1 | 0.15 | 20060922 | 3.52890 | 36.77603 | 329.15898 | 1.33322 | 0.1337566 | 2.4119923 | 16 | 1 | 34 days | 0.17 | | MPC | 2006 $RW_{89}$ |
| 2006 $RX_{89}$ | 18.1 | 0.15 | 20060922 | 57.72207 | 72.90693 | 221.59257 | 2.22050 | 0.1708781 | 2.2346439 | 19 | 1 | 34 days | 0.23 | | MPC | 2006 $RX_{89}$ |
| 2006 $RZ_{89}$ | 16.9 | 0.15 | 20060922 | 318.65005 | 234.67465 | 196.29060 | 9.14249 | 0.1822528 | 3.1320783 | 24 | 1 | 36 days | 0.36 | | MPC | 2006 $RZ_{89}$ |
| 2006 $RB_{90}$ | 17.2 | 0.15 | 20060922 | 302.70109 | 252.37672 | 200.19893 | 7.27739 | 0.2077817 | 2.7210041 | 20 | 1 | 42 days | 0.24 | | MPC | 2006 $RB_{90}$ |
| 2006 $RC_{90}$ | 17.1 | 0.15 | 20060922 | 4.24656 | 172.47310 | 193.88155 | 11.74224 | 0.1799932 | 3.0836260 | 20 | 1 | 37 days | 0.28 | | MPC | 2006 $RC_{90}$ |
| 2006 $RE_{90}$ | 17.4 | 0.15 | 20060922 | 343.48629 | 186.20020 | 208.83369 | 2.86642 | 0.1597160 | 2.7842834 | 23 | 1 | 46 days | 0.22 | | MPC | 2006 $RE_{90}$ |
| 2006 $RF_{90}$ | 17.2 | 0.15 | 20060922 | 337.95752 | 205.49891 | 192.69756 | 14.90702 | 0.0890039 | 2.5526977 | 23 | 1 | 37 days | 0.35 | | MPC | 2006 $RF_{90}$ |
| 2006 $RG_{90}$ | 18.5 | 0.15 | 20060922 | 345.07625 | 32.92031 | 357.86979 | 2.60805 | 0.1738934 | 2.2020460 | 27 | 1 | 36 days | 0.42 | | MPC | 2006 $RG_{90}$ |
| 2006 $RH_{90}$ | 16.4 | 0.15 | 20060902 | 253.17478 | 271.50085 | 220.64400 | 1.28862 | 0.1396388 | 2.9321467 | 12 | 1 | 11 days | 0.34 | | MPC | 2006 $RH_{90}$ |
| 2006 $RJ_{90}$ | 17.6 | 0.15 | 20060902 | 357.15062 | 171.51608 | 200.15833 | 4.54912 | 0.0465135 | 2.7642047 | 13 | 1 | 11 days | 0.35 | | MPC | 2006 $RJ_{90}$ |
| 2006 $RK_{90}$ | 18.5 | 0.15 | 20060922 | 327.00308 | 63.91384 | 354.78276 | 2.57117 | 0.1992122 | 2.2718571 | 17 | 1 | 34 days | 0.36 | | MPC | 2006 $RK_{90}$ |
| 2006 $RL_{90}$ | 18.1 | 0.15 | 20061012 | 326.11054 | 209.60729 | 216.13322 | 1.93053 | 0.1769667 | 2.4138749 | 28 | 1 | 57 days | 0.32 | | MPC | 2006 $RL_{90}$ |
| 2006 $RM_{90}$ | 18.8 | 0.15 | 20060922 | 8.51919 | 168.71774 | 186.75597 | 2.03416 | 0.2353598 | 2.3910856 | 24 | 1 | 36 days | 0.20 | | MPC | 2006 $RM_{90}$ |
| 2006 $RP_{90}$ | 16.4 | 0.15 | 20060922 | 158.58821 | 198.63297 | 16.14160 | 4.46375 | 0.0113991 | 2.7912485 | 28 | 1 | 61 days | 0.29 | M-v 4 | MPC | 2006 $RP_{90}$ |
| 2006 $RR_{90}$ | 17.0 | 0.15 | 20060922 | 49.88422 | 291.74078 | 25.24955 | 2.12742 | 0.0711559 | 2.7155944 | 19 | 1 | 44 days | 0.16 | | MPC | 2006 $RR_{90}$ |
| 2006 $RU_{90}$ | 17.4 | 0.15 | 20060922 | 296.36625 | 269.44300 | 178.96643 | 4.03816 | 0.1139307 | 2.3911128 | 25 | 1 | 62 days | 0.21 | M-v 4 | MPC | 2006 $RU_{90}$ |
| 2006 $RA_{91}$ | 17.3 | 0.15 | 20060922 | 7.16910 | 355.71618 | 3.86120 | 2.46189 | 0.2332937 | 3.0294341 | 27 | 1 | 32 days | 0.54 | | MPC | 2006 $RA_{91}$ |
| 2006 $RH_{91}$ | 17.0 | 0.15 | 20060922 | 4.34445 | 178.02190 | 189.03533 | 6.23507 | 0.0693738 | 2.6747674 | 28 | 1 | 62 days | 0.36 | M-v 4 | MPC | 2006 $RH_{91}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RK_{91}$ | 17.0 | 0.15 | 20060922 | 21.46010 | 337.24404 | 9.62405 | 1.98331 | 0.0826437 | 2.6893982 | 24 | 1 | 46 days | 0.28 | | MPC | 2006 $RK_{91}$ |
| 2006 $RL_{91}$ | 16.6 | 0.15 | 20060922 | 322.77383 | 53.86858 | 13.44519 | 10.40242 | 0.2034784 | 3.1302669 | 20 | 1 | 61 days | 0.22 | M-v 4 | MPC | 2006 $RL_{91}$ |
| 2006 $RN_{91}$ | 17.2 | 0.15 | 20060922 | 14.03037 | 344.18419 | 10.42173 | 12.91794 | 0.1220063 | 2.8692959 | 16 | 1 | 34 days | 0.19 | | MPC | 2006 $RN_{91}$ |
| 2006 $RO_{91}$ | 18.3 | 0.15 | 20060922 | 10.91994 | 347.81451 | 4.21211 | 2.47036 | 0.2236619 | 2.3965604 | 33 | 1 | 36 days | 0.40 | | MPC | 2006 $RO_{91}$ |
| 2006 $RQ_{91}$ | 16.2 | 0.15 | 20060902 | 303.11109 | 252.60890 | 190.22950 | 4.82017 | 0.1547429 | 3.1106082 | 13 | 1 | 11 days | 0.66 | | MPC | 2006 $RQ_{91}$ |
| 2006 $RS_{91}$ | 17.5 | 0.15 | 20060922 | 4.70604 | 176.47476 | 188.49198 | 9.45281 | 0.1598480 | 2.6779288 | 14 | 1 | 37 days | 0.17 | | MPC | 2006 $RS_{91}$ |
| 2006 $RT_{91}$ | 16.3 | 0.15 | 20060922 | 349.51822 | 14.67275 | 11.64808 | 16.09486 | 0.0978953 | 3.0604374 | 17 | 1 | 34 days | 0.32 | | MPC | 2006 $RT_{91}$ |
| 2006 $RW_{91}$ | 19.1 | 0.15 | 20060922 | 353.61558 | 53.98045 | 324.16980 | 0.80294 | 0.2108217 | 2.3567545 | 18 | 1 | 15 days | 0.23 | | MPC | 2006 $RW_{91}$ |
| 2006 $RX_{91}$ | 17.5 | 0.15 | 20060922 | 28.48728 | 328.75382 | 359.18553 | 3.02042 | 0.1919737 | 2.6108570 | 24 | 1 | 102 days | 0.25 | M-v 4 | MPC | 2006 $RX_{91}$ |
| 2006 $RZ_{91}$ | 16.9 | 0.15 | 20060922 | 5.67663 | 171.70837 | 193.63108 | 9.87069 | 0.0677824 | 3.0306493 | 21 | 1 | 36 days | 0.31 | | MPC | 2006 $RZ_{91}$ |
| 2006 $RA_{92}$ | 16.5 | 0.15 | 20060922 | 33.64744 | 331.73585 | 357.53057 | 4.64945 | 0.1156303 | 2.7301190 | 20 | 1 | 34 days | 0.19 | | MPC | 2006 $RA_{92}$ |
| 2006 $RC_{92}$ | 18.0 | 0.15 | 20060922 | 6.17859 | 6.15611 | 354.52678 | 2.48533 | 0.1732022 | 2.5179524 | 20 | 1 | 46 days | 0.27 | | MPC | 2006 $RC_{92}$ |
| 2006 $RH_{92}$ | 16.6 | 0.15 | 20060922 | 18.05921 | 150.23679 | 197.66200 | 5.18123 | 0.1413066 | 3.0849046 | 19 | 1 | 42 days | 0.25 | | MPC | 2006 $RH_{92}$ |
| 2006 $RJ_{92}$ | 16.7 | 0.15 | 20060922 | 359.18696 | 14.51075 | 358.04250 | 3.92736 | 0.1163983 | 2.8065252 | 20 | 1 | 32 days | 0.51 | | MPC | 2006 $RJ_{92}$ |
| 2006 $RK_{92}$ | 17.7 | 0.15 | 20060922 | 316.36723 | 261.32536 | 173.69924 | 0.07378 | 0.2284655 | 2.3095757 | 29 | 1 | 48 days | 0.33 | | MPC | 2006 $RK_{92}$ |
| 2006 $RN_{92}$ | 16.6 | 0.15 | 20060922 | 341.17016 | 193.63559 | 202.78832 | 5.54850 | 0.1674089 | 3.1345968 | 23 | 1 | 67 days | 0.39 | M-v 4 | MPC | 2006 $RN_{92}$ |
| 2006 $RO_{92}$ | 15.7 | 0.15 | 20060902 | 225.52081 | 315.75495 | 196.99620 | 13.31709 | 0.1380966 | 2.9902127 | 9 | 1 | 11 days | 0.73 | | MPC | 2006 $RO_{92}$ |
| 2006 $RQ_{92}$ | 18.4 | 0.15 | 20060922 | 61.80555 | 94.04378 | 194.83751 | 6.88715 | 0.1623157 | 2.2859401 | 20 | 1 | 36 days | 0.26 | | MPC | 2006 $RQ_{92}$ |
| 2006 $RR_{92}$ | 19.6 | 0.15 | 20060922 | 15.23333 | 150.10835 | 192.31489 | 5.78616 | 0.2202289 | 2.1739096 | 15 | 1 | 36 days | 0.20 | | MPC | 2006 $RR_{92}$ |
| 2006 $RS_{92}$ | 16.9 | 0.15 | 20060922 | 307.97707 | 234.04548 | 197.06919 | 8.77656 | 0.0835950 | 3.1293133 | 20 | 1 | 42 days | 0.36 | | MPC | 2006 $RS_{92}$ |
| 2006 $RU_{92}$ | 18.5 | 0.15 | 20060922 | 336.91016 | 205.69259 | 201.47473 | 1.73844 | 0.2630458 | 2.4169328 | 29 | 1 | 42 days | 0.45 | | MPC | 2006 $RU_{92}$ |
| 2006 $RV_{92}$ | 16.9 | 0.15 | 20060922 | 325.26580 | 205.04501 | 212.27705 | 3.17756 | 0.1525379 | 3.1638278 | 19 | 1 | 34 days | 0.29 | | MPC | 2006 $RV_{92}$ |
| 2006 $RX_{92}$ | 18.1 | 0.15 | 20060922 | 277.73359 | 254.57024 | 204.73630 | 2.04837 | 0.0689982 | 2.3148990 | 12 | 1 | 15 days | 0.19 | | MPC | 2006 $RX_{92}$ |
| 2006 $RY_{92}$ | 17.0 | 0.15 | 20060922 | 63.31339 | 102.05665 | 196.54686 | 9.70630 | 0.0847635 | 3.0012487 | 20 | 1 | 42 days | 0.30 | | MPC | 2006 $RY_{92}$ |
| 2006 $RB_{93}$ | 17.6 | 0.15 | 20060922 | 321.88938 | 65.96614 | 3.90148 | 6.36380 | 0.2484817 | 2.6626295 | 15 | 1 | 36 days | 0.13 | | MPC | 2006 $RB_{93}$ |
| 2006 $RE_{93}$ | 18.3 | 0.15 | 20060902 | 29.57680 | 316.78232 | 2.47882 | 9.69656 | 0.1975701 | 2.5856543 | 9 | 1 | 11 days | 0.25 | | MPC | 2006 $RE_{93}$ |
| 2006 $RH_{93}$ | 17.8 | 0.15 | 20060922 | 359.30656 | 66.88434 | 304.02530 | 1.02732 | 0.1108057 | 2.6697960 | 19 | 1 | 34 days | 0.32 | | MPC | 2006 $RH_{93}$ |
| 2006 $RJ_{93}$ | 17.1 | 0.15 | 20060922 | 42.40652 | 304.03870 | 5.85074 | 15.99138 | 0.1913291 | 2.6758488 | 17 | 1 | 15 days | 0.26 | | MPC | 2006 $RJ_{93}$ |
| 2006 $RK_{93}$ | 16.1 | 0.15 | 20060922 | 312.00602 | 223.29249 | 210.85122 | 8.84545 | 0.1005518 | 3.1852799 | 25 | 1 | 68 days | 0.27 | M-v 4 | MPC | 2006 $RK_{93}$ |
| 2006 $RL_{93}$ | 16.8 | 0.15 | 20060922 | 30.71712 | 102.31479 | 233.96825 | 3.90229 | 0.1212841 | 2.7118917 | 19 | 1 | 64 days | 0.29 | M-v 4 | MPC | 2006 $RL_{93}$ |
| 2006 $RM_{93}$ | 16.8 | 0.15 | 20060922 | 327.94130 | 64.29514 | 0.06149 | 8.95859 | 0.2238308 | 2.8048752 | 17 | 1 | 88 days | 0.26 | M-v 4 | MPC | 2006 $RM_{93}$ |
| 2006 $RP_{93}$ | 15.8 | 0.15 | 20060922 | 283.16334 | 266.81748 | 202.73143 | 16.32556 | 0.1375375 | 3.0493486 | 45 | 1 | 62 days | 0.37 | M-v 4 | MPC | 2006 $RP_{93}$ |
| 2006 $RQ_{93}$ | 16.4 | 0.15 | 20060922 | 28.29214 | 111.58090 | 231.50289 | 3.93902 | 0.0783737 | 2.7705076 | 28 | 1 | 64 days | 0.34 | M-v 4 | MPC | 2006 $RQ_{93}$ |
| 2006 $RT_{93}$ | 17.2 | 0.15 | 20060922 | 1.71455 | 36.95147 | 336.71459 | 2.80998 | 0.1082280 | 2.7786703 | 26 | 1 | 63 days | 0.56 | M-v 4 | MPC | 2006 $RT_{93}$ |
| 2006 $RU_{93}$ | 15.3 | 0.15 | 20060922 | 49.29889 | 113.63285 | 202.78636 | 21.73248 | 0.1217102 | 3.1856428 | 57 | 1 | 63 days | 0.40 | M-v 4 | MPC | 2006 $RU_{93}$ |
| 2006 $RV_{93}$ | 17.4 | 0.15 | 20060922 | 321.30358 | 63.75703 | 6.86559 | 16.47487 | 0.1900093 | 2.6567397 | 9 | 1 | 18 days | 0.21 | | MPC | 2006 $RV_{93}$ |
| 2006 $RX_{93}$ | 17.8 | 0.15 | 20060922 | 104.73108 | 357.58563 | 264.99784 | 1.69797 | 0.0713329 | 2.2783256 | 28 | 1 | 61 days | 0.29 | M-v 4 | MPC | 2006 $RX_{93}$ |
| 2006 $RZ_{93}$ | 18.2 | 0.15 | 20060922 | 13.78463 | 104.94827 | 248.75008 | 1.84971 | 0.1696756 | 2.3769339 | 18 | 1 | 46 days | 0.22 | | MPC | 2006 $RZ_{93}$ |
| 2006 $RB_{94}$ | 15.6 | 0.15 | 20060922 | 315.84217 | 86.68972 | 345.93819 | 4.56463 | 0.1190649 | 3.1383223 | 23 | 1 | 63 days | 0.26 | M-v 4 | MPC | 2006 $RB_{94}$ |
| 2006 $RD_{94}$ | 17.5 | 0.15 | 20060922 | 57.63099 | 318.29176 | 345.04413 | 4.06928 | 0.1417560 | 2.5896941 | 16 | 1 | 63 days | 0.20 | M-v 4 | MPC | 2006 $RD_{94}$ |
| 2006 $RE_{94}$ | 15.3 | 0.15 | 20060922 | 308.63443 | 224.84428 | 211.71316 | 7.79479 | 0.0754163 | 3.1594690 | 32 | 1 | 68 days | 0.25 | M-v 4 | MPC | 2006 $RE_{94}$ |
| 2006 $RJ_{94}$ | 16.9 | 0.15 | 20060922 | 78.42614 | 270.43800 | 1.13698 | 6.44521 | 0.2362830 | 2.6541878 | 16 | 1 | 63 days | 0.17 | M-v 4 | MPC | 2006 $RJ_{94}$ |
| 2006 $RL_{94}$ | 16.4 | 0.15 | 20060922 | 352.33258 | 173.59531 | 214.06526 | 8.69057 | 0.0943124 | 3.1748512 | 18 | 1 | 42 days | 0.32 | | MPC | 2006 $RL_{94}$ |
| 2006 $RM_{94}$ | 18.1 | 0.15 | 20060922 | 300.97455 | 74.77986 | 1.25777 | 6.50695 | 0.0176616 | 2.2241963 | 16 | 1 | 63 days | 0.22 | M-v 4 | MPC | 2006 $RM_{94}$ |
| 2006 $RN_{94}$ | 16.9 | 0.15 | 20060922 | 19.36115 | 354.24750 | 355.69190 | 4.98928 | 0.1432929 | 2.6213319 | 16 | 1 | 32 days | 0.29 | | MPC | 2006 $RN_{94}$ |
| 2006 $RO_{94}$ | 16.7 | 0.15 | 20060922 | 37.32171 | 29.33324 | 298.57917 | 1.79428 | 0.1538754 | 3.0268984 | 22 | 1 | 63 days | 0.27 | M-v 4 | MPC | 2006 $RO_{94}$ |
| 2006 $RP_{94}$ | 16.5 | 0.15 | 20061012 | 347.40239 | 194.69379 | 205.29732 | 11.11635 | 0.1564583 | 3.1822107 | 34 | 1 | 57 days | 0.38 | | MPC | 2006 $RP_{94}$ |
| 2006 $RS_{94}$ | 16.1 | 0.15 | 20060922 | 167.67596 | 2.65527 | 204.44932 | 13.85784 | 0.2267403 | 2.5405589 | 19 | 1 | 43 days | 0.39 | | MPC | 2006 $RS_{94}$ |
| 2006 $RT_{94}$ | 17.1 | 0.15 | 20060902 | 259.87448 | 246.51762 | 267.29377 | 1.94022 | 0.4091401 | 2.3173449 | 9 | 1 | 11 days | 0.50 | | MPC | 2006 $RT_{94}$ |
| 2006 $RV_{94}$ | 16.0 | 0.15 | 20061012 | 23.22229 | 346.61471 | 8.46125 | 10.11961 | 0.0986471 | 3.1127961 | 19 | 1 | 59 days | 0.48 | | MPC | 2006 $RV_{94}$ |
| 2006 $RW_{94}$ | 17.3 | 0.15 | 20060922 | 139.07505 | 268.53418 | 321.95542 | 2.06802 | 0.1314090 | 2.4218229 | 12 | 1 | 15 days | 0.23 | | MPC | 2006 $RW_{94}$ |
| 2006 $RX_{94}$ | 17.4 | 0.15 | 20060922 | 352.90888 | 180.79485 | 204.96830 | 5.29186 | 0.1935514 | 2.5494692 | 49 | 1 | 66 days | 0.34 | M-v 4 | MPC | 2006 $RX_{94}$ |
| 2006 $RY_{94}$ | 18.1 | 0.15 | 20060922 | 2.11116 | 18.35920 | 353.90523 | 4.67505 | 0.1898060 | 2.5433092 | 15 | 1 | 36 days | 0.14 | | MPC | 2006 $RY_{94}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RZ_{94}$ | 15.7 | 0.15 | 20061012 | 330.10557 | 207.62890 | 214.53787 | 4.17981 | 0.1321110 | 3.1683150 | 37 | 1 | 57 days | 0.28 | | | MPC | 2006 $RZ_{94}$ |
| 2006 $RC_{95}$ | 16.9 | 0.15 | 20060922 | 319.90593 | 127.86222 | 296.10881 | 1.23763 | 0.0617061 | 2.9082108 | 21 | 1 | 62 days | 0.42 | M-v | 4 | MPC | 2006 $RC_{95}$ |
| 2006 $RD_{95}$ | 16.6 | 0.15 | 20060922 | 108.69186 | 59.61646 | 206.71422 | 9.09183 | 0.0306781 | 2.5815752 | 49 | 1 | 62 days | 0.38 | M-v | 4 | MPC | 2006 $RD_{95}$ |
| 2006 $RE_{95}$ | 18.7 | 0.15 | 20060922 | 350.05457 | 189.96137 | 199.04934 | 6.58232 | 0.1891837 | 2.3301103 | 25 | 1 | 64 days | 0.18 | M-v | 3 | MPC | 2006 $RE_{95}$ |
| 2006 $RM_{95}$ | 16.1 | 0.15 | 20060922 | 26.11131 | 349.50243 | 2.57797 | 4.40339 | 0.0393719 | 3.0934220 | 18 | 1 | 62 days | 0.20 | M-v | 4 | MPC | 2006 $RM_{95}$ |
| 2006 $RN_{95}$ | 16.0 | 0.15 | 20060922 | 52.62824 | 307.75475 | 11.59079 | 14.08068 | 0.0745239 | 2.7526843 | 19 | 1 | 36 days | 0.37 | | | MPC | 2006 $RN_{95}$ |
| 2006 $RO_{95}$ | 16.3 | 0.15 | 20060922 | 11.80678 | 159.18494 | 206.05218 | 9.14643 | 0.0972163 | 3.1273723 | 39 | 1 | 65 days | 0.37 | M-v | 4 | MPC | 2006 $RO_{95}$ |
| 2006 $RP_{95}$ | 17.6 | 0.15 | 20060922 | 301.99233 | 230.78950 | 221.36680 | 1.34976 | 0.1688617 | 2.3848535 | 37 | 1 | 68 days | 0.28 | M-v | 4 | MPC | 2006 $RP_{95}$ |
| 2006 $RR_{95}$ | 16.9 | 0.15 | 20060922 | 316.69141 | 75.72148 | 351.22387 | 1.48813 | 0.0670502 | 2.6945764 | 16 | 1 | 43 days | 0.26 | | | MPC | 2006 $RR_{95}$ |
| 2006 $RT_{95}$ | 18.5 | 0.15 | 20061012 | 40.84218 | 23.16096 | 299.76963 | 0.42706 | 0.2002416 | 2.3680055 | 30 | 1 | 59 days | 0.31 | | | MPC | 2006 $RT_{95}$ |
| 2006 $RV_{95}$ | 17.9 | 0.15 | 20060922 | 18.95377 | 150.73145 | 198.96617 | 2.87609 | 0.1636573 | 2.6073572 | 33 | 1 | 66 days | 0.33 | M-v | 4 | MPC | 2006 $RV_{95}$ |
| 2006 $RH_{96}$ | 17.5 | 0.15 | 20060922 | 12.60445 | 162.21359 | 194.54989 | 16.91641 | 0.1596098 | 2.5635142 | 24 | 1 | 37 days | 0.44 | | | MPC | 2006 $RH_{96}$ |
| 2006 $RJ_{96}$ | 17.4 | 0.15 | 20060922 | 334.48764 | 195.25028 | 215.43735 | 1.83466 | 0.1732761 | 2.5776007 | 43 | 1 | 123 days | 0.25 | M-v | 3 | MPC | 2006 $RJ_{96}$ |
| 2006 $RK_{96}$ | 17.9 | 0.15 | 20060922 | 17.84492 | 338.93826 | 2.76250 | 7.46556 | 0.2752454 | 2.6697722 | 19 | 1 | 35 days | 0.33 | | | MPC | 2006 $RK_{96}$ |
| 2006 $RM_{96}$ | 19.7 | 0.15 | 20060922 | 9.18220 | 150.15887 | 205.59483 | 2.59771 | 0.2565533 | 2.3575380 | 9 | 1 | 15 days | 0.24 | | | MPC | 2006 $RM_{96}$ |
| 2006 $RN_{96}$ | 18.9 | 0.15 | 20060922 | 345.28571 | 28.37715 | 5.99643 | 10.88566 | 0.1867678 | 2.2760818 | 13 | 1 | 18 days | 0.20 | | | MPC | 2006 $RN_{96}$ |
| 2006 $RO_{96}$ | 17.2 | 0.15 | 20060922 | 79.33967 | 7.91431 | 284.78901 | 1.18540 | 0.0398027 | 2.5749462 | 19 | 1 | 61 days | 0.22 | M-v | 4 | MPC | 2006 $RO_{96}$ |
| 2006 $RS_{96}$ | 16.2 | 0.15 | 20060922 | 340.92616 | 28.95271 | 11.73858 | 10.88670 | 0.0810902 | 3.1512105 | 19 | 1 | 63 days | 0.25 | M-v | 4 | MPC | 2006 $RS_{96}$ |
| 2006 $RT_{96}$ | 16.7 | 0.15 | 20060922 | 28.01017 | 42.72737 | 297.05284 | 0.84057 | 0.1455913 | 2.9988524 | 19 | 1 | 46 days | 0.29 | | | MPC | 2006 $RT_{96}$ |
| 2006 $RX_{96}$ | 16.9 | 0.15 | 20060922 | 358.04658 | 32.94676 | 346.56013 | 1.37597 | 0.0812023 | 2.8668154 | 18 | 1 | 46 days | 0.20 | | | MPC | 2006 $RX_{96}$ |
| 2006 $RY_{96}$ | 17.9 | 0.15 | 20060922 | 5.15935 | 169.49572 | 195.93473 | 2.01227 | 0.1934499 | 2.3772609 | 46 | 1 | 62 days | 0.40 | M-v | 4 | MPC | 2006 $RY_{96}$ |
| 2006 $RZ_{96}$ | 17.5 | 0.15 | 20060922 | 353.69278 | 15.37491 | 9.91982 | 9.74193 | 0.2713335 | 2.7147645 | 19 | 1 | 36 days | 0.39 | | | MPC | 2006 $RZ_{96}$ |
| 2006 $RB_{97}$ | 17.0 | 0.15 | 20060922 | 17.35531 | 55.82429 | 291.09363 | 0.95388 | 0.1954519 | 2.5996182 | 44 | 1 | 47 days | 0.38 | | | MPC | 2006 $RB_{97}$ |
| 2006 $RD_{97}$ | 18.2 | 0.15 | 20060922 | 338.90737 | 211.46706 | 192.54370 | 23.30226 | 0.2032438 | 2.4221193 | 21 | 1 | 36 days | 0.20 | | | MPC | 2006 $RD_{97}$ |
| 2006 $RF_{97}$ | 17.0 | 0.15 | 20060922 | 309.17986 | 76.07803 | 7.59612 | 7.93126 | 0.1719891 | 2.7801735 | 12 | 1 | 15 days | 0.12 | | | MPC | 2006 $RF_{97}$ |
| 2006 $RG_{97}$ | 18.1 | 0.15 | 20060922 | 28.98766 | 96.91089 | 232.70290 | 2.02373 | 0.2128744 | 2.6019340 | 15 | 1 | 26 days | 0.31 | | | MPC | 2006 $RG_{97}$ |
| 2006 $RH_{97}$ | 18.3 | 0.15 | 20060922 | 40.95179 | 71.17770 | 239.43489 | 1.73709 | 0.2238684 | 2.2576683 | 31 | 1 | 42 days | 0.39 | | | MPC | 2006 $RH_{97}$ |
| 2006 $RM_{97}$ | 16.3 | 0.15 | 20060922 | 28.74492 | 331.53932 | 11.56623 | 16.38414 | 0.0937318 | 3.1743571 | 12 | 1 | 15 days | 0.12 | | | MPC | 2006 $RM_{97}$ |
| 2006 $RO_{97}$ | 16.7 | 0.15 | 20060922 | 306.46626 | 264.05836 | 198.70227 | 14.63818 | 0.2919092 | 3.1038238 | 21 | 1 | 69 days | 0.36 | M-v | 4 | MPC | 2006 $RO_{97}$ |
| 2006 $RV_{97}$ | 18.6 | 0.15 | 20060922 | 313.95417 | 111.44153 | 324.06970 | 1.74469 | 0.1752674 | 2.3319974 | 21 | 1 | 46 days | 0.28 | | | MPC | 2006 $RV_{97}$ |
| 2006 $RX_{97}$ | 18.6 | 0.15 | 20060922 | 91.04821 | 266.10529 | 6.56508 | 20.83112 | 0.0694777 | 1.9206401 | 13 | 1 | 18 days | 0.23 | | | MPC | 2006 $RX_{97}$ |
| 2006 $RZ_{97}$ | 16.2 | 0.15 | 20060902 | 338.03510 | 49.91465 | 333.10163 | 4.96439 | 0.1840609 | 3.0680101 | 20 | 1 | 55 days | 0.47 | | | MPC | 2006 $RZ_{97}$ |
| 2006 $RC_{98}$ | 15.9 | 0.15 | 20060902 | 335.99458 | 353.05099 | 20.40767 | 10.26519 | 0.2026358 | 2.8026963 | 27 | 1 | 57 days | 0.50 | | | MPC | 2006 $RC_{98}$ |
| 2006 $RF_{98}$ | 16.6 | 0.15 | 20060922 | 299.03574 | 91.91597 | 328.22646 | 5.77635 | 0.0361167 | 2.7887505 | 12 | 1 | 36 days | 0.11 | | | MPC | 2006 $RF_{98}$ |
| 2006 $RJ_{98}$ | 15.1 | 0.15 | 20060902 | 58.51318 | 187.88087 | 99.96465 | 11.77240 | 0.0650825 | 3.1409806 | 11 | 1 | 12 days | 0.47 | | | MPC | 2006 $RJ_{98}$ |
| 2006 $RN_{98}$ | 16.9 | 0.15 | 20060902 | 341.75897 | 249.86266 | 130.72894 | 13.45088 | 0.1912374 | 2.6172610 | 11 | 1 | 12 days | 0.39 | | | MPC | 2006 $RN_{98}$ |
| 2006 $RR_{98}$ | 18.1 | 0.15 | 20060922 | 331.90596 | 36.34572 | 2.33761 | 4.05858 | 0.1186263 | 2.2482225 | 23 | 1 | 61 days | 0.26 | M-v | 4 | MPC | 2006 $RR_{98}$ |
| 2006 $RS_{98}$ | 17.4 | 0.15 | 20060922 | 189.09368 | 169.15724 | 6.48557 | 4.27612 | 0.0090117 | 2.7801053 | 20 | 1 | 17 days | 0.28 | | D | MPC | 2006 $RS_{98}$ |
| 2006 $RT_{98}$ | 17.5 | 0.15 | 20060902 | 345.74703 | 284.87633 | 91.46685 | 1.88140 | 0.0907633 | 2.7738639 | 12 | 1 | 12 days | 0.33 | | | MPC | 2006 $RT_{98}$ |
| 2006 $RY_{98}$ | 16.8 | 0.15 | 20060922 | 0.70782 | 341.85887 | 25.04645 | 1.99664 | 0.2654990 | 2.7582646 | 74 | 1 | 74 days | 0.36 | M-v | 3 | MPC | 2006 $RY_{98}$ |
| 2006 $RA_{99}$ | 16.5 | 0.15 | 20060922 | 345.27212 | 22.69954 | 16.36256 | 14.97043 | 0.2344684 | 3.0887359 | 36 | 1 | 66 days | 0.40 | M-v | 4 | MPC | 2006 $RA_{99}$ |
| 2006 $RB_{99}$ | 16.8 | 0.15 | 20060922 | 355.19405 | 200.82735 | 181.76347 | 3.09846 | 0.2567339 | 3.0698247 | 45 | 1 | 48 days | 0.31 | | | MPC | 2006 $RB_{99}$ |
| 2006 $RE_{99}$ | 17.3 | 0.15 | 20060922 | 333.32112 | 223.38929 | 173.29758 | 2.45243 | 0.1792583 | 2.4339329 | 21 | 1 | 85 days | 0.38 | M-v | 4 | MPC | 2006 $RE_{99}$ |
| 2006 $RH_{99}$ | 15.8 | 0.15 | 20060922 | 33.35845 | 319.50956 | 3.57926 | 12.08059 | 0.0391292 | 2.8299950 | 39 | 1 | 66 days | 0.46 | M-v | 4 | MPC | 2006 $RH_{99}$ |
| 2006 $RJ_{99}$ | 14.5 | 0.15 | 20060902 | 183.92359 | 202.58301 | 334.46450 | 2.62464 | 0.2912975 | 2.4076664 | 12 | 1 | 12 days | 0.55 | | | MPC | 2006 $RJ_{99}$ |
| 2006 $RK_{99}$ | 18.0 | 0.15 | 20060922 | 5.35825 | 180.44663 | 173.16047 | 2.95174 | 0.2253031 | 2.3341892 | 49 | 1 | 62 days | 0.44 | M-v | 4 | MPC | 2006 $RK_{99}$ |
| 2006 $RQ_{99}$ | 18.7 | 0.15 | 20060902 | 339.00648 | 217.81606 | 166.95262 | 0.97598 | 0.2935323 | 2.4326345 | 12 | 1 | 14 days | 0.57 | | | MPC | 2006 $RQ_{99}$ |
| 2006 $RF_{100}$ | 16.4 | 0.15 | 20060922 | 289.49162 | 181.10137 | 252.77469 | 7.29198 | 0.0761293 | 2.3723295 | 19 | 1 | 69 days | 0.56 | M-v | 5 | MPC | 2006 $RF_{100}$ |
| 2006 $RG_{100}$ | 16.7 | 0.15 | 20060922 | 2.50319 | 121.91335 | 229.89658 | 8.12022 | 0.1461614 | 2.6423824 | 25 | 1 | 38 days | 0.54 | | | MPC | 2006 $RG_{100}$ |
| 2006 $RH_{100}$ | 18.9 | 0.15 | 20060922 | 13.39566 | 73.25834 | 257.11288 | 4.17458 | 0.3119274 | 2.2004522 | 20 | 1 | 55 days | 0.42 | | | MPC | 2006 $RH_{100}$ |
| 2006 $RJ_{100}$ | 17.7 | 0.15 | 20060902 | 2.75751 | 20.12383 | 322.62553 | 16.56086 | 0.2408511 | 2.5614189 | 20 | 1 | 42 days | 0.53 | | | MPC | 2006 $RJ_{100}$ |
| 2006 $RM_{100}$ | 16.4 | 0.15 | 20060922 | 356.47965 | 348.82833 | 3.62520 | 18.54479 | 0.0921400 | 2.8096691 | 20 | 1 | 68 days | 0.39 | M-v | 4 | MPC | 2006 $RM_{100}$ |
| 2006 $RQ_{100}$ | 15.9 | 0.15 | 20060902 | 329.55947 | 18.97598 | 11.54470 | 16.40446 | 0.2082904 | 3.0854831 | 16 | 1 | 12 days | 0.62 | | | MPC | 2006 $RQ_{100}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $RR_{100}$ | 16.3 | 0.15 | 20060922 | 354.60014 | 328.55259 | 29.89256 | 9.29832 | 0.1613140 | 2.7973580 | 30 | 1 | 87 days | 0.70 | M-v | 4 | | MPC | 2006 $RR_{100}$ |
| 2006 $RV_{100}$ | 18.0 | 0.15 | 20060902 | 13.56283 | 209.60992 | 115.43416 | 6.44685 | 0.2033824 | 2.3015566 | 12 | 1 | 12 days | 0.87 | | | | MPC | 2006 $RV_{100}$ |
| 2006 $RX_{100}$ | 15.8 | 0.15 | 20060902 | 319.57732 | 339.32340 | 62.79081 | 9.87808 | 0.1500439 | 3.0565393 | 13 | 1 | 6 days | 0.80 | | | | MPC | 2006 $RX_{100}$ |
| 2006 $RY_{100}$ | 16.6 | 0.15 | 20060922 | 8.84612 | 276.52036 | 66.34480 | 7.11069 | 0.1412782 | 2.4313637 | 33 | 1 | 55 days | 0.58 | | | | MPC | 2006 $RY_{100}$ |
| 2006 $RL_{101}$ | 16.9 | 0.15 | 20060922 | 350.39469 | 357.09218 | 11.73711 | 14.33534 | 0.2560510 | 2.6865631 | 19 | 1 | 25 days | 0.56 | | | | MPC | 2006 $RL_{101}$ |
| 2006 $RN_{101}$ | 17.7 | 0.15 | 20060922 | 7.09974 | 70.61383 | 273.55072 | 8.28483 | 0.1966247 | 2.2788502 | 27 | 1 | 49 days | 0.46 | | | | MPC | 2006 $RN_{101}$ |
| 2006 $RR_{101}$ | 16.4 | 0.15 | 20060902 | 297.00644 | 347.46220 | 67.65456 | 4.56329 | 0.0584140 | 2.3295722 | 12 | 1 | 22 days | 0.57 | | | | MPC | 2006 $RR_{101}$ |
| 2006 $RS_{101}$ | 17.8 | 0.15 | 20060902 | 350.09912 | 257.80326 | 103.85165 | 4.01930 | 0.2559074 | 2.3487010 | 19 | 1 | 33 days | 0.76 | | | | MPC | 2006 $RS_{101}$ |
| 2006 $RW_{101}$ | 15.9 | 0.15 | 20060922 | 28.22425 | 297.05957 | 8.13692 | 26.47830 | 0.2898011 | 3.2149887 | 27 | 1 | 28 days | 0.54 | | | | MPC | 2006 $RW_{101}$ |
| 2006 $RX_{101}$ | 15.4 | 0.15 | 20061012 | 11.83339 | 334.37598 | 8.88241 | 28.42590 | 0.1863922 | 3.2257183 | 38 | 1 | 58 days | 0.61 | | | | MPC | 2006 $RX_{101}$ |
| 2006 $RY_{101}$ | 18.7 | 0.15 | 20061012 | 19.77220 | 311.22039 | 19.61947 | 6.00460 | 0.2898039 | 2.2256524 | 37 | 1 | 58 days | 0.59 | | | | MPC | 2006 $RY_{101}$ |
| 2006 $RA_{102}$ | 18.0 | 0.15 | 20060922 | 15.80963 | 305.26965 | 45.57331 | 7.95975 | 0.1452807 | 2.2987148 | 30 | 1 | 63 days | 0.49 | M-v | 4 | | MPC | 2006 $RA_{102}$ |
| 2006 $RD_{102}$ | 16.5 | 0.15 | 20060922 | 353.48869 | 182.95980 | 196.55037 | 8.93199 | 0.1411372 | 3.0566098 | 34 | 1 | 60 days | 0.33 | M-v | 4 | | MPC | 2006 $RD_{102}$ |
| 2006 $RE_{102}$ | 17.1 | 0.15 | 20060922 | 68.68620 | 93.29823 | 195.15237 | 10.32793 | 0.1189432 | 2.6029388 | 17 | 1 | 32 days | 0.32 | | | | MPC | 2006 $RE_{102}$ |
| 2006 $RK_{102}$ | 16.8 | 0.15 | 20060922 | 343.92546 | 147.26325 | 231.35836 | 3.58484 | 0.1513848 | 2.7590760 | 22 | 1 | 46 days | 0.47 | | | | MPC | 2006 $RK_{102}$ |
| 2006 $RM_{102}$ | 17.2 | 0.15 | 20060922 | 347.65347 | 14.84887 | 357.19977 | 14.27850 | 0.2652838 | 2.6556798 | 29 | 1 | 36 days | 0.58 | | | | MPC | 2006 $RM_{102}$ |
| 2006 $RO_{102}$ | 17.0 | 0.15 | 20060922 | 20.49103 | 303.99527 | 9.36142 | 13.53775 | 0.3264279 | 3.1216381 | 18 | 1 | 66 days | 0.43 | M-v | 4 | | MPC | 2006 $RO_{102}$ |
| 2006 $RP_{102}$ | 17.8 | 0.15 | 20060922 | 47.16654 | 114.60485 | 186.91599 | 21.30431 | 0.1119199 | 1.9465217 | 16 | 1 | 38 days | 0.40 | | | | MPC | 2006 $RP_{102}$ |
| 2006 $RQ_{102}$ | 18.2 | 0.15 | 20060922 | 11.28268 | 46.27200 | 292.09571 | 8.58302 | 0.2053379 | 2.2302611 | 12 | 1 | 15 days | 0.78 | | | | MPC | 2006 $RQ_{102}$ |
| 2006 $RR_{102}$ | 17.4 | 0.15 | 20061012 | 29.38059 | 214.12080 | 116.77101 | 2.06128 | 0.2279080 | 2.3743953 | 25 | 1 | 38 days | 0.59 | | | D | MPC | 2006 $RR_{102}$ |
| 2006 $RC_{103}$ | 6.4 | 0.15 | 20060922 | 33.10167 | 350.66068 | 310.55554 | 17.28747 | 0.0787098 | 40.7735961 | 20 | 1 | 47 days | 0.10 | | | E | MPC | 2006 $RC_{103}$ |
| 2006 SA | 19.0 | 0.15 | 20060902 | 337.88380 | 202.46889 | 173.78118 | 18.25202 | 0.1672478 | 1.7602111 | 39 | 1 | 26 days | 0.57 | | | | MPC | 2006 SA |
| 2006 SB | 25.8 | 0.15 | 20060922 | 318.54524 | 243.31311 | 175.19878 | 16.17721 | 0.1985678 | 1.1520205 | 40 | 1 | 3 days | 0.46 | M-v | 6 | | MPC | 2006 SB |
| 2006 SC | 25.2 | 0.15 | 20060922 | 61.90495 | 265.09305 | 350.90780 | 10.43097 | 0.3499757 | 1.1126786 | 95 | 1 | 27 days | 0.73 | M-v | 5 | | MPC | 2006 SC |
| 2006 SD | 16.8 | 0.15 | 20060902 | 8.04972 | 43.35132 | 292.30238 | 13.23499 | 0.2317135 | 3.0826673 | 23 | 1 | 5 days | 0.76 | | | | MPC | 2006 SD |
| 2006 SF | 16.8 | 0.15 | 20060922 | 11.72632 | 97.53922 | 236.89117 | 8.75947 | 0.3426401 | 2.6691316 | 68 | 1 | 140 days | 0.41 | M-v | 3 | | MPC | 2006 SF |
| 2006 SG | 17.7 | 0.15 | 20060922 | 19.04481 | 121.93069 | 216.09869 | 5.94330 | 0.2270173 | 2.3957959 | 57 | 1 | 74 days | 0.54 | M-v | 4 | | MPC | 2006 SG |
| 2006 SJ | 17.2 | 0.15 | 20060922 | 21.34301 | 178.32194 | 140.16504 | 14.99091 | 0.2556625 | 2.6341232 | 23 | 1 | 65 days | 0.60 | M-v | 5 | | MPC | 2006 SJ |
| 2006 SP | 16.2 | 0.15 | 20060922 | 347.44829 | 175.39179 | 205.22532 | 15.56582 | 0.2185437 | 3.0757474 | 63 | 1 | 60 days | 0.60 | M-v | 4 | | MPC | 2006 SP |
| 2006 SQ | 16.6 | 0.15 | 20060922 | 23.97637 | 32.28649 | 293.37603 | 6.43661 | 0.2024838 | 2.6396498 | 27 | 1 | 47 days | 0.66 | | | | MPC | 2006 SQ |
| 2006 SR | 17.3 | 0.15 | 20060922 | 15.05173 | 9.92770 | 330.30082 | 11.40954 | 0.1904150 | 2.5822415 | 30 | 1 | 44 days | 0.66 | | | | MPC | 2006 SR |
| 2006 SS | 18.1 | 0.15 | 20060922 | 17.83133 | 45.31809 | 290.68137 | 3.92910 | 0.2143905 | 2.2129019 | 64 | 1 | 37 days | 0.57 | | | | MPC | 2006 SS |
| 2006 SV | 16.6 | 0.15 | 20060922 | 12.98429 | 185.93376 | 177.43790 | 8.50657 | 0.3299013 | 2.6523132 | 46 | 1 | 122 days | 0.52 | M-v | 4 | D | MPC | 2006 SV |
| 2006 SW | 18.0 | 0.15 | 20060922 | 356.74742 | 72.75776 | 297.73108 | 2.40542 | 0.1980069 | 2.2651358 | 50 | 1 | 64 days | 0.46 | M-v | 4 | | MPC | 2006 SW |
| 2006 SX | 16.6 | 0.15 | 20060922 | 182.42475 | 211.91048 | 326.45714 | 3.36398 | 0.0427365 | 2.7954147 | 32 | 1 | 63 days | 0.47 | M-v | 4 | | MPC | 2006 SX |
| 2006 SZ | 16.7 | 0.15 | 20060922 | 6.90245 | 43.45993 | 305.46615 | 1.66462 | 0.2201764 | 3.0622707 | 30 | 1 | 116 days | 0.48 | M-v | 3 | | MPC | 2006 SZ |
| 2006 $SA_1$ | 17.7 | 0.15 | 20060922 | 3.64663 | 56.30121 | 297.95598 | 1.22026 | 0.2157913 | 2.6487558 | 21 | 1 | 37 days | 0.31 | | | | MPC | 2006 $SA_1$ |
| 2006 $SB_1$ | 16.8 | 0.15 | 20060922 | 306.20810 | 246.28916 | 186.26518 | 11.69768 | 0.1777587 | 2.6141691 | 33 | 1 | 60 days | 0.56 | M-v | 4 | | MPC | 2006 $SB_1$ |
| 2006 $SC_1$ | 18.2 | 0.15 | 20060922 | 301.35045 | 172.48816 | 259.91571 | 1.67488 | 0.1264842 | 2.5226677 | 12 | 1 | 12 days | 0.20 | | | | MPC | 2006 $SC_1$ |
| 2006 $SD_1$ | 17.0 | 0.15 | 20060922 | 5.42132 | 0.01476 | 354.24148 | 15.05724 | 0.0672941 | 2.5230213 | 27 | 1 | 35 days | 0.25 | | | | MPC | 2006 $SD_1$ |
| 2006 $SE_1$ | 16.9 | 0.15 | 20060902 | 283.17734 | 84.63944 | 355.59544 | 24.33830 | 0.0736120 | 2.3353909 | 17 | 1 | 2 days | 0.61 | | | | MPC | 2006 $SE_1$ |
| 2006 $SG_1$ | 16.1 | 0.15 | 20060922 | 313.37156 | 75.00917 | 348.53654 | 8.39230 | 0.1670383 | 2.7796856 | 22 | 1 | 26 days | 0.51 | | | | MPC | 2006 $SG_1$ |
| 2006 $SH_1$ | 17.9 | 0.15 | 20060922 | 358.20923 | 170.12294 | 192.79672 | 6.55034 | 0.1373719 | 2.4345255 | 25 | 1 | 86 days | 0.35 | M-v | 3 | | MPC | 2006 $SH_1$ |
| 2006 $SK_1$ | 16.6 | 0.15 | 20060922 | 347.35002 | 191.09037 | 186.78519 | 9.26075 | 0.1495023 | 2.7134294 | 49 | 1 | 88 days | 0.49 | M-v | 4 | | MPC | 2006 $SK_1$ |
| 2006 $SQ_1$ | 15.6 | 0.15 | 20060922 | 7.22449 | 353.00449 | 356.16721 | 14.67570 | 0.2490713 | 3.9276050 | 28 | 1 | 56 days | 0.39 | | | | MPC | 2006 $SQ_1$ |
| 2006 $SS_1$ | 18.7 | 0.15 | 20060922 | 351.81597 | 85.67333 | 290.32453 | 0.84785 | 0.2805585 | 2.2729642 | 37 | 1 | 60 days | 0.52 | M-v | 5 | | MPC | 2006 $SS_1$ |
| 2006 $ST_1$ | 15.9 | 0.15 | 20060922 | 14.35756 | 340.96769 | 358.66002 | 17.00155 | 0.2083828 | 3.1690659 | 41 | 1 | 37 days | 0.60 | | | | MPC | 2006 $ST_1$ |
| 2006 $SV_1$ | 16.9 | 0.15 | 20060922 | 345.39179 | 213.71087 | 174.22352 | 7.56237 | 0.2768082 | 2.6863831 | 48 | 1 | 66 days | 0.52 | M-v | 4 | | MPC | 2006 $SV_1$ |
| 2006 $SW_1$ | 17.1 | 0.15 | 20060902 | 354.76106 | 137.45417 | 221.51825 | 12.78694 | 0.1866700 | 3.0481267 | 12 | 1 | 2 days | 0.69 | | | | MPC | 2006 $SW_1$ |
| 2006 $SY_1$ | 15.9 | 0.15 | 20060922 | 355.34594 | 86.56591 | 277.68498 | 9.71469 | 0.1522101 | 3.1200506 | 19 | 1 | 11 days | 0.59 | | | | MPC | 2006 $SY_1$ |
| 2006 $SA_2$ | 16.6 | 0.15 | 20060922 | 339.63514 | 170.69392 | 216.80246 | 12.44550 | 0.1869381 | 2.6912436 | 30 | 1 | 40 days | 0.57 | | | | MPC | 2006 $SA_2$ |
| 2006 $SJ_2$ | 18.4 | 0.15 | 20060922 | 323.97434 | 80.30560 | 324.80276 | 18.63417 | 0.1414573 | 1.8524544 | 12 | 1 | 12 days | 0.65 | | | | MPC | 2006 $SJ_2$ |
| 2006 $SO_2$ | 16.3 | 0.15 | 20060902 | 334.27013 | 123.43746 | 262.35180 | 0.92961 | 0.0840353 | 2.8617147 | 15 | 1 | 9 days | 0.66 | | | | MPC | 2006 $SO_2$ |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SP_2$ | 16.2 | 0.15 | 20060922 | 303.33233 | 89.62601 | 335.56037 | 2.58077 | 0.0794933 | 2.8650073 | 21 | 1 | 37 days | 0.60 | | | MPC | 2006 $SP_2$ |
| 2006 $SR_2$ | 17.5 | 0.15 | 20060922 | 25.14344 | 102.69580 | 202.11250 | 20.54918 | 0.3445298 | 2.3681236 | 13 | 1 | 11 days | 0.30 | | | MPC | 2006 $SR_2$ |
| 2006 $SS_2$ | 17.6 | 0.15 | 20060922 | 356.67829 | 121.96509 | 241.23359 | 12.02749 | 0.2771147 | 2.5975869 | 16 | 1 | 12 days | 0.66 | | | MPC | 2006 $SS_2$ |
| 2006 $SW_2$ | 17.7 | 0.15 | 20060902 | 349.76939 | 130.86194 | 235.75422 | 12.33611 | 0.2356880 | 2.4076313 | 12 | 1 | 5 days | 0.59 | | | MPC | 2006 $SW_2$ |
| 2006 $SC_3$ | 17.0 | 0.15 | 20060902 | 14.02868 | 42.36974 | 286.16268 | 11.84402 | 0.2455621 | 2.6215139 | 19 | 1 | 22 days | 0.44 | | | MPC | 2006 $SC_3$ |
| 2006 $SM_3$ | 18.7 | 0.15 | 20060922 | 324.52655 | 76.48305 | 332.10160 | 3.16658 | 0.1609957 | 2.5827956 | 12 | 1 | 12 days | 0.32 | | | MPC | 2006 $SM_3$ |
| 2006 $SO_3$ | 17.3 | 0.15 | 20060922 | 328.80434 | 227.45977 | 184.08332 | 16.69503 | 0.2513093 | 3.1677346 | 35 | 1 | 35 days | 0.36 | | | MPC | 2006 $SO_3$ |
| 2006 $SQ_3$ | | | 20060902 | 72.55201 | 260.25673 | 348.41006 | 7.97068 | 0.3054226 | 2.6465748 | 9 | 1 | 2 days | 0.37 | | | MPC | 2006 $SQ_3$ |
| 2006 $SU_3$ | 16.0 | 0.15 | 20060922 | 285.61786 | 116.71581 | 1.89126 | 31.11925 | 0.2971871 | 2.6131795 | 63 | 1 | 31 days | 0.72 | | | MPC | 2006 $SU_3$ |
| 2006 $SY_3$ | 16.0 | 0.15 | 20060922 | 22.60926 | 140.54240 | 194.80488 | 27.69041 | 0.1934600 | 3.1711201 | 33 | 1 | 69 days | 0.41 | M-v | 4 | MPC | 2006 $SY_3$ |
| 2006 $SA_4$ | 16.5 | 0.15 | 20060922 | 8.54359 | 160.44499 | 206.92591 | 10.34919 | 0.3738951 | 3.0392454 | 63 | 1 | 68 days | 0.65 | M-v | 4 | MPC | 2006 $SA_4$ |
| 2006 $SG_4$ | 17.8 | 0.15 | 20060922 | 335.32476 | 149.02826 | 248.30575 | 4.30214 | 0.1725236 | 2.2801965 | 28 | 1 | 37 days | 0.64 | | | MPC | 2006 $SG_4$ |
| 2006 $SJ_4$ | 15.3 | 0.15 | 20060902 | 40.83873 | 92.48595 | 199.50135 | 16.82234 | 0.2708537 | 3.1404976 | 15 | 1 | 2 days | 0.89 | | | MPC | 2006 $SJ_4$ |
| 2006 $SK_4$ | 16.7 | 0.15 | 20060922 | 39.33326 | 24.93657 | 271.32663 | 3.91203 | 0.2897082 | 2.6014012 | 32 | 1 | 53 days | 0.54 | | | MPC | 2006 $SK_4$ |
| 2006 $SL_4$ | 18.5 | 0.15 | 20060922 | 18.60247 | 61.76581 | 266.26180 | 3.24269 | 0.2928158 | 2.2686616 | 24 | 1 | 47 days | 0.49 | | | MPC | 2006 $SL_4$ |
| 2006 $SM_4$ | 15.3 | 0.15 | 20060922 | 13.25132 | 15.38892 | 333.45970 | 9.17998 | 0.1034686 | 3.0818668 | 42 | 1 | 55 days | 0.68 | | | MPC | 2006 $SM_4$ |
| 2006 $SS_4$ | 14.9 | 0.15 | 20060922 | 26.13567 | 324.31366 | 34.52087 | 17.69123 | 0.2109072 | 2.9825324 | 63 | 1 | 72 days | 0.48 | M-v | 4 | MPC | 2006 $SS_4$ |
| 2006 $SX_4$ | 17.8 | 0.15 | 20060922 | 1.77876 | 83.91786 | 276.98742 | 3.16022 | 0.2688465 | 2.5217415 | 40 | 1 | 65 days | 0.44 | M-v | 3 | MPC | 2006 $SX_4$ |
| 2006 $SA_5$ | 18.3 | 0.15 | 20060922 | 11.93777 | 160.91703 | 188.51422 | 22.40536 | 0.0765717 | 1.9060378 | 37 | 1 | 45 days | 0.54 | | | MPC | 2006 $SA_5$ |
| 2006 $SE_5$ | 16.1 | 0.15 | 20060902 | 19.58077 | 100.54734 | 228.75047 | 3.81629 | 0.2640733 | 3.2085268 | 21 | 1 | 9 days | 0.93 | | | MPC | 2006 $SE_5$ |
| 2006 $SF_5$ | 17.3 | 0.15 | 20060902 | 41.49457 | 326.77298 | 336.32453 | 1.99962 | 0.1804499 | 2.3122976 | 11 | 1 | 9 days | 0.42 | | | MPC | 2006 $SF_5$ |
| 2006 $SP_5$ | 16.4 | 0.15 | 20060922 | 359.70329 | 350.30641 | 20.95671 | 7.95703 | 0.1964267 | 2.6355861 | 52 | 1 | 83 days | 0.47 | M-v | 4 | MPC | 2006 $SP_5$ |
| 2006 $SQ_5$ | 17.1 | 0.15 | 20060922 | 7.57720 | 325.75788 | 30.90363 | 5.90157 | 0.2584345 | 2.6531975 | 48 | 1 | 72 days | 0.31 | M-v | 3 | MPC | 2006 $SQ_5$ |
| 2006 $SU_5$ | 15.3 | 0.15 | 20060922 | 4.40492 | 335.27738 | 34.00658 | 26.15622 | 0.1767532 | 2.6186873 | 110 | 1 | 72 days | 0.46 | M-v | 4 | MPC | 2006 $SU_5$ |
| 2006 $SV_5$ | 23.1 | 0.15 | 20060922 | 341.98108 | 207.81218 | 182.50565 | 4.85748 | 0.2930386 | 1.4445360 | 133 | 1 | 46 days | 0.42 | M-v | 5 | MPC | 2006 $SV_5$ |
| 2006 $SX_5$ | 16.1 | 0.15 | 20060902 | 95.24253 | 294.21135 | 306.21879 | 21.86872 | 0.1917288 | 2.2892653 | 39 | 1 | 2 days | 0.41 | | | MPC | 2006 $SX_5$ |
| 2006 $SY_5$ | 22.1 | 0.15 | 20060922 | 215.17814 | 175.64967 | 336.07570 | 7.56641 | 0.1523041 | 1.0430198 | 68 | 1 | 62 days | 0.43 | M-v | 5 | MPC | 2006 $SY_5$ |
| 2006 $SZ_5$ | 17.5 | 0.15 | 20060902 | 28.92663 | 17.05375 | 293.53233 | 14.01791 | 0.1954888 | 2.6418897 | 20 | 1 | 2 days | 0.78 | | | MPC | 2006 $SZ_5$ |
| 2006 $SA_6$ | 19.3 | 0.15 | 20060922 | 18.21582 | 64.70603 | 227.73842 | 5.81219 | 0.6200406 | 2.7867620 | 68 | 1 | 44 days | 0.43 | M-v | 5 | MPC | 2006 $SA_6$ |
| 2006 $SB_6$ | 19.7 | 0.15 | 20060922 | 358.94818 | 10.40545 | 356.88623 | 24.29768 | 0.4854803 | 2.6432690 | 38 | 1 | 12 days | 0.67 | | | MPC | 2006 $SB_6$ |
| 2006 $SD_6$ | 20.2 | 0.15 | 20060922 | 308.86183 | 264.85029 | 170.01423 | 35.74916 | 0.3017462 | 1.5157319 | 60 | 1 | 38 days | 0.51 | M-v | 5 | MPC | 2006 $SD_6$ |
| 2006 $SE_6$ | 22.9 | 0.15 | 20060922 | 190.25127 | 182.90810 | 347.56700 | 4.81480 | 0.3454251 | 0.8051863 | 95 | 1 | 30 days | 0.49 | M-v | 8 | MPC | 2006 $SE_6$ |
| 2006 $SF_6$ | 20.0 | 0.15 | 20060922 | 190.56006 | 305.53227 | 228.17507 | 5.86483 | 0.2804455 | 0.9492891 | 240 | 1 | 63 days | 0.39 | M-v | 5 | MPC | 2006 $SF_6$ |
| 2006 $SN_6$ | 17.0 | 0.15 | 20060922 | 4.52330 | 303.18154 | 72.40221 | 2.30959 | 0.3103461 | 2.3842851 | 94 | 1 | 66 days | 0.41 | M-v | 4 | MPC | 2006 $SN_6$ |
| 2006 $SP_6$ | 17.1 | 0.15 | 20060902 | 6.38691 | 83.48537 | 256.13484 | 5.04421 | 0.1864816 | 2.3717426 | 16 | 1 | 23 days | 0.49 | | | MPC | 2006 $SP_6$ |
| 2006 $SQ_6$ | 18.4 | 0.15 | 20060922 | 351.79752 | 180.12643 | 198.58978 | 7.13137 | 0.3861347 | 2.6382896 | 60 | 1 | 83 days | 0.51 | M-v | 4 | MPC | 2006 $SQ_6$ |
| 2006 $SS_6$ | 16.9 | 0.15 | 20060902 | 326.78317 | 271.22172 | 132.43441 | 12.63623 | 0.2703752 | 2.6194902 | 24 | 1 | 43 days | 0.54 | | | MPC | 2006 $SS_6$ |
| 2006 $SU_6$ | 15.7 | 0.15 | 20060922 | 237.10723 | 243.05495 | 238.03162 | 10.51246 | 0.0344737 | 3.0251307 | 16 | 1 | 34 days | 0.36 | | D | MPC | 2006 $SU_6$ |
| 2006 $SV_6$ | 16.7 | 0.15 | 20060922 | 344.46340 | 113.92563 | 278.99081 | 5.87583 | 0.0951505 | 2.2733398 | 28 | 1 | 45 days | 0.49 | | | MPC | 2006 $SV_6$ |
| 2006 $SY_6$ | 20.3 | 0.15 | 20060902 | 340.26577 | 214.75903 | 180.10756 | 27.36505 | 0.3805644 | 2.2655172 | 27 | 1 | 8 days | 0.45 | | | MPC | 2006 $SY_6$ |
| 2006 $SZ_6$ | 18.5 | 0.15 | 20060902 | 21.06826 | 287.64991 | 28.72580 | 12.19155 | 0.1824838 | 2.4446462 | 19 | 1 | 2 days | 0.82 | | | MPC | 2006 $SZ_6$ |
| 2006 $SA_7$ | 19.5 | 0.15 | 20060922 | 58.61382 | 265.09418 | 0.70085 | 35.60948 | 0.3614563 | 1.9881919 | 25 | 1 | 35 days | 0.45 | M-v | 5 | MPC | 2006 $SA_7$ |
| 2006 $SB_7$ | 17.0 | 0.15 | 20060922 | 74.58249 | 249.37781 | 4.42750 | 21.49156 | 0.3953138 | 2.1538253 | 71 | 1 | 34 days | 0.42 | | | MPC | 2006 $SB_7$ |
| 2006 $SC_7$ | 20.0 | 0.15 | 20060922 | 298.15957 | 68.19059 | 0.34330 | 25.83592 | 0.0779520 | 1.6556559 | 53 | 1 | 8 days | 0.68 | | | MPC | 2006 $SC_7$ |
| 2006 $SE_7$ | 18.1 | 0.15 | 20060922 | 348.76567 | 4.20210 | 23.44683 | 5.48598 | 0.3728418 | 2.4313063 | 120 | 1 | 95 days | 0.39 | M-v | 4 | MPC | 2006 $SE_7$ |
| 2006 $SF_7$ | 22.3 | 0.15 | 20060922 | 280.23526 | 284.89865 | 180.45663 | 23.95552 | 0.2092343 | 1.0401111 | 63 | 1 | 9 days | 1.26 | M-v | 7 | MPC | 2006 $SF_7$ |
| 2006 $SG_7$ | 22.9 | 0.15 | 20060922 | 286.78241 | 133.26667 | 2.34946 | 4.76731 | 0.5613934 | 1.0427794 | 72 | 1 | 23 days | 0.51 | M-v | 7 | MPC | 2006 $SG_7$ |
| 2006 $SJ_7$ | 18.4 | 0.15 | 20060922 | 11.32689 | 162.08587 | 187.14141 | 2.91044 | 0.2008653 | 2.2388815 | 23 | 1 | 37 days | 0.21 | | | MPC | 2006 $SJ_7$ |
| 2006 $SK_7$ | 18.4 | 0.15 | 20060902 | 336.09572 | 331.62543 | 61.48699 | 7.19913 | 0.3180878 | 2.7236737 | 11 | 1 | 1 days | 0.64 | | E | MPC | 2006 $SK_7$ |
| 2006 $SQ_7$ | 16.9 | 0.15 | 20060922 | 358.42455 | 113.89155 | 245.23000 | 8.38453 | 0.2171898 | 3.1925776 | 12 | 1 | 35 days | 0.30 | | | MPC | 2006 $SQ_7$ |
| 2006 $SR_7$ | 17.5 | 0.15 | 20060922 | 6.29008 | 119.67641 | 243.93246 | 6.53875 | 0.1775501 | 2.2237998 | 13 | 1 | 29 days | 0.34 | | | MPC | 2006 $SR_7$ |
| 2006 $ST_7$ | 16.9 | 0.15 | 20060922 | 39.34442 | 230.83656 | 73.63729 | 5.81529 | 0.2365110 | 2.3514929 | 32 | 1 | 33 days | 0.57 | | | MPC | 2006 $ST_7$ |
| 2006 $SU_7$ | 15.4 | 0.15 | 20060922 | 3.60314 | 15.11494 | 338.45439 | 8.55984 | 0.0839181 | 3.1200547 | 27 | 1 | 27 days | 0.66 | | | MPC | 2006 $SU_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SX_7$ | 16.9 | 0.15 | 20060922 | 337.86218 | 242.39087 | 157.78783 | 6.43336 | 0.1572113 | 2.2267045 | 60 | 1 | 52 days | 0.50 | | | MPC | 2006 $SX_7$ |
| 2006 $SZ_7$ | 16.9 | 0.15 | 20060922 | 293.23500 | 208.45664 | 234.95475 | 5.76543 | 0.0858383 | 2.3273758 | 35 | 1 | 37 days | 0.66 | | | MPC | 2006 $SZ_7$ |
| 2006 $SC_8$ | 17.5 | 0.15 | 20060922 | 13.53635 | 157.84205 | 191.85833 | 23.18758 | 0.0846130 | 1.9351825 | 32 | 1 | 36 days | 0.50 | | | MPC | 2006 $SC_8$ |
| 2006 $SH_8$ | 16.3 | 0.15 | 20060922 | 30.05175 | 295.89012 | 31.91018 | 22.43424 | 0.2502076 | 2.4331659 | 100 | 1 | 70 days | 0.47 | M-v | 4 | MPC | 2006 $SH_8$ |
| 2006 $ST_8$ | 17.1 | 0.15 | 20060922 | 350.51877 | 182.31814 | 182.10941 | 13.99852 | 0.2663031 | 2.6306830 | 35 | 1 | 61 days | 0.69 | M-v | 4 | MPC | 2006 $ST_8$ |
| 2006 $SV_8$ | 15.2 | 0.15 | 20060922 | 344.79082 | 186.71377 | 190.98348 | 17.43438 | 0.0905088 | 3.2264093 | 50 | 1 | 65 days | 0.58 | M-v | 4 | MPC | 2006 $SV_8$ |
| 2006 $SY_8$ | 16.3 | 0.15 | 20061012 | 285.70130 | 250.07556 | 213.40098 | 8.23566 | 0.1438345 | 2.5859038 | 24 | 1 | 59 days | 0.64 | | | MPC | 2006 $SY_8$ |
| 2006 $SZ_8$ | 17.8 | 0.15 | 20060902 | 35.41273 | 224.57916 | 76.06714 | 5.09712 | 0.1765484 | 2.1651766 | 11 | 1 | 4 days | 0.80 | | | MPC | 2006 $SZ_8$ |
| 2006 $SB_9$ | 16.3 | 0.15 | 20060902 | 290.66937 | 302.86407 | 135.99374 | 14.24502 | 0.1696500 | 2.8024809 | 19 | 1 | 5 days | 0.74 | | | MPC | 2006 $SB_9$ |
| 2006 $SD_9$ | 17.3 | 0.15 | 20060922 | 349.28854 | 187.69698 | 201.33555 | 7.66805 | 0.3145269 | 2.6335074 | 69 | 1 | 71 days | 0.42 | M-v | 4 | MPC | 2006 $SD_9$ |
| 2006 $SF_9$ | 16.3 | 0.15 | 20060922 | 331.73765 | 27.12926 | 19.05656 | 5.46802 | 0.1723919 | 3.0777638 | 43 | 1 | 35 days | 0.45 | | | MPC | 2006 $SF_9$ |
| 2006 $SH_9$ | 17.8 | 0.15 | 20060922 | 349.54171 | 288.30656 | 89.70265 | 2.85722 | 0.1876911 | 2.4128887 | 32 | 1 | 32 days | 0.61 | | | MPC | 2006 $SH_9$ |
| 2006 $SY_9$ | 16.7 | 0.15 | 20060902 | 55.60264 | 2.20809 | 253.79570 | 7.83578 | 0.2041570 | 2.5855282 | 10 | 1 | 3 days | 0.87 | | | MPC | 2006 $SY_9$ |
| 2006 $SD_{10}$ | 17.7 | 0.15 | 20060902 | 328.19627 | 127.13104 | 258.18088 | 5.68880 | 0.2375006 | 2.4090824 | 13 | 1 | 24 days | 0.30 | | | MPC | 2006 $SD_{10}$ |
| 2006 $SK_{10}$ | 16.7 | 0.15 | 20060902 | 25.14917 | 23.38754 | 281.64996 | 11.36319 | 0.0879151 | 3.1065371 | 12 | 1 | 7 days | 0.63 | | | MPC | 2006 $SK_{10}$ |
| 2006 $SL_{10}$ | 17.8 | 0.15 | 20060922 | 346.30381 | 103.62959 | 264.82170 | 7.13805 | 0.2768387 | 2.7414167 | 12 | 1 | 12 days | 0.18 | | | MPC | 2006 $SL_{10}$ |
| 2006 $SM_{10}$ | 17.1 | 0.15 | 20060922 | 46.65482 | 64.40787 | 211.30455 | 11.09760 | 0.1904634 | 2.7086374 | 18 | 1 | 14 days | 0.19 | | | MPC | 2006 $SM_{10}$ |
| 2006 $SO_{10}$ | 18.3 | 0.15 | 20060902 | 317.73811 | 110.29392 | 300.00122 | 12.73780 | 0.2877082 | 2.8581577 | 9 | 1 | 4 days | 0.36 | | | MPC | 2006 $SO_{10}$ |
| 2006 $SQ_{10}$ | 17.4 | 0.15 | 20060902 | 333.66171 | 157.06284 | 213.10992 | 11.28061 | 0.0992968 | 2.6333187 | 9 | 1 | 6 days | 0.21 | | | MPC | 2006 $SQ_{10}$ |
| 2006 $SR_{10}$ | 17.7 | 0.15 | 20060902 | 48.72128 | 323.71116 | 311.99979 | 16.77271 | 0.1581021 | 2.5974418 | 9 | 1 | 6 days | 0.18 | | | MPC | 2006 $SR_{10}$ |
| 2006 $ST_{10}$ | 16.2 | 0.15 | 20060902 | 313.12199 | 135.11055 | 252.77478 | 9.64064 | 0.0296912 | 3.0398689 | 9 | 1 | 6 days | 0.10 | | | MPC | 2006 $ST_{10}$ |
| 2006 $SU_{10}$ | 17.1 | 0.15 | 20060902 | 97.30629 | 344.80616 | 248.43653 | 9.14060 | 0.0701820 | 2.8023614 | 9 | 1 | 4 days | 0.16 | | | MPC | 2006 $SU_{10}$ |
| 2006 $SW_{10}$ | 16.8 | 0.15 | 20060902 | 93.95778 | 290.34301 | 303.77398 | 15.09560 | 0.0994537 | 2.9670387 | 9 | 1 | 4 days | 0.40 | | | MPC | 2006 $SW_{10}$ |
| 2006 $SX_{10}$ | 16.6 | 0.15 | 20060922 | 348.47963 | 70.07532 | 291.01502 | 10.73731 | 0.1699881 | 2.9324827 | 12 | 1 | 11 days | 0.16 | | | MPC | 2006 $SX_{10}$ |
| 2006 $SZ_{10}$ | 15.9 | 0.15 | 20060922 | 21.72041 | 326.94228 | 6.20950 | 5.16104 | 0.1516467 | 3.2252424 | 17 | 1 | 12 days | 0.45 | | | MPC | 2006 $SZ_{10}$ |
| 2006 $SC_{11}$ | 15.9 | 0.15 | 20060922 | 345.38503 | 23.57917 | 356.13389 | 9.89969 | 0.1193660 | 3.0255399 | 36 | 1 | 56 days | 0.50 | | | MPC | 2006 $SC_{11}$ |
| 2006 $SD_{11}$ | 16.9 | 0.15 | 20060902 | 302.92275 | 255.23138 | 185.30050 | 0.99159 | 0.2487202 | 2.6573449 | 11 | 1 | 9 days | 0.41 | | | MPC | 2006 $SD_{11}$ |
| 2006 $SE_{11}$ | 18.1 | 0.15 | 20060922 | 21.88148 | 142.20252 | 182.57187 | 2.93477 | 0.2233688 | 2.3724163 | 35 | 1 | 53 days | 0.54 | | | MPC | 2006 $SE_{11}$ |
| 2006 $SF_{11}$ | 18.0 | 0.15 | 20060922 | 346.41509 | 171.99468 | 209.16655 | 0.83227 | 0.2042182 | 2.4214707 | 39 | 1 | 85 days | 0.36 | M-v | 3 | MPC | 2006 $SF_{11}$ |
| 2006 $SJ_{11}$ | 18.0 | 0.15 | 20060922 | 24.06056 | 288.30566 | 29.41906 | 6.23611 | 0.2759618 | 2.1750791 | 39 | 1 | 55 days | 0.53 | | | MPC | 2006 $SJ_{11}$ |
| 2006 $SK_{11}$ | 16.5 | 0.15 | 20060922 | 348.03802 | 359.65285 | 24.37036 | 10.56080 | 0.3097042 | 2.7279989 | 44 | 1 | 66 days | 0.46 | M-v | 4 | MPC | 2006 $SK_{11}$ |
| 2006 $SM_{11}$ | 15.4 | 0.15 | 20060922 | 289.86704 | 275.10279 | 181.96698 | 25.56248 | 0.2853063 | 3.1296144 | 47 | 1 | 80 days | 0.56 | M-v | 4 | MPC | 2006 $SM_{11}$ |
| 2006 $SP_{11}$ | 15.8 | 0.15 | 20060922 | 2.50310 | 342.10558 | 21.26259 | 10.47589 | 0.2493048 | 2.7168381 | 85 | 1 | 94 days | 0.37 | M-v | 3 | MPC | 2006 $SP_{11}$ |
| 2006 $SQ_{11}$ | 17.6 | 0.15 | 20060922 | 12.18947 | 315.88263 | 32.27929 | 3.64243 | 0.2199681 | 2.2668913 | 47 | 1 | 72 days | 0.34 | M-v | 4 | MPC | 2006 $SQ_{11}$ |
| 2006 $SU_{11}$ | 16.9 | 0.15 | 20060922 | 39.71692 | 328.27343 | 338.03371 | 8.76272 | 0.2251048 | 2.3793416 | 36 | 1 | 93 days | 0.43 | M-v | 4 | MPC | 2006 $SU_{11}$ |
| 2006 $SZ_{11}$ | 17.2 | 0.15 | 20060922 | 26.48815 | 79.22782 | 235.95928 | 4.69848 | 0.3343433 | 2.5919089 | 41 | 1 | 35 days | 0.54 | | | MPC | 2006 $SZ_{11}$ |
| 2006 $SA_{12}$ | 17.6 | 0.15 | 20060922 | 326.98779 | 210.69279 | 197.71105 | 20.57185 | 0.0829202 | 1.9085071 | 35 | 1 | 68 days | 0.62 | M-v | 5 | MPC | 2006 $SA_{12}$ |
| 2006 $SB_{12}$ | 14.9 | 0.15 | 20061012 | 336.89891 | 49.02331 | 3.00637 | 12.54834 | 0.1211959 | 3.0644086 | 31 | 1 | 59 days | 0.52 | | | MPC | 2006 $SB_{12}$ |
| 2006 $SD_{12}$ | 16.1 | 0.15 | 20060922 | 27.45388 | 123.38811 | 200.17561 | 26.24172 | 0.2875244 | 3.1845014 | 47 | 1 | 87 days | 0.52 | M-v | 4 | MPC | 2006 $SD_{12}$ |
| 2006 $SE_{12}$ | 15.0 | 0.15 | 20060922 | 3.89751 | 6.40786 | 17.43239 | 16.14040 | 0.2513146 | 2.9967795 | 57 | 1 | 84 days | 0.47 | M-v | 4 | MPC | 2006 $SE_{12}$ |
| 2006 $SH_{12}$ | 16.3 | 0.15 | 20060922 | 356.30065 | 204.44250 | 176.85342 | 13.60246 | 0.1955853 | 2.6636091 | 62 | 1 | 108 days | 0.54 | M-v | 3 | MPC | 2006 $SH_{12}$ |
| 2006 $SR_{12}$ | 17.3 | 0.15 | 20060922 | 336.28310 | 178.69781 | 220.31881 | 5.41608 | 0.1651853 | 2.2981411 | 46 | 1 | 60 days | 0.43 | M-v | 4 | MPC | 2006 $SR_{12}$ |
| 2006 $SS_{12}$ | 17.9 | 0.15 | 20060922 | 74.50880 | 93.48288 | 189.36251 | 20.40356 | 0.0548689 | 1.8836739 | 27 | 1 | 25 days | 0.42 | | | MPC | 2006 $SS_{12}$ |
| 2006 $SU_{12}$ | 16.0 | 0.15 | 20060922 | 354.95362 | 193.58577 | 186.51556 | 12.70011 | 0.1425578 | 2.7171851 | 39 | 1 | 38 days | 0.51 | | | MPC | 2006 $SU_{12}$ |
| 2006 $SB_{13}$ | 17.9 | 0.15 | 20060902 | 339.33327 | 187.38255 | 183.23922 | 10.10799 | 0.2469635 | 2.9333194 | 9 | 1 | 2 days | 0.30 | | | MPC | 2006 $SB_{13}$ |
| 2006 $SC_{13}$ | 16.7 | 0.15 | 20060902 | 16.24133 | 63.54559 | 248.28620 | 7.52259 | 0.0924342 | 3.0378194 | 10 | 1 | 2 days | 0.34 | | | MPC | 2006 $SC_{13}$ |
| 2006 $SM_{13}$ | 15.7 | 0.15 | 20060922 | 332.27734 | 227.83110 | 176.51649 | 16.49219 | 0.2339633 | 3.1798077 | 48 | 1 | 64 days | 0.50 | M-v | 4 | MPC | 2006 $SM_{13}$ |
| 2006 $SN_{13}$ | 16.1 | 0.15 | 20060922 | 14.88231 | 165.06339 | 176.50282 | 8.67355 | 0.2434895 | 3.0126171 | 36 | 1 | 34 days | 0.59 | | | MPC | 2006 $SN_{13}$ |
| 2006 $SP_{13}$ | 16.3 | 0.15 | 20060922 | 9.86584 | 344.10197 | 12.03646 | 13.24922 | 0.0517040 | 2.6134053 | 45 | 1 | 44 days | 0.45 | | | MPC | 2006 $SP_{13}$ |
| 2006 $SS_{13}$ | 16.7 | 0.15 | 20060922 | 354.12375 | 3.67183 | 17.34644 | 11.73239 | 0.3011679 | 2.7393661 | 65 | 1 | 77 days | 0.41 | M-v | 4 | MPC | 2006 $SS_{13}$ |
| 2006 $ST_{13}$ | 17.2 | 0.15 | 20060922 | 1.01831 | 351.18737 | 17.67360 | 7.96278 | 0.1674982 | 2.2667177 | 36 | 1 | 62 days | 0.43 | M-v | 4 | MPC | 2006 $ST_{13}$ |
| 2006 $SV_{13}$ | 17.1 | 0.15 | 20060922 | 285.34732 | 255.51908 | 188.93185 | 5.43031 | 0.0426373 | 2.6682804 | 21 | 1 | 29 days | 0.26 | | D | MPC | 2006 $SV_{13}$ |
| 2006 $SW_{13}$ | 17.3 | 0.15 | 20060922 | 334.29238 | 213.38970 | 184.42220 | 17.33000 | 0.1317623 | 2.5844980 | 16 | 1 | 10 days | 0.67 | | | MPC | 2006 $SW_{13}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SX_{13}$ | 16.4 | 0.15 | 20060922 | 305.24997 | 72.35527 | 356.24027 | 2.40116 | 0.0832454 | 3.0547790 | 27 | 1 | 41 days | 0.34 | | | MPC | | 2006 $SX_{13}$ |
| 2006 $SY_{13}$ | 17.2 | 0.15 | 20060922 | 336.62157 | 204.46172 | 188.66350 | 2.92583 | 0.0953736 | 2.7186579 | 24 | 1 | 40 days | 0.52 | | | MPC | | 2006 $SY_{13}$ |
| 2006 $SA_{14}$ | 18.2 | 0.15 | 20060922 | 351.72211 | 17.45700 | 359.27309 | 4.21693 | 0.2176642 | 2.3615415 | 29 | 1 | 35 days | 0.37 | | | MPC | | 2006 $SA_{14}$ |
| 2006 $SE_{14}$ | 15.9 | 0.15 | 20061012 | 332.45735 | 48.98593 | 13.01867 | 13.99282 | 0.1475740 | 2.6594186 | 40 | 1 | 58 days | 0.50 | | | MPC | | 2006 $SE_{14}$ |
| 2006 $SH_{14}$ | 16.5 | 0.15 | 20060902 | 4.28586 | 58.38024 | 289.17403 | 4.47667 | 0.1807263 | 2.6495281 | 35 | 1 | 44 days | 0.60 | | | MPC | | 2006 $SH_{14}$ |
| 2006 $SJ_{14}$ | 16.7 | 0.15 | 20060922 | 32.28782 | 13.34960 | 299.95604 | 3.94663 | 0.1926194 | 2.5342765 | 53 | 1 | 64 days | 0.58 | M-v | 4 D | MPC | | 2006 $SJ_{14}$ |
| 2006 $SL_{14}$ | 15.8 | 0.15 | 20060922 | 355.27348 | 11.37845 | 355.84947 | 23.97930 | 0.1763069 | 3.0670437 | 60 | 1 | 72 days | 0.58 | M-v | 4 | MPC | | 2006 $SL_{14}$ |
| 2006 $SM_{14}$ | 16.1 | 0.15 | 20061012 | 7.94694 | 108.75789 | 247.71179 | 2.68912 | 0.2086941 | 2.7908350 | 60 | 1 | 50 days | 0.41 | | | MPC | | 2006 $SM_{14}$ |
| 2006 $SN_{14}$ | 18.1 | 0.15 | 20060922 | 2.69894 | 151.10195 | 205.63744 | 6.28066 | 0.2340313 | 2.1854893 | 49 | 1 | 65 days | 0.54 | M-v | 4 | MPC | | 2006 $SN_{14}$ |
| 2006 $SP_{14}$ | 16.9 | 0.15 | 20060922 | 320.40101 | 58.68444 | 352.12777 | 21.61671 | 0.0837366 | 2.5667600 | 21 | 1 | 42 days | 0.50 | | | MPC | | 2006 $SP_{14}$ |
| 2006 $SR_{14}$ | 18.2 | 0.15 | 20060922 | 346.73715 | 52.74254 | 329.00586 | 6.16085 | 0.1572037 | 2.2554175 | 17 | 1 | 30 days | 0.33 | | | MPC | | 2006 $SR_{14}$ |
| 2006 $ST_{14}$ | 16.4 | 0.15 | 20060922 | 268.96865 | 183.38998 | 282.76964 | 3.98636 | 0.0959573 | 2.3265937 | 34 | 1 | 36 days | 0.55 | | | MPC | | 2006 $ST_{14}$ |
| 2006 $SV_{14}$ | 17.0 | 0.15 | 20060922 | 50.00901 | 356.96439 | 298.61858 | 3.56840 | 0.1790303 | 2.1689846 | 39 | 1 | 36 days | 0.46 | | | MPC | | 2006 $SV_{14}$ |
| 2006 $SB_{15}$ | 16.7 | 0.15 | 20060922 | 353.23720 | 51.49975 | 322.65402 | 3.97506 | 0.1691681 | 2.7545844 | 34 | 1 | 55 days | 0.51 | | | MPC | | 2006 $SB_{15}$ |
| 2006 $SC_{15}$ | 15.5 | 0.15 | 20060922 | 336.00432 | 198.41089 | 197.24227 | 13.01238 | 0.1193756 | 3.1646694 | 39 | 1 | 65 days | 0.45 | M-v | 4 | MPC | | 2006 $SC_{15}$ |
| 2006 $SE_{15}$ | 17.5 | 0.15 | 20060922 | 16.80804 | 348.92308 | 349.47791 | 9.16873 | 0.2300460 | 2.8361821 | 18 | 1 | 94 days | 0.36 | M-v | 4 | MPC | | 2006 $SE_{15}$ |
| 2006 $SG_{15}$ | 18.3 | 0.15 | 20060922 | 32.31425 | 347.71897 | 328.89622 | 3.06577 | 0.2073670 | 2.3444188 | 17 | 1 | 35 days | 0.25 | | | MPC | | 2006 $SG_{15}$ |
| 2006 $SH_{15}$ | 17.0 | 0.15 | 20060922 | 330.01458 | 55.39166 | 357.06470 | 13.98994 | 0.2212291 | 2.6976120 | 19 | 1 | 36 days | 0.22 | | | MPC | | 2006 $SH_{15}$ |
| 2006 $SL_{15}$ | 16.5 | 0.15 | 20060922 | 10.79648 | 136.35475 | 216.50252 | 4.25386 | 0.1331833 | 3.0962587 | 24 | 1 | 44 days | 0.36 | | | MPC | | 2006 $SL_{15}$ |
| 2006 $SN_{15}$ | 16.2 | 0.15 | 20060922 | 346.47682 | 156.36681 | 224.61234 | 5.46759 | 0.0482264 | 2.7027951 | 19 | 1 | 35 days | 0.47 | | | MPC | | 2006 $SN_{15}$ |
| 2006 $SO_{15}$ | 16.8 | 0.15 | 20060902 | 281.02567 | 227.26293 | 225.67123 | 4.09213 | 0.1160138 | 2.5178314 | 10 | 1 | 2 days | 0.60 | | | MPC | | 2006 $SO_{15}$ |
| 2006 $SP_{15}$ | 16.0 | 0.15 | 20060922 | 117.82443 | 295.92498 | 312.24815 | 3.52496 | 0.0116536 | 2.7745535 | 26 | 1 | 35 days | 0.40 | | | MPC | | 2006 $SP_{15}$ |
| 2006 $SQ_{15}$ | 17.0 | 0.15 | 20060922 | 327.60907 | 71.01328 | 339.74429 | 5.83063 | 0.1622204 | 2.6540689 | 20 | 1 | 36 days | 0.50 | | | MPC | | 2006 $SQ_{15}$ |
| 2006 $SR_{15}$ | 17.8 | 0.15 | 20060922 | 1.90027 | 16.64550 | 346.39630 | 6.89510 | 0.1293330 | 2.2993032 | 22 | 1 | 94 days | 0.28 | M-v | 3 | MPC | | 2006 $SR_{15}$ |
| 2006 $ST_{15}$ | 15.7 | 0.15 | 20060922 | 263.11751 | 148.17106 | 320.78637 | 4.79068 | 0.0337092 | 3.0404520 | 19 | 1 | 36 days | 0.20 | | | MPC | | 2006 $ST_{15}$ |
| 2006 $SW_{15}$ | 16.7 | 0.15 | 20060922 | 345.14680 | 129.71620 | 258.70574 | 2.15075 | 0.1895653 | 2.7254813 | 42 | 1 | 44 days | 0.47 | | | MPC | | 2006 $SW_{15}$ |
| 2006 $SX_{15}$ | 16.6 | 0.15 | 20060922 | 328.04221 | 210.75811 | 204.96763 | 9.29919 | 0.2191483 | 2.7662356 | 52 | 1 | 65 days | 0.64 | M-v | 4 | MPC | | 2006 $SX_{15}$ |
| 2006 $SY_{15}$ | 17.0 | 0.15 | 20060922 | 57.11153 | 17.80970 | 271.83625 | 2.36701 | 0.1845044 | 2.4539266 | 20 | 1 | 35 days | 0.59 | | | MPC | | 2006 $SY_{15}$ |
| 2006 $SZ_{15}$ | 15.7 | 0.15 | 20060922 | 325.93979 | 69.45190 | 345.67435 | 7.11528 | 0.1706555 | 3.0994959 | 20 | 1 | 36 days | 0.37 | | | MPC | | 2006 $SZ_{15}$ |
| 2006 $SB_{16}$ | 16.2 | 0.15 | 20060922 | 2.65864 | 9.55226 | 355.01079 | 13.98159 | 0.1410731 | 3.0119863 | 35 | 1 | 36 days | 0.55 | | | MPC | | 2006 $SB_{16}$ |
| 2006 $SC_{16}$ | 18.1 | 0.15 | 20060902 | 334.56057 | 94.39547 | 310.27834 | 3.41579 | 0.2971841 | 2.5747545 | 14 | 1 | 2 days | 0.40 | | | MPC | | 2006 $SC_{16}$ |
| 2006 $SE_{16}$ | 17.9 | 0.15 | 20060922 | 22.30987 | 92.07020 | 233.13436 | 2.97019 | 0.2968973 | 2.7948759 | 10 | 1 | 9 days | 0.65 | | | MPC | | 2006 $SE_{16}$ |
| 2006 $SG_{16}$ | 16.4 | 0.15 | 20060922 | 339.07843 | 206.71583 | 186.37821 | 5.35073 | 0.2077854 | 3.1065572 | 35 | 1 | 67 days | 0.45 | M-v | 4 | MPC | | 2006 $SG_{16}$ |
| 2006 $SH_{16}$ | 16.5 | 0.15 | 20060922 | 16.56209 | 130.30922 | 218.39707 | 5.76188 | 0.0564299 | 2.6834679 | 19 | 1 | 35 days | 0.50 | | | MPC | | 2006 $SH_{16}$ |
| 2006 $SJ_{16}$ | 16.0 | 0.15 | 20060902 | 232.65499 | 285.74859 | 218.42646 | 6.10822 | 0.1304311 | 3.0170939 | 10 | 1 | 2 days | 0.53 | | | MPC | | 2006 $SJ_{16}$ |
| 2006 $SM_{16}$ | 17.8 | 0.15 | 20061012 | 351.66987 | 181.50263 | 207.04354 | 5.32415 | 0.2193000 | 2.2213535 | 48 | 1 | 55 days | 0.53 | | | MPC | | 2006 $SM_{16}$ |
| 2006 $SN_{16}$ | 17.1 | 0.15 | 20060922 | 9.16171 | 72.49461 | 280.07793 | 2.43943 | 0.2300111 | 2.7002997 | 29 | 1 | 30 days | 0.61 | | | MPC | | 2006 $SN_{16}$ |
| 2006 $SO_{16}$ | 15.9 | 0.15 | 20060922 | 35.89068 | 340.24221 | 324.21970 | 9.04996 | 0.2450618 | 3.0929076 | 37 | 1 | 53 days | 0.53 | | | MPC | | 2006 $SO_{16}$ |
| 2006 $SP_{16}$ | 17.4 | 0.15 | 20060922 | 331.43595 | 72.81763 | 342.19692 | 4.69339 | 0.2594730 | 2.8462522 | 22 | 1 | 36 days | 0.38 | | | MPC | | 2006 $SP_{16}$ |
| 2006 $ST_{16}$ | 18.2 | 0.15 | 20060922 | 4.15468 | 358.50660 | 358.18124 | 10.19475 | 0.3558917 | 2.6701399 | 65 | 1 | 68 days | 0.57 | M-v | 4 | MPC | | 2006 $ST_{16}$ |
| 2006 $SW_{16}$ | 16.0 | 0.15 | 20061012 | 23.26224 | 50.80002 | 302.05894 | 7.58714 | 0.1330138 | 2.6812329 | 33 | 1 | 58 days | 0.52 | | | MPC | | 2006 $SW_{16}$ |
| 2006 $SX_{16}$ | 17.4 | 0.15 | 20060922 | 356.69057 | 38.27696 | 340.80759 | 9.06410 | 0.2476372 | 2.3577737 | 24 | 1 | 97 days | 0.47 | M-v | 4 | MPC | | 2006 $SX_{16}$ |
| 2006 $SB_{17}$ | 17.9 | 0.15 | 20060922 | 354.73203 | 76.90085 | 302.71583 | 3.20090 | 0.2555625 | 2.5802244 | 14 | 1 | 34 days | 0.56 | | | MPC | | 2006 $SB_{17}$ |
| 2006 $SC_{17}$ | 16.4 | 0.15 | 20060902 | 236.43659 | 306.18963 | 202.69005 | 19.25079 | 0.1984976 | 2.3481013 | 11 | 1 | 2 days | 0.41 | | | MPC | | 2006 $SC_{17}$ |
| 2006 $SE_{17}$ | 17.3 | 0.15 | 20060922 | 8.84266 | 70.75390 | 286.87353 | 2.89583 | 0.2543613 | 3.1818416 | 16 | 1 | 24 days | 0.60 | | | MPC | | 2006 $SE_{17}$ |
| 2006 $SG_{17}$ | 15.5 | 0.15 | 20060922 | 348.82704 | 32.54518 | 357.15157 | 11.01245 | 0.1223931 | 3.1469303 | 38 | 1 | 33 days | 0.48 | | | MPC | | 2006 $SG_{17}$ |
| 2006 $SH_{17}$ | 18.0 | 0.15 | 20060902 | 87.38913 | 283.22522 | 338.37670 | 5.60435 | 0.1742318 | 2.3453499 | 9 | 1 | 2 days | 0.38 | | | MPC | | 2006 $SH_{17}$ |
| 2006 $SK_{17}$ | 16.8 | 0.15 | 20060902 | 310.73803 | 88.79538 | 336.84899 | 5.16477 | 0.0612248 | 2.8616145 | 12 | 1 | 4 days | 0.29 | | | MPC | | 2006 $SK_{17}$ |
| 2006 $SL_{17}$ | 16.3 | 0.15 | 20061012 | 348.05461 | 189.89346 | 205.19151 | 13.41538 | 0.1372134 | 3.0372308 | 23 | 1 | 55 days | 0.33 | | | MPC | | 2006 $SL_{17}$ |
| 2006 $SN_{17}$ | 17.9 | 0.15 | 20060922 | 21.44431 | 127.75441 | 209.20298 | 6.35709 | 0.2167630 | 2.2221535 | 42 | 1 | 66 days | 0.41 | M-v | 4 | MPC | | 2006 $SN_{17}$ |
| 2006 $SO_{17}$ | 18.4 | 0.15 | 20060922 | 357.41877 | 159.53977 | 213.83561 | 3.39734 | 0.2480557 | 2.2801540 | 43 | 1 | 66 days | 0.46 | M-v | 4 | MPC | | 2006 $SO_{17}$ |
| 2006 $SP_{17}$ | 17.7 | 0.15 | 20060922 | 9.15037 | 117.77956 | 236.67883 | 2.41404 | 0.2431387 | 2.3533270 | 47 | 1 | 71 days | 0.51 | M-v | 4 | MPC | | 2006 $SP_{17}$ |
| 2006 $SR_{17}$ | 16.4 | 0.15 | 20060922 | 335.71769 | 197.95311 | 207.60660 | 7.71390 | 0.1856068 | 2.7821723 | 44 | 1 | 65 days | 0.41 | M-v | 4 | MPC | | 2006 $SR_{17}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SS_{17}$ | 16.7 | 0.15 | 20060922 | 320.84805 | 67.48626 | 351.65316 | 11.56683 | 0.1328289 | 3.1960455 | 9 | 1 | 9 days | 0.29 | | | MPC | 2006 $SS_{17}$ |
| 2006 $SU_{17}$ | 16.0 | 0.15 | 20060922 | 355.86482 | 29.82379 | 344.08873 | 7.84197 | 0.0514824 | 3.2084716 | 24 | 1 | 39 days | 0.35 | | | MPC | 2006 $SU_{17}$ |
| 2006 $SW_{17}$ | 17.3 | 0.15 | 20060902 | 304.10343 | 305.09337 | 135.11681 | 1.67861 | 0.1470290 | 2.6084143 | 9 | 1 | 8 days | 0.14 | | | MPC | 2006 $SW_{17}$ |
| 2006 $SA_{18}$ | 17.2 | 0.15 | 20060922 | 13.60582 | 185.64658 | 166.27534 | 5.09941 | 0.2034743 | 2.5499393 | 30 | 1 | 35 days | 0.44 | | | MPC | 2006 $SA_{18}$ |
| 2006 $SD_{18}$ | 18.2 | 0.15 | 20060922 | 317.48794 | 25.91436 | 42.01622 | 3.46017 | 0.1242453 | 2.5426720 | 15 | 1 | 42 days | 0.26 | | | MPC | 2006 $SD_{18}$ |
| 2006 $SE_{18}$ | 18.6 | 0.15 | 20060922 | 322.23736 | 332.47533 | 87.66917 | 3.87646 | 0.2672711 | 2.2944057 | 20 | 1 | 86 days | 0.36 | M-v | 4 | MPC | 2006 $SE_{18}$ |
| 2006 $SM_{18}$ | 17.4 | 0.15 | 20060922 | 0.56710 | 304.18874 | 66.07206 | 3.26006 | 0.2209355 | 2.3927303 | 46 | 1 | 60 days | 0.47 | M-v | 4 | MPC | 2006 $SM_{18}$ |
| 2006 $SO_{18}$ | 16.7 | 0.15 | 20060922 | 344.36334 | 230.31446 | 165.26824 | 6.32303 | 0.1471128 | 2.7297641 | 31 | 1 | 35 days | 0.42 | | | MPC | 2006 $SO_{18}$ |
| 2006 $SQ_{18}$ | 15.6 | 0.15 | 20060922 | 353.54769 | 201.87952 | 183.83941 | 17.06118 | 0.2187897 | 3.0902916 | 43 | 1 | 89 days | 0.48 | M-v | 3 | MPC | 2006 $SQ_{18}$ |
| 2006 $SW_{18}$ | 16.3 | 0.15 | 20060902 | 284.75734 | 69.38676 | 30.48832 | 6.03447 | 0.1425745 | 2.7497390 | 9 | 1 | 8 days | 0.33 | | | MPC | 2006 $SW_{18}$ |
| 2006 $SX_{18}$ | 16.5 | 0.15 | 20060922 | 358.83422 | 218.19684 | 155.00644 | 3.42330 | 0.1309988 | 2.6714737 | 35 | 1 | 35 days | 0.43 | | | MPC | 2006 $SX_{18}$ |
| 2006 $SY_{18}$ | 18.2 | 0.15 | 20060922 | 3.41711 | 273.27148 | 90.34620 | 1.39250 | 0.2010716 | 2.1827742 | 28 | 1 | 35 days | 0.49 | | | MPC | 2006 $SY_{18}$ |
| 2006 $SZ_{18}$ | 18.0 | 0.15 | 20060922 | 254.73286 | 354.05167 | 140.56384 | 2.57924 | 0.1614561 | 2.3335371 | 9 | 1 | 10 days | 0.84 | | | MPC | 2006 $SZ_{18}$ |
| 2006 $SC_{19}$ | | | 20060902 | 358.70087 | 9.94487 | 354.38197 | 9.95949 | 0.2249449 | 2.3799470 | 9 | 1 | 2 days | 0.40 | | | MPC | 2006 $SC_{19}$ |
| 2006 $SD_{19}$ | 16.3 | 0.15 | 20060922 | 36.54334 | 64.72379 | 266.46243 | 3.17714 | 0.0816937 | 2.5733179 | 36 | 1 | 62 days | 0.46 | M-v | 4 | MPC | 2006 $SD_{19}$ |
| 2006 $SE_{19}$ | 16.9 | 0.15 | 20060922 | 30.08007 | 49.48376 | 285.02163 | 2.88660 | 0.1330196 | 2.6260276 | 34 | 1 | 62 days | 0.50 | M-v | 4 | MPC | 2006 $SE_{19}$ |
| 2006 $SH_{19}$ | 16.9 | 0.15 | 20060922 | 77.76261 | 265.47309 | 9.76752 | 19.44121 | 0.0422056 | 1.9778408 | 66 | 1 | 40 days | 0.52 | | | MPC | 2006 $SH_{19}$ |
| 2006 $SK_{19}$ | 16.1 | 0.15 | 20060902 | 350.74797 | 93.80295 | 275.75101 | 24.51256 | 0.3634641 | 3.0858165 | 17 | 1 | 2 days | 0.67 | | E | MPC | 2006 $SK_{19}$ |
| 2006 $SN_{19}$ | 16.4 | 0.15 | 20060922 | 5.38122 | 257.29511 | 93.76269 | 30.04385 | 0.3230916 | 2.6266600 | 24 | 1 | 40 days | 0.32 | | | MPC | 2006 $SN_{19}$ |
| 2006 $SP_{19}$ | 24.2 | 0.15 | 20060922 | 205.82235 | 166.00068 | 358.58629 | 4.59426 | 0.2932732 | 0.8810024 | 38 | 1 | 31 days | 0.67 | M-v | 7 | MPC | 2006 $SP_{19}$ |
| 2006 $SQ_{19}$ | 23.2 | 0.15 | 20060922 | 358.72477 | 13.86188 | 349.66045 | 6.23894 | 0.5111945 | 2.3555530 | 49 | 1 | 30 days | 0.53 | M-v | 6 | MPC | 2006 $SQ_{19}$ |
| 2006 $SR_{19}$ | 21.9 | 0.15 | 20060922 | 355.50544 | 33.54966 | 351.24974 | 2.90139 | 0.5564266 | 2.8057605 | 62 | 1 | 58 days | 0.42 | M-v | 5 | MPC | 2006 $SR_{19}$ |
| 2006 $SS_{19}$ | 18.8 | 0.15 | 20060922 | 20.18774 | 142.15241 | 154.50722 | 11.59688 | 0.5741393 | 2.8024343 | 37 | 1 | 56 days | 0.50 | M-v | 5 | MPC | 2006 $SS_{19}$ |
| 2006 $ST_{19}$ | 15.7 | 0.15 | 20060922 | 233.90783 | 69.48104 | 61.84234 | 6.72015 | 0.0923681 | 2.6306549 | 13 | 1 | 25 days | 0.44 | | | MPC | 2006 $ST_{19}$ |
| 2006 $SU_{19}$ | 19.1 | 0.15 | 20060922 | 245.37586 | 10.44197 | 152.36920 | 2.07937 | 0.5865901 | 1.5280073 | 56 | 1 | 53 days | 0.42 | M-v | 6 | MPC | 2006 $SU_{19}$ |
| 2006 $SA_{20}$ | 18.0 | 0.15 | 20061012 | 353.25549 | 28.87213 | 358.05706 | 9.60882 | 0.2136845 | 2.5737764 | 38 | 1 | 56 days | 0.42 | | | MPC | 2006 $SA_{20}$ |
| 2006 $SC_{20}$ | 17.9 | 0.15 | 20060922 | 331.90891 | 44.23371 | 11.92718 | 5.17095 | 0.1765053 | 2.2706475 | 56 | 1 | 68 days | 0.39 | M-v | 4 | MPC | 2006 $SC_{20}$ |
| 2006 $SD_{20}$ | 16.3 | 0.15 | 20060922 | 2.96056 | 358.58512 | 21.24234 | 17.53737 | 0.0203048 | 3.1914524 | 38 | 1 | 68 days | 0.36 | M-v | 4 | MPC | 2006 $SD_{20}$ |
| 2006 $SE_{20}$ | 15.9 | 0.15 | 20060922 | 331.41040 | 98.60122 | 295.84770 | 9.53465 | 0.1203216 | 3.0034521 | 11 | 1 | 11 days | 0.54 | | | MPC | 2006 $SE_{20}$ |
| 2006 $SF_{20}$ | 14.9 | 0.15 | 20060902 | 143.38987 | 268.60158 | 300.19981 | 11.19335 | 0.0512048 | 3.1570602 | 10 | 1 | 7 days | 0.64 | | | MPC | 2006 $SF_{20}$ |
| 2006 $SG_{20}$ | 15.9 | 0.15 | 20060922 | 349.90258 | 44.65576 | 329.77903 | 16.31959 | 0.1797316 | 3.0834050 | 14 | 1 | 17 days | 0.55 | | | MPC | 2006 $SG_{20}$ |
| 2006 $SH_{20}$ | 17.9 | 0.15 | 20060922 | 324.68041 | 14.09834 | 33.28192 | 5.96213 | 0.1251636 | 2.2793830 | 40 | 1 | 28 days | 0.48 | | | MPC | 2006 $SH_{20}$ |
| 2006 $SJ_{20}$ | 18.3 | 0.15 | 20060922 | 15.81165 | 174.34708 | 172.82702 | 5.47719 | 0.0803325 | 2.4512476 | 23 | 1 | 14 days | 0.43 | | | MPC | 2006 $SJ_{20}$ |
| 2006 $SM_{20}$ | 16.8 | 0.15 | 20060922 | 7.14276 | 248.03379 | 92.69718 | 3.99726 | 0.0868709 | 2.7611042 | 32 | 1 | 40 days | 0.68 | | | MPC | 2006 $SM_{20}$ |
| 2006 $SO_{20}$ | 19.3 | 0.15 | 20060922 | 21.88946 | 153.60721 | 172.85118 | 1.86759 | 0.1477749 | 2.1838028 | 13 | 1 | 6 days | 0.43 | | | MPC | 2006 $SO_{20}$ |
| 2006 $SQ_{20}$ | 14.8 | 0.15 | 20060922 | 16.17936 | 178.88860 | 195.39706 | 15.85573 | 0.3198172 | 3.0585488 | 29 | 1 | 66 days | 0.60 | M-v | 5 | MPC | 2006 $SQ_{20}$ |
| 2006 $ST_{20}$ | 16.4 | 0.15 | 20060922 | 311.12374 | 270.57716 | 146.96918 | 6.56576 | 0.0531897 | 2.8205338 | 22 | 1 | 13 days | 0.43 | | | MPC | 2006 $ST_{20}$ |
| 2006 $SU_{20}$ | 17.2 | 0.15 | 20060902 | 8.18639 | 177.35713 | 156.22620 | 6.27288 | 0.2555621 | 2.3477589 | 32 | 1 | 44 days | 0.55 | | | MPC | 2006 $SU_{20}$ |
| 2006 $SW_{20}$ | 17.3 | 0.15 | 20060902 | 33.72305 | 100.92412 | 197.70447 | 5.10557 | 0.2187383 | 2.4809735 | 14 | 1 | 4 days | 0.59 | | | MPC | 2006 $SW_{20}$ |
| 2006 $SX_{20}$ | 16.3 | 0.15 | 20061012 | 328.39235 | 175.24459 | 222.15774 | 5.04048 | 0.0858599 | 2.8568304 | 24 | 1 | 59 days | 0.58 | | | MPC | 2006 $SX_{20}$ |
| 2006 $SY_{20}$ | 18.1 | 0.15 | 20060922 | 343.50677 | 134.05168 | 243.97642 | 3.51431 | 0.1533647 | 2.3178913 | 20 | 1 | 85 days | 0.50 | M-v | 4 | MPC | 2006 $SY_{20}$ |
| 2006 $SF_{21}$ | 15.5 | 0.15 | 20060922 | 334.22812 | 34.09725 | 348.70262 | 8.63597 | 0.0859488 | 3.1747252 | 24 | 1 | 53 days | 0.61 | | | MPC | 2006 $SF_{21}$ |
| 2006 $SK_{21}$ | 16.6 | 0.15 | 20060902 | 9.08672 | 197.65951 | 143.32743 | 2.56956 | 0.1050366 | 2.8261917 | 15 | 1 | 10 days | 0.85 | | | MPC | 2006 $SK_{21}$ |
| 2006 $SP_{21}$ | 15.7 | 0.15 | 20060922 | 297.36795 | 98.32300 | 329.57856 | 11.22147 | 0.0390093 | 2.9504810 | 40 | 1 | 40 days | 0.61 | | | MPC | 2006 $SP_{21}$ |
| 2006 $SS_{21}$ | 17.8 | 0.15 | 20060922 | 339.07411 | 202.28925 | 195.70159 | 13.69282 | 0.2696790 | 2.5982234 | 48 | 1 | 78 days | 0.55 | M-v | 4 | MPC | 2006 $SS_{21}$ |
| 2006 $ST_{21}$ | 18.4 | 0.15 | 20060902 | 359.46074 | 73.28860 | 279.01803 | 3.87510 | 0.2711216 | 2.2963899 | 40 | 1 | 42 days | 0.54 | | | MPC | 2006 $ST_{21}$ |
| 2006 $SU_{21}$ | 17.1 | 0.15 | 20060902 | 309.14799 | 195.28195 | 220.75451 | 7.97229 | 0.0923840 | 2.3710664 | 9 | 1 | 3 days | 0.63 | | | MPC | 2006 $SU_{21}$ |
| 2006 $SV_{21}$ | 18.7 | 0.15 | 20060922 | 25.95734 | 20.03441 | 297.89913 | 3.07006 | 0.2476990 | 2.1747201 | 25 | 1 | 36 days | 0.40 | | | MPC | 2006 $SV_{21}$ |
| 2006 $SW_{21}$ | 18.2 | 0.15 | 20060922 | 2.83223 | 144.15894 | 212.63988 | 6.05313 | 0.1894426 | 2.3829000 | 20 | 1 | 36 days | 0.37 | | | MPC | 2006 $SW_{21}$ |
| 2006 $SX_{21}$ | 17.6 | 0.15 | 20060922 | 346.22893 | 105.92987 | 277.63678 | 2.99638 | 0.2309556 | 2.4136965 | 51 | 1 | 36 days | 0.44 | | | MPC | 2006 $SX_{21}$ |
| 2006 $SY_{21}$ | 17.5 | 0.15 | 20060922 | 359.44797 | 17.61704 | 344.94579 | 9.50006 | 0.2194510 | 2.5678183 | 25 | 1 | 14 days | 0.58 | | | MPC | 2006 $SY_{21}$ |
| 2006 $SZ_{21}$ | 17.3 | 0.15 | 20060922 | 32.77059 | 97.73904 | 219.43188 | 5.11804 | 0.1609290 | 2.3830423 | 35 | 1 | 78 days | 0.47 | M-v | 4 D | MPC | 2006 $SZ_{21}$ |
| 2006 $SA_{22}$ | 16.1 | 0.15 | 20061012 | 14.92631 | 156.37439 | 190.87038 | 14.37010 | 0.1326541 | 3.0620984 | 27 | 1 | 59 days | 0.34 | | | MPC | 2006 $SA_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SB_{22}$ | 17.7 | 0.15 | 20060922 | 37.13945 | 334.55238 | 341.59225 | 6.40352 | 0.1739370 | 2.5493441 | 25 | 1 | 36 days | 0.43 | | MPC | 2006 $SB_{22}$ |
| 2006 $SE_{22}$ | 17.8 | 0.15 | 20060922 | 4.99542 | 20.18541 | 332.64315 | 8.42585 | 0.1779286 | 2.5747941 | 25 | 1 | 63 days | 0.50 | M-v 4 | MPC | 2006 $SE_{22}$ |
| 2006 $SG_{22}$ | 16.3 | 0.15 | 20060922 | 35.09670 | 175.89579 | 140.35357 | 12.54788 | 0.1744846 | 2.6418917 | 21 | 1 | 25 days | 0.63 | | MPC | 2006 $SG_{22}$ |
| 2006 $SH_{22}$ | 17.3 | 0.15 | 20060922 | 9.05045 | 295.60679 | 55.01592 | 8.52383 | 0.1950514 | 2.5635255 | 23 | 1 | 67 days | 0.73 | M-v 4 | MPC | 2006 $SH_{22}$ |
| 2006 $SN_{22}$ | 15.1 | 0.15 | 20060922 | 328.89703 | 277.29806 | 125.88121 | 8.85809 | 0.1169134 | 3.1352174 | 23 | 1 | 55 days | 0.64 | | MPC | 2006 $SN_{22}$ |
| 2006 $SQ_{22}$ | 16.1 | 0.15 | 20060922 | 0.48955 | 324.17463 | 36.72777 | 11.04599 | 0.1797904 | 3.1190808 | 38 | 1 | 89 days | 0.75 | M-v 4 | MPC | 2006 $SQ_{22}$ |
| 2006 $SR_{22}$ | 15.1 | 0.15 | 20060902 | 344.86542 | 315.64689 | 65.59867 | 9.96963 | 0.1961439 | 3.9339671 | 18 | 1 | 44 days | 0.81 | | MPC | 2006 $SR_{22}$ |
| 2006 $ST_{22}$ | 16.5 | 0.15 | 20060922 | 51.57598 | 253.02858 | 43.14655 | 8.29329 | 0.1207169 | 2.3464576 | 24 | 1 | 98 days | 0.41 | M-v 4 | MPC | 2006 $ST_{22}$ |
| 2006 $SU_{22}$ | 18.1 | 0.15 | 20060902 | 18.22786 | 198.36254 | 121.88853 | 6.00525 | 0.2419535 | 2.1569010 | 21 | 1 | 44 days | 0.55 | | MPC | 2006 $SU_{22}$ |
| 2006 $SV_{22}$ | 16.5 | 0.15 | 20060922 | 35.23683 | 144.38365 | 158.91507 | 16.02311 | 0.2660073 | 2.7123127 | 25 | 1 | 83 days | 0.48 | M-v 4 | MPC | 2006 $SV_{22}$ |
| 2006 $SW_{22}$ | 16.8 | 0.15 | 20060902 | 2.91270 | 262.70132 | 85.13641 | 5.75237 | 0.1831845 | 2.6814296 | 12 | 1 | 8 days | 0.55 | | MPC | 2006 $SW_{22}$ |
| 2006 $SX_{22}$ | 15.7 | 0.15 | 20060902 | 348.01782 | 244.98202 | 125.50009 | 10.88486 | 0.1093532 | 3.1273522 | 12 | 1 | 8 days | 0.53 | | MPC | 2006 $SX_{22}$ |
| 2006 $SZ_{22}$ | 16.6 | 0.15 | 20060922 | 340.96219 | 4.15985 | 30.25660 | 13.99045 | 0.2887433 | 2.6566257 | 26 | 1 | 61 days | 0.44 | M-v 4 | MPC | 2006 $SZ_{22}$ |
| 2006 $SA_{23}$ | 18.5 | 0.15 | 20060902 | 346.52085 | 268.21926 | 104.90105 | 6.08533 | 0.2109180 | 2.2191767 | 18 | 1 | 43 days | 0.66 | | MPC | 2006 $SA_{23}$ |
| 2006 $SB_{23}$ | 17.3 | 0.15 | 20060922 | 35.90226 | 198.30475 | 114.76766 | 9.35839 | 0.1696618 | 2.2907565 | 14 | 1 | 23 days | 0.65 | | MPC | 2006 $SB_{23}$ |
| 2006 $SG_{23}$ | 17.4 | 0.15 | 20060922 | 329.36662 | 39.46351 | 34.18308 | 13.93817 | 0.4236346 | 2.6772483 | 21 | 1 | 35 days | 0.62 | | MPC | 2006 $SG_{23}$ |
| 2006 $SK_{23}$ | 15.6 | 0.15 | 20060922 | 333.36150 | 54.45609 | 23.47125 | 13.01269 | 0.2412935 | 2.5529178 | 60 | 1 | 75 days | 0.37 | M-v 3 | MPC | 2006 $SK_{23}$ |
| 2006 $SQ_{23}$ | 16.6 | 0.15 | 20060922 | 30.75999 | 344.44863 | 342.99558 | 6.74972 | 0.2141532 | 3.0284782 | 15 | 1 | 15 days | 0.60 | | MPC | 2006 $SQ_{23}$ |
| 2006 $SX_{23}$ | 17.3 | 0.15 | 20060922 | 344.26922 | 8.30995 | 23.56345 | 9.58637 | 0.2896702 | 2.7343095 | 21 | 1 | 34 days | 0.38 | | MPC | 2006 $SX_{23}$ |
| 2006 $SC_{24}$ | 16.7 | 0.15 | 20060922 | 16.35291 | 278.41130 | 83.86694 | 6.99306 | 0.2116177 | 2.2298883 | 54 | 1 | 63 days | 0.46 | M-v 5 | MPC | 2006 $SC_{24}$ |
| 2006 $SD_{24}$ | 16.9 | 0.15 | 20060922 | 338.15784 | 0.89204 | 64.32926 | 9.72964 | 0.2294774 | 2.3554720 | 66 | 1 | 70 days | 0.46 | M-v 4 | MPC | 2006 $SD_{24}$ |
| 2006 $SE_{24}$ | 15.3 | 0.15 | 20060922 | 33.85617 | 283.82862 | 74.95636 | 10.79094 | 0.1223603 | 2.6266087 | 39 | 1 | 70 days | 0.48 | M-v 5 | MPC | 2006 $SE_{24}$ |
| 2006 $SK_{24}$ | 14.8 | 0.15 | 20060922 | 27.54793 | 83.02177 | 248.03065 | 7.37195 | 0.0850147 | 3.4075462 | 21 | 1 | 35 days | 0.58 | | MPC | 2006 $SK_{24}$ |
| 2006 $SL_{24}$ | 16.2 | 0.15 | 20060922 | 303.26508 | 118.35671 | 320.12504 | 11.61682 | 0.1639794 | 2.6516853 | 19 | 1 | 37 days | 0.45 | | MPC | 2006 $SL_{24}$ |
| 2006 $SO_{24}$ | 15.1 | 0.15 | 20060922 | 237.44098 | 238.73839 | 250.34963 | 8.42026 | 0.0179367 | 3.0686877 | 19 | 1 | 26 days | 0.63 | | MPC | 2006 $SO_{24}$ |
| 2006 $SR_{24}$ | 17.9 | 0.15 | 20060922 | 25.78947 | 114.82359 | 204.63615 | 12.04044 | 0.2762844 | 2.5823384 | 27 | 1 | 76 days | 0.54 | M-v 4 | MPC | 2006 $SR_{24}$ |
| 2006 $SB_{25}$ | 18.4 | 0.15 | 20060922 | 340.24118 | 31.37602 | 4.64421 | 2.47505 | 0.1798743 | 2.4681652 | 18 | 1 | 44 days | 0.40 | | MPC | 2006 $SB_{25}$ |
| 2006 $SC_{25}$ | 17.7 | 0.15 | 20060922 | 25.49901 | 309.89900 | 8.12815 | 11.57054 | 0.0969938 | 2.7599692 | 12 | 1 | 7 days | 0.68 | | MPC | 2006 $SC_{25}$ |
| 2006 $SD_{25}$ | 24.0 | 0.15 | 20060922 | 7.93813 | 36.92586 | 297.05524 | 1.45464 | 0.4685679 | 1.9163243 | 76 | 1 | 39 days | 0.46 | M-v 6 | MPC | 2006 $SD_{25}$ |
| 2006 $SE_{25}$ | 17.5 | 0.15 | 20060922 | 29.38088 | 98.96811 | 177.67826 | 24.20869 | 0.3861197 | 3.1631265 | 15 | 1 | 11 days | 0.26 | | MPC | 2006 $SE_{25}$ |
| 2006 $SF_{25}$ | 17.0 | 0.15 | 20060922 | 347.35328 | 18.32562 | 3.19670 | 3.01173 | 0.1866912 | 3.1910864 | 16 | 1 | 11 days | 0.22 | | MPC | 2006 $SF_{25}$ |
| 2006 $SG_{25}$ | 17.6 | 0.15 | 20060922 | 332.64007 | 41.47956 | 1.36290 | 13.05599 | 0.1956618 | 2.7689041 | 20 | 1 | 37 days | 0.24 | | MPC | 2006 $SG_{25}$ |
| 2006 $SH_{25}$ | 19.3 | 0.15 | 20060922 | 352.74221 | 15.61364 | 0.19098 | 12.80946 | 0.2953082 | 2.6568258 | 16 | 1 | 15 days | 0.29 | | MPC | 2006 $SH_{25}$ |
| 2006 $SN_{25}$ | 17.1 | 0.15 | 20060922 | 2.17034 | 109.23271 | 246.36156 | 1.74987 | 0.1701981 | 2.6126127 | 26 | 1 | 60 days | 0.40 | M-v 4 | MPC | 2006 $SN_{25}$ |
| 2006 $SS_{25}$ | 17.6 | 0.15 | 20060922 | 349.65790 | 6.25372 | 4.41410 | 4.61229 | 0.1710343 | 2.2985999 | 35 | 1 | 77 days | 0.65 | M-v 4 | MPC | 2006 $SS_{25}$ |
| 2006 $SU_{25}$ | 17.4 | 0.15 | 20060902 | 22.15225 | 135.61938 | 171.73140 | 10.35783 | 0.2870246 | 2.7564562 | 20 | 1 | 34 days | 0.51 | | MPC | 2006 $SU_{25}$ |
| 2006 $SV_{25}$ | 16.5 | 0.15 | 20060902 | 350.25163 | 8.80289 | 354.79027 | 8.60206 | 0.1699301 | 3.1853675 | 15 | 1 | 7 days | 0.64 | | MPC | 2006 $SV_{25}$ |
| 2006 $SX_{25}$ | 17.8 | 0.15 | 20060922 | 7.36198 | 61.22966 | 287.27707 | 6.06551 | 0.2314819 | 2.3054474 | 31 | 1 | 45 days | 0.54 | | MPC | 2006 $SX_{25}$ |
| 2006 $SA_{26}$ | 16.1 | 0.15 | 20060902 | 37.45412 | 343.28970 | 321.89058 | 11.75391 | 0.1770615 | 2.7360709 | 21 | 1 | 56 days | 0.58 | | MPC | 2006 $SA_{26}$ |
| 2006 $SB_{26}$ | 17.9 | 0.15 | 20060922 | 342.19019 | 59.08049 | 326.96416 | 11.53951 | 0.1388291 | 2.2935640 | 12 | 1 | 11 days | 0.66 | | MPC | 2006 $SB_{26}$ |
| 2006 $SC_{26}$ | 17.3 | 0.15 | 20060922 | 11.83406 | 74.10188 | 272.62830 | 5.80940 | 0.1230851 | 2.4596604 | 18 | 1 | 26 days | 0.47 | | MPC | 2006 $SC_{26}$ |
| 2006 $SE_{26}$ | 16.8 | 0.15 | 20060902 | 331.02385 | 165.18183 | 236.47121 | 7.12433 | 0.2262501 | 2.7782683 | 30 | 1 | 56 days | 0.71 | | MPC | 2006 $SE_{26}$ |
| 2006 $SF_{26}$ | 15.8 | 0.15 | 20060922 | 234.21004 | 284.44742 | 210.88318 | 2.14883 | 0.2171206 | 2.7652111 | 12 | 1 | 12 days | 0.53 | | MPC | 2006 $SF_{26}$ |
| 2006 $SG_{26}$ | 15.9 | 0.15 | 20060922 | 314.34131 | 111.15503 | 315.11084 | 10.05330 | 0.1731831 | 2.6989431 | 20 | 1 | 37 days | 0.62 | | MPC | 2006 $SG_{26}$ |
| 2006 $SJ_{26}$ | 17.6 | 0.15 | 20060922 | 353.44175 | 129.73844 | 244.95806 | 5.45854 | 0.2851045 | 2.6269153 | 29 | 1 | 61 days | 0.65 | M-v 4 | MPC | 2006 $SJ_{26}$ |
| 2006 $SK_{26}$ | 18.0 | 0.15 | 20060922 | 25.50896 | 105.67785 | 213.86842 | 9.57691 | 0.2545721 | 2.3803917 | 24 | 1 | 37 days | 0.50 | | MPC | 2006 $SK_{26}$ |
| 2006 $SM_{26}$ | 17.3 | 0.15 | 20060922 | 345.56203 | 143.15079 | 239.55823 | 5.84476 | 0.1486134 | 2.3948832 | 37 | 1 | 47 days | 0.63 | | MPC | 2006 $SM_{26}$ |
| 2006 $SN_{26}$ | 16.4 | 0.15 | 20060922 | 313.62759 | 91.74233 | 337.92110 | 12.39279 | 0.1923210 | 2.7255059 | 39 | 1 | 37 days | 0.58 | | MPC | 2006 $SN_{26}$ |
| 2006 $SQ_{26}$ | 17.7 | 0.15 | 20060922 | 34.72171 | 299.02050 | 6.76164 | 6.83926 | 0.1951279 | 2.3812183 | 19 | 1 | 41 days | 0.61 | | MPC | 2006 $SQ_{26}$ |
| 2006 $SU_{26}$ | 17.9 | 0.15 | 20060922 | 334.48339 | 235.15785 | 162.79826 | 5.36582 | 0.2317676 | 2.4262691 | 29 | 1 | 68 days | 0.60 | M-v 5 | MPC | 2006 $SU_{26}$ |
| 2006 $SY_{26}$ | 17.1 | 0.15 | 20060922 | 3.63768 | 81.73395 | 277.77899 | 4.82582 | 0.1913629 | 2.6428888 | 35 | 1 | 37 days | 0.66 | | MPC | 2006 $SY_{26}$ |
| 2006 $SZ_{26}$ | 16.6 | 0.15 | 20060922 | 358.02524 | 159.01260 | 209.28623 | 10.51834 | 0.3064763 | 2.7852139 | 63 | 1 | 66 days | 0.43 | M-v 3 | MPC | 2006 $SZ_{26}$ |
| 2006 $SB_{27}$ | 17.6 | 0.15 | 20060922 | 354.45452 | 94.63463 | 279.34586 | 4.75660 | 0.1817237 | 2.2996264 | 50 | 1 | 53 days | 0.78 | | MPC | 2006 $SB_{27}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SG_{27}$ | 15.4 | 0.15 | 20060922 | 40.13341 | 352.40683 | 331.63328 | 8.79889 | 0.0546450 | 3.0814873 | 27 | 1 | 34 days | 0.45 | | | MPC | 2006 $SG_{27}$ |
| 2006 $SJ_{27}$ | 15.2 | 0.15 | 20060922 | 93.62500 | 338.85435 | 284.24358 | 4.16397 | 0.1160468 | 3.2267451 | 24 | 1 | 65 days | 0.53 | M-v | 5 | MPC | 2006 $SJ_{27}$ |
| 2006 $SP_{27}$ | 17.7 | 0.15 | 20060922 | 339.14394 | 86.44316 | 310.54264 | 4.92420 | 0.2416766 | 2.3604600 | 36 | 1 | 37 days | 0.62 | | | MPC | 2006 $SP_{27}$ |
| 2006 $SQ_{27}$ | 17.8 | 0.15 | 20060922 | 2.93940 | 3.98855 | 356.62497 | 4.43320 | 0.1657507 | 2.2844409 | 22 | 1 | 34 days | 0.35 | | | MPC | 2006 $SQ_{27}$ |
| 2006 $SR_{27}$ | 15.4 | 0.15 | 20060922 | 24.60976 | 305.75612 | 51.28212 | 15.22355 | 0.2670599 | 2.7006238 | 71 | 1 | 70 days | 0.37 | M-v | 4 | MPC | 2006 $SR_{27}$ |
| 2006 $SL_{28}$ | 20.2 | 0.15 | 20060902 | 297.86342 | 149.42015 | 259.27554 | 5.33812 | 0.1089235 | 2.1870371 | 6 | 1 | 40 days | 0.99 | | | MPC | 2006 $SL_{28}$ |
| 2006 $SM_{28}$ | 18.7 | 0.15 | 20060922 | 337.44622 | 159.55824 | 227.26972 | 5.41735 | 0.3179976 | 2.6040221 | 15 | 1 | 13 days | 0.17 | | | MPC | 2006 $SM_{28}$ |
| 2006 $SN_{28}$ | 16.3 | 0.15 | 20060922 | 145.99617 | 346.69495 | 203.60905 | 9.08740 | 0.0035114 | 3.0919568 | 15 | 1 | 13 days | 0.37 | | | MPC | 2006 $SN_{28}$ |
| 2006 $SO_{28}$ | 17.8 | 0.15 | 20060922 | 54.48042 | 21.44205 | 245.39835 | 4.86606 | 0.1924969 | 2.2710863 | 18 | 1 | 13 days | 0.17 | | | MPC | 2006 $SO_{28}$ |
| 2006 $SS_{28}$ | 16.7 | 0.15 | 20060922 | 295.43467 | 212.02517 | 217.69653 | 4.11660 | 0.2389756 | 2.6268373 | 15 | 1 | 14 days | 0.19 | | | MPC | 2006 $SS_{28}$ |
| 2006 $SC_{29}$ | 16.6 | 0.15 | 20060922 | 158.50629 | 237.24142 | 296.88632 | 12.39889 | 0.1859241 | 2.6805640 | 12 | 1 | 10 days | 0.33 | | | MPC | 2006 $SC_{29}$ |
| 2006 $SF_{29}$ | 17.9 | 0.15 | 20060922 | 91.08559 | 14.41793 | 225.46677 | 6.58915 | 0.0843301 | 2.3545182 | 9 | 1 | 10 days | 0.20 | | | MPC | 2006 $SF_{29}$ |
| 2006 $SG_{29}$ | 16.9 | 0.15 | 20060902 | 274.08950 | 247.09042 | 206.69057 | 9.29680 | 0.2993176 | 2.7198106 | 9 | 1 | 5 days | 0.25 | | | MPC | 2006 $SG_{29}$ |
| 2006 $SJ_{29}$ | 15.6 | 0.15 | 20060922 | 88.82694 | 311.65174 | 285.44918 | 8.62181 | 0.1084072 | 3.1026250 | 18 | 1 | 13 days | 0.15 | | | MPC | 2006 $SJ_{29}$ |
| 2006 $SK_{29}$ | 17.6 | 0.15 | 20060902 | 339.09420 | 139.77971 | 227.29504 | 7.52132 | 0.2066600 | 3.1896606 | 9 | 1 | 5 days | 0.25 | | | MPC | 2006 $SK_{29}$ |
| 2006 $SL_{29}$ | 16.5 | 0.15 | 20060922 | 237.41644 | 265.97686 | 199.95041 | 10.85887 | 0.0598131 | 3.0805157 | 12 | 1 | 10 days | 0.24 | | | MPC | 2006 $SL_{29}$ |
| 2006 $SN_{29}$ | 16.2 | 0.15 | 20060922 | 114.91445 | 274.29300 | 306.31141 | 14.23300 | 0.0361936 | 3.1635849 | 12 | 1 | 10 days | 0.21 | | | MPC | 2006 $SN_{29}$ |
| 2006 $SQ_{29}$ | 17.6 | 0.15 | 20060902 | 332.83397 | 67.10299 | 303.27044 | 9.44807 | 0.1277156 | 2.7556099 | 9 | 1 | 5 days | 0.20 | | | MPC | 2006 $SQ_{29}$ |
| 2006 $SR_{29}$ | 17.4 | 0.15 | 20060922 | 90.63787 | 354.65649 | 245.74341 | 5.23280 | 0.0828624 | 2.4197569 | 12 | 1 | 10 days | 0.18 | | | MPC | 2006 $SR_{29}$ |
| 2006 $SS_{29}$ | 17.8 | 0.15 | 20060922 | 24.20549 | 7.50354 | 301.59295 | 8.03848 | 0.1565981 | 2.5728559 | 9 | 1 | 10 days | 0.13 | | | MPC | 2006 $SS_{29}$ |
| 2006 $SX_{29}$ | 17.9 | 0.15 | 20060922 | 312.58575 | 126.14073 | 286.75480 | 5.33517 | 0.2253607 | 2.3718367 | 12 | 1 | 10 days | 0.24 | | | MPC | 2006 $SX_{29}$ |
| 2006 $SH_{30}$ | 16.9 | 0.15 | 20060902 | 286.73659 | 190.96097 | 219.54941 | 5.32158 | 0.0295278 | 2.7378623 | 12 | 1 | 29 days | 0.14 | | | MPC | 2006 $SH_{30}$ |
| 2006 $SL_{30}$ | 16.4 | 0.15 | 20060902 | 78.42990 | 346.26204 | 266.82908 | 5.22093 | 0.0239685 | 2.7609781 | 18 | 1 | 45 days | 0.20 | | | MPC | 2006 $SL_{30}$ |
| 2006 $SC_{31}$ | 16.5 | 0.15 | 20060922 | 307.86623 | 185.69007 | 225.56959 | 4.78407 | 0.1786751 | 3.0628834 | 9 | 1 | 10 days | 0.78 | | | MPC | 2006 $SC_{31}$ |
| 2006 $SG_{31}$ | 18.5 | 0.15 | 20060922 | 44.09462 | 2.57212 | 272.82213 | 4.46212 | 0.2333006 | 2.3688023 | 9 | 1 | 10 days | 0.20 | | | MPC | 2006 $SG_{31}$ |
| 2006 $SK_{31}$ | 17.7 | 0.15 | 20060922 | 327.75451 | 67.64391 | 341.07395 | 2.10612 | 0.2652132 | 2.4188408 | 33 | 1 | 78 days | 0.57 | M-v | 5 | MPC | 2006 $SK_{31}$ |
| 2006 $SM_{31}$ | 17.1 | 0.15 | 20060922 | 0.67877 | 183.99701 | 180.46391 | 2.26264 | 0.2075402 | 2.3742095 | 70 | 1 | 115 days | 0.38 | M-v | 3 D | MPC | 2006 $SM_{31}$ |
| 2006 $SO_{31}$ | 17.4 | 0.15 | 20061012 | 33.20563 | 86.13199 | 231.65349 | 2.26951 | 0.2378199 | 2.5328614 | 25 | 1 | 59 days | 0.40 | | | MPC | 2006 $SO_{31}$ |
| 2006 $SP_{31}$ | 18.2 | 0.15 | 20060922 | 357.71028 | 162.00334 | 204.91184 | 3.29865 | 0.1935625 | 2.2005557 | 31 | 1 | 41 days | 0.47 | | | MPC | 2006 $SP_{31}$ |
| 2006 $SQ_{31}$ | 17.3 | 0.15 | 20060922 | 27.63220 | 322.39424 | 352.76441 | 5.84024 | 0.2901335 | 2.4177051 | 41 | 1 | 68 days | 0.41 | M-v | 4 | MPC | 2006 $SQ_{31}$ |
| 2006 $SR_{31}$ | 17.8 | 0.15 | 20060922 | 5.67737 | 6.58726 | 350.92411 | 5.75105 | 0.1559062 | 2.2783058 | 30 | 1 | 36 days | 0.49 | | | MPC | 2006 $SR_{31}$ |
| 2006 $ST_{31}$ | 18.8 | 0.15 | 20060922 | 357.18493 | 46.31559 | 323.75663 | 1.76496 | 0.1942911 | 2.5438784 | 12 | 1 | 15 days | 0.21 | | | MPC | 2006 $ST_{31}$ |
| 2006 $SU_{31}$ | 16.4 | 0.15 | 20060922 | 64.10453 | 95.41885 | 191.58327 | 18.07352 | 0.1500375 | 3.1566139 | 22 | 1 | 29 days | 0.22 | | | MPC | 2006 $SU_{31}$ |
| 2006 $SV_{31}$ | 17.3 | 0.15 | 20060922 | 11.12943 | 78.29166 | 275.38471 | 1.07356 | 0.0807816 | 2.6716930 | 30 | 1 | 44 days | 0.34 | | | MPC | 2006 $SV_{31}$ |
| 2006 $SX_{31}$ | 17.0 | 0.15 | 20060922 | 44.95012 | 70.63506 | 248.88573 | 1.17936 | 0.0389444 | 3.0516777 | 12 | 1 | 11 days | 0.28 | | | MPC | 2006 $SX_{31}$ |
| 2006 $SY_{31}$ | 16.4 | 0.15 | 20060922 | 320.30545 | 49.40337 | 2.95283 | 10.35308 | 0.0634724 | 3.1445718 | 22 | 1 | 32 days | 0.28 | | | MPC | 2006 $SY_{31}$ |
| 2006 $SA_{32}$ | 16.8 | 0.15 | 20060922 | 346.55239 | 141.69879 | 245.68201 | 1.54009 | 0.2113559 | 2.7524965 | 28 | 1 | 41 days | 0.35 | | | MPC | 2006 $SA_{32}$ |
| 2006 $SB_{32}$ | 18.2 | 0.15 | 20060922 | 38.71484 | 310.51226 | 0.04021 | 10.36091 | 0.1874577 | 2.2808323 | 17 | 1 | 36 days | 0.25 | | | MPC | 2006 $SB_{32}$ |
| 2006 $SC_{32}$ | 16.5 | 0.15 | 20060922 | 92.25616 | 71.73724 | 195.95913 | 9.58607 | 0.0714781 | 3.0596090 | 19 | 1 | 15 days | 0.28 | | | MPC | 2006 $SC_{32}$ |
| 2006 $SG_{32}$ | 17.6 | 0.15 | 20060922 | 4.66926 | 353.77149 | 3.12416 | 6.98364 | 0.2475851 | 2.6365689 | 31 | 1 | 64 days | 0.48 | M-v | 4 | MPC | 2006 $SG_{32}$ |
| 2006 $SK_{32}$ | 17.7 | 0.15 | 20060922 | 17.79436 | 314.30381 | 26.53658 | 0.73508 | 0.1750872 | 2.9842897 | 19 | 1 | 11 days | 0.27 | | | MPC | 2006 $SK_{32}$ |
| 2006 $SL_{32}$ | 17.1 | 0.15 | 20060922 | 341.37625 | 209.36283 | 181.20887 | 2.36461 | 0.1260546 | 2.9052068 | 19 | 1 | 11 days | 0.21 | | | MPC | 2006 $SL_{32}$ |
| 2006 $SN_{32}$ | 18.8 | 0.15 | 20060922 | 327.34502 | 222.45351 | 189.27557 | 0.88575 | 0.1796012 | 2.4142570 | 13 | 1 | 29 days | 0.35 | | | MPC | 2006 $SN_{32}$ |
| 2006 $SO_{32}$ | 18.1 | 0.15 | 20060922 | 60.19155 | 281.75788 | 2.09225 | 1.79204 | 0.1973397 | 2.3697143 | 16 | 1 | 41 days | 0.32 | | | MPC | 2006 $SO_{32}$ |
| 2006 $SP_{32}$ | 16.9 | 0.15 | 20060922 | 310.17836 | 245.57143 | 190.44746 | 5.07468 | 0.1851193 | 3.1801377 | 23 | 1 | 40 days | 0.27 | | | MPC | 2006 $SP_{32}$ |
| 2006 $SQ_{32}$ | 16.4 | 0.15 | 20060922 | 319.05248 | 225.58187 | 190.66929 | 9.48050 | 0.1192555 | 3.0240804 | 37 | 1 | 40 days | 0.41 | | | MPC | 2006 $SQ_{32}$ |
| 2006 $SR_{32}$ | 18.3 | 0.15 | 20060922 | 4.57623 | 159.13311 | 196.66554 | 1.53559 | 0.2242823 | 2.3001907 | 41 | 1 | 40 days | 0.42 | | | MPC | 2006 $SR_{32}$ |
| 2006 $SS_{32}$ | 16.0 | 0.15 | 20060902 | 317.69918 | 60.74482 | 1.84667 | 26.18324 | 0.2045816 | 3.1341450 | 20 | 1 | 34 days | 0.47 | | | MPC | 2006 $SS_{32}$ |
| 2006 $ST_{32}$ | 17.4 | 0.15 | 20060922 | 345.19479 | 183.86285 | 199.55559 | 3.14628 | 0.1237342 | 2.4297502 | 18 | 1 | 15 days | 0.46 | | | MPC | 2006 $ST_{32}$ |
| 2006 $SW_{32}$ | 17.1 | 0.15 | 20060922 | 330.01447 | 233.40639 | 187.90562 | 12.49590 | 0.3319040 | 2.7776295 | 40 | 1 | 34 days | 0.52 | | | MPC | 2006 $SW_{32}$ |
| 2006 $SX_{32}$ | 18.0 | 0.15 | 20060922 | 25.89199 | 121.67422 | 199.85843 | 3.64729 | 0.2299906 | 2.2499738 | 40 | 1 | 65 days | 0.47 | M-v | 4 | MPC | 2006 $SX_{32}$ |
| 2006 $SY_{32}$ | 17.5 | 0.15 | 20061012 | 334.61163 | 93.14937 | 314.74715 | 1.51802 | 0.1944297 | 2.4631004 | 28 | 1 | 59 days | 0.40 | | | MPC | 2006 $SY_{32}$ |
| 2006 $SZ_{32}$ | 17.7 | 0.15 | 20060922 | 6.13808 | 19.46711 | 333.97437 | 2.02731 | 0.2101478 | 2.4036924 | 48 | 1 | 122 days | 0.45 | M-v | 3 | MPC | 2006 $SZ_{32}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SA_{33}$ | 16.7 | 0.15 | 20060922 | 356.31765 | 185.50542 | 184.99642 | 11.59770 | 0.2497175 | 3.1343436 | 37 | 1 | 67 days | 0.44 | M-v | 4 | MPC | 2006 $SA_{33}$ |
| 2006 $SB_{33}$ | 16.6 | 0.15 | 20060922 | 28.30466 | 126.90898 | 188.03481 | 13.98809 | 0.2573384 | 3.0048037 | 22 | 1 | 67 days | 0.41 | M-v | 4 | MPC | 2006 $SB_{33}$ |
| 2006 $SC_{33}$ | 17.8 | 0.15 | 20060922 | 358.99167 | 144.75984 | 218.94507 | 2.54550 | 0.1870289 | 2.3719131 | 31 | 1 | 34 days | 0.43 | | | MPC | 2006 $SC_{33}$ |
| 2006 $SG_{33}$ | 16.7 | 0.15 | 20060902 | 299.31269 | 108.15086 | 315.09712 | 6.65963 | 0.0868512 | 2.3031844 | 24 | 1 | 43 days | 0.76 | | | MPC | 2006 $SG_{33}$ |
| 2006 $SH_{33}$ | 15.2 | 0.15 | 20060922 | 29.47100 | 94.75016 | 231.73493 | 6.79917 | 0.0745888 | 3.4511707 | 11 | 1 | 24 days | 0.44 | | | MPC | 2006 $SH_{33}$ |
| 2006 $SK_{33}$ | 17.8 | 0.15 | 20060922 | 27.78904 | 81.28057 | 241.38621 | 5.43437 | 0.1434006 | 2.2317010 | 28 | 1 | 41 days | 0.56 | | | MPC | 2006 $SK_{33}$ |
| 2006 $SR_{33}$ | 15.9 | 0.15 | 20060922 | 33.94293 | 104.29942 | 211.35662 | 9.59911 | 0.1514316 | 3.2306814 | 27 | 1 | 36 days | 0.56 | | | MPC | 2006 $SR_{33}$ |
| 2006 $ST_{33}$ | 17.2 | 0.15 | 20060922 | 9.99532 | 151.26384 | 194.63488 | 15.01477 | 0.2038523 | 2.7021582 | 35 | 1 | 70 days | 0.40 | M-v | 3 | MPC | 2006 $ST_{33}$ |
| 2006 $SV_{33}$ | 17.1 | 0.15 | 20061012 | 329.90234 | 191.02847 | 225.71259 | 5.02787 | 0.2314222 | 2.4056485 | 46 | 1 | 59 days | 0.51 | | | MPC | 2006 $SV_{33}$ |
| 2006 $SW_{33}$ | 17.7 | 0.15 | 20060922 | 326.93119 | 149.91027 | 260.78303 | 2.82220 | 0.2123818 | 2.2179239 | 39 | 1 | 36 days | 0.63 | | | MPC | 2006 $SW_{33}$ |
| 2006 $SX_{33}$ | 17.6 | 0.15 | 20060922 | 14.53345 | 2.99460 | 337.40658 | 6.33544 | 0.1683714 | 2.3995504 | 28 | 1 | 94 days | 0.38 | M-v | 3 | MPC | 2006 $SX_{33}$ |
| 2006 $SZ_{33}$ | 16.2 | 0.15 | 20060922 | 324.95035 | 100.54507 | 305.91565 | 4.47186 | 0.1214788 | 2.6714219 | 31 | 1 | 36 days | 0.40 | | | MPC | 2006 $SZ_{33}$ |
| 2006 $SG_{34}$ | 16.1 | 0.15 | 20060922 | 47.23584 | 325.06869 | 335.79304 | 12.21453 | 0.1623540 | 2.7180497 | 35 | 1 | 55 days | 0.61 | | | MPC | 2006 $SG_{34}$ |
| 2006 $SM_{34}$ | 15.4 | 0.15 | 20060902 | 261.74562 | 298.77764 | 192.69820 | 8.58585 | 0.2857973 | 2.8218142 | 11 | 1 | 8 days | 0.49 | | | MPC | 2006 $SM_{34}$ |
| 2006 $SN_{34}$ | 17.5 | 0.15 | 20060922 | 42.83077 | 17.24062 | 285.54389 | 1.65852 | 0.2105840 | 2.3523575 | 19 | 1 | 35 days | 0.43 | | | MPC | 2006 $SN_{34}$ |
| 2006 $SO_{34}$ | 16.5 | 0.15 | 20060922 | 66.86092 | 48.42899 | 231.08046 | 4.62759 | 0.1819368 | 2.5655907 | 26 | 1 | 44 days | 0.27 | | | MPC | 2006 $SO_{34}$ |
| 2006 $SQ_{34}$ | 18.0 | 0.15 | 20060922 | 348.32826 | 85.95342 | 297.10239 | 3.62357 | 0.1322944 | 2.5378793 | 9 | 1 | 15 days | 0.49 | | | MPC | 2006 $SQ_{34}$ |
| 2006 $SR_{34}$ | 17.3 | 0.15 | 20060922 | 358.41986 | 23.84836 | 345.42978 | 6.29331 | 0.2153790 | 2.5693857 | 41 | 1 | 94 days | 0.53 | M-v | 3 | MPC | 2006 $SR_{34}$ |
| 2006 $SU_{34}$ | 18.6 | 0.15 | 20060922 | 351.63475 | 56.54357 | 321.52322 | 3.04602 | 0.1825366 | 2.2327740 | 24 | 1 | 36 days | 0.27 | | | MPC | 2006 $SU_{34}$ |
| 2006 $SY_{34}$ | 17.1 | 0.15 | 20060922 | 48.21697 | 70.08975 | 230.77265 | 3.93526 | 0.1870193 | 2.6030258 | 21 | 1 | 44 days | 0.26 | | | MPC | 2006 $SY_{34}$ |
| 2006 $SZ_{34}$ | 18.8 | 0.15 | 20060902 | 3.36277 | 143.80455 | 207.84226 | 4.84787 | 0.2090804 | 2.2823435 | 10 | 1 | 8 days | 0.31 | | | MPC | 2006 $SZ_{34}$ |
| 2006 $SB_{35}$ | 15.5 | 0.15 | 20060922 | 203.42621 | 331.71320 | 206.32017 | 10.55258 | 0.2962080 | 2.5600397 | 12 | 1 | 9 days | 0.92 | | | MPC | 2006 $SB_{35}$ |
| 2006 $SC_{35}$ | 19.1 | 0.15 | 20060922 | 11.57311 | 77.85794 | 272.72513 | 1.62484 | 0.1926979 | 2.4365298 | 15 | 1 | 13 days | 0.25 | | | MPC | 2006 $SC_{35}$ |
| 2006 $SD_{35}$ | 18.3 | 0.15 | 20060922 | 13.34228 | 131.80808 | 218.69386 | 3.77665 | 0.1584609 | 2.6408122 | 14 | 1 | 13 days | 0.83 | | | MPC | 2006 $SD_{35}$ |
| 2006 $SF_{35}$ | 17.7 | 0.15 | 20060922 | 33.75950 | 119.53266 | 201.98116 | 8.21136 | 0.1864370 | 2.9315089 | 9 | 1 | 13 days | 0.29 | | | MPC | 2006 $SF_{35}$ |
| 2006 $SG_{35}$ | 16.9 | 0.15 | 20060922 | 320.80894 | 74.94387 | 349.26358 | 4.83561 | 0.1788060 | 2.7005481 | 23 | 1 | 33 days | 0.28 | | | MPC | 2006 $SG_{35}$ |
| 2006 $SH_{35}$ | 16.7 | 0.15 | 20060922 | 28.11116 | 90.83544 | 247.70239 | 2.95679 | 0.0757357 | 3.0333832 | 12 | 1 | 24 days | 0.19 | | | MPC | 2006 $SH_{35}$ |
| 2006 $SJ_{35}$ | 17.4 | 0.15 | 20060922 | 316.54902 | 187.99139 | 235.92538 | 1.76814 | 0.1573984 | 2.2534041 | 23 | 1 | 44 days | 0.37 | | | MPC | 2006 $SJ_{35}$ |
| 2006 $SO_{35}$ | 16.3 | 0.15 | 20061012 | 348.27631 | 184.37855 | 203.67831 | 4.45505 | 0.0850210 | 2.7682868 | 28 | 1 | 55 days | 0.41 | | | MPC | 2006 $SO_{35}$ |
| 2006 $SQ_{35}$ | 17.4 | 0.15 | 20060922 | 2.38876 | 153.39722 | 209.64806 | 2.05889 | 0.1982800 | 2.2549215 | 65 | 1 | 79 days | 0.39 | M-v | 4 | MPC | 2006 $SQ_{35}$ |
| 2006 $SV_{35}$ | 17.9 | 0.15 | 20060922 | 1.64681 | 255.22129 | 103.75477 | 4.89664 | 0.1793274 | 2.2114277 | 15 | 1 | 24 days | 0.64 | | | MPC | 2006 $SV_{35}$ |
| 2006 $SY_{35}$ | 17.5 | 0.15 | 20060922 | 31.52764 | 207.30365 | 106.29611 | 5.34725 | 0.1961538 | 2.2501784 | 26 | 1 | 32 days | 0.77 | | | MPC | 2006 $SY_{35}$ |
| 2006 $SB_{36}$ | 18.0 | 0.15 | 20060922 | 359.14005 | 234.30409 | 126.32939 | 5.62306 | 0.2132052 | 2.2418637 | 23 | 1 | 52 days | 0.63 | | | MPC | 2006 $SB_{36}$ |
| 2006 $SE_{36}$ | 15.2 | 0.15 | 20060902 | 337.61191 | 255.53623 | 124.95828 | 10.66557 | 0.0669182 | 3.1010968 | 12 | 1 | 8 days | 0.51 | | | MPC | 2006 $SE_{36}$ |
| 2006 $SH_{36}$ | 16.9 | 0.15 | 20060922 | 354.84814 | 290.74430 | 75.38734 | 7.32849 | 0.1529297 | 2.3531459 | 25 | 1 | 36 days | 0.44 | | | MPC | 2006 $SH_{36}$ |
| 2006 $SO_{36}$ | 16.8 | 0.15 | 20060922 | 7.55132 | 261.53840 | 86.19518 | 7.92451 | 0.3270275 | 2.7081262 | 34 | 1 | 61 days | 0.38 | M-v | 4 | MPC | 2006 $SO_{36}$ |
| 2006 $SS_{36}$ | 15.6 | 0.15 | 20060922 | 18.69570 | 2.31556 | 342.50877 | 14.07724 | 0.3129754 | 2.5640748 | 71 | 1 | 90 days | 0.50 | M-v | 4 | MPC | 2006 $SS_{36}$ |
| 2006 $ST_{36}$ | 16.2 | 0.15 | 20060922 | 348.83770 | 164.66581 | 222.24370 | 5.95093 | 0.0950524 | 2.8710362 | 23 | 1 | 34 days | 0.31 | | | MPC | 2006 $ST_{36}$ |
| 2006 $SW_{36}$ | 18.6 | 0.15 | 20060922 | 26.98107 | 91.92723 | 241.02073 | 2.63687 | 0.1670425 | 2.1709158 | 20 | 1 | 30 days | 0.57 | | | MPC | 2006 $SW_{36}$ |
| 2006 $SY_{36}$ | 16.7 | 0.15 | 20060922 | 292.64406 | 257.56822 | 208.82948 | 11.46644 | 0.2173023 | 2.6087587 | 24 | 1 | 66 days | 0.34 | M-v | 4 | MPC | 2006 $SY_{36}$ |
| 2006 $SA_{37}$ | 17.5 | 0.15 | 20060922 | 62.95649 | 333.73961 | 316.06398 | 3.18618 | 0.1839361 | 2.3446168 | 10 | 1 | 14 days | 0.65 | | | MPC | 2006 $SA_{37}$ |
| 2006 $SE_{37}$ | 17.2 | 0.15 | 20061012 | 344.62727 | 165.47463 | 239.33922 | 2.76740 | 0.2190676 | 3.0514057 | 19 | 1 | 59 days | 0.21 | | | MPC | 2006 $SE_{37}$ |
| 2006 $SG_{37}$ | 17.9 | 0.15 | 20060922 | 88.18677 | 336.35393 | 289.99652 | 2.08318 | 0.1765375 | 2.3285780 | 15 | 1 | 14 days | 0.23 | | | MPC | 2006 $SG_{37}$ |
| 2006 $SH_{37}$ | 17.2 | 0.15 | 20060922 | 292.53695 | 190.15395 | 255.17190 | 3.23477 | 0.0149524 | 2.7650596 | 12 | 1 | 13 days | 0.26 | | | MPC | 2006 $SH_{37}$ |
| 2006 $SK_{37}$ | 19.8 | 0.15 | 20060922 | 3.32879 | 19.06635 | 344.49469 | 2.86008 | 0.2343591 | 2.2322521 | 12 | 1 | 13 days | 0.18 | | | MPC | 2006 $SK_{37}$ |
| 2006 $SN_{37}$ | 19.7 | 0.15 | 20060922 | 11.05398 | 137.82842 | 208.25482 | 4.33939 | 0.3397911 | 2.5961213 | 12 | 1 | 13 days | 0.18 | | | MPC | 2006 $SN_{37}$ |
| 2006 $SQ_{37}$ | 17.9 | 0.15 | 20060922 | 307.40377 | 152.82765 | 282.77397 | 1.63871 | 0.0957880 | 2.6410156 | 12 | 1 | 13 days | 0.26 | | | MPC | 2006 $SQ_{37}$ |
| 2006 $SS_{37}$ | 19.2 | 0.15 | 20060922 | 350.38095 | 187.36650 | 188.11295 | 20.82970 | 0.0732146 | 1.8036851 | 26 | 1 | 25 days | 0.25 | | | MPC | 2006 $SS_{37}$ |
| 2006 $SX_{37}$ | 16.4 | 0.15 | 20060922 | 345.36008 | 147.27833 | 233.84540 | 5.61343 | 0.0374357 | 2.7015200 | 13 | 1 | 12 days | 0.59 | | | MPC | 2006 $SX_{37}$ |
| 2006 $SE_{38}$ | 19.3 | 0.15 | 20060922 | 33.14057 | 100.02685 | 205.33139 | 6.54964 | 0.2989761 | 2.2993316 | 13 | 1 | 12 days | 0.25 | | | MPC | 2006 $SE_{38}$ |
| 2006 $SF_{38}$ | 17.3 | 0.15 | 20060922 | 4.17780 | 120.67505 | 242.12998 | 4.98465 | 0.0412536 | 2.7992689 | 17 | 1 | 35 days | 0.52 | | | MPC | 2006 $SF_{38}$ |
| 2006 $SG_{38}$ | 16.1 | 0.15 | 20060922 | 248.12423 | 273.49015 | 214.42602 | 8.92396 | 0.0831320 | 2.7918224 | 10 | 1 | 8 days | 0.86 | | | MPC | 2006 $SG_{38}$ |
| 2006 $SH_{38}$ | 17.9 | 0.15 | 20060922 | 344.67533 | 45.75412 | 339.93031 | 7.27226 | 0.1306021 | 2.2035677 | 25 | 1 | 29 days | 0.42 | | | MPC | 2006 $SH_{38}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SK_{38}$ | 18.2 | 0.15 | 20060922 | 13.58949 | 8.62209 | 338.45718 | 6.74233 | 0.1635586 | 2.4552044 | 14 | 1 | 35 days | 0.47 | | | MPC | | 2006 $SK_{38}$ |
| 2006 $SL_{38}$ | 19.1 | 0.15 | 20060922 | 35.00536 | 84.48800 | 219.18187 | 4.17712 | 0.2903741 | 2.1934369 | 21 | 1 | 43 days | 0.34 | | | MPC | | 2006 $SL_{38}$ |
| 2006 $SN_{38}$ | 16.9 | 0.15 | 20060922 | 187.47420 | 322.65637 | 218.11652 | 6.09566 | 0.0655153 | 2.4565206 | 20 | 1 | 34 days | 0.30 | | | MPC | | 2006 $SN_{38}$ |
| 2006 $SP_{38}$ | 17.7 | 0.15 | 20060922 | 347.36441 | 104.27979 | 278.15626 | 3.56530 | 0.0679229 | 2.8044770 | 12 | 1 | 12 days | 0.19 | | | MPC | | 2006 $SP_{38}$ |
| 2006 $SR_{38}$ | 16.3 | 0.15 | 20060922 | 54.00852 | 72.20213 | 230.04659 | 4.29817 | 0.1193786 | 3.0906567 | 21 | 1 | 43 days | 0.33 | | | MPC | | 2006 $SR_{38}$ |
| 2006 $SS_{38}$ | 16.3 | 0.15 | 20060922 | 315.37032 | 149.83073 | 273.83601 | 3.78684 | 0.1105176 | 3.1683507 | 12 | 1 | 15 days | 0.24 | | | MPC | | 2006 $SS_{38}$ |
| 2006 $ST_{38}$ | 16.8 | 0.15 | 20060922 | 334.47002 | 199.38544 | 204.15442 | 6.78496 | 0.1836872 | 2.7298498 | 10 | 1 | 8 days | 0.68 | | | MPC | | 2006 $ST_{38}$ |
| 2006 $SU_{38}$ | 15.6 | 0.15 | 20060922 | 28.95863 | 340.37447 | 356.20463 | 9.61419 | 0.0460596 | 3.1299080 | 28 | 1 | 102 days | 0.28 | M-v | 4 | MPC | | 2006 $SU_{38}$ |
| 2006 $SV_{38}$ | 16.4 | 0.15 | 20060922 | 336.71603 | 155.10453 | 242.18078 | 2.90526 | 0.1278440 | 2.7363582 | 30 | 1 | 55 days | 0.43 | | | MPC | | 2006 $SV_{38}$ |
| 2006 $SW_{38}$ | 16.6 | 0.15 | 20060922 | 321.00803 | 201.80031 | 217.78736 | 3.09484 | 0.1599530 | 2.7687039 | 28 | 1 | 43 days | 0.50 | | | MPC | | 2006 $SW_{38}$ |
| 2006 $SY_{38}$ | 17.1 | 0.15 | 20060922 | 18.56866 | 6.07819 | 326.34411 | 4.84400 | 0.2641801 | 3.0643913 | 17 | 1 | 14 days | 0.34 | | | MPC | | 2006 $SY_{38}$ |
| 2006 $SF_{39}$ | 15.8 | 0.15 | 20060922 | 351.30143 | 31.70516 | 343.95666 | 15.96478 | 0.1992347 | 3.1873141 | 46 | 1 | 94 days | 0.86 | M-v | 3 | MPC | | 2006 $SF_{39}$ |
| 2006 $SG_{39}$ | 16.2 | 0.15 | 20060922 | 13.97592 | 5.28669 | 344.64438 | 8.71917 | 0.1378184 | 3.0537569 | 28 | 1 | 35 days | 0.51 | | | MPC | | 2006 $SG_{39}$ |
| 2006 $SH_{39}$ | 19.3 | 0.15 | 20060922 | 14.56926 | 223.85051 | 108.80369 | 6.12875 | 0.2215994 | 2.1046370 | 15 | 1 | 8 days | 0.58 | | | MPC | | 2006 $SH_{39}$ |
| 2006 $SJ_{39}$ | 17.7 | 0.15 | 20060922 | 8.32923 | 23.80719 | 335.29497 | 6.07313 | 0.2057784 | 2.5447947 | 15 | 1 | 16 days | 0.59 | | | MPC | | 2006 $SJ_{39}$ |
| 2006 $SK_{39}$ | 17.1 | 0.15 | 20060922 | 345.49752 | 57.75446 | 334.38123 | 5.23554 | 0.1692902 | 2.3090263 | 34 | 1 | 52 days | 0.66 | | D | MPC | | 2006 $SK_{39}$ |
| 2006 $SM_{39}$ | 16.2 | 0.15 | 20060922 | 320.15439 | 132.98699 | 293.00421 | 3.55034 | 0.1401424 | 2.6989367 | 38 | 1 | 61 days | 0.57 | M-v | 5 | MPC | | 2006 $SM_{39}$ |
| 2006 $SN_{39}$ | 15.7 | 0.15 | 20060922 | 344.87851 | 172.87459 | 213.98862 | 6.04600 | 0.2022853 | 3.2089545 | 38 | 1 | 46 days | 0.39 | | | MPC | | 2006 $SN_{39}$ |
| 2006 $SQ_{39}$ | 15.0 | 0.15 | 20060922 | 340.86883 | 51.88245 | 332.30366 | 11.07417 | 0.0683865 | 3.1534171 | 23 | 1 | 41 days | 0.52 | | | MPC | | 2006 $SQ_{39}$ |
| 2006 $SK_{40}$ | 16.5 | 0.15 | 20060922 | 64.69930 | 198.88176 | 82.33558 | 2.81797 | 0.1589263 | 2.5384883 | 15 | 1 | 10 days | 0.43 | | | MPC | | 2006 $SK_{40}$ |
| 2006 $SP_{40}$ | 16.7 | 0.15 | 20060922 | 0.37196 | 316.49511 | 45.91958 | 5.47213 | 0.1338919 | 2.7550499 | 24 | 1 | 28 days | 0.64 | | | MPC | | 2006 $SP_{40}$ |
| 2006 $ST_{40}$ | 17.6 | 0.15 | 20060922 | 67.14995 | 234.90415 | 35.99579 | 6.39904 | 0.2144018 | 2.1577951 | 24 | 1 | 60 days | 0.48 | M-v | 5 | MPC | | 2006 $ST_{40}$ |
| 2006 $SV_{40}$ | 17.0 | 0.15 | 20060902 | 351.31045 | 316.65675 | 51.93523 | 5.10078 | 0.1495095 | 2.5957548 | 35 | 1 | 59 days | 0.76 | | | MPC | | 2006 $SV_{40}$ |
| 2006 $SW_{40}$ | 16.3 | 0.15 | 20060922 | 20.56711 | 165.73760 | 174.64888 | 4.26942 | 0.1313950 | 3.1450304 | 14 | 1 | 12 days | 0.31 | | | MPC | | 2006 $SW_{40}$ |
| 2006 $SX_{40}$ | 16.9 | 0.15 | 20060922 | 94.75776 | 235.47007 | 16.25112 | 5.73279 | 0.1853150 | 2.5222418 | 14 | 1 | 8 days | 0.46 | | | MPC | | 2006 $SX_{40}$ |
| 2006 $SC_{41}$ | 15.5 | 0.15 | 20060922 | 319.59747 | 293.00908 | 123.17288 | 7.60761 | 0.1222001 | 3.0632786 | 26 | 1 | 33 days | 0.62 | | | MPC | | 2006 $SC_{41}$ |
| 2006 $SE_{41}$ | 18.1 | 0.15 | 20060922 | 359.60200 | 336.07576 | 28.74300 | 2.21940 | 0.1911960 | 2.2393717 | 50 | 1 | 64 days | 0.46 | M-v | 4 | MPC | | 2006 $SE_{41}$ |
| 2006 $SF_{41}$ | 17.9 | 0.15 | 20061012 | 15.94283 | 203.44237 | 144.27622 | 2.32130 | 0.2144557 | 2.3852115 | 21 | 1 | 59 days | 0.33 | | | MPC | | 2006 $SF_{41}$ |
| 2006 $SG_{41}$ | 18.0 | 0.15 | 20061012 | 342.14018 | 260.92770 | 138.09734 | 1.80508 | 0.1873179 | 2.3530970 | 43 | 1 | 59 days | 0.46 | | | MPC | | 2006 $SG_{41}$ |
| 2006 $SH_{41}$ | 19.9 | 0.15 | 20060922 | 4.03546 | 349.11549 | 6.26267 | 11.44922 | 0.3587405 | 2.5423819 | 19 | 1 | 27 days | 0.25 | | | MPC | | 2006 $SH_{41}$ |
| 2006 $SJ_{41}$ | 16.8 | 0.15 | 20060922 | 341.46937 | 267.32793 | 128.37384 | 7.44952 | 0.2287475 | 2.6840160 | 31 | 1 | 40 days | 0.63 | | | MPC | | 2006 $SJ_{41}$ |
| 2006 $SK_{41}$ | 18.1 | 0.15 | 20060922 | 26.66683 | 169.46307 | 154.16113 | 2.74119 | 0.2180252 | 2.4069583 | 25 | 1 | 118 days | 0.36 | M-v | 4 | MPC | | 2006 $SK_{41}$ |
| 2006 $SL_{41}$ | 18.2 | 0.15 | 20060922 | 338.97322 | 17.76413 | 21.04108 | 4.86764 | 0.2345787 | 2.3917358 | 14 | 1 | 10 days | 0.41 | | | MPC | | 2006 $SL_{41}$ |
| 2006 $SM_{41}$ | 17.1 | 0.15 | 20061012 | 44.97445 | 294.10026 | 15.76560 | 10.39939 | 0.1760310 | 2.6937846 | 32 | 1 | 58 days | 0.36 | | | MPC | | 2006 $SM_{41}$ |
| 2006 $SP_{41}$ | 17.3 | 0.15 | 20060922 | 335.78060 | 208.31079 | 195.82891 | 0.59813 | 0.2367128 | 3.1638925 | 18 | 1 | 28 days | 0.23 | | | MPC | | 2006 $SP_{41}$ |
| 2006 $SQ_{41}$ | 15.9 | 0.15 | 20060922 | 317.69782 | 237.32010 | 184.91088 | 7.27460 | 0.1621113 | 3.0580452 | 25 | 1 | 33 days | 0.49 | | | MPC | | 2006 $SQ_{41}$ |
| 2006 $SU_{41}$ | 17.5 | 0.15 | 20060922 | 344.08778 | 358.93233 | 36.46735 | 6.14665 | 0.3348317 | 2.7969140 | 28 | 1 | 33 days | 0.67 | | | MPC | | 2006 $SU_{41}$ |
| 2006 $SV_{41}$ | 17.4 | 0.15 | 20060922 | 351.30407 | 277.59345 | 100.85590 | 5.37635 | 0.2373428 | 2.3576925 | 23 | 1 | 40 days | 0.54 | | | MPC | | 2006 $SV_{41}$ |
| 2006 $SW_{41}$ | 14.6 | 0.15 | 20060922 | 80.70704 | 239.07630 | 23.00033 | 26.87869 | 0.1910118 | 3.1974598 | 34 | 1 | 66 days | 0.68 | M-v | 5 | MPC | | 2006 $SW_{41}$ |
| 2006 $SZ_{41}$ | 16.3 | 0.15 | 20060922 | 35.83085 | 272.95005 | 30.88367 | 12.87683 | 0.2700789 | 2.6780283 | 23 | 1 | 54 days | 0.34 | | | MPC | | 2006 $SZ_{41}$ |
| 2006 $SE_{42}$ | 17.8 | 0.15 | 20060922 | 21.38721 | 328.71774 | 7.95147 | 35.76001 | 0.1828897 | 2.7552773 | 12 | 1 | 10 days | 0.17 | | | MPC | | 2006 $SE_{42}$ |
| 2006 $SG_{42}$ | 18.3 | 0.15 | 20060922 | 5.98466 | 197.16864 | 157.86614 | 2.26640 | 0.2487751 | 2.7083948 | 20 | 1 | 8 days | 0.34 | | D | MPC | | 2006 $SG_{42}$ |
| 2006 $SK_{42}$ | 14.9 | 0.15 | 20060922 | 348.66277 | 255.18283 | 141.38469 | 13.30498 | 0.1212031 | 3.1424394 | 37 | 1 | 66 days | 0.56 | M-v | 4 | MPC | | 2006 $SK_{42}$ |
| 2006 $SL_{42}$ | 18.1 | 0.15 | 20060922 | 321.21671 | 186.17662 | 238.13150 | 0.77655 | 0.1682528 | 2.3802139 | 24 | 1 | 70 days | 0.38 | M-v | 4 | MPC | | 2006 $SL_{42}$ |
| 2006 $SM_{42}$ | 16.3 | 0.15 | 20060922 | 349.44219 | 4.90560 | 26.34426 | 3.98196 | 0.1013485 | 2.6570493 | 71 | 1 | 63 days | 0.39 | M-v | 4 | MPC | | 2006 $SM_{42}$ |
| 2006 $SO_{42}$ | 18.9 | 0.15 | 20060922 | 322.15756 | 46.09910 | 9.67315 | 17.90757 | 0.0795193 | 1.8208591 | 27 | 1 | 38 days | 0.55 | | | MPC | | 2006 $SO_{42}$ |
| 2006 $SQ_{42}$ | 16.5 | 0.15 | 20060922 | 9.97555 | 332.08044 | 31.58570 | 5.49523 | 0.1564667 | 2.7158802 | 50 | 1 | 63 days | 0.49 | M-v | 4 | MPC | | 2006 $SQ_{42}$ |
| 2006 $SR_{42}$ | 14.9 | 0.15 | 20061012 | 42.76598 | 203.91823 | 129.78478 | 10.18495 | 0.1385951 | 3.1737502 | 23 | 1 | 59 days | 0.55 | | | MPC | | 2006 $SR_{42}$ |
| 2006 $ST_{42}$ | 15.9 | 0.15 | 20060922 | 13.09227 | 302.66919 | 61.49076 | 14.61297 | 0.3348302 | 3.1009138 | 71 | 1 | 63 days | 0.53 | M-v | 4 | MPC | | 2006 $ST_{42}$ |
| 2006 $SU_{42}$ | 15.9 | 0.15 | 20060922 | 13.55694 | 184.59832 | 177.80603 | 11.05567 | 0.3458654 | 2.9906619 | 26 | 1 | 62 days | 0.49 | M-v | 4 | MPC | | 2006 $SU_{42}$ |
| 2006 $SW_{42}$ | 16.1 | 0.15 | 20060922 | 358.72976 | 330.98487 | 61.95667 | 14.73889 | 0.2546067 | 2.6933886 | 57 | 1 | 69 days | 0.47 | M-v | 4 | MPC | | 2006 $SW_{42}$ |
| 2006 $SB_{43}$ | | | 20060922 | 213.00836 | 288.83547 | 246.09522 | 4.50010 | 0.2624196 | 2.3397365 | 9 | 1 | 13 days | 0.40 | | | MPC | | 2006 $SB_{43}$ |
| 2006 $SD_{43}$ | 16.9 | 0.15 | 20060922 | 337.46063 | 219.08710 | 193.68442 | 17.53842 | 0.1777513 | 2.5494282 | 25 | 1 | 40 days | 0.43 | | | MPC | | 2006 $SD_{43}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SE_{43}$ | 16.9 | 0.15 | 20060922 | 354.25048 | 195.42673 | 193.88839 | 10.55396 | 0.0623898 | 2.9940753 | 23 | 1 | 43 days | 0.31 | | MPC | 2006 $SE_{43}$ |
| 2006 $SF_{43}$ | 17.5 | 0.15 | 20061012 | 5.94227 | 262.45063 | 117.34150 | 1.57558 | 0.0841308 | 2.7572759 | 32 | 1 | 59 days | 0.29 | | MPC | 2006 $SF_{43}$ |
| 2006 $SH_{43}$ | 19.8 | 0.15 | 20060922 | 343.75265 | 57.05601 | 332.49058 | 3.08393 | 0.2807292 | 2.5779896 | 12 | 1 | 12 days | 0.19 | | MPC | 2006 $SH_{43}$ |
| 2006 $SJ_{43}$ | 17.9 | 0.15 | 20060922 | 46.11148 | 100.88907 | 196.47538 | 5.19990 | 0.1743332 | 2.3123272 | 22 | 1 | 67 days | 0.25 | M-v 4 | MPC | 2006 $SJ_{43}$ |
| 2006 $SM_{43}$ | 17.8 | 0.15 | 20060922 | 354.45187 | 176.53857 | 189.02433 | 6.56919 | 0.1224022 | 2.2952614 | 25 | 1 | 86 days | 0.49 | M-v 4 | MPC | 2006 $SM_{43}$ |
| 2006 $SP_{43}$ | 15.9 | 0.15 | 20060922 | 300.89025 | 123.26241 | 318.74215 | 8.23698 | 0.0940802 | 2.6858984 | 24 | 1 | 36 days | 0.39 | | MPC | 2006 $SP_{43}$ |
| 2006 $SQ_{43}$ | 18.0 | 0.15 | 20060922 | 13.05737 | 30.36025 | 315.73627 | 6.37198 | 0.2934205 | 2.5520892 | 22 | 1 | 37 days | 0.65 | | MPC | 2006 $SQ_{43}$ |
| 2006 $SV_{43}$ | 16.2 | 0.15 | 20060922 | 330.36701 | 68.13477 | 359.60555 | 11.80283 | 0.2486562 | 2.8002708 | 23 | 1 | 60 days | 0.56 | M-v 4 | MPC | 2006 $SV_{43}$ |
| 2006 $SX_{43}$ | 17.8 | 0.15 | 20060922 | 16.80633 | 134.69539 | 190.03398 | 2.18585 | 0.2049335 | 2.4285157 | 22 | 1 | 84 days | 0.45 | M-v 4 | MPC | 2006 $SX_{43}$ |
| 2006 $SZ_{43}$ | 16.1 | 0.15 | 20060922 | 341.10608 | 200.21177 | 189.33987 | 20.38238 | 0.2838252 | 3.0995523 | 39 | 1 | 72 days | 0.59 | M-v 4 | MPC | 2006 $SZ_{43}$ |
| 2006 $SE_{44}$ | 17.9 | 0.15 | 20061012 | 346.05603 | 166.81379 | 223.54469 | 4.83307 | 0.2588391 | 2.5703213 | 22 | 1 | 59 days | 0.44 | | MPC | 2006 $SE_{44}$ |
| 2006 $SL_{44}$ | 16.9 | 0.15 | 20060922 | 70.02764 | 303.28671 | 327.80113 | 9.35128 | 0.1866707 | 2.5591199 | 15 | 1 | 24 days | 0.53 | | MPC | 2006 $SL_{44}$ |
| 2006 $SP_{44}$ | 16.4 | 0.15 | 20060922 | 347.61960 | 227.41353 | 155.74214 | 21.51964 | 0.2927753 | 3.0246912 | 16 | 1 | 25 days | 0.41 | | MPC | 2006 $SP_{44}$ |
| 2006 $SY_{44}$ | 18.4 | 0.15 | 20060922 | 328.14262 | 195.83181 | 194.11492 | 14.22154 | 0.2077379 | 2.3947886 | 12 | 1 | 12 days | 0.24 | | MPC | 2006 $SY_{44}$ |
| 2006 $SZ_{44}$ | 17.0 | 0.15 | 20060902 | 263.31030 | 204.55476 | 242.66774 | 8.96697 | 0.1412349 | 2.5404273 | 9 | 1 | 5 days | 0.17 | | MPC | 2006 $SZ_{44}$ |
| 2006 $SA_{45}$ | 17.1 | 0.15 | 20060922 | 299.51602 | 147.27396 | 270.76248 | 10.03578 | 0.1579479 | 2.7327946 | 9 | 1 | 8 days | 0.40 | | MPC | 2006 $SA_{45}$ |
| 2006 $SC_{45}$ | 16.6 | 0.15 | 20060922 | 290.62146 | 183.48504 | 232.95397 | 10.36627 | 0.0739629 | 3.1226510 | 12 | 1 | 12 days | 0.23 | | MPC | 2006 $SC_{45}$ |
| 2006 $SD_{45}$ | 16.5 | 0.15 | 20060922 | 314.13757 | 94.35012 | 298.45671 | 13.53733 | 0.0748840 | 3.1725481 | 12 | 1 | 10 days | 0.19 | | MPC | 2006 $SD_{45}$ |
| 2006 $SE_{45}$ | 19.0 | 0.15 | 20060902 | 10.21557 | 86.36907 | 236.45110 | 7.14538 | 0.1607294 | 2.2278706 | 9 | 1 | 4 days | 0.24 | | MPC | 2006 $SE_{45}$ |
| 2006 $SF_{45}$ | 17.2 | 0.15 | 20060902 | 359.29325 | 135.98115 | 201.27469 | 12.54090 | 0.1683361 | 2.6546532 | 9 | 1 | 4 days | 0.13 | | MPC | 2006 $SF_{45}$ |
| 2006 $SG_{45}$ | 16.7 | 0.15 | 20060902 | 114.08527 | 297.62863 | 270.34104 | 10.56570 | 0.1735000 | 2.7211294 | 9 | 1 | 4 days | 0.14 | | MPC | 2006 $SG_{45}$ |
| 2006 $SJ_{45}$ | 15.9 | 0.15 | 20060902 | 132.05069 | 335.13375 | 225.20213 | 10.96121 | 0.0693678 | 3.0594467 | 12 | 1 | 6 days | 0.40 | | MPC | 2006 $SJ_{45}$ |
| 2006 $SK_{45}$ | 16.7 | 0.15 | 20060922 | 45.64243 | 333.81706 | 303.36549 | 14.87667 | 0.2197083 | 3.0642909 | 12 | 1 | 7 days | 0.33 | | MPC | 2006 $SK_{45}$ |
| 2006 $SQ_{45}$ | 16.6 | 0.15 | 20061012 | 337.58582 | 31.70028 | 13.00118 | 12.99717 | 0.2252136 | 3.1480066 | 18 | 1 | 58 days | 0.50 | | MPC | 2006 $SQ_{45}$ |
| 2006 $SS_{45}$ | 17.1 | 0.15 | 20060922 | 31.28110 | 225.10468 | 103.66107 | 2.61476 | 0.0741833 | 2.5536925 | 11 | 1 | 12 days | 0.51 | | MPC | 2006 $SS_{45}$ |
| 2006 $SU_{45}$ | 18.0 | 0.15 | 20060922 | 17.33927 | 295.25432 | 36.89285 | 5.04828 | 0.2803423 | 2.5894923 | 11 | 1 | 12 days | 0.68 | | MPC | 2006 $SU_{45}$ |
| 2006 $SZ_{45}$ | 17.3 | 0.15 | 20060922 | 345.46056 | 190.71471 | 208.99896 | 11.17805 | 0.3252637 | 2.6656722 | 56 | 1 | 64 days | 0.41 | M-v 4 | MPC | 2006 $SZ_{45}$ |
| 2006 $SC_{46}$ | 17.2 | 0.15 | 20060922 | 6.87173 | 197.79411 | 154.50173 | 3.83459 | 0.1859608 | 2.6430870 | 40 | 1 | 125 days | 0.51 | M-v 3 | MPC | 2006 $SC_{46}$ |
| 2006 $SD_{46}$ | 17.6 | 0.15 | 20061012 | 342.13880 | 5.14990 | 35.64744 | 5.11960 | 0.2226515 | 2.2583206 | 48 | 1 | 57 days | 0.54 | | MPC | 2006 $SD_{46}$ |
| 2006 $SE_{46}$ | 16.6 | 0.15 | 20061012 | 1.86218 | 112.81680 | 265.66087 | 6.06112 | 0.1441976 | 2.3243855 | 22 | 1 | 57 days | 0.50 | | MPC | 2006 $SE_{46}$ |
| 2006 $SG_{46}$ | 18.0 | 0.15 | 20060922 | 19.33417 | 146.98064 | 193.12580 | 4.35787 | 0.2870392 | 2.3112998 | 53 | 1 | 40 days | 0.38 | | MPC | 2006 $SG_{46}$ |
| 2006 $SH_{46}$ | 16.8 | 0.15 | 20060922 | 18.35794 | 320.60498 | 33.55066 | 3.99325 | 0.1751276 | 2.5977410 | 64 | 1 | 85 days | 0.46 | M-v 4 | MPC | 2006 $SH_{46}$ |
| 2006 $SJ_{46}$ | 17.5 | 0.15 | 20061012 | 16.74599 | 172.83013 | 183.44775 | 5.44768 | 0.2586265 | 2.4076038 | 57 | 1 | 56 days | 0.47 | | MPC | 2006 $SJ_{46}$ |
| 2006 $SN_{46}$ | 19.3 | 0.15 | 20060922 | 6.82190 | 348.02174 | 4.79696 | 1.03799 | 0.1972544 | 2.4453473 | 17 | 1 | 13 days | 0.25 | | MPC | 2006 $SN_{46}$ |
| 2006 $SP_{46}$ | 17.9 | 0.15 | 20060922 | 44.71942 | 83.32541 | 213.81302 | 4.26147 | 0.1437080 | 2.3905002 | 20 | 1 | 33 days | 0.41 | | MPC | 2006 $SP_{46}$ |
| 2006 $SS_{46}$ | 17.7 | 0.15 | 20060902 | 353.48950 | 132.11004 | 229.68041 | 4.73899 | 0.2570376 | 2.8441298 | 12 | 1 | 3 days | 0.60 | | MPC | 2006 $SS_{46}$ |
| 2006 $ST_{46}$ | 17.5 | 0.15 | 20060902 | 35.16884 | 101.90944 | 200.70202 | 6.52951 | 0.1609904 | 2.4001155 | 11 | 1 | 4 days | 0.53 | | MPC | 2006 $ST_{46}$ |
| 2006 $SU_{46}$ | 16.4 | 0.15 | 20060922 | 347.20723 | 39.37028 | 338.19252 | 11.46727 | 0.2084751 | 3.0490014 | 23 | 1 | 66 days | 0.61 | M-v 4 | MPC | 2006 $SU_{46}$ |
| 2006 $SV_{46}$ | 16.9 | 0.15 | 20061012 | 309.65820 | 257.45314 | 188.79016 | 13.89962 | 0.3071303 | 2.6535842 | 37 | 1 | 59 days | 0.50 | | MPC | 2006 $SV_{46}$ |
| 2006 $SW_{46}$ | 15.4 | 0.15 | 20060902 | 305.93729 | 120.92151 | 301.01662 | 5.38831 | 0.1369410 | 3.1764423 | 12 | 1 | 3 days | 0.66 | | MPC | 2006 $SW_{46}$ |
| 2006 $SX_{46}$ | 15.6 | 0.15 | 20060922 | 344.98733 | 169.66324 | 208.53320 | 6.71187 | 0.1581884 | 3.2002996 | 50 | 1 | 77 days | 0.46 | M-v 4 | MPC | 2006 $SX_{46}$ |
| 2006 $SY_{46}$ | 17.1 | 0.15 | 20060902 | 314.72685 | 194.57156 | 218.89234 | 4.50668 | 0.1679044 | 2.7548598 | 11 | 1 | 3 days | 0.53 | | MPC | 2006 $SY_{46}$ |
| 2006 $SB_{47}$ | 15.7 | 0.15 | 20060922 | 354.26251 | 40.70050 | 324.90504 | 6.51539 | 0.1094990 | 3.1154521 | 19 | 1 | 22 days | 0.57 | | MPC | 2006 $SB_{47}$ |
| 2006 $SC_{47}$ | 18.3 | 0.15 | 20060902 | 316.53350 | 211.20008 | 197.66850 | 7.15056 | 0.1582900 | 2.2913702 | 11 | 1 | 3 days | 0.50 | | MPC | 2006 $SC_{47}$ |
| 2006 $SF_{47}$ | 16.0 | 0.15 | 20060902 | 128.80668 | 239.56437 | 335.17378 | 10.55315 | 0.1016447 | 3.0942797 | 10 | 1 | 4 days | 0.64 | | MPC | 2006 $SF_{47}$ |
| 2006 $SH_{47}$ | 18.8 | 0.15 | 20060922 | 12.21331 | 4.35109 | 332.08236 | 5.06553 | 0.2379868 | 2.2077562 | 15 | 1 | 6 days | 0.63 | | MPC | 2006 $SH_{47}$ |
| 2006 $SK_{47}$ | 17.2 | 0.15 | 20060922 | 333.93890 | 2.35181 | 42.22092 | 2.84459 | 0.2218873 | 2.4688752 | 39 | 1 | 63 days | 0.53 | M-v 4 | MPC | 2006 $SK_{47}$ |
| 2006 $SM_{47}$ | 18.3 | 0.15 | 20060922 | 357.00981 | 28.13632 | 333.23486 | 3.67951 | 0.1734346 | 2.1999707 | 18 | 1 | 35 days | 0.48 | | MPC | 2006 $SM_{47}$ |
| 2006 $SS_{47}$ | 15.5 | 0.15 | 20060922 | 259.51100 | 284.17358 | 187.53505 | 10.74400 | 0.1294021 | 3.0972013 | 11 | 1 | 9 days | 0.51 | | MPC | 2006 $SS_{47}$ |
| 2006 $SV_{47}$ | 17.1 | 0.15 | 20060922 | 352.36947 | 19.67966 | 349.66119 | 14.94832 | 0.1473318 | 2.5793630 | 14 | 1 | 22 days | 0.38 | | MPC | 2006 $SV_{47}$ |
| 2006 $SW_{47}$ | 18.6 | 0.15 | 20060922 | 13.82057 | 202.10931 | 137.29115 | 1.34432 | 0.2368400 | 2.3191401 | 28 | 1 | 118 days | 0.35 | M-v 4 | MPC | 2006 $SW_{47}$ |
| 2006 $SY_{47}$ | 16.2 | 0.15 | 20060922 | 322.16709 | 37.98905 | 13.82286 | 10.40173 | 0.0952801 | 3.1239071 | 11 | 1 | 7 days | 0.35 | | MPC | 2006 $SY_{47}$ |
| 2006 $SB_{48}$ | 16.2 | 0.15 | 20060902 | 285.99548 | 303.89884 | 156.88162 | 2.61608 | 0.2101799 | 2.9208540 | 12 | 1 | 4 days | 0.68 | | MPC | 2006 $SB_{48}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SD_{48}$ | | | 20060902 | 206.37987 | 133.99692 | 30.09417 | 3.21258 | 0.2028764 | 2.2165280 | 9 | 1 | 4 days | 0.15 | | | MPC | 2006 $SD_{48}$ |
| 2006 $SG_{48}$ | 16.8 | 0.15 | 20060922 | 231.27976 | 301.23766 | 190.63987 | 11.19531 | 0.0323732 | 3.2177605 | 9 | 1 | 9 days | 0.17 | | | MPC | 2006 $SG_{48}$ |
| 2006 $SH_{48}$ | 18.7 | 0.15 | 20060922 | 242.85148 | 177.21320 | 313.64762 | 2.41637 | 0.1441987 | 2.2277802 | 9 | 1 | 9 days | 0.15 | | | MPC | 2006 $SH_{48}$ |
| 2006 $SL_{48}$ | 16.2 | 0.15 | 20060922 | 5.80211 | 333.89276 | 37.23603 | 8.77910 | 0.1816931 | 3.1057656 | 30 | 1 | 33 days | 0.38 | | | MPC | 2006 $SL_{48}$ |
| 2006 $SO_{48}$ | 16.5 | 0.15 | 20060922 | 338.66919 | 225.31769 | 202.04451 | 12.90211 | 0.2468686 | 2.6312766 | 43 | 1 | 84 days | 0.55 | M-v | 3 | MPC | 2006 $SO_{48}$ |
| 2006 $ST_{48}$ | 16.5 | 0.15 | 20060922 | 1.97181 | 186.37816 | 198.92528 | 6.24594 | 0.3122571 | 2.6190396 | 76 | 1 | 89 days | 0.51 | M-v | 4 | MPC | 2006 $ST_{48}$ |
| 2006 $SX_{48}$ | 16.5 | 0.15 | 20060922 | 334.63485 | 310.33255 | 88.59202 | 1.14127 | 0.1842378 | 2.7272193 | 31 | 1 | 85 days | 0.70 | M-v | 5 | MPC | 2006 $SX_{48}$ |
| 2006 $SZ_{48}$ | 17.5 | 0.15 | 20060922 | 348.02693 | 197.02208 | 186.62746 | 7.28118 | 0.1294767 | 2.2948946 | 43 | 1 | 66 days | 0.35 | M-v | 4 | MPC | 2006 $SZ_{48}$ |
| 2006 $SC_{49}$ | 17.4 | 0.15 | 20061012 | 31.68758 | 298.16900 | 33.65500 | 2.59291 | 0.2128001 | 2.3494471 | 38 | 1 | 54 days | 0.33 | | | MPC | 2006 $SC_{49}$ |
| 2006 $SE_{49}$ | 16.3 | 0.15 | 20060922 | 62.16193 | 269.94575 | 354.31388 | 2.41834 | 0.2736123 | 2.5208864 | 23 | 1 | 6 days | 0.35 | | | MPC | 2006 $SE_{49}$ |
| 2006 $SK_{49}$ | 16.0 | 0.15 | 20060922 | 293.67983 | 260.30639 | 189.73644 | 24.92916 | 0.1383234 | 2.7068948 | 30 | 1 | 32 days | 0.50 | | | MPC | 2006 $SK_{49}$ |
| 2006 $SO_{49}$ | 17.3 | 0.15 | 20061012 | 348.79657 | 270.64270 | 134.72218 | 28.18415 | 0.4366867 | 2.5984316 | 25 | 1 | 55 days | 0.37 | | | MPC | 2006 $SO_{49}$ |
| 2006 $SP_{49}$ | 16.1 | 0.15 | 20060922 | 11.68042 | 164.87075 | 204.10813 | 10.04747 | 0.0690651 | 3.1911835 | 51 | 1 | 63 days | 0.40 | M-v | 4 | MPC | 2006 $SP_{49}$ |
| 2006 $SQ_{49}$ | 15.9 | 0.15 | 20060902 | 262.01188 | 168.22536 | 288.64377 | 14.40622 | 0.0771555 | 2.8256097 | 11 | 1 | 5 days | 0.73 | | | MPC | 2006 $SQ_{49}$ |
| 2006 $SR_{49}$ | 15.8 | 0.15 | 20060922 | 289.55557 | 259.83319 | 179.15455 | 25.78804 | 0.2360925 | 3.1653466 | 16 | 1 | 7 days | 0.78 | | | MPC | 2006 $SR_{49}$ |
| 2006 $SS_{49}$ | 17.2 | 0.15 | 20060922 | 335.52328 | 136.67474 | 259.37863 | 6.67176 | 0.3505263 | 3.3062867 | 13 | 1 | 6 days | 0.52 | | | MPC | 2006 $SS_{49}$ |
| 2006 $SW_{49}$ | 15.5 | 0.15 | 20060922 | 296.21990 | 71.17671 | 20.17089 | 15.87854 | 0.0818585 | 3.1425834 | 43 | 1 | 64 days | 0.49 | M-v | 4 | MPC | 2006 $SW_{49}$ |
| 2006 $SZ_{49}$ | 17.8 | 0.15 | 20060922 | 350.80248 | 16.57442 | 13.76102 | 7.78212 | 0.1842275 | 2.3227405 | 47 | 1 | 62 days | 0.48 | M-v | 4 | MPC | 2006 $SZ_{49}$ |
| 2006 $SC_{50}$ | 18.1 | 0.15 | 20060922 | 13.17247 | 344.12843 | 10.84978 | 2.44499 | 0.2289418 | 2.3449439 | 50 | 1 | 60 days | 0.41 | M-v | 4 | MPC | 2006 $SC_{50}$ |
| 2006 $SD_{50}$ | 16.8 | 0.15 | 20061012 | 300.69868 | 88.53018 | 20.46692 | 7.26842 | 0.2109726 | 2.5253651 | 45 | 1 | 53 days | 0.47 | | | MPC | 2006 $SD_{50}$ |
| 2006 $SG_{50}$ | 18.0 | 0.15 | 20060922 | 21.06551 | 50.27358 | 276.70509 | 1.90033 | 0.2100211 | 2.2990182 | 21 | 1 | 25 days | 0.54 | | | MPC | 2006 $SG_{50}$ |
| 2006 $SJ_{50}$ | 16.5 | 0.15 | 20060902 | 332.96282 | 173.13288 | 220.00284 | 10.09490 | 0.1341564 | 3.0792333 | 15 | 1 | 36 days | 0.57 | | | MPC | 2006 $SJ_{50}$ |
| 2006 $SL_{50}$ | 16.9 | 0.15 | 20060922 | 35.79341 | 107.22519 | 203.77272 | 21.05035 | 0.2539101 | 2.4310782 | 39 | 1 | 47 days | 0.44 | | | MPC | 2006 $SL_{50}$ |
| 2006 $SO_{50}$ | 18.7 | 0.15 | 20060922 | 7.03713 | 59.56892 | 278.75226 | 5.34073 | 0.3819406 | 2.6094917 | 16 | 1 | 65 days | 0.37 | M-v | 4 | MPC | 2006 $SO_{50}$ |
| 2006 $SP_{50}$ | 16.3 | 0.15 | 20060922 | 5.07791 | 48.87235 | 299.47094 | 8.59268 | 0.1075661 | 2.9987554 | 17 | 1 | 36 days | 0.70 | | | MPC | 2006 $SP_{50}$ |
| 2006 $SQ_{50}$ | 16.1 | 0.15 | 20060922 | 331.78593 | 172.81215 | 240.22913 | 9.42337 | 0.1757698 | 2.6990233 | 23 | 1 | 67 days | 0.48 | M-v | 4 | MPC | 2006 $SQ_{50}$ |
| 2006 $SR_{50}$ | 18.0 | 0.15 | 20060922 | 358.58189 | 32.83256 | 341.45968 | 10.13372 | 0.2431272 | 2.3263150 | 28 | 1 | 38 days | 0.42 | | | MPC | 2006 $SR_{50}$ |
| 2006 $SW_{50}$ | 17.8 | 0.15 | 20060922 | 338.71128 | 332.04165 | 52.92976 | 6.28644 | 0.2503494 | 2.3552754 | 11 | 1 | 9 days | 0.75 | | | MPC | 2006 $SW_{50}$ |
| 2006 $SX_{50}$ | 17.2 | 0.15 | 20060922 | 23.74329 | 246.74454 | 69.89322 | 7.18420 | 0.1505699 | 2.3532439 | 12 | 1 | 9 days | 0.75 | | | MPC | 2006 $SX_{50}$ |
| 2006 $SA_{51}$ | 17.7 | 0.15 | 20060922 | 19.12997 | 134.03868 | 194.91238 | 13.70839 | 0.1954840 | 2.6319293 | 15 | 1 | 13 days | 0.82 | | | MPC | 2006 $SA_{51}$ |
| 2006 $SB_{51}$ | 16.4 | 0.15 | 20061012 | 286.38427 | 255.71240 | 197.76218 | 12.38578 | 0.1493777 | 2.6551033 | 26 | 1 | 58 days | 0.55 | | | MPC | 2006 $SB_{51}$ |
| 2006 $SE_{51}$ | 16.3 | 0.15 | 20060922 | 330.52623 | 174.66233 | 231.90427 | 6.33946 | 0.2068939 | 2.8007835 | 16 | 1 | 36 days | 0.48 | | | MPC | 2006 $SE_{51}$ |
| 2006 $SJ_{51}$ | 16.9 | 0.15 | 20060902 | 341.61503 | 273.91087 | 103.16597 | 5.68691 | 0.1354462 | 2.6076132 | 12 | 1 | 8 days | 0.63 | | | MPC | 2006 $SJ_{51}$ |
| 2006 $SK_{51}$ | 17.8 | 0.15 | 20060922 | 307.54540 | 272.99539 | 158.96593 | 22.82203 | 0.1653388 | 1.8989388 | 11 | 1 | 10 days | 0.41 | | | MPC | 2006 $SK_{51}$ |
| 2006 $SP_{51}$ | 16.5 | 0.15 | 20060922 | 36.97395 | 208.75919 | 94.29584 | 8.64938 | 0.1980811 | 2.3572388 | 14 | 1 | 9 days | 0.71 | | | MPC | 2006 $SP_{51}$ |
| 2006 $SU_{51}$ | 17.8 | 0.15 | 20060922 | 351.90881 | 3.31439 | 4.99475 | 12.14473 | 0.3891731 | 2.7386798 | 36 | 1 | 74 days | 0.54 | M-v | 4 | MPC | 2006 $SU_{51}$ |
| 2006 $SZ_{51}$ | 16.7 | 0.15 | 20060922 | 343.46957 | 352.41969 | 26.46576 | 4.63845 | 0.0920924 | 2.9170651 | 18 | 1 | 12 days | 0.78 | | | MPC | 2006 $SZ_{51}$ |
| 2006 $SA_{52}$ | 17.4 | 0.15 | 20060922 | 19.75455 | 107.34242 | 222.25006 | 4.61423 | 0.1895087 | 2.3082303 | 28 | 1 | 35 days | 0.56 | | | MPC | 2006 $SA_{52}$ |
| 2006 $SB_{52}$ | 17.9 | 0.15 | 20060922 | 3.53491 | 200.02455 | 158.81005 | 3.19079 | 0.2359627 | 2.5594524 | 28 | 1 | 119 days | 0.41 | M-v | 3 | MPC | 2006 $SB_{52}$ |
| 2006 $SD_{52}$ | 16.6 | 0.15 | 20060922 | 16.87327 | 322.92077 | 14.65958 | 2.22207 | 0.1270308 | 2.7895506 | 41 | 1 | 94 days | 0.53 | M-v | 4 | MPC | 2006 $SD_{52}$ |
| 2006 $SH_{52}$ | 17.2 | 0.15 | 20060922 | 351.88756 | 13.90564 | 355.31879 | 11.57191 | 0.2052615 | 2.8012095 | 23 | 1 | 56 days | 0.64 | | | MPC | 2006 $SH_{52}$ |
| 2006 $SM_{52}$ | 16.4 | 0.15 | 20060922 | 33.07086 | 118.02034 | 189.46802 | 16.14877 | 0.2055769 | 2.9947687 | 16 | 1 | 6 days | 0.63 | | | MPC | 2006 $SM_{52}$ |
| 2006 $SN_{52}$ | 16.9 | 0.15 | 20060922 | 338.99690 | 51.95738 | 329.03613 | 7.57689 | 0.0391251 | 2.5308014 | 12 | 1 | 5 days | 0.55 | | | MPC | 2006 $SN_{52}$ |
| 2006 $SP_{52}$ | 17.3 | 0.15 | 20060922 | 296.16929 | 60.88216 | 12.34861 | 4.93864 | 0.1095652 | 2.1829652 | 20 | 1 | 7 days | 0.56 | | | MPC | 2006 $SP_{52}$ |
| 2006 $SR_{52}$ | 17.6 | 0.15 | 20060922 | 28.14264 | 265.14912 | 51.35371 | 7.72685 | 0.1534260 | 2.3799693 | 12 | 1 | 7 days | 0.83 | | | MPC | 2006 $SR_{52}$ |
| 2006 $SV_{52}$ | 17.4 | 0.15 | 20060922 | 352.68670 | 41.81726 | 330.38652 | 6.74683 | 0.1317388 | 2.3593278 | 23 | 1 | 28 days | 0.53 | | | MPC | 2006 $SV_{52}$ |
| 2006 $SX_{52}$ | 16.1 | 0.15 | 20060922 | 12.72172 | 274.90553 | 60.89375 | 9.39648 | 0.4511678 | 2.6358224 | 77 | 1 | 64 days | 0.58 | M-v | 4 | MPC | 2006 $SX_{52}$ |
| 2006 $SZ_{52}$ | 17.0 | 0.15 | 20060902 | 354.80469 | 22.68468 | 336.27312 | 8.44025 | 0.0637819 | 2.6144087 | 10 | 1 | 3 days | 0.68 | | | MPC | 2006 $SZ_{52}$ |
| 2006 $SP_{53}$ | 17.0 | 0.15 | 20060922 | 356.45159 | 154.76819 | 206.41546 | 16.20933 | 0.2996215 | 2.7337157 | 23 | 1 | 35 days | 0.51 | | | MPC | 2006 $SP_{53}$ |
| 2006 $SQ_{53}$ | 16.8 | 0.15 | 20060922 | 10.97251 | 132.89842 | 206.40219 | 18.24964 | 0.1502412 | 2.6276500 | 24 | 1 | 34 days | 0.57 | | | MPC | 2006 $SQ_{53}$ |
| 2006 $SR_{53}$ | 16.8 | 0.15 | 20060922 | 323.52867 | 172.35953 | 231.41582 | 11.55818 | 0.1511846 | 2.4427920 | 24 | 1 | 31 days | 0.76 | | | MPC | 2006 $SR_{53}$ |
| 2006 $SW_{53}$ | 15.9 | 0.15 | 20060922 | 1.47426 | 122.03712 | 230.10763 | 15.75154 | 0.3153504 | 3.0986089 | 19 | 1 | 63 days | 0.45 | M-v | 4 | MPC | 2006 $SW_{53}$ |
| 2006 $SZ_{53}$ | 16.3 | 0.15 | 20060922 | 353.93696 | 146.34598 | 224.55003 | 11.27661 | 0.2822093 | 2.7329881 | 53 | 1 | 95 days | 0.47 | M-v | 3 | MPC | 2006 $SZ_{53}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SA_{54}$ | 15.0 | 0.15 | 20060922 | 268.91414 | 153.07541 | 307.35193 | 15.99840 | 0.0676194 | 2.7542078 | 12 | 1 | 12 days | 0.63 | | MPC | 2006 $SA_{54}$ |
| 2006 $SD_{54}$ | 16.1 | 0.15 | 20060922 | 0.92249 | 142.64710 | 215.22548 | 16.70950 | 0.2507783 | 3.1411323 | 29 | 1 | 53 days | 0.53 | | MPC | 2006 $SD_{54}$ |
| 2006 $SG_{54}$ | 16.6 | 0.15 | 20060922 | 21.88409 | 80.89652 | 231.78222 | 11.80251 | 0.3800231 | 2.6579301 | 16 | 1 | 28 days | 0.22 | | MPC | 2006 $SG_{54}$ |
| 2006 $SK_{54}$ | 15.9 | 0.15 | 20061012 | 356.15903 | 136.65397 | 244.24042 | 12.44022 | 0.2741513 | 2.6791288 | 30 | 1 | 58 days | 0.40 | | MPC | 2006 $SK_{54}$ |
| 2006 $SM_{54}$ | 16.9 | 0.15 | 20060922 | 332.97195 | 345.56129 | 64.52045 | 3.40402 | 0.1813766 | 2.3875774 | 51 | 1 | 60 days | 0.38 | M-v 4 | MPC | 2006 $SM_{54}$ |
| 2006 $SO_{54}$ | 15.4 | 0.15 | 20060922 | 323.28749 | 347.91437 | 57.14879 | 10.36899 | 0.1637195 | 2.7855893 | 12 | 1 | 8 days | 0.52 | | MPC | 2006 $SO_{54}$ |
| 2006 $SQ_{54}$ | 16.9 | 0.15 | 20060922 | 314.24716 | 1.19853 | 71.47760 | 3.39648 | 0.1893469 | 2.4077594 | 61 | 1 | 60 days | 0.51 | M-v 5 | MPC | 2006 $SQ_{54}$ |
| 2006 $ST_{54}$ | 17.1 | 0.15 | 20060922 | 7.71758 | 257.00568 | 99.93789 | 4.95665 | 0.1321650 | 2.2837114 | 29 | 1 | 64 days | 0.58 | M-v 5 | MPC | 2006 $ST_{54}$ |
| 2006 $SW_{54}$ | 17.2 | 0.15 | 20060922 | 28.39718 | 191.15879 | 135.41550 | 7.75533 | 0.1709196 | 2.2502502 | 23 | 1 | 34 days | 0.57 | | MPC | 2006 $SW_{54}$ |
| 2006 $SX_{54}$ | 17.5 | 0.15 | 20060922 | 356.07181 | 328.55756 | 43.28523 | 8.48998 | 0.1565554 | 2.2264637 | 27 | 1 | 60 days | 0.63 | M-v 4 | MPC | 2006 $SX_{54}$ |
| 2006 $SY_{54}$ | 15.0 | 0.15 | 20060922 | 353.00997 | 256.36195 | 125.36770 | 8.36132 | 0.1889091 | 3.1894539 | 26 | 1 | 37 days | 0.45 | | MPC | 2006 $SY_{54}$ |
| 2006 $SB_{55}$ | 16.6 | 0.15 | 20060922 | 41.71048 | 264.22639 | 34.00498 | 11.95569 | 0.3064865 | 2.6390428 | 29 | 1 | 34 days | 0.52 | | MPC | 2006 $SB_{55}$ |
| 2006 $SC_{55}$ | 16.7 | 0.15 | 20060922 | 9.27675 | 277.86745 | 78.52021 | 4.42564 | 0.1965648 | 2.3538797 | 74 | 1 | 67 days | 0.51 | M-v 4 | MPC | 2006 $SC_{55}$ |
| 2006 $SD_{55}$ | 15.7 | 0.15 | 20060922 | 333.65788 | 250.35802 | 162.19903 | 14.95831 | 0.2088182 | 3.0735253 | 37 | 1 | 40 days | 0.57 | | MPC | 2006 $SD_{55}$ |
| 2006 $SE_{55}$ | 16.9 | 0.15 | 20061012 | 25.59824 | 287.09499 | 37.24177 | 12.31017 | 0.3526544 | 2.6786681 | 49 | 1 | 59 days | 0.47 | | MPC | 2006 $SE_{55}$ |
| 2006 $SF_{55}$ | 15.4 | 0.15 | 20060922 | 20.06011 | 305.29637 | 38.85098 | 14.54324 | 0.1213461 | 2.7026531 | 37 | 1 | 34 days | 0.43 | | MPC | 2006 $SF_{55}$ |
| 2006 $SH_{55}$ | 16.9 | 0.15 | 20060922 | 342.98651 | 10.90260 | 28.67952 | 19.02917 | 0.2828639 | 2.6711708 | 56 | 1 | 61 days | 0.50 | M-v 4 | MPC | 2006 $SH_{55}$ |
| 2006 $SJ_{55}$ | 15.5 | 0.15 | 20060922 | 340.77785 | 258.07984 | 140.81719 | 9.69238 | 0.1626731 | 2.7862572 | 30 | 1 | 70 days | 0.52 | M-v 4 | MPC | 2006 $SJ_{55}$ |
| 2006 $SK_{55}$ | 17.2 | 0.15 | 20060922 | 12.47313 | 272.30599 | 79.89088 | 6.28405 | 0.2204207 | 2.5980006 | 33 | 1 | 34 days | 0.62 | | MPC | 2006 $SK_{55}$ |
| 2006 $SL_{55}$ | 16.5 | 0.15 | 20060922 | 337.34865 | 236.96530 | 172.12458 | 12.54770 | 0.2403203 | 2.3876003 | 47 | 1 | 61 days | 0.47 | M-v 4 | MPC | 2006 $SL_{55}$ |
| 2006 $SQ_{55}$ | 17.6 | 0.15 | 20061012 | 22.52582 | 254.75770 | 88.07143 | 5.82437 | 0.2549051 | 2.3380439 | 39 | 1 | 59 days | 0.66 | | MPC | 2006 $SQ_{55}$ |
| 2006 $SR_{55}$ | 17.5 | 0.15 | 20060922 | 4.97024 | 212.52538 | 153.08897 | 6.48579 | 0.1998047 | 2.2265629 | 35 | 1 | 40 days | 0.64 | | MPC | 2006 $SR_{55}$ |
| 2006 $SS_{55}$ | 17.4 | 0.15 | 20061012 | 41.10745 | 199.70997 | 123.57209 | 5.16540 | 0.1965335 | 2.2480330 | 56 | 1 | 59 days | 0.55 | | MPC | 2006 $SS_{55}$ |
| 2006 $SV_{55}$ | 15.1 | 0.15 | 20060922 | 24.12313 | 305.77742 | 35.99077 | 26.46153 | 0.1704890 | 3.1757215 | 43 | 1 | 61 days | 0.69 | M-v 4 | MPC | 2006 $SV_{55}$ |
| 2006 $SA_{56}$ | 15.4 | 0.15 | 20060922 | 280.80691 | 290.68791 | 170.11976 | 10.62271 | 0.0565719 | 3.0233171 | 38 | 1 | 34 days | 0.48 | | MPC | 2006 $SA_{56}$ |
| 2006 $SF_{56}$ | 16.5 | 0.15 | 20060922 | 351.83090 | 265.95864 | 121.65667 | 9.01610 | 0.3144476 | 2.7719032 | 33 | 1 | 64 days | 0.33 | M-v 3 | MPC | 2006 $SF_{56}$ |
| 2006 $SG_{56}$ | 17.3 | 0.15 | 20060922 | 327.81760 | 32.49425 | 30.32804 | 22.43669 | 0.2601789 | 2.2902390 | 55 | 1 | 60 days | 0.47 | M-v 4 | MPC | 2006 $SG_{56}$ |
| 2006 $SJ_{56}$ | 15.5 | 0.15 | 20061012 | 3.37720 | 317.83415 | 57.58855 | 17.07796 | 0.2059442 | 3.1669403 | 43 | 1 | 58 days | 0.59 | | MPC | 2006 $SJ_{56}$ |
| 2006 $SK_{56}$ | 17.4 | 0.15 | 20061012 | 4.75488 | 252.86257 | 118.97734 | 9.11524 | 0.2938536 | 2.6748602 | 33 | 1 | 59 days | 0.69 | | MPC | 2006 $SK_{56}$ |
| 2006 $SL_{56}$ | 17.0 | 0.15 | 20060922 | 19.39203 | 316.60722 | 30.50783 | 22.43810 | 0.0862989 | 1.9035444 | 61 | 1 | 105 days | 0.38 | M-v 3 | MPC | 2006 $SL_{56}$ |
| 2006 $SN_{56}$ | 16.5 | 0.15 | 20061012 | 2.79587 | 295.82519 | 80.81719 | 10.07263 | 0.2219679 | 2.7150842 | 60 | 1 | 58 days | 0.62 | | MPC | 2006 $SN_{56}$ |
| 2006 $SP_{56}$ | 14.5 | 0.15 | 20060922 | 77.71010 | 183.93332 | 86.49467 | 12.11436 | 0.0499962 | 3.0765532 | 12 | 1 | 6 days | 0.71 | | MPC | 2006 $SP_{56}$ |
| 2006 $SQ_{56}$ | 17.3 | 0.15 | 20060922 | 24.34497 | 237.56487 | 81.23014 | 8.77372 | 0.1954581 | 2.2390699 | 12 | 1 | 6 days | 0.83 | | MPC | 2006 $SQ_{56}$ |
| 2006 $SS_{56}$ | 15.3 | 0.15 | 20060922 | 5.41298 | 308.72274 | 35.92713 | 14.78667 | 0.2746039 | 3.1719087 | 22 | 1 | 87 days | 0.56 | M-v 4 | MPC | 2006 $SS_{56}$ |
| 2006 $ST_{56}$ | 16.7 | 0.15 | 20060922 | 12.52201 | 270.84440 | 64.01693 | 7.68611 | 0.2538281 | 2.3013000 | 29 | 1 | 103 days | 0.33 | M-v 3 | MPC | 2006 $ST_{56}$ |
| 2006 $SV_{56}$ | 16.7 | 0.15 | 20060922 | 347.10931 | 243.92163 | 137.15540 | 13.52534 | 0.2823095 | 2.6252859 | 23 | 1 | 89 days | 0.52 | M-v 4 | MPC | 2006 $SV_{56}$ |
| 2006 $SW_{56}$ | 17.4 | 0.15 | 20060922 | 345.37571 | 297.52225 | 91.07804 | 6.50812 | 0.2074708 | 2.2488685 | 30 | 1 | 38 days | 0.54 | | MPC | 2006 $SW_{56}$ |
| 2006 $SX_{56}$ | 18.4 | 0.15 | 20060922 | 18.13977 | 273.98843 | 61.72948 | 7.08872 | 0.2429395 | 2.1925497 | 29 | 1 | 65 days | 0.57 | M-v 4 | MPC | 2006 $SX_{56}$ |
| 2006 $SY_{56}$ | 16.9 | 0.15 | 20060922 | 25.57698 | 229.32548 | 103.18844 | 7.48464 | 0.1625344 | 2.3256987 | 26 | 1 | 34 days | 0.53 | | MPC | 2006 $SY_{56}$ |
| 2006 $SB_{57}$ | 17.7 | 0.15 | 20060922 | 322.46632 | 61.55110 | 17.50216 | 8.55647 | 0.2511238 | 2.7213567 | 65 | 1 | 68 days | 0.35 | M-v 4 | MPC | 2006 $SB_{57}$ |
| 2006 $SD_{57}$ | 17.1 | 0.15 | 20061012 | 65.42946 | 286.39983 | 17.97833 | 9.18852 | 0.1367787 | 2.7515272 | 40 | 1 | 59 days | 0.27 | | MPC | 2006 $SD_{57}$ |
| 2006 $SH_{57}$ | 17.1 | 0.15 | 20060922 | 118.61334 | 260.64545 | 340.46880 | 6.40680 | 0.1277185 | 2.1942300 | 12 | 1 | 10 days | 0.32 | | MPC | 2006 $SH_{57}$ |
| 2006 $SL_{57}$ | 17.6 | 0.15 | 20060922 | 17.37561 | 158.01002 | 202.08043 | 4.95489 | 0.0811050 | 2.7820914 | 44 | 1 | 39 days | 0.37 | | MPC | 2006 $SL_{57}$ |
| 2006 $SO_{57}$ | 16.0 | 0.15 | 20060922 | 54.89486 | 330.77180 | 332.99327 | 14.16448 | 0.0901594 | 2.6955578 | 16 | 1 | 11 days | 0.49 | | MPC | 2006 $SO_{57}$ |
| 2006 $ST_{57}$ | 17.3 | 0.15 | 20060902 | 35.79918 | 334.17522 | 309.31709 | 15.14905 | 0.2127610 | 3.0000859 | 9 | 1 | 10 days | 0.18 | | MPC | 2006 $ST_{57}$ |
| 2006 $SW_{57}$ | 16.7 | 0.15 | 20060902 | 7.09775 | 46.55599 | 280.29175 | 7.78324 | 0.0763245 | 2.9481240 | 20 | 1 | 32 days | 0.49 | | MPC | 2006 $SW_{57}$ |
| 2006 $SZ_{57}$ | 14.6 | 0.15 | 20060922 | 332.40135 | 281.72483 | 129.06230 | 16.74272 | 0.2442142 | 3.1482122 | 28 | 1 | 25 days | 0.43 | | MPC | 2006 $SZ_{57}$ |
| 2006 $SA_{58}$ | 15.7 | 0.15 | 20060922 | 291.45615 | 182.04526 | 247.24436 | 9.50668 | 0.1867553 | 3.0899448 | 9 | 1 | 8 days | 0.99 | | MPC | 2006 $SA_{58}$ |
| 2006 $SB_{58}$ | 16.8 | 0.15 | 20060922 | 358.13359 | 116.90082 | 226.40089 | 9.94502 | 0.1401874 | 3.0568510 | 12 | 1 | 10 days | 0.33 | | MPC | 2006 $SB_{58}$ |
| 2006 $SG_{58}$ | 17.5 | 0.15 | 20060902 | 306.57734 | 104.10462 | 331.11550 | 27.94479 | 0.3813897 | 2.6046260 | 18 | 1 | 36 days | 0.14 | | MPC | 2006 $SG_{58}$ |
| 2006 $SH_{58}$ | 17.0 | 0.15 | 20060922 | 330.87375 | 71.48242 | 312.05789 | 10.29761 | 0.1903339 | 2.7582676 | 12 | 1 | 11 days | 0.18 | | MPC | 2006 $SH_{58}$ |
| 2006 $SL_{58}$ | 17.9 | 0.15 | 20060922 | 75.48037 | 18.15217 | 238.32654 | 5.73767 | 0.0781050 | 2.4492355 | 9 | 1 | 8 days | 0.27 | | MPC | 2006 $SL_{58}$ |
| 2006 $SO_{58}$ | 16.7 | 0.15 | 20060922 | 90.65595 | 356.45285 | 245.93623 | 8.33088 | 0.0626849 | 2.6890255 | 12 | 1 | 10 days | 0.17 | | MPC | 2006 $SO_{58}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SQ_{58}$ | 17.0 | 0.15 | 20060922 | 342.53761 | 169.51858 | 200.48072 | 14.38663 | 0.1945497 | 2.7479584 | 9 | 1 | 5 days | 0.09 | | MPC | 2006 $SQ_{58}$ |
| 2006 $SS_{58}$ | 15.8 | 0.15 | 20060922 | 277.01123 | 169.54483 | 258.38691 | 10.62975 | 0.0237184 | 3.2023843 | 9 | 1 | 7 days | 0.24 | | MPC | 2006 $SS_{58}$ |
| 2006 $ST_{58}$ | 16.9 | 0.15 | 20060922 | 10.02799 | 63.79263 | 267.16402 | 9.97800 | 0.1234346 | 3.1155617 | 12 | 1 | 10 days | 0.27 | | MPC | 2006 $ST_{58}$ |
| 2006 $SC_{59}$ | 17.2 | 0.15 | 20060902 | 351.90445 | 50.62542 | 314.37987 | 10.58716 | 0.2125536 | 2.5827490 | 25 | 1 | 27 days | 0.72 | | MPC | 2006 $SC_{59}$ |
| 2006 $SE_{59}$ | 14.8 | 0.15 | 20060922 | 266.80948 | 149.65374 | 315.91308 | 11.84667 | 0.1032259 | 3.2272744 | 29 | 1 | 60 days | 0.61 | M-v 5 | MPC | 2006 $SE_{59}$ |
| 2006 $SF_{59}$ | 17.7 | 0.15 | 20060922 | 317.37703 | 209.10211 | 198.16859 | 21.80791 | 0.0792891 | 1.9862216 | 33 | 1 | 60 days | 0.62 | M-v 4 | MPC | 2006 $SF_{59}$ |
| 2006 $SH_{59}$ | 15.9 | 0.15 | 20060922 | 41.74073 | 94.14288 | 204.88804 | 25.71935 | 0.1940739 | 3.1749869 | 18 | 1 | 37 days | 0.83 | | MPC | 2006 $SH_{59}$ |
| 2006 $SK_{59}$ | 15.7 | 0.15 | 20060922 | 349.15965 | 115.59310 | 267.13854 | 10.56215 | 0.2843359 | 3.1864504 | 20 | 1 | 52 days | 0.56 | | MPC | 2006 $SK_{59}$ |
| 2006 $SL_{59}$ | 17.2 | 0.15 | 20060922 | 0.40741 | 196.65823 | 169.73193 | 6.74475 | 0.2106954 | 2.2748994 | 52 | 1 | 64 days | 0.56 | M-v 4 | MPC | 2006 $SL_{59}$ |
| 2006 $SN_{59}$ | 17.4 | 0.15 | 20060922 | 3.43357 | 261.81495 | 106.40341 | 4.09766 | 0.1873456 | 2.2022361 | 47 | 1 | 69 days | 0.48 | M-v 4 | MPC | 2006 $SN_{59}$ |
| 2006 $SO_{59}$ | 17.1 | 0.15 | 20060922 | 31.43256 | 186.21678 | 136.67948 | 7.66698 | 0.2403034 | 2.2408246 | 33 | 1 | 61 days | 0.76 | M-v 5 | MPC | 2006 $SO_{59}$ |
| 2006 $SS_{59}$ | 16.5 | 0.15 | 20060922 | 28.94678 | 18.96848 | 297.24512 | 8.34294 | 0.1886412 | 2.7886305 | 15 | 1 | 30 days | 0.70 | | MPC | 2006 $SS_{59}$ |
| 2006 $SZ_{59}$ | 16.9 | 0.15 | 20060922 | 6.22300 | 222.98124 | 136.00124 | 7.46268 | 0.1253597 | 2.3233260 | 19 | 1 | 29 days | 0.54 | | MPC | 2006 $SZ_{59}$ |
| 2006 $SA_{60}$ | 16.1 | 0.15 | 20060922 | 39.06195 | 269.56718 | 38.51829 | 13.90295 | 0.2234346 | 2.6410489 | 16 | 1 | 8 days | 0.54 | | MPC | 2006 $SA_{60}$ |
| 2006 $SB_{60}$ | 15.5 | 0.15 | 20060922 | 332.98412 | 268.15672 | 144.53369 | 10.11830 | 0.2254843 | 3.0976434 | 34 | 1 | 40 days | 0.70 | | MPC | 2006 $SB_{60}$ |
| 2006 $SC_{60}$ | 17.0 | 0.15 | 20060922 | 1.09465 | 205.11202 | 162.14930 | 14.53174 | 0.2209999 | 2.6705227 | 21 | 1 | 34 days | 0.56 | | MPC | 2006 $SC_{60}$ |
| 2006 $SH_{60}$ | 15.7 | 0.15 | 20061012 | 304.77486 | 83.54661 | 21.38239 | 22.31595 | 0.3023512 | 3.1265779 | 38 | 1 | 56 days | 0.46 | | MPC | 2006 $SH_{60}$ |
| 2006 $SJ_{60}$ | 16.1 | 0.15 | 20060922 | 53.32835 | 262.53787 | 42.61244 | 9.82249 | 0.1368636 | 2.7615859 | 33 | 1 | 66 days | 0.55 | M-v 5 | MPC | 2006 $SJ_{60}$ |
| 2006 $SK_{60}$ | 15.4 | 0.15 | 20061012 | 10.98494 | 320.49485 | 40.12671 | 10.94284 | 0.2196462 | 3.1488369 | 63 | 1 | 54 days | 0.46 | | MPC | 2006 $SK_{60}$ |
| 2006 $SO_{60}$ | 16.4 | 0.15 | 20060922 | 321.62472 | 325.62726 | 108.22310 | 7.27262 | 0.2666176 | 2.8632526 | 24 | 1 | 40 days | 0.77 | | MPC | 2006 $SO_{60}$ |
| 2006 $SP_{60}$ | 17.2 | 0.15 | 20060922 | 19.08481 | 288.35997 | 50.13374 | 9.10689 | 0.2040127 | 2.2629434 | 31 | 1 | 66 days | 0.48 | M-v 4 | MPC | 2006 $SP_{60}$ |
| 2006 $SQ_{60}$ | 17.7 | 0.15 | 20060922 | 353.55550 | 277.22477 | 100.36006 | 6.26571 | 0.1742118 | 2.1986394 | 32 | 1 | 40 days | 0.66 | | MPC | 2006 $SQ_{60}$ |
| 2006 $SR_{60}$ | 15.8 | 0.15 | 20060922 | 348.36533 | 251.30909 | 138.82361 | 9.22793 | 0.2116427 | 2.7094248 | 31 | 1 | 40 days | 0.47 | | MPC | 2006 $SR_{60}$ |
| 2006 $SS_{60}$ | 16.1 | 0.15 | 20061012 | 9.62871 | 323.22093 | 37.08025 | 19.01874 | 0.2731557 | 3.1362218 | 44 | 1 | 56 days | 0.58 | | MPC | 2006 $SS_{60}$ |
| 2006 $SV_{60}$ | 16.2 | 0.15 | 20060922 | 28.41333 | 220.61441 | 107.08408 | 6.60684 | 0.2354976 | 2.6609913 | 29 | 1 | 40 days | 0.54 | | MPC | 2006 $SV_{60}$ |
| 2006 $SZ_{60}$ | 15.7 | 0.15 | 20060922 | 332.79805 | 8.05476 | 39.64894 | 15.33298 | 0.0952013 | 2.6655441 | 58 | 1 | 64 days | 0.66 | M-v 4 | MPC | 2006 $SZ_{60}$ |
| 2006 $SA_{61}$ | 15.9 | 0.15 | 20060922 | 5.75266 | 330.17831 | 36.39936 | 17.40490 | 0.2220558 | 3.1642317 | 38 | 1 | 73 days | 0.43 | M-v 4 | MPC | 2006 $SA_{61}$ |
| 2006 $SB_{61}$ | 17.4 | 0.15 | 20060922 | 19.81393 | 186.70710 | 151.91121 | 6.11383 | 0.2708758 | 2.3706038 | 47 | 1 | 40 days | 0.53 | | MPC | 2006 $SB_{61}$ |
| 2006 $SG_{61}$ | 16.3 | 0.15 | 20060922 | 38.48255 | 209.05882 | 99.57654 | 8.16650 | 0.2755817 | 2.6544502 | 31 | 1 | 39 days | 0.63 | | MPC | 2006 $SG_{61}$ |
| 2006 $SH_{61}$ | 17.4 | 0.15 | 20060922 | 294.10422 | 142.91984 | 299.69762 | 5.04594 | 0.1275804 | 2.2684852 | 28 | 1 | 3 days | 0.52 | | MPC | 2006 $SH_{61}$ |
| 2006 $SK_{61}$ | 26.1 | 0.15 | 20060922 | 355.60296 | 57.80261 | 308.97031 | 0.37004 | 0.2676543 | 1.3867119 | 48 | 1 | 4 days | 0.45 | M-v 6 | MPC | 2006 $SK_{61}$ |
| 2006 $SL_{61}$ | 15.8 | 0.15 | 20060922 | 33.13862 | 259.68359 | 72.62445 | 7.17735 | 0.0530709 | 2.7676342 | 29 | 1 | 34 days | 0.63 | | MPC | 2006 $SL_{61}$ |
| 2006 $SQ_{61}$ | 16.8 | 0.15 | 20060922 | 43.25359 | 65.88311 | 245.28921 | 6.75906 | 0.1465247 | 2.3338402 | 15 | 1 | 31 days | 0.55 | | MPC | 2006 $SQ_{61}$ |
| 2006 $ST_{61}$ | 17.3 | 0.15 | 20060922 | 334.62528 | 250.43475 | 155.43113 | 5.95065 | 0.1246160 | 2.2761738 | 21 | 1 | 41 days | 0.42 | | MPC | 2006 $ST_{61}$ |
| 2006 $SU_{61}$ | 17.7 | 0.15 | 20060922 | 36.35691 | 159.13473 | 166.61779 | 6.82176 | 0.1354071 | 2.3274027 | 13 | 1 | 17 days | 0.21 | | MPC | 2006 $SU_{61}$ |
| 2006 $SV_{61}$ | 17.7 | 0.15 | 20060922 | 18.41866 | 299.79400 | 27.76127 | 5.23856 | 0.2440323 | 2.5656239 | 33 | 1 | 78 days | 0.63 | M-v 4 | MPC | 2006 $SV_{61}$ |
| 2006 $SW_{61}$ | 17.5 | 0.15 | 20060922 | 22.34291 | 261.94025 | 63.33778 | 3.15893 | 0.2235553 | 2.3444217 | 28 | 1 | 60 days | 0.44 | M-v 5 | MPC | 2006 $SW_{61}$ |
| 2006 $SZ_{61}$ | 17.0 | 0.15 | 20060922 | 5.78039 | 222.24032 | 133.14518 | 5.20110 | 0.2228273 | 2.5675792 | 18 | 1 | 33 days | 0.49 | | MPC | 2006 $SZ_{61}$ |
| 2006 $SB_{62}$ | 15.5 | 0.15 | 20060922 | 351.78005 | 218.87073 | 160.59371 | 9.30646 | 0.1837159 | 3.0848690 | 48 | 1 | 40 days | 0.46 | | MPC | 2006 $SB_{62}$ |
| 2006 $SD_{62}$ | 17.5 | 0.15 | 20060922 | 52.01922 | 134.18449 | 175.83089 | 23.01693 | 0.0443781 | 1.8810637 | 21 | 1 | 34 days | 0.55 | | MPC | 2006 $SD_{62}$ |
| 2006 $SF_{62}$ | 17.8 | 0.15 | 20060922 | 36.39679 | 257.16868 | 58.28002 | 5.86559 | 0.1620739 | 2.2374561 | 15 | 1 | 8 days | 0.64 | | MPC | 2006 $SF_{62}$ |
| 2006 $SK_{62}$ | 17.1 | 0.15 | 20060922 | 328.11696 | 250.21176 | 168.02457 | 7.77412 | 0.2899317 | 2.7005696 | 24 | 1 | 28 days | 0.52 | | MPC | 2006 $SK_{62}$ |
| 2006 $SL_{62}$ | 17.7 | 0.15 | 20061012 | 13.24761 | 321.49185 | 28.19603 | 2.59423 | 0.2257166 | 2.4000261 | 55 | 1 | 54 days | 0.44 | | MPC | 2006 $SL_{62}$ |
| 2006 $SM_{62}$ | 17.4 | 0.15 | 20060922 | 33.99537 | 168.65359 | 148.99633 | 7.18153 | 0.1872605 | 2.2136865 | 32 | 1 | 35 days | 0.44 | | MPC | 2006 $SM_{62}$ |
| 2006 $SR_{62}$ | 17.6 | 0.15 | 20060922 | 21.41545 | 263.32387 | 71.02297 | 5.60651 | 0.2437569 | 2.4294920 | 38 | 1 | 34 days | 0.45 | | MPC | 2006 $SR_{62}$ |
| 2006 $SS_{62}$ | 17.2 | 0.15 | 20061012 | 359.80622 | 281.50909 | 96.76926 | 6.17984 | 0.1757581 | 2.3703386 | 39 | 1 | 59 days | 0.49 | | MPC | 2006 $SS_{62}$ |
| 2006 $ST_{62}$ | 15.8 | 0.15 | 20060922 | 16.65445 | 160.02338 | 187.80539 | 7.59833 | 0.1680562 | 3.0744454 | 38 | 1 | 63 days | 0.33 | M-v 4 | MPC | 2006 $ST_{62}$ |
| 2006 $SU_{62}$ | 16.3 | 0.15 | 20060922 | 283.05599 | 62.87345 | 32.20144 | 22.58064 | 0.0629314 | 2.6483888 | 28 | 1 | 60 days | 0.67 | M-v 5 | MPC | 2006 $SU_{62}$ |
| 2006 $SV_{62}$ | 15.9 | 0.15 | 20060922 | 5.45357 | 322.22620 | 37.25596 | 14.32305 | 0.2692939 | 2.6955535 | 68 | 1 | 64 days | 0.39 | M-v 3 | MPC | 2006 $SV_{62}$ |
| 2006 $SZ_{62}$ | 16.1 | 0.15 | 20060922 | 3.83615 | 299.82330 | 55.34359 | 5.97118 | 0.2601620 | 3.1933269 | 25 | 1 | 28 days | 0.43 | | MPC | 2006 $SZ_{62}$ |
| 2006 $SA_{63}$ | 16.4 | 0.15 | 20060922 | 24.80857 | 239.42117 | 87.12657 | 6.40889 | 0.3188172 | 3.1123020 | 25 | 1 | 40 days | 0.50 | | MPC | 2006 $SA_{63}$ |
| 2006 $SB_{63}$ | 17.1 | 0.15 | 20060922 | 329.08235 | 42.24421 | 26.47901 | 18.83644 | 0.2899364 | 2.7353456 | 48 | 1 | 60 days | 0.40 | M-v 4 | MPC | 2006 $SB_{63}$ |
| 2006 $SF_{63}$ | 16.0 | 0.15 | 20060922 | 18.30533 | 346.23132 | 351.10575 | 21.15625 | 0.2417623 | 3.1077091 | 30 | 1 | 56 days | 0.44 | | MPC | 2006 $SF_{63}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SG_{63}$ | 15.7 | 0.15 | 20060922 | 245.65748 | 169.33395 | 322.45207 | 9.11503 | 0.0916586 | 2.7672818 | 15 | 1 | 8 days | 0.63 | | | MPC | | 2006 $SG_{63}$ |
| 2006 $SH_{63}$ | 17.8 | 0.15 | 20060922 | 2.55686 | 149.94813 | 210.60649 | 10.98193 | 0.2474127 | 2.3782401 | 32 | 1 | 42 days | 0.49 | | | MPC | | 2006 $SH_{63}$ |
| 2006 $SJ_{63}$ | 15.6 | 0.15 | 20060922 | 344.08557 | 349.47155 | 49.26523 | 10.60395 | 0.2364614 | 3.1703865 | 73 | 1 | 65 days | 0.43 | M-v | 4 | MPC | | 2006 $SJ_{63}$ |
| 2006 $SL_{63}$ | 17.6 | 0.15 | 20060922 | 47.95962 | 304.42049 | 350.25249 | 6.81176 | 0.1555913 | 2.5457564 | 17 | 1 | 3 days | 0.50 | | E | MPC | | 2006 $SL_{63}$ |
| 2006 $SM_{63}$ | 17.4 | 0.15 | 20060922 | 29.83530 | 303.39142 | 350.30899 | 6.92271 | 0.3811131 | 3.1775330 | 18 | 1 | 3 days | 0.81 | | E | MPC | | 2006 $SM_{63}$ |
| 2006 $SO_{63}$ | 18.1 | 0.15 | 20060922 | 25.48403 | 10.67792 | 318.24645 | 1.16891 | 0.0615265 | 2.2227565 | 12 | 1 | 2 days | 0.59 | | | MPC | | 2006 $SO_{63}$ |
| 2006 $SR_{63}$ | 17.5 | 0.15 | 20060922 | 343.34963 | 256.39209 | 135.31029 | 3.03568 | 0.2180584 | 2.3286386 | 39 | 1 | 66 days | 0.54 | M-v | 4 | MPC | | 2006 $SR_{63}$ |
| 2006 $ST_{63}$ | 16.7 | 0.15 | 20060922 | 0.67609 | 211.09468 | 155.41518 | 5.63489 | 0.1120857 | 2.3387961 | 52 | 1 | 34 days | 0.44 | | | MPC | | 2006 $ST_{63}$ |
| 2006 $SU_{63}$ | 16.9 | 0.15 | 20060922 | 355.98362 | 208.25297 | 174.90774 | 12.69372 | 0.3102707 | 2.6803800 | 49 | 1 | 40 days | 0.58 | | | MPC | | 2006 $SU_{63}$ |
| 2006 $SY_{63}$ | 16.6 | 0.15 | 20060922 | 3.39228 | 306.53341 | 56.17863 | 3.25145 | 0.2343579 | 2.3675224 | 59 | 1 | 89 days | 0.46 | M-v | 4 | MPC | | 2006 $SY_{63}$ |
| 2006 $SA_{64}$ | 18.6 | 0.15 | 20060922 | 350.68361 | 223.90569 | 175.12692 | 24.73399 | 0.2533252 | 1.9694168 | 17 | 1 | 2 days | 0.65 | | | MPC | | 2006 $SA_{64}$ |
| 2006 $SB_{64}$ | 18.1 | 0.15 | 20060922 | 258.28742 | 329.44989 | 155.39149 | 21.15607 | 0.1405707 | 1.7981877 | 21 | 1 | 1 days | 0.47 | | | MPC | | 2006 $SB_{64}$ |
| 2006 $SC_{64}$ | 16.7 | 0.15 | 20060922 | 32.99584 | 270.99147 | 50.41155 | 22.03380 | 0.1946659 | 2.0601430 | 24 | 1 | 1 days | 0.58 | | | MPC | | 2006 $SC_{64}$ |
| 2006 $SD_{64}$ | 17.8 | 0.15 | 20060922 | 332.92203 | 252.99543 | 145.93749 | 23.74768 | 0.1289557 | 1.8903347 | 26 | 1 | 29 days | 0.40 | | | MPC | | 2006 $SD_{64}$ |
| 2006 $SE_{64}$ | 17.0 | 0.15 | 20061012 | 356.69078 | 163.39294 | 226.42339 | 0.64286 | 0.1237774 | 3.1919437 | 43 | 1 | 56 days | 0.36 | | | MPC | | 2006 $SE_{64}$ |
| 2006 $SG_{64}$ | 17.6 | 0.15 | 20060922 | 19.33819 | 134.60239 | 181.99034 | 23.76764 | 0.3240499 | 3.0779910 | 14 | 1 | 6 days | 0.40 | | | MPC | | 2006 $SG_{64}$ |
| 2006 $SJ_{64}$ | 15.4 | 0.15 | 20060922 | 328.34534 | 215.44196 | 196.91339 | 27.14173 | 0.1961695 | 3.1691498 | 51 | 1 | 76 days | 0.56 | M-v | 4 | MPC | | 2006 $SJ_{64}$ |
| 2006 $SK_{64}$ | 16.2 | 0.15 | 20060922 | 17.59656 | 103.59115 | 244.29391 | 11.15729 | 0.2282202 | 2.6273032 | 39 | 1 | 105 days | 0.39 | M-v | 4 | MPC | | 2006 $SK_{64}$ |
| 2006 $SM_{64}$ | 15.4 | 0.15 | 20061012 | 291.36522 | 254.93942 | 204.57041 | 15.93397 | 0.1371300 | 3.2140591 | 17 | 1 | 59 days | 0.16 | | | MPC | | 2006 $SM_{64}$ |
| 2006 $SO_{64}$ | 16.6 | 0.15 | 20060922 | 28.34951 | 167.64152 | 159.07991 | 5.27625 | 0.0404969 | 2.8023506 | 20 | 1 | 64 days | 0.41 | M-v | 4 | MPC | | 2006 $SO_{64}$ |
| 2006 $SR_{64}$ | 16.1 | 0.15 | 20060922 | 356.07901 | 144.68707 | 224.31020 | 13.51679 | 0.0909707 | 3.1528408 | 14 | 1 | 32 days | 0.43 | | | MPC | | 2006 $SR_{64}$ |
| 2006 $ST_{64}$ | 17.3 | 0.15 | 20060922 | 349.85493 | 110.22839 | 268.63591 | 8.30358 | 0.1580121 | 3.1137238 | 21 | 1 | 32 days | 0.38 | | | MPC | | 2006 $ST_{64}$ |
| 2006 $SX_{64}$ | 16.9 | 0.15 | 20060922 | 297.45847 | 199.84769 | 234.08555 | 11.50903 | 0.0611428 | 2.9727115 | 9 | 1 | 3 days | 0.36 | | | MPC | | 2006 $SX_{64}$ |
| 2006 $SZ_{64}$ | 17.1 | 0.15 | 20060922 | 47.72538 | 71.64616 | 238.02531 | 7.02985 | 0.1803575 | 3.3898268 | 11 | 1 | 4 days | 0.31 | | E | MPC | | 2006 $SZ_{64}$ |
| 2006 $SA_{65}$ | 18.3 | 0.15 | 20060922 | 335.85419 | 39.35339 | 0.86850 | 6.98234 | 0.1290268 | 2.3922697 | 15 | 1 | 11 days | 0.24 | | | MPC | | 2006 $SA_{65}$ |
| 2006 $SB_{65}$ | 18.2 | 0.15 | 20060922 | 68.81133 | 282.46902 | 4.40301 | 9.86965 | 0.1322573 | 2.6105627 | 15 | 1 | 11 days | 0.34 | | | MPC | | 2006 $SB_{65}$ |
| 2006 $SC_{65}$ | 17.1 | 0.15 | 20060922 | 295.61150 | 226.29926 | 233.16794 | 1.54305 | 0.2056575 | 3.0422076 | 12 | 1 | 9 days | 0.80 | | | MPC | | 2006 $SC_{65}$ |
| 2006 $SD_{65}$ | 17.1 | 0.15 | 20061012 | 308.82795 | 86.66539 | 357.05117 | 3.53361 | 0.1637008 | 3.2015722 | 33 | 1 | 57 days | 0.35 | | | MPC | | 2006 $SD_{65}$ |
| 2006 $SE_{65}$ | 18.5 | 0.15 | 20060922 | 355.42654 | 9.19850 | 359.80326 | 3.75358 | 0.2316384 | 2.4649087 | 13 | 1 | 37 days | 0.13 | | | MPC | | 2006 $SE_{65}$ |
| 2006 $SF_{65}$ | 15.9 | 0.15 | 20060922 | 120.69873 | 114.30593 | 116.23694 | 0.89025 | 0.1303370 | 3.0917408 | 17 | 1 | 11 days | 0.28 | | | MPC | | 2006 $SF_{65}$ |
| 2006 $SG_{65}$ | 20.3 | 0.15 | 20060902 | 352.56387 | 351.68353 | 11.35568 | 2.80682 | 0.2308140 | 2.1442402 | 10 | 1 | 10 days | 0.20 | | | MPC | | 2006 $SG_{65}$ |
| 2006 $SH_{65}$ | 17.2 | 0.15 | 20060922 | 36.43574 | 125.09607 | 185.08300 | 7.06258 | 0.1123375 | 2.7679689 | 14 | 1 | 41 days | 0.45 | | | MPC | | 2006 $SH_{65}$ |
| 2006 $SL_{65}$ | 16.8 | 0.15 | 20060922 | 292.20530 | 279.73601 | 185.12951 | 23.73544 | 0.2873141 | 2.7439154 | 24 | 1 | 26 days | 0.42 | | | MPC | | 2006 $SL_{65}$ |
| 2006 $SP_{65}$ | 17.5 | 0.15 | 20060922 | 353.94245 | 192.90824 | 194.51111 | 13.38771 | 0.1053129 | 2.6061734 | 15 | 1 | 33 days | 0.18 | | | MPC | | 2006 $SP_{65}$ |
| 2006 $SQ_{65}$ | 18.3 | 0.15 | 20060922 | 0.88098 | 181.56294 | 191.98643 | 13.34464 | 0.2761704 | 2.6032484 | 20 | 1 | 33 days | 0.49 | | | MPC | | 2006 $SQ_{65}$ |
| 2006 $ST_{65}$ | 16.4 | 0.15 | 20060922 | 358.99463 | 40.26771 | 297.06881 | 8.48893 | 0.1206005 | 3.2014629 | 18 | 1 | 9 days | 0.19 | | | MPC | | 2006 $ST_{65}$ |
| 2006 $SU_{65}$ | 16.0 | 0.15 | 20060922 | 289.46566 | 113.32194 | 303.77741 | 10.14182 | 0.1022870 | 3.2008019 | 12 | 1 | 9 days | 0.16 | | | MPC | | 2006 $SU_{65}$ |
| 2006 $SW_{65}$ | 17.6 | 0.15 | 20060902 | 356.70474 | 155.61759 | 181.16797 | 10.79664 | 0.1553230 | 2.7091409 | 13 | 1 | 30 days | 0.31 | | | MPC | | 2006 $SW_{65}$ |
| 2006 $SX_{65}$ | 19.6 | 0.15 | 20060922 | 340.39080 | 166.02851 | 217.23263 | 4.83075 | 0.3108032 | 2.2711364 | 12 | 1 | 9 days | 0.18 | | | MPC | | 2006 $SX_{65}$ |
| 2006 $SY_{65}$ | 18.0 | 0.15 | 20060922 | 339.14801 | 84.43216 | 283.97566 | 6.17345 | 0.1409443 | 2.5298237 | 9 | 1 | 7 days | 0.83 | | | MPC | | 2006 $SY_{65}$ |
| 2006 $SZ_{65}$ | 18.5 | 0.15 | 20060922 | 56.65348 | 296.84446 | 313.00490 | 8.93380 | 0.3206379 | 2.1386501 | 9 | 1 | 6 days | 0.20 | | | MPC | | 2006 $SZ_{65}$ |
| 2006 $SA_{66}$ | 15.9 | 0.15 | 20060902 | 6.89317 | 78.25510 | 246.27903 | 6.08330 | 0.1377294 | 3.1727913 | 22 | 1 | 32 days | 0.22 | | | MPC | | 2006 $SA_{66}$ |
| 2006 $SB_{66}$ | 17.7 | 0.15 | 20060922 | 324.24160 | 62.50993 | 354.04192 | 12.40201 | 0.2690493 | 2.6617960 | 16 | 1 | 35 days | 0.40 | | | MPC | | 2006 $SB_{66}$ |
| 2006 $SG_{66}$ | 16.2 | 0.15 | 20060922 | 187.55472 | 186.30367 | 351.69801 | 4.46782 | 0.2251876 | 2.6985453 | 13 | 1 | 8 days | 0.70 | | | MPC | | 2006 $SG_{66}$ |
| 2006 $SH_{66}$ | 17.1 | 0.15 | 20060922 | 349.61119 | 173.76489 | 202.59501 | 1.07233 | 0.1439648 | 2.9143180 | 9 | 1 | 8 days | 0.18 | | | MPC | | 2006 $SH_{66}$ |
| 2006 $SJ_{66}$ | 17.2 | 0.15 | 20060922 | 50.00849 | 314.90311 | 344.90142 | 2.01524 | 0.1318861 | 2.6654632 | 13 | 1 | 8 days | 0.22 | | | MPC | | 2006 $SJ_{66}$ |
| 2006 $SM_{66}$ | 17.7 | 0.15 | 20060922 | 117.07744 | 255.50909 | 333.65959 | 1.05962 | 0.1902871 | 2.3401855 | 10 | 1 | 7 days | 0.35 | | | MPC | | 2006 $SM_{66}$ |
| 2006 $SN_{66}$ | 15.8 | 0.15 | 20060922 | 305.92930 | 241.43486 | 185.89863 | 11.33102 | 0.0919472 | 3.1366114 | 17 | 1 | 32 days | 0.21 | | | MPC | | 2006 $SN_{66}$ |
| 2006 $SO_{66}$ | 18.7 | 0.15 | 20060922 | 341.30617 | 236.00805 | 156.30279 | 0.41352 | 0.2247676 | 2.4233993 | 27 | 1 | 31 days | 0.23 | | | MPC | | 2006 $SO_{66}$ |
| 2006 $SQ_{66}$ | 17.6 | 0.15 | 20060922 | 85.32661 | 273.77996 | 358.57731 | 3.28216 | 0.0512318 | 2.3306332 | 21 | 1 | 39 days | 0.31 | | | MPC | | 2006 $SQ_{66}$ |
| 2006 $SR_{66}$ | 19.8 | 0.15 | 20060922 | 357.51407 | 6.37923 | 0.86167 | 4.84125 | 0.2490898 | 2.5626325 | 14 | 1 | 13 days | 0.29 | | | MPC | | 2006 $SR_{66}$ |
| 2006 $SS_{66}$ | 19.5 | 0.15 | 20060922 | 338.53772 | 216.40254 | 182.63109 | 5.51620 | 0.2509797 | 2.4150238 | 13 | 1 | 8 days | 0.39 | | | MPC | | 2006 $SS_{66}$ |
| 2006 $ST_{66}$ | 16.8 | 0.15 | 20060922 | 323.38151 | 47.20538 | 5.59065 | 7.61549 | 0.1473322 | 3.0879532 | 14 | 1 | 13 days | 0.35 | | | MPC | | 2006 $ST_{66}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SU_{66}$ | 19.2 | 0.15 | 20060922 | 330.07247 | 227.72037 | 181.65543 | 2.07469 | 0.2204687 | 2.3622738 | 17 | 1 | 32 days | 0.23 | | | MPC | 2006 $SU_{66}$ |
| 2006 $SV_{66}$ | 18.9 | 0.15 | 20060922 | 303.55731 | 259.57639 | 186.24313 | 0.83576 | 0.2340429 | 2.3380931 | 13 | 1 | 8 days | 0.63 | | | MPC | 2006 $SV_{66}$ |
| 2006 $SW_{66}$ | 17.7 | 0.15 | 20061012 | 36.45743 | 157.86495 | 161.75346 | 1.44643 | 0.1739948 | 2.4176739 | 28 | 1 | 58 days | 0.35 | | | MPC | 2006 $SW_{66}$ |
| 2006 $SX_{66}$ | 18.7 | 0.15 | 20060922 | 6.75360 | 178.86281 | 176.13386 | 2.06012 | 0.1069395 | 2.2121718 | 23 | 1 | 62 days | 0.30 | M-v | 4 | MPC | 2006 $SX_{66}$ |
| 2006 $SY_{66}$ | 17.7 | 0.15 | 20060922 | 302.60383 | 241.93258 | 182.18203 | 5.59416 | 0.0180625 | 2.7830632 | 10 | 1 | 6 days | 0.27 | | | MPC | 2006 $SY_{66}$ |
| 2006 $SZ_{66}$ | 15.8 | 0.15 | 20060922 | 135.48263 | 39.64486 | 183.59353 | 14.33956 | 0.0930312 | 3.1473304 | 17 | 1 | 8 days | 0.34 | | | MPC | 2006 $SZ_{66}$ |
| 2006 $SB_{67}$ | 18.4 | 0.15 | 20060922 | 336.74920 | 42.89117 | 4.78562 | 6.35391 | 0.3063667 | 2.7349222 | 23 | 1 | 33 days | 0.52 | | | MPC | 2006 $SB_{67}$ |
| 2006 $SC_{67}$ | 17.0 | 0.15 | 20060922 | 274.16628 | 89.33380 | 8.49488 | 9.44234 | 0.0569257 | 3.0463603 | 20 | 1 | 27 days | 0.35 | | | MPC | 2006 $SC_{67}$ |
| 2006 $SD_{67}$ | 18.8 | 0.15 | 20060922 | 316.16269 | 34.98994 | 20.06230 | 2.36089 | 0.0856436 | 2.2345816 | 13 | 1 | 8 days | 0.68 | | | MPC | 2006 $SD_{67}$ |
| 2006 $SF_{67}$ | 18.6 | 0.15 | 20060922 | 310.64972 | 84.21916 | 6.01925 | 11.41660 | 0.3296250 | 2.6508342 | 13 | 1 | 6 days | 0.21 | | | MPC | 2006 $SF_{67}$ |
| 2006 $SG_{67}$ | 17.0 | 0.15 | 20060922 | 307.85202 | 250.76266 | 177.47165 | 2.32075 | 0.1081641 | 2.8846143 | 16 | 1 | 8 days | 0.52 | | | MPC | 2006 $SG_{67}$ |
| 2006 $SJ_{67}$ | 15.4 | 0.15 | 20060922 | 337.50344 | 211.31748 | 183.57742 | 13.78878 | 0.1130545 | 3.9006347 | 17 | 1 | 8 days | 0.49 | | | MPC | 2006 $SJ_{67}$ |
| 2006 $SK_{67}$ | 16.2 | 0.15 | 20060922 | 244.98093 | 303.14506 | 184.46735 | 13.02096 | 0.0614364 | 3.0151001 | 16 | 1 | 8 days | 0.56 | | | MPC | 2006 $SK_{67}$ |
| 2006 $SL_{67}$ | 16.6 | 0.15 | 20060922 | 199.34180 | 144.58181 | 27.69031 | 3.02361 | 0.1708674 | 2.8371207 | 13 | 1 | 8 days | 0.63 | | | MPC | 2006 $SL_{67}$ |
| 2006 $SM_{67}$ | 18.7 | 0.15 | 20061012 | 358.70243 | 196.35868 | 178.58663 | 4.36044 | 0.2474765 | 2.4635831 | 23 | 1 | 59 days | 0.47 | | | MPC | 2006 $SM_{67}$ |
| 2006 $SN_{67}$ | 17.0 | 0.15 | 20060922 | 74.77540 | 254.17341 | 33.04346 | 1.75886 | 0.0378921 | 3.0496156 | 10 | 1 | 7 days | 0.43 | | E | MPC | 2006 $SN_{67}$ |
| 2006 $SO_{67}$ | 16.7 | 0.15 | 20060922 | 25.44047 | 322.61849 | 10.96411 | 5.40056 | 0.1250436 | 3.1528725 | 28 | 1 | 39 days | 0.45 | | | MPC | 2006 $SO_{67}$ |
| 2006 $SR_{67}$ | 17.6 | 0.15 | 20060922 | 337.45772 | 31.49820 | 9.65793 | 9.02184 | 0.2212427 | 2.9757006 | 15 | 1 | 13 days | 0.21 | | | MPC | 2006 $SR_{67}$ |
| 2006 $ST_{67}$ | 17.2 | 0.15 | 20060922 | 306.52075 | 243.04323 | 182.40723 | 11.03394 | 0.1749484 | 2.5395363 | 14 | 1 | 13 days | 0.46 | | | MPC | 2006 $ST_{67}$ |
| 2006 $SV_{67}$ | 19.6 | 0.15 | 20060922 | 16.41413 | 229.08935 | 109.13727 | 1.15434 | 0.1957981 | 2.1262510 | 9 | 1 | 8 days | 0.27 | | | MPC | 2006 $SV_{67}$ |
| 2006 $SW_{67}$ | 16.8 | 0.15 | 20060922 | 50.93569 | 156.54751 | 150.53890 | 2.87060 | 0.0707600 | 2.6287160 | 16 | 1 | 28 days | 0.51 | | | MPC | 2006 $SW_{67}$ |
| 2006 $SX_{67}$ | 18.4 | 0.15 | 20060922 | 333.36236 | 359.53568 | 36.22284 | 3.00882 | 0.0874224 | 2.4643292 | 11 | 1 | 30 days | 0.28 | | | MPC | 2006 $SX_{67}$ |
| 2006 $SZ_{67}$ | 16.0 | 0.15 | 20060922 | 202.23203 | 352.10542 | 177.95443 | 13.48642 | 0.1484488 | 3.0711505 | 9 | 1 | 8 days | 0.77 | | | MPC | 2006 $SZ_{67}$ |
| 2006 $SA_{68}$ | 17.2 | 0.15 | 20060922 | 333.97047 | 13.00811 | 27.85966 | 5.34535 | 0.1628697 | 2.7959057 | 12 | 1 | 33 days | 0.16 | | | MPC | 2006 $SA_{68}$ |
| 2006 $SC_{68}$ | 19.1 | 0.15 | 20060922 | 21.54496 | 185.46805 | 150.02715 | 2.77859 | 0.1365118 | 2.1471718 | 16 | 1 | 63 days | 0.35 | M-v | 5 D | MPC | 2006 $SC_{68}$ |
| 2006 $SF_{68}$ | 17.4 | 0.15 | 20060922 | 26.89894 | 317.57230 | 9.37093 | 15.10669 | 0.1680676 | 2.4775716 | 28 | 1 | 42 days | 0.34 | | | MPC | 2006 $SF_{68}$ |
| 2006 $SG_{68}$ | 19.3 | 0.15 | 20060922 | 247.64567 | 119.14727 | 7.97920 | 23.17749 | 0.1090129 | 1.9482918 | 9 | 1 | 8 days | 0.36 | | | MPC | 2006 $SG_{68}$ |
| 2006 $SH_{68}$ | 18.7 | 0.15 | 20060922 | 9.14244 | 321.12373 | 32.08883 | 3.20717 | 0.1108953 | 2.3570355 | 19 | 1 | 26 days | 0.32 | | | MPC | 2006 $SH_{68}$ |
| 2006 $SJ_{68}$ | 18.1 | 0.15 | 20060922 | 25.86839 | 326.50847 | 349.73740 | 1.31702 | 0.2044476 | 2.3118316 | 15 | 1 | 6 days | 0.49 | | | MPC | 2006 $SJ_{68}$ |
| 2006 $SL_{68}$ | 15.4 | 0.15 | 20060922 | 7.55973 | 334.68031 | 11.30049 | 3.47474 | 0.1462293 | 3.8509372 | 11 | 1 | 7 days | 0.61 | | | MPC | 2006 $SL_{68}$ |
| 2006 $SN_{68}$ | 16.5 | 0.15 | 20060922 | 325.69994 | 280.63317 | 122.73945 | 1.16949 | 0.0759010 | 2.8041266 | 18 | 1 | 34 days | 0.31 | | | MPC | 2006 $SN_{68}$ |
| 2006 $SQ_{68}$ | 15.3 | 0.15 | 20060922 | 226.89005 | 322.15220 | 180.63868 | 19.47134 | 0.0570070 | 3.1739855 | 13 | 1 | 8 days | 0.68 | | | MPC | 2006 $SQ_{68}$ |
| 2006 $SR_{68}$ | 18.2 | 0.15 | 20060922 | 10.54550 | 341.41077 | 6.46621 | 13.68410 | 0.1998095 | 2.7502762 | 21 | 1 | 33 days | 0.41 | | | MPC | 2006 $SR_{68}$ |
| 2006 $SS_{68}$ | 18.2 | 0.15 | 20060922 | 41.73902 | 267.81489 | 32.17052 | 3.00466 | 0.2269439 | 2.2827914 | 16 | 1 | 31 days | 0.16 | | | MPC | 2006 $SS_{68}$ |
| 2006 $ST_{68}$ | 16.8 | 0.15 | 20060922 | 315.31373 | 239.40962 | 176.50537 | 10.58133 | 0.0693061 | 3.0454130 | 9 | 1 | 8 days | 0.93 | | | MPC | 2006 $ST_{68}$ |
| 2006 $SU_{68}$ | 18.4 | 0.15 | 20060922 | 17.10197 | 296.12806 | 37.45713 | 2.29199 | 0.2746499 | 3.0347910 | 9 | 1 | 11 days | 0.16 | | | MPC | 2006 $SU_{68}$ |
| 2006 $SV_{68}$ | 18.8 | 0.15 | 20060922 | 288.11533 | 269.91690 | 168.68462 | 2.41905 | 0.0399114 | 2.3298422 | 10 | 1 | 7 days | 0.42 | | | MPC | 2006 $SV_{68}$ |
| 2006 $SW_{68}$ | 16.8 | 0.15 | 20060922 | 194.57702 | 2.58431 | 169.32976 | 4.54508 | 0.1402491 | 2.7301844 | 14 | 1 | 7 days | 0.26 | | | MPC | 2006 $SW_{68}$ |
| 2006 $SX_{68}$ | 16.5 | 0.15 | 20060922 | 36.63967 | 147.84848 | 178.04449 | 5.09700 | 0.0107602 | 3.0563236 | 20 | 1 | 37 days | 0.34 | | | MPC | 2006 $SX_{68}$ |
| 2006 $SY_{68}$ | 16.8 | 0.15 | 20060922 | 239.68761 | 123.14312 | 8.49902 | 4.91112 | 0.0897101 | 2.6304428 | 17 | 1 | 38 days | 0.28 | | | MPC | 2006 $SY_{68}$ |
| 2006 $SZ_{68}$ | 19.0 | 0.15 | 20060922 | 53.05271 | 119.21381 | 179.32178 | 7.67916 | 0.1085866 | 2.2633985 | 17 | 1 | 8 days | 0.37 | | | MPC | 2006 $SZ_{68}$ |
| 2006 $SA_{69}$ | 18.0 | 0.15 | 20060922 | 328.10684 | 238.43354 | 171.73801 | 2.55015 | 0.2062606 | 2.7011805 | 21 | 1 | 33 days | 0.29 | | | MPC | 2006 $SA_{69}$ |
| 2006 $SC_{69}$ | 17.8 | 0.15 | 20060922 | 336.78310 | 255.00253 | 135.33234 | 1.42460 | 0.0812032 | 2.9185786 | 13 | 1 | 8 days | 0.52 | | | MPC | 2006 $SC_{69}$ |
| 2006 $SD_{69}$ | 16.0 | 0.15 | 20060922 | 186.52339 | 174.08714 | 6.04332 | 16.36695 | 0.2761559 | 2.9039222 | 9 | 1 | 8 days | 0.61 | | | MPC | 2006 $SD_{69}$ |
| 2006 $SE_{69}$ | 18.1 | 0.15 | 20060922 | 50.65935 | 273.77344 | 9.99535 | 6.38600 | 0.2664484 | 2.9064273 | 10 | 1 | 7 days | 0.21 | | | MPC | 2006 $SE_{69}$ |
| 2006 $SF_{69}$ | 19.2 | 0.15 | 20060922 | 3.75642 | 349.69003 | 7.29795 | 7.50529 | 0.1329248 | 2.1752618 | 21 | 1 | 34 days | 0.37 | | | MPC | 2006 $SF_{69}$ |
| 2006 $SG_{69}$ | 16.7 | 0.15 | 20060922 | 282.71679 | 291.77990 | 168.30833 | 2.79403 | 0.1646415 | 3.1630686 | 17 | 1 | 8 days | 0.61 | | | MPC | 2006 $SG_{69}$ |
| 2006 $SH_{69}$ | 16.6 | 0.15 | 20060922 | 324.52487 | 21.03012 | 28.32700 | 2.84280 | 0.1377521 | 3.0413232 | 19 | 1 | 22 days | 0.30 | | | MPC | 2006 $SH_{69}$ |
| 2006 $SJ_{69}$ | 17.2 | 0.15 | 20060922 | 64.79872 | 112.78224 | 164.00859 | 2.76666 | 0.1950768 | 2.9709004 | 13 | 1 | 8 days | 0.25 | | | MPC | 2006 $SJ_{69}$ |
| 2006 $SK_{69}$ | 18.6 | 0.15 | 20060922 | 226.80760 | 129.06408 | 12.09406 | 4.72314 | 0.0644859 | 2.2025291 | 9 | 1 | 7 days | 0.62 | | | MPC | 2006 $SK_{69}$ |
| 2006 $SM_{69}$ | 17.1 | 0.15 | 20060922 | 79.16938 | 268.66484 | 13.97855 | 3.62529 | 0.0171927 | 2.7834261 | 13 | 1 | 8 days | 0.35 | | | MPC | 2006 $SM_{69}$ |
| 2006 $SN_{69}$ | 18.2 | 0.15 | 20060922 | 340.99330 | 221.38424 | 168.18893 | 2.77495 | 0.1713779 | 2.2988258 | 21 | 1 | 118 days | 0.22 | M-v | 3 | MPC | 2006 $SN_{69}$ |
| 2006 $SP_{69}$ | 17.4 | 0.15 | 20060922 | 195.94954 | 157.82885 | 14.66499 | 4.57012 | 0.1842708 | 2.2928154 | 10 | 1 | 7 days | 0.58 | | | MPC | 2006 $SP_{69}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SQ_{69}$ | 17.2 | 0.15 | 20060922 | 58.30104 | 100.22492 | 184.97585 | 8.82803 | 0.1889584 | 2.5656456 | 14 | 1 | 8 days | 0.61 | | MPC | 2006 $SQ_{69}$ |
| 2006 $SR_{69}$ | 19.3 | 0.15 | 20060922 | 0.69352 | 355.88150 | 5.62325 | 2.62572 | 0.2457804 | 2.3071113 | 28 | 1 | 61 days | 0.33 | M-v 4 | MPC | 2006 $SR_{69}$ |
| 2006 $SS_{69}$ | 16.2 | 0.15 | 20060922 | 246.58041 | 115.40477 | 7.75557 | 14.89695 | 0.0498081 | 2.8413479 | 11 | 1 | 7 days | 0.74 | | MPC | 2006 $SS_{69}$ |
| 2006 $ST_{69}$ | 17.7 | 0.15 | 20060922 | 338.20012 | 240.69956 | 152.36664 | 1.54591 | 0.1471774 | 2.5357095 | 21 | 1 | 36 days | 0.39 | | MPC | 2006 $ST_{69}$ |
| 2006 $SU_{69}$ | 19.3 | 0.15 | 20060922 | 347.09600 | 15.88517 | 2.96466 | 20.65865 | 0.1197195 | 1.8801562 | 13 | 1 | 12 days | 0.35 | | MPC | 2006 $SU_{69}$ |
| 2006 $SV_{69}$ | 18.2 | 0.15 | 20060922 | 61.83459 | 113.68759 | 169.29684 | 3.69794 | 0.1832837 | 2.3228048 | 26 | 1 | 8 days | 0.28 | | MPC | 2006 $SV_{69}$ |
| 2006 $SZ_{69}$ | 17.3 | 0.15 | 20061012 | 24.58344 | 319.84447 | 35.30893 | 2.35567 | 0.0791730 | 2.8665422 | 31 | 1 | 52 days | 0.30 | | MPC | 2006 $SZ_{69}$ |
| 2006 $SA_{70}$ | 17.5 | 0.15 | 20060922 | 23.90644 | 322.38287 | 26.30571 | 4.94068 | 0.0924466 | 2.5314765 | 25 | 1 | 42 days | 0.35 | | MPC | 2006 $SA_{70}$ |
| 2006 $SB_{70}$ | 17.2 | 0.15 | 20060922 | 19.47737 | 190.08958 | 162.76929 | 1.54352 | 0.1528415 | 3.1686099 | 12 | 1 | 12 days | 0.32 | | MPC | 2006 $SB_{70}$ |
| 2006 $SD_{70}$ | 17.9 | 0.15 | 20060922 | 358.51089 | 247.08999 | 133.26499 | 1.28115 | 0.0834697 | 2.7597407 | 15 | 1 | 24 days | 0.25 | | MPC | 2006 $SD_{70}$ |
| 2006 $SF_{70}$ | 16.9 | 0.15 | 20061012 | 310.75650 | 313.04754 | 133.61757 | 1.75952 | 0.1363683 | 3.1383370 | 23 | 1 | 58 days | 0.22 | | MPC | 2006 $SF_{70}$ |
| 2006 $SG_{70}$ | 16.5 | 0.15 | 20061012 | 23.60668 | 330.12498 | 27.25773 | 11.05071 | 0.0685098 | 3.1649510 | 26 | 1 | 55 days | 0.26 | | MPC | 2006 $SG_{70}$ |
| 2006 $SH_{70}$ | 16.3 | 0.15 | 20060922 | 63.24406 | 244.92573 | 57.46759 | 1.86604 | 0.1388744 | 3.1578508 | 22 | 1 | 42 days | 0.26 | | MPC | 2006 $SH_{70}$ |
| 2006 $SJ_{70}$ | 16.8 | 0.15 | 20060922 | 6.09136 | 191.87254 | 179.78172 | 4.33095 | 0.0842582 | 2.7700352 | 17 | 1 | 60 days | 0.25 | M-v 4 | MPC | 2006 $SJ_{70}$ |
| 2006 $SK_{70}$ | 17.6 | 0.15 | 20060922 | 15.55527 | 167.17195 | 190.24897 | 10.27128 | 0.1439793 | 2.7868550 | 13 | 1 | 32 days | 0.14 | | MPC | 2006 $SK_{70}$ |
| 2006 $SM_{70}$ | 16.7 | 0.15 | 20060922 | 31.41872 | 306.05291 | 36.92752 | 5.01114 | 0.0766654 | 2.8575369 | 12 | 1 | 12 days | 0.41 | | MPC | 2006 $SM_{70}$ |
| 2006 $SN_{70}$ | 16.0 | 0.15 | 20060922 | 308.42470 | 300.81972 | 148.74010 | 1.36234 | 0.1692714 | 3.1632701 | 18 | 1 | 28 days | 0.32 | | MPC | 2006 $SN_{70}$ |
| 2006 $SP_{70}$ | 18.7 | 0.15 | 20060922 | 322.00089 | 250.98810 | 173.87334 | 3.00157 | 0.1347979 | 2.2397054 | 12 | 1 | 12 days | 0.21 | | MPC | 2006 $SP_{70}$ |
| 2006 $SR_{70}$ | 18.9 | 0.15 | 20060922 | 35.51512 | 170.21423 | 152.87984 | 1.32884 | 0.2133674 | 2.4303793 | 16 | 1 | 28 days | 0.37 | | MPC | 2006 $SR_{70}$ |
| 2006 $SV_{70}$ | 17.6 | 0.15 | 20060922 | 269.90232 | 76.28724 | 56.61848 | 2.02752 | 0.2262015 | 2.1466028 | 9 | 1 | 8 days | 0.62 | | MPC | 2006 $SV_{70}$ |
| 2006 $SW_{70}$ | 16.9 | 0.15 | 20060922 | 1.63198 | 186.59672 | 191.66322 | 7.80415 | 0.0443074 | 2.7433087 | 19 | 1 | 42 days | 0.34 | | MPC | 2006 $SW_{70}$ |
| 2006 $SX_{70}$ | 15.6 | 0.15 | 20060922 | 25.72588 | 145.02199 | 196.11768 | 13.81367 | 0.2341663 | 3.9999819 | 19 | 1 | 42 days | 0.28 | | MPC | 2006 $SX_{70}$ |
| 2006 $SB_{71}$ | 16.8 | 0.15 | 20060922 | 266.86373 | 292.27710 | 186.08594 | 6.60936 | 0.0527417 | 2.4496850 | 24 | 1 | 60 days | 0.38 | M-v 4 | MPC | 2006 $SB_{71}$ |
| 2006 $SC_{71}$ | 18.0 | 0.15 | 20060922 | 338.92198 | 251.67875 | 155.63916 | 2.12949 | 0.2074345 | 2.2992273 | 37 | 1 | 60 days | 0.25 | M-v 4 | MPC | 2006 $SC_{71}$ |
| 2006 $SD_{71}$ | 16.8 | 0.15 | 20061012 | 302.95903 | 287.19646 | 159.64618 | 2.30175 | 0.0486891 | 2.7500917 | 16 | 1 | 58 days | 0.19 | | MPC | 2006 $SD_{71}$ |
| 2006 $SF_{71}$ | 17.4 | 0.15 | 20061012 | 45.50510 | 254.38700 | 72.24218 | 2.11043 | 0.1312931 | 2.5749674 | 22 | 1 | 53 days | 0.44 | | MPC | 2006 $SF_{71}$ |
| 2006 $SG_{71}$ | 17.4 | 0.15 | 20060922 | 309.09216 | 274.78994 | 160.34581 | 2.97317 | 0.0608334 | 2.4176507 | 23 | 1 | 60 days | 0.22 | M-v 4 | MPC | 2006 $SG_{71}$ |
| 2006 $SH_{71}$ | 18.9 | 0.15 | 20060922 | 359.52302 | 241.16193 | 134.42771 | 1.29886 | 0.1799377 | 2.2323646 | 28 | 1 | 62 days | 0.27 | M-v 4 | MPC | 2006 $SH_{71}$ |
| 2006 $SK_{71}$ | 19.0 | 0.15 | 20060922 | 15.84370 | 191.13831 | 157.92887 | 2.58192 | 0.2291012 | 2.3218959 | 23 | 1 | 42 days | 0.21 | | MPC | 2006 $SK_{71}$ |
| 2006 $SL_{71}$ | 17.9 | 0.15 | 20060922 | 331.56569 | 240.20020 | 178.70486 | 3.37992 | 0.2042748 | 2.3582223 | 37 | 1 | 60 days | 0.23 | M-v 4 | MPC | 2006 $SL_{71}$ |
| 2006 $SM_{71}$ | 17.3 | 0.15 | 20060922 | 26.52919 | 162.19341 | 183.13951 | 4.28508 | 0.1273923 | 2.7158765 | 35 | 1 | 120 days | 0.40 | M-v 4 | MPC | 2006 $SM_{71}$ |
| 2006 $SR_{71}$ | 17.1 | 0.15 | 20061012 | 80.61252 | 259.64157 | 27.47124 | 9.13636 | 0.1504432 | 2.5737035 | 32 | 1 | 58 days | 0.34 | | MPC | 2006 $SR_{71}$ |
| 2006 $SS_{71}$ | 16.5 | 0.15 | 20061012 | 57.66569 | 160.26847 | 152.45554 | 2.21730 | 0.1482631 | 3.1937120 | 23 | 1 | 58 days | 0.22 | | MPC | 2006 $SS_{71}$ |
| 2006 $SW_{71}$ | 17.0 | 0.15 | 20060922 | 9.64233 | 184.96996 | 184.55933 | 5.73432 | 0.0572163 | 2.6425678 | 24 | 1 | 60 days | 0.25 | M-v 4 | MPC | 2006 $SW_{71}$ |
| 2006 $SZ_{71}$ | 17.0 | 0.15 | 20060922 | 12.05330 | 284.64451 | 78.18646 | 2.52930 | 0.1875587 | 3.1595048 | 27 | 1 | 62 days | 0.31 | M-v 4 | MPC | 2006 $SZ_{71}$ |
| 2006 $SA_{72}$ | 18.7 | 0.15 | 20060922 | 350.54716 | 208.21260 | 181.71611 | 5.03090 | 0.1514666 | 2.3227793 | 16 | 1 | 33 days | 0.24 | | MPC | 2006 $SA_{72}$ |
| 2006 $SB_{72}$ | 16.4 | 0.15 | 20060922 | 118.53608 | 211.88226 | 44.67514 | 5.46181 | 0.0712811 | 2.7539421 | 29 | 1 | 62 days | 0.41 | M-v 4 | MPC | 2006 $SB_{72}$ |
| 2006 $SC_{72}$ | 16.7 | 0.15 | 20061012 | 334.21583 | 282.12561 | 140.57630 | 2.04071 | 0.1713082 | 3.1548846 | 24 | 1 | 58 days | 0.22 | | MPC | 2006 $SC_{72}$ |
| 2006 $SD_{72}$ | 17.1 | 0.15 | 20060922 | 314.76606 | 270.71527 | 170.64913 | 4.04924 | 0.1720679 | 2.6516871 | 34 | 1 | 60 days | 0.37 | M-v 4 | MPC | 2006 $SD_{72}$ |
| 2006 $SF_{72}$ | 17.0 | 0.15 | 20060922 | 55.35011 | 133.31919 | 171.46972 | 3.69582 | 0.1940508 | 2.7381298 | 27 | 1 | 60 days | 0.19 | M-v 4 | MPC | 2006 $SF_{72}$ |
| 2006 $SG_{72}$ | 17.6 | 0.15 | 20061012 | 28.49183 | 195.52114 | 153.86217 | 1.96995 | 0.1254307 | 2.6685318 | 20 | 1 | 58 days | 0.38 | | MPC | 2006 $SG_{72}$ |
| 2006 $SH_{72}$ | 19.7 | 0.15 | 20060922 | 339.93112 | 39.04145 | 22.65929 | 12.12261 | 0.3884939 | 2.6812818 | 18 | 1 | 40 days | 0.18 | | MPC | 2006 $SH_{72}$ |
| 2006 $SJ_{72}$ | 18.5 | 0.15 | 20061012 | 35.09984 | 277.22170 | 53.83164 | 2.84531 | 0.2193057 | 2.3385826 | 26 | 1 | 58 days | 0.19 | | MPC | 2006 $SJ_{72}$ |
| 2006 $SK_{72}$ | 16.5 | 0.15 | 20061012 | 27.12385 | 262.79197 | 89.75062 | 2.05739 | 0.1174070 | 3.0894582 | 29 | 1 | 58 days | 0.24 | | MPC | 2006 $SK_{72}$ |
| 2006 $SL_{72}$ | 17.3 | 0.15 | 20060922 | 274.82605 | 287.55776 | 188.64219 | 6.94488 | 0.0816049 | 2.6020034 | 27 | 1 | 60 days | 0.24 | M-v 4 | MPC | 2006 $SL_{72}$ |
| 2006 $SO_{72}$ | 18.3 | 0.15 | 20060922 | 353.27047 | 254.16743 | 132.92125 | 1.98934 | 0.1952222 | 2.3988623 | 21 | 1 | 42 days | 0.49 | | MPC | 2006 $SO_{72}$ |
| 2006 $SP_{72}$ | 15.3 | 0.15 | 20061012 | 301.88273 | 47.37311 | 48.17657 | 5.15556 | 0.1000239 | 3.1483679 | 49 | 1 | 56 days | 0.30 | | MPC | 2006 $SP_{72}$ |
| 2006 $SQ_{72}$ | 15.3 | 0.15 | 20061012 | 25.14711 | 304.60385 | 51.16410 | 4.24332 | 0.1297885 | 3.9425100 | 24 | 1 | 56 days | 0.31 | | MPC | 2006 $SQ_{72}$ |
| 2006 $SR_{72}$ | 16.5 | 0.15 | 20060922 | 38.37674 | 147.47012 | 192.22745 | 8.76209 | 0.0742129 | 3.1745947 | 22 | 1 | 33 days | 0.42 | | MPC | 2006 $SR_{72}$ |
| 2006 $SS_{72}$ | 18.7 | 0.15 | 20060922 | 22.64826 | 261.38172 | 80.14612 | 1.83078 | 0.2357211 | 2.5962018 | 19 | 1 | 33 days | 0.37 | | MPC | 2006 $SS_{72}$ |
| 2006 $SY_{72}$ | 16.3 | 0.15 | 20060922 | 337.29380 | 221.40825 | 189.26536 | 10.63210 | 0.1144567 | 2.8971709 | 13 | 1 | 65 days | 0.18 | M-v 4 | MPC | 2006 $SY_{72}$ |
| 2006 $SZ_{72}$ | 16.4 | 0.15 | 20060922 | 356.18664 | 352.71167 | 34.63869 | 11.77899 | 0.1133637 | 3.1424315 | 57 | 1 | 62 days | 0.29 | M-v 4 | MPC | 2006 $SZ_{72}$ |
| 2006 $SB_{73}$ | 17.4 | 0.15 | 20061012 | 28.88522 | 258.29053 | 84.35137 | 2.56476 | 0.2028993 | 2.6190033 | 28 | 1 | 58 days | 0.31 | | MPC | 2006 $SB_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SF_{73}$ | 16.7 | 0.15 | 20060922 | 92.11460 | 147.10001 | 141.09083 | 2.80066 | 0.0300050 | 2.8694561 | 23 | 1 | 42 days | 0.24 | | MPC | 2006 $SF_{73}$ |
| 2006 $SH_{73}$ | 17.7 | 0.15 | 20061012 | 350.10732 | 316.31587 | 87.41903 | 2.37970 | 0.2414791 | 3.0551477 | 26 | 1 | 56 days | 0.26 | | MPC | 2006 $SH_{73}$ |
| 2006 $SL_{73}$ | 17.4 | 0.15 | 20060922 | 32.79584 | 260.19425 | 71.60485 | 2.98562 | 0.2201031 | 2.9826261 | 28 | 1 | 43 days | 0.25 | | MPC | 2006 $SL_{73}$ |
| 2006 $SM_{73}$ | 18.0 | 0.15 | 20061012 | 23.76308 | 286.43836 | 65.71009 | 2.36043 | 0.1741431 | 2.3402437 | 51 | 1 | 56 days | 0.27 | | MPC | 2006 $SM_{73}$ |
| 2006 $SN_{73}$ | 17.6 | 0.15 | 20060922 | 37.89269 | 286.82118 | 49.06747 | 4.75820 | 0.0968693 | 2.5542421 | 31 | 1 | 43 days | 0.31 | | MPC | 2006 $SN_{73}$ |
| 2006 $SW_{73}$ | 16.5 | 0.15 | 20060922 | 89.47986 | 94.63398 | 188.05220 | 11.01635 | 0.0920177 | 2.9910286 | 16 | 1 | 65 days | 0.26 | M-v 4 | MPC | 2006 $SW_{73}$ |
| 2006 $SX_{73}$ | 17.2 | 0.15 | 20060922 | 1.22975 | 304.29965 | 73.43305 | 3.09985 | 0.2054759 | 3.0388643 | 30 | 1 | 60 days | 0.25 | M-v 4 | MPC | 2006 $SX_{73}$ |
| 2006 $SY_{73}$ | 17.6 | 0.15 | 20061012 | 56.15471 | 258.49707 | 57.97003 | 4.11751 | 0.1194223 | 2.5977055 | 27 | 1 | 58 days | 0.31 | | MPC | 2006 $SY_{73}$ |
| 2006 $SZ_{73}$ | 17.1 | 0.15 | 20060922 | 91.72514 | 133.15733 | 138.13962 | 3.20383 | 0.1533923 | 2.4304049 | 16 | 1 | 32 days | 0.27 | | MPC | 2006 $SZ_{73}$ |
| 2006 $SB_{74}$ | 18.0 | 0.15 | 20060922 | 335.06902 | 249.02318 | 173.22749 | 6.43221 | 0.2905177 | 2.6183437 | 24 | 1 | 31 days | 0.45 | | MPC | 2006 $SB_{74}$ |
| 2006 $SD_{74}$ | 17.9 | 0.15 | 20060922 | 358.15761 | 209.10042 | 170.09454 | 6.21484 | 0.1965393 | 2.4040023 | 22 | 1 | 87 days | 0.41 | M-v 4 | MPC | 2006 $SD_{74}$ |
| 2006 $SG_{74}$ | 16.2 | 0.15 | 20060922 | 336.57639 | 224.86523 | 186.45656 | 10.89869 | 0.1125381 | 3.0669832 | 21 | 1 | 66 days | 0.29 | M-v 4 | MPC | 2006 $SG_{74}$ |
| 2006 $SL_{74}$ | 17.0 | 0.15 | 20060922 | 306.05838 | 356.53798 | 84.37417 | 2.88470 | 0.0571798 | 2.7465004 | 23 | 1 | 42 days | 0.20 | | MPC | 2006 $SL_{74}$ |
| 2006 $SM_{74}$ | 17.4 | 0.15 | 20060922 | 337.58956 | 21.65817 | 28.50916 | 13.86209 | 0.1608394 | 2.6730561 | 50 | 1 | 60 days | 0.32 | M-v 4 | MPC | 2006 $SM_{74}$ |
| 2006 $SO_{74}$ | 17.2 | 0.15 | 20061012 | 150.06455 | 184.05850 | 48.14525 | 6.55965 | 0.0559398 | 2.4338752 | 24 | 1 | 58 days | 0.25 | | MPC | 2006 $SO_{74}$ |
| 2006 $SP_{74}$ | 17.4 | 0.15 | 20060922 | 54.14198 | 264.99537 | 38.35171 | 7.95698 | 0.2166321 | 2.7684579 | 20 | 1 | 39 days | 0.34 | | MPC | 2006 $SP_{74}$ |
| 2006 $SQ_{74}$ | 17.6 | 0.15 | 20061012 | 33.97258 | 291.53037 | 31.94208 | 9.44147 | 0.3073840 | 2.7202067 | 41 | 1 | 53 days | 0.46 | | MPC | 2006 $SQ_{74}$ |
| 2006 $SR_{74}$ | 17.1 | 0.15 | 20060922 | 354.84263 | 209.95568 | 174.94976 | 5.20411 | 0.1695902 | 2.7146722 | 35 | 1 | 92 days | 0.29 | M-v 3 | MPC | 2006 $SR_{74}$ |
| 2006 $SS_{74}$ | 18.6 | 0.15 | 20060922 | 13.42456 | 234.08563 | 120.00000 | 2.25000 | 0.2026449 | 2.3535232 | 13 | 1 | 32 days | 0.21 | | MPC | 2006 $SS_{74}$ |
| 2006 $ST_{74}$ | 18.8 | 0.15 | 20060922 | 23.31417 | 287.93666 | 51.67663 | 3.48951 | 0.2025229 | 2.3339006 | 16 | 1 | 28 days | 0.22 | | MPC | 2006 $ST_{74}$ |
| 2006 $SV_{74}$ | 16.5 | 0.15 | 20060922 | 37.60118 | 153.67997 | 182.54888 | 9.48888 | 0.0846789 | 3.0065862 | 17 | 1 | 66 days | 0.25 | M-v 4 | MPC | 2006 $SV_{74}$ |
| 2006 $SW_{74}$ | 19.2 | 0.15 | 20060922 | 10.86471 | 331.97072 | 23.10270 | 10.81493 | 0.2444727 | 2.3355530 | 19 | 1 | 38 days | 0.66 | | MPC | 2006 $SW_{74}$ |
| 2006 $SA_{75}$ | 18.2 | 0.15 | 20060922 | 347.52864 | 1.86178 | 30.01883 | 7.11963 | 0.1092490 | 2.2886370 | 52 | 1 | 60 days | 0.40 | M-v 4 | MPC | 2006 $SA_{75}$ |
| 2006 $SD_{75}$ | 16.8 | 0.15 | 20060922 | 42.83272 | 193.91630 | 124.33515 | 2.48213 | 0.2027048 | 3.0552907 | 19 | 1 | 42 days | 0.27 | | MPC | 2006 $SD_{75}$ |
| 2006 $SE_{75}$ | 18.1 | 0.15 | 20061012 | 216.31757 | 127.90764 | 42.48341 | 4.64201 | 0.0471487 | 2.2108415 | 19 | 1 | 53 days | 0.25 | | MPC | 2006 $SE_{75}$ |
| 2006 $SG_{75}$ | 16.0 | 0.15 | 20061012 | 30.88602 | 210.22220 | 133.26356 | 2.29886 | 0.1549001 | 3.2041223 | 34 | 1 | 58 days | 0.46 | | MPC | 2006 $SG_{75}$ |
| 2006 $SH_{75}$ | 16.2 | 0.15 | 20061012 | 30.25362 | 299.43636 | 49.64132 | 5.06796 | 0.0801133 | 2.7704888 | 29 | 1 | 58 days | 0.22 | | MPC | 2006 $SH_{75}$ |
| 2006 $SJ_{75}$ | 16.8 | 0.15 | 20060922 | 357.69279 | 332.06709 | 47.24035 | 3.89819 | 0.2912257 | 2.6488814 | 83 | 1 | 61 days | 0.47 | M-v 4 | MPC | 2006 $SJ_{75}$ |
| 2006 $SL_{75}$ | 17.1 | 0.15 | 20060922 | 64.83954 | 262.64725 | 33.79263 | 9.36969 | 0.1571281 | 2.5734185 | 22 | 1 | 61 days | 0.28 | M-v 4 | MPC | 2006 $SL_{75}$ |
| 2006 $SO_{75}$ | 16.0 | 0.15 | 20060922 | 291.45910 | 281.02156 | 194.82878 | 25.33667 | 0.2203770 | 3.1134650 | 10 | 1 | 13 days | 0.20 | | MPC | 2006 $SO_{75}$ |
| 2006 $SP_{75}$ | 16.9 | 0.15 | 20060922 | 33.15887 | 170.27948 | 174.33588 | 5.79429 | 0.0351661 | 2.7047118 | 13 | 1 | 32 days | 0.25 | | MPC | 2006 $SP_{75}$ |
| 2006 $SQ_{75}$ | 17.4 | 0.15 | 20060922 | 338.84088 | 301.53925 | 109.67350 | 2.72109 | 0.1963683 | 3.1036366 | 24 | 1 | 60 days | 0.32 | M-v 4 | MPC | 2006 $SQ_{75}$ |
| 2006 $SR_{75}$ | 16.1 | 0.15 | 20060922 | 290.97991 | 63.31551 | 38.46864 | 9.29742 | 0.0985234 | 3.2107925 | 12 | 1 | 33 days | 0.18 | | MPC | 2006 $SR_{75}$ |
| 2006 $ST_{75}$ | 18.2 | 0.15 | 20060922 | 333.57845 | 238.53453 | 173.37336 | 5.36506 | 0.1377027 | 2.3950903 | 20 | 1 | 66 days | 0.24 | M-v 4 | MPC | 2006 $ST_{75}$ |
| 2006 $SU_{75}$ | 17.7 | 0.15 | 20060922 | 325.46374 | 255.88925 | 162.34741 | 3.60761 | 0.0798868 | 2.3727845 | 26 | 1 | 32 days | 0.42 | | MPC | 2006 $SU_{75}$ |
| 2006 $SV_{75}$ | 16.5 | 0.15 | 20061012 | 31.13896 | 253.44881 | 86.58762 | 2.94886 | 0.1898284 | 3.1431231 | 31 | 1 | 58 days | 0.32 | | MPC | 2006 $SV_{75}$ |
| 2006 $SW_{75}$ | 17.3 | 0.15 | 20061012 | 32.17208 | 309.73682 | 28.13118 | 14.50708 | 0.1955470 | 3.0307449 | 18 | 1 | 58 days | 0.25 | | MPC | 2006 $SW_{75}$ |
| 2006 $SX_{75}$ | 16.2 | 0.15 | 20060922 | 313.56930 | 260.02340 | 182.04116 | 7.95913 | 0.1639664 | 2.7707784 | 39 | 1 | 66 days | 0.40 | M-v 4 | MPC | 2006 $SX_{75}$ |
| 2006 $SY_{75}$ | 17.5 | 0.15 | 20061012 | 3.79456 | 340.98565 | 36.23135 | 4.04198 | 0.1635094 | 2.6439471 | 41 | 1 | 58 days | 0.47 | | MPC | 2006 $SY_{75}$ |
| 2006 $SZ_{75}$ | 18.5 | 0.15 | 20061012 | 352.58395 | 353.41284 | 39.58301 | 3.59577 | 0.1804991 | 2.4094937 | 29 | 1 | 58 days | 0.29 | | MPC | 2006 $SZ_{75}$ |
| 2006 $SA_{76}$ | 17.0 | 0.15 | 20061012 | 54.16047 | 285.22622 | 37.31112 | 5.83704 | 0.0618069 | 2.6870931 | 31 | 1 | 58 days | 0.44 | | MPC | 2006 $SA_{76}$ |
| 2006 $SC_{76}$ | 18.8 | 0.15 | 20061012 | 9.98521 | 327.18411 | 37.73704 | 3.59522 | 0.2622263 | 2.5947154 | 27 | 1 | 52 days | 0.34 | | MPC | 2006 $SC_{76}$ |
| 2006 $SD_{76}$ | 17.8 | 0.15 | 20060922 | 19.08182 | 304.01395 | 48.81318 | 2.97249 | 0.0886668 | 2.2808428 | 23 | 1 | 40 days | 0.32 | | MPC | 2006 $SD_{76}$ |
| 2006 $SE_{76}$ | 18.0 | 0.15 | 20060922 | 57.08853 | 201.67352 | 93.85039 | 1.77358 | 0.2142897 | 2.3279426 | 20 | 1 | 42 days | 0.34 | | MPC | 2006 $SE_{76}$ |
| 2006 $SF_{76}$ | 17.7 | 0.15 | 20060922 | 330.45029 | 358.67065 | 57.31706 | 2.14415 | 0.1524596 | 2.4342833 | 37 | 1 | 62 days | 0.51 | M-v 4 | MPC | 2006 $SF_{76}$ |
| 2006 $SG_{76}$ | 17.8 | 0.15 | 20060922 | 347.92535 | 280.19227 | 112.30057 | 2.01560 | 0.1769972 | 2.4128331 | 30 | 1 | 60 days | 0.47 | M-v 4 | MPC | 2006 $SG_{76}$ |
| 2006 $SH_{76}$ | 16.8 | 0.15 | 20060922 | 69.65413 | 259.83136 | 34.76192 | 7.78383 | 0.1209583 | 2.5654741 | 37 | 1 | 64 days | 0.40 | M-v 4 | MPC | 2006 $SH_{76}$ |
| 2006 $SK_{76}$ | 17.5 | 0.15 | 20060922 | 31.53757 | 204.00037 | 121.71377 | 2.14438 | 0.2391478 | 2.5914019 | 34 | 1 | 62 days | 0.51 | M-v 4 | MPC | 2006 $SK_{76}$ |
| 2006 $SL_{76}$ | 17.7 | 0.15 | 20060922 | 347.19422 | 317.17840 | 76.19835 | 2.86706 | 0.1024956 | 2.6502166 | 13 | 1 | 13 days | 0.20 | | MPC | 2006 $SL_{76}$ |
| 2006 $SM_{76}$ | 18.1 | 0.15 | 20060922 | 12.98170 | 194.51471 | 162.98570 | 3.66237 | 0.1487602 | 2.3059785 | 13 | 1 | 32 days | 0.13 | | MPC | 2006 $SM_{76}$ |
| 2006 $SN_{76}$ | 17.6 | 0.15 | 20060922 | 26.19654 | 143.03107 | 187.14301 | 12.78624 | 0.2707230 | 2.5557538 | 20 | 1 | 33 days | 0.21 | | MPC | 2006 $SN_{76}$ |
| 2006 $SO_{76}$ | 17.8 | 0.15 | 20061012 | 268.14051 | 82.92107 | 39.75380 | 4.99091 | 0.0704832 | 2.1956896 | 26 | 1 | 58 days | 0.23 | | MPC | 2006 $SO_{76}$ |
| 2006 $SP_{76}$ | 17.6 | 0.15 | 20060922 | 314.93180 | 183.04354 | 222.87016 | 9.28786 | 0.1931195 | 2.3187249 | 9 | 1 | 8 days | 0.26 | | MPC | 2006 $SP_{76}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SS_{76}$ | 17.5 | 0.15 | 20060922 | 312.51684 | 205.86651 | 195.14546 | 15.45992 | 0.1357048 | 2.5286290 | 12 | 1 | 6 days | 0.39 | | | MPC | 2006 $SS_{76}$ |
| 2006 $ST_{76}$ | | | 20060922 | 12.24438 | 22.29401 | 310.85207 | 2.56348 | 0.2964882 | 2.2633824 | 12 | 1 | 10 days | 0.27 | | | MPC | 2006 $ST_{76}$ |
| 2006 $SV_{76}$ | | | 20060922 | 348.87016 | 107.91087 | 263.84083 | 2.24854 | 0.1676144 | 2.3047926 | 9 | 1 | 4 days | 0.28 | | | MPC | 2006 $SV_{76}$ |
| 2006 $SW_{76}$ | 18.5 | 0.15 | 20060922 | 31.00263 | 250.53591 | 52.50129 | 1.44439 | 0.3279603 | 2.7696977 | 10 | 1 | 32 days | 0.73 | | | MPC | 2006 $SW_{76}$ |
| 2006 $SX_{76}$ | 17.3 | 0.15 | 20060922 | 22.80526 | 307.93584 | 17.26681 | 7.03345 | 0.2518344 | 2.7341259 | 22 | 1 | 8 days | 0.45 | | | MPC | 2006 $SX_{76}$ |
| 2006 $SA_{77}$ | 16.2 | 0.15 | 20060922 | 258.94215 | 100.67135 | 13.47249 | 12.30774 | 0.0565935 | 3.0566557 | 10 | 1 | 6 days | 0.37 | | | MPC | 2006 $SA_{77}$ |
| 2006 $SC_{77}$ | 16.2 | 0.15 | 20060922 | 248.42504 | 261.91106 | 211.37839 | 1.93155 | 0.0416211 | 2.9120593 | 15 | 1 | 2 days | 0.35 | | | MPC | 2006 $SC_{77}$ |
| 2006 $SE_{77}$ | 18.0 | 0.15 | 20060922 | 346.48966 | 238.74555 | 166.41728 | 29.67702 | 0.3934152 | 2.6312741 | 31 | 1 | 5 days | 0.55 | | | MPC | 2006 $SE_{77}$ |
| 2006 $SF_{77}$ | 21.7 | 0.15 | 20060922 | 103.29433 | 224.43221 | 1.29007 | 32.53075 | 0.3292135 | 0.9221956 | 186 | 1 | 23 days | 0.48 | M-v | 6 | MPC | 2006 $SF_{77}$ |
| 2006 $SG_{77}$ | 20.7 | 0.15 | 20060922 | 352.23407 | 158.17780 | 237.54771 | 7.60238 | 0.5769653 | 2.8157591 | 218 | 1 | 66 days | 0.37 | M-v | 4 | MPC | 2006 $SG_{77}$ |
| 2006 $SK_{77}$ | 15.0 | 0.15 | 20061012 | 48.41108 | 9.85946 | 261.20604 | 19.77595 | 0.4516884 | 2.7462797 | 37 | 1 | 58 days | 0.49 | | | MPC | 2006 $SK_{77}$ |
| 2006 $SM_{77}$ | 16.7 | 0.15 | 20060922 | 5.45082 | 142.74262 | 213.13910 | 25.88504 | 0.2621429 | 2.2535454 | 64 | 1 | 63 days | 0.49 | M-v | 4 | MPC | 2006 $SM_{77}$ |
| 2006 $SN_{77}$ | 16.4 | 0.15 | 20061012 | 330.31237 | 216.41557 | 205.05560 | 8.99684 | 0.0953423 | 3.1707240 | 49 | 1 | 59 days | 0.27 | | | MPC | 2006 $SN_{77}$ |
| 2006 $SO_{77}$ | 26.5 | 0.15 | 20060922 | 8.17267 | 338.92226 | 354.96829 | 2.27607 | 0.4639246 | 1.8205516 | 23 | 1 | 1 days | 0.66 | M-v | 7 | MPC | 2006 $SO_{77}$ |
| 2006 $SP_{77}$ | 17.0 | 0.15 | 20061012 | 36.17301 | 310.85861 | 21.42936 | 14.11762 | 0.2545025 | 2.5965667 | 83 | 1 | 39 days | 0.35 | | | MPC | 2006 $SP_{77}$ |
| 2006 $SR_{77}$ | 16.2 | 0.15 | 20060922 | 311.46736 | 68.26038 | 18.45739 | 11.23928 | 0.1918140 | 2.6516607 | 84 | 1 | 68 days | 0.41 | M-v | 4 | MPC | 2006 $SR_{77}$ |
| 2006 $SS_{77}$ | 16.7 | 0.15 | 20060922 | 228.37300 | 181.03728 | 330.50777 | 4.59031 | 0.0510703 | 2.8553046 | 18 | 1 | 61 days | 0.57 | M-v | 5 | MPC | 2006 $SS_{77}$ |
| 2006 $SV_{77}$ | 16.5 | 0.15 | 20060922 | 18.46035 | 304.66065 | 51.72205 | 5.61438 | 0.0404451 | 2.7160907 | 26 | 1 | 60 days | 0.20 | M-v | 4 | MPC | 2006 $SV_{77}$ |
| 2006 $SZ_{77}$ | 16.5 | 0.15 | 20060922 | 286.91308 | 55.14927 | 39.93762 | 13.03937 | 0.0788511 | 2.7808691 | 34 | 1 | 61 days | 0.46 | M-v | 5 | MPC | 2006 $SZ_{77}$ |
| 2006 $SA_{78}$ | 15.6 | 0.15 | 20060922 | 70.31577 | 134.30401 | 160.19113 | 11.00561 | 0.0932472 | 3.1934681 | 16 | 1 | 22 days | 0.28 | | | MPC | 2006 $SA_{78}$ |
| 2006 $SB_{78}$ | 16.8 | 0.15 | 20060922 | 323.63123 | 304.52252 | 111.98948 | 5.52599 | 0.1014604 | 2.5782936 | 21 | 1 | 21 days | 0.24 | | D | MPC | 2006 $SB_{78}$ |
| 2006 $SH_{78}$ | 15.8 | 0.15 | 20060922 | 342.56582 | 174.47670 | 194.70522 | 15.28953 | 0.2688908 | 3.1860556 | 27 | 1 | 53 days | 0.82 | | | MPC | 2006 $SH_{78}$ |
| 2006 $SL_{78}$ | 15.8 | 0.15 | 20060922 | 348.14710 | 58.93807 | 328.58002 | 5.11507 | 0.1097954 | 3.0621930 | 12 | 1 | 10 days | 0.26 | | | MPC | 2006 $SL_{78}$ |
| 2006 $SM_{78}$ | 17.1 | 0.15 | 20060922 | 25.41452 | 90.75238 | 250.44338 | 2.22435 | 0.1274290 | 2.5567028 | 14 | 1 | 13 days | 0.46 | | | MPC | 2006 $SM_{78}$ |
| 2006 $SO_{78}$ | 19.0 | 0.15 | 20060922 | 7.36966 | 352.48737 | 4.58248 | 17.33519 | 0.5600123 | 1.8801007 | 22 | 1 | 54 days | 0.66 | M-v | 5 | MPC | 2006 $SO_{78}$ |
| 2006 $SP_{78}$ | 20.3 | 0.15 | 20060922 | 11.80602 | 145.68244 | 184.76996 | 33.54065 | 0.4188595 | 2.5192162 | 26 | 1 | 2 days | 0.39 | | | MPC | 2006 $SP_{78}$ |
| 2006 $SQ_{78}$ | 18.8 | 0.15 | 20060922 | 104.25175 | 32.93040 | 208.15427 | 36.05386 | 0.3390152 | 1.1718137 | 109 | 1 | 53 days | 0.48 | M-v | 5 | MPC | 2006 $SQ_{78}$ |
| 2006 $SR_{78}$ | 20.2 | 0.15 | 20060922 | 30.15304 | 267.83981 | 13.74725 | 20.05527 | 0.5615022 | 2.1612153 | 41 | 1 | 32 days | 0.51 | M-v | 5 | MPC | 2006 $SR_{78}$ |
| 2006 $ST_{78}$ | 16.1 | 0.15 | 20060922 | 27.11012 | 357.88351 | 326.17472 | 13.92715 | 0.2170577 | 2.6861701 | 30 | 1 | 52 days | 0.42 | | | MPC | 2006 $ST_{78}$ |
| 2006 $SV_{78}$ | 16.9 | 0.15 | 20060922 | 37.42724 | 324.84931 | 343.37635 | 13.55119 | 0.2582819 | 2.6236211 | 25 | 1 | 36 days | 0.49 | | | MPC | 2006 $SV_{78}$ |
| 2006 $SW_{78}$ | 16.3 | 0.15 | 20060922 | 19.06469 | 138.67655 | 198.09369 | 31.78144 | 0.2157372 | 2.6457835 | 50 | 1 | 70 days | 0.57 | M-v | 4 | MPC | 2006 $SW_{78}$ |
| 2006 $SX_{78}$ | 16.2 | 0.15 | 20060922 | 347.61535 | 21.51765 | 27.20360 | 7.35150 | 0.2798976 | 2.6356236 | 92 | 1 | 67 days | 0.48 | M-v | 3 | MPC | 2006 $SX_{78}$ |
| 2006 $SC_{79}$ | 15.7 | 0.15 | 20060922 | 309.22346 | 189.18373 | 229.16623 | 21.16747 | 0.0490252 | 2.6766767 | 19 | 1 | 33 days | 0.72 | | | MPC | 2006 $SC_{79}$ |
| 2006 $SD_{79}$ | 16.1 | 0.15 | 20060922 | 38.10562 | 2.92544 | 320.70310 | 25.11062 | 0.0846160 | 2.7588571 | 18 | 1 | 33 days | 0.58 | | | MPC | 2006 $SD_{79}$ |
| 2006 $SF_{79}$ | 19.9 | 0.15 | 20060922 | 6.66930 | 165.02715 | 188.96897 | 9.06562 | 0.2245342 | 2.3716302 | 9 | 1 | 11 days | 0.20 | | | MPC | 2006 $SF_{79}$ |
| 2006 $SG_{79}$ | 16.7 | 0.15 | 20060922 | 21.84586 | 135.77929 | 204.19009 | 2.47651 | 0.1096455 | 2.9943961 | 22 | 1 | 41 days | 0.41 | | | MPC | 2006 $SG_{79}$ |
| 2006 $SJ_{79}$ | 16.2 | 0.15 | 20060922 | 89.00822 | 271.09915 | 4.96497 | 15.85092 | 0.0243616 | 3.0973327 | 23 | 1 | 35 days | 0.24 | | | MPC | 2006 $SJ_{79}$ |
| 2006 $SM_{79}$ | 16.7 | 0.15 | 20060922 | 9.97776 | 31.02520 | 309.97536 | 11.64642 | 0.4011564 | 3.0414499 | 20 | 1 | 33 days | 0.41 | | | MPC | 2006 $SM_{79}$ |
| 2006 $SO_{79}$ | 17.8 | 0.15 | 20060922 | 337.75778 | 80.71341 | 331.44699 | 21.10704 | 0.3245256 | 2.3823198 | 20 | 1 | 45 days | 0.48 | | | MPC | 2006 $SO_{79}$ |
| 2006 $SP_{79}$ | 15.1 | 0.15 | 20061012 | 346.12232 | 162.14582 | 233.21786 | 15.84878 | 0.2181052 | 3.1285736 | 26 | 1 | 58 days | 0.44 | | | MPC | 2006 $SP_{79}$ |
| 2006 $SR_{79}$ | 16.3 | 0.15 | 20060922 | 21.53734 | 78.63593 | 254.83415 | 10.90978 | 0.2351702 | 2.7330584 | 25 | 1 | 35 days | 0.42 | | | MPC | 2006 $SR_{79}$ |
| 2006 $ST_{79}$ | 15.0 | 0.15 | 20060922 | 14.67984 | 75.70514 | 278.91053 | 15.06850 | 0.1263492 | 3.1099528 | 23 | 1 | 62 days | 0.49 | M-v | 4 | MPC | 2006 $ST_{79}$ |
| 2006 $SU_{79}$ | 15.2 | 0.15 | 20060922 | 59.91218 | 20.35064 | 278.33745 | 13.10375 | 0.1400738 | 3.1781511 | 18 | 1 | 35 days | 0.67 | | | MPC | 2006 $SU_{79}$ |
| 2006 $SY_{79}$ | 19.0 | 0.15 | 20060922 | 31.33870 | 113.89636 | 201.86533 | 5.68500 | 0.2215421 | 2.2254364 | 9 | 1 | 14 days | 0.20 | | | MPC | 2006 $SY_{79}$ |
| 2006 $SZ_{79}$ | 18.8 | 0.15 | 20060922 | 215.28479 | 325.04036 | 188.31947 | 22.17439 | 0.0668803 | 1.9214598 | 9 | 1 | 14 days | 0.14 | | | MPC | 2006 $SZ_{79}$ |
| 2006 $SA_{80}$ | 19.2 | 0.15 | 20060922 | 46.58946 | 125.42721 | 185.86104 | 22.10216 | 0.0663263 | 1.8196318 | 13 | 1 | 13 days | 0.23 | | | MPC | 2006 $SA_{80}$ |
| 2006 $SB_{80}$ | 16.8 | 0.15 | 20060922 | 37.46936 | 46.50900 | 273.39612 | 3.04772 | 0.0976903 | 2.8121665 | 19 | 1 | 34 days | 0.25 | | | MPC | 2006 $SB_{80}$ |
| 2006 $SC_{80}$ | 17.1 | 0.15 | 20060922 | 3.64525 | 157.18861 | 203.67523 | 10.43668 | 0.0812346 | 3.1639936 | 13 | 1 | 34 days | 0.31 | | | MPC | 2006 $SC_{80}$ |
| 2006 $SD_{80}$ | 18.3 | 0.15 | 20060922 | 26.76514 | 122.27278 | 204.10571 | 7.78940 | 0.1737535 | 2.5666243 | 22 | 1 | 34 days | 0.25 | | | MPC | 2006 $SD_{80}$ |
| 2006 $SG_{80}$ | 17.9 | 0.15 | 20061012 | 354.15763 | 179.78375 | 199.70244 | 8.35982 | 0.1470905 | 2.2794883 | 30 | 1 | 58 days | 0.38 | | | MPC | 2006 $SG_{80}$ |
| 2006 $SH_{80}$ | 18.4 | 0.15 | 20060922 | 30.19738 | 103.16519 | 216.69457 | 3.70273 | 0.1916613 | 2.3049149 | 19 | 1 | 34 days | 0.24 | | | MPC | 2006 $SH_{80}$ |
| 2006 $SK_{80}$ | 19.2 | 0.15 | 20060922 | 310.32737 | 108.11216 | 316.13560 | 3.08207 | 0.1094569 | 2.1405670 | 12 | 1 | 9 days | 0.25 | | | MPC | 2006 $SK_{80}$ |
| 2006 $SP_{80}$ | 17.4 | 0.15 | 20060922 | 28.66743 | 200.16795 | 134.35882 | 1.58374 | 0.0857133 | 2.6288353 | 19 | 1 | 34 days | 0.25 | | | MPC | 2006 $SP_{80}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SW_{80}$ | 16.3 | 0.15 | 20060922 | 270.69110 | 273.46205 | 188.13110 | 12.76043 | 0.0153454 | 3.0679496 | 32 | 1 | 60 days | 0.27 | M-v | 4 | MPC | 2006 $SW_{80}$ |
| 2006 $SX_{80}$ | 16.7 | 0.15 | 20060922 | 6.71432 | 319.79807 | 39.53088 | 1.00515 | 0.1829677 | 3.0783384 | 34 | 1 | 28 days | 0.23 | | | MPC | 2006 $SX_{80}$ |
| 2006 $SY_{80}$ | 18.0 | 0.15 | 20060922 | 333.39682 | 212.56685 | 192.96942 | 1.62192 | 0.1651087 | 2.6108995 | 18 | 1 | 39 days | 0.27 | | | MPC | 2006 $SY_{80}$ |
| 2006 $SZ_{80}$ | 19.5 | 0.15 | 20060922 | 21.51464 | 139.22515 | 193.13815 | 0.85184 | 0.2267891 | 2.2243833 | 18 | 1 | 39 days | 0.31 | | | MPC | 2006 $SZ_{80}$ |
| 2006 $SA_{81}$ | 16.7 | 0.15 | 20060922 | 66.34921 | 99.44195 | 189.63908 | 10.17357 | 0.1377504 | 3.1633223 | 22 | 1 | 37 days | 0.36 | | | MPC | 2006 $SA_{81}$ |
| 2006 $SB_{81}$ | 19.0 | 0.15 | 20060922 | 1.68793 | 356.08105 | 8.29965 | 8.54830 | 0.2900434 | 2.7901173 | 13 | 1 | 12 days | 0.18 | | | MPC | 2006 $SB_{81}$ |
| 2006 $SD_{81}$ | 18.2 | 0.15 | 20060922 | 2.48746 | 180.40699 | 185.32767 | 4.88825 | 0.2051640 | 3.1321564 | 16 | 1 | 31 days | 0.35 | | | MPC | 2006 $SD_{81}$ |
| 2006 $SF_{81}$ | 16.7 | 0.15 | 20060922 | 10.27301 | 42.60514 | 315.92410 | 0.20264 | 0.0742903 | 2.9593356 | 20 | 1 | 98 days | 0.35 | M-v | 4 | MPC | 2006 $SF_{81}$ |
| 2006 $SL_{81}$ | 18.1 | 0.15 | 20060922 | 6.26259 | 178.03286 | 180.97153 | 3.79920 | 0.1469946 | 2.2173471 | 32 | 1 | 38 days | 0.33 | | | MPC | 2006 $SL_{81}$ |
| 2006 $SN_{81}$ | 18.1 | 0.15 | 20060922 | 354.04871 | 197.99488 | 180.63833 | 3.16795 | 0.1921937 | 2.9657059 | 16 | 1 | 34 days | 0.19 | | | MPC | 2006 $SN_{81}$ |
| 2006 $SO_{81}$ | 16.4 | 0.15 | 20061012 | 258.48961 | 300.10860 | 189.91748 | 12.10988 | 0.1242885 | 3.1190656 | 24 | 1 | 59 days | 0.19 | | | MPC | 2006 $SO_{81}$ |
| 2006 $SP_{81}$ | 18.9 | 0.15 | 20060922 | 3.81949 | 176.07486 | 186.75754 | 5.23166 | 0.1674726 | 2.3879533 | 16 | 1 | 14 days | 0.24 | | | MPC | 2006 $SP_{81}$ |
| 2006 $SR_{81}$ | 17.2 | 0.15 | 20061012 | 42.29184 | 142.76549 | 183.73666 | 3.49129 | 0.0776295 | 2.7004537 | 24 | 1 | 57 days | 0.26 | | | MPC | 2006 $SR_{81}$ |
| 2006 $ST_{81}$ | 16.6 | 0.15 | 20060922 | 345.86058 | 199.36444 | 187.96611 | 9.81610 | 0.0583131 | 3.0817253 | 17 | 1 | 34 days | 0.31 | | | MPC | 2006 $ST_{81}$ |
| 2006 $SU_{81}$ | 17.6 | 0.15 | 20060922 | 316.18683 | 268.42215 | 160.35732 | 0.67085 | 0.1556040 | 2.8993599 | 14 | 1 | 39 days | 0.31 | | | MPC | 2006 $SU_{81}$ |
| 2006 $SX_{81}$ | 18.7 | 0.15 | 20060922 | 43.62334 | 282.83960 | 22.48883 | 2.98551 | 0.2058577 | 2.3089291 | 20 | 1 | 39 days | 0.30 | | | MPC | 2006 $SX_{81}$ |
| 2006 $SY_{81}$ | 17.1 | 0.15 | 20060922 | 259.66143 | 108.87675 | 15.81320 | 6.32183 | 0.1164928 | 2.7926525 | 10 | 1 | 8 days | 0.57 | | | MPC | 2006 $SY_{81}$ |
| 2006 $SZ_{81}$ | 18.1 | 0.15 | 20060922 | 3.12954 | 181.78711 | 180.47277 | 4.92159 | 0.2454836 | 2.3192970 | 36 | 1 | 38 days | 0.48 | | | MPC | 2006 $SZ_{81}$ |
| 2006 $SA_{82}$ | 17.6 | 0.15 | 20060922 | 291.67660 | 273.45352 | 180.67410 | 5.08632 | 0.1274217 | 2.7755065 | 10 | 1 | 8 days | 0.32 | | | MPC | 2006 $SA_{82}$ |
| 2006 $SD_{82}$ | 17.7 | 0.15 | 20060922 | 13.54456 | 327.54856 | 22.93849 | 5.41379 | 0.1863157 | 2.7676774 | 29 | 1 | 66 days | 0.36 | M-v | 4 | MPC | 2006 $SD_{82}$ |
| 2006 $SE_{82}$ | 17.1 | 0.15 | 20060922 | 298.96587 | 272.08270 | 176.04137 | 4.48628 | 0.1384566 | 2.8277033 | 10 | 1 | 8 days | 0.21 | | | MPC | 2006 $SE_{82}$ |
| 2006 $SG_{82}$ | 16.9 | 0.15 | 20060922 | 293.42895 | 356.13843 | 101.96052 | 1.13397 | 0.1700988 | 2.8825410 | 17 | 1 | 37 days | 0.18 | | | MPC | 2006 $SG_{82}$ |
| 2006 $SH_{82}$ | 18.4 | 0.15 | 20060922 | 349.55146 | 201.76481 | 182.17732 | 7.63857 | 0.1697585 | 2.2751200 | 14 | 1 | 34 days | 0.72 | | | MPC | 2006 $SH_{82}$ |
| 2006 $SN_{82}$ | 15.8 | 0.15 | 20060922 | 359.63847 | 347.31332 | 10.84423 | 15.16216 | 0.1308457 | 3.0999987 | 27 | 1 | 84 days | 0.41 | M-v | 3 | MPC | 2006 $SN_{82}$ |
| 2006 $ST_{82}$ | 16.8 | 0.15 | 20060922 | 41.89308 | 269.57787 | 40.97011 | 1.98650 | 0.2193381 | 3.0830584 | 10 | 1 | 8 days | 0.19 | | | MPC | 2006 $ST_{82}$ |
| 2006 $SU_{82}$ | 17.7 | 0.15 | 20060922 | 18.65499 | 182.73013 | 165.26675 | 3.81255 | 0.1191605 | 2.6606401 | 12 | 1 | 13 days | 0.20 | | | MPC | 2006 $SU_{82}$ |
| 2006 $SV_{82}$ | 15.8 | 0.15 | 20060922 | 299.30172 | 63.82895 | 22.35608 | 10.66726 | 0.1134235 | 3.0727097 | 13 | 1 | 70 days | 0.22 | M-v | 4 | MPC | 2006 $SV_{82}$ |
| 2006 $SY_{82}$ | 16.6 | 0.15 | 20060922 | 344.33588 | 272.55127 | 119.31462 | 1.45936 | 0.1010908 | 2.7325608 | 19 | 1 | 34 days | 0.41 | | | MPC | 2006 $SY_{82}$ |
| 2006 $SZ_{82}$ | 16.8 | 0.15 | 20060922 | 73.53016 | 251.53018 | 23.65125 | 6.36982 | 0.2137988 | 2.7045576 | 14 | 1 | 8 days | 0.38 | | | MPC | 2006 $SZ_{82}$ |
| 2006 $SB_{83}$ | 17.3 | 0.15 | 20060922 | 63.35541 | 253.96330 | 25.09002 | 6.83672 | 0.2399990 | 2.4691753 | 22 | 1 | 64 days | 0.22 | M-v | 4 | MPC | 2006 $SB_{83}$ |
| 2006 $SC_{83}$ | 19.1 | 0.15 | 20060922 | 329.98609 | 247.48584 | 173.47137 | 6.48727 | 0.2754880 | 2.6285918 | 9 | 1 | 10 days | 0.18 | | | MPC | 2006 $SC_{83}$ |
| 2006 $SG_{83}$ | 16.6 | 0.15 | 20061012 | 341.74375 | 274.57125 | 128.60643 | 2.36088 | 0.1846843 | 3.1562096 | 24 | 1 | 59 days | 0.25 | | | MPC | 2006 $SG_{83}$ |
| 2006 $SH_{83}$ | 15.6 | 0.15 | 20060922 | 119.13352 | 235.25462 | 16.59165 | 22.16310 | 0.0167741 | 3.1481564 | 20 | 1 | 47 days | 0.22 | | | MPC | 2006 $SH_{83}$ |
| 2006 $SM_{83}$ | 17.4 | 0.15 | 20060922 | 330.50460 | 295.14999 | 121.64226 | 1.91244 | 0.2192725 | 3.0223476 | 10 | 1 | 34 days | 0.12 | | | MPC | 2006 $SM_{83}$ |
| 2006 $SO_{83}$ | 19.9 | 0.15 | 20060922 | 8.65065 | 316.11698 | 38.07772 | 3.39573 | 0.2115778 | 2.2248294 | 16 | 1 | 34 days | 0.27 | | | MPC | 2006 $SO_{83}$ |
| 2006 $SU_{83}$ | 17.7 | 0.15 | 20060922 | 327.20630 | 270.37757 | 143.18811 | 1.67322 | 0.1661792 | 2.4644985 | 17 | 1 | 34 days | 0.61 | | | MPC | 2006 $SU_{83}$ |
| 2006 $SV_{83}$ | 18.8 | 0.15 | 20060922 | 12.09458 | 172.30665 | 176.58835 | 5.02750 | 0.2249822 | 2.6545454 | 9 | 1 | 14 days | 0.13 | | | MPC | 2006 $SV_{83}$ |
| 2006 $SX_{83}$ | 17.6 | 0.15 | 20060922 | 356.41521 | 210.05495 | 164.06019 | 4.41702 | 0.0853000 | 2.7708733 | 9 | 1 | 10 days | 0.20 | | | MPC | 2006 $SX_{83}$ |
| 2006 $SY_{83}$ | 17.6 | 0.15 | 20060922 | 12.37011 | 188.19303 | 166.03394 | 4.06141 | 0.1141280 | 2.7763266 | 12 | 1 | 14 days | 0.25 | | | MPC | 2006 $SY_{83}$ |
| 2006 $SZ_{83}$ | 16.7 | 0.15 | 20060922 | 294.31678 | 265.88556 | 183.55873 | 9.53344 | 0.1137102 | 2.9937384 | 10 | 1 | 8 days | 0.58 | | | MPC | 2006 $SZ_{83}$ |
| 2006 $SC_{84}$ | 17.8 | 0.15 | 20060922 | 27.67408 | 302.05243 | 22.74095 | 4.61856 | 0.2154888 | 2.2340808 | 26 | 1 | 39 days | 0.59 | | | MPC | 2006 $SC_{84}$ |
| 2006 $SD_{84}$ | 16.9 | 0.15 | 20060922 | 151.70730 | 51.92259 | 161.93870 | 3.57011 | 0.1129612 | 2.5190247 | 17 | 1 | 60 days | 0.22 | M-v | 5 | MPC | 2006 $SD_{84}$ |
| 2006 $SE_{84}$ | 16.7 | 0.15 | 20060922 | 346.82973 | 9.63898 | 18.60963 | 9.72016 | 0.1684009 | 2.7658734 | 33 | 1 | 62 days | 0.31 | M-v | 4 | MPC | 2006 $SE_{84}$ |
| 2006 $SF_{84}$ | 17.1 | 0.15 | 20060922 | 116.08406 | 223.75653 | 19.15775 | 13.37166 | 0.1187152 | 2.5385192 | 9 | 1 | 10 days | 0.16 | | | MPC | 2006 $SF_{84}$ |
| 2006 $SG_{84}$ | 16.0 | 0.15 | 20061012 | 356.29194 | 2.50683 | 15.26045 | 8.96462 | 0.0856074 | 3.1710607 | 41 | 1 | 58 days | 0.25 | | | MPC | 2006 $SG_{84}$ |
| 2006 $SJ_{84}$ | 19.7 | 0.15 | 20060922 | 13.25480 | 333.13169 | 14.51368 | 4.94040 | 0.1688061 | 2.2817737 | 17 | 1 | 14 days | 0.31 | | | MPC | 2006 $SJ_{84}$ |
| 2006 $SL_{84}$ | 16.1 | 0.15 | 20060922 | 84.82511 | 248.08213 | 20.54452 | 4.79094 | 0.1456809 | 3.1607632 | 58 | 1 | 33 days | 0.30 | | | MPC | 2006 $SL_{84}$ |
| 2006 $SQ_{84}$ | 16.2 | 0.15 | 20060922 | 352.62916 | 208.70143 | 173.27674 | 2.97957 | 0.2127909 | 4.0025186 | 33 | 1 | 33 days | 0.31 | | | MPC | 2006 $SQ_{84}$ |
| 2006 $SS_{84}$ | 17.1 | 0.15 | 20060922 | 30.85846 | 311.22246 | 15.05736 | 5.15765 | 0.1617213 | 2.7102075 | 38 | 1 | 43 days | 0.21 | | | MPC | 2006 $SS_{84}$ |
| 2006 $SX_{84}$ | 18.2 | 0.15 | 20060922 | 355.56449 | 356.36327 | 18.37378 | 4.82438 | 0.1959035 | 2.7158746 | 55 | 1 | 39 days | 0.31 | | | MPC | 2006 $SX_{84}$ |
| 2006 $SY_{84}$ | 16.1 | 0.15 | 20060922 | 208.69622 | 153.26878 | 16.18039 | 12.24033 | 0.1656602 | 2.8693872 | 14 | 1 | 12 days | 0.56 | | | MPC | 2006 $SY_{84}$ |
| 2006 $SZ_{84}$ | 16.8 | 0.15 | 20060922 | 245.42000 | 122.53278 | 11.91883 | 25.41126 | 0.1077915 | 2.6721250 | 29 | 1 | 31 days | 0.26 | | | MPC | 2006 $SZ_{84}$ |
| 2006 $SA_{85}$ | 18.5 | 0.15 | 20060922 | 19.48905 | 152.59639 | 178.12101 | 7.10050 | 0.3084097 | 3.0402472 | 9 | 1 | 31 days | 0.30 | | | MPC | 2006 $SA_{85}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SB_{85}$ | 16.3 | 0.15 | 20060922 | 194.52908 | 162.59842 | 15.99452 | 11.36054 | 0.0800249 | 3.2155640 | 35 | 1 | 39 days | 0.29 | | | MPC | 2006 $SB_{85}$ |
| 2006 $SD_{85}$ | 16.5 | 0.15 | 20060922 | 40.96638 | 153.04742 | 167.39927 | 2.73864 | 0.1044963 | 3.0713259 | 14 | 1 | 34 days | 0.19 | | | MPC | 2006 $SD_{85}$ |
| 2006 $SF_{85}$ | 16.6 | 0.15 | 20060922 | 241.96826 | 317.65185 | 181.87825 | 6.69350 | 0.1141733 | 2.9072930 | 10 | 1 | 8 days | 0.28 | | | MPC | 2006 $SF_{85}$ |
| 2006 $SG_{85}$ | 17.7 | 0.15 | 20060922 | 298.88066 | 58.06515 | 21.78653 | 4.01992 | 0.0897719 | 2.5876028 | 18 | 1 | 14 days | 0.21 | | | MPC | 2006 $SG_{85}$ |
| 2006 $SL_{85}$ | 16.6 | 0.15 | 20060922 | 327.85918 | 46.50747 | 14.12339 | 16.63738 | 0.2418090 | 3.1809545 | 61 | 1 | 43 days | 0.34 | | | MPC | 2006 $SL_{85}$ |
| 2006 $SQ_{85}$ | 17.3 | 0.15 | 20061012 | 359.15439 | 259.66106 | 123.40472 | 6.57510 | 0.1792594 | 2.2789784 | 34 | 1 | 59 days | 0.65 | | | MPC | 2006 $SQ_{85}$ |
| 2006 $SR_{85}$ | 17.0 | 0.15 | 20060922 | 225.29634 | 316.59863 | 207.11730 | 4.02861 | 0.2165760 | 2.4533186 | 10 | 1 | 8 days | 0.47 | | | MPC | 2006 $SR_{85}$ |
| 2006 $SS_{85}$ | 17.8 | 0.15 | 20060922 | 286.45709 | 260.85137 | 204.19822 | 3.03616 | 0.1675858 | 2.3277512 | 10 | 1 | 8 days | 0.51 | | | MPC | 2006 $SS_{85}$ |
| 2006 $SV_{85}$ | 17.6 | 0.15 | 20061012 | 346.10382 | 197.94216 | 198.65002 | 6.42303 | 0.1259108 | 2.3070680 | 28 | 1 | 59 days | 0.39 | | | MPC | 2006 $SV_{85}$ |
| 2006 $SX_{85}$ | 17.7 | 0.15 | 20060922 | 18.40537 | 140.27845 | 203.76970 | 3.30266 | 0.2235016 | 3.0071505 | 16 | 1 | 19 days | 0.23 | | | MPC | 2006 $SX_{85}$ |
| 2006 $SY_{85}$ | 17.4 | 0.15 | 20060922 | 326.51100 | 215.96508 | 201.07164 | 4.53353 | 0.1418790 | 2.6242100 | 31 | 1 | 61 days | 0.24 | M-v | 4 | MPC | 2006 $SY_{85}$ |
| 2006 $SZ_{85}$ | 16.7 | 0.15 | 20060922 | 31.96078 | 141.08812 | 193.14978 | 4.45804 | 0.1017954 | 2.6094881 | 23 | 1 | 61 days | 0.54 | M-v | 4 D | MPC | 2006 $SZ_{85}$ |
| 2006 $SB_{86}$ | 17.8 | 0.15 | 20060922 | 311.14235 | 77.43867 | 11.37776 | 12.90934 | 0.2578305 | 2.6090172 | 9 | 1 | 11 days | 0.22 | | | MPC | 2006 $SB_{86}$ |
| 2006 $SC_{86}$ | 18.1 | 0.15 | 20060922 | 286.24990 | 268.95997 | 194.08131 | 1.15001 | 0.1412494 | 2.4030041 | 20 | 1 | 41 days | 0.25 | | | MPC | 2006 $SC_{86}$ |
| 2006 $SD_{86}$ | 15.6 | 0.15 | 20060922 | 217.28120 | 336.39044 | 195.34419 | 0.39724 | 0.2141396 | 3.0951601 | 10 | 1 | 8 days | 0.28 | | | MPC | 2006 $SD_{86}$ |
| 2006 $SF_{86}$ | 17.1 | 0.15 | 20060922 | 224.87527 | 326.91699 | 198.69974 | 3.75718 | 0.2311612 | 2.4220191 | 10 | 1 | 8 days | 0.22 | | | MPC | 2006 $SF_{86}$ |
| 2006 $SG_{86}$ | 17.5 | 0.15 | 20060922 | 22.93693 | 336.30783 | 8.54786 | 1.89301 | 0.1298091 | 2.9632612 | 16 | 1 | 28 days | 0.24 | | | MPC | 2006 $SG_{86}$ |
| 2006 $SK_{86}$ | 19.4 | 0.15 | 20060922 | 351.43395 | 11.30655 | 13.10230 | 2.23638 | 0.2245577 | 2.3085393 | 21 | 1 | 40 days | 0.33 | | | MPC | 2006 $SK_{86}$ |
| 2006 $SM_{86}$ | 18.2 | 0.15 | 20060922 | 353.90081 | 188.36808 | 193.40289 | 3.44740 | 0.1596616 | 2.6119259 | 13 | 1 | 43 days | 0.31 | | | MPC | 2006 $SM_{86}$ |
| 2006 $SP_{86}$ | 19.0 | 0.15 | 20060922 | 5.26329 | 168.53330 | 191.94440 | 5.47975 | 0.3077097 | 2.5925189 | 14 | 1 | 34 days | 0.23 | | | MPC | 2006 $SP_{86}$ |
| 2006 $SR_{86}$ | 17.5 | 0.15 | 20060922 | 355.03328 | 7.30359 | 13.77426 | 5.15896 | 0.1675097 | 2.7498573 | 25 | 1 | 65 days | 0.26 | M-v | 4 | MPC | 2006 $SR_{86}$ |
| 2006 $SW_{86}$ | 16.7 | 0.15 | 20060922 | 76.53206 | 275.26626 | 16.56837 | 8.52639 | 0.0564803 | 2.4439772 | 23 | 1 | 61 days | 0.26 | M-v | 4 | MPC | 2006 $SW_{86}$ |
| 2006 $SD_{87}$ | 17.1 | 0.15 | 20060922 | 183.14774 | 9.48377 | 184.10086 | 3.22997 | 0.0210720 | 2.6821017 | 22 | 1 | 41 days | 0.27 | | | MPC | 2006 $SD_{87}$ |
| 2006 $SE_{87}$ | 16.4 | 0.15 | 20060922 | 276.29784 | 275.39061 | 196.07897 | 16.30736 | 0.0853457 | 3.1011683 | 18 | 1 | 33 days | 0.32 | | | MPC | 2006 $SE_{87}$ |
| 2006 $SG_{87}$ | 18.2 | 0.15 | 20060922 | 346.72434 | 213.04812 | 179.13898 | 1.25421 | 0.1776484 | 2.3827735 | 27 | 1 | 44 days | 0.49 | | | MPC | 2006 $SG_{87}$ |
| 2006 $SQ_{87}$ | 18.0 | 0.15 | 20060922 | 91.71565 | 90.42144 | 188.14006 | 2.20652 | 0.0568957 | 2.5180102 | 20 | 1 | 39 days | 0.38 | | | MPC | 2006 $SQ_{87}$ |
| 2006 $SS_{87}$ | 16.7 | 0.15 | 20060922 | 26.77703 | 326.83754 | 21.34879 | 6.20452 | 0.0479796 | 2.7693655 | 35 | 1 | 70 days | 0.40 | M-v | 4 | MPC | 2006 $SS_{87}$ |
| 2006 $ST_{87}$ | 16.5 | 0.15 | 20060922 | 131.41605 | 208.75664 | 27.65874 | 4.56791 | 0.1320837 | 2.5457534 | 26 | 1 | 70 days | 0.34 | M-v | 4 | MPC | 2006 $ST_{87}$ |
| 2006 $SU_{87}$ | 17.4 | 0.15 | 20060922 | 30.69716 | 149.77065 | 183.50059 | 3.18619 | 0.1721661 | 2.7183695 | 11 | 1 | 32 days | 0.15 | | | MPC | 2006 $SU_{87}$ |
| 2006 $SV_{87}$ | 20.2 | 0.15 | 20060922 | 348.29295 | 17.61445 | 18.32595 | 5.61419 | 0.3363327 | 2.4670394 | 10 | 1 | 14 days | 0.21 | | | MPC | 2006 $SV_{87}$ |
| 2006 $SW_{87}$ | 18.1 | 0.15 | 20060922 | 8.91184 | 173.99553 | 186.87599 | 4.00911 | 0.1689709 | 2.2902060 | 28 | 1 | 44 days | 0.35 | | | MPC | 2006 $SW_{87}$ |
| 2006 $SF_{88}$ | 19.0 | 0.15 | 20060922 | 29.01303 | 285.55835 | 45.29105 | 2.16739 | 0.1937841 | 2.3402912 | 12 | 1 | 40 days | 0.29 | | | MPC | 2006 $SF_{88}$ |
| 2006 $SH_{88}$ | 18.6 | 0.15 | 20061012 | 311.97511 | 12.83645 | 71.21659 | 2.17029 | 0.1555303 | 2.3407345 | 22 | 1 | 59 days | 0.29 | | | MPC | 2006 $SH_{88}$ |
| 2006 $SL_{88}$ | 16.8 | 0.15 | 20060922 | 130.35954 | 213.24369 | 23.56832 | 13.25055 | 0.1370419 | 2.5379293 | 16 | 1 | 61 days | 0.30 | M-v | 5 | MPC | 2006 $SL_{88}$ |
| 2006 $SU_{88}$ | 17.4 | 0.15 | 20060922 | 68.47309 | 266.87470 | 31.17779 | 5.54600 | 0.0746601 | 2.5227573 | 12 | 1 | 41 days | 0.10 | | | MPC | 2006 $SU_{88}$ |
| 2006 $SV_{88}$ | 18.6 | 0.15 | 20060922 | 73.13955 | 108.48190 | 173.10655 | 4.43469 | 0.1648600 | 2.2274448 | 13 | 1 | 34 days | 0.22 | | | MPC | 2006 $SV_{88}$ |
| 2006 $SB_{89}$ | 16.3 | 0.15 | 20060922 | 253.54283 | 295.71070 | 190.35939 | 10.62509 | 0.0364955 | 3.0555869 | 24 | 1 | 70 days | 0.29 | M-v | 4 | MPC | 2006 $SB_{89}$ |
| 2006 $SD_{89}$ | 16.1 | 0.15 | 20060922 | 254.08844 | 87.29919 | 48.66063 | 2.19735 | 0.1347219 | 3.1025741 | 10 | 1 | 8 days | 0.34 | | | MPC | 2006 $SD_{89}$ |
| 2006 $SF_{89}$ | 17.2 | 0.15 | 20060922 | 77.68186 | 250.89349 | 21.87833 | 7.03537 | 0.2165329 | 2.8516329 | 10 | 1 | 8 days | 0.34 | | | MPC | 2006 $SF_{89}$ |
| 2006 $SG_{89}$ | 17.1 | 0.15 | 20061012 | 32.80536 | 322.52929 | 17.43561 | 10.40921 | 0.1044222 | 3.0973358 | 23 | 1 | 58 days | 0.29 | | | MPC | 2006 $SG_{89}$ |
| 2006 $SH_{89}$ | 18.7 | 0.15 | 20060922 | 5.36329 | 196.59930 | 166.73837 | 2.00440 | 0.1820475 | 2.3114131 | 19 | 1 | 43 days | 0.42 | | | MPC | 2006 $SH_{89}$ |
| 2006 $SL_{89}$ | 16.9 | 0.15 | 20060922 | 331.57355 | 206.51404 | 206.96345 | 10.96254 | 0.0773657 | 3.0345590 | 22 | 1 | 43 days | 0.27 | | | MPC | 2006 $SL_{89}$ |
| 2006 $SM_{89}$ | 17.7 | 0.15 | 20060922 | 33.48440 | 319.04235 | 3.97069 | 4.08326 | 0.2310501 | 2.3419079 | 32 | 1 | 115 days | 0.41 | M-v | 4 | MPC | 2006 $SM_{89}$ |
| 2006 $SP_{89}$ | 17.9 | 0.15 | 20060922 | 302.40718 | 81.49869 | 6.12340 | 4.20389 | 0.1304998 | 2.1892899 | 23 | 1 | 60 days | 0.34 | M-v | 4 | MPC | 2006 $SP_{89}$ |
| 2006 $SS_{89}$ | 18.6 | 0.15 | 20061012 | 12.01487 | 98.09013 | 266.09418 | 0.62489 | 0.2169497 | 2.3299114 | 55 | 1 | 56 days | 0.37 | | | MPC | 2006 $SS_{89}$ |
| 2006 $ST_{89}$ | 16.9 | 0.15 | 20060922 | 285.99044 | 93.97047 | 3.88686 | 2.54739 | 0.0333173 | 2.7467388 | 34 | 1 | 61 days | 0.23 | M-v | 4 | MPC | 2006 $ST_{89}$ |
| 2006 $SU_{89}$ | 16.9 | 0.15 | 20061012 | 335.97859 | 210.79461 | 203.37123 | 9.56856 | 0.1024300 | 3.0110472 | 22 | 1 | 59 days | 0.27 | | | MPC | 2006 $SU_{89}$ |
| 2006 $SV_{89}$ | 16.2 | 0.15 | 20061012 | 296.01014 | 254.22077 | 208.84515 | 8.70003 | 0.1262822 | 3.0399639 | 31 | 1 | 54 days | 0.22 | | | MPC | 2006 $SV_{89}$ |
| 2006 $SW_{89}$ | 18.3 | 0.15 | 20061012 | 341.95898 | 59.16598 | 349.65481 | 1.28916 | 0.1615204 | 2.4002466 | 37 | 1 | 59 days | 0.26 | | | MPC | 2006 $SW_{89}$ |
| 2006 $SX_{89}$ | 17.8 | 0.15 | 20060922 | 356.85221 | 172.85463 | 210.09249 | 5.27741 | 0.0892404 | 2.6989003 | 25 | 1 | 40 days | 0.24 | | | MPC | 2006 $SX_{89}$ |
| 2006 $SY_{89}$ | 16.9 | 0.15 | 20060922 | 295.71664 | 78.08790 | 15.06379 | 15.29621 | 0.0885584 | 2.5440789 | 9 | 1 | 14 days | 0.10 | | | MPC | 2006 $SY_{89}$ |
| 2006 $SZ_{89}$ | 17.7 | 0.15 | 20061012 | 32.38267 | 349.15492 | 355.76449 | 1.97581 | 0.1017225 | 2.5752681 | 34 | 1 | 54 days | 0.32 | | | MPC | 2006 $SZ_{89}$ |
| 2006 $SB_{90}$ | 19.0 | 0.15 | 20061012 | 17.05069 | 354.56977 | 2.59550 | 2.55644 | 0.2100889 | 2.3959812 | 25 | 1 | 59 days | 0.45 | | | MPC | 2006 $SB_{90}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SE_{90}$ | 16.2 | 0.15 | 20061012 | 59.81342 | 327.38103 | 350.55862 | 1.51419 | 0.0760125 | 3.1819117 | 28 | 1 | 53 days | 0.22 | | | MPC | 2006 $SE_{90}$ |
| 2006 $SF_{90}$ | 19.4 | 0.15 | 20060922 | 2.58425 | 91.20856 | 279.69350 | 0.39077 | 0.2084487 | 2.3304646 | 38 | 1 | 43 days | 0.27 | | | MPC | 2006 $SF_{90}$ |
| 2006 $SG_{90}$ | 17.3 | 0.15 | 20061012 | 13.75087 | 156.61058 | 204.64996 | 4.96981 | 0.2411857 | 2.6602444 | 48 | 1 | 59 days | 0.41 | | | MPC | 2006 $SG_{90}$ |
| 2006 $SL_{90}$ | 15.8 | 0.15 | 20060922 | 162.40870 | 198.11342 | 19.95474 | 16.49281 | 0.0775000 | 3.0883223 | 12 | 1 | 29 days | 0.28 | | | MPC | 2006 $SL_{90}$ |
| 2006 $SM_{90}$ | 18.7 | 0.15 | 20060922 | 14.23510 | 139.52888 | 204.25329 | 3.64258 | 0.3550206 | 2.7187644 | 40 | 1 | 43 days | 0.34 | | | MPC | 2006 $SM_{90}$ |
| 2006 $SR_{90}$ | 17.2 | 0.15 | 20061012 | 349.89323 | 29.82880 | 7.88165 | 3.15393 | 0.0982803 | 2.7716711 | 15 | 1 | 59 days | 0.20 | | | MPC | 2006 $SR_{90}$ |
| 2006 $SS_{90}$ | 17.1 | 0.15 | 20061012 | 320.00664 | 222.93063 | 208.39556 | 5.58879 | 0.0687480 | 3.0017690 | 23 | 1 | 54 days | 0.23 | | | MPC | 2006 $SS_{90}$ |
| 2006 $SV_{90}$ | 17.8 | 0.15 | 20061012 | 278.06169 | 107.42342 | 10.43981 | 3.92701 | 0.0986220 | 2.2902275 | 19 | 1 | 59 days | 0.25 | | | MPC | 2006 $SV_{90}$ |
| 2006 $SY_{90}$ | 17.9 | 0.15 | 20061012 | 19.78158 | 141.59487 | 209.19996 | 3.63245 | 0.2653677 | 2.9894928 | 27 | 1 | 59 days | 0.26 | | | MPC | 2006 $SY_{90}$ |
| 2006 $SA_{91}$ | 18.9 | 0.15 | 20060922 | 12.88012 | 6.84716 | 350.44011 | 1.35062 | 0.1960203 | 2.4254946 | 16 | 1 | 40 days | 0.20 | | | MPC | 2006 $SA_{91}$ |
| 2006 $SB_{91}$ | 16.2 | 0.15 | 20060922 | 333.75333 | 215.34307 | 202.32024 | 26.13694 | 0.1615106 | 3.1962656 | 58 | 1 | 34 days | 0.38 | | | MPC | 2006 $SB_{91}$ |
| 2006 $SC_{91}$ | 17.7 | 0.15 | 20061012 | 15.89545 | 42.48498 | 319.56279 | 0.77917 | 0.1775257 | 2.6019062 | 37 | 1 | 54 days | 0.26 | | | MPC | 2006 $SC_{91}$ |
| 2006 $SE_{91}$ | 17.4 | 0.15 | 20060922 | 222.99570 | 304.01092 | 215.52712 | 2.49626 | 0.0168914 | 2.6086475 | 22 | 1 | 43 days | 0.30 | | | MPC | 2006 $SE_{91}$ |
| 2006 $SF_{91}$ | 18.1 | 0.15 | 20060922 | 333.49600 | 199.85342 | 214.35959 | 1.96537 | 0.1643831 | 2.3620806 | 35 | 1 | 62 days | 0.23 | M-v | 3 | MPC | 2006 $SF_{91}$ |
| 2006 $SG_{91}$ | 17.8 | 0.15 | 20061012 | 42.33880 | 128.23571 | 200.50071 | 5.60806 | 0.1588106 | 2.6795602 | 33 | 1 | 59 days | 0.30 | | | MPC | 2006 $SG_{91}$ |
| 2006 $SH_{91}$ | 16.2 | 0.15 | 20060922 | 37.09269 | 317.13930 | 19.60628 | 3.45881 | 0.1096262 | 3.1673623 | 39 | 1 | 61 days | 0.30 | M-v | 4 | MPC | 2006 $SH_{91}$ |
| 2006 $SK_{91}$ | 18.7 | 0.15 | 20060922 | 69.24844 | 283.27938 | 13.28927 | 21.58522 | 0.0920366 | 1.9177611 | 12 | 1 | 14 days | 0.13 | | | MPC | 2006 $SK_{91}$ |
| 2006 $SM_{91}$ | 19.5 | 0.15 | 20060922 | 12.19256 | 344.71241 | 12.26729 | 1.52087 | 0.2071103 | 2.3234391 | 20 | 1 | 40 days | 0.31 | | | MPC | 2006 $SM_{91}$ |
| 2006 $SN_{91}$ | 17.2 | 0.15 | 20060922 | 309.24813 | 241.84287 | 204.64927 | 6.79274 | 0.1516163 | 2.7037803 | 34 | 1 | 63 days | 0.25 | M-v | 4 | MPC | 2006 $SN_{91}$ |
| 2006 $SO_{91}$ | 16.9 | 0.15 | 20060922 | 350.89347 | 187.66942 | 205.98388 | 10.19543 | 0.0833478 | 3.2391553 | 16 | 1 | 40 days | 0.32 | | | MPC | 2006 $SO_{91}$ |
| 2006 $SQ_{91}$ | 17.8 | 0.15 | 20061012 | 305.05956 | 256.59706 | 202.79615 | 8.14865 | 0.1783098 | 2.5681528 | 19 | 1 | 59 days | 0.20 | | | MPC | 2006 $SQ_{91}$ |
| 2006 $SR_{91}$ | 16.8 | 0.15 | 20060922 | 11.26184 | 161.85446 | 207.10402 | 6.11969 | 0.0500882 | 2.7631818 | 26 | 1 | 62 days | 0.23 | M-v | 4 | MPC | 2006 $SR_{91}$ |
| 2006 $SS_{91}$ | 18.0 | 0.15 | 20060922 | 33.08550 | 317.07716 | 11.58166 | 2.06786 | 0.2155880 | 2.6385294 | 25 | 1 | 40 days | 0.39 | | | MPC | 2006 $SS_{91}$ |
| 2006 $SU_{91}$ | 17.3 | 0.15 | 20060922 | 34.74644 | 325.98533 | 3.35184 | 2.95218 | 0.1724995 | 2.3267111 | 58 | 1 | 128 days | 0.42 | M-v | 4 | MPC | 2006 $SU_{91}$ |
| 2006 $SV_{91}$ | 16.6 | 0.15 | 20061012 | 310.63469 | 65.88670 | 15.69580 | 6.33902 | 0.0581978 | 3.0495183 | 21 | 1 | 53 days | 0.21 | | | MPC | 2006 $SV_{91}$ |
| 2006 $SY_{91}$ | 18.5 | 0.15 | 20060922 | 8.69738 | 347.70268 | 13.48195 | 2.49650 | 0.2322227 | 2.3334727 | 34 | 1 | 61 days | 0.38 | M-v | 4 | MPC | 2006 $SY_{91}$ |
| 2006 $SZ_{91}$ | 18.0 | 0.15 | 20060922 | 346.82220 | 21.80646 | 17.41622 | 3.51037 | 0.2009845 | 2.7447162 | 25 | 1 | 63 days | 0.20 | M-v | 3 | MPC | 2006 $SZ_{91}$ |
| 2006 $SA_{92}$ | 16.4 | 0.15 | 20060922 | 306.97048 | 221.20028 | 218.16710 | 2.02207 | 0.0482329 | 2.7129702 | 47 | 1 | 62 days | 0.36 | M-v | 4 | MPC | 2006 $SA_{92}$ |
| 2006 $SB_{92}$ | 16.5 | 0.15 | 20060922 | 286.95908 | 270.93056 | 202.53483 | 13.02968 | 0.1663877 | 2.6292842 | 52 | 1 | 61 days | 0.52 | M-v | 4 | MPC | 2006 $SB_{92}$ |
| 2006 $SF_{92}$ | 17.3 | 0.15 | 20060922 | 147.29512 | 209.55253 | 20.62375 | 13.13602 | 0.0816915 | 2.5436180 | 9 | 1 | 10 days | 0.19 | | | MPC | 2006 $SF_{92}$ |
| 2006 $SG_{92}$ | 18.4 | 0.15 | 20061012 | 286.14495 | 99.90663 | 15.32581 | 5.12779 | 0.1413958 | 2.1854136 | 27 | 1 | 59 days | 0.25 | | | MPC | 2006 $SG_{92}$ |
| 2006 $SJ_{92}$ | 19.0 | 0.15 | 20060922 | 23.14651 | 146.84857 | 194.43130 | 5.17321 | 0.1928471 | 2.1445479 | 26 | 1 | 43 days | 0.24 | | | MPC | 2006 $SJ_{92}$ |
| 2006 $SK_{92}$ | 18.5 | 0.15 | 20061012 | 344.30894 | 216.13649 | 197.74225 | 4.99657 | 0.2743258 | 2.6764315 | 23 | 1 | 59 days | 0.39 | | | MPC | 2006 $SK_{92}$ |
| 2006 $SN_{92}$ | 17.6 | 0.15 | 20060922 | 47.08975 | 112.85151 | 201.51962 | 6.21161 | 0.1900998 | 2.5771924 | 31 | 1 | 63 days | 0.37 | M-v | 4 | MPC | 2006 $SN_{92}$ |
| 2006 $SO_{92}$ | 17.8 | 0.15 | 20061012 | 6.92258 | 173.73180 | 204.01243 | 8.01882 | 0.1014397 | 2.5766597 | 22 | 1 | 59 days | 0.33 | | | MPC | 2006 $SO_{92}$ |
| 2006 $SP_{92}$ | 17.3 | 0.15 | 20060922 | 20.03726 | 155.14616 | 203.99371 | 6.14448 | 0.0663981 | 2.7640980 | 22 | 1 | 40 days | 0.24 | | | MPC | 2006 $SP_{92}$ |
| 2006 $SQ_{92}$ | 16.8 | 0.15 | 20060922 | 53.84251 | 121.85701 | 198.37242 | 3.87096 | 0.0806952 | 2.7364318 | 43 | 1 | 63 days | 0.28 | M-v | 4 D | MPC | 2006 $SQ_{92}$ |
| 2006 $SR_{92}$ | 16.3 | 0.15 | 20060922 | 77.46329 | 87.28485 | 203.03985 | 10.38232 | 0.1430972 | 3.1654089 | 17 | 1 | 40 days | 0.21 | | | MPC | 2006 $SR_{92}$ |
| 2006 $SS_{92}$ | 18.0 | 0.15 | 20060922 | 295.05356 | 253.68212 | 204.90566 | 4.14585 | 0.1316775 | 2.2055546 | 41 | 1 | 63 days | 0.28 | M-v | 4 | MPC | 2006 $SS_{92}$ |
| 2006 $ST_{92}$ | 18.7 | 0.15 | 20060922 | 310.52287 | 240.60430 | 200.41283 | 5.62962 | 0.1311589 | 2.2589638 | 19 | 1 | 61 days | 0.28 | M-v | 4 | MPC | 2006 $ST_{92}$ |
| 2006 $SU_{92}$ | 17.8 | 0.15 | 20060922 | 25.88124 | 143.58658 | 202.53851 | 11.37079 | 0.1385517 | 2.5540377 | 16 | 1 | 43 days | 0.25 | | | MPC | 2006 $SU_{92}$ |
| 2006 $SW_{92}$ | 17.3 | 0.15 | 20061012 | 62.99713 | 117.37325 | 200.56516 | 3.91043 | 0.0590508 | 2.7892323 | 30 | 1 | 57 days | 0.36 | | | MPC | 2006 $SW_{92}$ |
| 2006 $SX_{92}$ | 17.5 | 0.15 | 20061012 | 11.73486 | 170.83135 | 201.41852 | 3.94167 | 0.1073012 | 2.7459794 | 23 | 1 | 57 days | 0.34 | | | MPC | 2006 $SX_{92}$ |
| 2006 $SC_{93}$ | 17.3 | 0.15 | 20060922 | 8.77153 | 349.68204 | 21.90094 | 10.28724 | 0.1122200 | 2.9718437 | 15 | 1 | 41 days | 0.23 | | | MPC | 2006 $SC_{93}$ |
| 2006 $SD_{93}$ | 18.0 | 0.15 | 20060922 | 10.27860 | 159.65132 | 199.91324 | 7.23451 | 0.2676973 | 2.6074627 | 29 | 1 | 43 days | 0.32 | | | MPC | 2006 $SD_{93}$ |
| 2006 $SE_{93}$ | 18.4 | 0.15 | 20061012 | 44.02300 | 119.75408 | 200.53988 | 4.24872 | 0.2161538 | 2.1978830 | 33 | 1 | 59 days | 0.39 | | | MPC | 2006 $SE_{93}$ |
| 2006 $SK_{93}$ | 18.0 | 0.15 | 20060922 | 330.69443 | 34.67993 | 20.31641 | 7.99799 | 0.0953799 | 2.3480651 | 33 | 1 | 68 days | 0.30 | M-v | 4 | MPC | 2006 $SK_{93}$ |
| 2006 $SN_{93}$ | 16.8 | 0.15 | 20060922 | 38.60964 | 313.11414 | 21.69457 | 12.71864 | 0.1134360 | 2.7926632 | 46 | 1 | 68 days | 0.31 | M-v | 4 | MPC | 2006 $SN_{93}$ |
| 2006 $SO_{93}$ | 17.5 | 0.15 | 20061012 | 321.68774 | 243.72875 | 193.55719 | 0.82755 | 0.1500035 | 2.4365930 | 27 | 1 | 54 days | 0.33 | | | MPC | 2006 $SO_{93}$ |
| 2006 $SS_{93}$ | 17.5 | 0.15 | 20060922 | 283.92736 | 275.72933 | 196.37718 | 1.75245 | 0.1293817 | 2.3752358 | 29 | 1 | 62 days | 0.34 | M-v | 4 | MPC | 2006 $SS_{93}$ |
| 2006 $ST_{93}$ | 16.7 | 0.15 | 20060922 | 10.77795 | 343.05617 | 28.82067 | 2.92269 | 0.0675469 | 3.1224107 | 17 | 1 | 39 days | 0.40 | | | MPC | 2006 $ST_{93}$ |
| 2006 $SW_{93}$ | 17.3 | 0.15 | 20061012 | 30.18007 | 201.89191 | 135.86041 | 0.88176 | 0.2384870 | 2.5580031 | 39 | 1 | 57 days | 0.30 | | | MPC | 2006 $SW_{93}$ |
| 2006 $SD_{94}$ | 17.2 | 0.15 | 20060922 | 42.24188 | 270.52677 | 64.14337 | 1.41435 | 0.0743765 | 2.8033977 | 22 | 1 | 40 days | 0.28 | | | MPC | 2006 $SD_{94}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SG_{94}$ | 17.2 | 0.15 | 20061012 | 327.99537 | 233.51735 | 194.90397 | 13.94908 | 0.1362504 | 2.4474796 | 26 | 1 | 56 days | 0.49 | | | MPC | 2006 $SG_{94}$ |
| 2006 $SH_{94}$ | 17.3 | 0.15 | 20060922 | 1.63199 | 348.78040 | 32.46825 | 6.27445 | 0.0270935 | 2.7162526 | 26 | 1 | 63 days | 0.34 | M-v | 4 | MPC | 2006 $SH_{94}$ |
| 2006 $SJ_{94}$ | 16.7 | 0.15 | 20060922 | 19.25381 | 324.40086 | 33.10137 | 7.66825 | 0.1472969 | 3.1918932 | 31 | 1 | 63 days | 0.28 | M-v | 4 | MPC | 2006 $SJ_{94}$ |
| 2006 $SL_{94}$ | 17.7 | 0.15 | 20060922 | 9.52631 | 289.17605 | 78.54385 | 2.09104 | 0.2009519 | 3.1345284 | 12 | 1 | 35 days | 0.25 | | | MPC | 2006 $SL_{94}$ |
| 2006 $SO_{94}$ | 16.9 | 0.15 | 20061012 | 28.27333 | 282.91287 | 64.06756 | 2.09518 | 0.1871420 | 3.1020397 | 25 | 1 | 57 days | 0.28 | | | MPC | 2006 $SO_{94}$ |
| 2006 $SR_{94}$ | 16.6 | 0.15 | 20061012 | 7.44967 | 223.91363 | 154.96220 | 2.16846 | 0.1031496 | 2.9360947 | 28 | 1 | 57 days | 0.29 | | | MPC | 2006 $SR_{94}$ |
| 2006 $SV_{94}$ | 16.8 | 0.15 | 20061012 | 53.37876 | 292.77121 | 23.03689 | 9.58426 | 0.1587044 | 2.6148906 | 32 | 1 | 59 days | 0.44 | | | MPC | 2006 $SV_{94}$ |
| 2006 $SW_{94}$ | 18.2 | 0.15 | 20060922 | 359.44535 | 354.81591 | 22.36113 | 4.22441 | 0.2272586 | 2.4164584 | 36 | 1 | 63 days | 0.33 | M-v | 4 | MPC | 2006 $SW_{94}$ |
| 2006 $SX_{94}$ | 18.9 | 0.15 | 20060922 | 324.34001 | 40.51014 | 16.08703 | 21.24467 | 0.0793937 | 1.9044020 | 12 | 1 | 15 days | 0.12 | | | MPC | 2006 $SX_{94}$ |
| 2006 $SY_{94}$ | 17.7 | 0.15 | 20060922 | 327.55952 | 238.88338 | 180.69210 | 2.50400 | 0.0938729 | 2.6403261 | 32 | 1 | 63 days | 0.37 | M-v | 4 | MPC | 2006 $SY_{94}$ |
| 2006 $SA_{95}$ | 16.9 | 0.15 | 20060922 | 23.39488 | 159.67466 | 196.16347 | 6.09723 | 0.0560838 | 2.7683343 | 26 | 1 | 61 days | 0.29 | M-v | 4 | MPC | 2006 $SA_{95}$ |
| 2006 $SC_{95}$ | 16.4 | 0.15 | 20061012 | 36.53757 | 207.03738 | 135.45394 | 1.11547 | 0.1026504 | 2.9693194 | 38 | 1 | 57 days | 0.33 | | | MPC | 2006 $SC_{95}$ |
| 2006 $SD_{95}$ | 18.3 | 0.15 | 20060922 | 337.92383 | 234.33969 | 176.55932 | 2.34828 | 0.1774354 | 2.6032350 | 25 | 1 | 44 days | 0.29 | | | MPC | 2006 $SD_{95}$ |
| 2006 $SG_{95}$ | 16.7 | 0.15 | 20060922 | 15.12746 | 165.46625 | 198.53323 | 9.63477 | 0.1039797 | 3.0553454 | 24 | 1 | 34 days | 0.24 | | | MPC | 2006 $SG_{95}$ |
| 2006 $SK_{95}$ | 17.8 | 0.15 | 20060922 | 14.36570 | 321.24025 | 31.77692 | 3.03276 | 0.2506813 | 2.5818925 | 61 | 1 | 61 days | 0.37 | M-v | 4 | MPC | 2006 $SK_{95}$ |
| 2006 $SL_{95}$ | 15.7 | 0.15 | 20060922 | 63.62262 | 256.44952 | 46.57679 | 1.10230 | 0.1542331 | 3.1393948 | 51 | 1 | 113 days | 0.29 | M-v | 4 | MPC | 2006 $SL_{95}$ |
| 2006 $SM_{95}$ | 16.5 | 0.15 | 20060922 | 69.13834 | 279.87884 | 27.67180 | 6.72763 | 0.0518937 | 2.7568970 | 52 | 1 | 63 days | 0.36 | M-v | 4 | MPC | 2006 $SM_{95}$ |
| 2006 $SO_{95}$ | 17.8 | 0.15 | 20060922 | 356.49849 | 194.82897 | 188.51631 | 3.31900 | 0.2813336 | 2.5917057 | 48 | 1 | 60 days | 0.33 | M-v | 3 | MPC | 2006 $SO_{95}$ |
| 2006 $SP_{95}$ | 16.6 | 0.15 | 20061012 | 358.52820 | 248.22996 | 140.88594 | 1.65963 | 0.1877051 | 3.2011403 | 42 | 1 | 57 days | 0.29 | | | MPC | 2006 $SP_{95}$ |
| 2006 $SQ_{95}$ | 16.6 | 0.15 | 20060922 | 49.80118 | 284.53896 | 22.70595 | 13.55126 | 0.2304196 | 2.7468477 | 39 | 1 | 68 days | 0.38 | M-v | 4 D | MPC | 2006 $SQ_{95}$ |
| 2006 $SR_{95}$ | 16.8 | 0.15 | 20060922 | 345.53416 | 207.01755 | 193.24740 | 6.14041 | 0.1123430 | 2.9207369 | 29 | 1 | 34 days | 0.39 | | | MPC | 2006 $SR_{95}$ |
| 2006 $SS_{95}$ | 16.3 | 0.15 | 20060922 | 26.33022 | 316.98916 | 26.93919 | 11.39133 | 0.1842506 | 3.1200649 | 28 | 1 | 63 days | 0.27 | M-v | 4 | MPC | 2006 $SS_{95}$ |
| 2006 $ST_{95}$ | 19.0 | 0.15 | 20061012 | 28.92287 | 232.68381 | 104.79427 | 0.39648 | 0.2493675 | 2.3497220 | 30 | 1 | 54 days | 0.27 | | | MPC | 2006 $ST_{95}$ |
| 2006 $SV_{95}$ | 16.6 | 0.15 | 20060922 | 87.03925 | 250.16509 | 32.66087 | 5.62396 | 0.1282481 | 3.1553014 | 16 | 1 | 40 days | 0.30 | | | MPC | 2006 $SV_{95}$ |
| 2006 $SX_{95}$ | 17.1 | 0.15 | 20060922 | 1.11526 | 181.80336 | 196.15852 | 16.06883 | 0.1928873 | 2.6868072 | 26 | 1 | 32 days | 0.39 | | | MPC | 2006 $SX_{95}$ |
| 2006 $SY_{95}$ | 18.1 | 0.15 | 20060922 | 352.06876 | 340.57117 | 49.18409 | 2.20529 | 0.1844220 | 2.4596768 | 29 | 1 | 33 days | 0.35 | | | MPC | 2006 $SY_{95}$ |
| 2006 $SB_{96}$ | 17.1 | 0.15 | 20061012 | 230.72292 | 124.48366 | 37.94822 | 3.46310 | 0.0696106 | 2.7087515 | 24 | 1 | 54 days | 0.36 | | | MPC | 2006 $SB_{96}$ |
| 2006 $SC_{96}$ | 17.7 | 0.15 | 20061012 | 308.25722 | 275.59940 | 180.19052 | 2.05873 | 0.1697528 | 2.6127259 | 32 | 1 | 57 days | 0.25 | | | MPC | 2006 $SC_{96}$ |
| 2006 $SD_{96}$ | 17.7 | 0.15 | 20060922 | 324.78954 | 257.52856 | 170.12372 | 2.48663 | 0.1706233 | 2.4088717 | 42 | 1 | 35 days | 0.34 | | | MPC | 2006 $SD_{96}$ |
| 2006 $SG_{96}$ | 16.6 | 0.15 | 20060922 | 43.77513 | 138.56416 | 199.98318 | 11.69360 | 0.0212361 | 2.9923100 | 22 | 1 | 35 days | 0.30 | | | MPC | 2006 $SG_{96}$ |
| 2006 $SK_{96}$ | 17.4 | 0.15 | 20061012 | 326.35633 | 23.46687 | 40.72612 | 3.53524 | 0.0531667 | 2.6978343 | 33 | 1 | 54 days | 0.31 | | | MPC | 2006 $SK_{96}$ |
| 2006 $SM_{96}$ | 17.2 | 0.15 | 20060922 | 240.53433 | 312.13609 | 194.36940 | 6.23589 | 0.0610839 | 2.3053639 | 40 | 1 | 61 days | 0.29 | M-v | 4 | MPC | 2006 $SM_{96}$ |
| 2006 $SN_{96}$ | 17.3 | 0.15 | 20060922 | 107.57097 | 221.87035 | 37.01608 | 4.12439 | 0.1604032 | 2.5340584 | 19 | 1 | 40 days | 0.26 | | | MPC | 2006 $SN_{96}$ |
| 2006 $SO_{96}$ | 17.0 | 0.15 | 20060922 | 143.29601 | 204.98618 | 32.95942 | 5.79361 | 0.0277622 | 2.7053734 | 26 | 1 | 44 days | 0.35 | | | MPC | 2006 $SO_{96}$ |
| 2006 $SQ_{96}$ | 17.6 | 0.15 | 20060922 | 329.06276 | 30.25330 | 27.52651 | 9.56444 | 0.0870817 | 2.6060142 | 25 | 1 | 63 days | 0.23 | M-v | 4 | MPC | 2006 $SQ_{96}$ |
| 2006 $SS_{96}$ | 16.5 | 0.15 | 20060922 | 82.28717 | 256.78816 | 28.48110 | 15.15538 | 0.1369379 | 2.8674419 | 36 | 1 | 40 days | 0.38 | | | MPC | 2006 $SS_{96}$ |
| 2006 $SU_{96}$ | 17.4 | 0.15 | 20060922 | 356.66310 | 358.96454 | 24.20374 | 5.15579 | 0.0662822 | 2.6394559 | 23 | 1 | 40 days | 0.27 | | | MPC | 2006 $SU_{96}$ |
| 2006 $SV_{96}$ | 18.9 | 0.15 | 20061012 | 343.62586 | 221.92351 | 186.13124 | 3.31382 | 0.1873878 | 2.3913928 | 26 | 1 | 59 days | 0.24 | | | MPC | 2006 $SV_{96}$ |
| 2006 $SW_{96}$ | 17.6 | 0.15 | 20060922 | 100.78376 | 75.82414 | 186.22029 | 2.40088 | 0.1516515 | 2.2946845 | 14 | 1 | 29 days | 0.27 | | | MPC | 2006 $SW_{96}$ |
| 2006 $SZ_{96}$ | 18.8 | 0.15 | 20060922 | 13.38209 | 339.63190 | 17.63838 | 11.78010 | 0.1765012 | 2.4301629 | 12 | 1 | 14 days | 0.27 | | | MPC | 2006 $SZ_{96}$ |
| 2006 $SC_{97}$ | 18.1 | 0.15 | 20061012 | 37.94716 | 310.01181 | 20.34366 | 5.88197 | 0.1797008 | 2.2591395 | 32 | 1 | 54 days | 0.24 | | | MPC | 2006 $SC_{97}$ |
| 2006 $SD_{97}$ | 19.1 | 0.15 | 20061012 | 13.28154 | 346.22457 | 17.38221 | 3.36857 | 0.1995295 | 2.3031127 | 27 | 1 | 53 days | 0.25 | | | MPC | 2006 $SD_{97}$ |
| 2006 $SF_{97}$ | 16.6 | 0.15 | 20060922 | 35.21354 | 318.32929 | 22.12400 | 12.07607 | 0.0902574 | 3.2093976 | 18 | 1 | 44 days | 0.31 | | | MPC | 2006 $SF_{97}$ |
| 2006 $SG_{97}$ | 18.4 | 0.15 | 20061012 | 271.59835 | 324.35250 | 151.35874 | 1.16616 | 0.0279034 | 2.2201386 | 17 | 1 | 59 days | 0.29 | | | MPC | 2006 $SG_{97}$ |
| 2006 $SK_{97}$ | 17.4 | 0.15 | 20060922 | 37.36230 | 138.85943 | 194.20150 | 8.75251 | 0.1201986 | 2.7253653 | 30 | 1 | 43 days | 0.45 | | | MPC | 2006 $SK_{97}$ |
| 2006 $SM_{97}$ | 17.6 | 0.15 | 20061012 | 324.62077 | 46.86454 | 21.83418 | 4.70705 | 0.1084731 | 2.6362697 | 40 | 1 | 59 days | 0.31 | | | MPC | 2006 $SM_{97}$ |
| 2006 $SN_{97}$ | 17.7 | 0.15 | 20060922 | 260.41674 | 109.29942 | 24.79914 | 6.53352 | 0.1338135 | 2.3998542 | 25 | 1 | 61 days | 0.23 | M-v | 4 D | MPC | 2006 $SN_{97}$ |
| 2006 $SP_{97}$ | 16.8 | 0.15 | 20060922 | 31.24928 | 149.48667 | 183.33350 | 3.29309 | 0.1994774 | 2.7351702 | 32 | 1 | 122 days | 0.24 | M-v | 3 | MPC | 2006 $SP_{97}$ |
| 2006 $SR_{97}$ | 18.8 | 0.15 | 20060922 | 335.78235 | 226.65845 | 184.63033 | 1.12142 | 0.1681312 | 2.3933563 | 22 | 1 | 62 days | 0.28 | M-v | 4 | MPC | 2006 $SR_{97}$ |
| 2006 $ST_{97}$ | 16.7 | 0.15 | 20060922 | 23.49268 | 316.70610 | 32.40714 | 3.71199 | 0.1474817 | 2.9798614 | 49 | 1 | 62 days | 0.34 | M-v | 4 | MPC | 2006 $ST_{97}$ |
| 2006 $SU_{97}$ | 16.5 | 0.15 | 20061012 | 67.03481 | 282.45576 | 21.75998 | 14.71852 | 0.1270926 | 2.6886260 | 63 | 1 | 57 days | 0.36 | | | MPC | 2006 $SU_{97}$ |
| 2006 $SV_{97}$ | 18.0 | 0.15 | 20060922 | 21.74026 | 152.67960 | 192.28353 | 2.04259 | 0.2064411 | 2.6022664 | 29 | 1 | 63 days | 0.27 | M-v | 4 | MPC | 2006 $SV_{97}$ |
| 2006 $SY_{97}$ | 17.3 | 0.15 | 20060922 | 11.67785 | 344.64092 | 21.11330 | 11.43031 | 0.0935003 | 2.6530588 | 29 | 1 | 44 days | 0.34 | | | MPC | 2006 $SY_{97}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SZ_{97}$ | 17.7 | 0.15 | 20060922 | 155.41989 | 195.59428 | 26.07306 | 6.41756 | 0.0700284 | 2.3444744 | 22 | 1 | 61 days | 0.35 | M-v 4 | MPC | 2006 $SZ_{97}$ |
| 2006 $SA_{98}$ | 16.9 | 0.15 | 20060922 | 27.92638 | 323.13387 | 27.27136 | 9.14978 | 0.0604011 | 3.0041360 | 22 | 1 | 43 days | 0.30 | | MPC | 2006 $SA_{98}$ |
| 2006 $SB_{98}$ | 19.1 | 0.15 | 20060922 | 10.24822 | 332.44220 | 28.09825 | 1.62446 | 0.1991026 | 2.3511204 | 30 | 1 | 39 days | 0.57 | | MPC | 2006 $SB_{98}$ |
| 2006 $SC_{98}$ | 17.9 | 0.15 | 20060922 | 347.38575 | 202.16532 | 195.46437 | 9.33356 | 0.1710318 | 2.8072304 | 20 | 1 | 43 days | 0.18 | | MPC | 2006 $SC_{98}$ |
| 2006 $SF_{98}$ | 17.5 | 0.15 | 20061012 | 7.91644 | 180.21613 | 196.69682 | 6.00827 | 0.0689515 | 2.7830325 | 22 | 1 | 59 days | 0.23 | | MPC | 2006 $SF_{98}$ |
| 2006 $SG_{98}$ | 16.3 | 0.15 | 20060922 | 321.72304 | 230.60244 | 200.05834 | 8.99229 | 0.1231534 | 3.1326901 | 39 | 1 | 61 days | 0.31 | M-v 4 | MPC | 2006 $SG_{98}$ |
| 2006 $SL_{98}$ | 17.5 | 0.15 | 20061012 | 349.53264 | 196.99416 | 200.59381 | 8.63267 | 0.1226875 | 3.0679055 | 14 | 1 | 59 days | 0.29 | | MPC | 2006 $SL_{98}$ |
| 2006 $SM_{98}$ | 18.4 | 0.15 | 20060922 | 328.40438 | 225.21310 | 198.09793 | 13.32076 | 0.1871237 | 2.7821019 | 14 | 1 | 29 days | 0.45 | | MPC | 2006 $SM_{98}$ |
| 2006 $SN_{98}$ | 18.6 | 0.15 | 20060922 | 32.59762 | 317.86000 | 13.64515 | 5.44870 | 0.1557080 | 2.3119614 | 13 | 1 | 60 days | 0.19 | M-v 4 | MPC | 2006 $SN_{98}$ |
| 2006 $SO_{98}$ | 17.3 | 0.15 | 20060922 | 347.69246 | 193.37338 | 199.92286 | 4.02263 | 0.0793628 | 2.7943371 | 21 | 1 | 62 days | 0.25 | M-v 4 | MPC | 2006 $SO_{98}$ |
| 2006 $SP_{98}$ | 18.4 | 0.15 | 20061012 | 345.63353 | 27.97908 | 16.05836 | 2.88732 | 0.1849025 | 2.4002556 | 29 | 1 | 59 days | 0.35 | | MPC | 2006 $SP_{98}$ |
| 2006 $SS_{98}$ | 17.6 | 0.15 | 20060922 | 44.65711 | 308.13570 | 14.45246 | 2.49968 | 0.1202332 | 2.5783774 | 25 | 1 | 62 days | 0.24 | M-v 4 | MPC | 2006 $SS_{98}$ |
| 2006 $ST_{98}$ | 18.6 | 0.15 | 20060922 | 21.13232 | 325.47297 | 17.38142 | 2.74650 | 0.2224941 | 2.6242723 | 23 | 1 | 40 days | 0.29 | | MPC | 2006 $ST_{98}$ |
| 2006 $SU_{98}$ | 16.4 | 0.15 | 20061012 | 338.76181 | 202.26418 | 205.86883 | 1.03121 | 0.0650233 | 2.7140907 | 49 | 1 | 52 days | 0.40 | | MPC | 2006 $SU_{98}$ |
| 2006 $SV_{98}$ | 16.7 | 0.15 | 20060922 | 95.40133 | 74.75364 | 195.25295 | 5.91488 | 0.1260272 | 2.6223844 | 16 | 1 | 41 days | 0.26 | | MPC | 2006 $SV_{98}$ |
| 2006 $SY_{98}$ | 17.9 | 0.15 | 20060922 | 338.30597 | 32.96346 | 13.10850 | 2.52069 | 0.1597391 | 2.3978374 | 57 | 1 | 118 days | 0.29 | M-v 3 | MPC | 2006 $SY_{98}$ |
| 2006 $SZ_{98}$ | 16.0 | 0.15 | 20060922 | 65.19029 | 256.40155 | 37.32428 | 1.53451 | 0.1934331 | 3.1606981 | 42 | 1 | 121 days | 0.22 | M-v 4 | MPC | 2006 $SZ_{98}$ |
| 2006 $SA_{99}$ | 16.9 | 0.15 | 20060922 | 130.02402 | 39.87303 | 202.43544 | 12.48029 | 0.1019553 | 2.6740532 | 18 | 1 | 62 days | 0.37 | M-v 5 | MPC | 2006 $SA_{99}$ |
| 2006 $SC_{99}$ | 17.4 | 0.15 | 20060922 | 2.51787 | 354.18631 | 19.63764 | 10.61057 | 0.2446542 | 3.1332715 | 25 | 1 | 32 days | 0.29 | | MPC | 2006 $SC_{99}$ |
| 2006 $SE_{99}$ | 16.7 | 0.15 | 20061012 | 3.57972 | 358.51987 | 21.48718 | 5.79004 | 0.0847918 | 2.7698143 | 52 | 1 | 59 days | 0.44 | | MPC | 2006 $SE_{99}$ |
| 2006 $SH_{99}$ | 17.6 | 0.15 | 20060922 | 358.30679 | 182.70039 | 198.13123 | 1.76907 | 0.0946723 | 2.6661442 | 29 | 1 | 43 days | 0.35 | | MPC | 2006 $SH_{99}$ |
| 2006 $SK_{99}$ | 15.7 | 0.15 | 20060922 | 107.02960 | 63.40382 | 202.53531 | 16.36759 | 0.0902636 | 3.2046108 | 31 | 1 | 61 days | 0.29 | M-v 4 | MPC | 2006 $SK_{99}$ |
| 2006 $SL_{99}$ | 18.3 | 0.15 | 20060922 | 316.00897 | 45.35625 | 26.66522 | 1.49277 | 0.1212521 | 2.3530474 | 13 | 1 | 39 days | 0.15 | | MPC | 2006 $SL_{99}$ |
| 2006 $SN_{99}$ | 17.8 | 0.15 | 20060922 | 334.61989 | 24.16783 | 23.91104 | 4.92696 | 0.0743304 | 2.5853393 | 25 | 1 | 39 days | 0.33 | | MPC | 2006 $SN_{99}$ |
| 2006 $SO_{99}$ | 17.9 | 0.15 | 20060922 | 9.90978 | 346.97622 | 11.78087 | 4.11793 | 0.2572018 | 2.6205736 | 33 | 1 | 61 days | 0.31 | M-v 3 | MPC | 2006 $SO_{99}$ |
| 2006 $SR_{99}$ | 17.2 | 0.15 | 20060922 | 177.91426 | 179.60535 | 23.27275 | 3.76333 | 0.0300066 | 2.7658866 | 17 | 1 | 40 days | 0.28 | | MPC | 2006 $SR_{99}$ |
| 2006 $ST_{99}$ | 16.3 | 0.15 | 20061012 | 9.75486 | 173.52299 | 199.86070 | 9.38290 | 0.0998171 | 3.1730624 | 34 | 1 | 59 days | 0.22 | | MPC | 2006 $ST_{99}$ |
| 2006 $SU_{99}$ | 16.3 | 0.15 | 20061012 | 49.29337 | 303.72826 | 22.11834 | 11.23548 | 0.1052453 | 3.0744795 | 31 | 1 | 53 days | 0.42 | | MPC | 2006 $SU_{99}$ |
| 2006 $SV_{99}$ | 16.5 | 0.15 | 20060922 | 26.13663 | 309.01182 | 22.56870 | 9.72398 | 0.3163136 | 3.9607244 | 18 | 1 | 35 days | 0.23 | | MPC | 2006 $SV_{99}$ |
| 2006 $SW_{99}$ | 19.1 | 0.15 | 20060922 | 19.88876 | 320.25910 | 25.68740 | 1.62984 | 0.2018399 | 2.4279374 | 20 | 1 | 40 days | 0.43 | | MPC | 2006 $SW_{99}$ |
| 2006 $SX_{99}$ | 17.9 | 0.15 | 20061012 | 348.97794 | 28.36317 | 12.07362 | 1.36659 | 0.1906067 | 2.4105173 | 68 | 1 | 54 days | 0.25 | | MPC | 2006 $SX_{99}$ |
| 2006 $SY_{99}$ | 17.1 | 0.15 | 20061012 | 354.65804 | 215.52317 | 175.14997 | 1.35809 | 0.0834228 | 2.5771421 | 43 | 1 | 54 days | 0.39 | | MPC | 2006 $SY_{99}$ |
| 2006 $SZ_{99}$ | 16.6 | 0.15 | 20061012 | 28.84851 | 324.21858 | 21.83990 | 5.34839 | 0.1549821 | 3.0921250 | 38 | 1 | 59 days | 0.44 | | MPC | 2006 $SZ_{99}$ |
| 2006 $SD_{100}$ | 17.4 | 0.15 | 20060922 | 164.82696 | 310.53086 | 222.61979 | 8.18069 | 0.0929717 | 2.3021982 | 9 | 1 | 8 days | 0.13 | | MPC | 2006 $SD_{100}$ |
| 2006 $SF_{100}$ | 16.2 | 0.15 | 20060922 | 73.59453 | 99.08091 | 173.04145 | 4.66809 | 0.1066290 | 2.8447638 | 11 | 1 | 11 days | 0.63 | | MPC | 2006 $SF_{100}$ |
| 2006 $SH_{100}$ | 17.9 | 0.15 | 20060922 | 296.37395 | 242.88436 | 185.11172 | 4.89864 | 0.0245831 | 2.3274269 | 10 | 1 | 9 days | 0.23 | | MPC | 2006 $SH_{100}$ |
| 2006 $SL_{100}$ | 17.6 | 0.15 | 20060922 | 331.72533 | 210.49041 | 185.23776 | 1.56684 | 0.0716242 | 2.8822791 | 10 | 1 | 8 days | 0.24 | | MPC | 2006 $SL_{100}$ |
| 2006 $SM_{100}$ | 17.7 | 0.15 | 20060922 | 174.33879 | 3.14670 | 184.48448 | 4.64893 | 0.1533578 | 2.4389114 | 14 | 1 | 13 days | 0.39 | | MPC | 2006 $SM_{100}$ |
| 2006 $SN_{100}$ | 19.3 | 0.15 | 20060922 | 350.07919 | 201.00521 | 176.64827 | 1.32792 | 0.2083500 | 2.3892858 | 11 | 1 | 8 days | 0.80 | | MPC | 2006 $SN_{100}$ |
| 2006 $SO_{100}$ | 17.5 | 0.15 | 20060922 | 342.44021 | 199.57819 | 185.33254 | 10.19698 | 0.0915708 | 3.0130279 | 18 | 1 | 13 days | 0.33 | | MPC | 2006 $SO_{100}$ |
| 2006 $SP_{100}$ | 16.6 | 0.15 | 20060922 | 87.44789 | 267.82014 | 5.80680 | 9.57173 | 0.0256366 | 3.2298885 | 21 | 1 | 33 days | 0.23 | | MPC | 2006 $SP_{100}$ |
| 2006 $SQ_{100}$ | 18.4 | 0.15 | 20060922 | 341.68118 | 37.19273 | 350.63257 | 1.36917 | 0.1420006 | 2.6560666 | 11 | 1 | 7 days | 0.28 | | MPC | 2006 $SQ_{100}$ |
| 2006 $SR_{100}$ | 17.2 | 0.15 | 20060922 | 326.16769 | 46.23064 | 6.28036 | 5.91141 | 0.1922042 | 3.0601423 | 21 | 1 | 33 days | 0.25 | | MPC | 2006 $SR_{100}$ |
| 2006 $SS_{100}$ | 18.4 | 0.15 | 20060922 | 346.05933 | 214.11591 | 168.87889 | 0.30119 | 0.1581250 | 2.9518573 | 10 | 1 | 8 days | 0.40 | | MPC | 2006 $SS_{100}$ |
| 2006 $SU_{100}$ | 18.4 | 0.15 | 20060922 | 199.06330 | 160.80398 | 6.62890 | 6.32040 | 0.0832425 | 2.2678048 | 11 | 1 | 13 days | 0.18 | | MPC | 2006 $SU_{100}$ |
| 2006 $SX_{100}$ | 17.7 | 0.15 | 20060922 | 352.00023 | 194.98355 | 184.01651 | 11.58669 | 0.2811394 | 3.1866606 | 13 | 1 | 8 days | 0.50 | | MPC | 2006 $SX_{100}$ |
| 2006 $SZ_{100}$ | 17.4 | 0.15 | 20060922 | 213.75715 | 149.56535 | 7.81575 | 2.03468 | 0.1004407 | 2.6730786 | 10 | 1 | 8 days | 0.39 | | MPC | 2006 $SZ_{100}$ |
| 2006 $SD_{101}$ | 18.4 | 0.15 | 20060922 | 320.25320 | 59.24092 | 8.19430 | 8.02043 | 0.2474371 | 2.7591919 | 10 | 1 | 8 days | 0.21 | | MPC | 2006 $SD_{101}$ |
| 2006 $SE_{101}$ | 16.9 | 0.15 | 20060922 | 215.14792 | 335.38215 | 181.46998 | 10.18767 | 0.0970724 | 3.0511249 | 11 | 1 | 7 days | 0.98 | | MPC | 2006 $SE_{101}$ |
| 2006 $SG_{101}$ | 17.5 | 0.15 | 20060922 | 216.06484 | 140.66373 | 16.13282 | 1.28742 | 0.1156122 | 2.4631575 | 10 | 1 | 8 days | 0.33 | | MPC | 2006 $SG_{101}$ |
| 2006 $SJ_{101}$ | 17.0 | 0.15 | 20060922 | 199.16702 | 128.01536 | 45.44253 | 2.08132 | 0.2119943 | 2.4108116 | 16 | 1 | 8 days | 0.40 | | MPC | 2006 $SJ_{101}$ |
| 2006 $SM_{101}$ | 16.0 | 0.15 | 20060922 | 18.46719 | 130.30809 | 198.04936 | 0.52892 | 0.1396954 | 3.1389816 | 12 | 1 | 9 days | 0.48 | | MPC | 2006 $SM_{101}$ |
| 2006 $SO_{101}$ | 17.6 | 0.15 | 20061012 | 331.60530 | 233.53048 | 166.99517 | 2.20279 | 0.1587812 | 2.5574086 | 16 | 1 | 59 days | 0.45 | | MPC | 2006 $SO_{101}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SR_{101}$ | 17.6 | 0.15 | 20060922 | 344.87954 | 15.51011 | 7.90529 | 12.07784 | 0.1289353 | 3.0826261 | 10 | 1 | 8 days | 0.47 | | | MPC | 2006 $SR_{101}$ |
| 2006 $SS_{101}$ | 17.1 | 0.15 | 20060922 | 344.14109 | 24.11741 | 2.87772 | 7.85090 | 0.2965710 | 3.0315151 | 15 | 1 | 6 days | 0.67 | | | MPC | 2006 $SS_{101}$ |
| 2006 $SX_{101}$ | 16.4 | 0.15 | 20060922 | 185.72744 | 169.85759 | 10.10649 | 3.25519 | 0.1928431 | 2.7682350 | 11 | 1 | 13 days | 0.39 | | | MPC | 2006 $SX_{101}$ |
| 2006 $SZ_{101}$ | 19.0 | 0.15 | 20060922 | 351.08679 | 275.06557 | 102.68973 | 0.63091 | 0.2270908 | 2.9637106 | 10 | 1 | 8 days | 0.43 | | | MPC | 2006 $SZ_{101}$ |
| 2006 $SB_{102}$ | 18.4 | 0.15 | 20060922 | 343.90708 | 179.15231 | 207.63298 | 2.33881 | 0.1159149 | 2.6322171 | 9 | 1 | 9 days | 0.29 | | | MPC | 2006 $SB_{102}$ |
| 2006 $SD_{102}$ | 17.4 | 0.15 | 20060922 | 246.25876 | 286.74751 | 202.90502 | 3.24669 | 0.0835830 | 2.6006969 | 9 | 1 | 9 days | 0.62 | | | MPC | 2006 $SD_{102}$ |
| 2006 $SE_{102}$ | 17.4 | 0.15 | 20060922 | 259.67304 | 278.98285 | 203.38870 | 2.05944 | 0.1369063 | 2.4535718 | 19 | 1 | 31 days | 0.32 | | | MPC | 2006 $SE_{102}$ |
| 2006 $SG_{102}$ | 18.7 | 0.15 | 20061012 | 306.52059 | 249.65276 | 197.06076 | 1.98185 | 0.1945169 | 2.4425584 | 21 | 1 | 38 days | 0.35 | | D | MPC | 2006 $SG_{102}$ |
| 2006 $SJ_{102}$ | 18.0 | 0.15 | 20060922 | 343.28765 | 28.13067 | 0.39848 | 4.86807 | 0.1156673 | 2.7620658 | 9 | 1 | 9 days | 0.17 | | | MPC | 2006 $SJ_{102}$ |
| 2006 $SK_{102}$ | 16.2 | 0.15 | 20060922 | 201.01858 | 166.78617 | 8.14580 | 29.68896 | 0.1868953 | 3.2242732 | 10 | 1 | 33 days | 0.64 | | | MPC | 2006 $SK_{102}$ |
| 2006 $SL_{102}$ | 17.7 | 0.15 | 20060922 | 17.63896 | 352.09184 | 354.62199 | 1.61150 | 0.0917431 | 2.8723974 | 9 | 1 | 9 days | 0.22 | | | MPC | 2006 $SL_{102}$ |
| 2006 $SN_{102}$ | 16.1 | 0.15 | 20060922 | 272.63813 | 94.34975 | 6.64881 | 11.34240 | 0.0411206 | 3.1122463 | 13 | 1 | 30 days | 0.11 | | | MPC | 2006 $SN_{102}$ |
| 2006 $SO_{102}$ | 17.2 | 0.15 | 20060922 | 235.44945 | 314.32247 | 188.81596 | 12.90881 | 0.1160091 | 2.6499868 | 16 | 1 | 27 days | 0.17 | | | MPC | 2006 $SO_{102}$ |
| 2006 $SP_{102}$ | 19.8 | 0.15 | 20060922 | 32.71384 | 126.56825 | 185.92691 | 23.16456 | 0.2519660 | 2.2292631 | 9 | 1 | 11 days | 0.29 | | | MPC | 2006 $SP_{102}$ |
| 2006 $SR_{102}$ | 17.7 | 0.15 | 20060922 | 317.72411 | 61.40245 | 7.07221 | 3.91848 | 0.1936791 | 2.7628196 | 17 | 1 | 42 days | 0.26 | | | MPC | 2006 $SR_{102}$ |
| 2006 $SS_{102}$ | 17.1 | 0.15 | 20060922 | 337.86424 | 68.79956 | 327.44595 | 0.95104 | 0.1034379 | 2.8515228 | 19 | 1 | 46 days | 0.15 | | D | MPC | 2006 $SS_{102}$ |
| 2006 $ST_{102}$ | 16.8 | 0.15 | 20060922 | 125.33260 | 231.15294 | 6.61759 | 5.11682 | 0.0804437 | 3.0858567 | 10 | 1 | 9 days | 0.27 | | | MPC | 2006 $ST_{102}$ |
| 2006 $SU_{102}$ | 17.7 | 0.15 | 20060922 | 9.77260 | 349.42661 | 8.13034 | 7.99092 | 0.0752873 | 2.8464482 | 10 | 1 | 9 days | 0.21 | | | MPC | 2006 $SU_{102}$ |
| 2006 $SV_{102}$ | 19.0 | 0.15 | 20060922 | 358.67070 | 10.28309 | 358.59353 | 1.10562 | 0.1942487 | 2.4227140 | 20 | 1 | 42 days | 0.33 | | | MPC | 2006 $SV_{102}$ |
| 2006 $SX_{102}$ | 17.9 | 0.15 | 20060922 | 0.30539 | 180.56137 | 187.54922 | 3.40920 | 0.1171216 | 2.7587218 | 14 | 1 | 9 days | 0.28 | | | MPC | 2006 $SX_{102}$ |
| 2006 $SB_{103}$ | 18.5 | 0.15 | 20060922 | 293.34395 | 261.31210 | 188.28644 | 5.24532 | 0.1340063 | 2.3381283 | 18 | 1 | 33 days | 0.22 | | | MPC | 2006 $SB_{103}$ |
| 2006 $SD_{103}$ | 17.3 | 0.15 | 20060922 | 252.26477 | 290.11808 | 192.13710 | 2.13979 | 0.0689267 | 2.8316302 | 9 | 1 | 9 days | 0.74 | | | MPC | 2006 $SD_{103}$ |
| 2006 $SE_{103}$ | 18.1 | 0.15 | 20060922 | 20.46444 | 326.13042 | 6.09202 | 12.03880 | 0.2446788 | 3.0096899 | 14 | 1 | 33 days | 0.29 | | | MPC | 2006 $SE_{103}$ |
| 2006 $SG_{103}$ | 17.7 | 0.15 | 20060922 | 303.90557 | 249.06700 | 189.99287 | 4.58326 | 0.1535600 | 2.6335658 | 20 | 1 | 38 days | 0.48 | | | MPC | 2006 $SG_{103}$ |
| 2006 $SH_{103}$ | 17.9 | 0.15 | 20060922 | 35.80828 | 253.74545 | 63.01734 | 0.60013 | 0.1738057 | 2.8292939 | 10 | 1 | 9 days | 0.24 | | | MPC | 2006 $SH_{103}$ |
| 2006 $SM_{103}$ | 17.6 | 0.15 | 20060922 | 19.14408 | 153.71014 | 187.80134 | 6.71244 | 0.1357762 | 2.6762209 | 16 | 1 | 27 days | 0.36 | | | MPC | 2006 $SM_{103}$ |
| 2006 $SN_{103}$ | 18.3 | 0.15 | 20060922 | 315.10959 | 69.32728 | 357.79554 | 0.85882 | 0.1698362 | 2.4356518 | 10 | 1 | 27 days | 0.21 | | | MPC | 2006 $SN_{103}$ |
| 2006 $SO_{103}$ | 17.2 | 0.15 | 20060922 | 344.05505 | 210.10135 | 179.28008 | 4.62424 | 0.1633664 | 3.0666871 | 16 | 1 | 11 days | 0.15 | | | MPC | 2006 $SO_{103}$ |
| 2006 $SQ_{103}$ | 15.7 | 0.15 | 20060922 | 107.62463 | 233.54002 | 8.67981 | 15.35586 | 0.1856747 | 3.1232944 | 16 | 1 | 39 days | 0.22 | | | MPC | 2006 $SQ_{103}$ |
| 2006 $SR_{103}$ | 17.2 | 0.15 | 20060922 | 114.90190 | 236.89689 | 2.41886 | 1.95107 | 0.1401736 | 2.5779316 | 9 | 1 | 9 days | 0.15 | | | MPC | 2006 $SR_{103}$ |
| 2006 $SS_{103}$ | 17.5 | 0.15 | 20060922 | 208.61060 | 157.59740 | 7.23536 | 3.23893 | 0.1253763 | 2.3876905 | 12 | 1 | 9 days | 0.18 | | | MPC | 2006 $SS_{103}$ |
| 2006 $ST_{103}$ | 19.5 | 0.15 | 20060922 | 15.55647 | 337.96487 | 6.01016 | 1.08352 | 0.1651425 | 2.4082222 | 10 | 1 | 9 days | 0.27 | | | MPC | 2006 $ST_{103}$ |
| 2006 $SU_{103}$ | 19.8 | 0.15 | 20060922 | 357.59119 | 182.91895 | 185.88867 | 4.04537 | 0.1761535 | 2.2518037 | 22 | 1 | 27 days | 0.28 | | | MPC | 2006 $SU_{103}$ |
| 2006 $SV_{103}$ | 17.9 | 0.15 | 20060922 | 198.99146 | 164.48126 | 7.41423 | 2.46184 | 0.1075098 | 2.3351910 | 12 | 1 | 9 days | 0.22 | | | MPC | 2006 $SV_{103}$ |
| 2006 $SW_{103}$ | 17.8 | 0.15 | 20060922 | 281.19645 | 94.15859 | 11.27765 | 9.73124 | 0.1673792 | 2.7509213 | 10 | 1 | 7 days | 0.27 | | | MPC | 2006 $SW_{103}$ |
| 2006 $SY_{103}$ | 17.6 | 0.15 | 20060922 | 157.18760 | 180.47265 | 24.76645 | 1.60194 | 0.1308213 | 2.3991090 | 13 | 1 | 9 days | 0.23 | | | MPC | 2006 $SY_{103}$ |
| 2006 $SA_{104}$ | 16.8 | 0.15 | 20060922 | 27.39113 | 309.96857 | 24.08184 | 3.10629 | 0.1083494 | 3.1945348 | 19 | 1 | 13 days | 0.26 | | | MPC | 2006 $SA_{104}$ |
| 2006 $SB_{104}$ | 15.5 | 0.15 | 20060922 | 34.57985 | 53.67778 | 272.55795 | 16.25678 | 0.1627263 | 3.0759818 | 12 | 1 | 6 days | 0.51 | | | MPC | 2006 $SB_{104}$ |
| 2006 $SF_{104}$ | 17.5 | 0.15 | 20060922 | 52.83569 | 127.29390 | 183.90310 | 4.60275 | 0.0439965 | 2.8141742 | 10 | 1 | 9 days | 0.15 | | | MPC | 2006 $SF_{104}$ |
| 2006 $SH_{104}$ | 17.9 | 0.15 | 20060922 | 8.57673 | 337.38002 | 19.50966 | 4.31506 | 0.1039723 | 2.7556048 | 13 | 1 | 9 days | 0.62 | | | MPC | 2006 $SH_{104}$ |
| 2006 $SJ_{104}$ | 17.2 | 0.15 | 20060922 | 1.75997 | 357.32700 | 9.17811 | 17.07236 | 0.0665890 | 3.0172583 | 10 | 1 | 9 days | 0.17 | | | MPC | 2006 $SJ_{104}$ |
| 2006 $SK_{104}$ | 17.2 | 0.15 | 20060922 | 47.50390 | 122.07434 | 178.40105 | 1.05348 | 0.2074113 | 3.1855253 | 13 | 1 | 9 days | 0.24 | | | MPC | 2006 $SK_{104}$ |
| 2006 $SM_{104}$ | 17.0 | 0.15 | 20060922 | 69.48960 | 120.08468 | 174.58129 | 3.00086 | 0.0348511 | 2.5927372 | 17 | 1 | 32 days | 0.27 | | | MPC | 2006 $SM_{104}$ |
| 2006 $SN_{104}$ | 17.0 | 0.15 | 20060922 | 281.47842 | 267.56773 | 185.89581 | 8.94552 | 0.0507181 | 3.1392638 | 10 | 1 | 9 days | 0.28 | | | MPC | 2006 $SN_{104}$ |
| 2006 $SO_{104}$ | 18.9 | 0.15 | 20060922 | 309.37456 | 246.80238 | 183.44404 | 6.22038 | 0.1262217 | 2.3923747 | 14 | 1 | 9 days | 0.29 | | | MPC | 2006 $SO_{104}$ |
| 2006 $ST_{104}$ | 17.2 | 0.15 | 20060922 | 290.39096 | 272.66790 | 176.07895 | 5.38481 | 0.0951790 | 2.7653152 | 10 | 1 | 7 days | 0.65 | | | MPC | 2006 $ST_{104}$ |
| 2006 $SU_{104}$ | 19.2 | 0.15 | 20060922 | 24.10553 | 146.10972 | 181.99300 | 6.72205 | 0.2208928 | 2.2054246 | 15 | 1 | 11 days | 0.10 | | | MPC | 2006 $SU_{104}$ |
| 2006 $SV_{104}$ | 16.5 | 0.15 | 20060922 | 259.78676 | 313.59056 | 165.08065 | 1.03150 | 0.0807666 | 2.9650079 | 28 | 1 | 32 days | 0.22 | | | MPC | 2006 $SV_{104}$ |
| 2006 $SW_{104}$ | 17.7 | 0.15 | 20060922 | 346.01794 | 14.28644 | 10.70795 | 8.44012 | 0.1289300 | 2.3369833 | 35 | 1 | 62 days | 0.37 | M-v | 4 | MPC | 2006 $SW_{104}$ |
| 2006 $SX_{104}$ | 16.3 | 0.15 | 20060922 | 348.30632 | 112.94589 | 290.67896 | 12.57385 | 0.3023352 | 3.1569715 | 20 | 1 | 42 days | 0.48 | | | MPC | 2006 $SX_{104}$ |
| 2006 $SY_{104}$ | 15.3 | 0.15 | 20061012 | 20.66205 | 103.92399 | 237.68423 | 17.89172 | 0.3597587 | 3.1167761 | 50 | 1 | 59 days | 0.53 | | | MPC | 2006 $SY_{104}$ |
| 2006 $SE_{105}$ | 16.3 | 0.15 | 20060922 | 345.67444 | 47.32843 | 1.50315 | 31.71750 | 0.2639623 | 2.6179271 | 12 | 1 | 27 days | 0.56 | | | MPC | 2006 $SE_{105}$ |
| 2006 $SF_{105}$ | 15.9 | 0.15 | 20060922 | 12.88100 | 30.13412 | 313.78136 | 17.03661 | 0.2989918 | 2.7531625 | 33 | 1 | 64 days | 0.57 | M-v | 4 | MPC | 2006 $SF_{105}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SJ_{105}$ | 17.0 | 0.15 | 20060922 | 242.77641 | 173.99595 | 332.13765 | 1.73986 | 0.1591057 | 2.6353737 | 9 | 1 | 7 days | 0.25 | | | MPC | 2006 $SJ_{105}$ |
| 2006 $SK_{105}$ | 17.7 | 0.15 | 20060922 | 22.51343 | 128.07861 | 206.05495 | 2.64310 | 0.2614892 | 3.1866349 | 10 | 1 | 7 days | 0.30 | | | MPC | 2006 $SK_{105}$ |
| 2006 $SM_{105}$ | 17.7 | 0.15 | 20060922 | 49.64389 | 97.12825 | 193.45588 | 10.97621 | 0.2943119 | 2.6436010 | 17 | 1 | 33 days | 0.26 | | | MPC | 2006 $SM_{105}$ |
| 2006 $SN_{105}$ | 17.4 | 0.15 | 20060922 | 27.41864 | 315.80501 | 11.71215 | 4.34384 | 0.2279507 | 2.5733514 | 21 | 1 | 28 days | 0.57 | | | MPC | 2006 $SN_{105}$ |
| 2006 $SO_{105}$ | 16.8 | 0.15 | 20060922 | 332.24419 | 219.00965 | 193.54119 | 8.62589 | 0.1738147 | 3.1580494 | 22 | 1 | 42 days | 0.37 | | | MPC | 2006 $SO_{105}$ |
| 2006 $SQ_{105}$ | 18.7 | 0.15 | 20060922 | 353.33028 | 193.50483 | 187.23458 | 1.50732 | 0.1883691 | 2.5278017 | 21 | 1 | 38 days | 0.30 | | | MPC | 2006 $SQ_{105}$ |
| 2006 $SR_{105}$ | 16.4 | 0.15 | 20060922 | 210.31097 | 160.34021 | 15.91355 | 2.26287 | 0.2661750 | 2.5518275 | 10 | 1 | 7 days | 0.28 | | | MPC | 2006 $SR_{105}$ |
| 2006 $SS_{105}$ | 17.4 | 0.15 | 20060922 | 8.58060 | 165.94325 | 194.73394 | 3.38478 | 0.1838561 | 3.1517513 | 13 | 1 | 40 days | 0.26 | | | MPC | 2006 $SS_{105}$ |
| 2006 $ST_{105}$ | 17.4 | 0.15 | 20060922 | 324.45291 | 50.25378 | 14.79308 | 9.64276 | 0.1962556 | 3.1236212 | 10 | 1 | 7 days | 0.23 | | | MPC | 2006 $ST_{105}$ |
| 2006 $SV_{105}$ | 18.0 | 0.15 | 20060922 | 64.24397 | 102.27790 | 184.08430 | 5.48436 | 0.1883361 | 2.3855503 | 10 | 1 | 7 days | 0.38 | | | MPC | 2006 $SV_{105}$ |
| 2006 $SW_{105}$ | 17.4 | 0.15 | 20060922 | 334.54154 | 29.97971 | 12.61974 | 1.95727 | 0.0635068 | 2.8770069 | 17 | 1 | 42 days | 0.27 | | | MPC | 2006 $SW_{105}$ |
| 2006 $SX_{105}$ | 17.9 | 0.15 | 20060922 | 318.46249 | 242.10004 | 181.39996 | 4.49517 | 0.1254656 | 2.3444935 | 10 | 1 | 7 days | 0.20 | | | MPC | 2006 $SX_{105}$ |
| 2006 $SZ_{105}$ | 18.2 | 0.15 | 20060922 | 7.04363 | 170.85920 | 190.63480 | 7.40099 | 0.1678913 | 2.5604165 | 17 | 1 | 33 days | 0.17 | | | MPC | 2006 $SZ_{105}$ |
| 2006 $SA_{106}$ | 18.2 | 0.15 | 20060922 | 17.48550 | 304.18706 | 39.18038 | 0.70082 | 0.2083253 | 2.4143170 | 28 | 1 | 44 days | 0.22 | | | MPC | 2006 $SA_{106}$ |
| 2006 $SB_{106}$ | 19.2 | 0.15 | 20060922 | 342.52141 | 211.96532 | 187.22552 | 5.58650 | 0.2510613 | 2.3511119 | 18 | 1 | 66 days | 0.24 | M-v | 4 | MPC | 2006 $SB_{106}$ |
| 2006 $SC_{106}$ | 18.1 | 0.15 | 20060922 | 306.73659 | 260.33317 | 184.55884 | 6.46643 | 0.1938764 | 2.3346142 | 21 | 1 | 37 days | 0.22 | | | MPC | 2006 $SC_{106}$ |
| 2006 $SE_{106}$ | 16.5 | 0.15 | 20060922 | 269.55196 | 100.00068 | 18.35310 | 3.93132 | 0.1129230 | 3.0484868 | 13 | 1 | 11 days | 0.79 | | | MPC | 2006 $SE_{106}$ |
| 2006 $SG_{106}$ | 19.5 | 0.15 | 20060922 | 22.69469 | 324.60792 | 10.50776 | 13.41327 | 0.2136113 | 2.3036809 | 10 | 1 | 7 days | 0.94 | | | MPC | 2006 $SG_{106}$ |
| 2006 $SH_{106}$ | 18.0 | 0.15 | 20060922 | 352.02456 | 11.52856 | 12.44348 | 13.03250 | 0.1899905 | 2.6720686 | 17 | 1 | 28 days | 0.42 | | | MPC | 2006 $SH_{106}$ |
| 2006 $SJ_{106}$ | 16.7 | 0.15 | 20060922 | 268.96003 | 101.92101 | 14.66310 | 12.24710 | 0.1091075 | 3.0376376 | 10 | 1 | 7 days | 0.47 | | | MPC | 2006 $SJ_{106}$ |
| 2006 $SK_{106}$ | 16.3 | 0.15 | 20060922 | 275.44436 | 286.21748 | 184.73066 | 3.03453 | 0.1189933 | 2.8733435 | 10 | 1 | 7 days | 0.46 | | | MPC | 2006 $SK_{106}$ |
| 2006 $SM_{106}$ | 16.8 | 0.15 | 20060922 | 89.13235 | 62.93768 | 198.51393 | 4.49950 | 0.2008970 | 2.6411395 | 17 | 1 | 26 days | 0.20 | | | MPC | 2006 $SM_{106}$ |
| 2006 $SN_{106}$ | 18.9 | 0.15 | 20060922 | 24.20815 | 141.56521 | 191.78311 | 0.71053 | 0.2016851 | 2.3469295 | 13 | 1 | 26 days | 0.19 | | | MPC | 2006 $SN_{106}$ |
| 2006 $SO_{106}$ | 17.3 | 0.15 | 20060922 | 283.07480 | 73.98236 | 27.29844 | 0.70120 | 0.0954707 | 2.8993190 | 21 | 1 | 38 days | 0.36 | | | MPC | 2006 $SO_{106}$ |
| 2006 $SQ_{106}$ | 17.8 | 0.15 | 20060922 | 299.97754 | 88.95265 | 11.49141 | 5.81557 | 0.2478815 | 2.6989008 | 10 | 1 | 11 days | 0.20 | | | MPC | 2006 $SQ_{106}$ |
| 2006 $SR_{106}$ | 18.1 | 0.15 | 20060922 | 333.78643 | 33.29668 | 9.57467 | 5.38116 | 0.1165149 | 2.1660830 | 31 | 1 | 30 days | 0.36 | | | MPC | 2006 $SR_{106}$ |
| 2006 $SS_{106}$ | 17.2 | 0.15 | 20060922 | 339.83255 | 23.14225 | 18.69599 | 0.35760 | 0.1779994 | 3.0953113 | 20 | 1 | 42 days | 0.33 | | | MPC | 2006 $SS_{106}$ |
| 2006 $ST_{106}$ | 17.3 | 0.15 | 20060922 | 81.16663 | 258.81421 | 13.02315 | 12.81477 | 0.1732150 | 2.6397618 | 14 | 1 | 30 days | 0.18 | | | MPC | 2006 $ST_{106}$ |
| 2006 $SU_{106}$ | 17.5 | 0.15 | 20060922 | 330.74913 | 214.74998 | 193.98667 | 10.59230 | 0.1282647 | 3.0625704 | 17 | 1 | 27 days | 0.23 | | | MPC | 2006 $SU_{106}$ |
| 2006 $SV_{106}$ | 16.9 | 0.15 | 20060922 | 307.21689 | 255.32654 | 192.77672 | 9.67321 | 0.2250366 | 3.1428767 | 17 | 1 | 36 days | 0.30 | | | MPC | 2006 $SV_{106}$ |
| 2006 $SW_{106}$ | 17.1 | 0.15 | 20060922 | 346.84704 | 190.08000 | 196.10930 | 4.58446 | 0.0862840 | 2.6987845 | 21 | 1 | 38 days | 0.20 | | | MPC | 2006 $SW_{106}$ |
| 2006 $SZ_{106}$ | 16.4 | 0.15 | 20061012 | 232.38259 | 310.81338 | 194.50390 | 9.87436 | 0.0187160 | 3.1349865 | 21 | 1 | 56 days | 0.42 | | | MPC | 2006 $SZ_{106}$ |
| 2006 $SA_{107}$ | 17.4 | 0.15 | 20060922 | 27.93463 | 134.65548 | 189.57555 | 4.25157 | 0.2495202 | 2.8464640 | 10 | 1 | 7 days | 0.69 | | | MPC | 2006 $SA_{107}$ |
| 2006 $SB_{107}$ | 18.7 | 0.15 | 20060922 | 37.42829 | 310.23793 | 9.25576 | 1.10458 | 0.1578985 | 2.4587448 | 10 | 1 | 11 days | 0.18 | | | MPC | 2006 $SB_{107}$ |
| 2006 $SC_{107}$ | 17.2 | 0.15 | 20060922 | 295.36620 | 256.47052 | 193.97458 | 5.37022 | 0.1280761 | 2.7984219 | 10 | 1 | 7 days | 0.42 | | | MPC | 2006 $SC_{107}$ |
| 2006 $SD_{107}$ | 18.2 | 0.15 | 20060922 | 333.19205 | 63.74569 | 336.83442 | 1.75090 | 0.0786763 | 2.6930404 | 20 | 1 | 30 days | 0.32 | | | MPC | 2006 $SD_{107}$ |
| 2006 $SG_{107}$ | 18.4 | 0.15 | 20060922 | 323.31370 | 182.58136 | 235.35778 | 0.54546 | 0.1557926 | 2.3679148 | 12 | 1 | 11 days | 0.30 | | | MPC | 2006 $SG_{107}$ |
| 2006 $SO_{107}$ | 17.8 | 0.15 | 20061012 | 341.72089 | 32.06657 | 12.51449 | 4.68204 | 0.2650743 | 2.6460999 | 30 | 1 | 57 days | 0.44 | | | MPC | 2006 $SO_{107}$ |
| 2006 $SS_{107}$ | 17.2 | 0.15 | 20060922 | 17.24587 | 4.13161 | 337.40792 | 6.10704 | 0.1548622 | 2.3630424 | 28 | 1 | 34 days | 0.42 | | | MPC | 2006 $SS_{107}$ |
| 2006 $SW_{107}$ | 16.9 | 0.15 | 20060922 | 0.89157 | 202.75718 | 158.64346 | 14.96716 | 0.2626153 | 2.6720735 | 22 | 1 | 94 days | 0.33 | M-v | 3 | MPC | 2006 $SW_{107}$ |
| 2006 $SZ_{107}$ | 16.6 | 0.15 | 20060922 | 31.32600 | 319.10491 | 356.80346 | 4.08806 | 0.2393455 | 2.6941699 | 31 | 1 | 42 days | 0.42 | | | MPC | 2006 $SZ_{107}$ |
| 2006 $SA_{108}$ | 16.5 | 0.15 | 20061012 | 49.30476 | 116.39241 | 193.32575 | 13.35824 | 0.0930682 | 2.6339312 | 29 | 1 | 57 days | 0.51 | | | MPC | 2006 $SA_{108}$ |
| 2006 $SE_{108}$ | 16.5 | 0.15 | 20060922 | 24.08732 | 253.02773 | 80.17183 | 8.55459 | 0.1344996 | 2.4090438 | 22 | 1 | 39 days | 0.56 | | | MPC | 2006 $SE_{108}$ |
| 2006 $SK_{108}$ | 18.2 | 0.15 | 20060922 | 2.72836 | 41.44857 | 328.17064 | 1.16745 | 0.2443244 | 2.4888245 | 44 | 1 | 60 days | 0.37 | M-v | 3 | MPC | 2006 $SK_{108}$ |
| 2006 $SM_{108}$ | 18.6 | 0.15 | 20060922 | 9.01211 | 163.74862 | 195.07655 | 8.29580 | 0.2542111 | 2.7287459 | 10 | 1 | 7 days | 0.42 | | | MPC | 2006 $SM_{108}$ |
| 2006 $SP_{108}$ | 16.4 | 0.15 | 20060922 | 139.58369 | 28.13993 | 202.43530 | 3.34204 | 0.1030895 | 2.5774654 | 33 | 1 | 64 days | 0.37 | M-v | 5 | MPC | 2006 $SP_{108}$ |
| 2006 $SQ_{108}$ | 17.4 | 0.15 | 20060922 | 176.09137 | 356.85003 | 203.23005 | 2.95974 | 0.0747429 | 2.3960070 | 18 | 1 | 64 days | 0.36 | M-v | 5 | MPC | 2006 $SQ_{108}$ |
| 2006 $ST_{108}$ | 14.6 | 0.15 | 20060922 | 15.31788 | 232.93715 | 135.02760 | 22.51613 | 0.0635006 | 3.1831478 | 16 | 1 | 66 days | 0.67 | M-v | 5 | MPC | 2006 $ST_{108}$ |
| 2006 $SU_{108}$ | 15.6 | 0.15 | 20060922 | 25.10124 | 275.21977 | 59.19742 | 16.82132 | 0.2094508 | 3.1668350 | 26 | 1 | 39 days | 0.61 | | | MPC | 2006 $SU_{108}$ |
| 2006 $SW_{108}$ | 17.1 | 0.15 | 20060922 | 347.68541 | 14.55176 | 19.46536 | 13.67140 | 0.1536237 | 2.6010860 | 59 | 1 | 64 days | 0.62 | M-v | 4 | MPC | 2006 $SW_{108}$ |
| 2006 $SY_{108}$ | 17.5 | 0.15 | 20060922 | 39.34810 | 302.12987 | 21.05840 | 10.25735 | 0.1722908 | 2.5224526 | 31 | 1 | 38 days | 0.30 | | | MPC | 2006 $SY_{108}$ |
| 2006 $SZ_{108}$ | 17.1 | 0.15 | 20061012 | 40.31737 | 175.91894 | 166.05647 | 1.49484 | 0.0313950 | 2.6802665 | 19 | 1 | 53 days | 0.27 | | | MPC | 2006 $SZ_{108}$ |
| 2006 $SB_{109}$ | 17.9 | 0.15 | 20060922 | 12.34317 | 332.19712 | 23.47364 | 4.82320 | 0.1932814 | 2.1733727 | 42 | 1 | 60 days | 0.49 | M-v | 4 | MPC | 2006 $SB_{109}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SD_{109}$ | 18.7 | 0.15 | 20061012 | 12.42652 | 332.90108 | 31.74318 | 2.93341 | 0.2119436 | 2.3944746 | 36 | 1 | 55 days | 0.26 | | MPC | 2006 $SD_{109}$ |
| 2006 $SE_{109}$ | 19.2 | 0.15 | 20060922 | 0.52675 | 355.47077 | 17.34447 | 15.05085 | 0.3638715 | 2.6769077 | 20 | 1 | 32 days | 0.31 | | MPC | 2006 $SE_{109}$ |
| 2006 $SF_{109}$ | 16.4 | 0.15 | 20060922 | 319.29813 | 33.93694 | 32.97717 | 8.62140 | 0.0453268 | 2.9480461 | 45 | 1 | 62 days | 0.39 | M-v 4 | MPC | 2006 $SF_{109}$ |
| 2006 $SG_{109}$ | 17.7 | 0.15 | 20061012 | 30.59624 | 300.49097 | 25.93109 | 12.40908 | 0.3343460 | 3.0095378 | 22 | 1 | 52 days | 0.25 | | MPC | 2006 $SG_{109}$ |
| 2006 $SJ_{109}$ | 15.6 | 0.15 | 20060922 | 37.96524 | 294.74438 | 29.63392 | 15.51953 | 0.2289774 | 3.1320852 | 44 | 1 | 62 days | 0.28 | M-v 3 | MPC | 2006 $SJ_{109}$ |
| 2006 $SK_{109}$ | 17.3 | 0.15 | 20061012 | 37.60097 | 190.69286 | 153.49523 | 2.43510 | 0.0808691 | 2.8948429 | 22 | 1 | 58 days | 0.33 | | MPC | 2006 $SK_{109}$ |
| 2006 $SL_{109}$ | 16.9 | 0.15 | 20061012 | 89.96944 | 141.14595 | 144.46533 | 2.24593 | 0.1067888 | 2.6705144 | 23 | 1 | 58 days | 0.29 | | MPC | 2006 $SL_{109}$ |
| 2006 $SN_{109}$ | 19.0 | 0.15 | 20060922 | 6.65772 | 349.77817 | 13.85025 | 21.43481 | 0.1020801 | 1.9090087 | 13 | 1 | 11 days | 0.21 | | MPC | 2006 $SN_{109}$ |
| 2006 $SU_{109}$ | 17.4 | 0.15 | 20060922 | 312.76541 | 82.81351 | 336.23242 | 4.62914 | 0.1428491 | 2.2170730 | 25 | 1 | 94 days | 0.65 | M-v 5 | MPC | 2006 $SU_{109}$ |
| 2006 $SV_{109}$ | 17.7 | 0.15 | 20060922 | 6.57477 | 109.99942 | 238.90465 | 1.50803 | 0.1603650 | 2.5801869 | 18 | 1 | 56 days | 0.57 | | MPC | 2006 $SV_{109}$ |
| 2006 $SY_{109}$ | | | 20060922 | 22.36947 | 22.76072 | 302.51798 | 3.56816 | 0.1455606 | 2.6264804 | 12 | 1 | 7 days | 0.55 | | MPC | 2006 $SY_{109}$ |
| 2006 $SD_{110}$ | 17.5 | 0.15 | 20060922 | 333.13405 | 204.36059 | 191.00353 | 3.41545 | 0.1438119 | 2.3116290 | 34 | 1 | 86 days | 0.36 | M-v 4 | MPC | 2006 $SD_{110}$ |
| 2006 $SE_{110}$ | 20.0 | 0.15 | 20060922 | 342.69327 | 359.40295 | 28.73160 | 0.31933 | 0.1877052 | 2.1245066 | 11 | 1 | 26 days | 0.51 | | MPC | 2006 $SE_{110}$ |
| 2006 $SF_{110}$ | 15.8 | 0.15 | 20060922 | 347.04174 | 312.55852 | 78.38894 | 1.84949 | 0.2386278 | 3.1579568 | 48 | 1 | 88 days | 0.33 | M-v 3 | MPC | 2006 $SF_{110}$ |
| 2006 $SG_{110}$ | 17.0 | 0.15 | 20060922 | 10.83068 | 94.48920 | 261.81235 | 3.91128 | 0.2427245 | 2.3545629 | 55 | 1 | 87 days | 0.45 | M-v 4 | MPC | 2006 $SG_{110}$ |
| 2006 $SJ_{110}$ | 16.5 | 0.15 | 20060922 | 3.54915 | 323.45403 | 35.67040 | 14.22528 | 0.2686302 | 2.6919705 | 47 | 1 | 62 days | 0.40 | M-v 3 | MPC | 2006 $SJ_{110}$ |
| 2006 $SK_{110}$ | 16.7 | 0.15 | 20060922 | 16.13005 | 214.03769 | 122.81236 | 7.98842 | 0.2907910 | 2.6959879 | 23 | 1 | 56 days | 0.58 | | MPC | 2006 $SK_{110}$ |
| 2006 $SL_{110}$ | 17.3 | 0.15 | 20060922 | 4.01829 | 219.70818 | 139.34017 | 10.49312 | 0.3184152 | 2.7514693 | 19 | 1 | 31 days | 0.57 | | MPC | 2006 $SL_{110}$ |
| 2006 $SO_{110}$ | 15.4 | 0.15 | 20060922 | 292.51411 | 302.80795 | 147.06672 | 15.67661 | 0.1148633 | 2.8627856 | 28 | 1 | 38 days | 0.47 | | MPC | 2006 $SO_{110}$ |
| 2006 $SP_{110}$ | 17.4 | 0.15 | 20060922 | 350.00151 | 328.84872 | 54.54877 | 7.42650 | 0.1195661 | 2.3168293 | 30 | 1 | 64 days | 0.57 | M-v 4 | MPC | 2006 $SP_{110}$ |
| 2006 $SS_{110}$ | 16.4 | 0.15 | 20060922 | 339.02693 | 25.55183 | 13.97864 | 18.22725 | 0.1899363 | 2.5878850 | 43 | 1 | 31 days | 0.40 | | MPC | 2006 $SS_{110}$ |
| 2006 $ST_{110}$ | 16.9 | 0.15 | 20060922 | 22.47854 | 303.60598 | 28.82576 | 13.05391 | 0.2747568 | 2.6334380 | 45 | 1 | 56 days | 0.34 | M-v 4 | MPC | 2006 $ST_{110}$ |
| 2006 $SW_{110}$ | 16.5 | 0.15 | 20060922 | 351.23151 | 298.32764 | 81.45123 | 7.70559 | 0.2092081 | 2.4257604 | 28 | 1 | 38 days | 0.52 | | MPC | 2006 $SW_{110}$ |
| 2006 $SX_{110}$ | 15.9 | 0.15 | 20060922 | 2.96975 | 253.30795 | 107.76852 | 9.33411 | 0.2880717 | 2.6937970 | 26 | 1 | 64 days | 0.49 | M-v 4 | MPC | 2006 $SX_{110}$ |
| 2006 $SC_{111}$ | 18.0 | 0.15 | 20060922 | 13.93459 | 250.87086 | 94.99844 | 6.62513 | 0.2374575 | 2.2527975 | 24 | 1 | 37 days | 0.60 | | MPC | 2006 $SC_{111}$ |
| 2006 $SJ_{111}$ | 18.5 | 0.15 | 20060922 | 335.64910 | 131.46454 | 251.05864 | 6.99684 | 0.1838755 | 2.2780969 | 9 | 1 | 5 days | 0.24 | | MPC | 2006 $SJ_{111}$ |
| 2006 $SN_{111}$ | 15.7 | 0.15 | 20060922 | 354.35800 | 84.05812 | 293.45103 | 8.94633 | 0.1475534 | 3.0456226 | 22 | 1 | 36 days | 0.52 | | MPC | 2006 $SN_{111}$ |
| 2006 $SP_{111}$ | 17.1 | 0.15 | 20061012 | 78.29120 | 80.70808 | 206.15425 | 20.74778 | 0.0708945 | 1.9313605 | 22 | 1 | 52 days | 0.35 | | MPC | 2006 $SP_{111}$ |
| 2006 $SR_{111}$ | 14.9 | 0.15 | 20060922 | 336.79604 | 275.97691 | 126.26673 | 16.74591 | 0.2141686 | 3.1360287 | 20 | 1 | 20 days | 0.39 | | MPC | 2006 $SR_{111}$ |
| 2006 $ST_{111}$ | 15.4 | 0.15 | 20060922 | 319.51093 | 311.13364 | 105.84956 | 16.73215 | 0.1003575 | 3.0554138 | 12 | 1 | 5 days | 0.68 | | MPC | 2006 $ST_{111}$ |
| 2006 $SX_{111}$ | 16.3 | 0.15 | 20061012 | 12.15287 | 274.62241 | 80.12646 | 13.83713 | 0.2797482 | 2.6608477 | 20 | 1 | 39 days | 0.46 | | MPC | 2006 $SX_{111}$ |
| 2006 $SZ_{111}$ | 17.1 | 0.15 | 20060922 | 8.89739 | 217.56672 | 131.40307 | 13.80231 | 0.2980685 | 2.6480548 | 12 | 1 | 5 days | 0.63 | | MPC | 2006 $SZ_{111}$ |
| 2006 $SB_{112}$ | 16.2 | 0.15 | 20060922 | 337.78973 | 279.45853 | 117.50857 | 14.51783 | 0.1382417 | 2.5342824 | 12 | 1 | 5 days | 0.58 | | MPC | 2006 $SB_{112}$ |
| 2006 $SC_{112}$ | 17.2 | 0.15 | 20060922 | 3.76591 | 291.27808 | 65.95635 | 10.42725 | 0.2730324 | 2.3840303 | 32 | 1 | 62 days | 0.38 | M-v 4 | MPC | 2006 $SC_{112}$ |
| 2006 $SF_{112}$ | 16.5 | 0.15 | 20060922 | 356.31325 | 19.93888 | 8.82862 | 11.61604 | 0.2550636 | 2.3541967 | 58 | 1 | 85 days | 0.50 | M-v 3 | MPC | 2006 $SF_{112}$ |
| 2006 $SR_{112}$ | 16.2 | 0.15 | 20060922 | 67.47327 | 290.29667 | 346.28533 | 2.82639 | 0.1009042 | 3.0412662 | 14 | 1 | 23 days | 0.34 | | MPC | 2006 $SR_{112}$ |
| 2006 $ST_{112}$ | 16.3 | 0.15 | 20060922 | 7.56594 | 169.48217 | 177.05520 | 10.18535 | 0.0685460 | 3.0026767 | 10 | 1 | 8 days | 0.30 | | MPC | 2006 $ST_{112}$ |
| 2006 $SV_{112}$ | 16.7 | 0.15 | 20060922 | 319.29777 | 46.08870 | 355.80309 | 9.62143 | 0.0756886 | 3.1256903 | 17 | 1 | 35 days | 0.28 | | MPC | 2006 $SV_{112}$ |
| 2006 $SX_{112}$ | 18.2 | 0.15 | 20060922 | 29.06466 | 355.60635 | 319.63223 | 0.60690 | 0.1733480 | 2.4386079 | 17 | 1 | 31 days | 0.24 | | MPC | 2006 $SX_{112}$ |
| 2006 $SZ_{112}$ | 17.6 | 0.15 | 20060902 | 37.30012 | 113.04402 | 177.67763 | 11.91913 | 0.2427958 | 2.6325152 | 10 | 1 | 10 days | 0.11 | | MPC | 2006 $SZ_{112}$ |
| 2006 $SE_{113}$ | 16.7 | 0.15 | 20060922 | 55.09092 | 285.07433 | 356.36239 | 6.88028 | 0.1821265 | 2.5699275 | 16 | 1 | 27 days | 0.18 | | MPC | 2006 $SE_{113}$ |
| 2006 $SH_{113}$ | 17.8 | 0.15 | 20060902 | 30.54167 | 312.44220 | 352.73659 | 4.91631 | 0.1718857 | 2.4221624 | 14 | 1 | 11 days | 0.46 | | MPC | 2006 $SH_{113}$ |
| 2006 $SO_{113}$ | 18.2 | 0.15 | 20060922 | 357.14440 | 11.83050 | 354.33456 | 2.93749 | 0.2008462 | 2.8801076 | 10 | 1 | 4 days | 0.51 | | MPC | 2006 $SO_{113}$ |
| 2006 $SQ_{113}$ | 16.1 | 0.15 | 20060922 | 182.27026 | 353.64034 | 188.07627 | 2.70865 | 0.2856352 | 2.7253863 | 10 | 1 | 4 days | 0.32 | | MPC | 2006 $SQ_{113}$ |
| 2006 $SR_{113}$ | 20.4 | 0.15 | 20060922 | 353.84005 | 184.20775 | 186.84187 | 0.90922 | 0.2034930 | 2.1343684 | 13 | 1 | 4 days | 0.54 | | MPC | 2006 $SR_{113}$ |
| 2006 $SS_{113}$ | 17.4 | 0.15 | 20060922 | 64.66433 | 99.75925 | 187.80611 | 3.06991 | 0.1072457 | 2.8095693 | 18 | 1 | 9 days | 0.33 | | MPC | 2006 $SS_{113}$ |
| 2006 $ST_{113}$ | 18.7 | 0.15 | 20060922 | 329.97776 | 29.37239 | 15.80856 | 1.17953 | 0.1718485 | 2.3149286 | 13 | 1 | 8 days | 0.30 | | MPC | 2006 $ST_{113}$ |
| 2006 $SV_{113}$ | 16.5 | 0.15 | 20060922 | 187.89322 | 151.41381 | 29.18922 | 1.41952 | 0.2405861 | 2.8269491 | 10 | 1 | 4 days | 0.32 | | MPC | 2006 $SV_{113}$ |
| 2006 $SW_{113}$ | 18.2 | 0.15 | 20060922 | 54.63900 | 276.44274 | 5.13757 | 11.36830 | 0.2602316 | 2.6097920 | 19 | 1 | 9 days | 0.75 | | MPC | 2006 $SW_{113}$ |
| 2006 $SX_{113}$ | 18.1 | 0.15 | 20060922 | 344.14810 | 352.32864 | 39.80003 | 0.36225 | 0.2568080 | 3.0694960 | 17 | 1 | 31 days | 0.32 | | MPC | 2006 $SX_{113}$ |
| 2006 $SZ_{113}$ | 17.4 | 0.15 | 20060922 | 49.00479 | 101.27458 | 183.86406 | 11.10236 | 0.2910322 | 2.8478692 | 10 | 1 | 4 days | 0.94 | | MPC | 2006 $SZ_{113}$ |
| 2006 $SA_{114}$ | 16.8 | 0.15 | 20060922 | 200.28067 | 157.38056 | 12.92670 | 4.11488 | 0.1340119 | 2.5743499 | 10 | 1 | 4 days | 0.26 | | MPC | 2006 $SA_{114}$ |
| 2006 $SB_{114}$ | 17.7 | 0.15 | 20060922 | 90.00988 | 218.39747 | 44.87335 | 2.34404 | 0.1107175 | 2.6461576 | 25 | 1 | 30 days | 0.25 | | MPC | 2006 $SB_{114}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SC_{114}$ | 17.7 | 0.15 | 20060922 | 0.36433 | 348.40964 | 14.81288 | 4.07802 | 0.1127658 | 2.7489319 | 13 | 1 | 35 days | 0.23 | | | MPC | 2006 $SC_{114}$ |
| 2006 $SF_{114}$ | 15.0 | 0.15 | 20060922 | 184.82047 | 358.88089 | 181.65849 | 10.07939 | 0.2185143 | 2.7112344 | 13 | 1 | 7 days | 0.51 | | | MPC | 2006 $SF_{114}$ |
| 2006 $SG_{114}$ | 18.3 | 0.15 | 20060922 | 348.09538 | 7.07021 | 10.58407 | 4.02762 | 0.1071501 | 2.5719247 | 10 | 1 | 4 days | 0.48 | | | MPC | 2006 $SG_{114}$ |
| 2006 $SH_{114}$ | 16.9 | 0.15 | 20060922 | 183.85693 | 175.70306 | 6.00335 | 20.15438 | 0.2673121 | 2.6070505 | 10 | 1 | 4 days | 0.75 | | | MPC | 2006 $SH_{114}$ |
| 2006 $SK_{114}$ | 16.9 | 0.15 | 20060922 | 207.67120 | 2.75898 | 161.13758 | 3.19661 | 0.1026528 | 2.8376788 | 16 | 1 | 4 days | 0.34 | | | MPC | 2006 $SK_{114}$ |
| 2006 $SL_{114}$ | 19.3 | 0.15 | 20060922 | 340.81483 | 344.19330 | 47.43906 | 1.71920 | 0.1630604 | 2.4757842 | 16 | 1 | 4 days | 0.34 | | | MPC | 2006 $SL_{114}$ |
| 2006 $SM_{114}$ | 16.7 | 0.15 | 20060922 | 356.62667 | 0.71775 | 10.04501 | 17.80949 | 0.1997429 | 3.1276210 | 31 | 1 | 42 days | 0.43 | | | MPC | 2006 $SM_{114}$ |
| 2006 $SN_{114}$ | 16.8 | 0.15 | 20061012 | 317.78701 | 24.06172 | 56.13849 | 1.07350 | 0.1598972 | 3.1010530 | 23 | 1 | 57 days | 0.36 | | | MPC | 2006 $SN_{114}$ |
| 2006 $SO_{114}$ | 18.1 | 0.15 | 20060922 | 1.16281 | 339.27376 | 33.17031 | 1.82082 | 0.1979887 | 2.3851859 | 34 | 1 | 66 days | 0.42 | M-v | 4 | MPC | 2006 $SO_{114}$ |
| 2006 $SP_{114}$ | 16.7 | 0.15 | 20061012 | 317.67077 | 238.22098 | 195.11032 | 8.92857 | 0.0869846 | 2.8807877 | 20 | 1 | 57 days | 0.35 | | | MPC | 2006 $SP_{114}$ |
| 2006 $SQ_{114}$ | 15.9 | 0.15 | 20061012 | 256.73911 | 309.22798 | 190.96762 | 5.04043 | 0.1175504 | 3.1423114 | 20 | 1 | 57 days | 0.24 | | | MPC | 2006 $SQ_{114}$ |
| 2006 $SS_{114}$ | 18.4 | 0.15 | 20060922 | 317.46640 | 265.74575 | 179.08081 | 2.22727 | 0.2698052 | 2.4413660 | 10 | 1 | 4 days | 0.38 | | | MPC | 2006 $SS_{114}$ |
| 2006 $ST_{114}$ | 15.9 | 0.15 | 20061012 | 19.68535 | 336.72387 | 24.16259 | 8.96719 | 0.0830273 | 3.0264263 | 44 | 1 | 58 days | 0.26 | | | MPC | 2006 $ST_{114}$ |
| 2006 $SV_{114}$ | 17.5 | 0.15 | 20060922 | 351.28948 | 185.09009 | 195.45062 | 7.15619 | 0.2293372 | 2.9750210 | 9 | 1 | 8 days | 0.34 | | | MPC | 2006 $SV_{114}$ |
| 2006 $SW_{114}$ | 17.4 | 0.15 | 20060922 | 300.65188 | 70.29217 | 1.39449 | 5.82449 | 0.0506456 | 2.7342297 | 10 | 1 | 25 days | 0.32 | | | MPC | 2006 $SW_{114}$ |
| 2006 $SY_{114}$ | 16.3 | 0.15 | 20060922 | 212.68801 | 331.72826 | 187.63585 | 15.91735 | 0.0767854 | 3.0961919 | 13 | 1 | 4 days | 0.27 | | | MPC | 2006 $SY_{114}$ |
| 2006 $SZ_{114}$ | 15.8 | 0.15 | 20060922 | 187.77247 | 171.69047 | 12.14742 | 4.82936 | 0.2994316 | 3.0063460 | 13 | 1 | 4 days | 0.33 | | | MPC | 2006 $SZ_{114}$ |
| 2006 $SA_{115}$ | 19.0 | 0.15 | 20060922 | 1.69175 | 354.38313 | 8.43500 | 9.71510 | 0.1928802 | 2.5176043 | 17 | 1 | 34 days | 0.34 | | | MPC | 2006 $SA_{115}$ |
| 2006 $SB_{115}$ | 19.3 | 0.15 | 20060922 | 318.50110 | 256.63539 | 158.40881 | 1.09372 | 0.0936776 | 2.2502209 | 13 | 1 | 6 days | 0.93 | | | MPC | 2006 $SB_{115}$ |
| 2006 $SC_{115}$ | 17.4 | 0.15 | 20060922 | 28.98394 | 134.84689 | 187.47589 | 12.05909 | 0.2148095 | 2.7875408 | 9 | 1 | 4 days | 0.11 | | | MPC | 2006 $SC_{115}$ |
| 2006 $SD_{115}$ | 17.7 | 0.15 | 20060922 | 307.53843 | 238.64632 | 185.36191 | 1.24655 | 0.0457376 | 2.5523481 | 18 | 1 | 33 days | 0.32 | | | MPC | 2006 $SD_{115}$ |
| 2006 $SE_{115}$ | 16.9 | 0.15 | 20060922 | 38.68242 | 314.33775 | 10.32637 | 5.57927 | 0.0540105 | 2.6775516 | 23 | 1 | 43 days | 0.26 | | D | MPC | 2006 $SE_{115}$ |
| 2006 $SG_{115}$ | 17.3 | 0.15 | 20060922 | 243.34225 | 302.52875 | 187.14047 | 12.37728 | 0.0492969 | 2.6207055 | 10 | 1 | 4 days | 0.18 | | | MPC | 2006 $SG_{115}$ |
| 2006 $SJ_{115}$ | 17.7 | 0.15 | 20060922 | 26.36020 | 320.62840 | 17.81570 | 3.28198 | 0.0612332 | 2.7309289 | 13 | 1 | 13 days | 0.25 | | | MPC | 2006 $SJ_{115}$ |
| 2006 $SK_{115}$ | 16.1 | 0.15 | 20060922 | 13.21064 | 55.70794 | 283.26751 | 3.51283 | 0.0847667 | 3.1596189 | 15 | 1 | 26 days | 0.14 | | | MPC | 2006 $SK_{115}$ |
| 2006 $SS_{115}$ | 16.7 | 0.15 | 20061012 | 25.52391 | 62.80173 | 269.81784 | 15.04404 | 0.2624303 | 2.5142377 | 19 | 1 | 59 days | 0.64 | | | MPC | 2006 $SS_{115}$ |
| 2006 $SU_{115}$ | 15.3 | 0.15 | 20060922 | 11.79195 | 281.06640 | 77.31115 | 15.09763 | 0.1743653 | 2.9628567 | 26 | 1 | 60 days | 0.54 | M-v | 4 | MPC | 2006 $SU_{115}$ |
| 2006 $SW_{115}$ | 14.6 | 0.15 | 20060922 | 5.06261 | 271.56209 | 90.73091 | 11.36205 | 0.1234505 | 3.4768351 | 18 | 1 | 34 days | 0.64 | | | MPC | 2006 $SW_{115}$ |
| 2006 $SE_{116}$ | 16.2 | 0.15 | 20060922 | 353.92127 | 325.67814 | 53.54251 | 18.23976 | 0.2168599 | 2.6538137 | 18 | 1 | 34 days | 0.31 | | | MPC | 2006 $SE_{116}$ |
| 2006 $SF_{116}$ | 15.3 | 0.15 | 20060922 | 42.52842 | 259.08067 | 51.87074 | 25.73875 | 0.2189937 | 3.1669841 | 25 | 1 | 60 days | 0.57 | M-v | 4 | MPC | 2006 $SF_{116}$ |
| 2006 $SG_{116}$ | 16.5 | 0.15 | 20061012 | 40.06939 | 311.89910 | 22.83566 | 1.99191 | 0.1429485 | 3.1728804 | 29 | 1 | 57 days | 0.19 | | | MPC | 2006 $SG_{116}$ |
| 2006 $SH_{116}$ | 17.0 | 0.15 | 20060922 | 79.84979 | 255.14441 | 27.68248 | 1.23925 | 0.1657106 | 2.6174318 | 10 | 1 | 4 days | 0.24 | | | MPC | 2006 $SH_{116}$ |
| 2006 $SJ_{116}$ | 17.8 | 0.15 | 20061012 | 311.69350 | 61.62193 | 26.47208 | 1.79611 | 0.1438672 | 2.5743253 | 32 | 1 | 50 days | 0.33 | | | MPC | 2006 $SJ_{116}$ |
| 2006 $SL_{116}$ | 17.2 | 0.15 | 20061012 | 354.90174 | 209.39404 | 184.87177 | 0.63162 | 0.1885456 | 3.1230504 | 31 | 1 | 48 days | 0.32 | | | MPC | 2006 $SL_{116}$ |
| 2006 $SM_{116}$ | 18.7 | 0.15 | 20061012 | 0.05647 | 191.62520 | 193.91802 | 3.36992 | 0.3411102 | 3.0057171 | 20 | 1 | 51 days | 0.32 | | | MPC | 2006 $SM_{116}$ |
| 2006 $SN_{116}$ | 17.4 | 0.15 | 20060922 | 9.73054 | 342.23014 | 26.01439 | 4.06806 | 0.1558549 | 3.0300641 | 25 | 1 | 37 days | 0.27 | | D | MPC | 2006 $SN_{116}$ |
| 2006 $SO_{116}$ | 16.3 | 0.15 | 20060922 | 82.58031 | 110.90801 | 175.27589 | 0.58853 | 0.1387368 | 3.1729281 | 19 | 1 | 34 days | 0.25 | | | MPC | 2006 $SO_{116}$ |
| 2006 $SP_{116}$ | 16.5 | 0.15 | 20060922 | 164.60544 | 182.59098 | 15.08489 | 10.48468 | 0.1744849 | 2.9308671 | 14 | 1 | 27 days | 0.83 | | | MPC | 2006 $SP_{116}$ |
| 2006 $SQ_{116}$ | 16.3 | 0.15 | 20060922 | 189.43680 | 152.13280 | 28.63404 | 4.42412 | 0.2293927 | 2.8516428 | 13 | 1 | 3 days | 0.49 | | | MPC | 2006 $SQ_{116}$ |
| 2006 $SR_{116}$ | 17.4 | 0.15 | 20061012 | 44.91732 | 305.76145 | 27.75254 | 7.25729 | 0.0938552 | 2.6694924 | 26 | 1 | 48 days | 0.31 | | | MPC | 2006 $SR_{116}$ |
| 2006 $SS_{116}$ | 18.2 | 0.15 | 20060922 | 336.60250 | 235.88138 | 159.81600 | 2.95517 | 0.1305147 | 2.6012930 | 13 | 1 | 7 days | 0.58 | | | MPC | 2006 $SS_{116}$ |
| 2006 $SU_{116}$ | 18.2 | 0.15 | 20060922 | 21.72175 | 155.10250 | 191.45422 | 1.88474 | 0.1960077 | 2.6607175 | 13 | 1 | 34 days | 0.26 | | | MPC | 2006 $SU_{116}$ |
| 2006 $SX_{116}$ | 18.5 | 0.15 | 20060922 | 358.52541 | 352.55326 | 27.12870 | 2.17255 | 0.1480617 | 2.3565408 | 37 | 1 | 60 days | 0.41 | M-v | 4 | MPC | 2006 $SX_{116}$ |
| 2006 $SY_{116}$ | 17.9 | 0.15 | 20060922 | 13.60089 | 337.82174 | 25.99110 | 5.00899 | 0.0889286 | 2.5429217 | 19 | 1 | 29 days | 0.27 | | | MPC | 2006 $SY_{116}$ |
| 2006 $SD_{117}$ | 17.4 | 0.15 | 20060922 | 57.37365 | 284.54498 | 24.68644 | 6.70880 | 0.1358397 | 3.0002773 | 17 | 1 | 34 days | 0.34 | | | MPC | 2006 $SD_{117}$ |
| 2006 $SE_{117}$ | 17.8 | 0.15 | 20061012 | 248.30349 | 79.66146 | 69.58620 | 0.72971 | 0.1363948 | 2.1947307 | 29 | 1 | 48 days | 0.35 | | | MPC | 2006 $SE_{117}$ |
| 2006 $SG_{117}$ | 18.4 | 0.15 | 20060922 | 299.37688 | 63.85950 | 33.52758 | 2.65130 | 0.1734886 | 2.3505514 | 23 | 1 | 33 days | 0.28 | | | MPC | 2006 $SG_{117}$ |
| 2006 $SH_{117}$ | 17.1 | 0.15 | 20060922 | 308.88304 | 240.28896 | 198.08174 | 13.44632 | 0.0810237 | 2.5683258 | 20 | 1 | 61 days | 0.32 | M-v | 4 | MPC | 2006 $SH_{117}$ |
| 2006 $SJ_{117}$ | 18.1 | 0.15 | 20060922 | 19.55270 | 163.25405 | 194.22474 | 4.93478 | 0.0558695 | 2.5416002 | 16 | 1 | 34 days | 0.39 | | | MPC | 2006 $SJ_{117}$ |
| 2006 $SM_{117}$ | 17.4 | 0.15 | 20061012 | 319.83351 | 19.35792 | 60.60520 | 1.25517 | 0.1774379 | 2.4344069 | 59 | 1 | 50 days | 0.36 | | | MPC | 2006 $SM_{117}$ |
| 2006 $SN_{117}$ | 18.0 | 0.15 | 20061012 | 339.71874 | 251.48999 | 161.17616 | 1.12789 | 0.1677597 | 2.4188936 | 34 | 1 | 57 days | 0.39 | | | MPC | 2006 $SN_{117}$ |
| 2006 $SO_{117}$ | 18.3 | 0.15 | 20061012 | 2.17620 | 189.94030 | 190.27966 | 5.63696 | 0.2393477 | 2.4272440 | 25 | 1 | 37 days | 0.25 | | | MPC | 2006 $SO_{117}$ |
| 2006 $SS_{117}$ | 17.2 | 0.15 | 20060922 | 9.82415 | 157.77272 | 206.39926 | 1.77287 | 0.1883776 | 3.2229172 | 41 | 1 | 65 days | 0.32 | M-v | 3 | MPC | 2006 $SS_{117}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $ST_{117}$ | 16.2 | 0.15 | 20060922 | 283.62523 | 86.68915 | 19.43881 | 16.64310 | 0.0882122 | 2.8616149 | 36 | 1 | 68 days | 0.39 | M-v | 4 | MPC | 2006 $ST_{117}$ |
| 2006 $SU_{117}$ | 18.1 | 0.15 | 20060922 | 324.53516 | 230.93982 | 193.14977 | 1.17822 | 0.1661985 | 2.3459507 | 46 | 1 | 62 days | 0.34 | M-v | 4 | MPC | 2006 $SU_{117}$ |
| 2006 $SW_{117}$ | 17.1 | 0.15 | 20060922 | 41.01292 | 305.93926 | 14.70856 | 1.72380 | 0.1915365 | 3.0101648 | 13 | 1 | 8 days | 0.28 | | | MPC | 2006 $SW_{117}$ |
| 2006 $SX_{117}$ | 19.2 | 0.15 | 20061012 | 15.06768 | 350.36678 | 7.94297 | 0.67186 | 0.2200899 | 2.2572478 | 27 | 1 | 47 days | 0.60 | | | MPC | 2006 $SX_{117}$ |
| 2006 $SY_{117}$ | 18.1 | 0.15 | 20061012 | 327.50357 | 49.37834 | 19.96607 | 2.50339 | 0.1882789 | 2.2866126 | 31 | 1 | 48 days | 0.47 | | | MPC | 2006 $SY_{117}$ |
| 2006 $SZ_{117}$ | 19.3 | 0.15 | 20060922 | 351.12474 | 9.21701 | 17.40417 | 3.34587 | 0.1533638 | 2.2478948 | 10 | 1 | 4 days | 0.22 | | | MPC | 2006 $SZ_{117}$ |
| 2006 $SA_{118}$ | 17.5 | 0.15 | 20060922 | 348.88635 | 199.05129 | 193.75229 | 3.39933 | 0.2095701 | 2.5547091 | 40 | 1 | 62 days | 0.37 | M-v | 4 | MPC | 2006 $SA_{118}$ |
| 2006 $SB_{118}$ | 19.7 | 0.15 | 20060922 | 5.77355 | 169.69694 | 194.50641 | 4.46275 | 0.2456827 | 2.4488159 | 12 | 1 | 8 days | 0.72 | | | MPC | 2006 $SB_{118}$ |
| 2006 $SD_{118}$ | 16.9 | 0.15 | 20060922 | 340.76746 | 206.58577 | 198.11503 | 7.66091 | 0.1660660 | 2.7373996 | 37 | 1 | 61 days | 0.30 | M-v | 4 | MPC | 2006 $SD_{118}$ |
| 2006 $SF_{118}$ | 18.0 | 0.15 | 20061012 | 326.93026 | 53.45980 | 20.45603 | 6.27826 | 0.2115105 | 2.9119101 | 20 | 1 | 54 days | 0.32 | | | MPC | 2006 $SF_{118}$ |
| 2006 $SG_{118}$ | 17.6 | 0.15 | 20060922 | 337.30382 | 29.82708 | 19.92167 | 9.65018 | 0.1598110 | 2.8025018 | 16 | 1 | 31 days | 0.24 | | | MPC | 2006 $SG_{118}$ |
| 2006 $SM_{118}$ | 16.9 | 0.15 | 20060922 | 181.99756 | 177.74106 | 4.83373 | 29.47002 | 0.2626495 | 2.6157781 | 10 | 1 | 3 days | 0.39 | | | MPC | 2006 $SM_{118}$ |
| 2006 $ST_{118}$ | 15.9 | 0.15 | 20060922 | 64.02971 | 305.53588 | 359.46665 | 6.42729 | 0.1190941 | 3.0846314 | 26 | 1 | 62 days | 0.37 | M-v | 4 | MPC | 2006 $ST_{118}$ |
| 2006 $SV_{118}$ | 16.1 | 0.15 | 20060922 | 22.17575 | 348.94333 | 6.20605 | 9.11107 | 0.0909407 | 3.0666392 | 20 | 1 | 62 days | 0.45 | M-v | 4 | MPC | 2006 $SV_{118}$ |
| 2006 $SW_{118}$ | 17.4 | 0.15 | 20060922 | 24.55857 | 296.89980 | 4.47937 | 29.35234 | 0.3839319 | 2.6170398 | 43 | 1 | 69 days | 0.85 | M-v | 5 | MPC | 2006 $SW_{118}$ |
| 2006 $SY_{118}$ | 17.2 | 0.15 | 20060922 | 17.69190 | 272.36345 | 47.79179 | 26.92575 | 0.4068796 | 2.6248211 | 20 | 1 | 32 days | 0.43 | | | MPC | 2006 $SY_{118}$ |
| 2006 $SZ_{118}$ | 15.7 | 0.15 | 20060922 | 347.76191 | 32.95166 | 346.60046 | 26.99226 | 0.1357383 | 3.1334896 | 43 | 1 | 93 days | 0.52 | M-v | 3 | MPC | 2006 $SZ_{118}$ |
| 2006 $SC_{119}$ | 17.6 | 0.15 | 20060922 | 343.96065 | 9.44682 | 3.39963 | 2.45109 | 0.1965155 | 2.4013276 | 39 | 1 | 95 days | 0.36 | M-v | 4 | MPC | 2006 $SC_{119}$ |
| 2006 $SH_{119}$ | 15.2 | 0.15 | 20060922 | 35.66493 | 279.44853 | 37.22681 | 5.26445 | 0.1490003 | 3.1816034 | 41 | 1 | 57 days | 0.54 | | | MPC | 2006 $SH_{119}$ |
| 2006 $SJ_{119}$ | 17.6 | 0.15 | 20060922 | 352.71441 | 255.03842 | 124.42448 | 4.51749 | 0.2877170 | 2.7253810 | 25 | 1 | 34 days | 0.49 | | | MPC | 2006 $SJ_{119}$ |
| 2006 $SM_{119}$ | 17.2 | 0.15 | 20061012 | 349.18875 | 16.93137 | 17.75986 | 13.86712 | 0.2584937 | 2.6638927 | 44 | 1 | 54 days | 0.49 | | | MPC | 2006 $SM_{119}$ |
| 2006 $SN_{119}$ | 15.2 | 0.15 | 20061012 | 6.63395 | 315.74952 | 48.18820 | 5.80309 | 0.2723549 | 3.9387216 | 50 | 1 | 59 days | 0.45 | | | MPC | 2006 $SN_{119}$ |
| 2006 $SQ_{119}$ | 15.9 | 0.15 | 20060922 | 333.34302 | 259.71922 | 143.43552 | 10.58895 | 0.1200706 | 3.0352006 | 19 | 1 | 29 days | 0.69 | | | MPC | 2006 $SQ_{119}$ |
| 2006 $ST_{119}$ | 16.7 | 0.15 | 20060922 | 64.88560 | 151.04957 | 139.50569 | 8.11301 | 0.1237142 | 2.4531728 | 28 | 1 | 34 days | 0.70 | | | MPC | 2006 $ST_{119}$ |
| 2006 $SV_{119}$ | 15.7 | 0.15 | 20060922 | 355.89180 | 341.29175 | 32.25504 | 16.76168 | 0.1474721 | 2.7182298 | 48 | 1 | 103 days | 0.50 | M-v | 3 | MPC | 2006 $SV_{119}$ |
| 2006 $SY_{119}$ | 17.6 | 0.15 | 20060922 | 22.79556 | 205.20927 | 121.96146 | 5.89225 | 0.2745595 | 2.3795722 | 34 | 1 | 70 days | 0.64 | M-v | 4 | MPC | 2006 $SY_{119}$ |
| 2006 $SZ_{119}$ | 16.0 | 0.15 | 20060922 | 329.99130 | 302.17609 | 100.06191 | 6.48735 | 0.0376457 | 2.8003539 | 22 | 1 | 33 days | 0.57 | | | MPC | 2006 $SZ_{119}$ |
| 2006 $SB_{120}$ | 15.9 | 0.15 | 20060922 | 274.94684 | 318.76463 | 150.96055 | 10.05786 | 0.1141355 | 2.7915652 | 10 | 1 | 9 days | 0.55 | | | MPC | 2006 $SB_{120}$ |
| 2006 $SC_{120}$ | 17.2 | 0.15 | 20060922 | 15.83900 | 281.13909 | 63.38317 | 5.76790 | 0.2055889 | 2.5532325 | 32 | 1 | 66 days | 0.57 | M-v | 4 | MPC | 2006 $SC_{120}$ |
| 2006 $SG_{120}$ | 16.0 | 0.15 | 20060922 | 350.81515 | 357.04170 | 27.81588 | 14.31736 | 0.1728974 | 3.1390252 | 41 | 1 | 70 days | 0.54 | M-v | 4 | MPC | 2006 $SG_{120}$ |
| 2006 $SH_{120}$ | 14.6 | 0.15 | 20060922 | 339.87595 | 8.64343 | 26.51986 | 22.02914 | 0.0657054 | 3.1550979 | 45 | 1 | 64 days | 0.48 | M-v | 4 | MPC | 2006 $SH_{120}$ |
| 2006 $SL_{120}$ | 18.1 | 0.15 | 20060922 | 23.81091 | 189.77101 | 138.04227 | 7.81848 | 0.2503309 | 2.2243058 | 18 | 1 | 14 days | 0.60 | | | MPC | 2006 $SL_{120}$ |
| 2006 $SM_{120}$ | 17.0 | 0.15 | 20060922 | 343.87734 | 235.71210 | 163.95594 | 16.51617 | 0.2809955 | 2.7740502 | 29 | 1 | 38 days | 0.75 | | | MPC | 2006 $SM_{120}$ |
| 2006 $SO_{120}$ | 16.5 | 0.15 | 20060922 | 343.65907 | 262.82797 | 135.62974 | 9.83259 | 0.2579209 | 2.7011006 | 33 | 1 | 40 days | 0.51 | | | MPC | 2006 $SO_{120}$ |
| 2006 $SQ_{120}$ | 15.9 | 0.15 | 20060922 | 334.84581 | 297.05028 | 115.01855 | 7.49186 | 0.2108076 | 3.0369567 | 32 | 1 | 35 days | 0.42 | | | MPC | 2006 $SQ_{120}$ |
| 2006 $SR_{120}$ | 17.0 | 0.15 | 20060922 | 18.59421 | 246.29005 | 94.33779 | 7.21785 | 0.2578787 | 2.9411817 | 12 | 1 | 8 days | 0.87 | | | MPC | 2006 $SR_{120}$ |
| 2006 $SS_{120}$ | 15.8 | 0.15 | 20060922 | 359.28440 | 308.34475 | 67.53288 | 8.87075 | 0.1030340 | 2.9212112 | 18 | 1 | 34 days | 0.53 | | | MPC | 2006 $SS_{120}$ |
| 2006 $SV_{120}$ | 16.0 | 0.15 | 20060922 | 5.73008 | 242.93944 | 122.41400 | 8.56557 | 0.2277687 | 3.0973679 | 34 | 1 | 40 days | 0.66 | | | MPC | 2006 $SV_{120}$ |
| 2006 $SW_{120}$ | 16.8 | 0.15 | 20060922 | 22.69183 | 168.10691 | 161.49770 | 14.46320 | 0.3385731 | 3.0990281 | 28 | 1 | 34 days | 0.54 | | | MPC | 2006 $SW_{120}$ |
| 2006 $SX_{120}$ | 17.9 | 0.15 | 20060922 | 18.98705 | 203.99950 | 139.07459 | 6.81294 | 0.2088020 | 2.2889444 | 16 | 1 | 28 days | 0.75 | | | MPC | 2006 $SX_{120}$ |
| 2006 $SB_{121}$ | 17.1 | 0.15 | 20060922 | 15.30147 | 272.21120 | 73.90973 | 5.00330 | 0.2758630 | 2.6085429 | 39 | 1 | 35 days | 0.39 | | | MPC | 2006 $SB_{121}$ |
| 2006 $SD_{121}$ | 17.2 | 0.15 | 20061012 | 1.72218 | 255.85969 | 123.76353 | 5.84156 | 0.2053781 | 2.2201929 | 33 | 1 | 53 days | 0.43 | | | MPC | 2006 $SD_{121}$ |
| 2006 $SE_{121}$ | 17.7 | 0.15 | 20060922 | 2.78570 | 338.91501 | 29.58257 | 21.50941 | 0.0822928 | 1.8896875 | 54 | 1 | 65 days | 0.45 | M-v | 4 | MPC | 2006 $SE_{121}$ |
| 2006 $SJ_{121}$ | 16.1 | 0.15 | 20060922 | 326.12169 | 73.27803 | 0.77359 | 21.05776 | 0.3156498 | 3.1300746 | 31 | 1 | 33 days | 0.75 | | | MPC | 2006 $SJ_{121}$ |
| 2006 $SK_{121}$ | 15.8 | 0.15 | 20060922 | 354.38662 | 36.91430 | 349.64566 | 4.44039 | 0.1597052 | 3.1228545 | 68 | 1 | 65 days | 0.54 | M-v | 4 | MPC | 2006 $SK_{121}$ |
| 2006 $SO_{121}$ | 16.4 | 0.15 | 20060922 | 41.94728 | 316.45850 | 352.84044 | 11.69910 | 0.2151911 | 2.9427609 | 14 | 1 | 23 days | 0.59 | | | MPC | 2006 $SO_{121}$ |
| 2006 $SQ_{121}$ | 16.1 | 0.15 | 20060922 | 6.97417 | 37.04228 | 342.69024 | 5.52689 | 0.2969543 | 2.6100637 | 36 | 1 | 94 days | 0.38 | M-v | 4 | MPC | 2006 $SQ_{121}$ |
| 2006 $SX_{121}$ | 17.4 | 0.15 | 20060922 | 336.52720 | 22.17642 | 11.73836 | 3.86833 | 0.2422384 | 2.6162811 | 14 | 1 | 7 days | 0.62 | | | MPC | 2006 $SX_{121}$ |
| 2006 $SY_{121}$ | 17.1 | 0.15 | 20060922 | 14.75560 | 199.32744 | 139.30723 | 3.45274 | 0.1091314 | 2.5617536 | 11 | 1 | 7 days | 0.70 | | | MPC | 2006 $SY_{121}$ |
| 2006 $SZ_{121}$ | 16.5 | 0.15 | 20060922 | 8.06429 | 332.17685 | 14.07991 | 7.42352 | 0.1523983 | 2.9382896 | 11 | 1 | 7 days | 0.60 | | | MPC | 2006 $SZ_{121}$ |
| 2006 $SA_{122}$ | 17.5 | 0.15 | 20060902 | 349.69643 | 216.02127 | 150.14098 | 4.63808 | 0.1917451 | 2.6143254 | 16 | 1 | 36 days | 0.51 | | | MPC | 2006 $SA_{122}$ |
| 2006 $SE_{122}$ | 17.2 | 0.15 | 20060922 | 333.10066 | 144.04188 | 275.31504 | 12.65671 | 0.2306833 | 2.6722418 | 16 | 1 | 30 days | 0.54 | | | MPC | 2006 $SE_{122}$ |
| 2006 $SG_{122}$ | 17.1 | 0.15 | 20061012 | 5.47230 | 85.56969 | 288.73868 | 11.42509 | 0.2960837 | 2.6183834 | 24 | 1 | 58 days | 0.50 | | | MPC | 2006 $SG_{122}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SR_{122}$ | 18.9 | 0.15 | 20060922 | 350.93263 | 64.94175 | 317.56900 | 5.19770 | 0.3210881 | 2.5734824 | 31 | 1 | 28 days | 0.69 | | | MPC | 2006 $SR_{122}$ |
| 2006 $SV_{122}$ | 15.1 | 0.15 | 20060922 | 1.93069 | 271.51861 | 83.19950 | 8.74364 | 0.2859407 | 3.9269966 | 21 | 1 | 34 days | 0.51 | | | MPC | 2006 $SV_{122}$ |
| 2006 $SE_{123}$ | 16.4 | 0.15 | 20060922 | 357.37336 | 275.34734 | 89.82467 | 6.40092 | 0.1703984 | 2.7674087 | 14 | 1 | 34 days | 0.43 | | | MPC | 2006 $SE_{123}$ |
| 2006 $SS_{123}$ | 16.7 | 0.15 | 20060922 | 17.53343 | 46.54215 | 295.06402 | 2.68279 | 0.1070816 | 2.5989676 | 17 | 1 | 34 days | 0.49 | | | MPC | 2006 $SS_{123}$ |
| 2006 $SZ_{123}$ | 16.0 | 0.15 | 20060922 | 233.01440 | 42.43863 | 94.42325 | 9.95028 | 0.0438858 | 2.6966664 | 14 | 1 | 34 days | 0.55 | | | MPC | 2006 $SZ_{123}$ |
| 2006 $SB_{124}$ | 16.8 | 0.15 | 20060922 | 327.76389 | 326.65663 | 93.05407 | 8.89874 | 0.2679497 | 2.7484730 | 18 | 1 | 39 days | 0.57 | | | MPC | 2006 $SB_{124}$ |
| 2006 $SC_{124}$ | 17.2 | 0.15 | 20060922 | 357.28621 | 329.31462 | 38.39694 | 17.29514 | 0.2463844 | 2.7650650 | 19 | 1 | 65 days | 0.53 | M-v | 4 | MPC | 2006 $SC_{124}$ |
| 2006 $SK_{124}$ | 16.2 | 0.15 | 20060922 | 1.29965 | 232.86943 | 139.68111 | 14.23278 | 0.1712764 | 2.7043616 | 12 | 1 | 6 days | 0.79 | | | MPC | 2006 $SK_{124}$ |
| 2006 $SP_{124}$ | 17.8 | 0.15 | 20061012 | 13.61250 | 290.22564 | 63.70625 | 12.41562 | 0.3198879 | 2.6434245 | 35 | 1 | 58 days | 0.56 | | | MPC | 2006 $SP_{124}$ |
| 2006 $SR_{124}$ | 17.7 | 0.15 | 20060922 | 28.79924 | 194.37485 | 130.13914 | 9.20747 | 0.2385986 | 2.2312202 | 22 | 1 | 34 days | 0.79 | | | MPC | 2006 $SR_{124}$ |
| 2006 $SU_{124}$ | 18.5 | 0.15 | 20060922 | 28.20944 | 81.18190 | 228.96117 | 3.38956 | 0.2707391 | 2.3163631 | 21 | 1 | 61 days | 0.63 | M-v | 4 | MPC | 2006 $SU_{124}$ |
| 2006 $SZ_{124}$ | 18.2 | 0.15 | 20060922 | 347.78829 | 226.78587 | 147.81879 | 2.71308 | 0.1807518 | 2.2127895 | 28 | 1 | 68 days | 0.33 | M-v | 4 D | MPC | 2006 $SZ_{124}$ |
| 2006 $SA_{125}$ | 17.3 | 0.15 | 20060922 | 322.16238 | 187.10375 | 216.08460 | 6.90415 | 0.0992156 | 2.4241681 | 11 | 1 | 6 days | 0.74 | | | MPC | 2006 $SA_{125}$ |
| 2006 $SL_{125}$ | 17.9 | 0.15 | 20060922 | 26.46102 | 225.19436 | 102.52454 | 6.37990 | 0.1888658 | 2.2062176 | 20 | 1 | 31 days | 0.76 | | | MPC | 2006 $SL_{125}$ |
| 2006 $SR_{125}$ | 15.8 | 0.15 | 20060922 | 356.67421 | 258.70405 | 113.70688 | 11.14709 | 0.1976121 | 3.1133901 | 22 | 1 | 33 days | 0.66 | | | MPC | 2006 $SR_{125}$ |
| 2006 $ST_{125}$ | 17.6 | 0.15 | 20060922 | 0.77942 | 273.13970 | 95.08005 | 5.19995 | 0.1861182 | 2.5558698 | 20 | 1 | 33 days | 0.39 | | | MPC | 2006 $ST_{125}$ |
| 2006 $SX_{125}$ | 17.5 | 0.15 | 20060922 | 41.47327 | 177.30175 | 140.54066 | 6.89706 | 0.1288288 | 2.3805174 | 14 | 1 | 26 days | 0.67 | | | MPC | 2006 $SX_{125}$ |
| 2006 $SY_{125}$ | 17.1 | 0.15 | 20060922 | 345.64068 | 346.71551 | 47.73023 | 8.53394 | 0.2436749 | 2.6724348 | 42 | 1 | 64 days | 0.49 | M-v | 4 | MPC | 2006 $SY_{125}$ |
| 2006 $SA_{126}$ | 16.9 | 0.15 | 20060922 | 337.33227 | 282.46588 | 120.71962 | 4.48258 | 0.1486239 | 2.4707565 | 38 | 1 | 32 days | 0.62 | | | MPC | 2006 $SA_{126}$ |
| 2006 $SB_{126}$ | 17.6 | 0.15 | 20060922 | 350.66381 | 185.07050 | 198.18918 | 23.99797 | 0.2062597 | 2.1704795 | 32 | 1 | 37 days | 0.58 | | | MPC | 2006 $SB_{126}$ |
| 2006 $SF_{126}$ | 17.8 | 0.15 | 20060922 | 2.28912 | 216.75670 | 146.99809 | 5.99739 | 0.2043743 | 2.2431319 | 26 | 1 | 32 days | 0.56 | | | MPC | 2006 $SF_{126}$ |
| 2006 $SN_{126}$ | 17.4 | 0.15 | 20060922 | 349.15307 | 328.99505 | 55.80089 | 7.85752 | 0.0867977 | 2.2283126 | 30 | 1 | 64 days | 0.59 | M-v | 4 | MPC | 2006 $SN_{126}$ |
| 2006 $SS_{126}$ | 16.1 | 0.15 | 20060922 | 354.59412 | 308.07001 | 72.17737 | 10.12914 | 0.2363101 | 2.6856048 | 49 | 1 | 80 days | 0.42 | M-v | 3 | MPC | 2006 $SS_{126}$ |
| 2006 $ST_{126}$ | 16.3 | 0.15 | 20060922 | 359.66912 | 297.24770 | 72.19358 | 8.52043 | 0.2826019 | 3.0787992 | 32 | 1 | 37 days | 0.50 | | | MPC | 2006 $ST_{126}$ |
| 2006 $SY_{126}$ | 16.9 | 0.15 | 20060922 | 0.47132 | 61.32698 | 305.82428 | 6.96802 | 0.2695835 | 2.7607798 | 28 | 1 | 29 days | 0.41 | | | MPC | 2006 $SY_{126}$ |
| 2006 $SB_{127}$ | 17.5 | 0.15 | 20060922 | 339.85286 | 338.00020 | 54.70459 | 19.83337 | 0.0846763 | 1.8856307 | 12 | 1 | 5 days | 0.74 | | | MPC | 2006 $SB_{127}$ |
| 2006 $SF_{127}$ | 16.7 | 0.15 | 20061012 | 355.86759 | 306.87200 | 76.03457 | 9.61555 | 0.2608589 | 2.7143224 | 23 | 1 | 54 days | 0.56 | | | MPC | 2006 $SF_{127}$ |
| 2006 $SO_{127}$ | 17.2 | 0.15 | 20061012 | 0.10574 | 319.91345 | 57.48849 | 15.86834 | 0.2934325 | 2.6888184 | 26 | 1 | 53 days | 0.56 | | | MPC | 2006 $SO_{127}$ |
| 2006 $SU_{127}$ | 16.0 | 0.15 | 20060922 | 319.47065 | 142.98602 | 267.64525 | 13.77222 | 0.0841129 | 2.5791295 | 16 | 1 | 33 days | 0.46 | | | MPC | 2006 $SU_{127}$ |
| 2006 $SW_{127}$ | 16.7 | 0.15 | 20060922 | 353.74232 | 113.02806 | 257.78765 | 13.66191 | 0.1156540 | 2.4149492 | 14 | 1 | 33 days | 0.77 | | | MPC | 2006 $SW_{127}$ |
| 2006 $SY_{127}$ | 14.4 | 0.15 | 20061012 | 353.60205 | 87.67984 | 289.27275 | 15.37713 | 0.1191599 | 3.1284772 | 23 | 1 | 59 days | 0.55 | | | MPC | 2006 $SY_{127}$ |
| 2006 $SA_{128}$ | 16.6 | 0.15 | 20060922 | 47.11741 | 91.03285 | 213.50819 | 2.03576 | 0.0862423 | 2.6473296 | 19 | 1 | 33 days | 0.56 | | | MPC | 2006 $SA_{128}$ |
| 2006 $SC_{128}$ | 15.2 | 0.15 | 20060922 | 22.10952 | 40.27158 | 292.35367 | 1.89531 | 0.2411634 | 3.9311984 | 32 | 1 | 44 days | 0.53 | | | MPC | 2006 $SC_{128}$ |
| 2006 $SH_{128}$ | 17.4 | 0.15 | 20060922 | 20.05306 | 251.28511 | 73.38047 | 6.23521 | 0.2764651 | 2.5764350 | 21 | 1 | 34 days | 0.64 | | | MPC | 2006 $SH_{128}$ |
| 2006 $SK_{128}$ | 18.7 | 0.15 | 20060922 | 347.51137 | 355.79537 | 33.17064 | 8.56877 | 0.3858799 | 2.6008244 | 19 | 1 | 65 days | 0.67 | M-v | 4 | MPC | 2006 $SK_{128}$ |
| 2006 $SP_{128}$ | 15.9 | 0.15 | 20060922 | 358.70630 | 46.52837 | 326.57636 | 5.63886 | 0.1274999 | 3.0028594 | 34 | 1 | 34 days | 0.56 | | | MPC | 2006 $SP_{128}$ |
| 2006 $SQ_{128}$ | 15.7 | 0.15 | 20060922 | 345.04663 | 149.31407 | 241.76216 | 16.29070 | 0.2132962 | 3.1198204 | 12 | 1 | 11 days | 0.49 | | | MPC | 2006 $SQ_{128}$ |
| 2006 $SR_{128}$ | 15.4 | 0.15 | 20060922 | 345.38370 | 89.69879 | 300.66262 | 15.81650 | 0.1382242 | 3.0816598 | 11 | 1 | 11 days | 0.36 | | | MPC | 2006 $SR_{128}$ |
| 2006 $SX_{128}$ | 17.4 | 0.15 | 20060922 | 353.23122 | 80.04286 | 303.66000 | 11.17630 | 0.2910322 | 2.6370501 | 27 | 1 | 66 days | 0.51 | M-v | 4 | MPC | 2006 $SX_{128}$ |
| 2006 $SY_{128}$ | 16.7 | 0.15 | 20060922 | 15.78672 | 88.27162 | 258.25350 | 10.43488 | 0.1986636 | 2.6732232 | 27 | 1 | 35 days | 0.40 | | | MPC | 2006 $SY_{128}$ |
| 2006 $SZ_{128}$ | 15.2 | 0.15 | 20061012 | 343.10095 | 153.69257 | 254.19899 | 11.03456 | 0.2743584 | 3.1762526 | 47 | 1 | 58 days | 0.33 | | | MPC | 2006 $SZ_{128}$ |
| 2006 $SA_{129}$ | 16.0 | 0.15 | 20060922 | 24.13146 | 25.79230 | 309.72326 | 10.76571 | 0.2286335 | 3.0973305 | 25 | 1 | 40 days | 0.53 | | | MPC | 2006 $SA_{129}$ |
| 2006 $SB_{129}$ | 17.2 | 0.15 | 20061012 | 29.88211 | 68.11945 | 259.24676 | 11.66730 | 0.2787567 | 2.6674653 | 29 | 1 | 55 days | 0.70 | | | MPC | 2006 $SB_{129}$ |
| 2006 $SG_{129}$ | 17.2 | 0.15 | 20060922 | 19.33027 | 311.91714 | 23.35141 | 4.83847 | 0.1843542 | 2.7240301 | 25 | 1 | 33 days | 0.37 | | | MPC | 2006 $SG_{129}$ |
| 2006 $SK_{129}$ | 18.1 | 0.15 | 20060922 | 28.68336 | 136.06634 | 191.07081 | 4.45119 | 0.1992343 | 2.1903139 | 28 | 1 | 34 days | 0.39 | | | MPC | 2006 $SK_{129}$ |
| 2006 $SL_{129}$ | 17.8 | 0.15 | 20061012 | 317.03226 | 55.16866 | 11.68534 | 20.26989 | 0.0877692 | 1.9302620 | 39 | 1 | 57 days | 0.50 | | | MPC | 2006 $SL_{129}$ |
| 2006 $SM_{129}$ | 15.9 | 0.15 | 20060922 | 309.31463 | 253.52191 | 199.15045 | 5.70238 | 0.2946703 | 3.2680547 | 14 | 1 | 8 days | 0.95 | | | MPC | 2006 $SM_{129}$ |
| 2006 $SO_{129}$ | 16.2 | 0.15 | 20060922 | 76.29738 | 276.13927 | 0.36909 | 4.86286 | 0.0489662 | 2.6893244 | 11 | 1 | 11 days | 0.29 | | | MPC | 2006 $SO_{129}$ |
| 2006 $SP_{129}$ | 18.4 | 0.15 | 20060902 | 4.79085 | 39.10298 | 300.43337 | 1.95646 | 0.1955498 | 2.3521663 | 15 | 1 | 35 days | 0.57 | | | MPC | 2006 $SP_{129}$ |
| 2006 $SS_{129}$ | 17.7 | 0.15 | 20060922 | 14.80203 | 112.30719 | 229.84526 | 6.45943 | 0.1731290 | 2.2509148 | 34 | 1 | 83 days | 0.63 | M-v | 4 | MPC | 2006 $SS_{129}$ |
| 2006 $SY_{129}$ | 18.1 | 0.15 | 20060922 | 304.02412 | 242.86540 | 185.25058 | 25.40632 | 0.0783505 | 1.9818171 | 13 | 1 | 8 days | 0.51 | | | MPC | 2006 $SY_{129}$ |
| 2006 $SZ_{129}$ | 16.6 | 0.15 | 20060922 | 0.61149 | 31.36725 | 332.95453 | 2.91421 | 0.1087720 | 2.7705426 | 27 | 1 | 42 days | 0.58 | | | MPC | 2006 $SZ_{129}$ |
| 2006 $SD_{130}$ | 19.0 | 0.15 | 20060922 | 331.57970 | 136.74194 | 270.20559 | 2.05739 | 0.2425008 | 2.2429158 | 17 | 1 | 34 days | 0.28 | | | MPC | 2006 $SD_{130}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SH_{130}$ | 18.0 | 0.15 | 20060922 | 1.42093 | 102.49188 | 254.22112 | 3.33479 | 0.1706427 | 2.2987830 | 39 | 1 | 86 days | 0.39 | M-v | 3 | MPC | | 2006 $SH_{130}$ |
| 2006 $SL_{130}$ | 16.3 | 0.15 | 20061012 | 341.34092 | 306.99270 | 107.83170 | 2.79626 | 0.2264294 | 2.7934677 | 53 | 1 | 59 days | 0.54 | | | MPC | | 2006 $SL_{130}$ |
| 2006 $SP_{130}$ | 17.0 | 0.15 | 20060922 | 29.18263 | 328.20600 | 6.45045 | 8.19145 | 0.2329791 | 2.7266753 | 30 | 1 | 116 days | 0.43 | M-v | 4 | MPC | | 2006 $SP_{130}$ |
| 2006 $SR_{130}$ | 15.3 | 0.15 | 20060922 | 329.73431 | 80.99937 | 344.36578 | 25.12158 | 0.2730150 | 3.0856547 | 33 | 1 | 60 days | 0.58 | M-v | 5 | MPC | | 2006 $SR_{130}$ |
| 2006 $ST_{130}$ | 14.8 | 0.15 | 20060922 | 355.14823 | 26.69356 | 6.16156 | 10.14702 | 0.1086398 | 3.0586560 | 40 | 1 | 115 days | 0.52 | M-v | 3 | MPC | | 2006 $ST_{130}$ |
| 2006 $SU_{130}$ | 15.5 | 0.15 | 20060922 | 313.35275 | 107.24295 | 338.65835 | 13.56208 | 0.2709308 | 3.1039574 | 35 | 1 | 36 days | 0.47 | | | MPC | | 2006 $SU_{130}$ |
| 2006 $SV_{130}$ | 17.3 | 0.15 | 20060922 | 20.57221 | 349.52025 | 348.98125 | 6.29653 | 0.2955590 | 2.5607673 | 42 | 1 | 101 days | 0.53 | M-v | 4 | MPC | | 2006 $SV_{130}$ |
| 2006 $SW_{130}$ | 17.3 | 0.15 | 20060922 | 209.25717 | 165.91340 | 357.03537 | 9.35883 | 0.0050005 | 2.9647021 | 25 | 1 | 42 days | 0.46 | | | MPC | | 2006 $SW_{130}$ |
| 2006 $SX_{130}$ | 17.3 | 0.15 | 20061012 | 344.57375 | 176.10056 | 220.79806 | 4.76011 | 0.1533251 | 3.0827707 | 47 | 1 | 58 days | 0.38 | | | MPC | | 2006 $SX_{130}$ |
| 2006 $SY_{130}$ | 18.3 | 0.15 | 20060922 | 35.37636 | 128.14489 | 196.26867 | 5.41552 | 0.1988558 | 2.2304808 | 55 | 1 | 61 days | 0.30 | M-v | 4 | MPC | | 2006 $SY_{130}$ |
| 2006 $SZ_{130}$ | 17.9 | 0.15 | 20061012 | 308.64798 | 253.09709 | 202.85717 | 4.41132 | 0.1986418 | 2.3391882 | 75 | 1 | 57 days | 0.37 | | | MPC | | 2006 $SZ_{130}$ |
| 2006 $SG_{131}$ | 15.8 | 0.15 | 20060922 | 286.88285 | 271.46794 | 172.70908 | 14.05809 | 0.1390785 | 3.1272570 | 27 | 1 | 64 days | 0.56 | M-v | 5 | MPC | | 2006 $SG_{131}$ |
| 2006 $SK_{131}$ | 16.7 | 0.15 | 20060922 | 3.75357 | 125.22282 | 213.42139 | 8.74333 | 0.2272623 | 3.0676150 | 14 | 1 | 10 days | 0.79 | | | MPC | | 2006 $SK_{131}$ |
| 2006 $SL_{131}$ | 16.4 | 0.15 | 20060922 | 304.91537 | 165.90724 | 249.10225 | 6.80323 | 0.1491899 | 2.7559738 | 8 | 1 | 2 days | 0.88 | | | MPC | | 2006 $SL_{131}$ |
| 2006 $SN_{131}$ | 26.3 | 0.15 | 20060922 | 358.21983 | 1.22077 | 2.91333 | 6.09450 | 0.5201667 | 2.1214112 | 21 | 1 | 6 days | 0.57 | M-v | 5 | MPC | | 2006 $SN_{131}$ |
| 2006 $SO_{131}$ | 19.8 | 0.15 | 20060922 | 305.48490 | 288.19587 | 149.33574 | 7.21780 | 0.2427663 | 1.8055443 | 24 | 1 | 1 days | 0.62 | | E | MPC | | 2006 $SO_{131}$ |
| 2006 $SP_{131}$ | 25.3 | 0.15 | 20060922 | 291.16754 | 100.84989 | 3.31324 | 20.13532 | 0.3097467 | 1.1233247 | 30 | 1 | 7 days | 0.52 | M-v | 8 | MPC | | 2006 $SP_{131}$ |
| 2006 $SQ_{131}$ | 22.6 | 0.15 | 20060922 | 5.68980 | 166.35563 | 185.02925 | 12.83854 | 0.3051876 | 1.7216198 | 39 | 1 | 22 days | 0.49 | M-v | 7 | MPC | | 2006 $SQ_{131}$ |
| 2006 $SR_{131}$ | 28.0 | 0.15 | 20060922 | 27.91854 | 118.25774 | 185.61172 | 0.54597 | 0.3308481 | 1.3311049 | 63 | 1 | 7 days | 0.42 | M-v | 6 | MPC | | 2006 $SR_{131}$ |
| 2006 $SS_{131}$ | 25.7 | 0.15 | 20060922 | 6.74306 | 159.53579 | 183.36197 | 4.72107 | 0.3823963 | 1.6267023 | 16 | 1 | 4 days | 0.48 | M-v | 7 | MPC | | 2006 $SS_{131}$ |
| 2006 $ST_{131}$ | 21.6 | 0.15 | 20060922 | 303.31266 | 265.72961 | 194.52218 | 32.86375 | 0.3163250 | 1.4691199 | 31 | 1 | 19 days | 0.39 | M-v | 6 | MPC | | 2006 $ST_{131}$ |
| 2006 $SU_{131}$ | 18.7 | 0.15 | 20060922 | 55.67565 | 167.59103 | 107.47259 | 9.65597 | 0.3956165 | 1.7277301 | 44 | 1 | 52 days | 0.48 | M-v | 4 | MPC | | 2006 $SU_{131}$ |
| 2006 $SX_{131}$ | 17.8 | 0.15 | 20060922 | 16.95186 | 16.81801 | 318.31551 | 10.10497 | 0.2668204 | 2.3696785 | 12 | 1 | 12 days | 0.66 | | | MPC | | 2006 $SX_{131}$ |
| 2006 $SC_{132}$ | 15.5 | 0.15 | 20060922 | 333.23707 | 98.31753 | 309.92761 | 9.46166 | 0.1805064 | 3.1662733 | 33 | 1 | 54 days | 0.56 | | | MPC | | 2006 $SC_{132}$ |
| 2006 $SD_{132}$ | 15.3 | 0.15 | 20060922 | 359.18633 | 107.34274 | 263.78380 | 9.22874 | 0.0114753 | 3.0422771 | 22 | 1 | 35 days | 0.72 | | | MPC | | 2006 $SD_{132}$ |
| 2006 $SK_{132}$ | 16.4 | 0.15 | 20060922 | 30.57932 | 39.23938 | 280.95901 | 5.69821 | 0.2438645 | 2.6629186 | 25 | 1 | 37 days | 0.58 | | | MPC | | 2006 $SK_{132}$ |
| 2006 $SL_{132}$ | 18.2 | 0.15 | 20060922 | 5.39454 | 48.34353 | 309.88409 | 5.31032 | 0.2214413 | 2.2464617 | 27 | 1 | 35 days | 0.51 | | | MPC | | 2006 $SL_{132}$ |
| 2006 $SN_{132}$ | 17.3 | 0.15 | 20060922 | 322.69545 | 83.94454 | 342.54670 | 8.35171 | 0.2374023 | 2.4201889 | 21 | 1 | 35 days | 0.46 | | | MPC | | 2006 $SN_{132}$ |
| 2006 $SP_{132}$ | 16.7 | 0.15 | 20060922 | 343.70316 | 24.52073 | 25.63300 | 5.27003 | 0.2250885 | 2.3268216 | 73 | 1 | 67 days | 0.51 | M-v | 3 | MPC | | 2006 $SP_{132}$ |
| 2006 $SQ_{132}$ | 16.3 | 0.15 | 20060922 | 29.48055 | 160.41995 | 166.34981 | 14.60751 | 0.2681990 | 2.6215181 | 26 | 1 | 42 days | 0.60 | | | MPC | | 2006 $SQ_{132}$ |
| 2006 $SU_{132}$ | 14.7 | 0.15 | 20060922 | 85.07993 | 337.99743 | 301.74088 | 12.15799 | 0.0437937 | 3.1129572 | 12 | 1 | 12 days | 0.52 | | | MPC | | 2006 $SU_{132}$ |
| 2006 $SY_{132}$ | 16.7 | 0.15 | 20060922 | 42.36755 | 53.15326 | 242.60300 | 8.51599 | 0.3005788 | 2.3799566 | 29 | 1 | 35 days | 0.60 | | | MPC | | 2006 $SY_{132}$ |
| 2006 $SA_{133}$ | 18.6 | 0.15 | 20060922 | 7.13753 | 138.78862 | 216.32317 | 12.60062 | 0.2923904 | 2.5993093 | 22 | 1 | 35 days | 0.70 | | | MPC | | 2006 $SA_{133}$ |
| 2006 $SB_{133}$ | 16.2 | 0.15 | 20060922 | 324.30334 | 96.80746 | 319.55497 | 10.97726 | 0.0982146 | 2.7407604 | 33 | 1 | 37 days | 0.53 | | | MPC | | 2006 $SB_{133}$ |
| 2006 $SE_{133}$ | 17.4 | 0.15 | 20060922 | 345.48309 | 73.20471 | 308.44639 | 18.58745 | 0.1014557 | 1.9112705 | 18 | 1 | 65 days | 0.58 | M-v | 5 | MPC | | 2006 $SE_{133}$ |
| 2006 $SF_{133}$ | 14.7 | 0.15 | 20060922 | 315.76558 | 139.67553 | 278.69553 | 21.60104 | 0.0828574 | 3.0945763 | 16 | 1 | 40 days | 0.53 | | | MPC | | 2006 $SF_{133}$ |
| 2006 $SK_{133}$ | 16.5 | 0.15 | 20060922 | 351.57270 | 124.90454 | 242.39377 | 8.63862 | 0.1091325 | 3.0251789 | 17 | 1 | 35 days | 0.45 | | | MPC | | 2006 $SK_{133}$ |
| 2006 $SM_{133}$ | 18.0 | 0.15 | 20060922 | 28.49893 | 104.90082 | 212.84617 | 6.68321 | 0.1731262 | 2.2764725 | 13 | 1 | 9 days | 0.56 | | | MPC | | 2006 $SM_{133}$ |
| 2006 $SN_{133}$ | 18.8 | 0.15 | 20060902 | 348.00953 | 124.11966 | 245.83578 | 3.36846 | 0.2673088 | 2.3953700 | 7 | 1 | 5 days | 0.50 | | | MPC | | 2006 $SN_{133}$ |
| 2006 $SS_{133}$ | 16.5 | 0.15 | 20060922 | 1.18182 | 106.62596 | 254.11058 | 3.90150 | 0.1807630 | 2.7861734 | 18 | 1 | 36 days | 0.42 | | | MPC | | 2006 $SS_{133}$ |
| 2006 $SU_{133}$ | 18.0 | 0.15 | 20060922 | 353.08386 | 31.01862 | 343.23935 | 3.67162 | 0.2106247 | 2.2610987 | 34 | 1 | 44 days | 0.46 | | | MPC | | 2006 $SU_{133}$ |
| 2006 $SE_{134}$ | 16.8 | 0.15 | 20060922 | 322.09989 | 295.59286 | 119.40666 | 1.91689 | 0.1600828 | 3.0927964 | 9 | 1 | 8 days | 0.36 | | | MPC | | 2006 $SE_{134}$ |
| 2006 $SF_{134}$ | 16.6 | 0.15 | 20060922 | 10.33870 | 334.28416 | 13.70383 | 11.35036 | 0.2144905 | 3.0796549 | 36 | 1 | 37 days | 0.50 | | | MPC | | 2006 $SF_{134}$ |
| 2006 $SG_{134}$ | 16.9 | 0.15 | 20060922 | 0.06106 | 343.73582 | 19.77134 | 5.93206 | 0.2411036 | 3.1965564 | 23 | 1 | 28 days | 0.37 | | | MPC | | 2006 $SG_{134}$ |
| 2006 $SH_{134}$ | 18.2 | 0.15 | 20060922 | 353.27286 | 147.61896 | 227.80672 | 5.49529 | 0.2273785 | 2.3981166 | 20 | 1 | 37 days | 0.32 | | | MPC | | 2006 $SH_{134}$ |
| 2006 $SJ_{134}$ | 17.8 | 0.15 | 20060922 | 339.96404 | 303.13298 | 129.89728 | 26.07039 | 0.4784443 | 2.2032454 | 31 | 1 | 62 days | 0.28 | M-v | 5 | MPC | | 2006 $SJ_{134}$ |
| 2006 $SK_{134}$ | 18.4 | 0.15 | 20060922 | 31.08956 | 74.29471 | 185.34179 | 34.69490 | 0.5362400 | 1.8796096 | 78 | 1 | 45 days | 0.52 | M-v | 6 | MPC | | 2006 $SK_{134}$ |
| 2006 $SL_{134}$ | 17.1 | 0.15 | 20060922 | 17.94743 | 317.02990 | 36.19784 | 34.00989 | 0.3651084 | 2.6600054 | 24 | 1 | 26 days | 0.64 | | | MPC | | 2006 $SL_{134}$ |
| 2006 $SM_{134}$ | 18.5 | 0.15 | 20060922 | 342.35130 | 44.99130 | 37.15450 | 20.40467 | 0.4487367 | 2.6480479 | 12 | 1 | 1 days | 0.29 | | | MPC | | 2006 $SM_{134}$ |
| 2006 $SO_{134}$ | 16.4 | 0.15 | 20060922 | 0.76193 | 170.32393 | 185.15922 | 4.17958 | 0.8298725 | 19.4293802 | 43 | 1 | 36 days | 0.32 | M-v | 3 | MPC | | 2006 $SO_{134}$ |
| 2006 $SP_{134}$ | 17.0 | 0.15 | 20060922 | 95.11717 | 192.24630 | 16.71084 | 13.05039 | 0.7357299 | 2.0518734 | 49 | 1 | 31 days | 0.31 | M-v | 7 | MPC | | 2006 $SP_{134}$ |
| 2006 $SQ_{134}$ | 24.7 | 0.15 | 20060922 | 313.62332 | 246.88992 | 186.84651 | 10.17530 | 0.2528843 | 1.2435610 | 15 | 1 | 1 days | 0.50 | M-v | 8 | MPC | | 2006 $SQ_{134}$ |
| 2006 $SR_{134}$ | 23.1 | 0.15 | 20060922 | 19.83172 | 262.38828 | 45.19430 | 1.59934 | 0.4627790 | 1.8836502 | 30 | 1 | 32 days | 0.33 | M-v | 6 | MPC | | 2006 $SR_{134}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SS_{134}$ | 21.4 | 0.15 | 20060922 | 44.94964 | 256.04361 | 9.12492 | 19.53120 | 0.4420947 | 1.1716512 | 161 | 1 | 57 days | 0.44 | M-v | 5 | MPC | | 2006 $SS_{134}$ |
| 2006 $ST_{134}$ | 20.5 | 0.15 | 20060922 | 353.90117 | 309.12979 | 68.79377 | 7.32669 | 0.4385438 | 2.4476330 | 22 | 1 | 2 days | 0.59 | | E | MPC | | 2006 $ST_{134}$ |
| 2006 $SU_{134}$ | 18.0 | 0.15 | 20060922 | 293.68233 | 56.29011 | 20.85298 | 26.49578 | 0.1597080 | 1.8723420 | 11 | 1 | 1 days | 0.43 | | E | MPC | | 2006 $SU_{134}$ |
| 2006 $SV_{134}$ | 18.8 | 0.15 | 20060922 | 43.07539 | 64.25112 | 217.32741 | 21.54686 | 0.4802625 | 1.8674229 | 66 | 1 | 52 days | 0.40 | M-v | 5 | MPC | | 2006 $SV_{134}$ |
| 2006 $SW_{134}$ | 15.7 | 0.15 | 20060902 | 18.36908 | 54.87538 | 261.25357 | 11.90479 | 0.1482706 | 2.6187220 | 20 | 1 | 45 days | 0.36 | | | MPC | | 2006 $SW_{134}$ |
| 2006 $SA_{135}$ | 18.0 | 0.15 | 20060922 | 29.90841 | 64.61642 | 251.85873 | 5.12121 | 0.2442727 | 2.2886791 | 25 | 1 | 47 days | 0.45 | | | MPC | | 2006 $SA_{135}$ |
| 2006 $SG_{135}$ | 14.5 | 0.15 | 20060922 | 357.35286 | 316.47595 | 33.86328 | 9.40120 | 0.2691219 | 3.9288978 | 25 | 1 | 54 days | 0.47 | | | MPC | | 2006 $SG_{135}$ |
| 2006 $SL_{135}$ | 16.9 | 0.15 | 20060922 | 337.64129 | 144.01271 | 247.95427 | 6.07080 | 0.0623410 | 2.3918860 | 11 | 1 | 14 days | 0.41 | | | MPC | | 2006 $SL_{135}$ |
| 2006 $SN_{135}$ | 17.1 | 0.15 | 20060922 | 343.39688 | 69.92790 | 322.88337 | 7.31725 | 0.1858739 | 2.7796288 | 10 | 1 | 22 days | 0.59 | | | MPC | | 2006 $SN_{135}$ |
| 2006 $SO_{137}$ | 17.2 | 0.15 | 20060922 | 337.98451 | 156.15788 | 243.15747 | 4.71478 | 0.2457334 | 2.7608360 | 23 | 1 | 33 days | 0.38 | | | MPC | | 2006 $SO_{137}$ |
| 2006 $ST_{137}$ | 15.6 | 0.15 | 20060922 | 8.57615 | 309.56565 | 34.56848 | 17.47289 | 0.2266100 | 3.1633393 | 14 | 1 | 33 days | 0.45 | | | MPC | | 2006 $ST_{137}$ |
| 2006 $SE_{138}$ | 17.3 | 0.15 | 20060922 | 17.87473 | 300.50835 | 36.70041 | 13.88299 | 0.2203171 | 2.5492179 | 26 | 1 | 32 days | 0.66 | | | MPC | | 2006 $SE_{138}$ |
| 2006 $SN_{138}$ | 16.9 | 0.15 | 20061012 | 343.82733 | 1.15753 | 42.81496 | 7.33417 | 0.0938447 | 2.2912389 | 46 | 1 | 58 days | 0.44 | | | MPC | | 2006 $SN_{138}$ |
| 2006 $SU_{138}$ | 16.9 | 0.15 | 20060922 | 4.67053 | 329.82839 | 19.08040 | 21.65077 | 0.1200552 | 1.9828109 | 14 | 1 | 20 days | 0.37 | | | MPC | | 2006 $SU_{138}$ |
| 2006 $SB_{139}$ | 17.0 | 0.15 | 20060922 | 357.54761 | 138.75092 | 229.16271 | 7.65895 | 0.4777633 | 3.0734575 | 60 | 1 | 62 days | 0.47 | M-v | 4 | MPC | | 2006 $SB_{139}$ |
| 2006 $SC_{139}$ | 16.2 | 0.15 | 20060922 | 336.39783 | 97.18123 | 292.32756 | 8.37883 | 0.1171036 | 3.1298700 | 17 | 1 | 31 days | 0.40 | | | MPC | | 2006 $SC_{139}$ |
| 2006 $SF_{139}$ | 16.4 | 0.15 | 20060922 | 328.14168 | 24.72961 | 46.92815 | 8.76560 | 0.3069834 | 2.8475611 | 31 | 1 | 68 days | 0.56 | M-v | 4 | MPC | | 2006 $SF_{139}$ |
| 2006 $SH_{139}$ | 16.5 | 0.15 | 20061012 | 357.54027 | 274.06914 | 111.18525 | 7.60090 | 0.2215131 | 3.0039180 | 22 | 1 | 56 days | 0.59 | | | MPC | | 2006 $SH_{139}$ |
| 2006 $SN_{139}$ | 17.0 | 0.15 | 20060922 | 358.97535 | 314.15817 | 59.52868 | 10.19016 | 0.2467417 | 2.3801390 | 60 | 1 | 64 days | 0.49 | M-v | 4 | MPC | | 2006 $SN_{139}$ |
| 2006 $SO_{139}$ | 15.8 | 0.15 | 20061012 | 303.33949 | 32.31480 | 60.20199 | 13.05286 | 0.1686598 | 2.7148447 | 22 | 1 | 56 days | 0.64 | | | MPC | | 2006 $SO_{139}$ |
| 2006 $SQ_{139}$ | 16.4 | 0.15 | 20060922 | 46.38232 | 248.10866 | 46.02691 | 9.55958 | 0.2626302 | 2.7653486 | 22 | 1 | 30 days | 0.45 | | | MPC | | 2006 $SQ_{139}$ |
| 2006 $ST_{139}$ | 16.6 | 0.15 | 20060902 | 19.26369 | 119.18515 | 194.33448 | 25.98549 | 0.2490913 | 3.2085387 | 12 | 1 | 13 days | 0.52 | | | MPC | | 2006 $ST_{139}$ |
| 2006 $SW_{139}$ | 16.8 | 0.15 | 20060922 | 344.27821 | 148.56684 | 225.22652 | 11.01578 | 0.1145119 | 2.7525693 | 17 | 1 | 61 days | 0.70 | M-v | 4 | MPC | | 2006 $SW_{139}$ |
| 2006 $SZ_{139}$ | 18.2 | 0.15 | 20060922 | 354.44433 | 135.19474 | 230.54067 | 9.50012 | 0.2416494 | 2.5287889 | 17 | 1 | 28 days | 0.45 | | | MPC | | 2006 $SZ_{139}$ |
| 2006 $SA_{140}$ | 15.5 | 0.15 | 20060922 | 33.00999 | 15.30347 | 318.83758 | 8.93377 | 0.0644036 | 3.0984454 | 37 | 1 | 31 days | 0.58 | | | MPC | | 2006 $SA_{140}$ |
| 2006 $SG_{140}$ | 14.4 | 0.15 | 20060922 | 358.49407 | 302.30068 | 63.77535 | 16.89546 | 0.2799393 | 3.9593208 | 19 | 1 | 6 days | 0.47 | | | MPC | | 2006 $SG_{140}$ |
| 2006 $SJ_{140}$ | 16.6 | 0.15 | 20060922 | 40.07244 | 243.64308 | 63.16156 | 15.59149 | 0.1793015 | 2.5792864 | 20 | 1 | 6 days | 0.76 | | | MPC | | 2006 $SJ_{140}$ |
| 2006 $SO_{140}$ | 17.9 | 0.15 | 20060922 | 331.98902 | 3.50679 | 31.52646 | 22.15191 | 0.0911641 | 1.8774178 | 25 | 1 | 29 days | 0.61 | | | MPC | | 2006 $SO_{140}$ |
| 2006 $SS_{140}$ | 15.7 | 0.15 | 20060922 | 325.43432 | 281.12145 | 126.33819 | 15.43930 | 0.1001830 | 2.6710547 | 19 | 1 | 6 days | 0.73 | | | MPC | | 2006 $SS_{140}$ |
| 2006 $ST_{140}$ | 16.5 | 0.15 | 20061012 | 27.54638 | 317.62803 | 30.87406 | 12.45524 | 0.1956800 | 2.6668607 | 51 | 1 | 58 days | 0.44 | | | MPC | | 2006 $ST_{140}$ |
| 2006 $SX_{140}$ | 18.0 | 0.15 | 20060922 | 8.58611 | 242.95830 | 110.98861 | 7.74818 | 0.2396408 | 2.1943490 | 21 | 1 | 27 days | 0.61 | | | MPC | | 2006 $SX_{140}$ |
| 2006 $SZ_{140}$ | 18.5 | 0.15 | 20060922 | 340.92157 | 130.85118 | 271.48386 | 3.43682 | 0.2899702 | 2.3600135 | 23 | 1 | 22 days | 0.62 | | | MPC | | 2006 $SZ_{140}$ |
| 2006 $SA_{141}$ | 17.9 | 0.15 | 20060922 | 13.38321 | 305.76477 | 28.54979 | 2.57971 | 0.2215154 | 2.2910887 | 27 | 1 | 85 days | 0.47 | M-v | 4 | MPC | | 2006 $SA_{141}$ |
| 2006 $SB_{141}$ | 17.6 | 0.15 | 20061012 | 43.77524 | 267.87485 | 45.08287 | 4.99099 | 0.2252106 | 2.1644621 | 41 | 1 | 52 days | 0.49 | | | MPC | | 2006 $SB_{141}$ |
| 2006 $SC_{141}$ | 17.1 | 0.15 | 20061012 | 15.60444 | 187.24510 | 170.21544 | 10.10912 | 0.1864970 | 2.7104582 | 30 | 1 | 33 days | 0.64 | | | MPC | | 2006 $SC_{141}$ |
| 2006 $SE_{141}$ | 17.5 | 0.15 | 20061012 | 9.73515 | 290.25446 | 76.96603 | 4.76571 | 0.1342227 | 2.2189352 | 33 | 1 | 59 days | 0.60 | | | MPC | | 2006 $SE_{141}$ |
| 2006 $SH_{141}$ | 16.1 | 0.15 | 20060922 | 15.65316 | 310.73148 | 38.71511 | 17.28936 | 0.2474557 | 3.1563869 | 47 | 1 | 81 days | 0.62 | M-v | 4 | MPC | | 2006 $SH_{141}$ |
| 2006 $SN_{141}$ | 17.6 | 0.15 | 20060922 | 329.44859 | 309.67302 | 114.07538 | 7.32582 | 0.2740196 | 2.3772901 | 12 | 1 | 4 days | 0.66 | | | MPC | | 2006 $SN_{141}$ |
| 2006 $SO_{141}$ | 16.3 | 0.15 | 20060922 | 358.52327 | 254.45256 | 125.96547 | 9.83465 | 0.2267546 | 3.1751779 | 32 | 1 | 54 days | 0.61 | | | MPC | | 2006 $SO_{141}$ |
| 2006 $SR_{141}$ | 18.3 | 0.15 | 20060922 | 10.07317 | 259.42715 | 89.96496 | 4.91285 | 0.2352273 | 2.1613624 | 28 | 1 | 34 days | 0.69 | | | MPC | | 2006 $SR_{141}$ |
| 2006 $ST_{141}$ | 17.0 | 0.15 | 20061012 | 329.83970 | 0.85003 | 61.75954 | 4.51464 | 0.2229256 | 2.3675213 | 34 | 1 | 53 days | 0.50 | | | MPC | | 2006 $ST_{141}$ |
| 2006 $SU_{141}$ | 17.0 | 0.15 | 20060922 | 345.55444 | 326.63505 | 48.75811 | 6.59986 | 0.0633179 | 2.9369268 | 24 | 1 | 4 days | 0.58 | | | MPC | | 2006 $SU_{141}$ |
| 2006 $SY_{141}$ | 17.2 | 0.15 | 20060922 | 38.55751 | 253.11244 | 62.76379 | 6.89716 | 0.1698377 | 2.3686477 | 16 | 1 | 26 days | 0.63 | | | MPC | | 2006 $SY_{141}$ |
| 2006 $SB_{142}$ | 22.1 | 0.15 | 20060922 | 349.86179 | 18.15211 | 9.70480 | 7.66894 | 0.4322224 | 2.2352591 | 34 | 1 | 44 days | 0.27 | M-v | 4 | MPC | | 2006 $SB_{142}$ |
| 2006 $SD_{142}$ | 17.2 | 0.15 | 20060922 | 303.91427 | 148.30560 | 267.04953 | 3.21319 | 0.2008728 | 2.5900324 | 10 | 1 | 9 days | 0.15 | | | MPC | | 2006 $SD_{142}$ |
| 2006 $SG_{142}$ | 17.0 | 0.15 | 20060922 | 307.50549 | 251.98943 | 169.14706 | 6.94668 | 0.1433307 | 2.5922231 | 18 | 1 | 11 days | 0.49 | | | MPC | | 2006 $SG_{142}$ |
| 2006 $ST_{142}$ | 18.4 | 0.15 | 20060922 | 353.02095 | 245.88867 | 122.82169 | 1.55719 | 0.2128533 | 2.6120646 | 18 | 1 | 55 days | 0.52 | | | MPC | | 2006 $ST_{142}$ |
| 2006 $SU_{142}$ | 17.2 | 0.15 | 20060922 | 310.70639 | 254.89244 | 183.94566 | 9.69498 | 0.2126167 | 3.1295919 | 16 | 1 | 11 days | 0.17 | | | MPC | | 2006 $SU_{142}$ |
| 2006 $SV_{142}$ | 17.5 | 0.15 | 20060922 | 132.22367 | 50.90873 | 177.68339 | 4.67811 | 0.0857559 | 2.6036022 | 13 | 1 | 11 days | 0.18 | | | MPC | | 2006 $SV_{142}$ |
| 2006 $SW_{142}$ | 17.0 | 0.15 | 20061012 | 334.46094 | 60.20273 | 355.58476 | 7.14027 | 0.2236494 | 2.7848239 | 23 | 1 | 53 days | 0.56 | | | MPC | | 2006 $SW_{142}$ |
| 2006 $SY_{142}$ | 16.8 | 0.15 | 20060922 | 143.26774 | 345.22208 | 241.26615 | 2.92406 | 0.0182471 | 2.6489509 | 12 | 1 | 15 days | 0.20 | | | MPC | | 2006 $SY_{142}$ |
| 2006 $SZ_{142}$ | 17.1 | 0.15 | 20060922 | 306.57459 | 228.84093 | 205.32100 | 10.03795 | 0.0954872 | 3.0016215 | 11 | 1 | 11 days | 0.14 | | E | MPC | | 2006 $SZ_{142}$ |
| 2006 $SA_{143}$ | 17.7 | 0.15 | 20060922 | 92.30690 | 337.40828 | 278.33814 | 1.84245 | 0.2021392 | 2.4177568 | 9 | 1 | 11 days | 0.12 | | | MPC | | 2006 $SA_{143}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SB_{143}$ | 17.9 | 0.15 | 20060922 | 315.49680 | 207.35296 | 213.42447 | 5.53953 | 0.0616535 | 2.7880629 | 9 | 1 | 11 days | 0.14 | | MPC | 2006 $SB_{143}$ |
| 2006 $SC_{143}$ | 15.2 | 0.15 | 20060922 | 78.14431 | 71.08207 | 204.56111 | 10.22722 | 0.1581026 | 3.1039596 | 26 | 1 | 68 days | 0.26 | M-v 4 | MPC | 2006 $SC_{143}$ |
| 2006 $SE_{143}$ | 18.1 | 0.15 | 20060922 | 329.28920 | 217.36488 | 199.94000 | 7.63985 | 0.2208163 | 2.7601162 | 10 | 1 | 38 days | 0.12 | | MPC | 2006 $SE_{143}$ |
| 2006 $SH_{143}$ | 18.6 | 0.15 | 20060922 | 16.04221 | 14.04718 | 329.78258 | 1.99197 | 0.2197195 | 2.5992524 | 9 | 1 | 11 days | 0.20 | | MPC | 2006 $SH_{143}$ |
| 2006 $SJ_{143}$ | 17.6 | 0.15 | 20060922 | 150.06674 | 218.64790 | 356.99598 | 6.38586 | 0.0957661 | 2.2219460 | 9 | 1 | 11 days | 0.11 | | MPC | 2006 $SJ_{143}$ |
| 2006 $SL_{143}$ | 15.8 | 0.15 | 20060922 | 119.61189 | 240.89285 | 6.58791 | 9.54234 | 0.0690582 | 3.3744238 | 16 | 1 | 30 days | 0.20 | | MPC | 2006 $SL_{143}$ |
| 2006 $SM_{143}$ | 16.3 | 0.15 | 20060922 | 181.62516 | 292.26357 | 259.53135 | 1.36309 | 0.0648744 | 3.0697533 | 13 | 1 | 30 days | 0.23 | | MPC | 2006 $SM_{143}$ |
| 2006 $SQ_{143}$ | 17.4 | 0.15 | 20060922 | 338.68665 | 196.66611 | 199.49752 | 11.80207 | 0.0694347 | 2.7186628 | 17 | 1 | 42 days | 0.23 | | MPC | 2006 $SQ_{143}$ |
| 2006 $SR_{143}$ | 19.7 | 0.15 | 20060922 | 346.12902 | 57.35683 | 333.25220 | 1.76978 | 0.2193994 | 2.3207603 | 13 | 1 | 30 days | 0.26 | | MPC | 2006 $SR_{143}$ |
| 2006 $SU_{143}$ | 16.6 | 0.15 | 20060922 | 158.90195 | 10.38015 | 202.99975 | 9.30176 | 0.0322389 | 3.1735448 | 9 | 1 | 11 days | 0.17 | | MPC | 2006 $SU_{143}$ |
| 2006 $SV_{143}$ | 17.1 | 0.15 | 20061012 | 309.80496 | 219.09561 | 231.49624 | 2.85591 | 0.2235177 | 3.1420336 | 17 | 1 | 57 days | 0.29 | | MPC | 2006 $SV_{143}$ |
| 2006 $SY_{143}$ | 18.2 | 0.15 | 20060922 | 348.62055 | 82.47983 | 305.91423 | 1.20773 | 0.2212778 | 2.6593397 | 17 | 1 | 30 days | 0.28 | | MPC | 2006 $SY_{143}$ |
| 2006 $SC_{144}$ | 17.7 | 0.15 | 20060922 | 25.41346 | 135.09990 | 194.96890 | 9.69802 | 0.2394762 | 3.0105559 | 13 | 1 | 11 days | 0.23 | | MPC | 2006 $SC_{144}$ |
| 2006 $SD_{144}$ | 17.5 | 0.15 | 20060922 | 154.31511 | 10.29133 | 205.65324 | 5.00848 | 0.0206251 | 2.2846985 | 9 | 1 | 11 days | 0.09 | | MPC | 2006 $SD_{144}$ |
| 2006 $SE_{144}$ | 17.0 | 0.15 | 20060922 | 253.45681 | 223.17154 | 263.15385 | 0.94070 | 0.0626959 | 2.8631594 | 9 | 1 | 11 days | 0.19 | | MPC | 2006 $SE_{144}$ |
| 2006 $SJ_{144}$ | 18.0 | 0.15 | 20060922 | 14.13199 | 85.24502 | 261.66182 | 0.81726 | 0.2542054 | 2.9773345 | 9 | 1 | 11 days | 0.13 | | MPC | 2006 $SJ_{144}$ |
| 2006 $SM_{144}$ | 16.6 | 0.15 | 20061012 | 62.34104 | 61.58803 | 241.45337 | 1.86530 | 0.1133980 | 2.6605101 | 25 | 1 | 57 days | 0.62 | | MPC | 2006 $SM_{144}$ |
| 2006 $SN_{144}$ | 16.8 | 0.15 | 20060922 | 127.38977 | 43.73236 | 199.33140 | 9.54728 | 0.0427727 | 3.0929775 | 13 | 1 | 38 days | 0.26 | | MPC | 2006 $SN_{144}$ |
| 2006 $SV_{144}$ | 18.2 | 0.15 | 20060922 | 296.28772 | 102.74477 | 354.96567 | 3.37009 | 0.1887828 | 2.6498233 | 13 | 1 | 30 days | 0.27 | | MPC | 2006 $SV_{144}$ |
| 2006 $SX_{144}$ | 17.4 | 0.15 | 20060922 | 354.54419 | 11.54651 | 7.70339 | 10.18586 | 0.2120953 | 2.5972421 | 22 | 1 | 28 days | 0.32 | | MPC | 2006 $SX_{144}$ |
| 2006 $SB_{145}$ | 17.1 | 0.15 | 20060922 | 162.40521 | 16.58230 | 189.80317 | 4.15503 | 0.1616553 | 2.4400215 | 9 | 1 | 11 days | 0.14 | | MPC | 2006 $SB_{145}$ |
| 2006 $SE_{145}$ | 17.6 | 0.15 | 20060922 | 341.61175 | 218.04356 | 183.55450 | 3.03793 | 0.2198409 | 3.1091156 | 21 | 1 | 42 days | 0.33 | | MPC | 2006 $SE_{145}$ |
| 2006 $SH_{145}$ | 17.4 | 0.15 | 20060922 | 339.06072 | 206.80718 | 189.99423 | 5.50068 | 0.0591083 | 2.8014878 | 13 | 1 | 32 days | 0.21 | | MPC | 2006 $SH_{145}$ |
| 2006 $SK_{145}$ | 16.5 | 0.15 | 20060922 | 46.53457 | 293.99162 | 27.59247 | 1.22852 | 0.0661740 | 2.9489355 | 25 | 1 | 64 days | 0.31 | M-v 4 | MPC | 2006 $SK_{145}$ |
| 2006 $SL_{145}$ | 17.8 | 0.15 | 20060922 | 320.97536 | 252.08364 | 166.05245 | 1.76424 | 0.0837979 | 2.5845988 | 17 | 1 | 32 days | 0.22 | | MPC | 2006 $SL_{145}$ |
| 2006 $SO_{145}$ | 15.6 | 0.15 | 20060922 | 325.13332 | 224.57065 | 191.26829 | 11.24937 | 0.0910167 | 3.1096493 | 47 | 1 | 69 days | 0.45 | M-v 4 | MPC | 2006 $SO_{145}$ |
| 2006 $SQ_{145}$ | 18.2 | 0.15 | 20060922 | 126.72644 | 52.94133 | 184.80608 | 4.22227 | 0.0991630 | 2.2708177 | 17 | 1 | 33 days | 0.29 | | MPC | 2006 $SQ_{145}$ |
| 2006 $SR_{145}$ | 16.7 | 0.15 | 20060922 | 57.33648 | 101.75404 | 193.05015 | 23.63630 | 0.2080764 | 3.1428322 | 14 | 1 | 12 days | 0.14 | | MPC | 2006 $SR_{145}$ |
| 2006 $SS_{145}$ | 17.1 | 0.15 | 20061012 | 352.48076 | 17.13131 | 8.77762 | 3.18966 | 0.1031442 | 2.6900036 | 20 | 1 | 57 days | 0.20 | | MPC | 2006 $SS_{145}$ |
| 2006 $ST_{145}$ | 17.5 | 0.15 | 20060922 | 60.38522 | 300.81123 | 2.88346 | 1.01286 | 0.0705920 | 2.5867792 | 12 | 1 | 13 days | 0.25 | | MPC | 2006 $ST_{145}$ |
| 2006 $SY_{145}$ | 15.6 | 0.15 | 20060922 | 213.43359 | 187.10840 | 343.15462 | 0.21650 | 0.1828841 | 3.0092029 | 13 | 1 | 11 days | 0.22 | | MPC | 2006 $SY_{145}$ |
| 2006 $SA_{146}$ | 16.9 | 0.15 | 20060922 | 259.40697 | 278.59886 | 200.08307 | 2.92443 | 0.0474683 | 2.7818501 | 17 | 1 | 27 days | 0.19 | | MPC | 2006 $SA_{146}$ |
| 2006 $SC_{146}$ | 18.7 | 0.15 | 20060922 | 338.99600 | 210.46560 | 189.12967 | 5.60926 | 0.1537782 | 2.6392678 | 9 | 1 | 11 days | 0.24 | | MPC | 2006 $SC_{146}$ |
| 2006 $SF_{146}$ | 17.1 | 0.15 | 20060922 | 27.95563 | 327.15897 | 7.73857 | 0.86913 | 0.1539275 | 3.1578604 | 17 | 1 | 27 days | 0.21 | | MPC | 2006 $SF_{146}$ |
| 2006 $SG_{146}$ | 18.1 | 0.15 | 20060922 | 352.40548 | 189.65596 | 190.96147 | 4.25772 | 0.0797977 | 2.6270102 | 9 | 1 | 11 days | 0.14 | | MPC | 2006 $SG_{146}$ |
| 2006 $SJ_{146}$ | 16.8 | 0.15 | 20060922 | 304.89740 | 256.66852 | 187.90626 | 5.16882 | 0.1566825 | 3.0935091 | 14 | 1 | 32 days | 0.24 | | MPC | 2006 $SJ_{146}$ |
| 2006 $SL_{146}$ | 16.7 | 0.15 | 20060922 | 291.33628 | 268.77720 | 190.34435 | 3.50382 | 0.1479117 | 3.1861833 | 25 | 1 | 38 days | 0.32 | | MPC | 2006 $SL_{146}$ |
| 2006 $SM_{146}$ | 19.2 | 0.15 | 20060922 | 17.02291 | 343.71525 | 2.13085 | 2.49764 | 0.1773107 | 2.4299128 | 9 | 1 | 11 days | 0.18 | | MPC | 2006 $SM_{146}$ |
| 2006 $SP_{146}$ | 18.9 | 0.15 | 20060922 | 299.12766 | 248.17261 | 199.43198 | 4.18341 | 0.1611290 | 2.2790331 | 9 | 1 | 11 days | 0.18 | | MPC | 2006 $SP_{146}$ |
| 2006 $ST_{146}$ | 17.9 | 0.15 | 20060922 | 329.28085 | 66.29312 | 342.18117 | 1.72260 | 0.1022202 | 2.8593677 | 12 | 1 | 11 days | 0.44 | | MPC | 2006 $ST_{146}$ |
| 2006 $SV_{146}$ | 17.7 | 0.15 | 20060922 | 284.59855 | 256.36514 | 193.84572 | 0.92133 | 0.0361860 | 2.5829363 | 13 | 1 | 27 days | 0.25 | | MPC | 2006 $SV_{146}$ |
| 2006 $SW_{146}$ | 16.9 | 0.15 | 20060922 | 298.92268 | 249.39979 | 198.33585 | 10.03834 | 0.1331069 | 3.1759646 | 9 | 1 | 11 days | 0.43 | | MPC | 2006 $SW_{146}$ |
| 2006 $SX_{146}$ | 17.4 | 0.15 | 20060922 | 356.43466 | 182.31742 | 193.21448 | 11.82847 | 0.0692859 | 2.9181478 | 13 | 1 | 32 days | 0.21 | | MPC | 2006 $SX_{146}$ |
| 2006 $SZ_{146}$ | 18.0 | 0.15 | 20060922 | 23.35268 | 6.34904 | 327.69127 | 1.18168 | 0.2109592 | 2.6466969 | 20 | 1 | 42 days | 0.25 | | MPC | 2006 $SZ_{146}$ |
| 2006 $SA_{147}$ | 18.9 | 0.15 | 20060922 | 18.42992 | 336.11452 | 2.28317 | 4.22220 | 0.2294901 | 2.3035225 | 16 | 1 | 34 days | 0.16 | | MPC | 2006 $SA_{147}$ |
| 2006 $SC_{147}$ | 17.0 | 0.15 | 20060922 | 253.91910 | 218.00564 | 273.97549 | 0.34540 | 0.1278140 | 2.8068817 | 12 | 1 | 13 days | 0.53 | | MPC | 2006 $SC_{147}$ |
| 2006 $SE_{147}$ | 18.9 | 0.15 | 20060922 | 61.31051 | 319.72389 | 328.82900 | 0.99219 | 0.1852887 | 2.3512532 | 9 | 1 | 11 days | 0.22 | | MPC | 2006 $SE_{147}$ |
| 2006 $SF_{147}$ | 18.1 | 0.15 | 20060922 | 331.38890 | 184.46622 | 225.91479 | 1.31597 | 0.1926801 | 2.6119982 | 9 | 1 | 11 days | 0.14 | | MPC | 2006 $SF_{147}$ |
| 2006 $SH_{147}$ | 18.5 | 0.15 | 20060922 | 238.86985 | 136.63080 | 357.61095 | 3.60210 | 0.0435559 | 2.2435557 | 9 | 1 | 11 days | 0.16 | | MPC | 2006 $SH_{147}$ |
| 2006 $SL_{147}$ | 18.6 | 0.15 | 20060922 | 304.00094 | 243.26546 | 199.94674 | 4.97713 | 0.1733408 | 2.3556666 | 13 | 1 | 38 days | 0.21 | | MPC | 2006 $SL_{147}$ |
| 2006 $SM_{147}$ | 18.1 | 0.15 | 20060922 | 17.47981 | 109.57709 | 232.27801 | 1.42063 | 0.2074592 | 2.6595944 | 9 | 1 | 11 days | 0.12 | | MPC | 2006 $SM_{147}$ |
| 2006 $SQ_{147}$ | 17.5 | 0.15 | 20060922 | 212.51759 | 304.79928 | 220.76025 | 1.76681 | 0.1489528 | 2.3048698 | 9 | 1 | 11 days | 0.31 | | MPC | 2006 $SQ_{147}$ |
| 2006 $SR_{147}$ | 18.0 | 0.15 | 20060922 | 11.39443 | 358.80530 | 354.10068 | 3.58388 | 0.1617107 | 2.5611272 | 13 | 1 | 42 days | 0.20 | | MPC | 2006 $SR_{147}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SS_{147}$ | 17.5 | 0.15 | 20060922 | 18.16712 | 14.40504 | 334.54750 | 1.21042 | 0.0794045 | 2.8332476 | 13 | 1 | 30 days | 0.26 | | MPC | 2006 $SS_{147}$ |
| 2006 $SW_{147}$ | 19.2 | 0.15 | 20060922 | 350.96316 | 181.62687 | 201.12769 | 3.19253 | 0.2175196 | 2.5555532 | 17 | 1 | 38 days | 0.30 | | MPC | 2006 $SW_{147}$ |
| 2006 $SX_{147}$ | 17.5 | 0.15 | 20060922 | 337.34088 | 205.04618 | 196.89969 | 2.89903 | 0.1849030 | 2.6112947 | 29 | 1 | 38 days | 0.43 | | MPC | 2006 $SX_{147}$ |
| 2006 $SY_{147}$ | 19.6 | 0.15 | 20060922 | 347.48252 | 32.96575 | 357.95337 | 5.73590 | 0.2838084 | 2.5376596 | 9 | 1 | 11 days | 0.18 | | MPC | 2006 $SY_{147}$ |
| 2006 $SA_{148}$ | 19.4 | 0.15 | 20060922 | 342.58632 | 34.34448 | 4.20613 | 13.02164 | 0.2585915 | 2.6194140 | 9 | 1 | 11 days | 0.18 | | MPC | 2006 $SA_{148}$ |
| 2006 $SB_{148}$ | 17.7 | 0.15 | 20060922 | 357.30150 | 179.81369 | 194.67455 | 12.90554 | 0.1620363 | 3.1457945 | 13 | 1 | 27 days | 0.30 | | MPC | 2006 $SB_{148}$ |
| 2006 $SJ_{148}$ | 18.7 | 0.15 | 20060922 | 335.01393 | 245.56328 | 156.07258 | 2.79942 | 0.1942373 | 2.3425947 | 14 | 1 | 11 days | 0.50 | | MPC | 2006 $SJ_{148}$ |
| 2006 $SL_{148}$ | 16.7 | 0.15 | 20060922 | 277.12816 | 282.60350 | 182.97662 | 14.53123 | 0.1461144 | 3.0526805 | 13 | 1 | 8 days | 0.29 | | MPC | 2006 $SL_{148}$ |
| 2006 $SM_{148}$ | 19.2 | 0.15 | 20060922 | 353.30900 | 75.85115 | 300.73276 | 2.18412 | 0.2627961 | 2.2997664 | 23 | 1 | 34 days | 0.54 | | MPC | 2006 $SM_{148}$ |
| 2006 $SS_{148}$ | 18.3 | 0.15 | 20060922 | 60.23688 | 83.18508 | 214.62457 | 5.56064 | 0.1482377 | 2.4133522 | 13 | 1 | 30 days | 0.28 | | MPC | 2006 $SS_{148}$ |
| 2006 $ST_{148}$ | 17.5 | 0.15 | 20060922 | 238.05851 | 265.96208 | 244.12386 | 2.41608 | 0.1417574 | 2.4194531 | 12 | 1 | 22 days | 0.21 | | MPC | 2006 $ST_{148}$ |
| 2006 $SU_{148}$ | 18.1 | 0.15 | 20061012 | 23.45070 | 8.41066 | 340.09739 | 4.02548 | 0.1554813 | 2.6607519 | 13 | 1 | 59 days | 0.19 | | MPC | 2006 $SU_{148}$ |
| 2006 $SV_{148}$ | 17.8 | 0.15 | 20061012 | 50.07137 | 98.72809 | 202.88936 | 12.00833 | 0.2666379 | 2.6824785 | 20 | 1 | 58 days | 0.27 | | MPC | 2006 $SV_{148}$ |
| 2006 $SW_{148}$ | 17.3 | 0.15 | 20060922 | 359.51245 | 159.98551 | 216.98379 | 5.52212 | 0.0933541 | 3.0030910 | 21 | 1 | 42 days | 0.30 | | MPC | 2006 $SW_{148}$ |
| 2006 $SZ_{148}$ | 18.3 | 0.15 | 20060922 | 320.40007 | 240.11346 | 196.96309 | 23.51161 | 0.2619862 | 2.4024768 | 13 | 1 | 26 days | 0.38 | | MPC | 2006 $SZ_{148}$ |
| 2006 $SA_{149}$ | 17.4 | 0.15 | 20060922 | 197.56370 | 321.82591 | 219.27524 | 5.16509 | 0.0734578 | 2.4823945 | 12 | 1 | 11 days | 0.15 | | MPC | 2006 $SA_{149}$ |
| 2006 $SC_{149}$ | 19.0 | 0.15 | 20060922 | 357.76544 | 171.11668 | 206.16051 | 7.85021 | 0.1481071 | 2.5592552 | 13 | 1 | 31 days | 0.30 | | MPC | 2006 $SC_{149}$ |
| 2006 $SD_{149}$ | 17.7 | 0.15 | 20060922 | 81.58859 | 57.97824 | 221.46852 | 5.14716 | 0.1293196 | 2.4414338 | 9 | 1 | 11 days | 0.22 | | MPC | 2006 $SD_{149}$ |
| 2006 $SE_{149}$ | 17.7 | 0.15 | 20061012 | 355.23970 | 133.16477 | 255.90067 | 2.00582 | 0.2288540 | 2.6135877 | 31 | 1 | 59 days | 0.41 | | MPC | 2006 $SE_{149}$ |
| 2006 $SF_{149}$ | 18.9 | 0.15 | 20060922 | 332.68926 | 211.91279 | 197.00525 | 13.11955 | 0.1637546 | 2.0066475 | 24 | 1 | 33 days | 0.42 | | MPC | 2006 $SF_{149}$ |
| 2006 $SG_{149}$ | 17.8 | 0.15 | 20061012 | 300.39543 | 83.87364 | 4.91552 | 8.65741 | 0.0755232 | 2.5474026 | 13 | 1 | 59 days | 0.19 | | MPC | 2006 $SG_{149}$ |
| 2006 $SH_{149}$ | 18.0 | 0.15 | 20060922 | 349.02886 | 170.92266 | 218.92255 | 3.34662 | 0.1076141 | 2.7738738 | 16 | 1 | 31 days | 0.26 | | MPC | 2006 $SH_{149}$ |
| 2006 $SJ_{149}$ | 18.0 | 0.15 | 20060922 | 88.76097 | 58.50621 | 220.21605 | 3.46877 | 0.0712530 | 2.3541253 | 16 | 1 | 38 days | 0.18 | | MPC | 2006 $SJ_{149}$ |
| 2006 $SL_{149}$ | 17.5 | 0.15 | 20061012 | 34.05695 | 132.56309 | 211.23007 | 7.90372 | 0.0606944 | 2.7674869 | 17 | 1 | 53 days | 0.29 | | MPC | 2006 $SL_{149}$ |
| 2006 $SN_{149}$ | 17.4 | 0.15 | 20060922 | 220.35907 | 306.10590 | 217.49428 | 4.75587 | 0.1093797 | 2.2597230 | 9 | 1 | 22 days | 0.14 | | MPC | 2006 $SN_{149}$ |
| 2006 $SP_{149}$ | 17.9 | 0.15 | 20060922 | 325.85688 | 207.97772 | 208.25240 | 6.52588 | 0.1032969 | 2.2635428 | 22 | 1 | 43 days | 0.28 | | MPC | 2006 $SP_{149}$ |
| 2006 $SR_{149}$ | 17.9 | 0.15 | 20060922 | 15.59691 | 153.72331 | 201.90523 | 16.13267 | 0.1371653 | 2.7219755 | 16 | 1 | 60 days | 0.33 | M-v 4 | MPC | 2006 $SR_{149}$ |
| 2006 $SU_{149}$ | 17.1 | 0.15 | 20061012 | 32.83299 | 345.56377 | 355.70179 | 4.47380 | 0.1217050 | 2.7696712 | 16 | 1 | 59 days | 0.30 | | MPC | 2006 $SU_{149}$ |
| 2006 $SV_{149}$ | 17.9 | 0.15 | 20060922 | 131.98488 | 4.21318 | 230.78805 | 2.62010 | 0.1350884 | 2.2470083 | 9 | 1 | 11 days | 0.28 | | MPC | 2006 $SV_{149}$ |
| 2006 $SZ_{149}$ | 17.6 | 0.15 | 20060922 | 22.52095 | 124.59883 | 225.21031 | 2.78690 | 0.1081862 | 2.7927850 | 16 | 1 | 39 days | 0.20 | | MPC | 2006 $SZ_{149}$ |
| 2006 $SC_{150}$ | 18.1 | 0.15 | 20060922 | 336.35258 | 203.22324 | 202.49170 | 6.71566 | 0.1222195 | 2.3805814 | 15 | 1 | 61 days | 0.24 | M-v 4 | MPC | 2006 $SC_{150}$ |
| 2006 $SE_{150}$ | 17.4 | 0.15 | 20060922 | 281.54085 | 254.26603 | 214.61012 | 4.36410 | 0.1147574 | 2.3933009 | 23 | 1 | 64 days | 0.35 | M-v 4 | MPC | 2006 $SE_{150}$ |
| 2006 $SG_{150}$ | 17.9 | 0.15 | 20060922 | 213.83648 | 149.60554 | 14.18377 | 3.70516 | 0.0212089 | 2.3264923 | 23 | 1 | 42 days | 0.21 | | MPC | 2006 $SG_{150}$ |
| 2006 $SH_{150}$ | 17.6 | 0.15 | 20060922 | 11.69485 | 105.17285 | 259.42580 | 0.14475 | 0.0374087 | 2.6440431 | 18 | 1 | 39 days | 0.35 | | MPC | 2006 $SH_{150}$ |
| 2006 $SJ_{150}$ | 18.1 | 0.15 | 20060922 | 53.55743 | 101.99199 | 198.23122 | 1.65620 | 0.2017263 | 2.3418768 | 20 | 1 | 38 days | 0.58 | | MPC | 2006 $SJ_{150}$ |
| 2006 $SK_{150}$ | 17.1 | 0.15 | 20060922 | 213.68076 | 245.68036 | 288.59483 | 0.40741 | 0.1762744 | 2.4255668 | 9 | 1 | 11 days | 0.19 | | MPC | 2006 $SK_{150}$ |
| 2006 $SN_{150}$ | 16.8 | 0.15 | 20060922 | 313.80809 | 69.96327 | 14.95349 | 2.73880 | 0.2192938 | 2.7560661 | 40 | 1 | 115 days | 0.26 | M-v 4 | MPC | 2006 $SN_{150}$ |
| 2006 $SO_{150}$ | 18.3 | 0.15 | 20060922 | 74.17201 | 83.89410 | 194.67279 | 1.89630 | 0.2016600 | 2.2937159 | 12 | 1 | 31 days | 0.25 | | MPC | 2006 $SO_{150}$ |
| 2006 $SP_{150}$ | 17.6 | 0.15 | 20060922 | 72.63515 | 90.44761 | 200.80958 | 2.82676 | 0.1215669 | 2.6107750 | 19 | 1 | 42 days | 0.45 | | MPC | 2006 $SP_{150}$ |
| 2006 $SV_{150}$ | 17.1 | 0.15 | 20061012 | 346.52196 | 67.33271 | 329.93464 | 1.22313 | 0.0757496 | 2.8701270 | 27 | 1 | 57 days | 0.34 | | MPC | 2006 $SV_{150}$ |
| 2006 $SW_{150}$ | 18.5 | 0.15 | 20061012 | 340.52366 | 48.05809 | 3.13616 | 5.65804 | 0.2061839 | 2.5255200 | 13 | 1 | 59 days | 0.20 | | MPC | 2006 $SW_{150}$ |
| 2006 $SX_{150}$ | 16.6 | 0.15 | 20060922 | 358.66411 | 100.49952 | 279.08151 | 1.11432 | 0.0723813 | 3.1354194 | 13 | 1 | 39 days | 0.18 | | MPC | 2006 $SX_{150}$ |
| 2006 $SY_{150}$ | 18.1 | 0.15 | 20060922 | 36.97309 | 120.42024 | 200.54033 | 7.12788 | 0.2066702 | 2.7338616 | 12 | 1 | 30 days | 0.24 | | MPC | 2006 $SY_{150}$ |
| 2006 $SZ_{150}$ | 17.7 | 0.15 | 20061012 | 224.42417 | 150.69820 | 11.21292 | 7.42800 | 0.0696187 | 2.2816580 | 19 | 1 | 59 days | 0.27 | | MPC | 2006 $SZ_{150}$ |
| 2006 $SA_{151}$ | 18.7 | 0.15 | 20061012 | 4.78213 | 171.02331 | 203.84889 | 3.58073 | 0.1185611 | 2.2152984 | 21 | 1 | 53 days | 0.28 | | MPC | 2006 $SA_{151}$ |
| 2006 $SC_{151}$ | 17.3 | 0.15 | 20060922 | 331.34065 | 38.26575 | 16.14221 | 28.00115 | 0.1247698 | 3.0880449 | 9 | 1 | 11 days | 0.19 | | MPC | 2006 $SC_{151}$ |
| 2006 $SE_{151}$ | 16.2 | 0.15 | 20060922 | 261.81254 | 279.56784 | 207.76142 | 5.80503 | 0.1133178 | 3.0811934 | 9 | 1 | 11 days | 0.10 | | MPC | 2006 $SE_{151}$ |
| 2006 $SG_{151}$ | 18.1 | 0.15 | 20061012 | 21.61126 | 359.22935 | 351.45648 | 4.13848 | 0.1541961 | 2.5890815 | 13 | 1 | 59 days | 0.20 | | MPC | 2006 $SG_{151}$ |
| 2006 $SK_{151}$ | 17.0 | 0.15 | 20060922 | 223.42138 | 315.39097 | 211.82206 | 2.83628 | 0.2221039 | 2.4539395 | 13 | 1 | 11 days | 0.38 | | MPC | 2006 $SK_{151}$ |
| 2006 $SL_{151}$ | 17.2 | 0.15 | 20060922 | 13.29176 | 13.47306 | 341.94838 | 2.89932 | 0.1946853 | 3.1038020 | 26 | 1 | 63 days | 0.44 | M-v 4 | MPC | 2006 $SL_{151}$ |
| 2006 $SM_{151}$ | 17.7 | 0.15 | 20061012 | 342.14774 | 69.01186 | 332.35451 | 2.41740 | 0.0842731 | 2.4542405 | 13 | 1 | 59 days | 0.19 | | MPC | 2006 $SM_{151}$ |
| 2006 $SO_{151}$ | 18.9 | 0.15 | 20060922 | 314.35135 | 164.12778 | 270.01844 | 0.97665 | 0.1614463 | 2.3624804 | 19 | 1 | 38 days | 0.30 | | MPC | 2006 $SO_{151}$ |
| 2006 $SQ_{151}$ | 17.0 | 0.15 | 20060922 | 123.69491 | 22.73097 | 217.20718 | 2.67508 | 0.1498627 | 2.6274300 | 16 | 1 | 27 days | 0.27 | | MPC | 2006 $SQ_{151}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SR_{151}$ | 17.3 | 0.15 | 20060922 | 214.82554 | 297.70579 | 230.18039 | 1.62254 | 0.1288698 | 2.2941413 | 12 | 1 | 27 days | 0.23 | | | MPC | 2006 $SR_{151}$ |
| 2006 $SS_{151}$ | 17.6 | 0.15 | 20061012 | 317.07878 | 163.05769 | 263.39187 | 1.13833 | 0.0418535 | 2.3899542 | 29 | 1 | 57 days | 0.36 | | | MPC | 2006 $SS_{151}$ |
| 2006 $ST_{151}$ | 17.0 | 0.15 | 20061012 | 340.84775 | 86.52202 | 317.32666 | 0.96445 | 0.0954460 | 2.9670658 | 22 | 1 | 57 days | 0.23 | | | MPC | 2006 $ST_{151}$ |
| 2006 $SV_{151}$ | 17.4 | 0.15 | 20061012 | 81.57928 | 281.86333 | 3.19605 | 6.08804 | 0.1214408 | 2.6502750 | 16 | 1 | 59 days | 0.25 | | | MPC | 2006 $SV_{151}$ |
| 2006 $SW_{151}$ | 19.4 | 0.15 | 20060922 | 328.18084 | 222.60288 | 199.02513 | 5.51594 | 0.2267446 | 2.2961449 | 26 | 1 | 42 days | 0.29 | | | MPC | 2006 $SW_{151}$ |
| 2006 $SX_{151}$ | 17.8 | 0.15 | 20060922 | 71.69019 | 63.67737 | 232.20774 | 2.84565 | 0.0552640 | 2.5961677 | 15 | 1 | 12 days | 0.17 | | | MPC | 2006 $SX_{151}$ |
| 2006 $SY_{151}$ | 17.7 | 0.15 | 20060922 | 281.79050 | 258.91700 | 198.28833 | 21.62460 | 0.0447188 | 2.6812475 | 14 | 1 | 32 days | 0.23 | | | MPC | 2006 $SY_{151}$ |
| 2006 $SC_{152}$ | 17.0 | 0.15 | 20060922 | 90.01215 | 21.04464 | 251.75912 | 1.65088 | 0.1021020 | 2.6565074 | 13 | 1 | 30 days | 0.16 | | | MPC | 2006 $SC_{152}$ |
| 2006 $SD_{152}$ | 19.0 | 0.15 | 20060922 | 12.22564 | 123.25449 | 228.29404 | 1.61601 | 0.2284663 | 2.5787940 | 9 | 1 | 11 days | 0.16 | | | MPC | 2006 $SD_{152}$ |
| 2006 $SE_{152}$ | 17.1 | 0.15 | 20061012 | 161.26960 | 13.29755 | 203.76556 | 9.69382 | 0.0164209 | 2.5427914 | 17 | 1 | 53 days | 0.29 | | | MPC | 2006 $SE_{152}$ |
| 2006 $SG_{152}$ | 16.9 | 0.15 | 20060922 | 11.28304 | 133.67122 | 226.67843 | 2.95728 | 0.1174415 | 2.9995220 | 16 | 1 | 30 days | 0.28 | | | MPC | 2006 $SG_{152}$ |
| 2006 $SK_{152}$ | 17.3 | 0.15 | 20060922 | 61.19045 | 11.34747 | 295.26321 | 1.31810 | 0.0610508 | 2.5624221 | 13 | 1 | 30 days | 0.19 | | | MPC | 2006 $SK_{152}$ |
| 2006 $SO_{152}$ | 17.3 | 0.15 | 20060922 | 301.01905 | 245.90161 | 204.73841 | 8.64805 | 0.1512476 | 2.9920185 | 12 | 1 | 27 days | 0.24 | | | MPC | 2006 $SO_{152}$ |
| 2006 $SP_{152}$ | 19.0 | 0.15 | 20060922 | 7.37588 | 359.42456 | 0.16666 | 5.09068 | 0.1813231 | 2.1897509 | 9 | 1 | 11 days | 0.11 | | | MPC | 2006 $SP_{152}$ |
| 2006 $SQ_{152}$ | 17.5 | 0.15 | 20061012 | 70.70693 | 51.87869 | 236.06409 | 2.01535 | 0.1800555 | 2.4690615 | 20 | 1 | 57 days | 0.21 | | | MPC | 2006 $SQ_{152}$ |
| 2006 $SR_{152}$ | 15.9 | 0.15 | 20060922 | 334.17637 | 275.33264 | 143.01040 | 14.34455 | 0.2509057 | 3.1028313 | 26 | 1 | 43 days | 0.54 | | | MPC | 2006 $SR_{152}$ |
| 2006 $ST_{152}$ | 16.8 | 0.15 | 20060922 | 338.08570 | 17.04240 | 31.81160 | 8.92186 | 0.1196652 | 2.7321985 | 49 | 1 | 62 days | 0.39 | M-v | 4 | MPC | 2006 $ST_{152}$ |
| 2006 $SV_{152}$ | 17.5 | 0.15 | 20060902 | 334.81164 | 60.89555 | 321.89749 | 22.28458 | 0.2662650 | 2.3379797 | 15 | 1 | 36 days | 0.38 | | | MPC | 2006 $SV_{152}$ |
| 2006 $SX_{152}$ | 18.3 | 0.15 | 20060922 | 358.14070 | 162.29845 | 195.46086 | 8.41685 | 0.2130466 | 2.8061127 | 24 | 1 | 62 days | 0.18 | M-v | 3 | MPC | 2006 $SX_{152}$ |
| 2006 $SY_{152}$ | | | 20060922 | 299.46902 | 145.72291 | 290.82217 | 3.25145 | 0.1916944 | 2.5903551 | 18 | 1 | 8 days | 0.14 | | | MPC | 2006 $SY_{152}$ |
| 2006 $SZ_{152}$ | | | 20060922 | 266.88613 | 255.65871 | 205.31410 | 5.90982 | 0.1141204 | 2.2532897 | 12 | 1 | 7 days | 0.29 | | | MPC | 2006 $SZ_{152}$ |
| 2006 $SD_{153}$ | 17.0 | 0.15 | 20060922 | 308.72321 | 301.38286 | 117.99234 | 1.76768 | 0.0448293 | 2.7779926 | 13 | 1 | 8 days | 0.59 | | | MPC | 2006 $SD_{153}$ |
| 2006 $SF_{153}$ | 17.7 | 0.15 | 20061012 | 7.24893 | 333.10940 | 25.53288 | 4.47710 | 0.2527981 | 2.6345029 | 41 | 1 | 52 days | 0.53 | | | MPC | 2006 $SF_{153}$ |
| 2006 $SV_{153}$ | 17.4 | 0.15 | 20060922 | 206.71424 | 135.46917 | 16.09319 | 22.29851 | 0.0423379 | 1.9371474 | 19 | 1 | 62 days | 0.67 | M-v | 5 | MPC | 2006 $SV_{153}$ |
| 2006 $SA_{154}$ | 17.8 | 0.15 | 20060922 | 16.07580 | 23.94810 | 315.39749 | 3.45852 | 0.3577900 | 2.5779408 | 33 | 1 | 63 days | 0.60 | M-v | 5 | MPC | 2006 $SA_{154}$ |
| 2006 $SB_{154}$ | 17.3 | 0.15 | 20060922 | 1.98397 | 50.93918 | 322.85874 | 4.96901 | 0.2730379 | 2.6173425 | 31 | 1 | 37 days | 0.45 | | | MPC | 2006 $SB_{154}$ |
| 2006 $SJ_{154}$ | 16.6 | 0.15 | 20060922 | 24.87868 | 239.42227 | 91.71834 | 3.83875 | 0.1733594 | 2.3531032 | 52 | 1 | 69 days | 0.46 | M-v | 4 | MPC | 2006 $SJ_{154}$ |
| 2006 $SM_{154}$ | 15.3 | 0.15 | 20060922 | 353.79119 | 305.86860 | 85.23804 | 5.90056 | 0.2972874 | 3.1709472 | 61 | 1 | 64 days | 0.59 | M-v | 4 | MPC | 2006 $SM_{154}$ |
| 2006 $SN_{154}$ | 17.6 | 0.15 | 20060922 | 352.71242 | 184.45727 | 194.50354 | 9.78454 | 0.1226509 | 2.6419587 | 12 | 1 | 9 days | 0.18 | | | MPC | 2006 $SN_{154}$ |
| 2006 $SQ_{154}$ | 15.6 | 0.15 | 20060922 | 54.63786 | 3.46592 | 291.95187 | 8.25484 | 0.1033006 | 3.0737401 | 14 | 1 | 32 days | 0.47 | | | MPC | 2006 $SQ_{154}$ |
| 2006 $SR_{154}$ | 16.5 | 0.15 | 20060922 | 352.89496 | 125.06635 | 240.96759 | 11.64480 | 0.2740290 | 2.6979566 | 27 | 1 | 96 days | 0.54 | M-v | 4 | MPC | 2006 $SR_{154}$ |
| 2006 $SS_{154}$ | 17.5 | 0.15 | 20061012 | 8.23804 | 311.42722 | 54.32249 | 3.95646 | 0.2074767 | 2.4049684 | 46 | 1 | 56 days | 0.38 | | | MPC | 2006 $SS_{154}$ |
| 2006 $ST_{154}$ | 17.3 | 0.15 | 20060922 | 354.21997 | 319.17888 | 61.15889 | 7.61093 | 0.2744654 | 2.4363884 | 46 | 1 | 63 days | 0.52 | M-v | 4 | MPC | 2006 $ST_{154}$ |
| 2006 $SU_{154}$ | 17.4 | 0.15 | 20060922 | 14.99881 | 249.03752 | 94.60529 | 5.41211 | 0.2252182 | 2.5794751 | 19 | 1 | 31 days | 0.67 | | | MPC | 2006 $SU_{154}$ |
| 2006 $SV_{154}$ | 17.5 | 0.15 | 20060922 | 285.71521 | 253.41608 | 203.00826 | 4.27745 | 0.1069805 | 2.3451700 | 12 | 1 | 8 days | 0.92 | | | MPC | 2006 $SV_{154}$ |
| 2006 $SY_{154}$ | 16.7 | 0.15 | 20060902 | 154.39883 | 228.84961 | 308.22522 | 14.19690 | 0.1013034 | 2.6099796 | 9 | 1 | 13 days | 0.25 | | | MPC | 2006 $SY_{154}$ |
| 2006 $SH_{155}$ | 16.0 | 0.15 | 20060922 | 319.23885 | 283.35593 | 145.92208 | 23.13059 | 0.2174074 | 3.1365823 | 11 | 1 | 20 days | 0.67 | | | MPC | 2006 $SH_{155}$ |
| 2006 $SN_{155}$ | 16.2 | 0.15 | 20060922 | 7.04157 | 286.79635 | 66.59124 | 12.52523 | 0.1779421 | 2.4805201 | 14 | 1 | 31 days | 0.23 | | | MPC | 2006 $SN_{155}$ |
| 2006 $SX_{155}$ | 16.6 | 0.15 | 20060922 | 50.58541 | 33.60130 | 230.43073 | 9.87347 | 0.2295725 | 3.0825822 | 9 | 1 | 5 days | 0.54 | | | MPC | 2006 $SX_{155}$ |
| 2006 $SY_{155}$ | 17.6 | 0.15 | 20060922 | 334.36248 | 167.91053 | 207.77506 | 7.74293 | 0.1759458 | 2.7436229 | 9 | 1 | 5 days | 0.21 | | | MPC | 2006 $SY_{155}$ |
| 2006 $SZ_{155}$ | 18.2 | 0.15 | 20060902 | 34.38647 | 23.36544 | 251.44786 | 5.63322 | 0.2862321 | 2.5888865 | 9 | 1 | 12 days | 0.20 | | | MPC | 2006 $SZ_{155}$ |
| 2006 $SG_{156}$ | 19.9 | 0.15 | 20060922 | 354.36792 | 219.25008 | 146.63472 | 1.10737 | 0.2107729 | 2.2751309 | 14 | 1 | 35 days | 0.47 | | | MPC | 2006 $SG_{156}$ |
| 2006 $SH_{156}$ | 17.6 | 0.15 | 20060902 | 23.15713 | 163.08628 | 163.55996 | 3.07438 | 0.0461092 | 2.8526532 | 10 | 1 | 11 days | 0.20 | | | MPC | 2006 $SH_{156}$ |
| 2006 $SJ_{156}$ | 17.1 | 0.15 | 20060922 | 349.01437 | 212.16263 | 159.03998 | 2.15165 | 0.1355646 | 2.8600485 | 17 | 1 | 35 days | 0.20 | | | MPC | 2006 $SJ_{156}$ |
| 2006 $SK_{156}$ | 16.8 | 0.15 | 20060922 | 14.04235 | 178.25131 | 161.27648 | 2.84961 | 0.0920504 | 3.1902750 | 17 | 1 | 35 days | 0.22 | | | MPC | 2006 $SK_{156}$ |
| 2006 $SL_{156}$ | 17.9 | 0.15 | 20060902 | 70.55748 | 104.48451 | 167.40992 | 4.40000 | 0.0845825 | 2.6081064 | 10 | 1 | 11 days | 0.30 | | | MPC | 2006 $SL_{156}$ |
| 2006 $SO_{156}$ | 18.4 | 0.15 | 20060902 | 32.81077 | 111.00062 | 184.70422 | 3.49828 | 0.2532748 | 2.6596939 | 9 | 1 | 12 days | 0.18 | | | MPC | 2006 $SO_{156}$ |
| 2006 $SP_{156}$ | 16.8 | 0.15 | 20060902 | 198.80250 | 322.95730 | 191.60670 | 1.75372 | 0.0510546 | 2.8330433 | 9 | 1 | 12 days | 0.13 | | | MPC | 2006 $SP_{156}$ |
| 2006 $SR_{156}$ | 15.7 | 0.15 | 20060902 | 167.19323 | 9.10514 | 173.56632 | 13.76885 | 0.1042019 | 3.1645554 | 11 | 1 | 11 days | 0.38 | | | MPC | 2006 $SR_{156}$ |
| 2006 $SV_{156}$ | 17.7 | 0.15 | 20060922 | 311.75487 | 209.28076 | 202.11246 | 1.99784 | 0.0122040 | 2.7244891 | 10 | 1 | 4 days | 0.31 | | | MPC | 2006 $SV_{156}$ |
| 2006 $SW_{156}$ | 17.9 | 0.15 | 20060922 | 50.40516 | 281.33122 | 0.19433 | 13.02864 | 0.2779647 | 2.6897691 | 10 | 1 | 4 days | 0.25 | | E | MPC | 2006 $SW_{156}$ |
| 2006 $SX_{156}$ | 15.2 | 0.15 | 20060902 | 276.75290 | 275.07685 | 188.24080 | 11.72694 | 0.1800470 | 3.2031899 | 14 | 1 | 14 days | 0.17 | | | MPC | 2006 $SX_{156}$ |
| 2006 $SZ_{156}$ | 17.0 | 0.15 | 20060902 | 24.93474 | 133.03871 | 191.97456 | 4.59086 | 0.1423386 | 3.0995641 | 13 | 1 | 12 days | 0.26 | | | MPC | 2006 $SZ_{156}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SA_{157}$ | 16.5 | 0.15 | 20060922 | 301.07562 | 215.72093 | 215.72412 | 1.86901 | 0.0933927 | 2.6594799 | 14 | 1 | 4 days | 0.31 | | MPC | 2006 $SA_{157}$ |
| 2006 $SB_{157}$ | 18.6 | 0.15 | 20060902 | 45.58360 | 65.27596 | 228.22926 | 0.75722 | 0.1759159 | 2.3796857 | 13 | 1 | 12 days | 0.29 | | MPC | 2006 $SB_{157}$ |
| 2006 $SC_{157}$ | 17.6 | 0.15 | 20060902 | 352.28255 | 12.86813 | 354.94611 | 3.16417 | 0.2043579 | 2.7739831 | 13 | 1 | 12 days | 0.20 | | MPC | 2006 $SC_{157}$ |
| 2006 $SD_{157}$ | 17.5 | 0.15 | 20060922 | 342.91307 | 23.87976 | 2.00147 | 18.05848 | 0.1471975 | 2.8161954 | 10 | 1 | 4 days | 0.21 | | MPC | 2006 $SD_{157}$ |
| 2006 $SE_{157}$ | 18.1 | 0.15 | 20060922 | 341.60814 | 123.30996 | 266.48777 | 0.42748 | 0.1959204 | 2.4025382 | 12 | 1 | 8 days | 0.32 | | MPC | 2006 $SE_{157}$ |
| 2006 $SF_{157}$ | 16.4 | 0.15 | 20060922 | 281.24383 | 92.26053 | 359.83281 | 5.92732 | 0.0868363 | 2.9903837 | 17 | 1 | 43 days | 0.27 | | MPC | 2006 $SF_{157}$ |
| 2006 $SJ_{157}$ | 16.9 | 0.15 | 20060902 | 349.29948 | 9.44433 | 2.15369 | 7.41469 | 0.0946873 | 2.9360065 | 13 | 1 | 12 days | 0.18 | | MPC | 2006 $SJ_{157}$ |
| 2006 $SK_{157}$ | 17.0 | 0.15 | 20060922 | 306.32620 | 237.61742 | 201.48353 | 2.11092 | 0.2057449 | 2.7497559 | 10 | 1 | 4 days | 0.13 | | MPC | 2006 $SK_{157}$ |
| 2006 $SL_{157}$ | 16.2 | 0.15 | 20060922 | 305.33976 | 78.58219 | 2.02146 | 12.91900 | 0.2046359 | 2.9151406 | 11 | 1 | 4 days | 0.40 | | MPC | 2006 $SL_{157}$ |
| 2006 $SM_{157}$ | 16.4 | 0.15 | 20060922 | 181.58671 | 189.86483 | 351.07935 | 4.19101 | 0.2750882 | 2.2779022 | 10 | 1 | 5 days | 0.63 | | MPC | 2006 $SM_{157}$ |
| 2006 $SN_{157}$ | 18.5 | 0.15 | 20060922 | 8.51087 | 171.71542 | 176.93253 | 4.92139 | 0.2525468 | 2.6959210 | 9 | 1 | 4 days | 0.27 | | MPC | 2006 $SN_{157}$ |
| 2006 $SO_{157}$ | 16.5 | 0.15 | 20060902 | 259.09570 | 113.06967 | 9.07908 | 15.96217 | 0.1806919 | 2.9825889 | 13 | 1 | 12 days | 0.33 | | MPC | 2006 $SO_{157}$ |
| 2006 $SP_{157}$ | 17.6 | 0.15 | 20060922 | 348.58225 | 8.93057 | 10.44100 | 8.81305 | 0.1256820 | 2.6253608 | 13 | 1 | 8 days | 0.82 | | MPC | 2006 $SP_{157}$ |
| 2006 $SQ_{157}$ | 18.2 | 0.15 | 20060922 | 308.98380 | 266.15837 | 169.95186 | 3.84305 | 0.1989844 | 2.3917000 | 13 | 1 | 7 days | 0.26 | | MPC | 2006 $SQ_{157}$ |
| 2006 $SR_{157}$ | 16.7 | 0.15 | 20060922 | 168.43813 | 184.64590 | 9.98357 | 10.57823 | 0.1909051 | 2.6365678 | 10 | 1 | 4 days | 0.25 | | MPC | 2006 $SR_{157}$ |
| 2006 $ST_{157}$ | 19.5 | 0.15 | 20060922 | 4.32877 | 178.55280 | 179.25758 | 5.40582 | 0.1920930 | 2.3028158 | 13 | 1 | 8 days | 0.29 | | MPC | 2006 $ST_{157}$ |
| 2006 $SU_{157}$ | 19.7 | 0.15 | 20060922 | 14.43774 | 291.88467 | 45.27282 | 1.39136 | 0.2918372 | 2.5841267 | 13 | 1 | 4 days | 0.30 | | MPC | 2006 $SU_{157}$ |
| 2006 $SV_{157}$ | 16.9 | 0.15 | 20060902 | 55.31394 | 116.36910 | 177.95243 | 13.02201 | 0.1161940 | 3.0493394 | 9 | 1 | 12 days | 0.21 | | MPC | 2006 $SV_{157}$ |
| 2006 $SY_{157}$ | 17.6 | 0.15 | 20060922 | 227.13972 | 123.26987 | 18.29768 | 7.75159 | 0.0487235 | 2.2884605 | 15 | 1 | 36 days | 0.20 | | MPC | 2006 $SY_{157}$ |
| 2006 $SZ_{157}$ | 18.6 | 0.15 | 20060902 | 294.93322 | 41.43544 | 39.09575 | 3.28619 | 0.1548249 | 2.3057787 | 9 | 1 | 12 days | 0.16 | | MPC | 2006 $SZ_{157}$ |
| 2006 $SB_{158}$ | 17.2 | 0.15 | 20060902 | 18.99295 | 272.48331 | 59.42319 | 2.60564 | 0.1969143 | 3.1893236 | 9 | 1 | 12 days | 0.12 | | MPC | 2006 $SB_{158}$ |
| 2006 $SC_{158}$ | 19.4 | 0.15 | 20060922 | 19.25743 | 288.38960 | 44.65599 | 1.61813 | 0.2206118 | 2.1463573 | 10 | 1 | 4 days | 0.16 | | MPC | 2006 $SC_{158}$ |
| 2006 $SD_{158}$ | 20.0 | 0.15 | 20060922 | 19.87743 | 286.24669 | 46.94839 | 1.82118 | 0.2097786 | 2.2544007 | 13 | 1 | 22 days | 0.31 | | MPC | 2006 $SD_{158}$ |
| 2006 $SF_{158}$ | 18.4 | 0.15 | 20060902 | 43.85294 | 118.22648 | 181.40261 | 17.61884 | 0.1599617 | 2.6389676 | 9 | 1 | 12 days | 0.21 | | MPC | 2006 $SF_{158}$ |
| 2006 $SG_{158}$ | 16.8 | 0.15 | 20060922 | 295.84108 | 50.30321 | 28.27673 | 3.41463 | 0.0940869 | 3.1625542 | 16 | 1 | 36 days | 0.30 | | MPC | 2006 $SG_{158}$ |
| 2006 $SJ_{158}$ | 17.8 | 0.15 | 20060922 | 6.24341 | 178.18697 | 175.03694 | 5.22872 | 0.2388137 | 2.9819073 | 10 | 1 | 4 days | 0.34 | | MPC | 2006 $SJ_{158}$ |
| 2006 $SK_{158}$ | 17.8 | 0.15 | 20060922 | 357.77788 | 254.19646 | 112.22500 | 1.21504 | 0.1078818 | 2.5704059 | 12 | 1 | 34 days | 0.12 | | MPC | 2006 $SK_{158}$ |
| 2006 $SL_{158}$ | 16.8 | 0.15 | 20060922 | 338.12158 | 344.71610 | 45.67377 | 2.39550 | 0.0913442 | 2.9746971 | 11 | 1 | 34 days | 0.13 | | MPC | 2006 $SL_{158}$ |
| 2006 $SM_{158}$ | 17.7 | 0.15 | 20060922 | 14.66552 | 333.97072 | 14.17969 | 5.98063 | 0.0515408 | 2.8395551 | 17 | 1 | 31 days | 0.28 | | MPC | 2006 $SM_{158}$ |
| 2006 $SP_{158}$ | 17.1 | 0.15 | 20060922 | 295.11366 | 35.07047 | 36.53276 | 2.67551 | 0.0251367 | 2.5391600 | 16 | 1 | 14 days | 0.21 | | MPC | 2006 $SP_{158}$ |
| 2006 $SQ_{158}$ | 16.4 | 0.15 | 20060902 | 40.81866 | 143.10764 | 174.76446 | 9.59057 | 0.0329971 | 3.1671999 | 13 | 1 | 12 days | 0.38 | | MPC | 2006 $SQ_{158}$ |
| 2006 $ST_{158}$ | 18.1 | 0.15 | 20060922 | 8.24033 | 342.24059 | 6.76774 | 9.67825 | 0.2185087 | 2.5680069 | 13 | 1 | 4 days | 0.18 | E | MPC | 2006 $ST_{158}$ |
| 2006 $SV_{158}$ | 16.7 | 0.15 | 20060922 | 82.88152 | 80.43986 | 180.88211 | 16.02383 | 0.1704028 | 3.0948264 | 16 | 1 | 22 days | 0.40 | | MPC | 2006 $SV_{158}$ |
| 2006 $SW_{158}$ | 16.1 | 0.15 | 20060902 | 260.43397 | 289.72884 | 178.01977 | 11.33841 | 0.0739422 | 3.0201687 | 13 | 1 | 12 days | 0.24 | | MPC | 2006 $SW_{158}$ |
| 2006 $SX_{158}$ | 16.2 | 0.15 | 20060902 | 322.98868 | 229.29513 | 177.93027 | 8.46164 | 0.1374650 | 3.2074060 | 10 | 1 | 11 days | 0.14 | | MPC | 2006 $SX_{158}$ |
| 2006 $SY_{158}$ | 17.3 | 0.15 | 20060902 | 41.58833 | 303.46694 | 12.89467 | 6.36192 | 0.0120237 | 2.7205463 | 13 | 1 | 12 days | 0.25 | | MPC | 2006 $SY_{158}$ |
| 2006 $SZ_{158}$ | 17.8 | 0.15 | 20060922 | 13.68309 | 166.27527 | 176.42342 | 8.26507 | 0.1954826 | 3.0860198 | 10 | 1 | 5 days | 0.23 | | MPC | 2006 $SZ_{158}$ |
| 2006 $SB_{159}$ | 17.4 | 0.15 | 20060922 | 50.72667 | 280.55000 | 11.01492 | 7.41755 | 0.2043659 | 2.7894813 | 18 | 1 | 29 days | 0.30 | | MPC | 2006 $SB_{159}$ |
| 2006 $SC_{159}$ | 17.4 | 0.15 | 20060922 | 342.95832 | 205.83082 | 178.48875 | 14.10796 | 0.0897895 | 3.1763652 | 10 | 1 | 5 days | 0.66 | | MPC | 2006 $SC_{159}$ |
| 2006 $SD_{159}$ | 17.4 | 0.15 | 20060922 | 350.20904 | 354.78021 | 20.78729 | 4.51192 | 0.1110765 | 2.8097085 | 13 | 1 | 5 days | 0.47 | | MPC | 2006 $SD_{159}$ |
| 2006 $SG_{159}$ | 17.8 | 0.15 | 20061012 | 31.61203 | 167.30645 | 171.19061 | 2.19802 | 0.1754651 | 2.6981179 | 16 | 1 | 57 days | 0.23 | | MPC | 2006 $SG_{159}$ |
| 2006 $SH_{159}$ | 18.0 | 0.15 | 20060922 | 349.52172 | 200.21428 | 192.04174 | 13.30661 | 0.2065239 | 2.6807623 | 22 | 1 | 38 days | 0.16 | | MPC | 2006 $SH_{159}$ |
| 2006 $SJ_{159}$ | 17.1 | 0.15 | 20061012 | 77.59232 | 262.04217 | 38.75058 | 4.93322 | 0.0464709 | 2.7983085 | 16 | 1 | 49 days | 0.19 | | MPC | 2006 $SJ_{159}$ |
| 2006 $SK_{159}$ | 17.6 | 0.15 | 20061012 | 36.86631 | 302.41377 | 31.53008 | 3.85805 | 0.1546259 | 2.6118714 | 25 | 1 | 38 days | 0.50 | | MPC | 2006 $SK_{159}$ |
| 2006 $SO_{159}$ | 18.7 | 0.15 | 20060922 | 43.33713 | 148.75136 | 162.07374 | 2.05138 | 0.2131280 | 2.1485949 | 18 | 1 | 39 days | 0.28 | | MPC | 2006 $SO_{159}$ |
| 2006 $SP_{159}$ | 18.2 | 0.15 | 20061012 | 348.97325 | 350.36524 | 50.67363 | 1.92003 | 0.2320111 | 2.3279100 | 52 | 1 | 58 days | 0.45 | | MPC | 2006 $SP_{159}$ |
| 2006 $SR_{159}$ | 18.4 | 0.15 | 20060922 | 343.28653 | 221.31480 | 183.59355 | 5.94891 | 0.2560123 | 2.6059190 | 13 | 1 | 28 days | 0.18 | | MPC | 2006 $SR_{159}$ |
| 2006 $SS_{159}$ | 17.2 | 0.15 | 20061012 | 352.04079 | 213.35467 | 182.65886 | 4.60827 | 0.1683666 | 2.7293082 | 41 | 1 | 56 days | 0.53 | | MPC | 2006 $SS_{159}$ |
| 2006 $SV_{159}$ | 18.2 | 0.15 | 20061012 | 299.06037 | 63.78151 | 32.34347 | 7.49819 | 0.0993339 | 2.4085456 | 26 | 1 | 51 days | 0.30 | | MPC | 2006 $SV_{159}$ |
| 2006 $SX_{159}$ | 16.8 | 0.15 | 20061012 | 17.19184 | 321.19318 | 41.96384 | 6.19135 | 0.1336749 | 3.0325492 | 19 | 1 | 57 days | 0.26 | | MPC | 2006 $SX_{159}$ |
| 2006 $SY_{159}$ | 16.3 | 0.15 | 20061012 | 85.38037 | 108.38761 | 177.09338 | 4.96953 | 0.1408069 | 3.2009410 | 17 | 1 | 38 days | 0.26 | | MPC | 2006 $SY_{159}$ |
| 2006 $SZ_{159}$ | 17.5 | 0.15 | 20061012 | 5.81492 | 317.51555 | 58.94852 | 3.04222 | 0.1972863 | 2.7315083 | 37 | 1 | 58 days | 0.35 | | MPC | 2006 $SZ_{159}$ |
| 2006 $SB_{160}$ | 17.2 | 0.15 | 20061012 | 23.31167 | 319.86270 | 40.48295 | 6.58517 | 0.0531397 | 2.8089962 | 20 | 1 | 57 days | 0.30 | | MPC | 2006 $SB_{160}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SC_{160}$ | 16.5 | 0.15 | 20061012 | 119.42247 | 204.61220 | 51.40369 | 5.35534 | 0.1135343 | 2.5256629 | 27 | 1 | 54 days | 0.22 | | | MPC | 2006 $SC_{160}$ |
| 2006 $SE_{160}$ | 18.0 | 0.15 | 20061012 | 39.47362 | 146.32210 | 176.20292 | 3.97548 | 0.2593303 | 2.6841806 | 20 | 1 | 38 days | 0.21 | | | MPC | 2006 $SE_{160}$ |
| 2006 $SG_{160}$ | 16.1 | 0.15 | 20061012 | 322.53445 | 20.07452 | 51.96259 | 6.19730 | 0.1200840 | 3.1602462 | 21 | 1 | 54 days | 0.20 | | | MPC | 2006 $SG_{160}$ |
| 2006 $SK_{160}$ | 18.6 | 0.15 | 20061012 | 348.45865 | 358.57761 | 42.00994 | 5.65495 | 0.1835511 | 2.3138600 | 19 | 1 | 51 days | 0.20 | | | MPC | 2006 $SK_{160}$ |
| 2006 $SN_{160}$ | 18.4 | 0.15 | 20061012 | 342.11465 | 334.98482 | 74.73518 | 2.42307 | 0.1701971 | 2.3917418 | 24 | 1 | 58 days | 0.28 | | | MPC | 2006 $SN_{160}$ |
| 2006 $SO_{160}$ | 16.1 | 0.15 | 20061012 | 325.68190 | 35.74772 | 32.67915 | 13.44779 | 0.1164383 | 3.0190123 | 36 | 1 | 51 days | 0.23 | | | MPC | 2006 $SO_{160}$ |
| 2006 $SR_{160}$ | 18.0 | 0.15 | 20061012 | 333.53038 | 342.47123 | 74.55218 | 3.22060 | 0.1099446 | 2.2469785 | 21 | 1 | 56 days | 0.17 | | | MPC | 2006 $SR_{160}$ |
| 2006 $ST_{160}$ | 16.9 | 0.15 | 20061012 | 12.66013 | 339.56711 | 30.93819 | 16.34064 | 0.0489905 | 2.4646069 | 53 | 1 | 56 days | 0.44 | | | MPC | 2006 $ST_{160}$ |
| 2006 $SU_{160}$ | 17.4 | 0.15 | 20061012 | 47.83319 | 176.28618 | 150.06633 | 3.13923 | 0.0985217 | 2.6043386 | 21 | 1 | 56 days | 0.20 | | | MPC | 2006 $SU_{160}$ |
| 2006 $SV_{160}$ | 17.2 | 0.15 | 20060922 | 31.73741 | 156.68935 | 176.60470 | 6.00649 | 0.1666371 | 2.6023643 | 30 | 1 | 92 days | 0.47 | M-v | 5 | MPC | 2006 $SV_{160}$ |
| 2006 $SW_{160}$ | 19.3 | 0.15 | 20061012 | 4.04235 | 334.12556 | 41.87674 | 3.99792 | 0.2366379 | 2.4411016 | 22 | 1 | 51 days | 0.37 | | | MPC | 2006 $SW_{160}$ |
| 2006 $SX_{160}$ | 17.4 | 0.15 | 20061012 | 321.24721 | 311.10549 | 119.64246 | 2.22440 | 0.1112552 | 2.2668736 | 30 | 1 | 57 days | 0.39 | | | MPC | 2006 $SX_{160}$ |
| 2006 $SY_{160}$ | 16.7 | 0.15 | 20060922 | 237.48984 | 341.46960 | 164.88887 | 4.85133 | 0.0376395 | 2.7527194 | 13 | 1 | 28 days | 0.15 | | | MPC | 2006 $SY_{160}$ |
| 2006 $SZ_{160}$ | 18.5 | 0.15 | 20061012 | 340.54180 | 0.02243 | 54.94782 | 3.42735 | 0.2376436 | 2.4192375 | 23 | 1 | 38 days | 0.52 | | | MPC | 2006 $SZ_{160}$ |
| 2006 $SB_{161}$ | 16.5 | 0.15 | 20061012 | 26.12308 | 306.00268 | 46.06647 | 6.74780 | 0.1031441 | 2.9076691 | 24 | 1 | 38 days | 0.47 | | | MPC | 2006 $SB_{161}$ |
| 2006 $SD_{161}$ | 16.0 | 0.15 | 20061012 | 27.87624 | 259.50725 | 91.54200 | 3.26013 | 0.0910861 | 2.9057248 | 32 | 1 | 56 days | 0.53 | | | MPC | 2006 $SD_{161}$ |
| 2006 $SF_{161}$ | 16.7 | 0.15 | 20061012 | 75.39890 | 273.87752 | 34.35735 | 11.05679 | 0.0115868 | 2.9982140 | 19 | 1 | 51 days | 0.33 | | | MPC | 2006 $SF_{161}$ |
| 2006 $SG_{161}$ | 18.7 | 0.15 | 20061012 | 2.57540 | 334.02263 | 45.41718 | 3.97126 | 0.1604666 | 2.2158630 | 22 | 1 | 53 days | 0.25 | | | MPC | 2006 $SG_{161}$ |
| 2006 $SL_{161}$ | 19.2 | 0.15 | 20060922 | 332.92743 | 274.80621 | 138.72583 | 1.66772 | 0.1841158 | 2.3568043 | 15 | 1 | 35 days | 0.25 | | | MPC | 2006 $SL_{161}$ |
| 2006 $SM_{161}$ | 18.0 | 0.15 | 20061012 | 329.77759 | 298.73032 | 125.43477 | 2.26874 | 0.1680022 | 2.4137205 | 37 | 1 | 56 days | 0.36 | | | MPC | 2006 $SM_{161}$ |
| 2006 $SS_{161}$ | 18.8 | 0.15 | 20060922 | 338.94327 | 20.46699 | 12.94507 | 4.35897 | 0.1385025 | 2.1831073 | 10 | 1 | 8 days | 0.45 | | | MPC | 2006 $SS_{161}$ |
| 2006 $ST_{161}$ | 18.9 | 0.15 | 20060922 | 46.38901 | 263.94242 | 33.96918 | 1.39795 | 0.2181779 | 2.2460033 | 13 | 1 | 8 days | 0.27 | | | MPC | 2006 $ST_{161}$ |
| 2006 $SU_{161}$ | 17.9 | 0.15 | 20060922 | 298.98928 | 257.47299 | 178.92985 | 4.83295 | 0.0740055 | 2.5825285 | 10 | 1 | 4 days | 0.27 | | | MPC | 2006 $SU_{161}$ |
| 2006 $SV_{161}$ | 18.5 | 0.15 | 20060922 | 33.30691 | 164.55609 | 152.64178 | 1.47884 | 0.2008537 | 2.3878401 | 10 | 1 | 6 days | 0.18 | | | MPC | 2006 $SV_{161}$ |
| 2006 $SW_{161}$ | 16.4 | 0.15 | 20060922 | 338.52341 | 8.81558 | 28.06489 | 3.17642 | 0.1473945 | 3.1176449 | 10 | 1 | 4 days | 0.28 | | | MPC | 2006 $SW_{161}$ |
| 2006 $SY_{161}$ | 18.0 | 0.15 | 20060922 | 54.50850 | 117.36130 | 181.12861 | 4.56856 | 0.1394031 | 2.4086584 | 16 | 1 | 17 days | 0.24 | | D | MPC | 2006 $SY_{161}$ |
| 2006 $SZ_{161}$ | 19.4 | 0.15 | 20060922 | 26.28288 | 282.06157 | 36.30653 | 1.64111 | 0.2995879 | 2.7482795 | 10 | 1 | 4 days | 0.65 | | | MPC | 2006 $SZ_{161}$ |
| 2006 $SB_{162}$ | 17.6 | 0.15 | 20060922 | 336.72863 | 253.62978 | 146.31908 | 1.75286 | 0.1532370 | 3.0887147 | 10 | 1 | 6 days | 0.20 | | | MPC | 2006 $SB_{162}$ |
| 2006 $SC_{162}$ | 16.8 | 0.15 | 20060922 | 157.57091 | 44.19292 | 165.83889 | 2.42352 | 0.0289510 | 2.7461134 | 13 | 1 | 8 days | 0.21 | | | MPC | 2006 $SC_{162}$ |
| 2006 $SD_{162}$ | 16.3 | 0.15 | 20060922 | 260.86315 | 103.34614 | 15.12415 | 5.70584 | 0.0910193 | 2.8091114 | 24 | 1 | 8 days | 0.55 | | | MPC | 2006 $SD_{162}$ |
| 2006 $SL_{162}$ | 17.9 | 0.15 | 20061012 | 359.40246 | 352.13508 | 34.69439 | 3.80597 | 0.1350910 | 2.5812495 | 39 | 1 | 56 days | 0.32 | | | MPC | 2006 $SL_{162}$ |
| 2006 $SM_{162}$ | 18.5 | 0.15 | 20061012 | 328.92117 | 236.65868 | 186.18172 | 4.52746 | 0.0967837 | 2.2142611 | 17 | 1 | 55 days | 0.66 | | | MPC | 2006 $SM_{162}$ |
| 2006 $SN_{162}$ | 17.5 | 0.15 | 20060922 | 277.96484 | 86.76686 | 25.59581 | 23.12346 | 0.0711914 | 2.6643962 | 10 | 1 | 4 days | 0.24 | | | MPC | 2006 $SN_{162}$ |
| 2006 $SO_{162}$ | 18.8 | 0.15 | 20061012 | 36.79088 | 294.55362 | 33.13290 | 3.52065 | 0.2397235 | 2.4821150 | 29 | 1 | 38 days | 0.34 | | | MPC | 2006 $SO_{162}$ |
| 2006 $SP_{162}$ | 19.4 | 0.15 | 20061012 | 1.69864 | 215.15232 | 167.26802 | 2.31692 | 0.2010805 | 2.3026100 | 28 | 1 | 37 days | 0.31 | | | MPC | 2006 $SP_{162}$ |
| 2006 $SQ_{162}$ | 17.6 | 0.15 | 20060922 | 25.14976 | 262.86788 | 80.04068 | 1.60423 | 0.2238308 | 3.2688381 | 10 | 1 | 4 days | 0.24 | | | MPC | 2006 $SQ_{162}$ |
| 2006 $SR_{162}$ | 16.4 | 0.15 | 20060922 | 229.92319 | 130.10980 | 30.86146 | 13.35207 | 0.0716442 | 3.1278768 | 23 | 1 | 33 days | 0.33 | | | MPC | 2006 $SR_{162}$ |
| 2006 $SS_{162}$ | 16.7 | 0.15 | 20060922 | 269.38209 | 70.24564 | 61.87987 | 1.95671 | 0.1479718 | 3.1042555 | 19 | 1 | 34 days | 0.22 | | | MPC | 2006 $SS_{162}$ |
| 2006 $SV_{162}$ | 19.6 | 0.15 | 20061012 | 356.46779 | 359.45793 | 30.97369 | 3.57881 | 0.2151575 | 2.1685621 | 23 | 1 | 35 days | 0.26 | | | MPC | 2006 $SV_{162}$ |
| 2006 $SW_{162}$ | 18.9 | 0.15 | 20061012 | 14.84468 | 189.70799 | 174.65739 | 3.22637 | 0.1738037 | 2.3769067 | 22 | 1 | 37 days | 0.25 | | | MPC | 2006 $SW_{162}$ |
| 2006 $SX_{162}$ | 15.6 | 0.15 | 20060922 | 251.74210 | 115.72008 | 35.27630 | 10.72447 | 0.1784730 | 2.9757577 | 13 | 1 | 8 days | 0.74 | | | MPC | 2006 $SX_{162}$ |
| 2006 $SY_{162}$ | 16.0 | 0.15 | 20061012 | 331.54939 | 33.36776 | 29.05485 | 16.46043 | 0.1007099 | 3.1014822 | 41 | 1 | 57 days | 0.35 | | | MPC | 2006 $SY_{162}$ |
| 2006 $SZ_{162}$ | 17.5 | 0.15 | 20060922 | 48.63631 | 285.29876 | 32.15520 | 5.26013 | 0.1651139 | 2.7338799 | 20 | 1 | 34 days | 0.31 | | | MPC | 2006 $SZ_{162}$ |
| 2006 $SB_{163}$ | 18.2 | 0.15 | 20061012 | 310.78982 | 259.50951 | 185.09270 | 6.05229 | 0.0951764 | 2.3310020 | 20 | 1 | 37 days | 0.31 | | | MPC | 2006 $SB_{163}$ |
| 2006 $SG_{163}$ | 18.1 | 0.15 | 20061012 | 339.57382 | 20.92269 | 33.22191 | 4.55326 | 0.1698611 | 2.5852603 | 20 | 1 | 48 days | 0.24 | | | MPC | 2006 $SG_{163}$ |
| 2006 $SJ_{163}$ | 16.1 | 0.15 | 20061012 | 21.62441 | 299.91224 | 60.69447 | 2.25301 | 0.0934964 | 3.0600297 | 32 | 1 | 56 days | 0.18 | | | MPC | 2006 $SJ_{163}$ |
| 2006 $SK_{163}$ | 16.3 | 0.15 | 20061012 | 330.01010 | 17.59468 | 52.24239 | 2.23387 | 0.1846748 | 3.1860157 | 29 | 1 | 54 days | 0.30 | | | MPC | 2006 $SK_{163}$ |
| 2006 $SM_{163}$ | 17.2 | 0.15 | 20061012 | 42.07086 | 137.81952 | 198.33492 | 11.69030 | 0.1031216 | 3.0178648 | 18 | 1 | 37 days | 0.28 | | | MPC | 2006 $SM_{163}$ |
| 2006 $SN_{163}$ | 18.7 | 0.15 | 20060922 | 355.85629 | 325.91375 | 59.81968 | 1.24830 | 0.3077152 | 2.8923925 | 10 | 1 | 8 days | 0.28 | | | MPC | 2006 $SN_{163}$ |
| 2006 $SO_{163}$ | 18.1 | 0.15 | 20061012 | 352.21442 | 209.03828 | 188.46805 | 5.72221 | 0.2261498 | 2.4136291 | 38 | 1 | 57 days | 0.44 | | | MPC | 2006 $SO_{163}$ |
| 2006 $SP_{163}$ | 17.5 | 0.15 | 20060922 | 17.79270 | 213.85467 | 143.25364 | 1.05635 | 0.1604035 | 3.0678875 | 13 | 1 | 29 days | 0.27 | | | MPC | 2006 $SP_{163}$ |
| 2006 $SR_{163}$ | 17.7 | 0.15 | 20060922 | 19.28416 | 232.02239 | 126.69573 | 1.41998 | 0.0866202 | 2.8137997 | 19 | 1 | 34 days | 0.40 | | | MPC | 2006 $SR_{163}$ |
| 2006 $SS_{163}$ | 18.1 | 0.15 | 20061012 | 12.89687 | 326.55237 | 38.30506 | 2.57022 | 0.2070556 | 2.3355789 | 49 | 1 | 57 days | 0.29 | | | MPC | 2006 $SS_{163}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $ST_{163}$ | 18.3 | 0.15 | 20060922 | 318.57330 | 247.51650 | 197.28922 | 12.79885 | 0.2475317 | 2.6103520 | 17 | 1 | 28 days | 0.26 | | | MPC | 2006 $ST_{163}$ |
| 2006 $SU_{163}$ | 18.2 | 0.15 | 20061012 | 301.48277 | 268.42698 | 189.37064 | 5.49094 | 0.1423830 | 2.2441834 | 23 | 1 | 55 days | 0.25 | | | MPC | 2006 $SU_{163}$ |
| 2006 $SY_{163}$ | 16.3 | 0.15 | 20060922 | 16.92678 | 42.27542 | 276.89954 | 9.10906 | 0.0965240 | 3.0397319 | 9 | 1 | 5 days | 0.27 | | | MPC | 2006 $SY_{163}$ |
| 2006 $SA_{164}$ | 17.9 | 0.15 | 20060922 | 279.55595 | 119.04454 | 321.02120 | 15.82462 | 0.1263747 | 2.0285223 | 12 | 1 | 5 days | 0.98 | | | MPC | 2006 $SA_{164}$ |
| 2006 $SD_{164}$ | 18.0 | 0.15 | 20060922 | 337.10967 | 114.08928 | 263.04539 | 6.38533 | 0.2036521 | 2.5821141 | 9 | 1 | 5 days | 0.12 | | | MPC | 2006 $SD_{164}$ |
| 2006 $SM_{164}$ | 16.4 | 0.15 | 20060922 | 4.15334 | 109.35373 | 229.23457 | 11.14795 | 0.0390642 | 2.9666185 | 10 | 1 | 7 days | 0.22 | | | MPC | 2006 $SM_{164}$ |
| 2006 $SN_{164}$ | 16.8 | 0.15 | 20060922 | 7.72938 | 57.36269 | 278.44245 | 10.71390 | 0.0134420 | 2.9655313 | 9 | 1 | 5 days | 0.24 | | | MPC | 2006 $SN_{164}$ |
| 2006 $SO_{164}$ | 15.8 | 0.15 | 20060922 | 58.69423 | 319.38417 | 309.84007 | 17.37867 | 0.1564341 | 3.1484624 | 9 | 1 | 6 days | 0.24 | | | MPC | 2006 $SO_{164}$ |
| 2006 $SP_{164}$ | 16.8 | 0.15 | 20060922 | 230.17983 | 266.25275 | 216.14356 | 12.52273 | 0.1122871 | 2.5637336 | 9 | 1 | 5 days | 0.19 | | | MPC | 2006 $SP_{164}$ |
| 2006 $SQ_{164}$ | 16.2 | 0.15 | 20060922 | 327.64219 | 165.52581 | 241.75250 | 5.20071 | 0.1756310 | 3.2032673 | 16 | 1 | 28 days | 0.16 | | | MPC | 2006 $SQ_{164}$ |
| 2006 $SR_{164}$ | 16.3 | 0.15 | 20060922 | 168.13455 | 348.70434 | 202.87482 | 11.17087 | 0.0948627 | 3.1951779 | 9 | 1 | 6 days | 0.41 | | | MPC | 2006 $SR_{164}$ |
| 2006 $SS_{164}$ | 17.8 | 0.15 | 20060922 | 9.57443 | 7.43940 | 338.72107 | 7.53082 | 0.2228683 | 2.7985978 | 20 | 1 | 63 days | 0.34 | M-v | 4 | MPC | 2006 $SS_{164}$ |
| 2006 $ST_{164}$ | 16.9 | 0.15 | 20060922 | 38.60579 | 38.11274 | 283.26673 | 3.47794 | 0.0249859 | 2.7460468 | 9 | 1 | 6 days | 0.31 | | | MPC | 2006 $ST_{164}$ |
| 2006 $SU_{164}$ | 16.3 | 0.15 | 20060922 | 136.81977 | 356.69152 | 222.19485 | 7.07378 | 0.0886536 | 2.7385833 | 13 | 1 | 28 days | 0.19 | | | MPC | 2006 $SU_{164}$ |
| 2006 $SV_{164}$ | 19.8 | 0.15 | 20060922 | 3.64837 | 45.87492 | 309.86176 | 3.60119 | 0.2005067 | 2.3656431 | 9 | 1 | 6 days | 0.76 | | | MPC | 2006 $SV_{164}$ |
| 2006 $SW_{164}$ | 17.5 | 0.15 | 20061012 | 64.81943 | 66.84253 | 217.33038 | 5.30842 | 0.1696311 | 2.2367871 | 24 | 1 | 36 days | 0.44 | | D | MPC | 2006 $SW_{164}$ |
| 2006 $SX_{164}$ | 16.3 | 0.15 | 20060922 | 154.62301 | 228.96973 | 336.40936 | 10.32759 | 0.0338773 | 2.9970336 | 9 | 1 | 6 days | 0.54 | | | MPC | 2006 $SX_{164}$ |
| 2006 $SE_{165}$ | 17.4 | 0.15 | 20060922 | 74.18094 | 28.48152 | 256.75554 | 4.33451 | 0.0197370 | 2.7049785 | 9 | 1 | 6 days | 0.64 | | | MPC | 2006 $SE_{165}$ |
| 2006 $SF_{165}$ | 15.8 | 0.15 | 20060922 | 62.42471 | 309.33693 | 322.86269 | 6.46585 | 0.2403482 | 3.0866338 | 13 | 1 | 28 days | 0.32 | | | MPC | 2006 $SF_{165}$ |
| 2006 $SJ_{165}$ | 17.5 | 0.15 | 20060922 | 6.38854 | 96.29805 | 256.94867 | 3.26861 | 0.1381001 | 2.6054314 | 17 | 1 | 36 days | 0.21 | | | MPC | 2006 $SJ_{165}$ |
| 2006 $SK_{165}$ | 17.1 | 0.15 | 20060922 | 203.11745 | 248.12663 | 272.41763 | 3.62589 | 0.0298060 | 2.7516852 | 13 | 1 | 28 days | 0.16 | | | MPC | 2006 $SK_{165}$ |
| 2006 $SL_{165}$ | 17.4 | 0.15 | 20060922 | 308.58632 | 117.20488 | 301.78884 | 3.93805 | 0.0558829 | 2.6659225 | 13 | 1 | 28 days | 0.29 | | | MPC | 2006 $SL_{165}$ |
| 2006 $SM_{165}$ | 16.3 | 0.15 | 20060922 | 169.11473 | 340.14059 | 212.02100 | 8.71232 | 0.0646245 | 3.0974116 | 9 | 1 | 6 days | 0.54 | | | MPC | 2006 $SM_{165}$ |
| 2006 $SR_{165}$ | 18.0 | 0.15 | 20060922 | 28.34008 | 343.26641 | 336.67492 | 5.24408 | 0.1948723 | 2.2358118 | 25 | 1 | 94 days | 0.56 | M-v | 4 | MPC | 2006 $SR_{165}$ |
| 2006 $ST_{165}$ | 17.1 | 0.15 | 20060922 | 253.39197 | 243.55408 | 235.47290 | 4.71140 | 0.0923397 | 2.3638528 | 13 | 1 | 28 days | 0.20 | | | MPC | 2006 $ST_{165}$ |
| 2006 $SU_{165}$ | 16.6 | 0.15 | 20060922 | 29.48281 | 126.04796 | 203.20962 | 9.61601 | 0.0634472 | 3.1134223 | 10 | 1 | 28 days | 0.20 | | | MPC | 2006 $SU_{165}$ |
| 2006 $SW_{165}$ | 17.3 | 0.15 | 20060922 | 59.15140 | 83.85778 | 204.72895 | 7.70493 | 0.1361314 | 2.2809781 | 29 | 1 | 84 days | 0.44 | M-v | 4 | MPC | 2006 $SW_{165}$ |
| 2006 $SX_{165}$ | 16.3 | 0.15 | 20060922 | 38.92069 | 60.47156 | 254.57864 | 3.84022 | 0.1164954 | 3.2491746 | 13 | 1 | 28 days | 0.20 | | | MPC | 2006 $SX_{165}$ |
| 2006 $SA_{166}$ | 15.4 | 0.15 | 20060922 | 317.13160 | 66.06470 | 343.95865 | 9.56727 | 0.0396331 | 3.1324817 | 23 | 1 | 36 days | 0.26 | | | MPC | 2006 $SA_{166}$ |
| 2006 $SD_{166}$ | 17.0 | 0.15 | 20060922 | 357.73362 | 31.58427 | 334.96181 | 5.77811 | 0.1307047 | 3.1035086 | 9 | 1 | 6 days | 0.75 | | | MPC | 2006 $SD_{166}$ |
| 2006 $SE_{166}$ | 18.9 | 0.15 | 20060922 | 333.28138 | 189.79624 | 210.50689 | 4.94500 | 0.1756734 | 2.3010768 | 13 | 1 | 28 days | 0.19 | | | MPC | 2006 $SE_{166}$ |
| 2006 $SF_{166}$ | 16.3 | 0.15 | 20060922 | 319.94621 | 223.16136 | 195.89904 | 15.97770 | 0.1795151 | 3.0777115 | 12 | 1 | 16 days | 0.17 | | | MPC | 2006 $SF_{166}$ |
| 2006 $SH_{166}$ | 18.4 | 0.15 | 20060922 | 308.58241 | 209.17122 | 229.14814 | 3.44986 | 0.2250925 | 2.6109726 | 9 | 1 | 6 days | 0.21 | | | MPC | 2006 $SH_{166}$ |
| 2006 $SJ_{166}$ | 16.8 | 0.15 | 20060922 | 304.06017 | 248.69511 | 191.96047 | 23.45549 | 0.1985710 | 3.0513388 | 9 | 1 | 6 days | 0.26 | | | MPC | 2006 $SJ_{166}$ |
| 2006 $SL_{166}$ | 16.9 | 0.15 | 20060922 | 185.55114 | 322.88587 | 216.35934 | 6.32522 | 0.0433179 | 2.9706421 | 9 | 1 | 6 days | 0.58 | | | MPC | 2006 $SL_{166}$ |
| 2006 $SP_{166}$ | 16.7 | 0.15 | 20060922 | 9.03341 | 357.97433 | 352.10744 | 10.47954 | 0.2002237 | 3.0497870 | 17 | 1 | 36 days | 0.50 | | | MPC | 2006 $SP_{166}$ |
| 2006 $SQ_{166}$ | 16.7 | 0.15 | 20060922 | 296.55653 | 86.96605 | 355.48663 | 16.73812 | 0.1286566 | 3.1800469 | 9 | 1 | 6 days | 0.30 | | | MPC | 2006 $SQ_{166}$ |
| 2006 $SX_{166}$ | 18.0 | 0.15 | 20060922 | 352.71577 | 158.77293 | 213.79888 | 5.77052 | 0.0824253 | 2.5050575 | 9 | 1 | 6 days | 0.65 | | | MPC | 2006 $SX_{166}$ |
| 2006 $SZ_{166}$ | 17.9 | 0.15 | 20060922 | 73.39351 | 306.23911 | 331.96415 | 4.38816 | 0.1099150 | 2.2482876 | 9 | 1 | 6 days | 0.19 | | | MPC | 2006 $SZ_{166}$ |
| 2006 $SA_{167}$ | 16.8 | 0.15 | 20060922 | 38.03719 | 341.55236 | 338.50387 | 5.04499 | 0.0828334 | 2.6585358 | 19 | 1 | 15 days | 0.23 | | | MPC | 2006 $SA_{167}$ |
| 2006 $SB_{167}$ | 16.6 | 0.15 | 20060922 | 310.07318 | 75.75569 | 350.66390 | 9.00937 | 0.1199349 | 3.0169067 | 15 | 1 | 15 days | 0.19 | | | MPC | 2006 $SB_{167}$ |
| 2006 $SC_{167}$ | 15.6 | 0.15 | 20060922 | 182.28028 | 342.41215 | 201.50118 | 11.83785 | 0.1808363 | 3.1340761 | 9 | 1 | 6 days | 0.40 | | | MPC | 2006 $SC_{167}$ |
| 2006 $SD_{167}$ | 18.4 | 0.15 | 20060922 | 337.17259 | 188.99584 | 210.91028 | 4.36446 | 0.2299813 | 2.4172430 | 22 | 1 | 15 days | 0.15 | | | MPC | 2006 $SD_{167}$ |
| 2006 $SE_{167}$ | 18.5 | 0.15 | 20060922 | 338.87234 | 161.90296 | 226.76814 | 2.87072 | 0.0849218 | 2.1609477 | 26 | 1 | 35 days | 0.24 | | | MPC | 2006 $SE_{167}$ |
| 2006 $SF_{167}$ | 17.9 | 0.15 | 20060922 | 46.73684 | 310.98882 | 355.43986 | 12.17564 | 0.1240460 | 2.5956390 | 12 | 1 | 7 days | 0.30 | | | MPC | 2006 $SF_{167}$ |
| 2006 $SG_{167}$ | 17.7 | 0.15 | 20060922 | 22.60341 | 335.72842 | 354.70724 | 13.31684 | 0.2010606 | 2.5604931 | 16 | 1 | 15 days | 0.15 | | | MPC | 2006 $SG_{167}$ |
| 2006 $SK_{167}$ | 16.6 | 0.15 | 20060922 | 250.05352 | 122.33728 | 355.22313 | 12.60970 | 0.0170029 | 3.0410801 | 19 | 1 | 35 days | 0.29 | | | MPC | 2006 $SK_{167}$ |
| 2006 $SM_{167}$ | 17.6 | 0.15 | 20060922 | 342.23771 | 167.13450 | 217.10232 | 4.46509 | 0.0436588 | 2.6082142 | 15 | 1 | 7 days | 0.85 | | | MPC | 2006 $SM_{167}$ |
| 2006 $SN_{167}$ | 16.6 | 0.15 | 20060922 | 340.64916 | 182.36164 | 204.76038 | 7.89664 | 0.0566786 | 3.2094854 | 16 | 1 | 27 days | 0.26 | | | MPC | 2006 $SN_{167}$ |
| 2006 $SO_{167}$ | 19.0 | 0.15 | 20060922 | 32.61683 | 340.53120 | 336.55791 | 3.69525 | 0.1853252 | 2.2064807 | 18 | 1 | 15 days | 0.23 | | | MPC | 2006 $SO_{167}$ |
| 2006 $SQ_{167}$ | 17.6 | 0.15 | 20060922 | 359.87397 | 4.76962 | 358.00149 | 19.35326 | 0.1600349 | 2.7344505 | 9 | 1 | 6 days | 0.90 | | | MPC | 2006 $SQ_{167}$ |
| 2006 $SR_{167}$ | 15.5 | 0.15 | 20060922 | 181.26686 | 185.25900 | 357.74958 | 24.67410 | 0.1252943 | 3.1072120 | 9 | 1 | 6 days | 0.59 | | | MPC | 2006 $SR_{167}$ |
| 2006 $SU_{167}$ | 16.2 | 0.15 | 20060922 | 41.83943 | 60.39056 | 258.59928 | 2.65441 | 0.0285842 | 2.7566389 | 20 | 1 | 36 days | 0.35 | | | MPC | 2006 $SU_{167}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SV_{167}$ | 15.0 | 0.15 | 20060922 | 12.92165 | 60.67192 | 284.72202 | 1.96481 | 0.1572432 | 3.9306117 | 24 | 1 | 62 days | 0.22 | M-v | 4 | MPC | | 2006 $SV_{167}$ |
| 2006 $SW_{167}$ | 16.7 | 0.15 | 20060922 | 175.48739 | 201.50323 | 345.53296 | 6.51947 | 0.0993728 | 2.6349106 | 11 | 1 | 7 days | 0.76 | | | MPC | | 2006 $SW_{167}$ |
| 2006 $SX_{167}$ | 16.6 | 0.15 | 20060922 | 3.09340 | 158.85634 | 201.13477 | 8.58707 | 0.0437566 | 3.2390481 | 9 | 1 | 6 days | 0.85 | | | MPC | | 2006 $SX_{167}$ |
| 2006 $SY_{167}$ | 17.9 | 0.15 | 20060922 | 324.01486 | 186.82541 | 220.15135 | 3.49491 | 0.1101630 | 2.3352535 | 12 | 1 | 16 days | 0.19 | | | MPC | | 2006 $SY_{167}$ |
| 2006 $SZ_{167}$ | 18.8 | 0.15 | 20060922 | 342.78938 | 196.86922 | 198.89159 | 6.48363 | 0.3133310 | 2.6109627 | 16 | 1 | 27 days | 0.18 | | | MPC | | 2006 $SZ_{167}$ |
| 2006 $SA_{168}$ | 17.1 | 0.15 | 20060922 | 179.84880 | 193.38375 | 350.30639 | 7.64804 | 0.0563245 | 2.7443455 | 9 | 1 | 6 days | 0.45 | | | MPC | | 2006 $SA_{168}$ |
| 2006 $SB_{168}$ | 17.8 | 0.15 | 20060922 | 318.03517 | 206.49873 | 217.08612 | 3.60820 | 0.2001061 | 2.8171280 | 12 | 1 | 7 days | 0.32 | | | MPC | | 2006 $SB_{168}$ |
| 2006 $SE_{168}$ | 18.9 | 0.15 | 20060922 | 351.61968 | 32.44765 | 344.82230 | 5.12447 | 0.2547561 | 2.5988438 | 12 | 1 | 14 days | 0.25 | | | MPC | | 2006 $SE_{168}$ |
| 2006 $SG_{168}$ | 17.7 | 0.15 | 20060922 | 358.37253 | 16.22414 | 349.05309 | 4.95495 | 0.1810035 | 2.5802080 | 22 | 1 | 82 days | 0.35 | M-v | 4 | MPC | | 2006 $SG_{168}$ |
| 2006 $SL_{168}$ | 17.0 | 0.15 | 20060922 | 327.66369 | 125.72587 | 271.53606 | 3.16317 | 0.0451511 | 2.9702223 | 13 | 1 | 28 days | 0.29 | | | MPC | | 2006 $SL_{168}$ |
| 2006 $SO_{168}$ | 18.8 | 0.15 | 20060922 | 16.14580 | 130.50996 | 201.02132 | 5.73471 | 0.2803923 | 2.4280188 | 13 | 1 | 14 days | 0.58 | | | MPC | | 2006 $SO_{168}$ |
| 2006 $SR_{168}$ | 16.0 | 0.15 | 20060922 | 281.33647 | 119.93627 | 343.91433 | 9.55817 | 0.1957275 | 3.1173032 | 13 | 1 | 28 days | 0.23 | | | MPC | | 2006 $SR_{168}$ |
| 2006 $SV_{168}$ | 17.2 | 0.15 | 20060922 | 41.72439 | 110.75674 | 207.24471 | 5.89954 | 0.0299537 | 2.7402825 | 13 | 1 | 28 days | 0.20 | | | MPC | | 2006 $SV_{168}$ |
| 2006 $SX_{168}$ | 18.1 | 0.15 | 20060922 | 10.30990 | 23.71752 | 322.37799 | 2.88079 | 0.1940623 | 2.5769783 | 16 | 1 | 63 days | 0.26 | M-v | 4 | MPC | | 2006 $SX_{168}$ |
| 2006 $SZ_{168}$ | 18.1 | 0.15 | 20060922 | 346.13644 | 189.65613 | 192.67958 | 13.95667 | 0.1910751 | 2.7885090 | 13 | 1 | 25 days | 0.25 | | | MPC | | 2006 $SZ_{168}$ |
| 2006 $SA_{169}$ | 17.1 | 0.15 | 20060922 | 308.98950 | 120.65322 | 307.83192 | 2.78026 | 0.1526427 | 2.7507643 | 13 | 1 | 28 days | 0.16 | | | MPC | | 2006 $SA_{169}$ |
| 2006 $SB_{169}$ | 18.5 | 0.15 | 20060922 | 22.01719 | 342.18583 | 348.70599 | 8.51954 | 0.1713233 | 2.5666493 | 9 | 1 | 6 days | 0.24 | | | MPC | | 2006 $SB_{169}$ |
| 2006 $SF_{169}$ | 17.3 | 0.15 | 20060922 | 176.66289 | 200.41790 | 345.61481 | 9.38034 | 0.0612845 | 2.5413946 | 9 | 1 | 6 days | 0.90 | | | MPC | | 2006 $SF_{169}$ |
| 2006 $SK_{169}$ | 15.9 | 0.15 | 20060922 | 174.39008 | 231.49893 | 316.74093 | 3.77348 | 0.0458190 | 2.7705704 | 9 | 1 | 6 days | 0.72 | | | MPC | | 2006 $SK_{169}$ |
| 2006 $SN_{169}$ | 18.4 | 0.15 | 20061012 | 339.76254 | 149.30921 | 250.32556 | 2.22242 | 0.1983412 | 2.2136724 | 31 | 1 | 59 days | 0.41 | | | MPC | | 2006 $SN_{169}$ |
| 2006 $SO_{169}$ | 17.3 | 0.15 | 20060922 | 33.26893 | 311.51405 | 352.57304 | 14.79917 | 0.2815885 | 2.7681247 | 16 | 1 | 22 days | 0.58 | | | MPC | | 2006 $SO_{169}$ |
| 2006 $SQ_{169}$ | 17.3 | 0.15 | 20060922 | 50.36474 | 89.08614 | 217.85397 | 5.09772 | 0.0369745 | 2.7530438 | 9 | 1 | 6 days | 0.26 | | | MPC | | 2006 $SQ_{169}$ |
| 2006 $SR_{169}$ | 16.3 | 0.15 | 20060922 | 21.91618 | 86.77222 | 250.26643 | 3.89121 | 0.0494102 | 3.2385030 | 9 | 1 | 6 days | 0.28 | | | MPC | | 2006 $SR_{169}$ |
| 2006 $SS_{169}$ | 17.0 | 0.15 | 20060922 | 11.32303 | 9.50810 | 337.07139 | 8.12938 | 0.1338423 | 3.0926425 | 13 | 1 | 28 days | 0.28 | | | MPC | | 2006 $SS_{169}$ |
| 2006 $ST_{169}$ | 16.4 | 0.15 | 20060922 | 141.19271 | 14.15822 | 197.45881 | 11.62037 | 0.1285792 | 2.6641429 | 13 | 1 | 28 days | 0.16 | | | MPC | | 2006 $ST_{169}$ |
| 2006 $SB_{170}$ | 16.9 | 0.15 | 20061012 | 309.21662 | 247.68209 | 195.27069 | 15.78254 | 0.2232450 | 3.1516835 | 21 | 1 | 33 days | 0.32 | | | MPC | | 2006 $SB_{170}$ |
| 2006 $SC_{170}$ | 17.2 | 0.15 | 20060922 | 197.19988 | 326.54719 | 202.55853 | 8.79642 | 0.0481925 | 2.6550198 | 14 | 1 | 27 days | 0.27 | | | MPC | | 2006 $SC_{170}$ |
| 2006 $SD_{170}$ | 19.2 | 0.15 | 20060922 | 337.52175 | 54.64675 | 340.08802 | 4.49426 | 0.1592645 | 2.3134274 | 12 | 1 | 14 days | 0.23 | | | MPC | | 2006 $SD_{170}$ |
| 2006 $SF_{170}$ | 19.0 | 0.15 | 20060922 | 323.10119 | 75.38304 | 336.04980 | 3.48976 | 0.1327327 | 2.2417620 | 15 | 1 | 15 days | 0.22 | | | MPC | | 2006 $SF_{170}$ |
| 2006 $SH_{170}$ | 15.1 | 0.15 | 20060922 | 9.77576 | 122.56175 | 227.70160 | 1.93297 | 0.2529219 | 4.0141520 | 45 | 1 | 55 days | 0.39 | | | MPC | | 2006 $SH_{170}$ |
| 2006 $SK_{170}$ | 17.3 | 0.15 | 20060922 | 354.05769 | 179.72085 | 191.96856 | 5.84231 | 0.0952204 | 2.7621239 | 11 | 1 | 7 days | 0.28 | | | MPC | | 2006 $SK_{170}$ |
| 2006 $SR_{170}$ | 16.3 | 0.15 | 20060922 | 181.63890 | 185.96330 | 359.05779 | 5.38823 | 0.2966973 | 2.5461676 | 15 | 1 | 7 days | 0.65 | | | MPC | | 2006 $SR_{170}$ |
| 2006 $SS_{170}$ | 18.9 | 0.15 | 20060922 | 349.21617 | 175.28689 | 206.07079 | 1.41531 | 0.2239324 | 2.6226628 | 25 | 1 | 29 days | 0.33 | | | MPC | | 2006 $SS_{170}$ |
| 2006 $SV_{170}$ | 18.2 | 0.15 | 20060922 | 347.11185 | 185.85078 | 193.33575 | 5.32791 | 0.0711601 | 2.2581604 | 13 | 1 | 7 days | 0.43 | | | MPC | | 2006 $SV_{170}$ |
| 2006 $SW_{170}$ | 18.9 | 0.15 | 20060922 | 55.31329 | 313.88404 | 339.12765 | 1.13705 | 0.1529667 | 2.2394529 | 18 | 1 | 15 days | 0.23 | | | MPC | | 2006 $SW_{170}$ |
| 2006 $SX_{170}$ | 17.9 | 0.15 | 20060922 | 338.21252 | 50.96452 | 339.71750 | 1.34537 | 0.0765871 | 2.8696640 | 14 | 1 | 10 days | 0.30 | | D | MPC | | 2006 $SX_{170}$ |
| 2006 $SZ_{170}$ | 18.8 | 0.15 | 20060922 | 308.49753 | 234.59224 | 198.93384 | 2.16247 | 0.1705949 | 2.3672994 | 18 | 1 | 29 days | 0.24 | | | MPC | | 2006 $SZ_{170}$ |
| 2006 $SB_{171}$ | 19.4 | 0.15 | 20060922 | 34.59293 | 112.91365 | 197.71015 | 2.02087 | 0.2276257 | 2.3051675 | 14 | 1 | 15 days | 0.31 | | | MPC | | 2006 $SB_{171}$ |
| 2006 $SF_{171}$ | 16.3 | 0.15 | 20060922 | 292.79629 | 202.76800 | 236.57824 | 1.45976 | 0.0731414 | 3.0200563 | 17 | 1 | 27 days | 0.24 | | | MPC | | 2006 $SF_{171}$ |
| 2006 $SP_{171}$ | 15.6 | 0.15 | 20060922 | 180.75045 | 234.66607 | 309.56185 | 1.19441 | 0.1638095 | 2.8355168 | 10 | 1 | 7 days | 0.38 | | | MPC | | 2006 $SP_{171}$ |
| 2006 $SQ_{171}$ | 15.2 | 0.15 | 20060922 | 0.37593 | 171.54597 | 192.31225 | 5.93954 | 0.1295737 | 3.4494149 | 37 | 1 | 60 days | 0.44 | M-v | 5 | MPC | | 2006 $SQ_{171}$ |
| 2006 $SR_{171}$ | 17.3 | 0.15 | 20060922 | 62.69464 | 331.11798 | 325.86904 | 1.81139 | 0.0456697 | 2.8110520 | 14 | 1 | 35 days | 0.25 | | | MPC | | 2006 $SR_{171}$ |
| 2006 $SS_{171}$ | 18.8 | 0.15 | 20060922 | 5.90328 | 11.25245 | 341.86250 | 1.57435 | 0.2141519 | 2.1802555 | 22 | 1 | 117 days | 0.26 | M-v | 3 | MPC | | 2006 $SS_{171}$ |
| 2006 $ST_{171}$ | 17.2 | 0.15 | 20060922 | 262.76840 | 118.42933 | 1.56690 | 11.61527 | 0.1687903 | 2.6212000 | 10 | 1 | 7 days | 0.22 | | | MPC | | 2006 $ST_{171}$ |
| 2006 $SV_{171}$ | 19.0 | 0.15 | 20060922 | 357.78497 | 23.02084 | 343.21553 | 2.08247 | 0.1999834 | 2.2817219 | 17 | 1 | 35 days | 0.20 | | | MPC | | 2006 $SV_{171}$ |
| 2006 $SY_{171}$ | 16.6 | 0.15 | 20060922 | 180.74929 | 351.35402 | 192.64649 | 5.20285 | 0.1339134 | 2.5570295 | 11 | 1 | 7 days | 0.94 | | | MPC | | 2006 $SY_{171}$ |
| 2006 $SJ_{172}$ | 17.1 | 0.15 | 20060922 | 177.35809 | 197.30851 | 347.95921 | 7.65105 | 0.1265108 | 2.3951087 | 9 | 1 | 6 days | 0.40 | | | MPC | | 2006 $SJ_{172}$ |
| 2006 $SN_{172}$ | 16.9 | 0.15 | 20060922 | 5.68375 | 14.31145 | 341.38333 | 3.47691 | 0.1093642 | 2.7605644 | 21 | 1 | 94 days | 0.25 | M-v | 4 | MPC | | 2006 $SN_{172}$ |
| 2006 $SP_{172}$ | 15.8 | 0.15 | 20060922 | 87.74593 | 257.85792 | 357.44718 | 12.70351 | 0.1819081 | 3.2186209 | 11 | 1 | 28 days | 0.20 | | | MPC | | 2006 $SP_{172}$ |
| 2006 $SQ_{172}$ | 18.1 | 0.15 | 20060922 | 0.25539 | 157.01379 | 205.49374 | 5.06968 | 0.1473931 | 2.6966530 | 9 | 1 | 6 days | 0.85 | | | MPC | | 2006 $SQ_{172}$ |
| 2006 $SY_{172}$ | 16.3 | 0.15 | 20060922 | 268.57809 | 274.56930 | 195.18369 | 5.80309 | 0.1347714 | 2.6867367 | 13 | 1 | 10 days | 0.39 | | | MPC | | 2006 $SY_{172}$ |
| 2006 $SZ_{172}$ | 18.5 | 0.15 | 20060922 | 0.49618 | 154.52561 | 207.16794 | 3.42240 | 0.2542546 | 2.8124208 | 12 | 1 | 7 days | 0.73 | | | MPC | | 2006 $SZ_{172}$ |
| 2006 $SC_{173}$ | 16.0 | 0.15 | 20060922 | 181.06573 | 201.62993 | 341.85025 | 5.23549 | 0.1347881 | 3.0840162 | 9 | 1 | 6 days | 0.30 | | | MPC | | 2006 $SC_{173}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SJ_{173}$ | 16.7 | 0.15 | 20060922 | 346.02821 | 27.28191 | 351.57311 | 5.96108 | 0.0445731 | 2.7273105 | 20 | 1 | 36 days | 0.28 | | | MPC | 2006 $SJ_{173}$ |
| 2006 $SK_{173}$ | 17.6 | 0.15 | 20061012 | 279.36300 | 238.62354 | 224.62596 | 2.05549 | 0.1212177 | 2.3614861 | 18 | 1 | 33 days | 0.30 | | | MPC | 2006 $SK_{173}$ |
| 2006 $SG_{174}$ | 19.2 | 0.15 | 20060922 | 340.89329 | 72.56775 | 325.64474 | 4.17409 | 0.1865316 | 2.2413989 | 13 | 1 | 16 days | 0.14 | | | MPC | 2006 $SG_{174}$ |
| 2006 $SK_{174}$ | 17.0 | 0.15 | 20060922 | 271.48998 | 108.75547 | 6.79303 | 25.70864 | 0.1037638 | 2.6747303 | 10 | 1 | 8 days | 0.67 | | | MPC | 2006 $SK_{174}$ |
| 2006 $SM_{174}$ | 17.8 | 0.15 | 20060922 | 8.64520 | 67.25347 | 284.38076 | 2.43929 | 0.2870689 | 2.6114780 | 13 | 1 | 26 days | 0.22 | | | MPC | 2006 $SM_{174}$ |
| 2006 $SO_{174}$ | 17.5 | 0.15 | 20060922 | 274.50390 | 268.73668 | 203.89641 | 11.49869 | 0.1695480 | 2.4674174 | 16 | 1 | 13 days | 0.46 | | | MPC | 2006 $SO_{174}$ |
| 2006 $SZ_{174}$ | 17.2 | 0.15 | 20060922 | 18.96840 | 140.46713 | 200.10962 | 13.91521 | 0.2064078 | 3.1163879 | 19 | 1 | 32 days | 0.21 | | | MPC | 2006 $SZ_{174}$ |
| 2006 $SB_{175}$ | 17.2 | 0.15 | 20061012 | 66.55182 | 71.19369 | 235.68132 | 2.90480 | 0.0127142 | 2.5610481 | 20 | 1 | 59 days | 0.22 | | | MPC | 2006 $SB_{175}$ |
| 2006 $SW_{175}$ | 16.7 | 0.15 | 20060922 | 332.40272 | 192.55462 | 217.50615 | 4.75186 | 0.2175890 | 3.0616667 | 10 | 1 | 2 days | 0.50 | | E | MPC | 2006 $SW_{175}$ |
| 2006 $SX_{175}$ | 17.8 | 0.15 | 20060922 | 7.38794 | 21.16395 | 336.32862 | 3.17855 | 0.1309174 | 2.7857697 | 20 | 1 | 43 days | 0.26 | | | MPC | 2006 $SX_{175}$ |
| 2006 $SZ_{175}$ | 18.3 | 0.15 | 20061012 | 332.33811 | 170.28549 | 243.45102 | 1.94290 | 0.1896269 | 2.3872330 | 17 | 1 | 36 days | 0.17 | | | MPC | 2006 $SZ_{175}$ |
| 2006 $SD_{176}$ | 17.6 | 0.15 | 20060922 | 20.98646 | 104.21103 | 238.93650 | 2.20400 | 0.0732581 | 2.6808305 | 12 | 1 | 13 days | 0.17 | | | MPC | 2006 $SD_{176}$ |
| 2006 $SN_{176}$ | 16.4 | 0.15 | 20060922 | 86.09652 | 5.38379 | 262.18084 | 1.62104 | 0.1480266 | 3.0249423 | 16 | 1 | 32 days | 0.17 | | | MPC | 2006 $SN_{176}$ |
| 2006 $SQ_{176}$ | 17.1 | 0.15 | 20060922 | 219.60715 | 150.37857 | 4.28054 | 9.65647 | 0.0514799 | 2.9840752 | 9 | 1 | 5 days | 0.18 | | | MPC | 2006 $SQ_{176}$ |
| 2006 $SU_{176}$ | 17.7 | 0.15 | 20060922 | 273.10266 | 86.29479 | 14.72011 | 6.91312 | 0.0414478 | 2.6275458 | 24 | 1 | 21 days | 0.39 | | | MPC | 2006 $SU_{176}$ |
| 2006 $SV_{176}$ | 17.6 | 0.15 | 20061012 | 266.06299 | 295.84499 | 184.45579 | 5.34908 | 0.1062566 | 2.3072810 | 46 | 1 | 52 days | 0.29 | | | MPC | 2006 $SV_{176}$ |
| 2006 $SY_{176}$ | 19.7 | 0.15 | 20060922 | 332.66337 | 242.47961 | 157.33839 | 1.15436 | 0.2103427 | 2.3118320 | 11 | 1 | 5 days | 0.20 | | | MPC | 2006 $SY_{176}$ |
| 2006 $SC_{177}$ | 19.8 | 0.15 | 20060922 | 39.74595 | 267.81233 | 34.76614 | 1.41648 | 0.2660266 | 2.2364840 | 10 | 1 | 7 days | 0.64 | | | MPC | 2006 $SC_{177}$ |
| 2006 $SD_{177}$ | 16.1 | 0.15 | 20060922 | 53.22571 | 126.56719 | 168.63039 | 2.55045 | 0.2131231 | 3.1099560 | 26 | 1 | 116 days | 0.42 | M-v | 4 | MPC | 2006 $SD_{177}$ |
| 2006 $SM_{177}$ | 19.1 | 0.15 | 20060922 | 329.87155 | 253.48697 | 158.64420 | 0.65197 | 0.1870634 | 2.2837632 | 22 | 1 | 43 days | 0.42 | | | MPC | 2006 $SM_{177}$ |
| 2006 $SO_{177}$ | 18.3 | 0.15 | 20060922 | 33.15199 | 136.02484 | 179.34165 | 3.57720 | 0.2622602 | 2.8948418 | 11 | 1 | 27 days | 0.50 | | | MPC | 2006 $SO_{177}$ |
| 2006 $SP_{177}$ | 16.5 | 0.15 | 20060922 | 331.36021 | 14.83816 | 29.52091 | 2.27924 | 0.0572948 | 3.0474967 | 11 | 1 | 21 days | 0.81 | | | MPC | 2006 $SP_{177}$ |
| 2006 $SQ_{177}$ | 16.2 | 0.15 | 20060922 | 98.26118 | 100.94069 | 159.97222 | 1.46211 | 0.1255657 | 3.0060710 | 22 | 1 | 47 days | 0.31 | | | MPC | 2006 $SQ_{177}$ |
| 2006 $SW_{177}$ | 17.0 | 0.15 | 20060922 | 34.42311 | 296.34063 | 16.62553 | 12.94237 | 0.2626320 | 2.6266160 | 24 | 1 | 47 days | 0.82 | | | MPC | 2006 $SW_{177}$ |
| 2006 $SB_{178}$ | 17.6 | 0.15 | 20060922 | 333.11815 | 250.35423 | 146.12868 | 0.81150 | 0.1406517 | 2.3410561 | 11 | 1 | 2 days | 0.27 | | E | MPC | 2006 $SB_{178}$ |
| 2006 $SK_{178}$ | 18.7 | 0.15 | 20060922 | 349.51397 | 18.59652 | 359.28788 | 6.63547 | 0.2238728 | 2.2392800 | 14 | 1 | 3 days | 0.66 | | | MPC | 2006 $SK_{178}$ |
| 2006 $SL_{178}$ | 19.7 | 0.15 | 20060922 | 358.98357 | 4.14746 | 358.29756 | 4.27971 | 0.1800600 | 2.0843376 | 10 | 1 | 3 days | 0.29 | | | MPC | 2006 $SL_{178}$ |
| 2006 $ST_{178}$ | 16.0 | 0.15 | 20060922 | 343.07966 | 225.65355 | 158.76113 | 0.33089 | 0.1239600 | 3.1095247 | 10 | 1 | 14 days | 0.41 | | | MPC | 2006 $ST_{178}$ |
| 2006 $SU_{178}$ | 17.7 | 0.15 | 20060902 | 8.94239 | 350.22597 | 357.33476 | 1.63953 | 0.0808729 | 2.8662625 | 10 | 1 | 12 days | 0.36 | | | MPC | 2006 $SU_{178}$ |
| 2006 $SW_{178}$ | 19.3 | 0.15 | 20060922 | 3.79309 | 348.80529 | 14.18657 | 10.42058 | 0.2123874 | 2.2814488 | 24 | 1 | 31 days | 0.37 | | | MPC | 2006 $SW_{178}$ |
| 2006 $SZ_{178}$ | 16.3 | 0.15 | 20060922 | 12.58043 | 205.05156 | 149.87136 | 1.67281 | 0.1775977 | 3.1494523 | 28 | 1 | 63 days | 0.60 | M-v | 4 | MPC | 2006 $SZ_{178}$ |
| 2006 $SD_{179}$ | 16.7 | 0.15 | 20060922 | 289.28958 | 272.81037 | 182.58321 | 9.98660 | 0.0909875 | 3.1640449 | 9 | 1 | 6 days | 0.41 | | | MPC | 2006 $SD_{179}$ |
| 2006 $SE_{179}$ | 17.6 | 0.15 | 20061012 | 44.17978 | 297.73404 | 18.43372 | 7.75752 | 0.1857797 | 2.2564124 | 26 | 1 | 51 days | 0.35 | | | MPC | 2006 $SE_{179}$ |
| 2006 $SF_{179}$ | 16.8 | 0.15 | 20060922 | 359.49544 | 190.19778 | 184.02471 | 11.62986 | 0.3452312 | 3.9734563 | 12 | 1 | 16 days | 0.12 | | | MPC | 2006 $SF_{179}$ |
| 2006 $SG_{179}$ | 16.4 | 0.15 | 20061012 | 338.50694 | 24.53578 | 21.95583 | 11.93354 | 0.1718060 | 2.6829067 | 71 | 1 | 57 days | 0.38 | | | MPC | 2006 $SG_{179}$ |
| 2006 $SL_{179}$ | 17.7 | 0.15 | 20060922 | 313.54568 | 25.46934 | 36.75109 | 2.85947 | 0.0700317 | 2.4783907 | 13 | 1 | 26 days | 0.22 | | | MPC | 2006 $SL_{179}$ |
| 2006 $SN_{179}$ | 15.8 | 0.15 | 20060922 | 255.70758 | 95.52339 | 26.44077 | 5.40781 | 0.0509390 | 3.3719461 | 22 | 1 | 68 days | 0.23 | M-v | 4 | MPC | 2006 $SN_{179}$ |
| 2006 $SP_{179}$ | 16.7 | 0.15 | 20060922 | 86.71191 | 91.53128 | 185.67601 | 9.29411 | 0.0511985 | 3.1192897 | 14 | 1 | 17 days | 0.31 | | | MPC | 2006 $SP_{179}$ |
| 2006 $SR_{179}$ | 18.0 | 0.15 | 20060922 | 90.51403 | 238.67262 | 23.11312 | 5.38989 | 0.1391389 | 2.2966957 | 20 | 1 | 32 days | 0.31 | | | MPC | 2006 $SR_{179}$ |
| 2006 $SS_{179}$ | 17.2 | 0.15 | 20060922 | 330.83499 | 222.82328 | 182.16117 | 5.68628 | 0.1186464 | 2.5630509 | 11 | 1 | 7 days | 0.52 | | | MPC | 2006 $SS_{179}$ |
| 2006 $SU_{179}$ | 15.7 | 0.15 | 20060922 | 234.36556 | 130.55015 | 17.01593 | 5.56020 | 0.1428743 | 2.7379330 | 58 | 1 | 14 days | 0.55 | | | MPC | 2006 $SU_{179}$ |
| 2006 $SV_{179}$ | 16.1 | 0.15 | 20061012 | 123.76978 | 222.64835 | 13.29131 | 13.26769 | 0.1629500 | 2.8068293 | 31 | 1 | 58 days | 0.20 | | | MPC | 2006 $SV_{179}$ |
| 2006 $SW_{179}$ | 15.5 | 0.15 | 20060922 | 204.21434 | 358.68358 | 173.13616 | 3.11569 | 0.1382592 | 2.9233734 | 11 | 1 | 5 days | 0.27 | | | MPC | 2006 $SW_{179}$ |
| 2006 $SX_{179}$ | 17.4 | 0.15 | 20060922 | 252.21586 | 50.56360 | 69.46646 | 0.94205 | 0.0243910 | 2.7616647 | 21 | 1 | 26 days | 0.49 | | | MPC | 2006 $SX_{179}$ |
| 2006 $SY_{179}$ | 16.7 | 0.15 | 20060922 | 204.06258 | 153.34980 | 20.54325 | 3.91114 | 0.2252472 | 2.2241225 | 57 | 1 | 7 days | 0.69 | | | MPC | 2006 $SY_{179}$ |
| 2006 $SZ_{179}$ | 17.2 | 0.15 | 20060922 | 254.86462 | 103.56602 | 17.98267 | 8.64299 | 0.0537818 | 3.0524757 | 10 | 1 | 7 days | 0.35 | | | MPC | 2006 $SZ_{179}$ |
| 2006 $SA_{180}$ | 15.9 | 0.15 | 20060922 | 177.41650 | 179.96929 | 5.46392 | 28.55061 | 0.2536108 | 3.1095783 | 10 | 1 | 7 days | 0.73 | | | MPC | 2006 $SA_{180}$ |
| 2006 $SH_{180}$ | 16.8 | 0.15 | 20060922 | 89.38418 | 262.08100 | 344.33321 | 1.25891 | 0.2603166 | 2.8108730 | 11 | 1 | 7 days | 0.90 | | | MPC | 2006 $SH_{180}$ |
| 2006 $SL_{180}$ | 18.2 | 0.15 | 20060922 | 355.30145 | 3.06775 | 6.41808 | 8.55541 | 0.0644800 | 2.6721395 | 11 | 1 | 7 days | 0.35 | | | MPC | 2006 $SL_{180}$ |
| 2006 $SP_{180}$ | 18.6 | 0.15 | 20060922 | 352.83099 | 204.95978 | 169.63744 | 2.40298 | 0.1731840 | 2.5378047 | 13 | 1 | 6 days | 0.73 | | | MPC | 2006 $SP_{180}$ |
| 2006 $SV_{180}$ | 18.7 | 0.15 | 20060922 | 306.19527 | 243.31875 | 188.57442 | 1.23270 | 0.1343038 | 2.3514239 | 14 | 1 | 9 days | 0.48 | | E | MPC | 2006 $SV_{180}$ |
| 2006 $SA_{181}$ | 18.8 | 0.15 | 20060922 | 52.20087 | 93.45456 | 195.70369 | 1.20331 | 0.2191299 | 2.3119451 | 21 | 1 | 29 days | 0.27 | | | MPC | 2006 $SA_{181}$ |
| 2006 $SF_{181}$ | 15.8 | 0.15 | 20060922 | 182.93448 | 355.50450 | 189.07959 | 8.28055 | 0.2493602 | 2.6429006 | 14 | 1 | 7 days | 0.43 | | | MPC | 2006 $SF_{181}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SG_{181}$ | 15.9 | 0.15 | 20060922 | 168.78639 | 7.74512 | 186.78164 | 1.98867 | 0.1675713 | 2.9668363 | 12 | 1 | 21 days | 0.59 | | | MPC | 2006 $SG_{181}$ |
| 2006 $SJ_{181}$ | 19.1 | 0.15 | 20060922 | 15.61328 | 334.09635 | 2.70966 | 4.88112 | 0.2541659 | 2.3075773 | 22 | 1 | 37 days | 0.33 | | | MPC | 2006 $SJ_{181}$ |
| 2006 $SL_{181}$ | 17.8 | 0.15 | 20060922 | 324.78563 | 41.19729 | 6.45044 | 2.85268 | 0.0961491 | 2.7553179 | 12 | 1 | 21 days | 0.32 | | | MPC | 2006 $SL_{181}$ |
| 2006 $SM_{181}$ | 19.0 | 0.15 | 20060922 | 345.44901 | 24.48385 | 5.79953 | 14.55863 | 0.2720866 | 2.7303873 | 12 | 1 | 7 days | 0.26 | | | MPC | 2006 $SM_{181}$ |
| 2006 $SP_{181}$ | 18.9 | 0.15 | 20060922 | 348.80056 | 200.60007 | 180.86519 | 2.40275 | 0.2031314 | 2.3653250 | 22 | 1 | 32 days | 0.62 | | | MPC | 2006 $SP_{181}$ |
| 2006 $SU_{181}$ | 15.5 | 0.15 | 20060922 | 191.19694 | 354.23185 | 188.81518 | 23.59682 | 0.2742602 | 2.9078664 | 11 | 1 | 3 days | 0.26 | | | MPC | 2006 $SU_{181}$ |
| 2006 $SV_{181}$ | 15.4 | 0.15 | 20061012 | 69.28938 | 258.48822 | 21.25193 | 21.41025 | 0.2404573 | 3.0194349 | 41 | 1 | 59 days | 0.55 | | | MPC | 2006 $SV_{181}$ |
| 2006 $SW_{181}$ | 16.7 | 0.15 | 20060922 | 22.07431 | 217.94690 | 122.66986 | 6.75834 | 0.2037731 | 2.2319883 | 51 | 1 | 61 days | 0.49 | M-v | 4 | MPC | 2006 $SW_{181}$ |
| 2006 $SY_{181}$ | 18.0 | 0.15 | 20061012 | 6.05480 | 284.99745 | 82.20377 | 4.83614 | 0.2371644 | 2.2509678 | 20 | 1 | 33 days | 0.61 | | | MPC | 2006 $SY_{181}$ |
| 2006 $SZ_{181}$ | 14.7 | 0.15 | 20060922 | 10.29337 | 221.58462 | 136.53794 | 10.39001 | 0.2090353 | 3.9458251 | 30 | 1 | 40 days | 0.53 | | | MPC | 2006 $SZ_{181}$ |
| 2006 $SA_{182}$ | 15.9 | 0.15 | 20060922 | 33.72891 | 267.83006 | 70.81705 | 15.27617 | 0.0669490 | 2.6804016 | 37 | 1 | 65 days | 0.64 | M-v | 5 | MPC | 2006 $SA_{182}$ |
| 2006 $SB_{182}$ | 17.1 | 0.15 | 20061012 | 344.89148 | 256.88521 | 152.11853 | 12.51824 | 0.2770212 | 2.6963415 | 20 | 1 | 36 days | 0.82 | | | MPC | 2006 $SB_{182}$ |
| 2006 $SC_{182}$ | 17.2 | 0.15 | 20060922 | 9.31198 | 225.55908 | 124.94430 | 8.06092 | 0.3096579 | 2.6417758 | 33 | 1 | 61 days | 0.49 | M-v | 4 | MPC | 2006 $SC_{182}$ |
| 2006 $SD_{182}$ | 18.7 | 0.15 | 20060922 | 46.23794 | 105.94635 | 194.15504 | 9.43333 | 0.2388020 | 2.2873920 | 13 | 1 | 5 days | 0.20 | | | MPC | 2006 $SD_{182}$ |
| 2006 $SN_{182}$ | 15.8 | 0.15 | 20060922 | 333.30997 | 217.01497 | 187.86958 | 11.88894 | 0.1266169 | 3.1243223 | 22 | 1 | 60 days | 0.39 | M-v | 5 | MPC | 2006 $SN_{182}$ |
| 2006 $SO_{182}$ | 19.4 | 0.15 | 20060922 | 17.55057 | 341.76426 | 350.42475 | 0.56166 | 0.3140368 | 2.3433259 | 12 | 1 | 5 days | 0.58 | | E | MPC | 2006 $SO_{182}$ |
| 2006 $SS_{182}$ | 18.0 | 0.15 | 20060922 | 292.76220 | 236.23505 | 220.12028 | 0.90462 | 0.1430080 | 2.3953020 | 13 | 1 | 15 days | 0.89 | | | MPC | 2006 $SS_{182}$ |
| 2006 $SY_{182}$ | 18.1 | 0.15 | 20060922 | 19.69392 | 144.52642 | 196.25306 | 8.38559 | 0.2472449 | 2.8768397 | 11 | 1 | 21 days | 0.38 | | | MPC | 2006 $SY_{182}$ |
| 2006 $SZ_{182}$ | 18.9 | 0.15 | 20060922 | 346.50009 | 22.13970 | 8.05567 | 6.19166 | 0.2555126 | 2.2334101 | 24 | 1 | 36 days | 0.41 | | | MPC | 2006 $SZ_{182}$ |
| 2006 $SA_{183}$ | 19.1 | 0.15 | 20061012 | 352.52007 | 197.00516 | 190.59500 | 1.00936 | 0.1887282 | 2.3386671 | 22 | 1 | 38 days | 0.47 | | | MPC | 2006 $SA_{183}$ |
| 2006 $SE_{183}$ | 17.9 | 0.15 | 20060922 | 345.82056 | 266.36124 | 124.86673 | 0.39468 | 0.2127971 | 2.3884309 | 27 | 1 | 43 days | 0.19 | | | MPC | 2006 $SE_{183}$ |
| 2006 $SF_{183}$ | 17.1 | 0.15 | 20061012 | 318.79995 | 27.06393 | 42.35871 | 0.46128 | 0.1293666 | 3.0519714 | 18 | 1 | 57 days | 0.27 | | | MPC | 2006 $SF_{183}$ |
| 2006 $SH_{183}$ | 16.9 | 0.15 | 20060922 | 86.97736 | 90.03288 | 192.66459 | 2.96109 | 0.0286470 | 2.7143715 | 25 | 1 | 67 days | 0.30 | M-v | 4 | MPC | 2006 $SH_{183}$ |
| 2006 $SN_{183}$ | 18.8 | 0.15 | 20060922 | 19.16995 | 324.44485 | 20.60794 | 1.83723 | 0.1318488 | 2.2028725 | 10 | 1 | 5 days | 0.35 | | | MPC | 2006 $SN_{183}$ |
| 2006 $SO_{183}$ | 16.7 | 0.15 | 20061012 | 323.82275 | 247.16742 | 180.09853 | 1.24289 | 0.1614211 | 3.1396884 | 22 | 1 | 50 days | 0.25 | | | MPC | 2006 $SO_{183}$ |
| 2006 $SQ_{183}$ | 17.2 | 0.15 | 20060922 | 124.62246 | 216.26357 | 20.95608 | 1.59407 | 0.1366818 | 2.3620332 | 14 | 1 | 21 days | 0.21 | | | MPC | 2006 $SQ_{183}$ |
| 2006 $SR_{183}$ | 19.3 | 0.15 | 20060922 | 6.60264 | 183.08741 | 176.65096 | 0.91050 | 0.2021738 | 2.3253469 | 14 | 1 | 27 days | 0.48 | | | MPC | 2006 $SR_{183}$ |
| 2006 $SS_{183}$ | 16.8 | 0.15 | 20060922 | 268.45563 | 288.42704 | 193.71298 | 9.46399 | 0.1363332 | 3.1380078 | 14 | 1 | 26 days | 0.31 | | | MPC | 2006 $SS_{183}$ |
| 2006 $SV_{183}$ | 16.6 | 0.15 | 20060922 | 262.48624 | 115.72360 | 17.22252 | 13.11562 | 0.1643774 | 2.7096133 | 26 | 1 | 64 days | 0.26 | M-v | 4 | MPC | 2006 $SV_{183}$ |
| 2006 $SX_{183}$ | 16.7 | 0.15 | 20060922 | 54.99516 | 279.91825 | 23.88682 | 5.14180 | 0.1479600 | 2.6020083 | 27 | 1 | 43 days | 0.49 | | | MPC | 2006 $SX_{183}$ |
| 2006 $SZ_{183}$ | 16.2 | 0.15 | 20060922 | 346.82409 | 257.02866 | 139.75954 | 1.92991 | 0.2534070 | 3.1300026 | 36 | 1 | 60 days | 0.41 | M-v | 4 | MPC | 2006 $SZ_{183}$ |
| 2006 $SB_{184}$ | 17.0 | 0.15 | 20060922 | 101.06874 | 234.26325 | 19.10245 | 9.47657 | 0.1740000 | 2.2942833 | 17 | 1 | 5 days | 0.22 | | | MPC | 2006 $SB_{184}$ |
| 2006 $SD_{184}$ | 18.5 | 0.15 | 20060922 | 33.13314 | 295.09464 | 26.47089 | 2.86746 | 0.2072470 | 2.3609776 | 26 | 1 | 43 days | 0.27 | | | MPC | 2006 $SD_{184}$ |
| 2006 $SO_{184}$ | 17.2 | 0.15 | 20060922 | 279.92315 | 276.50291 | 191.91638 | 8.70070 | 0.1083581 | 3.0592284 | 14 | 1 | 27 days | 0.31 | | | MPC | 2006 $SO_{184}$ |
| 2006 $SR_{184}$ | 17.6 | 0.15 | 20061012 | 17.97097 | 327.69793 | 25.26597 | 0.58875 | 0.2241103 | 2.6568602 | 43 | 1 | 58 days | 0.34 | | | MPC | 2006 $SR_{184}$ |
| 2006 $SS_{184}$ | 17.3 | 0.15 | 20061012 | 26.82043 | 154.33864 | 196.52803 | 5.77109 | 0.0773236 | 2.6679107 | 20 | 1 | 52 days | 0.16 | | | MPC | 2006 $SS_{184}$ |
| 2006 $SV_{184}$ | 16.8 | 0.15 | 20061012 | 6.60337 | 351.08802 | 24.79807 | 6.81909 | 0.0468501 | 2.7627282 | 20 | 1 | 47 days | 0.16 | | | MPC | 2006 $SV_{184}$ |
| 2006 $SW_{184}$ | 17.3 | 0.15 | 20060922 | 330.69279 | 21.45422 | 38.02684 | 1.73089 | 0.1990677 | 2.6103243 | 47 | 1 | 103 days | 0.44 | M-v | 4 | MPC | 2006 $SW_{184}$ |
| 2006 $SX_{184}$ | 16.2 | 0.15 | 20061012 | 4.01134 | 312.04037 | 65.16066 | 0.93298 | 0.2022937 | 3.1692728 | 41 | 1 | 55 days | 0.49 | | | MPC | 2006 $SX_{184}$ |
| 2006 $SZ_{184}$ | 16.1 | 0.15 | 20060922 | 49.63138 | 126.79212 | 195.28693 | 10.11292 | 0.0877514 | 3.1370331 | 13 | 1 | 26 days | 0.20 | | | MPC | 2006 $SZ_{184}$ |
| 2006 $SA_{185}$ | 17.6 | 0.15 | 20060922 | 350.18393 | 14.22245 | 20.58431 | 15.40568 | 0.2790071 | 3.1576168 | 13 | 1 | 16 days | 0.32 | | | MPC | 2006 $SA_{185}$ |
| 2006 $SB_{185}$ | 18.8 | 0.15 | 20060922 | 358.73755 | 190.01035 | 187.12936 | 4.01173 | 0.2395611 | 2.6340528 | 10 | 1 | 6 days | 0.21 | | | MPC | 2006 $SB_{185}$ |
| 2006 $SC_{185}$ | 17.0 | 0.15 | 20060922 | 47.55192 | 296.29434 | 22.66543 | 22.70253 | 0.1370430 | 3.1172552 | 13 | 1 | 13 days | 0.30 | | | MPC | 2006 $SC_{185}$ |
| 2006 $SE_{185}$ | 18.8 | 0.15 | 20061012 | 62.42783 | 325.38536 | 340.83409 | 0.75173 | 0.1686402 | 2.2380884 | 18 | 1 | 34 days | 0.40 | | | MPC | 2006 $SE_{185}$ |
| 2006 $SG_{185}$ | 17.8 | 0.15 | 20060922 | 42.82733 | 299.74593 | 18.76881 | 4.92099 | 0.2049206 | 2.3655408 | 14 | 1 | 25 days | 0.15 | | | MPC | 2006 $SG_{185}$ |
| 2006 $SJ_{185}$ | 19.0 | 0.15 | 20060922 | 38.45376 | 352.83532 | 336.61363 | 3.15786 | 0.1198339 | 2.1961495 | 12 | 1 | 25 days | 0.23 | | | MPC | 2006 $SJ_{185}$ |
| 2006 $SL_{185}$ | 18.5 | 0.15 | 20060922 | 312.93446 | 89.05975 | 349.03883 | 4.58824 | 0.1341781 | 2.2709161 | 26 | 1 | 61 days | 0.29 | M-v | 4 | MPC | 2006 $SL_{185}$ |
| 2006 $SM_{185}$ | 17.4 | 0.15 | 20061012 | 341.39873 | 173.59819 | 237.95959 | 4.18193 | 0.1574135 | 2.6801490 | 30 | 1 | 56 days | 0.21 | | | MPC | 2006 $SM_{185}$ |
| 2006 $SO_{185}$ | 18.8 | 0.15 | 20060922 | 23.24703 | 328.03620 | 10.73090 | 13.53543 | 0.2645462 | 2.7056981 | 13 | 1 | 26 days | 0.19 | | | MPC | 2006 $SO_{185}$ |
| 2006 $SP_{185}$ | 17.7 | 0.15 | 20060922 | 355.22287 | 24.91345 | 0.51104 | 6.98772 | 0.1290249 | 2.4607410 | 27 | 1 | 31 days | 0.21 | | | MPC | 2006 $SP_{185}$ |
| 2006 $SQ_{185}$ | 18.4 | 0.15 | 20061012 | 27.52549 | 338.95861 | 3.98617 | 6.85464 | 0.2500506 | 2.6966408 | 12 | 1 | 36 days | 0.21 | | | MPC | 2006 $SQ_{185}$ |
| 2006 $SR_{185}$ | 16.9 | 0.15 | 20060922 | 32.60035 | 142.56560 | 203.97289 | 9.83301 | 0.1083609 | 2.9941123 | 14 | 1 | 27 days | 0.24 | | | MPC | 2006 $SR_{185}$ |
| 2006 $SS_{185}$ | 17.9 | 0.15 | 20061012 | 344.20357 | 221.81190 | 186.75426 | 2.20158 | 0.1131550 | 2.2089299 | 17 | 1 | 51 days | 0.36 | | | MPC | 2006 $SS_{185}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SU_{185}$ | 17.5 | 0.15 | 20061012 | 15.18207 | 342.19488 | 25.40512 | 10.69034 | 0.1863505 | 2.5217748 | 31 | 1 | 56 days | 0.25 | | | MPC | | 2006 $SU_{185}$ |
| 2006 $SV_{185}$ | 16.1 | 0.15 | 20060922 | 184.11218 | 177.95661 | 29.59853 | 3.46698 | 0.0943140 | 3.0339189 | 17 | 1 | 25 days | 0.33 | | | MPC | | 2006 $SV_{185}$ |
| 2006 $SW_{185}$ | 17.2 | 0.15 | 20061012 | 60.01038 | 286.47085 | 26.78768 | 13.02624 | 0.1735850 | 2.7633780 | 28 | 1 | 54 days | 0.45 | | | MPC | | 2006 $SW_{185}$ |
| 2006 $SZ_{185}$ | 17.4 | 0.15 | 20061012 | 186.99411 | 179.57704 | 26.34652 | 5.10467 | 0.0848179 | 2.3286312 | 26 | 1 | 53 days | 0.25 | | | MPC | | 2006 $SZ_{185}$ |
| 2006 $SB_{186}$ | 18.0 | 0.15 | 20061012 | 83.67564 | 268.59994 | 25.11940 | 5.28166 | 0.1238081 | 2.3997797 | 23 | 1 | 46 days | 0.24 | | | MPC | | 2006 $SB_{186}$ |
| 2006 $SD_{186}$ | 15.8 | 0.15 | 20060922 | 60.50047 | 268.82300 | 30.43091 | 24.86214 | 0.2654825 | 3.1657788 | 38 | 1 | 61 days | 0.29 | M-v | 4 | MPC | | 2006 $SD_{186}$ |
| 2006 $SE_{186}$ | 18.3 | 0.15 | 20061012 | 70.64656 | 285.76448 | 17.37982 | 14.31132 | 0.1163814 | 2.4191474 | 15 | 1 | 34 days | 0.21 | | | MPC | | 2006 $SE_{186}$ |
| 2006 $SG_{186}$ | 16.4 | 0.15 | 20061012 | 337.92007 | 210.10112 | 213.84564 | 7.31049 | 0.2416142 | 3.0915437 | 65 | 1 | 59 days | 0.41 | | | MPC | | 2006 $SG_{186}$ |
| 2006 $SH_{186}$ | 16.8 | 0.15 | 20061012 | 293.31145 | 247.20153 | 215.04436 | 8.80373 | 0.0640290 | 3.0930370 | 23 | 1 | 47 days | 0.24 | | | MPC | | 2006 $SH_{186}$ |
| 2006 $SJ_{186}$ | 17.4 | 0.15 | 20061012 | 343.61700 | 193.12773 | 212.01853 | 6.29385 | 0.0430913 | 2.5940892 | 26 | 1 | 47 days | 0.35 | | | MPC | | 2006 $SJ_{186}$ |
| 2006 $SK_{186}$ | 16.9 | 0.15 | 20061012 | 355.43626 | 13.76207 | 20.31869 | 14.97537 | 0.1518220 | 2.9631801 | 25 | 1 | 57 days | 0.54 | | | MPC | | 2006 $SK_{186}$ |
| 2006 $SN_{186}$ | 17.4 | 0.15 | 20060922 | 29.64181 | 116.47971 | 208.64554 | 7.07993 | 0.3037394 | 2.6725347 | 50 | 1 | 76 days | 0.51 | M-v | 4 | MPC | | 2006 $SN_{186}$ |
| 2006 $SO_{186}$ | 16.5 | 0.15 | 20061012 | 44.60923 | 307.31720 | 20.60376 | 9.72499 | 0.1729892 | 3.1582799 | 19 | 1 | 51 days | 0.24 | | | MPC | | 2006 $SO_{186}$ |
| 2006 $SA_{187}$ | 17.8 | 0.15 | 20060922 | 336.48829 | 30.84565 | 35.84875 | 2.82447 | 0.2001572 | 2.3746013 | 35 | 1 | 60 days | 0.24 | M-v | 3 | MPC | | 2006 $SA_{187}$ |
| 2006 $SB_{187}$ | 16.9 | 0.15 | 20060922 | 6.27724 | 172.11242 | 214.77448 | 0.90162 | 0.1951900 | 2.6241191 | 42 | 1 | 63 days | 0.34 | M-v | 4 | MPC | | 2006 $SB_{187}$ |
| 2006 $SK_{187}$ | 17.2 | 0.15 | 20060922 | 349.75334 | 24.33249 | 354.97813 | 7.13167 | 0.1153404 | 2.3810745 | 40 | 1 | 34 days | 0.47 | | | MPC | | 2006 $SK_{187}$ |
| 2006 $SL_{187}$ | 16.8 | 0.15 | 20060922 | 194.72355 | 238.05546 | 294.18388 | 3.33908 | 0.0673841 | 2.7857174 | 9 | 1 | 4 days | 0.26 | | | MPC | | 2006 $SL_{187}$ |
| 2006 $SQ_{187}$ | 15.6 | 0.15 | 20060922 | 2.35142 | 322.05663 | 43.31294 | 3.16588 | 0.0521130 | 3.9380259 | 14 | 1 | 4 days | 0.31 | | | MPC | | 2006 $SQ_{187}$ |
| 2006 $SR_{187}$ | 17.3 | 0.15 | 20060922 | 211.23774 | 355.87996 | 164.87289 | 4.10898 | 0.0839017 | 2.7040097 | 11 | 1 | 2 days | 0.44 | | | MPC | | 2006 $SR_{187}$ |
| 2006 $SS_{187}$ | 18.5 | 0.15 | 20060922 | 340.47594 | 213.76647 | 180.69954 | 12.09660 | 0.1849589 | 2.5892542 | 17 | 1 | 4 days | 0.26 | | | MPC | | 2006 $SS_{187}$ |
| 2006 $ST_{187}$ | 17.7 | 0.15 | 20060922 | 183.13508 | 54.16906 | 130.76252 | 2.07047 | 0.1428876 | 2.4108403 | 17 | 1 | 10 days | 0.22 | | | MPC | | 2006 $ST_{187}$ |
| 2006 $SU_{187}$ | 17.3 | 0.15 | 20060922 | 357.10753 | 312.06645 | 58.97522 | 1.93977 | 0.2191837 | 3.0337431 | 17 | 1 | 12 days | 0.19 | | | MPC | | 2006 $SU_{187}$ |
| 2006 $SX_{187}$ | 16.5 | 0.15 | 20060922 | 313.96336 | 32.32402 | 22.35068 | 6.74959 | 0.0264741 | 2.7177563 | 30 | 1 | 33 days | 0.18 | | | MPC | | 2006 $SX_{187}$ |
| 2006 $SY_{187}$ | 18.2 | 0.15 | 20060922 | 321.25149 | 27.76212 | 23.77782 | 5.40943 | 0.0956613 | 2.2751698 | 27 | 1 | 25 days | 0.23 | | | MPC | | 2006 $SY_{187}$ |
| 2006 $SA_{188}$ | 18.5 | 0.15 | 20060922 | 350.38325 | 4.84318 | 15.65833 | 10.94713 | 0.2080693 | 2.8892827 | 11 | 1 | 2 days | 0.36 | | | MPC | | 2006 $SA_{188}$ |
| 2006 $SB_{188}$ | 15.4 | 0.15 | 20060922 | 192.00555 | 2.84809 | 176.44007 | 9.30614 | 0.1808074 | 2.9670732 | 23 | 1 | 5 days | 0.44 | | | MPC | | 2006 $SB_{188}$ |
| 2006 $SC_{188}$ | 17.5 | 0.15 | 20060922 | 66.49218 | 138.82335 | 144.09986 | 2.35947 | 0.1509677 | 2.5875371 | 33 | 1 | 14 days | 0.33 | | | MPC | | 2006 $SC_{188}$ |
| 2006 $SD_{188}$ | 17.8 | 0.15 | 20060922 | 345.41414 | 293.20373 | 93.70408 | 1.91968 | 0.1689995 | 3.0159433 | 13 | 1 | 12 days | 0.24 | | | MPC | | 2006 $SD_{188}$ |
| 2006 $SE_{188}$ | 17.2 | 0.15 | 20060922 | 269.82772 | 313.78097 | 161.01709 | 4.36400 | 0.1590335 | 2.6430012 | 17 | 1 | 12 days | 0.25 | | | MPC | | 2006 $SE_{188}$ |
| 2006 $SF_{188}$ | 17.4 | 0.15 | 20060922 | 322.63171 | 50.91452 | 14.47986 | 13.08006 | 0.2510579 | 2.6717995 | 38 | 1 | 43 days | 0.57 | | | MPC | | 2006 $SF_{188}$ |
| 2006 $SG_{188}$ | 19.5 | 0.15 | 20060922 | 21.92455 | 162.38315 | 160.63280 | 3.16055 | 0.3087245 | 2.5906007 | 17 | 1 | 4 days | 0.37 | | | MPC | | 2006 $SG_{188}$ |
| 2006 $SH_{188}$ | 17.8 | 0.15 | 20060922 | 110.55639 | 100.29584 | 137.66653 | 2.12412 | 0.1888175 | 2.4333194 | 10 | 1 | 4 days | 0.23 | | | MPC | | 2006 $SH_{188}$ |
| 2006 $SK_{188}$ | 16.6 | 0.15 | 20060922 | 294.57151 | 313.16456 | 122.96483 | 2.51547 | 0.0324823 | 3.1419809 | 14 | 1 | 4 days | 0.44 | | | MPC | | 2006 $SK_{188}$ |
| 2006 $SM_{188}$ | 16.6 | 0.15 | 20060922 | 342.07197 | 13.36256 | 17.93819 | 11.29843 | 0.1573523 | 3.1377303 | 30 | 1 | 39 days | 0.28 | | | MPC | | 2006 $SM_{188}$ |
| 2006 $SN_{188}$ | 17.0 | 0.15 | 20060922 | 190.71404 | 126.63656 | 53.99531 | 2.75026 | 0.2474251 | 2.3284659 | 20 | 1 | 4 days | 0.37 | | | MPC | | 2006 $SN_{188}$ |
| 2006 $SO_{188}$ | 17.0 | 0.15 | 20060922 | 142.42784 | 162.91475 | 58.85413 | 2.61452 | 0.0424173 | 2.6529586 | 10 | 1 | 4 days | 0.29 | | | MPC | | 2006 $SO_{188}$ |
| 2006 $SS_{188}$ | 19.1 | 0.15 | 20060922 | 353.53298 | 3.27570 | 13.47852 | 12.74209 | 0.2916888 | 2.5677450 | 14 | 1 | 4 days | 0.21 | | | MPC | | 2006 $SS_{188}$ |
| 2006 $SV_{188}$ | 15.5 | 0.15 | 20060922 | 49.04603 | 130.93085 | 155.25307 | 16.69266 | 0.1971545 | 3.1142043 | 26 | 1 | 28 days | 0.44 | | | MPC | | 2006 $SV_{188}$ |
| 2006 $SF_{189}$ | 17.0 | 0.15 | 20060922 | 162.65959 | 129.95173 | 70.89726 | 3.55590 | 0.1609604 | 2.5602893 | 9 | 1 | 4 days | 0.21 | | | MPC | | 2006 $SF_{189}$ |
| 2006 $SG_{189}$ | 18.4 | 0.15 | 20060922 | 17.66751 | 260.95689 | 80.03834 | 2.87657 | 0.1844036 | 2.8155509 | 12 | 1 | 12 days | 0.19 | | | MPC | | 2006 $SG_{189}$ |
| 2006 $SH_{189}$ | 17.8 | 0.15 | 20060922 | 0.90590 | 258.30107 | 107.81463 | 3.04437 | 0.1238696 | 2.8759272 | 15 | 1 | 13 days | 0.27 | | | MPC | | 2006 $SH_{189}$ |
| 2006 $SK_{189}$ | 17.2 | 0.15 | 20060922 | 256.16419 | 32.53618 | 86.74721 | 2.96337 | 0.0698168 | 2.6407679 | 12 | 1 | 12 days | 0.72 | | | MPC | | 2006 $SK_{189}$ |
| 2006 $SO_{189}$ | 16.8 | 0.15 | 20060922 | 319.66289 | 238.54708 | 175.19151 | 12.94397 | 0.0605108 | 3.0560370 | 12 | 1 | 12 days | 0.13 | | | MPC | | 2006 $SO_{189}$ |
| 2006 $SS_{189}$ | 17.0 | 0.15 | 20060922 | 336.75729 | 4.01408 | 28.97132 | 8.89960 | 0.0481812 | 2.6346084 | 9 | 1 | 4 days | 0.11 | | | MPC | | 2006 $SS_{189}$ |
| 2006 $SV_{189}$ | 19.8 | 0.15 | 20060922 | 324.55210 | 61.15188 | 4.38606 | 15.86387 | 0.3218351 | 1.8925083 | 53 | 1 | 53 days | 0.44 | M-v | 4 | MPC | | 2006 $SV_{189}$ |
| 2006 $SX_{189}$ | 16.5 | 0.15 | 20060922 | 359.63841 | 355.40662 | 7.30237 | 14.72614 | 0.0732597 | 2.6977504 | 14 | 1 | 2 days | 0.28 | | | MPC | | 2006 $SX_{189}$ |
| 2006 $SF_{190}$ | 17.0 | 0.15 | 20060922 | 292.32222 | 258.31175 | 179.91114 | 8.82196 | 0.0660430 | 3.1578846 | 17 | 1 | 8 days | 0.33 | | | MPC | | 2006 $SF_{190}$ |
| 2006 $SU_{190}$ | 20.0 | 0.15 | 20060922 | 352.96127 | 198.00247 | 174.30719 | 5.72371 | 0.1585544 | 2.2630342 | 10 | 1 | 2 days | 0.34 | | | MPC | | 2006 $SU_{190}$ |
| 2006 $SA_{191}$ | 16.0 | 0.15 | 20060922 | 181.98175 | 166.27714 | 17.00729 | 9.18878 | 0.2365235 | 2.8291948 | 10 | 1 | 2 days | 0.33 | | | MPC | | 2006 $SA_{191}$ |
| 2006 $SQ_{191}$ | 16.2 | 0.15 | 20060922 | 339.60323 | 19.96481 | 11.30817 | 10.30006 | 0.1204833 | 3.1483492 | 29 | 1 | 61 days | 0.27 | M-v | 4 | MPC | | 2006 $SQ_{191}$ |
| 2006 $SR_{191}$ | 19.7 | 0.15 | 20060922 | 358.58477 | 355.87233 | 9.23736 | 8.52009 | 0.1941828 | 2.1101263 | 10 | 1 | 7 days | 0.75 | | | MPC | | 2006 $SR_{191}$ |
| 2006 $ST_{191}$ | 19.1 | 0.15 | 20060922 | 328.35809 | 254.09858 | 158.98582 | 2.30693 | 0.2218603 | 2.5704276 | 10 | 1 | 4 days | 0.18 | | | MPC | | 2006 $ST_{191}$ |
| 2006 $SV_{191}$ | 16.4 | 0.15 | 20060922 | 223.33184 | 330.36576 | 182.44853 | 12.72485 | 0.1396949 | 3.1846315 | 16 | 1 | 30 days | 0.28 | | D | MPC | | 2006 $SV_{191}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SY_{191}$ | 18.7 | 0.15 | 20060922 | 350.95843 | 252.94344 | 125.66640 | 1.45854 | 0.1962781 | 2.8475813 | 10 | 1 | 2 days | 0.57 | | MPC | 2006 $SY_{191}$ |
| 2006 $SC_{192}$ | 15.5 | 0.15 | 20060922 | 173.11982 | 6.17860 | 186.20223 | 27.98145 | 0.1305291 | 3.0808578 | 10 | 1 | 15 days | 0.81 | | MPC | 2006 $SC_{192}$ |
| 2006 $SH_{192}$ | 17.6 | 0.15 | 20060922 | 340.17267 | 352.32581 | 42.77491 | 4.08075 | 0.1896330 | 2.3597023 | 46 | 1 | 33 days | 0.64 | | MPC | 2006 $SH_{192}$ |
| 2006 $SJ_{192}$ | 16.7 | 0.15 | 20060922 | 260.95427 | 84.34211 | 53.36836 | 4.75668 | 0.2926396 | 2.8143070 | 17 | 1 | 4 days | 0.31 | | MPC | 2006 $SJ_{192}$ |
| 2006 $SL_{192}$ | 17.7 | 0.15 | 20060922 | 315.41651 | 297.35062 | 139.72625 | 4.10189 | 0.2460683 | 3.0677952 | 14 | 1 | 4 days | 0.23 | | MPC | 2006 $SL_{192}$ |
| 2006 $SN_{192}$ | 18.9 | 0.15 | 20060922 | 344.68918 | 353.87439 | 31.42455 | 6.50216 | 0.1064496 | 2.2820316 | 21 | 1 | 4 days | 0.23 | | MPC | 2006 $SN_{192}$ |
| 2006 $SO_{192}$ | 16.0 | 0.15 | 20060922 | 294.20786 | 26.37020 | 56.76474 | 4.36852 | 0.0814179 | 3.0172097 | 21 | 1 | 4 days | 0.21 | | MPC | 2006 $SO_{192}$ |
| 2006 $SP_{192}$ | 18.2 | 0.15 | 20060922 | 220.89517 | 117.85285 | 35.47183 | 6.49583 | 0.0992809 | 2.2038816 | 17 | 1 | 4 days | 0.20 | | MPC | 2006 $SP_{192}$ |
| 2006 $SQ_{192}$ | 18.1 | 0.15 | 20060922 | 254.82793 | 42.65384 | 85.21095 | 3.03795 | 0.1425275 | 2.3349911 | 20 | 1 | 12 days | 0.40 | | MPC | 2006 $SQ_{192}$ |
| 2006 $SS_{192}$ | 16.9 | 0.15 | 20060922 | 82.24840 | 249.79318 | 21.67680 | 14.52823 | 0.1226235 | 2.6326724 | 10 | 1 | 4 days | 0.16 | | MPC | 2006 $SS_{192}$ |
| 2006 $ST_{192}$ | 17.0 | 0.15 | 20060922 | 30.27266 | 195.68274 | 135.04041 | 3.82191 | 0.1065730 | 2.7427433 | 18 | 1 | 9 days | 0.18 | | MPC | 2006 $ST_{192}$ |
| 2006 $SV_{192}$ | 16.8 | 0.15 | 20060922 | 257.72018 | 297.73128 | 179.39331 | 18.24973 | 0.0540518 | 2.6637354 | 18 | 1 | 5 days | 0.40 | | MPC | 2006 $SV_{192}$ |
| 2006 $SY_{192}$ | 16.6 | 0.15 | 20060922 | 351.61954 | 1.08261 | 19.78003 | 4.77375 | 0.2393207 | 3.0148832 | 24 | 1 | 6 days | 0.53 | | MPC | 2006 $SY_{192}$ |
| 2006 $SB_{193}$ | 16.3 | 0.15 | 20061012 | 146.53654 | 205.97316 | 20.40376 | 13.55331 | 0.0904908 | 2.5366994 | 28 | 1 | 50 days | 0.22 | | MPC | 2006 $SB_{193}$ |
| 2006 $SD_{193}$ | 17.1 | 0.15 | 20060922 | 252.23236 | 303.12680 | 187.20497 | 8.44895 | 0.0693200 | 2.8426294 | 13 | 1 | 19 days | 0.33 | | MPC | 2006 $SD_{193}$ |
| 2006 $SE_{193}$ | 17.0 | 0.15 | 20060922 | 260.10918 | 355.57731 | 131.84968 | 3.66214 | 0.1773415 | 2.7986002 | 10 | 1 | 4 days | 0.26 | | MPC | 2006 $SE_{193}$ |
| 2006 $SK_{193}$ | 16.5 | 0.15 | 20060922 | 337.85810 | 258.80455 | 124.34375 | 5.90411 | 0.1172811 | 2.7838637 | 12 | 1 | 4 days | 0.62 | | MPC | 2006 $SK_{193}$ |
| 2006 $SP_{193}$ | 17.9 | 0.15 | 20060922 | 19.29054 | 257.39611 | 67.01106 | 4.78807 | 0.2376571 | 2.6474851 | 10 | 1 | 4 days | 0.47 | | MPC | 2006 $SP_{193}$ |
| 2006 $SQ_{193}$ | 16.4 | 0.15 | 20060922 | 175.70905 | 196.20951 | 347.77617 | 2.24115 | 0.2765274 | 2.7429517 | 11 | 1 | 2 days | 0.30 | | MPC | 2006 $SQ_{193}$ |
| 2006 $SR_{193}$ | 17.5 | 0.15 | 20060922 | 301.55900 | 267.30697 | 185.85343 | 7.03847 | 0.2957076 | 2.8098648 | 11 | 1 | 2 days | 0.24 | | MPC | 2006 $SR_{193}$ |
| 2006 $SW_{193}$ | 18.3 | 0.15 | 20060902 | 39.74416 | 303.36877 | 355.51246 | 6.26823 | 0.1993878 | 2.6630872 | 17 | 1 | 12 days | 0.55 | | MPC | 2006 $SW_{193}$ |
| 2006 $SX_{193}$ | 15.8 | 0.15 | 20060922 | 145.92255 | 255.58345 | 310.40889 | 1.22384 | 0.2074830 | 2.8019248 | 18 | 1 | 31 days | 0.48 | | MPC | 2006 $SX_{193}$ |
| 2006 $SY_{193}$ | 19.0 | 0.15 | 20060922 | 30.03403 | 358.34743 | 322.06777 | 1.38475 | 0.1658411 | 2.3737933 | 14 | 1 | 8 days | 0.27 | | MPC | 2006 $SY_{193}$ |
| 2006 $SA_{194}$ | 18.8 | 0.15 | 20060922 | 348.50505 | 35.27456 | 344.54842 | 2.02480 | 0.2100004 | 2.6081025 | 14 | 1 | 4 days | 0.26 | | MPC | 2006 $SA_{194}$ |
| 2006 $SD_{194}$ | 16.4 | 0.15 | 20060922 | 274.45610 | 113.49126 | 0.76969 | 9.11056 | 0.1034898 | 3.0766275 | 9 | 1 | 5 days | 0.20 | | MPC | 2006 $SD_{194}$ |
| 2006 $SE_{194}$ | 17.6 | 0.15 | 20060922 | 30.54937 | 334.87595 | 349.67847 | 5.31867 | 0.2514596 | 3.0485123 | 9 | 1 | 5 days | 0.39 | | MPC | 2006 $SE_{194}$ |
| 2006 $SF_{194}$ | 17.0 | 0.15 | 20060922 | 33.84680 | 3.46098 | 332.77858 | 3.78401 | 0.0761061 | 2.7864143 | 19 | 1 | 62 days | 0.17 | M-v 4 | MPC | 2006 $SF_{194}$ |
| 2006 $SG_{194}$ | 16.7 | 0.15 | 20060922 | 308.90337 | 104.88785 | 329.61863 | 3.32411 | 0.0845035 | 2.7729682 | 26 | 1 | 62 days | 0.32 | M-v 4 | MPC | 2006 $SG_{194}$ |
| 2006 $SJ_{194}$ | 17.8 | 0.15 | 20060922 | 14.14262 | 127.97673 | 221.01098 | 3.27309 | 0.2135706 | 2.3457691 | 38 | 1 | 66 days | 0.44 | M-v 4 | MPC | 2006 $SJ_{194}$ |
| 2006 $SK_{194}$ | 18.9 | 0.15 | 20061012 | 349.24087 | 193.64741 | 197.26794 | 22.16724 | 0.0543501 | 1.8622254 | 19 | 1 | 31 days | 0.36 | | MPC | 2006 $SK_{194}$ |
| 2006 $SL_{194}$ | 15.7 | 0.15 | 20060922 | 240.11591 | 151.40940 | 357.24823 | 8.51118 | 0.1208903 | 3.0655147 | 9 | 1 | 5 days | 0.27 | | MPC | 2006 $SL_{194}$ |
| 2006 $SM_{194}$ | 16.7 | 0.15 | 20061012 | 311.33189 | 210.30617 | 224.32447 | 5.31407 | 0.0623982 | 3.0432138 | 22 | 1 | 59 days | 0.21 | | MPC | 2006 $SM_{194}$ |
| 2006 $SY_{194}$ | 19.3 | 0.15 | 20060922 | 2.87242 | 172.63402 | 185.59739 | 13.59221 | 0.1861822 | 2.5734126 | 15 | 1 | 6 days | 0.34 | | MPC | 2006 $SY_{194}$ |
| 2006 $SB_{195}$ | 18.7 | 0.15 | 20060922 | 1.07775 | 172.90346 | 188.53667 | 5.01657 | 0.1929267 | 2.8464016 | 11 | 1 | 6 days | 0.45 | | MPC | 2006 $SB_{195}$ |
| 2006 $SC_{195}$ | 17.5 | 0.15 | 20060922 | 32.11628 | 115.85978 | 192.15331 | 3.13994 | 0.2776811 | 2.9841652 | 18 | 1 | 37 days | 0.24 | | MPC | 2006 $SC_{195}$ |
| 2006 $SE_{195}$ | 16.1 | 0.15 | 20060922 | 5.19588 | 168.48852 | 189.90051 | 6.86181 | 0.0302319 | 2.8101209 | 25 | 1 | 26 days | 0.31 | | MPC | 2006 $SE_{195}$ |
| 2006 $SF_{195}$ | 16.6 | 0.15 | 20060922 | 290.82582 | 300.70191 | 187.06782 | 13.92311 | 0.4733656 | 2.8722254 | 11 | 1 | 6 days | 0.27 | | MPC | 2006 $SF_{195}$ |
| 2006 $SG_{195}$ | 18.1 | 0.15 | 20060922 | 341.17402 | 228.01019 | 178.44200 | 4.62810 | 0.2938134 | 2.8558964 | 11 | 1 | 5 days | 0.39 | | MPC | 2006 $SG_{195}$ |
| 2006 $SL_{195}$ | 17.3 | 0.15 | 20060922 | 13.15918 | 352.01457 | 4.13578 | 10.35353 | 0.1579070 | 3.2236571 | 12 | 1 | 5 days | 0.22 | | MPC | 2006 $SL_{195}$ |
| 2006 $SP_{195}$ | 16.9 | 0.15 | 20060922 | 48.11309 | 309.09902 | 0.97593 | 6.29933 | 0.1660046 | 3.0396949 | 9 | 1 | 4 days | 0.12 | | MPC | 2006 $SP_{195}$ |
| 2006 $SW_{195}$ | 18.9 | 0.15 | 20060922 | 355.27668 | 10.34948 | 0.45521 | 4.46761 | 0.1368324 | 2.6653250 | 12 | 1 | 6 days | 0.45 | | MPC | 2006 $SW_{195}$ |
| 2006 $SZ_{195}$ | 19.0 | 0.15 | 20060922 | 356.80852 | 179.81192 | 188.96924 | 8.37196 | 0.2222688 | 2.4478329 | 11 | 1 | 6 days | 0.57 | | MPC | 2006 $SZ_{195}$ |
| 2006 $SH_{196}$ | 16.8 | 0.15 | 20060922 | 340.82059 | 124.43253 | 265.19653 | 0.19314 | 0.1201865 | 3.0149656 | 14 | 1 | 14 days | 0.45 | | MPC | 2006 $SH_{196}$ |
| 2006 $SJ_{196}$ | 16.6 | 0.15 | 20060922 | 181.24885 | 180.04218 | 4.94629 | 14.74771 | 0.2322911 | 2.3544732 | 15 | 1 | 6 days | 0.70 | | MPC | 2006 $SJ_{196}$ |
| 2006 $SL_{196}$ | 20.3 | 0.15 | 20060922 | 0.01381 | 1.56436 | 0.89406 | 4.27538 | 0.1514834 | 2.0082196 | 11 | 1 | 6 days | 0.52 | | MPC | 2006 $SL_{196}$ |
| 2006 $SP_{196}$ | 17.4 | 0.15 | 20061012 | 8.09786 | 16.74219 | 359.54896 | 12.20372 | 0.0802924 | 2.3782587 | 25 | 1 | 31 days | 0.47 | | MPC | 2006 $SP_{196}$ |
| 2006 $SS_{196}$ | 16.9 | 0.15 | 20061012 | 319.48948 | 80.67474 | 359.79663 | 12.14917 | 0.1550797 | 2.5897968 | 27 | 1 | 31 days | 0.44 | | MPC | 2006 $SS_{196}$ |
| 2006 $ST_{196}$ | 16.7 | 0.15 | 20060922 | 266.59926 | 222.31470 | 258.67987 | 5.75560 | 0.0500550 | 2.7399739 | 18 | 1 | 60 days | 0.32 | M-v 4 | MPC | 2006 $ST_{196}$ |
| 2006 $SX_{196}$ | 16.2 | 0.15 | 20061012 | 356.61653 | 265.02878 | 129.89008 | 14.25323 | 0.0911001 | 2.5841184 | 27 | 1 | 58 days | 0.59 | | MPC | 2006 $SX_{196}$ |
| 2006 $SY_{196}$ | 16.2 | 0.15 | 20061012 | 49.93835 | 206.57148 | 115.12718 | 14.19336 | 0.1875989 | 2.6859651 | 27 | 1 | 52 days | 0.60 | | MPC | 2006 $SY_{196}$ |
| 2006 $SA_{197}$ | 18.2 | 0.15 | 20061012 | 12.63000 | 169.69235 | 207.99016 | 8.06675 | 0.2397883 | 2.7470496 | 24 | 1 | 52 days | 0.29 | | MPC | 2006 $SA_{197}$ |
| 2006 $SE_{197}$ | 16.9 | 0.15 | 20060922 | 288.68946 | 175.18485 | 269.88877 | 8.93187 | 0.0766160 | 3.0348142 | 15 | 1 | 25 days | 0.37 | | MPC | 2006 $SE_{197}$ |
| 2006 $SG_{197}$ | 18.4 | 0.15 | 20061012 | 48.95565 | 300.87040 | 20.10855 | 4.45227 | 0.1537040 | 2.2481678 | 26 | 1 | 50 days | 0.28 | | MPC | 2006 $SG_{197}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SM_{197}$ | 16.1 | 0.15 | 20061012 | 16.55472 | 68.75307 | 284.38966 | 14.52159 | 0.3097886 | 2.7112060 | 23 | 1 | 52 days | 0.55 | | E | MPC | 2006 $SM_{197}$ |
| 2006 $SQ_{197}$ | 17.0 | 0.15 | 20060922 | 10.89075 | 272.19655 | 71.41152 | 3.58153 | 0.1686171 | 2.5792963 | 23 | 1 | 86 days | 0.54 | M-v 4 | | MPC | 2006 $SQ_{197}$ |
| 2006 $SR_{197}$ | 15.9 | 0.15 | 20060922 | 320.86951 | 3.79171 | 37.74187 | 6.53818 | 0.0442280 | 2.7717746 | 20 | 1 | 36 days | 0.65 | | | MPC | 2006 $SR_{197}$ |
| 2006 $SS_{197}$ | 18.2 | 0.15 | 20061012 | 354.36884 | 341.88129 | 38.13748 | 4.98917 | 0.3253594 | 2.6733794 | 24 | 1 | 52 days | 0.44 | | | MPC | 2006 $SS_{197}$ |
| 2006 $SZ_{197}$ | 17.8 | 0.15 | 20060922 | 354.55929 | 100.66345 | 278.77989 | 4.81202 | 0.3615236 | 2.5814592 | 34 | 1 | 31 days | 0.46 | | | MPC | 2006 $SZ_{197}$ |
| 2006 $SB_{198}$ | 16.3 | 0.15 | 20061012 | 357.92477 | 84.04069 | 307.14573 | 15.61796 | 0.2223204 | 2.6413292 | 23 | 1 | 54 days | 0.60 | | | MPC | 2006 $SB_{198}$ |
| 2006 $SD_{198}$ | 17.5 | 0.15 | 20061012 | 8.24378 | 118.84858 | 232.87836 | 13.08060 | 0.4012130 | 3.0558419 | 23 | 1 | 58 days | 0.63 | | | MPC | 2006 $SD_{198}$ |
| 2006 $SH_{198}$ | 16.9 | 0.15 | 20061012 | 12.88242 | 261.81094 | 106.92213 | 29.05249 | 0.3876160 | 2.5881708 | 21 | 1 | 57 days | 0.41 | | | MPC | 2006 $SH_{198}$ |
| 2006 $SJ_{198}$ | 17.9 | 0.15 | 20060922 | 272.41958 | 211.67699 | 267.15831 | 2.44331 | 0.4563065 | 2.0895996 | 35 | 1 | 80 days | 0.47 | M-v 4 | | MPC | 2006 $SJ_{198}$ |
| 2006 $SL_{198}$ | 18.2 | 0.15 | 20060922 | 340.27325 | 213.05565 | 173.32291 | 16.55579 | 0.3739083 | 1.7995862 | 28 | 1 | 59 days | 0.47 | M-v 6 | | MPC | 2006 $SL_{198}$ |
| 2006 $SM_{198}$ | 21.6 | 0.15 | 20060922 | 2.15700 | 345.06450 | 359.36043 | 11.06217 | 0.5333101 | 2.3680761 | 42 | 1 | 43 days | 0.53 | M-v 5 | | MPC | 2006 $SM_{198}$ |
| 2006 $SN_{198}$ | 26.1 | 0.15 | 20060922 | 35.00500 | 70.88649 | 196.40321 | 1.54268 | 0.5123336 | 1.2606637 | 13 | 1 | 3 days | 0.69 | M-v 7 | | MPC | 2006 $SN_{198}$ |
| 2006 $SO_{198}$ | 23.9 | 0.15 | 20060922 | 342.19979 | 125.44926 | 10.38310 | 9.95489 | 0.8708158 | 2.0102140 | 26 | 1 | 3 days | 1.00 | M-v 8 | | MPC | 2006 $SO_{198}$ |
| 2006 $SP_{198}$ | 21.7 | 0.15 | 20060922 | 346.43465 | 226.45347 | 192.68423 | 6.92722 | 0.5739445 | 2.9342939 | 25 | 1 | 56 days | 0.36 | M-v 4 | | MPC | 2006 $SP_{198}$ |
| 2006 $SS_{198}$ | 17.2 | 0.15 | 20060922 | 0.76837 | 135.13007 | 228.18930 | 12.05878 | 0.2651090 | 2.6226363 | 25 | 1 | 65 days | 0.54 | M-v 4 | | MPC | 2006 $SS_{198}$ |
| 2006 $SY_{198}$ | 15.4 | 0.15 | 20060922 | 196.21289 | 342.92546 | 192.69342 | 19.29541 | 0.1120688 | 3.1603516 | 9 | 1 | 8 days | 0.14 | | | MPC | 2006 $SY_{198}$ |
| 2006 $SD_{199}$ | 19.7 | 0.15 | 20060922 | 28.46529 | 129.72215 | 189.32021 | 4.04836 | 0.2463061 | 2.3266284 | 14 | 1 | 27 days | 0.27 | | | MPC | 2006 $SD_{199}$ |
| 2006 $SF_{199}$ | 16.8 | 0.15 | 20060922 | 197.94484 | 340.43249 | 194.76071 | 5.88498 | 0.1433884 | 2.7272685 | 9 | 1 | 8 days | 0.56 | | | MPC | 2006 $SF_{199}$ |
| 2006 $SJ_{199}$ | 16.9 | 0.15 | 20060922 | 257.77984 | 125.97343 | 350.25254 | 1.60578 | 0.0481185 | 2.8696350 | 9 | 1 | 8 days | 0.72 | | | MPC | 2006 $SJ_{199}$ |
| 2006 $SL_{199}$ | 17.6 | 0.15 | 20060922 | 44.12908 | 113.87867 | 196.48414 | 2.99220 | 0.1440888 | 2.6001963 | 17 | 1 | 32 days | 0.47 | | | MPC | 2006 $SL_{199}$ |
| 2006 $SM_{199}$ | 15.9 | 0.15 | 20060922 | 200.38351 | 201.01424 | 332.95586 | 0.17780 | 0.1369280 | 2.9229372 | 9 | 1 | 8 days | 0.21 | | | MPC | 2006 $SM_{199}$ |
| 2006 $SO_{199}$ | 15.8 | 0.15 | 20060922 | 193.16562 | 346.22799 | 195.08529 | 6.01423 | 0.2089567 | 2.9069197 | 9 | 1 | 8 days | 0.34 | | | MPC | 2006 $SO_{199}$ |
| 2006 $SP_{199}$ | 15.5 | 0.15 | 20060922 | 62.66677 | 75.04951 | 215.81648 | 0.46826 | 0.1456898 | 3.2045472 | 16 | 1 | 27 days | 0.63 | | | MPC | 2006 $SP_{199}$ |
| 2006 $SW_{199}$ | 19.6 | 0.15 | 20060922 | 356.57815 | 351.16082 | 20.10148 | 1.52986 | 0.2527181 | 2.3000431 | 21 | 1 | 42 days | 0.33 | | | MPC | 2006 $SW_{199}$ |
| 2006 $SX_{199}$ | 16.7 | 0.15 | 20060922 | 32.01317 | 313.72334 | 21.89426 | 2.07413 | 0.0253497 | 2.9978823 | 21 | 1 | 36 days | 0.35 | | | MPC | 2006 $SX_{199}$ |
| 2006 $SZ_{199}$ | 18.2 | 0.15 | 20061012 | 295.98202 | 91.47746 | 9.80511 | 5.35394 | 0.1288702 | 2.3576174 | 16 | 1 | 54 days | 0.19 | | | MPC | 2006 $SZ_{199}$ |
| 2006 $SB_{200}$ | 17.4 | 0.15 | 20060922 | 184.44210 | 187.78011 | 6.44451 | 5.31940 | 0.0338511 | 2.3496552 | 9 | 1 | 8 days | 0.22 | | | MPC | 2006 $SB_{200}$ |
| 2006 $SC_{200}$ | 17.2 | 0.15 | 20060922 | 22.89727 | 41.62100 | 309.66025 | 1.08577 | 0.1018705 | 2.9185148 | 9 | 1 | 8 days | 0.20 | | | MPC | 2006 $SC_{200}$ |
| 2006 $SD_{200}$ | 19.0 | 0.15 | 20060922 | 52.96541 | 97.82845 | 202.45893 | 4.16861 | 0.2099408 | 2.1839779 | 16 | 1 | 34 days | 0.20 | | | MPC | 2006 $SD_{200}$ |
| 2006 $SF_{200}$ | 17.1 | 0.15 | 20061012 | 18.73579 | 144.93213 | 210.12684 | 4.63569 | 0.2143092 | 3.0569453 | 34 | 1 | 48 days | 0.29 | | | MPC | 2006 $SF_{200}$ |
| 2006 $SG_{200}$ | 16.8 | 0.15 | 20060922 | 36.09264 | 340.83391 | 348.00699 | 2.45975 | 0.1681840 | 2.6838234 | 27 | 1 | 113 days | 0.29 | M-v 4 | | MPC | 2006 $SG_{200}$ |
| 2006 $SH_{200}$ | 17.5 | 0.15 | 20061012 | 57.72817 | 91.73386 | 207.42877 | 4.36853 | 0.2365145 | 2.3255634 | 24 | 1 | 48 days | 0.41 | | | MPC | 2006 $SH_{200}$ |
| 2006 $SJ_{200}$ | 17.5 | 0.15 | 20060922 | 37.83641 | 129.44367 | 209.68575 | 5.60059 | 0.0392442 | 2.7304261 | 15 | 1 | 33 days | 0.24 | | | MPC | 2006 $SJ_{200}$ |
| 2006 $SL_{200}$ | 18.8 | 0.15 | 20060922 | 347.03076 | 41.13925 | 353.70423 | 1.00647 | 0.1891515 | 2.4143973 | 34 | 1 | 61 days | 0.41 | M-v 4 | | MPC | 2006 $SL_{200}$ |
| 2006 $SP_{200}$ | 17.6 | 0.15 | 20060922 | 34.22069 | 107.86021 | 234.08162 | 1.35613 | 0.0604199 | 2.6787669 | 19 | 1 | 40 days | 0.35 | | | MPC | 2006 $SP_{200}$ |
| 2006 $SV_{200}$ | 18.6 | 0.15 | 20060922 | 43.79632 | 305.17420 | 15.30211 | 6.48805 | 0.1443829 | 2.2534385 | 9 | 1 | 8 days | 0.79 | | | MPC | 2006 $SV_{200}$ |
| 2006 $SW_{200}$ | 18.3 | 0.15 | 20061012 | 346.36967 | 89.52590 | 315.15613 | 0.62102 | 0.1873023 | 2.4136443 | 37 | 1 | 57 days | 0.46 | | | MPC | 2006 $SW_{200}$ |
| 2006 $SX_{200}$ | 17.1 | 0.15 | 20061012 | 136.67923 | 36.18868 | 209.89324 | 2.83796 | 0.0415768 | 2.6775995 | 20 | 1 | 48 days | 0.32 | | | MPC | 2006 $SX_{200}$ |
| 2006 $SY_{200}$ | 16.6 | 0.15 | 20061012 | 321.87710 | 57.29300 | 15.74313 | 2.78573 | 0.1068513 | 3.0929064 | 22 | 1 | 48 days | 0.23 | | | MPC | 2006 $SY_{200}$ |
| 2006 $SZ_{200}$ | 19.3 | 0.15 | 20060922 | 339.78241 | 217.14857 | 199.19922 | 6.56086 | 0.3240115 | 2.6278720 | 21 | 1 | 29 days | 0.22 | | | MPC | 2006 $SZ_{200}$ |
| 2006 $SB_{201}$ | 17.5 | 0.15 | 20061012 | 9.52298 | 355.37550 | 18.85943 | 6.64382 | 0.1364829 | 3.0119154 | 24 | 1 | 35 days | 0.28 | | | MPC | 2006 $SB_{201}$ |
| 2006 $SD_{201}$ | 17.5 | 0.15 | 20061012 | 305.09632 | 72.20882 | 18.69507 | 4.17607 | 0.0947950 | 2.5884114 | 25 | 1 | 47 days | 0.24 | | | MPC | 2006 $SD_{201}$ |
| 2006 $SG_{201}$ | 17.6 | 0.15 | 20061012 | 15.31114 | 172.97075 | 193.44935 | 9.79914 | 0.1553492 | 2.9963357 | 20 | 1 | 37 days | 0.38 | | | MPC | 2006 $SG_{201}$ |
| 2006 $SH_{201}$ | 17.0 | 0.15 | 20061012 | 278.38453 | 93.56388 | 30.20286 | 9.22543 | 0.1248759 | 2.7248767 | 25 | 1 | 55 days | 0.39 | | | MPC | 2006 $SH_{201}$ |
| 2006 $SK_{201}$ | 16.7 | 0.15 | 20060922 | 274.31776 | 92.52169 | 29.59589 | 6.13527 | 0.1084587 | 3.0716779 | 31 | 1 | 63 days | 0.35 | M-v 4 | | MPC | 2006 $SK_{201}$ |
| 2006 $SL_{201}$ | 18.0 | 0.15 | 20060922 | 252.76730 | 318.64666 | 191.25219 | 3.80529 | 0.2148243 | 2.2392578 | 9 | 1 | 8 days | 0.59 | | | MPC | 2006 $SL_{201}$ |
| 2006 $SM_{201}$ | 17.6 | 0.15 | 20060922 | 344.46986 | 23.08477 | 20.27129 | 28.89471 | 0.2046585 | 3.1459519 | 9 | 1 | 8 days | 0.21 | | | MPC | 2006 $SM_{201}$ |
| 2006 $SP_{201}$ | 17.0 | 0.15 | 20060922 | 48.29399 | 122.32255 | 201.80599 | 9.07035 | 0.0841152 | 3.1572110 | 12 | 1 | 22 days | 0.22 | | | MPC | 2006 $SP_{201}$ |
| 2006 $SQ_{201}$ | 17.2 | 0.15 | 20060922 | 50.01829 | 105.82523 | 201.84436 | 14.82610 | 0.2130751 | 3.1729280 | 9 | 1 | 8 days | 0.67 | | | MPC | 2006 $SQ_{201}$ |
| 2006 $SR_{201}$ | 16.4 | 0.15 | 20061012 | 40.37008 | 329.09047 | 9.71315 | 1.29304 | 0.0638709 | 3.1938614 | 19 | 1 | 56 days | 0.26 | | | MPC | 2006 $SR_{201}$ |
| 2006 $ST_{201}$ | 18.0 | 0.15 | 20060922 | 2.98636 | 173.54300 | 198.41743 | 14.09634 | 0.1896122 | 2.6385847 | 13 | 1 | 23 days | 0.22 | | | MPC | 2006 $ST_{201}$ |
| 2006 $SV_{201}$ | 17.2 | 0.15 | 20060922 | 239.52630 | 127.38323 | 21.70586 | 5.81217 | 0.0980605 | 2.5522203 | 19 | 1 | 40 days | 0.34 | | D | MPC | 2006 $SV_{201}$ |
| 2006 $SW_{201}$ | 19.0 | 0.15 | 20061012 | 347.88092 | 214.17678 | 185.63046 | 2.37632 | 0.1694550 | 2.2142400 | 16 | 1 | 53 days | 0.17 | | | MPC | 2006 $SW_{201}$ |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SC_{202}$ | 16.9 | 0.15 | 20060922 | 350.74388 | 42.15046 | 329.11053 | 3.91210 | 0.0906960 | 2.7670871 | 19 | 1 | 63 days | 0.35 | M-v | 4 | MPC | | 2006 $SC_{202}$ |
| 2006 $SE_{202}$ | 17.3 | 0.15 | 20060922 | 51.50630 | 312.30466 | 1.10402 | 6.65898 | 0.1308806 | 2.3294869 | 22 | 1 | 62 days | 0.28 | M-v | 4 | MPC | | 2006 $SE_{202}$ |
| 2006 $SJ_{202}$ | 17.5 | 0.15 | 20060922 | 316.41197 | 224.73016 | 195.77483 | 8.39515 | 0.1175341 | 2.6196204 | 19 | 1 | 29 days | 0.25 | | | MPC | | 2006 $SJ_{202}$ |
| 2006 $SK_{202}$ | 17.1 | 0.15 | 20060922 | 347.40137 | 63.27892 | 319.37375 | 1.10734 | 0.1085299 | 2.9492004 | 23 | 1 | 41 days | 0.24 | | | MPC | | 2006 $SK_{202}$ |
| 2006 $SL_{202}$ | 16.3 | 0.15 | 20060922 | 2.37513 | 154.74990 | 207.82973 | 2.31823 | 0.2958763 | 3.9548108 | 20 | 1 | 41 days | 0.39 | | | MPC | | 2006 $SL_{202}$ |
| 2006 $SM_{202}$ | 19.4 | 0.15 | 20060922 | 24.19173 | 5.06965 | 320.72215 | 1.06319 | 0.2312796 | 2.1495732 | 19 | 1 | 32 days | 0.20 | | | MPC | | 2006 $SM_{202}$ |
| 2006 $SN_{202}$ | 18.2 | 0.15 | 20060922 | 44.95475 | 98.89776 | 192.34425 | 12.80316 | 0.2888295 | 2.4810196 | 12 | 1 | 7 days | 0.33 | | | MPC | | 2006 $SN_{202}$ |
| 2006 $SP_{202}$ | 15.0 | 0.15 | 20060922 | 355.36190 | 8.76455 | 5.70558 | 4.42116 | 0.2060752 | 3.9786359 | 44 | 1 | 99 days | 0.36 | M-v | 3 | MPC | | 2006 $SP_{202}$ |
| 2006 $SR_{202}$ | 15.3 | 0.15 | 20060922 | 183.94848 | 356.92571 | 188.94463 | 22.38331 | 0.2800578 | 3.0494748 | 9 | 1 | 7 days | 0.40 | | | MPC | | 2006 $SR_{202}$ |
| 2006 $SS_{202}$ | 16.4 | 0.15 | 20060922 | 275.44974 | 271.13635 | 189.04519 | 2.33632 | 0.0726028 | 3.0548426 | 23 | 1 | 40 days | 0.28 | | | MPC | | 2006 $SS_{202}$ |
| 2006 $ST_{202}$ | 17.5 | 0.15 | 20060922 | 354.58086 | 183.33704 | 190.20011 | 5.89537 | 0.1471647 | 2.6664863 | 12 | 1 | 15 days | 0.36 | | | MPC | | 2006 $ST_{202}$ |
| 2006 $SQ_{203}$ | 17.2 | 0.15 | 20060922 | 324.08709 | 359.27890 | 55.65758 | 3.06454 | 0.1099644 | 2.9520790 | 9 | 1 | 7 days | 0.22 | | | MPC | | 2006 $SQ_{203}$ |
| 2006 $SW_{203}$ | 16.8 | 0.15 | 20061012 | 45.77497 | 298.51768 | 23.69215 | 9.09768 | 0.0858161 | 2.5634123 | 20 | 1 | 58 days | 0.29 | | | MPC | | 2006 $SW_{203}$ |
| 2006 $SX_{203}$ | 16.7 | 0.15 | 20060922 | 279.19922 | 318.88295 | 141.66750 | 3.14419 | 0.0703722 | 2.9197714 | 9 | 1 | 7 days | 0.45 | | | MPC | | 2006 $SX_{203}$ |
| 2006 $SY_{203}$ | 17.5 | 0.15 | 20060922 | 325.01748 | 233.61192 | 176.60706 | 6.51352 | 0.0799537 | 2.2617260 | 17 | 1 | 33 days | 0.35 | | | MPC | | 2006 $SY_{203}$ |
| 2006 $SB_{204}$ | 16.2 | 0.15 | 20060922 | 54.93512 | 111.67061 | 188.80446 | 25.51069 | 0.1659522 | 3.2167708 | 12 | 1 | 14 days | 0.17 | | | MPC | | 2006 $SB_{204}$ |
| 2006 $SF_{204}$ | 18.5 | 0.15 | 20060922 | 345.00471 | 358.18684 | 29.09274 | 6.72533 | 0.0847034 | 2.2947568 | 9 | 1 | 7 days | 0.15 | | | MPC | | 2006 $SF_{204}$ |
| 2006 $SJ_{204}$ | 16.3 | 0.15 | 20060922 | 328.14028 | 270.13165 | 139.88513 | 2.20717 | 0.1088558 | 3.1857355 | 9 | 1 | 7 days | 0.49 | | | MPC | | 2006 $SJ_{204}$ |
| 2006 $SK_{204}$ | 16.1 | 0.15 | 20060922 | 213.17207 | 0.56015 | 163.61884 | 4.65264 | 0.1053081 | 3.0256909 | 9 | 1 | 7 days | 0.29 | | | MPC | | 2006 $SK_{204}$ |
| 2006 $SL_{204}$ | 16.1 | 0.15 | 20060922 | 324.58701 | 237.17785 | 177.43825 | 8.73176 | 0.1178034 | 2.9721135 | 13 | 1 | 7 days | 0.73 | | | MPC | | 2006 $SL_{204}$ |
| 2006 $SQ_{204}$ | 17.4 | 0.15 | 20061012 | 351.63567 | 8.31122 | 18.26763 | 5.87805 | 0.1698663 | 2.3308126 | 22 | 1 | 51 days | 0.40 | | | MPC | | 2006 $SQ_{204}$ |
| 2006 $SS_{204}$ | 17.4 | 0.15 | 20060922 | 311.83112 | 234.97904 | 183.17708 | 3.31292 | 0.0377901 | 2.7716199 | 13 | 1 | 7 days | 0.26 | | | MPC | | 2006 $SS_{204}$ |
| 2006 $ST_{204}$ | 16.6 | 0.15 | 20060922 | 5.36528 | 347.68377 | 11.80617 | 5.20365 | 0.1320282 | 3.0254885 | 26 | 1 | 39 days | 0.33 | | | MPC | | 2006 $ST_{204}$ |
| 2006 $SZ_{204}$ | 17.7 | 0.15 | 20060922 | 356.16422 | 8.68805 | 3.64828 | 3.92198 | 0.2254295 | 2.6905891 | 25 | 1 | 43 days | 0.34 | | | MPC | | 2006 $SZ_{204}$ |
| 2006 $SA_{205}$ | 19.7 | 0.15 | 20060922 | 345.77053 | 203.42050 | 184.34013 | 1.99715 | 0.2164848 | 2.3870727 | 17 | 1 | 27 days | 0.34 | | | MPC | | 2006 $SA_{205}$ |
| 2006 $SF_{205}$ | 15.6 | 0.15 | 20060922 | 249.58375 | 293.89686 | 189.94214 | 13.66522 | 0.0418689 | 3.0545845 | 13 | 1 | 7 days | 0.35 | | | MPC | | 2006 $SF_{205}$ |
| 2006 $SK_{205}$ | 16.1 | 0.15 | 20060922 | 274.84500 | 87.13476 | 11.64225 | 9.11577 | 0.0401041 | 3.1090665 | 10 | 1 | 7 days | 0.39 | | | MPC | | 2006 $SK_{205}$ |
| 2006 $ST_{205}$ | 18.0 | 0.15 | 20060922 | 16.80802 | 303.88110 | 35.53261 | 5.61660 | 0.2485444 | 2.3866460 | 32 | 1 | 64 days | 0.60 | M-v | 4 | MPC | | 2006 $ST_{205}$ |
| 2006 $SU_{205}$ | 16.7 | 0.15 | 20061012 | 322.63792 | 313.19493 | 111.18114 | 2.96609 | 0.1361360 | 2.7249632 | 21 | 1 | 53 days | 0.42 | | | MPC | | 2006 $SU_{205}$ |
| 2006 $SV_{205}$ | 17.7 | 0.15 | 20061012 | 25.73325 | 210.03936 | 125.66133 | 3.28335 | 0.2273045 | 2.4057122 | 33 | 1 | 34 days | 0.59 | | D | MPC | | 2006 $SV_{205}$ |
| 2006 $SX_{205}$ | 15.2 | 0.15 | 20061012 | 348.98435 | 4.24319 | 31.05854 | 16.12662 | 0.1630224 | 3.1950695 | 51 | 1 | 58 days | 0.47 | | | MPC | | 2006 $SX_{205}$ |
| 2006 $SY_{205}$ | 17.2 | 0.15 | 20060922 | 347.09695 | 1.17313 | 32.36033 | 17.04837 | 0.1902148 | 2.7005264 | 34 | 1 | 63 days | 0.54 | M-v | 4 | MPC | | 2006 $SY_{205}$ |
| 2006 $SB_{206}$ | 16.9 | 0.15 | 20060922 | 5.57006 | 269.67699 | 90.05519 | 6.79335 | 0.3473011 | 3.3105375 | 27 | 1 | 28 days | 0.64 | | | MPC | | 2006 $SB_{206}$ |
| 2006 $SD_{206}$ | 17.3 | 0.15 | 20060922 | 333.96298 | 213.10604 | 195.59572 | 14.57647 | 0.1560052 | 2.5658692 | 27 | 1 | 37 days | 0.31 | | | MPC | | 2006 $SD_{206}$ |
| 2006 $SE_{206}$ | 17.2 | 0.15 | 20060922 | 55.28318 | 279.20548 | 15.57626 | 3.02108 | 0.2260627 | 2.6944826 | 13 | 1 | 8 days | 0.50 | | | MPC | | 2006 $SE_{206}$ |
| 2006 $SG_{206}$ | 17.7 | 0.15 | 20060922 | 33.88600 | 147.54383 | 177.44309 | 1.81149 | 0.1811506 | 2.3222165 | 46 | 1 | 103 days | 0.36 | M-v | 4 | MPC | | 2006 $SG_{206}$ |
| 2006 $SH_{206}$ | 15.7 | 0.15 | 20060922 | 48.68838 | 274.25911 | 36.26529 | 3.66632 | 0.1833478 | 3.1220654 | 38 | 1 | 65 days | 0.46 | M-v | 4 | MPC | | 2006 $SH_{206}$ |
| 2006 $SJ_{206}$ | 15.8 | 0.15 | 20060922 | 25.47091 | 318.67365 | 27.41727 | 11.76862 | 0.0964845 | 3.1069317 | 43 | 1 | 71 days | 0.21 | M-v | 3 | MPC | | 2006 $SJ_{206}$ |
| 2006 $SK_{206}$ | 16.5 | 0.15 | 20060922 | 289.77196 | 52.14407 | 40.81176 | 5.57572 | 0.0555484 | 2.7701447 | 36 | 1 | 45 days | 0.36 | | | MPC | | 2006 $SK_{206}$ |
| 2006 $SL_{206}$ | 17.0 | 0.15 | 20061012 | 72.42150 | 270.05962 | 20.93453 | 12.76536 | 0.1714377 | 2.5521138 | 26 | 1 | 53 days | 0.35 | | | MPC | | 2006 $SL_{206}$ |
| 2006 $SM_{206}$ | 16.8 | 0.15 | 20061012 | 338.24510 | 322.58540 | 85.84566 | 0.53115 | 0.0672011 | 2.7964320 | 19 | 1 | 47 days | 0.34 | | | MPC | | 2006 $SM_{206}$ |
| 2006 $SO_{206}$ | 17.0 | 0.15 | 20060922 | 281.10584 | 96.07002 | 18.47867 | 5.84788 | 0.1379709 | 2.8995750 | 10 | 1 | 7 days | 0.56 | | | MPC | | 2006 $SO_{206}$ |
| 2006 $SR_{206}$ | 17.0 | 0.15 | 20060922 | 271.20971 | 103.98786 | 20.43380 | 12.41343 | 0.1299363 | 3.0298529 | 10 | 1 | 7 days | 0.94 | | | MPC | | 2006 $SR_{206}$ |
| 2006 $SS_{206}$ | 17.6 | 0.15 | 20061012 | 1.01558 | 178.54677 | 203.17412 | 0.77159 | 0.2234385 | 2.8051522 | 41 | 1 | 56 days | 0.45 | | | MPC | | 2006 $SS_{206}$ |
| 2006 $ST_{206}$ | 18.1 | 0.15 | 20060922 | 348.90978 | 199.80583 | 193.85776 | 1.92653 | 0.2134154 | 2.6826669 | 19 | 1 | 32 days | 0.24 | | | MPC | | 2006 $ST_{206}$ |
| 2006 $SV_{206}$ | 17.5 | 0.15 | 20060922 | 304.00665 | 238.92295 | 200.79587 | 6.05976 | 0.0407064 | 2.7302126 | 22 | 1 | 35 days | 0.35 | | | MPC | | 2006 $SV_{206}$ |
| 2006 $SX_{206}$ | 18.8 | 0.15 | 20060922 | 10.86552 | 341.51702 | 18.72119 | 6.95051 | 0.1934014 | 2.4200811 | 17 | 1 | 7 days | 0.42 | | | MPC | | 2006 $SX_{206}$ |
| 2006 $SY_{206}$ | 16.5 | 0.15 | 20060922 | 26.51200 | 327.63211 | 25.46492 | 4.26194 | 0.0648054 | 3.1843299 | 29 | 1 | 44 days | 0.32 | | | MPC | | 2006 $SY_{206}$ |
| 2006 $SZ_{206}$ | 16.6 | 0.15 | 20061012 | 303.55480 | 249.59336 | 203.06213 | 11.08805 | 0.0909680 | 3.0706126 | 26 | 1 | 52 days | 0.33 | | | MPC | | 2006 $SZ_{206}$ |
| 2006 $SA_{207}$ | 17.0 | 0.15 | 20061012 | 340.99361 | 225.39177 | 185.22783 | 2.60823 | 0.1018858 | 2.7142247 | 26 | 1 | 50 days | 0.20 | | | MPC | | 2006 $SA_{207}$ |
| 2006 $SB_{207}$ | 17.3 | 0.15 | 20060922 | 54.24025 | 15.55568 | 290.27915 | 2.99286 | 0.1865510 | 2.6401049 | 12 | 1 | 22 days | 0.17 | | | MPC | | 2006 $SB_{207}$ |
| 2006 $SC_{207}$ | 16.0 | 0.15 | 20060922 | 47.09251 | 47.35372 | 271.67419 | 4.17362 | 0.1665285 | 3.2153607 | 20 | 1 | 61 days | 0.36 | M-v | 4 | MPC | | 2006 $SC_{207}$ |
| 2006 $SG_{207}$ | 18.6 | 0.15 | 20061012 | 359.20896 | 61.03484 | 325.03438 | 3.74522 | 0.2233395 | 2.6084021 | 19 | 1 | 34 days | 0.33 | | | MPC | | 2006 $SG_{207}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SH_{207}$ | 17.3 | 0.15 | 20060922 | 31.06139 | 330.83496 | 7.26356 | 12.78106 | 0.1684224 | 3.0029943 | 9 | 1 | 7 days | 0.16 | | MPC | 2006 $SH_{207}$ |
| 2006 $SO_{207}$ | 16.8 | 0.15 | 20060922 | 108.67581 | 264.74500 | 4.33484 | 9.80709 | 0.0349010 | 2.6274204 | 17 | 1 | 61 days | 0.21 | M-v 4 | MPC | 2006 $SO_{207}$ |
| 2006 $SR_{207}$ | 16.3 | 0.15 | 20060922 | 359.62555 | 164.75255 | 214.92219 | 9.62024 | 0.2541813 | 2.7515189 | 85 | 1 | 88 days | 0.41 | M-v 3 | MPC | 2006 $SR_{207}$ |
| 2006 $SS_{207}$ | 16.7 | 0.15 | 20061012 | 1.91797 | 8.12658 | 16.46957 | 12.24925 | 0.2059488 | 3.0911377 | 31 | 1 | 50 days | 0.32 | | MPC | 2006 $SS_{207}$ |
| 2006 $SC_{208}$ | 16.3 | 0.15 | 20060902 | 10.87209 | 136.10919 | 179.93185 | 16.89035 | 0.2053356 | 3.1094695 | 13 | 1 | 19 days | 0.41 | | MPC | 2006 $SC_{208}$ |
| 2006 $SD_{208}$ | 17.1 | 0.15 | 20060922 | 323.89063 | 56.32682 | 325.76652 | 12.71873 | 0.0914985 | 2.5108976 | 9 | 1 | 5 days | 0.53 | | MPC | 2006 $SD_{208}$ |
| 2006 $SJ_{208}$ | 17.5 | 0.15 | 20060922 | 344.10802 | 271.72735 | 109.53858 | 1.87473 | 0.1319673 | 2.2852631 | 32 | 1 | 60 days | 0.59 | M-v 5 | MPC | 2006 $SJ_{208}$ |
| 2006 $SK_{208}$ | 18.6 | 0.15 | 20060922 | 1.69706 | 190.91786 | 166.01846 | 7.46094 | 0.2901387 | 2.2158341 | 32 | 1 | 64 days | 0.72 | M-v 5 | MPC | 2006 $SK_{208}$ |
| 2006 $SN_{208}$ | 15.0 | 0.15 | 20060922 | 320.07527 | 34.58224 | 18.86916 | 11.06127 | 0.0910984 | 3.1058718 | 26 | 1 | 58 days | 0.44 | | MPC | 2006 $SN_{208}$ |
| 2006 $SS_{208}$ | 16.6 | 0.15 | 20060922 | 336.95693 | 274.64978 | 120.08502 | 2.12753 | 0.1211365 | 2.5597549 | 15 | 1 | 32 days | 0.43 | | MPC | 2006 $SS_{208}$ |
| 2006 $SB_{209}$ | 19.6 | 0.15 | 20060922 | 34.98112 | 248.17396 | 56.79855 | 1.29636 | 0.2914868 | 2.3361107 | 9 | 1 | 4 days | 0.98 | | MPC | 2006 $SB_{209}$ |
| 2006 $SC_{209}$ | 17.8 | 0.15 | 20060922 | 322.73522 | 47.69110 | 19.21777 | 6.20136 | 0.2475582 | 2.7228138 | 20 | 1 | 39 days | 0.19 | | MPC | 2006 $SC_{209}$ |
| 2006 $SD_{209}$ | 16.8 | 0.15 | 20060922 | 349.82999 | 336.23641 | 45.41317 | 4.04298 | 0.2004648 | 2.8398540 | 19 | 1 | 33 days | 0.50 | | MPC | 2006 $SD_{209}$ |
| 2006 $SE_{209}$ | 16.5 | 0.15 | 20060922 | 318.31397 | 54.44274 | 16.27880 | 12.78712 | 0.2391598 | 2.6646508 | 39 | 1 | 60 days | 0.57 | M-v 4 | MPC | 2006 $SE_{209}$ |
| 2006 $SF_{209}$ | 16.7 | 0.15 | 20061012 | 357.38120 | 352.01201 | 43.57042 | 14.78249 | 0.2927714 | 2.6561593 | 76 | 1 | 57 days | 0.49 | | MPC | 2006 $SF_{209}$ |
| 2006 $SG_{209}$ | 17.9 | 0.15 | 20060922 | 358.31259 | 214.67923 | 160.32129 | 5.72268 | 0.2340691 | 2.2643661 | 46 | 1 | 99 days | 0.51 | M-v 4 | MPC | 2006 $SG_{209}$ |
| 2006 $SH_{209}$ | 17.4 | 0.15 | 20060922 | 348.14025 | 236.19991 | 170.65546 | 7.23348 | 0.3952455 | 2.5964835 | 42 | 1 | 77 days | 0.54 | M-v 4 | MPC | 2006 $SH_{209}$ |
| 2006 $SM_{209}$ | 19.7 | 0.15 | 20060922 | 9.21258 | 306.21987 | 41.81164 | 2.01563 | 0.2159800 | 2.3419071 | 14 | 1 | 25 days | 0.22 | | MPC | 2006 $SM_{209}$ |
| 2006 $SN_{209}$ | 17.1 | 0.15 | 20060922 | 0.28340 | 329.39256 | 36.68886 | 5.18633 | 0.1608935 | 2.4385998 | 27 | 1 | 4 days | 0.66 | | MPC | 2006 $SN_{209}$ |
| 2006 $SV_{209}$ | 17.5 | 0.15 | 20060922 | 357.45532 | 329.70682 | 41.52934 | 1.78737 | 0.1956394 | 3.0710333 | 20 | 1 | 33 days | 0.16 | | MPC | 2006 $SV_{209}$ |
| 2006 $SZ_{209}$ | 16.2 | 0.15 | 20060922 | 225.06802 | 112.76486 | 35.75757 | 2.85543 | 0.0595753 | 3.2038016 | 14 | 1 | 26 days | 0.26 | | MPC | 2006 $SZ_{209}$ |
| 2006 $SA_{210}$ | 18.2 | 0.15 | 20060922 | 306.14522 | 312.95980 | 137.69320 | 1.07637 | 0.2701965 | 2.4659628 | 20 | 1 | 32 days | 0.25 | | MPC | 2006 $SA_{210}$ |
| 2006 $SC_{210}$ | 17.3 | 0.15 | 20060922 | 199.99098 | 351.54058 | 181.99630 | 8.53676 | 0.1420942 | 2.5561668 | 10 | 1 | 4 days | 0.64 | | MPC | 2006 $SC_{210}$ |
| 2006 $SH_{210}$ | 18.2 | 0.15 | 20060922 | 37.29960 | 302.84889 | 10.04603 | 11.62114 | 0.2041826 | 2.5603488 | 19 | 1 | 34 days | 0.25 | | MPC | 2006 $SH_{210}$ |
| 2006 $SN_{210}$ | 16.6 | 0.15 | 20060922 | 202.49662 | 350.25436 | 186.64543 | 6.72040 | 0.2599336 | 2.7888304 | 24 | 1 | 6 days | 0.35 | | MPC | 2006 $SN_{210}$ |
| 2006 $SP_{210}$ | 18.2 | 0.15 | 20060922 | 6.35261 | 338.13236 | 20.13822 | 2.04760 | 0.2003261 | 2.7317642 | 21 | 1 | 4 days | 0.20 | | MPC | 2006 $SP_{210}$ |
| 2006 $SS_{210}$ | 15.3 | 0.15 | 20060922 | 5.86879 | 335.99243 | 22.18542 | 16.83161 | 0.0982325 | 3.0741393 | 19 | 1 | 33 days | 0.56 | | MPC | 2006 $SS_{210}$ |
| 2006 $SB_{211}$ | 15.9 | 0.15 | 20060922 | 358.35041 | 180.00312 | 198.53392 | 13.84854 | 0.1412059 | 3.1007665 | 24 | 1 | 65 days | 0.28 | M-v 4 | MPC | 2006 $SB_{211}$ |
| 2006 $SG_{211}$ | 17.9 | 0.15 | 20061012 | 4.61028 | 322.06322 | 48.17934 | 7.94879 | 0.1527248 | 2.1919327 | 32 | 1 | 59 days | 0.50 | | MPC | 2006 $SG_{211}$ |
| 2006 $SK_{211}$ | 16.7 | 0.15 | 20060922 | 57.90212 | 256.77528 | 42.72197 | 14.96406 | 0.1865295 | 2.5976252 | 45 | 1 | 62 days | 0.74 | M-v 5 | MPC | 2006 $SK_{211}$ |
| 2006 $SL_{211}$ | 16.5 | 0.15 | 20061012 | 45.94373 | 242.59339 | 75.05661 | 8.15606 | 0.2013436 | 2.5624801 | 34 | 1 | 59 days | 0.67 | | MPC | 2006 $SL_{211}$ |
| 2006 $SN_{211}$ | 17.7 | 0.15 | 20060922 | 32.97760 | 191.94936 | 123.69620 | 5.67786 | 0.2842468 | 2.3418965 | 25 | 1 | 34 days | 0.53 | | MPC | 2006 $SN_{211}$ |
| 2006 $SP_{211}$ | 17.1 | 0.15 | 20061012 | 0.45655 | 241.05560 | 141.16488 | 6.12163 | 0.1694323 | 2.5661042 | 40 | 1 | 59 days | 0.62 | | MPC | 2006 $SP_{211}$ |
| 2006 $SR_{211}$ | 17.7 | 0.15 | 20060922 | 359.25178 | 251.43043 | 122.71245 | 4.40079 | 0.2118181 | 2.5076318 | 12 | 1 | 8 days | 0.67 | | MPC | 2006 $SR_{211}$ |
| 2006 $SS_{211}$ | 17.7 | 0.15 | 20061012 | 341.88065 | 274.87545 | 141.46680 | 6.54823 | 0.3152818 | 2.6030987 | 31 | 1 | 59 days | 0.69 | | MPC | 2006 $SS_{211}$ |
| 2006 $ST_{211}$ | 17.4 | 0.15 | 20061012 | 25.00462 | 281.25667 | 64.98772 | 1.74011 | 0.2337873 | 3.1951820 | 13 | 1 | 32 days | 0.16 | | MPC | 2006 $ST_{211}$ |
| 2006 $SU_{211}$ | 18.0 | 0.15 | 20061012 | 248.32516 | 90.82116 | 58.38009 | 2.25344 | 0.1114170 | 2.4239934 | 24 | 1 | 51 days | 0.35 | | MPC | 2006 $SU_{211}$ |
| 2006 $SV_{211}$ | 18.7 | 0.15 | 20061012 | 331.36511 | 277.23552 | 147.34721 | 1.31845 | 0.1577824 | 2.3706268 | 23 | 1 | 59 days | 0.26 | | MPC | 2006 $SV_{211}$ |
| 2006 $SY_{211}$ | 16.5 | 0.15 | 20060922 | 64.10874 | 96.74261 | 198.22150 | 10.35430 | 0.2213714 | 3.1571441 | 20 | 1 | 34 days | 0.29 | | MPC | 2006 $SY_{211}$ |
| 2006 $SZ_{211}$ | 17.5 | 0.15 | 20060922 | 284.16239 | 294.31745 | 189.31328 | 4.60594 | 0.2123434 | 2.8034753 | 10 | 1 | 6 days | 0.40 | | MPC | 2006 $SZ_{211}$ |
| 2006 $SB_{212}$ | 17.6 | 0.15 | 20061012 | 289.21319 | 346.46135 | 120.37421 | 1.54483 | 0.0860041 | 2.3636464 | 20 | 1 | 51 days | 0.28 | | MPC | 2006 $SB_{212}$ |
| 2006 $SF_{212}$ | 18.3 | 0.15 | 20061012 | 77.99297 | 264.80419 | 34.31376 | 7.85577 | 0.1311534 | 2.2416536 | 17 | 1 | 33 days | 0.30 | | MPC | 2006 $SF_{212}$ |
| 2006 $SG_{212}$ | 17.9 | 0.15 | 20061012 | 46.90201 | 119.86299 | 208.51486 | 20.62263 | 0.0873246 | 1.9229262 | 45 | 1 | 53 days | 0.50 | | MPC | 2006 $SG_{212}$ |
| 2006 $SH_{212}$ | 16.5 | 0.15 | 20061012 | 45.36017 | 89.36761 | 216.78852 | 18.36885 | 0.3231477 | 2.7771215 | 37 | 1 | 52 days | 0.38 | | MPC | 2006 $SH_{212}$ |
| 2006 $SJ_{212}$ | 17.5 | 0.15 | 20061012 | 81.54028 | 83.92540 | 209.25551 | 20.50744 | 0.0827518 | 1.9073476 | 45 | 1 | 59 days | 0.49 | | MPC | 2006 $SJ_{212}$ |
| 2006 $SO_{212}$ | 15.8 | 0.15 | 20060922 | 71.58678 | 8.06076 | 303.28624 | 5.09132 | 0.0164760 | 2.7678086 | 21 | 1 | 60 days | 0.38 | M-v 4 | MPC | 2006 $SO_{212}$ |
| 2006 $SQ_{212}$ | 16.2 | 0.15 | 20061012 | 5.71008 | 156.81176 | 223.45171 | 11.94913 | 0.1468412 | 2.6418569 | 50 | 1 | 58 days | 0.44 | | MPC | 2006 $SQ_{212}$ |
| 2006 $ST_{212}$ | 15.5 | 0.15 | 20060922 | 17.63806 | 194.19276 | 159.22825 | 14.66178 | 0.2228502 | 3.0979123 | 27 | 1 | 60 days | 0.59 | M-v 4 | MPC | 2006 $ST_{212}$ |
| 2006 $SV_{212}$ | 15.5 | 0.15 | 20060922 | 2.49415 | 328.91396 | 49.24722 | 20.30178 | 0.2031094 | 3.0974976 | 42 | 1 | 64 days | 0.68 | M-v 4 | MPC | 2006 $SV_{212}$ |
| 2006 $SW_{212}$ | 17.2 | 0.15 | 20060922 | 44.55477 | 245.47176 | 60.86422 | 11.04976 | 0.2698352 | 2.3483459 | 30 | 1 | 65 days | 0.56 | M-v 4 | MPC | 2006 $SW_{212}$ |
| 2006 $SC_{213}$ | 16.7 | 0.15 | 20061012 | 31.22234 | 293.23227 | 37.64189 | 30.47326 | 0.3029930 | 2.5822910 | 63 | 1 | 59 days | 0.50 | | MPC | 2006 $SC_{213}$ |
| 2006 $SD_{213}$ | 15.1 | 0.15 | 20060922 | 0.63362 | 211.48086 | 170.83473 | 20.39937 | 0.2312050 | 2.8423617 | 12 | 1 | 4 days | 0.96 | | MPC | 2006 $SD_{213}$ |
| 2006 $SH_{213}$ | 16.0 | 0.15 | 20060922 | 359.49829 | 161.96969 | 200.35586 | 8.77699 | 0.1973843 | 3.1910162 | 31 | 1 | 41 days | 0.37 | | MPC | 2006 $SH_{213}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SL_{213}$ | 17.1 | 0.15 | 20060922 | 321.57437 | 225.01028 | 183.90324 | 11.20515 | 0.1231241 | 2.7592758 | 37 | 1 | 35 days | 0.52 | | | MPC | 2006 $SL_{213}$ |
| 2006 $SM_{213}$ | 18.3 | 0.15 | 20060922 | 325.08621 | 55.97764 | 349.06767 | 1.61166 | 0.1288630 | 2.1440713 | 22 | 1 | 23 days | 0.59 | | | MPC | 2006 $SM_{213}$ |
| 2006 $SU_{213}$ | 17.8 | 0.15 | 20060922 | 29.25538 | 26.54941 | 289.82227 | 6.02360 | 0.1963292 | 2.2998623 | 17 | 1 | 43 days | 0.42 | | | MPC | 2006 $SU_{213}$ |
| 2006 $SV_{213}$ | 15.7 | 0.15 | 20060922 | 325.22663 | 207.57780 | 203.75127 | 16.70554 | 0.2020679 | 3.0486629 | 29 | 1 | 60 days | 0.64 | M-v | 5 | MPC | 2006 $SV_{213}$ |
| 2006 $SZ_{213}$ | 16.1 | 0.15 | 20060922 | 17.91696 | 75.89275 | 256.42791 | 9.91434 | 0.2080702 | 2.7221258 | 23 | 1 | 55 days | 0.52 | | | MPC | 2006 $SZ_{213}$ |
| 2006 $SC_{214}$ | 16.6 | 0.15 | 20060922 | 36.48086 | 113.44886 | 189.64397 | 13.34649 | 0.2464963 | 2.9365044 | 30 | 1 | 38 days | 0.55 | | | MPC | 2006 $SC_{214}$ |
| 2006 $SD_{214}$ | 18.5 | 0.15 | 20060922 | 355.34328 | 20.31596 | 348.20628 | 4.53505 | 0.2183024 | 2.5293324 | 13 | 1 | 2 days | 0.36 | | E | MPC | 2006 $SD_{214}$ |
| 2006 $SO_{214}$ | 17.3 | 0.15 | 20061012 | 316.85320 | 88.60421 | 347.46790 | 8.07720 | 0.0833273 | 2.3433185 | 21 | 1 | 30 days | 0.47 | | | MPC | 2006 $SO_{214}$ |
| 2006 $SQ_{214}$ | 18.1 | 0.15 | 20060922 | 17.90206 | 334.17697 | 15.70090 | 20.00033 | 0.0913505 | 1.9489702 | 30 | 1 | 67 days | 0.72 | M-v | 4 | MPC | 2006 $SQ_{214}$ |
| 2006 $SR_{214}$ | 17.4 | 0.15 | 20060922 | 52.35582 | 291.28439 | 15.17010 | 5.35788 | 0.1759807 | 2.3061051 | 37 | 1 | 62 days | 0.40 | M-v | 4 | MPC | 2006 $SR_{214}$ |
| 2006 $ST_{214}$ | 15.6 | 0.15 | 20061012 | 11.14073 | 293.06437 | 79.05046 | 17.81188 | 0.2158399 | 3.1237245 | 45 | 1 | 51 days | 0.51 | | | MPC | 2006 $ST_{214}$ |
| 2006 $SU_{214}$ | 15.2 | 0.15 | 20060922 | 26.38794 | 203.66817 | 131.96082 | 5.75473 | 0.0826916 | 3.0390658 | 26 | 1 | 60 days | 0.58 | M-v | 5 | MPC | 2006 $SU_{214}$ |
| 2006 $SX_{214}$ | 18.5 | 0.15 | 20060922 | 350.62853 | 42.58422 | 339.75238 | 4.60453 | 0.1665864 | 2.2225093 | 39 | 1 | 93 days | 0.54 | M-v | 3 | MPC | 2006 $SX_{214}$ |
| 2006 $SZ_{214}$ | 17.9 | 0.15 | 20060922 | 356.82917 | 75.51383 | 298.29493 | 1.75094 | 0.2033115 | 2.2166369 | 20 | 1 | 24 days | 0.39 | | | MPC | 2006 $SZ_{214}$ |
| 2006 $SB_{215}$ | 15.6 | 0.15 | 20060922 | 345.22511 | 195.56981 | 214.87938 | 11.96043 | 0.1722991 | 2.6101474 | 73 | 1 | 83 days | 0.50 | M-v | 3 | MPC | 2006 $SB_{215}$ |
| 2006 $SD_{215}$ | 16.3 | 0.15 | 20060922 | 296.93078 | 71.97675 | 23.64014 | 17.42475 | 0.1571844 | 2.6172717 | 41 | 1 | 61 days | 0.47 | M-v | 4 | MPC | 2006 $SD_{215}$ |
| 2006 $SE_{215}$ | 18.0 | 0.15 | 20060922 | 23.28832 | 157.24820 | 174.31459 | 7.20057 | 0.2506982 | 2.2013966 | 29 | 1 | 55 days | 0.44 | | | MPC | 2006 $SE_{215}$ |
| 2006 $SF_{215}$ | 15.5 | 0.15 | 20060922 | 80.57492 | 254.77763 | 35.36593 | 10.61838 | 0.0422772 | 3.1229470 | 37 | 1 | 60 days | 0.53 | M-v | 4 | MPC | 2006 $SF_{215}$ |
| 2006 $SH_{215}$ | 15.8 | 0.15 | 20060922 | 357.36701 | 190.12626 | 189.20317 | 26.95521 | 0.0903848 | 3.1510238 | 17 | 1 | 29 days | 0.41 | | | MPC | 2006 $SH_{215}$ |
| 2006 $SJ_{215}$ | 17.8 | 0.15 | 20060922 | 61.10094 | 134.81888 | 158.40687 | 5.20535 | 0.1704295 | 2.3321302 | 13 | 1 | 7 days | 0.25 | | | MPC | 2006 $SJ_{215}$ |
| 2006 $SK_{215}$ | 17.8 | 0.15 | 20060922 | 326.80812 | 359.54297 | 62.21599 | 3.87999 | 0.2081717 | 2.4869226 | 9 | 1 | 4 days | 0.64 | | | MPC | 2006 $SK_{215}$ |
| 2006 $SM_{215}$ | 16.8 | 0.15 | 20060922 | 250.24443 | 86.37937 | 49.25355 | 7.24038 | 0.0975126 | 2.9636637 | 9 | 1 | 4 days | 0.34 | | | MPC | 2006 $SM_{215}$ |
| 2006 $SN_{215}$ | 18.0 | 0.15 | 20061012 | 359.31523 | 306.75457 | 73.66094 | 3.36632 | 0.2292354 | 2.6059443 | 20 | 1 | 52 days | 0.19 | | | MPC | 2006 $SN_{215}$ |
| 2006 $SO_{215}$ | 16.3 | 0.15 | 20060922 | 247.02206 | 311.81891 | 185.61407 | 16.93429 | 0.0892715 | 3.1599426 | 9 | 1 | 4 days | 0.17 | | | MPC | 2006 $SO_{215}$ |
| 2006 $SP_{215}$ | 17.7 | 0.15 | 20060922 | 326.24928 | 255.11722 | 164.27241 | 5.37137 | 0.1754107 | 2.6545305 | 9 | 1 | 4 days | 0.29 | | | MPC | 2006 $SP_{215}$ |
| 2006 $SQ_{215}$ | 16.7 | 0.15 | 20060922 | 260.94099 | 17.30070 | 103.29255 | 2.39182 | 0.0735259 | 3.0437794 | 9 | 1 | 4 days | 0.28 | | | MPC | 2006 $SQ_{215}$ |
| 2006 $SR_{215}$ | 18.5 | 0.15 | 20060922 | 40.75810 | 179.13016 | 128.56033 | 2.31195 | 0.2302251 | 2.3881248 | 10 | 1 | 25 days | 0.23 | | | MPC | 2006 $SR_{215}$ |
| 2006 $ST_{215}$ | 17.7 | 0.15 | 20060922 | 335.31337 | 332.16598 | 74.62071 | 2.74342 | 0.1698578 | 2.9992377 | 13 | 1 | 25 days | 0.28 | | | MPC | 2006 $ST_{215}$ |
| 2006 $SW_{215}$ | 18.5 | 0.15 | 20060922 | 59.26734 | 127.10252 | 157.18535 | 3.69203 | 0.2406741 | 2.2246710 | 9 | 1 | 5 days | 0.33 | | | MPC | 2006 $SW_{215}$ |
| 2006 $SX_{215}$ | 17.4 | 0.15 | 20060922 | 40.63909 | 268.98348 | 41.59971 | 5.01244 | 0.2131390 | 2.5183351 | 16 | 1 | 5 days | 0.50 | | | MPC | 2006 $SX_{215}$ |
| 2006 $SZ_{215}$ | 18.2 | 0.15 | 20060922 | 45.89837 | 207.54296 | 98.53733 | 2.02614 | 0.1851975 | 2.1879766 | 20 | 1 | 35 days | 0.54 | | | MPC | 2006 $SZ_{215}$ |
| 2006 $SB_{216}$ | 17.5 | 0.15 | 20060922 | 308.04616 | 47.52818 | 27.89846 | 10.30133 | 0.1117072 | 2.8053365 | 13 | 1 | 25 days | 0.19 | | | MPC | 2006 $SB_{216}$ |
| 2006 $SC_{216}$ | 17.2 | 0.15 | 20061012 | 36.07930 | 294.77380 | 34.92547 | 6.96395 | 0.1450956 | 2.5759424 | 24 | 1 | 48 days | 0.39 | | | MPC | 2006 $SC_{216}$ |
| 2006 $SH_{216}$ | 16.7 | 0.15 | 20060922 | 284.88003 | 329.22489 | 128.82310 | 3.15656 | 0.0819183 | 2.9394318 | 12 | 1 | 5 days | 0.25 | | | MPC | 2006 $SH_{216}$ |
| 2006 $SJ_{216}$ | 17.1 | 0.15 | 20060922 | 320.17360 | 254.34701 | 163.99700 | 4.99325 | 0.0868119 | 2.4026801 | 25 | 1 | 92 days | 0.22 | M-v | 4 | MPC | 2006 $SJ_{216}$ |
| 2006 $SL_{216}$ | 17.1 | 0.15 | 20060922 | 248.09770 | 336.66318 | 158.61093 | 4.94975 | 0.0940647 | 2.7767598 | 9 | 1 | 4 days | 0.32 | | | MPC | 2006 $SL_{216}$ |
| 2006 $SM_{216}$ | 17.6 | 0.15 | 20060922 | 268.39227 | 315.93863 | 159.50669 | 4.68390 | 0.1054902 | 2.2675819 | 9 | 1 | 4 days | 0.67 | | | MPC | 2006 $SM_{216}$ |
| 2006 $SN_{216}$ | 17.3 | 0.15 | 20060922 | 274.32386 | 34.15687 | 75.01117 | 3.09380 | 0.0894688 | 2.6916730 | 9 | 1 | 4 days | 0.23 | | | MPC | 2006 $SN_{216}$ |
| 2006 $SO_{216}$ | 17.0 | 0.15 | 20060922 | 218.30289 | 64.93707 | 99.58883 | 2.98490 | 0.1448615 | 2.5817724 | 9 | 1 | 4 days | 0.27 | | | MPC | 2006 $SO_{216}$ |
| 2006 $SP_{216}$ | 18.4 | 0.15 | 20060922 | 7.24920 | 307.29255 | 51.58901 | 3.19517 | 0.1975877 | 2.3890441 | 26 | 1 | 60 days | 0.38 | M-v | 4 | MPC | 2006 $SP_{216}$ |
| 2006 $SQ_{216}$ | 15.6 | 0.15 | 20060922 | 201.79627 | 151.27509 | 27.75220 | 15.51072 | 0.1738616 | 2.9975422 | 12 | 1 | 5 days | 0.30 | | | MPC | 2006 $SQ_{216}$ |
| 2006 $SS_{216}$ | 18.6 | 0.15 | 20060922 | 328.28617 | 261.85508 | 154.71364 | 3.97545 | 0.1865574 | 2.4643728 | 9 | 1 | 5 days | 0.51 | | | MPC | 2006 $SS_{216}$ |
| 2006 $SU_{216}$ | 16.5 | 0.15 | 20060922 | 268.73710 | 294.10961 | 181.22579 | 11.45051 | 0.0814335 | 3.0688481 | 12 | 1 | 5 days | 0.16 | | | MPC | 2006 $SU_{216}$ |
| 2006 $SX_{216}$ | 17.5 | 0.15 | 20060922 | 37.01869 | 285.10436 | 32.31733 | 3.49453 | 0.2727831 | 3.1957848 | 28 | 1 | 38 days | 0.33 | | | MPC | 2006 $SX_{216}$ |
| 2006 $SZ_{216}$ | 17.1 | 0.15 | 20061012 | 321.60658 | 15.44022 | 59.50417 | 3.39941 | 0.1113466 | 2.9894114 | 29 | 1 | 56 days | 0.35 | | | MPC | 2006 $SZ_{216}$ |
| 2006 $SA_{217}$ | 18.6 | 0.15 | 20060922 | 300.39488 | 65.36668 | 39.64228 | 4.93399 | 0.2365976 | 2.2350732 | 9 | 1 | 5 days | 0.89 | | | MPC | 2006 $SA_{217}$ |
| 2006 $SC_{217}$ | 16.4 | 0.15 | 20060922 | 358.52833 | 197.39412 | 176.05471 | 9.30143 | 0.1262838 | 3.0133429 | 21 | 1 | 87 days | 0.45 | M-v | 4 | MPC | 2006 $SC_{217}$ |
| 2006 $SE_{217}$ | 16.3 | 0.15 | 20060922 | 42.45771 | 142.42607 | 166.82592 | 11.14728 | 0.2866464 | 2.5934616 | 10 | 1 | 2 days | 0.63 | | | MPC | 2006 $SE_{217}$ |
| 2006 $SH_{217}$ | 18.4 | 0.15 | 20061012 | 16.96466 | 292.05736 | 59.59384 | 3.68762 | 0.1931009 | 2.1749462 | 24 | 1 | 52 days | 0.44 | | | MPC | 2006 $SH_{217}$ |
| 2006 $SJ_{217}$ | 16.7 | 0.15 | 20060922 | 334.70891 | 357.60397 | 48.29483 | 6.40901 | 0.1663130 | 2.6892969 | 14 | 1 | 4 days | 0.61 | | | MPC | 2006 $SJ_{217}$ |
| 2006 $SK_{217}$ | 17.3 | 0.15 | 20061012 | 30.91006 | 216.21671 | 113.32660 | 2.90297 | 0.2213610 | 2.3934785 | 28 | 1 | 56 days | 0.57 | | | MPC | 2006 $SK_{217}$ |
| 2006 $SP_{217}$ | 18.2 | 0.15 | 20060922 | 123.33984 | 55.10355 | 186.87540 | 26.83772 | 0.0692152 | 1.8613549 | 18 | 1 | 6 days | 0.21 | | | MPC | 2006 $SP_{217}$ |
| 2006 $SQ_{217}$ | 18.5 | 0.15 | 20060922 | 331.71311 | 49.59130 | 353.27169 | 33.86253 | 0.3295855 | 2.5257245 | 14 | 1 | 1 days | 0.34 | | | MPC | 2006 $SQ_{217}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SR_{217}$ | 20.3 | 0.15 | 20061012 | 352.40187 | 5.69175 | 39.09324 | 2.72433 | 0.4685462 | 2.4952945 | 84 | 1 | 52 days | 0.44 | | | MPC | 2006 $SR_{217}$ |
| 2006 $SS_{217}$ | 19.8 | 0.15 | 20060922 | 280.73953 | 94.03573 | 350.95480 | 12.41965 | 0.0944799 | 2.0024836 | 9 | 1 | 2 days | 0.58 | | E | MPC | 2006 $SS_{217}$ |
| 2006 $ST_{217}$ | 17.1 | 0.15 | 20061012 | 26.52769 | 298.04996 | 43.09658 | 30.66950 | 0.3712028 | 2.6131725 | 60 | 1 | 53 days | 0.53 | | E | MPC | 2006 $ST_{217}$ |
| 2006 $SU_{217}$ | 25.4 | 0.15 | 20060922 | 110.30790 | 38.26836 | 194.39237 | 2.64312 | 0.1748262 | 0.9857808 | 33 | 1 | 15 days | 0.50 | M-v | 7 | MPC | 2006 $SU_{217}$ |
| 2006 $SV_{217}$ | 24.5 | 0.15 | 20060922 | 46.59324 | 97.36558 | 179.55441 | 0.86569 | 0.3454572 | 1.3113332 | 17 | 1 | 13 days | 0.47 | M-v | 8 | MPC | 2006 $SV_{217}$ |
| 2006 $SW_{217}$ | 20.3 | 0.15 | 20060922 | 353.67581 | 345.49417 | 48.31316 | 4.00024 | 0.5402373 | 2.8481382 | 144 | 1 | 55 days | 0.41 | M-v | 4 | MPC | 2006 $SW_{217}$ |
| 2006 $SY_{217}$ | 21.6 | 0.15 | 20060922 | 335.00270 | 49.71157 | 23.87517 | 6.62145 | 0.4405382 | 1.9283224 | 46 | 1 | 52 days | 0.40 | M-v | 5 | MPC | 2006 $SY_{217}$ |
| 2006 $SZ_{217}$ | 17.6 | 0.15 | 20060922 | 9.81672 | 162.92181 | 241.43323 | 29.22241 | 0.2858013 | 1.6730818 | 31 | 1 | 40 days | 0.46 | M-v | 6 | MPC | 2006 $SZ_{217}$ |
| 2006 $SB_{218}$ | 17.9 | 0.15 | 20061012 | 5.03848 | 16.47610 | 4.93612 | 2.62013 | 0.2628145 | 2.5815769 | 72 | 1 | 54 days | 0.26 | | | MPC | 2006 $SB_{218}$ |
| 2006 $SM_{218}$ | 15.8 | 0.15 | 20061012 | 81.42395 | 93.75564 | 223.22719 | 14.09207 | 0.0648503 | 2.5832419 | 49 | 1 | 53 days | 0.54 | | | MPC | 2006 $SM_{218}$ |
| 2006 $SR_{218}$ | 17.7 | 0.15 | 20061012 | 19.97530 | 103.75289 | 256.74055 | 4.86670 | 0.1908615 | 2.2084411 | 36 | 1 | 51 days | 0.56 | | | MPC | 2006 $SR_{218}$ |
| 2006 $SS_{218}$ | 15.5 | 0.15 | 20061012 | 341.59704 | 62.43867 | 354.72494 | 8.34721 | 0.0952703 | 3.0009146 | 30 | 1 | 55 days | 0.60 | | | MPC | 2006 $SS_{218}$ |
| 2006 $SU_{218}$ | 17.0 | 0.15 | 20060922 | 73.58631 | 343.27762 | 288.18221 | 5.38266 | 0.2399697 | 2.2087750 | 13 | 1 | 3 days | 0.66 | | | MPC | 2006 $SU_{218}$ |
| 2006 $SY_{218}$ | 17.2 | 0.15 | 20061012 | 328.71437 | 234.58612 | 200.36381 | 16.23874 | 0.2982151 | 2.6224723 | 24 | 1 | 54 days | 0.53 | | | MPC | 2006 $SY_{218}$ |
| 2006 $SA_{219}$ | 17.4 | 0.15 | 20060922 | 266.86929 | 256.81161 | 206.18315 | 13.93696 | 0.0126900 | 2.6924120 | 12 | 1 | 20 days | 0.29 | | | MPC | 2006 $SA_{219}$ |
| 2006 $SB_{219}$ | 18.0 | 0.15 | 20060922 | 353.77137 | 118.24386 | 258.44993 | 3.69609 | 0.1663226 | 2.7649060 | 17 | 1 | 29 days | 0.45 | | | MPC | 2006 $SB_{219}$ |
| 2006 $SC_{219}$ | 17.0 | 0.15 | 20061012 | 321.18982 | 329.56510 | 94.56402 | 3.20916 | 0.0516883 | 2.8369578 | 17 | 1 | 52 days | 0.30 | | | MPC | 2006 $SC_{219}$ |
| 2006 $SD_{219}$ | 19.5 | 0.15 | 20061012 | 343.39590 | 302.81092 | 108.00354 | 4.42790 | 0.2194053 | 2.2227665 | 19 | 1 | 56 days | 0.32 | | | MPC | 2006 $SD_{219}$ |
| 2006 $SK_{219}$ | 17.0 | 0.15 | 20060922 | 207.36022 | 324.64356 | 185.81529 | 5.83472 | 0.0781160 | 2.4576919 | 15 | 1 | 26 days | 0.26 | | | MPC | 2006 $SK_{219}$ |
| 2006 $SQ_{219}$ | 16.3 | 0.15 | 20060922 | 329.07615 | 37.87941 | 351.55467 | 15.20242 | 0.0708056 | 3.0367222 | 17 | 1 | 37 days | 0.20 | | | MPC | 2006 $SQ_{219}$ |
| 2006 $SS_{219}$ | 18.5 | 0.15 | 20060922 | 3.09443 | 188.10670 | 178.14375 | 7.18850 | 0.3295664 | 2.4200546 | 25 | 1 | 35 days | 0.49 | | | MPC | 2006 $SS_{219}$ |
| 2006 $ST_{219}$ | 16.6 | 0.15 | 20060922 | 12.78802 | 346.63846 | 6.18287 | 11.19157 | 0.2549701 | 3.2084881 | 22 | 1 | 28 days | 0.52 | | | MPC | 2006 $ST_{219}$ |
| 2006 $SN_{220}$ | 16.6 | 0.15 | 20060922 | 353.92533 | 157.07756 | 227.29934 | 7.54284 | 0.2722656 | 2.7460092 | 63 | 1 | 81 days | 0.38 | M-v | 3 | MPC | 2006 $SN_{220}$ |
| 2006 $SV_{221}$ | 17.6 | 0.15 | 20060922 | 1.89287 | 177.88621 | 178.71875 | 1.91798 | 0.1446179 | 2.8034736 | 18 | 1 | 35 days | 0.21 | | | MPC | 2006 $SV_{221}$ |
| 2006 $SE_{222}$ | 17.3 | 0.15 | 20061012 | 320.98833 | 44.67552 | 14.95509 | 14.26351 | 0.0807020 | 2.5315483 | 22 | 1 | 36 days | 0.17 | | | MPC | 2006 $SE_{222}$ |
| 2006 $SJ_{222}$ | 17.2 | 0.15 | 20060922 | 316.81027 | 47.73471 | 12.91188 | 17.26565 | 0.0898127 | 3.1361195 | 14 | 1 | 5 days | 0.38 | | | MPC | 2006 $SJ_{222}$ |
| 2006 $SK_{222}$ | 17.2 | 0.15 | 20060922 | 53.49293 | 280.13153 | 13.65201 | 14.20826 | 0.2102816 | 3.1127512 | 27 | 1 | 6 days | 0.42 | | | MPC | 2006 $SK_{222}$ |
| 2006 $SL_{222}$ | 17.4 | 0.15 | 20060922 | 330.70942 | 29.72261 | 15.60410 | 10.28955 | 0.1040387 | 2.9653845 | 22 | 1 | 7 days | 0.53 | | | MPC | 2006 $SL_{222}$ |
| 2006 $SM_{222}$ | 16.3 | 0.15 | 20060922 | 316.32164 | 44.81326 | 13.70324 | 21.02840 | 0.0657415 | 2.8333040 | 10 | 1 | 7 days | 0.93 | | | MPC | 2006 $SM_{222}$ |
| 2006 $SO_{222}$ | 18.6 | 0.15 | 20060922 | 296.12708 | 64.71080 | 20.54889 | 2.65941 | 0.1414525 | 2.2178181 | 13 | 1 | 14 days | 0.28 | | | MPC | 2006 $SO_{222}$ |
| 2006 $ST_{222}$ | 16.9 | 0.15 | 20060922 | 31.33607 | 143.89700 | 176.71816 | 4.80069 | 0.1071863 | 2.7549119 | 32 | 1 | 62 days | 0.45 | M-v | 4 | MPC | 2006 $ST_{222}$ |
| 2006 $SW_{222}$ | 17.9 | 0.15 | 20060922 | 333.61377 | 302.22970 | 101.86026 | 4.53590 | 0.1639835 | 2.2666609 | 18 | 1 | 26 days | 0.46 | | | MPC | 2006 $SW_{222}$ |
| 2006 $SZ_{222}$ | 18.0 | 0.15 | 20060922 | 11.99012 | 343.62975 | 4.58299 | 2.24679 | 0.2638642 | 3.0044629 | 9 | 1 | 5 days | 0.20 | | | MPC | 2006 $SZ_{222}$ |
| 2006 $SJ_{223}$ | 17.1 | 0.15 | 20061012 | 109.94176 | 246.42382 | 16.09785 | 4.25905 | 0.0877227 | 2.5390581 | 25 | 1 | 33 days | 0.29 | | | MPC | 2006 $SJ_{223}$ |
| 2006 $SM_{223}$ | 16.5 | 0.15 | 20060922 | 210.44237 | 150.18495 | 21.43793 | 6.25025 | 0.0732970 | 2.5979271 | 27 | 1 | 63 days | 0.27 | M-v | 4 D | MPC | 2006 $SM_{223}$ |
| 2006 $SO_{223}$ | 16.5 | 0.15 | 20061012 | 53.17836 | 306.99016 | 9.21784 | 16.01152 | 0.1630597 | 2.6722544 | 24 | 1 | 49 days | 0.58 | | | MPC | 2006 $SO_{223}$ |
| 2006 $SS_{223}$ | 16.0 | 0.15 | 20061012 | 17.12388 | 167.42967 | 202.89876 | 8.21177 | 0.0737371 | 2.6136428 | 27 | 1 | 47 days | 0.45 | | | MPC | 2006 $SS_{223}$ |
| 2006 $SU_{223}$ | 17.5 | 0.15 | 20061012 | 29.79430 | 162.20736 | 193.06896 | 2.35789 | 0.0965768 | 2.1659988 | 25 | 1 | 51 days | 0.54 | | | MPC | 2006 $SU_{223}$ |
| 2006 $SV_{223}$ | 17.2 | 0.15 | 20061012 | 67.33946 | 279.69371 | 36.92882 | 6.62923 | 0.0896685 | 2.6595692 | 30 | 1 | 51 days | 0.43 | | | MPC | 2006 $SV_{223}$ |
| 2006 $SZ_{223}$ | 16.4 | 0.15 | 20061012 | 275.47517 | 280.84669 | 208.26807 | 9.53341 | 0.0756740 | 3.1102378 | 27 | 1 | 52 days | 0.36 | | | MPC | 2006 $SZ_{223}$ |
| 2006 $SD_{224}$ | 17.6 | 0.15 | 20060922 | 355.01901 | 191.03955 | 200.95518 | 5.72402 | 0.3122104 | 2.5497763 | 57 | 1 | 65 days | 0.49 | M-v | 3 | MPC | 2006 $SD_{224}$ |
| 2006 $SR_{225}$ | 17.3 | 0.15 | 20060922 | 358.52057 | 99.44987 | 266.46303 | 4.49078 | 0.0568963 | 2.8580424 | 10 | 1 | 6 days | 0.76 | | | MPC | 2006 $SR_{225}$ |
| 2006 $ST_{225}$ | 18.1 | 0.15 | 20060922 | 357.49270 | 151.58032 | 215.47451 | 8.15070 | 0.1493085 | 2.7020344 | 10 | 1 | 6 days | 0.54 | | | MPC | 2006 $ST_{225}$ |
| 2006 $SA_{226}$ | 17.4 | 0.15 | 20060922 | 60.98570 | 342.41785 | 304.78667 | 4.14230 | 0.1479403 | 2.3859780 | 17 | 1 | 35 days | 0.24 | | | MPC | 2006 $SA_{226}$ |
| 2006 $SB_{226}$ | 19.4 | 0.15 | 20060922 | 354.45983 | 172.28295 | 202.38918 | 10.13039 | 0.3466153 | 2.6088191 | 10 | 1 | 6 days | 0.70 | | | MPC | 2006 $SB_{226}$ |
| 2006 $SJ_{226}$ | 16.3 | 0.15 | 20060922 | 336.75747 | 163.27943 | 226.50750 | 6.42138 | 0.0341519 | 2.7871527 | 10 | 1 | 6 days | 0.62 | | | MPC | 2006 $SJ_{226}$ |
| 2006 $SW_{226}$ | 17.7 | 0.15 | 20060922 | 269.34216 | 230.25875 | 236.67308 | 4.64121 | 0.0988609 | 2.2874650 | 14 | 1 | 26 days | 0.26 | | | MPC | 2006 $SW_{226}$ |
| 2006 $SC_{227}$ | 16.5 | 0.15 | 20060922 | 282.03636 | 106.57908 | 344.23075 | 10.31385 | 0.0546805 | 3.1314704 | 10 | 1 | 27 days | 0.16 | | | MPC | 2006 $SC_{227}$ |
| 2006 $SP_{227}$ | 16.9 | 0.15 | 20061012 | 354.56559 | 169.47907 | 207.15526 | 10.92909 | 0.0406031 | 2.6816658 | 16 | 1 | 59 days | 0.16 | | | MPC | 2006 $SP_{227}$ |
| 2006 $SG_{229}$ | 16.8 | 0.15 | 20060922 | 16.23295 | 325.40584 | 14.00054 | 11.99120 | 0.1382210 | 2.5970348 | 31 | 1 | 39 days | 0.66 | | | MPC | 2006 $SG_{229}$ |
| 2006 $SS_{229}$ | 16.2 | 0.15 | 20061012 | 150.54882 | 356.33308 | 224.97559 | 5.82484 | 0.0087141 | 2.7956302 | 17 | 1 | 35 days | 0.39 | | | MPC | 2006 $SS_{229}$ |
| 2006 $SC_{230}$ | 17.3 | 0.15 | 20060922 | 170.85980 | 199.84671 | 358.02889 | 16.68984 | 0.0136228 | 2.6909557 | 17 | 1 | 36 days | 0.23 | | | MPC | 2006 $SC_{230}$ |
| 2006 $SH_{230}$ | 16.9 | 0.15 | 20060922 | 30.76347 | 137.90972 | 172.96151 | 14.73175 | 0.2658756 | 2.6590875 | 27 | 1 | 49 days | 0.54 | | | MPC | 2006 $SH_{230}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SL_{230}$ | 16.0 | 0.15 | 20060922 | 7.61039 | 206.71684 | 152.23025 | 5.34097 | 0.0783559 | 2.7231999 | 32 | 1 | 34 days | 0.67 | | | MPC | 2006 $SL_{230}$ |
| 2006 $SV_{230}$ | 17.8 | 0.15 | 20060922 | 359.96754 | 117.49552 | 247.84624 | 2.08990 | 0.1408264 | 2.2798125 | 12 | 1 | 24 days | 0.48 | | | MPC | 2006 $SV_{230}$ |
| 2006 $SC_{231}$ | 17.1 | 0.15 | 20060922 | 332.01452 | 40.45862 | 359.03125 | 11.73091 | 0.0674052 | 2.9456883 | 13 | 1 | 27 days | 0.30 | | | MPC | 2006 $SC_{231}$ |
| 2006 $SD_{231}$ | 17.7 | 0.15 | 20060922 | 325.54416 | 188.19088 | 226.22219 | 3.58105 | 0.1753619 | 2.4696519 | 13 | 1 | 26 days | 0.18 | | | MPC | 2006 $SD_{231}$ |
| 2006 $SM_{231}$ | 18.1 | 0.15 | 20060922 | 338.19271 | 74.32384 | 318.08643 | 2.05363 | 0.0874661 | 2.3788401 | 17 | 1 | 34 days | 0.18 | | | MPC | 2006 $SM_{231}$ |
| 2006 $SR_{231}$ | 16.5 | 0.15 | 20060922 | 2.73068 | 294.26608 | 69.86593 | 5.34186 | 0.1554245 | 2.6526088 | 22 | 1 | 32 days | 0.55 | | | MPC | 2006 $SR_{231}$ |
| 2006 $SE_{232}$ | 18.8 | 0.15 | 20060922 | 7.08603 | 130.01640 | 221.16494 | 3.40472 | 0.2720943 | 2.5313434 | 16 | 1 | 34 days | 0.21 | | | MPC | 2006 $SE_{232}$ |
| 2006 $SK_{232}$ | 17.2 | 0.15 | 20060922 | 312.54382 | 138.80941 | 281.38208 | 2.47751 | 0.0742704 | 2.7153384 | 12 | 1 | 12 days | 0.13 | | | MPC | 2006 $SK_{232}$ |
| 2006 $SL_{233}$ | 16.0 | 0.15 | 20061012 | 99.85386 | 272.78449 | 352.86891 | 9.11457 | 0.0496025 | 3.1044997 | 17 | 1 | 35 days | 0.17 | | | MPC | 2006 $SL_{233}$ |
| 2006 $SO_{233}$ | 16.2 | 0.15 | 20060922 | 350.82897 | 60.10275 | 316.24372 | 5.05545 | 0.0924895 | 3.2076582 | 14 | 1 | 27 days | 0.43 | | | MPC | 2006 $SO_{233}$ |
| 2006 $SR_{233}$ | 16.9 | 0.15 | 20060922 | 1.60670 | 16.07925 | 347.13630 | 10.67179 | 0.1032446 | 3.0225829 | 13 | 1 | 14 days | 0.22 | | | MPC | 2006 $SR_{233}$ |
| 2006 $ST_{233}$ | 18.0 | 0.15 | 20060922 | 296.97986 | 219.13823 | 216.46324 | 6.32505 | 0.0780663 | 2.3251989 | 10 | 1 | 6 days | 0.15 | | | MPC | 2006 $ST_{233}$ |
| 2006 $SZ_{233}$ | 17.0 | 0.15 | 20060922 | 43.43251 | 16.69535 | 294.83371 | 3.69005 | 0.1152584 | 2.7572838 | 17 | 1 | 34 days | 0.31 | | | MPC | 2006 $SZ_{233}$ |
| 2006 $SB_{234}$ | 16.7 | 0.15 | 20060922 | 57.18889 | 8.18380 | 289.58754 | 3.95446 | 0.1042531 | 3.0957049 | 14 | 1 | 27 days | 0.22 | | | MPC | 2006 $SB_{234}$ |
| 2006 $SC_{234}$ | 18.6 | 0.15 | 20060922 | 40.94837 | 321.59465 | 340.47584 | 6.20800 | 0.2258973 | 2.2654522 | 13 | 1 | 14 days | 0.17 | | | MPC | 2006 $SC_{234}$ |
| 2006 $SJ_{234}$ | 18.7 | 0.15 | 20060922 | 34.77298 | 318.87642 | 356.65631 | 15.87607 | 0.1815708 | 2.5237419 | 13 | 1 | 15 days | 0.23 | | | MPC | 2006 $SJ_{234}$ |
| 2006 $SS_{235}$ | 17.1 | 0.15 | 20060922 | 252.11362 | 301.66169 | 162.73315 | 5.72333 | 0.0718503 | 2.4262929 | 14 | 1 | 54 days | 0.26 | | | MPC | 2006 $SS_{235}$ |
| 2006 $SL_{236}$ | 17.8 | 0.15 | 20060922 | 359.78945 | 286.13337 | 66.71444 | 0.82367 | 0.1171526 | 2.5852620 | 11 | 1 | 24 days | 0.14 | | | MPC | 2006 $SL_{236}$ |
| 2006 $SX_{236}$ | 16.3 | 0.15 | 20060922 | 311.97441 | 261.57947 | 168.80779 | 7.27251 | 0.2763693 | 3.1706906 | 20 | 1 | 32 days | 0.46 | | | MPC | 2006 $SX_{236}$ |
| 2006 $SN_{237}$ | 16.5 | 0.15 | 20061012 | 4.31129 | 347.59398 | 18.47505 | 6.56936 | 0.0734538 | 3.0193063 | 31 | 1 | 38 days | 0.53 | | D | MPC | 2006 $SN_{237}$ |
| 2006 $SP_{237}$ | 15.4 | 0.15 | 20060922 | 279.10408 | 306.84414 | 183.60921 | 16.30807 | 0.3719524 | 3.3498247 | 13 | 1 | 12 days | 0.51 | | E | MPC | 2006 $SP_{237}$ |
| 2006 $SR_{237}$ | 19.6 | 0.15 | 20060922 | 337.58255 | 289.99721 | 105.43350 | 0.79317 | 0.1597012 | 2.0903949 | 10 | 1 | 25 days | 0.34 | | | MPC | 2006 $SR_{237}$ |
| 2006 $SC_{238}$ | 16.7 | 0.15 | 20060922 | 348.33289 | 343.75441 | 38.16808 | 2.39539 | 0.1110632 | 2.9291518 | 17 | 1 | 25 days | 0.36 | | | MPC | 2006 $SC_{238}$ |
| 2006 $SH_{238}$ | 17.6 | 0.15 | 20060922 | 355.25868 | 354.62852 | 18.43969 | 8.57808 | 0.0770907 | 2.9959077 | 19 | 1 | 25 days | 0.28 | | | MPC | 2006 $SH_{238}$ |
| 2006 $SM_{238}$ | 17.8 | 0.15 | 20060922 | 316.34721 | 45.69136 | 22.98638 | 4.93794 | 0.1961405 | 2.5610321 | 19 | 1 | 39 days | 0.24 | | | MPC | 2006 $SM_{238}$ |
| 2006 $SF_{239}$ | 18.3 | 0.15 | 20060922 | 13.75193 | 312.59055 | 30.86522 | 2.90305 | 0.2247000 | 2.4304108 | 26 | 1 | 64 days | 0.24 | M-v | 4 | MPC | 2006 $SF_{239}$ |
| 2006 $SG_{239}$ | 16.8 | 0.15 | 20060922 | 30.92548 | 309.88089 | 22.25422 | 4.79936 | 0.0725937 | 2.7770378 | 23 | 1 | 39 days | 0.18 | | | MPC | 2006 $SG_{239}$ |
| 2006 $SP_{239}$ | 19.4 | 0.15 | 20060922 | 355.48167 | 0.59624 | 13.72181 | 11.47006 | 0.3045785 | 2.7377499 | 16 | 1 | 31 days | 0.23 | | | MPC | 2006 $SP_{239}$ |
| 2006 $SL_{240}$ | 15.5 | 0.15 | 20060922 | 68.09411 | 264.26668 | 19.63067 | 12.09287 | 0.1491234 | 3.2270899 | 23 | 1 | 64 days | 0.38 | M-v | 5 | MPC | 2006 $SL_{240}$ |
| 2006 $SR_{241}$ | 17.0 | 0.15 | 20060922 | 338.26955 | 212.81894 | 168.35329 | 6.22610 | 0.0216677 | 2.6681046 | 15 | 1 | 25 days | 0.22 | | | MPC | 2006 $SR_{241}$ |
| 2006 $SS_{241}$ | 18.6 | 0.15 | 20060922 | 296.22965 | 68.47839 | 19.27176 | 3.68485 | 0.2246926 | 2.3032367 | 17 | 1 | 62 days | 0.36 | M-v | 4 | MPC | 2006 $SS_{241}$ |
| 2006 $SW_{241}$ | 16.6 | 0.15 | 20060922 | 27.33812 | 297.33021 | 27.69067 | 2.74396 | 0.1052703 | 2.8445787 | 26 | 1 | 63 days | 0.27 | M-v | 4 | MPC | 2006 $SW_{241}$ |
| 2006 $SA_{242}$ | 17.3 | 0.15 | 20060922 | 296.28589 | 333.20913 | 116.37224 | 2.09255 | 0.1713621 | 3.1708069 | 13 | 1 | 6 days | 0.30 | | | MPC | 2006 $SA_{242}$ |
| 2006 $SB_{242}$ | 19.0 | 0.15 | 20060922 | 354.40388 | 329.70363 | 43.79465 | 1.99477 | 0.2322741 | 2.3765506 | 30 | 1 | 27 days | 0.38 | | | MPC | 2006 $SB_{242}$ |
| 2006 $SC_{242}$ | 17.3 | 0.15 | 20060922 | 359.09179 | 338.71291 | 28.10531 | 5.09780 | 0.1329304 | 2.7122351 | 19 | 1 | 15 days | 0.36 | | | MPC | 2006 $SC_{242}$ |
| 2006 $SD_{242}$ | 18.3 | 0.15 | 20060922 | 353.70951 | 352.15634 | 22.40561 | 5.81253 | 0.1823998 | 2.6790744 | 26 | 1 | 25 days | 0.26 | | | MPC | 2006 $SD_{242}$ |
| 2006 $SF_{242}$ | 19.2 | 0.15 | 20060922 | 353.21265 | 337.05659 | 38.38966 | 3.13740 | 0.1997753 | 2.6204956 | 10 | 1 | 6 days | 0.63 | | | MPC | 2006 $SF_{242}$ |
| 2006 $SQ_{242}$ | 17.8 | 0.15 | 20060922 | 336.20376 | 6.99315 | 26.45439 | 6.01441 | 0.0679444 | 2.6666123 | 10 | 1 | 5 days | 0.47 | | | MPC | 2006 $SQ_{242}$ |
| 2006 $SR_{242}$ | 18.4 | 0.15 | 20060922 | 355.07602 | 2.21017 | 12.20611 | 17.61479 | 0.2683168 | 3.0375344 | 17 | 1 | 4 days | 0.56 | | | MPC | 2006 $SR_{242}$ |
| 2006 $SN_{244}$ | 19.9 | 0.15 | 20061012 | 21.00542 | 315.84040 | 26.10651 | 5.67088 | 0.2046103 | 2.2303995 | 14 | 1 | 31 days | 0.31 | | | MPC | 2006 $SN_{244}$ |
| 2006 $SO_{244}$ | 15.5 | 0.15 | 20061012 | 66.69213 | 258.76190 | 18.08331 | 15.99790 | 0.2462749 | 3.1922126 | 22 | 1 | 56 days | 0.20 | | | MPC | 2006 $SO_{244}$ |
| 2006 $SQ_{244}$ | 16.3 | 0.15 | 20061012 | 347.61950 | 9.81114 | 17.62993 | 14.07890 | 0.0916880 | 2.7219584 | 31 | 1 | 50 days | 0.25 | | | MPC | 2006 $SQ_{244}$ |
| 2006 $SS_{244}$ | 18.8 | 0.15 | 20060922 | 352.45279 | 352.22695 | 25.50637 | 5.60976 | 0.2326425 | 2.3750567 | 20 | 1 | 33 days | 0.36 | | | MPC | 2006 $SS_{244}$ |
| 2006 $ST_{244}$ | 16.3 | 0.15 | 20060922 | 339.37754 | 267.44521 | 123.28669 | 3.00623 | 0.0432499 | 3.0189040 | 9 | 1 | 12 days | 0.13 | | | MPC | 2006 $ST_{244}$ |
| 2006 $SW_{244}$ | 17.0 | 0.15 | 20060922 | 66.13446 | 112.05047 | 175.67659 | 11.22919 | 0.1334346 | 3.0794549 | 9 | 1 | 12 days | 0.11 | | | MPC | 2006 $SW_{244}$ |
| 2006 $SX_{244}$ | 15.6 | 0.15 | 20060922 | 15.83356 | 313.35053 | 33.52002 | 5.96119 | 0.1397600 | 3.1281798 | 29 | 1 | 83 days | 0.52 | M-v | 4 | MPC | 2006 $SX_{244}$ |
| 2006 $SG_{245}$ | 16.6 | 0.15 | 20061012 | 326.08875 | 39.11159 | 17.56264 | 15.19129 | 0.1357514 | 2.8557007 | 21 | 1 | 56 days | 0.22 | | | MPC | 2006 $SG_{245}$ |
| 2006 $SS_{245}$ | 16.5 | 0.15 | 20060922 | 353.08333 | 357.93864 | 32.69329 | 17.72662 | 0.2836107 | 3.1167834 | 60 | 1 | 63 days | 0.59 | M-v | 4 | MPC | 2006 $SS_{245}$ |
| 2006 $SC_{246}$ | 16.8 | 0.15 | 20060922 | 129.31229 | 46.87231 | 179.67971 | 11.79653 | 0.0607541 | 2.7152997 | 22 | 1 | 24 days | 0.35 | | | MPC | 2006 $SC_{246}$ |
| 2006 $SE_{246}$ | 19.6 | 0.15 | 20060922 | 356.36146 | 359.22004 | 7.16150 | 7.26445 | 0.2622838 | 2.2521672 | 21 | 1 | 57 days | 0.25 | | | MPC | 2006 $SE_{246}$ |
| 2006 $SF_{246}$ | 19.1 | 0.15 | 20060922 | 333.00225 | 241.63147 | 157.62500 | 1.53575 | 0.1826216 | 2.3367016 | 22 | 1 | 35 days | 0.25 | | | MPC | 2006 $SF_{246}$ |
| 2006 $SH_{246}$ | 18.9 | 0.15 | 20060922 | 8.24116 | 178.09267 | 172.94663 | 3.62385 | 0.0751497 | 2.2192852 | 12 | 1 | 24 days | 0.49 | | | MPC | 2006 $SH_{246}$ |
| 2006 $SN_{246}$ | 18.8 | 0.15 | 20060922 | 63.02373 | 120.10850 | 159.98769 | 2.37804 | 0.1597476 | 2.1739425 | 23 | 1 | 36 days | 0.34 | | | MPC | 2006 $SN_{246}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SV_{246}$ | 18.0 | 0.15 | 20060922 | 345.81102 | 13.12774 | 14.31347 | 3.96792 | 0.2892436 | 3.1605960 | 21 | 1 | 42 days | 0.33 | | | MPC | 2006 $SV_{246}$ |
| 2006 $SE_{247}$ | 17.5 | 0.15 | 20060922 | 326.09576 | 43.09015 | 7.89415 | 11.21654 | 0.2000850 | 2.6230849 | 18 | 1 | 35 days | 0.19 | | | MPC | 2006 $SE_{247}$ |
| 2006 $SG_{247}$ | 19.1 | 0.15 | 20060922 | 340.06990 | 353.19989 | 37.15959 | 1.33224 | 0.1874534 | 2.3331489 | 10 | 1 | 24 days | 0.46 | | | MPC | 2006 $SG_{247}$ |
| 2006 $SO_{247}$ | 17.0 | 0.15 | 20060922 | 12.57684 | 331.04240 | 13.56967 | 5.62564 | 0.1514541 | 3.0704676 | 14 | 1 | 35 days | 0.20 | | | MPC | 2006 $SO_{247}$ |
| 2006 $SR_{247}$ | 17.3 | 0.15 | 20060922 | 47.17800 | 278.04351 | 25.76761 | 2.97502 | 0.1177179 | 2.7888392 | 11 | 1 | 24 days | 0.90 | | | MPC | 2006 $SR_{247}$ |
| 2006 $SV_{247}$ | 17.7 | 0.15 | 20060922 | 0.02626 | 323.93073 | 37.92805 | 1.92686 | 0.1835591 | 2.9824616 | 11 | 1 | 24 days | 0.51 | | | MPC | 2006 $SV_{247}$ |
| 2006 $SW_{247}$ | 18.3 | 0.15 | 20060902 | 344.70486 | 190.34028 | 180.56340 | 22.54723 | 0.0870916 | 1.9407593 | 28 | 1 | 41 days | 0.53 | | | MPC | 2006 $SW_{247}$ |
| 2006 $SC_{248}$ | 16.7 | 0.15 | 20060922 | 32.93218 | 227.38623 | 104.66474 | 2.97684 | 0.0556985 | 3.1890635 | 17 | 1 | 12 days | 0.22 | | | MPC | 2006 $SC_{248}$ |
| 2006 $SK_{248}$ | 17.7 | 0.15 | 20061012 | 337.64323 | 20.99697 | 23.31993 | 8.96655 | 0.1573105 | 2.3634917 | 29 | 1 | 31 days | 0.33 | | | MPC | 2006 $SK_{248}$ |
| 2006 $SV_{248}$ | 18.9 | 0.15 | 20061012 | 13.53585 | 152.96074 | 205.33599 | 6.77075 | 0.1326077 | 2.2810039 | 17 | 1 | 35 days | 0.23 | | | MPC | 2006 $SV_{248}$ |
| 2006 $SA_{249}$ | 17.8 | 0.15 | 20060922 | 251.47776 | 288.98549 | 204.72446 | 7.81559 | 0.1363522 | 2.5806433 | 16 | 1 | 30 days | 0.33 | | | MPC | 2006 $SA_{249}$ |
| 2006 $SH_{249}$ | 17.6 | 0.15 | 20060922 | 274.54760 | 260.20600 | 212.19953 | 5.70436 | 0.1347365 | 2.5167559 | 10 | 1 | 23 days | 0.25 | | | MPC | 2006 $SH_{249}$ |
| 2006 $SJ_{249}$ | 17.9 | 0.15 | 20060922 | 274.71219 | 257.48927 | 211.24347 | 4.40328 | 0.1093439 | 2.3756279 | 20 | 1 | 46 days | 0.25 | | D | MPC | 2006 $SJ_{249}$ |
| 2006 $SM_{249}$ | 16.2 | 0.15 | 20060922 | 303.27167 | 246.46476 | 199.71613 | 8.65313 | 0.1687530 | 2.7898017 | 40 | 1 | 60 days | 0.49 | M-v | 4 | MPC | 2006 $SM_{249}$ |
| 2006 $SU_{249}$ | 16.8 | 0.15 | 20061012 | 345.90632 | 196.64363 | 198.36272 | 13.90747 | 0.1249662 | 2.7170434 | 17 | 1 | 51 days | 0.23 | | | MPC | 2006 $SU_{249}$ |
| 2006 $SC_{250}$ | 16.4 | 0.15 | 20060922 | 354.93785 | 182.52792 | 196.36715 | 27.88137 | 0.1167810 | 3.0450906 | 17 | 1 | 35 days | 0.21 | | | MPC | 2006 $SC_{250}$ |
| 2006 $SE_{250}$ | 18.2 | 0.15 | 20060922 | 1.10009 | 13.92044 | 352.89168 | 2.25712 | 0.2318443 | 2.3317334 | 25 | 1 | 92 days | 0.37 | M-v | 4 | MPC | 2006 $SE_{250}$ |
| 2006 $SQ_{250}$ | 16.5 | 0.15 | 20060922 | 2.98783 | 32.76977 | 336.27010 | 1.85019 | 0.2295673 | 3.9308952 | 10 | 1 | 23 days | 0.15 | | | MPC | 2006 $SQ_{250}$ |
| 2006 $SV_{250}$ | 18.6 | 0.15 | 20060922 | 51.40343 | 90.04457 | 201.26853 | 3.77908 | 0.2613047 | 2.3317586 | 17 | 1 | 31 days | 0.29 | | | MPC | 2006 $SV_{250}$ |
| 2006 $SY_{250}$ | 17.4 | 0.15 | 20061012 | 11.99595 | 155.59227 | 208.09024 | 1.43723 | 0.0800812 | 2.8613245 | 18 | 1 | 46 days | 0.41 | | | MPC | 2006 $SY_{250}$ |
| 2006 $SZ_{250}$ | 17.8 | 0.15 | 20061012 | 342.25916 | 17.26328 | 28.38402 | 1.59431 | 0.2116363 | 2.9901373 | 24 | 1 | 53 days | 0.27 | | | MPC | 2006 $SZ_{250}$ |
| 2006 $SM_{251}$ | 17.6 | 0.15 | 20060922 | 87.43607 | 66.08156 | 197.96247 | 2.34028 | 0.1780848 | 2.3943259 | 14 | 1 | 20 days | 0.31 | | | MPC | 2006 $SM_{251}$ |
| 2006 $SB_{252}$ | 16.6 | 0.15 | 20060922 | 224.64735 | 317.12342 | 204.00158 | 3.88732 | 0.1950913 | 2.5949586 | 12 | 1 | 11 days | 0.18 | | E | MPC | 2006 $SB_{252}$ |
| 2006 $SG_{252}$ | 18.4 | 0.15 | 20060922 | 40.02477 | 293.23242 | 10.27250 | 13.31293 | 0.2758959 | 2.6109597 | 15 | 1 | 32 days | 0.25 | | | MPC | 2006 $SG_{252}$ |
| 2006 $SH_{252}$ | 17.0 | 0.15 | 20060922 | 273.44072 | 252.49183 | 214.93881 | 1.45965 | 0.0755372 | 2.8417222 | 9 | 1 | 6 days | 0.17 | | | MPC | 2006 $SH_{252}$ |
| 2006 $SO_{252}$ | 16.8 | 0.15 | 20061012 | 335.10702 | 196.49047 | 204.90674 | 5.89226 | 0.0328711 | 2.6491331 | 17 | 1 | 36 days | 0.22 | | | MPC | 2006 $SO_{252}$ |
| 2006 $SY_{252}$ | 17.7 | 0.15 | 20060922 | 348.34384 | 23.57720 | 3.32889 | 3.84086 | 0.2064193 | 2.7801236 | 17 | 1 | 43 days | 0.25 | | | MPC | 2006 $SY_{252}$ |
| 2006 $SZ_{252}$ | 19.3 | 0.15 | 20060922 | 336.72170 | 82.96071 | 321.53242 | 1.06801 | 0.2109002 | 2.6347737 | 10 | 1 | 23 days | 0.37 | | | MPC | 2006 $SZ_{252}$ |
| 2006 $SD_{253}$ | 18.8 | 0.15 | 20060922 | 15.00459 | 159.39767 | 182.91252 | 14.81993 | 0.2049393 | 2.5953467 | 16 | 1 | 15 days | 0.23 | | | MPC | 2006 $SD_{253}$ |
| 2006 $SE_{253}$ | 16.0 | 0.15 | 20060922 | 327.41214 | 224.35287 | 180.19434 | 9.23728 | 0.0755340 | 2.9953287 | 14 | 1 | 11 days | 0.29 | | | MPC | 2006 $SE_{253}$ |
| 2006 $SV_{253}$ | 18.4 | 0.15 | 20060922 | 344.61906 | 223.71881 | 167.12401 | 1.53344 | 0.1769922 | 3.0100144 | 18 | 1 | 6 days | 0.51 | | | MPC | 2006 $SV_{253}$ |
| 2006 $SW_{253}$ | 16.3 | 0.15 | 20060922 | 201.32394 | 4.41551 | 171.45419 | 1.25425 | 0.1988533 | 2.8366853 | 28 | 1 | 6 days | 0.58 | | | MPC | 2006 $SW_{253}$ |
| 2006 $SX_{253}$ | 16.2 | 0.15 | 20060922 | 212.36534 | 349.80913 | 174.88472 | 1.72244 | 0.1192361 | 3.1251790 | 28 | 1 | 25 days | 0.30 | | | MPC | 2006 $SX_{253}$ |
| 2006 $SY_{253}$ | 17.1 | 0.15 | 20060922 | 331.80353 | 215.56728 | 188.38257 | 11.27775 | 0.0974626 | 3.1685059 | 33 | 1 | 6 days | 0.39 | | | MPC | 2006 $SY_{253}$ |
| 2006 $SZ_{253}$ | 18.7 | 0.15 | 20060922 | 321.07203 | 39.42889 | 22.63127 | 1.40833 | 0.1803719 | 2.3748236 | 25 | 1 | 28 days | 0.29 | | | MPC | 2006 $SZ_{253}$ |
| 2006 $SA_{254}$ | 16.0 | 0.15 | 20060922 | 190.73493 | 113.10561 | 71.85077 | 0.57620 | 0.2928837 | 2.8592955 | 11 | 1 | 6 days | 0.80 | | | MPC | 2006 $SA_{254}$ |
| 2006 $SD_{254}$ | 19.4 | 0.15 | 20060922 | 320.12161 | 26.40189 | 29.26833 | 1.28975 | 0.0977652 | 2.2668530 | 11 | 1 | 6 days | 0.76 | | | MPC | 2006 $SD_{254}$ |
| 2006 $SH_{254}$ | 19.3 | 0.15 | 20060922 | 346.71034 | 8.87812 | 16.93669 | 5.76602 | 0.1643448 | 2.3319629 | 15 | 1 | 20 days | 0.31 | | | MPC | 2006 $SH_{254}$ |
| 2006 $SJ_{254}$ | 16.7 | 0.15 | 20060922 | 252.37948 | 89.70914 | 34.60003 | 2.10947 | 0.0620123 | 2.8383770 | 23 | 1 | 5 days | 0.64 | | | MPC | 2006 $SJ_{254}$ |
| 2006 $SK_{254}$ | 16.5 | 0.15 | 20060922 | 203.22418 | 19.94445 | 152.60871 | 1.01119 | 0.1316390 | 2.7629267 | 14 | 1 | 6 days | 0.47 | | | MPC | 2006 $SK_{254}$ |
| 2006 $SL_{254}$ | 16.6 | 0.15 | 20060922 | 196.30066 | 357.50642 | 181.57858 | 5.53825 | 0.1972408 | 2.4364287 | 11 | 1 | 6 days | 0.79 | | | MPC | 2006 $SL_{254}$ |
| 2006 $SN_{254}$ | 17.2 | 0.15 | 20060922 | 324.30518 | 233.24576 | 182.81192 | 4.73317 | 0.1354180 | 3.0715445 | 25 | 1 | 25 days | 0.27 | | | MPC | 2006 $SN_{254}$ |
| 2006 $SR_{254}$ | 16.9 | 0.15 | 20060922 | 16.63528 | 334.91695 | 15.48529 | 13.02115 | 0.1367374 | 2.8753523 | 13 | 1 | 12 days | 0.19 | | | MPC | 2006 $SR_{254}$ |
| 2006 $SV_{254}$ | 17.4 | 0.15 | 20060922 | 281.88429 | 90.88371 | 18.32870 | 11.69759 | 0.1572347 | 2.6141210 | 13 | 1 | 12 days | 0.16 | | | MPC | 2006 $SV_{254}$ |
| 2006 $SW_{254}$ | 17.1 | 0.15 | 20061012 | 18.73208 | 282.04951 | 74.09094 | 0.60566 | 0.0808073 | 2.7961703 | 25 | 1 | 57 days | 0.25 | | | MPC | 2006 $SW_{254}$ |
| 2006 $SD_{255}$ | 16.7 | 0.15 | 20060922 | 336.08115 | 290.13814 | 109.46244 | 5.19962 | 0.2317212 | 2.7488950 | 18 | 1 | 35 days | 0.41 | | | MPC | 2006 $SD_{255}$ |
| 2006 $SF_{255}$ | 18.3 | 0.15 | 20060922 | 353.46847 | 317.17300 | 59.40947 | 4.58888 | 0.2772840 | 2.2348114 | 35 | 1 | 33 days | 0.50 | | | MPC | 2006 $SF_{255}$ |
| 2006 $SH_{255}$ | 19.1 | 0.15 | 20060922 | 349.42194 | 177.98884 | 198.78662 | 2.17788 | 0.2005553 | 2.3456272 | 20 | 1 | 33 days | 0.32 | | | MPC | 2006 $SH_{255}$ |
| 2006 $SX_{255}$ | 16.9 | 0.15 | 20061012 | 26.74361 | 121.17575 | 222.35335 | 5.24104 | 0.1568401 | 2.6523634 | 25 | 1 | 59 days | 0.22 | | | MPC | 2006 $SX_{255}$ |
| 2006 $SY_{255}$ | 18.1 | 0.15 | 20060922 | 44.92527 | 72.66028 | 242.66549 | 2.66841 | 0.1364958 | 2.2316513 | 21 | 1 | 46 days | 0.65 | | | MPC | 2006 $SY_{255}$ |
| 2006 $SD_{256}$ | 18.5 | 0.15 | 20060922 | 85.14450 | 320.28124 | 315.30154 | 1.83882 | 0.1176569 | 2.2785804 | 9 | 1 | 15 days | 0.22 | | | MPC | 2006 $SD_{256}$ |
| 2006 $SE_{256}$ | 16.4 | 0.15 | 20061012 | 46.06349 | 115.20797 | 215.31010 | 5.62510 | 0.0433084 | 2.7708247 | 32 | 1 | 57 days | 0.46 | | | MPC | 2006 $SE_{256}$ |
| 2006 $SM_{256}$ | 15.8 | 0.15 | 20060922 | 60.60144 | 96.57955 | 211.58735 | 7.35061 | 0.0765246 | 3.0169758 | 27 | 1 | 42 days | 0.54 | | | MPC | 2006 $SM_{256}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SS_{256}$ | 17.7 | 0.15 | 20060922 | 341.96100 | 200.42375 | 201.73683 | 18.59577 | 0.2172141 | 2.7002876 | 23 | 1 | 20 days | 0.45 | | | MPC | 2006 $SS_{256}$ |
| 2006 $SU_{256}$ | 17.4 | 0.15 | 20061012 | 346.41634 | 165.38491 | 232.52625 | 3.06642 | 0.1036969 | 2.8025134 | 22 | 1 | 53 days | 0.23 | | | MPC | 2006 $SU_{256}$ |
| 2006 $SY_{256}$ | 17.6 | 0.15 | 20061012 | 65.14442 | 79.75894 | 217.07300 | 4.63491 | 0.1738495 | 2.8045575 | 10 | 1 | 32 days | 0.33 | | | MPC | 2006 $SY_{256}$ |
| 2006 $SZ_{256}$ | 17.3 | 0.15 | 20060922 | 356.17644 | 8.54325 | 11.83102 | 16.87848 | 0.2277588 | 2.7050300 | 22 | 1 | 37 days | 0.67 | | | MPC | 2006 $SZ_{256}$ |
| 2006 $SB_{257}$ | 16.2 | 0.15 | 20060922 | 338.97547 | 204.65037 | 201.70106 | 27.26358 | 0.1647221 | 3.1600428 | 27 | 1 | 42 days | 0.44 | | | MPC | 2006 $SB_{257}$ |
| 2006 $SC_{257}$ | 16.6 | 0.15 | 20060922 | 23.73532 | 123.48756 | 218.60562 | 5.91614 | 0.2180955 | 3.9680467 | 12 | 1 | 22 days | 0.23 | | | MPC | 2006 $SC_{257}$ |
| 2006 $SD_{257}$ | 17.6 | 0.15 | 20061012 | 351.72901 | 171.50608 | 221.85584 | 4.17350 | 0.1438901 | 3.1151139 | 12 | 1 | 31 days | 0.24 | | | MPC | 2006 $SD_{257}$ |
| 2006 $SN_{257}$ | 15.8 | 0.15 | 20061012 | 21.75821 | 150.81936 | 206.28371 | 8.91122 | 0.0864830 | 3.1534116 | 37 | 1 | 58 days | 0.42 | | | MPC | 2006 $SN_{257}$ |
| 2006 $SO_{257}$ | 17.1 | 0.15 | 20061012 | 341.53203 | 196.41757 | 211.38277 | 4.87254 | 0.1455782 | 3.2193059 | 10 | 1 | 32 days | 0.27 | | | MPC | 2006 $SO_{257}$ |
| 2006 $SS_{257}$ | 17.5 | 0.15 | 20060922 | 322.94088 | 204.88747 | 225.79159 | 2.09248 | 0.1993976 | 2.7655508 | 16 | 1 | 46 days | 0.18 | | | MPC | 2006 $SS_{257}$ |
| 2006 $SW_{257}$ | 18.4 | 0.15 | 20061012 | 6.83534 | 2.08137 | 9.62489 | 6.60387 | 0.1962413 | 2.4323212 | 18 | 1 | 48 days | 0.44 | | | MPC | 2006 $SW_{257}$ |
| 2006 $SZ_{257}$ | 17.1 | 0.15 | 20060922 | 273.61867 | 100.16942 | 16.09534 | 14.98138 | 0.1011184 | 2.5793700 | 15 | 1 | 26 days | 0.28 | | | MPC | 2006 $SZ_{257}$ |
| 2006 $SE_{258}$ | 17.4 | 0.15 | 20060922 | 29.46825 | 122.83609 | 203.36743 | 8.76876 | 0.2738772 | 3.1446224 | 16 | 1 | 43 days | 0.23 | | | MPC | 2006 $SE_{258}$ |
| 2006 $ST_{258}$ | 18.1 | 0.15 | 20061012 | 263.17849 | 108.75930 | 21.66577 | 1.68035 | 0.1030372 | 2.2695167 | 23 | 1 | 32 days | 0.29 | | | MPC | 2006 $ST_{258}$ |
| 2006 $SU_{258}$ | 16.7 | 0.15 | 20061012 | 356.24848 | 175.29178 | 211.12380 | 4.74055 | 0.1786769 | 3.1949298 | 37 | 1 | 57 days | 0.27 | | | MPC | 2006 $SU_{258}$ |
| 2006 $SV_{258}$ | 16.6 | 0.15 | 20060922 | 52.43596 | 117.51741 | 202.83849 | 17.29878 | 0.0512920 | 3.2505048 | 25 | 1 | 38 days | 0.39 | | | MPC | 2006 $SV_{258}$ |
| 2006 $SB_{259}$ | 19.6 | 0.15 | 20061012 | 0.08993 | 158.20410 | 222.10229 | 0.79282 | 0.1938024 | 2.3356614 | 13 | 1 | 32 days | 0.34 | | | MPC | 2006 $SB_{259}$ |
| 2006 $SD_{259}$ | 17.4 | 0.15 | 20060922 | 269.15976 | 153.94261 | 324.11488 | 0.97786 | 0.0934236 | 2.6073163 | 18 | 1 | 38 days | 0.26 | | | MPC | 2006 $SD_{259}$ |
| 2006 $SF_{259}$ | 18.0 | 0.15 | 20061012 | 24.44410 | 141.25070 | 202.88473 | 5.36120 | 0.1978862 | 2.2589993 | 23 | 1 | 31 days | 0.18 | | | MPC | 2006 $SF_{259}$ |
| 2006 $SH_{259}$ | 18.3 | 0.15 | 20061012 | 49.83585 | 28.75871 | 283.26609 | 0.41805 | 0.1862925 | 2.4337003 | 25 | 1 | 36 days | 0.37 | | | MPC | 2006 $SH_{259}$ |
| 2006 $SJ_{259}$ | 17.6 | 0.15 | 20060922 | 3.00333 | 23.27260 | 346.67189 | 1.66907 | 0.1947121 | 2.7020130 | 29 | 1 | 63 days | 0.36 | M-v | 4 | MPC | 2006 $SJ_{259}$ |
| 2006 $SL_{259}$ | 16.2 | 0.15 | 20060922 | 28.76217 | 349.07416 | 355.59241 | 1.40855 | 0.0635643 | 2.9119804 | 22 | 1 | 46 days | 0.21 | | | MPC | 2006 $SL_{259}$ |
| 2006 $SR_{259}$ | 17.3 | 0.15 | 20061012 | 328.08309 | 218.22709 | 203.39737 | 9.87036 | 0.1149178 | 2.8052525 | 20 | 1 | 51 days | 0.32 | | | MPC | 2006 $SR_{259}$ |
| 2006 $SU_{259}$ | 16.4 | 0.15 | 20060922 | 273.20820 | 301.60241 | 196.51908 | 5.47415 | 0.3397272 | 3.0811397 | 14 | 1 | 20 days | 0.48 | | | MPC | 2006 $SU_{259}$ |
| 2006 $SA_{260}$ | 18.6 | 0.15 | 20060922 | 344.62466 | 44.32221 | 352.79886 | 1.86153 | 0.2392332 | 2.5252369 | 22 | 1 | 47 days | 0.22 | | | MPC | 2006 $SA_{260}$ |
| 2006 $SE_{260}$ | 17.3 | 0.15 | 20061012 | 74.46078 | 90.85528 | 200.36091 | 14.54689 | 0.1237729 | 2.5901665 | 25 | 1 | 51 days | 0.30 | | | MPC | 2006 $SE_{260}$ |
| 2006 $SG_{260}$ | 17.2 | 0.15 | 20061012 | 60.93634 | 297.77784 | 5.11826 | 4.87718 | 0.1506029 | 2.6952267 | 15 | 1 | 53 days | 0.22 | | | MPC | 2006 $SG_{260}$ |
| 2006 $SJ_{260}$ | 17.7 | 0.15 | 20060922 | 333.93676 | 186.75716 | 224.91237 | 2.48030 | 0.1759368 | 2.8026226 | 18 | 1 | 42 days | 0.21 | | | MPC | 2006 $SJ_{260}$ |
| 2006 $SL_{260}$ | 18.9 | 0.15 | 20060922 | 38.00804 | 100.32076 | 226.72665 | 1.11613 | 0.1019497 | 2.2475253 | 13 | 1 | 11 days | 0.20 | | | MPC | 2006 $SL_{260}$ |
| 2006 $SR_{260}$ | 18.4 | 0.15 | 20060922 | 339.25860 | 41.71239 | 6.97365 | 12.03085 | 0.2666115 | 3.0107012 | 9 | 1 | 5 days | 0.30 | | | MPC | 2006 $SR_{260}$ |
| 2006 $SV_{260}$ | 17.4 | 0.15 | 20060922 | 59.78279 | 80.47228 | 214.42583 | 5.40203 | 0.1653177 | 2.3396716 | 14 | 1 | 31 days | 0.69 | | | MPC | 2006 $SV_{260}$ |
| 2006 $SX_{260}$ | 18.3 | 0.15 | 20060922 | 293.73551 | 223.42699 | 222.01277 | 3.13682 | 0.0480249 | 2.5916083 | 10 | 1 | 23 days | 0.24 | | | MPC | 2006 $SX_{260}$ |
| 2006 $SA_{261}$ | 16.7 | 0.15 | 20060922 | 325.78294 | 62.49217 | 351.52368 | 2.52220 | 0.0924408 | 2.5513804 | 28 | 1 | 117 days | 0.32 | M-v | 4 | MPC | 2006 $SA_{261}$ |
| 2006 $SO_{261}$ | 16.1 | 0.15 | 20060922 | 315.09797 | 63.50352 | 27.75880 | 16.51323 | 0.2267592 | 3.1114566 | 43 | 1 | 61 days | 0.38 | M-v | 4 | MPC | 2006 $SO_{261}$ |
| 2006 $SS_{261}$ | 18.7 | 0.15 | 20061012 | 356.50544 | 208.46746 | 183.95863 | 2.05872 | 0.1969241 | 2.4414038 | 28 | 1 | 49 days | 0.28 | | | MPC | 2006 $SS_{261}$ |
| 2006 $ST_{261}$ | 17.7 | 0.15 | 20061012 | 13.24117 | 168.59605 | 195.62124 | 6.39842 | 0.2560885 | 2.5458884 | 37 | 1 | 48 days | 0.39 | | | MPC | 2006 $ST_{261}$ |
| 2006 $SW_{261}$ | 16.0 | 0.15 | 20061012 | 356.52106 | 193.77413 | 201.13155 | 9.46093 | 0.0692428 | 3.1551107 | 20 | 1 | 45 days | 0.19 | | | MPC | 2006 $SW_{261}$ |
| 2006 $SY_{261}$ | 16.6 | 0.15 | 20061012 | 31.21374 | 302.09483 | 51.94605 | 2.84789 | 0.0801235 | 2.8634548 | 23 | 1 | 49 days | 0.29 | | | MPC | 2006 $SY_{261}$ |
| 2006 $SA_{262}$ | 16.1 | 0.15 | 20061012 | 11.48782 | 175.44705 | 199.34584 | 10.21473 | 0.1601763 | 3.0110927 | 14 | 1 | 48 days | 0.19 | | | MPC | 2006 $SA_{262}$ |
| 2006 $SC_{262}$ | 17.0 | 0.15 | 20060922 | 26.16567 | 313.54440 | 32.65255 | 6.58514 | 0.1772159 | 2.6039355 | 54 | 1 | 62 days | 0.37 | M-v | 4 | MPC | 2006 $SC_{262}$ |
| 2006 $SE_{262}$ | 18.5 | 0.15 | 20061012 | 346.24902 | 218.84354 | 189.92029 | 5.78671 | 0.1841732 | 2.2265658 | 26 | 1 | 57 days | 0.22 | | | MPC | 2006 $SE_{262}$ |
| 2006 $SF_{262}$ | 15.4 | 0.15 | 20061012 | 91.67915 | 89.57845 | 200.94972 | 10.87316 | 0.0938795 | 3.0383053 | 22 | 1 | 36 days | 0.41 | | D | MPC | 2006 $SF_{262}$ |
| 2006 $SG_{262}$ | 16.4 | 0.15 | 20061012 | 76.95897 | 102.22550 | 202.31054 | 13.31174 | 0.0935499 | 2.8054685 | 22 | 1 | 36 days | 0.22 | | | MPC | 2006 $SG_{262}$ |
| 2006 $SK_{262}$ | 16.9 | 0.15 | 20061012 | 342.96254 | 349.65567 | 62.45242 | 3.38425 | 0.0645969 | 3.0357673 | 22 | 1 | 35 days | 0.28 | | | MPC | 2006 $SK_{262}$ |
| 2006 $SN_{262}$ | 17.4 | 0.15 | 20061012 | 32.05261 | 164.38659 | 177.50459 | 2.18505 | 0.2213366 | 2.6210768 | 28 | 1 | 35 days | 0.25 | | | MPC | 2006 $SN_{262}$ |
| 2006 $SP_{262}$ | 15.7 | 0.15 | 20061012 | 246.61624 | 315.50397 | 206.19591 | 13.60328 | 0.1343361 | 3.0803895 | 22 | 1 | 57 days | 0.29 | | | MPC | 2006 $SP_{262}$ |
| 2006 $SQ_{262}$ | 17.2 | 0.15 | 20061012 | 353.63605 | 204.94281 | 195.51791 | 5.43977 | 0.0434356 | 2.7473718 | 23 | 1 | 51 days | 0.29 | | | MPC | 2006 $SQ_{262}$ |
| 2006 $SW_{262}$ | 17.7 | 0.15 | 20061012 | 3.11603 | 240.49828 | 147.17450 | 1.27944 | 0.1952574 | 2.7254000 | 29 | 1 | 50 days | 0.31 | | | MPC | 2006 $SW_{262}$ |
| 2006 $SY_{262}$ | 18.2 | 0.15 | 20061012 | 27.25722 | 158.65070 | 185.58484 | 3.93876 | 0.2571043 | 2.3018580 | 25 | 1 | 44 days | 0.29 | | | MPC | 2006 $SY_{262}$ |
| 2006 $SB_{263}$ | 18.1 | 0.15 | 20061012 | 358.26259 | 205.23834 | 190.04541 | 3.19323 | 0.2012878 | 2.7455804 | 23 | 1 | 35 days | 0.35 | | | MPC | 2006 $SB_{263}$ |
| 2006 $SC_{263}$ | 16.1 | 0.15 | 20061012 | 45.46228 | 143.11057 | 203.44418 | 11.35999 | 0.0353983 | 2.9626790 | 22 | 1 | 57 days | 0.22 | | | MPC | 2006 $SC_{263}$ |
| 2006 $SD_{263}$ | 18.1 | 0.15 | 20061012 | 32.60398 | 209.67595 | 129.95987 | 1.36628 | 0.2376294 | 2.4840259 | 24 | 1 | 33 days | 0.28 | | | MPC | 2006 $SD_{263}$ |
| 2006 $SE_{263}$ | 16.7 | 0.15 | 20060922 | 326.21214 | 163.78310 | 266.85385 | 5.46638 | 0.2084010 | 2.9165218 | 21 | 1 | 60 days | 0.47 | M-v | 4 | MPC | 2006 $SE_{263}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SL_{263}$ | 16.2 | 0.15 | 20060922 | 90.10567 | 36.98026 | 244.88388 | 9.37239 | 0.0994761 | 2.9935477 | 26 | 1 | 60 days | 0.36 | M-v | 4 | MPC | 2006 $SL_{263}$ |
| 2006 $SO_{263}$ | 18.7 | 0.15 | 20061012 | 319.01240 | 214.76267 | 226.57340 | 10.03601 | 0.1728167 | 2.3923766 | 27 | 1 | 45 days | 0.30 | | | MPC | 2006 $SO_{263}$ |
| 2006 $SR_{263}$ | 17.4 | 0.15 | 20060922 | 19.29990 | 118.13018 | 237.21950 | 9.89175 | 0.1445563 | 2.9400258 | 19 | 1 | 60 days | 0.25 | M-v | 4 | MPC | 2006 $SR_{263}$ |
| 2006 $SW_{263}$ | 18.9 | 0.15 | 20060922 | 358.72067 | 106.96342 | 272.28950 | 4.63115 | 0.1596070 | 2.3223023 | 12 | 1 | 25 days | 0.38 | | | MPC | 2006 $SW_{263}$ |
| 2006 $SX_{263}$ | 16.5 | 0.15 | 20060922 | 3.17179 | 138.61680 | 239.88903 | 10.02247 | 0.1198022 | 3.1244040 | 19 | 1 | 60 days | 0.19 | M-v | 4 | MPC | 2006 $SX_{263}$ |
| 2006 $SY_{263}$ | 16.7 | 0.15 | 20060922 | 109.47999 | 19.52976 | 238.31410 | 8.58301 | 0.1506677 | 2.5760409 | 28 | 1 | 60 days | 0.35 | M-v | 4 | MPC | 2006 $SY_{263}$ |
| 2006 $SF_{264}$ | 16.0 | 0.15 | 20061012 | 261.43306 | 264.19777 | 234.26855 | 12.48620 | 0.1070343 | 3.1428842 | 16 | 1 | 33 days | 0.20 | | | MPC | 2006 $SF_{264}$ |
| 2006 $SK_{264}$ | 16.0 | 0.15 | 20060922 | 123.64879 | 6.28714 | 253.31434 | 8.73702 | 0.0349478 | 3.5289906 | 10 | 1 | 24 days | 0.26 | | | MPC | 2006 $SK_{264}$ |
| 2006 $SP_{264}$ | 16.7 | 0.15 | 20061012 | 37.36593 | 87.70150 | 239.33432 | 9.25402 | 0.2568145 | 3.1458889 | 25 | 1 | 33 days | 0.41 | | | MPC | 2006 $SP_{264}$ |
| 2006 $ST_{264}$ | 17.1 | 0.15 | 20061012 | 27.17888 | 127.09494 | 224.07542 | 16.50788 | 0.1524016 | 3.1743844 | 12 | 1 | 33 days | 0.18 | | | MPC | 2006 $ST_{264}$ |
| 2006 $SW_{264}$ | 17.5 | 0.15 | 20061012 | 4.05425 | 144.41776 | 236.84603 | 7.46743 | 0.1712804 | 2.7218506 | 24 | 1 | 53 days | 0.38 | | | MPC | 2006 $SW_{264}$ |
| 2006 $SX_{264}$ | 18.6 | 0.15 | 20060922 | 16.45213 | 99.94285 | 245.43448 | 4.16108 | 0.2710915 | 2.1898430 | 42 | 1 | 60 days | 0.24 | M-v | 3 | MPC | 2006 $SX_{264}$ |
| 2006 $SY_{264}$ | 16.6 | 0.15 | 20060922 | 70.54636 | 49.79508 | 237.46740 | 9.98824 | 0.2357561 | 3.0791611 | 12 | 1 | 25 days | 0.17 | | | MPC | 2006 $SY_{264}$ |
| 2006 $SZ_{264}$ | 17.8 | 0.15 | 20061012 | 13.23670 | 23.81381 | 344.17273 | 6.15477 | 0.1535086 | 2.2435147 | 20 | 1 | 31 days | 0.48 | | | MPC | 2006 $SZ_{264}$ |
| 2006 $SB_{265}$ | 16.5 | 0.15 | 20061012 | 16.00085 | 133.44319 | 234.47258 | 8.98798 | 0.1158373 | 2.9536748 | 31 | 1 | 55 days | 0.27 | | | MPC | 2006 $SB_{265}$ |
| 2006 $SE_{265}$ | 16.5 | 0.15 | 20061012 | 323.43503 | 227.37259 | 215.59722 | 21.71015 | 0.2187112 | 3.0040857 | 14 | 1 | 48 days | 0.14 | | | MPC | 2006 $SE_{265}$ |
| 2006 $SL_{265}$ | 18.2 | 0.15 | 20061012 | 355.31665 | 122.18915 | 270.81814 | 4.04492 | 0.1419027 | 2.2325573 | 20 | 1 | 35 days | 0.16 | | | MPC | 2006 $SL_{265}$ |
| 2006 $SM_{265}$ | 16.0 | 0.15 | 20061012 | 31.26615 | 84.86101 | 251.20758 | 6.35709 | 0.2768950 | 3.9736380 | 15 | 1 | 50 days | 0.16 | | | MPC | 2006 $SM_{265}$ |
| 2006 $SO_{265}$ | 18.5 | 0.15 | 20061012 | 340.23402 | 153.73518 | 261.76368 | 4.06264 | 0.1768665 | 2.3680756 | 15 | 1 | 35 days | 0.23 | | | MPC | 2006 $SO_{265}$ |
| 2006 $SP_{265}$ | 17.9 | 0.15 | 20060922 | 328.60508 | 123.38941 | 296.13614 | 4.03515 | 0.1217745 | 2.2126408 | 22 | 1 | 60 days | 0.57 | M-v | 4 | MPC | 2006 $SP_{265}$ |
| 2006 $SU_{265}$ | 16.9 | 0.15 | 20061012 | 338.47074 | 170.16503 | 248.65501 | 5.00291 | 0.1487605 | 3.1240168 | 18 | 1 | 35 days | 0.21 | | | MPC | 2006 $SU_{265}$ |
| 2006 $SY_{265}$ | 16.1 | 0.15 | 20061012 | 41.63824 | 90.65968 | 245.49178 | 5.12256 | 0.1412954 | 3.1323883 | 24 | 1 | 55 days | 0.17 | | | MPC | 2006 $SY_{265}$ |
| 2006 $SZ_{265}$ | 17.1 | 0.15 | 20060922 | 6.26754 | 147.47501 | 224.24119 | 5.68745 | 0.1194449 | 2.2257127 | 55 | 1 | 62 days | 0.43 | M-v | 4 | MPC | 2006 $SZ_{265}$ |
| 2006 $SA_{266}$ | 16.8 | 0.15 | 20061012 | 70.04729 | 2.55350 | 307.84432 | 3.40009 | 0.0832526 | 2.6408380 | 18 | 1 | 35 days | 0.15 | | | MPC | 2006 $SA_{266}$ |
| 2006 $SE_{266}$ | 17.6 | 0.15 | 20060922 | 19.17787 | 125.36846 | 221.88749 | 7.33720 | 0.2681323 | 2.7166561 | 22 | 1 | 62 days | 0.22 | M-v | 4 | MPC | 2006 $SE_{266}$ |
| 2006 $SF_{266}$ | 16.4 | 0.15 | 20061012 | 288.29889 | 233.11624 | 232.93971 | 8.18372 | 0.0314121 | 3.0381668 | 12 | 1 | 35 days | 0.19 | | | MPC | 2006 $SF_{266}$ |
| 2006 $SO_{266}$ | 19.7 | 0.15 | 20061012 | 18.62914 | 135.35455 | 215.55267 | 5.00455 | 0.3000175 | 2.2139960 | 28 | 1 | 45 days | 0.28 | | | MPC | 2006 $SO_{266}$ |
| 2006 $ST_{266}$ | 17.2 | 0.15 | 20060922 | 346.85417 | 51.11521 | 347.33208 | 5.25060 | 0.0658657 | 2.7624097 | 19 | 1 | 60 days | 0.24 | M-v | 4 | MPC | 2006 $ST_{266}$ |
| 2006 $SU_{266}$ | 16.3 | 0.15 | 20061012 | 304.07229 | 224.88284 | 223.17510 | 13.05121 | 0.0378900 | 2.8092288 | 27 | 1 | 54 days | 0.21 | | | MPC | 2006 $SU_{266}$ |
| 2006 $SW_{266}$ | 18.9 | 0.15 | 20060922 | 26.10613 | 75.52018 | 260.99674 | 3.01587 | 0.2325056 | 2.3609982 | 12 | 1 | 25 days | 0.22 | | | MPC | 2006 $SW_{266}$ |
| 2006 $SX_{266}$ | 17.0 | 0.15 | 20061012 | 315.84449 | 195.29274 | 253.16150 | 4.86777 | 0.1670274 | 3.0390403 | 21 | 1 | 55 days | 0.19 | | | MPC | 2006 $SX_{266}$ |
| 2006 $SA_{267}$ | 16.2 | 0.15 | 20060922 | 267.36063 | 124.18657 | 0.09161 | 9.51009 | 0.0421383 | 3.1205827 | 13 | 1 | 24 days | 0.16 | | | MPC | 2006 $SA_{267}$ |
| 2006 $SE_{267}$ | 17.3 | 0.15 | 20061012 | 116.43047 | 335.41117 | 292.28535 | 3.16050 | 0.0389625 | 2.3772262 | 27 | 1 | 55 days | 0.20 | | | MPC | 2006 $SE_{267}$ |
| 2006 $SG_{267}$ | 17.5 | 0.15 | 20060922 | 119.94009 | 272.80856 | 342.92522 | 4.71842 | 0.0702397 | 2.2239528 | 22 | 1 | 60 days | 0.28 | M-v | 4 | MPC | 2006 $SG_{267}$ |
| 2006 $SJ_{267}$ | 17.1 | 0.15 | 20060922 | 80.66284 | 275.14641 | 13.89571 | 15.04423 | 0.1259545 | 2.5518520 | 15 | 1 | 25 days | 0.20 | | | MPC | 2006 $SJ_{267}$ |
| 2006 $SL_{267}$ | 17.8 | 0.15 | 20061012 | 283.72629 | 231.69446 | 240.89571 | 6.18946 | 0.0683549 | 2.4632416 | 15 | 1 | 35 days | 0.21 | | | MPC | 2006 $SL_{267}$ |
| 2006 $SM_{267}$ | 18.0 | 0.15 | 20061012 | 51.68423 | 344.33332 | 331.71566 | 3.30425 | 0.1850865 | 2.1901238 | 15 | 1 | 33 days | 0.19 | | | MPC | 2006 $SM_{267}$ |
| 2006 $SQ_{267}$ | 16.9 | 0.15 | 20061012 | 4.66493 | 164.16022 | 217.12431 | 16.55495 | 0.2180304 | 3.1086716 | 31 | 1 | 49 days | 0.26 | | | MPC | 2006 $SQ_{267}$ |
| 2006 $SR_{267}$ | 17.1 | 0.15 | 20061012 | 327.10381 | 155.40621 | 271.91138 | 3.39079 | 0.0782082 | 2.7243586 | 21 | 1 | 55 days | 0.29 | | | MPC | 2006 $SR_{267}$ |
| 2006 $SS_{267}$ | 17.7 | 0.15 | 20061012 | 115.15678 | 260.01187 | 3.30984 | 7.77556 | 0.1022292 | 2.2809010 | 15 | 1 | 33 days | 0.20 | | | MPC | 2006 $SS_{267}$ |
| 2006 $ST_{267}$ | 19.5 | 0.15 | 20060922 | 346.20867 | 55.99959 | 343.44329 | 4.00825 | 0.2071332 | 2.2893799 | 12 | 1 | 25 days | 0.30 | | | MPC | 2006 $ST_{267}$ |
| 2006 $SU_{267}$ | 17.9 | 0.15 | 20061012 | 143.22776 | 280.39756 | 318.03473 | 3.95830 | 0.0699224 | 2.1788259 | 16 | 1 | 33 days | 0.24 | | | MPC | 2006 $SU_{267}$ |
| 2006 $SX_{267}$ | 17.6 | 0.15 | 20060922 | 42.74331 | 25.81051 | 286.22317 | 3.25668 | 0.2623762 | 2.6607564 | 22 | 1 | 60 days | 0.28 | M-v | 4 | MPC | 2006 $SX_{267}$ |
| 2006 $SZ_{267}$ | 19.9 | 0.15 | 20060922 | 1.30925 | 24.67712 | 349.89789 | 5.53577 | 0.1961445 | 2.2471578 | 13 | 1 | 23 days | 0.18 | | | MPC | 2006 $SZ_{267}$ |
| 2006 $SA_{268}$ | 18.4 | 0.15 | 20060922 | 90.11185 | 32.69384 | 237.85352 | 5.35832 | 0.1770101 | 2.1664246 | 9 | 1 | 24 days | 0.22 | | | MPC | 2006 $SA_{268}$ |
| 2006 $SB_{268}$ | 16.3 | 0.15 | 20061012 | 80.65897 | 320.86262 | 330.50222 | 4.42555 | 0.1463897 | 3.2153687 | 15 | 1 | 33 days | 0.18 | | | MPC | 2006 $SB_{268}$ |
| 2006 $SD_{268}$ | 16.1 | 0.15 | 20060922 | 0.72856 | 21.75334 | 1.04647 | 9.89956 | 0.1019618 | 2.9713907 | 19 | 1 | 25 days | 0.25 | | | MPC | 2006 $SD_{268}$ |
| 2006 $SJ_{268}$ | 17.6 | 0.15 | 20061012 | 112.50854 | 16.83907 | 244.65339 | 5.59096 | 0.1366477 | 2.3984989 | 18 | 1 | 53 days | 0.25 | | | MPC | 2006 $SJ_{268}$ |
| 2006 $SK_{268}$ | 16.2 | 0.15 | 20060922 | 95.36597 | 340.85522 | 298.52018 | 4.29457 | 0.0932110 | 2.9412126 | 22 | 1 | 60 days | 0.42 | M-v | 5 | MPC | 2006 $SK_{268}$ |
| 2006 $SL_{268}$ | 16.9 | 0.15 | 20061012 | 3.41159 | 141.15584 | 242.25588 | 6.55526 | 0.1642640 | 3.1367001 | 15 | 1 | 55 days | 0.19 | | | MPC | 2006 $SL_{268}$ |
| 2006 $SN_{268}$ | 18.9 | 0.15 | 20061012 | 43.36289 | 73.07960 | 252.53972 | 3.70351 | 0.1821977 | 2.2187986 | 18 | 1 | 36 days | 0.18 | | | MPC | 2006 $SN_{268}$ |
| 2006 $SQ_{268}$ | 17.0 | 0.15 | 20061012 | 344.27578 | 173.42350 | 231.36411 | 10.26415 | 0.0716882 | 3.2420626 | 12 | 1 | 33 days | 0.30 | | | MPC | 2006 $SQ_{268}$ |
| 2006 $SR_{268}$ | 18.1 | 0.15 | 20061012 | 52.43441 | 69.88110 | 240.32117 | 5.44508 | 0.2073051 | 2.2342469 | 24 | 1 | 53 days | 0.38 | | | MPC | 2006 $SR_{268}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SS_{268}$ | 16.9 | 0.15 | 20060922 | 332.35080 | 109.21951 | 308.81446 | 3.97918 | 0.1646991 | 2.6923757 | 21 | 1 | 60 days | 0.36 | M-v | 4 | MPC | | 2006 $SS_{268}$ |
| 2006 $ST_{268}$ | 18.9 | 0.15 | 20060922 | 21.84121 | 53.90796 | 287.77571 | 3.31702 | 0.2082050 | 2.1592174 | 21 | 1 | 23 days | 0.46 | | | MPC | | 2006 $ST_{268}$ |
| 2006 $SU_{268}$ | 18.4 | 0.15 | 20060922 | 304.85703 | 185.27021 | 266.51504 | 4.18133 | 0.1681914 | 2.3673555 | 19 | 1 | 60 days | 0.32 | M-v | 4 | MPC | | 2006 $SU_{268}$ |
| 2006 $SY_{268}$ | 17.4 | 0.15 | 20060922 | 359.68929 | 90.85317 | 289.00940 | 3.42294 | 0.1345555 | 2.5949757 | 25 | 1 | 60 days | 0.43 | M-v | 4 | MPC | | 2006 $SY_{268}$ |
| 2006 $SZ_{268}$ | 17.1 | 0.15 | 20061012 | 32.09240 | 69.21780 | 279.77621 | 4.54190 | 0.0862985 | 2.8493848 | 15 | 1 | 33 days | 0.28 | | | MPC | | 2006 $SZ_{268}$ |
| 2006 $SB_{269}$ | 16.6 | 0.15 | 20061012 | 25.02066 | 3.56447 | 356.73946 | 8.34479 | 0.0438350 | 3.0834786 | 19 | 1 | 33 days | 0.28 | | | MPC | | 2006 $SB_{269}$ |
| 2006 $SD_{269}$ | 17.2 | 0.15 | 20060922 | 103.76771 | 279.12685 | 338.67391 | 6.42839 | 0.2032385 | 2.4061583 | 16 | 1 | 23 days | 0.22 | | | MPC | | 2006 $SD_{269}$ |
| 2006 $SJ_{269}$ | 16.5 | 0.15 | 20060922 | 23.27581 | 27.89845 | 324.06072 | 4.19929 | 0.1167040 | 2.7267220 | 25 | 1 | 61 days | 0.27 | M-v | 4 | MPC | | 2006 $SJ_{269}$ |
| 2006 $SM_{269}$ | 16.6 | 0.15 | 20061012 | 22.17851 | 171.78875 | 199.66108 | 6.47341 | 0.0507250 | 2.7137539 | 27 | 1 | 51 days | 0.23 | | | MPC | | 2006 $SM_{269}$ |
| 2006 $SO_{269}$ | 15.6 | 0.15 | 20061012 | 8.12137 | 177.38946 | 206.38589 | 14.91444 | 0.1936441 | 3.0975164 | 54 | 1 | 59 days | 0.55 | | | MPC | | 2006 $SO_{269}$ |
| 2006 $SR_{269}$ | 16.9 | 0.15 | 20061012 | 353.99975 | 200.07349 | 206.82344 | 15.96031 | 0.2660784 | 2.7611436 | 39 | 1 | 54 days | 0.63 | | | MPC | | 2006 $SR_{269}$ |
| 2006 $SV_{269}$ | 18.5 | 0.15 | 20061012 | 21.84350 | 160.42131 | 198.42910 | 4.89862 | 0.2513402 | 2.3018777 | 25 | 1 | 52 days | 0.35 | | | MPC | | 2006 $SV_{269}$ |
| 2006 $SW_{269}$ | 16.7 | 0.15 | 20061012 | 252.81911 | 299.42833 | 212.36025 | 9.88927 | 0.0145303 | 3.0184950 | 18 | 1 | 52 days | 0.40 | | | MPC | | 2006 $SW_{269}$ |
| 2006 $SX_{269}$ | 16.8 | 0.15 | 20060922 | 330.83394 | 225.69979 | 208.07528 | 8.22415 | 0.1243568 | 2.7270807 | 21 | 1 | 22 days | 0.35 | | | MPC | | 2006 $SX_{269}$ |
| 2006 $SZ_{269}$ | 16.8 | 0.15 | 20060922 | 15.96076 | 160.90821 | 207.90828 | 12.53489 | 0.2065662 | 2.5694774 | 39 | 1 | 60 days | 0.46 | M-v | 4 | MPC | | 2006 $SZ_{269}$ |
| 2006 $SC_{270}$ | 16.6 | 0.15 | 20060922 | 6.63902 | 223.29563 | 153.17777 | 14.90785 | 0.2821442 | 2.5689261 | 38 | 1 | 65 days | 0.76 | M-v | 4 | MPC | | 2006 $SC_{270}$ |
| 2006 $SL_{270}$ | 18.9 | 0.15 | 20060922 | 339.22241 | 117.85074 | 273.72631 | 7.81800 | 0.3487163 | 2.7483481 | 13 | 1 | 5 days | 0.51 | | | MPC | | 2006 $SL_{270}$ |
| 2006 $SM_{270}$ | 16.1 | 0.15 | 20060922 | 79.55257 | 330.58327 | 275.37965 | 10.79923 | 0.1622160 | 2.9719096 | 9 | 1 | 4 days | 0.77 | | | MPC | | 2006 $SM_{270}$ |
| 2006 $ST_{270}$ | 17.2 | 0.15 | 20060922 | 354.90245 | 14.26748 | 359.38059 | 17.77065 | 0.2515191 | 3.0638842 | 9 | 1 | 4 days | 0.28 | | | MPC | | 2006 $ST_{270}$ |
| 2006 $SV_{270}$ | 17.7 | 0.15 | 20060922 | 6.84136 | 4.71888 | 351.94896 | 11.15864 | 0.2399704 | 2.4263096 | 27 | 1 | 37 days | 0.42 | | | MPC | | 2006 $SV_{270}$ |
| 2006 $SW_{270}$ | 18.1 | 0.15 | 20060922 | 356.21569 | 171.78142 | 194.81509 | 21.27081 | 0.0798267 | 1.9176346 | 15 | 1 | 13 days | 0.45 | | | MPC | | 2006 $SW_{270}$ |
| 2006 $SC_{271}$ | 17.1 | 0.15 | 20060922 | 21.50978 | 205.70342 | 126.13209 | 1.35575 | 0.1336214 | 2.3769656 | 20 | 1 | 33 days | 0.37 | | | MPC | | 2006 $SC_{271}$ |
| 2006 $SF_{271}$ | 17.3 | 0.15 | 20060922 | 15.70427 | 329.39824 | 14.44146 | 15.21314 | 0.1861420 | 2.5658879 | 23 | 1 | 33 days | 0.50 | | | MPC | | 2006 $SF_{271}$ |
| 2006 $SH_{271}$ | 18.3 | 0.15 | 20060922 | 353.94187 | 262.26050 | 112.96316 | 1.75248 | 0.2102739 | 2.9075905 | 10 | 1 | 5 days | 0.72 | | | MPC | | 2006 $SH_{271}$ |
| 2006 $SL_{271}$ | 20.0 | 0.15 | 20060922 | 31.90901 | 176.82560 | 140.89677 | 1.78468 | 0.2013689 | 2.2451168 | 14 | 1 | 3 days | 0.43 | | E | MPC | | 2006 $SL_{271}$ |
| 2006 $SO_{271}$ | 16.8 | 0.15 | 20060922 | 41.90680 | 282.62795 | 33.17410 | 3.87663 | 0.1111576 | 2.9570762 | 14 | 1 | 12 days | 0.31 | | | MPC | | 2006 $SO_{271}$ |
| 2006 $SP_{271}$ | 17.4 | 0.15 | 20060922 | 53.91948 | 182.11690 | 123.46512 | 2.51707 | 0.0790896 | 3.0235518 | 14 | 1 | 12 days | 0.40 | | | MPC | | 2006 $SP_{271}$ |
| 2006 $SQ_{271}$ | 15.1 | 0.15 | 20060922 | 242.87640 | 165.88281 | 339.14688 | 7.39891 | 0.0397960 | 3.1474451 | 18 | 1 | 22 days | 0.34 | | | MPC | | 2006 $SQ_{271}$ |
| 2006 $SR_{271}$ | 16.8 | 0.15 | 20061012 | 38.20380 | 100.25282 | 242.24472 | 8.05476 | 0.0765147 | 3.1749989 | 17 | 1 | 32 days | 0.34 | | | MPC | | 2006 $SR_{271}$ |
| 2006 $SU_{271}$ | 18.1 | 0.15 | 20060922 | 5.19196 | 71.65241 | 299.02504 | 4.14140 | 0.1767090 | 2.5331542 | 14 | 1 | 22 days | 0.38 | | | MPC | | 2006 $SU_{271}$ |
| 2006 $SK_{272}$ | 17.4 | 0.15 | 20060922 | 346.73345 | 9.27903 | 14.29695 | 24.81288 | 0.1498258 | 2.4099391 | 17 | 1 | 23 days | 0.68 | | | MPC | | 2006 $SK_{272}$ |
| 2006 $SN_{272}$ | 18.3 | 0.15 | 20060922 | 351.25812 | 262.56799 | 120.43893 | 3.15762 | 0.2732777 | 3.1460263 | 9 | 1 | 4 days | 0.33 | | | MPC | | 2006 $SN_{272}$ |
| 2006 $SO_{272}$ | 19.4 | 0.15 | 20061012 | 44.62164 | 307.07745 | 14.75140 | 21.58354 | 0.0829446 | 1.8780369 | 18 | 1 | 34 days | 0.33 | | | MPC | | 2006 $SO_{272}$ |
| 2006 $SP_{272}$ | 18.8 | 0.15 | 20060922 | 11.50917 | 197.83571 | 151.47795 | 4.05195 | 0.1911161 | 2.2722885 | 14 | 1 | 25 days | 0.72 | | | MPC | | 2006 $SP_{272}$ |
| 2006 $SX_{272}$ | 18.8 | 0.15 | 20061012 | 353.04739 | 21.04838 | 22.05971 | 14.21332 | 0.2566932 | 2.6799544 | 18 | 1 | 35 days | 0.34 | | | MPC | | 2006 $SX_{272}$ |
| 2006 $SD_{273}$ | 16.1 | 0.15 | 20060922 | 49.15479 | 344.87815 | 328.77955 | 6.22232 | 0.1019539 | 3.0887028 | 11 | 1 | 7 days | 0.47 | | | MPC | | 2006 $SD_{273}$ |
| 2006 $SG_{273}$ | 17.5 | 0.15 | 20060922 | 316.55347 | 226.00507 | 202.53336 | 12.73485 | 0.1359515 | 2.7332293 | 9 | 1 | 4 days | 0.31 | | | MPC | | 2006 $SG_{273}$ |
| 2006 $SJ_{273}$ | 16.5 | 0.15 | 20061012 | 358.11742 | 10.16348 | 31.72531 | 13.36374 | 0.1631387 | 3.1363489 | 22 | 1 | 52 days | 0.29 | | | MPC | | 2006 $SJ_{273}$ |
| 2006 $SK_{273}$ | 18.1 | 0.15 | 20061012 | 31.65402 | 320.36826 | 23.08090 | 7.89700 | 0.2434629 | 2.2051136 | 29 | 1 | 59 days | 0.58 | | | MPC | | 2006 $SK_{273}$ |
| 2006 $SN_{273}$ | 16.8 | 0.15 | 20061012 | 357.68191 | 15.86499 | 27.31258 | 5.09548 | 0.2465064 | 2.6082366 | 77 | 1 | 56 days | 0.41 | | | MPC | | 2006 $SN_{273}$ |
| 2006 $SP_{273}$ | 15.5 | 0.15 | 20061012 | 342.82438 | 195.94871 | 224.77843 | 9.14051 | 0.0784325 | 3.0206655 | 32 | 1 | 55 days | 0.48 | | | MPC | | 2006 $SP_{273}$ |
| 2006 $SQ_{273}$ | 17.5 | 0.15 | 20061012 | 357.67736 | 5.39769 | 37.11599 | 5.96066 | 0.2725519 | 2.2462196 | 66 | 1 | 59 days | 0.50 | | | MPC | | 2006 $SQ_{273}$ |
| 2006 $ST_{273}$ | 16.0 | 0.15 | 20060922 | 355.72408 | 190.70226 | 219.07749 | 8.44340 | 0.0845936 | 3.1571757 | 28 | 1 | 61 days | 0.26 | M-v | 4 | MPC | | 2006 $ST_{273}$ |
| 2006 $SU_{273}$ | 17.3 | 0.15 | 20060922 | 329.55280 | 219.74063 | 218.66098 | 0.72025 | 0.1616954 | 2.3356205 | 43 | 1 | 62 days | 0.45 | M-v | 4 | MPC | | 2006 $SU_{273}$ |
| 2006 $SV_{273}$ | 16.5 | 0.15 | 20061012 | 326.31643 | 219.73296 | 225.05651 | 3.57493 | 0.0354610 | 2.7828413 | 18 | 1 | 48 days | 0.25 | | | MPC | | 2006 $SV_{273}$ |
| 2006 $SW_{273}$ | 17.0 | 0.15 | 20061012 | 1.06514 | 193.48253 | 211.72557 | 3.38773 | 0.1076953 | 2.5965536 | 22 | 1 | 48 days | 0.26 | | | MPC | | 2006 $SW_{273}$ |
| 2006 $SY_{273}$ | 15.9 | 0.15 | 20061012 | 283.78715 | 88.51163 | 48.65160 | 15.57808 | 0.1005919 | 2.8355394 | 25 | 1 | 58 days | 0.35 | | | MPC | | 2006 $SY_{273}$ |
| 2006 $SB_{274}$ | 17.9 | 0.15 | 20061012 | 19.11982 | 336.31086 | 35.79973 | 2.75365 | 0.2272585 | 2.3762877 | 32 | 1 | 56 days | 0.29 | | | MPC | | 2006 $SB_{274}$ |
| 2006 $SD_{274}$ | 17.0 | 0.15 | 20061012 | 308.75336 | 240.87097 | 225.08400 | 3.48506 | 0.0704169 | 2.6269080 | 22 | 1 | 48 days | 0.28 | | | MPC | | 2006 $SD_{274}$ |
| 2006 $SE_{274}$ | 17.7 | 0.15 | 20060922 | 356.24018 | 339.99155 | 38.32697 | 4.84327 | 0.2251995 | 2.3752381 | 50 | 1 | 66 days | 0.42 | M-v | 4 | MPC | | 2006 $SE_{274}$ |
| 2006 $SH_{274}$ | 17.6 | 0.15 | 20060922 | 328.31388 | 325.33590 | 92.72824 | 2.86762 | 0.1852861 | 2.6114480 | 19 | 1 | 25 days | 0.16 | | | MPC | | 2006 $SH_{274}$ |
| 2006 $SJ_{274}$ | 18.9 | 0.15 | 20060922 | 323.62513 | 330.85598 | 97.32019 | 2.76230 | 0.2252165 | 2.5914958 | 16 | 1 | 25 days | 0.74 | | | MPC | | 2006 $SJ_{274}$ |
| 2006 $SK_{274}$ | 15.2 | 0.15 | 20060922 | 45.97543 | 138.60225 | 181.31309 | 12.82843 | 0.1116050 | 3.2511934 | 33 | 1 | 38 days | 0.34 | | | MPC | | 2006 $SK_{274}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SM_{274}$ | 16.5 | 0.15 | 20060922 | 13.83632 | 150.76864 | 219.99468 | 3.88897 | 0.3238984 | 2.5953560 | 52 | 1 | 87 days | 0.36 | M-v | 4 | MPC | 2006 $SM_{274}$ |
| 2006 $SN_{274}$ | 17.5 | 0.15 | 20061012 | 314.92445 | 231.17951 | 232.80759 | 3.48261 | 0.0898179 | 2.2296893 | 25 | 1 | 58 days | 0.20 | | | MPC | 2006 $SN_{274}$ |
| 2006 $SO_{274}$ | 16.7 | 0.15 | 20061012 | 359.40881 | 14.34453 | 34.88843 | 8.29596 | 0.2962271 | 2.5424293 | 20 | 1 | 50 days | 0.39 | | | MPC | 2006 $SO_{274}$ |
| 2006 $SR_{274}$ | 14.6 | 0.15 | 20060922 | 268.38398 | 271.35969 | 238.65305 | 10.87052 | 0.0351818 | 3.1262521 | 44 | 1 | 61 days | 0.33 | M-v | 5 | MPC | 2006 $SR_{274}$ |
| 2006 $SS_{274}$ | 16.3 | 0.15 | 20061012 | 344.52616 | 26.08806 | 46.83908 | 5.47171 | 0.0853018 | 2.6970959 | 29 | 1 | 48 days | 0.24 | | | MPC | 2006 $SS_{274}$ |
| 2006 $ST_{274}$ | 16.2 | 0.15 | 20060922 | 345.09966 | 190.41724 | 236.54943 | 2.46292 | 0.0669390 | 2.7420899 | 32 | 1 | 61 days | 0.30 | M-v | 4 | MPC | 2006 $ST_{274}$ |
| 2006 $SU_{274}$ | 16.7 | 0.15 | 20061012 | 320.39962 | 49.11290 | 59.52446 | 1.42293 | 0.1713586 | 2.7690778 | 12 | 1 | 45 days | 0.51 | | | MPC | 2006 $SU_{274}$ |
| 2006 $SZ_{274}$ | 16.5 | 0.15 | 20060922 | 49.04870 | 170.30369 | 144.00497 | 2.87624 | 0.1500788 | 2.6527381 | 41 | 1 | 61 days | 0.40 | M-v | 4 | MPC | 2006 $SZ_{274}$ |
| 2006 $SA_{275}$ | 17.4 | 0.15 | 20061012 | 42.87933 | 197.23367 | 123.91647 | 2.22364 | 0.2049970 | 2.6786654 | 16 | 1 | 52 days | 0.35 | | | MPC | 2006 $SA_{275}$ |
| 2006 $SB_{275}$ | 18.5 | 0.15 | 20060922 | 17.81274 | 306.73351 | 41.64666 | 4.07868 | 0.1811669 | 2.2008875 | 40 | 1 | 61 days | 0.49 | M-v | 4 | MPC | 2006 $SB_{275}$ |
| 2006 $SC_{275}$ | 16.2 | 0.15 | 20061012 | 44.08924 | 301.26651 | 35.27926 | 17.27971 | 0.2435957 | 3.1510716 | 25 | 1 | 30 days | 0.24 | | | MPC | 2006 $SC_{275}$ |
| 2006 $SD_{275}$ | 17.4 | 0.15 | 20061012 | 334.05882 | 60.17055 | 16.99494 | 5.70299 | 0.1650678 | 2.4326255 | 32 | 1 | 50 days | 0.38 | | | MPC | 2006 $SD_{275}$ |
| 2006 $SF_{275}$ | 16.1 | 0.15 | 20060922 | 359.68924 | 190.56892 | 189.36269 | 8.71853 | 0.0669338 | 3.1246662 | 29 | 1 | 119 days | 0.48 | M-v | 3 | MPC | 2006 $SF_{275}$ |
| 2006 $SH_{275}$ | 17.4 | 0.15 | 20061012 | 31.62657 | 350.00245 | 1.32472 | 2.56448 | 0.2267591 | 2.3201257 | 34 | 1 | 56 days | 0.40 | | | MPC | 2006 $SH_{275}$ |
| 2006 $SK_{275}$ | 17.9 | 0.15 | 20060922 | 0.55764 | 19.22350 | 13.87611 | 3.62060 | 0.2357819 | 2.5739636 | 13 | 1 | 26 days | 0.20 | | | MPC | 2006 $SK_{275}$ |
| 2006 $SL_{275}$ | 16.1 | 0.15 | 20061012 | 328.75775 | 49.54669 | 32.59828 | 4.73936 | 0.0194957 | 2.7120096 | 18 | 1 | 58 days | 0.38 | | | MPC | 2006 $SL_{275}$ |
| 2006 $SN_{275}$ | 17.6 | 0.15 | 20060922 | 357.24516 | 356.67396 | 54.80533 | 2.60091 | 0.1608683 | 2.8155389 | 30 | 1 | 61 days | 0.45 | M-v | 5 | MPC | 2006 $SN_{275}$ |
| 2006 $SO_{275}$ | 17.0 | 0.15 | 20061012 | 343.64155 | 205.17423 | 227.03363 | 5.83664 | 0.1020654 | 2.4227802 | 12 | 1 | 58 days | 0.17 | | | MPC | 2006 $SO_{275}$ |
| 2006 $SP_{275}$ | 17.4 | 0.15 | 20060922 | 339.50892 | 203.30993 | 225.76133 | 1.96078 | 0.0713340 | 2.3242474 | 23 | 1 | 61 days | 0.33 | M-v | 4 | MPC | 2006 $SP_{275}$ |
| 2006 $ST_{275}$ | 18.1 | 0.15 | 20060922 | 28.61415 | 9.75921 | 308.98287 | 2.78657 | 0.1759786 | 2.5916468 | 18 | 1 | 35 days | 0.19 | | | MPC | 2006 $ST_{275}$ |
| 2006 $SB_{276}$ | 15.9 | 0.15 | 20060922 | 302.74673 | 242.26668 | 172.88366 | 15.99955 | 0.1607289 | 3.2071027 | 19 | 1 | 4 days | 0.60 | | | MPC | 2006 $SB_{276}$ |
| 2006 $SP_{276}$ | 18.1 | 0.15 | 20060922 | 335.02140 | 266.57068 | 132.66592 | 3.21188 | 0.1993956 | 2.3908716 | 14 | 1 | 12 days | 0.39 | | | MPC | 2006 $SP_{276}$ |
| 2006 $SY_{276}$ | 17.3 | 0.15 | 20061012 | 341.21358 | 22.77329 | 14.53692 | 9.97179 | 0.2216386 | 2.7339073 | 17 | 1 | 29 days | 0.26 | | | MPC | 2006 $SY_{276}$ |
| 2006 $SH_{278}$ | 16.8 | 0.15 | 20060922 | 315.49976 | 242.94969 | 183.25240 | 17.00409 | 0.2405468 | 3.1634857 | 18 | 1 | 30 days | 0.28 | | | MPC | 2006 $SH_{278}$ |
| 2006 $SK_{278}$ | 15.3 | 0.15 | 20060922 | 244.29028 | 126.37580 | 351.34441 | 9.99355 | 0.0370521 | 3.2014236 | 21 | 1 | 60 days | 0.36 | M-v | 5 | MPC | 2006 $SK_{278}$ |
| 2006 $SL_{278}$ | 15.5 | 0.15 | 20060922 | 19.61629 | 116.29611 | 218.93066 | 21.85601 | 0.2373424 | 3.0902469 | 22 | 1 | 35 days | 0.53 | | | MPC | 2006 $SL_{278}$ |
| 2006 $SM_{278}$ | 18.8 | 0.15 | 20060922 | 348.92664 | 206.13402 | 173.03393 | 5.33226 | 0.1081348 | 2.3519636 | 16 | 1 | 5 days | 0.65 | | | MPC | 2006 $SM_{278}$ |
| 2006 $SQ_{278}$ | 16.7 | 0.15 | 20060922 | 189.04438 | 171.10971 | 13.50266 | 18.82862 | 0.2444430 | 2.6540155 | 14 | 1 | 3 days | 0.34 | | | MPC | 2006 $SQ_{278}$ |
| 2006 $SR_{278}$ | 17.4 | 0.15 | 20060922 | 310.38737 | 47.43652 | 18.08184 | 3.72322 | 0.0666102 | 3.0254262 | 15 | 1 | 5 days | 0.42 | | | MPC | 2006 $SR_{278}$ |
| 2006 $ST_{278}$ | 17.2 | 0.15 | 20060922 | 22.38356 | 82.87611 | 248.47485 | 7.77329 | 0.2716798 | 2.2221636 | 37 | 1 | 44 days | 0.37 | | | MPC | 2006 $ST_{278}$ |
| 2006 $SU_{278}$ | 16.1 | 0.15 | 20060922 | 222.58099 | 139.91580 | 16.17476 | 7.74443 | 0.1534015 | 2.9659666 | 16 | 1 | 28 days | 0.26 | | | MPC | 2006 $SU_{278}$ |
| 2006 $SW_{278}$ | 17.8 | 0.15 | 20061012 | 36.16083 | 177.55059 | 143.65087 | 2.84589 | 0.2128320 | 2.2746952 | 24 | 1 | 50 days | 0.43 | | | MPC | 2006 $SW_{278}$ |
| 2006 $SX_{278}$ | 15.5 | 0.15 | 20060922 | 189.16591 | 163.97187 | 19.69597 | 23.85852 | 0.1757381 | 2.6390112 | 10 | 1 | 4 days | 0.37 | | | MPC | 2006 $SX_{278}$ |
| 2006 $SY_{278}$ | 15.9 | 0.15 | 20060922 | 31.59051 | 158.17254 | 175.81397 | 10.28793 | 0.0825441 | 3.1434306 | 20 | 1 | 91 days | 0.34 | M-v | 4 | MPC | 2006 $SY_{278}$ |
| 2006 $SZ_{278}$ | 17.8 | 0.15 | 20060922 | 343.69903 | 285.00469 | 107.30050 | 2.22174 | 0.1943871 | 2.4347393 | 25 | 1 | 23 days | 0.44 | | | MPC | 2006 $SZ_{278}$ |
| 2006 $SG_{279}$ | 17.6 | 0.15 | 20060922 | 54.88464 | 127.85545 | 205.40126 | 6.34455 | 0.1203827 | 2.3840818 | 24 | 1 | 60 days | 0.24 | M-v | 5 | MPC | 2006 $SG_{279}$ |
| 2006 $SH_{279}$ | 17.5 | 0.15 | 20060922 | 325.58735 | 128.88072 | 291.87262 | 3.60855 | 0.1618337 | 2.3373005 | 23 | 1 | 24 days | 0.41 | | | MPC | 2006 $SH_{279}$ |
| 2006 $SJ_{279}$ | 16.0 | 0.15 | 20060922 | 314.82152 | 215.82477 | 211.41980 | 21.12390 | 0.0685301 | 2.6934212 | 50 | 1 | 63 days | 0.53 | M-v | 4 | MPC | 2006 $SJ_{279}$ |
| 2006 $SL_{279}$ | 16.1 | 0.15 | 20061012 | 341.22476 | 34.70595 | 43.65784 | 18.34383 | 0.3062717 | 3.0728026 | 77 | 1 | 56 days | 0.48 | | | MPC | 2006 $SL_{279}$ |
| 2006 $SO_{279}$ | 18.5 | 0.15 | 20061012 | 353.09858 | 36.89324 | 4.16794 | 13.07430 | 0.4117937 | 2.7390668 | 32 | 1 | 29 days | 0.64 | | | MPC | 2006 $SO_{279}$ |
| 2006 $SP_{279}$ | 15.6 | 0.15 | 20060922 | 6.30663 | 13.13777 | 357.27234 | 9.44764 | 0.2512664 | 3.9505463 | 21 | 1 | 23 days | 0.52 | | | MPC | 2006 $SP_{279}$ |
| 2006 $SQ_{279}$ | 16.5 | 0.15 | 20061012 | 155.18295 | 357.43833 | 232.78526 | 11.17141 | 0.0239017 | 2.7049276 | 24 | 1 | 58 days | 0.48 | | | MPC | 2006 $SQ_{279}$ |
| 2006 $ST_{279}$ | 16.2 | 0.15 | 20061012 | 329.30944 | 185.82510 | 238.66198 | 8.04575 | 0.0928049 | 2.7409057 | 29 | 1 | 53 days | 0.36 | | | MPC | 2006 $ST_{279}$ |
| 2006 $SU_{279}$ | 16.1 | 0.15 | 20060922 | 353.00148 | 35.97819 | 8.59496 | 13.07357 | 0.2602121 | 3.1271421 | 11 | 1 | 3 days | 0.69 | | | MPC | 2006 $SU_{279}$ |
| 2006 $SX_{279}$ | 17.4 | 0.15 | 20061012 | 355.89003 | 137.60380 | 246.12390 | 5.56852 | 0.1233572 | 2.3615129 | 22 | 1 | 51 days | 0.39 | | | MPC | 2006 $SX_{279}$ |
| 2006 $SZ_{279}$ | 15.9 | 0.15 | 20060922 | 8.76405 | 234.44698 | 143.78762 | 15.16757 | 0.1839129 | 2.5664284 | 45 | 1 | 65 days | 0.50 | M-v | 4 | MPC | 2006 $SZ_{279}$ |
| 2006 $SC_{280}$ | 16.1 | 0.15 | 20060922 | 10.26222 | 280.86926 | 81.15120 | 6.09347 | 0.1795982 | 2.7113681 | 34 | 1 | 64 days | 0.45 | M-v | 4 | MPC | 2006 $SC_{280}$ |
| 2006 $SG_{280}$ | 16.5 | 0.15 | 20061012 | 47.70380 | 219.96220 | 105.22538 | 4.31391 | 0.1844661 | 2.3363942 | 36 | 1 | 54 days | 0.54 | | | MPC | 2006 $SG_{280}$ |
| 2006 $SN_{280}$ | 16.6 | 0.15 | 20061012 | 40.15886 | 230.75938 | 93.74090 | 4.73392 | 0.2561271 | 2.3206191 | 30 | 1 | 54 days | 0.52 | | | MPC | 2006 $SN_{280}$ |
| 2006 $SZ_{280}$ | 16.8 | 0.15 | 20061012 | 29.84039 | 201.54830 | 128.89644 | 6.22258 | 0.3316868 | 2.5673878 | 30 | 1 | 51 days | 0.38 | | | MPC | 2006 $SZ_{280}$ |
| 2006 $SC_{281}$ | 16.3 | 0.15 | 20061012 | 348.82365 | 351.40834 | 55.99577 | 11.50826 | 0.2237398 | 2.4321642 | 65 | 1 | 52 days | 0.51 | | | MPC | 2006 $SC_{281}$ |
| 2006 $SD_{281}$ | 17.4 | 0.15 | 20061012 | 35.48050 | 243.31876 | 83.97559 | 6.02043 | 0.2906244 | 2.2569269 | 29 | 1 | 54 days | 0.52 | | | MPC | 2006 $SD_{281}$ |
| 2006 $SE_{281}$ | 16.1 | 0.15 | 20061012 | 326.34336 | 20.23230 | 56.15086 | 14.30579 | 0.1414702 | 2.6203243 | 27 | 1 | 54 days | 0.54 | | | MPC | 2006 $SE_{281}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SF_{281}$ | 27.1 | 0.15 | 20060922 | 355.08087 | 358.02539 | 10.41197 | 1.45006 | 0.3242709 | 1.4996288 | 16 | 1 | 0 days | 0.34 | M-v | 9 | MPC | | 2006 $SF_{281}$ |
| 2006 $SH_{281}$ | 14.7 | 0.15 | 20060922 | 209.73637 | 315.26231 | 209.89096 | 27.18019 | 0.0853497 | 3.2316166 | 15 | 1 | 2 days | 0.93 | | E | MPC | | 2006 $SH_{281}$ |
| 2006 $SQ_{281}$ | 16.6 | 0.15 | 20060922 | 345.91225 | 223.15375 | 162.24656 | 11.49238 | 0.2568240 | 3.1318490 | 22 | 1 | 80 days | 0.44 | M-v | 4 | MPC | | 2006 $SQ_{281}$ |
| 2006 $ST_{281}$ | 17.2 | 0.15 | 20060922 | 359.03884 | 322.82017 | 43.17069 | 7.49373 | 0.2505812 | 2.6386628 | 33 | 1 | 80 days | 0.46 | M-v | 4 | MPC | | 2006 $ST_{281}$ |
| 2006 $SU_{281}$ | 17.1 | 0.15 | 20060922 | 349.72443 | 354.18986 | 39.40995 | 15.43398 | 0.2978719 | 3.0302230 | 34 | 1 | 63 days | 0.62 | M-v | 4 | MPC | | 2006 $SU_{281}$ |
| 2006 $SX_{281}$ | 17.4 | 0.15 | 20060922 | 11.48530 | 288.84732 | 55.03413 | 15.73748 | 0.2227816 | 2.6314982 | 20 | 1 | 6 days | 0.81 | | | MPC | | 2006 $SX_{281}$ |
| 2006 $SY_{281}$ | 16.0 | 0.15 | 20060922 | 347.85961 | 161.28428 | 225.01592 | 7.96559 | 0.0794926 | 3.1867884 | 11 | 1 | 11 days | 0.57 | | | MPC | | 2006 $SY_{281}$ |
| 2006 $SH_{282}$ | 17.2 | 0.15 | 20060922 | 322.06200 | 1.31128 | 49.00236 | 3.16290 | 0.1649623 | 2.2788114 | 10 | 1 | 5 days | 0.70 | | | MPC | | 2006 $SH_{282}$ |
| 2006 $SJ_{282}$ | 17.6 | 0.15 | 20060922 | 42.87437 | 163.37282 | 137.51588 | 5.08368 | 0.1662032 | 2.2048302 | 18 | 1 | 15 days | 0.67 | | D | MPC | | 2006 $SJ_{282}$ |
| 2006 $SO_{282}$ | 16.2 | 0.15 | 20060922 | 24.70485 | 354.49705 | 344.75620 | 7.46454 | 0.2087867 | 2.6193075 | 21 | 1 | 26 days | 0.41 | | | MPC | | 2006 $SO_{282}$ |
| 2006 $SQ_{282}$ | 17.7 | 0.15 | 20060922 | 8.62006 | 319.58891 | 32.42995 | 8.72032 | 0.3369415 | 2.8612776 | 49 | 1 | 60 days | 0.47 | M-v | 4 | MPC | | 2006 $SQ_{282}$ |
| 2006 $SS_{282}$ | 17.5 | 0.15 | 20061012 | 351.14908 | 341.50598 | 53.60005 | 14.97713 | 0.2444748 | 2.6972765 | 29 | 1 | 33 days | 0.63 | | | MPC | | 2006 $SS_{282}$ |
| 2006 $SU_{282}$ | 15.9 | 0.15 | 20060922 | 31.40430 | 262.25439 | 71.10077 | 9.56754 | 0.0760595 | 3.0783324 | 12 | 1 | 7 days | 0.85 | | | MPC | | 2006 $SU_{282}$ |
| 2006 $SV_{282}$ | 18.3 | 0.15 | 20061012 | 16.41077 | 264.01886 | 82.88460 | 3.26850 | 0.2653321 | 2.3953710 | 29 | 1 | 59 days | 0.47 | | | MPC | | 2006 $SV_{282}$ |
| 2006 $SA_{283}$ | 17.8 | 0.15 | 20060922 | 335.05529 | 0.51986 | 33.99582 | 4.48742 | 0.1661985 | 2.2469887 | 23 | 1 | 80 days | 0.51 | M-v | 4 | MPC | | 2006 $SA_{283}$ |
| 2006 $SB_{283}$ | 17.5 | 0.15 | 20060922 | 340.21208 | 349.14180 | 35.56318 | 6.42092 | 0.1434859 | 2.2832628 | 39 | 1 | 80 days | 0.51 | M-v | 4 | MPC | | 2006 $SB_{283}$ |
| 2006 $SD_{283}$ | 17.9 | 0.15 | 20060922 | 20.63477 | 275.50933 | 50.26122 | 4.80931 | 0.2524408 | 2.2655461 | 20 | 1 | 60 days | 0.47 | M-v | 5 | MPC | | 2006 $SD_{283}$ |
| 2006 $SL_{283}$ | 16.5 | 0.15 | 20061012 | 8.61424 | 318.71781 | 51.21431 | 4.96521 | 0.1937086 | 2.7094220 | 33 | 1 | 55 days | 0.47 | | | MPC | | 2006 $SL_{283}$ |
| 2006 $SM_{283}$ | 15.9 | 0.15 | 20061012 | 8.95050 | 200.37530 | 169.54739 | 11.33878 | 0.2320156 | 3.1386026 | 32 | 1 | 51 days | 0.55 | | | MPC | | 2006 $SM_{283}$ |
| 2006 $SN_{283}$ | 15.6 | 0.15 | 20060922 | 351.34280 | 357.96928 | 35.76117 | 15.83740 | 0.1076997 | 2.6635875 | 70 | 1 | 66 days | 0.50 | M-v | 4 | MPC | | 2006 $SN_{283}$ |
| 2006 $SO_{283}$ | 15.2 | 0.15 | 20060922 | 344.45803 | 4.05726 | 43.66543 | 18.84125 | 0.2199582 | 3.0786593 | 72 | 1 | 62 days | 0.51 | M-v | 4 | MPC | | 2006 $SO_{283}$ |
| 2006 $SW_{283}$ | 16.8 | 0.15 | 20060922 | 2.90207 | 338.33851 | 31.67883 | 26.47176 | 0.1340732 | 2.6947133 | 26 | 1 | 62 days | 0.67 | M-v | 4 | MPC | | 2006 $SW_{283}$ |
| 2006 $SX_{283}$ | 17.8 | 0.15 | 20061012 | 2.75433 | 244.65384 | 131.74379 | 4.64862 | 0.2918248 | 2.6811183 | 26 | 1 | 32 days | 0.61 | | | MPC | | 2006 $SX_{283}$ |
| 2006 $SY_{283}$ | 17.2 | 0.15 | 20060922 | 301.08720 | 355.84411 | 86.40977 | 6.43674 | 0.0769929 | 2.3632992 | 17 | 1 | 26 days | 0.80 | | | MPC | | 2006 $SY_{283}$ |
| 2006 $SZ_{283}$ | 16.8 | 0.15 | 20060922 | 108.75361 | 216.46415 | 44.77553 | 12.71613 | 0.0536827 | 2.3047991 | 11 | 1 | 8 days | 0.75 | | | MPC | | 2006 $SZ_{283}$ |
| 2006 $SA_{284}$ | 15.9 | 0.15 | 20060922 | 32.72069 | 285.00666 | 41.02466 | 14.32664 | 0.2092520 | 3.1031943 | 25 | 1 | 26 days | 0.52 | | | MPC | | 2006 $SA_{284}$ |
| 2006 $SD_{284}$ | 17.0 | 0.15 | 20061012 | 23.39950 | 225.77452 | 121.67663 | 7.68204 | 0.2272000 | 2.2716769 | 30 | 1 | 51 days | 0.50 | | | MPC | | 2006 $SD_{284}$ |
| 2006 $SE_{284}$ | 15.4 | 0.15 | 20060922 | 16.02196 | 223.30765 | 144.83260 | 14.98905 | 0.1716452 | 2.6588835 | 44 | 1 | 65 days | 0.70 | M-v | 4 | MPC | | 2006 $SE_{284}$ |
| 2006 $SF_{284}$ | 16.1 | 0.15 | 20060922 | 324.72886 | 192.82470 | 220.78676 | 8.97173 | 0.1116107 | 2.7016453 | 23 | 1 | 35 days | 0.53 | | | MPC | | 2006 $SF_{284}$ |
| 2006 $SG_{284}$ | 15.7 | 0.15 | 20060922 | 340.28976 | 84.77118 | 308.39171 | 5.08010 | 0.0355179 | 2.7011225 | 21 | 1 | 37 days | 0.47 | | | MPC | | 2006 $SG_{284}$ |
| 2006 $SR_{284}$ | 17.2 | 0.15 | 20061012 | 20.55671 | 186.35653 | 156.48300 | 5.74867 | 0.1506067 | 2.3732238 | 29 | 1 | 58 days | 0.48 | | | MPC | | 2006 $SR_{284}$ |
| 2006 $SU_{284}$ | 18.0 | 0.15 | 20061012 | 359.65611 | 331.39519 | 51.14400 | 6.52888 | 0.2313170 | 2.3825743 | 39 | 1 | 50 days | 0.51 | | | MPC | | 2006 $SU_{284}$ |
| 2006 $SY_{284}$ | 16.8 | 0.15 | 20061012 | 57.52740 | 236.42719 | 66.68336 | 6.52903 | 0.2392689 | 2.3495620 | 31 | 1 | 45 days | 0.68 | | | MPC | | 2006 $SY_{284}$ |
| 2006 $SA_{285}$ | 17.8 | 0.15 | 20061012 | 18.57404 | 274.65400 | 84.71419 | 5.65833 | 0.2070423 | 2.2087101 | 33 | 1 | 54 days | 0.49 | | | MPC | | 2006 $SA_{285}$ |
| 2006 $SE_{285}$ | 16.5 | 0.15 | 20060922 | 9.84635 | 129.56652 | 229.49614 | 27.77844 | 0.4092353 | 2.6165297 | 83 | 1 | 69 days | 0.49 | M-v | 4 | MPC | | 2006 $SE_{285}$ |
| 2006 $SH_{285}$ | 18.1 | 0.15 | 20060922 | 353.44915 | 188.42413 | 200.01939 | 5.72849 | 0.2705414 | 2.6073914 | 40 | 1 | 44 days | 0.31 | | | MPC | | 2006 $SH_{285}$ |
| 2006 $SL_{285}$ | 15.8 | 0.15 | 20060922 | 308.66580 | 229.77676 | 202.89479 | 26.72614 | 0.0155828 | 2.5879686 | 41 | 1 | 41 days | 0.41 | | | MPC | | 2006 $SL_{285}$ |
| 2006 $SM_{285}$ | 17.1 | 0.15 | 20061012 | 330.95517 | 36.76607 | 22.33928 | 5.58693 | 0.0848900 | 2.7244363 | 21 | 1 | 47 days | 0.38 | | D | MPC | | 2006 $SM_{285}$ |
| 2006 $SP_{285}$ | 17.6 | 0.15 | 20061012 | 35.24172 | 318.00663 | 22.65097 | 2.36793 | 0.1983816 | 2.3327577 | 17 | 1 | 51 days | 0.30 | | | MPC | | 2006 $SP_{285}$ |
| 2006 $SS_{285}$ | 17.2 | 0.15 | 20061012 | 11.36199 | 349.88249 | 36.39227 | 5.11681 | 0.1499449 | 2.2591591 | 55 | 1 | 56 days | 0.51 | | | MPC | | 2006 $SS_{285}$ |
| 2006 $SV_{285}$ | 17.0 | 0.15 | 20061012 | 343.63065 | 198.78021 | 197.48021 | 4.13001 | 0.1213431 | 2.6678940 | 27 | 1 | 44 days | 0.40 | | | MPC | | 2006 $SV_{285}$ |
| 2006 $SW_{285}$ | 15.7 | 0.15 | 20060922 | 319.23366 | 226.98528 | 190.91302 | 9.50075 | 0.0711255 | 3.1492318 | 35 | 1 | 63 days | 0.44 | M-v | 4 | MPC | | 2006 $SW_{285}$ |
| 2006 $SY_{285}$ | 16.4 | 0.15 | 20060922 | 20.38883 | 357.10310 | 332.72797 | 12.99969 | 0.3239955 | 3.0892159 | 23 | 1 | 33 days | 0.60 | | | MPC | | 2006 $SY_{285}$ |
| 2006 $SA_{286}$ | 15.9 | 0.15 | 20060922 | 306.78236 | 300.72116 | 131.62994 | 6.18327 | 0.1537742 | 2.7968785 | 23 | 1 | 34 days | 0.53 | | | MPC | | 2006 $SA_{286}$ |
| 2006 $SC_{286}$ | 17.7 | 0.15 | 20060922 | 24.02817 | 226.77723 | 109.80313 | 6.90592 | 0.1234120 | 2.2578111 | 12 | 1 | 14 days | 0.71 | | | MPC | | 2006 $SC_{286}$ |
| 2006 $SE_{286}$ | 15.1 | 0.15 | 20061012 | 355.38791 | 68.89656 | 330.46750 | 14.95266 | 0.2396106 | 3.0354209 | 30 | 1 | 56 days | 0.71 | | | MPC | | 2006 $SE_{286}$ |
| 2006 $SG_{286}$ | 18.1 | 0.15 | 20060922 | 355.96114 | 317.97313 | 51.39970 | 7.32367 | 0.1713229 | 2.3554148 | 19 | 1 | 27 days | 0.66 | | | MPC | | 2006 $SG_{286}$ |
| 2006 $SH_{286}$ | 15.8 | 0.15 | 20060922 | 17.54634 | 295.87611 | 43.68742 | 11.81814 | 0.1982633 | 3.2285026 | 23 | 1 | 32 days | 0.60 | | | MPC | | 2006 $SH_{286}$ |
| 2006 $SJ_{286}$ | 16.7 | 0.15 | 20061012 | 53.72636 | 262.48049 | 29.33863 | 17.18157 | 0.2321622 | 2.5939343 | 20 | 1 | 59 days | 0.61 | | | MPC | | 2006 $SJ_{286}$ |
| 2006 $SL_{286}$ | 14.4 | 0.15 | 20060922 | 304.83613 | 15.85658 | 59.87166 | 18.92561 | 0.0425548 | 3.5501203 | 22 | 1 | 28 days | 0.51 | | | MPC | | 2006 $SL_{286}$ |
| 2006 $SQ_{286}$ | 16.7 | 0.15 | 20060922 | 346.12424 | 141.09318 | 243.85410 | 9.75367 | 0.2372725 | 2.3801326 | 21 | 1 | 69 days | 0.45 | M-v | 4 | MPC | | 2006 $SQ_{286}$ |
| 2006 $SR_{286}$ | 16.0 | 0.15 | 20060922 | 4.86374 | 197.69801 | 169.37896 | 9.66241 | 0.1834246 | 3.1428772 | 24 | 1 | 31 days | 0.36 | | | MPC | | 2006 $SR_{286}$ |
| 2006 $SS_{286}$ | 16.7 | 0.15 | 20061012 | 12.16519 | 309.37481 | 55.25424 | 9.19330 | 0.2213410 | 2.7454361 | 28 | 1 | 53 days | 0.55 | | | MPC | | 2006 $SS_{286}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $ST_{286}$ | 16.5 | 0.15 | 20060922 | 0.09517 | 275.03171 | 95.56532 | 8.64132 | 0.2429460 | 2.7711502 | 25 | 1 | 37 days | 0.52 | | | MPC | 2006 $ST_{286}$ |
| 2006 $SV_{286}$ | 16.3 | 0.15 | 20060922 | 5.78228 | 99.94965 | 272.41143 | 5.09539 | 0.0508680 | 2.6912748 | 14 | 1 | 28 days | 0.56 | | | MPC | 2006 $SV_{286}$ |
| 2006 $SG_{287}$ | 17.2 | 0.15 | 20061012 | 345.71754 | 191.61715 | 205.06854 | 25.73584 | 0.2237948 | 2.2761539 | 27 | 1 | 56 days | 0.30 | | | MPC | 2006 $SG_{287}$ |
| 2006 $SK_{287}$ | 16.6 | 0.15 | 20061012 | 345.85747 | 146.58476 | 251.45173 | 9.75892 | 0.2365456 | 2.6921944 | 31 | 1 | 53 days | 0.49 | | | MPC | 2006 $SK_{287}$ |
| 2006 $ST_{287}$ | 15.3 | 0.15 | 20061012 | 12.11023 | 65.13298 | 295.50404 | 9.71319 | 0.1303717 | 3.0979942 | 24 | 1 | 39 days | 0.45 | | | MPC | 2006 $ST_{287}$ |
| 2006 $SX_{287}$ | 17.4 | 0.15 | 20060922 | 353.95021 | 46.52771 | 323.70664 | 6.52651 | 0.1898614 | 2.6302337 | 23 | 1 | 64 days | 0.47 | M-v | 4 | MPC | 2006 $SX_{287}$ |
| 2006 $SK_{288}$ | 17.1 | 0.15 | 20060922 | 343.04129 | 225.89852 | 163.95024 | 18.32381 | 0.2841498 | 3.1016260 | 20 | 1 | 62 days | 0.65 | M-v | 4 | MPC | 2006 $SK_{288}$ |
| 2006 $SQ_{288}$ | 17.8 | 0.15 | 20060922 | 346.89999 | 259.03108 | 125.31750 | 5.55401 | 0.2305071 | 2.4071478 | 19 | 1 | 26 days | 0.54 | | | MPC | 2006 $SQ_{288}$ |
| 2006 $SH_{289}$ | 16.6 | 0.15 | 20061012 | 331.70103 | 2.98173 | 46.21714 | 14.50472 | 0.0983044 | 2.6964333 | 22 | 1 | 59 days | 0.57 | | | MPC | 2006 $SH_{289}$ |
| 2006 $SM_{289}$ | 17.2 | 0.15 | 20060922 | 0.78952 | 203.65042 | 161.72851 | 12.10507 | 0.2006321 | 2.6591302 | 15 | 1 | 23 days | 0.48 | | | MPC | 2006 $SM_{289}$ |
| 2006 $ST_{289}$ | 15.1 | 0.15 | 20061012 | 48.75077 | 262.60761 | 45.05414 | 26.29184 | 0.2134077 | 3.1322790 | 30 | 1 | 51 days | 0.59 | | | MPC | 2006 $ST_{289}$ |
| 2006 $SE_{290}$ | 17.5 | 0.15 | 20060922 | 29.38328 | 276.99750 | 39.60921 | 6.17699 | 0.1776569 | 2.4150470 | 11 | 1 | 3 days | 0.84 | | | MPC | 2006 $SE_{290}$ |
| 2006 $SG_{290}$ | 16.0 | 0.15 | 20060922 | 7.11452 | 284.32147 | 85.45171 | 5.71657 | 0.1560860 | 2.7429537 | 38 | 1 | 64 days | 0.52 | M-v | 4 | MPC | 2006 $SG_{290}$ |
| 2006 $SJ_{290}$ | 17.8 | 0.15 | 20061012 | 17.00280 | 227.01511 | 129.67277 | 4.37787 | 0.2476152 | 2.3416600 | 30 | 1 | 44 days | 0.57 | | | MPC | 2006 $SJ_{290}$ |
| 2006 $SK_{290}$ | 16.6 | 0.15 | 20061012 | 344.52317 | 359.94668 | 53.65665 | 9.65527 | 0.2641953 | 2.6865776 | 51 | 1 | 51 days | 0.47 | | | MPC | 2006 $SK_{290}$ |
| 2006 $SL_{290}$ | 16.5 | 0.15 | 20061012 | 22.81978 | 185.40784 | 168.05567 | 14.88081 | 0.2644882 | 2.6556111 | 22 | 1 | 54 days | 0.54 | | | MPC | 2006 $SL_{290}$ |
| 2006 $SR_{290}$ | 18.1 | 0.15 | 20061012 | 343.57152 | 127.40739 | 283.47774 | 1.18682 | 0.2165619 | 2.4298282 | 33 | 1 | 55 days | 0.32 | | | MPC | 2006 $SR_{290}$ |
| 2006 $ST_{290}$ | 18.6 | 0.15 | 20061012 | 357.00704 | 168.25385 | 221.50831 | 4.21403 | 0.2053937 | 2.3908595 | 28 | 1 | 51 days | 0.28 | | | MPC | 2006 $ST_{290}$ |
| 2006 $SV_{290}$ | 17.2 | 0.15 | 20061012 | 45.31205 | 12.91627 | 311.53059 | 1.73204 | 0.1779414 | 2.7530537 | 33 | 1 | 56 days | 0.31 | | | MPC | 2006 $SV_{290}$ |
| 2006 $SX_{290}$ | 17.3 | 0.15 | 20060922 | 45.53338 | 129.10729 | 203.31692 | 5.85349 | 0.0378237 | 2.7873843 | 48 | 1 | 63 days | 0.43 | M-v | 4 | MPC | 2006 $SX_{290}$ |
| 2006 $SE_{291}$ | 16.9 | 0.15 | 20060922 | 315.92953 | 108.00186 | 305.71703 | 16.61379 | 0.0924726 | 1.9026461 | 24 | 1 | 67 days | 0.50 | M-v | 5 | MPC | 2006 $SE_{291}$ |
| 2006 $SS_{291}$ | 14.7 | 0.15 | 20060922 | 349.34500 | 264.81431 | 118.02196 | 22.40966 | 0.1522432 | 3.1689892 | 16 | 1 | 40 days | 0.32 | | | MPC | 2006 $SS_{291}$ |
| 2006 $SA_{292}$ | 17.0 | 0.15 | 20061012 | 80.13325 | 241.11976 | 61.02425 | 23.46573 | 0.0453304 | 1.9505908 | 14 | 1 | 45 days | 0.46 | | | MPC | 2006 $SA_{292}$ |
| 2006 $SC_{292}$ | 15.8 | 0.15 | 20061012 | 355.92135 | 322.68220 | 56.01238 | 17.74741 | 0.2895142 | 2.7102456 | 27 | 1 | 53 days | 0.39 | | | MPC | 2006 $SC_{292}$ |
| 2006 $SE_{292}$ | 17.3 | 0.15 | 20061012 | 355.77636 | 197.26048 | 193.04377 | 8.17532 | 0.1673958 | 2.7171438 | 34 | 1 | 56 days | 0.43 | | | MPC | 2006 $SE_{292}$ |
| 2006 $SM_{292}$ | 17.1 | 0.15 | 20060922 | 320.44993 | 101.89749 | 306.36709 | 3.58497 | 0.0752875 | 2.7563885 | 12 | 1 | 28 days | 0.77 | | | MPC | 2006 $SM_{292}$ |
| 2006 $SA_{294}$ | 16.7 | 0.15 | 20060922 | 343.61920 | 180.09432 | 207.57169 | 4.60530 | 0.1425949 | 3.0824934 | 14 | 1 | 27 days | 0.14 | | | MPC | 2006 $SA_{294}$ |
| 2006 $SB_{294}$ | 16.2 | 0.15 | 20061012 | 14.68071 | 155.25681 | 195.05927 | 11.18040 | 0.1615844 | 3.0214614 | 16 | 1 | 58 days | 0.19 | | | MPC | 2006 $SB_{294}$ |
| 2006 $SH_{294}$ | 18.0 | 0.15 | 20061012 | 347.28836 | 204.99983 | 190.98028 | 12.14898 | 0.2986611 | 3.0422819 | 20 | 1 | 34 days | 0.30 | | D | MPC | 2006 $SH_{294}$ |
| 2006 $SK_{294}$ | 17.2 | 0.15 | 20060922 | 334.32285 | 80.26335 | 317.56988 | 2.19326 | 0.1158709 | 2.5942684 | 16 | 1 | 44 days | 0.20 | | | MPC | 2006 $SK_{294}$ |
| 2006 $SY_{294}$ | 18.4 | 0.15 | 20060922 | 343.86429 | 193.87203 | 195.95395 | 5.34387 | 0.2134173 | 2.2929987 | 21 | 1 | 60 days | 0.26 | M-v | 4 | MPC | 2006 $SY_{294}$ |
| 2006 $SE_{295}$ | 17.8 | 0.15 | 20060922 | 359.86051 | 173.88872 | 191.25949 | 7.32917 | 0.2351967 | 2.7536873 | 24 | 1 | 60 days | 0.42 | M-v | 4 | MPC | 2006 $SE_{295}$ |
| 2006 $SL_{295}$ | 18.9 | 0.15 | 20061012 | 357.89903 | 13.45585 | 2.43137 | 2.23405 | 0.1887489 | 2.4192400 | 10 | 1 | 33 days | 0.25 | | | MPC | 2006 $SL_{295}$ |
| 2006 $SM_{295}$ | 18.0 | 0.15 | 20060922 | 346.63566 | 27.08348 | 356.17822 | 2.57636 | 0.1040490 | 2.7526003 | 13 | 1 | 32 days | 0.27 | | | MPC | 2006 $SM_{295}$ |
| 2006 $SQ_{295}$ | 18.6 | 0.15 | 20061012 | 333.80371 | 93.70835 | 314.84964 | 0.98961 | 0.1781505 | 2.3649968 | 20 | 1 | 59 days | 0.24 | | | MPC | 2006 $SQ_{295}$ |
| 2006 $SW_{295}$ | 16.7 | 0.15 | 20060922 | 300.91057 | 95.75360 | 336.15960 | 1.83685 | 0.0664911 | 3.0214340 | 13 | 1 | 35 days | 0.74 | | | MPC | 2006 $SW_{295}$ |
| 2006 $SX_{295}$ | 17.8 | 0.15 | 20061012 | 0.34919 | 158.04069 | 213.22549 | 1.33932 | 0.1997392 | 2.5953166 | 18 | 1 | 33 days | 0.74 | | | MPC | 2006 $SX_{295}$ |
| 2006 $SF_{296}$ | 17.3 | 0.15 | 20060922 | 26.84765 | 106.98593 | 224.80150 | 1.97544 | 0.0988053 | 2.7665138 | 17 | 1 | 41 days | 0.35 | | | MPC | 2006 $SF_{296}$ |
| 2006 $SH_{296}$ | 16.8 | 0.15 | 20061012 | 125.48610 | 24.84497 | 208.81804 | 3.06843 | 0.1120364 | 2.6692702 | 14 | 1 | 33 days | 0.31 | | | MPC | 2006 $SH_{296}$ |
| 2006 $SU_{296}$ | 17.2 | 0.15 | 20060922 | 345.46184 | 24.10480 | 354.45414 | 7.63729 | 0.0471482 | 2.3903952 | 10 | 1 | 28 days | 0.30 | | | MPC | 2006 $SU_{296}$ |
| 2006 $SW_{296}$ | 18.8 | 0.15 | 20061012 | 346.68178 | 82.02387 | 309.75075 | 1.13002 | 0.2145679 | 2.3130155 | 16 | 1 | 59 days | 0.32 | | | MPC | 2006 $SW_{296}$ |
| 2006 $SN_{297}$ | 18.0 | 0.15 | 20061012 | 343.24636 | 29.46736 | 7.62771 | 1.21216 | 0.1933124 | 2.3605949 | 35 | 1 | 33 days | 0.55 | | | MPC | 2006 $SN_{297}$ |
| 2006 $SQ_{297}$ | 16.4 | 0.15 | 20060922 | 296.50586 | 248.06581 | 188.00538 | 10.45246 | 0.0531564 | 3.0829232 | 21 | 1 | 60 days | 0.28 | M-v | 5 | MPC | 2006 $SQ_{297}$ |
| 2006 $SU_{297}$ | 15.9 | 0.15 | 20061012 | 50.74828 | 284.34833 | 27.93427 | 10.76867 | 0.1281720 | 3.0280042 | 32 | 1 | 57 days | 0.50 | | | MPC | 2006 $SU_{297}$ |
| 2006 $SB_{298}$ | 17.4 | 0.15 | 20060922 | 18.60108 | 329.47780 | 22.25082 | 4.29774 | 0.1537559 | 2.7764749 | 20 | 1 | 44 days | 0.30 | | | MPC | 2006 $SB_{298}$ |
| 2006 $SC_{298}$ | 15.5 | 0.15 | 20061012 | 299.30468 | 64.70300 | 30.58252 | 3.64236 | 0.1032521 | 3.2031926 | 34 | 1 | 55 days | 0.50 | | | MPC | 2006 $SC_{298}$ |
| 2006 $SD_{298}$ | 16.8 | 0.15 | 20061012 | 325.58685 | 228.81222 | 195.46689 | 9.75043 | 0.0880833 | 3.1631300 | 20 | 1 | 55 days | 0.30 | | | MPC | 2006 $SD_{298}$ |
| 2006 $SE_{298}$ | 18.2 | 0.15 | 20060922 | 289.03101 | 63.95486 | 40.50307 | 1.94755 | 0.1415320 | 2.4107660 | 24 | 1 | 64 days | 0.33 | M-v | 4 | MPC | 2006 $SE_{298}$ |
| 2006 $SH_{298}$ | 16.6 | 0.15 | 20061012 | 306.99951 | 268.36503 | 186.67613 | 1.34965 | 0.1751066 | 3.1977978 | 20 | 1 | 47 days | 0.24 | | | MPC | 2006 $SH_{298}$ |
| 2006 $SM_{298}$ | 18.2 | 0.15 | 20061012 | 346.17565 | 24.27309 | 20.69324 | 1.50242 | 0.1767717 | 2.4526002 | 33 | 1 | 56 days | 0.40 | | | MPC | 2006 $SM_{298}$ |
| 2006 $SN_{298}$ | 18.5 | 0.15 | 20061012 | 347.32656 | 21.39625 | 26.51359 | 3.45181 | 0.2747798 | 2.6600293 | 26 | 1 | 56 days | 0.28 | | | MPC | 2006 $SN_{298}$ |
| 2006 $SA_{299}$ | 18.1 | 0.15 | 20060922 | 344.70388 | 192.21016 | 193.22831 | 16.82466 | 0.1425761 | 2.5465314 | 14 | 1 | 25 days | 0.21 | | | MPC | 2006 $SA_{299}$ |
| 2006 $SD_{299}$ | 17.7 | 0.15 | 20060922 | 274.28245 | 232.33845 | 229.77410 | 3.30325 | 0.1014753 | 2.2463406 | 19 | 1 | 34 days | 0.21 | | | MPC | 2006 $SD_{299}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SF_{299}$ | 18.2 | 0.15 | 20061012 | 58.74340 | 273.75785 | 23.80954 | 4.65313 | 0.1622163 | 2.2391748 | 14 | 1 | 31 days | 0.15 | | | MPC | 2006 $SF_{299}$ |
| 2006 $SH_{299}$ | 17.2 | 0.15 | 20061012 | 122.04037 | 230.27521 | 14.95033 | 15.00707 | 0.0347107 | 2.6180682 | 18 | 1 | 38 days | 0.37 | | D | MPC | 2006 $SH_{299}$ |
| 2006 $SN_{299}$ | 16.0 | 0.15 | 20060922 | 279.32169 | 91.22805 | 6.83482 | 10.02621 | 0.0259016 | 3.0264531 | 22 | 1 | 120 days | 0.30 | M-v | 4 | MPC | 2006 $SN_{299}$ |
| 2006 $SP_{299}$ | 18.1 | 0.15 | 20060922 | 24.36172 | 307.96989 | 22.06593 | 3.40416 | 0.2048654 | 2.7961985 | 13 | 1 | 14 days | 0.22 | | E | MPC | 2006 $SP_{299}$ |
| 2006 $SQ_{299}$ | 17.3 | 0.15 | 20060922 | 309.70001 | 46.98700 | 17.01143 | 6.60132 | 0.0642428 | 2.7066265 | 11 | 1 | 20 days | 0.28 | | | MPC | 2006 $SQ_{299}$ |
| 2006 $SA_{300}$ | 18.0 | 0.15 | 20060922 | 29.22903 | 265.80961 | 52.31269 | 6.22478 | 0.2017273 | 2.1956781 | 27 | 1 | 65 days | 0.67 | M-v | 5 | MPC | 2006 $SA_{300}$ |
| 2006 $SD_{300}$ | 15.4 | 0.15 | 20060922 | 337.66596 | 269.46369 | 121.21619 | 8.44751 | 0.0585953 | 3.0840639 | 19 | 1 | 33 days | 0.44 | | | MPC | 2006 $SD_{300}$ |
| 2006 $SM_{300}$ | 17.6 | 0.15 | 20060922 | 33.78686 | 176.19844 | 138.14913 | 5.84202 | 0.2224235 | 2.3106403 | 15 | 1 | 24 days | 0.45 | | | MPC | 2006 $SM_{300}$ |
| 2006 $SV_{300}$ | 15.4 | 0.15 | 20060922 | 336.44068 | 60.95848 | 345.74597 | 3.88356 | 0.1419427 | 3.1533776 | 22 | 1 | 63 days | 0.55 | M-v | 4 | MPC | 2006 $SV_{300}$ |
| 2006 $SF_{301}$ | 16.5 | 0.15 | 20061012 | 12.86962 | 327.74363 | 44.24484 | 3.26988 | 0.0676948 | 3.1257937 | 20 | 1 | 46 days | 0.26 | | | MPC | 2006 $SF_{301}$ |
| 2006 $SH_{301}$ | 17.4 | 0.15 | 20061012 | 2.75530 | 214.71659 | 167.56724 | 2.20841 | 0.1124530 | 2.6611010 | 27 | 1 | 55 days | 0.25 | | | MPC | 2006 $SH_{301}$ |
| 2006 $SK_{301}$ | 17.5 | 0.15 | 20061012 | 1.19840 | 341.98812 | 43.40937 | 3.42324 | 0.0704670 | 3.0056085 | 17 | 1 | 46 days | 0.31 | | | MPC | 2006 $SK_{301}$ |
| 2006 $SL_{301}$ | 19.8 | 0.15 | 20061012 | 17.67163 | 327.73527 | 30.43722 | 4.91188 | 0.2071973 | 2.3503726 | 14 | 1 | 31 days | 0.31 | | | MPC | 2006 $SL_{301}$ |
| 2006 $SO_{301}$ | 19.0 | 0.15 | 20060922 | 322.62207 | 214.06143 | 204.20969 | 21.95653 | 0.0620375 | 1.8550158 | 20 | 1 | 26 days | 0.22 | | | MPC | 2006 $SO_{301}$ |
| 2006 $SP_{301}$ | 15.9 | 0.15 | 20061012 | 295.21998 | 267.96195 | 206.42046 | 9.85637 | 0.0946800 | 2.9911879 | 25 | 1 | 51 days | 0.33 | | | MPC | 2006 $SP_{301}$ |
| 2006 $SR_{301}$ | 14.9 | 0.15 | 20061012 | 30.13332 | 273.51214 | 64.20617 | 25.95825 | 0.2726491 | 3.1747275 | 30 | 1 | 51 days | 0.42 | | | MPC | 2006 $SR_{301}$ |
| 2006 $ST_{301}$ | 15.9 | 0.15 | 20060922 | 4.42592 | 324.73814 | 51.00714 | 24.67794 | 0.2947351 | 2.9914134 | 50 | 1 | 61 days | 0.60 | M-v | 4 | MPC | 2006 $ST_{301}$ |
| 2006 $SU_{301}$ | 15.1 | 0.15 | 20060922 | 13.44756 | 348.00294 | 12.88111 | 2.82677 | 0.2662195 | 3.9725723 | 47 | 1 | 125 days | 0.38 | M-v | 3 | MPC | 2006 $SU_{301}$ |
| 2006 $SG_{303}$ | 18.4 | 0.15 | 20060902 | 320.07881 | 91.33871 | 331.06303 | 4.45573 | 0.2980682 | 2.5493508 | 19 | 1 | 59 days | 0.17 | | | MPC | 2006 $SG_{303}$ |
| 2006 $SR_{304}$ | 18.3 | 0.15 | 20061012 | 17.75339 | 289.62716 | 57.26790 | 3.32926 | 0.2095037 | 2.3921847 | 23 | 1 | 50 days | 0.56 | | | MPC | 2006 $SR_{304}$ |
| 2006 $ST_{304}$ | 15.9 | 0.15 | 20060922 | 213.61996 | 344.07317 | 174.57212 | 13.75035 | 0.0321881 | 3.0110236 | 9 | 1 | 14 days | 0.84 | | | MPC | 2006 $ST_{304}$ |
| 2006 $SN_{306}$ | 17.5 | 0.15 | 20061012 | 12.98694 | 211.07445 | 160.14318 | 3.97571 | 0.2080260 | 2.7368738 | 23 | 1 | 56 days | 0.23 | | | MPC | 2006 $SN_{306}$ |
| 2006 $SP_{306}$ | 16.4 | 0.15 | 20061012 | 292.10302 | 64.27771 | 50.06364 | 9.35293 | 0.1221950 | 2.7798913 | 26 | 1 | 45 days | 0.32 | | | MPC | 2006 $SP_{306}$ |
| 2006 $SS_{306}$ | 17.5 | 0.15 | 20061012 | 10.37669 | 338.82349 | 37.80596 | 18.36392 | 0.1958770 | 3.0596230 | 18 | 1 | 32 days | 0.26 | | | MPC | 2006 $SS_{306}$ |
| 2006 $ST_{306}$ | 17.3 | 0.15 | 20061012 | 325.84095 | 334.30216 | 105.69799 | 3.16755 | 0.1874621 | 2.4432371 | 30 | 1 | 56 days | 0.41 | | | MPC | 2006 $ST_{306}$ |
| 2006 $SZ_{306}$ | 15.8 | 0.15 | 20060922 | 328.06313 | 62.72350 | 349.27012 | 9.33639 | 0.1048915 | 3.1067491 | 19 | 1 | 36 days | 0.43 | | | MPC | 2006 $SZ_{306}$ |
| 2006 $SB_{307}$ | 17.2 | 0.15 | 20060922 | 16.98744 | 136.41200 | 208.71620 | 12.79985 | 0.1892846 | 2.6398251 | 22 | 1 | 66 days | 0.55 | M-v | 4 | MPC | 2006 $SB_{307}$ |
| 2006 $ST_{307}$ | 19.0 | 0.15 | 20060922 | 5.05971 | 107.70843 | 253.56493 | 2.35130 | 0.2161345 | 2.2652406 | 13 | 1 | 24 days | 0.53 | | | MPC | 2006 $ST_{307}$ |
| 2006 $SU_{307}$ | 17.2 | 0.15 | 20060922 | 11.46553 | 7.41276 | 349.66788 | 5.95304 | 0.1462173 | 2.7267046 | 12 | 1 | 24 days | 0.15 | | | MPC | 2006 $SU_{307}$ |
| 2006 $SW_{307}$ | 18.3 | 0.15 | 20060922 | 11.15219 | 12.26619 | 341.02674 | 3.65207 | 0.1847267 | 2.2108116 | 28 | 1 | 92 days | 0.30 | M-v | 4 | MPC | 2006 $SW_{307}$ |
| 2006 $SA_{308}$ | 16.7 | 0.15 | 20060922 | 358.36321 | 15.59832 | 359.52543 | 9.19439 | 0.1134373 | 2.7109325 | 16 | 1 | 28 days | 0.34 | | | MPC | 2006 $SA_{308}$ |
| 2006 $SB_{308}$ | 15.6 | 0.15 | 20060922 | 289.43489 | 250.84847 | 206.55519 | 15.63720 | 0.1080682 | 3.1593217 | 24 | 1 | 66 days | 0.47 | M-v | 4 | MPC | 2006 $SB_{308}$ |
| 2006 $SF_{308}$ | 18.7 | 0.15 | 20060922 | 21.46540 | 108.55395 | 224.93693 | 3.74837 | 0.2674194 | 2.5860252 | 9 | 1 | 22 days | 0.12 | | | MPC | 2006 $SF_{308}$ |
| 2006 $SQ_{308}$ | 18.5 | 0.15 | 20061012 | 354.99375 | 177.61940 | 210.56019 | 9.05520 | 0.2637587 | 2.7784416 | 15 | 1 | 31 days | 0.17 | | | MPC | 2006 $SQ_{308}$ |
| 2006 $SW_{308}$ | 17.3 | 0.15 | 20060922 | 348.73415 | 25.66694 | 7.77907 | 15.58819 | 0.2685564 | 3.0569571 | 15 | 1 | 29 days | 0.28 | | | MPC | 2006 $SW_{308}$ |
| 2006 $SY_{308}$ | 18.8 | 0.15 | 20060922 | 17.04554 | 120.42095 | 222.77724 | 3.93300 | 0.2435694 | 2.5626785 | 12 | 1 | 24 days | 0.18 | | | MPC | 2006 $SY_{308}$ |
| 2006 $SB_{309}$ | 17.9 | 0.15 | 20060922 | 300.20756 | 244.09072 | 206.57781 | 12.64836 | 0.1561660 | 2.6076301 | 16 | 1 | 32 days | 0.25 | | | MPC | 2006 $SB_{309}$ |
| 2006 $SY_{309}$ | 17.1 | 0.15 | 20060922 | 335.06638 | 45.72933 | 358.61365 | 7.16639 | 0.1260824 | 2.6329589 | 19 | 1 | 92 days | 0.25 | M-v | 4 | MPC | 2006 $SY_{309}$ |
| 2006 $SD_{310}$ | 18.2 | 0.15 | 20060922 | 306.71432 | 234.96178 | 211.91743 | 5.51631 | 0.1998394 | 2.6640589 | 10 | 1 | 22 days | 0.25 | | | MPC | 2006 $SD_{310}$ |
| 2006 $SE_{310}$ | 16.1 | 0.15 | 20060922 | 323.21745 | 236.02808 | 200.98400 | 17.39522 | 0.2965730 | 3.0767220 | 44 | 1 | 65 days | 0.39 | M-v | 4 | MPC | 2006 $SE_{310}$ |
| 2006 $SG_{310}$ | 17.2 | 0.15 | 20060922 | 40.74827 | 357.49674 | 306.67962 | 2.25123 | 0.2775245 | 2.6053116 | 13 | 1 | 30 days | 0.49 | | | MPC | 2006 $SG_{310}$ |
| 2006 $SJ_{310}$ | 15.7 | 0.15 | 20060922 | 193.32953 | 336.03634 | 207.82905 | 11.18218 | 0.0878694 | 3.0323209 | 10 | 1 | 22 days | 0.79 | | | MPC | 2006 $SJ_{310}$ |
| 2006 $SQ_{310}$ | 17.2 | 0.15 | 20061012 | 328.78317 | 171.29031 | 250.90915 | 2.19641 | 0.1718167 | 2.4429265 | 21 | 1 | 55 days | 0.50 | | | MPC | 2006 $SQ_{310}$ |
| 2006 $SU_{310}$ | 17.5 | 0.15 | 20060922 | 305.28076 | 102.19960 | 339.24433 | 4.44551 | 0.1447128 | 2.7483194 | 13 | 1 | 32 days | 0.27 | | | MPC | 2006 $SU_{310}$ |
| 2006 $SW_{310}$ | 16.2 | 0.15 | 20060922 | 14.71537 | 130.03977 | 225.34788 | 5.33737 | 0.0617917 | 2.7991316 | 20 | 1 | 32 days | 0.39 | | | MPC | 2006 $SW_{310}$ |
| 2006 $SF_{311}$ | 19.2 | 0.15 | 20060922 | 40.94868 | 96.66601 | 212.33243 | 5.94978 | 0.2115919 | 2.2040011 | 13 | 1 | 32 days | 0.17 | | | MPC | 2006 $SF_{311}$ |
| 2006 $SM_{311}$ | 17.1 | 0.15 | 20060922 | 325.79585 | 172.58603 | 239.09019 | 3.43897 | 0.0780408 | 2.5872119 | 17 | 1 | 32 days | 0.44 | | | MPC | 2006 $SM_{311}$ |
| 2006 $SQ_{311}$ | 16.4 | 0.15 | 20060922 | 339.20073 | 45.14110 | 356.62449 | 7.86673 | 0.1584248 | 3.1688776 | 22 | 1 | 64 days | 0.41 | M-v | 4 | MPC | 2006 $SQ_{311}$ |
| 2006 $ST_{311}$ | 17.1 | 0.15 | 20060922 | 41.16169 | 101.93420 | 209.88533 | 7.57995 | 0.2060028 | 2.7534753 | 17 | 1 | 32 days | 0.32 | | | MPC | 2006 $ST_{311}$ |
| 2006 $SB_{312}$ | 17.2 | 0.15 | 20060922 | 7.03072 | 84.34044 | 274.91252 | 2.74069 | 0.1771681 | 2.6366269 | 18 | 1 | 33 days | 0.23 | | | MPC | 2006 $SB_{312}$ |
| 2006 $SJ_{312}$ | 16.3 | 0.15 | 20060922 | 37.16543 | 123.31312 | 221.42084 | 10.03617 | 0.1537896 | 3.0849266 | 35 | 1 | 61 days | 0.27 | M-v | 4 | MPC | 2006 $SJ_{312}$ |
| 2006 $SB_{313}$ | 16.7 | 0.15 | 20061012 | 200.92823 | 142.49248 | 36.98973 | 4.32790 | 0.0360101 | 2.7887539 | 24 | 1 | 58 days | 0.36 | | | MPC | 2006 $SB_{313}$ |
| 2006 $SC_{313}$ | 16.2 | 0.15 | 20060922 | 211.51645 | 144.07278 | 29.43058 | 10.47057 | 0.1795072 | 2.9854921 | 13 | 1 | 24 days | 0.22 | | | MPC | 2006 $SC_{313}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SG_{313}$ | 16.7 | 0.15 | 20061012 | 301.98237 | 59.60357 | 27.62914 | 11.37977 | 0.0991069 | 3.1942282 | 10 | 1 | 45 days | 0.21 | | | MPC | 2006 $SG_{313}$ |
| 2006 $SL_{313}$ | 18.3 | 0.15 | 20060922 | 17.51344 | 306.43691 | 41.05189 | 4.61206 | 0.1736774 | 2.6755171 | 15 | 1 | 28 days | 0.22 | | | MPC | 2006 $SL_{313}$ |
| 2006 $SM_{313}$ | 15.6 | 0.15 | 20060922 | 56.30250 | 126.39709 | 182.72282 | 10.35920 | 0.0986988 | 3.1307187 | 22 | 1 | 35 days | 0.44 | | | MPC | 2006 $SM_{313}$ |
| 2006 $SO_{313}$ | 17.6 | 0.15 | 20060922 | 17.35206 | 188.36362 | 154.03885 | 2.59774 | 0.2483275 | 2.6420627 | 24 | 1 | 35 days | 0.43 | | | MPC | 2006 $SO_{313}$ |
| 2006 $SP_{313}$ | 17.3 | 0.15 | 20061012 | 268.41310 | 51.72453 | 65.16217 | 2.28969 | 0.0548882 | 2.5610545 | 24 | 1 | 50 days | 0.34 | | | MPC | 2006 $SP_{313}$ |
| 2006 $SU_{313}$ | 16.6 | 0.15 | 20060922 | 95.27045 | 195.64485 | 76.92187 | 1.87810 | 0.0722222 | 3.0318774 | 13 | 1 | 25 days | 0.25 | | | MPC | 2006 $SU_{313}$ |
| 2006 $SO_{314}$ | 19.2 | 0.15 | 20060922 | 21.06910 | 215.16971 | 117.84481 | 1.70434 | 0.2904811 | 2.6481208 | 10 | 1 | 25 days | 0.40 | | | MPC | 2006 $SO_{314}$ |
| 2006 $SS_{314}$ | 16.5 | 0.15 | 20060922 | 120.06489 | 203.55343 | 43.42892 | 4.75395 | 0.1082539 | 3.1318921 | 10 | 1 | 25 days | 0.21 | | | MPC | 2006 $SS_{314}$ |
| 2006 $SU_{314}$ | 16.2 | 0.15 | 20060922 | 325.64585 | 242.28638 | 187.30217 | 13.72827 | 0.2399466 | 3.1553785 | 24 | 1 | 25 days | 0.55 | | | MPC | 2006 $SU_{314}$ |
| 2006 $SB_{315}$ | 17.1 | 0.15 | 20061012 | 298.38616 | 285.68339 | 162.52696 | 3.69968 | 0.0616870 | 2.7638643 | 14 | 1 | 57 days | 0.22 | | | MPC | 2006 $SB_{315}$ |
| 2006 $SD_{315}$ | 16.9 | 0.15 | 20060922 | 327.27395 | 21.81127 | 31.73455 | 7.22481 | 0.1117262 | 2.3803494 | 50 | 1 | 94 days | 0.45 | M-v | 4 | MPC | 2006 $SD_{315}$ |
| 2006 $SE_{315}$ | 16.1 | 0.15 | 20060922 | 38.40689 | 257.07671 | 74.08408 | 2.71068 | 0.0868042 | 3.1404453 | 20 | 1 | 60 days | 0.25 | M-v | 4 | MPC | 2006 $SE_{315}$ |
| 2006 $SD_{316}$ | 18.0 | 0.15 | 20060922 | 329.86584 | 235.14828 | 182.86835 | 9.50205 | 0.1947488 | 2.5828174 | 14 | 1 | 25 days | 0.60 | | | MPC | 2006 $SD_{316}$ |
| 2006 $SE_{316}$ | 16.8 | 0.15 | 20060922 | 297.74786 | 63.17462 | 35.24353 | 8.65294 | 0.1745617 | 3.1498850 | 10 | 1 | 24 days | 0.24 | | | MPC | 2006 $SE_{316}$ |
| 2006 $SK_{316}$ | 16.8 | 0.15 | 20060922 | 34.47856 | 260.18629 | 66.21690 | 2.97399 | 0.1891851 | 2.9964183 | 21 | 1 | 60 days | 0.22 | M-v | 4 | MPC | 2006 $SK_{316}$ |
| 2006 $SP_{316}$ | 18.6 | 0.15 | 20060922 | 328.08679 | 4.54474 | 54.39601 | 3.30375 | 0.1867007 | 2.3711253 | 13 | 1 | 34 days | 0.21 | | | MPC | 2006 $SP_{316}$ |
| 2006 $SR_{316}$ | 18.6 | 0.15 | 20061012 | 335.89422 | 37.34369 | 31.08363 | 6.82092 | 0.3294751 | 2.6228906 | 17 | 1 | 47 days | 0.20 | | | MPC | 2006 $SR_{316}$ |
| 2006 $SU_{316}$ | 17.9 | 0.15 | 20060922 | 313.34274 | 35.23514 | 41.90117 | 4.99606 | 0.1619260 | 2.5585029 | 20 | 1 | 44 days | 0.26 | | | MPC | 2006 $SU_{316}$ |
| 2006 $SW_{316}$ | 19.3 | 0.15 | 20060922 | 11.80830 | 163.71976 | 178.28581 | 6.62762 | 0.3851363 | 2.6032542 | 15 | 1 | 37 days | 0.21 | | | MPC | 2006 $SW_{316}$ |
| 2006 $SX_{316}$ | 18.2 | 0.15 | 20060922 | 347.74155 | 273.29470 | 117.48734 | 2.04888 | 0.1886983 | 2.3582016 | 16 | 1 | 35 days | 0.17 | | | MPC | 2006 $SX_{316}$ |
| 2006 $SH_{317}$ | 19.0 | 0.15 | 20060922 | 342.43352 | 302.66647 | 95.45661 | 2.18008 | 0.1725009 | 2.3549981 | 17 | 1 | 35 days | 0.27 | | | MPC | 2006 $SH_{317}$ |
| 2006 $SJ_{317}$ | 17.0 | 0.15 | 20061012 | 183.01896 | 109.41358 | 89.47735 | 3.07952 | 0.0344649 | 2.9198020 | 13 | 1 | 34 days | 0.18 | | D | MPC | 2006 $SJ_{317}$ |
| 2006 $SD_{318}$ | 16.3 | 0.15 | 20060922 | 328.35278 | 356.19342 | 53.36456 | 5.64847 | 0.0363883 | 2.7014382 | 17 | 1 | 35 days | 0.34 | | | MPC | 2006 $SD_{318}$ |
| 2006 $SF_{318}$ | 17.3 | 0.15 | 20060922 | 344.83557 | 274.45749 | 120.86805 | 3.06781 | 0.1604298 | 2.6700082 | 15 | 1 | 35 days | 0.44 | | | MPC | 2006 $SF_{318}$ |
| 2006 $SH_{318}$ | 16.7 | 0.15 | 20060922 | 352.70517 | 202.56257 | 182.20422 | 12.43138 | 0.2006247 | 2.6184916 | 30 | 1 | 41 days | 0.36 | | | MPC | 2006 $SH_{318}$ |
| 2006 $SO_{318}$ | 16.6 | 0.15 | 20060922 | 15.85237 | 312.51148 | 45.57918 | 6.75984 | 0.0525972 | 2.7239099 | 21 | 1 | 60 days | 0.33 | M-v | 4 D | MPC | 2006 $SO_{318}$ |
| 2006 $SV_{318}$ | 17.7 | 0.15 | 20060922 | 28.91681 | 150.31141 | 181.51475 | 13.60451 | 0.2014637 | 2.7530493 | 9 | 1 | 14 days | 0.13 | | | MPC | 2006 $SV_{318}$ |
| 2006 $SA_{319}$ | 15.9 | 0.15 | 20060922 | 92.77996 | 100.08369 | 176.24844 | 10.10285 | 0.0775335 | 3.0594636 | 9 | 1 | 14 days | 0.10 | | | MPC | 2006 $SA_{319}$ |
| 2006 $SG_{319}$ | 17.1 | 0.15 | 20060922 | 355.14946 | 204.27174 | 176.99963 | 11.05911 | 0.1164022 | 2.6495386 | 14 | 1 | 7 days | 0.21 | | | MPC | 2006 $SG_{319}$ |
| 2006 $SM_{319}$ | 16.0 | 0.15 | 20060922 | 351.36543 | 323.55215 | 64.81295 | 5.83745 | 0.1725604 | 3.1961502 | 24 | 1 | 25 days | 0.65 | | | MPC | 2006 $SM_{319}$ |
| 2006 $SQ_{319}$ | 16.5 | 0.15 | 20060922 | 26.57107 | 223.66520 | 117.90056 | 3.92453 | 0.1362042 | 2.9888768 | 23 | 1 | 35 days | 0.41 | | | MPC | 2006 $SQ_{319}$ |
| 2006 $SR_{319}$ | 17.0 | 0.15 | 20060922 | 355.41804 | 241.56504 | 139.91800 | 4.43226 | 0.1891147 | 2.7978307 | 17 | 1 | 25 days | 0.36 | | | MPC | 2006 $SR_{319}$ |
| 2006 $SE_{320}$ | 16.0 | 0.15 | 20060922 | 34.45471 | 146.67884 | 188.28230 | 22.46177 | 0.0928263 | 3.1596584 | 13 | 1 | 7 days | 0.20 | | | MPC | 2006 $SE_{320}$ |
| 2006 $SM_{320}$ | 17.1 | 0.15 | 20060922 | 301.88557 | 273.54492 | 177.65705 | 9.29716 | 0.1751186 | 2.5782389 | 19 | 1 | 35 days | 0.37 | | | MPC | 2006 $SM_{320}$ |
| 2006 $SA_{321}$ | 16.7 | 0.15 | 20060922 | 181.10776 | 154.39771 | 39.34695 | 7.32277 | 0.0565773 | 2.3800314 | 23 | 1 | 44 days | 0.30 | | | MPC | 2006 $SA_{321}$ |
| 2006 $SC_{321}$ | 17.8 | 0.15 | 20060922 | 40.54635 | 237.58790 | 72.04232 | 3.72835 | 0.2533720 | 2.8201972 | 10 | 1 | 25 days | 0.62 | | | MPC | 2006 $SC_{321}$ |
| 2006 $SK_{321}$ | 17.1 | 0.15 | 20060922 | 18.44317 | 312.59543 | 28.53393 | 14.64380 | 0.2731667 | 3.1720230 | 27 | 1 | 61 days | 0.36 | M-v | 4 | MPC | 2006 $SK_{321}$ |
| 2006 $SN_{321}$ | 17.5 | 0.15 | 20061012 | 327.91524 | 34.53223 | 28.91726 | 13.30165 | 0.1613562 | 2.5914379 | 21 | 1 | 34 days | 0.40 | | | MPC | 2006 $SN_{321}$ |
| 2006 $SU_{321}$ | 15.9 | 0.15 | 20060922 | 275.93418 | 292.73963 | 190.64368 | 25.87173 | 0.2077034 | 3.1495808 | 9 | 1 | 15 days | 0.13 | | | MPC | 2006 $SU_{321}$ |
| 2006 $SW_{321}$ | 17.1 | 0.15 | 20060922 | 345.55729 | 350.65762 | 38.03049 | 6.55968 | 0.0161165 | 2.7869410 | 17 | 1 | 60 days | 0.18 | M-v | 4 | MPC | 2006 $SW_{321}$ |
| 2006 $SX_{321}$ | 17.8 | 0.15 | 20061012 | 323.13306 | 26.98722 | 34.25771 | 7.18717 | 0.0880596 | 2.2821036 | 20 | 1 | 55 days | 0.21 | | | MPC | 2006 $SX_{321}$ |
| 2006 $SZ_{321}$ | 18.7 | 0.15 | 20060922 | 276.70075 | 28.64162 | 77.29261 | 2.45701 | 0.0917518 | 2.2403307 | 10 | 1 | 25 days | 0.20 | | | MPC | 2006 $SZ_{321}$ |
| 2006 $SA_{322}$ | 17.7 | 0.15 | 20060922 | 337.43052 | 225.18900 | 183.77992 | 13.44397 | 0.2479918 | 2.6474280 | 19 | 1 | 38 days | 0.29 | | | MPC | 2006 $SA_{322}$ |
| 2006 $SB_{322}$ | 15.7 | 0.15 | 20060922 | 6.82308 | 214.65980 | 146.98098 | 3.45433 | 0.2832753 | 3.9796809 | 23 | 1 | 35 days | 0.57 | | | MPC | 2006 $SB_{322}$ |
| 2006 $SD_{322}$ | 16.0 | 0.15 | 20061012 | 33.28297 | 305.98584 | 33.98932 | 9.68708 | 0.0733640 | 3.1697478 | 18 | 1 | 50 days | 0.47 | | | MPC | 2006 $SD_{322}$ |
| 2006 $SL_{322}$ | 17.9 | 0.15 | 20060922 | 346.59406 | 347.03231 | 46.57452 | 4.49629 | 0.1928688 | 3.1338179 | 16 | 1 | 35 days | 0.18 | | | MPC | 2006 $SL_{322}$ |
| 2006 $SR_{322}$ | 18.1 | 0.15 | 20061012 | 18.48815 | 327.70890 | 24.41354 | 13.41142 | 0.1699153 | 2.6400159 | 17 | 1 | 32 days | 0.22 | | | MPC | 2006 $SR_{322}$ |
| 2006 $SS_{322}$ | 16.5 | 0.15 | 20061012 | 280.67909 | 83.88238 | 22.44259 | 22.20630 | 0.0795322 | 2.6360548 | 21 | 1 | 49 days | 0.21 | | | MPC | 2006 $SS_{322}$ |
| 2006 $ST_{322}$ | 17.3 | 0.15 | 20061012 | 336.28435 | 354.01887 | 59.91830 | 3.33046 | 0.1984746 | 2.3885979 | 44 | 1 | 50 days | 0.55 | | | MPC | 2006 $ST_{322}$ |
| 2006 $SU_{322}$ | 16.6 | 0.15 | 20061012 | 231.13830 | 120.80374 | 28.03363 | 14.69838 | 0.0225443 | 2.6021956 | 26 | 1 | 55 days | 0.45 | | | MPC | 2006 $SU_{322}$ |
| 2006 $SV_{322}$ | 17.5 | 0.15 | 20060922 | 6.80886 | 336.22982 | 28.00615 | 12.36315 | 0.0944082 | 2.5955194 | 13 | 1 | 61 days | 0.39 | M-v | 5 | MPC | 2006 $SV_{322}$ |
| 2006 $SZ_{322}$ | 17.1 | 0.15 | 20060922 | 283.71476 | 283.72711 | 180.09689 | 10.95400 | 0.1266827 | 2.3396427 | 19 | 1 | 29 days | 0.37 | | | MPC | 2006 $SZ_{322}$ |
| 2006 $SB_{323}$ | 17.7 | 0.15 | 20060922 | 358.21140 | 354.09134 | 19.78390 | 16.43223 | 0.2886177 | 2.7255566 | 28 | 1 | 24 days | 0.39 | | | MPC | 2006 $SB_{323}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SD_{323}$ | 17.9 | 0.15 | 20060922 | 9.93516 | 305.40489 | 52.51459 | 4.15269 | 0.1454490 | 2.3941754 | 20 | 1 | 60 days | 0.48 | M-v | 4 | | MPC | 2006 $SD_{323}$ |
| 2006 $SG_{323}$ | 17.3 | 0.15 | 20061012 | 42.83627 | 217.77168 | 94.54446 | 2.30082 | 0.2437744 | 2.6976767 | 10 | 1 | 50 days | 0.45 | | | | MPC | 2006 $SG_{323}$ |
| 2006 $SL_{323}$ | 17.3 | 0.15 | 20060922 | 21.29542 | 317.20371 | 27.54160 | 11.32017 | 0.1491002 | 2.8635560 | 23 | 1 | 44 days | 0.24 | | | D | MPC | 2006 $SL_{323}$ |
| 2006 $SQ_{323}$ | 16.6 | 0.15 | 20060922 | 310.14517 | 42.82693 | 27.70409 | 13.27440 | 0.0632091 | 2.9848603 | 9 | 1 | 18 days | 0.17 | | | | MPC | 2006 $SQ_{323}$ |
| 2006 $ST_{323}$ | 15.4 | 0.15 | 20060922 | 75.55809 | 254.41436 | 29.12028 | 13.80969 | 0.1421173 | 3.1360318 | 31 | 1 | 66 days | 0.26 | M-v | 4 | | MPC | 2006 $ST_{323}$ |
| 2006 $SW_{323}$ | 17.2 | 0.15 | 20060922 | 24.24399 | 293.57985 | 35.32013 | 8.74692 | 0.2949917 | 3.2642938 | 12 | 1 | 4 days | 0.12 | | | | MPC | 2006 $SW_{323}$ |
| 2006 $SY_{323}$ | 18.2 | 0.15 | 20060922 | 3.53187 | 228.22147 | 135.61714 | 1.79687 | 0.1960534 | 2.3452253 | 26 | 1 | 38 days | 0.36 | | | | MPC | 2006 $SY_{323}$ |
| 2006 $SE_{324}$ | 19.0 | 0.15 | 20060922 | 27.31768 | 294.33795 | 28.32679 | 5.68194 | 0.2639648 | 2.3581959 | 17 | 1 | 44 days | 0.31 | | | | MPC | 2006 $SE_{324}$ |
| 2006 $SN_{324}$ | 16.6 | 0.15 | 20060922 | 0.27314 | 192.46924 | 181.18524 | 10.75471 | 0.0821396 | 3.1375905 | 16 | 1 | 73 days | 0.71 | M-v | 5 | D | MPC | 2006 $SN_{324}$ |
| 2006 $SY_{324}$ | 14.9 | 0.15 | 20061012 | 341.36561 | 344.93978 | 58.90311 | 29.70894 | 0.2241784 | 3.1661126 | 20 | 1 | 53 days | 0.44 | | | | MPC | 2006 $SY_{324}$ |
| 2006 $SF_{325}$ | 16.7 | 0.15 | 20060922 | 299.46071 | 272.51362 | 192.02321 | 8.28461 | 0.2129440 | 3.1854443 | 17 | 1 | 60 days | 0.24 | M-v | 4 | | MPC | 2006 $SF_{325}$ |
| 2006 $SL_{325}$ | 16.6 | 0.15 | 20061012 | 46.62599 | 291.83551 | 24.90472 | 16.48123 | 0.2079256 | 3.1675403 | 19 | 1 | 44 days | 0.20 | | | | MPC | 2006 $SL_{325}$ |
| 2006 $SP_{325}$ | 16.7 | 0.15 | 20060922 | 58.42935 | 272.99719 | 35.91366 | 5.54599 | 0.1258626 | 3.1149484 | 19 | 1 | 38 days | 0.38 | | | | MPC | 2006 $SP_{325}$ |
| 2006 $SQ_{325}$ | 17.6 | 0.15 | 20060922 | 301.43631 | 267.82901 | 180.89060 | 4.49442 | 0.1284845 | 2.2527453 | 20 | 1 | 60 days | 0.38 | M-v | 4 | | MPC | 2006 $SQ_{325}$ |
| 2006 $SU_{325}$ | 16.7 | 0.15 | 20061012 | 306.95163 | 273.05319 | 179.57192 | 3.00174 | 0.1447861 | 3.0578711 | 24 | 1 | 58 days | 0.22 | | | | MPC | 2006 $SU_{325}$ |
| 2006 $SV_{325}$ | 16.0 | 0.15 | 20060922 | 299.12909 | 273.34805 | 192.11604 | 9.84776 | 0.2108172 | 3.1716439 | 15 | 1 | 33 days | 0.18 | | | | MPC | 2006 $SV_{325}$ |
| 2006 $SW_{325}$ | 17.6 | 0.15 | 20060922 | 16.12110 | 180.88430 | 178.04134 | 3.68945 | 0.1101935 | 2.7930408 | 24 | 1 | 60 days | 0.31 | M-v | 4 | D | MPC | 2006 $SW_{325}$ |
| 2006 $SY_{325}$ | 16.1 | 0.15 | 20060922 | 92.58001 | 241.55845 | 25.16310 | 17.12753 | 0.1901435 | 2.6029688 | 44 | 1 | 69 days | 0.30 | M-v | 4 | | MPC | 2006 $SY_{325}$ |
| 2006 $SZ_{325}$ | 18.0 | 0.15 | 20060922 | 25.70268 | 307.07150 | 29.06201 | 3.50780 | 0.2027805 | 2.2280591 | 51 | 1 | 60 days | 0.27 | M-v | 4 | | MPC | 2006 $SZ_{325}$ |
| 2006 $SE_{326}$ | 18.6 | 0.15 | 20060922 | 356.26092 | 347.22478 | 33.97431 | 5.52903 | 0.1900287 | 2.4168577 | 36 | 1 | 60 days | 0.41 | M-v | 4 | | MPC | 2006 $SE_{326}$ |
| 2006 $SF_{326}$ | 17.5 | 0.15 | 20060922 | 271.55696 | 78.05194 | 34.81743 | 4.92561 | 0.0464209 | 2.4003366 | 28 | 1 | 61 days | 0.28 | M-v | 4 | | MPC | 2006 $SF_{326}$ |
| 2006 $SG_{326}$ | 17.8 | 0.15 | 20060922 | 7.95179 | 336.71713 | 32.01006 | 5.16977 | 0.1267324 | 2.7249611 | 25 | 1 | 38 days | 0.18 | | | | MPC | 2006 $SG_{326}$ |
| 2006 $SJ_{326}$ | 17.9 | 0.15 | 20061012 | 314.23598 | 257.82040 | 182.29710 | 3.66502 | 0.1047523 | 2.5762545 | 24 | 1 | 58 days | 0.27 | | | | MPC | 2006 $SJ_{326}$ |
| 2006 $SK_{326}$ | 17.2 | 0.15 | 20060922 | 34.71974 | 156.65581 | 180.18304 | 5.13427 | 0.1191422 | 2.8788135 | 24 | 1 | 60 days | 0.17 | M-v | 4 | | MPC | 2006 $SK_{326}$ |
| 2006 $SL_{326}$ | 18.6 | 0.15 | 20061012 | 353.31932 | 344.56453 | 48.65332 | 2.59784 | 0.1381582 | 2.4339270 | 35 | 1 | 47 days | 0.31 | | | | MPC | 2006 $SL_{326}$ |
| 2006 $SO_{326}$ | 17.8 | 0.15 | 20061012 | 38.44727 | 161.99332 | 174.49081 | 3.55829 | 0.1270384 | 2.7171064 | 24 | 1 | 58 days | 0.20 | | | | MPC | 2006 $SO_{326}$ |
| 2006 $SP_{326}$ | 17.5 | 0.15 | 20061012 | 2.83955 | 330.24099 | 51.41426 | 3.96746 | 0.0479171 | 2.5281507 | 20 | 1 | 34 days | 0.17 | | | | MPC | 2006 $SP_{326}$ |
| 2006 $ST_{326}$ | 16.5 | 0.15 | 20061012 | 114.55528 | 228.69614 | 35.44197 | 10.51716 | 0.0781431 | 3.2158762 | 22 | 1 | 34 days | 0.29 | | | D | MPC | 2006 $ST_{326}$ |
| 2006 $SU_{326}$ | 17.6 | 0.15 | 20060922 | 8.39148 | 340.50911 | 31.08805 | 9.93008 | 0.0797741 | 2.9619186 | 12 | 1 | 26 days | 0.28 | | | | MPC | 2006 $SU_{326}$ |
| 2006 $SV_{326}$ | 16.1 | 0.15 | 20060922 | 24.31130 | 183.20395 | 162.60367 | 3.63571 | 0.2148626 | 3.9591985 | 17 | 1 | 25 days | 0.28 | | | | MPC | 2006 $SV_{326}$ |
| 2006 $SW_{326}$ | 18.8 | 0.15 | 20061012 | 5.51565 | 346.41926 | 30.78077 | 7.96443 | 0.1030041 | 2.1695172 | 32 | 1 | 56 days | 0.25 | | | | MPC | 2006 $SW_{326}$ |
| 2006 $SX_{326}$ | 18.1 | 0.15 | 20061012 | 336.89172 | 16.64314 | 37.08566 | 4.48671 | 0.1148004 | 2.2994241 | 41 | 1 | 51 days | 0.32 | | | | MPC | 2006 $SX_{326}$ |
| 2006 $SY_{326}$ | 16.8 | 0.15 | 20061012 | 93.04150 | 233.88272 | 51.45503 | 5.45710 | 0.0695165 | 2.9666696 | 24 | 1 | 54 days | 0.22 | | | | MPC | 2006 $SY_{326}$ |
| 2006 $SZ_{326}$ | 18.8 | 0.15 | 20061012 | 338.67206 | 273.27760 | 142.06901 | 1.68890 | 0.1728929 | 2.4763910 | 17 | 1 | 34 days | 0.46 | | | | MPC | 2006 $SZ_{326}$ |
| 2006 $SB_{327}$ | 18.5 | 0.15 | 20061012 | 356.98805 | 334.28801 | 54.55297 | 3.53942 | 0.1696304 | 2.4097114 | 20 | 1 | 58 days | 0.26 | | | | MPC | 2006 $SB_{327}$ |
| 2006 $SC_{327}$ | 18.0 | 0.15 | 20060922 | 27.90425 | 165.52495 | 172.28746 | 3.98823 | 0.1901447 | 2.5489715 | 24 | 1 | 60 days | 0.26 | M-v | 4 | | MPC | 2006 $SC_{327}$ |
| 2006 $SD_{327}$ | 17.1 | 0.15 | 20061012 | 352.88907 | 336.82935 | 58.87236 | 3.45540 | 0.1315318 | 3.0654560 | 24 | 1 | 54 days | 0.43 | | | | MPC | 2006 $SD_{327}$ |
| 2006 $SE_{327}$ | 17.7 | 0.15 | 20060922 | 283.91098 | 296.96792 | 174.38874 | 3.85121 | 0.1245720 | 2.5482060 | 24 | 1 | 60 days | 0.33 | M-v | 4 | | MPC | 2006 $SE_{327}$ |
| 2006 $SF_{327}$ | 16.5 | 0.15 | 20061012 | 325.02702 | 12.10095 | 58.58333 | 3.02221 | 0.1165418 | 3.2014490 | 29 | 1 | 56 days | 0.31 | | | | MPC | 2006 $SF_{327}$ |
| 2006 $SG_{327}$ | 18.7 | 0.15 | 20060922 | 34.08293 | 262.63253 | 57.53804 | 2.79392 | 0.2748299 | 2.5704215 | 10 | 1 | 24 days | 0.51 | | | | MPC | 2006 $SG_{327}$ |
| 2006 $SH_{327}$ | 16.7 | 0.15 | 20061012 | 82.80053 | 120.92559 | 177.49161 | 5.72231 | 0.0499912 | 2.8690117 | 17 | 1 | 34 days | 0.23 | | | | MPC | 2006 $SH_{327}$ |
| 2006 $SK_{327}$ | 17.2 | 0.15 | 20060922 | 343.88335 | 2.87891 | 37.40095 | 10.89104 | 0.0449602 | 3.0124300 | 16 | 1 | 25 days | 0.29 | | | | MPC | 2006 $SK_{327}$ |
| 2006 $SM_{327}$ | 17.0 | 0.15 | 20061012 | 340.43719 | 338.32632 | 70.50998 | 3.10128 | 0.0600533 | 2.8700391 | 20 | 1 | 58 days | 0.22 | | | | MPC | 2006 $SM_{327}$ |
| 2006 $SP_{327}$ | 16.6 | 0.15 | 20061012 | 323.10619 | 337.23760 | 101.47478 | 2.44893 | 0.1753935 | 3.1473922 | 24 | 1 | 58 days | 0.22 | | | | MPC | 2006 $SP_{327}$ |
| 2006 $SQ_{327}$ | 17.1 | 0.15 | 20061012 | 14.91431 | 286.06535 | 77.61465 | 2.69615 | 0.2085421 | 3.0420168 | 21 | 1 | 54 days | 0.40 | | | | MPC | 2006 $SQ_{327}$ |
| 2006 $SS_{327}$ | 15.6 | 0.15 | 20061012 | 23.68810 | 287.20408 | 59.55480 | 3.98260 | 0.2708210 | 3.9374596 | 48 | 1 | 56 days | 0.30 | | | | MPC | 2006 $SS_{327}$ |
| 2006 $SU_{327}$ | 19.1 | 0.15 | 20061012 | 339.61972 | 3.92285 | 51.91233 | 3.44566 | 0.1900589 | 2.4526152 | 20 | 1 | 48 days | 0.28 | | | | MPC | 2006 $SU_{327}$ |
| 2006 $SV_{327}$ | 17.5 | 0.15 | 20061012 | 7.23632 | 315.56737 | 62.85785 | 3.12981 | 0.1066419 | 2.9495397 | 28 | 1 | 56 days | 0.28 | | | | MPC | 2006 $SV_{327}$ |
| 2006 $SA_{328}$ | 18.1 | 0.15 | 20061012 | 29.45449 | 301.47334 | 39.92127 | 5.90620 | 0.1738116 | 2.2063680 | 31 | 1 | 54 days | 0.39 | | | | MPC | 2006 $SA_{328}$ |
| 2006 $SD_{328}$ | 17.0 | 0.15 | 20060922 | 61.96608 | 178.74019 | 119.69776 | 3.06497 | 0.1642106 | 2.4345936 | 20 | 1 | 24 days | 0.56 | | | | MPC | 2006 $SD_{328}$ |
| 2006 $SF_{328}$ | 18.0 | 0.15 | 20061012 | 353.77433 | 350.40664 | 44.61808 | 5.39517 | 0.2732973 | 2.6028966 | 27 | 1 | 50 days | 0.33 | | | | MPC | 2006 $SF_{328}$ |
| 2006 $SH_{328}$ | 18.0 | 0.15 | 20060922 | 10.88445 | 317.86772 | 40.68410 | 7.15775 | 0.2378980 | 2.6632598 | 17 | 1 | 25 days | 0.18 | | | | MPC | 2006 $SH_{328}$ |
| 2006 $SJ_{328}$ | 17.7 | 0.15 | 20061012 | 34.40526 | 266.87911 | 66.52671 | 3.52854 | 0.2010198 | 2.4495687 | 41 | 1 | 58 days | 0.43 | | | | MPC | 2006 $SJ_{328}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SQ_{328}$ | 17.6 | 0.15 | 20061012 | 299.54842 | 83.05719 | 24.45140 | 28.14210 | 0.2191089 | 2.6884878 | 19 | 1 | 51 days | 0.27 | | | MPC | 2006 $SQ_{328}$ |
| 2006 $SU_{328}$ | 17.5 | 0.15 | 20061012 | 153.99194 | 172.00724 | 49.85547 | 5.05017 | 0.1804813 | 2.3294138 | 17 | 1 | 31 days | 0.34 | | | MPC | 2006 $SU_{328}$ |
| 2006 $SW_{328}$ | 17.6 | 0.15 | 20060922 | 45.22675 | 268.40663 | 38.10907 | 8.56767 | 0.2641631 | 3.0194801 | 10 | 1 | 5 days | 0.33 | | | MPC | 2006 $SW_{328}$ |
| 2006 $SX_{328}$ | 17.4 | 0.15 | 20060922 | 22.45069 | 229.88417 | 115.80660 | 2.38376 | 0.1913079 | 3.0527896 | 21 | 1 | 60 days | 0.35 | M-v | 4 | MPC | 2006 $SX_{328}$ |
| 2006 $SB_{329}$ | 16.8 | 0.15 | 20060922 | 334.54816 | 324.48526 | 90.31189 | 2.72413 | 0.1562347 | 3.1004781 | 31 | 1 | 60 days | 0.31 | M-v | 4 | MPC | 2006 $SB_{329}$ |
| 2006 $SF_{329}$ | 17.2 | 0.15 | 20061012 | 47.27025 | 266.70587 | 49.90495 | 3.46703 | 0.1858376 | 2.7718715 | 19 | 1 | 50 days | 0.17 | | | MPC | 2006 $SF_{329}$ |
| 2006 $SJ_{329}$ | 16.8 | 0.15 | 20061012 | 294.12634 | 284.79409 | 169.65463 | 3.67578 | 0.0525125 | 2.9618306 | 20 | 1 | 53 days | 0.46 | | | MPC | 2006 $SJ_{329}$ |
| 2006 $SK_{329}$ | 17.0 | 0.15 | 20060922 | 19.73600 | 165.29339 | 188.06307 | 10.59083 | 0.1124305 | 2.9927568 | 21 | 1 | 70 days | 0.27 | M-v | 4 | MPC | 2006 $SK_{329}$ |
| 2006 $SQ_{329}$ | 17.8 | 0.15 | 20061012 | 344.92162 | 348.93986 | 51.61225 | 3.38970 | 0.0996824 | 2.4303374 | 23 | 1 | 50 days | 0.44 | | | MPC | 2006 $SQ_{329}$ |
| 2006 $SR_{329}$ | 16.4 | 0.15 | 20060922 | 311.20032 | 63.09949 | 26.68131 | 15.60382 | 0.2182695 | 3.1620122 | 22 | 1 | 61 days | 0.35 | M-v | 4 | MPC | 2006 $SR_{329}$ |
| 2006 $SS_{329}$ | 17.4 | 0.15 | 20060922 | 2.32127 | 294.10987 | 79.78977 | 2.05073 | 0.1978891 | 3.0797034 | 19 | 1 | 40 days | 0.28 | | | MPC | 2006 $SS_{329}$ |
| 2006 $SV_{329}$ | 17.7 | 0.15 | 20061012 | 332.51051 | 5.22695 | 63.23874 | 3.31646 | 0.2518429 | 3.0376301 | 17 | 1 | 53 days | 0.43 | | | MPC | 2006 $SV_{329}$ |
| 2006 $SW_{329}$ | 16.8 | 0.15 | 20061012 | 57.87732 | 284.68797 | 37.29220 | 5.72398 | 0.0348703 | 2.7678422 | 29 | 1 | 58 days | 0.27 | | | MPC | 2006 $SW_{329}$ |
| 2006 $SX_{329}$ | 17.4 | 0.15 | 20061012 | 32.02804 | 289.27335 | 57.96936 | 2.78728 | 0.0637916 | 2.8678939 | 13 | 1 | 32 days | 0.25 | | | MPC | 2006 $SX_{329}$ |
| 2006 $SF_{330}$ | 16.4 | 0.15 | 20060922 | 348.84072 | 309.16961 | 82.87701 | 2.22195 | 0.0536033 | 2.9846239 | 16 | 1 | 61 days | 0.20 | M-v | 4 | MPC | 2006 $SF_{330}$ |
| 2006 $SG_{330}$ | 17.0 | 0.15 | 20060922 | 148.40870 | 191.04071 | 36.23506 | 6.47199 | 0.0469781 | 2.4300212 | 34 | 1 | 64 days | 0.28 | M-v | 4 | MPC | 2006 $SG_{330}$ |
| 2006 $SJ_{330}$ | 16.2 | 0.15 | 20060922 | 283.67392 | 277.42967 | 194.00144 | 17.14487 | 0.1251355 | 3.1162436 | 13 | 1 | 5 days | 0.60 | | | MPC | 2006 $SJ_{330}$ |
| 2006 $SW_{330}$ | 18.4 | 0.15 | 20061012 | 15.86858 | 143.51044 | 217.81142 | 4.10003 | 0.1924163 | 2.2577486 | 41 | 1 | 49 days | 0.36 | | | MPC | 2006 $SW_{330}$ |
| 2006 $SA_{331}$ | 17.6 | 0.15 | 20061012 | 357.47694 | 184.34098 | 192.96730 | 13.25373 | 0.2442243 | 2.7690902 | 14 | 1 | 50 days | 0.21 | | | MPC | 2006 $SA_{331}$ |
| 2006 $SF_{331}$ | 17.6 | 0.15 | 20061012 | 33.35317 | 334.22732 | 355.40973 | 2.84235 | 0.1389409 | 2.6186171 | 20 | 1 | 43 days | 0.22 | | D | MPC | 2006 $SF_{331}$ |
| 2006 $SH_{331}$ | 18.4 | 0.15 | 20061012 | 21.14438 | 134.86974 | 205.96564 | 1.88415 | 0.2311532 | 2.2038406 | 21 | 1 | 55 days | 0.32 | | | MPC | 2006 $SH_{331}$ |
| 2006 $SN_{331}$ | 19.1 | 0.15 | 20061012 | 355.05412 | 174.11572 | 206.88735 | 0.81968 | 0.1951586 | 2.3183094 | 14 | 1 | 30 days | 0.39 | | | MPC | 2006 $SN_{331}$ |
| 2006 $SQ_{331}$ | 18.4 | 0.15 | 20060922 | 343.75416 | 212.32769 | 177.10543 | 1.86866 | 0.1948080 | 2.2697290 | 19 | 1 | 31 days | 0.52 | | | MPC | 2006 $SQ_{331}$ |
| 2006 $SU_{331}$ | 18.1 | 0.15 | 20061012 | 277.82946 | 112.83077 | 14.89638 | 6.59521 | 0.1213172 | 2.1909213 | 31 | 1 | 58 days | 0.40 | | | MPC | 2006 $SU_{331}$ |
| 2006 $SX_{331}$ | 16.4 | 0.15 | 20060922 | 339.76764 | 63.94681 | 348.03758 | 3.02908 | 0.0733743 | 2.6401308 | 17 | 1 | 17 days | 0.24 | | | MPC | 2006 $SX_{331}$ |
| 2006 $SY_{331}$ | 16.9 | 0.15 | 20061012 | 25.00734 | 342.30109 | 22.91344 | 9.59775 | 0.0961928 | 3.1775975 | 14 | 1 | 21 days | 0.26 | | D | MPC | 2006 $SY_{331}$ |
| 2006 $SC_{332}$ | 17.5 | 0.15 | 20061012 | 34.76371 | 322.56533 | 13.40487 | 5.95999 | 0.2538851 | 2.6139592 | 27 | 1 | 51 days | 0.27 | | | MPC | 2006 $SC_{332}$ |
| 2006 $SF_{332}$ | 16.6 | 0.15 | 20060922 | 66.74781 | 86.35354 | 231.32384 | 5.56758 | 0.0581010 | 2.7696551 | 21 | 1 | 60 days | 0.29 | M-v | 5 | MPC | 2006 $SF_{332}$ |
| 2006 $SJ_{332}$ | 17.8 | 0.15 | 20061012 | 157.80593 | 221.29442 | 13.35050 | 4.97110 | 0.0247227 | 2.2529515 | 24 | 1 | 34 days | 0.28 | | | MPC | 2006 $SJ_{332}$ |
| 2006 $SM_{332}$ | 18.2 | 0.15 | 20061012 | 333.25183 | 62.97414 | 9.81866 | 5.07529 | 0.2072659 | 2.3864382 | 27 | 1 | 56 days | 0.53 | | | MPC | 2006 $SM_{332}$ |
| 2006 $SP_{332}$ | 15.4 | 0.15 | 20061012 | 313.19492 | 224.60064 | 222.93856 | 10.93200 | 0.0513738 | 3.0846887 | 31 | 1 | 54 days | 0.27 | | | MPC | 2006 $SP_{332}$ |
| 2006 $ST_{332}$ | 18.0 | 0.15 | 20060922 | 338.22576 | 1.61695 | 36.88824 | 4.64170 | 0.1491797 | 2.6452893 | 10 | 1 | 24 days | 0.29 | | | MPC | 2006 $ST_{332}$ |
| 2006 $SZ_{332}$ | 18.7 | 0.15 | 20061012 | 15.15898 | 212.43938 | 139.25874 | 2.41511 | 0.2277475 | 2.3177078 | 17 | 1 | 56 days | 0.30 | | | MPC | 2006 $SZ_{332}$ |
| 2006 $SC_{333}$ | 18.3 | 0.15 | 20060922 | 340.57357 | 345.01919 | 51.77320 | 2.22159 | 0.1797497 | 2.4054181 | 23 | 1 | 61 days | 0.30 | M-v | 4 | MPC | 2006 $SC_{333}$ |
| 2006 $SG_{333}$ | 16.4 | 0.15 | 20061012 | 17.55485 | 284.55937 | 70.43167 | 3.03621 | 0.0839432 | 2.8467646 | 17 | 1 | 49 days | 0.20 | | | MPC | 2006 $SG_{333}$ |
| 2006 $SL_{333}$ | 17.2 | 0.15 | 20061012 | 353.02925 | 330.65293 | 57.42874 | 3.62887 | 0.2289056 | 3.0565439 | 18 | 1 | 49 days | 0.48 | | | MPC | 2006 $SL_{333}$ |
| 2006 $ST_{333}$ | 17.0 | 0.15 | 20061012 | 15.64933 | 276.98803 | 79.50812 | 2.71257 | 0.1279475 | 2.6475013 | 22 | 1 | 49 days | 0.37 | | | MPC | 2006 $ST_{333}$ |
| 2006 $SD_{334}$ | 16.9 | 0.15 | 20060922 | 318.30963 | 29.63578 | 31.73170 | 11.03501 | 0.0829860 | 3.1653648 | 10 | 1 | 24 days | 0.15 | | | MPC | 2006 $SD_{334}$ |
| 2006 $SQ_{334}$ | 16.5 | 0.15 | 20061012 | 36.57874 | 303.39983 | 28.56556 | 12.27742 | 0.1115852 | 2.7125078 | 31 | 1 | 54 days | 0.49 | | | MPC | 2006 $SQ_{334}$ |
| 2006 $SA_{335}$ | 16.4 | 0.15 | 20061012 | 337.80770 | 348.18019 | 56.10687 | 5.04486 | 0.0906337 | 2.8028395 | 28 | 1 | 49 days | 0.40 | | | MPC | 2006 $SA_{335}$ |
| 2006 $SR_{335}$ | 17.7 | 0.15 | 20060922 | 349.63420 | 324.84663 | 62.69263 | 4.47322 | 0.2373888 | 2.6142201 | 26 | 1 | 38 days | 0.51 | | | MPC | 2006 $SR_{335}$ |
| 2006 $SX_{335}$ | 17.3 | 0.15 | 20060922 | 38.02490 | 203.84443 | 112.96058 | 3.67542 | 0.1868665 | 2.2947578 | 30 | 1 | 39 days | 0.59 | | | MPC | 2006 $SX_{335}$ |
| 2006 $SY_{335}$ | 16.8 | 0.15 | 20061012 | 26.86331 | 298.49740 | 40.29336 | 9.34780 | 0.1908013 | 2.9916209 | 17 | 1 | 49 days | 0.39 | | | MPC | 2006 $SY_{335}$ |
| 2006 $SZ_{335}$ | 16.4 | 0.15 | 20060922 | 287.79558 | 23.50294 | 77.66253 | 5.36924 | 0.1412774 | 2.5988098 | 27 | 1 | 24 days | 0.49 | | | MPC | 2006 $SZ_{335}$ |
| 2006 $SB_{336}$ | 18.4 | 0.15 | 20061012 | 353.78836 | 308.79224 | 78.28213 | 3.63199 | 0.1649818 | 2.2314273 | 26 | 1 | 56 days | 0.37 | | | MPC | 2006 $SB_{336}$ |
| 2006 $SC_{336}$ | 17.9 | 0.15 | 20060922 | 329.99639 | 305.67657 | 105.31362 | 3.96200 | 0.1412739 | 2.4082380 | 28 | 1 | 24 days | 0.35 | | | MPC | 2006 $SC_{336}$ |
| 2006 $SK_{336}$ | 16.2 | 0.15 | 20060922 | 298.31991 | 274.50227 | 162.11542 | 8.83505 | 0.0089623 | 2.6755602 | 29 | 1 | 34 days | 0.47 | | | MPC | 2006 $SK_{336}$ |
| 2006 $SN_{336}$ | 18.8 | 0.15 | 20060922 | 7.50873 | 202.85730 | 158.04435 | 6.51497 | 0.1234684 | 2.1924080 | 23 | 1 | 27 days | 0.22 | | | MPC | 2006 $SN_{336}$ |
| 2006 $SY_{336}$ | 16.8 | 0.15 | 20060922 | 6.45698 | 204.24314 | 160.38941 | 6.59082 | 0.0578206 | 2.6719556 | 17 | 1 | 24 days | 0.53 | | | MPC | 2006 $SY_{336}$ |
| 2006 $SC_{337}$ | 17.3 | 0.15 | 20060922 | 34.68723 | 182.74486 | 133.61618 | 4.16528 | 0.2315587 | 2.5948690 | 21 | 1 | 18 days | 0.20 | | | MPC | 2006 $SC_{337}$ |
| 2006 $SJ_{337}$ | 15.4 | 0.15 | 20060922 | 352.01996 | 217.56362 | 164.99810 | 9.16678 | 0.0848756 | 3.1661830 | 31 | 1 | 23 days | 0.33 | | | MPC | 2006 $SJ_{337}$ |
| 2006 $SK_{337}$ | 16.7 | 0.15 | 20060922 | 1.81448 | 225.60303 | 143.48429 | 5.26783 | 0.1331650 | 2.7808964 | 32 | 1 | 24 days | 0.29 | | | MPC | 2006 $SK_{337}$ |
| 2006 $SM_{337}$ | 16.6 | 0.15 | 20060922 | 340.54485 | 335.33646 | 64.98470 | 5.22563 | 0.1907250 | 3.0286957 | 18 | 1 | 5 days | 0.34 | | | MPC | 2006 $SM_{337}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SP_{337}$ | 17.1 | 0.15 | 20060922 | 263.00273 | 49.40610 | 67.56601 | 5.50215 | 0.0687150 | 2.6629873 | 17 | 1 | 5 days | 0.20 | | MPC | 2006 $SP_{337}$ |
| 2006 $SQ_{337}$ | 17.4 | 0.15 | 20060922 | 291.49314 | 325.86899 | 123.56107 | 4.59410 | 0.0764711 | 2.7615255 | 18 | 1 | 5 days | 0.41 | | MPC | 2006 $SQ_{337}$ |
| 2006 $SS_{337}$ | 17.0 | 0.15 | 20060922 | 238.93954 | 72.26564 | 68.86479 | 5.32229 | 0.0822386 | 2.5762009 | 18 | 1 | 5 days | 0.39 | | MPC | 2006 $SS_{337}$ |
| 2006 $SU_{337}$ | 18.2 | 0.15 | 20060922 | 338.27426 | 244.60452 | 158.97583 | 5.57828 | 0.2255764 | 2.3185036 | 21 | 1 | 24 days | 0.47 | | MPC | 2006 $SU_{337}$ |
| 2006 $SZ_{337}$ | 18.4 | 0.15 | 20060922 | 306.74216 | 1.20591 | 80.26911 | 4.03093 | 0.1723052 | 2.2941800 | 21 | 1 | 18 days | 0.25 | | MPC | 2006 $SZ_{337}$ |
| 2006 $SM_{338}$ | 15.8 | 0.15 | 20061012 | 121.48137 | 206.10666 | 41.54430 | 9.44294 | 0.0872714 | 2.8154952 | 17 | 1 | 56 days | 0.39 | | MPC | 2006 $SM_{338}$ |
| 2006 $SP_{338}$ | 16.6 | 0.15 | 20061012 | 318.72336 | 312.79403 | 115.25027 | 4.17620 | 0.1083904 | 2.8924374 | 9 | 1 | 29 days | 0.16 | | MPC | 2006 $SP_{338}$ |
| 2006 $SS_{338}$ | 16.6 | 0.15 | 20060922 | 116.60484 | 207.64837 | 35.78394 | 9.20506 | 0.1111725 | 2.5818718 | 11 | 1 | 16 days | 0.25 | | MPC | 2006 $SS_{338}$ |
| 2006 $SU_{338}$ | 18.1 | 0.15 | 20060922 | 312.30456 | 305.07108 | 127.66946 | 3.09175 | 0.1617414 | 2.3997629 | 9 | 1 | 14 days | 0.17 | | MPC | 2006 $SU_{338}$ |
| 2006 $SV_{338}$ | 15.9 | 0.15 | 20061012 | 344.98337 | 1.24147 | 32.17716 | 9.90620 | 0.0900992 | 3.1682895 | 14 | 1 | 47 days | 0.26 | | MPC | 2006 $SV_{338}$ |
| 2006 $SW_{338}$ | 17.7 | 0.15 | 20060922 | 31.76891 | 213.32627 | 108.60701 | 2.85641 | 0.2080682 | 2.6277167 | 9 | 1 | 14 days | 0.19 | | MPC | 2006 $SW_{338}$ |
| 2006 $SX_{338}$ | 16.3 | 0.15 | 20060922 | 14.88085 | 211.41299 | 142.92575 | 4.94524 | 0.0830455 | 3.3750417 | 9 | 1 | 13 days | 0.14 | | MPC | 2006 $SX_{338}$ |
| 2006 $SA_{339}$ | 16.3 | 0.15 | 20061012 | 49.10695 | 250.36675 | 52.06806 | 5.71110 | 0.2320849 | 3.0726983 | 20 | 1 | 49 days | 0.38 | | MPC | 2006 $SA_{339}$ |
| 2006 $SL_{339}$ | 16.0 | 0.15 | 20060922 | 10.79592 | 228.28520 | 130.27058 | 4.50081 | 0.0887086 | 3.0136719 | 18 | 1 | 28 days | 0.37 | | MPC | 2006 $SL_{339}$ |
| 2006 $SN_{339}$ | 17.5 | 0.15 | 20060922 | 354.09241 | 313.18876 | 63.80090 | 3.80225 | 0.1347953 | 2.3859341 | 13 | 1 | 23 days | 0.80 | | MPC | 2006 $SN_{339}$ |
| 2006 $SV_{339}$ | 16.8 | 0.15 | 20060922 | 10.26218 | 297.16577 | 60.56254 | 4.68462 | 0.1034917 | 2.6122420 | 16 | 1 | 23 days | 0.23 | | MPC | 2006 $SV_{339}$ |
| 2006 $SX_{339}$ | 18.2 | 0.15 | 20060922 | 29.11003 | 289.71807 | 41.86008 | 6.77841 | 0.1339687 | 2.3784898 | 13 | 1 | 13 days | 0.24 | | MPC | 2006 $SX_{339}$ |
| 2006 $SE_{340}$ | 17.1 | 0.15 | 20060922 | 309.66808 | 275.33557 | 164.30518 | 7.44908 | 0.1816425 | 2.5775710 | 20 | 1 | 23 days | 0.60 | | MPC | 2006 $SE_{340}$ |
| 2006 $SS_{340}$ | 16.7 | 0.15 | 20060922 | 249.55120 | 83.68753 | 51.20505 | 4.62268 | 0.1415864 | 2.5401419 | 9 | 1 | 21 days | 0.23 | | MPC | 2006 $SS_{340}$ |
| 2006 $SE_{341}$ | 16.2 | 0.15 | 20060922 | 58.75030 | 250.56835 | 56.18540 | 5.01872 | 0.0491695 | 2.7702449 | 32 | 1 | 60 days | 0.45 | M-v 5 D | MPC | 2006 $SE_{341}$ |
| 2006 $SO_{341}$ | 16.6 | 0.15 | 20061012 | 353.03442 | 342.17713 | 40.96335 | 6.94989 | 0.0669406 | 2.7167256 | 24 | 1 | 59 days | 0.53 | | MPC | 2006 $SO_{341}$ |
| 2006 $SQ_{341}$ | 16.2 | 0.15 | 20061012 | 176.48353 | 181.57499 | 45.72734 | 7.33731 | 0.0896078 | 2.3662688 | 14 | 1 | 47 days | 0.23 | | MPC | 2006 $SQ_{341}$ |
| 2006 $ST_{341}$ | 16.1 | 0.15 | 20061012 | 31.39695 | 309.23124 | 42.33027 | 18.15613 | 0.2498358 | 2.7918893 | 55 | 1 | 55 days | 0.42 | | MPC | 2006 $ST_{341}$ |
| 2006 $SV_{341}$ | 16.8 | 0.15 | 20060922 | 5.48045 | 24.10436 | 346.92361 | 6.71638 | 0.1655805 | 3.1726943 | 15 | 1 | 23 days | 0.22 | | MPC | 2006 $SV_{341}$ |
| 2006 $SX_{341}$ | 17.7 | 0.15 | 20061012 | 9.04017 | 102.85303 | 267.48551 | 3.66677 | 0.1687708 | 2.7657829 | 10 | 1 | 29 days | 0.43 | | MPC | 2006 $SX_{341}$ |
| 2006 $SA_{342}$ | 17.4 | 0.15 | 20061012 | 39.41567 | 123.35924 | 207.79611 | 24.43585 | 0.1477103 | 2.7882895 | 14 | 1 | 30 days | 0.28 | | MPC | 2006 $SA_{342}$ |
| 2006 $SE_{342}$ | 18.7 | 0.15 | 20060922 | 16.75414 | 22.09920 | 326.17948 | 3.60420 | 0.2065761 | 2.2358253 | 10 | 1 | 21 days | 0.15 | | MPC | 2006 $SE_{342}$ |
| 2006 $SF_{342}$ | 16.7 | 0.15 | 20061012 | 316.96247 | 104.41558 | 328.17353 | 4.77127 | 0.0567334 | 2.8586053 | 17 | 1 | 58 days | 0.40 | | MPC | 2006 $SF_{342}$ |
| 2006 $SL_{342}$ | 16.7 | 0.15 | 20061012 | 353.62650 | 173.80487 | 221.13807 | 10.03501 | 0.2238403 | 3.1444511 | 34 | 1 | 50 days | 0.34 | | MPC | 2006 $SL_{342}$ |
| 2006 $SN_{342}$ | 16.9 | 0.15 | 20061012 | 324.95470 | 202.17944 | 233.93039 | 7.05039 | 0.2003128 | 2.8084676 | 19 | 1 | 51 days | 0.29 | | MPC | 2006 $SN_{342}$ |
| 2006 $SU_{342}$ | 17.9 | 0.15 | 20061012 | 328.96972 | 187.48455 | 233.45139 | 5.76444 | 0.0872647 | 2.3808951 | 12 | 1 | 51 days | 0.19 | | MPC | 2006 $SU_{342}$ |
| 2006 $SA_{343}$ | 16.4 | 0.15 | 20061012 | 286.89031 | 238.09103 | 228.90983 | 8.29884 | 0.0708825 | 3.1733609 | 21 | 1 | 51 days | 0.29 | | MPC | 2006 $SA_{343}$ |
| 2006 $SE_{343}$ | 18.4 | 0.15 | 20061012 | 19.47198 | 118.25928 | 233.35192 | 4.47418 | 0.2449983 | 2.5675179 | 24 | 1 | 43 days | 0.18 | | MPC | 2006 $SE_{343}$ |
| 2006 $SH_{343}$ | 15.3 | 0.15 | 20060922 | 289.08032 | 121.83497 | 1.89897 | 10.05251 | 0.2533604 | 3.2755912 | 10 | 1 | 21 days | 0.44 | | MPC | 2006 $SH_{343}$ |
| 2006 $SJ_{343}$ | 17.2 | 0.15 | 20061012 | 29.49348 | 124.30115 | 223.33377 | 8.30289 | 0.1228818 | 2.7129588 | 18 | 1 | 49 days | 0.20 | | MPC | 2006 $SJ_{343}$ |
| 2006 $SK_{343}$ | 17.7 | 0.15 | 20061012 | 326.40789 | 182.80012 | 246.38403 | 3.97853 | 0.1513127 | 2.2366633 | 51 | 1 | 52 days | 0.59 | | MPC | 2006 $SK_{343}$ |
| 2006 $SP_{343}$ | 16.6 | 0.15 | 20060922 | 324.58226 | 45.71675 | 15.18662 | 22.12349 | 0.0890965 | 2.6008062 | 19 | 1 | 33 days | 0.16 | | MPC | 2006 $SP_{343}$ |
| 2006 $SQ_{343}$ | 17.1 | 0.15 | 20061012 | 111.00919 | 50.76067 | 211.44736 | 15.45368 | 0.1070567 | 2.4548984 | 19 | 1 | 44 days | 0.20 | | MPC | 2006 $SQ_{343}$ |
| 2006 $SR_{343}$ | 16.6 | 0.15 | 20060922 | 30.74284 | 345.97324 | 352.01580 | 4.93069 | 0.1687815 | 3.2213211 | 9 | 1 | 19 days | 0.13 | | MPC | 2006 $SR_{343}$ |
| 2006 $SS_{343}$ | 16.6 | 0.15 | 20061012 | 300.08489 | 232.46923 | 221.01601 | 9.10643 | 0.0794679 | 3.1864874 | 24 | 1 | 51 days | 0.27 | | MPC | 2006 $SS_{343}$ |
| 2006 $SV_{343}$ | 16.0 | 0.15 | 20060922 | 221.21350 | 315.08519 | 216.19809 | 12.08059 | 0.1569397 | 2.9194690 | 9 | 1 | 19 days | 0.20 | | MPC | 2006 $SV_{343}$ |
| 2006 $SW_{343}$ | 15.7 | 0.15 | 20061012 | 295.08050 | 246.67004 | 215.78399 | 10.50957 | 0.1133682 | 3.1020303 | 46 | 1 | 51 days | 0.50 | | MPC | 2006 $SW_{343}$ |
| 2006 $SB_{344}$ | 17.9 | 0.15 | 20061012 | 16.80627 | 140.58250 | 221.34795 | 6.14262 | 0.1321783 | 2.4022691 | 25 | 1 | 51 days | 0.27 | | MPC | 2006 $SB_{344}$ |
| 2006 $SJ_{344}$ | 17.1 | 0.15 | 20061012 | 319.01590 | 111.46120 | 330.49438 | 3.63785 | 0.1714579 | 3.1658953 | 24 | 1 | 34 days | 0.24 | | MPC | 2006 $SJ_{344}$ |
| 2006 $SL_{344}$ | 16.4 | 0.15 | 20061012 | 291.14578 | 224.12596 | 244.32136 | 4.32923 | 0.1214212 | 3.1228391 | 9 | 1 | 49 days | 0.20 | | MPC | 2006 $SL_{344}$ |
| 2006 $SM_{344}$ | 17.8 | 0.15 | 20060922 | 19.53182 | 340.60277 | 8.19175 | 8.33703 | 0.2161956 | 2.9795180 | 9 | 1 | 19 days | 0.16 | | MPC | 2006 $SM_{344}$ |
| 2006 $SO_{344}$ | 17.0 | 0.15 | 20060922 | 334.10526 | 186.18914 | 221.44791 | 6.56822 | 0.1210046 | 2.2337350 | 61 | 1 | 60 days | 0.56 | M-v 4 | MPC | 2006 $SO_{344}$ |
| 2006 $SS_{344}$ | 16.7 | 0.15 | 20061012 | 15.74510 | 45.89164 | 315.99080 | 3.46291 | 0.1549106 | 3.1098285 | 16 | 1 | 29 days | 0.61 | | MPC | 2006 $SS_{344}$ |
| 2006 $SX_{344}$ | 16.2 | 0.15 | 20061012 | 293.14672 | 255.91421 | 207.95968 | 26.20371 | 0.1243891 | 3.1480445 | 29 | 1 | 52 days | 0.28 | | MPC | 2006 $SX_{344}$ |
| 2006 $SB_{345}$ | 17.6 | 0.15 | 20061012 | 328.13468 | 213.84382 | 212.43377 | 10.23970 | 0.1612755 | 2.6065137 | 21 | 1 | 44 days | 0.33 | | MPC | 2006 $SB_{345}$ |
| 2006 $SN_{345}$ | 16.3 | 0.15 | 20060922 | 262.59482 | 165.52290 | 321.84426 | 3.39224 | 0.0791457 | 3.0631196 | 9 | 1 | 19 days | 0.89 | | MPC | 2006 $SN_{345}$ |
| 2006 $SO_{345}$ | 16.9 | 0.15 | 20060922 | 323.62680 | 63.29918 | 3.63100 | 8.35840 | 0.1526579 | 2.7595942 | 26 | 1 | 35 days | 0.68 | | MPC | 2006 $SO_{345}$ |
| 2006 $SR_{345}$ | 18.3 | 0.15 | 20061012 | 336.23340 | 66.52567 | 347.00931 | 4.20985 | 0.1241999 | 2.2978317 | 15 | 1 | 29 days | 0.37 | | MPC | 2006 $SR_{345}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SS_{345}$ | 17.6 | 0.15 | 20061012 | 253.34262 | 219.85281 | 280.03228 | 2.34458 | 0.0928870 | 2.2808746 | 13 | 1 | 50 days | 0.45 | | | MPC | 2006 $SS_{345}$ |
| 2006 $SW_{345}$ | 16.5 | 0.15 | 20060922 | 66.55051 | 315.53236 | 339.26628 | 5.43326 | 0.1420879 | 2.6039380 | 20 | 1 | 23 days | 0.42 | | | MPC | 2006 $SW_{345}$ |
| 2006 $SX_{345}$ | 17.1 | 0.15 | 20061012 | 335.95048 | 200.26553 | 214.16487 | 12.06882 | 0.1519661 | 2.7358493 | 26 | 1 | 46 days | 0.37 | | | MPC | 2006 $SX_{345}$ |
| 2006 $SZ_{345}$ | 17.1 | 0.15 | 20060922 | 33.22228 | 42.42328 | 280.79423 | 3.17289 | 0.2312552 | 2.5738564 | 17 | 1 | 31 days | 0.43 | | | MPC | 2006 $SZ_{345}$ |
| 2006 $SA_{346}$ | 16.0 | 0.15 | 20060922 | 20.47754 | 351.71137 | 0.73897 | 9.94617 | 0.1132675 | 3.0153215 | 13 | 1 | 23 days | 0.45 | | | MPC | 2006 $SA_{346}$ |
| 2006 $SM_{346}$ | 16.1 | 0.15 | 20060922 | 128.57166 | 18.13626 | 226.12705 | 9.53587 | 0.0852425 | 3.0044069 | 19 | 1 | 60 days | 0.48 | M-v | 5 | MPC | 2006 $SM_{346}$ |
| 2006 $SO_{346}$ | 15.8 | 0.15 | 20060922 | 22.63268 | 355.84553 | 358.28264 | 8.95191 | 0.0680596 | 3.2375727 | 12 | 1 | 23 days | 0.19 | | | MPC | 2006 $SO_{346}$ |
| 2006 $SU_{346}$ | 18.3 | 0.15 | 20061012 | 88.97979 | 91.23225 | 214.01098 | 21.05477 | 0.0767433 | 1.8452690 | 26 | 1 | 53 days | 0.45 | | | MPC | 2006 $SU_{346}$ |
| 2006 $SV_{346}$ | 17.3 | 0.15 | 20061012 | 2.72543 | 205.82671 | 194.91955 | 4.69832 | 0.2653701 | 2.5700849 | 16 | 1 | 53 days | 0.35 | | | MPC | 2006 $SV_{346}$ |
| 2006 $SW_{346}$ | 16.7 | 0.15 | 20060922 | 43.93735 | 317.93054 | 7.03652 | 22.62516 | 0.1904193 | 2.3117311 | 26 | 1 | 82 days | 0.41 | M-v | 4 | MPC | 2006 $SW_{346}$ |
| 2006 $SY_{346}$ | 17.9 | 0.15 | 20060922 | 292.87785 | 117.59631 | 343.77031 | 2.24209 | 0.1511432 | 2.3785948 | 19 | 1 | 65 days | 0.24 | M-v | 4 | MPC | 2006 $SY_{346}$ |
| 2006 $SB_{347}$ | 17.9 | 0.15 | 20061012 | 358.12779 | 15.42835 | 10.55412 | 5.05342 | 0.1695688 | 2.7488259 | 15 | 1 | 56 days | 0.37 | | | MPC | 2006 $SB_{347}$ |
| 2006 $SF_{347}$ | 15.8 | 0.15 | 20060922 | 37.04487 | 325.55964 | 15.46548 | 8.86345 | 0.0404450 | 3.1107740 | 38 | 1 | 115 days | 0.36 | M-v | 4 | MPC | 2006 $SF_{347}$ |
| 2006 $SG_{347}$ | 17.4 | 0.15 | 20060922 | 354.50265 | 168.71774 | 218.63542 | 3.09455 | 0.1260464 | 3.2611653 | 12 | 1 | 25 days | 0.28 | | | MPC | 2006 $SG_{347}$ |
| 2006 $SH_{347}$ | 16.9 | 0.15 | 20060922 | 73.00795 | 357.64400 | 305.12882 | 1.08081 | 0.0418642 | 2.8651470 | 27 | 1 | 61 days | 0.27 | M-v | 4 | MPC | 2006 $SH_{347}$ |
| 2006 $SK_{347}$ | 17.4 | 0.15 | 20060922 | 1.90563 | 54.60253 | 322.76312 | 1.16204 | 0.0815771 | 2.8673016 | 18 | 1 | 35 days | 0.21 | | | MPC | 2006 $SK_{347}$ |
| 2006 $SP_{347}$ | 15.6 | 0.15 | 20061012 | 20.08585 | 157.65531 | 204.32030 | 13.84824 | 0.0666528 | 3.2192218 | 31 | 1 | 59 days | 0.35 | | | MPC | 2006 $SP_{347}$ |
| 2006 $SQ_{347}$ | 18.7 | 0.15 | 20061012 | 53.29404 | 113.11329 | 203.30828 | 4.96070 | 0.1321194 | 2.1869265 | 21 | 1 | 52 days | 0.20 | | | MPC | 2006 $SQ_{347}$ |
| 2006 $ST_{347}$ | 17.7 | 0.15 | 20061012 | 107.39994 | 45.73147 | 224.43099 | 1.55009 | 0.0623381 | 2.3980926 | 25 | 1 | 53 days | 0.27 | | | MPC | 2006 $ST_{347}$ |
| 2006 $SU_{347}$ | 19.5 | 0.15 | 20060922 | 10.43447 | 139.83962 | 220.09201 | 2.24342 | 0.1678680 | 2.1972315 | 19 | 1 | 40 days | 0.23 | | | MPC | 2006 $SU_{347}$ |
| 2006 $SV_{347}$ | 18.7 | 0.15 | 20060922 | 44.68446 | 333.59468 | 340.75251 | 0.92718 | 0.1948828 | 2.4646000 | 22 | 1 | 43 days | 0.39 | | | MPC | 2006 $SV_{347}$ |
| 2006 $SW_{347}$ | 18.2 | 0.15 | 20061012 | 334.19702 | 208.97243 | 211.53122 | 5.01884 | 0.1687048 | 2.6319230 | 25 | 1 | 54 days | 0.26 | | | MPC | 2006 $SW_{347}$ |
| 2006 $SY_{347}$ | 17.5 | 0.15 | 20060922 | 39.19331 | 335.29262 | 0.95806 | 1.71914 | 0.0702848 | 2.8657893 | 19 | 1 | 34 days | 0.26 | | | MPC | 2006 $SY_{347}$ |
| 2006 $SC_{348}$ | 19.3 | 0.15 | 20060922 | 15.46103 | 62.25643 | 289.63697 | 0.57568 | 0.2064663 | 2.3406392 | 19 | 1 | 40 days | 0.26 | | | MPC | 2006 $SC_{348}$ |
| 2006 $SD_{348}$ | 17.5 | 0.15 | 20060922 | 156.96503 | 19.49974 | 200.35371 | 1.16994 | 0.0870542 | 2.3425598 | 22 | 1 | 62 days | 0.32 | M-v | 4 | MPC | 2006 $SD_{348}$ |
| 2006 $SG_{348}$ | 18.0 | 0.15 | 20061012 | 303.28752 | 83.30962 | 14.78589 | 3.02106 | 0.1515045 | 2.4177728 | 12 | 1 | 30 days | 0.13 | | | MPC | 2006 $SG_{348}$ |
| 2006 $SH_{348}$ | 17.6 | 0.15 | 20061012 | 23.78610 | 341.38474 | 17.06247 | 2.00587 | 0.0799057 | 2.8679217 | 16 | 1 | 30 days | 0.21 | | | MPC | 2006 $SH_{348}$ |
| 2006 $SJ_{348}$ | 19.4 | 0.15 | 20060922 | 40.89021 | 115.41877 | 203.88637 | 6.82866 | 0.1866268 | 2.1831120 | 12 | 1 | 25 days | 0.23 | | | MPC | 2006 $SJ_{348}$ |
| 2006 $SK_{348}$ | 18.9 | 0.15 | 20061012 | 38.32010 | 124.37918 | 205.16837 | 5.28532 | 0.1939867 | 2.2373836 | 18 | 1 | 33 days | 0.34 | | | MPC | 2006 $SK_{348}$ |
| 2006 $SP_{348}$ | 16.3 | 0.15 | 20060922 | 38.95542 | 350.72657 | 341.79785 | 0.34822 | 0.0966533 | 2.9796468 | 23 | 1 | 121 days | 0.21 | M-v | 4 | MPC | 2006 $SP_{348}$ |
| 2006 $SQ_{348}$ | 17.1 | 0.15 | 20060922 | 27.69309 | 107.79599 | 231.44547 | 0.47344 | 0.1786031 | 3.1197628 | 13 | 1 | 38 days | 0.21 | | | MPC | 2006 $SQ_{348}$ |
| 2006 $SS_{348}$ | 17.8 | 0.15 | 20061012 | 291.81438 | 258.80179 | 207.52212 | 1.95107 | 0.1341148 | 2.4413432 | 18 | 1 | 55 days | 0.27 | | | MPC | 2006 $SS_{348}$ |
| 2006 $SV_{348}$ | 18.0 | 0.15 | 20060922 | 22.96642 | 317.80218 | 21.36448 | 16.29175 | 0.2503793 | 2.9846544 | 12 | 1 | 22 days | 0.29 | | | MPC | 2006 $SV_{348}$ |
| 2006 $SW_{348}$ | 16.6 | 0.15 | 20061012 | 242.44263 | 129.76744 | 21.35724 | 12.33076 | 0.0911261 | 2.9344573 | 25 | 1 | 44 days | 0.22 | | | MPC | 2006 $SW_{348}$ |
| 2006 $SX_{348}$ | 16.7 | 0.15 | 20061012 | 49.04048 | 308.34455 | 19.51175 | 6.08491 | 0.0816896 | 2.9282583 | 28 | 1 | 54 days | 0.22 | | | MPC | 2006 $SX_{348}$ |
| 2006 $SC_{349}$ | 17.3 | 0.15 | 20061012 | 48.10333 | 109.56485 | 219.50482 | 24.37034 | 0.1410021 | 1.9359270 | 47 | 1 | 55 days | 0.31 | | | MPC | 2006 $SC_{349}$ |
| 2006 $SD_{349}$ | 15.6 | 0.15 | 20060922 | 10.64890 | 244.67043 | 122.30302 | 19.59435 | 0.3602872 | 3.0761809 | 26 | 1 | 91 days | 0.49 | M-v | 4 | MPC | 2006 $SD_{349}$ |
| 2006 $SJ_{349}$ | 15.9 | 0.15 | 20060922 | 332.81295 | 16.64230 | 37.31132 | 10.90978 | 0.2244278 | 3.1407954 | 51 | 1 | 34 days | 0.53 | | | MPC | 2006 $SJ_{349}$ |
| 2006 $SL_{349}$ | 16.7 | 0.15 | 20061012 | 6.11617 | 256.03193 | 111.71302 | 1.75609 | 0.3449005 | 3.9570104 | 39 | 1 | 54 days | 0.29 | | | MPC | 2006 $SL_{349}$ |
| 2006 $SM_{349}$ | 16.0 | 0.15 | 20060922 | 353.09001 | 204.08363 | 182.29320 | 5.12578 | 0.1709450 | 3.1800203 | 41 | 1 | 63 days | 0.51 | M-v | 4 | MPC | 2006 $SM_{349}$ |
| 2006 $SP_{349}$ | 15.4 | 0.15 | 20061012 | 11.28400 | 313.35203 | 60.33620 | 14.60028 | 0.1715095 | 2.6790966 | 66 | 1 | 54 days | 0.58 | | | MPC | 2006 $SP_{349}$ |
| 2006 $SD_{350}$ | 18.9 | 0.15 | 20060922 | 347.49877 | 328.16056 | 59.03017 | 0.78065 | 0.2089809 | 2.6398933 | 13 | 1 | 2 days | 0.28 | | | MPC | 2006 $SD_{350}$ |
| 2006 $SF_{350}$ | 17.7 | 0.15 | 20060922 | 309.14436 | 82.94418 | 343.16110 | 7.48368 | 0.1126132 | 2.2289523 | 16 | 1 | 35 days | 0.20 | | | MPC | 2006 $SF_{350}$ |
| 2006 $SR_{350}$ | 17.8 | 0.15 | 20060902 | 335.01696 | 357.58896 | 24.73781 | 4.50293 | 0.1563287 | 2.2260164 | 21 | 1 | 44 days | 0.38 | | | MPC | 2006 $SR_{350}$ |
| 2006 $SU_{350}$ | 17.0 | 0.15 | 20060922 | 9.08136 | 327.20980 | 17.00822 | 11.77483 | 0.1764961 | 2.7181962 | 24 | 1 | 68 days | 0.55 | M-v | 4 | MPC | 2006 $SU_{350}$ |
| 2006 $SL_{351}$ | 16.0 | 0.15 | 20060922 | 11.07747 | 216.70616 | 134.07064 | 5.42461 | 0.1345987 | 3.1014246 | 18 | 1 | 66 days | 0.57 | M-v | 4 | MPC | 2006 $SL_{351}$ |
| 2006 $SQ_{351}$ | 19.8 | 0.15 | 20060922 | 354.18087 | 226.46570 | 145.90686 | 1.84954 | 0.1358965 | 2.1961272 | 12 | 1 | 2 days | 0.38 | | | MPC | 2006 $SQ_{351}$ |
| 2006 $ST_{351}$ | 18.1 | 0.15 | 20061012 | 356.89649 | 350.73140 | 30.37858 | 4.91504 | 0.2451765 | 2.2454184 | 34 | 1 | 54 days | 0.45 | | | MPC | 2006 $ST_{351}$ |
| 2006 $SU_{351}$ | 17.8 | 0.15 | 20060922 | 11.97518 | 237.74398 | 113.51287 | 2.47983 | 0.1444176 | 2.2161388 | 27 | 1 | 21 days | 0.64 | | | MPC | 2006 $SU_{351}$ |
| 2006 $SV_{351}$ | 15.9 | 0.15 | 20060922 | 3.14160 | 189.31609 | 178.35808 | 15.20444 | 0.0816896 | 3.1197868 | 11 | 1 | 20 days | 0.72 | | | MPC | 2006 $SV_{351}$ |
| 2006 $SZ_{351}$ | 15.9 | 0.15 | 20060922 | 303.97392 | 107.28417 | 325.46806 | 5.04358 | 0.0556956 | 2.8838473 | 13 | 1 | 12 days | 0.39 | | | MPC | 2006 $SZ_{351}$ |
| 2006 $SG_{352}$ | 18.1 | 0.15 | 20060922 | 348.55447 | 98.21030 | 288.23817 | 3.97355 | 0.1830378 | 2.2950815 | 22 | 1 | 21 days | 0.50 | | | MPC | 2006 $SG_{352}$ |
| 2006 $SH_{352}$ | 16.6 | 0.15 | 20060922 | 8.14029 | 137.40584 | 216.77891 | 9.98206 | 0.3041113 | 2.7852382 | 47 | 1 | 62 days | 0.46 | M-v | 4 | MPC | 2006 $SH_{352}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SN_{352}$ | 15.8 | 0.15 | 20060922 | 75.91819 | 311.22416 | 345.13190 | 8.70036 | 0.0332620 | 3.0232306 | 12 | 1 | 14 days | 0.36 | | MPC | 2006 $SN_{352}$ |
| 2006 $SO_{352}$ | 15.0 | 0.15 | 20060922 | 267.66022 | 124.27453 | 350.46846 | 10.38786 | 0.0511238 | 3.1430338 | 21 | 1 | 33 days | 0.58 | | MPC | 2006 $SO_{352}$ |
| 2006 $SR_{352}$ | 16.3 | 0.15 | 20060922 | 357.17564 | 24.40938 | 354.74050 | 10.10956 | 0.2276191 | 3.1447910 | 19 | 1 | 32 days | 0.40 | | MPC | 2006 $SR_{352}$ |
| 2006 $SS_{352}$ | 16.4 | 0.15 | 20060922 | 352.61561 | 111.24049 | 272.75560 | 3.96327 | 0.0871948 | 2.7479740 | 18 | 1 | 21 days | 0.42 | | MPC | 2006 $SS_{352}$ |
| 2006 $ST_{352}$ | 16.6 | 0.15 | 20060922 | 30.34624 | 7.61471 | 325.51336 | 4.35481 | 0.1661316 | 2.7208272 | 11 | 1 | 10 days | 0.46 | | MPC | 2006 $ST_{352}$ |
| 2006 $SU_{352}$ | 18.4 | 0.15 | 20061012 | 350.44657 | 181.67820 | 218.49406 | 6.17462 | 0.3211557 | 2.5853454 | 33 | 1 | 55 days | 0.69 | | MPC | 2006 $SU_{352}$ |
| 2006 $SX_{352}$ | 17.3 | 0.15 | 20061012 | 315.73509 | 132.98944 | 310.59596 | 2.90930 | 0.1934064 | 2.3289111 | 27 | 1 | 53 days | 0.37 | | MPC | 2006 $SX_{352}$ |
| 2006 $SB_{353}$ | 18.0 | 0.15 | 20061012 | 348.51196 | 9.62323 | 30.17143 | 13.95568 | 0.2505251 | 2.6064508 | 33 | 1 | 49 days | 0.42 | | MPC | 2006 $SB_{353}$ |
| 2006 $SE_{353}$ | 16.7 | 0.15 | 20061012 | 341.06384 | 3.01534 | 45.35321 | 8.58261 | 0.1575136 | 2.6626906 | 33 | 1 | 51 days | 0.49 | | MPC | 2006 $SE_{353}$ |
| 2006 $SF_{353}$ | 16.0 | 0.15 | 20061012 | 65.76224 | 200.57157 | 108.80627 | 4.27236 | 0.0764975 | 2.7072454 | 29 | 1 | 55 days | 0.49 | | MPC | 2006 $SF_{353}$ |
| 2006 $SG_{353}$ | 16.5 | 0.15 | 20061012 | 4.53693 | 333.05180 | 43.39677 | 10.26754 | 0.1554709 | 2.7545077 | 27 | 1 | 58 days | 0.42 | | MPC | 2006 $SG_{353}$ |
| 2006 $SJ_{353}$ | 17.3 | 0.15 | 20061012 | 349.73468 | 345.02931 | 53.20762 | 5.86484 | 0.2004162 | 2.4252171 | 38 | 1 | 49 days | 0.27 | | MPC | 2006 $SJ_{353}$ |
| 2006 $SM_{353}$ | 16.8 | 0.15 | 20061012 | 317.26337 | 38.55684 | 42.16827 | 13.17509 | 0.1661227 | 2.6297032 | 27 | 1 | 51 days | 0.63 | | MPC | 2006 $SM_{353}$ |
| 2006 $SO_{353}$ | 17.8 | 0.15 | 20060922 | 357.72323 | 219.78166 | 157.92652 | 4.53536 | 0.1339631 | 2.2475249 | 28 | 1 | 22 days | 0.60 | | MPC | 2006 $SO_{353}$ |
| 2006 $SR_{353}$ | 15.3 | 0.15 | 20061012 | 346.91779 | 0.31334 | 40.46301 | 13.27851 | 0.0991051 | 3.2236178 | 57 | 1 | 48 days | 0.49 | | MPC | 2006 $SR_{353}$ |
| 2006 $SS_{353}$ | 16.8 | 0.15 | 20061012 | 21.55696 | 315.22547 | 39.24554 | 13.87406 | 0.1438533 | 2.6241417 | 34 | 1 | 51 days | 0.41 | | MPC | 2006 $SS_{353}$ |
| 2006 $SV_{353}$ | 17.6 | 0.15 | 20060922 | 16.38538 | 185.39276 | 159.71327 | 5.69424 | 0.2881728 | 2.5575518 | 23 | 1 | 22 days | 0.40 | | MPC | 2006 $SV_{353}$ |
| 2006 $SY_{353}$ | 15.7 | 0.15 | 20061012 | 358.76238 | 211.85887 | 176.11063 | 10.48274 | 0.1310035 | 3.0305363 | 31 | 1 | 47 days | 0.58 | | MPC | 2006 $SY_{353}$ |
| 2006 $SZ_{353}$ | 16.7 | 0.15 | 20060922 | 44.14623 | 233.34972 | 79.12013 | 5.13345 | 0.2173860 | 2.3702665 | 31 | 1 | 66 days | 0.54 | M-v 5 | MPC | 2006 $SZ_{353}$ |
| 2006 $SA_{354}$ | 16.5 | 0.15 | 20061012 | 311.00579 | 29.70091 | 64.61236 | 5.06672 | 0.2083392 | 2.4798456 | 33 | 1 | 40 days | 0.40 | | MPC | 2006 $SA_{354}$ |
| 2006 $SB_{354}$ | 16.8 | 0.15 | 20060922 | 5.23807 | 197.73085 | 173.96503 | 7.44110 | 0.1257765 | 2.5460578 | 38 | 1 | 28 days | 0.41 | | MPC | 2006 $SB_{354}$ |
| 2006 $SC_{354}$ | 18.1 | 0.15 | 20061012 | 359.85557 | 347.10808 | 37.01639 | 9.13298 | 0.3179501 | 2.6803119 | 48 | 1 | 51 days | 0.55 | | MPC | 2006 $SC_{354}$ |
| 2006 $SF_{354}$ | 17.4 | 0.15 | 20060922 | 17.10925 | 298.81425 | 48.52398 | 6.49008 | 0.2226883 | 2.2175775 | 63 | 1 | 61 days | 0.53 | M-v 4 | MPC | 2006 $SF_{354}$ |
| 2006 $SG_{354}$ | 17.2 | 0.15 | 20061012 | 38.85808 | 257.13840 | 57.15095 | 4.98141 | 0.3217672 | 2.5664750 | 26 | 1 | 47 days | 0.44 | | MPC | 2006 $SG_{354}$ |
| 2006 $SL_{354}$ | 16.3 | 0.15 | 20061012 | 10.33870 | 318.78208 | 49.25927 | 11.15158 | 0.2340622 | 3.1437598 | 26 | 1 | 59 days | 0.48 | | MPC | 2006 $SL_{354}$ |
| 2006 $SW_{354}$ | 18.4 | 0.15 | 20061012 | 6.73083 | 206.01902 | 172.37124 | 3.41263 | 0.2351333 | 2.6619116 | 15 | 1 | 32 days | 0.22 | | MPC | 2006 $SW_{354}$ |
| 2006 $SX_{354}$ | 17.4 | 0.15 | 20061012 | 330.31377 | 326.45041 | 115.12302 | 1.92897 | 0.2803530 | 2.6426289 | 33 | 1 | 48 days | 0.34 | | MPC | 2006 $SX_{354}$ |
| 2006 $SY_{354}$ | 17.9 | 0.15 | 20061012 | 17.37488 | 183.54467 | 176.12549 | 3.61859 | 0.2391973 | 2.3333210 | 17 | 1 | 32 days | 0.22 | | MPC | 2006 $SY_{354}$ |
| 2006 $SA_{355}$ | 16.5 | 0.15 | 20061012 | 20.37962 | 260.80561 | 101.53690 | 2.48184 | 0.1833277 | 3.0925120 | 26 | 1 | 47 days | 0.42 | | MPC | 2006 $SA_{355}$ |
| 2006 $SC_{355}$ | 16.7 | 0.15 | 20061012 | 351.99335 | 212.00847 | 181.67790 | 12.22613 | 0.1545819 | 2.7694345 | 31 | 1 | 23 days | 0.32 | | MPC | 2006 $SC_{355}$ |
| 2006 $SF_{355}$ | 17.1 | 0.15 | 20060922 | 10.30573 | 347.40387 | 11.40259 | 10.49357 | 0.1139928 | 3.0366050 | 13 | 1 | 30 days | 0.21 | | MPC | 2006 $SF_{355}$ |
| 2006 $SM_{355}$ | 17.6 | 0.15 | 20061012 | 34.94872 | 178.33168 | 154.29373 | 4.69569 | 0.1971247 | 2.2793115 | 30 | 1 | 55 days | 0.39 | | MPC | 2006 $SM_{355}$ |
| 2006 $SS_{355}$ | 18.2 | 0.15 | 20061012 | 335.68643 | 261.93313 | 165.03997 | 5.07156 | 0.2685457 | 2.2683927 | 25 | 1 | 44 days | 0.48 | | MPC | 2006 $SS_{355}$ |
| 2006 $ST_{355}$ | 17.5 | 0.15 | 20061012 | 12.14776 | 274.08838 | 91.25759 | 3.44191 | 0.2296857 | 2.3627391 | 23 | 1 | 44 days | 0.50 | | MPC | 2006 $ST_{355}$ |
| 2006 $SX_{355}$ | 17.5 | 0.15 | 20061012 | 26.87056 | 193.89732 | 154.49345 | 4.62438 | 0.1658486 | 2.2298064 | 20 | 1 | 54 days | 0.48 | | MPC | 2006 $SX_{355}$ |
| 2006 $SY_{355}$ | 15.5 | 0.15 | 20060922 | 1.67194 | 202.10293 | 180.67824 | 10.87486 | 0.0573860 | 3.0230834 | 19 | 1 | 22 days | 0.43 | | MPC | 2006 $SY_{355}$ |
| 2006 $SZ_{355}$ | 17.9 | 0.15 | 20061012 | 11.35304 | 322.66824 | 45.86744 | 7.59433 | 0.1945438 | 2.2867618 | 34 | 1 | 58 days | 0.51 | | MPC | 2006 $SZ_{355}$ |
| 2006 $SA_{356}$ | 17.7 | 0.15 | 20061012 | 23.72011 | 228.64473 | 117.66309 | 3.39853 | 0.2485536 | 2.3537888 | 22 | 1 | 53 days | 0.34 | | MPC | 2006 $SA_{356}$ |
| 2006 $SC_{356}$ | 17.0 | 0.15 | 20061012 | 1.59924 | 342.46991 | 41.60593 | 8.13204 | 0.2058118 | 2.5970063 | 56 | 1 | 54 days | 0.36 | | MPC | 2006 $SC_{356}$ |
| 2006 $SD_{356}$ | 15.6 | 0.15 | 20060922 | 303.40918 | 68.29609 | 29.09224 | 11.51125 | 0.1629571 | 2.6562442 | 64 | 1 | 63 days | 0.62 | M-v 4 | MPC | 2006 $SD_{356}$ |
| 2006 $SF_{356}$ | 17.5 | 0.15 | 20061012 | 34.08442 | 186.67162 | 144.11732 | 2.36345 | 0.2570399 | 2.3125144 | 48 | 1 | 48 days | 0.35 | | MPC | 2006 $SF_{356}$ |
| 2006 $SG_{356}$ | 16.9 | 0.15 | 20061012 | 354.52239 | 1.60322 | 34.13850 | 13.65886 | 0.1515146 | 2.6253599 | 70 | 1 | 54 days | 0.44 | | MPC | 2006 $SG_{356}$ |
| 2006 $SH_{356}$ | 17.8 | 0.15 | 20060922 | 323.40028 | 302.61006 | 125.62210 | 2.77393 | 0.1456047 | 2.2611054 | 23 | 1 | 22 days | 0.83 | | MPC | 2006 $SH_{356}$ |
| 2006 $SJ_{356}$ | 16.5 | 0.15 | 20061012 | 11.52747 | 313.21190 | 58.02559 | 4.24871 | 0.1918176 | 2.7142865 | 52 | 1 | 58 days | 0.43 | | MPC | 2006 $SJ_{356}$ |
| 2006 $SM_{356}$ | 18.4 | 0.15 | 20060922 | 24.60895 | 203.91773 | 133.02596 | 2.69030 | 0.2403256 | 2.1592029 | 19 | 1 | 22 days | 0.44 | | MPC | 2006 $SM_{356}$ |
| 2006 $SO_{356}$ | 15.7 | 0.15 | 20061012 | 2.44428 | 349.28060 | 37.99000 | 22.60823 | 0.0538099 | 3.0903960 | 35 | 1 | 56 days | 0.46 | | MPC | 2006 $SO_{356}$ |
| 2006 $SP_{356}$ | 17.7 | 0.15 | 20061012 | 38.65782 | 269.67506 | 55.30625 | 4.25092 | 0.2610471 | 2.3935697 | 41 | 1 | 58 days | 0.54 | | MPC | 2006 $SP_{356}$ |
| 2006 $SS_{356}$ | 17.1 | 0.15 | 20061012 | 325.24923 | 48.46198 | 37.37620 | 14.24657 | 0.2548562 | 2.6214789 | 59 | 1 | 50 days | 0.53 | | MPC | 2006 $SS_{356}$ |
| 2006 $SB_{357}$ | 16.9 | 0.15 | 20061012 | 17.22756 | 312.65988 | 54.22403 | 6.46890 | 0.1458159 | 2.3468776 | 57 | 1 | 52 days | 0.45 | | MPC | 2006 $SB_{357}$ |
| 2006 $SE_{357}$ | 16.4 | 0.15 | 20061012 | 29.08446 | 303.69064 | 49.32272 | 9.55879 | 0.1433758 | 2.6095840 | 31 | 1 | 52 days | 0.36 | | MPC | 2006 $SE_{357}$ |
| 2006 $SG_{357}$ | 15.8 | 0.15 | 20061012 | 350.26683 | 340.27797 | 65.91969 | 4.02318 | 0.1648055 | 2.7501102 | 68 | 1 | 52 days | 0.47 | | MPC | 2006 $SG_{357}$ |
| 2006 $SJ_{357}$ | 16.6 | 0.15 | 20061012 | 28.48743 | 209.88202 | 145.82005 | 2.86685 | 0.1417820 | 2.6537247 | 40 | 1 | 48 days | 0.52 | | MPC | 2006 $SJ_{357}$ |
| 2006 $SL_{357}$ | 15.7 | 0.15 | 20060922 | 20.46283 | 157.93383 | 197.55148 | 12.16667 | 0.2378674 | 3.0507150 | 41 | 1 | 120 days | 0.48 | M-v 4 | MPC | 2006 $SL_{357}$ |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SM_{357}$ | 15.0 | 0.15 | 20060922 | 320.43472 | 42.28498 | 39.33038 | 27.76054 | 0.1390141 | 3.0914778 | 69 | 1 | 61 days | 0.39 | M-v | 4 | MPC | | 2006 $SM_{357}$ |
| 2006 $SP_{357}$ | 18.3 | 0.15 | 20061012 | 33.44872 | 128.70114 | 215.94952 | 15.99497 | 0.1873901 | 2.5585789 | 22 | 1 | 29 days | 0.28 | | | MPC | | 2006 $SP_{357}$ |
| 2006 $SR_{357}$ | 16.1 | 0.15 | 20061012 | 280.12388 | 254.25057 | 226.93350 | 10.20629 | 0.0448743 | 3.1225737 | 26 | 1 | 58 days | 0.34 | | | MPC | | 2006 $SR_{357}$ |
| 2006 $SS_{357}$ | 18.0 | 0.15 | 20061012 | 9.47204 | 357.40347 | 19.19543 | 15.73097 | 0.2209684 | 2.4132921 | 22 | 1 | 27 days | 0.49 | | | MPC | | 2006 $SS_{357}$ |
| 2006 $ST_{357}$ | 18.6 | 0.15 | 20061012 | 45.60223 | 105.35373 | 212.01482 | 21.49693 | 0.2758941 | 2.3504908 | 18 | 1 | 31 days | 0.22 | | | MPC | | 2006 $ST_{357}$ |
| 2006 $SU_{357}$ | 15.9 | 0.15 | 20060922 | 222.42996 | 150.16326 | 25.40056 | 13.79328 | 0.0519298 | 3.2064087 | 14 | 1 | 21 days | 0.40 | | | MPC | | 2006 $SU_{357}$ |
| 2006 $SW_{357}$ | 16.7 | 0.15 | 20061012 | 57.62749 | 57.03153 | 270.87502 | 2.00771 | 0.1111127 | 2.5712692 | 29 | 1 | 52 days | 0.27 | | | MPC | | 2006 $SW_{357}$ |
| 2006 $SX_{357}$ | 18.2 | 0.15 | 20061012 | 40.29994 | 116.28740 | 228.01564 | 5.62179 | 0.1302652 | 2.3897481 | 29 | 1 | 58 days | 0.27 | | | MPC | | 2006 $SX_{357}$ |
| 2006 $SZ_{357}$ | 15.8 | 0.15 | 20061012 | 114.42384 | 47.52058 | 228.76162 | 9.59252 | 0.0921198 | 3.0467310 | 21 | 1 | 46 days | 0.27 | | | MPC | | 2006 $SZ_{357}$ |
| 2006 $SA_{358}$ | 17.6 | 0.15 | 20061012 | 321.98401 | 68.00792 | 20.96503 | 8.03729 | 0.1720107 | 2.5430659 | 23 | 1 | 56 days | 0.23 | | | MPC | | 2006 $SA_{358}$ |
| 2006 $SB_{358}$ | 16.7 | 0.15 | 20061012 | 350.51578 | 23.56295 | 26.75608 | 9.80377 | 0.0759868 | 2.9734712 | 23 | 1 | 49 days | 0.23 | | | MPC | | 2006 $SB_{358}$ |
| 2006 $SC_{358}$ | 17.1 | 0.15 | 20061012 | 335.33804 | 207.74857 | 221.04384 | 17.33325 | 0.1021932 | 2.9337848 | 32 | 1 | 46 days | 0.36 | | | MPC | | 2006 $SC_{358}$ |
| 2006 $SF_{358}$ | 16.3 | 0.15 | 20061012 | 110.86305 | 55.72432 | 225.75173 | 8.26957 | 0.0721781 | 2.8747995 | 25 | 1 | 52 days | 0.25 | | | MPC | | 2006 $SF_{358}$ |
| 2006 $SK_{358}$ | 16.8 | 0.15 | 20060922 | 313.05619 | 203.22126 | 203.12874 | 4.11827 | 0.0703943 | 2.7774822 | 15 | 1 | 17 days | 0.23 | | | MPC | | 2006 $SK_{358}$ |
| 2006 $SN_{358}$ | 17.7 | 0.15 | 20060922 | 317.75378 | 268.59252 | 177.33697 | 7.21773 | 0.2816750 | 2.6610929 | 18 | 1 | 38 days | 0.32 | | | MPC | | 2006 $SN_{358}$ |
| 2006 $SO_{358}$ | 15.8 | 0.15 | 20061012 | 164.65226 | 179.45428 | 38.00371 | 9.75515 | 0.0352417 | 3.1775340 | 20 | 1 | 42 days | 0.37 | | | MPC | | 2006 $SO_{358}$ |
| 2006 $SP_{358}$ | 16.7 | 0.15 | 20061012 | 328.81249 | 341.21814 | 78.57340 | 3.57125 | 0.0961797 | 2.7067255 | 26 | 1 | 49 days | 0.34 | | | MPC | | 2006 $SP_{358}$ |
| 2006 $SR_{358}$ | 17.9 | 0.15 | 20061012 | 341.11920 | 6.71857 | 40.38714 | 6.57621 | 0.1389113 | 2.4699855 | 24 | 1 | 42 days | 0.43 | | | MPC | | 2006 $SR_{358}$ |
| 2006 $SS_{358}$ | 16.7 | 0.15 | 20061012 | 24.84714 | 301.63955 | 49.11320 | 5.72954 | 0.1253155 | 2.6570563 | 29 | 1 | 50 days | 0.39 | | | MPC | | 2006 $SS_{358}$ |
| 2006 $SA_{359}$ | 17.6 | 0.15 | 20060922 | 348.89944 | 226.99054 | 167.47304 | 6.27544 | 0.2122896 | 2.6424430 | 18 | 1 | 21 days | 0.47 | | | MPC | | 2006 $SA_{359}$ |
| 2006 $SF_{359}$ | 16.8 | 0.15 | 20061012 | 16.78041 | 218.84926 | 138.36130 | 4.67696 | 0.2488957 | 3.0675834 | 22 | 1 | 54 days | 0.35 | | | MPC | | 2006 $SF_{359}$ |
| 2006 $SH_{359}$ | 16.8 | 0.15 | 20061012 | 346.72493 | 13.58590 | 41.60594 | 15.05382 | 0.2533640 | 2.5859714 | 67 | 1 | 53 days | 0.53 | | | MPC | | 2006 $SH_{359}$ |
| 2006 $SJ_{359}$ | 16.7 | 0.15 | 20061012 | 24.13978 | 256.05971 | 109.56950 | 3.12860 | 0.1031790 | 2.6617194 | 18 | 1 | 47 days | 0.50 | | | MPC | | 2006 $SJ_{359}$ |
| 2006 $SK_{359}$ | 17.2 | 0.15 | 20061012 | 28.92933 | 293.87160 | 43.99912 | 12.23303 | 0.3166028 | 2.6450379 | 43 | 1 | 58 days | 0.51 | | | MPC | | 2006 $SK_{359}$ |
| 2006 $SL_{359}$ | 16.0 | 0.15 | 20061012 | 16.02711 | 309.92485 | 61.67643 | 7.41282 | 0.1715343 | 2.6866612 | 45 | 1 | 58 days | 0.48 | | | MPC | | 2006 $SL_{359}$ |
| 2006 $SM_{359}$ | 16.4 | 0.15 | 20061012 | 343.65515 | 341.38452 | 74.47869 | 4.87045 | 0.1030860 | 2.7026517 | 44 | 1 | 49 days | 0.42 | | | MPC | | 2006 $SM_{359}$ |
| 2006 $SU_{359}$ | 16.4 | 0.15 | 20061012 | 30.28862 | 204.12205 | 148.77606 | 3.95802 | 0.1829208 | 2.6358005 | 33 | 1 | 54 days | 0.38 | | | MPC | | 2006 $SU_{359}$ |
| 2006 $SY_{359}$ | 16.6 | 0.15 | 20060922 | 18.10707 | 301.71261 | 52.44739 | 12.59172 | 0.3354506 | 2.9972058 | 44 | 1 | 64 days | 0.54 | M-v | 4 | MPC | | 2006 $SY_{359}$ |
| 2006 $SA_{360}$ | 16.5 | 0.15 | 20061012 | 39.41558 | 205.42707 | 127.64284 | 7.86342 | 0.2173633 | 2.3151895 | 30 | 1 | 47 days | 0.50 | | | MPC | | 2006 $SA_{360}$ |
| 2006 $SD_{360}$ | 16.8 | 0.15 | 20061012 | 325.99104 | 258.50728 | 197.87295 | 5.64018 | 0.1916510 | 2.6498622 | 25 | 1 | 55 days | 0.29 | | | MPC | | 2006 $SD_{360}$ |
| 2006 $SE_{360}$ | 16.5 | 0.15 | 20060922 | 333.50570 | 196.67408 | 217.87712 | 7.52738 | 0.1291044 | 2.6811101 | 81 | 1 | 62 days | 0.43 | M-v | 4 | MPC | | 2006 $SE_{360}$ |
| 2006 $SF_{360}$ | 15.2 | 0.15 | 20061012 | 72.41152 | 76.10586 | 229.54145 | 5.64003 | 0.0862751 | 3.2279487 | 51 | 1 | 56 days | 0.34 | | | MPC | | 2006 $SF_{360}$ |
| 2006 $SG_{360}$ | 16.0 | 0.15 | 20061012 | 1.75373 | 192.33730 | 203.41309 | 8.87833 | 0.0873763 | 3.1563869 | 32 | 1 | 47 days | 0.19 | | | MPC | | 2006 $SG_{360}$ |
| 2006 $SH_{360}$ | 16.2 | 0.15 | 20061012 | 342.98537 | 216.16005 | 201.14050 | 9.47084 | 0.0627451 | 3.1117649 | 22 | 1 | 47 days | 0.35 | | | MPC | | 2006 $SH_{360}$ |
| 2006 $SJ_{360}$ | 16.7 | 0.15 | 20061012 | 259.90320 | 331.17666 | 186.57614 | 4.32421 | 0.1936893 | 2.5535723 | 26 | 1 | 31 days | 0.28 | | | MPC | | 2006 $SJ_{360}$ |
| 2006 $SL_{360}$ | 16.3 | 0.15 | 20061012 | 38.98683 | 306.53159 | 50.52814 | 6.93456 | 0.0172627 | 2.8111145 | 36 | 1 | 44 days | 0.38 | | | MPC | | 2006 $SL_{360}$ |
| 2006 $SM_{360}$ | 15.6 | 0.15 | 20061012 | 86.02164 | 109.55206 | 189.14892 | 4.44823 | 0.1212309 | 3.0868656 | 33 | 1 | 46 days | 0.30 | | | MPC | | 2006 $SM_{360}$ |
| 2006 $SO_{360}$ | 17.8 | 0.15 | 20061012 | 4.74281 | 197.41693 | 190.19391 | 4.82293 | 0.1418452 | 2.3649390 | 23 | 1 | 47 days | 0.36 | | | MPC | | 2006 $SO_{360}$ |
| 2006 $SP_{360}$ | 16.2 | 0.15 | 20061012 | 30.00625 | 159.53353 | 201.93775 | 9.32144 | 0.0986679 | 3.0566821 | 37 | 1 | 47 days | 0.37 | | | MPC | | 2006 $SP_{360}$ |
| 2006 $SQ_{360}$ | 15.8 | 0.15 | 20061012 | 38.19628 | 145.77677 | 203.84765 | 10.01123 | 0.1268399 | 3.1475642 | 34 | 1 | 47 days | 0.31 | | | MPC | | 2006 $SQ_{360}$ |
| 2006 $SR_{360}$ | 17.6 | 0.15 | 20061012 | 57.35420 | 272.81890 | 56.67024 | 4.33898 | 0.0737604 | 2.2193269 | 33 | 1 | 52 days | 0.32 | | | MPC | | 2006 $SR_{360}$ |
| 2006 $SS_{360}$ | 16.7 | 0.15 | 20061012 | 199.46938 | 154.75600 | 45.70665 | 9.69596 | 0.0736920 | 2.5848675 | 28 | 1 | 58 days | 0.34 | | | MPC | | 2006 $SS_{360}$ |
| 2006 $SU_{360}$ | 16.5 | 0.15 | 20061012 | 346.03314 | 10.16598 | 45.23672 | 11.12984 | 0.1286852 | 3.0772999 | 36 | 1 | 58 days | 0.42 | | | MPC | | 2006 $SU_{360}$ |
| 2006 $SX_{360}$ | 16.1 | 0.15 | 20061012 | 65.21047 | 108.48765 | 201.05643 | 9.31675 | 0.2097100 | 3.1639173 | 28 | 1 | 47 days | 0.38 | | | MPC | | 2006 $SX_{360}$ |
| 2006 $SY_{360}$ | 15.7 | 0.15 | 20061012 | 167.70009 | 186.77820 | 42.28754 | 28.61719 | 0.1027362 | 3.1160611 | 43 | 1 | 43 days | 0.38 | | | MPC | | 2006 $SY_{360}$ |
| 2006 $SZ_{360}$ | 16.5 | 0.15 | 20061012 | 76.00207 | 238.58725 | 77.25922 | 3.20083 | 0.0532497 | 2.8671300 | 28 | 1 | 46 days | 0.26 | | D | MPC | | 2006 $SZ_{360}$ |
| 2006 $SA_{361}$ | 16.4 | 0.15 | 20061012 | 0.53413 | 349.84969 | 46.93801 | 10.12219 | 0.1211085 | 3.1064400 | 38 | 1 | 58 days | 0.32 | | D | MPC | | 2006 $SA_{361}$ |
| 2006 $SB_{361}$ | 17.9 | 0.15 | 20061012 | 7.08416 | 186.89246 | 197.83688 | 6.98478 | 0.1355436 | 2.3199849 | 27 | 1 | 47 days | 0.23 | | | MPC | | 2006 $SB_{361}$ |
| 2006 $SC_{361}$ | 18.4 | 0.15 | 20061012 | 44.88673 | 256.25262 | 68.03597 | 2.41052 | 0.2446153 | 2.2897105 | 26 | 1 | 52 days | 0.33 | | | MPC | | 2006 $SC_{361}$ |
| 2006 $SD_{361}$ | 17.4 | 0.15 | 20060922 | 276.82115 | 307.02287 | 198.42652 | 8.52771 | 0.2791986 | 2.2847028 | 15 | 1 | 2 days | 0.24 | | | MPC | | 2006 $SD_{361}$ |
| 2006 $SE_{361}$ | 16.5 | 0.15 | 20061012 | 24.26451 | 161.64722 | 204.70978 | 13.63360 | 0.1091628 | 2.6333278 | 29 | 1 | 55 days | 0.28 | | | MPC | | 2006 $SE_{361}$ |
| 2006 $SF_{361}$ | 15.6 | 0.15 | 20061012 | 314.34615 | 41.63026 | 49.03208 | 10.29233 | 0.0739789 | 3.1361077 | 25 | 1 | 52 days | 0.27 | | | MPC | | 2006 $SF_{361}$ |
| 2006 $SJ_{361}$ | 17.3 | 0.15 | 20061012 | 11.25129 | 338.02872 | 40.38230 | 12.42421 | 0.1902346 | 2.6118025 | 35 | 1 | 51 days | 0.21 | | | MPC | | 2006 $SJ_{361}$ |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SL_{361}$ | 17.1 | 0.15 | 20061012 | 353.34078 | 205.26921 | 199.64730 | 9.48962 | 0.1602267 | 2.5237533 | 26 | 1 | 54 days | 0.52 | | | MPC | 2006 $SL_{361}$ |
| 2006 $SM_{361}$ | 17.0 | 0.15 | 20061012 | 58.64755 | 241.31119 | 76.57353 | 2.77376 | 0.1789736 | 2.4225604 | 21 | 1 | 23 days | 0.23 | | | MPC | 2006 $SM_{361}$ |
| 2006 $SN_{361}$ | 16.8 | 0.15 | 20061012 | 303.91411 | 73.41948 | 44.38671 | 13.41983 | 0.2273482 | 2.6659467 | 36 | 1 | 56 days | 0.39 | | | MPC | 2006 $SN_{361}$ |
| 2006 $SO_{361}$ | 17.5 | 0.15 | 20061012 | 52.70874 | 248.84599 | 69.99075 | 3.14897 | 0.2224090 | 2.3755299 | 32 | 1 | 46 days | 0.26 | | | MPC | 2006 $SO_{361}$ |
| 2006 $SQ_{361}$ | 16.5 | 0.15 | 20061012 | 273.86582 | 93.86646 | 53.97148 | 6.95188 | 0.2179182 | 2.3947020 | 12 | 1 | 44 days | 0.54 | | | MPC | 2006 $SQ_{361}$ |
| 2006 $SU_{361}$ | 17.4 | 0.15 | 20061012 | 351.54547 | 8.88123 | 39.05630 | 9.65862 | 0.2410169 | 2.4247146 | 63 | 1 | 53 days | 0.38 | | | MPC | 2006 $SU_{361}$ |
| 2006 $SW_{361}$ | 19.2 | 0.15 | 20061012 | 31.86623 | 159.22068 | 187.50616 | 5.02347 | 0.1950627 | 2.1490299 | 16 | 1 | 54 days | 0.29 | | | MPC | 2006 $SW_{361}$ |
| 2006 $SX_{361}$ | 17.2 | 0.15 | 20061012 | 304.73447 | 48.51560 | 65.12997 | 4.52037 | 0.1999156 | 2.5711767 | 18 | 1 | 46 days | 0.24 | | | MPC | 2006 $SX_{361}$ |
| 2006 $SG_{362}$ | 15.9 | 0.15 | 20061012 | 10.18109 | 336.13993 | 48.00063 | 9.83469 | 0.1571313 | 3.0478763 | 52 | 1 | 58 days | 0.51 | | | MPC | 2006 $SG_{362}$ |
| 2006 $SJ_{362}$ | 15.7 | 0.15 | 20061012 | 93.86196 | 239.91945 | 44.98546 | 13.11365 | 0.1813548 | 2.6933777 | 45 | 1 | 58 days | 0.40 | | | MPC | 2006 $SJ_{362}$ |
| 2006 $SM_{362}$ | 16.1 | 0.15 | 20060922 | 52.26026 | 174.53466 | 157.24575 | 2.22863 | 0.1080534 | 2.8908259 | 16 | 1 | 3 days | 0.21 | | | MPC | 2006 $SM_{362}$ |
| 2006 $SO_{362}$ | 16.7 | 0.15 | 20061012 | 31.84343 | 309.94421 | 41.41738 | 17.33816 | 0.2023530 | 3.1058839 | 36 | 1 | 48 days | 0.38 | | | MPC | 2006 $SO_{362}$ |
| 2006 $SP_{362}$ | 16.6 | 0.15 | 20061012 | 109.90321 | 232.49273 | 44.17452 | 15.04625 | 0.1314891 | 2.7926630 | 26 | 1 | 46 days | 0.29 | | | MPC | 2006 $SP_{362}$ |
| 2006 $SR_{362}$ | 16.1 | 0.15 | 20061012 | 36.76730 | 158.80246 | 195.14703 | 5.08084 | 0.1127348 | 2.9350355 | 19 | 1 | 46 days | 0.29 | | | MPC | 2006 $SR_{362}$ |
| 2006 $SU_{362}$ | 16.8 | 0.15 | 20061012 | 287.58767 | 98.72234 | 51.69525 | 7.95858 | 0.3416220 | 2.5203589 | 12 | 1 | 44 days | 0.37 | | | MPC | 2006 $SU_{362}$ |
| 2006 $SB_{363}$ | 15.6 | 0.15 | 20061012 | 325.90905 | 247.41133 | 208.10935 | 13.44462 | 0.2073012 | 2.7795463 | 48 | 1 | 51 days | 0.53 | | | MPC | 2006 $SB_{363}$ |
| 2006 $SC_{363}$ | 17.2 | 0.15 | 20061012 | 355.60261 | 248.03192 | 159.98665 | 3.32198 | 0.1423805 | 2.2635870 | 37 | 1 | 58 days | 0.67 | | | MPC | 2006 $SC_{363}$ |
| 2006 $SF_{363}$ | 17.7 | 0.15 | 20061012 | 16.77468 | 179.05880 | 182.38597 | 5.65594 | 0.3371066 | 2.5756337 | 30 | 1 | 54 days | 0.46 | | E | MPC | 2006 $SF_{363}$ |
| 2006 $SG_{363}$ | 17.3 | 0.15 | 20061012 | 14.09241 | 190.06443 | 185.85472 | 6.59388 | 0.2001909 | 2.3087654 | 16 | 1 | 56 days | 0.24 | | | MPC | 2006 $SG_{363}$ |
| 2006 $SH_{363}$ | 17.7 | 0.15 | 20061012 | 335.51812 | 258.05311 | 177.44321 | 5.35945 | 0.2026936 | 2.3117407 | 20 | 1 | 54 days | 0.41 | | | MPC | 2006 $SH_{363}$ |
| 2006 $SJ_{363}$ | 16.4 | 0.15 | 20061012 | 347.95732 | 219.75222 | 208.83247 | 20.53930 | 0.3616184 | 3.1056481 | 29 | 1 | 50 days | 0.37 | | E | MPC | 2006 $SJ_{363}$ |
| 2006 $SK_{363}$ | 16.1 | 0.15 | 20061012 | 88.55617 | 247.07812 | 58.41332 | 12.08917 | 0.0962844 | 2.6718180 | 28 | 1 | 48 days | 0.36 | | | MPC | 2006 $SK_{363}$ |
| 2006 $SL_{363}$ | 17.2 | 0.15 | 20061012 | 327.43888 | 277.79860 | 166.25196 | 4.11817 | 0.1372089 | 2.3205689 | 26 | 1 | 45 days | 0.50 | | | MPC | 2006 $SL_{363}$ |
| 2006 $SM_{363}$ | 17.5 | 0.15 | 20061012 | 11.76311 | 196.95467 | 179.91085 | 5.12366 | 0.2984214 | 2.5502412 | 30 | 1 | 51 days | 0.42 | | | MPC | 2006 $SM_{363}$ |
| 2006 $SA_{364}$ | 17.1 | 0.15 | 20060922 | 329.42867 | 292.41368 | 125.18821 | 3.63611 | 0.1852629 | 2.6912550 | 17 | 1 | 29 days | 0.49 | | | MPC | 2006 $SA_{364}$ |
| 2006 $SB_{364}$ | 16.4 | 0.15 | 20060922 | 359.31092 | 2.90305 | 35.29322 | 13.96411 | 0.2612200 | 2.6656106 | 34 | 1 | 67 days | 0.47 | M-v | 4 | MPC | 2006 $SB_{364}$ |
| 2006 $SK_{364}$ | 16.0 | 0.15 | 20061012 | 30.85495 | 336.84388 | 37.55787 | 10.15171 | 0.1240912 | 3.0381387 | 20 | 1 | 54 days | 0.19 | | | MPC | 2006 $SK_{364}$ |
| 2006 $SM_{364}$ | 16.4 | 0.15 | 20061012 | 33.06860 | 321.70149 | 39.25702 | 13.65480 | 0.2119738 | 2.6947870 | 15 | 1 | 55 days | 0.15 | | | MPC | 2006 $SM_{364}$ |
| 2006 $SN_{364}$ | 16.8 | 0.15 | 20061012 | 32.37198 | 340.63848 | 32.95473 | 8.29865 | 0.0879728 | 2.5791349 | 19 | 1 | 54 days | 0.27 | | | MPC | 2006 $SN_{364}$ |
| 2006 $SP_{364}$ | 17.2 | 0.15 | 20061012 | 6.62816 | 14.87912 | 25.31549 | 5.49563 | 0.1885941 | 2.5327191 | 22 | 1 | 50 days | 0.42 | | | MPC | 2006 $SP_{364}$ |
| 2006 $SR_{364}$ | 17.0 | 0.15 | 20061012 | 3.31427 | 14.50064 | 29.83613 | 7.30881 | 0.1830080 | 2.3747222 | 21 | 1 | 56 days | 0.41 | | | MPC | 2006 $SR_{364}$ |
| 2006 $ST_{364}$ | 16.4 | 0.15 | 20060922 | 13.50561 | 346.63222 | 34.10381 | 7.02801 | 0.2347917 | 2.5602964 | 39 | 1 | 60 days | 0.50 | M-v | 5 | MPC | 2006 $ST_{364}$ |
| 2006 $SV_{364}$ | 17.2 | 0.15 | 20060922 | 65.26338 | 329.65107 | 310.05459 | 4.62927 | 0.2146399 | 2.3480491 | 17 | 1 | 17 days | 0.40 | | | MPC | 2006 $SV_{364}$ |
| 2006 $SW_{364}$ | 18.5 | 0.15 | 20061012 | 20.30759 | 59.98343 | 286.07780 | 3.18201 | 0.1873059 | 2.2365505 | 18 | 1 | 51 days | 0.46 | | | MPC | 2006 $SW_{364}$ |
| 2006 $SX_{364}$ | 15.7 | 0.15 | 20060922 | 277.24196 | 119.56814 | 344.15222 | 9.15549 | 0.0806731 | 3.1179357 | 14 | 1 | 12 days | 0.38 | | | MPC | 2006 $SX_{364}$ |
| 2006 $SC_{365}$ | 16.8 | 0.15 | 20060922 | 35.64282 | 334.60336 | 339.06815 | 6.95083 | 0.2623958 | 2.5555249 | 22 | 1 | 35 days | 0.33 | | | MPC | 2006 $SC_{365}$ |
| 2006 $SD_{365}$ | 15.4 | 0.15 | 20060922 | 331.25639 | 62.26387 | 349.77529 | 9.08812 | 0.1031137 | 3.1288293 | 14 | 1 | 21 days | 0.34 | | | MPC | 2006 $SD_{365}$ |
| 2006 $SF_{365}$ | 16.6 | 0.15 | 20061012 | 16.60146 | 93.71260 | 266.13800 | 3.91434 | 0.1221845 | 2.6003563 | 31 | 1 | 54 days | 0.38 | | | MPC | 2006 $SF_{365}$ |
| 2006 $SG_{365}$ | 18.0 | 0.15 | 20060922 | 14.31066 | 18.56661 | 329.34795 | 3.88577 | 0.2514271 | 2.4112294 | 32 | 1 | 68 days | 0.52 | M-v | 4 | MPC | 2006 $SG_{365}$ |
| 2006 $SK_{365}$ | 16.0 | 0.15 | 20061012 | 23.80674 | 210.12832 | 140.63760 | 6.26872 | 0.1632729 | 3.1134793 | 36 | 1 | 59 days | 0.43 | | | MPC | 2006 $SK_{365}$ |
| 2006 $SM_{365}$ | 16.8 | 0.15 | 20060922 | 336.97522 | 270.88917 | 134.00672 | 6.14855 | 0.0685904 | 2.7033583 | 11 | 1 | 16 days | 0.72 | | | MPC | 2006 $SM_{365}$ |
| 2006 $SO_{365}$ | 16.7 | 0.15 | 20061012 | 315.70517 | 310.90128 | 140.62468 | 6.26878 | 0.2393514 | 2.5332321 | 37 | 1 | 48 days | 0.51 | | | MPC | 2006 $SO_{365}$ |
| 2006 $SQ_{365}$ | 17.7 | 0.15 | 20061012 | 1.14665 | 0.51216 | 26.71001 | 20.94657 | 0.0815266 | 1.9568159 | 28 | 1 | 46 days | 0.25 | | | MPC | 2006 $SQ_{365}$ |
| 2006 $SS_{365}$ | 17.3 | 0.15 | 20061012 | 46.95689 | 299.26536 | 35.71100 | 10.95338 | 0.1312059 | 2.5597833 | 21 | 1 | 46 days | 0.30 | | | MPC | 2006 $SS_{365}$ |
| 2006 $SU_{365}$ | 17.3 | 0.15 | 20061012 | 15.67363 | 163.86047 | 206.87745 | 11.11955 | 0.1908293 | 2.7086605 | 24 | 1 | 54 days | 0.26 | | | MPC | 2006 $SU_{365}$ |
| 2006 $SW_{365}$ | 16.3 | 0.15 | 20061012 | 349.58154 | 226.58314 | 183.41054 | 1.57545 | 0.1400338 | 3.0961442 | 28 | 1 | 52 days | 0.29 | | | MPC | 2006 $SW_{365}$ |
| 2006 $SX_{365}$ | 17.6 | 0.15 | 20061012 | 350.00326 | 13.04096 | 33.77941 | 16.36987 | 0.1341813 | 2.5291907 | 25 | 1 | 54 days | 0.24 | | | MPC | 2006 $SX_{365}$ |
| 2006 $SZ_{365}$ | 17.9 | 0.15 | 20061012 | 37.25255 | 294.31129 | 48.15602 | 2.81836 | 0.1572900 | 2.2724662 | 39 | 1 | 58 days | 0.25 | | | MPC | 2006 $SZ_{365}$ |
| 2006 $SB_{366}$ | 17.1 | 0.15 | 20061012 | 25.97885 | 325.19883 | 25.03801 | 32.69955 | 0.1802625 | 2.6103987 | 26 | 1 | 46 days | 0.44 | | | MPC | 2006 $SB_{366}$ |
| 2006 $SD_{366}$ | 15.9 | 0.15 | 20061012 | 9.46319 | 347.88931 | 34.74472 | 13.86768 | 0.1067215 | 2.6889227 | 33 | 1 | 50 days | 0.32 | | | MPC | 2006 $SD_{366}$ |
| 2006 $SH_{366}$ | 16.3 | 0.15 | 20060922 | 13.11492 | 344.21239 | 29.93793 | 12.32397 | 0.2254789 | 2.5862774 | 28 | 1 | 60 days | 0.53 | M-v | 5 | MPC | 2006 $SH_{366}$ |
| 2006 $SK_{366}$ | 15.9 | 0.15 | 20060922 | 8.26019 | 9.55248 | 14.27758 | 4.55718 | 0.2072866 | 2.6012208 | 69 | 1 | 86 days | 0.39 | M-v | 4 | MPC | 2006 $SK_{366}$ |
| 2006 $SL_{366}$ | 17.7 | 0.15 | 20061012 | 21.81008 | 347.67836 | 25.79842 | 7.93809 | 0.1487349 | 2.2328921 | 30 | 1 | 53 days | 0.41 | | | MPC | 2006 $SL_{366}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $SN_{366}$ | 17.7 | 0.15 | 20061012 | 334.56573 | 69.23440 | 19.27430 | 4.15859 | 0.2564657 | 2.6151117 | 18 | 1 | 56 days | 0.30 | | | MPC | 2006 $SN_{366}$ |
| 2006 $SO_{366}$ | 15.6 | 0.15 | 20060922 | 329.15024 | 121.11174 | 289.39357 | 8.23186 | 0.1016452 | 3.0758347 | 22 | 1 | 25 days | 0.29 | | | MPC | 2006 $SO_{366}$ |
| 2006 $SR_{366}$ | 17.3 | 0.15 | 20060922 | 346.33068 | 74.26759 | 308.11873 | 7.83412 | 0.1774034 | 2.5782563 | 12 | 1 | 17 days | 0.65 | | | MPC | 2006 $SR_{366}$ |
| 2006 $SU_{366}$ | 16.2 | 0.15 | 20060922 | 3.20817 | 124.21495 | 237.54384 | 12.21230 | 0.1429987 | 2.4683260 | 16 | 1 | 33 days | 0.51 | | | MPC | 2006 $SU_{366}$ |
| 2006 $SV_{366}$ | 16.4 | 0.15 | 20060922 | 32.97769 | 83.16991 | 237.91041 | 11.93054 | 0.1846980 | 2.6649861 | 23 | 1 | 36 days | 0.57 | | | MPC | 2006 $SV_{366}$ |
| 2006 $SY_{366}$ | 17.3 | 0.15 | 20060922 | 299.83933 | 190.45477 | 241.22704 | 5.94530 | 0.0926219 | 2.3965001 | 16 | 1 | 33 days | 0.55 | | | MPC | 2006 $SY_{366}$ |
| 2006 $SA_{367}$ | 16.7 | 0.15 | 20060922 | 6.50673 | 285.27261 | 73.11840 | 12.83859 | 0.2763161 | 2.6401374 | 18 | 1 | 28 days | 0.48 | | | MPC | 2006 $SA_{367}$ |
| 2006 $SC_{367}$ | 16.2 | 0.15 | 20060922 | 7.87642 | 88.47910 | 280.48218 | 11.92752 | 0.2134577 | 2.6234771 | 12 | 1 | 8 days | 0.39 | | | MPC | 2006 $SC_{367}$ |
| 2006 $SE_{367}$ | 15.9 | 0.15 | 20061012 | 329.39268 | 102.75961 | 330.05589 | 15.03904 | 0.1460004 | 2.5619871 | 24 | 1 | 57 days | 0.43 | | | MPC | 2006 $SE_{367}$ |
| 2006 $SJ_{367}$ | 17.5 | 0.15 | 20060922 | 23.11731 | 247.84914 | 82.76912 | 9.94485 | 0.2143737 | 2.2077033 | 14 | 1 | 17 days | 0.52 | | | MPC | 2006 $SJ_{367}$ |
| 2006 $SR_{367}$ | 17.4 | 0.15 | 20060922 | 336.14041 | 191.19818 | 217.27177 | 9.05582 | 0.2758855 | 2.3912458 | 65 | 1 | 69 days | 0.49 | M-v | 4 | MPC | 2006 $SR_{367}$ |
| 2006 $SU_{367}$ | 15.7 | 0.15 | 20060922 | 27.02304 | 268.74951 | 33.62467 | 25.10374 | 0.3471002 | 3.1066369 | 21 | 1 | 27 days | 0.32 | | | MPC | 2006 $SU_{367}$ |
| 2006 $SA_{368}$ | 17.0 | 0.15 | 20060922 | 34.66334 | 325.40522 | 3.67641 | 15.29389 | 0.1530586 | 2.5492495 | 18 | 1 | 29 days | 0.42 | | | MPC | 2006 $SA_{368}$ |
| 2006 $SB_{368}$ | 18.3 | 0.15 | 20061012 | 25.09015 | 138.55692 | 205.41848 | 21.71618 | 0.1235167 | 1.9961180 | 35 | 1 | 57 days | 0.38 | | | MPC | 2006 $SB_{368}$ |
| 2006 $SD_{368}$ | 16.2 | 0.15 | 20061012 | 39.89921 | 109.23453 | 215.89425 | 25.10197 | 0.2345424 | 3.1443513 | 23 | 1 | 57 days | 0.40 | | | MPC | 2006 $SD_{368}$ |
| 2006 $SE_{368}$ | 16.2 | 0.15 | 20060922 | 326.02618 | 62.56582 | 6.72525 | 18.49760 | 0.1692970 | 2.6442816 | 27 | 1 | 63 days | 0.61 | M-v | 4 | MPC | 2006 $SE_{368}$ |
| 2006 $SF_{368}$ | 17.9 | 0.15 | 20060922 | 332.67478 | 250.10758 | 189.92950 | 27.95755 | 0.4351204 | 2.5813964 | 27 | 1 | 28 days | 0.48 | | | MPC | 2006 $SF_{368}$ |
| 2006 $SG_{368}$ | 18.4 | 0.15 | 20061012 | 359.80408 | 347.38626 | 34.18114 | 21.97209 | 0.2471523 | 2.2121639 | 29 | 1 | 59 days | 0.52 | | | MPC | 2006 $SG_{368}$ |
| 2006 $SH_{368}$ | 18.2 | 0.15 | 20060922 | 13.94527 | 199.52288 | 145.84521 | 6.72447 | 0.2834551 | 2.7992490 | 23 | 1 | 23 days | 0.30 | | | MPC | 2006 $SH_{368}$ |
| 2006 $SJ_{368}$ | 17.9 | 0.15 | 20061012 | 338.76809 | 181.10824 | 238.07552 | 3.20696 | 0.2140929 | 2.6037094 | 30 | 1 | 56 days | 0.34 | | | MPC | 2006 $SJ_{368}$ |
| 2006 $SL_{368}$ | 16.8 | 0.15 | 20061012 | 16.16356 | 140.55742 | 222.13607 | 6.37475 | 0.1665495 | 2.7648260 | 52 | 1 | 56 days | 0.30 | | | MPC | 2006 $SL_{368}$ |
| 2006 $SM_{368}$ | 15.8 | 0.15 | 20060922 | 60.25395 | 284.97889 | 356.02377 | 15.70314 | 0.1880132 | 3.1610689 | 32 | 1 | 37 days | 0.47 | | | MPC | 2006 $SM_{368}$ |
| 2006 $SN_{368}$ | 19.6 | 0.15 | 20060922 | 13.86894 | 76.02147 | 250.69800 | 3.21088 | 0.4782201 | 2.6562276 | 9 | 1 | 4 days | 0.71 | | | MPC | 2006 $SN_{368}$ |
| 2006 $SO_{368}$ | 16.2 | 0.15 | 20060922 | 254.82046 | 163.90237 | 325.71299 | 6.00361 | 0.0648708 | 2.6310245 | 8 | 1 | 4 days | 0.29 | | | MPC | 2006 $SO_{368}$ |
| 2006 $SP_{368}$ | 16.6 | 0.15 | 20060922 | 356.36162 | 156.37583 | 223.82425 | 8.55465 | 0.2078913 | 2.7396303 | 32 | 1 | 68 days | 0.66 | M-v | 4 | MPC | 2006 $SP_{368}$ |
| 2006 $SX_{368}$ | 9.5 | 0.15 | 20060922 | 347.38099 | 70.38825 | 280.01822 | 36.28842 | 0.4585791 | 22.1054254 | 30 | 1 | 46 days | 0.07 | | | MPC | 2006 $SX_{368}$ |
| 2006 $SZ_{368}$ | 18.8 | 0.15 | 20060922 | 353.38921 | 109.49552 | 275.55830 | 6.71777 | 0.4431005 | 2.8180180 | 23 | 1 | 67 days | 0.66 | M-v | 5 | MPC | 2006 $SZ_{368}$ |
| 2006 $SE_{369}$ | 15.9 | 0.15 | 20060922 | 326.55017 | 72.35613 | 349.52096 | 3.87781 | 0.1720522 | 3.0821679 | 25 | 1 | 63 days | 0.41 | M-v | 4 | MPC | 2006 $SE_{369}$ |
| 2006 $SG_{369}$ | 7.9 | 0.15 | 20060922 | 2.12353 | 284.06129 | 101.36439 | 13.59356 | 0.3689836 | 47.7129583 | 18 | 1 | 43 days | 0.11 | | | MPC | 2006 $SG_{369}$ |
| 2006 $SF_{371}$ | 13.5 | 0.15 | 20061012 | 24.16979 | 68.06118 | 222.85235 | 18.28311 | 0.0274391 | 5.1762567 | 30 | 1 | 37 days | 0.08 | | | MPC | 2006 $SF_{371}$ |
| 2006 $SG_{371}$ | 13.6 | 0.15 | 20060922 | 269.14344 | 204.11652 | 207.56642 | 17.78729 | 0.0344413 | 5.1180426 | 18 | 1 | 25 days | 0.09 | | | MPC | 2006 $SG_{371}$ |
| 2006 $SH_{371}$ | 14.1 | 0.15 | 20061012 | 113.52397 | 306.40609 | 251.71241 | 17.61679 | 0.1118832 | 5.1779341 | 16 | 1 | 35 days | 0.09 | | | MPC | 2006 $SH_{371}$ |
| 2006 $SL_{371}$ | 7.7 | 0.15 | 20061012 | 13.49792 | 207.37685 | 175.80585 | 22.47454 | 0.2599133 | 47.6124787 | 14 | 1 | 36 days | 0.13 | | E | MPC | 2006 $SL_{371}$ |
| 2006 $SC_{372}$ | 18.5 | 0.15 | 20061012 | 345.92439 | 15.71192 | 38.07200 | 20.96847 | 0.0722118 | 1.8663879 | 29 | 1 | 52 days | 0.47 | | | MPC | 2006 $SC_{372}$ |
| 2006 TA | 20.4 | 0.15 | 20060922 | 342.94654 | 36.61804 | 10.23141 | 34.19418 | 0.3687755 | 2.4227601 | 13 | 1 | 2 days | 0.44 | | | MPC | 2006 TA |
| 2006 TB | 19.9 | 0.15 | 20060922 | 1.34046 | 180.85028 | 169.37077 | 27.58924 | 0.3252694 | 1.5639329 | 26 | 1 | 28 days | 0.37 | M-v | 6 | MPC | 2006 TB |
| 2006 TC | 18.8 | 0.15 | 20060922 | 18.25034 | 60.62881 | 152.67678 | 19.70890 | 0.9116200 | 1.5378467 | 22 | 1 | 22 days | 0.24 | M-v | 7 | MPC | 2006 TC |
| 2006 TD | 22.4 | 0.15 | 20060922 | 12.30378 | 159.21962 | 166.59110 | 8.19825 | 0.3930849 | 1.5895693 | 33 | 1 | 28 days | 0.31 | M-v | 6 | MPC | 2006 TD |
| 2006 TE | 16.3 | 0.15 | 20060922 | 332.89642 | 250.40115 | 150.29316 | 11.85742 | 0.1861858 | 2.7049720 | 30 | 1 | 56 days | 0.46 | | | MPC | 2006 TE |
| 2006 TF | 25.9 | 0.15 | 20060922 | 357.18110 | 182.29490 | 187.87447 | 3.48023 | 0.5601963 | 2.3257060 | 18 | 1 | 2 days | 0.33 | M-v | 8 | MPC | 2006 TF |
| 2006 TK | 19.6 | 0.15 | 20060922 | 33.77337 | 252.48722 | 40.17285 | 6.43350 | 0.5111201 | 2.1624634 | 34 | 1 | 46 days | 0.54 | M-v | 5 | MPC | 2006 TK |
| 2006 TL | 24.0 | 0.15 | 20060922 | 251.29596 | 315.10200 | 195.48241 | 11.62791 | 0.3974801 | 0.9406912 | 17 | 1 | 16 days | 0.40 | M-v | 7 | MPC | 2006 TL |
| 2006 TM | 18.3 | 0.15 | 20060922 | 108.27511 | 25.26683 | 224.05160 | 24.60054 | 0.1022947 | 1.6584893 | 14 | 1 | 1 days | 0.59 | | E | MPC | 2006 TM |
| 2006 TN | 19.6 | 0.15 | 20060922 | 241.15036 | 131.47965 | 24.44006 | 17.27217 | 0.3451394 | 1.5614785 | 32 | 1 | 45 days | 0.41 | M-v | 5 | MPC | 2006 TN |
| 2006 TO | 22.9 | 0.15 | 20060922 | 348.43311 | 202.70755 | 204.93027 | 4.72047 | 0.5154704 | 2.4179836 | 22 | 1 | 40 days | 0.52 | M-v | 5 | MPC | 2006 TO |
| 2006 TP | 16.8 | 0.15 | 20060922 | 358.26567 | 351.13687 | 101.32389 | 34.14106 | 0.3228050 | 3.2233129 | 9 | 1 | 5 days | 0.15 | | | MPC | 2006 TP |
| 2006 TT | 17.9 | 0.15 | 20060922 | 35.33118 | 79.32564 | 242.52288 | 3.74887 | 0.1293234 | 2.2483823 | 19 | 1 | 34 days | 0.40 | | | MPC | 2006 TT |
| 2006 TU | 17.3 | 0.15 | 20060922 | 17.27462 | 140.09165 | 204.42630 | 15.87986 | 0.1487637 | 3.0387938 | 15 | 1 | 15 days | 0.41 | | | MPC | 2006 TU |
| 2006 TX | 16.8 | 0.15 | 20061012 | 325.12094 | 137.59574 | 277.40215 | 11.04892 | 0.1485452 | 2.8871861 | 17 | 1 | 39 days | 0.30 | | | MPC | 2006 TX |
| 2006 TY | 16.9 | 0.15 | 20060922 | 328.15072 | 153.96161 | 254.01122 | 10.71306 | 0.1781501 | 2.5968264 | 25 | 1 | 71 days | 0.43 | M-v | 4 | MPC | 2006 TY |
| 2006 $TA_1$ | 16.1 | 0.15 | 20061012 | 18.08352 | 310.93355 | 64.40968 | 4.26056 | 0.1214714 | 3.0349126 | 31 | 1 | 58 days | 0.40 | | | MPC | 2006 $TA_1$ |
| 2006 $TB_1$ | 16.3 | 0.15 | 20061012 | 348.06322 | 285.15418 | 127.80741 | 1.78829 | 0.1591993 | 2.6231085 | 27 | 1 | 49 days | 0.23 | | | MPC | 2006 $TB_1$ |
| 2006 $TC_1$ | 18.9 | 0.15 | 20060922 | 285.66263 | 160.65929 | 326.19217 | 4.49529 | 0.3751116 | 1.7202296 | 80 | 1 | 61 days | 0.39 | M-v | 4 | MPC | 2006 $TC_1$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TD_1$ | 21.0 | 0.15 | 20060922 | 335.04163 | 5.56762 | 57.25885 | 2.42248 | 0.3615039 | 1.8930476 | 153 | 1 | 59 days | 0.35 | M-v | 4 | MPC | | 2006 $TD_1$ |
| 2006 $TE_1$ | 17.5 | 0.15 | 20060922 | 32.52680 | 115.77986 | 197.33621 | 8.37469 | 0.4912626 | 2.7151508 | 12 | 1 | 1 days | 0.53 | | E | MPC | | 2006 $TE_1$ |
| 2006 $TF_1$ | 20.4 | 0.15 | 20060922 | 3.12503 | 297.22071 | 44.81753 | 5.10708 | 0.6050938 | 2.5669231 | 203 | 1 | 50 days | 0.35 | M-v | 5 | MPC | | 2006 $TF_1$ |
| 2006 $TK_1$ | 17.8 | 0.15 | 20060922 | 8.24049 | 277.13081 | 77.69080 | 3.46389 | 0.2197690 | 2.3152559 | 30 | 1 | 66 days | 0.55 | M-v | 4 | MPC | | 2006 $TK_1$ |
| 2006 $TL_1$ | 16.7 | 0.15 | 20060922 | 11.44880 | 323.48011 | 19.52433 | 14.41445 | 0.0869874 | 2.5965152 | 11 | 1 | 14 days | 0.55 | | | MPC | | 2006 $TL_1$ |
| 2006 $TM_1$ | 18.1 | 0.15 | 20060922 | 347.40834 | 128.98793 | 260.85755 | 2.79866 | 0.2569911 | 2.5425001 | 18 | 1 | 21 days | 0.53 | | D | MPC | | 2006 $TM_1$ |
| 2006 $TN_1$ | 16.4 | 0.15 | 20060922 | 256.56378 | 139.55704 | 348.65499 | 8.25907 | 0.1182842 | 2.9320865 | 10 | 1 | 15 days | 0.38 | | | MPC | | 2006 $TN_1$ |
| 2006 $TO_1$ | 18.1 | 0.15 | 20061012 | 255.77470 | 111.20271 | 23.68592 | 22.69169 | 0.0851029 | 1.9803560 | 38 | 1 | 39 days | 0.60 | | | MPC | | 2006 $TO_1$ |
| 2006 $TP_1$ | | | 20060922 | 178.35187 | 6.43901 | 181.96192 | 14.68995 | 0.2025910 | 2.5777738 | 9 | 1 | 2 days | 0.20 | | | MPC | | 2006 $TP_1$ |
| 2006 $TT_1$ | 17.8 | 0.15 | 20060922 | 347.27947 | 275.12512 | 114.85489 | 2.21496 | 0.2028894 | 2.3445290 | 39 | 1 | 67 days | 0.40 | M-v | 4 | MPC | | 2006 $TT_1$ |
| 2006 $TA_2$ | 17.5 | 0.15 | 20060922 | 259.23725 | 44.71760 | 81.73001 | 3.27406 | 0.1086829 | 2.4206393 | 9 | 1 | 5 days | 0.21 | | | MPC | | 2006 $TA_2$ |
| 2006 $TC_2$ | 17.8 | 0.15 | 20061012 | 14.44197 | 310.09565 | 52.09295 | 2.20370 | 0.2049715 | 2.3392485 | 60 | 1 | 54 days | 0.32 | | | MPC | | 2006 $TC_2$ |
| 2006 $TG_2$ | 17.6 | 0.15 | 20060922 | 71.90410 | 206.18356 | 80.48599 | 2.48394 | 0.1595547 | 2.3094700 | 32 | 1 | 60 days | 0.34 | M-v | 4 | MPC | | 2006 $TG_2$ |
| 2006 $TU_2$ | 16.4 | 0.15 | 20060922 | 25.54622 | 178.18060 | 162.87594 | 6.26172 | 0.1689554 | 2.9398707 | 12 | 1 | 3 days | 0.34 | | | MPC | | 2006 $TU_2$ |
| 2006 $TW_2$ | 17.5 | 0.15 | 20061012 | 338.09630 | 252.53987 | 167.94500 | 7.28156 | 0.2559413 | 2.5441175 | 36 | 1 | 47 days | 0.54 | | | MPC | | 2006 $TW_2$ |
| 2006 $TD_3$ | 16.2 | 0.15 | 20060922 | 79.52496 | 199.39719 | 70.12076 | 5.39774 | 0.0833861 | 2.8177002 | 12 | 1 | 19 days | 0.45 | | | MPC | | 2006 $TD_3$ |
| 2006 $TM_3$ | 20.1 | 0.15 | 20060922 | 356.94403 | 227.66671 | 144.99713 | 4.15829 | 0.1977167 | 2.1571837 | 11 | 1 | 5 days | 0.30 | | | MPC | | 2006 $TM_3$ |
| 2006 $TN_3$ | 16.6 | 0.15 | 20060922 | 237.27541 | 335.35123 | 168.80066 | 10.62660 | 0.0834025 | 2.9498244 | 11 | 1 | 5 days | 0.59 | | | MPC | | 2006 $TN_3$ |
| 2006 $TP_3$ | 18.2 | 0.15 | 20061012 | 17.29318 | 291.61408 | 71.21986 | 3.99525 | 0.1640786 | 2.4085009 | 24 | 1 | 45 days | 0.37 | | | MPC | | 2006 $TP_3$ |
| 2006 $TV_3$ | 17.3 | 0.15 | 20061012 | 4.46165 | 349.16527 | 44.21314 | 15.67036 | 0.0937361 | 3.0693140 | 22 | 1 | 44 days | 0.27 | | | MPC | | 2006 $TV_3$ |
| 2006 $TB_4$ | 18.4 | 0.15 | 20060922 | 346.06650 | 262.31970 | 142.78883 | 2.84469 | 0.1970578 | 2.4693613 | 14 | 1 | 16 days | 0.27 | | | MPC | | 2006 $TB_4$ |
| 2006 $TC_4$ | 16.8 | 0.15 | 20060922 | 10.13415 | 184.35820 | 190.38435 | 8.94137 | 0.1615592 | 2.7109147 | 32 | 1 | 126 days | 0.38 | M-v | 3 | MPC | | 2006 $TC_4$ |
| 2006 $TG_4$ | 16.4 | 0.15 | 20061012 | 54.93547 | 1.95347 | 321.57176 | 2.38222 | 0.1544540 | 2.7591934 | 28 | 1 | 44 days | 0.31 | | | MPC | | 2006 $TG_4$ |
| 2006 $TH_4$ | 17.2 | 0.15 | 20061012 | 324.40312 | 58.27333 | 27.93373 | 23.78597 | 0.1857343 | 3.1009925 | 19 | 1 | 40 days | 0.28 | | | MPC | | 2006 $TH_4$ |
| 2006 $TJ_4$ | 17.1 | 0.15 | 20061012 | 346.55336 | 249.97037 | 178.90223 | 5.62358 | 0.2875414 | 2.6921082 | 20 | 1 | 53 days | 0.17 | | | MPC | | 2006 $TJ_4$ |
| 2006 $TN_4$ | 16.4 | 0.15 | 20060922 | 359.70160 | 89.02641 | 277.87123 | 4.76722 | 0.1977596 | 3.0592216 | 19 | 1 | 26 days | 0.29 | | | MPC | | 2006 $TN_4$ |
| 2006 $TO_4$ | 18.3 | 0.15 | 20061012 | 350.24130 | 293.62057 | 100.21996 | 3.81086 | 0.2286980 | 2.4026586 | 23 | 1 | 20 days | 0.47 | | | MPC | | 2006 $TO_4$ |
| 2006 $TP_4$ | 16.9 | 0.15 | 20060922 | 308.84185 | 313.33825 | 125.96967 | 4.89199 | 0.1596287 | 2.5506410 | 18 | 1 | 37 days | 0.41 | | | MPC | | 2006 $TP_4$ |
| 2006 $TR_4$ | 18.3 | 0.15 | 20061012 | 51.14452 | 246.32370 | 61.30426 | 5.74721 | 0.1859693 | 2.2028359 | 15 | 1 | 25 days | 0.38 | | | MPC | | 2006 $TR_4$ |
| 2006 $TU_4$ | 15.5 | 0.15 | 20060922 | 332.05616 | 241.27993 | 164.17966 | 10.76576 | 0.0389329 | 3.1142262 | 38 | 1 | 38 days | 0.47 | | | MPC | | 2006 $TU_4$ |
| 2006 $TC_5$ | 16.6 | 0.15 | 20061012 | 323.72116 | 39.46711 | 34.15389 | 16.97781 | 0.2142167 | 3.0908738 | 19 | 1 | 45 days | 0.32 | | | MPC | | 2006 $TC_5$ |
| 2006 $TL_5$ | 18.1 | 0.15 | 20061012 | 359.24949 | 70.30157 | 323.64558 | 3.42239 | 0.2521517 | 2.5549750 | 21 | 1 | 30 days | 0.31 | | | MPC | | 2006 $TL_5$ |
| 2006 $TM_5$ | 18.1 | 0.15 | 20061012 | 351.93084 | 57.07383 | 350.14576 | 4.91923 | 0.2630708 | 2.5966873 | 19 | 1 | 54 days | 0.21 | | | MPC | | 2006 $TM_5$ |
| 2006 $TZ_5$ | 16.3 | 0.15 | 20061012 | 37.94672 | 332.45703 | 3.78564 | 7.55397 | 0.1985482 | 2.6233086 | 44 | 1 | 43 days | 0.41 | | | MPC | | 2006 $TZ_5$ |
| 2006 $TA_6$ | 16.5 | 0.15 | 20061012 | 10.21777 | 5.94828 | 7.09103 | 8.43986 | 0.2753800 | 3.0773305 | 17 | 1 | 26 days | 0.29 | | | MPC | | 2006 $TA_6$ |
| 2006 $TD_6$ | 17.1 | 0.15 | 20060922 | 93.97105 | 294.97797 | 330.05952 | 6.26149 | 0.1157250 | 2.2492365 | 15 | 1 | 14 days | 0.39 | | | MPC | | 2006 $TD_6$ |
| 2006 $TH_6$ | 15.7 | 0.15 | 20060922 | 295.78411 | 105.84581 | 352.17361 | 13.18897 | 0.1682702 | 3.2562883 | 16 | 1 | 4 days | 0.34 | | | MPC | | 2006 $TH_6$ |
| 2006 $TL_6$ | 18.2 | 0.15 | 20061012 | 30.41247 | 287.40523 | 39.75846 | 11.78627 | 0.3601635 | 2.6434218 | 32 | 1 | 55 days | 0.24 | | | MPC | | 2006 $TL_6$ |
| 2006 $TO_6$ | 16.6 | 0.15 | 20061012 | 228.63426 | 120.45543 | 53.32250 | 10.40118 | 0.1308578 | 2.4306496 | 16 | 1 | 29 days | 0.22 | | | MPC | | 2006 $TO_6$ |
| 2006 $TU_6$ | 18.2 | 0.15 | 20061012 | 357.48508 | 353.23570 | 54.46825 | 15.00971 | 0.2371448 | 2.5909861 | 19 | 1 | 38 days | 0.24 | | | MPC | | 2006 $TU_6$ |
| 2006 $TV_6$ | 17.1 | 0.15 | 20061012 | 357.23960 | 326.29526 | 81.62917 | 5.67021 | 0.1875678 | 2.4307899 | 21 | 1 | 55 days | 0.28 | | | MPC | | 2006 $TV_6$ |
| 2006 $TX_6$ | 17.7 | 0.15 | 20061012 | 354.20928 | 326.30459 | 86.92812 | 4.56633 | 0.2612864 | 2.5570443 | 32 | 1 | 55 days | 0.38 | | | MPC | | 2006 $TX_6$ |
| 2006 $TY_6$ | 16.2 | 0.15 | 20061012 | 323.89202 | 216.11027 | 214.79735 | 8.83794 | 0.0844445 | 3.0827179 | 33 | 1 | 48 days | 0.32 | | | MPC | | 2006 $TY_6$ |
| 2006 $TZ_6$ | 16.1 | 0.15 | 20061012 | 197.92180 | 344.87965 | 205.87055 | 8.94283 | 0.0296891 | 3.1632916 | 34 | 1 | 51 days | 0.29 | | | MPC | | 2006 $TZ_6$ |
| 2006 $TA_7$ | 17.5 | 0.15 | 20060922 | 116.71715 | 313.52098 | 285.35847 | 16.51492 | 0.0971490 | 1.9750227 | 10 | 1 | 1 days | 0.26 | | E | MPC | | 2006 $TA_7$ |
| 2006 $TB_7$ | 23.7 | 0.15 | 20060922 | 12.05341 | 153.79779 | 185.18419 | 21.26255 | 0.1986109 | 1.2501124 | 10 | 1 | 7 days | 0.40 | M-v | 7 | MPC | | 2006 $TB_7$ |
| 2006 $TC_7$ | 15.5 | 0.15 | 20061012 | 288.65783 | 190.07713 | 302.39052 | 8.89712 | 0.3780848 | 3.0247600 | 6 | 1 | 2 days | 0.26 | | | MPC | | 2006 $TC_7$ |
| 2006 $TE_7$ | 18.2 | 0.15 | 20060922 | 355.41221 | 335.48806 | 33.49217 | 3.76699 | 0.2094051 | 2.3719592 | 14 | 1 | 23 days | 0.39 | | | MPC | | 2006 $TE_7$ |
| 2006 $TG_7$ | 18.6 | 0.15 | 20061012 | 358.92996 | 314.98028 | 69.86130 | 8.03022 | 0.3817408 | 2.6351833 | 33 | 1 | 18 days | 0.50 | | | MPC | | 2006 $TG_7$ |
| 2006 $TH_7$ | 19.3 | 0.15 | 20060922 | 340.47325 | 335.47520 | 163.88560 | 16.78322 | 0.8302020 | 2.5452125 | 36 | 1 | 38 days | 0.51 | M-v | 6 | MPC | | 2006 $TH_7$ |
| 2006 $TJ_7$ | 24.2 | 0.15 | 20060922 | 348.05268 | 193.85064 | 193.51363 | 11.70395 | 0.4219563 | 1.7812306 | 23 | 1 | 11 days | 0.31 | M-v | 7 | MPC | | 2006 $TJ_7$ |
| 2006 $TL_7$ | 17.6 | 0.15 | 20061012 | 342.36089 | 196.04997 | 208.35505 | 8.88893 | 0.2334510 | 3.2666758 | 34 | 1 | 34 days | 0.43 | | | MPC | | 2006 $TL_7$ |
| 2006 $TM_7$ | 15.9 | 0.15 | 20060922 | 293.61143 | 306.89602 | 137.82707 | 6.65554 | 0.0398046 | 2.8891873 | 43 | 1 | 20 days | 0.26 | | | MPC | | 2006 $TM_7$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TP_7$ | 17.9 | 0.15 | 20060922 | 20.46606 | 211.69997 | 119.35748 | 2.21383 | 0.2018481 | 2.3500358 | 27 | 1 | 66 days | 0.60 | M-v | 5 | MPC | | 2006 $TP_7$ |
| 2006 $TQ_7$ | 18.3 | 0.15 | 20061012 | 353.18323 | 345.01886 | 28.25279 | 6.06128 | 0.1803750 | 2.2899922 | 23 | 1 | 31 days | 0.47 | | | MPC | | 2006 $TQ_7$ |
| 2006 $TR_7$ | 25.2 | 0.15 | 20060922 | 24.37379 | 119.99255 | 183.25179 | 2.97779 | 0.3777339 | 1.3287429 | 18 | 1 | 11 days | 0.49 | M-v | 8 | MPC | | 2006 $TR_7$ |
| 2006 $TS_7$ | 21.2 | 0.15 | 20060922 | 249.77382 | 299.73496 | 225.46468 | 5.46341 | 0.5798266 | 0.9465046 | 107 | 1 | 18 days | 0.49 | M-v | 8 | MPC | | 2006 $TS_7$ |
| 2006 $TT_7$ | 19.5 | 0.15 | 20060922 | 1.46398 | 296.04540 | 70.10775 | 12.92489 | 0.5619052 | 2.8598737 | 34 | 1 | 49 days | 0.52 | M-v | 4 | MPC | | 2006 $TT_7$ |
| 2006 $TU_7$ | 21.9 | 0.15 | 20060922 | 235.84646 | 68.40102 | 92.19713 | 2.91420 | 0.4688695 | 0.8510391 | 22 | 1 | 11 days | 0.36 | M-v | 8 | MPC | | 2006 $TU_7$ |
| 2006 $TW_7$ | 16.9 | 0.15 | 20060922 | 305.92269 | 286.68094 | 140.26843 | 4.82862 | 0.0920341 | 2.5803466 | 15 | 1 | 13 days | 0.47 | | | MPC | | 2006 $TW_7$ |
| 2006 $TX_7$ | 16.3 | 0.15 | 20060922 | 334.18295 | 44.34337 | 0.76186 | 11.60924 | 0.0693389 | 2.9879101 | 22 | 1 | 44 days | 0.48 | | | MPC | | 2006 $TX_7$ |
| 2006 $TY_7$ | 17.9 | 0.15 | 20060922 | 2.45731 | 149.21015 | 206.03215 | 13.13976 | 0.2794113 | 2.5857958 | 17 | 1 | 37 days | 0.48 | | | MPC | | 2006 $TY_7$ |
| 2006 $TZ_7$ | 17.5 | 0.15 | 20060922 | 310.69042 | 210.96729 | 212.83732 | 21.56696 | 0.0613576 | 1.8282736 | 23 | 1 | 62 days | 0.40 | M-v | 4 | MPC | | 2006 $TZ_7$ |
| 2006 $TA_8$ | 20.9 | 0.15 | 20060922 | 349.59737 | 217.95317 | 208.04007 | 21.73600 | 0.6941429 | 2.9916136 | 42 | 1 | 10 days | 0.76 | M-v | 6 | MPC | | 2006 $TA_8$ |
| 2006 $TB_8$ | 18.0 | 0.15 | 20061012 | 129.64626 | 8.57882 | 232.95664 | 3.31326 | 0.0545219 | 2.5821867 | 13 | 1 | 15 days | 0.46 | | | MPC | | 2006 $TB_8$ |
| 2006 $TC_8$ | 19.9 | 0.15 | 20060922 | 13.73960 | 67.23579 | 204.54241 | 31.56961 | 0.7612195 | 2.1526927 | 78 | 1 | 30 days | 0.43 | M-v | 6 | MPC | | 2006 $TC_8$ |
| 2006 $TD_8$ | 15.5 | 0.15 | 20061012 | 270.85701 | 3.57280 | 127.05335 | 12.45607 | 0.0340988 | 3.1538098 | 15 | 1 | 34 days | 0.72 | | | MPC | | 2006 $TD_8$ |
| 2006 $TF_8$ | 15.8 | 0.15 | 20061012 | 19.95538 | 157.17160 | 207.28091 | 13.43137 | 0.0992526 | 3.0935690 | 36 | 1 | 51 days | 0.46 | | | MPC | | 2006 $TF_8$ |
| 2006 $TH_8$ | 17.2 | 0.15 | 20061012 | 335.42342 | 227.63646 | 194.96287 | 1.60535 | 0.0569049 | 2.8668429 | 22 | 1 | 47 days | 0.34 | | | MPC | | 2006 $TH_8$ |
| 2006 $TJ_8$ | 18.0 | 0.15 | 20061012 | 7.25989 | 173.90925 | 204.98117 | 7.36949 | 0.2082898 | 2.2138428 | 51 | 1 | 57 days | 0.51 | | | MPC | | 2006 $TJ_8$ |
| 2006 $TK_8$ | 18.0 | 0.15 | 20061012 | 9.81163 | 335.70328 | 41.78670 | 2.73327 | 0.1803482 | 2.4328123 | 35 | 1 | 54 days | 0.36 | | | MPC | | 2006 $TK_8$ |
| 2006 $TL_8$ | 17.8 | 0.15 | 20061012 | 32.77931 | 301.18733 | 35.59413 | 7.27632 | 0.2701543 | 2.5639373 | 27 | 1 | 46 days | 0.24 | | | MPC | | 2006 $TL_8$ |
| 2006 $TM_8$ | 16.2 | 0.15 | 20061012 | 90.25554 | 241.18443 | 41.72258 | 3.50445 | 0.1983853 | 2.6158547 | 31 | 1 | 54 days | 0.24 | | | MPC | | 2006 $TM_8$ |
| 2006 $TN_8$ | 17.1 | 0.15 | 20061012 | 16.32158 | 160.13521 | 208.98834 | 9.13568 | 0.1892318 | 2.6466184 | 31 | 1 | 53 days | 0.40 | | | MPC | | 2006 $TN_8$ |
| 2006 $TQ_8$ | 17.2 | 0.15 | 20061012 | 16.39485 | 213.10765 | 157.58503 | 1.14000 | 0.1660587 | 2.6797057 | 25 | 1 | 38 days | 0.40 | | | MPC | | 2006 $TQ_8$ |
| 2006 $TR_8$ | 17.8 | 0.15 | 20061012 | 352.97059 | 6.86492 | 34.37298 | 4.70743 | 0.1401943 | 2.2053644 | 25 | 1 | 44 days | 0.36 | | | MPC | | 2006 $TR_8$ |
| 2006 $TW_8$ | 16.7 | 0.15 | 20060922 | 336.45941 | 221.01411 | 192.79280 | 0.60133 | 0.1729896 | 3.0934504 | 39 | 1 | 113 days | 0.35 | M-v | 4 | MPC | | 2006 $TW_8$ |
| 2006 $TD_9$ | 15.2 | 0.15 | 20060922 | 37.97146 | 355.07177 | 331.59581 | 7.82536 | 0.1079124 | 3.0791142 | 27 | 1 | 37 days | 0.35 | | | MPC | | 2006 $TD_9$ |
| 2006 $TE_9$ | 14.7 | 0.15 | 20060922 | 46.00019 | 295.10160 | 38.89870 | 11.37854 | 0.1529338 | 3.9438760 | 37 | 1 | 63 days | 0.41 | M-v | 5 | MPC | | 2006 $TE_9$ |
| 2006 $TG_9$ | 19.2 | 0.15 | 20061012 | 35.49185 | 157.66785 | 181.00315 | 0.51081 | 0.1833459 | 1.8968432 | 30 | 1 | 49 days | 0.36 | | | MPC | | 2006 $TG_9$ |
| 2006 $TJ_9$ | 15.9 | 0.15 | 20061012 | 41.63721 | 129.91854 | 215.03436 | 16.07273 | 0.1212297 | 3.1660969 | 26 | 1 | 49 days | 0.29 | | | MPC | | 2006 $TJ_9$ |
| 2006 $TM_9$ | 16.1 | 0.15 | 20061012 | 342.15693 | 21.34673 | 37.35938 | 28.22134 | 0.1571734 | 3.1144134 | 25 | 1 | 38 days | 0.21 | | | MPC | | 2006 $TM_9$ |
| 2006 $TN_9$ | 15.9 | 0.15 | 20061012 | 10.73104 | 177.87399 | 205.65906 | 10.29916 | 0.0602150 | 3.1605109 | 34 | 1 | 49 days | 0.37 | | | MPC | | 2006 $TN_9$ |
| 2006 $TO_9$ | 16.1 | 0.15 | 20061012 | 9.79905 | 341.84041 | 41.63731 | 11.89804 | 0.0868026 | 3.1236121 | 26 | 1 | 45 days | 0.25 | | | MPC | | 2006 $TO_9$ |
| 2006 $TP_9$ | 16.5 | 0.15 | 20061012 | 49.04932 | 104.52640 | 211.97313 | 24.33882 | 0.2449746 | 3.1866861 | 38 | 1 | 29 days | 0.38 | | | MPC | | 2006 $TP_9$ |
| 2006 $TT_9$ | 17.1 | 0.15 | 20061012 | 340.87924 | 208.05708 | 204.77553 | 13.07147 | 0.1901960 | 2.5856698 | 46 | 1 | 42 days | 0.34 | | | MPC | | 2006 $TT_9$ |
| 2006 $TU_9$ | 17.7 | 0.15 | 20060922 | 8.53515 | 334.39036 | 23.81793 | 9.93393 | 0.2280975 | 2.3543437 | 60 | 1 | 61 days | 0.51 | M-v | 4 | MPC | | 2006 $TU_9$ |
| 2006 $TV_9$ | 16.3 | 0.15 | 20061012 | 345.74239 | 142.22906 | 241.95303 | 10.99343 | 0.0883826 | 2.9597075 | 20 | 1 | 28 days | 0.14 | | | MPC | | 2006 $TV_9$ |
| 2006 $TY_9$ | 14.9 | 0.15 | 20061012 | 158.69188 | 200.86747 | 29.32032 | 16.33570 | 0.0421544 | 3.1994321 | 44 | 1 | 58 days | 0.36 | | | MPC | | 2006 $TY_9$ |
| 2006 $TA_{10}$ | 17.8 | 0.15 | 20061012 | 18.72161 | 177.07835 | 179.49159 | 4.95420 | 0.2993727 | 2.6031137 | 25 | 1 | 52 days | 0.34 | | | MPC | | 2006 $TA_{10}$ |
| 2006 $TD_{10}$ | 16.6 | 0.15 | 20061012 | 331.58091 | 59.90247 | 350.35137 | 26.58828 | 0.1760465 | 3.0919293 | 32 | 1 | 28 days | 0.37 | | | MPC | | 2006 $TD_{10}$ |
| 2006 $TE_{10}$ | 15.5 | 0.15 | 20060922 | 247.51351 | 228.04530 | 250.95982 | 10.67938 | 0.0349752 | 3.1377787 | 33 | 1 | 43 days | 0.66 | | | MPC | | 2006 $TE_{10}$ |
| 2006 $TG_{10}$ | 17.8 | 0.15 | 20061012 | 59.07370 | 225.53074 | 74.24239 | 5.41349 | 0.1768740 | 2.1557073 | 23 | 1 | 18 days | 0.41 | | | MPC | | 2006 $TG_{10}$ |
| 2006 $TH_{10}$ | 17.0 | 0.15 | 20061012 | 7.92584 | 136.31158 | 202.76077 | 15.01548 | 0.2432392 | 3.0063193 | 12 | 1 | 3 days | 0.49 | | | MPC | | 2006 $TH_{10}$ |
| 2006 $TJ_{10}$ | 18.5 | 0.15 | 20061012 | 19.69613 | 122.00265 | 223.88791 | 5.62362 | 0.1706513 | 2.6514344 | 14 | 1 | 4 days | 0.29 | | | MPC | | 2006 $TJ_{10}$ |
| 2006 $TK_{10}$ | 17.7 | 0.15 | 20061012 | 61.70156 | 306.80393 | 331.67863 | 4.34414 | 0.2919587 | 2.6630927 | 14 | 1 | 4 days | 0.28 | | | MPC | | 2006 $TK_{10}$ |
| 2006 $TL_{10}$ | 15.4 | 0.15 | 20061012 | 119.39004 | 236.91880 | 355.87609 | 11.74935 | 0.2448076 | 3.0816718 | 23 | 1 | 4 days | 0.22 | | | MPC | | 2006 $TL_{10}$ |
| 2006 $TN_{10}$ | 16.8 | 0.15 | 20060922 | 34.44831 | 82.36900 | 247.17612 | 4.85262 | 0.0705731 | 2.9552699 | 23 | 1 | 26 days | 0.26 | | | MPC | | 2006 $TN_{10}$ |
| 2006 $TO_{10}$ | 17.2 | 0.15 | 20061012 | 67.55116 | 308.34062 | 352.39956 | 9.25390 | 0.0516402 | 2.5748314 | 19 | 1 | 8 days | 0.31 | | | MPC | | 2006 $TO_{10}$ |
| 2006 $TP_{10}$ | 17.4 | 0.15 | 20061012 | 28.45337 | 153.50814 | 182.55706 | 12.40819 | 0.2823558 | 2.6060367 | 26 | 1 | 36 days | 0.51 | | | MPC | | 2006 $TP_{10}$ |
| 2006 $TQ_{10}$ | 16.7 | 0.15 | 20061012 | 341.75810 | 240.95985 | 169.46495 | 10.49262 | 0.0988460 | 3.2405080 | 9 | 1 | 2 days | 0.21 | | | MPC | | 2006 $TQ_{10}$ |
| 2006 $TR_{10}$ | 16.6 | 0.15 | 20061101 | 101.76356 | 131.97573 | 175.57883 | 9.97404 | 0.0348463 | 2.5794015 | 16 | 1 | 34 days | 0.37 | | | MPC | | 2006 $TR_{10}$ |
| 2006 $TS_{10}$ | 16.7 | 0.15 | 20061101 | 34.77228 | 289.00632 | 84.72488 | 5.93589 | 0.0581169 | 2.2849707 | 35 | 1 | 43 days | 0.38 | | | MPC | | 2006 $TS_{10}$ |
| 2006 $TU_{10}$ | 16.9 | 0.15 | 20060922 | 41.91138 | 308.30893 | 15.28514 | 4.20531 | 0.2179405 | 2.6374456 | 46 | 1 | 129 days | 0.33 | M-v | 4 | MPC | | 2006 $TU_{10}$ |
| 2006 $TW_{10}$ | 16.1 | 0.15 | 20061012 | 349.33150 | 13.04245 | 33.09930 | 11.56298 | 0.0906889 | 3.1373098 | 33 | 1 | 58 days | 0.36 | | | MPC | | 2006 $TW_{10}$ |
| 2006 $TY_{10}$ | 16.5 | 0.15 | 20060922 | 33.49469 | 108.39677 | 217.22519 | 22.36886 | 0.1840780 | 2.2873306 | 45 | 1 | 107 days | 0.29 | M-v | 3 | MPC | | 2006 $TY_{10}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TA_{11}$ | 17.8 | 0.15 | 20060922 | 332.94298 | 301.33370 | 124.59827 | 3.68883 | 0.3936224 | 2.8392005 | 10 | 1 | 16 days | 0.71 | | | MPC | 2006 $TA_{11}$ |
| 2006 $TC_{11}$ | 15.9 | 0.15 | 20061012 | 60.25412 | 263.30635 | 41.41546 | 11.41404 | 0.2213593 | 3.2009066 | 33 | 1 | 43 days | 0.28 | | | MPC | 2006 $TC_{11}$ |
| 2006 $TD_{11}$ | 16.6 | 0.15 | 20061101 | 325.16686 | 197.10153 | 253.38753 | 4.26738 | 0.1379901 | 2.8045166 | 29 | 1 | 37 days | 0.49 | | | MPC | 2006 $TD_{11}$ |
| 2006 $TE_{11}$ | 15.4 | 0.15 | 20061101 | 331.52493 | 205.52682 | 233.02680 | 8.74853 | 0.0620746 | 3.1146964 | 55 | 1 | 38 days | 0.40 | | | MPC | 2006 $TE_{11}$ |
| 2006 $TF_{11}$ | 18.3 | 0.15 | 20061012 | 318.10296 | 197.57285 | 223.07623 | 6.16217 | 0.0600781 | 2.3523435 | 15 | 1 | 4 days | 0.29 | | | MPC | 2006 $TF_{11}$ |
| 2006 $TH_{11}$ | 16.5 | 0.15 | 20061012 | 30.16361 | 308.83060 | 43.32632 | 10.06551 | 0.1071187 | 3.1139649 | 35 | 1 | 30 days | 0.31 | | | MPC | 2006 $TH_{11}$ |
| 2006 $TJ_{11}$ | 15.2 | 0.15 | 20061012 | 313.04713 | 69.94370 | 20.01522 | 16.36932 | 0.0615218 | 3.0802910 | 36 | 1 | 42 days | 0.39 | | | MPC | 2006 $TJ_{11}$ |
| 2006 $TK_{11}$ | 17.7 | 0.15 | 20061101 | 309.04703 | 142.22815 | 325.87015 | 4.84662 | 0.1674734 | 2.4683128 | 19 | 1 | 39 days | 0.18 | | | MPC | 2006 $TK_{11}$ |
| 2006 $TL_{11}$ | 17.8 | 0.15 | 20061012 | 62.22203 | 282.42486 | 27.26871 | 6.41265 | 0.2326068 | 2.2646510 | 29 | 1 | 35 days | 0.24 | | | MPC | 2006 $TL_{11}$ |
| 2006 $TM_{11}$ | 18.2 | 0.15 | 20061012 | 276.64339 | 158.75552 | 299.76040 | 3.42378 | 0.0077010 | 2.1733194 | 19 | 1 | 7 days | 0.51 | | | MPC | 2006 $TM_{11}$ |
| 2006 $TN_{11}$ | 18.1 | 0.15 | 20061012 | 355.98292 | 159.31482 | 220.11516 | 7.60519 | 0.1253668 | 2.3503513 | 24 | 1 | 44 days | 0.30 | | | MPC | 2006 $TN_{11}$ |
| 2006 $TO_{11}$ | 17.1 | 0.15 | 20061012 | 309.39022 | 80.63086 | 3.59370 | 15.88400 | 0.1937167 | 2.9542786 | 14 | 1 | 3 days | 0.21 | | E | MPC | 2006 $TO_{11}$ |
| 2006 $TP_{11}$ | 17.1 | 0.15 | 20061012 | 342.31011 | 208.47339 | 199.27789 | 8.94081 | 0.2897807 | 2.8044129 | 23 | 1 | 5 days | 0.90 | | | MPC | 2006 $TP_{11}$ |
| 2006 $TT_{11}$ | 16.9 | 0.15 | 20061012 | 9.20978 | 159.89612 | 210.63082 | 9.97856 | 0.1599828 | 2.5936513 | 66 | 1 | 52 days | 0.46 | | | MPC | 2006 $TT_{11}$ |
| 2006 $TW_{11}$ | 19.1 | 0.15 | 20061012 | 299.67733 | 64.09625 | 31.25001 | 3.44658 | 0.0906864 | 2.1872726 | 15 | 1 | 8 days | 0.45 | | | MPC | 2006 $TW_{11}$ |
| 2006 $TX_{11}$ | 17.5 | 0.15 | 20061012 | 19.99667 | 14.58066 | 357.39595 | 7.38739 | 0.0696000 | 2.5407084 | 20 | 1 | 28 days | 0.35 | | | MPC | 2006 $TX_{11}$ |
| 2006 $TY_{11}$ | 16.1 | 0.15 | 20061012 | 61.03312 | 319.14345 | 6.08030 | 9.78028 | 0.1022003 | 3.0297035 | 20 | 1 | 28 days | 0.21 | | | MPC | 2006 $TY_{11}$ |
| 2006 $TZ_{11}$ | 16.8 | 0.15 | 20061101 | 25.22913 | 136.36893 | 239.41551 | 4.89642 | 0.0916993 | 2.8979619 | 29 | 1 | 38 days | 0.26 | | | MPC | 2006 $TZ_{11}$ |
| 2006 $TA_{12}$ | 16.5 | 0.15 | 20060922 | 344.42569 | 16.76488 | 20.90709 | 9.50819 | 0.1829155 | 2.7399638 | 53 | 1 | 64 days | 0.31 | M-v | 3 | MPC | 2006 $TA_{12}$ |
| 2006 $TB_{12}$ | 17.8 | 0.15 | 20060922 | 32.21155 | 294.17988 | 28.39618 | 7.41897 | 0.2406440 | 2.7422921 | 12 | 1 | 13 days | 0.24 | | | MPC | 2006 $TB_{12}$ |
| 2006 $TE_{12}$ | 18.0 | 0.15 | 20061012 | 18.23700 | 60.90290 | 294.66404 | 1.20710 | 0.2106316 | 2.3634804 | 41 | 1 | 44 days | 0.32 | | | MPC | 2006 $TE_{12}$ |
| 2006 $TG_{12}$ | 15.7 | 0.15 | 20060922 | 26.45686 | 117.29535 | 221.96786 | 10.72863 | 0.0728559 | 3.1201304 | 28 | 1 | 32 days | 0.53 | | | MPC | 2006 $TG_{12}$ |
| 2006 $TH_{12}$ | 17.8 | 0.15 | 20061012 | 359.11758 | 135.96965 | 245.09932 | 4.49139 | 0.2917406 | 2.6068978 | 25 | 1 | 48 days | 0.35 | | | MPC | 2006 $TH_{12}$ |
| 2006 $TK_{12}$ | 15.5 | 0.15 | 20060922 | 55.93455 | 258.57172 | 39.18925 | 13.13679 | 0.2029815 | 3.1225115 | 28 | 1 | 26 days | 0.63 | | | MPC | 2006 $TK_{12}$ |
| 2006 $TL_{12}$ | 16.0 | 0.15 | 20061012 | 324.31741 | 44.31175 | 34.42171 | 17.60677 | 0.2787997 | 3.0697431 | 39 | 1 | 50 days | 0.50 | | | MPC | 2006 $TL_{12}$ |
| 2006 $TM_{12}$ | 17.5 | 0.15 | 20060922 | 23.08484 | 104.62242 | 208.09804 | 12.82574 | 0.3365190 | 2.7512895 | 23 | 1 | 35 days | 0.36 | | | MPC | 2006 $TM_{12}$ |
| 2006 $TQ_{12}$ | 18.2 | 0.15 | 20060922 | 270.38487 | 274.36441 | 194.84138 | 21.60093 | 0.0969221 | 1.9242937 | 19 | 1 | 33 days | 0.33 | | | MPC | 2006 $TQ_{12}$ |
| 2006 $TR_{12}$ | 17.1 | 0.15 | 20060922 | 1.25727 | 56.59051 | 309.86777 | 4.79000 | 0.2835305 | 2.9841972 | 19 | 1 | 24 days | 0.45 | | | MPC | 2006 $TR_{12}$ |
| 2006 $TS_{12}$ | 16.2 | 0.15 | 20060922 | 142.72839 | 346.82385 | 236.66084 | 15.03513 | 0.0722887 | 2.5167182 | 9 | 1 | 2 days | 0.43 | | | MPC | 2006 $TS_{12}$ |
| 2006 $TT_{12}$ | 15.7 | 0.15 | 20060922 | 249.08035 | 217.57535 | 278.43135 | 11.23942 | 0.1132675 | 2.5706876 | 40 | 1 | 44 days | 0.53 | | | MPC | 2006 $TT_{12}$ |
| 2006 $TU_{12}$ | 16.9 | 0.15 | 20060922 | 14.91969 | 66.65655 | 279.86116 | 8.27086 | 0.2239915 | 2.5802942 | 37 | 1 | 44 days | 0.43 | | | MPC | 2006 $TU_{12}$ |
| 2006 $TW_{12}$ | 17.1 | 0.15 | 20060922 | 3.05594 | 109.06011 | 257.23120 | 7.32407 | 0.2771106 | 2.6606092 | 20 | 1 | 25 days | 0.29 | | | MPC | 2006 $TW_{12}$ |
| 2006 $TX_{12}$ | 16.1 | 0.15 | 20061012 | 80.51596 | 39.12655 | 244.76491 | 12.66843 | 0.1420176 | 2.5445413 | 25 | 1 | 33 days | 0.57 | | | MPC | 2006 $TX_{12}$ |
| 2006 $TY_{12}$ | 16.9 | 0.15 | 20061012 | 11.48343 | 59.54284 | 305.01434 | 8.00626 | 0.1817106 | 2.7336144 | 27 | 1 | 29 days | 0.41 | | | MPC | 2006 $TY_{12}$ |
| 2006 $TZ_{12}$ | 16.4 | 0.15 | 20061012 | 306.35037 | 169.59164 | 286.38325 | 8.11230 | 0.1826930 | 2.4398974 | 24 | 1 | 56 days | 0.48 | | | MPC | 2006 $TZ_{12}$ |
| 2006 $TA_{13}$ | 18.0 | 0.15 | 20061012 | 3.33563 | 154.71028 | 218.47299 | 13.39781 | 0.2791873 | 2.5876564 | 16 | 1 | 36 days | 0.18 | | | MPC | 2006 $TA_{13}$ |
| 2006 $TB_{13}$ | 16.6 | 0.15 | 20060922 | 25.36516 | 49.06202 | 289.85231 | 5.82444 | 0.1693767 | 2.5835045 | 18 | 1 | 19 days | 0.62 | | | MPC | 2006 $TB_{13}$ |
| 2006 $TC_{13}$ | 18.1 | 0.15 | 20061012 | 17.16116 | 67.65827 | 288.12762 | 4.44639 | 0.1843265 | 2.3462160 | 12 | 1 | 12 days | 0.17 | | | MPC | 2006 $TC_{13}$ |
| 2006 $TD_{13}$ | 16.1 | 0.15 | 20060922 | 257.82002 | 230.44961 | 252.15686 | 6.78041 | 0.0326079 | 2.6754962 | 9 | 1 | 2 days | 0.23 | | | MPC | 2006 $TD_{13}$ |
| 2006 $TF_{13}$ | 16.8 | 0.15 | 20060922 | 7.36781 | 15.11065 | 348.42845 | 5.18679 | 0.1864107 | 2.9768933 | 35 | 1 | 91 days | 0.37 | M-v | 4 | MPC | 2006 $TF_{13}$ |
| 2006 $TG_{13}$ | 17.4 | 0.15 | 20060922 | 310.01990 | 57.40562 | 29.31125 | 2.07007 | 0.2282391 | 2.4831548 | 33 | 1 | 69 days | 0.22 | M-v | 4 | MPC | 2006 $TG_{13}$ |
| 2006 $TJ_{13}$ | 17.8 | 0.15 | 20061012 | 351.43868 | 289.56229 | 101.51723 | 2.71728 | 0.1809063 | 2.2998643 | 30 | 1 | 55 days | 0.36 | | | MPC | 2006 $TJ_{13}$ |
| 2006 $TK_{13}$ | 17.6 | 0.15 | 20061012 | 42.04825 | 283.03899 | 28.43715 | 5.74606 | 0.2662681 | 2.5558643 | 10 | 1 | 5 days | 0.40 | | | MPC | 2006 $TK_{13}$ |
| 2006 $TL_{13}$ | 17.4 | 0.15 | 20061012 | 342.11154 | 24.97000 | 24.89351 | 11.63582 | 0.2512924 | 2.4208005 | 36 | 1 | 58 days | 0.35 | | | MPC | 2006 $TL_{13}$ |
| 2006 $TO_{13}$ | 15.1 | 0.15 | 20060922 | 258.30431 | 297.77503 | 180.90042 | 20.49162 | 0.0220644 | 3.0436787 | 30 | 1 | 93 days | 0.42 | M-v | 4 | MPC | 2006 $TO_{13}$ |
| 2006 $TQ_{13}$ | 17.5 | 0.15 | 20060922 | 347.44262 | 277.66603 | 109.26885 | 3.34043 | 0.1218339 | 2.2329830 | 26 | 1 | 34 days | 0.42 | | | MPC | 2006 $TQ_{13}$ |
| 2006 $TU_{13}$ | 16.2 | 0.15 | 20060922 | 325.64770 | 27.52744 | 42.18819 | 20.11967 | 0.2941153 | 3.1084518 | 27 | 1 | 34 days | 0.31 | | | MPC | 2006 $TU_{13}$ |
| 2006 $TV_{13}$ | 16.3 | 0.15 | 20061012 | 337.70226 | 354.28283 | 52.34644 | 15.29453 | 0.1608265 | 2.7801681 | 21 | 1 | 32 days | 0.43 | | | MPC | 2006 $TV_{13}$ |
| 2006 $TW_{13}$ | 16.3 | 0.15 | 20060922 | 355.28722 | 277.92361 | 100.47343 | 10.79409 | 0.1116345 | 2.7120046 | 17 | 1 | 27 days | 0.48 | | | MPC | 2006 $TW_{13}$ |
| 2006 $TY_{13}$ | 16.4 | 0.15 | 20061012 | 40.34585 | 274.66372 | 39.21329 | 26.75972 | 0.2744876 | 2.6680891 | 31 | 1 | 18 days | 0.27 | | | MPC | 2006 $TY_{13}$ |
| 2006 $TZ_{13}$ | 15.9 | 0.15 | 20061012 | 355.58134 | 355.56819 | 31.91757 | 8.90795 | 0.1456400 | 3.0842911 | 32 | 1 | 58 days | 0.30 | | | MPC | 2006 $TZ_{13}$ |
| 2006 $TA_{14}$ | 17.9 | 0.15 | 20060922 | 354.51957 | 252.35214 | 128.86797 | 2.01432 | 0.2018986 | 2.4221749 | 35 | 1 | 34 days | 0.41 | | | MPC | 2006 $TA_{14}$ |
| 2006 $TC_{14}$ | 16.6 | 0.15 | 20060922 | 336.55310 | 283.94960 | 125.69739 | 4.22912 | 0.1933297 | 2.7444040 | 25 | 1 | 68 days | 0.42 | M-v | 4 | MPC | 2006 $TC_{14}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TF_{14}$ | 17.5 | 0.15 | 20060922 | 12.81673 | 29.67669 | 325.19911 | 2.11086 | 0.2245560 | 2.6019981 | 25 | 1 | 62 days | 0.28 | M-v 4 | MPC | 2006 $TF_{14}$ |
| 2006 $TG_{14}$ | 17.2 | 0.15 | 20061012 | 339.93974 | 255.64358 | 161.91167 | 12.88206 | 0.2509403 | 2.6005544 | 24 | 1 | 32 days | 0.41 | | MPC | 2006 $TG_{14}$ |
| 2006 $TJ_{14}$ | 16.2 | 0.15 | 20061012 | 347.07000 | 237.38122 | 168.55480 | 9.01587 | 0.1832986 | 2.7112009 | 30 | 1 | 47 days | 0.57 | | MPC | 2006 $TJ_{14}$ |
| 2006 $TK_{14}$ | 17.2 | 0.15 | 20061101 | 33.99686 | 257.19802 | 79.56799 | 5.43523 | 0.2648605 | 2.5941745 | 18 | 1 | 43 days | 0.33 | | MPC | 2006 $TK_{14}$ |
| 2006 $TM_{14}$ | 16.8 | 0.15 | 20061012 | 15.38503 | 253.82703 | 106.35766 | 7.51239 | 0.2316711 | 2.6463416 | 27 | 1 | 29 days | 0.32 | | MPC | 2006 $TM_{14}$ |
| 2006 $TP_{14}$ | 16.6 | 0.15 | 20061012 | 330.60717 | 72.45315 | 325.92796 | 5.33836 | 0.0616290 | 2.7554627 | 12 | 1 | 10 days | 0.15 | | MPC | 2006 $TP_{14}$ |
| 2006 $TQ_{14}$ | 16.5 | 0.15 | 20061012 | 6.46863 | 145.76142 | 227.97909 | 5.19644 | 0.0787857 | 2.8584821 | 23 | 1 | 37 days | 0.42 | | MPC | 2006 $TQ_{14}$ |
| 2006 $TT_{14}$ | 15.6 | 0.15 | 20060922 | 61.06774 | 307.08090 | 7.57254 | 8.18706 | 0.0321004 | 3.2492720 | 24 | 1 | 119 days | 0.47 | M-v 4 | MPC | 2006 $TT_{14}$ |
| 2006 $TV_{14}$ | 16.9 | 0.15 | 20061012 | 357.00418 | 144.17690 | 241.52664 | 3.16333 | 0.0957424 | 2.7559279 | 13 | 1 | 10 days | 0.59 | | MPC | 2006 $TV_{14}$ |
| 2006 $TB_{15}$ | 16.6 | 0.15 | 20061012 | 19.95799 | 144.76405 | 206.26940 | 17.00071 | 0.2122101 | 3.0643028 | 25 | 1 | 31 days | 0.19 | | MPC | 2006 $TB_{15}$ |
| 2006 $TE_{15}$ | 17.8 | 0.15 | 20061012 | 58.94630 | 289.46483 | 10.66956 | 6.55254 | 0.2116584 | 2.2996371 | 17 | 1 | 37 days | 0.32 | | MPC | 2006 $TE_{15}$ |
| 2006 $TK_{15}$ | 18.5 | 0.15 | 20060922 | 10.38553 | 95.46541 | 261.11597 | 1.08820 | 0.2313096 | 2.3541404 | 49 | 1 | 60 days | 0.23 | M-v 3 | MPC | 2006 $TK_{15}$ |
| 2006 $TP_{15}$ | 17.4 | 0.15 | 20061012 | 19.17342 | 98.48844 | 260.98809 | 1.43312 | 0.1168818 | 2.6840113 | 25 | 1 | 57 days | 0.34 | | MPC | 2006 $TP_{15}$ |
| 2006 $TR_{15}$ | 16.0 | 0.15 | 20061012 | 54.20588 | 110.54159 | 204.75784 | 21.04631 | 0.1148205 | 3.0673047 | 30 | 1 | 46 days | 0.47 | | MPC | 2006 $TR_{15}$ |
| 2006 $TS_{15}$ | 18.2 | 0.15 | 20060922 | 320.39473 | 76.43329 | 354.43310 | 2.10711 | 0.2000867 | 2.3521571 | 25 | 1 | 61 days | 0.27 | M-v 4 | MPC | 2006 $TS_{15}$ |
| 2006 $TU_{15}$ | 18.6 | 0.15 | 20061012 | 143.35464 | 31.96704 | 202.82838 | 21.01728 | 0.0380200 | 1.8320623 | 9 | 1 | 10 days | 0.61 | | MPC | 2006 $TU_{15}$ |
| 2006 $TW_{15}$ | 15.2 | 0.15 | 20061012 | 158.02914 | 15.69140 | 205.74474 | 15.07097 | 0.0069748 | 3.2286075 | 17 | 1 | 53 days | 0.19 | | MPC | 2006 $TW_{15}$ |
| 2006 $TX_{15}$ | 17.6 | 0.15 | 20061012 | 4.74049 | 50.36021 | 323.16936 | 1.13037 | 0.1271412 | 2.8513489 | 10 | 1 | 8 days | 0.37 | | MPC | 2006 $TX_{15}$ |
| 2006 $TY_{15}$ | 16.4 | 0.15 | 20060922 | 29.27790 | 129.81371 | 208.56935 | 9.63967 | 0.1197079 | 3.0527791 | 23 | 1 | 66 days | 0.21 | M-v 3 | MPC | 2006 $TY_{15}$ |
| 2006 $TZ_{15}$ | 15.8 | 0.15 | 20060922 | 290.24668 | 246.33069 | 206.96165 | 10.26940 | 0.0631672 | 3.1394477 | 36 | 1 | 68 days | 0.40 | M-v 4 | MPC | 2006 $TZ_{15}$ |
| 2006 $TD_{16}$ | 17.1 | 0.15 | 20060922 | 21.93257 | 323.21680 | 16.69573 | 1.36590 | 0.2756796 | 3.0812431 | 38 | 1 | 102 days | 0.51 | M-v 4 | MPC | 2006 $TD_{16}$ |
| 2006 $TE_{16}$ | 16.9 | 0.15 | 20061012 | 348.90127 | 204.57682 | 204.03722 | 14.45862 | 0.3537511 | 3.0595083 | 21 | 1 | 53 days | 0.25 | | MPC | 2006 $TE_{16}$ |
| 2006 $TF_{16}$ | 18.1 | 0.15 | 20061012 | 349.13960 | 199.67828 | 202.93657 | 15.36165 | 0.2697290 | 2.7238978 | 13 | 1 | 19 days | 0.53 | | MPC | 2006 $TF_{16}$ |
| 2006 $TG_{16}$ | 16.0 | 0.15 | 20061012 | 90.55191 | 86.17196 | 203.28046 | 9.35941 | 0.0500966 | 3.2352364 | 25 | 1 | 57 days | 0.25 | | MPC | 2006 $TG_{16}$ |
| 2006 $TH_{16}$ | 17.8 | 0.15 | 20061012 | 23.41054 | 309.70199 | 40.76856 | 2.30607 | 0.1834619 | 2.7078929 | 39 | 1 | 48 days | 0.28 | | MPC | 2006 $TH_{16}$ |
| 2006 $TJ_{16}$ | 16.6 | 0.15 | 20061012 | 335.57290 | 217.87896 | 197.11640 | 3.28356 | 0.0909502 | 2.7775063 | 40 | 1 | 56 days | 0.45 | | MPC | 2006 $TJ_{16}$ |
| 2006 $TM_{16}$ | 18.0 | 0.15 | 20061012 | 346.89190 | 210.71943 | 202.16244 | 8.78911 | 0.3503119 | 2.6900254 | 46 | 1 | 56 days | 0.49 | | MPC | 2006 $TM_{16}$ |
| 2006 $TN_{16}$ | 16.7 | 0.15 | 20060922 | 82.23337 | 257.93992 | 25.28355 | 10.80759 | 0.1609498 | 2.9318642 | 22 | 1 | 44 days | 0.26 | | MPC | 2006 $TN_{16}$ |
| 2006 $TO_{16}$ | 18.8 | 0.15 | 20060922 | 14.71137 | 150.59068 | 202.24020 | 2.61706 | 0.2187550 | 2.2945772 | 31 | 1 | 44 days | 0.27 | | MPC | 2006 $TO_{16}$ |
| 2006 $TP_{16}$ | 17.8 | 0.15 | 20061012 | 7.75044 | 167.56830 | 206.70319 | 3.72323 | 0.1572946 | 2.2206579 | 40 | 1 | 55 days | 0.54 | | MPC | 2006 $TP_{16}$ |
| 2006 $TS_{16}$ | 17.0 | 0.15 | 20061012 | 27.88889 | 322.19407 | 32.08716 | 2.75647 | 0.0861154 | 2.6944312 | 30 | 1 | 49 days | 0.27 | | MPC | 2006 $TS_{16}$ |
| 2006 $TT_{16}$ | 18.1 | 0.15 | 20061012 | 348.83701 | 219.30325 | 182.93550 | 0.96000 | 0.1858869 | 2.3759027 | 32 | 1 | 47 days | 0.32 | | MPC | 2006 $TT_{16}$ |
| 2006 $TU_{16}$ | 16.6 | 0.15 | 20061012 | 24.30037 | 308.63602 | 45.35393 | 1.88328 | 0.1670235 | 3.1768585 | 30 | 1 | 53 days | 0.26 | | MPC | 2006 $TU_{16}$ |
| 2006 $TV_{16}$ | 18.1 | 0.15 | 20060922 | 321.30435 | 33.88013 | 32.69924 | 4.20679 | 0.0945771 | 2.3685420 | 32 | 1 | 63 days | 0.27 | M-v 4 | MPC | 2006 $TV_{16}$ |
| 2006 $TW_{16}$ | 18.3 | 0.15 | 20061012 | 355.93167 | 202.84020 | 189.41229 | 2.30231 | 0.2554195 | 2.3784219 | 42 | 1 | 50 days | 0.38 | | MPC | 2006 $TW_{16}$ |
| 2006 $TA_{17}$ | 16.8 | 0.15 | 20061012 | 25.23342 | 296.57545 | 51.74153 | 1.59225 | 0.2180773 | 2.7007185 | 53 | 1 | 48 days | 0.47 | | MPC | 2006 $TA_{17}$ |
| 2006 $TC_{17}$ | 17.2 | 0.15 | 20061012 | 341.06042 | 10.29527 | 45.65090 | 2.77561 | 0.1969115 | 2.6622837 | 52 | 1 | 48 days | 0.31 | | MPC | 2006 $TC_{17}$ |
| 2006 $TD_{17}$ | 18.2 | 0.15 | 20061012 | 356.46471 | 0.97244 | 30.41338 | 9.39696 | 0.1703822 | 2.2640613 | 55 | 1 | 40 days | 0.42 | | MPC | 2006 $TD_{17}$ |
| 2006 $TH_{17}$ | 16.3 | 0.15 | 20061012 | 34.96524 | 289.74979 | 55.35400 | 1.98170 | 0.1287090 | 3.1123351 | 40 | 1 | 58 days | 0.33 | | MPC | 2006 $TH_{17}$ |
| 2006 $TJ_{17}$ | 16.9 | 0.15 | 20060922 | 12.49301 | 184.90673 | 177.58674 | 1.97794 | 0.1799602 | 2.5374688 | 47 | 1 | 129 days | 0.33 | M-v 3 | MPC | 2006 $TJ_{17}$ |
| 2006 $TK_{17}$ | 18.2 | 0.15 | 20061012 | 351.07444 | 228.36162 | 173.20098 | 2.21882 | 0.2136345 | 2.6382836 | 33 | 1 | 45 days | 0.27 | | MPC | 2006 $TK_{17}$ |
| 2006 $TL_{17}$ | 17.9 | 0.15 | 20061012 | 1.49780 | 192.38227 | 192.39870 | 4.54893 | 0.2432830 | 2.6624412 | 31 | 1 | 42 days | 0.35 | | MPC | 2006 $TL_{17}$ |
| 2006 $TM_{17}$ | 16.8 | 0.15 | 20060922 | 18.83495 | 322.27652 | 35.98253 | 4.23928 | 0.1343472 | 2.6642076 | 53 | 1 | 60 days | 0.48 | M-v 4 | MPC | 2006 $TM_{17}$ |
| 2006 $TN_{17}$ | 18.2 | 0.15 | 20061012 | 353.74972 | 236.24613 | 159.77041 | 2.28010 | 0.1691102 | 2.3739141 | 22 | 1 | 36 days | 0.20 | | MPC | 2006 $TN_{17}$ |
| 2006 $TO_{17}$ | 17.8 | 0.15 | 20061101 | 356.27177 | 333.64435 | 66.47490 | 2.89013 | 0.1825056 | 2.5513559 | 28 | 1 | 47 days | 0.34 | | MPC | 2006 $TO_{17}$ |
| 2006 $TP_{17}$ | 17.9 | 0.15 | 20061012 | 33.21052 | 175.23419 | 165.32254 | 2.47753 | 0.1789145 | 2.3539358 | 19 | 1 | 36 days | 0.18 | | MPC | 2006 $TP_{17}$ |
| 2006 $TQ_{17}$ | 17.9 | 0.15 | 20061012 | 320.08611 | 280.08410 | 165.01827 | 2.49970 | 0.1946831 | 2.3949286 | 33 | 1 | 45 days | 0.29 | | MPC | 2006 $TQ_{17}$ |
| 2006 $TR_{17}$ | 18.1 | 0.15 | 20061012 | 357.50653 | 347.84398 | 43.08557 | 5.83097 | 0.2472136 | 2.4431147 | 29 | 1 | 56 days | 0.26 | | MPC | 2006 $TR_{17}$ |
| 2006 $TS_{17}$ | 18.7 | 0.15 | 20061012 | 15.62580 | 272.36892 | 93.42566 | 2.07873 | 0.1443802 | 2.1563476 | 29 | 1 | 43 days | 0.21 | | MPC | 2006 $TS_{17}$ |
| 2006 $TW_{17}$ | 16.2 | 0.15 | 20061012 | 8.14532 | 212.99112 | 167.53700 | 4.05581 | 0.0517593 | 2.7117200 | 29 | 1 | 30 days | 0.38 | | MPC | 2006 $TW_{17}$ |
| 2006 $TY_{17}$ | 16.2 | 0.15 | 20061012 | 65.92923 | 280.02855 | 39.42582 | 14.65555 | 0.0376680 | 2.6177634 | 29 | 1 | 43 days | 0.24 | | MPC | 2006 $TY_{17}$ |
| 2006 $TZ_{17}$ | 16.2 | 0.15 | 20061012 | 14.16651 | 331.51263 | 42.39867 | 13.61286 | 0.0714644 | 3.1572653 | 29 | 1 | 55 days | 0.48 | | MPC | 2006 $TZ_{17}$ |
| 2006 $TA_{18}$ | 17.8 | 0.15 | 20061012 | 187.35222 | 95.93786 | 107.09944 | 2.76773 | 0.0957326 | 2.1505875 | 23 | 1 | 44 days | 0.39 | | MPC | 2006 $TA_{18}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TD_{18}$ | 16.7 | 0.15 | 20060922 | 155.65854 | 186.99128 | 39.77108 | 9.04076 | 0.0327332 | 2.6686326 | 25 | 1 | 65 days | 0.34 | M-v 4 | MPC | | 2006 $TD_{18}$ |
| 2006 $TF_{18}$ | 16.0 | 0.15 | 20061012 | 301.66811 | 260.56062 | 202.57696 | 20.66644 | 0.1543517 | 2.7498128 | 35 | 1 | 54 days | 0.55 | | MPC | | 2006 $TF_{18}$ |
| 2006 $TH_{18}$ | 16.4 | 0.15 | 20061012 | 359.19063 | 354.08401 | 35.10540 | 18.11782 | 0.1379059 | 3.0003608 | 28 | 1 | 48 days | 0.39 | | MPC | | 2006 $TH_{18}$ |
| 2006 $TJ_{18}$ | 17.0 | 0.15 | 20061012 | 346.98546 | 0.55139 | 45.17564 | 6.75701 | 0.1323689 | 3.0243823 | 29 | 1 | 37 days | 0.26 | | MPC | | 2006 $TJ_{18}$ |
| 2006 $TK_{18}$ | 15.6 | 0.15 | 20061012 | 333.10890 | 228.74705 | 194.73353 | 9.76438 | 0.1192976 | 3.1046726 | 37 | 1 | 53 days | 0.32 | | MPC | | 2006 $TK_{18}$ |
| 2006 $TM_{18}$ | 15.6 | 0.15 | 20061012 | 54.85334 | 246.37926 | 73.35123 | 2.34593 | 0.1254645 | 3.1271651 | 42 | 1 | 56 days | 0.34 | | MPC | | 2006 $TM_{18}$ |
| 2006 $TP_{18}$ | 15.7 | 0.15 | 20060922 | 59.70001 | 273.01644 | 34.50285 | 5.98782 | 0.1451746 | 3.2212206 | 28 | 1 | 62 days | 0.23 | M-v 4 | MPC | | 2006 $TP_{18}$ |
| 2006 $TQ_{18}$ | 15.8 | 0.15 | 20060922 | 102.44937 | 74.54104 | 196.90533 | 8.67792 | 0.0865786 | 3.0229053 | 35 | 1 | 61 days | 0.37 | M-v 4 | MPC | | 2006 $TQ_{18}$ |
| 2006 $TT_{18}$ | 17.4 | 0.15 | 20061012 | 353.26788 | 84.95660 | 315.76261 | 1.84009 | 0.1756560 | 2.6330833 | 40 | 1 | 51 days | 0.48 | | MPC | | 2006 $TT_{18}$ |
| 2006 $TU_{18}$ | 16.8 | 0.15 | 20061012 | 132.26850 | 316.90297 | 295.81559 | 2.35944 | 0.1042997 | 2.3955020 | 22 | 1 | 51 days | 0.23 | | MPC | | 2006 $TU_{18}$ |
| 2006 $TV_{18}$ | 16.6 | 0.15 | 20061012 | 80.92013 | 60.12093 | 230.09051 | 8.74810 | 0.1916016 | 2.5917187 | 25 | 1 | 42 days | 0.26 | | MPC | | 2006 $TV_{18}$ |
| 2006 $TW_{18}$ | 16.4 | 0.15 | 20061012 | 337.96410 | 175.26675 | 241.99541 | 5.39219 | 0.0401316 | 2.7390130 | 26 | 1 | 40 days | 0.27 | | MPC | | 2006 $TW_{18}$ |
| 2006 $TZ_{18}$ | 17.5 | 0.15 | 20061012 | 348.94382 | 66.97286 | 342.39021 | 2.60937 | 0.1903575 | 2.7543069 | 27 | 1 | 46 days | 0.19 | | MPC | | 2006 $TZ_{18}$ |
| 2006 $TA_{19}$ | 16.4 | 0.15 | 20061012 | 346.11033 | 190.41785 | 223.05251 | 13.00822 | 0.1621257 | 3.0029607 | 31 | 1 | 51 days | 0.41 | | MPC | | 2006 $TA_{19}$ |
| 2006 $TB_{19}$ | 18.0 | 0.15 | 20061012 | 6.39151 | 3.00538 | 18.43187 | 7.28672 | 0.1789483 | 2.2535718 | 26 | 1 | 56 days | 0.28 | | MPC | | 2006 $TB_{19}$ |
| 2006 $TC_{19}$ | 16.7 | 0.15 | 20061012 | 21.35100 | 87.07549 | 280.66654 | 1.74559 | 0.1036774 | 2.7388557 | 34 | 1 | 44 days | 0.32 | | MPC | | 2006 $TC_{19}$ |
| 2006 $TG_{19}$ | 16.7 | 0.15 | 20061012 | 26.96920 | 135.17123 | 225.57757 | 4.66335 | 0.0986300 | 2.7289007 | 35 | 1 | 50 days | 0.41 | | MPC | | 2006 $TG_{19}$ |
| 2006 $TH_{19}$ | 16.7 | 0.15 | 20061012 | 16.72128 | 145.86495 | 228.25409 | 4.47835 | 0.0756244 | 2.7060888 | 31 | 1 | 48 days | 0.41 | | MPC | | 2006 $TH_{19}$ |
| 2006 $TO_{19}$ | 16.0 | 0.15 | 20061012 | 97.97235 | 307.28495 | 346.63801 | 1.36167 | 0.0303467 | 2.8937578 | 26 | 1 | 56 days | 0.33 | | MPC | | 2006 $TO_{19}$ |
| 2006 $TR_{19}$ | 16.8 | 0.15 | 20061012 | 19.08160 | 144.82976 | 218.03891 | 8.32057 | 0.2352165 | 3.0256085 | 27 | 1 | 44 days | 0.29 | | MPC | | 2006 $TR_{19}$ |
| 2006 $TS_{19}$ | 16.4 | 0.15 | 20061012 | 89.17682 | 308.47845 | 351.03707 | 1.58247 | 0.0412040 | 2.8471112 | 19 | 1 | 43 days | 0.24 | | MPC | | 2006 $TS_{19}$ |
| 2006 $TT_{19}$ | 17.9 | 0.15 | 20061012 | 52.73171 | 62.92527 | 257.70775 | 1.61925 | 0.1695323 | 2.3117258 | 37 | 1 | 56 days | 0.31 | | MPC | | 2006 $TT_{19}$ |
| 2006 $TU_{19}$ | 17.8 | 0.15 | 20061012 | 21.03402 | 342.82484 | 16.11850 | 2.80989 | 0.2060344 | 2.5537878 | 27 | 1 | 57 days | 0.31 | | MPC | | 2006 $TU_{19}$ |
| 2006 $TV_{19}$ | 17.0 | 0.15 | 20061012 | 335.31781 | 214.88208 | 216.43604 | 10.85392 | 0.2388572 | 2.5863911 | 44 | 1 | 47 days | 0.54 | | MPC | | 2006 $TV_{19}$ |
| 2006 $TW_{19}$ | 17.6 | 0.15 | 20061012 | 358.81593 | 5.13175 | 28.64773 | 14.55700 | 0.1484596 | 2.5982057 | 23 | 1 | 54 days | 0.23 | | MPC | | 2006 $TW_{19}$ |
| 2006 $TY_{19}$ | 17.2 | 0.15 | 20061012 | 4.44971 | 164.99033 | 217.99118 | 8.78730 | 0.2158865 | 2.7533203 | 31 | 1 | 46 days | 0.38 | | MPC | | 2006 $TY_{19}$ |
| 2006 $TZ_{19}$ | 19.0 | 0.15 | 20061012 | 28.44328 | 115.23054 | 231.92135 | 3.73487 | 0.1995982 | 2.3749588 | 18 | 1 | 17 days | 0.30 | | MPC | | 2006 $TZ_{19}$ |
| 2006 $TE_{20}$ | 18.3 | 0.15 | 20061012 | 21.11627 | 132.99908 | 223.47667 | 3.88881 | 0.2010450 | 2.1545563 | 29 | 1 | 55 days | 0.27 | | MPC | | 2006 $TE_{20}$ |
| 2006 $TH_{20}$ | 17.3 | 0.15 | 20061012 | 26.99322 | 108.52370 | 225.03121 | 4.67652 | 0.3561209 | 2.6236502 | 39 | 1 | 51 days | 0.32 | | MPC | | 2006 $TH_{20}$ |
| 2006 $TJ_{20}$ | 17.0 | 0.15 | 20061012 | 348.42064 | 41.16153 | 5.68831 | 2.87175 | 0.1387810 | 2.6412240 | 49 | 1 | 56 days | 0.38 | | MPC | | 2006 $TJ_{20}$ |
| 2006 $TS_{20}$ | 15.6 | 0.15 | 20061012 | 5.23985 | 176.93754 | 213.94800 | 9.66034 | 0.0291321 | 3.0730183 | 30 | 1 | 53 days | 0.34 | | MPC | | 2006 $TS_{20}$ |
| 2006 $TT_{20}$ | 17.2 | 0.15 | 20061012 | 335.24778 | 225.03722 | 203.39008 | 3.12728 | 0.1638005 | 2.7585417 | 19 | 1 | 20 days | 0.28 | | MPC | | 2006 $TT_{20}$ |
| 2006 $TV_{20}$ | 15.7 | 0.15 | 20061012 | 19.83330 | 328.48894 | 42.09735 | 9.79916 | 0.1174277 | 3.1392222 | 38 | 1 | 58 days | 0.38 | | MPC | | 2006 $TV_{20}$ |
| 2006 $TW_{20}$ | 17.8 | 0.15 | 20061012 | 47.78951 | 121.18050 | 203.20744 | 3.82060 | 0.2148403 | 2.5827741 | 25 | 1 | 51 days | 0.38 | | MPC | | 2006 $TW_{20}$ |
| 2006 $TX_{20}$ | 18.8 | 0.15 | 20061012 | 19.38200 | 153.57051 | 208.92509 | 1.57835 | 0.1995680 | 2.3361273 | 26 | 1 | 31 days | 0.32 | | MPC | | 2006 $TX_{20}$ |
| 2006 $TY_{20}$ | 16.6 | 0.15 | 20060922 | 38.86603 | 293.79845 | 37.07786 | 2.76225 | 0.2099132 | 2.6707755 | 34 | 1 | 63 days | 0.35 | M-v 4 | MPC | | 2006 $TY_{20}$ |
| 2006 $TZ_{20}$ | 16.9 | 0.15 | 20061101 | 46.69057 | 283.31720 | 49.16654 | 2.53193 | 0.2088807 | 2.5678984 | 16 | 1 | 42 days | 0.18 | | MPC | | 2006 $TZ_{20}$ |
| 2006 $TA_{21}$ | 15.7 | 0.15 | 20061012 | 352.95158 | 6.76150 | 38.57473 | 7.34001 | 0.1170694 | 3.0919798 | 48 | 1 | 58 days | 0.32 | | MPC | | 2006 $TA_{21}$ |
| 2006 $TB_{21}$ | 18.4 | 0.15 | 20061101 | 355.44588 | 358.28126 | 49.09268 | 3.18404 | 0.2040130 | 2.4180665 | 17 | 1 | 47 days | 0.23 | | MPC | | 2006 $TB_{21}$ |
| 2006 $TE_{21}$ | 16.0 | 0.15 | 20060922 | 108.81533 | 227.21713 | 41.75776 | 12.10297 | 0.1528192 | 2.6777236 | 32 | 1 | 62 days | 0.30 | M-v 4 | MPC | | 2006 $TE_{21}$ |
| 2006 $TH_{21}$ | 16.8 | 0.15 | 20061012 | 6.48864 | 177.43945 | 209.25465 | 9.75177 | 0.1414364 | 2.7839747 | 23 | 1 | 52 days | 0.28 | | MPC | | 2006 $TH_{21}$ |
| 2006 $TJ_{21}$ | 17.6 | 0.15 | 20061012 | 344.73253 | 12.68463 | 40.52316 | 3.03553 | 0.1385108 | 2.2654864 | 44 | 1 | 58 days | 0.35 | | MPC | | 2006 $TJ_{21}$ |
| 2006 $TK_{21}$ | 18.6 | 0.15 | 20060922 | 282.14109 | 269.21693 | 210.71432 | 23.84265 | 0.1493755 | 1.9347102 | 15 | 1 | 35 days | 0.23 | | MPC | | 2006 $TK_{21}$ |
| 2006 $TL_{21}$ | 16.9 | 0.15 | 20061012 | 333.00375 | 32.43714 | 38.61074 | 9.39887 | 0.1722760 | 2.3366128 | 72 | 1 | 53 days | 0.61 | | MPC | | 2006 $TL_{21}$ |
| 2006 $TN_{21}$ | 16.6 | 0.15 | 20061012 | 275.69377 | 272.57674 | 215.06580 | 21.21171 | 0.0550573 | 2.6404485 | 24 | 1 | 57 days | 0.29 | | MPC | | 2006 $TN_{21}$ |
| 2006 $TQ_{21}$ | 17.2 | 0.15 | 20061012 | 46.10851 | 334.54900 | 345.09508 | 6.74365 | 0.2327602 | 2.2170503 | 23 | 1 | 29 days | 0.30 | | MPC | | 2006 $TQ_{21}$ |
| 2006 $TR_{21}$ | 17.8 | 0.15 | 20061101 | 332.39133 | 243.58126 | 194.30741 | 1.88852 | 0.1425927 | 2.3417254 | 29 | 1 | 47 days | 0.36 | | MPC | | 2006 $TR_{21}$ |
| 2006 $TT_{21}$ | 16.9 | 0.15 | 20061101 | 351.07293 | 359.25999 | 53.60210 | 3.45497 | 0.0981354 | 2.6715236 | 30 | 1 | 41 days | 0.32 | | MPC | | 2006 $TT_{21}$ |
| 2006 $TV_{21}$ | 17.2 | 0.15 | 20061012 | 37.54423 | 125.14808 | 205.05503 | 3.92703 | 0.2943507 | 2.6453929 | 26 | 1 | 51 days | 0.34 | | MPC | | 2006 $TV_{21}$ |
| 2006 $TW_{21}$ | 17.5 | 0.15 | 20061012 | 355.03642 | 3.57391 | 39.30265 | 11.57367 | 0.1662837 | 2.6646129 | 24 | 1 | 52 days | 0.29 | | MPC | | 2006 $TW_{21}$ |
| 2006 $TX_{21}$ | 16.8 | 0.15 | 20061012 | 331.23841 | 235.87781 | 200.77164 | 4.64838 | 0.1759018 | 2.6299732 | 13 | 1 | 35 days | 0.29 | | MPC | | 2006 $TX_{21}$ |
| 2006 $TZ_{21}$ | 18.1 | 0.15 | 20061012 | 2.29086 | 321.74284 | 68.73402 | 3.51644 | 0.1872579 | 2.3986146 | 23 | 1 | 35 days | 0.24 | | MPC | | 2006 $TZ_{21}$ |
| 2006 $TA_{22}$ | 17.8 | 0.15 | 20061012 | 342.38520 | 345.43128 | 71.42500 | 3.82998 | 0.1242540 | 2.2605611 | 20 | 1 | 35 days | 0.37 | | MPC | | 2006 $TA_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TF_{22}$ | 16.6 | 0.15 | 20061012 | 17.08896 | 202.38514 | 164.65204 | 2.63435 | 0.2382083 | 2.6064177 | 46 | 1 | 48 days | 0.40 | | MPC | 2006 $TF_{22}$ |
| 2006 $TH_{22}$ | 17.8 | 0.15 | 20061012 | 344.98825 | 228.81329 | 183.09017 | 3.13588 | 0.1197699 | 2.1522457 | 23 | 1 | 47 days | 0.24 | | MPC | 2006 $TH_{22}$ |
| 2006 $TJ_{22}$ | 15.8 | 0.15 | 20061012 | 2.42380 | 343.94120 | 51.02550 | 9.59769 | 0.0756742 | 3.1691836 | 36 | 1 | 48 days | 0.32 | | MPC | 2006 $TJ_{22}$ |
| 2006 $TK_{22}$ | 18.0 | 0.15 | 20061012 | 338.20020 | 331.77417 | 94.64109 | 2.35961 | 0.1899130 | 2.5618424 | 19 | 1 | 35 days | 0.32 | | MPC | 2006 $TK_{22}$ |
| 2006 $TM_{22}$ | 17.4 | 0.15 | 20061012 | 0.24621 | 346.11783 | 46.03395 | 5.64864 | 0.1733984 | 2.2136326 | 54 | 1 | 58 days | 0.34 | | MPC | 2006 $TM_{22}$ |
| 2006 $TN_{22}$ | 17.2 | 0.15 | 20061101 | 25.41466 | 191.51061 | 175.05817 | 2.45946 | 0.1579306 | 2.2359782 | 22 | 1 | 41 days | 0.49 | | MPC | 2006 $TN_{22}$ |
| 2006 $TR_{22}$ | 16.3 | 0.15 | 20061012 | 284.17652 | 90.88760 | 40.50748 | 21.74441 | 0.1794657 | 2.6312363 | 41 | 1 | 46 days | 0.42 | | MPC | 2006 $TR_{22}$ |
| 2006 $TS_{22}$ | 16.3 | 0.15 | 20061012 | 100.71942 | 222.59399 | 59.83163 | 5.61575 | 0.1222307 | 2.8009466 | 23 | 1 | 46 days | 0.28 | | MPC | 2006 $TS_{22}$ |
| 2006 $TT_{22}$ | 17.7 | 0.15 | 20061012 | 57.16517 | 261.98282 | 46.58264 | 7.57009 | 0.2435860 | 2.2598513 | 27 | 1 | 53 days | 0.28 | | MPC | 2006 $TT_{22}$ |
| 2006 $TY_{22}$ | 15.7 | 0.15 | 20061101 | 322.53606 | 38.49513 | 48.79693 | 10.65301 | 0.1138079 | 3.1008947 | 26 | 1 | 41 days | 0.16 | | MPC | 2006 $TY_{22}$ |
| 2006 $TZ_{22}$ | 16.0 | 0.15 | 20061012 | 53.01377 | 291.11789 | 43.06244 | 12.92631 | 0.0895670 | 2.7118761 | 40 | 1 | 58 days | 0.45 | | MPC | 2006 $TZ_{22}$ |
| 2006 $TC_{23}$ | 16.4 | 0.15 | 20061012 | 18.38689 | 168.66059 | 205.44897 | 12.41051 | 0.1146847 | 3.1691950 | 30 | 1 | 54 days | 0.43 | | MPC | 2006 $TC_{23}$ |
| 2006 $TL_{23}$ | 17.9 | 0.15 | 20061012 | 344.84629 | 356.78498 | 54.24000 | 3.52707 | 0.1285870 | 2.2606042 | 30 | 1 | 53 days | 0.32 | | MPC | 2006 $TL_{23}$ |
| 2006 $TM_{23}$ | 17.5 | 0.15 | 20061012 | 340.62656 | 235.95821 | 181.76148 | 2.98842 | 0.1354223 | 2.4085852 | 37 | 1 | 48 days | 0.36 | | MPC | 2006 $TM_{23}$ |
| 2006 $TP_{23}$ | 16.2 | 0.15 | 20061012 | 31.36051 | 139.54601 | 212.23616 | 25.88722 | 0.1726908 | 3.2086428 | 28 | 1 | 59 days | 0.52 | | MPC | 2006 $TP_{23}$ |
| 2006 $TQ_{23}$ | 15.6 | 0.15 | 20061012 | 41.96532 | 296.45172 | 39.83484 | 17.80550 | 0.1838652 | 3.1023591 | 52 | 1 | 52 days | 0.40 | | MPC | 2006 $TQ_{23}$ |
| 2006 $TS_{23}$ | 17.1 | 0.15 | 20061101 | 338.59697 | 231.26394 | 209.52522 | 15.75347 | 0.3053889 | 3.0652622 | 25 | 1 | 44 days | 0.39 | | MPC | 2006 $TS_{23}$ |
| 2006 $TT_{23}$ | 17.1 | 0.15 | 20061012 | 24.57640 | 308.54947 | 50.43762 | 3.72943 | 0.1703833 | 2.6752606 | 26 | 1 | 53 days | 0.32 | | MPC | 2006 $TT_{23}$ |
| 2006 $TU_{23}$ | 17.7 | 0.15 | 20061012 | 101.25849 | 236.94343 | 44.88948 | 7.18215 | 0.0939820 | 2.1909108 | 28 | 1 | 53 days | 0.36 | | MPC | 2006 $TU_{23}$ |
| 2006 $TV_{23}$ | 17.4 | 0.15 | 20061012 | 66.79982 | 263.86204 | 46.30664 | 6.86113 | 0.1389281 | 2.1805666 | 23 | 1 | 53 days | 0.36 | | MPC | 2006 $TV_{23}$ |
| 2006 $TW_{23}$ | 16.0 | 0.15 | 20061012 | 262.50583 | 100.99804 | 46.33288 | 10.59360 | 0.1216729 | 2.9816006 | 9 | 1 | 8 days | 0.59 | | MPC | 2006 $TW_{23}$ |
| 2006 $TX_{23}$ | 18.3 | 0.15 | 20061012 | 305.97902 | 47.07978 | 59.89472 | 2.98918 | 0.1906548 | 2.2904912 | 20 | 1 | 44 days | 0.35 | | MPC | 2006 $TX_{23}$ |
| 2006 $TY_{23}$ | 17.4 | 0.15 | 20061012 | 314.20468 | 250.70682 | 205.13443 | 11.18666 | 0.1630528 | 2.6808092 | 21 | 1 | 54 days | 0.31 | | MPC | 2006 $TY_{23}$ |
| 2006 $TZ_{23}$ | 16.1 | 0.15 | 20061012 | 24.16180 | 165.59325 | 204.53690 | 8.85493 | 0.0474239 | 3.0534578 | 24 | 1 | 47 days | 0.24 | | MPC | 2006 $TZ_{23}$ |
| 2006 $TA_{24}$ | 17.1 | 0.15 | 20061012 | 47.78657 | 149.22957 | 194.45359 | 5.09321 | 0.0472355 | 2.7370034 | 20 | 1 | 47 days | 0.26 | | MPC | 2006 $TA_{24}$ |
| 2006 $TB_{24}$ | 18.7 | 0.15 | 20061012 | 0.29220 | 194.59235 | 196.44581 | 4.59282 | 0.2759208 | 2.5887242 | 26 | 1 | 52 days | 0.29 | | MPC | 2006 $TB_{24}$ |
| 2006 $TJ_{24}$ | 17.7 | 0.15 | 20061012 | 328.87542 | 185.81548 | 238.14008 | 2.83977 | 0.0982050 | 2.3833219 | 24 | 1 | 56 days | 0.23 | | MPC | 2006 $TJ_{24}$ |
| 2006 $TM_{24}$ | 16.0 | 0.15 | 20061012 | 54.92037 | 101.32017 | 220.59790 | 10.88114 | 0.1129219 | 3.0614285 | 30 | 1 | 59 days | 0.19 | | MPC | 2006 $TM_{24}$ |
| 2006 $TN_{24}$ | 15.9 | 0.15 | 20060922 | 58.81362 | 306.34396 | 16.51782 | 10.07647 | 0.0350177 | 3.0589257 | 15 | 1 | 25 days | 0.15 | | MPC | 2006 $TN_{24}$ |
| 2006 $TO_{24}$ | 16.9 | 0.15 | 20061012 | 304.25271 | 219.79343 | 231.23054 | 3.53603 | 0.0734837 | 2.8032701 | 9 | 1 | 8 days | 0.69 | | MPC | 2006 $TO_{24}$ |
| 2006 $TP_{24}$ | 17.4 | 0.15 | 20061012 | 20.92744 | 21.18198 | 341.14155 | 2.30007 | 0.0921435 | 2.6121724 | 21 | 1 | 56 days | 0.19 | | MPC | 2006 $TP_{24}$ |
| 2006 $TS_{24}$ | 17.5 | 0.15 | 20060922 | 7.57954 | 159.63919 | 210.15975 | 6.34576 | 0.1892042 | 2.5884907 | 29 | 1 | 62 days | 0.23 | M-v 4 | MPC | 2006 $TS_{24}$ |
| 2006 $TU_{24}$ | 16.2 | 0.15 | 20060922 | 103.68178 | 229.91994 | 23.85335 | 15.35949 | 0.0550575 | 2.5361308 | 24 | 1 | 43 days | 0.55 | | MPC | 2006 $TU_{24}$ |
| 2006 $TZ_{24}$ | 19.1 | 0.15 | 20061012 | 5.03780 | 147.27623 | 233.41642 | 0.59981 | 0.1988416 | 2.3435349 | 19 | 1 | 29 days | 0.18 | | MPC | 2006 $TZ_{24}$ |
| 2006 $TF_{25}$ | 16.3 | 0.15 | 20061012 | 138.82053 | 221.26828 | 30.22151 | 10.96867 | 0.0438926 | 3.0979301 | 25 | 1 | 58 days | 0.27 | | MPC | 2006 $TF_{25}$ |
| 2006 $TG_{25}$ | 15.3 | 0.15 | 20060922 | 282.00341 | 259.22292 | 215.77868 | 9.38547 | 0.0685889 | 3.0680554 | 60 | 1 | 61 days | 0.39 | M-v 4 | MPC | 2006 $TG_{25}$ |
| 2006 $TH_{25}$ | 18.7 | 0.15 | 20061101 | 313.15496 | 70.64314 | 28.58254 | 2.57917 | 0.1641091 | 2.3085899 | 15 | 1 | 42 days | 0.30 | | MPC | 2006 $TH_{25}$ |
| 2006 $TJ_{25}$ | 16.8 | 0.15 | 20061012 | 88.19317 | 258.16219 | 30.55546 | 14.06395 | 0.1364795 | 2.7055583 | 25 | 1 | 53 days | 0.21 | | MPC | 2006 $TJ_{25}$ |
| 2006 $TK_{25}$ | 18.7 | 0.15 | 20061012 | 344.64624 | 29.61338 | 25.25149 | 4.17556 | 0.2375506 | 2.5893840 | 18 | 1 | 32 days | 0.21 | | MPC | 2006 $TK_{25}$ |
| 2006 $TL_{25}$ | 16.6 | 0.15 | 20061012 | 11.05315 | 166.29212 | 212.85073 | 12.45327 | 0.0733097 | 2.8375266 | 29 | 1 | 47 days | 0.23 | | MPC | 2006 $TL_{25}$ |
| 2006 $TM_{25}$ | 16.0 | 0.15 | 20060922 | 19.04523 | 336.64553 | 32.90259 | 10.33545 | 0.0262116 | 3.2003705 | 29 | 1 | 63 days | 0.22 | M-v 4 | MPC | 2006 $TM_{25}$ |
| 2006 $TP_{25}$ | 17.5 | 0.15 | 20061012 | 343.58699 | 193.48084 | 216.06356 | 6.73962 | 0.0850097 | 2.2589700 | 33 | 1 | 46 days | 0.18 | | MPC | 2006 $TP_{25}$ |
| 2006 $TR_{25}$ | 15.8 | 0.15 | 20061012 | 285.65423 | 83.62128 | 31.83759 | 10.33657 | 0.0698711 | 3.0110224 | 28 | 1 | 58 days | 0.41 | | MPC | 2006 $TR_{25}$ |
| 2006 $TT_{25}$ | 16.8 | 0.15 | 20060922 | 288.24200 | 86.42885 | 29.90111 | 11.71698 | 0.1490843 | 2.6858716 | 37 | 1 | 63 days | 0.30 | M-v 4 | MPC | 2006 $TT_{25}$ |
| 2006 $TV_{25}$ | 16.8 | 0.15 | 20061012 | 274.40405 | 112.93444 | 7.65978 | 1.84104 | 0.0151617 | 2.8545109 | 16 | 1 | 45 days | 0.23 | | MPC | 2006 $TV_{25}$ |
| 2006 $TW_{25}$ | 16.3 | 0.15 | 20061012 | 350.29336 | 18.44556 | 30.87816 | 10.45456 | 0.2890284 | 3.1439563 | 81 | 1 | 49 days | 0.53 | | MPC | 2006 $TW_{25}$ |
| 2006 $TX_{25}$ | 16.2 | 0.15 | 20061012 | 259.42996 | 113.49029 | 31.73116 | 9.65279 | 0.0951986 | 3.1795983 | 12 | 1 | 8 days | 0.51 | | MPC | 2006 $TX_{25}$ |
| 2006 $TZ_{25}$ | 17.5 | 0.15 | 20061012 | 7.27527 | 17.61228 | 4.82155 | 0.80615 | 0.1070180 | 2.5490092 | 25 | 1 | 45 days | 0.27 | | MPC | 2006 $TZ_{25}$ |
| 2006 $TA_{26}$ | 17.8 | 0.15 | 20061012 | 11.68790 | 345.83705 | 29.11217 | 1.72249 | 0.1586216 | 2.6378969 | 19 | 1 | 49 days | 0.40 | | MPC | 2006 $TA_{26}$ |
| 2006 $TB_{26}$ | 17.4 | 0.15 | 20060922 | 1.75850 | 11.24695 | 14.10706 | 1.61856 | 0.1340735 | 2.9813534 | 13 | 1 | 23 days | 0.25 | | MPC | 2006 $TB_{26}$ |
| 2006 $TE_{26}$ | 17.3 | 0.15 | 20061012 | 337.04572 | 215.89166 | 207.26684 | 4.84901 | 0.1782028 | 2.4046277 | 22 | 1 | 38 days | 0.20 | | MPC | 2006 $TE_{26}$ |
| 2006 $TJ_{26}$ | 15.8 | 0.15 | 20061012 | 282.74595 | 263.10281 | 216.37169 | 7.32340 | 0.0714621 | 3.0156036 | 22 | 1 | 48 days | 0.23 | | MPC | 2006 $TJ_{26}$ |
| 2006 $TL_{26}$ | 15.8 | 0.15 | 20061012 | 18.45114 | 338.13798 | 33.37893 | 8.64852 | 0.0898196 | 3.0734964 | 29 | 1 | 38 days | 0.34 | | MPC | 2006 $TL_{26}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TM_{26}$ | 17.8 | 0.15 | 20061012 | 0.18017 | 0.83964 | 28.44510 | 6.06529 | 0.1798859 | 2.2760184 | 37 | 1 | 40 days | 0.24 | | | MPC | 2006 $TM_{26}$ |
| 2006 $TO_{26}$ | 17.8 | 0.15 | 20061012 | 322.88975 | 44.58720 | 33.97077 | 4.32976 | 0.1405881 | 2.2224399 | 29 | 1 | 46 days | 0.26 | | | MPC | 2006 $TO_{26}$ |
| 2006 $TP_{26}$ | 16.2 | 0.15 | 20061012 | 295.17807 | 71.90059 | 34.06085 | 18.65369 | 0.0611928 | 3.1813584 | 22 | 1 | 36 days | 0.26 | | | MPC | 2006 $TP_{26}$ |
| 2006 $TR_{26}$ | 17.9 | 0.15 | 20061012 | 32.69053 | 133.38682 | 209.36771 | 0.65132 | 0.1946014 | 2.3423612 | 27 | 1 | 58 days | 0.22 | | | MPC | 2006 $TR_{26}$ |
| 2006 $TT_{26}$ | 16.4 | 0.15 | 20061012 | 28.85953 | 319.74450 | 34.36252 | 7.30101 | 0.1423372 | 2.6879267 | 27 | 1 | 44 days | 0.32 | | | MPC | 2006 $TT_{26}$ |
| 2006 $TV_{26}$ | 18.0 | 0.15 | 20061012 | 64.03080 | 275.38365 | 34.09099 | 4.11865 | 0.1575652 | 2.1859820 | 29 | 1 | 49 days | 0.27 | | | MPC | 2006 $TV_{26}$ |
| 2006 $TW_{26}$ | 17.8 | 0.15 | 20061012 | 353.79455 | 187.21093 | 214.31411 | 8.80198 | 0.1752227 | 2.8904238 | 17 | 1 | 34 days | 0.22 | | | MPC | 2006 $TW_{26}$ |
| 2006 $TX_{26}$ | 17.7 | 0.15 | 20061012 | 335.55599 | 35.79509 | 35.58358 | 4.58691 | 0.2511480 | 2.5699219 | 29 | 1 | 46 days | 0.30 | | | MPC | 2006 $TX_{26}$ |
| 2006 $TY_{26}$ | 16.2 | 0.15 | 20061012 | 282.07841 | 269.70464 | 212.09213 | 14.45753 | 0.0939623 | 2.5688156 | 28 | 1 | 50 days | 0.17 | | | MPC | 2006 $TY_{26}$ |
| 2006 $TA_{27}$ | 16.5 | 0.15 | 20061012 | 355.48457 | 6.32925 | 33.48159 | 9.75567 | 0.0903949 | 3.1633460 | 23 | 1 | 42 days | 0.27 | | | MPC | 2006 $TA_{27}$ |
| 2006 $TC_{27}$ | 18.5 | 0.15 | 20061012 | 14.25273 | 336.51489 | 30.90935 | 5.21513 | 0.2168907 | 2.3503223 | 20 | 1 | 32 days | 0.28 | | | MPC | 2006 $TC_{27}$ |
| 2006 $TF_{27}$ | 16.7 | 0.15 | 20061012 | 96.99931 | 217.22091 | 65.04099 | 0.83224 | 0.1316130 | 2.5891299 | 35 | 1 | 58 days | 0.27 | | | MPC | 2006 $TF_{27}$ |
| 2006 $TH_{27}$ | 16.5 | 0.15 | 20061012 | 335.85171 | 37.89534 | 32.29563 | 0.18328 | 0.2064218 | 3.0893220 | 24 | 1 | 41 days | 0.36 | | | MPC | 2006 $TH_{27}$ |
| 2006 $TJ_{27}$ | 17.1 | 0.15 | 20061012 | 345.11344 | 192.83104 | 219.66532 | 1.15159 | 0.1339380 | 2.6798782 | 32 | 1 | 56 days | 0.28 | | | MPC | 2006 $TJ_{27}$ |
| 2006 $TK_{27}$ | 16.7 | 0.15 | 20060922 | 20.90316 | 330.45049 | 28.21970 | 0.56828 | 0.1836013 | 3.1002759 | 28 | 1 | 61 days | 0.29 | M-v | 4 | MPC | 2006 $TK_{27}$ |
| 2006 $TL_{27}$ | 17.0 | 0.15 | 20061012 | 40.01643 | 297.63001 | 44.38146 | 2.20657 | 0.1399657 | 2.8455755 | 32 | 1 | 50 days | 0.49 | | | MPC | 2006 $TL_{27}$ |
| 2006 $TM_{27}$ | 17.4 | 0.15 | 20061012 | 303.36214 | 256.47258 | 208.76036 | 3.82427 | 0.1524265 | 2.3907992 | 25 | 1 | 49 days | 0.39 | | | MPC | 2006 $TM_{27}$ |
| 2006 $TN_{27}$ | 15.9 | 0.15 | 20061012 | 64.92023 | 264.69271 | 35.25065 | 13.39200 | 0.2658447 | 3.1368804 | 26 | 1 | 37 days | 0.23 | | | MPC | 2006 $TN_{27}$ |
| 2006 $TO_{27}$ | 16.2 | 0.15 | 20061012 | 32.44564 | 315.12188 | 39.49650 | 5.68080 | 0.1017498 | 2.7950405 | 32 | 1 | 50 days | 0.46 | | | MPC | 2006 $TO_{27}$ |
| 2006 $TP_{27}$ | 17.4 | 0.15 | 20061012 | 180.42384 | 177.57121 | 35.27129 | 5.10864 | 0.0782050 | 2.1537226 | 23 | 1 | 47 days | 0.31 | | | MPC | 2006 $TP_{27}$ |
| 2006 $TR_{27}$ | 16.6 | 0.15 | 20061012 | 14.52115 | 190.11489 | 187.36162 | 1.74470 | 0.0778444 | 2.8900929 | 20 | 1 | 49 days | 0.24 | | | MPC | 2006 $TR_{27}$ |
| 2006 $TT_{27}$ | 16.1 | 0.15 | 20061012 | 103.73226 | 65.47251 | 213.94915 | 14.20446 | 0.1106758 | 2.6528996 | 23 | 1 | 50 days | 0.39 | | | MPC | 2006 $TT_{27}$ |
| 2006 $TU_{27}$ | 15.8 | 0.15 | 20061012 | 3.89373 | 347.22927 | 42.47922 | 3.15353 | 0.1268972 | 3.1032756 | 48 | 1 | 54 days | 0.35 | | | MPC | 2006 $TU_{27}$ |
| 2006 $TW_{27}$ | 17.1 | 0.15 | 20061012 | 317.99003 | 240.38414 | 212.30996 | 9.40025 | 0.1830248 | 2.8116450 | 12 | 1 | 7 days | 0.71 | | | MPC | 2006 $TW_{27}$ |
| 2006 $TX_{27}$ | 17.8 | 0.15 | 20061012 | 319.50422 | 248.39338 | 205.74889 | 4.27608 | 0.2281041 | 2.5343292 | 20 | 1 | 42 days | 0.32 | | | MPC | 2006 $TX_{27}$ |
| 2006 $TB_{28}$ | 16.8 | 0.15 | 20061012 | 5.65348 | 342.08754 | 41.58145 | 6.93393 | 0.2053959 | 3.0145735 | 29 | 1 | 45 days | 0.38 | | | MPC | 2006 $TB_{28}$ |
| 2006 $TC_{28}$ | 17.2 | 0.15 | 20061012 | 38.28361 | 276.94661 | 58.84203 | 2.69314 | 0.2046999 | 2.6479060 | 16 | 1 | 29 days | 0.27 | | | MPC | 2006 $TC_{28}$ |
| 2006 $TE_{28}$ | 17.2 | 0.15 | 20061101 | 356.76026 | 198.06104 | 204.38873 | 7.02409 | 0.1114019 | 2.3321462 | 35 | 1 | 41 days | 0.42 | | | MPC | 2006 $TE_{28}$ |
| 2006 $TF_{28}$ | 16.4 | 0.15 | 20061012 | 47.59561 | 295.25884 | 41.52374 | 11.72390 | 0.1047661 | 2.9825661 | 24 | 1 | 45 days | 0.41 | | | MPC | 2006 $TF_{28}$ |
| 2006 $TG_{28}$ | 18.5 | 0.15 | 20061101 | 347.71092 | 0.61102 | 56.39007 | 1.92329 | 0.1923553 | 2.3783029 | 20 | 1 | 41 days | 0.32 | | | MPC | 2006 $TG_{28}$ |
| 2006 $TH_{28}$ | 18.6 | 0.15 | 20061012 | 355.50070 | 359.76962 | 36.91209 | 7.44976 | 0.0937838 | 2.2385667 | 16 | 1 | 17 days | 0.20 | | | MPC | 2006 $TH_{28}$ |
| 2006 $TJ_{28}$ | 18.6 | 0.15 | 20061012 | 348.49842 | 3.61392 | 44.11116 | 5.25213 | 0.1874588 | 2.3929362 | 20 | 1 | 29 days | 0.18 | | | MPC | 2006 $TJ_{28}$ |
| 2006 $TL_{28}$ | 15.9 | 0.15 | 20061012 | 313.62199 | 44.03527 | 52.00410 | 5.61641 | 0.1576163 | 3.1923711 | 29 | 1 | 53 days | 0.30 | | | MPC | 2006 $TL_{28}$ |
| 2006 $TP_{28}$ | 16.9 | 0.15 | 20061012 | 16.68154 | 318.16744 | 45.70600 | 5.62637 | 0.2338975 | 2.5536909 | 40 | 1 | 52 days | 0.51 | | | MPC | 2006 $TP_{28}$ |
| 2006 $TQ_{28}$ | 16.9 | 0.15 | 20061012 | 336.50882 | 6.97636 | 54.20757 | 4.66167 | 0.0858830 | 2.6129613 | 36 | 1 | 44 days | 0.33 | | D | MPC | 2006 $TQ_{28}$ |
| 2006 $TR_{28}$ | 16.4 | 0.15 | 20061012 | 47.88674 | 271.55803 | 57.11752 | 1.77975 | 0.1667832 | 3.1145040 | 31 | 1 | 58 days | 0.32 | | | MPC | 2006 $TR_{28}$ |
| 2006 $TS_{28}$ | 17.5 | 0.15 | 20061012 | 238.93077 | 310.90450 | 206.24822 | 6.64814 | 0.0490395 | 2.3068401 | 26 | 1 | 49 days | 0.21 | | | MPC | 2006 $TS_{28}$ |
| 2006 $TT_{28}$ | 18.5 | 0.15 | 20061012 | 8.52074 | 329.92738 | 45.89126 | 2.91283 | 0.2293513 | 2.6189282 | 19 | 1 | 33 days | 0.35 | | | MPC | 2006 $TT_{28}$ |
| 2006 $TU_{28}$ | 16.6 | 0.15 | 20061012 | 59.12099 | 169.02295 | 146.72794 | 1.21175 | 0.1655760 | 3.0351259 | 22 | 1 | 17 days | 0.29 | | | MPC | 2006 $TU_{28}$ |
| 2006 $TV_{28}$ | 18.4 | 0.15 | 20061012 | 25.04702 | 146.39922 | 204.70561 | 4.43423 | 0.2013246 | 2.1904681 | 35 | 1 | 37 days | 0.65 | | | MPC | 2006 $TV_{28}$ |
| 2006 $TY_{28}$ | 16.4 | 0.15 | 20061012 | 219.38653 | 19.31014 | 164.19947 | 1.63585 | 0.1415114 | 2.9491919 | 15 | 1 | 10 days | 0.97 | | | MPC | 2006 $TY_{28}$ |
| 2006 $TA_{29}$ | 18.0 | 0.15 | 20060922 | 299.94939 | 267.47149 | 205.19151 | 4.52297 | 0.2362798 | 2.5792080 | 13 | 1 | 25 days | 0.32 | | | MPC | 2006 $TA_{29}$ |
| 2006 $TB_{29}$ | 17.1 | 0.15 | 20061012 | 12.38308 | 339.28134 | 38.61723 | 6.78317 | 0.0804295 | 2.8121461 | 26 | 1 | 40 days | 0.24 | | | MPC | 2006 $TB_{29}$ |
| 2006 $TC_{29}$ | 19.3 | 0.15 | 20061012 | 24.77826 | 309.98454 | 38.52419 | 2.50440 | 0.2409757 | 2.2745842 | 23 | 1 | 30 days | 0.29 | | | MPC | 2006 $TC_{29}$ |
| 2006 $TE_{29}$ | 16.0 | 0.15 | 20061012 | 301.10202 | 67.17658 | 36.90050 | 16.78335 | 0.1112085 | 3.0850775 | 29 | 1 | 44 days | 0.36 | | | MPC | 2006 $TE_{29}$ |
| 2006 $TG_{29}$ | 16.8 | 0.15 | 20061012 | 343.10848 | 207.12561 | 205.57730 | 9.21023 | 0.0723297 | 2.9505493 | 27 | 1 | 35 days | 0.30 | | | MPC | 2006 $TG_{29}$ |
| 2006 $TH_{29}$ | 18.5 | 0.15 | 20061012 | 25.76650 | 302.05262 | 46.69626 | 3.01326 | 0.2290707 | 2.3889011 | 33 | 1 | 53 days | 0.28 | | | MPC | 2006 $TH_{29}$ |
| 2006 $TK_{29}$ | 16.2 | 0.15 | 20061012 | 117.91682 | 62.76410 | 199.18901 | 4.15921 | 0.1455572 | 2.5692664 | 20 | 1 | 33 days | 0.21 | | | MPC | 2006 $TK_{29}$ |
| 2006 $TL_{29}$ | 16.4 | 0.15 | 20061012 | 134.77080 | 198.85305 | 58.16673 | 3.39251 | 0.0174784 | 2.7664999 | 19 | 1 | 17 days | 0.47 | | | MPC | 2006 $TL_{29}$ |
| 2006 $TM_{29}$ | 17.3 | 0.15 | 20061012 | 8.93808 | 179.36463 | 202.00154 | 5.82379 | 0.0914334 | 2.6643967 | 24 | 1 | 43 days | 0.25 | | | MPC | 2006 $TM_{29}$ |
| 2006 $TN_{29}$ | 17.0 | 0.15 | 20061012 | 25.07949 | 320.58957 | 40.92857 | 6.79352 | 0.0900349 | 2.4884315 | 43 | 1 | 53 days | 0.30 | | | MPC | 2006 $TN_{29}$ |
| 2006 $TO_{29}$ | 16.5 | 0.15 | 20061101 | 337.87847 | 25.56739 | 44.74503 | 6.61785 | 0.1922248 | 3.0588327 | 33 | 1 | 41 days | 0.25 | | | MPC | 2006 $TO_{29}$ |
| 2006 $TP_{29}$ | 17.1 | 0.15 | 20061012 | 348.97532 | 202.93646 | 204.00838 | 7.49117 | 0.1794051 | 2.5824843 | 37 | 1 | 49 days | 0.27 | | | MPC | 2006 $TP_{29}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TS_{29}$ | 17.4 | 0.15 | 20061012 | 332.67983 | 257.51444 | 172.78064 | 1.50499 | 0.1593453 | 3.0046362 | 10 | 1 | 34 days | 0.26 | | MPC | 2006 $TS_{29}$ |
| 2006 $TT_{29}$ | 16.8 | 0.15 | 20061012 | 0.50507 | 353.19045 | 39.36446 | 8.28455 | 0.1562230 | 3.2217375 | 31 | 1 | 45 days | 0.26 | | MPC | 2006 $TT_{29}$ |
| 2006 $TU_{29}$ | 17.0 | 0.15 | 20061012 | 13.58589 | 177.62570 | 198.25160 | 5.33286 | 0.0994239 | 2.7577663 | 28 | 1 | 51 days | 0.40 | | MPC | 2006 $TU_{29}$ |
| 2006 $TV_{29}$ | 18.1 | 0.15 | 20061012 | 25.53642 | 172.03567 | 179.79393 | 0.96753 | 0.2032281 | 2.3760797 | 22 | 1 | 25 days | 0.32 | | MPC | 2006 $TV_{29}$ |
| 2006 $TX_{29}$ | 15.4 | 0.15 | 20061012 | 22.80768 | 166.37453 | 192.23776 | 2.57480 | 0.2250740 | 3.9710837 | 32 | 1 | 50 days | 0.26 | | MPC | 2006 $TX_{29}$ |
| 2006 $TY_{29}$ | 18.0 | 0.15 | 20061012 | 353.77671 | 198.66523 | 199.38446 | 4.86527 | 0.1832164 | 2.1642851 | 38 | 1 | 53 days | 0.45 | | MPC | 2006 $TY_{29}$ |
| 2006 $TZ_{29}$ | 16.3 | 0.15 | 20061012 | 263.64021 | 348.49583 | 159.03600 | 1.97653 | 0.1589872 | 2.7534982 | 23 | 1 | 31 days | 0.33 | | MPC | 2006 $TZ_{29}$ |
| 2006 $TA_{30}$ | 17.2 | 0.15 | 20061012 | 13.58926 | 181.52763 | 191.86749 | 3.62277 | 0.1386719 | 2.5563407 | 33 | 1 | 46 days | 0.49 | | MPC | 2006 $TA_{30}$ |
| 2006 $TB_{30}$ | 16.7 | 0.15 | 20061012 | 279.46647 | 80.64898 | 40.31974 | 11.61791 | 0.0542733 | 3.0522712 | 20 | 1 | 45 days | 0.27 | | MPC | 2006 $TB_{30}$ |
| 2006 $TC_{30}$ | 17.6 | 0.15 | 20061012 | 307.43294 | 50.12687 | 47.80064 | 3.55033 | 0.1375678 | 2.3783008 | 34 | 1 | 53 days | 0.34 | | MPC | 2006 $TC_{30}$ |
| 2006 $TE_{30}$ | 17.7 | 0.15 | 20061012 | 331.34541 | 21.11416 | 47.57486 | 3.84716 | 0.1518108 | 2.2282530 | 46 | 1 | 54 days | 0.38 | | MPC | 2006 $TE_{30}$ |
| 2006 $TF_{30}$ | 17.3 | 0.15 | 20061012 | 339.16674 | 17.07792 | 47.79480 | 3.32817 | 0.2198982 | 2.8762702 | 10 | 1 | 16 days | 0.96 | | MPC | 2006 $TF_{30}$ |
| 2006 $TK_{30}$ | 18.4 | 0.15 | 20061012 | 20.68242 | 314.31785 | 38.97560 | 1.20560 | 0.2618553 | 2.6177040 | 34 | 1 | 59 days | 0.21 | | MPC | 2006 $TK_{30}$ |
| 2006 $TL_{30}$ | 17.0 | 0.15 | 20060922 | 17.31700 | 191.32084 | 167.93993 | 0.92312 | 0.2003592 | 3.0657404 | 26 | 1 | 63 days | 0.43 | M-v 4 | MPC | 2006 $TL_{30}$ |
| 2006 $TN_{30}$ | 18.3 | 0.15 | 20061101 | 7.75174 | 175.69765 | 206.76703 | 12.66913 | 0.2845154 | 2.6520062 | 24 | 1 | 41 days | 0.27 | | MPC | 2006 $TN_{30}$ |
| 2006 $TS_{30}$ | 16.9 | 0.15 | 20061012 | 10.58552 | 339.11268 | 36.39626 | 2.00136 | 0.1926254 | 3.1521128 | 49 | 1 | 49 days | 0.27 | | MPC | 2006 $TS_{30}$ |
| 2006 $TW_{30}$ | 17.8 | 0.15 | 20061012 | 351.69683 | 8.51187 | 32.55969 | 3.03744 | 0.1619361 | 2.4279350 | 43 | 1 | 59 days | 0.21 | | MPC | 2006 $TW_{30}$ |
| 2006 $TZ_{30}$ | 18.1 | 0.15 | 20061012 | 295.45715 | 76.01217 | 36.01330 | 8.21444 | 0.1494399 | 2.5297393 | 21 | 1 | 33 days | 0.25 | | MPC | 2006 $TZ_{30}$ |
| 2006 $TA_{31}$ | 17.5 | 0.15 | 20061012 | 21.00092 | 316.81446 | 39.32857 | 4.66812 | 0.2166747 | 2.4477409 | 43 | 1 | 36 days | 0.34 | | MPC | 2006 $TA_{31}$ |
| 2006 $TC_{31}$ | 16.8 | 0.15 | 20061012 | 3.45889 | 349.37082 | 33.89025 | 10.13587 | 0.2531552 | 2.7256543 | 58 | 1 | 58 days | 0.39 | | MPC | 2006 $TC_{31}$ |
| 2006 $TD_{31}$ | 15.6 | 0.15 | 20061012 | 33.82249 | 296.15902 | 38.35402 | 3.36207 | 0.2848593 | 3.9068865 | 46 | 1 | 58 days | 0.25 | | MPC | 2006 $TD_{31}$ |
| 2006 $TE_{31}$ | 17.2 | 0.15 | 20061012 | 334.56074 | 27.78098 | 32.96654 | 22.10981 | 0.0789075 | 2.6450840 | 24 | 1 | 56 days | 0.20 | | MPC | 2006 $TE_{31}$ |
| 2006 $TH_{31}$ | 15.8 | 0.15 | 20061012 | 71.11557 | 98.20123 | 212.09135 | 14.94844 | 0.1046206 | 3.1337066 | 20 | 1 | 35 days | 0.24 | | MPC | 2006 $TH_{31}$ |
| 2006 $TK_{31}$ | 18.2 | 0.15 | 20060922 | 46.40029 | 140.56094 | 179.79843 | 1.19607 | 0.1786586 | 2.4116982 | 17 | 1 | 32 days | 0.31 | | MPC | 2006 $TK_{31}$ |
| 2006 $TL_{31}$ | 19.1 | 0.15 | 20061012 | 348.76207 | 201.08810 | 207.33611 | 13.41301 | 0.2460753 | 2.6125117 | 17 | 1 | 20 days | 0.24 | | MPC | 2006 $TL_{31}$ |
| 2006 $TM_{31}$ | 15.3 | 0.15 | 20060922 | 315.41858 | 46.91613 | 33.51613 | 9.38922 | 0.0863243 | 2.9967348 | 55 | 1 | 63 days | 0.50 | M-v 4 | MPC | 2006 $TM_{31}$ |
| 2006 $TO_{31}$ | 17.5 | 0.15 | 20061012 | 3.30822 | 176.26156 | 207.32574 | 14.05207 | 0.2601285 | 2.6786538 | 39 | 1 | 56 days | 0.52 | | MPC | 2006 $TO_{31}$ |
| 2006 $TP_{31}$ | 16.9 | 0.15 | 20060922 | 328.81991 | 24.45218 | 36.42212 | 7.08777 | 0.0400338 | 2.7068547 | 36 | 1 | 63 days | 0.28 | M-v 4 | MPC | 2006 $TP_{31}$ |
| 2006 $TQ_{31}$ | 16.9 | 0.15 | 20061012 | 77.08939 | 107.65410 | 202.40845 | 2.36300 | 0.0460899 | 2.7310548 | 30 | 1 | 49 days | 0.42 | | MPC | 2006 $TQ_{31}$ |
| 2006 $TR_{31}$ | 18.9 | 0.15 | 20061012 | 12.31905 | 174.14098 | 195.66323 | 2.71069 | 0.2099934 | 2.3995209 | 20 | 1 | 47 days | 0.28 | | MPC | 2006 $TR_{31}$ |
| 2006 $TS_{31}$ | 18.3 | 0.15 | 20061012 | 356.22096 | 200.85568 | 193.14307 | 2.00837 | 0.1193422 | 2.1965092 | 33 | 1 | 49 days | 0.29 | | MPC | 2006 $TS_{31}$ |
| 2006 $TV_{31}$ | 16.4 | 0.15 | 20061012 | 323.37662 | 274.60963 | 158.11431 | 0.92427 | 0.0432665 | 3.0017384 | 20 | 1 | 58 days | 0.27 | | MPC | 2006 $TV_{31}$ |
| 2006 $TX_{31}$ | 18.1 | 0.15 | 20061012 | 22.55076 | 320.56792 | 33.92914 | 1.94493 | 0.1948124 | 2.4749881 | 21 | 1 | 46 days | 0.22 | | MPC | 2006 $TX_{31}$ |
| 2006 $TZ_{31}$ | 17.8 | 0.15 | 20060922 | 354.48083 | 181.24636 | 208.74973 | 9.45837 | 0.2478703 | 2.7167587 | 16 | 1 | 32 days | 0.20 | | MPC | 2006 $TZ_{31}$ |
| 2006 $TA_{32}$ | 16.3 | 0.15 | 20061012 | 218.46536 | 321.78724 | 212.54196 | 8.92533 | 0.0341534 | 2.6451555 | 27 | 1 | 57 days | 0.34 | | MPC | 2006 $TA_{32}$ |
| 2006 $TB_{32}$ | 17.6 | 0.15 | 20061101 | 349.21399 | 26.54138 | 24.82589 | 1.30577 | 0.1916362 | 3.1183809 | 18 | 1 | 42 days | 0.20 | | MPC | 2006 $TB_{32}$ |
| 2006 $TC_{32}$ | 16.8 | 0.15 | 20061012 | 337.89895 | 20.94416 | 36.38891 | 4.13472 | 0.1001642 | 3.0388613 | 20 | 1 | 33 days | 0.29 | | MPC | 2006 $TC_{32}$ |
| 2006 $TE_{32}$ | 16.5 | 0.15 | 20061012 | 14.33466 | 154.59367 | 210.46479 | 13.48766 | 0.2756923 | 3.9679206 | 24 | 1 | 46 days | 0.29 | | MPC | 2006 $TE_{32}$ |
| 2006 $TF_{32}$ | 16.7 | 0.15 | 20061012 | 15.66681 | 157.68141 | 210.72091 | 4.80678 | 0.1561961 | 2.9812728 | 44 | 1 | 57 days | 0.27 | | MPC | 2006 $TF_{32}$ |
| 2006 $TG_{32}$ | 16.2 | 0.15 | 20061012 | 270.18899 | 274.85480 | 210.27314 | 9.22627 | 0.0370785 | 2.9951243 | 24 | 1 | 33 days | 0.30 | | MPC | 2006 $TG_{32}$ |
| 2006 $TK_{32}$ | 17.9 | 0.15 | 20060922 | 12.21121 | 332.82688 | 29.94024 | 1.34393 | 0.2062172 | 2.6184116 | 36 | 1 | 63 days | 0.37 | M-v 4 | MPC | 2006 $TK_{32}$ |
| 2006 $TM_{32}$ | 17.5 | 0.15 | 20061012 | 335.40217 | 211.46778 | 210.34587 | 9.67995 | 0.1307370 | 2.7608240 | 20 | 1 | 45 days | 0.21 | | MPC | 2006 $TM_{32}$ |
| 2006 $TP_{32}$ | 17.8 | 0.15 | 20061012 | 311.42491 | 358.05937 | 95.66983 | 0.46385 | 0.1597362 | 2.5933899 | 24 | 1 | 33 days | 0.25 | | MPC | 2006 $TP_{32}$ |
| 2006 $TQ_{32}$ | 16.0 | 0.15 | 20061101 | 327.34194 | 239.70939 | 211.84082 | 13.62080 | 0.2763836 | 3.1805219 | 59 | 1 | 41 days | 0.43 | | MPC | 2006 $TQ_{32}$ |
| 2006 $TS_{32}$ | 19.1 | 0.15 | 20061101 | 19.94602 | 156.18355 | 210.19066 | 3.48340 | 0.1935472 | 2.2080154 | 38 | 1 | 41 days | 0.29 | | MPC | 2006 $TS_{32}$ |
| 2006 $TT_{32}$ | 18.2 | 0.15 | 20061012 | 19.92850 | 337.01785 | 26.97121 | 4.41387 | 0.1266394 | 2.6369793 | 13 | 1 | 17 days | 0.28 | | MPC | 2006 $TT_{32}$ |
| 2006 $TW_{32}$ | 17.0 | 0.15 | 20061012 | 359.13636 | 182.35730 | 209.50345 | 8.78647 | 0.1727039 | 3.1814784 | 26 | 1 | 48 days | 0.25 | | MPC | 2006 $TW_{32}$ |
| 2006 $TX_{32}$ | 17.7 | 0.15 | 20061012 | 1.13647 | 342.59323 | 45.71834 | 2.36307 | 0.1169057 | 2.7225195 | 37 | 1 | 59 days | 0.25 | | MPC | 2006 $TX_{32}$ |
| 2006 $TY_{32}$ | 16.9 | 0.15 | 20060922 | 295.94944 | 254.08323 | 204.40887 | 4.50069 | 0.0799339 | 2.7117323 | 33 | 1 | 63 days | 0.35 | M-v 4 | MPC | 2006 $TY_{32}$ |
| 2006 $TZ_{32}$ | 17.2 | 0.15 | 20061012 | 6.27274 | 350.22884 | 32.66619 | 10.86441 | 0.0915976 | 2.8435522 | 23 | 1 | 52 days | 0.23 | | MPC | 2006 $TZ_{32}$ |
| 2006 $TA_{33}$ | 15.8 | 0.15 | 20060922 | 214.88188 | 145.97551 | 32.66233 | 2.31165 | 0.0801501 | 2.9757996 | 24 | 1 | 60 days | 0.34 | M-v 5 | MPC | 2006 $TA_{33}$ |
| 2006 $TB_{33}$ | 17.2 | 0.15 | 20061012 | 324.33578 | 223.94829 | 206.33980 | 6.38381 | 0.0777045 | 2.2690586 | 37 | 1 | 56 days | 0.43 | | MPC | 2006 $TB_{33}$ |
| 2006 $TC_{33}$ | 16.0 | 0.15 | 20060922 | 324.81634 | 214.89540 | 210.31449 | 21.55810 | 0.0293521 | 3.1164547 | 16 | 1 | 26 days | 0.20 | | MPC | 2006 $TC_{33}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TD_{33}$ | 17.3 | 0.15 | 20061012 | 186.05417 | 171.05751 | 34.87359 | 10.08412 | 0.1334761 | 2.3304819 | 24 | 1 | 52 days | 0.34 | | | MPC | 2006 $TD_{33}$ |
| 2006 $TH_{33}$ | 17.1 | 0.15 | 20061012 | 317.54437 | 239.55411 | 200.64458 | 2.91152 | 0.0835905 | 2.7642538 | 35 | 1 | 50 days | 0.30 | | | MPC | 2006 $TH_{33}$ |
| 2006 $TL_{33}$ | 16.0 | 0.15 | 20061012 | 12.57997 | 325.66179 | 45.19863 | 3.69280 | 0.2378125 | 3.9409184 | 34 | 1 | 57 days | 0.30 | | | MPC | 2006 $TL_{33}$ |
| 2006 $TN_{33}$ | 17.0 | 0.15 | 20061012 | 345.97756 | 205.88290 | 208.71995 | 5.02559 | 0.2677044 | 3.0133578 | 40 | 1 | 44 days | 0.33 | | | MPC | 2006 $TN_{33}$ |
| 2006 $TO_{33}$ | 16.9 | 0.15 | 20061012 | 89.41477 | 248.60436 | 30.35720 | 8.89992 | 0.2078106 | 2.6900267 | 23 | 1 | 53 days | 0.30 | | | MPC | 2006 $TO_{33}$ |
| 2006 $TP_{33}$ | 16.0 | 0.15 | 20061012 | 74.46342 | 264.83999 | 33.82485 | 14.20981 | 0.1650163 | 3.1691141 | 28 | 1 | 58 days | 0.25 | | | MPC | 2006 $TP_{33}$ |
| 2006 $TQ_{33}$ | 18.8 | 0.15 | 20061012 | 315.17788 | 263.44393 | 209.38497 | 5.70177 | 0.3620871 | 2.3907548 | 22 | 1 | 29 days | 0.30 | | | MPC | 2006 $TQ_{33}$ |
| 2006 $TS_{33}$ | 16.7 | 0.15 | 20061012 | 301.86775 | 69.18166 | 33.51919 | 5.28951 | 0.1225671 | 3.0137300 | 31 | 1 | 50 days | 0.33 | | | MPC | 2006 $TS_{33}$ |
| 2006 $TT_{33}$ | 16.5 | 0.15 | 20061012 | 339.61417 | 208.52853 | 209.47770 | 16.03647 | 0.1364953 | 3.0383757 | 28 | 1 | 45 days | 0.26 | | | MPC | 2006 $TT_{33}$ |
| 2006 $TW_{33}$ | 15.9 | 0.15 | 20060922 | 219.62549 | 144.88321 | 34.56253 | 17.82584 | 0.1461826 | 3.0568417 | 29 | 1 | 62 days | 0.27 | M-v | 4 | MPC | 2006 $TW_{33}$ |
| 2006 $TX_{33}$ | 16.6 | 0.15 | 20061012 | 106.53511 | 75.40883 | 205.29587 | 4.87782 | 0.0402143 | 2.7875490 | 34 | 1 | 47 days | 0.29 | | | MPC | 2006 $TX_{33}$ |
| 2006 $TC_{34}$ | 17.1 | 0.15 | 20060922 | 6.76599 | 250.77384 | 112.04286 | 4.24833 | 0.1951197 | 2.6425278 | 21 | 1 | 32 days | 0.44 | | | MPC | 2006 $TC_{34}$ |
| 2006 $TH_{34}$ | 16.0 | 0.15 | 20061012 | 302.52373 | 91.69499 | 5.47373 | 3.71649 | 0.0420935 | 2.6681080 | 17 | 1 | 50 days | 0.45 | | | MPC | 2006 $TH_{34}$ |
| 2006 $TJ_{34}$ | 15.3 | 0.15 | 20061012 | 74.00229 | 94.07988 | 225.87040 | 11.01447 | 0.0264139 | 3.0884083 | 26 | 1 | 48 days | 0.39 | | | MPC | 2006 $TJ_{34}$ |
| 2006 $TK_{34}$ | 17.2 | 0.15 | 20061012 | 326.16928 | 62.72836 | 15.35696 | 4.01400 | 0.1314068 | 2.6486595 | 16 | 1 | 30 days | 0.17 | | | MPC | 2006 $TK_{34}$ |
| 2006 $TL_{34}$ | 18.8 | 0.15 | 20061101 | 2.07952 | 171.34160 | 225.55418 | 3.90525 | 0.1614462 | 2.2023580 | 23 | 1 | 40 days | 0.14 | | | MPC | 2006 $TL_{34}$ |
| 2006 $TN_{34}$ | 18.1 | 0.15 | 20061012 | 23.71025 | 135.75930 | 222.24863 | 4.79000 | 0.1725661 | 2.1981768 | 27 | 1 | 44 days | 0.53 | | | MPC | 2006 $TN_{34}$ |
| 2006 $TP_{34}$ | 16.9 | 0.15 | 20061101 | 142.38876 | 359.89095 | 251.99785 | 2.54682 | 0.0946754 | 2.4000215 | 23 | 1 | 46 days | 0.28 | | | MPC | 2006 $TP_{34}$ |
| 2006 $TS_{34}$ | 16.6 | 0.15 | 20061012 | 11.03426 | 356.28614 | 27.91592 | 6.76286 | 0.0358345 | 2.6945420 | 19 | 1 | 35 days | 0.15 | | | MPC | 2006 $TS_{34}$ |
| 2006 $TT_{34}$ | 18.0 | 0.15 | 20061012 | 306.56224 | 88.91886 | 25.52418 | 5.85538 | 0.2494703 | 2.4005215 | 24 | 1 | 51 days | 0.21 | | | MPC | 2006 $TT_{34}$ |
| 2006 $TU_{34}$ | 16.4 | 0.15 | 20061012 | 276.25871 | 108.79604 | 25.35162 | 6.01759 | 0.1207467 | 2.7013809 | 17 | 1 | 51 days | 0.32 | | | MPC | 2006 $TU_{34}$ |
| 2006 $TX_{34}$ | 17.4 | 0.15 | 20061012 | 319.11661 | 199.53760 | 243.30979 | 2.83147 | 0.0986645 | 2.2745223 | 32 | 1 | 58 days | 0.34 | | | MPC | 2006 $TX_{34}$ |
| 2006 $TY_{34}$ | 16.6 | 0.15 | 20061012 | 255.25771 | 134.34927 | 19.18289 | 5.71891 | 0.1085081 | 2.7067545 | 13 | 1 | 36 days | 0.66 | | | MPC | 2006 $TY_{34}$ |
| 2006 $TZ_{34}$ | 16.5 | 0.15 | 20060922 | 299.61545 | 86.66033 | 20.62237 | 4.96624 | 0.1532119 | 2.6040185 | 30 | 1 | 124 days | 0.30 | M-v | 4 | MPC | 2006 $TZ_{34}$ |
| 2006 $TA_{35}$ | 19.0 | 0.15 | 20061012 | 10.06242 | 0.55604 | 15.53378 | 3.51979 | 0.2381131 | 2.5565386 | 12 | 1 | 20 days | 0.18 | | | MPC | 2006 $TA_{35}$ |
| 2006 $TB_{35}$ | 17.4 | 0.15 | 20061012 | 320.03473 | 71.63009 | 11.64084 | 3.16179 | 0.0886667 | 2.7456471 | 18 | 1 | 20 days | 0.20 | | | MPC | 2006 $TB_{35}$ |
| 2006 $TF_{35}$ | 18.2 | 0.15 | 20061012 | 19.28620 | 339.58544 | 24.96685 | 6.89621 | 0.1857500 | 2.3370857 | 31 | 1 | 52 days | 0.20 | | | MPC | 2006 $TF_{35}$ |
| 2006 $TH_{35}$ | 16.1 | 0.15 | 20060922 | 304.50105 | 227.43506 | 237.48686 | 4.22037 | 0.1524266 | 3.1548626 | 27 | 1 | 60 days | 0.25 | M-v | 4 | MPC | 2006 $TH_{35}$ |
| 2006 $TJ_{35}$ | 16.8 | 0.15 | 20061101 | 22.53030 | 133.60517 | 238.55222 | 3.67285 | 0.1272511 | 2.7249283 | 25 | 1 | 46 days | 0.50 | | | MPC | 2006 $TJ_{35}$ |
| 2006 $TM_{35}$ | 17.7 | 0.15 | 20061012 | 16.64926 | 334.52556 | 28.30864 | 9.20745 | 0.3012851 | 3.0211955 | 21 | 1 | 59 days | 0.28 | | | MPC | 2006 $TM_{35}$ |
| 2006 $TO_{35}$ | 17.7 | 0.15 | 20061012 | 298.62367 | 112.47144 | 11.12271 | 2.18276 | 0.2338556 | 2.5913530 | 9 | 1 | 8 days | 0.21 | | | MPC | 2006 $TO_{35}$ |
| 2006 $TP_{35}$ | 17.9 | 0.15 | 20061012 | 313.44218 | 80.43426 | 13.13812 | 2.71558 | 0.1148478 | 2.7317275 | 15 | 1 | 20 days | 0.26 | | | MPC | 2006 $TP_{35}$ |
| 2006 $TR_{35}$ | 18.1 | 0.15 | 20061101 | 332.67299 | 70.87808 | 8.46387 | 2.57313 | 0.1684407 | 2.3697916 | 19 | 1 | 45 days | 0.22 | | | MPC | 2006 $TR_{35}$ |
| 2006 $TS_{35}$ | 16.0 | 0.15 | 20061012 | 24.46715 | 333.39334 | 31.19577 | 15.36200 | 0.1197881 | 2.5528465 | 49 | 1 | 56 days | 0.43 | | | MPC | 2006 $TS_{35}$ |
| 2006 $TU_{35}$ | 16.6 | 0.15 | 20061012 | 43.08797 | 323.80066 | 19.91655 | 4.43811 | 0.1221732 | 2.9072224 | 20 | 1 | 50 days | 0.18 | | | MPC | 2006 $TU_{35}$ |
| 2006 $TX_{35}$ | 16.3 | 0.15 | 20061012 | 292.37300 | 87.24771 | 29.52180 | 7.61189 | 0.1046308 | 2.7540140 | 13 | 1 | 36 days | 0.16 | | | MPC | 2006 $TX_{35}$ |
| 2006 $TZ_{35}$ | 17.8 | 0.15 | 20061012 | 9.39354 | 156.80039 | 222.68181 | 7.22759 | 0.2320832 | 2.7985073 | 17 | 1 | 30 days | 0.34 | | | MPC | 2006 $TZ_{35}$ |
| 2006 $TA_{36}$ | 16.7 | 0.15 | 20060922 | 256.80440 | 271.13549 | 232.20613 | 3.81063 | 0.0576702 | 2.7707576 | 27 | 1 | 61 days | 0.27 | M-v | 4 | MPC | 2006 $TA_{36}$ |
| 2006 $TB_{36}$ | 17.0 | 0.15 | 20061012 | 65.63553 | 291.34029 | 24.10837 | 3.04260 | 0.1422610 | 2.6288340 | 20 | 1 | 49 days | 0.24 | | | MPC | 2006 $TB_{36}$ |
| 2006 $TC_{36}$ | 17.8 | 0.15 | 20061101 | 325.51012 | 219.01586 | 230.52947 | 4.27982 | 0.1711939 | 2.4724053 | 24 | 1 | 46 days | 0.22 | | | MPC | 2006 $TC_{36}$ |
| 2006 $TD_{36}$ | 16.9 | 0.15 | 20061101 | 328.03596 | 202.82682 | 239.71620 | 2.84683 | 0.1224957 | 2.6626350 | 30 | 1 | 46 days | 0.45 | | | MPC | 2006 $TD_{36}$ |
| 2006 $TE_{36}$ | 16.9 | 0.15 | 20061012 | 88.90616 | 9.44334 | 277.53219 | 1.53641 | 0.1874917 | 2.3926265 | 17 | 1 | 46 days | 0.33 | | | MPC | 2006 $TE_{36}$ |
| 2006 $TF_{36}$ | 16.8 | 0.15 | 20060922 | 6.29031 | 157.36555 | 215.31885 | 14.88637 | 0.2915031 | 2.6479281 | 55 | 1 | 62 days | 0.54 | M-v | 4 | MPC | 2006 $TF_{36}$ |
| 2006 $TG_{36}$ | 16.2 | 0.15 | 20061012 | 198.22031 | 335.06297 | 225.88290 | 6.47332 | 0.0611081 | 2.3618994 | 30 | 1 | 58 days | 0.51 | | | MPC | 2006 $TG_{36}$ |
| 2006 $TK_{36}$ | 18.0 | 0.15 | 20061101 | 326.04014 | 179.85537 | 267.98086 | 1.38741 | 0.1533689 | 2.4135337 | 23 | 1 | 46 days | 0.27 | | | MPC | 2006 $TK_{36}$ |
| 2006 $TL_{36}$ | 16.0 | 0.15 | 20061012 | 296.06693 | 259.28252 | 223.30013 | 23.17856 | 0.1730872 | 3.1285540 | 31 | 1 | 46 days | 0.34 | | | MPC | 2006 $TL_{36}$ |
| 2006 $TM_{36}$ | 17.9 | 0.15 | 20061101 | 32.77904 | 120.36042 | 230.45740 | 1.19562 | 0.2265811 | 2.3611551 | 31 | 1 | 40 days | 0.41 | | | MPC | 2006 $TM_{36}$ |
| 2006 $TN_{36}$ | 17.5 | 0.15 | 20061012 | 34.70093 | 327.96947 | 27.05465 | 4.05913 | 0.1028369 | 2.6312501 | 23 | 1 | 51 days | 0.26 | | | MPC | 2006 $TN_{36}$ |
| 2006 $TO_{36}$ | 15.3 | 0.15 | 20061012 | 274.49701 | 115.85602 | 37.82490 | 17.33455 | 0.2377576 | 3.4344961 | 13 | 1 | 37 days | 0.66 | | | MPC | 2006 $TO_{36}$ |
| 2006 $TQ_{36}$ | 18.0 | 0.15 | 20061012 | 11.78529 | 49.29963 | 331.04035 | 1.22320 | 0.1509982 | 2.6483516 | 20 | 1 | 45 days | 0.31 | | | MPC | 2006 $TQ_{36}$ |
| 2006 $TU_{36}$ | 16.3 | 0.15 | 20061012 | 317.05123 | 224.73621 | 226.43675 | 9.48351 | 0.0994588 | 3.1293207 | 20 | 1 | 48 days | 0.51 | | | MPC | 2006 $TU_{36}$ |
| 2006 $TW_{36}$ | 17.8 | 0.15 | 20061012 | 331.34831 | 201.14528 | 230.81089 | 2.42823 | 0.1013659 | 2.5517959 | 16 | 1 | 29 days | 0.23 | | | MPC | 2006 $TW_{36}$ |
| 2006 $TZ_{36}$ | 17.0 | 0.15 | 20061101 | 165.74023 | 9.17163 | 226.05264 | 6.32296 | 0.0775714 | 2.3848301 | 19 | 1 | 40 days | 0.20 | | | MPC | 2006 $TZ_{36}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TA_{37}$ | 16.3 | 0.15 | 20061012 | 312.48365 | 58.69247 | 35.80184 | 10.79144 | 0.0757697 | 3.1366790 | 25 | 1 | 51 days | 0.22 | | MPC | 2006 $TA_{37}$ |
| 2006 $TC_{37}$ | 17.2 | 0.15 | 20061012 | 352.71697 | 189.56080 | 219.73007 | 17.49296 | 0.2295756 | 3.0447994 | 27 | 1 | 35 days | 0.22 | | MPC | 2006 $TC_{37}$ |
| 2006 $TD_{37}$ | 17.1 | 0.15 | 20061012 | 22.68089 | 318.11690 | 34.22233 | 14.39832 | 0.2755269 | 2.5999007 | 46 | 1 | 54 days | 0.53 | | MPC | 2006 $TD_{37}$ |
| 2006 $TF_{37}$ | 17.9 | 0.15 | 20061012 | 44.69492 | 44.79333 | 287.73153 | 0.97141 | 0.1944639 | 2.3383353 | 27 | 1 | 58 days | 0.23 | | MPC | 2006 $TF_{37}$ |
| 2006 $TH_{37}$ | 17.0 | 0.15 | 20061101 | 10.22452 | 150.23059 | 240.38418 | 1.86765 | 0.1066406 | 2.5859499 | 27 | 1 | 46 days | 0.42 | | MPC | 2006 $TH_{37}$ |
| 2006 $TJ_{37}$ | 18.2 | 0.15 | 20061012 | 249.08719 | 271.35294 | 243.49945 | 0.96908 | 0.0659880 | 2.1911954 | 19 | 1 | 31 days | 0.17 | | MPC | 2006 $TJ_{37}$ |
| 2006 $TN_{37}$ | 17.4 | 0.15 | 20061012 | 37.51650 | 323.52868 | 33.53202 | 6.96030 | 0.0659801 | 2.7490595 | 13 | 1 | 32 days | 0.37 | | MPC | 2006 $TN_{37}$ |
| 2006 $TO_{37}$ | 16.0 | 0.15 | 20061012 | 88.87958 | 65.86520 | 234.96835 | 3.88948 | 0.0926036 | 2.7689323 | 34 | 1 | 48 days | 0.40 | | MPC | 2006 $TO_{37}$ |
| 2006 $TP_{37}$ | 16.8 | 0.15 | 20061012 | 222.19226 | 329.92488 | 224.69578 | 4.76245 | 0.2557915 | 2.5179259 | 9 | 1 | 8 days | 0.59 | | MPC | 2006 $TP_{37}$ |
| 2006 $TQ_{37}$ | 16.3 | 0.15 | 20061101 | 20.40930 | 333.31277 | 35.50288 | 4.80454 | 0.2634157 | 3.1422602 | 40 | 1 | 40 days | 0.51 | | MPC | 2006 $TQ_{37}$ |
| 2006 $TR_{37}$ | 16.6 | 0.15 | 20061012 | 59.81844 | 282.71364 | 40.23796 | 6.40262 | 0.1640865 | 3.0423398 | 12 | 1 | 20 days | 0.10 | | MPC | 2006 $TR_{37}$ |
| 2006 $TS_{37}$ | 15.6 | 0.15 | 20061012 | 289.97688 | 284.13886 | 221.60602 | 23.61641 | 0.2966782 | 3.1255477 | 25 | 1 | 34 days | 0.40 | | MPC | 2006 $TS_{37}$ |
| 2006 $TW_{37}$ | 17.2 | 0.15 | 20061012 | 351.50624 | 178.74261 | 227.63811 | 0.66122 | 0.0567733 | 2.6383573 | 34 | 1 | 55 days | 0.22 | | MPC | 2006 $TW_{37}$ |
| 2006 $TZ_{37}$ | 16.9 | 0.15 | 20061012 | 27.94033 | 156.64554 | 206.36515 | 1.66502 | 0.1013910 | 2.7258713 | 22 | 1 | 20 days | 0.19 | | MPC | 2006 $TZ_{37}$ |
| 2006 $TB_{38}$ | 17.6 | 0.15 | 20061012 | 325.31191 | 73.42458 | 9.99611 | 0.29105 | 0.1615768 | 2.6085699 | 31 | 1 | 36 days | 0.24 | | MPC | 2006 $TB_{38}$ |
| 2006 $TC_{38}$ | 16.5 | 0.15 | 20061012 | 283.65826 | 76.08738 | 41.66679 | 2.71779 | 0.0154274 | 3.1508501 | 24 | 1 | 47 days | 0.34 | | MPC | 2006 $TC_{38}$ |
| 2006 $TE_{38}$ | 18.7 | 0.15 | 20061012 | 24.00105 | 148.97083 | 207.88895 | 1.57893 | 0.2196942 | 2.4745513 | 18 | 1 | 20 days | 0.18 | | MPC | 2006 $TE_{38}$ |
| 2006 $TG_{38}$ | 17.6 | 0.15 | 20061012 | 354.37239 | 356.88971 | 46.65014 | 2.47770 | 0.1566115 | 2.6233842 | 28 | 1 | 31 days | 0.29 | | MPC | 2006 $TG_{38}$ |
| 2006 $TH_{38}$ | 16.1 | 0.15 | 20061101 | 20.97740 | 313.82186 | 58.19060 | 1.73050 | 0.1868281 | 3.0976567 | 28 | 1 | 40 days | 0.47 | | MPC | 2006 $TH_{38}$ |
| 2006 $TJ_{38}$ | 17.3 | 0.15 | 20061012 | 135.48773 | 214.26955 | 38.98675 | 6.01704 | 0.1234067 | 2.3252751 | 13 | 1 | 15 days | 0.22 | | MPC | 2006 $TJ_{38}$ |
| 2006 $TK_{38}$ | 16.9 | 0.15 | 20061012 | 45.10892 | 280.73575 | 48.57703 | 2.26024 | 0.2393773 | 3.0988068 | 25 | 1 | 56 days | 0.36 | | MPC | 2006 $TK_{38}$ |
| 2006 $TL_{38}$ | 18.4 | 0.15 | 20061012 | 41.35662 | 92.86534 | 240.25190 | 0.66048 | 0.2283555 | 2.5481167 | 17 | 1 | 31 days | 0.35 | | MPC | 2006 $TL_{38}$ |
| 2006 $TM_{38}$ | 17.7 | 0.15 | 20061012 | 8.53494 | 175.10454 | 207.64174 | 4.11557 | 0.1752603 | 2.5248730 | 14 | 1 | 36 days | 0.22 | | MPC | 2006 $TM_{38}$ |
| 2006 $TN_{38}$ | 17.7 | 0.15 | 20061101 | 26.77760 | 316.77031 | 40.76998 | 4.29230 | 0.2512324 | 2.5615824 | 31 | 1 | 46 days | 0.35 | | MPC | 2006 $TN_{38}$ |
| 2006 $TO_{38}$ | 16.6 | 0.15 | 20061012 | 325.05643 | 237.49401 | 214.88058 | 7.42124 | 0.2282368 | 3.1894575 | 9 | 1 | 8 days | 0.61 | | MPC | 2006 $TO_{38}$ |
| 2006 $TP_{38}$ | 16.7 | 0.15 | 20061101 | 304.73237 | 77.43357 | 35.12196 | 4.50406 | 0.1393738 | 2.6222092 | 34 | 1 | 46 days | 0.51 | | MPC | 2006 $TP_{38}$ |
| 2006 $TS_{38}$ | 18.9 | 0.15 | 20061101 | 351.33798 | 9.91284 | 43.78571 | 3.11722 | 0.1521043 | 2.2125699 | 21 | 1 | 46 days | 0.20 | | MPC | 2006 $TS_{38}$ |
| 2006 $TT_{38}$ | 17.5 | 0.15 | 20061101 | 0.22373 | 358.29811 | 44.21272 | 3.05919 | 0.1522231 | 2.7947288 | 27 | 1 | 46 days | 0.21 | | MPC | 2006 $TT_{38}$ |
| 2006 $TV_{38}$ | 16.8 | 0.15 | 20060922 | 35.19855 | 290.28049 | 43.74891 | 4.08313 | 0.2383477 | 2.5888302 | 45 | 1 | 62 days | 0.38 | M-v 4 | MPC | 2006 $TV_{38}$ |
| 2006 $TW_{38}$ | 16.5 | 0.15 | 20061101 | 15.35632 | 335.61248 | 45.95128 | 2.25259 | 0.1691982 | 3.1211699 | 28 | 1 | 46 days | 0.39 | | MPC | 2006 $TW_{38}$ |
| 2006 $TY_{38}$ | 16.0 | 0.15 | 20061012 | 89.29846 | 244.22403 | 43.21488 | 6.24128 | 0.1927729 | 2.5476625 | 38 | 1 | 52 days | 0.48 | | MPC | 2006 $TY_{38}$ |
| 2006 $TB_{39}$ | 16.1 | 0.15 | 20060922 | 52.46459 | 273.16518 | 47.79459 | 3.73822 | 0.2072140 | 3.1062080 | 31 | 1 | 62 days | 0.21 | M-v 4 | MPC | 2006 $TB_{39}$ |
| 2006 $TE_{39}$ | 17.9 | 0.15 | 20060922 | 295.74282 | 87.84930 | 25.95977 | 1.91750 | 0.1867798 | 2.4015609 | 40 | 1 | 61 days | 0.31 | M-v 4 | MPC | 2006 $TE_{39}$ |
| 2006 $TG_{39}$ | 18.8 | 0.15 | 20061101 | 14.08445 | 349.50451 | 27.40612 | 2.62153 | 0.2420782 | 2.3661249 | 19 | 1 | 46 days | 0.14 | | MPC | 2006 $TG_{39}$ |
| 2006 $TH_{39}$ | 17.5 | 0.15 | 20061101 | 3.36130 | 33.19693 | 2.96279 | 0.42355 | 0.1189432 | 2.3276298 | 31 | 1 | 46 days | 0.37 | | MPC | 2006 $TH_{39}$ |
| 2006 $TJ_{39}$ | 16.0 | 0.15 | 20061012 | 54.41038 | 115.97096 | 218.39946 | 8.99513 | 0.0986093 | 3.5555758 | 21 | 1 | 32 days | 0.31 | | MPC | 2006 $TJ_{39}$ |
| 2006 $TK_{39}$ | 16.3 | 0.15 | 20061101 | 42.31196 | 315.94602 | 38.98595 | 2.49714 | 0.0504674 | 2.9701869 | 27 | 1 | 46 days | 0.26 | | MPC | 2006 $TK_{39}$ |
| 2006 $TL_{39}$ | 16.7 | 0.15 | 20060922 | 351.17904 | 53.61646 | 350.64009 | 0.29527 | 0.1824292 | 3.1908895 | 35 | 1 | 61 days | 0.48 | M-v 4 | MPC | 2006 $TL_{39}$ |
| 2006 $TM_{39}$ | 18.4 | 0.15 | 20061012 | 14.66477 | 145.67457 | 225.16888 | 0.55825 | 0.1761196 | 2.2160480 | 19 | 1 | 30 days | 0.27 | | MPC | 2006 $TM_{39}$ |
| 2006 $TN_{39}$ | 16.8 | 0.15 | 20061101 | 277.57634 | 120.88858 | 28.89874 | 3.80329 | 0.2282191 | 2.6488479 | 30 | 1 | 46 days | 0.25 | | MPC | 2006 $TN_{39}$ |
| 2006 $TO_{39}$ | 17.3 | 0.15 | 20061012 | 317.25676 | 59.14015 | 33.08301 | 13.81741 | 0.1582627 | 2.5573512 | 18 | 1 | 59 days | 0.14 | | MPC | 2006 $TO_{39}$ |
| 2006 $TQ_{39}$ | 18.5 | 0.15 | 20061101 | 54.26188 | 111.41826 | 221.62109 | 3.29708 | 0.1300743 | 2.1850838 | 23 | 1 | 40 days | 0.26 | | MPC | 2006 $TQ_{39}$ |
| 2006 $TR_{39}$ | 16.3 | 0.15 | 20060922 | 7.88473 | 339.82346 | 30.80389 | 1.22940 | 0.3243203 | 3.0746268 | 47 | 1 | 129 days | 0.45 | M-v 4 | MPC | 2006 $TR_{39}$ |
| 2006 $TS_{39}$ | 19.3 | 0.15 | 20061012 | 12.26751 | 340.12603 | 33.78898 | 5.64981 | 0.1819707 | 2.2003609 | 23 | 1 | 50 days | 0.23 | | MPC | 2006 $TS_{39}$ |
| 2006 $TU_{39}$ | 16.4 | 0.15 | 20060922 | 342.06768 | 23.64607 | 30.78163 | 2.05936 | 0.0712196 | 3.1009828 | 24 | 1 | 61 days | 0.26 | M-v 4 | MPC | 2006 $TU_{39}$ |
| 2006 $TW_{39}$ | 17.8 | 0.15 | 20061012 | 9.76092 | 177.56791 | 207.74559 | 1.39658 | 0.0843415 | 2.8704906 | 16 | 1 | 17 days | 0.25 | | MPC | 2006 $TW_{39}$ |
| 2006 $TX_{39}$ | 17.9 | 0.15 | 20061101 | 12.96899 | 345.74355 | 36.15256 | 2.89629 | 0.1846975 | 2.3555598 | 34 | 1 | 46 days | 0.41 | | MPC | 2006 $TX_{39}$ |
| 2006 $TY_{39}$ | 18.3 | 0.15 | 20060922 | 36.73944 | 46.05013 | 287.16352 | 0.45489 | 0.2024894 | 2.3607984 | 22 | 1 | 61 days | 0.26 | M-v 4 | MPC | 2006 $TY_{39}$ |
| 2006 $TZ_{39}$ | 16.8 | 0.15 | 20061012 | 310.41009 | 244.50287 | 216.16906 | 2.09594 | 0.1485468 | 2.7271102 | 26 | 1 | 30 days | 0.26 | | MPC | 2006 $TZ_{39}$ |
| 2006 $TA_{40}$ | 18.1 | 0.15 | 20061012 | 45.80502 | 119.14052 | 217.63342 | 7.66759 | 0.1320044 | 2.3407360 | 24 | 1 | 49 days | 0.38 | | MPC | 2006 $TA_{40}$ |
| 2006 $TB_{40}$ | 15.3 | 0.15 | 20060922 | 90.70452 | 260.01914 | 39.12402 | 9.67165 | 0.0494254 | 3.1663006 | 33 | 1 | 63 days | 0.28 | M-v 4 | MPC | 2006 $TB_{40}$ |
| 2006 $TC_{40}$ | 18.1 | 0.15 | 20061101 | 1.37287 | 6.74981 | 32.33522 | 5.33185 | 0.2599443 | 2.6651260 | 17 | 1 | 39 days | 0.25 | | MPC | 2006 $TC_{40}$ |
| 2006 $TD_{40}$ | 16.7 | 0.15 | 20061101 | 333.23019 | 50.21186 | 27.02636 | 1.19440 | 0.1359491 | 3.0952231 | 24 | 1 | 46 days | 0.29 | | MPC | 2006 $TD_{40}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TE_{40}$ | 17.2 | 0.15 | 20061012 | 17.68682 | 334.06916 | 33.90545 | 13.55806 | 0.2007897 | 2.6397732 | 20 | 1 | 58 days | 0.23 | | MPC | 2006 $TE_{40}$ |
| 2006 $TF_{40}$ | 16.5 | 0.15 | 20061101 | 15.58017 | 346.14482 | 34.84949 | 25.24713 | 0.1371731 | 2.5852062 | 28 | 1 | 41 days | 0.44 | | MPC | 2006 $TF_{40}$ |
| 2006 $TG_{40}$ | 16.8 | 0.15 | 20061012 | 309.24508 | 254.13194 | 211.30562 | 4.55869 | 0.1827720 | 2.6597719 | 29 | 1 | 55 days | 0.46 | | MPC | 2006 $TG_{40}$ |
| 2006 $TH_{40}$ | 16.0 | 0.15 | 20061012 | 228.73512 | 318.19429 | 220.13356 | 5.14150 | 0.0989710 | 3.0239992 | 28 | 1 | 58 days | 0.36 | | MPC | 2006 $TH_{40}$ |
| 2006 $TJ_{40}$ | 16.5 | 0.15 | 20061012 | 355.99033 | 187.20130 | 215.59583 | 9.20327 | 0.1837475 | 3.1527318 | 20 | 1 | 49 days | 0.28 | | MPC | 2006 $TJ_{40}$ |
| 2006 $TK_{40}$ | 17.1 | 0.15 | 20061101 | 43.77234 | 308.07904 | 39.70839 | 11.04790 | 0.1181321 | 2.9678614 | 20 | 1 | 40 days | 0.27 | | MPC | 2006 $TK_{40}$ |
| 2006 $TO_{40}$ | 18.0 | 0.15 | 20061012 | 324.57667 | 214.36302 | 223.40990 | 3.81908 | 0.1314463 | 2.2565626 | 20 | 1 | 55 days | 0.29 | | MPC | 2006 $TO_{40}$ |
| 2006 $TP_{40}$ | 16.5 | 0.15 | 20061012 | 308.22528 | 99.50330 | 3.98652 | 0.54776 | 0.1554254 | 3.1408204 | 21 | 1 | 48 days | 0.31 | | MPC | 2006 $TP_{40}$ |
| 2006 $TR_{40}$ | 16.9 | 0.15 | 20060922 | 66.17552 | 300.22591 | 13.78611 | 1.83639 | 0.0964773 | 2.6971733 | 26 | 1 | 61 days | 0.37 | M-v 4 | MPC | 2006 $TR_{40}$ |
| 2006 $TW_{40}$ | 19.5 | 0.15 | 20061012 | 355.94038 | 19.31838 | 17.90666 | 2.84601 | 0.2181320 | 2.2396633 | 19 | 1 | 36 days | 0.24 | | MPC | 2006 $TW_{40}$ |
| 2006 $TA_{41}$ | 17.1 | 0.15 | 20061012 | 314.63810 | 66.01380 | 31.03407 | 12.78539 | 0.1744432 | 2.6721453 | 25 | 1 | 55 days | 0.23 | | MPC | 2006 $TA_{41}$ |
| 2006 $TB_{41}$ | 16.1 | 0.15 | 20060922 | 178.88368 | 192.90351 | 21.82990 | 3.56749 | 0.0300458 | 2.9222603 | 27 | 1 | 61 days | 0.27 | M-v 4 | MPC | 2006 $TB_{41}$ |
| 2006 $TC_{41}$ | 18.6 | 0.15 | 20061101 | 23.57649 | 343.74628 | 16.95846 | 2.05197 | 0.2530467 | 2.5638207 | 24 | 1 | 46 days | 0.24 | | MPC | 2006 $TC_{41}$ |
| 2006 $TD_{41}$ | 17.2 | 0.15 | 20061012 | 356.79372 | 5.60674 | 35.00892 | 12.70166 | 0.1263034 | 3.1634149 | 23 | 1 | 53 days | 0.22 | | MPC | 2006 $TD_{41}$ |
| 2006 $TG_{41}$ | 17.8 | 0.15 | 20061012 | 244.51290 | 285.89877 | 241.73543 | 1.83572 | 0.1790410 | 2.2541121 | 9 | 1 | 8 days | 0.54 | | MPC | 2006 $TG_{41}$ |
| 2006 $TJ_{41}$ | 17.2 | 0.15 | 20061101 | 49.41409 | 340.68076 | 2.00732 | 1.61516 | 0.0938397 | 2.7292743 | 27 | 1 | 46 days | 0.35 | | MPC | 2006 $TJ_{41}$ |
| 2006 $TL_{41}$ | 17.1 | 0.15 | 20061101 | 334.84226 | 46.76945 | 30.36084 | 3.61835 | 0.1795920 | 2.9773685 | 20 | 1 | 46 days | 0.19 | | MPC | 2006 $TL_{41}$ |
| 2006 $TM_{41}$ | 16.4 | 0.15 | 20061012 | 280.45674 | 94.99645 | 36.32896 | 13.75643 | 0.1223862 | 3.0939043 | 11 | 1 | 8 days | 0.26 | | MPC | 2006 $TM_{41}$ |
| 2006 $TN_{41}$ | 18.0 | 0.15 | 20061012 | 0.37748 | 164.96678 | 217.37864 | 3.89931 | 0.2690171 | 2.5676872 | 49 | 1 | 40 days | 0.32 | | MPC | 2006 $TN_{41}$ |
| 2006 $TO_{41}$ | 18.8 | 0.15 | 20061012 | 7.84296 | 153.63009 | 216.85239 | 4.69671 | 0.1891121 | 2.2171400 | 25 | 1 | 38 days | 0.40 | | MPC | 2006 $TO_{41}$ |
| 2006 $TP_{41}$ | 17.8 | 0.15 | 20061012 | 335.13707 | 338.83388 | 82.08664 | 7.99158 | 0.2112471 | 2.3120907 | 24 | 1 | 36 days | 0.59 | | MPC | 2006 $TP_{41}$ |
| 2006 $TQ_{41}$ | 16.2 | 0.15 | 20060922 | 31.82988 | 286.59815 | 31.99915 | 9.45145 | 0.3016012 | 3.1146666 | 41 | 1 | 66 days | 0.41 | M-v 4 | MPC | 2006 $TQ_{41}$ |
| 2006 $TS_{41}$ | 16.4 | 0.15 | 20061012 | 353.41183 | 325.95194 | 65.20186 | 6.35456 | 0.1911736 | 3.1975036 | 22 | 1 | 54 days | 0.45 | | MPC | 2006 $TS_{41}$ |
| 2006 $TT_{41}$ | 16.4 | 0.15 | 20061012 | 246.98166 | 122.07414 | 38.83528 | 2.49902 | 0.0553212 | 2.9484021 | 23 | 1 | 31 days | 0.31 | | MPC | 2006 $TT_{41}$ |
| 2006 $TU_{41}$ | 16.8 | 0.15 | 20061012 | 312.87456 | 22.68879 | 66.34385 | 11.11074 | 0.2009194 | 2.6715957 | 29 | 1 | 32 days | 0.50 | | MPC | 2006 $TU_{41}$ |
| 2006 $TV_{41}$ | 17.5 | 0.15 | 20061101 | 69.50049 | 266.79667 | 47.41231 | 1.24663 | 0.1861897 | 2.5838508 | 20 | 1 | 40 days | 0.22 | | MPC | 2006 $TV_{41}$ |
| 2006 $TW_{41}$ | 19.2 | 0.15 | 20061101 | 354.96140 | 11.16321 | 40.33349 | 2.07335 | 0.1781159 | 2.3219383 | 17 | 1 | 39 days | 0.40 | | MPC | 2006 $TW_{41}$ |
| 2006 $TY_{41}$ | 17.0 | 0.15 | 20061012 | 319.54052 | 43.78459 | 39.44417 | 22.52330 | 0.0384457 | 2.6633875 | 21 | 1 | 53 days | 0.28 | | MPC | 2006 $TY_{41}$ |
| 2006 $TZ_{41}$ | 18.7 | 0.15 | 20061012 | 359.96101 | 0.54426 | 35.11499 | 3.84119 | 0.1940313 | 2.4110116 | 16 | 1 | 32 days | 0.32 | | MPC | 2006 $TZ_{41}$ |
| 2006 $TA_{42}$ | 16.8 | 0.15 | 20061101 | 83.15652 | 83.63776 | 224.36009 | 7.99753 | 0.1229209 | 2.9042029 | 23 | 1 | 40 days | 0.37 | | MPC | 2006 $TA_{42}$ |
| 2006 $TB_{42}$ | 16.2 | 0.15 | 20061012 | 21.39030 | 43.89037 | 332.05160 | 0.81362 | 0.0773627 | 2.9389709 | 24 | 1 | 36 days | 0.44 | | MPC | 2006 $TB_{42}$ |
| 2006 $TC_{42}$ | 17.1 | 0.15 | 20061012 | 14.45918 | 345.45419 | 37.92101 | 12.25082 | 0.0622869 | 2.6642443 | 21 | 1 | 50 days | 0.27 | | MPC | 2006 $TC_{42}$ |
| 2006 $TF_{42}$ | 17.7 | 0.15 | 20061012 | 30.64882 | 316.06863 | 32.46458 | 3.65944 | 0.2129751 | 2.2169514 | 33 | 1 | 57 days | 0.48 | | MPC | 2006 $TF_{42}$ |
| 2006 $TG_{42}$ | 17.7 | 0.15 | 20061101 | 55.83428 | 111.85674 | 222.63508 | 6.68418 | 0.1319048 | 2.2699025 | 24 | 1 | 43 days | 0.39 | | MPC | 2006 $TG_{42}$ |
| 2006 $TJ_{42}$ | 17.6 | 0.15 | 20061012 | 106.73922 | 252.64174 | 38.77040 | 4.26011 | 0.0178484 | 2.5290930 | 16 | 1 | 32 days | 0.24 | | MPC | 2006 $TJ_{42}$ |
| 2006 $TL_{42}$ | 17.0 | 0.15 | 20061101 | 266.52686 | 283.84189 | 223.26300 | 2.06266 | 0.0838325 | 2.1540002 | 44 | 1 | 46 days | 0.40 | | MPC | 2006 $TL_{42}$ |
| 2006 $TN_{42}$ | 16.0 | 0.15 | 20061012 | 331.26611 | 213.40961 | 222.47508 | 13.07367 | 0.1152188 | 2.7455429 | 42 | 1 | 56 days | 0.46 | | MPC | 2006 $TN_{42}$ |
| 2006 $TO_{42}$ | 18.2 | 0.15 | 20061101 | 46.44381 | 97.15477 | 236.29749 | 1.74457 | 0.2366285 | 2.3003960 | 21 | 1 | 40 days | 0.42 | | MPC | 2006 $TO_{42}$ |
| 2006 $TP_{42}$ | 16.6 | 0.15 | 20061101 | 81.42419 | 104.80723 | 217.30703 | 2.02698 | 0.0226053 | 3.0999278 | 17 | 1 | 40 days | 0.41 | | MPC | 2006 $TP_{42}$ |
| 2006 $TS_{42}$ | 15.6 | 0.15 | 20061012 | 296.75730 | 79.21007 | 43.10964 | 23.54475 | 0.1519016 | 3.1979892 | 12 | 1 | 8 days | 0.71 | | MPC | 2006 $TS_{42}$ |
| 2006 $TU_{42}$ | 16.4 | 0.15 | 20061012 | 356.48089 | 173.40015 | 231.55447 | 3.57704 | 0.0737794 | 2.7929160 | 24 | 1 | 32 days | 0.40 | | MPC | 2006 $TU_{42}$ |
| 2006 $TX_{42}$ | 18.3 | 0.15 | 20061101 | 39.57863 | 104.02156 | 220.57015 | 3.65221 | 0.3766902 | 2.3331782 | 26 | 1 | 43 days | 0.23 | | MPC | 2006 $TX_{42}$ |
| 2006 $TY_{42}$ | 16.7 | 0.15 | 20061012 | 311.95738 | 249.64812 | 220.58442 | 9.11102 | 0.2022840 | 3.1289104 | 30 | 1 | 36 days | 0.38 | | MPC | 2006 $TY_{42}$ |
| 2006 $TZ_{42}$ | 15.1 | 0.15 | 20061012 | 87.97927 | 68.19789 | 225.51150 | 21.79432 | 0.1963852 | 3.1705015 | 35 | 1 | 48 days | 0.36 | | MPC | 2006 $TZ_{42}$ |
| 2006 $TC_{43}$ | 17.7 | 0.15 | 20061012 | 49.21091 | 292.85047 | 35.27817 | 2.29012 | 0.2079196 | 2.4123296 | 26 | 1 | 32 days | 0.31 | | MPC | 2006 $TC_{43}$ |
| 2006 $TE_{43}$ | 17.7 | 0.15 | 20061012 | 30.59717 | 316.11490 | 38.99287 | 6.89137 | 0.1623359 | 2.2857790 | 25 | 1 | 32 days | 0.28 | | MPC | 2006 $TE_{43}$ |
| 2006 $TF_{43}$ | 16.7 | 0.15 | 20061012 | 28.73578 | 147.63762 | 221.82192 | 9.97358 | 0.0743362 | 3.0817240 | 25 | 1 | 20 days | 0.30 | | MPC | 2006 $TF_{43}$ |
| 2006 $TG_{43}$ | 16.5 | 0.15 | 20061101 | 48.19646 | 269.17740 | 65.41239 | 0.62407 | 0.2296926 | 3.0732486 | 29 | 1 | 40 days | 0.36 | | MPC | 2006 $TG_{43}$ |
| 2006 $TH_{43}$ | 17.5 | 0.15 | 20061012 | 354.10292 | 12.71369 | 34.31265 | 3.75579 | 0.1702342 | 2.5676904 | 32 | 1 | 53 days | 0.37 | | MPC | 2006 $TH_{43}$ |
| 2006 $TJ_{43}$ | 19.0 | 0.15 | 20061012 | 356.04303 | 186.40217 | 215.13816 | 5.85062 | 0.2555898 | 2.3211007 | 28 | 1 | 46 days | 0.21 | | MPC | 2006 $TJ_{43}$ |
| 2006 $TK_{43}$ | 16.3 | 0.15 | 20061012 | 66.11679 | 105.67826 | 221.61614 | 9.94229 | 0.0912946 | 3.1547125 | 22 | 1 | 37 days | 0.22 | | MPC | 2006 $TK_{43}$ |
| 2006 $TL_{43}$ | 16.1 | 0.15 | 20061101 | 328.64591 | 284.53997 | 164.26115 | 0.04444 | 0.1499340 | 3.1796656 | 43 | 1 | 40 days | 0.40 | | MPC | 2006 $TL_{43}$ |
| 2006 $TM_{43}$ | 17.0 | 0.15 | 20061101 | 77.43030 | 264.81778 | 47.95707 | 3.71229 | 0.1376684 | 2.6275438 | 27 | 1 | 39 days | 0.26 | | MPC | 2006 $TM_{43}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TN_{43}$ | 16.9 | 0.15 | 20061012 | 55.25002 | 123.78244 | 217.17534 | 4.67692 | 0.0531354 | 2.6575454 | 20 | 1 | 32 days | 0.37 | | | MPC | 2006 $TN_{43}$ |
| 2006 $TO_{43}$ | 17.3 | 0.15 | 20061012 | 351.25486 | 9.94050 | 41.11790 | 6.46785 | 0.0463375 | 2.6994272 | 13 | 1 | 31 days | 0.27 | | | MPC | 2006 $TO_{43}$ |
| 2006 $TP_{43}$ | 17.3 | 0.15 | 20061101 | 63.69896 | 294.34577 | 32.89824 | 2.05521 | 0.1391592 | 2.6828972 | 24 | 1 | 39 days | 0.26 | | | MPC | 2006 $TP_{43}$ |
| 2006 $TQ_{43}$ | 17.2 | 0.15 | 20061012 | 70.75541 | 285.18911 | 35.09798 | 3.15036 | 0.0929368 | 2.6039916 | 16 | 1 | 31 days | 0.24 | | | MPC | 2006 $TQ_{43}$ |
| 2006 $TR_{43}$ | 16.7 | 0.15 | 20061101 | 58.69333 | 290.35618 | 47.53333 | 1.84981 | 0.0898226 | 2.5398372 | 45 | 1 | 39 days | 0.60 | | D | MPC | 2006 $TR_{43}$ |
| 2006 $TV_{43}$ | 18.2 | 0.15 | 20061012 | 15.07058 | 170.69999 | 202.41584 | 0.38937 | 0.2106879 | 2.3530358 | 40 | 1 | 57 days | 0.41 | | | MPC | 2006 $TV_{43}$ |
| 2006 $TW_{43}$ | 16.5 | 0.15 | 20061101 | 11.50067 | 340.39014 | 49.32278 | 2.38226 | 0.1861465 | 3.0992485 | 28 | 1 | 40 days | 0.33 | | | MPC | 2006 $TW_{43}$ |
| 2006 $TX_{43}$ | 17.4 | 0.15 | 20060922 | 13.49253 | 149.79861 | 218.72438 | 2.58264 | 0.2277268 | 2.5453008 | 50 | 1 | 61 days | 0.41 | M-v | 4 | MPC | 2006 $TX_{43}$ |
| 2006 $TA_{44}$ | 16.4 | 0.15 | 20061012 | 93.85337 | 259.48869 | 40.11199 | 4.61591 | 0.0806459 | 2.6403797 | 23 | 1 | 36 days | 0.54 | | | MPC | 2006 $TA_{44}$ |
| 2006 $TE_{44}$ | 16.7 | 0.15 | 20061101 | 298.42988 | 273.64927 | 215.61292 | 2.14596 | 0.1898506 | 2.5799243 | 30 | 1 | 46 days | 0.26 | | | MPC | 2006 $TE_{44}$ |
| 2006 $TF_{44}$ | 17.0 | 0.15 | 20061012 | 40.22320 | 123.59109 | 212.88492 | 1.50709 | 0.2458592 | 2.5783943 | 32 | 1 | 37 days | 0.34 | | | MPC | 2006 $TF_{44}$ |
| 2006 $TG_{44}$ | 18.6 | 0.15 | 20061012 | 9.52031 | 338.10060 | 42.78056 | 3.52755 | 0.2251956 | 2.3230705 | 27 | 1 | 47 days | 0.21 | | | MPC | 2006 $TG_{44}$ |
| 2006 $TH_{44}$ | 16.7 | 0.15 | 20061101 | 178.64409 | 10.08707 | 217.91890 | 2.50252 | 0.1281685 | 2.2497348 | 29 | 1 | 46 days | 0.59 | | | MPC | 2006 $TH_{44}$ |
| 2006 $TJ_{44}$ | 17.8 | 0.15 | 20061012 | 356.33884 | 357.27882 | 47.71680 | 2.20724 | 0.1980412 | 2.6277932 | 28 | 1 | 57 days | 0.25 | | | MPC | 2006 $TJ_{44}$ |
| 2006 $TL_{44}$ | 16.3 | 0.15 | 20061101 | 309.04672 | 240.45711 | 226.24713 | 7.79789 | 0.0765275 | 3.0351287 | 21 | 1 | 40 days | 0.23 | | | MPC | 2006 $TL_{44}$ |
| 2006 $TN_{44}$ | 15.6 | 0.15 | 20061012 | 61.24377 | 281.38215 | 45.82266 | 26.46549 | 0.1496094 | 3.1658556 | 23 | 1 | 51 days | 0.28 | | | MPC | 2006 $TN_{44}$ |
| 2006 $TO_{44}$ | 16.3 | 0.15 | 20061101 | 53.37638 | 141.54100 | 197.55432 | 0.55338 | 0.1580690 | 3.2381007 | 25 | 1 | 40 days | 0.20 | | | MPC | 2006 $TO_{44}$ |
| 2006 $TP_{44}$ | 17.9 | 0.15 | 20061012 | 41.84753 | 286.55614 | 45.36967 | 3.66581 | 0.2555381 | 2.3281978 | 22 | 1 | 30 days | 0.36 | | | MPC | 2006 $TP_{44}$ |
| 2006 $TQ_{44}$ | 18.0 | 0.15 | 20060922 | 24.13240 | 319.57233 | 37.64742 | 1.95572 | 0.1731726 | 2.3266623 | 33 | 1 | 63 days | 0.41 | M-v | 5 | MPC | 2006 $TQ_{44}$ |
| 2006 $TR_{44}$ | 17.2 | 0.15 | 20061101 | 334.74653 | 33.23556 | 43.23963 | 3.36465 | 0.0666052 | 2.6304911 | 21 | 1 | 46 days | 0.34 | | | MPC | 2006 $TR_{44}$ |
| 2006 $TS_{44}$ | 17.8 | 0.15 | 20060922 | 322.73868 | 42.90518 | 42.01736 | 4.62306 | 0.1864041 | 2.3721598 | 46 | 1 | 62 days | 0.45 | M-v | 4 | MPC | 2006 $TS_{44}$ |
| 2006 $TV_{44}$ | 17.0 | 0.15 | 20061101 | 77.10139 | 98.10106 | 223.01707 | 2.78099 | 0.0873283 | 2.6547232 | 21 | 1 | 40 days | 0.29 | | | MPC | 2006 $TV_{44}$ |
| 2006 $TW_{44}$ | 17.2 | 0.15 | 20061012 | 12.38950 | 166.62107 | 214.72914 | 6.04516 | 0.2008429 | 2.6421650 | 23 | 1 | 54 days | 0.48 | | | MPC | 2006 $TW_{44}$ |
| 2006 $TZ_{44}$ | 16.7 | 0.15 | 20061012 | 274.55891 | 101.06043 | 46.70587 | 24.24617 | 0.1742865 | 2.7016515 | 27 | 1 | 43 days | 0.25 | | | MPC | 2006 $TZ_{44}$ |
| 2006 $TA_{45}$ | 18.4 | 0.15 | 20061101 | 23.46093 | 314.95531 | 53.47532 | 2.83235 | 0.2232706 | 2.4183419 | 31 | 1 | 40 days | 0.36 | | | MPC | 2006 $TA_{45}$ |
| 2006 $TB_{45}$ | 18.8 | 0.15 | 20061012 | 358.60670 | 244.02058 | 155.55134 | 1.46741 | 0.1806985 | 2.3714686 | 22 | 1 | 31 days | 0.24 | | | MPC | 2006 $TB_{45}$ |
| 2006 $TC_{45}$ | 17.1 | 0.15 | 20061012 | 41.83814 | 291.10550 | 54.75323 | 6.61125 | 0.1647490 | 2.9256714 | 9 | 1 | 8 days | 0.48 | | | MPC | 2006 $TC_{45}$ |
| 2006 $TE_{45}$ | 17.3 | 0.15 | 20061012 | 19.07784 | 266.44955 | 113.22235 | 1.46263 | 0.0603917 | 2.5214914 | 20 | 1 | 36 days | 0.23 | | | MPC | 2006 $TE_{45}$ |
| 2006 $TH_{45}$ | 16.2 | 0.15 | 20061012 | 3.20804 | 274.61719 | 123.51773 | 1.87619 | 0.1785634 | 3.2095320 | 24 | 1 | 36 days | 0.58 | | | MPC | 2006 $TH_{45}$ |
| 2006 $TM_{45}$ | 16.9 | 0.15 | 20061012 | 357.44336 | 328.49651 | 78.00631 | 2.47963 | 0.1867725 | 3.1557774 | 17 | 1 | 36 days | 0.41 | | | MPC | 2006 $TM_{45}$ |
| 2006 $TN_{45}$ | 16.7 | 0.15 | 20061012 | 2.73825 | 207.14615 | 188.51318 | 1.88551 | 0.2083755 | 2.6960852 | 40 | 1 | 53 days | 0.45 | | | MPC | 2006 $TN_{45}$ |
| 2006 $TP_{45}$ | 17.2 | 0.15 | 20061012 | 11.01659 | 170.89224 | 213.66155 | 8.21747 | 0.1680646 | 2.5696710 | 17 | 1 | 52 days | 0.37 | | | MPC | 2006 $TP_{45}$ |
| 2006 $TQ_{45}$ | 17.8 | 0.15 | 20061012 | 54.41625 | 271.42572 | 47.09218 | 11.92476 | 0.2438568 | 2.3159894 | 26 | 1 | 42 days | 0.22 | | | MPC | 2006 $TQ_{45}$ |
| 2006 $TR_{45}$ | 16.6 | 0.15 | 20061012 | 306.93351 | 259.92985 | 206.10780 | 4.39100 | 0.1015025 | 2.6901447 | 19 | 1 | 36 days | 0.30 | | | MPC | 2006 $TR_{45}$ |
| 2006 $TS_{45}$ | 16.3 | 0.15 | 20061012 | 28.89346 | 317.58639 | 46.85082 | 10.39744 | 0.1289838 | 3.1023113 | 31 | 1 | 32 days | 0.37 | | | MPC | 2006 $TS_{45}$ |
| 2006 $TT_{45}$ | 17.7 | 0.15 | 20061101 | 33.20903 | 156.53928 | 200.36556 | 1.72031 | 0.1827562 | 2.2488819 | 38 | 1 | 46 days | 0.37 | | | MPC | 2006 $TT_{45}$ |
| 2006 $TU_{45}$ | 16.2 | 0.15 | 20061012 | 1.29405 | 353.08222 | 45.12796 | 13.84454 | 0.0799688 | 2.6090480 | 42 | 1 | 50 days | 0.53 | | | MPC | 2006 $TU_{45}$ |
| 2006 $TB_{46}$ | 16.1 | 0.15 | 20061012 | 56.45283 | 267.98992 | 44.82434 | 11.41850 | 0.2768053 | 2.6448763 | 36 | 1 | 49 days | 0.33 | | | MPC | 2006 $TB_{46}$ |
| 2006 $TC_{46}$ | 18.1 | 0.15 | 20061012 | 28.97098 | 247.92046 | 105.76591 | 1.52313 | 0.2172015 | 2.5700232 | 16 | 1 | 31 days | 0.18 | | | MPC | 2006 $TC_{46}$ |
| 2006 $TD_{46}$ | 17.6 | 0.15 | 20061012 | 8.77652 | 318.25685 | 72.03735 | 3.01173 | 0.1060214 | 2.8858677 | 16 | 1 | 32 days | 0.36 | | | MPC | 2006 $TD_{46}$ |
| 2006 $TE_{46}$ | 15.9 | 0.15 | 20061012 | 304.38085 | 252.60751 | 220.67733 | 21.06911 | 0.1401003 | 3.1147042 | 13 | 1 | 36 days | 0.20 | | | MPC | 2006 $TE_{46}$ |
| 2006 $TJ_{46}$ | 17.9 | 0.15 | 20061012 | 324.97886 | 244.41464 | 197.46118 | 2.58220 | 0.1184339 | 2.2598293 | 22 | 1 | 37 days | 0.46 | | | MPC | 2006 $TJ_{46}$ |
| 2006 $TL_{46}$ | 16.7 | 0.15 | 20061101 | 19.49514 | 172.45781 | 210.43492 | 5.49979 | 0.1036297 | 2.9346282 | 13 | 1 | 43 days | 0.41 | | | MPC | 2006 $TL_{46}$ |
| 2006 $TM_{46}$ | 18.6 | 0.15 | 20061012 | 17.65628 | 204.30820 | 166.18349 | 1.29204 | 0.1972344 | 2.3521323 | 23 | 1 | 44 days | 0.26 | | | MPC | 2006 $TM_{46}$ |
| 2006 $TN_{46}$ | 16.7 | 0.15 | 20061101 | 63.53769 | 277.61752 | 52.79182 | 5.78114 | 0.1162808 | 2.7243052 | 32 | 1 | 40 days | 0.44 | | | MPC | 2006 $TN_{46}$ |
| 2006 $TO_{46}$ | 16.2 | 0.15 | 20061101 | 341.00107 | 7.09313 | 60.72704 | 5.29852 | 0.0552965 | 2.7791939 | 25 | 1 | 45 days | 0.46 | | | MPC | 2006 $TO_{46}$ |
| 2006 $TP_{46}$ | 16.6 | 0.15 | 20061012 | 40.18903 | 311.88009 | 46.73980 | 12.54369 | 0.0316115 | 2.5546334 | 36 | 1 | 48 days | 0.40 | | | MPC | 2006 $TP_{46}$ |
| 2006 $TR_{46}$ | 16.8 | 0.15 | 20061012 | 349.86499 | 355.46366 | 57.61981 | 6.09308 | 0.0510150 | 2.7506496 | 23 | 1 | 32 days | 0.45 | | | MPC | 2006 $TR_{46}$ |
| 2006 $TS_{46}$ | 17.1 | 0.15 | 20061012 | 0.69484 | 354.48975 | 41.94580 | 5.93289 | 0.1706345 | 2.6666391 | 26 | 1 | 36 days | 0.32 | | | MPC | 2006 $TS_{46}$ |
| 2006 $TU_{46}$ | 17.2 | 0.15 | 20061012 | 123.45020 | 196.02453 | 62.89026 | 1.46003 | 0.2039075 | 2.1977316 | 9 | 1 | 20 days | 0.29 | | | MPC | 2006 $TU_{46}$ |
| 2006 $TW_{46}$ | 16.3 | 0.15 | 20061012 | 307.63554 | 70.14085 | 43.39762 | 16.43041 | 0.1952749 | 3.1258214 | 22 | 1 | 33 days | 0.30 | | | MPC | 2006 $TW_{46}$ |
| 2006 $TY_{46}$ | 18.3 | 0.15 | 20061012 | 8.25664 | 339.10128 | 43.46638 | 3.32522 | 0.1954488 | 2.3181061 | 37 | 1 | 52 days | 0.42 | | | MPC | 2006 $TY_{46}$ |
| 2006 $TZ_{46}$ | 16.5 | 0.15 | 20061101 | 59.56817 | 120.98848 | 206.79775 | 1.37702 | 0.1594248 | 2.6574719 | 37 | 1 | 40 days | 0.39 | | | MPC | 2006 $TZ_{46}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TD_{47}$ | 17.9 | 0.15 | 20061101 | 45.76295 | 292.68216 | 54.04506 | 3.84209 | 0.1291010 | 2.5237382 | 29 | 1 | 41 days | 0.34 | | | MPC | 2006 $TD_{47}$ |
| 2006 $TE_{47}$ | 17.0 | 0.15 | 20061012 | 344.36106 | 8.84350 | 50.13758 | 4.39835 | 0.0905923 | 2.8161371 | 17 | 1 | 30 days | 0.27 | | | MPC | 2006 $TE_{47}$ |
| 2006 $TG_{47}$ | 18.0 | 0.15 | 20061012 | 14.27552 | 326.36448 | 52.49397 | 1.43561 | 0.1470271 | 2.5561106 | 17 | 1 | 30 days | 0.25 | | | MPC | 2006 $TG_{47}$ |
| 2006 $TH_{47}$ | 18.2 | 0.15 | 20061012 | 341.36468 | 218.96431 | 201.23320 | 3.31559 | 0.1297202 | 2.2003922 | 27 | 1 | 36 days | 0.42 | | | MPC | 2006 $TH_{47}$ |
| 2006 $TK_{47}$ | 15.5 | 0.15 | 20061101 | 263.92885 | 98.49456 | 49.60926 | 9.06919 | 0.0523968 | 3.1147877 | 27 | 1 | 46 days | 0.44 | | | MPC | 2006 $TK_{47}$ |
| 2006 $TL_{47}$ | 17.1 | 0.15 | 20061101 | 96.66299 | 227.77060 | 69.47452 | 1.00014 | 0.1013388 | 2.5534502 | 21 | 1 | 40 days | 0.24 | | | MPC | 2006 $TL_{47}$ |
| 2006 $TM_{47}$ | 17.5 | 0.15 | 20061012 | 329.81567 | 33.35026 | 43.70069 | 5.48370 | 0.1231390 | 2.5258290 | 24 | 1 | 36 days | 0.51 | | | MPC | 2006 $TM_{47}$ |
| 2006 $TN_{47}$ | 16.9 | 0.15 | 20061012 | 5.57101 | 347.20654 | 44.76605 | 10.34296 | 0.1766741 | 3.0504608 | 25 | 1 | 47 days | 0.34 | | | MPC | 2006 $TN_{47}$ |
| 2006 $TO_{47}$ | 16.7 | 0.15 | 20061012 | 293.36107 | 266.22331 | 216.38495 | 8.35482 | 0.1223985 | 3.1110881 | 17 | 1 | 31 days | 0.30 | | | MPC | 2006 $TO_{47}$ |
| 2006 $TT_{47}$ | 16.7 | 0.15 | 20061012 | 125.61725 | 208.97961 | 49.31033 | 3.58287 | 0.1839789 | 2.3751320 | 31 | 1 | 56 days | 0.37 | | | MPC | 2006 $TT_{47}$ |
| 2006 $TV_{47}$ | 17.7 | 0.15 | 20061012 | 315.91921 | 251.98627 | 202.17322 | 1.73849 | 0.1506151 | 2.4085098 | 26 | 1 | 32 days | 0.27 | | | MPC | 2006 $TV_{47}$ |
| 2006 $TW_{47}$ | 16.6 | 0.15 | 20061012 | 41.78445 | 311.44191 | 39.28212 | 15.30517 | 0.0735481 | 2.6754601 | 37 | 1 | 57 days | 0.40 | | | MPC | 2006 $TW_{47}$ |
| 2006 $TX_{47}$ | 17.6 | 0.15 | 20061101 | 30.46926 | 315.78887 | 44.55554 | 2.50621 | 0.1687964 | 2.4232457 | 23 | 1 | 46 days | 0.29 | | | MPC | 2006 $TX_{47}$ |
| 2006 $TY_{47}$ | 17.3 | 0.15 | 20061101 | 16.44834 | 335.81957 | 48.99064 | 3.86331 | 0.0601285 | 2.6567230 | 20 | 1 | 46 days | 0.25 | | | MPC | 2006 $TY_{47}$ |
| 2006 $TZ_{47}$ | 17.2 | 0.15 | 20061012 | 318.69163 | 52.64427 | 42.28725 | 5.31622 | 0.1626228 | 3.0140595 | 20 | 1 | 32 days | 0.21 | | | MPC | 2006 $TZ_{47}$ |
| 2006 $TB_{48}$ | 15.1 | 0.15 | 20061101 | 35.58990 | 145.61327 | 217.17111 | 15.34423 | 0.0803789 | 3.0415150 | 36 | 1 | 39 days | 0.33 | | | MPC | 2006 $TB_{48}$ |
| 2006 $TC_{48}$ | 16.1 | 0.15 | 20061101 | 17.01274 | 330.63831 | 52.57283 | 3.38097 | 0.1070206 | 3.2251387 | 42 | 1 | 41 days | 0.28 | | | MPC | 2006 $TC_{48}$ |
| 2006 $TE_{48}$ | 16.4 | 0.15 | 20061101 | 62.38895 | 275.60953 | 47.30457 | 2.05862 | 0.1731584 | 3.1587004 | 32 | 1 | 40 days | 0.22 | | | MPC | 2006 $TE_{48}$ |
| 2006 $TH_{48}$ | 17.8 | 0.15 | 20061101 | 323.21346 | 259.47026 | 192.53523 | 0.90791 | 0.1494345 | 2.4074607 | 30 | 1 | 46 days | 0.35 | | | MPC | 2006 $TH_{48}$ |
| 2006 $TM_{48}$ | 16.4 | 0.15 | 20061101 | 20.92329 | 310.40871 | 65.76587 | 2.38531 | 0.1431440 | 3.0308114 | 45 | 1 | 42 days | 0.32 | | | MPC | 2006 $TM_{48}$ |
| 2006 $TN_{48}$ | 16.8 | 0.15 | 20061012 | 214.10452 | 351.38559 | 201.16458 | 3.24886 | 0.1086447 | 2.6443272 | 19 | 1 | 34 days | 0.28 | | | MPC | 2006 $TN_{48}$ |
| 2006 $TO_{48}$ | 17.5 | 0.15 | 20061012 | 46.07242 | 289.57673 | 49.50641 | 5.24131 | 0.1415869 | 2.6798980 | 21 | 1 | 46 days | 0.32 | | | MPC | 2006 $TO_{48}$ |
| 2006 $TQ_{48}$ | 18.4 | 0.15 | 20061012 | 348.98426 | 5.01036 | 45.97562 | 3.48241 | 0.1909461 | 2.3127141 | 35 | 1 | 48 days | 0.22 | | | MPC | 2006 $TQ_{48}$ |
| 2006 $TR_{48}$ | 18.2 | 0.15 | 20061012 | 40.21784 | 287.52904 | 39.32156 | 7.59772 | 0.2879494 | 2.3403569 | 20 | 1 | 36 days | 0.28 | | | MPC | 2006 $TR_{48}$ |
| 2006 $TS_{48}$ | 17.6 | 0.15 | 20061012 | 38.31367 | 305.38337 | 40.28612 | 15.56205 | 0.1595042 | 2.5393825 | 24 | 1 | 49 days | 0.22 | | | MPC | 2006 $TS_{48}$ |
| 2006 $TT_{48}$ | 17.8 | 0.15 | 20061101 | 9.66761 | 181.15002 | 208.43439 | 2.79885 | 0.1751413 | 2.5665011 | 32 | 1 | 43 days | 0.38 | | | MPC | 2006 $TT_{48}$ |
| 2006 $TW_{48}$ | 17.9 | 0.15 | 20061012 | 39.13707 | 108.83866 | 214.81447 | 9.30478 | 0.3290604 | 2.4103826 | 16 | 1 | 49 days | 0.30 | | | MPC | 2006 $TW_{48}$ |
| 2006 $TX_{48}$ | 17.2 | 0.15 | 20061012 | 27.06447 | 315.33196 | 44.67119 | 8.65874 | 0.1924450 | 3.1584852 | 13 | 1 | 31 days | 0.77 | | | MPC | 2006 $TX_{48}$ |
| 2006 $TY_{48}$ | 17.7 | 0.15 | 20060922 | 44.78775 | 278.08847 | 41.76541 | 4.49989 | 0.2411685 | 2.2579142 | 41 | 1 | 62 days | 0.43 | M-v | 4 | MPC | 2006 $TY_{48}$ |
| 2006 $TZ_{48}$ | 15.9 | 0.15 | 20061012 | 9.37287 | 8.70212 | 12.50035 | 11.21145 | 0.1180677 | 3.0194176 | 30 | 1 | 41 days | 0.51 | | | MPC | 2006 $TZ_{48}$ |
| 2006 $TA_{49}$ | 16.5 | 0.15 | 20061012 | 27.49196 | 122.73079 | 231.27012 | 11.88094 | 0.1627654 | 2.6873945 | 38 | 1 | 49 days | 0.39 | | | MPC | 2006 $TA_{49}$ |
| 2006 $TE_{49}$ | 16.7 | 0.15 | 20060922 | 339.32875 | 191.82622 | 215.31073 | 2.55255 | 0.0962258 | 2.6142399 | 56 | 1 | 62 days | 0.40 | M-v | 4 | MPC | 2006 $TE_{49}$ |
| 2006 $TG_{49}$ | 16.6 | 0.15 | 20061101 | 9.32430 | 18.93964 | 0.12102 | 2.26835 | 0.2356415 | 3.1863642 | 39 | 1 | 40 days | 0.44 | | | MPC | 2006 $TG_{49}$ |
| 2006 $TO_{49}$ | 16.8 | 0.15 | 20061101 | 31.23659 | 133.51603 | 222.43794 | 2.75345 | 0.0980106 | 2.6771963 | 32 | 1 | 42 days | 0.24 | | | MPC | 2006 $TO_{49}$ |
| 2006 $TQ_{49}$ | 16.3 | 0.15 | 20061012 | 327.68434 | 233.12262 | 203.69793 | 14.47137 | 0.1932548 | 3.0932191 | 35 | 1 | 57 days | 0.31 | | | MPC | 2006 $TQ_{49}$ |
| 2006 $TS_{49}$ | 16.5 | 0.15 | 20061012 | 90.79441 | 216.12207 | 67.15031 | 2.70345 | 0.1176714 | 2.5442839 | 42 | 1 | 51 days | 0.28 | | | MPC | 2006 $TS_{49}$ |
| 2006 $TW_{49}$ | 16.3 | 0.15 | 20061012 | 0.42796 | 345.34932 | 42.57876 | 11.30657 | 0.2238920 | 3.1505042 | 50 | 1 | 56 days | 0.38 | | | MPC | 2006 $TW_{49}$ |
| 2006 $TY_{49}$ | 17.0 | 0.15 | 20061012 | 6.11107 | 333.60510 | 43.83941 | 16.82639 | 0.1718155 | 2.5903287 | 21 | 1 | 37 days | 0.45 | | | MPC | 2006 $TY_{49}$ |
| 2006 $TB_{50}$ | 17.5 | 0.15 | 20061012 | 4.35337 | 23.50341 | 0.37740 | 4.40851 | 0.2524220 | 2.5792870 | 30 | 1 | 52 days | 0.29 | | | MPC | 2006 $TB_{50}$ |
| 2006 $TC_{50}$ | 17.1 | 0.15 | 20061101 | 357.52669 | 62.79434 | 341.45073 | 3.79847 | 0.1990944 | 2.6351364 | 31 | 1 | 42 days | 0.41 | | | MPC | 2006 $TC_{50}$ |
| 2006 $TD_{50}$ | 17.6 | 0.15 | 20061012 | 357.03180 | 16.45128 | 21.23081 | 13.21157 | 0.2890197 | 2.6429767 | 23 | 1 | 55 days | 0.54 | | | MPC | 2006 $TD_{50}$ |
| 2006 $TF_{50}$ | 16.7 | 0.15 | 20061012 | 53.34051 | 240.56361 | 82.15265 | 6.06821 | 0.1305025 | 2.3183331 | 26 | 1 | 53 days | 0.54 | | | MPC | 2006 $TF_{50}$ |
| 2006 $TJ_{50}$ | 18.0 | 0.15 | 20061101 | 30.71442 | 296.44335 | 45.75789 | 16.14984 | 0.2932548 | 2.4071513 | 21 | 1 | 47 days | 0.37 | | | MPC | 2006 $TJ_{50}$ |
| 2006 $TL_{50}$ | 17.5 | 0.15 | 20061012 | 14.87494 | 262.30288 | 118.51874 | 0.59647 | 0.1471857 | 2.5660865 | 41 | 1 | 57 days | 0.27 | | | MPC | 2006 $TL_{50}$ |
| 2006 $TM_{50}$ | 15.6 | 0.15 | 20061101 | 62.95395 | 265.20294 | 57.11360 | 3.16422 | 0.2009507 | 2.6405515 | 79 | 1 | 46 days | 0.46 | | | MPC | 2006 $TM_{50}$ |
| 2006 $TO_{50}$ | 17.9 | 0.15 | 20061101 | 13.41854 | 339.24431 | 39.46606 | 7.51954 | 0.3283788 | 2.6044383 | 32 | 1 | 41 days | 0.40 | | E | MPC | 2006 $TO_{50}$ |
| 2006 $TP_{50}$ | 16.7 | 0.15 | 20061101 | 83.93053 | 192.59835 | 120.58681 | 0.62806 | 0.1066839 | 3.0029730 | 37 | 1 | 40 days | 0.36 | | | MPC | 2006 $TP_{50}$ |
| 2006 $TR_{50}$ | 18.0 | 0.15 | 20061101 | 9.78629 | 343.04907 | 46.48021 | 5.66707 | 0.2605128 | 2.5427055 | 29 | 1 | 43 days | 0.47 | | | MPC | 2006 $TR_{50}$ |
| 2006 $TS_{50}$ | 18.2 | 0.15 | 20061012 | 6.88935 | 166.50876 | 214.72538 | 9.31165 | 0.3108261 | 2.3288170 | 65 | 1 | 59 days | 0.50 | | | MPC | 2006 $TS_{50}$ |
| 2006 $TT_{50}$ | 18.0 | 0.15 | 20061012 | 2.62729 | 348.29595 | 48.40582 | 2.85908 | 0.2062356 | 2.6876894 | 24 | 1 | 48 days | 0.43 | | | MPC | 2006 $TT_{50}$ |
| 2006 $TU_{50}$ | 16.7 | 0.15 | 20061101 | 58.00391 | 124.60056 | 220.74820 | 1.40051 | 0.0601712 | 2.9211971 | 22 | 1 | 40 days | 0.40 | | | MPC | 2006 $TU_{50}$ |
| 2006 $TV_{50}$ | 16.3 | 0.15 | 20061012 | 87.95072 | 86.18238 | 216.74630 | 3.88312 | 0.1189017 | 2.6497059 | 46 | 1 | 33 days | 0.31 | | | MPC | 2006 $TV_{50}$ |
| 2006 $TW_{50}$ | 16.0 | 0.15 | 20061101 | 215.50001 | 143.40450 | 52.69019 | 3.05008 | 0.0342673 | 2.7471498 | 25 | 1 | 40 days | 0.41 | | | MPC | 2006 $TW_{50}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TX_{50}$ | 16.0 | 0.15 | 20061012 | 70.91614 | 273.99045 | 57.71750 | 4.79147 | 0.0369789 | 3.1997836 | 23 | 1 | 49 days | 0.39 | | MPC | 2006 $TX_{50}$ |
| 2006 $TY_{50}$ | 17.1 | 0.15 | 20061012 | 329.45416 | 236.62881 | 211.16849 | 4.54912 | 0.2152374 | 2.6024003 | 51 | 1 | 59 days | 0.42 | | MPC | 2006 $TY_{50}$ |
| 2006 $TZ_{50}$ | 17.3 | 0.15 | 20061101 | 51.73987 | 112.94282 | 220.56355 | 9.26207 | 0.2295191 | 3.1334496 | 20 | 1 | 42 days | 0.49 | | MPC | 2006 $TZ_{50}$ |
| 2006 $TA_{51}$ | 17.6 | 0.15 | 20061012 | 78.34991 | 77.02554 | 218.39188 | 5.89247 | 0.2517337 | 2.2903038 | 28 | 1 | 32 days | 0.44 | | MPC | 2006 $TA_{51}$ |
| 2006 $TB_{51}$ | 16.7 | 0.15 | 20060922 | 337.96945 | 23.33821 | 48.52526 | 7.00896 | 0.1980929 | 3.0936618 | 35 | 1 | 60 days | 0.58 | M-v 4 | MPC | 2006 $TB_{51}$ |
| 2006 $TC_{51}$ | 16.5 | 0.15 | 20061012 | 14.98738 | 159.00956 | 210.73693 | 4.85149 | 0.3052645 | 2.5804895 | 76 | 1 | 59 days | 0.42 | | MPC | 2006 $TC_{51}$ |
| 2006 $TF_{51}$ | 16.3 | 0.15 | 20061101 | 61.70305 | 116.04938 | 226.47858 | 15.71230 | 0.0650993 | 3.0780450 | 21 | 1 | 42 days | 0.30 | | MPC | 2006 $TF_{51}$ |
| 2006 $TG_{51}$ | 17.4 | 0.15 | 20061012 | 15.37278 | 335.80795 | 47.58322 | 4.85174 | 0.1180051 | 2.5517402 | 26 | 1 | 52 days | 0.25 | | MPC | 2006 $TG_{51}$ |
| 2006 $TK_{51}$ | 15.7 | 0.15 | 20061012 | 338.51659 | 215.59452 | 223.77119 | 26.70881 | 0.1972864 | 3.1942235 | 52 | 1 | 59 days | 0.47 | | MPC | 2006 $TK_{51}$ |
| 2006 $TL_{51}$ | 16.0 | 0.15 | 20061101 | 120.18404 | 223.81414 | 62.19406 | 11.03851 | 0.0680470 | 2.9713928 | 38 | 1 | 46 days | 0.38 | | MPC | 2006 $TL_{51}$ |
| 2006 $TN_{51}$ | 15.7 | 0.15 | 20060922 | 327.23569 | 228.64236 | 216.82084 | 10.29195 | 0.1238139 | 3.1117882 | 30 | 1 | 60 days | 0.38 | M-v 4 | MPC | 2006 $TN_{51}$ |
| 2006 $TR_{51}$ | 16.8 | 0.15 | 20061012 | 19.47646 | 299.87650 | 76.80222 | 4.42546 | 0.1333782 | 2.2678869 | 56 | 1 | 52 days | 0.59 | | MPC | 2006 $TR_{51}$ |
| 2006 $TT_{51}$ | 16.0 | 0.15 | 20061101 | 34.00606 | 295.01060 | 64.57707 | 10.26479 | 0.2272776 | 3.1853788 | 19 | 1 | 46 days | 0.36 | | MPC | 2006 $TT_{51}$ |
| 2006 $TU_{51}$ | 15.8 | 0.15 | 20061101 | 37.62279 | 141.66687 | 221.64898 | 18.16219 | 0.1544768 | 3.1745214 | 12 | 1 | 39 days | 0.25 | | MPC | 2006 $TU_{51}$ |
| 2006 $TV_{51}$ | 16.2 | 0.15 | 20061012 | 64.85999 | 268.15539 | 59.68104 | 10.84809 | 0.1282081 | 2.5786927 | 38 | 1 | 58 days | 0.52 | | MPC | 2006 $TV_{51}$ |
| 2006 $TD_{52}$ | 15.2 | 0.15 | 20060922 | 338.36261 | 211.92986 | 217.80765 | 9.82227 | 0.0782424 | 3.1749372 | 34 | 1 | 60 days | 0.40 | M-v 4 | MPC | 2006 $TD_{52}$ |
| 2006 $TE_{52}$ | 16.7 | 0.15 | 20061012 | 18.60546 | 313.53454 | 57.71360 | 7.39290 | 0.2437674 | 2.6442856 | 63 | 1 | 58 days | 0.44 | | MPC | 2006 $TE_{52}$ |
| 2006 $TF_{52}$ | 17.1 | 0.15 | 20061012 | 355.93351 | 334.00676 | 76.74173 | 4.20131 | 0.1000471 | 2.7179226 | 18 | 1 | 36 days | 0.43 | | MPC | 2006 $TF_{52}$ |
| 2006 $TG_{52}$ | 16.7 | 0.15 | 20061012 | 350.04788 | 342.55790 | 72.74479 | 3.73291 | 0.1065264 | 2.6613294 | 36 | 1 | 36 days | 0.34 | | MPC | 2006 $TG_{52}$ |
| 2006 $TL_{52}$ | 16.8 | 0.15 | 20061012 | 340.61799 | 217.84072 | 214.53376 | 14.55552 | 0.2218916 | 2.6986318 | 28 | 1 | 55 days | 0.50 | | MPC | 2006 $TL_{52}$ |
| 2006 $TM_{52}$ | 17.1 | 0.15 | 20061012 | 356.96089 | 323.70058 | 83.51376 | 3.36518 | 0.0920904 | 2.6858978 | 23 | 1 | 36 days | 0.23 | | MPC | 2006 $TM_{52}$ |
| 2006 $TN_{52}$ | 15.8 | 0.15 | 20061101 | 20.58444 | 326.72718 | 58.85660 | 10.58128 | 0.0861758 | 3.1295120 | 34 | 1 | 46 days | 0.42 | | MPC | 2006 $TN_{52}$ |
| 2006 $TO_{52}$ | 17.3 | 0.15 | 20061012 | 144.89103 | 173.77346 | 85.34692 | 3.12015 | 0.0179475 | 2.6306987 | 13 | 1 | 32 days | 0.38 | | MPC | 2006 $TO_{52}$ |
| 2006 $TP_{52}$ | 17.8 | 0.15 | 20061012 | 333.17173 | 254.37079 | 191.14129 | 3.71692 | 0.2573052 | 2.5497917 | 27 | 1 | 49 days | 0.30 | | MPC | 2006 $TP_{52}$ |
| 2006 $TQ_{52}$ | 17.6 | 0.15 | 20061101 | 335.75903 | 245.22542 | 191.74252 | 3.26805 | 0.0658512 | 2.6190861 | 17 | 1 | 42 days | 0.38 | | MPC | 2006 $TQ_{52}$ |
| 2006 $TR_{52}$ | 15.5 | 0.15 | 20061012 | 336.23381 | 212.42207 | 219.58974 | 12.40020 | 0.0186930 | 3.1015010 | 23 | 1 | 36 days | 0.49 | | MPC | 2006 $TR_{52}$ |
| 2006 $TS_{52}$ | 18.0 | 0.15 | 20061012 | 26.68232 | 312.93766 | 50.45128 | 7.30110 | 0.1578081 | 2.2541906 | 38 | 1 | 48 days | 0.37 | | MPC | 2006 $TS_{52}$ |
| 2006 $TT_{52}$ | 16.3 | 0.15 | 20061012 | 313.97592 | 42.33008 | 64.15136 | 4.98666 | 0.1688886 | 2.7830815 | 34 | 1 | 37 days | 0.46 | | MPC | 2006 $TT_{52}$ |
| 2006 $TU_{52}$ | 17.5 | 0.15 | 20060922 | 358.65703 | 183.98251 | 210.92076 | 10.88251 | 0.2306275 | 2.5894698 | 43 | 1 | 61 days | 0.50 | M-v 4 | MPC | 2006 $TU_{52}$ |
| 2006 $TV_{52}$ | 16.9 | 0.15 | 20061012 | 324.78106 | 335.38103 | 108.50568 | 1.75213 | 0.0425921 | 2.8109073 | 23 | 1 | 33 days | 0.34 | | MPC | 2006 $TV_{52}$ |
| 2006 $TW_{52}$ | 16.6 | 0.15 | 20061012 | 158.73803 | 182.27224 | 61.58655 | 5.50645 | 0.0890156 | 2.5475790 | 27 | 1 | 33 days | 0.38 | | MPC | 2006 $TW_{52}$ |
| 2006 $TY_{52}$ | 18.0 | 0.15 | 20061012 | 25.58110 | 259.56864 | 101.43947 | 2.32970 | 0.2221396 | 2.5343705 | 19 | 1 | 32 days | 0.41 | | MPC | 2006 $TY_{52}$ |
| 2006 $TZ_{52}$ | 17.1 | 0.15 | 20061012 | 355.79449 | 206.17994 | 201.83676 | 5.37245 | 0.1897288 | 2.6057865 | 24 | 1 | 51 days | 0.64 | | MPC | 2006 $TZ_{52}$ |
| 2006 $TA_{53}$ | 17.8 | 0.15 | 20061012 | 57.95937 | 277.33656 | 51.33510 | 6.80968 | 0.1348322 | 2.1351648 | 42 | 1 | 36 days | 0.40 | | MPC | 2006 $TA_{53}$ |
| 2006 $TC_{53}$ | 17.6 | 0.15 | 20061101 | 51.31745 | 283.95962 | 58.02534 | 8.45301 | 0.1529791 | 2.4494107 | 26 | 1 | 40 days | 0.44 | | MPC | 2006 $TC_{53}$ |
| 2006 $TD_{53}$ | 17.9 | 0.15 | 20061012 | 20.20261 | 166.55139 | 202.49271 | 4.58013 | 0.2061097 | 2.3392127 | 30 | 1 | 49 days | 0.31 | | MPC | 2006 $TD_{53}$ |
| 2006 $TF_{53}$ | 16.5 | 0.15 | 20061012 | 316.27305 | 11.56979 | 82.47158 | 2.87774 | 0.0615473 | 2.6439129 | 16 | 1 | 36 days | 0.46 | | MPC | 2006 $TF_{53}$ |
| 2006 $TG_{53}$ | 18.5 | 0.15 | 20061012 | 3.46215 | 334.09604 | 60.23484 | 4.48241 | 0.2069758 | 2.3792593 | 22 | 1 | 58 days | 0.28 | | MPC | 2006 $TG_{53}$ |
| 2006 $TJ_{53}$ | 17.9 | 0.15 | 20061012 | 297.41205 | 93.93416 | 20.46829 | 18.46236 | 0.1601702 | 2.6024531 | 9 | 1 | 5 days | 0.79 | | MPC | 2006 $TJ_{53}$ |
| 2006 $TK_{53}$ | 18.4 | 0.15 | 20061012 | 1.93398 | 97.60005 | 290.95925 | 3.99627 | 0.2068285 | 2.5832934 | 12 | 1 | 9 days | 0.37 | | MPC | 2006 $TK_{53}$ |
| 2006 $TL_{53}$ | 16.4 | 0.15 | 20061012 | 99.32141 | 237.74561 | 50.68347 | 12.23451 | 0.1451029 | 2.5700765 | 20 | 1 | 30 days | 0.33 | | MPC | 2006 $TL_{53}$ |
| 2006 $TM_{53}$ | 16.7 | 0.15 | 20061012 | 313.67729 | 243.16284 | 216.97395 | 16.11314 | 0.1248939 | 2.6047404 | 24 | 1 | 54 days | 0.19 | | MPC | 2006 $TM_{53}$ |
| 2006 $TO_{53}$ | 15.9 | 0.15 | 20061012 | 104.98619 | 70.03535 | 220.48234 | 17.93882 | 0.1054703 | 3.2229268 | 18 | 1 | 52 days | 0.28 | | MPC | 2006 $TO_{53}$ |
| 2006 $TR_{53}$ | 17.6 | 0.15 | 20061012 | 335.86643 | 15.74057 | 53.60073 | 6.66885 | 0.1142853 | 2.2246065 | 42 | 1 | 58 days | 0.48 | | MPC | 2006 $TR_{53}$ |
| 2006 $TS_{53}$ | 17.3 | 0.15 | 20061012 | 20.14301 | 164.62277 | 203.99852 | 3.75805 | 0.2223166 | 2.6372709 | 28 | 1 | 59 days | 0.29 | | MPC | 2006 $TS_{53}$ |
| 2006 $TV_{53}$ | 16.7 | 0.15 | 20061101 | 49.74512 | 285.38154 | 57.27297 | 7.05124 | 0.1623609 | 2.8780911 | 21 | 1 | 40 days | 0.29 | | MPC | 2006 $TV_{53}$ |
| 2006 $TX_{53}$ | 18.0 | 0.15 | 20061012 | 8.63640 | 337.63729 | 49.03246 | 6.84412 | 0.1456119 | 2.2188711 | 56 | 1 | 58 days | 0.38 | | MPC | 2006 $TX_{53}$ |
| 2006 $TY_{53}$ | 16.1 | 0.15 | 20061012 | 12.94293 | 173.06471 | 213.33425 | 10.70552 | 0.1549466 | 3.1275697 | 20 | 1 | 52 days | 0.27 | | MPC | 2006 $TY_{53}$ |
| 2006 $TZ_{53}$ | 16.4 | 0.15 | 20061012 | 96.56240 | 137.43382 | 156.53469 | 2.10543 | 0.1263136 | 2.6607503 | 16 | 1 | 34 days | 0.28 | | MPC | 2006 $TZ_{53}$ |
| 2006 $TB_{54}$ | 16.9 | 0.15 | 20061101 | 345.86729 | 9.23851 | 56.33025 | 10.16082 | 0.0805986 | 2.9780061 | 20 | 1 | 40 days | 0.24 | | MPC | 2006 $TB_{54}$ |
| 2006 $TC_{54}$ | 16.6 | 0.15 | 20061012 | 21.23354 | 317.15247 | 53.17996 | 10.83232 | 0.2187341 | 3.1679884 | 46 | 1 | 52 days | 0.38 | | MPC | 2006 $TC_{54}$ |
| 2006 $TD_{54}$ | 16.7 | 0.15 | 20061101 | 50.86214 | 291.74017 | 60.02720 | 7.37923 | 0.0675788 | 2.7913543 | 23 | 1 | 40 days | 0.20 | | MPC | 2006 $TD_{54}$ |
| 2006 $TE_{54}$ | 18.2 | 0.15 | 20061012 | 357.82971 | 357.94619 | 41.65208 | 21.40863 | 0.0717182 | 1.9298073 | 17 | 1 | 29 days | 0.20 | | MPC | 2006 $TE_{54}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TF_{54}$ | 18.6 | 0.15 | 20061012 | 12.27134 | 172.79870 | 206.71135 | 5.27677 | 0.2038006 | 2.3052304 | 20 | 1 | 52 days | 0.22 | | | MPC | 2006 $TF_{54}$ |
| 2006 $TG_{54}$ | 17.7 | 0.15 | 20061012 | 347.76582 | 204.88359 | 212.11660 | 7.54377 | 0.1690053 | 2.3408745 | 20 | 1 | 36 days | 0.18 | | | MPC | 2006 $TG_{54}$ |
| 2006 $TH_{54}$ | 18.3 | 0.15 | 20061101 | 47.70269 | 295.29692 | 43.50769 | 23.74892 | 0.2008176 | 2.2561998 | 29 | 1 | 44 days | 0.33 | | | MPC | 2006 $TH_{54}$ |
| 2006 $TJ_{54}$ | 17.1 | 0.15 | 20061012 | 349.79744 | 109.01368 | 299.71348 | 3.28993 | 0.1715165 | 2.5811119 | 35 | 1 | 52 days | 0.40 | | | MPC | 2006 $TJ_{54}$ |
| 2006 $TO_{54}$ | 17.6 | 0.15 | 20061012 | 11.75125 | 10.08160 | 4.40615 | 7.92630 | 0.1547142 | 2.2553815 | 27 | 1 | 42 days | 0.46 | | | MPC | 2006 $TO_{54}$ |
| 2006 $TQ_{54}$ | 16.9 | 0.15 | 20061012 | 350.40268 | 152.11327 | 252.20521 | 4.33479 | 0.1088437 | 2.4731738 | 37 | 1 | 50 days | 0.33 | | | MPC | 2006 $TQ_{54}$ |
| 2006 $TR_{54}$ | 15.3 | 0.15 | 20061012 | 38.50104 | 327.74170 | 23.23501 | 13.76289 | 0.0848551 | 3.1001407 | 44 | 1 | 52 days | 0.39 | | | MPC | 2006 $TR_{54}$ |
| 2006 $TS_{54}$ | 16.7 | 0.15 | 20061012 | 320.40475 | 206.50814 | 235.74183 | 6.87387 | 0.1258555 | 2.2172573 | 53 | 1 | 55 days | 0.49 | | | MPC | 2006 $TS_{54}$ |
| 2006 $TT_{54}$ | 16.9 | 0.15 | 20061101 | 64.79590 | 205.32676 | 106.30330 | 5.36915 | 0.1736653 | 2.2726215 | 21 | 1 | 43 days | 0.38 | | | MPC | 2006 $TT_{54}$ |
| 2006 $TU_{54}$ | 17.8 | 0.15 | 20061101 | 15.59324 | 246.64799 | 124.80607 | 4.65376 | 0.2354862 | 2.4787321 | 21 | 1 | 43 days | 0.53 | | | MPC | 2006 $TU_{54}$ |
| 2006 $TB_{55}$ | 16.8 | 0.15 | 20060922 | 9.53870 | 178.15705 | 190.68034 | 12.59780 | 0.2675636 | 2.5936834 | 36 | 1 | 72 days | 0.59 | M-v | 4 | MPC | 2006 $TB_{55}$ |
| 2006 $TC_{55}$ | 15.3 | 0.15 | 20061012 | 11.59030 | 228.36254 | 147.66161 | 6.06258 | 0.2593509 | 3.0674718 | 35 | 1 | 55 days | 0.38 | | | MPC | 2006 $TC_{55}$ |
| 2006 $TK_{55}$ | 15.8 | 0.15 | 20061012 | 17.84406 | 298.02692 | 65.13014 | 13.65367 | 0.2217264 | 2.6767592 | 44 | 1 | 54 days | 0.46 | | | MPC | 2006 $TK_{55}$ |
| 2006 $TL_{55}$ | 15.5 | 0.15 | 20061101 | 18.08127 | 301.29834 | 67.29240 | 10.98095 | 0.2404315 | 3.1362825 | 37 | 1 | 42 days | 0.55 | | | MPC | 2006 $TL_{55}$ |
| 2006 $TO_{55}$ | 16.7 | 0.15 | 20060922 | 24.90515 | 158.67163 | 185.53531 | 13.81167 | 0.2657903 | 2.6661424 | 22 | 1 | 80 days | 0.52 | M-v | 4 | MPC | 2006 $TO_{55}$ |
| 2006 $TQ_{55}$ | 17.4 | 0.15 | 20061012 | 31.43530 | 205.83518 | 135.19770 | 6.09385 | 0.2411107 | 2.2347098 | 15 | 1 | 38 days | 0.45 | | | MPC | 2006 $TQ_{55}$ |
| 2006 $TR_{55}$ | 16.7 | 0.15 | 20061012 | 17.35742 | 190.13910 | 176.10995 | 13.43778 | 0.2218270 | 2.5929114 | 22 | 1 | 35 days | 0.56 | | | MPC | 2006 $TR_{55}$ |
| 2006 $TU_{55}$ | 15.3 | 0.15 | 20061012 | 323.49243 | 305.38763 | 151.07832 | 9.14027 | 0.2599582 | 3.0715121 | 31 | 1 | 50 days | 0.55 | | | MPC | 2006 $TU_{55}$ |
| 2006 $TW_{55}$ | 16.7 | 0.15 | 20061101 | 23.89377 | 295.19230 | 73.59491 | 12.17579 | 0.1716038 | 2.6951699 | 22 | 1 | 42 days | 0.58 | | | MPC | 2006 $TW_{55}$ |
| 2006 $TY_{55}$ | 14.7 | 0.15 | 20061012 | 16.43552 | 269.15417 | 110.53409 | 6.71806 | 0.0737681 | 3.1802051 | 33 | 1 | 54 days | 0.61 | | | MPC | 2006 $TY_{55}$ |
| 2006 $TE_{56}$ | 18.4 | 0.15 | 20061101 | 356.07095 | 10.18157 | 40.88864 | 2.45644 | 0.2182852 | 2.6143219 | 24 | 1 | 38 days | 0.45 | | | MPC | 2006 $TE_{56}$ |
| 2006 $TF_{56}$ | 18.7 | 0.15 | 20061101 | 337.63086 | 221.59637 | 210.55854 | 1.38029 | 0.1085768 | 2.1490289 | 28 | 1 | 39 days | 0.31 | | | MPC | 2006 $TF_{56}$ |
| 2006 $TG_{56}$ | 17.7 | 0.15 | 20061012 | 6.80716 | 173.63211 | 219.31825 | 8.88810 | 0.1229245 | 3.0009280 | 17 | 1 | 30 days | 0.33 | | | MPC | 2006 $TG_{56}$ |
| 2006 $TH_{56}$ | 18.2 | 0.15 | 20061012 | 52.11287 | 113.11019 | 208.17314 | 2.64458 | 0.2291933 | 2.2506672 | 20 | 1 | 31 days | 0.25 | | | MPC | 2006 $TH_{56}$ |
| 2006 $TM_{56}$ | 18.6 | 0.15 | 20061012 | 348.46564 | 189.15261 | 215.73731 | 20.46713 | 0.0881644 | 1.8673430 | 30 | 1 | 40 days | 0.39 | | | MPC | 2006 $TM_{56}$ |
| 2006 $TQ_{56}$ | 15.6 | 0.15 | 20061012 | 250.25987 | 252.14319 | 239.97219 | 7.94418 | 0.0497565 | 3.1707332 | 16 | 1 | 18 days | 0.18 | | | MPC | 2006 $TQ_{56}$ |
| 2006 $TR_{56}$ | 17.5 | 0.15 | 20061101 | 343.47354 | 214.54049 | 218.34571 | 22.49806 | 0.2292118 | 2.2832049 | 24 | 1 | 37 days | 0.39 | | | MPC | 2006 $TR_{56}$ |
| 2006 $TS_{56}$ | 16.3 | 0.15 | 20061012 | 359.26543 | 129.51349 | 260.28805 | 1.06888 | 0.1437619 | 2.6646329 | 52 | 1 | 37 days | 0.37 | | | MPC | 2006 $TS_{56}$ |
| 2006 $TV_{56}$ | 17.3 | 0.15 | 20061101 | 24.21928 | 156.94657 | 196.68060 | 8.48209 | 0.2915616 | 2.6594655 | 24 | 1 | 40 days | 0.27 | | | MPC | 2006 $TV_{56}$ |
| 2006 $TX_{56}$ | 17.4 | 0.15 | 20061012 | 6.41163 | 248.23221 | 131.34169 | 2.79214 | 0.2288260 | 2.3112962 | 39 | 1 | 51 days | 0.52 | | | MPC | 2006 $TX_{56}$ |
| 2006 $TY_{56}$ | 16.1 | 0.15 | 20061012 | 353.18221 | 261.45859 | 142.13295 | 3.83621 | 0.0880740 | 3.1155067 | 25 | 1 | 51 days | 0.53 | | | MPC | 2006 $TY_{56}$ |
| 2006 $TE_{57}$ | 17.2 | 0.15 | 20061012 | 347.50299 | 80.52226 | 311.96951 | 5.03189 | 0.1051597 | 2.2433174 | 16 | 1 | 8 days | 0.53 | | | MPC | 2006 $TE_{57}$ |
| 2006 $TL_{57}$ | 15.5 | 0.15 | 20061012 | 20.06154 | 336.94927 | 38.87904 | 14.39520 | 0.0101433 | 3.2446986 | 24 | 1 | 58 days | 0.26 | | | MPC | 2006 $TL_{57}$ |
| 2006 $TM_{57}$ | 16.8 | 0.15 | 20061012 | 36.01424 | 141.24658 | 210.58722 | 8.82604 | 0.1206984 | 3.1153817 | 16 | 1 | 31 days | 0.46 | | | MPC | 2006 $TM_{57}$ |
| 2006 $TN_{57}$ | 19.2 | 0.15 | 20061012 | 18.42358 | 315.21098 | 42.13222 | 6.01368 | 0.2971473 | 2.5364481 | 31 | 1 | 58 days | 0.39 | | | MPC | 2006 $TN_{57}$ |
| 2006 $TP_{57}$ | 18.1 | 0.15 | 20061012 | 22.89541 | 156.16851 | 207.75548 | 20.72612 | 0.1025864 | 1.8581048 | 21 | 1 | 32 days | 0.51 | | | MPC | 2006 $TP_{57}$ |
| 2006 $TT_{57}$ | 15.5 | 0.15 | 20061012 | 20.80046 | 152.61467 | 201.42063 | 3.97717 | 0.0942851 | 3.1562650 | 14 | 1 | 6 days | 0.46 | | | MPC | 2006 $TT_{57}$ |
| 2006 $TV_{57}$ | 17.4 | 0.15 | 20060922 | 334.10805 | 213.81440 | 192.54745 | 4.34536 | 0.1318296 | 2.2476939 | 36 | 1 | 63 days | 0.34 | M-v | 4 | MPC | 2006 $TV_{57}$ |
| 2006 $TX_{57}$ | 15.6 | 0.15 | 20060922 | 36.42993 | 299.44604 | 22.89737 | 26.92627 | 0.2054031 | 3.1171282 | 37 | 1 | 61 days | 0.27 | M-v | 4 D | MPC | 2006 $TX_{57}$ |
| 2006 $TY_{57}$ | 16.4 | 0.15 | 20061012 | 78.10600 | 266.47526 | 24.98431 | 12.63001 | 0.1083327 | 2.6587094 | 37 | 1 | 29 days | 0.49 | | | MPC | 2006 $TY_{57}$ |
| 2006 $TA_{58}$ | 17.2 | 0.15 | 20060922 | 48.27894 | 267.91772 | 41.88057 | 2.89441 | 0.1735986 | 2.2884704 | 39 | 1 | 67 days | 0.36 | M-v | 4 | MPC | 2006 $TA_{58}$ |
| 2006 $TC_{58}$ | 17.9 | 0.15 | 20061012 | 2.76288 | 343.36176 | 34.05918 | 5.78138 | 0.1830986 | 2.3305109 | 36 | 1 | 42 days | 0.37 | | | MPC | 2006 $TC_{58}$ |
| 2006 $TE_{58}$ | 15.3 | 0.15 | 20060922 | 330.96321 | 46.49814 | 27.48539 | 26.99885 | 0.1846113 | 3.1726466 | 34 | 1 | 61 days | 0.48 | M-v | 4 | MPC | 2006 $TE_{58}$ |
| 2006 $TP_{58}$ | 17.5 | 0.15 | 20061012 | 237.66450 | 275.61792 | 229.59354 | 18.64991 | 0.0673988 | 1.9630617 | 11 | 1 | 10 days | 0.39 | | | MPC | 2006 $TP_{58}$ |
| 2006 $TQ_{58}$ | 16.6 | 0.15 | 20061012 | 16.30016 | 91.43825 | 252.68187 | 10.93772 | 0.4019941 | 2.6074221 | 44 | 1 | 52 days | 0.45 | | | MPC | 2006 $TQ_{58}$ |
| 2006 $TR_{58}$ | 19.5 | 0.15 | 20061012 | 335.17763 | 175.85857 | 250.17516 | 5.95751 | 0.1874884 | 2.1931299 | 12 | 1 | 18 days | 0.30 | | | MPC | 2006 $TR_{58}$ |
| 2006 $TU_{58}$ | 15.8 | 0.15 | 20061101 | 0.01932 | 175.31005 | 224.51075 | 27.80157 | 0.1820101 | 3.1192257 | 39 | 1 | 39 days | 0.55 | | | MPC | 2006 $TU_{58}$ |
| 2006 $TV_{58}$ | 18.4 | 0.15 | 20061012 | 9.88844 | 12.80531 | 2.61284 | 4.78898 | 0.2081670 | 2.3078700 | 20 | 1 | 52 days | 0.34 | | | MPC | 2006 $TV_{58}$ |
| 2006 $TW_{58}$ | 16.7 | 0.15 | 20061012 | 323.37419 | 65.52959 | 24.89173 | 16.52803 | 0.2072571 | 3.0560368 | 24 | 1 | 33 days | 0.29 | | | MPC | 2006 $TW_{58}$ |
| 2006 $TZ_{58}$ | 17.2 | 0.15 | 20061012 | 14.10272 | 48.10004 | 327.64729 | 4.13338 | 0.0984170 | 2.6558853 | 17 | 1 | 45 days | 0.27 | | | MPC | 2006 $TZ_{58}$ |
| 2006 $TB_{59}$ | 17.9 | 0.15 | 20060922 | 289.88681 | 247.58397 | 212.57997 | 5.18237 | 0.0648355 | 2.2099196 | 43 | 1 | 62 days | 0.39 | M-v | 4 | MPC | 2006 $TB_{59}$ |
| 2006 $TE_{59}$ | 17.1 | 0.15 | 20061012 | 8.70374 | 128.51068 | 259.25916 | 5.19215 | 0.0514371 | 2.7800451 | 18 | 1 | 46 days | 0.28 | | | MPC | 2006 $TE_{59}$ |
| 2006 $TF_{59}$ | 18.3 | 0.15 | 20061012 | 4.39860 | 102.15316 | 281.03862 | 3.00548 | 0.3329075 | 2.7089823 | 9 | 1 | 6 days | 0.31 | | | MPC | 2006 $TF_{59}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TH_{59}$ | 17.1 | 0.15 | 20061012 | 36.02540 | 346.81457 | 347.92979 | 3.39937 | 0.2707187 | 2.5824631 | 17 | 1 | 36 days | 0.27 | | | MPC | 2006 $TH_{59}$ |
| 2006 $TJ_{59}$ | 16.8 | 0.15 | 20061012 | 16.85083 | 113.22396 | 265.36668 | 4.51846 | 0.0632295 | 2.7737172 | 21 | 1 | 47 days | 0.36 | | | MPC | 2006 $TJ_{59}$ |
| 2006 $TK_{59}$ | 16.7 | 0.15 | 20061012 | 335.81817 | 198.28746 | 232.93649 | 13.77629 | 0.1596141 | 3.0387516 | 32 | 1 | 44 days | 0.43 | | | MPC | 2006 $TK_{59}$ |
| 2006 $TL_{59}$ | 17.4 | 0.15 | 20061012 | 329.31825 | 198.23689 | 243.79733 | 7.04301 | 0.1974733 | 2.7940411 | 32 | 1 | 45 days | 0.25 | | | MPC | 2006 $TL_{59}$ |
| 2006 $TM_{59}$ | 16.7 | 0.15 | 20061012 | 48.09102 | 319.04122 | 17.37155 | 7.80279 | 0.1558164 | 3.1571171 | 10 | 1 | 32 days | 0.75 | | | MPC | 2006 $TM_{59}$ |
| 2006 $TP_{59}$ | 16.0 | 0.15 | 20061012 | 18.39684 | 355.52383 | 23.22931 | 9.64101 | 0.0918091 | 3.1444114 | 19 | 1 | 36 days | 0.15 | | | MPC | 2006 $TP_{59}$ |
| 2006 $TQ_{59}$ | 15.5 | 0.15 | 20061012 | 111.99693 | 43.49315 | 237.56454 | 8.82857 | 0.0859056 | 3.1624339 | 16 | 1 | 19 days | 0.35 | | | MPC | 2006 $TQ_{59}$ |
| 2006 $TR_{59}$ | 15.5 | 0.15 | 20061012 | 203.00931 | 316.76672 | 246.86726 | 4.21087 | 0.0870361 | 3.1783339 | 17 | 1 | 32 days | 0.28 | | | MPC | 2006 $TR_{59}$ |
| 2006 $TW_{59}$ | 16.1 | 0.15 | 20061012 | 50.83704 | 25.93302 | 298.57415 | 3.21580 | 0.2426654 | 3.1763844 | 20 | 1 | 41 days | 0.27 | | | MPC | 2006 $TW_{59}$ |
| 2006 $TX_{59}$ | 16.8 | 0.15 | 20061012 | 19.07873 | 3.26207 | 10.10188 | 4.65072 | 0.1646573 | 3.0636097 | 21 | 1 | 45 days | 0.23 | | | MPC | 2006 $TX_{59}$ |
| 2006 $TY_{59}$ | 17.7 | 0.15 | 20061012 | 257.45038 | 254.32778 | 252.15007 | 5.73636 | 0.0440950 | 2.3443640 | 17 | 1 | 36 days | 0.36 | | | MPC | 2006 $TY_{59}$ |
| 2006 $TB_{60}$ | 15.7 | 0.15 | 20061012 | 157.19402 | 355.40454 | 251.83381 | 7.02916 | 0.0290111 | 3.4201003 | 16 | 1 | 27 days | 0.37 | | | MPC | 2006 $TB_{60}$ |
| 2006 $TD_{60}$ | 17.0 | 0.15 | 20061012 | 333.37638 | 189.00226 | 247.44977 | 4.22084 | 0.1477979 | 2.7131534 | 26 | 1 | 35 days | 0.49 | | | MPC | 2006 $TD_{60}$ |
| 2006 $TE_{60}$ | 15.3 | 0.15 | 20061012 | 156.45254 | 7.84725 | 236.54520 | 14.72157 | 0.1136082 | 3.1510499 | 25 | 1 | 43 days | 0.41 | | | MPC | 2006 $TE_{60}$ |
| 2006 $TF_{60}$ | 18.4 | 0.15 | 20061012 | 25.83429 | 112.26888 | 235.24449 | 6.04601 | 0.3052877 | 2.3108531 | 33 | 1 | 45 days | 0.54 | | E | MPC | 2006 $TF_{60}$ |
| 2006 $TG_{60}$ | 16.2 | 0.15 | 20061101 | 330.49908 | 223.27294 | 228.56412 | 27.95523 | 0.2077095 | 3.1601216 | 24 | 1 | 39 days | 0.49 | | | MPC | 2006 $TG_{60}$ |
| 2006 $TJ_{60}$ | 18.6 | 0.15 | 20061012 | 15.39604 | 36.67444 | 335.14261 | 1.95671 | 0.2352640 | 2.3252969 | 32 | 1 | 34 days | 0.36 | | | MPC | 2006 $TJ_{60}$ |
| 2006 $TK_{60}$ | 16.9 | 0.15 | 20061012 | 350.00094 | 71.42754 | 346.74048 | 2.47192 | 0.2063964 | 3.1060556 | 23 | 1 | 34 days | 0.17 | | | MPC | 2006 $TK_{60}$ |
| 2006 $TL_{60}$ | 16.6 | 0.15 | 20061012 | 301.02125 | 100.83457 | 7.84402 | 3.36365 | 0.0519754 | 2.7894862 | 19 | 1 | 31 days | 0.26 | | | MPC | 2006 $TL_{60}$ |
| 2006 $TM_{60}$ | 15.8 | 0.15 | 20061012 | 37.21645 | 314.48954 | 37.71761 | 6.58481 | 0.1713767 | 3.0459422 | 34 | 1 | 53 days | 0.36 | | | MPC | 2006 $TM_{60}$ |
| 2006 $TO_{60}$ | 15.3 | 0.15 | 20061012 | 188.68152 | 180.62255 | 35.71155 | 11.51963 | 0.0673894 | 2.9877591 | 17 | 1 | 32 days | 0.25 | | | MPC | 2006 $TO_{60}$ |
| 2006 $TS_{60}$ | 16.7 | 0.15 | 20061012 | 280.93356 | 18.43124 | 111.91046 | 2.82856 | 0.1205278 | 3.0906434 | 12 | 1 | 8 days | 0.61 | | | MPC | 2006 $TS_{60}$ |
| 2006 $TV_{60}$ | 18.0 | 0.15 | 20061012 | 331.00476 | 15.81391 | 52.10640 | 7.87189 | 0.0771158 | 2.3496794 | 27 | 1 | 50 days | 0.37 | | | MPC | 2006 $TV_{60}$ |
| 2006 $TW_{60}$ | 15.9 | 0.15 | 20061012 | 13.04132 | 177.70069 | 206.85793 | 12.83616 | 0.0219535 | 3.0596644 | 36 | 1 | 54 days | 0.31 | | | MPC | 2006 $TW_{60}$ |
| 2006 $TX_{60}$ | 16.8 | 0.15 | 20061012 | 196.07998 | 120.14294 | 82.04856 | 4.01307 | 0.0304460 | 2.7608943 | 20 | 1 | 46 days | 0.42 | | | MPC | 2006 $TX_{60}$ |
| 2006 $TY_{60}$ | 18.2 | 0.15 | 20061012 | 32.39407 | 140.13864 | 196.24616 | 7.50062 | 0.2410289 | 2.7444514 | 24 | 1 | 28 days | 0.34 | | | MPC | 2006 $TY_{60}$ |
| 2006 $TZ_{60}$ | 17.3 | 0.15 | 20061012 | 1.48723 | 157.44367 | 228.40616 | 9.08671 | 0.3241914 | 3.0103737 | 47 | 1 | 49 days | 0.34 | | | MPC | 2006 $TZ_{60}$ |
| 2006 $TD_{61}$ | 15.3 | 0.15 | 20061012 | 48.33377 | 304.61383 | 24.42526 | 16.33009 | 0.0298740 | 3.1524851 | 16 | 1 | 6 days | 0.77 | | | MPC | 2006 $TD_{61}$ |
| 2006 $TE_{61}$ | 17.2 | 0.15 | 20060922 | 331.89238 | 4.25962 | 54.63972 | 2.28453 | 0.2393900 | 2.8507203 | 32 | 1 | 66 days | 0.39 | M-v | 4 | MPC | 2006 $TE_{61}$ |
| 2006 $TF_{61}$ | 16.8 | 0.15 | 20060922 | 16.62222 | 151.42084 | 199.42373 | 16.28501 | 0.2004953 | 3.0861948 | 23 | 1 | 65 days | 0.40 | M-v | 4 | MPC | 2006 $TF_{61}$ |
| 2006 $TH_{61}$ | 16.7 | 0.15 | 20061101 | 9.70832 | 341.65641 | 31.08308 | 11.83426 | 0.1505573 | 2.9980424 | 16 | 1 | 43 days | 0.58 | | | MPC | 2006 $TH_{61}$ |
| 2006 $TK_{61}$ | 17.9 | 0.15 | 20061012 | 50.07409 | 187.73216 | 143.75797 | 2.80660 | 0.1765172 | 2.6752108 | 9 | 1 | 7 days | 0.86 | | | MPC | 2006 $TK_{61}$ |
| 2006 $TM_{61}$ | 16.6 | 0.15 | 20061012 | 22.56525 | 286.02951 | 81.39450 | 5.10962 | 0.1980140 | 2.9242487 | 10 | 1 | 5 days | 0.42 | | | MPC | 2006 $TM_{61}$ |
| 2006 $TN_{61}$ | 16.8 | 0.15 | 20061012 | 0.06499 | 172.33389 | 209.85859 | 16.55111 | 0.1839700 | 3.1053152 | 26 | 1 | 45 days | 0.47 | | | MPC | 2006 $TN_{61}$ |
| 2006 $TQ_{61}$ | 17.1 | 0.15 | 20060922 | 334.30215 | 60.00919 | 355.42613 | 4.69361 | 0.1616505 | 2.7239030 | 30 | 1 | 61 days | 0.42 | M-v | 4 | MPC | 2006 $TQ_{61}$ |
| 2006 $TA_{62}$ | 16.7 | 0.15 | 20060922 | 6.70787 | 75.63462 | 284.15183 | 6.85109 | 0.1108459 | 2.6636633 | 18 | 1 | 51 days | 0.58 | | | MPC | 2006 $TA_{62}$ |
| 2006 $TA_{63}$ | 16.4 | 0.15 | 20060922 | 355.68893 | 131.82784 | 248.10107 | 8.17718 | 0.2337541 | 2.8081397 | 18 | 1 | 27 days | 0.38 | | | MPC | 2006 $TA_{63}$ |
| 2006 $TB_{63}$ | 16.2 | 0.15 | 20061012 | 357.93385 | 41.76539 | 341.96196 | 8.29075 | 0.0814759 | 3.1392238 | 12 | 1 | 11 days | 0.68 | | | MPC | 2006 $TB_{63}$ |
| 2006 $TC_{63}$ | 18.3 | 0.15 | 20060922 | 351.20394 | 98.91233 | 285.06079 | 1.77132 | 0.2084265 | 2.3197332 | 16 | 1 | 34 days | 0.29 | | | MPC | 2006 $TC_{63}$ |
| 2006 $TD_{63}$ | 17.2 | 0.15 | 20061012 | 320.79687 | 85.04197 | 6.31507 | 8.96354 | 0.3308025 | 2.3852110 | 16 | 1 | 10 days | 0.35 | | | MPC | 2006 $TD_{63}$ |
| 2006 $TH_{63}$ | 18.1 | 0.15 | 20060922 | 30.42718 | 145.63897 | 180.12604 | 5.14222 | 0.2227722 | 2.1966474 | 31 | 1 | 38 days | 0.41 | | | MPC | 2006 $TH_{63}$ |
| 2006 $TL_{63}$ | 16.4 | 0.15 | 20061012 | 61.64462 | 57.19947 | 234.00079 | 8.28801 | 0.2534762 | 2.5369610 | 30 | 1 | 48 days | 0.44 | | | MPC | 2006 $TL_{63}$ |
| 2006 $TM_{63}$ | 17.3 | 0.15 | 20060922 | 12.49075 | 120.38455 | 233.96928 | 5.99728 | 0.1901104 | 2.2279453 | 37 | 1 | 83 days | 0.51 | M-v | 4 | MPC | 2006 $TM_{63}$ |
| 2006 $TP_{63}$ | 15.2 | 0.15 | 20060922 | 1.82973 | 6.54164 | 12.59350 | 13.26100 | 0.0360453 | 3.0651001 | 28 | 1 | 72 days | 0.34 | M-v | 4 | MPC | 2006 $TP_{63}$ |
| 2006 $TQ_{63}$ | 18.3 | 0.15 | 20061012 | 9.13197 | 318.28679 | 47.35902 | 4.10082 | 0.2713144 | 2.3454653 | 23 | 1 | 32 days | 0.31 | | | MPC | 2006 $TQ_{63}$ |
| 2006 $TR_{63}$ | 17.2 | 0.15 | 20060922 | 16.34047 | 201.62374 | 149.54806 | 3.81308 | 0.2084760 | 2.5220389 | 29 | 1 | 31 days | 0.61 | | | MPC | 2006 $TR_{63}$ |
| 2006 $TS_{63}$ | 17.0 | 0.15 | 20061012 | 327.13769 | 0.21714 | 66.49908 | 5.16476 | 0.1378548 | 2.2798097 | 42 | 1 | 44 days | 0.51 | | | MPC | 2006 $TS_{63}$ |
| 2006 $TU_{63}$ | 15.6 | 0.15 | 20061012 | 356.77538 | 307.80409 | 81.33407 | 12.89109 | 0.0938178 | 3.1600537 | 10 | 1 | 18 days | 0.83 | | | MPC | 2006 $TU_{63}$ |
| 2006 $TB_{64}$ | 18.1 | 0.15 | 20061012 | 17.55043 | 195.00048 | 154.27839 | 6.87090 | 0.3146532 | 2.3268316 | 17 | 1 | 25 days | 0.48 | | | MPC | 2006 $TB_{64}$ |
| 2006 $TC_{64}$ | 16.2 | 0.15 | 20061101 | 55.86354 | 256.30550 | 61.70192 | 13.49649 | 0.1760012 | 2.5826098 | 14 | 1 | 45 days | 0.27 | | | MPC | 2006 $TC_{64}$ |
| 2006 $TG_{64}$ | 16.9 | 0.15 | 20061012 | 32.32808 | 247.45245 | 84.78110 | 14.13204 | 0.2876961 | 2.6443295 | 12 | 1 | 30 days | 0.13 | | | MPC | 2006 $TG_{64}$ |
| 2006 $TJ_{64}$ | 17.1 | 0.15 | 20060922 | 315.78755 | 89.69870 | 318.87112 | 6.93308 | 0.0957078 | 2.3490357 | 21 | 1 | 47 days | 0.19 | | | MPC | 2006 $TJ_{64}$ |
| 2006 $TL_{64}$ | 17.5 | 0.15 | 20061012 | 344.07383 | 142.86969 | 251.89893 | 6.08424 | 0.2663889 | 3.0396504 | 12 | 1 | 8 days | 0.46 | | | MPC | 2006 $TL_{64}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TM_{64}$ | 18.2 | 0.15 | 20061012 | 337.77357 | 127.45234 | 271.11944 | 5.09704 | 0.1621777 | 2.4212036 | 21 | 1 | 12 days | 0.15 | | | MPC | 2006 $TM_{64}$ |
| 2006 $TN_{64}$ | 17.8 | 0.15 | 20061012 | 98.04082 | 321.66069 | 297.41158 | 5.95735 | 0.0869004 | 2.2926069 | 27 | 1 | 12 days | 0.24 | | | MPC | 2006 $TN_{64}$ |
| 2006 $TR_{64}$ | 17.6 | 0.15 | 20061012 | 340.20846 | 53.89834 | 342.46065 | 11.92008 | 0.1766591 | 2.6395255 | 18 | 1 | 12 days | 0.16 | | | MPC | 2006 $TR_{64}$ |
| 2006 $TX_{64}$ | 18.4 | 0.15 | 20061012 | 335.58723 | 185.84272 | 220.27468 | 6.93916 | 0.2212371 | 2.3226939 | 26 | 1 | 59 days | 0.27 | | | MPC | 2006 $TX_{64}$ |
| 2006 $TY_{64}$ | 16.2 | 0.15 | 20061012 | 322.05027 | 139.91194 | 264.66595 | 4.68441 | 0.0283925 | 2.7606744 | 25 | 1 | 26 days | 0.42 | | | MPC | 2006 $TY_{64}$ |
| 2006 $TZ_{64}$ | 17.7 | 0.15 | 20061012 | 249.71412 | 149.77280 | 329.02735 | 6.40329 | 0.0219821 | 2.2474106 | 21 | 1 | 12 days | 0.22 | | | MPC | 2006 $TZ_{64}$ |
| 2006 $TA_{65}$ | 18.1 | 0.15 | 20061012 | 327.66664 | 153.34763 | 250.78432 | 4.38296 | 0.0784898 | 2.3674002 | 15 | 1 | 10 days | 0.24 | | | MPC | 2006 $TA_{65}$ |
| 2006 $TC_{65}$ | 17.1 | 0.15 | 20061012 | 301.97694 | 224.16413 | 235.30450 | 3.26374 | 0.1731955 | 2.7821965 | 23 | 1 | 48 days | 0.34 | | | MPC | 2006 $TC_{65}$ |
| 2006 $TF_{65}$ | 17.2 | 0.15 | 20060922 | 9.54027 | 68.93998 | 276.38912 | 6.46681 | 0.2248515 | 2.6504524 | 23 | 1 | 35 days | 0.42 | | D | MPC | 2006 $TF_{65}$ |
| 2006 $TK_{65}$ | 15.0 | 0.15 | 20060922 | 276.88116 | 249.58474 | 215.95788 | 16.46371 | 0.1589253 | 3.1835812 | 26 | 1 | 34 days | 0.60 | | | MPC | 2006 $TK_{65}$ |
| 2006 $TP_{65}$ | 17.4 | 0.15 | 20061012 | 16.66871 | 53.85124 | 294.14744 | 8.25523 | 0.2224005 | 2.8394295 | 10 | 1 | 8 days | 0.68 | | | MPC | 2006 $TP_{65}$ |
| 2006 $TQ_{65}$ | 16.4 | 0.15 | 20060922 | 353.89353 | 86.70710 | 291.87687 | 8.45054 | 0.2361657 | 3.1406522 | 20 | 1 | 36 days | 0.55 | | | MPC | 2006 $TQ_{65}$ |
| 2006 $TS_{65}$ | 17.3 | 0.15 | 20061012 | 65.13493 | 8.83048 | 287.92597 | 7.20710 | 0.1212242 | 2.2913869 | 9 | 1 | 10 days | 0.13 | | | MPC | 2006 $TS_{65}$ |
| 2006 $TW_{65}$ | 16.2 | 0.15 | 20061012 | 29.83224 | 327.86482 | 19.37162 | 12.41779 | 0.1167813 | 3.1272304 | 23 | 1 | 53 days | 0.40 | | | MPC | 2006 $TW_{65}$ |
| 2006 $TX_{65}$ | 16.0 | 0.15 | 20061012 | 320.50186 | 219.18349 | 210.97344 | 12.23391 | 0.0747991 | 3.0440960 | 26 | 1 | 30 days | 0.38 | | | MPC | 2006 $TX_{65}$ |
| 2006 $TY_{65}$ | 17.4 | 0.15 | 20061012 | 30.13461 | 147.43823 | 203.13023 | 12.02320 | 0.0699749 | 3.0493076 | 20 | 1 | 36 days | 0.38 | | | MPC | 2006 $TY_{65}$ |
| 2006 $TZ_{65}$ | 17.4 | 0.15 | 20060922 | 13.06933 | 157.18432 | 200.47461 | 13.78655 | 0.2047795 | 2.8054261 | 26 | 1 | 43 days | 0.26 | | | MPC | 2006 $TZ_{65}$ |
| 2006 $TC_{66}$ | 17.7 | 0.15 | 20060922 | 19.11896 | 284.94721 | 49.13154 | 7.42504 | 0.1973386 | 2.4523690 | 24 | 1 | 65 days | 0.52 | M-v | 4 | MPC | 2006 $TC_{66}$ |
| 2006 $TF_{66}$ | 15.9 | 0.15 | 20061012 | 69.75768 | 261.39225 | 34.65662 | 12.86271 | 0.0671076 | 3.1628457 | 14 | 1 | 37 days | 0.41 | | | MPC | 2006 $TF_{66}$ |
| 2006 $TG_{66}$ | 17.8 | 0.15 | 20060922 | 10.20474 | 205.94762 | 147.27329 | 4.94457 | 0.1644008 | 2.2823986 | 22 | 1 | 34 days | 0.67 | | | MPC | 2006 $TG_{66}$ |
| 2006 $TH_{66}$ | 17.8 | 0.15 | 20061012 | 328.86316 | 0.30341 | 61.71645 | 3.10227 | 0.2010369 | 2.4271151 | 19 | 1 | 45 days | 0.23 | | | MPC | 2006 $TH_{66}$ |
| 2006 $TK_{66}$ | 16.1 | 0.15 | 20060922 | 4.38736 | 260.38994 | 103.33695 | 4.60814 | 0.1051845 | 2.8054818 | 25 | 1 | 34 days | 0.58 | | | MPC | 2006 $TK_{66}$ |
| 2006 $TL_{66}$ | 14.7 | 0.15 | 20061012 | 146.71003 | 203.14045 | 16.69404 | 21.39659 | 0.1196540 | 3.1310821 | 13 | 1 | 10 days | 0.46 | | | MPC | 2006 $TL_{66}$ |
| 2006 $TN_{66}$ | 15.6 | 0.15 | 20061012 | 148.51426 | 213.41570 | 11.31120 | 12.78494 | 0.0694491 | 2.7169658 | 15 | 1 | 8 days | 0.55 | | | MPC | 2006 $TN_{66}$ |
| 2006 $TP_{66}$ | 15.9 | 0.15 | 20061012 | 121.05812 | 267.27267 | 340.18884 | 11.58282 | 0.0656069 | 2.9412363 | 12 | 1 | 10 days | 0.32 | | | MPC | 2006 $TP_{66}$ |
| 2006 $TR_{66}$ | 16.0 | 0.15 | 20061012 | 36.47996 | 111.17517 | 218.70600 | 13.15022 | 0.1038987 | 3.0715060 | 24 | 1 | 54 days | 0.47 | | | MPC | 2006 $TR_{66}$ |
| 2006 $TT_{66}$ | 17.3 | 0.15 | 20061012 | 316.01184 | 163.57551 | 270.13741 | 4.04020 | 0.1407558 | 2.2811007 | 21 | 1 | 40 days | 0.57 | | | MPC | 2006 $TT_{66}$ |
| 2006 $TV_{66}$ | 15.5 | 0.15 | 20060922 | 39.44350 | 68.89424 | 257.53493 | 9.30193 | 0.0805129 | 2.9913840 | 27 | 1 | 24 days | 0.50 | | | MPC | 2006 $TV_{66}$ |
| 2006 $TX_{66}$ | 16.2 | 0.15 | 20060922 | 330.09351 | 124.95575 | 294.78700 | 6.62993 | 0.2335791 | 3.1430866 | 24 | 1 | 37 days | 0.46 | | | MPC | 2006 $TX_{66}$ |
| 2006 $TY_{66}$ | 17.4 | 0.15 | 20060922 | 355.06814 | 65.61781 | 311.56127 | 6.72311 | 0.0943276 | 2.3174826 | 26 | 1 | 37 days | 0.53 | | | MPC | 2006 $TY_{66}$ |
| 2006 $TA_{67}$ | 16.1 | 0.15 | 20061012 | 355.38915 | 156.06462 | 227.76075 | 11.94292 | 0.1373104 | 3.1728203 | 14 | 1 | 38 days | 0.40 | | | MPC | 2006 $TA_{67}$ |
| 2006 $TC_{67}$ | 16.0 | 0.15 | 20060922 | 352.91609 | 71.91468 | 312.61272 | 6.77569 | 0.1578914 | 3.2087090 | 18 | 1 | 19 days | 0.37 | | | MPC | 2006 $TC_{67}$ |
| 2006 $TD_{67}$ | 16.5 | 0.15 | 20060922 | 343.63082 | 109.18789 | 287.43729 | 7.49975 | 0.1363202 | 3.0099104 | 17 | 1 | 24 days | 0.66 | | | MPC | 2006 $TD_{67}$ |
| 2006 $TE_{67}$ | 16.3 | 0.15 | 20061012 | 49.46399 | 47.06151 | 263.19180 | 12.18975 | 0.1680789 | 2.8877845 | 16 | 1 | 12 days | 0.45 | | | MPC | 2006 $TE_{67}$ |
| 2006 $TF_{67}$ | 15.3 | 0.15 | 20060922 | 311.35083 | 112.65287 | 320.70252 | 13.20345 | 0.1047644 | 3.1533169 | 27 | 1 | 40 days | 0.47 | | | MPC | 2006 $TF_{67}$ |
| 2006 $TG_{67}$ | 15.8 | 0.15 | 20061012 | 303.86354 | 203.31315 | 247.23376 | 12.80252 | 0.1617489 | 2.7337243 | 31 | 1 | 58 days | 0.46 | | | MPC | 2006 $TG_{67}$ |
| 2006 $TH_{67}$ | 17.5 | 0.15 | 20060922 | 12.98895 | 72.04798 | 279.49457 | 6.93053 | 0.2421308 | 2.5518255 | 17 | 1 | 26 days | 0.36 | | | MPC | 2006 $TH_{67}$ |
| 2006 $TJ_{67}$ | 16.8 | 0.15 | 20061012 | 354.69913 | 75.11400 | 315.92440 | 6.55342 | 0.2320058 | 2.7132512 | 10 | 1 | 8 days | 0.74 | | | MPC | 2006 $TJ_{67}$ |
| 2006 $TK_{67}$ | 15.5 | 0.15 | 20061012 | 342.96141 | 138.06767 | 270.08574 | 8.13983 | 0.1905688 | 3.1247684 | 27 | 1 | 58 days | 0.56 | | | MPC | 2006 $TK_{67}$ |
| 2006 $TO_{67}$ | 17.9 | 0.15 | 20061012 | 357.79523 | 190.98287 | 201.14529 | 13.67142 | 0.2483645 | 2.6904546 | 18 | 1 | 11 days | 0.43 | | | MPC | 2006 $TO_{67}$ |
| 2006 $TP_{67}$ | 16.4 | 0.15 | 20061012 | 11.86330 | 205.41365 | 167.91594 | 2.68105 | 0.0922541 | 2.5232515 | 47 | 1 | 52 days | 0.40 | | | MPC | 2006 $TP_{67}$ |
| 2006 $TQ_{67}$ | 16.5 | 0.15 | 20061012 | 86.34665 | 97.68154 | 197.61552 | 10.07730 | 0.0692737 | 2.9838619 | 16 | 1 | 17 days | 0.24 | | | MPC | 2006 $TQ_{67}$ |
| 2006 $TU_{67}$ | 16.0 | 0.15 | 20061012 | 32.53307 | 46.30536 | 288.21033 | 11.69687 | 0.2059112 | 3.1285917 | 13 | 1 | 35 days | 0.35 | | | MPC | 2006 $TU_{67}$ |
| 2006 $TX_{67}$ | 16.3 | 0.15 | 20061012 | 353.76078 | 155.74145 | 236.73333 | 14.10156 | 0.2433495 | 2.6398264 | 32 | 1 | 58 days | 0.34 | | | MPC | 2006 $TX_{67}$ |
| 2006 $TZ_{67}$ | 17.6 | 0.15 | 20060922 | 8.68551 | 50.13545 | 311.32593 | 6.24064 | 0.1866602 | 2.6312169 | 23 | 1 | 25 days | 0.42 | | | MPC | 2006 $TZ_{67}$ |
| 2006 $TA_{68}$ | 17.3 | 0.15 | 20061012 | 15.13861 | 113.19507 | 242.42107 | 6.45147 | 0.2436440 | 2.7828909 | 13 | 1 | 37 days | 0.14 | | | MPC | 2006 $TA_{68}$ |
| 2006 $TC_{68}$ | 15.2 | 0.15 | 20061012 | 19.55720 | 41.01289 | 319.09429 | 8.83808 | 0.0590505 | 3.1384843 | 24 | 1 | 47 days | 0.47 | | | MPC | 2006 $TC_{68}$ |
| 2006 $TF_{68}$ | 15.5 | 0.15 | 20060922 | 331.31594 | 47.64206 | 1.86644 | 17.11468 | 0.0345972 | 3.1898358 | 13 | 1 | 21 days | 0.67 | | | MPC | 2006 $TF_{68}$ |
| 2006 $TG_{68}$ | 17.1 | 0.15 | 20061012 | 33.65128 | 70.13278 | 265.28598 | 5.37227 | 0.1578227 | 2.3120778 | 13 | 1 | 11 days | 0.47 | | | MPC | 2006 $TG_{68}$ |
| 2006 $TL_{68}$ | 15.1 | 0.15 | 20060922 | 27.27558 | 297.36994 | 39.82458 | 3.42375 | 0.1961931 | 3.9917510 | 25 | 1 | 69 days | 0.21 | M-v | 3 | MPC | 2006 $TL_{68}$ |
| 2006 $TO_{68}$ | 16.9 | 0.15 | 20060922 | 24.62063 | 305.92596 | 30.77399 | 9.34622 | 0.2034422 | 2.7460332 | 45 | 1 | 71 days | 0.35 | M-v | 4 | MPC | 2006 $TO_{68}$ |
| 2006 $TP_{68}$ | 17.1 | 0.15 | 20061012 | 331.93918 | 246.13509 | 176.40572 | 9.09399 | 0.2272390 | 2.6988717 | 17 | 1 | 11 days | 0.54 | | | MPC | 2006 $TP_{68}$ |
| 2006 $TQ_{68}$ | 16.5 | 0.15 | 20061012 | 336.04863 | 236.64977 | 178.49772 | 17.38592 | 0.2139227 | 3.1311311 | 16 | 1 | 12 days | 0.39 | | | MPC | 2006 $TQ_{68}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TV_{68}$ | 17.0 | 0.15 | 20060922 | 20.98673 | 191.76686 | 147.43261 | 4.47905 | 0.2195742 | 2.6785623 | 20 | 1 | 26 days | 0.49 | | MPC | 2006 $TV_{68}$ |
| 2006 $TW_{68}$ | 18.6 | 0.15 | 20060922 | 0.74186 | 189.86555 | 178.03863 | 7.61325 | 0.3282693 | 2.5652443 | 23 | 1 | 38 days | 0.48 | | MPC | 2006 $TW_{68}$ |
| 2006 $TX_{68}$ | 17.5 | 0.15 | 20060922 | 4.76740 | 213.79368 | 150.56772 | 5.28234 | 0.2129714 | 2.5769860 | 41 | 1 | 22 days | 0.57 | | MPC | 2006 $TX_{68}$ |
| 2006 $TY_{68}$ | 17.8 | 0.15 | 20061012 | 348.41875 | 344.32522 | 50.26886 | 8.55882 | 0.1524981 | 2.4015207 | 24 | 1 | 50 days | 0.25 | | MPC | 2006 $TY_{68}$ |
| 2006 $TZ_{68}$ | 15.8 | 0.15 | 20061012 | 3.77764 | 322.42245 | 51.52482 | 12.94814 | 0.1081183 | 3.2010779 | 19 | 1 | 11 days | 0.48 | | MPC | 2006 $TZ_{68}$ |
| 2006 $TA_{69}$ | 17.3 | 0.15 | 20061012 | 31.73166 | 279.05795 | 59.33399 | 5.68309 | 0.1384804 | 2.3012987 | 27 | 1 | 18 days | 0.33 | | MPC | 2006 $TA_{69}$ |
| 2006 $TE_{69}$ | 15.5 | 0.15 | 20061012 | 27.37875 | 233.32970 | 109.99917 | 10.42274 | 0.0845121 | 3.0646047 | 17 | 1 | 32 days | 0.47 | | MPC | 2006 $TE_{69}$ |
| 2006 $TJ_{69}$ | 14.5 | 0.15 | 20061012 | 83.87078 | 186.77268 | 101.23189 | 13.11782 | 0.0425452 | 3.2010265 | 14 | 1 | 20 days | 0.63 | | MPC | 2006 $TJ_{69}$ |
| 2006 $TK_{69}$ | 17.3 | 0.15 | 20060922 | 1.88805 | 320.81034 | 43.16920 | 18.72604 | 0.2315929 | 2.6253111 | 14 | 1 | 27 days | 0.52 | | MPC | 2006 $TK_{69}$ |
| 2006 $TL_{69}$ | 17.6 | 0.15 | 20060922 | 4.26115 | 321.36015 | 39.41058 | 19.70119 | 0.2342855 | 2.5472273 | 19 | 1 | 28 days | 0.36 | | MPC | 2006 $TL_{69}$ |
| 2006 $TO_{69}$ | 16.3 | 0.15 | 20060922 | 351.09963 | 317.62200 | 67.38207 | 15.38591 | 0.1502710 | 2.9168251 | 20 | 1 | 27 days | 0.32 | | MPC | 2006 $TO_{69}$ |
| 2006 $TR_{69}$ | 16.1 | 0.15 | 20061012 | 132.23083 | 159.04533 | 86.60284 | 3.69335 | 0.0404098 | 2.5839546 | 24 | 1 | 57 days | 0.27 | | MPC | 2006 $TR_{69}$ |
| 2006 $TS_{69}$ | 17.2 | 0.15 | 20061012 | 290.22455 | 25.84142 | 79.86603 | 4.50301 | 0.1310800 | 2.4393885 | 17 | 1 | 11 days | 0.44 | | MPC | 2006 $TS_{69}$ |
| 2006 $TT_{69}$ | 16.1 | 0.15 | 20061012 | 64.81504 | 271.67119 | 30.86190 | 15.89925 | 0.1345931 | 2.8543351 | 28 | 1 | 51 days | 0.45 | | MPC | 2006 $TT_{69}$ |
| 2006 $TU_{69}$ | 17.8 | 0.15 | 20061012 | 325.21406 | 301.92118 | 127.20405 | 3.24733 | 0.1635652 | 2.3220830 | 23 | 1 | 52 days | 0.52 | | MPC | 2006 $TU_{69}$ |
| 2006 $TV_{69}$ | 17.1 | 0.15 | 20061012 | 13.64590 | 326.72498 | 36.44656 | 13.61278 | 0.1815161 | 3.2557686 | 15 | 1 | 10 days | 0.44 | | MPC | 2006 $TV_{69}$ |
| 2006 $TB_{70}$ | 16.0 | 0.15 | 20061012 | 344.31044 | 174.25030 | 228.37158 | 14.66986 | 0.0860338 | 2.7128740 | 17 | 1 | 9 days | 0.61 | | MPC | 2006 $TB_{70}$ |
| 2006 $TC_{70}$ | 16.1 | 0.15 | 20060922 | 324.58392 | 60.82289 | 11.00135 | 24.99594 | 0.1836739 | 2.7651015 | 19 | 1 | 41 days | 0.52 | | MPC | 2006 $TC_{70}$ |
| 2006 $TD_{70}$ | 15.1 | 0.15 | 20061012 | 347.96873 | 163.73450 | 238.74405 | 15.43198 | 0.0778497 | 3.2282205 | 20 | 1 | 27 days | 0.30 | | MPC | 2006 $TD_{70}$ |
| 2006 $TF_{70}$ | 16.2 | 0.15 | 20061012 | 3.24535 | 279.25741 | 96.20665 | 12.49011 | 0.1326350 | 2.7525645 | 17 | 1 | 37 days | 0.37 | | MPC | 2006 $TF_{70}$ |
| 2006 $TG_{70}$ | 15.3 | 0.15 | 20061012 | 297.66351 | 91.60286 | 24.68271 | 14.56836 | 0.1871502 | 3.1915216 | 39 | 1 | 59 days | 0.32 | | MPC | 2006 $TG_{70}$ |
| 2006 $TH_{70}$ | 17.1 | 0.15 | 20061101 | 57.86649 | 20.01231 | 300.01172 | 1.75323 | 0.1726987 | 2.7553455 | 30 | 1 | 47 days | 0.24 | | MPC | 2006 $TH_{70}$ |
| 2006 $TJ_{70}$ | 16.6 | 0.15 | 20061012 | 38.07425 | 105.40805 | 238.02658 | 4.40709 | 0.1360392 | 3.2184191 | 25 | 1 | 44 days | 0.31 | | MPC | 2006 $TJ_{70}$ |
| 2006 $TK_{70}$ | 17.6 | 0.15 | 20061012 | 46.20439 | 225.84715 | 93.10549 | 7.29807 | 0.1634676 | 2.2225628 | 25 | 1 | 32 days | 0.58 | | MPC | 2006 $TK_{70}$ |
| 2006 $TQ_{70}$ | 17.7 | 0.15 | 20061012 | 22.90448 | 308.65771 | 41.07114 | 7.34031 | 0.1868092 | 2.3851288 | 26 | 1 | 31 days | 0.40 | | MPC | 2006 $TQ_{70}$ |
| 2006 $TT_{70}$ | 15.7 | 0.15 | 20061012 | 358.30083 | 210.44869 | 177.13154 | 10.86208 | 0.1131917 | 3.0422135 | 24 | 1 | 20 days | 0.44 | | MPC | 2006 $TT_{70}$ |
| 2006 $TY_{70}$ | 15.4 | 0.15 | 20060922 | 294.89991 | 284.24935 | 188.40293 | 14.94482 | 0.2229349 | 3.1383678 | 21 | 1 | 21 days | 0.64 | | MPC | 2006 $TY_{70}$ |
| 2006 $TB_{71}$ | 17.1 | 0.15 | 20060922 | 16.83685 | 340.27817 | 11.48128 | 12.31803 | 0.1848302 | 2.5595580 | 27 | 1 | 61 days | 0.39 | M-v 4 | MPC | 2006 $TB_{71}$ |
| 2006 $TD_{71}$ | 15.9 | 0.15 | 20061012 | 315.67293 | 207.73200 | 223.48108 | 8.69053 | 0.0350561 | 3.0709719 | 15 | 1 | 52 days | 0.17 | | MPC | 2006 $TD_{71}$ |
| 2006 $TK_{71}$ | 16.8 | 0.15 | 20060922 | 26.97368 | 355.09313 | 350.19390 | 3.60111 | 0.1092435 | 2.6887632 | 28 | 1 | 63 days | 0.33 | M-v 4 | MPC | 2006 $TK_{71}$ |
| 2006 $TL_{71}$ | 15.8 | 0.15 | 20061012 | 39.46285 | 71.00472 | 256.64216 | 3.87419 | 0.2024898 | 3.1070130 | 35 | 1 | 52 days | 0.43 | | MPC | 2006 $TL_{71}$ |
| 2006 $TO_{71}$ | 16.4 | 0.15 | 20061012 | 32.47161 | 134.59273 | 213.89372 | 7.92508 | 0.0554126 | 2.7016578 | 52 | 1 | 40 days | 0.45 | | MPC | 2006 $TO_{71}$ |
| 2006 $TP_{71}$ | 16.6 | 0.15 | 20061012 | 67.43459 | 37.29581 | 274.38159 | 1.97110 | 0.0409825 | 2.5352833 | 19 | 1 | 39 days | 0.29 | | MPC | 2006 $TP_{71}$ |
| 2006 $TQ_{71}$ | 16.9 | 0.15 | 20060922 | 321.99072 | 158.23183 | 265.05109 | 2.07320 | 0.0865301 | 2.7449483 | 36 | 1 | 65 days | 0.59 | M-v 4 | MPC | 2006 $TQ_{71}$ |
| 2006 $TR_{71}$ | 16.2 | 0.15 | 20061012 | 101.43963 | 54.26461 | 224.47549 | 6.47574 | 0.0522743 | 2.8027992 | 35 | 1 | 47 days | 0.56 | | MPC | 2006 $TR_{71}$ |
| 2006 $TT_{71}$ | 17.7 | 0.15 | 20061012 | 42.17705 | 169.53035 | 150.74279 | 5.81464 | 0.2167283 | 2.2866296 | 25 | 1 | 23 days | 0.51 | | MPC | 2006 $TT_{71}$ |
| 2006 $TA_{72}$ | 18.0 | 0.15 | 20061012 | 336.56331 | 338.33928 | 81.31448 | 5.85922 | 0.2162417 | 2.3264501 | 21 | 1 | 20 days | 0.54 | | MPC | 2006 $TA_{72}$ |
| 2006 $TB_{72}$ | 15.7 | 0.15 | 20061012 | 5.71122 | 74.76444 | 305.73803 | 8.78354 | 0.1126789 | 3.0181366 | 22 | 1 | 48 days | 0.46 | | MPC | 2006 $TB_{72}$ |
| 2006 $TC_{72}$ | 15.7 | 0.15 | 20061012 | 333.08413 | 83.53044 | 341.67096 | 11.60488 | 0.1622408 | 2.6764032 | 24 | 1 | 48 days | 0.62 | | MPC | 2006 $TC_{72}$ |
| 2006 $TF_{72}$ | 15.9 | 0.15 | 20061012 | 345.85418 | 67.26206 | 342.33529 | 10.29389 | 0.1579536 | 3.0198431 | 18 | 1 | 35 days | 0.51 | | MPC | 2006 $TF_{72}$ |
| 2006 $TJ_{72}$ | 17.2 | 0.15 | 20061012 | 358.53577 | 224.63817 | 161.18246 | 13.60782 | 0.2660629 | 2.6849918 | 14 | 1 | 10 days | 0.65 | | MPC | 2006 $TJ_{72}$ |
| 2006 $TN_{72}$ | 17.2 | 0.15 | 20061012 | 18.40013 | 298.18220 | 59.41868 | 9.14105 | 0.1790041 | 2.3067595 | 34 | 1 | 55 days | 0.50 | | MPC | 2006 $TN_{72}$ |
| 2006 $TO_{72}$ | 16.0 | 0.15 | 20061012 | 17.59432 | 251.74993 | 112.80042 | 7.13597 | 0.1332039 | 3.2156470 | 11 | 1 | 17 days | 0.59 | | MPC | 2006 $TO_{72}$ |
| 2006 $TP_{72}$ | 17.0 | 0.15 | 20061101 | 70.89203 | 229.32851 | 73.68154 | 8.32954 | 0.1587929 | 2.3058300 | 19 | 1 | 44 days | 0.55 | | MPC | 2006 $TP_{72}$ |
| 2006 $TQ_{72}$ | 17.5 | 0.15 | 20061012 | 30.25113 | 57.59513 | 281.90508 | 3.60826 | 0.2439345 | 2.6694749 | 24 | 1 | 39 days | 0.24 | | MPC | 2006 $TQ_{72}$ |
| 2006 $TR_{72}$ | 18.4 | 0.15 | 20061012 | 353.40085 | 36.33878 | 0.14806 | 3.04106 | 0.2167150 | 2.2114745 | 31 | 1 | 47 days | 0.36 | | MPC | 2006 $TR_{72}$ |
| 2006 $TS_{72}$ | 16.5 | 0.15 | 20061012 | 43.98185 | 312.32569 | 12.67308 | 9.79470 | 0.2159131 | 2.6971832 | 26 | 1 | 58 days | 0.19 | | MPC | 2006 $TS_{72}$ |
| 2006 $TT_{72}$ | 17.2 | 0.15 | 20060922 | 349.82573 | 17.27903 | 20.38026 | 14.18244 | 0.2559796 | 2.6306983 | 32 | 1 | 87 days | 0.43 | M-v 3 | MPC | 2006 $TT_{72}$ |
| 2006 $TU_{72}$ | 17.5 | 0.15 | 20061101 | 1.04996 | 103.37501 | 291.19172 | 3.21686 | 0.1838871 | 2.3640413 | 24 | 1 | 45 days | 0.30 | | MPC | 2006 $TU_{72}$ |
| 2006 $TV_{72}$ | 18.2 | 0.15 | 20060922 | 9.85122 | 42.29738 | 318.66054 | 2.56496 | 0.2364046 | 2.2027772 | 31 | 1 | 60 days | 0.33 | M-v 4 | MPC | 2006 $TV_{72}$ |
| 2006 $TY_{72}$ | 16.8 | 0.15 | 20061101 | 43.68610 | 78.52521 | 267.88224 | 2.57866 | 0.0696744 | 2.6100227 | 21 | 1 | 43 days | 0.22 | | MPC | 2006 $TY_{72}$ |
| 2006 $TA_{73}$ | 16.9 | 0.15 | 20061012 | 11.87450 | 72.24695 | 298.34288 | 3.81165 | 0.2171344 | 2.6883455 | 41 | 1 | 52 days | 0.45 | | MPC | 2006 $TA_{73}$ |
| 2006 $TB_{73}$ | 14.8 | 0.15 | 20061012 | 20.55740 | 128.58937 | 240.23306 | 14.87715 | 0.0629040 | 3.0826533 | 32 | 1 | 39 days | 0.43 | | MPC | 2006 $TB_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TC_{73}$ | 16.0 | 0.15 | 20061012 | 20.35869 | 335.54801 | 23.41567 | 26.09284 | 0.2388798 | 3.1752418 | 30 | 1 | 44 days | 0.49 | | | MPC | | 2006 $TC_{73}$ |
| 2006 $TD_{73}$ | 18.0 | 0.15 | 20061012 | 0.33909 | 59.16699 | 330.01405 | 5.79466 | 0.1239600 | 2.1717335 | 28 | 1 | 35 days | 0.49 | | | MPC | | 2006 $TD_{73}$ |
| 2006 $TE_{73}$ | 16.4 | 0.15 | 20061012 | 3.92961 | 131.42956 | 254.38019 | 5.55281 | 0.1497975 | 2.7480420 | 39 | 1 | 54 days | 0.25 | | | MPC | | 2006 $TE_{73}$ |
| 2006 $TF_{73}$ | 17.4 | 0.15 | 20061012 | 33.35444 | 9.21112 | 321.67226 | 3.33636 | 0.2951005 | 2.6031492 | 17 | 1 | 45 days | 0.19 | | | MPC | | 2006 $TF_{73}$ |
| 2006 $TG_{73}$ | 16.8 | 0.15 | 20061012 | 354.51809 | 24.35771 | 14.47724 | 11.55806 | 0.1699515 | 2.6287704 | 47 | 1 | 52 days | 0.52 | | | MPC | | 2006 $TG_{73}$ |
| 2006 $TJ_{73}$ | 16.0 | 0.15 | 20061012 | 39.97962 | 186.74949 | 155.44667 | 2.85354 | 0.1373816 | 3.1246176 | 17 | 1 | 36 days | 0.27 | | | MPC | | 2006 $TJ_{73}$ |
| 2006 $TK_{73}$ | 16.0 | 0.15 | 20061012 | 59.78600 | 174.82282 | 143.26558 | 2.72020 | 0.1428939 | 2.5904854 | 32 | 1 | 46 days | 0.45 | | | MPC | | 2006 $TK_{73}$ |
| 2006 $TM_{73}$ | 18.4 | 0.15 | 20061012 | 359.64326 | 326.71207 | 63.85001 | 3.38783 | 0.2390427 | 2.3310942 | 34 | 1 | 44 days | 0.38 | | | MPC | | 2006 $TM_{73}$ |
| 2006 $TO_{73}$ | 18.0 | 0.15 | 20060922 | 17.09105 | 215.68042 | 136.70231 | 9.12947 | 0.1777166 | 2.2144113 | 24 | 1 | 39 days | 0.45 | | | MPC | | 2006 $TO_{73}$ |
| 2006 $TS_{73}$ | 17.5 | 0.15 | 20061101 | 335.93447 | 234.55895 | 205.30021 | 12.61607 | 0.2273324 | 2.8039344 | 16 | 1 | 44 days | 0.30 | | D | MPC | | 2006 $TS_{73}$ |
| 2006 $TU_{73}$ | 16.7 | 0.15 | 20060922 | 22.59396 | 178.20936 | 182.92460 | 3.42726 | 0.1019896 | 2.7656558 | 29 | 1 | 118 days | 0.38 | M-v | 4 | MPC | | 2006 $TU_{73}$ |
| 2006 $TV_{73}$ | 17.4 | 0.15 | 20061012 | 348.74947 | 241.47354 | 158.85445 | 6.48080 | 0.1511466 | 2.3408932 | 26 | 1 | 47 days | 0.63 | | | MPC | | 2006 $TV_{73}$ |
| 2006 $TZ_{73}$ | 17.6 | 0.15 | 20061012 | 337.83318 | 257.91747 | 165.63459 | 6.41379 | 0.2536396 | 2.6239348 | 19 | 1 | 47 days | 0.44 | | | MPC | | 2006 $TZ_{73}$ |
| 2006 $TA_{74}$ | 17.4 | 0.15 | 20061012 | 17.37868 | 216.55068 | 144.90841 | 6.63509 | 0.1735348 | 2.5306942 | 18 | 1 | 17 days | 0.59 | | | MPC | | 2006 $TA_{74}$ |
| 2006 $TD_{74}$ | 15.3 | 0.15 | 20061012 | 31.74281 | 213.56063 | 136.88832 | 9.37784 | 0.1163564 | 3.1526963 | 18 | 1 | 36 days | 0.57 | | | MPC | | 2006 $TD_{74}$ |
| 2006 $TE_{74}$ | 17.6 | 0.15 | 20061012 | 341.49995 | 339.15203 | 71.48756 | 6.29352 | 0.1291607 | 2.3730196 | 24 | 1 | 33 days | 0.46 | | | MPC | | 2006 $TE_{74}$ |
| 2006 $TM_{74}$ | 17.9 | 0.15 | 20060922 | 30.78623 | 245.19334 | 77.05457 | 6.75785 | 0.2956259 | 2.2763266 | 24 | 1 | 64 days | 0.63 | M-v | 5 | MPC | | 2006 $TM_{74}$ |
| 2006 $TP_{74}$ | 16.8 | 0.15 | 20061012 | 331.92423 | 154.96535 | 292.00510 | 9.79256 | 0.3485243 | 2.7811796 | 21 | 1 | 51 days | 0.40 | | | MPC | | 2006 $TP_{74}$ |
| 2006 $TQ_{74}$ | 15.6 | 0.15 | 20061012 | 41.70052 | 69.59165 | 259.53395 | 15.00729 | 0.2272338 | 3.1645473 | 21 | 1 | 21 days | 0.46 | | | MPC | | 2006 $TQ_{74}$ |
| 2006 $TR_{74}$ | 17.7 | 0.15 | 20061101 | 60.76188 | 298.22001 | 15.55672 | 6.99379 | 0.1743287 | 2.2313014 | 16 | 1 | 45 days | 0.18 | | | MPC | | 2006 $TR_{74}$ |
| 2006 $TT_{74}$ | 16.3 | 0.15 | 20061012 | 304.05439 | 241.99730 | 217.04098 | 10.55479 | 0.1354019 | 3.0361029 | 22 | 1 | 40 days | 0.21 | | | MPC | | 2006 $TT_{74}$ |
| 2006 $TU_{74}$ | 17.0 | 0.15 | 20061012 | 352.68642 | 129.58654 | 267.70568 | 1.61008 | 0.1100649 | 2.6840659 | 15 | 1 | 59 days | 0.16 | | | MPC | | 2006 $TU_{74}$ |
| 2006 $TW_{74}$ | 15.5 | 0.15 | 20061012 | 37.69122 | 10.63155 | 319.31647 | 1.62753 | 0.2552721 | 3.9894340 | 18 | 1 | 45 days | 0.22 | | | MPC | | 2006 $TW_{74}$ |
| 2006 $TX_{74}$ | 18.1 | 0.15 | 20060922 | 343.48828 | 209.52852 | 195.24181 | 1.32375 | 0.1866547 | 2.4560905 | 37 | 1 | 63 days | 0.38 | M-v | 4 | MPC | | 2006 $TX_{74}$ |
| 2006 $TA_{75}$ | 17.9 | 0.15 | 20061012 | 3.68217 | 172.86055 | 207.22469 | 10.50839 | 0.2515260 | 2.4663346 | 49 | 1 | 58 days | 0.46 | | | MPC | | 2006 $TA_{75}$ |
| 2006 $TE_{75}$ | 17.2 | 0.15 | 20061012 | 332.63414 | 26.17830 | 36.82043 | 6.12107 | 0.1240752 | 2.4122883 | 39 | 1 | 54 days | 0.39 | | | MPC | | 2006 $TE_{75}$ |
| 2006 $TF_{75}$ | 17.2 | 0.15 | 20061012 | 19.38245 | 323.49663 | 37.85775 | 5.46213 | 0.1724031 | 2.6487844 | 34 | 1 | 58 days | 0.41 | | | MPC | | 2006 $TF_{75}$ |
| 2006 $TG_{75}$ | 16.2 | 0.15 | 20061012 | 23.34249 | 284.59365 | 66.52861 | 9.95836 | 0.2311113 | 2.7447839 | 19 | 1 | 53 days | 0.33 | | | MPC | | 2006 $TG_{75}$ |
| 2006 $TJ_{75}$ | 14.5 | 0.15 | 20061101 | 26.18684 | 275.22474 | 80.97012 | 9.97846 | 0.2060094 | 3.9700745 | 24 | 1 | 44 days | 0.38 | | | MPC | | 2006 $TJ_{75}$ |
| 2006 $TO_{75}$ | 16.2 | 0.15 | 20061012 | 26.71284 | 260.25279 | 98.38869 | 5.62751 | 0.0930761 | 2.6795851 | 22 | 1 | 53 days | 0.66 | | | MPC | | 2006 $TO_{75}$ |
| 2006 $TT_{75}$ | 16.9 | 0.15 | 20061012 | 25.71420 | 280.64174 | 60.50863 | 12.23889 | 0.2971988 | 2.5686771 | 27 | 1 | 39 days | 0.55 | | | MPC | | 2006 $TT_{75}$ |
| 2006 $TU_{75}$ | 18.3 | 0.15 | 20060922 | 1.31636 | 326.01490 | 46.13768 | 11.62783 | 0.3168543 | 2.2482966 | 53 | 1 | 64 days | 0.57 | M-v | 4 | MPC | | 2006 $TU_{75}$ |
| 2006 $TW_{75}$ | 16.9 | 0.15 | 20060922 | 333.26707 | 55.96339 | 8.17587 | 7.11593 | 0.1711710 | 2.6041490 | 40 | 1 | 125 days | 0.38 | M-v | 3 | MPC | | 2006 $TW_{75}$ |
| 2006 $TX_{75}$ | 16.1 | 0.15 | 20061012 | 336.22843 | 177.79815 | 248.78125 | 5.67616 | 0.1697175 | 2.6699496 | 36 | 1 | 46 days | 0.43 | | | MPC | | 2006 $TX_{75}$ |
| 2006 $TY_{75}$ | 15.8 | 0.15 | 20061101 | 353.09474 | 180.98096 | 229.52435 | 15.52560 | 0.2000097 | 3.1722789 | 44 | 1 | 47 days | 0.35 | | | MPC | | 2006 $TY_{75}$ |
| 2006 $TA_{76}$ | 18.0 | 0.15 | 20061012 | 33.66138 | 266.72820 | 71.53854 | 1.51469 | 0.1761880 | 2.2461895 | 38 | 1 | 57 days | 0.28 | | | MPC | | 2006 $TA_{76}$ |
| 2006 $TE_{76}$ | 17.7 | 0.15 | 20060922 | 24.33117 | 247.45549 | 95.76842 | 3.24282 | 0.1741373 | 2.1872373 | 23 | 1 | 22 days | 0.38 | | | MPC | | 2006 $TE_{76}$ |
| 2006 $TF_{76}$ | 17.5 | 0.15 | 20060922 | 14.96047 | 177.97849 | 177.99059 | 6.05448 | 0.1766088 | 2.1910012 | 29 | 1 | 92 days | 0.59 | M-v | 4 | D MPC | | 2006 $TF_{76}$ |
| 2006 $TG_{76}$ | 17.5 | 0.15 | 20061012 | 8.48803 | 311.77777 | 61.87272 | 5.13156 | 0.1922939 | 2.4070808 | 39 | 1 | 45 days | 0.39 | | | MPC | | 2006 $TG_{76}$ |
| 2006 $TH_{76}$ | 16.8 | 0.15 | 20061012 | 158.78545 | 181.86853 | 44.91564 | 7.57765 | 0.0532279 | 2.2409009 | 45 | 1 | 43 days | 0.37 | | | MPC | | 2006 $TH_{76}$ |
| 2006 $TM_{76}$ | 15.5 | 0.15 | 20061101 | 6.29018 | 95.60167 | 295.43351 | 9.20251 | 0.1914946 | 2.9869882 | 27 | 1 | 42 days | 0.36 | | | MPC | | 2006 $TM_{76}$ |
| 2006 $TN_{76}$ | 15.3 | 0.15 | 20061101 | 338.85411 | 75.09360 | 1.42257 | 15.09066 | 0.2745187 | 3.1406239 | 23 | 1 | 42 days | 0.48 | | | MPC | | 2006 $TN_{76}$ |
| 2006 $TO_{76}$ | 17.0 | 0.15 | 20060922 | 25.88544 | 95.82392 | 236.51133 | 12.94734 | 0.3238100 | 2.7383661 | 37 | 1 | 60 days | 0.40 | M-v | 4 | MPC | | 2006 $TO_{76}$ |
| 2006 $TP_{76}$ | 16.2 | 0.15 | 20061101 | 344.38370 | 68.81504 | 352.57941 | 12.48752 | 0.1767920 | 2.9829379 | 14 | 1 | 42 days | 0.42 | | | MPC | | 2006 $TP_{76}$ |
| 2006 $TR_{76}$ | 17.0 | 0.15 | 20061101 | 24.54233 | 117.71972 | 236.54574 | 13.87275 | 0.2806126 | 2.6374275 | 42 | 1 | 46 days | 0.39 | | | MPC | | 2006 $TR_{76}$ |
| 2006 $TT_{76}$ | 15.2 | 0.15 | 20061101 | 320.18397 | 213.39920 | 246.97135 | 15.74962 | 0.2358427 | 3.1743534 | 25 | 1 | 43 days | 0.53 | | | MPC | | 2006 $TT_{76}$ |
| 2006 $TV_{76}$ | 15.7 | 0.15 | 20061012 | 354.90463 | 62.96720 | 336.97934 | 9.26238 | 0.1503390 | 3.0631063 | 14 | 1 | 16 days | 0.35 | | | MPC | | 2006 $TV_{76}$ |
| 2006 $TW_{76}$ | 15.7 | 0.15 | 20061012 | 334.74930 | 157.09562 | 272.58784 | 7.03497 | 0.2107947 | 2.7807923 | 36 | 1 | 34 days | 0.38 | | | MPC | | 2006 $TW_{76}$ |
| 2006 $TX_{76}$ | 15.2 | 0.15 | 20061012 | 282.05421 | 107.51853 | 17.48230 | 24.89118 | 0.1020739 | 3.1178085 | 15 | 1 | 12 days | 0.71 | | | MPC | | 2006 $TX_{76}$ |
| 2006 $TY_{76}$ | 16.5 | 0.15 | 20061101 | 12.92038 | 55.98036 | 320.30587 | 6.90804 | 0.2560122 | 2.7279145 | 14 | 1 | 42 days | 0.25 | | | MPC | | 2006 $TY_{76}$ |
| 2006 $TA_{77}$ | 15.9 | 0.15 | 20060922 | 334.15146 | 140.09648 | 290.12913 | 7.60402 | 0.2645989 | 2.7815031 | 33 | 1 | 60 days | 0.42 | M-v | 4 | MPC | | 2006 $TA_{77}$ |
| 2006 $TD_{77}$ | 15.5 | 0.15 | 20061012 | 12.19383 | 302.01331 | 63.32404 | 14.90177 | 0.2851734 | 3.1715828 | 33 | 1 | 56 days | 0.52 | | | MPC | | 2006 $TD_{77}$ |
| 2006 $TF_{77}$ | 18.0 | 0.15 | 20061101 | 21.19510 | 271.22168 | 81.74205 | 6.70585 | 0.3321806 | 2.3667127 | 17 | 1 | 43 days | 0.48 | | | MPC | | 2006 $TF_{77}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TK_{77}$ | 16.5 | 0.15 | 20061012 | 0.44558 | 303.37218 | 85.50082 | 14.39912 | 0.1982346 | 2.7455756 | 17 | 1 | 34 days | 0.39 | | MPC | 2006 $TK_{77}$ |
| 2006 $TM_{77}$ | 17.5 | 0.15 | 20060922 | 321.46545 | 86.44018 | 347.98129 | 7.73867 | 0.2990845 | 2.5481090 | 28 | 1 | 36 days | 0.53 | | MPC | 2006 $TM_{77}$ |
| 2006 $TO_{77}$ | 17.5 | 0.15 | 20061012 | 55.25880 | 109.33141 | 203.76375 | 9.45035 | 0.2207274 | 2.6390742 | 17 | 1 | 35 days | 0.26 | | MPC | 2006 $TO_{77}$ |
| 2006 $TP_{77}$ | 16.7 | 0.15 | 20061012 | 39.17676 | 127.38170 | 209.51564 | 21.97377 | 0.1976915 | 3.1041686 | 21 | 1 | 37 days | 0.32 | | MPC | 2006 $TP_{77}$ |
| 2006 $TR_{77}$ | 17.4 | 0.15 | 20061012 | 24.34987 | 149.92946 | 206.04689 | 8.38780 | 0.1657443 | 2.6542580 | 28 | 1 | 45 days | 0.24 | | MPC | 2006 $TR_{77}$ |
| 2006 $TV_{77}$ | 17.3 | 0.15 | 20061012 | 55.09444 | 116.18013 | 199.50711 | 5.79208 | 0.1831899 | 2.3079559 | 21 | 1 | 46 days | 0.23 | | MPC | 2006 $TV_{77}$ |
| 2006 $TW_{77}$ | 19.2 | 0.15 | 20061012 | 5.49051 | 188.02813 | 191.63297 | 1.97662 | 0.2109720 | 2.4441199 | 10 | 1 | 10 days | 0.24 | | MPC | 2006 $TW_{77}$ |
| 2006 $TX_{77}$ | 17.9 | 0.15 | 20061012 | 54.70173 | 109.76967 | 202.51376 | 6.33429 | 0.2045303 | 2.2317665 | 16 | 1 | 38 days | 0.32 | | MPC | 2006 $TX_{77}$ |
| 2006 $TE_{78}$ | 17.0 | 0.15 | 20060922 | 9.64813 | 118.58283 | 231.80908 | 10.53535 | 0.3245313 | 2.6446854 | 18 | 1 | 63 days | 0.51 | M-v 4 | MPC | 2006 $TE_{78}$ |
| 2006 $TF_{78}$ | 16.1 | 0.15 | 20061012 | 31.25184 | 91.64721 | 249.79808 | 7.24608 | 0.1180377 | 2.6692311 | 18 | 1 | 55 days | 0.45 | | MPC | 2006 $TF_{78}$ |
| 2006 $TG_{78}$ | 17.1 | 0.15 | 20060922 | 252.88161 | 143.91060 | 346.14700 | 7.27953 | 0.0582263 | 2.2708636 | 16 | 1 | 24 days | 0.35 | | MPC | 2006 $TG_{78}$ |
| 2006 $TH_{78}$ | 18.0 | 0.15 | 20061012 | 25.84109 | 130.16631 | 208.52632 | 29.57446 | 0.2533386 | 2.5131528 | 12 | 1 | 9 days | 0.21 | | MPC | 2006 $TH_{78}$ |
| 2006 $TK_{78}$ | 16.9 | 0.15 | 20061012 | 21.56406 | 296.54287 | 56.53658 | 4.03961 | 0.1495422 | 2.6184468 | 39 | 1 | 51 days | 0.46 | | MPC | 2006 $TK_{78}$ |
| 2006 $TL_{78}$ | 18.1 | 0.15 | 20061012 | 68.21256 | 284.14489 | 37.50739 | 21.53535 | 0.0657309 | 1.8442952 | 16 | 1 | 31 days | 0.20 | | MPC | 2006 $TL_{78}$ |
| 2006 $TM_{78}$ | 17.3 | 0.15 | 20061012 | 301.67181 | 268.61277 | 211.07798 | 8.26395 | 0.1564895 | 3.1546997 | 8 | 1 | 35 days | 0.57 | | MPC | 2006 $TM_{78}$ |
| 2006 $TN_{78}$ | 16.5 | 0.15 | 20061012 | 71.01478 | 110.74110 | 213.51243 | 9.44907 | 0.0525394 | 2.6715857 | 20 | 1 | 50 days | 0.27 | | MPC | 2006 $TN_{78}$ |
| 2006 $TP_{78}$ | 16.2 | 0.15 | 20061101 | 332.76739 | 222.44022 | 214.84880 | 11.42582 | 0.0836270 | 2.7768930 | 28 | 1 | 39 days | 0.48 | | MPC | 2006 $TP_{78}$ |
| 2006 $TQ_{78}$ | 17.3 | 0.15 | 20061012 | 340.71285 | 227.59042 | 195.01116 | 3.17065 | 0.0813050 | 2.6969503 | 21 | 1 | 34 days | 0.28 | | MPC | 2006 $TQ_{78}$ |
| 2006 $TR_{78}$ | 14.8 | 0.15 | 20060922 | 321.05023 | 52.53128 | 20.91370 | 16.48168 | 0.0848479 | 3.4439532 | 36 | 1 | 126 days | 0.35 | M-v 3 | MPC | 2006 $TR_{78}$ |
| 2006 $TT_{78}$ | 16.1 | 0.15 | 20060922 | 334.03643 | 195.22746 | 223.19600 | 12.35028 | 0.1605428 | 2.6279235 | 42 | 1 | 60 days | 0.48 | M-v 4 | MPC | 2006 $TT_{78}$ |
| 2006 $TU_{78}$ | 15.4 | 0.15 | 20061101 | 16.92945 | 353.59991 | 20.55211 | 10.63595 | 0.1190978 | 3.0432771 | 22 | 1 | 44 days | 0.49 | | MPC | 2006 $TU_{78}$ |
| 2006 $TV_{78}$ | 15.6 | 0.15 | 20061012 | 52.92063 | 319.63432 | 13.89279 | 5.52654 | 0.0550193 | 3.0401121 | 28 | 1 | 51 days | 0.22 | | MPC | 2006 $TV_{78}$ |
| 2006 $TX_{78}$ | 17.7 | 0.15 | 20061101 | 25.57010 | 326.03345 | 38.76134 | 6.36520 | 0.2441255 | 2.3216539 | 38 | 1 | 41 days | 0.51 | | MPC | 2006 $TX_{78}$ |
| 2006 $TY_{78}$ | 17.1 | 0.15 | 20061012 | 353.92126 | 0.64287 | 49.92964 | 2.07015 | 0.1197109 | 2.6382908 | 28 | 1 | 47 days | 0.42 | | MPC | 2006 $TY_{78}$ |
| 2006 $TZ_{78}$ | 18.2 | 0.15 | 20061012 | 354.80821 | 6.19363 | 42.55439 | 13.31315 | 0.2349716 | 2.5792413 | 20 | 1 | 34 days | 0.24 | | MPC | 2006 $TZ_{78}$ |
| 2006 $TB_{79}$ | 15.6 | 0.15 | 20061101 | 33.93006 | 314.78156 | 44.75270 | 14.13264 | 0.1993039 | 2.6271856 | 78 | 1 | 41 days | 0.51 | | MPC | 2006 $TB_{79}$ |
| 2006 $TC_{79}$ | 16.5 | 0.15 | 20061012 | 287.12633 | 69.88439 | 53.54223 | 3.26685 | 0.0344871 | 2.7933976 | 26 | 1 | 35 days | 0.45 | | MPC | 2006 $TC_{79}$ |
| 2006 $TD_{79}$ | 17.0 | 0.15 | 20061012 | 358.13657 | 358.41544 | 44.22180 | 11.30904 | 0.2183919 | 2.3176136 | 56 | 1 | 53 days | 0.32 | | MPC | 2006 $TD_{79}$ |
| 2006 $TF_{79}$ | 17.0 | 0.15 | 20061012 | 8.16155 | 238.34288 | 156.59024 | 2.97033 | 0.1278992 | 2.6412189 | 19 | 1 | 58 days | 0.20 | | MPC | 2006 $TF_{79}$ |
| 2006 $TG_{79}$ | 16.6 | 0.15 | 20061012 | 142.11296 | 60.92007 | 197.90078 | 5.80292 | 0.0855998 | 2.3767904 | 17 | 1 | 35 days | 0.31 | | MPC | 2006 $TG_{79}$ |
| 2006 $TH_{79}$ | 16.0 | 0.15 | 20060922 | 56.96148 | 115.60563 | 217.26159 | 15.00542 | 0.1284703 | 3.0938567 | 17 | 1 | 22 days | 0.27 | | MPC | 2006 $TH_{79}$ |
| 2006 $TJ_{79}$ | 17.7 | 0.15 | 20061012 | 47.61247 | 137.64456 | 194.50900 | 3.64541 | 0.1928100 | 2.2210685 | 23 | 1 | 49 days | 0.32 | | MPC | 2006 $TJ_{79}$ |
| 2006 $TK_{79}$ | 17.3 | 0.15 | 20061012 | 332.28998 | 250.48764 | 193.02238 | 4.24545 | 0.2109188 | 2.6350102 | 34 | 1 | 51 days | 0.45 | | MPC | 2006 $TK_{79}$ |
| 2006 $TN_{79}$ | 15.8 | 0.15 | 20061012 | 50.60948 | 338.16755 | 355.76480 | 8.43015 | 0.0982868 | 3.0469222 | 17 | 1 | 17 days | 0.32 | | MPC | 2006 $TN_{79}$ |
| 2006 $TQ_{79}$ | 15.9 | 0.15 | 20061012 | 32.84041 | 106.06623 | 248.20794 | 9.27801 | 0.0958815 | 3.1650241 | 16 | 1 | 36 days | 0.19 | | MPC | 2006 $TQ_{79}$ |
| 2006 $TR_{79}$ | 16.5 | 0.15 | 20061012 | 263.90520 | 253.28954 | 247.06032 | 9.38147 | 0.0904866 | 3.0293621 | 9 | 1 | 8 days | 0.72 | | MPC | 2006 $TR_{79}$ |
| 2006 $TS_{79}$ | 16.0 | 0.15 | 20061012 | 139.09056 | 5.66514 | 248.71363 | 8.23642 | 0.0081074 | 3.0372158 | 13 | 1 | 36 days | 0.44 | | MPC | 2006 $TS_{79}$ |
| 2006 $TU_{79}$ | 18.0 | 0.15 | 20061012 | 16.50139 | 0.04440 | 0.81191 | 7.04868 | 0.2704217 | 2.5407544 | 21 | 1 | 23 days | 0.58 | | MPC | 2006 $TU_{79}$ |
| 2006 $TW_{79}$ | 16.1 | 0.15 | 20061012 | 257.24035 | 255.84866 | 251.89085 | 9.00019 | 0.0966037 | 2.9909379 | 9 | 1 | 8 days | 0.37 | | MPC | 2006 $TW_{79}$ |
| 2006 $TX_{79}$ | 16.7 | 0.15 | 20061012 | 72.43794 | 335.02377 | 344.73035 | 6.28132 | 0.0170170 | 2.7297732 | 21 | 1 | 50 days | 0.29 | | MPC | 2006 $TX_{79}$ |
| 2006 $TY_{79}$ | 18.3 | 0.15 | 20061012 | 9.33918 | 34.78737 | 341.50542 | 4.45462 | 0.1970082 | 2.4008609 | 20 | 1 | 50 days | 0.27 | | MPC | 2006 $TY_{79}$ |
| 2006 $TZ_{79}$ | 17.3 | 0.15 | 20061012 | 25.48050 | 339.00648 | 14.92348 | 12.47431 | 0.2049337 | 2.6685826 | 13 | 1 | 17 days | 0.20 | | MPC | 2006 $TZ_{79}$ |
| 2006 $TD_{80}$ | 16.3 | 0.15 | 20061012 | 29.66344 | 113.45451 | 233.82580 | 14.36418 | 0.2317007 | 3.3813652 | 12 | 1 | 18 days | 0.22 | | MPC | 2006 $TD_{80}$ |
| 2006 $TF_{80}$ | 18.1 | 0.15 | 20061101 | 357.75015 | 161.62336 | 239.91950 | 6.83922 | 0.1354531 | 2.2017915 | 19 | 1 | 39 days | 0.25 | | MPC | 2006 $TF_{80}$ |
| 2006 $TG_{80}$ | 17.0 | 0.15 | 20061012 | 68.05516 | 27.73896 | 277.91597 | 4.30122 | 0.1635628 | 2.2107387 | 26 | 1 | 51 days | 0.35 | | MPC | 2006 $TG_{80}$ |
| 2006 $TM_{80}$ | 16.1 | 0.15 | 20061012 | 45.26722 | 116.19372 | 225.72135 | 21.23342 | 0.0720645 | 2.6477658 | 31 | 1 | 54 days | 0.51 | | MPC | 2006 $TM_{80}$ |
| 2006 $TN_{80}$ | 18.7 | 0.15 | 20061012 | 341.32578 | 93.97262 | 321.12455 | 3.70546 | 0.1198971 | 2.1794537 | 24 | 1 | 50 days | 0.35 | | MPC | 2006 $TN_{80}$ |
| 2006 $TO_{80}$ | 16.4 | 0.15 | 20061012 | 26.41803 | 84.76485 | 272.70867 | 5.37539 | 0.1692077 | 2.9746727 | 23 | 1 | 18 days | 0.29 | | MPC | 2006 $TO_{80}$ |
| 2006 $TP_{80}$ | 16.6 | 0.15 | 20061012 | 212.48278 | 318.40408 | 232.38965 | 15.10607 | 0.1513094 | 2.5733462 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $TP_{80}$ |
| 2006 $TQ_{80}$ | 16.8 | 0.15 | 20061101 | 204.15192 | 253.33110 | 305.41628 | 4.53004 | 0.0817065 | 2.2856386 | 24 | 1 | 41 days | 0.51 | | MPC | 2006 $TQ_{80}$ |
| 2006 $TS_{80}$ | 18.0 | 0.15 | 20061012 | 25.90775 | 102.84021 | 256.75180 | 5.64796 | 0.1359666 | 2.5953920 | 12 | 1 | 18 days | 0.21 | | MPC | 2006 $TS_{80}$ |
| 2006 $TU_{80}$ | 17.1 | 0.15 | 20061012 | 84.65902 | 320.91022 | 329.61142 | 4.23666 | 0.1625695 | 2.2388392 | 13 | 1 | 19 days | 0.16 | | MPC | 2006 $TU_{80}$ |
| 2006 $TV_{80}$ | 16.7 | 0.15 | 20061012 | 60.97926 | 89.90900 | 240.34592 | 10.22146 | 0.0353056 | 2.5646255 | 19 | 1 | 35 days | 0.32 | | MPC | 2006 $TV_{80}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TW_{80}$ | 17.0 | 0.15 | 20061012 | 42.38936 | 79.85046 | 255.49464 | 4.94225 | 0.1747220 | 2.5265543 | 17 | 1 | 46 days | 0.23 | | | MPC | 2006 $TW_{80}$ |
| 2006 $TX_{80}$ | 16.3 | 0.15 | 20061012 | 213.22673 | 281.14540 | 263.62601 | 5.59437 | 0.0263050 | 2.8684524 | 28 | 1 | 53 days | 0.37 | | | MPC | 2006 $TX_{80}$ |
| 2006 $TY_{80}$ | 15.6 | 0.15 | 20061012 | 65.72764 | 14.13136 | 300.99321 | 4.36263 | 0.1445209 | 3.1740737 | 23 | 1 | 52 days | 0.24 | | | MPC | 2006 $TY_{80}$ |
| 2006 $TZ_{80}$ | 18.4 | 0.15 | 20061012 | 32.89695 | 70.17358 | 279.69218 | 3.15284 | 0.1300202 | 2.1925541 | 17 | 1 | 25 days | 0.49 | | | MPC | 2006 $TZ_{80}$ |
| 2006 $TB_{81}$ | 18.6 | 0.15 | 20061012 | 13.81437 | 19.04537 | 351.76433 | 4.75754 | 0.1896345 | 2.2285217 | 21 | 1 | 52 days | 0.21 | | | MPC | 2006 $TB_{81}$ |
| 2006 $TD_{81}$ | 18.8 | 0.15 | 20061012 | 31.78075 | 61.04053 | 285.35668 | 3.90666 | 0.2050496 | 2.5714892 | 12 | 1 | 20 days | 0.26 | | | MPC | 2006 $TD_{81}$ |
| 2006 $TF_{81}$ | 17.2 | 0.15 | 20061012 | 42.74530 | 18.46808 | 318.33231 | 3.88756 | 0.1647600 | 2.5364939 | 29 | 1 | 50 days | 0.28 | | | MPC | 2006 $TF_{81}$ |
| 2006 $TG_{81}$ | 16.7 | 0.15 | 20061012 | 17.37801 | 16.15114 | 354.84074 | 6.30821 | 0.1747897 | 3.0069649 | 18 | 1 | 28 days | 0.18 | | | MPC | 2006 $TG_{81}$ |
| 2006 $TH_{81}$ | 15.9 | 0.15 | 20061012 | 49.26436 | 306.65870 | 23.64612 | 18.00596 | 0.1784965 | 3.0715716 | 22 | 1 | 44 days | 0.56 | | | MPC | 2006 $TH_{81}$ |
| 2006 $TJ_{81}$ | 18.1 | 0.15 | 20061101 | 5.52593 | 88.29678 | 303.42794 | 2.88571 | 0.2115413 | 2.5541689 | 34 | 1 | 43 days | 0.34 | | | MPC | 2006 $TJ_{81}$ |
| 2006 $TK_{81}$ | 16.0 | 0.15 | 20061012 | 213.46192 | 175.95257 | 12.37223 | 9.23644 | 0.0626823 | 2.9830129 | 13 | 1 | 19 days | 0.22 | | | MPC | 2006 $TK_{81}$ |
| 2006 $TM_{81}$ | 18.5 | 0.15 | 20061012 | 356.66905 | 103.99355 | 293.95327 | 2.81390 | 0.2529282 | 2.5539513 | 13 | 1 | 19 days | 0.31 | | | MPC | 2006 $TM_{81}$ |
| 2006 $TN_{81}$ | 17.6 | 0.15 | 20061012 | 2.24157 | 147.19847 | 242.30663 | 5.25834 | 0.1275763 | 2.4411153 | 20 | 1 | 42 days | 0.24 | | | MPC | 2006 $TN_{81}$ |
| 2006 $TS_{81}$ | 17.7 | 0.15 | 20061012 | 74.65687 | 332.23447 | 331.53717 | 3.41386 | 0.1310238 | 2.1780820 | 21 | 1 | 47 days | 0.38 | | | MPC | 2006 $TS_{81}$ |
| 2006 $TT_{81}$ | 17.1 | 0.15 | 20061101 | 189.04909 | 341.53444 | 230.07971 | 11.01926 | 0.0522166 | 2.5938575 | 23 | 1 | 45 days | 0.38 | | | MPC | 2006 $TT_{81}$ |
| 2006 $TU_{81}$ | 16.5 | 0.15 | 20061012 | 345.31170 | 36.74683 | 26.89722 | 18.62133 | 0.3289801 | 3.0979995 | 30 | 1 | 49 days | 0.34 | | | MPC | 2006 $TU_{81}$ |
| 2006 $TV_{81}$ | 17.0 | 0.15 | 20061012 | 5.63543 | 162.17557 | 220.75559 | 21.64883 | 0.2761870 | 3.0749284 | 24 | 1 | 35 days | 0.56 | | | MPC | 2006 $TV_{81}$ |
| 2006 $TW_{81}$ | 15.6 | 0.15 | 20061101 | 118.56062 | 49.81710 | 229.01646 | 14.89234 | 0.0295221 | 3.1412416 | 21 | 1 | 45 days | 0.46 | | | MPC | 2006 $TW_{81}$ |
| 2006 $TY_{81}$ | 16.8 | 0.15 | 20060922 | 18.82951 | 337.20994 | 8.55147 | 7.11399 | 0.3123575 | 2.6223209 | 57 | 1 | 87 days | 0.34 | M-v | 3 | MPC | 2006 $TY_{81}$ |
| 2006 $TB_{82}$ | 16.4 | 0.15 | 20061012 | 241.32790 | 290.29440 | 233.85905 | 11.39356 | 0.1066745 | 3.0977496 | 9 | 1 | 8 days | 0.32 | | | MPC | 2006 $TB_{82}$ |
| 2006 $TD_{82}$ | 17.4 | 0.15 | 20061012 | 302.29246 | 215.56513 | 250.48561 | 5.14116 | 0.1468978 | 2.4549543 | 13 | 1 | 17 days | 0.23 | | | MPC | 2006 $TD_{82}$ |
| 2006 $TE_{82}$ | 16.7 | 0.15 | 20061012 | 341.80607 | 81.89062 | 333.89857 | 4.19421 | 0.0986116 | 2.6725396 | 20 | 1 | 23 days | 0.26 | | | MPC | 2006 $TE_{82}$ |
| 2006 $TF_{82}$ | 17.3 | 0.15 | 20061012 | 37.54659 | 81.75129 | 248.69330 | 4.40923 | 0.2650258 | 2.6514094 | 27 | 1 | 48 days | 0.34 | | | MPC | 2006 $TF_{82}$ |
| 2006 $TG_{82}$ | 16.0 | 0.15 | 20061012 | 7.34312 | 141.40304 | 242.62357 | 5.78519 | 0.1067460 | 2.6803146 | 32 | 1 | 49 days | 0.40 | | | MPC | 2006 $TG_{82}$ |
| 2006 $TH_{82}$ | 17.4 | 0.15 | 20061012 | 89.96508 | 333.51920 | 326.09478 | 3.51391 | 0.0453695 | 2.7541907 | 9 | 1 | 8 days | 0.27 | | | MPC | 2006 $TH_{82}$ |
| 2006 $TJ_{82}$ | 17.8 | 0.15 | 20061012 | 359.48286 | 15.56946 | 18.82061 | 10.83260 | 0.2457643 | 3.1633466 | 13 | 1 | 19 days | 0.25 | | | MPC | 2006 $TJ_{82}$ |
| 2006 $TK_{82}$ | 17.4 | 0.15 | 20061012 | 339.17451 | 79.98323 | 337.30160 | 3.82928 | 0.0410788 | 2.8000472 | 9 | 1 | 8 days | 0.26 | | | MPC | 2006 $TK_{82}$ |
| 2006 $TM_{82}$ | 16.2 | 0.15 | 20061012 | 336.33817 | 182.74333 | 240.81245 | 7.96094 | 0.0905466 | 3.1759800 | 12 | 1 | 18 days | 0.11 | | | MPC | 2006 $TM_{82}$ |
| 2006 $TR_{82}$ | 17.7 | 0.15 | 20061012 | 316.32183 | 106.04861 | 347.16601 | 4.24790 | 0.1731831 | 2.6014648 | 13 | 1 | 36 days | 0.18 | | | MPC | 2006 $TR_{82}$ |
| 2006 $TS_{82}$ | 15.8 | 0.15 | 20061012 | 196.63688 | 185.31801 | 13.75127 | 11.40481 | 0.0394916 | 3.0980363 | 17 | 1 | 25 days | 0.44 | | | MPC | 2006 $TS_{82}$ |
| 2006 $TT_{82}$ | 17.1 | 0.15 | 20061012 | 302.18181 | 253.20766 | 228.47228 | 14.97037 | 0.2742821 | 3.1848933 | 15 | 1 | 28 days | 0.14 | | | MPC | 2006 $TT_{82}$ |
| 2006 $TU_{82}$ | 16.4 | 0.15 | 20061101 | 354.85878 | 164.87873 | 240.75852 | 8.02946 | 0.2109133 | 3.0879852 | 54 | 1 | 54 days | 0.40 | | | MPC | 2006 $TU_{82}$ |
| 2006 $TV_{82}$ | 17.7 | 0.15 | 20061012 | 44.48138 | 20.49590 | 308.03185 | 3.40752 | 0.1963896 | 2.6481942 | 20 | 1 | 45 days | 0.23 | | | MPC | 2006 $TV_{82}$ |
| 2006 $TW_{82}$ | 16.3 | 0.15 | 20061012 | 212.59669 | 314.94427 | 235.23980 | 12.84352 | 0.1624072 | 2.8716773 | 9 | 1 | 8 days | 0.66 | | | MPC | 2006 $TW_{82}$ |
| 2006 $TZ_{82}$ | 17.3 | 0.15 | 20061012 | 20.68101 | 30.22555 | 335.13352 | 4.05838 | 0.1341958 | 2.8055380 | 13 | 1 | 36 days | 0.23 | | | MPC | 2006 $TZ_{82}$ |
| 2006 $TA_{83}$ | 17.2 | 0.15 | 20061012 | 33.96027 | 85.28789 | 252.62241 | 4.54203 | 0.2335575 | 2.6339259 | 38 | 1 | 54 days | 0.23 | | | MPC | 2006 $TA_{83}$ |
| 2006 $TC_{83}$ | 15.6 | 0.15 | 20061012 | 259.52946 | 126.72808 | 16.35665 | 13.06030 | 0.0683188 | 3.1062256 | 17 | 1 | 50 days | 0.16 | | | MPC | 2006 $TC_{83}$ |
| 2006 $TD_{83}$ | 18.0 | 0.15 | 20061012 | 11.81401 | 146.85192 | 218.86367 | 18.62170 | 0.3052276 | 2.5541897 | 23 | 1 | 35 days | 0.40 | | | MPC | 2006 $TD_{83}$ |
| 2006 $TE_{83}$ | 16.3 | 0.15 | 20061012 | 38.74651 | 89.10880 | 261.88970 | 4.34231 | 0.0431222 | 2.7456373 | 32 | 1 | 56 days | 0.20 | | | MPC | 2006 $TE_{83}$ |
| 2006 $TH_{83}$ | 17.8 | 0.15 | 20061012 | 346.88953 | 91.39191 | 317.86560 | 3.33401 | 0.1718649 | 2.3971283 | 32 | 1 | 45 days | 0.24 | | | MPC | 2006 $TH_{83}$ |
| 2006 $TK_{83}$ | 18.0 | 0.15 | 20061012 | 323.47768 | 79.90674 | 359.72892 | 6.22133 | 0.1526932 | 2.2925946 | 16 | 1 | 24 days | 0.20 | | | MPC | 2006 $TK_{83}$ |
| 2006 $TL_{83}$ | 17.7 | 0.15 | 20061012 | 120.08640 | 354.64826 | 267.46810 | 3.59903 | 0.1070635 | 2.2151606 | 18 | 1 | 35 days | 0.19 | | | MPC | 2006 $TL_{83}$ |
| 2006 $TN_{83}$ | 18.2 | 0.15 | 20061012 | 338.60331 | 201.53402 | 218.34034 | 31.66353 | 0.1471604 | 2.5977259 | 15 | 1 | 29 days | 0.28 | | E | MPC | 2006 $TN_{83}$ |
| 2006 $TR_{83}$ | 18.0 | 0.15 | 20061012 | 15.45004 | 119.73207 | 248.55411 | 5.89551 | 0.1433800 | 2.3303016 | 25 | 1 | 45 days | 0.37 | | | MPC | 2006 $TR_{83}$ |
| 2006 $TS_{83}$ | 16.2 | 0.15 | 20061012 | 281.28641 | 111.97578 | 9.56986 | 10.49686 | 0.0877979 | 3.1171279 | 10 | 1 | 7 days | 0.53 | | | MPC | 2006 $TS_{83}$ |
| 2006 $TT_{83}$ | 17.7 | 0.15 | 20061101 | 346.28269 | 176.03931 | 236.42622 | 10.00339 | 0.0906693 | 2.9143071 | 19 | 1 | 41 days | 0.28 | | | MPC | 2006 $TT_{83}$ |
| 2006 $TU_{83}$ | 19.2 | 0.15 | 20061012 | 5.78829 | 137.43389 | 242.51417 | 5.93162 | 0.1839004 | 2.3316596 | 19 | 1 | 42 days | 0.33 | | | MPC | 2006 $TU_{83}$ |
| 2006 $TW_{83}$ | 17.5 | 0.15 | 20061012 | 106.50266 | 285.35338 | 342.84346 | 5.05031 | 0.1613394 | 2.3174336 | 21 | 1 | 52 days | 0.31 | | | MPC | 2006 $TW_{83}$ |
| 2006 $TX_{83}$ | 18.1 | 0.15 | 20061012 | 42.97508 | 340.65452 | 347.86783 | 5.42309 | 0.1990007 | 2.4678385 | 17 | 1 | 17 days | 0.25 | | | MPC | 2006 $TX_{83}$ |
| 2006 $TY_{83}$ | 16.8 | 0.15 | 20061012 | 315.05943 | 101.19582 | 346.64498 | 6.24950 | 0.1132908 | 3.1748470 | 14 | 1 | 36 days | 0.26 | | | MPC | 2006 $TY_{83}$ |
| 2006 $TZ_{83}$ | 17.6 | 0.15 | 20061101 | 70.77447 | 348.74915 | 317.05858 | 3.21786 | 0.1718196 | 2.1597444 | 23 | 1 | 43 days | 0.33 | | | MPC | 2006 $TZ_{83}$ |
| 2006 $TA_{84}$ | 16.5 | 0.15 | 20061101 | 276.00705 | 189.84170 | 302.53966 | 4.18871 | 0.1032308 | 2.6417460 | 9 | 1 | 43 days | 0.46 | | | MPC | 2006 $TA_{84}$ |
| 2006 $TB_{84}$ | 16.9 | 0.15 | 20061012 | 18.86064 | 43.20198 | 326.65339 | 4.74023 | 0.0867074 | 2.9360042 | 21 | 1 | 52 days | 0.24 | | | MPC | 2006 $TB_{84}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TD_{84}$ | 17.3 | 0.15 | 20061012 | 354.82034 | 80.89081 | 317.36344 | 3.89120 | 0.1647824 | 2.7681270 | 25 | 1 | 52 days | 0.30 | | MPC | 2006 $TD_{84}$ |
| 2006 $TE_{84}$ | 15.8 | 0.15 | 20061012 | 95.75458 | 56.88603 | 226.40269 | 19.23319 | 0.1239237 | 3.1526288 | 25 | 1 | 54 days | 0.21 | | MPC | 2006 $TE_{84}$ |
| 2006 $TH_{84}$ | 16.7 | 0.15 | 20061012 | 356.77179 | 155.39158 | 239.86260 | 6.88821 | 0.1365646 | 2.7160632 | 29 | 1 | 50 days | 0.34 | | MPC | 2006 $TH_{84}$ |
| 2006 $TM_{84}$ | 17.5 | 0.15 | 20061012 | 26.82067 | 120.23539 | 225.54601 | 13.80277 | 0.2469002 | 2.5911500 | 28 | 1 | 55 days | 0.57 | | MPC | 2006 $TM_{84}$ |
| 2006 $TN_{84}$ | 16.1 | 0.15 | 20061012 | 228.49686 | 295.02636 | 238.88586 | 11.28491 | 0.1097466 | 3.0439632 | 9 | 1 | 8 days | 0.39 | | MPC | 2006 $TN_{84}$ |
| 2006 $TR_{84}$ | 16.5 | 0.15 | 20061012 | 286.08754 | 112.18281 | 14.61154 | 10.17483 | 0.1272740 | 3.1322063 | 9 | 1 | 8 days | 0.55 | | MPC | 2006 $TR_{84}$ |
| 2006 $TS_{84}$ | 16.9 | 0.15 | 20061012 | 169.48106 | 216.00972 | 9.43215 | 7.71573 | 0.0636121 | 2.3447022 | 30 | 1 | 52 days | 0.22 | | MPC | 2006 $TS_{84}$ |
| 2006 $TT_{84}$ | 17.7 | 0.15 | 20061012 | 6.41769 | 119.24566 | 266.49116 | 3.70932 | 0.1441984 | 2.5624749 | 29 | 1 | 46 days | 0.27 | | MPC | 2006 $TT_{84}$ |
| 2006 $TU_{84}$ | 15.9 | 0.15 | 20061012 | 8.36648 | 140.87885 | 246.72332 | 8.08351 | 0.0787000 | 3.0829799 | 25 | 1 | 44 days | 0.43 | | MPC | 2006 $TU_{84}$ |
| 2006 $TW_{84}$ | 15.8 | 0.15 | 20061101 | 102.18314 | 272.90533 | 9.90499 | 7.80601 | 0.1656545 | 3.1939873 | 14 | 1 | 43 days | 0.34 | | MPC | 2006 $TW_{84}$ |
| 2006 $TX_{84}$ | 17.6 | 0.15 | 20061012 | 51.12414 | 86.10119 | 237.49927 | 10.61672 | 0.2044822 | 2.7077947 | 9 | 1 | 8 days | 0.38 | | MPC | 2006 $TX_{84}$ |
| 2006 $TY_{84}$ | 17.5 | 0.15 | 20061012 | 322.44326 | 169.35567 | 273.46485 | 3.93085 | 0.1386923 | 2.3015283 | 17 | 1 | 28 days | 0.16 | | MPC | 2006 $TY_{84}$ |
| 2006 $TA_{85}$ | 16.7 | 0.15 | 20061012 | 141.37181 | 359.70972 | 251.68342 | 7.17541 | 0.0699587 | 2.5398457 | 20 | 1 | 28 days | 0.21 | | MPC | 2006 $TA_{85}$ |
| 2006 $TB_{85}$ | 19.5 | 0.15 | 20061012 | 6.49782 | 16.39834 | 6.13204 | 5.79039 | 0.1952083 | 2.2384601 | 13 | 1 | 19 days | 0.22 | | MPC | 2006 $TB_{85}$ |
| 2006 $TE_{85}$ | 16.3 | 0.15 | 20061012 | 46.10978 | 56.66642 | 281.88648 | 4.29009 | 0.1452312 | 3.0970595 | 18 | 1 | 45 days | 0.35 | | MPC | 2006 $TE_{85}$ |
| 2006 $TF_{85}$ | 16.1 | 0.15 | 20061012 | 313.21365 | 212.53246 | 250.46851 | 6.58722 | 0.1878539 | 3.0980921 | 25 | 1 | 47 days | 0.27 | | MPC | 2006 $TF_{85}$ |
| 2006 $TH_{85}$ | 17.5 | 0.15 | 20061012 | 26.73157 | 83.29768 | 269.05375 | 3.07197 | 0.1996885 | 2.1333758 | 30 | 1 | 44 days | 0.44 | | MPC | 2006 $TH_{85}$ |
| 2006 $TJ_{85}$ | 18.1 | 0.15 | 20061101 | 20.57406 | 132.89057 | 237.61471 | 7.46913 | 0.2026608 | 2.6849757 | 18 | 1 | 45 days | 0.31 | | MPC | 2006 $TJ_{85}$ |
| 2006 $TK_{85}$ | 16.4 | 0.15 | 20061012 | 349.46294 | 46.66265 | 2.34358 | 6.10221 | 0.0410980 | 2.6732752 | 22 | 1 | 54 days | 0.51 | | MPC | 2006 $TK_{85}$ |
| 2006 $TN_{85}$ | 16.2 | 0.15 | 20061012 | 193.41810 | 327.44645 | 240.70908 | 9.74850 | 0.0828123 | 3.0329910 | 18 | 1 | 46 days | 0.49 | | MPC | 2006 $TN_{85}$ |
| 2006 $TQ_{85}$ | 16.5 | 0.15 | 20061012 | 16.29741 | 1.69244 | 10.42478 | 6.77890 | 0.2061011 | 3.0554951 | 29 | 1 | 54 days | 0.48 | | MPC | 2006 $TQ_{85}$ |
| 2006 $TS_{85}$ | 17.7 | 0.15 | 20061012 | 345.19267 | 97.77573 | 320.88205 | 3.18913 | 0.2009568 | 2.7717481 | 27 | 1 | 54 days | 0.31 | | MPC | 2006 $TS_{85}$ |
| 2006 $TU_{85}$ | 15.9 | 0.15 | 20061012 | 9.65952 | 124.84336 | 261.33835 | 5.31012 | 0.1290877 | 3.1831953 | 22 | 1 | 45 days | 0.34 | | MPC | 2006 $TU_{85}$ |
| 2006 $TV_{85}$ | 15.8 | 0.15 | 20061101 | 341.93262 | 44.60159 | 20.91328 | 10.00391 | 0.0994933 | 2.9829249 | 14 | 1 | 43 days | 0.22 | | MPC | 2006 $TV_{85}$ |
| 2006 $TW_{85}$ | 17.1 | 0.15 | 20061012 | 10.62452 | 134.66082 | 243.04796 | 6.96309 | 0.2419940 | 2.7880872 | 39 | 1 | 46 days | 0.40 | | MPC | 2006 $TW_{85}$ |
| 2006 $TY_{85}$ | 17.1 | 0.15 | 20061012 | 2.35751 | 78.70586 | 315.65251 | 3.09470 | 0.1011566 | 2.6634643 | 18 | 1 | 47 days | 0.33 | D | MPC | 2006 $TY_{85}$ |
| 2006 $TZ_{85}$ | 16.3 | 0.15 | 20061012 | 269.65166 | 268.48507 | 231.36209 | 12.79735 | 0.0987947 | 2.6719167 | 29 | 1 | 56 days | 0.44 | | MPC | 2006 $TZ_{85}$ |
| 2006 $TD_{86}$ | 15.8 | 0.15 | 20061101 | 1.62163 | 164.71893 | 236.16821 | 9.05996 | 0.1825945 | 3.0438216 | 38 | 1 | 45 days | 0.48 | | MPC | 2006 $TD_{86}$ |
| 2006 $TE_{86}$ | 16.0 | 0.15 | 20061012 | 66.78542 | 73.91422 | 233.60124 | 15.30316 | 0.2228927 | 3.1094375 | 21 | 1 | 35 days | 0.21 | | MPC | 2006 $TE_{86}$ |
| 2006 $TF_{86}$ | 17.0 | 0.15 | 20061012 | 216.49280 | 299.24339 | 248.66275 | 5.74661 | 0.0997438 | 2.3461769 | 21 | 1 | 48 days | 0.31 | | MPC | 2006 $TF_{86}$ |
| 2006 $TG_{86}$ | 17.6 | 0.15 | 20061101 | 34.67046 | 335.48903 | 10.37543 | 5.87665 | 0.2541242 | 2.3527072 | 20 | 1 | 43 days | 0.30 | | MPC | 2006 $TG_{86}$ |
| 2006 $TH_{86}$ | 18.5 | 0.15 | 20061012 | 22.19800 | 86.64194 | 268.51281 | 2.55177 | 0.2649273 | 2.3764161 | 24 | 1 | 36 days | 0.22 | | MPC | 2006 $TH_{86}$ |
| 2006 $TK_{86}$ | 15.9 | 0.15 | 20061012 | 10.11672 | 142.12771 | 240.33233 | 8.10274 | 0.1756021 | 2.7442643 | 52 | 1 | 49 days | 0.42 | | MPC | 2006 $TK_{86}$ |
| 2006 $TL_{86}$ | 17.9 | 0.15 | 20061101 | 305.97037 | 122.51900 | 346.00991 | 3.26503 | 0.1147767 | 2.3124040 | 27 | 1 | 43 days | 0.32 | | MPC | 2006 $TL_{86}$ |
| 2006 $TO_{86}$ | 18.1 | 0.15 | 20061012 | 325.67933 | 58.97882 | 25.88706 | 12.73010 | 0.1655446 | 2.6397251 | 9 | 1 | 8 days | 0.17 | | MPC | 2006 $TO_{86}$ |
| 2006 $TQ_{86}$ | 17.7 | 0.15 | 20061012 | 20.69048 | 11.00643 | 358.40528 | 3.68243 | 0.1156243 | 2.2419700 | 17 | 1 | 36 days | 0.29 | | MPC | 2006 $TQ_{86}$ |
| 2006 $TS_{86}$ | 17.5 | 0.15 | 20061101 | 0.50632 | 150.07724 | 252.05310 | 4.00890 | 0.1493477 | 2.2515480 | 20 | 1 | 37 days | 0.42 | | MPC | 2006 $TS_{86}$ |
| 2006 $TW_{86}$ | 18.6 | 0.15 | 20061012 | 337.04054 | 62.32195 | 3.46417 | 2.82882 | 0.1464362 | 2.1767967 | 16 | 1 | 19 days | 0.19 | | MPC | 2006 $TW_{86}$ |
| 2006 $TY_{86}$ | 15.3 | 0.15 | 20061012 | 253.02387 | 278.96231 | 236.10790 | 8.13612 | 0.0577077 | 3.0897229 | 26 | 1 | 52 days | 0.55 | | MPC | 2006 $TY_{86}$ |
| 2006 $TA_{87}$ | 18.8 | 0.15 | 20061012 | 6.20839 | 121.88619 | 261.59244 | 2.09907 | 0.2512960 | 2.3829380 | 20 | 1 | 31 days | 0.27 | | MPC | 2006 $TA_{87}$ |
| 2006 $TB_{87}$ | 17.7 | 0.15 | 20061012 | 281.11754 | 259.91862 | 238.57799 | 5.60015 | 0.1685453 | 2.6717306 | 9 | 1 | 8 days | 0.35 | | MPC | 2006 $TB_{87}$ |
| 2006 $TC_{87}$ | 15.5 | 0.15 | 20061012 | 261.22720 | 117.58736 | 25.40285 | 4.89608 | 0.0223433 | 2.9850210 | 32 | 1 | 52 days | 0.40 | | MPC | 2006 $TC_{87}$ |
| 2006 $TE_{87}$ | 15.7 | 0.15 | 20061101 | 20.99552 | 148.23718 | 228.37778 | 12.77489 | 0.1498549 | 3.0643217 | 43 | 1 | 45 days | 0.44 | | MPC | 2006 $TE_{87}$ |
| 2006 $TF_{87}$ | 17.4 | 0.15 | 20061012 | 30.86037 | 328.90862 | 26.42538 | 5.04769 | 0.1691430 | 2.6145297 | 24 | 1 | 52 days | 0.27 | | MPC | 2006 $TF_{87}$ |
| 2006 $TH_{87}$ | 17.1 | 0.15 | 20061012 | 25.24760 | 103.13068 | 253.20652 | 2.99479 | 0.2581542 | 3.0046987 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $TH_{87}$ |
| 2006 $TJ_{87}$ | 16.7 | 0.15 | 20061012 | 330.71287 | 194.75311 | 239.45506 | 5.77637 | 0.0900009 | 3.1409194 | 25 | 1 | 46 days | 0.33 | | MPC | 2006 $TJ_{87}$ |
| 2006 $TK_{87}$ | 17.2 | 0.15 | 20061012 | 326.38903 | 181.02217 | 263.81517 | 2.49406 | 0.1715250 | 2.9593718 | 25 | 1 | 46 days | 0.29 | | MPC | 2006 $TK_{87}$ |
| 2006 $TL_{87}$ | 18.1 | 0.15 | 20061101 | 334.03821 | 229.78168 | 226.99236 | 7.91443 | 0.3581343 | 2.6742536 | 35 | 1 | 45 days | 0.38 | | MPC | 2006 $TL_{87}$ |
| 2006 $TM_{87}$ | 17.5 | 0.15 | 20061101 | 337.09285 | 190.88675 | 240.84823 | 4.37810 | 0.1249057 | 2.2476105 | 26 | 1 | 45 days | 0.50 | | MPC | 2006 $TM_{87}$ |
| 2006 $TO_{87}$ | 16.9 | 0.15 | 20061012 | 6.18693 | 152.71889 | 239.20208 | 4.96804 | 0.0339559 | 2.7028078 | 25 | 1 | 42 days | 0.23 | | MPC | 2006 $TO_{87}$ |
| 2006 $TQ_{87}$ | 19.2 | 0.15 | 20061012 | 22.97998 | 79.41745 | 280.38378 | 1.49201 | 0.2047601 | 2.3622493 | 13 | 1 | 29 days | 0.27 | | MPC | 2006 $TQ_{87}$ |
| 2006 $TR_{87}$ | 16.3 | 0.15 | 20061012 | 123.20911 | 223.96652 | 32.80044 | 12.56784 | 0.2639694 | 2.5837968 | 25 | 1 | 49 days | 0.21 | | MPC | 2006 $TR_{87}$ |
| 2006 $TS_{87}$ | 16.6 | 0.15 | 20061012 | 301.19346 | 231.94145 | 234.44628 | 10.48842 | 0.0691796 | 3.1055810 | 17 | 1 | 30 days | 0.33 | | MPC | 2006 $TS_{87}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TU_{87}$ | 15.8 | 0.15 | 20061012 | 61.74886 | 94.55270 | 234.25262 | 8.32397 | 0.0955656 | 3.1544877 | 17 | 1 | 31 days | 0.29 | | | MPC | 2006 $TU_{87}$ |
| 2006 $TW_{87}$ | 15.3 | 0.15 | 20061012 | 332.63189 | 37.72653 | 35.22949 | 22.27074 | 0.0780307 | 3.1438916 | 37 | 1 | 56 days | 0.44 | | | MPC | 2006 $TW_{87}$ |
| 2006 $TX_{87}$ | 16.8 | 0.15 | 20061012 | 11.40456 | 0.17590 | 26.82425 | 6.36865 | 0.0416603 | 2.7604464 | 13 | 1 | 19 days | 0.18 | | | MPC | 2006 $TX_{87}$ |
| 2006 $TB_{88}$ | 17.2 | 0.15 | 20061012 | 38.04623 | 106.18886 | 238.20428 | 4.57099 | 0.1906375 | 2.9152097 | 9 | 1 | 8 days | 0.24 | | | MPC | 2006 $TB_{88}$ |
| 2006 $TC_{88}$ | 17.0 | 0.15 | 20060922 | 6.96685 | 152.73664 | 222.26143 | 13.27155 | 0.2609271 | 2.6466201 | 51 | 1 | 64 days | 0.42 | M-v | 4 | MPC | 2006 $TC_{88}$ |
| 2006 $TD_{88}$ | 17.2 | 0.15 | 20061012 | 275.53274 | 246.27568 | 252.22030 | 4.39067 | 0.1531426 | 2.4570025 | 9 | 1 | 8 days | 0.74 | | | MPC | 2006 $TD_{88}$ |
| 2006 $TE_{88}$ | 17.9 | 0.15 | 20061012 | 15.30030 | 77.17302 | 292.66528 | 1.65810 | 0.1922622 | 2.2854714 | 10 | 1 | 35 days | 0.13 | | | MPC | 2006 $TE_{88}$ |
| 2006 $TF_{88}$ | 17.6 | 0.15 | 20061012 | 7.60909 | 30.88303 | 352.23175 | 3.23987 | 0.1653968 | 2.3926487 | 21 | 1 | 32 days | 0.46 | | | MPC | 2006 $TF_{88}$ |
| 2006 $TG_{88}$ | 16.5 | 0.15 | 20061012 | 48.43707 | 76.29640 | 258.93264 | 4.36330 | 0.1481235 | 3.0644300 | 21 | 1 | 46 days | 0.25 | | | MPC | 2006 $TG_{88}$ |
| 2006 $TK_{88}$ | 16.5 | 0.15 | 20061101 | 9.09930 | 13.28008 | 19.49429 | 9.02053 | 0.0552557 | 3.0196582 | 18 | 1 | 43 days | 0.29 | | | MPC | 2006 $TK_{88}$ |
| 2006 $TN_{88}$ | 18.7 | 0.15 | 20061012 | 35.58878 | 32.70532 | 308.10462 | 1.85290 | 0.2103356 | 2.3312344 | 13 | 1 | 35 days | 0.22 | | | MPC | 2006 $TN_{88}$ |
| 2006 $TO_{88}$ | 17.2 | 0.15 | 20061012 | 338.33202 | 205.36619 | 227.18585 | 12.43823 | 0.2455726 | 3.1172322 | 24 | 1 | 50 days | 0.24 | | | MPC | 2006 $TO_{88}$ |
| 2006 $TP_{88}$ | 17.0 | 0.15 | 20061012 | 338.87307 | 179.53521 | 242.35303 | 6.20750 | 0.0816519 | 2.6838950 | 24 | 1 | 46 days | 0.35 | | | MPC | 2006 $TP_{88}$ |
| 2006 $TQ_{88}$ | 17.2 | 0.15 | 20061101 | 27.34550 | 96.71052 | 271.46618 | 2.77316 | 0.1137977 | 2.7938201 | 18 | 1 | 38 days | 0.28 | | | MPC | 2006 $TQ_{88}$ |
| 2006 $TS_{88}$ | 17.4 | 0.15 | 20061012 | 56.02029 | 271.50134 | 23.97007 | 11.24147 | 0.3918411 | 2.5838171 | 17 | 1 | 30 days | 0.30 | | | MPC | 2006 $TS_{88}$ |
| 2006 $TT_{88}$ | 16.1 | 0.15 | 20061012 | 17.27995 | 350.53677 | 29.28554 | 13.77349 | 0.0627637 | 3.1662625 | 21 | 1 | 36 days | 0.35 | | | MPC | 2006 $TT_{88}$ |
| 2006 $TU_{88}$ | 16.5 | 0.15 | 20061012 | 207.88123 | 171.42922 | 22.18704 | 6.61209 | 0.0311309 | 3.1460193 | 21 | 1 | 50 days | 0.40 | | | MPC | 2006 $TU_{88}$ |
| 2006 $TW_{88}$ | 16.9 | 0.15 | 20061012 | 283.74521 | 257.97482 | 232.50365 | 12.43299 | 0.1352132 | 2.9084449 | 9 | 1 | 8 days | 0.81 | | | MPC | 2006 $TW_{88}$ |
| 2006 $TX_{88}$ | 18.4 | 0.15 | 20061012 | 7.18438 | 133.17637 | 249.80003 | 2.92297 | 0.2464450 | 2.8236818 | 9 | 1 | 8 days | 0.11 | | | MPC | 2006 $TX_{88}$ |
| 2006 $TY_{88}$ | 16.2 | 0.15 | 20061101 | 15.21523 | 149.95037 | 234.51520 | 7.31689 | 0.0960843 | 3.0749815 | 10 | 1 | 45 days | 0.22 | | | MPC | 2006 $TY_{88}$ |
| 2006 $TZ_{88}$ | 17.0 | 0.15 | 20061012 | 64.49872 | 286.58518 | 27.06704 | 8.51754 | 0.1773464 | 2.7360173 | 17 | 1 | 35 days | 0.28 | | | MPC | 2006 $TZ_{88}$ |
| 2006 $TA_{89}$ | 17.2 | 0.15 | 20061012 | 32.93679 | 322.44304 | 24.18462 | 14.26399 | 0.1960743 | 2.5716753 | 32 | 1 | 53 days | 0.52 | | | MPC | 2006 $TA_{89}$ |
| 2006 $TB_{89}$ | 16.7 | 0.15 | 20061101 | 321.96258 | 215.43101 | 234.76775 | 8.07289 | 0.1318575 | 2.7542455 | 25 | 1 | 45 days | 0.60 | | | MPC | 2006 $TB_{89}$ |
| 2006 $TE_{89}$ | 17.6 | 0.15 | 20061012 | 21.46217 | 91.24382 | 275.19986 | 2.15362 | 0.1422172 | 2.5581022 | 17 | 1 | 48 days | 0.20 | | | MPC | 2006 $TE_{89}$ |
| 2006 $TF_{89}$ | 17.7 | 0.15 | 20061101 | 0.90634 | 69.58100 | 330.03781 | 1.69409 | 0.2090150 | 2.3729011 | 28 | 1 | 37 days | 0.32 | | | MPC | 2006 $TF_{89}$ |
| 2006 $TJ_{89}$ | 16.4 | 0.15 | 20061101 | 344.57917 | 190.52008 | 232.50153 | 10.15287 | 0.1019768 | 2.6190878 | 40 | 1 | 45 days | 0.39 | | | MPC | 2006 $TJ_{89}$ |
| 2006 $TK_{89}$ | 18.4 | 0.15 | 20061012 | 28.64050 | 336.38407 | 16.27929 | 5.94827 | 0.1968574 | 2.2202094 | 17 | 1 | 49 days | 0.25 | | | MPC | 2006 $TK_{89}$ |
| 2006 $TL_{89}$ | 17.4 | 0.15 | 20061012 | 90.77980 | 300.62700 | 351.72399 | 3.72883 | 0.1455523 | 2.4307711 | 13 | 1 | 32 days | 0.17 | | | MPC | 2006 $TL_{89}$ |
| 2006 $TM_{89}$ | 17.0 | 0.15 | 20061012 | 57.73809 | 76.06718 | 233.89045 | 11.84656 | 0.2765302 | 2.6205739 | 14 | 1 | 28 days | 0.26 | | | MPC | 2006 $TM_{89}$ |
| 2006 $TN_{89}$ | 17.9 | 0.15 | 20061012 | 54.41895 | 358.27915 | 326.65377 | 2.28714 | 0.1787732 | 2.4518765 | 17 | 1 | 32 days | 0.17 | | | MPC | 2006 $TN_{89}$ |
| 2006 $TP_{89}$ | 17.3 | 0.15 | 20061012 | 308.20239 | 80.87583 | 18.66829 | 6.15096 | 0.1006576 | 2.3503307 | 24 | 1 | 45 days | 0.54 | | | MPC | 2006 $TP_{89}$ |
| 2006 $TQ_{89}$ | 17.0 | 0.15 | 20061101 | 352.59797 | 68.38393 | 349.51280 | 3.54676 | 0.2588703 | 3.0257892 | 25 | 1 | 40 days | 0.40 | | | MPC | 2006 $TQ_{89}$ |
| 2006 $TR_{89}$ | 16.6 | 0.15 | 20061012 | 255.54379 | 184.75250 | 339.07864 | 3.48814 | 0.1646389 | 2.8644237 | 9 | 1 | 8 days | 0.76 | | | MPC | 2006 $TR_{89}$ |
| 2006 $TS_{89}$ | 17.7 | 0.15 | 20061012 | 33.21549 | 22.31045 | 329.01643 | 2.60478 | 0.1553815 | 2.2177750 | 27 | 1 | 32 days | 0.53 | | | MPC | 2006 $TS_{89}$ |
| 2006 $TT_{89}$ | 16.4 | 0.15 | 20061012 | 324.04708 | 62.93534 | 21.65338 | 8.65964 | 0.1112657 | 2.7652901 | 20 | 1 | 32 days | 0.18 | | | MPC | 2006 $TT_{89}$ |
| 2006 $TV_{89}$ | 16.3 | 0.15 | 20061012 | 41.40670 | 103.56779 | 233.24705 | 11.91493 | 0.2171254 | 2.6244858 | 39 | 1 | 48 days | 0.54 | | | MPC | 2006 $TV_{89}$ |
| 2006 $TX_{89}$ | 17.6 | 0.15 | 20061012 | 318.32497 | 197.17449 | 249.31199 | 3.87861 | 0.0820576 | 2.3379858 | 12 | 1 | 31 days | 0.23 | | | MPC | 2006 $TX_{89}$ |
| 2006 $TZ_{89}$ | 17.6 | 0.15 | 20061012 | 25.95088 | 348.99547 | 3.13238 | 2.81594 | 0.2811256 | 2.6247806 | 21 | 1 | 32 days | 0.48 | | | MPC | 2006 $TZ_{89}$ |
| 2006 $TA_{90}$ | 16.6 | 0.15 | 20061012 | 343.76080 | 182.38343 | 238.00532 | 7.02398 | 0.0972925 | 2.5748313 | 33 | 1 | 35 days | 0.41 | | | MPC | 2006 $TA_{90}$ |
| 2006 $TB_{90}$ | 16.9 | 0.15 | 20061012 | 305.76428 | 234.50391 | 239.39993 | 7.07102 | 0.1735992 | 2.6880891 | 21 | 1 | 44 days | 0.39 | | | MPC | 2006 $TB_{90}$ |
| 2006 $TC_{90}$ | 16.0 | 0.15 | 20061012 | 61.54750 | 304.99173 | 30.79664 | 9.81130 | 0.0708505 | 3.1111848 | 9 | 1 | 8 days | 0.16 | | | MPC | 2006 $TC_{90}$ |
| 2006 $TF_{90}$ | 17.8 | 0.15 | 20061012 | 29.95471 | 84.02644 | 271.93267 | 2.08815 | 0.1974378 | 2.5730611 | 22 | 1 | 34 days | 0.23 | | | MPC | 2006 $TF_{90}$ |
| 2006 $TH_{90}$ | 17.1 | 0.15 | 20061101 | 36.27855 | 46.57346 | 303.78212 | 1.78854 | 0.2321601 | 2.6025242 | 23 | 1 | 40 days | 0.43 | | | MPC | 2006 $TH_{90}$ |
| 2006 $TK_{90}$ | 16.4 | 0.15 | 20061012 | 22.40575 | 4.38439 | 12.30596 | 3.19610 | 0.1036404 | 3.0973461 | 19 | 1 | 34 days | 0.23 | | | MPC | 2006 $TK_{90}$ |
| 2006 $TM_{90}$ | 16.8 | 0.15 | 20061012 | 346.81408 | 25.65442 | 36.17722 | 15.26053 | 0.1689536 | 2.9899342 | 27 | 1 | 32 days | 0.24 | | | MPC | 2006 $TM_{90}$ |
| 2006 $TO_{90}$ | 17.3 | 0.15 | 20061012 | 356.24130 | 57.12272 | 349.01249 | 2.52600 | 0.1216822 | 2.5557933 | 33 | 1 | 34 days | 0.27 | | | MPC | 2006 $TO_{90}$ |
| 2006 $TQ_{90}$ | 16.3 | 0.15 | 20061012 | 351.81088 | 178.97922 | 236.03476 | 10.16508 | 0.1896418 | 3.0649509 | 44 | 1 | 54 days | 0.45 | | | MPC | 2006 $TQ_{90}$ |
| 2006 $TU_{90}$ | 17.2 | 0.15 | 20061012 | 17.66442 | 129.23126 | 236.74039 | 8.23600 | 0.3221410 | 3.0973928 | 23 | 1 | 35 days | 0.25 | | E | MPC | 2006 $TU_{90}$ |
| 2006 $TX_{90}$ | 17.2 | 0.15 | 20061101 | 320.07758 | 216.24004 | 242.34383 | 1.64302 | 0.1412872 | 2.3785820 | 30 | 1 | 45 days | 0.33 | | | MPC | 2006 $TX_{90}$ |
| 2006 $TA_{91}$ | 15.9 | 0.15 | 20061012 | 18.19540 | 341.58642 | 40.97433 | 12.05587 | 0.0970905 | 3.1085133 | 29 | 1 | 53 days | 0.30 | | | MPC | 2006 $TA_{91}$ |
| 2006 $TB_{91}$ | 17.0 | 0.15 | 20061101 | 293.88358 | 249.52373 | 229.04835 | 8.78089 | 0.0410669 | 2.5858579 | 21 | 1 | 39 days | 0.18 | | | MPC | 2006 $TB_{91}$ |
| 2006 $TC_{91}$ | 16.9 | 0.15 | 20061101 | 68.20628 | 288.72058 | 39.52320 | 12.58004 | 0.1053752 | 2.5306285 | 25 | 1 | 37 days | 0.24 | | | MPC | 2006 $TC_{91}$ |
| 2006 $TE_{91}$ | 17.5 | 0.15 | 20061101 | 327.37872 | 221.81307 | 229.52925 | 6.62257 | 0.1781655 | 2.3308662 | 38 | 1 | 45 days | 0.47 | | | MPC | 2006 $TE_{91}$ |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TF_{91}$ | 16.8 | 0.15 | 20061012 | 65.36543 | 313.79421 | 1.47398 | 2.06492 | 0.1851720 | 2.6305758 | 36 | 1 | 48 days | 0.45 | | MPC | 2006 $TF_{91}$ |
| 2006 $TH_{91}$ | 16.2 | 0.15 | 20061012 | 47.91342 | 116.77452 | 232.42278 | 8.63522 | 0.0747880 | 3.1297318 | 13 | 1 | 29 days | 0.15 | | MPC | 2006 $TH_{91}$ |
| 2006 $TJ_{91}$ | 17.3 | 0.15 | 20061012 | 45.01734 | 49.04299 | 292.64827 | 1.14629 | 0.1662133 | 2.9078077 | 9 | 1 | 8 days | 0.67 | | MPC | 2006 $TJ_{91}$ |
| 2006 $TK_{91}$ | 17.4 | 0.15 | 20061012 | 18.31073 | 350.07492 | 28.37811 | 5.93490 | 0.1417983 | 3.0863386 | 13 | 1 | 34 days | 0.24 | | MPC | 2006 $TK_{91}$ |
| 2006 $TL_{91}$ | 16.4 | 0.15 | 20061101 | 51.40947 | 116.80353 | 230.23760 | 14.62944 | 0.0969156 | 2.9908121 | 21 | 1 | 39 days | 0.30 | | MPC | 2006 $TL_{91}$ |
| 2006 $TM_{91}$ | 16.7 | 0.15 | 20061012 | 332.20111 | 96.07622 | 338.52313 | 1.34925 | 0.0640709 | 2.8547916 | 13 | 1 | 19 days | 0.20 | | MPC | 2006 $TM_{91}$ |
| 2006 $TN_{91}$ | 15.9 | 0.15 | 20061012 | 7.34866 | 350.43143 | 40.32139 | 17.99675 | 0.2037461 | 3.1262459 | 34 | 1 | 57 days | 0.48 | | MPC | 2006 $TN_{91}$ |
| 2006 $TP_{91}$ | 15.9 | 0.15 | 20061101 | 306.57914 | 82.11666 | 34.07253 | 7.54395 | 0.1519318 | 2.5930913 | 44 | 1 | 40 days | 0.28 | | MPC | 2006 $TP_{91}$ |
| 2006 $TR_{91}$ | 16.2 | 0.15 | 20061012 | 129.46607 | 225.94428 | 41.42377 | 15.45480 | 0.0844764 | 2.6447524 | 29 | 1 | 58 days | 0.29 | | MPC | 2006 $TR_{91}$ |
| 2006 $TS_{91}$ | 18.1 | 0.15 | 20061012 | 19.82215 | 342.76209 | 26.32948 | 3.67384 | 0.1620312 | 2.1297184 | 43 | 1 | 53 days | 0.42 | | MPC | 2006 $TS_{91}$ |
| 2006 $TT_{91}$ | 16.6 | 0.15 | 20061012 | 59.69762 | 301.97913 | 34.11071 | 3.18221 | 0.0649458 | 2.6312472 | 25 | 1 | 35 days | 0.50 | | MPC | 2006 $TT_{91}$ |
| 2006 $TU_{91}$ | 14.7 | 0.15 | 20061012 | 298.46129 | 230.98231 | 235.80139 | 8.13173 | 0.0247526 | 3.1757648 | 59 | 1 | 51 days | 0.45 | | MPC | 2006 $TU_{91}$ |
| 2006 $TV_{91}$ | 17.4 | 0.15 | 20061012 | 299.73136 | 225.33052 | 245.78899 | 2.98228 | 0.1007932 | 2.6254350 | 16 | 1 | 31 days | 0.40 | | MPC | 2006 $TV_{91}$ |
| 2006 $TY_{91}$ | 15.4 | 0.15 | 20061101 | 69.17002 | 277.19617 | 36.06623 | 10.10900 | 0.2112281 | 3.1772269 | 20 | 1 | 37 days | 0.39 | | MPC | 2006 $TY_{91}$ |
| 2006 $TZ_{91}$ | 18.0 | 0.15 | 20061012 | 6.56598 | 138.69841 | 248.60762 | 2.57439 | 0.1623341 | 2.3034156 | 35 | 1 | 35 days | 0.37 | | MPC | 2006 $TZ_{91}$ |
| 2006 $TA_{92}$ | 18.5 | 0.15 | 20061012 | 16.96601 | 20.40121 | 350.42351 | 1.04162 | 0.1998472 | 2.3735156 | 17 | 1 | 36 days | 0.21 | | MPC | 2006 $TA_{92}$ |
| 2006 $TB_{92}$ | 16.7 | 0.15 | 20061012 | 286.51463 | 89.92188 | 35.10117 | 10.73552 | 0.1035391 | 2.3925801 | 28 | 1 | 50 days | 0.42 | | MPC | 2006 $TB_{92}$ |
| 2006 $TC_{92}$ | 17.9 | 0.15 | 20061012 | 4.18419 | 72.79802 | 318.21018 | 1.52436 | 0.2083358 | 2.5500803 | 27 | 1 | 34 days | 0.38 | | MPC | 2006 $TC_{92}$ |
| 2006 $TE_{92}$ | 18.0 | 0.15 | 20061012 | 6.82879 | 2.15568 | 27.32017 | 4.79663 | 0.0804195 | 2.1839250 | 17 | 1 | 32 days | 0.26 | | MPC | 2006 $TE_{92}$ |
| 2006 $TG_{92}$ | 17.6 | 0.15 | 20061012 | 293.90035 | 86.12035 | 25.89863 | 2.89210 | 0.0684167 | 2.1653517 | 24 | 1 | 30 days | 0.19 | | MPC | 2006 $TG_{92}$ |
| 2006 $TH_{92}$ | 18.0 | 0.15 | 20061012 | 320.25641 | 246.12507 | 190.45353 | 5.98663 | 0.0714449 | 2.3796304 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $TH_{92}$ |
| 2006 $TK_{92}$ | 16.4 | 0.15 | 20061012 | 309.64433 | 38.49299 | 57.43515 | 5.87618 | 0.1248859 | 3.1610416 | 13 | 1 | 17 days | 0.27 | | MPC | 2006 $TK_{92}$ |
| 2006 $TM_{92}$ | 17.6 | 0.15 | 20060922 | 350.35794 | 224.79701 | 174.01215 | 4.34821 | 0.2304300 | 2.5680755 | 25 | 1 | 125 days | 0.27 | M-v 3 | MPC | 2006 $TM_{92}$ |
| 2006 $TN_{92}$ | 16.6 | 0.15 | 20061012 | 53.63280 | 173.98801 | 158.90177 | 4.60280 | 0.0852018 | 2.6307675 | 24 | 1 | 51 days | 0.42 | | MPC | 2006 $TN_{92}$ |
| 2006 $TQ_{92}$ | 16.4 | 0.15 | 20061012 | 336.81112 | 216.32956 | 204.70386 | 23.26007 | 0.1446823 | 3.0972044 | 17 | 1 | 7 days | 0.52 | | MPC | 2006 $TQ_{92}$ |
| 2006 $TS_{92}$ | 17.7 | 0.15 | 20061012 | 329.30219 | 241.98969 | 186.70937 | 5.35524 | 0.1448437 | 2.6511232 | 22 | 1 | 58 days | 0.27 | | MPC | 2006 $TS_{92}$ |
| 2006 $TT_{92}$ | 15.8 | 0.15 | 20061012 | 247.73330 | 319.79103 | 188.31983 | 7.23900 | 0.0585450 | 3.0196970 | 11 | 1 | 6 days | 0.56 | | MPC | 2006 $TT_{92}$ |
| 2006 $TW_{92}$ | 18.4 | 0.15 | 20060922 | 328.41480 | 248.30201 | 172.88610 | 2.25754 | 0.1664670 | 2.3745140 | 28 | 1 | 63 days | 0.34 | M-v 4 | MPC | 2006 $TW_{92}$ |
| 2006 $TX_{92}$ | 15.3 | 0.15 | 20061012 | 33.01056 | 308.61133 | 35.04015 | 14.94796 | 0.1426153 | 3.4221419 | 45 | 1 | 57 days | 0.47 | | MPC | 2006 $TX_{92}$ |
| 2006 $TY_{92}$ | 17.2 | 0.15 | 20061101 | 7.32371 | 166.69504 | 219.10031 | 16.30402 | 0.1321840 | 2.5583506 | 22 | 1 | 43 days | 0.30 | | MPC | 2006 $TY_{92}$ |
| 2006 $TA_{93}$ | 17.5 | 0.15 | 20061101 | 34.62775 | 347.27585 | 354.42831 | 4.68458 | 0.2355668 | 2.5840627 | 19 | 1 | 41 days | 0.24 | | MPC | 2006 $TA_{93}$ |
| 2006 $TB_{93}$ | 18.6 | 0.15 | 20061012 | 14.70502 | 61.64491 | 307.96709 | 2.71847 | 0.1367014 | 2.3626237 | 18 | 1 | 13 days | 0.18 | | MPC | 2006 $TB_{93}$ |
| 2006 $TC_{93}$ | 16.7 | 0.15 | 20061101 | 34.85528 | 122.67042 | 222.51242 | 16.48893 | 0.1934552 | 3.1633873 | 33 | 1 | 43 days | 0.23 | | MPC | 2006 $TC_{93}$ |
| 2006 $TD_{93}$ | 16.7 | 0.15 | 20061012 | 27.69685 | 331.52349 | 15.40238 | 10.32699 | 0.2232577 | 2.7454749 | 31 | 1 | 55 days | 0.47 | | MPC | 2006 $TD_{93}$ |
| 2006 $TE_{93}$ | 18.4 | 0.15 | 20061101 | 49.67071 | 123.86358 | 214.19736 | 20.71306 | 0.0860654 | 1.8574995 | 25 | 1 | 40 days | 0.21 | | MPC | 2006 $TE_{93}$ |
| 2006 $TG_{93}$ | 17.4 | 0.15 | 20061012 | 6.42477 | 35.60258 | 344.24417 | 3.66590 | 0.2126343 | 2.7899715 | 36 | 1 | 54 days | 0.22 | | MPC | 2006 $TG_{93}$ |
| 2006 $TJ_{93}$ | 16.9 | 0.15 | 20061101 | 321.06172 | 184.98232 | 252.12164 | 4.70372 | 0.0275515 | 2.7655165 | 27 | 1 | 39 days | 0.22 | | MPC | 2006 $TJ_{93}$ |
| 2006 $TK_{93}$ | 18.9 | 0.15 | 20060922 | 357.38347 | 39.49061 | 343.20018 | 2.53250 | 0.2252160 | 2.2889843 | 23 | 1 | 60 days | 0.30 | M-v 4 | MPC | 2006 $TK_{93}$ |
| 2006 $TM_{93}$ | 16.2 | 0.15 | 20061012 | 40.55198 | 92.18178 | 247.54998 | 3.92174 | 0.1470243 | 3.0891619 | 37 | 1 | 51 days | 0.23 | | MPC | 2006 $TM_{93}$ |
| 2006 $TP_{93}$ | 16.7 | 0.15 | 20061012 | 23.89012 | 132.74955 | 228.58447 | 7.03609 | 0.1197445 | 2.9088500 | 28 | 1 | 52 days | 0.31 | | MPC | 2006 $TP_{93}$ |
| 2006 $TQ_{93}$ | 18.3 | 0.15 | 20061012 | 343.23291 | 28.22649 | 25.94780 | 14.12532 | 0.1673295 | 2.6021664 | 15 | 1 | 17 days | 0.28 | | MPC | 2006 $TQ_{93}$ |
| 2006 $TR_{93}$ | 16.2 | 0.15 | 20061012 | 316.33564 | 187.69801 | 253.63930 | 2.66839 | 0.0598685 | 2.9949329 | 37 | 1 | 46 days | 0.31 | | MPC | 2006 $TR_{93}$ |
| 2006 $TT_{93}$ | 17.8 | 0.15 | 20061012 | 327.23635 | 354.78628 | 84.85200 | 3.61534 | 0.1583803 | 2.3991864 | 32 | 1 | 31 days | 0.43 | | MPC | 2006 $TT_{93}$ |
| 2006 $TU_{93}$ | 17.1 | 0.15 | 20061012 | 341.22154 | 240.64296 | 184.71157 | 4.64441 | 0.2320562 | 2.5835656 | 58 | 1 | 51 days | 0.40 | | MPC | 2006 $TU_{93}$ |
| 2006 $TV_{93}$ | 16.0 | 0.15 | 20061012 | 330.28062 | 217.36374 | 212.95231 | 26.32114 | 0.0310569 | 2.6300231 | 24 | 1 | 42 days | 0.53 | | MPC | 2006 $TV_{93}$ |
| 2006 $TW_{93}$ | 18.4 | 0.15 | 20060922 | 349.61136 | 197.12972 | 205.49600 | 13.49915 | 0.2318259 | 2.5542672 | 13 | 1 | 27 days | 0.39 | | MPC | 2006 $TW_{93}$ |
| 2006 $TX_{93}$ | 16.0 | 0.15 | 20061012 | 25.04872 | 310.86811 | 46.33371 | 17.57470 | 0.2211177 | 3.1545214 | 38 | 1 | 56 days | 0.52 | | MPC | 2006 $TX_{93}$ |
| 2006 $TY_{93}$ | 15.5 | 0.15 | 20061101 | 304.95434 | 37.66745 | 61.87440 | 7.93513 | 0.0236320 | 3.1675189 | 26 | 1 | 37 days | 0.30 | | MPC | 2006 $TY_{93}$ |
| 2006 $TA_{94}$ | 15.9 | 0.15 | 20061012 | 282.63565 | 284.64965 | 204.10849 | 10.74191 | 0.1206512 | 3.1034882 | 13 | 1 | 4 days | 0.49 | | MPC | 2006 $TA_{94}$ |
| 2006 $TB_{94}$ | 18.4 | 0.15 | 20061012 | 6.71735 | 277.79318 | 107.19633 | 2.33368 | 0.1519650 | 2.6443079 | 22 | 1 | 31 days | 0.29 | | MPC | 2006 $TB_{94}$ |
| 2006 $TC_{94}$ | 18.2 | 0.15 | 20061012 | 266.20426 | 81.04308 | 56.40349 | 4.80461 | 0.0937750 | 2.2243779 | 25 | 1 | 31 days | 0.25 | | MPC | 2006 $TC_{94}$ |
| 2006 $TD_{94}$ | 17.7 | 0.15 | 20060922 | 13.56360 | 339.46234 | 11.79105 | 5.90488 | 0.1869395 | 2.6230675 | 15 | 1 | 16 days | 0.44 | | MPC | 2006 $TD_{94}$ |
| 2006 $TE_{94}$ | 16.4 | 0.15 | 20060922 | 349.11597 | 357.15693 | 29.92884 | 4.87262 | 0.0826324 | 2.7904578 | 29 | 1 | 66 days | 0.40 | M-v 4 | MPC | 2006 $TE_{94}$ |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TF_{94}$ | 15.8 | 0.15 | 20060922 | 22.40508 | 263.70924 | 77.08258 | 2.13037 | 0.2349857 | 3.9800216 | 30 | 1 | 63 days | 0.46 | M-v | 4 | MPC | 2006 $TF_{94}$ |
| 2006 $TG_{94}$ | 17.8 | 0.15 | 20060922 | 10.90721 | 263.80915 | 97.35690 | 1.65591 | 0.1157788 | 2.5677060 | 22 | 1 | 63 days | 0.44 | M-v | 4 | MPC | 2006 $TG_{94}$ |
| 2006 $TH_{94}$ | 16.7 | 0.15 | 20061012 | 338.56650 | 5.54434 | 43.64016 | 5.74356 | 0.1159290 | 2.7148937 | 28 | 1 | 42 days | 0.53 | | | MPC | 2006 $TH_{94}$ |
| 2006 $TK_{94}$ | 16.5 | 0.15 | 20061012 | 152.57719 | 191.53022 | 24.80448 | 7.63312 | 0.1800319 | 2.2921568 | 11 | 1 | 6 days | 0.65 | | | MPC | 2006 $TK_{94}$ |
| 2006 $TN_{94}$ | 15.3 | 0.15 | 20061012 | 247.60411 | 127.74229 | 54.18090 | 15.22918 | 0.2963673 | 2.9255346 | 10 | 1 | 28 days | 0.27 | | | MPC | 2006 $TN_{94}$ |
| 2006 $TP_{94}$ | 16.6 | 0.15 | 20061101 | 5.19224 | 335.98700 | 60.45931 | 6.37089 | 0.1941883 | 2.6395303 | 39 | 1 | 36 days | 0.60 | | | MPC | 2006 $TP_{94}$ |
| 2006 $TQ_{94}$ | 17.3 | 0.15 | 20061101 | 312.33523 | 35.34383 | 74.62050 | 4.60247 | 0.1754234 | 2.7465466 | 19 | 1 | 33 days | 0.32 | | | MPC | 2006 $TQ_{94}$ |
| 2006 $TS_{94}$ | 16.3 | 0.15 | 20060922 | 66.80664 | 94.77250 | 216.73788 | 25.02336 | 0.1888927 | 3.1131739 | 13 | 1 | 22 days | 0.19 | | | MPC | 2006 $TS_{94}$ |
| 2006 $TU_{94}$ | 16.6 | 0.15 | 20060922 | 356.69505 | 209.84768 | 186.87692 | 5.24100 | 0.1891693 | 2.6842726 | 49 | 1 | 122 days | 0.48 | M-v | 3 | MPC | 2006 $TU_{94}$ |
| 2006 $TX_{94}$ | 18.2 | 0.15 | 20061012 | 336.66469 | 330.37358 | 100.00005 | 3.04868 | 0.1592345 | 2.3592807 | 13 | 1 | 27 days | 0.27 | | | MPC | 2006 $TX_{94}$ |
| 2006 $TY_{94}$ | 15.4 | 0.15 | 20060922 | 112.65053 | 23.47871 | 229.75631 | 12.67353 | 0.1832718 | 2.7210894 | 35 | 1 | 60 days | 0.65 | M-v | 5 | MPC | 2006 $TY_{94}$ |
| 2006 $TZ_{94}$ | 17.3 | 0.15 | 20060922 | 214.94167 | 270.42886 | 259.48012 | 4.78758 | 0.0716279 | 2.1703629 | 32 | 1 | 60 days | 0.50 | M-v | 4 | MPC | 2006 $TZ_{94}$ |
| 2006 $TC_{95}$ | 16.4 | 0.15 | 20061012 | 337.88511 | 206.10342 | 210.86305 | 12.40775 | 0.0807038 | 3.0560617 | 33 | 1 | 31 days | 0.51 | | | MPC | 2006 $TC_{95}$ |
| 2006 $TD_{95}$ | 18.1 | 0.15 | 20061012 | 4.10354 | 334.57378 | 41.56817 | 3.28202 | 0.1945850 | 2.7526519 | 29 | 1 | 54 days | 0.30 | | | MPC | 2006 $TD_{95}$ |
| 2006 $TF_{95}$ | 20.7 | 0.15 | 20061012 | 351.11265 | 343.50173 | 50.68653 | 1.46716 | 0.1816766 | 1.8966470 | 10 | 1 | 16 days | 0.52 | | | MPC | 2006 $TF_{95}$ |
| 2006 $TG_{95}$ | 16.6 | 0.15 | 20060922 | 305.34988 | 258.82755 | 187.64699 | 4.93298 | 0.1127731 | 3.1296467 | 21 | 1 | 60 days | 0.25 | M-v | 4 | MPC | 2006 $TG_{95}$ |
| 2006 $TH_{95}$ | 15.8 | 0.15 | 20060922 | 350.79390 | 359.59674 | 31.35213 | 10.85220 | 0.0929101 | 3.0203892 | 53 | 1 | 62 days | 0.42 | M-v | 4 | MPC | 2006 $TH_{95}$ |
| 2006 $TJ_{95}$ | 16.0 | 0.15 | 20061012 | 7.38354 | 221.74118 | 148.14958 | 29.54483 | 0.2280888 | 2.6253822 | 16 | 1 | 48 days | 0.59 | | | MPC | 2006 $TJ_{95}$ |
| 2006 $TM_{95}$ | 15.9 | 0.15 | 20060922 | 6.20031 | 160.84880 | 205.58841 | 42.99032 | 0.2408910 | 2.6839623 | 36 | 1 | 56 days | 0.42 | M-v | 5 | MPC | 2006 $TM_{95}$ |
| 2006 $TO_{95}$ | 18.3 | 0.15 | 20061012 | 358.67665 | 0.11451 | 27.92463 | 23.48425 | 0.0751650 | 1.8593985 | 20 | 1 | 43 days | 0.34 | | | MPC | 2006 $TO_{95}$ |
| 2006 $TP_{95}$ | 18.1 | 0.15 | 20060922 | 356.18565 | 166.19676 | 209.75363 | 20.81561 | 0.0655384 | 1.8940420 | 43 | 1 | 104 days | 0.38 | M-v | 3 | MPC | 2006 $TP_{95}$ |
| 2006 $TQ_{95}$ | 17.8 | 0.15 | 20061012 | 50.90097 | 291.52961 | 19.21146 | 4.01311 | 0.2594915 | 2.2761768 | 25 | 1 | 58 days | 0.33 | | | MPC | 2006 $TQ_{95}$ |
| 2006 $TS_{95}$ | 16.2 | 0.15 | 20060922 | 23.71799 | 325.43529 | 23.20970 | 5.99503 | 0.2229252 | 3.0309754 | 44 | 1 | 62 days | 0.33 | M-v | 4 | MPC | 2006 $TS_{95}$ |
| 2006 $TT_{95}$ | 15.9 | 0.15 | 20061012 | 68.15169 | 279.75681 | 34.19202 | 22.44133 | 0.1140590 | 3.2070191 | 18 | 1 | 28 days | 0.28 | | | MPC | 2006 $TT_{95}$ |
| 2006 $TU_{95}$ | 17.7 | 0.15 | 20061012 | 353.31057 | 10.92385 | 31.19209 | 3.89118 | 0.0992469 | 2.8062879 | 19 | 1 | 33 days | 0.21 | | | MPC | 2006 $TU_{95}$ |
| 2006 $TX_{95}$ | 18.6 | 0.15 | 20061012 | 328.14093 | 217.99382 | 212.40824 | 22.14696 | 0.0978221 | 1.8713032 | 23 | 1 | 35 days | 0.39 | | | MPC | 2006 $TX_{95}$ |
| 2006 $TY_{95}$ | 18.7 | 0.15 | 20061012 | 34.79453 | 135.38039 | 208.22403 | 3.22585 | 0.1793972 | 2.2138443 | 20 | 1 | 49 days | 0.32 | | | MPC | 2006 $TY_{95}$ |
| 2006 $TC_{96}$ | 18.9 | 0.15 | 20061012 | 342.88280 | 155.92416 | 258.26039 | 5.67367 | 0.2689546 | 2.4428535 | 10 | 1 | 9 days | 0.31 | | | MPC | 2006 $TC_{96}$ |
| 2006 $TE_{96}$ | 17.5 | 0.15 | 20061012 | 347.73671 | 66.52997 | 336.50856 | 7.41214 | 0.1804710 | 2.4358987 | 14 | 1 | 15 days | 0.49 | | | MPC | 2006 $TE_{96}$ |
| 2006 $TJ_{96}$ | 15.7 | 0.15 | 20061012 | 55.77454 | 19.13154 | 308.57929 | 5.31141 | 0.0879328 | 3.0109049 | 23 | 1 | 36 days | 0.30 | | | MPC | 2006 $TJ_{96}$ |
| 2006 $TL_{96}$ | 17.7 | 0.15 | 20061012 | 20.79700 | 21.10171 | 333.20470 | 4.46526 | 0.2454752 | 2.3608260 | 19 | 1 | 15 days | 0.32 | | | MPC | 2006 $TL_{96}$ |
| 2006 $TN_{96}$ | 16.3 | 0.15 | 20061012 | 294.19302 | 32.56788 | 63.88252 | 2.29676 | 0.0145105 | 2.7138944 | 30 | 1 | 54 days | 0.30 | | | MPC | 2006 $TN_{96}$ |
| 2006 $TO_{96}$ | 15.6 | 0.15 | 20061101 | 41.16964 | 68.86356 | 268.31027 | 10.18995 | 0.2082043 | 2.6914879 | 28 | 1 | 41 days | 0.35 | | | MPC | 2006 $TO_{96}$ |
| 2006 $TP_{96}$ | 15.3 | 0.15 | 20061101 | 314.06923 | 153.36842 | 297.61356 | 8.58828 | 0.0776753 | 3.1257718 | 19 | 1 | 41 days | 0.41 | | | MPC | 2006 $TP_{96}$ |
| 2006 $TQ_{96}$ | 17.0 | 0.15 | 20061101 | 23.70398 | 102.46603 | 258.76973 | 10.76496 | 0.2705761 | 2.7277271 | 15 | 1 | 44 days | 0.40 | | | MPC | 2006 $TQ_{96}$ |
| 2006 $TT_{96}$ | 16.1 | 0.15 | 20061101 | 340.29463 | 195.09637 | 239.13780 | 12.06886 | 0.2611241 | 2.6455136 | 57 | 1 | 41 days | 0.33 | | | MPC | 2006 $TT_{96}$ |
| 2006 $TV_{96}$ | 17.2 | 0.15 | 20061012 | 15.13878 | 308.16845 | 71.83314 | 2.91092 | 0.1959698 | 2.5374360 | 44 | 1 | 58 days | 0.45 | | | MPC | 2006 $TV_{96}$ |
| 2006 $TW_{96}$ | 18.2 | 0.15 | 20061012 | 27.23669 | 299.37708 | 53.96754 | 6.74362 | 0.2577432 | 2.1885046 | 43 | 1 | 55 days | 0.49 | | | MPC | 2006 $TW_{96}$ |
| 2006 $TZ_{96}$ | 17.7 | 0.15 | 20061012 | 356.75350 | 205.25324 | 200.98974 | 4.53422 | 0.2047522 | 2.3236302 | 21 | 1 | 35 days | 0.53 | | | MPC | 2006 $TZ_{96}$ |
| 2006 $TB_{97}$ | 17.1 | 0.15 | 20061012 | 32.63669 | 259.95452 | 102.70863 | 2.46622 | 0.1448901 | 2.5710712 | 13 | 1 | 33 days | 0.26 | | | MPC | 2006 $TB_{97}$ |
| 2006 $TD_{97}$ | 17.4 | 0.15 | 20060922 | 0.07056 | 47.38622 | 336.52740 | 4.22425 | 0.3011189 | 2.5625923 | 42 | 1 | 64 days | 0.51 | M-v | 4 | MPC | 2006 $TD_{97}$ |
| 2006 $TG_{97}$ | 18.4 | 0.15 | 20061012 | 24.83843 | 115.03025 | 233.78932 | 4.80348 | 0.2788164 | 2.5327151 | 13 | 1 | 33 days | 0.18 | | | MPC | 2006 $TG_{97}$ |
| 2006 $TH_{97}$ | 17.2 | 0.15 | 20061012 | 34.12204 | 307.00810 | 32.28574 | 1.45198 | 0.1612343 | 3.1309722 | 31 | 1 | 54 days | 0.28 | | | MPC | 2006 $TH_{97}$ |
| 2006 $TM_{97}$ | 17.5 | 0.15 | 20061012 | 242.09972 | 157.75989 | 4.39201 | 4.72453 | 0.0499322 | 2.2591887 | 20 | 1 | 36 days | 0.20 | | | MPC | 2006 $TM_{97}$ |
| 2006 $TN_{97}$ | 16.9 | 0.15 | 20061012 | 310.66353 | 91.65062 | 21.32250 | 8.13212 | 0.2270019 | 2.7568200 | 9 | 1 | 7 days | 0.67 | | | MPC | 2006 $TN_{97}$ |
| 2006 $TO_{97}$ | 17.3 | 0.15 | 20061012 | 317.67136 | 104.14272 | 357.01854 | 3.96652 | 0.2098282 | 2.6369696 | 14 | 1 | 32 days | 0.22 | | | MPC | 2006 $TO_{97}$ |
| 2006 $TP_{97}$ | 18.7 | 0.15 | 20061012 | 359.77658 | 35.39559 | 0.40319 | 3.32411 | 0.2212699 | 2.2437337 | 14 | 1 | 14 days | 0.26 | | | MPC | 2006 $TP_{97}$ |
| 2006 $TS_{97}$ | 16.3 | 0.15 | 20061012 | 257.43723 | 121.21533 | 29.52768 | 9.85166 | 0.0374373 | 2.7261444 | 17 | 1 | 29 days | 0.37 | | | MPC | 2006 $TS_{97}$ |
| 2006 $TU_{97}$ | 16.1 | 0.15 | 20061012 | 93.02389 | 260.01103 | 35.56442 | 15.59536 | 0.1403867 | 2.6052181 | 35 | 1 | 48 days | 0.25 | | | MPC | 2006 $TU_{97}$ |
| 2006 $TV_{97}$ | 18.6 | 0.15 | 20061012 | 27.05869 | 351.39739 | 4.68209 | 3.32395 | 0.2140706 | 2.2192346 | 28 | 1 | 32 days | 0.22 | | | MPC | 2006 $TV_{97}$ |
| 2006 $TX_{97}$ | 18.0 | 0.15 | 20061012 | 55.76144 | 281.46323 | 34.97276 | 15.61822 | 0.2646439 | 2.4204582 | 28 | 1 | 59 days | 0.26 | | | MPC | 2006 $TX_{97}$ |
| 2006 $TY_{97}$ | 16.0 | 0.15 | 20061101 | 33.90719 | 120.32529 | 223.06909 | 24.84627 | 0.3079160 | 3.1326418 | 36 | 1 | 38 days | 0.52 | | | MPC | 2006 $TY_{97}$ |
| 2006 $TZ_{97}$ | 17.1 | 0.15 | 20061012 | 294.98486 | 247.05365 | 206.15370 | 21.63482 | 0.0416056 | 2.5954138 | 19 | 1 | 38 days | 0.49 | | | MPC | 2006 $TZ_{97}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TA_{98}$ | 18.5 | 0.15 | 20061012 | 8.36724 | 148.74842 | 221.72397 | 0.42436 | 0.2022187 | 2.3296118 | 36 | 1 | 56 days | 0.43 | | MPC | 2006 $TA_{98}$ |
| 2006 $TB_{98}$ | 17.2 | 0.15 | 20060922 | 345.65159 | 172.41149 | 227.90666 | 1.57167 | 0.1681052 | 3.1168534 | 25 | 1 | 40 days | 0.25 | | MPC | 2006 $TB_{98}$ |
| 2006 $TD_{98}$ | 17.7 | 0.15 | 20061012 | 33.67193 | 121.82659 | 209.10798 | 7.27711 | 0.2450461 | 2.6688191 | 21 | 1 | 46 days | 0.38 | | MPC | 2006 $TD_{98}$ |
| 2006 $TE_{98}$ | 16.0 | 0.15 | 20061101 | 89.44604 | 85.43084 | 210.04890 | 14.48637 | 0.0488813 | 3.1150028 | 33 | 1 | 35 days | 0.33 | | MPC | 2006 $TE_{98}$ |
| 2006 $TG_{98}$ | 17.3 | 0.15 | 20061012 | 46.85913 | 120.78422 | 207.43205 | 11.31081 | 0.1263891 | 2.5362940 | 19 | 1 | 32 days | 0.26 | | MPC | 2006 $TG_{98}$ |
| 2006 $TH_{98}$ | 16.9 | 0.15 | 20061101 | 39.52830 | 309.35342 | 31.78290 | 1.85436 | 0.1421352 | 3.0142900 | 26 | 1 | 36 days | 0.28 | | MPC | 2006 $TH_{98}$ |
| 2006 $TJ_{98}$ | 16.5 | 0.15 | 20061012 | 211.12922 | 334.10225 | 205.98020 | 5.11125 | 0.0458803 | 2.9773411 | 13 | 1 | 12 days | 0.79 | | MPC | 2006 $TJ_{98}$ |
| 2006 $TK_{98}$ | 15.3 | 0.15 | 20060922 | 280.92824 | 122.48833 | 30.09279 | 23.30056 | 0.4263643 | 3.0048570 | 31 | 1 | 63 days | 0.35 | M-v 5 | MPC | 2006 $TK_{98}$ |
| 2006 $TL_{98}$ | 16.7 | 0.15 | 20061012 | 240.64335 | 316.07887 | 207.49086 | 22.65443 | 0.1839336 | 2.2671732 | 12 | 1 | 8 days | 0.51 | | MPC | 2006 $TL_{98}$ |
| 2006 $TQ_{98}$ | 17.7 | 0.15 | 20061101 | 13.40094 | 339.29720 | 30.87966 | 15.78902 | 0.2613350 | 3.1423488 | 22 | 1 | 36 days | 0.32 | | MPC | 2006 $TQ_{98}$ |
| 2006 $TR_{98}$ | 18.3 | 0.15 | 20061012 | 23.20953 | 167.21900 | 186.76182 | 2.54630 | 0.1778331 | 2.5120163 | 17 | 1 | 30 days | 0.19 | | MPC | 2006 $TR_{98}$ |
| 2006 $TS_{98}$ | 17.7 | 0.15 | 20061012 | 349.93871 | 351.78162 | 50.20558 | 3.11331 | 0.1769466 | 2.6289766 | 30 | 1 | 31 days | 0.24 | | MPC | 2006 $TS_{98}$ |
| 2006 $TT_{98}$ | 16.2 | 0.15 | 20061012 | 7.38280 | 340.91143 | 38.42675 | 3.01989 | 0.1348781 | 3.0593020 | 36 | 1 | 56 days | 0.29 | | MPC | 2006 $TT_{98}$ |
| 2006 $TU_{98}$ | 17.2 | 0.15 | 20060922 | 12.89730 | 174.93615 | 186.79472 | 1.22901 | 0.1992058 | 2.6989429 | 31 | 1 | 62 days | 0.27 | M-v 4 | MPC | 2006 $TU_{98}$ |
| 2006 $TV_{98}$ | 18.2 | 0.15 | 20061012 | 40.66082 | 253.27668 | 72.92473 | 1.75731 | 0.2246199 | 2.5397446 | 26 | 1 | 30 days | 0.38 | | MPC | 2006 $TV_{98}$ |
| 2006 $TW_{98}$ | 16.8 | 0.15 | 20061101 | 269.97023 | 114.26999 | 34.53986 | 17.38160 | 0.2290814 | 2.7841379 | 32 | 1 | 39 days | 0.34 | | MPC | 2006 $TW_{98}$ |
| 2006 $TX_{98}$ | 17.1 | 0.15 | 20061012 | 28.53967 | 186.80117 | 162.36588 | 0.95947 | 0.1765537 | 3.1866838 | 17 | 1 | 30 days | 0.23 | | MPC | 2006 $TX_{98}$ |
| 2006 $TZ_{98}$ | 17.6 | 0.15 | 20061012 | 75.92629 | 230.37574 | 68.61262 | 3.41533 | 0.1147083 | 2.2283168 | 26 | 1 | 43 days | 0.25 | | MPC | 2006 $TZ_{98}$ |
| 2006 $TA_{99}$ | 17.1 | 0.15 | 20061012 | 42.60651 | 288.18182 | 53.31205 | 4.93489 | 0.0531254 | 2.3984651 | 23 | 1 | 43 days | 0.25 | | MPC | 2006 $TA_{99}$ |
| 2006 $TB_{99}$ | 17.1 | 0.15 | 20061012 | 23.21743 | 303.99024 | 58.40716 | 5.15037 | 0.0790059 | 2.6303382 | 19 | 1 | 39 days | 0.27 | | MPC | 2006 $TB_{99}$ |
| 2006 $TC_{99}$ | 16.9 | 0.15 | 20060922 | 19.07362 | 249.69258 | 103.18747 | 1.87869 | 0.2144368 | 3.1117545 | 18 | 1 | 44 days | 0.12 | | MPC | 2006 $TC_{99}$ |
| 2006 $TD_{99}$ | 16.5 | 0.15 | 20061012 | 295.45037 | 266.07226 | 195.48353 | 8.87753 | 0.0700693 | 3.1688482 | 12 | 1 | 13 days | 0.23 | | MPC | 2006 $TD_{99}$ |
| 2006 $TG_{99}$ | 17.3 | 0.15 | 20061012 | 260.08897 | 93.17030 | 46.80889 | 4.98687 | 0.1098217 | 2.2353011 | 20 | 1 | 34 days | 0.24 | | MPC | 2006 $TG_{99}$ |
| 2006 $TH_{99}$ | 16.7 | 0.15 | 20061101 | 37.78062 | 309.87767 | 40.24115 | 11.44924 | 0.0720020 | 2.8984337 | 26 | 1 | 39 days | 0.32 | | MPC | 2006 $TH_{99}$ |
| 2006 $TJ_{99}$ | 15.9 | 0.15 | 20061012 | 345.23569 | 17.06350 | 32.81611 | 15.23211 | 0.2221039 | 3.0938930 | 56 | 1 | 50 days | 0.32 | | MPC | 2006 $TJ_{99}$ |
| 2006 $TK_{99}$ | 15.9 | 0.15 | 20060922 | 118.50501 | 47.34601 | 205.08633 | 20.81325 | 0.1607282 | 3.0594527 | 18 | 1 | 40 days | 0.26 | | MPC | 2006 $TK_{99}$ |
| 2006 $TL_{99}$ | 15.8 | 0.15 | 20061012 | 66.83171 | 111.33870 | 202.49449 | 9.40700 | 0.0704942 | 3.1598135 | 24 | 1 | 32 days | 0.39 | | MPC | 2006 $TL_{99}$ |
| 2006 $TM_{99}$ | 16.2 | 0.15 | 20061012 | 265.89855 | 100.40801 | 33.00752 | 13.00888 | 0.1014527 | 2.8061594 | 35 | 1 | 56 days | 0.31 | | MPC | 2006 $TM_{99}$ |
| 2006 $TN_{99}$ | 15.9 | 0.15 | 20061101 | 229.16008 | 131.65666 | 31.92441 | 27.32242 | 0.0152851 | 3.1446597 | 15 | 1 | 36 days | 0.20 | | MPC | 2006 $TN_{99}$ |
| 2006 $TP_{99}$ | 16.5 | 0.15 | 20060922 | 136.37446 | 182.77338 | 59.32888 | 2.46780 | 0.0776600 | 2.6410886 | 22 | 1 | 44 days | 0.35 | | MPC | 2006 $TP_{99}$ |
| 2006 $TR_{99}$ | 17.2 | 0.15 | 20060922 | 27.82189 | 139.86323 | 203.41601 | 10.17507 | 0.1543847 | 2.8970869 | 25 | 1 | 61 days | 0.28 | M-v 4 | MPC | 2006 $TR_{99}$ |
| 2006 $TS_{99}$ | 17.9 | 0.15 | 20061012 | 15.39440 | 307.05955 | 56.25709 | 2.31769 | 0.1714308 | 2.5482343 | 33 | 1 | 54 days | 0.36 | | MPC | 2006 $TS_{99}$ |
| 2006 $TV_{99}$ | 16.8 | 0.15 | 20061012 | 28.73940 | 53.09921 | 306.02460 | 3.13916 | 0.0707069 | 3.0717554 | 23 | 1 | 47 days | 0.30 | | MPC | 2006 $TV_{99}$ |
| 2006 $TW_{99}$ | 15.5 | 0.15 | 20061101 | 195.82370 | 322.66137 | 239.30624 | 8.60379 | 0.0471684 | 3.1446795 | 24 | 1 | 43 days | 0.17 | | MPC | 2006 $TW_{99}$ |
| 2006 $TX_{99}$ | 17.4 | 0.15 | 20061012 | 312.73942 | 221.03964 | 233.86041 | 5.90218 | 0.1779019 | 2.5278347 | 28 | 1 | 56 days | 0.35 | | MPC | 2006 $TX_{99}$ |
| 2006 $TZ_{99}$ | 17.3 | 0.15 | 20061101 | 292.09635 | 252.30403 | 230.21105 | 8.24881 | 0.1621347 | 2.4162098 | 24 | 1 | 43 days | 0.35 | | MPC | 2006 $TZ_{99}$ |
| 2006 $TA_{100}$ | 18.3 | 0.15 | 20061012 | 311.95290 | 187.27904 | 262.10726 | 2.84198 | 0.1225953 | 2.2512495 | 25 | 1 | 52 days | 0.26 | | MPC | 2006 $TA_{100}$ |
| 2006 $TC_{100}$ | 17.0 | 0.15 | 20061012 | 348.69088 | 81.52970 | 325.87149 | 2.44149 | 0.1714400 | 2.7600789 | 42 | 1 | 56 days | 0.45 | | MPC | 2006 $TC_{100}$ |
| 2006 $TE_{100}$ | 17.1 | 0.15 | 20061012 | 72.53356 | 84.58015 | 224.83249 | 11.88395 | 0.0895770 | 2.5933019 | 31 | 1 | 51 days | 0.34 | | MPC | 2006 $TE_{100}$ |
| 2006 $TF_{100}$ | 18.5 | 0.15 | 20061012 | 346.03552 | 175.30696 | 237.64332 | 4.50591 | 0.2417070 | 2.5451584 | 25 | 1 | 42 days | 0.24 | | MPC | 2006 $TF_{100}$ |
| 2006 $TJ_{100}$ | 17.0 | 0.15 | 20061012 | 14.47797 | 347.76512 | 21.26094 | 11.34764 | 0.2238247 | 3.0703997 | 20 | 1 | 51 days | 0.38 | | MPC | 2006 $TJ_{100}$ |
| 2006 $TK_{100}$ | 17.1 | 0.15 | 20061012 | 352.53960 | 177.44812 | 225.45198 | 7.55302 | 0.2309395 | 2.7731376 | 29 | 1 | 51 days | 0.24 | | MPC | 2006 $TK_{100}$ |
| 2006 $TL_{100}$ | 16.8 | 0.15 | 20061012 | 275.90775 | 166.23503 | 328.66550 | 2.94839 | 0.1553952 | 2.6079656 | 32 | 1 | 56 days | 0.29 | | MPC | 2006 $TL_{100}$ |
| 2006 $TM_{100}$ | 18.1 | 0.15 | 20061012 | 342.80813 | 33.53685 | 21.33950 | 9.31769 | 0.1551157 | 2.5754226 | 23 | 1 | 52 days | 0.33 | | MPC | 2006 $TM_{100}$ |
| 2006 $TO_{100}$ | 19.3 | 0.15 | 20061012 | 4.94673 | 99.08345 | 282.87980 | 1.76018 | 0.1774100 | 2.2216643 | 25 | 1 | 51 days | 0.30 | | MPC | 2006 $TO_{100}$ |
| 2006 $TP_{100}$ | 16.1 | 0.15 | 20061012 | 291.31402 | 256.59881 | 226.71039 | 11.21253 | 0.1812860 | 3.1831484 | 9 | 1 | 17 days | 0.19 | | MPC | 2006 $TP_{100}$ |
| 2006 $TQ_{100}$ | 16.8 | 0.15 | 20061101 | 2.47648 | 171.64451 | 222.47112 | 16.22703 | 0.2340695 | 3.1647926 | 29 | 1 | 38 days | 0.24 | | MPC | 2006 $TQ_{100}$ |
| 2006 $TR_{100}$ | 18.4 | 0.15 | 20061012 | 349.90386 | 56.17682 | 348.67500 | 2.42747 | 0.1698396 | 2.3331775 | 28 | 1 | 49 days | 0.31 | | MPC | 2006 $TR_{100}$ |
| 2006 $TS_{100}$ | 17.0 | 0.15 | 20061012 | 325.76098 | 206.97119 | 228.00428 | 10.03613 | 0.1054066 | 2.7416166 | 20 | 1 | 44 days | 0.29 | | MPC | 2006 $TS_{100}$ |
| 2006 $TU_{100}$ | 17.5 | 0.15 | 20061101 | 10.34568 | 151.63094 | 231.21567 | 7.47498 | 0.2014077 | 2.7886280 | 32 | 1 | 33 days | 0.28 | | MPC | 2006 $TU_{100}$ |
| 2006 $TV_{100}$ | 18.8 | 0.15 | 20061012 | 10.12931 | 105.77599 | 269.30278 | 1.65352 | 0.1966274 | 2.3647983 | 23 | 1 | 30 days | 0.44 | | MPC | 2006 $TV_{100}$ |
| 2006 $TW_{100}$ | 16.3 | 0.15 | 20061012 | 113.32511 | 252.79087 | 14.09076 | 5.24395 | 0.1474439 | 2.5777428 | 19 | 1 | 49 days | 0.22 | | MPC | 2006 $TW_{100}$ |
| 2006 $TX_{100}$ | 17.8 | 0.15 | 20061012 | 325.37041 | 137.93835 | 301.35306 | 1.98200 | 0.1725601 | 2.2880345 | 26 | 1 | 51 days | 0.32 | | MPC | 2006 $TX_{100}$ |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TZ_{100}$ | 16.7 | 0.15 | 20061012 | 93.17864 | 69.21526 | 229.82419 | 9.24737 | 0.0173304 | 2.6834441 | 33 | 1 | 44 days | 0.28 | | MPC | | 2006 $TZ_{100}$ |
| 2006 $TA_{101}$ | 16.0 | 0.15 | 20061012 | 34.15610 | 125.70970 | 229.18833 | 8.28789 | 0.0836552 | 3.1782019 | 21 | 1 | 44 days | 0.28 | | MPC | | 2006 $TA_{101}$ |
| 2006 $TE_{101}$ | 15.6 | 0.15 | 20061012 | 200.50052 | 326.83647 | 231.55369 | 8.15408 | 0.0754085 | 3.0620807 | 28 | 1 | 44 days | 0.26 | | MPC | | 2006 $TE_{101}$ |
| 2006 $TG_{101}$ | 18.1 | 0.15 | 20061012 | 4.82407 | 156.67205 | 225.92930 | 7.12881 | 0.2008350 | 2.2342457 | 29 | 1 | 49 days | 0.25 | | MPC | | 2006 $TG_{101}$ |
| 2006 $TH_{101}$ | 15.8 | 0.15 | 20061012 | 343.04481 | 182.16760 | 234.00965 | 8.34504 | 0.0987463 | 3.2178762 | 27 | 1 | 44 days | 0.42 | | MPC | | 2006 $TH_{101}$ |
| 2006 $TJ_{101}$ | 16.5 | 0.15 | 20061012 | 83.76111 | 57.59931 | 243.13665 | 3.80233 | 0.0984852 | 3.0494777 | 28 | 1 | 48 days | 0.43 | | MPC | | 2006 $TJ_{101}$ |
| 2006 $TL_{101}$ | 18.8 | 0.15 | 20061012 | 338.00799 | 188.14668 | 231.37003 | 4.26788 | 0.1264483 | 2.1834620 | 31 | 1 | 43 days | 0.32 | | MPC | | 2006 $TL_{101}$ |
| 2006 $TN_{101}$ | 18.4 | 0.15 | 20061012 | 34.45112 | 113.87156 | 227.09075 | 7.39980 | 0.1984836 | 2.2570268 | 31 | 1 | 43 days | 0.43 | | MPC | | 2006 $TN_{101}$ |
| 2006 $TO_{101}$ | 17.6 | 0.15 | 20061012 | 10.71978 | 155.35983 | 221.01084 | 12.06481 | 0.1977815 | 2.6865046 | 20 | 1 | 40 days | 0.35 | | MPC | | 2006 $TO_{101}$ |
| 2006 $TP_{101}$ | 17.6 | 0.15 | 20061012 | 63.48309 | 81.64140 | 231.85678 | 6.76416 | 0.1466077 | 2.3142981 | 23 | 1 | 31 days | 0.27 | | MPC | | 2006 $TP_{101}$ |
| 2006 $TS_{101}$ | 17.0 | 0.15 | 20061012 | 335.37074 | 154.27474 | 266.58379 | 1.01148 | 0.0586674 | 2.6160939 | 29 | 1 | 48 days | 0.30 | | MPC | | 2006 $TS_{101}$ |
| 2006 $TU_{101}$ | 18.0 | 0.15 | 20061101 | 349.09409 | 135.15182 | 279.32264 | 0.55294 | 0.1788918 | 2.3620498 | 30 | 1 | 33 days | 0.32 | | MPC | | 2006 $TU_{101}$ |
| 2006 $TV_{101}$ | 16.9 | 0.15 | 20061012 | 51.40757 | 32.61826 | 304.07897 | 1.00303 | 0.0681242 | 2.8587422 | 27 | 1 | 48 days | 0.37 | | MPC | | 2006 $TV_{101}$ |
| 2006 $TW_{101}$ | 16.0 | 0.15 | 20061012 | 130.96753 | 228.74464 | 31.34009 | 10.35466 | 0.0580430 | 3.0117184 | 26 | 1 | 49 days | 0.26 | | MPC | | 2006 $TW_{101}$ |
| 2006 $TA_{102}$ | 18.6 | 0.15 | 20061101 | 24.00135 | 87.03724 | 271.53844 | 1.10198 | 0.2565282 | 2.7072218 | 23 | 1 | 43 days | 0.36 | | MPC | | 2006 $TA_{102}$ |
| 2006 $TC_{102}$ | 16.7 | 0.15 | 20061012 | 299.16707 | 73.12560 | 30.14047 | 5.27826 | 0.0746213 | 2.7305168 | 26 | 1 | 49 days | 0.30 | | MPC | | 2006 $TC_{102}$ |
| 2006 $TD_{102}$ | 17.8 | 0.15 | 20061012 | 310.59876 | 193.02504 | 263.95590 | 1.17194 | 0.1478797 | 2.4475247 | 20 | 1 | 47 days | 0.30 | | MPC | | 2006 $TD_{102}$ |
| 2006 $TE_{102}$ | 17.4 | 0.15 | 20061012 | 296.34868 | 84.47710 | 33.33281 | 7.80372 | 0.1749912 | 2.7777880 | 26 | 1 | 51 days | 0.35 | | MPC | | 2006 $TE_{102}$ |
| 2006 $TF_{102}$ | 16.9 | 0.15 | 20061012 | 129.23300 | 33.52708 | 224.00818 | 6.43668 | 0.0970596 | 2.4410189 | 23 | 1 | 47 days | 0.32 | | MPC | | 2006 $TF_{102}$ |
| 2006 $TG_{102}$ | 18.8 | 0.15 | 20061101 | 304.04050 | 251.68091 | 213.61047 | 18.39865 | 0.1184326 | 1.8510018 | 17 | 1 | 40 days | 0.19 | | MPC | | 2006 $TG_{102}$ |
| 2006 $TH_{102}$ | 18.0 | 0.15 | 20060922 | 280.57492 | 96.92956 | 19.03491 | 4.04606 | 0.1024282 | 2.1991050 | 34 | 1 | 61 days | 0.26 | M-v 4 | MPC | | 2006 $TH_{102}$ |
| 2006 $TK_{102}$ | 17.0 | 0.15 | 20061012 | 80.14207 | 323.56818 | 334.62034 | 1.65860 | 0.1284356 | 2.6465825 | 22 | 1 | 44 days | 0.21 | | MPC | | 2006 $TK_{102}$ |
| 2006 $TM_{102}$ | 16.8 | 0.15 | 20061012 | 354.44645 | 175.00465 | 224.92405 | 5.80959 | 0.1092999 | 2.9802270 | 27 | 1 | 55 days | 0.31 | | MPC | | 2006 $TM_{102}$ |
| 2006 $TN_{102}$ | 16.8 | 0.15 | 20061012 | 122.37476 | 12.11168 | 254.89214 | 2.51163 | 0.0513888 | 2.8919258 | 16 | 1 | 30 days | 0.15 | | MPC | | 2006 $TN_{102}$ |
| 2006 $TO_{102}$ | 16.1 | 0.15 | 20061012 | 257.13958 | 118.07184 | 26.07425 | 10.38785 | 0.0607926 | 3.0298681 | 19 | 1 | 34 days | 0.22 | | MPC | | 2006 $TO_{102}$ |
| 2006 $TP_{102}$ | 17.4 | 0.15 | 20061012 | 331.25116 | 51.64835 | 30.13490 | 28.70272 | 0.2792904 | 2.7549165 | 20 | 1 | 31 days | 0.34 | | MPC | | 2006 $TP_{102}$ |
| 2006 $TR_{102}$ | 17.1 | 0.15 | 20061012 | 293.21125 | 269.84086 | 218.29307 | 10.87392 | 0.2514196 | 2.5411733 | 13 | 1 | 14 days | 0.23 | | MPC | | 2006 $TR_{102}$ |
| 2006 $TS_{102}$ | 17.3 | 0.15 | 20060922 | 40.96285 | 310.80599 | 23.34798 | 5.39425 | 0.1232320 | 2.4114408 | 32 | 1 | 61 days | 0.33 | M-v 4 | MPC | | 2006 $TS_{102}$ |
| 2006 $TT_{102}$ | 16.6 | 0.15 | 20061101 | 25.16017 | 144.37399 | 220.87110 | 12.13459 | 0.1372389 | 3.0906824 | 27 | 1 | 38 days | 0.32 | | MPC | | 2006 $TT_{102}$ |
| 2006 $TU_{102}$ | 15.6 | 0.15 | 20061012 | 27.37449 | 121.88012 | 220.10944 | 14.28034 | 0.3210107 | 3.9605582 | 13 | 1 | 27 days | 0.32 | | MPC | | 2006 $TU_{102}$ |
| 2006 $TV_{102}$ | 16.3 | 0.15 | 20061012 | 106.54191 | 250.87423 | 31.86659 | 10.70853 | 0.0539436 | 3.1172109 | 19 | 1 | 35 days | 0.26 | | MPC | | 2006 $TV_{102}$ |
| 2006 $TW_{102}$ | 18.3 | 0.15 | 20061012 | 350.77805 | 149.38692 | 253.10242 | 1.29370 | 0.0798585 | 2.3273969 | 19 | 1 | 34 days | 0.26 | | MPC | | 2006 $TW_{102}$ |
| 2006 $TY_{102}$ | 18.0 | 0.15 | 20061012 | 44.32207 | 116.79975 | 219.42757 | 6.33113 | 0.1239472 | 2.3200017 | 20 | 1 | 30 days | 0.28 | | MPC | | 2006 $TY_{102}$ |
| 2006 $TZ_{102}$ | 18.6 | 0.15 | 20061012 | 50.60394 | 339.28682 | 335.01057 | 1.66905 | 0.2355229 | 2.3133610 | 9 | 1 | 6 days | 0.57 | | MPC | | 2006 $TZ_{102}$ |
| 2006 $TA_{103}$ | 17.2 | 0.15 | 20061012 | 19.79671 | 80.38532 | 289.76581 | 1.81713 | 0.0599106 | 3.0272378 | 12 | 1 | 13 days | 0.26 | | MPC | | 2006 $TA_{103}$ |
| 2006 $TB_{103}$ | 16.5 | 0.15 | 20061012 | 106.50279 | 259.64112 | 15.88969 | 5.12688 | 0.1073362 | 3.1079870 | 22 | 1 | 44 days | 0.35 | | MPC | | 2006 $TB_{103}$ |
| 2006 $TC_{103}$ | 16.6 | 0.15 | 20061101 | 195.47402 | 179.01024 | 23.32115 | 9.34901 | 0.0353947 | 2.9710805 | 21 | 1 | 39 days | 0.32 | | MPC | | 2006 $TC_{103}$ |
| 2006 $TF_{103}$ | 17.8 | 0.15 | 20061012 | 73.37925 | 66.09769 | 230.10581 | 4.61483 | 0.1858363 | 2.2727734 | 22 | 1 | 39 days | 0.28 | D | MPC | | 2006 $TF_{103}$ |
| 2006 $TG_{103}$ | 18.7 | 0.15 | 20061012 | 23.80697 | 125.53331 | 218.18035 | 10.30794 | 0.3122587 | 2.5520610 | 19 | 1 | 40 days | 0.23 | | MPC | | 2006 $TG_{103}$ |
| 2006 $TH_{103}$ | 15.5 | 0.15 | 20061012 | 306.48273 | 234.50225 | 221.15756 | 9.73767 | 0.0887898 | 3.1311036 | 32 | 1 | 55 days | 0.51 | | MPC | | 2006 $TH_{103}$ |
| 2006 $TJ_{103}$ | 17.4 | 0.15 | 20061012 | 54.27121 | 103.67473 | 219.18725 | 16.04385 | 0.1490616 | 2.8087618 | 21 | 1 | 30 days | 0.23 | | MPC | | 2006 $TJ_{103}$ |
| 2006 $TK_{103}$ | 17.4 | 0.15 | 20060922 | 20.94073 | 31.74645 | 329.41920 | 1.05343 | 0.0871920 | 2.5686758 | 31 | 1 | 61 days | 0.34 | M-v 4 | MPC | | 2006 $TK_{103}$ |
| 2006 $TL_{103}$ | 16.1 | 0.15 | 20061101 | 244.06504 | 116.29851 | 51.05744 | 2.01423 | 0.1202098 | 3.0906792 | 17 | 1 | 38 days | 0.35 | | MPC | | 2006 $TL_{103}$ |
| 2006 $TO_{103}$ | 16.5 | 0.15 | 20061012 | 343.09750 | 208.08708 | 209.59043 | 9.13759 | 0.1503541 | 2.9913230 | 27 | 1 | 50 days | 0.35 | | MPC | | 2006 $TO_{103}$ |
| 2006 $TP_{103}$ | 18.9 | 0.15 | 20061012 | 30.35159 | 167.31318 | 181.02033 | 0.94028 | 0.1913507 | 2.4519251 | 17 | 1 | 27 days | 0.35 | | MPC | | 2006 $TP_{103}$ |
| 2006 $TQ_{103}$ | 15.4 | 0.15 | 20061012 | 19.62511 | 161.38366 | 211.19138 | 9.55131 | 0.1057129 | 3.5371035 | 24 | 1 | 51 days | 0.26 | | MPC | | 2006 $TQ_{103}$ |
| 2006 $TS_{103}$ | 17.2 | 0.15 | 20061012 | 351.25055 | 0.34819 | 44.52577 | 2.73890 | 0.0864890 | 2.6159938 | 27 | 1 | 49 days | 0.34 | | MPC | | 2006 $TS_{103}$ |
| 2006 $TV_{103}$ | 17.0 | 0.15 | 20061012 | 310.11145 | 252.09701 | 199.57605 | 3.00827 | 0.0637601 | 2.7898586 | 22 | 1 | 31 days | 0.27 | | MPC | | 2006 $TV_{103}$ |
| 2006 $TX_{103}$ | 17.3 | 0.15 | 20061012 | 146.62646 | 177.15707 | 67.96346 | 2.39514 | 0.0719812 | 2.4213090 | 16 | 1 | 31 days | 0.22 | | MPC | | 2006 $TX_{103}$ |
| 2006 $TY_{103}$ | 17.8 | 0.15 | 20061101 | 352.21589 | 198.95191 | 211.33871 | 13.61922 | 0.0972619 | 2.5478803 | 23 | 1 | 39 days | 0.27 | | MPC | | 2006 $TY_{103}$ |
| 2006 $TB_{104}$ | 16.5 | 0.15 | 20061012 | 165.11968 | 184.40151 | 46.26558 | 9.60960 | 0.0338172 | 2.6777799 | 27 | 1 | 52 days | 0.29 | | MPC | | 2006 $TB_{104}$ |
| 2006 $TC_{104}$ | 16.7 | 0.15 | 20061012 | 351.03236 | 8.19259 | 39.48436 | 9.69410 | 0.1504563 | 2.7804948 | 24 | 1 | 50 days | 0.57 | | MPC | | 2006 $TC_{104}$ |
| 2006 $TE_{104}$ | 17.0 | 0.15 | 20060922 | 301.64517 | 51.19819 | 42.02479 | 8.98660 | 0.0350681 | 2.5618976 | 28 | 1 | 62 days | 0.33 | M-v 4 | MPC | | 2006 $TE_{104}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $TG_{104}$ | 18.0 | 0.15 | 20061101 | 18.80633 | 326.55911 | 45.56299 | 3.39897 | 0.2096026 | 2.3948645 | 24 | 1 | 47 days | 0.23 | | | MPC | 2006 $TG_{104}$ |
| 2006 $TH_{104}$ | 17.6 | 0.15 | 20061012 | 285.42554 | 66.58014 | 61.29723 | 3.37649 | 0.1491917 | 2.4528593 | 16 | 1 | 29 days | 0.28 | | | MPC | 2006 $TH_{104}$ |
| 2006 $TJ_{104}$ | 16.7 | 0.15 | 20061012 | 37.63368 | 172.93200 | 180.78868 | 2.72646 | 0.0919987 | 3.1245294 | 20 | 1 | 50 days | 0.30 | | | MPC | 2006 $TJ_{104}$ |
| 2006 $TL_{104}$ | 18.5 | 0.15 | 20061012 | 25.75924 | 145.89796 | 205.95774 | 8.75811 | 0.2312745 | 2.2796972 | 24 | 1 | 57 days | 0.30 | | | MPC | 2006 $TL_{104}$ |
| 2006 $TN_{104}$ | 18.0 | 0.15 | 20061101 | 25.38879 | 267.08227 | 95.95413 | 2.13312 | 0.2076335 | 2.4091929 | 23 | 1 | 33 days | 0.47 | | | MPC | 2006 $TN_{104}$ |
| 2006 $TP_{104}$ | 17.1 | 0.15 | 20060922 | 356.68234 | 336.44759 | 52.80894 | 6.33057 | 0.3283636 | 2.6005588 | 69 | 1 | 74 days | 0.35 | M-v | 3 | MPC | 2006 $TP_{104}$ |
| 2006 $TQ_{104}$ | 16.7 | 0.15 | 20061012 | 283.93351 | 33.12208 | 97.79723 | 3.36319 | 0.1342881 | 2.9175339 | 9 | 1 | 8 days | 0.64 | | | MPC | 2006 $TQ_{104}$ |
| 2006 $TS_{104}$ | 17.9 | 0.15 | 20061012 | 5.53200 | 247.64969 | 139.13354 | 2.03127 | 0.1463192 | 2.5400512 | 17 | 1 | 46 days | 0.23 | | | MPC | 2006 $TS_{104}$ |
| 2006 $TT_{104}$ | 17.9 | 0.15 | 20061012 | 20.75557 | 328.93712 | 37.55333 | 21.42668 | 0.0913194 | 1.9468229 | 37 | 1 | 54 days | 0.46 | | | MPC | 2006 $TT_{104}$ |
| 2006 $TV_{104}$ | 18.3 | 0.15 | 20061012 | 315.36801 | 48.00029 | 45.84727 | 11.39151 | 0.1634505 | 2.3181284 | 24 | 1 | 56 days | 0.35 | | | MPC | 2006 $TV_{104}$ |
| 2006 $TW_{104}$ | 17.7 | 0.15 | 20061101 | 344.93691 | 12.75430 | 54.47059 | 6.27476 | 0.2532304 | 2.6891904 | 28 | 1 | 34 days | 0.44 | | | MPC | 2006 $TW_{104}$ |
| 2006 $TY_{104}$ | 17.1 | 0.15 | 20061012 | 64.03778 | 107.16011 | 205.24037 | 11.93590 | 0.1866033 | 2.6907421 | 21 | 1 | 54 days | 0.28 | | | MPC | 2006 $TY_{104}$ |
| 2006 $TZ_{104}$ | 16.8 | 0.15 | 20061012 | 11.34762 | 332.86046 | 48.92949 | 9.81883 | 0.1028924 | 3.1118046 | 17 | 1 | 46 days | 0.28 | | | MPC | 2006 $TZ_{104}$ |
| 2006 $TA_{105}$ | 16.3 | 0.15 | 20061012 | 22.04455 | 326.68286 | 43.31507 | 15.22423 | 0.0576470 | 2.6402742 | 23 | 1 | 56 days | 0.35 | | | MPC | 2006 $TA_{105}$ |
| 2006 $TD_{105}$ | 16.3 | 0.15 | 20061012 | 336.93707 | 341.37255 | 88.12193 | 2.64371 | 0.1777464 | 3.1981026 | 27 | 1 | 58 days | 0.37 | | | MPC | 2006 $TD_{105}$ |
| 2006 $TE_{105}$ | 17.6 | 0.15 | 20061101 | 334.74619 | 34.06758 | 45.34091 | 8.52190 | 0.2121874 | 2.5468339 | 27 | 1 | 43 days | 0.29 | | | MPC | 2006 $TE_{105}$ |
| 2006 $TF_{105}$ | 17.4 | 0.15 | 20061012 | 27.42719 | 292.35302 | 68.03887 | 4.71475 | 0.1427981 | 3.0969880 | 13 | 1 | 31 days | 0.31 | | | MPC | 2006 $TF_{105}$ |
| 2006 $TG_{105}$ | 17.2 | 0.15 | 20061012 | 339.25114 | 284.49247 | 139.76109 | 1.57737 | 0.1713306 | 3.1793514 | 16 | 1 | 31 days | 0.25 | | | MPC | 2006 $TG_{105}$ |
| 2006 $TK_{105}$ | 16.7 | 0.15 | 20061012 | 240.46244 | 99.57347 | 56.47890 | 5.20468 | 0.0121085 | 2.7945759 | 16 | 1 | 29 days | 0.18 | | | MPC | 2006 $TK_{105}$ |
| 2006 $TL_{105}$ | 16.9 | 0.15 | 20061012 | 328.18364 | 245.75754 | 185.96669 | 3.17211 | 0.0907584 | 2.5680847 | 26 | 1 | 37 days | 0.43 | | | MPC | 2006 $TL_{105}$ |
| 2006 $TM_{105}$ | 16.8 | 0.15 | 20061012 | 328.59115 | 230.04202 | 200.11104 | 7.23261 | 0.0465282 | 3.0154475 | 20 | 1 | 32 days | 0.29 | | | MPC | 2006 $TM_{105}$ |
| 2006 $TO_{105}$ | 16.1 | 0.15 | 20061012 | 83.70138 | 238.75790 | 60.42142 | 6.03233 | 0.1198906 | 3.2125261 | 23 | 1 | 46 days | 0.29 | | | MPC | 2006 $TO_{105}$ |
| 2006 $TQ_{105}$ | 15.7 | 0.15 | 20061012 | 56.39542 | 316.48662 | 13.19369 | 14.53634 | 0.1230595 | 2.5981713 | 35 | 1 | 55 days | 0.70 | | | MPC | 2006 $TQ_{105}$ |
| 2006 $TR_{105}$ | 18.8 | 0.15 | 20061012 | 349.80205 | 36.06686 | 8.92451 | 7.76199 | 0.3236715 | 2.6599458 | 15 | 1 | 13 days | 0.43 | | | MPC | 2006 $TR_{105}$ |
| 2006 $TU_{105}$ | 18.4 | 0.15 | 20061012 | 4.72091 | 343.53077 | 36.47126 | 5.61271 | 0.2091137 | 2.3325418 | 45 | 1 | 58 days | 0.33 | | | MPC | 2006 $TU_{105}$ |
| 2006 $TY_{105}$ | 16.2 | 0.15 | 20061012 | 11.60509 | 69.20978 | 305.44744 | 7.88330 | 0.1181499 | 2.7305735 | 27 | 1 | 48 days | 0.34 | | | MPC | 2006 $TY_{105}$ |
| 2006 $TB_{106}$ | 15.8 | 0.15 | 20061012 | 299.18544 | 281.76600 | 197.78569 | 12.32200 | 0.2250481 | 2.6843711 | 34 | 1 | 55 days | 0.50 | | | MPC | 2006 $TB_{106}$ |
| 2006 $TC_{106}$ | 16.5 | 0.15 | 20061012 | 250.96527 | 274.92538 | 221.70733 | 2.79530 | 0.0535464 | 2.6060811 | 17 | 1 | 16 days | 0.29 | | | MPC | 2006 $TC_{106}$ |
| 2006 $TD_{106}$ | 15.8 | 0.15 | 20061101 | 278.74737 | 105.56146 | 22.68981 | 18.85743 | 0.1781174 | 2.6597446 | 27 | 1 | 33 days | 0.36 | | | MPC | 2006 $TD_{106}$ |
| 2006 $TH_{106}$ | 17.7 | 0.15 | 20061012 | 343.51219 | 66.80460 | 346.88728 | 2.96313 | 0.1660458 | 2.2724041 | 22 | 1 | 51 days | 0.63 | | | MPC | 2006 $TH_{106}$ |
| 2006 $TK_{106}$ | 17.3 | 0.15 | 20061012 | 345.10455 | 191.82815 | 222.92699 | 10.02526 | 0.2120809 | 3.1374511 | 29 | 1 | 51 days | 0.32 | | | MPC | 2006 $TK_{106}$ |
| 2006 $TU_{106}$ | 16.1 | 0.15 | 20061012 | 344.96124 | 326.55008 | 91.02377 | 3.88548 | 0.0190879 | 3.1559783 | 11 | 1 | 31 days | 0.20 | | | MPC | 2006 $TU_{106}$ |
| 2006 $TX_{106}$ | 18.6 | 0.15 | 20061101 | 13.85510 | 288.25568 | 81.88760 | 1.66884 | 0.2359064 | 2.1908796 | 29 | 1 | 36 days | 0.39 | | | MPC | 2006 $TX_{106}$ |
| 2006 $TY_{106}$ | 16.9 | 0.15 | 20061012 | 356.62442 | 331.34144 | 57.69251 | 5.64337 | 0.1368271 | 2.7404861 | 32 | 1 | 49 days | 0.45 | | | MPC | 2006 $TY_{106}$ |
| 2006 $TZ_{106}$ | 16.9 | 0.15 | 20060922 | 20.71404 | 321.12629 | 39.46402 | 2.40783 | 0.1304711 | 2.8964356 | 31 | 1 | 100 days | 0.29 | M-v | 4 | MPC | 2006 $TZ_{106}$ |
| 2006 $TA_{107}$ | 16.2 | 0.15 | 20061012 | 90.80085 | 249.95475 | 46.32446 | 8.63896 | 0.0436397 | 2.3677788 | 47 | 1 | 53 days | 0.42 | | D | MPC | 2006 $TA_{107}$ |
| 2006 $TB_{107}$ | 15.6 | 0.15 | 20061012 | 96.99163 | 252.22983 | 43.36787 | 16.58077 | 0.0516213 | 3.1178175 | 31 | 1 | 56 days | 0.29 | | | MPC | 2006 $TB_{107}$ |
| 2006 $TG_{107}$ | 16.1 | 0.15 | 20060922 | 7.98486 | 252.08106 | 112.84957 | 0.88659 | 0.3293985 | 3.9598586 | 32 | 1 | 113 days | 0.25 | M-v | 3 | MPC | 2006 $TG_{107}$ |
| 2006 $TJ_{107}$ | 19.0 | 0.15 | 20060922 | 330.66439 | 349.30020 | 59.98211 | 6.17129 | 0.1407235 | 2.3305714 | 11 | 1 | 3 days | 0.35 | | | MPC | 2006 $TJ_{107}$ |
| 2006 $TR_{107}$ | 15.4 | 0.15 | 20060922 | 326.22032 | 297.02292 | 122.01179 | 23.51488 | 0.2160637 | 3.1158447 | 20 | 1 | 60 days | 0.65 | M-v | 5 | MPC | 2006 $TR_{107}$ |
| 2006 $TU_{107}$ | 13.7 | 0.15 | 20061012 | 250.25252 | 199.30660 | 238.07058 | 16.31891 | 0.0200023 | 5.2930770 | 14 | 1 | 17 days | 0.07 | | | MPC | 2006 $TU_{107}$ |
| 2006 $TV_{107}$ | 17.1 | 0.15 | 20060922 | 4.49731 | 345.36229 | 357.94312 | 7.04501 | 0.5072257 | 5.2973134 | 8 | 1 | 21 days | 0.19 | M-v | 5 | MPC | 2006 $TV_{107}$ |
| 2006 $TX_{107}$ | 16.8 | 0.15 | 20061012 | 352.51283 | 58.31037 | 304.21774 | 9.03162 | 0.1065986 | 2.9981208 | 8 | 1 | 10 days | 0.05 | | | MPC | 2006 $TX_{107}$ |
| 2006 $TH_{108}$ | 16.1 | 0.15 | 20061101 | 46.14538 | 246.84546 | 79.31479 | 22.79600 | 0.2512601 | 2.4281491 | 40 | 1 | 45 days | 0.42 | | | MPC | 2006 $TH_{108}$ |
| 2006 UA | 20.1 | 0.15 | 20060922 | 21.10468 | 270.61599 | 23.33424 | 14.32832 | 0.4861947 | 1.5286964 | 148 | 1 | 33 days | 0.43 | M-v | 5 | MPC | 2006 UA |
| 2006 UB | 17.6 | 0.15 | 20061012 | 339.61699 | 119.02011 | 278.49248 | 14.46604 | 0.3232014 | 3.1241374 | 10 | 1 | 4 days | 0.20 | | | MPC | 2006 UB |
| 2006 UE | 22.5 | 0.15 | 20060922 | 351.55369 | 12.44178 | 21.99591 | 5.01097 | 0.5728163 | 2.8074069 | 42 | 1 | 26 days | 0.63 | M-v | 5 | MPC | 2006 UE |
| 2006 UF | 22.3 | 0.15 | 20060922 | 346.70879 | 203.62775 | 207.62540 | 6.95345 | 0.5304232 | 2.4594659 | 56 | 1 | 48 days | 0.52 | M-v | 5 | MPC | 2006 UF |
| 2006 UG | 16.7 | 0.15 | 20060922 | 348.27483 | 234.51082 | 171.00157 | 13.28544 | 0.2566303 | 2.6381377 | 43 | 1 | 65 days | 0.67 | M-v | 4 | MPC | 2006 UG |
| 2006 UH | 17.9 | 0.15 | 20060922 | 350.37635 | 44.06319 | 342.88504 | 9.79309 | 0.2026793 | 2.2274993 | 30 | 1 | 41 days | 0.46 | | | MPC | 2006 UH |
| 2006 UJ | 23.9 | 0.15 | 20060922 | 357.93457 | 164.54767 | 203.43707 | 5.34808 | 0.4930132 | 2.2293766 | 18 | 1 | 6 days | 0.56 | M-v | 8 | MPC | 2006 UJ |
| 2006 UK | 20.1 | 0.15 | 20060922 | 288.72330 | 251.91318 | 244.33178 | 4.72481 | 0.5383672 | 1.4913874 | 48 | 1 | 31 days | 0.45 | M-v | 6 | MPC | 2006 UK |
| 2006 UL | 26.1 | 0.15 | 20060922 | 352.77614 | 164.81485 | 204.74604 | 7.23028 | 0.2696440 | 1.4028323 | 34 | 1 | 5 days | 0.57 | M-v | 7 | MPC | 2006 UL |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 UM | 18.5 | 0.15 | 20060922 | 328.35010 | 54.44039 | 57.59451 | 15.98961 | 0.5393250 | 2.2337319 | 358 | 1 | 48 days | 0.29 | M-v | 4 | MPC | 2006 UM |
| 2006 UN | 25.5 | 0.15 | 20060922 | 341.54620 | 70.90935 | 324.33758 | 0.49724 | 0.3312894 | 1.5498252 | 52 | 1 | 36 days | 0.55 | M-v | 6 | MPC | 2006 UN |
| 2006 UO | 21.0 | 0.15 | 20060922 | 341.82418 | 76.73130 | 26.91915 | 2.31298 | 0.6708110 | 2.8121114 | 48 | 1 | 38 days | 0.55 | M-v | 6 | MPC | 2006 UO |
| 2006 UP | 22.9 | 0.15 | 20060922 | 350.18295 | 334.61951 | 48.09940 | 2.28250 | 0.3025044 | 1.5883398 | 43 | 1 | 38 days | 0.41 | M-v | 5 | MPC | 2006 UP |
| 2006 UQ | 18.6 | 0.15 | 20061101 | 1.18258 | 185.57206 | 212.71989 | 25.49682 | 0.3170985 | 2.3198232 | 19 | 1 | 38 days | 0.19 | | | MPC | 2006 UQ |
| 2006 UR | 19.2 | 0.15 | 20060922 | 309.62457 | 199.66132 | 263.45880 | 5.33591 | 0.4482896 | 2.0196396 | 43 | 1 | 31 days | 0.43 | M-v | 5 | MPC | 2006 UR |
| 2006 US | 15.9 | 0.15 | 20061101 | 86.61608 | 273.35806 | 20.01292 | 13.13368 | 0.1519009 | 2.6198930 | 54 | 1 | 43 days | 0.38 | | | MPC | 2006 US |
| 2006 UT | 17.2 | 0.15 | 20061101 | 190.09762 | 138.00328 | 58.10160 | 2.97405 | 0.1372770 | 2.2983259 | 31 | 1 | 30 days | 0.50 | | | MPC | 2006 UT |
| 2006 UU | 16.7 | 0.15 | 20060922 | 327.20327 | 33.59394 | 31.10946 | 10.71665 | 0.2218098 | 3.1516110 | 52 | 1 | 71 days | 0.43 | M-v | 4 | MPC | 2006 UU |
| 2006 UW | 18.2 | 0.15 | 20061101 | 10.70860 | 67.52271 | 310.33596 | 0.92791 | 0.2156502 | 2.6947770 | 20 | 1 | 31 days | 0.35 | | | MPC | 2006 UW |
| 2006 UX | 18.9 | 0.15 | 20061012 | 326.13635 | 52.97822 | 17.69060 | 3.73556 | 0.1300654 | 2.1839111 | 12 | 1 | 4 days | 0.67 | | | MPC | 2006 UX |
| 2006 UZ | 16.8 | 0.15 | 20061101 | 333.41857 | 42.48418 | 24.79179 | 9.41095 | 0.1090222 | 3.0889737 | 22 | 1 | 32 days | 0.36 | | | MPC | 2006 UZ |
| 2006 $UC_1$ | 16.4 | 0.15 | 20061101 | 109.21916 | 229.09186 | 55.55248 | 10.13744 | 0.0699117 | 2.6410669 | 32 | 1 | 35 days | 0.40 | | | MPC | 2006 $UC_1$ |
| 2006 $UD_1$ | 15.9 | 0.15 | 20061012 | 80.71962 | 103.88675 | 209.31810 | 14.10368 | 0.1091722 | 2.5612572 | 35 | 1 | 54 days | 0.33 | | | MPC | 2006 $UD_1$ |
| 2006 $UE_1$ | 15.8 | 0.15 | 20061012 | 142.44118 | 275.64710 | 285.81417 | 9.26952 | 0.0811578 | 2.9383344 | 11 | 1 | 3 days | 0.20 | | E | MPC | 2006 $UE_1$ |
| 2006 $UF_1$ | 15.5 | 0.15 | 20061012 | 92.99532 | 316.69105 | 294.66715 | 8.40702 | 0.1164594 | 3.0161552 | 8 | 1 | 2 days | 0.19 | | | MPC | 2006 $UF_1$ |
| 2006 $UG_1$ | 16.6 | 0.15 | 20061012 | 335.24571 | 73.14336 | 349.24409 | 7.26982 | 0.3323815 | 3.9716493 | 9 | 1 | 2 days | 0.15 | | E | MPC | 2006 $UG_1$ |
| 2006 $UH_1$ | 15.9 | 0.15 | 20061012 | 149.65476 | 213.47643 | 0.02300 | 16.15204 | 0.2347172 | 2.3363721 | 10 | 1 | 6 days | 0.38 | | | MPC | 2006 $UH_1$ |
| 2006 $UK_1$ | 19.6 | 0.15 | 20061012 | 340.25863 | 213.14052 | 202.94545 | 2.32584 | 0.2214690 | 2.3801385 | 24 | 1 | 27 days | 0.34 | | | MPC | 2006 $UK_1$ |
| 2006 $UM_1$ | 18.1 | 0.15 | 20061012 | 345.80355 | 51.58949 | 6.83122 | 2.62301 | 0.1737852 | 2.5837926 | 19 | 1 | 28 days | 0.43 | | | MPC | 2006 $UM_1$ |
| 2006 $UQ_1$ | 17.1 | 0.15 | 20061012 | 10.25395 | 328.44852 | 46.20800 | 14.84834 | 0.2816157 | 2.6319382 | 64 | 1 | 53 days | 0.48 | | | MPC | 2006 $UQ_1$ |
| 2006 $US_1$ | 16.3 | 0.15 | 20061101 | 4.89467 | 154.38316 | 234.31413 | 11.26068 | 0.2747890 | 2.6715997 | 71 | 1 | 37 days | 0.49 | | | MPC | 2006 $US_1$ |
| 2006 $UU_1$ | 16.0 | 0.15 | 20061012 | 83.60965 | 233.95482 | 63.19993 | 7.93874 | 0.1375884 | 2.7050345 | 27 | 1 | 44 days | 0.32 | | | MPC | 2006 $UU_1$ |
| 2006 $UV_1$ | 18.1 | 0.15 | 20061012 | 2.32841 | 185.28050 | 190.36036 | 7.91986 | 0.2251097 | 2.7417817 | 16 | 1 | 50 days | 0.28 | | | MPC | 2006 $UV_1$ |
| 2006 $UX_1$ | 22.1 | 0.15 | 20060922 | 302.44983 | 96.30096 | 21.08750 | 20.28405 | 0.3940588 | 1.7108605 | 21 | 1 | 6 days | 0.44 | M-v | 8 | MPC | 2006 $UX_1$ |
| 2006 $UA_2$ | 18.9 | 0.15 | 20061012 | 342.12497 | 276.43470 | 135.85428 | 1.77114 | 0.1652801 | 2.3833053 | 18 | 1 | 15 days | 0.38 | | | MPC | 2006 $UA_2$ |
| 2006 $UD_2$ | 17.1 | 0.15 | 20061012 | 38.64639 | 157.96365 | 191.76477 | 4.45837 | 0.1747234 | 2.9722035 | 16 | 1 | 6 days | 0.60 | | | MPC | 2006 $UD_2$ |
| 2006 $UE_2$ | 16.0 | 0.15 | 20061101 | 84.77650 | 236.86044 | 76.69296 | 5.57073 | 0.0950662 | 3.1702371 | 20 | 1 | 38 days | 0.32 | | | MPC | 2006 $UE_2$ |
| 2006 $UK_2$ | 18.7 | 0.15 | 20060922 | 327.49094 | 12.14550 | 48.50037 | 3.25861 | 0.1941925 | 2.3434030 | 30 | 1 | 66 days | 0.40 | M-v | 4 | MPC | 2006 $UK_2$ |
| 2006 $UL_2$ | 16.7 | 0.15 | 20060922 | 281.30295 | 80.01989 | 33.52753 | 8.84256 | 0.1539471 | 2.7069614 | 20 | 1 | 66 days | 0.39 | M-v | 4 | MPC | 2006 $UL_2$ |
| 2006 $UM_2$ | 17.5 | 0.15 | 20061012 | 17.59557 | 324.94070 | 32.07466 | 6.67527 | 0.1460729 | 3.0819676 | 10 | 1 | 12 days | 0.76 | | | MPC | 2006 $UM_2$ |
| 2006 $UO_2$ | 17.3 | 0.15 | 20061012 | 11.07281 | 104.81149 | 268.21118 | 3.25584 | 0.0722187 | 2.7420710 | 19 | 1 | 16 days | 0.55 | | | MPC | 2006 $UO_2$ |
| 2006 $UR_2$ | 18.7 | 0.15 | 20061012 | 291.60184 | 254.41324 | 196.96733 | 20.64859 | 0.0698762 | 1.9022400 | 16 | 1 | 6 days | 0.32 | | | MPC | 2006 $UR_2$ |
| 2006 $US_2$ | 15.5 | 0.15 | 20060922 | 273.82414 | 87.45071 | 16.10821 | 10.11465 | 0.0508366 | 3.1228798 | 15 | 1 | 22 days | 0.32 | | | MPC | 2006 $US_2$ |
| 2006 $UV_2$ | 16.9 | 0.15 | 20061012 | 291.77007 | 341.96689 | 139.43083 | 1.65713 | 0.1642714 | 3.1290195 | 21 | 1 | 46 days | 0.44 | | | MPC | 2006 $UV_2$ |
| 2006 $UX_2$ | 15.9 | 0.15 | 20061012 | 318.70136 | 43.68179 | 51.57187 | 12.36177 | 0.2117477 | 3.1916125 | 18 | 1 | 30 days | 0.59 | | | MPC | 2006 $UX_2$ |
| 2006 $UY_2$ | 15.1 | 0.15 | 20061101 | 16.37019 | 271.47054 | 101.86637 | 4.19117 | 0.2406532 | 3.9841079 | 25 | 1 | 32 days | 0.45 | | | MPC | 2006 $UY_2$ |
| 2006 $UZ_2$ | 14.9 | 0.15 | 20061101 | 46.94453 | 272.54114 | 56.18150 | 15.16515 | 0.2477095 | 3.1979303 | 33 | 1 | 35 days | 0.44 | | | MPC | 2006 $UZ_2$ |
| 2006 $UA_3$ | 14.9 | 0.15 | 20061012 | 30.65446 | 156.41538 | 197.78144 | 12.76611 | 0.2020842 | 4.0026694 | 18 | 1 | 51 days | 0.40 | | | MPC | 2006 $UA_3$ |
| 2006 $UB_3$ | 16.5 | 0.15 | 20061101 | 336.79363 | 356.26194 | 75.63579 | 6.07405 | 0.0999964 | 2.7520355 | 28 | 1 | 35 days | 0.79 | | | MPC | 2006 $UB_3$ |
| 2006 $UD_3$ | 17.6 | 0.15 | 20061101 | 356.45961 | 347.19245 | 63.45837 | 4.21988 | 0.2335407 | 2.6326624 | 30 | 1 | 34 days | 0.60 | | | MPC | 2006 $UD_3$ |
| 2006 $UF_3$ | 17.5 | 0.15 | 20061012 | 332.33154 | 288.88098 | 135.04854 | 2.58242 | 0.1303006 | 2.5844109 | 12 | 1 | 5 days | 0.57 | | | MPC | 2006 $UF_3$ |
| 2006 $UG_3$ | 17.1 | 0.15 | 20061101 | 19.64945 | 149.36118 | 227.85296 | 15.23305 | 0.2756706 | 2.7437039 | 35 | 1 | 39 days | 0.52 | | | MPC | 2006 $UG_3$ |
| 2006 $UH_3$ | 18.8 | 0.15 | 20061012 | 319.12733 | 59.32216 | 36.39481 | 3.11064 | 0.2254288 | 2.4289827 | 9 | 1 | 4 days | 0.95 | | | MPC | 2006 $UH_3$ |
| 2006 $UM_3$ | 17.2 | 0.15 | 20061101 | 326.47094 | 330.82026 | 122.21834 | 3.22184 | 0.1768944 | 2.4086997 | 26 | 1 | 35 days | 0.54 | | | MPC | 2006 $UM_3$ |
| 2006 $UN_3$ | 15.1 | 0.15 | 20061012 | 51.44013 | 119.62119 | 218.17566 | 16.79788 | 0.1679349 | 3.2037314 | 22 | 1 | 48 days | 0.51 | | | MPC | 2006 $UN_3$ |
| 2006 $UO_3$ | 16.1 | 0.15 | 20061012 | 341.52341 | 283.21522 | 132.56914 | 10.16638 | 0.0870953 | 2.7351875 | 10 | 1 | 5 days | 0.66 | | | MPC | 2006 $UO_3$ |
| 2006 $UP_3$ | 16.5 | 0.15 | 20060922 | 232.12146 | 125.67231 | 39.99611 | 2.05934 | 0.1632552 | 3.0390511 | 23 | 1 | 32 days | 0.44 | | | MPC | 2006 $UP_3$ |
| 2006 $UQ_3$ | 17.9 | 0.15 | 20061012 | 352.68092 | 149.53171 | 254.54585 | 7.35108 | 0.1487084 | 2.6998201 | 13 | 1 | 15 days | 0.27 | | | MPC | 2006 $UQ_3$ |
| 2006 $US_3$ | 18.1 | 0.15 | 20061012 | 33.68729 | 246.69551 | 109.10031 | 2.54912 | 0.1523164 | 2.5152630 | 9 | 1 | 5 days | 0.36 | | | MPC | 2006 $US_3$ |
| 2006 $UT_3$ | 17.4 | 0.15 | 20061012 | 20.97186 | 180.41894 | 189.22517 | 3.85360 | 0.1880923 | 2.6763332 | 9 | 1 | 5 days | 0.77 | | | MPC | 2006 $UT_3$ |
| 2006 $UU_3$ | 18.0 | 0.15 | 20061012 | 45.49794 | 233.70994 | 93.44699 | 2.46711 | 0.1548275 | 2.4443153 | 11 | 1 | 4 days | 0.26 | | | MPC | 2006 $UU_3$ |
| 2006 $UV_3$ | 16.4 | 0.15 | 20061012 | 53.21031 | 280.81920 | 47.30417 | 15.45841 | 0.1774737 | 3.0553667 | 33 | 1 | 58 days | 0.42 | | | MPC | 2006 $UV_3$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UW_3$ | 17.5 | 0.15 | 20061012 | 18.13943 | 215.91670 | 157.36803 | 1.49288 | 0.1675462 | 2.8402142 | 18 | 1 | 26 days | 0.37 | | | MPC | 2006 $UW_3$ |
| 2006 $UB_4$ | 17.6 | 0.15 | 20061012 | 95.35032 | 252.89716 | 35.51076 | 2.54247 | 0.0273915 | 2.6173024 | 21 | 1 | 11 days | 0.21 | | | MPC | 2006 $UB_4$ |
| 2006 $UE_4$ | 16.5 | 0.15 | 20061101 | 71.49786 | 255.09992 | 74.41816 | 9.77636 | 0.1119305 | 3.0368221 | 16 | 1 | 36 days | 0.25 | | | MPC | 2006 $UE_4$ |
| 2006 $UF_4$ | 19.2 | 0.15 | 20060922 | 20.74529 | 32.88134 | 303.36514 | 3.06180 | 0.1886051 | 2.3336972 | 16 | 1 | 16 days | 0.34 | | | MPC | 2006 $UF_4$ |
| 2006 $UG_4$ | 17.3 | 0.15 | 20061012 | 2.65009 | 44.86737 | 347.05400 | 6.10439 | 0.0907044 | 2.6816999 | 19 | 1 | 28 days | 0.29 | | | MPC | 2006 $UG_4$ |
| 2006 $UH_4$ | 16.7 | 0.15 | 20061012 | 37.18746 | 339.74359 | 358.02746 | 10.88759 | 0.0658725 | 3.2323806 | 13 | 1 | 23 days | 0.42 | | | MPC | 2006 $UH_4$ |
| 2006 $UK_4$ | 16.0 | 0.15 | 20061012 | 285.47624 | 87.51576 | 19.18483 | 12.04628 | 0.0457077 | 3.2094473 | 23 | 1 | 53 days | 0.21 | | | MPC | 2006 $UK_4$ |
| 2006 $UL_4$ | 17.3 | 0.15 | 20061012 | 279.01064 | 187.61410 | 280.83242 | 1.21077 | 0.0168874 | 2.3178640 | 27 | 1 | 50 days | 0.36 | | | MPC | 2006 $UL_4$ |
| 2006 $UM_4$ | 17.2 | 0.15 | 20060922 | 279.22639 | 301.06003 | 165.35331 | 3.29718 | 0.0656550 | 2.7549450 | 10 | 1 | 16 days | 0.36 | | | MPC | 2006 $UM_4$ |
| 2006 $UN_4$ | 18.5 | 0.15 | 20061012 | 23.27067 | 207.84478 | 138.55645 | 1.80830 | 0.2064131 | 2.3841679 | 19 | 1 | 57 days | 0.39 | | | MPC | 2006 $UN_4$ |
| 2006 $UQ_4$ | 18.4 | 0.15 | 20061012 | 333.56625 | 7.22372 | 54.10439 | 3.70178 | 0.1938455 | 2.6251007 | 10 | 1 | 12 days | 0.29 | | | MPC | 2006 $UQ_4$ |
| 2006 $UR_4$ | 18.8 | 0.15 | 20061012 | 344.20775 | 348.73173 | 56.06192 | 3.24751 | 0.1759324 | 2.3485154 | 20 | 1 | 30 days | 0.63 | | | MPC | 2006 $UR_4$ |
| 2006 $UT_4$ | 16.3 | 0.15 | 20061012 | 40.74581 | 296.33923 | 38.72877 | 9.38457 | 0.0898577 | 3.1495225 | 18 | 1 | 49 days | 0.61 | | | MPC | 2006 $UT_4$ |
| 2006 $UV_4$ | 18.0 | 0.15 | 20060922 | 14.32990 | 301.58069 | 55.53096 | 2.68427 | 0.1325199 | 2.8577720 | 19 | 1 | 41 days | 0.31 | | | MPC | 2006 $UV_4$ |
| 2006 $UA_5$ | 17.9 | 0.15 | 20061012 | 13.48510 | 299.45818 | 60.44287 | 1.59793 | 0.1986007 | 3.0344538 | 10 | 1 | 12 days | 0.48 | | | MPC | 2006 $UA_5$ |
| 2006 $UD_5$ | 15.4 | 0.15 | 20061012 | 301.78952 | 243.95206 | 219.87921 | 13.54466 | 0.1799235 | 3.1672747 | 42 | 1 | 54 days | 0.48 | | | MPC | 2006 $UD_5$ |
| 2006 $UG_5$ | 17.9 | 0.15 | 20060922 | 355.24271 | 136.71249 | 237.32997 | 6.30020 | 0.1507009 | 2.2527612 | 28 | 1 | 65 days | 0.49 | M-v | 4 | MPC | 2006 $UG_5$ |
| 2006 $UK_5$ | 17.9 | 0.15 | 20061012 | 17.62314 | 315.63950 | 42.73862 | 3.18658 | 0.2393401 | 2.3671296 | 65 | 1 | 58 days | 0.40 | | | MPC | 2006 $UK_5$ |
| 2006 $UO_5$ | 15.9 | 0.15 | 20060922 | 290.66279 | 47.04278 | 52.11472 | 22.16317 | 0.0635107 | 2.6725289 | 22 | 1 | 26 days | 0.51 | | | MPC | 2006 $UO_5$ |
| 2006 $UP_5$ | 16.7 | 0.15 | 20061012 | 6.42855 | 206.16666 | 176.59539 | 4.90188 | 0.1233734 | 2.7545304 | 21 | 1 | 30 days | 0.33 | | | MPC | 2006 $UP_5$ |
| 2006 $UQ_5$ | 17.3 | 0.15 | 20061012 | 353.27626 | 317.56886 | 82.96816 | 3.15477 | 0.2183128 | 2.6373436 | 36 | 1 | 49 days | 0.55 | | | MPC | 2006 $UQ_5$ |
| 2006 $UT_5$ | 17.6 | 0.15 | 20061012 | 0.41553 | 196.84227 | 191.34454 | 6.87247 | 0.3018024 | 2.6162089 | 42 | 1 | 58 days | 0.46 | | E | MPC | 2006 $UT_5$ |
| 2006 $UU_5$ | 17.4 | 0.15 | 20061012 | 17.03300 | 251.07376 | 122.23435 | 1.76363 | 0.0839222 | 2.7661380 | 24 | 1 | 47 days | 0.28 | | | MPC | 2006 $UU_5$ |
| 2006 $UV_5$ | 17.6 | 0.15 | 20061012 | 175.95264 | 17.87977 | 199.16057 | 6.25622 | 0.0833478 | 2.3281205 | 21 | 1 | 49 days | 0.30 | | | MPC | 2006 $UV_5$ |
| 2006 $UA_6$ | 17.9 | 0.15 | 20061012 | 26.60969 | 300.36531 | 48.94343 | 2.28904 | 0.2064088 | 2.5579754 | 41 | 1 | 57 days | 0.27 | | | MPC | 2006 $UA_6$ |
| 2006 $UB_6$ | 15.3 | 0.15 | 20061012 | 44.47128 | 209.00410 | 124.68440 | 1.00619 | 0.1639230 | 3.9977079 | 30 | 1 | 46 days | 0.41 | | | MPC | 2006 $UB_6$ |
| 2006 $UD_6$ | 18.0 | 0.15 | 20061012 | 341.88296 | 11.32999 | 48.12764 | 7.93515 | 0.2165385 | 2.2847246 | 53 | 1 | 55 days | 0.55 | | | MPC | 2006 $UD_6$ |
| 2006 $UL_6$ | 17.4 | 0.15 | 20061012 | 4.17773 | 279.64061 | 105.67308 | 2.26564 | 0.1875752 | 2.3920644 | 32 | 1 | 50 days | 0.35 | | | MPC | 2006 $UL_6$ |
| 2006 $UO_6$ | 16.7 | 0.15 | 20061012 | 274.32990 | 318.63155 | 183.42637 | 5.77236 | 0.1973174 | 2.7348609 | 10 | 1 | 6 days | 0.57 | | | MPC | 2006 $UO_6$ |
| 2006 $UP_6$ | 16.7 | 0.15 | 20061012 | 357.09816 | 293.72037 | 102.49930 | 2.74677 | 0.1009270 | 2.6755132 | 34 | 1 | 46 days | 0.49 | | | MPC | 2006 $UP_6$ |
| 2006 $US_6$ | 17.1 | 0.15 | 20061012 | 330.06982 | 5.30795 | 70.56179 | 5.60059 | 0.1919245 | 2.7122971 | 14 | 1 | 6 days | 0.34 | | | MPC | 2006 $US_6$ |
| 2006 $UT_6$ | 16.1 | 0.15 | 20061012 | 35.62040 | 304.04204 | 46.84516 | 14.60816 | 0.0909680 | 2.6707585 | 38 | 1 | 52 days | 0.55 | | | MPC | 2006 $UT_6$ |
| 2006 $UV_6$ | 16.1 | 0.15 | 20061101 | 14.16139 | 323.10495 | 53.52623 | 11.35169 | 0.2082577 | 3.0494576 | 30 | 1 | 32 days | 0.40 | | | MPC | 2006 $UV_6$ |
| 2006 $UW_6$ | 15.7 | 0.15 | 20061012 | 279.84692 | 290.02227 | 197.29636 | 12.48324 | 0.0986462 | 3.1031072 | 10 | 1 | 5 days | 0.72 | | | MPC | 2006 $UW_6$ |
| 2006 $UX_6$ | 18.8 | 0.15 | 20060922 | 11.97697 | 277.76785 | 89.21559 | 2.88240 | 0.1114039 | 2.0186063 | 11 | 1 | 15 days | 0.42 | | | MPC | 2006 $UX_6$ |
| 2006 $UB_7$ | 16.2 | 0.15 | 20061012 | 35.06526 | 294.90227 | 52.02598 | 9.96960 | 0.1735051 | 3.0635641 | 31 | 1 | 44 days | 0.47 | | | MPC | 2006 $UB_7$ |
| 2006 $UC_7$ | 16.5 | 0.15 | 20061012 | 15.45729 | 264.73342 | 101.94073 | 3.28961 | 0.2695233 | 3.0474504 | 23 | 1 | 47 days | 0.60 | | | MPC | 2006 $UC_7$ |
| 2006 $UE_7$ | 17.3 | 0.15 | 20061012 | 8.00859 | 333.95939 | 48.64857 | 12.60174 | 0.1867726 | 2.6977083 | 37 | 1 | 55 days | 0.45 | | | MPC | 2006 $UE_7$ |
| 2006 $UF_7$ | 16.7 | 0.15 | 20061101 | 23.54027 | 329.27071 | 40.83241 | 32.77052 | 0.1287872 | 2.5820490 | 30 | 1 | 32 days | 0.38 | | | MPC | 2006 $UF_7$ |
| 2006 $UL_7$ | 17.0 | 0.15 | 20061012 | 346.51126 | 281.44839 | 129.12479 | 3.06438 | 0.1147785 | 2.1553983 | 30 | 1 | 49 days | 0.46 | | | MPC | 2006 $UL_7$ |
| 2006 $UM_7$ | 15.4 | 0.15 | 20061012 | 315.75450 | 274.41624 | 184.65940 | 8.84092 | 0.1813089 | 3.0035828 | 11 | 1 | 5 days | 0.83 | | | MPC | 2006 $UM_7$ |
| 2006 $UN_7$ | 16.2 | 0.15 | 20061012 | 232.10458 | 118.88018 | 62.20984 | 9.62889 | 0.1876909 | 2.3551203 | 10 | 1 | 6 days | 0.54 | | | MPC | 2006 $UN_7$ |
| 2006 $UP_7$ | 17.1 | 0.15 | 20061012 | 7.34000 | 325.79783 | 56.38454 | 6.43395 | 0.2259684 | 2.3469058 | 65 | 1 | 55 days | 0.48 | | | MPC | 2006 $UP_7$ |
| 2006 $UQ_7$ | 17.2 | 0.15 | 20061101 | 6.37207 | 333.40177 | 58.82643 | 7.49473 | 0.2588041 | 2.6242549 | 33 | 1 | 42 days | 0.60 | | | MPC | 2006 $UQ_7$ |
| 2006 $US_7$ | 16.6 | 0.15 | 20060922 | 3.89704 | 200.58006 | 182.68536 | 4.34649 | 0.2199389 | 2.6323650 | 37 | 1 | 121 days | 0.55 | M-v | 4 | MPC | 2006 $US_7$ |
| 2006 $UU_7$ | 17.8 | 0.15 | 20061101 | 30.39154 | 314.69814 | 50.00384 | 6.67060 | 0.1209211 | 2.2458728 | 32 | 1 | 42 days | 0.56 | | | MPC | 2006 $UU_7$ |
| 2006 $UW_7$ | 17.3 | 0.15 | 20061012 | 17.81202 | 314.72925 | 50.68150 | 5.88419 | 0.2456343 | 2.3995600 | 57 | 1 | 58 days | 0.31 | | | MPC | 2006 $UW_7$ |
| 2006 $UX_7$ | 17.4 | 0.15 | 20061012 | 19.38208 | 167.25109 | 203.19178 | 6.07126 | 0.1623828 | 2.4258512 | 33 | 1 | 52 days | 0.52 | | | MPC | 2006 $UX_7$ |
| 2006 $UA_8$ | 17.9 | 0.15 | 20061101 | 7.77657 | 280.81701 | 112.04700 | 2.50023 | 0.1874726 | 2.4580316 | 27 | 1 | 33 days | 0.46 | | | MPC | 2006 $UA_8$ |
| 2006 $UB_8$ | 17.0 | 0.15 | 20061012 | 51.11552 | 266.48283 | 41.22225 | 13.00465 | 0.2708048 | 2.6660350 | 31 | 1 | 51 days | 0.43 | | | MPC | 2006 $UB_8$ |
| 2006 $UC_8$ | 18.0 | 0.15 | 20061012 | 354.82685 | 336.64968 | 58.08894 | 4.58281 | 0.1908588 | 2.4361647 | 22 | 1 | 43 days | 0.44 | | | MPC | 2006 $UC_8$ |
| 2006 $UF_8$ | 16.9 | 0.15 | 20061012 | 24.35840 | 295.91974 | 54.91338 | 6.34795 | 0.2129726 | 2.6892669 | 43 | 1 | 55 days | 0.31 | | | MPC | 2006 $UF_8$ |
| 2006 $UG_8$ | 15.6 | 0.15 | 20061012 | 224.67012 | 3.29254 | 169.76899 | 5.28212 | 0.0814065 | 3.1040328 | 15 | 1 | 6 days | 0.67 | | | MPC | 2006 $UG_8$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UM_8$ | 16.2 | 0.15 | 20061101 | 27.86193 | 143.48462 | 222.74602 | 11.45221 | 0.2128699 | 2.6311230 | 55 | 1 | 35 days | 0.37 | | | MPC | 2006 $UM_8$ |
| 2006 $UR_8$ | 16.2 | 0.15 | 20061101 | 327.80530 | 59.26764 | 47.03238 | 13.53563 | 0.2273069 | 2.6779601 | 31 | 1 | 42 days | 0.44 | | | MPC | 2006 $UR_8$ |
| 2006 $US_8$ | 19.0 | 0.15 | 20061101 | 342.29068 | 216.99752 | 208.92889 | 0.80324 | 0.1725826 | 2.3622676 | 24 | 1 | 36 days | 0.26 | | | MPC | 2006 $US_8$ |
| 2006 $UT_8$ | 15.9 | 0.15 | 20061101 | 239.74438 | 93.18107 | 93.28361 | 4.05225 | 0.2338096 | 2.5404069 | 13 | 1 | 31 days | 0.69 | | | MPC | 2006 $UT_8$ |
| 2006 $UU_8$ | 17.9 | 0.15 | 20061101 | 37.59521 | 281.20499 | 69.09180 | 3.23712 | 0.1961084 | 2.2115209 | 25 | 1 | 32 days | 0.51 | | | MPC | 2006 $UU_8$ |
| 2006 $UW_8$ | 16.0 | 0.15 | 20061101 | 38.97351 | 282.13982 | 72.08747 | 4.06819 | 0.1549282 | 2.6171678 | 37 | 1 | 42 days | 0.50 | | | MPC | 2006 $UW_8$ |
| 2006 $UY_8$ | 17.1 | 0.15 | 20061012 | 345.36725 | 14.02883 | 49.31046 | 13.28087 | 0.2616050 | 2.5979881 | 64 | 1 | 50 days | 0.44 | | | MPC | 2006 $UY_8$ |
| 2006 $UA_9$ | 16.6 | 0.15 | 20060922 | 9.06561 | 320.94965 | 57.63917 | 13.10405 | 0.2060386 | 2.5965753 | 42 | 1 | 70 days | 0.56 | M-v | 4 | MPC | 2006 $UA_9$ |
| 2006 $UC_9$ | 15.2 | 0.15 | 20061012 | 196.61396 | 7.74954 | 204.20250 | 8.88227 | 0.0679883 | 2.9269857 | 10 | 1 | 6 days | 0.51 | | | MPC | 2006 $UC_9$ |
| 2006 $UE_9$ | 16.7 | 0.15 | 20061012 | 18.83355 | 165.17264 | 208.81639 | 11.21488 | 0.1944987 | 2.6032691 | 38 | 1 | 54 days | 0.58 | | | MPC | 2006 $UE_9$ |
| 2006 $UF_9$ | 15.8 | 0.15 | 20061012 | 301.70677 | 48.23243 | 64.49341 | 13.29484 | 0.0846618 | 2.8013876 | 14 | 1 | 30 days | 0.73 | | | MPC | 2006 $UF_9$ |
| 2006 $UH_9$ | 16.2 | 0.15 | 20061012 | 18.57270 | 277.32193 | 102.80254 | 4.81907 | 0.1488776 | 2.8152707 | 15 | 1 | 2 days | 0.50 | | | MPC | 2006 $UH_9$ |
| 2006 $UK_9$ | 16.8 | 0.15 | 20061012 | 92.72681 | 239.33088 | 64.46610 | 5.29584 | 0.0563234 | 2.7552606 | 19 | 1 | 28 days | 0.38 | | | MPC | 2006 $UK_9$ |
| 2006 $UL_9$ | 16.3 | 0.15 | 20061012 | 37.79638 | 136.68577 | 212.09487 | 8.42889 | 0.1963960 | 3.2598494 | 12 | 1 | 6 days | 0.96 | | | MPC | 2006 $UL_9$ |
| 2006 $UM_9$ | 16.3 | 0.15 | 20061012 | 39.39433 | 203.64510 | 143.96197 | 1.58776 | 0.1701495 | 3.1391103 | 23 | 1 | 27 days | 0.27 | | | MPC | 2006 $UM_9$ |
| 2006 $UP_9$ | 19.3 | 0.15 | 20061012 | 344.23765 | 350.27078 | 65.79140 | 2.89675 | 0.0998906 | 2.1619134 | 17 | 1 | 28 days | 0.41 | | | MPC | 2006 $UP_9$ |
| 2006 $UR_9$ | 16.0 | 0.15 | 20061012 | 261.77705 | 17.72779 | 141.77585 | 4.95809 | 0.1378706 | 2.6978011 | 16 | 1 | 47 days | 0.43 | | | MPC | 2006 $UR_9$ |
| 2006 $UU_9$ | 15.9 | 0.15 | 20061101 | 235.04205 | 121.32024 | 57.85859 | 22.22621 | 0.0527990 | 2.6083776 | 26 | 1 | 36 days | 0.47 | | | MPC | 2006 $UU_9$ |
| 2006 $UW_9$ | 17.8 | 0.15 | 20061101 | 61.17227 | 179.62034 | 137.53329 | 0.95538 | 0.2256514 | 2.5341366 | 19 | 1 | 42 days | 0.30 | | | MPC | 2006 $UW_9$ |
| 2006 $UY_9$ | 18.3 | 0.15 | 20061101 | 345.05092 | 325.93198 | 106.12372 | 2.63757 | 0.1997387 | 2.4176052 | 19 | 1 | 42 days | 0.26 | | | MPC | 2006 $UY_9$ |
| 2006 $UA_{10}$ | 17.4 | 0.15 | 20061012 | 6.48129 | 188.48170 | 206.43946 | 8.04826 | 0.1868646 | 2.6937584 | 9 | 1 | 6 days | 0.68 | | | MPC | 2006 $UA_{10}$ |
| 2006 $UC_{10}$ | 17.8 | 0.15 | 20061012 | 350.88722 | 214.32768 | 199.73671 | 5.80755 | 0.1970394 | 2.2447136 | 25 | 1 | 53 days | 0.46 | | | MPC | 2006 $UC_{10}$ |
| 2006 $UD_{10}$ | 18.1 | 0.15 | 20061012 | 338.58434 | 242.85611 | 191.07292 | 3.19827 | 0.2370625 | 2.6093053 | 24 | 1 | 47 days | 0.26 | | | MPC | 2006 $UD_{10}$ |
| 2006 $UH_{10}$ | 17.7 | 0.15 | 20061012 | 40.65359 | 335.12991 | 345.72702 | 5.53113 | 0.2672655 | 2.5911086 | 18 | 1 | 33 days | 0.08 | | | MPC | 2006 $UH_{10}$ |
| 2006 $UJ_{10}$ | 17.7 | 0.15 | 20061012 | 299.59978 | 52.76919 | 40.07062 | 7.87351 | 0.0320406 | 2.2135449 | 13 | 1 | 10 days | 0.16 | | | MPC | 2006 $UJ_{10}$ |
| 2006 $UK_{10}$ | 15.9 | 0.15 | 20061012 | 293.82811 | 263.33727 | 202.59457 | 9.89855 | 0.0738651 | 2.9621446 | 21 | 1 | 48 days | 0.56 | | | MPC | 2006 $UK_{10}$ |
| 2006 $UM_{10}$ | 17.0 | 0.15 | 20061012 | 224.00369 | 131.08143 | 43.12258 | 8.70765 | 0.1042155 | 2.3130394 | 10 | 1 | 5 days | 0.42 | | | MPC | 2006 $UM_{10}$ |
| 2006 $UN_{10}$ | 18.3 | 0.15 | 20061012 | 29.86921 | 307.09396 | 42.38272 | 6.79962 | 0.1482434 | 2.4310001 | 30 | 1 | 53 days | 0.33 | | | MPC | 2006 $UN_{10}$ |
| 2006 $US_{10}$ | 17.6 | 0.15 | 20061012 | 291.30259 | 61.31828 | 47.68172 | 3.54862 | 0.0954209 | 2.3329927 | 31 | 1 | 58 days | 0.27 | | D | MPC | 2006 $US_{10}$ |
| 2006 $UT_{10}$ | 18.6 | 0.15 | 20060922 | 16.49929 | 257.80048 | 91.55481 | 0.90108 | 0.2702191 | 2.3775118 | 20 | 1 | 62 days | 0.23 | M-v | 4 | MPC | 2006 $UT_{10}$ |
| 2006 $UV_{10}$ | 17.2 | 0.15 | 20061012 | 287.90644 | 271.40700 | 198.12640 | 4.05295 | 0.0662295 | 2.3161093 | 23 | 1 | 58 days | 0.23 | | | MPC | 2006 $UV_{10}$ |
| 2006 $UX_{10}$ | 16.6 | 0.15 | 20061012 | 94.50035 | 245.45180 | 41.37885 | 8.35104 | 0.0939575 | 2.8539665 | 24 | 1 | 24 days | 0.35 | | | MPC | 2006 $UX_{10}$ |
| 2006 $UZ_{10}$ | 16.2 | 0.15 | 20061012 | 197.78605 | 12.31261 | 188.71242 | 3.60979 | 0.2260593 | 2.5376690 | 10 | 1 | 5 days | 0.34 | | | MPC | 2006 $UZ_{10}$ |
| 2006 $UA_{11}$ | 17.0 | 0.15 | 20061012 | 345.05853 | 11.53583 | 39.01815 | 12.59239 | 0.1149337 | 3.1384798 | 27 | 1 | 40 days | 0.35 | | | MPC | 2006 $UA_{11}$ |
| 2006 $UC_{11}$ | 18.5 | 0.15 | 20061012 | 358.60300 | 216.25060 | 174.48654 | 1.66993 | 0.1215078 | 2.2260635 | 27 | 1 | 46 days | 0.41 | | | MPC | 2006 $UC_{11}$ |
| 2006 $UD_{11}$ | 16.3 | 0.15 | 20061012 | 38.19982 | 310.21597 | 40.27931 | 10.88498 | 0.0500723 | 3.1006976 | 20 | 1 | 42 days | 0.29 | | | MPC | 2006 $UD_{11}$ |
| 2006 $UF_{11}$ | 18.1 | 0.15 | 20061101 | 6.84089 | 350.07296 | 37.46179 | 11.12517 | 0.1329057 | 2.5414494 | 37 | 1 | 37 days | 0.26 | | | MPC | 2006 $UF_{11}$ |
| 2006 $UJ_{11}$ | 17.2 | 0.15 | 20061012 | 12.40358 | 323.26799 | 48.74876 | 4.39987 | 0.1823523 | 2.6695420 | 39 | 1 | 53 days | 0.39 | | | MPC | 2006 $UJ_{11}$ |
| 2006 $UM_{11}$ | 15.9 | 0.15 | 20060922 | 67.84137 | 257.87229 | 44.88901 | 5.63632 | 0.1488352 | 2.7138566 | 37 | 1 | 62 days | 0.27 | M-v | 4 | MPC | 2006 $UM_{11}$ |
| 2006 $UN_{11}$ | 16.4 | 0.15 | 20061012 | 202.18194 | 357.56801 | 200.52122 | 6.34074 | 0.1999054 | 2.5997841 | 10 | 1 | 5 days | 0.23 | | | MPC | 2006 $UN_{11}$ |
| 2006 $UO_{11}$ | 16.8 | 0.15 | 20060922 | 60.99855 | 228.62273 | 83.25092 | 1.65751 | 0.1313683 | 2.6461953 | 24 | 1 | 62 days | 0.28 | M-v | 4 | MPC | 2006 $UO_{11}$ |
| 2006 $UP_{11}$ | 17.9 | 0.15 | 20061012 | 34.58887 | 140.79630 | 197.18487 | 4.57932 | 0.2085915 | 2.3004482 | 25 | 1 | 53 days | 0.43 | | | MPC | 2006 $UP_{11}$ |
| 2006 $UT_{11}$ | 17.8 | 0.15 | 20061101 | 46.26720 | 289.91588 | 46.40571 | 4.70577 | 0.1562250 | 2.1965359 | 41 | 1 | 36 days | 0.37 | | | MPC | 2006 $UT_{11}$ |
| 2006 $UU_{11}$ | 16.2 | 0.15 | 20061012 | 253.91720 | 8.53790 | 149.95887 | 2.11375 | 0.1751881 | 2.8064072 | 22 | 1 | 47 days | 0.30 | | | MPC | 2006 $UU_{11}$ |
| 2006 $UW_{11}$ | 16.1 | 0.15 | 20061012 | 38.35333 | 269.62543 | 81.17406 | 2.85032 | 0.0702511 | 3.1234143 | 22 | 1 | 46 days | 0.30 | | | MPC | 2006 $UW_{11}$ |
| 2006 $UX_{11}$ | 17.4 | 0.15 | 20061012 | 23.79105 | 172.96603 | 179.73186 | 3.22616 | 0.2478717 | 2.7903979 | 22 | 1 | 47 days | 0.16 | | | MPC | 2006 $UX_{11}$ |
| 2006 $UZ_{11}$ | 16.3 | 0.15 | 20061012 | 111.47333 | 223.71757 | 45.13426 | 13.72216 | 0.1493774 | 2.7026470 | 31 | 1 | 51 days | 0.42 | | | MPC | 2006 $UZ_{11}$ |
| 2006 $UA_{12}$ | 16.9 | 0.15 | 20061012 | 357.59708 | 347.16247 | 49.46190 | 7.64008 | 0.0822216 | 2.7142786 | 34 | 1 | 51 days | 0.32 | | | MPC | 2006 $UA_{12}$ |
| 2006 $UD_{12}$ | 16.5 | 0.15 | 20060922 | 32.26062 | 159.28138 | 185.35214 | 4.84821 | 0.1585634 | 2.6864588 | 30 | 1 | 119 days | 0.49 | M-v | 4 | MPC | 2006 $UD_{12}$ |
| 2006 $UG_{12}$ | 16.9 | 0.15 | 20061012 | 238.26569 | 111.26798 | 55.64924 | 6.64829 | 0.1139067 | 2.3411579 | 12 | 1 | 10 days | 0.86 | | | MPC | 2006 $UG_{12}$ |
| 2006 $UJ_{12}$ | 17.2 | 0.15 | 20061012 | 61.07376 | 254.39398 | 62.92581 | 5.88967 | 0.1561000 | 2.7838992 | 14 | 1 | 14 days | 0.25 | | | MPC | 2006 $UJ_{12}$ |
| 2006 $UK_{12}$ | 18.1 | 0.15 | 20061012 | 15.51781 | 180.91547 | 188.42313 | 5.33227 | 0.1970818 | 2.5257681 | 22 | 1 | 54 days | 0.29 | | | MPC | 2006 $UK_{12}$ |
| 2006 $UL_{12}$ | 16.8 | 0.15 | 20061012 | 97.15423 | 81.97601 | 203.62423 | 9.44876 | 0.1325506 | 2.9821693 | 19 | 1 | 10 days | 0.34 | | | MPC | 2006 $UL_{12}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UM_{12}$ | 18.6 | 0.15 | 20061101 | 358.80572 | 266.51512 | 135.18604 | 2.01847 | 0.1954122 | 2.3706056 | 18 | 1 | 30 days | 0.42 | | MPC | 2006 $UM_{12}$ |
| 2006 $UN_{12}$ | 16.8 | 0.15 | 20061012 | 334.76073 | 16.66442 | 49.90964 | 11.56435 | 0.1162942 | 2.7348255 | 27 | 1 | 45 days | 0.44 | | MPC | 2006 $UN_{12}$ |
| 2006 $UO_{12}$ | 16.2 | 0.15 | 20061012 | 279.10371 | 2.90580 | 133.50882 | 2.70708 | 0.1676664 | 2.6994451 | 15 | 1 | 6 days | 0.37 | | MPC | 2006 $UO_{12}$ |
| 2006 $UP_{12}$ | 16.0 | 0.15 | 20061012 | 304.42558 | 47.23747 | 50.58702 | 14.50717 | 0.0493133 | 3.2314848 | 21 | 1 | 44 days | 0.35 | | MPC | 2006 $UP_{12}$ |
| 2006 $UQ_{12}$ | 18.3 | 0.15 | 20061012 | 17.09216 | 300.45269 | 57.29090 | 5.34537 | 0.3243881 | 2.6875362 | 24 | 1 | 44 days | 0.29 | E | MPC | 2006 $UQ_{12}$ |
| 2006 $UR_{12}$ | 16.7 | 0.15 | 20060922 | 20.60030 | 169.62525 | 193.13622 | 6.74273 | 0.1602951 | 3.0251898 | 11 | 1 | 18 days | 0.29 | | MPC | 2006 $UR_{12}$ |
| 2006 $US_{12}$ | 16.4 | 0.15 | 20060922 | 292.61765 | 89.50590 | 56.45780 | 9.36858 | 0.3868935 | 2.9872831 | 11 | 1 | 16 days | 0.26 | | MPC | 2006 $US_{12}$ |
| 2006 $UT_{12}$ | 16.2 | 0.15 | 20061012 | 241.51294 | 321.62255 | 200.37001 | 9.64062 | 0.0554689 | 2.8993259 | 22 | 1 | 54 days | 0.39 | | MPC | 2006 $UT_{12}$ |
| 2006 $UW_{12}$ | 17.9 | 0.15 | 20061012 | 18.69409 | 319.97951 | 47.92044 | 14.05863 | 0.1767054 | 2.6447609 | 25 | 1 | 55 days | 0.42 | | MPC | 2006 $UW_{12}$ |
| 2006 $UY_{12}$ | 17.6 | 0.15 | 20061101 | 266.78659 | 55.18834 | 90.20648 | 3.37342 | 0.0941786 | 2.2664883 | 20 | 1 | 29 days | 0.27 | | MPC | 2006 $UY_{12}$ |
| 2006 $UZ_{12}$ | 18.1 | 0.15 | 20061101 | 335.34822 | 284.52500 | 150.64692 | 2.92641 | 0.1516818 | 2.4275538 | 17 | 1 | 39 days | 0.22 | | MPC | 2006 $UZ_{12}$ |
| 2006 $UA_{13}$ | 16.5 | 0.15 | 20061012 | 307.61093 | 264.38962 | 202.05583 | 11.18156 | 0.1497090 | 3.1074313 | 10 | 1 | 5 days | 0.59 | | MPC | 2006 $UA_{13}$ |
| 2006 $UC_{13}$ | 17.6 | 0.15 | 20061012 | 304.40736 | 290.50886 | 179.83446 | 4.83321 | 0.1657731 | 2.6724369 | 10 | 1 | 5 days | 0.48 | | MPC | 2006 $UC_{13}$ |
| 2006 $UD_{13}$ | 16.9 | 0.15 | 20061012 | 285.94199 | 354.28759 | 133.44073 | 3.40578 | 0.1369648 | 2.7272129 | 10 | 1 | 5 days | 0.54 | | MPC | 2006 $UD_{13}$ |
| 2006 $UE_{13}$ | 16.7 | 0.15 | 20061012 | 353.09258 | 270.27802 | 135.98456 | 3.00220 | 0.0672715 | 2.9082952 | 27 | 1 | 44 days | 0.33 | | MPC | 2006 $UE_{13}$ |
| 2006 $UG_{13}$ | 18.6 | 0.15 | 20061101 | 38.37365 | 161.72155 | 185.17927 | 1.65808 | 0.1980919 | 2.2482218 | 22 | 1 | 41 days | 0.34 | | MPC | 2006 $UG_{13}$ |
| 2006 $UH_{13}$ | 15.8 | 0.15 | 20061012 | 46.49748 | 252.87119 | 87.82027 | 2.00716 | 0.1186276 | 2.6093531 | 52 | 1 | 58 days | 0.57 | | MPC | 2006 $UH_{13}$ |
| 2006 $UJ_{13}$ | 16.3 | 0.15 | 20061101 | 63.44021 | 239.71289 | 88.38965 | 1.64902 | 0.1127631 | 2.6498041 | 35 | 1 | 41 days | 0.37 | | MPC | 2006 $UJ_{13}$ |
| 2006 $UO_{13}$ | 16.0 | 0.15 | 20061012 | 278.13618 | 287.80148 | 211.55649 | 10.78561 | 0.1360110 | 3.0611779 | 10 | 1 | 5 days | 0.38 | | MPC | 2006 $UO_{13}$ |
| 2006 $UQ_{13}$ | 18.2 | 0.15 | 20061012 | 309.94250 | 27.33867 | 76.30204 | 2.90590 | 0.1571118 | 2.3879905 | 14 | 1 | 26 days | 0.38 | | MPC | 2006 $UQ_{13}$ |
| 2006 $UT_{13}$ | 16.5 | 0.15 | 20061012 | 308.87195 | 337.58721 | 133.41032 | 2.10059 | 0.1773865 | 3.1365620 | 10 | 1 | 5 days | 0.28 | | MPC | 2006 $UT_{13}$ |
| 2006 $UU_{13}$ | 15.9 | 0.15 | 20061012 | 90.75659 | 229.78949 | 60.40815 | 7.70274 | 0.1934464 | 2.9186087 | 18 | 1 | 43 days | 0.33 | | MPC | 2006 $UU_{13}$ |
| 2006 $UV_{13}$ | 17.2 | 0.15 | 20061101 | 350.53577 | 358.00175 | 59.91090 | 4.55759 | 0.1639367 | 2.4250172 | 55 | 1 | 41 days | 0.47 | | MPC | 2006 $UV_{13}$ |
| 2006 $UW_{13}$ | 17.1 | 0.15 | 20061012 | 160.39714 | 179.43673 | 60.42591 | 6.66598 | 0.0382812 | 2.6415257 | 21 | 1 | 43 days | 0.35 | | MPC | 2006 $UW_{13}$ |
| 2006 $UX_{13}$ | 17.5 | 0.15 | 20061012 | 77.40862 | 157.92054 | 149.83878 | 1.88636 | 0.1248186 | 2.3186454 | 10 | 1 | 5 days | 0.30 | | MPC | 2006 $UX_{13}$ |
| 2006 $UY_{13}$ | 15.7 | 0.15 | 20061012 | 227.21388 | 136.01519 | 54.09463 | 13.35880 | 0.2052415 | 2.6341625 | 10 | 1 | 5 days | 0.22 | | MPC | 2006 $UY_{13}$ |
| 2006 $UZ_{13}$ | 16.3 | 0.15 | 20061012 | 273.57943 | 291.47317 | 214.88344 | 13.86730 | 0.1455451 | 3.0148854 | 10 | 1 | 5 days | 0.45 | | MPC | 2006 $UZ_{13}$ |
| 2006 $UA_{14}$ | 16.3 | 0.15 | 20061012 | 320.67190 | 234.78928 | 215.63856 | 16.74385 | 0.1301561 | 2.6505858 | 25 | 1 | 53 days | 0.39 | | MPC | 2006 $UA_{14}$ |
| 2006 $UC_{14}$ | 17.4 | 0.15 | 20061012 | 34.34289 | 292.73804 | 58.09869 | 5.62474 | 0.1802369 | 2.6302403 | 20 | 1 | 25 days | 0.43 | | MPC | 2006 $UC_{14}$ |
| 2006 $UD_{14}$ | 16.0 | 0.15 | 20061012 | 224.34702 | 344.20855 | 209.98445 | 8.75630 | 0.2078414 | 2.9543067 | 10 | 1 | 5 days | 0.41 | | MPC | 2006 $UD_{14}$ |
| 2006 $UE_{14}$ | 17.0 | 0.15 | 20061012 | 35.44142 | 305.90597 | 50.19097 | 13.04668 | 0.1122980 | 2.6258420 | 25 | 1 | 43 days | 0.33 | | MPC | 2006 $UE_{14}$ |
| 2006 $UG_{14}$ | 18.1 | 0.15 | 20061012 | 323.23585 | 256.80048 | 204.19840 | 6.16284 | 0.2861141 | 2.5605027 | 10 | 1 | 5 days | 0.64 | | MPC | 2006 $UG_{14}$ |
| 2006 $UM_{14}$ | 18.1 | 0.15 | 20061101 | 53.79363 | 240.61509 | 89.21211 | 2.74358 | 0.2052906 | 2.4812680 | 18 | 1 | 29 days | 0.38 | | MPC | 2006 $UM_{14}$ |
| 2006 $UO_{14}$ | 16.7 | 0.15 | 20061012 | 314.63703 | 303.85591 | 164.47614 | 2.76310 | 0.2132696 | 3.0194559 | 10 | 1 | 5 days | 0.28 | | MPC | 2006 $UO_{14}$ |
| 2006 $UR_{14}$ | 16.2 | 0.15 | 20061012 | 276.40053 | 84.30649 | 59.81188 | 10.42188 | 0.1465419 | 3.0296124 | 13 | 1 | 5 days | 0.49 | | MPC | 2006 $UR_{14}$ |
| 2006 $US_{14}$ | 16.7 | 0.15 | 20061101 | 319.74126 | 4.08993 | 87.96735 | 3.19259 | 0.0584397 | 2.8729978 | 14 | 1 | 30 days | 0.32 | | MPC | 2006 $US_{14}$ |
| 2006 $UT_{14}$ | 18.2 | 0.15 | 20061012 | 344.85121 | 318.68236 | 100.45139 | 2.20902 | 0.1765863 | 2.3375288 | 18 | 1 | 28 days | 0.54 | | MPC | 2006 $UT_{14}$ |
| 2006 $UU_{14}$ | 16.7 | 0.15 | 20061101 | 55.23112 | 170.37030 | 169.53835 | 2.33735 | 0.1129606 | 2.5881057 | 22 | 1 | 35 days | 0.37 | | MPC | 2006 $UU_{14}$ |
| 2006 $UW_{14}$ | 17.8 | 0.15 | 20061012 | 29.17180 | 303.51127 | 53.53660 | 8.46892 | 0.1683434 | 2.2948657 | 36 | 1 | 52 days | 0.51 | | MPC | 2006 $UW_{14}$ |
| 2006 $UX_{14}$ | 16.8 | 0.15 | 20061012 | 24.49119 | 154.59062 | 209.71112 | 10.12419 | 0.2185411 | 3.2227198 | 13 | 1 | 5 days | 0.58 | | MPC | 2006 $UX_{14}$ |
| 2006 $UY_{14}$ | 15.7 | 0.15 | 20061012 | 55.90589 | 281.49205 | 49.73625 | 27.06037 | 0.1555631 | 3.1016546 | 40 | 1 | 48 days | 0.53 | | MPC | 2006 $UY_{14}$ |
| 2006 $UA_{15}$ | 17.4 | 0.15 | 20061012 | 41.38175 | 218.08218 | 115.72438 | 1.90253 | 0.2533021 | 2.4853580 | 25 | 1 | 28 days | 0.37 | | MPC | 2006 $UA_{15}$ |
| 2006 $UB_{15}$ | 17.7 | 0.15 | 20061012 | 327.82829 | 261.80072 | 183.12520 | 3.57503 | 0.1819320 | 2.4282488 | 15 | 1 | 48 days | 0.24 | | MPC | 2006 $UB_{15}$ |
| 2006 $UC_{15}$ | 17.4 | 0.15 | 20061101 | 62.12643 | 259.38664 | 52.73276 | 13.19004 | 0.2834063 | 2.6143730 | 25 | 1 | 36 days | 0.57 | | MPC | 2006 $UC_{15}$ |
| 2006 $UD_{15}$ | 18.1 | 0.15 | 20061012 | 327.23175 | 318.74023 | 125.57457 | 2.06013 | 0.1627083 | 2.3878307 | 17 | 1 | 26 days | 0.46 | | MPC | 2006 $UD_{15}$ |
| 2006 $UH_{15}$ | 15.1 | 0.15 | 20061101 | 309.64218 | 267.71670 | 219.37676 | 24.43092 | 0.2526193 | 3.1763974 | 30 | 1 | 37 days | 0.39 | | MPC | 2006 $UH_{15}$ |
| 2006 $UK_{15}$ | 17.9 | 0.15 | 20061012 | 3.13175 | 328.18263 | 63.56996 | 4.64610 | 0.3034280 | 2.6397126 | 35 | 1 | 47 days | 0.45 | E | MPC | 2006 $UK_{15}$ |
| 2006 $UL_{15}$ | 18.4 | 0.15 | 20061012 | 3.56981 | 335.45805 | 56.35814 | 6.85444 | 0.2269987 | 2.3181014 | 40 | 1 | 50 days | 0.38 | | MPC | 2006 $UL_{15}$ |
| 2006 $UM_{15}$ | 18.1 | 0.15 | 20061012 | 76.75696 | 196.43685 | 114.36562 | 3.01521 | 0.1264852 | 2.2362484 | 9 | 1 | 5 days | 0.72 | | MPC | 2006 $UM_{15}$ |
| 2006 $UN_{15}$ | 15.8 | 0.15 | 20060922 | 97.47311 | 88.46604 | 212.61623 | 12.52972 | 0.0553597 | 3.2296132 | 11 | 1 | 18 days | 0.29 | | MPC | 2006 $UN_{15}$ |
| 2006 $UO_{15}$ | 15.2 | 0.15 | 20061012 | 313.67081 | 241.56972 | 216.78349 | 15.17516 | 0.0601845 | 3.0409396 | 22 | 1 | 51 days | 0.34 | | MPC | 2006 $UO_{15}$ |
| 2006 $UP_{15}$ | 17.4 | 0.15 | 20060922 | 337.40236 | 226.84713 | 210.32621 | 10.66397 | 0.2899049 | 3.0223802 | 11 | 1 | 20 days | 0.25 | | MPC | 2006 $UP_{15}$ |
| 2006 $UT_{15}$ | 17.0 | 0.15 | 20061012 | 339.34564 | 271.61674 | 160.53066 | 3.00957 | 0.1834653 | 2.6303375 | 22 | 1 | 51 days | 0.40 | | MPC | 2006 $UT_{15}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UV_{15}$ | 15.4 | 0.15 | 20061101 | 94.30304 | 248.89313 | 64.37742 | 10.74211 | 0.0326355 | 3.1006350 | 24 | 1 | 31 days | 0.46 | | | MPC | 2006 $UV_{15}$ |
| 2006 $UW_{15}$ | 16.6 | 0.15 | 20061101 | 38.75057 | 279.14400 | 57.44008 | 14.83511 | 0.3396894 | 3.0474611 | 31 | 1 | 41 days | 0.47 | | | MPC | 2006 $UW_{15}$ |
| 2006 $UA_{16}$ | 17.8 | 0.15 | 20061101 | 7.01269 | 324.03927 | 73.44999 | 5.23724 | 0.1921217 | 2.3670387 | 25 | 1 | 31 days | 0.55 | | | MPC | 2006 $UA_{16}$ |
| 2006 $UB_{16}$ | 18.0 | 0.15 | 20060922 | 20.46433 | 227.90991 | 135.52193 | 2.37682 | 0.1989863 | 2.4533448 | 11 | 1 | 18 days | 0.31 | | | MPC | 2006 $UB_{16}$ |
| 2006 $UD_{16}$ | 17.1 | 0.15 | 20061012 | 252.23068 | 104.35452 | 71.68305 | 7.76511 | 0.2274730 | 2.3614957 | 10 | 1 | 5 days | 0.69 | | | MPC | 2006 $UD_{16}$ |
| 2006 $UE_{16}$ | 17.8 | 0.15 | 20061012 | 19.97411 | 214.61318 | 161.45900 | 3.05876 | 0.1192350 | 2.2562687 | 9 | 1 | 5 days | 0.41 | | | MPC | 2006 $UE_{16}$ |
| 2006 $UF_{16}$ | 16.5 | 0.15 | 20061012 | 53.01309 | 125.41056 | 214.35416 | 13.58504 | 0.1382718 | 2.7768659 | 10 | 1 | 5 days | 0.37 | | | MPC | 2006 $UF_{16}$ |
| 2006 $UH_{16}$ | 17.9 | 0.15 | 20061012 | 78.31814 | 249.19730 | 65.83208 | 6.37258 | 0.0737251 | 2.0125300 | 10 | 1 | 3 days | 0.61 | | | MPC | 2006 $UH_{16}$ |
| 2006 $UK_{16}$ | 16.2 | 0.15 | 20061101 | 108.17416 | 230.92348 | 66.47413 | 12.50170 | 0.0633212 | 2.9685123 | 21 | 1 | 31 days | 0.41 | | | MPC | 2006 $UK_{16}$ |
| 2006 $UM_{16}$ | 16.3 | 0.15 | 20061101 | 10.60065 | 296.83554 | 97.49636 | 3.93843 | 0.1885205 | 2.6243946 | 35 | 1 | 37 days | 0.48 | | | MPC | 2006 $UM_{16}$ |
| 2006 $UN_{16}$ | 16.9 | 0.15 | 20061101 | 7.86690 | 338.97393 | 59.25240 | 12.72780 | 0.1814148 | 2.5873572 | 57 | 1 | 41 days | 0.51 | | | MPC | 2006 $UN_{16}$ |
| 2006 $UO_{16}$ | 15.9 | 0.15 | 20061101 | 298.14394 | 52.08562 | 68.46934 | 11.53205 | 0.0565138 | 3.0578449 | 18 | 1 | 29 days | 0.27 | | | MPC | 2006 $UO_{16}$ |
| 2006 $UP_{16}$ | 16.4 | 0.15 | 20061101 | 298.93487 | 66.54873 | 74.66078 | 7.10248 | 0.2524808 | 2.6085809 | 31 | 1 | 41 days | 0.40 | | | MPC | 2006 $UP_{16}$ |
| 2006 $UQ_{16}$ | 17.7 | 0.15 | 20061101 | 24.12888 | 292.60801 | 80.57451 | 5.18219 | 0.1864696 | 2.2958183 | 29 | 1 | 37 days | 0.30 | | | MPC | 2006 $UQ_{16}$ |
| 2006 $UR_{16}$ | 16.5 | 0.15 | 20061012 | 284.82827 | 61.34751 | 83.68360 | 7.37833 | 0.2061765 | 2.6490150 | 14 | 1 | 5 days | 0.42 | | | MPC | 2006 $UR_{16}$ |
| 2006 $US_{16}$ | 16.2 | 0.15 | 20061101 | 330.96137 | 235.81388 | 209.46703 | 14.07835 | 0.0656323 | 2.9606972 | 18 | 1 | 37 days | 0.42 | | | MPC | 2006 $US_{16}$ |
| 2006 $UT_{16}$ | 16.0 | 0.15 | 20061012 | 290.61898 | 294.40069 | 205.86076 | 11.14795 | 0.1919213 | 3.1089133 | 14 | 1 | 5 days | 0.62 | | | MPC | 2006 $UT_{16}$ |
| 2006 $UV_{16}$ | 16.9 | 0.15 | 20061012 | 216.64172 | 145.48121 | 22.85039 | 7.74259 | 0.0309466 | 2.6995040 | 18 | 1 | 12 days | 0.55 | | | MPC | 2006 $UV_{16}$ |
| 2006 $UX_{16}$ | 17.4 | 0.15 | 20061012 | 14.73778 | 152.79172 | 211.19584 | 1.39616 | 0.1180348 | 2.7880297 | 14 | 1 | 12 days | 0.82 | | | MPC | 2006 $UX_{16}$ |
| 2006 $UY_{16}$ | 24.5 | 0.15 | 20060922 | 357.97848 | 337.76513 | 21.22262 | 3.25855 | 0.5388470 | 2.2231135 | 30 | 1 | 6 days | 0.88 | M-v | 7 | MPC | 2006 $UY_{16}$ |
| 2006 $UZ_{16}$ | 20.2 | 0.15 | 20061012 | 345.12705 | 54.43785 | 1.76164 | 1.61005 | 0.3390545 | 1.9822650 | 45 | 1 | 53 days | 0.28 | | | MPC | 2006 $UZ_{16}$ |
| 2006 $UA_{17}$ | 23.8 | 0.15 | 20060922 | 18.68829 | 116.81383 | 207.82014 | 22.04531 | 0.2894674 | 1.3777684 | 26 | 1 | 4 days | 0.42 | M-v | 8 | MPC | 2006 $UA_{17}$ |
| 2006 $UB_{17}$ | 26.3 | 0.15 | 20060922 | 9.14405 | 134.85615 | 214.15872 | 1.97382 | 0.1049366 | 1.1414871 | 28 | 1 | 11 days | 0.48 | M-v | 7 | MPC | 2006 $UB_{17}$ |
| 2006 $UC_{17}$ | 14.8 | 0.15 | 20061012 | 324.35987 | 211.49992 | 287.56845 | 34.02688 | 0.3262149 | 2.6621070 | 22 | 1 | 1 days | 0.45 | | E | MPC | 2006 $UC_{17}$ |
| 2006 $UD_{17}$ | 18.5 | 0.15 | 20060922 | 359.02845 | 148.92818 | 233.12364 | 16.78366 | 0.6525268 | 3.2191320 | 63 | 1 | 177 days | 0.48 | M-v | 4 | MPC | 2006 $UD_{17}$ |
| 2006 $UE_{17}$ | 21.8 | 0.15 | 20060922 | 266.76062 | 115.18653 | 27.81724 | 12.13933 | 0.3324379 | 1.1762943 | 31 | 1 | 21 days | 0.43 | M-v | 6 | MPC | 2006 $UE_{17}$ |
| 2006 $UF_{17}$ | 21.5 | 0.15 | 20060922 | 6.70109 | 235.40758 | 47.97415 | 3.74239 | 0.8106808 | 2.4889966 | 51 | 1 | 26 days | 0.58 | M-v | 7 | MPC | 2006 $UF_{17}$ |
| 2006 $UH_{17}$ | 17.7 | 0.15 | 20061012 | 349.43181 | 9.93126 | 34.70988 | 6.64029 | 0.2007240 | 2.5714650 | 39 | 1 | 44 days | 0.45 | | | MPC | 2006 $UH_{17}$ |
| 2006 $UJ_{17}$ | 18.4 | 0.15 | 20061012 | 26.53035 | 24.82884 | 325.11317 | 0.51547 | 0.1387949 | 2.6289088 | 43 | 1 | 50 days | 0.27 | | | MPC | 2006 $UJ_{17}$ |
| 2006 $UK_{17}$ | 20.8 | 0.15 | 20061012 | 4.97167 | 4.40624 | 10.80500 | 1.28869 | 0.2066960 | 2.1161890 | 20 | 1 | 9 days | 0.49 | | | MPC | 2006 $UK_{17}$ |
| 2006 $UL_{17}$ | 17.5 | 0.15 | 20061012 | 236.06340 | 153.38498 | 355.00948 | 8.04355 | 0.0499281 | 2.3332918 | 11 | 1 | 4 days | 0.64 | | | MPC | 2006 $UL_{17}$ |
| 2006 $UM_{17}$ | 17.6 | 0.15 | 20061012 | 335.80114 | 37.74196 | 29.55492 | 33.32231 | 0.2759606 | 2.5764744 | 30 | 1 | 28 days | 0.26 | | | MPC | 2006 $UM_{17}$ |
| 2006 $UO_{17}$ | 16.3 | 0.15 | 20061012 | 195.73755 | 305.15879 | 255.10092 | 4.86768 | 0.2344445 | 2.1918621 | 9 | 1 | 4 days | 0.53 | | | MPC | 2006 $UO_{17}$ |
| 2006 $UP_{17}$ | 18.3 | 0.15 | 20061101 | 13.37278 | 323.03090 | 54.05139 | 28.46334 | 0.2384865 | 2.0137247 | 38 | 1 | 31 days | 0.47 | | | MPC | 2006 $UP_{17}$ |
| 2006 $UQ_{17}$ | 21.9 | 0.15 | 20060922 | 314.64726 | 9.73209 | 82.41743 | 1.76158 | 0.3797285 | 1.6198123 | 120 | 1 | 66 days | 0.41 | M-v | 4 | MPC | 2006 $UQ_{17}$ |
| 2006 $UR_{17}$ | 18.9 | 0.15 | 20061012 | 307.35926 | 277.74262 | 189.53356 | 24.70684 | 0.3993672 | 2.2102641 | 12 | 1 | 1 days | 0.38 | | E | MPC | 2006 $UR_{17}$ |
| 2006 $US_{17}$ | 18.3 | 0.15 | 20061012 | 349.42556 | 14.43102 | 25.85539 | 37.76668 | 0.0495893 | 2.0479257 | 23 | 1 | 1 days | 0.50 | | E | MPC | 2006 $US_{17}$ |
| 2006 $UT_{17}$ | 24.2 | 0.15 | 20060922 | 343.32237 | 49.49725 | 15.59120 | 2.06259 | 0.5512019 | 2.3948983 | 19 | 1 | 9 days | 0.45 | M-v | 8 | MPC | 2006 $UT_{17}$ |
| 2006 $UU_{17}$ | 26.6 | 0.15 | 20060922 | 358.12790 | 150.68733 | 209.52817 | 2.74318 | 0.5815635 | 2.3193590 | 21 | 1 | 7 days | 0.34 | M-v | 6 | MPC | 2006 $UU_{17}$ |
| 2006 $UV_{17}$ | 18.2 | 0.15 | 20061012 | 58.31978 | 282.28496 | 37.72402 | 25.34533 | 0.1612651 | 1.8740804 | 30 | 1 | 23 days | 0.52 | | | MPC | 2006 $UV_{17}$ |
| 2006 $UW_{17}$ | 18.2 | 0.15 | 20061101 | 15.29201 | 5.34411 | 6.61442 | 2.41712 | 0.1985734 | 2.4561853 | 29 | 1 | 38 days | 0.25 | | | MPC | 2006 $UW_{17}$ |
| 2006 $UY_{17}$ | 18.1 | 0.15 | 20061101 | 359.11699 | 17.28257 | 26.22341 | 7.50345 | 0.3469674 | 2.6044941 | 42 | 1 | 40 days | 0.50 | | | MPC | 2006 $UY_{17}$ |
| 2006 $UA_{18}$ | 17.0 | 0.15 | 20060922 | 136.43688 | 212.28919 | 16.25168 | 12.34524 | 0.1672224 | 2.6406329 | 14 | 1 | 24 days | 0.27 | | | MPC | 2006 $UA_{18}$ |
| 2006 $UB_{18}$ | 16.6 | 0.15 | 20060922 | 322.06535 | 49.07742 | 17.10331 | 10.82564 | 0.1532349 | 3.1234020 | 30 | 1 | 62 days | 0.40 | M-v | 4 | MPC | 2006 $UB_{18}$ |
| 2006 $UH_{18}$ | 17.5 | 0.15 | 20061012 | 33.70798 | 303.14706 | 47.86317 | 10.33604 | 0.1695856 | 2.1960473 | 25 | 1 | 49 days | 0.48 | | | MPC | 2006 $UH_{18}$ |
| 2006 $UL_{18}$ | 18.2 | 0.15 | 20061012 | 332.29008 | 206.91695 | 219.11078 | 12.76613 | 0.2008791 | 2.7426221 | 9 | 1 | 16 days | 0.18 | | | MPC | 2006 $UL_{18}$ |
| 2006 $UN_{18}$ | 17.5 | 0.15 | 20061012 | 56.46149 | 356.06544 | 323.75273 | 3.58378 | 0.0943442 | 2.7854618 | 12 | 1 | 33 days | 0.24 | | | MPC | 2006 $UN_{18}$ |
| 2006 $UP_{18}$ | 18.2 | 0.15 | 20060922 | 262.34009 | 118.59904 | 6.16240 | 6.98128 | 0.0618350 | 2.3822874 | 9 | 1 | 25 days | 0.17 | | | MPC | 2006 $UP_{18}$ |
| 2006 $UR_{18}$ | 18.2 | 0.15 | 20061012 | 288.53701 | 231.08956 | 238.76079 | 4.74846 | 0.1141038 | 2.3660254 | 18 | 1 | 52 days | 0.28 | | | MPC | 2006 $UR_{18}$ |
| 2006 $US_{18}$ | 18.9 | 0.15 | 20061012 | 45.57150 | 102.80532 | 229.64865 | 5.62831 | 0.0748898 | 2.0423475 | 18 | 1 | 45 days | 0.30 | | | MPC | 2006 $US_{18}$ |
| 2006 $UT_{18}$ | 18.6 | 0.15 | 20061012 | 8.47519 | 131.20160 | 241.02767 | 3.99401 | 0.1847276 | 2.4435825 | 18 | 1 | 46 days | 0.14 | | | MPC | 2006 $UT_{18}$ |
| 2006 $UU_{18}$ | 16.8 | 0.15 | 20061012 | 24.06036 | 117.06395 | 226.17760 | 7.74404 | 0.2706850 | 2.8030877 | 37 | 1 | 54 days | 0.48 | | | MPC | 2006 $UU_{18}$ |
| 2006 $UW_{18}$ | 17.3 | 0.15 | 20061012 | 317.98029 | 95.20633 | 346.91044 | 4.37879 | 0.1519899 | 3.1417953 | 15 | 1 | 25 days | 0.26 | | | MPC | 2006 $UW_{18}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UX_{18}$ | 17.2 | 0.15 | 20060922 | 74.30764 | 270.16864 | 15.68807 | 15.23452 | 0.1965397 | 2.7382487 | 10 | 1 | 24 days | 0.35 | | MPC | 2006 $UX_{18}$ |
| 2006 $UY_{18}$ | 16.8 | 0.15 | 20061012 | 347.39583 | 174.34575 | 226.31804 | 10.21382 | 0.0472963 | 3.1901578 | 15 | 1 | 37 days | 0.19 | | MPC | 2006 $UY_{18}$ |
| 2006 $UA_{19}$ | 18.9 | 0.15 | 20061012 | 18.66483 | 38.88119 | 321.78307 | 2.28621 | 0.1364010 | 2.4681992 | 12 | 1 | 37 days | 0.29 | | MPC | 2006 $UA_{19}$ |
| 2006 $UC_{19}$ | 17.9 | 0.15 | 20061012 | 43.28467 | 21.35719 | 313.42263 | 2.90689 | 0.0991637 | 2.8000113 | 18 | 1 | 32 days | 0.31 | | MPC | 2006 $UC_{19}$ |
| 2006 $UD_{19}$ | 16.3 | 0.15 | 20061012 | 129.27046 | 28.12299 | 225.91907 | 9.50759 | 0.0446291 | 3.0886725 | 21 | 1 | 46 days | 0.22 | | MPC | 2006 $UD_{19}$ |
| 2006 $UE_{19}$ | 17.2 | 0.15 | 20061012 | 302.23591 | 236.43659 | 222.74892 | 9.40457 | 0.1400421 | 3.0154658 | 15 | 1 | 46 days | 0.29 | | MPC | 2006 $UE_{19}$ |
| 2006 $UF_{19}$ | 18.8 | 0.15 | 20061012 | 347.43617 | 19.53569 | 23.57297 | 31.24187 | 0.1470225 | 2.4851051 | 9 | 1 | 5 days | 0.27 | | MPC | 2006 $UF_{19}$ |
| 2006 $UG_{19}$ | 17.5 | 0.15 | 20061012 | 50.54676 | 63.68118 | 262.23825 | 3.44216 | 0.1079546 | 2.7952482 | 12 | 1 | 33 days | 0.15 | | MPC | 2006 $UG_{19}$ |
| 2006 $UH_{19}$ | 20.1 | 0.15 | 20061012 | 315.12910 | 62.16168 | 21.67718 | 21.26116 | 0.1581349 | 1.8455015 | 10 | 1 | 5 days | 0.30 | | MPC | 2006 $UH_{19}$ |
| 2006 $UJ_{19}$ | 16.9 | 0.15 | 20061012 | 140.43371 | 8.98171 | 228.49542 | 8.44648 | 0.1462999 | 2.5401594 | 12 | 1 | 25 days | 0.21 | | MPC | 2006 $UJ_{19}$ |
| 2006 $UQ_{19}$ | 16.3 | 0.15 | 20061012 | 179.58842 | 349.00927 | 219.43683 | 14.58459 | 0.1820610 | 3.1200438 | 9 | 1 | 13 days | 0.67 | | MPC | 2006 $UQ_{19}$ |
| 2006 $UR_{19}$ | 18.5 | 0.15 | 20061012 | 289.77988 | 227.64628 | 233.91738 | 3.89145 | 0.0501983 | 2.1583101 | 21 | 1 | 46 days | 0.23 | | MPC | 2006 $UR_{19}$ |
| 2006 $US_{19}$ | 16.6 | 0.15 | 20061012 | 328.72028 | 49.63922 | 15.85732 | 9.96146 | 0.1023926 | 2.9910945 | 24 | 1 | 52 days | 0.32 | | MPC | 2006 $US_{19}$ |
| 2006 $UT_{19}$ | 16.9 | 0.15 | 20061012 | 0.69941 | 95.08461 | 290.62273 | 2.08335 | 0.1966469 | 3.1316288 | 33 | 1 | 56 days | 0.17 | | MPC | 2006 $UT_{19}$ |
| 2006 $UU_{19}$ | 18.8 | 0.15 | 20061012 | 334.77255 | 121.46588 | 300.69193 | 1.53734 | 0.1874137 | 2.4105436 | 30 | 1 | 56 days | 0.28 | | MPC | 2006 $UU_{19}$ |
| 2006 $UW_{19}$ | 15.9 | 0.15 | 20061101 | 306.80284 | 227.63969 | 228.87399 | 7.14152 | 0.1183332 | 3.1791256 | 27 | 1 | 35 days | 0.17 | | MPC | 2006 $UW_{19}$ |
| 2006 $UX_{19}$ | 16.9 | 0.15 | 20061012 | 320.18525 | 209.46785 | 223.86156 | 8.27523 | 0.0766261 | 3.1324368 | 21 | 1 | 29 days | 0.28 | | MPC | 2006 $UX_{19}$ |
| 2006 $UY_{19}$ | 19.5 | 0.15 | 20060922 | 337.39001 | 143.57986 | 263.77750 | 2.39969 | 0.1291765 | 2.2459577 | 12 | 1 | 25 days | 0.26 | | MPC | 2006 $UY_{19}$ |
| 2006 $UZ_{19}$ | 17.4 | 0.15 | 20061012 | 3.04875 | 21.25198 | 2.74088 | 6.06105 | 0.0598965 | 2.6851930 | 15 | 1 | 34 days | 0.28 | | MPC | 2006 $UZ_{19}$ |
| 2006 $UC_{20}$ | 17.0 | 0.15 | 20061012 | 46.95890 | 101.67684 | 218.85756 | 14.62112 | 0.2017297 | 3.0791447 | 15 | 1 | 33 days | 0.21 | | MPC | 2006 $UC_{20}$ |
| 2006 $UE_{20}$ | 16.6 | 0.15 | 20061101 | 301.44718 | 235.51371 | 221.80438 | 8.39615 | 0.0699408 | 3.1868959 | 15 | 1 | 33 days | 0.19 | | MPC | 2006 $UE_{20}$ |
| 2006 $UF_{20}$ | 17.0 | 0.15 | 20061012 | 39.44439 | 321.97428 | 17.38782 | 10.06694 | 0.1109152 | 2.9988527 | 25 | 1 | 53 days | 0.27 | | MPC | 2006 $UF_{20}$ |
| 2006 $UH_{20}$ | 15.9 | 0.15 | 20061101 | 145.83041 | 2.49009 | 237.94905 | 4.34801 | 0.0908163 | 3.1449955 | 15 | 1 | 33 days | 0.28 | | MPC | 2006 $UH_{20}$ |
| 2006 $UM_{20}$ | 16.6 | 0.15 | 20061012 | 292.40965 | 101.79428 | 5.95249 | 4.60168 | 0.1277729 | 3.1924933 | 18 | 1 | 55 days | 0.24 | | MPC | 2006 $UM_{20}$ |
| 2006 $UN_{20}$ | 19.1 | 0.15 | 20061012 | 25.21492 | 335.16394 | 12.39237 | 5.85981 | 0.1857183 | 2.3437687 | 12 | 1 | 30 days | 0.27 | | MPC | 2006 $UN_{20}$ |
| 2006 $UO_{20}$ | 18.3 | 0.15 | 20061012 | 11.33774 | 29.54029 | 333.70718 | 2.18508 | 0.2932662 | 3.0784210 | 15 | 1 | 43 days | 0.19 | | MPC | 2006 $UO_{20}$ |
| 2006 $UP_{20}$ | 16.8 | 0.15 | 20061012 | 109.59293 | 26.18340 | 238.37687 | 4.14965 | 0.1163638 | 2.8062400 | 15 | 1 | 29 days | 0.20 | | MPC | 2006 $UP_{20}$ |
| 2006 $UQ_{20}$ | 16.4 | 0.15 | 20061012 | 183.97340 | 242.60371 | 320.96099 | 1.73542 | 0.2282683 | 2.5218171 | 10 | 1 | 5 days | 0.60 | | MPC | 2006 $UQ_{20}$ |
| 2006 $UU_{20}$ | 18.7 | 0.15 | 20061012 | 323.85022 | 72.91744 | 5.73376 | 4.99593 | 0.2084034 | 2.5606608 | 9 | 1 | 12 days | 0.23 | | MPC | 2006 $UU_{20}$ |
| 2006 $UZ_{20}$ | 16.6 | 0.15 | 20061012 | 17.03921 | 146.50285 | 216.09947 | 13.33698 | 0.1510922 | 3.1348357 | 23 | 1 | 28 days | 0.49 | | MPC | 2006 $UZ_{20}$ |
| 2006 $UA_{21}$ | 17.2 | 0.15 | 20061012 | 291.29746 | 92.16643 | 5.21954 | 4.14055 | 0.0247378 | 2.7693124 | 15 | 1 | 53 days | 0.22 | | MPC | 2006 $UA_{21}$ |
| 2006 $UB_{21}$ | 18.6 | 0.15 | 20061012 | 40.03071 | 82.09211 | 244.88148 | 2.21041 | 0.1945753 | 2.2034355 | 24 | 1 | 46 days | 0.24 | | MPC | 2006 $UB_{21}$ |
| 2006 $UF_{21}$ | 15.4 | 0.15 | 20061012 | 184.58484 | 341.08674 | 222.92569 | 5.02363 | 0.2437240 | 2.6514571 | 13 | 1 | 5 days | 0.40 | | MPC | 2006 $UF_{21}$ |
| 2006 $UG_{21}$ | 17.8 | 0.15 | 20061012 | 39.85095 | 28.97880 | 309.34150 | 1.71843 | 0.0971558 | 2.6983356 | 15 | 1 | 46 days | 0.26 | | MPC | 2006 $UG_{21}$ |
| 2006 $UH_{21}$ | 17.3 | 0.15 | 20061012 | 89.07484 | 66.79523 | 227.60116 | 5.89803 | 0.0263253 | 2.7698067 | 12 | 1 | 25 days | 0.24 | | MPC | 2006 $UH_{21}$ |
| 2006 $UL_{21}$ | 18.0 | 0.15 | 20061012 | 90.67402 | 276.37828 | 6.14785 | 3.91174 | 0.1143499 | 2.3593528 | 9 | 1 | 12 days | 0.36 | | MPC | 2006 $UL_{21}$ |
| 2006 $UM_{21}$ | 17.5 | 0.15 | 20061012 | 351.70632 | 184.02167 | 213.50303 | 12.25356 | 0.1814769 | 2.6432864 | 38 | 1 | 56 days | 0.33 | | MPC | 2006 $UM_{21}$ |
| 2006 $UN_{21}$ | 16.6 | 0.15 | 20061012 | 271.68428 | 282.86338 | 212.80127 | 14.51671 | 0.1792843 | 3.1489915 | 10 | 1 | 12 days | 0.21 | | MPC | 2006 $UN_{21}$ |
| 2006 $UO_{21}$ | 17.1 | 0.15 | 20061012 | 95.95411 | 266.40367 | 13.32646 | 7.08896 | 0.1036205 | 2.6902931 | 21 | 1 | 46 days | 0.28 | | MPC | 2006 $UO_{21}$ |
| 2006 $UP_{21}$ | 19.4 | 0.15 | 20061012 | 29.75379 | 334.30234 | 9.63011 | 4.63525 | 0.1669202 | 2.2388618 | 9 | 1 | 16 days | 0.18 | | MPC | 2006 $UP_{21}$ |
| 2006 $UQ_{21}$ | 17.0 | 0.15 | 20060922 | 324.19242 | 55.53654 | 12.65217 | 5.65946 | 0.1707912 | 2.4002584 | 40 | 1 | 68 days | 0.38 | M-v 4 | MPC | 2006 $UQ_{21}$ |
| 2006 $UT_{21}$ | 17.0 | 0.15 | 20061101 | 350.60067 | 193.20111 | 210.67246 | 27.14762 | 0.1364593 | 3.1724546 | 23 | 1 | 31 days | 0.33 | | MPC | 2006 $UT_{21}$ |
| 2006 $UU_{21}$ | 17.3 | 0.15 | 20061012 | 326.20976 | 204.45112 | 226.79014 | 4.18293 | 0.1447327 | 2.8032328 | 30 | 1 | 56 days | 0.21 | | MPC | 2006 $UU_{21}$ |
| 2006 $UV_{21}$ | 17.7 | 0.15 | 20061012 | 52.19760 | 14.37038 | 300.77058 | 1.06577 | 0.1845035 | 2.5894557 | 31 | 1 | 54 days | 0.20 | | MPC | 2006 $UV_{21}$ |
| 2006 $UX_{21}$ | 16.3 | 0.15 | 20061012 | 273.48318 | 273.05747 | 214.69803 | 13.64544 | 0.1176946 | 3.0895371 | 23 | 1 | 54 days | 0.20 | | MPC | 2006 $UX_{21}$ |
| 2006 $UZ_{21}$ | 18.6 | 0.15 | 20061012 | 358.53591 | 176.28858 | 211.44971 | 8.25644 | 0.3343421 | 2.7383408 | 31 | 1 | 49 days | 0.20 | | MPC | 2006 $UZ_{21}$ |
| 2006 $UA_{22}$ | 17.1 | 0.15 | 20061101 | 330.57950 | 201.92695 | 221.15161 | 2.90463 | 0.0320842 | 2.6021714 | 23 | 1 | 35 days | 0.30 | | MPC | 2006 $UA_{22}$ |
| 2006 $UB_{22}$ | 18.3 | 0.15 | 20061012 | 340.32255 | 166.89258 | 243.07428 | 1.99407 | 0.0891047 | 2.4852914 | 21 | 1 | 56 days | 0.26 | | MPC | 2006 $UB_{22}$ |
| 2006 $UC_{22}$ | 19.5 | 0.15 | 20061101 | 7.17312 | 160.76759 | 220.83585 | 3.24236 | 0.2598517 | 2.2973671 | 26 | 1 | 38 days | 0.31 | | MPC | 2006 $UC_{22}$ |
| 2006 $UE_{22}$ | 16.6 | 0.15 | 20060922 | 272.56260 | 272.97221 | 178.52511 | 4.02571 | 0.1029870 | 2.6289205 | 18 | 1 | 62 days | 0.34 | M-v 5 | MPC | 2006 $UE_{22}$ |
| 2006 $US_{22}$ | 18.8 | 0.15 | 20060922 | 2.26590 | 359.62603 | 354.88517 | 1.45053 | 0.1662597 | 2.1872622 | 15 | 1 | 52 days | 0.20 | | MPC | 2006 $US_{22}$ |
| 2006 $UG_{23}$ | 17.9 | 0.15 | 20061012 | 297.05257 | 224.86302 | 240.47318 | 4.00341 | 0.1397915 | 2.5583900 | 30 | 1 | 56 days | 0.32 | | MPC | 2006 $UG_{23}$ |
| 2006 $UH_{23}$ | 18.5 | 0.15 | 20061012 | 5.54118 | 56.13973 | 321.26157 | 1.81275 | 0.2204411 | 2.7015027 | 12 | 1 | 34 days | 0.18 | | MPC | 2006 $UH_{23}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UK_{23}$ | 17.9 | 0.15 | 20061012 | 355.00667 | 147.49892 | 246.23067 | 3.70577 | 0.1297873 | 2.7116559 | 18 | 1 | 56 days | 0.39 | | MPC | 2006 $UK_{23}$ |
| 2006 $UL_{23}$ | 18.3 | 0.15 | 20061012 | 341.58670 | 202.90738 | 214.53222 | 15.79749 | 0.2491306 | 2.8493306 | 13 | 1 | 13 days | 0.62 | | MPC | 2006 $UL_{23}$ |
| 2006 $UM_{23}$ | 17.5 | 0.15 | 20061012 | 313.48294 | 211.68218 | 226.83498 | 4.96503 | 0.0537468 | 2.5753666 | 18 | 1 | 48 days | 0.30 | | MPC | 2006 $UM_{23}$ |
| 2006 $UN_{23}$ | 17.7 | 0.15 | 20061012 | 355.77198 | 176.47848 | 216.82913 | 14.36590 | 0.1382292 | 3.1207414 | 9 | 1 | 13 days | 0.34 | | MPC | 2006 $UN_{23}$ |
| 2006 $UO_{23}$ | 16.0 | 0.15 | 20060922 | 24.17861 | 334.16881 | 20.22310 | 10.02358 | 0.1028494 | 3.1279853 | 33 | 1 | 63 days | 0.25 | M-v 4 | MPC | 2006 $UO_{23}$ |
| 2006 $UQ_{23}$ | 17.8 | 0.15 | 20061012 | 12.33302 | 148.14249 | 223.04425 | 5.75951 | 0.1298859 | 2.7730823 | 12 | 1 | 26 days | 0.23 | | MPC | 2006 $UQ_{23}$ |
| 2006 $UR_{23}$ | 17.6 | 0.15 | 20061101 | 45.20448 | 22.67054 | 317.19031 | 1.82199 | 0.0873064 | 2.7306138 | 12 | 1 | 35 days | 0.31 | | MPC | 2006 $UR_{23}$ |
| 2006 $US_{23}$ | 16.5 | 0.15 | 20061012 | 182.02229 | 182.77039 | 24.37035 | 22.25143 | 0.1739692 | 2.2730419 | 13 | 1 | 33 days | 0.24 | | MPC | 2006 $US_{23}$ |
| 2006 $UT_{23}$ | 16.9 | 0.15 | 20061012 | 29.84621 | 126.89445 | 219.73545 | 9.75406 | 0.1657906 | 3.0731212 | 15 | 1 | 56 days | 0.24 | | MPC | 2006 $UT_{23}$ |
| 2006 $UW_{23}$ | 18.8 | 0.15 | 20061012 | 32.90238 | 113.84358 | 222.92544 | 4.84657 | 0.2053489 | 2.1963225 | 15 | 1 | 34 days | 0.16 | | MPC | 2006 $UW_{23}$ |
| 2006 $UX_{23}$ | 19.0 | 0.15 | 20061012 | 319.74189 | 218.29401 | 220.11188 | 5.23364 | 0.1405162 | 2.2272402 | 25 | 1 | 51 days | 0.33 | | MPC | 2006 $UX_{23}$ |
| 2006 $UE_{24}$ | 18.5 | 0.15 | 20061101 | 36.18525 | 338.86138 | 4.53959 | 3.45145 | 0.1775848 | 2.2624027 | 15 | 1 | 35 days | 0.17 | | MPC | 2006 $UE_{24}$ |
| 2006 $UH_{24}$ | 17.7 | 0.15 | 20061012 | 44.53877 | 104.12724 | 217.52943 | 8.34825 | 0.2198107 | 2.6145809 | 19 | 1 | 53 days | 0.28 | | MPC | 2006 $UH_{24}$ |
| 2006 $UJ_{24}$ | 16.8 | 0.15 | 20061012 | 354.05254 | 60.54480 | 335.75233 | 2.04269 | 0.0968688 | 3.1168762 | 23 | 1 | 56 days | 0.34 | | MPC | 2006 $UJ_{24}$ |
| 2006 $UK_{24}$ | 18.2 | 0.15 | 20061101 | 248.78100 | 137.88787 | 16.90404 | 6.47921 | 0.0991706 | 2.2631289 | 12 | 1 | 35 days | 0.26 | | MPC | 2006 $UK_{24}$ |
| 2006 $UL_{24}$ | 17.5 | 0.15 | 20061012 | 345.36395 | 19.42478 | 25.30014 | 15.35975 | 0.0608389 | 2.5271161 | 14 | 1 | 52 days | 0.25 | | MPC | 2006 $UL_{24}$ |
| 2006 $UN_{24}$ | 16.1 | 0.15 | 20061012 | 328.99131 | 47.52290 | 19.77657 | 10.51991 | 0.0998225 | 3.1573587 | 12 | 1 | 5 days | 0.23 | | MPC | 2006 $UN_{24}$ |
| 2006 $UO_{24}$ | 17.9 | 0.15 | 20061012 | 348.67681 | 132.39446 | 272.67284 | 1.69283 | 0.2106736 | 2.6264511 | 27 | 1 | 59 days | 0.26 | | MPC | 2006 $UO_{24}$ |
| 2006 $UQ_{24}$ | 19.2 | 0.15 | 20061012 | 353.48758 | 48.86189 | 348.92893 | 1.87367 | 0.2397248 | 2.5683161 | 12 | 1 | 34 days | 0.20 | | MPC | 2006 $UQ_{24}$ |
| 2006 $UR_{24}$ | 16.7 | 0.15 | 20061012 | 325.51445 | 49.55781 | 17.85205 | 5.09621 | 0.0447615 | 3.2122304 | 9 | 1 | 13 days | 0.72 | | MPC | 2006 $UR_{24}$ |
| 2006 $UT_{24}$ | 18.1 | 0.15 | 20061012 | 25.73000 | 9.11495 | 324.64552 | 1.22625 | 0.3570218 | 2.9222048 | 8 | 1 | 13 days | 0.54 | | MPC | 2006 $UT_{24}$ |
| 2006 $UU_{24}$ | 18.1 | 0.15 | 20061012 | 351.23925 | 163.87826 | 235.68155 | 2.64868 | 0.1072612 | 2.7824260 | 12 | 1 | 13 days | 0.28 | | MPC | 2006 $UU_{24}$ |
| 2006 $UV_{24}$ | 16.4 | 0.15 | 20061101 | 276.32982 | 102.24365 | 22.86362 | 10.30858 | 0.0665237 | 2.9953897 | 12 | 1 | 33 days | 0.14 | | MPC | 2006 $UV_{24}$ |
| 2006 $UX_{24}$ | 15.6 | 0.15 | 20061012 | 341.55573 | 204.20977 | 215.08051 | 16.98012 | 0.2464562 | 3.1104776 | 52 | 1 | 52 days | 0.53 | | MPC | 2006 $UX_{24}$ |
| 2006 $UA_{25}$ | 18.3 | 0.15 | 20061101 | 330.11719 | 77.08480 | 2.45189 | 3.01709 | 0.2054580 | 2.5628163 | 18 | 1 | 35 days | 0.21 | | MPC | 2006 $UA_{25}$ |
| 2006 $UC_{25}$ | 18.8 | 0.15 | 20061012 | 337.85626 | 44.24741 | 11.57459 | 3.46093 | 0.1294279 | 2.1612963 | 16 | 1 | 53 days | 0.23 | | MPC | 2006 $UC_{25}$ |
| 2006 $UE_{25}$ | 16.8 | 0.15 | 20061012 | 7.71874 | 353.37512 | 26.64105 | 11.32062 | 0.1120834 | 3.0205873 | 23 | 1 | 56 days | 0.30 | | MPC | 2006 $UE_{25}$ |
| 2006 $UF_{25}$ | 17.3 | 0.15 | 20061101 | 78.55136 | 286.90169 | 8.01793 | 3.60316 | 0.1833187 | 2.3284690 | 15 | 1 | 33 days | 0.21 | | MPC | 2006 $UF_{25}$ |
| 2006 $UG_{25}$ | 17.4 | 0.15 | 20061012 | 332.12144 | 56.64189 | 9.56801 | 2.19330 | 0.1624545 | 2.3786500 | 32 | 1 | 58 days | 0.48 | | MPC | 2006 $UG_{25}$ |
| 2006 $UH_{25}$ | 17.6 | 0.15 | 20061012 | 50.37930 | 313.50424 | 16.27729 | 3.84737 | 0.1004190 | 2.7913719 | 13 | 1 | 33 days | 0.15 | | MPC | 2006 $UH_{25}$ |
| 2006 $UK_{25}$ | 18.6 | 0.15 | 20060922 | 19.23276 | 321.13190 | 22.63694 | 8.77576 | 0.2752712 | 2.3814548 | 21 | 1 | 60 days | 0.26 | M-v 4 | MPC | 2006 $UK_{25}$ |
| 2006 $UM_{25}$ | 15.9 | 0.15 | 20061012 | 92.17170 | 254.55674 | 25.26608 | 8.57007 | 0.1720781 | 3.1691011 | 9 | 1 | 13 days | 0.30 | | MPC | 2006 $UM_{25}$ |
| 2006 $UP_{25}$ | 17.6 | 0.15 | 20061012 | 30.35505 | 118.02524 | 232.46565 | 3.86484 | 0.1284475 | 2.7154131 | 13 | 1 | 28 days | 0.28 | | MPC | 2006 $UP_{25}$ |
| 2006 $UQ_{25}$ | 17.3 | 0.15 | 20061012 | 150.47003 | 213.53701 | 20.60514 | 7.53777 | 0.0988852 | 2.2237233 | 13 | 1 | 50 days | 0.22 | | MPC | 2006 $UQ_{25}$ |
| 2006 $UU_{25}$ | 17.6 | 0.15 | 20061012 | 44.55216 | 112.55219 | 215.74782 | 11.32643 | 0.1756986 | 2.7037572 | 18 | 1 | 29 days | 0.26 | | MPC | 2006 $UU_{25}$ |
| 2006 $UV_{25}$ | 18.9 | 0.15 | 20061012 | 31.31429 | 125.95293 | 213.35603 | 10.53700 | 0.2207633 | 2.3301488 | 14 | 1 | 29 days | 0.26 | | MPC | 2006 $UV_{25}$ |
| 2006 $UW_{25}$ | 18.8 | 0.15 | 20061012 | 30.65857 | 319.16018 | 25.89561 | 7.58504 | 0.1789598 | 2.5138772 | 9 | 1 | 13 days | 0.20 | | MPC | 2006 $UW_{25}$ |
| 2006 $UE_{26}$ | 17.1 | 0.15 | 20060922 | 299.71939 | 135.75727 | 318.45300 | 0.81018 | 0.0883038 | 2.5792744 | 30 | 1 | 62 days | 0.29 | M-v 4 | MPC | 2006 $UE_{26}$ |
| 2006 $UF_{26}$ | 18.6 | 0.15 | 20061012 | 4.38644 | 359.42205 | 23.05296 | 6.51579 | 0.1433803 | 2.3956545 | 9 | 1 | 13 days | 0.22 | | MPC | 2006 $UF_{26}$ |
| 2006 $UH_{26}$ | 16.5 | 0.15 | 20061012 | 83.60476 | 279.05564 | 17.35318 | 4.92053 | 0.0940281 | 2.7343835 | 20 | 1 | 50 days | 0.20 | | MPC | 2006 $UH_{26}$ |
| 2006 $UJ_{26}$ | 19.3 | 0.15 | 20061012 | 10.79433 | 140.10738 | 230.35251 | 1.42998 | 0.2110151 | 2.3393458 | 10 | 1 | 11 days | 0.22 | | MPC | 2006 $UJ_{26}$ |
| 2006 $UK_{26}$ | 20.0 | 0.15 | 20061012 | 343.51857 | 205.43425 | 210.43537 | 24.32302 | 0.2728142 | 2.3023327 | 9 | 1 | 12 days | 0.30 | | MPC | 2006 $UK_{26}$ |
| 2006 $UM_{26}$ | 19.4 | 0.15 | 20061012 | 353.78105 | 22.54387 | 14.41287 | 1.85606 | 0.1813871 | 2.3477291 | 13 | 1 | 13 days | 0.37 | | MPC | 2006 $UM_{26}$ |
| 2006 $UN_{26}$ | 17.5 | 0.15 | 20061101 | 343.11802 | 196.76180 | 221.68531 | 4.44760 | 0.1473786 | 2.8095443 | 28 | 1 | 42 days | 0.30 | | MPC | 2006 $UN_{26}$ |
| 2006 $UO_{26}$ | 16.4 | 0.15 | 20060922 | 25.61452 | 348.25030 | 1.64138 | 1.22508 | 0.1742071 | 3.1659736 | 33 | 1 | 129 days | 0.29 | M-v 4 | MPC | 2006 $UO_{26}$ |
| 2006 $UQ_{26}$ | 17.3 | 0.15 | 20061012 | 291.90690 | 261.73808 | 215.35397 | 6.62717 | 0.1608428 | 2.7516613 | 27 | 1 | 29 days | 0.30 | | MPC | 2006 $UQ_{26}$ |
| 2006 $UR_{26}$ | 17.2 | 0.15 | 20061012 | 196.77031 | 327.80398 | 226.96852 | 4.13115 | 0.0291211 | 2.4121897 | 17 | 1 | 28 days | 0.22 | | MPC | 2006 $UR_{26}$ |
| 2006 $US_{26}$ | 19.0 | 0.15 | 20061101 | 348.70774 | 165.10301 | 246.98501 | 1.68370 | 0.1643877 | 2.4736530 | 12 | 1 | 32 days | 0.27 | | MPC | 2006 $US_{26}$ |
| 2006 $UT_{26}$ | 17.2 | 0.15 | 20061012 | 117.98097 | 237.22842 | 29.03179 | 9.87622 | 0.0755919 | 2.7204092 | 17 | 1 | 34 days | 0.28 | | MPC | 2006 $UT_{26}$ |
| 2006 $UU_{26}$ | 19.1 | 0.15 | 20061012 | 43.35978 | 106.64214 | 218.15007 | 4.96997 | 0.2106783 | 2.1559229 | 20 | 1 | 44 days | 0.31 | | MPC | 2006 $UU_{26}$ |
| 2006 $UY_{26}$ | 17.2 | 0.15 | 20061012 | 153.40093 | 233.12161 | 1.42971 | 2.09995 | 0.0788829 | 2.5504069 | 19 | 1 | 49 days | 0.28 | | MPC | 2006 $UY_{26}$ |
| 2006 $UZ_{26}$ | 15.9 | 0.15 | 20061012 | 193.26337 | 346.19039 | 216.80939 | 15.36417 | 0.1643777 | 2.8412057 | 9 | 1 | 13 days | 0.93 | | MPC | 2006 $UZ_{26}$ |
| 2006 $UA_{27}$ | 17.6 | 0.15 | 20061012 | 348.42269 | 179.20847 | 228.57740 | 0.87050 | 0.1873498 | 3.0530948 | 17 | 1 | 37 days | 0.28 | | MPC | 2006 $UA_{27}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UB_{27}$ | 17.1 | 0.15 | 20061012 | 39.24341 | 13.28886 | 333.19113 | 1.29045 | 0.0754482 | 2.8643622 | 22 | 1 | 57 days | 0.26 | | MPC | 2006 $UB_{27}$ |
| 2006 $UD_{27}$ | 18.3 | 0.15 | 20061012 | 343.96362 | 145.70356 | 268.19821 | 1.20192 | 0.2002949 | 2.6128493 | 16 | 1 | 44 days | 0.26 | | MPC | 2006 $UD_{27}$ |
| 2006 $UH_{27}$ | 16.0 | 0.15 | 20061012 | 186.84346 | 173.71535 | 32.63491 | 4.68520 | 0.2333399 | 2.8381951 | 10 | 1 | 11 days | 0.45 | | MPC | 2006 $UH_{27}$ |
| 2006 $UJ_{27}$ | 17.8 | 0.15 | 20061012 | 66.17519 | 104.42510 | 210.65011 | 12.11841 | 0.0723463 | 2.6085074 | 10 | 1 | 11 days | 0.17 | | MPC | 2006 $UJ_{27}$ |
| 2006 $UK_{27}$ | 16.3 | 0.15 | 20061012 | 217.37521 | 144.13778 | 32.00440 | 5.24377 | 0.0555538 | 2.7734459 | 10 | 1 | 11 days | 0.63 | | MPC | 2006 $UK_{27}$ |
| 2006 $UL_{27}$ | 15.7 | 0.15 | 20061012 | 43.14521 | 132.50717 | 211.37360 | 14.77457 | 0.0396837 | 3.1719740 | 17 | 1 | 29 days | 0.25 | | MPC | 2006 $UL_{27}$ |
| 2006 $UM_{27}$ | 18.4 | 0.15 | 20060922 | 10.10219 | 148.51050 | 215.26768 | 0.56203 | 0.1963858 | 2.3808429 | 24 | 1 | 63 days | 0.32 | M-v 4 | MPC | 2006 $UM_{27}$ |
| 2006 $UN_{27}$ | 17.5 | 0.15 | 20061101 | 259.28615 | 297.77250 | 213.46260 | 4.61563 | 0.1544376 | 2.5319037 | 17 | 1 | 38 days | 0.33 | | MPC | 2006 $UN_{27}$ |
| 2006 $UO_{27}$ | 17.5 | 0.15 | 20061101 | 335.85535 | 36.50014 | 29.29344 | 0.65315 | 0.1334812 | 2.9269922 | 17 | 1 | 42 days | 0.40 | | MPC | 2006 $UO_{27}$ |
| 2006 $UP_{27}$ | 18.8 | 0.15 | 20061012 | 343.83799 | 20.83355 | 28.70717 | 1.04875 | 0.1452269 | 2.4369182 | 10 | 1 | 11 days | 0.24 | | MPC | 2006 $UP_{27}$ |
| 2006 $UQ_{27}$ | 16.8 | 0.15 | 20061012 | 119.55280 | 36.23643 | 222.54485 | 2.61317 | 0.1287882 | 2.6334595 | 20 | 1 | 52 days | 0.35 | | MPC | 2006 $UQ_{27}$ |
| 2006 $UR_{27}$ | 17.5 | 0.15 | 20061101 | 319.39455 | 248.74808 | 211.25628 | 5.84509 | 0.2596291 | 2.6241799 | 26 | 1 | 32 days | 0.25 | | MPC | 2006 $UR_{27}$ |
| 2006 $UT_{27}$ | 18.5 | 0.15 | 20061101 | 359.56168 | 177.94460 | 217.90989 | 1.64002 | 0.1638008 | 2.2436656 | 17 | 1 | 42 days | 0.22 | | MPC | 2006 $UT_{27}$ |
| 2006 $UV_{27}$ | 16.4 | 0.15 | 20061012 | 286.23257 | 84.16687 | 26.65095 | 4.17140 | 0.0622770 | 2.8114001 | 19 | 1 | 51 days | 0.29 | | MPC | 2006 $UV_{27}$ |
| 2006 $UW_{27}$ | 17.1 | 0.15 | 20061012 | 359.44850 | 2.13557 | 28.34440 | 11.17303 | 0.1122102 | 2.9477517 | 13 | 1 | 55 days | 0.21 | | MPC | 2006 $UW_{27}$ |
| 2006 $UZ_{27}$ | 17.6 | 0.15 | 20060922 | 315.01908 | 228.08526 | 214.72977 | 5.28594 | 0.1627510 | 2.5194042 | 25 | 1 | 62 days | 0.23 | M-v 4 | MPC | 2006 $UZ_{27}$ |
| 2006 $UA_{28}$ | 21.3 | 0.15 | 20061012 | 19.89485 | 115.41111 | 233.75456 | 0.63053 | 0.2713240 | 1.9118583 | 8 | 1 | 11 days | 0.61 | | MPC | 2006 $UA_{28}$ |
| 2006 $UC_{28}$ | 17.5 | 0.15 | 20061012 | 29.51115 | 128.72124 | 209.90941 | 8.53855 | 0.2577169 | 2.5321377 | 26 | 1 | 50 days | 0.17 | | MPC | 2006 $UC_{28}$ |
| 2006 $UD_{28}$ | 16.8 | 0.15 | 20061012 | 339.61227 | 199.37932 | 215.06384 | 1.17879 | 0.0870548 | 3.0226913 | 18 | 1 | 47 days | 0.31 | | MPC | 2006 $UD_{28}$ |
| 2006 $UG_{28}$ | 16.5 | 0.15 | 20061012 | 196.38697 | 343.09542 | 215.34072 | 3.32045 | 0.1378527 | 2.7341633 | 10 | 1 | 11 days | 0.33 | | MPC | 2006 $UG_{28}$ |
| 2006 $UK_{28}$ | 16.8 | 0.15 | 20061012 | 50.54645 | 107.78547 | 217.49939 | 3.74314 | 0.1270194 | 3.1429469 | 20 | 1 | 28 days | 0.36 | | MPC | 2006 $UK_{28}$ |
| 2006 $UM_{28}$ | 18.9 | 0.15 | 20060922 | 36.05560 | 303.59449 | 16.33366 | 4.22946 | 0.2522735 | 2.2751103 | 10 | 1 | 24 days | 0.21 | | MPC | 2006 $UM_{28}$ |
| 2006 $UN_{28}$ | 17.1 | 0.15 | 20060922 | 42.79431 | 324.86940 | 7.29146 | 1.51244 | 0.1015867 | 2.9399514 | 16 | 1 | 41 days | 0.29 | | MPC | 2006 $UN_{28}$ |
| 2006 $UO_{28}$ | 19.2 | 0.15 | 20061012 | 348.06331 | 23.81453 | 18.53973 | 4.29303 | 0.1515595 | 2.2822235 | 13 | 1 | 34 days | 0.24 | | MPC | 2006 $UO_{28}$ |
| 2006 $UQ_{28}$ | 18.4 | 0.15 | 20061012 | 37.76819 | 64.11285 | 249.49864 | 0.97203 | 0.3569261 | 2.7871596 | 17 | 1 | 33 days | 0.32 | | MPC | 2006 $UQ_{28}$ |
| 2006 $UR_{28}$ | 19.1 | 0.15 | 20061012 | 86.56132 | 59.98515 | 228.77230 | 1.98099 | 0.1012080 | 2.1159787 | 9 | 1 | 13 days | 0.22 | | MPC | 2006 $UR_{28}$ |
| 2006 $US_{28}$ | 17.6 | 0.15 | 20061012 | 65.98024 | 87.87877 | 223.06605 | 3.79383 | 0.1018371 | 2.6255770 | 13 | 1 | 13 days | 0.27 | | MPC | 2006 $US_{28}$ |
| 2006 $UU_{28}$ | 16.2 | 0.15 | 20061101 | 80.10378 | 86.68729 | 212.82461 | 9.93006 | 0.1140277 | 3.0725849 | 28 | 1 | 38 days | 0.27 | | MPC | 2006 $UU_{28}$ |
| 2006 $UV_{28}$ | 19.5 | 0.15 | 20061012 | 340.75918 | 176.74060 | 237.82072 | 1.33051 | 0.1904520 | 2.3069263 | 10 | 1 | 12 days | 0.23 | | MPC | 2006 $UV_{28}$ |
| 2006 $UW_{28}$ | 16.9 | 0.15 | 20061012 | 46.55518 | 307.55881 | 26.43007 | 15.76101 | 0.0862615 | 2.6287598 | 16 | 1 | 47 days | 0.28 | | MPC | 2006 $UW_{28}$ |
| 2006 $UY_{28}$ | 17.5 | 0.15 | 20061012 | 57.87800 | 278.19514 | 24.69123 | 4.39218 | 0.2376503 | 2.3291919 | 37 | 1 | 55 days | 0.34 | | MPC | 2006 $UY_{28}$ |
| 2006 $UZ_{28}$ | 19.0 | 0.15 | 20061012 | 24.45460 | 326.16806 | 18.76861 | 3.49693 | 0.2613438 | 2.5722220 | 9 | 1 | 13 days | 0.18 | | MPC | 2006 $UZ_{28}$ |
| 2006 $UA_{29}$ | 16.4 | 0.15 | 20061012 | 182.46445 | 352.71146 | 215.30697 | 1.86194 | 0.2597491 | 2.6144246 | 9 | 1 | 13 days | 0.45 | | MPC | 2006 $UA_{29}$ |
| 2006 $UB_{29}$ | 17.9 | 0.15 | 20060922 | 353.91473 | 5.04102 | 25.94625 | 7.03732 | 0.2366583 | 2.9455377 | 21 | 1 | 67 days | 0.32 | M-v 4 | MPC | 2006 $UB_{29}$ |
| 2006 $UC_{29}$ | 17.3 | 0.15 | 20061101 | 35.86287 | 332.65226 | 16.64865 | 1.73347 | 0.1064949 | 2.9496382 | 20 | 1 | 35 days | 0.27 | | MPC | 2006 $UC_{29}$ |
| 2006 $UE_{29}$ | 17.5 | 0.15 | 20061012 | 163.66821 | 7.89945 | 216.19993 | 4.23239 | 0.0409435 | 2.7386305 | 11 | 1 | 13 days | 0.76 | | MPC | 2006 $UE_{29}$ |
| 2006 $UF_{29}$ | 16.0 | 0.15 | 20061012 | 185.93659 | 354.73323 | 211.35253 | 12.65745 | 0.2015796 | 3.0781246 | 10 | 1 | 11 days | 0.46 | | MPC | 2006 $UF_{29}$ |
| 2006 $UG_{29}$ | 17.5 | 0.15 | 20061012 | 194.16662 | 341.28442 | 216.87100 | 3.18808 | 0.1667380 | 2.1745265 | 10 | 1 | 12 days | 0.23 | | MPC | 2006 $UG_{29}$ |
| 2006 $UH_{29}$ | 16.9 | 0.15 | 20061012 | 27.90803 | 140.11057 | 215.32992 | 3.68563 | 0.0868881 | 2.8010227 | 27 | 1 | 58 days | 0.29 | | MPC | 2006 $UH_{29}$ |
| 2006 $UL_{29}$ | 15.9 | 0.15 | 20061012 | 62.79071 | 292.40195 | 26.15251 | 9.77523 | 0.0779867 | 3.1526172 | 26 | 1 | 55 days | 0.27 | | MPC | 2006 $UL_{29}$ |
| 2006 $UM_{29}$ | 17.6 | 0.15 | 20061012 | 170.88706 | 197.78972 | 18.23916 | 1.88283 | 0.1119070 | 2.3462689 | 13 | 1 | 13 days | 0.28 | | MPC | 2006 $UM_{29}$ |
| 2006 $UO_{29}$ | 16.9 | 0.15 | 20061012 | 82.80484 | 275.67122 | 29.34401 | 5.56050 | 0.0053669 | 2.5452350 | 23 | 1 | 46 days | 0.27 | | MPC | 2006 $UO_{29}$ |
| 2006 $UP_{29}$ | 16.9 | 0.15 | 20061012 | 24.99866 | 327.51560 | 30.07087 | 2.70818 | 0.0989551 | 2.6106630 | 33 | 1 | 56 days | 0.51 | | MPC | 2006 $UP_{29}$ |
| 2006 $UQ_{29}$ | 18.5 | 0.15 | 20061012 | 328.80185 | 44.58079 | 26.32032 | 1.79376 | 0.1729374 | 2.4629991 | 16 | 1 | 28 days | 0.42 | | MPC | 2006 $UQ_{29}$ |
| 2006 $UR_{29}$ | 15.7 | 0.15 | 20061012 | 125.99896 | 235.70109 | 26.09544 | 9.59652 | 0.0257210 | 3.1811073 | 19 | 1 | 52 days | 0.25 | | MPC | 2006 $UR_{29}$ |
| 2006 $US_{29}$ | 16.0 | 0.15 | 20060922 | 108.57938 | 242.47505 | 21.16400 | 4.93442 | 0.1257389 | 2.5830719 | 29 | 1 | 121 days | 0.23 | M-v 4 | MPC | 2006 $US_{29}$ |
| 2006 $UT_{29}$ | 18.1 | 0.15 | 20061101 | 15.69855 | 344.56191 | 27.38379 | 4.37036 | 0.1628809 | 2.7792605 | 19 | 1 | 34 days | 0.34 | | MPC | 2006 $UT_{29}$ |
| 2006 $UU_{29}$ | 18.1 | 0.15 | 20060922 | 24.62887 | 327.28596 | 7.68183 | 3.57063 | 0.2911900 | 2.9528937 | 9 | 1 | 32 days | 0.27 | | MPC | 2006 $UU_{29}$ |
| 2006 $UV_{29}$ | 17.5 | 0.15 | 20061012 | 8.32243 | 156.28405 | 218.18870 | 5.43911 | 0.1833907 | 3.1880633 | 29 | 1 | 56 days | 0.30 | | MPC | 2006 $UV_{29}$ |
| 2006 $UX_{29}$ | 18.6 | 0.15 | 20061012 | 45.46614 | 353.84058 | 325.80629 | 1.01977 | 0.2108489 | 2.3575351 | 22 | 1 | 25 days | 0.26 | | MPC | 2006 $UX_{29}$ |
| 2006 $UY_{29}$ | 18.5 | 0.15 | 20061012 | 18.36732 | 118.17465 | 239.08583 | 1.97878 | 0.2175631 | 2.6754314 | 19 | 1 | 34 days | 0.23 | | MPC | 2006 $UY_{29}$ |
| 2006 $UZ_{29}$ | 16.5 | 0.15 | 20061101 | 277.23613 | 267.44239 | 221.79528 | 4.44064 | 0.1296361 | 3.0684226 | 15 | 1 | 35 days | 0.26 | | MPC | 2006 $UZ_{29}$ |
| 2006 $UA_{30}$ | 19.3 | 0.15 | 20061012 | 27.74229 | 348.70834 | 342.28951 | 1.05091 | 0.3320635 | 2.5675885 | 10 | 1 | 12 days | 0.40 | | MPC | 2006 $UA_{30}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UG_{30}$ | 15.2 | 0.15 | 20061012 | 187.99320 | 175.55291 | 27.37366 | 22.47744 | 0.1496146 | 3.0859854 | 25 | 1 | 56 days | 0.19 | | | MPC | 2006 $UG_{30}$ |
| 2006 $UJ_{30}$ | 17.3 | 0.15 | 20061012 | 351.28134 | 28.14756 | 14.56431 | 3.05846 | 0.2877480 | 3.0684278 | 26 | 1 | 52 days | 0.30 | | | MPC | 2006 $UJ_{30}$ |
| 2006 $UK_{30}$ | 17.6 | 0.15 | 20060922 | 323.24864 | 47.33368 | 22.71210 | 9.42188 | 0.1421086 | 2.7786396 | 21 | 1 | 61 days | 0.20 | M-v | 3 | MPC | 2006 $UK_{30}$ |
| 2006 $UL_{30}$ | 17.8 | 0.15 | 20061012 | 29.05921 | 122.76390 | 212.20513 | 12.22839 | 0.2829399 | 2.6241099 | 29 | 1 | 29 days | 0.66 | | | MPC | 2006 $UL_{30}$ |
| 2006 $UM_{30}$ | 18.2 | 0.15 | 20061012 | 8.12196 | 149.72306 | 227.24280 | 2.79810 | 0.0993020 | 2.5360325 | 19 | 1 | 34 days | 0.26 | | D | MPC | 2006 $UM_{30}$ |
| 2006 $UN_{30}$ | 17.4 | 0.15 | 20061012 | 63.70382 | 92.71062 | 213.48017 | 7.12269 | 0.1593745 | 2.7121791 | 17 | 1 | 49 days | 0.30 | | | MPC | 2006 $UN_{30}$ |
| 2006 $UP_{30}$ | 17.8 | 0.15 | 20061012 | 326.74022 | 216.01515 | 215.04595 | 16.21121 | 0.1035759 | 2.5612618 | 26 | 1 | 26 days | 0.30 | | | MPC | 2006 $UP_{30}$ |
| 2006 $UQ_{30}$ | 18.0 | 0.15 | 20061012 | 25.10130 | 324.74938 | 27.66325 | 4.50512 | 0.1982098 | 2.5931788 | 28 | 1 | 46 days | 0.26 | | | MPC | 2006 $UQ_{30}$ |
| 2006 $UR_{30}$ | 17.8 | 0.15 | 20061012 | 24.03295 | 331.50249 | 28.56872 | 5.27638 | 0.1242359 | 2.7113067 | 20 | 1 | 37 days | 0.23 | | | MPC | 2006 $UR_{30}$ |
| 2006 $US_{30}$ | 16.7 | 0.15 | 20061101 | 73.39762 | 92.57942 | 218.46326 | 0.61446 | 0.1046286 | 2.8631125 | 21 | 1 | 37 days | 0.30 | | | MPC | 2006 $US_{30}$ |
| 2006 $UT_{30}$ | 18.1 | 0.15 | 20061101 | 292.26565 | 85.15654 | 26.78479 | 5.97402 | 0.0708917 | 2.3210822 | 19 | 1 | 32 days | 0.24 | | | MPC | 2006 $UT_{30}$ |
| 2006 $UV_{30}$ | 17.0 | 0.15 | 20061012 | 191.50049 | 349.15971 | 215.07120 | 5.35341 | 0.1643030 | 2.5225948 | 10 | 1 | 11 days | 0.19 | | | MPC | 2006 $UV_{30}$ |
| 2006 $UW_{30}$ | 16.8 | 0.15 | 20061012 | 40.91072 | 304.79863 | 31.58920 | 1.41056 | 0.1683930 | 3.1010866 | 24 | 1 | 44 days | 0.23 | | | MPC | 2006 $UW_{30}$ |
| 2006 $UX_{30}$ | 17.3 | 0.15 | 20061012 | 354.09401 | 6.84924 | 32.50403 | 10.25614 | 0.0676932 | 3.0601364 | 9 | 1 | 13 days | 0.30 | | | MPC | 2006 $UX_{30}$ |
| 2006 $UY_{30}$ | 18.5 | 0.15 | 20061012 | 319.92127 | 221.71402 | 211.58786 | 20.61286 | 0.0608500 | 1.8865098 | 13 | 1 | 42 days | 0.52 | | | MPC | 2006 $UY_{30}$ |
| 2006 $UZ_{30}$ | 17.3 | 0.15 | 20061012 | 323.27804 | 128.02706 | 305.21417 | 0.86605 | 0.0522144 | 2.8751215 | 22 | 1 | 35 days | 0.24 | | | MPC | 2006 $UZ_{30}$ |
| 2006 $UA_{31}$ | 16.6 | 0.15 | 20061012 | 349.45490 | 192.37093 | 213.66352 | 14.61952 | 0.0966438 | 3.4020638 | 21 | 1 | 32 days | 0.29 | | | MPC | 2006 $UA_{31}$ |
| 2006 $UB_{31}$ | 17.7 | 0.15 | 20061101 | 195.94895 | 350.38870 | 211.80617 | 1.24040 | 0.0513012 | 2.3109480 | 26 | 1 | 37 days | 0.23 | | | MPC | 2006 $UB_{31}$ |
| 2006 $UC_{31}$ | 16.9 | 0.15 | 20061012 | 73.23455 | 88.76504 | 221.21071 | 4.57955 | 0.0811835 | 2.6529191 | 22 | 1 | 47 days | 0.21 | | | MPC | 2006 $UC_{31}$ |
| 2006 $UG_{31}$ | 20.3 | 0.15 | 20061012 | 12.15399 | 338.18109 | 29.13479 | 2.58208 | 0.2437249 | 2.2209032 | 9 | 1 | 13 days | 0.36 | | | MPC | 2006 $UG_{31}$ |
| 2006 $UJ_{31}$ | 17.4 | 0.15 | 20061012 | 46.33774 | 321.73627 | 15.25399 | 2.15301 | 0.0984589 | 2.6736033 | 20 | 1 | 45 days | 0.25 | | | MPC | 2006 $UJ_{31}$ |
| 2006 $UK_{31}$ | 18.1 | 0.15 | 20061012 | 6.19869 | 349.39473 | 32.79407 | 6.36569 | 0.1481313 | 2.5590751 | 18 | 1 | 28 days | 0.21 | | | MPC | 2006 $UK_{31}$ |
| 2006 $UL_{31}$ | 18.0 | 0.15 | 20061012 | 5.66771 | 8.73026 | 14.88806 | 0.98484 | 0.1362683 | 2.6134222 | 21 | 1 | 26 days | 0.22 | | | MPC | 2006 $UL_{31}$ |
| 2006 $UM_{31}$ | 17.2 | 0.15 | 20061012 | 355.95261 | 4.13092 | 32.75487 | 5.48926 | 0.1636628 | 2.7245850 | 33 | 1 | 53 days | 0.37 | | | MPC | 2006 $UM_{31}$ |
| 2006 $UN_{31}$ | 18.3 | 0.15 | 20061012 | 19.05763 | 146.10511 | 212.88723 | 7.36680 | 0.2437719 | 2.7336889 | 15 | 1 | 13 days | 0.32 | | | MPC | 2006 $UN_{31}$ |
| 2006 $UO_{31}$ | 17.5 | 0.15 | 20061012 | 253.72662 | 111.94657 | 29.54051 | 2.97534 | 0.0186436 | 2.7314567 | 15 | 1 | 26 days | 0.33 | | | MPC | 2006 $UO_{31}$ |
| 2006 $UR_{31}$ | 17.9 | 0.15 | 20060922 | 295.51414 | 76.40300 | 23.95848 | 3.68727 | 0.0890305 | 2.3932239 | 25 | 1 | 61 days | 0.24 | M-v | 4 | MPC | 2006 $UR_{31}$ |
| 2006 $US_{31}$ | 18.0 | 0.15 | 20061012 | 13.96923 | 339.49126 | 27.50507 | 6.22516 | 0.2296172 | 2.4068930 | 36 | 1 | 48 days | 0.40 | | | MPC | 2006 $US_{31}$ |
| 2006 $UU_{31}$ | 16.6 | 0.15 | 20061012 | 338.05543 | 201.78589 | 215.33393 | 8.74347 | 0.0467301 | 2.7355087 | 23 | 1 | 44 days | 0.25 | | | MPC | 2006 $UU_{31}$ |
| 2006 $UV_{31}$ | 17.6 | 0.15 | 20061012 | 305.45762 | 251.21273 | 210.54234 | 4.67018 | 0.1494173 | 2.4731014 | 18 | 1 | 32 days | 0.17 | | | MPC | 2006 $UV_{31}$ |
| 2006 $UW_{31}$ | 16.5 | 0.15 | 20061012 | 33.47140 | 148.01434 | 206.12313 | 2.34310 | 0.0876933 | 3.1011967 | 19 | 1 | 50 days | 0.29 | | | MPC | 2006 $UW_{31}$ |
| 2006 $UX_{31}$ | 16.3 | 0.15 | 20061012 | 246.42566 | 302.21940 | 212.44421 | 8.97111 | 0.0620988 | 3.2115797 | 9 | 1 | 13 days | 0.50 | | | MPC | 2006 $UX_{31}$ |
| 2006 $UY_{31}$ | 17.5 | 0.15 | 20061012 | 325.91571 | 43.44945 | 35.81919 | 6.67156 | 0.1562128 | 3.0681893 | 17 | 1 | 26 days | 0.29 | | | MPC | 2006 $UY_{31}$ |
| 2006 $UZ_{31}$ | 18.5 | 0.15 | 20061012 | 20.93971 | 328.07894 | 28.10249 | 4.45165 | 0.2308324 | 2.3440939 | 23 | 1 | 37 days | 0.20 | | | MPC | 2006 $UZ_{31}$ |
| 2006 $UA_{32}$ | 17.9 | 0.15 | 20061012 | 2.15130 | 357.25734 | 31.41574 | 8.71652 | 0.2295686 | 2.9654151 | 29 | 1 | 53 days | 0.46 | | | MPC | 2006 $UA_{32}$ |
| 2006 $UB_{32}$ | 17.0 | 0.15 | 20061012 | 14.24462 | 338.96436 | 37.21071 | 10.40998 | 0.1067266 | 3.1470692 | 17 | 1 | 26 days | 0.23 | | | MPC | 2006 $UB_{32}$ |
| 2006 $UC_{32}$ | 18.3 | 0.15 | 20061012 | 336.51061 | 37.81511 | 34.38665 | 8.83386 | 0.2537752 | 3.1199027 | 9 | 1 | 16 days | 0.16 | | | MPC | 2006 $UC_{32}$ |
| 2006 $UD_{32}$ | 16.6 | 0.15 | 20061012 | 318.14061 | 35.67232 | 43.65050 | 2.59846 | 0.0462299 | 2.8563355 | 21 | 1 | 49 days | 0.27 | | | MPC | 2006 $UD_{32}$ |
| 2006 $UK_{32}$ | 17.8 | 0.15 | 20061101 | 359.32311 | 223.02305 | 176.39079 | 0.40314 | 0.1576973 | 2.6657779 | 17 | 1 | 41 days | 0.40 | | | MPC | 2006 $UK_{32}$ |
| 2006 $UM_{32}$ | 17.4 | 0.15 | 20061012 | 34.01429 | 125.62359 | 211.52985 | 3.92974 | 0.2470585 | 2.5843889 | 25 | 1 | 47 days | 0.17 | | | MPC | 2006 $UM_{32}$ |
| 2006 $UN_{32}$ | 16.2 | 0.15 | 20061012 | 245.52203 | 160.97604 | 7.96786 | 0.42845 | 0.1999035 | 2.9273881 | 9 | 1 | 13 days | 0.30 | | | MPC | 2006 $UN_{32}$ |
| 2006 $UO_{32}$ | 18.0 | 0.15 | 20061012 | 12.82035 | 168.45970 | 204.21879 | 1.33212 | 0.1780738 | 2.4438473 | 21 | 1 | 40 days | 0.24 | | | MPC | 2006 $UO_{32}$ |
| 2006 $UP_{32}$ | 17.0 | 0.15 | 20061012 | 18.00550 | 144.14935 | 220.08484 | 2.49518 | 0.2291407 | 3.0285912 | 25 | 1 | 56 days | 0.23 | | | MPC | 2006 $UP_{32}$ |
| 2006 $UR_{32}$ | 16.6 | 0.15 | 20061012 | 351.68657 | 7.26992 | 36.76978 | 14.62311 | 0.0396192 | 3.0263927 | 16 | 1 | 30 days | 0.23 | | | MPC | 2006 $UR_{32}$ |
| 2006 $US_{32}$ | 17.2 | 0.15 | 20061012 | 348.73694 | 350.43651 | 56.56475 | 1.76088 | 0.0877634 | 2.7013744 | 25 | 1 | 55 days | 0.37 | | | MPC | 2006 $US_{32}$ |
| 2006 $UT_{32}$ | 16.7 | 0.15 | 20061012 | 8.40384 | 344.04539 | 34.08937 | 2.85941 | 0.2248707 | 2.6371691 | 50 | 1 | 48 days | 0.38 | | | MPC | 2006 $UT_{32}$ |
| 2006 $UU_{32}$ | 18.2 | 0.15 | 20061012 | 8.73356 | 168.20193 | 210.71496 | 3.61908 | 0.1511748 | 2.2527064 | 25 | 1 | 49 days | 0.21 | | | MPC | 2006 $UU_{32}$ |
| 2006 $UV_{32}$ | 18.9 | 0.15 | 20061012 | 19.15735 | 321.68042 | 32.57241 | 13.11117 | 0.3066179 | 2.6427231 | 23 | 1 | 49 days | 0.27 | | | MPC | 2006 $UV_{32}$ |
| 2006 $UX_{32}$ | 19.0 | 0.15 | 20061012 | 49.56480 | 107.57660 | 213.13901 | 3.84848 | 0.2063070 | 2.1780548 | 9 | 1 | 13 days | 0.16 | | | MPC | 2006 $UX_{32}$ |
| 2006 $UY_{32}$ | 17.6 | 0.15 | 20061012 | 30.81820 | 318.92849 | 37.73640 | 12.51510 | 0.0991669 | 2.7256496 | 24 | 1 | 46 days | 0.20 | | | MPC | 2006 $UY_{32}$ |
| 2006 $UZ_{32}$ | 17.2 | 0.15 | 20061012 | 42.34551 | 107.72496 | 214.60095 | 11.94689 | 0.2853635 | 2.6663541 | 20 | 1 | 49 days | 0.27 | | | MPC | 2006 $UZ_{32}$ |
| 2006 $UA_{33}$ | 16.0 | 0.15 | 20061012 | 4.29846 | 349.67811 | 41.23632 | 10.67613 | 0.0377277 | 3.0945869 | 32 | 1 | 58 days | 0.35 | | | MPC | 2006 $UA_{33}$ |
| 2006 $UB_{33}$ | 17.3 | 0.15 | 20060922 | 194.70500 | 146.74076 | 54.23222 | 2.79589 | 0.2169198 | 2.1969317 | 10 | 1 | 25 days | 0.21 | | | MPC | 2006 $UB_{33}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UE_{33}$ | 18.4 | 0.15 | 20061012 | 27.54213 | 286.90893 | 57.46546 | 3.79060 | 0.2736610 | 2.8921265 | 9 | 1 | 6 days | 0.41 | | MPC | 2006 $UE_{33}$ |
| 2006 $UG_{33}$ | 18.0 | 0.15 | 20061012 | 315.02119 | 5.62699 | 84.92412 | 1.16849 | 0.1446312 | 2.4271160 | 17 | 1 | 46 days | 0.31 | | MPC | 2006 $UG_{33}$ |
| 2006 $UK_{33}$ | 16.2 | 0.15 | 20061012 | 347.39948 | 282.18787 | 126.59760 | 1.89834 | 0.0493423 | 3.0842471 | 24 | 1 | 46 days | 0.39 | | MPC | 2006 $UK_{33}$ |
| 2006 $UM_{33}$ | 16.5 | 0.15 | 20061012 | 310.67765 | 246.38961 | 211.20331 | 16.67318 | 0.1507448 | 2.6198444 | 41 | 1 | 57 days | 0.48 | | MPC | 2006 $UM_{33}$ |
| 2006 $UN_{33}$ | 18.7 | 0.15 | 20061012 | 0.87160 | 212.88084 | 174.74173 | 1.00894 | 0.1929946 | 2.3388693 | 16 | 1 | 38 days | 0.27 | | MPC | 2006 $UN_{33}$ |
| 2006 $UO_{33}$ | 18.4 | 0.15 | 20061012 | 50.12493 | 278.59994 | 35.97327 | 4.19050 | 0.2407121 | 2.2739769 | 37 | 1 | 58 days | 0.31 | | MPC | 2006 $UO_{33}$ |
| 2006 $UP_{33}$ | 18.9 | 0.15 | 20061012 | 320.15538 | 265.73265 | 189.40847 | 2.08910 | 0.2593699 | 2.6331693 | 9 | 1 | 13 days | 0.22 | | MPC | 2006 $UP_{33}$ |
| 2006 $UQ_{33}$ | 18.5 | 0.15 | 20061012 | 320.75812 | 47.84875 | 35.83627 | 17.74192 | 0.1567223 | 2.6045588 | 16 | 1 | 13 days | 0.36 | | MPC | 2006 $UQ_{33}$ |
| 2006 $UR_{33}$ | 17.2 | 0.15 | 20061101 | 337.89560 | 18.62708 | 50.76661 | 2.13945 | 0.1798111 | 3.1473068 | 30 | 1 | 37 days | 0.28 | | MPC | 2006 $UR_{33}$ |
| 2006 $US_{33}$ | 17.1 | 0.15 | 20061012 | 202.34859 | 155.06962 | 37.01788 | 6.65744 | 0.0469603 | 2.4443419 | 24 | 1 | 44 days | 0.22 | | MPC | 2006 $US_{33}$ |
| 2006 $UT_{33}$ | 16.9 | 0.15 | 20061012 | 43.12259 | 280.74455 | 50.94766 | 3.70110 | 0.1926208 | 3.0968651 | 9 | 1 | 13 days | 0.28 | | MPC | 2006 $UT_{33}$ |
| 2006 $UU_{33}$ | 16.5 | 0.15 | 20061012 | 41.52199 | 135.45450 | 210.66063 | 8.71438 | 0.0750460 | 3.1651866 | 9 | 1 | 13 days | 0.17 | | MPC | 2006 $UU_{33}$ |
| 2006 $UX_{33}$ | 16.7 | 0.15 | 20061012 | 119.99002 | 60.81937 | 208.84043 | 12.05524 | 0.0379909 | 2.7293968 | 18 | 1 | 52 days | 0.25 | | MPC | 2006 $UX_{33}$ |
| 2006 $UY_{33}$ | 17.9 | 0.15 | 20061012 | 324.09783 | 246.76869 | 191.03343 | 1.55837 | 0.1272328 | 2.6620468 | 13 | 1 | 13 days | 0.29 | | MPC | 2006 $UY_{33}$ |
| 2006 $UC_{34}$ | 17.1 | 0.15 | 20061012 | 359.03001 | 351.16226 | 42.16423 | 3.24601 | 0.1168123 | 2.6392073 | 29 | 1 | 57 days | 0.28 | | MPC | 2006 $UC_{34}$ |
| 2006 $UE_{34}$ | 17.5 | 0.15 | 20061012 | 26.72804 | 294.58163 | 56.02419 | 3.98498 | 0.2249310 | 3.1192265 | 9 | 1 | 13 days | 0.18 | | MPC | 2006 $UE_{34}$ |
| 2006 $UG_{34}$ | 17.2 | 0.15 | 20061012 | 330.64283 | 226.86350 | 198.54269 | 4.96549 | 0.0493768 | 2.7265317 | 25 | 1 | 51 days | 0.28 | | MPC | 2006 $UG_{34}$ |
| 2006 $UH_{34}$ | 17.3 | 0.15 | 20061012 | 320.45236 | 47.29854 | 42.76412 | 8.37120 | 0.2048795 | 2.7994407 | 24 | 1 | 53 days | 0.34 | | MPC | 2006 $UH_{34}$ |
| 2006 $UJ_{34}$ | 17.4 | 0.15 | 20061101 | 5.20364 | 345.47808 | 44.56514 | 3.24248 | 0.0663578 | 2.6683543 | 20 | 1 | 37 days | 0.25 | | MPC | 2006 $UJ_{34}$ |
| 2006 $UL_{34}$ | 17.5 | 0.15 | 20061012 | 316.91620 | 255.59603 | 182.08963 | 1.53169 | 0.0380328 | 2.7339809 | 24 | 1 | 15 days | 0.28 | | MPC | 2006 $UL_{34}$ |
| 2006 $UM_{34}$ | 18.3 | 0.15 | 20061012 | 286.22508 | 71.83656 | 40.95002 | 4.77208 | 0.0760666 | 2.3400816 | 25 | 1 | 57 days | 0.40 | | MPC | 2006 $UM_{34}$ |
| 2006 $UN_{34}$ | 17.2 | 0.15 | 20061101 | 330.37778 | 17.07920 | 51.62722 | 2.65252 | 0.0470665 | 2.8878593 | 20 | 1 | 37 days | 0.37 | | MPC | 2006 $UN_{34}$ |
| 2006 $UP_{34}$ | 16.4 | 0.15 | 20061012 | 45.01929 | 132.42664 | 212.69782 | 9.57945 | 0.0316866 | 3.0504528 | 18 | 1 | 32 days | 0.28 | | MPC | 2006 $UP_{34}$ |
| 2006 $UQ_{34}$ | 16.6 | 0.15 | 20061101 | 323.66149 | 261.09087 | 177.18935 | 1.18878 | 0.0739206 | 3.1150149 | 17 | 1 | 37 days | 0.24 | | MPC | 2006 $UQ_{34}$ |
| 2006 $US_{34}$ | 18.2 | 0.15 | 20061012 | 348.13352 | 11.09878 | 38.74574 | 5.15200 | 0.2717438 | 2.5482018 | 26 | 1 | 44 days | 0.18 | | MPC | 2006 $US_{34}$ |
| 2006 $UT_{34}$ | 18.8 | 0.15 | 20061012 | 340.96438 | 245.90301 | 169.65702 | 1.36670 | 0.1590158 | 2.3272827 | 17 | 1 | 35 days | 0.23 | | MPC | 2006 $UT_{34}$ |
| 2006 $UU_{34}$ | 17.3 | 0.15 | 20061012 | 216.14096 | 145.96870 | 39.77953 | 3.38364 | 0.1652743 | 2.3449079 | 16 | 1 | 13 days | 0.31 | | MPC | 2006 $UU_{34}$ |
| 2006 $UV_{34}$ | 17.3 | 0.15 | 20061012 | 280.96938 | 93.00283 | 40.16355 | 3.78127 | 0.1894900 | 2.6977235 | 17 | 1 | 12 days | 0.32 | | MPC | 2006 $UV_{34}$ |
| 2006 $UX_{34}$ | 16.5 | 0.15 | 20061012 | 38.66105 | 315.80960 | 34.23411 | 22.11638 | 0.0433388 | 2.6469012 | 19 | 1 | 46 days | 0.20 | | MPC | 2006 $UX_{34}$ |
| 2006 $UY_{34}$ | 17.1 | 0.15 | 20061012 | 67.52274 | 248.38521 | 34.19127 | 7.43083 | 0.3508781 | 3.1091684 | 10 | 1 | 11 days | 0.72 | | MPC | 2006 $UY_{34}$ |
| 2006 $UZ_{34}$ | 16.5 | 0.15 | 20060922 | 7.52523 | 159.19161 | 210.34268 | 7.23338 | 0.2230020 | 2.7481848 | 50 | 1 | 84 days | 0.43 | M-v 4 | MPC | 2006 $UZ_{34}$ |
| 2006 $UA_{35}$ | 16.6 | 0.15 | 20060922 | 198.38573 | 335.78201 | 214.62947 | 1.77301 | 0.0189883 | 3.1851698 | 26 | 1 | 60 days | 0.37 | M-v 5 | MPC | 2006 $UA_{35}$ |
| 2006 $UB_{35}$ | 19.5 | 0.15 | 20061012 | 11.59132 | 338.50971 | 31.49393 | 1.91863 | 0.2000045 | 2.3349710 | 10 | 1 | 11 days | 0.19 | | MPC | 2006 $UB_{35}$ |
| 2006 $UC_{35}$ | 17.2 | 0.15 | 20061012 | 318.01347 | 226.08427 | 211.46172 | 11.13443 | 0.0589548 | 2.7943966 | 25 | 1 | 33 days | 0.25 | | MPC | 2006 $UC_{35}$ |
| 2006 $UE_{35}$ | 16.7 | 0.15 | 20060922 | 17.67447 | 147.94758 | 216.87682 | 2.73691 | 0.0895385 | 2.8408962 | 31 | 1 | 62 days | 0.28 | M-v 4 | MPC | 2006 $UE_{35}$ |
| 2006 $UF_{35}$ | 17.9 | 0.15 | 20061012 | 326.60978 | 26.83845 | 37.80084 | 4.91890 | 0.0196419 | 2.4051900 | 32 | 1 | 45 days | 0.30 | | MPC | 2006 $UF_{35}$ |
| 2006 $UG_{35}$ | 16.4 | 0.15 | 20060922 | 143.96507 | 205.82775 | 36.49366 | 4.96905 | 0.0134506 | 2.7801154 | 39 | 1 | 60 days | 0.35 | M-v 4 | MPC | 2006 $UG_{35}$ |
| 2006 $UH_{35}$ | 17.1 | 0.15 | 20061012 | 29.20787 | 135.86849 | 212.19372 | 13.78785 | 0.1860834 | 2.7762102 | 23 | 1 | 26 days | 0.19 | | MPC | 2006 $UH_{35}$ |
| 2006 $UJ_{35}$ | 17.2 | 0.15 | 20061012 | 27.52343 | 173.23307 | 177.62988 | 2.63018 | 0.2073984 | 2.5652044 | 31 | 1 | 47 days | 0.24 | | MPC | 2006 $UJ_{35}$ |
| 2006 $UK_{35}$ | 18.1 | 0.15 | 20060922 | 356.59263 | 178.04680 | 210.29216 | 21.25128 | 0.0641592 | 1.9751266 | 16 | 1 | 35 days | 0.40 | | MPC | 2006 $UK_{35}$ |
| 2006 $UL_{35}$ | 17.2 | 0.15 | 20061012 | 60.88162 | 285.45136 | 40.58356 | 23.14778 | 0.0620108 | 1.8801961 | 60 | 1 | 54 days | 0.62 | | MPC | 2006 $UL_{35}$ |
| 2006 $UN_{35}$ | 17.2 | 0.15 | 20061101 | 42.07731 | 29.42399 | 315.97175 | 1.79658 | 0.2296056 | 2.3460033 | 42 | 1 | 37 days | 0.57 | | MPC | 2006 $UN_{35}$ |
| 2006 $UP_{35}$ | 18.4 | 0.15 | 20061012 | 62.16073 | 79.28491 | 238.72130 | 4.63192 | 0.1319900 | 2.4668727 | 9 | 1 | 12 days | 0.47 | | MPC | 2006 $UP_{35}$ |
| 2006 $UR_{35}$ | 17.3 | 0.15 | 20061012 | 303.69866 | 240.74961 | 223.46171 | 10.64138 | 0.1249724 | 2.6076227 | 21 | 1 | 52 days | 0.22 | | MPC | 2006 $UR_{35}$ |
| 2006 $UT_{35}$ | 16.9 | 0.15 | 20061012 | 0.45439 | 168.91988 | 225.16800 | 10.09391 | 0.2250255 | 3.1176830 | 16 | 1 | 32 days | 0.21 | | MPC | 2006 $UT_{35}$ |
| 2006 $UU_{35}$ | 16.9 | 0.15 | 20061012 | 6.84175 | 3.16541 | 25.09893 | 6.57899 | 0.0487604 | 2.7125627 | 20 | 1 | 51 days | 0.29 | | MPC | 2006 $UU_{35}$ |
| 2006 $UV_{35}$ | 18.5 | 0.15 | 20061012 | 320.18807 | 70.48014 | 16.75708 | 3.06776 | 0.1624534 | 2.3998663 | 16 | 1 | 35 days | 0.20 | | MPC | 2006 $UV_{35}$ |
| 2006 $UY_{35}$ | 17.0 | 0.15 | 20061012 | 49.48718 | 96.07639 | 228.90535 | 8.75792 | 0.2159714 | 3.1381401 | 21 | 1 | 46 days | 0.29 | | MPC | 2006 $UY_{35}$ |
| 2006 $UA_{36}$ | 18.5 | 0.15 | 20061101 | 351.66936 | 75.48859 | 337.24260 | 1.63915 | 0.1817734 | 2.3734878 | 16 | 1 | 32 days | 0.16 | | MPC | 2006 $UA_{36}$ |
| 2006 $UB_{36}$ | 18.8 | 0.15 | 20061012 | 32.13987 | 112.04500 | 220.84056 | 10.52791 | 0.3216030 | 2.6475590 | 9 | 1 | 16 days | 0.10 | | MPC | 2006 $UB_{36}$ |
| 2006 $UE_{36}$ | 17.7 | 0.15 | 20061101 | 309.49344 | 253.04886 | 222.76151 | 12.89813 | 0.2338973 | 2.6176233 | 17 | 1 | 36 days | 0.39 | | MPC | 2006 $UE_{36}$ |
| 2006 $UF_{36}$ | 17.0 | 0.15 | 20061101 | 343.97181 | 185.84134 | 232.60611 | 4.33647 | 0.0427743 | 2.7215111 | 18 | 1 | 42 days | 0.20 | | MPC | 2006 $UF_{36}$ |
| 2006 $UG_{36}$ | 17.0 | 0.15 | 20061012 | 317.88146 | 223.13312 | 223.33255 | 14.50008 | 0.0899394 | 2.9805985 | 25 | 1 | 52 days | 0.31 | | MPC | 2006 $UG_{36}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UH_{36}$ | 17.1 | 0.15 | 20061012 | 324.19591 | 170.62940 | 271.60107 | 1.76552 | 0.1605542 | 2.3546396 | 48 | 1 | 58 days | 0.48 | | MPC | 2006 $UH_{36}$ |
| 2006 $UK_{36}$ | 16.1 | 0.15 | 20061012 | 347.44537 | 22.06426 | 30.92581 | 11.45869 | 0.1042670 | 3.1798579 | 18 | 1 | 51 days | 0.48 | | MPC | 2006 $UK_{36}$ |
| 2006 $UN_{36}$ | 16.0 | 0.15 | 20061012 | 350.95755 | 16.45843 | 32.05870 | 9.39104 | 0.0886466 | 3.1625059 | 17 | 1 | 51 days | 0.22 | | MPC | 2006 $UN_{36}$ |
| 2006 $UP_{36}$ | 17.4 | 0.15 | 20061012 | 31.78698 | 123.80453 | 220.14560 | 16.09255 | 0.2351516 | 2.5738692 | 21 | 1 | 44 days | 0.38 | | MPC | 2006 $UP_{36}$ |
| 2006 $UR_{36}$ | 16.6 | 0.15 | 20061101 | 40.12168 | 53.28926 | 295.75355 | 1.32014 | 0.1501918 | 2.9904805 | 26 | 1 | 42 days | 0.27 | | MPC | 2006 $UR_{36}$ |
| 2006 $UU_{36}$ | 18.3 | 0.15 | 20060922 | 46.73172 | 90.93892 | 244.54371 | 2.69782 | 0.0687494 | 2.2166418 | 10 | 1 | 20 days | 0.21 | | MPC | 2006 $UU_{36}$ |
| 2006 $UV_{36}$ | 16.7 | 0.15 | 20061012 | 228.35744 | 138.97215 | 35.15217 | 10.87947 | 0.0424032 | 3.0510125 | 21 | 1 | 54 days | 0.43 | | MPC | 2006 $UV_{36}$ |
| 2006 $UW_{36}$ | 17.3 | 0.15 | 20061012 | 55.80366 | 285.55629 | 34.05261 | 12.48316 | 0.1979498 | 2.6812733 | 17 | 1 | 53 days | 0.25 | | MPC | 2006 $UW_{36}$ |
| 2006 $UX_{36}$ | 17.2 | 0.15 | 20061012 | 344.22334 | 194.80119 | 225.04758 | 14.35993 | 0.1696068 | 3.2046307 | 16 | 1 | 27 days | 0.21 | | MPC | 2006 $UX_{36}$ |
| 2006 $UB_{37}$ | 17.7 | 0.15 | 20061012 | 200.05095 | 190.23473 | 10.33792 | 2.13094 | 0.1083990 | 2.2099907 | 13 | 1 | 30 days | 0.25 | | MPC | 2006 $UB_{37}$ |
| 2006 $UD_{37}$ | 16.9 | 0.15 | 20061012 | 64.70027 | 23.83598 | 304.47495 | 1.13158 | 0.0585465 | 2.9864668 | 20 | 1 | 35 days | 0.30 | | MPC | 2006 $UD_{37}$ |
| 2006 $UG_{37}$ | 19.7 | 0.15 | 20061101 | 1.28542 | 177.18758 | 222.36430 | 2.57393 | 0.2404913 | 2.3579559 | 21 | 1 | 36 days | 0.26 | | MPC | 2006 $UG_{37}$ |
| 2006 $UH_{37}$ | 18.1 | 0.15 | 20061012 | 307.50090 | 78.54872 | 26.42611 | 5.27691 | 0.1627996 | 2.3421159 | 17 | 1 | 47 days | 0.26 | | MPC | 2006 $UH_{37}$ |
| 2006 $UK_{37}$ | 16.7 | 0.15 | 20061101 | 356.69059 | 76.31583 | 331.70857 | 0.61891 | 0.1759571 | 3.1032838 | 37 | 1 | 42 days | 0.50 | | MPC | 2006 $UK_{37}$ |
| 2006 $UL_{37}$ | 17.4 | 0.15 | 20061012 | 122.50895 | 246.13271 | 22.33682 | 3.10520 | 0.0738058 | 2.3237906 | 20 | 1 | 55 days | 0.28 | | MPC | 2006 $UL_{37}$ |
| 2006 $UN_{37}$ | 17.2 | 0.15 | 20061012 | 6.73040 | 131.03425 | 259.73957 | 1.02403 | 0.0781423 | 2.8677791 | 21 | 1 | 40 days | 0.26 | | MPC | 2006 $UN_{37}$ |
| 2006 $UO_{37}$ | 16.0 | 0.15 | 20061012 | 271.16099 | 265.56728 | 229.58311 | 8.52714 | 0.0471615 | 3.1647691 | 26 | 1 | 52 days | 0.26 | | MPC | 2006 $UO_{37}$ |
| 2006 $UP_{37}$ | 16.7 | 0.15 | 20061012 | 350.04728 | 17.34591 | 37.26116 | 15.59900 | 0.2489535 | 3.1434877 | 28 | 1 | 54 days | 0.28 | | MPC | 2006 $UP_{37}$ |
| 2006 $UQ_{37}$ | 16.6 | 0.15 | 20061012 | 111.18129 | 55.36157 | 231.64010 | 5.83185 | 0.0144790 | 2.7661661 | 17 | 1 | 58 days | 0.23 | | MPC | 2006 $UQ_{37}$ |
| 2006 $UT_{37}$ | 17.4 | 0.15 | 20061012 | 350.90460 | 181.76684 | 227.33595 | 5.54893 | 0.0622378 | 2.7034441 | 20 | 1 | 27 days | 0.31 | | MPC | 2006 $UT_{37}$ |
| 2006 $UY_{37}$ | 16.1 | 0.15 | 20061012 | 188.54435 | 350.76657 | 224.16546 | 12.06752 | 0.0758330 | 3.2011902 | 10 | 1 | 11 days | 0.28 | | MPC | 2006 $UY_{37}$ |
| 2006 $UA_{38}$ | 15.6 | 0.15 | 20060922 | 249.57706 | 279.70672 | 247.21346 | 1.41326 | 0.1747079 | 3.1120530 | 13 | 1 | 23 days | 0.78 | | MPC | 2006 $UA_{38}$ |
| 2006 $UB_{38}$ | 18.0 | 0.15 | 20061012 | 269.69461 | 109.54699 | 32.81667 | 2.30240 | 0.1407213 | 2.3160335 | 9 | 1 | 8 days | 0.48 | | MPC | 2006 $UB_{38}$ |
| 2006 $UC_{38}$ | 15.7 | 0.15 | 20061012 | 89.59624 | 82.69676 | 218.36746 | 8.99858 | 0.0733884 | 3.0734904 | 29 | 1 | 35 days | 0.28 | | MPC | 2006 $UC_{38}$ |
| 2006 $UD_{38}$ | 17.7 | 0.15 | 20061101 | 38.43058 | 307.13090 | 38.73170 | 12.17357 | 0.1993647 | 2.6370384 | 16 | 1 | 32 days | 0.12 | | MPC | 2006 $UD_{38}$ |
| 2006 $UE_{38}$ | 18.6 | 0.15 | 20061101 | 351.10668 | 208.82404 | 205.47024 | 0.85722 | 0.1709675 | 2.4555179 | 24 | 1 | 36 days | 0.26 | | MPC | 2006 $UE_{38}$ |
| 2006 $UH_{38}$ | 17.0 | 0.15 | 20061012 | 44.74991 | 180.54108 | 161.24241 | 0.42611 | 0.1252811 | 2.9091896 | 24 | 1 | 57 days | 0.29 | | MPC | 2006 $UH_{38}$ |
| 2006 $UJ_{38}$ | 17.3 | 0.15 | 20061101 | 83.27628 | 259.21860 | 51.57997 | 1.93811 | 0.0700781 | 2.5316035 | 31 | 1 | 42 days | 0.19 | | MPC | 2006 $UJ_{38}$ |
| 2006 $UM_{38}$ | 16.0 | 0.15 | 20060922 | 135.13839 | 211.18822 | 43.98745 | 11.89127 | 0.0847351 | 3.0338622 | 31 | 1 | 62 days | 0.45 | M-v 4 | MPC | 2006 $UM_{38}$ |
| 2006 $UN_{38}$ | 16.8 | 0.15 | 20061101 | 337.86734 | 34.28745 | 33.32537 | 2.40458 | 0.0504879 | 2.8639495 | 21 | 1 | 42 days | 0.26 | | MPC | 2006 $UN_{38}$ |
| 2006 $UO_{38}$ | 17.8 | 0.15 | 20061101 | 27.56823 | 139.10802 | 221.94951 | 2.43389 | 0.2066158 | 2.7492655 | 21 | 1 | 36 days | 0.26 | | MPC | 2006 $UO_{38}$ |
| 2006 $UP_{38}$ | 17.0 | 0.15 | 20061101 | 5.52024 | 359.37097 | 36.23499 | 3.40450 | 0.1144152 | 2.5424233 | 39 | 1 | 42 days | 0.58 | | MPC | 2006 $UP_{38}$ |
| 2006 $US_{38}$ | 17.8 | 0.15 | 20061101 | 21.89965 | 343.20348 | 27.31104 | 2.22605 | 0.1539812 | 2.3342393 | 22 | 1 | 42 days | 0.16 | | MPC | 2006 $US_{38}$ |
| 2006 $UT_{38}$ | 16.1 | 0.15 | 20061012 | 68.61129 | 97.04653 | 219.77190 | 9.96941 | 0.1107323 | 3.1395325 | 30 | 1 | 51 days | 0.42 | | MPC | 2006 $UT_{38}$ |
| 2006 $UU_{38}$ | 17.7 | 0.15 | 20061012 | 59.86509 | 291.75560 | 36.15168 | 2.57110 | 0.0809549 | 2.6413952 | 16 | 1 | 27 days | 0.31 | | MPC | 2006 $UU_{38}$ |
| 2006 $UV_{38}$ | 17.2 | 0.15 | 20061101 | 346.39300 | 17.71497 | 43.78942 | 0.87908 | 0.1873406 | 3.1537865 | 24 | 1 | 46 days | 0.22 | | MPC | 2006 $UV_{38}$ |
| 2006 $UX_{38}$ | 17.6 | 0.15 | 20061012 | 90.32649 | 265.01525 | 31.14882 | 2.77406 | 0.0912407 | 2.6134371 | 15 | 1 | 27 days | 0.19 | | MPC | 2006 $UX_{38}$ |
| 2006 $UZ_{38}$ | 18.0 | 0.15 | 20061012 | 17.95226 | 148.26745 | 214.63833 | 29.21584 | 0.2527257 | 2.6044210 | 13 | 1 | 21 days | 0.18 | | MPC | 2006 $UZ_{38}$ |
| 2006 $UB_{39}$ | 17.6 | 0.15 | 20061012 | 132.13651 | 221.97464 | 32.88802 | 7.10700 | 0.1000560 | 2.3790975 | 19 | 1 | 37 days | 0.28 | | MPC | 2006 $UB_{39}$ |
| 2006 $UC_{39}$ | 17.1 | 0.15 | 20061012 | 3.47177 | 3.00547 | 27.85057 | 4.75462 | 0.0748844 | 2.7756675 | 14 | 1 | 51 days | 0.24 | | MPC | 2006 $UC_{39}$ |
| 2006 $UH_{39}$ | 16.6 | 0.15 | 20061012 | 316.39050 | 230.26462 | 218.94814 | 9.79658 | 0.1139203 | 3.0299730 | 21 | 1 | 45 days | 0.24 | | MPC | 2006 $UH_{39}$ |
| 2006 $UK_{39}$ | 16.1 | 0.15 | 20061012 | 105.05424 | 53.59489 | 222.38009 | 11.94847 | 0.1532822 | 3.0175302 | 21 | 1 | 54 days | 0.27 | | MPC | 2006 $UK_{39}$ |
| 2006 $UM_{39}$ | 18.7 | 0.15 | 20061012 | 326.10168 | 60.71576 | 20.74771 | 2.27184 | 0.1916853 | 2.4012056 | 13 | 1 | 30 days | 0.23 | | MPC | 2006 $UM_{39}$ |
| 2006 $UN_{39}$ | 17.4 | 0.15 | 20061012 | 336.70735 | 28.00928 | 33.87332 | 5.81230 | 0.0761083 | 2.7086738 | 17 | 1 | 30 days | 0.32 | | MPC | 2006 $UN_{39}$ |
| 2006 $UO_{39}$ | 17.3 | 0.15 | 20061012 | 36.28765 | 312.90060 | 28.89385 | 4.21823 | 0.1870493 | 2.5388548 | 20 | 1 | 51 days | 0.28 | | MPC | 2006 $UO_{39}$ |
| 2006 $UP_{39}$ | 17.9 | 0.15 | 20061012 | 359.10693 | 0.45794 | 32.33240 | 2.82998 | 0.1979828 | 2.3656782 | 36 | 1 | 54 days | 0.37 | | MPC | 2006 $UP_{39}$ |
| 2006 $UQ_{39}$ | 16.8 | 0.15 | 20061012 | 317.14580 | 214.11801 | 228.72688 | 1.06971 | 0.0574727 | 2.7012947 | 28 | 1 | 56 days | 0.28 | | MPC | 2006 $UQ_{39}$ |
| 2006 $UR_{39}$ | 17.4 | 0.15 | 20061012 | 50.64738 | 100.98404 | 223.35312 | 1.57962 | 0.1900864 | 2.5932903 | 28 | 1 | 56 days | 0.44 | | MPC | 2006 $UR_{39}$ |
| 2006 $UT_{39}$ | 17.3 | 0.15 | 20060922 | 302.03929 | 203.28774 | 256.94984 | 1.41856 | 0.1160238 | 2.6492062 | 21 | 1 | 60 days | 0.23 | M-v 4 | MPC | 2006 $UT_{39}$ |
| 2006 $UV_{39}$ | 16.9 | 0.15 | 20061012 | 19.87298 | 334.31808 | 37.63071 | 10.31957 | 0.1022816 | 3.1655330 | 19 | 1 | 30 days | 0.28 | | MPC | 2006 $UV_{39}$ |
| 2006 $UX_{39}$ | 18.1 | 0.15 | 20061012 | 28.49901 | 324.25770 | 25.83555 | 1.93723 | 0.2059048 | 2.4696683 | 13 | 1 | 30 days | 0.16 | | MPC | 2006 $UX_{39}$ |
| 2006 $UY_{39}$ | 16.8 | 0.15 | 20061012 | 348.03291 | 188.27641 | 222.58548 | 8.81475 | 0.0943966 | 3.0537557 | 25 | 1 | 54 days | 0.25 | | MPC | 2006 $UY_{39}$ |
| 2006 $UZ_{39}$ | 16.7 | 0.15 | 20061012 | 322.22149 | 223.50753 | 219.35046 | 7.35560 | 0.1127356 | 3.0151708 | 25 | 1 | 55 days | 0.34 | | MPC | 2006 $UZ_{39}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UC_{40}$ | 16.4 | 0.15 | 20060922 | 60.45075 | 74.98436 | 232.28839 | 2.17501 | 0.2213896 | 2.9895082 | 24 | 1 | 61 days | 0.29 | M-v 4 | MPC | 2006 $UC_{40}$ |
| 2006 $UD_{40}$ | 18.7 | 0.15 | 20061012 | 5.73085 | 354.02979 | 31.68955 | 6.93294 | 0.1332106 | 2.4072233 | 13 | 1 | 30 days | 0.27 | | MPC | 2006 $UD_{40}$ |
| 2006 $UH_{40}$ | 18.8 | 0.15 | 20061012 | 322.54397 | 54.56083 | 33.98387 | 7.55671 | 0.2159756 | 2.3089342 | 13 | 1 | 30 days | 0.36 | | MPC | 2006 $UH_{40}$ |
| 2006 $UJ_{40}$ | 17.8 | 0.15 | 20061012 | 275.72825 | 110.32975 | 21.49057 | 2.98578 | 0.1129199 | 2.2740057 | 20 | 1 | 49 days | 0.32 | | MPC | 2006 $UJ_{40}$ |
| 2006 $UL_{40}$ | 17.9 | 0.15 | 20061012 | 355.84888 | 357.65033 | 40.27660 | 4.77437 | 0.1724484 | 2.8104619 | 18 | 1 | 49 days | 0.34 | | MPC | 2006 $UL_{40}$ |
| 2006 $UN_{40}$ | 16.8 | 0.15 | 20061012 | 5.23115 | 348.05496 | 39.29809 | 8.97134 | 0.1062065 | 3.1485230 | 34 | 1 | 49 days | 0.41 | | MPC | 2006 $UN_{40}$ |
| 2006 $UO_{40}$ | 17.6 | 0.15 | 20061101 | 346.67799 | 14.15752 | 49.57383 | 22.94584 | 0.1003609 | 1.9160707 | 43 | 1 | 37 days | 0.60 | | MPC | 2006 $UO_{40}$ |
| 2006 $US_{40}$ | 17.6 | 0.15 | 20061101 | 25.32628 | 147.56369 | 226.99046 | 3.56583 | 0.0898056 | 2.7544732 | 18 | 1 | 36 days | 0.27 | | MPC | 2006 $US_{40}$ |
| 2006 $UC_{41}$ | 17.6 | 0.15 | 20061012 | 342.66144 | 37.36457 | 24.78500 | 1.28167 | 0.1164943 | 2.8727803 | 13 | 1 | 27 days | 0.19 | | MPC | 2006 $UC_{41}$ |
| 2006 $UD_{41}$ | 16.8 | 0.15 | 20061012 | 294.64798 | 252.96330 | 232.79691 | 2.89218 | 0.1794646 | 2.6522534 | 19 | 1 | 26 days | 0.37 | | MPC | 2006 $UD_{41}$ |
| 2006 $UE_{41}$ | 17.3 | 0.15 | 20061012 | 47.58321 | 295.12604 | 37.14906 | 4.96441 | 0.2029971 | 2.8058650 | 16 | 1 | 28 days | 0.23 | | MPC | 2006 $UE_{41}$ |
| 2006 $UG_{41}$ | 16.7 | 0.15 | 20061101 | 339.80310 | 32.42290 | 40.18264 | 2.34988 | 0.1407654 | 3.0933006 | 27 | 1 | 39 days | 0.23 | | MPC | 2006 $UG_{41}$ |
| 2006 $UH_{41}$ | 18.3 | 0.15 | 20061012 | 59.98686 | 279.75328 | 36.29763 | 3.43686 | 0.2050774 | 2.3951378 | 9 | 1 | 16 days | 0.90 | | MPC | 2006 $UH_{41}$ |
| 2006 $UJ_{41}$ | 17.8 | 0.15 | 20061101 | 8.88851 | 170.27061 | 221.33996 | 11.45216 | 0.1815400 | 2.5313885 | 38 | 1 | 32 days | 0.35 | | MPC | 2006 $UJ_{41}$ |
| 2006 $UK_{41}$ | 17.2 | 0.15 | 20061012 | 47.72215 | 102.94480 | 220.58049 | 11.57509 | 0.2550978 | 2.3484053 | 26 | 1 | 42 days | 0.25 | | MPC | 2006 $UK_{41}$ |
| 2006 $UN_{41}$ | 18.8 | 0.15 | 20061012 | 6.96231 | 168.62360 | 217.74568 | 1.98994 | 0.1819861 | 2.3445382 | 16 | 1 | 26 days | 0.28 | | MPC | 2006 $UN_{41}$ |
| 2006 $UP_{41}$ | 18.5 | 0.15 | 20061012 | 14.52591 | 160.28814 | 219.60152 | 5.89289 | 0.1121874 | 2.3341454 | 17 | 1 | 35 days | 0.27 | | MPC | 2006 $UP_{41}$ |
| 2006 $UQ_{41}$ | 16.9 | 0.15 | 20061101 | 79.00735 | 94.01582 | 226.07869 | 1.63098 | 0.0650618 | 2.7506161 | 36 | 1 | 36 days | 0.38 | | MPC | 2006 $UQ_{41}$ |
| 2006 $US_{41}$ | 17.1 | 0.15 | 20061101 | 16.27063 | 159.89516 | 226.48750 | 1.92724 | 0.1167625 | 3.1391370 | 17 | 1 | 36 days | 0.25 | | MPC | 2006 $US_{41}$ |
| 2006 $UU_{41}$ | 17.1 | 0.15 | 20061101 | 72.62939 | 126.74248 | 185.74983 | 0.36539 | 0.1882420 | 2.7219228 | 21 | 1 | 36 days | 0.23 | | MPC | 2006 $UU_{41}$ |
| 2006 $UW_{41}$ | 16.8 | 0.15 | 20061101 | 171.01397 | 184.46549 | 50.53873 | 6.68178 | 0.0718308 | 2.5892952 | 17 | 1 | 36 days | 0.28 | | MPC | 2006 $UW_{41}$ |
| 2006 $UZ_{41}$ | 17.2 | 0.15 | 20061012 | 52.76640 | 307.76396 | 39.49998 | 3.77260 | 0.0125390 | 2.3599805 | 17 | 1 | 27 days | 0.50 | | MPC | 2006 $UZ_{41}$ |
| 2006 $UA_{42}$ | 17.1 | 0.15 | 20061101 | 32.55678 | 176.76519 | 191.57430 | 1.09012 | 0.0992014 | 2.9906009 | 23 | 1 | 36 days | 0.27 | | MPC | 2006 $UA_{42}$ |
| 2006 $UB_{42}$ | 18.6 | 0.15 | 20061101 | 21.06229 | 155.00555 | 218.72993 | 3.23076 | 0.2093089 | 2.5389009 | 23 | 1 | 43 days | 0.48 | | MPC | 2006 $UB_{42}$ |
| 2006 $UC_{42}$ | 18.3 | 0.15 | 20061012 | 352.98578 | 190.16476 | 220.06497 | 12.89454 | 0.2440174 | 2.6248765 | 21 | 1 | 48 days | 0.26 | | MPC | 2006 $UC_{42}$ |
| 2006 $UE_{42}$ | 18.9 | 0.15 | 20061012 | 345.41081 | 9.16054 | 50.50234 | 1.92530 | 0.1714070 | 2.4342609 | 21 | 1 | 26 days | 0.18 | | MPC | 2006 $UE_{42}$ |
| 2006 $UH_{42}$ | 16.3 | 0.15 | 20061101 | 109.96381 | 222.53182 | 64.06962 | 2.68087 | 0.1008816 | 2.5608988 | 26 | 1 | 32 days | 0.49 | | MPC | 2006 $UH_{42}$ |
| 2006 $UL_{42}$ | 17.4 | 0.15 | 20061012 | 317.35616 | 243.62829 | 218.49048 | 8.75099 | 0.1783518 | 3.0981392 | 13 | 1 | 16 days | 0.23 | | MPC | 2006 $UL_{42}$ |
| 2006 $UM_{42}$ | 17.0 | 0.15 | 20061101 | 303.35218 | 69.57178 | 48.39170 | 9.69217 | 0.1363172 | 2.6956317 | 20 | 1 | 32 days | 0.33 | | MPC | 2006 $UM_{42}$ |
| 2006 $UP_{42}$ | 16.8 | 0.15 | 20061101 | 11.16082 | 341.72611 | 50.96601 | 6.74874 | 0.1287665 | 2.8039375 | 17 | 1 | 33 days | 0.44 | | MPC | 2006 $UP_{42}$ |
| 2006 $UQ_{42}$ | 17.4 | 0.15 | 20061012 | 339.83879 | 24.98705 | 47.94541 | 17.73979 | 0.2089193 | 3.1111144 | 16 | 1 | 20 days | 0.20 | | MPC | 2006 $UQ_{42}$ |
| 2006 $UR_{42}$ | 17.1 | 0.15 | 20061012 | 356.70219 | 250.43407 | 156.93160 | 1.94044 | 0.0816458 | 2.9768659 | 12 | 1 | 16 days | 0.22 | | MPC | 2006 $UR_{42}$ |
| 2006 $UT_{42}$ | 17.0 | 0.15 | 20061012 | 208.90944 | 145.75876 | 49.40161 | 8.31365 | 0.0628015 | 2.4650295 | 21 | 1 | 42 days | 0.25 | | MPC | 2006 $UT_{42}$ |
| 2006 $UU_{42}$ | 17.6 | 0.15 | 20061012 | 57.43159 | 119.25990 | 211.12125 | 3.25632 | 0.1229656 | 2.6619495 | 13 | 1 | 16 days | 0.21 | | MPC | 2006 $UU_{42}$ |
| 2006 $UV_{42}$ | 16.8 | 0.15 | 20061012 | 105.82951 | 79.14718 | 214.12438 | 8.45749 | 0.0331232 | 2.9756962 | 13 | 1 | 12 days | 0.32 | | MPC | 2006 $UV_{42}$ |
| 2006 $UX_{42}$ | 17.0 | 0.15 | 20061012 | 281.64508 | 322.77478 | 173.54802 | 2.15350 | 0.1354671 | 2.9326418 | 9 | 1 | 16 days | 0.66 | | MPC | 2006 $UX_{42}$ |
| 2006 $UZ_{42}$ | 18.5 | 0.15 | 20061012 | 351.38583 | 200.63472 | 211.75628 | 5.28697 | 0.2896224 | 2.6339430 | 28 | 1 | 48 days | 0.24 | | MPC | 2006 $UZ_{42}$ |
| 2006 $UB_{43}$ | 18.9 | 0.15 | 20061012 | 44.78420 | 123.85257 | 204.79897 | 2.40705 | 0.2413905 | 2.2900276 | 9 | 1 | 16 days | 0.20 | | MPC | 2006 $UB_{43}$ |
| 2006 $UC_{43}$ | 19.0 | 0.15 | 20061012 | 26.69303 | 313.77318 | 45.41612 | 4.08027 | 0.1707097 | 2.2341329 | 20 | 1 | 28 days | 0.42 | | MPC | 2006 $UC_{43}$ |
| 2006 $UF_{43}$ | 16.7 | 0.15 | 20061012 | 75.93110 | 262.57641 | 48.30087 | 12.64328 | 0.1290719 | 2.6448071 | 39 | 1 | 51 days | 0.29 | | MPC | 2006 $UF_{43}$ |
| 2006 $UG_{43}$ | 16.2 | 0.15 | 20060922 | 357.16233 | 347.61678 | 47.89691 | 9.20906 | 0.2232909 | 2.6944842 | 64 | 1 | 66 days | 0.41 | M-v 4 | MPC | 2006 $UG_{43}$ |
| 2006 $UK_{43}$ | 16.7 | 0.15 | 20061012 | 35.66272 | 307.71002 | 44.54933 | 17.61340 | 0.1557528 | 3.1649146 | 13 | 1 | 27 days | 0.20 | | MPC | 2006 $UK_{43}$ |
| 2006 $UL_{43}$ | 18.1 | 0.15 | 20061012 | 46.32593 | 289.79076 | 44.35328 | 9.37201 | 0.1815514 | 2.5729151 | 22 | 1 | 44 days | 0.32 | | MPC | 2006 $UL_{43}$ |
| 2006 $UM_{43}$ | 16.3 | 0.15 | 20061012 | 5.01440 | 347.23922 | 47.52076 | 9.94393 | 0.0767844 | 3.1002221 | 20 | 1 | 27 days | 0.20 | | MPC | 2006 $UM_{43}$ |
| 2006 $UN_{43}$ | 17.1 | 0.15 | 20061012 | 3.49535 | 348.21564 | 46.07806 | 5.71653 | 0.1312045 | 2.7993952 | 32 | 1 | 36 days | 0.39 | | MPC | 2006 $UN_{43}$ |
| 2006 $UO_{43}$ | 19.3 | 0.15 | 20061101 | 23.79996 | 317.42227 | 49.73898 | 3.71136 | 0.2027993 | 2.2897913 | 21 | 1 | 36 days | 0.22 | | MPC | 2006 $UO_{43}$ |
| 2006 $UP_{43}$ | 16.6 | 0.15 | 20061101 | 11.04408 | 344.91312 | 46.26401 | 6.97548 | 0.0740057 | 2.4780150 | 52 | 1 | 42 days | 0.47 | | MPC | 2006 $UP_{43}$ |
| 2006 $UQ_{43}$ | 18.2 | 0.15 | 20061012 | 333.80935 | 36.21335 | 42.36917 | 14.23353 | 0.2368204 | 2.5758902 | 25 | 1 | 44 days | 0.53 | | MPC | 2006 $UQ_{43}$ |
| 2006 $UU_{43}$ | 17.6 | 0.15 | 20061012 | 209.25565 | 149.64801 | 43.33134 | 7.61505 | 0.0517429 | 2.3201379 | 21 | 1 | 48 days | 0.33 | | MPC | 2006 $UU_{43}$ |
| 2006 $UV_{43}$ | 18.5 | 0.15 | 20061012 | 24.49298 | 312.12691 | 41.49168 | 5.38549 | 0.2487077 | 2.2416349 | 28 | 1 | 36 days | 0.47 | | MPC | 2006 $UV_{43}$ |
| 2006 $UW_{43}$ | 16.7 | 0.15 | 20061012 | 130.64844 | 218.69128 | 47.75638 | 4.54258 | 0.0577908 | 2.7890429 | 14 | 1 | 27 days | 0.45 | | MPC | 2006 $UW_{43}$ |
| 2006 $UX_{43}$ | 16.5 | 0.15 | 20061012 | 237.15631 | 122.63922 | 52.03169 | 3.37428 | 0.1319975 | 2.8578025 | 10 | 1 | 12 days | 0.83 | | MPC | 2006 $UX_{43}$ |
| 2006 $UZ_{43}$ | 18.0 | 0.15 | 20061012 | 8.71694 | 338.21089 | 47.31659 | 3.57988 | 0.1665198 | 2.9300014 | 13 | 1 | 26 days | 0.23 | | MPC | 2006 $UZ_{43}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UA_{44}$ | 17.7 | 0.15 | 20061101 | 10.43210 | 201.64879 | 189.36117 | 1.34593 | 0.0699012 | 2.5183334 | 17 | 1 | 42 days | 0.26 | | MPC | 2006 $UA_{44}$ |
| 2006 $UC_{44}$ | 20.4 | 0.15 | 20061012 | 24.56257 | 280.70407 | 57.14428 | 1.38752 | 0.3650190 | 2.1741385 | 9 | 1 | 13 days | 0.48 | | MPC | 2006 $UC_{44}$ |
| 2006 $UD_{44}$ | 18.0 | 0.15 | 20061101 | 322.12380 | 65.16462 | 48.96768 | 4.61461 | 0.3378518 | 2.7045853 | 17 | 1 | 42 days | 0.26 | | MPC | 2006 $UD_{44}$ |
| 2006 $UF_{44}$ | 17.6 | 0.15 | 20061012 | 59.35433 | 94.93123 | 218.20491 | 7.17147 | 0.2394190 | 2.7459742 | 13 | 1 | 16 days | 0.24 | | MPC | 2006 $UF_{44}$ |
| 2006 $UG_{44}$ | 17.6 | 0.15 | 20061101 | 25.31166 | 166.38154 | 210.10874 | 2.87269 | 0.0429719 | 2.6136734 | 20 | 1 | 38 days | 0.26 | | MPC | 2006 $UG_{44}$ |
| 2006 $UJ_{44}$ | 17.4 | 0.15 | 20061012 | 155.85002 | 20.84477 | 221.95012 | 6.06707 | 0.1287888 | 2.3968770 | 10 | 1 | 12 days | 0.39 | | MPC | 2006 $UJ_{44}$ |
| 2006 $UK_{44}$ | 18.2 | 0.15 | 20061012 | 78.21465 | 96.43536 | 216.45305 | 5.50031 | 0.0959558 | 2.3814120 | 10 | 1 | 12 days | 0.24 | | MPC | 2006 $UK_{44}$ |
| 2006 $UL_{44}$ | 16.6 | 0.15 | 20061101 | 30.48686 | 156.92191 | 220.94758 | 1.54913 | 0.0051566 | 2.7236930 | 25 | 1 | 36 days | 0.22 | | MPC | 2006 $UL_{44}$ |
| 2006 $UM_{44}$ | 18.6 | 0.15 | 20061012 | 12.37672 | 166.79658 | 210.77494 | 4.60895 | 0.2536820 | 2.6187382 | 17 | 1 | 59 days | 0.23 | | MPC | 2006 $UM_{44}$ |
| 2006 $UN_{44}$ | 17.4 | 0.15 | 20061101 | 356.64324 | 222.10025 | 189.81071 | 0.95173 | 0.0734415 | 2.6571758 | 29 | 1 | 36 days | 0.28 | | MPC | 2006 $UN_{44}$ |
| 2006 $UO_{44}$ | 17.5 | 0.15 | 20061012 | 45.22907 | 306.31093 | 45.17559 | 3.93516 | 0.0691101 | 2.5487157 | 13 | 1 | 29 days | 0.18 | | MPC | 2006 $UO_{44}$ |
| 2006 $UP_{44}$ | 16.8 | 0.15 | 20061101 | 31.46221 | 309.80536 | 61.35099 | 2.86045 | 0.0909070 | 2.9033279 | 39 | 1 | 36 days | 0.24 | | MPC | 2006 $UP_{44}$ |
| 2006 $UQ_{44}$ | 17.1 | 0.15 | 20061101 | 320.42903 | 38.12135 | 57.28796 | 4.36049 | 0.0976808 | 2.5623336 | 32 | 1 | 42 days | 0.40 | | MPC | 2006 $UQ_{44}$ |
| 2006 $UR_{44}$ | 17.0 | 0.15 | 20061012 | 44.01064 | 112.60297 | 222.54508 | 8.45567 | 0.2386614 | 2.7286913 | 32 | 1 | 47 days | 0.28 | | MPC | 2006 $UR_{44}$ |
| 2006 $UT_{44}$ | 17.1 | 0.15 | 20061101 | 36.54928 | 313.14418 | 53.12401 | 7.35142 | 0.0773376 | 2.7190510 | 24 | 1 | 36 days | 0.27 | | MPC | 2006 $UT_{44}$ |
| 2006 $UU_{44}$ | 16.7 | 0.15 | 20061101 | 10.76328 | 331.56418 | 62.84313 | 1.97509 | 0.1602003 | 3.0924530 | 23 | 1 | 36 days | 0.51 | | MPC | 2006 $UU_{44}$ |
| 2006 $UV_{44}$ | 15.7 | 0.15 | 20061101 | 187.56026 | 173.66717 | 50.35516 | 27.49464 | 0.0642080 | 3.1702126 | 20 | 1 | 39 days | 0.30 | | MPC | 2006 $UV_{44}$ |
| 2006 $UW_{44}$ | 18.0 | 0.15 | 20061012 | 310.61110 | 70.55502 | 45.42101 | 12.53730 | 0.2343716 | 2.5520693 | 19 | 1 | 49 days | 0.18 | | MPC | 2006 $UW_{44}$ |
| 2006 $UX_{44}$ | 16.8 | 0.15 | 20061012 | 58.76534 | 285.80614 | 46.81370 | 24.66469 | 0.1187033 | 2.6313885 | 23 | 1 | 47 days | 0.27 | | MPC | 2006 $UX_{44}$ |
| 2006 $UA_{45}$ | 16.8 | 0.15 | 20061101 | 354.60007 | 358.50043 | 57.98993 | 2.83720 | 0.0798531 | 2.8883374 | 28 | 1 | 46 days | 0.26 | D | MPC | 2006 $UA_{45}$ |
| 2006 $UD_{45}$ | 16.0 | 0.15 | 20061012 | 333.31767 | 218.45636 | 221.08520 | 9.45646 | 0.1106366 | 3.0931364 | 29 | 1 | 59 days | 0.27 | | MPC | 2006 $UD_{45}$ |
| 2006 $UF_{45}$ | 16.8 | 0.15 | 20061101 | 232.25715 | 121.59681 | 61.27397 | 4.05802 | 0.0541332 | 2.6179851 | 14 | 1 | 42 days | 0.27 | | MPC | 2006 $UF_{45}$ |
| 2006 $UG_{45}$ | 16.6 | 0.15 | 20061012 | 238.05954 | 318.20276 | 220.44181 | 14.43987 | 0.0845162 | 2.8649294 | 12 | 1 | 20 days | 0.15 | | MPC | 2006 $UG_{45}$ |
| 2006 $UH_{45}$ | 17.3 | 0.15 | 20061012 | 122.07736 | 164.25074 | 106.46908 | 2.72428 | 0.1607645 | 2.3864832 | 9 | 1 | 16 days | 0.23 | | MPC | 2006 $UH_{45}$ |
| 2006 $UJ_{45}$ | 18.3 | 0.15 | 20061012 | 354.49012 | 346.60626 | 64.02386 | 5.17127 | 0.2496588 | 2.6201622 | 35 | 1 | 58 days | 0.49 | | MPC | 2006 $UJ_{45}$ |
| 2006 $UL_{45}$ | 16.7 | 0.15 | 20061012 | 5.20108 | 323.66106 | 70.14588 | 4.19610 | 0.2308177 | 2.6910841 | 53 | 1 | 58 days | 0.41 | | MPC | 2006 $UL_{45}$ |
| 2006 $UN_{45}$ | 15.8 | 0.15 | 20061101 | 237.65887 | 118.40382 | 62.11513 | 10.48558 | 0.0536982 | 3.1061433 | 28 | 1 | 42 days | 0.23 | | MPC | 2006 $UN_{45}$ |
| 2006 $UO_{45}$ | 17.7 | 0.15 | 20061101 | 357.93093 | 342.69713 | 70.87436 | 6.22635 | 0.1239172 | 2.7252186 | 16 | 1 | 42 days | 0.19 | | MPC | 2006 $UO_{45}$ |
| 2006 $UP_{45}$ | 17.8 | 0.15 | 20061012 | 343.05094 | 311.55348 | 114.97879 | 2.32433 | 0.1787629 | 2.4186516 | 31 | 1 | 58 days | 0.55 | | MPC | 2006 $UP_{45}$ |
| 2006 $UQ_{45}$ | 17.5 | 0.15 | 20061101 | 358.68457 | 0.40639 | 53.08852 | 18.34542 | 0.2031825 | 3.1251119 | 19 | 1 | 35 days | 0.20 | | MPC | 2006 $UQ_{45}$ |
| 2006 $UR_{45}$ | 17.3 | 0.15 | 20061101 | 346.45519 | 232.80808 | 195.09912 | 3.29693 | 0.0846340 | 2.7685456 | 23 | 1 | 42 days | 0.25 | | MPC | 2006 $UR_{45}$ |
| 2006 $UU_{45}$ | 16.6 | 0.15 | 20061012 | 55.88527 | 126.49579 | 214.99074 | 9.13865 | 0.1130301 | 2.9987574 | 20 | 1 | 56 days | 0.30 | | MPC | 2006 $UU_{45}$ |
| 2006 $UX_{45}$ | 17.8 | 0.15 | 20061012 | 348.49597 | 356.11332 | 60.85782 | 5.84703 | 0.1040635 | 2.2334249 | 34 | 1 | 58 days | 0.48 | | MPC | 2006 $UX_{45}$ |
| 2006 $UZ_{45}$ | 18.1 | 0.15 | 20061012 | 24.34967 | 303.25857 | 63.08469 | 4.59314 | 0.1999214 | 2.6195902 | 17 | 1 | 29 days | 0.32 | | MPC | 2006 $UZ_{45}$ |
| 2006 $UB_{46}$ | 17.6 | 0.15 | 20061101 | 341.28760 | 10.56636 | 60.27729 | 8.79857 | 0.0727142 | 2.3389403 | 16 | 1 | 42 days | 0.29 | | MPC | 2006 $UB_{46}$ |
| 2006 $UD_{46}$ | 17.6 | 0.15 | 20061012 | 2.45141 | 320.33391 | 76.00547 | 3.39262 | 0.2193931 | 2.4344693 | 48 | 1 | 58 days | 0.39 | | MPC | 2006 $UD_{46}$ |
| 2006 $UE_{46}$ | 17.6 | 0.15 | 20061101 | 21.55762 | 319.40604 | 63.00475 | 7.61296 | 0.1126234 | 2.4043421 | 23 | 1 | 42 days | 0.48 | | MPC | 2006 $UE_{46}$ |
| 2006 $UF_{46}$ | 15.6 | 0.15 | 20061012 | 217.71576 | 329.24711 | 222.35252 | 15.69546 | 0.0307348 | 3.1422464 | 17 | 1 | 45 days | 0.22 | | MPC | 2006 $UF_{46}$ |
| 2006 $UG_{46}$ | 16.5 | 0.15 | 20061012 | 79.43483 | 94.54882 | 222.27704 | 21.28669 | 0.0918678 | 3.1023320 | 14 | 1 | 50 days | 0.24 | | MPC | 2006 $UG_{46}$ |
| 2006 $UJ_{46}$ | 18.6 | 0.15 | 20061012 | 341.54859 | 342.12567 | 81.37825 | 2.13323 | 0.1285004 | 2.2523913 | 17 | 1 | 43 days | 0.26 | | MPC | 2006 $UJ_{46}$ |
| 2006 $UK_{46}$ | 14.5 | 0.15 | 20061012 | 106.39841 | 103.43910 | 194.07681 | 3.03775 | 0.0518969 | 3.9447742 | 18 | 1 | 32 days | 0.30 | | MPC | 2006 $UK_{46}$ |
| 2006 $UL_{46}$ | 17.5 | 0.15 | 20061012 | 34.71471 | 242.93112 | 111.89061 | 1.47891 | 0.1661159 | 2.6208684 | 17 | 1 | 27 days | 0.58 | | MPC | 2006 $UL_{46}$ |
| 2006 $UM_{46}$ | 16.6 | 0.15 | 20061012 | 181.82071 | 170.58565 | 53.96354 | 14.11244 | 0.0978086 | 2.6930353 | 24 | 1 | 52 days | 0.26 | | MPC | 2006 $UM_{46}$ |
| 2006 $UN_{46}$ | 17.3 | 0.15 | 20061012 | 285.66392 | 60.99666 | 63.89064 | 7.49181 | 0.0549081 | 2.6410151 | 13 | 1 | 28 days | 0.18 | | MPC | 2006 $UN_{46}$ |
| 2006 $UQ_{46}$ | 16.7 | 0.15 | 20061012 | 78.30803 | 236.60341 | 84.48937 | 3.20408 | 0.0587447 | 2.8692695 | 13 | 1 | 28 days | 0.26 | | MPC | 2006 $UQ_{46}$ |
| 2006 $UR_{46}$ | 17.1 | 0.15 | 20061101 | 185.37069 | 167.98929 | 56.82099 | 9.07123 | 0.1186254 | 2.2233576 | 31 | 1 | 36 days | 0.31 | | MPC | 2006 $UR_{46}$ |
| 2006 $UV_{46}$ | 17.4 | 0.15 | 20061101 | 344.67607 | 10.66416 | 57.85257 | 5.82607 | 0.1562706 | 2.7697571 | 18 | 1 | 36 days | 0.24 | | MPC | 2006 $UV_{46}$ |
| 2006 $UW_{46}$ | 18.2 | 0.15 | 20061012 | 232.60056 | 17.56324 | 157.54293 | 1.36359 | 0.0708977 | 2.1912315 | 13 | 1 | 28 days | 0.30 | | MPC | 2006 $UW_{46}$ |
| 2006 $UX_{46}$ | 16.7 | 0.15 | 20061012 | 131.86661 | 212.44258 | 48.54350 | 33.80738 | 0.1492655 | 2.5599300 | 12 | 1 | 16 days | 0.19 | | MPC | 2006 $UX_{46}$ |
| 2006 $UZ_{46}$ | 16.1 | 0.15 | 20061101 | 287.93092 | 7.16062 | 127.56313 | 2.07962 | 0.1166136 | 3.0984212 | 20 | 1 | 38 days | 0.51 | | MPC | 2006 $UZ_{46}$ |
| 2006 $UC_{47}$ | 17.5 | 0.15 | 20061101 | 16.32095 | 222.02650 | 167.79404 | 2.13860 | 0.0764092 | 2.8585616 | 17 | 1 | 38 days | 0.24 | | MPC | 2006 $UC_{47}$ |
| 2006 $UD_{47}$ | 16.9 | 0.15 | 20061101 | 287.08603 | 83.69764 | 51.70316 | 15.11664 | 0.1213553 | 2.7399275 | 33 | 1 | 36 days | 0.32 | | MPC | 2006 $UD_{47}$ |
| 2006 $UF_{47}$ | 17.5 | 0.15 | 20061101 | 13.38445 | 243.39902 | 145.12307 | 1.82213 | 0.1971007 | 3.1137712 | 17 | 1 | 38 days | 0.36 | | MPC | 2006 $UF_{47}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UH_{47}$ | 17.8 | 0.15 | 20061101 | 344.40443 | 210.78216 | 201.76712 | 14.18593 | 0.2842613 | 2.6150883 | 25 | 1 | 31 days | 0.26 | | MPC | 2006 $UH_{47}$ |
| 2006 $UJ_{47}$ | 17.2 | 0.15 | 20060922 | 279.73123 | 93.66622 | 5.58353 | 6.80957 | 0.0755399 | 2.4082202 | 23 | 1 | 46 days | 0.34 | | MPC | 2006 $UJ_{47}$ |
| 2006 $UM_{47}$ | 19.8 | 0.15 | 20061012 | 0.94807 | 344.81224 | 38.16316 | 8.61668 | 0.3256756 | 2.5470193 | 33 | 1 | 49 days | 0.39 | | MPC | 2006 $UM_{47}$ |
| 2006 $UQ_{47}$ | 16.6 | 0.15 | 20061012 | 110.40381 | 262.19817 | 334.47966 | 15.52142 | 0.1742059 | 2.7361444 | 9 | 1 | 3 days | 0.24 | | MPC | 2006 $UQ_{47}$ |
| 2006 $UR_{47}$ | 16.1 | 0.15 | 20061012 | 66.94254 | 302.81458 | 336.63156 | 16.45681 | 0.1596329 | 3.0691908 | 9 | 1 | 5 days | 0.35 | | MPC | 2006 $UR_{47}$ |
| 2006 $US_{47}$ | 16.3 | 0.15 | 20060922 | 359.05533 | 82.38054 | 278.47284 | 7.45787 | 0.1588696 | 3.0036380 | 15 | 1 | 66 days | 0.26 | M-v 3 | MPC | 2006 $US_{47}$ |
| 2006 $UT_{47}$ | 16.2 | 0.15 | 20061012 | 303.61473 | 181.74215 | 256.13974 | 8.37507 | 0.1704395 | 3.2070082 | 12 | 1 | 6 days | 0.68 | | MPC | 2006 $UT_{47}$ |
| 2006 $UU_{47}$ | 15.6 | 0.15 | 20061012 | 104.18077 | 335.22488 | 265.97804 | 8.59059 | 0.1694327 | 3.1322134 | 12 | 1 | 6 days | 0.90 | | MPC | 2006 $UU_{47}$ |
| 2006 $UV_{47}$ | 17.8 | 0.15 | 20061012 | 59.54024 | 357.37407 | 282.53408 | 6.15352 | 0.2401368 | 2.3389928 | 9 | 1 | 4 days | 0.45 | | MPC | 2006 $UV_{47}$ |
| 2006 $UW_{47}$ | 15.8 | 0.15 | 20060922 | 36.51745 | 81.11136 | 236.20032 | 9.55212 | 0.0754377 | 3.1484392 | 18 | 1 | 45 days | 0.37 | | MPC | 2006 $UW_{47}$ |
| 2006 $UX_{47}$ | 16.4 | 0.15 | 20061012 | 59.53074 | 342.38204 | 303.92518 | 8.53554 | 0.1708088 | 3.1637005 | 9 | 1 | 4 days | 0.40 | | MPC | 2006 $UX_{47}$ |
| 2006 $UB_{48}$ | 17.0 | 0.15 | 20061012 | 50.59891 | 13.51900 | 275.68725 | 5.70022 | 0.2394569 | 2.6589922 | 9 | 1 | 4 days | 0.38 | | MPC | 2006 $UB_{48}$ |
| 2006 $UC_{48}$ | 16.6 | 0.15 | 20061012 | 268.86201 | 250.98598 | 225.50160 | 9.85083 | 0.2014657 | 2.8706435 | 9 | 1 | 4 days | 0.27 | | MPC | 2006 $UC_{48}$ |
| 2006 $UD_{48}$ | 19.3 | 0.15 | 20061012 | 2.76852 | 129.65551 | 234.17487 | 6.69148 | 0.2557292 | 2.3066089 | 18 | 1 | 6 days | 0.19 | | MPC | 2006 $UD_{48}$ |
| 2006 $UE_{48}$ | 16.8 | 0.15 | 20061012 | 86.45271 | 332.74484 | 284.52415 | 6.75131 | 0.1818544 | 2.7089464 | 12 | 1 | 4 days | 0.36 | | MPC | 2006 $UE_{48}$ |
| 2006 $UF_{48}$ | 16.5 | 0.15 | 20061012 | 104.34032 | 326.51223 | 275.80065 | 9.16204 | 0.1718759 | 2.9476854 | 9 | 1 | 6 days | 0.76 | | MPC | 2006 $UF_{48}$ |
| 2006 $UG_{48}$ | 15.8 | 0.15 | 20061012 | 115.01073 | 251.13948 | 347.54433 | 28.07621 | 0.1275795 | 3.1421572 | 9 | 1 | 6 days | 0.64 | | MPC | 2006 $UG_{48}$ |
| 2006 $UH_{48}$ | 17.6 | 0.15 | 20061012 | 319.10801 | 137.98481 | 283.09327 | 7.81270 | 0.1565913 | 2.6822604 | 12 | 1 | 6 days | 0.96 | | MPC | 2006 $UH_{48}$ |
| 2006 $UJ_{48}$ | 17.3 | 0.15 | 20061012 | 333.63263 | 76.13885 | 331.35320 | 10.99797 | 0.2049600 | 2.6725130 | 19 | 1 | 11 days | 0.32 | | MPC | 2006 $UJ_{48}$ |
| 2006 $UM_{48}$ | 17.1 | 0.15 | 20061012 | 319.59170 | 133.77116 | 290.67572 | 8.30177 | 0.2007040 | 3.2347153 | 9 | 1 | 4 days | 0.33 | | MPC | 2006 $UM_{48}$ |
| 2006 $UN_{48}$ | 16.0 | 0.15 | 20061012 | 329.74222 | 190.93138 | 220.95310 | 15.55339 | 0.2315040 | 3.9108424 | 9 | 1 | 4 days | 0.95 | | MPC | 2006 $UN_{48}$ |
| 2006 $UO_{48}$ | 16.2 | 0.15 | 20061012 | 91.15628 | 304.53330 | 313.49982 | 10.64130 | 0.1460244 | 3.0848866 | 9 | 1 | 6 days | 0.62 | | MPC | 2006 $UO_{48}$ |
| 2006 $UQ_{48}$ | 16.6 | 0.15 | 20061012 | 64.75828 | 53.37280 | 225.44039 | 10.03310 | 0.1776439 | 3.1150014 | 12 | 1 | 4 days | 0.44 | | MPC | 2006 $UQ_{48}$ |
| 2006 $UR_{48}$ | 18.0 | 0.15 | 20061012 | 50.59284 | 34.26181 | 248.95158 | 6.47851 | 0.2941256 | 2.6379984 | 9 | 1 | 6 days | 0.27 | | MPC | 2006 $UR_{48}$ |
| 2006 $US_{48}$ | 16.2 | 0.15 | 20061012 | 102.99979 | 279.82413 | 324.14200 | 9.79451 | 0.1614283 | 2.9902629 | 12 | 1 | 4 days | 0.36 | | MPC | 2006 $US_{48}$ |
| 2006 $UT_{48}$ | 17.7 | 0.15 | 20061012 | 45.39967 | 309.12083 | 350.06355 | 16.27399 | 0.2315570 | 2.5119093 | 12 | 1 | 4 days | 0.80 | | MPC | 2006 $UT_{48}$ |
| 2006 $UU_{48}$ | 16.3 | 0.15 | 20061012 | 78.28727 | 54.71574 | 211.21824 | 14.22125 | 0.1660912 | 3.1729719 | 12 | 1 | 6 days | 0.75 | | MPC | 2006 $UU_{48}$ |
| 2006 $UV_{48}$ | 16.0 | 0.15 | 20061012 | 63.21685 | 53.33066 | 228.18326 | 8.84178 | 0.1739225 | 3.1357368 | 9 | 1 | 4 days | 0.22 | | MPC | 2006 $UV_{48}$ |
| 2006 $UW_{48}$ | 16.0 | 0.15 | 20061012 | 77.34214 | 303.16585 | 325.55543 | 9.23151 | 0.1636248 | 2.9835387 | 12 | 1 | 6 days | 0.28 | | MPC | 2006 $UW_{48}$ |
| 2006 $UX_{48}$ | 17.2 | 0.15 | 20061012 | 71.49839 | 0.01564 | 269.66686 | 5.15102 | 0.2063425 | 2.6151305 | 9 | 1 | 6 days | 0.92 | | MPC | 2006 $UX_{48}$ |
| 2006 $UY_{48}$ | 17.3 | 0.15 | 20061012 | 87.92412 | 315.72350 | 310.32983 | 5.72838 | 0.1031913 | 2.3438393 | 15 | 1 | 11 days | 0.25 | | MPC | 2006 $UY_{48}$ |
| 2006 $UZ_{48}$ | 17.7 | 0.15 | 20061012 | 104.27248 | 311.21815 | 295.81444 | 5.30052 | 0.1370961 | 2.2836933 | 15 | 1 | 11 days | 0.36 | | MPC | 2006 $UZ_{48}$ |
| 2006 $UA_{49}$ | 16.4 | 0.15 | 20061012 | 50.46665 | 335.81185 | 333.63247 | 9.08688 | 0.0468714 | 2.9181324 | 21 | 1 | 11 days | 0.18 | | MPC | 2006 $UA_{49}$ |
| 2006 $UB_{49}$ | 18.1 | 0.15 | 20061012 | 39.24453 | 357.67499 | 307.00179 | 4.60125 | 0.2409841 | 2.6206004 | 18 | 1 | 6 days | 0.24 | | MPC | 2006 $UB_{49}$ |
| 2006 $UC_{49}$ | 16.4 | 0.15 | 20061012 | 258.16784 | 245.64505 | 224.36162 | 8.33544 | 0.0450784 | 3.0700339 | 12 | 1 | 10 days | 0.27 | | MPC | 2006 $UC_{49}$ |
| 2006 $UD_{49}$ | 17.1 | 0.15 | 20061012 | 314.00388 | 129.48773 | 296.52242 | 5.15118 | 0.1580809 | 2.8667367 | 15 | 1 | 6 days | 0.61 | | MPC | 2006 $UD_{49}$ |
| 2006 $UE_{49}$ | 17.1 | 0.15 | 20061012 | 96.14028 | 4.37214 | 242.26944 | 5.99439 | 0.2061030 | 2.4258376 | 9 | 1 | 4 days | 0.42 | | MPC | 2006 $UE_{49}$ |
| 2006 $UF_{49}$ | 18.2 | 0.15 | 20061101 | 350.66809 | 187.31076 | 204.32085 | 14.01055 | 0.2587803 | 2.5838690 | 22 | 1 | 35 days | 0.27 | | MPC | 2006 $UF_{49}$ |
| 2006 $UG_{49}$ | 16.8 | 0.15 | 20060922 | 331.10819 | 121.64853 | 270.81745 | 4.70667 | 0.0506602 | 2.6920801 | 19 | 1 | 24 days | 0.38 | | MPC | 2006 $UG_{49}$ |
| 2006 $UH_{49}$ | 16.9 | 0.15 | 20061012 | 281.49621 | 235.57335 | 229.91571 | 9.39880 | 0.1860907 | 2.8244399 | 9 | 1 | 4 days | 0.54 | | MPC | 2006 $UH_{49}$ |
| 2006 $UJ_{49}$ | 15.6 | 0.15 | 20061012 | 327.68473 | 79.67349 | 336.25936 | 16.23437 | 0.2283468 | 3.8117969 | 19 | 1 | 11 days | 0.58 | | MPC | 2006 $UJ_{49}$ |
| 2006 $UM_{49}$ | 18.2 | 0.15 | 20060922 | 36.81052 | 311.48863 | 359.32317 | 4.56345 | 0.2185997 | 2.1958398 | 19 | 1 | 46 days | 0.34 | | MPC | 2006 $UM_{49}$ |
| 2006 $UO_{49}$ | 18.0 | 0.15 | 20061012 | 43.18098 | 336.70297 | 322.88356 | 0.66495 | 0.3174991 | 2.5354065 | 12 | 1 | 14 days | 0.65 | | MPC | 2006 $UO_{49}$ |
| 2006 $UP_{49}$ | 18.8 | 0.15 | 20061012 | 21.02563 | 60.49379 | 280.27341 | 1.18580 | 0.2506759 | 2.3221139 | 25 | 1 | 46 days | 0.35 | | MPC | 2006 $UP_{49}$ |
| 2006 $UU_{49}$ | 18.1 | 0.15 | 20061012 | 359.31289 | 153.88911 | 232.30966 | 8.63445 | 0.2600201 | 2.7440506 | 25 | 1 | 55 days | 0.23 | | MPC | 2006 $UU_{49}$ |
| 2006 $UV_{49}$ | 17.5 | 0.15 | 20061012 | 22.84502 | 63.46020 | 292.89306 | 4.15585 | 0.1375279 | 2.8045581 | 16 | 1 | 29 days | 0.23 | | MPC | 2006 $UV_{49}$ |
| 2006 $UW_{49}$ | 16.5 | 0.15 | 20061012 | 97.47008 | 283.99443 | 358.65273 | 9.66120 | 0.0703777 | 3.0774107 | 16 | 1 | 33 days | 0.29 | | MPC | 2006 $UW_{49}$ |
| 2006 $UY_{49}$ | 17.8 | 0.15 | 20061012 | 13.31321 | 3.23945 | 4.36440 | 10.17163 | 0.1871901 | 2.6353608 | 11 | 1 | 3 days | 0.16 | | MPC | 2006 $UY_{49}$ |
| 2006 $UZ_{49}$ | 17.4 | 0.15 | 20061012 | 325.49549 | 120.62326 | 308.01083 | 4.44958 | 0.0917716 | 2.4738582 | 9 | 1 | 4 days | 0.28 | | MPC | 2006 $UZ_{49}$ |
| 2006 $UA_{50}$ | 18.1 | 0.15 | 20060922 | 344.93720 | 46.43673 | 352.87528 | 6.02816 | 0.1593523 | 2.5231205 | 10 | 1 | 24 days | 0.12 | | MPC | 2006 $UA_{50}$ |
| 2006 $UB_{50}$ | 17.6 | 0.15 | 20061012 | 286.27239 | 206.60481 | 264.77539 | 4.79348 | 0.1026323 | 2.6005762 | 16 | 1 | 33 days | 0.31 | | MPC | 2006 $UB_{50}$ |
| 2006 $UC_{50}$ | 15.4 | 0.15 | 20061012 | 163.49142 | 216.72562 | 4.79476 | 10.76612 | 0.0808021 | 3.0042653 | 20 | 1 | 12 days | 0.49 | | MPC | 2006 $UC_{50}$ |
| 2006 $UE_{50}$ | 17.2 | 0.15 | 20061012 | 94.81660 | 40.86035 | 249.50868 | 5.44615 | 0.0097259 | 2.7512922 | 13 | 1 | 15 days | 0.28 | | MPC | 2006 $UE_{50}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UG_{50}$ | 17.2 | 0.15 | 20061012 | 34.90754 | 327.68323 | 12.96850 | 15.84920 | 0.1488801 | 2.8940431 | 10 | 1 | 12 days | 0.16 | | MPC | 2006 $UG_{50}$ |
| 2006 $UH_{50}$ | 16.1 | 0.15 | 20061012 | 325.81351 | 56.58422 | 11.87062 | 12.66786 | 0.1017481 | 3.1338303 | 16 | 1 | 34 days | 0.30 | | MPC | 2006 $UH_{50}$ |
| 2006 $UK_{50}$ | 17.9 | 0.15 | 20061012 | 344.81871 | 111.25373 | 296.10772 | 3.98582 | 0.1516146 | 3.1188650 | 10 | 1 | 12 days | 0.24 | | MPC | 2006 $UK_{50}$ |
| 2006 $UL_{50}$ | 17.3 | 0.15 | 20061012 | 7.04920 | 92.07718 | 286.89366 | 3.41282 | 0.0317498 | 2.7702184 | 13 | 1 | 12 days | 0.89 | | MPC | 2006 $UL_{50}$ |
| 2006 $UO_{50}$ | 18.3 | 0.15 | 20060922 | 46.51739 | 338.64637 | 336.70454 | 4.71544 | 0.1816487 | 2.3799861 | 13 | 1 | 21 days | 0.18 | | MPC | 2006 $UO_{50}$ |
| 2006 $UP_{50}$ | 17.9 | 0.15 | 20061012 | 4.92445 | 115.75377 | 262.79690 | 3.88590 | 0.1951010 | 3.0288065 | 19 | 1 | 34 days | 0.22 | | MPC | 2006 $UP_{50}$ |
| 2006 $UQ_{50}$ | 16.9 | 0.15 | 20061012 | 348.50372 | 34.28346 | 6.90875 | 11.32281 | 0.0869219 | 3.1436423 | 16 | 1 | 34 days | 0.30 | | MPC | 2006 $UQ_{50}$ |
| 2006 $UR_{50}$ | 18.3 | 0.15 | 20061012 | 47.27229 | 315.57032 | 6.96535 | 7.76498 | 0.1617258 | 2.2500058 | 18 | 1 | 34 days | 0.32 | | MPC | 2006 $UR_{50}$ |
| 2006 $US_{50}$ | 16.9 | 0.15 | 20061012 | 262.65850 | 188.76672 | 310.07717 | 4.04265 | 0.1280029 | 3.0091287 | 10 | 1 | 10 days | 0.26 | | MPC | 2006 $US_{50}$ |
| 2006 $UT_{50}$ | 17.4 | 0.15 | 20061012 | 303.21538 | 197.90982 | 264.48388 | 3.84454 | 0.1806056 | 2.6713139 | 25 | 1 | 34 days | 0.27 | | MPC | 2006 $UT_{50}$ |
| 2006 $UU_{50}$ | 19.0 | 0.15 | 20061101 | 64.09005 | 105.37657 | 213.13297 | 20.79466 | 0.0936625 | 1.9223459 | 16 | 1 | 32 days | 0.32 | | MPC | 2006 $UU_{50}$ |
| 2006 $UV_{50}$ | 16.5 | 0.15 | 20061012 | 298.86448 | 180.70079 | 264.85431 | 2.31972 | 0.0739464 | 2.8209808 | 11 | 1 | 8 days | 0.50 | | MPC | 2006 $UV_{50}$ |
| 2006 $UX_{50}$ | 17.4 | 0.15 | 20061012 | 11.10094 | 346.27303 | 15.50552 | 14.18494 | 0.1974149 | 2.7785212 | 15 | 1 | 49 days | 0.48 | | MPC | 2006 $UX_{50}$ |
| 2006 $UY_{50}$ | 16.0 | 0.15 | 20061012 | 8.35289 | 41.34510 | 322.63414 | 1.92617 | 0.2749232 | 3.9082148 | 11 | 1 | 10 days | 0.47 | | MPC | 2006 $UY_{50}$ |
| 2006 $UZ_{50}$ | 17.4 | 0.15 | 20061012 | 58.55670 | 275.00869 | 43.99641 | 3.37433 | 0.0764130 | 2.6263897 | 29 | 1 | 29 days | 0.27 | | MPC | 2006 $UZ_{50}$ |
| 2006 $UB_{51}$ | 19.1 | 0.15 | 20061012 | 32.25739 | 152.47308 | 178.89813 | 2.16349 | 0.2531393 | 2.3680271 | 20 | 1 | 59 days | 0.36 | | MPC | 2006 $UB_{51}$ |
| 2006 $UC_{51}$ | 16.5 | 0.15 | 20061012 | 354.97655 | 0.11571 | 31.85238 | 15.69430 | 0.1211363 | 2.8405140 | 20 | 1 | 10 days | 0.80 | | MPC | 2006 $UC_{51}$ |
| 2006 $UD_{51}$ | 17.8 | 0.15 | 20061012 | 343.96195 | 6.75173 | 40.12395 | 6.01770 | 0.1432916 | 2.6511464 | 23 | 1 | 57 days | 0.32 | | MPC | 2006 $UD_{51}$ |
| 2006 $UE_{51}$ | 20.0 | 0.15 | 20061012 | 329.01518 | 30.49836 | 28.92306 | 19.90328 | 0.0761548 | 1.8108690 | 10 | 1 | 6 days | 0.25 | | MPC | 2006 $UE_{51}$ |
| 2006 $UF_{51}$ | 18.3 | 0.15 | 20061012 | 96.44032 | 235.16033 | 37.27728 | 7.80942 | 0.1567470 | 2.3136904 | 10 | 1 | 5 days | 0.34 | | MPC | 2006 $UF_{51}$ |
| 2006 $UG_{51}$ | 18.4 | 0.15 | 20061012 | 15.33685 | 316.42398 | 32.40839 | 13.73471 | 0.3813767 | 2.9935288 | 30 | 1 | 47 days | 0.35 | | MPC | 2006 $UG_{51}$ |
| 2006 $UH_{51}$ | 18.2 | 0.15 | 20061012 | 352.80926 | 199.76160 | 197.30411 | 6.78502 | 0.2012286 | 2.8672403 | 13 | 1 | 6 days | 0.68 | | MPC | 2006 $UH_{51}$ |
| 2006 $UJ_{51}$ | 18.0 | 0.15 | 20061012 | 249.38854 | 106.94958 | 52.00320 | 3.61583 | 0.2208350 | 2.3977470 | 10 | 1 | 6 days | 0.48 | | MPC | 2006 $UJ_{51}$ |
| 2006 $UK_{51}$ | 18.0 | 0.15 | 20061101 | 328.51688 | 41.61752 | 36.54076 | 12.92307 | 0.1922750 | 2.7275959 | 23 | 1 | 32 days | 0.33 | | MPC | 2006 $UK_{51}$ |
| 2006 $UL_{51}$ | 17.0 | 0.15 | 20061012 | 201.99616 | 118.46645 | 68.26331 | 3.20937 | 0.0190747 | 2.7271225 | 26 | 1 | 58 days | 0.36 | | MPC | 2006 $UL_{51}$ |
| 2006 $UM_{51}$ | 17.2 | 0.15 | 20061012 | 63.81716 | 209.43928 | 101.59591 | 1.99243 | 0.1238884 | 3.0255951 | 13 | 1 | 11 days | 0.36 | | MPC | 2006 $UM_{51}$ |
| 2006 $UN_{51}$ | 18.0 | 0.15 | 20060922 | 34.16005 | 138.55572 | 192.22839 | 5.34114 | 0.1804438 | 2.2990882 | 17 | 1 | 27 days | 0.30 | | MPC | 2006 $UN_{51}$ |
| 2006 $UO_{51}$ | 17.6 | 0.15 | 20061012 | 293.06793 | 108.42267 | 355.54947 | 7.12424 | 0.0756036 | 2.3529843 | 11 | 1 | 4 days | 0.25 | | MPC | 2006 $UO_{51}$ |
| 2006 $UP_{51}$ | 16.8 | 0.15 | 20060922 | 42.83590 | 35.57386 | 300.72442 | 4.36633 | 0.0707465 | 2.7896462 | 19 | 1 | 60 days | 0.27 | M-v 4 | MPC | 2006 $UP_{51}$ |
| 2006 $UQ_{51}$ | 18.6 | 0.15 | 20061012 | 28.77441 | 64.11807 | 283.40521 | 3.63760 | 0.1685586 | 2.3219999 | 14 | 1 | 14 days | 0.21 | | MPC | 2006 $UQ_{51}$ |
| 2006 $UR_{51}$ | 15.0 | 0.15 | 20061012 | 194.78745 | 191.27960 | 11.77117 | 13.14586 | 0.2290096 | 3.0131849 | 10 | 1 | 4 days | 0.12 | | MPC | 2006 $UR_{51}$ |
| 2006 $US_{51}$ | 16.4 | 0.15 | 20061012 | 339.83984 | 166.24515 | 247.55091 | 7.27188 | 0.0622398 | 3.0587831 | 13 | 1 | 14 days | 0.30 | | MPC | 2006 $US_{51}$ |
| 2006 $UU_{51}$ | 16.5 | 0.15 | 20061101 | 105.60417 | 45.33903 | 238.80319 | 8.61251 | 0.0533302 | 3.1635725 | 15 | 1 | 37 days | 0.30 | | MPC | 2006 $UU_{51}$ |
| 2006 $UV_{51}$ | 18.2 | 0.15 | 20060922 | 326.57707 | 57.96782 | 22.07971 | 11.82115 | 0.2766176 | 2.6416960 | 16 | 1 | 27 days | 0.16 | | MPC | 2006 $UV_{51}$ |
| 2006 $UW_{51}$ | 17.0 | 0.15 | 20061012 | 138.37659 | 224.68909 | 24.49622 | 14.97806 | 0.0667018 | 2.4374472 | 22 | 1 | 58 days | 0.49 | | MPC | 2006 $UW_{51}$ |
| 2006 $UY_{51}$ | 17.1 | 0.15 | 20061012 | 172.57082 | 202.61917 | 15.69652 | 6.47357 | 0.1175103 | 2.3052020 | 25 | 1 | 34 days | 0.28 | | MPC | 2006 $UY_{51}$ |
| 2006 $UA_{52}$ | 18.8 | 0.15 | 20061012 | 354.30018 | 181.32710 | 216.66663 | 12.46445 | 0.2411131 | 2.6382667 | 13 | 1 | 12 days | 0.35 | | MPC | 2006 $UA_{52}$ |
| 2006 $UB_{52}$ | 17.6 | 0.15 | 20061101 | 218.76901 | 12.81311 | 169.40399 | 2.91456 | 0.1304357 | 2.3380443 | 23 | 1 | 30 days | 0.28 | | MPC | 2006 $UB_{52}$ |
| 2006 $UC_{52}$ | 16.4 | 0.15 | 20061012 | 263.28189 | 89.78555 | 39.54576 | 14.99703 | 0.0275204 | 3.1894384 | 24 | 1 | 43 days | 0.33 | | MPC | 2006 $UC_{52}$ |
| 2006 $UD_{52}$ | 16.8 | 0.15 | 20061012 | 317.99819 | 271.23886 | 169.59862 | 3.41609 | 0.1087817 | 3.2130572 | 20 | 1 | 28 days | 0.31 | | MPC | 2006 $UD_{52}$ |
| 2006 $UE_{52}$ | 17.1 | 0.15 | 20061012 | 294.48490 | 51.59524 | 48.17465 | 7.85541 | 0.0471206 | 2.7462489 | 10 | 1 | 6 days | 0.39 | | MPC | 2006 $UE_{52}$ |
| 2006 $UF_{52}$ | 17.2 | 0.15 | 20061012 | 306.10006 | 297.14450 | 148.93649 | 2.65501 | 0.0254318 | 2.8529282 | 22 | 1 | 45 days | 0.42 | | MPC | 2006 $UF_{52}$ |
| 2006 $UG_{52}$ | 16.3 | 0.15 | 20061012 | 205.08111 | 352.08114 | 198.73124 | 12.58591 | 0.1159156 | 2.9757595 | 10 | 1 | 5 days | 0.65 | | MPC | 2006 $UG_{52}$ |
| 2006 $UK_{52}$ | 17.2 | 0.15 | 20061012 | 30.04793 | 306.93416 | 44.47389 | 10.88739 | 0.1226348 | 2.9859949 | 17 | 1 | 28 days | 0.30 | | MPC | 2006 $UK_{52}$ |
| 2006 $UL_{52}$ | 17.4 | 0.15 | 20061012 | 37.36467 | 203.76761 | 135.27357 | 2.68491 | 0.1556888 | 2.5988653 | 24 | 1 | 29 days | 0.36 | | MPC | 2006 $UL_{52}$ |
| 2006 $UN_{52}$ | 16.9 | 0.15 | 20061012 | 39.57997 | 268.55868 | 56.83182 | 4.15228 | 0.2899757 | 3.2073247 | 13 | 1 | 12 days | 0.98 | | MPC | 2006 $UN_{52}$ |
| 2006 $UT_{52}$ | 17.0 | 0.15 | 20061101 | 345.62909 | 178.06231 | 227.99344 | 2.66554 | 0.1946000 | 2.7332958 | 16 | 1 | 29 days | 0.31 | | MPC | 2006 $UT_{52}$ |
| 2006 $UV_{52}$ | 16.8 | 0.15 | 20061012 | 221.92704 | 96.75119 | 89.97405 | 3.71284 | 0.1581873 | 2.9066532 | 10 | 1 | 5 days | 0.36 | | MPC | 2006 $UV_{52}$ |
| 2006 $UW_{52}$ | 17.3 | 0.15 | 20061012 | 326.89951 | 254.74570 | 189.67206 | 5.22177 | 0.1920191 | 3.1451837 | 10 | 1 | 5 days | 0.38 | | MPC | 2006 $UW_{52}$ |
| 2006 $UX_{52}$ | 16.8 | 0.15 | 20061012 | 292.11322 | 61.52187 | 56.52256 | 9.75794 | 0.1133328 | 2.9728957 | 13 | 1 | 6 days | 0.35 | | MPC | 2006 $UX_{52}$ |
| 2006 $UY_{52}$ | 18.5 | 0.15 | 20061012 | 29.82669 | 290.25923 | 58.26018 | 6.65990 | 0.2195281 | 2.4817719 | 9 | 1 | 6 days | 0.85 | | MPC | 2006 $UY_{52}$ |
| 2006 $UZ_{52}$ | 17.2 | 0.15 | 20061012 | 69.13564 | 118.74020 | 185.75858 | 5.30483 | 0.2156526 | 2.7256246 | 13 | 1 | 6 days | 0.88 | | MPC | 2006 $UZ_{52}$ |
| 2006 $UA_{53}$ | 16.1 | 0.15 | 20061012 | 59.65237 | 251.03499 | 70.17744 | 1.87799 | 0.1709583 | 3.0302859 | 26 | 1 | 56 days | 0.32 | | MPC | 2006 $UA_{53}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UC_{53}$ | 16.2 | 0.15 | 20061101 | 13.45918 | 300.85354 | 84.98376 | 2.22902 | 0.1833754 | 3.0839434 | 36 | 1 | 41 days | 0.45 | | MPC | | 2006 $UC_{53}$ |
| 2006 $UD_{53}$ | 17.1 | 0.15 | 20061012 | 351.98024 | 318.96070 | 93.93034 | 2.41584 | 0.1462959 | 3.0812526 | 17 | 1 | 26 days | 0.33 | | MPC | | 2006 $UD_{53}$ |
| 2006 $UE_{53}$ | 17.4 | 0.15 | 20061012 | 71.92011 | 250.48329 | 61.56196 | 6.58178 | 0.1582875 | 2.4748417 | 10 | 1 | 5 days | 0.66 | | MPC | | 2006 $UE_{53}$ |
| 2006 $UF_{53}$ | 16.0 | 0.15 | 20061101 | 11.37670 | 336.81510 | 58.14782 | 10.50562 | 0.0875448 | 3.0756916 | 27 | 1 | 35 days | 0.52 | | MPC | | 2006 $UF_{53}$ |
| 2006 $UH_{53}$ | 16.7 | 0.15 | 20061012 | 309.89551 | 234.87113 | 226.28335 | 17.37377 | 0.1920102 | 3.1909318 | 29 | 1 | 44 days | 0.26 | | MPC | | 2006 $UH_{53}$ |
| 2006 $UJ_{53}$ | 17.8 | 0.15 | 20061012 | 14.26262 | 349.86231 | 20.13282 | 15.88086 | 0.1831906 | 2.7571174 | 10 | 1 | 4 days | 0.18 | | MPC | | 2006 $UJ_{53}$ |
| 2006 $UK_{53}$ | 18.0 | 0.15 | 20061101 | 357.00856 | 175.60764 | 226.37132 | 13.56743 | 0.2505888 | 2.6671634 | 32 | 1 | 36 days | 0.42 | | MPC | | 2006 $UK_{53}$ |
| 2006 $UN_{53}$ | 17.6 | 0.15 | 20061012 | 313.81784 | 42.34314 | 61.86022 | 4.47149 | 0.1481921 | 2.3546187 | 22 | 1 | 58 days | 0.26 | | MPC | | 2006 $UN_{53}$ |
| 2006 $UT_{53}$ | 17.6 | 0.15 | 20061012 | 356.52946 | 316.75187 | 93.02208 | 2.02006 | 0.1403227 | 2.5606157 | 18 | 1 | 47 days | 0.35 | | MPC | | 2006 $UT_{53}$ |
| 2006 $UU_{53}$ | 17.0 | 0.15 | 20061012 | 351.77522 | 207.31196 | 209.03117 | 3.61162 | 0.1538202 | 2.5639344 | 19 | 1 | 48 days | 0.38 | | MPC | | 2006 $UU_{53}$ |
| 2006 $UV_{53}$ | 17.2 | 0.15 | 20061012 | 21.42153 | 152.34349 | 219.44817 | 11.21607 | 0.2028841 | 2.5442328 | 22 | 1 | 51 days | 0.33 | | MPC | | 2006 $UV_{53}$ |
| 2006 $UW_{53}$ | 17.5 | 0.15 | 20061012 | 32.48863 | 291.66705 | 70.74139 | 3.42496 | 0.1553329 | 2.6322932 | 18 | 1 | 47 days | 0.26 | | MPC | | 2006 $UW_{53}$ |
| 2006 $UY_{53}$ | 15.4 | 0.15 | 20061012 | 277.38666 | 78.61657 | 56.68922 | 15.67921 | 0.0133554 | 3.1397759 | 37 | 1 | 58 days | 0.31 | | MPC | | 2006 $UY_{53}$ |
| 2006 $UB_{54}$ | 17.1 | 0.15 | 20061012 | 43.25173 | 113.77178 | 219.95969 | 5.46021 | 0.2660137 | 2.5427344 | 32 | 1 | 52 days | 0.54 | | MPC | | 2006 $UB_{54}$ |
| 2006 $UC_{54}$ | 16.1 | 0.15 | 20061012 | 359.37205 | 98.48346 | 285.83411 | 4.90044 | 0.1353789 | 3.1106979 | 14 | 1 | 3 days | 0.58 | | MPC | | 2006 $UC_{54}$ |
| 2006 $UE_{54}$ | 14.5 | 0.15 | 20061012 | 181.29616 | 257.31813 | 308.15674 | 4.53341 | 0.2597796 | 2.9298882 | 11 | 1 | 4 days | 0.52 | | MPC | | 2006 $UE_{54}$ |
| 2006 $UJ_{54}$ | 17.7 | 0.15 | 20061012 | 353.97667 | 80.20921 | 313.28406 | 4.22201 | 0.2177356 | 2.4120554 | 14 | 1 | 4 days | 0.96 | | MPC | | 2006 $UJ_{54}$ |
| 2006 $UK_{54}$ | 17.8 | 0.15 | 20061101 | 33.98977 | 61.72949 | 274.90069 | 4.42674 | 0.2561181 | 2.2682806 | 28 | 1 | 39 days | 0.38 | | MPC | | 2006 $UK_{54}$ |
| 2006 $US_{54}$ | 18.1 | 0.15 | 20061012 | 351.35171 | 73.18005 | 324.50093 | 3.92674 | 0.2110995 | 2.3841028 | 14 | 1 | 3 days | 0.66 | | MPC | | 2006 $US_{54}$ |
| 2006 $UT_{54}$ | 18.9 | 0.15 | 20061012 | 9.43936 | 132.55885 | 235.13549 | 7.47710 | 0.2429519 | 2.2884498 | 11 | 1 | 12 days | 0.45 | | MPC | | 2006 $UT_{54}$ |
| 2006 $UW_{54}$ | 16.5 | 0.15 | 20061012 | 334.75732 | 171.98974 | 239.90159 | 8.95345 | 0.0597567 | 3.0255785 | 11 | 1 | 8 days | 0.65 | | MPC | | 2006 $UW_{54}$ |
| 2006 $UX_{54}$ | 15.3 | 0.15 | 20061012 | 6.58560 | 150.64394 | 225.87423 | 17.93055 | 0.0556512 | 3.0539257 | 13 | 1 | 3 days | 0.88 | | MPC | | 2006 $UX_{54}$ |
| 2006 $UY_{54}$ | 15.4 | 0.15 | 20061012 | 18.95449 | 85.95807 | 264.71091 | 6.34262 | 0.2869920 | 3.9585136 | 31 | 1 | 56 days | 0.37 | | MPC | | 2006 $UY_{54}$ |
| 2006 $UZ_{54}$ | 18.3 | 0.15 | 20061012 | 354.82483 | 36.22053 | 355.24598 | 5.69144 | 0.2340155 | 2.2084189 | 17 | 1 | 4 days | 0.54 | | MPC | | 2006 $UZ_{54}$ |
| 2006 $UB_{55}$ | 17.3 | 0.15 | 20061012 | 31.33273 | 311.88898 | 13.49434 | 20.08821 | 0.3283092 | 2.6819029 | 11 | 1 | 4 days | 0.82 | | MPC | | 2006 $UB_{55}$ |
| 2006 $UC_{55}$ | 15.5 | 0.15 | 20060922 | 21.50762 | 325.42620 | 45.89234 | 12.69398 | 0.1865166 | 2.6100957 | 47 | 1 | 61 days | 0.56 | M-v 5 | MPC | | 2006 $UC_{55}$ |
| 2006 $UD_{55}$ | 16.2 | 0.15 | 20061012 | 318.55565 | 59.73396 | 32.70582 | 15.62222 | 0.0964553 | 3.1487082 | 19 | 1 | 28 days | 0.22 | | MPC | | 2006 $UD_{55}$ |
| 2006 $UE_{55}$ | 17.4 | 0.15 | 20061012 | 26.21827 | 28.78362 | 326.92668 | 2.58053 | 0.2391911 | 2.6420163 | 18 | 1 | 41 days | 0.26 | | MPC | | 2006 $UE_{55}$ |
| 2006 $UF_{55}$ | 17.3 | 0.15 | 20061012 | 13.64626 | 133.59606 | 241.22421 | 6.45399 | 0.2282859 | 2.5221657 | 35 | 1 | 44 days | 0.47 | | MPC | | 2006 $UF_{55}$ |
| 2006 $UG_{55}$ | 16.5 | 0.15 | 20061101 | 313.76162 | 202.51617 | 265.63154 | 3.83420 | 0.1695136 | 2.6225454 | 28 | 1 | 36 days | 0.58 | | MPC | | 2006 $UG_{55}$ |
| 2006 $UK_{55}$ | 17.2 | 0.15 | 20061101 | 285.05171 | 271.82124 | 224.80141 | 9.63742 | 0.1267803 | 2.4199836 | 31 | 1 | 30 days | 0.63 | | MPC | | 2006 $UK_{55}$ |
| 2006 $UM_{55}$ | 17.7 | 0.15 | 20061012 | 73.58059 | 274.45219 | 38.98689 | 20.26906 | 0.1194385 | 1.8736268 | 19 | 1 | 54 days | 0.36 | | MPC | | 2006 $UM_{55}$ |
| 2006 $UO_{55}$ | 17.4 | 0.15 | 20061012 | 351.04440 | 118.22305 | 256.46693 | 7.85300 | 0.1862752 | 2.8717523 | 9 | 1 | 4 days | 0.61 | | MPC | | 2006 $UO_{55}$ |
| 2006 $UR_{55}$ | 17.2 | 0.15 | 20061012 | 337.77265 | 108.52580 | 284.28194 | 8.38645 | 0.1702004 | 3.0115696 | 9 | 1 | 4 days | 0.22 | | MPC | | 2006 $UR_{55}$ |
| 2006 $UT_{55}$ | 17.7 | 0.15 | 20061012 | 356.75693 | 96.32462 | 271.68022 | 7.74128 | 0.2714208 | 3.2240050 | 9 | 1 | 4 days | 0.56 | | MPC | | 2006 $UT_{55}$ |
| 2006 $UU_{55}$ | 17.9 | 0.15 | 20061012 | 352.77547 | 109.37612 | 264.26724 | 7.80918 | 0.2181131 | 2.9968467 | 9 | 1 | 4 days | 0.69 | | MPC | | 2006 $UU_{55}$ |
| 2006 $UX_{55}$ | 15.9 | 0.15 | 20061012 | 76.22914 | 336.53983 | 285.18644 | 8.63786 | 0.1887726 | 3.1398099 | 12 | 1 | 4 days | 0.43 | | MPC | | 2006 $UX_{55}$ |
| 2006 $UZ_{55}$ | 17.5 | 0.15 | 20061012 | 356.36596 | 118.56938 | 248.29693 | 5.65956 | 0.1537673 | 2.5387385 | 9 | 1 | 4 days | 0.94 | | MPC | | 2006 $UZ_{55}$ |
| 2006 $UB_{56}$ | 15.5 | 0.15 | 20061012 | 101.25054 | 280.42157 | 316.21480 | 9.68414 | 0.1949842 | 3.0780119 | 9 | 1 | 4 days | 0.50 | | MPC | | 2006 $UB_{56}$ |
| 2006 $UC_{56}$ | 16.2 | 0.15 | 20061012 | 87.55692 | 292.07639 | 316.97477 | 9.05308 | 0.1961026 | 3.0118244 | 9 | 1 | 4 days | 0.25 | | MPC | | 2006 $UC_{56}$ |
| 2006 $UD_{56}$ | 15.9 | 0.15 | 20061012 | 79.14279 | 297.43201 | 319.90895 | 9.80267 | 0.2025659 | 2.9003876 | 9 | 1 | 4 days | 0.31 | | MPC | | 2006 $UD_{56}$ |
| 2006 $UE_{56}$ | 16.0 | 0.15 | 20061012 | 74.37095 | 39.56269 | 220.95049 | 8.81677 | 0.2019149 | 3.1464428 | 9 | 1 | 4 days | 0.72 | | MPC | | 2006 $UE_{56}$ |
| 2006 $UF_{56}$ | 15.8 | 0.15 | 20061012 | 106.34489 | 325.16494 | 265.31152 | 6.03785 | 0.2112556 | 3.0115945 | 9 | 1 | 4 days | 0.34 | | MPC | | 2006 $UF_{56}$ |
| 2006 $UG_{56}$ | 17.9 | 0.15 | 20061012 | 52.94682 | 38.40722 | 249.69340 | 5.19464 | 0.2108966 | 2.2165085 | 9 | 1 | 4 days | 0.14 | | MPC | | 2006 $UG_{56}$ |
| 2006 $UH_{56}$ | 16.2 | 0.15 | 20061012 | 296.72184 | 120.91799 | 318.33039 | 9.01089 | 0.1479076 | 3.0903228 | 9 | 1 | 4 days | 0.14 | | MPC | | 2006 $UH_{56}$ |
| 2006 $UK_{56}$ | 16.7 | 0.15 | 20061012 | 74.84617 | 322.35085 | 299.58473 | 8.17580 | 0.2239312 | 2.5509073 | 9 | 1 | 4 days | 0.67 | | MPC | | 2006 $UK_{56}$ |
| 2006 $UM_{56}$ | 15.9 | 0.15 | 20061012 | 62.74606 | 349.97879 | 285.46998 | 8.26449 | 0.2123285 | 2.8921021 | 9 | 1 | 4 days | 0.23 | | MPC | | 2006 $UM_{56}$ |
| 2006 $UN_{56}$ | 16.1 | 0.15 | 20061012 | 280.88715 | 213.27154 | 235.66882 | 9.64073 | 0.0823070 | 3.0407787 | 12 | 1 | 24 days | 0.17 | | MPC | | 2006 $UN_{56}$ |
| 2006 $UO_{56}$ | 16.5 | 0.15 | 20061012 | 110.48655 | 5.87763 | 221.33330 | 12.55239 | 0.2425266 | 2.5889271 | 9 | 1 | 4 days | 0.55 | | MPC | | 2006 $UO_{56}$ |
| 2006 $UQ_{56}$ | 17.5 | 0.15 | 20061012 | 64.99913 | 353.66896 | 277.64528 | 7.11218 | 0.2299183 | 2.6578625 | 9 | 1 | 4 days | 0.59 | | MPC | | 2006 $UQ_{56}$ |
| 2006 $UR_{56}$ | 18.0 | 0.15 | 20060922 | 347.22195 | 144.89304 | 235.32860 | 8.46665 | 0.2751679 | 2.7419713 | 18 | 1 | 34 days | 0.38 | | MPC | | 2006 $UR_{56}$ |
| 2006 $US_{56}$ | 16.5 | 0.15 | 20061012 | 326.28468 | 106.17216 | 302.36044 | 8.06324 | 0.1706311 | 3.1779051 | 9 | 1 | 4 days | 0.23 | | MPC | | 2006 $US_{56}$ |
| 2006 $UT_{56}$ | 16.2 | 0.15 | 20061012 | 309.20300 | 118.69298 | 295.66123 | 8.87887 | 0.0267779 | 3.1647869 | 11 | 1 | 8 days | 0.23 | | MPC | | 2006 $UT_{56}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UV_{56}$ | 16.7 | 0.15 | 20061012 | 267.45756 | 260.41572 | 208.43522 | 10.39334 | 0.1571695 | 2.8554258 | 9 | 1 | 4 days | 0.35 | | MPC | 2006 $UV_{56}$ |
| 2006 $UW_{56}$ | 16.9 | 0.15 | 20061012 | 105.19658 | 298.77161 | 290.62401 | 5.09020 | 0.2585261 | 2.4160641 | 9 | 1 | 4 days | 0.38 | | MPC | 2006 $UW_{56}$ |
| 2006 $UX_{56}$ | 17.6 | 0.15 | 20061012 | 331.34902 | 159.02585 | 238.02856 | 4.92770 | 0.1125217 | 2.5922869 | 9 | 1 | 4 days | 0.75 | | MPC | 2006 $UX_{56}$ |
| 2006 $UY_{56}$ | 16.9 | 0.15 | 20061012 | 75.50334 | 295.23528 | 322.93525 | 7.23040 | 0.2380773 | 2.5255858 | 9 | 1 | 4 days | 0.38 | | MPC | 2006 $UY_{56}$ |
| 2006 $UZ_{56}$ | 15.9 | 0.15 | 20061012 | 97.71606 | 318.04561 | 281.90428 | 5.48003 | 0.1935367 | 3.1201685 | 9 | 1 | 4 days | 0.36 | | MPC | 2006 $UZ_{56}$ |
| 2006 $UA_{57}$ | 17.0 | 0.15 | 20061012 | 66.61398 | 348.91233 | 279.22834 | 4.69657 | 0.2245095 | 2.8370868 | 9 | 1 | 4 days | 0.46 | | MPC | 2006 $UA_{57}$ |
| 2006 $UB_{57}$ | 17.7 | 0.15 | 20061101 | 329.50720 | 205.70446 | 214.63772 | 7.95554 | 0.2639754 | 2.7132003 | 13 | 1 | 27 days | 0.27 | | MPC | 2006 $UB_{57}$ |
| 2006 $UD_{57}$ | 16.4 | 0.15 | 20060922 | 295.74304 | 87.11154 | 344.53390 | 16.13239 | 0.0983308 | 3.0346477 | 9 | 1 | 30 days | 0.20 | | MPC | 2006 $UD_{57}$ |
| 2006 $UE_{57}$ | 16.1 | 0.15 | 20061012 | 76.40700 | 28.94855 | 226.95259 | 4.98459 | 0.2335334 | 2.7079030 | 9 | 1 | 4 days | 0.42 | | MPC | 2006 $UE_{57}$ |
| 2006 $UF_{57}$ | 16.8 | 0.15 | 20061012 | 93.87369 | 23.95396 | 215.85159 | 5.99156 | 0.2282592 | 2.7269612 | 9 | 1 | 4 days | 0.35 | | MPC | 2006 $UF_{57}$ |
| 2006 $UH_{57}$ | | | 20061012 | 343.94198 | 98.63409 | 282.48424 | 8.05161 | 0.0658188 | 2.9066204 | 9 | 1 | 2 days | 0.22 | | MPC | 2006 $UH_{57}$ |
| 2006 $UJ_{57}$ | 16.7 | 0.15 | 20061012 | 77.03344 | 43.18541 | 225.14256 | 11.20340 | 0.1670864 | 3.0066804 | 9 | 1 | 3 days | 0.32 | | MPC | 2006 $UJ_{57}$ |
| 2006 $UN_{57}$ | 16.7 | 0.15 | 20061012 | 43.08909 | 301.72408 | 40.94147 | 10.20909 | 0.0793080 | 3.0815621 | 13 | 1 | 42 days | 0.11 | | MPC | 2006 $UN_{57}$ |
| 2006 $UO_{57}$ | 17.7 | 0.15 | 20061012 | 17.58714 | 316.55612 | 47.16472 | 7.24954 | 0.2326420 | 2.9222821 | 20 | 1 | 42 days | 0.35 | | MPC | 2006 $UO_{57}$ |
| 2006 $UP_{57}$ | 18.0 | 0.15 | 20061012 | 31.95001 | 299.64509 | 45.60217 | 7.05066 | 0.1803787 | 2.2587499 | 21 | 1 | 51 days | 0.23 | | MPC | 2006 $UP_{57}$ |
| 2006 $UQ_{57}$ | 19.0 | 0.15 | 20061012 | 350.04783 | 350.63439 | 56.07747 | 3.39410 | 0.1947608 | 2.5849796 | 12 | 1 | 11 days | 0.17 | | MPC | 2006 $UQ_{57}$ |
| 2006 $UR_{57}$ | 17.2 | 0.15 | 20061012 | 256.78885 | 84.51442 | 63.76130 | 3.65382 | 0.0911877 | 2.8102256 | 9 | 1 | 5 days | 0.22 | | MPC | 2006 $UR_{57}$ |
| 2006 $US_{57}$ | 20.0 | 0.15 | 20061012 | 351.10951 | 192.13641 | 214.31236 | 1.83709 | 0.2142947 | 2.3763298 | 17 | 1 | 24 days | 0.30 | | MPC | 2006 $US_{57}$ |
| 2006 $UT_{57}$ | 18.1 | 0.15 | 20061012 | 19.09721 | 320.13372 | 41.84988 | 12.72183 | 0.2092413 | 2.3553486 | 28 | 1 | 45 days | 0.35 | | MPC | 2006 $UT_{57}$ |
| 2006 $UU_{57}$ | 17.5 | 0.15 | 20061012 | 13.90634 | 180.30907 | 195.49114 | 6.23827 | 0.1635224 | 2.7367533 | 22 | 1 | 47 days | 0.30 | | MPC | 2006 $UU_{57}$ |
| 2006 $UX_{57}$ | 16.4 | 0.15 | 20061012 | 103.15423 | 235.72257 | 57.39369 | 5.26272 | 0.0396267 | 2.7129537 | 19 | 1 | 22 days | 0.28 | | MPC | 2006 $UX_{57}$ |
| 2006 $UY_{57}$ | 18.5 | 0.15 | 20061012 | 73.27764 | 246.67448 | 58.97444 | 4.70302 | 0.1717141 | 2.2147847 | 10 | 1 | 10 days | 0.24 | | MPC | 2006 $UY_{57}$ |
| 2006 $UZ_{57}$ | 17.2 | 0.15 | 20061012 | 320.88229 | 283.27347 | 170.87539 | 1.90469 | 0.1743420 | 2.6698949 | 26 | 1 | 37 days | 0.52 | | MPC | 2006 $UZ_{57}$ |
| 2006 $UA_{58}$ | 15.5 | 0.15 | 20061012 | 212.64323 | 133.17266 | 62.67659 | 10.09320 | 0.0271711 | 3.1725612 | 16 | 1 | 24 days | 0.41 | | MPC | 2006 $UA_{58}$ |
| 2006 $UB_{58}$ | 17.9 | 0.15 | 20061012 | 340.85635 | 10.22080 | 61.65352 | 6.70815 | 0.2283672 | 2.6223436 | 24 | 1 | 48 days | 0.48 | | MPC | 2006 $UB_{58}$ |
| 2006 $UC_{58}$ | 16.9 | 0.15 | 20061012 | 47.20370 | 259.68705 | 80.29890 | 4.41707 | 0.1722656 | 2.5610240 | 21 | 1 | 22 days | 0.30 | | MPC | 2006 $UC_{58}$ |
| 2006 $UD_{58}$ | 18.4 | 0.15 | 20061012 | 348.24780 | 258.51417 | 160.08643 | 2.50216 | 0.1987690 | 2.3837219 | 27 | 1 | 58 days | 0.30 | | MPC | 2006 $UD_{58}$ |
| 2006 $UH_{58}$ | 18.0 | 0.15 | 20061012 | 338.93140 | 53.68493 | 347.00693 | 15.96050 | 0.2281354 | 2.9490681 | 9 | 1 | 4 days | 0.53 | | MPC | 2006 $UH_{58}$ |
| 2006 $UJ_{58}$ | | | 20061012 | 6.87229 | 14.61620 | 339.42579 | 14.21264 | 0.2411744 | 2.8148310 | 9 | 1 | 2 days | 0.43 | | MPC | 2006 $UJ_{58}$ |
| 2006 $UK_{58}$ | | | 20061012 | 328.73785 | 92.67149 | 314.11087 | 9.25637 | 0.1575011 | 2.7294280 | 9 | 1 | 2 days | 0.13 | | MPC | 2006 $UK_{58}$ |
| 2006 $UV_{58}$ | 16.0 | 0.15 | 20060922 | 76.33874 | 346.39292 | 285.68453 | 1.39930 | 0.0453388 | 2.7687125 | 16 | 1 | 31 days | 0.37 | | MPC | 2006 $UV_{58}$ |
| 2006 $UX_{58}$ | 16.6 | 0.15 | 20061012 | 351.77966 | 68.41891 | 331.51546 | 11.80868 | 0.2742480 | 2.6135468 | 11 | 1 | 8 days | 0.35 | | MPC | 2006 $UX_{58}$ |
| 2006 $UZ_{58}$ | 17.0 | 0.15 | 20061012 | 199.09899 | 242.13977 | 322.20538 | 1.94434 | 0.2832303 | 2.2676653 | 10 | 1 | 4 days | 0.39 | | MPC | 2006 $UZ_{58}$ |
| 2006 $UA_{59}$ | 17.0 | 0.15 | 20061012 | 304.53729 | 126.66581 | 338.29226 | 2.47595 | 0.1342096 | 3.1735413 | 22 | 1 | 44 days | 0.26 | | MPC | 2006 $UA_{59}$ |
| 2006 $UB_{59}$ | 19.0 | 0.15 | 20061101 | 11.90785 | 137.69953 | 242.51612 | 3.57322 | 0.2208906 | 2.5335413 | 14 | 1 | 27 days | 0.30 | | MPC | 2006 $UB_{59}$ |
| 2006 $UC_{59}$ | 17.3 | 0.15 | 20061012 | 48.79487 | 338.87176 | 348.46922 | 2.83719 | 0.1911655 | 3.0661595 | 28 | 1 | 48 days | 0.29 | | MPC | 2006 $UC_{59}$ |
| 2006 $UD_{59}$ | 17.9 | 0.15 | 20061012 | 337.01211 | 43.07433 | 27.31489 | 9.84180 | 0.2342087 | 2.8842379 | 10 | 1 | 4 days | 0.35 | | MPC | 2006 $UD_{59}$ |
| 2006 $UE_{59}$ | 17.9 | 0.15 | 20061101 | 341.37767 | 194.46216 | 236.21461 | 4.48178 | 0.2473505 | 2.9353271 | 11 | 1 | 27 days | 0.38 | | MPC | 2006 $UE_{59}$ |
| 2006 $UF_{59}$ | 16.3 | 0.15 | 20061012 | 81.98030 | 71.94582 | 223.61463 | 17.14707 | 0.1639032 | 3.2988758 | 16 | 1 | 13 days | 0.32 | | MPC | 2006 $UF_{59}$ |
| 2006 $UJ_{59}$ | 17.8 | 0.15 | 20061012 | 316.32273 | 78.73305 | 6.70324 | 3.41232 | 0.0962002 | 2.4046141 | 21 | 1 | 43 days | 0.19 | D | MPC | 2006 $UJ_{59}$ |
| 2006 $UK_{59}$ | 17.4 | 0.15 | 20061012 | 289.11572 | 108.23502 | 2.80864 | 2.91290 | 0.0435646 | 2.7520320 | 18 | 1 | 48 days | 0.31 | | MPC | 2006 $UK_{59}$ |
| 2006 $UL_{59}$ | 15.4 | 0.15 | 20061101 | 24.73990 | 130.14742 | 230.61610 | 14.49653 | 0.1304205 | 3.1023712 | 31 | 1 | 31 days | 0.48 | | MPC | 2006 $UL_{59}$ |
| 2006 $UR_{59}$ | 15.9 | 0.15 | 20061012 | 346.52951 | 77.50637 | 331.85215 | 6.01865 | 0.1905445 | 3.0496010 | 20 | 1 | 4 days | 0.82 | | MPC | 2006 $UR_{59}$ |
| 2006 $US_{59}$ | 15.8 | 0.15 | 20061101 | 357.13369 | 157.22119 | 244.39948 | 12.81825 | 0.2466476 | 2.6711870 | 24 | 1 | 29 days | 0.54 | | MPC | 2006 $US_{59}$ |
| 2006 $UU_{59}$ | 15.2 | 0.15 | 20061012 | 121.32099 | 269.63934 | 354.18283 | 9.65635 | 0.0702903 | 3.0331255 | 14 | 1 | 8 days | 0.53 | | MPC | 2006 $UU_{59}$ |
| 2006 $UV_{59}$ | 18.6 | 0.15 | 20061012 | 357.55879 | 75.38708 | 315.49867 | 3.76319 | 0.2466414 | 2.3603421 | 13 | 1 | 3 days | 0.49 | | MPC | 2006 $UV_{59}$ |
| 2006 $UW_{59}$ | 16.9 | 0.15 | 20061012 | 359.53534 | 143.83117 | 246.29471 | 8.62350 | 0.1881968 | 2.9658637 | 12 | 1 | 2 days | 0.50 | | MPC | 2006 $UW_{59}$ |
| 2006 $UZ_{59}$ | 16.0 | 0.15 | 20061012 | 312.65867 | 77.88241 | 7.17250 | 9.83266 | 0.0872843 | 2.4294480 | 20 | 1 | 4 days | 0.91 | | MPC | 2006 $UZ_{59}$ |
| 2006 $UB_{60}$ | 17.2 | 0.15 | 20061012 | 300.98609 | 204.30423 | 251.98610 | 6.38482 | 0.0754701 | 2.3758093 | 11 | 1 | 2 days | 0.59 | | MPC | 2006 $UB_{60}$ |
| 2006 $UD_{60}$ | 15.9 | 0.15 | 20061012 | 36.92893 | 58.94602 | 290.92944 | 5.11030 | 0.0576147 | 2.6950025 | 28 | 1 | 52 days | 0.30 | | MPC | 2006 $UD_{60}$ |
| 2006 $UE_{60}$ | 17.9 | 0.15 | 20061012 | 41.51554 | 20.89592 | 308.59605 | 3.96880 | 0.2002681 | 2.2488023 | 12 | 1 | 8 days | 0.63 | | MPC | 2006 $UE_{60}$ |
| 2006 $UF_{60}$ | 17.5 | 0.15 | 20061101 | 70.07813 | 43.89830 | 258.70820 | 6.27434 | 0.1746665 | 2.4307517 | 18 | 1 | 37 days | 0.21 | | MPC | 2006 $UF_{60}$ |
| 2006 $UJ_{60}$ | 16.8 | 0.15 | 20061012 | 50.73598 | 75.60180 | 250.30597 | 8.23676 | 0.1183037 | 3.0770145 | 11 | 1 | 10 days | 0.28 | | MPC | 2006 $UJ_{60}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UL_{60}$ | 17.8 | 0.15 | 20060922 | 21.23979 | 336.28809 | 14.17340 | 17.01866 | 0.2017966 | 2.9164034 | 14 | 1 | 20 days | 0.19 | | MPC | 2006 $UL_{60}$ |
| 2006 $UM_{60}$ | 17.7 | 0.15 | 20060922 | 20.65397 | 36.02922 | 324.92192 | 5.31106 | 0.0449232 | 2.7187283 | 11 | 1 | 24 days | 0.31 | | MPC | 2006 $UM_{60}$ |
| 2006 $UO_{60}$ | 19.4 | 0.15 | 20061012 | 53.67461 | 270.06530 | 47.05257 | 2.71904 | 0.1945094 | 2.1258275 | 9 | 1 | 10 days | 0.22 | | MPC | 2006 $UO_{60}$ |
| 2006 $UP_{60}$ | 16.2 | 0.15 | 20061012 | 184.79739 | 169.86724 | 43.72213 | 3.25949 | 0.1802082 | 2.9523939 | 12 | 1 | 23 days | 0.79 | | MPC | 2006 $UP_{60}$ |
| 2006 $UR_{60}$ | 16.0 | 0.15 | 20060922 | 9.35402 | 5.91088 | 8.79683 | 6.45814 | 0.3104817 | 2.6196661 | 51 | 1 | 133 days | 0.37 | M-v 3 | MPC | 2006 $UR_{60}$ |
| 2006 $UT_{60}$ | 15.8 | 0.15 | 20061101 | 24.38439 | 41.14868 | 315.38301 | 6.12168 | 0.3580367 | 2.9940085 | 35 | 1 | 33 days | 0.45 | | MPC | 2006 $UT_{60}$ |
| 2006 $UW_{60}$ | 16.7 | 0.15 | 20061012 | 340.74199 | 61.25135 | 7.83200 | 3.86420 | 0.1286169 | 3.0752362 | 27 | 1 | 34 days | 0.30 | | MPC | 2006 $UW_{60}$ |
| 2006 $UA_{61}$ | 14.9 | 0.15 | 20061101 | 359.79128 | 169.24329 | 234.77234 | 28.04556 | 0.1084366 | 2.7078833 | 50 | 1 | 34 days | 0.42 | | MPC | 2006 $UA_{61}$ |
| 2006 $UB_{61}$ | 17.3 | 0.15 | 20061012 | 20.69772 | 133.18065 | 239.21362 | 9.14136 | 0.1546705 | 2.5731473 | 30 | 1 | 43 days | 0.25 | | MPC | 2006 $UB_{61}$ |
| 2006 $UC_{61}$ | 17.7 | 0.15 | 20061101 | 5.81646 | 153.43646 | 245.59197 | 6.35395 | 0.1500889 | 2.5268638 | 23 | 1 | 28 days | 0.42 | | MPC | 2006 $UC_{61}$ |
| 2006 $UD_{61}$ | 16.4 | 0.15 | 20061101 | 341.58476 | 62.86442 | 9.92000 | 4.73967 | 0.1322099 | 3.0312775 | 32 | 1 | 26 days | 0.37 | | MPC | 2006 $UD_{61}$ |
| 2006 $UE_{61}$ | 16.8 | 0.15 | 20061012 | 60.25010 | 300.04585 | 9.66588 | 4.54436 | 0.2865692 | 2.5520236 | 32 | 1 | 45 days | 0.28 | | MPC | 2006 $UE_{61}$ |
| 2006 $UF_{61}$ | 16.7 | 0.15 | 20061101 | 327.71174 | 187.10357 | 263.89492 | 3.86604 | 0.1539680 | 2.6943748 | 20 | 1 | 28 days | 0.41 | | MPC | 2006 $UF_{61}$ |
| 2006 $UG_{61}$ | 16.1 | 0.15 | 20061012 | 250.29441 | 273.30255 | 255.38960 | 5.77154 | 0.1381562 | 2.7587796 | 12 | 1 | 16 days | 0.19 | | MPC | 2006 $UG_{61}$ |
| 2006 $UJ_{61}$ | 16.6 | 0.15 | 20061101 | 125.63490 | 315.09513 | 322.15811 | 2.73853 | 0.0674965 | 2.5990226 | 26 | 1 | 28 days | 0.24 | | MPC | 2006 $UJ_{61}$ |
| 2006 $UM_{61}$ | 17.2 | 0.15 | 20060922 | 9.85553 | 346.48047 | 39.17350 | 4.34138 | 0.1676404 | 2.2877847 | 41 | 1 | 61 days | 0.57 | M-v 5 | MPC | 2006 $UM_{61}$ |
| 2006 $UN_{61}$ | 16.8 | 0.15 | 20061012 | 350.68005 | 53.98116 | 0.36330 | 4.87823 | 0.1251386 | 2.2161415 | 71 | 1 | 49 days | 0.46 | | MPC | 2006 $UN_{61}$ |
| 2006 $UP_{61}$ | 15.5 | 0.15 | 20060922 | 47.03279 | 296.31470 | 42.19886 | 12.96273 | 0.2050931 | 2.6379436 | 36 | 1 | 61 days | 0.42 | M-v 5 | MPC | 2006 $UP_{61}$ |
| 2006 $UQ_{61}$ | 15.8 | 0.15 | 20061012 | 319.87149 | 59.50368 | 42.17184 | 14.07590 | 0.1148189 | 2.6314328 | 18 | 1 | 54 days | 0.41 | | MPC | 2006 $UQ_{61}$ |
| 2006 $UR_{61}$ | 16.1 | 0.15 | 20061101 | 26.91776 | 138.84055 | 244.46001 | 14.15498 | 0.1191354 | 2.5677274 | 52 | 1 | 39 days | 0.56 | | MPC | 2006 $UR_{61}$ |
| 2006 $US_{61}$ | 16.1 | 0.15 | 20061101 | 11.38157 | 153.01974 | 239.54328 | 12.80422 | 0.2572277 | 2.6636772 | 46 | 1 | 39 days | 0.51 | | MPC | 2006 $US_{61}$ |
| 2006 $UT_{61}$ | 16.4 | 0.15 | 20061012 | 355.78086 | 71.91434 | 319.43243 | 7.67431 | 0.2165648 | 2.6539991 | 23 | 1 | 6 days | 0.52 | | MPC | 2006 $UT_{61}$ |
| 2006 $UW_{61}$ | 17.8 | 0.15 | 20061012 | 22.69433 | 45.72412 | 299.17872 | 5.27496 | 0.2554678 | 2.3237463 | 38 | 1 | 47 days | 0.58 | | MPC | 2006 $UW_{61}$ |
| 2006 $UX_{61}$ | 17.9 | 0.15 | 20060922 | 3.00122 | 130.31173 | 237.27050 | 5.05379 | 0.2507254 | 2.3737243 | 37 | 1 | 79 days | 0.46 | M-v 4 | MPC | 2006 $UX_{61}$ |
| 2006 $UY_{61}$ | 16.6 | 0.15 | 20060922 | 32.63806 | 119.17628 | 224.75942 | 10.17177 | 0.0360139 | 2.7320723 | 31 | 1 | 60 days | 0.50 | M-v 4 | MPC | 2006 $UY_{61}$ |
| 2006 $UA_{62}$ | 17.7 | 0.15 | 20060922 | 358.17430 | 146.27473 | 228.19280 | 12.64108 | 0.2069042 | 2.5597265 | 26 | 1 | 84 days | 0.45 | M-v 4 | MPC | 2006 $UA_{62}$ |
| 2006 $UC_{62}$ | 15.8 | 0.15 | 20061012 | 219.36651 | 300.64150 | 231.50120 | 15.65342 | 0.0243059 | 3.0928150 | 19 | 1 | 20 days | 0.26 | | MPC | 2006 $UC_{62}$ |
| 2006 $UD_{62}$ | 18.2 | 0.15 | 20060922 | 356.22399 | 110.26105 | 271.89108 | 3.52950 | 0.1492883 | 2.1877254 | 36 | 1 | 62 days | 0.46 | M-v 4 | MPC | 2006 $UD_{62}$ |
| 2006 $UH_{62}$ | 16.3 | 0.15 | 20061012 | 338.02077 | 24.60410 | 50.66357 | 12.11632 | 0.0863232 | 2.9771512 | 37 | 1 | 56 days | 0.31 | | MPC | 2006 $UH_{62}$ |
| 2006 $UJ_{62}$ | 17.9 | 0.15 | 20061012 | 22.55808 | 148.08725 | 229.06409 | 2.72296 | 0.0994164 | 2.3193429 | 12 | 1 | 28 days | 0.34 | | MPC | 2006 $UJ_{62}$ |
| 2006 $UK_{62}$ | 19.3 | 0.15 | 20061012 | 291.97449 | 252.26839 | 206.89606 | 26.00495 | 0.0588809 | 1.8602558 | 22 | 1 | 5 days | 0.40 | | MPC | 2006 $UK_{62}$ |
| 2006 $UL_{62}$ | 18.2 | 0.15 | 20061012 | 18.14758 | 263.11805 | 96.31159 | 1.32030 | 0.2054702 | 2.7111789 | 18 | 1 | 5 days | 0.76 | | MPC | 2006 $UL_{62}$ |
| 2006 $UM_{62}$ | 17.7 | 0.15 | 20061012 | 59.38509 | 251.11105 | 54.01413 | 3.50130 | 0.2132164 | 2.6824415 | 19 | 1 | 9 days | 0.59 | | MPC | 2006 $UM_{62}$ |
| 2006 $UN_{62}$ | 16.4 | 0.15 | 20061101 | 49.10140 | 136.60636 | 202.26963 | 9.11722 | 0.0536465 | 2.9910348 | 31 | 1 | 28 days | 0.27 | | MPC | 2006 $UN_{62}$ |
| 2006 $UO_{62}$ | 17.1 | 0.15 | 20061012 | 320.10573 | 236.95521 | 223.96185 | 11.76021 | 0.3055702 | 2.5939298 | 33 | 1 | 49 days | 0.39 | | MPC | 2006 $UO_{62}$ |
| 2006 $UP_{62}$ | 16.6 | 0.15 | 20061101 | 349.78945 | 247.57216 | 138.18705 | 4.89281 | 0.1006333 | 3.0692281 | 28 | 1 | 29 days | 0.79 | | MPC | 2006 $UP_{62}$ |
| 2006 $UQ_{62}$ | 16.0 | 0.15 | 20061101 | 349.47095 | 357.86010 | 61.74021 | 12.39650 | 0.1192625 | 2.6970423 | 49 | 1 | 36 days | 0.72 | | MPC | 2006 $UQ_{62}$ |
| 2006 $US_{62}$ | 17.2 | 0.15 | 20060922 | 28.78041 | 124.95906 | 228.21197 | 1.67159 | 0.2444252 | 2.8065868 | 9 | 1 | 24 days | 0.35 | | MPC | 2006 $US_{62}$ |
| 2006 $UT_{62}$ | 16.5 | 0.15 | 20061101 | 122.79455 | 228.43381 | 53.79516 | 6.69417 | 0.1193507 | 3.0793715 | 24 | 1 | 36 days | 0.37 | | MPC | 2006 $UT_{62}$ |
| 2006 $UV_{62}$ | 17.2 | 0.15 | 20061101 | 29.46010 | 116.45687 | 254.56188 | 2.80947 | 0.2025550 | 2.6667249 | 33 | 1 | 31 days | 0.36 | | MPC | 2006 $UV_{62}$ |
| 2006 $UW_{62}$ | 16.4 | 0.15 | 20061012 | 8.15132 | 79.12094 | 290.22953 | 6.39685 | 0.2470027 | 2.7820675 | 33 | 1 | 58 days | 0.53 | | MPC | 2006 $UW_{62}$ |
| 2006 $UX_{62}$ | 17.8 | 0.15 | 20061012 | 348.79086 | 155.01740 | 248.05924 | 7.39544 | 0.2814812 | 2.3781000 | 28 | 1 | 58 days | 0.62 | | MPC | 2006 $UX_{62}$ |
| 2006 $UC_{63}$ | 19.7 | 0.15 | 20060922 | 199.41584 | 327.93545 | 219.72941 | 16.66401 | 0.2819505 | 1.4725108 | 68 | 1 | 32 days | 0.53 | M-v 5 | MPC | 2006 $UC_{63}$ |
| 2006 $UD_{63}$ | 19.3 | 0.15 | 20060922 | 41.84962 | 137.43253 | 147.63550 | 7.19597 | 0.4310974 | 2.2214407 | 20 | 1 | 2 days | 0.60 | M-v 9 | MPC | 2006 $UD_{63}$ |
| 2006 $UE_{63}$ | 19.8 | 0.15 | 20060922 | 358.34199 | 15.91487 | 6.93540 | 6.19780 | 0.6281431 | 4.2932922 | 46 | 1 | 37 days | 0.38 | M-v 4 | MPC | 2006 $UE_{63}$ |
| 2006 $UF_{63}$ | 20.2 | 0.15 | 20060922 | 7.49460 | 295.67390 | 46.63438 | 23.80345 | 0.4841102 | 2.2826248 | 59 | 1 | 33 days | 0.58 | M-v 6 | MPC | 2006 $UF_{63}$ |
| 2006 $UG_{63}$ | 17.5 | 0.15 | 20061012 | 43.10200 | 22.01018 | 299.64815 | 6.31877 | 0.2689379 | 2.3370470 | 18 | 1 | 35 days | 0.50 | | MPC | 2006 $UG_{63}$ |
| 2006 $UH_{63}$ | 17.9 | 0.15 | 20061012 | 344.96522 | 57.22790 | 357.78544 | 4.23495 | 0.1772062 | 2.5863364 | 23 | 1 | 50 days | 0.47 | | MPC | 2006 $UH_{63}$ |
| 2006 $UJ_{63}$ | 18.6 | 0.15 | 20061101 | 29.11201 | 24.27721 | 328.26795 | 2.68259 | 0.2470317 | 2.3547833 | 37 | 1 | 37 days | 0.56 | | MPC | 2006 $UJ_{63}$ |
| 2006 $UK_{63}$ | 16.6 | 0.15 | 20061012 | 31.08896 | 358.28512 | 354.73027 | 3.73928 | 0.1525299 | 2.6963717 | 51 | 1 | 56 days | 0.47 | | MPC | 2006 $UK_{63}$ |
| 2006 $UQ_{63}$ | 16.2 | 0.15 | 20061012 | 32.03920 | 95.25052 | 235.51779 | 11.90056 | 0.3176463 | 2.6540513 | 52 | 1 | 55 days | 0.41 | | MPC | 2006 $UQ_{63}$ |
| 2006 $US_{63}$ | 18.9 | 0.15 | 20061012 | 60.95483 | 262.24943 | 41.88324 | 7.19692 | 0.2013871 | 2.3390675 | 11 | 1 | 9 days | 0.56 | | MPC | 2006 $US_{63}$ |
| 2006 $UT_{63}$ | 18.7 | 0.15 | 20061012 | 13.40321 | 331.45368 | 33.87048 | 9.77172 | 0.2612983 | 2.6944412 | 27 | 1 | 48 days | 0.26 | | MPC | 2006 $UT_{63}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UU_{63}$ | 16.0 | 0.15 | 20061101 | 164.89418 | 151.70076 | 66.72585 | 12.76612 | 0.0681882 | 3.0860358 | 25 | 1 | 27 days | 0.67 | | | MPC | 2006 $UU_{63}$ |
| 2006 $UW_{63}$ | 18.8 | 0.15 | 20061101 | 48.55525 | 136.30863 | 186.34141 | 2.64002 | 0.2200655 | 2.3513020 | 27 | 1 | 17 days | 0.52 | | | MPC | 2006 $UW_{63}$ |
| 2006 $UX_{63}$ | 17.8 | 0.15 | 20061012 | 6.85986 | 334.83532 | 20.42880 | 14.54720 | 0.2656811 | 2.5697676 | 10 | 1 | 7 days | 0.51 | | | MPC | 2006 $UX_{63}$ |
| 2006 $UY_{63}$ | 18.3 | 0.15 | 20061012 | 347.18348 | 198.58615 | 206.96875 | 9.32673 | 0.1972179 | 2.5756524 | 22 | 1 | 52 days | 0.32 | | | MPC | 2006 $UY_{63}$ |
| 2006 $UA_{64}$ | 17.5 | 0.15 | 20061012 | 34.65085 | 290.78954 | 79.18358 | 32.15712 | 0.3531385 | 2.7202959 | 26 | 1 | 7 days | 0.32 | | | MPC | 2006 $UA_{64}$ |
| 2006 $UB_{64}$ | 20.7 | 0.15 | 20060922 | 329.67279 | 359.17710 | 130.42034 | 9.47182 | 0.6958938 | 2.0990513 | 26 | 1 | 16 days | 0.47 | M-v | 8 | MPC | 2006 $UB_{64}$ |
| 2006 $UC_{64}$ | 24.9 | 0.15 | 20060922 | 331.60856 | 268.18308 | 212.10412 | 6.11093 | 0.7010127 | 2.0374579 | 26 | 1 | 4 days | 0.74 | M-v | 8 | MPC | 2006 $UC_{64}$ |
| 2006 $UD_{64}$ | 20.2 | 0.15 | 20060922 | 321.20241 | 303.83874 | 205.99612 | 29.78615 | 0.7914840 | 2.1142608 | 21 | 1 | 28 days | 0.42 | M-v | 6 | MPC | 2006 $UD_{64}$ |
| 2006 $UE_{64}$ | 28.0 | 0.15 | 20060922 | 16.35190 | 286.86501 | 27.26063 | 8.19842 | 0.3742174 | 1.2821423 | 16 | 1 | 4 days | 0.79 | M-v | 7 | MPC | 2006 $UE_{64}$ |
| 2006 $UF_{64}$ | 17.4 | 0.15 | 20061101 | 351.77349 | 213.37877 | 223.79132 | 7.83451 | 0.4275633 | 2.6233344 | 56 | 1 | 42 days | 0.58 | | | MPC | 2006 $UF_{64}$ |
| 2006 $UG_{64}$ | 18.6 | 0.15 | 20060922 | 355.45330 | 202.80115 | 152.48806 | 20.99958 | 0.3708352 | 1.9023294 | 30 | 1 | 23 days | 0.41 | M-v | 7 | MPC | 2006 $UG_{64}$ |
| 2006 $UJ_{64}$ | 14.9 | 0.15 | 20061012 | 18.99014 | 85.53741 | 267.99171 | 8.22720 | 0.2908430 | 3.9805228 | 24 | 1 | 21 days | 0.67 | | | MPC | 2006 $UJ_{64}$ |
| 2006 $UK_{64}$ | 16.1 | 0.15 | 20061012 | 337.23054 | 60.21568 | 359.66754 | 12.11190 | 0.1476588 | 2.9347761 | 30 | 1 | 48 days | 0.74 | | | MPC | 2006 $UK_{64}$ |
| 2006 $UL_{64}$ | 16.2 | 0.15 | 20060922 | 72.21797 | 275.41744 | 32.70146 | 1.90241 | 0.0388676 | 3.0635836 | 39 | 1 | 66 days | 0.30 | M-v | 4 D | MPC | 2006 $UL_{64}$ |
| 2006 $UP_{64}$ | 16.2 | 0.15 | 20061012 | 305.91058 | 159.46398 | 292.63227 | 6.61446 | 0.1728378 | 3.0306741 | 19 | 1 | 44 days | 0.45 | | | MPC | 2006 $UP_{64}$ |
| 2006 $UQ_{64}$ | 17.4 | 0.15 | 20061101 | 31.28917 | 90.11251 | 272.80770 | 6.91922 | 0.1586209 | 2.2980299 | 34 | 1 | 39 days | 0.44 | | | MPC | 2006 $UQ_{64}$ |
| 2006 $UR_{64}$ | 18.8 | 0.15 | 20061012 | 45.61272 | 278.29813 | 35.89437 | 3.22641 | 0.2471836 | 2.3779477 | 20 | 1 | 8 days | 0.41 | | | MPC | 2006 $UR_{64}$ |
| 2006 $UY_{64}$ | 19.5 | 0.15 | 20060922 | 96.73075 | 210.86462 | 30.84393 | 26.22396 | 0.1577542 | 0.9313620 | 95 | 1 | 40 days | 0.37 | M-v | 6 | MPC | 2006 $UY_{64}$ |
| 2006 $UZ_{64}$ | 17.9 | 0.15 | 20060922 | 346.09603 | 20.26020 | 14.38375 | 0.56374 | 0.2259089 | 2.4043200 | 38 | 1 | 60 days | 0.31 | M-v | 4 | MPC | 2006 $UZ_{64}$ |
| 2006 $UA_{65}$ | 18.1 | 0.15 | 20061012 | 6.34949 | 169.47132 | 200.73773 | 5.01245 | 0.2962912 | 2.7535607 | 33 | 1 | 58 days | 0.35 | | | MPC | 2006 $UA_{65}$ |
| 2006 $UC_{65}$ | 19.0 | 0.15 | 20060922 | 313.75422 | 248.59371 | 200.49574 | 20.73769 | 0.2881196 | 2.3094293 | 13 | 1 | 22 days | 0.22 | | | MPC | 2006 $UC_{65}$ |
| 2006 $UD_{65}$ | 16.5 | 0.15 | 20060922 | 258.30102 | 298.51214 | 194.33255 | 10.90193 | 0.1309886 | 2.7163120 | 25 | 1 | 66 days | 0.27 | M-v | 4 | MPC | 2006 $UD_{65}$ |
| 2006 $UG_{65}$ | 16.6 | 0.15 | 20061012 | 4.50515 | 12.24895 | 9.28588 | 10.18149 | 0.0805075 | 2.9904865 | 15 | 1 | 34 days | 0.24 | | | MPC | 2006 $UG_{65}$ |
| 2006 $UH_{65}$ | 17.0 | 0.15 | 20060922 | 338.82711 | 40.77974 | 7.43163 | 9.17725 | 0.0923043 | 3.0588247 | 22 | 1 | 61 days | 0.24 | M-v | 4 | MPC | 2006 $UH_{65}$ |
| 2006 $UJ_{65}$ | 16.8 | 0.15 | 20060922 | 9.77511 | 10.96124 | 0.72848 | 5.91823 | 0.0549089 | 2.7240450 | 19 | 1 | 61 days | 0.24 | M-v | 4 | MPC | 2006 $UJ_{65}$ |
| 2006 $UK_{65}$ | 17.6 | 0.15 | 20061012 | 13.52456 | 148.28264 | 210.20917 | 17.05581 | 0.3079068 | 3.0876841 | 29 | 1 | 46 days | 0.60 | | | MPC | 2006 $UK_{65}$ |
| 2006 $UT_{65}$ | 16.4 | 0.15 | 20061012 | 1.42489 | 278.64581 | 95.28042 | 2.11245 | 0.0722171 | 2.6669983 | 27 | 1 | 49 days | 0.40 | | | MPC | 2006 $UT_{65}$ |
| 2006 $UU_{65}$ | 16.3 | 0.15 | 20061012 | 56.08822 | 261.57737 | 46.85372 | 6.28409 | 0.1082842 | 2.7920904 | 18 | 1 | 49 days | 0.49 | | | MPC | 2006 $UU_{65}$ |
| 2006 $UZ_{65}$ | 16.9 | 0.15 | 20061012 | 351.50511 | 18.36442 | 26.79215 | 15.60193 | 0.2677264 | 3.1667241 | 24 | 1 | 52 days | 0.26 | | | MPC | 2006 $UZ_{65}$ |
| 2006 $UA_{66}$ | 18.7 | 0.15 | 20061101 | 345.11537 | 43.38353 | 19.00679 | 4.43427 | 0.2556790 | 2.6050255 | 21 | 1 | 42 days | 0.37 | | | MPC | 2006 $UA_{66}$ |
| 2006 $UC_{66}$ | 17.3 | 0.15 | 20060922 | 341.05890 | 195.51244 | 192.02601 | 4.20904 | 0.1143328 | 2.6181595 | 15 | 1 | 35 days | 0.18 | | | MPC | 2006 $UC_{66}$ |
| 2006 $UD_{66}$ | 17.9 | 0.15 | 20060922 | 345.65531 | 193.53109 | 191.91700 | 9.27455 | 0.1700485 | 2.7857381 | 18 | 1 | 34 days | 0.34 | | | MPC | 2006 $UD_{66}$ |
| 2006 $UK_{66}$ | 17.9 | 0.15 | 20060922 | 6.79432 | 17.09167 | 349.92577 | 0.69673 | 0.2308074 | 2.5479644 | 33 | 1 | 125 days | 0.46 | M-v | 4 | MPC | 2006 $UK_{66}$ |
| 2006 $UM_{66}$ | 16.9 | 0.15 | 20061012 | 53.46869 | 96.32352 | 209.92214 | 12.92800 | 0.2643620 | 3.2028739 | 17 | 1 | 29 days | 0.27 | | | MPC | 2006 $UM_{66}$ |
| 2006 $UN_{66}$ | 17.0 | 0.15 | 20061012 | 276.65033 | 287.84717 | 209.88965 | 17.48458 | 0.2299790 | 2.5233947 | 9 | 1 | 12 days | 0.11 | | | MPC | 2006 $UN_{66}$ |
| 2006 $UP_{66}$ | 17.2 | 0.15 | 20061012 | 306.77019 | 244.44573 | 210.40339 | 14.34387 | 0.1334329 | 3.2075603 | 10 | 1 | 11 days | 0.30 | | | MPC | 2006 $UP_{66}$ |
| 2006 $UQ_{66}$ | 18.2 | 0.15 | 20061012 | 327.80088 | 236.78907 | 209.47987 | 12.70339 | 0.3181442 | 2.7407620 | 15 | 1 | 33 days | 0.26 | | | MPC | 2006 $UQ_{66}$ |
| 2006 $UT_{66}$ | 17.9 | 0.15 | 20060922 | 31.74181 | 174.11121 | 149.91121 | 6.40340 | 0.2118736 | 2.2369534 | 30 | 1 | 59 days | 0.39 | | | MPC | 2006 $UT_{66}$ |
| 2006 $UW_{66}$ | 15.6 | 0.15 | 20061012 | 1.47454 | 205.83262 | 175.49084 | 9.89325 | 0.1023073 | 3.2146300 | 14 | 1 | 6 days | 0.34 | | | MPC | 2006 $UW_{66}$ |
| 2006 $UZ_{66}$ | 17.9 | 0.15 | 20060922 | 302.65890 | 267.05235 | 192.00782 | 5.68153 | 0.2752990 | 2.7690875 | 15 | 1 | 32 days | 0.45 | | | MPC | 2006 $UZ_{66}$ |
| 2006 $UC_{67}$ | 15.0 | 0.15 | 20061012 | 184.30906 | 151.06979 | 52.11349 | 11.29931 | 0.1732765 | 2.6352792 | 11 | 1 | 5 days | 0.75 | | | MPC | 2006 $UC_{67}$ |
| 2006 $UG_{67}$ | 18.0 | 0.15 | 20061101 | 46.77907 | 299.06831 | 29.92001 | 12.08871 | 0.2144353 | 2.5379933 | 19 | 1 | 33 days | 0.19 | | | MPC | 2006 $UG_{67}$ |
| 2006 $UJ_{67}$ | 16.9 | 0.15 | 20061012 | 34.02801 | 284.11658 | 51.28597 | 15.25762 | 0.1934378 | 2.5275779 | 18 | 1 | 12 days | 0.78 | | | MPC | 2006 $UJ_{67}$ |
| 2006 $UL_{67}$ | 16.8 | 0.15 | 20061012 | 303.21141 | 35.84667 | 52.51020 | 7.14874 | 0.0406531 | 2.7545287 | 13 | 1 | 6 days | 0.35 | | | MPC | 2006 $UL_{67}$ |
| 2006 $UM_{67}$ | 16.9 | 0.15 | 20060922 | 220.91109 | 344.68958 | 180.00207 | 5.82141 | 0.0502172 | 2.3010161 | 32 | 1 | 101 days | 0.58 | M-v | 5 | MPC | 2006 $UM_{67}$ |
| 2006 $UN_{67}$ | 18.1 | 0.15 | 20061012 | 356.14039 | 333.73121 | 58.86226 | 5.79500 | 0.2887683 | 2.5499245 | 30 | 1 | 58 days | 0.61 | | | MPC | 2006 $UN_{67}$ |
| 2006 $UQ_{67}$ | 17.0 | 0.15 | 20061012 | 317.16744 | 310.82252 | 140.79991 | 3.14844 | 0.2223918 | 2.4600137 | 21 | 1 | 6 days | 0.31 | | | MPC | 2006 $UQ_{67}$ |
| 2006 $US_{67}$ | 17.7 | 0.15 | 20061012 | 339.50539 | 351.15608 | 61.50779 | 5.07130 | 0.1103449 | 2.1517080 | 15 | 1 | 6 days | 0.56 | | | MPC | 2006 $US_{67}$ |
| 2006 $UT_{67}$ | 16.6 | 0.15 | 20061012 | 25.25042 | 186.54571 | 167.36688 | 4.41332 | 0.1581365 | 2.5536106 | 11 | 1 | 6 days | 0.31 | | | MPC | 2006 $UT_{67}$ |
| 2006 $UW_{67}$ | 17.0 | 0.15 | 20061012 | 15.83257 | 222.25527 | 138.08864 | 4.23109 | 0.2242482 | 2.3098516 | 27 | 1 | 55 days | 0.50 | | | MPC | 2006 $UW_{67}$ |
| 2006 $UX_{67}$ | 15.7 | 0.15 | 20061012 | 314.89969 | 10.94006 | 66.50323 | 10.99764 | 0.0466608 | 2.9829824 | 11 | 1 | 6 days | 0.52 | | | MPC | 2006 $UX_{67}$ |
| 2006 $UY_{67}$ | 17.2 | 0.15 | 20061012 | 49.62168 | 149.10393 | 174.57967 | 7.60111 | 0.1502533 | 2.2378021 | 11 | 1 | 6 days | 0.58 | | | MPC | 2006 $UY_{67}$ |
| 2006 $UF_{68}$ | 16.7 | 0.15 | 20061012 | 40.53694 | 174.24631 | 152.90602 | 3.65533 | 0.2349439 | 2.6030934 | 15 | 1 | 6 days | 0.75 | | | MPC | 2006 $UF_{68}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UK_{68}$ | 16.7 | 0.15 | 20061012 | 327.87913 | 11.24169 | 55.55234 | 7.47946 | 0.0673837 | 2.2878987 | 32 | 1 | 49 days | 0.49 | | MPC | 2006 $UK_{68}$ |
| 2006 $UL_{68}$ | 16.7 | 0.15 | 20061101 | 83.87785 | 103.38806 | 205.97920 | 10.50859 | 0.0471933 | 3.1588851 | 14 | 1 | 31 days | 0.25 | | MPC | 2006 $UL_{68}$ |
| 2006 $UM_{68}$ | 17.3 | 0.15 | 20061012 | 354.25449 | 200.60332 | 200.92895 | 7.77276 | 0.1087636 | 3.0229834 | 18 | 1 | 51 days | 0.31 | | MPC | 2006 $UM_{68}$ |
| 2006 $UO_{68}$ | 16.7 | 0.15 | 20061101 | 60.97421 | 138.72713 | 188.49244 | 3.66370 | 0.0926614 | 3.2366931 | 14 | 1 | 31 days | 0.31 | | MPC | 2006 $UO_{68}$ |
| 2006 $UP_{68}$ | 18.5 | 0.15 | 20061012 | 18.36771 | 152.98980 | 209.08165 | 13.10806 | 0.1926936 | 2.5661368 | 13 | 1 | 25 days | 0.20 | | MPC | 2006 $UP_{68}$ |
| 2006 $UR_{68}$ | 18.2 | 0.15 | 20061101 | 356.95385 | 337.70397 | 65.63463 | 4.77036 | 0.2375247 | 2.2941920 | 25 | 1 | 32 days | 0.53 | | MPC | 2006 $UR_{68}$ |
| 2006 $US_{68}$ | 16.2 | 0.15 | 20061012 | 26.02211 | 273.26485 | 88.46484 | 4.62092 | 0.0918291 | 2.7163343 | 15 | 1 | 28 days | 0.54 | | MPC | 2006 $US_{68}$ |
| 2006 $UW_{68}$ | 17.8 | 0.15 | 20061012 | 29.40796 | 277.95037 | 62.44949 | 9.82304 | 0.2614260 | 2.4566774 | 14 | 1 | 28 days | 0.39 | | MPC | 2006 $UW_{68}$ |
| 2006 $UX_{68}$ | 16.3 | 0.15 | 20061101 | 352.31117 | 313.82322 | 96.73437 | 4.45939 | 0.1784658 | 2.9082632 | 15 | 1 | 38 days | 0.36 | | MPC | 2006 $UX_{68}$ |
| 2006 $UY_{68}$ | 18.0 | 0.15 | 20061012 | 18.01096 | 314.98613 | 44.66768 | 13.64573 | 0.2703632 | 2.6478961 | 14 | 1 | 26 days | 0.31 | | MPC | 2006 $UY_{68}$ |
| 2006 $UD_{69}$ | 15.6 | 0.15 | 20061012 | 357.72847 | 316.45603 | 82.59573 | 7.12695 | 0.1735049 | 3.1803560 | 34 | 1 | 54 days | 0.68 | | MPC | 2006 $UD_{69}$ |
| 2006 $UJ_{69}$ | 16.4 | 0.15 | 20061101 | 28.91461 | 305.06567 | 52.92307 | 16.19819 | 0.1983858 | 2.6085108 | 35 | 1 | 42 days | 0.57 | | MPC | 2006 $UJ_{69}$ |
| 2006 $UK_{69}$ | 16.4 | 0.15 | 20061101 | 314.31646 | 346.97230 | 112.25734 | 5.17494 | 0.1296596 | 2.5643729 | 23 | 1 | 38 days | 0.43 | | MPC | 2006 $UK_{69}$ |
| 2006 $UO_{69}$ | 16.1 | 0.15 | 20061012 | 50.58775 | 157.92857 | 159.62778 | 6.26650 | 0.2629835 | 2.3346399 | 24 | 1 | 50 days | 0.47 | | MPC | 2006 $UO_{69}$ |
| 2006 $UP_{69}$ | 16.9 | 0.15 | 20060922 | 7.08488 | 303.76893 | 67.08960 | 5.94750 | 0.3042898 | 2.5947431 | 69 | 1 | 68 days | 0.59 | M-v 5 | MPC | 2006 $UP_{69}$ |
| 2006 $UQ_{69}$ | 18.1 | 0.15 | 20061012 | 34.03054 | 286.41484 | 52.40687 | 6.01070 | 0.1763244 | 2.2072112 | 14 | 1 | 6 days | 0.29 | | MPC | 2006 $UQ_{69}$ |
| 2006 $US_{69}$ | 17.6 | 0.15 | 20061012 | 315.79253 | 280.29346 | 162.57950 | 4.50324 | 0.1224194 | 2.2992065 | 25 | 1 | 52 days | 0.27 | | MPC | 2006 $US_{69}$ |
| 2006 $UU_{69}$ | 16.0 | 0.15 | 20061012 | 267.24224 | 80.79212 | 46.81729 | 12.36862 | 0.0537677 | 2.4820429 | 14 | 1 | 6 days | 0.77 | | MPC | 2006 $UU_{69}$ |
| 2006 $UV_{69}$ | 16.6 | 0.15 | 20060922 | 55.68426 | 141.39679 | 164.98428 | 6.27021 | 0.2170421 | 2.9941291 | 11 | 1 | 22 days | 0.46 | | MPC | 2006 $UV_{69}$ |
| 2006 $UX_{69}$ | 16.7 | 0.15 | 20061012 | 64.18889 | 208.16430 | 110.97833 | 3.56904 | 0.0652855 | 2.6195490 | 14 | 1 | 28 days | 0.45 | | MPC | 2006 $UX_{69}$ |
| 2006 $UY_{69}$ | 18.1 | 0.15 | 20061012 | 328.14168 | 60.27505 | 25.41243 | 8.65283 | 0.2458384 | 2.6824380 | 10 | 1 | 16 days | 0.21 | | MPC | 2006 $UY_{69}$ |
| 2006 $UZ_{69}$ | 17.0 | 0.15 | 20061101 | 18.61886 | 345.23199 | 30.24415 | 11.32614 | 0.1763902 | 3.1057996 | 18 | 1 | 40 days | 0.28 | | MPC | 2006 $UZ_{69}$ |
| 2006 $UA_{70}$ | 16.9 | 0.15 | 20061012 | 32.36100 | 28.26042 | 323.40432 | 1.77244 | 0.1710793 | 2.8917232 | 18 | 1 | 48 days | 0.28 | | MPC | 2006 $UA_{70}$ |
| 2006 $UD_{70}$ | 15.2 | 0.15 | 20061101 | 348.75670 | 19.34359 | 50.29768 | 37.24940 | 0.1752388 | 2.7548722 | 49 | 1 | 36 days | 0.49 | | MPC | 2006 $UD_{70}$ |
| 2006 $UE_{70}$ | 18.4 | 0.15 | 20061012 | 355.95196 | 186.34777 | 211.93015 | 5.07784 | 0.1458127 | 2.1876066 | 27 | 1 | 49 days | 0.34 | | MPC | 2006 $UE_{70}$ |
| 2006 $UF_{70}$ | 17.6 | 0.15 | 20061101 | 21.97800 | 241.01268 | 134.80683 | 3.18929 | 0.1308019 | 2.2125379 | 28 | 1 | 35 days | 0.64 | | MPC | 2006 $UF_{70}$ |
| 2006 $UH_{70}$ | 15.4 | 0.15 | 20060922 | 348.56531 | 210.62082 | 214.67915 | 19.43654 | 0.2957469 | 3.0919572 | 35 | 1 | 65 days | 0.51 | M-v 4 | MPC | 2006 $UH_{70}$ |
| 2006 $UJ_{70}$ | 16.5 | 0.15 | 20061012 | 7.21921 | 351.80879 | 43.33871 | 11.83207 | 0.0898443 | 3.1132554 | 20 | 1 | 52 days | 0.23 | | MPC | 2006 $UJ_{70}$ |
| 2006 $UP_{70}$ | 18.1 | 0.15 | 20061101 | 24.66740 | 320.25097 | 47.64133 | 22.37528 | 0.0998803 | 1.9112524 | 33 | 1 | 42 days | 0.43 | | MPC | 2006 $UP_{70}$ |
| 2006 $UW_{70}$ | 16.3 | 0.15 | 20061101 | 37.74900 | 282.58584 | 61.98128 | 13.39342 | 0.2415492 | 2.6730836 | 30 | 1 | 35 days | 0.52 | | MPC | 2006 $UW_{70}$ |
| 2006 $UD_{71}$ | 16.3 | 0.15 | 20061101 | 43.56518 | 257.10365 | 80.37352 | 13.40887 | 0.2833890 | 2.6928762 | 34 | 1 | 38 days | 0.52 | | MPC | 2006 $UD_{71}$ |
| 2006 $UF_{71}$ | 17.3 | 0.15 | 20061101 | 26.54839 | 183.82295 | 197.47578 | 5.80394 | 0.0764938 | 2.7137054 | 19 | 1 | 42 days | 0.27 | | MPC | 2006 $UF_{71}$ |
| 2006 $UG_{71}$ | 17.2 | 0.15 | 20061101 | 7.14651 | 307.60452 | 90.50195 | 3.24176 | 0.2086559 | 2.6476110 | 24 | 1 | 35 days | 0.37 | | MPC | 2006 $UG_{71}$ |
| 2006 $UJ_{71}$ | 16.6 | 0.15 | 20061012 | 31.02447 | 159.55435 | 211.77929 | 8.98079 | 0.0580505 | 3.0855198 | 14 | 1 | 49 days | 0.87 | | MPC | 2006 $UJ_{71}$ |
| 2006 $UM_{71}$ | 16.9 | 0.15 | 20061012 | 46.39534 | 271.20658 | 61.01665 | 4.32910 | 0.1021729 | 2.7232833 | 20 | 1 | 28 days | 0.19 | | MPC | 2006 $UM_{71}$ |
| 2006 $UN_{71}$ | 17.0 | 0.15 | 20061012 | 304.29053 | 333.17562 | 135.70881 | 2.26544 | 0.2338705 | 2.6241422 | 17 | 1 | 58 days | 0.18 | | MPC | 2006 $UN_{71}$ |
| 2006 $UO_{71}$ | 17.1 | 0.15 | 20061012 | 106.03986 | 82.20101 | 192.55990 | 8.82358 | 0.0820614 | 3.0310272 | 11 | 1 | 14 days | 0.34 | | MPC | 2006 $UO_{71}$ |
| 2006 $UP_{71}$ | 16.2 | 0.15 | 20061012 | 151.82005 | 296.14111 | 272.58800 | 8.48225 | 0.0630105 | 3.1433716 | 9 | 1 | 6 days | 0.18 | | MPC | 2006 $UP_{71}$ |
| 2006 $UQ_{71}$ | 17.8 | 0.15 | 20061012 | 296.98544 | 155.61154 | 281.02523 | 6.23586 | 0.0768808 | 2.3854206 | 12 | 1 | 6 days | 0.32 | | MPC | 2006 $UQ_{71}$ |
| 2006 $UR_{71}$ | 15.7 | 0.15 | 20061012 | 313.93683 | 86.74563 | 329.66760 | 12.79346 | 0.0741132 | 3.2041818 | 9 | 1 | 6 days | 0.12 | | MPC | 2006 $UR_{71}$ |
| 2006 $UT_{71}$ | 17.6 | 0.15 | 20061012 | 304.55065 | 218.98378 | 216.70281 | 12.58938 | 0.1469245 | 2.5360724 | 15 | 1 | 6 days | 0.22 | | MPC | 2006 $UT_{71}$ |
| 2006 $UW_{71}$ | 17.6 | 0.15 | 20061012 | 318.82739 | 78.00892 | 334.07389 | 9.96121 | 0.0491414 | 2.2254728 | 9 | 1 | 5 days | 0.12 | | MPC | 2006 $UW_{71}$ |
| 2006 $UX_{71}$ | 17.7 | 0.15 | 20061012 | 21.95677 | 80.31992 | 254.25505 | 8.31828 | 0.1911997 | 2.7038585 | 9 | 1 | 6 days | 0.17 | | MPC | 2006 $UX_{71}$ |
| 2006 $UZ_{71}$ | 18.0 | 0.15 | 20061012 | 18.62303 | 32.89404 | 309.56616 | 5.53831 | 0.1442586 | 2.3500407 | 12 | 1 | 6 days | 0.16 | | MPC | 2006 $UZ_{71}$ |
| 2006 $UC_{72}$ | 16.2 | 0.15 | 20061012 | 304.19856 | 96.56111 | 343.76625 | 17.59240 | 0.1780492 | 3.2620251 | 12 | 1 | 6 days | 0.22 | | MPC | 2006 $UC_{72}$ |
| 2006 $UD_{72}$ | 18.0 | 0.15 | 20061012 | 62.31561 | 27.74600 | 263.43656 | 5.20630 | 0.1219982 | 2.3470928 | 9 | 1 | 6 days | 0.21 | | MPC | 2006 $UD_{72}$ |
| 2006 $UE_{72}$ | 18.3 | 0.15 | 20061012 | 331.80456 | 57.19876 | 349.98293 | 16.27332 | 0.1658923 | 2.5798281 | 9 | 1 | 6 days | 0.29 | | MPC | 2006 $UE_{72}$ |
| 2006 $UF_{72}$ | 18.4 | 0.15 | 20061012 | 27.53027 | 37.54674 | 295.55027 | 5.48175 | 0.1216224 | 2.2932262 | 15 | 1 | 12 days | 0.34 | | MPC | 2006 $UF_{72}$ |
| 2006 $UJ_{72}$ | 17.0 | 0.15 | 20061012 | 297.39775 | 242.81327 | 210.38676 | 21.56594 | 0.0580329 | 2.6715525 | 25 | 1 | 49 days | 0.49 | | MPC | 2006 $UJ_{72}$ |
| 2006 $UL_{72}$ | 17.0 | 0.15 | 20061012 | 341.52222 | 137.30009 | 263.71512 | 2.31070 | 0.2002556 | 2.7336892 | 18 | 1 | 31 days | 0.42 | | MPC | 2006 $UL_{72}$ |
| 2006 $UM_{72}$ | 17.3 | 0.15 | 20061012 | 68.02656 | 344.48716 | 302.43749 | 4.27361 | 0.1631555 | 2.1985798 | 15 | 1 | 12 days | 0.51 | | MPC | 2006 $UM_{72}$ |
| 2006 $UR_{72}$ | 16.7 | 0.15 | 20061012 | 320.43692 | 73.97663 | 0.90285 | 10.39368 | 0.0939849 | 3.1332767 | 12 | 1 | 29 days | 0.32 | | MPC | 2006 $UR_{72}$ |
| 2006 $UT_{72}$ | 17.3 | 0.15 | 20060922 | 19.84241 | 101.59405 | 251.98867 | 6.55553 | 0.1619334 | 2.8995654 | 16 | 1 | 60 days | 0.36 | M-v 4 | MPC | 2006 $UT_{72}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UW_{72}$ | 16.8 | 0.15 | 20061012 | 359.00054 | 28.07989 | 0.70965 | 10.25265 | 0.1147770 | 2.9673935 | 18 | 1 | 33 days | 0.15 | | MPC | 2006 $UW_{72}$ |
| 2006 $UX_{72}$ | 16.5 | 0.15 | 20061012 | 306.52747 | 92.63872 | 352.22019 | 8.55331 | 0.0337285 | 3.1839584 | 12 | 1 | 29 days | 0.23 | | MPC | 2006 $UX_{72}$ |
| 2006 $UY_{72}$ | 18.0 | 0.15 | 20061012 | 95.96350 | 321.39578 | 311.90003 | 4.57862 | 0.1599227 | 2.2682222 | 12 | 1 | 33 days | 0.21 | | MPC | 2006 $UY_{72}$ |
| 2006 $UB_{73}$ | 17.9 | 0.15 | 20061012 | 301.04541 | 129.68394 | 332.62086 | 4.48510 | 0.1567005 | 2.4005789 | 18 | 1 | 33 days | 0.25 | | MPC | 2006 $UB_{73}$ |
| 2006 $UG_{73}$ | 16.4 | 0.15 | 20061012 | 312.69844 | 75.52067 | 6.45082 | 10.58958 | 0.0643233 | 3.0194366 | 12 | 1 | 33 days | 0.25 | | MPC | 2006 $UG_{73}$ |
| 2006 $UJ_{73}$ | 18.0 | 0.15 | 20061012 | 42.41813 | 330.41595 | 345.33608 | 5.01620 | 0.2868381 | 2.4551600 | 9 | 1 | 4 days | 0.74 | | MPC | 2006 $UJ_{73}$ |
| 2006 $UL_{73}$ | 17.3 | 0.15 | 20061012 | 70.38073 | 350.54774 | 323.54578 | 4.48836 | 0.0374888 | 2.6699238 | 12 | 1 | 33 days | 0.17 | | MPC | 2006 $UL_{73}$ |
| 2006 $UM_{73}$ | 18.4 | 0.15 | 20060922 | 325.98994 | 95.40979 | 338.05046 | 3.63457 | 0.2521197 | 2.5653734 | 19 | 1 | 61 days | 0.24 | M-v 4 | MPC | 2006 $UM_{73}$ |
| 2006 $UN_{73}$ | 17.4 | 0.15 | 20060922 | 275.72474 | 158.46603 | 329.20201 | 4.07484 | 0.1882451 | 2.5327751 | 16 | 1 | 61 days | 0.23 | M-v 4 | MPC | 2006 $UN_{73}$ |
| 2006 $UO_{73}$ | 18.2 | 0.15 | 20061012 | 13.46826 | 102.18032 | 265.58413 | 4.13718 | 0.1485356 | 2.6893531 | 12 | 1 | 33 days | 0.32 | | MPC | 2006 $UO_{73}$ |
| 2006 $UR_{73}$ | 15.7 | 0.15 | 20061012 | 35.75013 | 337.84809 | 8.06287 | 11.32957 | 0.0838327 | 3.1260704 | 21 | 1 | 34 days | 0.29 | | MPC | 2006 $UR_{73}$ |
| 2006 $US_{73}$ | 16.4 | 0.15 | 20061012 | 65.69448 | 301.78059 | 12.67022 | 15.90342 | 0.0770460 | 3.1972083 | 12 | 1 | 34 days | 0.28 | | MPC | 2006 $US_{73}$ |
| 2006 $UU_{73}$ | 19.0 | 0.15 | 20061012 | 24.07492 | 1.50667 | 349.81718 | 4.29484 | 0.1716442 | 2.3242868 | 18 | 1 | 34 days | 0.26 | | MPC | 2006 $UU_{73}$ |
| 2006 $UX_{73}$ | 18.1 | 0.15 | 20061012 | 286.13412 | 181.86199 | 289.98450 | 3.28176 | 0.1048245 | 2.2156935 | 19 | 1 | 56 days | 0.37 | | MPC | 2006 $UX_{73}$ |
| 2006 $UY_{73}$ | 16.1 | 0.15 | 20061012 | 251.47157 | 270.04655 | 235.29481 | 8.36117 | 0.0877835 | 3.1321376 | 21 | 1 | 53 days | 0.25 | | MPC | 2006 $UY_{73}$ |
| 2006 $UA_{74}$ | 18.9 | 0.15 | 20061012 | 338.70445 | 179.97877 | 239.62135 | 5.67981 | 0.2326271 | 2.4436315 | 15 | 1 | 55 days | 0.20 | | MPC | 2006 $UA_{74}$ |
| 2006 $UD_{74}$ | 16.0 | 0.15 | 20060922 | 94.19950 | 290.03240 | 353.01075 | 6.31333 | 0.0676520 | 3.1204850 | 16 | 1 | 61 days | 0.33 | M-v 4 | MPC | 2006 $UD_{74}$ |
| 2006 $UE_{74}$ | 16.9 | 0.15 | 20061012 | 54.25362 | 309.65084 | 3.47414 | 7.62151 | 0.1881876 | 2.6460843 | 12 | 1 | 34 days | 0.18 | | MPC | 2006 $UE_{74}$ |
| 2006 $UG_{74}$ | 16.7 | 0.15 | 20060922 | 46.50081 | 322.51453 | 2.80816 | 8.57112 | 0.1299164 | 3.0145396 | 16 | 1 | 61 days | 0.19 | M-v 4 | MPC | 2006 $UG_{74}$ |
| 2006 $UL_{74}$ | 17.2 | 0.15 | 20061101 | 344.97154 | 176.94895 | 233.45111 | 9.56857 | 0.0941136 | 3.1065783 | 12 | 1 | 30 days | 0.26 | | MPC | 2006 $UL_{74}$ |
| 2006 $UN_{74}$ | 17.5 | 0.15 | 20060922 | 333.36396 | 61.71201 | 350.05638 | 4.91159 | 0.0428476 | 2.6893513 | 16 | 1 | 61 days | 0.34 | M-v 4 | MPC | 2006 $UN_{74}$ |
| 2006 $UP_{74}$ | 18.2 | 0.15 | 20061012 | 39.51362 | 39.66932 | 279.55554 | 3.45410 | 0.2894555 | 2.5598738 | 12 | 1 | 33 days | 0.25 | | MPC | 2006 $UP_{74}$ |
| 2006 $UQ_{74}$ | 18.6 | 0.15 | 20061012 | 354.78076 | 65.00741 | 328.35955 | 2.56604 | 0.1813270 | 2.3583943 | 15 | 1 | 46 days | 0.13 | | MPC | 2006 $UQ_{74}$ |
| 2006 $UR_{74}$ | 17.6 | 0.15 | 20061012 | 315.62588 | 147.44077 | 306.50921 | 2.95089 | 0.2308781 | 2.5753976 | 23 | 1 | 56 days | 0.31 | | MPC | 2006 $UR_{74}$ |
| 2006 $UU_{74}$ | 19.0 | 0.15 | 20061012 | 22.16809 | 123.58632 | 220.74421 | 9.67710 | 0.2893348 | 2.2840038 | 25 | 1 | 54 days | 0.30 | | MPC | 2006 $UU_{74}$ |
| 2006 $UV_{74}$ | 17.6 | 0.15 | 20061012 | 339.77659 | 40.93762 | 11.52663 | 10.51936 | 0.1126708 | 2.3545156 | 16 | 1 | 42 days | 0.29 | | MPC | 2006 $UV_{74}$ |
| 2006 $UW_{74}$ | 16.9 | 0.15 | 20061012 | 337.75278 | 43.23741 | 15.06487 | 12.38812 | 0.1591419 | 2.7080488 | 14 | 1 | 50 days | 0.27 | | MPC | 2006 $UW_{74}$ |
| 2006 $UX_{74}$ | 17.6 | 0.15 | 20060922 | 87.53125 | 288.38321 | 353.37222 | 4.49741 | 0.1147932 | 2.3654619 | 12 | 1 | 26 days | 0.20 | | MPC | 2006 $UX_{74}$ |
| 2006 $UZ_{74}$ | 17.0 | 0.15 | 20061012 | 356.66199 | 154.05631 | 238.37866 | 7.49385 | 0.0791293 | 3.1497905 | 12 | 1 | 35 days | 0.21 | | MPC | 2006 $UZ_{74}$ |
| 2006 $UA_{75}$ | 17.4 | 0.15 | 20061101 | 319.46098 | 204.71097 | 237.59421 | 7.01185 | 0.1041702 | 2.4754998 | 15 | 1 | 32 days | 0.22 | | MPC | 2006 $UA_{75}$ |
| 2006 $UC_{75}$ | 16.1 | 0.15 | 20061012 | 317.70802 | 48.69225 | 19.66408 | 12.40891 | 0.1205346 | 2.8615212 | 18 | 1 | 15 days | 0.40 | | MPC | 2006 $UC_{75}$ |
| 2006 $UK_{75}$ | 16.4 | 0.15 | 20060922 | 40.30520 | 139.44373 | 189.78563 | 8.94250 | 0.0999685 | 3.0417186 | 21 | 1 | 65 days | 0.22 | M-v 4 | MPC | 2006 $UK_{75}$ |
| 2006 $UP_{75}$ | 17.8 | 0.15 | 20061012 | 9.92798 | 335.51604 | 31.99402 | 13.88852 | 0.1937567 | 2.6691988 | 32 | 1 | 42 days | 0.40 | | MPC | 2006 $UP_{75}$ |
| 2006 $US_{75}$ | 17.8 | 0.15 | 20061012 | 19.03734 | 329.80497 | 30.46442 | 14.76724 | 0.1116958 | 2.6701934 | 20 | 1 | 52 days | 0.41 | | MPC | 2006 $US_{75}$ |
| 2006 $UT_{75}$ | 16.3 | 0.15 | 20061012 | 110.27131 | 232.14615 | 29.54097 | 15.33755 | 0.1226093 | 2.6514137 | 25 | 1 | 52 days | 0.23 | | MPC | 2006 $UT_{75}$ |
| 2006 $UU_{75}$ | 17.6 | 0.15 | 20060922 | 332.70403 | 17.88757 | 32.26589 | 7.32566 | 0.0963084 | 2.3322591 | 28 | 1 | 62 days | 0.48 | M-v 4 | MPC | 2006 $UU_{75}$ |
| 2006 $UV_{75}$ | 18.4 | 0.15 | 20061012 | 11.79079 | 334.15012 | 31.75975 | 9.23230 | 0.2051033 | 2.8390006 | 17 | 1 | 10 days | 0.34 | | MPC | 2006 $UV_{75}$ |
| 2006 $UW_{75}$ | 18.1 | 0.15 | 20061012 | 358.63927 | 187.85469 | 198.95707 | 7.35903 | 0.1861195 | 3.1618880 | 21 | 1 | 53 days | 0.40 | | MPC | 2006 $UW_{75}$ |
| 2006 $UY_{75}$ | 19.0 | 0.15 | 20061012 | 53.94269 | 267.09008 | 42.85201 | 4.07551 | 0.1960202 | 2.4082660 | 10 | 1 | 6 days | 0.40 | | MPC | 2006 $UY_{75}$ |
| 2006 $UZ_{75}$ | 17.9 | 0.15 | 20061012 | 349.49821 | 242.85344 | 157.81932 | 1.70682 | 0.1944263 | 2.8471789 | 11 | 1 | 5 days | 0.48 | | MPC | 2006 $UZ_{75}$ |
| 2006 $UA_{76}$ | 17.2 | 0.15 | 20061012 | 35.18070 | 275.80444 | 62.80263 | 1.77149 | 0.1573945 | 3.1883422 | 17 | 1 | 45 days | 0.41 | | MPC | 2006 $UA_{76}$ |
| 2006 $UB_{76}$ | 17.8 | 0.15 | 20060922 | 250.49567 | 313.63239 | 194.59336 | 6.22511 | 0.1758592 | 2.3577747 | 11 | 1 | 26 days | 0.50 | | MPC | 2006 $UB_{76}$ |
| 2006 $UE_{76}$ | 16.4 | 0.15 | 20061012 | 49.79544 | 291.86702 | 37.79820 | 10.79799 | 0.0780735 | 3.1949935 | 20 | 1 | 52 days | 0.35 | | MPC | 2006 $UE_{76}$ |
| 2006 $UF_{76}$ | 15.8 | 0.15 | 20061101 | 1.38031 | 357.90522 | 30.94892 | 28.63387 | 0.1157886 | 3.1219517 | 29 | 1 | 31 days | 0.41 | | MPC | 2006 $UF_{76}$ |
| 2006 $UG_{76}$ | 17.8 | 0.15 | 20060922 | 57.21982 | 254.03036 | 45.01445 | 5.78884 | 0.2198523 | 2.4203708 | 22 | 1 | 61 days | 0.21 | M-v 4 | MPC | 2006 $UG_{76}$ |
| 2006 $UH_{76}$ | 18.5 | 0.15 | 20061012 | 37.85694 | 277.72483 | 47.77718 | 5.01531 | 0.2466120 | 2.4046391 | 15 | 1 | 28 days | 0.27 | | MPC | 2006 $UH_{76}$ |
| 2006 $UJ_{76}$ | 17.0 | 0.15 | 20061012 | 17.48693 | 324.93588 | 41.50803 | 9.92501 | 0.0867324 | 3.0263275 | 11 | 1 | 11 days | 0.31 | | MPC | 2006 $UJ_{76}$ |
| 2006 $UK_{76}$ | 16.9 | 0.15 | 20061012 | 346.11429 | 4.50636 | 38.52793 | 11.93440 | 0.0356101 | 3.2025285 | 10 | 1 | 11 days | 0.73 | | MPC | 2006 $UK_{76}$ |
| 2006 $UL_{76}$ | 17.5 | 0.15 | 20061012 | 51.48510 | 132.74649 | 189.93465 | 6.48546 | 0.1270869 | 2.4116245 | 11 | 1 | 5 days | 0.17 | | MPC | 2006 $UL_{76}$ |
| 2006 $UN_{76}$ | 19.2 | 0.15 | 20061012 | 1.47054 | 327.85485 | 54.94889 | 3.69953 | 0.2274731 | 2.3531896 | 20 | 1 | 48 days | 0.31 | | MPC | 2006 $UN_{76}$ |
| 2006 $UO_{76}$ | 17.5 | 0.15 | 20061012 | 36.28854 | 291.57877 | 50.40207 | 5.51230 | 0.1205869 | 2.7338919 | 17 | 1 | 28 days | 0.24 | | MPC | 2006 $UO_{76}$ |
| 2006 $UP_{76}$ | 17.1 | 0.15 | 20061012 | 312.58304 | 204.18620 | 249.35909 | 6.74820 | 0.1786297 | 3.0605296 | 15 | 1 | 35 days | 0.14 | | MPC | 2006 $UP_{76}$ |
| 2006 $US_{76}$ | 17.9 | 0.15 | 20061012 | 337.49658 | 181.29030 | 245.57527 | 5.84195 | 0.2746093 | 2.6176926 | 24 | 1 | 50 days | 0.32 | | MPC | 2006 $US_{76}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UU_{76}$ | 16.1 | 0.15 | 20061012 | 29.45290 | 116.38651 | 233.19601 | 10.72402 | 0.1537636 | 3.2120194 | 27 | 1 | 54 days | 0.29 | | MPC | 2006 $UU_{76}$ |
| 2006 $UW_{76}$ | 16.1 | 0.15 | 20060922 | 27.13346 | 14.41010 | 336.73623 | 4.79518 | 0.1232942 | 3.1427948 | 31 | 1 | 60 days | 0.24 | M-v 4 | MPC | 2006 $UW_{76}$ |
| 2006 $UA_{77}$ | 17.6 | 0.15 | 20061012 | 84.34431 | 59.48296 | 228.47454 | 11.22984 | 0.1533135 | 2.6964246 | 9 | 1 | 14 days | 0.23 | | MPC | 2006 $UA_{77}$ |
| 2006 $UD_{77}$ | 16.9 | 0.15 | 20060922 | 5.11172 | 59.53329 | 317.74682 | 3.81784 | 0.1856847 | 3.0979495 | 16 | 1 | 60 days | 0.22 | M-v 4 | MPC | 2006 $UD_{77}$ |
| 2006 $UF_{77}$ | 16.0 | 0.15 | 20061012 | 72.29094 | 279.15323 | 19.17480 | 14.91629 | 0.1828279 | 3.0386948 | 17 | 1 | 58 days | 0.20 | | MPC | 2006 $UF_{77}$ |
| 2006 $UJ_{77}$ | 17.1 | 0.15 | 20061012 | 332.94269 | 60.38778 | 6.78299 | 7.86436 | 0.1643256 | 2.6683987 | 9 | 1 | 4 days | 0.31 | | MPC | 2006 $UJ_{77}$ |
| 2006 $UK_{77}$ | 17.4 | 0.15 | 20061012 | 6.23142 | 91.36187 | 289.50348 | 3.58376 | 0.1977063 | 3.1961272 | 12 | 1 | 35 days | 0.23 | | MPC | 2006 $UK_{77}$ |
| 2006 $UL_{77}$ | 17.1 | 0.15 | 20061012 | 355.43984 | 118.03382 | 277.63126 | 3.22853 | 0.0759673 | 2.8001473 | 15 | 1 | 50 days | 0.17 | | MPC | 2006 $UL_{77}$ |
| 2006 $UM_{77}$ | 17.0 | 0.15 | 20061101 | 326.75567 | 76.67743 | 357.61636 | 5.20033 | 0.0800708 | 2.6156250 | 13 | 1 | 39 days | 0.23 | | MPC | 2006 $UM_{77}$ |
| 2006 $UN_{77}$ | 18.0 | 0.15 | 20061012 | 15.09509 | 100.67478 | 269.42432 | 3.71228 | 0.1284071 | 2.5565702 | 9 | 1 | 14 days | 0.37 | | MPC | 2006 $UN_{77}$ |
| 2006 $UQ_{77}$ | 16.5 | 0.15 | 20061012 | 37.10799 | 337.96653 | 11.50941 | 8.58832 | 0.0752035 | 2.9676469 | 31 | 1 | 54 days | 0.25 | | MPC | 2006 $UQ_{77}$ |
| 2006 $US_{77}$ | 16.7 | 0.15 | 20061012 | 9.26960 | 355.38178 | 23.59823 | 12.31220 | 0.1482816 | 3.0674922 | 24 | 1 | 59 days | 0.21 | | MPC | 2006 $US_{77}$ |
| 2006 $UT_{77}$ | 17.4 | 0.15 | 20061012 | 328.73565 | 124.76308 | 302.49357 | 2.01829 | 0.0717541 | 2.7236989 | 22 | 1 | 56 days | 0.30 | | MPC | 2006 $UT_{77}$ |
| 2006 $UU_{77}$ | 17.8 | 0.15 | 20060922 | 336.80155 | 162.40471 | 254.16519 | 2.39363 | 0.1691222 | 2.6665989 | 25 | 1 | 60 days | 0.26 | M-v 4 | MPC | 2006 $UU_{77}$ |
| 2006 $UX_{77}$ | 17.9 | 0.15 | 20061012 | 352.67111 | 113.02736 | 285.49111 | 1.79757 | 0.1787298 | 2.3651469 | 30 | 1 | 53 days | 0.25 | | MPC | 2006 $UX_{77}$ |
| 2006 $UY_{77}$ | 17.4 | 0.15 | 20061012 | 22.06681 | 18.82371 | 334.70850 | 2.02001 | 0.2133012 | 2.3267313 | 37 | 1 | 55 days | 0.30 | | MPC | 2006 $UY_{77}$ |
| 2006 $UB_{78}$ | 18.0 | 0.15 | 20061012 | 356.42268 | 175.04282 | 219.14140 | 12.71735 | 0.1658879 | 2.6408540 | 16 | 1 | 24 days | 0.24 | | MPC | 2006 $UB_{78}$ |
| 2006 $UC_{78}$ | 17.4 | 0.15 | 20061012 | 271.13858 | 212.89472 | 274.81497 | 1.85357 | 0.0795281 | 2.2872897 | 12 | 1 | 4 days | 0.51 | | MPC | 2006 $UC_{78}$ |
| 2006 $UD_{78}$ | 17.2 | 0.15 | 20061012 | 322.27533 | 68.38728 | 7.52364 | 4.82743 | 0.1087831 | 2.4206830 | 16 | 1 | 53 days | 0.16 | | MPC | 2006 $UD_{78}$ |
| 2006 $UG_{78}$ | 17.2 | 0.15 | 20061012 | 16.00830 | 140.93032 | 232.81119 | 4.97796 | 0.0354292 | 2.7524863 | 16 | 1 | 48 days | 0.24 | | MPC | 2006 $UG_{78}$ |
| 2006 $UH_{78}$ | 16.5 | 0.15 | 20061012 | 6.88405 | 5.48122 | 17.81254 | 6.59676 | 0.0485829 | 2.6987299 | 19 | 1 | 51 days | 0.19 | | MPC | 2006 $UH_{78}$ |
| 2006 $UJ_{78}$ | 19.8 | 0.15 | 20061101 | 7.38382 | 2.57051 | 18.43536 | 6.87761 | 0.3460001 | 2.6972964 | 22 | 1 | 32 days | 0.21 | E | MPC | 2006 $UJ_{78}$ |
| 2006 $UK_{78}$ | 16.0 | 0.15 | 20060922 | 24.93672 | 359.10612 | 3.38787 | 4.53073 | 0.0282475 | 3.1540710 | 28 | 1 | 60 days | 0.29 | M-v 4 | MPC | 2006 $UK_{78}$ |
| 2006 $UL_{78}$ | 17.6 | 0.15 | 20061012 | 352.45945 | 19.49254 | 19.51784 | 12.78562 | 0.1914023 | 2.5723668 | 26 | 1 | 49 days | 0.41 | | MPC | 2006 $UL_{78}$ |
| 2006 $UM_{78}$ | 15.7 | 0.15 | 20061012 | 264.13351 | 118.97529 | 13.68116 | 10.58622 | 0.0541114 | 3.0678009 | 15 | 1 | 4 days | 0.15 | | MPC | 2006 $UM_{78}$ |
| 2006 $UN_{78}$ | 17.1 | 0.15 | 20060922 | 8.33489 | 3.37035 | 10.28581 | 8.06154 | 0.1361945 | 3.0318174 | 13 | 1 | 61 days | 0.35 | M-v 4 | MPC | 2006 $UN_{78}$ |
| 2006 $UO_{78}$ | 18.1 | 0.15 | 20061101 | 332.85506 | 163.57383 | 268.10524 | 2.77446 | 0.1589824 | 2.6035514 | 18 | 1 | 37 days | 0.27 | | MPC | 2006 $UO_{78}$ |
| 2006 $UP_{78}$ | 18.4 | 0.15 | 20061012 | 320.66452 | 156.22713 | 283.75169 | 2.33149 | 0.1509233 | 2.3782856 | 9 | 1 | 14 days | 0.24 | | MPC | 2006 $UP_{78}$ |
| 2006 $UQ_{78}$ | 17.4 | 0.15 | 20061101 | 10.92935 | 150.65747 | 226.88166 | 8.70314 | 0.2133564 | 2.7828087 | 19 | 1 | 31 days | 0.44 | | MPC | 2006 $UQ_{78}$ |
| 2006 $UR_{78}$ | 16.9 | 0.15 | 20061101 | 354.35214 | 176.78933 | 226.70124 | 10.78654 | 0.2094463 | 3.1145909 | 19 | 1 | 41 days | 0.40 | | MPC | 2006 $UR_{78}$ |
| 2006 $US_{78}$ | 17.0 | 0.15 | 20061012 | 3.82341 | 159.87459 | 224.38115 | 11.06944 | 0.1413253 | 3.0065166 | 18 | 1 | 52 days | 0.23 | | MPC | 2006 $US_{78}$ |
| 2006 $UY_{78}$ | 16.9 | 0.15 | 20061012 | 351.64999 | 93.28040 | 308.16524 | 3.04550 | 0.1358588 | 3.1768638 | 18 | 1 | 54 days | 0.25 | | MPC | 2006 $UY_{78}$ |
| 2006 $UZ_{78}$ | 17.4 | 0.15 | 20061012 | 38.87978 | 54.32929 | 286.98522 | 2.77838 | 0.1139869 | 2.5816981 | 15 | 1 | 50 days | 0.24 | | MPC | 2006 $UZ_{78}$ |
| 2006 $UA_{79}$ | 16.6 | 0.15 | 20061101 | 25.13743 | 344.47313 | 15.40542 | 10.45093 | 0.1710538 | 3.1385858 | 13 | 1 | 39 days | 0.20 | | MPC | 2006 $UA_{79}$ |
| 2006 $UB_{79}$ | 16.4 | 0.15 | 20060922 | 344.50741 | 173.83403 | 230.55917 | 8.68500 | 0.0795495 | 3.1082810 | 18 | 1 | 62 days | 0.18 | M-v 4 | MPC | 2006 $UB_{79}$ |
| 2006 $UC_{79}$ | 17.5 | 0.15 | 20061012 | 79.77927 | 353.98237 | 291.67110 | 1.91490 | 0.2077027 | 2.2748140 | 28 | 1 | 56 days | 0.25 | | MPC | 2006 $UC_{79}$ |
| 2006 $UD_{79}$ | 18.1 | 0.15 | 20061012 | 304.76377 | 136.16174 | 325.12473 | 3.44698 | 0.1732430 | 2.5891399 | 12 | 1 | 29 days | 0.19 | | MPC | 2006 $UD_{79}$ |
| 2006 $UE_{79}$ | 16.7 | 0.15 | 20061012 | 76.00262 | 67.30748 | 235.77513 | 7.66273 | 0.0858954 | 3.0590986 | 12 | 1 | 31 days | 0.23 | | MPC | 2006 $UE_{79}$ |
| 2006 $UF_{79}$ | 18.4 | 0.15 | 20060922 | 25.06092 | 90.02757 | 237.91870 | 5.71103 | 0.3512208 | 2.8699157 | 9 | 1 | 25 days | 0.16 | | MPC | 2006 $UF_{79}$ |
| 2006 $UG_{79}$ | 18.7 | 0.15 | 20061012 | 12.02845 | 75.29851 | 293.25394 | 2.59299 | 0.1970223 | 2.5562555 | 12 | 1 | 31 days | 0.21 | | MPC | 2006 $UG_{79}$ |
| 2006 $UH_{79}$ | 18.1 | 0.15 | 20061012 | 55.84488 | 314.94532 | 353.05931 | 4.47162 | 0.2205682 | 2.5582405 | 9 | 1 | 14 days | 0.21 | | MPC | 2006 $UH_{79}$ |
| 2006 $UK_{79}$ | 18.1 | 0.15 | 20061101 | 320.51665 | 167.84118 | 286.11033 | 2.83716 | 0.2271067 | 2.6363808 | 15 | 1 | 34 days | 0.22 | | MPC | 2006 $UK_{79}$ |
| 2006 $UL_{79}$ | 18.9 | 0.15 | 20061012 | 18.16493 | 42.24243 | 316.22522 | 2.44215 | 0.2125870 | 2.4481483 | 12 | 1 | 36 days | 0.13 | | MPC | 2006 $UL_{79}$ |
| 2006 $UR_{79}$ | 16.6 | 0.15 | 20061012 | 233.90958 | 140.44139 | 16.99736 | 12.01201 | 0.0093040 | 3.2489441 | 9 | 1 | 14 days | 0.35 | | MPC | 2006 $UR_{79}$ |
| 2006 $US_{79}$ | 16.5 | 0.15 | 20061012 | 57.49298 | 329.88107 | 356.17136 | 5.37380 | 0.0609543 | 2.9082552 | 12 | 1 | 36 days | 0.13 | | MPC | 2006 $US_{79}$ |
| 2006 $UT_{79}$ | 16.6 | 0.15 | 20061101 | 135.21387 | 342.38885 | 264.97677 | 3.21946 | 0.1522720 | 2.6471512 | 15 | 1 | 37 days | 0.21 | | MPC | 2006 $UT_{79}$ |
| 2006 $UU_{79}$ | 17.5 | 0.15 | 20061012 | 1.38508 | 293.67846 | 92.66013 | 2.17093 | 0.1352701 | 2.9942980 | 20 | 1 | 56 days | 0.44 | | MPC | 2006 $UU_{79}$ |
| 2006 $UV_{79}$ | 16.2 | 0.15 | 20061012 | 15.74669 | 191.55689 | 179.50613 | 5.04378 | 0.0546666 | 2.7691920 | 11 | 1 | 14 days | 0.12 | | MPC | 2006 $UV_{79}$ |
| 2006 $UW_{79}$ | 17.8 | 0.15 | 20061012 | 355.01431 | 359.77111 | 34.58881 | 18.80345 | 0.1921159 | 2.6223283 | 23 | 1 | 48 days | 0.34 | | MPC | 2006 $UW_{79}$ |
| 2006 $UY_{79}$ | 17.6 | 0.15 | 20061012 | 335.84795 | 266.81816 | 158.48646 | 3.47905 | 0.2007524 | 3.1040874 | 18 | 1 | 25 days | 0.34 | | MPC | 2006 $UY_{79}$ |
| 2006 $UZ_{79}$ | 16.5 | 0.15 | 20061012 | 318.53737 | 239.79595 | 196.55057 | 10.06332 | 0.0536517 | 3.1424680 | 27 | 1 | 40 days | 0.43 | | MPC | 2006 $UZ_{79}$ |
| 2006 $UA_{80}$ | 16.7 | 0.15 | 20061012 | 326.10949 | 22.82590 | 46.25048 | 9.25859 | 0.0831481 | 2.7555543 | 26 | 1 | 34 days | 0.38 | | MPC | 2006 $UA_{80}$ |
| 2006 $UB_{80}$ | 16.1 | 0.15 | 20061012 | 37.85030 | 228.79748 | 116.46153 | 3.19827 | 0.0920969 | 2.9947258 | 19 | 1 | 39 days | 0.28 | | MPC | 2006 $UB_{80}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UC_{80}$ | 15.6 | 0.15 | 20060922 | 39.70372 | 150.37962 | 191.38097 | 9.09892 | 0.0764968 | 3.1254300 | 19 | 1 | 93 days | 0.20 | M-v | 4 | MPC | 2006 $UC_{80}$ |
| 2006 $UE_{80}$ | 16.0 | 0.15 | 20061012 | 341.13955 | 1.17912 | 50.99867 | 9.67886 | 0.0520327 | 3.2044914 | 11 | 1 | 19 days | 0.36 | | | MPC | 2006 $UE_{80}$ |
| 2006 $UJ_{80}$ | 17.6 | 0.15 | 20061101 | 1.69890 | 349.45153 | 44.08894 | 5.81290 | 0.2140666 | 2.7462419 | 29 | 1 | 37 days | 0.34 | | | MPC | 2006 $UJ_{80}$ |
| 2006 $UL_{80}$ | 18.5 | 0.15 | 20061012 | 4.05234 | 344.84259 | 36.76072 | 14.29026 | 0.2473896 | 2.6547966 | 21 | 1 | 45 days | 0.21 | | | MPC | 2006 $UL_{80}$ |
| 2006 $UM_{80}$ | 17.7 | 0.15 | 20061101 | 302.90700 | 46.93576 | 59.46631 | 2.08265 | 0.1310758 | 2.3790311 | 25 | 1 | 41 days | 0.28 | | | MPC | 2006 $UM_{80}$ |
| 2006 $UO_{80}$ | 18.0 | 0.15 | 20061012 | 93.67963 | 78.14021 | 207.76597 | 14.69819 | 0.1107791 | 2.5225293 | 15 | 1 | 36 days | 0.51 | | | MPC | 2006 $UO_{80}$ |
| 2006 $UP_{80}$ | 17.3 | 0.15 | 20061012 | 14.15475 | 314.88587 | 58.86139 | 3.13543 | 0.1075892 | 2.6418485 | 25 | 1 | 48 days | 0.24 | | | MPC | 2006 $UP_{80}$ |
| 2006 $UT_{80}$ | 17.1 | 0.15 | 20061012 | 60.45950 | 269.19432 | 43.84148 | 7.72090 | 0.1635412 | 2.2790388 | 28 | 1 | 51 days | 0.27 | | | MPC | 2006 $UT_{80}$ |
| 2006 $UV_{80}$ | 16.0 | 0.15 | 20061012 | 20.90679 | 145.68475 | 206.95667 | 27.19163 | 0.1414306 | 3.1025748 | 18 | 1 | 46 days | 0.45 | | | MPC | 2006 $UV_{80}$ |
| 2006 $UX_{80}$ | 17.4 | 0.15 | 20061012 | 347.28147 | 284.19705 | 126.59599 | 3.00899 | 0.0820761 | 2.5982071 | 15 | 1 | 45 days | 0.26 | | | MPC | 2006 $UX_{80}$ |
| 2006 $UY_{80}$ | 17.3 | 0.15 | 20061101 | 334.45737 | 325.05604 | 106.71976 | 2.98063 | 0.0817937 | 2.6627747 | 23 | 1 | 29 days | 0.34 | | D | MPC | 2006 $UY_{80}$ |
| 2006 $UZ_{80}$ | 16.4 | 0.15 | 20061012 | 53.88769 | 223.91856 | 112.98611 | 3.44223 | 0.0702356 | 2.8536704 | 15 | 1 | 45 days | 0.75 | | | MPC | 2006 $UZ_{80}$ |
| 2006 $UA_{81}$ | 16.2 | 0.15 | 20061012 | 334.31559 | 111.50272 | 311.08518 | 5.01952 | 0.0649082 | 3.0169321 | 13 | 1 | 24 days | 0.26 | | | MPC | 2006 $UA_{81}$ |
| 2006 $UB_{81}$ | 16.4 | 0.15 | 20061012 | 8.88692 | 48.35117 | 333.11093 | 5.57584 | 0.1395430 | 3.1734305 | 20 | 1 | 50 days | 0.30 | | | MPC | 2006 $UB_{81}$ |
| 2006 $UF_{81}$ | 15.6 | 0.15 | 20061101 | 276.93158 | 320.77648 | 176.41310 | 1.68940 | 0.0838287 | 3.1971776 | 21 | 1 | 38 days | 0.28 | | | MPC | 2006 $UF_{81}$ |
| 2006 $UG_{81}$ | 17.8 | 0.15 | 20061012 | 335.50031 | 234.43865 | 211.33558 | 10.73798 | 0.3509195 | 2.7084894 | 26 | 1 | 57 days | 0.53 | | E | MPC | 2006 $UG_{81}$ |
| 2006 $UK_{81}$ | 17.2 | 0.15 | 20061012 | 350.00469 | 148.10977 | 259.87677 | 4.62893 | 0.2482076 | 2.6480717 | 31 | 1 | 46 days | 0.27 | | | MPC | 2006 $UK_{81}$ |
| 2006 $UP_{81}$ | 17.8 | 0.15 | 20061101 | 346.06377 | 230.79478 | 191.57868 | 3.61396 | 0.1085160 | 2.3167064 | 24 | 1 | 31 days | 0.48 | | | MPC | 2006 $UP_{81}$ |
| 2006 $UQ_{81}$ | 17.9 | 0.15 | 20061101 | 358.75468 | 346.05637 | 60.85909 | 4.31635 | 0.2266993 | 2.5447635 | 46 | 1 | 41 days | 0.49 | | | MPC | 2006 $UQ_{81}$ |
| 2006 $UT_{81}$ | 17.2 | 0.15 | 20061012 | 8.99115 | 215.73521 | 171.52706 | 2.26277 | 0.1592309 | 2.6565094 | 14 | 1 | 28 days | 0.16 | | | MPC | 2006 $UT_{81}$ |
| 2006 $UU_{81}$ | 16.6 | 0.15 | 20061012 | 59.05164 | 157.96761 | 178.01281 | 2.69097 | 0.0747070 | 2.7814419 | 15 | 1 | 28 days | 0.26 | | | MPC | 2006 $UU_{81}$ |
| 2006 $UV_{81}$ | 18.3 | 0.15 | 20061101 | 26.87877 | 286.17224 | 81.27660 | 2.64489 | 0.1814860 | 2.4568509 | 24 | 1 | 31 days | 0.54 | | | MPC | 2006 $UV_{81}$ |
| 2006 $UW_{81}$ | 17.3 | 0.15 | 20061012 | 336.19772 | 3.54463 | 69.25057 | 5.77974 | 0.1110452 | 2.7771091 | 14 | 1 | 27 days | 0.35 | | | MPC | 2006 $UW_{81}$ |
| 2006 $UY_{81}$ | 18.0 | 0.15 | 20061012 | 309.57964 | 92.75712 | 4.18529 | 6.27181 | 0.1364880 | 2.3004861 | 17 | 1 | 29 days | 0.35 | | | MPC | 2006 $UY_{81}$ |
| 2006 $UB_{82}$ | 15.2 | 0.15 | 20061012 | 13.98582 | 1.24084 | 17.74733 | 12.05544 | 0.1082445 | 2.9650225 | 36 | 1 | 43 days | 0.54 | | | MPC | 2006 $UB_{82}$ |
| 2006 $UC_{82}$ | 17.8 | 0.15 | 20061101 | 70.79117 | 79.52244 | 229.39908 | 13.59512 | 0.1766793 | 2.4414786 | 18 | 1 | 41 days | 0.43 | | | MPC | 2006 $UC_{82}$ |
| 2006 $UD_{82}$ | 17.8 | 0.15 | 20061012 | 35.18125 | 75.37317 | 269.16267 | 3.63182 | 0.1722556 | 2.5380930 | 17 | 1 | 46 days | 0.31 | | | MPC | 2006 $UD_{82}$ |
| 2006 $UE_{82}$ | 18.3 | 0.15 | 20061012 | 323.97318 | 85.00469 | 359.86468 | 4.95233 | 0.1993965 | 2.3314465 | 17 | 1 | 52 days | 0.24 | | | MPC | 2006 $UE_{82}$ |
| 2006 $UF_{82}$ | 17.4 | 0.15 | 20061012 | 332.27473 | 63.05760 | 17.72686 | 7.66627 | 0.2546765 | 3.0552413 | 26 | 1 | 51 days | 0.44 | | | MPC | 2006 $UF_{82}$ |
| 2006 $UG_{82}$ | 16.4 | 0.15 | 20061012 | 347.86230 | 30.29414 | 21.11952 | 10.13177 | 0.0941911 | 3.1549532 | 17 | 1 | 54 days | 0.26 | | | MPC | 2006 $UG_{82}$ |
| 2006 $UJ_{82}$ | 17.3 | 0.15 | 20060922 | 4.31294 | 312.03318 | 63.45690 | 2.04247 | 0.2330601 | 2.2037522 | 61 | 1 | 72 days | 0.44 | M-v | 4 | MPC | 2006 $UJ_{82}$ |
| 2006 $UN_{82}$ | 18.1 | 0.15 | 20061012 | 352.04048 | 28.50909 | 14.80345 | 7.54507 | 0.2143124 | 2.4455874 | 13 | 1 | 20 days | 0.21 | | | MPC | 2006 $UN_{82}$ |
| 2006 $UQ_{82}$ | 15.2 | 0.15 | 20061012 | 253.29780 | 130.41388 | 22.06155 | 12.02127 | 0.0902438 | 3.1796788 | 9 | 1 | 5 days | 0.36 | | | MPC | 2006 $UQ_{82}$ |
| 2006 $US_{82}$ | 17.5 | 0.15 | 20061012 | 341.89694 | 55.21719 | 359.96971 | 5.57534 | 0.1424414 | 2.5155013 | 14 | 1 | 47 days | 0.14 | | | MPC | 2006 $US_{82}$ |
| 2006 $UU_{82}$ | 16.3 | 0.15 | 20061012 | 73.43043 | 312.83209 | 1.77539 | 6.45049 | 0.0562118 | 3.2072187 | 14 | 1 | 47 days | 0.16 | | | MPC | 2006 $UU_{82}$ |
| 2006 $UV_{82}$ | 18.3 | 0.15 | 20061012 | 35.42938 | 332.15917 | 2.61772 | 5.32554 | 0.2334210 | 2.3360369 | 14 | 1 | 47 days | 0.21 | | | MPC | 2006 $UV_{82}$ |
| 2006 $UW_{82}$ | 17.7 | 0.15 | 20061012 | 17.68275 | 49.01636 | 316.25299 | 2.59637 | 0.1618294 | 2.2978304 | 23 | 1 | 56 days | 0.24 | | | MPC | 2006 $UW_{82}$ |
| 2006 $UX_{82}$ | 16.6 | 0.15 | 20061012 | 52.94436 | 34.43343 | 290.42442 | 3.82249 | 0.1541930 | 3.0181241 | 14 | 1 | 45 days | 0.16 | | | MPC | 2006 $UX_{82}$ |
| 2006 $UZ_{82}$ | 17.3 | 0.15 | 20061101 | 347.51758 | 119.73485 | 293.42610 | 3.27952 | 0.1358451 | 2.5248475 | 16 | 1 | 39 days | 0.18 | | | MPC | 2006 $UZ_{82}$ |
| 2006 $UD_{83}$ | 16.7 | 0.15 | 20061101 | 46.26861 | 250.91488 | 96.18342 | 3.39833 | 0.1512314 | 2.4352557 | 23 | 1 | 30 days | 0.39 | | | MPC | 2006 $UD_{83}$ |
| 2006 $UG_{83}$ | 16.3 | 0.15 | 20061101 | 169.77435 | 140.89958 | 98.90914 | 3.47673 | 0.0312865 | 2.8566538 | 19 | 1 | 37 days | 0.49 | | | MPC | 2006 $UG_{83}$ |
| 2006 $UJ_{83}$ | 17.2 | 0.15 | 20061101 | 34.75753 | 238.77534 | 105.16100 | 2.67647 | 0.3200999 | 2.6708455 | 22 | 1 | 37 days | 0.38 | | E | MPC | 2006 $UJ_{83}$ |
| 2006 $UK_{83}$ | 17.6 | 0.15 | 20061012 | 28.15347 | 248.38024 | 109.67930 | 2.43389 | 0.1931374 | 2.2290999 | 23 | 1 | 54 days | 0.36 | | | MPC | 2006 $UK_{83}$ |
| 2006 $UO_{83}$ | 16.9 | 0.15 | 20061101 | 21.90094 | 302.48351 | 79.39973 | 5.52696 | 0.1373687 | 2.7905918 | 14 | 1 | 29 days | 0.27 | | | MPC | 2006 $UO_{83}$ |
| 2006 $UQ_{83}$ | 17.0 | 0.15 | 20061101 | 38.71812 | 283.23703 | 53.77313 | 15.71004 | 0.1669316 | 2.5821645 | 16 | 1 | 38 days | 0.34 | | | MPC | 2006 $UQ_{83}$ |
| 2006 $UR_{83}$ | 15.4 | 0.15 | 20061101 | 21.06887 | 299.51429 | 53.84017 | 26.76829 | 0.3467961 | 3.1496917 | 44 | 1 | 42 days | 0.50 | | E | MPC | 2006 $UR_{83}$ |
| 2006 $UU_{83}$ | 18.8 | 0.15 | 20061101 | 43.59865 | 77.58882 | 254.58181 | 4.40994 | 0.2505934 | 2.3858933 | 22 | 1 | 31 days | 0.31 | | | MPC | 2006 $UU_{83}$ |
| 2006 $UY_{83}$ | 17.7 | 0.15 | 20061101 | 355.18408 | 40.47479 | 9.52285 | 6.59326 | 0.2362260 | 2.6419116 | 18 | 1 | 39 days | 0.36 | | | MPC | 2006 $UY_{83}$ |
| 2006 $UZ_{83}$ | 16.8 | 0.15 | 20061012 | 307.61873 | 116.08756 | 346.26957 | 4.05432 | 0.1072246 | 3.0541337 | 22 | 1 | 47 days | 0.28 | | | MPC | 2006 $UZ_{83}$ |
| 2006 $UB_{84}$ | 16.9 | 0.15 | 20061101 | 20.36567 | 339.48873 | 42.89660 | 4.02744 | 0.1285711 | 2.6803438 | 27 | 1 | 41 days | 0.38 | | | MPC | 2006 $UB_{84}$ |
| 2006 $UC_{84}$ | 17.7 | 0.15 | 20061012 | 19.91465 | 135.18314 | 235.89422 | 0.61266 | 0.1857503 | 2.4004068 | 32 | 1 | 52 days | 0.42 | | | MPC | 2006 $UC_{84}$ |
| 2006 $UE_{84}$ | 16.0 | 0.15 | 20061101 | 182.33200 | 179.13334 | 49.98893 | 9.43068 | 0.0463906 | 3.0010380 | 15 | 1 | 38 days | 0.25 | | | MPC | 2006 $UE_{84}$ |
| 2006 $UG_{84}$ | 17.1 | 0.15 | 20061101 | 45.62798 | 304.79677 | 46.11720 | 8.78015 | 0.1420765 | 2.6440501 | 19 | 1 | 32 days | 0.27 | | | MPC | 2006 $UG_{84}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UJ_{84}$ | 16.4 | 0.15 | 20060922 | 12.10284 | 333.72439 | 47.85856 | 3.16316 | 0.1427692 | 2.6667047 | 41 | 1 | 63 days | 0.43 | M-v 4 | MPC | 2006 $UJ_{84}$ |
| 2006 $UK_{84}$ | 17.8 | 0.15 | 20061012 | 7.15917 | 346.97550 | 44.26531 | 3.97118 | 0.1906049 | 2.5627520 | 24 | 1 | 57 days | 0.23 | | MPC | 2006 $UK_{84}$ |
| 2006 $UL_{84}$ | 18.5 | 0.15 | 20060922 | 7.71317 | 133.86430 | 246.57104 | 0.31151 | 0.1977689 | 2.3647040 | 24 | 1 | 63 days | 0.43 | M-v 5 | MPC | 2006 $UL_{84}$ |
| 2006 $UN_{84}$ | 16.6 | 0.15 | 20060922 | 7.72914 | 336.53616 | 53.01069 | 2.85393 | 0.0991850 | 2.6380235 | 28 | 1 | 63 days | 0.45 | M-v 5 | MPC | 2006 $UN_{84}$ |
| 2006 $UO_{84}$ | 18.3 | 0.15 | 20061101 | 9.72976 | 352.26823 | 41.01785 | 6.64660 | 0.1850190 | 2.1442725 | 32 | 1 | 36 days | 0.50 | | MPC | 2006 $UO_{84}$ |
| 2006 $UP_{84}$ | 16.7 | 0.15 | 20061101 | 354.24229 | 8.33511 | 49.81247 | 2.77190 | 0.0612987 | 2.8701111 | 24 | 1 | 41 days | 0.33 | | MPC | 2006 $UP_{84}$ |
| 2006 $UQ_{84}$ | 16.2 | 0.15 | 20061101 | 96.62797 | 73.15232 | 225.97563 | 2.91490 | 0.1424391 | 2.5773806 | 37 | 1 | 41 days | 0.41 | | MPC | 2006 $UQ_{84}$ |
| 2006 $UR_{84}$ | 16.4 | 0.15 | 20061012 | 355.92090 | 130.03203 | 272.85539 | 3.64665 | 0.1123605 | 2.8007763 | 26 | 1 | 47 days | 0.31 | | MPC | 2006 $UR_{84}$ |
| 2006 $US_{84}$ | 17.5 | 0.15 | 20061012 | 19.72458 | 27.26448 | 335.98827 | 2.80680 | 0.2017449 | 2.1859517 | 50 | 1 | 54 days | 0.52 | | MPC | 2006 $US_{84}$ |
| 2006 $UV_{84}$ | 17.5 | 0.15 | 20060922 | 345.72848 | 192.10578 | 225.80121 | 13.06899 | 0.1585165 | 2.6400145 | 28 | 1 | 61 days | 0.26 | M-v 3 | MPC | 2006 $UV_{84}$ |
| 2006 $UW_{84}$ | 16.8 | 0.15 | 20061012 | 36.31271 | 299.45027 | 49.47670 | 10.09028 | 0.2455508 | 3.0293635 | 24 | 1 | 53 days | 0.23 | | MPC | 2006 $UW_{84}$ |
| 2006 $UX_{84}$ | 17.0 | 0.15 | 20061012 | 350.40963 | 11.80142 | 47.68749 | 14.97006 | 0.1230262 | 2.6609395 | 26 | 1 | 56 days | 0.39 | | MPC | 2006 $UX_{84}$ |
| 2006 $UB_{85}$ | 15.2 | 0.15 | 20061101 | 18.82161 | 155.12091 | 238.93991 | 9.64669 | 0.0578663 | 3.1161528 | 53 | 1 | 42 days | 0.47 | | MPC | 2006 $UB_{85}$ |
| 2006 $UC_{85}$ | 16.3 | 0.15 | 20061101 | 54.18225 | 94.45353 | 245.78934 | 2.12986 | 0.1892235 | 2.9656253 | 27 | 1 | 38 days | 0.31 | | MPC | 2006 $UC_{85}$ |
| 2006 $UD_{85}$ | 16.2 | 0.15 | 20061012 | 58.66085 | 290.70141 | 49.76911 | 11.40548 | 0.1138206 | 3.0262105 | 20 | 1 | 56 days | 0.27 | | MPC | 2006 $UD_{85}$ |
| 2006 $UG_{85}$ | 16.4 | 0.15 | 20060922 | 284.55912 | 92.42903 | 37.95744 | 24.92869 | 0.1603532 | 2.7973132 | 22 | 1 | 61 days | 0.28 | M-v 4 | MPC | 2006 $UG_{85}$ |
| 2006 $UL_{85}$ | 17.0 | 0.15 | 20061012 | 346.39660 | 21.35495 | 47.94210 | 3.99834 | 0.2109841 | 2.7606620 | 25 | 1 | 55 days | 0.38 | | MPC | 2006 $UL_{85}$ |
| 2006 $UM_{85}$ | 15.7 | 0.15 | 20061012 | 2.48698 | 356.92575 | 51.49857 | 6.19052 | 0.1495761 | 3.0879737 | 34 | 1 | 56 days | 0.43 | | MPC | 2006 $UM_{85}$ |
| 2006 $UO_{85}$ | 17.3 | 0.15 | 20061101 | 45.25056 | 311.57629 | 51.70095 | 6.65110 | 0.0895911 | 2.6559708 | 17 | 1 | 36 days | 0.28 | | MPC | 2006 $UO_{85}$ |
| 2006 $UQ_{85}$ | 17.8 | 0.15 | 20061101 | 12.15469 | 139.01233 | 242.73198 | 4.20557 | 0.2515364 | 2.7193761 | 24 | 1 | 31 days | 0.35 | | MPC | 2006 $UQ_{85}$ |
| 2006 $US_{85}$ | 17.3 | 0.15 | 20061012 | 51.91207 | 38.10201 | 286.84769 | 2.87067 | 0.1882637 | 2.6815733 | 10 | 1 | 15 days | 0.16 | | MPC | 2006 $US_{85}$ |
| 2006 $UT_{85}$ | 17.3 | 0.15 | 20061101 | 56.02773 | 40.05106 | 295.86042 | 2.62315 | 0.0952689 | 2.6013603 | 14 | 1 | 31 days | 0.17 | | MPC | 2006 $UT_{85}$ |
| 2006 $UU_{85}$ | 15.9 | 0.15 | 20061101 | 316.80975 | 217.13517 | 234.29298 | 8.59479 | 0.0715507 | 3.0504581 | 21 | 1 | 41 days | 0.23 | | MPC | 2006 $UU_{85}$ |
| 2006 $UW_{85}$ | 17.7 | 0.15 | 20061101 | 9.88212 | 71.06617 | 316.12219 | 2.55354 | 0.2002035 | 2.9455400 | 18 | 1 | 32 days | 0.18 | | MPC | 2006 $UW_{85}$ |
| 2006 $UY_{85}$ | 16.3 | 0.15 | 20061012 | 35.46919 | 322.09062 | 28.16499 | 12.13929 | 0.1616366 | 3.1748026 | 25 | 1 | 56 days | 0.30 | | MPC | 2006 $UY_{85}$ |
| 2006 $UZ_{85}$ | 17.1 | 0.15 | 20061012 | 54.39174 | 47.14447 | 271.64788 | 3.11351 | 0.2171229 | 2.5655987 | 18 | 1 | 46 days | 0.21 | | MPC | 2006 $UZ_{85}$ |
| 2006 $UA_{86}$ | 15.4 | 0.15 | 20061012 | 49.42510 | 317.84214 | 10.31003 | 4.07281 | 0.2206899 | 3.9073076 | 14 | 1 | 49 days | 0.15 | | MPC | 2006 $UA_{86}$ |
| 2006 $UC_{86}$ | 17.4 | 0.15 | 20061012 | 355.60602 | 14.44562 | 28.07182 | 9.75397 | 0.1818868 | 2.7228528 | 20 | 1 | 59 days | 0.27 | | MPC | 2006 $UC_{86}$ |
| 2006 $UD_{86}$ | 18.6 | 0.15 | 20061012 | 341.52493 | 56.77796 | 351.48298 | 8.61327 | 0.2294504 | 2.2989956 | 10 | 1 | 6 days | 0.57 | | MPC | 2006 $UD_{86}$ |
| 2006 $UE_{86}$ | 15.3 | 0.15 | 20061012 | 39.57476 | 112.39725 | 218.67072 | 16.74336 | 0.0879848 | 3.0702461 | 10 | 1 | 3 days | 0.74 | | MPC | 2006 $UE_{86}$ |
| 2006 $UM_{86}$ | 16.9 | 0.15 | 20061101 | 318.27602 | 157.18956 | 297.40893 | 1.01084 | 0.0289909 | 2.9186138 | 17 | 1 | 38 days | 0.34 | | MPC | 2006 $UM_{86}$ |
| 2006 $UN_{86}$ | 19.2 | 0.15 | 20061012 | 7.59636 | 161.41180 | 226.32386 | 6.79743 | 0.1914322 | 2.3214002 | 18 | 1 | 48 days | 0.27 | | MPC | 2006 $UN_{86}$ |
| 2006 $UO_{86}$ | 15.6 | 0.15 | 20061101 | 32.53876 | 139.57194 | 233.21606 | 8.44140 | 0.0812344 | 3.1516373 | 26 | 1 | 41 days | 0.50 | | MPC | 2006 $UO_{86}$ |
| 2006 $UQ_{86}$ | 16.9 | 0.15 | 20061012 | 349.78610 | 19.64121 | 37.30291 | 5.46149 | 0.1068956 | 2.7280801 | 18 | 1 | 45 days | 0.29 | | MPC | 2006 $UQ_{86}$ |
| 2006 $UR_{86}$ | 16.6 | 0.15 | 20061012 | 27.44482 | 330.43594 | 46.37953 | 20.73503 | 0.0420659 | 2.9674664 | 17 | 1 | 27 days | 0.24 | | MPC | 2006 $UR_{86}$ |
| 2006 $US_{86}$ | 16.3 | 0.15 | 20061101 | 101.64047 | 260.20069 | 42.88596 | 10.29286 | 0.0534368 | 2.7538471 | 14 | 1 | 30 days | 0.28 | | MPC | 2006 $US_{86}$ |
| 2006 $UT_{86}$ | 17.1 | 0.15 | 20061101 | 57.00918 | 115.09733 | 231.24609 | 9.32505 | 0.0653471 | 2.5956938 | 23 | 1 | 35 days | 0.38 | | MPC | 2006 $UT_{86}$ |
| 2006 $UV_{86}$ | 16.2 | 0.15 | 20061101 | 1.50339 | 170.39080 | 237.86218 | 4.01975 | 0.1846303 | 3.1621842 | 34 | 1 | 41 days | 0.45 | | MPC | 2006 $UV_{86}$ |
| 2006 $UW_{86}$ | 17.3 | 0.15 | 20061101 | 41.34860 | 34.92393 | 314.91325 | 0.47689 | 0.1938752 | 2.4575305 | 26 | 1 | 41 days | 0.45 | | MPC | 2006 $UW_{86}$ |
| 2006 $UX_{86}$ | 16.8 | 0.15 | 20061012 | 349.73860 | 16.51135 | 41.69991 | 19.53111 | 0.2185713 | 2.6526812 | 41 | 1 | 53 days | 0.36 | | MPC | 2006 $UX_{86}$ |
| 2006 $UY_{86}$ | 17.5 | 0.15 | 20061012 | 353.86419 | 19.96641 | 28.21334 | 2.91910 | 0.1020922 | 2.1536375 | 36 | 1 | 56 days | 0.46 | | MPC | 2006 $UY_{86}$ |
| 2006 $UZ_{86}$ | 17.3 | 0.15 | 20061101 | 16.29104 | 340.20025 | 42.89414 | 16.62685 | 0.2317709 | 2.7273595 | 27 | 1 | 37 days | 0.47 | | MPC | 2006 $UZ_{86}$ |
| 2006 $UA_{87}$ | 17.0 | 0.15 | 20061101 | 256.79435 | 289.55180 | 232.01116 | 8.46912 | 0.0619660 | 2.7318859 | 19 | 1 | 31 days | 0.49 | | MPC | 2006 $UA_{87}$ |
| 2006 $UC_{87}$ | 17.1 | 0.15 | 20060922 | 21.82025 | 93.15412 | 257.64914 | 0.81958 | 0.3550677 | 3.1034166 | 11 | 1 | 24 days | 0.42 | | MPC | 2006 $UC_{87}$ |
| 2006 $UE_{87}$ | 18.0 | 0.15 | 20061101 | 319.11742 | 60.72387 | 39.89964 | 6.61413 | 0.1148775 | 2.3620003 | 14 | 1 | 32 days | 0.30 | | MPC | 2006 $UE_{87}$ |
| 2006 $UG_{87}$ | 18.5 | 0.15 | 20061101 | 356.68355 | 19.73887 | 34.76696 | 3.22565 | 0.1626420 | 2.4034613 | 17 | 1 | 32 days | 0.33 | | MPC | 2006 $UG_{87}$ |
| 2006 $UJ_{87}$ | 17.1 | 0.15 | 20061101 | 131.82191 | 40.85384 | 231.26635 | 5.43859 | 0.0956024 | 2.3469715 | 25 | 1 | 41 days | 0.26 | | MPC | 2006 $UJ_{87}$ |
| 2006 $UK_{87}$ | 17.6 | 0.15 | 20060922 | 24.13321 | 127.86245 | 232.69833 | 4.13816 | 0.2055601 | 2.5562439 | 27 | 1 | 61 days | 0.57 | M-v 5 | MPC | 2006 $UK_{87}$ |
| 2006 $UM_{87}$ | 17.0 | 0.15 | 20061101 | 246.51621 | 130.70139 | 46.56853 | 12.69130 | 0.1197292 | 2.3302242 | 23 | 1 | 33 days | 0.26 | | MPC | 2006 $UM_{87}$ |
| 2006 $UN_{87}$ | 17.8 | 0.15 | 20061012 | 21.91098 | 346.20924 | 25.14867 | 1.09371 | 0.1834784 | 2.4223877 | 31 | 1 | 58 days | 0.36 | | MPC | 2006 $UN_{87}$ |
| 2006 $UO_{87}$ | 16.6 | 0.15 | 20061012 | 61.51559 | 295.45799 | 36.72457 | 3.91254 | 0.1271787 | 2.5664868 | 24 | 1 | 54 days | 0.25 | | MPC | 2006 $UO_{87}$ |
| 2006 $UP_{87}$ | 16.5 | 0.15 | 20061012 | 32.65131 | 319.47543 | 45.83597 | 5.85143 | 0.1521279 | 3.0302604 | 17 | 1 | 52 days | 0.25 | | MPC | 2006 $UP_{87}$ |
| 2006 $UT_{87}$ | 15.7 | 0.15 | 20061101 | 314.81840 | 64.74522 | 46.49232 | 10.94395 | 0.0929675 | 3.4325852 | 13 | 1 | 39 days | 0.33 | | MPC | 2006 $UT_{87}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UV_{87}$ | 17.6 | 0.15 | 20061012 | 340.20923 | 193.40858 | 235.57803 | 5.06745 | 0.1040086 | 2.1190772 | 39 | 1 | 58 days | 0.44 | MPC | 2006 $UV_{87}$ |
| 2006 $UZ_{87}$ | 16.8 | 0.15 | 20061012 | 71.33273 | 343.65855 | 336.38430 | 3.18510 | 0.0788716 | 2.7867485 | 14 | 1 | 28 days | 0.23 | MPC | 2006 $UZ_{87}$ |
| 2006 $UA_{88}$ | 17.1 | 0.15 | 20061012 | 335.09722 | 45.90405 | 27.93653 | 11.99520 | 0.1863959 | 2.6443058 | 21 | 1 | 56 days | 0.32 | MPC | 2006 $UA_{88}$ |
| 2006 $UB_{88}$ | 17.8 | 0.15 | 20060922 | 305.09371 | 75.53503 | 20.33188 | 6.95337 | 0.0860921 | 2.4170776 | 10 | 1 | 21 days | 0.20 | MPC | 2006 $UB_{88}$ |
| 2006 $UD_{88}$ | 17.3 | 0.15 | 20061012 | 336.84555 | 51.33481 | 26.64339 | 9.73123 | 0.2683075 | 2.7135988 | 26 | 1 | 59 days | 0.47 | MPC | 2006 $UD_{88}$ |
| 2006 $UF_{88}$ | 16.9 | 0.15 | 20061012 | 358.01763 | 11.15894 | 30.58090 | 12.21132 | 0.3374440 | 3.0469561 | 37 | 1 | 58 days | 0.44 | MPC | 2006 $UF_{88}$ |
| 2006 $UG_{88}$ | 15.0 | 0.15 | 20061012 | 236.78938 | 310.38033 | 231.41887 | 25.86299 | 0.1680119 | 3.1675216 | 29 | 1 | 47 days | 0.36 | MPC | 2006 $UG_{88}$ |
| 2006 $UH_{88}$ | 17.3 | 0.15 | 20061012 | 230.09019 | 165.29888 | 7.37839 | 3.54831 | 0.0381917 | 2.1977497 | 17 | 1 | 28 days | 0.28 | MPC | 2006 $UH_{88}$ |
| 2006 $UJ_{88}$ | 17.9 | 0.15 | 20061012 | 352.49121 | 39.91834 | 9.48160 | 3.31165 | 0.2124334 | 2.5452440 | 14 | 1 | 45 days | 0.18 | MPC | 2006 $UJ_{88}$ |
| 2006 $UK_{88}$ | 18.1 | 0.15 | 20061012 | 46.58282 | 9.93221 | 321.20095 | 1.56907 | 0.1983143 | 2.1872067 | 27 | 1 | 28 days | 0.47 | MPC | 2006 $UK_{88}$ |
| 2006 $UL_{88}$ | 17.2 | 0.15 | 20061101 | 4.17760 | 158.76258 | 241.23066 | 6.91034 | 0.1639021 | 2.6726897 | 30 | 1 | 31 days | 0.51 | MPC | 2006 $UL_{88}$ |
| 2006 $UM_{88}$ | 17.4 | 0.15 | 20061101 | 46.01009 | 35.38997 | 306.86564 | 2.10332 | 0.1882641 | 2.6450395 | 19 | 1 | 30 days | 0.21 | MPC | 2006 $UM_{88}$ |
| 2006 $UN_{88}$ | 16.0 | 0.15 | 20061012 | 294.78796 | 82.29326 | 33.41522 | 10.42817 | 0.0494926 | 3.1348165 | 13 | 1 | 28 days | 0.19 | MPC | 2006 $UN_{88}$ |
| 2006 $UO_{88}$ | 17.8 | 0.15 | 20061012 | 358.88416 | 29.74494 | 8.86292 | 3.01250 | 0.2421508 | 2.3841288 | 34 | 1 | 53 days | 0.37 | MPC | 2006 $UO_{88}$ |
| 2006 $UP_{88}$ | 16.7 | 0.15 | 20061012 | 32.52679 | 336.06900 | 22.70989 | 4.79897 | 0.1633139 | 2.9836566 | 23 | 1 | 47 days | 0.20 | MPC | 2006 $UP_{88}$ |
| 2006 $UQ_{88}$ | 17.0 | 0.15 | 20061101 | 23.75576 | 130.85468 | 251.23642 | 3.95474 | 0.0458155 | 2.5669590 | 23 | 1 | 30 days | 0.38 | MPC | 2006 $UQ_{88}$ |
| 2006 $US_{88}$ | 18.2 | 0.15 | 20061012 | 1.46870 | 140.72922 | 255.04905 | 1.45096 | 0.1718892 | 2.3192263 | 31 | 1 | 48 days | 0.37 | MPC | 2006 $US_{88}$ |
| 2006 $UU_{88}$ | 17.0 | 0.15 | 20061012 | 2.16800 | 170.27164 | 224.23710 | 5.89353 | 0.1538214 | 2.2102800 | 57 | 1 | 58 days | 0.38 | MPC | 2006 $UU_{88}$ |
| 2006 $UV_{88}$ | 15.3 | 0.15 | 20061012 | 72.58663 | 281.97921 | 41.90172 | 15.95695 | 0.0801203 | 3.0325866 | 26 | 1 | 55 days | 0.39 | MPC | 2006 $UV_{88}$ |
| 2006 $UX_{88}$ | 17.3 | 0.15 | 20061101 | 37.42826 | 81.12244 | 285.40783 | 1.01725 | 0.0403028 | 2.1930720 | 24 | 1 | 41 days | 0.53 | MPC | 2006 $UX_{88}$ |
| 2006 $UY_{88}$ | 16.2 | 0.15 | 20061012 | 23.70155 | 126.16602 | 244.53537 | 3.97742 | 0.1372397 | 3.0237778 | 20 | 1 | 26 days | 0.31 | MPC | 2006 $UY_{88}$ |
| 2006 $UA_{89}$ | 16.6 | 0.15 | 20061101 | 1.94014 | 176.05081 | 227.40999 | 17.22617 | 0.1936712 | 3.1108859 | 21 | 1 | 31 days | 0.46 | MPC | 2006 $UA_{89}$ |
| 2006 $UB_{89}$ | 17.8 | 0.15 | 20061012 | 6.79188 | 1.75209 | 25.94622 | 4.91282 | 0.1694441 | 2.3535057 | 13 | 1 | 28 days | 0.14 | MPC | 2006 $UB_{89}$ |
| 2006 $UD_{89}$ | 16.8 | 0.15 | 20061012 | 269.70340 | 108.84521 | 37.93797 | 12.67492 | 0.1228367 | 2.5587668 | 14 | 1 | 28 days | 0.24 | MPC | 2006 $UD_{89}$ |
| 2006 $UE_{89}$ | 15.9 | 0.15 | 20061101 | 193.35929 | 176.41227 | 39.98964 | 8.94648 | 0.0540098 | 2.9965052 | 16 | 1 | 30 days | 0.17 | MPC | 2006 $UE_{89}$ |
| 2006 $UF_{89}$ | 17.1 | 0.15 | 20061012 | 149.82208 | 5.96013 | 237.57468 | 6.23190 | 0.1468811 | 2.3046736 | 14 | 1 | 27 days | 0.28 | MPC | 2006 $UF_{89}$ |
| 2006 $UJ_{89}$ | 17.1 | 0.15 | 20061101 | 346.02417 | 196.07925 | 230.18155 | 11.85092 | 0.1784139 | 2.9816483 | 37 | 1 | 35 days | 0.30 | MPC | 2006 $UJ_{89}$ |
| 2006 $UL_{89}$ | 16.5 | 0.15 | 20061101 | 337.41522 | 61.30289 | 14.43788 | 2.68128 | 0.0636553 | 2.9752094 | 15 | 1 | 30 days | 0.32 | MPC | 2006 $UL_{89}$ |
| 2006 $UN_{89}$ | 16.9 | 0.15 | 20061101 | 147.61790 | 243.73544 | 11.21239 | 2.69063 | 0.1210132 | 2.2884108 | 17 | 1 | 38 days | 0.19 | MPC | 2006 $UN_{89}$ |
| 2006 $UQ_{89}$ | 17.5 | 0.15 | 20061012 | 351.47815 | 19.59196 | 32.61391 | 9.11683 | 0.1998699 | 2.3433795 | 51 | 1 | 59 days | 0.50 | MPC | 2006 $UQ_{89}$ |
| 2006 $UW_{89}$ | 15.4 | 0.15 | 20061101 | 31.36750 | 332.17836 | 24.08601 | 4.65718 | 0.2918519 | 3.9865244 | 17 | 1 | 33 days | 0.39 | MPC | 2006 $UW_{89}$ |
| 2006 $UX_{89}$ | 16.2 | 0.15 | 20061101 | 174.17107 | 355.96766 | 240.16591 | 7.76042 | 0.0699015 | 2.7559621 | 17 | 1 | 41 days | 0.33 | MPC | 2006 $UX_{89}$ |
| 2006 $UZ_{89}$ | 16.8 | 0.15 | 20061101 | 332.95889 | 214.11489 | 235.42596 | 9.19214 | 0.1976974 | 2.6787244 | 40 | 1 | 41 days | 0.49 | MPC | 2006 $UZ_{89}$ |
| 2006 $UC_{90}$ | 18.7 | 0.15 | 20061101 | 3.89160 | 172.06359 | 229.31896 | 12.42613 | 0.2807456 | 2.6478951 | 17 | 1 | 31 days | 0.44 | MPC | 2006 $UC_{90}$ |
| 2006 $UO_{90}$ | 18.0 | 0.15 | 20061101 | 346.93914 | 103.24706 | 322.12052 | 1.37205 | 0.0506599 | 2.4597440 | 15 | 1 | 32 days | 0.23 | MPC | 2006 $UO_{90}$ |
| 2006 $UW_{90}$ | 17.1 | 0.15 | 20061101 | 51.39183 | 92.45801 | 233.41913 | 6.09986 | 0.3088196 | 2.6731042 | 21 | 1 | 41 days | 0.55 | MPC | 2006 $UW_{90}$ |
| 2006 $UX_{90}$ | 17.9 | 0.15 | 20061101 | 63.01529 | 53.36825 | 272.29716 | 1.68719 | 0.1975066 | 2.2585362 | 19 | 1 | 34 days | 0.25 | MPC | 2006 $UX_{90}$ |
| 2006 $UA_{91}$ | 16.2 | 0.15 | 20061012 | 325.23615 | 63.05088 | 25.62851 | 3.48400 | 0.0619250 | 2.8210456 | 9 | 1 | 28 days | 0.37 | MPC | 2006 $UA_{91}$ |
| 2006 $UB_{91}$ | 16.2 | 0.15 | 20061101 | 78.42391 | 81.41706 | 241.73077 | 7.88559 | 0.1169685 | 2.9665546 | 13 | 1 | 38 days | 0.15 | MPC | 2006 $UB_{91}$ |
| 2006 $UC_{91}$ | 17.7 | 0.15 | 20061012 | 341.40151 | 32.96195 | 35.91935 | 6.42216 | 0.1394576 | 2.2966306 | 30 | 1 | 59 days | 0.41 | MPC | 2006 $UC_{91}$ |
| 2006 $UD_{91}$ | 16.5 | 0.15 | 20061101 | 32.71469 | 303.11026 | 62.77762 | 1.76633 | 0.1828730 | 3.0966022 | 24 | 1 | 41 days | 0.50 | MPC | 2006 $UD_{91}$ |
| 2006 $UH_{91}$ | 16.7 | 0.15 | 20061012 | 9.27649 | 353.51000 | 36.12385 | 1.66857 | 0.1421555 | 2.6017572 | 44 | 1 | 57 days | 0.58 | MPC | 2006 $UH_{91}$ |
| 2006 $UO_{91}$ | 16.3 | 0.15 | 20061012 | 139.23653 | 340.24411 | 237.26617 | 10.09654 | 0.0452069 | 2.9680426 | 9 | 1 | 10 days | 0.20 | MPC | 2006 $UO_{91}$ |
| 2006 $UP_{91}$ | 15.5 | 0.15 | 20061012 | 266.72764 | 207.35435 | 250.47258 | 8.09421 | 0.0385625 | 3.0241642 | 23 | 1 | 47 days | 0.41 | MPC | 2006 $UP_{91}$ |
| 2006 $UX_{91}$ | 18.0 | 0.15 | 20061012 | 343.08597 | 8.51915 | 45.29730 | 2.94692 | 0.2034362 | 2.4137829 | 45 | 1 | 58 days | 0.25 | MPC | 2006 $UX_{91}$ |
| 2006 $UY_{91}$ | 17.6 | 0.15 | 20061012 | 34.97172 | 157.24967 | 188.64647 | 3.09891 | 0.1212697 | 2.6659022 | 16 | 1 | 45 days | 0.29 | MPC | 2006 $UY_{91}$ |
| 2006 $UA_{92}$ | 17.3 | 0.15 | 20060922 | 346.87079 | 198.95961 | 205.89846 | 12.62585 | 0.2174574 | 3.0315019 | 10 | 1 | 27 days | 0.22 | MPC | 2006 $UA_{92}$ |
| 2006 $UC_{92}$ | 17.6 | 0.15 | 20061012 | 287.67152 | 76.32630 | 36.15302 | 23.25244 | 0.0846947 | 2.6364814 | 17 | 1 | 11 days | 0.27 | MPC | 2006 $UC_{92}$ |
| 2006 $UE_{92}$ | 16.9 | 0.15 | 20061012 | 327.95124 | 21.53866 | 50.63443 | 5.99018 | 0.1237674 | 3.0807925 | 23 | 1 | 56 days | 0.27 | MPC | 2006 $UE_{92}$ |
| 2006 $UF_{92}$ | 19.4 | 0.15 | 20061012 | 26.68958 | 307.72184 | 42.10299 | 5.04787 | 0.1882248 | 2.2697505 | 17 | 1 | 11 days | 0.34 | MPC | 2006 $UF_{92}$ |
| 2006 $UK_{92}$ | 15.2 | 0.15 | 20061012 | 53.07771 | 251.48933 | 66.64616 | 3.82330 | 0.2094311 | 3.9664942 | 14 | 1 | 31 days | 0.15 | MPC | 2006 $UK_{92}$ |
| 2006 $UL_{92}$ | 16.8 | 0.15 | 20061012 | 263.43783 | 309.53488 | 190.63776 | 4.52571 | 0.0954915 | 3.1205933 | 13 | 1 | 24 days | 0.29 | MPC | 2006 $UL_{92}$ |
| 2006 $UM_{92}$ | 17.4 | 0.15 | 20061012 | 128.73784 | 165.94167 | 85.59438 | 1.87556 | 0.1406103 | 2.2563750 | 16 | 1 | 26 days | 0.31 | MPC | 2006 $UM_{92}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UO_{92}$ | 18.7 | 0.15 | 20061012 | 43.93109 | 268.42380 | 52.96584 | 2.64045 | 0.2452581 | 2.2734718 | 15 | 1 | 26 days | 0.26 | MPC | 2006 $UO_{92}$ |
| 2006 $UP_{92}$ | 18.4 | 0.15 | 20061012 | 301.69909 | 268.74787 | 194.11015 | 4.10673 | 0.1327326 | 2.2973382 | 13 | 1 | 24 days | 0.40 | MPC | 2006 $UP_{92}$ |
| 2006 $UT_{92}$ | 17.4 | 0.15 | 20061012 | 21.98907 | 313.26692 | 39.24385 | 15.08617 | 0.2728021 | 3.1816398 | 25 | 1 | 51 days | 0.29 | MPC | 2006 $UT_{92}$ |
| 2006 $UV_{92}$ | 18.1 | 0.15 | 20061012 | 357.43781 | 348.32236 | 44.36395 | 7.59564 | 0.1193516 | 2.2459226 | 38 | 1 | 56 days | 0.29 | MPC | 2006 $UV_{92}$ |
| 2006 $UX_{92}$ | 18.5 | 0.15 | 20061012 | 56.02531 | 252.42942 | 57.41417 | 3.68552 | 0.2246865 | 2.3017703 | 20 | 1 | 42 days | 0.31 | MPC | 2006 $UX_{92}$ |
| 2006 $UZ_{92}$ | 17.1 | 0.15 | 20061012 | 2.02766 | 195.80081 | 192.94352 | 5.24743 | 0.1907958 | 3.0559349 | 18 | 1 | 51 days | 0.26 | MPC | 2006 $UZ_{92}$ |
| 2006 $UC_{93}$ | 18.4 | 0.15 | 20061012 | 349.14173 | 356.41737 | 48.58946 | 6.32789 | 0.1670579 | 2.3639778 | 18 | 1 | 51 days | 0.33 | MPC | 2006 $UC_{93}$ |
| 2006 $UD_{93}$ | 18.9 | 0.15 | 20061012 | 339.40744 | 264.11046 | 155.44252 | 1.78439 | 0.1736302 | 2.3943650 | 10 | 1 | 13 days | 0.27 | MPC | 2006 $UD_{93}$ |
| 2006 $UE_{93}$ | 17.1 | 0.15 | 20061012 | 22.60987 | 168.35164 | 190.36203 | 4.16755 | 0.2011863 | 3.1116451 | 18 | 1 | 47 days | 0.27 | MPC | 2006 $UE_{93}$ |
| 2006 $UF_{93}$ | 17.7 | 0.15 | 20061012 | 345.54237 | 261.29375 | 151.90321 | 2.33396 | 0.2055090 | 2.6914070 | 14 | 1 | 31 days | 0.18 | MPC | 2006 $UF_{93}$ |
| 2006 $UG_{93}$ | 17.4 | 0.15 | 20061012 | 329.04620 | 257.05967 | 179.73943 | 3.13437 | 0.1944496 | 2.6558516 | 20 | 1 | 48 days | 0.55 | MPC | 2006 $UG_{93}$ |
| 2006 $UH_{93}$ | 17.6 | 0.15 | 20061101 | 31.51467 | 234.41728 | 118.72001 | 2.35235 | 0.1799864 | 3.1996492 | 14 | 1 | 29 days | 0.43 | MPC | 2006 $UH_{93}$ |
| 2006 $UK_{93}$ | 17.2 | 0.15 | 20061012 | 316.23883 | 244.18233 | 199.71278 | 8.48167 | 0.0813536 | 2.7559492 | 14 | 1 | 31 days | 0.28 | MPC | 2006 $UK_{93}$ |
| 2006 $UL_{93}$ | 18.8 | 0.15 | 20061101 | 352.61732 | 269.15066 | 139.61789 | 2.04842 | 0.1813995 | 2.3870670 | 14 | 1 | 29 days | 0.25 | MPC | 2006 $UL_{93}$ |
| 2006 $UM_{93}$ | 17.3 | 0.15 | 20061012 | 35.65155 | 275.29314 | 68.99427 | 3.53542 | 0.1553177 | 2.6335398 | 14 | 1 | 29 days | 0.27 | MPC | 2006 $UM_{93}$ |
| 2006 $UN_{93}$ | 18.4 | 0.15 | 20061012 | 41.12149 | 287.77724 | 43.35961 | 8.54529 | 0.1991628 | 2.2479454 | 14 | 1 | 50 days | 0.26 | MPC | 2006 $UN_{93}$ |
| 2006 $UO_{93}$ | 16.7 | 0.15 | 20061012 | 352.83119 | 348.35085 | 52.83575 | 7.15317 | 0.0389127 | 2.7961518 | 14 | 1 | 29 days | 0.23 | MPC | 2006 $UO_{93}$ |
| 2006 $UP_{93}$ | 18.1 | 0.15 | 20061012 | 49.22034 | 243.37254 | 79.76108 | 1.99891 | 0.1841351 | 2.1923530 | 14 | 1 | 31 days | 0.23 | MPC | 2006 $UP_{93}$ |
| 2006 $UQ_{93}$ | 19.1 | 0.15 | 20061101 | 354.93089 | 2.48129 | 44.86377 | 8.00848 | 0.2646366 | 2.6381652 | 13 | 1 | 27 days | 0.18 | MPC | 2006 $UQ_{93}$ |
| 2006 $UR_{93}$ | 16.3 | 0.15 | 20061012 | 152.30468 | 172.37459 | 67.82843 | 4.87955 | 0.0353612 | 2.7455720 | 18 | 1 | 45 days | 0.25 | MPC | 2006 $UR_{93}$ |
| 2006 $US_{93}$ | 18.4 | 0.15 | 20061012 | 43.62532 | 145.09527 | 183.69324 | 3.46944 | 0.2035674 | 2.3736309 | 18 | 1 | 47 days | 0.33 | MPC | 2006 $US_{93}$ |
| 2006 $UT_{93}$ | 18.9 | 0.15 | 20061012 | 6.20924 | 336.62906 | 44.97872 | 8.76099 | 0.1474925 | 2.1884645 | 17 | 1 | 42 days | 0.25 | MPC | 2006 $UT_{93}$ |
| 2006 $UW_{93}$ | 17.1 | 0.15 | 20061012 | 336.48725 | 356.58787 | 63.34176 | 4.38116 | 0.0733895 | 2.4799055 | 22 | 1 | 45 days | 0.24 | MPC | 2006 $UW_{93}$ |
| 2006 $UX_{93}$ | 16.0 | 0.15 | 20061012 | 55.52985 | 244.26310 | 76.39956 | 3.67517 | 0.1746711 | 3.0543137 | 17 | 1 | 45 days | 0.25 | MPC | 2006 $UX_{93}$ |
| 2006 $UZ_{93}$ | 15.8 | 0.15 | 20061012 | 310.71880 | 45.98179 | 43.92137 | 17.46978 | 0.0591079 | 3.2257381 | 27 | 1 | 51 days | 0.32 | MPC | 2006 $UZ_{93}$ |
| 2006 $UA_{94}$ | 18.1 | 0.15 | 20061012 | 36.09549 | 303.40639 | 48.56250 | 9.31165 | 0.0751788 | 2.6089883 | 9 | 1 | 13 days | 0.25 | MPC | 2006 $UA_{94}$ |
| 2006 $UB_{94}$ | 15.9 | 0.15 | 20061012 | 243.27250 | 105.12440 | 49.97836 | 11.35676 | 0.0219720 | 3.2119351 | 23 | 1 | 44 days | 0.27 | MPC | 2006 $UB_{94}$ |
| 2006 $UC_{94}$ | 18.1 | 0.15 | 20061012 | 13.60242 | 179.27884 | 195.76295 | 6.57003 | 0.1192494 | 2.3764963 | 22 | 1 | 54 days | 0.28 | MPC | 2006 $UC_{94}$ |
| 2006 $UF_{94}$ | 17.4 | 0.15 | 20061012 | 359.52629 | 269.09310 | 122.75942 | 2.16585 | 0.1873262 | 2.3742831 | 32 | 1 | 49 days | 0.44 | MPC | 2006 $UF_{94}$ |
| 2006 $UJ_{94}$ | 16.0 | 0.15 | 20061012 | 322.27606 | 269.77938 | 171.79829 | 4.41251 | 0.1169107 | 3.1713438 | 22 | 1 | 51 days | 0.28 | MPC | 2006 $UJ_{94}$ |
| 2006 $UL_{94}$ | 17.1 | 0.15 | 20061012 | 47.30579 | 252.76040 | 81.86608 | 3.99985 | 0.1120968 | 2.4159502 | 14 | 1 | 44 days | 0.21 | MPC | 2006 $UL_{94}$ |
| 2006 $UN_{94}$ | 17.0 | 0.15 | 20061012 | 57.23275 | 156.21655 | 166.69823 | 4.65571 | 0.1302570 | 2.7334597 | 10 | 1 | 4 days | 0.26 | MPC | 2006 $UN_{94}$ |
| 2006 $UO_{94}$ | 16.2 | 0.15 | 20061012 | 78.28964 | 105.55969 | 208.51913 | 21.95356 | 0.0343013 | 3.2252044 | 14 | 1 | 54 days | 0.37 | MPC | 2006 $UO_{94}$ |
| 2006 $UP_{94}$ | 16.5 | 0.15 | 20061012 | 352.25205 | 338.12926 | 65.99791 | 5.97369 | 0.1251750 | 3.0821902 | 17 | 1 | 44 days | 0.27 | MPC | 2006 $UP_{94}$ |
| 2006 $UQ_{94}$ | 17.5 | 0.15 | 20061012 | 51.65733 | 132.75252 | 190.24437 | 7.92156 | 0.1846489 | 2.7209902 | 10 | 1 | 20 days | 0.37 | MPC | 2006 $UQ_{94}$ |
| 2006 $UR_{94}$ | 18.1 | 0.15 | 20061012 | 8.25232 | 289.15307 | 90.34713 | 2.94999 | 0.1858133 | 2.5614096 | 18 | 1 | 44 days | 0.20 | MPC | 2006 $UR_{94}$ |
| 2006 $US_{94}$ | 17.9 | 0.15 | 20061012 | 66.00890 | 174.21639 | 127.07435 | 2.66937 | 0.2226037 | 2.3109053 | 22 | 1 | 51 days | 0.30 | MPC | 2006 $US_{94}$ |
| 2006 $UT_{94}$ | 17.2 | 0.15 | 20061012 | 348.48384 | 233.01582 | 174.92828 | 5.74583 | 0.0759432 | 2.9357158 | 26 | 1 | 51 days | 0.33 | MPC | 2006 $UT_{94}$ |
| 2006 $UV_{94}$ | 18.7 | 0.15 | 20061012 | 28.22722 | 184.66603 | 163.40292 | 3.53283 | 0.2141147 | 2.3858182 | 14 | 1 | 50 days | 0.22 | MPC | 2006 $UV_{94}$ |
| 2006 $UW_{94}$ | 16.5 | 0.15 | 20061012 | 70.19639 | 244.57290 | 67.53191 | 5.89383 | 0.1073799 | 2.7041191 | 18 | 1 | 44 days | 0.35 | MPC | 2006 $UW_{94}$ |
| 2006 $UX_{94}$ | 17.4 | 0.15 | 20061012 | 6.26970 | 300.17682 | 85.91191 | 4.29994 | 0.1163138 | 2.9219844 | 10 | 1 | 19 days | 0.13 | MPC | 2006 $UX_{94}$ |
| 2006 $UZ_{94}$ | 18.1 | 0.15 | 20061012 | 47.37041 | 233.16895 | 88.28139 | 3.16260 | 0.2262565 | 2.2765463 | 18 | 1 | 44 days | 0.22 | MPC | 2006 $UZ_{94}$ |
| 2006 $UB_{95}$ | 16.7 | 0.15 | 20061101 | 87.73558 | 244.52014 | 52.86921 | 12.86952 | 0.1228463 | 3.1111202 | 13 | 1 | 29 days | 0.32 | MPC | 2006 $UB_{95}$ |
| 2006 $UE_{95}$ | 17.1 | 0.15 | 20061012 | 28.61197 | 153.34083 | 196.27762 | 10.32405 | 0.2272652 | 3.1421809 | 14 | 1 | 52 days | 0.29 | MPC | 2006 $UE_{95}$ |
| 2006 $UF_{95}$ | 17.3 | 0.15 | 20061012 | 359.28666 | 282.15060 | 110.82840 | 3.07079 | 0.1068708 | 2.9103198 | 14 | 1 | 30 days | 0.30 | MPC | 2006 $UF_{95}$ |
| 2006 $UG_{95}$ | 17.3 | 0.15 | 20061012 | 27.05386 | 269.24363 | 90.31081 | 2.92563 | 0.0920752 | 2.7075651 | 18 | 1 | 45 days | 0.28 | MPC | 2006 $UG_{95}$ |
| 2006 $UH_{95}$ | 19.0 | 0.15 | 20061012 | 12.83846 | 302.06968 | 62.56890 | 4.00999 | 0.2921814 | 2.5779043 | 10 | 1 | 13 days | 0.62 | MPC | 2006 $UH_{95}$ |
| 2006 $UJ_{95}$ | 17.2 | 0.15 | 20061012 | 18.66270 | 189.31807 | 181.37771 | 5.53482 | 0.0712550 | 2.7307222 | 18 | 1 | 30 days | 0.28 | MPC | 2006 $UJ_{95}$ |
| 2006 $UK_{95}$ | 17.4 | 0.15 | 20061012 | 319.25554 | 20.98599 | 69.10578 | 4.89642 | 0.1979216 | 2.7699717 | 18 | 1 | 44 days | 0.21 | MPC | 2006 $UK_{95}$ |
| 2006 $UN_{95}$ | 18.2 | 0.15 | 20061012 | 340.35091 | 226.79005 | 188.31246 | 6.04766 | 0.1211291 | 2.2537828 | 14 | 1 | 14 days | 0.21 | MPC | 2006 $UN_{95}$ |
| 2006 $UO_{95}$ | 17.7 | 0.15 | 20061012 | 303.47242 | 55.77390 | 53.11689 | 8.29551 | 0.1871024 | 2.7984508 | 14 | 1 | 29 days | 0.28 | MPC | 2006 $UO_{95}$ |
| 2006 $UP_{95}$ | 18.0 | 0.15 | 20061012 | 30.94115 | 276.01432 | 61.89431 | 4.86415 | 0.2555162 | 2.2931394 | 26 | 1 | 47 days | 0.29 | MPC | 2006 $UP_{95}$ |
| 2006 $US_{95}$ | 16.9 | 0.15 | 20061012 | 134.58319 | 70.99947 | 178.87549 | 5.06575 | 0.1182835 | 2.4606378 | 10 | 1 | 14 days | 0.17 | MPC | 2006 $US_{95}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UU_{95}$ | 18.1 | 0.15 | 20061101 | 338.96399 | 225.57404 | 203.54412 | 13.34584 | 0.1898078 | 2.6764067 | 18 | 1 | 37 days | 0.23 | MPC | 2006 $UU_{95}$ |
| 2006 $UV_{95}$ | 16.9 | 0.15 | 20061012 | 291.58927 | 277.56840 | 192.17009 | 7.08680 | 0.0760997 | 2.6138399 | 10 | 1 | 14 days | 0.17 | MPC | 2006 $UV_{95}$ |
| 2006 $UW_{95}$ | 18.7 | 0.15 | 20061012 | 357.26661 | 319.25383 | 74.29826 | 3.16136 | 0.1722499 | 2.2933418 | 14 | 1 | 29 days | 0.21 | MPC | 2006 $UW_{95}$ |
| 2006 $UY_{95}$ | 19.0 | 0.15 | 20061012 | 355.49197 | 229.55649 | 167.20340 | 3.82853 | 0.2040671 | 2.4265018 | 22 | 1 | 51 days | 0.22 | MPC | 2006 $UY_{95}$ |
| 2006 $UZ_{95}$ | 16.5 | 0.15 | 20061101 | 22.21160 | 323.81743 | 48.24334 | 15.97911 | 0.0637967 | 3.1431672 | 15 | 1 | 29 days | 0.29 | MPC | 2006 $UZ_{95}$ |
| 2006 $UD_{96}$ | 17.6 | 0.15 | 20061012 | 318.09975 | 339.47271 | 112.05239 | 2.93749 | 0.2080046 | 2.3088523 | 22 | 1 | 35 days | 0.24 | MPC | 2006 $UD_{96}$ |
| 2006 $UE_{96}$ | 16.9 | 0.15 | 20061012 | 318.20957 | 335.44025 | 117.48779 | 2.98545 | 0.1993751 | 2.8883682 | 16 | 1 | 56 days | 0.42 | MPC | 2006 $UE_{96}$ |
| 2006 $UF_{96}$ | 18.0 | 0.15 | 20061012 | 271.54388 | 36.59921 | 96.27809 | 3.36751 | 0.1116958 | 2.2193137 | 14 | 1 | 14 days | 0.37 | MPC | 2006 $UF_{96}$ |
| 2006 $UG_{96}$ | 18.9 | 0.15 | 20061012 | 53.95890 | 263.30226 | 52.20022 | 8.22407 | 0.2001792 | 2.2362983 | 10 | 1 | 13 days | 0.19 | MPC | 2006 $UG_{96}$ |
| 2006 $UJ_{96}$ | 16.4 | 0.15 | 20061012 | 255.61380 | 93.98920 | 58.69973 | 8.93278 | 0.1302134 | 3.0119708 | 18 | 1 | 44 days | 0.29 | MPC | 2006 $UJ_{96}$ |
| 2006 $UK_{96}$ | 18.3 | 0.15 | 20061012 | 331.55446 | 337.91253 | 89.38300 | 2.84713 | 0.1339912 | 2.1990049 | 22 | 1 | 50 days | 0.20 | MPC | 2006 $UK_{96}$ |
| 2006 $UL_{96}$ | 16.9 | 0.15 | 20061012 | 347.16840 | 321.35541 | 85.38496 | 3.33727 | 0.0704049 | 3.0927092 | 18 | 1 | 30 days | 0.45 | MPC | 2006 $UL_{96}$ |
| 2006 $UN_{96}$ | 17.4 | 0.15 | 20061012 | 27.17710 | 189.67116 | 166.99580 | 3.03684 | 0.1199097 | 2.6690758 | 14 | 1 | 14 days | 0.18 | MPC | 2006 $UN_{96}$ |
| 2006 $UO_{96}$ | 19.3 | 0.15 | 20061012 | 345.67481 | 295.52454 | 113.39302 | 2.25262 | 0.1641307 | 2.2902124 | 10 | 1 | 4 days | 0.23 | MPC | 2006 $UO_{96}$ |
| 2006 $UP_{96}$ | 16.6 | 0.15 | 20061012 | 33.79583 | 296.21438 | 58.55156 | 7.03597 | 0.0425493 | 2.6971586 | 17 | 1 | 29 days | 0.22 | MPC | 2006 $UP_{96}$ |
| 2006 $UQ_{96}$ | 17.9 | 0.15 | 20061012 | 11.34643 | 332.69549 | 42.94818 | 11.77401 | 0.1303642 | 2.6209362 | 17 | 1 | 37 days | 0.26 | MPC | 2006 $UQ_{96}$ |
| 2006 $UR_{96}$ | 17.3 | 0.15 | 20061012 | 359.20972 | 325.76652 | 65.85122 | 3.53412 | 0.1543532 | 2.6592988 | 32 | 1 | 44 days | 0.33 | MPC | 2006 $UR_{96}$ |
| 2006 $UT_{96}$ | 18.0 | 0.15 | 20061012 | 327.00787 | 15.19955 | 59.32217 | 4.40182 | 0.1549061 | 2.4368085 | 21 | 1 | 40 days | 0.22 | MPC | 2006 $UT_{96}$ |
| 2006 $UW_{96}$ | 17.6 | 0.15 | 20061012 | 8.99784 | 182.74861 | 194.21020 | 9.35137 | 0.2172483 | 3.0772779 | 11 | 1 | 14 days | 0.23 | MPC | 2006 $UW_{96}$ |
| 2006 $UX_{96}$ | 19.2 | 0.15 | 20061012 | 352.52816 | 265.19986 | 134.86210 | 2.45220 | 0.1912894 | 2.3736988 | 14 | 1 | 20 days | 0.25 | MPC | 2006 $UX_{96}$ |
| 2006 $UY_{96}$ | 17.3 | 0.15 | 20061012 | 205.73799 | 358.87690 | 192.07766 | 6.04091 | 0.1083267 | 2.2535825 | 10 | 1 | 14 days | 0.15 | MPC | 2006 $UY_{96}$ |
| 2006 $UA_{97}$ | 17.1 | 0.15 | 20061012 | 7.88599 | 225.92845 | 156.50485 | 3.01028 | 0.1164579 | 3.1044583 | 18 | 1 | 45 days | 0.27 | MPC | 2006 $UA_{97}$ |
| 2006 $UB_{97}$ | 16.9 | 0.15 | 20061012 | 349.65314 | 312.04898 | 95.21286 | 3.31228 | 0.2057620 | 3.0854641 | 14 | 1 | 14 days | 0.23 | MPC | 2006 $UB_{97}$ |
| 2006 $UC_{97}$ | 18.4 | 0.15 | 20061012 | 344.91560 | 238.59138 | 175.38959 | 3.04647 | 0.2293580 | 2.5362376 | 21 | 1 | 32 days | 0.20 | MPC | 2006 $UC_{97}$ |
| 2006 $UE_{97}$ | 19.4 | 0.15 | 20061012 | 354.67532 | 359.28790 | 34.82048 | 23.07357 | 0.0658350 | 1.8873260 | 20 | 1 | 11 days | 0.29 | MPC | 2006 $UE_{97}$ |
| 2006 $UF_{97}$ | 17.8 | 0.15 | 20061012 | 15.27929 | 212.98226 | 159.52176 | 3.40270 | 0.0864255 | 2.4203143 | 18 | 1 | 30 days | 0.33 | MPC | 2006 $UF_{97}$ |
| 2006 $UG_{97}$ | 17.4 | 0.15 | 20061012 | 12.72666 | 220.94207 | 152.19632 | 3.35358 | 0.1616360 | 2.7251498 | 10 | 1 | 4 days | 0.22 | MPC | 2006 $UG_{97}$ |
| 2006 $UJ_{97}$ | 16.1 | 0.15 | 20061012 | 67.30823 | 250.35875 | 53.10506 | 10.37057 | 0.1943567 | 3.1417883 | 18 | 1 | 44 days | 0.23 | MPC | 2006 $UJ_{97}$ |
| 2006 $UK_{97}$ | 17.5 | 0.15 | 20061012 | 341.18390 | 5.62252 | 51.59794 | 6.45463 | 0.1650792 | 2.6508689 | 18 | 1 | 29 days | 0.19 | MPC | 2006 $UK_{97}$ |
| 2006 $UM_{97}$ | 17.0 | 0.15 | 20061012 | 78.79068 | 221.61956 | 84.49972 | 3.22818 | 0.0666866 | 2.6861195 | 18 | 1 | 45 days | 0.24 | MPC | 2006 $UM_{97}$ |
| 2006 $UQ_{97}$ | 15.6 | 0.15 | 20061012 | 279.94963 | 83.87774 | 45.54602 | 19.91861 | 0.1146630 | 3.2067245 | 23 | 1 | 41 days | 0.25 | MPC | 2006 $UQ_{97}$ |
| 2006 $UR_{97}$ | 17.5 | 0.15 | 20061012 | 345.08800 | 0.71380 | 55.56525 | 7.77631 | 0.2055677 | 2.8516476 | 18 | 1 | 43 days | 0.23 | MPC | 2006 $UR_{97}$ |
| 2006 $US_{97}$ | 18.3 | 0.15 | 20061012 | 330.17752 | 28.37949 | 50.71915 | 7.23112 | 0.2458029 | 2.2710222 | 28 | 1 | 55 days | 0.33 | MPC | 2006 $US_{97}$ |
| 2006 $UT_{97}$ | 15.4 | 0.15 | 20061012 | 212.51651 | 138.87510 | 52.11079 | 12.72135 | 0.1186290 | 3.0192423 | 10 | 1 | 13 days | 0.40 | MPC | 2006 $UT_{97}$ |
| 2006 $UX_{97}$ | 18.0 | 0.15 | 20061012 | 19.49738 | 302.55308 | 58.78039 | 5.85079 | 0.2343897 | 2.6710436 | 18 | 1 | 44 days | 0.28 | MPC | 2006 $UX_{97}$ |
| 2006 $UY_{97}$ | 16.7 | 0.15 | 20061012 | 219.19875 | 123.64108 | 61.19617 | 7.49828 | 0.1056378 | 2.8559894 | 9 | 1 | 13 days | 0.73 | MPC | 2006 $UY_{97}$ |
| 2006 $UG_{98}$ | 16.2 | 0.15 | 20061012 | 171.71352 | 47.84601 | 177.20339 | 5.52911 | 0.0334290 | 2.7109868 | 18 | 1 | 52 days | 0.45 | MPC | 2006 $UG_{98}$ |
| 2006 $UH_{98}$ | 17.2 | 0.15 | 20061012 | 55.91046 | 195.78281 | 118.59904 | 3.13464 | 0.2239171 | 2.4070316 | 14 | 1 | 45 days | 0.13 | MPC | 2006 $UH_{98}$ |
| 2006 $UK_{98}$ | 15.6 | 0.15 | 20061012 | 245.40713 | 318.34834 | 204.13853 | 12.91651 | 0.0885543 | 2.9864754 | 18 | 1 | 54 days | 0.17 | MPC | 2006 $UK_{98}$ |
| 2006 $UL_{98}$ | 18.2 | 0.15 | 20061012 | 39.04670 | 212.30457 | 124.95596 | 2.67082 | 0.1874114 | 2.1245704 | 12 | 1 | 4 days | 0.38 | MPC | 2006 $UL_{98}$ |
| 2006 $UM_{98}$ | 16.9 | 0.15 | 20061012 | 331.06627 | 8.41594 | 69.32930 | 6.90104 | 0.1771182 | 3.0306251 | 10 | 1 | 19 days | 0.18 | MPC | 2006 $UM_{98}$ |
| 2006 $UN_{98}$ | 18.8 | 0.15 | 20061012 | 18.72799 | 296.00863 | 71.91299 | 4.05238 | 0.1424823 | 2.1720665 | 17 | 1 | 44 days | 0.26 | MPC | 2006 $UN_{98}$ |
| 2006 $UO_{98}$ | 17.1 | 0.15 | 20061012 | 36.55131 | 166.19964 | 175.89722 | 4.92723 | 0.2031971 | 2.6165041 | 29 | 1 | 54 days | 0.49 | MPC | 2006 $UO_{98}$ |
| 2006 $UR_{98}$ | 16.5 | 0.15 | 20061012 | 313.76147 | 283.47218 | 184.43183 | 6.75199 | 0.2355201 | 3.0756793 | 14 | 1 | 52 days | 0.19 | MPC | 2006 $UR_{98}$ |
| 2006 $UT_{98}$ | 15.5 | 0.15 | 20061012 | 329.59842 | 246.74141 | 190.88677 | 8.22758 | 0.1310890 | 3.1139444 | 29 | 1 | 54 days | 0.65 | MPC | 2006 $UT_{98}$ |
| 2006 $UY_{98}$ | 16.3 | 0.15 | 20061012 | 328.02208 | 359.38362 | 77.00307 | 5.93719 | 0.1012638 | 2.7863664 | 14 | 1 | 45 days | 0.19 | MPC | 2006 $UY_{98}$ |
| 2006 $UA_{99}$ | 16.5 | 0.15 | 20061012 | 61.93971 | 264.62776 | 49.41200 | 20.77579 | 0.1935984 | 2.7765586 | 13 | 1 | 28 days | 0.19 | MPC | 2006 $UA_{99}$ |
| 2006 $UD_{99}$ | 16.2 | 0.15 | 20061012 | 320.46552 | 261.09602 | 180.29639 | 5.84648 | 0.0359180 | 2.8620578 | 14 | 1 | 45 days | 0.16 | MPC | 2006 $UD_{99}$ |
| 2006 $UM_{99}$ | 17.1 | 0.15 | 20061012 | 17.69907 | 294.47007 | 77.81989 | 5.73987 | 0.1681263 | 2.7947436 | 14 | 1 | 44 days | 0.22 | MPC | 2006 $UM_{99}$ |
| 2006 $UN_{99}$ | 18.9 | 0.15 | 20061012 | 346.46388 | 236.91267 | 182.84315 | 4.83456 | 0.3059239 | 2.5670093 | 14 | 1 | 54 days | 0.19 | MPC | 2006 $UN_{99}$ |
| 2006 $UO_{99}$ | 16.8 | 0.15 | 20061012 | 0.78743 | 307.11859 | 90.85366 | 5.14171 | 0.1083287 | 3.0322092 | 10 | 1 | 19 days | 0.22 | MPC | 2006 $UO_{99}$ |
| 2006 $UP_{99}$ | 17.1 | 0.15 | 20061012 | 58.40474 | 183.52180 | 135.83237 | 3.89609 | 0.1870222 | 2.6419775 | 14 | 1 | 44 days | 0.28 | MPC | 2006 $UP_{99}$ |
| 2006 $UQ_{99}$ | 17.3 | 0.15 | 20061012 | 72.12661 | 163.49588 | 140.20248 | 3.45511 | 0.1845797 | 2.2847563 | 14 | 1 | 44 days | 0.17 | MPC | 2006 $UQ_{99}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $US_{99}$ | 16.8 | 0.15 | 20061012 | 340.39865 | 221.31868 | 207.57305 | 16.52048 | 0.2036605 | 3.1356008 | 14 | 1 | 55 days | 0.27 | MPC | 2006 $US_{99}$ |
| 2006 $UU_{99}$ | 16.9 | 0.15 | 20061012 | 296.90667 | 335.76929 | 144.48023 | 3.23736 | 0.1682164 | 2.5874122 | 10 | 1 | 19 days | 0.21 | MPC | 2006 $UU_{99}$ |
| 2006 $UV_{99}$ | 16.3 | 0.15 | 20061012 | 26.52811 | 206.17226 | 160.28479 | 3.91006 | 0.1171298 | 3.0447431 | 14 | 1 | 45 days | 0.22 | MPC | 2006 $UV_{99}$ |
| 2006 $UB_{100}$ | 16.8 | 0.15 | 20061012 | 35.96875 | 209.09327 | 143.44549 | 4.90566 | 0.1173151 | 3.0639462 | 10 | 1 | 4 days | 0.42 | MPC | 2006 $UB_{100}$ |
| 2006 $UD_{100}$ | 16.8 | 0.15 | 20061012 | 210.07848 | 354.67415 | 198.86990 | 13.36684 | 0.1000656 | 2.6615648 | 18 | 1 | 52 days | 0.28 | MPC | 2006 $UD_{100}$ |
| 2006 $UE_{100}$ | 16.0 | 0.15 | 20061012 | 11.81789 | 174.14664 | 208.01074 | 22.53978 | 0.1478637 | 3.2013146 | 21 | 1 | 44 days | 0.43 | MPC | 2006 $UE_{100}$ |
| 2006 $UH_{100}$ | 18.6 | 0.15 | 20061101 | 331.67839 | 10.75115 | 74.17776 | 6.25119 | 0.2205507 | 2.4022471 | 14 | 1 | 29 days | 0.29 | MPC | 2006 $UH_{100}$ |
| 2006 $UJ_{100}$ | 19.0 | 0.15 | 20061012 | 30.96563 | 168.82195 | 173.23182 | 4.90911 | 0.2430876 | 2.1524698 | 12 | 1 | 20 days | 0.95 | MPC | 2006 $UJ_{100}$ |
| 2006 $UN_{100}$ | 17.7 | 0.15 | 20061012 | 44.35389 | 198.05846 | 140.34186 | 4.32990 | 0.1430611 | 2.4841662 | 14 | 1 | 51 days | 0.25 | MPC | 2006 $UN_{100}$ |
| 2006 $UO_{100}$ | 16.4 | 0.15 | 20061012 | 45.25529 | 257.33761 | 71.55548 | 9.64331 | 0.2380071 | 3.2623924 | 10 | 1 | 4 days | 0.28 | MPC | 2006 $UO_{100}$ |
| 2006 $UQ_{100}$ | 17.3 | 0.15 | 20061012 | 265.19790 | 40.21121 | 111.42934 | 4.79719 | 0.1731619 | 2.5352593 | 14 | 1 | 51 days | 0.29 | MPC | 2006 $UQ_{100}$ |
| 2006 $UR_{100}$ | 16.4 | 0.15 | 20061012 | 45.22867 | 153.79114 | 188.85123 | 9.44527 | 0.1179105 | 2.9691801 | 10 | 1 | 4 days | 0.23 | MPC | 2006 $UR_{100}$ |
| 2006 $UT_{100}$ | 16.4 | 0.15 | 20061012 | 166.07140 | 37.49967 | 193.22888 | 11.22544 | 0.1094695 | 2.6789226 | 18 | 1 | 52 days | 0.27 | MPC | 2006 $UT_{100}$ |
| 2006 $UU_{100}$ | 17.3 | 0.15 | 20061012 | 77.80114 | 189.63895 | 109.98527 | 4.73732 | 0.1602505 | 2.2558723 | 13 | 1 | 22 days | 0.24 | MPC | 2006 $UU_{100}$ |
| 2006 $UV_{100}$ | 17.4 | 0.15 | 20061012 | 297.56640 | 14.69328 | 107.08597 | 3.95367 | 0.2167256 | 2.6182669 | 14 | 1 | 51 days | 0.18 | MPC | 2006 $UV_{100}$ |
| 2006 $UY_{100}$ | 16.6 | 0.15 | 20061012 | 350.46590 | 334.97037 | 70.85731 | 7.16043 | 0.0210586 | 2.7358252 | 14 | 1 | 44 days | 0.19 | MPC | 2006 $UY_{100}$ |
| 2006 $UA_{101}$ | 16.2 | 0.15 | 20061012 | 202.70317 | 136.25843 | 61.75976 | 9.62608 | 0.1062873 | 2.5798149 | 14 | 1 | 44 days | 0.21 | MPC | 2006 $UA_{101}$ |
| 2006 $UE_{101}$ | 16.2 | 0.15 | 20061012 | 334.98706 | 236.08547 | 190.48584 | 9.36529 | 0.0820437 | 3.1068582 | 18 | 1 | 52 days | 0.30 | MPC | 2006 $UE_{101}$ |
| 2006 $UF_{101}$ | 17.4 | 0.15 | 20061012 | 24.28599 | 273.46891 | 90.59195 | 3.99563 | 0.1160812 | 2.5516892 | 13 | 1 | 44 days | 0.21 | MPC | 2006 $UF_{101}$ |
| 2006 $UK_{101}$ | 15.7 | 0.15 | 20061012 | 214.80600 | 105.24412 | 87.26690 | 6.86877 | 0.1631519 | 3.0419751 | 10 | 1 | 4 days | 0.35 | MPC | 2006 $UK_{101}$ |
| 2006 $UL_{101}$ | 18.3 | 0.15 | 20061012 | 7.92779 | 208.84792 | 174.47874 | 5.64128 | 0.0956708 | 2.2175207 | 15 | 1 | 52 days | 0.16 | MPC | 2006 $UL_{101}$ |
| 2006 $UP_{101}$ | 16.6 | 0.15 | 20061101 | 294.89710 | 51.22274 | 66.02362 | 9.91195 | 0.1017798 | 3.0916350 | 10 | 1 | 29 days | 0.29 | MPC | 2006 $UP_{101}$ |
| 2006 $UT_{101}$ | 17.5 | 0.15 | 20061101 | 342.03857 | 317.14169 | 104.90759 | 4.32255 | 0.0787070 | 2.6983830 | 14 | 1 | 36 days | 0.35 | MPC | 2006 $UT_{101}$ |
| 2006 $UU_{101}$ | 17.4 | 0.15 | 20061012 | 33.36862 | 230.91142 | 106.16666 | 4.87068 | 0.2943286 | 3.2526103 | 10 | 1 | 4 days | 0.27 | MPC | 2006 $UU_{101}$ |
| 2006 $UY_{101}$ | 16.9 | 0.15 | 20061012 | 19.33766 | 198.60125 | 173.98978 | 6.18925 | 0.0831756 | 2.5431776 | 9 | 1 | 19 days | 0.10 | MPC | 2006 $UY_{101}$ |
| 2006 $UB_{102}$ | 17.3 | 0.15 | 20061012 | 346.49123 | 252.25470 | 162.14623 | 4.76163 | 0.1906838 | 2.6204154 | 21 | 1 | 51 days | 0.50 | MPC | 2006 $UB_{102}$ |
| 2006 $UH_{102}$ | 18.3 | 0.15 | 20061012 | 340.41149 | 343.70396 | 78.20123 | 3.97283 | 0.2020844 | 2.5380901 | 18 | 1 | 44 days | 0.27 | MPC | 2006 $UH_{102}$ |
| 2006 $UM_{102}$ | 17.2 | 0.15 | 20061012 | 29.21255 | 161.54145 | 201.51023 | 15.27852 | 0.0709801 | 3.1477996 | 10 | 1 | 4 days | 0.39 | MPC | 2006 $UM_{102}$ |
| 2006 $UN_{102}$ | 17.4 | 0.15 | 20061012 | 350.52316 | 261.77443 | 143.65121 | 4.21562 | 0.0523453 | 2.7340432 | 10 | 1 | 4 days | 0.35 | MPC | 2006 $UN_{102}$ |
| 2006 $UO_{102}$ | 16.4 | 0.15 | 20061012 | 154.27092 | 43.77603 | 197.10457 | 10.85571 | 0.0370642 | 2.9486687 | 10 | 1 | 20 days | 0.30 | MPC | 2006 $UO_{102}$ |
| 2006 $UQ_{102}$ | 16.4 | 0.15 | 20060922 | 50.35635 | 110.14041 | 209.57571 | 24.97018 | 0.2206308 | 3.2142800 | 10 | 1 | 22 days | 0.23 | MPC | 2006 $UQ_{102}$ |
| 2006 $UR_{102}$ | 19.5 | 0.15 | 20061012 | 6.07669 | 302.01757 | 76.88067 | 4.03006 | 0.2564876 | 2.2659171 | 10 | 1 | 4 days | 0.21 | MPC | 2006 $UR_{102}$ |
| 2006 $UT_{102}$ | 16.3 | 0.15 | 20061012 | 241.64869 | 106.22914 | 53.28943 | 13.92362 | 0.0458313 | 3.0509576 | 14 | 1 | 43 days | 0.27 | MPC | 2006 $UT_{102}$ |
| 2006 $UU_{102}$ | 18.2 | 0.15 | 20061012 | 27.69972 | 249.70708 | 108.80479 | 4.02534 | 0.1276631 | 2.6271709 | 10 | 1 | 4 days | 0.26 | MPC | 2006 $UU_{102}$ |
| 2006 $UV_{102}$ | 16.6 | 0.15 | 20061101 | 116.93853 | 139.51879 | 132.75499 | 3.54780 | 0.1154200 | 2.5628684 | 14 | 1 | 36 days | 0.26 | MPC | 2006 $UV_{102}$ |
| 2006 $UF_{103}$ | 18.1 | 0.15 | 20061012 | 352.49933 | 199.62611 | 205.57285 | 6.09711 | 0.1578615 | 2.3107591 | 14 | 1 | 52 days | 0.21 | MPC | 2006 $UF_{103}$ |
| 2006 $UH_{103}$ | 16.4 | 0.15 | 20061101 | 291.62121 | 48.85399 | 67.94371 | 3.09302 | 0.0386844 | 3.0218410 | 18 | 1 | 37 days | 0.25 | MPC | 2006 $UH_{103}$ |
| 2006 $UK_{103}$ | 15.4 | 0.15 | 20060922 | 108.16675 | 78.99384 | 202.89991 | 4.67129 | 0.0880899 | 3.2604396 | 10 | 1 | 26 days | 0.22 | MPC | 2006 $UK_{103}$ |
| 2006 $UO_{103}$ | 17.3 | 0.15 | 20061012 | 8.83222 | 335.12611 | 51.30776 | 9.02629 | 0.1558080 | 2.8712706 | 22 | 1 | 53 days | 0.18 | MPC | 2006 $UO_{103}$ |
| 2006 $UQ_{103}$ | 17.9 | 0.15 | 20061012 | 62.76090 | 169.77905 | 144.25632 | 1.89104 | 0.1928912 | 2.4050898 | 14 | 1 | 46 days | 0.34 | MPC | 2006 $UQ_{103}$ |
| 2006 $UT_{103}$ | 18.1 | 0.15 | 20061012 | 59.75856 | 270.62650 | 55.47475 | 8.42080 | 0.1199929 | 2.4146376 | 14 | 1 | 43 days | 0.22 | MPC | 2006 $UT_{103}$ |
| 2006 $UV_{103}$ | 18.3 | 0.15 | 20061101 | 325.21470 | 19.92696 | 73.00988 | 3.78954 | 0.1740785 | 2.4680966 | 10 | 1 | 28 days | 0.16 | MPC | 2006 $UV_{103}$ |
| 2006 $UX_{103}$ | 16.8 | 0.15 | 20061012 | 35.96315 | 296.47105 | 49.57407 | 13.97386 | 0.2030925 | 2.6842313 | 24 | 1 | 25 days | 0.36 | MPC | 2006 $UX_{103}$ |
| 2006 $UY_{103}$ | 17.3 | 0.15 | 20061012 | 306.31059 | 69.16530 | 51.03954 | 11.06560 | 0.2447670 | 2.7151190 | 17 | 1 | 42 days | 0.29 | MPC | 2006 $UY_{103}$ |
| 2006 $UZ_{103}$ | 16.8 | 0.15 | 20061012 | 82.80637 | 200.10067 | 100.71839 | 2.75840 | 0.1527306 | 2.5690191 | 14 | 1 | 46 days | 0.31 | MPC | 2006 $UZ_{103}$ |
| 2006 $UC_{104}$ | 17.3 | 0.15 | 20061012 | 341.17558 | 219.60542 | 212.02113 | 9.23891 | 0.2407009 | 3.0222341 | 28 | 1 | 55 days | 0.40 | MPC | 2006 $UC_{104}$ |
| 2006 $UH_{104}$ | 17.1 | 0.15 | 20061101 | 6.20067 | 325.03374 | 72.39369 | 4.53832 | 0.1582028 | 2.6158169 | 24 | 1 | 30 days | 0.54 | MPC | 2006 $UH_{104}$ |
| 2006 $UK_{104}$ | 16.8 | 0.15 | 20061012 | 123.05060 | 74.41708 | 199.69469 | 5.97926 | 0.0588509 | 2.5197737 | 16 | 1 | 48 days | 0.33 | MPC | 2006 $UK_{104}$ |
| 2006 $UN_{104}$ | 16.8 | 0.15 | 20061012 | 114.74828 | 213.95202 | 64.79043 | 6.12967 | 0.0839046 | 2.3558439 | 17 | 1 | 43 days | 0.35 | MPC | 2006 $UN_{104}$ |
| 2006 $UR_{104}$ | 17.0 | 0.15 | 20061101 | 156.16692 | 167.69176 | 81.53779 | 4.26645 | 0.0462598 | 2.5303114 | 14 | 1 | 27 days | 0.19 | MPC | 2006 $UR_{104}$ |
| 2006 $UV_{104}$ | 16.9 | 0.15 | 20061101 | 28.27790 | 225.66988 | 136.37217 | 2.61579 | 0.2306425 | 2.7126209 | 22 | 1 | 33 days | 0.56 | MPC | 2006 $UV_{104}$ |
| 2006 $UB_{105}$ | 17.8 | 0.15 | 20061012 | 53.67403 | 260.65248 | 65.15377 | 7.17823 | 0.1822232 | 2.2489619 | 14 | 1 | 43 days | 0.16 | MPC | 2006 $UB_{105}$ |
| 2006 $UD_{105}$ | 16.0 | 0.15 | 20061101 | 41.62645 | 271.24531 | 71.91657 | 10.16247 | 0.2454113 | 3.9744589 | 10 | 1 | 30 days | 0.22 | MPC | 2006 $UD_{105}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UN_{105}$ | 17.1 | 0.15 | 20061012 | 19.41479 | 308.62364 | 64.53482 | 9.55367 | 0.1692745 | 2.7184061 | 10 | 1 | 19 days | 0.13 | | | MPC | 2006 $UN_{105}$ |
| 2006 $UP_{105}$ | 16.8 | 0.15 | 20061012 | 338.88887 | 3.08728 | 64.81300 | 9.19939 | 0.1065600 | 2.7050075 | 25 | 1 | 55 days | 0.55 | | | MPC | 2006 $UP_{105}$ |
| 2006 $UC_{106}$ | 17.7 | 0.15 | 20061012 | 17.79557 | 293.49924 | 73.07392 | 4.85080 | 0.2481004 | 2.5351091 | 12 | 1 | 24 days | 0.15 | | | MPC | 2006 $UC_{106}$ |
| 2006 $UF_{106}$ | 18.4 | 0.15 | 20061101 | 11.13723 | 328.24054 | 56.70802 | 7.23452 | 0.2421051 | 2.2925253 | 22 | 1 | 34 days | 0.36 | | | MPC | 2006 $UF_{106}$ |
| 2006 $UH_{106}$ | 16.5 | 0.15 | 20061012 | 195.66269 | 132.46111 | 73.98668 | 7.05878 | 0.0119119 | 2.7506374 | 13 | 1 | 45 days | 0.21 | | | MPC | 2006 $UH_{106}$ |
| 2006 $UM_{106}$ | 17.6 | 0.15 | 20061012 | 332.51767 | 334.24397 | 99.41652 | 3.96805 | 0.1081611 | 2.5675950 | 10 | 1 | 24 days | 0.18 | | | MPC | 2006 $UM_{106}$ |
| 2006 $UO_{106}$ | 17.2 | 0.15 | 20061012 | 60.45239 | 199.06953 | 116.64531 | 3.50199 | 0.2209190 | 2.6428534 | 18 | 1 | 48 days | 0.25 | | | MPC | 2006 $UO_{106}$ |
| 2006 $UP_{106}$ | 17.5 | 0.15 | 20061101 | 257.37082 | 30.22237 | 127.44956 | 3.33555 | 0.0873482 | 2.2814744 | 14 | 1 | 30 days | 0.22 | | | MPC | 2006 $UP_{106}$ |
| 2006 $UY_{106}$ | 15.8 | 0.15 | 20061012 | 237.13010 | 121.75468 | 59.16376 | 12.76947 | 0.1821909 | 3.0861905 | 10 | 1 | 19 days | 0.92 | | | MPC | 2006 $UY_{106}$ |
| 2006 $UA_{107}$ | 18.0 | 0.15 | 20061012 | 58.51891 | 236.74953 | 81.81172 | 4.00972 | 0.1879079 | 2.3339300 | 14 | 1 | 43 days | 0.44 | | | MPC | 2006 $UA_{107}$ |
| 2006 $UB_{107}$ | 16.8 | 0.15 | 20061012 | 195.01887 | 150.76752 | 58.65054 | 9.12401 | 0.1201091 | 2.5746293 | 14 | 1 | 46 days | 0.30 | | | MPC | 2006 $UB_{107}$ |
| 2006 $UD_{107}$ | 17.7 | 0.15 | 20061012 | 61.15630 | 250.68481 | 65.57956 | 6.01640 | 0.1841965 | 2.3219164 | 18 | 1 | 43 days | 0.46 | | | MPC | 2006 $UD_{107}$ |
| 2006 $UG_{107}$ | 17.5 | 0.15 | 20061101 | 327.07162 | 312.80678 | 138.23178 | 2.57762 | 0.1833314 | 2.4161444 | 18 | 1 | 30 days | 0.53 | | | MPC | 2006 $UG_{107}$ |
| 2006 $UJ_{107}$ | 18.2 | 0.15 | 20061012 | 20.02961 | 166.62961 | 194.42310 | 5.41133 | 0.2738128 | 2.6159475 | 14 | 1 | 52 days | 0.22 | | | MPC | 2006 $UJ_{107}$ |
| 2006 $UK_{107}$ | 16.7 | 0.15 | 20061012 | 61.43641 | 248.55920 | 81.89860 | 4.76399 | 0.0757287 | 2.5611299 | 21 | 1 | 45 days | 0.36 | | | MPC | 2006 $UK_{107}$ |
| 2006 $UM_{107}$ | 17.5 | 0.15 | 20061012 | 37.26727 | 302.06287 | 51.91469 | 13.36018 | 0.1084465 | 2.6418796 | 14 | 1 | 49 days | 0.27 | | | MPC | 2006 $UM_{107}$ |
| 2006 $UO_{107}$ | 17.0 | 0.15 | 20061012 | 55.52998 | 215.48866 | 105.91790 | 2.91017 | 0.2112039 | 2.6071159 | 14 | 1 | 46 days | 0.19 | | | MPC | 2006 $UO_{107}$ |
| 2006 $UP_{107}$ | 17.3 | 0.15 | 20061012 | 336.96974 | 281.04861 | 149.44894 | 3.56306 | 0.1496971 | 2.7547823 | 15 | 1 | 45 days | 0.19 | | | MPC | 2006 $UP_{107}$ |
| 2006 $UQ_{107}$ | 16.1 | 0.15 | 20061012 | 35.63230 | 302.18055 | 54.47363 | 15.30347 | 0.1271128 | 2.6668396 | 37 | 1 | 56 days | 0.42 | | | MPC | 2006 $UQ_{107}$ |
| 2006 $UR_{107}$ | 17.7 | 0.15 | 20061012 | 33.75646 | 188.56540 | 163.38214 | 3.06363 | 0.1871876 | 2.4604552 | 14 | 1 | 48 days | 0.28 | | | MPC | 2006 $UR_{107}$ |
| 2006 $UW_{107}$ | 17.1 | 0.15 | 20061012 | 18.23354 | 301.89044 | 75.37056 | 4.18078 | 0.1383515 | 2.3965751 | 17 | 1 | 26 days | 0.28 | | | MPC | 2006 $UW_{107}$ |
| 2006 $UX_{107}$ | 16.1 | 0.15 | 20061101 | 18.77762 | 331.23678 | 53.96071 | 28.29020 | 0.1283575 | 3.0842407 | 27 | 1 | 40 days | 0.39 | | | MPC | 2006 $UX_{107}$ |
| 2006 $UY_{107}$ | 17.3 | 0.15 | 20061012 | 351.95455 | 195.44312 | 219.47923 | 33.19091 | 0.2060357 | 2.5937275 | 17 | 1 | 53 days | 0.45 | | E | MPC | 2006 $UY_{107}$ |
| 2006 $UB_{108}$ | 17.0 | 0.15 | 20061101 | 79.89739 | 235.89151 | 70.96573 | 7.78273 | 0.1948960 | 2.2531107 | 18 | 1 | 36 days | 0.34 | | | MPC | 2006 $UB_{108}$ |
| 2006 $UC_{108}$ | 17.0 | 0.15 | 20061012 | 192.66275 | 158.06623 | 56.24789 | 22.56369 | 0.0292843 | 2.6218200 | 23 | 1 | 55 days | 0.29 | | | MPC | 2006 $UC_{108}$ |
| 2006 $UJ_{108}$ | 15.8 | 0.15 | 20061101 | 30.63610 | 295.05969 | 81.92358 | 8.27270 | 0.0588158 | 3.0456577 | 10 | 1 | 29 days | 0.19 | | | MPC | 2006 $UJ_{108}$ |
| 2006 $UO_{108}$ | 18.2 | 0.15 | 20061012 | 315.10020 | 37.14750 | 79.23988 | 4.79382 | 0.3099403 | 2.2803535 | 10 | 1 | 20 days | 0.24 | | | MPC | 2006 $UO_{108}$ |
| 2006 $UP_{108}$ | 16.6 | 0.15 | 20061101 | 340.57550 | 352.15716 | 89.30623 | 4.53897 | 0.2609325 | 2.6852441 | 34 | 1 | 33 days | 0.53 | | | MPC | 2006 $UP_{108}$ |
| 2006 $UR_{108}$ | 17.3 | 0.15 | 20061101 | 36.20730 | 291.43516 | 65.51013 | 9.60040 | 0.1832268 | 2.5777708 | 22 | 1 | 36 days | 0.50 | | | MPC | 2006 $UR_{108}$ |
| 2006 $US_{108}$ | 17.3 | 0.15 | 20061101 | 83.71915 | 171.32228 | 142.19079 | 4.06804 | 0.1040405 | 2.4659331 | 10 | 1 | 30 days | 0.32 | | | MPC | 2006 $US_{108}$ |
| 2006 $UY_{108}$ | 17.5 | 0.15 | 20061012 | 11.81078 | 205.14936 | 177.17342 | 4.10847 | 0.1579460 | 2.2943166 | 13 | 1 | 48 days | 0.18 | | | MPC | 2006 $UY_{108}$ |
| 2006 $UZ_{108}$ | 17.0 | 0.15 | 20061101 | 18.74882 | 174.85794 | 207.03060 | 12.47716 | 0.1613039 | 2.6579366 | 17 | 1 | 38 days | 0.15 | | | MPC | 2006 $UZ_{108}$ |
| 2006 $UD_{109}$ | 16.6 | 0.15 | 20061012 | 64.51787 | 264.65943 | 58.19215 | 15.07997 | 0.1443687 | 2.6551198 | 18 | 1 | 41 days | 0.64 | | | MPC | 2006 $UD_{109}$ |
| 2006 $UK_{109}$ | 16.8 | 0.15 | 20061012 | 335.38688 | 134.48177 | 259.93927 | 8.44182 | 0.1025614 | 3.0863689 | 9 | 1 | 4 days | 0.21 | | | MPC | 2006 $UK_{109}$ |
| 2006 $UM_{109}$ | 18.0 | 0.15 | 20061012 | 345.33711 | 118.49348 | 273.52785 | 6.65559 | 0.2552040 | 2.8354194 | 9 | 1 | 4 days | 0.29 | | | MPC | 2006 $UM_{109}$ |
| 2006 $UR_{109}$ | 15.5 | 0.15 | 20061012 | 259.30526 | 208.24384 | 262.72619 | 8.06516 | 0.0555139 | 3.0536743 | 16 | 1 | 34 days | 0.40 | | | MPC | 2006 $UR_{109}$ |
| 2006 $UT_{109}$ | 17.9 | 0.15 | 20061012 | 317.14624 | 124.47743 | 291.11832 | 6.21342 | 0.0700753 | 2.3225156 | 12 | 1 | 4 days | 0.23 | | | MPC | 2006 $UT_{109}$ |
| 2006 $UV_{109}$ | 17.3 | 0.15 | 20061012 | 84.16038 | 332.41200 | 294.17296 | 6.25632 | 0.1268002 | 2.3410669 | 12 | 1 | 4 days | 0.12 | | | MPC | 2006 $UV_{109}$ |
| 2006 $UW_{109}$ | 17.5 | 0.15 | 20061012 | 62.55068 | 40.45715 | 249.04654 | 7.03592 | 0.1268791 | 2.3202833 | 12 | 1 | 4 days | 0.47 | | | MPC | 2006 $UW_{109}$ |
| 2006 $UX_{109}$ | 17.9 | 0.15 | 20061012 | 344.82421 | 107.43485 | 286.29362 | 8.06663 | 0.2663057 | 3.2037134 | 9 | 1 | 4 days | 0.24 | | | MPC | 2006 $UX_{109}$ |
| 2006 $UY_{109}$ | 18.5 | 0.15 | 20061012 | 346.92383 | 50.11271 | 342.96079 | 12.30405 | 0.2793462 | 2.6589272 | 12 | 1 | 12 days | 0.31 | | | MPC | 2006 $UY_{109}$ |
| 2006 $UZ_{109}$ | 16.5 | 0.15 | 20061012 | 347.00294 | 151.02233 | 228.24321 | 8.74426 | 0.0748918 | 3.0276443 | 9 | 1 | 4 days | 0.17 | | | MPC | 2006 $UZ_{109}$ |
| 2006 $UA_{110}$ | 16.5 | 0.15 | 20060922 | 72.56622 | 359.30052 | 276.03331 | 5.95090 | 0.1120183 | 2.6009262 | 20 | 1 | 41 days | 0.60 | | | MPC | 2006 $UA_{110}$ |
| 2006 $UH_{110}$ | 16.2 | 0.15 | 20061012 | 87.10473 | 283.41513 | 331.86647 | 10.43628 | 0.1856792 | 3.0123450 | 9 | 1 | 9 days | 0.88 | | | MPC | 2006 $UH_{110}$ |
| 2006 $UJ_{110}$ | 17.5 | 0.15 | 20061012 | 353.63908 | 168.75635 | 207.33847 | 13.00632 | 0.2280369 | 2.7156169 | 26 | 1 | 55 days | 0.28 | | | MPC | 2006 $UJ_{110}$ |
| 2006 $UP_{110}$ | 17.4 | 0.15 | 20061101 | 349.63490 | 184.24313 | 200.22597 | 14.95454 | 0.1260556 | 2.5524525 | 19 | 1 | 27 days | 0.29 | | | MPC | 2006 $UP_{110}$ |
| 2006 $UQ_{110}$ | 15.8 | 0.15 | 20060922 | 283.16992 | 251.94030 | 198.35259 | 15.83361 | 0.1316107 | 3.2070575 | 24 | 1 | 66 days | 0.22 | M-v | 4 | MPC | 2006 $UQ_{110}$ |
| 2006 $UT_{110}$ | 16.7 | 0.15 | 20061012 | 316.74892 | 216.42092 | 201.70409 | 12.55804 | 0.1339884 | 3.1603765 | 22 | 1 | 9 days | 0.35 | | | MPC | 2006 $UT_{110}$ |
| 2006 $UZ_{110}$ | 17.2 | 0.15 | 20060922 | 302.26705 | 223.54373 | 222.00327 | 6.68705 | 0.2471793 | 2.5416099 | 22 | 1 | 38 days | 0.24 | | | MPC | 2006 $UZ_{110}$ |
| 2006 $UG_{111}$ | 16.5 | 0.15 | 20061012 | 314.45481 | 100.02454 | 318.07823 | 8.86703 | 0.0786478 | 2.9543334 | 12 | 1 | 16 days | 0.19 | | | MPC | 2006 $UG_{111}$ |
| 2006 $UR_{111}$ | 14.5 | 0.15 | 20061012 | 349.14307 | 175.68210 | 200.03055 | 16.55434 | 0.1009070 | 3.8913809 | 12 | 1 | 5 days | 0.84 | | | MPC | 2006 $UR_{111}$ |
| 2006 $UJ_{112}$ | 15.6 | 0.15 | 20061012 | 89.49045 | 57.63200 | 207.03433 | 7.80499 | 0.0734987 | 3.1600341 | 15 | 1 | 8 days | 0.30 | | | MPC | 2006 $UJ_{112}$ |
| 2006 $UT_{112}$ | 17.1 | 0.15 | 20061012 | 341.59920 | 25.30225 | 19.91150 | 5.56628 | 0.0710164 | 2.7185633 | 26 | 1 | 57 days | 0.32 | | | MPC | 2006 $UT_{112}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UU_{112}$ | 17.4 | 0.15 | 20061012 | 43.94415 | 332.72536 | 0.21555 | 2.27488 | 0.0890594 | 3.0633410 | 12 | 1 | 16 days | 0.21 | | MPC | 2006 $UU_{112}$ |
| 2006 $UV_{112}$ | 18.5 | 0.15 | 20061012 | 13.98310 | 0.36492 | 6.69396 | 2.09569 | 0.0811822 | 2.3029908 | 19 | 1 | 49 days | 0.21 | | MPC | 2006 $UV_{112}$ |
| 2006 $UW_{112}$ | 16.8 | 0.15 | 20061101 | 261.36640 | 284.73110 | 212.92163 | 8.72016 | 0.0925208 | 2.6474470 | 16 | 1 | 31 days | 0.21 | | MPC | 2006 $UW_{112}$ |
| 2006 $UX_{112}$ | 17.3 | 0.15 | 20061012 | 152.75257 | 246.08040 | 343.26785 | 1.77404 | 0.0547015 | 2.7474860 | 9 | 1 | 8 days | 0.34 | | MPC | 2006 $UX_{112}$ |
| 2006 $UY_{112}$ | 18.4 | 0.15 | 20061012 | 4.56262 | 157.98721 | 218.46424 | 2.41255 | 0.2319640 | 3.2218538 | 10 | 1 | 9 days | 0.66 | | MPC | 2006 $UY_{112}$ |
| 2006 $UZ_{112}$ | 16.5 | 0.15 | 20061012 | 297.78753 | 94.25513 | 10.56214 | 4.72406 | 0.1597768 | 3.1810640 | 22 | 1 | 55 days | 0.27 | | MPC | 2006 $UZ_{112}$ |
| 2006 $UF_{113}$ | 17.4 | 0.15 | 20060922 | 307.34538 | 71.49360 | 24.80612 | 9.94197 | 0.2182959 | 3.1465414 | 19 | 1 | 34 days | 0.21 | | MPC | 2006 $UF_{113}$ |
| 2006 $UG_{113}$ | 17.9 | 0.15 | 20061012 | 4.98817 | 169.50577 | 207.50994 | 11.82479 | 0.1805943 | 3.0257313 | 13 | 1 | 8 days | 0.58 | | MPC | 2006 $UG_{113}$ |
| 2006 $UL_{113}$ | 17.7 | 0.15 | 20061012 | 331.35974 | 212.95629 | 211.63357 | 11.26831 | 0.1671201 | 3.0204438 | 10 | 1 | 9 days | 0.26 | | MPC | 2006 $UL_{113}$ |
| 2006 $UO_{113}$ | 16.6 | 0.15 | 20061012 | 140.13824 | 30.70058 | 211.85704 | 11.21898 | 0.0372030 | 2.8002961 | 10 | 1 | 9 days | 0.30 | | MPC | 2006 $UO_{113}$ |
| 2006 $UP_{113}$ | 18.0 | 0.15 | 20061012 | 223.16634 | 312.42451 | 216.26033 | 5.53625 | 0.0983910 | 2.1817248 | 19 | 1 | 55 days | 0.28 | | MPC | 2006 $UP_{113}$ |
| 2006 $UR_{113}$ | 17.4 | 0.15 | 20061012 | 22.01840 | 337.42612 | 23.56040 | 4.03199 | 0.0452195 | 2.8008098 | 13 | 1 | 9 days | 0.47 | | MPC | 2006 $UR_{113}$ |
| 2006 $US_{113}$ | 18.5 | 0.15 | 20061012 | 304.84724 | 233.97800 | 213.60462 | 4.59910 | 0.0784300 | 2.4017302 | 10 | 1 | 9 days | 0.25 | | MPC | 2006 $US_{113}$ |
| 2006 $UT_{113}$ | 18.1 | 0.15 | 20061012 | 31.30698 | 126.44969 | 217.32933 | 3.40863 | 0.1378642 | 2.6076904 | 19 | 1 | 33 days | 0.23 | | MPC | 2006 $UT_{113}$ |
| 2006 $UU_{113}$ | 17.6 | 0.15 | 20061012 | 17.94468 | 346.32767 | 19.10953 | 2.83757 | 0.0538363 | 3.0374869 | 10 | 1 | 9 days | 0.29 | | MPC | 2006 $UU_{113}$ |
| 2006 $UV_{113}$ | 15.9 | 0.15 | 20061012 | 21.23667 | 5.71478 | 346.22708 | 1.17678 | 0.2273414 | 3.9553138 | 31 | 1 | 54 days | 0.21 | | MPC | 2006 $UV_{113}$ |
| 2006 $UW_{113}$ | 17.5 | 0.15 | 20061012 | 164.90433 | 5.64880 | 212.59174 | 5.62594 | 0.0939132 | 2.6414593 | 10 | 1 | 9 days | 0.67 | | MPC | 2006 $UW_{113}$ |
| 2006 $UY_{113}$ | 19.1 | 0.15 | 20061012 | 5.39521 | 354.86626 | 21.64231 | 5.19750 | 0.1752260 | 2.5203584 | 10 | 1 | 9 days | 0.57 | | MPC | 2006 $UY_{113}$ |
| 2006 $UA_{114}$ | 17.1 | 0.15 | 20061012 | 174.56241 | 261.87300 | 307.87627 | 0.79597 | 0.2498987 | 2.4712584 | 9 | 1 | 8 days | 0.98 | | MPC | 2006 $UA_{114}$ |
| 2006 $UC_{114}$ | 17.6 | 0.15 | 20061012 | 266.94557 | 271.17584 | 210.91637 | 10.63293 | 0.0285154 | 2.6853024 | 18 | 1 | 36 days | 0.29 | | MPC | 2006 $UC_{114}$ |
| 2006 $UD_{114}$ | 17.0 | 0.15 | 20061012 | 64.90110 | 97.40469 | 211.94291 | 11.51497 | 0.1087672 | 3.0166320 | 14 | 1 | 23 days | 0.23 | | MPC | 2006 $UD_{114}$ |
| 2006 $UE_{114}$ | 17.2 | 0.15 | 20060922 | 59.05881 | 271.56218 | 27.03625 | 13.75651 | 0.2105944 | 2.7757331 | 28 | 1 | 60 days | 0.29 | M-v 4 | MPC | 2006 $UE_{114}$ |
| 2006 $UF_{114}$ | 18.4 | 0.15 | 20061012 | 1.73046 | 176.45396 | 205.73220 | 6.17892 | 0.2105210 | 2.8963375 | 10 | 1 | 8 days | 0.26 | | MPC | 2006 $UF_{114}$ |
| 2006 $UG_{114}$ | 18.7 | 0.15 | 20061012 | 334.07670 | 30.32349 | 27.22043 | 5.53931 | 0.1228302 | 2.2971838 | 26 | 1 | 53 days | 0.25 | | MPC | 2006 $UG_{114}$ |
| 2006 $UJ_{114}$ | 17.2 | 0.15 | 20061012 | 63.35194 | 279.69339 | 27.52597 | 2.25946 | 0.1400175 | 2.9271578 | 14 | 1 | 23 days | 0.27 | | MPC | 2006 $UJ_{114}$ |
| 2006 $UK_{114}$ | 16.9 | 0.15 | 20061012 | 308.09268 | 225.73672 | 213.45252 | 5.69705 | 0.0123420 | 2.7013606 | 18 | 1 | 23 days | 0.20 | | MPC | 2006 $UK_{114}$ |
| 2006 $UM_{114}$ | 18.6 | 0.15 | 20061012 | 0.81552 | 167.29154 | 216.81384 | 0.77723 | 0.1898673 | 2.8248060 | 9 | 1 | 8 days | 0.41 | | MPC | 2006 $UM_{114}$ |
| 2006 $UN_{114}$ | 16.6 | 0.15 | 20061012 | 176.38481 | 214.10528 | 355.15173 | 0.66318 | 0.2802322 | 2.5698119 | 9 | 1 | 8 days | 0.54 | | MPC | 2006 $UN_{114}$ |
| 2006 $UO_{114}$ | 16.6 | 0.15 | 20061012 | 319.69388 | 61.78586 | 28.76713 | 16.93542 | 0.2570404 | 3.1447340 | 27 | 1 | 31 days | 0.34 | | MPC | 2006 $UO_{114}$ |
| 2006 $UP_{114}$ | 18.4 | 0.15 | 20061012 | 0.05822 | 210.07693 | 175.10448 | 0.22055 | 0.2586824 | 3.0861597 | 13 | 1 | 9 days | 0.47 | | MPC | 2006 $UP_{114}$ |
| 2006 $UQ_{114}$ | 18.0 | 0.15 | 20061012 | 5.76160 | 336.98939 | 37.69580 | 1.14822 | 0.2046886 | 3.1108885 | 13 | 1 | 8 days | 0.40 | | MPC | 2006 $UQ_{114}$ |
| 2006 $UB_{115}$ | 17.2 | 0.15 | 20061012 | 166.51761 | 179.79932 | 35.59587 | 1.34403 | 0.1309100 | 2.5556796 | 10 | 1 | 8 days | 0.28 | | MPC | 2006 $UB_{115}$ |
| 2006 $UC_{115}$ | 16.5 | 0.15 | 20061012 | 52.83072 | 125.36583 | 203.56846 | 9.59879 | 0.0340200 | 3.1422024 | 19 | 1 | 29 days | 0.18 | | MPC | 2006 $UC_{115}$ |
| 2006 $UD_{115}$ | 18.2 | 0.15 | 20061012 | 294.24078 | 265.96160 | 204.53044 | 3.89196 | 0.1826012 | 2.3719652 | 10 | 1 | 8 days | 0.16 | | MPC | 2006 $UD_{115}$ |
| 2006 $UF_{115}$ | 19.4 | 0.15 | 20061012 | 331.35050 | 228.50773 | 201.31809 | 4.43003 | 0.2442573 | 2.4073089 | 8 | 1 | 8 days | 0.41 | | MPC | 2006 $UF_{115}$ |
| 2006 $UK_{115}$ | 17.5 | 0.15 | 20061012 | 5.86149 | 347.33808 | 29.48830 | 9.25412 | 0.1432024 | 3.1284060 | 10 | 1 | 8 days | 0.91 | | MPC | 2006 $UK_{115}$ |
| 2006 $UM_{115}$ | 18.7 | 0.15 | 20060922 | 58.85655 | 262.42933 | 29.21445 | 9.10034 | 0.2483797 | 2.3624514 | 16 | 1 | 38 days | 0.28 | | MPC | 2006 $UM_{115}$ |
| 2006 $UR_{115}$ | 16.4 | 0.15 | 20061012 | 276.08573 | 291.50215 | 203.32497 | 10.21326 | 0.2204063 | 3.1152090 | 19 | 1 | 16 days | 0.26 | | MPC | 2006 $UR_{115}$ |
| 2006 $US_{115}$ | 18.6 | 0.15 | 20061012 | 346.25286 | 208.48306 | 202.45328 | 6.68381 | 0.3153029 | 2.7457760 | 26 | 1 | 55 days | 0.28 | | MPC | 2006 $US_{115}$ |
| 2006 $UT_{115}$ | 17.1 | 0.15 | 20061012 | 83.17157 | 244.13380 | 31.35810 | 15.06685 | 0.2346608 | 2.8072344 | 13 | 1 | 8 days | 0.48 | | MPC | 2006 $UT_{115}$ |
| 2006 $UU_{115}$ | 18.7 | 0.15 | 20061012 | 52.55786 | 120.96164 | 189.07203 | 2.06973 | 0.2095299 | 2.4399891 | 22 | 1 | 25 days | 0.31 | | MPC | 2006 $UU_{115}$ |
| 2006 $UV_{115}$ | 18.3 | 0.15 | 20061012 | 309.62159 | 236.64865 | 206.19484 | 20.81193 | 0.0908538 | 1.9285446 | 22 | 1 | 42 days | 0.34 | | MPC | 2006 $UV_{115}$ |
| 2006 $UW_{115}$ | 16.5 | 0.15 | 20061012 | 194.19250 | 162.13768 | 30.81432 | 9.37015 | 0.0356113 | 3.1736698 | 17 | 1 | 40 days | 0.22 | | MPC | 2006 $UW_{115}$ |
| 2006 $UY_{115}$ | 19.8 | 0.15 | 20061012 | 16.12457 | 314.80623 | 41.11622 | 1.37084 | 0.2628170 | 2.5791191 | 13 | 1 | 25 days | 0.29 | | MPC | 2006 $UY_{115}$ |
| 2006 $UZ_{115}$ | 16.3 | 0.15 | 20061012 | 273.11862 | 284.93735 | 206.64153 | 23.06137 | 0.1635785 | 2.7302261 | 13 | 1 | 8 days | 0.31 | | MPC | 2006 $UZ_{115}$ |
| 2006 $UB_{116}$ | 17.6 | 0.15 | 20061012 | 95.26955 | 85.78421 | 184.40028 | 2.03407 | 0.1871038 | 2.6068972 | 13 | 1 | 8 days | 0.37 | | MPC | 2006 $UB_{116}$ |
| 2006 $UD_{116}$ | 17.2 | 0.15 | 20061012 | 327.90517 | 39.35755 | 33.62573 | 5.82780 | 0.2002272 | 3.0397491 | 23 | 1 | 31 days | 0.28 | | MPC | 2006 $UD_{116}$ |
| 2006 $UE_{116}$ | 18.1 | 0.15 | 20061012 | 1.48658 | 352.64773 | 31.16149 | 9.07843 | 0.1575068 | 3.1905822 | 10 | 1 | 8 days | 0.51 | | MPC | 2006 $UE_{116}$ |
| 2006 $UJ_{116}$ | 17.7 | 0.15 | 20061012 | 0.68030 | 172.33541 | 212.21945 | 5.74182 | 0.2144887 | 2.9116972 | 13 | 1 | 9 days | 0.66 | | MPC | 2006 $UJ_{116}$ |
| 2006 $UK_{116}$ | 18.3 | 0.15 | 20061012 | 0.02198 | 25.33334 | 0.32880 | 0.59897 | 0.2458051 | 3.0333253 | 13 | 1 | 9 days | 0.39 | | MPC | 2006 $UK_{116}$ |
| 2006 $UL_{116}$ | 19.0 | 0.15 | 20061012 | 9.44973 | 161.91640 | 205.89529 | 0.73981 | 0.2762993 | 2.7982283 | 13 | 1 | 9 days | 0.46 | | MPC | 2006 $UL_{116}$ |
| 2006 $UM_{116}$ | 18.1 | 0.15 | 20061012 | 0.12967 | 359.45634 | 26.60990 | 5.73294 | 0.1836587 | 3.0479998 | 10 | 1 | 9 days | 0.41 | | MPC | 2006 $UM_{116}$ |
| 2006 $UN_{116}$ | 17.1 | 0.15 | 20061012 | 175.89527 | 359.44899 | 210.50571 | 7.65938 | 0.2700181 | 2.4322866 | 9 | 1 | 9 days | 0.34 | | MPC | 2006 $UN_{116}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UO_{116}$ | 16.9 | 0.15 | 20061012 | 333.11636 | 215.32623 | 210.78924 | 7.34360 | 0.2019123 | 2.7171208 | 38 | 1 | 55 days | 0.36 | | MPC | 2006 $UO_{116}$ |
| 2006 $UQ_{116}$ | 15.8 | 0.15 | 20061012 | 7.52995 | 170.56467 | 208.81642 | 21.06851 | 0.0285447 | 3.1888116 | 22 | 1 | 52 days | 0.36 | | MPC | 2006 $UQ_{116}$ |
| 2006 $UU_{116}$ | 18.2 | 0.15 | 20061012 | 359.92586 | 177.69609 | 208.62518 | 4.00957 | 0.1338877 | 2.6438116 | 13 | 1 | 9 days | 0.53 | | MPC | 2006 $UU_{116}$ |
| 2006 $UV_{116}$ | 19.1 | 0.15 | 20061012 | 26.81267 | 351.37247 | 355.09274 | 0.56464 | 0.1937073 | 2.4996967 | 9 | 1 | 9 days | 0.15 | | MPC | 2006 $UV_{116}$ |
| 2006 $UY_{116}$ | 17.2 | 0.15 | 20061012 | 334.71596 | 294.80738 | 120.82516 | 0.59126 | 0.0663804 | 2.7663533 | 27 | 1 | 55 days | 0.28 | | MPC | 2006 $UY_{116}$ |
| 2006 $UC_{117}$ | 17.0 | 0.15 | 20061012 | 178.37091 | 175.77707 | 33.25105 | 6.52395 | 0.1883301 | 2.6017878 | 10 | 1 | 8 days | 0.76 | | MPC | 2006 $UC_{117}$ |
| 2006 $UD_{117}$ | 17.6 | 0.15 | 20061101 | 55.48243 | 104.95586 | 217.71383 | 1.82634 | 0.1367376 | 2.6261744 | 20 | 1 | 32 days | 0.37 | | MPC | 2006 $UD_{117}$ |
| 2006 $UE_{117}$ | 16.8 | 0.15 | 20061012 | 45.13591 | 290.24846 | 32.51583 | 3.71954 | 0.2008353 | 3.0583904 | 19 | 1 | 33 days | 0.24 | | MPC | 2006 $UE_{117}$ |
| 2006 $UF_{117}$ | 15.6 | 0.15 | 20061012 | 108.20572 | 44.48539 | 209.58550 | 5.13968 | 0.2790857 | 3.0694425 | 16 | 1 | 9 days | 0.32 | | MPC | 2006 $UF_{117}$ |
| 2006 $UH_{117}$ | 16.7 | 0.15 | 20061012 | 352.95109 | 189.89378 | 205.87893 | 7.10590 | 0.0394071 | 3.2171489 | 9 | 1 | 9 days | 0.20 | | MPC | 2006 $UH_{117}$ |
| 2006 $UJ_{117}$ | 17.8 | 0.15 | 20061012 | 57.38054 | 115.29954 | 195.83277 | 2.19473 | 0.1755273 | 2.7802294 | 9 | 1 | 9 days | 0.22 | | MPC | 2006 $UJ_{117}$ |
| 2006 $UK_{117}$ | 19.6 | 0.15 | 20061012 | 341.65873 | 22.21283 | 30.67295 | 0.83067 | 0.2005087 | 2.2275358 | 12 | 1 | 10 days | 0.76 | | MPC | 2006 $UK_{117}$ |
| 2006 $UL_{117}$ | 15.3 | 0.15 | 20061012 | 82.09298 | 76.77990 | 209.38963 | 21.09229 | 0.1760930 | 3.0396957 | 23 | 1 | 50 days | 0.35 | | MPC | 2006 $UL_{117}$ |
| 2006 $UM_{117}$ | 19.2 | 0.15 | 20061012 | 357.92075 | 358.06824 | 30.58798 | 1.88015 | 0.1941889 | 2.3425641 | 23 | 1 | 56 days | 0.42 | | MPC | 2006 $UM_{117}$ |
| 2006 $UO_{117}$ | 17.2 | 0.15 | 20061012 | 39.87111 | 310.86683 | 33.13091 | 4.45911 | 0.0483035 | 2.6786055 | 16 | 1 | 13 days | 0.25 | | MPC | 2006 $UO_{117}$ |
| 2006 $UR_{117}$ | 19.2 | 0.15 | 20061012 | 0.62350 | 177.76650 | 207.24781 | 10.64573 | 0.2286163 | 2.5966624 | 9 | 1 | 9 days | 0.22 | | MPC | 2006 $UR_{117}$ |
| 2006 $US_{117}$ | 19.6 | 0.15 | 20061012 | 353.70015 | 358.54961 | 35.50801 | 3.70290 | 0.0942203 | 2.3105032 | 10 | 1 | 8 days | 0.27 | | MPC | 2006 $US_{117}$ |
| 2006 $UT_{117}$ | 17.2 | 0.15 | 20061101 | 348.46790 | 0.80097 | 44.20867 | 2.15971 | 0.0405640 | 2.8032580 | 17 | 1 | 25 days | 0.44 | | MPC | 2006 $UT_{117}$ |
| 2006 $UU_{117}$ | 16.8 | 0.15 | 20061012 | 197.47001 | 344.56416 | 207.54753 | 10.00906 | 0.0246670 | 3.0216258 | 9 | 1 | 9 days | 0.24 | | MPC | 2006 $UU_{117}$ |
| 2006 $UW_{117}$ | 17.8 | 0.15 | 20061012 | 63.36628 | 122.30415 | 183.61886 | 2.08686 | 0.1636031 | 2.5424932 | 12 | 1 | 13 days | 0.15 | | MPC | 2006 $UW_{117}$ |
| 2006 $UX_{117}$ | 16.1 | 0.15 | 20061012 | 179.91440 | 175.50288 | 33.63470 | 16.73214 | 0.1529804 | 3.0284309 | 9 | 1 | 9 days | 0.30 | | MPC | 2006 $UX_{117}$ |
| 2006 $UZ_{117}$ | 16.2 | 0.15 | 20061012 | 180.53717 | 173.09437 | 36.37726 | 1.91635 | 0.2579979 | 2.9356563 | 9 | 1 | 9 days | 0.59 | | MPC | 2006 $UZ_{117}$ |
| 2006 $UA_{118}$ | 17.8 | 0.15 | 20061012 | 351.84095 | 5.60224 | 33.04555 | 7.75013 | 0.1127318 | 3.0333405 | 10 | 1 | 8 days | 0.32 | | MPC | 2006 $UA_{118}$ |
| 2006 $UB_{118}$ | 16.4 | 0.15 | 20061012 | 92.60617 | 71.39606 | 208.00089 | 3.99937 | 0.1492451 | 2.6521466 | 31 | 1 | 50 days | 0.33 | | MPC | 2006 $UB_{118}$ |
| 2006 $UF_{118}$ | 16.4 | 0.15 | 20061012 | 38.54369 | 308.38609 | 31.00667 | 15.76921 | 0.1302288 | 2.9654992 | 14 | 1 | 10 days | 0.49 | | MPC | 2006 $UF_{118}$ |
| 2006 $UH_{118}$ | 17.9 | 0.15 | 20061101 | 310.53056 | 67.17176 | 33.80565 | 13.99851 | 0.1842154 | 2.6605581 | 15 | 1 | 32 days | 0.34 | | MPC | 2006 $UH_{118}$ |
| 2006 $UK_{118}$ | 16.6 | 0.15 | 20061012 | 70.21730 | 276.31690 | 33.27282 | 10.65648 | 0.0849462 | 3.2280929 | 13 | 1 | 9 days | 0.34 | | MPC | 2006 $UK_{118}$ |
| 2006 $UM_{118}$ | 18.1 | 0.15 | 20061012 | 326.32616 | 250.32022 | 193.77632 | 2.37494 | 0.2761792 | 2.5580255 | 32 | 1 | 50 days | 0.35 | | MPC | 2006 $UM_{118}$ |
| 2006 $UN_{118}$ | 17.6 | 0.15 | 20060922 | 268.83788 | 89.43121 | 34.66758 | 4.60206 | 0.0820303 | 2.5529025 | 23 | 1 | 63 days | 0.39 | M-v 4 | MPC | 2006 $UN_{118}$ |
| 2006 $UO_{118}$ | 18.8 | 0.15 | 20061012 | 354.17997 | 356.85172 | 38.36556 | 3.34055 | 0.2111363 | 2.4173606 | 26 | 1 | 48 days | 0.34 | | MPC | 2006 $UO_{118}$ |
| 2006 $UP_{118}$ | 17.5 | 0.15 | 20061012 | 5.52612 | 205.89786 | 174.13547 | 1.03591 | 0.1852879 | 3.1237370 | 25 | 1 | 49 days | 0.39 | | MPC | 2006 $UP_{118}$ |
| 2006 $UR_{118}$ | 18.8 | 0.15 | 20061012 | 37.94234 | 145.19732 | 198.50516 | 1.70598 | 0.0703291 | 2.1460720 | 12 | 1 | 9 days | 0.13 | | MPC | 2006 $UR_{118}$ |
| 2006 $US_{118}$ | 17.3 | 0.15 | 20061012 | 318.61592 | 14.72840 | 66.07754 | 1.67567 | 0.1242708 | 3.1572883 | 9 | 1 | 9 days | 0.27 | | MPC | 2006 $US_{118}$ |
| 2006 $UT_{118}$ | 18.0 | 0.15 | 20061012 | 227.02587 | 121.00887 | 42.11642 | 4.05533 | 0.0254720 | 2.3908917 | 13 | 1 | 23 days | 0.18 | | MPC | 2006 $UT_{118}$ |
| 2006 $UU_{118}$ | 17.9 | 0.15 | 20061101 | 342.71824 | 32.24744 | 30.99099 | 13.63875 | 0.2444044 | 2.5310328 | 29 | 1 | 45 days | 0.31 | | MPC | 2006 $UU_{118}$ |
| 2006 $UV_{118}$ | 17.0 | 0.15 | 20061012 | 212.84206 | 140.70522 | 37.66333 | 5.76861 | 0.0294038 | 3.0203281 | 13 | 1 | 9 days | 0.40 | | MPC | 2006 $UV_{118}$ |
| 2006 $UW_{118}$ | 16.9 | 0.15 | 20061012 | 53.51239 | 162.95507 | 160.24441 | 1.26441 | 0.1214910 | 2.9987128 | 20 | 1 | 49 days | 0.29 | | MPC | 2006 $UW_{118}$ |
| 2006 $UY_{118}$ | 18.0 | 0.15 | 20061012 | 41.27820 | 128.28041 | 200.61925 | 2.74885 | 0.1952973 | 2.6359140 | 13 | 1 | 9 days | 0.32 | | MPC | 2006 $UY_{118}$ |
| 2006 $UZ_{118}$ | 16.4 | 0.15 | 20061101 | 75.26900 | 106.03800 | 205.31368 | 9.04185 | 0.0584868 | 3.1798983 | 20 | 1 | 26 days | 0.24 | | MPC | 2006 $UZ_{118}$ |
| 2006 $UB_{119}$ | 18.7 | 0.15 | 20061012 | 339.40137 | 15.55718 | 41.07693 | 3.14154 | 0.1768153 | 2.4647113 | 13 | 1 | 9 days | 0.24 | | MPC | 2006 $UB_{119}$ |
| 2006 $UC_{119}$ | 16.7 | 0.15 | 20061101 | 301.67650 | 66.16639 | 37.76344 | 8.90029 | 0.1180594 | 3.0323142 | 20 | 1 | 27 days | 0.38 | | MPC | 2006 $UC_{119}$ |
| 2006 $UE_{119}$ | 19.0 | 0.15 | 20061012 | 41.63496 | 128.29553 | 204.09417 | 5.84480 | 0.1509297 | 2.2686457 | 10 | 1 | 8 days | 0.19 | | MPC | 2006 $UE_{119}$ |
| 2006 $UF_{119}$ | 14.4 | 0.15 | 20061012 | 208.22566 | 157.78891 | 31.72173 | 99.28185 | 0.1787394 | 4.4661277 | 10 | 1 | 8 days | 0.46 | | MPC | 2006 $UF_{119}$ |
| 2006 $UG_{119}$ | 15.4 | 0.15 | 20061012 | 181.82933 | 173.50894 | 35.82169 | 14.36278 | 0.2604565 | 2.9324701 | 12 | 1 | 9 days | 0.89 | | MPC | 2006 $UG_{119}$ |
| 2006 $UJ_{119}$ | 17.0 | 0.15 | 20061101 | 270.87171 | 91.14465 | 35.03938 | 13.22441 | 0.0317848 | 2.7240781 | 20 | 1 | 25 days | 0.32 | | MPC | 2006 $UJ_{119}$ |
| 2006 $UK_{119}$ | 16.6 | 0.15 | 20061012 | 93.58212 | 251.17922 | 35.98822 | 13.28457 | 0.0762996 | 2.8934984 | 13 | 1 | 9 days | 0.30 | | MPC | 2006 $UK_{119}$ |
| 2006 $UL_{119}$ | 15.4 | 0.15 | 20061012 | 185.86098 | 1.24697 | 203.33993 | 9.95855 | 0.0320096 | 3.1345969 | 20 | 1 | 30 days | 0.28 | | MPC | 2006 $UL_{119}$ |
| 2006 $UM_{119}$ | 17.5 | 0.15 | 20061012 | 347.47941 | 217.90305 | 185.94597 | 1.94195 | 0.1042861 | 2.6383816 | 24 | 1 | 49 days | 0.40 | D | MPC | 2006 $UM_{119}$ |
| 2006 $UN_{119}$ | 18.6 | 0.15 | 20061012 | 76.37028 | 261.18907 | 34.61155 | 9.46215 | 0.1400791 | 2.2924739 | 10 | 1 | 8 days | 0.36 | | MPC | 2006 $UN_{119}$ |
| 2006 $UP_{119}$ | 17.0 | 0.15 | 20061012 | 25.50798 | 179.05571 | 179.71497 | 1.92777 | 0.0906508 | 2.9400712 | 24 | 1 | 45 days | 0.27 | | MPC | 2006 $UP_{119}$ |
| 2006 $UQ_{119}$ | 16.9 | 0.15 | 20061012 | 321.29400 | 29.89207 | 54.53415 | 1.85833 | 0.1868358 | 3.1840721 | 21 | 1 | 45 days | 0.27 | | MPC | 2006 $UQ_{119}$ |
| 2006 $UR_{119}$ | 16.5 | 0.15 | 20061012 | 28.23296 | 157.13934 | 193.98361 | 4.67031 | 0.1564360 | 3.2200375 | 21 | 1 | 45 days | 0.29 | | MPC | 2006 $UR_{119}$ |
| 2006 $UT_{119}$ | 18.2 | 0.15 | 20061012 | 340.05571 | 16.60151 | 39.13458 | 3.20933 | 0.1740354 | 2.3566623 | 31 | 1 | 48 days | 0.40 | | MPC | 2006 $UT_{119}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UU_{119}$ | 16.8 | 0.15 | 20061101 | 50.28686 | 277.51298 | 59.34043 | 2.94839 | 0.0719378 | 2.8699656 | 16 | 1 | 26 days | 0.20 | | MPC | 2006 $UU_{119}$ |
| 2006 $UW_{119}$ | 17.6 | 0.15 | 20061012 | 23.04505 | 310.59002 | 49.40825 | 3.22175 | 0.1117465 | 2.6886155 | 16 | 1 | 13 days | 0.25 | | MPC | 2006 $UW_{119}$ |
| 2006 $UX_{119}$ | 18.2 | 0.15 | 20061012 | 340.71256 | 27.05775 | 36.89940 | 7.62095 | 0.2990944 | 2.8965570 | 23 | 1 | 35 days | 0.32 | | MPC | 2006 $UX_{119}$ |
| 2006 $UA_{120}$ | 17.9 | 0.15 | 20061012 | 343.35261 | 7.34915 | 41.81313 | 4.94542 | 0.0938496 | 2.7428002 | 10 | 1 | 8 days | 0.38 | | MPC | 2006 $UA_{120}$ |
| 2006 $UB_{120}$ | 16.0 | 0.15 | 20061012 | 185.73539 | 165.98055 | 40.99672 | 4.49696 | 0.2000667 | 2.7492913 | 12 | 1 | 9 days | 0.61 | | MPC | 2006 $UB_{120}$ |
| 2006 $UC_{120}$ | 17.0 | 0.15 | 20061012 | 274.01333 | 283.25802 | 202.68505 | 4.83200 | 0.0915424 | 2.5552034 | 21 | 1 | 50 days | 0.26 | | MPC | 2006 $UC_{120}$ |
| 2006 $UD_{120}$ | 17.9 | 0.15 | 20061012 | 24.14374 | 299.49643 | 51.62196 | 6.02150 | 0.2162934 | 2.9985648 | 9 | 1 | 9 days | 0.17 | | MPC | 2006 $UD_{120}$ |
| 2006 $UF_{120}$ | 17.5 | 0.15 | 20061012 | 327.93594 | 355.52475 | 74.79749 | 2.96626 | 0.1284112 | 2.9684370 | 9 | 1 | 9 days | 0.25 | | MPC | 2006 $UF_{120}$ |
| 2006 $UG_{120}$ | 16.9 | 0.15 | 20061012 | 285.74135 | 285.48399 | 197.19434 | 7.72648 | 0.1626908 | 2.7489403 | 20 | 1 | 32 days | 0.24 | | MPC | 2006 $UG_{120}$ |
| 2006 $UK_{120}$ | 18.3 | 0.15 | 20061012 | 342.25843 | 259.43505 | 155.72471 | 2.49841 | 0.2057455 | 2.6759062 | 26 | 1 | 36 days | 0.27 | | MPC | 2006 $UK_{120}$ |
| 2006 $UL_{120}$ | 17.3 | 0.15 | 20061012 | 259.92822 | 303.96016 | 195.05007 | 6.46656 | 0.0890900 | 2.3052714 | 24 | 1 | 47 days | 0.39 | | MPC | 2006 $UL_{120}$ |
| 2006 $UM_{120}$ | 17.2 | 0.15 | 20061012 | 330.36381 | 259.69168 | 165.59436 | 3.17242 | 0.0943306 | 2.8923877 | 26 | 1 | 40 days | 0.28 | | MPC | 2006 $UM_{120}$ |
| 2006 $UO_{120}$ | 17.4 | 0.15 | 20061101 | 62.34779 | 249.56460 | 62.99819 | 4.37817 | 0.1745660 | 2.7882294 | 22 | 1 | 26 days | 0.26 | | MPC | 2006 $UO_{120}$ |
| 2006 $UQ_{120}$ | 17.8 | 0.15 | 20061012 | 8.12812 | 196.18964 | 182.32236 | 5.51070 | 0.1484009 | 3.0929510 | 10 | 1 | 13 days | 0.24 | | MPC | 2006 $UQ_{120}$ |
| 2006 $UR_{120}$ | 16.5 | 0.15 | 20061012 | 133.39014 | 56.29855 | 190.56523 | 6.34838 | 0.1389287 | 2.6048718 | 27 | 1 | 45 days | 0.32 | | MPC | 2006 $UR_{120}$ |
| 2006 $US_{120}$ | 17.9 | 0.15 | 20061012 | 72.84732 | 195.77882 | 99.15848 | 2.50250 | 0.1852189 | 2.4142303 | 21 | 1 | 44 days | 0.29 | | MPC | 2006 $US_{120}$ |
| 2006 $UT_{120}$ | 18.0 | 0.15 | 20061012 | 346.17680 | 6.72057 | 43.29937 | 7.56967 | 0.2236225 | 2.6407115 | 16 | 1 | 56 days | 0.37 | | MPC | 2006 $UT_{120}$ |
| 2006 $UU_{120}$ | 16.0 | 0.15 | 20061012 | 44.20472 | 276.02900 | 64.36483 | 4.14004 | 0.0715112 | 3.2081635 | 19 | 1 | 30 days | 0.24 | | MPC | 2006 $UU_{120}$ |
| 2006 $UX_{120}$ | 16.3 | 0.15 | 20061012 | 268.90901 | 292.76655 | 194.54351 | 9.55547 | 0.0528264 | 2.6867307 | 9 | 1 | 3 days | 0.41 | | MPC | 2006 $UX_{120}$ |
| 2006 $UZ_{120}$ | 16.9 | 0.15 | 20061012 | 44.41093 | 251.98897 | 76.65295 | 2.96104 | 0.1828992 | 3.0681614 | 22 | 1 | 40 days | 0.30 | | MPC | 2006 $UZ_{120}$ |
| 2006 $UH_{121}$ | 17.4 | 0.15 | 20061012 | 12.50610 | 284.79982 | 87.48020 | 2.79372 | 0.1650362 | 3.0662705 | 15 | 1 | 22 days | 0.22 | | MPC | 2006 $UH_{121}$ |
| 2006 $UJ_{121}$ | 19.2 | 0.15 | 20061012 | 53.65013 | 254.96877 | 56.06992 | 3.04898 | 0.2076012 | 2.3064263 | 12 | 1 | 9 days | 0.26 | | MPC | 2006 $UJ_{121}$ |
| 2006 $UL_{121}$ | 19.6 | 0.15 | 20061012 | 243.95845 | 300.75941 | 206.28103 | 20.85505 | 0.0437611 | 1.8850107 | 10 | 1 | 12 days | 0.40 | | MPC | 2006 $UL_{121}$ |
| 2006 $UM_{121}$ | 19.0 | 0.15 | 20061012 | 354.80155 | 338.02137 | 55.95470 | 3.09435 | 0.1815427 | 2.4472038 | 12 | 1 | 13 days | 0.20 | | MPC | 2006 $UM_{121}$ |
| 2006 $UO_{121}$ | 19.0 | 0.15 | 20061012 | 0.45112 | 214.72702 | 171.04198 | 2.06941 | 0.1393226 | 2.2681997 | 23 | 1 | 59 days | 0.33 | | MPC | 2006 $UO_{121}$ |
| 2006 $UP_{121}$ | 17.9 | 0.15 | 20061012 | 208.53205 | 112.95631 | 73.93343 | 2.49899 | 0.1460033 | 2.3480188 | 9 | 1 | 9 days | 0.17 | | MPC | 2006 $UP_{121}$ |
| 2006 $UR_{121}$ | 17.6 | 0.15 | 20061101 | 233.36900 | 116.92728 | 53.43009 | 5.26055 | 0.1315798 | 2.4240631 | 16 | 1 | 26 days | 0.24 | | MPC | 2006 $UR_{121}$ |
| 2006 $US_{121}$ | 17.6 | 0.15 | 20061012 | 8.08687 | 169.35028 | 204.03412 | 15.26278 | 0.2670441 | 3.1506883 | 24 | 1 | 58 days | 0.39 | | MPC | 2006 $US_{121}$ |
| 2006 $UT_{121}$ | 17.6 | 0.15 | 20061012 | 6.12631 | 342.55189 | 35.67578 | 17.83226 | 0.2108645 | 3.1754485 | 18 | 1 | 42 days | 0.28 | | MPC | 2006 $UT_{121}$ |
| 2006 $UV_{121}$ | 16.7 | 0.15 | 20061101 | 116.20068 | 63.29193 | 196.69817 | 7.72833 | 0.1825721 | 2.8056622 | 13 | 1 | 28 days | 0.22 | | MPC | 2006 $UV_{121}$ |
| 2006 $UZ_{121}$ | 17.2 | 0.15 | 20061012 | 275.98779 | 288.52276 | 197.38703 | 8.13895 | 0.1150158 | 2.5665966 | 19 | 1 | 32 days | 0.25 | | MPC | 2006 $UZ_{121}$ |
| 2006 $UB_{122}$ | 16.9 | 0.15 | 20061012 | 0.08911 | 313.94730 | 74.83629 | 3.03815 | 0.1090188 | 3.1346083 | 15 | 1 | 13 days | 0.16 | | MPC | 2006 $UB_{122}$ |
| 2006 $UC_{122}$ | 17.9 | 0.15 | 20061101 | 22.17698 | 239.88541 | 118.36019 | 1.85970 | 0.2305859 | 2.9993556 | 16 | 1 | 26 days | 0.24 | | MPC | 2006 $UC_{122}$ |
| 2006 $UD_{122}$ | 17.9 | 0.15 | 20061101 | 68.42817 | 109.24622 | 200.94317 | 9.90982 | 0.1341650 | 2.7093608 | 13 | 1 | 28 days | 0.22 | | MPC | 2006 $UD_{122}$ |
| 2006 $UF_{122}$ | 18.6 | 0.15 | 20061012 | 309.12019 | 255.30843 | 193.24424 | 5.47073 | 0.1026926 | 2.3155843 | 9 | 1 | 9 days | 0.16 | | MPC | 2006 $UF_{122}$ |
| 2006 $UG_{122}$ | 17.2 | 0.15 | 20061101 | 343.80620 | 4.39752 | 50.83582 | 4.39678 | 0.1367768 | 3.1462060 | 20 | 1 | 26 days | 0.29 | | MPC | 2006 $UG_{122}$ |
| 2006 $UH_{122}$ | 17.0 | 0.15 | 20061101 | 62.39866 | 224.24767 | 93.71489 | 1.93478 | 0.1225913 | 2.9873692 | 17 | 1 | 26 days | 0.30 | | MPC | 2006 $UH_{122}$ |
| 2006 $UJ_{122}$ | 18.8 | 0.15 | 20061012 | 2.34721 | 347.40214 | 35.47941 | 16.83410 | 0.2495502 | 2.7570246 | 13 | 1 | 9 days | 0.33 | | MPC | 2006 $UJ_{122}$ |
| 2006 $UK_{122}$ | 17.6 | 0.15 | 20061012 | 140.02330 | 57.25660 | 186.75873 | 3.77517 | 0.0705298 | 2.3358819 | 20 | 1 | 45 days | 0.27 | | MPC | 2006 $UK_{122}$ |
| 2006 $UM_{122}$ | 18.2 | 0.15 | 20061012 | 48.24016 | 256.98038 | 62.19832 | 2.81091 | 0.2077557 | 2.6078004 | 13 | 1 | 9 days | 0.24 | | MPC | 2006 $UM_{122}$ |
| 2006 $UO_{122}$ | 16.4 | 0.15 | 20061012 | 126.86728 | 224.30612 | 37.18764 | 16.57302 | 0.0170205 | 3.1039356 | 13 | 1 | 13 days | 0.34 | | MPC | 2006 $UO_{122}$ |
| 2006 $UP_{122}$ | 18.6 | 0.15 | 20061012 | 307.73891 | 264.37133 | 185.66164 | 3.60528 | 0.1007872 | 2.2893687 | 17 | 1 | 47 days | 0.35 | | MPC | 2006 $UP_{122}$ |
| 2006 $UQ_{122}$ | 18.3 | 0.15 | 20061101 | 355.38042 | 340.59447 | 60.28886 | 3.93714 | 0.1673804 | 2.5510327 | 19 | 1 | 26 days | 0.30 | | MPC | 2006 $UQ_{122}$ |
| 2006 $UR_{122}$ | 17.0 | 0.15 | 20061012 | 341.42015 | 204.49867 | 204.71773 | 15.05627 | 0.0893973 | 2.7319781 | 16 | 1 | 4 days | 0.83 | | MPC | 2006 $UR_{122}$ |
| 2006 $US_{122}$ | 18.8 | 0.15 | 20061012 | 316.07217 | 37.28297 | 50.60891 | 2.95247 | 0.1916503 | 2.4152111 | 19 | 1 | 56 days | 0.40 | | MPC | 2006 $US_{122}$ |
| 2006 $UU_{122}$ | 17.9 | 0.15 | 20061012 | 15.99663 | 318.08512 | 49.28191 | 4.56174 | 0.0984393 | 2.7916458 | 12 | 1 | 31 days | 0.19 | | MPC | 2006 $UU_{122}$ |
| 2006 $UX_{122}$ | 19.8 | 0.15 | 20061012 | 8.83377 | 174.53846 | 195.41747 | 5.02661 | 0.2478744 | 2.4164162 | 12 | 1 | 9 days | 0.25 | | MPC | 2006 $UX_{122}$ |
| 2006 $UA_{123}$ | 17.8 | 0.15 | 20061101 | 43.71617 | 140.72282 | 198.57492 | 6.96325 | 0.1078329 | 2.8176608 | 13 | 1 | 28 days | 0.21 | | MPC | 2006 $UA_{123}$ |
| 2006 $UC_{123}$ | 17.0 | 0.15 | 20060922 | 283.39318 | 78.45805 | 35.09468 | 12.70016 | 0.1242906 | 2.6325867 | 25 | 1 | 62 days | 0.43 | M-v 4 | MPC | 2006 $UC_{123}$ |
| 2006 $UD_{123}$ | 18.2 | 0.15 | 20061101 | 1.53527 | 356.49100 | 33.89208 | 12.90633 | 0.2945421 | 3.0547740 | 15 | 1 | 31 days | 0.24 | | MPC | 2006 $UD_{123}$ |
| 2006 $UL_{123}$ | 16.6 | 0.15 | 20061012 | 257.69236 | 332.80567 | 184.11512 | 4.37015 | 0.2566115 | 2.6325209 | 22 | 1 | 59 days | 0.31 | | MPC | 2006 $UL_{123}$ |
| 2006 $UM_{123}$ | 17.5 | 0.15 | 20061012 | 34.08205 | 302.03982 | 23.76049 | 4.80336 | 0.1882550 | 2.2605854 | 13 | 1 | 47 days | 0.19 | | MPC | 2006 $UM_{123}$ |
| 2006 $UN_{123}$ | 17.1 | 0.15 | 20061012 | 8.43234 | 228.69494 | 148.42601 | 0.94556 | 0.0523294 | 3.2546640 | 8 | 1 | 9 days | 0.68 | | MPC | 2006 $UN_{123}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UP_{123}$ | 17.1 | 0.15 | 20061012 | 164.86211 | 147.30763 | 72.70152 | 1.45551 | 0.0547412 | 2.7406218 | 9 | 1 | 9 days | 0.59 | | MPC | 2006 $UP_{123}$ |
| 2006 $US_{123}$ | 17.5 | 0.15 | 20061012 | 84.94543 | 247.80250 | 49.55008 | 3.02804 | 0.0336550 | 2.7166615 | 15 | 1 | 30 days | 0.17 | | MPC | 2006 $US_{123}$ |
| 2006 $UU_{123}$ | 19.5 | 0.15 | 20061012 | 24.76207 | 153.36300 | 189.66781 | 2.19335 | 0.2526120 | 2.4189595 | 20 | 1 | 52 days | 0.28 | | MPC | 2006 $UU_{123}$ |
| 2006 $UW_{123}$ | 17.6 | 0.15 | 20061012 | 172.84563 | 28.27074 | 183.45602 | 2.05012 | 0.1721508 | 2.2937286 | 9 | 1 | 9 days | 0.52 | | MPC | 2006 $UW_{123}$ |
| 2006 $UY_{123}$ | 18.6 | 0.15 | 20061101 | 285.60151 | 296.82129 | 182.96982 | 2.64267 | 0.1222481 | 2.3379427 | 16 | 1 | 28 days | 0.23 | | MPC | 2006 $UY_{123}$ |
| 2006 $UZ_{123}$ | 16.1 | 0.15 | 20061012 | 18.50990 | 171.73817 | 183.43027 | 2.74704 | 0.2562560 | 3.9380871 | 22 | 1 | 43 days | 0.27 | | MPC | 2006 $UZ_{123}$ |
| 2006 $UA_{124}$ | 17.1 | 0.15 | 20061012 | 3.41083 | 177.88921 | 205.20871 | 11.62854 | 0.0723920 | 3.1280999 | 15 | 1 | 34 days | 0.30 | | MPC | 2006 $UA_{124}$ |
| 2006 $UH_{124}$ | 15.1 | 0.15 | 20060922 | 32.00705 | 31.92608 | 297.72842 | 9.26234 | 0.1948178 | 3.0620283 | 30 | 1 | 94 days | 0.42 | M-v 4 | MPC | 2006 $UH_{124}$ |
| 2006 $UK_{124}$ | 15.9 | 0.15 | 20060922 | 348.41762 | 87.35061 | 306.63276 | 11.81663 | 0.2103978 | 2.6322559 | 26 | 1 | 95 days | 0.48 | M-v 3 | MPC | 2006 $UK_{124}$ |
| 2006 $UP_{124}$ | 17.3 | 0.15 | 20060922 | 302.14370 | 205.75190 | 231.02202 | 2.84825 | 0.1169099 | 2.5575082 | 18 | 1 | 43 days | 0.26 | | MPC | 2006 $UP_{124}$ |
| 2006 $UX_{124}$ | 16.0 | 0.15 | 20060922 | 354.79903 | 151.75243 | 233.10180 | 16.64794 | 0.3301816 | 3.0455005 | 39 | 1 | 105 days | 0.39 | M-v 3 | MPC | 2006 $UX_{124}$ |
| 2006 $UZ_{124}$ | 17.5 | 0.15 | 20061101 | 310.93742 | 255.47925 | 217.77772 | 24.00735 | 0.2967827 | 2.1931569 | 42 | 1 | 29 days | 0.42 | | MPC | 2006 $UZ_{124}$ |
| 2006 $UA_{125}$ | 18.1 | 0.15 | 20061012 | 31.35102 | 116.14513 | 233.04904 | 8.96151 | 0.1401892 | 2.8095246 | 9 | 1 | 9 days | 0.25 | | MPC | 2006 $UA_{125}$ |
| 2006 $UC_{125}$ | 17.8 | 0.15 | 20061012 | 3.33271 | 9.54030 | 16.49433 | 9.63991 | 0.1755964 | 3.0931090 | 15 | 1 | 13 days | 0.19 | | MPC | 2006 $UC_{125}$ |
| 2006 $UD_{125}$ | 17.5 | 0.15 | 20061101 | 21.25149 | 134.75729 | 235.40724 | 8.31355 | 0.0941844 | 2.6993767 | 24 | 1 | 35 days | 0.21 | | MPC | 2006 $UD_{125}$ |
| 2006 $UG_{125}$ | 16.4 | 0.15 | 20061101 | 220.35273 | 295.50235 | 242.49383 | 7.69412 | 0.0324394 | 3.1749849 | 15 | 1 | 39 days | 0.28 | | MPC | 2006 $UG_{125}$ |
| 2006 $UH_{125}$ | 17.0 | 0.15 | 20061101 | 355.11476 | 164.24584 | 237.65834 | 8.72747 | 0.0832010 | 3.1262680 | 27 | 1 | 35 days | 0.23 | | MPC | 2006 $UH_{125}$ |
| 2006 $UJ_{125}$ | 18.2 | 0.15 | 20061012 | 312.24169 | 217.12403 | 235.82301 | 6.93922 | 0.1537360 | 2.5596625 | 12 | 1 | 22 days | 0.20 | | MPC | 2006 $UJ_{125}$ |
| 2006 $UL_{125}$ | 17.0 | 0.15 | 20061012 | 151.43737 | 6.50604 | 233.34173 | 9.37999 | 0.0192220 | 2.9890397 | 12 | 1 | 13 days | 0.19 | | MPC | 2006 $UL_{125}$ |
| 2006 $UN_{125}$ | 17.3 | 0.15 | 20061012 | 319.32359 | 94.97231 | 342.07003 | 3.84441 | 0.0617393 | 2.6729485 | 30 | 1 | 54 days | 0.32 | | MPC | 2006 $UN_{125}$ |
| 2006 $UO_{125}$ | 16.8 | 0.15 | 20061101 | 334.57763 | 50.64757 | 13.01773 | 7.57560 | 0.0366416 | 3.1720799 | 13 | 1 | 30 days | 0.20 | | MPC | 2006 $UO_{125}$ |
| 2006 $UP_{125}$ | 17.9 | 0.15 | 20061012 | 326.94547 | 163.39086 | 264.61524 | 3.17998 | 0.0516497 | 2.7794286 | 12 | 1 | 13 days | 0.34 | | MPC | 2006 $UP_{125}$ |
| 2006 $UQ_{125}$ | 18.4 | 0.15 | 20061012 | 336.26309 | 212.75408 | 219.53119 | 15.33436 | 0.2916470 | 2.7283062 | 16 | 1 | 38 days | 0.33 | | MPC | 2006 $UQ_{125}$ |
| 2006 $US_{125}$ | 17.1 | 0.15 | 20061101 | 303.27404 | 129.41397 | 326.56435 | 3.56969 | 0.0276574 | 2.7842803 | 16 | 1 | 30 days | 0.22 | | MPC | 2006 $US_{125}$ |
| 2006 $UT_{125}$ | 16.3 | 0.15 | 20061012 | 77.32788 | 285.84974 | 14.60486 | 9.57456 | 0.1375918 | 3.3542855 | 17 | 1 | 47 days | 0.27 | | MPC | 2006 $UT_{125}$ |
| 2006 $UV_{125}$ | 17.5 | 0.15 | 20061012 | 317.38383 | 175.32102 | 266.49479 | 3.38338 | 0.0895946 | 2.7639373 | 16 | 1 | 30 days | 0.27 | | MPC | 2006 $UV_{125}$ |
| 2006 $UW_{125}$ | 19.0 | 0.15 | 20061012 | 15.29398 | 70.51355 | 295.02909 | 2.39598 | 0.2199638 | 2.6464453 | 12 | 1 | 13 days | 0.20 | | MPC | 2006 $UW_{125}$ |
| 2006 $UZ_{125}$ | 18.0 | 0.15 | 20061012 | 50.23589 | 53.74972 | 260.95857 | 3.45448 | 0.2488094 | 2.6344344 | 19 | 1 | 39 days | 0.27 | | MPC | 2006 $UZ_{125}$ |
| 2006 $UA_{126}$ | 18.2 | 0.15 | 20061012 | 0.57991 | 33.94754 | 355.19755 | 3.92753 | 0.1069494 | 2.2466311 | 21 | 1 | 54 days | 0.29 | | MPC | 2006 $UA_{126}$ |
| 2006 $UB_{126}$ | 17.1 | 0.15 | 20061012 | 295.53302 | 145.86122 | 316.25799 | 2.17533 | 0.0497737 | 2.7596352 | 25 | 1 | 55 days | 0.30 | | MPC | 2006 $UB_{126}$ |
| 2006 $UD_{126}$ | 18.8 | 0.15 | 20061012 | 24.37804 | 109.83005 | 246.41135 | 3.97935 | 0.1772530 | 2.6798761 | 9 | 1 | 9 days | 0.26 | | MPC | 2006 $UD_{126}$ |
| 2006 $UE_{126}$ | 18.6 | 0.15 | 20061012 | 56.42623 | 333.32551 | 349.94862 | 2.96308 | 0.1052727 | 2.1989056 | 16 | 1 | 30 days | 0.20 | | MPC | 2006 $UE_{126}$ |
| 2006 $UF_{126}$ | 16.2 | 0.15 | 20061012 | 72.41007 | 356.99882 | 315.26162 | 3.27645 | 0.0849536 | 3.2611322 | 20 | 1 | 47 days | 0.28 | | MPC | 2006 $UF_{126}$ |
| 2006 $UG_{126}$ | 17.4 | 0.15 | 20061012 | 335.27809 | 180.48365 | 240.67051 | 5.07493 | 0.0733917 | 2.8584429 | 15 | 1 | 21 days | 0.22 | | MPC | 2006 $UG_{126}$ |
| 2006 $UH_{126}$ | 17.4 | 0.15 | 20061012 | 39.83098 | 347.60263 | 346.66997 | 2.97562 | 0.1989334 | 2.7427880 | 29 | 1 | 51 days | 0.23 | | MPC | 2006 $UH_{126}$ |
| 2006 $UL_{126}$ | 17.2 | 0.15 | 20061012 | 325.28562 | 75.37845 | 6.61298 | 5.05339 | 0.1837839 | 3.0221834 | 23 | 1 | 47 days | 0.30 | | MPC | 2006 $UL_{126}$ |
| 2006 $UM_{126}$ | 17.9 | 0.15 | 20061012 | 301.52753 | 235.32994 | 221.20775 | 21.26880 | 0.0577572 | 2.6241978 | 12 | 1 | 23 days | 0.25 | | MPC | 2006 $UM_{126}$ |
| 2006 $UP_{126}$ | 17.0 | 0.15 | 20061012 | 93.67525 | 291.91521 | 348.77952 | 3.62007 | 0.1763425 | 2.7833389 | 20 | 1 | 47 days | 0.35 | | MPC | 2006 $UP_{126}$ |
| 2006 $UQ_{126}$ | 17.5 | 0.15 | 20060922 | 23.37674 | 343.31063 | 12.89833 | 5.22472 | 0.1295555 | 2.6970132 | 26 | 1 | 60 days | 0.34 | M-v 4 | MPC | 2006 $UQ_{126}$ |
| 2006 $UR_{126}$ | 18.7 | 0.15 | 20061012 | 11.54896 | 131.07263 | 244.76216 | 4.04359 | 0.1311790 | 2.4477197 | 13 | 1 | 30 days | 0.20 | | MPC | 2006 $UR_{126}$ |
| 2006 $US_{126}$ | 17.9 | 0.15 | 20061101 | 100.59082 | 292.99761 | 349.35851 | 3.36310 | 0.1348194 | 2.2283788 | 19 | 1 | 30 days | 0.26 | | MPC | 2006 $US_{126}$ |
| 2006 $UU_{126}$ | 17.6 | 0.15 | 20061012 | 39.86331 | 54.90630 | 279.57239 | 2.21321 | 0.1998369 | 2.7444082 | 22 | 1 | 42 days | 0.31 | | MPC | 2006 $UU_{126}$ |
| 2006 $UV_{126}$ | 18.8 | 0.15 | 20061012 | 345.61886 | 133.09656 | 277.53030 | 2.20606 | 0.1798581 | 2.2849469 | 21 | 1 | 30 days | 0.22 | | MPC | 2006 $UV_{126}$ |
| 2006 $UW_{126}$ | 18.2 | 0.15 | 20061012 | 44.14937 | 340.69595 | 1.04170 | 4.04291 | 0.0782288 | 2.5532572 | 20 | 1 | 47 days | 0.31 | | MPC | 2006 $UW_{126}$ |
| 2006 $UC_{127}$ | 16.8 | 0.15 | 20061012 | 59.80106 | 37.07910 | 287.35173 | 2.42579 | 0.0901689 | 2.8022021 | 16 | 1 | 30 days | 0.28 | | MPC | 2006 $UC_{127}$ |
| 2006 $UD_{127}$ | 16.1 | 0.15 | 20061012 | 186.76964 | 340.20314 | 231.49271 | 9.16218 | 0.2664017 | 2.9173091 | 9 | 1 | 13 days | 0.62 | | MPC | 2006 $UD_{127}$ |
| 2006 $UH_{127}$ | 16.3 | 0.15 | 20061012 | 69.72141 | 303.54949 | 9.90311 | 5.14645 | 0.1071471 | 3.2606949 | 16 | 1 | 49 days | 0.27 | | MPC | 2006 $UH_{127}$ |
| 2006 $UK_{127}$ | 16.3 | 0.15 | 20061012 | 154.45451 | 222.37843 | 11.59327 | 5.45863 | 0.1516675 | 2.5454397 | 23 | 1 | 30 days | 0.29 | | MPC | 2006 $UK_{127}$ |
| 2006 $UL_{127}$ | 15.8 | 0.15 | 20061012 | 272.41717 | 112.35871 | 28.18881 | 13.96986 | 0.1625653 | 2.7653861 | 32 | 1 | 51 days | 0.38 | | MPC | 2006 $UL_{127}$ |
| 2006 $UO_{127}$ | 15.7 | 0.15 | 20060922 | 161.05236 | 5.53850 | 221.77455 | 21.29568 | 0.0362361 | 2.6455746 | 43 | 1 | 64 days | 0.36 | M-v 4 | MPC | 2006 $UO_{127}$ |
| 2006 $UQ_{127}$ | 18.5 | 0.15 | 20061012 | 58.16220 | 331.38171 | 358.05987 | 2.30418 | 0.0419989 | 2.1501613 | 22 | 1 | 44 days | 0.33 | | MPC | 2006 $UQ_{127}$ |
| 2006 $UR_{127}$ | 18.8 | 0.15 | 20061012 | 41.39818 | 105.33136 | 239.99407 | 3.61033 | 0.0626863 | 2.1975982 | 12 | 1 | 9 days | 0.22 | | MPC | 2006 $UR_{127}$ |
| 2006 $US_{127}$ | 16.4 | 0.15 | 20061012 | 17.89904 | 15.73278 | 347.08666 | 12.90248 | 0.1814721 | 2.6858859 | 20 | 1 | 48 days | 0.37 | | MPC | 2006 $US_{127}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UT_{127}$ | 17.4 | 0.15 | 20061012 | 328.52952 | 190.05516 | 244.38408 | 4.67530 | 0.1328141 | 2.8049797 | 9 | 1 | 9 days | 0.62 | MPC | 2006 $UT_{127}$ |
| 2006 $UV_{127}$ | 18.0 | 0.15 | 20061012 | 314.10730 | 174.63303 | 280.95736 | 2.24004 | 0.1742990 | 2.5659696 | 20 | 1 | 44 days | 0.25 | MPC | 2006 $UV_{127}$ |
| 2006 $UW_{127}$ | 16.3 | 0.15 | 20061012 | 31.16639 | 122.65203 | 220.94447 | 15.38453 | 0.2431234 | 3.1400638 | 28 | 1 | 51 days | 0.21 | MPC | 2006 $UW_{127}$ |
| 2006 $UX_{127}$ | 17.8 | 0.15 | 20061012 | 336.54478 | 178.86018 | 241.16187 | 4.18644 | 0.0469862 | 2.7109996 | 17 | 1 | 44 days | 0.44 | MPC | 2006 $UX_{127}$ |
| 2006 $UA_{128}$ | 17.3 | 0.15 | 20061012 | 327.93920 | 183.57643 | 245.34870 | 3.38504 | 0.0205981 | 3.0065808 | 17 | 1 | 44 days | 0.39 | MPC | 2006 $UA_{128}$ |
| 2006 $UB_{128}$ | 19.4 | 0.15 | 20061012 | 14.20660 | 102.73976 | 268.19473 | 2.27892 | 0.1738697 | 2.3039397 | 9 | 1 | 9 days | 0.28 | MPC | 2006 $UB_{128}$ |
| 2006 $UE_{128}$ | 16.2 | 0.15 | 20061012 | 142.99099 | 196.81855 | 27.19586 | 6.79395 | 0.1653797 | 2.3407151 | 10 | 1 | 2 days | 0.19 | MPC | 2006 $UE_{128}$ |
| 2006 $UN_{128}$ | 19.0 | 0.15 | 20061012 | 40.38615 | 339.70019 | 352.05562 | 1.24045 | 0.2105002 | 2.3319999 | 16 | 1 | 34 days | 0.28 | MPC | 2006 $UN_{128}$ |
| 2006 $UO_{128}$ | 17.7 | 0.15 | 20061101 | 41.51858 | 326.65190 | 22.40138 | 4.27329 | 0.0985205 | 2.7664065 | 13 | 1 | 27 days | 0.17 | MPC | 2006 $UO_{128}$ |
| 2006 $UP_{128}$ | 18.9 | 0.15 | 20061101 | 356.28403 | 49.07427 | 355.20817 | 1.44945 | 0.1881529 | 2.3881217 | 16 | 1 | 27 days | 0.28 | MPC | 2006 $UP_{128}$ |
| 2006 $UR_{128}$ | 17.6 | 0.15 | 20061012 | 7.75678 | 28.38944 | 355.07465 | 1.65896 | 0.1067413 | 2.6413907 | 20 | 1 | 48 days | 0.34 | MPC | 2006 $UR_{128}$ |
| 2006 $US_{128}$ | 16.8 | 0.15 | 20061012 | 351.38653 | 185.21317 | 219.01785 | 12.62781 | 0.1507622 | 2.6301339 | 40 | 1 | 50 days | 0.45 | MPC | 2006 $US_{128}$ |
| 2006 $UW_{128}$ | 17.8 | 0.15 | 20061012 | 21.85160 | 126.73030 | 234.72787 | 1.07449 | 0.1578875 | 2.3997583 | 24 | 1 | 48 days | 0.26 | MPC | 2006 $UW_{128}$ |
| 2006 $UY_{128}$ | 17.4 | 0.15 | 20061101 | 58.92752 | 111.90503 | 222.91494 | 6.28589 | 0.0509156 | 2.7818571 | 13 | 1 | 26 days | 0.23 | MPC | 2006 $UY_{128}$ |
| 2006 $UA_{129}$ | 17.3 | 0.15 | 20061012 | 249.12847 | 163.40700 | 349.19887 | 1.57725 | 0.0597851 | 2.8342144 | 9 | 1 | 13 days | 0.88 | MPC | 2006 $UA_{129}$ |
| 2006 $UB_{129}$ | 17.9 | 0.15 | 20061012 | 214.50063 | 158.81126 | 28.28509 | 7.71373 | 0.1307496 | 2.2009780 | 9 | 1 | 9 days | 0.21 | MPC | 2006 $UB_{129}$ |
| 2006 $UC_{129}$ | 16.7 | 0.15 | 20061101 | 217.96210 | 153.82309 | 31.10489 | 10.67379 | 0.0475950 | 3.0025923 | 13 | 1 | 27 days | 0.34 | MPC | 2006 $UC_{129}$ |
| 2006 $UE_{129}$ | 18.4 | 0.15 | 20061101 | 328.77852 | 198.14923 | 236.03822 | 2.63971 | 0.0620948 | 2.2176859 | 17 | 1 | 27 days | 0.31 | MPC | 2006 $UE_{129}$ |
| 2006 $UF_{129}$ | 18.5 | 0.15 | 20061101 | 305.91555 | 81.02060 | 30.57077 | 6.22115 | 0.1759657 | 2.3521884 | 13 | 1 | 27 days | 0.23 | MPC | 2006 $UF_{129}$ |
| 2006 $UG_{129}$ | 19.2 | 0.15 | 20061101 | 21.48833 | 338.50016 | 28.91597 | 1.96741 | 0.1899717 | 2.3720588 | 16 | 1 | 26 days | 0.26 | MPC | 2006 $UG_{129}$ |
| 2006 $UH_{129}$ | 18.3 | 0.15 | 20061012 | 56.92936 | 40.59359 | 273.98211 | 1.53109 | 0.1906512 | 2.6229268 | 9 | 1 | 9 days | 0.26 | MPC | 2006 $UH_{129}$ |
| 2006 $UK_{129}$ | 16.2 | 0.15 | 20061012 | 315.01852 | 232.34177 | 221.56847 | 12.46555 | 0.1755654 | 2.7957028 | 27 | 1 | 51 days | 0.54 | MPC | 2006 $UK_{129}$ |
| 2006 $UL_{129}$ | 17.2 | 0.15 | 20061012 | 42.98157 | 320.59935 | 22.77945 | 4.61805 | 0.0784809 | 2.8165136 | 13 | 1 | 31 days | 0.16 | MPC | 2006 $UL_{129}$ |
| 2006 $UM_{129}$ | 19.0 | 0.15 | 20061012 | 14.32521 | 350.67331 | 17.86637 | 4.11697 | 0.1950073 | 2.4026160 | 13 | 1 | 31 days | 0.22 | MPC | 2006 $UM_{129}$ |
| 2006 $UN_{129}$ | 16.7 | 0.15 | 20061012 | 1.18824 | 1.88937 | 29.44372 | 11.65756 | 0.1531856 | 3.1090756 | 19 | 1 | 49 days | 0.23 | MPC | 2006 $UN_{129}$ |
| 2006 $UO_{129}$ | 16.5 | 0.15 | 20061012 | 195.79766 | 172.10548 | 30.72987 | 12.38416 | 0.1306208 | 3.1044535 | 8 | 1 | 13 days | 0.78 | MPC | 2006 $UO_{129}$ |
| 2006 $UQ_{129}$ | 17.6 | 0.15 | 20061012 | 292.53479 | 240.98836 | 235.19474 | 2.64433 | 0.1429963 | 2.6354730 | 19 | 1 | 42 days | 0.29 | MPC | 2006 $UQ_{129}$ |
| 2006 $UR_{129}$ | 18.2 | 0.15 | 20061012 | 330.70942 | 101.98827 | 336.67015 | 1.28987 | 0.2470166 | 2.6143644 | 25 | 1 | 47 days | 0.26 | MPC | 2006 $UR_{129}$ |
| 2006 $UT_{129}$ | 17.0 | 0.15 | 20061012 | 77.88632 | 30.89592 | 260.87323 | 1.84238 | 0.2059216 | 2.6621081 | 12 | 1 | 13 days | 0.18 | MPC | 2006 $UT_{129}$ |
| 2006 $UV_{129}$ | 17.1 | 0.15 | 20061101 | 293.63516 | 100.87081 | 27.94955 | 13.02372 | 0.2135229 | 2.6856203 | 16 | 1 | 30 days | 0.24 | MPC | 2006 $UV_{129}$ |
| 2006 $UW_{129}$ | 18.6 | 0.15 | 20061012 | 253.49470 | 122.91113 | 21.25309 | 4.76308 | 0.0549623 | 2.1814893 | 15 | 1 | 23 days | 0.28 | MPC | 2006 $UW_{129}$ |
| 2006 $UA_{130}$ | 19.4 | 0.15 | 20061101 | 359.61188 | 17.59817 | 21.17948 | 6.22936 | 0.1734782 | 2.3641059 | 19 | 1 | 30 days | 0.29 | MPC | 2006 $UA_{130}$ |
| 2006 $UC_{130}$ | 18.2 | 0.15 | 20061012 | 12.75796 | 98.05838 | 278.12104 | 0.67060 | 0.1116070 | 2.6653217 | 12 | 1 | 10 days | 0.26 | MPC | 2006 $UC_{130}$ |
| 2006 $UF_{130}$ | 19.6 | 0.15 | 20061012 | 12.52488 | 347.16123 | 21.20089 | 5.99635 | 0.2491211 | 2.4182111 | 12 | 1 | 13 days | 0.20 | MPC | 2006 $UF_{130}$ |
| 2006 $UG_{130}$ | 17.8 | 0.15 | 20061012 | 358.90467 | 27.24014 | 6.96593 | 2.19725 | 0.1085757 | 2.7876468 | 12 | 1 | 13 days | 0.32 | MPC | 2006 $UG_{130}$ |
| 2006 $UJ_{130}$ | 18.3 | 0.15 | 20061101 | 10.06390 | 126.46869 | 252.87483 | 0.90261 | 0.2908468 | 2.9808294 | 20 | 1 | 27 days | 0.22 | MPC | 2006 $UJ_{130}$ |
| 2006 $UK_{130}$ | 17.2 | 0.15 | 20061012 | 106.29301 | 28.28685 | 242.33593 | 3.31268 | 0.1739521 | 2.7524771 | 12 | 1 | 13 days | 0.30 | MPC | 2006 $UK_{130}$ |
| 2006 $UN_{130}$ | 18.3 | 0.15 | 20061101 | 329.26988 | 215.58406 | 230.01625 | 1.84035 | 0.2215659 | 2.4782264 | 21 | 1 | 34 days | 0.24 | MPC | 2006 $UN_{130}$ |
| 2006 $UO_{130}$ | 16.9 | 0.15 | 20061012 | 201.34812 | 179.20651 | 18.60983 | 2.39685 | 0.1175720 | 2.7902618 | 9 | 1 | 13 days | 0.99 | MPC | 2006 $UO_{130}$ |
| 2006 $UQ_{130}$ | 19.0 | 0.15 | 20061012 | 37.04612 | 314.37607 | 22.57136 | 4.54619 | 0.2001043 | 2.3186305 | 16 | 1 | 35 days | 0.21 | MPC | 2006 $UQ_{130}$ |
| 2006 $UU_{130}$ | 15.8 | 0.15 | 20061012 | 210.70088 | 159.49188 | 25.80583 | 9.48938 | 0.0500512 | 3.1371881 | 28 | 1 | 57 days | 0.32 | MPC | 2006 $UU_{130}$ |
| 2006 $UV_{130}$ | 17.4 | 0.15 | 20061012 | 29.85781 | 16.01642 | 332.41718 | 1.39290 | 0.1861089 | 2.9894247 | 22 | 1 | 57 days | 0.25 | MPC | 2006 $UV_{130}$ |
| 2006 $UW_{130}$ | 19.4 | 0.15 | 20061012 | 9.82461 | 37.54604 | 336.07948 | 1.47164 | 0.1960897 | 2.2848799 | 19 | 1 | 35 days | 0.24 | MPC | 2006 $UW_{130}$ |
| 2006 $UX_{130}$ | 17.3 | 0.15 | 20061012 | 357.86851 | 15.74529 | 19.33673 | 4.84424 | 0.0962475 | 3.1856296 | 16 | 1 | 35 days | 0.35 | MPC | 2006 $UX_{130}$ |
| 2006 $UY_{130}$ | 17.3 | 0.15 | 20061012 | 330.37645 | 203.77324 | 230.01154 | 6.61336 | 0.1732367 | 3.1813526 | 22 | 1 | 42 days | 0.31 | MPC | 2006 $UY_{130}$ |
| 2006 $UZ_{130}$ | 19.4 | 0.15 | 20061012 | 349.43916 | 173.69316 | 230.72778 | 4.75974 | 0.1773544 | 2.3373265 | 18 | 1 | 13 days | 0.25 | MPC | 2006 $UZ_{130}$ |
| 2006 $UB_{131}$ | 18.9 | 0.15 | 20061012 | 56.25269 | 304.11066 | 6.70663 | 2.70867 | 0.2142276 | 2.3042798 | 12 | 1 | 12 days | 0.27 | MPC | 2006 $UB_{131}$ |
| 2006 $UC_{131}$ | 17.9 | 0.15 | 20061012 | 33.20586 | 76.49817 | 275.52838 | 1.67229 | 0.0952290 | 2.7433052 | 15 | 1 | 13 days | 0.29 | MPC | 2006 $UC_{131}$ |
| 2006 $UE_{131}$ | 17.5 | 0.15 | 20061101 | 325.71449 | 62.71637 | 28.57987 | 15.85957 | 0.2363393 | 3.1724595 | 16 | 1 | 30 days | 0.30 | MPC | 2006 $UE_{131}$ |
| 2006 $UF_{131}$ | 15.9 | 0.15 | 20061012 | 292.12949 | 261.51146 | 221.34247 | 15.87052 | 0.1936208 | 3.0585011 | 26 | 1 | 51 days | 0.45 | MPC | 2006 $UF_{131}$ |
| 2006 $UH_{131}$ | 16.9 | 0.15 | 20061012 | 20.46877 | 355.84756 | 7.88170 | 2.61218 | 0.1620601 | 3.0567280 | 22 | 1 | 56 days | 0.26 | MPC | 2006 $UH_{131}$ |
| 2006 $UJ_{131}$ | 17.1 | 0.15 | 20061012 | 309.27525 | 80.83885 | 19.67740 | 5.40048 | 0.1689463 | 3.0302251 | 9 | 1 | 9 days | 0.18 | MPC | 2006 $UJ_{131}$ |
| 2006 $UK_{131}$ | 16.9 | 0.15 | 20061012 | 287.71776 | 101.55097 | 27.07841 | 11.68863 | 0.2063993 | 2.6931850 | 30 | 1 | 59 days | 0.44 | MPC | 2006 $UK_{131}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UM_{131}$ | 16.8 | 0.15 | 20061012 | 76.33713 | 75.44924 | 223.68358 | 12.11575 | 0.1564994 | 3.0829295 | 16 | 1 | 30 days | 0.22 | | | MPC | 2006 $UM_{131}$ |
| 2006 $UN_{131}$ | 15.4 | 0.15 | 20061101 | 182.28708 | 353.64158 | 221.49930 | 14.55561 | 0.0745556 | 3.1826920 | 25 | 1 | 34 days | 0.22 | | | MPC | 2006 $UN_{131}$ |
| 2006 $UO_{131}$ | 18.1 | 0.15 | 20061012 | 334.87544 | 62.21176 | 3.46842 | 3.41548 | 0.1528614 | 2.6939123 | 22 | 1 | 56 days | 0.37 | | | MPC | 2006 $UO_{131}$ |
| 2006 $UR_{131}$ | 18.7 | 0.15 | 20061012 | 48.47034 | 90.23403 | 227.39686 | 4.68480 | 0.2353989 | 2.3331477 | 19 | 1 | 40 days | 0.29 | | | MPC | 2006 $UR_{131}$ |
| 2006 $UT_{131}$ | 17.5 | 0.15 | 20061101 | 156.38807 | 213.89246 | 21.04621 | 6.99072 | 0.1501889 | 2.3285504 | 15 | 1 | 35 days | 0.25 | | | MPC | 2006 $UT_{131}$ |
| 2006 $UU_{131}$ | 17.9 | 0.15 | 20061012 | 48.18228 | 324.20202 | 9.82309 | 3.46874 | 0.1075182 | 2.6658921 | 12 | 1 | 13 days | 0.18 | | | MPC | 2006 $UU_{131}$ |
| 2006 $UV_{131}$ | 18.9 | 0.15 | 20061012 | 10.55616 | 353.00760 | 22.52111 | 5.85592 | 0.1476521 | 2.3071278 | 15 | 1 | 21 days | 0.20 | | | MPC | 2006 $UV_{131}$ |
| 2006 $UY_{131}$ | 16.1 | 0.15 | 20060922 | 353.69639 | 354.85343 | 27.92855 | 10.98345 | 0.1260788 | 3.1871358 | 38 | 1 | 71 days | 0.41 | M-v | 4 D | MPC | 2006 $UY_{131}$ |
| 2006 $UA_{132}$ | 16.6 | 0.15 | 20061012 | 345.51490 | 71.49985 | 339.59237 | 7.58788 | 0.2102864 | 2.6085465 | 22 | 1 | 48 days | 0.61 | | | MPC | 2006 $UA_{132}$ |
| 2006 $UD_{132}$ | 19.9 | 0.15 | 20061012 | 13.17070 | 119.34221 | 239.76428 | 4.54311 | 0.2779070 | 2.2172798 | 23 | 1 | 22 days | 0.29 | | | MPC | 2006 $UD_{132}$ |
| 2006 $UL_{132}$ | 17.5 | 0.15 | 20061012 | 2.04335 | 158.58025 | 224.55347 | 18.34511 | 0.2244570 | 3.1980177 | 10 | 1 | 10 days | 0.69 | | | MPC | 2006 $UL_{132}$ |
| 2006 $UM_{132}$ | 15.7 | 0.15 | 20061101 | 336.80497 | 198.46196 | 226.84739 | 16.10550 | 0.1759447 | 3.1364075 | 33 | 1 | 32 days | 0.37 | | | MPC | 2006 $UM_{132}$ |
| 2006 $UN_{132}$ | 17.6 | 0.15 | 20061101 | 1.81843 | 340.05550 | 57.13339 | 1.01968 | 0.0723109 | 2.5111897 | 21 | 1 | 34 days | 0.29 | | | MPC | 2006 $UN_{132}$ |
| 2006 $UO_{132}$ | 16.9 | 0.15 | 20061012 | 47.04801 | 129.54832 | 214.60577 | 6.28230 | 0.0427234 | 2.7015757 | 21 | 1 | 47 days | 0.25 | | | MPC | 2006 $UO_{132}$ |
| 2006 $UQ_{132}$ | 18.9 | 0.15 | 20061012 | 351.25160 | 213.01664 | 192.97251 | 1.28242 | 0.2105161 | 2.6415165 | 14 | 1 | 23 days | 0.29 | | | MPC | 2006 $UQ_{132}$ |
| 2006 $UR_{132}$ | 16.5 | 0.15 | 20061101 | 304.89493 | 59.45422 | 40.81698 | 11.21454 | 0.0543596 | 3.1088933 | 18 | 1 | 39 days | 0.42 | | | MPC | 2006 $UR_{132}$ |
| 2006 $UU_{132}$ | 18.2 | 0.15 | 20061101 | 352.20117 | 201.69634 | 208.46919 | 3.40789 | 0.1584059 | 2.2149369 | 25 | 1 | 29 days | 0.40 | | | MPC | 2006 $UU_{132}$ |
| 2006 $UV_{132}$ | 16.8 | 0.15 | 20061012 | 198.09794 | 348.56622 | 216.53142 | 8.84853 | 0.2543411 | 2.3249867 | 9 | 1 | 8 days | 0.80 | | | MPC | 2006 $UV_{132}$ |
| 2006 $UX_{132}$ | 17.5 | 0.15 | 20061012 | 311.89811 | 37.45753 | 51.02402 | 4.75685 | 0.0564820 | 2.7493450 | 12 | 1 | 12 days | 0.25 | | | MPC | 2006 $UX_{132}$ |
| 2006 $UY_{132}$ | 16.5 | 0.15 | 20061012 | 37.33730 | 303.70302 | 41.19216 | 12.04318 | 0.1689354 | 3.1751266 | 24 | 1 | 46 days | 0.27 | | | MPC | 2006 $UY_{132}$ |
| 2006 $UA_{133}$ | 16.7 | 0.15 | 20061012 | 27.89990 | 295.61726 | 41.56274 | 8.55497 | 0.3378022 | 2.6721658 | 49 | 1 | 52 days | 0.45 | | | MPC | 2006 $UA_{133}$ |
| 2006 $UB_{133}$ | 17.0 | 0.15 | 20061101 | 250.71783 | 333.49034 | 186.10696 | 1.93416 | 0.0938692 | 2.6514238 | 13 | 1 | 27 days | 0.32 | | | MPC | 2006 $UB_{133}$ |
| 2006 $UC_{133}$ | 18.2 | 0.15 | 20061101 | 346.08335 | 211.50406 | 208.79662 | 4.11583 | 0.1761466 | 2.3835428 | 13 | 1 | 27 days | 0.19 | | | MPC | 2006 $UC_{133}$ |
| 2006 $UF_{133}$ | 17.0 | 0.15 | 20061012 | 222.69500 | 136.62459 | 42.50411 | 6.54697 | 0.0653162 | 2.7256946 | 17 | 1 | 46 days | 0.28 | | | MPC | 2006 $UF_{133}$ |
| 2006 $UG_{133}$ | 16.5 | 0.15 | 20061012 | 146.20522 | 31.08439 | 216.85758 | 10.24192 | 0.0719522 | 3.0424352 | 9 | 1 | 12 days | 0.18 | | | MPC | 2006 $UG_{133}$ |
| 2006 $UH_{133}$ | 16.9 | 0.15 | 20061012 | 303.88554 | 250.98978 | 208.26577 | 4.65066 | 0.0677496 | 2.7232490 | 15 | 1 | 20 days | 0.20 | | | MPC | 2006 $UH_{133}$ |
| 2006 $UJ_{133}$ | 18.7 | 0.15 | 20061101 | 330.82527 | 239.49376 | 211.08331 | 11.25681 | 0.2673478 | 2.6443869 | 20 | 1 | 38 days | 0.24 | | | MPC | 2006 $UJ_{133}$ |
| 2006 $UL_{133}$ | 16.9 | 0.15 | 20061101 | 26.82369 | 153.90692 | 214.97927 | 11.33738 | 0.1028079 | 3.0534208 | 13 | 1 | 27 days | 0.22 | | | MPC | 2006 $UL_{133}$ |
| 2006 $UM_{133}$ | 16.8 | 0.15 | 20061012 | 279.50464 | 85.85914 | 50.62648 | 4.97849 | 0.1611780 | 2.8082459 | 10 | 1 | 23 days | 0.43 | | | MPC | 2006 $UM_{133}$ |
| 2006 $UO_{133}$ | 17.3 | 0.15 | 20061101 | 20.39305 | 157.86308 | 213.64902 | 16.18488 | 0.1959848 | 3.0956367 | 16 | 1 | 28 days | 0.31 | | | MPC | 2006 $UO_{133}$ |
| 2006 $UU_{133}$ | 15.9 | 0.15 | 20061012 | 53.89494 | 128.58941 | 210.89601 | 10.83397 | 0.0569972 | 3.1698733 | 26 | 1 | 51 days | 0.32 | | | MPC | 2006 $UU_{133}$ |
| 2006 $UV_{133}$ | 18.5 | 0.15 | 20061101 | 7.34063 | 326.66956 | 63.45034 | 2.35770 | 0.1961906 | 2.4212237 | 10 | 1 | 25 days | 0.30 | | | MPC | 2006 $UV_{133}$ |
| 2006 $UW_{133}$ | 17.4 | 0.15 | 20061012 | 248.37953 | 96.07750 | 65.48633 | 3.57632 | 0.1361197 | 2.2928319 | 17 | 1 | 31 days | 0.27 | | | MPC | 2006 $UW_{133}$ |
| 2006 $UZ_{133}$ | 18.3 | 0.15 | 20061012 | 39.51657 | 280.92048 | 52.72803 | 2.77763 | 0.2306577 | 2.3630021 | 22 | 1 | 56 days | 0.43 | | | MPC | 2006 $UZ_{133}$ |
| 2006 $UA_{134}$ | 16.8 | 0.15 | 20061101 | 308.52740 | 255.43200 | 203.44905 | 5.62263 | 0.0517925 | 2.8720678 | 16 | 1 | 27 days | 0.22 | | | MPC | 2006 $UA_{134}$ |
| 2006 $UB_{134}$ | 19.0 | 0.15 | 20061012 | 21.66356 | 151.42948 | 206.21129 | 5.63689 | 0.2415512 | 2.3974099 | 17 | 1 | 49 days | 0.20 | | | MPC | 2006 $UB_{134}$ |
| 2006 $UH_{134}$ | 15.6 | 0.15 | 20061012 | 257.09553 | 42.66100 | 121.34535 | 3.01708 | 0.1980806 | 3.1695134 | 21 | 1 | 46 days | 0.28 | | | MPC | 2006 $UH_{134}$ |
| 2006 $UN_{134}$ | 18.0 | 0.15 | 20061012 | 305.28149 | 329.32109 | 138.97075 | 2.81003 | 0.1638887 | 2.4512970 | 17 | 1 | 45 days | 0.26 | | | MPC | 2006 $UN_{134}$ |
| 2006 $UP_{134}$ | 17.0 | 0.15 | 20061101 | 225.35392 | 131.21169 | 52.37308 | 8.80793 | 0.1051065 | 2.5898214 | 14 | 1 | 33 days | 0.30 | | | MPC | 2006 $UP_{134}$ |
| 2006 $UQ_{134}$ | 16.8 | 0.15 | 20061012 | 309.04409 | 263.96302 | 196.09910 | 5.37792 | 0.1270537 | 2.8164782 | 21 | 1 | 51 days | 0.22 | | | MPC | 2006 $UQ_{134}$ |
| 2006 $UT_{134}$ | 19.3 | 0.15 | 20061101 | 13.38153 | 302.38584 | 79.05738 | 2.56500 | 0.1819654 | 2.3283652 | 13 | 1 | 27 days | 0.32 | | | MPC | 2006 $UT_{134}$ |
| 2006 $UV_{134}$ | 16.1 | 0.15 | 20061012 | 54.23352 | 115.52633 | 210.60860 | 16.03441 | 0.1716506 | 3.0869164 | 16 | 1 | 58 days | 0.19 | | | MPC | 2006 $UV_{134}$ |
| 2006 $UY_{134}$ | 16.3 | 0.15 | 20061012 | 307.38136 | 219.60307 | 223.58016 | 1.44321 | 0.0755089 | 2.6844345 | 37 | 1 | 59 days | 0.36 | | D | MPC | 2006 $UY_{134}$ |
| 2006 $UA_{135}$ | 16.8 | 0.15 | 20061012 | 23.76129 | 313.99550 | 52.99671 | 6.95226 | 0.0797357 | 2.7033491 | 26 | 1 | 42 days | 0.43 | | | MPC | 2006 $UA_{135}$ |
| 2006 $UB_{135}$ | 17.8 | 0.15 | 20061101 | 356.12590 | 197.51904 | 210.01373 | 12.92989 | 0.2761061 | 3.1043273 | 17 | 1 | 35 days | 0.22 | | | MPC | 2006 $UB_{135}$ |
| 2006 $UC_{135}$ | 18.2 | 0.15 | 20061101 | 306.51337 | 29.23436 | 78.47802 | 2.41382 | 0.1418037 | 2.3505464 | 13 | 1 | 27 days | 0.14 | | | MPC | 2006 $UC_{135}$ |
| 2006 $UE_{135}$ | 16.0 | 0.15 | 20061012 | 100.28202 | 226.98011 | 49.67842 | 8.87328 | 0.1780970 | 2.5813933 | 30 | 1 | 48 days | 0.46 | | | MPC | 2006 $UE_{135}$ |
| 2006 $UL_{135}$ | 17.3 | 0.15 | 20061012 | 292.83179 | 261.25997 | 207.70920 | 8.86870 | 0.0552917 | 2.5925923 | 20 | 1 | 52 days | 0.25 | | | MPC | 2006 $UL_{135}$ |
| 2006 $UO_{135}$ | 17.4 | 0.15 | 20061101 | 31.67337 | 299.84842 | 61.14247 | 5.07896 | 0.1174327 | 2.7785531 | 13 | 1 | 27 days | 0.17 | | | MPC | 2006 $UO_{135}$ |
| 2006 $US_{135}$ | 16.7 | 0.15 | 20061012 | 313.89415 | 50.79114 | 44.74383 | 8.63243 | 0.1528449 | 3.0559806 | 25 | 1 | 58 days | 0.30 | | | MPC | 2006 $US_{135}$ |
| 2006 $UT_{135}$ | 19.6 | 0.15 | 20061012 | 14.47188 | 324.52691 | 43.93670 | 7.80880 | 0.1958735 | 2.2356115 | 18 | 1 | 42 days | 0.26 | | | MPC | 2006 $UT_{135}$ |
| 2006 $UU_{135}$ | 17.9 | 0.15 | 20061012 | 31.61505 | 157.42065 | 189.63156 | 3.32272 | 0.1913282 | 2.5795051 | 20 | 1 | 47 days | 0.24 | | | MPC | 2006 $UU_{135}$ |
| 2006 $UX_{135}$ | 16.5 | 0.15 | 20061012 | 98.09903 | 229.69793 | 59.82306 | 3.29455 | 0.0695069 | 2.6274514 | 23 | 1 | 44 days | 0.24 | | | MPC | 2006 $UX_{135}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UY_{135}$ | 15.9 | 0.15 | 20061012 | 190.84233 | 3.75817 | 205.73074 | 9.76733 | 0.1486528 | 3.0720763 | 18 | 1 | 47 days | 0.24 | MPC | 2006 $UY_{135}$ |
| 2006 $UZ_{135}$ | 15.8 | 0.15 | 20061012 | 36.68420 | 307.70664 | 43.39772 | 13.75911 | 0.1083404 | 3.2095242 | 23 | 1 | 58 days | 0.28 | MPC | 2006 $UZ_{135}$ |
| 2006 $UB_{136}$ | 17.0 | 0.15 | 20061012 | 37.28766 | 161.29415 | 188.89573 | 3.83682 | 0.1117477 | 3.2143632 | 9 | 1 | 12 days | 0.27 | MPC | 2006 $UB_{136}$ |
| 2006 $UE_{136}$ | 17.8 | 0.15 | 20061012 | 357.82761 | 288.23570 | 109.15435 | 1.91272 | 0.2316564 | 3.0249423 | 17 | 1 | 46 days | 0.32 | MPC | 2006 $UE_{136}$ |
| 2006 $UK_{136}$ | 15.9 | 0.15 | 20061012 | 196.21744 | 314.05278 | 252.87097 | 8.71087 | 0.0288320 | 3.0097575 | 21 | 1 | 41 days | 0.26 | MPC | 2006 $UK_{136}$ |
| 2006 $UL_{136}$ | 17.5 | 0.15 | 20061101 | 49.71762 | 47.61768 | 298.34158 | 3.80788 | 0.1006461 | 2.6460754 | 17 | 1 | 26 days | 0.39 | MPC | 2006 $UL_{136}$ |
| 2006 $UM_{136}$ | 16.8 | 0.15 | 20061012 | 345.68744 | 79.25342 | 341.62007 | 4.51733 | 0.1612125 | 3.1244241 | 27 | 1 | 41 days | 0.24 | MPC | 2006 $UM_{136}$ |
| 2006 $UN_{136}$ | 16.3 | 0.15 | 20061012 | 347.10552 | 178.39460 | 238.47532 | 8.93094 | 0.1962320 | 2.7643432 | 47 | 1 | 48 days | 0.38 | MPC | 2006 $UN_{136}$ |
| 2006 $UO_{136}$ | 17.1 | 0.15 | 20061101 | 348.49588 | 102.21161 | 319.73468 | 3.01399 | 0.1972091 | 2.5862804 | 34 | 1 | 34 days | 0.42 | MPC | 2006 $UO_{136}$ |
| 2006 $UQ_{136}$ | 16.4 | 0.15 | 20061101 | 267.35141 | 233.17705 | 285.71280 | 3.82677 | 0.1835749 | 2.6114208 | 17 | 1 | 26 days | 0.26 | MPC | 2006 $UQ_{136}$ |
| 2006 $US_{136}$ | 17.0 | 0.15 | 20061012 | 352.51971 | 175.07154 | 234.97302 | 10.89131 | 0.2096524 | 2.7975247 | 48 | 1 | 54 days | 0.46 | MPC | 2006 $US_{136}$ |
| 2006 $UT_{136}$ | 16.0 | 0.15 | 20061012 | 5.77621 | 104.12932 | 287.07599 | 3.95069 | 0.2121370 | 3.1842053 | 29 | 1 | 49 days | 0.36 | MPC | 2006 $UT_{136}$ |
| 2006 $UU_{136}$ | 17.5 | 0.15 | 20061012 | 3.26178 | 63.52711 | 331.22748 | 3.82021 | 0.1444781 | 2.6590795 | 25 | 1 | 41 days | 0.39 | MPC | 2006 $UU_{136}$ |
| 2006 $UW_{136}$ | 17.2 | 0.15 | 20061101 | 339.91750 | 186.71721 | 247.25840 | 7.32003 | 0.1599257 | 3.1578560 | 11 | 1 | 26 days | 0.63 | MPC | 2006 $UW_{136}$ |
| 2006 $UZ_{136}$ | 17.8 | 0.15 | 20061012 | 21.80822 | 343.08187 | 28.41622 | 10.54436 | 0.1350236 | 2.6200592 | 18 | 1 | 45 days | 0.27 | MPC | 2006 $UZ_{136}$ |
| 2006 $UA_{137}$ | 16.3 | 0.15 | 20061012 | 331.22179 | 76.67310 | 5.40933 | 6.92080 | 0.2001391 | 2.5916869 | 29 | 1 | 49 days | 0.33 | MPC | 2006 $UA_{137}$ |
| 2006 $UB_{137}$ | 17.7 | 0.15 | 20061101 | 333.38377 | 76.69363 | 11.47168 | 5.36531 | 0.2325507 | 2.3155441 | 37 | 1 | 28 days | 0.59 | MPC | 2006 $UB_{137}$ |
| 2006 $UF_{137}$ | 16.6 | 0.15 | 20061012 | 21.53265 | 125.73772 | 236.18482 | 14.20250 | 0.3132877 | 3.9672210 | 18 | 1 | 43 days | 0.29 | E MPC | 2006 $UF_{137}$ |
| 2006 $UG_{137}$ | 16.7 | 0.15 | 20061012 | 102.59502 | 266.27029 | 23.73436 | 8.55035 | 0.1149587 | 2.9258498 | 10 | 1 | 8 days | 0.33 | MPC | 2006 $UG_{137}$ |
| 2006 $UH_{137}$ | 16.8 | 0.15 | 20061012 | 85.01764 | 287.42730 | 5.61774 | 4.66782 | 0.2313717 | 2.7262006 | 10 | 1 | 8 days | 0.66 | MPC | 2006 $UH_{137}$ |
| 2006 $UJ_{137}$ | 17.3 | 0.15 | 20061012 | 113.37443 | 18.35245 | 264.17498 | 4.49231 | 0.0611389 | 2.3632764 | 10 | 1 | 8 days | 0.17 | MPC | 2006 $UJ_{137}$ |
| 2006 $UK_{137}$ | 19.0 | 0.15 | 20061101 | 355.27863 | 47.08931 | 6.97535 | 4.23007 | 0.2052722 | 2.6111388 | 14 | 1 | 26 days | 0.27 | MPC | 2006 $UK_{137}$ |
| 2006 $UL_{137}$ | 15.7 | 0.15 | 20061101 | 324.24222 | 210.43383 | 243.68087 | 12.09779 | 0.1408331 | 2.6336265 | 50 | 1 | 34 days | 0.37 | MPC | 2006 $UL_{137}$ |
| 2006 $UM_{137}$ | 15.8 | 0.15 | 20061101 | 355.30813 | 175.03266 | 239.57421 | 14.04890 | 0.1737525 | 2.7093937 | 63 | 1 | 40 days | 0.46 | MPC | 2006 $UM_{137}$ |
| 2006 $UN_{137}$ | 19.1 | 0.15 | 20061101 | 350.99777 | 155.62476 | 263.24232 | 4.01904 | 0.1940370 | 2.2288083 | 20 | 1 | 26 days | 0.25 | MPC | 2006 $UN_{137}$ |
| 2006 $UO_{137}$ | 18.4 | 0.15 | 20061101 | 37.40404 | 113.57730 | 238.37361 | 11.59673 | 0.1995236 | 2.5852327 | 16 | 1 | 28 days | 0.33 | MPC | 2006 $UO_{137}$ |
| 2006 $UR_{137}$ | 17.0 | 0.15 | 20061101 | 107.36687 | 279.17282 | 8.29333 | 4.46912 | 0.1334005 | 2.5673413 | 21 | 1 | 28 days | 0.29 | MPC | 2006 $UR_{137}$ |
| 2006 $US_{137}$ | 16.7 | 0.15 | 20061101 | 158.65754 | 227.10875 | 18.64591 | 5.60875 | 0.1043895 | 2.3096285 | 25 | 1 | 26 days | 0.28 | MPC | 2006 $US_{137}$ |
| 2006 $UT_{137}$ | 15.5 | 0.15 | 20061012 | 53.39708 | 311.07166 | 26.78527 | 9.29993 | 0.1372304 | 3.0569682 | 36 | 1 | 53 days | 0.41 | MPC | 2006 $UT_{137}$ |
| 2006 $UV_{137}$ | 16.0 | 0.15 | 20061101 | 8.21786 | 162.70490 | 235.78351 | 19.05653 | 0.1208731 | 3.1576493 | 14 | 1 | 28 days | 0.35 | MPC | 2006 $UV_{137}$ |
| 2006 $UX_{137}$ | 16.9 | 0.15 | 20061101 | 47.96893 | 330.02506 | 19.59598 | 11.38544 | 0.1062788 | 2.9100000 | 13 | 1 | 37 days | 0.29 | MPC | 2006 $UX_{137}$ |
| 2006 $UZ_{137}$ | 16.4 | 0.15 | 20061101 | 96.11556 | 355.25777 | 311.54606 | 4.79209 | 0.0361969 | 2.6601823 | 16 | 1 | 34 days | 0.45 | MPC | 2006 $UZ_{137}$ |
| 2006 $UA_{138}$ | 16.1 | 0.15 | 20061012 | 258.92761 | 275.40077 | 241.90919 | 17.36928 | 0.1116749 | 3.1607535 | 9 | 1 | 8 days | 0.22 | MPC | 2006 $UA_{138}$ |
| 2006 $UB_{138}$ | 18.1 | 0.15 | 20061012 | 1.49112 | 23.69713 | 13.60026 | 8.62655 | 0.1648937 | 2.5651645 | 16 | 1 | 46 days | 0.28 | MPC | 2006 $UB_{138}$ |
| 2006 $UC_{138}$ | 18.1 | 0.15 | 20061012 | 350.48998 | 40.47574 | 14.11119 | 8.55525 | 0.2057947 | 2.7744375 | 9 | 1 | 8 days | 0.16 | MPC | 2006 $UC_{138}$ |
| 2006 $UD_{138}$ | 17.7 | 0.15 | 20061012 | 354.00693 | 38.09731 | 10.81167 | 7.74281 | 0.2034308 | 2.7323644 | 17 | 1 | 49 days | 0.29 | MPC | 2006 $UD_{138}$ |
| 2006 $UE_{138}$ | 17.4 | 0.15 | 20061012 | 353.80261 | 37.51415 | 11.51888 | 7.47898 | 0.2267082 | 2.6933229 | 21 | 1 | 41 days | 0.73 | MPC | 2006 $UE_{138}$ |
| 2006 $UH_{138}$ | 18.2 | 0.15 | 20061012 | 31.90683 | 333.55366 | 21.22243 | 10.18031 | 0.1749851 | 2.4415189 | 9 | 1 | 12 days | 0.22 | MPC | 2006 $UH_{138}$ |
| 2006 $UJ_{138}$ | 18.9 | 0.15 | 20061101 | 55.69448 | 352.56996 | 344.30391 | 4.50845 | 0.1273142 | 2.1520720 | 13 | 1 | 37 days | 0.32 | MPC | 2006 $UJ_{138}$ |
| 2006 $UM_{138}$ | 17.1 | 0.15 | 20061012 | 302.92571 | 172.58110 | 305.48255 | 4.42053 | 0.1604573 | 3.0771746 | 12 | 1 | 8 days | 0.47 | MPC | 2006 $UM_{138}$ |
| 2006 $UN_{138}$ | 17.9 | 0.15 | 20061101 | 329.86164 | 175.85416 | 265.62987 | 6.43209 | 0.0788918 | 2.3428256 | 13 | 1 | 26 days | 0.23 | MPC | 2006 $UN_{138}$ |
| 2006 $US_{138}$ | 18.3 | 0.15 | 20061012 | 356.85966 | 26.62820 | 15.16188 | 7.30768 | 0.3588931 | 2.6041302 | 18 | 1 | 48 days | 0.34 | E MPC | 2006 $US_{138}$ |
| 2006 $UT_{138}$ | 17.6 | 0.15 | 20061101 | 308.59961 | 110.77925 | 353.69502 | 4.98139 | 0.0633405 | 2.4259527 | 16 | 1 | 26 days | 0.25 | MPC | 2006 $UT_{138}$ |
| 2006 $UU_{138}$ | 18.7 | 0.15 | 20061101 | 8.88021 | 10.82843 | 14.77477 | 6.73644 | 0.3428363 | 2.3822799 | 28 | 1 | 33 days | 0.43 | MPC | 2006 $UU_{138}$ |
| 2006 $UV_{138}$ | 17.7 | 0.15 | 20061101 | 332.93244 | 209.97021 | 241.74462 | 11.71781 | 0.2563422 | 2.6488087 | 28 | 1 | 26 days | 0.40 | MPC | 2006 $UV_{138}$ |
| 2006 $UW_{138}$ | 18.1 | 0.15 | 20061101 | 26.56205 | 119.11055 | 243.45239 | 12.10251 | 0.2572395 | 3.0653678 | 12 | 1 | 28 days | 0.30 | MPC | 2006 $UW_{138}$ |
| 2006 $UX_{138}$ | 17.6 | 0.15 | 20061101 | 28.39047 | 82.84704 | 276.27987 | 3.84477 | 0.2472751 | 2.3153712 | 27 | 1 | 34 days | 0.51 | MPC | 2006 $UX_{138}$ |
| 2006 $UY_{138}$ | 17.6 | 0.15 | 20061101 | 10.37697 | 108.78817 | 278.18499 | 4.40781 | 0.2829561 | 2.6097243 | 47 | 1 | 34 days | 0.50 | MPC | 2006 $UY_{138}$ |
| 2006 $UA_{139}$ | 15.6 | 0.15 | 20061101 | 63.13148 | 67.61704 | 247.53064 | 12.61587 | 0.2668874 | 3.1978483 | 13 | 1 | 26 days | 0.11 | MPC | 2006 $UA_{139}$ |
| 2006 $UC_{139}$ | 17.7 | 0.15 | 20061012 | 311.07957 | 79.05712 | 16.12953 | 7.35321 | 0.0573688 | 2.2603117 | 16 | 1 | 42 days | 0.37 | MPC | 2006 $UC_{139}$ |
| 2006 $UE_{139}$ | 16.5 | 0.15 | 20061101 | 208.05343 | 193.36799 | 10.19484 | 7.51515 | 0.0341831 | 2.8441042 | 15 | 1 | 27 days | 0.16 | MPC | 2006 $UE_{139}$ |
| 2006 $UG_{139}$ | 16.2 | 0.15 | 20061101 | 352.08891 | 62.15899 | 358.73494 | 5.94186 | 0.1840759 | 3.1623121 | 28 | 1 | 35 days | 0.52 | MPC | 2006 $UG_{139}$ |
| 2006 $UK_{139}$ | 15.7 | 0.15 | 20061101 | 310.77768 | 226.05296 | 244.61495 | 11.94673 | 0.1353801 | 2.6820193 | 48 | 1 | 34 days | 0.38 | MPC | 2006 $UK_{139}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UL_{139}$ | 18.1 | 0.15 | 20061101 | 321.66748 | 254.62972 | 208.97783 | 6.92431 | 0.1609864 | 2.3529394 | 20 | 1 | 39 days | 0.23 | MPC | 2006 $UL_{139}$ |
| 2006 $UM_{139}$ | 16.6 | 0.15 | 20061101 | 2.88851 | 189.83203 | 221.32575 | 10.79598 | 0.1089489 | 3.0603958 | 23 | 1 | 36 days | 0.29 | MPC | 2006 $UM_{139}$ |
| 2006 $UN_{139}$ | 17.5 | 0.15 | 20061101 | 72.31791 | 125.10764 | 210.44853 | 5.70505 | 0.0560275 | 2.6127793 | 19 | 1 | 35 days | 0.30 | MPC | 2006 $UN_{139}$ |
| 2006 $UO_{139}$ | 17.7 | 0.15 | 20061101 | 17.59892 | 330.22034 | 59.26382 | 10.87581 | 0.1360159 | 2.6043018 | 25 | 1 | 36 days | 0.27 | MPC | 2006 $UO_{139}$ |
| 2006 $UP_{139}$ | 16.1 | 0.15 | 20061012 | 89.49966 | 197.01737 | 106.20762 | 2.48278 | 0.1580838 | 2.6914126 | 10 | 1 | 4 days | 0.22 | MPC | 2006 $UP_{139}$ |
| 2006 $UQ_{139}$ | 16.6 | 0.15 | 20061101 | 31.16503 | 284.02763 | 93.77604 | 3.05614 | 0.0922177 | 3.0382306 | 37 | 1 | 39 days | 0.38 | MPC | 2006 $UQ_{139}$ |
| 2006 $US_{139}$ | 16.5 | 0.15 | 20061012 | 340.93855 | 252.46735 | 179.32606 | 3.07138 | 0.1387185 | 2.5611400 | 33 | 1 | 55 days | 0.32 | MPC | 2006 $US_{139}$ |
| 2006 $UT_{139}$ | 15.5 | 0.15 | 20061012 | 12.50257 | 334.49664 | 57.81041 | 15.09084 | 0.1180445 | 2.7518555 | 39 | 1 | 50 days | 0.48 | MPC | 2006 $UT_{139}$ |
| 2006 $UV_{139}$ | 18.0 | 0.15 | 20061012 | 349.37994 | 357.18357 | 64.44880 | 5.70381 | 0.2324510 | 2.5938803 | 18 | 1 | 46 days | 0.33 | MPC | 2006 $UV_{139}$ |
| 2006 $UX_{139}$ | 17.4 | 0.15 | 20061101 | 310.37846 | 216.79480 | 247.73666 | 10.29169 | 0.0678028 | 2.6120509 | 17 | 1 | 28 days | 0.19 | MPC | 2006 $UX_{139}$ |
| 2006 $UY_{139}$ | 17.0 | 0.15 | 20061101 | 285.71736 | 208.22317 | 282.80472 | 5.60407 | 0.0634893 | 2.7732020 | 17 | 1 | 28 days | 0.35 | MPC | 2006 $UY_{139}$ |
| 2006 $UB_{140}$ | 17.4 | 0.15 | 20061101 | 122.41221 | 19.29469 | 259.14733 | 7.20376 | 0.0897815 | 2.4787237 | 14 | 1 | 27 days | 0.22 | MPC | 2006 $UB_{140}$ |
| 2006 $UC_{140}$ | 16.0 | 0.15 | 20061101 | 76.32722 | 67.61921 | 248.42469 | 11.42107 | 0.1485252 | 2.8080515 | 25 | 1 | 27 days | 0.21 | MPC | 2006 $UC_{140}$ |
| 2006 $UD_{140}$ | 16.3 | 0.15 | 20061101 | 55.21384 | 325.09604 | 20.41268 | 9.35611 | 0.0993415 | 3.1240481 | 12 | 1 | 27 days | 0.20 | MPC | 2006 $UD_{140}$ |
| 2006 $UE_{140}$ | 18.6 | 0.15 | 20061101 | 354.94578 | 75.90802 | 338.88975 | 3.32681 | 0.1907022 | 2.3567895 | 24 | 1 | 28 days | 0.24 | MPC | 2006 $UE_{140}$ |
| 2006 $UF_{140}$ | 17.3 | 0.15 | 20061101 | 320.47215 | 202.81831 | 252.67065 | 8.64457 | 0.0871616 | 2.6539836 | 14 | 1 | 27 days | 0.19 | MPC | 2006 $UF_{140}$ |
| 2006 $UH_{140}$ | 17.5 | 0.15 | 20061101 | 308.31681 | 107.09285 | 12.99906 | 7.58726 | 0.1803211 | 2.7942878 | 9 | 1 | 27 days | 0.22 | MPC | 2006 $UH_{140}$ |
| 2006 $UJ_{140}$ | 17.3 | 0.15 | 20061101 | 345.84612 | 172.60068 | 254.86804 | 9.21084 | 0.1253435 | 2.7656227 | 21 | 1 | 27 days | 0.22 | MPC | 2006 $UJ_{140}$ |
| 2006 $UK_{140}$ | 16.5 | 0.15 | 20061012 | 288.28201 | 103.99155 | 33.33969 | 15.08372 | 0.1574849 | 3.1360938 | 9 | 1 | 8 days | 0.96 | MPC | 2006 $UK_{140}$ |
| 2006 $UL_{140}$ | 17.5 | 0.15 | 20061101 | 12.06830 | 152.82163 | 240.68817 | 13.73207 | 0.1090111 | 2.5789523 | 19 | 1 | 36 days | 0.21 | MPC | 2006 $UL_{140}$ |
| 2006 $UN_{140}$ | 16.3 | 0.15 | 20061101 | 87.14433 | 73.80097 | 246.19292 | 9.55754 | 0.0230052 | 3.1316801 | 18 | 1 | 28 days | 0.21 | MPC | 2006 $UN_{140}$ |
| 2006 $UP_{140}$ | 17.2 | 0.15 | 20061012 | 32.07489 | 29.97696 | 333.05414 | 3.51313 | 0.1209882 | 2.7279859 | 31 | 1 | 42 days | 0.26 | MPC | 2006 $UP_{140}$ |
| 2006 $UQ_{140}$ | 16.0 | 0.15 | 20061101 | 11.88809 | 26.18578 | 6.17666 | 4.74726 | 0.1659533 | 3.0452980 | 50 | 1 | 34 days | 0.43 | MPC | 2006 $UQ_{140}$ |
| 2006 $US_{140}$ | 16.4 | 0.15 | 20061101 | 182.68973 | 343.51802 | 243.54375 | 11.97491 | 0.0793066 | 2.6742366 | 16 | 1 | 36 days | 0.22 | MPC | 2006 $US_{140}$ |
| 2006 $UZ_{140}$ | 17.4 | 0.15 | 20061012 | 347.49409 | 68.30805 | 355.04113 | 2.99330 | 0.2301735 | 3.0400751 | 29 | 1 | 34 days | 0.19 | MPC | 2006 $UZ_{140}$ |
| 2006 $UA_{141}$ | 16.3 | 0.15 | 20061012 | 264.30465 | 258.71855 | 243.48864 | 11.02601 | 0.0039985 | 2.9203920 | 23 | 1 | 51 days | 0.62 | MPC | 2006 $UA_{141}$ |
| 2006 $UC_{141}$ | 15.7 | 0.15 | 20061012 | 305.24312 | 252.66900 | 221.61306 | 9.81620 | 0.0784644 | 3.1366654 | 11 | 1 | 4 days | 0.21 | MPC | 2006 $UC_{141}$ |
| 2006 $UD_{141}$ | 16.8 | 0.15 | 20061012 | 32.29734 | 290.86777 | 66.96997 | 5.01591 | 0.2063584 | 2.5989408 | 28 | 1 | 54 days | 0.26 | MPC | 2006 $UD_{141}$ |
| 2006 $UF_{141}$ | 15.8 | 0.15 | 20061012 | 310.61579 | 47.89946 | 59.41470 | 12.94715 | 0.0931723 | 2.7415568 | 48 | 1 | 52 days | 0.47 | MPC | 2006 $UF_{141}$ |
| 2006 $UJ_{141}$ | 18.1 | 0.15 | 20061101 | 305.14642 | 42.28651 | 79.16527 | 2.87985 | 0.1361148 | 2.2976554 | 27 | 1 | 39 days | 0.30 | MPC | 2006 $UJ_{141}$ |
| 2006 $UM_{141}$ | 17.1 | 0.15 | 20061101 | 351.92710 | 328.11200 | 97.99492 | 2.47313 | 0.1646324 | 3.0098474 | 17 | 1 | 37 days | 0.27 | MPC | 2006 $UM_{141}$ |
| 2006 $UO_{141}$ | 17.3 | 0.15 | 20061012 | 17.33644 | 126.81397 | 257.11148 | 5.71519 | 0.0423316 | 2.7377790 | 9 | 1 | 8 days | 0.15 | MPC | 2006 $UO_{141}$ |
| 2006 $UP_{141}$ | 18.4 | 0.15 | 20061012 | 12.90570 | 142.39057 | 241.26810 | 9.89709 | 0.1282094 | 2.5450799 | 9 | 1 | 8 days | 0.25 | MPC | 2006 $UP_{141}$ |
| 2006 $UQ_{141}$ | 17.2 | 0.15 | 20061101 | 53.41351 | 102.64697 | 232.95702 | 23.95293 | 0.1738060 | 2.7189051 | 10 | 1 | 29 days | 0.19 | MPC | 2006 $UQ_{141}$ |
| 2006 $UR_{141}$ | 17.8 | 0.15 | 20061012 | 67.51180 | 29.31001 | 279.47213 | 3.99367 | 0.2199065 | 2.3709529 | 13 | 1 | 8 days | 0.16 | MPC | 2006 $UR_{141}$ |
| 2006 $UU_{141}$ | 17.0 | 0.15 | 20061101 | 26.51862 | 337.39264 | 28.07861 | 10.36324 | 0.2287833 | 2.8008232 | 24 | 1 | 26 days | 0.38 | MPC | 2006 $UU_{141}$ |
| 2006 $UV_{141}$ | 15.8 | 0.15 | 20061101 | 133.46810 | 18.44281 | 253.35942 | 8.94293 | 0.0510751 | 3.2025183 | 23 | 1 | 28 days | 0.26 | MPC | 2006 $UV_{141}$ |
| 2006 $UX_{141}$ | 18.3 | 0.15 | 20061012 | 175.86685 | 221.80724 | 3.01269 | 4.50144 | 0.0275315 | 2.1343268 | 13 | 1 | 8 days | 0.24 | MPC | 2006 $UX_{141}$ |
| 2006 $UY_{141}$ | 15.5 | 0.15 | 20061012 | 60.48829 | 337.50802 | 352.95640 | 4.58567 | 0.1378802 | 3.2240742 | 29 | 1 | 41 days | 0.21 | MPC | 2006 $UY_{141}$ |
| 2006 $UA_{142}$ | 17.2 | 0.15 | 20061101 | 199.12329 | 199.42486 | 13.15608 | 5.68482 | 0.0926302 | 2.4791619 | 17 | 1 | 26 days | 0.31 | MPC | 2006 $UA_{142}$ |
| 2006 $UD_{142}$ | 19.0 | 0.15 | 20061101 | 5.13679 | 21.59818 | 15.64687 | 6.33696 | 0.2784116 | 2.6188203 | 16 | 1 | 37 days | 0.24 | MPC | 2006 $UD_{142}$ |
| 2006 $UE_{142}$ | 17.4 | 0.15 | 20061101 | 46.51445 | 339.41178 | 8.34184 | 4.64792 | 0.1450206 | 2.5569042 | 28 | 1 | 26 days | 0.36 | MPC | 2006 $UE_{142}$ |
| 2006 $UG_{142}$ | 18.7 | 0.15 | 20061101 | 353.73410 | 72.64353 | 339.69961 | 3.37253 | 0.1572814 | 2.1888766 | 23 | 1 | 26 days | 0.24 | MPC | 2006 $UG_{142}$ |
| 2006 $UK_{142}$ | 17.1 | 0.15 | 20061101 | 358.41185 | 159.41073 | 247.76450 | 9.57028 | 0.0839403 | 2.8120654 | 20 | 1 | 26 days | 0.27 | MPC | 2006 $UK_{142}$ |
| 2006 $UL_{142}$ | 16.4 | 0.15 | 20061012 | 240.07815 | 248.51611 | 274.86953 | 5.02402 | 0.0190533 | 2.7850601 | 27 | 1 | 41 days | 0.27 | MPC | 2006 $UL_{142}$ |
| 2006 $UN_{142}$ | 16.7 | 0.15 | 20061012 | 41.16751 | 0.91305 | 343.78537 | 4.55347 | 0.1645591 | 2.8022120 | 17 | 1 | 41 days | 0.27 | MPC | 2006 $UN_{142}$ |
| 2006 $UO_{142}$ | 18.6 | 0.15 | 20061012 | 7.51445 | 14.52783 | 10.83107 | 5.97575 | 0.1778455 | 2.3496948 | 19 | 1 | 14 days | 0.27 | MPC | 2006 $UO_{142}$ |
| 2006 $UP_{142}$ | 17.6 | 0.15 | 20061012 | 81.87545 | 33.41760 | 261.60356 | 5.21672 | 0.1940391 | 2.2700049 | 21 | 1 | 41 days | 0.26 | MPC | 2006 $UP_{142}$ |
| 2006 $UQ_{142}$ | 18.5 | 0.15 | 20061101 | 355.36758 | 44.97621 | 8.37678 | 5.55735 | 0.3066296 | 2.6362941 | 27 | 1 | 39 days | 0.47 | MPC | 2006 $UQ_{142}$ |
| 2006 $UR_{142}$ | 17.0 | 0.15 | 20061012 | 218.48059 | 316.75287 | 238.43185 | 15.35263 | 0.1997968 | 2.4620329 | 9 | 1 | 8 days | 0.49 | MPC | 2006 $UR_{142}$ |
| 2006 $US_{142}$ | 18.0 | 0.15 | 20061101 | 40.82928 | 109.62621 | 243.51425 | 10.60847 | 0.1326378 | 2.6342877 | 17 | 1 | 26 days | 0.24 | MPC | 2006 $US_{142}$ |
| 2006 $UT_{142}$ | 17.5 | 0.15 | 20061012 | 97.61264 | 310.04949 | 344.64320 | 4.26238 | 0.0756932 | 2.4572889 | 21 | 1 | 41 days | 0.33 | MPC | 2006 $UT_{142}$ |
| 2006 $UU_{142}$ | 16.5 | 0.15 | 20061012 | 61.40627 | 306.59246 | 24.33652 | 10.39740 | 0.1014995 | 3.1245643 | 20 | 1 | 41 days | 0.34 | MPC | 2006 $UU_{142}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UX_{142}$ | 16.1 | 0.15 | 20061012 | 215.73080 | 181.34532 | 19.38405 | 9.42239 | 0.2126600 | 2.9282878 | 13 | 1 | 8 days | 0.77 | | MPC | 2006 $UX_{142}$ |
| 2006 $UA_{143}$ | 17.2 | 0.15 | 20061012 | 26.57194 | 102.44200 | 254.48031 | 5.45612 | 0.2278053 | 2.7382910 | 25 | 1 | 41 days | 0.37 | | MPC | 2006 $UA_{143}$ |
| 2006 $UB_{143}$ | 18.1 | 0.15 | 20061012 | 337.09592 | 87.81398 | 354.68266 | 4.75781 | 0.2985363 | 3.1566633 | 13 | 1 | 8 days | 0.27 | | MPC | 2006 $UB_{143}$ |
| 2006 $UD_{143}$ | 18.0 | 0.15 | 20061101 | 64.83912 | 310.74628 | 15.02951 | 6.75159 | 0.1354172 | 2.3502356 | 17 | 1 | 26 days | 0.22 | | MPC | 2006 $UD_{143}$ |
| 2006 $UE_{143}$ | 16.7 | 0.15 | 20060922 | 41.12150 | 87.32001 | 213.72473 | 18.27743 | 0.3495972 | 2.7747286 | 34 | 1 | 64 days | 0.51 | M-v 4 | MPC | 2006 $UE_{143}$ |
| 2006 $UH_{143}$ | 17.0 | 0.15 | 20061101 | 325.49202 | 229.20575 | 216.12957 | 14.84806 | 0.1907750 | 2.5952653 | 39 | 1 | 29 days | 0.27 | | MPC | 2006 $UH_{143}$ |
| 2006 $UJ_{143}$ | 17.8 | 0.15 | 20061012 | 8.91818 | 68.48200 | 301.22074 | 2.46225 | 0.2769494 | 2.6032773 | 21 | 1 | 43 days | 0.16 | | MPC | 2006 $UJ_{143}$ |
| 2006 $UK_{143}$ | 17.8 | 0.15 | 20061101 | 15.65954 | 61.67130 | 303.93363 | 2.39496 | 0.2927905 | 2.5798327 | 25 | 1 | 31 days | 0.35 | | MPC | 2006 $UK_{143}$ |
| 2006 $UM_{143}$ | 17.7 | 0.15 | 20061012 | 6.20277 | 327.96698 | 44.46714 | 5.65656 | 0.3193910 | 2.5738426 | 58 | 1 | 56 days | 0.37 | | MPC | 2006 $UM_{143}$ |
| 2006 $UN_{143}$ | 15.4 | 0.15 | 20061012 | 68.78657 | 104.59161 | 233.33664 | 12.78391 | 0.0967030 | 3.1490726 | 15 | 1 | 12 days | 0.22 | | MPC | 2006 $UN_{143}$ |
| 2006 $UP_{143}$ | 17.7 | 0.15 | 20061012 | 1.06104 | 189.30398 | 195.25266 | 4.87200 | 0.2375854 | 2.3609494 | 41 | 1 | 47 days | 0.30 | | MPC | 2006 $UP_{143}$ |
| 2006 $UR_{143}$ | 16.2 | 0.15 | 20061101 | 52.55027 | 63.42972 | 272.93976 | 4.55418 | 0.2104457 | 2.6268150 | 27 | 1 | 31 days | 0.48 | | MPC | 2006 $UR_{143}$ |
| 2006 $UV_{143}$ | 16.5 | 0.15 | 20060922 | 22.05796 | 310.77923 | 37.03847 | 13.85446 | 0.2747702 | 2.6669497 | 48 | 1 | 66 days | 0.56 | M-v 4 | MPC | 2006 $UV_{143}$ |
| 2006 $UW_{143}$ | 15.3 | 0.15 | 20061101 | 24.74370 | 10.50544 | 7.46691 | 12.03087 | 0.1477230 | 2.9308301 | 19 | 1 | 33 days | 0.49 | | MPC | 2006 $UW_{143}$ |
| 2006 $UY_{143}$ | 17.3 | 0.15 | 20061012 | 27.74470 | 344.58674 | 22.04770 | 4.14607 | 0.1594163 | 2.2438550 | 22 | 1 | 53 days | 0.60 | | MPC | 2006 $UY_{143}$ |
| 2006 $UC_{144}$ | 16.5 | 0.15 | 20061101 | 320.13235 | 99.37162 | 359.35889 | 3.15101 | 0.0543065 | 2.7898514 | 13 | 1 | 37 days | 0.48 | | MPC | 2006 $UC_{144}$ |
| 2006 $UE_{144}$ | 16.1 | 0.15 | 20061101 | 0.19886 | 169.67610 | 241.81849 | 11.09712 | 0.2506905 | 3.0704044 | 60 | 1 | 36 days | 0.43 | | MPC | 2006 $UE_{144}$ |
| 2006 $UH_{144}$ | 16.1 | 0.15 | 20060922 | 14.31926 | 152.93489 | 221.67877 | 33.07361 | 0.2463213 | 2.6168841 | 33 | 1 | 67 days | 0.48 | M-v 4 | MPC | 2006 $UH_{144}$ |
| 2006 $UK_{144}$ | 18.3 | 0.15 | 20061012 | 350.08077 | 61.81263 | 354.33174 | 2.73507 | 0.1880825 | 2.4182431 | 13 | 1 | 27 days | 0.17 | | MPC | 2006 $UK_{144}$ |
| 2006 $UM_{144}$ | 17.7 | 0.15 | 20061012 | 9.50659 | 4.40008 | 26.29866 | 7.55683 | 0.1669359 | 2.5928726 | 22 | 1 | 50 days | 0.20 | | MPC | 2006 $UM_{144}$ |
| 2006 $UQ_{145}$ | 18.9 | 0.15 | 20061012 | 11.11014 | 74.59555 | 274.18444 | 6.24777 | 0.1788678 | 2.3264497 | 15 | 1 | 8 days | 0.91 | | MPC | 2006 $UQ_{145}$ |
| 2006 $UA_{146}$ | 15.9 | 0.15 | 20061012 | 105.71215 | 357.10717 | 234.75869 | 10.95263 | 0.2158378 | 3.1408471 | 9 | 1 | 8 days | 0.52 | | MPC | 2006 $UA_{146}$ |
| 2006 $UQ_{147}$ | 18.3 | 0.15 | 20061012 | 352.94526 | 150.35862 | 244.07594 | 3.80501 | 0.1538534 | 2.1978393 | 21 | 1 | 45 days | 0.25 | | MPC | 2006 $UQ_{147}$ |
| 2006 $UT_{147}$ | 16.3 | 0.15 | 20061012 | 42.53664 | 83.07598 | 226.75391 | 10.43142 | 0.1316241 | 3.1206593 | 18 | 1 | 8 days | 0.19 | | MPC | 2006 $UT_{147}$ |
| 2006 $UW_{147}$ | 18.4 | 0.15 | 20061101 | 11.39772 | 352.54851 | 24.12348 | 1.49032 | 0.1985432 | 2.3697166 | 16 | 1 | 31 days | 0.34 | | MPC | 2006 $UW_{147}$ |
| 2006 $UX_{147}$ | 18.9 | 0.15 | 20061012 | 328.38502 | 220.17914 | 209.58385 | 6.67573 | 0.1597575 | 2.2757424 | 16 | 1 | 50 days | 0.30 | | MPC | 2006 $UX_{147}$ |
| 2006 $UU_{148}$ | 18.8 | 0.15 | 20061012 | 8.75166 | 341.39709 | 30.64447 | 13.70160 | 0.2968001 | 2.6411505 | 19 | 1 | 32 days | 0.27 | | MPC | 2006 $UU_{148}$ |
| 2006 $UV_{148}$ | 17.1 | 0.15 | 20061012 | 159.84684 | 178.11156 | 56.37942 | 1.17539 | 0.0262885 | 2.7666345 | 13 | 1 | 9 days | 0.31 | E | MPC | 2006 $UV_{148}$ |
| 2006 $UW_{148}$ | 17.0 | 0.15 | 20061012 | 302.66759 | 260.70676 | 213.38882 | 24.73767 | 0.1969650 | 3.1835640 | 10 | 1 | 11 days | 0.19 | | MPC | 2006 $UW_{148}$ |
| 2006 $UZ_{148}$ | 17.1 | 0.15 | 20061012 | 10.99527 | 337.36507 | 42.82266 | 10.88000 | 0.0870600 | 3.2294190 | 12 | 1 | 21 days | 0.46 | | MPC | 2006 $UZ_{148}$ |
| 2006 $UA_{149}$ | 19.8 | 0.15 | 20061012 | 356.89886 | 335.01148 | 58.59723 | 2.48739 | 0.1705026 | 2.2294818 | 9 | 1 | 9 days | 0.37 | | MPC | 2006 $UA_{149}$ |
| 2006 $UB_{149}$ | 17.6 | 0.15 | 20061012 | 347.01400 | 321.82812 | 89.91328 | 1.83716 | 0.1903732 | 3.0642518 | 10 | 1 | 11 days | 0.85 | | MPC | 2006 $UB_{149}$ |
| 2006 $UC_{149}$ | 17.8 | 0.15 | 20061012 | 225.97000 | 345.44160 | 183.92351 | 1.45353 | 0.0566337 | 2.4016844 | 10 | 1 | 7 days | 0.69 | | MPC | 2006 $UC_{149}$ |
| 2006 $UD_{149}$ | 17.3 | 0.15 | 20061012 | 259.81709 | 286.94320 | 209.31923 | 9.39666 | 0.0408068 | 2.6758799 | 10 | 1 | 7 days | 0.51 | | MPC | 2006 $UD_{149}$ |
| 2006 $UO_{149}$ | 17.0 | 0.15 | 20061012 | 10.54322 | 163.68173 | 203.90091 | 12.30448 | 0.1815723 | 2.6904039 | 34 | 1 | 47 days | 0.44 | | MPC | 2006 $UO_{149}$ |
| 2006 $UP_{149}$ | 15.6 | 0.15 | 20061012 | 14.05991 | 162.07506 | 204.11735 | 19.29797 | 0.1134524 | 3.2278767 | 14 | 1 | 8 days | 0.68 | | MPC | 2006 $UP_{149}$ |
| 2006 $UQ_{149}$ | 18.1 | 0.15 | 20060922 | 351.40733 | 350.66175 | 37.88872 | 2.89676 | 0.1895445 | 2.5731958 | 39 | 1 | 62 days | 0.37 | M-v 4 | MPC | 2006 $UQ_{149}$ |
| 2006 $UC_{150}$ | 16.0 | 0.15 | 20060922 | 43.01478 | 204.53493 | 136.14078 | 16.13353 | 0.1162494 | 2.6264963 | 24 | 1 | 65 days | 0.60 | M-v 5 | MPC | 2006 $UC_{150}$ |
| 2006 $UZ_{150}$ | 18.5 | 0.15 | 20061101 | 12.97346 | 127.49170 | 245.53073 | 5.33712 | 0.2680723 | 2.5256173 | 18 | 1 | 34 days | 0.37 | | MPC | 2006 $UZ_{150}$ |
| 2006 $UJ_{151}$ | 16.5 | 0.15 | 20061012 | 210.34181 | 336.01809 | 218.49307 | 13.10976 | 0.1421650 | 2.9237628 | 10 | 1 | 7 days | 0.62 | | MPC | 2006 $UJ_{151}$ |
| 2006 $UK_{151}$ | 16.6 | 0.15 | 20061012 | 95.69588 | 68.78474 | 229.90874 | 9.35224 | 0.0106919 | 3.0736474 | 24 | 1 | 44 days | 0.33 | | MPC | 2006 $UK_{151}$ |
| 2006 $UL_{151}$ | 17.3 | 0.15 | 20061012 | 56.84355 | 307.14293 | 25.96000 | 9.70537 | 0.0478307 | 2.6154806 | 19 | 1 | 35 days | 0.30 | | MPC | 2006 $UL_{151}$ |
| 2006 $UM_{151}$ | 17.9 | 0.15 | 20061012 | 330.94376 | 218.24886 | 220.37252 | 13.76542 | 0.2395262 | 2.5573597 | 25 | 1 | 42 days | 0.27 | | MPC | 2006 $UM_{151}$ |
| 2006 $UN_{151}$ | 17.1 | 0.15 | 20061012 | 15.46390 | 346.57704 | 21.55067 | 7.00593 | 0.2322490 | 3.0013940 | 16 | 1 | 30 days | 0.30 | | MPC | 2006 $UN_{151}$ |
| 2006 $UQ_{151}$ | 17.5 | 0.15 | 20061012 | 59.63279 | 31.09057 | 281.20539 | 2.28435 | 0.2524874 | 2.2842862 | 18 | 1 | 34 days | 0.13 | | MPC | 2006 $UQ_{151}$ |
| 2006 $UT_{151}$ | 16.6 | 0.15 | 20061101 | 41.94572 | 303.63060 | 35.51723 | 13.22271 | 0.2688675 | 2.6438195 | 38 | 1 | 40 days | 0.42 | | MPC | 2006 $UT_{151}$ |
| 2006 $UZ_{151}$ | 17.5 | 0.15 | 20061012 | 27.51098 | 209.59492 | 155.15789 | 3.32068 | 0.1480271 | 2.1875795 | 39 | 1 | 52 days | 0.46 | | MPC | 2006 $UZ_{151}$ |
| 2006 $UE_{152}$ | 16.3 | 0.15 | 20061101 | 49.90173 | 111.86126 | 242.06400 | 17.10670 | 0.1223381 | 3.1055225 | 22 | 1 | 33 days | 0.20 | | MPC | 2006 $UE_{152}$ |
| 2006 $UF_{152}$ | 15.2 | 0.15 | 20060922 | 350.89913 | 243.11706 | 166.64404 | 20.15388 | 0.2304452 | 3.3062552 | 38 | 1 | 66 days | 0.50 | M-v 3 | MPC | 2006 $UF_{152}$ |
| 2006 $UL_{152}$ | 16.1 | 0.15 | 20061012 | 89.73136 | 341.78343 | 271.42708 | 8.39450 | 0.1905415 | 2.9919328 | 12 | 1 | 7 days | 0.87 | | MPC | 2006 $UL_{152}$ |
| 2006 $UP_{152}$ | 16.9 | 0.15 | 20061012 | 263.20795 | 151.64228 | 331.22057 | 11.95368 | 0.1874354 | 2.6244410 | 15 | 1 | 6 days | 0.61 | | MPC | 2006 $UP_{152}$ |
| 2006 $UT_{152}$ | 16.5 | 0.15 | 20061012 | 153.59168 | 353.80430 | 214.22691 | 14.70910 | 0.0527552 | 2.6206694 | 12 | 1 | 6 days | 0.20 | | MPC | 2006 $UT_{152}$ |
| 2006 $UF_{153}$ | 18.3 | 0.15 | 20061012 | 2.88288 | 88.64838 | 274.64564 | 4.09199 | 0.2417213 | 2.3760795 | 15 | 1 | 3 days | 0.46 | | MPC | 2006 $UF_{153}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UH_{153}$ | | | 20061012 | 348.45365 | 172.80768 | 197.25260 | 9.72670 | 0.1213419 | 2.9917064 | 12 | 1 | 6 days | 0.29 | | | MPC | 2006 $UH_{153}$ |
| 2006 $UK_{153}$ | 16.8 | 0.15 | 20060922 | 353.26553 | 85.74261 | 280.80013 | 3.48281 | 0.0521531 | 2.7403151 | 22 | 1 | 38 days | 0.27 | | | MPC | 2006 $UK_{153}$ |
| 2006 $UN_{153}$ | 18.7 | 0.15 | 20061012 | 324.60673 | 112.54026 | 317.04058 | 3.41684 | 0.3018976 | 2.5823327 | 16 | 1 | 7 days | 0.32 | | | MPC | 2006 $UN_{153}$ |
| 2006 $US_{154}$ | 16.5 | 0.15 | 20061012 | 344.23613 | 192.10231 | 219.87545 | 27.30554 | 0.1515525 | 3.1734506 | 27 | 1 | 54 days | 0.22 | | | MPC | 2006 $US_{154}$ |
| 2006 $UW_{154}$ | 16.4 | 0.15 | 20060922 | 53.18349 | 307.04045 | 14.16628 | 4.19093 | 0.1192220 | 2.6663150 | 35 | 1 | 125 days | 0.38 | M-v | 4 | MPC | 2006 $UW_{154}$ |
| 2006 $UX_{154}$ | 17.3 | 0.15 | 20061012 | 334.75332 | 61.46148 | 5.05207 | 3.68891 | 0.1622441 | 3.0519576 | 31 | 1 | 57 days | 0.31 | | | MPC | 2006 $UX_{154}$ |
| 2006 $UY_{154}$ | 20.1 | 0.15 | 20061012 | 340.74347 | 191.82445 | 223.40224 | 6.93440 | 0.1701557 | 2.1139155 | 9 | 1 | 7 days | 0.24 | | | MPC | 2006 $UY_{154}$ |
| 2006 $UZ_{154}$ | 19.7 | 0.15 | 20061012 | 13.50272 | 40.83763 | 326.75803 | 1.65230 | 0.2188135 | 2.3885412 | 9 | 1 | 7 days | 0.27 | | | MPC | 2006 $UZ_{154}$ |
| 2006 $UB_{155}$ | 18.7 | 0.15 | 20061012 | 340.20806 | 178.71465 | 240.36611 | 3.75989 | 0.1896892 | 2.4525933 | 22 | 1 | 56 days | 0.31 | | | MPC | 2006 $UB_{155}$ |
| 2006 $UN_{155}$ | 18.1 | 0.15 | 20060922 | 347.20360 | 321.85168 | 70.73803 | 3.37935 | 0.2165950 | 2.3396222 | 29 | 1 | 62 days | 0.41 | M-v | 4 | MPC | 2006 $UN_{155}$ |
| 2006 $UQ_{155}$ | 19.1 | 0.15 | 20061101 | 13.79554 | 309.58894 | 62.44911 | 4.11442 | 0.1679413 | 2.0087599 | 15 | 1 | 29 days | 0.49 | | | MPC | 2006 $UQ_{155}$ |
| 2006 $UE_{156}$ | 19.9 | 0.15 | 20061012 | 8.38644 | 158.19373 | 210.71024 | 5.85431 | 0.2529089 | 2.1423993 | 14 | 1 | 11 days | 0.35 | | | MPC | 2006 $UE_{156}$ |
| 2006 $UF_{156}$ | 18.7 | 0.15 | 20061012 | 306.28671 | 60.29510 | 36.84190 | 3.10600 | 0.1754889 | 2.3506663 | 9 | 1 | 6 days | 0.47 | | | MPC | 2006 $UF_{156}$ |
| 2006 $UL_{156}$ | 17.5 | 0.15 | 20060922 | 63.59565 | 121.72460 | 174.23482 | 2.89710 | 0.1696437 | 2.2996662 | 27 | 1 | 60 days | 0.34 | M-v | 4 | MPC | 2006 $UL_{156}$ |
| 2006 $UQ_{156}$ | 15.6 | 0.15 | 20061012 | 9.86327 | 322.96278 | 48.07843 | 11.40334 | 0.1111420 | 3.0166809 | 14 | 1 | 2 days | 0.45 | | | MPC | 2006 $UQ_{156}$ |
| 2006 $UV_{156}$ | 17.5 | 0.15 | 20061012 | 342.06915 | 234.82865 | 169.73234 | 4.09629 | 0.0386548 | 2.1742112 | 14 | 1 | 2 days | 0.74 | | | MPC | 2006 $UV_{156}$ |
| 2006 $UW_{156}$ | 16.4 | 0.15 | 20061012 | 27.95649 | 308.36583 | 42.86663 | 12.48353 | 0.1106196 | 2.7601447 | 29 | 1 | 48 days | 0.34 | | | MPC | 2006 $UW_{156}$ |
| 2006 $UY_{156}$ | 16.5 | 0.15 | 20060922 | 56.96799 | 261.82319 | 53.35766 | 3.57350 | 0.0393481 | 2.6945924 | 32 | 1 | 60 days | 0.40 | M-v | 4 | MPC | 2006 $UY_{156}$ |
| 2006 $UC_{157}$ | 17.2 | 0.15 | 20061012 | 341.68106 | 3.72743 | 51.16809 | 5.32694 | 0.2522125 | 3.0711018 | 21 | 1 | 50 days | 0.18 | | | MPC | 2006 $UC_{157}$ |
| 2006 $UH_{157}$ | 18.3 | 0.15 | 20061012 | 28.38060 | 317.45736 | 35.27118 | 9.49706 | 0.0613244 | 2.4107210 | 10 | 1 | 6 days | 0.77 | | | MPC | 2006 $UH_{157}$ |
| 2006 $UJ_{157}$ | 16.6 | 0.15 | 20061012 | 150.72338 | 38.14619 | 191.90997 | 7.76875 | 0.1018810 | 2.7406490 | 11 | 1 | 10 days | 0.21 | | | MPC | 2006 $UJ_{157}$ |
| 2006 $UO_{157}$ | 16.5 | 0.15 | 20060922 | 28.97463 | 309.84921 | 37.21444 | 10.29489 | 0.0887533 | 3.0119129 | 23 | 1 | 61 days | 0.19 | M-v | 3 | MPC | 2006 $UO_{157}$ |
| 2006 $UR_{157}$ | 17.4 | 0.15 | 20061012 | 354.64752 | 351.58111 | 39.18679 | 6.90146 | 0.0515285 | 2.2084762 | 13 | 1 | 2 days | 0.55 | | | MPC | 2006 $UR_{157}$ |
| 2006 $UT_{157}$ | 17.0 | 0.15 | 20061012 | 355.29348 | 342.13461 | 48.25971 | 5.58924 | 0.0480021 | 2.4099305 | 17 | 1 | 2 days | 0.67 | | | MPC | 2006 $UT_{157}$ |
| 2006 $UU_{157}$ | 18.9 | 0.15 | 20061012 | 6.88218 | 327.20097 | 44.75566 | 5.03431 | 0.2576616 | 2.5189595 | 21 | 1 | 53 days | 0.27 | | | MPC | 2006 $UU_{157}$ |
| 2006 $UV_{157}$ | 18.0 | 0.15 | 20060922 | 355.28040 | 196.74920 | 190.29001 | 5.16662 | 0.1494216 | 2.9689310 | 21 | 1 | 61 days | 0.27 | M-v | 4 D | MPC | 2006 $UV_{157}$ |
| 2006 $UW_{157}$ | 18.0 | 0.15 | 20061101 | 39.21550 | 267.19082 | 39.55562 | 7.56765 | 0.4248218 | 2.6444126 | 23 | 1 | 30 days | 0.44 | | | MPC | 2006 $UW_{157}$ |
| 2006 $UX_{157}$ | 16.6 | 0.15 | 20060922 | 304.55116 | 45.73836 | 37.70499 | 12.30366 | 0.0533087 | 3.2122852 | 20 | 1 | 61 days | 0.28 | M-v | 4 | MPC | 2006 $UX_{157}$ |
| 2006 $UZ_{157}$ | 17.3 | 0.15 | 20061012 | 352.44643 | 359.55412 | 38.22386 | 11.02716 | 0.2353430 | 3.1112876 | 21 | 1 | 48 days | 0.29 | | | MPC | 2006 $UZ_{157}$ |
| 2006 $UG_{158}$ | 17.3 | 0.15 | 20061012 | 179.70042 | 159.38357 | 47.39786 | 6.73407 | 0.2236307 | 2.3844613 | 11 | 1 | 10 days | 0.30 | | | MPC | 2006 $UG_{158}$ |
| 2006 $UH_{158}$ | 19.0 | 0.15 | 20060922 | 358.89022 | 320.09550 | 57.92239 | 3.55116 | 0.1816740 | 2.3368654 | 21 | 1 | 62 days | 0.31 | M-v | 4 | MPC | 2006 $UH_{158}$ |
| 2006 $UJ_{158}$ | 18.9 | 0.15 | 20061012 | 347.81776 | 8.82452 | 37.33350 | 10.09701 | 0.2638293 | 2.6973497 | 27 | 1 | 49 days | 0.28 | | | MPC | 2006 $UJ_{158}$ |
| 2006 $UL_{158}$ | 17.5 | 0.15 | 20061101 | 334.75756 | 37.99961 | 35.16415 | 13.18529 | 0.2401510 | 2.6769457 | 33 | 1 | 31 days | 0.26 | | | MPC | 2006 $UL_{158}$ |
| 2006 $UM_{158}$ | 17.1 | 0.15 | 20061012 | 16.29844 | 326.52662 | 35.60113 | 13.85415 | 0.1743329 | 2.6479294 | 44 | 1 | 49 days | 0.28 | | | MPC | 2006 $UM_{158}$ |
| 2006 $UP_{158}$ | 17.6 | 0.15 | 20061012 | 4.73472 | 343.14658 | 35.63211 | 13.67309 | 0.1660553 | 2.6076049 | 28 | 1 | 49 days | 0.25 | | | MPC | 2006 $UP_{158}$ |
| 2006 $US_{158}$ | 17.3 | 0.15 | 20061012 | 321.71424 | 336.00078 | 94.96053 | 2.55745 | 0.0710876 | 2.9718750 | 11 | 1 | 10 days | 0.26 | | | MPC | 2006 $US_{158}$ |
| 2006 $UV_{158}$ | 17.6 | 0.15 | 20061012 | 23.48640 | 297.59341 | 62.65361 | 4.46520 | 0.0589713 | 2.6188408 | 11 | 1 | 10 days | 0.72 | | | MPC | 2006 $UV_{158}$ |
| 2006 $UW_{158}$ | 16.5 | 0.15 | 20061012 | 266.60012 | 293.25917 | 189.34515 | 9.78480 | 0.0192276 | 3.1202463 | 11 | 1 | 10 days | 0.20 | | | MPC | 2006 $UW_{158}$ |
| 2006 $UZ_{158}$ | 17.2 | 0.15 | 20061012 | 320.46006 | 11.52556 | 58.81498 | 6.06692 | 0.0582730 | 2.9584065 | 15 | 1 | 29 days | 0.29 | | | MPC | 2006 $UZ_{158}$ |
| 2006 $UB_{159}$ | 19.0 | 0.15 | 20061012 | 353.87935 | 345.19858 | 47.81695 | 6.06436 | 0.1680308 | 2.2456230 | 19 | 1 | 45 days | 0.24 | | | MPC | 2006 $UB_{159}$ |
| 2006 $UC_{159}$ | 18.0 | 0.15 | 20061012 | 33.22807 | 282.12962 | 48.53012 | 5.66719 | 0.2513082 | 2.3738491 | 28 | 1 | 40 days | 0.46 | | | MPC | 2006 $UC_{159}$ |
| 2006 $UD_{159}$ | 18.0 | 0.15 | 20060922 | 336.98346 | 232.18261 | 185.35359 | 5.27580 | 0.2758047 | 2.6123664 | 24 | 1 | 42 days | 0.39 | | | MPC | 2006 $UD_{159}$ |
| 2006 $UE_{159}$ | 18.8 | 0.15 | 20061012 | 315.87027 | 21.66459 | 64.31069 | 3.70956 | 0.1796111 | 2.3013748 | 11 | 1 | 10 days | 0.21 | | | MPC | 2006 $UE_{159}$ |
| 2006 $UF_{159}$ | 17.0 | 0.15 | 20061012 | 16.29658 | 280.38822 | 86.14154 | 2.92916 | 0.0968787 | 2.9028360 | 11 | 1 | 10 days | 0.39 | | | MPC | 2006 $UF_{159}$ |
| 2006 $UJ_{159}$ | 18.0 | 0.15 | 20061101 | 39.99159 | 251.48311 | 88.04521 | 2.94612 | 0.1455649 | 2.4230001 | 15 | 1 | 28 days | 0.19 | | | MPC | 2006 $UJ_{159}$ |
| 2006 $UM_{159}$ | 18.6 | 0.15 | 20061012 | 0.54849 | 327.43707 | 55.55922 | 4.30829 | 0.2447796 | 2.3300728 | 26 | 1 | 45 days | 0.31 | | | MPC | 2006 $UM_{159}$ |
| 2006 $UN_{159}$ | 17.5 | 0.15 | 20061012 | 353.00386 | 201.67329 | 193.91323 | 10.12481 | 0.1782793 | 2.5443207 | 13 | 1 | 2 days | 0.23 | | | MPC | 2006 $UN_{159}$ |
| 2006 $UO_{159}$ | 16.6 | 0.15 | 20061012 | 32.33835 | 158.92454 | 194.71221 | 12.18902 | 0.0231204 | 3.1507965 | 11 | 1 | 10 days | 0.36 | | | MPC | 2006 $UO_{159}$ |
| 2006 $UQ_{159}$ | 17.2 | 0.15 | 20061012 | 334.08092 | 267.47038 | 149.41080 | 3.52176 | 0.0728874 | 3.1552287 | 11 | 1 | 10 days | 0.24 | | | MPC | 2006 $UQ_{159}$ |
| 2006 $UR_{159}$ | 18.0 | 0.15 | 20061012 | 7.73725 | 292.28701 | 84.09256 | 2.97601 | 0.1256877 | 2.8878696 | 11 | 1 | 10 days | 0.40 | | | MPC | 2006 $UR_{159}$ |
| 2006 $UH_{160}$ | 15.9 | 0.15 | 20061012 | 295.82780 | 8.09070 | 82.30138 | 3.41467 | 0.0010220 | 2.8273444 | 18 | 1 | 10 days | 0.29 | | | MPC | 2006 $UH_{160}$ |
| 2006 $UL_{160}$ | 18.1 | 0.15 | 20061101 | 40.76543 | 267.77406 | 65.21615 | 3.64715 | 0.1945857 | 2.7380877 | 15 | 1 | 26 days | 0.32 | | | MPC | 2006 $UL_{160}$ |
| 2006 $UM_{160}$ | 17.7 | 0.15 | 20061101 | 113.56264 | 198.22905 | 61.09962 | 4.33141 | 0.1876324 | 2.3837571 | 14 | 1 | 30 days | 0.24 | | | MPC | 2006 $UM_{160}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UN_{160}$ | 16.7 | 0.15 | 20061101 | 100.62011 | 184.45234 | 102.01967 | 3.19815 | 0.0289684 | 2.8659801 | 15 | 1 | 28 days | 0.36 | | | MPC | 2006 $UN_{160}$ |
| 2006 $UO_{160}$ | 19.1 | 0.15 | 20060922 | 342.51101 | 328.25180 | 74.46828 | 2.84830 | 0.1932807 | 2.3952680 | 18 | 1 | 60 days | 0.31 | M-v | 4 | MPC | 2006 $UO_{160}$ |
| 2006 $UT_{160}$ | 18.0 | 0.15 | 20061012 | 318.08029 | 35.56650 | 40.13688 | 10.49823 | 0.1080310 | 2.7414285 | 11 | 1 | 10 days | 0.20 | | | MPC | 2006 $UT_{160}$ |
| 2006 $UX_{160}$ | 16.7 | 0.15 | 20061012 | 247.47716 | 101.91246 | 41.40448 | 10.07416 | 0.0500112 | 3.0141343 | 11 | 1 | 10 days | 0.23 | | | MPC | 2006 $UX_{160}$ |
| 2006 $UY_{160}$ | 15.8 | 0.15 | 20061012 | 151.73301 | 141.86484 | 88.45631 | 3.17993 | 0.0766060 | 3.0595586 | 11 | 1 | 10 days | 0.70 | | | MPC | 2006 $UY_{160}$ |
| 2006 $UZ_{160}$ | 17.4 | 0.15 | 20061012 | 34.81412 | 200.28550 | 145.75314 | 2.56414 | 0.0622625 | 2.6106079 | 11 | 1 | 10 days | 0.43 | | | MPC | 2006 $UZ_{160}$ |
| 2006 $UW_{161}$ | 16.8 | 0.15 | 20061012 | 11.19916 | 329.83830 | 36.22757 | 19.41863 | 0.2452618 | 3.1098706 | 29 | 1 | 47 days | 0.54 | | | MPC | 2006 $UW_{161}$ |
| 2006 $UX_{161}$ | 17.3 | 0.15 | 20061012 | 40.18144 | 260.35317 | 64.15259 | 4.62377 | 0.2217515 | 2.4859402 | 15 | 1 | 10 days | 0.59 | | | MPC | 2006 $UX_{161}$ |
| 2006 $UY_{161}$ | 19.2 | 0.15 | 20061012 | 5.47883 | 298.32929 | 77.87828 | 3.35291 | 0.1913746 | 2.3883190 | 11 | 1 | 10 days | 0.19 | | | MPC | 2006 $UY_{161}$ |
| 2006 $UA_{162}$ | 16.7 | 0.15 | 20061012 | 15.27157 | 323.36777 | 44.50739 | 12.10923 | 0.0937728 | 3.1643505 | 10 | 1 | 10 days | 0.22 | | | MPC | 2006 $UA_{162}$ |
| 2006 $UC_{162}$ | 18.6 | 0.15 | 20060922 | 18.02423 | 254.02189 | 96.07775 | 2.53299 | 0.1918784 | 2.4325343 | 21 | 1 | 60 days | 0.25 | M-v | 4 D | MPC | 2006 $UC_{162}$ |
| 2006 $UJ_{162}$ | 17.0 | 0.15 | 20061012 | 339.52968 | 294.97032 | 116.12465 | 2.97383 | 0.1096510 | 2.8035387 | 17 | 1 | 60 days | 0.31 | | D | MPC | 2006 $UJ_{162}$ |
| 2006 $UM_{162}$ | 16.0 | 0.15 | 20061012 | 31.40694 | 294.25019 | 57.91591 | 6.38126 | 0.0380622 | 2.8184084 | 15 | 1 | 10 days | 0.39 | | | MPC | 2006 $UM_{162}$ |
| 2006 $UX_{162}$ | 17.7 | 0.15 | 20061012 | 11.97524 | 284.50360 | 76.51579 | 2.64929 | 0.3157925 | 2.7015330 | 32 | 1 | 35 days | 0.30 | | D | MPC | 2006 $UX_{162}$ |
| 2006 $UZ_{162}$ | 16.9 | 0.15 | 20061012 | 12.01882 | 184.39409 | 191.00695 | 8.42909 | 0.0216922 | 3.0317633 | 11 | 1 | 10 days | 0.52 | | | MPC | 2006 $UZ_{162}$ |
| 2006 $UA_{163}$ | 19.6 | 0.15 | 20061012 | 30.17396 | 295.86111 | 44.71347 | 6.83252 | 0.2023389 | 2.2845255 | 10 | 1 | 7 days | 0.21 | | | MPC | 2006 $UA_{163}$ |
| 2006 $UC_{163}$ | 17.3 | 0.15 | 20061012 | 13.30294 | 296.88673 | 71.85635 | 3.79577 | 0.1580669 | 3.0702583 | 18 | 1 | 46 days | 0.20 | | | MPC | 2006 $UC_{163}$ |
| 2006 $UG_{163}$ | 16.4 | 0.15 | 20061012 | 174.37331 | 173.08356 | 39.07217 | 15.33687 | 0.1978107 | 2.5802924 | 10 | 1 | 7 days | 0.40 | | | MPC | 2006 $UG_{163}$ |
| 2006 $UJ_{163}$ | 18.4 | 0.15 | 20061012 | 30.15971 | 295.90460 | 55.24647 | 5.79163 | 0.0845324 | 2.4260151 | 19 | 1 | 45 days | 0.36 | | | MPC | 2006 $UJ_{163}$ |
| 2006 $UK_{163}$ | 17.6 | 0.15 | 20061012 | 135.49341 | 61.10301 | 189.34049 | 6.87909 | 0.0138806 | 2.2247244 | 11 | 1 | 10 days | 0.16 | | | MPC | 2006 $UK_{163}$ |
| 2006 $UY_{163}$ | 17.4 | 0.15 | 20061012 | 322.68260 | 18.09638 | 58.71776 | 5.76206 | 0.1491066 | 2.6488310 | 19 | 1 | 45 days | 0.21 | | | MPC | 2006 $UY_{163}$ |
| 2006 $UZ_{163}$ | 16.2 | 0.15 | 20061012 | 168.04038 | 119.41478 | 100.52828 | 3.49742 | 0.0444972 | 2.9507544 | 11 | 1 | 10 days | 0.32 | | | MPC | 2006 $UZ_{163}$ |
| 2006 $UG_{164}$ | 18.7 | 0.15 | 20061012 | 345.38917 | 329.05962 | 80.44254 | 3.25465 | 0.2147625 | 2.5496205 | 19 | 1 | 45 days | 0.22 | | | MPC | 2006 $UG_{164}$ |
| 2006 $UK_{164}$ | 16.9 | 0.15 | 20061012 | 286.73209 | 299.17689 | 167.75647 | 4.65594 | 0.0444901 | 2.6677552 | 19 | 1 | 51 days | 0.19 | | | MPC | 2006 $UK_{164}$ |
| 2006 $UL_{164}$ | 16.8 | 0.15 | 20061012 | 35.97520 | 215.55063 | 136.63856 | 3.27515 | 0.0089254 | 2.7043676 | 11 | 1 | 10 days | 0.87 | | | MPC | 2006 $UL_{164}$ |
| 2006 $UM_{164}$ | 16.1 | 0.15 | 20061012 | 343.76916 | 6.59190 | 43.35990 | 12.45036 | 0.1305240 | 3.1949441 | 25 | 1 | 43 days | 0.51 | | | MPC | 2006 $UM_{164}$ |
| 2006 $UR_{164}$ | 17.4 | 0.15 | 20061101 | 316.37062 | 46.31741 | 41.21094 | 15.60034 | 0.1192262 | 2.8575606 | 17 | 1 | 24 days | 0.28 | | | MPC | 2006 $UR_{164}$ |
| 2006 $UW_{164}$ | 17.0 | 0.15 | 20061012 | 347.60728 | 353.20588 | 51.90662 | 7.04262 | 0.1602802 | 2.6361612 | 35 | 1 | 56 days | 0.39 | | | MPC | 2006 $UW_{164}$ |
| 2006 $UZ_{164}$ | 16.5 | 0.15 | 20061012 | 15.21453 | 322.25724 | 48.05625 | 10.93614 | 0.1076108 | 3.1734274 | 11 | 1 | 11 days | 0.35 | | | MPC | 2006 $UZ_{164}$ |
| 2006 $UC_{165}$ | 16.8 | 0.15 | 20061012 | 49.34319 | 156.15278 | 169.98364 | 4.51553 | 0.1386907 | 2.7018255 | 14 | 1 | 6 days | 0.45 | | | MPC | 2006 $UC_{165}$ |
| 2006 $UK_{165}$ | 17.8 | 0.15 | 20061012 | 172.16228 | 138.40430 | 77.71646 | 3.79293 | 0.0469817 | 2.3040905 | 11 | 1 | 11 days | 0.78 | | | MPC | 2006 $UK_{165}$ |
| 2006 $UU_{165}$ | 17.6 | 0.15 | 20061101 | 70.02371 | 257.40480 | 55.29045 | 7.72139 | 0.0974518 | 2.4466788 | 15 | 1 | 26 days | 0.22 | | | MPC | 2006 $UU_{165}$ |
| 2006 $UK_{166}$ | 14.9 | 0.15 | 20061012 | 186.33506 | 94.26133 | 112.58998 | 4.11308 | 0.2728283 | 2.5894750 | 13 | 1 | 6 days | 0.85 | | | MPC | 2006 $UK_{166}$ |
| 2006 $UM_{166}$ | 17.4 | 0.15 | 20061101 | 28.95694 | 272.14330 | 79.43780 | 4.22314 | 0.1980531 | 2.7373660 | 17 | 1 | 31 days | 0.42 | | | MPC | 2006 $UM_{166}$ |
| 2006 $UO_{166}$ | 18.0 | 0.15 | 20061012 | 6.00565 | 335.83405 | 44.35279 | 13.17352 | 0.1139122 | 3.0186802 | 11 | 1 | 10 days | 0.55 | | | MPC | 2006 $UO_{166}$ |
| 2006 $UQ_{166}$ | 17.9 | 0.15 | 20061012 | 290.85817 | 320.21398 | 149.56028 | 3.56716 | 0.1186808 | 2.3222848 | 20 | 1 | 49 days | 0.26 | | | MPC | 2006 $UQ_{166}$ |
| 2006 $US_{166}$ | 17.5 | 0.15 | 20061012 | 30.96871 | 193.60068 | 155.69470 | 3.64267 | 0.1141193 | 2.7035083 | 11 | 1 | 10 days | 0.18 | | | MPC | 2006 $US_{166}$ |
| 2006 $UU_{166}$ | 18.7 | 0.15 | 20061012 | 344.30267 | 353.64026 | 55.64784 | 7.02598 | 0.1776260 | 2.5466189 | 19 | 1 | 44 days | 0.31 | | | MPC | 2006 $UU_{166}$ |
| 2006 $UV_{166}$ | 16.8 | 0.15 | 20061012 | 3.29695 | 340.87262 | 43.57238 | 15.91521 | 0.0666830 | 3.0951317 | 19 | 1 | 44 days | 0.22 | | | MPC | 2006 $UV_{166}$ |
| 2006 $UW_{166}$ | 17.7 | 0.15 | 20061012 | 16.69557 | 309.54600 | 60.77287 | 7.22044 | 0.0346025 | 2.7869331 | 11 | 1 | 10 days | 0.41 | | | MPC | 2006 $UW_{166}$ |
| 2006 $UX_{166}$ | 15.7 | 0.15 | 20061012 | 105.01670 | 81.01349 | 192.41145 | 11.08203 | 0.1055688 | 3.0331913 | 19 | 1 | 52 days | 0.19 | | | MPC | 2006 $UX_{166}$ |
| 2006 $UY_{166}$ | 16.5 | 0.15 | 20061101 | 220.01792 | 129.00368 | 46.78172 | 13.39424 | 0.0488917 | 3.0495647 | 15 | 1 | 26 days | 0.38 | | | MPC | 2006 $UY_{166}$ |
| 2006 $UC_{167}$ | 17.4 | 0.15 | 20061012 | 32.32094 | 184.50704 | 161.40034 | 4.31148 | 0.1327381 | 2.5340136 | 23 | 1 | 51 days | 0.29 | | D | MPC | 2006 $UC_{167}$ |
| 2006 $UD_{167}$ | 16.5 | 0.15 | 20061012 | 305.26371 | 35.08778 | 51.47992 | 10.50150 | 0.0307524 | 3.0602151 | 19 | 1 | 45 days | 0.39 | | | MPC | 2006 $UD_{167}$ |
| 2006 $UE_{167}$ | 17.2 | 0.15 | 20061012 | 208.82052 | 84.91388 | 102.98344 | 4.25640 | 0.1652387 | 2.5099738 | 11 | 1 | 10 days | 0.32 | | | MPC | 2006 $UE_{167}$ |
| 2006 $UJ_{167}$ | 18.3 | 0.15 | 20061012 | 5.81157 | 326.99737 | 52.74974 | 7.79502 | 0.1054414 | 2.3289301 | 11 | 1 | 10 days | 0.77 | | | MPC | 2006 $UJ_{167}$ |
| 2006 $UN_{167}$ | 18.5 | 0.15 | 20061012 | 333.79654 | 356.05534 | 62.84453 | 4.36865 | 0.1161471 | 2.2437107 | 19 | 1 | 45 days | 0.22 | | | MPC | 2006 $UN_{167}$ |
| 2006 $US_{167}$ | 17.8 | 0.15 | 20061012 | 3.65161 | 315.12047 | 64.73316 | 4.87893 | 0.2427934 | 2.7317880 | 23 | 1 | 45 days | 0.47 | | | MPC | 2006 $US_{167}$ |
| 2006 $UT_{167}$ | 17.1 | 0.15 | 20061012 | 10.57276 | 271.40827 | 104.94444 | 3.37928 | 0.0358234 | 2.6656132 | 11 | 1 | 10 days | 0.29 | | | MPC | 2006 $UT_{167}$ |
| 2006 $UV_{167}$ | 16.4 | 0.15 | 20061012 | 163.35335 | 65.67973 | 157.62345 | 4.52877 | 0.0620571 | 2.7630570 | 11 | 1 | 10 days | 0.19 | | | MPC | 2006 $UV_{167}$ |
| 2006 $UW_{167}$ | 18.7 | 0.15 | 20061012 | 24.19172 | 188.36612 | 159.87459 | 3.27516 | 0.2110108 | 2.1817487 | 11 | 1 | 10 days | 0.12 | | | MPC | 2006 $UW_{167}$ |
| 2006 $UY_{167}$ | 16.9 | 0.15 | 20061012 | 16.93879 | 269.46809 | 96.43133 | 3.19888 | 0.1004603 | 2.8666635 | 11 | 1 | 10 days | 0.28 | | | MPC | 2006 $UY_{167}$ |
| 2006 $UD_{168}$ | 18.2 | 0.15 | 20061012 | 315.70141 | 5.24599 | 79.31578 | 3.26376 | 0.1548329 | 2.4613652 | 11 | 1 | 10 days | 0.19 | | | MPC | 2006 $UD_{168}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UJ_{168}$ | 17.8 | 0.15 | 20061012 | 215.19412 | 349.29176 | 187.57431 | 7.75848 | 0.0793423 | 2.3481326 | 11 | 1 | 10 days | 0.32 | MPC | 2006 $UJ_{168}$ |
| 2006 $UK_{168}$ | 19.0 | 0.15 | 20060922 | 358.56258 | 210.90778 | 168.48059 | 3.58223 | 0.2370960 | 2.5209738 | 17 | 1 | 42 days | 0.31 | MPC | 2006 $UK_{168}$ |
| 2006 $UL_{168}$ | 16.8 | 0.15 | 20061012 | 299.84771 | 16.44944 | 83.25867 | 3.63918 | 0.1191497 | 2.6480452 | 11 | 1 | 10 days | 0.23 | MPC | 2006 $UL_{168}$ |
| 2006 $UM_{168}$ | 16.9 | 0.15 | 20061012 | 49.85448 | 272.82893 | 56.25131 | 6.07204 | 0.0869694 | 2.7675119 | 18 | 1 | 45 days | 0.32 | MPC | 2006 $UM_{168}$ |
| 2006 $UQ_{168}$ | 16.6 | 0.15 | 20061012 | 5.51527 | 192.78947 | 188.59914 | 9.23700 | 0.0778299 | 3.1582362 | 11 | 1 | 10 days | 0.34 | MPC | 2006 $UQ_{168}$ |
| 2006 $UR_{168}$ | 16.7 | 0.15 | 20061012 | 230.34176 | 76.74675 | 82.97626 | 3.60070 | 0.0284015 | 2.7468245 | 11 | 1 | 10 days | 0.12 | MPC | 2006 $UR_{168}$ |
| 2006 $US_{168}$ | 17.6 | 0.15 | 20061012 | 351.93146 | 359.31635 | 38.95739 | 18.24693 | 0.1760698 | 3.1860916 | 11 | 1 | 10 days | 0.27 | MPC | 2006 $US_{168}$ |
| 2006 $UT_{168}$ | 17.0 | 0.15 | 20061012 | 9.74228 | 262.31697 | 113.95203 | 3.23475 | 0.0678759 | 2.9159048 | 11 | 1 | 10 days | 0.18 | MPC | 2006 $UT_{168}$ |
| 2006 $UW_{168}$ | 16.4 | 0.15 | 20061012 | 74.28537 | 254.08383 | 55.50500 | 7.35604 | 0.0303957 | 2.6942136 | 10 | 1 | 10 days | 0.13 | MPC | 2006 $UW_{168}$ |
| 2006 $UA_{169}$ | 18.2 | 0.15 | 20061012 | 49.12303 | 271.88238 | 58.55293 | 6.07942 | 0.0942287 | 2.3287293 | 19 | 1 | 42 days | 0.39 | MPC | 2006 $UA_{169}$ |
| 2006 $UF_{169}$ | 18.7 | 0.15 | 20061012 | 40.62381 | 222.01737 | 100.66336 | 2.78396 | 0.2593469 | 2.4267388 | 11 | 1 | 11 days | 0.28 | MPC | 2006 $UF_{169}$ |
| 2006 $UJ_{169}$ | 19.6 | 0.15 | 20061012 | 358.21943 | 298.71116 | 90.17458 | 2.49080 | 0.2419450 | 2.2245541 | 11 | 1 | 11 days | 0.78 | MPC | 2006 $UJ_{169}$ |
| 2006 $UK_{169}$ | 16.0 | 0.15 | 20061101 | 315.01134 | 45.89835 | 42.82028 | 18.05374 | 0.1080141 | 3.2050970 | 26 | 1 | 37 days | 0.25 | MPC | 2006 $UK_{169}$ |
| 2006 $UM_{169}$ | 17.1 | 0.15 | 20061012 | 21.75640 | 233.70076 | 129.69036 | 2.97012 | 0.0954357 | 2.7294479 | 19 | 1 | 29 days | 0.37 | MPC | 2006 $UM_{169}$ |
| 2006 $UR_{169}$ | 16.4 | 0.15 | 20061012 | 22.55820 | 319.84538 | 39.47673 | 25.91791 | 0.1344056 | 2.8074728 | 32 | 1 | 48 days | 0.60 | MPC | 2006 $UR_{169}$ |
| 2006 $US_{169}$ | 18.1 | 0.15 | 20061012 | 12.79730 | 308.13300 | 61.86879 | 5.02083 | 0.1478511 | 2.1826039 | 32 | 1 | 58 days | 0.56 | MPC | 2006 $US_{169}$ |
| 2006 $UG_{170}$ | 17.8 | 0.15 | 20061012 | 330.84893 | 322.24073 | 100.18733 | 3.39803 | 0.0518579 | 2.5371356 | 11 | 1 | 11 days | 0.45 | MPC | 2006 $UG_{170}$ |
| 2006 $UJ_{170}$ | 18.1 | 0.15 | 20061012 | 342.99671 | 31.80139 | 34.86604 | 37.48691 | 0.3802114 | 2.9151258 | 28 | 1 | 10 days | 0.45 | MPC | 2006 $UJ_{170}$ |
| 2006 $UL_{170}$ | 17.2 | 0.15 | 20061012 | 260.60001 | 36.52577 | 98.54827 | 3.28341 | 0.0335408 | 2.8392730 | 11 | 1 | 11 days | 0.17 | MPC | 2006 $UL_{170}$ |
| 2006 $UP_{170}$ | 19.4 | 0.15 | 20061012 | 345.12218 | 263.10684 | 147.72183 | 2.35982 | 0.1993733 | 2.2898182 | 15 | 1 | 11 days | 0.30 | MPC | 2006 $UP_{170}$ |
| 2006 $UR_{170}$ | 16.9 | 0.15 | 20061012 | 18.50903 | 254.77886 | 115.12073 | 3.13719 | 0.0809300 | 2.8872792 | 15 | 1 | 29 days | 0.21 | MPC | 2006 $UR_{170}$ |
| 2006 $UT_{170}$ | 18.0 | 0.15 | 20061012 | 332.74860 | 349.77345 | 72.58894 | 4.42152 | 0.0722218 | 2.5898303 | 11 | 1 | 11 days | 0.49 | MPC | 2006 $UT_{170}$ |
| 2006 $UU_{170}$ | 16.9 | 0.15 | 20061012 | 114.22835 | 66.31313 | 193.70252 | 9.12962 | 0.2023891 | 2.7295345 | 11 | 1 | 11 days | 0.32 | MPC | 2006 $UU_{170}$ |
| 2006 $UW_{170}$ | 17.6 | 0.15 | 20061012 | 20.31174 | 286.31949 | 81.51590 | 4.04758 | 0.0756054 | 2.7145863 | 11 | 1 | 11 days | 0.46 | MPC | 2006 $UW_{170}$ |
| 2006 $UX_{170}$ | 17.8 | 0.15 | 20061101 | 26.39447 | 312.60991 | 43.23009 | 14.35215 | 0.2154779 | 2.5804467 | 29 | 1 | 32 days | 0.23 | MPC | 2006 $UX_{170}$ |
| 2006 $UZ_{170}$ | 16.6 | 0.15 | 20061012 | 339.61003 | 358.93055 | 56.39137 | 8.03509 | 0.0737598 | 2.6794673 | 11 | 1 | 11 days | 0.48 | MPC | 2006 $UZ_{170}$ |
| 2006 $UA_{171}$ | 17.7 | 0.15 | 20061012 | 346.46866 | 211.66027 | 199.88578 | 11.87578 | 0.1743526 | 2.9386028 | 11 | 1 | 11 days | 0.82 | MPC | 2006 $UA_{171}$ |
| 2006 $UB_{171}$ | 17.6 | 0.15 | 20061012 | 330.55334 | 330.16420 | 95.70136 | 3.59431 | 0.0680960 | 2.6510764 | 11 | 1 | 11 days | 0.59 | MPC | 2006 $UB_{171}$ |
| 2006 $UE_{171}$ | 17.0 | 0.15 | 20061101 | 33.48994 | 297.24515 | 53.04705 | 12.68602 | 0.1901929 | 3.0974117 | 15 | 1 | 26 days | 0.26 | MPC | 2006 $UE_{171}$ |
| 2006 $UH_{171}$ | 16.2 | 0.15 | 20061101 | 264.96201 | 61.78489 | 82.40437 | 5.56536 | 0.0889414 | 2.7841066 | 11 | 1 | 32 days | 0.56 | MPC | 2006 $UH_{171}$ |
| 2006 $US_{171}$ | 17.4 | 0.15 | 20061101 | 26.89401 | 267.10464 | 100.32176 | 3.87071 | 0.1686878 | 2.6487817 | 14 | 1 | 27 days | 0.24 | MPC | 2006 $US_{171}$ |
| 2006 $UT_{171}$ | 17.4 | 0.15 | 20061101 | 21.65291 | 304.51253 | 60.93797 | 7.88513 | 0.2780399 | 2.5382162 | 33 | 1 | 36 days | 0.56 | MPC | 2006 $UT_{171}$ |
| 2006 $UU_{171}$ | 17.0 | 0.15 | 20061101 | 28.65875 | 269.78655 | 99.87737 | 4.10481 | 0.1125036 | 2.6468232 | 15 | 1 | 27 days | 0.19 | MPC | 2006 $UU_{171}$ |
| 2006 $UW_{171}$ | 16.3 | 0.15 | 20061101 | 24.40353 | 311.62432 | 54.59866 | 17.50917 | 0.2327474 | 3.1247116 | 25 | 1 | 37 days | 0.57 | MPC | 2006 $UW_{171}$ |
| 2006 $UC_{172}$ | 15.1 | 0.15 | 20061012 | 328.15730 | 223.32689 | 231.98321 | 18.78478 | 0.1099736 | 2.9862366 | 30 | 1 | 54 days | 0.38 | MPC | 2006 $UC_{172}$ |
| 2006 $UF_{172}$ | 18.0 | 0.15 | 20061101 | 349.18643 | 61.00050 | 4.24900 | 2.56519 | 0.1441813 | 2.7131946 | 12 | 1 | 28 days | 0.21 | MPC | 2006 $UF_{172}$ |
| 2006 $UO_{172}$ | 18.0 | 0.15 | 20061012 | 29.29741 | 275.48677 | 74.95625 | 1.45447 | 0.0869206 | 2.8113099 | 12 | 1 | 16 days | 0.65 | MPC | 2006 $UO_{172}$ |
| 2006 $UP_{172}$ | 16.9 | 0.15 | 20061012 | 25.52081 | 327.35195 | 30.05042 | 19.04002 | 0.0517052 | 3.2348403 | 10 | 1 | 5 days | 0.53 | MPC | 2006 $UP_{172}$ |
| 2006 $UQ_{172}$ | 18.2 | 0.15 | 20061012 | 263.61855 | 100.01740 | 34.49578 | 7.63041 | 0.1187796 | 2.2413327 | 10 | 1 | 5 days | 0.26 | MPC | 2006 $UQ_{172}$ |
| 2006 $UV_{172}$ | 17.2 | 0.15 | 20061012 | 267.32012 | 70.36607 | 64.55587 | 2.11388 | 0.1435053 | 2.6299910 | 16 | 1 | 45 days | 0.25 | MPC | 2006 $UV_{172}$ |
| 2006 $UY_{172}$ | 17.2 | 0.15 | 20061012 | 172.78136 | 167.10434 | 45.45163 | 6.51209 | 0.2261871 | 2.3569094 | 9 | 1 | 6 days | 0.80 | MPC | 2006 $UY_{172}$ |
| 2006 $UA_{173}$ | 18.2 | 0.15 | 20061012 | 0.85556 | 184.40435 | 201.48380 | 11.81941 | 0.1774709 | 2.6028249 | 10 | 1 | 9 days | 0.71 | MPC | 2006 $UA_{173}$ |
| 2006 $UB_{173}$ | 18.0 | 0.15 | 20061012 | 307.54283 | 54.03459 | 46.87854 | 8.17507 | 0.1965308 | 2.7386847 | 17 | 1 | 43 days | 0.21 | MPC | 2006 $UB_{173}$ |
| 2006 $UC_{173}$ | 16.8 | 0.15 | 20061012 | 339.24730 | 8.83825 | 42.75187 | 14.04671 | 0.0176147 | 3.1448811 | 9 | 1 | 6 days | 0.21 | MPC | 2006 $UC_{173}$ |
| 2006 $UD_{173}$ | 18.6 | 0.15 | 20061012 | 5.27551 | 213.03885 | 165.82215 | 2.66928 | 0.2098910 | 2.3780399 | 26 | 1 | 40 days | 0.34 | MPC | 2006 $UD_{173}$ |
| 2006 $UG_{173}$ | 17.7 | 0.15 | 20061101 | 340.49725 | 313.79360 | 125.29743 | 2.81192 | 0.1698476 | 2.3014065 | 14 | 1 | 33 days | 0.14 | MPC | 2006 $UG_{173}$ |
| 2006 $UN_{173}$ | 17.0 | 0.15 | 20061101 | 14.79018 | 291.25185 | 102.77870 | 2.54576 | 0.1635269 | 3.0616146 | 25 | 1 | 34 days | 0.25 | MPC | 2006 $UN_{173}$ |
| 2006 $UX_{173}$ | 17.6 | 0.15 | 20061012 | 359.41975 | 172.50729 | 194.76628 | 22.49567 | 0.0774455 | 1.9351514 | 12 | 1 | 2 days | 0.26 | MPC | 2006 $UX_{173}$ |
| 2006 $UZ_{173}$ | 17.1 | 0.15 | 20061012 | 289.72491 | 122.90842 | 8.51977 | 9.84979 | 0.1759504 | 2.3477761 | 11 | 1 | 2 days | 0.77 | MPC | 2006 $UZ_{173}$ |
| 2006 $UB_{174}$ | 15.1 | 0.15 | 20061012 | 356.97986 | 148.82994 | 242.39331 | 13.52606 | 0.0772761 | 3.1247772 | 9 | 1 | 7 days | 0.71 | MPC | 2006 $UB_{174}$ |
| 2006 $UE_{174}$ | 15.7 | 0.15 | 20061101 | 297.30934 | 107.46343 | 14.31584 | 9.54846 | 0.1156167 | 3.1890847 | 19 | 1 | 37 days | 0.47 | MPC | 2006 $UE_{174}$ |
| 2006 $UG_{174}$ | 17.1 | 0.15 | 20061101 | 333.49133 | 169.20607 | 286.32834 | 3.39100 | 0.3105073 | 2.7824804 | 45 | 1 | 34 days | 0.56 | MPC | 2006 $UG_{174}$ |
| 2006 $UH_{174}$ | 18.2 | 0.15 | 20061012 | 18.57912 | 28.07296 | 340.28783 | 3.37370 | 0.2267726 | 2.5762961 | 10 | 1 | 8 days | 0.62 | MPC | 2006 $UH_{174}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UJ_{174}$ | 17.5 | 0.15 | 20061012 | 346.64641 | 45.06577 | 10.35391 | 6.73033 | 0.0670137 | 2.4157905 | 17 | 1 | 36 days | 0.26 | | | MPC | 2006 $UJ_{174}$ |
| 2006 $UM_{174}$ | 17.7 | 0.15 | 20061101 | 18.58060 | 116.90968 | 261.95898 | 4.58998 | 0.1694294 | 2.2635005 | 38 | 1 | 34 days | 0.60 | | | MPC | 2006 $UM_{174}$ |
| 2006 $UO_{174}$ | 17.3 | 0.15 | 20061012 | 52.14198 | 350.50086 | 335.48170 | 3.50929 | 0.1942419 | 2.2019618 | 47 | 1 | 49 days | 0.44 | | | MPC | 2006 $UO_{174}$ |
| 2006 $UU_{174}$ | 16.4 | 0.15 | 20061012 | 64.53968 | 195.49601 | 134.19690 | 2.61692 | 0.0877203 | 2.6958589 | 25 | 1 | 47 days | 0.35 | | | MPC | 2006 $UU_{174}$ |
| 2006 $UW_{174}$ | 14.5 | 0.15 | 20061012 | 84.60784 | 102.60989 | 174.24071 | 15.73372 | 0.0888454 | 3.2284508 | 11 | 1 | 6 days | 0.51 | | | MPC | 2006 $UW_{174}$ |
| 2006 $UX_{174}$ | 17.4 | 0.15 | 20061012 | 47.35316 | 220.97480 | 82.51641 | 4.83814 | 0.2158125 | 2.4400910 | 12 | 1 | 20 days | 0.64 | | | MPC | 2006 $UX_{174}$ |
| 2006 $UZ_{174}$ | 16.2 | 0.15 | 20061012 | 79.66304 | 177.59804 | 102.86653 | 5.27245 | 0.1131939 | 2.6544089 | 11 | 1 | 6 days | 0.70 | | | MPC | 2006 $UZ_{174}$ |
| 2006 $UD_{175}$ | 16.2 | 0.15 | 20060922 | 4.16325 | 324.93820 | 38.88290 | 10.49822 | 0.0805908 | 2.8609337 | 29 | 1 | 60 days | 0.51 | M-v | 4 | MPC | 2006 $UD_{175}$ |
| 2006 $UF_{175}$ | 16.7 | 0.15 | 20061012 | 0.45209 | 347.08138 | 27.17335 | 18.54530 | 0.1552006 | 2.7215594 | 32 | 1 | 52 days | 0.52 | | | MPC | 2006 $UF_{175}$ |
| 2006 $UH_{175}$ | 16.5 | 0.15 | 20061012 | 40.75777 | 124.87068 | 189.54913 | 17.53357 | 0.2407504 | 2.8306803 | 14 | 1 | 6 days | 0.65 | | | MPC | 2006 $UH_{175}$ |
| 2006 $UN_{175}$ | 16.6 | 0.15 | 20061012 | 44.75464 | 282.51877 | 36.01883 | 15.35081 | 0.1323805 | 2.6778080 | 11 | 1 | 6 days | 0.94 | | | MPC | 2006 $UN_{175}$ |
| 2006 $UO_{175}$ | 17.7 | 0.15 | 20061012 | 355.11515 | 295.62232 | 89.23376 | 3.56744 | 0.2321384 | 2.4315252 | 11 | 1 | 6 days | 0.41 | | | MPC | 2006 $UO_{175}$ |
| 2006 $UP_{175}$ | 16.0 | 0.15 | 20061012 | 20.08913 | 269.58128 | 76.43663 | 6.49504 | 0.1950717 | 3.2193287 | 14 | 1 | 7 days | 0.52 | | | MPC | 2006 $UP_{175}$ |
| 2006 $US_{175}$ | 15.4 | 0.15 | 20061012 | 125.55387 | 200.11352 | 40.15108 | 16.65477 | 0.1111229 | 2.8429430 | 14 | 1 | 7 days | 0.72 | | | MPC | 2006 $US_{175}$ |
| 2006 $UU_{175}$ | 16.1 | 0.15 | 20061012 | 21.95755 | 219.81748 | 127.03198 | 6.64003 | 0.1583467 | 3.0926780 | 11 | 1 | 7 days | 0.80 | | | MPC | 2006 $UU_{175}$ |
| 2006 $UW_{175}$ | 16.1 | 0.15 | 20061012 | 260.23145 | 87.77623 | 36.62082 | 12.33629 | 0.0679954 | 3.1138209 | 11 | 1 | 20 days | 0.69 | | | MPC | 2006 $UW_{175}$ |
| 2006 $UX_{175}$ | 15.2 | 0.15 | 20060922 | 308.69470 | 272.65278 | 175.57553 | 9.16235 | 0.2119185 | 3.1715102 | 23 | 1 | 35 days | 0.41 | | | MPC | 2006 $UX_{175}$ |
| 2006 $UY_{175}$ | 15.9 | 0.15 | 20061012 | 129.50250 | 179.00466 | 64.23348 | 6.85283 | 0.0718979 | 2.7378375 | 18 | 1 | 6 days | 0.78 | | | MPC | 2006 $UY_{175}$ |
| 2006 $UZ_{175}$ | 17.8 | 0.15 | 20061012 | 70.87412 | 221.81580 | 78.74992 | 3.86211 | 0.0698596 | 2.1122021 | 11 | 1 | 6 days | 0.86 | | | MPC | 2006 $UZ_{175}$ |
| 2006 $UA_{176}$ | 16.3 | 0.15 | 20060922 | 5.77874 | 324.83773 | 42.48182 | 10.84613 | 0.1177763 | 3.0572024 | 15 | 1 | 38 days | 0.59 | | | MPC | 2006 $UA_{176}$ |
| 2006 $UE_{176}$ | 17.3 | 0.15 | 20060922 | 6.25393 | 254.15772 | 107.73038 | 4.80929 | 0.2329473 | 2.7134603 | 14 | 1 | 22 days | 0.61 | | | MPC | 2006 $UE_{176}$ |
| 2006 $UF_{176}$ | 16.2 | 0.15 | 20061012 | 130.83518 | 195.80377 | 46.38098 | 14.30746 | 0.0745063 | 2.7302458 | 11 | 1 | 6 days | 0.77 | | | MPC | 2006 $UF_{176}$ |
| 2006 $UG_{176}$ | 15.2 | 0.15 | 20060922 | 246.06916 | 307.97613 | 184.73264 | 26.76390 | 0.0127905 | 3.1122957 | 19 | 1 | 22 days | 0.50 | | | MPC | 2006 $UG_{176}$ |
| 2006 $UJ_{176}$ | 17.0 | 0.15 | 20060922 | 336.89277 | 296.31847 | 111.66110 | 6.92101 | 0.1882230 | 2.6816506 | 23 | 1 | 40 days | 0.55 | | | MPC | 2006 $UJ_{176}$ |
| 2006 $UT_{176}$ | 15.7 | 0.15 | 20060922 | 46.05211 | 234.68340 | 88.95882 | 6.78982 | 0.0977313 | 3.1043733 | 16 | 1 | 26 days | 0.79 | | | MPC | 2006 $UT_{176}$ |
| 2006 $UW_{176}$ | 16.0 | 0.15 | 20061012 | 116.09982 | 181.91198 | 82.48020 | 7.66061 | 0.0195528 | 2.8547680 | 11 | 1 | 6 days | 0.59 | | | MPC | 2006 $UW_{176}$ |
| 2006 $UX_{176}$ | 16.7 | 0.15 | 20061012 | 56.60266 | 134.00652 | 173.69462 | 9.24281 | 0.1762969 | 2.5731130 | 18 | 1 | 19 days | 0.66 | | | MPC | 2006 $UX_{176}$ |
| 2006 $UY_{176}$ | 16.8 | 0.15 | 20061012 | 359.89189 | 249.09463 | 134.59666 | 5.74026 | 0.1458566 | 2.6762921 | 14 | 1 | 7 days | 0.86 | | | MPC | 2006 $UY_{176}$ |
| 2006 $UZ_{176}$ | 18.6 | 0.15 | 20061012 | 0.22623 | 275.76636 | 104.94358 | 4.77706 | 0.2300342 | 2.4217040 | 17 | 1 | 18 days | 0.63 | | | MPC | 2006 $UZ_{176}$ |
| 2006 $UA_{177}$ | 18.0 | 0.15 | 20060922 | 347.58071 | 248.75990 | 148.67711 | 6.31605 | 0.2986090 | 2.6965446 | 22 | 1 | 26 days | 0.58 | | | MPC | 2006 $UA_{177}$ |
| 2006 $UJ_{177}$ | 16.2 | 0.15 | 20061101 | 348.00339 | 344.91000 | 60.62932 | 10.12984 | 0.1434790 | 2.7727536 | 26 | 1 | 45 days | 0.58 | | | MPC | 2006 $UJ_{177}$ |
| 2006 $UL_{177}$ | 17.5 | 0.15 | 20061012 | 16.03855 | 275.62640 | 85.21579 | 4.33346 | 0.1697004 | 2.3292454 | 15 | 1 | 18 days | 0.46 | | | MPC | 2006 $UL_{177}$ |
| 2006 $UN_{177}$ | 16.4 | 0.15 | 20061012 | 350.71649 | 231.72163 | 165.45625 | 9.27647 | 0.0716814 | 2.7335005 | 22 | 1 | 28 days | 0.67 | | | MPC | 2006 $UN_{177}$ |
| 2006 $UO_{177}$ | 17.3 | 0.15 | 20061012 | 322.69812 | 297.71428 | 133.72416 | 5.04496 | 0.1150762 | 2.2216776 | 26 | 1 | 31 days | 0.46 | | D | MPC | 2006 $UO_{177}$ |
| 2006 $UT_{177}$ | 15.7 | 0.15 | 20061012 | 2.87189 | 254.59793 | 128.63181 | 5.98310 | 0.1719899 | 3.1537853 | 41 | 1 | 55 days | 0.63 | | | MPC | 2006 $UT_{177}$ |
| 2006 $UW_{177}$ | 15.9 | 0.15 | 20061012 | 338.93541 | 334.79146 | 77.57583 | 5.11421 | 0.0975607 | 2.7418430 | 14 | 1 | 5 days | 0.78 | | | MPC | 2006 $UW_{177}$ |
| 2006 $UA_{178}$ | 14.8 | 0.15 | 20061012 | 191.43303 | 89.20817 | 114.96289 | 4.74005 | 0.2509838 | 2.7979986 | 15 | 1 | 6 days | 0.63 | | | MPC | 2006 $UA_{178}$ |
| 2006 $UG_{178}$ | 15.5 | 0.15 | 20061012 | 287.87136 | 58.89026 | 42.80840 | 22.59811 | 0.0169709 | 2.6615528 | 21 | 1 | 52 days | 0.57 | | | MPC | 2006 $UG_{178}$ |
| 2006 $UH_{178}$ | 16.8 | 0.15 | 20061012 | 32.83497 | 281.02988 | 45.91325 | 17.21420 | 0.3108690 | 2.6548902 | 26 | 1 | 59 days | 0.44 | | E | MPC | 2006 $UH_{178}$ |
| 2006 $UL_{178}$ | 17.6 | 0.15 | 20061012 | 346.19245 | 332.22363 | 76.48180 | 6.47127 | 0.2510205 | 2.2754356 | 34 | 1 | 54 days | 0.59 | | | MPC | 2006 $UL_{178}$ |
| 2006 $UV_{178}$ | 17.7 | 0.15 | 20061012 | 11.91816 | 297.79436 | 73.72765 | 4.94879 | 0.1647137 | 2.3567971 | 11 | 1 | 6 days | 0.47 | | | MPC | 2006 $UV_{178}$ |
| 2006 $UX_{178}$ | 15.1 | 0.15 | 20061012 | 31.29155 | 170.43650 | 185.90262 | 9.47993 | 0.0735156 | 3.0124299 | 30 | 1 | 54 days | 0.42 | | | MPC | 2006 $UX_{178}$ |
| 2006 $UZ_{178}$ | 16.8 | 0.15 | 20061101 | 342.23254 | 230.16477 | 192.42328 | 11.26083 | 0.1735038 | 2.6450035 | 18 | 1 | 39 days | 0.54 | | | MPC | 2006 $UZ_{178}$ |
| 2006 $UA_{179}$ | 16.7 | 0.15 | 20061012 | 307.09906 | 344.77950 | 111.71684 | 4.78409 | 0.1191127 | 2.7807239 | 12 | 1 | 20 days | 0.41 | | | MPC | 2006 $UA_{179}$ |
| 2006 $UG_{179}$ | 17.4 | 0.15 | 20061101 | 26.80195 | 307.35256 | 50.48063 | 14.14031 | 0.1899253 | 2.6084151 | 20 | 1 | 32 days | 0.71 | | | MPC | 2006 $UG_{179}$ |
| 2006 $UH_{179}$ | 16.7 | 0.15 | 20061012 | 3.96840 | 232.33232 | 153.41247 | 5.75201 | 0.1742639 | 2.7041375 | 15 | 1 | 28 days | 0.60 | | | MPC | 2006 $UH_{179}$ |
| 2006 $UP_{179}$ | 17.7 | 0.15 | 20061101 | 21.11977 | 270.39144 | 94.24151 | 4.64140 | 0.2459116 | 2.2599999 | 29 | 1 | 38 days | 0.54 | | | MPC | 2006 $UP_{179}$ |
| 2006 $UU_{179}$ | 17.3 | 0.15 | 20061101 | 5.33911 | 263.49347 | 128.14682 | 4.76059 | 0.2441056 | 2.6293648 | 30 | 1 | 39 days | 0.62 | | | MPC | 2006 $UU_{179}$ |
| 2006 $UX_{179}$ | 17.1 | 0.15 | 20061101 | 3.07110 | 320.04397 | 76.36767 | 7.90584 | 0.2268106 | 2.6401568 | 33 | 1 | 38 days | 0.58 | | | MPC | 2006 $UX_{179}$ |
| 2006 $UY_{179}$ | 16.7 | 0.15 | 20061012 | 7.34606 | 259.68488 | 122.12019 | 5.69272 | 0.1742173 | 2.2058398 | 19 | 1 | 50 days | 0.43 | | | MPC | 2006 $UY_{179}$ |
| 2006 $UZ_{179}$ | 16.9 | 0.15 | 20061101 | 351.80382 | 309.88646 | 102.59096 | 5.83095 | 0.1256282 | 2.4301548 | 24 | 1 | 38 days | 0.66 | | | MPC | 2006 $UZ_{179}$ |
| 2006 $UA_{180}$ | 15.3 | 0.15 | 20061101 | 9.70759 | 325.68880 | 63.65969 | 17.11880 | 0.1305774 | 3.1615739 | 32 | 1 | 42 days | 0.59 | | | MPC | 2006 $UA_{180}$ |
| 2006 $UG_{180}$ | 16.4 | 0.15 | 20061101 | 336.67020 | 258.56163 | 173.85733 | 6.20020 | 0.0687694 | 2.2383117 | 29 | 1 | 39 days | 0.63 | | | MPC | 2006 $UG_{180}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UJ_{180}$ | 17.0 | 0.15 | 20061101 | 12.49883 | 294.85216 | 82.38428 | 7.52723 | 0.2049112 | 2.2956536 | 35 | 1 | 43 days | 0.37 | | | MPC | 2006 $UJ_{180}$ |
| 2006 $US_{180}$ | 17.5 | 0.15 | 20061101 | 42.19624 | 255.21189 | 79.79676 | 8.29814 | 0.2233728 | 2.2394635 | 23 | 1 | 42 days | 0.63 | | | MPC | 2006 $US_{180}$ |
| 2006 $UC_{181}$ | 16.1 | 0.15 | 20061012 | 349.75342 | 224.42214 | 184.18691 | 12.43158 | 0.1618877 | 2.6686820 | 14 | 1 | 35 days | 0.44 | | | MPC | 2006 $UC_{181}$ |
| 2006 $UA_{182}$ | 16.3 | 0.15 | 20061101 | 342.87726 | 0.47019 | 66.67039 | 13.32938 | 0.1581646 | 2.6108166 | 30 | 1 | 35 days | 0.71 | | | MPC | 2006 $UA_{182}$ |
| 2006 $UC_{182}$ | 17.1 | 0.15 | 20060922 | 5.39561 | 241.12302 | 136.42701 | 5.39956 | 0.1952949 | 2.2082259 | 29 | 1 | 67 days | 0.53 | M-v | 4 | MPC | 2006 $UC_{182}$ |
| 2006 $UE_{182}$ | 15.6 | 0.15 | 20061101 | 333.47292 | 262.80004 | 182.05249 | 9.27500 | 0.1848634 | 3.1121639 | 16 | 1 | 40 days | 0.56 | | | MPC | 2006 $UE_{182}$ |
| 2006 $UF_{182}$ | 17.1 | 0.15 | 20061101 | 22.48500 | 226.09697 | 140.61397 | 4.83884 | 0.2468883 | 2.3760119 | 16 | 1 | 39 days | 0.43 | | | MPC | 2006 $UF_{182}$ |
| 2006 $UK_{182}$ | 15.2 | 0.15 | 20061101 | 42.04092 | 287.20539 | 68.23773 | 15.58038 | 0.1139604 | 3.0912016 | 23 | 1 | 33 days | 0.58 | | | MPC | 2006 $UK_{182}$ |
| 2006 $UQ_{182}$ | 16.7 | 0.15 | 20061012 | 358.49858 | 218.31837 | 186.51307 | 9.37941 | 0.1269567 | 2.5440518 | 24 | 1 | 49 days | 0.56 | | | MPC | 2006 $UQ_{182}$ |
| 2006 $US_{182}$ | 16.0 | 0.15 | 20061101 | 5.73029 | 327.78420 | 70.17877 | 18.55380 | 0.2328953 | 3.0612630 | 25 | 1 | 35 days | 0.58 | | | MPC | 2006 $US_{182}$ |
| 2006 $UZ_{182}$ | 16.0 | 0.15 | 20060922 | 2.33477 | 194.32947 | 196.06668 | 15.78537 | 0.2013481 | 2.7194597 | 27 | 1 | 85 days | 0.63 | M-v | 4 | MPC | 2006 $UZ_{182}$ |
| 2006 $UB_{183}$ | 17.9 | 0.15 | 20061012 | 68.16733 | 94.85994 | 202.16965 | 21.11877 | 0.1018436 | 1.9271298 | 29 | 1 | 55 days | 0.45 | | | MPC | 2006 $UB_{183}$ |
| 2006 $UF_{183}$ | 15.6 | 0.15 | 20061012 | 22.98110 | 78.47443 | 255.94344 | 12.61512 | 0.1103473 | 2.9777108 | 12 | 1 | 9 days | 0.44 | | | MPC | 2006 $UF_{183}$ |
| 2006 $UM_{183}$ | 16.0 | 0.15 | 20061012 | 139.47964 | 173.93929 | 68.63726 | 12.68570 | 0.0403563 | 2.7794452 | 13 | 1 | 11 days | 0.78 | | | MPC | 2006 $UM_{183}$ |
| 2006 $UN_{183}$ | 16.6 | 0.15 | 20061012 | 339.70286 | 10.40085 | 54.03726 | 15.00591 | 0.3254377 | 3.0615150 | 28 | 1 | 58 days | 0.60 | | E | MPC | 2006 $UN_{183}$ |
| 2006 $UQ_{183}$ | 17.0 | 0.15 | 20061101 | 17.90576 | 298.94826 | 68.79025 | 12.97045 | 0.3168360 | 2.5971152 | 25 | 1 | 34 days | 0.50 | | | MPC | 2006 $UQ_{183}$ |
| 2006 $UT_{183}$ | 16.3 | 0.15 | 20060922 | 357.57075 | 280.51301 | 113.15761 | 9.65115 | 0.1598381 | 2.5659624 | 20 | 1 | 61 days | 0.57 | M-v | 5 | MPC | 2006 $UT_{183}$ |
| 2006 $UW_{183}$ | 17.1 | 0.15 | 20061012 | 10.10010 | 24.06888 | 340.81055 | 9.94495 | 0.2075929 | 2.3312376 | 13 | 1 | 4 days | 0.57 | | | MPC | 2006 $UW_{183}$ |
| 2006 $UX_{183}$ | 15.5 | 0.15 | 20061012 | 337.91310 | 131.40210 | 278.97896 | 10.86182 | 0.1066114 | 3.0987462 | 33 | 1 | 48 days | 0.51 | | | MPC | 2006 $UX_{183}$ |
| 2006 $UJ_{184}$ | 17.2 | 0.15 | 20061101 | 18.38136 | 52.49520 | 330.80334 | 6.25419 | 0.1425441 | 2.2248205 | 24 | 1 | 33 days | 0.66 | | | MPC | 2006 $UJ_{184}$ |
| 2006 $UN_{184}$ | 17.7 | 0.15 | 20060922 | 5.61635 | 340.79221 | 24.77086 | 7.57860 | 0.2375153 | 2.6461339 | 27 | 1 | 61 days | 0.46 | M-v | 4 | MPC | 2006 $UN_{184}$ |
| 2006 $UQ_{184}$ | 17.1 | 0.15 | 20061012 | 352.38186 | 266.64866 | 138.78322 | 12.44874 | 0.2797838 | 2.6404905 | 17 | 1 | 37 days | 0.74 | | | MPC | 2006 $UQ_{184}$ |
| 2006 $UR_{184}$ | 17.5 | 0.15 | 20061012 | 326.71455 | 94.97753 | 337.28662 | 6.64057 | 0.1583837 | 2.2967251 | 25 | 1 | 48 days | 0.69 | | | MPC | 2006 $UR_{184}$ |
| 2006 $US_{184}$ | 15.3 | 0.15 | 20061012 | 38.72284 | 80.86639 | 266.50464 | 8.47565 | 0.0441272 | 3.0288434 | 33 | 1 | 56 days | 0.68 | | | MPC | 2006 $US_{184}$ |
| 2006 $UT_{184}$ | 16.2 | 0.15 | 20061101 | 23.28515 | 295.54361 | 68.76841 | 8.86268 | 0.2336518 | 2.6906359 | 47 | 1 | 35 days | 0.52 | | | MPC | 2006 $UT_{184}$ |
| 2006 $UW_{184}$ | 16.7 | 0.15 | 20061012 | 349.44436 | 105.14216 | 297.21505 | 6.17527 | 0.1451852 | 2.7423755 | 14 | 1 | 10 days | 0.57 | | | MPC | 2006 $UW_{184}$ |
| 2006 $UB_{185}$ | 16.3 | 0.15 | 20061012 | 46.94560 | 309.65232 | 14.90079 | 12.50623 | 0.3747368 | 2.8435736 | 53 | 1 | 4 days | 0.48 | | | MPC | 2006 $UB_{185}$ |
| 2006 $UC_{185}$ | 23.4 | 0.15 | 20060922 | 2.18855 | 307.09179 | 37.63356 | 4.26878 | 0.3959987 | 1.5217725 | 122 | 1 | 30 days | 0.42 | M-v | 6 | MPC | 2006 $UC_{185}$ |
| 2006 $UD_{185}$ | 14.5 | 0.15 | 20061101 | 337.04887 | 212.85840 | 243.07445 | 29.88274 | 0.3734304 | 3.1359126 | 27 | 1 | 32 days | 0.54 | | | MPC | 2006 $UD_{185}$ |
| 2006 $UE_{185}$ | 24.5 | 0.15 | 20060922 | 349.93687 | 183.72667 | 210.64510 | 1.05034 | 0.4921222 | 2.3038941 | 28 | 1 | 20 days | 0.45 | M-v | 8 | MPC | 2006 $UE_{185}$ |
| 2006 $UF_{185}$ | 21.5 | 0.15 | 20060922 | 277.06096 | 307.20644 | 221.94835 | 33.78787 | 0.6039309 | 1.2285243 | 45 | 1 | 13 days | 0.50 | M-v | 7 | MPC | 2006 $UF_{185}$ |
| 2006 $UG_{185}$ | 14.0 | 0.15 | 20061012 | 186.30581 | 169.37791 | 130.25345 | 21.69253 | 0.2558773 | 3.2482947 | 16 | 1 | 2 days | 0.58 | | | MPC | 2006 $UG_{185}$ |
| 2006 $UH_{185}$ | 25.1 | 0.15 | 20060922 | 337.54886 | 196.82764 | 213.97025 | 11.40778 | 0.3946508 | 1.7420657 | 19 | 1 | 1 days | 0.40 | M-v | 7 | MPC | 2006 $UH_{185}$ |
| 2006 $UJ_{185}$ | 27.9 | 0.15 | 20060922 | 322.93654 | 77.14819 | 35.38830 | 0.95923 | 0.5841439 | 1.7295766 | 39 | 1 | 1 days | 0.52 | M-v | 6 | MPC | 2006 $UJ_{185}$ |
| 2006 $UK_{185}$ | 17.2 | 0.15 | 20061012 | 43.03383 | 275.86662 | 64.90587 | 22.78509 | 0.1226453 | 1.9368264 | 40 | 1 | 1 days | 0.42 | | E | MPC | 2006 $UK_{185}$ |
| 2006 $UL_{185}$ | 21.3 | 0.15 | 20060922 | 101.57975 | 177.26422 | 52.35012 | 19.42517 | 0.5017690 | 0.8440465 | 36 | 1 | 20 days | 0.53 | M-v | 7 | MPC | 2006 $UL_{185}$ |
| 2006 $UO_{185}$ | 15.8 | 0.15 | 20060922 | 19.23782 | 298.11476 | 48.16748 | 16.46283 | 0.1712608 | 3.0723474 | 32 | 1 | 39 days | 0.53 | | | MPC | 2006 $UO_{185}$ |
| 2006 $UR_{185}$ | 17.9 | 0.15 | 20061012 | 338.22413 | 340.82197 | 73.09288 | 6.24027 | 0.1949722 | 2.1958289 | 32 | 1 | 59 days | 0.53 | | | MPC | 2006 $UR_{185}$ |
| 2006 $UY_{185}$ | 15.7 | 0.15 | 20061012 | 19.59231 | 10.24583 | 339.85444 | 10.51282 | 0.1589813 | 3.1260277 | 16 | 1 | 12 days | 0.40 | | | MPC | 2006 $UY_{185}$ |
| 2006 $UA_{186}$ | 17.9 | 0.15 | 20061012 | 30.21710 | 43.80090 | 291.51739 | 5.19311 | 0.1728381 | 2.1609539 | 13 | 1 | 6 days | 0.62 | | | MPC | 2006 $UA_{186}$ |
| 2006 $UA_{188}$ | 16.0 | 0.15 | 20061012 | 7.15989 | 75.93361 | 292.93820 | 9.04998 | 0.2439870 | 3.1368419 | 17 | 1 | 29 days | 0.50 | | | MPC | 2006 $UA_{188}$ |
| 2006 $UE_{188}$ | 16.9 | 0.15 | 20061012 | 18.96544 | 98.42460 | 251.72840 | 11.89587 | 0.2271384 | 2.5832527 | 16 | 1 | 8 days | 0.58 | | | MPC | 2006 $UE_{188}$ |
| 2006 $UU_{188}$ | 17.7 | 0.15 | 20060922 | 307.51940 | 76.74597 | 5.57327 | 19.57477 | 0.1522426 | 1.8736523 | 32 | 1 | 63 days | 0.47 | M-v | 5 | MPC | 2006 $UU_{188}$ |
| 2006 $UC_{189}$ | 16.4 | 0.15 | 20061012 | 8.30158 | 81.65800 | 286.21080 | 8.46205 | 0.2921368 | 3.1392930 | 22 | 1 | 52 days | 0.53 | | | MPC | 2006 $UC_{189}$ |
| 2006 $UT_{189}$ | 15.9 | 0.15 | 20061012 | 351.18420 | 100.14239 | 297.65935 | 7.57092 | 0.1278814 | 3.0124178 | 27 | 1 | 46 days | 0.39 | | | MPC | 2006 $UT_{189}$ |
| 2006 $UB_{190}$ | 16.2 | 0.15 | 20061012 | 357.00788 | 144.70896 | 245.56034 | 11.01341 | 0.1425700 | 3.1171765 | 14 | 1 | 8 days | 0.43 | | | MPC | 2006 $UB_{190}$ |
| 2006 $UM_{190}$ | 14.9 | 0.15 | 20061012 | 36.82839 | 353.88539 | 352.49665 | 11.73011 | 0.0876165 | 3.1003968 | 23 | 1 | 40 days | 0.57 | | | MPC | 2006 $UM_{190}$ |
| 2006 $UU_{190}$ | 15.0 | 0.15 | 20060922 | 335.15984 | 33.21276 | 29.33172 | 21.77859 | 0.1300395 | 3.1286670 | 38 | 1 | 62 days | 0.48 | M-v | 4 | MPC | 2006 $UU_{190}$ |
| 2006 $UC_{191}$ | 16.9 | 0.15 | 20061101 | 51.66254 | 47.57624 | 279.26591 | 6.57279 | 0.1642436 | 2.2643058 | 21 | 1 | 27 days | 0.48 | | | MPC | 2006 $UC_{191}$ |
| 2006 $UD_{191}$ | 16.6 | 0.15 | 20061012 | 6.57286 | 45.80864 | 333.64659 | 7.29254 | 0.1936727 | 2.8774311 | 15 | 1 | 8 days | 0.59 | | | MPC | 2006 $UD_{191}$ |
| 2006 $UE_{191}$ | 16.6 | 0.15 | 20061012 | 356.10695 | 30.29746 | 5.36164 | 13.30419 | 0.2471094 | 2.6593897 | 31 | 1 | 55 days | 0.44 | | | MPC | 2006 $UE_{191}$ |
| 2006 $UF_{191}$ | 17.8 | 0.15 | 20061012 | 17.10243 | 49.35343 | 312.37256 | 4.56657 | 0.1939607 | 2.2239006 | 24 | 1 | 33 days | 0.59 | | | MPC | 2006 $UF_{191}$ |
| 2006 $UJ_{191}$ | 18.1 | 0.15 | 20061012 | 19.84945 | 23.06614 | 331.81657 | 7.07700 | 0.2399008 | 2.3397518 | 20 | 1 | 19 days | 0.43 | | | MPC | 2006 $UJ_{191}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UK_{191}$ | 16.3 | 0.15 | 20061101 | 292.79208 | 218.83406 | 253.44621 | 13.47208 | 0.0928344 | 2.6072676 | 25 | 1 | 40 days | 0.54 | | MPC | 2006 $UK_{191}$ |
| 2006 $UL_{191}$ | 15.9 | 0.15 | 20060922 | 21.60961 | 356.58288 | 349.51157 | 11.39463 | 0.2574716 | 2.7245485 | 34 | 1 | 85 days | 0.49 | M-v 4 | MPC | 2006 $UL_{191}$ |
| 2006 $US_{191}$ | 18.0 | 0.15 | 20061012 | 10.22040 | 74.06333 | 291.32156 | 5.02743 | 0.3280867 | 2.4288412 | 15 | 1 | 3 days | 0.29 | | MPC | 2006 $US_{191}$ |
| 2006 $UT_{191}$ | 16.1 | 0.15 | 20061101 | 28.26755 | 5.34063 | 344.93305 | 7.54001 | 0.2471684 | 3.1011600 | 23 | 1 | 26 days | 0.34 | | MPC | 2006 $UT_{191}$ |
| 2006 $UU_{191}$ | 16.1 | 0.15 | 20061101 | 281.13922 | 146.73047 | 351.81604 | 10.16559 | 0.1990359 | 2.6556476 | 27 | 1 | 27 days | 0.52 | | MPC | 2006 $UU_{191}$ |
| 2006 $UW_{191}$ | 17.6 | 0.15 | 20061101 | 9.82942 | 148.45972 | 229.89764 | 15.69753 | 0.2785611 | 2.7621237 | 29 | 1 | 39 days | 0.36 | | MPC | 2006 $UW_{191}$ |
| 2006 $UA_{192}$ | 15.5 | 0.15 | 20061101 | 202.21282 | 303.35100 | 251.22332 | 8.51047 | 0.0121355 | 2.7300925 | 15 | 1 | 37 days | 0.20 | | MPC | 2006 $UA_{192}$ |
| 2006 $UB_{192}$ | 18.1 | 0.15 | 20061012 | 346.06496 | 73.98651 | 338.54875 | 4.44140 | 0.2486396 | 2.4020552 | 37 | 1 | 50 days | 0.54 | | MPC | 2006 $UB_{192}$ |
| 2006 $UC_{192}$ | 16.5 | 0.15 | 20061101 | 7.46175 | 130.39933 | 256.26042 | 7.06519 | 0.1638509 | 2.6634406 | 25 | 1 | 31 days | 0.41 | | MPC | 2006 $UC_{192}$ |
| 2006 $UG_{192}$ | 16.2 | 0.15 | 20061012 | 346.16040 | 137.35419 | 278.14123 | 6.65310 | 0.2724467 | 2.7833495 | 25 | 1 | 37 days | 0.39 | | MPC | 2006 $UG_{192}$ |
| 2006 $UQ_{192}$ | 15.9 | 0.15 | 20061101 | 359.70233 | 161.35310 | 239.00536 | 13.10190 | 0.1531911 | 2.6854753 | 59 | 1 | 34 days | 0.34 | | MPC | 2006 $UQ_{192}$ |
| 2006 $UW_{192}$ | 16.0 | 0.15 | 20061101 | 25.94251 | 120.11720 | 234.01694 | 12.57666 | 0.3312172 | 3.0680600 | 45 | 1 | 39 days | 0.38 | | MPC | 2006 $UW_{192}$ |
| 2006 $UY_{192}$ | 17.6 | 0.15 | 20060922 | 13.57370 | 44.50857 | 319.57648 | 2.93467 | 0.2292669 | 2.2151765 | 55 | 1 | 65 days | 0.52 | M-v 5 | MPC | 2006 $UY_{192}$ |
| 2006 $UZ_{192}$ | 16.9 | 0.15 | 20061101 | 28.67961 | 17.03125 | 343.71824 | 5.97875 | 0.2541554 | 2.5406489 | 14 | 1 | 27 days | 0.40 | | MPC | 2006 $UZ_{192}$ |
| 2006 $UD_{193}$ | 16.9 | 0.15 | 20061101 | 4.21174 | 47.14965 | 355.85513 | 4.81796 | 0.1633596 | 2.2227993 | 27 | 1 | 32 days | 0.31 | D | MPC | 2006 $UD_{193}$ |
| 2006 $UM_{193}$ | 16.2 | 0.15 | 20061012 | 357.25366 | 359.06723 | 11.79610 | 14.49086 | 0.1563085 | 3.1129474 | 27 | 1 | 48 days | 0.18 | | MPC | 2006 $UM_{193}$ |
| 2006 $UP_{193}$ | 16.7 | 0.15 | 20061012 | 57.00239 | 296.03261 | 32.46620 | 17.03989 | 0.0673260 | 3.0336326 | 23 | 1 | 58 days | 0.27 | | MPC | 2006 $UP_{193}$ |
| 2006 $UQ_{193}$ | 18.5 | 0.15 | 20061012 | 317.41265 | 54.22256 | 25.77602 | 4.36152 | 0.0907112 | 2.2330089 | 20 | 1 | 58 days | 0.21 | | MPC | 2006 $UQ_{193}$ |
| 2006 $US_{193}$ | 16.6 | 0.15 | 20061101 | 118.45576 | 46.69856 | 216.59757 | 7.19297 | 0.1676035 | 2.8091803 | 20 | 1 | 25 days | 0.30 | | MPC | 2006 $US_{193}$ |
| 2006 $UT_{193}$ | 18.5 | 0.15 | 20061012 | 322.30565 | 221.64416 | 215.35183 | 2.12911 | 0.1233405 | 2.1410864 | 31 | 1 | 56 days | 0.31 | | MPC | 2006 $UT_{193}$ |
| 2006 $UU_{193}$ | 18.5 | 0.15 | 20061012 | 346.32685 | 200.22404 | 211.34837 | 3.96219 | 0.1947708 | 2.8314350 | 11 | 1 | 9 days | 0.31 | | MPC | 2006 $UU_{193}$ |
| 2006 $UV_{193}$ | 17.8 | 0.15 | 20061012 | 36.56265 | 300.56507 | 33.88651 | 3.39656 | 0.2190141 | 2.3323231 | 34 | 1 | 49 days | 0.31 | | MPC | 2006 $UV_{193}$ |
| 2006 $UW_{193}$ | 17.1 | 0.15 | 20061012 | 232.65778 | 310.03442 | 215.72092 | 5.19639 | 0.0563347 | 2.7995490 | 10 | 1 | 9 days | 0.33 | | MPC | 2006 $UW_{193}$ |
| 2006 $UX_{193}$ | 16.1 | 0.15 | 20061012 | 358.29203 | 186.38118 | 208.80440 | 2.57287 | 0.0751811 | 3.0478660 | 25 | 1 | 50 days | 0.29 | | MPC | 2006 $UX_{193}$ |
| 2006 $UY_{193}$ | 16.1 | 0.15 | 20061012 | 188.07369 | 177.63025 | 32.66483 | 3.43135 | 0.2705205 | 2.7570034 | 10 | 1 | 9 days | 0.43 | | MPC | 2006 $UY_{193}$ |
| 2006 $UZ_{193}$ | 16.0 | 0.15 | 20061012 | 206.92562 | 336.08636 | 215.68322 | 14.43654 | 0.0946724 | 2.8543479 | 9 | 1 | 9 days | 0.82 | | MPC | 2006 $UZ_{193}$ |
| 2006 $UC_{194}$ | 16.9 | 0.15 | 20061012 | 73.48340 | 269.89176 | 36.34377 | 2.60164 | 0.1114165 | 2.4091416 | 15 | 1 | 9 days | 0.85 | | MPC | 2006 $UC_{194}$ |
| 2006 $UD_{194}$ | 15.8 | 0.15 | 20061012 | 151.49224 | 196.24465 | 39.32420 | 4.24797 | 0.1543832 | 2.6137828 | 10 | 1 | 9 days | 0.30 | | MPC | 2006 $UD_{194}$ |
| 2006 $UE_{194}$ | 17.6 | 0.15 | 20061012 | 305.68389 | 74.30125 | 25.71797 | 1.63078 | 0.1252040 | 2.6782420 | 14 | 1 | 22 days | 0.19 | | MPC | 2006 $UE_{194}$ |
| 2006 $UF_{194}$ | 17.3 | 0.15 | 20061101 | 343.17656 | 21.98016 | 40.63528 | 1.08123 | 0.1808968 | 3.0941091 | 15 | 1 | 33 days | 0.26 | | MPC | 2006 $UF_{194}$ |
| 2006 $UG_{194}$ | 16.2 | 0.15 | 20061101 | 296.96076 | 73.03993 | 36.71004 | 16.25072 | 0.0899898 | 2.9948578 | 28 | 1 | 46 days | 0.35 | | MPC | 2006 $UG_{194}$ |
| 2006 $UH_{194}$ | 17.0 | 0.15 | 20061012 | 342.85945 | 206.01850 | 210.23947 | 7.09566 | 0.1533030 | 3.1563857 | 13 | 1 | 9 days | 0.54 | | MPC | 2006 $UH_{194}$ |
| 2006 $UL_{194}$ | 15.9 | 0.15 | 20061012 | 191.76650 | 355.01808 | 212.20078 | 7.74780 | 0.1909074 | 3.1120319 | 10 | 1 | 9 days | 0.50 | | MPC | 2006 $UL_{194}$ |
| 2006 $UM_{194}$ | 18.6 | 0.15 | 20061012 | 58.52229 | 279.21814 | 43.58183 | 2.48908 | 0.0799032 | 2.2364894 | 18 | 1 | 9 days | 0.36 | | MPC | 2006 $UM_{194}$ |
| 2006 $UN_{194}$ | 16.3 | 0.15 | 20060922 | 27.24477 | 167.14342 | 184.68778 | 0.93259 | 0.1294661 | 3.1151015 | 44 | 1 | 63 days | 0.33 | M-v 4 | MPC | 2006 $UN_{194}$ |
| 2006 $UO_{194}$ | 17.3 | 0.15 | 20061012 | 340.15811 | 23.83882 | 35.11468 | 6.04521 | 0.1655872 | 3.1053185 | 14 | 1 | 21 days | 0.31 | | MPC | 2006 $UO_{194}$ |
| 2006 $UP_{194}$ | 16.9 | 0.15 | 20061012 | 209.27581 | 127.05632 | 58.87723 | 1.51774 | 0.0619707 | 2.7475504 | 13 | 1 | 9 days | 0.39 | | MPC | 2006 $UP_{194}$ |
| 2006 $UQ_{194}$ | 17.7 | 0.15 | 20061012 | 40.81534 | 149.13652 | 193.83167 | 1.42849 | 0.0882462 | 2.6278751 | 25 | 1 | 38 days | 0.29 | | MPC | 2006 $UQ_{194}$ |
| 2006 $UR_{194}$ | 17.4 | 0.15 | 20061012 | 345.23556 | 351.32821 | 60.65042 | 1.17448 | 0.1490603 | 3.1494034 | 18 | 1 | 9 days | 0.39 | | MPC | 2006 $UR_{194}$ |
| 2006 $US_{194}$ | 15.6 | 0.15 | 20061012 | 185.08802 | 174.43022 | 36.55572 | 19.08795 | 0.2602499 | 2.9349403 | 18 | 1 | 9 days | 0.34 | | MPC | 2006 $US_{194}$ |
| 2006 $UT_{194}$ | 16.6 | 0.15 | 20061012 | 325.13226 | 234.03883 | 197.06040 | 1.51693 | 0.0563310 | 2.8902227 | 36 | 1 | 58 days | 0.31 | | MPC | 2006 $UT_{194}$ |
| 2006 $UU_{194}$ | 17.0 | 0.15 | 20061012 | 254.49127 | 104.53372 | 38.47299 | 4.68007 | 0.0389806 | 3.0632885 | 15 | 1 | 9 days | 0.23 | | MPC | 2006 $UU_{194}$ |
| 2006 $UW_{194}$ | 17.0 | 0.15 | 20061012 | 305.06285 | 254.37242 | 213.56597 | 11.03773 | 0.2089055 | 3.0488517 | 18 | 1 | 22 days | 0.24 | | MPC | 2006 $UW_{194}$ |
| 2006 $UX_{194}$ | 18.1 | 0.15 | 20061012 | 324.26201 | 49.31911 | 31.04872 | 10.79323 | 0.1839007 | 2.8024967 | 9 | 1 | 9 days | 0.18 | | MPC | 2006 $UX_{194}$ |
| 2006 $UY_{194}$ | 18.1 | 0.15 | 20061012 | 88.07825 | 252.53708 | 35.28717 | 4.87975 | 0.1207227 | 2.3517282 | 10 | 1 | 9 days | 0.27 | | MPC | 2006 $UY_{194}$ |
| 2006 $UZ_{194}$ | 17.4 | 0.15 | 20061012 | 346.73706 | 13.28799 | 33.73598 | 21.79455 | 0.1157851 | 3.0604838 | 13 | 1 | 27 days | 0.20 | | MPC | 2006 $UZ_{194}$ |
| 2006 $UA_{195}$ | 15.3 | 0.15 | 20061012 | 29.07620 | 299.54501 | 47.81370 | 1.95912 | 0.2102543 | 3.9437050 | 48 | 1 | 57 days | 0.25 | | MPC | 2006 $UA_{195}$ |
| 2006 $UB_{195}$ | 16.1 | 0.15 | 20061012 | 173.24076 | 184.41664 | 31.82438 | 3.72069 | 0.2657848 | 2.7353834 | 10 | 1 | 21 days | 0.34 | | MPC | 2006 $UB_{195}$ |
| 2006 $UD_{195}$ | 17.4 | 0.15 | 20061101 | 20.32369 | 159.29276 | 211.19019 | 1.30436 | 0.0998278 | 2.9110749 | 22 | 1 | 25 days | 0.64 | | MPC | 2006 $UD_{195}$ |
| 2006 $UE_{195}$ | 17.0 | 0.15 | 20061012 | 334.31263 | 17.22459 | 42.89219 | 1.82634 | 0.0635825 | 3.0716258 | 11 | 1 | 8 days | 0.27 | | MPC | 2006 $UE_{195}$ |
| 2006 $UG_{195}$ | 17.3 | 0.15 | 20061012 | 32.59223 | 313.10130 | 37.92220 | 2.37154 | 0.1014787 | 2.9241036 | 20 | 1 | 29 days | 0.20 | | MPC | 2006 $UG_{195}$ |
| 2006 $UH_{195}$ | 16.7 | 0.15 | 20061012 | 184.38324 | 115.24774 | 94.21076 | 0.06533 | 0.2554071 | 2.6269207 | 15 | 1 | 8 days | 0.36 | | MPC | 2006 $UH_{195}$ |
| 2006 $UJ_{195}$ | 17.1 | 0.15 | 20061012 | 335.19545 | 21.46741 | 37.64255 | 6.30186 | 0.0606358 | 3.0639663 | 18 | 1 | 9 days | 0.33 | | MPC | 2006 $UJ_{195}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UK_{195}$ | 18.3 | 0.15 | 20060922 | 12.16344 | 326.07267 | 34.00719 | 2.87865 | 0.2299135 | 2.4490811 | 25 | 1 | 62 days | 0.22 | M-v | 4 | MPC | 2006 $UK_{195}$ |
| 2006 $UL_{195}$ | 16.5 | 0.15 | 20061012 | 184.37926 | 3.90187 | 205.59084 | 3.92683 | 0.2582884 | 2.6212622 | 15 | 1 | 8 days | 0.83 | | | MPC | 2006 $UL_{195}$ |
| 2006 $UO_{195}$ | 17.4 | 0.15 | 20061012 | 327.47586 | 34.49322 | 34.33496 | 7.27444 | 0.0977941 | 2.4498968 | 19 | 1 | 32 days | 0.24 | | | MPC | 2006 $UO_{195}$ |
| 2006 $UV_{195}$ | 16.8 | 0.15 | 20061012 | 137.56032 | 223.04349 | 14.39510 | 6.44262 | 0.0965343 | 2.6630928 | 11 | 1 | 8 days | 0.43 | | | MPC | 2006 $UV_{195}$ |
| 2006 $UW_{195}$ | 18.9 | 0.15 | 20061012 | 326.80604 | 60.47343 | 19.12888 | 5.01611 | 0.2918179 | 2.6697284 | 11 | 1 | 8 days | 0.41 | | | MPC | 2006 $UW_{195}$ |
| 2006 $UZ_{195}$ | 18.8 | 0.15 | 20061101 | 37.45518 | 122.68096 | 225.08321 | 2.91886 | 0.1939546 | 2.2033249 | 24 | 1 | 36 days | 0.24 | | | MPC | 2006 $UZ_{195}$ |
| 2006 $UC_{196}$ | 17.0 | 0.15 | 20061101 | 358.69560 | 1.56653 | 42.34272 | 10.11285 | 0.0994837 | 3.1680424 | 21 | 1 | 38 days | 0.28 | | | MPC | 2006 $UC_{196}$ |
| 2006 $UF_{196}$ | 17.0 | 0.15 | 20061012 | 218.00139 | 153.14465 | 37.24566 | 5.34968 | 0.1692694 | 2.3614932 | 10 | 1 | 8 days | 0.27 | | | MPC | 2006 $UF_{196}$ |
| 2006 $UH_{196}$ | 18.8 | 0.15 | 20061012 | 330.09589 | 209.55582 | 220.38164 | 3.71904 | 0.0852422 | 2.1881789 | 14 | 1 | 22 days | 0.28 | | | MPC | 2006 $UH_{196}$ |
| 2006 $UJ_{196}$ | 15.8 | 0.15 | 20061101 | 338.45927 | 209.02592 | 221.03703 | 12.35634 | 0.1144950 | 3.0911454 | 35 | 1 | 28 days | 0.35 | | | MPC | 2006 $UJ_{196}$ |
| 2006 $UK_{196}$ | 16.9 | 0.15 | 20061012 | 4.92501 | 164.89839 | 226.92318 | 2.34956 | 0.1323775 | 3.1114119 | 13 | 1 | 22 days | 0.23 | | | MPC | 2006 $UK_{196}$ |
| 2006 $UM_{196}$ | 16.1 | 0.15 | 20061012 | 25.67606 | 324.97684 | 39.55624 | 13.95134 | 0.1223593 | 2.7419850 | 36 | 1 | 57 days | 0.41 | | | MPC | 2006 $UM_{196}$ |
| 2006 $UN_{196}$ | 19.0 | 0.15 | 20061101 | 5.88052 | 168.78559 | 224.53356 | 0.62657 | 0.1823751 | 2.4070193 | 18 | 1 | 32 days | 0.27 | | | MPC | 2006 $UN_{196}$ |
| 2006 $UO_{196}$ | 16.9 | 0.15 | 20061012 | 289.96950 | 76.05468 | 43.52534 | 16.10380 | 0.0913058 | 3.0971541 | 10 | 1 | 12 days | 0.26 | | | MPC | 2006 $UO_{196}$ |
| 2006 $UP_{196}$ | 18.3 | 0.15 | 20061012 | 67.83879 | 263.63929 | 41.39090 | 6.08060 | 0.2030490 | 2.2651468 | 24 | 1 | 47 days | 0.31 | | | MPC | 2006 $UP_{196}$ |
| 2006 $UQ_{196}$ | 18.7 | 0.15 | 20061101 | 307.28490 | 240.53575 | 224.41704 | 1.82476 | 0.1022481 | 2.2257995 | 25 | 1 | 32 days | 0.35 | | | MPC | 2006 $UQ_{196}$ |
| 2006 $UT_{196}$ | 17.9 | 0.15 | 20061101 | 13.29952 | 166.28369 | 214.11108 | 0.79430 | 0.2034536 | 2.4138051 | 33 | 1 | 40 days | 0.61 | | | MPC | 2006 $UT_{196}$ |
| 2006 $UU_{196}$ | 18.0 | 0.15 | 20061101 | 15.72008 | 340.54927 | 41.63657 | 4.36159 | 0.0903003 | 2.4120679 | 21 | 1 | 38 days | 0.26 | | | MPC | 2006 $UU_{196}$ |
| 2006 $UW_{196}$ | 18.4 | 0.15 | 20061012 | 229.81674 | 295.50601 | 236.25265 | 1.49397 | 0.0894374 | 2.1725989 | 10 | 1 | 12 days | 0.58 | | | MPC | 2006 $UW_{196}$ |
| 2006 $UZ_{196}$ | 16.1 | 0.15 | 20061101 | 2.60263 | 176.24815 | 223.06503 | 10.78018 | 0.2558664 | 2.7806671 | 43 | 1 | 44 days | 0.45 | | | MPC | 2006 $UZ_{196}$ |
| 2006 $UC_{197}$ | 16.2 | 0.15 | 20061012 | 259.31236 | 115.00533 | 43.36515 | 14.58374 | 0.1483802 | 2.7650200 | 21 | 1 | 48 days | 0.28 | | | MPC | 2006 $UC_{197}$ |
| 2006 $UD_{197}$ | 17.4 | 0.15 | 20061101 | 295.55129 | 74.80818 | 38.19028 | 3.02177 | 0.0288848 | 2.7086183 | 11 | 1 | 23 days | 0.34 | | | MPC | 2006 $UD_{197}$ |
| 2006 $UE_{197}$ | 16.1 | 0.15 | 20061101 | 298.57811 | 251.23980 | 232.44243 | 1.30995 | 0.1548871 | 2.6701907 | 53 | 1 | 46 days | 0.53 | | | MPC | 2006 $UE_{197}$ |
| 2006 $UG_{197}$ | 17.1 | 0.15 | 20061101 | 48.13198 | 304.91223 | 46.07424 | 10.43569 | 0.0783249 | 3.0383377 | 21 | 1 | 39 days | 0.27 | | | MPC | 2006 $UG_{197}$ |
| 2006 $UH_{197}$ | 18.9 | 0.15 | 20061101 | 6.94509 | 204.52773 | 190.48755 | 0.67050 | 0.1599573 | 2.4409880 | 18 | 1 | 32 days | 0.19 | | | MPC | 2006 $UH_{197}$ |
| 2006 $UJ_{197}$ | 18.1 | 0.15 | 20061101 | 214.26847 | 337.07782 | 220.14615 | 5.11818 | 0.1048422 | 2.2155300 | 14 | 1 | 24 days | 0.35 | | | MPC | 2006 $UJ_{197}$ |
| 2006 $UK_{197}$ | 15.3 | 0.15 | 20061012 | 72.28731 | 82.40636 | 226.15168 | 8.31393 | 0.2148647 | 3.9733342 | 22 | 1 | 55 days | 0.26 | | | MPC | 2006 $UK_{197}$ |
| 2006 $UN_{197}$ | 16.7 | 0.15 | 20061012 | 12.96655 | 170.81637 | 218.22503 | 4.96972 | 0.0396784 | 3.0644663 | 14 | 1 | 15 days | 0.53 | | | MPC | 2006 $UN_{197}$ |
| 2006 $UO_{197}$ | 16.8 | 0.15 | 20061012 | 12.09788 | 161.53550 | 221.91579 | 9.10536 | 0.1833728 | 3.0302990 | 17 | 1 | 35 days | 0.24 | | | MPC | 2006 $UO_{197}$ |
| 2006 $UP_{197}$ | 16.1 | 0.15 | 20061101 | 179.20729 | 2.32642 | 226.54948 | 9.45007 | 0.0255609 | 3.1787492 | 17 | 1 | 39 days | 0.36 | | | MPC | 2006 $UP_{197}$ |
| 2006 $UQ_{197}$ | 18.9 | 0.15 | 20061012 | 19.11406 | 146.98809 | 217.45113 | 2.60044 | 0.2333699 | 2.2314288 | 21 | 1 | 45 days | 0.27 | | | MPC | 2006 $UQ_{197}$ |
| 2006 $UY_{197}$ | 17.2 | 0.15 | 20061012 | 38.29006 | 295.93256 | 46.76695 | 11.30305 | 0.2128209 | 2.6003417 | 27 | 1 | 48 days | 0.32 | | | MPC | 2006 $UY_{197}$ |
| 2006 $UZ_{197}$ | 16.8 | 0.15 | 20061101 | 330.80080 | 26.13789 | 58.61729 | 1.95873 | 0.1644425 | 3.1082922 | 30 | 1 | 33 days | 0.24 | | | MPC | 2006 $UZ_{197}$ |
| 2006 $UB_{198}$ | 16.2 | 0.15 | 20061101 | 51.93470 | 276.80089 | 57.28623 | 1.04733 | 0.1803770 | 2.9756401 | 22 | 1 | 37 days | 0.21 | | | MPC | 2006 $UB_{198}$ |
| 2006 $UC_{198}$ | 17.2 | 0.15 | 20061101 | 353.01561 | 4.96505 | 49.75456 | 4.06650 | 0.1780491 | 3.2068140 | 24 | 1 | 40 days | 0.40 | | | MPC | 2006 $UC_{198}$ |
| 2006 $UD_{198}$ | 16.9 | 0.15 | 20061012 | 54.14607 | 272.13217 | 59.35762 | 2.76227 | 0.1500580 | 3.2376909 | 10 | 1 | 12 days | 0.31 | | | MPC | 2006 $UD_{198}$ |
| 2006 $UE_{198}$ | 17.3 | 0.15 | 20061101 | 51.78242 | 295.97790 | 48.19928 | 6.41307 | 0.0880377 | 2.6601010 | 32 | 1 | 40 days | 0.28 | | | MPC | 2006 $UE_{198}$ |
| 2006 $UF_{198}$ | 17.7 | 0.15 | 20061012 | 0.16452 | 183.43262 | 209.60607 | 4.82482 | 0.2227629 | 2.2269088 | 54 | 1 | 56 days | 0.56 | | | MPC | 2006 $UF_{198}$ |
| 2006 $UJ_{198}$ | 18.5 | 0.15 | 20061012 | 331.26770 | 39.76514 | 40.62177 | 9.58547 | 0.2272120 | 2.3045157 | 34 | 1 | 33 days | 0.49 | | | MPC | 2006 $UJ_{198}$ |
| 2006 $UK_{198}$ | 18.0 | 0.15 | 20061101 | 347.68047 | 203.22183 | 218.96147 | 3.74582 | 0.2234136 | 2.5758269 | 30 | 1 | 46 days | 0.32 | | | MPC | 2006 $UK_{198}$ |
| 2006 $UL_{198}$ | 17.0 | 0.15 | 20061101 | 209.66688 | 340.08092 | 215.34006 | 1.27686 | 0.0286761 | 2.8678371 | 14 | 1 | 32 days | 0.22 | | | MPC | 2006 $UL_{198}$ |
| 2006 $UM_{198}$ | 17.8 | 0.15 | 20061012 | 46.01650 | 293.86175 | 41.44455 | 6.40620 | 0.1632342 | 2.5257516 | 24 | 1 | 50 days | 0.25 | | | MPC | 2006 $UM_{198}$ |
| 2006 $UN_{198}$ | 18.1 | 0.15 | 20061012 | 322.33113 | 40.62870 | 46.55752 | 4.50857 | 0.1563603 | 2.5624973 | 14 | 1 | 22 days | 0.27 | | | MPC | 2006 $UN_{198}$ |
| 2006 $UO_{198}$ | 18.8 | 0.15 | 20061012 | 353.13648 | 4.52862 | 39.96343 | 7.27287 | 0.2342439 | 2.3581868 | 35 | 1 | 49 days | 0.37 | | | MPC | 2006 $UO_{198}$ |
| 2006 $UP_{198}$ | 18.5 | 0.15 | 20061101 | 339.68059 | 39.88392 | 41.91019 | 15.60967 | 0.3052375 | 2.9988892 | 19 | 1 | 29 days | 0.24 | | E | MPC | 2006 $UP_{198}$ |
| 2006 $UR_{198}$ | 18.6 | 0.15 | 20061101 | 7.39823 | 201.16875 | 190.35714 | 0.96987 | 0.1951070 | 2.3612907 | 35 | 1 | 35 days | 0.31 | | | MPC | 2006 $UR_{198}$ |
| 2006 $UT_{198}$ | 17.5 | 0.15 | 20061101 | 346.57627 | 207.68553 | 215.68924 | 4.28110 | 0.1911939 | 2.6062915 | 20 | 1 | 43 days | 0.18 | | | MPC | 2006 $UT_{198}$ |
| 2006 $UV_{198}$ | 17.4 | 0.15 | 20061012 | 321.68800 | 78.48590 | 12.74373 | 3.65016 | 0.0878847 | 2.1994459 | 26 | 1 | 52 days | 0.57 | | | MPC | 2006 $UV_{198}$ |
| 2006 $UW_{198}$ | 17.8 | 0.15 | 20060922 | 327.20117 | 213.00665 | 220.76418 | 2.16111 | 0.1323303 | 2.2602884 | 33 | 1 | 61 days | 0.38 | M-v | 4 | MPC | 2006 $UW_{198}$ |
| 2006 $UC_{199}$ | 16.8 | 0.15 | 20061101 | 13.01468 | 324.82543 | 63.77270 | 1.44807 | 0.2013349 | 3.1349995 | 33 | 1 | 36 days | 0.44 | | | MPC | 2006 $UC_{199}$ |
| 2006 $UE_{199}$ | 17.0 | 0.15 | 20061012 | 62.23706 | 268.19200 | 47.79161 | 7.83901 | 0.2263463 | 2.6742475 | 17 | 1 | 33 days | 0.19 | | | MPC | 2006 $UE_{199}$ |
| 2006 $UF_{199}$ | 18.1 | 0.15 | 20061012 | 311.72135 | 54.03008 | 48.31548 | 4.31557 | 0.1417655 | 2.2602741 | 27 | 1 | 52 days | 0.38 | | | MPC | 2006 $UF_{199}$ |
| 2006 $UH_{199}$ | 17.6 | 0.15 | 20061101 | 26.64485 | 316.58265 | 49.23022 | 8.57447 | 0.2416428 | 2.7748485 | 24 | 1 | 43 days | 0.25 | | | MPC | 2006 $UH_{199}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UJ_{199}$ | 16.9 | 0.15 | 20061101 | 41.23248 | 287.62635 | 51.68740 | 6.35404 | 0.2861265 | 2.6092873 | 39 | 1 | 38 days | 0.43 | | MPC | 2006 $UJ_{199}$ |
| 2006 $UK_{199}$ | 17.7 | 0.15 | 20061101 | 216.78771 | 141.04537 | 56.59643 | 3.37418 | 0.0764199 | 2.1929506 | 25 | 1 | 32 days | 0.33 | | MPC | 2006 $UK_{199}$ |
| 2006 $UX_{199}$ | 17.9 | 0.15 | 20060922 | 22.15776 | 306.70907 | 27.14141 | 4.65312 | 0.2805753 | 2.5516934 | 35 | 1 | 60 days | 0.42 | M-v 4 | MPC | 2006 $UX_{199}$ |
| 2006 $UY_{199}$ | 17.4 | 0.15 | 20061012 | 22.14651 | 325.66217 | 24.70632 | 5.57658 | 0.1828390 | 2.6433286 | 20 | 1 | 11 days | 0.37 | | MPC | 2006 $UY_{199}$ |
| 2006 $UZ_{199}$ | 17.3 | 0.15 | 20060922 | 346.75309 | 138.01035 | 260.45592 | 0.14677 | 0.2686811 | 2.7598586 | 30 | 1 | 62 days | 0.34 | M-v 4 | MPC | 2006 $UZ_{199}$ |
| 2006 $UC_{200}$ | 16.8 | 0.15 | 20061012 | 19.73087 | 283.37549 | 62.11727 | 12.11652 | 0.2151287 | 2.6157569 | 21 | 1 | 33 days | 0.53 | | MPC | 2006 $UC_{200}$ |
| 2006 $UF_{200}$ | 17.3 | 0.15 | 20061101 | 64.98418 | 101.80529 | 222.90895 | 20.71529 | 0.0751075 | 1.9141936 | 37 | 1 | 40 days | 0.41 | | MPC | 2006 $UF_{200}$ |
| 2006 $UH_{200}$ | 16.2 | 0.15 | 20061012 | 57.56346 | 58.61898 | 275.35685 | 4.90650 | 0.0402694 | 2.7002381 | 26 | 1 | 41 days | 0.36 | | MPC | 2006 $UH_{200}$ |
| 2006 $UQ_{200}$ | 16.5 | 0.15 | 20061101 | 0.52352 | 17.04780 | 24.38615 | 9.13360 | 0.2079180 | 2.5809372 | 31 | 1 | 35 days | 0.52 | | MPC | 2006 $UQ_{200}$ |
| 2006 $UR_{200}$ | 17.9 | 0.15 | 20060922 | 5.70977 | 17.68070 | 354.09787 | 2.74276 | 0.2612007 | 2.3711808 | 47 | 1 | 129 days | 0.45 | M-v 4 | MPC | 2006 $UR_{200}$ |
| 2006 $UT_{200}$ | 16.2 | 0.15 | 20061012 | 358.87864 | 166.93031 | 227.93737 | 13.10504 | 0.2067340 | 2.6132038 | 58 | 1 | 53 days | 0.54 | | MPC | 2006 $UT_{200}$ |
| 2006 $UU_{200}$ | 15.8 | 0.15 | 20061012 | 50.73015 | 94.29718 | 239.86273 | 8.68666 | 0.1240058 | 3.0448069 | 30 | 1 | 55 days | 0.37 | | MPC | 2006 $UU_{200}$ |
| 2006 $UV_{200}$ | 17.2 | 0.15 | 20061101 | 9.89365 | 166.99346 | 229.45708 | 23.50319 | 0.2283132 | 2.3844618 | 33 | 1 | 34 days | 0.33 | | MPC | 2006 $UV_{200}$ |
| 2006 $UY_{200}$ | 17.5 | 0.15 | 20061012 | 323.91716 | 214.07476 | 233.37454 | 9.37494 | 0.1731423 | 2.3389690 | 56 | 1 | 54 days | 0.46 | | MPC | 2006 $UY_{200}$ |
| 2006 $UB_{201}$ | 15.5 | 0.15 | 20060922 | 339.46485 | 198.36621 | 231.48770 | 16.40565 | 0.2184546 | 3.0784289 | 58 | 1 | 68 days | 0.35 | M-v 3 | MPC | 2006 $UB_{201}$ |
| 2006 $UD_{201}$ | 18.3 | 0.15 | 20061101 | 349.34733 | 25.80954 | 43.87047 | 19.93574 | 0.2662243 | 2.7366671 | 15 | 1 | 27 days | 0.17 | | MPC | 2006 $UD_{201}$ |
| 2006 $UF_{201}$ | 17.9 | 0.15 | 20061101 | 37.41299 | 143.37853 | 219.20466 | 0.24618 | 0.1333030 | 2.5555468 | 24 | 1 | 37 days | 0.34 | | MPC | 2006 $UF_{201}$ |
| 2006 $UG_{201}$ | 17.2 | 0.15 | 20061101 | 38.44801 | 119.74848 | 233.68728 | 2.12517 | 0.2256318 | 3.0639744 | 18 | 1 | 41 days | 0.25 | | MPC | 2006 $UG_{201}$ |
| 2006 $UH_{201}$ | 17.3 | 0.15 | 20061101 | 237.08628 | 132.12694 | 50.91636 | 7.15078 | 0.0865908 | 2.4740982 | 13 | 1 | 30 days | 0.25 | | MPC | 2006 $UH_{201}$ |
| 2006 $UN_{201}$ | 16.4 | 0.15 | 20061012 | 3.06996 | 353.97200 | 48.07662 | 12.17886 | 0.1332013 | 3.0643214 | 23 | 1 | 35 days | 0.19 | | MPC | 2006 $UN_{201}$ |
| 2006 $UQ_{201}$ | 16.7 | 0.15 | 20060922 | 357.53981 | 350.86275 | 50.41541 | 3.67101 | 0.2862520 | 3.1376837 | 52 | 1 | 60 days | 0.60 | M-v 4 | MPC | 2006 $UQ_{201}$ |
| 2006 $US_{201}$ | 17.1 | 0.15 | 20061012 | 39.38217 | 121.66535 | 228.26383 | 18.62076 | 0.1817118 | 2.7522450 | 10 | 1 | 7 days | 0.69 | | MPC | 2006 $US_{201}$ |
| 2006 $UY_{201}$ | 16.5 | 0.15 | 20061012 | 12.40525 | 294.21131 | 59.32313 | 3.04280 | 0.0888827 | 2.7581902 | 23 | 1 | 50 days | 0.51 | | MPC | 2006 $UY_{201}$ |
| 2006 $UD_{202}$ | 17.3 | 0.15 | 20061012 | 320.04560 | 47.38975 | 44.95695 | 5.22742 | 0.2500071 | 2.5989101 | 26 | 1 | 54 days | 0.21 | | MPC | 2006 $UD_{202}$ |
| 2006 $UX_{202}$ | 15.3 | 0.15 | 20061012 | 67.58624 | 157.18741 | 151.03155 | 7.61648 | 0.0562956 | 3.1127253 | 17 | 1 | 7 days | 0.81 | | MPC | 2006 $UX_{202}$ |
| 2006 $UY_{202}$ | 16.7 | 0.15 | 20061012 | 29.62586 | 261.27531 | 84.47062 | 7.10197 | 0.0938087 | 2.9007787 | 9 | 1 | 2 days | 0.21 | | MPC | 2006 $UY_{202}$ |
| 2006 $UB_{203}$ | 16.3 | 0.15 | 20061012 | 44.62467 | 243.94598 | 89.87791 | 6.76785 | 0.0520614 | 2.5690282 | 13 | 1 | 2 days | 0.70 | | MPC | 2006 $UB_{203}$ |
| 2006 $UG_{203}$ | 16.7 | 0.15 | 20061012 | 54.34410 | 190.13240 | 115.79748 | 6.42247 | 0.2339031 | 2.5473264 | 16 | 1 | 31 days | 0.45 | | MPC | 2006 $UG_{203}$ |
| 2006 $UQ_{203}$ | 16.5 | 0.15 | 20060922 | 343.04135 | 91.34960 | 316.85081 | 10.43400 | 0.1869522 | 2.6186789 | 26 | 1 | 66 days | 0.42 | M-v 4 | MPC | 2006 $UQ_{203}$ |
| 2006 $UU_{203}$ | 16.0 | 0.15 | 20061012 | 343.87163 | 46.47530 | 6.22313 | 12.45556 | 0.1310239 | 3.0834205 | 15 | 1 | 7 days | 0.59 | | MPC | 2006 $UU_{203}$ |
| 2006 $UA_{204}$ | 17.3 | 0.15 | 20061012 | 6.64745 | 148.87363 | 226.48702 | 6.39855 | 0.3279093 | 2.6658816 | 50 | 1 | 51 days | 0.40 | | MPC | 2006 $UA_{204}$ |
| 2006 $UB_{204}$ | 16.4 | 0.15 | 20061101 | 39.83065 | 116.32497 | 231.83652 | 5.12205 | 0.1382656 | 2.6723841 | 33 | 1 | 47 days | 0.49 | | MPC | 2006 $UB_{204}$ |
| 2006 $UQ_{204}$ | 16.6 | 0.15 | 20061101 | 52.51662 | 90.92307 | 239.64631 | 4.44661 | 0.2073449 | 2.2286858 | 60 | 1 | 35 days | 0.48 | | MPC | 2006 $UQ_{204}$ |
| 2006 $UR_{204}$ | 16.1 | 0.15 | 20061101 | 338.72267 | 199.81145 | 237.32872 | 13.49179 | 0.1833589 | 2.7297077 | 53 | 1 | 39 days | 0.41 | | MPC | 2006 $UR_{204}$ |
| 2006 $UU_{204}$ | 17.0 | 0.15 | 20061012 | 7.62796 | 145.69521 | 241.93158 | 6.87363 | 0.2794304 | 2.7717794 | 54 | 1 | 54 days | 0.44 | | MPC | 2006 $UU_{204}$ |
| 2006 $UW_{204}$ | 17.6 | 0.15 | 20061012 | 56.26225 | 286.21963 | 15.50451 | 21.00319 | 0.0753108 | 1.9587977 | 12 | 1 | 4 days | 0.26 | | MPC | 2006 $UW_{204}$ |
| 2006 $UC_{205}$ | 16.8 | 0.15 | 20061012 | 253.92783 | 293.93343 | 210.05122 | 12.24990 | 0.1235994 | 2.6152196 | 19 | 1 | 39 days | 0.21 | | MPC | 2006 $UC_{205}$ |
| 2006 $UG_{205}$ | 16.9 | 0.15 | 20061012 | 151.15399 | 16.68013 | 214.50351 | 6.90762 | 0.0732225 | 2.7057080 | 14 | 1 | 5 days | 0.32 | | MPC | 2006 $UG_{205}$ |
| 2006 $UH_{205}$ | 18.1 | 0.15 | 20061101 | 283.15907 | 257.89226 | 223.66617 | 2.75884 | 0.1180534 | 2.2261646 | 26 | 1 | 26 days | 0.31 | | MPC | 2006 $UH_{205}$ |
| 2006 $UM_{205}$ | 17.4 | 0.15 | 20061012 | 163.30646 | 11.91008 | 206.49987 | 1.96833 | 0.1774688 | 2.3938702 | 9 | 1 | 8 days | 0.30 | | MPC | 2006 $UM_{205}$ |
| 2006 $UN_{205}$ | 17.6 | 0.15 | 20061012 | 322.30358 | 228.49872 | 208.01315 | 8.92441 | 0.1779876 | 3.1426458 | 9 | 1 | 8 days | 0.44 | | MPC | 2006 $UN_{205}$ |
| 2006 $UX_{205}$ | 18.3 | 0.15 | 20061012 | 9.74653 | 343.70981 | 30.19105 | 3.90518 | 0.1108998 | 2.7882914 | 10 | 1 | 5 days | 0.32 | | MPC | 2006 $UX_{205}$ |
| 2006 $UZ_{205}$ | 18.6 | 0.15 | 20061012 | 4.52849 | 355.40044 | 24.86320 | 0.77506 | 0.1423613 | 2.6645247 | 9 | 1 | 5 days | 0.29 | | MPC | 2006 $UZ_{205}$ |
| 2006 $UA_{206}$ | 15.5 | 0.15 | 20061012 | 204.19474 | 335.27034 | 210.14675 | 9.11969 | 0.0353799 | 3.1136853 | 23 | 1 | 40 days | 0.14 | | MPC | 2006 $UA_{206}$ |
| 2006 $UB_{206}$ | 17.2 | 0.15 | 20061012 | 101.25116 | 257.31558 | 27.41803 | 1.75953 | 0.0144691 | 2.6799517 | 10 | 1 | 5 days | 0.30 | | MPC | 2006 $UB_{206}$ |
| 2006 $UC_{206}$ | 16.8 | 0.15 | 20061012 | 156.89159 | 196.12683 | 30.81816 | 29.04500 | 0.0973633 | 2.6353771 | 13 | 1 | 9 days | 0.79 | | MPC | 2006 $UC_{206}$ |
| 2006 $UD_{206}$ | 16.9 | 0.15 | 20061012 | 2.57594 | 176.50849 | 209.01800 | 8.90957 | 0.0660974 | 3.0959648 | 10 | 1 | 5 days | 0.22 | | MPC | 2006 $UD_{206}$ |
| 2006 $UF_{206}$ | 19.5 | 0.15 | 20061012 | 3.06928 | 343.23154 | 39.09321 | 0.57674 | 0.0987130 | 2.0971700 | 13 | 1 | 9 days | 0.89 | | MPC | 2006 $UF_{206}$ |
| 2006 $UG_{206}$ | 15.4 | 0.15 | 20061012 | 86.34992 | 77.51393 | 209.74719 | 9.86706 | 0.1372184 | 3.3203116 | 31 | 1 | 58 days | 0.36 | E | MPC | 2006 $UG_{206}$ |
| 2006 $UH_{206}$ | 18.3 | 0.15 | 20061012 | 25.12288 | 155.51908 | 205.95154 | 4.49087 | 0.0185640 | 2.3289352 | 10 | 1 | 5 days | 0.33 | | MPC | 2006 $UH_{206}$ |
| 2006 $UL_{206}$ | 18.7 | 0.15 | 20061012 | 1.74239 | 185.53957 | 198.42140 | 1.16353 | 0.1867572 | 2.3989316 | 28 | 1 | 59 days | 0.31 | | MPC | 2006 $UL_{206}$ |
| 2006 $UM_{206}$ | 18.5 | 0.15 | 20061012 | 358.11968 | 191.20253 | 199.08270 | 3.79374 | 0.1479642 | 2.6897478 | 10 | 1 | 5 days | 0.27 | | MPC | 2006 $UM_{206}$ |
| 2006 $UN_{206}$ | 20.3 | 0.15 | 20061012 | 357.30418 | 347.77755 | 41.65004 | 1.68701 | 0.1818563 | 2.0811526 | 10 | 1 | 5 days | 0.29 | | MPC | 2006 $UN_{206}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UO_{206}$ | 19.5 | 0.15 | 20061012 | 34.03734 | 201.48780 | 140.14351 | 0.81933 | 0.1453258 | 2.1443795 | 10 | 1 | 5 days | 0.45 | | | MPC | 2006 $UO_{206}$ |
| 2006 $UQ_{206}$ | 17.5 | 0.15 | 20061012 | 28.08191 | 129.82308 | 207.40193 | 8.29656 | 0.2918509 | 2.8317366 | 13 | 1 | 9 days | 0.67 | | | MPC | 2006 $UQ_{206}$ |
| 2006 $US_{206}$ | 17.8 | 0.15 | 20061012 | 357.68846 | 201.61944 | 190.09644 | 3.38104 | 0.1839970 | 3.0537399 | 10 | 1 | 5 days | 0.32 | | | MPC | 2006 $US_{206}$ |
| 2006 $UU_{206}$ | 16.4 | 0.15 | 20061101 | 287.49445 | 311.55625 | 170.46304 | 1.42402 | 0.1418579 | 3.0808931 | 14 | 1 | 22 days | 0.32 | | | MPC | 2006 $UU_{206}$ |
| 2006 $UV_{206}$ | 14.9 | 0.15 | 20061012 | 178.69296 | 0.97101 | 210.69809 | 25.83788 | 0.1966580 | 3.0847248 | 13 | 1 | 9 days | 0.45 | | | MPC | 2006 $UV_{206}$ |
| 2006 $UZ_{206}$ | 18.1 | 0.15 | 20061012 | 278.62009 | 288.51223 | 194.65306 | 2.07540 | 0.1123201 | 2.4564713 | 9 | 1 | 5 days | 0.26 | | | MPC | 2006 $UZ_{206}$ |
| 2006 $UC_{207}$ | 16.4 | 0.15 | 20061012 | 301.36181 | 60.21846 | 38.13690 | 10.39525 | 0.1007934 | 2.7044450 | 34 | 1 | 52 days | 0.36 | | | MPC | 2006 $UC_{207}$ |
| 2006 $UE_{207}$ | 16.7 | 0.15 | 20061101 | 27.66045 | 291.38301 | 69.24976 | 3.09466 | 0.0965711 | 3.1516304 | 17 | 1 | 35 days | 0.31 | | | MPC | 2006 $UE_{207}$ |
| 2006 $US_{207}$ | 17.3 | 0.15 | 20061012 | 212.48420 | 148.67702 | 39.52193 | 7.45200 | 0.0931660 | 2.6827602 | 10 | 1 | 6 days | 0.47 | | | MPC | 2006 $US_{207}$ |
| 2006 $UT_{207}$ | 16.3 | 0.15 | 20061012 | 197.47718 | 357.25561 | 206.08077 | 1.91177 | 0.1546899 | 2.7416284 | 10 | 1 | 8 days | 0.40 | | | MPC | 2006 $UT_{207}$ |
| 2006 $UV_{207}$ | 16.3 | 0.15 | 20061012 | 196.31954 | 165.17962 | 38.97706 | 21.21913 | 0.1550135 | 2.6929139 | 10 | 1 | 6 days | 0.66 | | | MPC | 2006 $UV_{207}$ |
| 2006 $UX_{207}$ | 17.1 | 0.15 | 20061012 | 281.54305 | 278.88201 | 209.94568 | 2.40027 | 0.1349508 | 2.6100467 | 26 | 1 | 53 days | 0.41 | | | MPC | 2006 $UX_{207}$ |
| 2006 $UA_{208}$ | 18.0 | 0.15 | 20061101 | 322.88205 | 48.35577 | 40.23659 | 3.99967 | 0.1464152 | 2.6624838 | 18 | 1 | 35 days | 0.32 | | | MPC | 2006 $UA_{208}$ |
| 2006 $UC_{208}$ | 17.1 | 0.15 | 20061101 | 106.08914 | 74.91811 | 212.95662 | 5.69497 | 0.0561011 | 2.9778102 | 11 | 1 | 19 days | 0.22 | | | MPC | 2006 $UC_{208}$ |
| 2006 $UE_{208}$ | 17.4 | 0.15 | 20061101 | 316.79750 | 242.05557 | 204.62605 | 1.43004 | 0.0420935 | 2.8663420 | 11 | 1 | 29 days | 0.22 | | | MPC | 2006 $UE_{208}$ |
| 2006 $UF_{208}$ | 16.1 | 0.15 | 20061012 | 303.77209 | 57.63821 | 41.81558 | 11.00256 | 0.0708810 | 3.1016896 | 28 | 1 | 58 days | 0.28 | | | MPC | 2006 $UF_{208}$ |
| 2006 $UM_{208}$ | 16.5 | 0.15 | 20061012 | 231.70530 | 124.49986 | 45.99696 | 5.59638 | 0.0623997 | 2.9783318 | 9 | 1 | 8 days | 0.53 | | | MPC | 2006 $UM_{208}$ |
| 2006 $UN_{208}$ | 16.9 | 0.15 | 20061101 | 262.06706 | 269.57795 | 240.07301 | 20.90042 | 0.0680029 | 1.9244861 | 33 | 1 | 30 days | 0.60 | | | MPC | 2006 $UN_{208}$ |
| 2006 $US_{208}$ | 15.9 | 0.15 | 20061012 | 322.65810 | 32.50537 | 46.71857 | 10.79732 | 0.0679101 | 3.0219330 | 24 | 1 | 52 days | 0.24 | | D | MPC | 2006 $US_{208}$ |
| 2006 $UV_{208}$ | 15.9 | 0.15 | 20061101 | 49.94032 | 135.52729 | 210.40098 | 9.01281 | 0.0741534 | 3.1666126 | 20 | 1 | 25 days | 0.42 | | | MPC | 2006 $UV_{208}$ |
| 2006 $UX_{208}$ | 16.4 | 0.15 | 20061012 | 334.42582 | 18.32764 | 55.68293 | 8.37837 | 0.1857685 | 2.7876518 | 35 | 1 | 50 days | 0.55 | | | MPC | 2006 $UX_{208}$ |
| 2006 $UY_{208}$ | 17.6 | 0.15 | 20061101 | 320.91461 | 26.29185 | 68.75179 | 3.87293 | 0.1754028 | 2.7163756 | 16 | 1 | 23 days | 0.24 | | | MPC | 2006 $UY_{208}$ |
| 2006 $UZ_{208}$ | 17.9 | 0.15 | 20061012 | 48.76041 | 160.91004 | 164.22822 | 1.90991 | 0.1958972 | 2.2346892 | 17 | 1 | 50 days | 0.16 | | | MPC | 2006 $UZ_{208}$ |
| 2006 $UA_{209}$ | 18.0 | 0.15 | 20061012 | 295.04094 | 271.15231 | 199.86878 | 4.92318 | 0.1047269 | 2.2565198 | 20 | 1 | 34 days | 0.45 | | | MPC | 2006 $UA_{209}$ |
| 2006 $UE_{209}$ | 17.8 | 0.15 | 20061012 | 22.28931 | 155.19241 | 197.23507 | 5.11270 | 0.2908907 | 2.5940232 | 16 | 1 | 51 days | 0.32 | | | MPC | 2006 $UE_{209}$ |
| 2006 $UF_{209}$ | 18.3 | 0.15 | 20061012 | 28.55180 | 177.49386 | 170.98226 | 2.07253 | 0.2279815 | 2.3763010 | 19 | 1 | 35 days | 0.26 | | | MPC | 2006 $UF_{209}$ |
| 2006 $UG_{209}$ | 16.9 | 0.15 | 20061012 | 329.11637 | 26.84918 | 48.17833 | 17.38014 | 0.0961564 | 3.2013139 | 9 | 1 | 8 days | 0.18 | | | MPC | 2006 $UG_{209}$ |
| 2006 $UJ_{209}$ | 16.7 | 0.15 | 20061012 | 2.48535 | 183.12043 | 207.15476 | 10.67795 | 0.2405303 | 3.1485237 | 34 | 1 | 50 days | 0.45 | | | MPC | 2006 $UJ_{209}$ |
| 2006 $UM_{209}$ | 16.7 | 0.15 | 20061012 | 332.57758 | 7.99549 | 60.08043 | 4.53231 | 0.0907968 | 2.9821031 | 9 | 1 | 8 days | 0.61 | | | MPC | 2006 $UM_{209}$ |
| 2006 $UW_{209}$ | 18.2 | 0.15 | 20061012 | 8.57265 | 41.24740 | 341.53818 | 4.17417 | 0.2502072 | 2.5629718 | 9 | 1 | 8 days | 0.15 | | | MPC | 2006 $UW_{209}$ |
| 2006 $UA_{210}$ | 17.8 | 0.15 | 20061101 | 46.71098 | 15.20866 | 327.61694 | 4.16263 | 0.1707052 | 2.2928164 | 16 | 1 | 19 days | 0.47 | | | MPC | 2006 $UA_{210}$ |
| 2006 $UC_{210}$ | 16.0 | 0.15 | 20061101 | 348.34793 | 159.88496 | 262.29281 | 8.31664 | 0.1017427 | 3.1470116 | 17 | 1 | 22 days | 0.46 | | | MPC | 2006 $UC_{210}$ |
| 2006 $UH_{210}$ | 18.4 | 0.15 | 20061101 | 5.34572 | 94.71634 | 302.16918 | 3.51162 | 0.2538422 | 2.6967103 | 16 | 1 | 22 days | 0.23 | | | MPC | 2006 $UH_{210}$ |
| 2006 $UL_{210}$ | 15.6 | 0.15 | 20061101 | 358.40380 | 153.96489 | 256.56544 | 8.28052 | 0.0837216 | 3.1672224 | 32 | 1 | 30 days | 0.42 | | | MPC | 2006 $UL_{210}$ |
| 2006 $UQ_{210}$ | 17.6 | 0.15 | 20061101 | 71.66654 | 55.29213 | 264.26282 | 6.53660 | 0.1422222 | 2.2412582 | 13 | 1 | 22 days | 0.16 | | | MPC | 2006 $UQ_{210}$ |
| 2006 $UR_{210}$ | 17.5 | 0.15 | 20061012 | 26.33170 | 347.06542 | 18.98452 | 7.49890 | 0.1359104 | 2.3032683 | 16 | 1 | 42 days | 0.39 | | | MPC | 2006 $UR_{210}$ |
| 2006 $UT_{210}$ | 17.6 | 0.15 | 20061101 | 347.96992 | 165.66735 | 259.68420 | 4.48813 | 0.2090980 | 2.2942393 | 68 | 1 | 34 days | 0.59 | | | MPC | 2006 $UT_{210}$ |
| 2006 $UU_{210}$ | 17.6 | 0.15 | 20061101 | 74.34692 | 9.20209 | 292.72118 | 3.74007 | 0.2719043 | 2.1095320 | 15 | 1 | 26 days | 0.22 | | | MPC | 2006 $UU_{210}$ |
| 2006 $UV_{210}$ | 17.8 | 0.15 | 20061101 | 2.07723 | 128.95523 | 276.71908 | 4.79138 | 0.0962442 | 2.3631593 | 28 | 1 | 24 days | 0.18 | | | MPC | 2006 $UV_{210}$ |
| 2006 $UW_{210}$ | 16.7 | 0.15 | 20061101 | 328.49475 | 216.52659 | 239.21251 | 17.05810 | 0.2001007 | 3.0376970 | 20 | 1 | 36 days | 0.20 | | | MPC | 2006 $UW_{210}$ |
| 2006 $UX_{210}$ | 17.2 | 0.15 | 20061012 | 326.47619 | 56.08019 | 30.79074 | 9.24632 | 0.1361599 | 2.7510209 | 20 | 1 | 33 days | 0.30 | | | MPC | 2006 $UX_{210}$ |
| 2006 $UY_{210}$ | 17.7 | 0.15 | 20061101 | 9.97759 | 22.21047 | 12.58158 | 4.44703 | 0.1373963 | 2.5875934 | 18 | 1 | 23 days | 0.23 | | | MPC | 2006 $UY_{210}$ |
| 2006 $UZ_{210}$ | 16.0 | 0.15 | 20061101 | 34.90325 | 117.94636 | 249.35734 | 9.96141 | 0.1021609 | 3.1533662 | 16 | 1 | 24 days | 0.15 | | | MPC | 2006 $UZ_{210}$ |
| 2006 $UA_{211}$ | 17.5 | 0.15 | 20061101 | 144.82947 | 256.90756 | 359.95243 | 3.86662 | 0.1200073 | 2.2711423 | 17 | 1 | 22 days | 0.21 | | | MPC | 2006 $UA_{211}$ |
| 2006 $UB_{211}$ | 17.0 | 0.15 | 20061101 | 52.18550 | 87.72135 | 252.02322 | 6.58136 | 0.1740766 | 3.1250810 | 15 | 1 | 28 days | 0.23 | | | MPC | 2006 $UB_{211}$ |
| 2006 $UC_{211}$ | 16.2 | 0.15 | 20061101 | 353.47846 | 58.95857 | 0.63868 | 4.55439 | 0.1900137 | 3.1739825 | 28 | 1 | 27 days | 0.35 | | | MPC | 2006 $UC_{211}$ |
| 2006 $UD_{211}$ | 17.9 | 0.15 | 20061101 | 47.55118 | 12.71523 | 323.63087 | 2.15817 | 0.2385503 | 2.5627430 | 12 | 1 | 24 days | 0.19 | | | MPC | 2006 $UD_{211}$ |
| 2006 $UF_{211}$ | 16.6 | 0.15 | 20061101 | 13.27697 | 143.89559 | 250.96766 | 9.37383 | 0.0409195 | 3.2082940 | 12 | 1 | 24 days | 0.22 | | | MPC | 2006 $UF_{211}$ |
| 2006 $UG_{211}$ | 15.8 | 0.15 | 20061101 | 249.58496 | 134.66350 | 26.82405 | 9.69325 | 0.0137803 | 2.9725354 | 28 | 1 | 27 days | 0.23 | | | MPC | 2006 $UG_{211}$ |
| 2006 $UH_{211}$ | 16.3 | 0.15 | 20061101 | 346.45192 | 41.01152 | 29.51662 | 10.45969 | 0.2296870 | 3.1510583 | 38 | 1 | 34 days | 0.68 | | | MPC | 2006 $UH_{211}$ |
| 2006 $UM_{211}$ | 15.7 | 0.15 | 20061012 | 57.82110 | 317.74968 | 7.15574 | 5.75006 | 0.1862287 | 3.2096160 | 24 | 1 | 41 days | 0.25 | | | MPC | 2006 $UM_{211}$ |
| 2006 $UP_{211}$ | 16.7 | 0.15 | 20060922 | 351.78468 | 55.16459 | 340.90276 | 9.32998 | 0.2009709 | 2.5915364 | 27 | 1 | 66 days | 0.57 | M-v | 4 | MPC | 2006 $UP_{211}$ |
| 2006 $US_{211}$ | 17.9 | 0.15 | 20061101 | 15.97904 | 114.02929 | 270.51357 | 4.30912 | 0.2095871 | 2.5819562 | 15 | 1 | 27 days | 0.23 | | | MPC | 2006 $US_{211}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UT_{211}$ | 17.5 | 0.15 | 20061101 | 357.10310 | 170.81472 | 243.15237 | 8.44225 | 0.2847809 | 2.6670893 | 29 | 1 | 32 days | 0.54 | | MPC | 2006 $UT_{211}$ |
| 2006 $UV_{211}$ | 17.9 | 0.15 | 20061101 | 35.98938 | 103.73694 | 257.42001 | 4.96433 | 0.1525274 | 2.3026810 | 15 | 1 | 27 days | 0.40 | | MPC | 2006 $UV_{211}$ |
| 2006 $UW_{211}$ | 18.5 | 0.15 | 20061012 | 2.41924 | 52.18250 | 344.59064 | 3.41473 | 0.2594166 | 2.5953965 | 22 | 1 | 42 days | 0.28 | | MPC | 2006 $UW_{211}$ |
| 2006 $UX_{211}$ | 17.1 | 0.15 | 20061012 | 333.89503 | 88.84326 | 351.29698 | 4.38583 | 0.1258053 | 2.8447596 | 22 | 1 | 51 days | 0.21 | | MPC | 2006 $UX_{211}$ |
| 2006 $UZ_{211}$ | 17.1 | 0.15 | 20061101 | 299.31645 | 148.75223 | 326.85003 | 3.52599 | 0.0234245 | 2.7944789 | 15 | 1 | 27 days | 0.23 | | MPC | 2006 $UZ_{211}$ |
| 2006 $UA_{212}$ | 16.5 | 0.15 | 20061012 | 64.23739 | 346.40339 | 346.28994 | 3.48795 | 0.1025849 | 2.8340576 | 13 | 1 | 27 days | 0.18 | | MPC | 2006 $UA_{212}$ |
| 2006 $UC_{212}$ | 17.2 | 0.15 | 20061012 | 134.20994 | 248.50908 | 14.53716 | 5.72714 | 0.1447389 | 2.3193908 | 16 | 1 | 42 days | 0.17 | | MPC | 2006 $UC_{212}$ |
| 2006 $UD_{212}$ | 17.2 | 0.15 | 20061012 | 18.76390 | 91.59667 | 285.69987 | 3.75377 | 0.1931973 | 2.7970072 | 12 | 1 | 8 days | 0.14 | | MPC | 2006 $UD_{212}$ |
| 2006 $UF_{212}$ | 18.6 | 0.15 | 20061012 | 327.06979 | 74.88977 | 13.92345 | 5.05089 | 0.1814752 | 2.2859717 | 28 | 1 | 49 days | 0.26 | | MPC | 2006 $UF_{212}$ |
| 2006 $UG_{212}$ | 17.4 | 0.15 | 20061012 | 257.54500 | 160.22940 | 357.94584 | 3.66081 | 0.0903626 | 2.2576596 | 19 | 1 | 54 days | 0.21 | | MPC | 2006 $UG_{212}$ |
| 2006 $UH_{212}$ | 17.0 | 0.15 | 20061012 | 38.02298 | 97.17524 | 266.26552 | 5.61121 | 0.0782541 | 2.7140472 | 9 | 1 | 8 days | 0.34 | | MPC | 2006 $UH_{212}$ |
| 2006 $UM_{212}$ | 17.2 | 0.15 | 20061012 | 56.75470 | 332.37315 | 13.91899 | 5.88039 | 0.0558779 | 2.7065652 | 22 | 1 | 46 days | 0.28 | | MPC | 2006 $UM_{212}$ |
| 2006 $UN_{212}$ | 16.5 | 0.15 | 20061012 | 247.20965 | 216.97412 | 323.19524 | 2.97069 | 0.1848181 | 2.6106879 | 9 | 1 | 8 days | 0.59 | | MPC | 2006 $UN_{212}$ |
| 2006 $UR_{212}$ | 17.3 | 0.15 | 20061101 | 18.83180 | 111.21132 | 274.42083 | 4.54524 | 0.1609633 | 2.5631794 | 40 | 1 | 32 days | 0.36 | | MPC | 2006 $UR_{212}$ |
| 2006 $UT_{212}$ | 17.6 | 0.15 | 20061101 | 69.68810 | 340.44704 | 354.09030 | 4.01594 | 0.0870847 | 2.5590996 | 12 | 1 | 30 days | 0.18 | | MPC | 2006 $UT_{212}$ |
| 2006 $UU_{212}$ | 16.2 | 0.15 | 20061101 | 79.91374 | 289.21235 | 37.74228 | 10.37337 | 0.0782975 | 2.9725727 | 19 | 1 | 33 days | 0.32 | | MPC | 2006 $UU_{212}$ |
| 2006 $UV_{212}$ | 17.2 | 0.15 | 20061101 | 353.68902 | 182.62150 | 237.96554 | 10.99147 | 0.2173803 | 2.3211251 | 51 | 1 | 35 days | 0.41 | | MPC | 2006 $UV_{212}$ |
| 2006 $UW_{212}$ | 15.9 | 0.15 | 20061012 | 260.25644 | 124.34283 | 46.87945 | 12.32952 | 0.1708343 | 3.0545805 | 13 | 1 | 5 days | 0.41 | | MPC | 2006 $UW_{212}$ |
| 2006 $UD_{213}$ | 16.9 | 0.15 | 20061012 | 12.24271 | 51.77982 | 337.50547 | 2.15204 | 0.1942647 | 3.0052401 | 17 | 1 | 55 days | 0.35 | | MPC | 2006 $UD_{213}$ |
| 2006 $UE_{213}$ | 17.1 | 0.15 | 20061101 | 86.76400 | 54.61543 | 265.50185 | 3.70279 | 0.0638572 | 2.7824325 | 18 | 1 | 30 days | 0.25 | | MPC | 2006 $UE_{213}$ |
| 2006 $UF_{213}$ | 16.7 | 0.15 | 20061012 | 69.75096 | 80.71913 | 241.64882 | 12.55867 | 0.1484760 | 2.6743286 | 23 | 1 | 51 days | 0.46 | | MPC | 2006 $UF_{213}$ |
| 2006 $UG_{213}$ | 17.1 | 0.15 | 20061101 | 45.93677 | 104.38353 | 255.89210 | 4.59267 | 0.0865974 | 2.8024844 | 9 | 1 | 18 days | 0.16 | | MPC | 2006 $UG_{213}$ |
| 2006 $UH_{213}$ | 17.7 | 0.15 | 20061101 | 352.37364 | 181.73794 | 243.73913 | 9.89102 | 0.2180932 | 3.1210205 | 15 | 1 | 30 days | 0.20 | | MPC | 2006 $UH_{213}$ |
| 2006 $UL_{213}$ | 16.2 | 0.15 | 20061012 | 242.37588 | 174.60285 | 10.59817 | 2.86415 | 0.1642573 | 2.9315351 | 9 | 1 | 8 days | 0.27 | | MPC | 2006 $UL_{213}$ |
| 2006 $UM_{213}$ | 17.9 | 0.15 | 20061101 | 326.14612 | 191.98195 | 257.71474 | 3.87210 | 0.0584508 | 2.2251405 | 19 | 1 | 30 days | 0.33 | | MPC | 2006 $UM_{213}$ |
| 2006 $UP_{213}$ | 18.4 | 0.15 | 20061012 | 7.24262 | 142.77410 | 247.45795 | 5.13825 | 0.2064267 | 2.2777885 | 27 | 1 | 49 days | 0.41 | | MPC | 2006 $UP_{213}$ |
| 2006 $UR_{213}$ | 17.8 | 0.15 | 20061101 | 284.21407 | 248.19668 | 250.84348 | 4.78690 | 0.0881228 | 2.3717774 | 22 | 1 | 30 days | 0.22 | | MPC | 2006 $UR_{213}$ |
| 2006 $US_{213}$ | 17.5 | 0.15 | 20061101 | 21.14466 | 130.45755 | 256.04774 | 5.12218 | 0.0893253 | 2.7166406 | 21 | 1 | 28 days | 0.24 | | MPC | 2006 $US_{213}$ |
| 2006 $UT_{213}$ | 16.9 | 0.15 | 20061012 | 55.83394 | 32.20084 | 310.47489 | 2.55374 | 0.0905471 | 2.7035830 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $UT_{213}$ |
| 2006 $UW_{213}$ | 17.9 | 0.15 | 20061012 | 326.40809 | 96.67096 | 354.55210 | 1.98118 | 0.1909376 | 2.3723739 | 26 | 1 | 56 days | 0.44 | | MPC | 2006 $UW_{213}$ |
| 2006 $UY_{213}$ | 17.5 | 0.15 | 20061012 | 21.45373 | 352.87852 | 29.57524 | 6.50172 | 0.0794320 | 2.7404123 | 9 | 1 | 8 days | 0.25 | | MPC | 2006 $UY_{213}$ |
| 2006 $UZ_{213}$ | 16.2 | 0.15 | 20061101 | 66.41184 | 80.23743 | 240.00978 | 17.18935 | 0.2326375 | 3.0816866 | 13 | 1 | 32 days | 0.15 | | MPC | 2006 $UZ_{213}$ |
| 2006 $UC_{214}$ | 16.3 | 0.15 | 20061101 | 15.78502 | 359.40787 | 37.57569 | 10.95534 | 0.0574391 | 3.1148713 | 21 | 1 | 30 days | 0.17 | | MPC | 2006 $UC_{214}$ |
| 2006 $UF_{214}$ | 16.0 | 0.15 | 20061012 | 52.98656 | 95.61438 | 251.60870 | 8.10968 | 0.0842906 | 3.1765033 | 16 | 1 | 45 days | 0.23 | | MPC | 2006 $UF_{214}$ |
| 2006 $UH_{214}$ | 17.1 | 0.15 | 20061101 | 19.12400 | 129.38840 | 259.79266 | 4.61631 | 0.0765378 | 2.8865019 | 15 | 1 | 26 days | 0.30 | | MPC | 2006 $UH_{214}$ |
| 2006 $UK_{214}$ | 19.0 | 0.15 | 20061101 | 2.82158 | 37.95022 | 7.62087 | 3.65616 | 0.1920297 | 2.5306567 | 9 | 1 | 23 days | 0.51 | | MPC | 2006 $UK_{214}$ |
| 2006 $UL_{214}$ | 19.4 | 0.15 | 20061101 | 3.12637 | 6.03157 | 35.34518 | 9.91203 | 0.3463328 | 2.6598080 | 20 | 1 | 30 days | 0.25 | | MPC | 2006 $UL_{214}$ |
| 2006 $UN_{214}$ | 16.3 | 0.15 | 20061101 | 196.34784 | 330.71893 | 249.35990 | 9.47659 | 0.0954068 | 3.0330473 | 12 | 1 | 28 days | 0.19 | | MPC | 2006 $UN_{214}$ |
| 2006 $UR_{214}$ | 16.0 | 0.15 | 20061101 | 29.67956 | 330.61012 | 108.90362 | 12.25018 | 0.0866557 | 3.0171965 | 15 | 1 | 32 days | 0.26 | | MPC | 2006 $UR_{214}$ |
| 2006 $UW_{214}$ | 17.0 | 0.15 | 20061101 | 339.85599 | 204.28088 | 220.63733 | 21.74048 | 0.0529511 | 1.9057327 | 48 | 1 | 38 days | 0.53 | | MPC | 2006 $UW_{214}$ |
| 2006 $UX_{214}$ | 16.3 | 0.15 | 20061101 | 38.02860 | 4.30926 | 335.83174 | 5.35934 | 0.3094096 | 2.6248004 | 30 | 1 | 38 days | 0.45 | | MPC | 2006 $UX_{214}$ |
| 2006 $UZ_{214}$ | 17.9 | 0.15 | 20061012 | 293.49719 | 100.60491 | 17.74744 | 5.28312 | 0.1624276 | 2.6013745 | 51 | 1 | 53 days | 0.47 | | MPC | 2006 $UZ_{214}$ |
| 2006 $UA_{215}$ | 17.5 | 0.15 | 20061101 | 46.18669 | 112.31967 | 233.97083 | 19.35102 | 0.0934503 | 1.9281786 | 51 | 1 | 39 days | 0.58 | | MPC | 2006 $UA_{215}$ |
| 2006 $UC_{215}$ | 17.2 | 0.15 | 20061012 | 312.99173 | 218.95218 | 245.43149 | 4.61012 | 0.1524026 | 2.2455261 | 48 | 1 | 55 days | 0.53 | | MPC | 2006 $UC_{215}$ |
| 2006 $UF_{215}$ | 16.9 | 0.15 | 20061012 | 45.36794 | 315.75925 | 26.68542 | 9.39805 | 0.0816297 | 3.1080072 | 54 | 1 | 54 days | 0.31 | | MPC | 2006 $UF_{215}$ |
| 2006 $UG_{215}$ | 17.5 | 0.15 | 20061012 | 6.89971 | 333.49883 | 45.21451 | 8.76774 | 0.1975726 | 2.2294221 | 41 | 1 | 48 days | 0.40 | | MPC | 2006 $UG_{215}$ |
| 2006 $UJ_{215}$ | 16.9 | 0.15 | 20061012 | 261.03223 | 115.69160 | 26.78324 | 9.53112 | 0.1227300 | 2.7874063 | 41 | 1 | 59 days | 0.33 | | MPC | 2006 $UJ_{215}$ |
| 2006 $UL_{215}$ | 18.9 | 0.15 | 20061101 | 349.35733 | 318.29417 | 120.05578 | 9.14618 | 0.4655575 | 2.5958881 | 45 | 1 | 27 days | 0.42 | | MPC | 2006 $UL_{215}$ |
| 2006 $UM_{215}$ | 16.4 | 0.15 | 20061012 | 19.73554 | 250.40079 | 123.35207 | 3.71554 | 0.1209326 | 2.6455675 | 38 | 1 | 48 days | 0.63 | | MPC | 2006 $UM_{215}$ |
| 2006 $UP_{215}$ | 16.4 | 0.15 | 20061101 | 27.36178 | 99.52158 | 274.84092 | 7.70656 | 0.1584838 | 2.2714991 | 31 | 1 | 33 days | 0.54 | | MPC | 2006 $UP_{215}$ |
| 2006 $UQ_{215}$ | 17.1 | 0.15 | 20061101 | 2.12626 | 251.31668 | 141.56590 | 6.90469 | 0.0124577 | 2.7102760 | 12 | 1 | 18 days | 0.29 | | MPC | 2006 $UQ_{215}$ |
| 2006 $UU_{215}$ | 16.6 | 0.15 | 20060922 | 274.81627 | 264.70184 | 218.60277 | 3.43022 | 0.1008107 | 2.6449381 | 40 | 1 | 62 days | 0.39 | M-v 4 | MPC | 2006 $UU_{215}$ |
| 2006 $UV_{215}$ | 18.6 | 0.15 | 20061101 | 15.14851 | 153.84096 | 218.75305 | 2.61982 | 0.2087444 | 2.7317792 | 18 | 1 | 25 days | 0.33 | | MPC | 2006 $UV_{215}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UW_{215}$ | 16.2 | 0.15 | 20061012 | 340.20236 | 25.37379 | 124.64059 | 33.45372 | 0.2042138 | 2.7668492 | 16 | 1 | 9 days | 0.48 | | | MPC | 2006 $UW_{215}$ |
| 2006 $UX_{215}$ | 18.0 | 0.15 | 20061012 | 52.83984 | 116.24150 | 199.55843 | 22.08771 | 0.2798421 | 2.1108319 | 20 | 1 | 1 days | 0.41 | | | MPC | 2006 $UX_{215}$ |
| 2006 $UY_{215}$ | 23.1 | 0.15 | 20060922 | 303.54430 | 262.71911 | 215.83242 | 9.33691 | 0.4583436 | 1.3804307 | 33 | 1 | 3 days | 0.57 | M-v | 7 | MPC | 2006 $UY_{215}$ |
| 2006 $UZ_{215}$ | 25.5 | 0.15 | 20060922 | 77.24341 | 222.51911 | 35.26903 | 14.26472 | 0.2065605 | 0.8911871 | 37 | 1 | 4 days | 0.46 | M-v | 7 | MPC | 2006 $UZ_{215}$ |
| 2006 $UA_{216}$ | 23.6 | 0.15 | 20060922 | 345.13477 | 340.40734 | 42.99433 | 6.66847 | 0.3164214 | 1.4563667 | 67 | 1 | 25 days | 0.33 | M-v | 5 | MPC | 2006 $UA_{216}$ |
| 2006 $UB_{216}$ | 17.8 | 0.15 | 20061012 | 59.06910 | 265.38765 | 27.00589 | 7.11407 | 0.3270098 | 2.3583703 | 46 | 1 | 47 days | 0.35 | | E | MPC | 2006 $UB_{216}$ |
| 2006 $UD_{216}$ | 17.4 | 0.15 | 20061101 | 23.07881 | 339.36137 | 21.38365 | 5.16310 | 0.1734537 | 3.2147236 | 25 | 1 | 26 days | 0.39 | | | MPC | 2006 $UD_{216}$ |
| 2006 $UE_{216}$ | 16.5 | 0.15 | 20061012 | 79.51887 | 275.93459 | 28.50972 | 6.12737 | 0.0595799 | 2.7646405 | 13 | 1 | 4 days | 0.63 | | | MPC | 2006 $UE_{216}$ |
| 2006 $UF_{216}$ | 18.6 | 0.15 | 20061012 | 5.83301 | 158.61481 | 220.03790 | 4.68871 | 0.2033087 | 2.3718469 | 14 | 1 | 5 days | 0.68 | | | MPC | 2006 $UF_{216}$ |
| 2006 $UG_{216}$ | 16.2 | 0.15 | 20061012 | 10.00175 | 212.34426 | 173.84977 | 6.21359 | 0.0780700 | 2.6925483 | 19 | 1 | 53 days | 0.50 | | | MPC | 2006 $UG_{216}$ |
| 2006 $UH_{216}$ | 16.8 | 0.15 | 20061101 | 12.01223 | 212.09811 | 172.48688 | 5.25029 | 0.1952180 | 2.6620661 | 13 | 1 | 27 days | 0.46 | | | MPC | 2006 $UH_{216}$ |
| 2006 $UJ_{216}$ | 18.2 | 0.15 | 20061101 | 7.03036 | 302.12433 | 87.95576 | 4.52948 | 0.2376441 | 2.2887738 | 16 | 1 | 19 days | 0.45 | | | MPC | 2006 $UJ_{216}$ |
| 2006 $UM_{216}$ | 16.0 | 0.15 | 20060922 | 12.00412 | 145.54933 | 251.80174 | 15.66433 | 0.5198864 | 2.6841912 | 47 | 1 | 33 days | 0.33 | M-v | 6 | MPC | 2006 $UM_{216}$ |
| 2006 $UN_{216}$ | 19.0 | 0.15 | 20060922 | 343.41885 | 10.24463 | 84.09762 | 11.86389 | 0.6197852 | 3.2023910 | 116 | 1 | 37 days | 0.38 | M-v | 4 | MPC | 2006 $UN_{216}$ |
| 2006 $UO_{216}$ | 16.1 | 0.15 | 20060922 | 5.28908 | 160.77232 | 224.33453 | 3.97260 | 0.2831033 | 2.5713194 | 61 | 1 | 89 days | 0.36 | M-v | 4 | MPC | 2006 $UO_{216}$ |
| 2006 $UP_{216}$ | 19.3 | 0.15 | 20061101 | 65.79602 | 96.78994 | 231.95922 | 25.02478 | 0.1073672 | 1.7287364 | 24 | 1 | 22 days | 0.48 | | | MPC | 2006 $UP_{216}$ |
| 2006 $UQ_{216}$ | 27.3 | 0.15 | 20060922 | 278.17338 | 245.13027 | 218.31003 | 0.48203 | 0.1658726 | 1.1122895 | 18 | 1 | 3 days | 0.33 | M-v | 7 | MPC | 2006 $UQ_{216}$ |
| 2006 $UR_{216}$ | 19.8 | 0.15 | 20060922 | 310.55102 | 133.98875 | 21.72968 | 14.25309 | 0.5326840 | 1.6776541 | 17 | 1 | 21 days | 0.25 | M-v | 8 | MPC | 2006 $UR_{216}$ |
| 2006 $US_{216}$ | 19.9 | 0.15 | 20060922 | 59.18822 | 55.06768 | 194.58119 | 3.46532 | 0.5627810 | 0.6366970 | 43 | 1 | 30 days | 0.35 | M-v | 7 | MPC | 2006 $US_{216}$ |
| 2006 $UY_{216}$ | 17.2 | 0.15 | 20061012 | 161.15040 | 38.82025 | 141.57393 | 13.71331 | 0.0552859 | 3.0513338 | 9 | 1 | 16 days | 0.03 | | | MPC | 2006 $UY_{216}$ |
| 2006 $UB_{217}$ | 16.3 | 0.15 | 20061101 | 16.12693 | 226.55229 | 158.26767 | 13.85558 | 0.2809218 | 3.0042371 | 20 | 1 | 19 days | 0.46 | | | MPC | 2006 $UB_{217}$ |
| 2006 $UC_{217}$ | 17.2 | 0.15 | 20061012 | 63.29195 | 17.32910 | 303.20268 | 1.90859 | 0.1018930 | 3.0247996 | 18 | 1 | 3 days | 0.42 | | E | MPC | 2006 $UC_{217}$ |
| 2006 $UD_{217}$ | 17.3 | 0.15 | 20061012 | 36.58005 | 115.25511 | 234.02441 | 3.39269 | 0.2030093 | 2.1818752 | 45 | 1 | 58 days | 0.35 | | | MPC | 2006 $UD_{217}$ |
| 2006 $UE_{217}$ | 16.4 | 0.15 | 20061101 | 304.71174 | 58.30792 | 36.81197 | 24.51444 | 0.1544827 | 3.1003336 | 19 | 1 | 29 days | 0.46 | | | MPC | 2006 $UE_{217}$ |
| 2006 $UH_{217}$ | 16.3 | 0.15 | 20061012 | 1.47784 | 171.78162 | 232.34323 | 7.50624 | 0.1700288 | 2.6148106 | 64 | 1 | 58 days | 0.41 | | | MPC | 2006 $UH_{217}$ |
| 2006 $UK_{217}$ | 18.9 | 0.15 | 20060922 | 297.16262 | 311.43003 | 217.32002 | 41.03575 | 0.6686427 | 1.4902924 | 38 | 1 | 23 days | 0.35 | M-v | 7 | MPC | 2006 $UK_{217}$ |
| 2006 $UL_{217}$ | 20.7 | 0.15 | 20060922 | 358.52208 | 310.03123 | 45.33181 | 9.90451 | 0.3492557 | 1.4317426 | 161 | 1 | 32 days | 0.39 | M-v | 5 | MPC | 2006 $UL_{217}$ |
| 2006 $UN_{217}$ | 12.9 | 0.15 | 20060922 | 275.67647 | 145.20412 | 269.22928 | 1.52399 | 0.0971549 | 5.1887401 | 17 | 1 | 81 days | 0.41 | | | MPC | 2006 $UN_{217}$ |
| 2006 $UO_{217}$ | 15.3 | 0.15 | 20061101 | 297.55824 | 295.47266 | 243.97294 | 27.34727 | 0.2051525 | 1.9055305 | 33 | 1 | 1 days | 0.56 | | | MPC | 2006 $UO_{217}$ |
| 2006 $UP_{217}$ | 24.9 | 0.15 | 20060922 | 20.68655 | 83.04735 | 206.88367 | 1.51860 | 0.4888469 | 1.2040103 | 28 | 1 | 1 days | 0.51 | M-v | 9 | MPC | 2006 $UP_{217}$ |
| 2006 $UQ_{217}$ | 16.6 | 0.15 | 20060922 | 20.91645 | 240.03034 | 84.93044 | 22.20768 | 0.5852557 | 3.0045324 | 72 | 1 | 33 days | 0.43 | M-v | 5 | MPC | 2006 $UQ_{217}$ |
| 2006 $UR_{217}$ | 19.8 | 0.15 | 20060922 | 357.31407 | 304.92355 | 64.38536 | 17.58167 | 0.6116616 | 2.7400046 | 120 | 1 | 32 days | 0.37 | M-v | 5 | MPC | 2006 $UR_{217}$ |
| 2006 $UT_{217}$ | 15.3 | 0.15 | 20061101 | 356.91902 | 10.26455 | 43.84179 | 7.08279 | 0.2210058 | 3.1393053 | 49 | 1 | 46 days | 0.37 | | | MPC | 2006 $UT_{217}$ |
| 2006 $UU_{217}$ | 16.5 | 0.15 | 20061012 | 30.22043 | 325.47389 | 358.21051 | 16.53133 | 0.2833872 | 2.8958649 | 9 | 1 | 9 days | 0.77 | | E | MPC | 2006 $UU_{217}$ |
| 2006 $UW_{217}$ | 17.7 | 0.15 | 20061012 | 3.84689 | 168.12001 | 214.41371 | 13.29361 | 0.2870438 | 2.5744793 | 39 | 1 | 52 days | 0.63 | | | MPC | 2006 $UW_{217}$ |
| 2006 $UY_{217}$ | 15.6 | 0.15 | 20061012 | 1.82392 | 186.79538 | 218.26397 | 14.64832 | 0.2724627 | 3.0412630 | 46 | 1 | 58 days | 0.58 | | | MPC | 2006 $UY_{217}$ |
| 2006 $UB_{218}$ | 17.1 | 0.15 | 20061012 | 262.32152 | 248.42793 | 256.41351 | 5.34213 | 0.0980884 | 2.8003412 | 6 | 1 | 4 days | 0.22 | | | MPC | 2006 $UB_{218}$ |
| 2006 $UC_{218}$ | 16.1 | 0.15 | 20061012 | 269.20486 | 149.12702 | 350.71752 | 4.59699 | 0.1019951 | 3.0896215 | 30 | 1 | 36 days | 0.40 | | | MPC | 2006 $UC_{218}$ |
| 2006 $UD_{218}$ | 18.6 | 0.15 | 20061012 | 3.48340 | 12.73807 | 14.57773 | 5.31285 | 0.1609877 | 2.2962565 | 6 | 1 | 4 days | 0.15 | | | MPC | 2006 $UD_{218}$ |
| 2006 $UF_{218}$ | 16.3 | 0.15 | 20061012 | 41.70377 | 321.23329 | 9.39003 | 5.73200 | 0.2495623 | 3.1191332 | 37 | 1 | 55 days | 0.35 | | | MPC | 2006 $UF_{218}$ |
| 2006 $UG_{218}$ | 17.5 | 0.15 | 20061012 | 131.17405 | 225.68717 | 22.11036 | 8.41041 | 0.2573969 | 2.2482186 | 6 | 1 | 4 days | 0.23 | | | MPC | 2006 $UG_{218}$ |
| 2006 $UM_{218}$ | 16.6 | 0.15 | 20061012 | 315.91652 | 210.64861 | 241.22676 | 7.74807 | 0.1419222 | 2.7270529 | 28 | 1 | 46 days | 0.31 | | | MPC | 2006 $UM_{218}$ |
| 2006 $UN_{218}$ | 18.2 | 0.15 | 20061012 | 342.44982 | 55.47990 | 0.96812 | 3.53473 | 0.1300379 | 2.4370144 | 8 | 1 | 2 days | 0.21 | | | MPC | 2006 $UN_{218}$ |
| 2006 $UF_{219}$ | 15.5 | 0.15 | 20061012 | 332.13622 | 46.95769 | 24.42307 | 16.94467 | 0.2084343 | 3.1211295 | 23 | 1 | 35 days | 0.30 | | | MPC | 2006 $UF_{219}$ |
| 2006 $UK_{219}$ | 17.8 | 0.15 | 20061012 | 8.01335 | 354.69512 | 23.94570 | 7.89609 | 0.1244767 | 2.3073194 | 12 | 1 | 30 days | 0.21 | | | MPC | 2006 $UK_{219}$ |
| 2006 $UL_{219}$ | 16.1 | 0.15 | 20061012 | 291.46194 | 269.02004 | 215.65098 | 25.34221 | 0.2119008 | 3.0340030 | 23 | 1 | 28 days | 0.42 | | | MPC | 2006 $UL_{219}$ |
| 2006 $UM_{219}$ | 17.5 | 0.15 | 20061012 | 49.95684 | 295.46445 | 25.06108 | 7.38274 | 0.1763277 | 2.4020533 | 22 | 1 | 56 days | 0.27 | | | MPC | 2006 $UM_{219}$ |
| 2006 $UA_{220}$ | 17.4 | 0.15 | 20061012 | 5.74437 | 270.79654 | 107.58501 | 3.27585 | 0.2190359 | 2.6466216 | 24 | 1 | 39 days | 0.36 | | | MPC | 2006 $UA_{220}$ |
| 2006 $UD_{220}$ | 16.8 | 0.15 | 20061101 | 8.79728 | 250.35757 | 131.57093 | 4.74553 | 0.1616921 | 2.7033964 | 15 | 1 | 39 days | 0.26 | | | MPC | 2006 $UD_{220}$ |
| 2006 $UH_{220}$ | 17.2 | 0.15 | 20061101 | 345.29919 | 189.97467 | 236.54882 | 3.83524 | 0.2466641 | 2.6021816 | 33 | 1 | 42 days | 0.60 | | | MPC | 2006 $UH_{220}$ |
| 2006 $UJ_{220}$ | 14.2 | 0.15 | 20061101 | 329.32800 | 22.52044 | 63.75631 | 22.62741 | 0.0661448 | 3.1770164 | 43 | 1 | 43 days | 0.51 | | | MPC | 2006 $UJ_{220}$ |
| 2006 $UK_{220}$ | 16.9 | 0.15 | 20061101 | 38.77610 | 192.89561 | 167.99580 | 5.54712 | 0.1380382 | 2.6532483 | 11 | 1 | 35 days | 0.48 | | | MPC | 2006 $UK_{220}$ |
| 2006 $UL_{220}$ | 15.7 | 0.15 | 20061101 | 10.94737 | 187.66993 | 210.73356 | 13.85157 | 0.2431397 | 2.6773935 | 28 | 1 | 41 days | 0.37 | | | MPC | 2006 $UL_{220}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UQ_{220}$ | 16.8 | 0.15 | 20061012 | 321.24409 | 235.85370 | 216.44539 | 15.60519 | 0.2998237 | 3.0608832 | 28 | 1 | 47 days | 0.35 | | | MPC | 2006 $UQ_{220}$ |
| 2006 $UB_{221}$ | 17.0 | 0.15 | 20061012 | 4.45168 | 144.27255 | 235.64419 | 6.66384 | 0.1874014 | 3.0693814 | 27 | 1 | 51 days | 0.17 | | | MPC | 2006 $UB_{221}$ |
| 2006 $UQ_{221}$ | 17.8 | 0.15 | 20061101 | 337.85392 | 183.98052 | 244.46419 | 4.97008 | 0.1946680 | 2.3937771 | 25 | 1 | 33 days | 0.32 | | | MPC | 2006 $UQ_{221}$ |
| 2006 $UG_{222}$ | 16.7 | 0.15 | 20060922 | 60.80026 | 49.97063 | 258.45651 | 4.65114 | 0.0582965 | 2.9338351 | 28 | 1 | 64 days | 0.48 | M-v | 5 | MPC | 2006 $UG_{222}$ |
| 2006 $UL_{222}$ | 16.9 | 0.15 | 20060922 | 36.42001 | 100.32849 | 227.99731 | 5.54116 | 0.1265300 | 2.6809993 | 21 | 1 | 61 days | 0.55 | M-v | 4 | MPC | 2006 $UL_{222}$ |
| 2006 $UQ_{222}$ | 16.1 | 0.15 | 20061012 | 350.53257 | 5.99404 | 43.91611 | 15.50676 | 0.1433833 | 2.7507173 | 53 | 1 | 53 days | 0.52 | | | MPC | 2006 $UQ_{222}$ |
| 2006 $UF_{223}$ | 15.0 | 0.15 | 20061101 | 300.09649 | 246.52025 | 232.31210 | 12.54983 | 0.2703110 | 3.1762696 | 15 | 1 | 39 days | 0.59 | | | MPC | 2006 $UF_{223}$ |
| 2006 $UJ_{223}$ | 15.3 | 0.15 | 20061012 | 345.43979 | 154.63978 | 248.14485 | 7.95769 | 0.0948337 | 3.1738556 | 21 | 1 | 58 days | 0.36 | | | MPC | 2006 $UJ_{223}$ |
| 2006 $UM_{223}$ | 17.5 | 0.15 | 20061101 | 323.88986 | 320.40392 | 126.40210 | 2.53751 | 0.3289614 | 3.2108437 | 10 | 1 | 28 days | 0.25 | | | MPC | 2006 $UM_{223}$ |
| 2006 $UP_{223}$ | 16.7 | 0.15 | 20061012 | 31.34814 | 118.31385 | 201.98071 | 15.50642 | 0.2890342 | 2.9522507 | 13 | 1 | 2 days | 0.18 | | | MPC | 2006 $UP_{223}$ |
| 2006 $US_{223}$ | 17.3 | 0.15 | 20060922 | 16.01170 | 26.08193 | 327.85458 | 6.13365 | 0.1476734 | 2.1983817 | 29 | 1 | 77 days | 0.58 | M-v | 4 | MPC | 2006 $US_{223}$ |
| 2006 $UX_{223}$ | 17.3 | 0.15 | 20061012 | 2.74421 | 154.25793 | 232.69971 | 8.55933 | 0.1371341 | 2.6760110 | 25 | 1 | 50 days | 0.22 | | | MPC | 2006 $UX_{223}$ |
| 2006 $UY_{223}$ | 18.2 | 0.15 | 20061012 | 300.62214 | 238.66041 | 215.38871 | 4.11674 | 0.1565859 | 2.3137099 | 11 | 1 | 12 days | 0.20 | | | MPC | 2006 $UY_{223}$ |
| 2006 $UD_{224}$ | 17.4 | 0.15 | 20061012 | 26.45727 | 196.14051 | 139.71514 | 4.83585 | 0.2575222 | 2.6651281 | 20 | 1 | 31 days | 0.51 | | | MPC | 2006 $UD_{224}$ |
| 2006 $UP_{224}$ | 17.0 | 0.15 | 20061101 | 41.40634 | 91.67581 | 241.53644 | 13.13270 | 0.2337592 | 2.6992563 | 15 | 1 | 37 days | 0.43 | | | MPC | 2006 $UP_{224}$ |
| 2006 $UU_{224}$ | 17.0 | 0.15 | 20061101 | 341.48234 | 148.07017 | 272.24509 | 5.09703 | 0.1418448 | 2.2887483 | 23 | 1 | 37 days | 0.43 | | | MPC | 2006 $UU_{224}$ |
| 2006 $UY_{224}$ | 17.9 | 0.15 | 20061101 | 27.78384 | 127.26737 | 220.31012 | 16.77968 | 0.2184771 | 2.6295625 | 16 | 1 | 30 days | 0.18 | | | MPC | 2006 $UY_{224}$ |
| 2006 $UB_{225}$ | 17.2 | 0.15 | 20061101 | 296.60758 | 209.85894 | 260.24491 | 6.07003 | 0.0905490 | 2.2292984 | 26 | 1 | 37 days | 0.41 | | D | MPC | 2006 $UB_{225}$ |
| 2006 $UC_{225}$ | 17.4 | 0.15 | 20061012 | 40.51618 | 340.67070 | 351.59500 | 5.13835 | 0.1969599 | 2.3231787 | 24 | 1 | 39 days | 0.52 | | D | MPC | 2006 $UC_{225}$ |
| 2006 $UJ_{225}$ | 17.6 | 0.15 | 20061101 | 303.41248 | 232.23491 | 229.45187 | 16.50303 | 0.0711809 | 1.8878435 | 42 | 1 | 47 days | 0.37 | | | MPC | 2006 $UJ_{225}$ |
| 2006 $UC_{226}$ | 17.8 | 0.15 | 20061101 | 22.29033 | 46.55669 | 316.76353 | 1.02520 | 0.1814952 | 2.2231486 | 32 | 1 | 46 days | 0.35 | | | MPC | 2006 $UC_{226}$ |
| 2006 $UK_{226}$ | 15.9 | 0.15 | 20061012 | 245.53314 | 148.95802 | 18.36058 | 4.21230 | 0.2777141 | 2.6043740 | 13 | 1 | 9 days | 0.45 | | | MPC | 2006 $UK_{226}$ |
| 2006 $UN_{226}$ | 17.6 | 0.15 | 20061012 | 358.86908 | 234.05078 | 150.05320 | 2.75932 | 0.2223293 | 2.6665508 | 21 | 1 | 39 days | 0.32 | | | MPC | 2006 $UN_{226}$ |
| 2006 $UT_{226}$ | 16.6 | 0.15 | 20061101 | 25.53462 | 337.83807 | 28.74299 | 6.64218 | 0.0808359 | 2.7952588 | 21 | 1 | 38 days | 0.21 | | | MPC | 2006 $UT_{226}$ |
| 2006 $UW_{226}$ | 17.4 | 0.15 | 20061012 | 350.86208 | 249.60922 | 155.62681 | 1.16212 | 0.2097741 | 2.6778337 | 22 | 1 | 36 days | 0.35 | | | MPC | 2006 $UW_{226}$ |
| 2006 $UY_{226}$ | 18.6 | 0.15 | 20061101 | 355.38928 | 353.60287 | 44.67760 | 5.05333 | 0.1762906 | 2.2746079 | 16 | 1 | 24 days | 0.26 | | | MPC | 2006 $UY_{226}$ |
| 2006 $UZ_{226}$ | 17.7 | 0.15 | 20061012 | 292.40185 | 47.14530 | 51.44919 | 4.28340 | 0.0649711 | 2.2256538 | 23 | 1 | 58 days | 0.21 | | | MPC | 2006 $UZ_{226}$ |
| 2006 $UA_{227}$ | 17.8 | 0.15 | 20061012 | 7.12024 | 180.95692 | 195.28694 | 3.08867 | 0.1488409 | 2.4347196 | 9 | 1 | 12 days | 0.86 | | | MPC | 2006 $UA_{227}$ |
| 2006 $UB_{227}$ | 16.4 | 0.15 | 20061012 | 12.74207 | 284.34393 | 87.57771 | 3.69549 | 0.0747885 | 2.8990414 | 11 | 1 | 11 days | 0.57 | | | MPC | 2006 $UB_{227}$ |
| 2006 $UG_{227}$ | 17.5 | 0.15 | 20061012 | 15.79950 | 131.62884 | 227.60780 | 6.92134 | 0.2749117 | 3.0535418 | 21 | 1 | 58 days | 0.22 | | | MPC | 2006 $UG_{227}$ |
| 2006 $UK_{227}$ | 16.1 | 0.15 | 20060922 | 328.00739 | 329.67023 | 92.27544 | 3.15675 | 0.1288783 | 2.9593216 | 28 | 1 | 60 days | 0.58 | M-v | 4 D | MPC | 2006 $UK_{227}$ |
| 2006 $UX_{227}$ | 15.7 | 0.15 | 20061012 | 340.74950 | 236.09032 | 177.17294 | 11.17672 | 0.1349731 | 3.0958705 | 17 | 1 | 31 days | 0.50 | | D | MPC | 2006 $UX_{227}$ |
| 2006 $UB_{228}$ | 17.4 | 0.15 | 20061101 | 16.28843 | 268.23328 | 99.45936 | 2.81903 | 0.2618337 | 2.1941528 | 22 | 1 | 31 days | 0.37 | | | MPC | 2006 $UB_{228}$ |
| 2006 $UE_{228}$ | 17.7 | 0.15 | 20061012 | 5.06729 | 30.01242 | 351.36189 | 6.39208 | 0.1307751 | 2.2701549 | 24 | 1 | 48 days | 0.57 | | | MPC | 2006 $UE_{228}$ |
| 2006 $UH_{228}$ | 15.3 | 0.15 | 20061012 | 15.57834 | 63.30749 | 303.29127 | 6.43260 | 0.2191083 | 3.1562928 | 19 | 1 | 8 days | 0.49 | | | MPC | 2006 $UH_{228}$ |
| 2006 $UM_{228}$ | 17.6 | 0.15 | 20061012 | 42.92912 | 67.01256 | 264.65134 | 5.66275 | 0.1842099 | 2.2085958 | 17 | 1 | 20 days | 0.34 | | | MPC | 2006 $UM_{228}$ |
| 2006 $UU_{228}$ | 16.0 | 0.15 | 20061012 | 39.65349 | 287.53773 | 54.53968 | 14.35882 | 0.2256183 | 2.7787179 | 49 | 1 | 50 days | 0.46 | | | MPC | 2006 $UU_{228}$ |
| 2006 $UV_{228}$ | 16.5 | 0.15 | 20061101 | 58.43539 | 274.76993 | 53.02768 | 6.59660 | 0.2040689 | 2.3253475 | 42 | 1 | 38 days | 0.57 | | | MPC | 2006 $UV_{228}$ |
| 2006 $UW_{228}$ | 15.9 | 0.15 | 20061101 | 356.72304 | 343.19308 | 75.16140 | 10.69796 | 0.2225987 | 3.0253520 | 34 | 1 | 31 days | 0.47 | | | MPC | 2006 $UW_{228}$ |
| 2006 $UX_{228}$ | 15.6 | 0.15 | 20061012 | 339.96509 | 243.20380 | 197.19015 | 9.94897 | 0.2372385 | 2.9985613 | 30 | 1 | 47 days | 0.56 | | | MPC | 2006 $UX_{228}$ |
| 2006 $UY_{228}$ | 15.2 | 0.15 | 20061012 | 1.83680 | 189.26937 | 217.33245 | 17.39781 | 0.1928053 | 3.0011667 | 31 | 1 | 47 days | 0.48 | | | MPC | 2006 $UY_{228}$ |
| 2006 $UA_{229}$ | 15.8 | 0.15 | 20061101 | 28.71172 | 315.80051 | 61.70797 | 14.67287 | 0.1150927 | 2.5978420 | 43 | 1 | 39 days | 0.37 | | | MPC | 2006 $UA_{229}$ |
| 2006 $UD_{229}$ | 16.6 | 0.15 | 20060922 | 13.89990 | 174.81834 | 198.43020 | 2.81997 | 0.2725010 | 2.6455080 | 41 | 1 | 60 days | 0.35 | M-v | 4 | MPC | 2006 $UD_{229}$ |
| 2006 $UE_{229}$ | 15.9 | 0.15 | 20061101 | 331.17054 | 7.67668 | 88.52790 | 4.62834 | 0.1654861 | 2.7393516 | 26 | 1 | 38 days | 0.44 | | | MPC | 2006 $UE_{229}$ |
| 2006 $UF_{229}$ | 16.5 | 0.15 | 20060922 | 23.21416 | 288.70464 | 61.76541 | 6.55474 | 0.3490555 | 2.6132194 | 42 | 1 | 60 days | 0.37 | M-v | 4 | MPC | 2006 $UF_{229}$ |
| 2006 $UH_{229}$ | 16.2 | 0.15 | 20061101 | 28.50092 | 232.95891 | 140.11045 | 3.66246 | 0.2103131 | 2.5781435 | 26 | 1 | 31 days | 0.54 | | | MPC | 2006 $UH_{229}$ |
| 2006 $UJ_{229}$ | 15.7 | 0.15 | 20061101 | 37.35807 | 263.79406 | 86.17519 | 5.55635 | 0.3137368 | 2.6636860 | 48 | 1 | 31 days | 0.56 | | E | MPC | 2006 $UJ_{229}$ |
| 2006 $UK_{229}$ | 15.9 | 0.15 | 20061012 | 2.29336 | 196.80248 | 208.17471 | 6.30921 | 0.3295310 | 3.0357888 | 69 | 1 | 58 days | 0.40 | | E | MPC | 2006 $UK_{229}$ |
| 2006 $UL_{229}$ | 15.6 | 0.15 | 20061101 | 20.26675 | 326.70523 | 62.99548 | 14.08446 | 0.1677117 | 2.5846634 | 45 | 1 | 34 days | 0.36 | | | MPC | 2006 $UL_{229}$ |
| 2006 $UF_{230}$ | 15.7 | 0.15 | 20060922 | 335.41152 | 254.08134 | 146.36738 | 4.52920 | 0.0928954 | 2.7762553 | 20 | 1 | 27 days | 0.51 | | | MPC | 2006 $UF_{230}$ |
| 2006 $UG_{231}$ | 17.4 | 0.15 | 20061101 | 332.15733 | 202.39973 | 230.04462 | 10.19388 | 0.0728256 | 2.6005973 | 25 | 1 | 37 days | 0.23 | | | MPC | 2006 $UG_{231}$ |
| 2006 $UH_{231}$ | 16.3 | 0.15 | 20061101 | 336.71901 | 203.39565 | 229.67265 | 10.52813 | 0.1609317 | 3.0894007 | 36 | 1 | 45 days | 0.51 | | | MPC | 2006 $UH_{231}$ |
| 2006 $UJ_{231}$ | 16.8 | 0.15 | 20061101 | 4.08719 | 166.90292 | 228.24478 | 11.38513 | 0.1601401 | 3.0582175 | 18 | 1 | 25 days | 0.22 | | | MPC | 2006 $UJ_{231}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UW_{231}$ | 18.6 | 0.15 | 20061101 | 34.92174 | 122.89870 | 230.23542 | 5.64256 | 0.1797802 | 2.3810987 | 13 | 1 | 22 days | 0.24 | | MPC | 2006 $UW_{231}$ |
| 2006 $UY_{231}$ | 16.9 | 0.15 | 20061101 | 90.00959 | 68.67397 | 227.57763 | 13.11518 | 0.1427915 | 2.6350372 | 17 | 1 | 37 days | 0.24 | | MPC | 2006 $UY_{231}$ |
| 2006 $UC_{232}$ | 17.5 | 0.15 | 20061101 | 45.62310 | 101.79890 | 257.28547 | 0.51903 | 0.1184928 | 2.5553177 | 20 | 1 | 32 days | 0.26 | | MPC | 2006 $UC_{232}$ |
| 2006 $UE_{232}$ | 17.1 | 0.15 | 20061012 | 34.58372 | 110.49095 | 235.54998 | 11.82562 | 0.2939088 | 2.6042542 | 34 | 1 | 54 days | 0.28 | | MPC | 2006 $UE_{232}$ |
| 2006 $UK_{232}$ | 17.9 | 0.15 | 20061101 | 130.52534 | 43.58994 | 214.32428 | 19.97188 | 0.0533119 | 1.9451506 | 17 | 1 | 30 days | 0.16 | | MPC | 2006 $UK_{232}$ |
| 2006 $UZ_{232}$ | 15.6 | 0.15 | 20060922 | 30.10364 | 353.13047 | 357.20675 | 9.10078 | 0.1454806 | 3.0521349 | 37 | 1 | 64 days | 0.49 | M-v 4 | MPC | 2006 $UZ_{232}$ |
| 2006 $UH_{233}$ | 18.4 | 0.15 | 20061012 | 10.84894 | 348.69715 | 22.60026 | 2.33726 | 0.2344787 | 2.3494624 | 18 | 1 | 28 days | 0.14 | | MPC | 2006 $UH_{233}$ |
| 2006 $UK_{233}$ | 16.7 | 0.15 | 20061101 | 21.79882 | 212.35675 | 153.96665 | 3.06585 | 0.2235582 | 2.6409673 | 17 | 1 | 32 days | 0.36 | | MPC | 2006 $UK_{233}$ |
| 2006 $UN_{233}$ | 18.0 | 0.15 | 20061101 | 334.64893 | 27.33278 | 43.15427 | 9.11267 | 0.1928457 | 2.7791581 | 13 | 1 | 23 days | 0.22 | | MPC | 2006 $UN_{233}$ |
| 2006 $UV_{233}$ | 16.6 | 0.15 | 20061012 | 95.10034 | 44.02561 | 208.73354 | 3.48240 | 0.2077341 | 2.6623061 | 12 | 1 | 9 days | 0.67 | | MPC | 2006 $UV_{233}$ |
| 2006 $UA_{234}$ | 18.2 | 0.15 | 20061012 | 298.67442 | 62.49691 | 44.32493 | 5.36659 | 0.1376783 | 2.4198075 | 27 | 1 | 58 days | 0.48 | | MPC | 2006 $UA_{234}$ |
| 2006 $UE_{234}$ | 16.1 | 0.15 | 20061101 | 176.27370 | 167.50037 | 60.71022 | 3.74537 | 0.0515168 | 3.0557680 | 26 | 1 | 32 days | 0.28 | | MPC | 2006 $UE_{234}$ |
| 2006 $UF_{234}$ | 16.5 | 0.15 | 20061101 | 306.37993 | 36.94722 | 77.10732 | 2.38745 | 0.1513653 | 3.1450022 | 17 | 1 | 21 days | 0.22 | | MPC | 2006 $UF_{234}$ |
| 2006 $UG_{234}$ | 17.6 | 0.15 | 20061012 | 333.62248 | 18.75810 | 54.07204 | 7.06389 | 0.1441374 | 2.5916757 | 30 | 1 | 54 days | 0.32 | | MPC | 2006 $UG_{234}$ |
| 2006 $UK_{234}$ | 17.6 | 0.15 | 20061012 | 0.34872 | 238.34085 | 161.22840 | 1.50148 | 0.1755652 | 3.1172986 | 17 | 1 | 31 days | 0.28 | | MPC | 2006 $UK_{234}$ |
| 2006 $UT_{234}$ | 15.9 | 0.15 | 20061101 | 1.17389 | 176.86085 | 266.31719 | 13.32506 | 0.2427771 | 2.6477204 | 35 | 1 | 30 days | 0.44 | | MPC | 2006 $UT_{234}$ |
| 2006 $UZ_{235}$ | 17.4 | 0.15 | 20061101 | 56.97202 | 290.14321 | 35.12900 | 2.54226 | 0.0846097 | 2.9470249 | 10 | 1 | 19 days | 0.86 | | MPC | 2006 $UZ_{235}$ |
| 2006 $UC_{236}$ | 18.5 | 0.15 | 20061012 | 2.40613 | 61.11474 | 320.58864 | 0.34106 | 0.2389773 | 2.9029153 | 13 | 1 | 9 days | 0.41 | | MPC | 2006 $UC_{236}$ |
| 2006 $UF_{236}$ | 17.6 | 0.15 | 20061012 | 233.75954 | 325.00697 | 201.27633 | 4.33655 | 0.1592138 | 2.2540538 | 27 | 1 | 56 days | 0.33 | | MPC | 2006 $UF_{236}$ |
| 2006 $UO_{236}$ | 18.8 | 0.15 | 20061012 | 349.58499 | 195.02627 | 208.19768 | 12.74572 | 0.2409801 | 2.5118858 | 9 | 1 | 9 days | 0.19 | | MPC | 2006 $UO_{236}$ |
| 2006 $UU_{236}$ | 19.0 | 0.15 | 20061101 | 4.99652 | 343.09111 | 43.20700 | 4.65968 | 0.2153744 | 2.6192485 | 13 | 1 | 19 days | 0.34 | | MPC | 2006 $UU_{236}$ |
| 2006 $UX_{236}$ | 17.3 | 0.15 | 20061101 | 244.93937 | 328.62901 | 181.58508 | 3.92865 | 0.0134164 | 3.0426370 | 10 | 1 | 22 days | 0.19 | | MPC | 2006 $UX_{236}$ |
| 2006 $UY_{236}$ | 18.2 | 0.15 | 20061101 | 347.11658 | 8.62214 | 41.59334 | 12.33994 | 0.1072103 | 2.4694096 | 19 | 1 | 25 days | 0.26 | | MPC | 2006 $UY_{236}$ |
| 2006 $UE_{237}$ | 17.4 | 0.15 | 20061012 | 32.41376 | 149.81097 | 200.20012 | 10.01314 | 0.1118948 | 3.0911255 | 10 | 1 | 9 days | 0.27 | | MPC | 2006 $UE_{237}$ |
| 2006 $UH_{237}$ | 17.5 | 0.15 | 20061012 | 16.65658 | 159.38348 | 198.14621 | 5.97867 | 0.2804865 | 2.6927842 | 19 | 1 | 46 days | 0.17 | | MPC | 2006 $UH_{237}$ |
| 2006 $UJ_{237}$ | 17.0 | 0.15 | 20061012 | 175.80082 | 24.45655 | 189.65431 | 4.96455 | 0.1369701 | 2.5589610 | 9 | 1 | 9 days | 0.25 | | MPC | 2006 $UJ_{237}$ |
| 2006 $UO_{237}$ | 17.3 | 0.15 | 20061012 | 26.77831 | 306.83095 | 37.90028 | 15.38102 | 0.2326415 | 3.1809396 | 17 | 1 | 43 days | 0.27 | | MPC | 2006 $UO_{237}$ |
| 2006 $UQ_{237}$ | 18.4 | 0.15 | 20061101 | 65.68190 | 256.25865 | 55.89485 | 3.44181 | 0.1418156 | 2.2675313 | 13 | 1 | 22 days | 0.21 | | MPC | 2006 $UQ_{237}$ |
| 2006 $UT_{237}$ | 16.0 | 0.15 | 20061012 | 327.04494 | 228.33588 | 200.91764 | 10.85763 | 0.1037904 | 3.1366152 | 20 | 1 | 51 days | 0.26 | | MPC | 2006 $UT_{237}$ |
| 2006 $UU_{237}$ | 18.3 | 0.15 | 20061012 | 13.47521 | 167.18129 | 198.72995 | 7.46263 | 0.2189154 | 2.7149471 | 16 | 1 | 37 days | 0.36 | | MPC | 2006 $UU_{237}$ |
| 2006 $UV_{237}$ | 17.7 | 0.15 | 20061012 | 356.99541 | 349.57660 | 42.75568 | 11.82162 | 0.1028120 | 2.9995134 | 9 | 1 | 9 days | 0.16 | | MPC | 2006 $UV_{237}$ |
| 2006 $UZ_{237}$ | 17.4 | 0.15 | 20061101 | 254.91637 | 313.67456 | 195.34979 | 4.83556 | 0.1166356 | 2.7297823 | 14 | 1 | 24 days | 0.26 | | MPC | 2006 $UZ_{237}$ |
| 2006 $UA_{238}$ | 17.0 | 0.15 | 20061101 | 13.66728 | 178.39850 | 199.11575 | 5.31878 | 0.0303450 | 2.7003713 | 13 | 1 | 22 days | 0.22 | | MPC | 2006 $UA_{238}$ |
| 2006 $UF_{238}$ | 17.2 | 0.15 | 20061101 | 338.60297 | 240.75635 | 182.74445 | 2.96979 | 0.1801953 | 3.1217275 | 13 | 1 | 22 days | 0.24 | | MPC | 2006 $UF_{238}$ |
| 2006 $UO_{238}$ | 17.8 | 0.15 | 20061012 | 16.03822 | 142.50375 | 226.97080 | 13.56548 | 0.1230138 | 2.6411562 | 22 | 1 | 54 days | 0.25 | | MPC | 2006 $UO_{238}$ |
| 2006 $UR_{238}$ | 17.0 | 0.15 | 20061101 | 305.32356 | 221.83950 | 230.52515 | 11.08509 | 0.0123897 | 2.9251663 | 21 | 1 | 31 days | 0.22 | | MPC | 2006 $UR_{238}$ |
| 2006 $UT_{238}$ | 16.5 | 0.15 | 20061012 | 323.65307 | 222.99718 | 219.47252 | 26.88067 | 0.1758369 | 3.1054116 | 28 | 1 | 49 days | 0.27 | | MPC | 2006 $UT_{238}$ |
| 2006 $UU_{238}$ | 17.9 | 0.15 | 20061101 | 334.31387 | 188.14260 | 241.08626 | 4.65140 | 0.1160687 | 2.7009972 | 15 | 1 | 19 days | 0.28 | | MPC | 2006 $UU_{238}$ |
| 2006 $UW_{238}$ | 17.9 | 0.15 | 20061012 | 33.45051 | 60.82426 | 281.54316 | 1.96526 | 0.1812261 | 2.2621620 | 41 | 1 | 56 days | 0.35 | | MPC | 2006 $UW_{238}$ |
| 2006 $UY_{238}$ | 18.3 | 0.15 | 20061012 | 314.12811 | 141.64834 | 313.27390 | 1.78265 | 0.1846769 | 2.4502028 | 16 | 1 | 30 days | 0.27 | | MPC | 2006 $UY_{238}$ |
| 2006 $UB_{239}$ | 16.6 | 0.15 | 20061012 | 326.84661 | 56.70136 | 14.69709 | 6.07258 | 0.0573731 | 3.1045438 | 9 | 1 | 9 days | 0.64 | | MPC | 2006 $UB_{239}$ |
| 2006 $UC_{239}$ | 18.7 | 0.15 | 20061012 | 344.69311 | 81.98765 | 331.06163 | 1.55776 | 0.1811686 | 2.4625838 | 9 | 1 | 9 days | 0.21 | | MPC | 2006 $UC_{239}$ |
| 2006 $UD_{239}$ | 18.6 | 0.15 | 20061012 | 348.86780 | 58.29238 | 348.03539 | 2.23546 | 0.1675608 | 2.3498407 | 15 | 1 | 26 days | 0.18 | | MPC | 2006 $UD_{239}$ |
| 2006 $UE_{239}$ | 17.3 | 0.15 | 20061012 | 14.77331 | 347.53399 | 27.12404 | 10.10327 | 0.1058218 | 2.7148867 | 25 | 1 | 47 days | 0.47 | | MPC | 2006 $UE_{239}$ |
| 2006 $UF_{239}$ | 16.6 | 0.15 | 20061012 | 36.11782 | 107.77081 | 232.38004 | 9.24711 | 0.2100514 | 3.1033980 | 20 | 1 | 42 days | 0.26 | | MPC | 2006 $UF_{239}$ |
| 2006 $UG_{239}$ | 17.6 | 0.15 | 20061012 | 196.97216 | 173.59624 | 24.87437 | 7.43645 | 0.0585051 | 2.3471341 | 13 | 1 | 34 days | 0.29 | | MPC | 2006 $UG_{239}$ |
| 2006 $UL_{239}$ | 15.3 | 0.15 | 20061012 | 110.52402 | 230.86492 | 32.71740 | 15.70541 | 0.2464731 | 3.1308632 | 17 | 1 | 49 days | 0.23 | | MPC | 2006 $UL_{239}$ |
| 2006 $UR_{239}$ | 16.6 | 0.15 | 20061012 | 191.28126 | 251.01988 | 316.92504 | 1.16202 | 0.1791154 | 2.6746199 | 9 | 1 | 9 days | 0.84 | | MPC | 2006 $UR_{239}$ |
| 2006 $UT_{239}$ | 18.5 | 0.15 | 20061012 | 355.92726 | 7.42871 | 31.27255 | 8.79442 | 0.2354955 | 2.7340331 | 20 | 1 | 42 days | 0.40 | | MPC | 2006 $UT_{239}$ |
| 2006 $UU_{239}$ | 18.5 | 0.15 | 20061012 | 328.83084 | 226.44202 | 227.38376 | 4.11828 | 0.3406411 | 2.9868289 | 9 | 1 | 9 days | 0.26 | | MPC | 2006 $UU_{239}$ |
| 2006 $UW_{239}$ | 18.7 | 0.15 | 20061101 | 46.29623 | 354.85719 | 338.21900 | 1.05027 | 0.2026717 | 2.3559638 | 13 | 1 | 23 days | 0.18 | | MPC | 2006 $UW_{239}$ |
| 2006 $UX_{239}$ | 17.9 | 0.15 | 20061012 | 42.05795 | 324.47808 | 8.30760 | 1.94469 | 0.2047793 | 2.6939132 | 20 | 1 | 49 days | 0.30 | | MPC | 2006 $UX_{239}$ |
| 2006 $UB_{240}$ | 16.7 | 0.15 | 20061012 | 102.50888 | 51.00266 | 223.13399 | 10.71961 | 0.1601564 | 2.6505328 | 20 | 1 | 51 days | 0.28 | | MPC | 2006 $UB_{240}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UD_{240}$ | 16.4 | 0.15 | 20061012 | 137.39813 | 355.91024 | 256.25883 | 2.75842 | 0.0719254 | 3.1019519 | 10 | 1 | 30 days | 0.11 | | | MPC | 2006 $UD_{240}$ |
| 2006 $UG_{240}$ | 19.0 | 0.15 | 20061012 | 37.72910 | 317.75751 | 24.16020 | 5.43919 | 0.1464063 | 2.4076669 | 9 | 1 | 9 days | 0.25 | | | MPC | 2006 $UG_{240}$ |
| 2006 $UK_{240}$ | 19.5 | 0.15 | 20061012 | 0.90576 | 133.94110 | 253.44616 | 1.34781 | 0.2423169 | 2.5639356 | 9 | 1 | 9 days | 0.26 | | | MPC | 2006 $UK_{240}$ |
| 2006 $UL_{240}$ | 17.8 | 0.15 | 20061012 | 302.95176 | 214.39896 | 236.53073 | 4.36290 | 0.0180876 | 2.5554001 | 12 | 1 | 9 days | 0.16 | | | MPC | 2006 $UL_{240}$ |
| 2006 $UM_{240}$ | 15.8 | 0.15 | 20061012 | 43.32403 | 56.64522 | 272.20007 | 1.61987 | 0.2258518 | 3.9787308 | 19 | 1 | 45 days | 0.26 | | | MPC | 2006 $UM_{240}$ |
| 2006 $UN_{240}$ | 18.9 | 0.15 | 20061012 | 67.40344 | 287.76232 | 18.28924 | 3.99309 | 0.1523323 | 2.1664215 | 9 | 1 | 9 days | 0.22 | | | MPC | 2006 $UN_{240}$ |
| 2006 $UO_{240}$ | 17.6 | 0.15 | 20061012 | 306.18176 | 73.65452 | 19.69591 | 4.47720 | 0.0700147 | 2.7752430 | 9 | 1 | 9 days | 0.43 | | | MPC | 2006 $UO_{240}$ |
| 2006 $UQ_{240}$ | 15.4 | 0.15 | 20061101 | 6.25940 | 127.47565 | 267.90077 | 12.08654 | 0.1663435 | 2.6361236 | 21 | 1 | 29 days | 0.25 | | | MPC | 2006 $UQ_{240}$ |
| 2006 $UT_{240}$ | 16.9 | 0.15 | 20061101 | 12.31107 | 308.61474 | 84.82399 | 6.05502 | 0.2236051 | 2.3394830 | 26 | 1 | 28 days | 0.44 | | | MPC | 2006 $UT_{240}$ |
| 2006 $UW_{240}$ | 16.6 | 0.15 | 20061101 | 23.92680 | 305.71352 | 66.91161 | 14.26365 | 0.2754314 | 2.6659677 | 36 | 1 | 35 days | 0.51 | | | MPC | 2006 $UW_{240}$ |
| 2006 $UY_{240}$ | 15.6 | 0.15 | 20061101 | 96.12508 | 118.87997 | 184.53423 | 5.40168 | 0.1757311 | 2.5326313 | 24 | 1 | 32 days | 0.33 | | | MPC | 2006 $UY_{240}$ |
| 2006 $UB_{241}$ | 15.9 | 0.15 | 20061101 | 355.96775 | 338.77076 | 82.37680 | 7.44373 | 0.1038374 | 2.3794705 | 20 | 1 | 35 days | 0.46 | | | MPC | 2006 $UB_{241}$ |
| 2006 $UD_{241}$ | 16.5 | 0.15 | 20061101 | 346.40749 | 217.28380 | 220.77796 | 12.63137 | 0.1365920 | 3.0978364 | 14 | 1 | 32 days | 0.19 | | | MPC | 2006 $UD_{241}$ |
| 2006 $UK_{241}$ | 16.3 | 0.15 | 20061012 | 22.43605 | 97.96542 | 273.93491 | 10.56296 | 0.1390391 | 2.6245355 | 20 | 1 | 56 days | 0.29 | | | MPC | 2006 $UK_{241}$ |
| 2006 $UQ_{241}$ | 16.7 | 0.15 | 20061101 | 59.16535 | 324.05726 | 19.63222 | 3.11042 | 0.1199808 | 3.0116779 | 13 | 1 | 33 days | 0.38 | | | MPC | 2006 $UQ_{241}$ |
| 2006 $UT_{241}$ | | | 20061101 | 351.17204 | 168.31747 | 202.90479 | 8.88634 | 0.1369377 | 3.0178670 | 12 | 1 | 15 days | 0.22 | | | MPC | 2006 $UT_{241}$ |
| 2006 $UW_{241}$ | 17.1 | 0.15 | 20060922 | 222.89066 | 145.48604 | 17.20881 | 6.78244 | 0.0855587 | 2.5157277 | 32 | 1 | 70 days | 0.33 | M-v | 4 | MPC | 2006 $UW_{241}$ |
| 2006 $UX_{241}$ | 17.7 | 0.15 | 20061012 | 33.17169 | 116.92887 | 227.23454 | 3.10161 | 0.0898796 | 2.7968808 | 10 | 1 | 17 days | 0.27 | | | MPC | 2006 $UX_{241}$ |
| 2006 $UY_{241}$ | 16.9 | 0.15 | 20061101 | 0.45133 | 172.97936 | 214.87552 | 9.08511 | 0.1048355 | 2.9641089 | 13 | 1 | 15 days | 0.20 | | | MPC | 2006 $UY_{241}$ |
| 2006 $UZ_{241}$ | 18.2 | 0.15 | 20061012 | 106.86058 | 53.70115 | 219.43270 | 3.08977 | 0.0333033 | 2.2658955 | 10 | 1 | 17 days | 0.23 | | | MPC | 2006 $UZ_{241}$ |
| 2006 $UB_{242}$ | 17.5 | 0.15 | 20060922 | 39.16666 | 104.22218 | 215.16901 | 1.70103 | 0.2040742 | 2.5970664 | 21 | 1 | 68 days | 0.24 | M-v | 4 D | MPC | 2006 $UB_{242}$ |
| 2006 $UD_{242}$ | 19.3 | 0.15 | 20061012 | 18.73224 | 317.25549 | 34.65868 | 3.28291 | 0.2309641 | 2.4324555 | 13 | 1 | 4 days | 0.43 | | | MPC | 2006 $UD_{242}$ |
| 2006 $UE_{242}$ | 17.3 | 0.15 | 20060922 | 26.16225 | 311.18168 | 23.55052 | 16.88157 | 0.2284683 | 3.1552352 | 24 | 1 | 41 days | 0.23 | | | MPC | 2006 $UE_{242}$ |
| 2006 $UF_{242}$ | 17.4 | 0.15 | 20061012 | 75.83214 | 255.30041 | 22.53264 | 13.92111 | 0.2481950 | 2.6105768 | 10 | 1 | 12 days | 0.19 | | | MPC | 2006 $UF_{242}$ |
| 2006 $UG_{242}$ | 17.4 | 0.15 | 20061012 | 356.60152 | 13.98893 | 12.42161 | 2.85399 | 0.1474818 | 2.6702906 | 14 | 1 | 28 days | 0.68 | | | MPC | 2006 $UG_{242}$ |
| 2006 $UH_{242}$ | 18.3 | 0.15 | 20061101 | 34.87600 | 113.82439 | 213.72339 | 4.71335 | 0.3013645 | 2.3411231 | 31 | 1 | 38 days | 0.26 | | D | MPC | 2006 $UH_{242}$ |
| 2006 $UK_{242}$ | 15.8 | 0.15 | 20061012 | 96.96799 | 77.48349 | 205.48025 | 7.97154 | 0.0235523 | 3.1588124 | 23 | 1 | 58 days | 0.31 | | | MPC | 2006 $UK_{242}$ |
| 2006 $UO_{242}$ | 18.4 | 0.15 | 20061101 | 11.06991 | 28.37942 | 351.96756 | 4.19405 | 0.0599365 | 2.1150197 | 19 | 1 | 35 days | 0.27 | | | MPC | 2006 $UO_{242}$ |
| 2006 $UP_{242}$ | 17.9 | 0.15 | 20061012 | 276.74597 | 259.28973 | 242.14900 | 6.71595 | 0.2744198 | 2.7089206 | 9 | 1 | 8 days | 0.20 | | | MPC | 2006 $UP_{242}$ |
| 2006 $UQ_{242}$ | 16.9 | 0.15 | 20061012 | 328.21783 | 222.39780 | 210.59396 | 16.03734 | 0.2183606 | 3.1266102 | 10 | 1 | 4 days | 0.20 | | | MPC | 2006 $UQ_{242}$ |
| 2006 $UR_{242}$ | 17.9 | 0.15 | 20061012 | 11.57255 | 346.51960 | 23.43818 | 3.43708 | 0.1068679 | 2.7469937 | 20 | 1 | 52 days | 0.33 | | | MPC | 2006 $UR_{242}$ |
| 2006 $US_{242}$ | 17.7 | 0.15 | 20061012 | 344.20720 | 195.22973 | 213.36419 | 7.94635 | 0.1895390 | 3.1928917 | 9 | 1 | 9 days | 0.25 | | | MPC | 2006 $US_{242}$ |
| 2006 $UT_{242}$ | 18.4 | 0.15 | 20061012 | 355.99608 | 163.29884 | 226.73515 | 2.53460 | 0.1515815 | 2.3937542 | 13 | 1 | 41 days | 0.21 | | | MPC | 2006 $UT_{242}$ |
| 2006 $UU_{242}$ | 18.3 | 0.15 | 20061012 | 280.27472 | 91.35981 | 26.00890 | 6.86699 | 0.1062278 | 2.3188311 | 16 | 1 | 22 days | 0.27 | | | MPC | 2006 $UU_{242}$ |
| 2006 $UW_{242}$ | 18.3 | 0.15 | 20061012 | 43.99620 | 111.83827 | 214.99888 | 6.14290 | 0.1537517 | 2.2301574 | 27 | 1 | 55 days | 0.41 | | | MPC | 2006 $UW_{242}$ |
| 2006 $UY_{242}$ | 18.1 | 0.15 | 20060922 | 19.15573 | 332.70603 | 2.87116 | 1.29528 | 0.2014768 | 2.3704555 | 20 | 1 | 41 days | 0.38 | | | MPC | 2006 $UY_{242}$ |
| 2006 $UB_{243}$ | 16.8 | 0.15 | 20060922 | 291.72082 | 70.09583 | 34.17704 | 1.91324 | 0.1903869 | 2.7294167 | 26 | 1 | 65 days | 0.36 | M-v | 5 | MPC | 2006 $UB_{243}$ |
| 2006 $UC_{243}$ | 18.0 | 0.15 | 20061012 | 20.44912 | 148.65967 | 199.09858 | 5.79976 | 0.2059227 | 2.6474286 | 18 | 1 | 28 days | 0.22 | | | MPC | 2006 $UC_{243}$ |
| 2006 $UF_{243}$ | 18.6 | 0.15 | 20061012 | 338.28110 | 210.76238 | 196.58284 | 3.02601 | 0.1246736 | 2.3746413 | 11 | 1 | 13 days | 0.27 | | | MPC | 2006 $UF_{243}$ |
| 2006 $UG_{243}$ | 18.3 | 0.15 | 20061012 | 338.44854 | 210.04493 | 199.27322 | 5.51986 | 0.1612668 | 2.4170848 | 11 | 1 | 4 days | 0.13 | | | MPC | 2006 $UG_{243}$ |
| 2006 $UM_{243}$ | 18.4 | 0.15 | 20061012 | 39.09509 | 113.97844 | 194.52727 | 2.44971 | 0.3343456 | 2.5646495 | 11 | 1 | 12 days | 0.25 | | | MPC | 2006 $UM_{243}$ |
| 2006 $UN_{243}$ | 16.4 | 0.15 | 20061012 | 330.43125 | 224.61165 | 199.68390 | 4.18297 | 0.1886168 | 3.1713224 | 19 | 1 | 16 days | 0.20 | | | MPC | 2006 $UN_{243}$ |
| 2006 $UO_{243}$ | 16.8 | 0.15 | 20061012 | 357.84340 | 185.64056 | 198.59761 | 3.66463 | 0.1022643 | 2.8156540 | 16 | 1 | 12 days | 0.21 | | | MPC | 2006 $UO_{243}$ |
| 2006 $UQ_{243}$ | 17.5 | 0.15 | 20061012 | 316.40550 | 41.76290 | 30.28237 | 5.89036 | 0.0782179 | 2.9271265 | 18 | 1 | 39 days | 0.35 | | | MPC | 2006 $UQ_{243}$ |
| 2006 $UU_{243}$ | 19.9 | 0.15 | 20061012 | 351.00271 | 10.44001 | 28.48161 | 7.10981 | 0.3085843 | 2.6067293 | 11 | 1 | 12 days | 0.19 | | | MPC | 2006 $UU_{243}$ |
| 2006 $UX_{243}$ | 18.4 | 0.15 | 20061012 | 27.19039 | 164.37323 | 179.95282 | 1.31477 | 0.1695331 | 2.3993726 | 11 | 1 | 2 days | 0.26 | | | MPC | 2006 $UX_{243}$ |
| 2006 $UD_{244}$ | 18.4 | 0.15 | 20061012 | 309.72866 | 64.39251 | 26.57322 | 8.43640 | 0.1761750 | 2.6164130 | 14 | 1 | 27 days | 0.29 | | | MPC | 2006 $UD_{244}$ |
| 2006 $UE_{244}$ | 16.7 | 0.15 | 20060922 | 348.62303 | 176.67990 | 219.48574 | 1.03158 | 0.0858186 | 3.0348834 | 36 | 1 | 63 days | 0.29 | M-v | 4 | MPC | 2006 $UE_{244}$ |
| 2006 $UF_{244}$ | 16.5 | 0.15 | 20061012 | 154.64340 | 15.12576 | 213.22693 | 4.74708 | 0.1081196 | 2.5450603 | 10 | 1 | 5 days | 0.26 | | | MPC | 2006 $UF_{244}$ |
| 2006 $UH_{244}$ | 17.4 | 0.15 | 20061012 | 131.40440 | 43.64496 | 207.83440 | 3.16136 | 0.0552762 | 2.5227123 | 17 | 1 | 47 days | 0.29 | | | MPC | 2006 $UH_{244}$ |
| 2006 $UJ_{244}$ | 17.6 | 0.15 | 20061012 | 42.02147 | 115.43970 | 210.91912 | 10.74728 | 0.1991917 | 2.6083134 | 18 | 1 | 29 days | 0.22 | | | MPC | 2006 $UJ_{244}$ |
| 2006 $UN_{244}$ | 20.0 | 0.15 | 20061012 | 357.43322 | 176.32257 | 212.46241 | 7.59005 | 0.1951658 | 2.1017439 | 10 | 1 | 8 days | 0.55 | | | MPC | 2006 $UN_{244}$ |
| 2006 $UO_{244}$ | 18.8 | 0.15 | 20060922 | 19.63556 | 319.12415 | 30.40575 | 3.00302 | 0.1941509 | 2.3831867 | 14 | 1 | 41 days | 0.27 | | | MPC | 2006 $UO_{244}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UP_{244}$ | 18.4 | 0.15 | 20061101 | 1.28628 | 0.67532 | 31.43569 | 1.26771 | 0.1540460 | 2.4834766 | 11 | 1 | 17 days | 0.24 | | MPC | 2006 $UP_{244}$ |
| 2006 $UR_{244}$ | 17.2 | 0.15 | 20061012 | 0.75849 | 244.73771 | 142.41116 | 0.35232 | 0.1868419 | 3.0894654 | 34 | 1 | 59 days | 0.28 | | MPC | 2006 $UR_{244}$ |
| 2006 $US_{244}$ | 16.9 | 0.15 | 20061012 | 5.95278 | 217.70563 | 156.01162 | 0.82945 | 0.0792279 | 3.0541857 | 23 | 1 | 58 days | 0.31 | | MPC | 2006 $US_{244}$ |
| 2006 $UV_{244}$ | 16.7 | 0.15 | 20061101 | 78.68942 | 158.18605 | 148.40348 | 1.36562 | 0.0662025 | 3.2505081 | 11 | 1 | 18 days | 0.47 | | MPC | 2006 $UV_{244}$ |
| 2006 $UX_{244}$ | 16.0 | 0.15 | 20061012 | 49.95465 | 259.34217 | 66.83964 | 2.19993 | 0.1428218 | 3.9841222 | 18 | 1 | 49 days | 0.28 | | MPC | 2006 $UX_{244}$ |
| 2006 $UY_{244}$ | 19.8 | 0.15 | 20061012 | 337.09828 | 232.96467 | 206.48541 | 9.03368 | 0.3996262 | 2.7037167 | 10 | 1 | 5 days | 0.19 | | MPC | 2006 $UY_{244}$ |
| 2006 $UA_{245}$ | 18.5 | 0.15 | 20061012 | 64.21097 | 243.54454 | 59.91563 | 2.56710 | 0.1833312 | 2.3170550 | 18 | 1 | 43 days | 0.19 | | MPC | 2006 $UA_{245}$ |
| 2006 $UD_{245}$ | 17.6 | 0.15 | 20061012 | 19.06626 | 148.50823 | 210.11511 | 11.22897 | 0.2105545 | 2.6889083 | 24 | 1 | 50 days | 0.22 | | MPC | 2006 $UD_{245}$ |
| 2006 $UG_{245}$ | 17.5 | 0.15 | 20061012 | 210.72815 | 142.03529 | 37.69368 | 8.31213 | 0.0296283 | 2.1944528 | 28 | 1 | 49 days | 0.24 | | MPC | 2006 $UG_{245}$ |
| 2006 $UJ_{245}$ | 17.4 | 0.15 | 20061012 | 344.69139 | 199.73721 | 206.13020 | 5.36474 | 0.0640929 | 2.6138800 | 11 | 1 | 24 days | 0.20 | | MPC | 2006 $UJ_{245}$ |
| 2006 $UK_{245}$ | 18.9 | 0.15 | 20061012 | 12.14531 | 324.05938 | 43.74996 | 2.98424 | 0.2110238 | 2.4814902 | 12 | 1 | 17 days | 0.25 | | MPC | 2006 $UK_{245}$ |
| 2006 $UO_{245}$ | 16.7 | 0.15 | 20061101 | 325.45237 | 47.63045 | 30.26564 | 5.54745 | 0.1286239 | 3.0970718 | 24 | 1 | 28 days | 0.59 | | MPC | 2006 $UO_{245}$ |
| 2006 $UP_{245}$ | 16.9 | 0.15 | 20061012 | 226.34954 | 309.31858 | 220.75771 | 1.91827 | 0.0877817 | 2.6707053 | 11 | 1 | 8 days | 0.36 | | MPC | 2006 $UP_{245}$ |
| 2006 $UR_{245}$ | 17.2 | 0.15 | 20061012 | 27.03035 | 313.12239 | 32.24667 | 21.00727 | 0.2354180 | 3.0084550 | 11 | 1 | 9 days | 0.20 | | MPC | 2006 $UR_{245}$ |
| 2006 $US_{245}$ | 19.3 | 0.15 | 20061012 | 1.84122 | 348.80288 | 35.16818 | 0.09581 | 0.2510580 | 2.5265155 | 10 | 1 | 9 days | 0.49 | | MPC | 2006 $US_{245}$ |
| 2006 $UA_{246}$ | 17.5 | 0.15 | 20061012 | 359.33909 | 355.32108 | 35.90155 | 11.90901 | 0.0977252 | 2.9855205 | 11 | 1 | 2 days | 0.21 | | MPC | 2006 $UA_{246}$ |
| 2006 $UD_{246}$ | 18.5 | 0.15 | 20061012 | 280.36378 | 272.47293 | 210.42667 | 3.54880 | 0.1154533 | 2.3376139 | 15 | 1 | 2 days | 0.32 | | MPC | 2006 $UD_{246}$ |
| 2006 $UL_{246}$ | 17.9 | 0.15 | 20061012 | 347.03154 | 189.07256 | 220.96209 | 4.25307 | 0.1934835 | 3.0756843 | 10 | 1 | 13 days | 0.83 | | MPC | 2006 $UL_{246}$ |
| 2006 $UN_{246}$ | 18.7 | 0.15 | 20061101 | 25.10636 | 151.42495 | 212.09401 | 2.90263 | 0.1291587 | 2.5459499 | 12 | 1 | 15 days | 0.76 | | MPC | 2006 $UN_{246}$ |
| 2006 $UR_{246}$ | 19.5 | 0.15 | 20061101 | 0.94054 | 20.57587 | 14.06044 | 1.32847 | 0.1636721 | 2.0476060 | 11 | 1 | 17 days | 0.28 | | MPC | 2006 $UR_{246}$ |
| 2006 $US_{246}$ | 16.5 | 0.15 | 20061101 | 340.37344 | 198.77660 | 219.79615 | 3.38827 | 0.0896249 | 2.6433342 | 29 | 1 | 31 days | 0.51 | | MPC | 2006 $US_{246}$ |
| 2006 $UT_{246}$ | 16.2 | 0.15 | 20061101 | 87.80982 | 84.40104 | 216.02836 | 9.39597 | 0.0563054 | 3.1628372 | 20 | 1 | 42 days | 0.35 | | MPC | 2006 $UT_{246}$ |
| 2006 $UY_{246}$ | 15.8 | 0.15 | 20061012 | 212.66919 | 187.05037 | 355.66037 | 1.42930 | 0.0759932 | 3.2012449 | 13 | 1 | 13 days | 0.42 | | MPC | 2006 $UY_{246}$ |
| 2006 $UZ_{246}$ | 19.6 | 0.15 | 20061012 | 1.97089 | 357.07215 | 25.65749 | 3.41371 | 0.2369894 | 2.2374866 | 18 | 1 | 33 days | 0.30 | | MPC | 2006 $UZ_{246}$ |
| 2006 $UA_{247}$ | 17.8 | 0.15 | 20061012 | 18.27428 | 6.93835 | 0.22825 | 1.46402 | 0.1040082 | 2.7670054 | 14 | 1 | 33 days | 0.23 | | MPC | 2006 $UA_{247}$ |
| 2006 $UB_{247}$ | 17.5 | 0.15 | 20061012 | 124.65123 | 231.20674 | 21.13787 | 2.92501 | 0.1604185 | 2.4165798 | 11 | 1 | 33 days | 0.30 | | MPC | 2006 $UB_{247}$ |
| 2006 $UC_{247}$ | 17.5 | 0.15 | 20061012 | 30.31163 | 333.74308 | 23.58748 | 6.57924 | 0.0491301 | 2.8574130 | 10 | 1 | 9 days | 0.18 | | MPC | 2006 $UC_{247}$ |
| 2006 $UE_{247}$ | 16.9 | 0.15 | 20061012 | 153.59585 | 218.39488 | 14.60969 | 3.37242 | 0.1017403 | 2.6831795 | 10 | 1 | 9 days | 0.24 | | MPC | 2006 $UE_{247}$ |
| 2006 $UG_{247}$ | 16.6 | 0.15 | 20060922 | 11.93949 | 150.52633 | 221.21535 | 8.86002 | 0.1003392 | 3.1300993 | 24 | 1 | 60 days | 0.27 | M-v 4 | MPC | 2006 $UG_{247}$ |
| 2006 $UH_{247}$ | 16.7 | 0.15 | 20061012 | 257.78340 | 182.92318 | 314.67237 | 0.82460 | 0.0413058 | 2.7495575 | 10 | 1 | 9 days | 0.28 | | MPC | 2006 $UH_{247}$ |
| 2006 $UK_{247}$ | 17.4 | 0.15 | 20061012 | 323.15354 | 62.12227 | 11.05309 | 2.46337 | 0.0791125 | 2.7558099 | 17 | 1 | 52 days | 0.32 | | MPC | 2006 $UK_{247}$ |
| 2006 $UM_{247}$ | 16.9 | 0.15 | 20061012 | 281.22731 | 257.68072 | 219.89957 | 11.57250 | 0.0639293 | 3.0600707 | 19 | 1 | 55 days | 0.40 | | MPC | 2006 $UM_{247}$ |
| 2006 $UP_{247}$ | 17.2 | 0.15 | 20061101 | 9.55725 | 165.58495 | 218.30905 | 14.42949 | 0.1034364 | 2.5499991 | 23 | 1 | 36 days | 0.25 | D | MPC | 2006 $UP_{247}$ |
| 2006 $UR_{247}$ | 16.4 | 0.15 | 20061101 | 328.39790 | 212.25721 | 220.43428 | 9.07314 | 0.0839999 | 2.9884254 | 18 | 1 | 39 days | 0.36 | | MPC | 2006 $UR_{247}$ |
| 2006 $US_{247}$ | 17.5 | 0.15 | 20061101 | 332.98746 | 49.88216 | 16.81108 | 3.66898 | 0.0684577 | 2.8414445 | 13 | 1 | 21 days | 0.37 | | MPC | 2006 $US_{247}$ |
| 2006 $UU_{247}$ | 16.9 | 0.15 | 20061012 | 171.15121 | 350.48233 | 227.70879 | 3.41978 | 0.2186014 | 2.6458266 | 10 | 1 | 9 days | 0.29 | | MPC | 2006 $UU_{247}$ |
| 2006 $UX_{247}$ | 17.7 | 0.15 | 20061012 | 46.39953 | 19.53806 | 300.34664 | 0.82710 | 0.2397215 | 2.7155324 | 17 | 1 | 51 days | 0.31 | | MPC | 2006 $UX_{247}$ |
| 2006 $UY_{247}$ | 16.6 | 0.15 | 20061012 | 39.37931 | 315.23933 | 31.37288 | 13.77146 | 0.0700379 | 2.8038293 | 31 | 1 | 58 days | 0.26 | | MPC | 2006 $UY_{247}$ |
| 2006 $UC_{248}$ | 16.2 | 0.15 | 20061012 | 79.19066 | 70.89847 | 218.80281 | 11.46964 | 0.2052171 | 3.1618143 | 17 | 1 | 43 days | 0.23 | | MPC | 2006 $UC_{248}$ |
| 2006 $UD_{248}$ | 16.9 | 0.15 | 20060922 | 292.50802 | 247.84612 | 221.01034 | 7.10166 | 0.1382857 | 2.5970863 | 37 | 1 | 60 days | 0.27 | M-v 4 | MPC | 2006 $UD_{248}$ |
| 2006 $UF_{248}$ | 18.6 | 0.15 | 20061012 | 348.98555 | 16.16411 | 31.27833 | 7.98199 | 0.2347945 | 2.6912760 | 20 | 1 | 45 days | 0.31 | | MPC | 2006 $UF_{248}$ |
| 2006 $UK_{248}$ | 16.0 | 0.15 | 20060922 | 41.95079 | 251.74433 | 82.21057 | 0.73116 | 0.1283016 | 3.0448995 | 31 | 1 | 63 days | 0.28 | M-v 4 | MPC | 2006 $UK_{248}$ |
| 2006 $UM_{248}$ | 16.9 | 0.15 | 20061012 | 165.98670 | 182.15400 | 38.95467 | 7.36908 | 0.2514478 | 2.4869417 | 10 | 1 | 33 days | 0.27 | | MPC | 2006 $UM_{248}$ |
| 2006 $UN_{248}$ | 16.1 | 0.15 | 20061012 | 237.24225 | 126.05355 | 37.85640 | 7.52193 | 0.0958753 | 3.0978827 | 19 | 1 | 21 days | 0.26 | | MPC | 2006 $UN_{248}$ |
| 2006 $UO_{248}$ | 16.5 | 0.15 | 20061101 | 171.12018 | 7.77069 | 213.54589 | 12.67513 | 0.2671590 | 2.4227751 | 15 | 1 | 14 days | 0.67 | | MPC | 2006 $UO_{248}$ |
| 2006 $UP_{248}$ | 17.1 | 0.15 | 20061012 | 346.86490 | 200.00589 | 209.00793 | 4.31113 | 0.1672620 | 2.8016927 | 38 | 1 | 54 days | 0.31 | | MPC | 2006 $UP_{248}$ |
| 2006 $UQ_{248}$ | 19.5 | 0.15 | 20061012 | 356.94826 | 190.91357 | 202.37001 | 3.39727 | 0.0833278 | 2.2817178 | 13 | 1 | 4 days | 0.74 | | MPC | 2006 $UQ_{248}$ |
| 2006 $US_{248}$ | 19.6 | 0.15 | 20061101 | 18.20707 | 303.93935 | 69.79897 | 0.68295 | 0.1142402 | 2.2569737 | 20 | 1 | 13 days | 0.30 | D | MPC | 2006 $US_{248}$ |
| 2006 $UV_{248}$ | 18.9 | 0.15 | 20061012 | 358.52866 | 3.40116 | 27.49688 | 1.80482 | 0.1829607 | 2.3769658 | 17 | 1 | 50 days | 0.26 | | MPC | 2006 $UV_{248}$ |
| 2006 $UA_{249}$ | 18.6 | 0.15 | 20061101 | 350.26348 | 194.24238 | 217.87285 | 1.36310 | 0.2118685 | 2.3098362 | 23 | 1 | 37 days | 0.28 | | MPC | 2006 $UA_{249}$ |
| 2006 $UE_{249}$ | 19.0 | 0.15 | 20061012 | 149.06900 | 22.98339 | 215.03653 | 18.71604 | 0.0463112 | 1.9064374 | 14 | 1 | 10 days | 0.19 | | MPC | 2006 $UE_{249}$ |
| 2006 $UH_{249}$ | 18.9 | 0.15 | 20061012 | 13.58614 | 194.97782 | 170.62066 | 0.05803 | 0.2714762 | 2.8949185 | 14 | 1 | 2 days | 0.43 | | MPC | 2006 $UH_{249}$ |
| 2006 $UJ_{249}$ | 19.3 | 0.15 | 20061012 | 353.57736 | 3.74670 | 36.02064 | 6.07115 | 0.2105033 | 2.6494281 | 19 | 1 | 2 days | 0.34 | | MPC | 2006 $UJ_{249}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UK_{249}$ | 17.0 | 0.15 | 20061012 | 182.51128 | 173.60435 | 37.00472 | 5.76811 | 0.1047866 | 2.6207671 | 19 | 1 | 2 days | 0.44 | | MPC | 2006 $UK_{249}$ |
| 2006 $UL_{249}$ | 18.1 | 0.15 | 20061012 | 354.14504 | 333.59560 | 66.15529 | 0.73262 | 0.1803747 | 3.0395364 | 18 | 1 | 2 days | 0.39 | | MPC | 2006 $UL_{249}$ |
| 2006 $UO_{249}$ | 18.5 | 0.15 | 20061012 | 354.26913 | 186.33038 | 212.68942 | 8.14749 | 0.1774552 | 2.8158810 | 15 | 1 | 2 days | 0.35 | | MPC | 2006 $UO_{249}$ |
| 2006 $UP_{249}$ | 18.6 | 0.15 | 20061012 | 257.03479 | 284.14180 | 214.95922 | 20.96062 | 0.0616285 | 1.8675361 | 32 | 1 | 50 days | 0.26 | | MPC | 2006 $UP_{249}$ |
| 2006 $US_{249}$ | 20.7 | 0.15 | 20061012 | 3.81065 | 165.60928 | 215.24119 | 2.51407 | 0.2560486 | 2.2831850 | 11 | 1 | 2 days | 0.51 | | MPC | 2006 $US_{249}$ |
| 2006 $UT_{249}$ | 18.6 | 0.15 | 20061101 | 352.74631 | 191.85088 | 215.67551 | 14.07179 | 0.1727166 | 2.5773914 | 18 | 1 | 15 days | 0.29 | | MPC | 2006 $UT_{249}$ |
| 2006 $UV_{249}$ | 18.9 | 0.15 | 20061012 | 329.79023 | 212.63103 | 210.58192 | 1.40017 | 0.0420593 | 2.1742392 | 15 | 1 | 2 days | 0.36 | | MPC | 2006 $UV_{249}$ |
| 2006 $UW_{249}$ | 18.8 | 0.15 | 20061101 | 27.36899 | 147.38000 | 204.81013 | 1.23769 | 0.2498308 | 2.1280188 | 23 | 1 | 41 days | 0.22 | | MPC | 2006 $UW_{249}$ |
| 2006 $UY_{249}$ | 16.3 | 0.15 | 20061012 | 326.06417 | 37.75076 | 40.62134 | 1.23395 | 0.1587088 | 3.0799449 | 43 | 1 | 58 days | 0.28 | | MPC | 2006 $UY_{249}$ |
| 2006 $UZ_{249}$ | 18.2 | 0.15 | 20061101 | 15.51842 | 198.72556 | 177.55069 | 0.32088 | 0.1433756 | 3.0715416 | 11 | 1 | 18 days | 0.61 | | MPC | 2006 $UZ_{249}$ |
| 2006 $UC_{250}$ | 17.8 | 0.15 | 20061012 | 64.22581 | 264.48668 | 40.44685 | 2.93721 | 0.1978602 | 2.3917308 | 18 | 1 | 36 days | 0.24 | | MPC | 2006 $UC_{250}$ |
| 2006 $UF_{250}$ | 17.1 | 0.15 | 20061012 | 28.22138 | 150.15352 | 207.43027 | 1.34838 | 0.1015158 | 2.6843858 | 28 | 1 | 58 days | 0.30 | | MPC | 2006 $UF_{250}$ |
| 2006 $UK_{250}$ | 15.7 | 0.15 | 20061012 | 144.62520 | 36.79508 | 207.12463 | 2.88967 | 0.0969036 | 3.1819846 | 22 | 1 | 50 days | 0.24 | | MPC | 2006 $UK_{250}$ |
| 2006 $UQ_{250}$ | 15.9 | 0.15 | 20061101 | 166.49246 | 174.29432 | 51.50819 | 2.36595 | 0.2578013 | 2.8758728 | 10 | 1 | 26 days | 0.86 | | MPC | 2006 $UQ_{250}$ |
| 2006 $UR_{250}$ | 18.5 | 0.15 | 20061101 | 32.47603 | 148.06425 | 214.14835 | 4.37169 | 0.0481493 | 2.5764523 | 13 | 1 | 14 days | 0.35 | | MPC | 2006 $UR_{250}$ |
| 2006 $US_{250}$ | 18.9 | 0.15 | 20061101 | 346.91618 | 18.92843 | 39.88010 | 3.46573 | 0.2220043 | 2.6194135 | 17 | 1 | 25 days | 0.26 | | MPC | 2006 $US_{250}$ |
| 2006 $UU_{250}$ | 17.3 | 0.15 | 20061012 | 1.01231 | 348.84112 | 42.91812 | 5.44427 | 0.1290479 | 3.0786841 | 11 | 1 | 33 days | 0.26 | | MPC | 2006 $UU_{250}$ |
| 2006 $UX_{250}$ | 16.8 | 0.15 | 20061012 | 99.14111 | 240.51738 | 35.38870 | 14.22680 | 0.1745538 | 2.7405464 | 10 | 1 | 9 days | 0.25 | | MPC | 2006 $UX_{250}$ |
| 2006 $UC_{251}$ | 17.9 | 0.15 | 20061012 | 31.14507 | 124.66551 | 221.85427 | 3.94937 | 0.1818013 | 2.4178138 | 22 | 1 | 55 days | 0.32 | | MPC | 2006 $UC_{251}$ |
| 2006 $UL_{251}$ | 16.1 | 0.15 | 20061012 | 280.74953 | 291.41321 | 218.42742 | 17.60522 | 0.3225898 | 2.7593662 | 11 | 1 | 27 days | 0.42 | | MPC | 2006 $UL_{251}$ |
| 2006 $UN_{251}$ | 18.1 | 0.15 | 20061012 | 52.37809 | 284.51693 | 36.36788 | 13.35633 | 0.1868277 | 2.6547852 | 10 | 1 | 9 days | 0.23 | | MPC | 2006 $UN_{251}$ |
| 2006 $UQ_{251}$ | 18.1 | 0.15 | 20061012 | 151.41828 | 197.11990 | 38.23520 | 6.50772 | 0.1373755 | 2.2400323 | 10 | 1 | 31 days | 0.22 | | MPC | 2006 $UQ_{251}$ |
| 2006 $UX_{251}$ | 17.9 | 0.15 | 20061101 | 318.68308 | 80.00436 | 22.86233 | 4.99986 | 0.2666474 | 2.5428977 | 15 | 1 | 35 days | 0.31 | | MPC | 2006 $UX_{251}$ |
| 2006 $UY_{251}$ | 16.6 | 0.15 | 20061101 | 170.94964 | 193.36932 | 27.36721 | 4.52644 | 0.2944159 | 2.3705899 | 9 | 1 | 14 days | 0.74 | | MPC | 2006 $UY_{251}$ |
| 2006 $UZ_{251}$ | 17.1 | 0.15 | 20061012 | 303.36175 | 92.66036 | 359.80243 | 1.28940 | 0.0396213 | 2.8642793 | 16 | 1 | 45 days | 0.31 | | MPC | 2006 $UZ_{251}$ |
| 2006 $UA_{252}$ | 16.5 | 0.15 | 20061012 | 178.65765 | 166.80219 | 47.74745 | 3.04278 | 0.3010459 | 2.3664870 | 13 | 1 | 9 days | 0.38 | | MPC | 2006 $UA_{252}$ |
| 2006 $UC_{252}$ | 16.6 | 0.15 | 20061101 | 15.23872 | 63.01161 | 316.56836 | 3.88674 | 0.2424888 | 2.3450776 | 34 | 1 | 28 days | 0.58 | | MPC | 2006 $UC_{252}$ |
| 2006 $UD_{252}$ | 18.5 | 0.15 | 20061101 | 334.73483 | 219.79616 | 216.29619 | 7.04115 | 0.2008669 | 2.7433021 | 18 | 1 | 19 days | 0.29 | | MPC | 2006 $UD_{252}$ |
| 2006 $UG_{252}$ | 17.0 | 0.15 | 20061012 | 34.50284 | 314.39340 | 38.93392 | 9.38123 | 0.0926771 | 3.1823228 | 14 | 1 | 22 days | 0.23 | | MPC | 2006 $UG_{252}$ |
| 2006 $UJ_{252}$ | 16.2 | 0.15 | 20061012 | 354.07136 | 2.46039 | 38.99670 | 9.37004 | 0.0925823 | 3.1680248 | 22 | 1 | 49 days | 0.22 | | MPC | 2006 $UJ_{252}$ |
| 2006 $UL_{252}$ | 17.1 | 0.15 | 20061012 | 331.88074 | 20.73064 | 48.37104 | 1.88587 | 0.1161185 | 3.0003017 | 14 | 1 | 9 days | 0.66 | | MPC | 2006 $UL_{252}$ |
| 2006 $UM_{252}$ | 17.3 | 0.15 | 20061012 | 34.49884 | 134.67395 | 214.40441 | 4.21181 | 0.1282285 | 2.6916155 | 17 | 1 | 28 days | 0.42 | | MPC | 2006 $UM_{252}$ |
| 2006 $UN_{252}$ | 17.1 | 0.15 | 20061101 | 4.69279 | 176.04843 | 216.47589 | 5.11142 | 0.1277713 | 3.0339299 | 25 | 1 | 37 days | 0.36 | | MPC | 2006 $UN_{252}$ |
| 2006 $UO_{252}$ | 18.3 | 0.15 | 20061012 | 312.90497 | 57.00222 | 38.47693 | 6.18143 | 0.1686775 | 2.3927959 | 25 | 1 | 50 days | 0.26 | | MPC | 2006 $UO_{252}$ |
| 2006 $UQ_{252}$ | 17.4 | 0.15 | 20061101 | 350.14484 | 13.00935 | 42.94471 | 16.33627 | 0.2579752 | 3.1571136 | 20 | 1 | 27 days | 0.21 | | MPC | 2006 $UQ_{252}$ |
| 2006 $US_{252}$ | 17.9 | 0.15 | 20061101 | 339.21915 | 30.12402 | 40.90275 | 7.01973 | 0.2134823 | 2.9068145 | 18 | 1 | 25 days | 0.32 | | MPC | 2006 $US_{252}$ |
| 2006 $UT_{252}$ | 17.8 | 0.15 | 20061101 | 68.75592 | 267.94077 | 41.54936 | 5.92658 | 0.1796000 | 2.3333929 | 18 | 1 | 25 days | 0.27 | | MPC | 2006 $UT_{252}$ |
| 2006 $UU_{252}$ | 17.8 | 0.15 | 20061101 | 289.04872 | 66.63441 | 45.89357 | 2.74088 | 0.0237026 | 2.8717736 | 14 | 1 | 25 days | 0.37 | | MPC | 2006 $UU_{252}$ |
| 2006 $UV_{252}$ | 17.2 | 0.15 | 20061101 | 316.40012 | 233.41937 | 213.71406 | 2.74603 | 0.0541547 | 2.6877721 | 22 | 1 | 33 days | 0.36 | | MPC | 2006 $UV_{252}$ |
| 2006 $UW_{252}$ | 17.2 | 0.15 | 20061101 | 336.94311 | 212.77536 | 216.35193 | 9.96830 | 0.1302254 | 3.0441194 | 14 | 1 | 24 days | 0.53 | | MPC | 2006 $UW_{252}$ |
| 2006 $UX_{252}$ | 17.1 | 0.15 | 20061012 | 221.47993 | 139.83709 | 40.95154 | 5.26801 | 0.1034265 | 2.5908302 | 22 | 1 | 50 days | 0.36 | | MPC | 2006 $UX_{252}$ |
| 2006 $UA_{253}$ | 16.7 | 0.15 | 20061101 | 59.45776 | 121.40814 | 209.01705 | 3.80577 | 0.0899148 | 2.9599226 | 11 | 1 | 26 days | 0.17 | | MPC | 2006 $UA_{253}$ |
| 2006 $UH_{253}$ | 17.1 | 0.15 | 20061012 | 99.79846 | 57.73785 | 219.81569 | 9.27829 | 0.1832793 | 2.5937276 | 10 | 1 | 12 days | 0.23 | | MPC | 2006 $UH_{253}$ |
| 2006 $UJ_{253}$ | 16.4 | 0.15 | 20060922 | 36.20352 | 311.33925 | 39.94976 | 10.65490 | 0.0573106 | 2.7623101 | 33 | 1 | 62 days | 0.42 | M-v 4 | MPC | 2006 $UJ_{253}$ |
| 2006 $UK_{253}$ | 18.3 | 0.15 | 20061012 | 30.71064 | 299.01064 | 45.88694 | 2.75644 | 0.2439426 | 2.6940482 | 10 | 1 | 5 days | 0.30 | | MPC | 2006 $UK_{253}$ |
| 2006 $UL_{253}$ | 17.2 | 0.15 | 20060922 | 286.01516 | 69.65868 | 40.14542 | 7.51590 | 0.0563132 | 2.3257360 | 29 | 1 | 62 days | 0.39 | M-v 4 | MPC | 2006 $UL_{253}$ |
| 2006 $UM_{253}$ | 16.1 | 0.15 | 20061012 | 194.65918 | 163.64395 | 44.09997 | 7.45559 | 0.1574835 | 2.6847586 | 13 | 1 | 5 days | 0.34 | | MPC | 2006 $UM_{253}$ |
| 2006 $UN_{253}$ | 17.0 | 0.15 | 20061012 | 307.61458 | 53.31302 | 42.49577 | 11.53737 | 0.0591557 | 3.0014227 | 10 | 1 | 5 days | 0.41 | | MPC | 2006 $UN_{253}$ |
| 2006 $UP_{253}$ | 17.9 | 0.15 | 20061101 | 340.26004 | 4.03934 | 60.33502 | 0.98841 | 0.0636207 | 2.7680572 | 18 | 1 | 25 days | 0.36 | | MPC | 2006 $UP_{253}$ |
| 2006 $UQ_{253}$ | 17.5 | 0.15 | 20061012 | 50.56918 | 119.84112 | 217.34086 | 4.14381 | 0.1013121 | 2.7537550 | 17 | 1 | 30 days | 0.36 | | MPC | 2006 $UQ_{253}$ |
| 2006 $UR_{253}$ | 16.1 | 0.15 | 20061101 | 193.46357 | 165.71852 | 44.85657 | 13.36215 | 0.0566456 | 3.1132670 | 14 | 1 | 16 days | 0.71 | | MPC | 2006 $UR_{253}$ |
| 2006 $US_{253}$ | 16.7 | 0.15 | 20061012 | 203.01279 | 153.36346 | 46.81053 | 5.69873 | 0.1333240 | 2.3996898 | 9 | 1 | 5 days | 0.54 | | MPC | 2006 $US_{253}$ |
| 2006 $UT_{253}$ | 17.5 | 0.15 | 20061101 | 237.33558 | 127.22505 | 44.90301 | 8.02405 | 0.0811151 | 2.4238922 | 22 | 1 | 31 days | 0.34 | | MPC | 2006 $UT_{253}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UV_{253}$ | 15.9 | 0.15 | 20060922 | 2.57613 | 10.69383 | 23.90581 | 14.62343 | 0.1897278 | 2.7381672 | 39 | 1 | 85 days | 0.49 | M-v | 4 | MPC | 2006 $UV_{253}$ |
| 2006 $UX_{253}$ | 17.5 | 0.15 | 20061101 | 211.50701 | 333.50040 | 218.80632 | 4.93046 | 0.0147779 | 2.7363155 | 14 | 1 | 17 days | 0.38 | | | MPC | 2006 $UX_{253}$ |
| 2006 $UY_{253}$ | 17.2 | 0.15 | 20061101 | 7.95483 | 179.48222 | 214.37938 | 1.25400 | 0.0731934 | 2.8649227 | 18 | 1 | 25 days | 0.66 | | | MPC | 2006 $UY_{253}$ |
| 2006 $UA_{254}$ | 17.7 | 0.15 | 20061101 | 78.48375 | 97.02874 | 222.05454 | 2.19877 | 0.0497586 | 2.5552331 | 18 | 1 | 25 days | 0.32 | | | MPC | 2006 $UA_{254}$ |
| 2006 $UB_{254}$ | 16.5 | 0.15 | 20061101 | 189.80083 | 3.90632 | 213.51728 | 1.05191 | 0.1781823 | 2.7965358 | 14 | 1 | 16 days | 0.76 | | | MPC | 2006 $UB_{254}$ |
| 2006 $UD_{254}$ | 16.5 | 0.15 | 20061101 | 0.94707 | 326.56395 | 75.70565 | 0.74087 | 0.1850638 | 3.1457937 | 28 | 1 | 42 days | 0.23 | | | MPC | 2006 $UD_{254}$ |
| 2006 $UE_{254}$ | 18.9 | 0.15 | 20061101 | 46.35844 | 290.69270 | 43.33143 | 4.34912 | 0.2244672 | 2.2803075 | 20 | 1 | 46 days | 0.26 | | | MPC | 2006 $UE_{254}$ |
| 2006 $UG_{254}$ | 18.0 | 0.15 | 20061101 | 55.75916 | 283.54838 | 52.09913 | 4.32261 | 0.1231062 | 2.6711188 | 26 | 1 | 33 days | 0.34 | | | MPC | 2006 $UG_{254}$ |
| 2006 $UH_{254}$ | 17.0 | 0.15 | 20061012 | 328.03209 | 213.09999 | 222.21446 | 15.81865 | 0.0466178 | 2.8845986 | 20 | 1 | 27 days | 0.32 | | | MPC | 2006 $UH_{254}$ |
| 2006 $UK_{254}$ | 18.2 | 0.15 | 20061101 | 208.19562 | 336.11766 | 220.57098 | 19.80524 | 0.0302082 | 1.9518818 | 18 | 1 | 27 days | 0.24 | | | MPC | 2006 $UK_{254}$ |
| 2006 $UL_{254}$ | 15.0 | 0.15 | 20061012 | 193.26027 | 353.62303 | 223.27392 | 15.33916 | 0.3329504 | 2.8828610 | 10 | 1 | 5 days | 0.28 | | | MPC | 2006 $UL_{254}$ |
| 2006 $UM_{254}$ | 18.2 | 0.15 | 20061012 | 52.16550 | 117.18601 | 220.27244 | 9.01562 | 0.1044373 | 2.7051049 | 10 | 1 | 5 days | 0.39 | | | MPC | 2006 $UM_{254}$ |
| 2006 $UN_{254}$ | 18.0 | 0.15 | 20061101 | 80.30645 | 253.26871 | 51.48095 | 2.25688 | 0.1692994 | 2.4009861 | 22 | 1 | 26 days | 0.32 | | | MPC | 2006 $UN_{254}$ |
| 2006 $UP_{254}$ | 16.4 | 0.15 | 20061012 | 147.80333 | 25.57101 | 221.05159 | 9.60952 | 0.1351995 | 2.5834119 | 24 | 1 | 48 days | 0.18 | | | MPC | 2006 $UP_{254}$ |
| 2006 $UQ_{254}$ | 17.7 | 0.15 | 20061012 | 27.66101 | 301.13086 | 43.90350 | 14.96712 | 0.3036740 | 2.5827135 | 26 | 1 | 46 days | 0.21 | | E | MPC | 2006 $UQ_{254}$ |
| 2006 $UT_{254}$ | 16.1 | 0.15 | 20061101 | 62.89249 | 98.35239 | 228.43227 | 5.25053 | 0.1490825 | 3.1655843 | 17 | 1 | 15 days | 0.22 | | | MPC | 2006 $UT_{254}$ |
| 2006 $UU_{254}$ | 16.7 | 0.15 | 20061101 | 323.18111 | 242.95513 | 202.76171 | 0.68597 | 0.0425818 | 2.5920250 | 35 | 1 | 40 days | 0.35 | | | MPC | 2006 $UU_{254}$ |
| 2006 $UV_{254}$ | 16.7 | 0.15 | 20061012 | 64.92510 | 283.53503 | 45.45041 | 10.35155 | 0.0845838 | 3.0956584 | 17 | 1 | 26 days | 0.38 | | | MPC | 2006 $UV_{254}$ |
| 2006 $UX_{254}$ | 17.8 | 0.15 | 20061101 | 75.30395 | 261.87659 | 51.07968 | 5.20403 | 0.1520250 | 2.2067744 | 25 | 1 | 35 days | 0.36 | | | MPC | 2006 $UX_{254}$ |
| 2006 $UY_{254}$ | 16.7 | 0.15 | 20061101 | 22.79232 | 160.60626 | 221.35073 | 9.16069 | 0.0608359 | 3.0961236 | 17 | 1 | 16 days | 0.36 | | D | MPC | 2006 $UY_{254}$ |
| 2006 $UZ_{254}$ | 17.3 | 0.15 | 20061101 | 316.19985 | 53.47782 | 51.37776 | 3.29797 | 0.1641926 | 2.3957758 | 32 | 1 | 32 days | 0.38 | | D | MPC | 2006 $UZ_{254}$ |
| 2006 $UA_{255}$ | 18.0 | 0.15 | 20061012 | 313.38919 | 23.86496 | 71.27526 | 1.74496 | 0.0831894 | 2.5371773 | 15 | 1 | 26 days | 0.47 | | | MPC | 2006 $UA_{255}$ |
| 2006 $UB_{255}$ | 15.9 | 0.15 | 20061101 | 21.23908 | 319.04513 | 59.88114 | 2.90998 | 0.1480277 | 3.0795580 | 42 | 1 | 46 days | 0.51 | | | MPC | 2006 $UB_{255}$ |
| 2006 $UC_{255}$ | 17.7 | 0.15 | 20061101 | 32.88769 | 156.48715 | 203.96173 | 1.00255 | 0.1940027 | 3.1062448 | 22 | 1 | 25 days | 0.32 | | | MPC | 2006 $UC_{255}$ |
| 2006 $UD_{255}$ | 15.4 | 0.15 | 20061012 | 323.05432 | 226.19211 | 233.28426 | 12.18706 | 0.2428006 | 3.0325533 | 56 | 1 | 54 days | 0.38 | | | MPC | 2006 $UD_{255}$ |
| 2006 $UE_{255}$ | 17.3 | 0.15 | 20061101 | 40.41397 | 127.05817 | 219.60884 | 4.75169 | 0.1889894 | 2.7148734 | 23 | 1 | 43 days | 0.21 | | | MPC | 2006 $UE_{255}$ |
| 2006 $UF_{255}$ | 15.6 | 0.15 | 20061101 | 319.79488 | 41.79446 | 45.72697 | 10.71909 | 0.0358871 | 3.9967423 | 15 | 1 | 16 days | 0.74 | | | MPC | 2006 $UF_{255}$ |
| 2006 $UG_{255}$ | 15.3 | 0.15 | 20061101 | 356.95436 | 173.50765 | 240.23607 | 16.44070 | 0.2070339 | 3.0904652 | 63 | 1 | 39 days | 0.53 | | | MPC | 2006 $UG_{255}$ |
| 2006 $UL_{255}$ | 20.5 | 0.15 | 20061012 | 14.48074 | 154.60407 | 207.92148 | 1.13499 | 0.2574940 | 2.2870595 | 11 | 1 | 2 days | 0.45 | | | MPC | 2006 $UL_{255}$ |
| 2006 $UN_{255}$ | 17.6 | 0.15 | 20061012 | 349.06336 | 202.79758 | 201.00898 | 2.37030 | 0.0737348 | 2.6126304 | 28 | 1 | 47 days | 0.31 | | | MPC | 2006 $UN_{255}$ |
| 2006 $UO_{255}$ | 17.0 | 0.15 | 20061012 | 35.52833 | 138.06315 | 211.44442 | 7.63217 | 0.0998496 | 3.1804579 | 17 | 1 | 9 days | 0.31 | | | MPC | 2006 $UO_{255}$ |
| 2006 $UR_{255}$ | 17.3 | 0.15 | 20061012 | 30.62976 | 308.37849 | 36.92560 | 5.37747 | 0.2026150 | 2.7548620 | 15 | 1 | 2 days | 0.27 | | | MPC | 2006 $UR_{255}$ |
| 2006 $US_{255}$ | 16.9 | 0.15 | 20061101 | 1.95214 | 181.70298 | 225.10799 | 11.23014 | 0.1025132 | 2.9409680 | 23 | 1 | 27 days | 0.50 | | | MPC | 2006 $US_{255}$ |
| 2006 $UT_{255}$ | 16.8 | 0.15 | 20060922 | 19.18334 | 124.34187 | 232.07982 | 5.11646 | 0.3175706 | 2.5596824 | 58 | 1 | 70 days | 0.46 | M-v | 4 | MPC | 2006 $UT_{255}$ |
| 2006 $UU_{255}$ | 18.1 | 0.15 | 20061012 | 20.40055 | 324.05330 | 45.22729 | 4.42579 | 0.2411615 | 2.4087668 | 34 | 1 | 56 days | 0.43 | | | MPC | 2006 $UU_{255}$ |
| 2006 $UV_{255}$ | 18.4 | 0.15 | 20061101 | 334.88684 | 46.06659 | 47.72365 | 23.81980 | 0.2682866 | 2.3144049 | 32 | 1 | 32 days | 0.33 | | | MPC | 2006 $UV_{255}$ |
| 2006 $UX_{255}$ | 16.1 | 0.15 | 20061101 | 137.18513 | 30.84665 | 245.76129 | 2.42739 | 0.0668657 | 2.7496628 | 17 | 1 | 27 days | 0.20 | | | MPC | 2006 $UX_{255}$ |
| 2006 $UY_{255}$ | 16.5 | 0.15 | 20061101 | 146.60462 | 211.74378 | 52.26646 | 7.36930 | 0.1157573 | 2.2696559 | 15 | 1 | 29 days | 0.17 | | | MPC | 2006 $UY_{255}$ |
| 2006 $UB_{256}$ | 15.9 | 0.15 | 20061012 | 327.21781 | 50.87897 | 47.35091 | 14.91534 | 0.2000852 | 3.1599758 | 35 | 1 | 59 days | 0.39 | | | MPC | 2006 $UB_{256}$ |
| 2006 $UH_{256}$ | 18.1 | 0.15 | 20060922 | 12.10449 | 304.42491 | 49.98939 | 2.10253 | 0.2400151 | 2.6580271 | 23 | 1 | 63 days | 0.25 | M-v | 4 | MPC | 2006 $UH_{256}$ |
| 2006 $UK_{256}$ | 18.1 | 0.15 | 20060922 | 357.89124 | 172.88837 | 205.12732 | 14.22440 | 0.2643709 | 2.6610096 | 16 | 1 | 37 days | 0.44 | | | MPC | 2006 $UK_{256}$ |
| 2006 $UP_{256}$ | 16.9 | 0.15 | 20061012 | 345.86918 | 202.78078 | 197.84838 | 10.90957 | 0.1497208 | 3.0870847 | 26 | 1 | 58 days | 0.37 | | | MPC | 2006 $UP_{256}$ |
| 2006 $UQ_{256}$ | 18.7 | 0.15 | 20061101 | 43.35364 | 181.68556 | 146.77723 | 1.28405 | 0.1844775 | 2.1765257 | 13 | 1 | 19 days | 0.23 | | | MPC | 2006 $UQ_{256}$ |
| 2006 $US_{256}$ | 17.2 | 0.15 | 20061012 | 225.59548 | 332.40206 | 190.35773 | 3.36070 | 0.1049650 | 2.2336957 | 19 | 1 | 29 days | 0.36 | | | MPC | 2006 $US_{256}$ |
| 2006 $UT_{256}$ | 17.2 | 0.15 | 20061012 | 33.44027 | 169.63343 | 165.09829 | 1.68501 | 0.1604003 | 3.0186056 | 13 | 1 | 4 days | 0.31 | | | MPC | 2006 $UT_{256}$ |
| 2006 $UU_{256}$ | 16.5 | 0.15 | 20061012 | 147.32826 | 31.73968 | 196.63194 | 11.13364 | 0.0984982 | 2.8158938 | 9 | 1 | 13 days | 0.25 | | | MPC | 2006 $UU_{256}$ |
| 2006 $UV_{256}$ | 17.0 | 0.15 | 20061012 | 84.16172 | 112.51618 | 172.69070 | 2.47444 | 0.1026120 | 2.8365473 | 10 | 1 | 3 days | 0.36 | | | MPC | 2006 $UV_{256}$ |
| 2006 $UX_{256}$ | 19.5 | 0.15 | 20061012 | 341.02083 | 71.21634 | 346.88134 | 3.52780 | 0.2705722 | 2.4709277 | 12 | 1 | 9 days | 0.32 | | | MPC | 2006 $UX_{256}$ |
| 2006 $UA_{257}$ | 18.4 | 0.15 | 20061012 | 28.52060 | 327.24193 | 14.25867 | 4.44222 | 0.2139925 | 2.1938042 | 37 | 1 | 52 days | 0.26 | | | MPC | 2006 $UA_{257}$ |
| 2006 $UB_{257}$ | 17.3 | 0.15 | 20061012 | 312.73112 | 200.61595 | 246.20308 | 4.21917 | 0.1298967 | 2.8015371 | 27 | 1 | 56 days | 0.19 | | D | MPC | 2006 $UB_{257}$ |
| 2006 $UC_{257}$ | 16.7 | 0.15 | 20061101 | 308.76674 | 220.19578 | 235.53788 | 3.51723 | 0.1336268 | 3.0856802 | 18 | 1 | 31 days | 0.19 | | | MPC | 2006 $UC_{257}$ |
| 2006 $UE_{257}$ | 17.7 | 0.15 | 20061012 | 25.15580 | 118.10601 | 239.42315 | 2.98128 | 0.0781791 | 2.7710954 | 9 | 1 | 9 days | 0.15 | | | MPC | 2006 $UE_{257}$ |
| 2006 $UL_{257}$ | 17.9 | 0.15 | 20061012 | 29.36897 | 111.63437 | 241.82424 | 1.64181 | 0.0666754 | 2.7452689 | 13 | 1 | 13 days | 0.19 | | | MPC | 2006 $UL_{257}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UM_{257}$ | 17.7 | 0.15 | 20061012 | 22.66100 | 146.21325 | 217.79137 | 6.44982 | 0.0126230 | 2.7324144 | 13 | 1 | 9 days | 0.21 | | MPC | 2006 $UM_{257}$ |
| 2006 $UN_{257}$ | 17.6 | 0.15 | 20061012 | 292.63652 | 77.00916 | 24.80968 | 6.84100 | 0.0704890 | 2.3326544 | 23 | 1 | 56 days | 0.22 | | MPC | 2006 $UN_{257}$ |
| 2006 $UO_{257}$ | 18.6 | 0.15 | 20061012 | 4.67147 | 26.97476 | 351.78887 | 0.85366 | 0.1828592 | 2.4673019 | 10 | 1 | 13 days | 0.15 | | MPC | 2006 $UO_{257}$ |
| 2006 $UQ_{257}$ | 16.6 | 0.15 | 20061101 | 50.39314 | 318.23288 | 21.90926 | 6.46034 | 0.0173063 | 2.7664010 | 13 | 1 | 31 days | 0.35 | | MPC | 2006 $UQ_{257}$ |
| 2006 $UU_{257}$ | 17.8 | 0.15 | 20061012 | 146.76606 | 209.78391 | 27.11858 | 6.87101 | 0.0653380 | 2.3047609 | 11 | 1 | 34 days | 0.26 | | MPC | 2006 $UU_{257}$ |
| 2006 $UV_{257}$ | 17.9 | 0.15 | 20061101 | 226.42917 | 319.22528 | 217.48593 | 4.58691 | 0.1485444 | 2.3027993 | 13 | 1 | 33 days | 0.31 | | MPC | 2006 $UV_{257}$ |
| 2006 $UW_{257}$ | 18.1 | 0.15 | 20061012 | 0.69180 | 153.33793 | 232.61516 | 1.58479 | 0.1865245 | 2.9652856 | 10 | 1 | 13 days | 0.33 | | MPC | 2006 $UW_{257}$ |
| 2006 $UX_{257}$ | 19.4 | 0.15 | 20061012 | 5.46715 | 152.54811 | 225.51726 | 1.51191 | 0.1810484 | 2.5011221 | 10 | 1 | 9 days | 0.22 | | MPC | 2006 $UX_{257}$ |
| 2006 $UB_{258}$ | 17.2 | 0.15 | 20061012 | 66.00013 | 298.34276 | 13.78417 | 2.05460 | 0.0921819 | 2.9745599 | 16 | 1 | 9 days | 0.28 | | MPC | 2006 $UB_{258}$ |
| 2006 $UH_{258}$ | 19.0 | 0.15 | 20061012 | 358.78684 | 13.79674 | 14.43543 | 1.63731 | 0.1801195 | 2.5495121 | 10 | 1 | 9 days | 0.62 | | MPC | 2006 $UH_{258}$ |
| 2006 $UK_{258}$ | 17.1 | 0.15 | 20061012 | 113.43347 | 14.82741 | 230.66649 | 2.05122 | 0.3511943 | 2.3437914 | 10 | 1 | 9 days | 0.28 | | MPC | 2006 $UK_{258}$ |
| 2006 $UL_{258}$ | 17.8 | 0.15 | 20061012 | 139.98991 | 211.80936 | 26.58530 | 7.81510 | 0.1623233 | 2.4352713 | 10 | 1 | 13 days | 0.31 | | MPC | 2006 $UL_{258}$ |
| 2006 $UP_{258}$ | 16.9 | 0.15 | 20061012 | 85.59216 | 59.43795 | 226.53875 | 2.39393 | 0.1467838 | 2.6556646 | 10 | 1 | 13 days | 0.14 | | MPC | 2006 $UP_{258}$ |
| 2006 $UR_{258}$ | 16.7 | 0.15 | 20061101 | 297.15454 | 246.80101 | 214.37936 | 15.07489 | 0.0560997 | 3.1249240 | 16 | 1 | 26 days | 0.27 | | MPC | 2006 $UR_{258}$ |
| 2006 $US_{258}$ | 17.0 | 0.15 | 20060922 | 326.94183 | 63.36806 | 1.63514 | 1.26035 | 0.1092753 | 3.1515561 | 19 | 1 | 62 days | 0.24 | M-v 4 | MPC | 2006 $US_{258}$ |
| 2006 $UT_{258}$ | 18.0 | 0.15 | 20061012 | 25.48863 | 126.98393 | 223.17054 | 3.81082 | 0.1930325 | 2.8950766 | 10 | 1 | 34 days | 0.35 | | MPC | 2006 $UT_{258}$ |
| 2006 $UY_{258}$ | 17.3 | 0.15 | 20061012 | 79.48788 | 83.53326 | 214.52143 | 12.10616 | 0.0983122 | 3.0089607 | 9 | 1 | 13 days | 0.20 | | MPC | 2006 $UY_{258}$ |
| 2006 $UZ_{258}$ | 15.9 | 0.15 | 20061012 | 181.97715 | 179.17917 | 29.55009 | 12.45040 | 0.2778198 | 3.0462571 | 10 | 1 | 13 days | 0.33 | | MPC | 2006 $UZ_{258}$ |
| 2006 $UA_{259}$ | 18.5 | 0.15 | 20061012 | 54.09974 | 291.76411 | 16.07511 | 1.76831 | 0.2376037 | 2.5070946 | 8 | 1 | 9 days | 0.26 | | MPC | 2006 $UA_{259}$ |
| 2006 $UB_{259}$ | 18.3 | 0.15 | 20061012 | 171.88436 | 188.32265 | 27.08018 | 5.89623 | 0.0529269 | 2.2429202 | 10 | 1 | 9 days | 0.19 | | MPC | 2006 $UB_{259}$ |
| 2006 $UC_{259}$ | 17.6 | 0.15 | 20061012 | 205.48010 | 160.69364 | 26.67226 | 6.94708 | 0.0978408 | 2.2937694 | 17 | 1 | 55 days | 0.21 | | MPC | 2006 $UC_{259}$ |
| 2006 $UD_{259}$ | 18.1 | 0.15 | 20061012 | 358.22629 | 171.78531 | 217.64048 | 3.65468 | 0.1870052 | 2.5774277 | 22 | 1 | 59 days | 0.23 | | MPC | 2006 $UD_{259}$ |
| 2006 $UE_{259}$ | 17.7 | 0.15 | 20061012 | 39.01970 | 127.74757 | 215.78589 | 5.55012 | 0.0726067 | 2.6710562 | 20 | 1 | 56 days | 0.24 | | MPC | 2006 $UE_{259}$ |
| 2006 $UF_{259}$ | 18.2 | 0.15 | 20061012 | 293.48676 | 240.07255 | 229.96308 | 0.85128 | 0.1397450 | 2.4089306 | 10 | 1 | 9 days | 0.25 | | MPC | 2006 $UF_{259}$ |
| 2006 $UG_{259}$ | 20.4 | 0.15 | 20061012 | 357.72527 | 13.70091 | 15.26556 | 0.65297 | 0.2605829 | 2.2870962 | 10 | 1 | 9 days | 0.65 | | MPC | 2006 $UG_{259}$ |
| 2006 $UL_{259}$ | 17.4 | 0.15 | 20061012 | 194.38518 | 167.65085 | 30.14500 | 2.29372 | 0.1171754 | 2.5754543 | 10 | 1 | 9 days | 0.32 | | MPC | 2006 $UL_{259}$ |
| 2006 $UM_{259}$ | 17.5 | 0.15 | 20061012 | 63.91448 | 269.98558 | 30.31416 | 13.33394 | 0.2194528 | 2.8073064 | 10 | 1 | 9 days | 0.26 | | MPC | 2006 $UM_{259}$ |
| 2006 $UN_{259}$ | 20.1 | 0.15 | 20061012 | 355.71978 | 359.28134 | 32.39051 | 4.06233 | 0.1870319 | 2.0855169 | 10 | 1 | 10 days | 0.77 | | MPC | 2006 $UN_{259}$ |
| 2006 $UO_{259}$ | 17.7 | 0.15 | 20060922 | 327.27689 | 40.32623 | 30.03209 | 8.38738 | 0.2075581 | 2.6888394 | 29 | 1 | 66 days | 0.30 | M-v 3 | MPC | 2006 $UO_{259}$ |
| 2006 $UP_{259}$ | 19.7 | 0.15 | 20061012 | 8.15710 | 43.85587 | 331.16949 | 0.42950 | 0.1417783 | 2.0312794 | 11 | 1 | 33 days | 0.34 | | MPC | 2006 $UP_{259}$ |
| 2006 $UQ_{259}$ | 17.5 | 0.15 | 20061101 | 266.17524 | 91.96500 | 47.23069 | 2.60690 | 0.0782883 | 2.6785472 | 14 | 1 | 12 days | 0.37 | | MPC | 2006 $UQ_{259}$ |
| 2006 $UU_{259}$ | 18.0 | 0.15 | 20061012 | 328.89596 | 27.14807 | 41.14597 | 4.66635 | 0.0839301 | 2.6895426 | 10 | 1 | 9 days | 0.48 | | MPC | 2006 $UU_{259}$ |
| 2006 $UX_{259}$ | 16.4 | 0.15 | 20061012 | 254.73875 | 123.76398 | 23.39580 | 6.73780 | 0.1304878 | 2.7091789 | 9 | 1 | 13 days | 0.22 | | MPC | 2006 $UX_{259}$ |
| 2006 $UY_{259}$ | 17.2 | 0.15 | 20061101 | 65.65759 | 346.54983 | 333.63194 | 0.65739 | 0.0694331 | 2.5141015 | 12 | 1 | 23 days | 0.18 | | MPC | 2006 $UY_{259}$ |
| 2006 $UB_{260}$ | 15.8 | 0.15 | 20061012 | 283.35946 | 279.42440 | 204.41722 | 3.37911 | 0.1240703 | 3.2162704 | 23 | 1 | 54 days | 0.29 | | MPC | 2006 $UB_{260}$ |
| 2006 $UD_{260}$ | 17.1 | 0.15 | 20061101 | 59.82454 | 330.99104 | 359.38058 | 1.64038 | 0.0644944 | 2.8622948 | 12 | 1 | 30 days | 0.26 | | MPC | 2006 $UD_{260}$ |
| 2006 $UF_{260}$ | 17.8 | 0.15 | 20061012 | 66.40393 | 76.24646 | 213.77663 | 9.36530 | 0.2927590 | 2.4401233 | 21 | 1 | 22 days | 0.25 | | MPC | 2006 $UF_{260}$ |
| 2006 $UH_{260}$ | 18.5 | 0.15 | 20061012 | 83.36814 | 94.00741 | 206.83587 | 4.89356 | 0.0483277 | 2.1888510 | 22 | 1 | 49 days | 0.33 | | MPC | 2006 $UH_{260}$ |
| 2006 $UJ_{260}$ | 16.9 | 0.15 | 20061012 | 76.23528 | 102.96000 | 206.51136 | 4.36557 | 0.0490270 | 2.6955000 | 21 | 1 | 34 days | 0.28 | | MPC | 2006 $UJ_{260}$ |
| 2006 $UL_{260}$ | 17.1 | 0.15 | 20061012 | 279.61496 | 332.68095 | 183.00920 | 1.31690 | 0.3690051 | 2.5990890 | 11 | 1 | 34 days | 0.20 | | MPC | 2006 $UL_{260}$ |
| 2006 $UQ_{260}$ | 18.4 | 0.15 | 20061012 | 18.91382 | 313.79780 | 47.48556 | 4.30415 | 0.2312255 | 2.8676336 | 10 | 1 | 9 days | 0.25 | | MPC | 2006 $UQ_{260}$ |
| 2006 $US_{260}$ | 16.7 | 0.15 | 20061101 | 141.88337 | 41.32293 | 211.03726 | 7.64007 | 0.0622835 | 2.7169008 | 11 | 1 | 18 days | 0.39 | | MPC | 2006 $US_{260}$ |
| 2006 $UV_{260}$ | 17.5 | 0.15 | 20061101 | 52.77220 | 136.69765 | 207.71323 | 3.88894 | 0.0161629 | 2.4540012 | 18 | 1 | 26 days | 0.29 | | MPC | 2006 $UV_{260}$ |
| 2006 $UW_{260}$ | 17.0 | 0.15 | 20061012 | 55.49206 | 236.76470 | 94.92213 | 1.20437 | 0.0659867 | 2.6367819 | 24 | 1 | 48 days | 0.23 | | MPC | 2006 $UW_{260}$ |
| 2006 $UY_{260}$ | 18.7 | 0.15 | 20061012 | 24.30061 | 252.30997 | 96.07801 | 0.55782 | 0.3210081 | 2.9283768 | 10 | 1 | 9 days | 0.31 | | MPC | 2006 $UY_{260}$ |
| 2006 $UA_{261}$ | 18.1 | 0.15 | 20061101 | 355.45663 | 359.09221 | 55.06751 | 6.20535 | 0.1970969 | 2.6591289 | 22 | 1 | 32 days | 0.38 | | MPC | 2006 $UA_{261}$ |
| 2006 $UB_{261}$ | 18.6 | 0.15 | 20061012 | 10.18980 | 173.29873 | 207.00711 | 1.79456 | 0.2312500 | 2.3121655 | 28 | 1 | 54 days | 0.45 | | MPC | 2006 $UB_{261}$ |
| 2006 $UC_{261}$ | 16.8 | 0.15 | 20061101 | 333.05046 | 215.80777 | 224.13736 | 9.31922 | 0.0737346 | 3.1676932 | 21 | 1 | 23 days | 0.34 | D | MPC | 2006 $UC_{261}$ |
| 2006 $UH_{261}$ | 17.8 | 0.15 | 20061101 | 29.81460 | 324.47085 | 42.80531 | 7.42840 | 0.0771498 | 2.6960022 | 13 | 1 | 15 days | 0.29 | | MPC | 2006 $UH_{261}$ |
| 2006 $UL_{261}$ | 17.9 | 0.15 | 20061101 | 9.13410 | 350.07191 | 52.64680 | 11.33057 | 0.1595455 | 2.6759568 | 18 | 1 | 30 days | 0.27 | | MPC | 2006 $UL_{261}$ |
| 2006 $UN_{261}$ | 17.4 | 0.15 | 20061101 | 256.15899 | 296.26858 | 224.03780 | 5.71450 | 0.0751581 | 2.6359123 | 12 | 1 | 14 days | 0.49 | | MPC | 2006 $UN_{261}$ |
| 2006 $UR_{261}$ | 19.4 | 0.15 | 20061012 | 29.54309 | 289.47198 | 49.57192 | 4.12806 | 0.3459888 | 2.5143205 | 14 | 1 | 2 days | 0.58 | | MPC | 2006 $UR_{261}$ |
| 2006 $US_{261}$ | 18.0 | 0.15 | 20061012 | 302.75575 | 247.24835 | 224.01639 | 12.28886 | 0.1106339 | 2.5934617 | 19 | 1 | 4 days | 0.30 | | MPC | 2006 $US_{261}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UT_{261}$ | 17.3 | 0.15 | 20061101 | 356.16590 | 2.69786 | 50.85067 | 10.25422 | 0.0978177 | 3.2247475 | 30 | 1 | 17 days | 0.38 | | | MPC | 2006 $UT_{261}$ |
| 2006 $UV_{261}$ | 17.5 | 0.15 | 20061012 | 75.12340 | 247.36226 | 53.41294 | 3.79175 | 0.2429571 | 2.6263724 | 11 | 1 | 2 days | 0.35 | | | MPC | 2006 $UV_{261}$ |
| 2006 $UX_{261}$ | 18.3 | 0.15 | 20061012 | 62.62194 | 114.62047 | 202.41609 | 1.77437 | 0.1993600 | 2.4344255 | 15 | 1 | 4 days | 0.28 | | | MPC | 2006 $UX_{261}$ |
| 2006 $UY_{261}$ | 17.1 | 0.15 | 20061012 | 359.10627 | 180.83958 | 223.73995 | 10.67665 | 0.0637203 | 2.7565131 | 29 | 1 | 47 days | 0.26 | | | MPC | 2006 $UY_{261}$ |
| 2006 $UB_{262}$ | 18.1 | 0.15 | 20061012 | 63.78433 | 120.97210 | 205.41007 | 2.14273 | 0.0994108 | 2.2323785 | 25 | 1 | 4 days | 0.64 | | | MPC | 2006 $UB_{262}$ |
| 2006 $UC_{262}$ | 17.9 | 0.15 | 20061101 | 31.47869 | 307.28923 | 64.77662 | 2.98980 | 0.0786679 | 2.8408551 | 16 | 1 | 24 days | 0.36 | | | MPC | 2006 $UC_{262}$ |
| 2006 $UE_{262}$ | 17.1 | 0.15 | 20061101 | 43.00215 | 133.79449 | 253.99631 | 4.59578 | 0.1814334 | 2.1707620 | 20 | 1 | 28 days | 0.35 | | | MPC | 2006 $UE_{262}$ |
| 2006 $UG_{262}$ | 17.9 | 0.15 | 20061012 | 45.03519 | 301.99318 | 48.24669 | 13.90287 | 0.0749184 | 2.4310649 | 25 | 1 | 29 days | 0.28 | | | MPC | 2006 $UG_{262}$ |
| 2006 $UM_{262}$ | 17.3 | 0.15 | 20061012 | 203.52484 | 356.36786 | 214.52197 | 2.48287 | 0.2590746 | 2.3073222 | 15 | 1 | 4 days | 0.41 | | | MPC | 2006 $UM_{262}$ |
| 2006 $UN_{262}$ | 17.6 | 0.15 | 20061012 | 322.62065 | 228.77872 | 225.69081 | 13.65512 | 0.1760478 | 2.8327505 | 18 | 1 | 19 days | 0.35 | | | MPC | 2006 $UN_{262}$ |
| 2006 $UP_{262}$ | 18.0 | 0.15 | 20061012 | 340.70262 | 200.11231 | 224.98048 | 14.36479 | 0.0950467 | 2.5551533 | 22 | 1 | 17 days | 0.25 | | D | MPC | 2006 $UP_{262}$ |
| 2006 $UQ_{262}$ | 17.2 | 0.15 | 20061012 | 276.34706 | 89.91744 | 50.12666 | 15.14031 | 0.1127678 | 2.5444180 | 36 | 1 | 45 days | 0.26 | | | MPC | 2006 $UQ_{262}$ |
| 2006 $UA_{263}$ | 16.4 | 0.15 | 20061101 | 25.67285 | 319.15626 | 129.67869 | 34.20281 | 0.2470773 | 2.5677310 | 20 | 1 | 13 days | 0.28 | | | MPC | 2006 $UA_{263}$ |
| 2006 $UB_{263}$ | 16.5 | 0.15 | 20061012 | 329.98647 | 147.33359 | 283.40844 | 5.09507 | 0.0841557 | 2.6872538 | 12 | 1 | 6 days | 0.68 | | | MPC | 2006 $UB_{263}$ |
| 2006 $UC_{263}$ | 17.1 | 0.15 | 20061012 | 12.49055 | 185.75213 | 190.38930 | 1.24967 | 0.0289556 | 2.5607395 | 10 | 1 | 5 days | 0.33 | | | MPC | 2006 $UC_{263}$ |
| 2006 $UD_{263}$ | 16.3 | 0.15 | 20061101 | 36.02989 | 80.92647 | 270.77999 | 15.74460 | 0.3475135 | 2.5841823 | 13 | 1 | 26 days | 0.39 | | | MPC | 2006 $UD_{263}$ |
| 2006 $UF_{263}$ | 18.9 | 0.15 | 20061101 | 310.92602 | 50.75020 | 60.77817 | 5.09454 | 0.1693058 | 2.2669728 | 9 | 1 | 2 days | 0.33 | | | MPC | 2006 $UF_{263}$ |
| 2006 $UG_{263}$ | 19.1 | 0.15 | 20061101 | 18.55621 | 235.74351 | 146.53977 | 1.58103 | 0.1226967 | 2.4188101 | 9 | 1 | 2 days | 0.39 | | | MPC | 2006 $UG_{263}$ |
| 2006 $UJ_{263}$ | 17.3 | 0.15 | 20061101 | 77.89327 | 263.73164 | 60.92793 | 7.68228 | 0.0449332 | 2.7735231 | 18 | 1 | 28 days | 0.46 | | | MPC | 2006 $UJ_{263}$ |
| 2006 $UK_{263}$ | 16.8 | 0.15 | 20061101 | 32.43863 | 330.47177 | 38.12362 | 14.40009 | 0.1819785 | 2.5937485 | 27 | 1 | 55 days | 0.40 | | | MPC | 2006 $UK_{263}$ |
| 2006 $UN_{263}$ | 17.5 | 0.15 | 20061012 | 347.80026 | 186.40660 | 214.40806 | 12.94676 | 0.2427568 | 2.6786815 | 18 | 1 | 49 days | 0.39 | | | MPC | 2006 $UN_{263}$ |
| 2006 $UQ_{263}$ | 17.2 | 0.15 | 20061101 | 37.40809 | 97.86680 | 226.53011 | 5.93514 | 0.2705999 | 3.0923173 | 13 | 1 | 33 days | 0.17 | | | MPC | 2006 $UQ_{263}$ |
| 2006 $US_{263}$ | 19.2 | 0.15 | 20061012 | 13.86031 | 333.79093 | 21.09116 | 11.42195 | 0.2906882 | 2.4944686 | 13 | 1 | 28 days | 0.30 | | | MPC | 2006 $US_{263}$ |
| 2006 $UV_{263}$ | 16.4 | 0.15 | 20061012 | 11.26159 | 54.93135 | 304.95535 | 1.58542 | 0.3012107 | 3.9405217 | 19 | 1 | 59 days | 0.16 | | E | MPC | 2006 $UV_{263}$ |
| 2006 $UX_{263}$ | 15.7 | 0.15 | 20061101 | 320.00887 | 204.71427 | 223.82961 | 7.00679 | 0.0349779 | 3.2555349 | 17 | 1 | 31 days | 0.26 | | | MPC | 2006 $UX_{263}$ |
| 2006 $UY_{263}$ | 18.8 | 0.15 | 20060922 | 357.05738 | 146.12616 | 232.46685 | 2.71170 | 0.2498930 | 2.6756510 | 12 | 1 | 42 days | 0.26 | | | MPC | 2006 $UY_{263}$ |
| 2006 $UA_{264}$ | 18.6 | 0.15 | 20061101 | 23.04177 | 94.09074 | 261.30808 | 1.94665 | 0.1978135 | 2.3692935 | 16 | 1 | 33 days | 0.32 | | | MPC | 2006 $UA_{264}$ |
| 2006 $UD_{264}$ | 17.6 | 0.15 | 20060922 | 335.65171 | 134.91374 | 273.45216 | 1.61401 | 0.1144763 | 2.7034177 | 24 | 1 | 65 days | 0.30 | M-v | 4 | MPC | 2006 $UD_{264}$ |
| 2006 $UG_{264}$ | 16.5 | 0.15 | 20060922 | 303.14183 | 72.67474 | 28.08089 | 18.32727 | 0.2224112 | 3.1875676 | 29 | 1 | 69 days | 0.33 | M-v | 4 | MPC | 2006 $UG_{264}$ |
| 2006 $UK_{264}$ | 16.2 | 0.15 | 20061012 | 62.07908 | 276.04238 | 8.57426 | 6.14083 | 0.2854594 | 3.2822137 | 10 | 1 | 12 days | 0.32 | | | MPC | 2006 $UK_{264}$ |
| 2006 $UL_{264}$ | 17.1 | 0.15 | 20061012 | 350.59372 | 14.41396 | 17.20443 | 10.47249 | 0.0977309 | 2.8674214 | 21 | 1 | 53 days | 0.25 | | | MPC | 2006 $UL_{264}$ |
| 2006 $UO_{264}$ | 17.7 | 0.15 | 20061012 | 277.08815 | 276.80812 | 205.52013 | 2.12052 | 0.1351168 | 2.5662296 | 15 | 1 | 33 days | 0.18 | | | MPC | 2006 $UO_{264}$ |
| 2006 $UQ_{264}$ | 17.0 | 0.15 | 20061012 | 109.60668 | 59.47237 | 204.97811 | 14.08621 | 0.1110057 | 2.5934714 | 25 | 1 | 59 days | 0.34 | | | MPC | 2006 $UQ_{264}$ |
| 2006 $US_{264}$ | 18.8 | 0.15 | 20061012 | 343.61055 | 18.89430 | 22.22601 | 6.90847 | 0.1654369 | 2.3897563 | 16 | 1 | 34 days | 0.23 | | | MPC | 2006 $US_{264}$ |
| 2006 $UV_{264}$ | 17.9 | 0.15 | 20061012 | 340.79056 | 203.81670 | 204.60426 | 13.88748 | 0.1807266 | 2.6247453 | 18 | 1 | 38 days | 0.25 | | | MPC | 2006 $UV_{264}$ |
| 2006 $UZ_{264}$ | 17.3 | 0.15 | 20061101 | 242.18806 | 315.18493 | 210.19718 | 22.81236 | 0.1852172 | 2.3020770 | 14 | 1 | 31 days | 0.26 | | | MPC | 2006 $UZ_{264}$ |
| 2006 $UB_{265}$ | 19.9 | 0.15 | 20061012 | 20.11012 | 320.91318 | 33.74549 | 2.62313 | 0.2036245 | 2.3920152 | 10 | 1 | 30 days | 0.50 | | | MPC | 2006 $UB_{265}$ |
| 2006 $UC_{265}$ | 18.2 | 0.15 | 20061012 | 337.39081 | 201.52796 | 216.90904 | 0.56669 | 0.1759690 | 2.4196096 | 21 | 1 | 56 days | 0.29 | | | MPC | 2006 $UC_{265}$ |
| 2006 $UD_{265}$ | 16.6 | 0.15 | 20061012 | 53.95429 | 316.17393 | 11.41545 | 8.59127 | 0.1099391 | 2.5730622 | 14 | 1 | 29 days | 0.52 | | | MPC | 2006 $UD_{265}$ |
| 2006 $UK_{265}$ | 18.7 | 0.15 | 20061101 | 337.52666 | 253.23405 | 175.01036 | 1.97822 | 0.1908413 | 2.2533125 | 11 | 1 | 18 days | 0.22 | | | MPC | 2006 $UK_{265}$ |
| 2006 $UO_{265}$ | 17.4 | 0.15 | 20061101 | 64.12713 | 354.34321 | 325.20504 | 4.69500 | 0.1462241 | 2.1732697 | 15 | 1 | 35 days | 0.52 | | | MPC | 2006 $UO_{265}$ |
| 2006 $UP_{265}$ | 16.6 | 0.15 | 20061101 | 86.48082 | 62.67070 | 241.14725 | 12.66572 | 0.0839132 | 2.6225461 | 14 | 1 | 28 days | 0.25 | | | MPC | 2006 $UP_{265}$ |
| 2006 $UR_{265}$ | 15.4 | 0.15 | 20061101 | 275.64568 | 255.20563 | 247.39434 | 11.70360 | 0.1541377 | 2.7734001 | 26 | 1 | 35 days | 0.56 | | | MPC | 2006 $UR_{265}$ |
| 2006 $UD_{266}$ | 17.2 | 0.15 | 20061101 | 354.52867 | 50.63171 | 0.88215 | 2.75887 | 0.2331823 | 2.6900496 | 33 | 1 | 36 days | 0.48 | | | MPC | 2006 $UD_{266}$ |
| 2006 $UF_{266}$ | 17.9 | 0.15 | 20061012 | 333.20458 | 261.21287 | 168.28208 | 1.06675 | 0.1675340 | 2.3869430 | 14 | 1 | 40 days | 0.25 | | | MPC | 2006 $UF_{266}$ |
| 2006 $UK_{266}$ | 15.9 | 0.15 | 20061012 | 63.10963 | 190.82268 | 128.12899 | 1.57860 | 0.1432678 | 3.0022641 | 27 | 1 | 52 days | 0.36 | | | MPC | 2006 $UK_{266}$ |
| 2006 $UM_{266}$ | 17.6 | 0.15 | 20061012 | 32.93389 | 287.15660 | 45.08869 | 8.39887 | 0.3180854 | 2.3931592 | 28 | 1 | 56 days | 0.38 | | E | MPC | 2006 $UM_{266}$ |
| 2006 $UO_{266}$ | 16.1 | 0.15 | 20061012 | 204.60224 | 150.74627 | 49.78448 | 19.63364 | 0.1797732 | 2.4826341 | 10 | 1 | 14 days | 0.68 | | | MPC | 2006 $UO_{266}$ |
| 2006 $UQ_{266}$ | 16.8 | 0.15 | 20061012 | 312.76211 | 347.38290 | 109.77772 | 2.37520 | 0.1479158 | 3.0946357 | 17 | 1 | 46 days | 0.29 | | | MPC | 2006 $UQ_{266}$ |
| 2006 $US_{266}$ | 18.1 | 0.15 | 20061012 | 14.35158 | 297.02091 | 79.27722 | 2.36582 | 0.0961926 | 2.3777947 | 17 | 1 | 46 days | 0.26 | | | MPC | 2006 $US_{266}$ |
| 2006 $UT_{266}$ | 16.9 | 0.15 | 20061012 | 325.18996 | 28.48991 | 47.50620 | 15.70186 | 0.0922579 | 2.5451625 | 28 | 1 | 49 days | 0.39 | | | MPC | 2006 $UT_{266}$ |
| 2006 $UU_{266}$ | 16.7 | 0.15 | 20060922 | 33.02580 | 148.12094 | 200.47836 | 4.65156 | 0.1247222 | 2.7272421 | 23 | 1 | 62 days | 0.23 | M-v | 4 | MPC | 2006 $UU_{266}$ |
| 2006 $UZ_{266}$ | 16.6 | 0.15 | 20061101 | 99.12379 | 221.78200 | 70.38029 | 4.00153 | 0.0715053 | 2.6793255 | 17 | 1 | 24 days | 0.21 | | | MPC | 2006 $UZ_{266}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UA_{267}$ | 19.0 | 0.15 | 20061012 | 5.08928 | 171.96635 | 208.86579 | 6.85968 | 0.2429035 | 2.2116227 | 21 | 1 | 56 days | 0.31 | | MPC | 2006 $UA_{267}$ |
| 2006 $UB_{267}$ | 18.1 | 0.15 | 20061101 | 273.86390 | 267.83694 | 228.83059 | 19.90479 | 0.0650858 | 1.8750477 | 26 | 1 | 29 days | 0.34 | | MPC | 2006 $UB_{267}$ |
| 2006 $UC_{267}$ | 16.9 | 0.15 | 20061101 | 4.45562 | 83.61463 | 314.89331 | 3.75945 | 0.2171558 | 2.6317363 | 39 | 1 | 34 days | 0.57 | | MPC | 2006 $UC_{267}$ |
| 2006 $UG_{267}$ | 15.6 | 0.15 | 20061012 | 332.56318 | 43.61773 | 32.71858 | 8.43715 | 0.1274955 | 3.0781336 | 33 | 1 | 53 days | 0.45 | | MPC | 2006 $UG_{267}$ |
| 2006 $UH_{267}$ | 16.5 | 0.15 | 20061012 | 297.82135 | 249.76436 | 215.30049 | 10.66956 | 0.0623111 | 3.0713237 | 10 | 1 | 12 days | 0.27 | | MPC | 2006 $UH_{267}$ |
| 2006 $UJ_{267}$ | 16.8 | 0.15 | 20061012 | 302.70983 | 249.85270 | 219.75338 | 0.28560 | 0.1531745 | 3.1487075 | 19 | 1 | 57 days | 0.29 | | MPC | 2006 $UJ_{267}$ |
| 2006 $UL_{267}$ | 18.2 | 0.15 | 20061101 | 339.45620 | 208.44683 | 219.85872 | 1.00885 | 0.1617539 | 2.5142893 | 11 | 1 | 26 days | 0.25 | | MPC | 2006 $UL_{267}$ |
| 2006 $UM_{267}$ | 16.6 | 0.15 | 20061012 | 172.66449 | 186.36776 | 37.39248 | 11.71167 | 0.0472769 | 3.0050816 | 14 | 1 | 30 days | 0.27 | | MPC | 2006 $UM_{267}$ |
| 2006 $UP_{267}$ | 19.6 | 0.15 | 20061012 | 347.49203 | 13.90848 | 35.52617 | 6.89387 | 0.1585652 | 2.3077429 | 10 | 1 | 17 days | 0.30 | | MPC | 2006 $UP_{267}$ |
| 2006 $UR_{267}$ | 17.9 | 0.15 | 20061101 | 79.65702 | 272.93021 | 40.83601 | 4.24125 | 0.0623161 | 2.3861838 | 15 | 1 | 18 days | 0.23 | | MPC | 2006 $UR_{267}$ |
| 2006 $UV_{267}$ | 17.5 | 0.15 | 20061101 | 34.17143 | 310.60538 | 48.25591 | 2.27109 | 0.1133494 | 2.8758948 | 11 | 1 | 15 days | 0.25 | | MPC | 2006 $UV_{267}$ |
| 2006 $UW_{267}$ | 14.7 | 0.15 | 20061101 | 9.77092 | 129.63153 | 268.23964 | 12.20502 | 0.0754948 | 3.2168595 | 14 | 1 | 17 days | 0.44 | | MPC | 2006 $UW_{267}$ |
| 2006 $UY_{267}$ | 15.5 | 0.15 | 20061101 | 329.59625 | 212.07557 | 243.16691 | 27.02135 | 0.2177144 | 3.1691759 | 36 | 1 | 26 days | 0.52 | | MPC | 2006 $UY_{267}$ |
| 2006 $UZ_{267}$ | 17.8 | 0.15 | 20061101 | 37.46413 | 313.57802 | 45.72440 | 6.83691 | 0.0721667 | 2.7164661 | 15 | 1 | 31 days | 0.30 | | MPC | 2006 $UZ_{267}$ |
| 2006 $UA_{268}$ | 17.2 | 0.15 | 20061101 | 29.28665 | 96.70548 | 259.57127 | 11.00556 | 0.2897203 | 2.6404754 | 28 | 1 | 35 days | 0.60 | | MPC | 2006 $UA_{268}$ |
| 2006 $UC_{268}$ | 18.2 | 0.15 | 20061101 | 298.84507 | 259.62940 | 221.62285 | 1.28393 | 0.1588007 | 2.6317336 | 14 | 1 | 25 days | 0.33 | | MPC | 2006 $UC_{268}$ |
| 2006 $UE_{268}$ | 17.4 | 0.15 | 20061012 | 321.41015 | 260.01527 | 191.78013 | 0.54173 | 0.1724156 | 3.0512210 | 14 | 1 | 26 days | 0.31 | | MPC | 2006 $UE_{268}$ |
| 2006 $UF_{268}$ | 16.0 | 0.15 | 20060922 | 18.92887 | 108.53350 | 255.14382 | 7.70556 | 0.2627125 | 2.7267299 | 46 | 1 | 65 days | 0.43 | M-v 5 | MPC | 2006 $UF_{268}$ |
| 2006 $UJ_{268}$ | 17.0 | 0.15 | 20060922 | 331.44466 | 139.48775 | 293.52375 | 4.28617 | 0.1821280 | 2.3300533 | 68 | 1 | 66 days | 0.52 | M-v 4 | MPC | 2006 $UJ_{268}$ |
| 2006 $UK_{268}$ | 19.0 | 0.15 | 20061101 | 348.17201 | 9.05637 | 49.55779 | 4.27769 | 0.1190086 | 2.3328909 | 26 | 1 | 36 days | 0.32 | | MPC | 2006 $UK_{268}$ |
| 2006 $UL_{268}$ | 18.0 | 0.15 | 20061101 | 315.55599 | 36.93057 | 55.51846 | 3.30020 | 0.0488538 | 2.3433258 | 23 | 1 | 27 days | 0.35 | | MPC | 2006 $UL_{268}$ |
| 2006 $US_{268}$ | 16.4 | 0.15 | 20061012 | 132.52864 | 234.20340 | 34.10309 | 1.85252 | 0.0228124 | 3.1283115 | 14 | 1 | 27 days | 0.25 | | MPC | 2006 $US_{268}$ |
| 2006 $UV_{268}$ | 15.9 | 0.15 | 20061101 | 119.00338 | 225.30029 | 46.61524 | 16.76938 | 0.1766490 | 3.2166446 | 11 | 1 | 16 days | 0.27 | | MPC | 2006 $UV_{268}$ |
| 2006 $UW_{268}$ | 17.7 | 0.15 | 20061012 | 356.98983 | 187.63767 | 217.56580 | 1.69228 | 0.0563255 | 2.8690485 | 18 | 1 | 28 days | 0.31 | | MPC | 2006 $UW_{268}$ |
| 2006 $UZ_{268}$ | 16.9 | 0.15 | 20061101 | 134.05872 | 214.60868 | 46.36991 | 1.86551 | 0.1630485 | 2.3946776 | 24 | 1 | 36 days | 0.27 | | MPC | 2006 $UZ_{268}$ |
| 2006 $UB_{269}$ | 19.2 | 0.15 | 20061101 | 270.50711 | 282.01238 | 221.91327 | 21.75998 | 0.0876980 | 1.8349479 | 18 | 1 | 33 days | 0.36 | | MPC | 2006 $UB_{269}$ |
| 2006 $UC_{269}$ | 16.7 | 0.15 | 20061101 | 161.76540 | 195.21033 | 47.08830 | 13.43401 | 0.0948623 | 2.5735702 | 18 | 1 | 15 days | 0.30 | | MPC | 2006 $UC_{269}$ |
| 2006 $UG_{269}$ | 17.6 | 0.15 | 20061012 | 7.23090 | 341.48185 | 50.78331 | 5.32135 | 0.1221708 | 2.7757901 | 14 | 1 | 26 days | 0.29 | | MPC | 2006 $UG_{269}$ |
| 2006 $UL_{269}$ | 16.5 | 0.15 | 20061101 | 307.07090 | 236.96715 | 226.75416 | 5.73712 | 0.0205457 | 2.8861369 | 18 | 1 | 40 days | 0.19 | | MPC | 2006 $UL_{269}$ |
| 2006 $UM_{269}$ | 17.6 | 0.15 | 20061101 | 17.36986 | 341.26096 | 43.39020 | 22.04020 | 0.0912007 | 1.9111732 | 32 | 1 | 26 days | 0.47 | | MPC | 2006 $UM_{269}$ |
| 2006 $UO_{269}$ | 19.5 | 0.15 | 20061101 | 358.52649 | 173.94003 | 231.56336 | 19.87634 | 0.0880355 | 1.9414695 | 18 | 1 | 25 days | 0.27 | | MPC | 2006 $UO_{269}$ |
| 2006 $UP_{269}$ | 16.2 | 0.15 | 20061101 | 296.54109 | 231.42584 | 257.19657 | 8.71489 | 0.1719756 | 2.4285639 | 26 | 1 | 26 days | 0.55 | | MPC | 2006 $UP_{269}$ |
| 2006 $UQ_{269}$ | 15.8 | 0.15 | 20061012 | 23.41191 | 340.63917 | 23.65324 | 11.42961 | 0.2310806 | 3.1200525 | 40 | 1 | 52 days | 0.47 | | MPC | 2006 $UQ_{269}$ |
| 2006 $US_{269}$ | 16.5 | 0.15 | 20061101 | 42.41853 | 109.98150 | 241.76759 | 13.91835 | 0.1380403 | 2.5675562 | 32 | 1 | 34 days | 0.57 | | MPC | 2006 $US_{269}$ |
| 2006 $UU_{269}$ | 18.0 | 0.15 | 20061101 | 47.31599 | 115.98291 | 231.45092 | 18.85782 | 0.1044034 | 1.8792774 | 44 | 1 | 33 days | 0.50 | | MPC | 2006 $UU_{269}$ |
| 2006 $UX_{269}$ | 17.9 | 0.15 | 20061012 | 49.22291 | 331.12593 | 2.74232 | 4.69138 | 0.1786194 | 2.3239958 | 18 | 1 | 41 days | 0.26 | | MPC | 2006 $UX_{269}$ |
| 2006 $UY_{269}$ | 18.4 | 0.15 | 20061012 | 341.01867 | 48.61960 | 16.77077 | 5.59580 | 0.1397958 | 2.2909713 | 27 | 1 | 47 days | 0.27 | | MPC | 2006 $UY_{269}$ |
| 2006 $UC_{270}$ | 18.3 | 0.15 | 20061101 | 342.25508 | 218.86114 | 215.47768 | 2.07303 | 0.2090160 | 2.5280109 | 25 | 1 | 25 days | 0.35 | | MPC | 2006 $UC_{270}$ |
| 2006 $UE_{270}$ | 15.7 | 0.15 | 20061012 | 173.46118 | 14.98010 | 218.09694 | 2.15202 | 0.1661461 | 3.1253252 | 17 | 1 | 29 days | 0.36 | | MPC | 2006 $UE_{270}$ |
| 2006 $UF_{270}$ | 17.3 | 0.15 | 20061101 | 313.88263 | 247.62504 | 216.54683 | 0.86689 | 0.1030747 | 2.6568675 | 24 | 1 | 40 days | 0.33 | | MPC | 2006 $UF_{270}$ |
| 2006 $UK_{270}$ | 17.1 | 0.15 | 20061101 | 341.02248 | 81.28649 | 348.10932 | 3.88740 | 0.0457838 | 2.7866822 | 17 | 1 | 26 days | 0.26 | | MPC | 2006 $UK_{270}$ |
| 2006 $UL_{270}$ | 16.3 | 0.15 | 20061012 | 290.54310 | 88.96730 | 48.84847 | 15.07892 | 0.2030579 | 2.7915866 | 37 | 1 | 55 days | 0.42 | | MPC | 2006 $UL_{270}$ |
| 2006 $UN_{270}$ | 16.2 | 0.15 | 20061101 | 193.80003 | 351.42471 | 228.37116 | 9.84504 | 0.0941016 | 3.1148520 | 18 | 1 | 20 days | 0.40 | | MPC | 2006 $UN_{270}$ |
| 2006 $UO_{270}$ | 16.2 | 0.15 | 20061101 | 77.32130 | 101.83222 | 221.64579 | 4.84138 | 0.0824283 | 2.8861196 | 21 | 1 | 20 days | 0.42 | | MPC | 2006 $UO_{270}$ |
| 2006 $UP_{270}$ | 18.6 | 0.15 | 20061101 | 10.29349 | 170.42996 | 224.12288 | 21.20294 | 0.0742489 | 1.9317338 | 15 | 1 | 27 days | 0.13 | | MPC | 2006 $UP_{270}$ |
| 2006 $UR_{270}$ | 15.7 | 0.15 | 20061101 | 307.01809 | 252.55702 | 227.55851 | 7.16472 | 0.1571306 | 3.1339591 | 37 | 1 | 41 days | 0.33 | | MPC | 2006 $UR_{270}$ |
| 2006 $US_{270}$ | 17.3 | 0.15 | 20061101 | 37.61665 | 211.38782 | 154.33701 | 0.86184 | 0.0879500 | 2.7582060 | 15 | 1 | 20 days | 0.66 | | MPC | 2006 $US_{270}$ |
| 2006 $UT_{270}$ | 16.1 | 0.15 | 20061101 | 16.94494 | 339.41819 | 50.92345 | 10.89519 | 0.0940096 | 3.0419388 | 28 | 1 | 39 days | 0.29 | | MPC | 2006 $UT_{270}$ |
| 2006 $UU_{270}$ | 18.4 | 0.15 | 20061012 | 62.78723 | 102.17224 | 220.92455 | 5.50863 | 0.1449129 | 2.1498114 | 11 | 1 | 15 days | 0.30 | | MPC | 2006 $UU_{270}$ |
| 2006 $UZ_{270}$ | 18.2 | 0.15 | 20060922 | 352.67074 | 354.05091 | 50.13697 | 2.10704 | 0.1514603 | 2.4173714 | 23 | 1 | 60 days | 0.26 | M-v 4 | MPC | 2006 $UZ_{270}$ |
| 2006 $UA_{271}$ | 15.7 | 0.15 | 20061101 | 345.34932 | 17.53893 | 50.46928 | 11.71796 | 0.0652401 | 3.0796348 | 21 | 1 | 38 days | 0.39 | | MPC | 2006 $UA_{271}$ |
| 2006 $UB_{271}$ | 16.8 | 0.15 | 20061101 | 194.03242 | 350.40417 | 228.47151 | 4.27079 | 0.0935400 | 2.3523738 | 23 | 1 | 30 days | 0.36 | | MPC | 2006 $UB_{271}$ |
| 2006 $UC_{271}$ | 15.9 | 0.15 | 20061101 | 285.42702 | 250.58727 | 245.49136 | 10.22440 | 0.1328675 | 2.7706562 | 17 | 1 | 26 days | 0.22 | | MPC | 2006 $UC_{271}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UD_{271}$ | 16.4 | 0.15 | 20061012 | 306.35508 | 97.05154 | 1.15413 | 4.69496 | 0.0289043 | 2.6439253 | 28 | 1 | 41 days | 0.28 | | MPC | 2006 $UD_{271}$ |
| 2006 $UE_{271}$ | 17.2 | 0.15 | 20061101 | 315.56733 | 128.92481 | 329.34498 | 3.68223 | 0.0813102 | 2.7276397 | 14 | 1 | 26 days | 0.40 | | MPC | 2006 $UE_{271}$ |
| 2006 $UF_{271}$ | 17.9 | 0.15 | 20061101 | 25.39749 | 121.01528 | 230.68054 | 15.08570 | 0.3531197 | 2.5412534 | 47 | 1 | 33 days | 0.53 | | MPC | 2006 $UF_{271}$ |
| 2006 $UJ_{271}$ | 15.7 | 0.15 | 20061012 | 195.86011 | 219.05630 | 354.22931 | 4.63364 | 0.1295741 | 2.9659632 | 14 | 1 | 27 days | 0.13 | | MPC | 2006 $UJ_{271}$ |
| 2006 $UL_{271}$ | 17.2 | 0.15 | 20061012 | 38.29502 | 315.33779 | 39.44152 | 2.35150 | 0.1564774 | 2.5147793 | 19 | 1 | 44 days | 0.22 | | MPC | 2006 $UL_{271}$ |
| 2006 $UM_{271}$ | 16.2 | 0.15 | 20061101 | 42.58579 | 323.02851 | 47.38659 | 3.92074 | 0.0238910 | 3.0490397 | 24 | 1 | 36 days | 0.23 | | MPC | 2006 $UM_{271}$ |
| 2006 $UO_{271}$ | 17.0 | 0.15 | 20061101 | 13.41193 | 344.07597 | 50.71223 | 4.16697 | 0.1697424 | 3.1090226 | 17 | 1 | 26 days | 0.19 | | MPC | 2006 $UO_{271}$ |
| 2006 $UQ_{271}$ | 17.7 | 0.15 | 20061012 | 43.75321 | 292.48400 | 51.54753 | 5.91818 | 0.1808846 | 2.3105933 | 22 | 1 | 53 days | 0.28 | | MPC | 2006 $UQ_{271}$ |
| 2006 $UR_{271}$ | 15.7 | 0.15 | 20061101 | 47.81773 | 123.23714 | 234.37408 | 15.96947 | 0.1092256 | 3.1217894 | 36 | 1 | 41 days | 0.25 | | MPC | 2006 $UR_{271}$ |
| 2006 $UU_{271}$ | 18.5 | 0.15 | 20061101 | 13.93134 | 37.91607 | 342.04560 | 3.44673 | 0.2520721 | 2.5314223 | 14 | 1 | 26 days | 0.19 | | MPC | 2006 $UU_{271}$ |
| 2006 $UV_{271}$ | 17.3 | 0.15 | 20061012 | 356.16756 | 13.63493 | 32.56226 | 16.29834 | 0.1888874 | 3.1176136 | 14 | 1 | 20 days | 0.25 | | MPC | 2006 $UV_{271}$ |
| 2006 $UW_{271}$ | 16.0 | 0.15 | 20061101 | 120.17528 | 36.60441 | 246.89175 | 10.97363 | 0.0229220 | 2.9767210 | 13 | 1 | 18 days | 0.48 | | MPC | 2006 $UW_{271}$ |
| 2006 $UA_{272}$ | 18.2 | 0.15 | 20060922 | 0.91094 | 168.49884 | 224.22592 | 3.29488 | 0.1651942 | 2.1807443 | 35 | 1 | 61 days | 0.31 | M-v 4 | MPC | 2006 $UA_{272}$ |
| 2006 $UC_{272}$ | 17.8 | 0.15 | 20061012 | 3.60868 | 207.91783 | 191.27381 | 0.71839 | 0.1917705 | 2.3779164 | 21 | 1 | 56 days | 0.28 | | MPC | 2006 $UC_{272}$ |
| 2006 $UE_{272}$ | 16.9 | 0.15 | 20060922 | 337.59625 | 205.61240 | 230.20054 | 8.72011 | 0.1699700 | 2.7890160 | 18 | 1 | 61 days | 0.55 | M-v 4 | MPC | 2006 $UE_{272}$ |
| 2006 $UF_{272}$ | 16.0 | 0.15 | 20061012 | 42.86522 | 128.87601 | 231.89208 | 8.95466 | 0.1142271 | 2.9707641 | 32 | 1 | 57 days | 0.30 | | MPC | 2006 $UF_{272}$ |
| 2006 $UG_{272}$ | 16.9 | 0.15 | 20061101 | 87.76885 | 265.36314 | 52.17391 | 24.07694 | 0.0785372 | 1.9944005 | 24 | 1 | 26 days | 0.58 | | MPC | 2006 $UG_{272}$ |
| 2006 $UH_{272}$ | 17.0 | 0.15 | 20060922 | 1.65512 | 184.40104 | 216.95968 | 0.39479 | 0.1369295 | 2.5334548 | 35 | 1 | 61 days | 0.28 | M-v 4 | MPC | 2006 $UH_{272}$ |
| 2006 $UK_{272}$ | 17.5 | 0.15 | 20060922 | 333.78021 | 41.14124 | 39.66244 | 1.02057 | 0.2215971 | 2.4845581 | 43 | 1 | 61 days | 0.40 | M-v 4 | MPC | 2006 $UK_{272}$ |
| 2006 $UN_{272}$ | 16.7 | 0.15 | 20061101 | 12.17328 | 165.89984 | 226.06100 | 5.34584 | 0.1657060 | 3.0083677 | 23 | 1 | 25 days | 0.32 | | MPC | 2006 $UN_{272}$ |
| 2006 $UO_{272}$ | 17.3 | 0.15 | 20061101 | 300.58388 | 74.51553 | 54.33587 | 6.07835 | 0.1787390 | 2.5492188 | 16 | 1 | 20 days | 0.37 | | MPC | 2006 $UO_{272}$ |
| 2006 $US_{272}$ | 17.1 | 0.15 | 20061101 | 344.21510 | 158.64877 | 270.30697 | 4.64419 | 0.0889016 | 2.4832794 | 13 | 1 | 19 days | 0.50 | | MPC | 2006 $US_{272}$ |
| 2006 $UT_{272}$ | 15.8 | 0.15 | 20061012 | 287.38418 | 247.13974 | 253.69021 | 9.19473 | 0.1716812 | 3.1557547 | 9 | 1 | 6 days | 0.18 | | MPC | 2006 $UT_{272}$ |
| 2006 $UU_{272}$ | 16.2 | 0.15 | 20061012 | 63.47333 | 354.67949 | 330.80376 | 3.81936 | 0.1799362 | 3.1863336 | 13 | 1 | 42 days | 0.15 | | MPC | 2006 $UU_{272}$ |
| 2006 $UX_{272}$ | 17.1 | 0.15 | 20061012 | 23.71653 | 357.60862 | 22.46820 | 6.91139 | 0.0775473 | 2.9062216 | 22 | 1 | 46 days | 0.23 | | MPC | 2006 $UX_{272}$ |
| 2006 $UY_{272}$ | 16.8 | 0.15 | 20061012 | 45.53426 | 90.66930 | 259.48114 | 7.31309 | 0.1412291 | 3.2039978 | 9 | 1 | 8 days | 0.15 | | MPC | 2006 $UY_{272}$ |
| 2006 $UZ_{272}$ | 17.6 | 0.15 | 20061101 | 35.46499 | 0.64298 | 7.50698 | 4.52318 | 0.1023463 | 2.4592478 | 24 | 1 | 34 days | 0.45 | | MPC | 2006 $UZ_{272}$ |
| 2006 $UC_{273}$ | 16.5 | 0.15 | 20061101 | 27.18192 | 93.43375 | 274.67392 | 4.84585 | 0.2359663 | 2.9140060 | 19 | 1 | 36 days | 0.45 | | MPC | 2006 $UC_{273}$ |
| 2006 $UD_{273}$ | 14.0 | 0.15 | 20061101 | 198.12426 | 316.86841 | 264.80646 | 7.74604 | 0.1201521 | 3.9492153 | 20 | 1 | 28 days | 0.23 | | MPC | 2006 $UD_{273}$ |
| 2006 $UE_{273}$ | 16.8 | 0.15 | 20061101 | 314.58207 | 175.06230 | 284.80562 | 4.66351 | 0.0177573 | 2.7041384 | 26 | 1 | 35 days | 0.41 | | MPC | 2006 $UE_{273}$ |
| 2006 $UG_{273}$ | 15.2 | 0.15 | 20061101 | 34.16703 | 120.18308 | 254.03900 | 8.78144 | 0.0797057 | 3.1246921 | 16 | 1 | 26 days | 0.62 | | MPC | 2006 $UG_{273}$ |
| 2006 $UH_{273}$ | 15.8 | 0.15 | 20061101 | 327.64852 | 156.49383 | 293.71651 | 4.11984 | 0.0612801 | 2.9170838 | 40 | 1 | 28 days | 0.56 | | MPC | 2006 $UH_{273}$ |
| 2006 $UJ_{273}$ | 16.9 | 0.15 | 20061101 | 326.89470 | 203.21294 | 252.12321 | 7.94713 | 0.1330164 | 2.7596636 | 13 | 1 | 32 days | 0.30 | | MPC | 2006 $UJ_{273}$ |
| 2006 $UL_{273}$ | 18.7 | 0.15 | 20061101 | 21.35821 | 11.57089 | 3.43485 | 3.31337 | 0.2556940 | 2.5671037 | 19 | 1 | 27 days | 0.38 | | MPC | 2006 $UL_{273}$ |
| 2006 $UM_{273}$ | 17.0 | 0.15 | 20061012 | 11.75980 | 37.99107 | 357.43752 | 3.98845 | 0.0802888 | 2.7974316 | 9 | 1 | 8 days | 0.25 | | MPC | 2006 $UM_{273}$ |
| 2006 $UO_{273}$ | 17.9 | 0.15 | 20061101 | 69.29240 | 355.46769 | 325.62427 | 2.75417 | 0.1980277 | 2.3885282 | 17 | 1 | 27 days | 0.25 | | MPC | 2006 $UO_{273}$ |
| 2006 $UP_{273}$ | 16.1 | 0.15 | 20061012 | 335.11006 | 46.43583 | 37.84923 | 6.93274 | 0.1586738 | 3.1613457 | 26 | 1 | 51 days | 0.35 | | MPC | 2006 $UP_{273}$ |
| 2006 $UR_{273}$ | 16.1 | 0.15 | 20061012 | 73.95712 | 286.94777 | 42.52784 | 9.90032 | 0.0863063 | 3.1916041 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $UR_{273}$ |
| 2006 $UU_{273}$ | 18.7 | 0.15 | 20061101 | 23.69973 | 328.07281 | 40.94618 | 14.50718 | 0.2771389 | 2.6476422 | 32 | 1 | 26 days | 0.24 | | MPC | 2006 $UU_{273}$ |
| 2006 $UY_{273}$ | 16.0 | 0.15 | 20061012 | 18.85940 | 350.84550 | 28.89201 | 4.30571 | 0.1950405 | 3.0212658 | 25 | 1 | 58 days | 0.39 | | MPC | 2006 $UY_{273}$ |
| 2006 $UZ_{273}$ | 17.1 | 0.15 | 20061101 | 337.82351 | 60.11135 | 24.03250 | 4.64553 | 0.1797342 | 2.6229783 | 24 | 1 | 28 days | 0.33 | | MPC | 2006 $UZ_{273}$ |
| 2006 $UC_{274}$ | 16.3 | 0.15 | 20061012 | 280.87120 | 94.75294 | 45.67398 | 14.62031 | 0.1014327 | 2.6325348 | 16 | 1 | 53 days | 0.16 | | MPC | 2006 $UC_{274}$ |
| 2006 $UG_{274}$ | 17.7 | 0.15 | 20061012 | 358.81742 | 87.18598 | 317.91534 | 1.58013 | 0.1597522 | 2.4410857 | 29 | 1 | 51 days | 0.37 | | MPC | 2006 $UG_{274}$ |
| 2006 $UN_{274}$ | 17.4 | 0.15 | 20061012 | 1.85631 | 184.04571 | 195.95283 | 9.99593 | 0.1316537 | 3.1100940 | 21 | 1 | 54 days | 0.38 | | MPC | 2006 $UN_{274}$ |
| 2006 $UQ_{274}$ | 16.6 | 0.15 | 20061012 | 49.72169 | 124.15188 | 197.73347 | 13.31197 | 0.1093475 | 3.0276636 | 10 | 1 | 4 days | 0.20 | | MPC | 2006 $UQ_{274}$ |
| 2006 $UR_{274}$ | 17.6 | 0.15 | 20060922 | 238.06604 | 345.67306 | 166.27361 | 1.96442 | 0.1406964 | 2.3182452 | 16 | 1 | 63 days | 0.26 | M-v 4 | MPC | 2006 $UR_{274}$ |
| 2006 $US_{274}$ | 16.6 | 0.15 | 20061101 | 8.95114 | 340.24716 | 36.19938 | 6.11048 | 0.0827793 | 2.8529120 | 13 | 1 | 19 days | 0.34 | | MPC | 2006 $US_{274}$ |
| 2006 $UU_{274}$ | 17.3 | 0.15 | 20060922 | 315.16701 | 32.09331 | 33.60146 | 5.13678 | 0.0629744 | 2.7475473 | 15 | 1 | 48 days | 0.26 | | MPC | 2006 $UU_{274}$ |
| 2006 $UX_{274}$ | 16.8 | 0.15 | 20061012 | 41.80957 | 52.05187 | 284.28318 | 2.72179 | 0.0942258 | 2.7858825 | 13 | 1 | 12 days | 0.17 | | MPC | 2006 $UX_{274}$ |
| 2006 $UY_{274}$ | 16.5 | 0.15 | 20061012 | 89.37160 | 55.92982 | 217.75442 | 16.45099 | 0.2091050 | 3.1555751 | 9 | 1 | 37 days | 0.27 | | MPC | 2006 $UY_{274}$ |
| 2006 $UZ_{274}$ | 17.8 | 0.15 | 20061012 | 30.52982 | 1.53626 | 348.67062 | 4.11446 | 0.0877358 | 2.7340076 | 20 | 1 | 53 days | 0.36 | | MPC | 2006 $UZ_{274}$ |
| 2006 $UE_{275}$ | 18.0 | 0.15 | 20061012 | 358.14941 | 166.33372 | 221.77628 | 13.19908 | 0.1157220 | 2.3808244 | 18 | 1 | 49 days | 0.23 | | MPC | 2006 $UE_{275}$ |
| 2006 $UG_{275}$ | 18.3 | 0.15 | 20061101 | 337.89514 | 160.47476 | 257.66148 | 3.09073 | 0.0607332 | 2.1801177 | 12 | 1 | 19 days | 0.17 | | MPC | 2006 $UG_{275}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UJ_{275}$ | 18.3 | 0.15 | 20061012 | 29.89463 | 79.48065 | 258.29836 | 2.19934 | 0.2254245 | 2.6025410 | 21 | 1 | 54 days | 0.21 | | | MPC | 2006 $UJ_{275}$ |
| 2006 $UK_{275}$ | 18.2 | 0.15 | 20061012 | 344.65467 | 52.79076 | 352.74819 | 3.28157 | 0.1457908 | 2.6558916 | 12 | 1 | 37 days | 0.17 | | | MPC | 2006 $UK_{275}$ |
| 2006 $UL_{275}$ | 17.6 | 0.15 | 20061012 | 138.32060 | 358.96750 | 236.92293 | 3.70377 | 0.1742386 | 2.2186282 | 16 | 1 | 22 days | 0.24 | | | MPC | 2006 $UL_{275}$ |
| 2006 $UM_{275}$ | 17.2 | 0.15 | 20061012 | 75.46543 | 82.33187 | 218.17234 | 10.75732 | 0.0847512 | 2.6675639 | 12 | 1 | 21 days | 0.21 | | | MPC | 2006 $UM_{275}$ |
| 2006 $UN_{275}$ | 18.4 | 0.15 | 20061012 | 2.39621 | 31.97635 | 349.83946 | 2.01024 | 0.1810865 | 2.6079692 | 15 | 1 | 53 days | 0.14 | | | MPC | 2006 $UN_{275}$ |
| 2006 $UO_{275}$ | 17.5 | 0.15 | 20061012 | 315.12230 | 220.82287 | 215.99574 | 5.54496 | 0.0764329 | 2.7957186 | 20 | 1 | 33 days | 0.37 | | | MPC | 2006 $UO_{275}$ |
| 2006 $UP_{275}$ | 19.1 | 0.15 | 20061101 | 335.55910 | 230.35754 | 214.63858 | 5.05806 | 0.3637135 | 2.7952396 | 14 | 1 | 14 days | 0.38 | | | MPC | 2006 $UP_{275}$ |
| 2006 $UQ_{275}$ | 18.6 | 0.15 | 20060922 | 345.21240 | 5.91867 | 32.99687 | 2.84736 | 0.1427771 | 2.4556634 | 15 | 1 | 63 days | 0.19 | M-v | 4 | MPC | 2006 $UQ_{275}$ |
| 2006 $UT_{275}$ | 18.3 | 0.15 | 20061101 | 344.86167 | 339.49942 | 74.08286 | 3.56665 | 0.1154289 | 2.6392652 | 13 | 1 | 14 days | 0.27 | | | MPC | 2006 $UT_{275}$ |
| 2006 $UU_{275}$ | 18.4 | 0.15 | 20061012 | 353.97842 | 320.01584 | 76.45284 | 2.42451 | 0.1944752 | 2.4368588 | 20 | 1 | 43 days | 0.36 | | | MPC | 2006 $UU_{275}$ |
| 2006 $UW_{275}$ | 17.5 | 0.15 | 20061012 | 255.58541 | 309.62883 | 192.01661 | 5.83873 | 0.0737971 | 2.2105488 | 28 | 1 | 48 days | 0.35 | | | MPC | 2006 $UW_{275}$ |
| 2006 $UX_{275}$ | 16.9 | 0.15 | 20061012 | 278.40968 | 58.60925 | 59.36034 | 4.76105 | 0.0499591 | 2.8054901 | 13 | 1 | 30 days | 0.23 | | | MPC | 2006 $UX_{275}$ |
| 2006 $UZ_{275}$ | 19.3 | 0.15 | 20061012 | 332.83663 | 282.81731 | 142.08780 | 1.47207 | 0.1712306 | 2.3532214 | 9 | 1 | 13 days | 0.30 | | | MPC | 2006 $UZ_{275}$ |
| 2006 $UB_{276}$ | 16.5 | 0.15 | 20061012 | 162.34455 | 21.78272 | 204.03559 | 13.67248 | 0.0469629 | 2.6742045 | 16 | 1 | 36 days | 0.34 | | | MPC | 2006 $UB_{276}$ |
| 2006 $UD_{276}$ | 17.5 | 0.15 | 20061101 | 27.49060 | 163.16081 | 196.83538 | 3.94772 | 0.0858149 | 2.8188672 | 13 | 1 | 26 days | 0.20 | | | MPC | 2006 $UD_{276}$ |
| 2006 $UJ_{276}$ | 17.8 | 0.15 | 20061012 | 29.08961 | 118.71285 | 229.50955 | 1.43609 | 0.0711368 | 2.3960700 | 24 | 1 | 55 days | 0.31 | | D | MPC | 2006 $UJ_{276}$ |
| 2006 $UK_{276}$ | 16.2 | 0.15 | 20061012 | 207.45009 | 328.99893 | 207.31394 | 6.67507 | 0.0161689 | 2.8942402 | 14 | 1 | 53 days | 0.25 | | | MPC | 2006 $UK_{276}$ |
| 2006 $UM_{276}$ | 16.9 | 0.15 | 20061012 | 284.88041 | 257.23811 | 207.87459 | 20.93235 | 0.0603262 | 2.6824622 | 16 | 1 | 48 days | 0.23 | | | MPC | 2006 $UM_{276}$ |
| 2006 $UO_{276}$ | 16.6 | 0.15 | 20061012 | 262.30822 | 275.50112 | 212.31611 | 9.68765 | 0.0570061 | 2.9951458 | 13 | 1 | 39 days | 0.24 | | | MPC | 2006 $UO_{276}$ |
| 2006 $US_{276}$ | 17.0 | 0.15 | 20061101 | 19.20058 | 97.26818 | 271.08397 | 3.95815 | 0.1752890 | 3.1228552 | 13 | 1 | 28 days | 0.14 | | | MPC | 2006 $US_{276}$ |
| 2006 $UT_{276}$ | 17.5 | 0.15 | 20061012 | 314.66980 | 130.06997 | 315.15407 | 2.85005 | 0.0919042 | 2.9846111 | 9 | 1 | 12 days | 0.25 | | | MPC | 2006 $UT_{276}$ |
| 2006 $UU_{276}$ | 17.9 | 0.15 | 20061012 | 352.86795 | 20.77602 | 19.45551 | 9.46617 | 0.1383405 | 2.6690476 | 23 | 1 | 59 days | 0.24 | | | MPC | 2006 $UU_{276}$ |
| 2006 $UV_{276}$ | 18.2 | 0.15 | 20061012 | 324.40443 | 57.66602 | 20.68333 | 8.41004 | 0.1563588 | 2.5579978 | 21 | 1 | 59 days | 0.29 | | | MPC | 2006 $UV_{276}$ |
| 2006 $UX_{276}$ | 17.7 | 0.15 | 20061012 | 324.44841 | 90.39796 | 356.77876 | 3.70776 | 0.2485957 | 2.6009312 | 21 | 1 | 58 days | 0.21 | | | MPC | 2006 $UX_{276}$ |
| 2006 $UA_{277}$ | 17.3 | 0.15 | 20061012 | 5.92921 | 165.19752 | 213.22561 | 13.48431 | 0.0873956 | 2.5174067 | 27 | 1 | 56 days | 0.19 | | | MPC | 2006 $UA_{277}$ |
| 2006 $UE_{277}$ | 18.4 | 0.15 | 20061012 | 12.40236 | 104.06173 | 268.82999 | 2.94711 | 0.1826704 | 2.6087946 | 16 | 1 | 39 days | 0.28 | | | MPC | 2006 $UE_{277}$ |
| 2006 $UF_{277}$ | 16.6 | 0.15 | 20061101 | 341.50587 | 200.68237 | 222.12386 | 27.36082 | 0.1598349 | 3.1749778 | 25 | 1 | 40 days | 0.26 | | | MPC | 2006 $UF_{277}$ |
| 2006 $UG_{277}$ | 19.4 | 0.15 | 20061012 | 19.55251 | 11.62149 | 347.88784 | 2.19643 | 0.2129115 | 2.3680262 | 12 | 1 | 22 days | 0.31 | | | MPC | 2006 $UG_{277}$ |
| 2006 $UH_{277}$ | 16.1 | 0.15 | 20061012 | 98.11872 | 63.18722 | 231.23155 | 10.20061 | 0.0154706 | 3.0573746 | 13 | 1 | 30 days | 0.47 | | | MPC | 2006 $UH_{277}$ |
| 2006 $UJ_{277}$ | 19.1 | 0.15 | 20061012 | 21.74481 | 17.10182 | 341.68613 | 2.16224 | 0.1744814 | 2.1558425 | 16 | 1 | 42 days | 0.19 | | | MPC | 2006 $UJ_{277}$ |
| 2006 $UM_{277}$ | 17.2 | 0.15 | 20061012 | 281.91091 | 96.90883 | 25.17854 | 10.81261 | 0.0788096 | 2.8771323 | 9 | 1 | 13 days | 0.13 | | | MPC | 2006 $UM_{277}$ |
| 2006 $UN_{277}$ | 18.7 | 0.15 | 20061101 | 327.19918 | 80.75320 | 4.02074 | 2.49778 | 0.1752257 | 2.4139925 | 14 | 1 | 24 days | 0.23 | | | MPC | 2006 $UN_{277}$ |
| 2006 $UO_{277}$ | 17.9 | 0.15 | 20061012 | 27.52021 | 342.16678 | 22.54553 | 6.23240 | 0.0375968 | 2.6646751 | 9 | 1 | 13 days | 0.36 | | | MPC | 2006 $UO_{277}$ |
| 2006 $UP_{277}$ | 16.5 | 0.15 | 20061012 | 18.59315 | 121.98858 | 245.12919 | 3.97924 | 0.1844929 | 3.2029375 | 24 | 1 | 44 days | 0.19 | | | MPC | 2006 $UP_{277}$ |
| 2006 $UQ_{277}$ | 17.0 | 0.15 | 20061012 | 3.71251 | 149.20165 | 240.45791 | 4.67502 | 0.0945569 | 2.7888399 | 25 | 1 | 44 days | 0.26 | | | MPC | 2006 $UQ_{277}$ |
| 2006 $UT_{277}$ | 19.0 | 0.15 | 20061101 | 6.01216 | 157.15876 | 234.63452 | 3.85037 | 0.1103617 | 2.3560361 | 14 | 1 | 25 days | 0.45 | | | MPC | 2006 $UT_{277}$ |
| 2006 $UU_{277}$ | 19.2 | 0.15 | 20061012 | 351.91900 | 12.37319 | 30.87870 | 5.45128 | 0.2293334 | 2.4407764 | 16 | 1 | 55 days | 0.25 | | | MPC | 2006 $UU_{277}$ |
| 2006 $UC_{278}$ | 17.1 | 0.15 | 20061101 | 310.02822 | 86.22028 | 16.52415 | 1.12954 | 0.1427081 | 3.1738253 | 10 | 1 | 17 days | 0.22 | | | MPC | 2006 $UC_{278}$ |
| 2006 $UD_{278}$ | 19.0 | 0.15 | 20061101 | 19.18035 | 335.95254 | 33.61885 | 6.97410 | 0.2020790 | 2.2817361 | 14 | 1 | 40 days | 0.39 | | | MPC | 2006 $UD_{278}$ |
| 2006 $UF_{278}$ | 17.3 | 0.15 | 20061012 | 198.89286 | 171.98066 | 25.29279 | 4.47043 | 0.0615388 | 2.2276292 | 18 | 1 | 49 days | 0.34 | | | MPC | 2006 $UF_{278}$ |
| 2006 $UG_{278}$ | 16.2 | 0.15 | 20061012 | 51.94437 | 292.48504 | 37.62442 | 12.17337 | 0.1327749 | 3.0965758 | 21 | 1 | 46 days | 0.28 | | | MPC | 2006 $UG_{278}$ |
| 2006 $UJ_{278}$ | 18.1 | 0.15 | 20061101 | 323.83181 | 182.40001 | 258.92327 | 1.11773 | 0.0806711 | 2.1641461 | 10 | 1 | 17 days | 0.17 | | | MPC | 2006 $UJ_{278}$ |
| 2006 $UK_{278}$ | 18.4 | 0.15 | 20061012 | 26.13723 | 114.47123 | 236.27048 | 3.25058 | 0.2002829 | 2.3234522 | 25 | 1 | 40 days | 0.34 | | | MPC | 2006 $UK_{278}$ |
| 2006 $UM_{278}$ | 16.6 | 0.15 | 20061012 | 127.83722 | 12.20265 | 244.73177 | 3.54370 | 0.1044715 | 2.5581482 | 19 | 1 | 42 days | 0.23 | | | MPC | 2006 $UM_{278}$ |
| 2006 $UN_{278}$ | 17.4 | 0.15 | 20061101 | 142.84117 | 220.92819 | 31.89025 | 15.19182 | 0.0327771 | 2.6235675 | 16 | 1 | 34 days | 0.25 | | | MPC | 2006 $UN_{278}$ |
| 2006 $UO_{278}$ | 18.2 | 0.15 | 20061012 | 347.48448 | 142.78593 | 265.76627 | 1.63024 | 0.1841173 | 2.3870821 | 22 | 1 | 44 days | 0.40 | | | MPC | 2006 $UO_{278}$ |
| 2006 $UT_{278}$ | 16.9 | 0.15 | 20061012 | 352.27582 | 17.20490 | 24.36650 | 6.70991 | 0.1116501 | 3.0457962 | 16 | 1 | 45 days | 0.18 | | | MPC | 2006 $UT_{278}$ |
| 2006 $UU_{278}$ | 18.0 | 0.15 | 20061012 | 300.56335 | 225.46664 | 241.49961 | 3.56415 | 0.1484512 | 2.6574289 | 9 | 1 | 12 days | 0.23 | | | MPC | 2006 $UU_{278}$ |
| 2006 $UV_{278}$ | 17.4 | 0.15 | 20061012 | 24.94196 | 326.81018 | 29.65686 | 9.98460 | 0.1752931 | 3.1108215 | 29 | 1 | 47 days | 0.30 | | | MPC | 2006 $UV_{278}$ |
| 2006 $UY_{278}$ | 20.2 | 0.15 | 20061012 | 33.65730 | 328.52758 | 355.17766 | 1.89660 | 0.3419616 | 2.3072105 | 9 | 1 | 4 days | 0.32 | | | MPC | 2006 $UY_{278}$ |
| 2006 $UC_{279}$ | 15.5 | 0.15 | 20061012 | 65.67229 | 268.15915 | 46.46381 | 15.10356 | 0.1767690 | 3.0398518 | 36 | 1 | 48 days | 0.39 | | | MPC | 2006 $UC_{279}$ |
| 2006 $UD_{279}$ | 16.8 | 0.15 | 20061101 | 61.90771 | 269.87383 | 53.97193 | 4.30695 | 0.1686282 | 3.1209005 | 24 | 1 | 42 days | 0.30 | | | MPC | 2006 $UD_{279}$ |
| 2006 $UE_{279}$ | 16.7 | 0.15 | 20061101 | 307.73152 | 39.30944 | 62.03257 | 3.03347 | 0.0508387 | 3.0081228 | 19 | 1 | 26 days | 0.22 | | | MPC | 2006 $UE_{279}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UF_{279}$ | 16.1 | 0.15 | 20061012 | 7.18169 | 338.00146 | 48.16165 | 11.66925 | 0.2296865 | 3.1583111 | 42 | 1 | 52 days | 0.49 | | | MPC | 2006 $UF_{279}$ |
| 2006 $UG_{279}$ | 16.3 | 0.15 | 20061012 | 13.56566 | 163.32730 | 219.88538 | 12.03260 | 0.1189942 | 3.2116960 | 22 | 1 | 51 days | 0.50 | | | MPC | 2006 $UG_{279}$ |
| 2006 $UH_{279}$ | 17.3 | 0.15 | 20061012 | 66.29884 | 259.16181 | 67.30480 | 2.96371 | 0.0703682 | 2.8768595 | 14 | 1 | 15 days | 0.53 | | | MPC | 2006 $UH_{279}$ |
| 2006 $UJ_{279}$ | 16.8 | 0.15 | 20061012 | 332.24572 | 215.95940 | 217.59688 | 9.63940 | 0.0892616 | 3.0760314 | 28 | 1 | 49 days | 0.32 | | | MPC | 2006 $UJ_{279}$ |
| 2006 $UK_{279}$ | 17.6 | 0.15 | 20061101 | 85.23115 | 217.77399 | 97.69812 | 1.57196 | 0.0330695 | 2.5635279 | 14 | 1 | 15 days | 0.35 | | | MPC | 2006 $UK_{279}$ |
| 2006 $UL_{279}$ | 16.6 | 0.15 | 20061012 | 234.34866 | 119.67365 | 59.40915 | 4.17627 | 0.1350351 | 2.8471353 | 10 | 1 | 16 days | 0.68 | | | MPC | 2006 $UL_{279}$ |
| 2006 $UM_{279}$ | 17.3 | 0.15 | 20061101 | 354.35184 | 291.28972 | 120.85776 | 1.09005 | 0.1759661 | 2.5558974 | 31 | 1 | 40 days | 0.43 | | | MPC | 2006 $UM_{279}$ |
| 2006 $UP_{279}$ | 17.5 | 0.15 | 20061101 | 157.92577 | 188.05798 | 55.77413 | 5.27511 | 0.0743311 | 2.2621870 | 19 | 1 | 26 days | 0.30 | | | MPC | 2006 $UP_{279}$ |
| 2006 $UQ_{279}$ | 18.1 | 0.15 | 20061012 | 13.87070 | 221.16191 | 154.91304 | 1.16974 | 0.2043046 | 2.6236879 | 17 | 1 | 31 days | 0.26 | | | MPC | 2006 $UQ_{279}$ |
| 2006 $UR_{279}$ | 15.9 | 0.15 | 20061012 | 251.51020 | 118.51408 | 56.31980 | 7.85543 | 0.2361255 | 3.0833203 | 10 | 1 | 14 days | 0.15 | | | MPC | 2006 $UR_{279}$ |
| 2006 $UT_{279}$ | 17.3 | 0.15 | 20061012 | 274.90861 | 86.82480 | 56.48343 | 6.02594 | 0.1443345 | 2.8094381 | 10 | 1 | 12 days | 0.26 | | | MPC | 2006 $UT_{279}$ |
| 2006 $UV_{279}$ | 17.5 | 0.15 | 20061101 | 298.30822 | 22.56495 | 89.01429 | 2.12807 | 0.0382058 | 2.7614994 | 11 | 1 | 15 days | 0.30 | | | MPC | 2006 $UV_{279}$ |
| 2006 $UA_{280}$ | 18.8 | 0.15 | 20061101 | 45.62884 | 124.92872 | 216.84654 | 5.64353 | 0.1816914 | 2.4194189 | 11 | 1 | 15 days | 0.30 | | | MPC | 2006 $UA_{280}$ |
| 2006 $UD_{280}$ | 17.1 | 0.15 | 20061012 | 282.44719 | 83.08349 | 58.70821 | 3.81750 | 0.1954797 | 2.6816547 | 12 | 1 | 12 days | 0.16 | | | MPC | 2006 $UD_{280}$ |
| 2006 $UE_{280}$ | 16.4 | 0.15 | 20061012 | 280.50769 | 279.71699 | 213.24680 | 6.10674 | 0.0848126 | 3.1299561 | 10 | 1 | 12 days | 0.19 | | | MPC | 2006 $UE_{280}$ |
| 2006 $UK_{280}$ | 17.4 | 0.15 | 20061012 | 273.61440 | 102.43670 | 47.27622 | 22.98649 | 0.1977515 | 2.3040958 | 32 | 1 | 43 days | 0.48 | | D | MPC | 2006 $UK_{280}$ |
| 2006 $UL_{280}$ | 18.1 | 0.15 | 20061012 | 12.00070 | 215.03036 | 164.89698 | 1.12800 | 0.1917598 | 2.4383482 | 14 | 1 | 32 days | 0.19 | | | MPC | 2006 $UL_{280}$ |
| 2006 $UP_{280}$ | 17.0 | 0.15 | 20061012 | 39.96932 | 137.32444 | 219.32552 | 8.62020 | 0.0923279 | 3.1712818 | 14 | 1 | 28 days | 0.52 | | | MPC | 2006 $UP_{280}$ |
| 2006 $UV_{280}$ | 17.6 | 0.15 | 20061012 | 72.03473 | 110.95863 | 215.56973 | 6.85258 | 0.0431856 | 2.6891510 | 10 | 1 | 12 days | 0.16 | | | MPC | 2006 $UV_{280}$ |
| 2006 $UW_{280}$ | 17.5 | 0.15 | 20061101 | 32.25686 | 303.83185 | 60.40096 | 4.65288 | 0.1461272 | 2.6168592 | 21 | 1 | 40 days | 0.18 | | | MPC | 2006 $UW_{280}$ |
| 2006 $UB_{281}$ | 18.1 | 0.15 | 20061012 | 344.80739 | 223.99301 | 198.95933 | 3.16223 | 0.1872957 | 2.7329835 | 18 | 1 | 47 days | 0.33 | | | MPC | 2006 $UB_{281}$ |
| 2006 $UC_{281}$ | 16.7 | 0.15 | 20061012 | 100.36369 | 66.01469 | 220.68557 | 11.82240 | 0.1685894 | 2.7893722 | 10 | 1 | 12 days | 0.26 | | | MPC | 2006 $UC_{281}$ |
| 2006 $UG_{281}$ | 16.8 | 0.15 | 20061012 | 297.78068 | 56.07580 | 50.49251 | 5.79154 | 0.0143188 | 2.5844413 | 16 | 1 | 30 days | 0.28 | | | MPC | 2006 $UG_{281}$ |
| 2006 $UL_{281}$ | 17.1 | 0.15 | 20061012 | 51.61820 | 279.20639 | 49.95141 | 12.02955 | 0.1999600 | 2.5905649 | 23 | 1 | 42 days | 0.27 | | | MPC | 2006 $UL_{281}$ |
| 2006 $UO_{281}$ | 18.1 | 0.15 | 20061012 | 351.19097 | 201.61550 | 209.59030 | 3.12952 | 0.1544144 | 2.4032549 | 25 | 1 | 53 days | 0.34 | | | MPC | 2006 $UO_{281}$ |
| 2006 $UP_{281}$ | 17.5 | 0.15 | 20061101 | 290.23223 | 76.68738 | 58.35225 | 4.59220 | 0.1505896 | 2.4951681 | 20 | 1 | 40 days | 0.32 | | | MPC | 2006 $UP_{281}$ |
| 2006 $UQ_{281}$ | 17.9 | 0.15 | 20061101 | 354.78777 | 192.65055 | 221.97633 | 8.74945 | 0.1330207 | 2.5550007 | 18 | 1 | 34 days | 0.45 | | | MPC | 2006 $UQ_{281}$ |
| 2006 $US_{281}$ | 15.9 | 0.15 | 20061012 | 17.77245 | 330.52732 | 50.88029 | 26.97151 | 0.1360223 | 3.1463752 | 41 | 1 | 53 days | 0.36 | | | MPC | 2006 $US_{281}$ |
| 2006 $UT_{281}$ | 16.8 | 0.15 | 20061101 | 44.98203 | 151.16604 | 199.38381 | 1.78737 | 0.1445927 | 2.6087030 | 37 | 1 | 40 days | 0.50 | | | MPC | 2006 $UT_{281}$ |
| 2006 $UU_{281}$ | 17.1 | 0.15 | 20061012 | 293.60287 | 283.70329 | 212.11930 | 3.39591 | 0.2252008 | 2.5562608 | 29 | 1 | 36 days | 0.54 | | | MPC | 2006 $UU_{281}$ |
| 2006 $UV_{281}$ | 17.1 | 0.15 | 20061101 | 297.79415 | 267.18082 | 208.55105 | 2.33860 | 0.0376623 | 2.6371288 | 20 | 1 | 25 days | 0.19 | | | MPC | 2006 $UV_{281}$ |
| 2006 $UY_{281}$ | 16.9 | 0.15 | 20061101 | 43.11620 | 293.41410 | 61.77354 | 3.45426 | 0.1258894 | 2.6844607 | 27 | 1 | 42 days | 0.42 | | | MPC | 2006 $UY_{281}$ |
| 2006 $UZ_{281}$ | 18.0 | 0.15 | 20061101 | 2.15178 | 194.96481 | 210.75939 | 2.91887 | 0.1581187 | 2.5732506 | 11 | 1 | 16 days | 0.34 | | | MPC | 2006 $UZ_{281}$ |
| 2006 $UA_{282}$ | 18.9 | 0.15 | 20061012 | 22.69311 | 307.04916 | 52.53101 | 6.17417 | 0.2599258 | 2.3200480 | 29 | 1 | 49 days | 0.42 | | | MPC | 2006 $UA_{282}$ |
| 2006 $UC_{282}$ | 16.6 | 0.15 | 20061101 | 13.70737 | 336.02005 | 56.88727 | 9.85217 | 0.1154823 | 2.9842555 | 25 | 1 | 46 days | 0.33 | | | MPC | 2006 $UC_{282}$ |
| 2006 $UE_{282}$ | 17.2 | 0.15 | 20061012 | 343.75271 | 209.69494 | 214.69228 | 3.78304 | 0.0585310 | 2.8412146 | 14 | 1 | 35 days | 0.25 | | | MPC | 2006 $UE_{282}$ |
| 2006 $UF_{282}$ | 18.6 | 0.15 | 20061101 | 326.22749 | 25.76352 | 65.83980 | 3.76953 | 0.1303897 | 2.2577402 | 13 | 1 | 25 days | 0.23 | | | MPC | 2006 $UF_{282}$ |
| 2006 $UG_{282}$ | 15.9 | 0.15 | 20061101 | 236.51091 | 120.95038 | 57.07069 | 12.36440 | 0.0310133 | 3.0872300 | 23 | 1 | 38 days | 0.37 | | | MPC | 2006 $UG_{282}$ |
| 2006 $UJ_{282}$ | 15.9 | 0.15 | 20061012 | 310.28125 | 305.99638 | 162.37568 | 1.28561 | 0.1247987 | 2.9918745 | 28 | 1 | 37 days | 0.39 | | | MPC | 2006 $UJ_{282}$ |
| 2006 $UK_{282}$ | 17.9 | 0.15 | 20061101 | 12.80103 | 168.82201 | 219.28989 | 7.49364 | 0.2327233 | 2.7606979 | 18 | 1 | 38 days | 0.39 | | | MPC | 2006 $UK_{282}$ |
| 2006 $UL_{282}$ | 17.9 | 0.15 | 20061101 | 336.63404 | 31.08354 | 51.29218 | 12.92638 | 0.1866582 | 2.3876116 | 19 | 1 | 31 days | 0.22 | | | MPC | 2006 $UL_{282}$ |
| 2006 $UN_{282}$ | 17.8 | 0.15 | 20061101 | 39.76582 | 277.93966 | 75.18984 | 2.02684 | 0.1898370 | 2.5892561 | 17 | 1 | 38 days | 0.25 | | | MPC | 2006 $UN_{282}$ |
| 2006 $UO_{282}$ | 17.1 | 0.15 | 20061012 | 104.37669 | 232.42953 | 53.81463 | 7.75032 | 0.1108346 | 2.3598078 | 17 | 1 | 42 days | 0.19 | | | MPC | 2006 $UO_{282}$ |
| 2006 $UR_{282}$ | 17.1 | 0.15 | 20061012 | 265.55651 | 116.97391 | 34.32432 | 17.69661 | 0.1892918 | 2.6576947 | 17 | 1 | 53 days | 0.29 | | | MPC | 2006 $UR_{282}$ |
| 2006 $UU_{282}$ | 19.5 | 0.15 | 20061101 | 51.38222 | 94.98998 | 229.35545 | 5.58922 | 0.2291030 | 2.2276090 | 10 | 1 | 17 days | 0.20 | | | MPC | 2006 $UU_{282}$ |
| 2006 $UV_{282}$ | 16.0 | 0.15 | 20061012 | 76.06602 | 87.66010 | 229.48750 | 7.97963 | 0.0362016 | 3.1723309 | 28 | 1 | 58 days | 0.26 | | | MPC | 2006 $UV_{282}$ |
| 2006 $UX_{282}$ | 17.4 | 0.15 | 20061012 | 312.36048 | 67.33044 | 32.06060 | 9.79576 | 0.1724675 | 2.5917033 | 21 | 1 | 53 days | 0.20 | | | MPC | 2006 $UX_{282}$ |
| 2006 $UY_{282}$ | 17.1 | 0.15 | 20061012 | 68.69917 | 297.27870 | 20.37314 | 4.04861 | 0.0913476 | 2.7718907 | 13 | 1 | 30 days | 0.25 | | | MPC | 2006 $UY_{282}$ |
| 2006 $UA_{283}$ | 17.4 | 0.15 | 20060922 | 304.50662 | 76.56601 | 33.45399 | 12.57249 | 0.2228045 | 2.7206463 | 31 | 1 | 61 days | 0.39 | M-v | 4 | MPC | 2006 $UA_{283}$ |
| 2006 $UB_{283}$ | 18.6 | 0.15 | 20061101 | 353.09823 | 108.76864 | 302.45357 | 1.19136 | 0.2082738 | 2.4198090 | 20 | 1 | 46 days | 0.20 | | | MPC | 2006 $UB_{283}$ |
| 2006 $UC_{283}$ | 17.3 | 0.15 | 20061012 | 43.82341 | 104.89530 | 233.57539 | 6.09771 | 0.1560547 | 2.9664339 | 18 | 1 | 58 days | 0.32 | | | MPC | 2006 $UC_{283}$ |
| 2006 $UD_{283}$ | 18.5 | 0.15 | 20061012 | 292.29171 | 98.43555 | 23.08657 | 2.70739 | 0.1671477 | 2.3255501 | 13 | 1 | 35 days | 0.22 | | | MPC | 2006 $UD_{283}$ |
| 2006 $UJ_{283}$ | 16.8 | 0.15 | 20061101 | 209.11581 | 300.52588 | 253.47082 | 1.42296 | 0.0235234 | 2.8213893 | 17 | 1 | 38 days | 0.27 | | | MPC | 2006 $UJ_{283}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UM_{283}$ | 18.0 | 0.15 | 20061012 | 329.15388 | 39.34170 | 37.77150 | 14.33372 | 0.1499675 | 2.5771298 | 17 | 1 | 52 days | 0.20 | | | MPC | 2006 $UM_{283}$ |
| 2006 $UN_{283}$ | 16.3 | 0.15 | 20061012 | 11.82529 | 111.09832 | 271.24962 | 1.78489 | 0.1036815 | 2.7026364 | 30 | 1 | 52 days | 0.48 | | | MPC | 2006 $UN_{283}$ |
| 2006 $UO_{283}$ | 15.4 | 0.15 | 20061101 | 185.96283 | 352.06789 | 226.26508 | 10.34629 | 0.1256639 | 3.0982430 | 10 | 1 | 15 days | 0.13 | | | MPC | 2006 $UO_{283}$ |
| 2006 $UP_{283}$ | 17.2 | 0.15 | 20061101 | 330.39128 | 223.57715 | 226.38699 | 11.81267 | 0.2386130 | 3.1078040 | 21 | 1 | 39 days | 0.18 | | | MPC | 2006 $UP_{283}$ |
| 2006 $US_{283}$ | 17.3 | 0.15 | 20061101 | 22.53938 | 52.70387 | 318.64630 | 1.22778 | 0.1677454 | 3.1873989 | 13 | 1 | 28 days | 0.27 | | | MPC | 2006 $US_{283}$ |
| 2006 $UV_{283}$ | 18.1 | 0.15 | 20061012 | 343.40618 | 20.90358 | 36.85697 | 10.23447 | 0.1009491 | 2.7201208 | 9 | 1 | 12 days | 0.39 | | | MPC | 2006 $UV_{283}$ |
| 2006 $UX_{283}$ | 18.0 | 0.15 | 20061101 | 5.51382 | 126.02747 | 265.83039 | 1.31971 | 0.2987813 | 3.0654287 | 25 | 1 | 26 days | 0.20 | | | MPC | 2006 $UX_{283}$ |
| 2006 $UA_{284}$ | 16.8 | 0.15 | 20061012 | 346.63606 | 14.51672 | 40.36768 | 9.62408 | 0.0841967 | 3.0934907 | 28 | 1 | 50 days | 0.21 | | | MPC | 2006 $UA_{284}$ |
| 2006 $UC_{284}$ | 16.7 | 0.15 | 20061012 | 102.12756 | 49.70510 | 230.03774 | 7.72758 | 0.1628747 | 2.5440309 | 21 | 1 | 30 days | 0.21 | | | MPC | 2006 $UC_{284}$ |
| 2006 $UD_{284}$ | 17.0 | 0.15 | 20061012 | 247.99268 | 121.35096 | 38.25855 | 6.08459 | 0.0969962 | 2.3132820 | 28 | 1 | 53 days | 0.46 | | | MPC | 2006 $UD_{284}$ |
| 2006 $UE_{284}$ | 16.3 | 0.15 | 20061012 | 35.30661 | 129.25308 | 228.35962 | 8.77175 | 0.0866923 | 2.9731208 | 20 | 1 | 43 days | 0.23 | | | MPC | 2006 $UE_{284}$ |
| 2006 $UG_{284}$ | 16.6 | 0.15 | 20061101 | 101.96083 | 287.02888 | 2.09475 | 0.47334 | 0.1244809 | 3.2412958 | 18 | 1 | 16 days | 0.26 | | | MPC | 2006 $UG_{284}$ |
| 2006 $UH_{284}$ | 18.4 | 0.15 | 20061012 | 318.83281 | 46.73354 | 36.75447 | 3.60210 | 0.0752590 | 2.2281512 | 23 | 1 | 27 days | 0.25 | | | MPC | 2006 $UH_{284}$ |
| 2006 $UJ_{284}$ | 17.5 | 0.15 | 20061101 | 317.23259 | 227.83408 | 225.62757 | 3.79700 | 0.0854115 | 2.4886938 | 17 | 1 | 40 days | 0.29 | | | MPC | 2006 $UJ_{284}$ |
| 2006 $UK_{284}$ | 16.6 | 0.15 | 20061012 | 343.68916 | 188.13232 | 228.81573 | 4.92402 | 0.0328699 | 2.7629277 | 40 | 1 | 53 days | 0.25 | | | MPC | 2006 $UK_{284}$ |
| 2006 $UL_{284}$ | 16.3 | 0.15 | 20060922 | 22.70694 | 324.05453 | 40.83275 | 9.97727 | 0.1176892 | 3.2006941 | 21 | 1 | 62 days | 0.22 | M-v | 4 | MPC | 2006 $UL_{284}$ |
| 2006 $UM_{284}$ | 17.6 | 0.15 | 20061101 | 342.68609 | 35.09007 | 30.04966 | 0.58091 | 0.1336568 | 2.5222996 | 19 | 1 | 40 days | 0.36 | | | MPC | 2006 $UM_{284}$ |
| 2006 $UN_{284}$ | 16.4 | 0.15 | 20061101 | 266.93006 | 100.63608 | 48.34655 | 8.41354 | 0.1126417 | 3.1002932 | 18 | 1 | 24 days | 0.33 | | | MPC | 2006 $UN_{284}$ |
| 2006 $UO_{284}$ | 16.4 | 0.15 | 20061101 | 81.07757 | 325.39625 | 2.04097 | 1.68147 | 0.0610079 | 2.8606331 | 17 | 1 | 32 days | 0.27 | | | MPC | 2006 $UO_{284}$ |
| 2006 $UP_{284}$ | 17.9 | 0.15 | 20061101 | 325.19249 | 53.54928 | 49.45351 | 7.88021 | 0.1771984 | 2.3822800 | 18 | 1 | 32 days | 0.30 | | | MPC | 2006 $UP_{284}$ |
| 2006 $UV_{284}$ | 19.0 | 0.15 | 20061101 | 16.19937 | 156.87688 | 220.02485 | 3.94979 | 0.1841175 | 2.2235532 | 27 | 1 | 36 days | 0.23 | | | MPC | 2006 $UV_{284}$ |
| 2006 $UX_{284}$ | 16.8 | 0.15 | 20061012 | 20.24198 | 321.55834 | 57.44752 | 10.00782 | 0.2106762 | 2.6969317 | 16 | 1 | 44 days | 0.21 | | | MPC | 2006 $UX_{284}$ |
| 2006 $UB_{285}$ | 18.9 | 0.15 | 20061012 | 9.90657 | 343.06881 | 34.31159 | 6.47189 | 0.1802783 | 2.3787841 | 17 | 1 | 42 days | 0.29 | | | MPC | 2006 $UB_{285}$ |
| 2006 $UC_{285}$ | 18.1 | 0.15 | 20061012 | 354.77993 | 159.33928 | 241.43611 | 1.86925 | 0.0741439 | 2.6191734 | 9 | 1 | 16 days | 0.27 | | | MPC | 2006 $UC_{285}$ |
| 2006 $UD_{285}$ | 16.6 | 0.15 | 20061012 | 35.89794 | 128.45406 | 225.38691 | 8.82802 | 0.0890529 | 3.0537138 | 20 | 1 | 47 days | 0.25 | | | MPC | 2006 $UD_{285}$ |
| 2006 $UF_{285}$ | 15.1 | 0.15 | 20061012 | 148.87328 | 206.01435 | 62.40150 | 17.95477 | 0.0982366 | 3.1883489 | 18 | 1 | 54 days | 0.21 | | | MPC | 2006 $UF_{285}$ |
| 2006 $UG_{285}$ | 16.4 | 0.15 | 20060922 | 5.81309 | 342.16680 | 49.87639 | 3.98643 | 0.2610949 | 2.6066331 | 55 | 1 | 69 days | 0.53 | M-v | 5 | MPC | 2006 $UG_{285}$ |
| 2006 $UH_{285}$ | 15.9 | 0.15 | 20061101 | 9.45094 | 195.01754 | 202.27150 | 3.28917 | 0.1291105 | 3.0283114 | 40 | 1 | 40 days | 0.47 | | | MPC | 2006 $UH_{285}$ |
| 2006 $UK_{285}$ | 16.5 | 0.15 | 20061101 | 246.72418 | 89.98023 | 81.07625 | 2.41809 | 0.0663978 | 3.0866955 | 14 | 1 | 19 days | 0.42 | | | MPC | 2006 $UK_{285}$ |
| 2006 $UM_{285}$ | 17.7 | 0.15 | 20061101 | 316.34759 | 235.02130 | 225.30514 | 0.75222 | 0.1431979 | 2.3504755 | 39 | 1 | 41 days | 0.25 | | | MPC | 2006 $UM_{285}$ |
| 2006 $UN_{285}$ | 17.2 | 0.15 | 20061012 | 23.16062 | 343.78466 | 27.90602 | 2.01425 | 0.1066494 | 2.9354410 | 13 | 1 | 32 days | 0.38 | | | MPC | 2006 $UN_{285}$ |
| 2006 $UQ_{285}$ | 17.8 | 0.15 | 20061101 | 342.04969 | 64.75106 | 10.55350 | 0.75708 | 0.2447111 | 3.0580983 | 16 | 1 | 31 days | 0.20 | | | MPC | 2006 $UQ_{285}$ |
| 2006 $UT_{285}$ | 18.1 | 0.15 | 20061101 | 18.57970 | 159.22797 | 223.24823 | 3.78526 | 0.1190152 | 2.7035903 | 10 | 1 | 14 days | 0.26 | | | MPC | 2006 $UT_{285}$ |
| 2006 $UU_{285}$ | 18.4 | 0.15 | 20061012 | 23.91109 | 134.25560 | 224.96568 | 7.51226 | 0.2433177 | 2.6372105 | 13 | 1 | 29 days | 0.22 | | | MPC | 2006 $UU_{285}$ |
| 2006 $UV_{285}$ | 17.2 | 0.15 | 20061012 | 27.94649 | 313.31441 | 43.65821 | 3.44876 | 0.2098960 | 2.6195335 | 31 | 1 | 36 days | 0.36 | | D | MPC | 2006 $UV_{285}$ |
| 2006 $UA_{286}$ | 16.3 | 0.15 | 20061012 | 58.42720 | 283.03130 | 55.73986 | 7.33062 | 0.0408633 | 2.7927208 | 32 | 1 | 52 days | 0.39 | | | MPC | 2006 $UA_{286}$ |
| 2006 $UB_{286}$ | 17.9 | 0.15 | 20061101 | 33.16307 | 125.08284 | 220.63520 | 12.41613 | 0.2969774 | 2.6341774 | 24 | 1 | 26 days | 0.45 | | | MPC | 2006 $UB_{286}$ |
| 2006 $UE_{286}$ | 15.5 | 0.15 | 20061012 | 28.92347 | 157.70886 | 196.64458 | 2.46677 | 0.2483417 | 3.9682118 | 19 | 1 | 31 days | 0.29 | | | MPC | 2006 $UE_{286}$ |
| 2006 $UF_{286}$ | 16.8 | 0.15 | 20061101 | 57.68842 | 280.24653 | 55.83012 | 4.23714 | 0.1037427 | 2.6485831 | 31 | 1 | 42 days | 0.25 | | | MPC | 2006 $UF_{286}$ |
| 2006 $UH_{286}$ | 18.9 | 0.15 | 20061012 | 12.64889 | 166.79376 | 209.83656 | 2.70112 | 0.2014236 | 2.4268774 | 13 | 1 | 27 days | 0.18 | | | MPC | 2006 $UH_{286}$ |
| 2006 $UJ_{286}$ | 18.3 | 0.15 | 20061012 | 350.11935 | 207.99402 | 204.34223 | 0.37737 | 0.1897819 | 3.0651180 | 9 | 1 | 12 days | 0.29 | | | MPC | 2006 $UJ_{286}$ |
| 2006 $UK_{286}$ | 17.0 | 0.15 | 20061101 | 338.94398 | 22.69799 | 44.15991 | 13.67073 | 0.0494427 | 3.2367323 | 10 | 1 | 15 days | 0.22 | | | MPC | 2006 $UK_{286}$ |
| 2006 $UL_{286}$ | 18.1 | 0.15 | 20061012 | 52.80851 | 268.41542 | 51.10709 | 3.56411 | 0.2238676 | 2.3716474 | 22 | 1 | 56 days | 0.33 | | | MPC | 2006 $UL_{286}$ |
| 2006 $UM_{286}$ | 16.8 | 0.15 | 20061101 | 43.94822 | 118.83708 | 215.91982 | 4.81453 | 0.2493914 | 2.9763387 | 27 | 1 | 46 days | 0.32 | | | MPC | 2006 $UM_{286}$ |
| 2006 $UN_{286}$ | 17.3 | 0.15 | 20061012 | 181.70183 | 168.70280 | 47.04645 | 7.86100 | 0.0330208 | 2.2413584 | 22 | 1 | 56 days | 0.35 | | | MPC | 2006 $UN_{286}$ |
| 2006 $UO_{286}$ | 15.9 | 0.15 | 20061101 | 129.95013 | 43.84967 | 223.19128 | 3.70963 | 0.0933673 | 3.0687307 | 32 | 1 | 37 days | 0.27 | | | MPC | 2006 $UO_{286}$ |
| 2006 $UP_{286}$ | 17.3 | 0.15 | 20061012 | 345.79668 | 6.93900 | 47.36148 | 7.28037 | 0.0192274 | 2.7575056 | 17 | 1 | 27 days | 0.32 | | | MPC | 2006 $UP_{286}$ |
| 2006 $UQ_{286}$ | 17.2 | 0.15 | 20061101 | 0.07942 | 323.65779 | 79.20341 | 0.89758 | 0.1956278 | 2.5497713 | 47 | 1 | 46 days | 0.36 | | | MPC | 2006 $UQ_{286}$ |
| 2006 $UV_{286}$ | 16.7 | 0.15 | 20061012 | 340.86501 | 14.20787 | 55.61843 | 4.98776 | 0.2025563 | 2.5920542 | 63 | 1 | 53 days | 0.40 | | | MPC | 2006 $UV_{286}$ |
| 2006 $UW_{286}$ | 17.2 | 0.15 | 20061012 | 332.67860 | 223.20926 | 222.72252 | 11.95694 | 0.2467002 | 2.5831776 | 32 | 1 | 54 days | 0.38 | | | MPC | 2006 $UW_{286}$ |
| 2006 $UB_{287}$ | 15.5 | 0.15 | 20061012 | 160.53221 | 29.62334 | 217.50204 | 9.56921 | 0.0151571 | 3.0798421 | 35 | 1 | 56 days | 0.40 | | | MPC | 2006 $UB_{287}$ |
| 2006 $UD_{287}$ | 16.0 | 0.15 | 20061012 | 2.65656 | 345.60112 | 54.95023 | 18.14139 | 0.1984373 | 3.1007654 | 50 | 1 | 55 days | 0.42 | | | MPC | 2006 $UD_{287}$ |
| 2006 $UK_{287}$ | 17.0 | 0.15 | 20061012 | 34.74110 | 119.11375 | 227.35486 | 6.64858 | 0.0828074 | 2.9406171 | 15 | 1 | 48 days | 0.15 | | | MPC | 2006 $UK_{287}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UL_{287}$ | 16.2 | 0.15 | 20061012 | 112.32736 | 19.03472 | 244.96545 | 4.17385 | 0.1188901 | 3.1968125 | 12 | 1 | 12 days | 0.25 | | | MPC | 2006 $UL_{287}$ |
| 2006 $UM_{287}$ | 16.5 | 0.15 | 20061101 | 282.96037 | 97.32585 | 52.45659 | 14.99561 | 0.2079361 | 3.1269900 | 18 | 1 | 36 days | 0.31 | | | MPC | 2006 $UM_{287}$ |
| 2006 $UT_{287}$ | 17.3 | 0.15 | 20061101 | 17.31955 | 14.60688 | 3.59073 | 0.62514 | 0.0897608 | 3.1285982 | 10 | 1 | 16 days | 0.51 | | | MPC | 2006 $UT_{287}$ |
| 2006 $UV_{287}$ | 15.7 | 0.15 | 20061012 | 53.70573 | 104.93840 | 214.52004 | 25.23004 | 0.2041979 | 3.1063177 | 29 | 1 | 55 days | 0.28 | | | MPC | 2006 $UV_{287}$ |
| 2006 $UX_{287}$ | 18.1 | 0.15 | 20061012 | 29.11856 | 162.30995 | 169.42595 | 2.26489 | 0.3658558 | 3.0305653 | 11 | 1 | 31 days | 0.44 | | | MPC | 2006 $UX_{287}$ |
| 2006 $UZ_{287}$ | 18.5 | 0.15 | 20061012 | 87.17588 | 94.17549 | 200.83513 | 4.07271 | 0.0845787 | 2.3954865 | 10 | 1 | 15 days | 0.19 | | | MPC | 2006 $UZ_{287}$ |
| 2006 $UB_{288}$ | 19.0 | 0.15 | 20061012 | 359.88189 | 181.35075 | 208.28662 | 7.55083 | 0.2284572 | 2.4843200 | 10 | 1 | 11 days | 0.18 | | | MPC | 2006 $UB_{288}$ |
| 2006 $UF_{288}$ | 16.6 | 0.15 | 20060922 | 35.31042 | 295.84892 | 56.10131 | 17.87333 | 0.2389629 | 2.7559908 | 28 | 1 | 60 days | 0.32 | M-v | 4 | MPC | 2006 $UF_{288}$ |
| 2006 $UH_{288}$ | 16.3 | 0.15 | 20061101 | 13.70471 | 47.07266 | 341.33791 | 8.26029 | 0.1888351 | 2.7316486 | 19 | 1 | 23 days | 0.44 | | | MPC | 2006 $UH_{288}$ |
| 2006 $UK_{288}$ | 16.6 | 0.15 | 20061101 | 65.03154 | 9.28970 | 318.34935 | 6.45035 | 0.1511043 | 2.2452540 | 16 | 1 | 23 days | 0.41 | | | MPC | 2006 $UK_{288}$ |
| 2006 $UL_{288}$ | 14.4 | 0.15 | 20061101 | 257.17440 | 149.93876 | 11.42894 | 12.51171 | 0.0352596 | 3.2383971 | 24 | 1 | 33 days | 0.46 | | | MPC | 2006 $UL_{288}$ |
| 2006 $UO_{288}$ | 17.0 | 0.15 | 20061012 | 263.75356 | 169.01389 | 340.60910 | 4.24177 | 0.2040913 | 2.5425707 | 9 | 1 | 10 days | 0.36 | | | MPC | 2006 $UO_{288}$ |
| 2006 $UR_{288}$ | 16.3 | 0.15 | 20061012 | 56.41744 | 27.50167 | 289.97637 | 4.16752 | 0.1532100 | 3.1662152 | 9 | 1 | 10 days | 0.36 | | | MPC | 2006 $UR_{288}$ |
| 2006 $US_{288}$ | 18.1 | 0.15 | 20061012 | 307.33256 | 93.81326 | 355.96400 | 5.63475 | 0.0894168 | 2.3565019 | 8 | 1 | 10 days | 0.37 | | | MPC | 2006 $US_{288}$ |
| 2006 $UU_{288}$ | 17.6 | 0.15 | 20061101 | 20.04197 | 156.39303 | 225.74220 | 8.58007 | 0.1368821 | 3.0267172 | 14 | 1 | 15 days | 0.18 | | | MPC | 2006 $UU_{288}$ |
| 2006 $UV_{288}$ | 16.9 | 0.15 | 20061101 | 324.43322 | 40.88368 | 52.32563 | 11.79287 | 0.1141188 | 3.0975011 | 22 | 1 | 36 days | 0.48 | | | MPC | 2006 $UV_{288}$ |
| 2006 $UW_{288}$ | 15.6 | 0.15 | 20061012 | 92.62037 | 65.95780 | 202.88926 | 9.87984 | 0.1088060 | 2.9906853 | 12 | 1 | 13 days | 0.29 | | | MPC | 2006 $UW_{288}$ |
| 2006 $UX_{288}$ | 17.0 | 0.15 | 20061012 | 31.65986 | 99.03209 | 223.56333 | 2.26222 | 0.2499990 | 3.0491649 | 12 | 1 | 13 days | 0.24 | | | MPC | 2006 $UX_{288}$ |
| 2006 $UB_{289}$ | 17.4 | 0.15 | 20061012 | 325.71703 | 138.16376 | 303.58704 | 2.80508 | 0.2109623 | 2.7385921 | 20 | 1 | 47 days | 0.29 | | | MPC | 2006 $UB_{289}$ |
| 2006 $UC_{289}$ | 16.6 | 0.15 | 20061012 | 143.90825 | 221.02402 | 25.27399 | 10.30670 | 0.0433031 | 3.0315202 | 25 | 1 | 57 days | 0.41 | | | MPC | 2006 $UC_{289}$ |
| 2006 $UD_{289}$ | 17.7 | 0.15 | 20061101 | 358.19658 | 13.75908 | 24.99458 | 12.67928 | 0.1218934 | 2.9911116 | 13 | 1 | 28 days | 0.24 | | | MPC | 2006 $UD_{289}$ |
| 2006 $UE_{289}$ | 18.3 | 0.15 | 20061012 | 323.59676 | 20.08385 | 55.49060 | 5.75487 | 0.1221387 | 2.3412366 | 25 | 1 | 39 days | 0.28 | | | MPC | 2006 $UE_{289}$ |
| 2006 $UF_{289}$ | 15.9 | 0.15 | 20061101 | 24.69069 | 163.87107 | 201.48831 | 9.93497 | 0.1361423 | 3.1310629 | 15 | 1 | 39 days | 0.24 | | | MPC | 2006 $UF_{289}$ |
| 2006 $UG_{289}$ | 17.2 | 0.15 | 20061101 | 234.32708 | 226.12911 | 304.44951 | 4.60101 | 0.0737938 | 2.2808906 | 17 | 1 | 41 days | 0.38 | | | MPC | 2006 $UG_{289}$ |
| 2006 $UH_{289}$ | 16.8 | 0.15 | 20061012 | 61.02755 | 301.54503 | 15.96959 | 12.52555 | 0.1528872 | 2.9785964 | 14 | 1 | 28 days | 0.31 | | | MPC | 2006 $UH_{289}$ |
| 2006 $UL_{289}$ | 17.3 | 0.15 | 20061012 | 20.14292 | 156.62891 | 203.59666 | 10.52366 | 0.2087902 | 3.0378010 | 15 | 1 | 14 days | 0.19 | | | MPC | 2006 $UL_{289}$ |
| 2006 $UN_{289}$ | 16.9 | 0.15 | 20061012 | 293.45927 | 245.91050 | 230.30458 | 21.80684 | 0.0645110 | 2.6646699 | 11 | 1 | 11 days | 0.14 | | | MPC | 2006 $UN_{289}$ |
| 2006 $UP_{289}$ | 17.0 | 0.15 | 20061012 | 359.10770 | 149.88878 | 252.88943 | 3.09349 | 0.2060829 | 2.9904479 | 24 | 1 | 35 days | 0.36 | | | MPC | 2006 $UP_{289}$ |
| 2006 $UQ_{289}$ | 16.5 | 0.15 | 20061012 | 28.52222 | 311.20420 | 43.30135 | 17.27364 | 0.2630901 | 3.1714370 | 23 | 1 | 51 days | 0.24 | | | MPC | 2006 $UQ_{289}$ |
| 2006 $US_{289}$ | 17.8 | 0.15 | 20061101 | 28.82424 | 249.13711 | 120.66159 | 4.25425 | 0.1440074 | 2.1986164 | 18 | 1 | 35 days | 0.50 | | | MPC | 2006 $US_{289}$ |
| 2006 $UT_{289}$ | 18.2 | 0.15 | 20061012 | 327.83266 | 46.54347 | 43.12085 | 13.91560 | 0.2393379 | 2.6500564 | 14 | 1 | 29 days | 0.23 | | | MPC | 2006 $UT_{289}$ |
| 2006 $UU_{289}$ | 16.5 | 0.15 | 20061101 | 319.41664 | 68.92254 | 37.09393 | 12.69183 | 0.1699808 | 2.6996507 | 14 | 1 | 27 days | 0.48 | | | MPC | 2006 $UU_{289}$ |
| 2006 $UY_{289}$ | 17.9 | 0.15 | 20061101 | 6.09281 | 141.28742 | 248.57538 | 7.02520 | 0.2326517 | 2.7766107 | 21 | 1 | 28 days | 0.18 | | | MPC | 2006 $UY_{289}$ |
| 2006 $UZ_{289}$ | 16.0 | 0.15 | 20061012 | 251.11599 | 247.34422 | 261.02498 | 5.81237 | 0.0259469 | 3.0970022 | 20 | 1 | 53 days | 0.22 | | | MPC | 2006 $UZ_{289}$ |
| 2006 $UB_{290}$ | 17.4 | 0.15 | 20061012 | 101.56226 | 330.79232 | 309.79410 | 3.57108 | 0.1209915 | 2.3484809 | 21 | 1 | 47 days | 0.40 | | | MPC | 2006 $UB_{290}$ |
| 2006 $UC_{290}$ | 16.9 | 0.15 | 20061012 | 357.23565 | 98.80837 | 300.73138 | 3.96562 | 0.1584631 | 3.1933896 | 13 | 1 | 31 days | 0.19 | | | MPC | 2006 $UC_{290}$ |
| 2006 $UD_{290}$ | | | 20061101 | 327.38229 | 149.74419 | 298.74807 | 2.99422 | 0.2037883 | 2.5597491 | 12 | 1 | 24 days | 0.16 | | | MPC | 2006 $UD_{290}$ |
| 2006 $UE_{290}$ | 16.6 | 0.15 | 20061101 | 319.19492 | 86.21908 | 358.27004 | 5.55580 | 0.0386840 | 2.8529172 | 16 | 1 | 41 days | 0.29 | | | MPC | 2006 $UE_{290}$ |
| 2006 $UG_{290}$ | 15.4 | 0.15 | 20061101 | 34.53687 | 328.22845 | 23.85303 | 11.02990 | 0.2427964 | 4.0020545 | 20 | 1 | 26 days | 0.23 | | E | MPC | 2006 $UG_{290}$ |
| 2006 $UH_{290}$ | 16.6 | 0.15 | 20061101 | 266.42499 | 119.08611 | 39.31495 | 15.67122 | 0.1163712 | 2.5898520 | 16 | 1 | 30 days | 0.44 | | | MPC | 2006 $UH_{290}$ |
| 2006 $UJ_{290}$ | 16.5 | 0.15 | 20061101 | 354.95625 | 174.25261 | 243.36973 | 9.35995 | 0.2417406 | 2.7641019 | 42 | 1 | 36 days | 0.40 | | | MPC | 2006 $UJ_{290}$ |
| 2006 $UN_{290}$ | 16.1 | 0.15 | 20061012 | 223.15923 | 329.72134 | 203.30760 | 13.27118 | 0.0426576 | 3.0089589 | 14 | 1 | 36 days | 0.21 | | | MPC | 2006 $UN_{290}$ |
| 2006 $UD_{291}$ | 15.7 | 0.15 | 20061012 | 304.68312 | 309.65341 | 149.92130 | 22.58920 | 0.0376096 | 2.5422760 | 11 | 1 | 14 days | 0.49 | | | MPC | 2006 $UD_{291}$ |
| 2006 $UL_{291}$ | 19.3 | 0.15 | 20061101 | 327.76252 | 72.15673 | 11.26496 | 3.31150 | 0.1702262 | 2.2850956 | 15 | 1 | 22 days | 0.14 | | | MPC | 2006 $UL_{291}$ |
| 2006 $UM_{291}$ | 14.3 | 0.15 | 20061012 | 96.51582 | 310.52917 | 270.44779 | 21.10031 | 0.0708795 | 5.2512355 | 8 | 1 | 12 days | 0.08 | | | MPC | 2006 $UM_{291}$ |
| 2006 $US_{291}$ | 16.3 | 0.15 | 20061012 | 165.78054 | 217.78980 | 333.28475 | 8.85986 | 0.0328193 | 2.9973142 | 10 | 1 | 10 days | 0.09 | | E | MPC | 2006 $US_{291}$ |
| 2006 $UV_{291}$ | 17.8 | 0.15 | 20061101 | 349.42330 | 321.70037 | 98.78408 | 2.44935 | 0.1742056 | 2.3594458 | 31 | 1 | 33 days | 0.46 | | | MPC | 2006 $UV_{291}$ |
| 2006 $UW_{291}$ | 17.1 | 0.15 | 20061012 | 14.63145 | 27.33245 | 344.70561 | 17.51850 | 0.1082870 | 1.9557957 | 11 | 1 | 28 days | 0.60 | | | MPC | 2006 $UW_{291}$ |
| 2006 $UH_{313}$ | 17.0 | 0.15 | 20061101 | 141.70337 | 24.15587 | 240.20023 | 13.58969 | 0.1048114 | 2.6363782 | 10 | 1 | 36 days | 0.27 | | | MPC | 2006 $UH_{313}$ |
| 2006 $UK_{313}$ | 17.4 | 0.15 | 20061101 | 221.52497 | 309.31269 | 246.06494 | 6.22430 | 0.0723888 | 2.3561623 | 10 | 1 | 36 days | 0.20 | | | MPC | 2006 $UK_{313}$ |
| 2006 $UA_{314}$ | 20.0 | 0.15 | 20061101 | 333.91643 | 12.37029 | 79.61400 | 3.81428 | 0.2181167 | 2.5222288 | 7 | 1 | 39 days | 0.56 | | | MPC | 2006 $UA_{314}$ |
| 2006 $UC_{314}$ | 15.5 | 0.15 | 20061101 | 101.55603 | 236.25706 | 71.05457 | 7.62856 | 0.0607927 | 3.1955078 | 20 | 1 | 37 days | 0.16 | | | MPC | 2006 $UC_{314}$ |
| 2006 $UM_{317}$ | 18.8 | 0.15 | 20061101 | 23.25705 | 181.13850 | 194.44137 | 2.77865 | 0.2378240 | 2.6422978 | 12 | 1 | 39 days | 0.22 | | | MPC | 2006 $UM_{317}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $UB_{319}$ | 19.7 | 0.15 | 20061101 | 41.74416 | 138.16918 | 205.58451 | 2.43527 | 0.2959118 | 2.4448307 | 10 | 1 | 39 days | 0.47 | | | MPC | | 2006 $UB_{319}$ |
| 2006 $UG_{319}$ | 17.5 | 0.15 | 20061101 | 105.99353 | 229.36978 | 72.20975 | 5.27027 | 0.1083062 | 2.6586375 | 9 | 1 | 39 days | 0.18 | | | MPC | | 2006 $UG_{319}$ |
| 2006 $UO_{319}$ | 17.6 | 0.15 | 20061101 | 336.04306 | 14.22091 | 72.24557 | 4.68923 | 0.0649803 | 2.7447831 | 10 | 1 | 39 days | 0.11 | | | MPC | | 2006 $UO_{319}$ |
| 2006 $UA_{321}$ | 17.8 | 0.15 | 20061101 | 195.67138 | 160.78454 | 67.56612 | 7.14901 | 0.1850252 | 2.3172568 | 10 | 1 | 39 days | 0.16 | | | MPC | | 2006 $UA_{321}$ |
| 2006 $UD_{321}$ | 17.1 | 0.15 | 20061101 | 116.16269 | 211.23077 | 82.21150 | 2.84963 | 0.1123925 | 2.7821598 | 10 | 1 | 39 days | 0.21 | | | MPC | | 2006 $UD_{321}$ |
| 2006 $UW_{321}$ | 15.5 | 0.15 | 20061101 | 7.39683 | 254.61207 | 133.31138 | 19.46327 | 0.2960552 | 3.0748531 | 13 | 1 | 33 days | 0.42 | | | MPC | | 2006 $UW_{321}$ |
| 2006 $UR_{324}$ | 16.4 | 0.15 | 20061101 | 89.94209 | 202.37372 | 116.15411 | 2.33416 | 0.0560173 | 2.9621876 | 12 | 1 | 39 days | 0.34 | | | MPC | | 2006 $UR_{324}$ |
| 2006 VA | 18.8 | 0.15 | 20060922 | 45.07973 | 13.61083 | 287.19723 | 4.13225 | 0.3588925 | 2.1136082 | 28 | 1 | 12 days | 0.34 | M-v | 7 | MPC | | 2006 VA |
| 2006 VB | 25.1 | 0.15 | 20060922 | 356.58796 | 324.96387 | 37.03637 | 8.67487 | 0.4241478 | 1.7271517 | 18 | 1 | 9 days | 0.53 | M-v | 7 | MPC | | 2006 VB |
| 2006 VC | 19.9 | 0.15 | 20060922 | 323.74271 | 18.88744 | 87.67581 | 12.26606 | 0.4917805 | 1.9443445 | 60 | 1 | 33 days | 0.53 | M-v | 5 | MPC | | 2006 VC |
| 2006 VD | 16.7 | 0.15 | 20061101 | 324.30228 | 63.33414 | 51.35715 | 22.65911 | 0.0967621 | 2.6615167 | 11 | 1 | 15 days | 0.25 | | | MPC | | 2006 VD |
| 2006 VE | 16.7 | 0.15 | 20061101 | 53.68304 | 82.56372 | 257.30725 | 4.39963 | 0.2769194 | 2.6524231 | 19 | 1 | 15 days | 0.40 | | | MPC | | 2006 VE |
| 2006 VG | 19.8 | 0.15 | 20061101 | 145.01312 | 27.03534 | 226.27541 | 23.50811 | 0.0919344 | 1.6272913 | 22 | 1 | 1 days | 0.48 | | | MPC | | 2006 VG |
| 2006 VH | 16.9 | 0.15 | 20061101 | 28.95158 | 103.81350 | 291.10368 | 28.10053 | 0.4414519 | 2.7189073 | 28 | 1 | 30 days | 0.50 | | | MPC | | 2006 VH |
| 2006 VJ | 21.7 | 0.15 | 20060922 | 328.97123 | 194.06302 | 219.42158 | 17.36498 | 0.2015192 | 1.4676670 | 35 | 1 | 18 days | 0.59 | M-v | 7 | MPC | | 2006 VJ |
| 2006 VN | 17.1 | 0.15 | 20061101 | 315.12428 | 222.61949 | 234.90844 | 8.05453 | 0.0687570 | 3.0768086 | 19 | 1 | 22 days | 0.24 | | | MPC | | 2006 VN |
| 2006 VO | 18.1 | 0.15 | 20061012 | 10.36858 | 345.83700 | 38.79990 | 9.36880 | 0.1645742 | 2.6399648 | 17 | 1 | 24 days | 0.27 | | | MPC | | 2006 VO |
| 2006 VS | 17.9 | 0.15 | 20061012 | 280.98892 | 209.09315 | 274.21377 | 1.09428 | 0.0467486 | 2.1503302 | 18 | 1 | 30 days | 0.20 | | | MPC | | 2006 VS |
| 2006 VT | 17.2 | 0.15 | 20061012 | 34.57383 | 121.95177 | 230.12572 | 25.23513 | 0.1922953 | 3.1706240 | 20 | 1 | 24 days | 0.31 | | | MPC | | 2006 VT |
| 2006 VY | 16.2 | 0.15 | 20061101 | 188.56574 | 205.66349 | 16.43820 | 2.83969 | 0.1996811 | 2.9138170 | 12 | 1 | 13 days | 0.49 | | | MPC | | 2006 VY |
| 2006 VZ | 15.7 | 0.15 | 20061012 | 331.93497 | 47.65656 | 101.66163 | 12.75387 | 0.2360275 | 2.7903871 | 11 | 1 | 35 days | 0.26 | | | MPC | | 2006 VZ |
| 2006 $VE_1$ | 17.4 | 0.15 | 20061012 | 319.61525 | 73.48491 | 24.88740 | 12.10577 | 0.2326759 | 3.1876232 | 10 | 1 | 12 days | 0.38 | | | MPC | | 2006 $VE_1$ |
| 2006 $VG_1$ | 18.0 | 0.15 | 20061101 | 18.88286 | 146.42744 | 228.58666 | 15.00136 | 0.2149216 | 2.5816078 | 18 | 1 | 22 days | 0.45 | | | MPC | | 2006 $VG_1$ |
| 2006 $VM_1$ | 16.2 | 0.15 | 20060922 | 58.87056 | 304.86649 | 359.43874 | 6.91471 | 0.2410775 | 2.5295875 | 31 | 1 | 67 days | 0.50 | M-v | 4 | MPC | | 2006 $VM_1$ |
| 2006 $VO_1$ | 17.3 | 0.15 | 20061012 | 354.88921 | 212.87781 | 199.65639 | 4.18594 | 0.3134319 | 2.3291284 | 42 | 1 | 58 days | 0.48 | | E | MPC | | 2006 $VO_1$ |
| 2006 $VP_1$ | 18.1 | 0.15 | 20061012 | 343.96277 | 52.31903 | 4.79167 | 5.95851 | 0.2238292 | 2.3210263 | 36 | 1 | 55 days | 0.34 | | | MPC | | 2006 $VP_1$ |
| 2006 $VQ_1$ | 16.5 | 0.15 | 20061012 | 306.49372 | 122.57210 | 324.40312 | 8.22534 | 0.1696494 | 2.7753470 | 28 | 1 | 20 days | 0.80 | | D | MPC | | 2006 $VQ_1$ |
| 2006 $VR_1$ | 18.2 | 0.15 | 20061101 | 30.91190 | 132.28341 | 230.01490 | 20.25955 | 0.1216404 | 1.9586091 | 25 | 1 | 25 days | 0.70 | | | MPC | | 2006 $VR_1$ |
| 2006 $VS_1$ | 15.8 | 0.15 | 20060922 | 15.17391 | 161.50536 | 221.06317 | 11.23585 | 0.2073459 | 2.6853675 | 37 | 1 | 64 days | 0.36 | M-v | 4 | MPC | | 2006 $VS_1$ |
| 2006 $VV_1$ | 16.8 | 0.15 | 20061101 | 32.86596 | 119.35318 | 247.07139 | 9.50665 | 0.1541092 | 2.8424139 | 21 | 1 | 22 days | 0.30 | | | MPC | | 2006 $VV_1$ |
| 2006 $VW_1$ | 17.8 | 0.15 | 20060922 | 16.19286 | 310.53226 | 54.81631 | 23.15108 | 0.0855539 | 1.8865270 | 31 | 1 | 62 days | 0.56 | M-v | 5 | MPC | | 2006 $VW_1$ |
| 2006 $VZ_1$ | 18.6 | 0.15 | 20061101 | 6.97420 | 109.48359 | 276.95023 | 28.76434 | 0.4324789 | 2.7657122 | 12 | 1 | 1 days | 0.49 | | E | MPC | | 2006 $VZ_1$ |
| 2006 $VA_2$ | 20.9 | 0.15 | 20060922 | 353.79837 | 340.79970 | 46.57191 | 24.40454 | 0.4807598 | 2.5035025 | 43 | 1 | 18 days | 0.36 | M-v | 5 | MPC | | 2006 $VA_2$ |
| 2006 $VB_2$ | 19.7 | 0.15 | 20060922 | 315.21990 | 171.55780 | 4.32769 | 15.77315 | 0.7864096 | 1.7831341 | 20 | 1 | 12 days | 0.43 | M-v | 9 | MPC | | 2006 $VB_2$ |
| 2006 $VC_2$ | 21.2 | 0.15 | 20060922 | 332.77989 | 211.70544 | 226.20578 | 27.76547 | 0.4225775 | 2.1023741 | 35 | 1 | 22 days | 0.49 | M-v | 7 | MPC | | 2006 $VC_2$ |
| 2006 $VD_2$ | 19.4 | 0.15 | 20060922 | 356.84140 | 241.83447 | 121.11885 | 9.03280 | 0.6003234 | 2.5854758 | 57 | 1 | 23 days | 0.52 | M-v | 6 | MPC | | 2006 $VD_2$ |
| 2006 $VE_2$ | 18.5 | 0.15 | 20061101 | 271.88837 | 268.35243 | 237.00366 | 21.24752 | 0.1296501 | 1.7852218 | 50 | 1 | 27 days | 0.57 | | | MPC | | 2006 $VE_2$ |
| 2006 $VG_2$ | 17.1 | 0.15 | 20061101 | 15.52698 | 59.81316 | 299.79477 | 23.80890 | 0.4291546 | 2.4146323 | 15 | 1 | 2 days | 0.42 | | E | MPC | | 2006 $VG_2$ |
| 2006 $VL_2$ | 17.7 | 0.15 | 20061101 | 38.14276 | 69.42589 | 277.46907 | 4.58303 | 0.1765248 | 2.3037627 | 35 | 1 | 35 days | 0.43 | | | MPC | | 2006 $VL_2$ |
| 2006 $VO_2$ | 15.8 | 0.15 | 20061101 | 354.66593 | 82.48739 | 328.54725 | 3.87382 | 0.1804528 | 3.2015077 | 24 | 1 | 24 days | 0.59 | | | MPC | | 2006 $VO_2$ |
| 2006 $VP_2$ | 16.2 | 0.15 | 20061012 | 322.06617 | 176.66372 | 264.88420 | 5.29224 | 0.0872320 | 2.4668128 | 41 | 1 | 49 days | 0.57 | | | MPC | | 2006 $VP_2$ |
| 2006 $VT_2$ | 18.2 | 0.15 | 20060922 | 236.80843 | 152.55413 | 59.51566 | 31.78928 | 0.7232533 | 1.2626188 | 113 | 1 | 20 days | 0.43 | M-v | 7 | MPC | | 2006 $VT_2$ |
| 2006 $VU_2$ | 26.0 | 0.15 | 20060922 | 347.68520 | 172.41309 | 226.85147 | 2.17076 | 0.5472143 | 2.3099892 | 15 | 1 | 16 days | 0.43 | M-v | 8 | MPC | | 2006 $VU_2$ |
| 2006 $VW_2$ | 21.3 | 0.15 | 20060922 | 235.48414 | 299.58413 | 229.92249 | 10.03097 | 0.2942834 | 1.2359202 | 64 | 1 | 19 days | 0.46 | M-v | 7 | MPC | | 2006 $VW_2$ |
| 2006 $VX_2$ | 24.9 | 0.15 | 20060922 | 210.13739 | 126.50430 | 47.42460 | 9.89442 | 0.2898848 | 0.9325432 | 64 | 1 | 5 days | 0.36 | M-v | 7 | MPC | | 2006 $VX_2$ |
| 2006 $VY_2$ | 22.7 | 0.15 | 20060922 | 186.39144 | 327.00228 | 231.32275 | 14.58295 | 0.3772900 | 0.8924982 | 59 | 1 | 14 days | 0.39 | M-v | 7 | MPC | | 2006 $VY_2$ |
| 2006 $VZ_2$ | 19.7 | 0.15 | 20060922 | 337.04415 | 215.28836 | 252.21252 | 36.69146 | 0.6070816 | 2.5287554 | 46 | 1 | 20 days | 0.71 | M-v | 6 | MPC | | 2006 $VZ_2$ |
| 2006 $VA_3$ | 17.2 | 0.15 | 20060922 | 290.95411 | 307.75644 | 313.02075 | 53.32909 | 0.6792099 | 1.6025275 | 34 | 1 | 20 days | 0.43 | M-v | 8 | MPC | | 2006 $VA_3$ |
| 2006 $VB_3$ | 21.2 | 0.15 | 20060922 | 355.77146 | 336.52916 | 46.50197 | 11.03917 | 0.5482578 | 2.8477792 | 42 | 1 | 15 days | 0.57 | M-v | 6 | MPC | | 2006 $VB_3$ |
| 2006 $VF_3$ | 16.7 | 0.15 | 20060922 | 256.40762 | 136.01854 | 1.94504 | 2.27065 | 0.0554898 | 2.6235851 | 31 | 1 | 61 days | 0.27 | M-v | 4 | MPC | | 2006 $VF_3$ |
| 2006 $VG_3$ | 16.8 | 0.15 | 20060922 | 23.84861 | 133.72195 | 225.16871 | 5.66373 | 0.0753288 | 2.7511930 | 28 | 1 | 60 days | 0.23 | M-v | 4 | MPC | | 2006 $VG_3$ |
| 2006 $VJ_3$ | 18.5 | 0.15 | 20061101 | 33.47045 | 339.84159 | 11.06125 | 1.28471 | 0.1733250 | 2.3650413 | 9 | 1 | 4 days | 0.46 | | | MPC | | 2006 $VJ_3$ |
| 2006 $VK_3$ | 17.8 | 0.15 | 20061101 | 22.40217 | 319.09393 | 42.23113 | 11.54565 | 0.2224467 | 2.7938033 | 9 | 1 | 4 days | 0.66 | | | MPC | | 2006 $VK_3$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VL_3$ | 16.6 | 0.15 | 20061101 | 112.09794 | 56.86937 | 217.74782 | 15.89665 | 0.0988440 | 2.7268533 | 9 | 1 | 4 days | 0.25 | | | MPC | 2006 $VL_3$ |
| 2006 $VO_3$ | 16.3 | 0.15 | 20061101 | 295.34525 | 83.60500 | 44.16191 | 2.76906 | 0.2286756 | 3.0018855 | 20 | 1 | 26 days | 0.24 | | | MPC | 2006 $VO_3$ |
| 2006 $VP_3$ | 17.0 | 0.15 | 20061101 | 16.28455 | 324.02101 | 42.87689 | 15.43310 | 0.2847242 | 3.1796768 | 24 | 1 | 31 days | 0.24 | | | MPC | 2006 $VP_3$ |
| 2006 $VR_3$ | 14.9 | 0.15 | 20061101 | 207.61155 | 146.05716 | 44.38058 | 12.98078 | 0.0524325 | 3.2032467 | 18 | 1 | 18 days | 0.39 | | | MPC | 2006 $VR_3$ |
| 2006 $VS_3$ | 18.1 | 0.15 | 20061101 | 37.13975 | 293.72442 | 51.48106 | 5.40003 | 0.1760458 | 2.3414194 | 9 | 1 | 4 days | 0.86 | | | MPC | 2006 $VS_3$ |
| 2006 $VW_3$ | 17.6 | 0.15 | 20061101 | 55.30049 | 353.37858 | 338.77962 | 2.06658 | 0.1903793 | 2.4216119 | 13 | 1 | 7 days | 0.52 | | | MPC | 2006 $VW_3$ |
| 2006 $VZ_3$ | 19.2 | 0.15 | 20061101 | 27.81671 | 111.21931 | 231.49701 | 25.58317 | 0.4069656 | 2.5146362 | 14 | 1 | 5 days | 0.18 | | | MPC | 2006 $VZ_3$ |
| 2006 $VA_4$ | 15.8 | 0.15 | 20061101 | 267.90614 | 275.46849 | 237.02463 | 13.44079 | 0.0917383 | 2.7024437 | 25 | 1 | 32 days | 0.32 | | | MPC | 2006 $VA_4$ |
| 2006 $VB_4$ | 16.0 | 0.15 | 20061101 | 349.35947 | 83.23371 | 339.17900 | 0.95799 | 0.0474398 | 2.8703716 | 37 | 1 | 38 days | 0.50 | | | MPC | 2006 $VB_4$ |
| 2006 $VD_4$ | 18.3 | 0.15 | 20060922 | 3.67235 | 136.53405 | 244.68469 | 1.80222 | 0.2360777 | 2.2154470 | 43 | 1 | 61 days | 0.39 | M-v | 4 | MPC | 2006 $VD_4$ |
| 2006 $VE_4$ | 16.0 | 0.15 | 20061101 | 356.75377 | 17.87154 | 34.63943 | 5.22378 | 0.0526340 | 2.7163115 | 24 | 1 | 24 days | 0.26 | | | MPC | 2006 $VE_4$ |
| 2006 $VG_4$ | 17.1 | 0.15 | 20061101 | 245.85216 | 240.92160 | 290.25554 | 1.43169 | 0.0815928 | 2.1830837 | 19 | 1 | 24 days | 0.56 | | | MPC | 2006 $VG_4$ |
| 2006 $VH_4$ | 17.0 | 0.15 | 20061101 | 15.62648 | 14.66599 | 7.30493 | 1.54741 | 0.2371232 | 2.5906329 | 38 | 1 | 34 days | 0.49 | | | MPC | 2006 $VH_4$ |
| 2006 $VJ_4$ | 17.2 | 0.15 | 20061101 | 336.01570 | 188.70793 | 250.67956 | 3.26552 | 0.1648054 | 2.3591374 | 36 | 1 | 37 days | 0.63 | | | MPC | 2006 $VJ_4$ |
| 2006 $VK_4$ | 17.6 | 0.15 | 20061101 | 345.19206 | 127.91326 | 299.57442 | 1.37708 | 0.2032695 | 2.4560474 | 26 | 1 | 21 days | 0.34 | | | MPC | 2006 $VK_4$ |
| 2006 $VM_4$ | 17.7 | 0.15 | 20061101 | 48.19695 | 288.38412 | 36.23077 | 5.89191 | 0.3060734 | 2.2812037 | 13 | 1 | 7 days | 0.51 | | | MPC | 2006 $VM_4$ |
| 2006 $VO_4$ | 14.9 | 0.15 | 20061101 | 1.35647 | 168.93991 | 242.43784 | 9.03910 | 0.1453969 | 3.4291182 | 45 | 1 | 24 days | 0.57 | | E | MPC | 2006 $VO_4$ |
| 2006 $VP_4$ | 15.4 | 0.15 | 20061101 | 342.02602 | 201.58492 | 234.74065 | 27.53984 | 0.1494710 | 3.1269024 | 33 | 1 | 42 days | 0.45 | | | MPC | 2006 $VP_4$ |
| 2006 $VQ_4$ | 17.2 | 0.15 | 20061012 | 2.23654 | 344.47240 | 48.31322 | 7.49782 | 0.2971376 | 2.3657057 | 47 | 1 | 53 days | 0.37 | | | MPC | 2006 $VQ_4$ |
| 2006 $VR_4$ | 17.7 | 0.15 | 20060922 | 342.60941 | 175.56346 | 248.83917 | 1.46427 | 0.3068790 | 2.6001377 | 79 | 1 | 61 days | 0.58 | M-v | 4 | MPC | 2006 $VR_4$ |
| 2006 $VW_4$ | 18.4 | 0.15 | 20061101 | 40.01073 | 72.82449 | 260.62521 | 1.72815 | 0.1916539 | 2.3781326 | 13 | 1 | 8 days | 0.27 | | | MPC | 2006 $VW_4$ |
| 2006 $VY_4$ | 17.4 | 0.15 | 20061101 | 10.52762 | 151.70802 | 225.32554 | 5.62013 | 0.1433079 | 2.2948208 | 16 | 1 | 9 days | 0.24 | | | MPC | 2006 $VY_4$ |
| 2006 $VZ_4$ | 16.7 | 0.15 | 20061101 | 355.57740 | 180.51934 | 217.06646 | 13.24168 | 0.1937390 | 2.7044589 | 24 | 1 | 35 days | 0.43 | | | MPC | 2006 $VZ_4$ |
| 2006 $VC_5$ | | | 20061101 | 336.77770 | 91.94258 | 292.85329 | 3.84320 | 0.0484408 | 2.7620285 | 18 | 1 | 11 days | 0.26 | | | MPC | 2006 $VC_5$ |
| 2006 $VF_5$ | 16.8 | 0.15 | 20061101 | 334.72634 | 113.86061 | 315.97086 | 0.86868 | 0.1444296 | 2.9449961 | 18 | 1 | 17 days | 0.45 | | | MPC | 2006 $VF_5$ |
| 2006 $VJ_5$ | 17.8 | 0.15 | 20061101 | 322.74720 | 33.76807 | 58.27679 | 1.83581 | 0.2241547 | 2.6903812 | 11 | 1 | 4 days | 0.23 | | | MPC | 2006 $VJ_5$ |
| 2006 $VK_5$ | 17.4 | 0.15 | 20061101 | 54.29428 | 142.97971 | 183.74897 | 1.38716 | 0.1364012 | 2.8140499 | 11 | 1 | 4 days | 0.36 | | | MPC | 2006 $VK_5$ |
| 2006 $VL_5$ | 18.9 | 0.15 | 20061101 | 19.88452 | 308.29190 | 54.44959 | 3.98509 | 0.2488684 | 2.2319603 | 14 | 1 | 17 days | 0.54 | | | MPC | 2006 $VL_5$ |
| 2006 $VO_5$ | 16.2 | 0.15 | 20061101 | 204.68204 | 11.49184 | 200.77498 | 0.80898 | 0.1002656 | 2.8297923 | 10 | 1 | 4 days | 0.21 | | | MPC | 2006 $VO_5$ |
| 2006 $VP_5$ | 16.8 | 0.15 | 20061101 | 298.40531 | 261.17376 | 232.99739 | 8.53084 | 0.1815818 | 3.1877754 | 17 | 1 | 37 days | 0.30 | | | MPC | 2006 $VP_5$ |
| 2006 $VQ_5$ | 16.1 | 0.15 | 20061101 | 96.62101 | 99.76119 | 201.50622 | 0.92640 | 0.1270375 | 2.6152849 | 30 | 1 | 17 days | 0.61 | | | MPC | 2006 $VQ_5$ |
| 2006 $VR_5$ | 17.0 | 0.15 | 20061101 | 43.47415 | 117.18142 | 227.99690 | 3.32654 | 0.2254733 | 2.5519321 | 52 | 1 | 41 days | 0.40 | | | MPC | 2006 $VR_5$ |
| 2006 $VT_5$ | 15.5 | 0.15 | 20061101 | 248.09182 | 108.67356 | 61.04324 | 3.62631 | 0.0475538 | 3.0299392 | 17 | 1 | 7 days | 0.85 | | | MPC | 2006 $VT_5$ |
| 2006 $VU_5$ | 17.4 | 0.15 | 20061101 | 331.01905 | 24.24711 | 62.57154 | 3.75593 | 0.1139072 | 2.5403244 | 10 | 1 | 4 days | 0.18 | | | MPC | 2006 $VU_5$ |
| 2006 $VV_5$ | 18.0 | 0.15 | 20061101 | 15.67037 | 314.89453 | 69.98573 | 2.33479 | 0.2011096 | 2.3406925 | 30 | 1 | 17 days | 0.47 | | | MPC | 2006 $VV_5$ |
| 2006 $VX_5$ | 16.3 | 0.15 | 20061101 | 269.20278 | 89.84418 | 59.09904 | 3.94795 | 0.0482096 | 2.8840425 | 10 | 1 | 4 days | 0.26 | | | MPC | 2006 $VX_5$ |
| 2006 $VY_5$ | 17.8 | 0.15 | 20061101 | 6.16649 | 342.88853 | 56.29804 | 3.41797 | 0.2144363 | 2.4355047 | 39 | 1 | 17 days | 0.57 | | | MPC | 2006 $VY_5$ |
| 2006 $VZ_5$ | 17.3 | 0.15 | 20061101 | 342.39337 | 23.73860 | 56.59115 | 5.37998 | 0.2693856 | 2.6286641 | 38 | 1 | 18 days | 0.46 | | | MPC | 2006 $VZ_5$ |
| 2006 $VA_6$ | 16.1 | 0.15 | 20061101 | 339.25220 | 13.23829 | 63.13865 | 5.14331 | 0.0820315 | 2.8056064 | 32 | 1 | 18 days | 0.45 | | | MPC | 2006 $VA_6$ |
| 2006 $VB_6$ | 17.1 | 0.15 | 20061101 | 26.10828 | 292.59068 | 74.69667 | 1.92009 | 0.2421551 | 2.5442149 | 53 | 1 | 18 days | 0.57 | | | MPC | 2006 $VB_6$ |
| 2006 $VC_6$ | 17.3 | 0.15 | 20061101 | 4.83049 | 348.04992 | 53.16442 | 15.93899 | 0.2307570 | 2.4447566 | 28 | 1 | 12 days | 0.45 | | | MPC | 2006 $VC_6$ |
| 2006 $VF_6$ | 16.7 | 0.15 | 20060922 | 21.66679 | 309.42687 | 59.48539 | 4.29299 | 0.1336530 | 2.3358244 | 47 | 1 | 60 days | 0.59 | M-v | 5 | MPC | 2006 $VF_6$ |
| 2006 $VJ_6$ | 18.0 | 0.15 | 20061101 | 35.67725 | 258.05651 | 96.71415 | 1.48324 | 0.2243705 | 2.4787225 | 20 | 1 | 46 days | 0.41 | | | MPC | 2006 $VJ_6$ |
| 2006 $VL_6$ | 16.9 | 0.15 | 20061101 | 258.49839 | 290.61120 | 228.06212 | 12.55083 | 0.0450601 | 2.8614686 | 13 | 1 | 4 days | 0.26 | | | MPC | 2006 $VL_6$ |
| 2006 $VM_6$ | 15.2 | 0.15 | 20061101 | 306.02708 | 244.43065 | 227.09577 | 10.78963 | 0.0518003 | 3.1833174 | 31 | 1 | 9 days | 0.55 | | | MPC | 2006 $VM_6$ |
| 2006 $VN_6$ | 17.7 | 0.15 | 20061101 | 41.00303 | 296.30383 | 68.61528 | 5.11585 | 0.0700964 | 2.7823771 | 14 | 1 | 17 days | 0.36 | | | MPC | 2006 $VN_6$ |
| 2006 $VO_6$ | 16.1 | 0.15 | 20061101 | 305.54919 | 46.19733 | 62.88241 | 8.65521 | 0.0216301 | 3.1158829 | 18 | 1 | 17 days | 0.24 | | | MPC | 2006 $VO_6$ |
| 2006 $VP_6$ | 15.3 | 0.15 | 20061101 | 59.87920 | 269.53179 | 63.23304 | 7.36033 | 0.1817899 | 3.0171470 | 43 | 1 | 39 days | 0.58 | | | MPC | 2006 $VP_6$ |
| 2006 $VQ_6$ | 15.3 | 0.15 | 20061101 | 356.10498 | 356.75836 | 61.22095 | 13.33208 | 0.1361880 | 3.0873346 | 31 | 1 | 17 days | 0.49 | | | MPC | 2006 $VQ_6$ |
| 2006 $VR_6$ | 17.4 | 0.15 | 20061101 | 23.52851 | 119.44892 | 252.16262 | 4.88708 | 0.2543266 | 2.5337871 | 31 | 1 | 12 days | 0.53 | | | MPC | 2006 $VR_6$ |
| 2006 $VT_6$ | 16.2 | 0.15 | 20061101 | 12.22591 | 149.52564 | 244.76041 | 6.13747 | 0.2459178 | 3.0473727 | 26 | 1 | 12 days | 0.46 | | | MPC | 2006 $VT_6$ |
| 2006 $VU_6$ | 16.8 | 0.15 | 20061101 | 358.85074 | 130.02818 | 284.14523 | 1.29450 | 0.2042332 | 2.3354534 | 24 | 1 | 17 days | 0.67 | | | MPC | 2006 $VU_6$ |
| 2006 $VX_6$ | 17.4 | 0.15 | 20061101 | 359.70594 | 177.75009 | 234.83713 | 14.39210 | 0.2299779 | 2.5387830 | 35 | 1 | 35 days | 0.33 | | | MPC | 2006 $VX_6$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VZ_6$ | 16.8 | 0.15 | 20061101 | 31.00358 | 177.49243 | 194.69115 | 0.22777 | 0.1587916 | 2.5862121 | 22 | 1 | 12 days | 0.78 | | MPC | 2006 $VZ_6$ |
| 2006 $VB_7$ | 16.0 | 0.15 | 20061101 | 15.61991 | 330.74461 | 61.14704 | 1.96993 | 0.1727535 | 3.1022112 | 36 | 1 | 28 days | 0.52 | | MPC | 2006 $VB_7$ |
| 2006 $VC_7$ | 18.1 | 0.15 | 20061101 | 35.83292 | 134.11389 | 233.75629 | 19.94761 | 0.0889363 | 1.9206176 | 40 | 1 | 28 days | 0.40 | | MPC | 2006 $VC_7$ |
| 2006 $VD_7$ | 16.1 | 0.15 | 20061101 | 97.54370 | 106.13316 | 203.80400 | 0.39232 | 0.0771412 | 3.1477803 | 21 | 1 | 28 days | 0.26 | | MPC | 2006 $VD_7$ |
| 2006 $VE_7$ | 16.9 | 0.15 | 20061101 | 52.59577 | 277.72965 | 58.70342 | 2.54845 | 0.2422233 | 3.0823407 | 14 | 1 | 14 days | 0.52 | | MPC | 2006 $VE_7$ |
| 2006 $VG_7$ | 16.4 | 0.15 | 20061101 | 4.24004 | 349.76654 | 58.88961 | 6.79213 | 0.1501112 | 3.0852608 | 24 | 1 | 24 days | 0.20 | | MPC | 2006 $VG_7$ |
| 2006 $VH_7$ | 18.2 | 0.15 | 20061101 | 352.12441 | 189.28029 | 234.11641 | 2.10103 | 0.2162107 | 2.4132751 | 30 | 1 | 28 days | 0.29 | | MPC | 2006 $VH_7$ |
| 2006 $VL_7$ | 16.9 | 0.15 | 20061101 | 23.48179 | 319.68792 | 60.51353 | 5.90033 | 0.1733741 | 2.7070073 | 24 | 1 | 36 days | 0.20 | | MPC | 2006 $VL_7$ |
| 2006 $VM_7$ | 15.9 | 0.15 | 20061101 | 91.01778 | 248.37482 | 62.33719 | 2.06457 | 0.1283911 | 2.9648849 | 24 | 1 | 28 days | 0.25 | | MPC | 2006 $VM_7$ |
| 2006 $VN_7$ | 18.0 | 0.15 | 20061101 | 11.99038 | 162.20520 | 232.43851 | 4.67726 | 0.1583361 | 2.2355368 | 23 | 1 | 17 days | 0.55 | | MPC | 2006 $VN_7$ |
| 2006 $VO_7$ | 17.8 | 0.15 | 20061012 | 17.37629 | 146.58446 | 232.93135 | 4.44871 | 0.1765317 | 2.3650037 | 27 | 1 | 58 days | 0.21 | | MPC | 2006 $VO_7$ |
| 2006 $VP_7$ | 16.3 | 0.15 | 20061101 | 346.12659 | 13.91874 | 61.56362 | 3.86890 | 0.1932251 | 3.1262243 | 30 | 1 | 36 days | 0.41 | | MPC | 2006 $VP_7$ |
| 2006 $VQ_7$ | 18.1 | 0.15 | 20061101 | 340.67353 | 213.87058 | 226.54741 | 1.80754 | 0.1878322 | 2.4110126 | 13 | 1 | 12 days | 0.40 | | MPC | 2006 $VQ_7$ |
| 2006 $VR_7$ | 16.8 | 0.15 | 20061012 | 295.97987 | 78.05386 | 58.27795 | 14.57632 | 0.1990785 | 2.7132201 | 27 | 1 | 50 days | 0.23 | | MPC | 2006 $VR_7$ |
| 2006 $VS_7$ | 15.5 | 0.15 | 20061101 | 46.38604 | 299.31325 | 60.17125 | 10.92733 | 0.1082366 | 2.9864961 | 26 | 1 | 24 days | 0.31 | | MPC | 2006 $VS_7$ |
| 2006 $VU_7$ | 17.5 | 0.15 | 20061101 | 359.70305 | 354.43935 | 59.59248 | 4.28923 | 0.2450802 | 2.9859316 | 27 | 1 | 36 days | 0.39 | | MPC | 2006 $VU_7$ |
| 2006 $VV_7$ | 17.4 | 0.15 | 20061012 | 352.04020 | 356.56207 | 58.50179 | 8.25835 | 0.0669694 | 2.2188361 | 36 | 1 | 50 days | 0.36 | | MPC | 2006 $VV_7$ |
| 2006 $VW_7$ | 15.3 | 0.15 | 20061101 | 30.44236 | 124.54287 | 237.73827 | 12.31275 | 0.2571880 | 3.0768715 | 42 | 1 | 27 days | 0.59 | | MPC | 2006 $VW_7$ |
| 2006 $VZ_7$ | 17.4 | 0.15 | 20060922 | 4.86740 | 164.02918 | 229.07308 | 2.85123 | 0.1541235 | 2.6102055 | 27 | 1 | 61 days | 0.26 | M-v 4 | MPC | 2006 $VZ_7$ |
| 2006 $VA_8$ | 16.2 | 0.15 | 20061101 | 344.80223 | 23.95202 | 54.22418 | 15.07009 | 0.1474855 | 2.7170964 | 57 | 1 | 39 days | 0.52 | | MPC | 2006 $VA_8$ |
| 2006 $VB_8$ | 15.4 | 0.15 | 20061101 | 17.70602 | 336.89367 | 58.63215 | 27.81387 | 0.1555860 | 3.1863484 | 38 | 1 | 39 days | 0.56 | | MPC | 2006 $VB_8$ |
| 2006 $VD_8$ | 16.9 | 0.15 | 20061101 | 17.51675 | 123.06072 | 255.77042 | 7.73093 | 0.0892273 | 2.5939544 | 17 | 1 | 22 days | 0.40 | | MPC | 2006 $VD_8$ |
| 2006 $VE_8$ | 17.3 | 0.15 | 20061101 | 331.07510 | 216.26919 | 248.69880 | 8.61397 | 0.1956487 | 2.7650978 | 16 | 1 | 17 days | 0.27 | | MPC | 2006 $VE_8$ |
| 2006 $VF_8$ | 17.2 | 0.15 | 20061101 | 333.59114 | 275.36991 | 173.01440 | 1.59779 | 0.1048173 | 2.6112161 | 19 | 1 | 12 days | 0.35 | | MPC | 2006 $VF_8$ |
| 2006 $VL_8$ | 16.9 | 0.15 | 20061101 | 7.84511 | 327.51191 | 75.96017 | 5.17296 | 0.1930912 | 2.6856176 | 29 | 1 | 16 days | 0.42 | | MPC | 2006 $VL_8$ |
| 2006 $VN_8$ | 15.6 | 0.15 | 20061101 | 310.92976 | 44.85641 | 70.40002 | 10.16836 | 0.0794021 | 3.1100889 | 31 | 1 | 37 days | 0.51 | | MPC | 2006 $VN_8$ |
| 2006 $VO_8$ | 18.6 | 0.15 | 20061101 | 355.61630 | 226.50271 | 193.39525 | 1.97946 | 0.1610713 | 2.3035611 | 16 | 1 | 16 days | 0.62 | | MPC | 2006 $VO_8$ |
| 2006 $VP_8$ | 17.0 | 0.15 | 20061101 | 5.72098 | 309.40660 | 99.49185 | 2.41538 | 0.1856512 | 3.1148712 | 16 | 1 | 12 days | 0.29 | | MPC | 2006 $VP_8$ |
| 2006 $VQ_8$ | 17.0 | 0.15 | 20061101 | 106.26785 | 186.09039 | 113.79238 | 1.89295 | 0.0985058 | 2.2229593 | 20 | 1 | 16 days | 0.24 | | MPC | 2006 $VQ_8$ |
| 2006 $VR_8$ | 18.8 | 0.15 | 20061101 | 26.91992 | 234.39867 | 140.38084 | 1.65509 | 0.1948538 | 2.3953949 | 22 | 1 | 16 days | 0.31 | | MPC | 2006 $VR_8$ |
| 2006 $VS_8$ | 16.4 | 0.15 | 20061101 | 40.15549 | 276.31899 | 81.86172 | 3.96001 | 0.1970643 | 2.5403823 | 35 | 1 | 16 days | 0.42 | | MPC | 2006 $VS_8$ |
| 2006 $VT_8$ | 15.0 | 0.15 | 20061101 | 306.46067 | 44.16889 | 72.34413 | 10.75063 | 0.0383085 | 3.1192355 | 37 | 1 | 36 days | 0.37 | | MPC | 2006 $VT_8$ |
| 2006 $VV_8$ | 16.3 | 0.15 | 20061101 | 192.98382 | 155.92214 | 71.95484 | 10.76011 | 0.0321444 | 3.1434479 | 14 | 1 | 29 days | 0.31 | | MPC | 2006 $VV_8$ |
| 2006 $VY_8$ | 16.1 | 0.15 | 20061101 | 301.74313 | 71.69667 | 72.30089 | 10.48194 | 0.2416827 | 3.0878167 | 14 | 1 | 7 days | 0.30 | | MPC | 2006 $VY_8$ |
| 2006 $VZ_8$ | 16.5 | 0.15 | 20061101 | 22.99011 | 197.25910 | 187.50337 | 2.87056 | 0.1421635 | 2.6235374 | 28 | 1 | 16 days | 0.45 | | MPC | 2006 $VZ_8$ |
| 2006 $VA_9$ | 17.2 | 0.15 | 20061101 | 341.16931 | 191.04806 | 242.13977 | 5.61450 | 0.2327078 | 2.8545361 | 11 | 1 | 3 days | 0.42 | | MPC | 2006 $VA_9$ |
| 2006 $VB_9$ | 15.5 | 0.15 | 20061101 | 174.47083 | 184.77489 | 43.83382 | 5.56913 | 0.2511613 | 2.4690194 | 10 | 1 | 3 days | 0.42 | | MPC | 2006 $VB_9$ |
| 2006 $VC_9$ | 17.4 | 0.15 | 20061101 | 1.17111 | 357.84397 | 43.66667 | 4.73099 | 0.2441378 | 2.7565964 | 11 | 1 | 3 days | 0.30 | | MPC | 2006 $VC_9$ |
| 2006 $VD_9$ | 16.3 | 0.15 | 20061101 | 37.68795 | 320.95383 | 41.60516 | 3.61063 | 0.0601162 | 2.5931719 | 12 | 1 | 6 days | 0.63 | | MPC | 2006 $VD_9$ |
| 2006 $VE_9$ | 15.8 | 0.15 | 20061101 | 324.62550 | 37.02812 | 54.01978 | 10.96150 | 0.1414459 | 3.0955047 | 16 | 1 | 15 days | 0.67 | | MPC | 2006 $VE_9$ |
| 2006 $VF_9$ | 16.7 | 0.15 | 20061101 | 7.02562 | 197.41347 | 197.18283 | 2.96191 | 0.1843540 | 3.0819910 | 18 | 1 | 20 days | 0.46 | | MPC | 2006 $VF_9$ |
| 2006 $VG_9$ | 16.8 | 0.15 | 20061101 | 5.71667 | 332.55904 | 62.49194 | 6.70947 | 0.2482607 | 3.0501228 | 26 | 1 | 18 days | 0.50 | | MPC | 2006 $VG_9$ |
| 2006 $VH_9$ | 19.6 | 0.15 | 20061101 | 8.31438 | 149.47632 | 240.79943 | 0.91183 | 0.2165440 | 2.1119681 | 12 | 1 | 9 days | 0.35 | | MPC | 2006 $VH_9$ |
| 2006 $VK_9$ | 18.7 | 0.15 | 20061101 | 355.92294 | 19.70143 | 31.10954 | 1.73501 | 0.1883337 | 2.3126621 | 18 | 1 | 8 days | 0.46 | | MPC | 2006 $VK_9$ |
| 2006 $VL_9$ | 17.1 | 0.15 | 20061101 | 12.57199 | 308.94957 | 77.95339 | 3.71144 | 0.1934298 | 2.6936877 | 12 | 1 | 8 days | 0.88 | | MPC | 2006 $VL_9$ |
| 2006 $VM_9$ | 15.9 | 0.15 | 20061101 | 45.70693 | 285.61596 | 62.85517 | 7.37571 | 0.1402013 | 3.1020992 | 18 | 1 | 8 days | 0.61 | | MPC | 2006 $VM_9$ |
| 2006 $VN_9$ | 16.5 | 0.15 | 20061101 | 350.48375 | 21.65844 | 39.07388 | 2.11083 | 0.2219155 | 2.6596212 | 27 | 1 | 24 days | 0.38 | | MPC | 2006 $VN_9$ |
| 2006 $VO_9$ | 17.8 | 0.15 | 20061101 | 355.72579 | 175.53644 | 236.54732 | 2.08940 | 0.2060712 | 2.3693412 | 26 | 1 | 18 days | 0.42 | | MPC | 2006 $VO_9$ |
| 2006 $VP_9$ | 18.6 | 0.15 | 20061101 | 358.41614 | 80.13739 | 328.23110 | 0.40306 | 0.1864082 | 2.3164468 | 13 | 1 | 6 days | 0.73 | | MPC | 2006 $VP_9$ |
| 2006 $VQ_9$ | 17.2 | 0.15 | 20061101 | 355.83809 | 173.97683 | 239.38514 | 3.48287 | 0.2438240 | 2.5806522 | 44 | 1 | 32 days | 0.51 | | MPC | 2006 $VQ_9$ |
| 2006 $VR_9$ | 17.1 | 0.15 | 20061101 | 215.86794 | 147.62934 | 46.16651 | 4.09730 | 0.1163090 | 2.3185153 | 16 | 1 | 16 days | 0.21 | | MPC | 2006 $VR_9$ |
| 2006 $VV_9$ | 17.4 | 0.15 | 20061101 | 156.75832 | 2.49532 | 238.30809 | 4.79744 | 0.1520886 | 2.3181746 | 19 | 1 | 37 days | 0.40 | | MPC | 2006 $VV_9$ |
| 2006 $VW_9$ | 18.5 | 0.15 | 20061101 | 338.57173 | 46.15294 | 27.77961 | 3.08039 | 0.1872453 | 2.5342179 | 12 | 1 | 6 days | 0.20 | | MPC | 2006 $VW_9$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VX_9$ | 18.3 | 0.15 | 20061101 | 12.45134 | 157.43857 | 228.74869 | 22.04028 | 0.1436273 | 2.8883236 | 16 | 1 | 4 days | 0.63 | | | MPC | 2006 $VX_9$ |
| 2006 $VY_9$ | 17.7 | 0.15 | 20061101 | 53.83340 | 71.13864 | 249.97923 | 2.61520 | 0.2605109 | 2.6852924 | 16 | 1 | 6 days | 0.49 | | | MPC | 2006 $VY_9$ |
| 2006 $VA_{10}$ | 16.5 | 0.15 | 20061101 | 59.60378 | 91.34674 | 233.30426 | 7.74560 | 0.1785290 | 2.9308259 | 22 | 1 | 45 days | 0.22 | | | MPC | 2006 $VA_{10}$ |
| 2006 $VE_{10}$ | 16.5 | 0.15 | 20061101 | 79.06566 | 270.59161 | 53.33784 | 4.23085 | 0.0222716 | 2.7180308 | 18 | 1 | 12 days | 0.82 | | | MPC | 2006 $VE_{10}$ |
| 2006 $VF_{10}$ | 19.2 | 0.15 | 20061101 | 358.30364 | 344.05226 | 62.23465 | 1.06172 | 0.2343275 | 2.2077901 | 18 | 1 | 4 days | 0.84 | | | MPC | 2006 $VF_{10}$ |
| 2006 $VG_{10}$ | 19.2 | 0.15 | 20061101 | 359.57279 | 177.06750 | 227.30973 | 2.92674 | 0.2084794 | 2.1630354 | 8 | 1 | 8 days | 0.55 | | | MPC | 2006 $VG_{10}$ |
| 2006 $VH_{10}$ | 17.8 | 0.15 | 20061101 | 24.25801 | 141.17863 | 227.43998 | 4.12212 | 0.1976482 | 2.3486290 | 20 | 1 | 30 days | 0.41 | | | MPC | 2006 $VH_{10}$ |
| 2006 $VJ_{10}$ | 16.0 | 0.15 | 20061101 | 169.96136 | 5.05526 | 228.67465 | 11.84707 | 0.2935088 | 2.3784128 | 10 | 1 | 10 days | 0.57 | | | MPC | 2006 $VJ_{10}$ |
| 2006 $VK_{10}$ | 15.5 | 0.15 | 20061101 | 186.14711 | 355.82945 | 229.58481 | 16.19570 | 0.1179918 | 2.9455717 | 11 | 1 | 3 days | 0.40 | | | MPC | 2006 $VK_{10}$ |
| 2006 $VM_{10}$ | 18.2 | 0.15 | 20061101 | 170.27600 | 20.77211 | 215.99287 | 3.07728 | 0.1244479 | 2.2075686 | 11 | 1 | 10 days | 0.38 | | | MPC | 2006 $VM_{10}$ |
| 2006 $VN_{10}$ | 18.1 | 0.15 | 20061101 | 351.07986 | 352.75056 | 66.57930 | 2.95631 | 0.2066253 | 2.2628062 | 37 | 1 | 38 days | 0.74 | | | MPC | 2006 $VN_{10}$ |
| 2006 $VP_{10}$ | 16.5 | 0.15 | 20061101 | 6.14415 | 337.77040 | 60.51334 | 14.80294 | 0.2089248 | 3.0773815 | 16 | 1 | 16 days | 0.41 | | | MPC | 2006 $VP_{10}$ |
| 2006 $VQ_{10}$ | 16.9 | 0.15 | 20061101 | 7.78320 | 351.02301 | 47.20962 | 3.04881 | 0.1152386 | 2.5995157 | 19 | 1 | 6 days | 0.41 | | | MPC | 2006 $VQ_{10}$ |
| 2006 $VR_{10}$ | 17.1 | 0.15 | 20061101 | 33.27486 | 124.08735 | 232.65096 | 12.34562 | 0.2244616 | 2.7136188 | 35 | 1 | 27 days | 0.48 | | | MPC | 2006 $VR_{10}$ |
| 2006 $VS_{10}$ | 16.8 | 0.15 | 20061101 | 54.24720 | 92.32303 | 232.03849 | 10.72827 | 0.2755528 | 2.8514257 | 16 | 1 | 10 days | 0.83 | | | MPC | 2006 $VS_{10}$ |
| 2006 $VU_{10}$ | 16.7 | 0.15 | 20061101 | 33.13928 | 128.10811 | 234.14663 | 4.55210 | 0.1784756 | 2.6080650 | 40 | 1 | 37 days | 0.46 | | | MPC | 2006 $VU_{10}$ |
| 2006 $VV_{10}$ | 17.3 | 0.15 | 20061101 | 13.47894 | 158.75562 | 229.39785 | 13.11471 | 0.2015083 | 2.7120167 | 27 | 1 | 17 days | 0.49 | | | MPC | 2006 $VV_{10}$ |
| 2006 $VW_{10}$ | 16.3 | 0.15 | 20061101 | 347.83622 | 198.84424 | 230.18946 | 17.32911 | 0.1944834 | 3.0703652 | 15 | 1 | 10 days | 0.73 | | | MPC | 2006 $VW_{10}$ |
| 2006 $VX_{10}$ | 16.2 | 0.15 | 20061101 | 303.67434 | 47.95290 | 65.30364 | 4.84142 | 0.0553169 | 2.8091650 | 30 | 1 | 30 days | 0.55 | | | MPC | 2006 $VX_{10}$ |
| 2006 $VY_{10}$ | 18.4 | 0.15 | 20061101 | 1.70660 | 175.31812 | 227.82214 | 2.05193 | 0.2454743 | 2.4934008 | 18 | 1 | 10 days | 0.51 | | | MPC | 2006 $VY_{10}$ |
| 2006 $VZ_{10}$ | 16.5 | 0.15 | 20061101 | 44.78305 | 310.14740 | 52.56121 | 10.12627 | 0.0325264 | 3.1429536 | 14 | 1 | 13 days | 0.21 | | | MPC | 2006 $VZ_{10}$ |
| 2006 $VA_{11}$ | 16.7 | 0.15 | 20061101 | 183.05921 | 354.28952 | 234.01530 | 8.71404 | 0.2236198 | 2.3631616 | 11 | 1 | 3 days | 0.41 | | | MPC | 2006 $VA_{11}$ |
| 2006 $VC_{11}$ | 18.1 | 0.15 | 20061101 | 67.22205 | 272.39196 | 47.47682 | 4.41912 | 0.1880561 | 2.2538842 | 15 | 1 | 5 days | 0.65 | | | MPC | 2006 $VC_{11}$ |
| 2006 $VE_{11}$ | 16.5 | 0.15 | 20061101 | 336.66356 | 16.83284 | 59.46498 | 5.28421 | 0.0414816 | 2.7856702 | 26 | 1 | 46 days | 0.44 | | | MPC | 2006 $VE_{11}$ |
| 2006 $VF_{11}$ | 16.4 | 0.15 | 20061101 | 40.17288 | 131.20585 | 232.42573 | 8.04709 | 0.0421469 | 3.1679762 | 15 | 1 | 10 days | 0.30 | | | MPC | 2006 $VF_{11}$ |
| 2006 $VG_{11}$ | 18.1 | 0.15 | 20061101 | 321.97654 | 220.86692 | 235.11621 | 1.31550 | 0.1500900 | 2.4831216 | 30 | 1 | 20 days | 0.29 | | | MPC | 2006 $VG_{11}$ |
| 2006 $VJ_{11}$ | 16.6 | 0.15 | 20061101 | 31.31112 | 143.63946 | 228.50898 | 6.06557 | 0.0541743 | 3.0048180 | 15 | 1 | 10 days | 0.55 | | | MPC | 2006 $VJ_{11}$ |
| 2006 $VM_{11}$ | 15.8 | 0.15 | 20061101 | 26.70587 | 341.33250 | 27.68981 | 0.43175 | 0.1752478 | 3.2223892 | 38 | 1 | 38 days | 0.44 | | | MPC | 2006 $VM_{11}$ |
| 2006 $VP_{11}$ | 16.3 | 0.15 | 20061101 | 139.39412 | 221.46896 | 46.27777 | 2.62656 | 0.0240421 | 2.9086991 | 19 | 1 | 25 days | 0.27 | | | MPC | 2006 $VP_{11}$ |
| 2006 $VR_{11}$ | 18.3 | 0.15 | 20061101 | 0.38671 | 162.74789 | 241.24951 | 2.30693 | 0.2036262 | 2.4323343 | 15 | 1 | 9 days | 0.61 | | | MPC | 2006 $VR_{11}$ |
| 2006 $VC_{12}$ | 16.7 | 0.15 | 20061101 | 13.94544 | 170.70937 | 220.17100 | 5.63254 | 0.2120967 | 2.3247034 | 31 | 1 | 37 days | 0.54 | | | MPC | 2006 $VC_{12}$ |
| 2006 $VD_{12}$ | 16.9 | 0.15 | 20061101 | 353.05100 | 336.55516 | 87.31634 | 3.25741 | 0.1894510 | 2.4291272 | 47 | 1 | 25 days | 0.47 | | | MPC | 2006 $VD_{12}$ |
| 2006 $VF_{12}$ | 16.9 | 0.15 | 20061101 | 38.06883 | 149.36084 | 227.60077 | 7.30982 | 0.0494985 | 2.8621370 | 17 | 1 | 16 days | 0.24 | | | MPC | 2006 $VF_{12}$ |
| 2006 $VJ_{12}$ | 17.8 | 0.15 | 20061101 | 4.27545 | 208.45898 | 198.59168 | 2.39525 | 0.1950967 | 2.2985346 | 16 | 1 | 16 days | 0.63 | | | MPC | 2006 $VJ_{12}$ |
| 2006 $VN_{12}$ | 16.1 | 0.15 | 20061101 | 349.43914 | 336.67376 | 99.97618 | 2.77098 | 0.0839843 | 2.6466085 | 33 | 1 | 13 days | 0.55 | | | MPC | 2006 $VN_{12}$ |
| 2006 $VO_{12}$ | 16.4 | 0.15 | 20061101 | 15.03026 | 78.57620 | 276.44707 | 26.28795 | 0.3690146 | 2.4223796 | 13 | 1 | 3 days | 0.34 | | | MPC | 2006 $VO_{12}$ |
| 2006 $VQ_{12}$ | 15.5 | 0.15 | 20061101 | 284.76557 | 218.18041 | 277.78906 | 24.61776 | 0.0910930 | 2.0520627 | 13 | 1 | 3 days | 0.44 | | | MPC | 2006 $VQ_{12}$ |
| 2006 $VR_{12}$ | 14.6 | 0.15 | 20061101 | 13.27511 | 97.08691 | 296.26460 | 25.14232 | 0.2506254 | 3.1963375 | 13 | 1 | 3 days | 0.30 | | | MPC | 2006 $VR_{12}$ |
| 2006 $VT_{12}$ | 17.8 | 0.15 | 20061101 | 10.08018 | 319.23353 | 73.84695 | 7.15301 | 0.1194133 | 2.2553512 | 26 | 1 | 11 days | 0.80 | | | MPC | 2006 $VT_{12}$ |
| 2006 $VU_{12}$ | 16.2 | 0.15 | 20061101 | 10.51716 | 319.24509 | 79.77773 | 13.48519 | 0.1812297 | 2.6520364 | 39 | 1 | 13 days | 0.50 | | | MPC | 2006 $VU_{12}$ |
| 2006 $VV_{12}$ | 15.5 | 0.15 | 20061101 | 44.33083 | 5.03449 | 350.34120 | 9.04029 | 0.0931415 | 3.0519496 | 15 | 1 | 8 days | 0.50 | | | MPC | 2006 $VV_{12}$ |
| 2006 $VW_{12}$ | 15.0 | 0.15 | 20061101 | 168.11197 | 10.75862 | 326.85977 | 23.68746 | 0.1324850 | 2.3484402 | 14 | 1 | 1 days | 0.43 | | E | MPC | 2006 $VW_{12}$ |
| 2006 $VX_{12}$ | 17.6 | 0.15 | 20061101 | 291.72094 | 64.47372 | 70.52624 | 23.99552 | 0.1764973 | 1.9331075 | 31 | 1 | 1 days | 0.84 | | | MPC | 2006 $VX_{12}$ |
| 2006 $VY_{12}$ | 18.1 | 0.15 | 20061101 | 31.81198 | 296.37584 | 64.36927 | 25.45424 | 0.1692410 | 1.9015189 | 33 | 1 | 31 days | 0.59 | | | MPC | 2006 $VY_{12}$ |
| 2006 $VB_{13}$ | 15.8 | 0.15 | 20061101 | 3.27217 | 119.09228 | 266.97882 | 23.80224 | 0.3417348 | 3.2780432 | 17 | 1 | 14 days | 0.60 | | | MPC | 2006 $VB_{13}$ |
| 2006 $VD_{13}$ | 18.9 | 0.15 | 20060922 | 313.55171 | 162.57007 | 314.15504 | 11.69304 | 0.4826962 | 1.9472068 | 61 | 1 | 19 days | 0.41 | M-v | 6 | MPC | 2006 $VD_{13}$ |
| 2006 $VE_{13}$ | 26.6 | 0.15 | 20060922 | 354.64125 | 305.41352 | 52.73897 | 3.79049 | 0.5337167 | 1.8642628 | 26 | 1 | 4 days | 0.45 | M-v | 7 | MPC | 2006 $VE_{13}$ |
| 2006 $VF_{13}$ | 23.2 | 0.15 | 20060922 | 335.33777 | 161.26185 | 235.58477 | 24.45175 | 0.2514073 | 1.3230559 | 11 | 1 | 5 days | 0.45 | M-v | 8 | MPC | 2006 $VF_{13}$ |
| 2006 $VG_{13}$ | 21.4 | 0.15 | 20060922 | 136.47085 | 115.00332 | 96.89388 | 5.77989 | 0.3002945 | 0.8191509 | 22 | 1 | 12 days | 0.43 | M-v | 9 | MPC | 2006 $VG_{13}$ |
| 2006 $VJ_{13}$ | 17.7 | 0.15 | 20061101 | 27.03839 | 312.16729 | 57.01972 | 7.06628 | 0.2314814 | 2.3204126 | 21 | 1 | 21 days | 0.38 | | | MPC | 2006 $VJ_{13}$ |
| 2006 $VN_{13}$ | 16.7 | 0.15 | 20061121 | 13.93776 | 142.00779 | 249.27010 | 22.87337 | 0.2976134 | 2.3789688 | 27 | 1 | 18 days | 0.43 | | | MPC | 2006 $VN_{13}$ |
| 2006 $VO_{13}$ | 17.4 | 0.15 | 20061012 | 46.31188 | 281.69517 | 46.05669 | 5.79316 | 0.3272909 | 2.1288798 | 41 | 1 | 57 days | 0.57 | | | MPC | 2006 $VO_{13}$ |
| 2006 $VP_{13}$ | 23.6 | 0.15 | 20060922 | 277.83724 | 234.36492 | 231.07038 | 10.99898 | 0.1413782 | 1.1758454 | 20 | 1 | 12 days | 0.33 | M-v | 7 | MPC | 2006 $VP_{13}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VQ_{13}$ | 20.1 | 0.15 | 20060922 | 9.59325 | 73.76616 | 233.79556 | 16.69467 | 0.4458223 | 1.1000920 | 108 | 1 | 20 days | 0.47 | M-v | 7 | MPC | 2006 $VQ_{13}$ |
| 2006 $VR_{13}$ | 16.2 | 0.15 | 20061101 | 8.64336 | 52.44818 | 344.92065 | 8.31900 | 0.0845697 | 3.1007693 | 15 | 1 | 15 days | 0.35 | | | MPC | 2006 $VR_{13}$ |
| 2006 $VS_{13}$ | 17.1 | 0.15 | 20061101 | 358.09774 | 156.79514 | 248.99674 | 2.77287 | 0.1312784 | 2.7922700 | 14 | 1 | 6 days | 0.32 | | | MPC | 2006 $VS_{13}$ |
| 2006 $VT_{13}$ | 20.8 | 0.15 | 20060922 | 355.23323 | 40.43280 | 324.61579 | 2.21577 | 0.6277108 | 2.5576902 | 136 | 1 | 12 days | 0.46 | M-v | 7 | MPC | 2006 $VT_{13}$ |
| 2006 $VU_{13}$ | 17.7 | 0.15 | 20061101 | 354.33356 | 173.83268 | 241.49703 | 17.66319 | 0.1014659 | 1.9610717 | 31 | 1 | 9 days | 0.38 | | | MPC | 2006 $VU_{13}$ |
| 2006 $VX_{13}$ | 16.7 | 0.15 | 20061121 | 63.20964 | 276.08414 | 74.71405 | 23.66730 | 0.1132056 | 1.9124608 | 22 | 1 | 15 days | 0.47 | | | MPC | 2006 $VX_{13}$ |
| 2006 $VY_{13}$ | 17.3 | 0.15 | 20060922 | 338.66247 | 16.56560 | 140.27135 | 4.67819 | 0.5512737 | 2.6769832 | 33 | 1 | 13 days | 0.57 | M-v | 7 | MPC | 2006 $VY_{13}$ |
| 2006 $VA_{14}$ | 16.9 | 0.15 | 20060922 | 341.25958 | 24.99371 | 66.75373 | 41.44604 | 0.4733053 | 2.7330368 | 46 | 1 | 3 days | 0.31 | M-v | 8 | MPC | 2006 $VA_{14}$ |
| 2006 $VB_{14}$ | 18.8 | 0.15 | 20060922 | 108.94691 | 346.42355 | 258.78258 | 31.04662 | 0.4213095 | 0.7668985 | 77 | 1 | 18 days | 0.60 | M-v | 8 | MPC | 2006 $VB_{14}$ |
| 2006 $VF_{14}$ | 15.1 | 0.15 | 20061121 | 141.03056 | 318.22180 | 310.09418 | 8.38131 | 0.0285474 | 3.0380324 | 15 | 1 | 14 days | 0.53 | | | MPC | 2006 $VF_{14}$ |
| 2006 $VG_{14}$ | 15.4 | 0.15 | 20061101 | 42.55810 | 20.48069 | 342.74336 | 8.93774 | 0.0289729 | 3.1312008 | 18 | 1 | 6 days | 0.69 | | | MPC | 2006 $VG_{14}$ |
| 2006 $VH_{14}$ | 16.5 | 0.15 | 20061101 | 23.91901 | 58.12640 | 314.70198 | 1.12184 | 0.1243389 | 2.7643599 | 30 | 1 | 8 days | 0.91 | | | MPC | 2006 $VH_{14}$ |
| 2006 $VJ_{14}$ | 17.4 | 0.15 | 20061101 | 37.33456 | 74.96525 | 284.53831 | 1.22017 | 0.0867592 | 2.5378349 | 20 | 1 | 28 days | 0.38 | | | MPC | 2006 $VJ_{14}$ |
| 2006 $VK_{14}$ | 15.7 | 0.15 | 20061101 | 130.03809 | 168.96160 | 93.62912 | 4.03654 | 0.1825308 | 2.5882145 | 18 | 1 | 6 days | 0.61 | | | MPC | 2006 $VK_{14}$ |
| 2006 $VL_{14}$ | 16.8 | 0.15 | 20061101 | 10.51520 | 100.55011 | 271.91978 | 22.51949 | 0.2714395 | 2.3332155 | 12 | 1 | 7 days | 0.52 | | | MPC | 2006 $VL_{14}$ |
| 2006 $VM_{14}$ | 18.1 | 0.15 | 20061101 | 22.19319 | 261.93285 | 99.07173 | 1.63142 | 0.2305997 | 2.3020173 | 18 | 1 | 16 days | 0.40 | | | MPC | 2006 $VM_{14}$ |
| 2006 $VN_{14}$ | 17.0 | 0.15 | 20061101 | 331.58846 | 50.77721 | 34.37549 | 9.54999 | 0.1411849 | 2.7575864 | 16 | 1 | 26 days | 0.19 | | | MPC | 2006 $VN_{14}$ |
| 2006 $VP_{14}$ | 17.0 | 0.15 | 20061101 | 23.68730 | 355.21754 | 23.56043 | 5.04287 | 0.1038968 | 2.6663155 | 16 | 1 | 26 days | 0.20 | | | MPC | 2006 $VP_{14}$ |
| 2006 $VQ_{14}$ | 18.0 | 0.15 | 20061101 | 326.55359 | 55.44872 | 40.28288 | 10.47715 | 0.2011672 | 2.3238526 | 20 | 1 | 19 days | 0.35 | | | MPC | 2006 $VQ_{14}$ |
| 2006 $VT_{14}$ | 19.1 | 0.15 | 20061101 | 28.74802 | 119.14959 | 248.44524 | 5.41577 | 0.1525958 | 2.2244136 | 9 | 1 | 7 days | 0.32 | | | MPC | 2006 $VT_{14}$ |
| 2006 $VV_{14}$ | 18.5 | 0.15 | 20061101 | 56.06306 | 5.33967 | 332.07070 | 2.03986 | 0.1308540 | 2.1303206 | 9 | 1 | 7 days | 0.16 | | | MPC | 2006 $VV_{14}$ |
| 2006 $VW_{14}$ | 16.2 | 0.15 | 20061101 | 186.48389 | 284.62053 | 300.25806 | 3.30674 | 0.1219537 | 2.7543045 | 10 | 1 | 7 days | 0.92 | | | MPC | 2006 $VW_{14}$ |
| 2006 $VX_{14}$ | 16.4 | 0.15 | 20061101 | 186.41989 | 192.95333 | 33.00854 | 8.26142 | 0.2197745 | 2.5352793 | 9 | 1 | 7 days | 0.62 | | | MPC | 2006 $VX_{14}$ |
| 2006 $VY_{14}$ | 16.8 | 0.15 | 20061101 | 191.93029 | 177.96294 | 43.44812 | 19.17141 | 0.1444977 | 2.7041711 | 9 | 1 | 7 days | 0.90 | | | MPC | 2006 $VY_{14}$ |
| 2006 $VZ_{14}$ | 17.3 | 0.15 | 20061101 | 319.70476 | 86.61589 | 5.37750 | 3.60571 | 0.0315193 | 2.7558388 | 9 | 1 | 7 days | 0.44 | | | MPC | 2006 $VZ_{14}$ |
| 2006 $VB_{15}$ | 17.2 | 0.15 | 20061101 | 85.81026 | 313.71847 | 3.39858 | 2.64933 | 0.0559969 | 2.6136019 | 12 | 1 | 26 days | 0.17 | | | MPC | 2006 $VB_{15}$ |
| 2006 $VC_{15}$ | 15.8 | 0.15 | 20061101 | 1.00179 | 8.06193 | 40.10446 | 11.24551 | 0.1424849 | 3.0474972 | 31 | 1 | 13 days | 0.66 | | | MPC | 2006 $VC_{15}$ |
| 2006 $VD_{15}$ | 19.2 | 0.15 | 20061101 | 42.43576 | 85.79708 | 258.63166 | 4.69745 | 0.2150982 | 2.1847074 | 12 | 1 | 28 days | 0.16 | | | MPC | 2006 $VD_{15}$ |
| 2006 $VE_{15}$ | 16.4 | 0.15 | 20061101 | 231.10153 | 310.41251 | 238.92883 | 16.64060 | 0.1324526 | 2.6936020 | 10 | 1 | 15 days | 0.25 | | | MPC | 2006 $VE_{15}$ |
| 2006 $VF_{15}$ | 18.8 | 0.15 | 20061101 | 47.68053 | 337.94647 | 3.96019 | 2.67282 | 0.1862846 | 2.2919464 | 12 | 1 | 26 days | 0.18 | | | MPC | 2006 $VF_{15}$ |
| 2006 $VG_{15}$ | 17.2 | 0.15 | 20061101 | 33.41578 | 79.52688 | 270.83382 | 4.02533 | 0.2916981 | 3.0672314 | 12 | 1 | 20 days | 0.34 | | | MPC | 2006 $VG_{15}$ |
| 2006 $VH_{15}$ | 18.2 | 0.15 | 20061101 | 12.70828 | 18.46416 | 9.53396 | 2.55983 | 0.2000656 | 2.4016262 | 13 | 1 | 10 days | 0.52 | | | MPC | 2006 $VH_{15}$ |
| 2006 $VL_{15}$ | 18.2 | 0.15 | 20061101 | 41.81397 | 296.78731 | 41.53200 | 11.61417 | 0.2867943 | 2.5657055 | 13 | 1 | 16 days | 0.30 | | | MPC | 2006 $VL_{15}$ |
| 2006 $VN_{15}$ | 18.5 | 0.15 | 20061101 | 42.42303 | 84.03287 | 257.75399 | 4.07527 | 0.2454470 | 2.3692951 | 9 | 1 | 7 days | 0.15 | | | MPC | 2006 $VN_{15}$ |
| 2006 $VO_{15}$ | 18.1 | 0.15 | 20061101 | 73.63536 | 53.01976 | 262.77692 | 3.57994 | 0.1699961 | 2.2934636 | 9 | 1 | 7 days | 0.18 | | | MPC | 2006 $VO_{15}$ |
| 2006 $VP_{15}$ | 17.8 | 0.15 | 20061101 | 309.51461 | 220.33028 | 255.66317 | 3.99768 | 0.1710546 | 2.3269366 | 16 | 1 | 15 days | 0.18 | | | MPC | 2006 $VP_{15}$ |
| 2006 $VQ_{15}$ | 16.6 | 0.15 | 20061101 | 113.91060 | 273.03189 | 15.05097 | 2.98156 | 0.0808317 | 2.5644833 | 20 | 1 | 26 days | 0.46 | | | MPC | 2006 $VQ_{15}$ |
| 2006 $VR_{15}$ | 18.1 | 0.15 | 20061101 | 345.88715 | 85.62509 | 343.86834 | 2.28066 | 0.1798021 | 2.7698111 | 9 | 1 | 7 days | 0.22 | | | MPC | 2006 $VR_{15}$ |
| 2006 $VS_{15}$ | 17.5 | 0.15 | 20061101 | 190.03448 | 325.75081 | 256.71042 | 4.92995 | 0.1302371 | 2.3851313 | 9 | 1 | 7 days | 0.65 | | | MPC | 2006 $VS_{15}$ |
| 2006 $VU_{15}$ | 16.4 | 0.15 | 20061101 | 85.34718 | 278.88168 | 29.55576 | 5.71830 | 0.1557514 | 3.1652429 | 12 | 1 | 26 days | 0.16 | | | MPC | 2006 $VU_{15}$ |
| 2006 $VW_{15}$ | 16.6 | 0.15 | 20061101 | 338.47134 | 191.45030 | 245.23605 | 9.17271 | 0.1033116 | 2.9736905 | 9 | 1 | 7 days | 0.51 | | | MPC | 2006 $VW_{15}$ |
| 2006 $VX_{15}$ | 17.3 | 0.15 | 20061101 | 290.67347 | 92.22532 | 31.76350 | 6.48639 | 0.0365013 | 2.7249484 | 9 | 1 | 7 days | 0.47 | | | MPC | 2006 $VX_{15}$ |
| 2006 $VY_{15}$ | 18.6 | 0.15 | 20061101 | 318.26652 | 143.46650 | 319.65135 | 1.72205 | 0.1469961 | 2.2954802 | 9 | 1 | 7 days | 0.20 | | | MPC | 2006 $VY_{15}$ |
| 2006 $VZ_{15}$ | 15.2 | 0.15 | 20061101 | 185.85548 | 304.10774 | 281.81713 | 2.36789 | 0.0171479 | 3.1602524 | 13 | 1 | 16 days | 0.20 | | | MPC | 2006 $VZ_{15}$ |
| 2006 $VA_{16}$ | 17.3 | 0.15 | 20061101 | 66.98685 | 295.39331 | 35.29119 | 5.52685 | 0.1147800 | 2.6336565 | 13 | 1 | 16 days | 0.18 | | | MPC | 2006 $VA_{16}$ |
| 2006 $VB_{16}$ | 18.5 | 0.15 | 20061101 | 57.95001 | 304.41268 | 17.71567 | 2.78612 | 0.2598116 | 2.3229052 | 9 | 1 | 7 days | 0.27 | | | MPC | 2006 $VB_{16}$ |
| 2006 $VD_{16}$ | 17.5 | 0.15 | 20061101 | 328.20277 | 180.29253 | 267.86856 | 3.06246 | 0.0911455 | 2.6967272 | 9 | 1 | 7 days | 0.51 | | | MPC | 2006 $VD_{16}$ |
| 2006 $VF_{16}$ | 16.4 | 0.15 | 20061101 | 202.19057 | 296.39458 | 276.62512 | 3.58494 | 0.0842648 | 2.8656885 | 9 | 1 | 7 days | 0.79 | | | MPC | 2006 $VF_{16}$ |
| 2006 $VH_{16}$ | 18.0 | 0.15 | 20061101 | 67.59020 | 291.34251 | 38.84351 | 8.01872 | 0.1106397 | 2.3728708 | 9 | 1 | 7 days | 0.70 | | | MPC | 2006 $VH_{16}$ |
| 2006 $VJ_{16}$ | 15.6 | 0.15 | 20061101 | 189.39673 | 181.53757 | 42.19511 | 10.89144 | 0.0435084 | 3.0238474 | 13 | 1 | 16 days | 0.17 | | | MPC | 2006 $VJ_{16}$ |
| 2006 $VN_{16}$ | 19.6 | 0.15 | 20061101 | 3.45509 | 4.64438 | 36.97257 | 4.02923 | 0.2051191 | 2.3160172 | 9 | 1 | 7 days | 0.29 | | | MPC | 2006 $VN_{16}$ |
| 2006 $VO_{16}$ | 15.9 | 0.15 | 20061101 | 36.54087 | 55.81410 | 297.52875 | 1.78705 | 0.2418766 | 3.9240439 | 20 | 1 | 34 days | 0.28 | | | MPC | 2006 $VO_{16}$ |
| 2006 $VP_{16}$ | 17.2 | 0.15 | 20061101 | 350.54403 | 27.15047 | 36.33187 | 4.66439 | 0.1853675 | 3.0472892 | 9 | 1 | 7 days | 0.86 | | | MPC | 2006 $VP_{16}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VQ_{16}$ | 16.5 | 0.15 | 20061101 | 65.00921 | 291.44503 | 46.69671 | 10.60968 | 0.0701487 | 2.9618514 | 17 | 1 | 24 days | 0.23 | MPC | 2006 $VQ_{16}$ |
| 2006 $VR_{16}$ | 18.0 | 0.15 | 20061012 | 355.07939 | 158.55767 | 250.26975 | 3.57493 | 0.2240844 | 2.6482902 | 27 | 1 | 58 days | 0.36 | MPC | 2006 $VR_{16}$ |
| 2006 $VT_{16}$ | 17.5 | 0.15 | 20061101 | 304.96646 | 205.65999 | 275.59267 | 1.71585 | 0.1605731 | 2.4435127 | 20 | 1 | 34 days | 0.21 | MPC | 2006 $VT_{16}$ |
| 2006 $VU_{16}$ | 16.7 | 0.15 | 20061101 | 353.94095 | 17.28076 | 41.10538 | 3.71264 | 0.1363911 | 3.0146483 | 17 | 1 | 24 days | 0.23 | MPC | 2006 $VU_{16}$ |
| 2006 $VW_{16}$ | 18.1 | 0.15 | 20061101 | 43.57260 | 328.84833 | 17.39900 | 1.55617 | 0.2027422 | 2.3643922 | 16 | 1 | 34 days | 0.21 | MPC | 2006 $VW_{16}$ |
| 2006 $VX_{16}$ | 15.3 | 0.15 | 20061101 | 134.70839 | 228.97409 | 44.42064 | 12.71966 | 0.0227523 | 3.2220055 | 21 | 1 | 24 days | 0.17 | MPC | 2006 $VX_{16}$ |
| 2006 $VY_{16}$ | 16.7 | 0.15 | 20061101 | 298.17592 | 236.34254 | 243.93127 | 8.18929 | 0.0867273 | 2.9852695 | 23 | 1 | 42 days | 0.25 | MPC | 2006 $VY_{16}$ |
| 2006 $VA_{17}$ | 17.0 | 0.15 | 20061101 | 346.39544 | 28.60394 | 38.98706 | 8.72313 | 0.1410611 | 3.1182748 | 9 | 1 | 7 days | 0.78 | MPC | 2006 $VA_{17}$ |
| 2006 $VB_{17}$ | 17.8 | 0.15 | 20061101 | 64.17053 | 273.24993 | 44.20217 | 6.43687 | 0.2312717 | 2.2845776 | 20 | 1 | 34 days | 0.19 | MPC | 2006 $VB_{17}$ |
| 2006 $VC_{17}$ | 16.4 | 0.15 | 20061101 | 183.59557 | 189.62492 | 36.94676 | 4.35312 | 0.1259812 | 2.3735530 | 21 | 1 | 34 days | 0.32 | MPC | 2006 $VC_{17}$ |
| 2006 $VD_{17}$ | 17.5 | 0.15 | 20061101 | 73.53335 | 3.05016 | 322.26537 | 1.02869 | 0.0900869 | 2.5928726 | 9 | 1 | 7 days | 0.18 | MPC | 2006 $VD_{17}$ |
| 2006 $VE_{17}$ | 17.5 | 0.15 | 20061101 | 335.50844 | 35.98697 | 42.58849 | 5.07811 | 0.1020599 | 2.6465065 | 20 | 1 | 34 days | 0.22 | MPC | 2006 $VE_{17}$ |
| 2006 $VF_{17}$ | 18.0 | 0.15 | 20061101 | 52.29063 | 320.45738 | 14.98386 | 1.42741 | 0.1956578 | 2.4126777 | 12 | 1 | 26 days | 0.16 | MPC | 2006 $VF_{17}$ |
| 2006 $VG_{17}$ | 18.8 | 0.15 | 20061101 | 15.27473 | 109.78507 | 274.22985 | 1.42337 | 0.1947533 | 2.3181760 | 13 | 1 | 16 days | 0.19 | MPC | 2006 $VG_{17}$ |
| 2006 $VK_{17}$ | 17.6 | 0.15 | 20061101 | 322.77045 | 208.72482 | 242.18915 | 6.95366 | 0.0600803 | 2.6156374 | 9 | 1 | 7 days | 0.32 | MPC | 2006 $VK_{17}$ |
| 2006 $VL_{17}$ | 17.4 | 0.15 | 20061101 | 207.14937 | 285.44282 | 281.50181 | 1.92627 | 0.1024699 | 2.1964954 | 16 | 1 | 34 days | 0.24 | MPC | 2006 $VL_{17}$ |
| 2006 $VM_{17}$ | 15.5 | 0.15 | 20061101 | 185.07809 | 350.10550 | 237.98932 | 13.88143 | 0.2427371 | 2.9716852 | 9 | 1 | 7 days | 0.28 | MPC | 2006 $VM_{17}$ |
| 2006 $VO_{17}$ | 15.8 | 0.15 | 20061101 | 180.86392 | 347.31494 | 240.97954 | 11.53899 | 0.2260523 | 3.0086665 | 9 | 1 | 7 days | 0.44 | MPC | 2006 $VO_{17}$ |
| 2006 $VP_{17}$ | 17.2 | 0.15 | 20061101 | 44.69311 | 339.92950 | 5.30988 | 2.51791 | 0.1811735 | 2.5824394 | 13 | 1 | 15 days | 0.18 | MPC | 2006 $VP_{17}$ |
| 2006 $VS_{17}$ | 16.0 | 0.15 | 20061101 | 331.71064 | 201.01766 | 240.22213 | 9.50479 | 0.0840723 | 3.0340293 | 13 | 1 | 15 days | 0.15 | MPC | 2006 $VS_{17}$ |
| 2006 $VV_{17}$ | 17.2 | 0.15 | 20061101 | 300.32035 | 116.93935 | 356.52560 | 2.47602 | 0.0555463 | 2.7210231 | 13 | 1 | 15 days | 0.26 | MPC | 2006 $VV_{17}$ |
| 2006 $VW_{17}$ | 18.4 | 0.15 | 20061101 | 343.43244 | 39.83704 | 27.62158 | 3.30970 | 0.1256077 | 2.1965502 | 16 | 1 | 26 days | 0.15 | MPC | 2006 $VW_{17}$ |
| 2006 $VX_{17}$ | 17.5 | 0.15 | 20061101 | 24.87731 | 347.61671 | 26.28442 | 2.92743 | 0.1530623 | 2.6846540 | 23 | 1 | 42 days | 0.18 | MPC | 2006 $VX_{17}$ |
| 2006 $VB_{18}$ | 17.2 | 0.15 | 20061101 | 133.73946 | 24.28208 | 248.16631 | 6.13738 | 0.0308497 | 2.6100487 | 14 | 1 | 15 days | 0.71 | MPC | 2006 $VB_{18}$ |
| 2006 $VG_{18}$ | 18.4 | 0.15 | 20061101 | 359.58532 | 120.03941 | 287.53157 | 1.37313 | 0.1904315 | 2.5569754 | 16 | 1 | 34 days | 0.25 | MPC | 2006 $VG_{18}$ |
| 2006 $VH_{18}$ | 17.3 | 0.15 | 20061101 | 54.92127 | 294.60020 | 33.68466 | 3.14926 | 0.2279398 | 2.5618434 | 13 | 1 | 16 days | 0.21 | MPC | 2006 $VH_{18}$ |
| 2006 $VK_{18}$ | 15.7 | 0.15 | 20061101 | 177.22687 | 345.22662 | 243.98182 | 9.70803 | 0.2072723 | 2.7240041 | 10 | 1 | 7 days | 0.69 | MPC | 2006 $VK_{18}$ |
| 2006 $VL_{18}$ | 17.6 | 0.15 | 20061101 | 358.61922 | 157.34630 | 250.48550 | 5.30300 | 0.1187365 | 2.7530839 | 14 | 1 | 15 days | 0.24 | MPC | 2006 $VL_{18}$ |
| 2006 $VM_{18}$ | 18.8 | 0.15 | 20061101 | 4.87304 | 1.20622 | 34.81122 | 5.85959 | 0.2320873 | 2.2597317 | 22 | 1 | 25 days | 0.23 | MPC | 2006 $VM_{18}$ |
| 2006 $VO_{18}$ | 18.1 | 0.15 | 20061101 | 317.03917 | 71.63443 | 32.15754 | 5.32660 | 0.1666236 | 2.4247643 | 13 | 1 | 15 days | 0.17 | MPC | 2006 $VO_{18}$ |
| 2006 $VR_{18}$ | 18.1 | 0.15 | 20061101 | 63.52424 | 313.43023 | 5.85556 | 2.93799 | 0.2060960 | 2.2552523 | 10 | 1 | 7 days | 0.28 | MPC | 2006 $VR_{18}$ |
| 2006 $VS_{18}$ | 17.1 | 0.15 | 20061101 | 176.09855 | 196.52114 | 33.88141 | 8.05344 | 0.1081759 | 2.4235716 | 10 | 1 | 7 days | 0.91 | MPC | 2006 $VS_{18}$ |
| 2006 $VU_{18}$ | 17.4 | 0.15 | 20061101 | 3.38903 | 142.36462 | 259.96433 | 3.72136 | 0.0668015 | 2.4481892 | 10 | 1 | 7 days | 0.35 | MPC | 2006 $VU_{18}$ |
| 2006 $VV_{18}$ | 17.1 | 0.15 | 20061101 | 301.63780 | 245.89595 | 240.13561 | 8.04723 | 0.1924068 | 2.7608348 | 13 | 1 | 15 days | 0.21 | MPC | 2006 $VV_{18}$ |
| 2006 $VW_{18}$ | 17.8 | 0.15 | 20061101 | 30.31983 | 327.87479 | 33.27630 | 4.99496 | 0.2042245 | 2.7958899 | 13 | 1 | 15 days | 0.23 | MPC | 2006 $VW_{18}$ |
| 2006 $VX_{18}$ | 16.9 | 0.15 | 20061101 | 2.44170 | 162.07547 | 242.64713 | 8.84573 | 0.0410646 | 3.0093605 | 9 | 1 | 7 days | 0.87 | MPC | 2006 $VX_{18}$ |
| 2006 $VY_{18}$ | 18.7 | 0.15 | 20061101 | 26.02307 | 12.39476 | 351.79705 | 2.12454 | 0.2297972 | 2.4363029 | 10 | 1 | 7 days | 0.17 | MPC | 2006 $VY_{18}$ |
| 2006 $VZ_{18}$ | 18.8 | 0.15 | 20061101 | 352.93312 | 47.46677 | 7.06053 | 1.94545 | 0.1346021 | 2.1819966 | 9 | 1 | 7 days | 0.66 | MPC | 2006 $VZ_{18}$ |
| 2006 $VB_{19}$ | 18.1 | 0.15 | 20061101 | 36.02044 | 345.14834 | 5.47390 | 1.84791 | 0.2246088 | 2.4307705 | 16 | 1 | 26 days | 0.19 | MPC | 2006 $VB_{19}$ |
| 2006 $VC_{19}$ | 18.6 | 0.15 | 20061101 | 345.95935 | 157.30304 | 267.94779 | 1.77798 | 0.1721457 | 2.2775977 | 13 | 1 | 15 days | 0.18 | MPC | 2006 $VC_{19}$ |
| 2006 $VD_{19}$ | 17.1 | 0.15 | 20061101 | 83.32820 | 262.32062 | 41.65618 | 11.70062 | 0.1800213 | 2.7259245 | 13 | 1 | 15 days | 0.27 | MPC | 2006 $VD_{19}$ |
| 2006 $VF_{19}$ | 17.8 | 0.15 | 20061101 | 245.19407 | 274.90745 | 258.66877 | 3.58141 | 0.0849442 | 2.2567477 | 12 | 1 | 24 days | 0.23 | MPC | 2006 $VF_{19}$ |
| 2006 $VG_{19}$ | 17.4 | 0.15 | 20061101 | 50.75300 | 103.25526 | 241.93413 | 13.49902 | 0.1477681 | 2.6251653 | 18 | 1 | 28 days | 0.31 | MPC | 2006 $VG_{19}$ |
| 2006 $VH_{19}$ | 15.9 | 0.15 | 20061101 | 71.29711 | 76.46472 | 243.01173 | 13.58585 | 0.1879155 | 3.1540681 | 15 | 1 | 20 days | 0.12 | MPC | 2006 $VH_{19}$ |
| 2006 $VJ_{19}$ | 15.5 | 0.15 | 20061101 | 148.82070 | 224.76364 | 33.71782 | 5.48513 | 0.1110832 | 3.0980357 | 16 | 1 | 20 days | 0.20 | MPC | 2006 $VJ_{19}$ |
| 2006 $VK_{19}$ | 16.4 | 0.15 | 20061101 | 302.19465 | 229.03085 | 244.82127 | 10.42568 | 0.0358602 | 3.2033437 | 12 | 1 | 11 days | 0.21 | MPC | 2006 $VK_{19}$ |
| 2006 $VL_{19}$ | 16.6 | 0.15 | 20061101 | 10.91362 | 117.62642 | 280.09455 | 2.61275 | 0.1038285 | 2.7679327 | 22 | 1 | 20 days | 0.37 | MPC | 2006 $VL_{19}$ |
| 2006 $VM_{19}$ | 16.9 | 0.15 | 20061101 | 320.70683 | 204.04619 | 253.73836 | 5.41925 | 0.0984975 | 2.4348594 | 29 | 1 | 33 days | 0.42 | MPC | 2006 $VM_{19}$ |
| 2006 $VO_{19}$ | 16.3 | 0.15 | 20061101 | 38.48155 | 319.18020 | 46.86821 | 13.41921 | 0.1042493 | 3.1032715 | 19 | 1 | 30 days | 0.13 | MPC | 2006 $VO_{19}$ |
| 2006 $VP_{19}$ | 18.9 | 0.15 | 20061101 | 51.23303 | 302.16931 | 36.98706 | 4.15893 | 0.1863105 | 2.1578850 | 16 | 1 | 20 days | 0.33 | MPC | 2006 $VP_{19}$ |
| 2006 $VQ_{19}$ | 17.1 | 0.15 | 20061101 | 261.30290 | 197.22219 | 323.67245 | 1.84812 | 0.0883814 | 2.6413420 | 15 | 1 | 32 days | 0.20 | MPC | 2006 $VQ_{19}$ |
| 2006 $VS_{19}$ | 17.1 | 0.15 | 20061101 | 1.34268 | 152.22647 | 258.47165 | 5.17348 | 0.0639095 | 2.8392711 | 12 | 1 | 24 days | 0.19 | MPC | 2006 $VS_{19}$ |
| 2006 $VT_{19}$ | 15.8 | 0.15 | 20061101 | 139.28561 | 282.09623 | 348.28852 | 1.66925 | 0.0527683 | 3.0460107 | 25 | 1 | 34 days | 0.22 | MPC | 2006 $VT_{19}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VU_{19}$ | 15.9 | 0.15 | 20061101 | 60.42783 | 288.20808 | 38.69270 | 6.05604 | 0.2289760 | 3.0771479 | 19 | 1 | 22 days | 0.31 | | | MPC | 2006 $VU_{19}$ |
| 2006 $VV_{19}$ | 17.4 | 0.15 | 20061101 | 50.81543 | 86.06864 | 260.75597 | 3.80105 | 0.1429651 | 2.6523941 | 18 | 1 | 32 days | 0.19 | | | MPC | 2006 $VV_{19}$ |
| 2006 $VX_{19}$ | 17.1 | 0.15 | 20061101 | 278.24221 | 108.15865 | 49.86085 | 14.88668 | 0.1987623 | 2.7101906 | 12 | 1 | 11 days | 0.18 | | | MPC | 2006 $VX_{19}$ |
| 2006 $VA_{20}$ | 17.8 | 0.15 | 20060922 | 341.78580 | 169.62046 | 250.70421 | 1.82215 | 0.1859083 | 2.4557003 | 25 | 1 | 61 days | 0.28 | M-v | 3 | MPC | 2006 $VA_{20}$ |
| 2006 $VC_{20}$ | 16.8 | 0.15 | 20061101 | 4.14770 | 166.45133 | 237.73353 | 7.84037 | 0.1588076 | 2.7545329 | 34 | 1 | 41 days | 0.40 | | | MPC | 2006 $VC_{20}$ |
| 2006 $VD_{20}$ | 17.5 | 0.15 | 20061101 | 241.69995 | 285.84994 | 250.55857 | 2.91357 | 0.0780459 | 2.3231390 | 13 | 1 | 15 days | 0.32 | | | MPC | 2006 $VD_{20}$ |
| 2006 $VE_{20}$ | 17.4 | 0.15 | 20061101 | 96.69429 | 49.56644 | 239.41782 | 7.15514 | 0.2375366 | 2.2427594 | 19 | 1 | 37 days | 0.22 | | | MPC | 2006 $VE_{20}$ |
| 2006 $VH_{20}$ | 16.7 | 0.15 | 20061101 | 8.80395 | 147.52271 | 252.28243 | 1.27578 | 0.1353122 | 2.9813162 | 23 | 1 | 37 days | 0.22 | | | MPC | 2006 $VH_{20}$ |
| 2006 $VK_{20}$ | 16.7 | 0.15 | 20061101 | 41.71367 | 126.89354 | 237.81188 | 10.21551 | 0.0727203 | 2.9929932 | 16 | 1 | 18 days | 0.20 | | | MPC | 2006 $VK_{20}$ |
| 2006 $VL_{20}$ | 17.4 | 0.15 | 20061101 | 175.53963 | 186.88024 | 48.42083 | 2.65573 | 0.1032553 | 2.1560758 | 20 | 1 | 18 days | 0.17 | | | MPC | 2006 $VL_{20}$ |
| 2006 $VM_{20}$ | 17.0 | 0.15 | 20061101 | 12.72390 | 116.70817 | 280.56530 | 0.93040 | 0.0864785 | 2.8360729 | 23 | 1 | 34 days | 0.26 | | | MPC | 2006 $VM_{20}$ |
| 2006 $VN_{20}$ | 18.7 | 0.15 | 20061101 | 9.36147 | 347.32192 | 48.22962 | 2.37369 | 0.1865946 | 2.3497310 | 13 | 1 | 15 days | 0.21 | | | MPC | 2006 $VN_{20}$ |
| 2006 $VO_{20}$ | 16.5 | 0.15 | 20061101 | 10.17402 | 163.53784 | 236.49931 | 10.66674 | 0.1072108 | 3.0390114 | 17 | 1 | 27 days | 0.19 | | | MPC | 2006 $VO_{20}$ |
| 2006 $VP_{20}$ | 15.9 | 0.15 | 20061101 | 332.74848 | 42.97640 | 43.13345 | 2.98933 | 0.0931703 | 3.1675271 | 13 | 1 | 10 days | 0.37 | | | MPC | 2006 $VP_{20}$ |
| 2006 $VQ_{20}$ | 18.5 | 0.15 | 20061101 | 340.19256 | 36.52080 | 41.87419 | 1.79917 | 0.1735252 | 2.4180950 | 23 | 1 | 38 days | 0.49 | | | MPC | 2006 $VQ_{20}$ |
| 2006 $VR_{20}$ | 18.2 | 0.15 | 20061101 | 37.14523 | 10.38360 | 353.11446 | 0.70682 | 0.1206924 | 2.1710593 | 23 | 1 | 34 days | 0.31 | | | MPC | 2006 $VR_{20}$ |
| 2006 $VS_{20}$ | 15.8 | 0.15 | 20061101 | 11.98527 | 82.97303 | 315.18257 | 0.64540 | 0.1093316 | 3.1060526 | 26 | 1 | 38 days | 0.49 | | | MPC | 2006 $VS_{20}$ |
| 2006 $VT_{20}$ | 16.9 | 0.15 | 20061101 | 34.19349 | 128.38403 | 239.56622 | 5.51625 | 0.1460837 | 3.1428601 | 25 | 1 | 27 days | 0.56 | | | MPC | 2006 $VT_{20}$ |
| 2006 $VU_{20}$ | 17.3 | 0.15 | 20061101 | 317.39021 | 53.35045 | 46.46413 | 4.00074 | 0.0489421 | 2.8147658 | 9 | 1 | 11 days | 0.18 | | | MPC | 2006 $VU_{20}$ |
| 2006 $VV_{20}$ | 17.1 | 0.15 | 20061101 | 353.21084 | 153.22289 | 266.87688 | 0.89690 | 0.0918891 | 2.5659105 | 13 | 1 | 15 days | 0.25 | | | MPC | 2006 $VV_{20}$ |
| 2006 $VX_{20}$ | 16.1 | 0.15 | 20061101 | 35.69951 | 310.58760 | 53.87514 | 10.99544 | 0.1671673 | 3.1407871 | 17 | 1 | 23 days | 0.35 | | | MPC | 2006 $VX_{20}$ |
| 2006 $VY_{20}$ | 17.7 | 0.15 | 20061101 | 279.65867 | 270.46121 | 240.73160 | 4.14556 | 0.1617202 | 2.3646393 | 24 | 1 | 27 days | 0.45 | | | MPC | 2006 $VY_{20}$ |
| 2006 $VZ_{20}$ | 17.6 | 0.15 | 20061101 | 95.87680 | 254.90218 | 55.52463 | 6.50872 | 0.0522695 | 2.3417401 | 13 | 1 | 15 days | 0.27 | | | MPC | 2006 $VZ_{20}$ |
| 2006 $VE_{21}$ | 17.7 | 0.15 | 20061101 | 1.42126 | 83.16467 | 305.37413 | 1.85965 | 0.1804729 | 2.5565753 | 12 | 1 | 8 days | 0.37 | | | MPC | 2006 $VE_{21}$ |
| 2006 $VJ_{21}$ | | | 20061101 | 11.14959 | 127.70169 | 217.71860 | 5.99634 | 0.1571601 | 2.7423340 | 9 | 1 | 11 days | 0.18 | | | MPC | 2006 $VJ_{21}$ |
| 2006 $VK_{21}$ | | | 20061101 | 74.33658 | 34.87568 | 231.17090 | 3.87841 | 0.1724789 | 2.6167307 | 9 | 1 | 7 days | 0.19 | | | MPC | 2006 $VK_{21}$ |
| 2006 $VO_{21}$ | 18.3 | 0.15 | 20061101 | 7.40915 | 170.50967 | 213.99001 | 4.03709 | 0.2146438 | 2.5270074 | 17 | 1 | 29 days | 0.26 | | | MPC | 2006 $VO_{21}$ |
| 2006 $VS_{21}$ | 18.3 | 0.15 | 20061101 | 36.39078 | 298.58000 | 47.79567 | 6.34738 | 0.1584415 | 2.2883362 | 13 | 1 | 30 days | 0.23 | | | MPC | 2006 $VS_{21}$ |
| 2006 $VT_{21}$ | 17.0 | 0.15 | 20061101 | 33.28239 | 262.06367 | 92.00829 | 1.23307 | 0.1109499 | 2.6090827 | 18 | 1 | 17 days | 0.48 | | | MPC | 2006 $VT_{21}$ |
| 2006 $VV_{21}$ | 18.1 | 0.15 | 20061101 | 338.10761 | 35.43164 | 43.84307 | 12.17387 | 0.3254917 | 2.7861431 | 20 | 1 | 36 days | 0.24 | | E | MPC | 2006 $VV_{21}$ |
| 2006 $VG_{22}$ | 16.7 | 0.15 | 20061101 | 356.46358 | 359.05907 | 57.60770 | 9.28869 | 0.1195977 | 3.0406712 | 10 | 1 | 17 days | 0.65 | | | MPC | 2006 $VG_{22}$ |
| 2006 $VL_{22}$ | 16.6 | 0.15 | 20060922 | 298.62948 | 57.98562 | 59.39218 | 5.34967 | 0.1337784 | 2.6599777 | 30 | 1 | 60 days | 0.50 | M-v | 6 | MPC | 2006 $VL_{22}$ |
| 2006 $VN_{22}$ | 17.9 | 0.15 | 20061101 | 25.22878 | 176.02386 | 185.36889 | 1.02517 | 0.3251843 | 2.9848541 | 18 | 1 | 17 days | 0.17 | | | MPC | 2006 $VN_{22}$ |
| 2006 $VP_{22}$ | 16.1 | 0.15 | 20061101 | 216.68994 | 139.46708 | 58.35989 | 16.26318 | 0.0189682 | 3.0151710 | 20 | 1 | 46 days | 0.38 | | | MPC | 2006 $VP_{22}$ |
| 2006 $VT_{22}$ | 14.8 | 0.15 | 20061101 | 189.14514 | 167.04174 | 60.80048 | 12.89770 | 0.1780439 | 2.9685179 | 13 | 1 | 8 days | 0.32 | | | MPC | 2006 $VT_{22}$ |
| 2006 $VV_{22}$ | 17.4 | 0.15 | 20061101 | 95.01361 | 75.50471 | 227.04566 | 6.38765 | 0.1270431 | 2.2418058 | 18 | 1 | 17 days | 0.43 | | | MPC | 2006 $VV_{22}$ |
| 2006 $VZ_{22}$ | 16.6 | 0.15 | 20061012 | 316.27872 | 45.74618 | 60.36407 | 5.84216 | 0.1974363 | 2.4150557 | 53 | 1 | 58 days | 0.47 | | | MPC | 2006 $VZ_{22}$ |
| 2006 $VN_{23}$ | 16.4 | 0.15 | 20061101 | 41.78275 | 304.70375 | 65.57150 | 7.16302 | 0.0171082 | 2.6988301 | 12 | 1 | 26 days | 0.26 | | | MPC | 2006 $VN_{23}$ |
| 2006 $VS_{23}$ | 16.9 | 0.15 | 20061101 | 1.75852 | 310.78739 | 97.64720 | 2.18161 | 0.1768009 | 3.0976321 | 13 | 1 | 17 days | 0.13 | | | MPC | 2006 $VS_{23}$ |
| 2006 $VU_{23}$ | 19.0 | 0.15 | 20061101 | 348.29348 | 307.82003 | 118.20291 | 1.23262 | 0.2018614 | 2.2887503 | 13 | 1 | 38 days | 0.15 | | | MPC | 2006 $VU_{23}$ |
| 2006 $VZ_{23}$ | 16.6 | 0.15 | 20061101 | 11.22274 | 338.13953 | 60.50540 | 10.31481 | 0.0943473 | 3.1643577 | 18 | 1 | 17 days | 0.29 | | | MPC | 2006 $VZ_{23}$ |
| 2006 $VC_{24}$ | 16.6 | 0.15 | 20061101 | 157.60616 | 173.81940 | 80.16191 | 3.14996 | 0.0230561 | 2.8931620 | 14 | 1 | 17 days | 0.19 | | | MPC | 2006 $VC_{24}$ |
| 2006 $VF_{24}$ | 19.4 | 0.15 | 20061101 | 11.29397 | 285.32820 | 101.54555 | 1.96388 | 0.2937177 | 2.5858492 | 10 | 1 | 7 days | 0.60 | | | MPC | 2006 $VF_{24}$ |
| 2006 $VH_{24}$ | 16.6 | 0.15 | 20061101 | 281.26932 | 42.28764 | 102.76236 | 2.17872 | 0.1171360 | 3.0859719 | 10 | 1 | 17 days | 0.20 | | | MPC | 2006 $VH_{24}$ |
| 2006 $VN_{24}$ | 16.6 | 0.15 | 20061012 | 13.91062 | 291.19138 | 98.65488 | 2.81151 | 0.0871882 | 2.7623359 | 20 | 1 | 36 days | 0.26 | | | MPC | 2006 $VN_{24}$ |
| 2006 $VP_{24}$ | 15.8 | 0.15 | 20061101 | 302.04072 | 61.71474 | 61.60494 | 13.25865 | 0.1206583 | 3.1478552 | 18 | 1 | 8 days | 0.41 | | | MPC | 2006 $VP_{24}$ |
| 2006 $VT_{24}$ | 16.6 | 0.15 | 20061101 | 358.38224 | 194.02469 | 219.36670 | 4.39836 | 0.1806198 | 2.7870467 | 28 | 1 | 35 days | 0.41 | | | MPC | 2006 $VT_{24}$ |
| 2006 $VW_{24}$ | 17.8 | 0.15 | 20061101 | 78.17371 | 94.17458 | 224.70038 | 9.82353 | 0.1356012 | 2.6299869 | 12 | 1 | 17 days | 0.17 | | | MPC | 2006 $VW_{24}$ |
| 2006 $VA_{25}$ | 16.7 | 0.15 | 20061101 | 343.44559 | 348.40642 | 84.26911 | 4.13820 | 0.1220119 | 2.5947080 | 10 | 1 | 11 days | 0.71 | | | MPC | 2006 $VA_{25}$ |
| 2006 $VC_{25}$ | 15.3 | 0.15 | 20061101 | 269.81144 | 82.88211 | 65.30463 | 12.46959 | 0.0360551 | 3.0893056 | 9 | 1 | 8 days | 0.35 | | | MPC | 2006 $VC_{25}$ |
| 2006 $VH_{25}$ | 15.8 | 0.15 | 20061101 | 32.57304 | 247.96377 | 126.76815 | 2.19635 | 0.0810984 | 2.6793527 | 18 | 1 | 33 days | 0.29 | | | MPC | 2006 $VH_{25}$ |
| 2006 $VK_{25}$ | 15.6 | 0.15 | 20061101 | 252.35245 | 101.90172 | 63.70296 | 13.73988 | 0.0323414 | 3.0606965 | 9 | 1 | 11 days | 0.47 | | | MPC | 2006 $VK_{25}$ |
| 2006 $VL_{25}$ | 19.2 | 0.15 | 20061101 | 18.32172 | 240.81484 | 143.13026 | 1.76848 | 0.1775680 | 2.3346006 | 9 | 1 | 7 days | 0.16 | | | MPC | 2006 $VL_{25}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VM_{25}$ | 16.4 | 0.15 | 20061101 | 18.78137 | 311.74455 | 79.56227 | 5.65788 | 0.0676101 | 2.6570763 | 13 | 1 | 11 days | 0.35 | | MPC | 2006 $VM_{25}$ |
| 2006 $VN_{25}$ | 16.7 | 0.15 | 20061101 | 37.55825 | 22.42667 | 315.82481 | 1.32378 | 0.3739640 | 3.3712026 | 16 | 1 | 22 days | 0.31 | E | MPC | 2006 $VN_{25}$ |
| 2006 $VQ_{25}$ | 18.8 | 0.15 | 20061101 | 15.79697 | 143.09611 | 247.26349 | 5.06057 | 0.1275986 | 2.2486180 | 19 | 1 | 11 days | 0.26 | | MPC | 2006 $VQ_{25}$ |
| 2006 $VR_{25}$ | 17.9 | 0.15 | 20061101 | 216.03315 | 166.07185 | 37.08770 | 3.54617 | 0.0923210 | 2.2944926 | 12 | 1 | 12 days | 0.23 | | MPC | 2006 $VR_{25}$ |
| 2006 $VS_{25}$ | 16.5 | 0.15 | 20061101 | 222.85085 | 164.35254 | 31.71887 | 3.10035 | 0.0531348 | 2.8586309 | 15 | 1 | 32 days | 0.17 | | MPC | 2006 $VS_{25}$ |
| 2006 $VT_{25}$ | 17.0 | 0.15 | 20061101 | 345.43441 | 134.86684 | 295.61660 | 1.21920 | 0.0761491 | 2.7156665 | 12 | 1 | 12 days | 0.13 | | MPC | 2006 $VT_{25}$ |
| 2006 $VV_{25}$ | 17.4 | 0.15 | 20061101 | 63.62501 | 306.35260 | 35.18275 | 2.23421 | 0.0881602 | 2.8785318 | 9 | 1 | 12 days | 0.13 | | MPC | 2006 $VV_{25}$ |
| 2006 $VW_{25}$ | 16.7 | 0.15 | 20061101 | 207.00440 | 323.16383 | 246.46928 | 8.43463 | 0.0290841 | 2.8846539 | 15 | 1 | 26 days | 0.24 | | MPC | 2006 $VW_{25}$ |
| 2006 $VB_{26}$ | 16.4 | 0.15 | 20061101 | 279.75272 | 98.13756 | 50.60895 | 10.42372 | 0.1022132 | 3.1736591 | 9 | 1 | 8 days | 0.14 | | MPC | 2006 $VB_{26}$ |
| 2006 $VC_{26}$ | 17.1 | 0.15 | 20061101 | 23.30049 | 349.07897 | 36.99491 | 3.22153 | 0.1018630 | 2.7273496 | 13 | 1 | 25 days | 0.21 | | MPC | 2006 $VC_{26}$ |
| 2006 $VF_{26}$ | 15.4 | 0.15 | 20061012 | 175.49353 | 185.86977 | 52.19132 | 10.69618 | 0.0564181 | 3.0201968 | 24 | 1 | 56 days | 0.24 | | MPC | 2006 $VF_{26}$ |
| 2006 $VG_{26}$ | 17.3 | 0.15 | 20061101 | 37.61943 | 306.54374 | 48.04989 | 3.29096 | 0.2277680 | 2.3286570 | 27 | 1 | 36 days | 0.38 | | MPC | 2006 $VG_{26}$ |
| 2006 $VJ_{26}$ | 16.5 | 0.15 | 20061101 | 306.12200 | 245.10265 | 244.69936 | 9.13620 | 0.1832255 | 3.0654763 | 9 | 1 | 8 days | 0.13 | | MPC | 2006 $VJ_{26}$ |
| 2006 $VK_{26}$ | 16.4 | 0.15 | 20061101 | 349.72637 | 74.98002 | 355.63281 | 0.86791 | 0.1623714 | 3.1441729 | 16 | 1 | 25 days | 0.18 | | MPC | 2006 $VK_{26}$ |
| 2006 $VL_{26}$ | 18.3 | 0.15 | 20061012 | 357.26190 | 0.57953 | 47.09237 | 1.92396 | 0.1388900 | 2.1810932 | 18 | 1 | 56 days | 0.21 | | MPC | 2006 $VL_{26}$ |
| 2006 $VM_{26}$ | 16.0 | 0.15 | 20061101 | 218.22825 | 131.87570 | 71.40888 | 3.10562 | 0.0481927 | 2.9186868 | 23 | 1 | 39 days | 0.43 | | MPC | 2006 $VM_{26}$ |
| 2006 $VN_{26}$ | 17.7 | 0.15 | 20061101 | 5.08321 | 343.04247 | 62.78557 | 3.46776 | 0.1902526 | 2.4534480 | 22 | 1 | 27 days | 0.41 | | MPC | 2006 $VN_{26}$ |
| 2006 $VP_{26}$ | 16.4 | 0.15 | 20061101 | 78.87463 | 256.71724 | 60.38505 | 13.71115 | 0.1843289 | 2.5376063 | 25 | 1 | 27 days | 0.40 | | MPC | 2006 $VP_{26}$ |
| 2006 $VQ_{26}$ | 17.5 | 0.15 | 20061101 | 91.24239 | 247.29680 | 59.87463 | 6.69243 | 0.1562991 | 2.2042268 | 12 | 1 | 8 days | 0.29 | | MPC | 2006 $VQ_{26}$ |
| 2006 $VR_{26}$ | 17.9 | 0.15 | 20061101 | 338.40287 | 212.62187 | 237.30810 | 4.16470 | 0.2466687 | 2.5700801 | 23 | 1 | 26 days | 0.30 | | MPC | 2006 $VR_{26}$ |
| 2006 $VU_{26}$ | 16.1 | 0.15 | 20061101 | 95.24326 | 255.73736 | 59.59632 | 2.92358 | 0.0530458 | 2.8672191 | 20 | 1 | 28 days | 0.17 | | MPC | 2006 $VU_{26}$ |
| 2006 $VV_{26}$ | 18.2 | 0.15 | 20061101 | 345.47140 | 189.95990 | 243.47651 | 0.63917 | 0.1652723 | 2.4411925 | 20 | 1 | 28 days | 0.18 | | MPC | 2006 $VV_{26}$ |
| 2006 $VW_{26}$ | 18.7 | 0.15 | 20061101 | 1.09658 | 350.40819 | 60.14145 | 2.92718 | 0.1801894 | 2.3611217 | 20 | 1 | 24 days | 0.27 | | MPC | 2006 $VW_{26}$ |
| 2006 $VY_{26}$ | 16.5 | 0.15 | 20061101 | 338.09785 | 209.87232 | 230.02953 | 3.45426 | 0.0421965 | 2.8025355 | 25 | 1 | 41 days | 0.39 | | MPC | 2006 $VY_{26}$ |
| 2006 $VA_{27}$ | 17.3 | 0.15 | 20061101 | 5.92536 | 351.00391 | 56.94693 | 6.17428 | 0.0976498 | 2.6717427 | 13 | 1 | 22 days | 0.22 | | MPC | 2006 $VA_{27}$ |
| 2006 $VC_{27}$ | 17.3 | 0.15 | 20061101 | 38.01955 | 131.24121 | 234.82013 | 5.76125 | 0.1240725 | 2.3758845 | 26 | 1 | 41 days | 0.27 | | MPC | 2006 $VC_{27}$ |
| 2006 $VD_{27}$ | 18.1 | 0.15 | 20061101 | 332.25484 | 26.17733 | 64.31568 | 2.15573 | 0.1513549 | 2.3371420 | 20 | 1 | 28 days | 0.23 | | MPC | 2006 $VD_{27}$ |
| 2006 $VE_{27}$ | 17.6 | 0.15 | 20061101 | 350.63292 | 192.52769 | 237.60840 | 10.79055 | 0.2087012 | 3.1154515 | 19 | 1 | 37 days | 0.30 | | MPC | 2006 $VE_{27}$ |
| 2006 $VG_{27}$ | 17.8 | 0.15 | 20061101 | 13.90648 | 160.58091 | 235.92081 | 7.39954 | 0.1366314 | 2.6346352 | 19 | 1 | 30 days | 0.20 | | MPC | 2006 $VG_{27}$ |
| 2006 $VH_{27}$ | 17.3 | 0.15 | 20060922 | 37.10901 | 118.89842 | 223.39166 | 0.88856 | 0.2088185 | 2.1703608 | 39 | 1 | 61 days | 0.47 | M-v 5 | MPC | 2006 $VH_{27}$ |
| 2006 $VJ_{27}$ | 16.2 | 0.15 | 20061101 | 3.81369 | 173.09319 | 239.44600 | 15.16286 | 0.0922668 | 3.0556984 | 26 | 1 | 41 days | 0.45 | | MPC | 2006 $VJ_{27}$ |
| 2006 $VL_{27}$ | 17.3 | 0.15 | 20061101 | 359.70222 | 170.22747 | 240.84749 | 3.32225 | 0.3095240 | 2.6994095 | 36 | 1 | 34 days | 0.43 | E | MPC | 2006 $VL_{27}$ |
| 2006 $VM_{27}$ | 19.3 | 0.15 | 20061101 | 11.97551 | 341.23366 | 50.11235 | 1.87346 | 0.2229040 | 2.3087660 | 12 | 1 | 12 days | 0.20 | | MPC | 2006 $VM_{27}$ |
| 2006 $VN_{27}$ | 17.5 | 0.15 | 20061101 | 295.04703 | 76.57834 | 55.09215 | 3.40923 | 0.1293063 | 2.4552961 | 17 | 1 | 28 days | 0.21 | | MPC | 2006 $VN_{27}$ |
| 2006 $VO_{27}$ | 17.8 | 0.15 | 20061101 | 85.46758 | 67.09710 | 239.08766 | 5.59259 | 0.1824661 | 2.1865806 | 12 | 1 | 12 days | 0.16 | | MPC | 2006 $VO_{27}$ |
| 2006 $VP_{27}$ | 16.8 | 0.15 | 20061101 | 6.94877 | 35.83547 | 6.59681 | 0.33202 | 0.2047756 | 3.1047140 | 26 | 1 | 34 days | 0.38 | | MPC | 2006 $VP_{27}$ |
| 2006 $VQ_{27}$ | 16.3 | 0.15 | 20061101 | 77.31583 | 84.52692 | 241.02466 | 9.06890 | 0.1053479 | 2.9965483 | 19 | 1 | 12 days | 0.13 | | MPC | 2006 $VQ_{27}$ |
| 2006 $VS_{27}$ | 17.2 | 0.15 | 20061101 | 61.27136 | 88.66707 | 234.59671 | 3.65618 | 0.2396801 | 2.1571554 | 31 | 1 | 41 days | 0.46 | | MPC | 2006 $VS_{27}$ |
| 2006 $VT_{27}$ | 15.8 | 0.15 | 20061101 | 12.58049 | 340.80352 | 57.61219 | 14.70159 | 0.1231043 | 3.2224427 | 20 | 1 | 12 days | 0.36 | | MPC | 2006 $VT_{27}$ |
| 2006 $VX_{27}$ | 17.5 | 0.15 | 20061101 | 44.69934 | 105.53546 | 241.61722 | 2.40042 | 0.2181832 | 2.6017059 | 20 | 1 | 26 days | 0.32 | | MPC | 2006 $VX_{27}$ |
| 2006 $VY_{27}$ | 17.4 | 0.15 | 20061101 | 343.98391 | 72.38964 | 7.68194 | 3.26059 | 0.2140982 | 2.5468015 | 14 | 1 | 32 days | 0.13 | | MPC | 2006 $VY_{27}$ |
| 2006 $VA_{28}$ | 17.8 | 0.15 | 20061101 | 23.24185 | 121.96099 | 256.86790 | 8.31066 | 0.2215968 | 2.5709536 | 19 | 1 | 12 days | 0.16 | | MPC | 2006 $VA_{28}$ |
| 2006 $VB_{28}$ | 17.7 | 0.15 | 20061012 | 22.55842 | 335.48024 | 38.40259 | 6.52343 | 0.1845329 | 2.2820417 | 18 | 1 | 55 days | 0.15 | | MPC | 2006 $VB_{28}$ |
| 2006 $VC_{28}$ | 16.0 | 0.15 | 20061101 | 31.97471 | 115.51672 | 251.38768 | 11.87256 | 0.2190387 | 2.5861618 | 42 | 1 | 17 days | 0.56 | | MPC | 2006 $VC_{28}$ |
| 2006 $VD_{28}$ | 16.2 | 0.15 | 20061101 | 254.52988 | 281.08017 | 251.62584 | 13.04876 | 0.0796881 | 2.6291598 | 14 | 1 | 12 days | 0.46 | | MPC | 2006 $VD_{28}$ |
| 2006 $VE_{28}$ | 16.9 | 0.15 | 20061101 | 356.08846 | 11.21909 | 52.90433 | 18.48467 | 0.2290382 | 3.1014165 | 16 | 1 | 20 days | 0.26 | | MPC | 2006 $VE_{28}$ |
| 2006 $VF_{28}$ | 16.3 | 0.15 | 20061101 | 2.14875 | 74.76019 | 342.59101 | 3.16406 | 0.0806483 | 3.1710863 | 16 | 1 | 12 days | 0.23 | | MPC | 2006 $VF_{28}$ |
| 2006 $VG_{28}$ | 17.0 | 0.15 | 20061101 | 133.75145 | 237.45824 | 38.19711 | 7.08686 | 0.1246970 | 2.3023721 | 13 | 1 | 15 days | 0.16 | | MPC | 2006 $VG_{28}$ |
| 2006 $VJ_{28}$ | 16.6 | 0.15 | 20061101 | 354.25484 | 43.75300 | 23.13877 | 5.10095 | 0.1356531 | 3.1019463 | 12 | 1 | 15 days | 0.30 | | MPC | 2006 $VJ_{28}$ |
| 2006 $VK_{28}$ | 17.0 | 0.15 | 20061101 | 325.02560 | 51.58303 | 48.47466 | 10.83920 | 0.0733541 | 2.9609459 | 13 | 1 | 12 days | 0.21 | | MPC | 2006 $VK_{28}$ |
| 2006 $VN_{28}$ | 15.5 | 0.15 | 20061101 | 270.81846 | 267.87675 | 252.83303 | 14.93322 | 0.1008315 | 2.8096176 | 16 | 1 | 12 days | 0.44 | | MPC | 2006 $VN_{28}$ |
| 2006 $VO_{28}$ | 18.5 | 0.15 | 20061012 | 8.01885 | 353.43465 | 40.01270 | 6.41756 | 0.1725016 | 2.1434863 | 21 | 1 | 56 days | 0.50 | | MPC | 2006 $VO_{28}$ |
| 2006 $VQ_{28}$ | 17.2 | 0.15 | 20061101 | 27.24357 | 327.78788 | 51.54272 | 14.75309 | 0.1750753 | 2.6180431 | 24 | 1 | 37 days | 0.26 | | MPC | 2006 $VQ_{28}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VR_{28}$ | 18.6 | 0.15 | 20061101 | 37.14535 | 320.21770 | 38.46648 | 5.39074 | 0.2207368 | 2.2064012 | 19 | 1 | 33 days | 0.20 | | | MPC | 2006 $VR_{28}$ |
| 2006 $VT_{28}$ | 16.9 | 0.15 | 20061101 | 68.11260 | 324.66966 | 6.62846 | 3.03701 | 0.1775335 | 2.6026853 | 16 | 1 | 33 days | 0.25 | | | MPC | 2006 $VT_{28}$ |
| 2006 $VU_{28}$ | 17.3 | 0.15 | 20061101 | 343.71062 | 139.54382 | 298.45414 | 3.33612 | 0.0519141 | 2.7539535 | 9 | 1 | 8 days | 0.15 | | | MPC | 2006 $VU_{28}$ |
| 2006 $VV_{28}$ | 17.3 | 0.15 | 20061101 | 46.93706 | 82.18996 | 267.21302 | 6.35376 | 0.2246832 | 2.7447535 | 9 | 1 | 8 days | 0.24 | | | MPC | 2006 $VV_{28}$ |
| 2006 $VX_{28}$ | 13.5 | 0.15 | 20061101 | 280.21302 | 104.88197 | 50.19928 | 12.32829 | 0.0960679 | 3.9781316 | 39 | 1 | 38 days | 0.45 | | | MPC | 2006 $VX_{28}$ |
| 2006 $VY_{28}$ | 17.5 | 0.15 | 20061101 | 8.32180 | 151.65558 | 257.83613 | 8.28879 | 0.0687636 | 2.6224625 | 16 | 1 | 33 days | 0.28 | | | MPC | 2006 $VY_{28}$ |
| 2006 $VA_{29}$ | 16.3 | 0.15 | 20061101 | 4.80519 | 8.70993 | 43.16273 | 8.36682 | 0.1664630 | 2.7802665 | 27 | 1 | 38 days | 0.59 | | | MPC | 2006 $VA_{29}$ |
| 2006 $VB_{29}$ | 16.0 | 0.15 | 20060922 | 334.78312 | 42.61927 | 52.16500 | 17.00344 | 0.3333053 | 3.1135838 | 43 | 1 | 60 days | 0.43 | M-v | 4 | MPC | 2006 $VB_{29}$ |
| 2006 $VC_{29}$ | 16.4 | 0.15 | 20061101 | 346.77447 | 178.97324 | 256.63386 | 11.66381 | 0.0558883 | 2.9791802 | 9 | 1 | 8 days | 0.17 | | | MPC | 2006 $VC_{29}$ |
| 2006 $VE_{29}$ | 16.7 | 0.15 | 20061012 | 346.49939 | 22.38430 | 45.78666 | 6.91342 | 0.1025170 | 2.4203406 | 32 | 1 | 56 days | 0.29 | | | MPC | 2006 $VE_{29}$ |
| 2006 $VF_{29}$ | 17.9 | 0.15 | 20061101 | 346.03385 | 89.74374 | 344.22041 | 2.41835 | 0.0511267 | 2.3471653 | 18 | 1 | 12 days | 0.41 | | | MPC | 2006 $VF_{29}$ |
| 2006 $VG_{29}$ | 18.4 | 0.15 | 20061101 | 20.35042 | 351.72682 | 39.54863 | 5.50982 | 0.1342551 | 2.4283492 | 12 | 1 | 12 days | 0.36 | | | MPC | 2006 $VG_{29}$ |
| 2006 $VH_{29}$ | 18.4 | 0.15 | 20061101 | 24.13867 | 92.78557 | 271.55175 | 3.63123 | 0.3629211 | 2.6614634 | 17 | 1 | 13 days | 0.41 | | | MPC | 2006 $VH_{29}$ |
| 2006 $VJ_{29}$ | 17.2 | 0.15 | 20061101 | 72.38739 | 34.63004 | 289.82344 | 2.57365 | 0.1911939 | 2.2695456 | 19 | 1 | 33 days | 0.29 | | | MPC | 2006 $VJ_{29}$ |
| 2006 $VK_{29}$ | 18.5 | 0.15 | 20061101 | 19.17986 | 120.10144 | 273.07514 | 3.88997 | 0.1143079 | 2.2824380 | 12 | 1 | 13 days | 0.22 | | | MPC | 2006 $VK_{29}$ |
| 2006 $VL_{29}$ | 17.6 | 0.15 | 20061012 | 13.88752 | 11.65329 | 16.62218 | 3.02555 | 0.1904978 | 2.3608683 | 20 | 1 | 55 days | 0.38 | | | MPC | 2006 $VL_{29}$ |
| 2006 $VM_{29}$ | 15.7 | 0.15 | 20061101 | 53.29595 | 304.36425 | 52.32911 | 10.14439 | 0.1238791 | 3.0027399 | 22 | 1 | 38 days | 0.45 | | | MPC | 2006 $VM_{29}$ |
| 2006 $VN_{29}$ | 16.6 | 0.15 | 20061012 | 325.66458 | 48.80383 | 50.87230 | 10.77676 | 0.1465749 | 2.6383215 | 21 | 1 | 59 days | 0.35 | | | MPC | 2006 $VN_{29}$ |
| 2006 $VP_{29}$ | 16.9 | 0.15 | 20061101 | 314.22058 | 74.77080 | 46.71582 | 4.75298 | 0.1767849 | 2.5652608 | 22 | 1 | 23 days | 0.36 | | | MPC | 2006 $VP_{29}$ |
| 2006 $VQ_{29}$ | 16.7 | 0.15 | 20061101 | 36.97567 | 334.20446 | 38.28764 | 3.52423 | 0.1285484 | 2.6393722 | 23 | 1 | 35 days | 0.38 | | | MPC | 2006 $VQ_{29}$ |
| 2006 $VT_{29}$ | 16.6 | 0.15 | 20060922 | 349.14627 | 3.01366 | 55.19513 | 16.17943 | 0.3785651 | 2.7148456 | 77 | 1 | 74 days | 0.53 | M-v | 3 D | MPC | 2006 $VT_{29}$ |
| 2006 $VV_{29}$ | 17.0 | 0.15 | 20061101 | 316.77090 | 218.36738 | 248.87953 | 6.26680 | 0.0566281 | 2.3553070 | 25 | 1 | 17 days | 0.53 | | | MPC | 2006 $VV_{29}$ |
| 2006 $VW_{29}$ | 16.3 | 0.15 | 20061101 | 321.73247 | 161.69062 | 302.03461 | 2.10213 | 0.0614024 | 3.1094195 | 13 | 1 | 17 days | 0.29 | | | MPC | 2006 $VW_{29}$ |
| 2006 $VA_{30}$ | 16.1 | 0.15 | 20061101 | 317.70723 | 62.64902 | 60.34972 | 26.88850 | 0.2179873 | 3.1018384 | 24 | 1 | 17 days | 0.55 | | | MPC | 2006 $VA_{30}$ |
| 2006 $VD_{30}$ | 17.7 | 0.15 | 20061101 | 65.71176 | 31.17607 | 300.66373 | 1.97709 | 0.1858754 | 2.3811754 | 16 | 1 | 33 days | 0.30 | | | MPC | 2006 $VD_{30}$ |
| 2006 $VE_{30}$ | 16.8 | 0.15 | 20061012 | 346.91778 | 64.84174 | 11.16011 | 2.39598 | 0.2248260 | 3.3229620 | 17 | 1 | 55 days | 0.45 | | E | MPC | 2006 $VE_{30}$ |
| 2006 $VF_{30}$ | 16.8 | 0.15 | 20061101 | 38.10178 | 329.07742 | 48.72669 | 7.15558 | 0.0587974 | 2.6894948 | 20 | 1 | 33 days | 0.29 | | | MPC | 2006 $VF_{30}$ |
| 2006 $VG_{30}$ | 15.9 | 0.15 | 20061101 | 283.39237 | 277.70304 | 253.19357 | 8.08401 | 0.2742409 | 3.2639700 | 9 | 1 | 8 days | 0.16 | | | MPC | 2006 $VG_{30}$ |
| 2006 $VJ_{30}$ | 16.5 | 0.15 | 20061101 | 297.64016 | 234.52025 | 257.48193 | 3.72133 | 0.1092081 | 2.5917143 | 13 | 1 | 26 days | 0.16 | | | MPC | 2006 $VJ_{30}$ |
| 2006 $VK_{30}$ | 17.8 | 0.15 | 20061101 | 347.35062 | 58.25838 | 14.29885 | 2.14829 | 0.1496941 | 2.3904249 | 16 | 1 | 21 days | 0.18 | | | MPC | 2006 $VK_{30}$ |
| 2006 $VL_{30}$ | 16.9 | 0.15 | 20061101 | 6.72706 | 352.34144 | 49.74243 | 10.56986 | 0.2852937 | 2.7125951 | 49 | 1 | 41 days | 0.50 | | | MPC | 2006 $VL_{30}$ |
| 2006 $VM_{30}$ | 16.2 | 0.15 | 20061101 | 77.99743 | 50.05792 | 262.20426 | 3.82557 | 0.2486793 | 2.5741728 | 20 | 1 | 33 days | 0.21 | | | MPC | 2006 $VM_{30}$ |
| 2006 $VN_{30}$ | 16.5 | 0.15 | 20061101 | 79.18887 | 269.09609 | 51.53082 | 12.09230 | 0.1614780 | 2.4418491 | 13 | 1 | 15 days | 0.20 | | | MPC | 2006 $VN_{30}$ |
| 2006 $VO_{30}$ | 17.0 | 0.15 | 20061101 | 292.53610 | 113.88931 | 27.01916 | 3.37211 | 0.1430973 | 2.3767599 | 10 | 1 | 5 days | 0.56 | | | MPC | 2006 $VO_{30}$ |
| 2006 $VP_{30}$ | 19.0 | 0.15 | 20061101 | 1.51453 | 22.42721 | 29.38260 | 3.07872 | 0.2724345 | 2.6508251 | 12 | 1 | 12 days | 0.15 | | | MPC | 2006 $VP_{30}$ |
| 2006 $VQ_{30}$ | 18.0 | 0.15 | 20061101 | 27.65490 | 332.90723 | 36.36647 | 2.70756 | 0.2451849 | 2.3591531 | 16 | 1 | 24 days | 0.41 | | | MPC | 2006 $VQ_{30}$ |
| 2006 $VS_{30}$ | 16.3 | 0.15 | 20061101 | 296.85669 | 243.53040 | 251.01363 | 8.38413 | 0.1360138 | 2.6413628 | 24 | 1 | 20 days | 0.25 | | | MPC | 2006 $VS_{30}$ |
| 2006 $VT_{30}$ | 16.5 | 0.15 | 20061101 | 313.34615 | 226.34271 | 248.76784 | 14.54110 | 0.1160280 | 3.1192263 | 16 | 1 | 33 days | 0.21 | | | MPC | 2006 $VT_{30}$ |
| 2006 $VV_{30}$ | 15.9 | 0.15 | 20061101 | 112.38844 | 47.54690 | 249.21639 | 13.97161 | 0.0931588 | 2.8981767 | 19 | 1 | 36 days | 0.29 | | | MPC | 2006 $VV_{30}$ |
| 2006 $VW_{30}$ | 15.9 | 0.15 | 20061101 | 57.03581 | 92.68955 | 255.15835 | 8.86072 | 0.1292004 | 3.1001644 | 21 | 1 | 12 days | 0.29 | | | MPC | 2006 $VW_{30}$ |
| 2006 $VX_{30}$ | 17.0 | 0.15 | 20061101 | 35.04625 | 112.71770 | 245.67970 | 14.46219 | 0.2480596 | 2.5635104 | 23 | 1 | 17 days | 0.30 | | | MPC | 2006 $VX_{30}$ |
| 2006 $VZ_{30}$ | 16.8 | 0.15 | 20061101 | 66.95986 | 23.91797 | 294.80536 | 2.33943 | 0.2741105 | 2.6245853 | 23 | 1 | 36 days | 0.27 | | | MPC | 2006 $VZ_{30}$ |
| 2006 $VA_{31}$ | 17.4 | 0.15 | 20061101 | 31.50885 | 128.50532 | 246.19245 | 13.85418 | 0.1350624 | 2.5419067 | 18 | 1 | 17 days | 0.20 | | | MPC | 2006 $VA_{31}$ |
| 2006 $VC_{31}$ | 16.9 | 0.15 | 20061101 | 75.03999 | 71.76848 | 248.49863 | 11.91926 | 0.1943659 | 2.6019801 | 18 | 1 | 17 days | 0.20 | | | MPC | 2006 $VC_{31}$ |
| 2006 $VD_{31}$ | 18.0 | 0.15 | 20061101 | 19.28097 | 76.04739 | 308.28907 | 1.91781 | 0.2211466 | 2.5664396 | 12 | 1 | 12 days | 0.24 | | | MPC | 2006 $VD_{31}$ |
| 2006 $VL_{31}$ | 16.1 | 0.15 | 20061101 | 232.85853 | 303.95546 | 212.12129 | 9.52161 | 0.0241318 | 2.9825874 | 15 | 1 | 25 days | 0.29 | | | MPC | 2006 $VL_{31}$ |
| 2006 $VM_{31}$ | | | 20061101 | 93.45951 | 349.30030 | 269.61527 | 2.88905 | 0.0804481 | 2.3959961 | 9 | 1 | 6 days | 0.14 | | | MPC | 2006 $VM_{31}$ |
| 2006 $VR_{31}$ | 17.4 | 0.15 | 20061101 | 16.43713 | 12.85570 | 5.20107 | 5.16238 | 0.2986761 | 2.6346253 | 44 | 1 | 34 days | 0.48 | | | MPC | 2006 $VR_{31}$ |
| 2006 $VS_{31}$ | 17.7 | 0.15 | 20061101 | 30.82783 | 43.29003 | 321.75040 | 3.51517 | 0.1887251 | 2.2161184 | 41 | 1 | 13 days | 0.52 | | | MPC | 2006 $VS_{31}$ |
| 2006 $VT_{31}$ | 15.7 | 0.15 | 20061101 | 71.60178 | 38.63637 | 282.06036 | 6.46361 | 0.1869956 | 2.6262679 | 41 | 1 | 26 days | 0.46 | | | MPC | 2006 $VT_{31}$ |
| 2006 $VG_{32}$ | 17.1 | 0.15 | 20061101 | 311.84013 | 237.63127 | 240.48139 | 11.01420 | 0.1361253 | 2.6730019 | 35 | 1 | 23 days | 0.28 | | | MPC | 2006 $VG_{32}$ |
| 2006 $VM_{32}$ | 18.0 | 0.15 | 20061101 | 317.40768 | 58.60450 | 36.78701 | 3.00594 | 0.1577865 | 2.3280178 | 21 | 1 | 41 days | 0.28 | | D | MPC | 2006 $VM_{32}$ |
| 2006 $VR_{32}$ | 17.4 | 0.15 | 20061101 | 350.50681 | 18.11988 | 55.39836 | 7.98432 | 0.3028567 | 2.6789813 | 28 | 1 | 36 days | 0.59 | | E | MPC | 2006 $VR_{32}$ |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VS_{32}$ | 18.4 | 0.15 | 20061101 | 305.02264 | 79.14732 | 51.83777 | 3.13064 | 0.1707722 | 2.2809926 | 12 | 1 | 11 days | 0.22 | | | MPC | 2006 $VS_{32}$ |
| 2006 $VT_{32}$ | 16.3 | 0.15 | 20061101 | 11.11309 | 217.39281 | 168.96588 | 1.19494 | 0.1892842 | 3.1449274 | 14 | 1 | 16 days | 0.54 | | | MPC | 2006 $VT_{32}$ |
| 2006 $VU_{32}$ | 17.9 | 0.15 | 20061101 | 359.77101 | 347.00604 | 55.88062 | 4.08487 | 0.1957663 | 2.3616936 | 19 | 1 | 25 days | 0.44 | | | MPC | 2006 $VU_{32}$ |
| 2006 $VW_{32}$ | 16.1 | 0.15 | 20061101 | 157.88411 | 205.93397 | 38.06037 | 12.81346 | 0.0599019 | 2.5407740 | 11 | 1 | 4 days | 0.74 | | | MPC | 2006 $VW_{32}$ |
| 2006 $VX_{32}$ | 17.7 | 0.15 | 20061101 | 294.58969 | 218.81521 | 261.33833 | 2.29582 | 0.1017305 | 2.1734088 | 24 | 1 | 21 days | 0.38 | | | MPC | 2006 $VX_{32}$ |
| 2006 $VZ_{32}$ | 17.4 | 0.15 | 20061101 | 36.39750 | 336.21923 | 15.84748 | 2.22721 | 0.1830325 | 2.3383484 | 12 | 1 | 6 days | 0.47 | | | MPC | 2006 $VZ_{32}$ |
| 2006 $VA_{33}$ | 18.2 | 0.15 | 20061101 | 356.92951 | 9.18290 | 38.66332 | 4.22752 | 0.1882932 | 2.3287315 | 21 | 1 | 16 days | 0.35 | | | MPC | 2006 $VA_{33}$ |
| 2006 $VC_{33}$ | 13.8 | 0.15 | 20061101 | 171.75799 | 357.14283 | 234.26559 | 14.65695 | 0.2512115 | 2.9457456 | 14 | 1 | 7 days | 0.70 | | | MPC | 2006 $VC_{33}$ |
| 2006 $VD_{33}$ | 18.8 | 0.15 | 20061101 | 345.62155 | 348.77214 | 76.74303 | 2.02593 | 0.1681647 | 2.1835045 | 10 | 1 | 5 days | 0.56 | | | MPC | 2006 $VD_{33}$ |
| 2006 $VE_{33}$ | 15.7 | 0.15 | 20061101 | 343.91210 | 33.36837 | 32.36744 | 4.77004 | 0.0651113 | 2.6813601 | 31 | 1 | 21 days | 0.42 | | | MPC | 2006 $VE_{33}$ |
| 2006 $VG_{33}$ | 16.0 | 0.15 | 20061101 | 14.97059 | 314.46903 | 63.44900 | 2.23899 | 0.1788644 | 3.1214412 | 19 | 1 | 17 days | 0.34 | | | MPC | 2006 $VG_{33}$ |
| 2006 $VM_{33}$ | 16.8 | 0.15 | 20061101 | 86.98898 | 261.93365 | 48.03665 | 10.87979 | 0.0559837 | 3.2469360 | 11 | 1 | 10 days | 0.39 | | | MPC | 2006 $VM_{33}$ |
| 2006 $VR_{33}$ | 16.4 | 0.15 | 20061101 | 352.27030 | 353.18216 | 61.23633 | 15.29497 | 0.0844681 | 2.5807266 | 26 | 1 | 34 days | 0.56 | | | MPC | 2006 $VR_{33}$ |
| 2006 $VS_{33}$ | 16.5 | 0.15 | 20061101 | 345.68403 | 14.09227 | 55.13581 | 5.82949 | 0.1695488 | 3.1871562 | 41 | 1 | 46 days | 0.54 | | | MPC | 2006 $VS_{33}$ |
| 2006 $VT_{33}$ | 16.7 | 0.15 | 20061101 | 130.28679 | 204.82292 | 61.94679 | 3.29194 | 0.1583643 | 2.3975348 | 18 | 1 | 20 days | 0.21 | | | MPC | 2006 $VT_{33}$ |
| 2006 $VW_{33}$ | 16.6 | 0.15 | 20061101 | 174.21209 | 168.35451 | 66.87413 | 3.61832 | 0.0818718 | 2.8492550 | 11 | 1 | 10 days | 0.74 | | | MPC | 2006 $VW_{33}$ |
| 2006 $VX_{33}$ | 17.6 | 0.15 | 20061101 | 305.28597 | 245.21093 | 224.87343 | 5.54784 | 0.0635914 | 2.5627591 | 14 | 1 | 10 days | 0.72 | | | MPC | 2006 $VX_{33}$ |
| 2006 $VZ_{33}$ | 17.2 | 0.15 | 20061101 | 0.39666 | 339.30976 | 66.26784 | 5.04453 | 0.1087079 | 2.2018989 | 36 | 1 | 41 days | 0.43 | | | MPC | 2006 $VZ_{33}$ |
| 2006 $VA_{34}$ | 15.3 | 0.15 | 20061101 | 179.51202 | 189.52301 | 41.25439 | 4.77682 | 0.2766787 | 2.7333684 | 12 | 1 | 5 days | 0.45 | | | MPC | 2006 $VA_{34}$ |
| 2006 $VB_{34}$ | 17.5 | 0.15 | 20061101 | 36.25855 | 131.02255 | 232.24613 | 19.10968 | 0.1022554 | 1.9862383 | 31 | 1 | 21 days | 0.43 | | | MPC | 2006 $VB_{34}$ |
| 2006 $VC_{34}$ | 18.6 | 0.15 | 20061101 | 11.13778 | 96.13897 | 293.40923 | 1.91704 | 0.2073683 | 2.2720281 | 10 | 1 | 5 days | 0.58 | | | MPC | 2006 $VC_{34}$ |
| 2006 $VE_{34}$ | 15.4 | 0.15 | 20061101 | 62.91700 | 281.19423 | 51.78015 | 15.17177 | 0.1330188 | 2.5976143 | 57 | 1 | 43 days | 0.38 | | | MPC | 2006 $VE_{34}$ |
| 2006 $VF_{34}$ | 17.3 | 0.15 | 20061101 | 9.15618 | 192.94668 | 201.97643 | 1.65358 | 0.2150976 | 2.6495445 | 39 | 1 | 38 days | 0.56 | | | MPC | 2006 $VF_{34}$ |
| 2006 $VH_{34}$ | 15.6 | 0.15 | 20061101 | 146.98151 | 31.97498 | 224.43365 | 11.85237 | 0.1298323 | 2.5546822 | 22 | 1 | 22 days | 0.66 | | | MPC | 2006 $VH_{34}$ |
| 2006 $VL_{34}$ | 15.6 | 0.15 | 20061101 | 41.30720 | 318.20147 | 35.94172 | 1.45684 | 0.1913870 | 3.0206469 | 35 | 1 | 10 days | 0.70 | | | MPC | 2006 $VL_{34}$ |
| 2006 $VM_{34}$ | 16.2 | 0.15 | 20061101 | 335.48812 | 46.78540 | 49.31579 | 14.71481 | 0.2668257 | 3.1470254 | 25 | 1 | 38 days | 0.49 | | | MPC | 2006 $VM_{34}$ |
| 2006 $VN_{34}$ | 15.8 | 0.15 | 20061101 | 49.41304 | 100.42934 | 245.92236 | 13.48674 | 0.1818621 | 2.5971807 | 31 | 1 | 12 days | 0.72 | | | MPC | 2006 $VN_{34}$ |
| 2006 $VO_{34}$ | 16.1 | 0.15 | 20061101 | 13.49794 | 339.09067 | 54.46310 | 9.69707 | 0.2101116 | 3.0383741 | 23 | 1 | 11 days | 0.72 | | | MPC | 2006 $VO_{34}$ |
| 2006 $VQ_{34}$ | 15.9 | 0.15 | 20061101 | 2.14971 | 166.94550 | 244.28368 | 13.42084 | 0.1761552 | 2.7984341 | 26 | 1 | 11 days | 0.49 | | | MPC | 2006 $VQ_{34}$ |
| 2006 $VT_{34}$ | 17.3 | 0.15 | 20060922 | 351.36422 | 177.34538 | 230.81018 | 1.99866 | 0.2112582 | 2.3527918 | 55 | 1 | 61 days | 0.45 | M-v | 4 | MPC | 2006 $VT_{34}$ |
| 2006 $VU_{34}$ | 16.1 | 0.15 | 20060922 | 325.26386 | 52.56805 | 35.21336 | 4.62859 | 0.1173831 | 2.5729252 | 41 | 1 | 61 days | 0.50 | M-v | 4 | MPC | 2006 $VU_{34}$ |
| 2006 $VW_{34}$ | 16.5 | 0.15 | 20061101 | 355.71840 | 2.67914 | 50.75557 | 18.89134 | 0.2059329 | 2.7173475 | 39 | 1 | 30 days | 0.41 | | | MPC | 2006 $VW_{34}$ |
| 2006 $VX_{34}$ | 18.1 | 0.15 | 20061101 | 271.40491 | 93.66676 | 49.69024 | 4.53337 | 0.0584414 | 2.4742867 | 15 | 1 | 10 days | 0.35 | | | MPC | 2006 $VX_{34}$ |
| 2006 $VY_{34}$ | 17.0 | 0.15 | 20060922 | 12.93473 | 138.22237 | 237.07650 | 3.53266 | 0.1930215 | 2.6170024 | 49 | 1 | 61 days | 0.52 | M-v | 5 | MPC | 2006 $VY_{34}$ |
| 2006 $VZ_{34}$ | 18.2 | 0.15 | 20061101 | 10.17169 | 162.36117 | 231.87820 | 4.36942 | 0.1538441 | 2.5261978 | 14 | 1 | 10 days | 0.27 | | | MPC | 2006 $VZ_{34}$ |
| 2006 $VB_{35}$ | 17.4 | 0.15 | 20061101 | 43.21762 | 130.75883 | 230.92662 | 4.69467 | 0.0617102 | 2.7633705 | 14 | 1 | 16 days | 0.26 | | | MPC | 2006 $VB_{35}$ |
| 2006 $VG_{35}$ | 17.0 | 0.15 | 20061101 | 190.18462 | 347.31267 | 234.17708 | 4.68490 | 0.0950702 | 2.1821438 | 18 | 1 | 21 days | 0.33 | | | MPC | 2006 $VG_{35}$ |
| 2006 $VK_{35}$ | 16.7 | 0.15 | 20061101 | 182.43572 | 174.54545 | 55.49113 | 6.08092 | 0.2689225 | 2.2789328 | 10 | 1 | 5 days | 0.44 | | | MPC | 2006 $VK_{35}$ |
| 2006 $VM_{35}$ | 16.4 | 0.15 | 20061101 | 187.01385 | 171.82330 | 54.49002 | 8.68733 | 0.1576672 | 2.5005080 | 9 | 1 | 5 days | 0.42 | | | MPC | 2006 $VM_{35}$ |
| 2006 $VO_{35}$ | 17.6 | 0.15 | 20061101 | 85.69830 | 187.51855 | 122.89869 | 0.24001 | 0.1177558 | 2.1928548 | 23 | 1 | 41 days | 0.35 | | | MPC | 2006 $VO_{35}$ |
| 2006 $VP_{35}$ | 19.4 | 0.15 | 20061101 | 332.52977 | 208.89072 | 231.79771 | 18.49442 | 0.1024016 | 1.9010707 | 14 | 1 | 12 days | 0.49 | | | MPC | 2006 $VP_{35}$ |
| 2006 $VS_{35}$ | 16.7 | 0.15 | 20061012 | 326.49221 | 36.73937 | 45.86517 | 0.41702 | 0.0572254 | 2.5846481 | 20 | 1 | 52 days | 0.35 | | D | MPC | 2006 $VS_{35}$ |
| 2006 $VT_{35}$ | 17.3 | 0.15 | 20061101 | 340.92723 | 17.92403 | 55.53300 | 6.03253 | 0.0933907 | 2.7329161 | 10 | 1 | 5 days | 0.40 | | | MPC | 2006 $VT_{35}$ |
| 2006 $VW_{35}$ | 15.9 | 0.15 | 20061101 | 114.30095 | 58.45920 | 231.58688 | 9.74235 | 0.0817242 | 3.1486087 | 11 | 1 | 16 days | 0.20 | | | MPC | 2006 $VW_{35}$ |
| 2006 $VX_{35}$ | 18.9 | 0.15 | 20061101 | 43.93389 | 120.62413 | 227.55943 | 3.84269 | 0.1853579 | 2.3549872 | 15 | 1 | 16 days | 0.43 | | | MPC | 2006 $VX_{35}$ |
| 2006 $VZ_{35}$ | 17.8 | 0.15 | 20061101 | 18.89599 | 325.79021 | 53.26205 | 2.79373 | 0.2266719 | 2.5982124 | 19 | 1 | 31 days | 0.32 | | | MPC | 2006 $VZ_{35}$ |
| 2006 $VB_{36}$ | 16.2 | 0.15 | 20061101 | 77.50735 | 98.83708 | 232.08846 | 10.32239 | 0.0352302 | 3.0392580 | 14 | 1 | 16 days | 0.21 | | | MPC | 2006 $VB_{36}$ |
| 2006 $VD_{36}$ | 17.2 | 0.15 | 20061101 | 21.10322 | 322.84042 | 54.86791 | 3.78342 | 0.2064642 | 2.6431464 | 25 | 1 | 16 days | 0.57 | | | MPC | 2006 $VD_{36}$ |
| 2006 $VE_{36}$ | 17.9 | 0.15 | 20061101 | 40.12041 | 297.94406 | 54.52470 | 6.45694 | 0.1905077 | 2.3252169 | 21 | 1 | 16 days | 0.54 | | | MPC | 2006 $VE_{36}$ |
| 2006 $VF_{36}$ | 15.6 | 0.15 | 20061101 | 302.08490 | 243.70682 | 234.18007 | 8.72855 | 0.0925592 | 3.1051028 | 26 | 1 | 37 days | 0.36 | | | MPC | 2006 $VF_{36}$ |
| 2006 $VG_{36}$ | 17.4 | 0.15 | 20061101 | 342.76830 | 259.09089 | 170.26614 | 4.93619 | 0.2074888 | 2.4098536 | 31 | 1 | 38 days | 0.57 | | | MPC | 2006 $VG_{36}$ |
| 2006 $VH_{36}$ | 17.2 | 0.15 | 20061101 | 355.34131 | 252.15081 | 157.71419 | 5.00638 | 0.1772034 | 2.4789479 | 20 | 1 | 22 days | 0.67 | | | MPC | 2006 $VH_{36}$ |
| 2006 $VJ_{36}$ | 15.9 | 0.15 | 20061012 | 10.22256 | 320.88879 | 57.57209 | 16.63092 | 0.2645561 | 3.1048468 | 41 | 1 | 56 days | 0.63 | | | MPC | 2006 $VJ_{36}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VK_{36}$ | 16.5 | 0.15 | 20061101 | 309.58090 | 52.40461 | 57.36309 | 22.73048 | 0.0536039 | 2.6719310 | 21 | 1 | 31 days | 0.20 | | MPC | 2006 $VK_{36}$ |
| 2006 $VN_{36}$ | 17.2 | 0.15 | 20061101 | 10.06971 | 341.08696 | 59.25906 | 15.77772 | 0.1333367 | 2.6262146 | 17 | 1 | 31 days | 0.32 | | MPC | 2006 $VN_{36}$ |
| 2006 $VO_{36}$ | 18.5 | 0.15 | 20061101 | 342.69700 | 261.47340 | 181.43869 | 0.51986 | 0.2592963 | 2.8491527 | 10 | 1 | 7 days | 0.31 | | MPC | 2006 $VO_{36}$ |
| 2006 $VP_{36}$ | 16.9 | 0.15 | 20061101 | 27.48632 | 317.56379 | 60.36640 | 7.67078 | 0.1269767 | 2.3798781 | 27 | 1 | 36 days | 0.23 | | MPC | 2006 $VP_{36}$ |
| 2006 $VR_{36}$ | 16.3 | 0.15 | 20061101 | 7.88966 | 306.73112 | 85.23322 | 6.53852 | 0.2031497 | 2.6396072 | 31 | 1 | 19 days | 0.59 | | MPC | 2006 $VR_{36}$ |
| 2006 $VS_{36}$ | 17.6 | 0.15 | 20061101 | 12.37593 | 303.69300 | 61.69922 | 13.08600 | 0.4718507 | 3.0335248 | 25 | 1 | 18 days | 0.46 | E | MPC | 2006 $VS_{36}$ |
| 2006 $VT_{36}$ | 16.9 | 0.15 | 20061101 | 341.25105 | 304.64254 | 126.86364 | 3.10037 | 0.1635664 | 2.4147308 | 18 | 1 | 9 days | 0.66 | | MPC | 2006 $VT_{36}$ |
| 2006 $VU_{36}$ | 16.1 | 0.15 | 20061101 | 82.43077 | 240.43449 | 71.22236 | 7.22865 | 0.1129282 | 2.5653184 | 14 | 1 | 27 days | 0.36 | | MPC | 2006 $VU_{36}$ |
| 2006 $VX_{36}$ | 16.8 | 0.15 | 20061101 | 14.08391 | 138.18438 | 245.71892 | 7.54955 | 0.1683351 | 2.7552317 | 19 | 1 | 21 days | 0.53 | | MPC | 2006 $VX_{36}$ |
| 2006 $VY_{36}$ | 14.6 | 0.15 | 20061101 | 315.79672 | 211.50785 | 241.45873 | 13.04082 | 0.0467015 | 3.1318665 | 21 | 1 | 31 days | 0.48 | | MPC | 2006 $VY_{36}$ |
| 2006 $VA_{37}$ | 15.6 | 0.15 | 20061101 | 27.67318 | 122.35183 | 244.07858 | 13.50496 | 0.1601021 | 2.6509731 | 38 | 1 | 34 days | 0.62 | | MPC | 2006 $VA_{37}$ |
| 2006 $VE_{37}$ | 18.0 | 0.15 | 20061101 | 46.40968 | 311.27050 | 53.04580 | 6.10576 | 0.0750214 | 2.3729290 | 14 | 1 | 21 days | 0.28 | | MPC | 2006 $VE_{37}$ |
| 2006 $VF_{37}$ | 16.8 | 0.15 | 20061101 | 9.35814 | 141.11399 | 249.72651 | 14.42996 | 0.1939798 | 2.6634108 | 23 | 1 | 34 days | 0.69 | | MPC | 2006 $VF_{37}$ |
| 2006 $VH_{37}$ | 17.0 | 0.15 | 20061101 | 52.08216 | 357.79729 | 338.97799 | 4.71612 | 0.1783347 | 2.1869530 | 18 | 1 | 13 days | 0.43 | | MPC | 2006 $VH_{37}$ |
| 2006 $VO_{37}$ | 17.5 | 0.15 | 20061101 | 17.65996 | 87.45182 | 291.22881 | 1.67014 | 0.1838594 | 2.2420264 | 39 | 1 | 36 days | 0.54 | | MPC | 2006 $VO_{37}$ |
| 2006 $VP_{37}$ | 17.4 | 0.15 | 20061101 | 352.31208 | 23.70653 | 37.54190 | 10.28976 | 0.2727269 | 2.7241403 | 37 | 1 | 40 days | 0.46 | | MPC | 2006 $VP_{37}$ |
| 2006 $VQ_{37}$ | 15.9 | 0.15 | 20061101 | 60.97864 | 342.51316 | 349.13910 | 3.38991 | 0.1563358 | 2.5993914 | 66 | 1 | 11 days | 0.64 | | MPC | 2006 $VQ_{37}$ |
| 2006 $VS_{37}$ | 17.3 | 0.15 | 20061101 | 342.45856 | 2.38249 | 74.72142 | 7.37386 | 0.2954500 | 2.7068506 | 13 | 1 | 6 days | 0.37 | | MPC | 2006 $VS_{37}$ |
| 2006 $VT_{37}$ | 15.5 | 0.15 | 20061101 | 343.32258 | 329.88178 | 100.88112 | 7.78916 | 0.2071168 | 2.9192891 | 26 | 1 | 33 days | 0.58 | | MPC | 2006 $VT_{37}$ |
| 2006 $VU_{37}$ | 15.1 | 0.15 | 20061101 | 26.28750 | 304.06564 | 62.24384 | 27.59050 | 0.2023852 | 3.1226120 | 31 | 1 | 34 days | 0.57 | | MPC | 2006 $VU_{37}$ |
| 2006 $VV_{37}$ | 15.8 | 0.15 | 20061101 | 1.34877 | 331.20502 | 72.37100 | 14.45707 | 0.2075561 | 2.7219874 | 27 | 1 | 29 days | 0.54 | | MPC | 2006 $VV_{37}$ |
| 2006 $VX_{37}$ | 15.5 | 0.15 | 20061101 | 20.69637 | 135.96433 | 240.73205 | 27.74383 | 0.2337573 | 3.1017969 | 38 | 1 | 34 days | 0.40 | | MPC | 2006 $VX_{37}$ |
| 2006 $VY_{37}$ | 17.4 | 0.15 | 20061101 | 3.16957 | 354.86872 | 48.72206 | 5.68482 | 0.1543069 | 3.1392807 | 14 | 1 | 20 days | 0.25 | | MPC | 2006 $VY_{37}$ |
| 2006 $VZ_{37}$ | 17.8 | 0.15 | 20061101 | 1.23875 | 170.29260 | 235.24121 | 2.99570 | 0.2394874 | 2.9956884 | 11 | 1 | 9 days | 0.38 | | MPC | 2006 $VZ_{37}$ |
| 2006 $VA_{38}$ | 16.8 | 0.15 | 20061101 | 331.37425 | 27.61641 | 55.34216 | 8.21331 | 0.0903651 | 2.7503575 | 15 | 1 | 9 days | 0.36 | | MPC | 2006 $VA_{38}$ |
| 2006 $VO_{38}$ | 15.5 | 0.15 | 20061101 | 172.49659 | 0.69090 | 232.99482 | 17.63307 | 0.2758607 | 2.8835075 | 11 | 1 | 9 days | 0.44 | | MPC | 2006 $VO_{38}$ |
| 2006 $VV_{38}$ | 17.7 | 0.15 | 20061101 | 2.13749 | 167.00213 | 236.95925 | 2.57626 | 0.1222303 | 2.3995771 | 21 | 1 | 27 days | 0.40 | | MPC | 2006 $VV_{38}$ |
| 2006 $VW_{38}$ | 17.7 | 0.15 | 20061101 | 339.70550 | 59.89261 | 18.98977 | 0.76484 | 0.2102661 | 3.0585114 | 11 | 1 | 9 days | 0.16 | | MPC | 2006 $VW_{38}$ |
| 2006 $VY_{38}$ | 14.8 | 0.15 | 20061101 | 173.64427 | 1.36708 | 232.09424 | 24.09816 | 0.2867156 | 3.0157338 | 11 | 1 | 9 days | 0.75 | | MPC | 2006 $VY_{38}$ |
| 2006 $VA_{39}$ | 17.0 | 0.15 | 20061101 | 4.52068 | 4.10572 | 38.27676 | 0.60322 | 0.1363939 | 3.0978783 | 9 | 1 | 9 days | 0.28 | | MPC | 2006 $VA_{39}$ |
| 2006 $VG_{39}$ | 17.4 | 0.15 | 20061101 | 15.95569 | 354.84403 | 35.67769 | 0.59850 | 0.0565570 | 2.6190575 | 10 | 1 | 9 days | 0.28 | | MPC | 2006 $VG_{39}$ |
| 2006 $VH_{39}$ | 18.9 | 0.15 | 20061101 | 4.69400 | 166.54856 | 234.14994 | 4.56635 | 0.1533809 | 2.4509447 | 10 | 1 | 9 days | 0.52 | | MPC | 2006 $VH_{39}$ |
| 2006 $VL_{39}$ | 18.9 | 0.15 | 20061101 | 298.04179 | 193.40130 | 286.74648 | 0.40362 | 0.0937712 | 2.4178923 | 15 | 1 | 9 days | 0.25 | | MPC | 2006 $VL_{39}$ |
| 2006 $VR_{39}$ | 18.6 | 0.15 | 20061101 | 16.45883 | 340.74934 | 39.18073 | 1.02214 | 0.2200234 | 2.2337594 | 15 | 1 | 5 days | 0.85 | | MPC | 2006 $VR_{39}$ |
| 2006 $VU_{39}$ | 15.8 | 0.15 | 20061101 | 322.05586 | 216.49504 | 235.17160 | 7.84265 | 0.0550722 | 3.0881521 | 16 | 1 | 27 days | 0.28 | | MPC | 2006 $VU_{39}$ |
| 2006 $VX_{39}$ | 18.3 | 0.15 | 20061101 | 3.03212 | 168.50213 | 234.90609 | 4.82333 | 0.1494986 | 2.4437726 | 14 | 1 | 9 days | 0.54 | | MPC | 2006 $VX_{39}$ |
| 2006 $VZ_{39}$ | 18.2 | 0.15 | 20061101 | 4.27442 | 172.02886 | 230.75445 | 1.93182 | 0.1155438 | 2.5755463 | 11 | 1 | 9 days | 0.33 | | MPC | 2006 $VZ_{39}$ |
| 2006 $VD_{40}$ | 17.1 | 0.15 | 20061101 | 3.35813 | 329.49367 | 75.51895 | 2.38820 | 0.1128853 | 3.2449049 | 11 | 1 | 9 days | 0.51 | | MPC | 2006 $VD_{40}$ |
| 2006 $VG_{40}$ | 16.1 | 0.15 | 20061101 | 261.71761 | 107.61487 | 59.87397 | 10.68445 | 0.1765967 | 3.1202936 | 11 | 1 | 9 days | 0.20 | | MPC | 2006 $VG_{40}$ |
| 2006 $VL_{40}$ | 16.9 | 0.15 | 20061101 | 9.85219 | 171.50971 | 226.68361 | 8.78948 | 0.0572689 | 3.0509679 | 11 | 1 | 9 days | 0.37 | | MPC | 2006 $VL_{40}$ |
| 2006 $VO_{40}$ | 15.9 | 0.15 | 20061101 | 169.49922 | 10.02433 | 229.81938 | 13.82784 | 0.1319681 | 3.0645151 | 11 | 1 | 15 days | 0.40 | | MPC | 2006 $VO_{40}$ |
| 2006 $VQ_{40}$ | 18.2 | 0.15 | 20061101 | 60.71882 | 261.33236 | 63.38469 | 3.45108 | 0.2144276 | 2.4390658 | 14 | 1 | 15 days | 0.53 | | MPC | 2006 $VQ_{40}$ |
| 2006 $VT_{40}$ | 16.3 | 0.15 | 20061101 | 89.54120 | 162.91412 | 156.83547 | 0.68384 | 0.0173241 | 3.0652562 | 11 | 1 | 15 days | 0.70 | | MPC | 2006 $VT_{40}$ |
| 2006 $VW_{40}$ | 18.7 | 0.15 | 20061012 | 350.47671 | 354.79150 | 58.22418 | 7.30408 | 0.2019722 | 2.2875121 | 28 | 1 | 56 days | 0.28 | | MPC | 2006 $VW_{40}$ |
| 2006 $VX_{40}$ | 15.4 | 0.15 | 20061101 | 157.41634 | 23.94325 | 227.37211 | 6.71995 | 0.0578817 | 2.7161890 | 22 | 1 | 41 days | 0.30 | | MPC | 2006 $VX_{40}$ |
| 2006 $VB_{41}$ | 16.6 | 0.15 | 20061101 | 245.88188 | 355.13266 | 173.61985 | 0.99009 | 0.0291533 | 3.0516388 | 9 | 1 | 4 days | 0.67 | | MPC | 2006 $VB_{41}$ |
| 2006 $VL_{41}$ | 18.4 | 0.15 | 20061101 | 39.04111 | 224.19354 | 125.95234 | 0.70576 | 0.2191114 | 2.2796463 | 15 | 1 | 15 days | 0.19 | | MPC | 2006 $VL_{41}$ |
| 2006 $VN_{41}$ | 15.7 | 0.15 | 20061101 | 172.90052 | 149.80848 | 89.09489 | 2.48479 | 0.0914842 | 3.1817842 | 14 | 1 | 15 days | 0.82 | | MPC | 2006 $VN_{41}$ |
| 2006 $VQ_{41}$ | 17.8 | 0.15 | 20061101 | 355.65524 | 235.00206 | 180.35438 | 0.88783 | 0.1737622 | 2.4088402 | 31 | 1 | 15 days | 0.63 | | MPC | 2006 $VQ_{41}$ |
| 2006 $VS_{41}$ | 15.0 | 0.15 | 20061101 | 137.00488 | 202.33661 | 67.20084 | 5.61442 | 0.0918608 | 3.1810228 | 23 | 1 | 15 days | 0.53 | | MPC | 2006 $VS_{41}$ |
| 2006 $VT_{41}$ | 18.9 | 0.15 | 20061101 | 331.95716 | 235.53877 | 223.43625 | 5.46557 | 0.2843508 | 2.6357708 | 14 | 1 | 5 days | 0.45 | | MPC | 2006 $VT_{41}$ |
| 2006 $VV_{41}$ | 16.6 | 0.15 | 20061101 | 34.51652 | 228.88912 | 135.35748 | 2.25473 | 0.1432177 | 2.1893796 | 52 | 1 | 34 days | 0.54 | | MPC | 2006 $VV_{41}$ |
| 2006 $VX_{41}$ | 16.7 | 0.15 | 20061101 | 3.65628 | 249.45827 | 152.90046 | 2.44247 | 0.3523388 | 3.0051503 | 41 | 1 | 43 days | 0.43 | E | MPC | 2006 $VX_{41}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VY_{41}$ | 17.8 | 0.15 | 20061101 | 0.54887 | 178.55266 | 228.95867 | 12.74362 | 0.2383427 | 2.6444250 | 18 | 1 | 17 days | 0.38 | | MPC | 2006 $VY_{41}$ |
| 2006 $VC_{42}$ | 17.1 | 0.15 | 20061101 | 341.87201 | 299.43951 | 139.98234 | 2.58705 | 0.1861011 | 2.4114037 | 22 | 1 | 33 days | 0.50 | | MPC | 2006 $VC_{42}$ |
| 2006 $VE_{42}$ | 16.5 | 0.15 | 20061101 | 329.44116 | 7.99873 | 95.20565 | 4.10658 | 0.2275984 | 2.5644223 | 11 | 1 | 8 days | 0.66 | | MPC | 2006 $VE_{42}$ |
| 2006 $VQ_{42}$ | 16.9 | 0.15 | 20061101 | 3.79233 | 334.65300 | 74.56464 | 7.30831 | 0.2229266 | 2.3421770 | 32 | 1 | 15 days | 0.36 | | MPC | 2006 $VQ_{42}$ |
| 2006 $VR_{42}$ | 16.8 | 0.15 | 20061101 | 20.76390 | 164.08835 | 217.07500 | 3.78105 | 0.2508879 | 2.3365434 | 35 | 1 | 32 days | 0.49 | | MPC | 2006 $VR_{42}$ |
| 2006 $VT_{42}$ | 15.5 | 0.15 | 20061101 | 18.39913 | 301.52361 | 93.10875 | 6.13882 | 0.2136341 | 3.1829284 | 17 | 1 | 20 days | 0.26 | | MPC | 2006 $VT_{42}$ |
| 2006 $VX_{42}$ | 17.1 | 0.15 | 20061101 | 357.37204 | 28.83632 | 23.01204 | 6.37764 | 0.1741793 | 3.2464838 | 10 | 1 | 3 days | 0.66 | | MPC | 2006 $VX_{42}$ |
| 2006 $VY_{42}$ | 17.5 | 0.15 | 20061101 | 352.73458 | 19.83626 | 39.92328 | 11.10469 | 0.2293275 | 2.7060679 | 14 | 1 | 2 days | 0.22 | | MPC | 2006 $VY_{42}$ |
| 2006 $VZ_{42}$ | 17.4 | 0.15 | 20061101 | 201.72997 | 270.01070 | 299.80763 | 2.87439 | 0.0467840 | 2.3876965 | 14 | 1 | 3 days | 0.48 | | MPC | 2006 $VZ_{42}$ |
| 2006 $VA_{43}$ | 15.8 | 0.15 | 20061101 | 183.75567 | 340.23250 | 246.28742 | 11.75815 | 0.0445638 | 2.6075053 | 25 | 1 | 13 days | 0.41 | | MPC | 2006 $VA_{43}$ |
| 2006 $VB_{43}$ | 16.6 | 0.15 | 20061101 | 10.44343 | 164.55422 | 234.61066 | 27.97912 | 0.0382793 | 2.7872362 | 10 | 1 | 8 days | 0.25 | | MPC | 2006 $VB_{43}$ |
| 2006 $VC_{43}$ | 19.5 | 0.15 | 20061101 | 328.00524 | 209.78771 | 233.80724 | 12.93529 | 0.0725746 | 1.8130818 | 9 | 1 | 3 days | 0.68 | | MPC | 2006 $VC_{43}$ |
| 2006 $VD_{43}$ | 17.1 | 0.15 | 20061101 | 305.64289 | 63.80538 | 45.41583 | 7.27352 | 0.0686696 | 2.3253723 | 14 | 1 | 11 days | 0.26 | | MPC | 2006 $VD_{43}$ |
| 2006 $VE_{43}$ | 18.9 | 0.15 | 20061101 | 329.69167 | 37.58730 | 47.30481 | 7.58312 | 0.0997750 | 2.3245258 | 13 | 1 | 11 days | 0.24 | | MPC | 2006 $VE_{43}$ |
| 2006 $VG_{43}$ | 18.3 | 0.15 | 20061101 | 353.48145 | 176.40610 | 242.04909 | 4.07396 | 0.2269158 | 2.7135862 | 13 | 1 | 3 days | 0.53 | | MPC | 2006 $VG_{43}$ |
| 2006 $VH_{43}$ | 18.8 | 0.15 | 20061101 | 10.95778 | 342.60091 | 44.50413 | 6.35459 | 0.2443686 | 2.3414067 | 13 | 1 | 11 days | 0.18 | | MPC | 2006 $VH_{43}$ |
| 2006 $VJ_{43}$ | 17.5 | 0.15 | 20061101 | 60.48695 | 45.21378 | 297.85273 | 2.09276 | 0.0280972 | 2.5142413 | 10 | 1 | 3 days | 0.44 | | MPC | 2006 $VJ_{43}$ |
| 2006 $VK_{43}$ | 15.9 | 0.15 | 20061101 | 158.42763 | 267.42814 | 340.21633 | 2.57620 | 0.0326308 | 2.7965959 | 10 | 1 | 3 days | 0.37 | | MPC | 2006 $VK_{43}$ |
| 2006 $VL_{43}$ | 18.0 | 0.15 | 20061101 | 4.22625 | 155.03171 | 245.05326 | 7.78247 | 0.1687605 | 2.7432946 | 10 | 1 | 3 days | 0.43 | | MPC | 2006 $VL_{43}$ |
| 2006 $VP_{43}$ | 15.8 | 0.15 | 20061101 | 350.68709 | 0.07453 | 75.96238 | 13.81473 | 0.2535371 | 2.7324100 | 35 | 1 | 7 days | 0.40 | | MPC | 2006 $VP_{43}$ |
| 2006 $VR_{43}$ | 18.7 | 0.15 | 20061101 | 44.55985 | 105.42960 | 234.17786 | 4.63099 | 0.2565513 | 2.2478554 | 10 | 1 | 14 days | 0.16 | | MPC | 2006 $VR_{43}$ |
| 2006 $VS_{43}$ | 17.2 | 0.15 | 20061101 | 12.15190 | 229.62606 | 153.86068 | 5.75286 | 0.2875349 | 2.3511241 | 12 | 1 | 7 days | 0.46 | | MPC | 2006 $VS_{43}$ |
| 2006 $VT_{43}$ | 17.8 | 0.15 | 20061101 | 356.61187 | 265.21907 | 148.07210 | 5.93771 | 0.3300985 | 2.6070837 | 12 | 1 | 6 days | 0.35 | | MPC | 2006 $VT_{43}$ |
| 2006 $VV_{43}$ | 17.1 | 0.15 | 20061101 | 348.24706 | 161.14335 | 272.23482 | 2.94640 | 0.1842017 | 2.9894655 | 12 | 1 | 9 days | 0.49 | | MPC | 2006 $VV_{43}$ |
| 2006 $VW_{43}$ | | | 20061101 | 186.38956 | 253.19101 | 341.53796 | 2.22601 | 0.2813791 | 2.2605719 | 9 | 1 | 12 days | 0.33 | | MPC | 2006 $VW_{43}$ |
| 2006 $VX_{43}$ | 17.8 | 0.15 | 20061101 | 30.34336 | 85.71338 | 288.42772 | 2.21008 | 0.1582017 | 2.5980630 | 15 | 1 | 12 days | 0.21 | | MPC | 2006 $VX_{43}$ |
| 2006 $VB_{44}$ | 16.0 | 0.15 | 20061101 | 344.84489 | 204.27233 | 226.34331 | 11.28480 | 0.1409084 | 3.1663149 | 19 | 1 | 10 days | 0.60 | | MPC | 2006 $VB_{44}$ |
| 2006 $VC_{44}$ | 17.3 | 0.15 | 20061101 | 11.47266 | 348.88627 | 35.58176 | 6.57072 | 0.3844594 | 2.5900233 | 35 | 1 | 31 days | 0.63 | E | MPC | 2006 $VC_{44}$ |
| 2006 $VH_{44}$ | 17.5 | 0.15 | 20061101 | 332.25490 | 215.56905 | 225.95375 | 20.59901 | 0.0668663 | 1.8656322 | 35 | 1 | 39 days | 0.45 | | MPC | 2006 $VH_{44}$ |
| 2006 $VJ_{44}$ | 16.6 | 0.15 | 20061101 | 45.45221 | 264.23199 | 85.62131 | 7.49518 | 0.1471244 | 2.2870678 | 26 | 1 | 31 days | 0.43 | | MPC | 2006 $VJ_{44}$ |
| 2006 $VK_{44}$ | 16.8 | 0.15 | 20061101 | 354.70055 | 313.21332 | 101.14406 | 3.68514 | 0.1554613 | 2.3401673 | 30 | 1 | 11 days | 0.54 | | MPC | 2006 $VK_{44}$ |
| 2006 $VO_{44}$ | 15.5 | 0.15 | 20061101 | 42.70784 | 277.94665 | 61.83848 | 17.58705 | 0.3826897 | 2.5839172 | 33 | 1 | 30 days | 0.60 | E | MPC | 2006 $VO_{44}$ |
| 2006 $VQ_{44}$ | 16.2 | 0.15 | 20061101 | 23.03615 | 315.84641 | 58.41014 | 13.78498 | 0.1710776 | 3.0973276 | 23 | 1 | 36 days | 0.43 | | MPC | 2006 $VQ_{44}$ |
| 2006 $VU_{44}$ | 15.5 | 0.15 | 20061101 | 71.86501 | 265.38791 | 55.69738 | 17.39659 | 0.1312084 | 3.0073670 | 13 | 1 | 14 days | 0.69 | | MPC | 2006 $VU_{44}$ |
| 2006 $VV_{44}$ | 17.9 | 0.15 | 20061101 | 339.45143 | 191.35974 | 235.28573 | 20.32616 | 0.0820578 | 1.8830833 | 26 | 1 | 25 days | 0.51 | | MPC | 2006 $VV_{44}$ |
| 2006 $VZ_{44}$ | 17.4 | 0.15 | 20061101 | 52.70875 | 101.64785 | 246.42211 | 20.18021 | 0.0931462 | 1.8822936 | 39 | 1 | 30 days | 0.50 | | MPC | 2006 $VZ_{44}$ |
| 2006 $VB_{45}$ | 24.7 | 0.15 | 20060922 | 325.84498 | 170.87193 | 234.59439 | 12.46576 | 0.1650265 | 1.2226665 | 40 | 1 | 8 days | 0.50 | M-v 7 | MPC | 2006 $VB_{45}$ |
| 2006 $VC_{45}$ | 17.0 | 0.15 | 20061101 | 4.72032 | 330.67760 | 69.85784 | 4.49655 | 0.1314010 | 3.2184424 | 10 | 1 | 5 days | 0.19 | E | MPC | 2006 $VC_{45}$ |
| 2006 $VD_{45}$ | 19.1 | 0.15 | 20061101 | 33.32470 | 55.82407 | 284.66931 | 3.54914 | 0.4027437 | 2.2520620 | 18 | 1 | 8 days | 0.22 | | MPC | 2006 $VD_{45}$ |
| 2006 $VG_{45}$ | 16.9 | 0.15 | 20061012 | 327.36028 | 172.83086 | 253.24179 | 3.04557 | 0.0573686 | 2.7592008 | 21 | 1 | 59 days | 0.32 | | MPC | 2006 $VG_{45}$ |
| 2006 $VH_{45}$ | 16.9 | 0.15 | 20061101 | 353.40841 | 353.90889 | 50.48094 | 8.52830 | 0.1225755 | 2.5470697 | 29 | 1 | 40 days | 0.37 | | MPC | 2006 $VH_{45}$ |
| 2006 $VJ_{45}$ | 16.5 | 0.15 | 20061101 | 17.63736 | 225.80712 | 153.12054 | 6.15481 | 0.2788558 | 2.9310892 | 17 | 1 | 10 days | 0.40 | | MPC | 2006 $VJ_{45}$ |
| 2006 $VL_{45}$ | 15.6 | 0.15 | 20061012 | 350.08693 | 193.34340 | 233.13437 | 13.86099 | 0.0949285 | 2.6140954 | 42 | 1 | 58 days | 0.50 | | MPC | 2006 $VL_{45}$ |
| 2006 $VM_{45}$ | 15.9 | 0.15 | 20061101 | 0.54916 | 1.04856 | 43.25937 | 17.33130 | 0.1311212 | 3.1710408 | 24 | 1 | 18 days | 0.45 | | MPC | 2006 $VM_{45}$ |
| 2006 $VO_{45}$ | 17.1 | 0.15 | 20061101 | 1.32352 | 334.14074 | 67.84339 | 7.80181 | 0.2387098 | 2.7368037 | 10 | 1 | 5 days | 0.63 | | MPC | 2006 $VO_{45}$ |
| 2006 $VP_{45}$ | 14.5 | 0.15 | 20061101 | 168.45714 | 358.50549 | 233.78492 | 18.48862 | 0.2791032 | 3.0330728 | 11 | 1 | 5 days | 0.54 | | MPC | 2006 $VP_{45}$ |
| 2006 $VQ_{45}$ | 16.9 | 0.15 | 20061101 | 248.53111 | 110.79739 | 62.13896 | 3.43630 | 0.0733257 | 2.8730169 | 10 | 1 | 4 days | 0.15 | | MPC | 2006 $VQ_{45}$ |
| 2006 $VT_{45}$ | 20.7 | 0.15 | 20061101 | 322.50869 | 40.40597 | 47.98738 | 26.47248 | 0.1112945 | 1.7459713 | 28 | 1 | 6 days | 0.50 | | MPC | 2006 $VT_{45}$ |
| 2006 $VV_{45}$ | 17.5 | 0.15 | 20061121 | 349.57233 | 17.23469 | 56.31128 | 7.47206 | 0.0789334 | 2.3169279 | 14 | 1 | 13 days | 0.32 | | MPC | 2006 $VV_{45}$ |
| 2006 $VW_{45}$ | 17.8 | 0.15 | 20061101 | 322.27160 | 51.42489 | 55.49372 | 5.86345 | 0.1788096 | 2.3138911 | 25 | 1 | 16 days | 0.44 | | MPC | 2006 $VW_{45}$ |
| 2006 $VZ_{45}$ | 18.1 | 0.15 | 20061101 | 356.60412 | 48.86772 | 359.62041 | 1.95290 | 0.1942505 | 2.3235548 | 22 | 1 | 5 days | 0.49 | | MPC | 2006 $VZ_{45}$ |
| 2006 $VB_{46}$ | 16.6 | 0.15 | 20061101 | 46.03784 | 100.01994 | 255.18065 | 5.48295 | 0.0861914 | 2.8797494 | 17 | 1 | 36 days | 0.28 | | MPC | 2006 $VB_{46}$ |
| 2006 $VC_{46}$ | 16.1 | 0.15 | 20061101 | 359.11036 | 167.04234 | 243.23170 | 10.79138 | 0.0469169 | 2.9294349 | 13 | 1 | 24 days | 0.19 | | MPC | 2006 $VC_{46}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VM_{46}$ | 18.5 | 0.15 | 20061101 | 8.37887 | 348.96715 | 47.15021 | 6.36459 | 0.1570290 | 2.2775464 | 14 | 1 | 24 days | 0.23 | | MPC | 2006 $VM_{46}$ |
| 2006 $VN_{46}$ | 16.6 | 0.15 | 20061101 | 332.76361 | 33.98875 | 47.08939 | 6.29316 | 0.0630769 | 2.7638064 | 14 | 1 | 24 days | 0.24 | | MPC | 2006 $VN_{46}$ |
| 2006 $VP_{46}$ | 16.7 | 0.15 | 20061101 | 65.40316 | 342.53470 | 342.59477 | 0.99592 | 0.1831420 | 3.0291662 | 10 | 1 | 15 days | 0.23 | | MPC | 2006 $VP_{46}$ |
| 2006 $VQ_{46}$ | 16.5 | 0.15 | 20061101 | 104.21107 | 252.33054 | 45.05193 | 11.11005 | 0.0752785 | 3.1451342 | 14 | 1 | 15 days | 0.23 | | MPC | 2006 $VQ_{46}$ |
| 2006 $VS_{46}$ | 17.4 | 0.15 | 20061101 | 59.64926 | 27.17853 | 300.69230 | 1.45024 | 0.1853802 | 2.3730845 | 18 | 1 | 24 days | 0.18 | | MPC | 2006 $VS_{46}$ |
| 2006 $VU_{46}$ | 17.0 | 0.15 | 20061101 | 19.39501 | 117.84634 | 258.41915 | 2.86412 | 0.2328306 | 2.7005125 | 22 | 1 | 42 days | 0.51 | | MPC | 2006 $VU_{46}$ |
| 2006 $VV_{46}$ | 17.1 | 0.15 | 20061101 | 0.67367 | 3.80234 | 44.59367 | 8.51491 | 0.1516654 | 3.1509563 | 10 | 1 | 15 days | 0.90 | | MPC | 2006 $VV_{46}$ |
| 2006 $VW_{46}$ | 17.5 | 0.15 | 20061101 | 218.30619 | 169.62839 | 29.74296 | 2.80731 | 0.1251520 | 2.3734175 | 10 | 1 | 15 days | 0.17 | | MPC | 2006 $VW_{46}$ |
| 2006 $VX_{46}$ | 17.1 | 0.15 | 20061101 | 204.49187 | 306.78832 | 261.94632 | 2.83732 | 0.0868935 | 2.2860349 | 17 | 1 | 34 days | 0.22 | | MPC | 2006 $VX_{46}$ |
| 2006 $VF_{47}$ | 16.3 | 0.15 | 20061101 | 30.76732 | 333.29094 | 33.59547 | 5.54577 | 0.1568539 | 3.0834628 | 23 | 1 | 42 days | 0.22 | | MPC | 2006 $VF_{47}$ |
| 2006 $VH_{47}$ | 17.5 | 0.15 | 20061101 | 352.32975 | 99.64741 | 317.63602 | 1.70375 | 0.0736166 | 2.7477191 | 17 | 1 | 15 days | 0.34 | | MPC | 2006 $VH_{47}$ |
| 2006 $VK_{47}$ | 17.2 | 0.15 | 20061101 | 312.71745 | 68.87510 | 29.07947 | 4.32887 | 0.0207008 | 2.7703332 | 14 | 1 | 15 days | 0.45 | | MPC | 2006 $VK_{47}$ |
| 2006 $VT_{47}$ | 18.7 | 0.15 | 20061101 | 345.45970 | 17.24697 | 48.26457 | 21.46544 | 0.1026845 | 1.8562125 | 29 | 1 | 36 days | 0.39 | | MPC | 2006 $VT_{47}$ |
| 2006 $VV_{47}$ | 18.4 | 0.15 | 20061101 | 6.56001 | 150.62565 | 232.30401 | 5.35880 | 0.0688832 | 2.1406173 | 9 | 1 | 9 days | 0.38 | | MPC | 2006 $VV_{47}$ |
| 2006 $VY_{47}$ | 16.9 | 0.15 | 20061101 | 304.51880 | 108.03011 | 343.50221 | 2.85771 | 0.0678074 | 2.9581727 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $VY_{47}$ |
| 2006 $VZ_{47}$ | 17.6 | 0.15 | 20061101 | 334.04019 | 126.86717 | 298.17283 | 1.32917 | 0.1395114 | 2.5638423 | 9 | 1 | 8 days | 0.13 | | MPC | 2006 $VZ_{47}$ |
| 2006 $VA_{48}$ | 16.3 | 0.15 | 20061101 | 4.09475 | 14.20261 | 16.52443 | 5.87777 | 0.1151140 | 3.4619985 | 21 | 1 | 27 days | 0.25 | E | MPC | 2006 $VA_{48}$ |
| 2006 $VB_{48}$ | 15.8 | 0.15 | 20061101 | 117.29749 | 240.07320 | 25.76356 | 8.74516 | 0.1336970 | 3.1358971 | 15 | 1 | 13 days | 0.34 | | MPC | 2006 $VB_{48}$ |
| 2006 $VD_{48}$ | 18.3 | 0.15 | 20061101 | 31.21599 | 204.43948 | 159.63137 | 1.74720 | 0.1913315 | 2.3749663 | 14 | 1 | 16 days | 0.51 | | MPC | 2006 $VD_{48}$ |
| 2006 $VJ_{48}$ | 17.0 | 0.15 | 20061101 | 69.36256 | 97.66306 | 228.92755 | 4.61254 | 0.1742534 | 2.5674528 | 22 | 1 | 31 days | 0.21 | | MPC | 2006 $VJ_{48}$ |
| 2006 $VN_{48}$ | 15.6 | 0.15 | 20061101 | 346.17834 | 275.69357 | 150.88716 | 11.75111 | 0.2483220 | 2.7691772 | 17 | 1 | 25 days | 0.43 | | MPC | 2006 $VN_{48}$ |
| 2006 $VS_{48}$ | 16.7 | 0.15 | 20061101 | 42.26345 | 101.65235 | 258.64685 | 6.06217 | 0.1443273 | 2.2709169 | 19 | 1 | 17 days | 0.46 | | MPC | 2006 $VS_{48}$ |
| 2006 $VT_{48}$ | 15.6 | 0.15 | 20061101 | 351.41818 | 179.16331 | 252.76020 | 12.36099 | 0.1400228 | 3.0815128 | 20 | 1 | 13 days | 0.41 | | MPC | 2006 $VT_{48}$ |
| 2006 $VU_{48}$ | 16.1 | 0.15 | 20061101 | 59.21147 | 102.94014 | 255.08785 | 10.55838 | 0.0379116 | 2.6626375 | 20 | 1 | 33 days | 0.37 | | MPC | 2006 $VU_{48}$ |
| 2006 $VW_{48}$ | 16.0 | 0.15 | 20061012 | 26.17359 | 334.95499 | 54.96351 | 12.32804 | 0.0646990 | 3.1542223 | 16 | 1 | 57 days | 0.19 | | MPC | 2006 $VW_{48}$ |
| 2006 $VY_{48}$ | 16.3 | 0.15 | 20061012 | 36.09677 | 327.00584 | 47.23221 | 6.55354 | 0.0734892 | 2.6709305 | 29 | 1 | 59 days | 0.22 | | MPC | 2006 $VY_{48}$ |
| 2006 $VZ_{48}$ | 18.0 | 0.15 | 20061101 | 321.35738 | 218.51166 | 248.14448 | 4.50530 | 0.1380937 | 2.2025470 | 29 | 1 | 26 days | 0.42 | | MPC | 2006 $VZ_{48}$ |
| 2006 $VB_{49}$ | 17.9 | 0.15 | 20061101 | 347.02562 | 193.75241 | 243.64948 | 12.73230 | 0.2537407 | 2.6801425 | 20 | 1 | 17 days | 0.54 | | MPC | 2006 $VB_{49}$ |
| 2006 $VC_{49}$ | 15.8 | 0.15 | 20061101 | 342.55873 | 186.24651 | 255.47010 | 6.20944 | 0.1160077 | 3.1689733 | 14 | 1 | 21 days | 0.38 | | MPC | 2006 $VC_{49}$ |
| 2006 $VD_{49}$ | 16.4 | 0.15 | 20061101 | 350.36256 | 174.06608 | 258.38537 | 3.79548 | 0.1609393 | 3.1554158 | 20 | 1 | 26 days | 0.28 | | MPC | 2006 $VD_{49}$ |
| 2006 $VE_{49}$ | 17.3 | 0.15 | 20061101 | 17.36087 | 334.33992 | 51.20046 | 9.59169 | 0.2641201 | 2.6955933 | 22 | 1 | 12 days | 0.52 | | MPC | 2006 $VE_{49}$ |
| 2006 $VF_{49}$ | 16.7 | 0.15 | 20061101 | 351.83413 | 15.33128 | 56.73060 | 15.57606 | 0.2117716 | 2.7102774 | 29 | 1 | 30 days | 0.44 | | MPC | 2006 $VF_{49}$ |
| 2006 $VG_{49}$ | 16.5 | 0.15 | 20061101 | 24.59317 | 119.61213 | 266.69175 | 7.49103 | 0.1914224 | 3.2090058 | 9 | 1 | 14 days | 0.18 | | MPC | 2006 $VG_{49}$ |
| 2006 $VH_{49}$ | 16.9 | 0.15 | 20061101 | 51.56973 | 70.77182 | 288.36599 | 3.09285 | 0.1123987 | 2.6049616 | 9 | 1 | 14 days | 0.40 | | MPC | 2006 $VH_{49}$ |
| 2006 $VM_{49}$ | 16.9 | 0.15 | 20061101 | 16.50806 | 124.60326 | 277.48760 | 3.75181 | 0.1159323 | 2.7755086 | 15 | 1 | 14 days | 0.22 | | MPC | 2006 $VM_{49}$ |
| 2006 $VN_{49}$ | 17.5 | 0.15 | 20061101 | 193.48615 | 203.81039 | 27.02469 | 2.97318 | 0.0803722 | 2.1551402 | 9 | 1 | 10 days | 0.14 | | MPC | 2006 $VN_{49}$ |
| 2006 $VQ_{49}$ | 16.7 | 0.15 | 20061101 | 357.92511 | 8.60896 | 55.51151 | 10.67645 | 0.2790389 | 2.7842196 | 27 | 1 | 37 days | 0.57 | | MPC | 2006 $VQ_{49}$ |
| 2006 $VR_{49}$ | 18.0 | 0.15 | 20061101 | 37.27724 | 111.99899 | 262.95915 | 6.31218 | 0.1126329 | 2.2506879 | 12 | 1 | 14 days | 0.18 | | MPC | 2006 $VR_{49}$ |
| 2006 $VU_{49}$ | 17.6 | 0.15 | 20061101 | 254.60625 | 274.22248 | 275.63943 | 0.76869 | 0.1879778 | 2.2567982 | 9 | 1 | 10 days | 0.22 | | MPC | 2006 $VU_{49}$ |
| 2006 $VV_{49}$ | 16.2 | 0.15 | 20061101 | 333.26128 | 62.62669 | 33.77361 | 2.40104 | 0.0794921 | 3.0264810 | 16 | 1 | 23 days | 0.22 | | MPC | 2006 $VV_{49}$ |
| 2006 $VW_{49}$ | 16.6 | 0.15 | 20061101 | 359.04458 | 175.91896 | 248.10152 | 14.47141 | 0.2567138 | 3.1569804 | 20 | 1 | 17 days | 0.51 | | MPC | 2006 $VW_{49}$ |
| 2006 $VX_{49}$ | 17.8 | 0.15 | 20061101 | 54.39451 | 293.21743 | 58.21151 | 7.96818 | 0.1532053 | 2.5646225 | 9 | 1 | 10 days | 0.27 | | MPC | 2006 $VX_{49}$ |
| 2006 $VY_{49}$ | 16.1 | 0.15 | 20060922 | 324.64843 | 37.93192 | 61.82919 | 12.57937 | 0.1306228 | 3.0677695 | 34 | 1 | 57 days | 0.51 | M-v 4 | MPC | 2006 $VY_{49}$ |
| 2006 $VB_{50}$ | 16.7 | 0.15 | 20061101 | 39.99145 | 112.43683 | 248.97561 | 11.74439 | 0.2193456 | 2.6025652 | 20 | 1 | 17 days | 0.24 | | MPC | 2006 $VB_{50}$ |
| 2006 $VG_{50}$ | 16.6 | 0.15 | 20061101 | 90.21001 | 259.58586 | 58.45849 | 7.43088 | 0.1155383 | 2.4104913 | 16 | 1 | 27 days | 0.20 | | MPC | 2006 $VG_{50}$ |
| 2006 $VH_{50}$ | 18.2 | 0.15 | 20061101 | 23.30361 | 95.23536 | 288.56300 | 1.21732 | 0.1939805 | 2.4531760 | 9 | 1 | 14 days | 0.11 | | MPC | 2006 $VH_{50}$ |
| 2006 $VJ_{50}$ | 17.6 | 0.15 | 20061101 | 21.78274 | 89.72097 | 295.55824 | 1.11952 | 0.2158338 | 2.6374872 | 9 | 1 | 14 days | 0.17 | | MPC | 2006 $VJ_{50}$ |
| 2006 $VN_{50}$ | 15.5 | 0.15 | 20061101 | 29.38469 | 320.62863 | 58.89735 | 15.37362 | 0.1973355 | 2.5848810 | 26 | 1 | 17 days | 0.69 | | MPC | 2006 $VN_{50}$ |
| 2006 $VO_{50}$ | 17.8 | 0.15 | 20061101 | 334.71836 | 147.73920 | 309.26983 | 1.35111 | 0.1693292 | 2.4303864 | 12 | 1 | 14 days | 0.16 | | MPC | 2006 $VO_{50}$ |
| 2006 $VS_{50}$ | 17.0 | 0.15 | 20061101 | 5.45464 | 164.15119 | 253.89199 | 16.09296 | 0.2044080 | 3.1790529 | 15 | 1 | 14 days | 0.17 | | MPC | 2006 $VS_{50}$ |
| 2006 $VW_{50}$ | 18.1 | 0.15 | 20061101 | 341.21303 | 152.52753 | 297.18308 | 1.58305 | 0.1813325 | 2.4130939 | 12 | 1 | 14 days | 0.29 | | MPC | 2006 $VW_{50}$ |
| 2006 $VX_{50}$ | 16.5 | 0.15 | 20061101 | 12.23317 | 350.49072 | 61.69512 | 10.37949 | 0.0887978 | 2.7005161 | 16 | 1 | 14 days | 0.39 | | MPC | 2006 $VX_{50}$ |
| 2006 $VB_{51}$ | 15.9 | 0.15 | 20061101 | 26.54596 | 143.05500 | 257.42499 | 21.12063 | 0.0634841 | 3.0749321 | 12 | 1 | 14 days | 0.19 | | MPC | 2006 $VB_{51}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VC_{51}$ | 16.8 | 0.15 | 20061101 | 339.02943 | 35.31686 | 57.92348 | 7.62584 | 0.1162905 | 2.5106790 | 10 | 1 | 8 days | 0.28 | | MPC | 2006 $VC_{51}$ |
| 2006 $VL_{51}$ | 16.1 | 0.15 | 20061101 | 54.01654 | 103.40716 | 252.16305 | 24.48290 | 0.1797066 | 2.6034716 | 25 | 1 | 17 days | 0.65 | | MPC | 2006 $VL_{51}$ |
| 2006 $VN_{51}$ | 17.8 | 0.15 | 20061101 | 13.43362 | 339.95941 | 64.46901 | 3.50855 | 0.1582132 | 2.3623936 | 12 | 1 | 14 days | 0.12 | | MPC | 2006 $VN_{51}$ |
| 2006 $VO_{51}$ | 16.8 | 0.15 | 20061101 | 337.97847 | 193.59074 | 260.57738 | 3.56617 | 0.1608566 | 2.4048470 | 14 | 1 | 10 days | 0.30 | | MPC | 2006 $VO_{51}$ |
| 2006 $VQ_{51}$ | 16.0 | 0.15 | 20061101 | 81.13488 | 63.90862 | 268.99469 | 3.71607 | 0.1263802 | 2.9215738 | 15 | 1 | 14 days | 0.41 | | MPC | 2006 $VQ_{51}$ |
| 2006 $VR_{51}$ | 16.4 | 0.15 | 20061101 | 113.33545 | 54.77475 | 251.48737 | 23.16629 | 0.0790319 | 2.6475704 | 15 | 1 | 17 days | 0.19 | | MPC | 2006 $VR_{51}$ |
| 2006 $VS_{51}$ | 16.1 | 0.15 | 20061101 | 153.47304 | 16.76852 | 254.85120 | 9.65160 | 0.0768178 | 2.7496927 | 12 | 1 | 14 days | 0.15 | | MPC | 2006 $VS_{51}$ |
| 2006 $VT_{51}$ | 16.9 | 0.15 | 20061101 | 51.01905 | 330.85561 | 44.24939 | 1.73638 | 0.0154820 | 2.6956778 | 9 | 1 | 10 days | 0.22 | | MPC | 2006 $VT_{51}$ |
| 2006 $VE_{52}$ | 15.9 | 0.15 | 20061101 | 354.08537 | 139.85545 | 280.21680 | 7.01360 | 0.1441501 | 3.1896381 | 16 | 1 | 11 days | 0.35 | | MPC | 2006 $VE_{52}$ |
| 2006 $VF_{52}$ | 17.9 | 0.15 | 20061101 | 352.59162 | 130.71132 | 288.72760 | 5.60658 | 0.0789596 | 2.3851563 | 15 | 1 | 11 days | 0.22 | | MPC | 2006 $VF_{52}$ |
| 2006 $VG_{52}$ | 16.7 | 0.15 | 20061101 | 4.99983 | 81.54573 | 325.22612 | 4.90949 | 0.0507377 | 2.7464373 | 12 | 1 | 11 days | 0.08 | | MPC | 2006 $VG_{52}$ |
| 2006 $VH_{52}$ | 15.7 | 0.15 | 20061101 | 350.24402 | 43.35696 | 22.88467 | 10.47950 | 0.1091845 | 3.4278121 | 16 | 1 | 10 days | 0.26 | | MPC | 2006 $VH_{52}$ |
| 2006 $VJ_{52}$ | 15.4 | 0.15 | 20061101 | 65.19720 | 78.55250 | 254.25684 | 15.77132 | 0.1353560 | 3.1715499 | 23 | 1 | 13 days | 0.49 | | MPC | 2006 $VJ_{52}$ |
| 2006 $VK_{52}$ | 17.6 | 0.15 | 20061101 | 354.84152 | 125.63861 | 291.56580 | 5.40692 | 0.0850065 | 2.4091478 | 18 | 1 | 11 days | 0.21 | | MPC | 2006 $VK_{52}$ |
| 2006 $VL_{52}$ | 17.6 | 0.15 | 20061101 | 38.77223 | 84.50458 | 249.03369 | 20.71913 | 0.3792516 | 3.0966403 | 12 | 1 | 8 days | 0.28 | | MPC | 2006 $VL_{52}$ |
| 2006 $VM_{52}$ | 16.9 | 0.15 | 20061101 | 123.93491 | 316.31090 | 328.91476 | 5.07677 | 0.0450271 | 2.7120461 | 26 | 1 | 13 days | 0.20 | | MPC | 2006 $VM_{52}$ |
| 2006 $VN_{52}$ | 16.5 | 0.15 | 20061101 | 349.48825 | 66.89763 | 359.38577 | 4.71350 | 0.1833058 | 2.5984945 | 59 | 1 | 13 days | 0.42 | | MPC | 2006 $VN_{52}$ |
| 2006 $VP_{52}$ | 17.4 | 0.15 | 20061101 | 250.25134 | 235.27681 | 298.65453 | 5.67728 | 0.1109171 | 2.4231337 | 28 | 1 | 11 days | 0.22 | | MPC | 2006 $VP_{52}$ |
| 2006 $VQ_{52}$ | 16.3 | 0.15 | 20061101 | 146.64172 | 231.37292 | 29.11141 | 10.82793 | 0.1300863 | 2.6065810 | 33 | 1 | 33 days | 0.18 | | MPC | 2006 $VQ_{52}$ |
| 2006 $VR_{52}$ | 15.9 | 0.15 | 20061101 | 128.04637 | 299.42096 | 343.59159 | 5.72658 | 0.0339029 | 2.8485471 | 18 | 1 | 11 days | 0.19 | | MPC | 2006 $VR_{52}$ |
| 2006 $VS_{52}$ | 18.2 | 0.15 | 20061101 | 335.33185 | 66.80041 | 16.40396 | 6.57408 | 0.1160917 | 2.6168962 | 33 | 1 | 13 days | 0.43 | | MPC | 2006 $VS_{52}$ |
| 2006 $VT_{52}$ | 17.6 | 0.15 | 20061101 | 13.17500 | 110.27217 | 270.56250 | 6.55216 | 0.3483623 | 2.7718432 | 56 | 1 | 31 days | 0.53 | E | MPC | 2006 $VT_{52}$ |
| 2006 $VU_{52}$ | 17.0 | 0.15 | 20061101 | 25.99612 | 25.32394 | 351.01872 | 4.60777 | 0.1593514 | 2.6790730 | 30 | 1 | 13 days | 0.18 | | MPC | 2006 $VU_{52}$ |
| 2006 $VW_{52}$ | 16.8 | 0.15 | 20061101 | 241.67445 | 234.03983 | 303.20015 | 5.81785 | 0.0490652 | 2.7511406 | 9 | 1 | 6 days | 0.31 | | MPC | 2006 $VW_{52}$ |
| 2006 $VX_{52}$ | 16.4 | 0.15 | 20061101 | 14.73034 | 105.06756 | 290.60185 | 5.85808 | 0.0997925 | 3.0039646 | 15 | 1 | 10 days | 0.25 | | MPC | 2006 $VX_{52}$ |
| 2006 $VY_{52}$ | 17.5 | 0.15 | 20061101 | 41.34208 | 49.08383 | 321.15164 | 5.00748 | 0.0294814 | 2.7370148 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $VY_{52}$ |
| 2006 $VZ_{52}$ | 16.3 | 0.15 | 20061101 | 35.52591 | 354.24761 | 17.96332 | 8.50926 | 0.0977301 | 3.1636100 | 12 | 1 | 8 days | 0.20 | | MPC | 2006 $VZ_{52}$ |
| 2006 $VA_{53}$ | 15.4 | 0.15 | 20061101 | 98.94302 | 272.66879 | 33.32714 | 13.53367 | 0.1036662 | 3.2030556 | 14 | 1 | 10 days | 0.23 | | MPC | 2006 $VA_{53}$ |
| 2006 $VB_{53}$ | 16.6 | 0.15 | 20061101 | 347.01802 | 162.79161 | 266.63984 | 8.80555 | 0.0809814 | 2.9429563 | 15 | 1 | 11 days | 0.13 | | MPC | 2006 $VB_{53}$ |
| 2006 $VE_{53}$ | 17.7 | 0.15 | 20061101 | 20.00192 | 100.48230 | 285.07190 | 4.96542 | 0.1234679 | 2.7286313 | 12 | 1 | 8 days | 0.17 | | MPC | 2006 $VE_{53}$ |
| 2006 $VF_{53}$ | 16.5 | 0.15 | 20061101 | 352.25192 | 150.75335 | 270.90264 | 7.75547 | 0.0751510 | 3.1798069 | 18 | 1 | 14 days | 0.35 | | MPC | 2006 $VF_{53}$ |
| 2006 $VJ_{53}$ | 18.1 | 0.15 | 20061101 | 342.04938 | 34.43629 | 40.62034 | 15.43790 | 0.1218557 | 2.6783156 | 17 | 1 | 34 days | 0.21 | | MPC | 2006 $VJ_{53}$ |
| 2006 $VL_{53}$ | 17.0 | 0.15 | 20061101 | 233.30644 | 213.80608 | 340.77395 | 4.76126 | 0.1780672 | 2.5941411 | 9 | 1 | 6 days | 0.20 | | MPC | 2006 $VL_{53}$ |
| 2006 $VM_{53}$ | 16.8 | 0.15 | 20061101 | 255.57762 | 235.73051 | 283.04444 | 6.40953 | 0.0075312 | 3.0165308 | 15 | 1 | 11 days | 0.25 | | MPC | 2006 $VM_{53}$ |
| 2006 $VN_{53}$ | 17.4 | 0.15 | 20061101 | 110.15690 | 19.65788 | 270.94334 | 6.46611 | 0.1146301 | 2.4521886 | 16 | 1 | 33 days | 0.18 | | MPC | 2006 $VN_{53}$ |
| 2006 $VO_{53}$ | 17.1 | 0.15 | 20061101 | 46.13050 | 93.20824 | 258.16816 | 9.02270 | 0.1538664 | 2.7789884 | 9 | 1 | 8 days | 0.29 | | MPC | 2006 $VO_{53}$ |
| 2006 $VP_{53}$ | 16.3 | 0.15 | 20061101 | 93.86478 | 29.61298 | 282.23625 | 4.91153 | 0.0683393 | 2.9211291 | 15 | 1 | 25 days | 0.27 | | MPC | 2006 $VP_{53}$ |
| 2006 $VR_{53}$ | 18.3 | 0.15 | 20061101 | 334.00493 | 75.95052 | 13.19964 | 5.40458 | 0.1903756 | 2.5468173 | 23 | 1 | 30 days | 0.25 | | MPC | 2006 $VR_{53}$ |
| 2006 $VS_{53}$ | 16.5 | 0.15 | 20061101 | 211.18548 | 263.15360 | 306.06097 | 4.36826 | 0.1028504 | 3.0518720 | 15 | 1 | 30 days | 0.24 | | MPC | 2006 $VS_{53}$ |
| 2006 $VT_{53}$ | 18.5 | 0.15 | 20061101 | 17.93741 | 352.00431 | 33.80655 | 8.00113 | 0.1523292 | 2.2278372 | 18 | 1 | 22 days | 0.23 | | MPC | 2006 $VT_{53}$ |
| 2006 $VU_{53}$ | 16.7 | 0.15 | 20061101 | 62.08167 | 309.57349 | 34.29278 | 9.61802 | 0.0828205 | 3.1704537 | 12 | 1 | 11 days | 0.16 | | MPC | 2006 $VU_{53}$ |
| 2006 $VV_{53}$ | 16.7 | 0.15 | 20061101 | 40.64273 | 347.73392 | 13.17504 | 4.77307 | 0.1330407 | 2.6903430 | 16 | 1 | 31 days | 0.57 | | MPC | 2006 $VV_{53}$ |
| 2006 $VW_{53}$ | 16.0 | 0.15 | 20061101 | 158.03128 | 335.52682 | 278.45024 | 5.99978 | 0.0770253 | 3.1025449 | 15 | 1 | 11 days | 0.17 | | MPC | 2006 $VW_{53}$ |
| 2006 $VX_{53}$ | 16.5 | 0.15 | 20061101 | 25.45760 | 83.82052 | 303.64522 | 4.93403 | 0.0410609 | 3.3652315 | 12 | 1 | 11 days | 0.25 | | MPC | 2006 $VX_{53}$ |
| 2006 $VY_{53}$ | 16.8 | 0.15 | 20061012 | 107.95666 | 245.70871 | 43.96032 | 18.39598 | 0.1296837 | 2.6487257 | 16 | 1 | 53 days | 0.23 | | MPC | 2006 $VY_{53}$ |
| 2006 $VZ_{53}$ | 16.4 | 0.15 | 20061101 | 39.11760 | 324.22006 | 38.28020 | 13.59119 | 0.1560620 | 3.1618134 | 12 | 1 | 17 days | 0.36 | | MPC | 2006 $VZ_{53}$ |
| 2006 $VA_{54}$ | 18.4 | 0.15 | 20061101 | 350.53296 | 163.44021 | 262.49663 | 7.67215 | 0.1864353 | 2.7194484 | 15 | 1 | 11 days | 0.18 | | MPC | 2006 $VA_{54}$ |
| 2006 $VB_{54}$ | 17.4 | 0.15 | 20061101 | 103.09950 | 281.36690 | 25.42726 | 6.68629 | 0.0377856 | 2.5776422 | 18 | 1 | 22 days | 0.23 | | MPC | 2006 $VB_{54}$ |
| 2006 $VC_{54}$ | 16.8 | 0.15 | 20061101 | 301.74712 | 79.97789 | 39.92001 | 11.87829 | 0.0649936 | 3.0015935 | 9 | 1 | 8 days | 0.13 | | MPC | 2006 $VC_{54}$ |
| 2006 $VD_{54}$ | 18.1 | 0.15 | 20061101 | 314.65138 | 115.19713 | 355.86255 | 3.33771 | 0.1394875 | 2.5827471 | 23 | 1 | 23 days | 0.30 | | MPC | 2006 $VD_{54}$ |
| 2006 $VE_{54}$ | 15.9 | 0.15 | 20061012 | 87.37289 | 298.50689 | 17.33146 | 5.97242 | 0.0701382 | 2.9343325 | 28 | 1 | 50 days | 0.35 | | MPC | 2006 $VE_{54}$ |
| 2006 $VH_{54}$ | 15.9 | 0.15 | 20061101 | 305.52420 | 323.19616 | 153.62731 | 0.90277 | 0.0760742 | 3.1241669 | 18 | 1 | 26 days | 0.18 | | MPC | 2006 $VH_{54}$ |
| 2006 $VJ_{54}$ | 19.4 | 0.15 | 20061101 | 338.97492 | 268.23153 | 179.88458 | 0.60524 | 0.2745749 | 2.6316479 | 15 | 1 | 16 days | 0.27 | | MPC | 2006 $VJ_{54}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VL_{54}$ | 19.4 | 0.15 | 20061101 | 8.22395 | 175.90408 | 221.65943 | 1.76440 | 0.1987140 | 2.2749892 | 15 | 1 | 16 days | 0.28 | | MPC | | 2006 $VL_{54}$ |
| 2006 $VM_{54}$ | 18.3 | 0.15 | 20061101 | 33.87793 | 137.19211 | 231.12389 | 8.20991 | 0.1441648 | 2.5876285 | 9 | 1 | 8 days | 0.24 | | MPC | | 2006 $VM_{54}$ |
| 2006 $VO_{54}$ | 19.1 | 0.15 | 20061101 | 340.56372 | 2.33912 | 75.64533 | 2.63310 | 0.1572621 | 2.3460492 | 12 | 1 | 12 days | 0.11 | | MPC | | 2006 $VO_{54}$ |
| 2006 $VP_{54}$ | 18.4 | 0.15 | 20061101 | 30.78541 | 294.56896 | 72.06431 | 2.57742 | 0.1961657 | 2.4585035 | 16 | 1 | 39 days | 0.30 | | MPC | | 2006 $VP_{54}$ |
| 2006 $VR_{54}$ | 15.4 | 0.15 | 20061101 | 159.92536 | 26.65433 | 229.23337 | 8.76504 | 0.0158757 | 3.4565444 | 29 | 1 | 16 days | 0.33 | E | MPC | | 2006 $VR_{54}$ |
| 2006 $VU_{54}$ | 16.2 | 0.15 | 20061101 | 16.46651 | 319.41287 | 73.36979 | 1.60074 | 0.1347483 | 3.0392664 | 15 | 1 | 9 days | 0.39 | | MPC | | 2006 $VU_{54}$ |
| 2006 $VW_{54}$ | 16.3 | 0.15 | 20061101 | 327.03884 | 244.99635 | 205.64772 | 2.34213 | 0.0605136 | 2.5548183 | 43 | 1 | 26 days | 0.42 | | MPC | | 2006 $VW_{54}$ |
| 2006 $VX_{54}$ | 16.5 | 0.15 | 20061101 | 354.20343 | 346.04376 | 76.06031 | 1.86191 | 0.1440522 | 3.0282698 | 23 | 1 | 16 days | 0.33 | | MPC | | 2006 $VX_{54}$ |
| 2006 $VY_{54}$ | 16.9 | 0.15 | 20061101 | 43.22491 | 281.49267 | 59.68636 | 26.08092 | 0.2939838 | 3.1776442 | 17 | 1 | 33 days | 0.24 | | MPC | | 2006 $VY_{54}$ |
| 2006 $VA_{55}$ | 17.0 | 0.15 | 20061101 | 47.29996 | 291.92379 | 63.18031 | 9.88205 | 0.1347760 | 3.0853881 | 20 | 1 | 31 days | 0.27 | | MPC | | 2006 $VA_{55}$ |
| 2006 $VC_{55}$ | 18.3 | 0.15 | 20061101 | 71.13671 | 240.19241 | 80.10480 | 2.32292 | 0.1931497 | 2.3622316 | 12 | 1 | 12 days | 0.17 | | MPC | | 2006 $VC_{55}$ |
| 2006 $VD_{55}$ | 18.8 | 0.15 | 20061101 | 20.43491 | 302.97828 | 78.66450 | 2.34953 | 0.1889888 | 2.4161785 | 12 | 1 | 16 days | 0.15 | | MPC | | 2006 $VD_{55}$ |
| 2006 $VE_{55}$ | 18.3 | 0.15 | 20061101 | 346.48455 | 10.63102 | 63.53431 | 10.66499 | 0.1945412 | 3.0475715 | 9 | 1 | 8 days | 0.26 | | MPC | | 2006 $VE_{55}$ |
| 2006 $VF_{55}$ | 16.4 | 0.15 | 20061101 | 314.11840 | 238.19274 | 230.67035 | 9.47230 | 0.0838584 | 3.0115094 | 25 | 1 | 25 days | 0.43 | | MPC | | 2006 $VF_{55}$ |
| 2006 $VH_{55}$ | 18.0 | 0.15 | 20061101 | 0.47852 | 203.55808 | 209.08121 | 2.16550 | 0.1376352 | 2.6173147 | 27 | 1 | 27 days | 0.21 | | MPC | | 2006 $VH_{55}$ |
| 2006 $VL_{55}$ | 19.2 | 0.15 | 20061101 | 332.14813 | 31.67080 | 66.79378 | 5.78161 | 0.2574791 | 2.5504263 | 17 | 1 | 34 days | 0.36 | | MPC | | 2006 $VL_{55}$ |
| 2006 $VM_{55}$ | 17.7 | 0.15 | 20061101 | 319.30648 | 236.95662 | 233.45602 | 11.30131 | 0.1764375 | 2.7031290 | 19 | 1 | 16 days | 0.36 | | MPC | | 2006 $VM_{55}$ |
| 2006 $VN_{55}$ | 17.8 | 0.15 | 20061101 | 287.27723 | 273.75311 | 218.74698 | 3.58942 | 0.0595552 | 2.2009058 | 23 | 1 | 27 days | 0.22 | | MPC | | 2006 $VN_{55}$ |
| 2006 $VO_{55}$ | 18.4 | 0.15 | 20061101 | 22.17378 | 173.91248 | 204.93962 | 1.96742 | 0.1927107 | 2.3498549 | 30 | 1 | 39 days | 0.24 | | MPC | | 2006 $VO_{55}$ |
| 2006 $VP_{55}$ | 16.7 | 0.15 | 20061101 | 37.57459 | 289.50396 | 73.69642 | 3.22778 | 0.1731306 | 3.0447727 | 12 | 1 | 12 days | 0.27 | | MPC | | 2006 $VP_{55}$ |
| 2006 $VQ_{55}$ | 18.3 | 0.15 | 20061101 | 59.61002 | 228.21842 | 112.56842 | 1.57125 | 0.1311561 | 2.5750068 | 9 | 1 | 12 days | 0.27 | | MPC | | 2006 $VQ_{55}$ |
| 2006 $VS_{55}$ | 17.4 | 0.15 | 20061101 | 302.92083 | 302.83692 | 181.26865 | 1.41046 | 0.1216557 | 2.5564618 | 16 | 1 | 16 days | 0.19 | | MPC | | 2006 $VS_{55}$ |
| 2006 $VT_{55}$ | 18.4 | 0.15 | 20061101 | 14.16905 | 169.84631 | 227.39553 | 5.99781 | 0.0488951 | 2.1836965 | 16 | 1 | 14 days | 0.18 | | MPC | | 2006 $VT_{55}$ |
| 2006 $VU_{55}$ | 17.2 | 0.15 | 20061101 | 3.12499 | 272.84826 | 137.22519 | 1.54227 | 0.1860442 | 3.1083659 | 19 | 1 | 33 days | 0.17 | | MPC | | 2006 $VU_{55}$ |
| 2006 $VX_{55}$ | 16.2 | 0.15 | 20061101 | 139.33118 | 191.49102 | 83.01860 | 3.76854 | 0.0236815 | 2.6431195 | 26 | 1 | 39 days | 0.38 | | MPC | | 2006 $VX_{55}$ |
| 2006 $VY_{55}$ | 15.9 | 0.15 | 20061101 | 353.91664 | 0.24226 | 63.76166 | 11.95808 | 0.2160870 | 3.1208513 | 36 | 1 | 36 days | 0.39 | | MPC | | 2006 $VY_{55}$ |
| 2006 $VA_{56}$ | 19.2 | 0.15 | 20061101 | 16.53777 | 307.14982 | 80.55832 | 2.39594 | 0.1888140 | 2.4008914 | 15 | 1 | 39 days | 0.30 | | MPC | | 2006 $VA_{56}$ |
| 2006 $VB_{56}$ | 16.2 | 0.15 | 20061012 | 74.43877 | 251.08573 | 76.74995 | 3.91676 | 0.0782940 | 2.6840437 | 22 | 1 | 56 days | 0.22 | | MPC | | 2006 $VB_{56}$ |
| 2006 $VC_{56}$ | 16.3 | 0.15 | 20061101 | 21.09251 | 324.57528 | 66.56098 | 11.69700 | 0.0793648 | 2.9681590 | 23 | 1 | 36 days | 0.25 | | MPC | | 2006 $VC_{56}$ |
| 2006 $VD_{56}$ | 16.2 | 0.15 | 20061101 | 76.93215 | 91.12344 | 230.37802 | 10.69496 | 0.1612016 | 2.9994722 | 19 | 1 | 39 days | 0.26 | | MPC | | 2006 $VD_{56}$ |
| 2006 $VE_{56}$ | 17.3 | 0.15 | 20061101 | 331.43829 | 308.97907 | 145.73993 | 1.19935 | 0.1545339 | 3.1375894 | 15 | 1 | 16 days | 0.20 | | MPC | | 2006 $VE_{56}$ |
| 2006 $VH_{56}$ | 18.6 | 0.15 | 20061101 | 9.08829 | 319.30978 | 79.65719 | 3.22027 | 0.2109954 | 2.6522047 | 18 | 1 | 39 days | 0.19 | | MPC | | 2006 $VH_{56}$ |
| 2006 $VJ_{56}$ | 16.3 | 0.15 | 20061101 | 319.99964 | 359.14687 | 101.56208 | 2.60362 | 0.0487478 | 3.1150623 | 31 | 1 | 39 days | 0.23 | | MPC | | 2006 $VJ_{56}$ |
| 2006 $VL_{56}$ | 16.7 | 0.15 | 20061012 | 12.64391 | 294.75578 | 100.99095 | 1.74869 | 0.0820660 | 2.7771526 | 20 | 1 | 56 days | 0.17 | | MPC | | 2006 $VL_{56}$ |
| 2006 $VM_{56}$ | 17.0 | 0.15 | 20061101 | 323.66601 | 227.90732 | 227.16419 | 6.12962 | 0.0616350 | 2.3323460 | 26 | 1 | 41 days | 0.59 | | MPC | | 2006 $VM_{56}$ |
| 2006 $VN_{56}$ | 17.1 | 0.15 | 20061101 | 37.54742 | 160.57596 | 193.97045 | 1.16396 | 0.2507984 | 2.6527880 | 24 | 1 | 39 days | 0.28 | | MPC | | 2006 $VN_{56}$ |
| 2006 $VO_{56}$ | 16.7 | 0.15 | 20061101 | 13.31909 | 325.72691 | 74.76802 | 4.62503 | 0.0819856 | 2.7959666 | 9 | 1 | 16 days | 0.10 | | MPC | | 2006 $VO_{56}$ |
| 2006 $VR_{56}$ | 16.8 | 0.15 | 20060922 | 329.60065 | 215.49531 | 228.35469 | 8.04688 | 0.1369389 | 2.7105403 | 34 | 1 | 61 days | 0.35 | M-v 4 | MPC | | 2006 $VR_{56}$ |
| 2006 $VS_{56}$ | 17.5 | 0.15 | 20061101 | 54.41943 | 234.25577 | 97.40124 | 2.53678 | 0.2683206 | 2.6195226 | 20 | 1 | 37 days | 0.35 | | MPC | | 2006 $VS_{56}$ |
| 2006 $VT_{56}$ | 18.8 | 0.15 | 20061101 | 309.60227 | 47.65762 | 76.32370 | 3.13947 | 0.1891233 | 2.3723230 | 15 | 1 | 16 days | 0.21 | | MPC | | 2006 $VT_{56}$ |
| 2006 $VV_{56}$ | 16.1 | 0.15 | 20061101 | 19.98629 | 240.24289 | 141.94199 | 1.22948 | 0.2470329 | 3.0544889 | 33 | 1 | 39 days | 0.40 | | MPC | | 2006 $VV_{56}$ |
| 2006 $VY_{56}$ | 19.0 | 0.15 | 20061101 | 352.94953 | 338.85644 | 83.05873 | 2.27482 | 0.1102735 | 2.1792233 | 15 | 1 | 16 days | 0.22 | | MPC | | 2006 $VY_{56}$ |
| 2006 $VZ_{56}$ | 15.7 | 0.15 | 20061101 | 312.48783 | 238.72236 | 231.87061 | 9.72328 | 0.0546689 | 3.1029514 | 27 | 1 | 39 days | 0.33 | | MPC | | 2006 $VZ_{56}$ |
| 2006 $VA_{57}$ | 17.8 | 0.15 | 20061101 | 28.06484 | 285.67405 | 89.04452 | 2.93838 | 0.1866499 | 2.7056469 | 19 | 1 | 37 days | 0.30 | | MPC | | 2006 $VA_{57}$ |
| 2006 $VB_{57}$ | 17.3 | 0.15 | 20061101 | 300.84887 | 252.34220 | 232.13757 | 11.77422 | 0.0702573 | 2.9963000 | 9 | 1 | 12 days | 0.69 | | MPC | | 2006 $VB_{57}$ |
| 2006 $VD_{57}$ | 16.7 | 0.15 | 20061101 | 201.70832 | 150.41141 | 71.85308 | 8.07318 | 0.1459368 | 2.7213311 | 15 | 1 | 12 days | 0.67 | | MPC | | 2006 $VD_{57}$ |
| 2006 $VG_{57}$ | 17.2 | 0.15 | 20061101 | 5.08308 | 338.47265 | 70.37593 | 7.30625 | 0.1360158 | 2.6808530 | 26 | 1 | 36 days | 0.20 | | MPC | | 2006 $VG_{57}$ |
| 2006 $VH_{57}$ | 17.5 | 0.15 | 20061101 | 40.46210 | 282.12668 | 64.83481 | 13.51648 | 0.2860456 | 2.6835702 | 12 | 1 | 11 days | 0.11 | | MPC | | 2006 $VH_{57}$ |
| 2006 $VJ_{57}$ | 17.9 | 0.15 | 20061101 | 9.55345 | 317.48530 | 85.57971 | 2.92897 | 0.1519110 | 2.8012298 | 12 | 1 | 16 days | 0.21 | | MPC | | 2006 $VJ_{57}$ |
| 2006 $VL_{57}$ | 16.5 | 0.15 | 20061101 | 246.72077 | 312.17773 | 228.96155 | 6.75532 | 0.0793504 | 3.1757650 | 9 | 1 | 8 days | 0.54 | | MPC | | 2006 $VL_{57}$ |
| 2006 $VM_{57}$ | 16.5 | 0.15 | 20061101 | 3.22262 | 218.59363 | 195.76002 | 1.64886 | 0.0635275 | 2.8674725 | 22 | 1 | 37 days | 0.38 | | MPC | | 2006 $VM_{57}$ |
| 2006 $VP_{57}$ | 16.3 | 0.15 | 20061101 | 126.42721 | 46.17790 | 234.52016 | 13.33764 | 0.1544256 | 2.6980645 | 19 | 1 | 27 days | 0.18 | | MPC | | 2006 $VP_{57}$ |
| 2006 $VT_{57}$ | 16.1 | 0.15 | 20061101 | 47.79807 | 264.47696 | 76.01439 | 8.54138 | 0.2818461 | 3.9887868 | 13 | 1 | 36 days | 0.19 | | MPC | | 2006 $VT_{57}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VU_{57}$ | 16.4 | 0.15 | 20061101 | 71.55871 | 183.17648 | 152.90576 | 2.57958 | 0.0837983 | 3.0099295 | 16 | 1 | 36 days | 0.22 | | | MPC | 2006 $VU_{57}$ |
| 2006 $VV_{57}$ | 14.7 | 0.15 | 20061101 | 189.50754 | 116.88367 | 116.83142 | 4.10091 | 0.2112115 | 3.8783948 | 9 | 1 | 12 days | 0.78 | | | MPC | 2006 $VV_{57}$ |
| 2006 $VW_{57}$ | 16.4 | 0.15 | 20061101 | 10.66550 | 301.96706 | 100.12535 | 3.77079 | 0.0938503 | 2.6420215 | 25 | 1 | 36 days | 0.50 | | | MPC | 2006 $VW_{57}$ |
| 2006 $VX_{57}$ | 16.6 | 0.15 | 20061101 | 79.38987 | 247.92074 | 83.04663 | 6.98721 | 0.0525518 | 2.7318757 | 13 | 1 | 32 days | 0.16 | | | MPC | 2006 $VX_{57}$ |
| 2006 $VY_{57}$ | 17.7 | 0.15 | 20061012 | 29.40229 | 154.60972 | 210.06003 | 4.28296 | 0.1710278 | 2.2996081 | 24 | 1 | 56 days | 0.35 | | | MPC | 2006 $VY_{57}$ |
| 2006 $VA_{58}$ | 15.6 | 0.15 | 20061101 | 187.12925 | 359.02460 | 233.07523 | 18.60680 | 0.0447641 | 3.0938558 | 13 | 1 | 8 days | 0.31 | | | MPC | 2006 $VA_{58}$ |
| 2006 $VB_{58}$ | 17.3 | 0.15 | 20061012 | 43.62459 | 146.90301 | 208.93356 | 4.66135 | 0.1287549 | 2.7224265 | 20 | 1 | 56 days | 0.25 | | | MPC | 2006 $VB_{58}$ |
| 2006 $VC_{58}$ | 19.0 | 0.15 | 20061101 | 8.35768 | 294.99826 | 102.10118 | 2.94743 | 0.2586593 | 2.4777692 | 15 | 1 | 16 days | 0.12 | | | MPC | 2006 $VC_{58}$ |
| 2006 $VD_{58}$ | 18.0 | 0.15 | 20061101 | 43.07831 | 288.52836 | 65.01794 | 17.23959 | 0.1914313 | 2.5486493 | 23 | 1 | 35 days | 0.35 | | | MPC | 2006 $VD_{58}$ |
| 2006 $VE_{58}$ | 19.1 | 0.15 | 20061101 | 22.05103 | 195.83800 | 181.14395 | 2.63929 | 0.2271442 | 2.3248611 | 22 | 1 | 33 days | 0.24 | | | MPC | 2006 $VE_{58}$ |
| 2006 $VK_{58}$ | 18.1 | 0.15 | 20061101 | 50.86372 | 166.67675 | 179.80649 | 2.90737 | 0.1722031 | 2.4219832 | 19 | 1 | 36 days | 0.24 | | | MPC | 2006 $VK_{58}$ |
| 2006 $VL_{58}$ | 19.1 | 0.15 | 20061101 | 10.81298 | 271.42584 | 125.72153 | 2.23945 | 0.1847306 | 2.4123940 | 19 | 1 | 36 days | 0.36 | | | MPC | 2006 $VL_{58}$ |
| 2006 $VO_{58}$ | 17.6 | 0.15 | 20061101 | 188.68896 | 146.05477 | 81.45073 | 6.73971 | 0.0496738 | 2.2321319 | 16 | 1 | 32 days | 0.21 | | | MPC | 2006 $VO_{58}$ |
| 2006 $VP_{58}$ | 17.8 | 0.15 | 20061101 | 3.16102 | 278.40716 | 134.47478 | 2.01607 | 0.0604714 | 2.7140174 | 15 | 1 | 16 days | 0.38 | | | MPC | 2006 $VP_{58}$ |
| 2006 $VQ_{58}$ | 18.7 | 0.15 | 20061101 | 344.94516 | 9.03641 | 71.26623 | 10.37283 | 0.2728904 | 2.7650595 | 12 | 1 | 16 days | 0.12 | | | MPC | 2006 $VQ_{58}$ |
| 2006 $VR_{58}$ | 16.3 | 0.15 | 20061101 | 52.50334 | 282.32264 | 72.50772 | 10.53285 | 0.1048677 | 3.0608239 | 16 | 1 | 36 days | 0.17 | | | MPC | 2006 $VR_{58}$ |
| 2006 $VS_{58}$ | 16.5 | 0.15 | 20061101 | 338.40681 | 339.07037 | 103.45180 | 4.67127 | 0.0739514 | 3.0742208 | 9 | 1 | 9 days | 0.20 | | | MPC | 2006 $VS_{58}$ |
| 2006 $VT_{58}$ | 17.5 | 0.15 | 20061101 | 77.96809 | 243.68693 | 82.36322 | 7.23435 | 0.1052255 | 2.4726153 | 16 | 1 | 36 days | 0.26 | | | MPC | 2006 $VT_{58}$ |
| 2006 $VV_{58}$ | 18.7 | 0.15 | 20061101 | 327.66461 | 9.41570 | 87.54753 | 3.29262 | 0.1721243 | 2.3314954 | 16 | 1 | 14 days | 0.19 | | | MPC | 2006 $VV_{58}$ |
| 2006 $VW_{58}$ | 15.2 | 0.15 | 20061101 | 189.11499 | 0.97073 | 229.72311 | 12.84184 | 0.1428826 | 3.1274970 | 23 | 1 | 39 days | 0.36 | | | MPC | 2006 $VW_{58}$ |
| 2006 $VY_{58}$ | 17.1 | 0.15 | 20061101 | 323.85548 | 27.53969 | 70.67341 | 10.48786 | 0.1023064 | 2.7873031 | 9 | 1 | 16 days | 0.10 | | | MPC | 2006 $VY_{58}$ |
| 2006 $VA_{59}$ | 17.2 | 0.15 | 20060922 | 63.99416 | 93.49223 | 219.20193 | 6.03688 | 0.2118040 | 2.1699263 | 26 | 1 | 61 days | 0.23 | M-v | 4 | MPC | 2006 $VA_{59}$ |
| 2006 $VC_{59}$ | 16.9 | 0.15 | 20061101 | 315.99741 | 38.31292 | 67.15751 | 12.22499 | 0.0685430 | 2.9796392 | 19 | 1 | 16 days | 0.20 | | | MPC | 2006 $VC_{59}$ |
| 2006 $VD_{59}$ | 17.2 | 0.15 | 20061101 | 331.46995 | 244.58668 | 201.59398 | 3.86879 | 0.0391305 | 2.7782019 | 23 | 1 | 36 days | 0.34 | | | MPC | 2006 $VD_{59}$ |
| 2006 $VE_{59}$ | 16.1 | 0.15 | 20061101 | 34.55377 | 293.40233 | 68.05400 | 14.54144 | 0.2242066 | 3.0827660 | 20 | 1 | 33 days | 0.27 | | | MPC | 2006 $VE_{59}$ |
| 2006 $VF_{59}$ | 18.4 | 0.15 | 20061101 | 24.41897 | 153.59869 | 222.90153 | 8.53175 | 0.2103495 | 2.7768114 | 12 | 1 | 9 days | 0.29 | | | MPC | 2006 $VF_{59}$ |
| 2006 $VG_{59}$ | 16.4 | 0.15 | 20061101 | 86.00612 | 256.47194 | 68.17968 | 16.55872 | 0.0481115 | 3.0871010 | 16 | 1 | 35 days | 0.32 | | | MPC | 2006 $VG_{59}$ |
| 2006 $VH_{59}$ | 16.7 | 0.15 | 20061101 | 343.39009 | 2.57790 | 74.59086 | 6.46527 | 0.1388296 | 3.0089406 | 26 | 1 | 36 days | 0.42 | | | MPC | 2006 $VH_{59}$ |
| 2006 $VK_{59}$ | 16.6 | 0.15 | 20061101 | 48.06085 | 288.76869 | 69.35569 | 10.85924 | 0.1037617 | 3.0025786 | 23 | 1 | 36 days | 0.24 | | | MPC | 2006 $VK_{59}$ |
| 2006 $VM_{59}$ | 17.5 | 0.15 | 20061101 | 291.50627 | 284.80550 | 219.42318 | 6.83790 | 0.1759976 | 2.7801113 | 15 | 1 | 39 days | 0.22 | | | MPC | 2006 $VM_{59}$ |
| 2006 $VN_{59}$ | 16.9 | 0.15 | 20061101 | 250.01889 | 324.40658 | 208.21970 | 3.88010 | 0.0609709 | 2.7553571 | 12 | 1 | 27 days | 0.29 | | | MPC | 2006 $VN_{59}$ |
| 2006 $VO_{59}$ | 18.3 | 0.15 | 20061101 | 304.18730 | 247.71416 | 231.96880 | 21.49705 | 0.1212115 | 1.9300919 | 23 | 1 | 25 days | 0.28 | | | MPC | 2006 $VO_{59}$ |
| 2006 $VQ_{59}$ | 16.3 | 0.15 | 20061101 | 104.70007 | 233.68511 | 66.99873 | 13.78774 | 0.0929969 | 2.5510173 | 34 | 1 | 36 days | 0.30 | | | MPC | 2006 $VQ_{59}$ |
| 2006 $VR_{59}$ | 15.5 | 0.15 | 20061101 | 315.03740 | 53.48908 | 66.54992 | 15.06108 | 0.2026722 | 3.1228966 | 36 | 1 | 36 days | 0.45 | | | MPC | 2006 $VR_{59}$ |
| 2006 $VS_{59}$ | 17.1 | 0.15 | 20061101 | 28.00425 | 301.55490 | 67.05540 | 13.90693 | 0.2369165 | 2.7960013 | 19 | 1 | 35 days | 0.18 | | | MPC | 2006 $VS_{59}$ |
| 2006 $VT_{59}$ | 17.7 | 0.15 | 20061101 | 63.21306 | 223.20416 | 104.15063 | 3.59926 | 0.2112268 | 2.4594921 | 26 | 1 | 36 days | 0.32 | | | MPC | 2006 $VT_{59}$ |
| 2006 $VU_{59}$ | 17.4 | 0.15 | 20061101 | 76.72587 | 262.05765 | 72.36350 | 8.08681 | 0.0262931 | 2.2935763 | 27 | 1 | 36 days | 0.33 | | | MPC | 2006 $VU_{59}$ |
| 2006 $VW_{59}$ | 19.0 | 0.15 | 20061101 | 1.74656 | 274.40530 | 133.16868 | 2.05953 | 0.3009653 | 2.6285445 | 12 | 1 | 16 days | 0.21 | | | MPC | 2006 $VW_{59}$ |
| 2006 $VY_{59}$ | 18.1 | 0.15 | 20061101 | 325.09154 | 335.46513 | 121.77338 | 2.68898 | 0.1052063 | 2.5967142 | 9 | 1 | 12 days | 0.23 | | | MPC | 2006 $VY_{59}$ |
| 2006 $VZ_{59}$ | 17.5 | 0.15 | 20061101 | 144.17604 | 188.88881 | 72.67592 | 10.67823 | 0.1722215 | 2.2395099 | 15 | 1 | 16 days | 0.21 | | | MPC | 2006 $VZ_{59}$ |
| 2006 $VA_{60}$ | 17.2 | 0.15 | 20061101 | 305.54466 | 19.81303 | 102.70709 | 2.74295 | 0.1271477 | 2.6252558 | 20 | 1 | 32 days | 0.22 | | | MPC | 2006 $VA_{60}$ |
| 2006 $VB_{60}$ | 17.0 | 0.15 | 20061101 | 344.42148 | 343.69742 | 90.27340 | 4.35628 | 0.1125613 | 2.6175551 | 16 | 1 | 36 days | 0.17 | | | MPC | 2006 $VB_{60}$ |
| 2006 $VC_{60}$ | 16.2 | 0.15 | 20061101 | 358.14082 | 348.23947 | 70.47305 | 10.61647 | 0.0345793 | 3.0621249 | 26 | 1 | 36 days | 0.34 | | | MPC | 2006 $VC_{60}$ |
| 2006 $VD_{60}$ | 16.2 | 0.15 | 20061101 | 57.83330 | 119.38574 | 226.10815 | 13.00447 | 0.1105031 | 3.1563032 | 12 | 1 | 16 days | 0.31 | | | MPC | 2006 $VD_{60}$ |
| 2006 $VG_{60}$ | 18.5 | 0.15 | 20061101 | 38.77425 | 278.29024 | 76.46965 | 3.51805 | 0.2061525 | 2.3712845 | 16 | 1 | 35 days | 0.17 | | | MPC | 2006 $VG_{60}$ |
| 2006 $VH_{60}$ | 16.9 | 0.15 | 20061101 | 74.82166 | 203.29734 | 116.55646 | 2.76406 | 0.1668697 | 2.5431584 | 22 | 1 | 39 days | 0.19 | | | MPC | 2006 $VH_{60}$ |
| 2006 $VJ_{60}$ | 16.4 | 0.15 | 20061101 | 88.47512 | 242.02883 | 64.06874 | 17.51498 | 0.1903962 | 3.1240552 | 19 | 1 | 16 days | 0.26 | | | MPC | 2006 $VJ_{60}$ |
| 2006 $VK_{60}$ | 16.1 | 0.15 | 20061101 | 352.41108 | 200.78497 | 224.11674 | 9.34547 | 0.0647269 | 3.3857406 | 19 | 1 | 39 days | 0.28 | | E | MPC | 2006 $VK_{60}$ |
| 2006 $VL_{60}$ | 17.9 | 0.15 | 20061101 | 356.82789 | 331.28066 | 86.11808 | 2.91337 | 0.1555119 | 2.6528935 | 34 | 1 | 35 days | 0.34 | | | MPC | 2006 $VL_{60}$ |
| 2006 $VM_{60}$ | 17.7 | 0.15 | 20061101 | 8.78431 | 332.85791 | 57.54284 | 12.40957 | 0.1823244 | 2.5282352 | 17 | 1 | 6 days | 0.53 | | | MPC | 2006 $VM_{60}$ |
| 2006 $VQ_{60}$ | 16.8 | 0.15 | 20061101 | 66.38760 | 280.66434 | 47.85512 | 4.09852 | 0.2040500 | 2.9938749 | 15 | 1 | 16 days | 0.24 | | | MPC | 2006 $VQ_{60}$ |
| 2006 $VT_{60}$ | 16.6 | 0.15 | 20061101 | 290.76298 | 171.61254 | 318.25282 | 1.00448 | 0.0247765 | 2.8165883 | 16 | 1 | 26 days | 0.21 | | | MPC | 2006 $VT_{60}$ |
| 2006 $VX_{60}$ | 16.4 | 0.15 | 20061101 | 330.53314 | 35.00141 | 57.55285 | 10.01801 | 0.0734984 | 3.1725902 | 19 | 1 | 30 days | 0.21 | | | MPC | 2006 $VX_{60}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VY_{60}$ | 17.8 | 0.15 | 20061101 | 25.47373 | 321.17576 | 57.34052 | 18.00856 | 0.2056177 | 3.0539279 | 12 | 1 | 11 days | 0.15 | | MPC | 2006 $VY_{60}$ |
| 2006 $VZ_{60}$ | 17.0 | 0.15 | 20061101 | 8.31786 | 346.58163 | 56.86871 | 17.72986 | 0.2149296 | 3.0818804 | 21 | 1 | 29 days | 0.37 | | MPC | 2006 $VZ_{60}$ |
| 2006 $VA_{61}$ | 16.1 | 0.15 | 20061101 | 344.15660 | 192.60287 | 246.68332 | 9.33900 | 0.1659854 | 2.9988743 | 24 | 1 | 38 days | 0.31 | | MPC | 2006 $VA_{61}$ |
| 2006 $VB_{61}$ | 16.8 | 0.15 | 20061101 | 23.90265 | 118.46012 | 261.53941 | 0.78643 | 0.2170427 | 3.1185548 | 9 | 1 | 12 days | 0.23 | | MPC | 2006 $VB_{61}$ |
| 2006 $VC_{61}$ | 16.2 | 0.15 | 20061101 | 78.83935 | 67.19969 | 247.41648 | 5.16628 | 0.2219416 | 2.9386777 | 23 | 1 | 41 days | 0.25 | | MPC | 2006 $VC_{61}$ |
| 2006 $VD_{61}$ | 18.3 | 0.15 | 20061101 | 355.35499 | 17.32098 | 43.46006 | 1.57908 | 0.1936475 | 2.4311303 | 19 | 1 | 16 days | 0.53 | | MPC | 2006 $VD_{61}$ |
| 2006 $VF_{61}$ | 17.7 | 0.15 | 20061101 | 343.92110 | 24.23444 | 53.78364 | 3.44713 | 0.1744744 | 2.5386726 | 16 | 1 | 26 days | 0.20 | | MPC | 2006 $VF_{61}$ |
| 2006 $VG_{61}$ | 17.6 | 0.15 | 20060922 | 327.62904 | 183.77926 | 266.37976 | 1.67540 | 0.2063005 | 2.6108201 | 27 | 1 | 61 days | 0.50 | M-v 5 | MPC | 2006 $VG_{61}$ |
| 2006 $VJ_{61}$ | 15.9 | 0.15 | 20061101 | 42.50646 | 113.98711 | 244.71235 | 17.06912 | 0.1902690 | 3.2091176 | 26 | 1 | 38 days | 0.50 | | MPC | 2006 $VJ_{61}$ |
| 2006 $VK_{61}$ | 17.6 | 0.15 | 20061101 | 43.46763 | 107.21028 | 257.82418 | 0.94702 | 0.1095965 | 2.8329655 | 15 | 1 | 16 days | 0.22 | | MPC | 2006 $VK_{61}$ |
| 2006 $VL_{61}$ | 17.0 | 0.15 | 20061101 | 12.04748 | 348.50126 | 52.53576 | 2.00818 | 0.1631712 | 3.1098546 | 15 | 1 | 16 days | 0.26 | | MPC | 2006 $VL_{61}$ |
| 2006 $VO_{61}$ | 16.6 | 0.15 | 20061101 | 38.95309 | 310.89819 | 50.66949 | 3.80812 | 0.1873636 | 2.6112359 | 26 | 1 | 37 days | 0.47 | | MPC | 2006 $VO_{61}$ |
| 2006 $VP_{61}$ | 17.2 | 0.15 | 20061101 | 0.92593 | 3.86654 | 49.40859 | 3.60395 | 0.2366897 | 2.6466642 | 22 | 1 | 25 days | 0.48 | | MPC | 2006 $VP_{61}$ |
| 2006 $VQ_{61}$ | 16.3 | 0.15 | 20061101 | 196.32874 | 294.07365 | 290.07705 | 1.07101 | 0.0131314 | 2.9735717 | 13 | 1 | 21 days | 0.23 | | MPC | 2006 $VQ_{61}$ |
| 2006 $VR_{61}$ | 19.0 | 0.15 | 20061101 | 52.84864 | 92.64704 | 254.28346 | 1.26244 | 0.1478257 | 2.1065687 | 15 | 1 | 16 days | 0.18 | | MPC | 2006 $VR_{61}$ |
| 2006 $VT_{61}$ | 14.8 | 0.15 | 20061101 | 77.58564 | 274.99965 | 60.40149 | 12.76472 | 0.0652999 | 3.0963314 | 42 | 1 | 39 days | 0.44 | | MPC | 2006 $VT_{61}$ |
| 2006 $VU_{61}$ | 19.3 | 0.15 | 20061101 | 352.65713 | 13.24913 | 51.93188 | 3.51415 | 0.2089308 | 2.3293818 | 16 | 1 | 12 days | 0.24 | | MPC | 2006 $VU_{61}$ |
| 2006 $VW_{61}$ | 15.7 | 0.15 | 20061101 | 151.73531 | 209.72020 | 58.51367 | 10.35068 | 0.0172156 | 3.0597988 | 24 | 1 | 34 days | 0.22 | | MPC | 2006 $VW_{61}$ |
| 2006 $VX_{61}$ | 17.9 | 0.15 | 20061101 | 28.22527 | 64.19407 | 310.82310 | 0.76595 | 0.1730626 | 2.2368686 | 24 | 1 | 25 days | 0.33 | | MPC | 2006 $VX_{61}$ |
| 2006 $VZ_{61}$ | 17.4 | 0.15 | 20061012 | 43.61098 | 104.91745 | 243.71736 | 7.75587 | 0.1992805 | 2.5167055 | 28 | 1 | 54 days | 0.27 | | MPC | 2006 $VZ_{61}$ |
| 2006 $VA_{62}$ | 17.0 | 0.15 | 20061101 | 32.37393 | 131.30500 | 239.78564 | 7.76222 | 0.1792194 | 2.5723960 | 23 | 1 | 29 days | 0.36 | | MPC | 2006 $VA_{62}$ |
| 2006 $VB_{62}$ | 16.2 | 0.15 | 20061101 | 11.65326 | 159.59151 | 239.81630 | 12.74801 | 0.1769102 | 2.5787196 | 43 | 1 | 38 days | 0.44 | | MPC | 2006 $VB_{62}$ |
| 2006 $VC_{62}$ | 15.7 | 0.15 | 20061101 | 37.62192 | 332.84356 | 43.99815 | 1.51042 | 0.0704162 | 2.9295212 | 29 | 1 | 31 days | 0.30 | | MPC | 2006 $VC_{62}$ |
| 2006 $VD_{62}$ | 16.8 | 0.15 | 20061101 | 136.08669 | 29.80903 | 241.83368 | 4.49026 | 0.1754955 | 2.3790823 | 16 | 1 | 23 days | 0.22 | | MPC | 2006 $VD_{62}$ |
| 2006 $VE_{62}$ | 19.0 | 0.15 | 20061101 | 18.62097 | 53.81943 | 332.02136 | 0.44637 | 0.2153745 | 2.4165473 | 16 | 1 | 12 days | 0.26 | | MPC | 2006 $VE_{62}$ |
| 2006 $VF_{62}$ | 19.1 | 0.15 | 20061101 | 354.40017 | 5.22962 | 58.05427 | 9.24222 | 0.1828954 | 2.4051194 | 11 | 1 | 30 days | 0.15 | | MPC | 2006 $VF_{62}$ |
| 2006 $VG_{62}$ | 16.8 | 0.15 | 20061101 | 5.86642 | 6.18043 | 44.10969 | 1.57675 | 0.1858692 | 3.1558059 | 20 | 1 | 16 days | 0.24 | | MPC | 2006 $VG_{62}$ |
| 2006 $VK_{62}$ | 16.6 | 0.15 | 20060922 | 354.19158 | 169.79710 | 244.85895 | 4.81921 | 0.2372661 | 3.0076854 | 33 | 1 | 60 days | 0.45 | M-v 4 | MPC | 2006 $VK_{62}$ |
| 2006 $VN_{62}$ | 17.3 | 0.15 | 20061101 | 70.00691 | 272.94465 | 57.13474 | 1.06205 | 0.1501603 | 2.1935944 | 13 | 1 | 10 days | 0.32 | | MPC | 2006 $VN_{62}$ |
| 2006 $VP_{62}$ | 17.8 | 0.15 | 20061101 | 346.10840 | 175.34652 | 260.54587 | 1.99292 | 0.1104095 | 2.6515606 | 15 | 1 | 16 days | 0.20 | | MPC | 2006 $VP_{62}$ |
| 2006 $VQ_{62}$ | 16.3 | 0.15 | 20061101 | 42.25478 | 118.98088 | 247.35559 | 4.73994 | 0.1205708 | 2.6584703 | 45 | 1 | 39 days | 0.37 | | MPC | 2006 $VQ_{62}$ |
| 2006 $VR_{62}$ | 16.1 | 0.15 | 20061101 | 228.95006 | 325.32909 | 241.46442 | 1.18087 | 0.1827839 | 2.8507235 | 13 | 1 | 12 days | 0.20 | | MPC | 2006 $VR_{62}$ |
| 2006 $VS_{62}$ | 17.1 | 0.15 | 20061101 | 357.52531 | 27.09666 | 36.27062 | 1.09862 | 0.1658209 | 3.1517695 | 15 | 1 | 16 days | 0.21 | | MPC | 2006 $VS_{62}$ |
| 2006 $VT_{62}$ | 17.0 | 0.15 | 20061101 | 332.68565 | 29.11724 | 60.71830 | 13.07120 | 0.0266452 | 2.9234443 | 12 | 1 | 11 days | 0.28 | | MPC | 2006 $VT_{62}$ |
| 2006 $VU_{62}$ | 18.1 | 0.15 | 20061101 | 34.54600 | 359.44607 | 9.57097 | 0.86568 | 0.1833663 | 2.5947023 | 15 | 1 | 16 days | 0.27 | | MPC | 2006 $VU_{62}$ |
| 2006 $VW_{62}$ | 16.7 | 0.15 | 20061101 | 327.57994 | 61.66935 | 42.09030 | 0.05118 | 0.1471663 | 3.0972990 | 24 | 1 | 26 days | 0.37 | | MPC | 2006 $VW_{62}$ |
| 2006 $VX_{62}$ | 16.7 | 0.15 | 20061101 | 287.44614 | 251.23362 | 246.72193 | 14.97926 | 0.0269788 | 3.1696081 | 9 | 1 | 16 days | 0.25 | | MPC | 2006 $VX_{62}$ |
| 2006 $VY_{62}$ | 17.5 | 0.15 | 20061101 | 26.29745 | 320.00715 | 63.03904 | 10.44514 | 0.1570685 | 2.7190699 | 12 | 1 | 16 days | 0.15 | | MPC | 2006 $VY_{62}$ |
| 2006 $VZ_{62}$ | 16.2 | 0.15 | 20061101 | 31.30265 | 108.12944 | 237.84965 | 3.56436 | 0.1634631 | 3.0767856 | 16 | 1 | 7 days | 0.17 | | MPC | 2006 $VZ_{62}$ |
| 2006 $VC_{63}$ | 17.5 | 0.15 | 20061012 | 4.47360 | 344.61134 | 57.32763 | 3.75171 | 0.1500677 | 2.2498153 | 32 | 1 | 56 days | 0.38 | | MPC | 2006 $VC_{63}$ |
| 2006 $VE_{63}$ | 16.8 | 0.15 | 20061101 | 322.82191 | 63.29075 | 45.11002 | 1.91458 | 0.1212422 | 3.1215335 | 12 | 1 | 12 days | 0.21 | | MPC | 2006 $VE_{63}$ |
| 2006 $VF_{63}$ | 17.3 | 0.15 | 20061101 | 318.34962 | 233.29607 | 244.41363 | 6.79919 | 0.1812104 | 2.7597070 | 19 | 1 | 16 days | 0.30 | | MPC | 2006 $VF_{63}$ |
| 2006 $VH_{63}$ | 18.0 | 0.15 | 20061101 | 48.71332 | 305.86865 | 59.85243 | 6.45863 | 0.0492414 | 2.2671786 | 17 | 1 | 13 days | 0.44 | | MPC | 2006 $VH_{63}$ |
| 2006 $VK_{63}$ | 17.1 | 0.15 | 20061101 | 299.82381 | 90.15971 | 49.04904 | 2.37372 | 0.1642988 | 2.7607162 | 12 | 1 | 11 days | 0.15 | | MPC | 2006 $VK_{63}$ |
| 2006 $VM_{63}$ | 18.0 | 0.15 | 20061101 | 37.37614 | 280.38800 | 63.78345 | 0.37366 | 0.3498741 | 2.3358569 | 24 | 1 | 30 days | 0.25 | E | MPC | 2006 $VM_{63}$ |
| 2006 $VN_{63}$ | 16.4 | 0.15 | 20061101 | 112.26896 | 237.88973 | 65.31070 | 12.30355 | 0.0693798 | 2.8074147 | 23 | 1 | 39 days | 0.28 | | MPC | 2006 $VN_{63}$ |
| 2006 $VP_{63}$ | 16.5 | 0.15 | 20061101 | 38.72458 | 129.34137 | 244.86260 | 9.06921 | 0.1106213 | 2.9443891 | 13 | 1 | 12 days | 0.16 | | MPC | 2006 $VP_{63}$ |
| 2006 $VR_{63}$ | 17.7 | 0.15 | 20061101 | 45.19920 | 105.95079 | 247.69925 | 2.90585 | 0.2125957 | 2.5724770 | 12 | 1 | 16 days | 0.26 | | MPC | 2006 $VR_{63}$ |
| 2006 $VS_{63}$ | 15.9 | 0.15 | 20061101 | 351.80089 | 186.85963 | 245.08896 | 9.08724 | 0.0944318 | 2.9853065 | 32 | 1 | 35 days | 0.36 | | MPC | 2006 $VS_{63}$ |
| 2006 $VU_{63}$ | 18.7 | 0.15 | 20061101 | 24.05812 | 310.18727 | 66.43993 | 4.72008 | 0.2354202 | 2.3522460 | 13 | 1 | 16 days | 0.32 | | MPC | 2006 $VU_{63}$ |
| 2006 $VW_{63}$ | 15.3 | 0.15 | 20061101 | 20.47276 | 161.98563 | 235.24630 | 8.82826 | 0.0803135 | 2.9887538 | 26 | 1 | 33 days | 0.39 | | MPC | 2006 $VW_{63}$ |
| 2006 $VX_{63}$ | 17.8 | 0.15 | 20061101 | 55.08239 | 279.89515 | 68.90814 | 7.45432 | 0.1336403 | 2.2390157 | 19 | 1 | 27 days | 0.17 | | MPC | 2006 $VX_{63}$ |
| 2006 $VZ_{63}$ | 18.1 | 0.15 | 20061101 | 18.37091 | 325.35393 | 64.43265 | 3.68712 | 0.1659200 | 2.1998282 | 34 | 1 | 39 days | 0.31 | | MPC | 2006 $VZ_{63}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VB_{64}$ | 16.3 | 0.15 | 20061101 | 292.80177 | 57.90577 | 77.12112 | 5.82902 | 0.0600821 | 2.7818100 | 23 | 1 | 34 days | 0.30 | | | MPC | 2006 $VB_{64}$ |
| 2006 $VC_{64}$ | 17.0 | 0.15 | 20061101 | 71.73286 | 98.70158 | 232.16644 | 4.07173 | 0.1649064 | 2.7586530 | 16 | 1 | 13 days | 0.23 | | | MPC | 2006 $VC_{64}$ |
| 2006 $VF_{64}$ | 17.5 | 0.15 | 20061101 | 111.51899 | 61.81979 | 236.47223 | 4.16708 | 0.1101880 | 2.4214898 | 9 | 1 | 8 days | 0.25 | | | MPC | 2006 $VF_{64}$ |
| 2006 $VG_{64}$ | 19.1 | 0.15 | 20061101 | 359.97888 | 345.42939 | 70.66484 | 2.28850 | 0.1772485 | 2.3135407 | 15 | 1 | 16 days | 0.20 | | | MPC | 2006 $VG_{64}$ |
| 2006 $VJ_{64}$ | 17.1 | 0.15 | 20061101 | 67.21493 | 260.74535 | 69.14006 | 15.54825 | 0.2102751 | 2.7595910 | 12 | 1 | 16 days | 0.16 | | | MPC | 2006 $VJ_{64}$ |
| 2006 $VK_{64}$ | 17.9 | 0.15 | 20061101 | 0.05170 | 190.62645 | 225.76279 | 2.85517 | 0.1135957 | 2.1791913 | 27 | 1 | 29 days | 0.22 | | | MPC | 2006 $VK_{64}$ |
| 2006 $VL_{64}$ | 18.4 | 0.15 | 20061101 | 41.04248 | 139.71287 | 215.53465 | 1.61930 | 0.2182787 | 2.2183427 | 16 | 1 | 26 days | 0.23 | | | MPC | 2006 $VL_{64}$ |
| 2006 $VM_{64}$ | 17.8 | 0.15 | 20061101 | 341.97760 | 14.69972 | 66.98910 | 3.49697 | 0.1656403 | 2.2751304 | 26 | 1 | 39 days | 0.30 | | | MPC | 2006 $VM_{64}$ |
| 2006 $VN_{64}$ | 18.9 | 0.15 | 20061101 | 19.56125 | 320.01351 | 66.36315 | 6.87122 | 0.1985718 | 2.2683866 | 12 | 1 | 16 days | 0.15 | | | MPC | 2006 $VN_{64}$ |
| 2006 $VO_{64}$ | 16.6 | 0.15 | 20061101 | 16.22588 | 210.83347 | 189.02157 | 1.13062 | 0.1390584 | 3.0304736 | 14 | 1 | 13 days | 0.25 | | | MPC | 2006 $VO_{64}$ |
| 2006 $VP_{64}$ | 17.7 | 0.15 | 20061101 | 25.25426 | 187.98656 | 192.54547 | 0.94916 | 0.1899648 | 2.4045638 | 21 | 1 | 29 days | 0.25 | | | MPC | 2006 $VP_{64}$ |
| 2006 $VQ_{64}$ | 17.1 | 0.15 | 20061101 | 346.70146 | 1.35840 | 74.81210 | 2.30198 | 0.1650030 | 2.4062878 | 18 | 1 | 13 days | 0.54 | | | MPC | 2006 $VQ_{64}$ |
| 2006 $VR_{64}$ | 16.0 | 0.15 | 20061101 | 172.11782 | 31.13627 | 217.13090 | 2.11125 | 0.1071890 | 3.0629572 | 15 | 1 | 26 days | 0.24 | | | MPC | 2006 $VR_{64}$ |
| 2006 $VS_{64}$ | 15.7 | 0.15 | 20060922 | 52.05808 | 268.25109 | 77.40331 | 3.21528 | 0.1466678 | 3.1292651 | 35 | 1 | 60 days | 0.40 | M-v | 5 | MPC | 2006 $VS_{64}$ |
| 2006 $VT_{64}$ | 17.5 | 0.15 | 20060922 | 14.63334 | 262.19320 | 118.59068 | 0.93643 | 0.1965195 | 2.5689343 | 23 | 1 | 61 days | 0.20 | M-v | 5 | MPC | 2006 $VT_{64}$ |
| 2006 $VU_{64}$ | 17.1 | 0.15 | 20060922 | 345.15882 | 357.96213 | 67.86733 | 4.85335 | 0.2068275 | 2.6893054 | 35 | 1 | 60 days | 0.46 | M-v | 4 | MPC | 2006 $VU_{64}$ |
| 2006 $VV_{64}$ | 16.5 | 0.15 | 20061101 | 57.02910 | 159.65010 | 200.26547 | 1.60908 | 0.0315603 | 2.7326097 | 16 | 1 | 13 days | 0.18 | | | MPC | 2006 $VV_{64}$ |
| 2006 $VX_{64}$ | 17.7 | 0.15 | 20061101 | 108.28911 | 224.32827 | 69.65855 | 5.42291 | 0.1655598 | 2.2175293 | 9 | 1 | 8 days | 0.13 | | | MPC | 2006 $VX_{64}$ |
| 2006 $VY_{64}$ | 17.3 | 0.15 | 20061101 | 359.55571 | 231.60547 | 188.67513 | 0.78267 | 0.1514638 | 3.0361695 | 15 | 1 | 16 days | 0.16 | | | MPC | 2006 $VY_{64}$ |
| 2006 $VZ_{64}$ | 14.6 | 0.15 | 20061101 | 122.09981 | 214.99763 | 78.17720 | 6.95972 | 0.0975191 | 3.9485354 | 26 | 1 | 27 days | 0.28 | | | MPC | 2006 $VZ_{64}$ |
| 2006 $VA_{65}$ | 16.9 | 0.15 | 20061101 | 354.27965 | 233.47968 | 193.36186 | 1.40961 | 0.0517418 | 2.8865400 | 19 | 1 | 16 days | 0.28 | | | MPC | 2006 $VA_{65}$ |
| 2006 $VB_{65}$ | 18.3 | 0.15 | 20061101 | 4.98567 | 181.37238 | 227.09860 | 1.98780 | 0.1758542 | 2.3653699 | 19 | 1 | 30 days | 0.13 | | | MPC | 2006 $VB_{65}$ |
| 2006 $VC_{65}$ | 17.4 | 0.15 | 20061101 | 41.55516 | 198.33949 | 156.08872 | 1.14089 | 0.2334038 | 2.6116802 | 14 | 1 | 24 days | 0.21 | | | MPC | 2006 $VC_{65}$ |
| 2006 $VD_{65}$ | 17.0 | 0.15 | 20061101 | 7.03978 | 340.86039 | 62.52132 | 14.17105 | 0.2668627 | 2.7026331 | 33 | 1 | 31 days | 0.44 | | | MPC | 2006 $VD_{65}$ |
| 2006 $VE_{65}$ | 18.4 | 0.15 | 20061101 | 351.95446 | 2.02462 | 66.65061 | 3.42124 | 0.1815357 | 2.5339889 | 9 | 1 | 16 days | 0.26 | | | MPC | 2006 $VE_{65}$ |
| 2006 $VF_{65}$ | 16.6 | 0.15 | 20061101 | 317.87764 | 47.42044 | 64.72378 | 14.41755 | 0.1115850 | 2.9118778 | 16 | 1 | 33 days | 0.26 | | | MPC | 2006 $VF_{65}$ |
| 2006 $VG_{65}$ | 18.3 | 0.15 | 20061101 | 353.22315 | 212.00632 | 212.95958 | 2.30256 | 0.1997376 | 2.2872786 | 19 | 1 | 13 days | 0.28 | | | MPC | 2006 $VG_{65}$ |
| 2006 $VH_{65}$ | 18.0 | 0.15 | 20061101 | 68.55541 | 253.75725 | 69.37339 | 2.62540 | 0.2309964 | 2.2671235 | 16 | 1 | 35 days | 0.42 | | | MPC | 2006 $VH_{65}$ |
| 2006 $VK_{65}$ | 17.9 | 0.15 | 20061101 | 353.14275 | 330.02105 | 77.99034 | 4.13135 | 0.1693135 | 2.2661237 | 15 | 1 | 26 days | 0.37 | | | MPC | 2006 $VK_{65}$ |
| 2006 $VN_{65}$ | 15.4 | 0.15 | 20060922 | 26.09038 | 141.51162 | 237.76862 | 11.24956 | 0.0823938 | 2.9870939 | 31 | 1 | 61 days | 0.41 | M-v | 5 | MPC | 2006 $VN_{65}$ |
| 2006 $VP_{65}$ | 17.6 | 0.15 | 20061101 | 29.55907 | 142.83181 | 231.50038 | 3.86038 | 0.1773377 | 2.5958799 | 20 | 1 | 26 days | 0.25 | | | MPC | 2006 $VP_{65}$ |
| 2006 $VQ_{65}$ | 17.7 | 0.15 | 20061101 | 54.42817 | 131.21559 | 221.07104 | 1.38784 | 0.1136990 | 2.7152538 | 16 | 1 | 30 days | 0.28 | | | MPC | 2006 $VQ_{65}$ |
| 2006 $VS_{65}$ | 16.8 | 0.15 | 20061101 | 33.39580 | 135.96802 | 238.14799 | 4.56105 | 0.1365939 | 2.6985491 | 21 | 1 | 41 days | 0.26 | | | MPC | 2006 $VS_{65}$ |
| 2006 $VT_{65}$ | 16.5 | 0.15 | 20061101 | 43.27772 | 277.48667 | 67.54675 | 5.78358 | 0.2806752 | 2.6252160 | 37 | 1 | 24 days | 0.54 | | | MPC | 2006 $VT_{65}$ |
| 2006 $VV_{65}$ | 16.0 | 0.15 | 20061101 | 274.36814 | 285.22918 | 238.33218 | 6.61032 | 0.1617345 | 2.7867673 | 10 | 1 | 13 days | 0.09 | | | MPC | 2006 $VV_{65}$ |
| 2006 $VW_{65}$ | 17.1 | 0.15 | 20061101 | 143.50724 | 33.94808 | 234.83855 | 5.93736 | 0.1056962 | 2.3911751 | 13 | 1 | 13 days | 0.44 | | | MPC | 2006 $VW_{65}$ |
| 2006 $VB_{66}$ | 17.1 | 0.15 | 20061101 | 15.17100 | 264.37283 | 133.85188 | 0.97052 | 0.1135363 | 2.6127031 | 23 | 1 | 16 days | 0.39 | | | MPC | 2006 $VB_{66}$ |
| 2006 $VC_{66}$ | 15.8 | 0.15 | 20061101 | 117.69668 | 56.99826 | 239.64673 | 10.72739 | 0.0654183 | 2.9871375 | 27 | 1 | 27 days | 0.22 | | | MPC | 2006 $VC_{66}$ |
| 2006 $VD_{66}$ | 16.4 | 0.15 | 20061101 | 320.19433 | 25.28073 | 75.54508 | 3.10685 | 0.0150496 | 2.8976557 | 24 | 1 | 30 days | 0.33 | | | MPC | 2006 $VD_{66}$ |
| 2006 $VE_{66}$ | 18.7 | 0.15 | 20061101 | 15.45492 | 165.50079 | 223.97800 | 1.82800 | 0.2274627 | 2.4181768 | 20 | 1 | 16 days | 0.44 | | | MPC | 2006 $VE_{66}$ |
| 2006 $VF_{66}$ | 16.7 | 0.15 | 20061101 | 285.83868 | 79.49647 | 64.86846 | 9.78310 | 0.0939947 | 2.8091809 | 16 | 1 | 31 days | 0.17 | | | MPC | 2006 $VF_{66}$ |
| 2006 $VG_{66}$ | 18.2 | 0.15 | 20061101 | 38.46291 | 290.84997 | 63.75168 | 2.84268 | 0.2601627 | 2.6763989 | 9 | 1 | 12 days | 0.30 | | | MPC | 2006 $VG_{66}$ |
| 2006 $VK_{66}$ | 18.1 | 0.15 | 20061101 | 12.55790 | 174.91871 | 220.13759 | 1.62618 | 0.2292474 | 2.5926875 | 27 | 1 | 30 days | 0.25 | | | MPC | 2006 $VK_{66}$ |
| 2006 $VL_{66}$ | 17.3 | 0.15 | 20061101 | 18.23604 | 161.11359 | 211.97893 | 6.95632 | 0.1960282 | 2.3235139 | 19 | 1 | 28 days | 0.46 | | | MPC | 2006 $VL_{66}$ |
| 2006 $VN_{66}$ | 18.0 | 0.15 | 20061101 | 349.62965 | 278.06545 | 138.92651 | 1.63691 | 0.1741719 | 2.4438590 | 10 | 1 | 6 days | 0.64 | | | MPC | 2006 $VN_{66}$ |
| 2006 $VO_{66}$ | 17.2 | 0.15 | 20061101 | 8.71466 | 180.91888 | 209.07016 | 6.35103 | 0.1864878 | 2.7833122 | 11 | 1 | 6 days | 0.49 | | | MPC | 2006 $VO_{66}$ |
| 2006 $VP_{66}$ | 17.2 | 0.15 | 20061101 | 333.14896 | 249.98644 | 183.53091 | 2.43574 | 0.0634298 | 2.3488360 | 12 | 1 | 6 days | 0.48 | | | MPC | 2006 $VP_{66}$ |
| 2006 $VQ_{66}$ | 15.9 | 0.15 | 20061101 | 315.12080 | 249.12988 | 215.67274 | 12.44722 | 0.1707759 | 3.0657618 | 15 | 1 | 6 days | 0.52 | | | MPC | 2006 $VQ_{66}$ |
| 2006 $VR_{66}$ | 16.4 | 0.15 | 20061101 | 18.93814 | 310.37669 | 69.67784 | 4.35587 | 0.1078230 | 2.7295069 | 26 | 1 | 19 days | 0.67 | | | MPC | 2006 $VR_{66}$ |
| 2006 $VT_{66}$ | 16.2 | 0.15 | 20061101 | 5.16519 | 340.35231 | 55.92053 | 16.33272 | 0.1407583 | 2.8502102 | 23 | 1 | 16 days | 0.54 | | | MPC | 2006 $VT_{66}$ |
| 2006 $VU_{66}$ | 16.0 | 0.15 | 20061101 | 10.56280 | 309.75405 | 80.98348 | 4.01638 | 0.1180258 | 3.0270815 | 11 | 1 | 6 days | 0.32 | | | MPC | 2006 $VU_{66}$ |
| 2006 $VV_{66}$ | 17.4 | 0.15 | 20061101 | 3.85483 | 322.97905 | 74.35239 | 3.40253 | 0.2224395 | 2.6322897 | 19 | 1 | 15 days | 0.37 | | | MPC | 2006 $VV_{66}$ |
| 2006 $VW_{66}$ | 18.3 | 0.15 | 20061101 | 344.80849 | 225.02832 | 206.81495 | 5.69592 | 0.2952164 | 2.6044521 | 16 | 1 | 6 days | 0.71 | | E | MPC | 2006 $VW_{66}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VX_{66}$ | 17.8 | 0.15 | 20061101 | 357.43774 | 323.50588 | 83.76238 | 2.33842 | 0.1889559 | 2.3358255 | 12 | 1 | 6 days | 0.43 | | MPC | 2006 $VX_{66}$ |
| 2006 $VE_{67}$ | 15.9 | 0.15 | 20061101 | 53.28184 | 117.81434 | 244.34876 | 10.87020 | 0.0744962 | 2.9491628 | 21 | 1 | 30 days | 0.33 | | MPC | 2006 $VE_{67}$ |
| 2006 $VF_{67}$ | 15.8 | 0.15 | 20061101 | 311.71072 | 233.59166 | 245.42059 | 10.17773 | 0.0831239 | 3.1084018 | 24 | 1 | 16 days | 0.29 | | MPC | 2006 $VF_{67}$ |
| 2006 $VG_{67}$ | 17.4 | 0.15 | 20061101 | 27.42442 | 308.61332 | 65.22664 | 3.52828 | 0.2241824 | 2.3369074 | 22 | 1 | 8 days | 0.42 | | MPC | 2006 $VG_{67}$ |
| 2006 $VH_{67}$ | 17.7 | 0.15 | 20061101 | 43.35229 | 121.63183 | 240.66327 | 5.63345 | 0.1378584 | 2.2077910 | 22 | 1 | 27 days | 0.35 | | MPC | 2006 $VH_{67}$ |
| 2006 $VJ_{67}$ | 16.1 | 0.15 | 20061101 | 322.73561 | 215.55787 | 250.15932 | 5.58509 | 0.0669696 | 3.1474651 | 9 | 1 | 16 days | 0.25 | | MPC | 2006 $VJ_{67}$ |
| 2006 $VL_{67}$ | 17.7 | 0.15 | 20061101 | 0.27955 | 353.84295 | 61.89937 | 6.78087 | 0.1995892 | 2.3126698 | 26 | 1 | 34 days | 0.45 | | MPC | 2006 $VL_{67}$ |
| 2006 $VM_{67}$ | 17.7 | 0.15 | 20060922 | 349.73571 | 353.75237 | 63.87812 | 4.71686 | 0.1313358 | 2.3697206 | 27 | 1 | 60 days | 0.28 | M-v 4 | MPC | 2006 $VM_{67}$ |
| 2006 $VN_{67}$ | 17.9 | 0.15 | 20061101 | 5.14533 | 344.13046 | 66.43258 | 4.35322 | 0.1657094 | 2.3949886 | 13 | 1 | 8 days | 0.22 | | MPC | 2006 $VN_{67}$ |
| 2006 $VO_{67}$ | 17.8 | 0.15 | 20061101 | 39.20145 | 303.91070 | 70.57195 | 5.05105 | 0.1023965 | 2.7464541 | 12 | 1 | 12 days | 0.22 | | MPC | 2006 $VO_{67}$ |
| 2006 $VP_{67}$ | 18.2 | 0.15 | 20061101 | 299.49554 | 76.07348 | 58.08516 | 5.19072 | 0.1269511 | 2.3360787 | 9 | 1 | 13 days | 0.26 | | MPC | 2006 $VP_{67}$ |
| 2006 $VQ_{67}$ | 16.7 | 0.15 | 20061101 | 55.47351 | 144.43280 | 217.40771 | 1.15192 | 0.0627667 | 2.9145837 | 13 | 1 | 13 days | 0.16 | | MPC | 2006 $VQ_{67}$ |
| 2006 $VS_{67}$ | 15.5 | 0.15 | 20061101 | 318.33909 | 50.58853 | 64.61441 | 14.00558 | 0.1363091 | 2.7003519 | 36 | 1 | 36 days | 0.47 | | MPC | 2006 $VS_{67}$ |
| 2006 $VT_{67}$ | 15.5 | 0.15 | 20061101 | 344.97816 | 199.95861 | 244.16961 | 16.59642 | 0.1643745 | 3.1993434 | 28 | 1 | 16 days | 0.35 | | MPC | 2006 $VT_{67}$ |
| 2006 $VU_{67}$ | 18.2 | 0.15 | 20061101 | 21.12842 | 324.61662 | 63.88558 | 3.31130 | 0.1589645 | 2.2382151 | 22 | 1 | 12 days | 0.28 | | MPC | 2006 $VU_{67}$ |
| 2006 $VV_{67}$ | 16.6 | 0.15 | 20061101 | 6.64456 | 156.07446 | 243.98565 | 9.04390 | 0.1539512 | 2.6865263 | 19 | 1 | 13 days | 0.38 | | MPC | 2006 $VV_{67}$ |
| 2006 $VW_{67}$ | 17.2 | 0.15 | 20060922 | 13.51500 | 315.76931 | 63.31765 | 6.29453 | 0.2688011 | 2.6308046 | 26 | 1 | 64 days | 0.39 | M-v 5 | MPC | 2006 $VW_{67}$ |
| 2006 $VX_{67}$ | 15.8 | 0.15 | 20061101 | 238.66270 | 135.29362 | 69.96243 | 15.26637 | 0.2043488 | 3.2030247 | 22 | 1 | 27 days | 0.36 | | MPC | 2006 $VX_{67}$ |
| 2006 $VZ_{67}$ | 15.7 | 0.15 | 20061101 | 136.93880 | 209.94873 | 67.64325 | 14.21673 | 0.1415797 | 2.5428133 | 34 | 1 | 40 days | 0.39 | | MPC | 2006 $VZ_{67}$ |
| 2006 $VA_{68}$ | 16.5 | 0.15 | 20061101 | 11.51250 | 169.14326 | 235.40166 | 2.83591 | 0.2076883 | 3.1175084 | 26 | 1 | 30 days | 0.30 | | MPC | 2006 $VA_{68}$ |
| 2006 $VE_{68}$ | 16.2 | 0.15 | 20061101 | 29.10954 | 312.19360 | 70.44628 | 2.39903 | 0.1761272 | 3.1253949 | 16 | 1 | 22 days | 0.23 | | MPC | 2006 $VE_{68}$ |
| 2006 $VH_{68}$ | 15.7 | 0.15 | 20061101 | 99.58797 | 234.89147 | 69.19172 | 15.48862 | 0.1966787 | 2.6035312 | 20 | 1 | 23 days | 0.24 | | MPC | 2006 $VH_{68}$ |
| 2006 $VJ_{68}$ | 16.8 | 0.15 | 20061101 | 58.13072 | 109.53886 | 247.66025 | 8.42798 | 0.0946833 | 3.0109273 | 15 | 1 | 16 days | 0.25 | | MPC | 2006 $VJ_{68}$ |
| 2006 $VK_{68}$ | 17.0 | 0.15 | 20060922 | 346.37218 | 186.70378 | 241.37536 | 7.21596 | 0.1356991 | 2.6835519 | 24 | 1 | 60 days | 0.27 | M-v 4 | MPC | 2006 $VK_{68}$ |
| 2006 $VM_{68}$ | 18.1 | 0.15 | 20061101 | 28.13538 | 124.63511 | 253.12700 | 1.22662 | 0.2149822 | 2.6198297 | 9 | 1 | 16 days | 0.16 | | MPC | 2006 $VM_{68}$ |
| 2006 $VO_{68}$ | 17.4 | 0.15 | 20061101 | 352.39740 | 313.67554 | 105.59926 | 2.15882 | 0.1681218 | 2.3529688 | 23 | 1 | 19 days | 0.48 | | MPC | 2006 $VO_{68}$ |
| 2006 $VP_{68}$ | 16.1 | 0.15 | 20061101 | 326.74699 | 10.45802 | 79.41884 | 4.57275 | 0.0882196 | 2.6463006 | 33 | 1 | 40 days | 0.45 | | MPC | 2006 $VP_{68}$ |
| 2006 $VQ_{68}$ | 17.0 | 0.15 | 20061101 | 291.08420 | 74.37602 | 65.31782 | 8.71216 | 0.0825048 | 2.2943011 | 21 | 1 | 24 days | 0.25 | | MPC | 2006 $VQ_{68}$ |
| 2006 $VU_{68}$ | 16.9 | 0.15 | 20061101 | 349.53160 | 196.45955 | 244.07623 | 8.79078 | 0.2671967 | 3.0161766 | 16 | 1 | 16 days | 0.39 | | MPC | 2006 $VU_{68}$ |
| 2006 $VW_{68}$ | 17.4 | 0.15 | 20061101 | 54.92894 | 111.98326 | 243.98837 | 2.51554 | 0.1235729 | 2.5434422 | 16 | 1 | 16 days | 0.22 | | MPC | 2006 $VW_{68}$ |
| 2006 $VX_{68}$ | 16.5 | 0.15 | 20061101 | 33.24855 | 300.80507 | 66.41491 | 5.72327 | 0.2561792 | 2.6410093 | 22 | 1 | 10 days | 0.52 | | MPC | 2006 $VX_{68}$ |
| 2006 $VY_{68}$ | 16.1 | 0.15 | 20061101 | 27.56730 | 312.71559 | 65.51668 | 8.90174 | 0.2359492 | 2.7574330 | 21 | 1 | 13 days | 0.33 | | MPC | 2006 $VY_{68}$ |
| 2006 $VZ_{68}$ | 15.0 | 0.15 | 20061101 | 329.50091 | 225.60038 | 246.48760 | 26.34214 | 0.2201560 | 3.1696425 | 30 | 1 | 13 days | 0.66 | | MPC | 2006 $VZ_{68}$ |
| 2006 $VE_{69}$ | 16.3 | 0.15 | 20061101 | 3.31666 | 157.36473 | 248.14954 | 11.05508 | 0.2739774 | 2.6930752 | 30 | 1 | 11 days | 0.41 | | MPC | 2006 $VE_{69}$ |
| 2006 $VF_{69}$ | 17.2 | 0.15 | 20061101 | 54.53835 | 102.68371 | 247.56508 | 7.59900 | 0.1835889 | 2.5800894 | 15 | 1 | 16 days | 0.27 | | MPC | 2006 $VF_{69}$ |
| 2006 $VG_{69}$ | 16.1 | 0.15 | 20061101 | 74.80206 | 252.94796 | 70.27684 | 27.00847 | 0.2642303 | 3.2065748 | 9 | 1 | 13 days | 0.62 | | MPC | 2006 $VG_{69}$ |
| 2006 $VH_{69}$ | 16.5 | 0.15 | 20061101 | 104.85589 | 234.34477 | 83.59858 | 3.11585 | 0.0416931 | 2.9164642 | 12 | 1 | 16 days | 0.40 | | MPC | 2006 $VH_{69}$ |
| 2006 $VK_{69}$ | 17.6 | 0.15 | 20061101 | 5.11776 | 342.62631 | 76.83505 | 2.73535 | 0.0562320 | 2.6904963 | 15 | 1 | 16 days | 0.26 | | MPC | 2006 $VK_{69}$ |
| 2006 $VL_{69}$ | 16.3 | 0.15 | 20061101 | 37.92441 | 128.59911 | 240.34764 | 5.45928 | 0.1875944 | 2.5250459 | 26 | 1 | 16 days | 0.33 | | MPC | 2006 $VL_{69}$ |
| 2006 $VN_{69}$ | 17.7 | 0.15 | 20061101 | 76.81250 | 85.09104 | 236.38115 | 3.70604 | 0.2401238 | 2.5338688 | 9 | 1 | 16 days | 0.11 | | MPC | 2006 $VN_{69}$ |
| 2006 $VO_{69}$ | 16.0 | 0.15 | 20061101 | 313.77183 | 41.77278 | 76.01354 | 11.32943 | 0.0692545 | 3.1137888 | 16 | 1 | 13 days | 0.30 | | MPC | 2006 $VO_{69}$ |
| 2006 $VP_{69}$ | 17.1 | 0.15 | 20061101 | 343.80622 | 299.79141 | 146.21317 | 1.70699 | 0.1532207 | 3.0561984 | 13 | 1 | 16 days | 0.31 | | MPC | 2006 $VP_{69}$ |
| 2006 $VT_{69}$ | 15.7 | 0.15 | 20061101 | 81.11070 | 91.51988 | 241.39710 | 11.57463 | 0.1124918 | 3.2065902 | 15 | 1 | 16 days | 0.18 | | MPC | 2006 $VT_{69}$ |
| 2006 $VU_{69}$ | 17.1 | 0.15 | 20061101 | 58.46134 | 268.10311 | 77.06292 | 4.94186 | 0.1717677 | 2.4253514 | 13 | 1 | 13 days | 0.25 | | MPC | 2006 $VU_{69}$ |
| 2006 $VV_{69}$ | 17.2 | 0.15 | 20061101 | 341.07147 | 224.71371 | 223.27728 | 4.22348 | 0.1414043 | 2.7404436 | 12 | 1 | 11 days | 0.20 | | MPC | 2006 $VV_{69}$ |
| 2006 $VW_{69}$ | 17.1 | 0.15 | 20061101 | 182.53960 | 165.74031 | 76.37305 | 7.34074 | 0.0757747 | 2.4033573 | 13 | 1 | 13 days | 0.31 | | MPC | 2006 $VW_{69}$ |
| 2006 $VX_{69}$ | 17.3 | 0.15 | 20061101 | 24.03373 | 288.81653 | 91.61065 | 3.08229 | 0.2392843 | 2.4503056 | 12 | 1 | 13 days | 0.27 | | MPC | 2006 $VX_{69}$ |
| 2006 $VA_{70}$ | 16.2 | 0.15 | 20061101 | 32.33081 | 300.87820 | 77.83586 | 4.09892 | 0.1605312 | 3.0044618 | 19 | 1 | 31 days | 0.28 | | MPC | 2006 $VA_{70}$ |
| 2006 $VC_{70}$ | 16.5 | 0.15 | 20061101 | 7.72277 | 183.75522 | 223.24053 | 2.63003 | 0.2081251 | 2.5581484 | 31 | 1 | 24 days | 0.34 | | MPC | 2006 $VC_{70}$ |
| 2006 $VE_{70}$ | 16.0 | 0.15 | 20061101 | 66.12729 | 262.48342 | 70.47164 | 13.87474 | 0.2140161 | 2.7278845 | 19 | 1 | 37 days | 0.19 | | MPC | 2006 $VE_{70}$ |
| 2006 $VG_{70}$ | 18.7 | 0.15 | 20061101 | 21.12662 | 161.10571 | 221.79437 | 3.11752 | 0.2415706 | 2.3675973 | 19 | 1 | 13 days | 0.18 | | MPC | 2006 $VG_{70}$ |
| 2006 $VH_{70}$ | 15.6 | 0.15 | 20061101 | 66.87845 | 274.29802 | 72.41495 | 16.45887 | 0.1073187 | 3.1625785 | 19 | 1 | 16 days | 0.22 | | MPC | 2006 $VH_{70}$ |
| 2006 $VK_{70}$ | 18.4 | 0.15 | 20061101 | 359.40250 | 341.29012 | 74.35365 | 4.26538 | 0.2792211 | 2.2728272 | 24 | 1 | 16 days | 0.50 | | MPC | 2006 $VK_{70}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VL_{70}$ | 16.3 | 0.15 | 20061101 | 335.34076 | 219.77647 | 230.42691 | 3.54929 | 0.0798046 | 2.7739259 | 20 | 1 | 16 days | 0.51 | | | MPC | 2006 $VL_{70}$ |
| 2006 $VM_{70}$ | 16.6 | 0.15 | 20061101 | 34.78993 | 203.38580 | 169.60056 | 0.84014 | 0.1753586 | 2.9382701 | 12 | 1 | 13 days | 0.31 | | | MPC | 2006 $VM_{70}$ |
| 2006 $VN_{70}$ | 16.4 | 0.15 | 20061101 | 29.44488 | 311.28996 | 67.40947 | 10.82053 | 0.1669647 | 2.5838804 | 28 | 1 | 16 days | 0.61 | | | MPC | 2006 $VN_{70}$ |
| 2006 $VP_{70}$ | 17.2 | 0.15 | 20060922 | 315.64136 | 29.17538 | 74.07256 | 2.30523 | 0.1454416 | 2.3853444 | 30 | 1 | 60 days | 0.35 | M-v | 5 | MPC | 2006 $VP_{70}$ |
| 2006 $VQ_{70}$ | 17.7 | 0.15 | 20061101 | 329.94833 | 223.52165 | 237.23693 | 11.31402 | 0.1640960 | 2.5210931 | 18 | 1 | 27 days | 0.29 | | | MPC | 2006 $VQ_{70}$ |
| 2006 $VR_{70}$ | 17.6 | 0.15 | 20061101 | 296.86142 | 63.58426 | 80.71896 | 4.35451 | 0.1880197 | 2.4346065 | 13 | 1 | 19 days | 0.22 | | | MPC | 2006 $VR_{70}$ |
| 2006 $VV_{70}$ | 17.0 | 0.15 | 20061101 | 15.04267 | 166.14202 | 230.14280 | 2.99662 | 0.2361672 | 3.0898903 | 20 | 1 | 30 days | 0.28 | | | MPC | 2006 $VV_{70}$ |
| 2006 $VW_{70}$ | 16.7 | 0.15 | 20061101 | 64.65057 | 271.44555 | 67.98915 | 15.54701 | 0.1703538 | 2.8631502 | 12 | 1 | 16 days | 0.23 | | | MPC | 2006 $VW_{70}$ |
| 2006 $VX_{70}$ | 16.9 | 0.15 | 20061101 | 282.28892 | 45.41101 | 107.35287 | 2.24140 | 0.1189930 | 2.4552802 | 17 | 1 | 24 days | 0.15 | | | MPC | 2006 $VX_{70}$ |
| 2006 $VZ_{70}$ | 16.8 | 0.15 | 20061101 | 44.79582 | 287.84625 | 77.75918 | 7.05468 | 0.1289585 | 2.7677915 | 14 | 1 | 24 days | 0.25 | | | MPC | 2006 $VZ_{70}$ |
| 2006 $VA_{71}$ | 17.4 | 0.15 | 20061101 | 326.39023 | 226.66339 | 230.19489 | 2.64478 | 0.0515376 | 2.2540941 | 20 | 1 | 27 days | 0.39 | | | MPC | 2006 $VA_{71}$ |
| 2006 $VC_{71}$ | 16.0 | 0.15 | 20061101 | 95.82337 | 245.25688 | 52.84072 | 6.64621 | 0.1553492 | 2.7331249 | 12 | 1 | 16 days | 0.42 | | | MPC | 2006 $VC_{71}$ |
| 2006 $VF_{71}$ | 17.4 | 0.15 | 20061101 | 356.59293 | 353.18896 | 55.75835 | 15.33197 | 0.2512675 | 2.5845650 | 36 | 1 | 42 days | 0.60 | | | MPC | 2006 $VF_{71}$ |
| 2006 $VG_{71}$ | 17.7 | 0.15 | 20061101 | 2.83288 | 333.75437 | 62.10205 | 9.48378 | 0.2852446 | 2.6769373 | 15 | 1 | 26 days | 0.36 | | | MPC | 2006 $VG_{71}$ |
| 2006 $VH_{71}$ | 17.9 | 0.15 | 20061012 | 11.44455 | 324.32501 | 69.85873 | 4.04494 | 0.0705089 | 2.5271010 | 17 | 1 | 56 days | 0.29 | | | MPC | 2006 $VH_{71}$ |
| 2006 $VJ_{71}$ | 16.5 | 0.15 | 20061101 | 249.62023 | 110.88292 | 64.24154 | 11.28938 | 0.0902594 | 3.1147362 | 10 | 1 | 27 days | 0.27 | | | MPC | 2006 $VJ_{71}$ |
| 2006 $VK_{71}$ | 17.3 | 0.15 | 20061101 | 342.33665 | 4.24709 | 73.79895 | 3.07232 | 0.1500312 | 3.0676903 | 20 | 1 | 39 days | 0.30 | | | MPC | 2006 $VK_{71}$ |
| 2006 $VM_{71}$ | 17.4 | 0.15 | 20061101 | 24.56580 | 323.96993 | 59.27422 | 16.45737 | 0.1065426 | 2.7190645 | 14 | 1 | 13 days | 0.36 | | | MPC | 2006 $VM_{71}$ |
| 2006 $VN_{71}$ | 17.3 | 0.15 | 20061101 | 330.00513 | 13.47592 | 73.32298 | 3.27089 | 0.0435789 | 2.6919296 | 13 | 1 | 16 days | 0.29 | | | MPC | 2006 $VN_{71}$ |
| 2006 $VO_{71}$ | 16.3 | 0.15 | 20061101 | 160.74163 | 26.74040 | 225.44057 | 4.27045 | 0.0536448 | 2.5723385 | 14 | 1 | 13 days | 0.35 | | | MPC | 2006 $VO_{71}$ |
| 2006 $VP_{71}$ | 16.8 | 0.15 | 20061101 | 326.29893 | 14.82866 | 83.94907 | 2.28096 | 0.1345102 | 3.2159019 | 13 | 1 | 16 days | 0.26 | | | MPC | 2006 $VP_{71}$ |
| 2006 $VQ_{71}$ | 16.9 | 0.15 | 20061101 | 128.05118 | 200.73235 | 70.59263 | 5.19612 | 0.2078221 | 2.4287506 | 16 | 1 | 39 days | 0.30 | | | MPC | 2006 $VQ_{71}$ |
| 2006 $VT_{71}$ | 16.5 | 0.15 | 20061101 | 303.42715 | 250.45393 | 232.27192 | 4.59375 | 0.1184660 | 2.5644891 | 32 | 1 | 31 days | 0.51 | | | MPC | 2006 $VT_{71}$ |
| 2006 $VV_{71}$ | 16.5 | 0.15 | 20061101 | 259.30423 | 300.79782 | 235.09030 | 10.22410 | 0.1716649 | 3.1629410 | 13 | 1 | 12 days | 0.28 | | | MPC | 2006 $VV_{71}$ |
| 2006 $VW_{71}$ | 15.2 | 0.15 | 20061101 | 176.22644 | 178.94930 | 61.12589 | 19.17162 | 0.1735142 | 3.0955904 | 24 | 1 | 36 days | 0.26 | | | MPC | 2006 $VW_{71}$ |
| 2006 $VX_{71}$ | 15.7 | 0.15 | 20061012 | 38.71498 | 232.62690 | 105.54543 | 4.32324 | 0.2551129 | 3.2447096 | 15 | 1 | 44 days | 0.42 | | | MPC | 2006 $VX_{71}$ |
| 2006 $VB_{72}$ | 16.5 | 0.15 | 20061101 | 20.72185 | 152.30388 | 239.94588 | 9.17774 | 0.1114431 | 2.9342059 | 24 | 1 | 31 days | 0.28 | | | MPC | 2006 $VB_{72}$ |
| 2006 $VC_{72}$ | 18.0 | 0.15 | 20061101 | 339.95733 | 14.60195 | 65.39062 | 3.86220 | 0.1156687 | 2.2643734 | 18 | 1 | 23 days | 0.24 | | | MPC | 2006 $VC_{72}$ |
| 2006 $VE_{72}$ | 17.9 | 0.15 | 20060922 | 18.52444 | 166.53955 | 204.89457 | 0.74946 | 0.1978905 | 2.3693188 | 28 | 1 | 61 days | 0.23 | M-v | 5 | MPC | 2006 $VE_{72}$ |
| 2006 $VF_{72}$ | 15.3 | 0.15 | 20061101 | 82.96416 | 86.33370 | 240.35424 | 14.08008 | 0.0939969 | 3.1414078 | 28 | 1 | 41 days | 0.19 | | | MPC | 2006 $VF_{72}$ |
| 2006 $VH_{72}$ | 18.0 | 0.15 | 20061101 | 102.76077 | 247.32231 | 62.12839 | 2.91120 | 0.0449020 | 2.2764658 | 10 | 1 | 8 days | 0.18 | | | MPC | 2006 $VH_{72}$ |
| 2006 $VJ_{72}$ | 18.0 | 0.15 | 20061101 | 18.89819 | 161.74992 | 225.81344 | 1.50035 | 0.1957804 | 2.5943480 | 24 | 1 | 30 days | 0.32 | | | MPC | 2006 $VJ_{72}$ |
| 2006 $VK_{72}$ | 18.0 | 0.15 | 20061101 | 5.70042 | 343.46121 | 60.58415 | 15.31409 | 0.2603102 | 2.5820787 | 20 | 1 | 31 days | 0.40 | | | MPC | 2006 $VK_{72}$ |
| 2006 $VM_{72}$ | 17.2 | 0.15 | 20061101 | 268.95017 | 302.66133 | 237.15367 | 1.33714 | 0.2618255 | 2.6675264 | 13 | 1 | 8 days | 0.31 | | | MPC | 2006 $VM_{72}$ |
| 2006 $VN_{72}$ | 17.1 | 0.15 | 20061101 | 22.91309 | 324.60375 | 68.52639 | 4.13152 | 0.0672224 | 2.8220644 | 10 | 1 | 8 days | 0.23 | | | MPC | 2006 $VN_{72}$ |
| 2006 $VO_{72}$ | 17.8 | 0.15 | 20061101 | 29.95664 | 290.35628 | 60.31130 | 17.74388 | 0.3875012 | 2.7400023 | 17 | 1 | 30 days | 0.18 | | E | MPC | 2006 $VO_{72}$ |
| 2006 $VP_{72}$ | 18.1 | 0.15 | 20061101 | 334.88678 | 24.58556 | 60.61107 | 7.77463 | 0.0631631 | 2.3004435 | 23 | 1 | 39 days | 0.26 | | | MPC | 2006 $VP_{72}$ |
| 2006 $VQ_{72}$ | 16.8 | 0.15 | 20061101 | 219.97541 | 318.24531 | 241.17666 | 8.09680 | 0.0101573 | 2.4596236 | 10 | 1 | 8 days | 0.16 | | | MPC | 2006 $VQ_{72}$ |
| 2006 $VU_{72}$ | 15.9 | 0.15 | 20061101 | 174.75392 | 183.11304 | 63.63250 | 11.45072 | 0.1026732 | 3.0820516 | 13 | 1 | 16 days | 0.15 | | | MPC | 2006 $VU_{72}$ |
| 2006 $VV_{72}$ | 17.5 | 0.15 | 20061101 | 269.89513 | 105.22047 | 56.32711 | 4.10134 | 0.1019044 | 2.5957051 | 14 | 1 | 26 days | 0.34 | | | MPC | 2006 $VV_{72}$ |
| 2006 $VW_{72}$ | 17.1 | 0.15 | 20061101 | 13.38564 | 36.93840 | 4.22589 | 0.49957 | 0.1161618 | 2.5856853 | 13 | 1 | 16 days | 0.22 | | | MPC | 2006 $VW_{72}$ |
| 2006 $VX_{72}$ | 17.6 | 0.15 | 20061012 | 31.09297 | 304.07886 | 55.92557 | 5.33677 | 0.2043918 | 2.2185181 | 32 | 1 | 56 days | 0.25 | | | MPC | 2006 $VX_{72}$ |
| 2006 $VB_{73}$ | 16.5 | 0.15 | 20061101 | 9.34841 | 148.42790 | 247.69937 | 12.59039 | 0.1600527 | 2.7591072 | 27 | 1 | 13 days | 0.64 | | | MPC | 2006 $VB_{73}$ |
| 2006 $VD_{73}$ | 16.1 | 0.15 | 20061101 | 14.98661 | 164.98086 | 247.24590 | 11.32524 | 0.0256988 | 2.9604598 | 16 | 1 | 12 days | 0.32 | | | MPC | 2006 $VD_{73}$ |
| 2006 $VF_{73}$ | 16.1 | 0.15 | 20061101 | 300.96901 | 260.99866 | 247.03735 | 11.54257 | 0.1966748 | 2.7742125 | 16 | 1 | 16 days | 0.50 | | | MPC | 2006 $VF_{73}$ |
| 2006 $VJ_{73}$ | 16.5 | 0.15 | 20061101 | 302.17020 | 72.07366 | 73.67289 | 6.91979 | 0.1673658 | 3.0899195 | 9 | 1 | 13 days | 0.99 | | | MPC | 2006 $VJ_{73}$ |
| 2006 $VN_{73}$ | 15.7 | 0.15 | 20061101 | 64.10915 | 266.22159 | 63.03019 | 26.59348 | 0.2507661 | 3.1186192 | 17 | 1 | 24 days | 0.16 | | | MPC | 2006 $VN_{73}$ |
| 2006 $VO_{73}$ | 18.5 | 0.15 | 20060922 | 353.15454 | 170.45111 | 240.84491 | 4.99805 | 0.2398955 | 2.5584745 | 27 | 1 | 60 days | 0.29 | M-v | 4 | MPC | 2006 $VO_{73}$ |
| 2006 $VP_{73}$ | 16.8 | 0.15 | 20061101 | 194.89758 | 159.36901 | 70.63144 | 3.55855 | 0.1232775 | 2.3830209 | 13 | 1 | 16 days | 0.22 | | | MPC | 2006 $VP_{73}$ |
| 2006 $VQ_{73}$ | 16.4 | 0.15 | 20061101 | 323.73536 | 256.89316 | 213.25906 | 0.31848 | 0.1413825 | 3.0949882 | 14 | 1 | 22 days | 0.23 | | | MPC | 2006 $VQ_{73}$ |
| 2006 $VS_{73}$ | 16.0 | 0.15 | 20061101 | 252.74726 | 291.67865 | 242.84286 | 4.08763 | 0.0332512 | 2.8086496 | 20 | 1 | 16 days | 0.24 | | | MPC | 2006 $VS_{73}$ |
| 2006 $VX_{73}$ | 14.9 | 0.15 | 20061101 | 333.70168 | 211.24128 | 244.37546 | 10.85697 | 0.0865237 | 3.1245231 | 31 | 1 | 30 days | 0.51 | | | MPC | 2006 $VX_{73}$ |
| 2006 $VY_{73}$ | 17.5 | 0.15 | 20061101 | 335.51760 | 222.53563 | 243.10092 | 14.84019 | 0.2827439 | 3.1043231 | 17 | 1 | 13 days | 0.28 | | | MPC | 2006 $VY_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VB_{74}$ | 15.8 | 0.15 | 20061101 | 11.99015 | 343.20593 | 66.25154 | 2.90344 | 0.1155849 | 3.0065807 | 21 | 1 | 13 days | 0.43 | | MPC | 2006 $VB_{74}$ |
| 2006 $VD_{74}$ | 17.2 | 0.15 | 20061101 | 301.17615 | 54.83549 | 73.47603 | 22.81851 | 0.0340026 | 2.5830088 | 12 | 1 | 16 days | 0.35 | | MPC | 2006 $VD_{74}$ |
| 2006 $VJ_{74}$ | 16.9 | 0.15 | 20061101 | 52.24420 | 285.57763 | 74.23368 | 15.40929 | 0.1269544 | 2.6526932 | 13 | 1 | 12 days | 0.21 | | MPC | 2006 $VJ_{74}$ |
| 2006 $VK_{74}$ | 16.1 | 0.15 | 20061101 | 83.27893 | 250.85023 | 78.23064 | 8.88884 | 0.1064275 | 2.3864338 | 20 | 1 | 16 days | 0.69 | | MPC | 2006 $VK_{74}$ |
| 2006 $VM_{74}$ | 16.1 | 0.15 | 20061101 | 359.63467 | 355.49689 | 66.22661 | 14.16649 | 0.1705041 | 2.5904317 | 30 | 1 | 34 days | 0.44 | | MPC | 2006 $VM_{74}$ |
| 2006 $VN_{74}$ | 17.2 | 0.15 | 20061101 | 316.15333 | 40.20731 | 64.43864 | 11.07999 | 0.0724612 | 3.0365114 | 13 | 1 | 27 days | 0.33 | | MPC | 2006 $VN_{74}$ |
| 2006 $VO_{74}$ | 18.1 | 0.15 | 20061101 | 30.19511 | 153.31009 | 220.56323 | 6.55153 | 0.1345397 | 2.4467562 | 13 | 1 | 13 days | 0.27 | | MPC | 2006 $VO_{74}$ |
| 2006 $VP_{74}$ | 17.3 | 0.15 | 20061101 | 205.93269 | 138.63603 | 73.84153 | 5.19195 | 0.0780231 | 2.3365394 | 14 | 1 | 14 days | 0.32 | | MPC | 2006 $VP_{74}$ |
| 2006 $VQ_{74}$ | 19.3 | 0.15 | 20061101 | 9.97643 | 290.43677 | 106.80759 | 2.13583 | 0.1934604 | 2.4722931 | 13 | 1 | 12 days | 0.24 | | MPC | 2006 $VQ_{74}$ |
| 2006 $VR_{74}$ | 18.2 | 0.15 | 20061101 | 47.41751 | 122.89707 | 222.74627 | 5.80461 | 0.1980719 | 2.2168733 | 20 | 1 | 27 days | 0.25 | | MPC | 2006 $VR_{74}$ |
| 2006 $VS_{74}$ | 17.2 | 0.15 | 20061101 | 328.32962 | 342.93852 | 114.75697 | 2.32247 | 0.1433749 | 3.0659579 | 16 | 1 | 16 days | 0.39 | | MPC | 2006 $VS_{74}$ |
| 2006 $VU_{74}$ | 17.0 | 0.15 | 20061101 | 338.77164 | 16.40760 | 65.82546 | 16.32086 | 0.1240451 | 2.6718542 | 20 | 1 | 35 days | 0.21 | | MPC | 2006 $VU_{74}$ |
| 2006 $VV_{74}$ | 15.9 | 0.15 | 20060922 | 207.09213 | 340.16110 | 225.89685 | 10.40293 | 0.0245113 | 3.1618979 | 24 | 1 | 60 days | 0.27 | M-v 4 | MPC | 2006 $VV_{74}$ |
| 2006 $VW_{74}$ | 16.5 | 0.15 | 20061101 | 359.92689 | 233.17874 | 184.49383 | 2.56110 | 0.0548343 | 3.0719817 | 20 | 1 | 37 days | 0.30 | | MPC | 2006 $VW_{74}$ |
| 2006 $VX_{74}$ | 17.0 | 0.15 | 20061101 | 23.98759 | 190.17894 | 185.07298 | 8.25396 | 0.2979134 | 2.6175387 | 11 | 1 | 6 days | 0.15 | | MPC | 2006 $VX_{74}$ |
| 2006 $VZ_{74}$ | 16.6 | 0.15 | 20061101 | 308.57179 | 246.45077 | 241.06082 | 7.77600 | 0.1223509 | 2.5541171 | 20 | 1 | 39 days | 0.20 | | MPC | 2006 $VZ_{74}$ |
| 2006 $VA_{75}$ | 17.1 | 0.15 | 20061101 | 33.06780 | 145.37686 | 237.62372 | 4.01775 | 0.1267249 | 2.7797369 | 10 | 1 | 16 days | 0.30 | | MPC | 2006 $VA_{75}$ |
| 2006 $VC_{75}$ | 16.0 | 0.15 | 20061101 | 40.23504 | 136.80265 | 233.84289 | 3.32685 | 0.1600225 | 2.5984297 | 21 | 1 | 16 days | 0.43 | | MPC | 2006 $VC_{75}$ |
| 2006 $VD_{75}$ | 16.4 | 0.15 | 20061101 | 327.89667 | 24.28064 | 79.95881 | 5.75150 | 0.0654725 | 2.7625406 | 13 | 1 | 16 days | 0.19 | | MPC | 2006 $VD_{75}$ |
| 2006 $VH_{75}$ | 17.2 | 0.15 | 20061101 | 36.62366 | 118.32851 | 264.17329 | 5.63858 | 0.1136399 | 2.3274891 | 9 | 1 | 13 days | 0.11 | | MPC | 2006 $VH_{75}$ |
| 2006 $VJ_{75}$ | 17.7 | 0.15 | 20061101 | 22.76036 | 325.03325 | 62.07464 | 6.94377 | 0.2624933 | 2.5505895 | 9 | 1 | 9 days | 0.33 | | MPC | 2006 $VJ_{75}$ |
| 2006 $VA_{76}$ | 18.5 | 0.15 | 20061101 | 27.67890 | 103.15401 | 252.91001 | 0.87714 | 0.2333993 | 2.1469137 | 16 | 1 | 15 days | 0.41 | | MPC | 2006 $VA_{76}$ |
| 2006 $VK_{76}$ | 16.8 | 0.15 | 20061101 | 0.63430 | 314.94325 | 95.95098 | 3.79665 | 0.0615038 | 2.6962120 | 20 | 1 | 40 days | 0.36 | | MPC | 2006 $VK_{76}$ |
| 2006 $VN_{76}$ | 17.2 | 0.15 | 20061101 | 102.11858 | 69.76097 | 223.09343 | 11.42232 | 0.1732072 | 2.7339261 | 14 | 1 | 11 days | 0.27 | | MPC | 2006 $VN_{76}$ |
| 2006 $VQ_{76}$ | 16.5 | 0.15 | 20061101 | 157.38533 | 151.84947 | 102.23887 | 3.17033 | 0.0261012 | 2.6803168 | 17 | 1 | 46 days | 0.26 | | MPC | 2006 $VQ_{76}$ |
| 2006 $VS_{76}$ | 17.7 | 0.15 | 20061101 | 352.19457 | 322.92263 | 98.07812 | 3.49735 | 0.0978082 | 2.6858211 | 14 | 1 | 11 days | 0.22 | | MPC | 2006 $VS_{76}$ |
| 2006 $VX_{76}$ | 16.8 | 0.15 | 20061101 | 202.25077 | 125.69349 | 86.18815 | 4.77657 | 0.0269955 | 2.8158300 | 10 | 1 | 11 days | 0.57 | | MPC | 2006 $VX_{76}$ |
| 2006 $VC_{77}$ | 16.8 | 0.15 | 20061101 | 313.39127 | 32.38103 | 85.42494 | 5.72424 | 0.1906544 | 3.1348227 | 13 | 1 | 15 days | 0.37 | | MPC | 2006 $VC_{77}$ |
| 2006 $VD_{77}$ | 16.5 | 0.15 | 20061101 | 30.47324 | 188.66511 | 183.53783 | 3.06594 | 0.1437337 | 2.9821474 | 13 | 1 | 15 days | 0.16 | | MPC | 2006 $VD_{77}$ |
| 2006 $VE_{77}$ | 16.3 | 0.15 | 20061101 | 320.16263 | 37.95742 | 65.18920 | 13.36496 | 0.1396205 | 2.7123704 | 19 | 1 | 19 days | 0.59 | | MPC | 2006 $VE_{77}$ |
| 2006 $VH_{77}$ | 16.3 | 0.15 | 20061101 | 174.88184 | 145.65199 | 92.35526 | 4.68259 | 0.0333743 | 2.7836324 | 10 | 1 | 15 days | 0.97 | | MPC | 2006 $VH_{77}$ |
| 2006 $VJ_{77}$ | 17.5 | 0.15 | 20061101 | 43.21538 | 264.09330 | 59.22233 | 24.32603 | 0.3919036 | 2.2907814 | 26 | 1 | 15 days | 0.43 | | MPC | 2006 $VJ_{77}$ |
| 2006 $VK_{77}$ | 17.4 | 0.15 | 20061101 | 334.18439 | 331.29818 | 115.58395 | 2.42175 | 0.1684495 | 2.5252040 | 13 | 1 | 11 days | 0.30 | | MPC | 2006 $VK_{77}$ |
| 2006 $VN_{77}$ | 16.3 | 0.15 | 20061101 | 296.02690 | 49.57531 | 74.68551 | 10.08001 | 0.0636426 | 3.1792635 | 13 | 1 | 15 days | 0.19 | | MPC | 2006 $VN_{77}$ |
| 2006 $VQ_{77}$ | 16.3 | 0.15 | 20061101 | 241.22287 | 108.64240 | 75.98105 | 8.50203 | 0.1375825 | 2.5754531 | 13 | 1 | 15 days | 0.14 | | MPC | 2006 $VQ_{77}$ |
| 2006 $VR_{77}$ | 19.4 | 0.15 | 20061101 | 352.87584 | 333.80210 | 86.59112 | 3.75125 | 0.2029687 | 2.3657665 | 10 | 1 | 11 days | 0.87 | | MPC | 2006 $VR_{77}$ |
| 2006 $VT_{77}$ | 18.4 | 0.15 | 20061101 | 14.41990 | 316.09136 | 69.76456 | 11.11178 | 0.2690884 | 3.1440163 | 13 | 1 | 11 days | 0.22 | | MPC | 2006 $VT_{77}$ |
| 2006 $VU_{77}$ | 17.7 | 0.15 | 20061101 | 50.13212 | 250.55085 | 93.31362 | 3.86877 | 0.1654019 | 2.2031266 | 13 | 1 | 15 days | 0.13 | | MPC | 2006 $VU_{77}$ |
| 2006 $VZ_{77}$ | 19.0 | 0.15 | 20061101 | 355.47648 | 294.11671 | 122.26977 | 2.29638 | 0.1289815 | 2.3031841 | 13 | 1 | 15 days | 0.26 | | MPC | 2006 $VZ_{77}$ |
| 2006 $VA_{78}$ | 18.5 | 0.15 | 20061101 | 45.50990 | 173.02965 | 175.32429 | 2.89441 | 0.1787859 | 2.2841227 | 17 | 1 | 15 days | 0.21 | | MPC | 2006 $VA_{78}$ |
| 2006 $VN_{78}$ | 16.6 | 0.15 | 20061101 | 0.85974 | 335.16731 | 76.83132 | 8.08224 | 0.1973569 | 3.1317387 | 20 | 1 | 35 days | 0.21 | | MPC | 2006 $VN_{78}$ |
| 2006 $VP_{78}$ | 15.5 | 0.15 | 20061101 | 332.62627 | 289.07109 | 157.74619 | 3.31812 | 0.0817656 | 3.0618071 | 19 | 1 | 36 days | 0.24 | | MPC | 2006 $VP_{78}$ |
| 2006 $VQ_{78}$ | 16.6 | 0.15 | 20061101 | 169.28022 | 162.61050 | 80.50595 | 6.32695 | 0.0599968 | 2.3009036 | 23 | 1 | 36 days | 0.27 | | MPC | 2006 $VQ_{78}$ |
| 2006 $VR_{78}$ | 17.5 | 0.15 | 20061101 | 5.24239 | 327.24049 | 77.15178 | 7.26436 | 0.1349917 | 2.3442808 | 17 | 1 | 15 days | 0.24 | | MPC | 2006 $VR_{78}$ |
| 2006 $VU_{78}$ | 16.6 | 0.15 | 20061101 | 36.97034 | 174.88834 | 190.07831 | 4.22954 | 0.1529109 | 2.9086236 | 13 | 1 | 12 days | 0.20 | | MPC | 2006 $VU_{78}$ |
| 2006 $VV_{78}$ | 17.2 | 0.15 | 20061101 | 60.64550 | 110.39870 | 224.93779 | 13.44961 | 0.1781034 | 3.0490867 | 10 | 1 | 8 days | 0.23 | | MPC | 2006 $VV_{78}$ |
| 2006 $VW_{78}$ | 15.0 | 0.15 | 20061012 | 283.40623 | 294.20071 | 227.46827 | 19.91618 | 0.2810952 | 3.0897279 | 35 | 1 | 57 days | 0.34 | | MPC | 2006 $VW_{78}$ |
| 2006 $VX_{78}$ | 18.5 | 0.15 | 20061101 | 18.68159 | 275.26371 | 105.69428 | 3.03520 | 0.2197092 | 2.3139467 | 17 | 1 | 32 days | 0.21 | | MPC | 2006 $VX_{78}$ |
| 2006 $VY_{78}$ | 17.1 | 0.15 | 20061101 | 43.70617 | 226.10219 | 139.17347 | 2.86549 | 0.0691010 | 2.8636834 | 10 | 1 | 8 days | 0.30 | | MPC | 2006 $VY_{78}$ |
| 2006 $VZ_{78}$ | 17.5 | 0.15 | 20061101 | 17.26283 | 276.25526 | 114.00395 | 2.20258 | 0.2140725 | 3.1569839 | 13 | 1 | 15 days | 0.19 | | MPC | 2006 $VZ_{78}$ |
| 2006 $VA_{79}$ | 17.9 | 0.15 | 20061101 | 22.93406 | 308.45671 | 76.67258 | 5.87434 | 0.1521869 | 2.6525849 | 13 | 1 | 11 days | 0.30 | | MPC | 2006 $VA_{79}$ |
| 2006 $VC_{79}$ | 16.7 | 0.15 | 20061101 | 2.03989 | 329.31875 | 79.06436 | 6.43559 | 0.2265044 | 3.1205917 | 23 | 1 | 41 days | 0.46 | | MPC | 2006 $VC_{79}$ |
| 2006 $VE_{79}$ | 17.7 | 0.15 | 20061101 | 24.10249 | 306.56679 | 74.96627 | 7.47691 | 0.1138968 | 2.2614054 | 13 | 1 | 15 days | 0.24 | | MPC | 2006 $VE_{79}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VF_{79}$ | 18.4 | 0.15 | 20061101 | 29.46240 | 262.35892 | 106.63995 | 3.69141 | 0.1908713 | 2.4212561 | 17 | 1 | 12 days | 0.29 | MPC | 2006 $VF_{79}$ |
| 2006 $VH_{79}$ | 18.8 | 0.15 | 20061101 | 28.59610 | 213.39590 | 155.22554 | 2.75907 | 0.2053250 | 2.3623835 | 14 | 1 | 8 days | 0.24 | MPC | 2006 $VH_{79}$ |
| 2006 $VL_{79}$ | 17.5 | 0.15 | 20061101 | 140.63745 | 165.83328 | 103.95695 | 3.95196 | 0.0442877 | 2.1923350 | 17 | 1 | 33 days | 0.20 | MPC | 2006 $VL_{79}$ |
| 2006 $VN_{79}$ | 17.9 | 0.15 | 20061101 | 332.23138 | 0.12175 | 87.73715 | 5.36157 | 0.1212566 | 2.3881882 | 17 | 1 | 32 days | 0.23 | MPC | 2006 $VN_{79}$ |
| 2006 $VQ_{79}$ | 16.5 | 0.15 | 20061101 | 215.77094 | 99.59456 | 101.95927 | 4.51744 | 0.0259033 | 2.7404416 | 10 | 1 | 8 days | 0.18 | MPC | 2006 $VQ_{79}$ |
| 2006 $VS_{79}$ | 15.5 | 0.15 | 20061101 | 324.90384 | 24.94018 | 73.78140 | 13.16494 | 0.1095532 | 3.1858849 | 20 | 1 | 35 days | 0.20 | MPC | 2006 $VS_{79}$ |
| 2006 $VU_{79}$ | 16.9 | 0.15 | 20061101 | 48.90376 | 151.74720 | 211.56466 | 7.43409 | 0.0331770 | 2.5924245 | 11 | 1 | 6 days | 0.11 | MPC | 2006 $VU_{79}$ |
| 2006 $VV_{79}$ | 18.7 | 0.15 | 20061101 | 8.64557 | 280.93141 | 116.55102 | 3.11077 | 0.2188420 | 2.3867344 | 10 | 1 | 12 days | 0.19 | MPC | 2006 $VV_{79}$ |
| 2006 $VW_{79}$ | 16.6 | 0.15 | 20061101 | 32.84756 | 289.49274 | 86.19357 | 6.44480 | 0.0911585 | 2.6885164 | 14 | 1 | 32 days | 0.17 | MPC | 2006 $VW_{79}$ |
| 2006 $VX_{79}$ | 17.7 | 0.15 | 20061101 | 64.37921 | 210.02848 | 117.94541 | 3.71590 | 0.1954509 | 2.4376825 | 11 | 1 | 6 days | 0.16 | MPC | 2006 $VX_{79}$ |
| 2006 $VY_{79}$ | 16.3 | 0.15 | 20061101 | 231.44724 | 97.73866 | 87.07736 | 6.41115 | 0.0053493 | 2.6960283 | 20 | 1 | 36 days | 0.24 | MPC | 2006 $VY_{79}$ |
| 2006 $VZ_{79}$ | 16.0 | 0.15 | 20061101 | 284.18260 | 272.35570 | 226.57915 | 15.39180 | 0.0509019 | 3.1010264 | 10 | 1 | 8 days | 0.36 | MPC | 2006 $VZ_{79}$ |
| 2006 $VC_{80}$ | 17.8 | 0.15 | 20061101 | 354.44709 | 288.24777 | 132.37451 | 2.80766 | 0.1684108 | 2.4347629 | 17 | 1 | 33 days | 0.28 | MPC | 2006 $VC_{80}$ |
| 2006 $VD_{80}$ | 16.7 | 0.15 | 20061101 | 36.81703 | 270.16691 | 107.06514 | 3.84861 | 0.0184433 | 2.5263068 | 16 | 1 | 15 days | 0.20 | MPC | 2006 $VD_{80}$ |
| 2006 $VF_{80}$ | 15.3 | 0.15 | 20061101 | 133.36969 | 175.53634 | 100.27877 | 6.10608 | 0.1180958 | 3.1402969 | 17 | 1 | 32 days | 0.27 | MPC | 2006 $VF_{80}$ |
| 2006 $VG_{80}$ | 14.7 | 0.15 | 20061101 | 282.85244 | 284.59627 | 215.28883 | 9.80552 | 0.0441948 | 3.1272942 | 22 | 1 | 8 days | 0.35 | MPC | 2006 $VG_{80}$ |
| 2006 $VH_{80}$ | 18.5 | 0.15 | 20061101 | 52.17327 | 249.40462 | 96.59984 | 4.37895 | 0.1490819 | 2.1922491 | 10 | 1 | 8 days | 0.25 | MPC | 2006 $VH_{80}$ |
| 2006 $VJ_{80}$ | 16.5 | 0.15 | 20061101 | 312.69467 | 235.29307 | 232.35106 | 26.23422 | 0.0441519 | 2.5451172 | 24 | 1 | 36 days | 0.34 | MPC | 2006 $VJ_{80}$ |
| 2006 $VK_{80}$ | 15.1 | 0.15 | 20061101 | 92.26287 | 87.23616 | 225.64740 | 15.58080 | 0.1193101 | 3.1360263 | 10 | 1 | 6 days | 0.16 | MPC | 2006 $VK_{80}$ |
| 2006 $VL_{80}$ | 18.1 | 0.15 | 20061101 | 336.68365 | 347.78574 | 93.81698 | 4.94873 | 0.0935606 | 2.2656212 | 13 | 1 | 8 days | 0.26 | MPC | 2006 $VL_{80}$ |
| 2006 $VM_{80}$ | 16.3 | 0.15 | 20061101 | 276.09670 | 61.76611 | 84.02795 | 9.85540 | 0.0387239 | 3.1010858 | 10 | 1 | 12 days | 0.17 | MPC | 2006 $VM_{80}$ |
| 2006 $VN_{80}$ | 17.9 | 0.15 | 20061101 | 288.36549 | 40.32193 | 96.05473 | 5.32819 | 0.0856501 | 2.3932398 | 20 | 1 | 32 days | 0.37 | MPC | 2006 $VN_{80}$ |
| 2006 $VO_{80}$ | 16.8 | 0.15 | 20061101 | 335.37274 | 225.08614 | 222.28971 | 11.60334 | 0.1046404 | 2.9149884 | 17 | 1 | 33 days | 0.30 | MPC | 2006 $VO_{80}$ |
| 2006 $VP_{80}$ | 17.2 | 0.15 | 20061101 | 63.28754 | 122.90577 | 215.77543 | 7.98195 | 0.1305004 | 2.5200488 | 17 | 1 | 33 days | 0.28 | MPC | 2006 $VP_{80}$ |
| 2006 $VQ_{80}$ | 16.1 | 0.15 | 20061101 | 66.05278 | 231.17023 | 87.94360 | 8.11818 | 0.2745095 | 2.7629820 | 18 | 1 | 28 days | 0.20 | MPC | 2006 $VQ_{80}$ |
| 2006 $VR_{80}$ | 17.9 | 0.15 | 20061101 | 18.67178 | 274.05487 | 111.96908 | 3.91576 | 0.2060791 | 2.6996548 | 13 | 1 | 12 days | 0.17 | MPC | 2006 $VR_{80}$ |
| 2006 $VS_{80}$ | 16.8 | 0.15 | 20061101 | 349.52753 | 233.99731 | 194.68201 | 4.28402 | 0.1158884 | 2.5793254 | 13 | 1 | 12 days | 0.22 | MPC | 2006 $VS_{80}$ |
| 2006 $VT_{80}$ | 17.5 | 0.15 | 20061101 | 358.70789 | 284.43879 | 130.68434 | 2.88966 | 0.1991213 | 2.4262713 | 23 | 1 | 12 days | 0.34 | MPC | 2006 $VT_{80}$ |
| 2006 $VU_{80}$ | 16.1 | 0.15 | 20061101 | 87.84744 | 210.76147 | 105.76445 | 3.21692 | 0.1550390 | 3.0772279 | 10 | 1 | 12 days | 0.18 | MPC | 2006 $VU_{80}$ |
| 2006 $VV_{80}$ | 15.6 | 0.15 | 20061101 | 0.92971 | 346.20278 | 73.73568 | 10.04892 | 0.0809313 | 3.1488492 | 22 | 1 | 15 days | 0.32 | MPC | 2006 $VV_{80}$ |
| 2006 $VC_{81}$ | 14.8 | 0.15 | 20061101 | 248.68401 | 0.13934 | 207.85234 | 3.39088 | 0.4029249 | 2.4714742 | 10 | 1 | 8 days | 0.66 | MPC | 2006 $VC_{81}$ |
| 2006 $VD_{81}$ | 16.5 | 0.15 | 20061101 | 117.64285 | 74.27172 | 226.57238 | 8.16511 | 0.0102166 | 2.4045103 | 28 | 1 | 33 days | 0.51 | MPC | 2006 $VD_{81}$ |
| 2006 $VE_{81}$ | 15.7 | 0.15 | 20061101 | 26.10830 | 160.72975 | 232.42563 | 9.12646 | 0.0650626 | 3.0714409 | 14 | 1 | 20 days | 0.27 | MPC | 2006 $VE_{81}$ |
| 2006 $VF_{81}$ | 17.2 | 0.15 | 20061101 | 8.88366 | 336.52473 | 72.99144 | 11.04971 | 0.0896260 | 2.5940957 | 22 | 1 | 24 days | 0.29 | MPC | 2006 $VF_{81}$ |
| 2006 $VG_{81}$ | 15.7 | 0.15 | 20061101 | 65.40625 | 262.55978 | 76.12504 | 12.03558 | 0.1704628 | 3.0469265 | 21 | 1 | 27 days | 0.22 | MPC | 2006 $VG_{81}$ |
| 2006 $VH_{81}$ | 15.1 | 0.15 | 20061101 | 336.05100 | 216.23623 | 240.14371 | 20.79503 | 0.1287552 | 3.1431127 | 18 | 1 | 10 days | 0.55 | MPC | 2006 $VH_{81}$ |
| 2006 $VO_{81}$ | 17.6 | 0.15 | 20061101 | 359.89488 | 226.05864 | 191.51581 | 3.07599 | 0.2873824 | 2.5989021 | 19 | 1 | 22 days | 0.35 | MPC | 2006 $VO_{81}$ |
| 2006 $VP_{81}$ | 15.4 | 0.15 | 20061101 | 262.89063 | 93.26304 | 85.17839 | 12.59192 | 0.1226036 | 3.1629749 | 10 | 1 | 6 days | 0.42 | MPC | 2006 $VP_{81}$ |
| 2006 $VQ_{81}$ | 17.8 | 0.15 | 20061101 | 351.81389 | 167.49661 | 232.18757 | 5.83658 | 0.0880857 | 2.3033233 | 9 | 1 | 6 days | 0.31 | MPC | 2006 $VQ_{81}$ |
| 2006 $VM_{82}$ | 18.4 | 0.15 | 20061101 | 11.09411 | 138.85498 | 252.91914 | 5.48612 | 0.1720894 | 2.2471292 | 12 | 1 | 20 days | 0.48 | MPC | 2006 $VM_{82}$ |
| 2006 $VU_{82}$ | 19.1 | 0.15 | 20061101 | 12.98543 | 6.50263 | 21.15525 | 1.32235 | 0.1944384 | 2.3063244 | 10 | 1 | 11 days | 0.24 | MPC | 2006 $VU_{82}$ |
| 2006 $VV_{82}$ | 18.4 | 0.15 | 20061101 | 1.13289 | 102.56131 | 304.31590 | 1.15596 | 0.1870633 | 2.6813034 | 9 | 1 | 6 days | 0.36 | MPC | 2006 $VV_{82}$ |
| 2006 $VW_{82}$ | 16.6 | 0.15 | 20061101 | 67.15860 | 78.78226 | 256.46912 | 3.25664 | 0.0741672 | 2.7873065 | 14 | 1 | 11 days | 0.27 | MPC | 2006 $VW_{82}$ |
| 2006 $VX_{82}$ | 17.2 | 0.15 | 20061101 | 11.41408 | 153.45919 | 243.44563 | 7.23150 | 0.0685121 | 2.6524216 | 10 | 1 | 11 days | 0.60 | MPC | 2006 $VX_{82}$ |
| 2006 $VC_{83}$ | 18.6 | 0.15 | 20061101 | 19.74828 | 7.65919 | 9.31330 | 1.35046 | 0.1963303 | 2.3356220 | 17 | 1 | 42 days | 0.20 | MPC | 2006 $VC_{83}$ |
| 2006 $VE_{83}$ | 16.3 | 0.15 | 20061101 | 85.77271 | 278.13571 | 42.99915 | 7.39417 | 0.0241546 | 2.8716559 | 10 | 1 | 11 days | 0.37 | MPC | 2006 $VE_{83}$ |
| 2006 $VF_{83}$ | 15.6 | 0.15 | 20061101 | 116.26105 | 244.48271 | 48.10555 | 12.63181 | 0.0127922 | 3.1680550 | 14 | 1 | 24 days | 0.19 | MPC | 2006 $VF_{83}$ |
| 2006 $VJ_{83}$ | 17.0 | 0.15 | 20061101 | 296.27951 | 118.10443 | 1.15193 | 1.94624 | 0.0575274 | 2.6441803 | 14 | 1 | 24 days | 0.29 | MPC | 2006 $VJ_{83}$ |
| 2006 $VK_{83}$ | 16.7 | 0.15 | 20061101 | 115.01677 | 29.83581 | 262.32350 | 3.01423 | 0.0265457 | 2.6397028 | 10 | 1 | 11 days | 0.91 | MPC | 2006 $VK_{83}$ |
| 2006 $VM_{83}$ | 16.9 | 0.15 | 20061012 | 32.71223 | 315.51462 | 39.77241 | 6.93195 | 0.1832976 | 2.8117633 | 19 | 1 | 35 days | 0.25 | MPC | 2006 $VM_{83}$ |
| 2006 $VX_{83}$ | 17.5 | 0.15 | 20061101 | 327.40566 | 222.54061 | 226.48013 | 2.77343 | 0.2654632 | 2.6962626 | 10 | 1 | 4 days | 0.16 | MPC | 2006 $VX_{83}$ |
| 2006 $VY_{83}$ | 15.7 | 0.15 | 20061101 | 241.71775 | 117.45900 | 35.42473 | 10.63485 | 0.0150721 | 3.1287992 | 16 | 1 | 22 days | 0.32 | MPC | 2006 $VY_{83}$ |
| 2006 $VZ_{83}$ | 17.5 | 0.15 | 20061101 | 51.66288 | 282.28827 | 37.28922 | 2.10777 | 0.2181313 | 2.5938169 | 13 | 1 | 10 days | 0.92 | MPC | 2006 $VZ_{83}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VA_{84}$ | 16.8 | 0.15 | 20061101 | 25.53803 | 139.92730 | 223.68964 | 3.22548 | 0.0897591 | 2.7063224 | 13 | 1 | 10 days | 0.65 | | MPC | 2006 $VA_{84}$ |
| 2006 $VC_{84}$ | 16.0 | 0.15 | 20061101 | 156.38088 | 6.11127 | 225.96499 | 7.22222 | 0.1425020 | 2.6146073 | 13 | 1 | 10 days | 0.57 | | MPC | 2006 $VC_{84}$ |
| 2006 $VD_{84}$ | 16.9 | 0.15 | 20061101 | 309.24168 | 82.35217 | 33.70273 | 13.93810 | 0.2827087 | 2.8785230 | 17 | 1 | 24 days | 0.34 | | MPC | 2006 $VD_{84}$ |
| 2006 $VE_{84}$ | 18.5 | 0.15 | 20061101 | 6.26373 | 158.14010 | 228.85585 | 4.75203 | 0.1412089 | 2.1776412 | 13 | 1 | 19 days | 0.29 | | MPC | 2006 $VE_{84}$ |
| 2006 $VM_{84}$ | 16.0 | 0.15 | 20061101 | 6.66548 | 87.23355 | 315.23831 | 2.55650 | 0.2128245 | 2.6532956 | 29 | 1 | 9 days | 0.89 | | MPC | 2006 $VM_{84}$ |
| 2006 $VN_{84}$ | 16.4 | 0.15 | 20061101 | 346.77984 | 47.59060 | 26.36044 | 5.59260 | 0.2165928 | 2.5245345 | 32 | 1 | 9 days | 0.74 | | MPC | 2006 $VN_{84}$ |
| 2006 $VO_{84}$ | 17.7 | 0.15 | 20061101 | 16.38742 | 124.36313 | 260.64738 | 5.17853 | 0.2299749 | 2.1668845 | 28 | 1 | 9 days | 0.88 | | MPC | 2006 $VO_{84}$ |
| 2006 $VS_{84}$ | 15.7 | 0.15 | 20061101 | 322.98247 | 125.15896 | 326.85263 | 8.79284 | 0.0667186 | 3.0625563 | 16 | 1 | 19 days | 0.46 | | MPC | 2006 $VS_{84}$ |
| 2006 $VU_{84}$ | 16.1 | 0.15 | 20061101 | 6.67606 | 97.86869 | 305.30735 | 8.61871 | 0.1181320 | 3.0443595 | 16 | 1 | 19 days | 0.48 | | MPC | 2006 $VU_{84}$ |
| 2006 $VY_{84}$ | 16.8 | 0.15 | 20061101 | 8.25844 | 62.01991 | 337.29312 | 3.51632 | 0.2706271 | 2.5990039 | 27 | 1 | 14 days | 0.50 | | MPC | 2006 $VY_{84}$ |
| 2006 $VZ_{84}$ | 16.5 | 0.15 | 20061101 | 22.03176 | 346.17723 | 34.21899 | 6.75748 | 0.2288688 | 2.3296642 | 39 | 1 | 38 days | 0.55 | | MPC | 2006 $VZ_{84}$ |
| 2006 $VA_{85}$ | 17.5 | 0.15 | 20061101 | 24.99500 | 71.18018 | 318.19807 | 3.57147 | 0.0837731 | 2.7722982 | 12 | 1 | 12 days | 0.18 | | MPC | 2006 $VA_{85}$ |
| 2006 $VB_{85}$ | 17.3 | 0.15 | 20061101 | 338.03118 | 187.58898 | 257.54968 | 11.79973 | 0.1164341 | 2.5784566 | 13 | 1 | 8 days | 0.18 | | MPC | 2006 $VB_{85}$ |
| 2006 $VC_{85}$ | 16.9 | 0.15 | 20061101 | 359.70108 | 64.07758 | 353.41682 | 3.24686 | 0.1331663 | 2.5315111 | 18 | 1 | 12 days | 0.31 | | MPC | 2006 $VC_{85}$ |
| 2006 $VD_{85}$ | 16.4 | 0.15 | 20061101 | 1.62832 | 323.72489 | 86.07355 | 9.57964 | 0.1873519 | 2.7195450 | 47 | 1 | 37 days | 0.60 | | MPC | 2006 $VD_{85}$ |
| 2006 $VE_{85}$ | 15.9 | 0.15 | 20061101 | 29.60551 | 150.06784 | 219.61358 | 12.83714 | 0.1971881 | 2.6170961 | 26 | 1 | 20 days | 0.42 | | MPC | 2006 $VE_{85}$ |
| 2006 $VF_{85}$ | 17.0 | 0.15 | 20061101 | 20.89290 | 299.31517 | 78.69493 | 6.94937 | 0.1879110 | 2.6117320 | 14 | 1 | 25 days | 0.29 | | MPC | 2006 $VF_{85}$ |
| 2006 $VH_{85}$ | 16.1 | 0.15 | 20061101 | 67.19105 | 69.74751 | 275.21160 | 8.09652 | 0.0739735 | 2.1768964 | 21 | 1 | 12 days | 0.37 | | MPC | 2006 $VH_{85}$ |
| 2006 $VJ_{85}$ | 17.0 | 0.15 | 20061101 | 24.55450 | 314.97516 | 70.28005 | 8.12839 | 0.1307154 | 2.9202002 | 18 | 1 | 34 days | 0.25 | | MPC | 2006 $VJ_{85}$ |
| 2006 $VK_{85}$ | 17.0 | 0.15 | 20061101 | 329.19006 | 25.98704 | 76.23261 | 13.11872 | 0.1661535 | 2.3486549 | 16 | 1 | 9 days | 0.53 | | MPC | 2006 $VK_{85}$ |
| 2006 $VM_{85}$ | 17.3 | 0.15 | 20061101 | 31.03789 | 250.58898 | 121.78536 | 3.33052 | 0.2037160 | 2.6141927 | 16 | 1 | 10 days | 0.28 | | MPC | 2006 $VM_{85}$ |
| 2006 $VN_{85}$ | 17.2 | 0.15 | 20061101 | 11.87076 | 350.81078 | 35.65231 | 3.35739 | 0.2616545 | 3.1011574 | 10 | 1 | 3 days | 0.38 | | MPC | 2006 $VN_{85}$ |
| 2006 $VP_{85}$ | 15.5 | 0.15 | 20061101 | 308.08552 | 74.22393 | 36.81448 | 2.11701 | 0.0911593 | 3.0822325 | 14 | 1 | 10 days | 0.82 | | MPC | 2006 $VP_{85}$ |
| 2006 $VV_{85}$ | 18.9 | 0.15 | 20061101 | 5.42092 | 175.73299 | 225.03462 | 1.13353 | 0.1083318 | 2.1067116 | 10 | 1 | 7 days | 0.40 | | MPC | 2006 $VV_{85}$ |
| 2006 $VA_{86}$ | 16.8 | 0.15 | 20061101 | 25.97929 | 299.63731 | 71.56486 | 1.31200 | 0.1959200 | 3.1607173 | 13 | 1 | 7 days | 0.21 | | MPC | 2006 $VA_{86}$ |
| 2006 $VB_{86}$ | 18.6 | 0.15 | 20061101 | 357.05934 | 189.07018 | 207.43864 | 5.61348 | 0.1651126 | 2.4330168 | 11 | 1 | 6 days | 0.22 | | MPC | 2006 $VB_{86}$ |
| 2006 $VC_{86}$ | 17.2 | 0.15 | 20061101 | 99.06326 | 223.05111 | 41.64501 | 10.22207 | 0.2954485 | 2.3615663 | 10 | 1 | 3 days | 0.20 | | MPC | 2006 $VC_{86}$ |
| 2006 $VD_{86}$ | 18.1 | 0.15 | 20061101 | 19.02527 | 170.18281 | 210.68326 | 3.80908 | 0.1789911 | 2.1513367 | 18 | 1 | 6 days | 0.45 | | MPC | 2006 $VD_{86}$ |
| 2006 $VE_{86}$ | 18.1 | 0.15 | 20061101 | 285.68042 | 312.66430 | 179.75116 | 2.33223 | 0.0581773 | 2.2348899 | 19 | 1 | 39 days | 0.26 | | MPC | 2006 $VE_{86}$ |
| 2006 $VH_{86}$ | 15.8 | 0.15 | 20061101 | 351.18347 | 349.75116 | 63.94915 | 10.28284 | 0.1189413 | 2.7264511 | 14 | 1 | 4 days | 0.74 | | MPC | 2006 $VH_{86}$ |
| 2006 $VJ_{86}$ | 16.2 | 0.15 | 20061101 | 308.12743 | 22.61153 | 94.56170 | 4.66798 | 0.1547908 | 2.5150695 | 10 | 1 | 7 days | 0.21 | | MPC | 2006 $VJ_{86}$ |
| 2006 $VK_{86}$ | 16.8 | 0.15 | 20061101 | 24.01092 | 301.25907 | 68.17281 | 11.59589 | 0.2353960 | 2.8171042 | 11 | 1 | 4 days | 0.55 | | MPC | 2006 $VK_{86}$ |
| 2006 $VL_{86}$ | 17.0 | 0.15 | 20061101 | 42.20622 | 264.53559 | 76.99045 | 7.75942 | 0.2683655 | 2.5844070 | 18 | 1 | 9 days | 0.80 | | MPC | 2006 $VL_{86}$ |
| 2006 $VM_{86}$ | 17.0 | 0.15 | 20061101 | 11.43354 | 313.94839 | 85.09024 | 6.93953 | 0.0995618 | 2.3215894 | 24 | 1 | 10 days | 0.63 | | MPC | 2006 $VM_{86}$ |
| 2006 $VN_{86}$ | 14.5 | 0.15 | 20061101 | 303.21439 | 48.08023 | 77.48216 | 16.84341 | 0.1188297 | 3.2250414 | 43 | 1 | 35 days | 0.53 | | MPC | 2006 $VN_{86}$ |
| 2006 $VO_{86}$ | 17.5 | 0.15 | 20061101 | 358.44167 | 208.38079 | 205.89349 | 6.53618 | 0.3371333 | 2.6784127 | 45 | 1 | 32 days | 0.54 | E | MPC | 2006 $VO_{86}$ |
| 2006 $VQ_{86}$ | 16.1 | 0.15 | 20061101 | 356.39550 | 92.39325 | 325.58417 | 7.04738 | 0.1821095 | 2.5799898 | 12 | 1 | 7 days | 0.29 | | MPC | 2006 $VQ_{86}$ |
| 2006 $VR_{86}$ | 16.0 | 0.15 | 20061101 | 307.84611 | 333.86811 | 141.03727 | 3.80883 | 0.1187050 | 2.5851526 | 17 | 1 | 7 days | 0.59 | | MPC | 2006 $VR_{86}$ |
| 2006 $VB_{87}$ | 17.5 | 0.15 | 20061101 | 54.87502 | 63.14048 | 276.28448 | 5.82549 | 0.1233218 | 2.2053017 | 14 | 1 | 10 days | 0.85 | | MPC | 2006 $VB_{87}$ |
| 2006 $VD_{87}$ | 16.9 | 0.15 | 20061101 | 86.67037 | 347.44635 | 310.32429 | 4.49690 | 0.2141809 | 2.1789745 | 18 | 1 | 8 days | 0.69 | | MPC | 2006 $VD_{87}$ |
| 2006 $VG_{87}$ | 16.6 | 0.15 | 20061101 | 21.53285 | 135.82469 | 246.18875 | 13.92805 | 0.1055631 | 2.7064779 | 29 | 1 | 22 days | 0.32 | | MPC | 2006 $VG_{87}$ |
| 2006 $VH_{87}$ | 15.9 | 0.15 | 20061101 | 345.69647 | 59.33353 | 10.71173 | 5.93645 | 0.1717873 | 3.0799756 | 34 | 1 | 26 days | 0.46 | | MPC | 2006 $VH_{87}$ |
| 2006 $VJ_{87}$ | 16.7 | 0.15 | 20061101 | 49.29509 | 91.39693 | 251.06616 | 8.75944 | 0.1711622 | 2.5776427 | 19 | 1 | 5 days | 0.66 | | MPC | 2006 $VJ_{87}$ |
| 2006 $VK_{87}$ | 17.2 | 0.15 | 20061101 | 16.62646 | 40.79593 | 341.40957 | 3.83910 | 0.2147242 | 2.5887742 | 23 | 1 | 5 days | 0.67 | | MPC | 2006 $VK_{87}$ |
| 2006 $VL_{87}$ | 16.8 | 0.15 | 20061101 | 325.35446 | 167.02022 | 290.96815 | 4.39060 | 0.1888310 | 2.3895756 | 36 | 1 | 32 days | 0.44 | | MPC | 2006 $VL_{87}$ |
| 2006 $VP_{87}$ | 16.5 | 0.15 | 20061101 | 11.15970 | 45.78253 | 344.88091 | 4.28884 | 0.2396633 | 2.5676259 | 15 | 1 | 7 days | 0.63 | | MPC | 2006 $VP_{87}$ |
| 2006 $VS_{87}$ | 17.3 | 0.15 | 20061101 | 352.48284 | 51.84142 | 10.71537 | 4.36973 | 0.1648811 | 2.6044204 | 20 | 1 | 9 days | 0.71 | | MPC | 2006 $VS_{87}$ |
| 2006 $VV_{88}$ | 15.7 | 0.15 | 20061101 | 317.58499 | 70.41015 | 34.98977 | 10.02579 | 0.1424078 | 3.1014488 | 19 | 1 | 13 days | 0.47 | | MPC | 2006 $VV_{88}$ |
| 2006 $VY_{88}$ | 16.8 | 0.15 | 20061101 | 22.67369 | 193.32815 | 181.04634 | 4.69347 | 0.2752330 | 2.5482093 | 38 | 1 | 32 days | 0.47 | | MPC | 2006 $VY_{88}$ |
| 2006 $VA_{89}$ | 17.3 | 0.15 | 20061101 | 342.03048 | 241.16383 | 207.75622 | 7.71702 | 0.3211866 | 2.6520093 | 16 | 1 | 9 days | 0.35 | | MPC | 2006 $VA_{89}$ |
| 2006 $VC_{89}$ | 15.6 | 0.15 | 20061121 | 10.45349 | 339.01648 | 72.01962 | 29.95828 | 0.2062788 | 3.1573297 | 26 | 1 | 13 days | 0.46 | | MPC | 2006 $VC_{89}$ |
| 2006 $VD_{89}$ | 16.2 | 0.15 | 20061101 | 23.00077 | 346.06620 | 40.91222 | 7.54527 | 0.1084520 | 2.2445948 | 53 | 1 | 38 days | 0.53 | | MPC | 2006 $VD_{89}$ |
| 2006 $VE_{89}$ | 18.2 | 0.15 | 20061121 | 11.75007 | 162.88274 | 244.58372 | 20.18112 | 0.0876942 | 1.9025474 | 34 | 1 | 13 days | 0.39 | | MPC | 2006 $VE_{89}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VF_{89}$ | 16.3 | 0.15 | 20061101 | 317.24678 | 94.89131 | 15.77422 | 2.93718 | 0.1127447 | 2.7083464 | 21 | 1 | 8 days | 0.70 | | MPC | 2006 $VF_{89}$ |
| 2006 $VG_{89}$ | 15.6 | 0.15 | 20061101 | 57.11892 | 122.69821 | 219.59412 | 5.65373 | 0.2372981 | 2.6339567 | 22 | 1 | 8 days | 0.74 | | MPC | 2006 $VG_{89}$ |
| 2006 $VJ_{89}$ | 16.0 | 0.15 | 20061101 | 253.72107 | 136.50345 | 50.81942 | 9.88707 | 0.1790279 | 2.7611101 | 12 | 1 | 8 days | 0.63 | | MPC | 2006 $VJ_{89}$ |
| 2006 $VK_{89}$ | 16.4 | 0.15 | 20061101 | 111.66037 | 46.02520 | 254.06575 | 13.24983 | 0.0969879 | 2.6255706 | 17 | 1 | 11 days | 0.41 | | MPC | 2006 $VK_{89}$ |
| 2006 $VL_{89}$ | 16.3 | 0.15 | 20061101 | 180.26819 | 213.78791 | 28.18596 | 3.45913 | 0.0865862 | 2.5881382 | 10 | 1 | 4 days | 0.23 | | MPC | 2006 $VL_{89}$ |
| 2006 $VM_{89}$ | 17.1 | 0.15 | 20061101 | 64.26533 | 1.55804 | 326.45636 | 1.83257 | 0.2461862 | 2.5496807 | 12 | 1 | 9 days | 0.59 | | MPC | 2006 $VM_{89}$ |
| 2006 $VN_{89}$ | 16.7 | 0.15 | 20061101 | 63.19705 | 293.40474 | 59.82117 | 20.50800 | 0.0613890 | 2.9525179 | 10 | 1 | 4 days | 0.23 | | MPC | 2006 $VN_{89}$ |
| 2006 $VO_{89}$ | 16.1 | 0.15 | 20061101 | 282.10021 | 87.83595 | 57.64591 | 13.74211 | 0.0337848 | 3.1910553 | 14 | 1 | 17 days | 0.27 | | MPC | 2006 $VO_{89}$ |
| 2006 $VP_{89}$ | 18.0 | 0.15 | 20061101 | 45.94590 | 288.06577 | 53.83880 | 12.03667 | 0.2911235 | 2.3806500 | 18 | 1 | 12 days | 0.60 | | MPC | 2006 $VP_{89}$ |
| 2006 $VS_{89}$ | 15.1 | 0.15 | 20061101 | 198.69290 | 325.39405 | 268.22143 | 7.14339 | 0.2531188 | 2.9558880 | 13 | 1 | 10 days | 0.48 | | MPC | 2006 $VS_{89}$ |
| 2006 $VV_{89}$ | 18.8 | 0.15 | 20061101 | 13.12469 | 107.29079 | 288.59616 | 1.31569 | 0.2176325 | 2.4357613 | 12 | 1 | 10 days | 0.44 | | MPC | 2006 $VV_{89}$ |
| 2006 $VW_{89}$ | 16.0 | 0.15 | 20061101 | 19.65194 | 344.80649 | 51.63025 | 5.53155 | 0.1369568 | 3.2007594 | 13 | 1 | 19 days | 0.16 | | MPC | 2006 $VW_{89}$ |
| 2006 $VX_{89}$ | 15.1 | 0.15 | 20061101 | 320.17653 | 248.65173 | 219.90878 | 15.46736 | 0.1076254 | 3.1346287 | 18 | 1 | 9 days | 0.80 | | MPC | 2006 $VX_{89}$ |
| 2006 $VY_{89}$ | 16.0 | 0.15 | 20061101 | 352.23987 | 21.50635 | 48.63716 | 5.29227 | 0.1225028 | 3.1477684 | 10 | 1 | 4 days | 0.42 | | MPC | 2006 $VY_{89}$ |
| 2006 $VZ_{89}$ | 17.2 | 0.15 | 20061101 | 331.55539 | 200.14209 | 247.93800 | 7.46135 | 0.0270349 | 2.3086765 | 19 | 1 | 26 days | 0.31 | | MPC | 2006 $VZ_{89}$ |
| 2006 $VB_{90}$ | 16.9 | 0.15 | 20061101 | 342.21503 | 43.00982 | 39.05439 | 4.41601 | 0.1894927 | 2.6164706 | 21 | 1 | 8 days | 0.59 | | MPC | 2006 $VB_{90}$ |
| 2006 $VQ_{90}$ | 18.4 | 0.15 | 20061101 | 357.68817 | 22.62377 | 28.20843 | 6.87670 | 0.2561967 | 2.5223857 | 23 | 1 | 2 days | 0.18 | | MPC | 2006 $VQ_{90}$ |
| 2006 $VS_{90}$ | 18.6 | 0.15 | 20061101 | 8.78793 | 11.50388 | 21.28404 | 6.40968 | 0.2611601 | 2.9517444 | 15 | 1 | 2 days | 0.23 | | MPC | 2006 $VS_{90}$ |
| 2006 $VT_{90}$ | 18.6 | 0.15 | 20061101 | 31.40221 | 38.12195 | 314.15325 | 3.30788 | 0.2919688 | 2.6693884 | 23 | 1 | 2 days | 0.28 | | MPC | 2006 $VT_{90}$ |
| 2006 $VU_{90}$ | 19.2 | 0.15 | 20061101 | 46.74326 | 38.18993 | 296.74088 | 3.38135 | 0.2537464 | 2.2544448 | 20 | 1 | 2 days | 0.36 | | MPC | 2006 $VU_{90}$ |
| 2006 $VW_{90}$ | 17.8 | 0.15 | 20061101 | 273.70366 | 159.37804 | 349.00614 | 3.63265 | 0.1139970 | 2.3074397 | 20 | 1 | 2 days | 0.33 | E | MPC | 2006 $VW_{90}$ |
| 2006 $VY_{90}$ | 18.4 | 0.15 | 20061101 | 27.81680 | 27.39734 | 331.82298 | 3.14452 | 0.2823556 | 2.7913751 | 23 | 1 | 2 days | 0.39 | | MPC | 2006 $VY_{90}$ |
| 2006 $VZ_{90}$ | 16.0 | 0.15 | 20061101 | 119.94368 | 304.83695 | 330.15494 | 3.57623 | 0.1739488 | 2.5571110 | 23 | 1 | 5 days | 0.39 | | MPC | 2006 $VZ_{90}$ |
| 2006 $VB_{91}$ | 17.9 | 0.15 | 20061101 | 320.08471 | 189.58721 | 274.86313 | 4.15983 | 0.1862595 | 2.3700374 | 18 | 1 | 5 days | 0.47 | | MPC | 2006 $VB_{91}$ |
| 2006 $VG_{92}$ | 17.0 | 0.15 | 20061101 | 131.88151 | 208.15678 | 67.62132 | 28.76902 | 0.0683859 | 2.0161066 | 21 | 1 | 9 days | 0.94 | | MPC | 2006 $VG_{92}$ |
| 2006 $VH_{92}$ | 16.6 | 0.15 | 20061101 | 39.56678 | 193.04180 | 163.87337 | 4.71385 | 0.2083135 | 2.5294264 | 14 | 1 | 7 days | 0.50 | | MPC | 2006 $VH_{92}$ |
| 2006 $VJ_{92}$ | 16.9 | 0.15 | 20061101 | 27.92993 | 278.90429 | 83.65906 | 11.74241 | 0.3185598 | 2.7928188 | 13 | 1 | 9 days | 0.46 | | MPC | 2006 $VJ_{92}$ |
| 2006 $VK_{92}$ | 16.6 | 0.15 | 20061101 | 15.69590 | 204.59440 | 196.25008 | 6.35133 | 0.0356419 | 2.3770580 | 8 | 1 | 9 days | 0.40 | | MPC | 2006 $VK_{92}$ |
| 2006 $VL_{92}$ | 17.2 | 0.15 | 20061101 | 63.02862 | 224.64261 | 104.27438 | 6.45470 | 0.2211663 | 2.3015576 | 13 | 1 | 9 days | 0.44 | | MPC | 2006 $VL_{92}$ |
| 2006 $VM_{92}$ | 17.6 | 0.15 | 20061101 | 354.78791 | 347.12409 | 76.66425 | 16.32120 | 0.2506869 | 2.6668802 | 9 | 1 | 5 days | 0.40 | | MPC | 2006 $VM_{92}$ |
| 2006 $VN_{92}$ | 16.1 | 0.15 | 20061101 | 57.91209 | 235.77664 | 112.36858 | 6.88270 | 0.1163448 | 2.4261279 | 17 | 1 | 7 days | 0.50 | | MPC | 2006 $VN_{92}$ |
| 2006 $VO_{92}$ | 15.5 | 0.15 | 20061101 | 13.69458 | 199.93057 | 204.57742 | 9.07103 | 0.1053945 | 3.1376123 | 14 | 1 | 6 days | 0.41 | | MPC | 2006 $VO_{92}$ |
| 2006 $VQ_{92}$ | 17.1 | 0.15 | 20061101 | 13.86994 | 213.83605 | 185.66119 | 5.26458 | 0.1340135 | 2.4073742 | 13 | 1 | 9 days | 0.34 | | MPC | 2006 $VQ_{92}$ |
| 2006 $VR_{92}$ | 18.0 | 0.15 | 20061101 | 359.10608 | 329.41027 | 86.58842 | 9.14103 | 0.2488894 | 2.4095131 | 17 | 1 | 5 days | 0.58 | | MPC | 2006 $VR_{92}$ |
| 2006 $VS_{92}$ | 16.9 | 0.15 | 20061101 | 205.94607 | 81.80801 | 137.44235 | 3.12394 | 0.1801955 | 2.6020157 | 12 | 1 | 8 days | 0.62 | | MPC | 2006 $VS_{92}$ |
| 2006 $VT_{92}$ | 16.9 | 0.15 | 20061101 | 37.91463 | 275.85829 | 92.97078 | 5.25065 | 0.1150416 | 2.7622440 | 16 | 1 | 36 days | 0.17 | | MPC | 2006 $VT_{92}$ |
| 2006 $VV_{92}$ | 15.9 | 0.15 | 20061101 | 28.34226 | 119.64571 | 259.81655 | 11.31666 | 0.2243448 | 2.6269102 | 35 | 1 | 15 days | 0.46 | | MPC | 2006 $VV_{92}$ |
| 2006 $VX_{92}$ | 17.0 | 0.15 | 20061101 | 359.29536 | 226.00099 | 186.58410 | 4.62580 | 0.1250348 | 2.3311528 | 16 | 1 | 7 days | 0.41 | | MPC | 2006 $VX_{92}$ |
| 2006 $VY_{92}$ | 16.9 | 0.15 | 20061101 | 257.35459 | 341.10118 | 178.03391 | 4.89964 | 0.0175022 | 2.6746486 | 10 | 1 | 9 days | 0.69 | | MPC | 2006 $VY_{92}$ |
| 2006 $VA_{93}$ | 17.2 | 0.15 | 20061101 | 5.27521 | 281.52052 | 126.18040 | 4.59974 | 0.0898722 | 2.7777305 | 14 | 1 | 9 days | 0.24 | | MPC | 2006 $VA_{93}$ |
| 2006 $VB_{93}$ | 17.5 | 0.15 | 20061101 | 345.39741 | 345.44151 | 84.00348 | 8.62096 | 0.0590526 | 2.4246186 | 10 | 1 | 9 days | 0.56 | | MPC | 2006 $VB_{93}$ |
| 2006 $VC_{93}$ | 15.0 | 0.15 | 20061101 | 198.60426 | 141.76398 | 79.36805 | 14.41586 | 0.1261083 | 3.0904839 | 14 | 1 | 9 days | 0.78 | | MPC | 2006 $VC_{93}$ |
| 2006 $VD_{93}$ | 16.5 | 0.15 | 20061101 | 336.41284 | 15.17216 | 72.48412 | 18.41734 | 0.1787875 | 3.0972189 | 17 | 1 | 9 days | 0.27 | | MPC | 2006 $VD_{93}$ |
| 2006 $VE_{93}$ | 18.4 | 0.15 | 20061101 | 5.51484 | 71.92911 | 337.31572 | 1.76222 | 0.2214093 | 2.6785325 | 10 | 1 | 5 days | 0.20 | | MPC | 2006 $VE_{93}$ |
| 2006 $VF_{93}$ | 17.9 | 0.15 | 20061101 | 12.26780 | 342.26255 | 58.59169 | 17.93875 | 0.1685792 | 2.4683936 | 10 | 1 | 3 days | 0.25 | | MPC | 2006 $VF_{93}$ |
| 2006 $VM_{93}$ | 16.0 | 0.15 | 20061101 | 173.66677 | 126.64349 | 111.63713 | 3.42305 | 0.0886427 | 2.8314177 | 11 | 1 | 8 days | 0.20 | | MPC | 2006 $VM_{93}$ |
| 2006 $VP_{93}$ | 15.9 | 0.15 | 20061101 | 171.13653 | 174.46536 | 66.60260 | 16.18323 | 0.0608992 | 3.0953987 | 10 | 1 | 8 days | 0.25 | | MPC | 2006 $VP_{93}$ |
| 2006 $VT_{93}$ | 16.8 | 0.15 | 20061121 | 250.16066 | 353.36107 | 184.70319 | 3.99851 | 0.1094846 | 2.6899639 | 17 | 1 | 12 days | 0.30 | | MPC | 2006 $VT_{93}$ |
| 2006 $VW_{93}$ | 16.9 | 0.15 | 20061121 | 26.23807 | 253.49542 | 132.60159 | 3.14212 | 0.0842419 | 2.5513577 | 17 | 1 | 12 days | 0.34 | | MPC | 2006 $VW_{93}$ |
| 2006 $VX_{93}$ | 17.5 | 0.15 | 20061101 | 19.42243 | 158.04594 | 223.45588 | 15.89653 | 0.2214755 | 3.1318815 | 11 | 1 | 8 days | 0.29 | | MPC | 2006 $VX_{93}$ |
| 2006 $VY_{93}$ | 16.4 | 0.15 | 20061101 | 188.73852 | 7.08341 | 217.56719 | 10.84886 | 0.0284459 | 2.6091220 | 10 | 1 | 8 days | 0.76 | | MPC | 2006 $VY_{93}$ |
| 2006 $VZ_{93}$ | 16.8 | 0.15 | 20061121 | 332.70822 | 16.72110 | 75.07203 | 10.72206 | 0.1244449 | 3.0066375 | 13 | 1 | 12 days | 0.43 | | MPC | 2006 $VZ_{93}$ |
| 2006 $VA_{94}$ | 15.9 | 0.15 | 20061101 | 337.71615 | 196.09848 | 254.77593 | 21.34621 | 0.0388780 | 2.6354482 | 18 | 1 | 8 days | 0.58 | | MPC | 2006 $VA_{94}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VB_{94}$ | 16.8 | 0.15 | 20061101 | 1.43445 | 211.74902 | 198.77114 | 5.43623 | 0.0307775 | 2.7663092 | 9 | 1 | 8 days | 0.26 | | MPC | | 2006 $VB_{94}$ |
| 2006 $VC_{94}$ | 17.2 | 0.15 | 20061101 | 11.70646 | 128.90797 | 273.25084 | 1.22066 | 0.1938659 | 2.2484345 | 11 | 1 | 3 days | 0.72 | | MPC | | 2006 $VC_{94}$ |
| 2006 $VM_{94}$ | 15.3 | 0.15 | 20061101 | 197.36559 | 185.41083 | 48.67466 | 3.11540 | 0.2866037 | 2.2639328 | 10 | 1 | 9 days | 0.65 | | MPC | | 2006 $VM_{94}$ |
| 2006 $VR_{94}$ | 18.6 | 0.15 | 20061101 | 38.11610 | 262.52861 | 96.17289 | 2.09666 | 0.2232609 | 2.3152233 | 13 | 1 | 9 days | 0.15 | | MPC | | 2006 $VR_{94}$ |
| 2006 $VS_{94}$ | 17.8 | 0.15 | 20061121 | 322.37157 | 43.50665 | 75.73184 | 6.01535 | 0.1961128 | 2.5939687 | 16 | 1 | 12 days | 0.17 | | MPC | | 2006 $VS_{94}$ |
| 2006 $VT_{94}$ | 18.0 | 0.15 | 20061101 | 331.09426 | 9.63005 | 84.10094 | 3.37358 | 0.1133067 | 2.3094237 | 23 | 1 | 27 days | 0.19 | | MPC | | 2006 $VT_{94}$ |
| 2006 $VV_{94}$ | 16.4 | 0.15 | 20061121 | 350.78086 | 183.67881 | 287.82090 | 4.14737 | 0.1591907 | 2.4533522 | 16 | 1 | 13 days | 0.45 | | MPC | | 2006 $VV_{94}$ |
| 2006 $VY_{94}$ | 17.0 | 0.15 | 20061121 | 294.31897 | 60.37514 | 81.07404 | 5.01700 | 0.0907533 | 2.3777804 | 18 | 1 | 12 days | 0.13 | | MPC | | 2006 $VY_{94}$ |
| 2006 $VA_{95}$ | 17.1 | 0.15 | 20061101 | 341.94932 | 35.76001 | 25.27569 | 6.30550 | 0.1058401 | 2.6986624 | 20 | 1 | 7 days | 0.20 | | MPC | | 2006 $VA_{95}$ |
| 2006 $VC_{95}$ | 17.7 | 0.15 | 20061101 | 12.15546 | 223.92895 | 159.73262 | 2.62077 | 0.2052858 | 2.3359404 | 27 | 1 | 11 days | 0.57 | | MPC | | 2006 $VC_{95}$ |
| 2006 $VD_{95}$ | 16.8 | 0.15 | 20061101 | 319.16756 | 0.19203 | 98.76101 | 3.52546 | 0.1706115 | 2.3943329 | 18 | 1 | 9 days | 0.50 | E | MPC | | 2006 $VD_{95}$ |
| 2006 $VO_{95}$ | 19.1 | 0.15 | 20061101 | 34.12660 | 314.95887 | 52.48481 | 23.13042 | 0.1404919 | 1.8157577 | 25 | 1 | 31 days | 0.20 | | MPC | | 2006 $VO_{95}$ |
| 2006 $VP_{95}$ | 17.2 | 0.15 | 20061101 | 8.40322 | 278.59257 | 113.56570 | 6.03879 | 0.1692071 | 2.3047629 | 16 | 1 | 23 days | 0.35 | | MPC | | 2006 $VP_{95}$ |
| 2006 $VR_{95}$ | 16.3 | 0.15 | 20061101 | 73.35807 | 63.83209 | 267.73028 | 10.72003 | 0.0777348 | 3.2250327 | 31 | 1 | 9 days | 0.57 | | MPC | | 2006 $VR_{95}$ |
| 2006 $VS_{95}$ | 17.1 | 0.15 | 20061101 | 18.00561 | 347.41175 | 41.76986 | 15.98987 | 0.1387974 | 2.8344899 | 41 | 1 | 23 days | 0.33 | | MPC | | 2006 $VS_{95}$ |
| 2006 $VW_{95}$ | 17.2 | 0.15 | 20061101 | 359.40498 | 69.89418 | 324.64166 | 18.74950 | 0.0969588 | 1.9186668 | 13 | 1 | 21 days | 0.64 | | MPC | | 2006 $VW_{95}$ |
| 2006 $VX_{95}$ | 16.8 | 0.15 | 20061101 | 29.63461 | 323.91948 | 44.10723 | 7.58377 | 0.2564238 | 2.2088834 | 24 | 1 | 12 days | 0.64 | | MPC | | 2006 $VX_{95}$ |
| 2006 $VA_{96}$ | 17.3 | 0.15 | 20061101 | 51.83068 | 290.02015 | 50.53971 | 14.58309 | 0.2035522 | 2.5738386 | 14 | 1 | 26 days | 0.25 | | MPC | | 2006 $VA_{96}$ |
| 2006 $VD_{96}$ | 16.5 | 0.15 | 20061012 | 333.28363 | 29.40012 | 51.26709 | 12.61667 | 0.0180069 | 2.5877626 | 22 | 1 | 55 days | 0.25 | | MPC | | 2006 $VD_{96}$ |
| 2006 $VE_{96}$ | 17.3 | 0.15 | 20061101 | 47.32369 | 311.86325 | 45.24092 | 7.03516 | 0.1596143 | 2.2014782 | 15 | 1 | 12 days | 0.53 | | MPC | | 2006 $VE_{96}$ |
| 2006 $VG_{96}$ | 16.6 | 0.15 | 20061101 | 41.07900 | 44.90625 | 329.22873 | 1.96090 | 0.1312955 | 2.6424180 | 16 | 1 | 14 days | 0.44 | | MPC | | 2006 $VG_{96}$ |
| 2006 $VJ_{96}$ | 16.2 | 0.15 | 20061101 | 330.77927 | 39.96621 | 65.19947 | 14.90866 | 0.1381777 | 2.7378052 | 16 | 1 | 14 days | 0.57 | | MPC | | 2006 $VJ_{96}$ |
| 2006 $VL_{96}$ | 17.2 | 0.15 | 20061101 | 14.28045 | 324.81791 | 80.85544 | 5.01809 | 0.1878901 | 2.5908549 | 9 | 1 | 15 days | 0.27 | | MPC | | 2006 $VL_{96}$ |
| 2006 $VO_{96}$ | 16.4 | 0.15 | 20061101 | 355.71924 | 192.62198 | 242.32275 | 4.92105 | 0.1144693 | 2.5543517 | 12 | 1 | 15 days | 0.47 | | MPC | | 2006 $VO_{96}$ |
| 2006 $VR_{96}$ | 17.8 | 0.15 | 20061101 | 322.22720 | 26.10244 | 85.66952 | 4.93348 | 0.0958759 | 2.2321118 | 16 | 1 | 15 days | 0.23 | | MPC | | 2006 $VR_{96}$ |
| 2006 $VD_{97}$ | 18.5 | 0.15 | 20061012 | 335.42861 | 143.30576 | 273.30095 | 0.69308 | 0.1183918 | 2.2283372 | 33 | 1 | 48 days | 0.41 | | MPC | | 2006 $VD_{97}$ |
| 2006 $VS_{97}$ | 16.4 | 0.15 | 20061101 | 298.73657 | 184.35729 | 299.22673 | 4.63493 | 0.0804694 | 2.9270537 | 13 | 1 | 12 days | 0.30 | | MPC | | 2006 $VS_{97}$ |
| 2006 $VT_{97}$ | 18.7 | 0.15 | 20061101 | 338.25549 | 150.33055 | 294.94566 | 4.15109 | 0.2131457 | 2.6806973 | 9 | 1 | 11 days | 0.12 | | MPC | | 2006 $VT_{97}$ |
| 2006 $VU_{97}$ | 17.1 | 0.15 | 20061101 | 14.69677 | 87.30312 | 306.08987 | 3.79244 | 0.1540967 | 3.0808537 | 15 | 1 | 30 days | 0.28 | | MPC | | 2006 $VU_{97}$ |
| 2006 $VV_{97}$ | 17.9 | 0.15 | 20061012 | 341.73136 | 60.73978 | 10.21265 | 5.11934 | 0.1487789 | 2.6019264 | 19 | 1 | 49 days | 0.27 | | MPC | | 2006 $VV_{97}$ |
| 2006 $VW_{97}$ | 19.0 | 0.15 | 20061101 | 37.31582 | 1.97016 | 355.95877 | 3.01887 | 0.1877680 | 2.2631089 | 16 | 1 | 23 days | 0.28 | | MPC | | 2006 $VW_{97}$ |
| 2006 $VX_{97}$ | 17.4 | 0.15 | 20061101 | 160.24413 | 325.10532 | 285.40216 | 4.96571 | 0.0707777 | 2.2218664 | 15 | 1 | 11 days | 0.41 | | MPC | | 2006 $VX_{97}$ |
| 2006 $VY_{97}$ | 18.2 | 0.15 | 20061101 | 8.06721 | 339.16682 | 57.35504 | 19.23831 | 0.2915298 | 3.0424496 | 9 | 1 | 11 days | 0.10 | | MPC | | 2006 $VY_{97}$ |
| 2006 $VZ_{97}$ | 16.4 | 0.15 | 20061101 | 261.08285 | 94.49353 | 70.69691 | 2.29522 | 0.0977909 | 2.7315879 | 17 | 1 | 22 days | 0.21 | | MPC | | 2006 $VZ_{97}$ |
| 2006 $VA_{98}$ | 16.9 | 0.15 | 20061101 | 24.92154 | 314.13223 | 64.07252 | 6.14955 | 0.1941314 | 3.2114439 | 20 | 1 | 13 days | 0.32 | | MPC | | 2006 $VA_{98}$ |
| 2006 $VB_{98}$ | 15.8 | 0.15 | 20061101 | 74.93201 | 265.68874 | 62.22358 | 12.76439 | 0.1240475 | 3.0817701 | 20 | 1 | 34 days | 0.37 | | MPC | | 2006 $VB_{98}$ |
| 2006 $VC_{98}$ | 18.2 | 0.15 | 20061101 | 41.89129 | 295.74294 | 65.86270 | 6.54824 | 0.1338063 | 2.5472027 | 9 | 1 | 11 days | 0.41 | | MPC | | 2006 $VC_{98}$ |
| 2006 $VD_{98}$ | 17.8 | 0.15 | 20061101 | 359.85747 | 348.98857 | 63.15385 | 8.25609 | 0.1861312 | 2.2840318 | 19 | 1 | 11 days | 0.60 | | MPC | | 2006 $VD_{98}$ |
| 2006 $VE_{98}$ | 17.0 | 0.15 | 20061101 | 326.79601 | 27.51523 | 76.10395 | 6.45139 | 0.2112071 | 2.4785443 | 18 | 1 | 10 days | 0.55 | | MPC | | 2006 $VE_{98}$ |
| 2006 $VF_{98}$ | 16.3 | 0.15 | 20061101 | 308.81740 | 76.59098 | 56.33823 | 17.59870 | 0.2263206 | 3.1593072 | 12 | 1 | 8 days | 0.27 | | MPC | | 2006 $VF_{98}$ |
| 2006 $VH_{98}$ | 15.3 | 0.15 | 20061101 | 307.09477 | 255.78500 | 241.58344 | 24.50770 | 0.2422416 | 3.1122224 | 38 | 1 | 38 days | 0.34 | | MPC | | 2006 $VH_{98}$ |
| 2006 $VJ_{98}$ | 16.4 | 0.15 | 20061101 | 32.73228 | 320.90041 | 53.53519 | 5.94914 | 0.1663738 | 3.1956293 | 17 | 1 | 34 days | 0.18 | | MPC | | 2006 $VJ_{98}$ |
| 2006 $VL_{98}$ | 18.8 | 0.15 | 20061101 | 37.66735 | 316.42065 | 44.00054 | 1.89639 | 0.2237578 | 2.3972120 | 9 | 1 | 11 days | 0.49 | | MPC | | 2006 $VL_{98}$ |
| 2006 $VM_{98}$ | 16.8 | 0.15 | 20061101 | 13.98216 | 340.12049 | 62.31127 | 15.67787 | 0.1075175 | 2.6040988 | 20 | 1 | 35 days | 0.34 | | MPC | | 2006 $VM_{98}$ |
| 2006 $VO_{98}$ | 17.7 | 0.15 | 20061101 | 12.41478 | 27.67998 | 352.58928 | 1.85375 | 0.2523449 | 2.5581914 | 22 | 1 | 39 days | 0.44 | | MPC | | 2006 $VO_{98}$ |
| 2006 $VZ_{98}$ | 16.8 | 0.15 | 20061101 | 6.20242 | 343.58471 | 53.06027 | 12.55629 | 0.1882205 | 2.7228842 | 27 | 1 | 19 days | 0.53 | | MPC | | 2006 $VZ_{98}$ |
| 2006 $VP_{99}$ | 15.3 | 0.15 | 20061101 | 83.17371 | 230.99468 | 91.01092 | 5.72482 | 0.0136154 | 3.0825887 | 11 | 1 | 8 days | 0.78 | | MPC | | 2006 $VP_{99}$ |
| 2006 $VR_{99}$ | 18.4 | 0.15 | 20061101 | 30.96370 | 313.11822 | 52.99214 | 1.51464 | 0.1413694 | 2.1641068 | 25 | 1 | 20 days | 0.59 | | MPC | | 2006 $VR_{99}$ |
| 2006 $VT_{99}$ | 17.2 | 0.15 | 20061101 | 10.78456 | 124.68354 | 273.14440 | 2.54787 | 0.1621824 | 2.2764467 | 26 | 1 | 24 days | 0.46 | | MPC | | 2006 $VT_{99}$ |
| 2006 $VU_{99}$ | 16.5 | 0.15 | 20061101 | 251.83545 | 116.39165 | 55.40591 | 7.10730 | 0.0403630 | 2.2872469 | 19 | 1 | 24 days | 0.47 | | MPC | | 2006 $VU_{99}$ |
| 2006 $VX_{99}$ | 18.3 | 0.15 | 20061101 | 36.21125 | 143.97870 | 223.55058 | 4.37648 | 0.1785083 | 2.2095466 | 13 | 1 | 22 days | 0.28 | | MPC | | 2006 $VX_{99}$ |
| 2006 $VY_{99}$ | 17.5 | 0.15 | 20060922 | 338.26310 | 2.58266 | 62.94560 | 2.64269 | 0.1748004 | 2.4532094 | 34 | 1 | 60 days | 0.37 | M-v 4 | MPC | | 2006 $VY_{99}$ |
| 2006 $VA_{100}$ | 16.3 | 0.15 | 20061101 | 23.54675 | 316.16674 | 55.09192 | 16.98746 | 0.1340331 | 2.7918831 | 14 | 1 | 8 days | 0.79 | | MPC | | 2006 $VA_{100}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VD_{100}$ | 16.1 | 0.15 | 20061101 | 30.65568 | 313.26029 | 58.54460 | 13.41624 | 0.1684808 | 3.0753329 | 13 | 1 | 21 days | 0.21 | | | MPC | 2006 $VD_{100}$ |
| 2006 $VF_{100}$ | 16.9 | 0.15 | 20061101 | 14.95759 | 306.96705 | 67.52454 | 12.78003 | 0.2831905 | 2.3689264 | 28 | 1 | 29 days | 0.47 | | | MPC | 2006 $VF_{100}$ |
| 2006 $VH_{100}$ | 18.1 | 0.15 | 20061101 | 48.94166 | 281.70082 | 61.04592 | 5.70236 | 0.2072369 | 2.3397360 | 18 | 1 | 32 days | 0.27 | | | MPC | 2006 $VH_{100}$ |
| 2006 $VJ_{100}$ | 17.0 | 0.15 | 20061101 | 216.03551 | 130.44493 | 73.57596 | 0.61403 | 0.0631342 | 2.7517112 | 11 | 1 | 13 days | 0.66 | | | MPC | 2006 $VJ_{100}$ |
| 2006 $VK_{100}$ | 17.7 | 0.15 | 20061101 | 42.49453 | 290.50112 | 63.29888 | 3.75670 | 0.1986927 | 2.8829879 | 11 | 1 | 13 days | 0.34 | | | MPC | 2006 $VK_{100}$ |
| 2006 $VM_{100}$ | 16.2 | 0.15 | 20061101 | 220.95934 | 144.99575 | 66.45084 | 4.02421 | 0.2385895 | 2.9205033 | 11 | 1 | 13 days | 0.18 | | | MPC | 2006 $VM_{100}$ |
| 2006 $VN_{100}$ | 18.0 | 0.15 | 20061101 | 340.98103 | 21.73936 | 61.67146 | 4.81061 | 0.2250099 | 2.6641069 | 11 | 1 | 13 days | 0.21 | | | MPC | 2006 $VN_{100}$ |
| 2006 $VO_{100}$ | 15.9 | 0.15 | 20061101 | 339.40247 | 317.90710 | 110.86352 | 4.67437 | 0.0836362 | 2.7874843 | 19 | 1 | 32 days | 0.61 | | | MPC | 2006 $VO_{100}$ |
| 2006 $VT_{100}$ | 16.0 | 0.15 | 20061101 | 31.41168 | 297.17691 | 62.04992 | 13.18874 | 0.2022812 | 2.6739179 | 47 | 1 | 22 days | 0.68 | | | MPC | 2006 $VT_{100}$ |
| 2006 $VU_{100}$ | 16.1 | 0.15 | 20061101 | 57.53810 | 268.07344 | 62.05373 | 14.57343 | 0.1755344 | 2.7693863 | 15 | 1 | 15 days | 0.57 | | | MPC | 2006 $VU_{100}$ |
| 2006 $VV_{100}$ | 17.5 | 0.15 | 20061012 | 30.40164 | 129.98690 | 216.82363 | 9.83100 | 0.2615266 | 2.3203672 | 17 | 1 | 36 days | 0.36 | | | MPC | 2006 $VV_{100}$ |
| 2006 $VY_{100}$ | 16.7 | 0.15 | 20061101 | 339.60181 | 335.02440 | 101.58512 | 5.34020 | 0.2098515 | 2.5900943 | 21 | 1 | 11 days | 0.62 | | D | MPC | 2006 $VY_{100}$ |
| 2006 $VA_{101}$ | 17.0 | 0.15 | 20061101 | 359.39819 | 320.56523 | 85.99928 | 7.01610 | 0.0757250 | 2.2253007 | 23 | 1 | 19 days | 0.59 | | | MPC | 2006 $VA_{101}$ |
| 2006 $VC_{101}$ | 17.5 | 0.15 | 20061101 | 17.45299 | 101.85604 | 262.45286 | 4.74248 | 0.3542978 | 2.5837801 | 29 | 1 | 31 days | 0.64 | | E | MPC | 2006 $VC_{101}$ |
| 2006 $VE_{101}$ | 18.2 | 0.15 | 20061101 | 49.88688 | 286.34565 | 58.42309 | 23.43987 | 0.2064312 | 2.2869270 | 14 | 1 | 22 days | 0.25 | | | MPC | 2006 $VE_{101}$ |
| 2006 $VF_{101}$ | 17.3 | 0.15 | 20061101 | 359.58890 | 295.86176 | 107.29629 | 3.74581 | 0.1785754 | 2.3779062 | 23 | 1 | 18 days | 0.45 | | | MPC | 2006 $VF_{101}$ |
| 2006 $VJ_{101}$ | 16.1 | 0.15 | 20061101 | 57.97049 | 117.99656 | 245.16951 | 14.27676 | 0.0797621 | 2.5853596 | 9 | 1 | 11 days | 0.10 | | | MPC | 2006 $VJ_{101}$ |
| 2006 $VN_{101}$ | 18.0 | 0.15 | 20061101 | 358.19252 | 325.12093 | 82.80610 | 5.53769 | 0.2906528 | 2.6183702 | 17 | 1 | 8 days | 0.52 | | | MPC | 2006 $VN_{101}$ |
| 2006 $VP_{101}$ | 17.6 | 0.15 | 20061101 | 355.38112 | 191.18121 | 238.56882 | 12.52159 | 0.1379270 | 2.6496344 | 9 | 1 | 11 days | 0.15 | | | MPC | 2006 $VP_{101}$ |
| 2006 $VQ_{101}$ | 16.3 | 0.15 | 20061101 | 2.61137 | 0.79818 | 58.07935 | 8.36495 | 0.2286332 | 2.3602383 | 27 | 1 | 16 days | 0.40 | | | MPC | 2006 $VQ_{101}$ |
| 2006 $VS_{101}$ | 16.2 | 0.15 | 20060922 | 290.27524 | 39.16057 | 84.00261 | 4.30025 | 0.0461440 | 2.7430323 | 20 | 1 | 60 days | 0.41 | M-v | 6 | MPC | 2006 $VS_{101}$ |
| 2006 $VU_{101}$ | 16.2 | 0.15 | 20061101 | 319.30105 | 213.14819 | 243.22453 | 4.34491 | 0.1042054 | 2.7457348 | 14 | 1 | 8 days | 0.49 | | | MPC | 2006 $VU_{101}$ |
| 2006 $VW_{101}$ | 16.3 | 0.15 | 20061101 | 321.38498 | 41.43888 | 65.99796 | 19.25037 | 0.1272435 | 3.1787424 | 11 | 1 | 12 days | 0.17 | | | MPC | 2006 $VW_{101}$ |
| 2006 $VN_{102}$ | 16.8 | 0.15 | 20061101 | 13.62842 | 325.61007 | 72.36517 | 12.63464 | 0.1246727 | 3.1680304 | 17 | 1 | 35 days | 0.23 | | | MPC | 2006 $VN_{102}$ |
| 2006 $VP_{102}$ | 16.2 | 0.15 | 20061101 | 106.06318 | 219.95382 | 71.98185 | 14.93312 | 0.1842296 | 2.5998518 | 20 | 1 | 35 days | 0.24 | | | MPC | 2006 $VP_{102}$ |
| 2006 $VT_{102}$ | 17.0 | 0.15 | 20061101 | 21.06188 | 311.69043 | 68.67471 | 13.50213 | 0.2795320 | 3.0758174 | 22 | 1 | 35 days | 0.29 | | | MPC | 2006 $VT_{102}$ |
| 2006 $VV_{102}$ | 16.3 | 0.15 | 20061101 | 343.88281 | 6.09067 | 79.00315 | 9.34715 | 0.2012149 | 2.7300183 | 23 | 1 | 20 days | 0.36 | | | MPC | 2006 $VV_{102}$ |
| 2006 $VC_{103}$ | 15.9 | 0.15 | 20061101 | 296.92063 | 231.95791 | 275.54509 | 9.00950 | 0.1113344 | 3.0968513 | 10 | 1 | 13 days | 0.29 | | | MPC | 2006 $VC_{103}$ |
| 2006 $VG_{103}$ | 17.3 | 0.15 | 20061101 | 48.89325 | 244.76876 | 106.77263 | 4.26717 | 0.2160534 | 2.7184926 | 13 | 1 | 10 days | 0.47 | | | MPC | 2006 $VG_{103}$ |
| 2006 $VJ_{103}$ | 17.1 | 0.15 | 20061101 | 77.67177 | 251.94836 | 79.55278 | 14.44961 | 0.1307697 | 2.6665987 | 13 | 1 | 10 days | 0.36 | | | MPC | 2006 $VJ_{103}$ |
| 2006 $VM_{103}$ | 17.2 | 0.15 | 20061101 | 15.11358 | 276.77774 | 124.72277 | 2.76879 | 0.1686443 | 2.8959950 | 9 | 1 | 10 days | 0.09 | | | MPC | 2006 $VM_{103}$ |
| 2006 $VR_{103}$ | 17.1 | 0.15 | 20061121 | 29.10433 | 264.70370 | 108.12328 | 5.04564 | 0.3039048 | 2.5522598 | 23 | 1 | 18 days | 0.45 | | | MPC | 2006 $VR_{103}$ |
| 2006 $VS_{103}$ | 17.5 | 0.15 | 20061101 | 0.24099 | 309.95447 | 109.63653 | 4.85962 | 0.3081371 | 3.0604156 | 10 | 1 | 10 days | 0.14 | | | MPC | 2006 $VS_{103}$ |
| 2006 $VU_{103}$ | 18.2 | 0.15 | 20061101 | 8.08806 | 262.51967 | 142.93383 | 3.14036 | 0.2379805 | 2.5299589 | 13 | 1 | 10 days | 0.24 | | | MPC | 2006 $VU_{103}$ |
| 2006 $VF_{104}$ | 16.9 | 0.15 | 20061101 | 340.27321 | 317.31065 | 105.76155 | 2.99849 | 0.1412666 | 2.3296208 | 16 | 1 | 4 days | 0.67 | | | MPC | 2006 $VF_{104}$ |
| 2006 $VM_{104}$ | 19.1 | 0.15 | 20061101 | 37.51156 | 310.74470 | 40.65992 | 19.42571 | 0.0943183 | 1.8980085 | 19 | 1 | 12 days | 0.24 | | | MPC | 2006 $VM_{104}$ |
| 2006 $VT_{104}$ | 16.5 | 0.15 | 20061101 | 17.24878 | 246.17643 | 128.89323 | 4.71654 | 0.2118834 | 2.6526012 | 35 | 1 | 38 days | 0.62 | | | MPC | 2006 $VT_{104}$ |
| 2006 $VV_{104}$ | 15.7 | 0.15 | 20061101 | 358.58710 | 163.53269 | 249.91808 | 8.67593 | 0.0967691 | 3.1505333 | 18 | 1 | 22 days | 0.39 | | | MPC | 2006 $VV_{104}$ |
| 2006 $VZ_{104}$ | 17.5 | 0.15 | 20061101 | 37.35025 | 98.36416 | 255.18399 | 4.84677 | 0.2096810 | 2.2266560 | 26 | 1 | 13 days | 0.44 | | | MPC | 2006 $VZ_{104}$ |
| 2006 $VC_{105}$ | 17.3 | 0.15 | 20061101 | 309.69069 | 91.18428 | 25.58538 | 2.36158 | 0.1598970 | 2.3938637 | 13 | 1 | 7 days | 0.62 | | | MPC | 2006 $VC_{105}$ |
| 2006 $VD_{105}$ | 17.5 | 0.15 | 20061101 | 333.16946 | 211.09778 | 236.83098 | 31.22807 | 0.1722443 | 2.5733851 | 16 | 1 | 14 days | 0.34 | | | MPC | 2006 $VD_{105}$ |
| 2006 $VG_{105}$ | 16.6 | 0.15 | 20061101 | 314.43174 | 220.39732 | 243.72665 | 9.65559 | 0.0524782 | 3.1729995 | 11 | 1 | 30 days | 0.25 | | | MPC | 2006 $VG_{105}$ |
| 2006 $VJ_{105}$ | 16.1 | 0.15 | 20061101 | 36.16488 | 314.11247 | 38.60399 | 3.10218 | 0.2607091 | 3.9674345 | 13 | 1 | 11 days | 0.24 | | | MPC | 2006 $VJ_{105}$ |
| 2006 $VK_{105}$ | 16.4 | 0.15 | 20061101 | 66.08922 | 92.67100 | 241.96415 | 9.34378 | 0.0992973 | 3.0178599 | 13 | 1 | 11 days | 0.21 | | | MPC | 2006 $VK_{105}$ |
| 2006 $VL_{105}$ | 16.8 | 0.15 | 20061101 | 8.03865 | 10.87059 | 31.52706 | 2.35749 | 0.0424883 | 2.7959716 | 10 | 1 | 11 days | 0.17 | | | MPC | 2006 $VL_{105}$ |
| 2006 $VM_{105}$ | 17.2 | 0.15 | 20061101 | 359.78915 | 166.55992 | 244.28908 | 5.42315 | 0.1718778 | 2.9935970 | 10 | 1 | 11 days | 0.75 | | | MPC | 2006 $VM_{105}$ |
| 2006 $VN_{105}$ | 17.7 | 0.15 | 20061101 | 81.74172 | 316.06385 | 347.58181 | 0.64774 | 0.2184665 | 2.2462960 | 14 | 1 | 14 days | 0.14 | | | MPC | 2006 $VN_{105}$ |
| 2006 $VO_{105}$ | 16.7 | 0.15 | 20061101 | 45.65102 | 300.75861 | 50.86690 | 10.43610 | 0.1460393 | 2.7700366 | 13 | 1 | 11 days | 0.19 | | | MPC | 2006 $VO_{105}$ |
| 2006 $VP_{105}$ | 18.3 | 0.15 | 20061101 | 11.57909 | 354.77001 | 41.95009 | 2.90451 | 0.0558322 | 2.2815225 | 13 | 1 | 11 days | 0.22 | | | MPC | 2006 $VP_{105}$ |
| 2006 $VQ_{105}$ | 16.6 | 0.15 | 20061101 | 7.65498 | 158.11626 | 243.81684 | 7.92022 | 0.1055991 | 3.0213703 | 13 | 1 | 11 days | 0.21 | | | MPC | 2006 $VQ_{105}$ |
| 2006 $VR_{105}$ | 16.9 | 0.15 | 20061101 | 94.14144 | 250.40179 | 52.41310 | 6.98461 | 0.1318264 | 2.5968115 | 21 | 1 | 14 days | 0.42 | | | MPC | 2006 $VR_{105}$ |
| 2006 $VU_{105}$ | 18.5 | 0.15 | 20061101 | 339.94307 | 29.04239 | 49.55499 | 3.21998 | 0.1897112 | 2.3613440 | 10 | 1 | 11 days | 0.13 | | | MPC | 2006 $VU_{105}$ |
| 2006 $VD_{106}$ | 17.4 | 0.15 | 20061101 | 14.53803 | 333.52777 | 45.72852 | 24.45109 | 0.2304100 | 2.4390294 | 30 | 1 | 31 days | 0.61 | | | MPC | 2006 $VD_{106}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VT_{106}$ | 14.9 | 0.15 | 20061121 | 212.30337 | 92.19167 | 108.77142 | 10.03579 | 0.0292057 | 3.1803958 | 16 | 1 | 16 days | 0.75 | | | MPC | 2006 $VT_{106}$ |
| 2006 $VC_{107}$ | 15.7 | 0.15 | 20061101 | 28.06084 | 99.26458 | 284.49878 | 4.90918 | 0.0588562 | 2.7342927 | 14 | 1 | 12 days | 0.47 | | | MPC | 2006 $VC_{107}$ |
| 2006 $VE_{107}$ | 16.3 | 0.15 | 20061101 | 352.54751 | 130.90794 | 293.43124 | 3.36206 | 0.1344482 | 2.6155635 | 25 | 1 | 36 days | 0.57 | | | MPC | 2006 $VE_{107}$ |
| 2006 $VF_{107}$ | 17.2 | 0.15 | 20061101 | 25.06530 | 333.14883 | 37.79536 | 6.85290 | 0.2432466 | 2.3076746 | 12 | 1 | 12 days | 0.23 | | | MPC | 2006 $VF_{107}$ |
| 2006 $VG_{107}$ | 17.0 | 0.15 | 20061101 | 55.26501 | 315.32366 | 36.74474 | 7.57695 | 0.0704133 | 2.1831293 | 14 | 1 | 33 days | 0.27 | | | MPC | 2006 $VG_{107}$ |
| 2006 $VH_{107}$ | 17.1 | 0.15 | 20060922 | 9.75549 | 346.19554 | 31.39453 | 5.35685 | 0.2490308 | 2.3558946 | 38 | 1 | 61 days | 0.51 | M-v | 4 | MPC | 2006 $VH_{107}$ |
| 2006 $VJ_{107}$ | 17.1 | 0.15 | 20061101 | 12.44540 | 137.58022 | 260.06134 | 5.81845 | 0.1212269 | 2.2897009 | 15 | 1 | 12 days | 0.43 | | | MPC | 2006 $VJ_{107}$ |
| 2006 $VK_{107}$ | 17.6 | 0.15 | 20061101 | 337.80118 | 56.94094 | 28.05801 | 4.27260 | 0.1756836 | 2.3372321 | 18 | 1 | 12 days | 0.43 | | | MPC | 2006 $VK_{107}$ |
| 2006 $VO_{107}$ | 17.0 | 0.15 | 20061101 | 30.04322 | 333.74866 | 42.03029 | 9.81888 | 0.1711163 | 3.0538867 | 10 | 1 | 8 days | 0.14 | | | MPC | 2006 $VO_{107}$ |
| 2006 $VP_{107}$ | 18.4 | 0.15 | 20061101 | 11.11579 | 129.90222 | 268.97556 | 5.16255 | 0.1412850 | 2.2672486 | 9 | 1 | 12 days | 0.20 | | | MPC | 2006 $VP_{107}$ |
| 2006 $VT_{107}$ | 16.3 | 0.15 | 20061101 | 344.28572 | 41.23589 | 38.48003 | 7.32265 | 0.1536353 | 3.1914697 | 10 | 1 | 8 days | 0.08 | | | MPC | 2006 $VT_{107}$ |
| 2006 $VU_{107}$ | 17.1 | 0.15 | 20061101 | 8.77620 | 351.76433 | 50.03421 | 14.91139 | 0.2478728 | 3.1078950 | 13 | 1 | 20 days | 0.17 | | | MPC | 2006 $VU_{107}$ |
| 2006 $VV_{107}$ | 15.9 | 0.15 | 20061101 | 350.27444 | 22.52540 | 51.32756 | 15.52249 | 0.2655192 | 3.1634099 | 28 | 1 | 21 days | 0.38 | | | MPC | 2006 $VV_{107}$ |
| 2006 $VW_{107}$ | 16.1 | 0.15 | 20061012 | 355.44373 | 98.11360 | 316.71943 | 2.32305 | 0.1899777 | 2.5981434 | 36 | 1 | 54 days | 0.40 | | | MPC | 2006 $VW_{107}$ |
| 2006 $VX_{107}$ | 16.3 | 0.15 | 20061101 | 12.89001 | 31.09692 | 6.08455 | 2.95497 | 0.2141190 | 3.1135780 | 24 | 1 | 33 days | 0.28 | | | MPC | 2006 $VX_{107}$ |
| 2006 $VZ_{107}$ | 18.5 | 0.15 | 20061101 | 354.25867 | 179.16735 | 243.65247 | 13.67268 | 0.2435216 | 2.6658752 | 9 | 1 | 9 days | 0.14 | | | MPC | 2006 $VZ_{107}$ |
| 2006 $VA_{108}$ | 17.4 | 0.15 | 20061101 | 52.15814 | 5.16148 | 339.32312 | 1.65930 | 0.1792616 | 2.4387502 | 13 | 1 | 24 days | 0.20 | | | MPC | 2006 $VA_{108}$ |
| 2006 $VC_{108}$ | 18.3 | 0.15 | 20061101 | 31.83366 | 44.61353 | 317.76522 | 1.87022 | 0.2374635 | 2.3129824 | 12 | 1 | 12 days | 0.65 | | | MPC | 2006 $VC_{108}$ |
| 2006 $VG_{108}$ | 18.0 | 0.15 | 20061101 | 23.18414 | 96.09599 | 288.41115 | 2.66409 | 0.1438220 | 2.5741234 | 12 | 1 | 12 days | 0.23 | | | MPC | 2006 $VG_{108}$ |
| 2006 $VK_{108}$ | 16.3 | 0.15 | 20061101 | 24.10200 | 121.11603 | 267.39946 | 5.23105 | 0.0740294 | 3.1693215 | 13 | 1 | 38 days | 0.27 | | | MPC | 2006 $VK_{108}$ |
| 2006 $VL_{108}$ | 17.2 | 0.15 | 20061101 | 9.07884 | 140.35149 | 259.09320 | 4.25058 | 0.1842493 | 2.5197059 | 11 | 1 | 8 days | 0.55 | | | MPC | 2006 $VL_{108}$ |
| 2006 $VR_{108}$ | 17.2 | 0.15 | 20061012 | 30.32625 | 74.61355 | 284.90001 | 2.43401 | 0.2278256 | 2.5610620 | 13 | 1 | 52 days | 0.22 | | | MPC | 2006 $VR_{108}$ |
| 2006 $VS_{108}$ | 17.6 | 0.15 | 20061101 | 39.26745 | 119.17508 | 248.88974 | 13.44995 | 0.0947420 | 2.5556738 | 9 | 1 | 12 days | 0.10 | | | MPC | 2006 $VS_{108}$ |
| 2006 $VU_{108}$ | 17.8 | 0.15 | 20061101 | 313.60234 | 82.43930 | 31.64529 | 4.99777 | 0.1255152 | 2.7521334 | 9 | 1 | 12 days | 0.18 | | | MPC | 2006 $VU_{108}$ |
| 2006 $VX_{108}$ | 15.9 | 0.15 | 20061101 | 316.42655 | 189.92484 | 267.51053 | 12.10290 | 0.1031042 | 2.7983402 | 19 | 1 | 26 days | 0.62 | | | MPC | 2006 $VX_{108}$ |
| 2006 $VY_{108}$ | 18.7 | 0.15 | 20061101 | 307.70491 | 232.91166 | 239.97606 | 22.01509 | 0.1052732 | 1.9671742 | 17 | 1 | 11 days | 0.22 | | | MPC | 2006 $VY_{108}$ |
| 2006 $VZ_{108}$ | 17.2 | 0.15 | 20061101 | 51.71815 | 59.81481 | 268.96697 | 4.25774 | 0.2894861 | 2.3101967 | 14 | 1 | 11 days | 0.36 | | | MPC | 2006 $VZ_{108}$ |
| 2006 $VH_{109}$ | 14.9 | 0.15 | 20061101 | 299.29240 | 232.41967 | 254.84673 | 15.33755 | 0.1716711 | 3.0901090 | 22 | 1 | 26 days | 0.55 | | | MPC | 2006 $VH_{109}$ |
| 2006 $VN_{109}$ | 17.6 | 0.15 | 20061101 | 349.62610 | 216.20077 | 207.26340 | 3.86453 | 0.1846103 | 2.5653160 | 19 | 1 | 26 days | 0.35 | | | MPC | 2006 $VN_{109}$ |
| 2006 $VA_{110}$ | 15.6 | 0.15 | 20061121 | 342.69772 | 251.47992 | 200.46722 | 12.99761 | 0.2237944 | 3.0884416 | 11 | 1 | 19 days | 0.28 | | | MPC | 2006 $VA_{110}$ |
| 2006 $VC_{110}$ | 16.1 | 0.15 | 20061101 | 55.30988 | 330.89381 | 359.45588 | 5.29209 | 0.2816218 | 2.5907587 | 16 | 1 | 9 days | 0.63 | | E | MPC | 2006 $VC_{110}$ |
| 2006 $VD_{110}$ | 16.8 | 0.15 | 20061101 | 23.84407 | 48.83464 | 332.27189 | 4.26078 | 0.1868633 | 2.6219430 | 10 | 1 | 12 days | 0.13 | | | MPC | 2006 $VD_{110}$ |
| 2006 $VE_{110}$ | 14.9 | 0.15 | 20061101 | 39.76303 | 38.00563 | 326.14625 | 4.81985 | 0.1677133 | 2.9830486 | 27 | 1 | 14 days | 0.49 | | | MPC | 2006 $VE_{110}$ |
| 2006 $VF_{110}$ | 15.9 | 0.15 | 20061101 | 255.97528 | 275.31746 | 252.16086 | 23.39242 | 0.0517362 | 2.6506769 | 11 | 1 | 8 days | 0.68 | | | MPC | 2006 $VF_{110}$ |
| 2006 $VG_{110}$ | 17.4 | 0.15 | 20061101 | 40.78248 | 350.57909 | 359.39540 | 5.28219 | 0.2714718 | 2.6987756 | 10 | 1 | 8 days | 0.17 | | | MPC | 2006 $VG_{110}$ |
| 2006 $VH_{110}$ | 18.4 | 0.15 | 20061012 | 14.17385 | 30.97969 | 351.85670 | 3.75396 | 0.2118466 | 2.2800219 | 13 | 1 | 52 days | 0.14 | | | MPC | 2006 $VH_{110}$ |
| 2006 $VT_{110}$ | 16.2 | 0.15 | 20061101 | 352.04638 | 25.96968 | 46.65888 | 12.86662 | 0.1310335 | 3.0096085 | 12 | 1 | 14 days | 0.27 | | | MPC | 2006 $VT_{110}$ |
| 2006 $VU_{110}$ | 17.0 | 0.15 | 20061101 | 23.67281 | 110.81928 | 269.45021 | 10.18553 | 0.2551956 | 3.0111278 | 9 | 1 | 12 days | 0.12 | | | MPC | 2006 $VU_{110}$ |
| 2006 $VZ_{110}$ | 17.6 | 0.15 | 20061101 | 27.52495 | 69.65594 | 302.45176 | 2.90249 | 0.2371820 | 2.2904500 | 30 | 1 | 14 days | 0.63 | | E | MPC | 2006 $VZ_{110}$ |
| 2006 $VB_{111}$ | 16.7 | 0.15 | 20061101 | 58.44413 | 19.81423 | 309.53676 | 3.74989 | 0.2790642 | 2.6366168 | 25 | 1 | 12 days | 0.28 | | | MPC | 2006 $VB_{111}$ |
| 2006 $VC_{111}$ | 16.1 | 0.15 | 20061101 | 2.56494 | 91.80526 | 324.63549 | 3.49751 | 0.1691596 | 3.2093834 | 16 | 1 | 12 days | 0.31 | | | MPC | 2006 $VC_{111}$ |
| 2006 $VE_{111}$ | 18.5 | 0.15 | 20061101 | 345.91655 | 58.05841 | 20.88766 | 4.20615 | 0.2211088 | 2.5846180 | 9 | 1 | 12 days | 0.15 | | | MPC | 2006 $VE_{111}$ |
| 2006 $VH_{111}$ | 16.7 | 0.15 | 20061101 | 41.92427 | 328.01397 | 36.44421 | 6.81792 | 0.1474457 | 2.5816970 | 17 | 1 | 36 days | 0.32 | | | MPC | 2006 $VH_{111}$ |
| 2006 $VJ_{111}$ | 18.1 | 0.15 | 20061012 | 28.01307 | 343.71461 | 27.60840 | 4.34338 | 0.1500647 | 2.1977992 | 13 | 1 | 58 days | 0.20 | | | MPC | 2006 $VJ_{111}$ |
| 2006 $VM_{111}$ | 17.3 | 0.15 | 20061101 | 42.29767 | 39.20350 | 310.76172 | 3.32761 | 0.2547999 | 2.6173785 | 10 | 1 | 8 days | 0.90 | | | MPC | 2006 $VM_{111}$ |
| 2006 $VN_{111}$ | 16.3 | 0.15 | 20061101 | 336.39241 | 78.12725 | 9.02865 | 5.12292 | 0.0994840 | 2.6439253 | 16 | 1 | 14 days | 0.45 | | | MPC | 2006 $VN_{111}$ |
| 2006 $VO_{111}$ | 15.9 | 0.15 | 20061101 | 207.37831 | 321.78039 | 257.92439 | 14.12598 | 0.1375044 | 2.7467510 | 13 | 1 | 9 days | 0.65 | | | MPC | 2006 $VO_{111}$ |
| 2006 $VP_{111}$ | 16.2 | 0.15 | 20061101 | 52.07541 | 309.87810 | 50.62905 | 17.51350 | 0.0885641 | 3.0526002 | 13 | 1 | 12 days | 0.44 | | | MPC | 2006 $VP_{111}$ |
| 2006 $VQ_{111}$ | 17.4 | 0.15 | 20061101 | 274.14744 | 192.21383 | 330.70369 | 4.22187 | 0.1547073 | 2.5417061 | 9 | 1 | 12 days | 0.27 | | | MPC | 2006 $VQ_{111}$ |
| 2006 $VR_{111}$ | 16.1 | 0.15 | 20061101 | 264.13685 | 246.35892 | 278.81951 | 6.01941 | 0.0792189 | 2.8527666 | 10 | 1 | 8 days | 0.62 | | | MPC | 2006 $VR_{111}$ |
| 2006 $VS_{111}$ | 15.4 | 0.15 | 20061101 | 84.23729 | 290.76174 | 36.98639 | 9.14582 | 0.0822846 | 2.9917164 | 23 | 1 | 36 days | 0.35 | | | MPC | 2006 $VS_{111}$ |
| 2006 $VV_{111}$ | 16.6 | 0.15 | 20060922 | 11.39692 | 349.63622 | 32.37257 | 5.71394 | 0.2326996 | 2.5469905 | 46 | 1 | 61 days | 0.53 | M-v | 5 | MPC | 2006 $VV_{111}$ |
| 2006 $VW_{111}$ | 14.7 | 0.15 | 20061121 | 95.87487 | 281.35342 | 38.47666 | 10.25469 | 0.0905476 | 3.1252376 | 15 | 1 | 15 days | 0.58 | | | MPC | 2006 $VW_{111}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VZ_{111}$ | 16.8 | 0.15 | 20061101 | 3.36428 | 38.57995 | 4.07236 | 5.89630 | 0.2270043 | 2.5585679 | 33 | 1 | 35 days | 0.30 | | | MPC | 2006 $VZ_{111}$ |
| 2006 $VA_{112}$ | 15.2 | 0.15 | 20061101 | 45.59269 | 297.98119 | 41.81663 | 18.35178 | 0.2600619 | 3.0974731 | 27 | 1 | 21 days | 0.40 | | | MPC | 2006 $VA_{112}$ |
| 2006 $VG_{112}$ | 15.8 | 0.15 | 20061101 | 321.75666 | 320.58378 | 137.34875 | 5.11876 | 0.1431454 | 2.6526806 | 17 | 1 | 7 days | 0.54 | | | MPC | 2006 $VG_{112}$ |
| 2006 $VL_{112}$ | 16.6 | 0.15 | 20061101 | 336.72111 | 184.38912 | 262.88244 | 13.01424 | 0.2176005 | 2.6938498 | 15 | 1 | 8 days | 0.28 | | | MPC | 2006 $VL_{112}$ |
| 2006 $VT_{112}$ | 16.3 | 0.15 | 20061101 | 38.62531 | 95.38362 | 267.25167 | 11.06454 | 0.2139490 | 2.6493164 | 21 | 1 | 14 days | 0.42 | | | MPC | 2006 $VT_{112}$ |
| 2006 $VV_{112}$ | 16.6 | 0.15 | 20061101 | 85.12780 | 35.58619 | 287.92667 | 7.93018 | 0.1373708 | 3.0125598 | 9 | 1 | 12 days | 0.19 | | | MPC | 2006 $VV_{112}$ |
| 2006 $VC_{113}$ | 17.3 | 0.15 | 20061101 | 66.86690 | 23.27909 | 333.99931 | 4.27310 | 0.0054846 | 2.7223270 | 9 | 1 | 12 days | 0.12 | | | MPC | 2006 $VC_{113}$ |
| 2006 $VD_{113}$ | 18.8 | 0.15 | 20061101 | 32.04609 | 340.06532 | 31.72194 | 5.88211 | 0.2123358 | 2.3969719 | 9 | 1 | 12 days | 0.18 | | | MPC | 2006 $VD_{113}$ |
| 2006 $VK_{113}$ | 16.5 | 0.15 | 20061012 | 353.47980 | 18.46562 | 47.85320 | 11.66030 | 0.1495511 | 2.9235094 | 16 | 1 | 58 days | 0.20 | | | MPC | 2006 $VK_{113}$ |
| 2006 $VN_{113}$ | 17.1 | 0.15 | 20061101 | 7.30499 | 138.11185 | 269.99062 | 5.97547 | 0.0818751 | 2.3141957 | 16 | 1 | 9 days | 0.61 | | | MPC | 2006 $VN_{113}$ |
| 2006 $VS_{113}$ | 15.6 | 0.15 | 20061101 | 42.84876 | 114.66207 | 259.83507 | 12.53846 | 0.0780312 | 2.7055958 | 31 | 1 | 11 days | 0.57 | | | MPC | 2006 $VS_{113}$ |
| 2006 $VU_{113}$ | 17.6 | 0.15 | 20061101 | 315.25929 | 152.03767 | 327.55330 | 2.70009 | 0.1665539 | 2.3565466 | 8 | 1 | 12 days | 0.86 | | | MPC | 2006 $VU_{113}$ |
| 2006 $VW_{113}$ | 16.1 | 0.15 | 20061101 | 341.67095 | 183.25801 | 271.05116 | 12.87021 | 0.2126532 | 2.6854599 | 21 | 1 | 12 days | 0.44 | | | MPC | 2006 $VW_{113}$ |
| 2006 $VX_{113}$ | 16.6 | 0.15 | 20061101 | 21.92400 | 350.95590 | 40.52020 | 6.76565 | 0.2183144 | 2.5957169 | 13 | 1 | 9 days | 0.45 | | | MPC | 2006 $VX_{113}$ |
| 2006 $VB_{114}$ | 18.4 | 0.15 | 20061121 | 10.76895 | 343.55936 | 57.01544 | 2.08208 | 0.1906127 | 2.2993394 | 11 | 1 | 13 days | 0.94 | | | MPC | 2006 $VB_{114}$ |
| 2006 $VD_{114}$ | 16.3 | 0.15 | 20061121 | 172.67911 | 190.59249 | 52.55171 | 3.63871 | 0.0702862 | 2.8747555 | 17 | 1 | 13 days | 0.66 | | | MPC | 2006 $VD_{114}$ |
| 2006 $VH_{114}$ | 18.1 | 0.15 | 20061101 | 25.29288 | 342.95645 | 22.97783 | 6.20414 | 0.1835463 | 2.2195892 | 22 | 1 | 24 days | 0.32 | | | MPC | 2006 $VH_{114}$ |
| 2006 $VF_{115}$ | 17.5 | 0.15 | 20061012 | 358.65055 | 320.24407 | 82.05068 | 2.31607 | 0.1764805 | 2.3606146 | 36 | 1 | 58 days | 0.44 | | | MPC | 2006 $VF_{115}$ |
| 2006 $VK_{115}$ | 17.1 | 0.15 | 20061101 | 204.05733 | 152.74517 | 39.26493 | 11.54016 | 0.0677455 | 2.5594180 | 13 | 1 | 31 days | 0.33 | | | MPC | 2006 $VK_{115}$ |
| 2006 $VM_{115}$ | 17.3 | 0.15 | 20061121 | 35.74373 | 305.12847 | 67.62441 | 2.87593 | 0.1109070 | 2.6368530 | 11 | 1 | 13 days | 0.16 | | | MPC | 2006 $VM_{115}$ |
| 2006 $VO_{115}$ | 17.5 | 0.15 | 20061121 | 59.21745 | 121.69426 | 228.78493 | 5.40116 | 0.0701626 | 2.6831726 | 15 | 1 | 13 days | 0.23 | | | MPC | 2006 $VO_{115}$ |
| 2006 $VS_{115}$ | 18.1 | 0.15 | 20061101 | 345.18843 | 217.72377 | 213.65118 | 0.91151 | 0.1902151 | 2.3267897 | 32 | 1 | 18 days | 0.46 | | | MPC | 2006 $VS_{115}$ |
| 2006 $VU_{115}$ | 17.0 | 0.15 | 20061121 | 14.67645 | 200.74579 | 200.23710 | 1.91383 | 0.0396572 | 2.9898370 | 15 | 1 | 13 days | 0.72 | | | MPC | 2006 $VU_{115}$ |
| 2006 $VV_{115}$ | 16.2 | 0.15 | 20061121 | 285.46071 | 74.19861 | 65.54013 | 7.03996 | 0.0749947 | 3.0394637 | 15 | 1 | 13 days | 0.18 | | | MPC | 2006 $VV_{115}$ |
| 2006 $VW_{115}$ | 17.4 | 0.15 | 20061101 | 311.89087 | 266.67710 | 215.45275 | 3.98835 | 0.2244277 | 2.6031470 | 15 | 1 | 7 days | 0.55 | | | MPC | 2006 $VW_{115}$ |
| 2006 $VZ_{115}$ | 18.6 | 0.15 | 20061101 | 4.37770 | 188.64187 | 216.18605 | 5.77531 | 0.2193478 | 2.8899392 | 9 | 1 | 9 days | 0.16 | | | MPC | 2006 $VZ_{115}$ |
| 2006 $VD_{116}$ | 17.5 | 0.15 | 20061101 | 356.19077 | 147.98409 | 261.08092 | 5.24385 | 0.3473251 | 2.5879902 | 41 | 1 | 40 days | 0.46 | | E | MPC | 2006 $VD_{116}$ |
| 2006 $VH_{116}$ | 16.6 | 0.15 | 20061101 | 355.63827 | 330.59312 | 79.85192 | 6.59366 | 0.1194877 | 2.3838662 | 21 | 1 | 11 days | 0.41 | | | MPC | 2006 $VH_{116}$ |
| 2006 $VK_{116}$ | 17.5 | 0.15 | 20061101 | 21.43202 | 303.11657 | 73.34781 | 11.89248 | 0.1939155 | 2.2726510 | 35 | 1 | 34 days | 0.55 | | | MPC | 2006 $VK_{116}$ |
| 2006 $VL_{116}$ | 17.1 | 0.15 | 20060922 | 11.40461 | 194.07669 | 180.06672 | 2.07574 | 0.2290789 | 2.3200862 | 47 | 1 | 60 days | 0.49 | M-v | 5 | MPC | 2006 $VL_{116}$ |
| 2006 $VO_{116}$ | 15.3 | 0.15 | 20061101 | 81.52897 | 284.20894 | 34.85692 | 4.60811 | 0.1359211 | 3.9758436 | 13 | 1 | 22 days | 0.32 | | | MPC | 2006 $VO_{116}$ |
| 2006 $VQ_{116}$ | 18.8 | 0.15 | 20061101 | 7.99316 | 11.37157 | 27.93431 | 2.05781 | 0.1695081 | 2.3367877 | 9 | 1 | 8 days | 0.13 | | | MPC | 2006 $VQ_{116}$ |
| 2006 $VW_{116}$ | 17.9 | 0.15 | 20061101 | 348.91473 | 182.74599 | 245.03762 | 8.10227 | 0.1783836 | 2.5360011 | 9 | 1 | 8 days | 0.74 | | | MPC | 2006 $VW_{116}$ |
| 2006 $VX_{116}$ | 18.8 | 0.15 | 20061101 | 346.26678 | 175.16553 | 255.45441 | 3.37880 | 0.1519643 | 2.4544051 | 9 | 1 | 8 days | 0.60 | | | MPC | 2006 $VX_{116}$ |
| 2006 $VY_{116}$ | 16.5 | 0.15 | 20061101 | 108.33594 | 251.11302 | 37.99339 | 3.38029 | 0.1754255 | 2.5619626 | 17 | 1 | 36 days | 0.23 | | | MPC | 2006 $VY_{116}$ |
| 2006 $VZ_{116}$ | 17.0 | 0.15 | 20061101 | 197.16738 | 221.61426 | 359.54550 | 1.68251 | 0.0836519 | 2.8619966 | 9 | 1 | 8 days | 0.46 | | | MPC | 2006 $VZ_{116}$ |
| 2006 $VA_{117}$ | 17.3 | 0.15 | 20061101 | 339.96104 | 28.26598 | 51.01851 | 9.39426 | 0.0917967 | 3.1634283 | 9 | 1 | 8 days | 0.45 | | | MPC | 2006 $VA_{117}$ |
| 2006 $VB_{117}$ | 17.2 | 0.15 | 20061101 | 197.23699 | 233.30716 | 347.55362 | 1.45778 | 0.0876347 | 2.6682165 | 9 | 1 | 8 days | 0.40 | | | MPC | 2006 $VB_{117}$ |
| 2006 $VC_{117}$ | 18.3 | 0.15 | 20061101 | 288.04911 | 84.77748 | 50.29916 | 6.60564 | 0.0845701 | 2.4286795 | 9 | 1 | 8 days | 0.18 | | | MPC | 2006 $VC_{117}$ |
| 2006 $VE_{117}$ | 19.6 | 0.15 | 20061101 | 21.74936 | 77.91462 | 300.92040 | 0.80050 | 0.1925107 | 2.3024718 | 9 | 1 | 8 days | 0.14 | | | MPC | 2006 $VE_{117}$ |
| 2006 $VF_{117}$ | 17.0 | 0.15 | 20061101 | 188.50283 | 178.17355 | 51.73414 | 9.45726 | 0.1588057 | 2.6718118 | 9 | 1 | 8 days | 0.84 | | | MPC | 2006 $VF_{117}$ |
| 2006 $VG_{117}$ | 16.9 | 0.15 | 20061101 | 186.50983 | 183.71543 | 47.61666 | 5.62041 | 0.1931848 | 2.4259547 | 9 | 1 | 8 days | 0.75 | | | MPC | 2006 $VG_{117}$ |
| 2006 $VH_{117}$ | 16.7 | 0.15 | 20061101 | 71.62989 | 276.65854 | 50.21250 | 7.48771 | 0.1415453 | 2.5882414 | 13 | 1 | 25 days | 0.12 | | | MPC | 2006 $VH_{117}$ |
| 2006 $VJ_{117}$ | 16.9 | 0.15 | 20061101 | 309.47720 | 89.63269 | 20.55062 | 1.93188 | 0.0436124 | 2.9737525 | 9 | 1 | 8 days | 0.50 | | | MPC | 2006 $VJ_{117}$ |
| 2006 $VK_{117}$ | 16.6 | 0.15 | 20061101 | 47.03385 | 302.14059 | 53.35071 | 10.23455 | 0.1371750 | 3.0345819 | 13 | 1 | 26 days | 0.14 | | | MPC | 2006 $VK_{117}$ |
| 2006 $VL_{117}$ | 18.4 | 0.15 | 20061101 | 321.79438 | 216.86250 | 247.37630 | 7.36469 | 0.1557569 | 2.4933522 | 9 | 1 | 8 days | 0.15 | | | MPC | 2006 $VL_{117}$ |
| 2006 $VM_{117}$ | 17.5 | 0.15 | 20061101 | 77.82915 | 270.09106 | 49.43185 | 6.87903 | 0.1505162 | 2.4802193 | 12 | 1 | 12 days | 0.30 | | | MPC | 2006 $VM_{117}$ |
| 2006 $VR_{117}$ | 16.7 | 0.15 | 20061101 | 217.47451 | 311.45669 | 251.09766 | 6.54272 | 0.0572196 | 2.7658881 | 9 | 1 | 8 days | 0.73 | | | MPC | 2006 $VR_{117}$ |
| 2006 $VT_{117}$ | 18.8 | 0.15 | 20061101 | 356.46841 | 141.72140 | 275.76212 | 1.68056 | 0.1847255 | 2.4623497 | 9 | 1 | 8 days | 0.09 | | | MPC | 2006 $VT_{117}$ |
| 2006 $VU_{117}$ | 16.8 | 0.15 | 20061101 | 131.94165 | 226.58434 | 44.56953 | 5.35736 | 0.1809997 | 2.4510052 | 13 | 1 | 32 days | 0.16 | | | MPC | 2006 $VU_{117}$ |
| 2006 $VV_{117}$ | 18.4 | 0.15 | 20061101 | 68.91546 | 64.05229 | 255.14575 | 2.06942 | 0.2231723 | 2.2404443 | 9 | 1 | 8 days | 0.38 | | | MPC | 2006 $VV_{117}$ |
| 2006 $VX_{117}$ | 17.3 | 0.15 | 20061101 | 339.26721 | 47.65027 | 34.22964 | 1.90604 | 0.1181782 | 3.0254742 | 9 | 1 | 8 days | 0.66 | | | MPC | 2006 $VX_{117}$ |
| 2006 $VY_{117}$ | 16.9 | 0.15 | 20061101 | 188.30700 | 200.03942 | 32.01765 | 3.00016 | 0.2056113 | 2.7346567 | 9 | 1 | 8 days | 0.64 | | | MPC | 2006 $VY_{117}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VA_{118}$ | 17.9 | 0.15 | 20061101 | 311.80991 | 181.80792 | 291.35818 | 1.13126 | 0.1156686 | 2.4442877 | 9 | 1 | 8 days | 0.18 | | | MPC | 2006 $VA_{118}$ |
| 2006 $VB_{118}$ | 16.6 | 0.15 | 20061101 | 209.85106 | 162.02655 | 49.08743 | 7.30161 | 0.0799932 | 2.7036663 | 9 | 1 | 8 days | 0.92 | | | MPC | 2006 $VB_{118}$ |
| 2006 $VC_{118}$ | 16.2 | 0.15 | 20061101 | 194.15600 | 179.06816 | 47.68272 | 6.79047 | 0.1471340 | 2.7051998 | 9 | 1 | 8 days | 0.78 | | | MPC | 2006 $VC_{118}$ |
| 2006 $VE_{118}$ | 18.6 | 0.15 | 20061101 | 343.34815 | 169.82787 | 268.14149 | 2.18047 | 0.1727715 | 2.7462896 | 9 | 1 | 8 days | 0.56 | | | MPC | 2006 $VE_{118}$ |
| 2006 $VH_{118}$ | 16.9 | 0.15 | 20061101 | 315.07762 | 198.15654 | 268.12649 | 2.56201 | 0.0623595 | 2.8158116 | 9 | 1 | 8 days | 0.44 | | | MPC | 2006 $VH_{118}$ |
| 2006 $VJ_{118}$ | 17.2 | 0.15 | 20061101 | 336.76568 | 28.39350 | 56.48747 | 13.33828 | 0.1203063 | 2.8010184 | 9 | 1 | 8 days | 0.72 | | | MPC | 2006 $VJ_{118}$ |
| 2006 $VK_{118}$ | 18.1 | 0.15 | 20061101 | 346.21871 | 25.15143 | 49.96600 | 4.08939 | 0.2495425 | 2.4787358 | 14 | 1 | 8 days | 0.72 | | | MPC | 2006 $VK_{118}$ |
| 2006 $VM_{118}$ | 18.9 | 0.15 | 20061101 | 331.82488 | 212.54222 | 244.50896 | 3.97890 | 0.2218057 | 2.5458220 | 8 | 1 | 8 days | 0.27 | | | MPC | 2006 $VM_{118}$ |
| 2006 $VN_{118}$ | 16.6 | 0.15 | 20061101 | 329.17565 | 209.56738 | 243.54329 | 10.85119 | 0.0838167 | 3.1143486 | 9 | 1 | 8 days | 0.30 | | | MPC | 2006 $VN_{118}$ |
| 2006 $VO_{118}$ | 17.2 | 0.15 | 20061101 | 334.73956 | 41.42880 | 46.72548 | 1.64403 | 0.1150229 | 3.0027293 | 9 | 1 | 8 days | 0.24 | | | MPC | 2006 $VO_{118}$ |
| 2006 $VP_{118}$ | 17.7 | 0.15 | 20061101 | 326.97414 | 219.21776 | 242.15482 | 5.14644 | 0.2031066 | 2.2910076 | 13 | 1 | 10 days | 0.08 | | | MPC | 2006 $VP_{118}$ |
| 2006 $VR_{118}$ | 15.7 | 0.15 | 20061101 | 312.35025 | 63.31692 | 57.29117 | 16.94930 | 0.1621445 | 3.1350055 | 13 | 1 | 23 days | 0.19 | | | MPC | 2006 $VR_{118}$ |
| 2006 $VT_{118}$ | 17.6 | 0.15 | 20061101 | 34.78574 | 108.31874 | 239.91789 | 10.51768 | 0.3323988 | 2.6726981 | 20 | 1 | 33 days | 0.36 | | E | MPC | 2006 $VT_{118}$ |
| 2006 $VU_{118}$ | 17.2 | 0.15 | 20061101 | 204.09616 | 332.43649 | 245.91605 | 2.79575 | 0.1144433 | 2.6178715 | 9 | 1 | 8 days | 0.52 | | | MPC | 2006 $VU_{118}$ |
| 2006 $VN_{119}$ | 17.8 | 0.15 | 20061101 | 332.21738 | 22.85627 | 68.74164 | 3.81592 | 0.1339415 | 2.5987282 | 9 | 1 | 8 days | 0.69 | | | MPC | 2006 $VN_{119}$ |
| 2006 $VO_{119}$ | 16.0 | 0.15 | 20061101 | 203.59627 | 147.22083 | 72.62288 | 4.52900 | 0.1191077 | 2.7857551 | 9 | 1 | 8 days | 0.72 | | | MPC | 2006 $VO_{119}$ |
| 2006 $VQ_{119}$ | 17.0 | 0.15 | 20061101 | 12.14510 | 336.90828 | 61.41406 | 4.44827 | 0.1619870 | 2.6181344 | 37 | 1 | 39 days | 0.40 | | | MPC | 2006 $VQ_{119}$ |
| 2006 $VR_{119}$ | 16.1 | 0.15 | 20061101 | 285.86376 | 88.21897 | 70.37693 | 4.94268 | 0.2289076 | 2.8525406 | 17 | 1 | 10 days | 0.57 | | | MPC | 2006 $VR_{119}$ |
| 2006 $VS_{119}$ | 17.6 | 0.15 | 20061101 | 44.53643 | 295.25253 | 66.32748 | 2.44107 | 0.1228243 | 2.7178033 | 16 | 1 | 13 days | 0.34 | | | MPC | 2006 $VS_{119}$ |
| 2006 $VU_{119}$ | 18.2 | 0.15 | 20061101 | 16.23956 | 320.84983 | 68.23277 | 3.51761 | 0.2057803 | 2.4584990 | 20 | 1 | 10 days | 0.29 | | | MPC | 2006 $VU_{119}$ |
| 2006 $VV_{119}$ | 17.3 | 0.15 | 20061121 | 80.16803 | 254.53932 | 60.38837 | 4.34648 | 0.2391034 | 2.6123990 | 12 | 1 | 13 days | 0.25 | | | MPC | 2006 $VV_{119}$ |
| 2006 $VB_{120}$ | 18.4 | 0.15 | 20061101 | 354.51522 | 183.07490 | 239.50787 | 5.92210 | 0.2242802 | 2.8909015 | 13 | 1 | 10 days | 0.18 | | | MPC | 2006 $VB_{120}$ |
| 2006 $VC_{120}$ | 19.0 | 0.15 | 20061101 | 5.59566 | 339.23146 | 64.93258 | 2.99980 | 0.1815147 | 2.4254140 | 13 | 1 | 10 days | 0.19 | | | MPC | 2006 $VC_{120}$ |
| 2006 $VD_{120}$ | 16.1 | 0.15 | 20061121 | 129.00444 | 48.89472 | 236.22190 | 8.35476 | 0.0911284 | 3.1468895 | 12 | 1 | 13 days | 0.10 | | | MPC | 2006 $VD_{120}$ |
| 2006 $VF_{120}$ | 16.3 | 0.15 | 20061101 | 21.69938 | 313.73270 | 61.12222 | 15.24963 | 0.2955911 | 3.1745179 | 27 | 1 | 31 days | 0.53 | | | MPC | 2006 $VF_{120}$ |
| 2006 $VG_{120}$ | 19.0 | 0.15 | 20061101 | 31.54775 | 291.42643 | 66.01292 | 2.88794 | 0.2802039 | 2.3135309 | 8 | 1 | 5 days | 0.36 | | | MPC | 2006 $VG_{120}$ |
| 2006 $VM_{120}$ | 17.6 | 0.15 | 20061101 | 351.47823 | 24.86730 | 41.90062 | 0.62058 | 0.1966327 | 3.0917128 | 10 | 1 | 10 days | 0.43 | | | MPC | 2006 $VM_{120}$ |
| 2006 $VN_{120}$ | 17.4 | 0.15 | 20061101 | 199.93073 | 341.53055 | 237.51098 | 6.79456 | 0.0877220 | 2.6717531 | 9 | 1 | 8 days | 0.78 | | | MPC | 2006 $VN_{120}$ |
| 2006 $VO_{120}$ | 15.3 | 0.15 | 20061101 | 253.94204 | 308.24225 | 239.21367 | 19.81258 | 0.2457984 | 3.1067206 | 18 | 1 | 38 days | 0.29 | | | MPC | 2006 $VO_{120}$ |
| 2006 $VP_{120}$ | 18.1 | 0.15 | 20061101 | 346.38979 | 200.10111 | 233.70491 | 4.39240 | 0.1710904 | 2.9884544 | 9 | 1 | 8 days | 0.52 | | | MPC | 2006 $VP_{120}$ |
| 2006 $VR_{120}$ | 17.7 | 0.15 | 20061101 | 248.89437 | 284.57634 | 245.63841 | 3.45412 | 0.0565947 | 2.4219514 | 17 | 1 | 10 days | 0.24 | | | MPC | 2006 $VR_{120}$ |
| 2006 $VS_{120}$ | 18.2 | 0.15 | 20061101 | 323.08866 | 38.39060 | 57.24664 | 5.75263 | 0.0717787 | 2.6620329 | 13 | 1 | 10 days | 0.23 | | | MPC | 2006 $VS_{120}$ |
| 2006 $VT_{120}$ | 18.6 | 0.15 | 20061101 | 1.07916 | 174.34134 | 235.07218 | 9.73482 | 0.3034260 | 3.0808211 | 12 | 1 | 13 days | 0.29 | | E | MPC | 2006 $VT_{120}$ |
| 2006 $VU_{120}$ | 16.9 | 0.15 | 20061101 | 313.69864 | 226.39763 | 240.22073 | 9.57300 | 0.0650761 | 2.9749110 | 13 | 1 | 10 days | 0.23 | | | MPC | 2006 $VU_{120}$ |
| 2006 $VV_{120}$ | 16.5 | 0.15 | 20061101 | 106.89118 | 49.08353 | 244.58552 | 2.77256 | 0.1345283 | 2.5712026 | 21 | 1 | 38 days | 0.25 | | | MPC | 2006 $VV_{120}$ |
| 2006 $VW_{120}$ | 16.8 | 0.15 | 20061101 | 180.21416 | 179.96382 | 55.00669 | 11.63846 | 0.1041553 | 2.6535897 | 12 | 1 | 12 days | 0.27 | | | MPC | 2006 $VW_{120}$ |
| 2006 $VX_{120}$ | 15.9 | 0.15 | 20061101 | 347.51496 | 12.99682 | 56.71480 | 4.09126 | 0.0909284 | 3.1322872 | 21 | 1 | 28 days | 0.19 | | | MPC | 2006 $VX_{120}$ |
| 2006 $VY_{120}$ | 17.3 | 0.15 | 20061101 | 0.47703 | 354.88817 | 57.25257 | 19.65679 | 0.2229226 | 3.0626494 | 13 | 1 | 31 days | 0.14 | | | MPC | 2006 $VY_{120}$ |
| 2006 $VA_{121}$ | 16.2 | 0.15 | 20061101 | 13.75840 | 328.59761 | 65.41133 | 2.39963 | 0.1782125 | 3.1215683 | 21 | 1 | 41 days | 0.37 | | | MPC | 2006 $VA_{121}$ |
| 2006 $VH_{121}$ | 17.0 | 0.15 | 20061101 | 339.39865 | 53.30394 | 20.75669 | 6.72153 | 0.0990352 | 2.3630087 | 22 | 1 | 9 days | 0.63 | | | MPC | 2006 $VH_{121}$ |
| 2006 $VJ_{121}$ | 16.7 | 0.15 | 20061101 | 1.08454 | 156.95220 | 254.40375 | 12.36962 | 0.1637725 | 2.7543018 | 19 | 1 | 11 days | 0.54 | | | MPC | 2006 $VJ_{121}$ |
| 2006 $VL_{121}$ | 15.2 | 0.15 | 20061101 | 359.89423 | 157.26343 | 244.97864 | 13.52719 | 0.2838423 | 3.1347055 | 38 | 1 | 40 days | 0.55 | | | MPC | 2006 $VL_{121}$ |
| 2006 $VC_{122}$ | 16.1 | 0.15 | 20061101 | 229.39728 | 133.16663 | 60.76030 | 7.19641 | 0.0572421 | 3.1713320 | 10 | 1 | 8 days | 0.36 | | | MPC | 2006 $VC_{122}$ |
| 2006 $VD_{122}$ | 15.5 | 0.15 | 20060922 | 334.23971 | 219.77234 | 221.83029 | 11.26702 | 0.1535184 | 2.5939932 | 46 | 1 | 64 days | 0.39 | M-v | 4 | MPC | 2006 $VD_{122}$ |
| 2006 $VG_{122}$ | 16.7 | 0.15 | 20061101 | 257.73953 | 237.61456 | 291.72214 | 3.39194 | 0.0651238 | 3.0398183 | 10 | 1 | 7 days | 0.41 | | | MPC | 2006 $VG_{122}$ |
| 2006 $VH_{122}$ | 17.4 | 0.15 | 20061101 | 296.58327 | 208.82041 | 281.31964 | 4.32219 | 0.0755575 | 2.7783617 | 11 | 1 | 8 days | 0.73 | | | MPC | 2006 $VH_{122}$ |
| 2006 $VJ_{122}$ | 17.8 | 0.15 | 20061101 | 331.40891 | 49.22284 | 48.27350 | 11.56945 | 0.1634580 | 2.8940202 | 13 | 1 | 7 days | 0.50 | | | MPC | 2006 $VJ_{122}$ |
| 2006 $VK_{122}$ | 17.1 | 0.15 | 20061101 | 304.00031 | 89.14689 | 34.92491 | 5.48469 | 0.0886055 | 2.8223152 | 12 | 1 | 8 days | 0.71 | | | MPC | 2006 $VK_{122}$ |
| 2006 $VL_{122}$ | 16.3 | 0.15 | 20061101 | 221.01676 | 308.50205 | 257.53545 | 10.86863 | 0.0909261 | 3.0700458 | 10 | 1 | 7 days | 0.54 | | | MPC | 2006 $VL_{122}$ |
| 2006 $VM_{122}$ | 18.1 | 0.15 | 20061101 | 356.79841 | 162.35715 | 255.43310 | 7.07132 | 0.2369243 | 2.2879976 | 29 | 1 | 8 days | 0.69 | | | MPC | 2006 $VM_{122}$ |
| 2006 $VN_{122}$ | 16.2 | 0.15 | 20061101 | 335.66301 | 154.67868 | 299.19117 | 3.62814 | 0.1770844 | 3.1903638 | 10 | 1 | 7 days | 0.72 | | | MPC | 2006 $VN_{122}$ |
| 2006 $VO_{122}$ | 18.8 | 0.15 | 20061101 | 337.15204 | 92.84512 | 353.17320 | 1.88227 | 0.1477593 | 2.3161054 | 9 | 1 | 8 days | 0.15 | | | MPC | 2006 $VO_{122}$ |
| 2006 $VP_{122}$ | 16.0 | 0.15 | 20061101 | 200.30926 | 327.24255 | 259.37107 | 11.81644 | 0.1575552 | 3.0340498 | 9 | 1 | 8 days | 0.61 | | | MPC | 2006 $VP_{122}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VQ_{122}$ | 16.2 | 0.15 | 20061101 | 211.15070 | 178.70659 | 38.54046 | 6.65784 | 0.1219590 | 3.1513106 | 9 | 1 | 8 days | 0.48 | | MPC | 2006 $VQ_{122}$ |
| 2006 $VR_{122}$ | 17.7 | 0.15 | 20061101 | 214.95784 | 296.31028 | 275.21398 | 3.90351 | 0.1349426 | 2.2397111 | 9 | 1 | 8 days | 0.72 | | MPC | 2006 $VR_{122}$ |
| 2006 $VX_{122}$ | 17.9 | 0.15 | 20061101 | 8.51011 | 0.16657 | 45.49834 | 6.94051 | 0.1121550 | 2.3403982 | 17 | 1 | 34 days | 0.26 | | MPC | 2006 $VX_{122}$ |
| 2006 $VZ_{122}$ | 15.7 | 0.15 | 20061101 | 289.87814 | 279.66553 | 247.83925 | 24.78602 | 0.3270731 | 2.7584541 | 22 | 1 | 11 days | 0.48 | E | MPC | 2006 $VZ_{122}$ |
| 2006 $VB_{123}$ | 16.3 | 0.15 | 20061101 | 202.72242 | 329.68602 | 254.71569 | 16.10357 | 0.1581976 | 2.6900187 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $VB_{123}$ |
| 2006 $VE_{123}$ | 17.1 | 0.15 | 20061101 | 354.28759 | 88.71200 | 336.59969 | 2.54295 | 0.1477744 | 2.5747382 | 20 | 1 | 17 days | 0.63 | | MPC | 2006 $VE_{123}$ |
| 2006 $VF_{123}$ | 16.3 | 0.15 | 20061101 | 332.61412 | 105.33056 | 346.56266 | 2.69122 | 0.0980676 | 2.5910354 | 20 | 1 | 33 days | 0.57 | | MPC | 2006 $VF_{123}$ |
| 2006 $VG_{123}$ | 19.2 | 0.15 | 20061101 | 347.19001 | 178.77487 | 255.49078 | 6.07729 | 0.2085272 | 2.2923942 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $VG_{123}$ |
| 2006 $VH_{123}$ | 18.0 | 0.15 | 20061012 | 6.68794 | 64.69654 | 330.87156 | 1.81650 | 0.2237387 | 2.3709541 | 18 | 1 | 55 days | 0.29 | | MPC | 2006 $VH_{123}$ |
| 2006 $VK_{123}$ | 16.4 | 0.15 | 20061101 | 255.11646 | 149.55796 | 26.28378 | 3.33126 | 0.0817186 | 3.0125725 | 12 | 1 | 8 days | 0.50 | | MPC | 2006 $VK_{123}$ |
| 2006 $VN_{123}$ | 16.3 | 0.15 | 20061101 | 19.34163 | 296.66713 | 95.72953 | 3.79439 | 0.2613242 | 2.6325718 | 15 | 1 | 11 days | 0.50 | | MPC | 2006 $VN_{123}$ |
| 2006 $VO_{123}$ | 17.8 | 0.15 | 20061101 | 9.65278 | 6.57468 | 40.14794 | 5.33287 | 0.1160135 | 2.6148570 | 9 | 1 | 8 days | 0.14 | | MPC | 2006 $VO_{123}$ |
| 2006 $VP_{123}$ | 16.4 | 0.15 | 20061101 | 259.25534 | 150.18560 | 21.98099 | 3.38555 | 0.0875484 | 2.8289784 | 9 | 1 | 8 days | 0.67 | | MPC | 2006 $VP_{123}$ |
| 2006 $VQ_{123}$ | 18.0 | 0.15 | 20061101 | 359.86500 | 153.87272 | 263.90635 | 5.06945 | 0.1264036 | 2.4233989 | 16 | 1 | 13 days | 0.38 | | MPC | 2006 $VQ_{123}$ |
| 2006 $VR_{123}$ | 18.1 | 0.15 | 20061101 | 307.07198 | 74.78728 | 43.23849 | 5.85344 | 0.0570866 | 2.4555469 | 9 | 1 | 8 days | 0.11 | | MPC | 2006 $VR_{123}$ |
| 2006 $VU_{123}$ | 16.2 | 0.15 | 20061101 | 18.56557 | 285.97357 | 93.53785 | 5.64481 | 0.3898992 | 2.5928063 | 18 | 1 | 11 days | 0.51 | E | MPC | 2006 $VU_{123}$ |
| 2006 $VV_{123}$ | 16.7 | 0.15 | 20061101 | 229.00052 | 238.15820 | 323.30382 | 1.22498 | 0.1115731 | 2.6824028 | 9 | 1 | 8 days | 0.38 | | MPC | 2006 $VV_{123}$ |
| 2006 $VZ_{123}$ | 18.7 | 0.15 | 20061101 | 321.12672 | 74.07134 | 36.99662 | 1.90309 | 0.1717763 | 2.3978817 | 9 | 1 | 8 days | 0.93 | | MPC | 2006 $VZ_{123}$ |
| 2006 $VA_{124}$ | 15.7 | 0.15 | 20061101 | 247.65969 | 134.80711 | 52.76861 | 6.43818 | 0.1228978 | 2.9671188 | 13 | 1 | 21 days | 0.14 | | MPC | 2006 $VA_{124}$ |
| 2006 $VB_{124}$ | 17.8 | 0.15 | 20061101 | 39.32302 | 98.93293 | 258.00728 | 5.43115 | 0.2542952 | 2.8942691 | 9 | 1 | 8 days | 0.95 | | MPC | 2006 $VB_{124}$ |
| 2006 $VE_{124}$ | 17.0 | 0.15 | 20061101 | 334.02345 | 41.51588 | 59.43169 | 17.05928 | 0.2149182 | 3.0556449 | 9 | 1 | 8 days | 0.34 | | MPC | 2006 $VE_{124}$ |
| 2006 $VN_{124}$ | 17.4 | 0.15 | 20061101 | 254.86994 | 236.78760 | 294.73099 | 2.02239 | 0.0533798 | 2.6898009 | 9 | 1 | 8 days | 0.20 | | MPC | 2006 $VN_{124}$ |
| 2006 $VP_{124}$ | 16.7 | 0.15 | 20061101 | 131.43842 | 37.34861 | 247.73753 | 12.89867 | 0.0435509 | 2.5449662 | 17 | 1 | 38 days | 0.21 | | MPC | 2006 $VP_{124}$ |
| 2006 $VQ_{124}$ | 16.9 | 0.15 | 20061101 | 56.49909 | 291.57402 | 55.55211 | 5.74520 | 0.1675872 | 3.1243038 | 9 | 1 | 8 days | 0.16 | | MPC | 2006 $VQ_{124}$ |
| 2006 $VU_{124}$ | 14.5 | 0.15 | 20061101 | 34.40684 | 283.62877 | 101.71028 | 7.03190 | 0.0882443 | 3.4482629 | 18 | 1 | 8 days | 0.44 | | MPC | 2006 $VU_{124}$ |
| 2006 $VV_{124}$ | 17.1 | 0.15 | 20061101 | 289.05162 | 235.46233 | 261.55343 | 4.61204 | 0.0688717 | 2.7486603 | 12 | 1 | 8 days | 0.70 | | MPC | 2006 $VV_{124}$ |
| 2006 $VZ_{124}$ | 16.4 | 0.15 | 20061101 | 272.54412 | 132.87170 | 22.44150 | 1.97032 | 0.0693613 | 2.8927114 | 9 | 1 | 8 days | 0.63 | | MPC | 2006 $VZ_{124}$ |
| 2006 $VA_{125}$ | 17.8 | 0.15 | 20061101 | 302.35162 | 85.94943 | 47.20181 | 7.71199 | 0.1645714 | 2.5329946 | 13 | 1 | 21 days | 0.25 | | MPC | 2006 $VA_{125}$ |
| 2006 $VB_{125}$ | 17.5 | 0.15 | 20061101 | 32.08375 | 301.47328 | 57.99712 | 31.85352 | 0.2943317 | 2.6000299 | 17 | 1 | 29 days | 0.17 | E | MPC | 2006 $VB_{125}$ |
| 2006 $VC_{125}$ | 16.2 | 0.15 | 20061101 | 205.40642 | 317.74566 | 264.65773 | 5.12433 | 0.1487315 | 2.8943888 | 12 | 1 | 8 days | 0.52 | | MPC | 2006 $VC_{125}$ |
| 2006 $VD_{125}$ | 15.6 | 0.15 | 20061101 | 320.08251 | 58.31055 | 60.10457 | 27.09225 | 0.2068098 | 3.2050601 | 16 | 1 | 27 days | 0.24 | | MPC | 2006 $VD_{125}$ |
| 2006 $VJ_{125}$ | 17.3 | 0.15 | 20061101 | 336.30513 | 196.84730 | 251.42356 | 12.38780 | 0.1322960 | 3.0583444 | 12 | 1 | 8 days | 0.76 | | MPC | 2006 $VJ_{125}$ |
| 2006 $VL_{125}$ | 17.4 | 0.15 | 20061101 | 354.96362 | 176.27711 | 245.95655 | 11.99223 | 0.2659168 | 2.6315358 | 18 | 1 | 9 days | 0.54 | | MPC | 2006 $VL_{125}$ |
| 2006 $VM_{125}$ | 17.6 | 0.15 | 20061101 | 4.82340 | 12.66632 | 38.38217 | 3.68304 | 0.0762051 | 2.5699638 | 13 | 1 | 21 days | 0.23 | | MPC | 2006 $VM_{125}$ |
| 2006 $VN_{125}$ | 19.0 | 0.15 | 20061101 | 338.17645 | 37.17583 | 47.20116 | 7.03842 | 0.1747182 | 2.2221098 | 13 | 1 | 24 days | 0.32 | | MPC | 2006 $VN_{125}$ |
| 2006 $VP_{125}$ | 18.5 | 0.15 | 20061101 | 2.95921 | 17.55622 | 31.41496 | 2.69254 | 0.2084284 | 2.4152792 | 13 | 1 | 21 days | 0.31 | | MPC | 2006 $VP_{125}$ |
| 2006 $VQ_{125}$ | 17.5 | 0.15 | 20061121 | 22.86837 | 139.72489 | 250.78528 | 7.86447 | 0.1692099 | 3.0436432 | 12 | 1 | 13 days | 0.60 | | MPC | 2006 $VQ_{125}$ |
| 2006 $VT_{125}$ | 17.6 | 0.15 | 20061121 | 237.12466 | 299.21830 | 251.25852 | 7.03900 | 0.0552716 | 2.4121109 | 9 | 1 | 13 days | 0.30 | | MPC | 2006 $VT_{125}$ |
| 2006 $VY_{125}$ | 17.4 | 0.15 | 20061101 | 1.73067 | 133.67478 | 257.85048 | 2.90886 | 0.1317094 | 2.7321684 | 9 | 1 | 8 days | 0.16 | | MPC | 2006 $VY_{125}$ |
| 2006 $VB_{126}$ | 17.4 | 0.15 | 20061101 | 327.44551 | 209.21863 | 228.74683 | 10.89386 | 0.1558230 | 2.6727144 | 12 | 1 | 33 days | 0.24 | | MPC | 2006 $VB_{126}$ |
| 2006 $VG_{126}$ | 18.5 | 0.15 | 20061101 | 332.60619 | 205.16734 | 230.65699 | 14.23028 | 0.2004820 | 2.6923802 | 15 | 1 | 5 days | 0.65 | | MPC | 2006 $VG_{126}$ |
| 2006 $VJ_{126}$ | 19.0 | 0.15 | 20061101 | 19.09083 | 354.58518 | 10.95252 | 2.53148 | 0.2093407 | 2.2906282 | 15 | 1 | 8 days | 0.24 | | MPC | 2006 $VJ_{126}$ |
| 2006 $VK_{126}$ | 16.6 | 0.15 | 20061012 | 17.30532 | 132.88109 | 232.54440 | 5.67378 | 0.1563264 | 3.2249214 | 15 | 1 | 51 days | 0.27 | | MPC | 2006 $VK_{126}$ |
| 2006 $VQ_{126}$ | 17.4 | 0.15 | 20061101 | 27.37735 | 100.24102 | 264.49016 | 6.48503 | 0.2258731 | 2.3072708 | 15 | 1 | 7 days | 0.46 | | MPC | 2006 $VQ_{126}$ |
| 2006 $VR_{126}$ | 17.2 | 0.15 | 20061101 | 331.32955 | 164.29543 | 282.10657 | 4.95912 | 0.1272539 | 2.4374713 | 10 | 1 | 7 days | 0.57 | | MPC | 2006 $VR_{126}$ |
| 2006 $VS_{126}$ | 18.0 | 0.15 | 20061101 | 354.97107 | 24.24462 | 32.32266 | 7.23734 | 0.1924809 | 2.3306383 | 25 | 1 | 7 days | 0.77 | | MPC | 2006 $VS_{126}$ |
| 2006 $VU_{126}$ | 19.3 | 0.15 | 20061101 | 8.16431 | 104.94702 | 292.24952 | 3.69453 | 0.1912728 | 2.4002086 | 12 | 1 | 7 days | 0.19 | | MPC | 2006 $VU_{126}$ |
| 2006 $VV_{126}$ | 15.1 | 0.15 | 20061101 | 62.73616 | 88.26009 | 250.52341 | 14.30767 | 0.0991387 | 3.1259740 | 14 | 1 | 13 days | 0.38 | | MPC | 2006 $VV_{126}$ |
| 2006 $VX_{126}$ | 16.1 | 0.15 | 20061101 | 37.12324 | 111.05142 | 255.41934 | 8.25604 | 0.1019389 | 2.6845080 | 14 | 1 | 10 days | 0.48 | | MPC | 2006 $VX_{126}$ |
| 2006 $VB_{127}$ | 16.9 | 0.15 | 20061101 | 357.39193 | 132.71333 | 282.54710 | 7.37428 | 0.1004001 | 2.9786162 | 13 | 1 | 7 days | 0.30 | | MPC | 2006 $VB_{127}$ |
| 2006 $VD_{127}$ | 16.3 | 0.15 | 20061101 | 280.34528 | 230.56886 | 275.57832 | 8.43304 | 0.1149918 | 3.0743610 | 14 | 1 | 7 days | 0.23 | | MPC | 2006 $VD_{127}$ |
| 2006 $VE_{127}$ | 15.9 | 0.15 | 20061101 | 169.07516 | 309.97857 | 292.53077 | 7.02205 | 0.1670799 | 3.1890187 | 13 | 1 | 10 days | 0.27 | | MPC | 2006 $VE_{127}$ |
| 2006 $VG_{127}$ | 16.0 | 0.15 | 20061101 | 111.10474 | 256.02597 | 35.31606 | 16.06480 | 0.1292283 | 3.1758474 | 17 | 1 | 6 days | 0.21 | | MPC | 2006 $VG_{127}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VH_{127}$ | 16.1 | 0.15 | 20061101 | 29.41111 | 96.79499 | 257.18944 | 13.23602 | 0.3330718 | 3.0487587 | 51 | 1 | 28 days | 0.40 | E | MPC | 2006 $VH_{127}$ |
| 2006 $VJ_{127}$ | 17.7 | 0.15 | 20061101 | 336.11386 | 52.90971 | 36.46633 | 14.53607 | 0.2077845 | 3.0476758 | 10 | 1 | 6 days | 0.20 | | MPC | 2006 $VJ_{127}$ |
| 2006 $VK_{127}$ | 17.0 | 0.15 | 20061101 | 204.14118 | 200.11603 | 10.55432 | 6.58038 | 0.0422334 | 2.3920558 | 31 | 1 | 7 days | 0.58 | | MPC | 2006 $VK_{127}$ |
| 2006 $VL_{127}$ | 18.0 | 0.15 | 20061101 | 31.09174 | 57.10581 | 314.04543 | 4.29202 | 0.1430530 | 2.7127238 | 13 | 1 | 6 days | 0.15 | | MPC | 2006 $VL_{127}$ |
| 2006 $VM_{127}$ | 16.5 | 0.15 | 20061101 | 330.37617 | 191.81355 | 264.31665 | 9.97263 | 0.1956654 | 3.1074207 | 21 | 1 | 7 days | 0.35 | | MPC | 2006 $VM_{127}$ |
| 2006 $VN_{127}$ | 16.8 | 0.15 | 20061101 | 56.70275 | 330.07203 | 2.80368 | 6.18246 | 0.2229978 | 3.0849782 | 22 | 1 | 7 days | 0.18 | | MPC | 2006 $VN_{127}$ |
| 2006 $VO_{127}$ | 18.3 | 0.15 | 20061101 | 44.28674 | 336.03150 | 13.56485 | 6.00211 | 0.1864395 | 2.3379141 | 22 | 1 | 7 days | 0.23 | | MPC | 2006 $VO_{127}$ |
| 2006 $VP_{127}$ | 17.7 | 0.15 | 20061101 | 46.74067 | 325.96015 | 28.12535 | 8.94386 | 0.1327640 | 2.6752626 | 11 | 1 | 7 days | 0.22 | | MPC | 2006 $VP_{127}$ |
| 2006 $VQ_{127}$ | 17.4 | 0.15 | 20061101 | 268.31418 | 142.64540 | 5.69129 | 6.40625 | 0.0194961 | 2.8831691 | 9 | 1 | 7 days | 0.50 | | MPC | 2006 $VQ_{127}$ |
| 2006 $VR_{127}$ | 19.4 | 0.15 | 20061101 | 359.18940 | 100.96161 | 309.67593 | 3.50696 | 0.1618207 | 2.1608156 | 12 | 1 | 7 days | 0.22 | | MPC | 2006 $VR_{127}$ |
| 2006 $VS_{127}$ | 17.4 | 0.15 | 20061101 | 197.43820 | 231.76022 | 347.31363 | 5.63563 | 0.0582565 | 2.7324969 | 9 | 1 | 7 days | 0.79 | | MPC | 2006 $VS_{127}$ |
| 2006 $VT_{127}$ | 17.9 | 0.15 | 20061101 | 355.14091 | 164.58045 | 253.82567 | 11.82185 | 0.2704667 | 2.5831042 | 22 | 1 | 7 days | 0.53 | | MPC | 2006 $VT_{127}$ |
| 2006 $VY_{127}$ | 17.7 | 0.15 | 20061101 | 28.27152 | 101.44412 | 259.69093 | 12.43956 | 0.2978322 | 3.0067195 | 12 | 1 | 7 days | 0.29 | | MPC | 2006 $VY_{127}$ |
| 2006 $VZ_{127}$ | 16.7 | 0.15 | 20061101 | 213.55118 | 175.31491 | 30.15261 | 10.88461 | 0.0504781 | 2.9603874 | 9 | 1 | 7 days | 0.27 | | MPC | 2006 $VZ_{127}$ |
| 2006 $VC_{128}$ | 18.0 | 0.15 | 20061101 | 113.58427 | 353.68960 | 294.33218 | 4.67862 | 0.1037487 | 2.3838833 | 9 | 1 | 7 days | 0.24 | | MPC | 2006 $VC_{128}$ |
| 2006 $VE_{128}$ | 18.0 | 0.15 | 20061101 | 41.01215 | 345.19545 | 14.50810 | 5.25720 | 0.1332685 | 2.7496639 | 12 | 1 | 7 days | 0.20 | | MPC | 2006 $VE_{128}$ |
| 2006 $VJ_{128}$ | 16.9 | 0.15 | 20061101 | 346.13564 | 31.03911 | 38.82080 | 13.11089 | 0.0764144 | 3.1173224 | 9 | 1 | 7 days | 0.76 | | MPC | 2006 $VJ_{128}$ |
| 2006 $VK_{128}$ | 17.6 | 0.15 | 20061101 | 350.79003 | 54.77842 | 8.22239 | 5.61414 | 0.0527315 | 2.6936328 | 12 | 1 | 7 days | 0.16 | | MPC | 2006 $VK_{128}$ |
| 2006 $VM_{128}$ | 19.1 | 0.15 | 20061012 | 17.11489 | 345.42095 | 26.38458 | 5.34989 | 0.2428919 | 2.3104894 | 21 | 1 | 56 days | 0.22 | | MPC | 2006 $VM_{128}$ |
| 2006 $VQ_{128}$ | 17.8 | 0.15 | 20061101 | 55.89720 | 336.84276 | 1.88246 | 4.28089 | 0.1697548 | 2.5314965 | 12 | 1 | 7 days | 0.34 | | MPC | 2006 $VQ_{128}$ |
| 2006 $VR_{128}$ | 19.2 | 0.15 | 20061101 | 13.30345 | 1.60590 | 32.24925 | 6.85458 | 0.1195721 | 2.2525480 | 12 | 1 | 11 days | 0.22 | | MPC | 2006 $VR_{128}$ |
| 2006 $VS_{128}$ | 18.6 | 0.15 | 20061101 | 75.38298 | 13.73489 | 302.67744 | 3.87701 | 0.1791344 | 2.2773200 | 9 | 1 | 7 days | 0.18 | | MPC | 2006 $VS_{128}$ |
| 2006 $VT_{128}$ | 17.7 | 0.15 | 20061101 | 334.63805 | 185.06975 | 255.14095 | 12.53130 | 0.0260970 | 2.7515374 | 9 | 1 | 7 days | 0.36 | | MPC | 2006 $VT_{128}$ |
| 2006 $VV_{128}$ | 16.3 | 0.15 | 20061101 | 35.61126 | 359.55340 | 8.41709 | 5.59917 | 0.1367165 | 3.0009578 | 15 | 1 | 7 days | 0.37 | | MPC | 2006 $VV_{128}$ |
| 2006 $VW_{128}$ | 18.4 | 0.15 | 20061101 | 345.01019 | 105.95447 | 325.60744 | 3.78850 | 0.0964950 | 2.7438825 | 9 | 1 | 7 days | 0.76 | | MPC | 2006 $VW_{128}$ |
| 2006 $VX_{128}$ | 16.9 | 0.15 | 20061101 | 180.19252 | 329.26425 | 266.16830 | 8.39607 | 0.2789944 | 2.5700574 | 15 | 1 | 7 days | 0.62 | | MPC | 2006 $VX_{128}$ |
| 2006 $VY_{128}$ | 18.1 | 0.15 | 20061101 | 343.25622 | 82.37434 | 351.33838 | 4.04336 | 0.0935764 | 2.7327324 | 9 | 1 | 7 days | 0.39 | | MPC | 2006 $VY_{128}$ |
| 2006 $VZ_{128}$ | 18.6 | 0.15 | 20061101 | 5.04099 | 352.03629 | 51.54796 | 28.09900 | 0.2201206 | 2.5704294 | 13 | 1 | 30 days | 0.13 | | MPC | 2006 $VZ_{128}$ |
| 2006 $VB_{129}$ | 17.3 | 0.15 | 20061101 | 326.98639 | 69.18537 | 21.21708 | 5.24415 | 0.0469100 | 2.7987485 | 9 | 1 | 7 days | 0.51 | | MPC | 2006 $VB_{129}$ |
| 2006 $VC_{129}$ | 17.2 | 0.15 | 20061101 | 10.85827 | 22.73572 | 14.21361 | 6.26960 | 0.1445041 | 2.3434703 | 22 | 1 | 6 days | 0.67 | | MPC | 2006 $VC_{129}$ |
| 2006 $VD_{129}$ | 15.6 | 0.15 | 20061101 | 32.54828 | 110.76516 | 253.73138 | 13.80729 | 0.1692969 | 2.8500138 | 39 | 1 | 35 days | 0.55 | | MPC | 2006 $VD_{129}$ |
| 2006 $VF_{129}$ | 16.4 | 0.15 | 20061101 | 23.99768 | 335.99902 | 40.88971 | 15.54420 | 0.1955730 | 2.7099788 | 32 | 1 | 22 days | 0.48 | | MPC | 2006 $VF_{129}$ |
| 2006 $VG_{129}$ | 14.5 | 0.15 | 20061101 | 306.69088 | 216.69116 | 255.51925 | 17.00764 | 0.0274722 | 3.1357936 | 18 | 1 | 7 days | 0.71 | | MPC | 2006 $VG_{129}$ |
| 2006 $VH_{129}$ | 15.6 | 0.15 | 20061101 | 46.03401 | 92.80606 | 261.92486 | 12.64489 | 0.1630774 | 2.6116814 | 20 | 1 | 7 days | 0.46 | | MPC | 2006 $VH_{129}$ |
| 2006 $VL_{129}$ | 14.5 | 0.15 | 20061101 | 340.78376 | 178.05748 | 266.05776 | 15.40870 | 0.1028925 | 3.4433987 | 16 | 1 | 7 days | 0.44 | | MPC | 2006 $VL_{129}$ |
| 2006 $VN_{129}$ | 17.9 | 0.15 | 20061101 | 29.76573 | 304.88453 | 51.26376 | 24.50059 | 0.2244245 | 2.2770874 | 10 | 1 | 8 days | 0.32 | | MPC | 2006 $VN_{129}$ |
| 2006 $VO_{129}$ | 15.8 | 0.15 | 20061101 | 4.63943 | 155.76571 | 253.02215 | 15.28004 | 0.1163268 | 3.0547627 | 17 | 1 | 11 days | 0.53 | | MPC | 2006 $VO_{129}$ |
| 2006 $VP_{129}$ | 16.3 | 0.15 | 20061101 | 18.17232 | 24.80992 | 1.99865 | 3.81746 | 0.1757562 | 2.3163397 | 26 | 1 | 7 days | 0.56 | | MPC | 2006 $VP_{129}$ |
| 2006 $VR_{129}$ | 17.4 | 0.15 | 20061101 | 126.54140 | 50.43385 | 228.82329 | 4.53930 | 0.1078150 | 2.7396238 | 9 | 1 | 8 days | 0.35 | | MPC | 2006 $VR_{129}$ |
| 2006 $VS_{129}$ | 16.5 | 0.15 | 20061101 | 179.79871 | 2.69045 | 233.72699 | 15.05106 | 0.2947821 | 2.6939433 | 9 | 1 | 8 days | 0.66 | | MPC | 2006 $VS_{129}$ |
| 2006 $VT_{129}$ | 17.4 | 0.15 | 20061121 | 0.27871 | 200.73503 | 217.60599 | 2.36575 | 0.0646269 | 2.6532652 | 9 | 1 | 12 days | 0.79 | | MPC | 2006 $VT_{129}$ |
| 2006 $VW_{129}$ | 17.6 | 0.15 | 20061121 | 359.27375 | 196.45065 | 223.27184 | 1.95589 | 0.0966611 | 2.7475881 | 9 | 1 | 12 days | 0.83 | | MPC | 2006 $VW_{129}$ |
| 2006 $VA_{130}$ | 17.7 | 0.15 | 20061101 | 273.82335 | 106.15922 | 62.09084 | 9.62904 | 0.2386277 | 2.6972152 | 9 | 1 | 31 days | 0.19 | | MPC | 2006 $VA_{130}$ |
| 2006 $VB_{130}$ | 18.2 | 0.15 | 20061121 | 48.82926 | 114.61344 | 232.89107 | 8.25735 | 0.2234450 | 2.5865761 | 16 | 1 | 12 days | 0.18 | | MPC | 2006 $VB_{130}$ |
| 2006 $VC_{130}$ | 17.5 | 0.15 | 20061121 | 52.03191 | 150.58810 | 206.26988 | 2.43141 | 0.1076132 | 2.6706045 | 14 | 1 | 12 days | 0.27 | | MPC | 2006 $VC_{130}$ |
| 2006 $VD_{130}$ | 17.3 | 0.15 | 20061121 | 65.15660 | 116.63090 | 227.33781 | 5.59083 | 0.0968032 | 2.8941885 | 16 | 1 | 12 days | 0.31 | | MPC | 2006 $VD_{130}$ |
| 2006 $VE_{130}$ | 17.3 | 0.15 | 20061101 | 306.40383 | 253.42788 | 229.39587 | 8.48608 | 0.1441526 | 2.7329351 | 21 | 1 | 27 days | 0.21 | | MPC | 2006 $VE_{130}$ |
| 2006 $VF_{130}$ | 19.6 | 0.15 | 20061101 | 26.19663 | 301.50274 | 66.73109 | 2.98377 | 0.2436567 | 2.3293509 | 9 | 1 | 7 days | 0.15 | | MPC | 2006 $VF_{130}$ |
| 2006 $VG_{130}$ | 17.4 | 0.15 | 20061101 | 342.84811 | 203.49381 | 231.71064 | 8.43379 | 0.0680815 | 3.0229979 | 16 | 1 | 10 days | 0.21 | | MPC | 2006 $VG_{130}$ |
| 2006 $VK_{130}$ | 16.8 | 0.15 | 20061101 | 135.52194 | 194.57941 | 71.69091 | 4.33479 | 0.2119837 | 2.3553870 | 9 | 1 | 8 days | 0.14 | | MPC | 2006 $VK_{130}$ |
| 2006 $VL_{130}$ | 18.7 | 0.15 | 20061101 | 305.08211 | 58.30517 | 72.07083 | 5.26602 | 0.2013572 | 2.5356390 | 9 | 1 | 8 days | 0.26 | | MPC | 2006 $VL_{130}$ |
| 2006 $VN_{130}$ | 18.6 | 0.15 | 20061101 | 52.65262 | 118.48552 | 223.60131 | 3.89980 | 0.1781088 | 2.2464313 | 13 | 1 | 23 days | 0.29 | | MPC | 2006 $VN_{130}$ |
| 2006 $VO_{130}$ | 17.1 | 0.15 | 20061121 | 50.49237 | 155.16529 | 204.44418 | 1.29342 | 0.1093029 | 3.0716297 | 12 | 1 | 12 days | 0.23 | | MPC | 2006 $VO_{130}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VP_{130}$ | 16.9 | 0.15 | 20061121 | 47.68843 | 273.62394 | 68.72376 | 6.98106 | 0.2835057 | 2.6078591 | 24 | 1 | 12 days | 0.59 | | | MPC | 2006 $VP_{130}$ |
| 2006 $VR_{130}$ | 18.1 | 0.15 | 20061101 | 342.75783 | 343.07530 | 93.63720 | 2.40420 | 0.1603196 | 2.4151886 | 26 | 1 | 16 days | 0.42 | | | MPC | 2006 $VR_{130}$ |
| 2006 $VS_{130}$ | 17.8 | 0.15 | 20061101 | 255.86089 | 297.45360 | 226.29398 | 5.54389 | 0.0403925 | 2.3962715 | 19 | 1 | 27 days | 0.20 | | | MPC | 2006 $VS_{130}$ |
| 2006 $VU_{130}$ | 19.0 | 0.15 | 20061101 | 20.85342 | 165.69612 | 208.43742 | 2.56565 | 0.2916848 | 2.6751959 | 12 | 1 | 12 days | 0.15 | | | MPC | 2006 $VU_{130}$ |
| 2006 $VV_{130}$ | 15.7 | 0.15 | 20061101 | 190.19213 | 355.93552 | 235.07868 | 13.19859 | 0.1572552 | 3.0229483 | 12 | 1 | 8 days | 0.71 | | | MPC | 2006 $VV_{130}$ |
| 2006 $VW_{130}$ | 16.8 | 0.15 | 20061101 | 51.77255 | 256.69176 | 87.85240 | 7.94328 | 0.1660857 | 2.2388555 | 22 | 1 | 9 days | 0.46 | | | MPC | 2006 $VW_{130}$ |
| 2006 $VZ_{130}$ | 14.7 | 0.15 | 20061101 | 14.18665 | 304.73732 | 84.05969 | 18.06925 | 0.2840059 | 3.1219576 | 12 | 1 | 10 days | 0.41 | | | MPC | 2006 $VZ_{130}$ |
| 2006 $VB_{131}$ | 17.5 | 0.15 | 20061101 | 350.61687 | 5.77130 | 63.59465 | 14.00274 | 0.2252482 | 2.9472812 | 10 | 1 | 9 days | 0.54 | | | MPC | 2006 $VB_{131}$ |
| 2006 $VC_{131}$ | 18.5 | 0.15 | 20061101 | 22.40892 | 225.70453 | 153.94350 | 0.98350 | 0.1877373 | 2.3008762 | 26 | 1 | 39 days | 0.25 | | | MPC | 2006 $VC_{131}$ |
| 2006 $VD_{131}$ | 19.0 | 0.15 | 20061121 | 37.80389 | 292.98279 | 67.09671 | 9.34733 | 0.2492472 | 2.5167024 | 15 | 1 | 12 days | 0.22 | | | MPC | 2006 $VD_{131}$ |
| 2006 $VE_{131}$ | 17.1 | 0.15 | 20061101 | 24.18545 | 160.46841 | 223.46016 | 4.23398 | 0.1345254 | 2.7389082 | 20 | 1 | 27 days | 0.26 | | | MPC | 2006 $VE_{131}$ |
| 2006 $VF_{131}$ | 17.6 | 0.15 | 20061101 | 306.18225 | 271.31190 | 218.71317 | 2.20130 | 0.1932731 | 2.6782367 | 13 | 1 | 27 days | 0.21 | | | MPC | 2006 $VF_{131}$ |
| 2006 $VH_{131}$ | 17.5 | 0.15 | 20061101 | 293.45101 | 354.14900 | 135.02113 | 1.20610 | 0.0509101 | 2.7473443 | 9 | 1 | 8 days | 0.20 | | | MPC | 2006 $VH_{131}$ |
| 2006 $VJ_{131}$ | 16.5 | 0.15 | 20060922 | 322.42036 | 2.12339 | 92.51275 | 2.68289 | 0.0961506 | 3.1683901 | 16 | 1 | 60 days | 0.26 | M-v | 5 | MPC | 2006 $VJ_{131}$ |
| 2006 $VK_{131}$ | 17.3 | 0.15 | 20061101 | 218.19875 | 137.59886 | 67.24548 | 8.69581 | 0.0753507 | 2.7286029 | 9 | 1 | 7 days | 0.27 | | | MPC | 2006 $VK_{131}$ |
| 2006 $VL_{131}$ | 19.5 | 0.15 | 20061121 | 38.84423 | 277.17935 | 86.64255 | 2.30854 | 0.2079294 | 2.3221332 | 9 | 1 | 12 days | 0.26 | | | MPC | 2006 $VL_{131}$ |
| 2006 $VO_{131}$ | 16.5 | 0.15 | 20061121 | 95.04900 | 243.00072 | 79.85362 | 5.97231 | 0.0367564 | 3.1267590 | 12 | 1 | 12 days | 0.16 | | | MPC | 2006 $VO_{131}$ |
| 2006 $VP_{131}$ | 14.9 | 0.15 | 20061101 | 308.32843 | 35.89651 | 86.13495 | 17.60301 | 0.0868095 | 3.0335115 | 11 | 1 | 8 days | 0.92 | | | MPC | 2006 $VP_{131}$ |
| 2006 $VQ_{131}$ | 15.2 | 0.15 | 20061101 | 41.10367 | 259.47406 | 97.80271 | 13.21806 | 0.2397030 | 2.6157911 | 24 | 1 | 10 days | 0.63 | | | MPC | 2006 $VQ_{131}$ |
| 2006 $VR_{131}$ | 17.6 | 0.15 | 20061101 | 4.66444 | 219.40246 | 186.81756 | 6.61483 | 0.3349562 | 2.5797652 | 16 | 1 | 10 days | 0.61 | | | MPC | 2006 $VR_{131}$ |
| 2006 $VT_{131}$ | 18.4 | 0.15 | 20061101 | 343.58364 | 8.88304 | 71.10849 | 9.63583 | 0.1921363 | 2.8091049 | 9 | 1 | 8 days | 0.32 | | | MPC | 2006 $VT_{131}$ |
| 2006 $VU_{131}$ | 15.3 | 0.15 | 20061101 | 35.53813 | 140.30916 | 234.73464 | 11.22856 | 0.1088657 | 3.1917701 | 27 | 1 | 41 days | 0.29 | | | MPC | 2006 $VU_{131}$ |
| 2006 $VV_{131}$ | 17.5 | 0.15 | 20061121 | 13.07088 | 166.81602 | 236.39928 | 14.22077 | 0.1863548 | 3.0456954 | 9 | 1 | 12 days | 0.20 | | | MPC | 2006 $VV_{131}$ |
| 2006 $VZ_{131}$ | 15.7 | 0.15 | 20061101 | 223.46211 | 131.04547 | 69.22327 | 9.88609 | 0.0657746 | 2.7597311 | 10 | 1 | 9 days | 0.89 | | | MPC | 2006 $VZ_{131}$ |
| 2006 $VA_{132}$ | 17.2 | 0.15 | 20061101 | 206.00184 | 6.52905 | 211.68810 | 3.58514 | 0.1171301 | 2.6149948 | 9 | 1 | 8 days | 0.77 | | | MPC | 2006 $VA_{132}$ |
| 2006 $VC_{132}$ | 18.0 | 0.15 | 20061101 | 45.89029 | 150.43681 | 210.88235 | 5.07361 | 0.0933495 | 2.6722673 | 12 | 1 | 8 days | 0.21 | | | MPC | 2006 $VC_{132}$ |
| 2006 $VD_{132}$ | 17.4 | 0.15 | 20061121 | 41.41545 | 275.53742 | 93.94613 | 3.94163 | 0.1156991 | 2.9961480 | 9 | 1 | 12 days | 0.14 | | | MPC | 2006 $VD_{132}$ |
| 2006 $VH_{132}$ | 17.3 | 0.15 | 20061101 | 222.61841 | 335.18002 | 223.82741 | 7.45056 | 0.0578645 | 2.7725834 | 9 | 1 | 8 days | 0.91 | | | MPC | 2006 $VH_{132}$ |
| 2006 $VJ_{132}$ | 17.5 | 0.15 | 20061101 | 36.26397 | 264.88664 | 97.32870 | 3.62502 | 0.2103698 | 3.0800230 | 13 | 1 | 12 days | 0.22 | | | MPC | 2006 $VJ_{132}$ |
| 2006 $VM_{132}$ | 18.2 | 0.15 | 20061101 | 321.65831 | 247.42313 | 220.18089 | 5.31301 | 0.1716268 | 2.5463655 | 16 | 1 | 16 days | 0.25 | | | MPC | 2006 $VM_{132}$ |
| 2006 $VN_{132}$ | 17.5 | 0.15 | 20061121 | 231.60475 | 74.23767 | 123.26306 | 3.16513 | 0.0930217 | 2.6395246 | 12 | 1 | 12 days | 0.17 | | | MPC | 2006 $VN_{132}$ |
| 2006 $VO_{132}$ | 17.7 | 0.15 | 20061101 | 337.13203 | 16.90982 | 66.15997 | 20.36026 | 0.0912915 | 2.7203984 | 8 | 1 | 8 days | 0.87 | | | MPC | 2006 $VO_{132}$ |
| 2006 $VP_{132}$ | 18.6 | 0.15 | 20061121 | 350.59538 | 326.34015 | 107.51296 | 2.17442 | 0.1541961 | 2.3319802 | 12 | 1 | 12 days | 0.17 | | | MPC | 2006 $VP_{132}$ |
| 2006 $VS_{132}$ | 18.3 | 0.15 | 20061101 | 233.00086 | 106.14055 | 82.27388 | 5.48358 | 0.0568626 | 2.4098324 | 9 | 1 | 8 days | 0.36 | | | MPC | 2006 $VS_{132}$ |
| 2006 $VT_{132}$ | 17.6 | 0.15 | 20061101 | 56.35419 | 256.15992 | 64.31530 | 30.17218 | 0.3388972 | 2.6490801 | 9 | 1 | 8 days | 0.18 | | | MPC | 2006 $VT_{132}$ |
| 2006 $VU_{132}$ | 18.4 | 0.15 | 20061101 | 321.69777 | 319.91564 | 142.52599 | 1.85613 | 0.1436636 | 2.3166773 | 19 | 1 | 35 days | 0.43 | | | MPC | 2006 $VU_{132}$ |
| 2006 $VV_{132}$ | 17.9 | 0.15 | 20061101 | 68.83445 | 87.09772 | 230.04259 | 11.91576 | 0.2474050 | 2.4346596 | 16 | 1 | 27 days | 0.25 | | | MPC | 2006 $VV_{132}$ |
| 2006 $VX_{132}$ | 17.9 | 0.15 | 20061101 | 81.49525 | 109.18852 | 196.07886 | 3.26170 | 0.2413574 | 2.2646895 | 13 | 1 | 33 days | 0.28 | | | MPC | 2006 $VX_{132}$ |
| 2006 $VY_{132}$ | 19.7 | 0.15 | 20061101 | 28.69913 | 280.27980 | 86.26378 | 3.08041 | 0.2281841 | 2.3436200 | 9 | 1 | 10 days | 0.07 | | | MPC | 2006 $VY_{132}$ |
| 2006 $VZ_{132}$ | 17.3 | 0.15 | 20061101 | 301.62260 | 57.57782 | 66.87121 | 15.88761 | 0.1043541 | 2.8608096 | 13 | 1 | 10 days | 0.31 | | | MPC | 2006 $VZ_{132}$ |
| 2006 $VB_{133}$ | 18.3 | 0.15 | 20061101 | 336.97741 | 280.02149 | 165.49119 | 2.39039 | 0.1667942 | 2.5864261 | 15 | 1 | 9 days | 0.32 | | | MPC | 2006 $VB_{133}$ |
| 2006 $VE_{133}$ | 17.5 | 0.15 | 20061101 | 197.85124 | 148.24185 | 72.01983 | 9.03605 | 0.0571063 | 2.7407928 | 9 | 1 | 10 days | 0.81 | | | MPC | 2006 $VE_{133}$ |
| 2006 $VF_{133}$ | 19.1 | 0.15 | 20061101 | 26.20141 | 286.04997 | 82.68662 | 3.14837 | 0.2426105 | 2.3315184 | 12 | 1 | 10 days | 0.19 | | | MPC | 2006 $VF_{133}$ |
| 2006 $VG_{133}$ | 15.9 | 0.15 | 20061101 | 309.30274 | 50.23883 | 64.04059 | 22.50893 | 0.0800647 | 3.0762499 | 17 | 1 | 16 days | 0.47 | | | MPC | 2006 $VG_{133}$ |
| 2006 $VJ_{133}$ | 17.4 | 0.15 | 20061101 | 325.28246 | 15.61624 | 82.48918 | 4.17527 | 0.1334681 | 2.3985196 | 28 | 1 | 16 days | 0.37 | | | MPC | 2006 $VJ_{133}$ |
| 2006 $VL_{133}$ | 19.7 | 0.15 | 20061101 | 359.23489 | 291.97989 | 120.90417 | 2.30083 | 0.1801240 | 2.3450536 | 9 | 1 | 8 days | 0.21 | | | MPC | 2006 $VL_{133}$ |
| 2006 $VO_{133}$ | 16.5 | 0.15 | 20061121 | 54.84390 | 12.49762 | 345.53638 | 3.29964 | 0.1186097 | 2.1506804 | 42 | 1 | 13 days | 0.50 | | | MPC | 2006 $VO_{133}$ |
| 2006 $VS_{133}$ | 16.0 | 0.15 | 20061101 | 11.68030 | 339.06997 | 55.01084 | 7.89629 | 0.3790405 | 2.6532597 | 36 | 1 | 35 days | 0.57 | | E | MPC | 2006 $VS_{133}$ |
| 2006 $VT_{133}$ | 17.4 | 0.15 | 20061101 | 19.38545 | 207.85876 | 175.64128 | 4.18304 | 0.1683421 | 2.2408108 | 16 | 1 | 7 days | 0.49 | | | MPC | 2006 $VT_{133}$ |
| 2006 $VX_{133}$ | 16.8 | 0.15 | 20061101 | 62.06990 | 64.62844 | 265.95262 | 6.50211 | 0.2539974 | 2.7873289 | 10 | 1 | 7 days | 0.62 | | | MPC | 2006 $VX_{133}$ |
| 2006 $VY_{133}$ | 17.3 | 0.15 | 20061101 | 37.04195 | 319.85351 | 41.00087 | 4.38311 | 0.2531760 | 2.9238889 | 10 | 1 | 7 days | 0.74 | | | MPC | 2006 $VY_{133}$ |
| 2006 $VD_{134}$ | 14.8 | 0.15 | 20061101 | 44.12357 | 282.80871 | 65.11720 | 13.33152 | 0.1954050 | 3.1538209 | 25 | 1 | 9 days | 0.76 | | | MPC | 2006 $VD_{134}$ |
| 2006 $VE_{134}$ | 16.5 | 0.15 | 20061101 | 3.55136 | 302.26858 | 103.53525 | 3.42093 | 0.0892563 | 2.5328178 | 23 | 1 | 37 days | 0.32 | | | MPC | 2006 $VE_{134}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VG_{134}$ | 17.3 | 0.15 | 20061101 | 32.54702 | 271.31380 | 103.66862 | 2.81536 | 0.0346939 | 2.2124059 | 18 | 1 | 22 days | 0.26 | | | MPC | 2006 $VG_{134}$ |
| 2006 $VH_{134}$ | 17.1 | 0.15 | 20061101 | 58.72521 | 232.64756 | 105.04458 | 2.79653 | 0.1304193 | 2.3873550 | 12 | 1 | 8 days | 0.56 | | | MPC | 2006 $VH_{134}$ |
| 2006 $VJ_{134}$ | 15.7 | 0.15 | 20061101 | 7.20460 | 344.63432 | 67.24046 | 12.79741 | 0.0843322 | 2.9595256 | 24 | 1 | 37 days | 0.42 | | | MPC | 2006 $VJ_{134}$ |
| 2006 $VK_{134}$ | 17.1 | 0.15 | 20061101 | 355.14817 | 0.34095 | 63.49151 | 6.04324 | 0.2102848 | 2.4041787 | 31 | 1 | 29 days | 0.53 | | | MPC | 2006 $VK_{134}$ |
| 2006 $VM_{134}$ | 17.2 | 0.15 | 20061121 | 1.44728 | 346.56635 | 76.04663 | 3.22436 | 0.2013624 | 2.3911565 | 27 | 1 | 12 days | 0.42 | | | MPC | 2006 $VM_{134}$ |
| 2006 $VO_{134}$ | 16.8 | 0.15 | 20061101 | 354.83208 | 29.16684 | 33.71705 | 1.64642 | 0.2117985 | 2.6225986 | 28 | 1 | 16 days | 0.56 | | | MPC | 2006 $VO_{134}$ |
| 2006 $VQ_{134}$ | 17.0 | 0.15 | 20061101 | 32.34737 | 304.32485 | 57.02718 | 13.92317 | 0.2761519 | 2.6556346 | 19 | 1 | 38 days | 0.56 | | | MPC | 2006 $VQ_{134}$ |
| 2006 $VS_{134}$ | 16.6 | 0.15 | 20061121 | 25.28596 | 313.50862 | 65.40319 | 6.92319 | 0.2695951 | 2.5896687 | 35 | 1 | 12 days | 0.49 | | | MPC | 2006 $VS_{134}$ |
| 2006 $VY_{134}$ | 17.9 | 0.15 | 20061101 | 21.18567 | 320.63909 | 57.42146 | 11.75783 | 0.2647995 | 2.8295522 | 9 | 1 | 4 days | 0.28 | | | MPC | 2006 $VY_{134}$ |
| 2006 $VZ_{134}$ | 16.1 | 0.15 | 20061121 | 82.45823 | 79.47777 | 245.59806 | 10.13686 | 0.1284700 | 3.1415020 | 15 | 1 | 12 days | 0.20 | | | MPC | 2006 $VZ_{134}$ |
| 2006 $VB_{135}$ | 15.4 | 0.15 | 20061101 | 203.27746 | 337.54012 | 242.99456 | 26.79245 | 0.1062152 | 3.1738408 | 9 | 1 | 4 days | 0.42 | | | MPC | 2006 $VB_{135}$ |
| 2006 $VC_{135}$ | 17.3 | 0.15 | 20061101 | 346.32380 | 16.69150 | 57.68845 | 10.67326 | 0.1061628 | 2.9929672 | 8 | 1 | 4 days | 0.25 | | | MPC | 2006 $VC_{135}$ |
| 2006 $VF_{135}$ | 17.7 | 0.15 | 20061101 | 311.11183 | 56.03499 | 56.55247 | 6.79965 | 0.0673526 | 2.8158213 | 9 | 1 | 8 days | 0.79 | | | MPC | 2006 $VF_{135}$ |
| 2006 $VG_{135}$ | 15.4 | 0.15 | 20061101 | 219.31929 | 313.29378 | 251.55108 | 5.66277 | 0.0682938 | 3.1243618 | 9 | 1 | 8 days | 0.54 | | | MPC | 2006 $VG_{135}$ |
| 2006 $VJ_{135}$ | 17.3 | 0.15 | 20061101 | 243.16501 | 125.27583 | 56.11197 | 13.08770 | 0.0648180 | 2.6129693 | 9 | 1 | 7 days | 0.82 | | | MPC | 2006 $VJ_{135}$ |
| 2006 $VL_{135}$ | 17.7 | 0.15 | 20060922 | 20.16182 | 107.48445 | 267.85519 | 1.20667 | 0.1237330 | 2.3360056 | 26 | 1 | 61 days | 0.55 | M-v | 5 | MPC | 2006 $VL_{135}$ |
| 2006 $VM_{135}$ | 17.0 | 0.15 | 20061101 | 63.27813 | 275.76657 | 57.48893 | 2.66299 | 0.1953934 | 2.9767743 | 16 | 1 | 30 days | 0.23 | | | MPC | 2006 $VM_{135}$ |
| 2006 $VO_{135}$ | 18.9 | 0.15 | 20061121 | 346.41159 | 189.41898 | 248.28504 | 6.44774 | 0.0749449 | 2.3460754 | 9 | 1 | 12 days | 0.07 | | | MPC | 2006 $VO_{135}$ |
| 2006 $VP_{135}$ | 16.9 | 0.15 | 20061121 | 56.40479 | 299.48818 | 44.93493 | 1.74532 | 0.2026575 | 3.1797856 | 9 | 1 | 12 days | 0.20 | | | MPC | 2006 $VP_{135}$ |
| 2006 $VQ_{135}$ | 17.9 | 0.15 | 20061101 | 331.10066 | 40.04900 | 51.63492 | 2.03228 | 0.1346917 | 2.2381951 | 20 | 1 | 30 days | 0.37 | | | MPC | 2006 $VQ_{135}$ |
| 2006 $VR_{135}$ | 16.9 | 0.15 | 20061121 | 239.89151 | 220.42661 | 326.93606 | 0.62032 | 0.0441724 | 3.0174265 | 9 | 1 | 12 days | 0.81 | | | MPC | 2006 $VR_{135}$ |
| 2006 $VT_{135}$ | 17.5 | 0.15 | 20061121 | 63.33363 | 73.67843 | 276.98859 | 0.95385 | 0.0822853 | 2.9100123 | 12 | 1 | 12 days | 0.25 | | | MPC | 2006 $VT_{135}$ |
| 2006 $VU_{135}$ | 18.3 | 0.15 | 20061101 | 321.77693 | 62.43149 | 45.31967 | 2.03057 | 0.1582674 | 2.6213177 | 9 | 1 | 8 days | 0.23 | | | MPC | 2006 $VU_{135}$ |
| 2006 $VV_{135}$ | 17.4 | 0.15 | 20061121 | 296.57844 | 212.89671 | 291.26861 | 1.09595 | 0.1642230 | 2.6284231 | 16 | 1 | 12 days | 0.58 | | | MPC | 2006 $VV_{135}$ |
| 2006 $VW_{135}$ | 17.7 | 0.15 | 20061121 | 301.73029 | 222.98651 | 262.89859 | 1.83144 | 0.0504851 | 2.5921693 | 12 | 1 | 12 days | 0.21 | | | MPC | 2006 $VW_{135}$ |
| 2006 $VA_{136}$ | 16.9 | 0.15 | 20061101 | 201.95020 | 165.05551 | 57.19728 | 3.50624 | 0.1359398 | 2.5673612 | 9 | 1 | 8 days | 0.50 | | | MPC | 2006 $VA_{136}$ |
| 2006 $VB_{136}$ | 18.0 | 0.15 | 20061101 | 31.18679 | 120.70516 | 240.03568 | 9.75404 | 0.2743750 | 2.4574978 | 32 | 1 | 35 days | 0.23 | | | MPC | 2006 $VB_{136}$ |
| 2006 $VF_{136}$ | 17.3 | 0.15 | 20061121 | 25.93204 | 337.81336 | 54.68638 | 5.00747 | 0.0847845 | 2.7935296 | 9 | 1 | 12 days | 0.20 | | | MPC | 2006 $VF_{136}$ |
| 2006 $VH_{136}$ | 18.4 | 0.15 | 20061121 | 94.15124 | 59.25399 | 249.85390 | 2.58155 | 0.1745347 | 2.2101687 | 12 | 1 | 12 days | 0.25 | | | MPC | 2006 $VH_{136}$ |
| 2006 $VJ_{136}$ | 15.4 | 0.15 | 20061101 | 349.93059 | 185.12150 | 245.90633 | 11.22836 | 0.0560833 | 3.2098304 | 23 | 1 | 26 days | 0.39 | | | MPC | 2006 $VJ_{136}$ |
| 2006 $VK_{136}$ | 17.8 | 0.15 | 20061121 | 49.82074 | 96.56291 | 258.99094 | 1.47482 | 0.1752393 | 2.7057423 | 12 | 1 | 12 days | 0.36 | | | MPC | 2006 $VK_{136}$ |
| 2006 $VL_{136}$ | 17.0 | 0.15 | 20061101 | 23.85451 | 136.12355 | 240.55533 | 13.71809 | 0.2370571 | 2.5798480 | 33 | 1 | 26 days | 0.45 | | | MPC | 2006 $VL_{136}$ |
| 2006 $VM_{136}$ | 17.7 | 0.15 | 20061121 | 48.71731 | 301.61308 | 60.55856 | 6.01754 | 0.1290256 | 2.7116983 | 12 | 1 | 12 days | 0.21 | | | MPC | 2006 $VM_{136}$ |
| 2006 $VO_{136}$ | 18.3 | 0.15 | 20061121 | 80.60934 | 18.62594 | 301.34479 | 0.57539 | 0.1959053 | 2.3251352 | 12 | 1 | 12 days | 0.14 | | | MPC | 2006 $VO_{136}$ |
| 2006 $VP_{136}$ | 17.5 | 0.15 | 20061121 | 333.89555 | 114.67728 | 344.99294 | 0.13109 | 0.1611143 | 3.0861754 | 12 | 1 | 12 days | 0.25 | | | MPC | 2006 $VP_{136}$ |
| 2006 $VQ_{136}$ | 17.8 | 0.15 | 20061101 | 237.91963 | 293.97503 | 254.18983 | 3.64106 | 0.0820582 | 2.3862328 | 9 | 1 | 8 days | 0.78 | | | MPC | 2006 $VQ_{136}$ |
| 2006 $VS_{136}$ | 18.1 | 0.15 | 20061121 | 72.75804 | 261.16129 | 59.13118 | 7.87893 | 0.2608688 | 2.2317018 | 11 | 1 | 12 days | 0.23 | | | MPC | 2006 $VS_{136}$ |
| 2006 $VT_{136}$ | 17.6 | 0.15 | 20061121 | 12.71197 | 148.97522 | 255.80405 | 2.11478 | 0.1988299 | 3.1967675 | 12 | 1 | 12 days | 0.45 | | | MPC | 2006 $VT_{136}$ |
| 2006 $VV_{136}$ | 17.9 | 0.15 | 20060922 | 11.22273 | 319.84982 | 64.78876 | 2.74687 | 0.1856686 | 2.4374947 | 20 | 1 | 61 days | 0.38 | M-v | 5 | MPC | 2006 $VV_{136}$ |
| 2006 $VX_{136}$ | 17.4 | 0.15 | 20061121 | 1.39894 | 178.09558 | 244.51829 | 16.38003 | 0.1648046 | 3.1809552 | 12 | 1 | 12 days | 0.23 | | | MPC | 2006 $VX_{136}$ |
| 2006 $VA_{137}$ | 17.3 | 0.15 | 20061101 | 35.39358 | 105.48968 | 244.89781 | 4.92763 | 0.3305250 | 2.6434402 | 16 | 1 | 25 days | 0.26 | | E | MPC | 2006 $VA_{137}$ |
| 2006 $VB_{137}$ | 16.5 | 0.15 | 20061121 | 219.89660 | 146.45985 | 64.29828 | 20.77503 | 0.0769972 | 3.0989812 | 9 | 1 | 12 days | 0.58 | | | MPC | 2006 $VB_{137}$ |
| 2006 $VG_{137}$ | 18.8 | 0.15 | 20060922 | 22.78893 | 114.65380 | 250.56811 | 3.37055 | 0.1946446 | 2.2137264 | 13 | 1 | 60 days | 0.22 | M-v | 5 | MPC | 2006 $VG_{137}$ |
| 2006 $VH_{137}$ | 15.9 | 0.15 | 20061121 | 278.90490 | 264.17934 | 251.87132 | 3.50002 | 0.0790569 | 3.1992451 | 16 | 1 | 12 days | 0.22 | | | MPC | 2006 $VH_{137}$ |
| 2006 $VO_{137}$ | 19.5 | 0.15 | 20061121 | 27.22775 | 323.89974 | 61.75502 | 5.85133 | 0.1764511 | 2.2514627 | 9 | 1 | 12 days | 0.15 | | | MPC | 2006 $VO_{137}$ |
| 2006 $VP_{137}$ | 17.0 | 0.15 | 20061101 | 340.02405 | 28.55257 | 65.65294 | 15.80161 | 0.2573220 | 3.1519241 | 20 | 1 | 35 days | 0.15 | | | MPC | 2006 $VP_{137}$ |
| 2006 $VR_{137}$ | 17.4 | 0.15 | 20061101 | 308.60471 | 246.11891 | 231.89104 | 3.91931 | 0.0671402 | 2.7080745 | 10 | 1 | 9 days | 0.20 | | | MPC | 2006 $VR_{137}$ |
| 2006 $VS_{137}$ | 17.7 | 0.15 | 20061121 | 263.88036 | 84.55219 | 79.68532 | 2.99999 | 0.0256582 | 2.6914583 | 9 | 1 | 12 days | 0.16 | | | MPC | 2006 $VS_{137}$ |
| 2006 $VT_{137}$ | 17.2 | 0.15 | 20061101 | 336.34157 | 214.09920 | 237.59119 | 8.61853 | 0.1412822 | 3.0060098 | 17 | 1 | 9 days | 0.48 | | | MPC | 2006 $VT_{137}$ |
| 2006 $VY_{137}$ | 19.9 | 0.15 | 20061121 | 21.14170 | 297.56741 | 81.40408 | 1.80668 | 0.3501335 | 2.4302299 | 9 | 1 | 12 days | 0.15 | | | MPC | 2006 $VY_{137}$ |
| 2006 $VZ_{137}$ | 17.2 | 0.15 | 20061101 | 15.23088 | 325.63297 | 75.20905 | 6.36936 | 0.1249995 | 2.8768248 | 14 | 1 | 9 days | 0.21 | | | MPC | 2006 $VZ_{137}$ |
| 2006 $VA_{138}$ | 16.1 | 0.15 | 20061121 | 310.46237 | 44.68226 | 74.35004 | 10.53971 | 0.0323520 | 3.1021283 | 20 | 1 | 12 days | 0.23 | | | MPC | 2006 $VA_{138}$ |
| 2006 $VB_{138}$ | 16.9 | 0.15 | 20061101 | 282.66659 | 358.10912 | 160.39454 | 1.25947 | 0.1549049 | 3.1588510 | 17 | 1 | 9 days | 0.26 | | | MPC | 2006 $VB_{138}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VE_{138}$ | 17.5 | 0.15 | 20061101 | 58.70655 | 270.36574 | 84.87730 | 0.65211 | 0.0609589 | 2.7906059 | 12 | 1 | 8 days | 0.27 | | | MPC | 2006 $VE_{138}$ |
| 2006 $VF_{138}$ | 17.0 | 0.15 | 20061101 | 228.30792 | 119.38875 | 80.96101 | 2.33845 | 0.0955192 | 2.7125537 | 9 | 1 | 8 days | 0.63 | | | MPC | 2006 $VF_{138}$ |
| 2006 $VG_{138}$ | 16.4 | 0.15 | 20061101 | 12.28394 | 326.44146 | 78.01928 | 4.44464 | 0.0950996 | 2.7720401 | 17 | 1 | 27 days | 0.19 | | | MPC | 2006 $VG_{138}$ |
| 2006 $VJ_{138}$ | 17.1 | 0.15 | 20061101 | 295.28400 | 81.01420 | 67.79587 | 13.73585 | 0.2172280 | 2.6651970 | 16 | 1 | 35 days | 0.27 | | | MPC | 2006 $VJ_{138}$ |
| 2006 $VK_{138}$ | 17.0 | 0.15 | 20061121 | 220.85030 | 138.54722 | 74.69983 | 3.01330 | 0.1325815 | 2.6272185 | 12 | 1 | 12 days | 0.28 | | | MPC | 2006 $VK_{138}$ |
| 2006 $VM_{138}$ | 17.5 | 0.15 | 20061101 | 27.41181 | 135.71525 | 239.73225 | 10.12574 | 0.1937838 | 2.5725738 | 17 | 1 | 23 days | 0.17 | | | MPC | 2006 $VM_{138}$ |
| 2006 $VN_{138}$ | 17.5 | 0.15 | 20061121 | 29.12696 | 313.76861 | 65.26285 | 6.00806 | 0.2093969 | 3.0806701 | 12 | 1 | 12 days | 0.25 | | | MPC | 2006 $VN_{138}$ |
| 2006 $VO_{138}$ | 16.4 | 0.15 | 20061101 | 86.24269 | 132.34933 | 195.90446 | 1.44497 | 0.0426439 | 2.9013838 | 24 | 1 | 39 days | 0.26 | | | MPC | 2006 $VO_{138}$ |
| 2006 $VP_{138}$ | 16.6 | 0.15 | 20061121 | 300.02599 | 67.98766 | 73.29221 | 3.39312 | 0.1642067 | 3.1055404 | 16 | 1 | 12 days | 0.30 | | | MPC | 2006 $VP_{138}$ |
| 2006 $VQ_{138}$ | 17.1 | 0.15 | 20061121 | 8.32939 | 341.11607 | 71.15019 | 6.84037 | 0.1334582 | 3.1051053 | 12 | 1 | 12 days | 0.28 | | | MPC | 2006 $VQ_{138}$ |
| 2006 $VR_{138}$ | 17.4 | 0.15 | 20061101 | 336.48829 | 19.42357 | 67.27321 | 8.42759 | 0.1308588 | 2.4887668 | 17 | 1 | 33 days | 0.23 | | | MPC | 2006 $VR_{138}$ |
| 2006 $VY_{138}$ | 17.1 | 0.15 | 20061121 | 67.19140 | 284.88743 | 65.68562 | 19.55501 | 0.0583497 | 3.1207769 | 12 | 1 | 12 days | 0.16 | | | MPC | 2006 $VY_{138}$ |
| 2006 $VZ_{138}$ | 17.1 | 0.15 | 20061101 | 15.28137 | 283.74607 | 105.06804 | 7.21252 | 0.1934447 | 2.4307723 | 16 | 1 | 8 days | 0.26 | | | MPC | 2006 $VZ_{138}$ |
| 2006 $VD_{139}$ | 17.3 | 0.15 | 20061101 | 358.57748 | 4.68779 | 56.22044 | 2.92031 | 0.1723615 | 2.5889755 | 14 | 1 | 10 days | 0.52 | | | MPC | 2006 $VD_{139}$ |
| 2006 $VE_{139}$ | 16.3 | 0.15 | 20061101 | 12.28357 | 156.46212 | 246.88635 | 10.14892 | 0.1826816 | 3.0405604 | 25 | 1 | 22 days | 0.47 | | | MPC | 2006 $VE_{139}$ |
| 2006 $VF_{139}$ | 15.9 | 0.15 | 20061101 | 131.28457 | 31.00906 | 252.63940 | 0.22175 | 0.1347544 | 3.1217019 | 13 | 1 | 16 days | 0.25 | | | MPC | 2006 $VF_{139}$ |
| 2006 $VH_{139}$ | 16.9 | 0.15 | 20061101 | 349.52314 | 186.24711 | 242.10622 | 19.70956 | 0.1158089 | 1.9436296 | 52 | 1 | 33 days | 0.52 | | | MPC | 2006 $VH_{139}$ |
| 2006 $VJ_{139}$ | 16.6 | 0.15 | 20060922 | 11.71501 | 144.76483 | 246.99720 | 4.75723 | 0.2148772 | 3.0425064 | 22 | 1 | 60 days | 0.18 | M-v | 4 | MPC | 2006 $VJ_{139}$ |
| 2006 $VK_{139}$ | 16.8 | 0.15 | 20061101 | 32.32931 | 318.92234 | 65.77761 | 4.76437 | 0.0984301 | 3.0768550 | 12 | 1 | 15 days | 0.26 | | | MPC | 2006 $VK_{139}$ |
| 2006 $VL_{139}$ | 16.6 | 0.15 | 20061121 | 303.53786 | 229.97914 | 261.26493 | 0.98199 | 0.0638028 | 3.0411656 | 14 | 1 | 12 days | 0.72 | | E | MPC | 2006 $VL_{139}$ |
| 2006 $VN_{139}$ | 17.8 | 0.15 | 20061101 | 319.73468 | 217.31937 | 249.57990 | 2.03855 | 0.0828134 | 2.2572230 | 16 | 1 | 16 days | 0.52 | | | MPC | 2006 $VN_{139}$ |
| 2006 $VO_{139}$ | 16.7 | 0.15 | 20061101 | 54.41604 | 272.65015 | 66.67130 | 14.43762 | 0.2626542 | 2.6900775 | 25 | 1 | 37 days | 0.28 | | | MPC | 2006 $VO_{139}$ |
| 2006 $VQ_{139}$ | 18.0 | 0.15 | 20061101 | 323.93383 | 223.60513 | 237.62421 | 2.60362 | 0.0710070 | 2.2140344 | 17 | 1 | 16 days | 0.27 | | | MPC | 2006 $VQ_{139}$ |
| 2006 $VR_{139}$ | 17.0 | 0.15 | 20061121 | 354.66072 | 3.50630 | 71.46769 | 9.54685 | 0.0442857 | 3.0592817 | 9 | 1 | 12 days | 0.32 | | | MPC | 2006 $VR_{139}$ |
| 2006 $VT_{139}$ | 17.1 | 0.15 | 20061101 | 148.04893 | 21.58578 | 249.89613 | 5.82154 | 0.0923272 | 2.3798538 | 9 | 1 | 8 days | 0.09 | | | MPC | 2006 $VT_{139}$ |
| 2006 $VV_{139}$ | 16.7 | 0.15 | 20061101 | 15.50999 | 322.26613 | 67.36280 | 5.16221 | 0.2941873 | 2.5982797 | 33 | 1 | 13 days | 0.36 | | | MPC | 2006 $VV_{139}$ |
| 2006 $VX_{139}$ | 16.5 | 0.15 | 20061101 | 34.00595 | 292.31306 | 69.17731 | 9.20400 | 0.3025426 | 2.7823814 | 23 | 1 | 16 days | 0.42 | | E | MPC | 2006 $VX_{139}$ |
| 2006 $VY_{139}$ | 16.0 | 0.15 | 20061101 | 96.18753 | 247.29748 | 72.90185 | 12.23236 | 0.1107785 | 3.1721593 | 13 | 1 | 12 days | 0.24 | | | MPC | 2006 $VY_{139}$ |
| 2006 $VA_{140}$ | 16.8 | 0.15 | 20061101 | 21.83796 | 303.72437 | 79.70671 | 5.83984 | 0.2810216 | 3.2107490 | 13 | 1 | 9 days | 0.42 | | | MPC | 2006 $VA_{140}$ |
| 2006 $VB_{140}$ | 16.0 | 0.15 | 20061101 | 258.11501 | 100.50406 | 77.70726 | 11.33965 | 0.0954868 | 3.0076908 | 10 | 1 | 9 days | 0.72 | | | MPC | 2006 $VB_{140}$ |
| 2006 $VC_{140}$ | 17.4 | 0.15 | 20061121 | 295.63239 | 257.84245 | 237.67039 | 7.30703 | 0.0133808 | 2.7127409 | 13 | 1 | 12 days | 0.34 | | | MPC | 2006 $VC_{140}$ |
| 2006 $VD_{140}$ | 17.4 | 0.15 | 20061101 | 227.69277 | 341.70172 | 221.42122 | 2.73020 | 0.0869740 | 2.3010155 | 16 | 1 | 13 days | 0.25 | | | MPC | 2006 $VD_{140}$ |
| 2006 $VE_{140}$ | 16.8 | 0.15 | 20061121 | 21.44926 | 211.20778 | 185.11547 | 1.30044 | 0.1863483 | 3.1493352 | 12 | 1 | 12 days | 0.18 | | | MPC | 2006 $VE_{140}$ |
| 2006 $VF_{140}$ | 18.2 | 0.15 | 20061101 | 2.46512 | 195.01794 | 219.43158 | 2.85277 | 0.1478561 | 2.2685791 | 10 | 1 | 9 days | 0.14 | | | MPC | 2006 $VF_{140}$ |
| 2006 $VG_{140}$ | 18.0 | 0.15 | 20061121 | 5.47149 | 346.23943 | 71.52765 | 5.43695 | 0.2032513 | 2.5720051 | 16 | 1 | 12 days | 0.37 | | | MPC | 2006 $VG_{140}$ |
| 2006 $VH_{140}$ | 17.2 | 0.15 | 20061101 | 61.23357 | 109.28292 | 239.15451 | 9.86647 | 0.1202260 | 2.5973961 | 13 | 1 | 9 days | 0.25 | | | MPC | 2006 $VH_{140}$ |
| 2006 $VJ_{140}$ | 16.4 | 0.15 | 20061101 | 20.96852 | 321.79773 | 77.57076 | 6.97738 | 0.0582860 | 2.6758143 | 23 | 1 | 27 days | 0.22 | | | MPC | 2006 $VJ_{140}$ |
| 2006 $VK_{140}$ | 17.9 | 0.15 | 20061121 | 329.50516 | 29.36288 | 76.91209 | 5.13869 | 0.1362014 | 2.3125833 | 16 | 1 | 12 days | 0.18 | | | MPC | 2006 $VK_{140}$ |
| 2006 $VL_{140}$ | 15.6 | 0.15 | 20061101 | 6.81428 | 342.29073 | 74.80982 | 12.26811 | 0.0652277 | 3.1363087 | 16 | 1 | 16 days | 0.29 | | | MPC | 2006 $VL_{140}$ |
| 2006 $VO_{140}$ | 17.0 | 0.15 | 20061101 | 91.79604 | 239.79194 | 81.54969 | 2.85096 | 0.0791995 | 2.6608539 | 10 | 1 | 9 days | 0.21 | | | MPC | 2006 $VO_{140}$ |
| 2006 $VP_{140}$ | 15.9 | 0.15 | 20061101 | 330.07996 | 11.72957 | 91.58373 | 2.86525 | 0.1616739 | 3.1651968 | 10 | 1 | 9 days | 0.09 | | | MPC | 2006 $VP_{140}$ |
| 2006 $VQ_{140}$ | 17.4 | 0.15 | 20061101 | 348.05007 | 307.17428 | 127.49936 | 0.57848 | 0.0965188 | 2.5386745 | 20 | 1 | 30 days | 0.20 | | | MPC | 2006 $VQ_{140}$ |
| 2006 $VR_{140}$ | 16.2 | 0.15 | 20061101 | 333.82717 | 343.96643 | 108.96413 | 2.12725 | 0.0621344 | 3.1148871 | 10 | 1 | 9 days | 0.47 | | | MPC | 2006 $VR_{140}$ |
| 2006 $VS_{140}$ | 18.1 | 0.15 | 20061121 | 317.05171 | 42.22540 | 77.72550 | 6.05990 | 0.1261342 | 2.4068619 | 13 | 1 | 12 days | 0.20 | | | MPC | 2006 $VS_{140}$ |
| 2006 $VT_{140}$ | 17.0 | 0.15 | 20061101 | 331.09305 | 219.46934 | 233.84954 | 5.51787 | 0.0749698 | 2.3484291 | 25 | 1 | 27 days | 0.41 | | | MPC | 2006 $VT_{140}$ |
| 2006 $VU_{140}$ | 18.7 | 0.15 | 20061101 | 15.21679 | 330.59213 | 68.48214 | 2.39756 | 0.1870838 | 2.3588850 | 12 | 1 | 12 days | 0.19 | | | MPC | 2006 $VU_{140}$ |
| 2006 $VV_{140}$ | 16.7 | 0.15 | 20061101 | 299.79544 | 296.88158 | 199.72626 | 1.20521 | 0.0769177 | 2.5519166 | 13 | 1 | 12 days | 0.37 | | | MPC | 2006 $VV_{140}$ |
| 2006 $VW_{140}$ | 16.7 | 0.15 | 20061121 | 2.62824 | 233.56407 | 193.13958 | 1.95582 | 0.1958162 | 3.0859587 | 12 | 1 | 12 days | 0.12 | | | MPC | 2006 $VW_{140}$ |
| 2006 $VY_{140}$ | 17.8 | 0.15 | 20061101 | 333.12773 | 3.46110 | 94.03289 | 2.31149 | 0.1422897 | 2.4590232 | 12 | 1 | 12 days | 0.29 | | | MPC | 2006 $VY_{140}$ |
| 2006 $VZ_{140}$ | 16.2 | 0.15 | 20061101 | 265.94724 | 350.22434 | 183.82458 | 1.98390 | 0.1170452 | 2.8311514 | 10 | 1 | 9 days | 0.98 | | | MPC | 2006 $VZ_{140}$ |
| 2006 $VA_{141}$ | 16.2 | 0.15 | 20061101 | 44.41000 | 123.60186 | 237.45003 | 7.47390 | 0.2236308 | 3.2276284 | 13 | 1 | 9 days | 0.94 | | | MPC | 2006 $VA_{141}$ |
| 2006 $VC_{141}$ | 18.0 | 0.15 | 20061101 | 4.60266 | 339.67692 | 68.00377 | 14.81781 | 0.3631825 | 2.7986563 | 10 | 1 | 6 days | 0.45 | | | MPC | 2006 $VC_{141}$ |
| 2006 $VK_{141}$ | 16.0 | 0.15 | 20061101 | 125.80224 | 35.42955 | 241.41424 | 8.84377 | 0.1140559 | 3.2154073 | 10 | 1 | 11 days | 0.24 | | | MPC | 2006 $VK_{141}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $VS_{141}$ | 18.6 | 0.15 | 20061101 | 17.75825 | 338.38010 | 43.90332 | 3.05526 | 0.1995662 | 2.4181624 | 10 | 1 | 11 days | 0.19 | | | MPC | 2006 $VS_{141}$ |
| 2006 $VT_{141}$ | 16.6 | 0.15 | 20061101 | 245.36192 | 137.59843 | 35.35550 | 1.82194 | 0.0525999 | 2.9013250 | 18 | 1 | 38 days | 0.35 | | | MPC | 2006 $VT_{141}$ |
| 2006 $VN_{142}$ | 18.3 | 0.15 | 20061101 | 357.45183 | 359.20266 | 55.86841 | 5.75856 | 0.2354875 | 2.9862399 | 10 | 1 | 10 days | 0.30 | | | MPC | 2006 $VN_{142}$ |
| 2006 $VO_{142}$ | 16.8 | 0.15 | 20061101 | 52.75380 | 287.60497 | 55.96265 | 19.05913 | 0.1624923 | 3.0686312 | 10 | 1 | 10 days | 0.15 | | | MPC | 2006 $VO_{142}$ |
| 2006 $VR_{142}$ | 16.6 | 0.15 | 20061101 | 359.86872 | 212.05616 | 197.13859 | 6.63607 | 0.2780935 | 3.1302789 | 20 | 1 | 29 days | 0.48 | | | MPC | 2006 $VR_{142}$ |
| 2006 $VU_{142}$ | 17.7 | 0.15 | 20061101 | 357.57784 | 155.03239 | 259.29153 | 3.14657 | 0.1781359 | 2.3542884 | 22 | 1 | 12 days | 0.30 | | | MPC | 2006 $VU_{142}$ |
| 2006 $VB_{143}$ | 16.3 | 0.15 | 20061121 | 245.76613 | 274.11829 | 269.66011 | 6.30754 | 0.0595032 | 2.3347878 | 10 | 1 | 13 days | 0.44 | | | MPC | 2006 $VB_{143}$ |
| 2006 $VD_{144}$ | 17.4 | 0.15 | 20061101 | 226.50340 | 258.32246 | 295.55073 | 5.70794 | 0.1074923 | 2.2345517 | 14 | 1 | 7 days | 0.20 | | | MPC | 2006 $VD_{144}$ |
| 2006 $VF_{144}$ | 19.0 | 0.15 | 20061101 | 336.76286 | 158.10105 | 286.82234 | 4.47093 | 0.2085310 | 2.2922821 | 18 | 1 | 7 days | 0.31 | | | MPC | 2006 $VF_{144}$ |
| 2006 $VH_{144}$ | 17.4 | 0.15 | 20061101 | 323.51886 | 60.26591 | 31.48814 | 9.78866 | 0.0328759 | 2.5531824 | 19 | 1 | 7 days | 0.28 | | | MPC | 2006 $VH_{144}$ |
| 2006 $VM_{144}$ | 15.2 | 0.15 | 20061121 | 114.82391 | 272.23271 | 7.53806 | 1.96562 | 0.1189925 | 2.8417566 | 15 | 1 | 12 days | 0.50 | | | MPC | 2006 $VM_{144}$ |
| 2006 $VE_{145}$ | 16.6 | 0.15 | 20061101 | 43.92688 | 5.73801 | 343.52025 | 5.26612 | 0.1874475 | 2.3021240 | 15 | 1 | 12 days | 0.31 | | | MPC | 2006 $VE_{145}$ |
| 2006 $VX_{145}$ | 16.0 | 0.15 | 20061101 | 10.72329 | 128.21232 | 261.77530 | 6.20037 | 0.3216903 | 3.1195958 | 27 | 1 | 16 days | 0.52 | | E | MPC | 2006 $VX_{145}$ |
| 2006 $VD_{146}$ | 16.7 | 0.15 | 20061101 | 79.22136 | 258.10766 | 61.86425 | 21.19676 | 0.1473170 | 2.9324635 | 10 | 1 | 9 days | 0.40 | | | MPC | 2006 $VD_{146}$ |
| 2006 $VF_{146}$ | 15.6 | 0.15 | 20061101 | 272.34540 | 50.65766 | 108.86629 | 6.71140 | 0.1366124 | 2.5437470 | 14 | 1 | 9 days | 0.43 | | | MPC | 2006 $VF_{146}$ |
| 2006 $VG_{146}$ | 15.8 | 0.15 | 20061101 | 27.24245 | 299.27727 | 78.82199 | 15.76904 | 0.1591307 | 2.8486646 | 19 | 1 | 9 days | 0.48 | | | MPC | 2006 $VG_{146}$ |
| 2006 $VJ_{146}$ | 14.9 | 0.15 | 20061101 | 301.79344 | 32.04545 | 89.75971 | 11.49459 | 0.0587022 | 2.7676936 | 7 | 1 | 9 days | 0.67 | | | MPC | 2006 $VJ_{146}$ |
| 2006 $VM_{146}$ | 16.5 | 0.15 | 20061121 | 72.46089 | 174.46316 | 154.57922 | 4.95753 | 0.1931699 | 2.1747428 | 16 | 1 | 13 days | 0.50 | | | MPC | 2006 $VM_{146}$ |
| 2006 $VR_{146}$ | 16.4 | 0.15 | 20061101 | 217.21858 | 140.37915 | 64.64629 | 23.66850 | 0.0489926 | 3.1676283 | 10 | 1 | 9 days | 0.52 | | | MPC | 2006 $VR_{146}$ |
| 2006 $VS_{146}$ | 16.5 | 0.15 | 20061121 | 67.40257 | 238.67949 | 101.54092 | 4.45272 | 0.1218728 | 2.6265567 | 13 | 1 | 12 days | 0.51 | | | MPC | 2006 $VS_{146}$ |
| 2006 $VU_{146}$ | 15.7 | 0.15 | 20061101 | 57.71243 | 254.79092 | 96.50734 | 6.84924 | 0.0520289 | 2.7040864 | 19 | 1 | 9 days | 0.30 | | | MPC | 2006 $VU_{146}$ |
| 2006 $VW_{146}$ | 15.5 | 0.15 | 20061101 | 112.02299 | 204.35948 | 84.97947 | 10.53991 | 0.1277952 | 2.4464164 | 11 | 1 | 9 days | 0.18 | | | MPC | 2006 $VW_{146}$ |
| 2006 $VY_{146}$ | 15.8 | 0.15 | 20061121 | 69.25984 | 202.76522 | 124.93032 | 4.88782 | 0.1941661 | 2.5709686 | 17 | 1 | 11 days | 0.22 | | | MPC | 2006 $VY_{146}$ |
| 2006 $VZ_{146}$ | 15.5 | 0.15 | 20061101 | 310.46119 | 25.81750 | 78.73681 | 13.86193 | 0.0089931 | 2.6985692 | 11 | 1 | 9 days | 0.75 | | | MPC | 2006 $VZ_{146}$ |
| 2006 $VM_{147}$ | 15.9 | 0.15 | 20061121 | 46.49312 | 269.15933 | 82.88504 | 3.82371 | 0.2918729 | 2.6476485 | 21 | 1 | 12 days | 0.23 | | | MPC | 2006 $VM_{147}$ |
| 2006 $VN_{147}$ | 15.9 | 0.15 | 20061101 | 7.29964 | 357.48182 | 59.52690 | 2.38813 | 0.1116391 | 2.6268804 | 15 | 1 | 9 days | 0.55 | | | MPC | 2006 $VN_{147}$ |
| 2006 $VO_{147}$ | 16.2 | 0.15 | 20061101 | 122.75241 | 27.34320 | 264.56302 | 2.20353 | 0.1061210 | 2.1927737 | 11 | 1 | 9 days | 0.52 | | | MPC | 2006 $VO_{147}$ |
| 2006 $VQ_{147}$ | 15.2 | 0.15 | 20061121 | 2.91115 | 0.68875 | 59.29458 | 16.77046 | 0.0818998 | 3.0609683 | 18 | 1 | 12 days | 0.38 | | | MPC | 2006 $VQ_{147}$ |
| 2006 $VS_{147}$ | 17.1 | 0.15 | 20061101 | 330.40346 | 45.39714 | 48.76566 | 4.75208 | 0.1625031 | 2.2652731 | 19 | 1 | 28 days | 0.37 | | | MPC | 2006 $VS_{147}$ |
| 2006 $VN_{148}$ | 16.7 | 0.15 | 20061101 | 40.41924 | 307.10550 | 69.82115 | 10.96045 | 0.1227857 | 3.1416417 | 9 | 1 | 9 days | 0.21 | | | MPC | 2006 $VN_{148}$ |
| 2006 $VU_{148}$ | 15.9 | 0.15 | 20061121 | 331.90752 | 346.37639 | 102.22180 | 10.69223 | 0.1301628 | 2.8099822 | 17 | 1 | 15 days | 0.67 | | | MPC | 2006 $VU_{148}$ |
| 2006 $VX_{148}$ | 17.3 | 0.15 | 20061012 | 349.41222 | 219.86784 | 197.85973 | 9.59668 | 0.2883487 | 2.7385326 | 18 | 1 | 58 days | 0.62 | | | MPC | 2006 $VX_{148}$ |
| 2006 $VY_{148}$ | 16.2 | 0.15 | 20061101 | 7.75803 | 346.15098 | 66.05727 | 17.82674 | 0.1532078 | 3.0449015 | 21 | 1 | 37 days | 0.20 | | | MPC | 2006 $VY_{148}$ |
| 2006 $VZ_{148}$ | 17.8 | 0.15 | 20061101 | 1.31211 | 336.73344 | 76.29812 | 23.68268 | 0.1040407 | 1.9744231 | 11 | 1 | 30 days | 0.36 | | | MPC | 2006 $VZ_{148}$ |
| 2006 $VA_{149}$ | 18.0 | 0.15 | 20061121 | 57.03853 | 281.85206 | 68.46124 | 23.67440 | 0.1062704 | 1.9123307 | 17 | 1 | 13 days | 0.73 | | | MPC | 2006 $VA_{149}$ |
| 2006 WA | 20.0 | 0.15 | 20060922 | 40.67804 | 270.20124 | 58.18107 | 28.13271 | 0.1419578 | 1.4902452 | 38 | 1 | 15 days | 0.55 | M-v | 7 | MPC | 2006 WA |
| 2006 WB | 22.8 | 0.15 | 20060922 | 123.54663 | 161.65184 | 65.71678 | 4.98005 | 0.1777446 | 0.8524800 | 67 | 1 | 16 days | 0.68 | M-v | 7 | MPC | 2006 WB |
| 2006 WC | 15.5 | 0.15 | 20061101 | 328.83855 | 25.99367 | 78.93052 | 8.69715 | 0.2018615 | 2.9260114 | 17 | 1 | 8 days | 0.34 | | | MPC | 2006 WC |
| 2006 WG | 18.7 | 0.15 | 20061101 | 24.72326 | 142.67594 | 234.82808 | 19.95771 | 0.0275326 | 1.9197455 | 26 | 1 | 1 days | 0.64 | | | MPC | 2006 WG |
| 2006 WH | 17.8 | 0.15 | 20061101 | 163.87060 | 153.32922 | 93.78223 | 25.78584 | 0.0407558 | 1.9492024 | 24 | 1 | 1 days | 0.51 | | | MPC | 2006 WH |
| 2006 WJ | 16.2 | 0.15 | 20061101 | 16.82981 | 280.00399 | 106.42697 | 29.06655 | 0.3218009 | 2.6163992 | 38 | 1 | 6 days | 0.38 | | | MPC | 2006 WJ |
| 2006 WK | 16.6 | 0.15 | 20061121 | 213.31692 | 165.98302 | 31.20783 | 13.57357 | 0.0888344 | 2.5604780 | 23 | 1 | 9 days | 0.79 | | E | MPC | 2006 WK |
| 2006 WM | 18.2 | 0.15 | 20061121 | 43.33763 | 314.86471 | 21.41115 | 5.58932 | 0.2897296 | 2.2011224 | 14 | 1 | 8 days | 0.91 | | E | MPC | 2006 WM |
| 2006 WO | 17.8 | 0.15 | 20061121 | 42.78195 | 286.58610 | 57.50628 | 10.94362 | 0.2552631 | 2.7452450 | 14 | 1 | 10 days | 0.27 | | | MPC | 2006 WO |
| 2006 WP | 16.8 | 0.15 | 20061101 | 18.47898 | 285.48349 | 96.62838 | 8.84687 | 0.1916950 | 2.6232780 | 10 | 1 | 2 days | 0.55 | | | MPC | 2006 WP |
| 2006 WQ | 17.2 | 0.15 | 20061121 | 358.21530 | 359.01067 | 63.19548 | 24.89086 | 0.1858911 | 2.3025480 | 35 | 1 | 11 days | 0.58 | | | MPC | 2006 WQ |
| 2006 WS | 17.7 | 0.15 | 20061101 | 322.50423 | 227.14691 | 232.21471 | 20.21330 | 0.1001992 | 1.8717098 | 51 | 1 | 39 days | 0.42 | | | MPC | 2006 WS |
| 2006 WU | 18.9 | 0.15 | 20060922 | 236.93198 | 208.71729 | 332.43566 | 2.91614 | 0.3557785 | 1.7886190 | 41 | 1 | 10 days | 0.58 | M-v | 8 | MPC | 2006 WU |
| 2006 WV | 27.2 | 0.15 | 20060922 | 304.44275 | 79.64657 | 56.63741 | 2.34527 | 0.5369799 | 1.5522575 | 76 | 1 | 4 days | 0.52 | M-v | 6 | MPC | 2006 WV |
| 2006 WW | 16.3 | 0.15 | 20060922 | 8.92311 | 197.49048 | 88.58966 | 33.12818 | 0.8641313 | 2.6994847 | 70 | 1 | 15 days | 0.47 | M-v | 7 | MPC | 2006 WW |
| 2006 WX | 25.1 | 0.15 | 20060922 | 349.01880 | 165.91511 | 232.14622 | 8.69580 | 0.6006546 | 2.4699637 | 40 | 1 | 9 days | 0.39 | M-v | 6 | MPC | 2006 WX |
| 2006 WY | 18.1 | 0.15 | 20061121 | 305.99588 | 65.85261 | 60.25191 | 3.36826 | 0.1400324 | 2.4710669 | 15 | 1 | 10 days | 0.31 | | | MPC | 2006 WY |
| 2006 WZ | 17.2 | 0.15 | 20061121 | 84.14000 | 265.44460 | 48.06712 | 2.98288 | 0.1817898 | 2.5490048 | 18 | 1 | 8 days | 0.73 | | | MPC | 2006 WZ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WB_1$ | 16.6 | 0.15 | 20061101 | 150.32818 | 210.59752 | 52.72997 | 5.18821 | 0.0195009 | 2.7990419 | 28 | 1 | 29 days | 0.25 | | | MPC | | 2006 $WB_1$ |
| 2006 $WD_1$ | 17.2 | 0.15 | 20061121 | 205.74415 | 167.64475 | 50.05425 | 3.85853 | 0.1104107 | 2.7008014 | 10 | 1 | 8 days | 0.21 | | | MPC | | 2006 $WD_1$ |
| 2006 $WE_1$ | 15.5 | 0.15 | 20061101 | 281.19139 | 188.28159 | 310.91213 | 15.66873 | 0.1420527 | 2.9231633 | 22 | 1 | 13 days | 0.37 | | | MPC | | 2006 $WE_1$ |
| 2006 $WF_1$ | 15.7 | 0.15 | 20061101 | 179.82180 | 199.42697 | 72.09177 | 19.15311 | 0.1430950 | 3.0938971 | 15 | 1 | 5 days | 0.31 | | | MPC | | 2006 $WF_1$ |
| 2006 $WG_1$ | 18.1 | 0.15 | 20061101 | 16.76266 | 330.40925 | 53.09256 | 26.92790 | 0.1124826 | 2.1030927 | 15 | 1 | 4 days | 0.55 | | E | MPC | | 2006 $WG_1$ |
| 2006 $WH_1$ | 20.3 | 0.15 | 20060922 | 299.55965 | 262.84439 | 241.06522 | 2.65588 | 0.4850412 | 1.6722647 | 182 | 1 | 41 days | 0.35 | M-v | 5 | MPC | | 2006 $WH_1$ |
| 2006 $WJ_1$ | 15.8 | 0.15 | 20061101 | 20.76827 | 320.27126 | 137.13510 | 30.82752 | 0.2870829 | 2.8465379 | 25 | 1 | 4 days | 0.33 | | | MPC | | 2006 $WJ_1$ |
| 2006 $WK_1$ | 18.4 | 0.15 | 20061101 | 42.26874 | 202.07960 | 132.66894 | 6.46002 | 0.4335565 | 2.4338809 | 14 | 1 | 2 days | 0.35 | | | MPC | | 2006 $WK_1$ |
| 2006 $WL_1$ | 16.0 | 0.15 | 20061101 | 69.62453 | 351.62374 | 53.95154 | 27.09276 | 0.1039937 | 2.3730660 | 11 | 1 | 2 days | 0.33 | | | MPC | | 2006 $WL_1$ |
| 2006 $WM_1$ | 18.7 | 0.15 | 20061121 | 25.12241 | 293.52051 | 74.88109 | 26.78508 | 0.2819404 | 1.8875924 | 30 | 1 | 5 days | 0.71 | | | MPC | | 2006 $WM_1$ |
| 2006 $WN_1$ | 19.2 | 0.15 | 20060922 | 27.39126 | 93.65180 | 239.37607 | 3.99026 | 0.4501713 | 2.1010311 | 26 | 1 | 13 days | 0.39 | M-v | 6 | MPC | | 2006 $WN_1$ |
| 2006 $WO_1$ | 18.8 | 0.15 | 20060922 | 19.11057 | 115.71788 | 222.93227 | 9.09197 | 0.5260480 | 2.7464779 | 28 | 1 | 3 days | 0.61 | M-v | 8 | MPC | | 2006 $WO_1$ |
| 2006 $WP_1$ | 28.2 | 0.15 | 20060922 | 356.54412 | 97.32988 | 234.30776 | 5.83725 | 0.6032279 | 1.6807886 | 19 | 1 | 1 days | 0.36 | M-v | 7 | MPC | | 2006 $WP_1$ |
| 2006 $WQ_1$ | 19.4 | 0.15 | 20060922 | 38.11863 | 205.16193 | 111.81929 | 14.43625 | 0.2406660 | 1.4759550 | 34 | 1 | 13 days | 0.47 | M-v | 6 | MPC | | 2006 $WQ_1$ |
| 2006 $WR_1$ | 17.6 | 0.15 | 20060922 | 275.10077 | 131.94161 | 106.08863 | 38.16676 | 0.6144828 | 1.3355298 | 26 | 1 | 40 days | 0.35 | M-v | 7 | MPC | | 2006 $WR_1$ |
| 2006 $WS_1$ | 19.7 | 0.15 | 20060922 | 19.94805 | 322.88599 | 310.73227 | 18.24822 | 0.4753646 | 1.2655149 | 22 | 1 | 8 days | 0.42 | M-v | 9 | MPC | | 2006 $WS_1$ |
| 2006 $WT_1$ | 20.3 | 0.15 | 20060922 | 343.76114 | 170.59166 | 244.93990 | 13.74107 | 0.6046889 | 2.4899338 | 46 | 1 | 15 days | 0.76 | M-v | 7 | MPC | | 2006 $WT_1$ |
| 2006 $WU_1$ | 22.8 | 0.15 | 20060922 | 354.54403 | 311.03647 | 60.18152 | 7.42717 | 0.5043627 | 2.2294212 | 15 | 1 | 8 days | 0.51 | M-v | 8 | MPC | | 2006 $WU_1$ |
| 2006 $WV_1$ | 25.9 | 0.15 | 20060922 | 146.09421 | 149.54213 | 62.10446 | 5.56870 | 0.2897085 | 0.8273614 | 25 | 1 | 1 days | 0.47 | M-v | 8 | MPC | | 2006 $WV_1$ |
| 2006 $WW_1$ | 19.0 | 0.15 | 20060922 | 244.41115 | 322.40723 | 240.50312 | 9.38715 | 0.5041594 | 1.4180009 | 27 | 1 | 19 days | 0.44 | M-v | 7 | MPC | | 2006 $WW_1$ |
| 2006 $WX_1$ | 19.4 | 0.15 | 20060922 | 102.05301 | 291.13831 | 327.83461 | 11.52557 | 0.2979206 | 0.9159432 | 17 | 1 | 9 days | 0.52 | M-v | 9 | MPC | | 2006 $WX_1$ |
| 2006 $WY_1$ | 15.7 | 0.15 | 20061101 | 216.04405 | 326.77225 | 243.52106 | 12.26612 | 0.1149510 | 3.0004944 | 15 | 1 | 8 days | 0.77 | | | MPC | | 2006 $WY_1$ |
| 2006 $WZ_1$ | 16.4 | 0.15 | 20061101 | 31.84316 | 290.64572 | 71.57130 | 18.10764 | 0.2969766 | 3.0846625 | 15 | 1 | 8 days | 0.59 | | | MPC | | 2006 $WZ_1$ |
| 2006 $WA_2$ | 16.6 | 0.15 | 20061101 | 288.81877 | 53.34870 | 94.34847 | 4.35607 | 0.1445043 | 2.5765568 | 21 | 1 | 12 days | 0.35 | | | MPC | | 2006 $WA_2$ |
| 2006 $WB_2$ | 17.0 | 0.15 | 20061101 | 357.44719 | 244.81881 | 176.54452 | 2.66195 | 0.1223299 | 2.6494410 | 16 | 1 | 5 days | 0.46 | | | MPC | | 2006 $WB_2$ |
| 2006 $WE_2$ | 15.8 | 0.15 | 20061101 | 317.77936 | 245.70794 | 230.50631 | 6.76413 | 0.0593704 | 2.7838193 | 16 | 1 | 5 days | 0.52 | | | MPC | | 2006 $WE_2$ |
| 2006 $WF_2$ | 17.0 | 0.15 | 20061101 | 92.05271 | 336.23226 | 322.73294 | 6.59030 | 0.1422265 | 2.2709778 | 18 | 1 | 25 days | 0.38 | | | MPC | | 2006 $WF_2$ |
| 2006 $WG_2$ | 16.8 | 0.15 | 20061121 | 26.41424 | 267.21729 | 127.72163 | 4.13933 | 0.1293969 | 2.5150765 | 24 | 1 | 9 days | 0.65 | | | MPC | | 2006 $WG_2$ |
| 2006 $WJ_2$ | 16.0 | 0.15 | 20061101 | 312.28306 | 48.01926 | 59.71603 | 18.17489 | 0.2373485 | 2.9301304 | 34 | 1 | 16 days | 0.34 | | | MPC | | 2006 $WJ_2$ |
| 2006 $WL_2$ | 18.0 | 0.15 | 20061121 | 33.16684 | 316.37324 | 66.85553 | 23.21032 | 0.1044291 | 1.9813612 | 18 | 1 | 11 days | 0.30 | | | MPC | | 2006 $WL_2$ |
| 2006 $WM_2$ | 17.2 | 0.15 | 20061121 | 65.79343 | 94.61127 | 240.80553 | 5.65836 | 0.1468942 | 2.2041600 | 29 | 1 | 6 days | 0.61 | | | MPC | | 2006 $WM_2$ |
| 2006 $WN_2$ | 16.8 | 0.15 | 20060922 | 342.97270 | 78.79898 | 18.74838 | 21.79375 | 0.4881958 | 3.1361510 | 30 | 1 | 11 days | 0.25 | M-v | 6 | MPC | | 2006 $WN_2$ |
| 2006 $WQ_2$ | 15.5 | 0.15 | 20061121 | 29.22318 | 304.96675 | 78.10665 | 28.59596 | 0.2313168 | 3.1988914 | 17 | 1 | 8 days | 0.30 | | E | MPC | | 2006 $WQ_2$ |
| 2006 $WS_2$ | 16.3 | 0.15 | 20061101 | 325.35832 | 244.15802 | 232.73385 | 11.95947 | 0.2848361 | 2.7562131 | 22 | 1 | 10 days | 0.86 | | | MPC | | 2006 $WS_2$ |
| 2006 $WT_2$ | 15.8 | 0.15 | 20061101 | 269.47935 | 88.97293 | 69.79680 | 28.68237 | 0.0681920 | 3.1134168 | 10 | 1 | 5 days | 0.24 | | | MPC | | 2006 $WT_2$ |
| 2006 $WW_2$ | 17.4 | 0.15 | 20061121 | 349.99939 | 7.66721 | 70.98690 | 26.30531 | 0.1766876 | 3.2413370 | 12 | 1 | 3 days | 0.54 | | | MPC | | 2006 $WW_2$ |
| 2006 $WX_2$ | 17.6 | 0.15 | 20061121 | 211.58983 | 320.36307 | 255.36228 | 18.20954 | 0.0526313 | 1.9171454 | 13 | 1 | 10 days | 0.42 | | | MPC | | 2006 $WX_2$ |
| 2006 $WY_2$ | 18.5 | 0.15 | 20060922 | 52.68896 | 159.65195 | 100.10266 | 27.40478 | 0.3324391 | 0.9811606 | 31 | 1 | 10 days | 0.30 | M-v | 8 | MPC | | 2006 $WY_2$ |
| 2006 $WZ_2$ | 16.6 | 0.15 | 20060922 | 13.95093 | 63.41263 | 354.20773 | 24.57906 | 0.3274499 | 1.6567561 | 42 | 1 | 14 days | 0.48 | M-v | 9 | MPC | | 2006 $WZ_2$ |
| 2006 $WA_3$ | 22.3 | 0.15 | 20060922 | 68.27556 | 47.89999 | 234.69681 | 24.07127 | 0.1968394 | 1.2243679 | 27 | 1 | 4 days | 0.58 | M-v | 9 | MPC | | 2006 $WA_3$ |
| 2006 $WB_3$ | 24.4 | 0.15 | 20060922 | 329.42335 | 172.82963 | 234.99559 | 19.65300 | 0.2438099 | 1.3687377 | 24 | 1 | 2 days | 0.61 | M-v | 8 | MPC | | 2006 $WB_3$ |
| 2006 $WC_3$ | 17.1 | 0.15 | 20061101 | 104.97047 | 30.16970 | 266.59614 | 17.67019 | 0.0551917 | 1.9159964 | 16 | 1 | 9 days | 0.71 | | | MPC | | 2006 $WC_3$ |
| 2006 $WD_3$ | 16.5 | 0.15 | 20061121 | 28.23874 | 96.07861 | 263.82365 | 19.99207 | 0.3808122 | 2.4024259 | 18 | 1 | 18 days | 0.46 | | | MPC | | 2006 $WD_3$ |
| 2006 $WF_3$ | 18.1 | 0.15 | 20061101 | 14.03050 | 325.72613 | 45.00759 | 36.57407 | 0.3455308 | 2.5713674 | 28 | 1 | 12 days | 0.51 | | E | MPC | | 2006 $WF_3$ |
| 2006 $WG_3$ | 18.4 | 0.15 | 20061101 | 27.15544 | 315.81964 | 59.17621 | 23.14145 | 0.1246894 | 1.9013665 | 22 | 1 | 11 days | 0.61 | | | MPC | | 2006 $WG_3$ |
| 2006 $WH_3$ | 16.0 | 0.15 | 20061101 | 99.02606 | 205.01382 | 82.11483 | 3.98738 | 0.2601564 | 2.2009834 | 10 | 1 | 4 days | 0.81 | | E | MPC | | 2006 $WH_3$ |
| 2006 $WJ_3$ | 20.1 | 0.15 | 20060922 | 335.47393 | 178.35107 | 232.65536 | 15.42173 | 0.4266467 | 1.7579508 | 91 | 1 | 14 days | 0.49 | M-v | 7 | MPC | | 2006 $WJ_3$ |
| 2006 $WK_3$ | 20.1 | 0.15 | 20060922 | 7.70263 | 292.63478 | 84.78154 | 18.64240 | 0.3031265 | 1.6469904 | 23 | 1 | 12 days | 0.39 | M-v | 7 | MPC | | 2006 $WK_3$ |
| 2006 $WL_3$ | 19.8 | 0.15 | 20060922 | 278.88924 | 66.90134 | 81.41449 | 20.41915 | 0.2416064 | 1.3599301 | 18 | 1 | 12 days | 0.48 | M-v | 9 | MPC | | 2006 $WL_3$ |
| 2006 $WM_3$ | 23.2 | 0.15 | 20060922 | 319.35298 | 36.34131 | 89.85688 | 2.00289 | 0.5441521 | 1.9742593 | 38 | 1 | 9 days | 0.53 | M-v | 8 | MPC | | 2006 $WM_3$ |
| 2006 $WN_3$ | 19.7 | 0.15 | 20060922 | 272.22058 | 295.14180 | 245.00825 | 26.81834 | 0.5097276 | 1.8181295 | 21 | 1 | 7 days | 0.67 | M-v | 8 | MPC | | 2006 $WN_3$ |
| 2006 $WO_3$ | 21.4 | 0.15 | 20060922 | 58.98296 | 9.65812 | 252.67572 | 21.22583 | 0.4475816 | 0.7997291 | 42 | 1 | 12 days | 0.48 | M-v | 9 | MPC | | 2006 $WO_3$ |
| 2006 $WP_3$ | 23.4 | 0.15 | 20060922 | 351.37151 | 141.10877 | 221.30504 | 7.45835 | 0.3389278 | 1.3558983 | 21 | 1 | 11 days | 0.54 | M-v | 7 | MPC | | 2006 $WP_3$ |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WQ_3$ | 18.9 | 0.15 | 20061121 | 35.71833 | 123.64578 | 253.80724 | 18.00397 | 0.0492684 | 1.6573898 | 21 | 1 | 1 days | 0.68 | | E | MPC | | 2006 $WQ_3$ |
| 2006 $WR_3$ | 15.9 | 0.15 | 20061121 | 2.09563 | 161.18840 | 275.02637 | 49.84327 | 0.4345254 | 3.6589211 | 34 | 1 | 2 days | 0.34 | | | MPC | | 2006 $WR_3$ |
| 2006 $WS_3$ | 16.9 | 0.15 | 20060922 | 348.81291 | 152.35319 | 284.54865 | 29.92463 | 0.5404497 | 3.4708971 | 48 | 1 | 12 days | 0.30 | M-v | 6 | MPC | | 2006 $WS_3$ |
| 2006 $WT_3$ | 19.1 | 0.15 | 20061121 | 27.00968 | 289.45547 | 68.35617 | 28.27367 | 0.4888368 | 2.7113339 | 19 | 1 | 2 days | 0.32 | | | MPC | | 2006 $WT_3$ |
| 2006 $WU_3$ | 20.2 | 0.15 | 20061121 | 1.33883 | 113.30500 | 297.23622 | 6.89018 | 0.4508742 | 2.4929838 | 33 | 1 | 1 days | 0.53 | | E | MPC | | 2006 $WU_3$ |
| 2006 $WV_3$ | 17.7 | 0.15 | 20061101 | 349.50813 | 354.90203 | 108.94729 | 13.44264 | 0.4259068 | 2.3639962 | 37 | 1 | 5 days | 0.76 | | | MPC | | 2006 $WV_3$ |
| 2006 $WW_3$ | 15.1 | 0.15 | 20061121 | 149.99043 | 24.44940 | 292.62580 | 23.12060 | 0.2366156 | 3.0653085 | 25 | 1 | 3 days | 0.28 | | | MPC | | 2006 $WW_3$ |
| 2006 $WX_3$ | 22.3 | 0.15 | 20060922 | 356.60880 | 123.14820 | 244.52140 | 14.64536 | 0.6368374 | 2.6973478 | 42 | 1 | 10 days | 0.35 | M-v | 7 | MPC | | 2006 $WX_3$ |
| 2006 $WY_3$ | 22.8 | 0.15 | 20060922 | 3.80168 | 323.45947 | 9.38532 | 2.74303 | 0.6479206 | 2.4318534 | 23 | 1 | 3 days | 0.32 | M-v | 8 | MPC | | 2006 $WY_3$ |
| 2006 $WZ_3$ | 20.1 | 0.15 | 20060922 | 290.08705 | 0.07690 | 176.50581 | 3.81560 | 0.5792349 | 1.7523276 | 51 | 1 | 10 days | 0.28 | M-v | 7 | MPC | | 2006 $WZ_3$ |
| 2006 $WA_4$ | 20.6 | 0.15 | 20061121 | 4.01071 | 178.84713 | 233.68492 | 28.28157 | 0.2845879 | 2.1506680 | 20 | 1 | 5 days | 0.25 | | | MPC | | 2006 $WA_4$ |
| 2006 $WB_4$ | 17.6 | 0.15 | 20060922 | 322.92244 | 80.55720 | 352.08552 | 8.05056 | 0.0845989 | 2.2494928 | 21 | 1 | 61 days | 0.52 | M-v | 4 | MPC | | 2006 $WB_4$ |
| 2006 $WC_4$ | 18.1 | 0.15 | 20061121 | 304.21890 | 58.82198 | 74.30504 | 23.06932 | 0.1033533 | 1.9448484 | 17 | 1 | 8 days | 0.40 | | E | MPC | | 2006 $WC_4$ |
| 2006 $WD_4$ | 17.0 | 0.15 | 20061121 | 359.11157 | 296.46115 | 227.23237 | 151.84495 | 0.9826800 | 31.1905418 | 32 | 1 | 11 days | 0.59 | | E | MPC | | 2006 $WD_4$ |
| 2006 $WE_4$ | 18.6 | 0.15 | 20060922 | 110.23489 | 318.88715 | 310.95017 | 24.57762 | 0.1816514 | 0.7842085 | 25 | 1 | 5 days | 0.47 | M-v | 9 | MPC | | 2006 $WE_4$ |
| 2006 $WF_4$ | 16.8 | 0.15 | 20061121 | 59.53749 | 92.62998 | 251.00772 | 6.35081 | 0.1954776 | 2.3768354 | 29 | 1 | 9 days | 0.78 | | | MPC | | 2006 $WF_4$ |
| 2006 $WG_4$ | 16.3 | 0.15 | 20061121 | 161.74751 | 187.34921 | 83.96585 | 13.37708 | 0.0488043 | 3.0814840 | 13 | 1 | 4 days | 0.26 | | | MPC | | 2006 $WG_4$ |
| 2006 $WJ_4$ | 16.7 | 0.15 | 20061101 | 352.49393 | 43.75747 | 19.35252 | 8.59349 | 0.1431048 | 3.0443683 | 18 | 1 | 9 days | 0.28 | | | MPC | | 2006 $WJ_4$ |
| 2006 $WK_4$ | 16.7 | 0.15 | 20060922 | 30.85840 | 108.67767 | 247.06652 | 3.81813 | 0.2174208 | 2.4417867 | 57 | 1 | 60 days | 0.41 | M-v | 5 | MPC | | 2006 $WK_4$ |
| 2006 $WL_4$ | 17.9 | 0.15 | 20061121 | 91.57164 | 263.67941 | 54.84630 | 23.82480 | 0.0905806 | 1.8815074 | 11 | 1 | 8 days | 0.67 | | | MPC | | 2006 $WL_4$ |
| 2006 $WM_4$ | 17.2 | 0.15 | 20061101 | 305.11023 | 84.35731 | 25.68743 | 6.99450 | 0.1096737 | 2.2418367 | 21 | 1 | 21 days | 0.49 | | | MPC | | 2006 $WM_4$ |
| 2006 $WN_4$ | 14.7 | 0.15 | 20061121 | 61.66632 | 70.81063 | 264.31010 | 28.21083 | 0.3554616 | 2.6441470 | 13 | 1 | 7 days | 0.45 | | | MPC | | 2006 $WN_4$ |
| 2006 $WP_4$ | 17.3 | 0.15 | 20061121 | 253.44913 | 285.33995 | 251.36741 | 19.57106 | 0.1058188 | 1.9817114 | 13 | 1 | 2 days | 0.62 | | E | MPC | | 2006 $WP_4$ |
| 2006 $WS_4$ | 16.2 | 0.15 | 20061101 | 75.48284 | 65.91829 | 259.23290 | 12.18536 | 0.2276842 | 2.6155913 | 8 | 1 | 5 days | 0.78 | | | MPC | | 2006 $WS_4$ |
| 2006 $WW_4$ | 17.6 | 0.15 | 20061121 | 313.83372 | 100.34867 | 3.45608 | 4.92018 | 0.1879633 | 2.4987721 | 13 | 1 | 9 days | 0.19 | | | MPC | | 2006 $WW_4$ |
| 2006 $WC_5$ | 16.5 | 0.15 | 20061101 | 24.30132 | 291.22908 | 93.67975 | 4.10121 | 0.0822224 | 2.6688226 | 19 | 1 | 36 days | 0.21 | | | MPC | | 2006 $WC_5$ |
| 2006 $WD_5$ | 16.2 | 0.15 | 20061121 | 104.95802 | 192.50315 | 112.09464 | 3.35855 | 0.0869093 | 2.9365030 | 18 | 1 | 11 days | 0.35 | | | MPC | | 2006 $WD_5$ |
| 2006 $WG_5$ | 17.4 | 0.15 | 20061121 | 165.44000 | 140.00657 | 111.46343 | 3.11457 | 0.0887872 | 2.3661035 | 12 | 1 | 11 days | 0.20 | | | MPC | | 2006 $WG_5$ |
| 2006 $WH_5$ | 17.2 | 0.15 | 20061101 | 88.44417 | 242.78057 | 71.84119 | 12.21626 | 0.1104049 | 2.9764384 | 9 | 1 | 7 days | 0.18 | | | MPC | | 2006 $WH_5$ |
| 2006 $WL_5$ | 15.0 | 0.15 | 20061101 | 13.44047 | 324.55840 | 76.07850 | 11.52321 | 0.0586270 | 3.1126674 | 25 | 1 | 12 days | 0.29 | | | MPC | | 2006 $WL_5$ |
| 2006 $WM_5$ | 17.0 | 0.15 | 20061012 | 337.99930 | 208.76201 | 225.54414 | 13.66720 | 0.0496711 | 2.5836925 | 29 | 1 | 54 days | 0.27 | | | MPC | | 2006 $WM_5$ |
| 2006 $WN_5$ | 15.7 | 0.15 | 20061101 | 38.45926 | 178.35310 | 173.89299 | 4.30746 | 0.2821716 | 4.0523936 | 10 | 1 | 8 days | 0.30 | | | MPC | | 2006 $WN_5$ |
| 2006 $WO_5$ | 17.0 | 0.15 | 20061101 | 349.35997 | 342.03741 | 87.46190 | 7.70704 | 0.1387190 | 3.1118139 | 13 | 1 | 8 days | 0.63 | | | MPC | | 2006 $WO_5$ |
| 2006 $WP_5$ | 16.4 | 0.15 | 20061101 | 242.98993 | 319.20060 | 219.00365 | 11.00224 | 0.0365860 | 3.0610640 | 14 | 1 | 12 days | 0.37 | | | MPC | | 2006 $WP_5$ |
| 2006 $WQ_5$ | 18.0 | 0.15 | 20061101 | 347.29453 | 347.37657 | 83.00587 | 7.26320 | 0.1519166 | 2.4550307 | 10 | 1 | 8 days | 0.92 | | | MPC | | 2006 $WQ_5$ |
| 2006 $WS_5$ | 18.6 | 0.15 | 20061101 | 42.49913 | 257.13954 | 95.89928 | 4.85521 | 0.1863906 | 2.2281094 | 10 | 1 | 8 days | 0.30 | | | MPC | | 2006 $WS_5$ |
| 2006 $WU_5$ | 16.2 | 0.15 | 20061101 | 319.69819 | 351.91913 | 107.95970 | 5.03296 | 0.0450591 | 2.7846525 | 13 | 1 | 8 days | 0.57 | | | MPC | | 2006 $WU_5$ |
| 2006 $WV_5$ | 17.1 | 0.15 | 20061101 | 262.75220 | 326.31780 | 194.61538 | 4.94169 | 0.0718446 | 2.3873157 | 17 | 1 | 12 days | 0.23 | | | MPC | | 2006 $WV_5$ |
| 2006 $WX_5$ | 17.8 | 0.15 | 20061101 | 356.22038 | 355.01854 | 65.83561 | 22.63879 | 0.2861862 | 3.0621197 | 13 | 1 | 11 days | 0.14 | | | MPC | | 2006 $WX_5$ |
| 2006 $WY_5$ | 16.6 | 0.15 | 20061101 | 23.89245 | 280.37429 | 105.48870 | 4.35082 | 0.1265298 | 2.9436017 | 19 | 1 | 36 days | 0.21 | | | MPC | | 2006 $WY_5$ |
| 2006 $WF_6$ | 16.3 | 0.15 | 20061101 | 28.08018 | 265.90744 | 74.19273 | 15.57390 | 0.4861379 | 3.5775864 | 13 | 1 | 8 days | 0.15 | | | MPC | | 2006 $WF_6$ |
| 2006 $WG_6$ | 16.1 | 0.15 | 20061121 | 110.05917 | 222.58366 | 76.32683 | 13.12347 | 0.1225956 | 2.5685069 | 19 | 1 | 11 days | 0.28 | | | MPC | | 2006 $WG_6$ |
| 2006 $WH_6$ | 16.9 | 0.15 | 20061101 | 336.69510 | 342.28400 | 103.23652 | 5.42900 | 0.1114361 | 2.7739113 | 10 | 1 | 8 days | 0.97 | | | MPC | | 2006 $WH_6$ |
| 2006 $WJ_6$ | 16.4 | 0.15 | 20061101 | 282.26504 | 285.32540 | 220.89636 | 10.76798 | 0.0988592 | 2.5538229 | 13 | 1 | 8 days | 0.33 | | | MPC | | 2006 $WJ_6$ |
| 2006 $WL_6$ | 15.8 | 0.15 | 20061101 | 208.35173 | 0.37229 | 215.52940 | 10.73516 | 0.0941978 | 2.8497820 | 17 | 1 | 8 days | 0.33 | | | MPC | | 2006 $WL_6$ |
| 2006 $WN_6$ | 17.9 | 0.15 | 20061101 | 23.07497 | 197.75355 | 192.76380 | 5.65910 | 0.0755437 | 2.6524508 | 11 | 1 | 8 days | 0.27 | | | MPC | | 2006 $WN_6$ |
| 2006 $WT_6$ | 16.5 | 0.15 | 20061101 | 261.26742 | 62.77554 | 93.98176 | 6.81931 | 0.0248240 | 2.3962346 | 17 | 1 | 8 days | 0.56 | | | MPC | | 2006 $WT_6$ |
| 2006 $WV_6$ | 16.7 | 0.15 | 20061101 | 97.39029 | 119.97978 | 184.86149 | 4.77391 | 0.1273009 | 2.3902613 | 14 | 1 | 8 days | 0.21 | | | MPC | | 2006 $WV_6$ |
| 2006 $WW_6$ | 16.5 | 0.15 | 20061101 | 212.40483 | 358.66758 | 210.98590 | 9.03868 | 0.0707297 | 2.7252723 | 11 | 1 | 8 days | 0.94 | | | MPC | | 2006 $WW_6$ |
| 2006 $WX_6$ | 17.0 | 0.15 | 20061101 | 35.22796 | 262.43064 | 104.10368 | 6.02814 | 0.1848403 | 2.9876702 | 10 | 1 | 8 days | 0.27 | | | MPC | | 2006 $WX_6$ |
| 2006 $WZ_6$ | 15.7 | 0.15 | 20061101 | 66.52821 | 272.47973 | 39.52983 | 16.33048 | 0.1026147 | 2.6775121 | 23 | 1 | 27 days | 0.52 | | | MPC | | 2006 $WZ_6$ |
| 2006 $WA_7$ | 16.9 | 0.15 | 20061101 | 340.90423 | 5.82980 | 77.58980 | 10.61885 | 0.2201468 | 2.8960101 | 10 | 1 | 8 days | 0.16 | | | MPC | | 2006 $WA_7$ |
| 2006 $WB_7$ | 19.5 | 0.15 | 20061121 | 321.92583 | 70.18834 | 62.66538 | 26.30747 | 0.3582103 | 2.1278201 | 22 | 1 | 11 days | 0.21 | | E | MPC | | 2006 $WB_7$ |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WF_7$ | 16.9 | 0.15 | 20061101 | 11.53587 | 314.53861 | 77.84004 | 11.76344 | 0.2522405 | 2.7294024 | 23 | 1 | 8 days | 0.55 | | MPC | 2006 $WF_7$ |
| 2006 $WG_7$ | 16.7 | 0.15 | 20061101 | 312.44272 | 49.12882 | 78.72640 | 11.78030 | 0.2423890 | 3.0840585 | 13 | 1 | 8 days | 0.27 | | MPC | 2006 $WG_7$ |
| 2006 $WJ_7$ | 17.3 | 0.15 | 20061101 | 359.79151 | 339.21704 | 72.54810 | 13.33995 | 0.2379445 | 2.5239622 | 23 | 1 | 8 days | 0.61 | | MPC | 2006 $WJ_7$ |
| 2006 $WO_7$ | 17.5 | 0.15 | 20061101 | 97.10363 | 123.14800 | 180.25508 | 4.55162 | 0.1395437 | 2.4206601 | 11 | 1 | 8 days | 0.22 | | MPC | 2006 $WO_7$ |
| 2006 $WP_7$ | 17.8 | 0.15 | 20061101 | 2.08253 | 264.45996 | 146.68989 | 3.63004 | 0.1432813 | 2.5655258 | 17 | 1 | 8 days | 0.21 | | MPC | 2006 $WP_7$ |
| 2006 $WQ_7$ | 16.7 | 0.15 | 20061101 | 318.32751 | 252.26040 | 229.17090 | 20.59141 | 0.2745193 | 2.3101002 | 30 | 1 | 10 days | 0.36 | E | MPC | 2006 $WQ_7$ |
| 2006 $WS_7$ | 17.6 | 0.15 | 20061101 | 335.91714 | 302.02968 | 146.02921 | 3.64688 | 0.1718601 | 2.5957631 | 16 | 1 | 8 days | 0.15 | E | MPC | 2006 $WS_7$ |
| 2006 $WU_7$ | 18.0 | 0.15 | 20061101 | 330.87754 | 309.88717 | 142.01370 | 3.30337 | 0.1568389 | 2.3636041 | 17 | 1 | 8 days | 0.36 | | MPC | 2006 $WU_7$ |
| 2006 $WA_8$ | 15.0 | 0.15 | 20061101 | 353.21567 | 324.55164 | 95.91067 | 7.58250 | 0.0754982 | 2.6847725 | 12 | 1 | 6 days | 0.55 | | MPC | 2006 $WA_8$ |
| 2006 $WB_8$ | 17.1 | 0.15 | 20061101 | 6.47676 | 138.27786 | 254.33560 | 5.42918 | 0.1654773 | 2.2818387 | 17 | 1 | 6 days | 0.59 | | MPC | 2006 $WB_8$ |
| 2006 $WJ_8$ | 15.9 | 0.15 | 20061101 | 103.17611 | 185.73166 | 112.04614 | 3.96542 | 0.0349080 | 2.4494459 | 10 | 1 | 8 days | 0.61 | | MPC | 2006 $WJ_8$ |
| 2006 $WL_8$ | 16.1 | 0.15 | 20061121 | 231.73513 | 126.36001 | 76.26869 | 8.91851 | 0.0902185 | 2.7230123 | 16 | 1 | 11 days | 0.79 | | MPC | 2006 $WL_8$ |
| 2006 $WN_8$ | 17.9 | 0.15 | 20061101 | 323.96778 | 336.19226 | 130.57278 | 2.95609 | 0.1621091 | 2.3978323 | 13 | 1 | 8 days | 0.26 | | MPC | 2006 $WN_8$ |
| 2006 $WP_8$ | 16.6 | 0.15 | 20061101 | 27.18892 | 285.38695 | 86.32617 | 8.16968 | 0.2864933 | 3.2196768 | 10 | 1 | 8 days | 0.40 | | MPC | 2006 $WP_8$ |
| 2006 $WV_8$ | 17.4 | 0.15 | 20061101 | 341.55697 | 292.31633 | 152.23651 | 2.61162 | 0.2028738 | 2.3641666 | 27 | 1 | 8 days | 0.43 | | MPC | 2006 $WV_8$ |
| 2006 $WX_8$ | 17.1 | 0.15 | 20061101 | 65.27422 | 196.74345 | 131.86617 | 3.25722 | 0.2175016 | 2.1554207 | 21 | 1 | 8 days | 0.42 | | MPC | 2006 $WX_8$ |
| 2006 $WY_8$ | 15.9 | 0.15 | 20061101 | 282.07268 | 43.95060 | 107.77555 | 6.05338 | 0.0896808 | 3.1189083 | 32 | 1 | 8 days | 0.60 | | MPC | 2006 $WY_8$ |
| 2006 $WE_9$ | 16.1 | 0.15 | 20061101 | 212.19939 | 75.78143 | 142.47299 | 4.81079 | 0.1267032 | 2.9606619 | 12 | 1 | 8 days | 0.72 | | MPC | 2006 $WE_9$ |
| 2006 $WF_9$ | 15.7 | 0.15 | 20061101 | 272.50728 | 50.85991 | 110.72864 | 6.39775 | 0.0975629 | 3.1129223 | 13 | 1 | 8 days | 0.15 | | MPC | 2006 $WF_9$ |
| 2006 $WM_9$ | 16.0 | 0.15 | 20061101 | 57.29432 | 139.42422 | 218.19049 | 8.54617 | 0.0806474 | 3.0424299 | 25 | 1 | 8 days | 0.18 | | MPC | 2006 $WM_9$ |
| 2006 $WN_9$ | 17.5 | 0.15 | 20061101 | 20.54717 | 289.01464 | 92.91721 | 7.33232 | 0.2656118 | 2.7043482 | 10 | 1 | 8 days | 0.30 | | MPC | 2006 $WN_9$ |
| 2006 $WO_9$ | 16.8 | 0.15 | 20061101 | 313.17646 | 37.13712 | 82.12198 | 13.38138 | 0.1195835 | 2.8995290 | 21 | 1 | 8 days | 0.27 | | MPC | 2006 $WO_9$ |
| 2006 $WP_9$ | 17.1 | 0.15 | 20061101 | 31.11735 | 284.83687 | 88.55790 | 9.89220 | 0.2224738 | 3.2074792 | 14 | 1 | 8 days | 0.23 | | MPC | 2006 $WP_9$ |
| 2006 $WQ_9$ | 16.3 | 0.15 | 20061101 | 282.99148 | 295.55249 | 216.20478 | 8.83142 | 0.0953716 | 3.1212065 | 13 | 1 | 4 days | 0.40 | | MPC | 2006 $WQ_9$ |
| 2006 $WR_9$ | 17.8 | 0.15 | 20061101 | 57.06962 | 248.30062 | 82.90373 | 13.26023 | 0.2895315 | 2.7203557 | 16 | 1 | 6 days | 0.31 | | MPC | 2006 $WR_9$ |
| 2006 $WZ_9$ | 17.8 | 0.15 | 20061101 | 345.72172 | 350.72571 | 82.38402 | 5.65301 | 0.2483784 | 2.4012806 | 29 | 1 | 18 days | 0.48 | | MPC | 2006 $WZ_9$ |
| 2006 $WA_{10}$ | 15.6 | 0.15 | 20061121 | 323.42502 | 40.38561 | 67.18019 | 21.50726 | 0.1591224 | 3.0616072 | 17 | 1 | 11 days | 0.29 | | MPC | 2006 $WA_{10}$ |
| 2006 $WC_{10}$ | 16.6 | 0.15 | 20061101 | 102.74946 | 95.16248 | 208.82729 | 8.21641 | 0.1195310 | 2.5611976 | 17 | 1 | 27 days | 0.23 | | MPC | 2006 $WC_{10}$ |
| 2006 $WD_{10}$ | 17.8 | 0.15 | 20061101 | 59.59717 | 120.04286 | 216.39120 | 9.67873 | 0.1965524 | 2.4140400 | 17 | 1 | 8 days | 0.34 | | MPC | 2006 $WD_{10}$ |
| 2006 $WF_{10}$ | 16.2 | 0.15 | 20061101 | 57.99308 | 114.30374 | 224.71376 | 15.11611 | 0.2124376 | 2.9959209 | 14 | 1 | 8 days | 0.26 | | MPC | 2006 $WF_{10}$ |
| 2006 $WG_{10}$ | 16.8 | 0.15 | 20061101 | 339.77895 | 324.04260 | 122.93795 | 5.30227 | 0.1744466 | 2.9714535 | 14 | 1 | 8 days | 0.94 | | MPC | 2006 $WG_{10}$ |
| 2006 $WJ_{10}$ | 16.8 | 0.15 | 20061101 | 25.93508 | 167.37264 | 213.31162 | 8.97838 | 0.1956772 | 3.0723521 | 16 | 1 | 8 days | 0.23 | | MPC | 2006 $WJ_{10}$ |
| 2006 $WK_{10}$ | 17.0 | 0.15 | 20061101 | 44.31881 | 171.69347 | 196.41981 | 6.22168 | 0.0767089 | 2.6778930 | 21 | 1 | 32 days | 0.26 | | MPC | 2006 $WK_{10}$ |
| 2006 $WM_{10}$ | 16.3 | 0.15 | 20061121 | 39.24681 | 54.13862 | 295.10886 | 4.24662 | 0.3257547 | 2.5921818 | 28 | 1 | 11 days | 0.38 | | MPC | 2006 $WM_{10}$ |
| 2006 $WP_{10}$ | 15.1 | 0.15 | 20061101 | 29.98852 | 329.75592 | 42.24182 | 11.10539 | 0.2455814 | 2.7503692 | 12 | 1 | 6 days | 0.78 | | MPC | 2006 $WP_{10}$ |
| 2006 $WR_{10}$ | 16.8 | 0.15 | 20061101 | 28.86393 | 86.78741 | 298.69361 | 5.73340 | 0.0854796 | 2.1569911 | 18 | 1 | 7 days | 0.39 | | MPC | 2006 $WR_{10}$ |
| 2006 $WS_{10}$ | 15.3 | 0.15 | 20061121 | 38.73172 | 324.13128 | 52.83745 | 14.76540 | 0.1580429 | 2.7292568 | 16 | 1 | 9 days | 0.49 | | MPC | 2006 $WS_{10}$ |
| 2006 $WV_{10}$ | 17.8 | 0.15 | 20061121 | 288.92219 | 251.51324 | 248.74418 | 19.35009 | 0.0760647 | 1.9079708 | 18 | 1 | 9 days | 0.37 | | MPC | 2006 $WV_{10}$ |
| 2006 $WX_{10}$ | 17.0 | 0.15 | 20061101 | 45.37429 | 57.11929 | 296.49771 | 4.92175 | 0.1666190 | 2.2472745 | 15 | 1 | 6 days | 0.55 | | MPC | 2006 $WX_{10}$ |
| 2006 $WA_{11}$ | 16.0 | 0.15 | 20061012 | 10.48000 | 55.97877 | 340.88646 | 3.30229 | 0.1816458 | 3.1504555 | 21 | 1 | 52 days | 0.34 | | MPC | 2006 $WA_{11}$ |
| 2006 $WB_{11}$ | 16.5 | 0.15 | 20061101 | 16.93028 | 349.54397 | 38.76535 | 5.49148 | 0.2483364 | 3.0153228 | 26 | 1 | 24 days | 0.36 | | MPC | 2006 $WB_{11}$ |
| 2006 $WD_{11}$ | 16.7 | 0.15 | 20061121 | 322.89604 | 106.38553 | 18.18209 | 5.51107 | 0.2672903 | 2.5451170 | 19 | 1 | 9 days | 0.53 | | MPC | 2006 $WD_{11}$ |
| 2006 $WG_{11}$ | 15.7 | 0.15 | 20061101 | 333.17374 | 53.37517 | 49.84771 | 17.19604 | 0.2133147 | 3.1434565 | 15 | 1 | 7 days | 0.47 | | MPC | 2006 $WG_{11}$ |
| 2006 $WH_{11}$ | 16.8 | 0.15 | 20061121 | 319.97887 | 193.18917 | 296.03923 | 4.39183 | 0.2510392 | 2.3392096 | 15 | 1 | 9 days | 0.54 | | MPC | 2006 $WH_{11}$ |
| 2006 $WJ_{11}$ | 16.5 | 0.15 | 20061101 | 342.73820 | 174.86508 | 264.88245 | 6.79917 | 0.0800265 | 2.2063894 | 17 | 1 | 11 days | 0.87 | | MPC | 2006 $WJ_{11}$ |
| 2006 $WK_{11}$ | 14.5 | 0.15 | 20061121 | 64.82964 | 308.89292 | 44.38128 | 10.73790 | 0.1060585 | 3.1135444 | 10 | 1 | 9 days | 0.34 | | MPC | 2006 $WK_{11}$ |
| 2006 $WN_{11}$ | 15.2 | 0.15 | 20061101 | 30.77357 | 7.00659 | 10.64256 | 2.80745 | 0.2164542 | 2.6545705 | 16 | 1 | 15 days | 0.38 | | MPC | 2006 $WN_{11}$ |
| 2006 $WO_{11}$ | 16.6 | 0.15 | 20061121 | 20.64347 | 341.44950 | 55.61700 | 8.01118 | 0.2235367 | 2.3418525 | 22 | 1 | 11 days | 0.63 | | MPC | 2006 $WO_{11}$ |
| 2006 $WP_{11}$ | 16.8 | 0.15 | 20061101 | 311.84287 | 213.82655 | 259.61546 | 19.03582 | 0.0087029 | 1.8835708 | 11 | 1 | 6 days | 0.35 | | MPC | 2006 $WP_{11}$ |
| 2006 $WQ_{11}$ | 15.7 | 0.15 | 20061121 | 27.38776 | 74.59617 | 304.75497 | 3.99339 | 0.2312585 | 3.0509560 | 24 | 1 | 11 days | 0.46 | | MPC | 2006 $WQ_{11}$ |
| 2006 $WS_{11}$ | 15.4 | 0.15 | 20061121 | 211.71629 | 301.85681 | 279.50097 | 9.59532 | 0.1242339 | 2.9555753 | 12 | 1 | 9 days | 0.40 | | MPC | 2006 $WS_{11}$ |
| 2006 $WT_{11}$ | 16.1 | 0.15 | 20061121 | 72.44186 | 295.80225 | 42.67038 | 6.66774 | 0.1394075 | 2.5311091 | 14 | 1 | 9 days | 0.64 | | MPC | 2006 $WT_{11}$ |
| 2006 $WU_{11}$ | 16.7 | 0.15 | 20061101 | 349.61843 | 18.99702 | 56.62340 | 14.71241 | 0.2321392 | 2.6173320 | 20 | 1 | 6 days | 0.66 | | MPC | 2006 $WU_{11}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WX_{11}$ | 16.4 | 0.15 | 20061101 | 359.84015 | 296.20968 | 123.23984 | 3.06182 | 0.1698588 | 2.6761399 | 13 | 1 | 8 days | 0.39 | | MPC | 2006 $WX_{11}$ |
| 2006 $WY_{11}$ | 15.4 | 0.15 | 20061101 | 35.58843 | 149.91336 | 232.55703 | 13.87220 | 0.0703668 | 2.9777627 | 25 | 1 | 8 days | 0.46 | | MPC | 2006 $WY_{11}$ |
| 2006 $WZ_{11}$ | 14.6 | 0.15 | 20061121 | 282.80334 | 281.25962 | 234.46444 | 15.31671 | 0.0857338 | 3.1151945 | 21 | 1 | 9 days | 0.44 | | MPC | 2006 $WZ_{11}$ |
| 2006 $WA_{12}$ | 17.2 | 0.15 | 20061101 | 345.02299 | 270.24731 | 171.51162 | 2.69780 | 0.1711939 | 2.6986797 | 10 | 1 | 6 days | 0.29 | | MPC | 2006 $WA_{12}$ |
| 2006 $WB_{12}$ | 16.8 | 0.15 | 20061101 | 278.71919 | 298.00823 | 219.79615 | 6.04414 | 0.1039789 | 2.9043898 | 10 | 1 | 6 days | 0.68 | | MPC | 2006 $WB_{12}$ |
| 2006 $WD_{12}$ | 17.5 | 0.15 | 20061101 | 21.56013 | 167.85433 | 215.32933 | 5.53874 | 0.2836703 | 3.2233507 | 10 | 1 | 6 days | 0.62 | | MPC | 2006 $WD_{12}$ |
| 2006 $WF_{12}$ | 17.3 | 0.15 | 20061101 | 16.74057 | 271.30113 | 117.15018 | 2.90592 | 0.2840820 | 2.7538940 | 10 | 1 | 6 days | 0.61 | | MPC | 2006 $WF_{12}$ |
| 2006 $WG_{12}$ | 16.8 | 0.15 | 20061012 | 290.58546 | 278.03103 | 232.58028 | 11.93021 | 0.2031783 | 2.6196853 | 18 | 1 | 56 days | 0.24 | | MPC | 2006 $WG_{12}$ |
| 2006 $WH_{12}$ | 19.0 | 0.15 | 20061121 | 22.41835 | 312.68530 | 74.42677 | 10.23223 | 0.2572625 | 2.2845193 | 13 | 1 | 11 days | 0.16 | | MPC | 2006 $WH_{12}$ |
| 2006 $WJ_{12}$ | 18.0 | 0.15 | 20061101 | 42.50235 | 139.99281 | 217.86481 | 5.31182 | 0.2203989 | 2.5662717 | 10 | 1 | 6 days | 0.65 | | MPC | 2006 $WJ_{12}$ |
| 2006 $WK_{12}$ | 16.1 | 0.15 | 20061101 | 245.66274 | 316.49435 | 232.25450 | 11.50239 | 0.0957610 | 2.6761747 | 13 | 1 | 10 days | 0.19 | E | MPC | 2006 $WK_{12}$ |
| 2006 $WL_{12}$ | 17.9 | 0.15 | 20061101 | 300.71615 | 282.67894 | 203.84142 | 4.26093 | 0.0677223 | 2.1689212 | 10 | 1 | 6 days | 0.22 | | MPC | 2006 $WL_{12}$ |
| 2006 $WM_{12}$ | 18.0 | 0.15 | 20061101 | 346.20567 | 188.26173 | 249.13358 | 4.79965 | 0.0854043 | 2.1956607 | 9 | 1 | 7 days | 0.06 | | MPC | 2006 $WM_{12}$ |
| 2006 $WN_{12}$ | 18.7 | 0.15 | 20061012 | 359.82237 | 195.85629 | 213.86004 | 4.51650 | 0.1795998 | 2.2637127 | 21 | 1 | 55 days | 0.22 | | MPC | 2006 $WN_{12}$ |
| 2006 $WU_{12}$ | 16.8 | 0.15 | 20061101 | 41.10501 | 271.78225 | 88.20525 | 8.53860 | 0.2322276 | 2.8259110 | 9 | 1 | 6 days | 0.74 | | MPC | 2006 $WU_{12}$ |
| 2006 $WW_{12}$ | 16.3 | 0.15 | 20061101 | 203.17512 | 143.02469 | 88.95025 | 10.65382 | 0.2503776 | 2.4875595 | 10 | 1 | 6 days | 0.88 | | MPC | 2006 $WW_{12}$ |
| 2006 $WX_{12}$ | 17.6 | 0.15 | 20061101 | 296.03232 | 28.66679 | 113.96609 | 3.48801 | 0.1483479 | 2.4097410 | 10 | 1 | 6 days | 0.43 | | MPC | 2006 $WX_{12}$ |
| 2006 $WY_{12}$ | 17.4 | 0.15 | 20061101 | 29.50481 | 147.55742 | 228.90712 | 9.97736 | 0.2498023 | 3.2572093 | 10 | 1 | 6 days | 0.90 | | MPC | 2006 $WY_{12}$ |
| 2006 $WA_{13}$ | 17.2 | 0.15 | 20061101 | 60.97258 | 145.58904 | 206.16555 | 4.89847 | 0.1060612 | 2.5467985 | 10 | 1 | 6 days | 0.21 | | MPC | 2006 $WA_{13}$ |
| 2006 $WD_{13}$ | 18.2 | 0.15 | 20061101 | 24.48057 | 155.60186 | 227.24837 | 8.63545 | 0.2384925 | 2.7918094 | 10 | 1 | 6 days | 0.72 | | MPC | 2006 $WD_{13}$ |
| 2006 $WF_{13}$ | 18.4 | 0.15 | 20061101 | 40.73369 | 201.49215 | 161.54679 | 2.72515 | 0.1924530 | 2.3138565 | 10 | 1 | 6 days | 0.25 | | MPC | 2006 $WF_{13}$ |
| 2006 $WH_{13}$ | 17.5 | 0.15 | 20061101 | 186.43686 | 52.19622 | 184.57688 | 3.21874 | 0.0220629 | 2.1466533 | 13 | 1 | 9 days | 0.74 | | MPC | 2006 $WH_{13}$ |
| 2006 $WK_{13}$ | 16.5 | 0.15 | 20061101 | 38.02897 | 256.17622 | 111.19439 | 4.78844 | 0.2050663 | 2.5808101 | 11 | 1 | 6 days | 0.40 | | MPC | 2006 $WK_{13}$ |
| 2006 $WM_{13}$ | 17.5 | 0.15 | 20061101 | 45.78361 | 168.91438 | 190.46282 | 3.62555 | 0.2030578 | 2.7277546 | 10 | 1 | 6 days | 0.80 | | MPC | 2006 $WM_{13}$ |
| 2006 $WP_{13}$ | 16.4 | 0.15 | 20061101 | 225.46215 | 105.60482 | 109.68347 | 6.03653 | 0.1728549 | 2.7095730 | 11 | 1 | 6 days | 0.59 | | MPC | 2006 $WP_{13}$ |
| 2006 $WS_{13}$ | 17.9 | 0.15 | 20061101 | 38.29746 | 151.65209 | 216.66250 | 4.18201 | 0.1700532 | 2.1963143 | 10 | 1 | 6 days | 0.16 | | MPC | 2006 $WS_{13}$ |
| 2006 $WT_{13}$ | 16.6 | 0.15 | 20061101 | 357.06507 | 189.98574 | 236.31842 | 11.58233 | 0.2020431 | 2.5483529 | 10 | 1 | 6 days | 0.33 | | MPC | 2006 $WT_{13}$ |
| 2006 $WU_{13}$ | 18.6 | 0.15 | 20061101 | 20.59614 | 169.20044 | 223.58579 | 5.30870 | 0.1608037 | 2.3092260 | 10 | 1 | 6 days | 0.17 | | MPC | 2006 $WU_{13}$ |
| 2006 $WV_{13}$ | 15.6 | 0.15 | 20061101 | 234.80958 | 337.11568 | 230.19918 | 8.18287 | 0.1569977 | 2.7826717 | 10 | 1 | 6 days | 0.76 | | MPC | 2006 $WV_{13}$ |
| 2006 $WY_{13}$ | 16.1 | 0.15 | 20061101 | 252.65769 | 308.73297 | 241.81370 | 16.63513 | 0.1255420 | 3.1122718 | 10 | 1 | 6 days | 0.64 | | MPC | 2006 $WY_{13}$ |
| 2006 $WZ_{13}$ | 17.5 | 0.15 | 20061101 | 12.58227 | 171.61242 | 230.32270 | 7.16354 | 0.2159123 | 2.5250365 | 10 | 1 | 6 days | 0.17 | | MPC | 2006 $WZ_{13}$ |
| 2006 $WH_{14}$ | 16.0 | 0.15 | 20061101 | 270.41060 | 296.42066 | 237.04653 | 10.65145 | 0.1272251 | 3.0275453 | 12 | 1 | 6 days | 0.68 | | MPC | 2006 $WH_{14}$ |
| 2006 $WM_{14}$ | 15.7 | 0.15 | 20061121 | 11.66020 | 332.06375 | 77.14340 | 18.06979 | 0.2753662 | 3.0413906 | 29 | 1 | 11 days | 0.36 | | MPC | 2006 $WM_{14}$ |
| 2006 $WP_{14}$ | 16.6 | 0.15 | 20061101 | 42.58226 | 283.81163 | 78.33942 | 25.88443 | 0.2397615 | 3.2636243 | 10 | 1 | 6 days | 0.28 | | MPC | 2006 $WP_{14}$ |
| 2006 $WQ_{14}$ | 16.9 | 0.15 | 20061101 | 32.81632 | 161.03833 | 213.83242 | 5.17549 | 0.1842092 | 2.2389376 | 11 | 1 | 6 days | 0.52 | | MPC | 2006 $WQ_{14}$ |
| 2006 $WV_{14}$ | 17.9 | 0.15 | 20061101 | 2.40933 | 169.13993 | 247.44094 | 10.31810 | 0.1876774 | 2.6373981 | 9 | 1 | 7 days | 0.15 | | MPC | 2006 $WV_{14}$ |
| 2006 $WZ_{14}$ | 16.0 | 0.15 | 20061101 | 35.38003 | 351.34433 | 25.34908 | 2.63503 | 0.1926030 | 3.0766510 | 19 | 1 | 14 days | 0.41 | | MPC | 2006 $WZ_{14}$ |
| 2006 $WA_{15}$ | 16.8 | 0.15 | 20061101 | 24.20061 | 135.89412 | 251.22098 | 25.48221 | 0.2244035 | 2.7429193 | 10 | 1 | 5 days | 0.94 | | MPC | 2006 $WA_{15}$ |
| 2006 $WB_{15}$ | 17.8 | 0.15 | 20061101 | 24.67089 | 127.45912 | 249.00393 | 5.23105 | 0.2937098 | 2.6035969 | 9 | 1 | 7 days | 0.06 | | MPC | 2006 $WB_{15}$ |
| 2006 $WC_{15}$ | 16.6 | 0.15 | 20061101 | 307.66956 | 94.57901 | 26.72410 | 5.92385 | 0.0953130 | 2.8426863 | 10 | 1 | 5 days | 0.34 | | MPC | 2006 $WC_{15}$ |
| 2006 $WD_{15}$ | 17.2 | 0.15 | 20061121 | 29.76000 | 62.57694 | 311.28748 | 3.67213 | 0.2641893 | 3.1481941 | 9 | 1 | 9 days | 0.25 | | MPC | 2006 $WD_{15}$ |
| 2006 $WE_{15}$ | 15.0 | 0.15 | 20061101 | 313.50769 | 240.82722 | 301.48074 | 29.11102 | 0.3027039 | 2.5929979 | 13 | 1 | 6 days | 0.45 | | MPC | 2006 $WE_{15}$ |
| 2006 $WR_{15}$ | 16.2 | 0.15 | 20061101 | 161.85909 | 339.57108 | 271.48330 | 9.08713 | 0.0166725 | 3.0318565 | 20 | 1 | 5 days | 0.35 | | MPC | 2006 $WR_{15}$ |
| 2006 $WS_{15}$ | 17.6 | 0.15 | 20061101 | 4.75348 | 155.42259 | 251.48380 | 19.50172 | 0.0612123 | 2.6413171 | 9 | 1 | 5 days | 0.44 | | MPC | 2006 $WS_{15}$ |
| 2006 $WU_{15}$ | 16.3 | 0.15 | 20061101 | 349.82334 | 148.18051 | 277.77000 | 8.45244 | 0.0648762 | 3.0791835 | 9 | 1 | 5 days | 0.32 | | MPC | 2006 $WU_{15}$ |
| 2006 $WW_{15}$ | 17.3 | 0.15 | 20061101 | 45.43832 | 322.34319 | 33.95105 | 10.50325 | 0.1253396 | 2.9833263 | 9 | 1 | 5 days | 0.22 | | MPC | 2006 $WW_{15}$ |
| 2006 $WX_{15}$ | 17.5 | 0.15 | 20061101 | 295.26318 | 105.58058 | 30.66271 | 7.96476 | 0.1664008 | 2.7823304 | 9 | 1 | 5 days | 0.20 | | MPC | 2006 $WX_{15}$ |
| 2006 $WA_{16}$ | 18.4 | 0.15 | 20061101 | 36.20818 | 47.22826 | 316.79391 | 3.81740 | 0.1470061 | 2.5578331 | 9 | 1 | 5 days | 0.10 | | MPC | 2006 $WA_{16}$ |
| 2006 $WB_{16}$ | 17.5 | 0.15 | 20061101 | 313.45120 | 112.50479 | 358.36672 | 4.51473 | 0.1235644 | 2.6844530 | 9 | 1 | 5 days | 0.14 | | MPC | 2006 $WB_{16}$ |
| 2006 $WC_{16}$ | 16.7 | 0.15 | 20061101 | 344.95305 | 35.47043 | 35.72067 | 10.53631 | 0.0593142 | 3.0613060 | 9 | 1 | 5 days | 0.25 | | MPC | 2006 $WC_{16}$ |
| 2006 $WD_{16}$ | 17.3 | 0.15 | 20061101 | 339.32761 | 54.08666 | 21.66417 | 6.23991 | 0.0341107 | 2.7747408 | 9 | 1 | 5 days | 0.19 | | MPC | 2006 $WD_{16}$ |
| 2006 $WE_{16}$ | 17.4 | 0.15 | 20061101 | 30.77311 | 316.23228 | 50.42632 | 24.41425 | 0.2206930 | 3.1377244 | 12 | 1 | 22 days | 0.18 | | MPC | 2006 $WE_{16}$ |
| 2006 $WF_{16}$ | 15.7 | 0.15 | 20061121 | 77.96020 | 58.59950 | 270.86975 | 5.89595 | 0.0945055 | 2.5707930 | 26 | 1 | 7 days | 0.62 | | MPC | 2006 $WF_{16}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WG_{16}$ | 19.1 | 0.15 | 20061101 | 42.62931 | 330.38005 | 22.79414 | 5.04465 | 0.1754626 | 2.3099040 | 12 | 1 | 26 days | 0.32 | | MPC | 2006 $WG_{16}$ |
| 2006 $WJ_{16}$ | 16.9 | 0.15 | 20061101 | 33.50047 | 107.19688 | 254.64358 | 10.14926 | 0.2216178 | 2.5892528 | 10 | 1 | 5 days | 0.28 | | MPC | 2006 $WJ_{16}$ |
| 2006 $WL_{16}$ | 16.9 | 0.15 | 20061101 | 318.29041 | 194.95080 | 278.47690 | 3.92906 | 0.1901991 | 2.5328041 | 19 | 1 | 36 days | 0.33 | | MPC | 2006 $WL_{16}$ |
| 2006 $WM_{16}$ | 15.8 | 0.15 | 20061121 | 313.30402 | 219.56842 | 256.81401 | 12.33341 | 0.0932014 | 2.6687286 | 21 | 1 | 10 days | 0.40 | | MPC | 2006 $WM_{16}$ |
| 2006 $WN_{16}$ | 16.4 | 0.15 | 20061121 | 32.95716 | 117.12635 | 263.09857 | 8.64441 | 0.1166668 | 2.6701194 | 15 | 1 | 8 days | 0.33 | | MPC | 2006 $WN_{16}$ |
| 2006 $WO_{16}$ | 17.5 | 0.15 | 20061101 | 325.00359 | 128.31024 | 332.49791 | 2.96250 | 0.1093001 | 2.7300389 | 13 | 1 | 5 days | 0.30 | | MPC | 2006 $WO_{16}$ |
| 2006 $WP_{16}$ | 16.0 | 0.15 | 20061121 | 203.37670 | 319.78862 | 265.61939 | 9.34530 | 0.1293058 | 3.1055763 | 13 | 1 | 8 days | 0.53 | | MPC | 2006 $WP_{16}$ |
| 2006 $WQ_{16}$ | 17.8 | 0.15 | 20061101 | 23.90978 | 323.21751 | 57.66592 | 29.26594 | 0.2210154 | 3.0278191 | 10 | 1 | 4 days | 0.23 | | MPC | 2006 $WQ_{16}$ |
| 2006 $WR_{16}$ | 15.6 | 0.15 | 20061101 | 81.26506 | 273.45086 | 39.47447 | 6.00525 | 0.1963713 | 2.5691617 | 19 | 1 | 24 days | 0.44 | | MPC | 2006 $WR_{16}$ |
| 2006 $WS_{16}$ | 15.1 | 0.15 | 20061121 | 194.68402 | 339.46687 | 249.37237 | 17.20663 | 0.0791040 | 3.0527202 | 13 | 1 | 8 days | 0.77 | | MPC | 2006 $WS_{16}$ |
| 2006 $WZ_{16}$ | 16.7 | 0.15 | 20061121 | 28.77184 | 67.24229 | 310.48724 | 4.85702 | 0.2392471 | 2.6513261 | 20 | 1 | 10 days | 0.58 | | MPC | 2006 $WZ_{16}$ |
| 2006 $WA_{17}$ | 16.9 | 0.15 | 20061101 | 344.64409 | 302.71134 | 116.47124 | 4.97331 | 0.1558546 | 2.5444456 | 11 | 1 | 6 days | 0.28 | | MPC | 2006 $WA_{17}$ |
| 2006 $WF_{17}$ | 17.0 | 0.15 | 20061101 | 29.83806 | 62.93174 | 292.44530 | 1.78316 | 0.2172134 | 2.4329742 | 18 | 1 | 5 days | 0.66 | | MPC | 2006 $WF_{17}$ |
| 2006 $WS_{18}$ | 16.3 | 0.15 | 20061101 | 17.87080 | 288.42389 | 101.84704 | 7.31473 | 0.0463730 | 2.3811532 | 23 | 1 | 3 days | 0.42 | | MPC | 2006 $WS_{18}$ |
| 2006 $WW_{18}$ | 17.1 | 0.15 | 20061121 | 359.59302 | 99.01854 | 328.32698 | 2.29023 | 0.1232864 | 2.2524344 | 14 | 1 | 8 days | 0.64 | | MPC | 2006 $WW_{18}$ |
| 2006 $WX_{18}$ | 17.6 | 0.15 | 20061101 | 358.06222 | 201.75303 | 202.39940 | 26.69876 | 0.2516139 | 2.5029132 | 12 | 1 | 6 days | 0.59 | | MPC | 2006 $WX_{18}$ |
| 2006 $WD_{19}$ | 15.6 | 0.15 | 20061121 | 174.85342 | 178.80096 | 61.76904 | 8.68584 | 0.2136897 | 2.7012366 | 12 | 1 | 10 days | 0.70 | | MPC | 2006 $WD_{19}$ |
| 2006 $WE_{19}$ | 16.3 | 0.15 | 20061121 | 312.81694 | 60.96105 | 57.21666 | 29.49111 | 0.1438765 | 2.8257566 | 18 | 1 | 7 days | 0.64 | E | MPC | 2006 $WE_{19}$ |
| 2006 $WN_{19}$ | 17.7 | 0.15 | 20061121 | 71.62642 | 22.19079 | 303.12461 | 3.28086 | 0.0844994 | 2.3833488 | 12 | 1 | 7 days | 0.33 | | MPC | 2006 $WN_{19}$ |
| 2006 $WE_{20}$ | 14.7 | 0.15 | 20061101 | 204.73740 | 306.82382 | 268.41835 | 10.60507 | 0.0519301 | 3.1371913 | 10 | 1 | 5 days | 0.50 | | MPC | 2006 $WE_{20}$ |
| 2006 $WH_{20}$ | 15.4 | 0.15 | 20061101 | 336.17508 | 158.31911 | 284.78122 | 5.57040 | 0.0813260 | 2.6885787 | 14 | 1 | 5 days | 0.55 | | MPC | 2006 $WH_{20}$ |
| 2006 $WJ_{20}$ | 15.8 | 0.15 | 20061101 | 12.13590 | 351.44592 | 44.36466 | 16.83414 | 0.2335413 | 3.0778763 | 14 | 1 | 5 days | 0.37 | | MPC | 2006 $WJ_{20}$ |
| 2006 $WK_{20}$ | 15.8 | 0.15 | 20061101 | 319.41087 | 126.96880 | 335.35554 | 5.13177 | 0.0650933 | 2.8236145 | 13 | 1 | 4 days | 0.65 | | MPC | 2006 $WK_{20}$ |
| 2006 $WL_{20}$ | 16.0 | 0.15 | 20061101 | 336.69470 | 180.01619 | 265.29308 | 11.17552 | 0.1129969 | 2.7722968 | 13 | 1 | 4 days | 0.47 | | MPC | 2006 $WL_{20}$ |
| 2006 $WM_{20}$ | 17.8 | 0.15 | 20061121 | 332.57718 | 230.81988 | 232.02586 | 9.81323 | 0.2576494 | 3.0047679 | 15 | 1 | 10 days | 0.49 | | MPC | 2006 $WM_{20}$ |
| 2006 $WQ_{20}$ | 17.2 | 0.15 | 20061121 | 357.85417 | 300.40176 | 128.45867 | 3.59943 | 0.1525329 | 2.7056918 | 25 | 1 | 7 days | 0.34 | | MPC | 2006 $WQ_{20}$ |
| 2006 $WR_{20}$ | 15.7 | 0.15 | 20061121 | 239.77491 | 347.29622 | 209.13648 | 6.31342 | 0.0954524 | 2.7314125 | 32 | 1 | 8 days | 0.59 | | MPC | 2006 $WR_{20}$ |
| 2006 $WX_{20}$ | 18.0 | 0.15 | 20061101 | 296.70012 | 29.66250 | 107.36661 | 4.55202 | 0.1216289 | 2.4006890 | 10 | 1 | 5 days | 0.15 | | MPC | 2006 $WX_{20}$ |
| 2006 $WA_{21}$ | 16.7 | 0.15 | 20061101 | 206.71196 | 111.29326 | 114.19334 | 4.83396 | 0.2141327 | 2.2449157 | 9 | 1 | 5 days | 0.44 | | MPC | 2006 $WA_{21}$ |
| 2006 $WB_{21}$ | 16.5 | 0.15 | 20061101 | 353.54623 | 317.97976 | 111.78053 | 4.66294 | 0.1828683 | 2.7361882 | 24 | 1 | 23 days | 0.36 | | MPC | 2006 $WB_{21}$ |
| 2006 $WC_{21}$ | 16.8 | 0.15 | 20061121 | 63.63559 | 107.44557 | 228.40109 | 11.92866 | 0.2544368 | 3.0247206 | 11 | 1 | 8 days | 0.63 | | MPC | 2006 $WC_{21}$ |
| 2006 $WD_{21}$ | 16.5 | 0.15 | 20061121 | 262.09742 | 51.78139 | 125.88209 | 3.79820 | 0.1125534 | 2.4086538 | 9 | 1 | 8 days | 0.70 | | MPC | 2006 $WD_{21}$ |
| 2006 $WE_{21}$ | 16.7 | 0.15 | 20061101 | 288.62504 | 344.41287 | 162.23523 | 3.63738 | 0.1149607 | 2.5571115 | 10 | 1 | 5 days | 0.20 | | MPC | 2006 $WE_{21}$ |
| 2006 $WF_{21}$ | 17.4 | 0.15 | 20061121 | 321.36933 | 40.64515 | 90.76255 | 7.80771 | 0.2759454 | 2.7732090 | 10 | 1 | 8 days | 0.54 | | MPC | 2006 $WF_{21}$ |
| 2006 $WG_{21}$ | 15.3 | 0.15 | 20061121 | 201.41976 | 155.70733 | 78.65078 | 21.40537 | 0.2438698 | 2.4904849 | 13 | 1 | 8 days | 0.52 | | MPC | 2006 $WG_{21}$ |
| 2006 $WH_{21}$ | 17.1 | 0.15 | 20061101 | 237.19353 | 99.04451 | 98.07070 | 7.52456 | 0.1122827 | 2.6993628 | 10 | 1 | 5 days | 0.37 | | MPC | 2006 $WH_{21}$ |
| 2006 $WL_{21}$ | 16.2 | 0.15 | 20061101 | 27.69905 | 269.96233 | 109.62510 | 4.69881 | 0.1944686 | 2.5872045 | 22 | 1 | 11 days | 0.54 | | MPC | 2006 $WL_{21}$ |
| 2006 $WM_{21}$ | 16.0 | 0.15 | 20061121 | 274.14838 | 68.52690 | 95.65978 | 7.52252 | 0.0896978 | 2.6745178 | 11 | 1 | 8 days | 0.58 | | MPC | 2006 $WM_{21}$ |
| 2006 $WO_{21}$ | 18.4 | 0.15 | 20061101 | 18.57540 | 286.19828 | 98.77278 | 4.53726 | 0.2620454 | 2.4047661 | 13 | 1 | 5 days | 0.35 | | MPC | 2006 $WO_{21}$ |
| 2006 $WR_{21}$ | 16.7 | 0.15 | 20061121 | 31.02021 | 264.48039 | 111.20393 | 4.65896 | 0.2585749 | 2.8124846 | 6 | 1 | 8 days | 0.78 | | MPC | 2006 $WR_{21}$ |
| 2006 $WS_{21}$ | 16.1 | 0.15 | 20061101 | 34.45434 | 279.19046 | 87.20799 | 10.19361 | 0.2608727 | 3.2103646 | 10 | 1 | 5 days | 0.23 | | MPC | 2006 $WS_{21}$ |
| 2006 $WT_{21}$ | 17.3 | 0.15 | 20061101 | 273.39753 | 18.36308 | 144.50913 | 3.80110 | 0.1077942 | 2.6753285 | 10 | 1 | 5 days | 0.24 | | MPC | 2006 $WT_{21}$ |
| 2006 $WV_{21}$ | 15.9 | 0.15 | 20061101 | 276.18145 | 72.31810 | 87.36617 | 12.01725 | 0.0900794 | 3.0867445 | 10 | 1 | 5 days | 0.30 | | MPC | 2006 $WV_{21}$ |
| 2006 $WX_{21}$ | 17.8 | 0.15 | 20061101 | 348.55655 | 289.92988 | 147.22428 | 2.59244 | 0.3049991 | 2.3716601 | 15 | 1 | 5 days | 0.48 | E | MPC | 2006 $WX_{21}$ |
| 2006 $WY_{21}$ | 16.7 | 0.15 | 20061101 | 302.29729 | 54.83629 | 78.45883 | 17.03231 | 0.1221319 | 2.6318318 | 10 | 1 | 5 days | 0.37 | | MPC | 2006 $WY_{21}$ |
| 2006 $WD_{22}$ | 17.7 | 0.15 | 20061101 | 28.84715 | 157.51028 | 218.69705 | 7.05587 | 0.2345416 | 2.7361137 | 10 | 1 | 5 days | 0.27 | | MPC | 2006 $WD_{22}$ |
| 2006 $WG_{22}$ | 16.9 | 0.15 | 20061121 | 52.69720 | 176.39061 | 188.69809 | 5.00911 | 0.0918455 | 2.8006954 | 16 | 1 | 7 days | 0.21 | | MPC | 2006 $WG_{22}$ |
| 2006 $WJ_{22}$ | 16.5 | 0.15 | 20061101 | 309.92565 | 311.05154 | 167.29584 | 4.16075 | 0.0684679 | 2.7574607 | 13 | 1 | 3 days | 0.16 | | MPC | 2006 $WJ_{22}$ |
| 2006 $WL_{22}$ | 15.8 | 0.15 | 20061121 | 299.46715 | 61.33585 | 89.11437 | 7.40893 | 0.1650890 | 2.6007836 | 13 | 1 | 10 days | 0.73 | | MPC | 2006 $WL_{22}$ |
| 2006 $WO_{22}$ | 16.3 | 0.15 | 20061101 | 312.40384 | 258.03431 | 236.35596 | 10.19927 | 0.1773543 | 3.1906642 | 10 | 1 | 5 days | 0.30 | | MPC | 2006 $WO_{22}$ |
| 2006 $WP_{22}$ | 17.6 | 0.15 | 20061121 | 28.61262 | 302.60678 | 76.97156 | 12.00127 | 0.2739762 | 2.3587100 | 22 | 1 | 10 days | 0.30 | | MPC | 2006 $WP_{22}$ |
| 2006 $WQ_{22}$ | 17.7 | 0.15 | 20061101 | 342.62962 | 7.10916 | 85.42068 | 7.85633 | 0.2827532 | 2.5654746 | 10 | 1 | 5 days | 0.12 | | MPC | 2006 $WQ_{22}$ |
| 2006 $WS_{22}$ | 17.6 | 0.15 | 20061101 | 2.22830 | 308.13979 | 111.52129 | 3.25164 | 0.1826636 | 2.4683133 | 10 | 1 | 5 days | 0.42 | | MPC | 2006 $WS_{22}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WT_{22}$ | 16.5 | 0.15 | 20061101 | 225.83591 | 13.80932 | 204.80990 | 3.48443 | 0.1957167 | 2.6588284 | 10 | 1 | 5 days | 0.31 | | MPC | 2006 $WT_{22}$ |
| 2006 $WY_{22}$ | 17.3 | 0.15 | 20061101 | 13.54751 | 311.99052 | 88.98155 | 8.37695 | 0.2653348 | 2.9668961 | 10 | 1 | 5 days | 0.81 | | MPC | 2006 $WY_{22}$ |
| 2006 $WA_{23}$ | 17.6 | 0.15 | 20061101 | 25.97735 | 296.65371 | 88.78271 | 6.76658 | 0.1896162 | 2.4078387 | 10 | 1 | 5 days | 0.42 | | MPC | 2006 $WA_{23}$ |
| 2006 $WC_{23}$ | 15.5 | 0.15 | 20061121 | 279.43587 | 84.68738 | 84.88958 | 14.17141 | 0.1275572 | 3.0479423 | 10 | 1 | 10 days | 0.54 | | MPC | 2006 $WC_{23}$ |
| 2006 $WD_{23}$ | 15.2 | 0.15 | 20061101 | 232.33062 | 326.99565 | 246.65315 | 19.74885 | 0.1591184 | 3.1095681 | 10 | 1 | 5 days | 0.46 | | MPC | 2006 $WD_{23}$ |
| 2006 $WE_{23}$ | 17.9 | 0.15 | 20061101 | 17.06056 | 301.84640 | 95.03876 | 5.51972 | 0.2138670 | 2.5241731 | 10 | 1 | 5 days | 0.28 | | MPC | 2006 $WE_{23}$ |
| 2006 $WF_{23}$ | 17.2 | 0.15 | 20061101 | 308.29700 | 44.71619 | 95.22665 | 5.55200 | 0.2117085 | 2.5407347 | 10 | 1 | 5 days | 0.84 | | MPC | 2006 $WF_{23}$ |
| 2006 $WH_{23}$ | 17.8 | 0.15 | 20061101 | 8.14352 | 314.78697 | 93.11542 | 6.37502 | 0.2289695 | 2.3601547 | 10 | 1 | 5 days | 0.47 | | MPC | 2006 $WH_{23}$ |
| 2006 $WM_{23}$ | 16.1 | 0.15 | 20061101 | 31.67414 | 285.79032 | 93.58594 | 9.67361 | 0.2224302 | 3.1375491 | 10 | 1 | 5 days | 0.13 | | MPC | 2006 $WM_{23}$ |
| 2006 $WO_{23}$ | 16.1 | 0.15 | 20061101 | 228.39006 | 343.21238 | 235.55343 | 12.84997 | 0.2043269 | 2.6473743 | 10 | 1 | 5 days | 0.44 | | MPC | 2006 $WO_{23}$ |
| 2006 $WU_{23}$ | 17.5 | 0.15 | 20061101 | 17.65210 | 309.42526 | 85.16015 | 13.64906 | 0.2300122 | 2.5604741 | 10 | 1 | 5 days | 0.58 | | MPC | 2006 $WU_{23}$ |
| 2006 $WV_{23}$ | 15.8 | 0.15 | 20061101 | 221.35216 | 127.74107 | 94.70239 | 12.78968 | 0.1904003 | 2.8151173 | 10 | 1 | 5 days | 0.21 | | MPC | 2006 $WV_{23}$ |
| 2006 $WZ_{23}$ | 16.0 | 0.15 | 20061101 | 233.92531 | 5.74458 | 203.43748 | 5.45612 | 0.1738203 | 2.5659074 | 10 | 1 | 5 days | 0.56 | | MPC | 2006 $WZ_{23}$ |
| 2006 $WB_{24}$ | 18.0 | 0.15 | 20061101 | 44.44079 | 254.18464 | 107.99032 | 5.82755 | 0.1884761 | 2.4920107 | 10 | 1 | 5 days | 0.36 | | MPC | 2006 $WB_{24}$ |
| 2006 $WD_{24}$ | 16.4 | 0.15 | 20061101 | 30.02058 | 290.16566 | 88.31300 | 14.09600 | 0.2426489 | 3.2130728 | 10 | 1 | 5 days | 0.36 | | MPC | 2006 $WD_{24}$ |
| 2006 $WE_{24}$ | 19.2 | 0.15 | 20061101 | 8.33841 | 273.86211 | 131.80129 | 3.35316 | 0.2505745 | 2.4079490 | 10 | 1 | 5 days | 0.64 | | MPC | 2006 $WE_{24}$ |
| 2006 $WO_{24}$ | 17.9 | 0.15 | 20061101 | 57.52348 | 223.80716 | 122.38100 | 5.08360 | 0.2004145 | 2.5983812 | 10 | 1 | 5 days | 0.36 | | MPC | 2006 $WO_{24}$ |
| 2006 $WQ_{24}$ | 17.8 | 0.15 | 20061101 | 41.18268 | 199.88037 | 164.72568 | 3.34948 | 0.1768491 | 2.2684426 | 13 | 1 | 5 days | 0.19 | | MPC | 2006 $WQ_{24}$ |
| 2006 $WU_{24}$ | 16.2 | 0.15 | 20061101 | 302.43690 | 41.65868 | 95.82445 | 7.64077 | 0.1475808 | 2.6543073 | 10 | 1 | 5 days | 0.15 | | MPC | 2006 $WU_{24}$ |
| 2006 $WW_{24}$ | 17.9 | 0.15 | 20061101 | 25.88568 | 193.11375 | 192.45410 | 2.62076 | 0.1878666 | 2.4054326 | 9 | 1 | 5 days | 0.72 | | MPC | 2006 $WW_{24}$ |
| 2006 $WX_{24}$ | 17.3 | 0.15 | 20061101 | 45.72765 | 246.34445 | 111.37844 | 4.91681 | 0.2020336 | 2.5022016 | 19 | 1 | 6 days | 0.41 | | MPC | 2006 $WX_{24}$ |
| 2006 $WN_{25}$ | 15.4 | 0.15 | 20061121 | 202.90825 | 142.73122 | 88.72127 | 10.82020 | 0.2034251 | 2.5810096 | 13 | 1 | 7 days | 0.42 | | MPC | 2006 $WN_{25}$ |
| 2006 $WT_{25}$ | 17.8 | 0.15 | 20061101 | 37.15278 | 238.53504 | 130.50432 | 4.30792 | 0.2170904 | 2.8398481 | 11 | 1 | 5 days | 0.37 | | MPC | 2006 $WT_{25}$ |
| 2006 $WV_{25}$ | 17.0 | 0.15 | 20061101 | 33.27935 | 236.02604 | 138.42426 | 3.62736 | 0.2196329 | 2.8873030 | 10 | 1 | 5 days | 0.29 | | MPC | 2006 $WV_{25}$ |
| 2006 $WW_{25}$ | 16.2 | 0.15 | 20061101 | 56.99400 | 115.71687 | 226.50680 | 10.32142 | 0.2057261 | 2.6582174 | 18 | 1 | 28 days | 0.16 | | MPC | 2006 $WW_{25}$ |
| 2006 $WX_{25}$ | 16.4 | 0.15 | 20061101 | 233.14435 | 139.42602 | 127.94636 | 9.15236 | 0.0512396 | 2.1284499 | 14 | 1 | 3 days | 0.72 | | MPC | 2006 $WX_{25}$ |
| 2006 $WY_{25}$ | 15.9 | 0.15 | 20061121 | 310.00114 | 235.50963 | 241.99188 | 5.24036 | 0.1042946 | 3.1726594 | 17 | 1 | 6 days | 0.72 | | MPC | 2006 $WY_{25}$ |
| 2006 $WG_{26}$ | 15.8 | 0.15 | 20061101 | 292.18870 | 239.10936 | 256.58175 | 9.21167 | 0.0609772 | 3.1549283 | 9 | 1 | 4 days | 0.27 | | MPC | 2006 $WG_{26}$ |
| 2006 $WH_{26}$ | 18.1 | 0.15 | 20061121 | 348.30788 | 196.79532 | 245.45448 | 14.90448 | 0.2348153 | 2.7156940 | 8 | 1 | 9 days | 0.39 | | MPC | 2006 $WH_{26}$ |
| 2006 $WJ_{26}$ | 15.9 | 0.15 | 20061101 | 48.99029 | 108.80436 | 250.73559 | 12.56539 | 0.0932399 | 2.7137954 | 20 | 1 | 16 days | 0.49 | | MPC | 2006 $WJ_{26}$ |
| 2006 $WK_{26}$ | 18.1 | 0.15 | 20061121 | 345.17703 | 262.60758 | 174.52699 | 5.65621 | 0.1390495 | 2.2239716 | 11 | 1 | 5 days | 0.37 | | MPC | 2006 $WK_{26}$ |
| 2006 $WM_{26}$ | 16.7 | 0.15 | 20061101 | 322.74627 | 213.30486 | 247.53050 | 8.24382 | 0.2420108 | 2.7506015 | 12 | 1 | 4 days | 0.67 | | MPC | 2006 $WM_{26}$ |
| 2006 $WN_{26}$ | 17.7 | 0.15 | 20061101 | 58.33499 | 84.87496 | 241.07341 | 15.35327 | 0.1656619 | 1.9431963 | 10 | 1 | 4 days | 0.74 | | MPC | 2006 $WN_{26}$ |
| 2006 $WO_{26}$ | 16.0 | 0.15 | 20061101 | 7.11394 | 318.89597 | 85.77076 | 3.30780 | 0.0823256 | 2.6730689 | 38 | 1 | 39 days | 0.54 | | MPC | 2006 $WO_{26}$ |
| 2006 $WP_{26}$ | 17.0 | 0.15 | 20061101 | 27.17826 | 299.61133 | 61.83128 | 12.56822 | 0.2957153 | 2.5834253 | 23 | 1 | 10 days | 0.42 | | MPC | 2006 $WP_{26}$ |
| 2006 $WQ_{26}$ | 16.8 | 0.15 | 20061121 | 344.38557 | 8.35993 | 70.33036 | 3.71525 | 0.0940931 | 2.5111696 | 16 | 1 | 9 days | 0.67 | | MPC | 2006 $WQ_{26}$ |
| 2006 $WS_{26}$ | 16.3 | 0.15 | 20061121 | 313.85303 | 50.98922 | 67.77857 | 5.54230 | 0.0907106 | 2.6393340 | 14 | 1 | 9 days | 0.60 | | MPC | 2006 $WS_{26}$ |
| 2006 $WV_{26}$ | 16.8 | 0.15 | 20061101 | 29.24371 | 273.69836 | 98.18737 | 2.81969 | 0.1758243 | 2.6529937 | 24 | 1 | 16 days | 0.55 | | MPC | 2006 $WV_{26}$ |
| 2006 $WX_{26}$ | 17.3 | 0.15 | 20061101 | 355.84242 | 177.38879 | 243.41121 | 17.96120 | 0.0918082 | 1.9355908 | 33 | 1 | 31 days | 0.39 | | MPC | 2006 $WX_{26}$ |
| 2006 $WY_{26}$ | 15.0 | 0.15 | 20061101 | 123.33793 | 54.09419 | 241.25812 | 8.85867 | 0.0679653 | 3.1201937 | 22 | 1 | 16 days | 0.48 | | MPC | 2006 $WY_{26}$ |
| 2006 $WZ_{26}$ | 17.3 | 0.15 | 20061121 | 29.78210 | 146.53875 | 231.77739 | 4.44081 | 0.2338294 | 2.4236554 | 22 | 1 | 9 days | 0.55 | | MPC | 2006 $WZ_{26}$ |
| 2006 $WA_{27}$ | 16.2 | 0.15 | 20061101 | 6.27613 | 339.99710 | 71.80269 | 5.62888 | 0.1759253 | 2.6146380 | 23 | 1 | 27 days | 0.29 | | MPC | 2006 $WA_{27}$ |
| 2006 $WD_{27}$ | 16.3 | 0.15 | 20061101 | 276.55884 | 145.07066 | 38.83814 | 4.10961 | 0.2313730 | 2.3817816 | 14 | 1 | 4 days | 0.68 | | MPC | 2006 $WD_{27}$ |
| 2006 $WG_{27}$ | 16.0 | 0.15 | 20061121 | 112.87664 | 302.29600 | 314.42012 | 30.77301 | 0.0752267 | 1.9144145 | 28 | 1 | 1 days | 0.48 | E | MPC | 2006 $WG_{27}$ |
| 2006 $WH_{27}$ | 17.9 | 0.15 | 20061101 | 354.41767 | 199.11954 | 224.37951 | 1.64292 | 0.1752136 | 2.3688212 | 23 | 1 | 30 days | 0.58 | | MPC | 2006 $WH_{27}$ |
| 2006 $WK_{27}$ | 17.8 | 0.15 | 20061101 | 340.70570 | 221.65576 | 214.68417 | 0.99765 | 0.1776227 | 2.6837645 | 16 | 1 | 31 days | 0.27 | | MPC | 2006 $WK_{27}$ |
| 2006 $WL_{27}$ | 16.9 | 0.15 | 20061121 | 44.40502 | 90.92301 | 275.58723 | 10.18550 | 0.0079195 | 3.1000324 | 8 | 1 | 8 days | 0.68 | E | MPC | 2006 $WL_{27}$ |
| 2006 $WN_{27}$ | 16.8 | 0.15 | 20061121 | 45.36656 | 1.95182 | 343.62814 | 7.85276 | 0.2177716 | 2.7906667 | 13 | 1 | 7 days | 0.31 | | MPC | 2006 $WN_{27}$ |
| 2006 $WS_{27}$ | 16.8 | 0.15 | 20061121 | 35.58216 | 67.79499 | 308.30600 | 0.87127 | 0.1718333 | 2.9442896 | 16 | 1 | 6 days | 0.45 | | MPC | 2006 $WS_{27}$ |
| 2006 $WT_{27}$ | 18.1 | 0.15 | 20061121 | 59.20933 | 292.08433 | 49.19072 | 2.43756 | 0.2213916 | 2.5028007 | 11 | 1 | 2 days | 0.53 | | MPC | 2006 $WT_{27}$ |
| 2006 $WU_{27}$ | 17.6 | 0.15 | 20061101 | 127.41571 | 221.43864 | 61.56441 | 4.44133 | 0.1137462 | 2.2049387 | 15 | 1 | 16 days | 0.31 | | MPC | 2006 $WU_{27}$ |
| 2006 $WY_{27}$ | 15.5 | 0.15 | 20061121 | 202.79633 | 159.22654 | 68.05711 | 12.35335 | 0.0941511 | 3.0215728 | 14 | 1 | 5 days | 0.28 | | MPC | 2006 $WY_{27}$ |
| 2006 $WZ_{27}$ | 16.8 | 0.15 | 20061121 | 215.23848 | 335.74924 | 239.05645 | 4.11591 | 0.0697324 | 2.7285055 | 12 | 1 | 5 days | 0.37 | | MPC | 2006 $WZ_{27}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WA_{28}$ | 16.2 | 0.15 | 20061121 | 356.71464 | 187.31480 | 241.80846 | 9.85574 | 0.1147799 | 2.6436278 | 33 | 1 | 12 days | 0.41 | | MPC | 2006 $WA_{28}$ |
| 2006 $WE_{28}$ | 18.2 | 0.15 | 20061121 | 30.40542 | 163.09706 | 219.30002 | 3.72043 | 0.1675678 | 2.6259015 | 9 | 1 | 2 days | 0.38 | | MPC | 2006 $WE_{28}$ |
| 2006 $WF_{28}$ | 17.1 | 0.15 | 20061101 | 35.26959 | 255.95559 | 123.71199 | 2.08655 | 0.0669920 | 2.5850449 | 16 | 1 | 8 days | 0.22 | | MPC | 2006 $WF_{28}$ |
| 2006 $WG_{28}$ | 17.3 | 0.15 | 20061121 | 318.98271 | 276.33310 | 195.53031 | 2.33153 | 0.0803068 | 2.4305530 | 10 | 1 | 4 days | 0.81 | | MPC | 2006 $WG_{28}$ |
| 2006 $WH_{28}$ | 17.6 | 0.15 | 20061101 | 14.98307 | 312.44743 | 79.86482 | 6.46595 | 0.2292028 | 2.6208009 | 14 | 1 | 7 days | 0.33 | | MPC | 2006 $WH_{28}$ |
| 2006 $WJ_{28}$ | 17.7 | 0.15 | 20061121 | 227.65908 | 118.16733 | 84.57898 | 5.62249 | 0.0710657 | 2.3659458 | 10 | 1 | 2 days | 0.43 | | MPC | 2006 $WJ_{28}$ |
| 2006 $WR_{28}$ | 18.9 | 0.15 | 20061121 | 0.17140 | 93.22447 | 330.64560 | 0.88084 | 0.2252634 | 2.5261270 | 9 | 1 | 2 days | 0.55 | | MPC | 2006 $WR_{28}$ |
| 2006 $WV_{28}$ | 18.4 | 0.15 | 20061121 | 51.89085 | 115.68685 | 246.94851 | 5.01593 | 0.1015848 | 2.2625291 | 12 | 1 | 5 days | 0.51 | | MPC | 2006 $WV_{28}$ |
| 2006 $WX_{28}$ | 15.9 | 0.15 | 20061101 | 192.04149 | 166.90982 | 61.56590 | 5.89349 | 0.1351642 | 2.5536939 | 9 | 1 | 4 days | 0.67 | | MPC | 2006 $WX_{28}$ |
| 2006 $WY_{28}$ | 17.2 | 0.15 | 20061121 | 332.41099 | 222.59683 | 234.15876 | 1.24359 | 0.1093597 | 2.5165539 | 9 | 1 | 9 days | 0.22 | | MPC | 2006 $WY_{28}$ |
| 2006 $WZ_{28}$ | 18.8 | 0.15 | 20061101 | 346.15995 | 12.25365 | 61.91422 | 4.91955 | 0.2201677 | 2.4059154 | 9 | 1 | 4 days | 0.38 | | MPC | 2006 $WZ_{28}$ |
| 2006 $WB_{29}$ | 17.4 | 0.15 | 20061121 | 32.19908 | 130.83791 | 242.30542 | 15.77361 | 0.2094941 | 2.5528891 | 18 | 1 | 9 days | 0.50 | | MPC | 2006 $WB_{29}$ |
| 2006 $WC_{29}$ | 18.1 | 0.15 | 20061121 | 9.24127 | 163.32682 | 248.48169 | 2.16733 | 0.1271000 | 2.5702763 | 19 | 1 | 6 days | 0.56 | | MPC | 2006 $WC_{29}$ |
| 2006 $WD_{29}$ | 17.3 | 0.15 | 20061121 | 90.55392 | 254.16047 | 62.00757 | 2.86921 | 0.1558134 | 2.4016069 | 22 | 1 | 8 days | 0.50 | | MPC | 2006 $WD_{29}$ |
| 2006 $WE_{29}$ | 15.8 | 0.15 | 20061121 | 174.43714 | 270.50519 | 324.25835 | 13.81391 | 0.0840028 | 2.6234198 | 19 | 1 | 7 days | 0.44 | | MPC | 2006 $WE_{29}$ |
| 2006 $WF_{29}$ | 17.4 | 0.15 | 20061121 | 352.70840 | 61.40510 | 17.41337 | 10.33290 | 0.2372519 | 3.1317320 | 14 | 1 | 9 days | 0.38 | | MPC | 2006 $WF_{29}$ |
| 2006 $WK_{29}$ | 17.6 | 0.15 | 20060922 | 26.60820 | 119.48654 | 241.70973 | 45.82376 | 0.1407614 | 2.2946553 | 39 | 1 | 9 days | 0.30 | M-v 7 | MPC | 2006 $WK_{29}$ |
| 2006 $WL_{29}$ | 20.3 | 0.15 | 20061121 | 301.85396 | 247.36997 | 241.59258 | 29.06059 | 0.0932440 | 1.7594865 | 19 | 1 | 2 days | 0.46 | | MPC | 2006 $WL_{29}$ |
| 2006 $WM_{29}$ | 20.3 | 0.15 | 20061121 | 9.64804 | 334.69325 | 43.17340 | 9.05854 | 0.4042397 | 2.1999970 | 16 | 1 | 2 days | 0.53 | | MPC | 2006 $WM_{29}$ |
| 2006 $WN_{29}$ | 18.8 | 0.15 | 20061101 | 330.86078 | 232.63976 | 231.80966 | 32.52601 | 0.3710529 | 2.5489801 | 42 | 1 | 10 days | 0.41 | | MPC | 2006 $WN_{29}$ |
| 2006 $WO_{29}$ | 16.2 | 0.15 | 20061121 | 62.10042 | 253.18783 | 116.73457 | 28.50225 | 0.3616998 | 2.5432376 | 27 | 1 | 5 days | 0.30 | | MPC | 2006 $WO_{29}$ |
| 2006 $WP_{29}$ | 17.3 | 0.15 | 20061121 | 355.04074 | 293.60040 | 127.53397 | 22.40805 | 0.3649133 | 2.2211552 | 24 | 1 | 2 days | 0.26 | | MPC | 2006 $WP_{29}$ |
| 2006 $WR_{29}$ | 24.0 | 0.15 | 20060922 | 338.25787 | 197.50961 | 243.51459 | 11.88176 | 0.5477842 | 2.3523825 | 18 | 1 | 6 days | 0.57 | M-v 6 | MPC | 2006 $WR_{29}$ |
| 2006 $WS_{29}$ | 25.0 | 0.15 | 20060922 | 309.40041 | 56.77224 | 63.87884 | 14.54972 | 0.4580990 | 1.6635635 | 29 | 1 | 11 days | 0.60 | M-v 7 | MPC | 2006 $WS_{29}$ |
| 2006 $WT_{29}$ | 19.4 | 0.15 | 20060922 | 346.13309 | 156.97381 | 259.66631 | 31.64303 | 0.3145313 | 1.7209438 | 22 | 1 | 10 days | 0.40 | M-v 9 | MPC | 2006 $WT_{29}$ |
| 2006 $WU_{29}$ | 18.2 | 0.15 | 20060922 | 339.98439 | 336.94971 | 96.03391 | 29.10752 | 0.5338897 | 2.6607285 | 28 | 1 | 5 days | 0.42 | M-v 8 | MPC | 2006 $WU_{29}$ |
| 2006 $WV_{29}$ | 26.5 | 0.15 | 20060922 | 288.36136 | 82.01286 | 75.36120 | 1.19690 | 0.5586183 | 1.3793756 | 29 | 1 | 3 days | 0.70 | M-v 7 | MPC | 2006 $WV_{29}$ |
| 2006 $WX_{29}$ | 27.8 | 0.15 | 20060922 | 355.76651 | 95.68276 | 239.39709 | 2.43421 | 0.7279737 | 2.3027682 | 16 | 1 | 2 days | 0.59 | M-v 8 | MPC | 2006 $WX_{29}$ |
| 2006 $WY_{29}$ | 16.0 | 0.15 | 20061121 | 22.93005 | 119.58135 | 252.56729 | 29.25712 | 0.3681790 | 2.6414679 | 132 | 1 | 9 days | 0.45 | | MPC | 2006 $WY_{29}$ |
| 2006 $WZ_{29}$ | 24.8 | 0.15 | 20060922 | 354.31947 | 143.75293 | 226.90221 | 4.86460 | 0.5744343 | 2.2741335 | 22 | 1 | 4 days | 0.39 | M-v 8 | MPC | 2006 $WZ_{29}$ |
| 2006 $WA_{30}$ | 25.6 | 0.15 | 20060922 | 311.91741 | 226.64567 | 241.55614 | 10.08388 | 0.4221225 | 1.6304975 | 17 | 1 | 6 days | 0.34 | M-v 7 | MPC | 2006 $WA_{30}$ |
| 2006 $WB_{30}$ | 25.9 | 0.15 | 20060922 | 326.78799 | 359.70568 | 70.62959 | 3.63255 | 0.3611744 | 1.6432787 | 20 | 1 | 7 days | 0.57 | M-v 7 | MPC | 2006 $WB_{30}$ |
| 2006 $WC_{30}$ | 24.3 | 0.15 | 20060922 | 340.71140 | 13.37985 | 72.42622 | 4.95804 | 0.6267373 | 2.6060086 | 25 | 1 | 6 days | 0.65 | M-v 5 | MPC | 2006 $WC_{30}$ |
| 2006 $WE_{30}$ | 16.6 | 0.15 | 20061121 | 358.02528 | 340.26489 | 96.59189 | 15.06361 | 0.3409566 | 2.7280990 | 11 | 1 | 11 days | 0.42 | | MPC | 2006 $WE_{30}$ |
| 2006 $WF_{30}$ | 17.9 | 0.15 | 20061121 | 337.81903 | 97.57815 | 6.12374 | 8.32914 | 0.3855561 | 2.9276387 | 9 | 1 | 3 days | 0.43 | | MPC | 2006 $WF_{30}$ |
| 2006 $WG_{30}$ | 15.9 | 0.15 | 20061121 | 62.37553 | 337.67799 | 339.23674 | 8.48530 | 0.2816384 | 3.1210941 | 10 | 1 | 3 days | 0.25 | | MPC | 2006 $WG_{30}$ |
| 2006 $WH_{30}$ | 15.3 | 0.15 | 20061121 | 68.12630 | 289.82953 | 34.18516 | 24.01638 | 0.1816185 | 3.1666438 | 10 | 1 | 3 days | 0.23 | | MPC | 2006 $WH_{30}$ |
| 2006 $WJ_{30}$ | 17.3 | 0.15 | 20061121 | 11.61148 | 42.83276 | 353.25522 | 7.16411 | 0.1734941 | 2.6774494 | 10 | 1 | 3 days | 0.33 | | MPC | 2006 $WJ_{30}$ |
| 2006 $WK_{30}$ | 16.4 | 0.15 | 20061121 | 21.71213 | 52.24260 | 337.47235 | 5.60016 | 0.2426622 | 2.3619694 | 57 | 1 | 3 days | 0.52 | | MPC | 2006 $WK_{30}$ |
| 2006 $WL_{30}$ | 15.5 | 0.15 | 20061121 | 234.59720 | 144.90303 | 47.64909 | 15.13530 | 0.0972337 | 3.1049927 | 24 | 1 | 3 days | 0.37 | | MPC | 2006 $WL_{30}$ |
| 2006 $WP_{30}$ | 16.9 | 0.15 | 20061121 | 157.80939 | 22.52846 | 234.31004 | 1.20744 | 0.0750415 | 2.6885501 | 10 | 1 | 7 days | 0.42 | | MPC | 2006 $WP_{30}$ |
| 2006 $WR_{30}$ | 16.2 | 0.15 | 20061101 | 323.58101 | 40.40974 | 56.21136 | 11.31417 | 0.0767427 | 3.1458133 | 21 | 1 | 15 days | 0.29 | | MPC | 2006 $WR_{30}$ |
| 2006 $WT_{30}$ | 16.8 | 0.15 | 20061121 | 168.03152 | 4.22102 | 244.40576 | 6.22756 | 0.0921309 | 2.8283906 | 10 | 1 | 3 days | 0.21 | | MPC | 2006 $WT_{30}$ |
| 2006 $WV_{30}$ | 16.0 | 0.15 | 20061121 | 128.68989 | 40.12222 | 246.40855 | 15.48767 | 0.1210876 | 3.1396122 | 18 | 1 | 12 days | 0.63 | | MPC | 2006 $WV_{30}$ |
| 2006 $WW_{30}$ | 18.6 | 0.15 | 20061121 | 21.67991 | 7.73279 | 19.99422 | 3.35108 | 0.1715083 | 2.2509306 | 17 | 1 | 6 days | 0.32 | | MPC | 2006 $WW_{30}$ |
| 2006 $WG_{31}$ | 17.0 | 0.15 | 20061121 | 171.47275 | 106.35881 | 137.75410 | 2.39097 | 0.1069491 | 2.6003339 | 9 | 1 | 11 days | 0.92 | | MPC | 2006 $WG_{31}$ |
| 2006 $WO_{31}$ | 17.3 | 0.15 | 20061121 | 338.47380 | 328.10165 | 118.99045 | 3.19711 | 0.1439080 | 2.9280100 | 9 | 1 | 11 days | 0.18 | | MPC | 2006 $WO_{31}$ |
| 2006 $WP_{31}$ | 16.4 | 0.15 | 20061101 | 279.55174 | 85.68385 | 69.88236 | 17.05208 | 0.1804567 | 3.1044768 | 13 | 1 | 35 days | 0.29 | | MPC | 2006 $WP_{31}$ |
| 2006 $WQ_{31}$ | 18.6 | 0.15 | 20061101 | 344.07291 | 323.38388 | 109.79448 | 2.61254 | 0.1717292 | 2.2633217 | 13 | 1 | 36 days | 0.22 | | MPC | 2006 $WQ_{31}$ |
| 2006 $WS_{31}$ | 16.6 | 0.15 | 20061121 | 12.71222 | 266.95577 | 134.46111 | 4.23700 | 0.0863982 | 3.1339194 | 9 | 1 | 11 days | 0.44 | | MPC | 2006 $WS_{31}$ |
| 2006 $WZ_{31}$ | 16.7 | 0.15 | 20061121 | 37.71107 | 252.94915 | 117.06455 | 4.13262 | 0.1247236 | 2.7099340 | 13 | 1 | 11 days | 0.32 | | MPC | 2006 $WZ_{31}$ |
| 2006 $WE_{32}$ | 17.3 | 0.15 | 20061121 | 79.37825 | 238.82882 | 93.46272 | 7.25962 | 0.0542377 | 2.7453448 | 9 | 1 | 11 days | 0.17 | | MPC | 2006 $WE_{32}$ |
| 2006 $WH_{32}$ | 16.4 | 0.15 | 20061101 | 54.58324 | 202.76483 | 145.62581 | 4.26967 | 0.1046452 | 2.7763263 | 13 | 1 | 35 days | 0.17 | | MPC | 2006 $WH_{32}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WJ_{32}$ | 16.2 | 0.15 | 20061121 | 77.46279 | 255.05310 | 79.75805 | 11.44295 | 0.0498507 | 3.1235747 | 9 | 1 | 11 days | 0.17 | | MPC | 2006 $WJ_{32}$ |
| 2006 $WN_{32}$ | 17.9 | 0.15 | 20061121 | 29.44544 | 304.67154 | 72.19896 | 14.85670 | 0.1673633 | 2.6245922 | 9 | 1 | 11 days | 0.14 | | MPC | 2006 $WN_{32}$ |
| 2006 $WP_{32}$ | 16.4 | 0.15 | 20061012 | 297.57850 | 287.91183 | 196.36717 | 6.25830 | 0.1217649 | 2.6921396 | 21 | 1 | 56 days | 0.24 | | MPC | 2006 $WP_{32}$ |
| 2006 $WC_{33}$ | 16.5 | 0.15 | 20061101 | 21.78321 | 161.98754 | 197.95579 | 2.01888 | 0.0858565 | 3.2339406 | 16 | 1 | 37 days | 0.26 | | MPC | 2006 $WC_{33}$ |
| 2006 $WD_{33}$ | 16.1 | 0.15 | 20061101 | 53.19643 | 276.87308 | 76.82556 | 9.90233 | 0.0835676 | 3.2452447 | 9 | 1 | 8 days | 0.21 | | MPC | 2006 $WD_{33}$ |
| 2006 $WG_{33}$ | 17.5 | 0.15 | 20061101 | 352.53237 | 347.77450 | 75.36975 | 10.63057 | 0.0923119 | 2.9572499 | 9 | 1 | 8 days | 0.33 | | MPC | 2006 $WG_{33}$ |
| 2006 $WN_{33}$ | 16.0 | 0.15 | 20061101 | 49.55357 | 279.29396 | 70.11737 | 14.53349 | 0.1501074 | 2.6798066 | 20 | 1 | 25 days | 0.44 | | MPC | 2006 $WN_{33}$ |
| 2006 $WO_{33}$ | 17.0 | 0.15 | 20061101 | 159.30684 | 173.28574 | 78.85706 | 8.15315 | 0.0841051 | 2.3754627 | 16 | 1 | 15 days | 0.26 | | MPC | 2006 $WO_{33}$ |
| 2006 $WQ_{33}$ | 18.0 | 0.15 | 20061101 | 58.16407 | 172.08811 | 180.74148 | 3.54356 | 0.0238918 | 2.2574884 | 13 | 1 | 12 days | 0.18 | | MPC | 2006 $WQ_{33}$ |
| 2006 $WR_{33}$ | 15.7 | 0.15 | 20061101 | 152.11467 | 183.08105 | 78.67818 | 11.66560 | 0.0418066 | 3.1364747 | 13 | 1 | 32 days | 0.22 | | MPC | 2006 $WR_{33}$ |
| 2006 $WV_{33}$ | 15.9 | 0.15 | 20061121 | 140.25194 | 141.99105 | 128.36011 | 3.40680 | 0.1483854 | 3.1129682 | 9 | 1 | 11 days | 0.18 | | MPC | 2006 $WV_{33}$ |
| 2006 $WW_{33}$ | 16.4 | 0.15 | 20061101 | 230.10525 | 99.12791 | 88.57304 | 7.11637 | 0.0198429 | 3.0485644 | 9 | 1 | 8 days | 0.54 | | MPC | 2006 $WW_{33}$ |
| 2006 $WZ_{33}$ | 16.1 | 0.15 | 20061101 | 15.53446 | 320.40676 | 76.93419 | 10.46461 | 0.0865592 | 3.0507400 | 23 | 1 | 35 days | 0.25 | | MPC | 2006 $WZ_{33}$ |
| 2006 $WB_{34}$ | 17.9 | 0.15 | 20061101 | 301.14109 | 32.10500 | 95.10297 | 4.98830 | 0.1236975 | 2.6795367 | 13 | 1 | 15 days | 0.20 | | MPC | 2006 $WB_{34}$ |
| 2006 $WD_{34}$ | 16.5 | 0.15 | 20061101 | 226.31541 | 328.38425 | 225.29010 | 11.75306 | 0.0441177 | 2.6103310 | 8 | 1 | 8 days | 0.73 | | MPC | 2006 $WD_{34}$ |
| 2006 $WE_{34}$ | 16.6 | 0.15 | 20061101 | 150.81088 | 55.73959 | 203.45505 | 5.51778 | 0.1298677 | 2.3761760 | 13 | 1 | 33 days | 0.18 | | MPC | 2006 $WE_{34}$ |
| 2006 $WH_{34}$ | 17.5 | 0.15 | 20061101 | 4.25805 | 223.79334 | 186.06952 | 3.94594 | 0.1186305 | 2.7061728 | 20 | 1 | 33 days | 0.25 | | MPC | 2006 $WH_{34}$ |
| 2006 $WM_{34}$ | 17.5 | 0.15 | 20061101 | 263.09137 | 336.27336 | 187.33439 | 4.17725 | 0.0966404 | 2.3034383 | 13 | 1 | 12 days | 0.39 | | MPC | 2006 $WM_{34}$ |
| 2006 $WN_{34}$ | 15.8 | 0.15 | 20061101 | 237.83277 | 106.26564 | 82.78224 | 10.62205 | 0.0974669 | 2.8518792 | 13 | 1 | 12 days | 0.18 | | MPC | 2006 $WN_{34}$ |
| 2006 $WO_{34}$ | 16.9 | 0.15 | 20061101 | 0.56730 | 337.62899 | 76.77295 | 11.67402 | 0.2154795 | 3.0066671 | 16 | 1 | 12 days | 0.18 | | MPC | 2006 $WO_{34}$ |
| 2006 $WR_{34}$ | 17.8 | 0.15 | 20061101 | 64.03028 | 229.13917 | 98.07298 | 4.95313 | 0.2164207 | 2.3795195 | 9 | 1 | 8 days | 0.27 | | MPC | 2006 $WR_{34}$ |
| 2006 $WX_{34}$ | 17.0 | 0.15 | 20061101 | 115.76224 | 189.55106 | 101.96656 | 6.81372 | 0.0993670 | 2.4088656 | 13 | 1 | 8 days | 0.16 | | MPC | 2006 $WX_{34}$ |
| 2006 $WZ_{34}$ | 16.5 | 0.15 | 20061101 | 194.14723 | 125.92044 | 100.54675 | 7.55718 | 0.1253857 | 2.3967340 | 12 | 1 | 8 days | 0.75 | | MPC | 2006 $WZ_{34}$ |
| 2006 $WA_{35}$ | 17.8 | 0.15 | 20061101 | 355.19348 | 211.40413 | 211.12536 | 8.46249 | 0.1910379 | 2.7164726 | 13 | 1 | 33 days | 0.13 | | MPC | 2006 $WA_{35}$ |
| 2006 $WB_{35}$ | 17.6 | 0.15 | 20061101 | 337.97128 | 326.56467 | 123.90891 | 5.10332 | 0.2166956 | 3.0116742 | 10 | 1 | 8 days | 0.15 | | MPC | 2006 $WB_{35}$ |
| 2006 $WD_{35}$ | 17.8 | 0.15 | 20061101 | 280.95782 | 351.58875 | 148.34010 | 4.30272 | 0.0387858 | 2.3577248 | 10 | 1 | 8 days | 0.22 | | MPC | 2006 $WD_{35}$ |
| 2006 $WF_{35}$ | 17.8 | 0.15 | 20061101 | 28.55063 | 262.08273 | 120.04018 | 4.92156 | 0.1021725 | 2.6904969 | 9 | 1 | 8 days | 0.16 | | MPC | 2006 $WF_{35}$ |
| 2006 $WL_{35}$ | 19.6 | 0.15 | 20061101 | 30.27295 | 243.20456 | 127.56312 | 3.88568 | 0.1748106 | 2.1566122 | 13 | 1 | 8 days | 0.32 | | MPC | 2006 $WL_{35}$ |
| 2006 $WT_{35}$ | 17.6 | 0.15 | 20061101 | 341.69936 | 346.93734 | 91.59686 | 7.66260 | 0.1331757 | 2.3146357 | 17 | 1 | 9 days | 0.41 | E | MPC | 2006 $WT_{35}$ |
| 2006 $WW_{35}$ | 15.9 | 0.15 | 20061101 | 112.52695 | 191.50164 | 101.51944 | 8.79052 | 0.1481318 | 3.0149011 | 13 | 1 | 8 days | 0.20 | | MPC | 2006 $WW_{35}$ |
| 2006 $WY_{35}$ | 17.3 | 0.15 | 20061101 | 66.21838 | 235.07566 | 95.00049 | 9.29954 | 0.1864065 | 2.5632096 | 10 | 1 | 8 days | 0.14 | | MPC | 2006 $WY_{35}$ |
| 2006 $WZ_{35}$ | 17.7 | 0.15 | 20061101 | 13.46700 | 251.11424 | 143.34638 | 3.98445 | 0.1779276 | 2.5848607 | 17 | 1 | 32 days | 0.19 | | MPC | 2006 $WZ_{35}$ |
| 2006 $WA_{36}$ | 16.2 | 0.15 | 20061101 | 257.45544 | 347.97590 | 176.38518 | 5.62206 | 0.0315644 | 3.2630301 | 10 | 1 | 8 days | 0.53 | | MPC | 2006 $WA_{36}$ |
| 2006 $WB_{36}$ | 19.1 | 0.15 | 20061101 | 346.06995 | 261.78625 | 173.19320 | 4.06131 | 0.2009507 | 2.5956933 | 9 | 1 | 8 days | 0.77 | | MPC | 2006 $WB_{36}$ |
| 2006 $WD_{36}$ | 15.9 | 0.15 | 20061101 | 238.96906 | 42.76241 | 149.68009 | 5.27367 | 0.1577751 | 2.6157799 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $WD_{36}$ |
| 2006 $WE_{36}$ | 16.2 | 0.15 | 20061101 | 266.85194 | 38.72773 | 116.06561 | 5.44861 | 0.0445288 | 2.6167588 | 17 | 1 | 32 days | 0.21 | | MPC | 2006 $WE_{36}$ |
| 2006 $WF_{36}$ | 16.8 | 0.15 | 20061101 | 191.90052 | 143.32831 | 82.82474 | 11.22705 | 0.0984853 | 2.2695699 | 13 | 1 | 8 days | 0.56 | | MPC | 2006 $WF_{36}$ |
| 2006 $WG_{36}$ | 16.1 | 0.15 | 20061101 | 345.21340 | 318.63511 | 118.00245 | 6.09485 | 0.1472047 | 3.1315393 | 13 | 1 | 8 days | 0.31 | | MPC | 2006 $WG_{36}$ |
| 2006 $WJ_{36}$ | 17.9 | 0.15 | 20061101 | 18.07545 | 214.31879 | 174.31850 | 4.18225 | 0.1466823 | 2.2053117 | 17 | 1 | 32 days | 0.25 | | MPC | 2006 $WJ_{36}$ |
| 2006 $WO_{36}$ | 17.3 | 0.15 | 20061101 | 54.22819 | 164.11664 | 193.02215 | 5.79296 | 0.0421871 | 2.7135034 | 10 | 1 | 8 days | 0.23 | | MPC | 2006 $WO_{36}$ |
| 2006 $WP_{36}$ | 18.0 | 0.15 | 20061101 | 262.81417 | 1.22637 | 159.99975 | 3.81693 | 0.0881717 | 2.2734158 | 13 | 1 | 8 days | 0.22 | | MPC | 2006 $WP_{36}$ |
| 2006 $WQ_{36}$ | 16.5 | 0.15 | 20061101 | 348.16415 | 346.74846 | 82.26378 | 12.17320 | 0.0698272 | 3.0964056 | 13 | 1 | 8 days | 0.37 | | MPC | 2006 $WQ_{36}$ |
| 2006 $WT_{36}$ | 16.6 | 0.15 | 20061101 | 303.75340 | 348.39836 | 130.76955 | 4.48854 | 0.0782398 | 2.6683248 | 17 | 1 | 32 days | 0.20 | | MPC | 2006 $WT_{36}$ |
| 2006 $WV_{36}$ | 15.4 | 0.15 | 20061101 | 186.54193 | 144.91203 | 86.93130 | 10.62492 | 0.0971268 | 3.1788092 | 13 | 1 | 8 days | 0.57 | | MPC | 2006 $WV_{36}$ |
| 2006 $WW_{36}$ | 15.6 | 0.15 | 20061101 | 217.33689 | 118.87007 | 82.12487 | 12.50806 | 0.0225547 | 3.2270795 | 13 | 1 | 8 days | 0.34 | | MPC | 2006 $WW_{36}$ |
| 2006 $WX_{36}$ | 18.0 | 0.15 | 20061101 | 27.33194 | 183.81205 | 189.12790 | 4.59125 | 0.1927069 | 2.4541924 | 13 | 1 | 8 days | 0.24 | | MPC | 2006 $WX_{36}$ |
| 2006 $WY_{36}$ | 15.9 | 0.15 | 20061101 | 336.46146 | 0.17116 | 81.97128 | 13.54324 | 0.0428403 | 3.2109452 | 13 | 1 | 8 days | 0.57 | | MPC | 2006 $WY_{36}$ |
| 2006 $WZ_{36}$ | 18.8 | 0.15 | 20061101 | 27.52916 | 256.48515 | 116.40945 | 4.26046 | 0.1784468 | 2.2358218 | 10 | 1 | 8 days | 0.17 | | MPC | 2006 $WZ_{36}$ |
| 2006 $WA_{37}$ | 17.6 | 0.15 | 20061101 | 25.48013 | 236.83757 | 149.10586 | 4.90937 | 0.0804925 | 2.8117415 | 9 | 1 | 8 days | 0.22 | | MPC | 2006 $WA_{37}$ |
| 2006 $WB_{37}$ | 17.1 | 0.15 | 20061101 | 72.04949 | 248.92910 | 83.43184 | 12.35064 | 0.1004974 | 2.7600152 | 13 | 1 | 8 days | 0.20 | | MPC | 2006 $WB_{37}$ |
| 2006 $WC_{37}$ | 17.1 | 0.15 | 20061101 | 79.76839 | 98.55063 | 215.89591 | 10.78408 | 0.1928904 | 2.5481361 | 14 | 1 | 33 days | 0.25 | | MPC | 2006 $WC_{37}$ |
| 2006 $WD_{37}$ | 15.7 | 0.15 | 20061121 | 264.61143 | 88.21847 | 72.37580 | 16.48552 | 0.0626918 | 3.0903510 | 12 | 1 | 11 days | 0.18 | | MPC | 2006 $WD_{37}$ |
| 2006 $WE_{37}$ | 17.9 | 0.15 | 20061121 | 10.93495 | 310.31297 | 95.37164 | 5.48969 | 0.0737567 | 2.2400538 | 9 | 1 | 11 days | 0.95 | | MPC | 2006 $WE_{37}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WK_{37}$ | 17.6 | 0.15 | 20061101 | 352.45624 | 302.45521 | 120.41198 | 4.74077 | 0.1116168 | 2.7932729 | 9 | 1 | 8 days | 0.69 | | MPC | 2006 $WK_{37}$ |
| 2006 $WL_{37}$ | 17.3 | 0.15 | 20061101 | 190.89680 | 67.11384 | 157.89849 | 4.58037 | 0.0466133 | 2.7575313 | 9 | 1 | 8 days | 0.44 | | MPC | 2006 $WL_{37}$ |
| 2006 $WM_{37}$ | 15.5 | 0.15 | 20061121 | 350.82802 | 225.75651 | 203.85168 | 8.35615 | 0.0555387 | 3.2568416 | 10 | 1 | 10 days | 0.69 | | MPC | 2006 $WM_{37}$ |
| 2006 $WP_{37}$ | 17.5 | 0.15 | 20061101 | 2.37488 | 293.12962 | 115.64498 | 4.41282 | 0.1955477 | 2.7435779 | 17 | 1 | 32 days | 0.18 | | MPC | 2006 $WP_{37}$ |
| 2006 $WQ_{37}$ | 16.6 | 0.15 | 20061101 | 182.74343 | 56.41562 | 177.40546 | 5.12586 | 0.1369429 | 2.7129206 | 10 | 1 | 8 days | 0.83 | | MPC | 2006 $WQ_{37}$ |
| 2006 $WR_{37}$ | 19.1 | 0.15 | 20061121 | 358.57944 | 288.81810 | 132.30584 | 3.58753 | 0.2182534 | 2.3687478 | 14 | 1 | 10 days | 0.41 | | MPC | 2006 $WR_{37}$ |
| 2006 $WS_{37}$ | 17.4 | 0.15 | 20061101 | 344.24177 | 228.36119 | 204.28981 | 6.92982 | 0.0807205 | 2.6956788 | 13 | 1 | 8 days | 0.82 | | MPC | 2006 $WS_{37}$ |
| 2006 $WU_{37}$ | 17.4 | 0.15 | 20061101 | 16.33261 | 259.44553 | 134.44438 | 4.21951 | 0.1041063 | 2.7709648 | 17 | 1 | 32 days | 0.31 | | MPC | 2006 $WU_{37}$ |
| 2006 $WW_{37}$ | 17.1 | 0.15 | 20061101 | 272.67924 | 25.68379 | 125.35032 | 4.46512 | 0.0772865 | 2.6966564 | 17 | 1 | 32 days | 0.28 | | MPC | 2006 $WW_{37}$ |
| 2006 $WX_{37}$ | 17.1 | 0.15 | 20061101 | 161.90084 | 47.10758 | 203.04694 | 6.96779 | 0.0818122 | 2.3351678 | 14 | 1 | 32 days | 0.20 | | MPC | 2006 $WX_{37}$ |
| 2006 $WA_{38}$ | 18.2 | 0.15 | 20061101 | 16.18242 | 188.03157 | 186.35029 | 4.36085 | 0.3616703 | 2.6753222 | 14 | 1 | 32 days | 0.16 | E | MPC | 2006 $WA_{38}$ |
| 2006 $WB_{38}$ | 17.4 | 0.15 | 20061101 | 64.00668 | 133.74080 | 197.73315 | 6.20591 | 0.1683919 | 2.5439018 | 17 | 1 | 32 days | 0.18 | | MPC | 2006 $WB_{38}$ |
| 2006 $WD_{38}$ | 17.3 | 0.15 | 20061101 | 350.59839 | 349.29932 | 76.32548 | 12.46500 | 0.0822934 | 2.9240024 | 9 | 1 | 8 days | 0.46 | | MPC | 2006 $WD_{38}$ |
| 2006 $WH_{38}$ | 17.5 | 0.15 | 20061101 | 26.09646 | 277.19999 | 95.20391 | 6.33506 | 0.2114786 | 2.5694161 | 13 | 1 | 8 days | 0.16 | | MPC | 2006 $WH_{38}$ |
| 2006 $WJ_{38}$ | 17.1 | 0.15 | 20061101 | 258.88596 | 101.36157 | 77.11712 | 13.97250 | 0.2133613 | 2.6465656 | 10 | 1 | 8 days | 0.27 | | MPC | 2006 $WJ_{38}$ |
| 2006 $WM_{38}$ | 18.5 | 0.15 | 20061101 | 339.25331 | 248.67314 | 192.53369 | 4.82634 | 0.1773891 | 2.2928312 | 13 | 1 | 8 days | 0.24 | | MPC | 2006 $WM_{38}$ |
| 2006 $WN_{38}$ | 17.7 | 0.15 | 20061101 | 336.70723 | 193.63718 | 250.58905 | 4.17399 | 0.1917544 | 2.2763444 | 18 | 1 | 5 days | 0.56 | | MPC | 2006 $WN_{38}$ |
| 2006 $WO_{38}$ | 18.1 | 0.15 | 20061101 | 11.83747 | 167.43312 | 230.96116 | 7.39757 | 0.1883309 | 2.4139223 | 16 | 1 | 26 days | 0.30 | | MPC | 2006 $WO_{38}$ |
| 2006 $WP_{38}$ | 18.2 | 0.15 | 20061121 | 45.67269 | 291.16798 | 69.76573 | 13.86204 | 0.1838348 | 2.6959813 | 13 | 1 | 11 days | 0.29 | | MPC | 2006 $WP_{38}$ |
| 2006 $WR_{38}$ | 16.2 | 0.15 | 20061101 | 212.93597 | 97.90938 | 117.56334 | 3.05251 | 0.1146785 | 2.8143640 | 9 | 1 | 8 days | 0.71 | | MPC | 2006 $WR_{38}$ |
| 2006 $WT_{38}$ | 17.5 | 0.15 | 20061101 | 25.38653 | 302.49895 | 75.79838 | 9.24629 | 0.2307076 | 2.9496798 | 13 | 1 | 8 days | 0.44 | | MPC | 2006 $WT_{38}$ |
| 2006 $WU_{38}$ | 18.2 | 0.15 | 20061101 | 47.38193 | 250.81551 | 94.78377 | 3.33595 | 0.2348905 | 2.3061684 | 9 | 1 | 8 days | 0.10 | | MPC | 2006 $WU_{38}$ |
| 2006 $WV_{38}$ | 17.1 | 0.15 | 20061101 | 330.75799 | 329.99023 | 129.45947 | 2.11657 | 0.1458373 | 3.0735574 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $WV_{38}$ |
| 2006 $WW_{38}$ | 17.5 | 0.15 | 20061101 | 321.83294 | 19.24351 | 88.44329 | 4.73291 | 0.1228945 | 2.7504840 | 9 | 1 | 8 days | 0.44 | | MPC | 2006 $WW_{38}$ |
| 2006 $WX_{38}$ | 16.5 | 0.15 | 20061101 | 300.61584 | 297.00987 | 192.42203 | 2.62654 | 0.0816893 | 3.0078368 | 9 | 1 | 8 days | 0.44 | | MPC | 2006 $WX_{38}$ |
| 2006 $WZ_{38}$ | 17.0 | 0.15 | 20061101 | 330.37240 | 289.79067 | 170.62830 | 1.86899 | 0.1482052 | 3.0779314 | 13 | 1 | 8 days | 0.29 | | MPC | 2006 $WZ_{38}$ |
| 2006 $WA_{39}$ | 16.2 | 0.15 | 20061101 | 204.41354 | 101.06103 | 123.60203 | 2.39855 | 0.1589532 | 2.6953030 | 10 | 1 | 8 days | 0.46 | | MPC | 2006 $WA_{39}$ |
| 2006 $WC_{39}$ | 17.0 | 0.15 | 20061101 | 25.26451 | 160.41911 | 230.51535 | 8.30638 | 0.1009959 | 3.0903168 | 9 | 1 | 8 days | 0.24 | | MPC | 2006 $WC_{39}$ |
| 2006 $WE_{39}$ | 17.6 | 0.15 | 20061121 | 339.86997 | 355.51282 | 96.09291 | 2.34523 | 0.1447535 | 2.4115343 | 20 | 1 | 11 days | 0.22 | | MPC | 2006 $WE_{39}$ |
| 2006 $WF_{39}$ | 15.6 | 0.15 | 20061101 | 207.20975 | 349.74463 | 233.73657 | 10.33905 | 0.1426579 | 3.0891521 | 12 | 1 | 8 days | 0.48 | | MPC | 2006 $WF_{39}$ |
| 2006 $WG_{39}$ | 16.7 | 0.15 | 20061121 | 311.49571 | 39.13395 | 80.47973 | 5.85827 | 0.0594728 | 2.7101782 | 23 | 1 | 11 days | 0.23 | | MPC | 2006 $WG_{39}$ |
| 2006 $WJ_{39}$ | 15.0 | 0.15 | 20061101 | 116.29521 | 66.42210 | 234.65347 | 9.56226 | 0.0722460 | 3.3906213 | 13 | 1 | 24 days | 0.21 | E | MPC | 2006 $WJ_{39}$ |
| 2006 $WK_{39}$ | 17.8 | 0.15 | 20061101 | 332.33368 | 319.43536 | 140.34634 | 2.14812 | 0.1916087 | 2.7454168 | 9 | 1 | 8 days | 0.73 | | MPC | 2006 $WK_{39}$ |
| 2006 $WO_{39}$ | 17.3 | 0.15 | 20061101 | 204.22986 | 108.10172 | 118.10273 | 2.90136 | 0.2050706 | 2.2612294 | 9 | 1 | 8 days | 0.52 | | MPC | 2006 $WO_{39}$ |
| 2006 $WQ_{39}$ | 16.8 | 0.15 | 20061101 | 76.23741 | 202.72242 | 133.51800 | 2.75809 | 0.0926552 | 2.8780042 | 9 | 1 | 8 days | 0.32 | | MPC | 2006 $WQ_{39}$ |
| 2006 $WV_{39}$ | 16.0 | 0.15 | 20061101 | 290.57374 | 49.53573 | 89.01990 | 10.97283 | 0.0744825 | 2.7532429 | 12 | 1 | 8 days | 0.95 | | MPC | 2006 $WV_{39}$ |
| 2006 $WX_{39}$ | 16.0 | 0.15 | 20061121 | 74.48496 | 109.21324 | 212.88332 | 9.02442 | 0.2624364 | 2.8717253 | 24 | 1 | 9 days | 0.32 | | MPC | 2006 $WX_{39}$ |
| 2006 $WZ_{39}$ | 18.0 | 0.15 | 20061101 | 36.33715 | 173.80404 | 199.17614 | 6.23893 | 0.1133599 | 2.3053157 | 16 | 1 | 8 days | 0.17 | | MPC | 2006 $WZ_{39}$ |
| 2006 $WB_{40}$ | 15.7 | 0.15 | 20061101 | 291.25568 | 292.48632 | 207.79829 | 9.54374 | 0.0783879 | 3.1635662 | 17 | 1 | 8 days | 0.57 | | MPC | 2006 $WB_{40}$ |
| 2006 $WC_{40}$ | 17.2 | 0.15 | 20061101 | 44.76523 | 160.59881 | 184.94269 | 5.66787 | 0.2794920 | 2.5974337 | 13 | 1 | 8 days | 0.16 | | MPC | 2006 $WC_{40}$ |
| 2006 $WF_{40}$ | 15.9 | 0.15 | 20061101 | 60.57727 | 255.03822 | 95.11413 | 11.07161 | 0.0995372 | 2.9239238 | 9 | 1 | 8 days | 0.10 | | MPC | 2006 $WF_{40}$ |
| 2006 $WH_{40}$ | 17.5 | 0.15 | 20061101 | 26.80844 | 272.99805 | 110.75663 | 5.83776 | 0.1099729 | 2.2209173 | 17 | 1 | 8 days | 0.20 | | MPC | 2006 $WH_{40}$ |
| 2006 $WK_{40}$ | 17.3 | 0.15 | 20061101 | 136.38784 | 63.59546 | 218.39016 | 11.07106 | 0.0500418 | 2.6210021 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $WK_{40}$ |
| 2006 $WL_{40}$ | 17.3 | 0.15 | 20061101 | 25.22471 | 148.27305 | 224.85269 | 13.05977 | 0.2789820 | 2.6200629 | 17 | 1 | 22 days | 0.13 | | MPC | 2006 $WL_{40}$ |
| 2006 $WM_{40}$ | 18.1 | 0.15 | 20061101 | 23.89282 | 267.44935 | 116.66975 | 5.95491 | 0.1818353 | 2.6365177 | 9 | 1 | 8 days | 0.17 | | MPC | 2006 $WM_{40}$ |
| 2006 $WO_{40}$ | 17.1 | 0.15 | 20061101 | 65.76359 | 167.07915 | 179.84417 | 6.35796 | 0.0833455 | 2.8054555 | 9 | 1 | 8 days | 0.20 | | MPC | 2006 $WO_{40}$ |
| 2006 $WP_{40}$ | 15.8 | 0.15 | 20061121 | 59.05043 | 238.16340 | 97.91648 | 9.70225 | 0.2722363 | 3.0982449 | 17 | 1 | 9 days | 0.25 | | MPC | 2006 $WP_{40}$ |
| 2006 $WR_{40}$ | 16.2 | 0.15 | 20061101 | 56.51657 | 253.04306 | 98.56684 | 10.62618 | 0.1356537 | 3.1894162 | 13 | 1 | 8 days | 0.16 | | MPC | 2006 $WR_{40}$ |
| 2006 $WT_{40}$ | 15.6 | 0.15 | 20061101 | 264.11710 | 317.14907 | 211.18462 | 9.71867 | 0.0791212 | 3.0474346 | 13 | 1 | 8 days | 0.85 | | MPC | 2006 $WT_{40}$ |
| 2006 $WU_{40}$ | 17.1 | 0.15 | 20061101 | 344.92928 | 270.72120 | 166.43767 | 5.27808 | 0.0151312 | 2.6983676 | 9 | 1 | 8 days | 0.15 | | MPC | 2006 $WU_{40}$ |
| 2006 $WV_{40}$ | 17.4 | 0.15 | 20061121 | 15.83175 | 312.18602 | 89.76373 | 11.74323 | 0.1872812 | 2.9481937 | 18 | 1 | 9 days | 0.33 | | MPC | 2006 $WV_{40}$ |
| 2006 $WW_{40}$ | 17.9 | 0.15 | 20061101 | 322.80027 | 305.37872 | 171.18098 | 4.83454 | 0.2409946 | 2.5246388 | 10 | 1 | 8 days | 0.17 | | MPC | 2006 $WW_{40}$ |
| 2006 $WX_{40}$ | 16.5 | 0.15 | 20061101 | 42.42499 | 143.58023 | 224.02004 | 13.50299 | 0.1209297 | 2.5445470 | 17 | 1 | 22 days | 0.19 | | MPC | 2006 $WX_{40}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WZ_{40}$ | 18.8 | 0.15 | 20061121 | 10.83853 | 317.72830 | 89.96476 | 8.14811 | 0.1856344 | 2.1667706 | 16 | 1 | 9 days | 0.25 | | MPC | 2006 $WZ_{40}$ |
| 2006 $WA_{41}$ | 16.1 | 0.15 | 20061121 | 240.51770 | 97.10932 | 97.94446 | 9.86085 | 0.0997350 | 2.7210998 | 14 | 1 | 9 days | 0.34 | | MPC | 2006 $WA_{41}$ |
| 2006 $WC_{41}$ | 17.7 | 0.15 | 20061101 | 226.09283 | 61.84561 | 143.87435 | 5.04732 | 0.1333618 | 2.4422914 | 18 | 1 | 5 days | 0.52 | | MPC | 2006 $WC_{41}$ |
| 2006 $WD_{41}$ | 17.5 | 0.15 | 20061121 | 18.76798 | 274.89039 | 112.78382 | 4.79706 | 0.3144420 | 2.6176307 | 31 | 1 | 9 days | 0.13 | E | MPC | 2006 $WD_{41}$ |
| 2006 $WF_{41}$ | 14.9 | 0.15 | 20061121 | 240.19616 | 110.54929 | 82.58148 | 19.74273 | 0.0740118 | 3.1388880 | 25 | 1 | 9 days | 0.32 | | MPC | 2006 $WF_{41}$ |
| 2006 $WG_{41}$ | 15.5 | 0.15 | 20061101 | 216.06138 | 110.82389 | 104.74826 | 9.09042 | 0.1226935 | 3.1537164 | 25 | 1 | 8 days | 0.75 | | MPC | 2006 $WG_{41}$ |
| 2006 $WJ_{41}$ | 16.6 | 0.15 | 20061101 | 20.88046 | 220.91544 | 175.33057 | 5.48961 | 0.0812905 | 2.6640998 | 16 | 1 | 8 days | 0.19 | | MPC | 2006 $WJ_{41}$ |
| 2006 $WM_{41}$ | 17.5 | 0.15 | 20061121 | 350.31092 | 340.98714 | 100.35788 | 6.71106 | 0.2494081 | 2.6103731 | 20 | 1 | 9 days | 0.32 | | MPC | 2006 $WM_{41}$ |
| 2006 $WP_{41}$ | 17.3 | 0.15 | 20061101 | 321.50222 | 43.57371 | 73.61997 | 23.30568 | 0.2461406 | 2.3645277 | 20 | 1 | 8 days | 0.40 | | MPC | 2006 $WP_{41}$ |
| 2006 $WQ_{41}$ | 19.0 | 0.15 | 20061101 | 343.79261 | 281.44629 | 151.32826 | 2.74712 | 0.1975664 | 2.2628950 | 16 | 1 | 36 days | 0.23 | | MPC | 2006 $WQ_{41}$ |
| 2006 $WU_{41}$ | 18.0 | 0.15 | 20061012 | 359.85224 | 262.95078 | 138.63330 | 3.27425 | 0.1845417 | 2.3946879 | 18 | 1 | 56 days | 0.38 | | MPC | 2006 $WU_{41}$ |
| 2006 $WV_{41}$ | 17.7 | 0.15 | 20061121 | 35.64778 | 235.32475 | 127.74036 | 3.69722 | 0.2168684 | 2.7962931 | 13 | 1 | 11 days | 0.29 | | MPC | 2006 $WV_{41}$ |
| 2006 $WY_{41}$ | 16.3 | 0.15 | 20061101 | 272.39360 | 12.03823 | 156.82244 | 3.99898 | 0.2526072 | 2.6602052 | 20 | 1 | 40 days | 0.25 | | MPC | 2006 $WY_{41}$ |
| 2006 $WB_{42}$ | 16.6 | 0.15 | 20061121 | 3.55506 | 206.35016 | 206.26675 | 7.60307 | 0.1608046 | 3.1846480 | 13 | 1 | 11 days | 0.34 | | MPC | 2006 $WB_{42}$ |
| 2006 $WD_{42}$ | 16.0 | 0.15 | 20061121 | 131.42103 | 79.00601 | 205.40067 | 7.25576 | 0.0210535 | 2.7778828 | 13 | 1 | 11 days | 0.21 | | MPC | 2006 $WD_{42}$ |
| 2006 $WH_{42}$ | 17.0 | 0.15 | 20061121 | 325.86090 | 304.43291 | 153.16381 | 3.98248 | 0.0827314 | 2.6501695 | 10 | 1 | 11 days | 0.24 | | MPC | 2006 $WH_{42}$ |
| 2006 $WK_{42}$ | 16.9 | 0.15 | 20061101 | 36.42651 | 156.03227 | 203.38884 | 6.84886 | 0.2455009 | 2.5953581 | 16 | 1 | 8 days | 0.39 | | MPC | 2006 $WK_{42}$ |
| 2006 $WL_{42}$ | 16.2 | 0.15 | 20061101 | 273.35827 | 352.40996 | 162.08378 | 4.95720 | 0.0673643 | 2.6933293 | 13 | 1 | 8 days | 0.76 | | MPC | 2006 $WL_{42}$ |
| 2006 $WM_{42}$ | 18.6 | 0.15 | 20061101 | 15.37222 | 193.21048 | 196.08218 | 5.51523 | 0.2384736 | 2.3953832 | 13 | 1 | 8 days | 0.17 | | MPC | 2006 $WM_{42}$ |
| 2006 $WN_{42}$ | 17.2 | 0.15 | 20061101 | 307.75888 | 347.41969 | 134.87150 | 5.01138 | 0.1231341 | 2.4366688 | 14 | 1 | 32 days | 0.15 | | MPC | 2006 $WN_{42}$ |
| 2006 $WO_{42}$ | 15.8 | 0.15 | 20061101 | 230.72455 | 98.83437 | 97.66716 | 10.55539 | 0.0647218 | 3.1507674 | 14 | 1 | 8 days | 0.43 | | MPC | 2006 $WO_{42}$ |
| 2006 $WQ_{42}$ | 19.7 | 0.15 | 20061101 | 10.45999 | 185.44094 | 210.20073 | 6.61254 | 0.2535860 | 2.3182162 | 14 | 1 | 8 days | 0.20 | | MPC | 2006 $WQ_{42}$ |
| 2006 $WS_{42}$ | 15.7 | 0.15 | 20061101 | 91.50327 | 187.70290 | 129.20811 | 6.14628 | 0.1232568 | 3.2075436 | 13 | 1 | 8 days | 0.22 | | MPC | 2006 $WS_{42}$ |
| 2006 $WT_{42}$ | 17.7 | 0.15 | 20061101 | 291.17835 | 39.62716 | 96.33641 | 8.15312 | 0.0797982 | 2.3534263 | 9 | 1 | 8 days | 0.66 | | MPC | 2006 $WT_{42}$ |
| 2006 $WV_{42}$ | 17.9 | 0.15 | 20061101 | 358.35784 | 228.86343 | 190.39010 | 5.64485 | 0.1401103 | 2.4176377 | 14 | 1 | 8 days | 0.25 | | MPC | 2006 $WV_{42}$ |
| 2006 $WW_{42}$ | 15.7 | 0.15 | 20061101 | 314.22473 | 251.54279 | 225.20744 | 15.15201 | 0.1036990 | 3.0029212 | 17 | 1 | 8 days | 0.13 | | MPC | 2006 $WW_{42}$ |
| 2006 $WY_{42}$ | 16.0 | 0.15 | 20061101 | 199.10125 | 144.32763 | 83.38446 | 17.91297 | 0.1309214 | 3.0965999 | 9 | 1 | 8 days | 0.53 | | MPC | 2006 $WY_{42}$ |
| 2006 $WZ_{42}$ | 15.6 | 0.15 | 20061101 | 234.79343 | 327.83692 | 228.64091 | 17.56087 | 0.0919402 | 2.9217458 | 11 | 1 | 8 days | 0.76 | | MPC | 2006 $WZ_{42}$ |
| 2006 $WC_{43}$ | 18.0 | 0.15 | 20061121 | 71.88821 | 231.75681 | 83.26818 | 6.50297 | 0.2626738 | 2.3164332 | 13 | 1 | 11 days | 0.20 | | MPC | 2006 $WC_{43}$ |
| 2006 $WE_{43}$ | 17.1 | 0.15 | 20060922 | 293.31946 | 267.33596 | 218.52865 | 10.97747 | 0.1515117 | 2.6088238 | 24 | 1 | 61 days | 0.22 | M-v 4 | MPC | 2006 $WE_{43}$ |
| 2006 $WF_{43}$ | 17.7 | 0.15 | 20061121 | 346.71441 | 283.78985 | 149.85353 | 3.10991 | 0.0938400 | 2.3612218 | 10 | 1 | 11 days | 0.11 | | MPC | 2006 $WF_{43}$ |
| 2006 $WH_{43}$ | 17.6 | 0.15 | 20061121 | 24.46408 | 304.28407 | 68.28018 | 15.12996 | 0.2936532 | 3.1480658 | 13 | 1 | 11 days | 0.25 | | MPC | 2006 $WH_{43}$ |
| 2006 $WJ_{43}$ | 16.5 | 0.15 | 20061121 | 345.94026 | 6.45392 | 69.69072 | 14.21479 | 0.1407295 | 3.0859207 | 10 | 1 | 11 days | 0.23 | | MPC | 2006 $WJ_{43}$ |
| 2006 $WN_{43}$ | 17.2 | 0.15 | 20061121 | 39.00689 | 292.54959 | 69.06928 | 14.45641 | 0.1948606 | 2.6073093 | 16 | 1 | 11 days | 0.23 | | MPC | 2006 $WN_{43}$ |
| 2006 $WQ_{43}$ | 17.1 | 0.15 | 20061121 | 98.96872 | 217.60220 | 86.97175 | 6.32255 | 0.1316586 | 2.3740997 | 10 | 1 | 11 days | 0.20 | | MPC | 2006 $WQ_{43}$ |
| 2006 $WR_{43}$ | 16.5 | 0.15 | 20061101 | 311.26560 | 8.18627 | 104.86247 | 4.78629 | 0.1219760 | 2.6651482 | 17 | 1 | 35 days | 0.27 | | MPC | 2006 $WR_{43}$ |
| 2006 $WV_{43}$ | 16.7 | 0.15 | 20061101 | 343.10877 | 209.81744 | 225.01270 | 15.90646 | 0.0832371 | 3.0754555 | 13 | 1 | 35 days | 0.24 | | MPC | 2006 $WV_{43}$ |
| 2006 $WB_{44}$ | 18.4 | 0.15 | 20061101 | 314.16693 | 346.05438 | 127.78384 | 3.21192 | 0.1739044 | 2.2568603 | 17 | 1 | 35 days | 0.35 | | MPC | 2006 $WB_{44}$ |
| 2006 $WC_{44}$ | 16.2 | 0.15 | 20061101 | 344.02226 | 214.48106 | 219.27959 | 11.77416 | 0.0745495 | 3.1083633 | 10 | 1 | 8 days | 0.71 | | MPC | 2006 $WC_{44}$ |
| 2006 $WD_{44}$ | 18.1 | 0.15 | 20061101 | 28.33316 | 174.23371 | 199.19119 | 5.40544 | 0.1669429 | 2.5563700 | 17 | 1 | 8 days | 0.32 | | MPC | 2006 $WD_{44}$ |
| 2006 $WF_{44}$ | 17.7 | 0.15 | 20061101 | 9.23066 | 293.21692 | 103.83364 | 4.44645 | 0.2204526 | 2.6280286 | 13 | 1 | 8 days | 0.27 | | MPC | 2006 $WF_{44}$ |
| 2006 $WH_{44}$ | 15.3 | 0.15 | 20061101 | 46.83319 | 271.09116 | 79.21570 | 17.64560 | 0.2136428 | 3.2171053 | 19 | 1 | 8 days | 0.26 | | MPC | 2006 $WH_{44}$ |
| 2006 $WK_{44}$ | 16.8 | 0.15 | 20061101 | 316.68602 | 359.25438 | 119.04214 | 5.49293 | 0.1982026 | 2.5755528 | 17 | 1 | 32 days | 0.16 | | MPC | 2006 $WK_{44}$ |
| 2006 $WL_{44}$ | 18.4 | 0.15 | 20061101 | 359.20568 | 275.30535 | 140.11082 | 3.99544 | 0.1712344 | 2.3428161 | 13 | 1 | 32 days | 0.19 | | MPC | 2006 $WL_{44}$ |
| 2006 $WN_{44}$ | 15.6 | 0.15 | 20061101 | 316.75986 | 14.97035 | 93.22518 | 10.65067 | 0.0626505 | 3.2311263 | 10 | 1 | 8 days | 0.85 | | MPC | 2006 $WN_{44}$ |
| 2006 $WR_{44}$ | 16.6 | 0.15 | 20061101 | 76.29582 | 226.79995 | 91.27015 | 11.48219 | 0.2116042 | 2.6830574 | 10 | 1 | 8 days | 0.22 | | MPC | 2006 $WR_{44}$ |
| 2006 $WS_{44}$ | 17.3 | 0.15 | 20061101 | 12.94874 | 256.07194 | 140.68894 | 4.83870 | 0.2070459 | 2.7778554 | 10 | 1 | 8 days | 0.10 | | MPC | 2006 $WS_{44}$ |
| 2006 $WT_{44}$ | 17.7 | 0.15 | 20061101 | 330.22302 | 332.60533 | 121.35391 | 5.74237 | 0.0879442 | 2.7492561 | 13 | 1 | 8 days | 0.26 | | MPC | 2006 $WT_{44}$ |
| 2006 $WU_{44}$ | 15.6 | 0.15 | 20061101 | 67.32728 | 133.21482 | 211.06149 | 10.29540 | 0.0829082 | 2.9670992 | 21 | 1 | 32 days | 0.16 | | MPC | 2006 $WU_{44}$ |
| 2006 $WV_{44}$ | 19.1 | 0.15 | 20061101 | 14.52991 | 230.96192 | 168.00650 | 4.19177 | 0.0889798 | 2.2514572 | 9 | 1 | 8 days | 0.24 | | MPC | 2006 $WV_{44}$ |
| 2006 $WB_{45}$ | 16.9 | 0.15 | 20061101 | 13.28854 | 98.75300 | 297.67112 | 2.66822 | 0.2849261 | 2.7870657 | 15 | 1 | 8 days | 0.48 | | MPC | 2006 $WB_{45}$ |
| 2006 $WE_{46}$ | 16.0 | 0.15 | 20061101 | 293.96034 | 83.70109 | 55.44179 | 11.92332 | 0.0850080 | 3.1859294 | 9 | 1 | 8 days | 0.51 | | MPC | 2006 $WE_{46}$ |
| 2006 $WF_{46}$ | 17.0 | 0.15 | 20061101 | 332.02594 | 198.57368 | 262.16210 | 7.67883 | 0.1675696 | 3.1415504 | 9 | 1 | 8 days | 0.70 | | MPC | 2006 $WF_{46}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WG_{46}$ | 16.0 | 0.15 | 20061012 | 41.62576 | 320.38113 | 48.67909 | 6.97993 | 0.0797848 | 2.7778937 | 20 | 1 | 57 days | 0.33 | MPC | 2006 $WG_{46}$ |
| 2006 $WH_{46}$ | 16.9 | 0.15 | 20061101 | 281.25502 | 216.70971 | 294.14202 | 2.71150 | 0.0873467 | 2.7262570 | 9 | 1 | 8 days | 0.97 | MPC | 2006 $WH_{46}$ |
| 2006 $WK_{46}$ | 19.4 | 0.15 | 20061101 | 342.73462 | 80.30662 | 2.91916 | 1.72415 | 0.2162367 | 2.3465268 | 9 | 1 | 8 days | 0.18 | MPC | 2006 $WK_{46}$ |
| 2006 $WM_{46}$ | 17.5 | 0.15 | 20061101 | 341.30715 | 92.05934 | 349.95648 | 1.58409 | 0.0877018 | 2.4408610 | 9 | 1 | 8 days | 0.06 | MPC | 2006 $WM_{46}$ |
| 2006 $WS_{46}$ | 17.5 | 0.15 | 20061101 | 291.27079 | 241.78251 | 259.82292 | 7.72215 | 0.1010609 | 2.5732364 | 8 | 1 | 8 days | 0.71 | MPC | 2006 $WS_{46}$ |
| 2006 $WT_{46}$ | 16.4 | 0.15 | 20061101 | 227.65350 | 196.47330 | 9.34961 | 2.81480 | 0.1077612 | 3.0526942 | 9 | 1 | 8 days | 0.77 | MPC | 2006 $WT_{46}$ |
| 2006 $WU_{46}$ | 17.6 | 0.15 | 20061101 | 152.98200 | 215.59002 | 49.97535 | 6.81993 | 0.0871046 | 2.4074781 | 9 | 1 | 8 days | 0.34 | MPC | 2006 $WU_{46}$ |
| 2006 $WW_{46}$ | 17.4 | 0.15 | 20061101 | 49.56403 | 103.15695 | 254.44015 | 11.97943 | 0.1593871 | 3.0063138 | 9 | 1 | 8 days | 0.19 | MPC | 2006 $WW_{46}$ |
| 2006 $WA_{47}$ | 17.5 | 0.15 | 20061101 | 260.31410 | 148.37156 | 25.29938 | 2.74443 | 0.0979123 | 2.6324444 | 9 | 1 | 8 days | 0.42 | MPC | 2006 $WA_{47}$ |
| 2006 $WB_{47}$ | 18.5 | 0.15 | 20061101 | 350.80451 | 107.82774 | 323.61652 | 1.67002 | 0.1591821 | 2.4169346 | 12 | 1 | 8 days | 0.18 | MPC | 2006 $WB_{47}$ |
| 2006 $WC_{47}$ | 17.4 | 0.15 | 20061101 | 27.18623 | 116.43616 | 254.65010 | 12.38809 | 0.2953263 | 2.9735028 | 18 | 1 | 18 days | 0.51 | MPC | 2006 $WC_{47}$ |
| 2006 $WD_{47}$ | 17.3 | 0.15 | 20061121 | 0.87017 | 142.38011 | 282.34023 | 2.90842 | 0.2340389 | 2.6963503 | 15 | 1 | 11 days | 0.54 | MPC | 2006 $WD_{47}$ |
| 2006 $WJ_{47}$ | 17.2 | 0.15 | 20061121 | 358.88805 | 144.10152 | 284.77030 | 3.57515 | 0.0518998 | 2.6676500 | 11 | 1 | 10 days | 0.39 | MPC | 2006 $WJ_{47}$ |
| 2006 $WM_{47}$ | 16.6 | 0.15 | 20061121 | 90.31813 | 68.96463 | 259.49304 | 12.27365 | 0.0817295 | 2.7416121 | 14 | 1 | 11 days | 0.59 | MPC | 2006 $WM_{47}$ |
| 2006 $WP_{47}$ | 17.1 | 0.15 | 20061101 | 12.72891 | 153.85215 | 253.49121 | 16.71881 | 0.1275720 | 3.1846276 | 9 | 1 | 8 days | 0.21 | MPC | 2006 $WP_{47}$ |
| 2006 $WR_{47}$ | 17.7 | 0.15 | 20061121 | 81.33883 | 311.04413 | 13.12052 | 2.27001 | 0.1943164 | 2.4436224 | 8 | 1 | 11 days | 0.30 | MPC | 2006 $WR_{47}$ |
| 2006 $WS_{47}$ | 17.6 | 0.15 | 20061101 | 353.48823 | 45.23749 | 24.71809 | 2.47559 | 0.1320518 | 2.6335024 | 9 | 1 | 8 days | 0.30 | MPC | 2006 $WS_{47}$ |
| 2006 $WU_{47}$ | 18.2 | 0.15 | 20061101 | 30.87506 | 104.72727 | 265.88799 | 6.13930 | 0.2508703 | 2.7511944 | 9 | 1 | 8 days | 0.40 | MPC | 2006 $WU_{47}$ |
| 2006 $WV_{47}$ | 16.4 | 0.15 | 20061101 | 301.79199 | 116.54208 | 18.68396 | 2.67920 | 0.1146359 | 3.0480232 | 12 | 1 | 8 days | 0.39 | MPC | 2006 $WV_{47}$ |
| 2006 $WZ_{47}$ | 15.4 | 0.15 | 20061101 | 114.59315 | 68.79945 | 228.48660 | 10.34570 | 0.1191152 | 3.0094593 | 10 | 1 | 8 days | 0.25 | MPC | 2006 $WZ_{47}$ |
| 2006 $WA_{48}$ | 16.2 | 0.15 | 20061101 | 84.63458 | 102.17826 | 220.88665 | 7.61355 | 0.1322375 | 3.0082851 | 10 | 1 | 8 days | 0.30 | MPC | 2006 $WA_{48}$ |
| 2006 $WD_{48}$ | 17.4 | 0.15 | 20061101 | 29.19956 | 17.91769 | 11.87094 | 2.40557 | 0.0805523 | 2.7789531 | 9 | 1 | 8 days | 0.17 | MPC | 2006 $WD_{48}$ |
| 2006 $WG_{48}$ | 16.0 | 0.15 | 20061101 | 261.13048 | 270.53636 | 265.44747 | 6.00188 | 0.0976009 | 3.0187365 | 9 | 1 | 8 days | 0.37 | MPC | 2006 $WG_{48}$ |
| 2006 $WH_{48}$ | 17.0 | 0.15 | 20061101 | 316.31560 | 61.32055 | 53.90759 | 7.38622 | 0.0972573 | 2.5640175 | 13 | 1 | 23 days | 0.12 | MPC | 2006 $WH_{48}$ |
| 2006 $WJ_{48}$ | 16.4 | 0.15 | 20061101 | 297.15932 | 200.47991 | 306.03086 | 3.11544 | 0.1562905 | 3.2244095 | 9 | 1 | 8 days | 0.18 | MPC | 2006 $WJ_{48}$ |
| 2006 $WL_{48}$ | 18.2 | 0.15 | 20061101 | 14.45888 | 75.45441 | 316.87006 | 1.94037 | 0.2708921 | 2.4658096 | 8 | 1 | 8 days | 0.73 | MPC | 2006 $WL_{48}$ |
| 2006 $WM_{48}$ | 17.3 | 0.15 | 20061101 | 90.41142 | 265.96789 | 48.81774 | 5.96040 | 0.1691438 | 2.3847304 | 9 | 1 | 8 days | 0.15 | MPC | 2006 $WM_{48}$ |
| 2006 $WO_{48}$ | 17.2 | 0.15 | 20061101 | 282.40150 | 202.17975 | 308.68877 | 2.61590 | 0.0784202 | 2.5586965 | 9 | 1 | 8 days | 0.12 | MPC | 2006 $WO_{48}$ |
| 2006 $WP_{48}$ | 17.3 | 0.15 | 20061101 | 26.34591 | 125.51692 | 267.02174 | 4.66916 | 0.0988565 | 2.8107808 | 9 | 1 | 8 days | 0.34 | MPC | 2006 $WP_{48}$ |
| 2006 $WQ_{48}$ | 16.8 | 0.15 | 20061101 | 69.36322 | 292.59396 | 54.85971 | 6.87517 | 0.0817420 | 2.8022563 | 12 | 1 | 8 days | 0.23 | MPC | 2006 $WQ_{48}$ |
| 2006 $WW_{48}$ | 17.5 | 0.15 | 20061101 | 349.53021 | 300.10343 | 135.19485 | 2.50893 | 0.1916076 | 2.8906791 | 10 | 1 | 8 days | 0.13 | MPC | 2006 $WW_{48}$ |
| 2006 $WD_{49}$ | 15.4 | 0.15 | 20061101 | 55.03347 | 126.54052 | 230.60746 | 9.90845 | 0.1120133 | 3.1149657 | 14 | 1 | 24 days | 0.17 | MPC | 2006 $WD_{49}$ |
| 2006 $WT_{49}$ | 16.9 | 0.15 | 20061101 | 348.63876 | 12.16430 | 64.15750 | 5.69117 | 0.0767791 | 2.4317962 | 10 | 1 | 8 days | 0.33 | MPC | 2006 $WT_{49}$ |
| 2006 $WX_{49}$ | 17.0 | 0.15 | 20061101 | 32.82394 | 321.05154 | 61.47910 | 4.50100 | 0.1383479 | 2.7903700 | 9 | 1 | 8 days | 0.18 | MPC | 2006 $WX_{49}$ |
| 2006 $WP_{50}$ | 16.4 | 0.15 | 20061121 | 96.51969 | 238.48428 | 78.78758 | 15.68095 | 0.1569592 | 2.5404051 | 10 | 1 | 11 days | 0.16 | MPC | 2006 $WP_{50}$ |
| 2006 $WV_{50}$ | 16.0 | 0.15 | 20061101 | 139.40342 | 217.26942 | 66.30762 | 11.30810 | 0.0546813 | 3.0888370 | 9 | 1 | 8 days | 0.16 | MPC | 2006 $WV_{50}$ |
| 2006 $WZ_{50}$ | 16.7 | 0.15 | 20061101 | 213.90417 | 164.38597 | 58.07471 | 2.73761 | 0.1928191 | 2.4733787 | 9 | 1 | 8 days | 0.48 | MPC | 2006 $WZ_{50}$ |
| 2006 $WB_{51}$ | 16.3 | 0.15 | 20061101 | 206.82686 | 311.27868 | 273.10791 | 1.97154 | 0.1043676 | 2.6743134 | 9 | 1 | 8 days | 0.09 | MPC | 2006 $WB_{51}$ |
| 2006 $WL_{51}$ | 16.4 | 0.15 | 20061121 | 184.50047 | 351.33326 | 253.22925 | 9.28374 | 0.0615418 | 2.9915409 | 14 | 1 | 15 days | 0.40 | MPC | 2006 $WL_{51}$ |
| 2006 $WM_{51}$ | 17.0 | 0.15 | 20061101 | 218.37539 | 153.64033 | 55.40748 | 5.20960 | 0.0726977 | 2.3654885 | 9 | 1 | 8 days | 0.13 | MPC | 2006 $WM_{51}$ |
| 2006 $WO_{51}$ | 15.9 | 0.15 | 20061121 | 102.24992 | 248.93485 | 63.32807 | 8.17953 | 0.1344948 | 2.9896901 | 9 | 1 | 10 days | 0.32 | MPC | 2006 $WO_{51}$ |
| 2006 $WP_{51}$ | 17.4 | 0.15 | 20061121 | 211.69436 | 164.34227 | 58.57212 | 4.76312 | 0.1292035 | 2.3136785 | 15 | 1 | 12 days | 0.42 | MPC | 2006 $WP_{51}$ |
| 2006 $WQ_{51}$ | 17.3 | 0.15 | 20061101 | 96.00934 | 258.05048 | 56.43698 | 6.62187 | 0.1166372 | 2.5360395 | 9 | 1 | 8 days | 0.18 | MPC | 2006 $WQ_{51}$ |
| 2006 $WR_{51}$ | 17.7 | 0.15 | 20061121 | 286.87417 | 97.72935 | 59.55816 | 7.15121 | 0.1485037 | 2.3399241 | 10 | 1 | 12 days | 0.31 | MPC | 2006 $WR_{51}$ |
| 2006 $WS_{51}$ | 18.1 | 0.15 | 20061121 | 141.07170 | 221.47773 | 57.28763 | 3.28338 | 0.1229503 | 2.2849478 | 9 | 1 | 11 days | 0.19 | MPC | 2006 $WS_{51}$ |
| 2006 $WT_{51}$ | 18.0 | 0.15 | 20061101 | 18.79617 | 334.47035 | 59.69626 | 12.05042 | 0.1774282 | 2.6754022 | 9 | 1 | 8 days | 0.15 | MPC | 2006 $WT_{51}$ |
| 2006 $WW_{51}$ | 17.0 | 0.15 | 20061101 | 273.52023 | 102.71333 | 59.93941 | 7.07885 | 0.1048520 | 2.6869834 | 9 | 1 | 8 days | 0.75 | MPC | 2006 $WW_{51}$ |
| 2006 $WA_{52}$ | 16.1 | 0.15 | 20061101 | 293.70178 | 81.47377 | 57.46105 | 9.09399 | 0.0882845 | 2.9839079 | 9 | 1 | 8 days | 0.60 | MPC | 2006 $WA_{52}$ |
| 2006 $WC_{52}$ | 17.2 | 0.15 | 20061101 | 125.96407 | 238.54694 | 46.74777 | 3.74603 | 0.1414205 | 2.5828559 | 9 | 1 | 8 days | 0.35 | MPC | 2006 $WC_{52}$ |
| 2006 $WD_{52}$ | 17.6 | 0.15 | 20061101 | 24.15194 | 76.53115 | 316.74206 | 1.49164 | 0.0731326 | 2.6523839 | 12 | 1 | 14 days | 0.22 | MPC | 2006 $WD_{52}$ |
| 2006 $WJ_{52}$ | 17.5 | 0.15 | 20061101 | 310.72821 | 60.01456 | 62.48104 | 10.69664 | 0.1138865 | 2.8924037 | 9 | 1 | 8 days | 0.45 | MPC | 2006 $WJ_{52}$ |
| 2006 $WL_{52}$ | 15.9 | 0.15 | 20061101 | 205.44019 | 169.48002 | 57.13703 | 9.47208 | 0.1867547 | 2.6356055 | 9 | 1 | 8 days | 0.87 | MPC | 2006 $WL_{52}$ |
| 2006 $WS_{52}$ | 16.1 | 0.15 | 20061101 | 12.35505 | 350.84626 | 58.11367 | 11.05792 | 0.0785313 | 3.0876236 | 13 | 1 | 23 days | 0.28 | MPC | 2006 $WS_{52}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WU_{52}$ | 18.0 | 0.15 | 20061101 | 292.48528 | 99.70498 | 41.62985 | 3.81326 | 0.1075917 | 2.5829113 | 9 | 1 | 8 days | 0.75 | | MPC | 2006 $WU_{52}$ |
| 2006 $WW_{52}$ | 18.5 | 0.15 | 20061101 | 306.20826 | 68.72631 | 58.30857 | 5.54036 | 0.1387399 | 2.2668490 | 9 | 1 | 8 days | 0.70 | | MPC | 2006 $WW_{52}$ |
| 2006 $WY_{52}$ | 18.8 | 0.15 | 20061101 | 313.14686 | 183.89568 | 296.94561 | 1.00537 | 0.1551723 | 2.3255956 | 9 | 1 | 8 days | 0.90 | | MPC | 2006 $WY_{52}$ |
| 2006 $WH_{53}$ | 16.0 | 0.15 | 20061101 | 7.15241 | 243.49417 | 159.80140 | 13.63067 | 0.2200666 | 2.5921878 | 29 | 1 | 27 days | 0.54 | | MPC | 2006 $WH_{53}$ |
| 2006 $WR_{53}$ | 16.4 | 0.15 | 20061101 | 316.26518 | 238.93497 | 254.02940 | 25.28513 | 0.2421609 | 3.2111311 | 9 | 1 | 8 days | 0.23 | | MPC | 2006 $WR_{53}$ |
| 2006 $WS_{53}$ | 17.5 | 0.15 | 20061101 | 294.00123 | 97.92275 | 44.04077 | 3.32004 | 0.1068693 | 2.4460189 | 9 | 1 | 8 days | 0.16 | | MPC | 2006 $WS_{53}$ |
| 2006 $WU_{53}$ | 16.6 | 0.15 | 20061101 | 284.40554 | 256.85686 | 258.18609 | 19.27583 | 0.1011610 | 3.1315646 | 12 | 1 | 8 days | 0.82 | | MPC | 2006 $WU_{53}$ |
| 2006 $WZ_{53}$ | 16.4 | 0.15 | 20061121 | 344.40403 | 27.62075 | 60.52148 | 11.45190 | 0.0154632 | 2.7469791 | 12 | 1 | 9 days | 0.40 | | MPC | 2006 $WZ_{53}$ |
| 2006 $WC_{54}$ | 17.0 | 0.15 | 20061121 | 338.50878 | 121.63360 | 333.07834 | 2.13219 | 0.0370810 | 2.6606674 | 13 | 1 | 9 days | 0.32 | | MPC | 2006 $WC_{54}$ |
| 2006 $WH_{54}$ | 16.9 | 0.15 | 20061121 | 19.15628 | 357.61869 | 45.80104 | 4.24502 | 0.1755850 | 2.5619301 | 19 | 1 | 11 days | 0.43 | | MPC | 2006 $WH_{54}$ |
| 2006 $WJ_{54}$ | 16.9 | 0.15 | 20061121 | 41.92855 | 71.14720 | 297.95435 | 2.05430 | 0.2161875 | 2.5579361 | 16 | 1 | 11 days | 0.35 | | MPC | 2006 $WJ_{54}$ |
| 2006 $WL_{54}$ | 17.4 | 0.15 | 20061101 | 28.59141 | 354.27530 | 28.46452 | 2.13600 | 0.2188942 | 2.9354202 | 9 | 1 | 8 days | 0.62 | | MPC | 2006 $WL_{54}$ |
| 2006 $WN_{54}$ | 18.2 | 0.15 | 20061101 | 10.11464 | 348.59634 | 60.11501 | 3.62058 | 0.1753553 | 2.4265827 | 12 | 1 | 8 days | 0.38 | | MPC | 2006 $WN_{54}$ |
| 2006 $WR_{54}$ | 16.5 | 0.15 | 20061101 | 231.90653 | 311.84130 | 259.28288 | 12.29617 | 0.1499318 | 2.6478197 | 9 | 1 | 8 days | 0.25 | | MPC | 2006 $WR_{54}$ |
| 2006 $WU_{54}$ | 17.4 | 0.15 | 20061101 | 20.82926 | 130.88100 | 268.67522 | 2.55225 | 0.0607734 | 2.1480210 | 13 | 1 | 8 days | 0.27 | | MPC | 2006 $WU_{54}$ |
| 2006 $WW_{54}$ | 16.3 | 0.15 | 20061101 | 239.37827 | 271.07959 | 293.43378 | 0.83251 | 0.1426876 | 3.0159280 | 9 | 1 | 8 days | 0.69 | | MPC | 2006 $WW_{54}$ |
| 2006 $WY_{54}$ | 18.1 | 0.15 | 20061101 | 303.34905 | 104.54063 | 31.16037 | 1.67204 | 0.1363461 | 2.3448019 | 9 | 1 | 8 days | 0.39 | | MPC | 2006 $WY_{54}$ |
| 2006 $WZ_{54}$ | 15.7 | 0.15 | 20061101 | 42.23676 | 303.31688 | 66.27963 | 10.93049 | 0.1834947 | 3.0282076 | 14 | 1 | 8 days | 0.44 | | MPC | 2006 $WZ_{54}$ |
| 2006 $WA_{55}$ | 18.3 | 0.15 | 20061101 | 55.08864 | 110.11539 | 254.25639 | 12.23115 | 0.0608320 | 2.2951674 | 9 | 1 | 8 days | 0.26 | | MPC | 2006 $WA_{55}$ |
| 2006 $WD_{55}$ | 15.9 | 0.15 | 20061101 | 30.34859 | 307.29044 | 69.81923 | 32.12356 | 0.2316394 | 2.6489708 | 27 | 1 | 13 days | 0.35 | E | MPC | 2006 $WD_{55}$ |
| 2006 $WE_{55}$ | 15.3 | 0.15 | 20061101 | 318.61452 | 235.80616 | 252.76222 | 13.54556 | 0.2022639 | 3.0806186 | 16 | 1 | 7 days | 0.80 | | MPC | 2006 $WE_{55}$ |
| 2006 $WF_{55}$ | 16.8 | 0.15 | 20061101 | 38.72697 | 127.43264 | 253.42242 | 13.46240 | 0.0830653 | 2.7612388 | 9 | 1 | 8 days | 0.09 | | MPC | 2006 $WF_{55}$ |
| 2006 $WH_{55}$ | 17.0 | 0.15 | 20061101 | 20.95553 | 12.27364 | 9.46140 | 0.58094 | 0.3023060 | 2.6805762 | 18 | 1 | 8 days | 0.52 | | MPC | 2006 $WH_{55}$ |
| 2006 $WJ_{55}$ | 16.8 | 0.15 | 20061101 | 67.43666 | 274.27346 | 58.76263 | 6.19685 | 0.2250905 | 2.5716014 | 9 | 1 | 8 days | 0.16 | | MPC | 2006 $WJ_{55}$ |
| 2006 $WK_{55}$ | 15.9 | 0.15 | 20061101 | 48.46638 | 287.84922 | 68.08000 | 22.04240 | 0.2276468 | 3.0884726 | 12 | 1 | 14 days | 0.46 | | MPC | 2006 $WK_{55}$ |
| 2006 $WL_{55}$ | 16.7 | 0.15 | 20061101 | 317.90911 | 177.93135 | 298.79886 | 1.48374 | 0.0831300 | 2.9298982 | 9 | 1 | 8 days | 0.17 | | MPC | 2006 $WL_{55}$ |
| 2006 $WP_{55}$ | 16.9 | 0.15 | 20061101 | 28.51688 | 78.72897 | 302.49570 | 1.14326 | 0.2399903 | 3.2391841 | 9 | 1 | 8 days | 0.48 | | MPC | 2006 $WP_{55}$ |
| 2006 $WR_{55}$ | 17.5 | 0.15 | 20061101 | 15.68453 | 344.37049 | 81.98526 | 5.19634 | 0.2169811 | 2.5563872 | 20 | 1 | 34 days | 0.19 | | MPC | 2006 $WR_{55}$ |
| 2006 $WY_{55}$ | 15.7 | 0.15 | 20061121 | 330.12174 | 211.31429 | 298.82976 | 11.75639 | 0.1085694 | 2.9725122 | 12 | 1 | 12 days | 0.21 | | MPC | 2006 $WY_{55}$ |
| 2006 $WD_{56}$ | 17.9 | 0.15 | 20061101 | 337.88496 | 94.00892 | 0.95755 | 1.32726 | 0.1428870 | 2.3772607 | 9 | 1 | 8 days | 0.13 | | MPC | 2006 $WD_{56}$ |
| 2006 $WG_{56}$ | 16.5 | 0.15 | 20061101 | 297.39781 | 233.99361 | 301.14011 | 5.53052 | 0.0528582 | 2.3561509 | 16 | 1 | 35 days | 0.21 | | MPC | 2006 $WG_{56}$ |
| 2006 $WM_{56}$ | 17.5 | 0.15 | 20061101 | 316.34602 | 80.70804 | 44.05490 | 3.13627 | 0.1411565 | 2.3873981 | 9 | 1 | 8 days | 0.34 | | MPC | 2006 $WM_{56}$ |
| 2006 $WP_{56}$ | 15.8 | 0.15 | 20061121 | 270.03477 | 107.56646 | 66.34831 | 9.72404 | 0.0278106 | 3.0922128 | 12 | 1 | 10 days | 0.34 | | MPC | 2006 $WP_{56}$ |
| 2006 $WQ_{56}$ | 17.5 | 0.15 | 20061101 | 14.30443 | 339.78281 | 70.00559 | 6.30333 | 0.1017452 | 2.2973202 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $WQ_{56}$ |
| 2006 $WZ_{56}$ | 18.1 | 0.15 | 20061101 | 355.71627 | 57.41515 | 13.80404 | 0.91214 | 0.1685914 | 2.4621012 | 12 | 1 | 13 days | 0.24 | | MPC | 2006 $WZ_{56}$ |
| 2006 $WQ_{57}$ | 18.3 | 0.15 | 20061101 | 26.98736 | 135.44880 | 230.25676 | 18.87046 | 0.0789176 | 1.9652982 | 15 | 1 | 39 days | 0.45 | | MPC | 2006 $WQ_{57}$ |
| 2006 $WV_{57}$ | 17.5 | 0.15 | 20061101 | 74.31102 | 293.54287 | 14.33189 | 6.45002 | 0.2611493 | 2.2800421 | 16 | 1 | 5 days | 0.21 | | MPC | 2006 $WV_{57}$ |
| 2006 $WW_{57}$ | 17.2 | 0.15 | 20061121 | 46.04753 | 97.54802 | 262.48105 | 10.22357 | 0.1144758 | 3.1053770 | 9 | 1 | 7 days | 0.21 | | MPC | 2006 $WW_{57}$ |
| 2006 $WB_{58}$ | 15.5 | 0.15 | 20061101 | 81.13407 | 285.02524 | 42.81093 | 11.55155 | 0.0688711 | 3.1640395 | 13 | 1 | 33 days | 0.34 | | MPC | 2006 $WB_{58}$ |
| 2006 $WC_{58}$ | 17.3 | 0.15 | 20061121 | 8.33275 | 126.86748 | 280.82411 | 3.57742 | 0.2078771 | 2.6038720 | 10 | 1 | 8 days | 0.24 | | MPC | 2006 $WC_{58}$ |
| 2006 $WQ_{58}$ | 16.5 | 0.15 | 20061101 | 89.56934 | 277.22697 | 43.62037 | 6.89285 | 0.0661586 | 2.4570620 | 17 | 1 | 24 days | 0.40 | | MPC | 2006 $WQ_{58}$ |
| 2006 $WR_{58}$ | 17.4 | 0.15 | 20061121 | 32.85129 | 93.10905 | 281.13381 | 2.96140 | 0.1574421 | 2.2607527 | 15 | 1 | 7 days | 0.46 | | MPC | 2006 $WR_{58}$ |
| 2006 $WT_{58}$ | 17.0 | 0.15 | 20061121 | 352.19907 | 161.68522 | 272.71084 | 10.14274 | 0.2050602 | 3.1111214 | 10 | 1 | 8 days | 0.47 | | MPC | 2006 $WT_{58}$ |
| 2006 $WU_{58}$ | 16.2 | 0.15 | 20061121 | 54.84374 | 324.37110 | 29.44729 | 9.57364 | 0.1457110 | 3.0740203 | 10 | 1 | 8 days | 0.13 | | MPC | 2006 $WU_{58}$ |
| 2006 $WW_{58}$ | 17.7 | 0.15 | 20061121 | 348.67246 | 162.78348 | 276.17765 | 8.44199 | 0.1797343 | 2.7666389 | 10 | 1 | 8 days | 0.75 | | MPC | 2006 $WW_{58}$ |
| 2006 $WX_{58}$ | 16.6 | 0.15 | 20061121 | 344.67505 | 144.67359 | 298.94165 | 6.41874 | 0.1412895 | 3.0988709 | 10 | 1 | 8 days | 0.56 | | MPC | 2006 $WX_{58}$ |
| 2006 $WZ_{58}$ | 15.1 | 0.15 | 20061121 | 94.22029 | 280.27362 | 34.39612 | 11.71220 | 0.1395942 | 3.2258157 | 10 | 1 | 8 days | 0.12 | | MPC | 2006 $WZ_{58}$ |
| 2006 $WF_{59}$ | 17.9 | 0.15 | 20061121 | 335.23091 | 195.95665 | 260.40259 | 11.02557 | 0.1445035 | 2.5740524 | 10 | 1 | 8 days | 0.15 | | MPC | 2006 $WF_{59}$ |
| 2006 $WG_{59}$ | 15.6 | 0.15 | 20061121 | 335.82637 | 178.06026 | 276.42093 | 7.53232 | 0.1098619 | 3.1968307 | 14 | 1 | 8 days | 0.96 | | MPC | 2006 $WG_{59}$ |
| 2006 $WJ_{59}$ | 15.6 | 0.15 | 20061121 | 210.13080 | 306.87614 | 272.79971 | 8.66543 | 0.0967321 | 3.0243194 | 10 | 1 | 8 days | 0.64 | | MPC | 2006 $WJ_{59}$ |
| 2006 $WK_{59}$ | 17.9 | 0.15 | 20061121 | 335.58069 | 192.46851 | 266.63438 | 7.72720 | 0.1921538 | 2.4335130 | 10 | 1 | 8 days | 0.09 | | MPC | 2006 $WK_{59}$ |
| 2006 $WL_{59}$ | 15.6 | 0.15 | 20061121 | 278.08682 | 115.06639 | 38.75636 | 9.61282 | 0.0575350 | 3.0981768 | 8 | 1 | 8 days | 0.45 | | MPC | 2006 $WL_{59}$ |
| 2006 $WM_{59}$ | 18.6 | 0.15 | 20061121 | 32.93388 | 344.44251 | 33.10103 | 5.53406 | 0.1683398 | 2.2057484 | 10 | 1 | 8 days | 0.18 | | MPC | 2006 $WM_{59}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WP_{59}$ | 16.6 | 0.15 | 20061121 | 200.76789 | 190.12908 | 38.20668 | 9.53481 | 0.1032371 | 2.6728066 | 10 | 1 | 8 days | 0.23 | | MPC | 2006 $WP_{59}$ |
| 2006 $WQ_{59}$ | 14.2 | 0.15 | 20061101 | 186.81299 | 338.63795 | 256.09832 | 21.07157 | 0.1715207 | 2.9767102 | 15 | 1 | 5 days | 0.60 | | MPC | 2006 $WQ_{59}$ |
| 2006 $WS_{59}$ | 16.3 | 0.15 | 20061121 | 21.72713 | 354.72306 | 21.70006 | 5.32296 | 0.1718376 | 2.7793795 | 15 | 1 | 12 days | 0.80 | E | MPC | 2006 $WS_{59}$ |
| 2006 $WV_{59}$ | 16.9 | 0.15 | 20061121 | 296.59345 | 260.62882 | 232.92139 | 12.49953 | 0.2038882 | 2.5781338 | 12 | 1 | 10 days | 0.38 | | MPC | 2006 $WV_{59}$ |
| 2006 $WL_{60}$ | 15.7 | 0.15 | 20061121 | 16.98824 | 355.80392 | 52.89905 | 12.35613 | 0.1458073 | 3.1691229 | 10 | 1 | 8 days | 0.57 | | MPC | 2006 $WL_{60}$ |
| 2006 $WN_{60}$ | 16.0 | 0.15 | 20061121 | 57.20460 | 96.00363 | 261.48570 | 12.13275 | 0.1378405 | 2.7208869 | 12 | 1 | 10 days | 0.57 | | MPC | 2006 $WN_{60}$ |
| 2006 $WO_{60}$ | 14.9 | 0.15 | 20061121 | 64.38733 | 74.32981 | 257.65012 | 22.49778 | 0.2784257 | 3.2160937 | 14 | 1 | 8 days | 0.48 | | MPC | 2006 $WO_{60}$ |
| 2006 $WJ_{61}$ | 16.2 | 0.15 | 20061101 | 8.35926 | 322.36643 | 72.37554 | 9.27793 | 0.1573027 | 2.7586438 | 15 | 1 | 11 days | 0.44 | | MPC | 2006 $WJ_{61}$ |
| 2006 $WK_{61}$ | 14.7 | 0.15 | 20061121 | 322.89713 | 25.57673 | 88.48468 | 13.74681 | 0.1170976 | 3.1470819 | 11 | 1 | 7 days | 0.89 | | MPC | 2006 $WK_{61}$ |
| 2006 $WQ_{61}$ | 18.3 | 0.15 | 20061121 | 324.57873 | 221.32566 | 246.29110 | 0.45232 | 0.1854533 | 2.1568971 | 12 | 1 | 10 days | 0.35 | | MPC | 2006 $WQ_{61}$ |
| 2006 $WR_{61}$ | 17.4 | 0.15 | 20061101 | 315.58785 | 235.56385 | 233.43352 | 4.50051 | 0.1931121 | 2.3565850 | 30 | 1 | 27 days | 0.46 | | MPC | 2006 $WR_{61}$ |
| 2006 $WS_{61}$ | 16.7 | 0.15 | 20061101 | 37.52337 | 305.68847 | 57.13975 | 6.92420 | 0.0521390 | 2.7149950 | 13 | 1 | 13 days | 0.50 | | MPC | 2006 $WS_{61}$ |
| 2006 $WD_{62}$ | 15.4 | 0.15 | 20061121 | 27.59232 | 345.65813 | 57.66576 | 12.96701 | 0.0932972 | 3.1663795 | 11 | 1 | 8 days | 0.47 | | MPC | 2006 $WD_{62}$ |
| 2006 $WF_{62}$ | 16.4 | 0.15 | 20061121 | 27.61449 | 44.31569 | 347.35156 | 4.26095 | 0.2192979 | 2.9707328 | 10 | 1 | 8 days | 0.24 | | MPC | 2006 $WF_{62}$ |
| 2006 $WY_{65}$ | 16.8 | 0.15 | 20061121 | 35.98311 | 99.93498 | 283.49910 | 6.35811 | 0.2051050 | 3.0831659 | 9 | 1 | 9 days | 0.23 | | MPC | 2006 $WY_{65}$ |
| 2006 $WL_{66}$ | 14.6 | 0.15 | 20061121 | 63.19363 | 114.13948 | 221.60378 | 8.65391 | 0.2605061 | 3.2423533 | 19 | 1 | 8 days | 0.73 | | MPC | 2006 $WL_{66}$ |
| 2006 $WC_{67}$ | 16.5 | 0.15 | 20061121 | 54.85150 | 214.52714 | 141.50752 | 4.33639 | 0.1510552 | 2.6102584 | 15 | 1 | 12 days | 0.29 | | MPC | 2006 $WC_{67}$ |
| 2006 $WE_{67}$ | 15.5 | 0.15 | 20061121 | 309.75109 | 254.79146 | 234.27905 | 21.89583 | 0.1261445 | 2.6632151 | 28 | 1 | 7 days | 0.85 | | MPC | 2006 $WE_{67}$ |
| 2006 $WG_{67}$ | 15.5 | 0.15 | 20061121 | 204.95618 | 113.12476 | 115.60572 | 6.68810 | 0.1627138 | 3.0195339 | 17 | 1 | 7 days | 0.81 | | MPC | 2006 $WG_{67}$ |
| 2006 $WJ_{67}$ | 17.9 | 0.15 | 20061121 | 33.37564 | 174.33835 | 204.87881 | 5.32612 | 0.1622627 | 2.2404015 | 19 | 1 | 8 days | 0.17 | | MPC | 2006 $WJ_{67}$ |
| 2006 $WM_{67}$ | 18.7 | 0.15 | 20061101 | 27.27009 | 210.04880 | 162.06835 | 3.62463 | 0.2582542 | 2.5631854 | 15 | 1 | 4 days | 0.51 | | MPC | 2006 $WM_{67}$ |
| 2006 $WQ_{67}$ | 15.7 | 0.15 | 20061121 | 208.59687 | 95.09822 | 130.26662 | 4.77216 | 0.1517561 | 2.8818482 | 10 | 1 | 7 days | 0.80 | | MPC | 2006 $WQ_{67}$ |
| 2006 $WV_{67}$ | 18.0 | 0.15 | 20061121 | 22.23983 | 240.94230 | 152.55302 | 2.35297 | 0.2661903 | 3.1862659 | 10 | 1 | 8 days | 0.49 | | MPC | 2006 $WV_{67}$ |
| 2006 $WD_{69}$ | 15.6 | 0.15 | 20061121 | 80.57421 | 130.96234 | 209.30113 | 6.24740 | 0.0508909 | 2.8372268 | 13 | 1 | 7 days | 0.51 | | MPC | 2006 $WD_{69}$ |
| 2006 $WH_{69}$ | 17.1 | 0.15 | 20061121 | 341.38985 | 205.59254 | 259.23109 | 22.79022 | 0.2052169 | 2.3448840 | 10 | 1 | 8 days | 0.24 | | MPC | 2006 $WH_{69}$ |
| 2006 $WN_{69}$ | 15.5 | 0.15 | 20061101 | 332.73035 | 213.39429 | 283.88599 | 17.39702 | 0.1093750 | 2.6532708 | 16 | 1 | 5 days | 0.86 | | MPC | 2006 $WN_{69}$ |
| 2006 $WQ_{69}$ | 16.4 | 0.15 | 20061101 | 35.68990 | 287.73700 | 120.56316 | 7.71253 | 0.2132104 | 2.7098012 | 16 | 1 | 5 days | 0.20 | | MPC | 2006 $WQ_{69}$ |
| 2006 $WR_{69}$ | 16.6 | 0.15 | 20061101 | 76.85538 | 105.60975 | 262.37306 | 3.91288 | 0.1392627 | 2.2225380 | 16 | 1 | 5 days | 0.27 | | MPC | 2006 $WR_{69}$ |
| 2006 $WZ_{69}$ | 16.9 | 0.15 | 20061101 | 327.01253 | 198.45022 | 238.43207 | 3.86042 | 0.1632405 | 2.8115113 | 12 | 1 | 11 days | 0.24 | | MPC | 2006 $WZ_{69}$ |
| 2006 $WC_{71}$ | 18.3 | 0.15 | 20061101 | 61.88853 | 38.79280 | 288.75698 | 1.96846 | 0.1952266 | 2.3865077 | 18 | 1 | 32 days | 0.19 | | MPC | 2006 $WC_{71}$ |
| 2006 $WG_{71}$ | 17.1 | 0.15 | 20061101 | 89.34386 | 69.90777 | 248.46883 | 7.45991 | 0.0477353 | 2.9781851 | 9 | 1 | 32 days | 0.28 | | MPC | 2006 $WG_{71}$ |
| 2006 $WJ_{71}$ | 17.6 | 0.15 | 20061101 | 121.36417 | 23.43885 | 260.93905 | 3.59035 | 0.0748244 | 2.4635463 | 12 | 1 | 32 days | 0.21 | | MPC | 2006 $WJ_{71}$ |
| 2006 $WO_{71}$ | 17.0 | 0.15 | 20061101 | 25.21835 | 128.37975 | 254.79824 | 4.34422 | 0.0764750 | 2.7117087 | 18 | 1 | 32 days | 0.24 | | MPC | 2006 $WO_{71}$ |
| 2006 $WQ_{71}$ | 17.7 | 0.15 | 20061121 | 29.95606 | 133.52366 | 242.84212 | 8.88169 | 0.1629942 | 2.8038178 | 13 | 1 | 6 days | 0.17 | | MPC | 2006 $WQ_{71}$ |
| 2006 $WA_{72}$ | 17.8 | 0.15 | 20061121 | 292.85751 | 250.16279 | 251.58768 | 2.98574 | 0.1666118 | 2.6025966 | 10 | 1 | 6 days | 0.23 | | MPC | 2006 $WA_{72}$ |
| 2006 $WB_{72}$ | 16.9 | 0.15 | 20061101 | 272.28135 | 273.44762 | 242.66130 | 7.74608 | 0.1483635 | 2.7703651 | 14 | 1 | 24 days | 0.24 | | MPC | 2006 $WB_{72}$ |
| 2006 $WC_{72}$ | 17.9 | 0.15 | 20061101 | 12.63300 | 110.98682 | 276.38186 | 1.38271 | 0.2283439 | 2.3472075 | 25 | 1 | 24 days | 0.39 | | MPC | 2006 $WC_{72}$ |
| 2006 $WD_{72}$ | 17.0 | 0.15 | 20061121 | 18.61285 | 90.60351 | 303.35787 | 0.89187 | 0.0807334 | 2.8998262 | 10 | 1 | 6 days | 0.32 | | MPC | 2006 $WD_{72}$ |
| 2006 $WE_{72}$ | 19.1 | 0.15 | 20061121 | 331.03927 | 52.07535 | 50.79458 | 7.42876 | 0.2371054 | 2.2770505 | 10 | 1 | 6 days | 0.33 | | MPC | 2006 $WE_{72}$ |
| 2006 $WF_{72}$ | 19.0 | 0.15 | 20061121 | 11.91753 | 113.66004 | 285.56468 | 0.87601 | 0.1783387 | 2.2727317 | 10 | 1 | 6 days | 0.61 | | MPC | 2006 $WF_{72}$ |
| 2006 $WG_{72}$ | 16.6 | 0.15 | 20061121 | 172.31932 | 202.35011 | 39.00642 | 4.19998 | 0.1775148 | 2.6184574 | 10 | 1 | 6 days | 0.36 | | MPC | 2006 $WG_{72}$ |
| 2006 $WH_{72}$ | 18.1 | 0.15 | 20061121 | 53.71206 | 311.62777 | 46.69685 | 4.47484 | 0.0450935 | 2.1346139 | 10 | 1 | 6 days | 0.72 | | MPC | 2006 $WH_{72}$ |
| 2006 $WK_{72}$ | 19.4 | 0.15 | 20061121 | 12.85099 | 6.22986 | 32.64100 | 1.88392 | 0.1573306 | 2.2182197 | 10 | 1 | 6 days | 0.81 | | MPC | 2006 $WK_{72}$ |
| 2006 $WM_{72}$ | 15.7 | 0.15 | 20061121 | 175.15360 | 353.12731 | 245.85877 | 6.78853 | 0.2415851 | 2.8044332 | 10 | 1 | 6 days | 0.65 | | MPC | 2006 $WM_{72}$ |
| 2006 $WN_{72}$ | 18.4 | 0.15 | 20061121 | 278.70970 | 105.76637 | 42.15376 | 2.70187 | 0.0888745 | 2.2368014 | 10 | 1 | 6 days | 0.15 | | MPC | 2006 $WN_{72}$ |
| 2006 $WP_{72}$ | 17.0 | 0.15 | 20061121 | 28.03018 | 143.23281 | 241.26937 | 6.94820 | 0.0633756 | 3.0398646 | 14 | 1 | 9 days | 0.43 | | MPC | 2006 $WP_{72}$ |
| 2006 $WQ_{72}$ | 16.9 | 0.15 | 20061121 | 172.75183 | 355.30465 | 246.06425 | 6.25896 | 0.1741058 | 2.6268129 | 10 | 1 | 6 days | 0.57 | | MPC | 2006 $WQ_{72}$ |
| 2006 $WU_{72}$ | 15.4 | 0.15 | 20061121 | 176.88659 | 350.63707 | 247.29806 | 5.00305 | 0.2879897 | 3.0138112 | 10 | 1 | 6 days | 0.38 | | MPC | 2006 $WU_{72}$ |
| 2006 $WV_{72}$ | 19.1 | 0.15 | 20061121 | 7.93451 | 355.54732 | 49.51139 | 4.13719 | 0.1849276 | 2.5452503 | 10 | 1 | 6 days | 0.39 | | MPC | 2006 $WV_{72}$ |
| 2006 $WW_{72}$ | 16.2 | 0.15 | 20061121 | 158.98797 | 12.13380 | 243.36120 | 9.84603 | 0.0505868 | 2.9418222 | 10 | 1 | 6 days | 0.21 | | MPC | 2006 $WW_{72}$ |
| 2006 $WX_{72}$ | 18.2 | 0.15 | 20061121 | 71.33268 | 82.90008 | 246.08007 | 2.14877 | 0.1434875 | 2.3501531 | 10 | 1 | 9 days | 0.22 | | MPC | 2006 $WX_{72}$ |
| 2006 $WY_{72}$ | 17.4 | 0.15 | 20061121 | 5.35084 | 114.39117 | 294.49599 | 0.67063 | 0.1855301 | 3.0430744 | 10 | 1 | 6 days | 0.27 | | MPC | 2006 $WY_{72}$ |
| 2006 $WC_{73}$ | 15.7 | 0.15 | 20061121 | 4.06809 | 54.62554 | 356.93815 | 0.82026 | 0.1268432 | 3.9878700 | 10 | 1 | 6 days | 0.88 | | MPC | 2006 $WC_{73}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WD_{73}$ | 18.2 | 0.15 | 20061101 | 28.68354 | 93.39657 | 271.74778 | 1.23650 | 0.2209123 | 2.3559965 | 17 | 1 | 15 days | 0.37 | MPC | 2006 $WD_{73}$ |
| 2006 $WE_{73}$ | 18.5 | 0.15 | 20061121 | 6.82538 | 160.06029 | 248.23640 | 2.06207 | 0.1441301 | 2.4312130 | 10 | 1 | 6 days | 0.32 | MPC | 2006 $WE_{73}$ |
| 2006 $WG_{73}$ | 17.5 | 0.15 | 20061101 | 65.40765 | 322.99825 | 10.26950 | 0.89978 | 0.1251164 | 2.5541507 | 14 | 1 | 24 days | 0.21 | MPC | 2006 $WG_{73}$ |
| 2006 $WH_{73}$ | 19.7 | 0.15 | 20061121 | 5.48296 | 168.20804 | 241.12311 | 3.46138 | 0.2089062 | 2.1251135 | 10 | 1 | 6 days | 0.43 | MPC | 2006 $WH_{73}$ |
| 2006 $WJ_{73}$ | 17.5 | 0.15 | 20061121 | 2.99555 | 0.12970 | 53.33108 | 7.17988 | 0.1678487 | 2.9844020 | 10 | 1 | 6 days | 0.22 | MPC | 2006 $WJ_{73}$ |
| 2006 $WK_{73}$ | 16.3 | 0.15 | 20061101 | 281.96601 | 98.48733 | 57.32895 | 8.78012 | 0.2073488 | 3.0723467 | 17 | 1 | 17 days | 0.27 | MPC | 2006 $WK_{73}$ |
| 2006 $WL_{73}$ | 17.1 | 0.15 | 20061121 | 2.05500 | 2.15317 | 52.27372 | 2.10128 | 0.2250314 | 3.2040592 | 10 | 1 | 6 days | 0.24 | MPC | 2006 $WL_{73}$ |
| 2006 $WM_{73}$ | 18.0 | 0.15 | 20061121 | 353.96517 | 181.65725 | 245.88879 | 2.55905 | 0.2216040 | 2.9741120 | 10 | 1 | 6 days | 0.17 | MPC | 2006 $WM_{73}$ |
| 2006 $WQ_{73}$ | 17.9 | 0.15 | 20061121 | 3.27826 | 168.21078 | 245.18416 | 2.38233 | 0.1555170 | 2.7041564 | 10 | 1 | 6 days | 0.18 | MPC | 2006 $WQ_{73}$ |
| 2006 $WV_{75}$ | 14.8 | 0.15 | 20061121 | 186.33033 | 171.78884 | 67.56167 | 8.79793 | 0.2995950 | 2.9938709 | 21 | 1 | 6 days | 0.37 | MPC | 2006 $WV_{75}$ |
| 2006 $WY_{75}$ | 17.4 | 0.15 | 20061121 | 84.45284 | 85.37038 | 237.74825 | 5.89733 | 0.1243762 | 2.1634212 | 14 | 1 | 6 days | 0.12 | MPC | 2006 $WY_{75}$ |
| 2006 $WZ_{75}$ | 16.8 | 0.15 | 20061121 | 65.03888 | 274.73271 | 68.27499 | 5.06299 | 0.1296366 | 2.6761458 | 14 | 1 | 6 days | 0.27 | MPC | 2006 $WZ_{75}$ |
| 2006 $WA_{76}$ | 20.0 | 0.15 | 20061121 | 4.21856 | 175.78609 | 236.82811 | 3.46853 | 0.2481843 | 2.2724700 | 10 | 1 | 6 days | 0.11 | MPC | 2006 $WA_{76}$ |
| 2006 $WB_{76}$ | 17.9 | 0.15 | 20061101 | 76.18062 | 261.02840 | 66.42906 | 1.06305 | 0.0889833 | 2.1427451 | 14 | 1 | 28 days | 0.19 | MPC | 2006 $WB_{76}$ |
| 2006 $WC_{76}$ | 16.4 | 0.15 | 20061101 | 77.05047 | 260.96778 | 57.96345 | 1.62689 | 0.1856238 | 3.1566611 | 13 | 1 | 14 days | 0.17 | MPC | 2006 $WC_{76}$ |
| 2006 $WD_{76}$ | 15.1 | 0.15 | 20061121 | 184.32325 | 170.95193 | 67.16684 | 4.87740 | 0.2613259 | 2.7662137 | 10 | 1 | 6 days | 0.39 | MPC | 2006 $WD_{76}$ |
| 2006 $WF_{76}$ | 16.9 | 0.15 | 20061121 | 323.71542 | 36.02235 | 63.09565 | 8.36213 | 0.0297515 | 3.1626395 | 10 | 1 | 6 days | 0.19 | MPC | 2006 $WF_{76}$ |
| 2006 $WG_{76}$ | 17.6 | 0.15 | 20061121 | 30.62116 | 316.04408 | 63.24578 | 5.33324 | 0.1524409 | 2.8172114 | 10 | 1 | 6 days | 0.12 | MPC | 2006 $WG_{76}$ |
| 2006 $WJ_{76}$ | 16.3 | 0.15 | 20061121 | 250.44575 | 298.26724 | 234.44964 | 1.53506 | 0.0229985 | 2.6664576 | 10 | 1 | 6 days | 0.18 | MPC | 2006 $WJ_{76}$ |
| 2006 $WL_{76}$ | 17.2 | 0.15 | 20061121 | 207.76236 | 335.75274 | 239.87348 | 3.64922 | 0.0486354 | 2.7677229 | 10 | 1 | 6 days | 0.36 | MPC | 2006 $WL_{76}$ |
| 2006 $WN_{76}$ | 15.4 | 0.15 | 20061121 | 164.10761 | 188.27947 | 61.92662 | 7.11097 | 0.3018531 | 2.8277796 | 10 | 1 | 6 days | 0.12 | MPC | 2006 $WN_{76}$ |
| 2006 $WP_{76}$ | 16.7 | 0.15 | 20061121 | 185.62062 | 174.72035 | 62.26412 | 20.76637 | 0.2026387 | 2.4027275 | 10 | 1 | 6 days | 0.43 | MPC | 2006 $WP_{76}$ |
| 2006 $WR_{76}$ | 17.9 | 0.15 | 20061121 | 333.02411 | 226.15090 | 236.42151 | 11.26501 | 0.2172083 | 3.1012393 | 9 | 1 | 9 days | 0.14 | MPC | 2006 $WR_{76}$ |
| 2006 $WX_{76}$ | 18.2 | 0.15 | 20061121 | 352.94390 | 195.77974 | 233.77850 | 2.32395 | 0.1075710 | 2.3355896 | 10 | 1 | 9 days | 0.28 | MPC | 2006 $WX_{76}$ |
| 2006 $WA_{77}$ | 18.6 | 0.15 | 20061121 | 335.38131 | 37.07014 | 58.13499 | 3.32478 | 0.1899297 | 2.6749038 | 10 | 1 | 6 days | 0.48 | MPC | 2006 $WA_{77}$ |
| 2006 $WB_{77}$ | 17.3 | 0.15 | 20061121 | 354.88435 | 9.04755 | 56.20397 | 4.51107 | 0.0751855 | 2.6884299 | 10 | 1 | 6 days | 0.21 | MPC | 2006 $WB_{77}$ |
| 2006 $WE_{77}$ | 15.8 | 0.15 | 20061101 | 285.24385 | 275.72537 | 238.25077 | 15.18042 | 0.2022312 | 3.0803841 | 15 | 1 | 17 days | 0.25 | MPC | 2006 $WE_{77}$ |
| 2006 $WG_{77}$ | 15.1 | 0.15 | 20061121 | 183.41420 | 165.83977 | 71.95509 | 0.32184 | 0.2277174 | 2.8410290 | 12 | 1 | 6 days | 0.70 | MPC | 2006 $WG_{77}$ |
| 2006 $WJ_{77}$ | 15.1 | 0.15 | 20061121 | 183.26775 | 355.16961 | 242.83009 | 6.58525 | 0.2515832 | 2.6272947 | 10 | 1 | 6 days | 0.56 | MPC | 2006 $WJ_{77}$ |
| 2006 $WK_{77}$ | 16.6 | 0.15 | 20061121 | 145.33203 | 207.48204 | 58.59075 | 0.80059 | 0.1544391 | 2.4243560 | 10 | 1 | 6 days | 0.17 | MPC | 2006 $WK_{77}$ |
| 2006 $WL_{77}$ | 18.4 | 0.15 | 20061121 | 356.08386 | 6.68637 | 58.89888 | 2.64255 | 0.1898685 | 2.3276161 | 10 | 1 | 6 days | 0.29 | MPC | 2006 $WL_{77}$ |
| 2006 $WN_{77}$ | 19.5 | 0.15 | 20061101 | 26.29698 | 308.44536 | 59.73126 | 6.26974 | 0.2445463 | 2.2915396 | 14 | 1 | 13 days | 0.22 | MPC | 2006 $WN_{77}$ |
| 2006 $WP_{77}$ | 18.5 | 0.15 | 20061121 | 2.38506 | 173.32688 | 241.43453 | 3.34879 | 0.1642904 | 2.7333521 | 10 | 1 | 6 days | 0.19 | MPC | 2006 $WP_{77}$ |
| 2006 $WR_{77}$ | 16.0 | 0.15 | 20061121 | 179.70643 | 186.19821 | 52.36193 | 3.49941 | 0.1649982 | 2.6485775 | 10 | 1 | 6 days | 0.22 | MPC | 2006 $WR_{77}$ |
| 2006 $WW_{77}$ | 20.4 | 0.15 | 20061121 | 1.81299 | 359.92381 | 55.45725 | 2.21490 | 0.2509558 | 2.2508520 | 10 | 1 | 6 days | 0.47 | MPC | 2006 $WW_{77}$ |
| 2006 $WB_{78}$ | 17.2 | 0.15 | 20061121 | 325.51605 | 231.31754 | 240.90665 | 3.40440 | 0.2285781 | 2.7477912 | 13 | 1 | 6 days | 0.47 | MPC | 2006 $WB_{78}$ |
| 2006 $WD_{78}$ | 19.7 | 0.15 | 20061121 | 0.44108 | 3.06271 | 55.06950 | 2.44814 | 0.1797353 | 2.2982552 | 10 | 1 | 6 days | 0.44 | MPC | 2006 $WD_{78}$ |
| 2006 $WF_{78}$ | 16.9 | 0.15 | 20061121 | 32.19266 | 317.04702 | 56.85411 | 6.85864 | 0.1742629 | 3.1419553 | 10 | 1 | 6 days | 0.29 | MPC | 2006 $WF_{78}$ |
| 2006 $WH_{78}$ | 19.7 | 0.15 | 20061101 | 19.48789 | 298.18191 | 55.51872 | 1.97213 | 0.4688057 | 2.6672419 | 13 | 1 | 14 days | 0.20 | MPC | 2006 $WH_{78}$ |
| 2006 $WM_{78}$ | 17.3 | 0.15 | 20061101 | 85.76700 | 290.21581 | 28.03680 | 4.68306 | 0.1278125 | 2.5739968 | 16 | 1 | 15 days | 0.26 | MPC | 2006 $WM_{78}$ |
| 2006 $WN_{78}$ | 16.5 | 0.15 | 20061121 | 219.94130 | 174.95192 | 33.80599 | 5.82103 | 0.0726249 | 2.7288044 | 10 | 1 | 7 days | 0.53 | MPC | 2006 $WN_{78}$ |
| 2006 $WP_{78}$ | 16.6 | 0.15 | 20061121 | 64.08911 | 66.04211 | 260.56634 | 9.33185 | 0.2836004 | 2.6702361 | 9 | 1 | 9 days | 0.32 | MPC | 2006 $WP_{78}$ |
| 2006 $WT_{78}$ | 18.1 | 0.15 | 20061121 | 47.82742 | 294.71152 | 51.87810 | 14.38274 | 0.2749950 | 2.3807759 | 10 | 1 | 7 days | 0.63 | MPC | 2006 $WT_{78}$ |
| 2006 $WU_{78}$ | 17.5 | 0.15 | 20061101 | 38.08372 | 311.63318 | 51.53568 | 13.55429 | 0.1962652 | 2.6819391 | 12 | 1 | 15 days | 0.19 | MPC | 2006 $WU_{78}$ |
| 2006 $WO_{79}$ | 17.2 | 0.15 | 20061121 | 59.04919 | 94.91163 | 258.49106 | 8.40273 | 0.1250617 | 2.8786123 | 12 | 1 | 7 days | 0.66 | E MPC | 2006 $WO_{79}$ |
| 2006 $WA_{81}$ | 17.7 | 0.15 | 20061101 | 13.32081 | 348.83186 | 48.37348 | 6.47214 | 0.1230586 | 2.2811238 | 16 | 1 | 29 days | 0.26 | MPC | 2006 $WA_{81}$ |
| 2006 $WB_{81}$ | 17.8 | 0.15 | 20061121 | 355.84734 | 181.45176 | 246.76396 | 17.76976 | 0.2058821 | 2.8778210 | 9 | 1 | 9 days | 0.47 | MPC | 2006 $WB_{81}$ |
| 2006 $WH_{81}$ | 17.2 | 0.15 | 20061012 | 46.24298 | 37.42066 | 280.33404 | 3.42949 | 0.2656554 | 2.5866650 | 20 | 1 | 54 days | 0.24 | MPC | 2006 $WH_{81}$ |
| 2006 $WP_{81}$ | 15.8 | 0.15 | 20061121 | 248.28812 | 105.85743 | 83.21152 | 7.47071 | 0.0870005 | 2.9630770 | 13 | 1 | 6 days | 0.22 | MPC | 2006 $WP_{81}$ |
| 2006 $WQ_{81}$ | 17.3 | 0.15 | 20061101 | 332.10423 | 25.16431 | 79.96184 | 6.41782 | 0.2508542 | 2.6310508 | 16 | 1 | 15 days | 0.35 | MPC | 2006 $WQ_{81}$ |
| 2006 $WU_{82}$ | 18.6 | 0.15 | 20061121 | 24.72187 | 309.29088 | 74.56898 | 14.37991 | 0.2783444 | 2.5631736 | 16 | 1 | 9 days | 0.27 | MPC | 2006 $WU_{82}$ |
| 2006 $WA_{83}$ | 17.4 | 0.15 | 20061101 | 5.33955 | 328.90996 | 67.60217 | 6.35738 | 0.2272975 | 2.4688786 | 16 | 1 | 12 days | 0.34 | MPC | 2006 $WA_{83}$ |
| 2006 $WB_{83}$ | 17.3 | 0.15 | 20061121 | 23.70256 | 328.63418 | 52.86629 | 8.16548 | 0.2025729 | 2.5409563 | 19 | 1 | 6 days | 0.58 | MPC | 2006 $WB_{83}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WF_{83}$ | 17.3 | 0.15 | 20061101 | 330.37925 | 206.54906 | 247.79528 | 4.31226 | 0.1931180 | 2.3878403 | 36 | 1 | 4 days | 0.68 | E | MPC | 2006 $WF_{83}$ |
| 2006 $WJ_{83}$ | 16.1 | 0.15 | 20061121 | 326.76816 | 46.01090 | 74.79929 | 11.52741 | 0.2967014 | 2.8441501 | 13 | 1 | 9 days | 0.64 | | MPC | 2006 $WJ_{83}$ |
| 2006 $WK_{83}$ | 16.9 | 0.15 | 20061101 | 327.36640 | 36.76977 | 66.56312 | 13.60329 | 0.2139199 | 2.6717880 | 26 | 1 | 16 days | 0.38 | | MPC | 2006 $WK_{83}$ |
| 2006 $WZ_{83}$ | 16.4 | 0.15 | 20061101 | 359.06302 | 327.03461 | 79.21965 | 8.66780 | 0.1108889 | 2.5352641 | 20 | 1 | 19 days | 0.69 | | MPC | 2006 $WZ_{83}$ |
| 2006 $WO_{84}$ | 16.8 | 0.15 | 20061101 | 3.35635 | 197.46261 | 205.38454 | 11.60194 | 0.1783000 | 2.9237576 | 14 | 1 | 36 days | 0.23 | | MPC | 2006 $WO_{84}$ |
| 2006 $WC_{85}$ | 18.0 | 0.15 | 20061121 | 354.55052 | 346.84628 | 89.84035 | 5.01416 | 0.1513515 | 2.4687848 | 13 | 1 | 9 days | 0.10 | | MPC | 2006 $WC_{85}$ |
| 2006 $WJ_{86}$ | 17.4 | 0.15 | 20061101 | 330.23524 | 40.89528 | 55.62293 | 7.23161 | 0.1188723 | 2.2397525 | 23 | 1 | 17 days | 0.62 | | MPC | 2006 $WJ_{86}$ |
| 2006 $WK_{86}$ | 16.1 | 0.15 | 20061101 | 30.79906 | 113.17211 | 250.23138 | 20.25602 | 0.3188293 | 3.0147424 | 30 | 1 | 18 days | 0.39 | E | MPC | 2006 $WK_{86}$ |
| 2006 $WQ_{86}$ | 16.1 | 0.15 | 20061121 | 23.66229 | 133.22579 | 256.04865 | 7.68904 | 0.2738670 | 3.2000263 | 15 | 1 | 6 days | 0.70 | | MPC | 2006 $WQ_{86}$ |
| 2006 $WR_{86}$ | 17.0 | 0.15 | 20061101 | 10.79544 | 155.79464 | 246.17063 | 6.29070 | 0.2696023 | 2.6305031 | 27 | 1 | 17 days | 0.56 | | MPC | 2006 $WR_{86}$ |
| 2006 $WS_{86}$ | 16.1 | 0.15 | 20061121 | 66.64473 | 90.25788 | 257.96292 | 4.50509 | 0.1485295 | 2.1793686 | 21 | 1 | 13 days | 0.43 | | MPC | 2006 $WS_{86}$ |
| 2006 $WT_{86}$ | 16.7 | 0.15 | 20061121 | 27.57859 | 118.27818 | 253.98490 | 2.89296 | 0.3769641 | 2.6874626 | 15 | 1 | 6 days | 0.55 | E | MPC | 2006 $WT_{86}$ |
| 2006 $WY_{86}$ | 16.1 | 0.15 | 20061121 | 82.95877 | 265.95157 | 70.05518 | 23.33936 | 0.1385975 | 2.3472332 | 12 | 1 | 7 days | 0.40 | | MPC | 2006 $WY_{86}$ |
| 2006 $WA_{87}$ | 16.9 | 0.15 | 20061121 | 37.99860 | 312.83585 | 72.39312 | 12.72160 | 0.1390545 | 2.2561476 | 9 | 1 | 6 days | 0.64 | | MPC | 2006 $WA_{87}$ |
| 2006 $WD_{87}$ | 15.3 | 0.15 | 20061101 | 346.48038 | 20.87664 | 61.75835 | 14.37167 | 0.1461821 | 3.1699362 | 29 | 1 | 27 days | 0.38 | | MPC | 2006 $WD_{87}$ |
| 2006 $WL_{87}$ | 16.9 | 0.15 | 20061121 | 22.82701 | 302.64619 | 78.91656 | 10.05674 | 0.2525168 | 3.2031451 | 10 | 1 | 6 days | 0.22 | | MPC | 2006 $WL_{87}$ |
| 2006 $WM_{87}$ | 16.5 | 0.15 | 20061121 | 311.12859 | 296.27651 | 195.29821 | 6.07692 | 0.2145245 | 3.1307165 | 14 | 1 | 6 days | 0.20 | | MPC | 2006 $WM_{87}$ |
| 2006 $WN_{87}$ | 16.9 | 0.15 | 20061121 | 353.98381 | 242.94609 | 186.71760 | 4.11573 | 0.1998593 | 2.5999644 | 15 | 1 | 6 days | 0.92 | | MPC | 2006 $WN_{87}$ |
| 2006 $WO_{87}$ | 17.0 | 0.15 | 20061121 | 329.49170 | 4.33505 | 88.41616 | 8.91175 | 0.0295991 | 2.7539909 | 10 | 1 | 6 days | 0.31 | | MPC | 2006 $WO_{87}$ |
| 2006 $WP_{87}$ | 16.7 | 0.15 | 20061121 | 206.19984 | 139.97405 | 76.51963 | 14.52181 | 0.0354149 | 2.9892716 | 10 | 1 | 6 days | 0.42 | | MPC | 2006 $WP_{87}$ |
| 2006 $WS_{87}$ | 17.1 | 0.15 | 20061121 | 40.78432 | 264.83030 | 92.32431 | 7.49265 | 0.2475711 | 3.0225729 | 10 | 1 | 6 days | 0.19 | | MPC | 2006 $WS_{87}$ |
| 2006 $WT_{87}$ | 15.9 | 0.15 | 20061121 | 245.24466 | 101.76001 | 76.32631 | 16.66992 | 0.0188312 | 3.0590784 | 10 | 1 | 6 days | 0.29 | | MPC | 2006 $WT_{87}$ |
| 2006 $WU_{87}$ | 16.4 | 0.15 | 20061121 | 344.91684 | 243.55093 | 197.47719 | 5.90008 | 0.1166188 | 3.0211286 | 10 | 1 | 6 days | 0.46 | | MPC | 2006 $WU_{87}$ |
| 2006 $WW_{87}$ | 15.2 | 0.15 | 20061121 | 79.93640 | 233.25205 | 83.38876 | 11.76624 | 0.2228240 | 3.1489367 | 13 | 1 | 6 days | 0.38 | | MPC | 2006 $WW_{87}$ |
| 2006 $WX_{87}$ | 16.1 | 0.15 | 20061121 | 60.25896 | 134.94207 | 211.15670 | 8.02554 | 0.1467674 | 2.6578795 | 18 | 1 | 6 days | 0.57 | | MPC | 2006 $WX_{87}$ |
| 2006 $WY_{87}$ | 17.7 | 0.15 | 20061121 | 21.44925 | 236.95856 | 157.44531 | 3.48695 | 0.1142750 | 2.1897271 | 14 | 1 | 6 days | 0.24 | | MPC | 2006 $WY_{87}$ |
| 2006 $WC_{88}$ | 17.8 | 0.15 | 20061101 | 26.18012 | 221.57595 | 154.65708 | 3.63206 | 0.1879942 | 2.2496973 | 19 | 1 | 32 days | 0.20 | | MPC | 2006 $WC_{88}$ |
| 2006 $WD_{88}$ | 17.0 | 0.15 | 20061121 | 313.37809 | 326.29466 | 150.50077 | 4.37042 | 0.0735185 | 2.6059498 | 10 | 1 | 6 days | 0.70 | | MPC | 2006 $WD_{88}$ |
| 2006 $WE_{88}$ | 16.3 | 0.15 | 20061121 | 279.07603 | 346.97559 | 180.83157 | 5.02290 | 0.1984127 | 2.5780436 | 10 | 1 | 6 days | 0.12 | | MPC | 2006 $WE_{88}$ |
| 2006 $WG_{88}$ | 16.6 | 0.15 | 20061121 | 49.53717 | 158.19266 | 200.65139 | 7.07401 | 0.1658711 | 3.1578523 | 17 | 1 | 6 days | 0.22 | | MPC | 2006 $WG_{88}$ |
| 2006 $WN_{88}$ | 16.8 | 0.15 | 20061121 | 69.56369 | 28.30703 | 318.83259 | 5.04724 | 0.1856306 | 2.8252012 | 9 | 1 | 8 days | 0.25 | | MPC | 2006 $WN_{88}$ |
| 2006 $WT_{88}$ | 18.2 | 0.15 | 20061121 | 29.87339 | 2.06936 | 22.05147 | 4.22722 | 0.2671593 | 2.3603255 | 9 | 1 | 8 days | 0.24 | | MPC | 2006 $WT_{88}$ |
| 2006 $WV_{88}$ | 16.3 | 0.15 | 20061121 | 296.47240 | 125.83258 | 28.76847 | 5.04496 | 0.0997636 | 2.7783955 | 9 | 1 | 8 days | 0.11 | | MPC | 2006 $WV_{88}$ |
| 2006 $WZ_{88}$ | 16.1 | 0.15 | 20061121 | 284.93865 | 251.07136 | 279.68100 | 8.84151 | 0.1152503 | 3.0856713 | 9 | 1 | 8 days | 0.34 | | MPC | 2006 $WZ_{88}$ |
| 2006 $WG_{89}$ | 15.2 | 0.15 | 20061121 | 39.78824 | 294.46480 | 87.70764 | 15.46443 | 0.2880798 | 2.6949871 | 17 | 1 | 9 days | 0.39 | | MPC | 2006 $WG_{89}$ |
| 2006 $WK_{89}$ | 17.1 | 0.15 | 20061121 | 344.48428 | 170.22916 | 285.82428 | 6.51004 | 0.1110909 | 2.9228091 | 9 | 1 | 8 days | 0.20 | | MPC | 2006 $WK_{89}$ |
| 2006 $WO_{89}$ | 15.2 | 0.15 | 20061121 | 358.60568 | 10.01823 | 84.68743 | 16.34964 | 0.3009260 | 3.1519724 | 24 | 1 | 13 days | 0.52 | E | MPC | 2006 $WO_{89}$ |
| 2006 $WV_{89}$ | 16.4 | 0.15 | 20061121 | 43.66285 | 279.47301 | 86.10660 | 15.37431 | 0.3288560 | 3.0653244 | 9 | 1 | 8 days | 0.12 | | MPC | 2006 $WV_{89}$ |
| 2006 $WZ_{89}$ | 17.0 | 0.15 | 20061121 | 68.32923 | 265.40246 | 94.43533 | 7.45975 | 0.1336412 | 2.6677384 | 9 | 1 | 8 days | 0.66 | | MPC | 2006 $WZ_{89}$ |
| 2006 $WA_{90}$ | 16.1 | 0.15 | 20061121 | 87.79851 | 238.71562 | 106.66312 | 5.84836 | 0.1037950 | 2.9169445 | 9 | 1 | 8 days | 0.12 | | MPC | 2006 $WA_{90}$ |
| 2006 $WD_{90}$ | 15.7 | 0.15 | 20061121 | 249.48892 | 119.19757 | 97.61747 | 9.99275 | 0.1970925 | 3.0697341 | 9 | 1 | 8 days | 0.30 | | MPC | 2006 $WD_{90}$ |
| 2006 $WT_{91}$ | 18.0 | 0.15 | 20061101 | 336.79244 | 9.14144 | 75.18733 | 3.30612 | 0.1781576 | 2.3850378 | 16 | 1 | 39 days | 0.16 | | MPC | 2006 $WT_{91}$ |
| 2006 $WW_{91}$ | 17.5 | 0.15 | 20061101 | 119.33607 | 69.08487 | 211.00538 | 2.01771 | 0.1713006 | 2.4078674 | 13 | 1 | 16 days | 0.21 | | MPC | 2006 $WW_{91}$ |
| 2006 $WY_{91}$ | 18.4 | 0.15 | 20061121 | 29.52251 | 296.84519 | 85.09847 | 2.96829 | 0.1188240 | 2.6441952 | 13 | 1 | 6 days | 0.25 | | MPC | 2006 $WY_{91}$ |
| 2006 $WC_{92}$ | 16.5 | 0.15 | 20061121 | 3.58249 | 178.69970 | 236.67296 | 16.27072 | 0.0803184 | 2.6991443 | 22 | 1 | 8 days | 0.47 | | MPC | 2006 $WC_{92}$ |
| 2006 $WD_{92}$ | 18.2 | 0.15 | 20061101 | 36.81532 | 114.59885 | 232.66533 | 7.52101 | 0.3096837 | 2.7516203 | 14 | 1 | 13 days | 0.21 | E | MPC | 2006 $WD_{92}$ |
| 2006 $WE_{92}$ | 15.9 | 0.15 | 20061121 | 179.66550 | 7.84419 | 232.25730 | 12.10765 | 0.1675561 | 2.9828583 | 20 | 1 | 8 days | 0.51 | | MPC | 2006 $WE_{92}$ |
| 2006 $WH_{92}$ | 16.0 | 0.15 | 20061101 | 56.02426 | 184.66076 | 163.78371 | 1.72937 | 0.1171634 | 3.1492969 | 26 | 1 | 39 days | 0.23 | | MPC | 2006 $WH_{92}$ |
| 2006 $WK_{92}$ | 16.4 | 0.15 | 20061121 | 283.25688 | 66.40712 | 71.51329 | 6.86883 | 0.0045513 | 3.0881746 | 9 | 1 | 8 days | 0.27 | | MPC | 2006 $WK_{92}$ |
| 2006 $WL_{92}$ | 15.5 | 0.15 | 20061101 | 21.92529 | 300.92125 | 87.26126 | 3.03559 | 0.1195712 | 3.0824808 | 20 | 1 | 33 days | 0.30 | | MPC | 2006 $WL_{92}$ |
| 2006 $WM_{92}$ | 17.3 | 0.15 | 20061101 | 3.34098 | 172.48904 | 237.46763 | 16.66925 | 0.2158748 | 3.1880985 | 12 | 1 | 17 days | 0.12 | | MPC | 2006 $WM_{92}$ |
| 2006 $WN_{92}$ | 17.1 | 0.15 | 20061101 | 102.41693 | 149.07939 | 153.11221 | 1.47458 | 0.1026006 | 2.4339775 | 15 | 1 | 16 days | 0.18 | | MPC | 2006 $WN_{92}$ |
| 2006 $WP_{92}$ | 17.5 | 0.15 | 20061101 | 9.97329 | 231.52540 | 169.90948 | 1.49223 | 0.1230071 | 2.5391900 | 20 | 1 | 16 days | 0.34 | | MPC | 2006 $WP_{92}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WQ_{92}$ | 16.4 | 0.15 | 20061101 | 316.63949 | 29.53838 | 78.60821 | 4.75263 | 0.0971048 | 2.9856398 | 22 | 1 | 37 days | 0.38 | | MPC | 2006 $WQ_{92}$ |
| 2006 $WS_{92}$ | 18.6 | 0.15 | 20061101 | 20.45024 | 155.48894 | 227.27263 | 4.93355 | 0.1945654 | 2.4317308 | 13 | 1 | 27 days | 0.28 | | MPC | 2006 $WS_{92}$ |
| 2006 $WU_{92}$ | 16.1 | 0.15 | 20061121 | 66.25567 | 259.95246 | 83.07469 | 4.87631 | 0.1134253 | 3.9299092 | 9 | 1 | 8 days | 0.18 | | MPC | 2006 $WU_{92}$ |
| 2006 $WV_{92}$ | 18.9 | 0.15 | 20061121 | 36.47531 | 139.11358 | 224.46344 | 4.63006 | 0.2401430 | 2.6571561 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $WV_{92}$ |
| 2006 $WB_{93}$ | 17.8 | 0.15 | 20061121 | 40.77768 | 145.25954 | 230.80828 | 5.99079 | 0.0626736 | 2.8016036 | 9 | 1 | 8 days | 0.26 | | MPC | 2006 $WB_{93}$ |
| 2006 $WF_{93}$ | 19.5 | 0.15 | 20061121 | 24.27128 | 218.62948 | 170.59554 | 0.97457 | 0.1394749 | 2.1414922 | 9 | 1 | 8 days | 0.23 | | MPC | 2006 $WF_{93}$ |
| 2006 $WG_{93}$ | 16.5 | 0.15 | 20061121 | 332.13125 | 20.46657 | 72.23586 | 11.10009 | 0.0393317 | 3.1976205 | 9 | 1 | 8 days | 0.22 | | MPC | 2006 $WG_{93}$ |
| 2006 $WL_{93}$ | 16.7 | 0.15 | 20061101 | 246.80819 | 303.22898 | 237.18340 | 13.41527 | 0.0860740 | 2.6305179 | 12 | 1 | 16 days | 0.22 | | MPC | 2006 $WL_{93}$ |
| 2006 $WM_{93}$ | 15.7 | 0.15 | 20061121 | 186.69607 | 168.13196 | 69.85765 | 18.68977 | 0.1552660 | 2.8476493 | 13 | 1 | 8 days | 0.51 | | MPC | 2006 $WM_{93}$ |
| 2006 $WN_{93}$ | 18.6 | 0.15 | 20061121 | 354.18846 | 4.09051 | 66.39474 | 19.59171 | 0.1679977 | 2.7454056 | 9 | 1 | 8 days | 0.31 | | MPC | 2006 $WN_{93}$ |
| 2006 $WO_{93}$ | 18.3 | 0.15 | 20061121 | 53.67297 | 272.79304 | 69.44572 | 9.51241 | 0.2461655 | 2.6597964 | 9 | 1 | 8 days | 0.25 | | MPC | 2006 $WO_{93}$ |
| 2006 $WT_{93}$ | 16.4 | 0.15 | 20061121 | 109.79331 | 221.18915 | 84.98386 | 6.73613 | 0.0440940 | 2.7682352 | 9 | 1 | 8 days | 0.12 | | MPC | 2006 $WT_{93}$ |
| 2006 $WU_{93}$ | 17.5 | 0.15 | 20061121 | 273.73280 | 305.31191 | 210.22518 | 4.04520 | 0.0722711 | 2.7632723 | 9 | 1 | 8 days | 0.23 | | MPC | 2006 $WU_{93}$ |
| 2006 $WV_{93}$ | 17.8 | 0.15 | 20061101 | 357.74212 | 322.03817 | 95.69255 | 2.98028 | 0.2793049 | 2.9772669 | 17 | 1 | 16 days | 0.45 | | MPC | 2006 $WV_{93}$ |
| 2006 $WW_{93}$ | 17.6 | 0.15 | 20061101 | 311.15863 | 26.93795 | 87.18586 | 3.86878 | 0.1175345 | 2.3074967 | 14 | 1 | 16 days | 0.25 | | MPC | 2006 $WW_{93}$ |
| 2006 $WX_{93}$ | 16.4 | 0.15 | 20061121 | 79.75120 | 248.02087 | 68.70028 | 16.63934 | 0.2147809 | 3.1732724 | 9 | 1 | 8 days | 0.21 | | MPC | 2006 $WX_{93}$ |
| 2006 $WA_{94}$ | 17.6 | 0.15 | 20061101 | 61.67659 | 235.55490 | 103.06618 | 3.66902 | 0.1404262 | 2.5182079 | 16 | 1 | 36 days | 0.20 | | MPC | 2006 $WA_{94}$ |
| 2006 $WC_{94}$ | 16.7 | 0.15 | 20061101 | 180.36344 | 142.27343 | 94.35521 | 5.20873 | 0.0209972 | 2.7286182 | 12 | 1 | 16 days | 0.25 | | MPC | 2006 $WC_{94}$ |
| 2006 $WF_{94}$ | 19.5 | 0.15 | 20061101 | 329.26174 | 1.65610 | 94.94607 | 3.42621 | 0.1775923 | 2.3178162 | 12 | 1 | 16 days | 0.23 | | MPC | 2006 $WF_{94}$ |
| 2006 $WH_{94}$ | 18.6 | 0.15 | 20061101 | 5.02475 | 316.03349 | 90.26164 | 3.42038 | 0.1667234 | 2.3751761 | 13 | 1 | 36 days | 0.21 | | MPC | 2006 $WH_{94}$ |
| 2006 $WJ_{94}$ | 16.5 | 0.15 | 20061121 | 121.55093 | 214.80525 | 72.70305 | 13.81381 | 0.1397624 | 2.6248102 | 9 | 1 | 8 days | 0.43 | | MPC | 2006 $WJ_{94}$ |
| 2006 $WL_{94}$ | 16.6 | 0.15 | 20061121 | 55.27758 | 233.70829 | 124.68328 | 2.99389 | 0.0671454 | 2.9937015 | 9 | 1 | 8 days | 0.24 | | MPC | 2006 $WL_{94}$ |
| 2006 $WM_{94}$ | 17.2 | 0.15 | 20061101 | 355.44354 | 351.05760 | 70.05516 | 14.60747 | 0.1661249 | 3.0535087 | 13 | 1 | 15 days | 0.20 | | MPC | 2006 $WM_{94}$ |
| 2006 $WO_{94}$ | 17.5 | 0.15 | 20061121 | 294.28509 | 42.12025 | 96.82877 | 4.51977 | 0.1184120 | 2.6689909 | 9 | 1 | 8 days | 0.17 | | MPC | 2006 $WO_{94}$ |
| 2006 $WR_{94}$ | 17.6 | 0.15 | 20061101 | 352.62169 | 252.82696 | 170.13353 | 1.89567 | 0.1862808 | 2.7676225 | 16 | 1 | 39 days | 0.23 | | MPC | 2006 $WR_{94}$ |
| 2006 $WS_{94}$ | 16.2 | 0.15 | 20061121 | 82.16307 | 226.48285 | 95.88265 | 3.91352 | 0.1204361 | 3.0423627 | 9 | 1 | 8 days | 0.12 | | MPC | 2006 $WS_{94}$ |
| 2006 $WT_{94}$ | 17.3 | 0.15 | 20061101 | 56.71356 | 276.49320 | 73.61671 | 7.57305 | 0.0683326 | 2.7155541 | 19 | 1 | 39 days | 0.27 | | MPC | 2006 $WT_{94}$ |
| 2006 $WV_{94}$ | 17.5 | 0.15 | 20061101 | 23.43734 | 186.33515 | 188.40089 | 2.28025 | 0.2247851 | 2.6046733 | 16 | 1 | 16 days | 0.25 | | MPC | 2006 $WV_{94}$ |
| 2006 $WW_{94}$ | 18.1 | 0.15 | 20061121 | 62.18953 | 167.02429 | 176.86562 | 1.84917 | 0.1188871 | 2.7469360 | 9 | 1 | 8 days | 0.20 | | MPC | 2006 $WW_{94}$ |
| 2006 $WX_{94}$ | 17.3 | 0.15 | 20061101 | 172.07984 | 13.65280 | 227.93159 | 10.36223 | 0.1374281 | 2.6242359 | 12 | 1 | 16 days | 0.45 | | MPC | 2006 $WX_{94}$ |
| 2006 $WZ_{94}$ | 17.0 | 0.15 | 20061101 | 87.99163 | 91.81717 | 212.29958 | 5.60619 | 0.2022077 | 2.6832269 | 16 | 1 | 35 days | 0.35 | | MPC | 2006 $WZ_{94}$ |
| 2006 $WB_{95}$ | 16.7 | 0.15 | 20061101 | 260.77615 | 293.45505 | 231.37125 | 14.05199 | 0.0928113 | 2.8581180 | 16 | 1 | 16 days | 0.29 | | MPC | 2006 $WB_{95}$ |
| 2006 $WC_{95}$ | 15.7 | 0.15 | 20061101 | 47.15934 | 127.78302 | 226.25769 | 10.28871 | 0.1459314 | 3.1613577 | 19 | 1 | 16 days | 0.29 | | MPC | 2006 $WC_{95}$ |
| 2006 $WD_{95}$ | 17.7 | 0.15 | 20061121 | 240.42658 | 117.08892 | 78.13120 | 7.10088 | 0.1930964 | 2.3829246 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $WD_{95}$ |
| 2006 $WE_{95}$ | 15.8 | 0.15 | 20061101 | 327.58149 | 9.53663 | 90.04847 | 3.82363 | 0.1794202 | 2.9722123 | 23 | 1 | 16 days | 0.44 | | MPC | 2006 $WE_{95}$ |
| 2006 $WF_{95}$ | 17.1 | 0.15 | 20061101 | 174.40067 | 165.69963 | 74.88144 | 8.76454 | 0.0155942 | 3.0161971 | 9 | 1 | 35 days | 0.24 | | MPC | 2006 $WF_{95}$ |
| 2006 $WH_{95}$ | 16.7 | 0.15 | 20061101 | 302.53463 | 53.41233 | 73.12781 | 6.65691 | 0.1352813 | 3.0366123 | 23 | 1 | 37 days | 0.19 | | MPC | 2006 $WH_{95}$ |
| 2006 $WJ_{95}$ | 18.0 | 0.15 | 20061101 | 327.77786 | 271.57653 | 193.05373 | 2.97148 | 0.2536892 | 2.5977031 | 12 | 1 | 35 days | 0.23 | | MPC | 2006 $WJ_{95}$ |
| 2006 $WL_{95}$ | 16.2 | 0.15 | 20061101 | 68.34032 | 108.72967 | 222.33375 | 7.99664 | 0.1341893 | 2.6932635 | 17 | 1 | 39 days | 0.30 | | MPC | 2006 $WL_{95}$ |
| 2006 $WM_{95}$ | 17.6 | 0.15 | 20061121 | 107.74180 | 202.73885 | 98.55280 | 3.08781 | 0.0950781 | 2.5252156 | 9 | 1 | 8 days | 0.15 | | MPC | 2006 $WM_{95}$ |
| 2006 $WO_{95}$ | 15.9 | 0.15 | 20061101 | 113.00778 | 214.86325 | 66.28646 | 14.53709 | 0.2319890 | 2.6988919 | 27 | 1 | 36 days | 0.35 | | MPC | 2006 $WO_{95}$ |
| 2006 $WP_{95}$ | 16.3 | 0.15 | 20060922 | 19.36187 | 246.08345 | 131.02384 | 2.14304 | 0.1680583 | 3.0855918 | 20 | 1 | 60 days | 0.18 | M-v 4 | MPC | 2006 $WP_{95}$ |
| 2006 $WQ_{95}$ | 19.0 | 0.15 | 20061121 | 8.38726 | 302.87929 | 105.69619 | 2.25835 | 0.1056923 | 2.3233588 | 9 | 1 | 8 days | 0.95 | | MPC | 2006 $WQ_{95}$ |
| 2006 $WR_{95}$ | 18.7 | 0.15 | 20061101 | 18.93196 | 233.61720 | 149.31027 | 1.98354 | 0.1971021 | 2.4107942 | 12 | 1 | 16 days | 0.12 | | MPC | 2006 $WR_{95}$ |
| 2006 $WS_{95}$ | 17.8 | 0.15 | 20061101 | 32.70376 | 164.01055 | 204.26624 | 4.28306 | 0.1789916 | 3.0987119 | 12 | 1 | 39 days | 0.19 | | MPC | 2006 $WS_{95}$ |
| 2006 $WT_{95}$ | 17.3 | 0.15 | 20061121 | 74.74976 | 211.59372 | 131.94621 | 2.75664 | 0.0082790 | 2.8865931 | 9 | 1 | 8 days | 0.64 | | MPC | 2006 $WT_{95}$ |
| 2006 $WU_{95}$ | 18.5 | 0.15 | 20061101 | 339.92052 | 258.84722 | 180.15438 | 1.76936 | 0.1579697 | 2.2775425 | 20 | 1 | 35 days | 0.25 | | MPC | 2006 $WU_{95}$ |
| 2006 $WV_{95}$ | 16.6 | 0.15 | 20061101 | 64.85573 | 263.44249 | 78.02028 | 6.65881 | 0.0772924 | 2.7484562 | 12 | 1 | 16 days | 0.15 | | MPC | 2006 $WV_{95}$ |
| 2006 $WX_{95}$ | 17.5 | 0.15 | 20061101 | 17.19625 | 316.11931 | 68.25312 | 11.88155 | 0.2508094 | 3.1643219 | 20 | 1 | 16 days | 0.25 | | MPC | 2006 $WX_{95}$ |
| 2006 $WY_{95}$ | 16.4 | 0.15 | 20061101 | 105.12883 | 97.13600 | 202.16113 | 3.34619 | 0.1107995 | 2.9997504 | 19 | 1 | 16 days | 0.25 | | MPC | 2006 $WY_{95}$ |
| 2006 $WZ_{95}$ | 17.0 | 0.15 | 20061121 | 327.91590 | 27.87086 | 73.50132 | 6.83992 | 0.1384550 | 3.1006337 | 16 | 1 | 8 days | 0.60 | | MPC | 2006 $WZ_{95}$ |
| 2006 $WJ_{96}$ | 16.0 | 0.15 | 20061121 | 122.78908 | 225.63288 | 58.03427 | 6.88556 | 0.1875360 | 3.1244117 | 9 | 1 | 8 days | 0.16 | | MPC | 2006 $WJ_{96}$ |
| 2006 $WL_{96}$ | 18.0 | 0.15 | 20061121 | 40.04258 | 320.49264 | 52.81754 | 2.69851 | 0.1029227 | 2.6281535 | 9 | 1 | 8 days | 0.13 | | MPC | 2006 $WL_{96}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WM_{96}$ | 17.1 | 0.15 | 20061121 | 186.45742 | 347.34207 | 250.65179 | 5.31973 | 0.1868537 | 2.6033522 | 9 | 1 | 8 days | 0.29 | MPC | 2006 $WM_{96}$ |
| 2006 $WO_{96}$ | 14.8 | 0.15 | 20061121 | 185.94458 | 179.82183 | 59.44773 | 14.47442 | 0.2164082 | 3.0337780 | 14 | 1 | 9 days | 0.65 | MPC | 2006 $WO_{96}$ |
| 2006 $WR_{96}$ | 15.9 | 0.15 | 20061121 | 186.91966 | 181.37216 | 57.17837 | 7.99022 | 0.2042557 | 2.8987579 | 9 | 1 | 8 days | 0.78 | MPC | 2006 $WR_{96}$ |
| 2006 $WT_{96}$ | 18.7 | 0.15 | 20061121 | 350.39117 | 98.72751 | 336.78632 | 0.47540 | 0.1588962 | 2.4744512 | 9 | 1 | 8 days | 0.59 | MPC | 2006 $WT_{96}$ |
| 2006 $WV_{96}$ | 17.4 | 0.15 | 20061101 | 178.31763 | 181.54966 | 58.15609 | 8.46213 | 0.0696446 | 2.4018838 | 12 | 1 | 16 days | 0.22 | MPC | 2006 $WV_{96}$ |
| 2006 $WX_{96}$ | 16.6 | 0.15 | 20061121 | 354.20460 | 95.48592 | 337.14083 | 0.81519 | 0.2395464 | 3.2631324 | 14 | 1 | 8 days | 0.89 | MPC | 2006 $WX_{96}$ |
| 2006 $WY_{96}$ | 16.3 | 0.15 | 20061121 | 187.03816 | 180.80184 | 58.56641 | 5.78366 | 0.2406301 | 2.8143237 | 9 | 1 | 8 days | 0.49 | MPC | 2006 $WY_{96}$ |
| 2006 $WA_{97}$ | 17.5 | 0.15 | 20061121 | 231.63859 | 166.09529 | 29.31229 | 1.32448 | 0.0446597 | 2.4190764 | 9 | 1 | 8 days | 0.43 | MPC | 2006 $WA_{97}$ |
| 2006 $WB_{97}$ | 18.9 | 0.15 | 20061101 | 32.78217 | 308.33370 | 60.01373 | 6.03531 | 0.1843874 | 2.3256038 | 18 | 1 | 39 days | 0.48 | MPC | 2006 $WB_{97}$ |
| 2006 $WC_{97}$ | 16.1 | 0.15 | 20061121 | 193.48017 | 171.89309 | 61.83988 | 14.40096 | 0.1297657 | 3.0952713 | 9 | 1 | 8 days | 0.33 | MPC | 2006 $WC_{97}$ |
| 2006 $WE_{97}$ | 17.2 | 0.15 | 20061012 | 12.07347 | 143.22735 | 242.10458 | 8.07095 | 0.3160334 | 3.1327334 | 24 | 1 | 54 days | 0.29 | E MPC | 2006 $WE_{97}$ |
| 2006 $WF_{97}$ | 15.8 | 0.15 | 20061121 | 188.38441 | 183.81451 | 55.08716 | 0.93713 | 0.2296504 | 2.8407078 | 9 | 1 | 8 days | 0.60 | MPC | 2006 $WF_{97}$ |
| 2006 $WG_{97}$ | 18.5 | 0.15 | 20061101 | 6.94051 | 157.12503 | 244.75399 | 3.84908 | 0.2353086 | 2.3713546 | 20 | 1 | 29 days | 0.27 | MPC | 2006 $WG_{97}$ |
| 2006 $WH_{97}$ | 17.4 | 0.15 | 20061101 | 17.22997 | 148.06409 | 242.68060 | 16.33583 | 0.2176390 | 3.0856016 | 17 | 1 | 16 days | 0.28 | MPC | 2006 $WH_{97}$ |
| 2006 $WJ_{97}$ | 17.6 | 0.15 | 20061121 | 333.49978 | 77.12158 | 17.45324 | 0.86807 | 0.0807317 | 2.6790510 | 9 | 1 | 8 days | 0.76 | MPC | 2006 $WJ_{97}$ |
| 2006 $WK_{97}$ | 18.6 | 0.15 | 20061101 | 30.93194 | 326.03736 | 48.74867 | 1.46799 | 0.1410991 | 2.2574522 | 12 | 1 | 16 days | 0.16 | MPC | 2006 $WK_{97}$ |
| 2006 $WL_{97}$ | 16.8 | 0.15 | 20061121 | 192.02390 | 172.06177 | 63.66913 | 8.95398 | 0.1783892 | 2.6274530 | 9 | 1 | 8 days | 0.60 | MPC | 2006 $WL_{97}$ |
| 2006 $WM_{97}$ | 17.6 | 0.15 | 20061121 | 293.07666 | 243.59089 | 251.79230 | 1.27759 | 0.0436899 | 2.5286952 | 9 | 1 | 8 days | 0.30 | MPC | 2006 $WM_{97}$ |
| 2006 $WN_{97}$ | 17.1 | 0.15 | 20061121 | 341.66288 | 196.10244 | 251.05026 | 3.15871 | 0.1085045 | 3.2156850 | 9 | 1 | 8 days | 0.26 | MPC | 2006 $WN_{97}$ |
| 2006 $WQ_{97}$ | 18.2 | 0.15 | 20061121 | 6.72328 | 163.52676 | 251.59411 | 1.76077 | 0.1696696 | 2.9494246 | 12 | 1 | 12 days | 0.26 | MPC | 2006 $WQ_{97}$ |
| 2006 $WR_{97}$ | 19.0 | 0.15 | 20061121 | 14.69320 | 158.74011 | 243.51944 | 1.80764 | 0.1814788 | 2.3878351 | 9 | 1 | 8 days | 0.11 | MPC | 2006 $WR_{97}$ |
| 2006 $WS_{97}$ | 18.4 | 0.15 | 20061121 | 17.56758 | 148.42054 | 242.90469 | 2.55182 | 0.2818092 | 2.4607407 | 12 | 1 | 8 days | 0.57 | MPC | 2006 $WS_{97}$ |
| 2006 $WU_{97}$ | 18.7 | 0.15 | 20061121 | 70.22457 | 269.21032 | 62.94559 | 3.40440 | 0.1940862 | 2.3565738 | 9 | 1 | 8 days | 0.35 | MPC | 2006 $WU_{97}$ |
| 2006 $WZ_{97}$ | 15.2 | 0.15 | 20061121 | 198.33788 | 162.22138 | 71.11024 | 2.41668 | 0.1905970 | 2.4400316 | 11 | 1 | 8 days | 0.82 | MPC | 2006 $WZ_{97}$ |
| 2006 $WD_{98}$ | 15.0 | 0.15 | 20061121 | 190.89335 | 353.07674 | 247.84009 | 6.93941 | 0.2833145 | 2.8798132 | 9 | 1 | 8 days | 0.64 | MPC | 2006 $WD_{98}$ |
| 2006 $WG_{98}$ | 16.0 | 0.15 | 20061121 | 257.06484 | 102.95747 | 72.94692 | 3.88606 | 0.0588625 | 2.8416995 | 13 | 1 | 8 days | 0.79 | MPC | 2006 $WG_{98}$ |
| 2006 $WJ_{98}$ | 16.7 | 0.15 | 20061121 | 83.65484 | 254.79399 | 66.15036 | 14.03899 | 0.1895421 | 2.6098364 | 9 | 1 | 8 days | 0.16 | MPC | 2006 $WJ_{98}$ |
| 2006 $WK_{98}$ | 16.9 | 0.15 | 20061121 | 309.88050 | 50.24867 | 70.13645 | 13.50349 | 0.0542330 | 2.9865949 | 13 | 1 | 8 days | 0.44 | MPC | 2006 $WK_{98}$ |
| 2006 $WL_{98}$ | 17.2 | 0.15 | 20061121 | 58.38425 | 260.99107 | 80.71092 | 3.07176 | 0.2242914 | 2.6650570 | 16 | 1 | 8 days | 0.68 | MPC | 2006 $WL_{98}$ |
| 2006 $WM_{98}$ | 16.4 | 0.15 | 20061101 | 67.83971 | 106.45048 | 240.16700 | 12.50011 | 0.0696068 | 3.0730089 | 15 | 1 | 14 days | 0.50 | MPC | 2006 $WM_{98}$ |
| 2006 $WN_{98}$ | 16.5 | 0.15 | 20061121 | 298.40525 | 275.81400 | 217.50719 | 2.78173 | 0.0595634 | 2.7589252 | 13 | 1 | 8 days | 0.91 | MPC | 2006 $WN_{98}$ |
| 2006 $WO_{98}$ | 17.2 | 0.15 | 20061101 | 336.96808 | 210.84102 | 240.74785 | 18.71469 | 0.1449352 | 3.0414278 | 12 | 1 | 13 days | 0.22 | MPC | 2006 $WO_{98}$ |
| 2006 $WP_{98}$ | 16.9 | 0.15 | 20061121 | 268.24024 | 20.83335 | 142.80639 | 1.11773 | 0.0520601 | 2.8760877 | 13 | 1 | 8 days | 0.68 | MPC | 2006 $WP_{98}$ |
| 2006 $WQ_{98}$ | 18.0 | 0.15 | 20061121 | 64.55768 | 251.89180 | 87.48747 | 1.88589 | 0.1870489 | 2.4106542 | 12 | 1 | 8 days | 0.19 | MPC | 2006 $WQ_{98}$ |
| 2006 $WR_{98}$ | 16.8 | 0.15 | 20061121 | 323.68390 | 309.70611 | 159.16684 | 0.61636 | 0.0943893 | 2.6841415 | 9 | 1 | 8 days | 0.48 | MPC | 2006 $WR_{98}$ |
| 2006 $WS_{98}$ | 16.0 | 0.15 | 20061121 | 196.32982 | 164.26837 | 70.69890 | 15.58967 | 0.1692337 | 2.9950801 | 9 | 1 | 8 days | 0.55 | MPC | 2006 $WS_{98}$ |
| 2006 $WT_{98}$ | 18.8 | 0.15 | 20061121 | 37.31229 | 190.83562 | 181.64223 | 1.22169 | 0.1733848 | 2.1617035 | 24 | 1 | 8 days | 0.37 | MPC | 2006 $WT_{98}$ |
| 2006 $WV_{98}$ | 16.3 | 0.15 | 20061101 | 71.15800 | 85.12335 | 240.96856 | 10.36549 | 0.1906135 | 2.5910607 | 17 | 1 | 16 days | 0.37 | MPC | 2006 $WV_{98}$ |
| 2006 $WW_{98}$ | 15.9 | 0.15 | 20061101 | 179.06420 | 170.78488 | 70.76612 | 7.60573 | 0.0525114 | 2.8537375 | 16 | 1 | 16 days | 0.24 | MPC | 2006 $WW_{98}$ |
| 2006 $WX_{98}$ | 16.9 | 0.15 | 20061121 | 225.87551 | 117.02600 | 86.96914 | 1.53404 | 0.0707878 | 2.7444920 | 10 | 1 | 5 days | 0.22 | MPC | 2006 $WX_{98}$ |
| 2006 $WY_{98}$ | 15.9 | 0.15 | 20061121 | 187.49295 | 172.35621 | 67.71537 | 18.18448 | 0.2610110 | 2.6104782 | 13 | 1 | 8 days | 0.29 | MPC | 2006 $WY_{98}$ |
| 2006 $WZ_{98}$ | 17.7 | 0.15 | 20061121 | 209.47852 | 341.36297 | 238.01563 | 7.27635 | 0.0943852 | 2.2962580 | 13 | 1 | 8 days | 0.47 | MPC | 2006 $WZ_{98}$ |
| 2006 $WA_{99}$ | 17.3 | 0.15 | 20061101 | 315.02150 | 45.13506 | 66.37580 | 11.29739 | 0.0655438 | 3.1630775 | 9 | 1 | 35 days | 0.10 | MPC | 2006 $WA_{99}$ |
| 2006 $WB_{99}$ | 16.1 | 0.15 | 20061121 | 191.69417 | 20.96517 | 216.12944 | 2.02451 | 0.2050313 | 2.7353842 | 13 | 1 | 8 days | 0.63 | MPC | 2006 $WB_{99}$ |
| 2006 $WC_{99}$ | 18.2 | 0.15 | 20061121 | 56.18099 | 275.09627 | 67.55077 | 12.92537 | 0.2272703 | 2.5483627 | 13 | 1 | 8 days | 0.22 | MPC | 2006 $WC_{99}$ |
| 2006 $WD_{99}$ | 17.2 | 0.15 | 20061121 | 8.16793 | 178.70091 | 232.08448 | 3.74421 | 0.2249833 | 3.0054923 | 20 | 1 | 12 days | 0.56 | MPC | 2006 $WD_{99}$ |
| 2006 $WE_{99}$ | 14.1 | 0.15 | 20061121 | 195.07292 | 158.36769 | 75.51728 | 8.06243 | 0.1241945 | 3.8249031 | 13 | 1 | 8 days | 0.96 | MPC | 2006 $WE_{99}$ |
| 2006 $WG_{99}$ | 19.7 | 0.15 | 20061101 | 0.34199 | 347.09764 | 66.83465 | 3.44545 | 0.1849729 | 2.2659568 | 12 | 1 | 39 days | 0.23 | MPC | 2006 $WG_{99}$ |
| 2006 $WH_{99}$ | 14.9 | 0.15 | 20061121 | 189.56662 | 357.93222 | 241.93583 | 14.71792 | 0.2493818 | 2.9570461 | 13 | 1 | 8 days | 0.86 | MPC | 2006 $WH_{99}$ |
| 2006 $WJ_{99}$ | 16.7 | 0.15 | 20061121 | 241.21360 | 0.16276 | 188.66750 | 0.73736 | 0.0489571 | 3.0123631 | 9 | 1 | 8 days | 0.62 | MPC | 2006 $WJ_{99}$ |
| 2006 $WL_{99}$ | 16.7 | 0.15 | 20061121 | 291.00450 | 65.83855 | 72.98735 | 9.05071 | 0.0465123 | 2.7292280 | 13 | 1 | 8 days | 0.92 | MPC | 2006 $WL_{99}$ |
| 2006 $WO_{99}$ | 17.2 | 0.15 | 20061121 | 203.49953 | 141.22533 | 81.43243 | 1.80760 | 0.0712513 | 2.7093535 | 9 | 1 | 8 days | 0.37 | MPC | 2006 $WO_{99}$ |
| 2006 $WP_{99}$ | 16.8 | 0.15 | 20061121 | 332.64879 | 217.10547 | 242.47998 | 26.21345 | 0.1429579 | 3.0414772 | 13 | 1 | 8 days | 0.16 | MPC | 2006 $WP_{99}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WQ_{99}$ | 18.0 | 0.15 | 20061121 | 76.54305 | 271.04643 | 67.04928 | 1.76846 | 0.0756273 | 2.4637202 | 9 | 1 | 8 days | 0.13 | | MPC | 2006 $WQ_{99}$ |
| 2006 $WT_{99}$ | 18.6 | 0.15 | 20061121 | 334.25800 | 25.94181 | 67.05954 | 5.91916 | 0.0782798 | 2.4598485 | 9 | 1 | 8 days | 0.66 | | MPC | 2006 $WT_{99}$ |
| 2006 $WU_{99}$ | 18.0 | 0.15 | 20061121 | 53.22040 | 277.46494 | 70.89095 | 2.45724 | 0.2027348 | 2.4441882 | 9 | 1 | 8 days | 0.08 | | MPC | 2006 $WU_{99}$ |
| 2006 $WV_{99}$ | 18.0 | 0.15 | 20061101 | 16.50887 | 154.48867 | 239.52370 | 4.68753 | 0.1598312 | 2.6188147 | 12 | 1 | 16 days | 0.18 | | MPC | 2006 $WV_{99}$ |
| 2006 $WY_{99}$ | 15.8 | 0.15 | 20061101 | 285.41849 | 56.60471 | 64.28873 | 15.17922 | 0.0412150 | 2.6791959 | 14 | 1 | 11 days | 0.53 | | MPC | 2006 $WY_{99}$ |
| 2006 $WA_{100}$ | 17.0 | 0.15 | 20061101 | 20.08142 | 200.75108 | 172.10652 | 4.62498 | 0.1834015 | 2.3336850 | 16 | 1 | 11 days | 0.58 | | MPC | 2006 $WA_{100}$ |
| 2006 $WD_{100}$ | 17.3 | 0.15 | 20061101 | 356.39946 | 304.59766 | 103.83577 | 5.26097 | 0.2550894 | 2.6066133 | 15 | 1 | 14 days | 0.50 | | MPC | 2006 $WD_{100}$ |
| 2006 $WG_{100}$ | 16.4 | 0.15 | 20061101 | 23.04184 | 277.26202 | 96.42477 | 7.03127 | 0.1185748 | 2.4044620 | 15 | 1 | 11 days | 0.49 | | MPC | 2006 $WG_{100}$ |
| 2006 $WH_{100}$ | 16.0 | 0.15 | 20061121 | 36.58006 | 203.39631 | 156.69642 | 6.38936 | 0.1522500 | 2.9737615 | 12 | 1 | 5 days | 0.52 | | MPC | 2006 $WH_{100}$ |
| 2006 $WM_{100}$ | 16.3 | 0.15 | 20061101 | 298.88953 | 339.27596 | 149.94138 | 5.83278 | 0.2092760 | 2.6770262 | 15 | 1 | 14 days | 0.57 | | MPC | 2006 $WM_{100}$ |
| 2006 $WO_{100}$ | 15.7 | 0.15 | 20061121 | 3.61706 | 197.88154 | 215.85120 | 5.53640 | 0.1581425 | 3.1818266 | 13 | 1 | 8 days | 0.64 | | MPC | 2006 $WO_{100}$ |
| 2006 $WQ_{100}$ | 18.3 | 0.15 | 20061101 | 11.53803 | 0.34588 | 29.69751 | 8.08690 | 0.1991130 | 2.1844544 | 33 | 1 | 23 days | 0.63 | | MPC | 2006 $WQ_{100}$ |
| 2006 $WT_{100}$ | 18.0 | 0.15 | 20061121 | 11.79143 | 85.30253 | 314.44333 | 1.71537 | 0.2043444 | 2.3051210 | 13 | 1 | 5 days | 0.69 | | MPC | 2006 $WT_{100}$ |
| 2006 $WV_{100}$ | 15.9 | 0.15 | 20061121 | 20.12928 | 137.08038 | 259.83230 | 5.91890 | 0.0270245 | 2.7536710 | 13 | 1 | 5 days | 0.54 | | MPC | 2006 $WV_{100}$ |
| 2006 $WA_{101}$ | 17.1 | 0.15 | 20061101 | 13.43457 | 24.45550 | 9.43890 | 1.38252 | 0.1821975 | 2.3800256 | 15 | 1 | 14 days | 0.40 | | MPC | 2006 $WA_{101}$ |
| 2006 $WB_{101}$ | 17.7 | 0.15 | 20061101 | 7.97313 | 104.22425 | 284.25320 | 4.86529 | 0.4226680 | 2.6348106 | 21 | 1 | 11 days | 0.40 | E | MPC | 2006 $WB_{101}$ |
| 2006 $WC_{101}$ | 16.6 | 0.15 | 20061121 | 11.34261 | 19.10354 | 28.40710 | 4.43319 | 0.1997472 | 2.5761042 | 21 | 1 | 8 days | 0.80 | | MPC | 2006 $WC_{101}$ |
| 2006 $WD_{101}$ | 17.2 | 0.15 | 20061121 | 342.18424 | 356.14697 | 86.35462 | 6.62280 | 0.1786730 | 2.4334051 | 19 | 1 | 13 days | 0.67 | | MPC | 2006 $WD_{101}$ |
| 2006 $WG_{101}$ | 15.7 | 0.15 | 20061121 | 24.96538 | 122.35266 | 262.33937 | 8.77402 | 0.1574081 | 3.0073508 | 16 | 1 | 6 days | 0.48 | | MPC | 2006 $WG_{101}$ |
| 2006 $WK_{101}$ | 16.7 | 0.15 | 20061121 | 1.90598 | 40.08832 | 16.08994 | 2.52188 | 0.1249509 | 2.6107268 | 12 | 1 | 5 days | 0.32 | | MPC | 2006 $WK_{101}$ |
| 2006 $WM_{101}$ | 14.9 | 0.15 | 20061121 | 244.13211 | 261.36764 | 296.12304 | 6.89427 | 0.2047456 | 2.5900865 | 10 | 1 | 6 days | 0.30 | | MPC | 2006 $WM_{101}$ |
| 2006 $WN_{101}$ | 17.3 | 0.15 | 20061121 | 24.29711 | 357.44789 | 25.01014 | 7.00584 | 0.2542734 | 2.5393086 | 19 | 1 | 7 days | 0.54 | | MPC | 2006 $WN_{101}$ |
| 2006 $WU_{101}$ | 16.1 | 0.15 | 20061101 | 48.14882 | 198.01513 | 143.23097 | 5.93314 | 0.1747944 | 2.7515390 | 15 | 1 | 14 days | 0.69 | | MPC | 2006 $WU_{101}$ |
| 2006 $WW_{101}$ | 17.0 | 0.15 | 20061101 | 16.36462 | 278.84837 | 92.65913 | 6.89443 | 0.3235959 | 2.5527514 | 14 | 1 | 14 days | 0.28 | | MPC | 2006 $WW_{101}$ |
| 2006 $WE_{102}$ | 15.8 | 0.15 | 20061101 | 336.27562 | 5.34401 | 75.94134 | 19.88364 | 0.1611463 | 3.0956873 | 16 | 1 | 12 days | 0.56 | | MPC | 2006 $WE_{102}$ |
| 2006 $WK_{102}$ | 17.5 | 0.15 | 20061101 | 74.23351 | 265.14470 | 65.12861 | 5.26155 | 0.1371103 | 2.3291436 | 12 | 1 | 16 days | 0.14 | | MPC | 2006 $WK_{102}$ |
| 2006 $WL_{102}$ | 16.5 | 0.15 | 20061121 | 223.29665 | 300.28962 | 270.75193 | 1.07590 | 0.0979812 | 2.6850541 | 9 | 1 | 8 days | 0.78 | | MPC | 2006 $WL_{102}$ |
| 2006 $WN_{102}$ | 18.7 | 0.15 | 20061101 | 30.51697 | 129.16100 | 240.75481 | 4.06682 | 0.2204794 | 2.2682893 | 17 | 1 | 16 days | 0.22 | | MPC | 2006 $WN_{102}$ |
| 2006 $WP_{102}$ | 16.8 | 0.15 | 20061121 | 220.63975 | 141.22569 | 70.66338 | 3.86138 | 0.0700224 | 2.7852806 | 9 | 1 | 8 days | 0.21 | | MPC | 2006 $WP_{102}$ |
| 2006 $WQ_{102}$ | 18.0 | 0.15 | 20061121 | 93.22604 | 65.27370 | 245.96079 | 5.25025 | 0.1993422 | 2.1925455 | 12 | 1 | 12 days | 0.18 | | MPC | 2006 $WQ_{102}$ |
| 2006 $WR_{102}$ | 17.2 | 0.15 | 20061121 | 306.83669 | 80.44341 | 68.66982 | 9.36041 | 0.2596893 | 3.1775122 | 9 | 1 | 8 days | 0.23 | | MPC | 2006 $WR_{102}$ |
| 2006 $WU_{102}$ | 15.8 | 0.15 | 20061101 | 152.74091 | 197.00726 | 71.34605 | 6.08397 | 0.1026184 | 3.1688078 | 17 | 1 | 16 days | 0.26 | | MPC | 2006 $WU_{102}$ |
| 2006 $WY_{102}$ | 16.5 | 0.15 | 20061121 | 209.58748 | 341.48037 | 245.00520 | 10.58911 | 0.1442047 | 2.9075434 | 9 | 1 | 8 days | 0.50 | | MPC | 2006 $WY_{102}$ |
| 2006 $WZ_{102}$ | 17.3 | 0.15 | 20061121 | 274.80182 | 276.38780 | 245.68595 | 1.00573 | 0.0734268 | 2.8879942 | 9 | 1 | 8 days | 0.69 | | MPC | 2006 $WZ_{102}$ |
| 2006 $WA_{103}$ | 16.4 | 0.15 | 20061101 | 61.83276 | 285.77673 | 72.29485 | 7.11729 | 0.0360544 | 2.7579616 | 16 | 1 | 16 days | 0.18 | | MPC | 2006 $WA_{103}$ |
| 2006 $WB_{103}$ | 16.0 | 0.15 | 20061121 | 296.93574 | 75.03891 | 66.22650 | 12.43292 | 0.0898952 | 2.9787473 | 9 | 1 | 5 days | 0.32 | | MPC | 2006 $WB_{103}$ |
| 2006 $WD_{103}$ | 16.5 | 0.15 | 20061101 | 148.66383 | 201.15222 | 69.03570 | 16.50715 | 0.1118934 | 2.6320244 | 16 | 1 | 16 days | 0.29 | | MPC | 2006 $WD_{103}$ |
| 2006 $WH_{103}$ | 18.6 | 0.15 | 20061101 | 333.10022 | 25.74508 | 74.92719 | 3.41842 | 0.2021680 | 2.6384655 | 12 | 1 | 16 days | 0.29 | | MPC | 2006 $WH_{103}$ |
| 2006 $WK_{103}$ | 15.8 | 0.15 | 20061121 | 315.44804 | 53.96898 | 68.51996 | 8.55434 | 0.1019259 | 3.0917071 | 9 | 1 | 8 days | 0.80 | | MPC | 2006 $WK_{103}$ |
| 2006 $WL_{103}$ | 17.9 | 0.15 | 20061121 | 306.15200 | 254.90856 | 239.09345 | 3.37305 | 0.1251425 | 2.4319360 | 9 | 1 | 5 days | 0.83 | | MPC | 2006 $WL_{103}$ |
| 2006 $WM_{103}$ | 18.3 | 0.15 | 20061121 | 317.17094 | 49.36191 | 72.70279 | 3.92181 | 0.1300997 | 2.5037081 | 9 | 1 | 8 days | 0.46 | | MPC | 2006 $WM_{103}$ |
| 2006 $WO_{103}$ | 15.7 | 0.15 | 20061121 | 69.58434 | 257.84420 | 70.52844 | 12.11820 | 0.2674154 | 2.7277290 | 14 | 1 | 8 days | 0.66 | | MPC | 2006 $WO_{103}$ |
| 2006 $WP_{103}$ | 16.2 | 0.15 | 20061121 | 206.02091 | 343.19260 | 248.56085 | 12.15053 | 0.1750190 | 2.9961889 | 9 | 1 | 8 days | 0.44 | | MPC | 2006 $WP_{103}$ |
| 2006 $WS_{103}$ | 16.8 | 0.15 | 20061121 | 318.97080 | 226.87172 | 246.94701 | 3.66285 | 0.0505896 | 2.5808310 | 9 | 1 | 8 days | 0.26 | | MPC | 2006 $WS_{103}$ |
| 2006 $WU_{103}$ | 17.8 | 0.15 | 20061101 | 1.25883 | 343.88666 | 72.06687 | 3.10730 | 0.2126755 | 2.3543889 | 13 | 1 | 16 days | 0.18 | | MPC | 2006 $WU_{103}$ |
| 2006 $WW_{103}$ | 18.4 | 0.15 | 20061121 | 303.54969 | 279.96274 | 219.33815 | 0.91888 | 0.1418186 | 2.3756138 | 9 | 1 | 8 days | 0.26 | | MPC | 2006 $WW_{103}$ |
| 2006 $WY_{103}$ | 16.1 | 0.15 | 20061121 | 236.16506 | 313.89726 | 249.01098 | 11.75047 | 0.0995576 | 2.9029048 | 9 | 1 | 8 days | 0.94 | | MPC | 2006 $WY_{103}$ |
| 2006 $WA_{104}$ | 17.8 | 0.15 | 20061101 | 251.98047 | 107.34476 | 73.80669 | 5.23309 | 0.0967162 | 2.2522248 | 12 | 1 | 16 days | 0.25 | | MPC | 2006 $WA_{104}$ |
| 2006 $WE_{104}$ | 17.2 | 0.15 | 20061121 | 308.17559 | 61.27299 | 70.83577 | 7.91678 | 0.1039472 | 3.0559955 | 9 | 1 | 8 days | 0.69 | | MPC | 2006 $WE_{104}$ |
| 2006 $WG_{104}$ | 17.3 | 0.15 | 20061121 | 33.89296 | 298.75014 | 74.13802 | 4.49512 | 0.2659841 | 3.0378516 | 9 | 1 | 8 days | 0.74 | | MPC | 2006 $WG_{104}$ |
| 2006 $WJ_{104}$ | 17.5 | 0.15 | 20061121 | 21.62725 | 322.52378 | 76.09834 | 0.54937 | 0.1868309 | 3.0676753 | 9 | 1 | 8 days | 0.55 | | MPC | 2006 $WJ_{104}$ |
| 2006 $WK_{104}$ | 18.5 | 0.15 | 20061121 | 10.08184 | 337.44982 | 73.52629 | 5.13858 | 0.2456801 | 2.5764712 | 12 | 1 | 12 days | 0.27 | | MPC | 2006 $WK_{104}$ |
| 2006 $WL_{104}$ | 16.1 | 0.15 | 20061121 | 250.65092 | 119.02216 | 72.30210 | 11.33317 | 0.0939291 | 3.1547328 | 9 | 1 | 8 days | 0.71 | | MPC | 2006 $WL_{104}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WP_{104}$ | 17.9 | 0.15 | 20061121 | 312.22168 | 344.77766 | 143.84377 | 1.11708 | 0.1376632 | 2.4768787 | 13 | 1 | 8 days | 0.99 | MPC | 2006 $WP_{104}$ |
| 2006 $WS_{104}$ | 17.2 | 0.15 | 20061121 | 305.99349 | 51.05798 | 83.19876 | 5.63630 | 0.1071133 | 3.0400232 | 10 | 1 | 5 days | 0.21 | MPC | 2006 $WS_{104}$ |
| 2006 $WT_{104}$ | 17.9 | 0.15 | 20061121 | 6.19181 | 343.60662 | 77.00237 | 6.41202 | 0.0710393 | 2.3698780 | 13 | 1 | 8 days | 0.43 | MPC | 2006 $WT_{104}$ |
| 2006 $WU_{104}$ | 18.3 | 0.15 | 20061121 | 338.61407 | 357.33318 | 101.26369 | 2.18836 | 0.1814128 | 2.5714406 | 13 | 1 | 8 days | 0.26 | MPC | 2006 $WU_{104}$ |
| 2006 $WV_{104}$ | 16.3 | 0.15 | 20061121 | 251.78016 | 307.31769 | 241.10727 | 8.82221 | 0.0920730 | 3.1575458 | 10 | 1 | 5 days | 0.23 | MPC | 2006 $WV_{104}$ |
| 2006 $WW_{104}$ | 15.6 | 0.15 | 20061121 | 244.87449 | 114.00822 | 79.40072 | 11.97118 | 0.0847438 | 2.9586649 | 13 | 1 | 8 days | 0.84 | MPC | 2006 $WW_{104}$ |
| 2006 $WX_{104}$ | 16.9 | 0.15 | 20061121 | 55.14372 | 269.76149 | 85.55153 | 3.94518 | 0.1780413 | 2.8759489 | 12 | 1 | 12 days | 0.52 | MPC | 2006 $WX_{104}$ |
| 2006 $WY_{104}$ | 17.4 | 0.15 | 20061121 | 18.14432 | 327.08000 | 76.75927 | 4.67713 | 0.1338358 | 2.3899282 | 13 | 1 | 8 days | 0.12 | MPC | 2006 $WY_{104}$ |
| 2006 $WZ_{104}$ | 17.5 | 0.15 | 20061121 | 65.33892 | 172.98848 | 159.13448 | 1.36899 | 0.2565418 | 2.5863379 | 13 | 1 | 5 days | 0.39 | MPC | 2006 $WZ_{104}$ |
| 2006 $WB_{105}$ | 16.1 | 0.15 | 20061101 | 128.42580 | 203.94672 | 79.33193 | 5.07032 | 0.1581327 | 2.6327983 | 15 | 1 | 16 days | 0.48 | MPC | 2006 $WB_{105}$ |
| 2006 $WC_{105}$ | 17.0 | 0.15 | 20061121 | 266.30696 | 75.93068 | 94.75562 | 3.29097 | 0.0799625 | 2.8463982 | 10 | 1 | 5 days | 0.35 | MPC | 2006 $WC_{105}$ |
| 2006 $WD_{105}$ | 17.8 | 0.15 | 20061121 | 42.28626 | 277.99591 | 80.26258 | 3.50449 | 0.2547437 | 2.1935719 | 13 | 1 | 8 days | 0.77 | MPC | 2006 $WD_{105}$ |
| 2006 $WE_{105}$ | 17.6 | 0.15 | 20061121 | 48.36612 | 152.00665 | 213.88475 | 2.30614 | 0.1343672 | 2.5114104 | 13 | 1 | 8 days | 0.25 | MPC | 2006 $WE_{105}$ |
| 2006 $WF_{105}$ | 16.9 | 0.15 | 20061121 | 200.55083 | 155.55024 | 80.02542 | 5.20588 | 0.2290646 | 2.5298181 | 9 | 1 | 8 days | 0.67 | MPC | 2006 $WF_{105}$ |
| 2006 $WG_{105}$ | 18.2 | 0.15 | 20061121 | 29.98496 | 291.57320 | 83.48581 | 4.48188 | 0.2782165 | 2.8794719 | 10 | 1 | 5 days | 0.26 | MPC | 2006 $WG_{105}$ |
| 2006 $WH_{105}$ | 16.6 | 0.15 | 20061121 | 264.17002 | 85.89272 | 87.01801 | 4.20628 | 0.0792257 | 2.6484183 | 13 | 1 | 8 days | 0.58 | MPC | 2006 $WH_{105}$ |
| 2006 $WJ_{105}$ | 15.3 | 0.15 | 20061121 | 231.36208 | 323.86554 | 242.76883 | 8.26198 | 0.1040067 | 3.0584474 | 10 | 1 | 5 days | 0.35 | MPC | 2006 $WJ_{105}$ |
| 2006 $WK_{105}$ | 18.6 | 0.15 | 20061121 | 329.61160 | 249.13620 | 219.12158 | 1.79500 | 0.1636550 | 2.3317495 | 9 | 1 | 8 days | 0.57 | MPC | 2006 $WK_{105}$ |
| 2006 $WL_{105}$ | 16.3 | 0.15 | 20061121 | 301.70603 | 250.44364 | 245.20503 | 17.97035 | 0.0789803 | 3.2016202 | 13 | 1 | 8 days | 0.67 | MPC | 2006 $WL_{105}$ |
| 2006 $WM_{105}$ | 16.0 | 0.15 | 20061101 | 292.23174 | 268.82395 | 228.10526 | 3.23913 | 0.0458603 | 2.7939105 | 16 | 1 | 16 days | 0.15 | MPC | 2006 $WM_{105}$ |
| 2006 $WN_{105}$ | 16.3 | 0.15 | 20061121 | 319.35919 | 243.05429 | 236.81006 | 5.10695 | 0.1226339 | 3.1463181 | 10 | 1 | 5 days | 0.41 | MPC | 2006 $WN_{105}$ |
| 2006 $WO_{105}$ | 18.6 | 0.15 | 20061101 | 11.08838 | 330.45547 | 74.40069 | 5.48678 | 0.1462630 | 2.4297748 | 16 | 1 | 16 days | 0.19 | MPC | 2006 $WO_{105}$ |
| 2006 $WP_{105}$ | 17.4 | 0.15 | 20061121 | 308.72968 | 325.61161 | 165.42229 | 0.86334 | 0.1197108 | 2.6516382 | 10 | 1 | 5 days | 0.64 | MPC | 2006 $WP_{105}$ |
| 2006 $WR_{105}$ | 16.2 | 0.15 | 20061121 | 203.39188 | 149.44571 | 79.57349 | 6.45899 | 0.1380029 | 2.9106657 | 17 | 1 | 8 days | 0.64 | MPC | 2006 $WR_{105}$ |
| 2006 $WS_{105}$ | 16.5 | 0.15 | 20061121 | 198.99427 | 146.45771 | 87.09910 | 3.66608 | 0.1771341 | 2.8091012 | 17 | 1 | 8 days | 0.47 | MPC | 2006 $WS_{105}$ |
| 2006 $WT_{105}$ | 16.7 | 0.15 | 20061121 | 203.48593 | 69.21477 | 160.10751 | 1.11796 | 0.1610179 | 2.5088281 | 17 | 1 | 8 days | 0.52 | MPC | 2006 $WT_{105}$ |
| 2006 $WU_{105}$ | 16.6 | 0.15 | 20061121 | 217.89326 | 139.83816 | 75.04335 | 7.68974 | 0.0964816 | 2.6756199 | 17 | 1 | 8 days | 0.71 | MPC | 2006 $WU_{105}$ |
| 2006 $WV_{105}$ | 16.5 | 0.15 | 20061121 | 213.51860 | 337.36145 | 242.43718 | 13.49598 | 0.1028615 | 3.0194295 | 13 | 1 | 8 days | 0.99 | MPC | 2006 $WV_{105}$ |
| 2006 $WW_{105}$ | 18.6 | 0.15 | 20061101 | 31.40630 | 246.66030 | 123.11949 | 1.09265 | 0.2199205 | 2.4591981 | 12 | 1 | 16 days | 0.15 | MPC | 2006 $WW_{105}$ |
| 2006 $WX_{105}$ | 17.9 | 0.15 | 20061101 | 0.20676 | 214.47685 | 204.79917 | 1.59117 | 0.2253371 | 2.9846834 | 13 | 1 | 13 days | 0.19 | MPC | 2006 $WX_{105}$ |
| 2006 $WY_{105}$ | 15.7 | 0.15 | 20061121 | 234.24875 | 330.42553 | 229.07705 | 2.38978 | 0.0774044 | 2.7528017 | 13 | 1 | 8 days | 0.76 | MPC | 2006 $WY_{105}$ |
| 2006 $WZ_{105}$ | 16.2 | 0.15 | 20061101 | 287.72551 | 61.53418 | 84.91471 | 2.41671 | 0.0941620 | 3.1644085 | 13 | 1 | 13 days | 0.37 | MPC | 2006 $WZ_{105}$ |
| 2006 $WC_{106}$ | 16.5 | 0.15 | 20061121 | 194.06873 | 162.79583 | 76.34960 | 3.81996 | 0.2813153 | 2.4189929 | 9 | 1 | 8 days | 0.32 | MPC | 2006 $WC_{106}$ |
| 2006 $WE_{106}$ | 17.5 | 0.15 | 20061121 | 309.23011 | 50.00284 | 75.43899 | 3.35609 | 0.0861755 | 2.6197397 | 12 | 1 | 8 days | 0.59 | MPC | 2006 $WE_{106}$ |
| 2006 $WF_{106}$ | 16.8 | 0.15 | 20061101 | 11.33927 | 166.29861 | 241.69762 | 10.38733 | 0.1145872 | 3.0254575 | 16 | 1 | 16 days | 0.20 | MPC | 2006 $WF_{106}$ |
| 2006 $WG_{106}$ | 16.9 | 0.15 | 20061101 | 321.87448 | 226.84090 | 243.57084 | 12.76960 | 0.1390897 | 2.6888801 | 20 | 1 | 16 days | 0.16 | MPC | 2006 $WG_{106}$ |
| 2006 $WJ_{106}$ | 17.5 | 0.15 | 20061121 | 265.53793 | 94.05747 | 76.54834 | 5.94281 | 0.0846092 | 2.4493577 | 14 | 1 | 5 days | 0.33 | MPC | 2006 $WJ_{106}$ |
| 2006 $WK_{106}$ | 16.2 | 0.15 | 20061121 | 283.90053 | 269.42796 | 241.66598 | 10.25055 | 0.0628132 | 3.1218077 | 13 | 1 | 8 days | 0.95 | MPC | 2006 $WK_{106}$ |
| 2006 $WL_{106}$ | 15.9 | 0.15 | 20061121 | 215.56651 | 110.32726 | 108.50617 | 2.40453 | 0.1067429 | 3.0137839 | 9 | 1 | 8 days | 0.32 | MPC | 2006 $WL_{106}$ |
| 2006 $WM_{106}$ | 18.9 | 0.15 | 20061121 | 357.88704 | 219.78478 | 208.46443 | 1.20973 | 0.1623754 | 2.3197999 | 13 | 1 | 8 days | 0.23 | MPC | 2006 $WM_{106}$ |
| 2006 $WO_{106}$ | 16.6 | 0.15 | 20061121 | 257.45472 | 319.14993 | 218.72747 | 1.34186 | 0.0696313 | 2.8311630 | 13 | 1 | 8 days | 0.39 | MPC | 2006 $WO_{106}$ |
| 2006 $WP_{106}$ | 17.2 | 0.15 | 20061121 | 330.67359 | 28.39297 | 77.52317 | 7.02874 | 0.1422733 | 3.0392126 | 10 | 1 | 5 days | 0.32 | MPC | 2006 $WP_{106}$ |
| 2006 $WQ_{106}$ | 16.3 | 0.15 | 20061121 | 212.02988 | 59.26065 | 163.42993 | 1.80966 | 0.1280981 | 2.7737600 | 13 | 1 | 8 days | 0.99 | MPC | 2006 $WQ_{106}$ |
| 2006 $WT_{106}$ | 17.0 | 0.15 | 20061121 | 285.92975 | 330.34645 | 174.06352 | 6.47863 | 0.1326383 | 2.5122719 | 13 | 1 | 9 days | 0.26 | MPC | 2006 $WT_{106}$ |
| 2006 $WY_{106}$ | 17.5 | 0.15 | 20061121 | 24.98670 | 219.16121 | 167.49991 | 5.53507 | 0.0855208 | 2.2455271 | 20 | 1 | 4 days | 0.73 | MPC | 2006 $WY_{106}$ |
| 2006 $WA_{107}$ | 15.6 | 0.15 | 20061121 | 71.16317 | 202.92727 | 138.53259 | 6.07071 | 0.0300726 | 2.6977235 | 16 | 1 | 4 days | 0.35 | MPC | 2006 $WA_{107}$ |
| 2006 $WC_{107}$ | 18.6 | 0.15 | 20061121 | 12.62082 | 223.24444 | 175.47333 | 4.61928 | 0.1753357 | 2.0184220 | 16 | 1 | 4 days | 0.87 | MPC | 2006 $WC_{107}$ |
| 2006 $WU_{107}$ | 17.0 | 0.15 | 20061101 | 353.27119 | 136.65911 | 292.58281 | 2.33827 | 0.2769134 | 2.5625395 | 21 | 1 | 7 days | 0.33 | E MPC | 2006 $WU_{107}$ |
| 2006 $WY_{107}$ | 15.1 | 0.15 | 20061121 | 58.96798 | 115.80287 | 244.12816 | 7.45960 | 0.0616743 | 2.9811755 | 12 | 1 | 8 days | 0.58 | MPC | 2006 $WY_{107}$ |
| 2006 $WK_{108}$ | 17.4 | 0.15 | 20061101 | 8.46173 | 171.36123 | 237.58820 | 1.93932 | 0.1666438 | 2.3526043 | 19 | 1 | 16 days | 0.32 | MPC | 2006 $WK_{108}$ |
| 2006 $WM_{108}$ | 16.5 | 0.15 | 20061121 | 270.44711 | 98.30270 | 75.01112 | 4.11900 | 0.0981422 | 3.0485346 | 9 | 1 | 8 days | 0.86 | MPC | 2006 $WM_{108}$ |
| 2006 $WO_{108}$ | 16.7 | 0.15 | 20061101 | 329.33966 | 30.08580 | 73.98170 | 5.95654 | 0.1145215 | 2.7583436 | 13 | 1 | 16 days | 0.19 | MPC | 2006 $WO_{108}$ |
| 2006 $WR_{108}$ | 17.9 | 0.15 | 20061121 | 12.48532 | 164.90478 | 248.25501 | 15.88198 | 0.1801937 | 3.0034352 | 9 | 1 | 8 days | 0.20 | MPC | 2006 $WR_{108}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WS_{108}$ | 16.9 | 0.15 | 20061101 | 357.76957 | 356.19593 | 73.94749 | 8.37264 | 0.1586937 | 3.1792024 | 13 | 1 | 16 days | 0.25 | | MPC | 2006 $WS_{108}$ |
| 2006 $WT_{108}$ | 16.9 | 0.15 | 20061101 | 301.89530 | 47.87748 | 87.13371 | 2.89771 | 0.1033662 | 2.6207094 | 15 | 1 | 16 days | 0.15 | | MPC | 2006 $WT_{108}$ |
| 2006 $WX_{108}$ | 17.4 | 0.15 | 20061121 | 11.74554 | 335.43091 | 71.46524 | 8.29421 | 0.2877662 | 2.5835857 | 18 | 1 | 4 days | 0.67 | | MPC | 2006 $WX_{108}$ |
| 2006 $WY_{108}$ | 16.5 | 0.15 | 20061121 | 292.39559 | 262.97336 | 250.20786 | 6.17070 | 0.1089870 | 3.1703943 | 9 | 1 | 8 days | 0.49 | | MPC | 2006 $WY_{108}$ |
| 2006 $WA_{109}$ | 17.4 | 0.15 | 20061121 | 300.87083 | 64.65096 | 81.56510 | 4.89029 | 0.1405956 | 2.6232679 | 9 | 1 | 8 days | 0.88 | | MPC | 2006 $WA_{109}$ |
| 2006 $WC_{109}$ | 16.9 | 0.15 | 20061121 | 50.79929 | 279.53288 | 78.75699 | 8.08976 | 0.2317638 | 3.1905385 | 9 | 1 | 8 days | 0.44 | | MPC | 2006 $WC_{109}$ |
| 2006 $WE_{109}$ | 16.6 | 0.15 | 20061101 | 53.47251 | 171.14840 | 189.15683 | 0.32949 | 0.1543196 | 3.0914770 | 12 | 1 | 16 days | 0.13 | | MPC | 2006 $WE_{109}$ |
| 2006 $WF_{109}$ | 18.8 | 0.15 | 20061121 | 13.16323 | 161.27637 | 245.44901 | 4.65808 | 0.2667975 | 2.6107690 | 9 | 1 | 8 days | 0.12 | | MPC | 2006 $WF_{109}$ |
| 2006 $WG_{109}$ | 17.4 | 0.15 | 20061101 | 351.88827 | 356.58759 | 79.48164 | 3.57042 | 0.0893602 | 2.5875253 | 16 | 1 | 16 days | 0.25 | | MPC | 2006 $WG_{109}$ |
| 2006 $WJ_{109}$ | 16.7 | 0.15 | 20061121 | 39.37302 | 282.49323 | 91.19274 | 2.69160 | 0.2283137 | 3.1113081 | 9 | 1 | 8 days | 0.22 | | MPC | 2006 $WJ_{109}$ |
| 2006 $WL_{109}$ | 16.3 | 0.15 | 20061101 | 192.94370 | 152.65235 | 85.03810 | 1.83164 | 0.0149184 | 2.7690613 | 13 | 1 | 16 days | 0.16 | | MPC | 2006 $WL_{109}$ |
| 2006 $WR_{109}$ | 17.7 | 0.15 | 20061121 | 80.70894 | 247.31990 | 78.81278 | 6.22769 | 0.2371987 | 2.4788880 | 9 | 1 | 6 days | 0.18 | | MPC | 2006 $WR_{109}$ |
| 2006 $WS_{109}$ | 17.0 | 0.15 | 20061121 | 280.44247 | 330.73006 | 196.61661 | 1.57382 | 0.1200787 | 2.8907668 | 9 | 1 | 8 days | 0.55 | | MPC | 2006 $WS_{109}$ |
| 2006 $WV_{109}$ | 15.6 | 0.15 | 20061121 | 293.30234 | 70.79855 | 82.89354 | 11.88710 | 0.1132460 | 3.1722982 | 9 | 1 | 8 days | 0.81 | | MPC | 2006 $WV_{109}$ |
| 2006 $WW_{109}$ | 16.9 | 0.15 | 20061121 | 24.73333 | 318.33150 | 81.47553 | 8.13746 | 0.1204132 | 2.3721769 | 13 | 1 | 8 days | 0.15 | | MPC | 2006 $WW_{109}$ |
| 2006 $WZ_{109}$ | 17.7 | 0.15 | 20061121 | 32.76292 | 278.69488 | 103.21225 | 3.20655 | 0.2317656 | 2.9622583 | 9 | 1 | 8 days | 0.89 | | MPC | 2006 $WZ_{109}$ |
| 2006 $WB_{110}$ | 18.8 | 0.15 | 20061121 | 10.55636 | 230.18266 | 185.24531 | 1.73299 | 0.1911802 | 2.4526760 | 9 | 1 | 8 days | 0.17 | | MPC | 2006 $WB_{110}$ |
| 2006 $WE_{110}$ | 15.3 | 0.15 | 20061121 | 3.54527 | 351.51077 | 76.64567 | 15.40994 | 0.0888875 | 3.0414009 | 15 | 1 | 8 days | 0.59 | | MPC | 2006 $WE_{110}$ |
| 2006 $WF_{110}$ | 18.2 | 0.15 | 20061121 | 315.85477 | 307.83001 | 177.76060 | 1.10829 | 0.1239498 | 2.3446899 | 9 | 1 | 8 days | 0.23 | | MPC | 2006 $WF_{110}$ |
| 2006 $WT_{110}$ | 16.7 | 0.15 | 20061121 | 46.78607 | 197.58824 | 166.90185 | 1.54212 | 0.2056719 | 3.1679382 | 13 | 1 | 8 days | 0.18 | | MPC | 2006 $WT_{110}$ |
| 2006 $WU_{110}$ | 17.5 | 0.15 | 20061121 | 296.89378 | 69.58300 | 83.01775 | 5.29372 | 0.1703148 | 2.5642879 | 9 | 1 | 8 days | 0.14 | | MPC | 2006 $WU_{110}$ |
| 2006 $WW_{110}$ | 17.6 | 0.15 | 20061121 | 28.05202 | 175.66892 | 208.35691 | 2.56494 | 0.2566549 | 3.0896809 | 10 | 1 | 5 days | 0.37 | | MPC | 2006 $WW_{110}$ |
| 2006 $WX_{110}$ | 18.1 | 0.15 | 20061121 | 353.33119 | 278.55299 | 160.06355 | 1.45356 | 0.1568713 | 2.4109082 | 13 | 1 | 8 days | 0.18 | | MPC | 2006 $WX_{110}$ |
| 2006 $WY_{110}$ | 15.2 | 0.15 | 20061121 | 37.52407 | 309.34308 | 77.22349 | 11.65128 | 0.1019882 | 2.9817986 | 14 | 1 | 12 days | 0.39 | E | MPC | 2006 $WY_{110}$ |
| 2006 $WC_{111}$ | 16.1 | 0.15 | 20061121 | 256.43477 | 102.85281 | 81.32876 | 6.44724 | 0.0891305 | 2.9955974 | 9 | 1 | 8 days | 0.17 | | MPC | 2006 $WC_{111}$ |
| 2006 $WD_{111}$ | 15.8 | 0.15 | 20061121 | 306.52119 | 56.55068 | 77.28212 | 14.24772 | 0.0998160 | 3.0396040 | 13 | 1 | 8 days | 0.52 | | MPC | 2006 $WD_{111}$ |
| 2006 $WE_{111}$ | 15.8 | 0.15 | 20061101 | 59.03895 | 123.01518 | 226.98417 | 4.19470 | 0.1663570 | 3.1300411 | 25 | 1 | 16 days | 0.25 | | MPC | 2006 $WE_{111}$ |
| 2006 $WK_{111}$ | 15.8 | 0.15 | 20061101 | 146.01692 | 32.09873 | 246.67583 | 14.73199 | 0.0690949 | 3.1441870 | 12 | 1 | 16 days | 0.14 | | MPC | 2006 $WK_{111}$ |
| 2006 $WM_{111}$ | 17.3 | 0.15 | 20061101 | 65.16818 | 261.48149 | 79.63037 | 5.10283 | 0.1575333 | 2.3968541 | 12 | 1 | 16 days | 0.08 | | MPC | 2006 $WM_{111}$ |
| 2006 $WN_{111}$ | 17.7 | 0.15 | 20061121 | 302.06869 | 54.94493 | 85.54395 | 5.55845 | 0.1194274 | 2.6183572 | 9 | 1 | 8 days | 0.62 | | MPC | 2006 $WN_{111}$ |
| 2006 $WO_{111}$ | 17.4 | 0.15 | 20061101 | 1.82113 | 301.48949 | 119.94234 | 1.70238 | 0.1994646 | 3.0047653 | 12 | 1 | 16 days | 0.11 | | MPC | 2006 $WO_{111}$ |
| 2006 $WP_{111}$ | 16.4 | 0.15 | 20061121 | 210.33878 | 136.19538 | 94.79376 | 3.68705 | 0.1939655 | 2.7887074 | 9 | 1 | 8 days | 0.47 | | MPC | 2006 $WP_{111}$ |
| 2006 $WR_{111}$ | 18.0 | 0.15 | 20061121 | 60.67967 | 173.63154 | 170.04640 | 1.20598 | 0.2247860 | 2.4181180 | 9 | 1 | 8 days | 0.28 | | MPC | 2006 $WR_{111}$ |
| 2006 $WW_{111}$ | 16.2 | 0.15 | 20061121 | 357.20845 | 292.35777 | 136.16833 | 6.66417 | 0.3559590 | 2.6888640 | 22 | 1 | 15 days | 0.29 | E | MPC | 2006 $WW_{111}$ |
| 2006 $WL_{113}$ | 18.6 | 0.15 | 20061101 | 332.45542 | 18.75278 | 69.79312 | 12.27806 | 0.1389188 | 2.3777137 | 13 | 1 | 15 days | 0.21 | | MPC | 2006 $WL_{113}$ |
| 2006 $WN_{113}$ | 15.9 | 0.15 | 20061101 | 91.69814 | 231.05178 | 90.02368 | 6.15581 | 0.0310566 | 2.5996167 | 15 | 1 | 15 days | 0.16 | | MPC | 2006 $WN_{113}$ |
| 2006 $WT_{113}$ | 16.8 | 0.15 | 20061121 | 0.04304 | 290.09020 | 129.18620 | 4.82975 | 0.1925716 | 3.0733710 | 10 | 1 | 4 days | 0.47 | | MPC | 2006 $WT_{113}$ |
| 2006 $WY_{113}$ | 14.9 | 0.15 | 20061101 | 30.63766 | 305.30562 | 74.54449 | 13.25169 | 0.1567348 | 3.2352632 | 19 | 1 | 12 days | 0.41 | | MPC | 2006 $WY_{113}$ |
| 2006 $WZ_{113}$ | 19.6 | 0.15 | 20061121 | 23.62945 | 311.07065 | 72.54610 | 6.76777 | 0.2551754 | 2.2102327 | 17 | 1 | 7 days | 0.26 | | MPC | 2006 $WZ_{113}$ |
| 2006 $WA_{114}$ | 15.9 | 0.15 | 20061121 | 202.49868 | 69.34765 | 160.92729 | 4.91051 | 0.1755056 | 2.4705305 | 24 | 1 | 5 days | 0.67 | | MPC | 2006 $WA_{114}$ |
| 2006 $WD_{114}$ | 18.2 | 0.15 | 20061121 | 56.87228 | 199.64770 | 137.69919 | 5.09448 | 0.2719121 | 2.4788275 | 10 | 1 | 4 days | 0.71 | | MPC | 2006 $WD_{114}$ |
| 2006 $WE_{114}$ | 17.8 | 0.15 | 20061121 | 31.28707 | 145.54869 | 224.22291 | 12.03424 | 0.2873871 | 2.6262548 | 11 | 1 | 4 days | 0.43 | | MPC | 2006 $WE_{114}$ |
| 2006 $WJ_{114}$ | 17.6 | 0.15 | 20061121 | 306.29652 | 334.04670 | 153.23667 | 4.95406 | 0.0824134 | 2.5917565 | 10 | 1 | 4 days | 0.33 | | MPC | 2006 $WJ_{114}$ |
| 2006 $WK_{114}$ | 15.7 | 0.15 | 20061121 | 199.02339 | 55.75806 | 177.96833 | 5.56650 | 0.2007563 | 2.5807701 | 17 | 1 | 5 days | 0.75 | | MPC | 2006 $WK_{114}$ |
| 2006 $WL_{114}$ | 15.3 | 0.15 | 20061121 | 239.90468 | 346.99807 | 207.12115 | 8.82976 | 0.0721515 | 3.1497503 | 18 | 1 | 4 days | 0.20 | | MPC | 2006 $WL_{114}$ |
| 2006 $WM_{114}$ | 15.4 | 0.15 | 20061121 | 269.59571 | 52.63515 | 109.94348 | 7.98697 | 0.0509584 | 3.0692163 | 18 | 1 | 5 days | 0.36 | | MPC | 2006 $WM_{114}$ |
| 2006 $WN_{114}$ | 16.6 | 0.15 | 20061121 | 201.39163 | 78.85596 | 152.68756 | 5.64387 | 0.2085657 | 2.2328394 | 10 | 1 | 4 days | 0.46 | | MPC | 2006 $WN_{114}$ |
| 2006 $WO_{114}$ | 16.4 | 0.15 | 20061121 | 253.21910 | 68.63397 | 111.22196 | 7.80962 | 0.0668515 | 2.6153518 | 10 | 1 | 4 days | 0.54 | | MPC | 2006 $WO_{114}$ |
| 2006 $WP_{114}$ | 17.1 | 0.15 | 20061121 | 347.06909 | 346.29508 | 100.69194 | 8.05162 | 0.2548700 | 2.7577333 | 10 | 1 | 4 days | 0.99 | | MPC | 2006 $WP_{114}$ |
| 2006 $WQ_{114}$ | 16.7 | 0.15 | 20061101 | 247.29917 | 8.26562 | 174.23744 | 6.10335 | 0.0768349 | 2.6008379 | 13 | 1 | 8 days | 0.75 | | MPC | 2006 $WQ_{114}$ |
| 2006 $WR_{114}$ | 17.2 | 0.15 | 20061121 | 272.88907 | 61.47686 | 98.72969 | 9.78726 | 0.0654364 | 2.4742890 | 14 | 1 | 4 days | 0.74 | | MPC | 2006 $WR_{114}$ |
| 2006 $WT_{114}$ | 16.0 | 0.15 | 20061121 | 231.55484 | 4.69302 | 198.34862 | 8.46925 | 0.0840836 | 3.0984241 | 9 | 1 | 4 days | 0.24 | | MPC | 2006 $WT_{114}$ |
| 2006 $WV_{114}$ | 19.6 | 0.15 | 20061121 | 10.28059 | 315.62882 | 86.62677 | 8.90543 | 0.3234367 | 2.3877531 | 10 | 1 | 4 days | 0.15 | | MPC | 2006 $WV_{114}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WX_{114}$ | 16.9 | 0.15 | 20061121 | 311.42736 | 275.14299 | 209.18179 | 9.09129 | 0.0918858 | 3.0435929 | 14 | 1 | 4 days | 0.34 | | MPC | 2006 $WX_{114}$ |
| 2006 $WC_{115}$ | 17.3 | 0.15 | 20061121 | 202.91599 | 47.74455 | 181.44165 | 6.16996 | 0.1799039 | 2.2893433 | 18 | 1 | 4 days | 0.37 | | MPC | 2006 $WC_{115}$ |
| 2006 $WD_{115}$ | 15.8 | 0.15 | 20061121 | 257.94766 | 318.10296 | 214.38374 | 11.52697 | 0.0500862 | 3.0400317 | 10 | 1 | 4 days | 0.16 | | MPC | 2006 $WD_{115}$ |
| 2006 $WJ_{115}$ | 16.1 | 0.15 | 20061121 | 22.47489 | 264.03304 | 128.50330 | 5.79517 | 0.1666752 | 2.6341479 | 27 | 1 | 9 days | 0.70 | | MPC | 2006 $WJ_{115}$ |
| 2006 $WK_{115}$ | 16.6 | 0.15 | 20061012 | 333.67454 | 30.91220 | 56.88719 | 16.95831 | 0.2038972 | 3.1406142 | 31 | 1 | 51 days | 0.64 | | MPC | 2006 $WK_{115}$ |
| 2006 $WO_{115}$ | 17.0 | 0.15 | 20061101 | 45.55654 | 128.96106 | 218.03172 | 5.53438 | 0.2224489 | 2.6515463 | 20 | 1 | 16 days | 0.24 | | MPC | 2006 $WO_{115}$ |
| 2006 $WU_{115}$ | 16.4 | 0.15 | 20061121 | 325.98116 | 251.54530 | 217.11675 | 9.91084 | 0.1077808 | 3.1474473 | 20 | 1 | 5 days | 0.29 | | MPC | 2006 $WU_{115}$ |
| 2006 $WW_{115}$ | 19.0 | 0.15 | 20061121 | 36.60869 | 255.85928 | 107.83931 | 5.11447 | 0.2680683 | 2.2773556 | 18 | 1 | 4 days | 0.70 | | MPC | 2006 $WW_{115}$ |
| 2006 $WA_{116}$ | 17.0 | 0.15 | 20061121 | 341.33520 | 195.85536 | 259.02815 | 5.68421 | 0.2210490 | 2.6134495 | 10 | 1 | 4 days | 0.37 | | MPC | 2006 $WA_{116}$ |
| 2006 $WB_{116}$ | 15.3 | 0.15 | 20061121 | 44.71932 | 285.41570 | 78.11166 | 18.51754 | 0.2439026 | 3.0651757 | 11 | 1 | 7 days | 0.67 | | MPC | 2006 $WB_{116}$ |
| 2006 $WC_{116}$ | 15.9 | 0.15 | 20061121 | 39.53561 | 186.20383 | 196.70401 | 4.16605 | 0.1607882 | 2.6050448 | 10 | 1 | 7 days | 0.22 | | MPC | 2006 $WC_{116}$ |
| 2006 $WD_{116}$ | 16.4 | 0.15 | 20061121 | 8.49627 | 339.58361 | 79.81654 | 15.04279 | 0.1793792 | 2.7581059 | 13 | 1 | 10 days | 0.44 | | MPC | 2006 $WD_{116}$ |
| 2006 $WE_{116}$ | 17.5 | 0.15 | 20061121 | 3.71953 | 68.44750 | 344.49338 | 2.66986 | 0.1687489 | 2.9838967 | 11 | 1 | 4 days | 0.95 | | MPC | 2006 $WE_{116}$ |
| 2006 $WG_{116}$ | 17.5 | 0.15 | 20061121 | 4.48082 | 133.87305 | 278.19384 | 4.05994 | 0.1615670 | 2.6754221 | 11 | 1 | 9 days | 0.42 | | MPC | 2006 $WG_{116}$ |
| 2006 $WM_{116}$ | 17.6 | 0.15 | 20061121 | 4.81757 | 122.68851 | 287.88798 | 6.31593 | 0.1640400 | 2.9644247 | 16 | 1 | 2 days | 0.29 | | MPC | 2006 $WM_{116}$ |
| 2006 $WW_{117}$ | 17.1 | 0.15 | 20061121 | 7.15119 | 341.57261 | 109.42995 | 13.98593 | 0.2439479 | 2.6040123 | 16 | 1 | 8 days | 0.23 | | MPC | 2006 $WW_{117}$ |
| 2006 $WY_{117}$ | 16.4 | 0.15 | 20061121 | 18.50102 | 307.24104 | 144.03203 | 2.73238 | 0.0708667 | 3.0379489 | 11 | 1 | 8 days | 0.82 | | MPC | 2006 $WY_{117}$ |
| 2006 $WE_{118}$ | 17.5 | 0.15 | 20061121 | 12.16475 | 143.26918 | 268.09368 | 1.49945 | 0.2314670 | 2.3983830 | 11 | 1 | 4 days | 0.47 | | MPC | 2006 $WE_{118}$ |
| 2006 $WG_{118}$ | 17.2 | 0.15 | 20061121 | 319.84188 | 255.20776 | 220.07661 | 10.61633 | 0.0979011 | 3.0971989 | 12 | 1 | 5 days | 0.39 | | MPC | 2006 $WG_{118}$ |
| 2006 $WJ_{118}$ | 17.5 | 0.15 | 20061121 | 58.35009 | 129.56874 | 207.55957 | 7.40411 | 0.2699779 | 2.6743311 | 18 | 1 | 5 days | 0.44 | | MPC | 2006 $WJ_{118}$ |
| 2006 $WL_{118}$ | 17.8 | 0.15 | 20061121 | 38.54098 | 165.14791 | 195.63090 | 5.37747 | 0.2744082 | 2.5010653 | 16 | 1 | 5 days | 0.77 | | MPC | 2006 $WL_{118}$ |
| 2006 $WN_{118}$ | 16.5 | 0.15 | 20061121 | 254.32952 | 75.44155 | 103.08617 | 8.48585 | 0.0561811 | 3.0236349 | 20 | 1 | 5 days | 0.36 | | MPC | 2006 $WN_{118}$ |
| 2006 $WS_{118}$ | 18.0 | 0.15 | 20061121 | 292.95810 | 12.14478 | 135.11340 | 2.78717 | 0.0172798 | 2.2648004 | 9 | 1 | 8 days | 0.19 | | MPC | 2006 $WS_{118}$ |
| 2006 $WT_{118}$ | 17.2 | 0.15 | 20061101 | 18.37040 | 198.55387 | 199.82392 | 4.01173 | 0.2386627 | 2.5951071 | 15 | 1 | 43 days | 0.16 | | MPC | 2006 $WT_{118}$ |
| 2006 $WE_{119}$ | 17.2 | 0.15 | 20061121 | 66.73804 | 275.86627 | 52.72399 | 7.78872 | 0.1305098 | 2.3421664 | 16 | 1 | 2 days | 0.26 | | MPC | 2006 $WE_{119}$ |
| 2006 $WX_{119}$ | 17.3 | 0.15 | 20061121 | 341.79606 | 47.18395 | 38.78472 | 4.74078 | 0.1220199 | 2.3570419 | 10 | 1 | 4 days | 0.31 | | MPC | 2006 $WX_{119}$ |
| 2006 $WY_{119}$ | 17.2 | 0.15 | 20061121 | 351.28737 | 179.98222 | 255.53941 | 9.52320 | 0.1919995 | 2.5723297 | 10 | 1 | 4 days | 0.26 | | MPC | 2006 $WY_{119}$ |
| 2006 $WG_{120}$ | 18.7 | 0.15 | 20061121 | 10.15692 | 328.72289 | 72.64094 | 4.70275 | 0.2339675 | 2.1716578 | 13 | 1 | 6 days | 0.74 | | MPC | 2006 $WG_{120}$ |
| 2006 $WJ_{120}$ | 16.2 | 0.15 | 20061101 | 208.69154 | 338.83277 | 231.05022 | 10.57340 | 0.0662930 | 2.4660448 | 25 | 1 | 27 days | 0.63 | | MPC | 2006 $WJ_{120}$ |
| 2006 $WK_{120}$ | 16.2 | 0.15 | 20061121 | 0.89427 | 343.86983 | 75.84723 | 8.01990 | 0.0983337 | 2.7557096 | 12 | 1 | 6 days | 0.67 | | MPC | 2006 $WK_{120}$ |
| 2006 $WL_{120}$ | 16.2 | 0.15 | 20061101 | 53.31544 | 79.18460 | 260.95495 | 2.50699 | 0.2325518 | 2.6414106 | 19 | 1 | 16 days | 0.61 | | MPC | 2006 $WL_{120}$ |
| 2006 $WN_{120}$ | 15.6 | 0.15 | 20061121 | 202.35039 | 164.08566 | 66.37371 | 1.77569 | 0.1561846 | 2.5165216 | 10 | 1 | 6 days | 0.64 | | MPC | 2006 $WN_{120}$ |
| 2006 $WO_{120}$ | 15.8 | 0.15 | 20061101 | 38.29841 | 122.91412 | 242.19994 | 12.70668 | 0.1983790 | 2.6349184 | 21 | 1 | 9 days | 0.50 | E | MPC | 2006 $WO_{120}$ |
| 2006 $WQ_{120}$ | 16.4 | 0.15 | 20061101 | 4.52368 | 335.33338 | 63.78949 | 11.99963 | 0.2786878 | 3.0106402 | 21 | 1 | 21 days | 0.59 | | MPC | 2006 $WQ_{120}$ |
| 2006 $WS_{120}$ | 17.5 | 0.15 | 20061121 | 3.54975 | 347.20127 | 66.52671 | 5.37932 | 0.2219369 | 2.6713203 | 13 | 1 | 6 days | 0.64 | | MPC | 2006 $WS_{120}$ |
| 2006 $WT_{120}$ | 18.2 | 0.15 | 20061121 | 15.68560 | 149.26954 | 244.37379 | 10.56228 | 0.2637807 | 2.4324453 | 10 | 1 | 6 days | 0.43 | | MPC | 2006 $WT_{120}$ |
| 2006 $WW_{120}$ | 14.4 | 0.15 | 20061121 | 220.17517 | 139.34375 | 81.33364 | 13.70089 | 0.1304967 | 2.9610411 | 12 | 1 | 6 days | 0.52 | | MPC | 2006 $WW_{120}$ |
| 2006 $WA_{121}$ | 16.8 | 0.15 | 20061121 | 231.44710 | 92.35801 | 108.59288 | 7.86646 | 0.0702425 | 2.7494059 | 12 | 1 | 4 days | 0.45 | | MPC | 2006 $WA_{121}$ |
| 2006 $WC_{121}$ | 17.6 | 0.15 | 20061121 | 55.36162 | 208.35826 | 132.91087 | 5.17888 | 0.2633716 | 2.4958434 | 11 | 1 | 3 days | 0.60 | | MPC | 2006 $WC_{121}$ |
| 2006 $WF_{121}$ | 17.9 | 0.15 | 20061121 | 329.19767 | 325.11357 | 138.41134 | 6.39416 | 0.1107746 | 2.7232094 | 16 | 1 | 3 days | 0.47 | | MPC | 2006 $WF_{121}$ |
| 2006 $WH_{121}$ | 16.0 | 0.15 | 20061121 | 308.22587 | 266.15048 | 221.21626 | 15.33971 | 0.0884969 | 3.0204387 | 38 | 1 | 2 days | 0.23 | | MPC | 2006 $WH_{121}$ |
| 2006 $WK_{121}$ | 17.9 | 0.15 | 20061121 | 34.22708 | 221.95351 | 151.93415 | 4.89071 | 0.2007122 | 2.2232414 | 46 | 1 | 6 days | 0.18 | | MPC | 2006 $WK_{121}$ |
| 2006 $WN_{121}$ | 14.6 | 0.15 | 20061121 | 239.94682 | 0.96724 | 193.20797 | 8.69409 | 0.0718425 | 3.1441257 | 40 | 1 | 2 days | 0.23 | | MPC | 2006 $WN_{121}$ |
| 2006 $WV_{121}$ | 14.9 | 0.15 | 20061121 | 185.22948 | 151.94275 | 90.10032 | 18.07258 | 0.2521241 | 2.6169853 | 21 | 1 | 6 days | 0.89 | | MPC | 2006 $WV_{121}$ |
| 2006 $WW_{121}$ | 17.1 | 0.15 | 20061121 | 24.49625 | 260.40591 | 126.77113 | 6.17614 | 0.2062330 | 2.5203312 | 32 | 1 | 6 days | 0.21 | | MPC | 2006 $WW_{121}$ |
| 2006 $WZ_{121}$ | 16.4 | 0.15 | 20061121 | 341.79430 | 235.53675 | 218.60744 | 13.62440 | 0.2083033 | 3.0630880 | 40 | 1 | 3 days | 0.35 | | MPC | 2006 $WZ_{121}$ |
| 2006 $WA_{122}$ | 15.4 | 0.15 | 20061121 | 343.31806 | 354.69092 | 92.36614 | 15.32364 | 0.1375223 | 3.0709400 | 37 | 1 | 6 days | 0.37 | | MPC | 2006 $WA_{122}$ |
| 2006 $WB_{122}$ | 16.5 | 0.15 | 20061121 | 46.02613 | 225.40718 | 124.95512 | 6.81433 | 0.2759280 | 2.6312014 | 47 | 1 | 6 days | 0.30 | | MPC | 2006 $WB_{122}$ |
| 2006 $WC_{122}$ | 16.2 | 0.15 | 20061121 | 342.45840 | 223.99378 | 230.84156 | 23.52049 | 0.2315503 | 2.8992927 | 19 | 1 | 4 days | 0.61 | | MPC | 2006 $WC_{122}$ |
| 2006 $WD_{122}$ | 16.4 | 0.15 | 20061121 | 313.57959 | 320.93708 | 158.88112 | 6.80798 | 0.0802177 | 3.0268137 | 36 | 1 | 3 days | 0.34 | | MPC | 2006 $WD_{122}$ |
| 2006 $WE_{122}$ | 17.6 | 0.15 | 20061121 | 18.30056 | 210.87848 | 182.83001 | 6.07111 | 0.2504352 | 2.5970793 | 32 | 1 | 3 days | 0.32 | | MPC | 2006 $WE_{122}$ |
| 2006 $WF_{122}$ | 17.2 | 0.15 | 20061121 | 347.31629 | 359.79870 | 84.68915 | 13.88463 | 0.2359374 | 2.4260819 | 35 | 1 | 2 days | 0.28 | | MPC | 2006 $WF_{122}$ |
| 2006 $WG_{122}$ | 17.1 | 0.15 | 20061121 | 32.04482 | 160.58726 | 208.56584 | 10.16940 | 0.2934290 | 3.1284406 | 25 | 1 | 3 days | 0.32 | | MPC | 2006 $WG_{122}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WH_{122}$ | 16.1 | 0.15 | 20061121 | 304.14977 | 18.69929 | 109.09494 | 10.22615 | 0.0616868 | 2.9637127 | 29 | 1 | 3 days | 0.25 | | | MPC | 2006 $WH_{122}$ |
| 2006 $WJ_{122}$ | 18.5 | 0.15 | 20061121 | 29.49421 | 240.69350 | 143.44193 | 5.40116 | 0.1573285 | 2.2200316 | 28 | 1 | 3 days | 0.31 | | | MPC | 2006 $WJ_{122}$ |
| 2006 $WK_{122}$ | 15.5 | 0.15 | 20061121 | 275.56691 | 28.73186 | 128.68719 | 7.44939 | 0.0621367 | 2.6777852 | 45 | 1 | 3 days | 0.22 | | | MPC | 2006 $WK_{122}$ |
| 2006 $WL_{122}$ | 17.2 | 0.15 | 20061121 | 328.64362 | 326.50387 | 139.06875 | 6.02362 | 0.1375159 | 2.3346273 | 24 | 1 | 2 days | 0.32 | | | MPC | 2006 $WL_{122}$ |
| 2006 $WM_{122}$ | 16.0 | 0.15 | 20061121 | 325.28264 | 264.45237 | 204.82363 | 10.17454 | 0.1146627 | 2.7179534 | 16 | 1 | 4 days | 0.54 | | | MPC | 2006 $WM_{122}$ |
| 2006 $WO_{122}$ | 17.5 | 0.15 | 20061121 | 344.62599 | 332.81374 | 115.26521 | 6.91964 | 0.2145529 | 2.3621473 | 15 | 1 | 4 days | 0.94 | | | MPC | 2006 $WO_{122}$ |
| 2006 $WA_{123}$ | 16.9 | 0.15 | 20061121 | 36.92507 | 156.81436 | 205.13002 | 8.82600 | 0.2851430 | 2.7827499 | 10 | 1 | 3 days | 0.74 | | | MPC | 2006 $WA_{123}$ |
| 2006 $WD_{123}$ | 17.4 | 0.15 | 20061121 | 24.26108 | 118.92963 | 272.68351 | 7.27955 | 0.0330367 | 2.3524435 | 21 | 1 | 3 days | 0.31 | | | MPC | 2006 $WD_{123}$ |
| 2006 $WO_{123}$ | 15.5 | 0.15 | 20061101 | 337.05308 | 207.91455 | 292.14687 | 11.11018 | 0.0607878 | 3.0211791 | 10 | 1 | 33 days | 0.26 | | | MPC | 2006 $WO_{123}$ |
| 2006 $WW_{123}$ | 17.2 | 0.15 | 20061121 | 266.38365 | 138.92468 | 107.75159 | 24.27133 | 0.0272613 | 1.8074806 | 14 | 1 | 4 days | 0.34 | | E | MPC | 2006 $WW_{123}$ |
| 2006 $WB_{124}$ | 18.3 | 0.15 | 20061121 | 353.15662 | 0.40978 | 71.25926 | 1.04450 | 0.1935263 | 2.3160434 | 11 | 1 | 5 days | 0.81 | | | MPC | 2006 $WB_{124}$ |
| 2006 $WC_{124}$ | 18.0 | 0.15 | 20061121 | 349.26875 | 4.81751 | 71.11989 | 2.22901 | 0.1346637 | 2.4041190 | 11 | 1 | 2 days | 0.26 | | | MPC | 2006 $WC_{124}$ |
| 2006 $WH_{124}$ | 18.0 | 0.15 | 20061121 | 307.71504 | 326.07381 | 160.19447 | 5.56337 | 0.0929576 | 2.1882686 | 32 | 1 | 2 days | 0.41 | | | MPC | 2006 $WH_{124}$ |
| 2006 $WY_{124}$ | 16.3 | 0.15 | 20061121 | 6.47652 | 132.22909 | 277.14402 | 3.34214 | 0.1576257 | 2.7048148 | 13 | 1 | 2 days | 0.37 | | | MPC | 2006 $WY_{124}$ |
| 2006 $WA_{125}$ | 16.6 | 0.15 | 20061101 | 44.24975 | 0.11621 | 349.94859 | 4.70574 | 0.1721377 | 2.7209460 | 14 | 1 | 14 days | 0.50 | | | MPC | 2006 $WA_{125}$ |
| 2006 $WC_{125}$ | 16.2 | 0.15 | 20061121 | 251.06605 | 107.71258 | 75.79024 | 14.83922 | 0.0570780 | 3.0198978 | 13 | 1 | 5 days | 0.27 | | | MPC | 2006 $WC_{125}$ |
| 2006 $WD_{125}$ | 16.7 | 0.15 | 20061121 | 220.33063 | 34.27717 | 184.14005 | 2.12249 | 0.1327758 | 2.7736319 | 10 | 1 | 2 days | 0.18 | | | MPC | 2006 $WD_{125}$ |
| 2006 $WE_{125}$ | 16.3 | 0.15 | 20061121 | 243.38664 | 108.40299 | 86.08439 | 7.02169 | 0.0835275 | 2.7635055 | 13 | 1 | 5 days | 0.46 | | | MPC | 2006 $WE_{125}$ |
| 2006 $WF_{125}$ | 17.1 | 0.15 | 20061121 | 324.98725 | 15.84081 | 102.93649 | 2.92455 | 0.1905735 | 2.4221049 | 13 | 1 | 5 days | 0.64 | | | MPC | 2006 $WF_{125}$ |
| 2006 $WP_{125}$ | 15.1 | 0.15 | 20061121 | 335.72225 | 252.60993 | 206.04159 | 10.55866 | 0.1388898 | 3.0496985 | 24 | 1 | 3 days | 0.44 | | | MPC | 2006 $WP_{125}$ |
| 2006 $WS_{125}$ | 15.3 | 0.15 | 20061121 | 195.82775 | 24.86817 | 212.34803 | 13.47729 | 0.2130252 | 3.0387889 | 20 | 1 | 2 days | 0.28 | | | MPC | 2006 $WS_{125}$ |
| 2006 $WT_{125}$ | 17.5 | 0.15 | 20061121 | 333.01256 | 355.09732 | 103.79903 | 9.64291 | 0.1165726 | 2.5291267 | 20 | 1 | 2 days | 0.31 | | | MPC | 2006 $WT_{125}$ |
| 2006 $WJ_{126}$ | 17.0 | 0.15 | 20061121 | 292.56143 | 53.13639 | 98.70639 | 4.25538 | 0.1228761 | 2.5523796 | 10 | 1 | 2 days | 0.16 | | | MPC | 2006 $WJ_{126}$ |
| 2006 $WP_{126}$ | 16.0 | 0.15 | 20061121 | 62.94616 | 242.71155 | 113.83140 | 19.62911 | 0.0128901 | 2.4411241 | 13 | 1 | 2 days | 0.73 | | | MPC | 2006 $WP_{126}$ |
| 2006 $WF_{127}$ | 15.9 | 0.15 | 20061121 | 61.62002 | 284.88160 | 128.54184 | 4.30331 | 0.0461260 | 3.1436127 | 12 | 1 | 2 days | 0.23 | | | MPC | 2006 $WF_{127}$ |
| 2006 $WG_{127}$ | 16.3 | 0.15 | 20061121 | 125.41721 | 50.56776 | 296.16212 | 15.74920 | 0.0744448 | 2.7601954 | 12 | 1 | 2 days | 0.32 | | | MPC | 2006 $WG_{127}$ |
| 2006 $WH_{127}$ | 15.2 | 0.15 | 20061121 | 140.62249 | 325.61658 | 42.72024 | 17.61472 | 0.1233056 | 2.3753151 | 12 | 1 | 2 days | 0.22 | | | MPC | 2006 $WH_{127}$ |
| 2006 $WL_{127}$ | 12.7 | 0.15 | 20061121 | 252.46481 | 165.26455 | 122.26500 | 21.00551 | 0.0846922 | 5.1684680 | 17 | 1 | 4 days | 0.25 | | E | MPC | 2006 $WL_{127}$ |
| 2006 $WM_{127}$ | 18.6 | 0.15 | 20061121 | 353.60595 | 186.76730 | 277.13545 | 33.39063 | 0.3179807 | 2.1249918 | 16 | 1 | 3 days | 0.24 | | | MPC | 2006 $WM_{127}$ |
| 2006 $WN_{127}$ | 15.5 | 0.15 | 20061121 | 6.86718 | 140.34014 | 328.75162 | 32.44005 | 0.2464386 | 2.7993648 | 28 | 1 | 4 days | 0.58 | | | MPC | 2006 $WN_{127}$ |
| 2006 $WO_{127}$ | 16.2 | 0.15 | 20060922 | 343.38841 | 311.77095 | 167.38409 | 10.76228 | 0.5150521 | 2.0104651 | 20 | 1 | 6 days | 0.50 | M-v | 9 | MPC | 2006 $WO_{127}$ |
| 2006 $WP_{127}$ | 18.1 | 0.15 | 20060922 | 309.11074 | 22.42239 | 179.43102 | 6.16794 | 0.7790230 | 2.5963104 | 28 | 1 | 6 days | 0.50 | M-v | 8 | MPC | 2006 $WP_{127}$ |
| 2006 $WQ_{127}$ | 23.3 | 0.15 | 20060922 | 278.15073 | 87.40867 | 73.57964 | 18.08584 | 0.5087976 | 1.3097885 | 28 | 1 | 2 days | 0.73 | M-v | 8 | MPC | 2006 $WQ_{127}$ |
| 2006 $WR_{127}$ | 20.3 | 0.15 | 20060922 | 113.65102 | 351.37973 | 260.87966 | 16.83221 | 0.3766041 | 0.9070465 | 31 | 1 | 9 days | 0.40 | M-v | 8 | MPC | 2006 $WR_{127}$ |
| 2006 $WU_{127}$ | 16.1 | 0.15 | 20061121 | 346.65113 | 218.50751 | 221.72483 | 21.34332 | 0.0476102 | 2.5950361 | 14 | 1 | 13 days | 0.40 | | | MPC | 2006 $WU_{127}$ |
| 2006 $WC_{128}$ | 18.4 | 0.15 | 20061121 | 0.46407 | 31.24021 | 37.07825 | 3.12029 | 0.1591800 | 2.3076442 | 9 | 1 | 4 days | 0.43 | | | MPC | 2006 $WC_{128}$ |
| 2006 $WE_{128}$ | 16.7 | 0.15 | 20061121 | 345.86698 | 72.64238 | 17.07243 | 2.67837 | 0.1172201 | 2.9849003 | 9 | 1 | 9 days | 0.31 | | | MPC | 2006 $WE_{128}$ |
| 2006 $WK_{128}$ | 18.5 | 0.15 | 20061121 | 208.32339 | 286.41131 | 293.22365 | 1.90093 | 0.0087684 | 2.3495981 | 8 | 1 | 4 days | 0.69 | | | MPC | 2006 $WK_{128}$ |
| 2006 $WM_{128}$ | 16.3 | 0.15 | 20061121 | 346.86927 | 28.02553 | 60.83742 | 6.74381 | 0.2279011 | 3.1777835 | 15 | 1 | 6 days | 0.42 | | | MPC | 2006 $WM_{128}$ |
| 2006 $WN_{128}$ | 16.4 | 0.15 | 20061121 | 69.24232 | 90.49827 | 254.63606 | 9.99342 | 0.1227417 | 3.0520204 | 16 | 1 | 7 days | 0.32 | | E | MPC | 2006 $WN_{128}$ |
| 2006 $WO_{128}$ | 17.4 | 0.15 | 20061121 | 38.92044 | 114.01130 | 250.06398 | 7.37112 | 0.2557362 | 2.6416822 | 16 | 1 | 8 days | 0.82 | | | MPC | 2006 $WO_{128}$ |
| 2006 $WS_{128}$ | 16.0 | 0.15 | 20061121 | 97.95092 | 336.49451 | 315.28755 | 2.25239 | 0.1493806 | 2.6064963 | 10 | 1 | 11 days | 0.28 | | | MPC | 2006 $WS_{128}$ |
| 2006 $WT_{128}$ | 17.2 | 0.15 | 20061121 | 340.02776 | 33.32275 | 58.41017 | 1.44120 | 0.1359773 | 3.0737944 | 10 | 1 | 8 days | 0.30 | | | MPC | 2006 $WT_{128}$ |
| 2006 $WV_{128}$ | 16.7 | 0.15 | 20061121 | 319.86676 | 356.61677 | 108.82639 | 6.72141 | 0.1240585 | 2.6062897 | 17 | 1 | 9 days | 0.52 | | | MPC | 2006 $WV_{128}$ |
| 2006 $WZ_{128}$ | 17.5 | 0.15 | 20061121 | 203.51962 | 216.84947 | 14.35011 | 2.37063 | 0.1784114 | 2.1283400 | 8 | 1 | 3 days | 0.32 | | | MPC | 2006 $WZ_{128}$ |
| 2006 $WA_{129}$ | 17.7 | 0.15 | 20061121 | 308.40864 | 337.52509 | 143.12185 | 5.19557 | 0.1363408 | 2.3332429 | 11 | 1 | 5 days | 0.50 | | | MPC | 2006 $WA_{129}$ |
| 2006 $WB_{129}$ | 16.2 | 0.15 | 20061121 | 353.22757 | 292.97258 | 143.51206 | 15.10738 | 0.2537884 | 3.0006427 | 10 | 1 | 7 days | 0.36 | | | MPC | 2006 $WB_{129}$ |
| 2006 $WC_{129}$ | 16.1 | 0.15 | 20061121 | 3.19147 | 342.95205 | 80.22673 | 28.09258 | 0.2023260 | 2.2219756 | 29 | 1 | 10 days | 0.47 | | | MPC | 2006 $WC_{129}$ |
| 2006 $WD_{129}$ | 26.3 | 0.15 | 20060922 | 349.46567 | 319.37023 | 56.82521 | 6.01844 | 0.4994280 | 1.8761510 | 17 | 1 | 2 days | 0.55 | M-v | 8 | MPC | 2006 $WD_{129}$ |
| 2006 $WE_{129}$ | 20.1 | 0.15 | 20060922 | 277.52777 | 109.19018 | 64.32123 | 40.31572 | 0.4904482 | 1.7625258 | 20 | 1 | 4 days | 0.54 | M-v | 8 | MPC | 2006 $WE_{129}$ |
| 2006 $WF_{129}$ | 19.3 | 0.15 | 20060922 | 0.46616 | 124.73099 | 269.12641 | 21.78440 | 0.5205666 | 2.5897206 | 25 | 1 | 4 days | 0.40 | M-v | 7 | MPC | 2006 $WF_{129}$ |
| 2006 $WG_{129}$ | 20.2 | 0.15 | 20060922 | 322.80295 | 210.58354 | 277.38858 | 11.55879 | 0.4741381 | 1.9459611 | 19 | 1 | 4 days | 0.29 | M-v | 9 | MPC | 2006 $WG_{129}$ |
| 2006 $WH_{129}$ | 19.9 | 0.15 | 20061121 | 334.03197 | 197.40078 | 263.04869 | 1.11490 | 0.1464567 | 2.2368010 | 17 | 1 | 5 days | 0.63 | | E | MPC | 2006 $WH_{129}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 $WJ_{129}$ | 16.9 | 0.15 | 20061121 | 74.27057 | 285.72820 | 54.54042 | 1.62670 | 0.1225523 | 3.2718153 | 13 | 1 | 5 days | 1.02 | | E | MPC | | 2006 $WJ_{129}$ |
| 2006 $WK_{129}$ | 16.7 | 0.15 | 20061121 | 41.66001 | 306.31773 | 64.32260 | 12.27653 | 0.1736904 | 3.0815564 | 9 | 1 | 6 days | 0.42 | | | MPC | | 2006 $WK_{129}$ |
| 2006 $WN_{129}$ | 16.7 | 0.15 | 20061121 | 35.08101 | 211.80748 | 178.05436 | 6.01326 | 0.0146823 | 2.1829061 | 17 | 1 | 5 days | 0.64 | | | MPC | | 2006 $WN_{129}$ |
| 2006 $WO_{129}$ | 16.6 | 0.15 | 20061121 | 97.03858 | 279.79021 | 75.02980 | 4.56946 | 0.1419513 | 2.0823008 | 17 | 1 | 4 days | 0.91 | | E | MPC | | 2006 $WO_{129}$ |
| 2006 $WQ_{129}$ | 20.5 | 0.15 | 20061121 | 331.28460 | 205.13079 | 256.53874 | 1.54679 | 0.1181947 | 2.1003947 | 8 | 1 | 2 days | 0.46 | | | MPC | | 2006 $WQ_{129}$ |
| 2006 $WR_{129}$ | 18.1 | 0.15 | 20061121 | 69.50173 | 259.33270 | 89.38749 | 35.12607 | 0.1428407 | 2.2900996 | 7 | 1 | 11 days | 0.24 | | | MPC | | 2006 $WR_{129}$ |
| 2006 $WT_{129}$ | 18.3 | 0.15 | 20061121 | 26.67812 | 308.05027 | 66.68259 | 22.83780 | 0.2286526 | 2.2069383 | 12 | 1 | 9 days | 0.28 | | | MPC | | 2006 $WT_{129}$ |
| 2006 $WU_{129}$ | 18.2 | 0.15 | 20061121 | 355.51821 | 117.22885 | 296.49449 | 5.43165 | 0.1553717 | 2.4800219 | 12 | 1 | 5 days | 0.50 | | | MPC | | 2006 $WU_{129}$ |
| 2006 $WX_{129}$ | 17.2 | 0.15 | 20061121 | 32.92657 | 209.50026 | 153.88755 | 5.16257 | 0.3251285 | 2.5771778 | 17 | 1 | 3 days | 0.47 | | | MPC | | 2006 $WX_{129}$ |
| 2006 $WY_{129}$ | 15.8 | 0.15 | 20061121 | 20.57706 | 272.70881 | 126.07078 | 7.02547 | 0.1884475 | 2.5389765 | 7 | 1 | 5 days | 0.34 | | | MPC | | 2006 $WY_{129}$ |
| 2006 $WD_{130}$ | 16.1 | 0.15 | 20061121 | 17.73614 | 340.83613 | 63.89807 | 16.30768 | 0.1264110 | 2.8616611 | 17 | 1 | 13 days | 0.56 | | | MPC | | 2006 $WD_{130}$ |
| 2006 $WG_{130}$ | 24.7 | 0.15 | 20060922 | 349.79865 | 325.32074 | 64.07903 | 11.25634 | 0.5977536 | 2.3976870 | 19 | 1 | 2 days | 0.41 | M-v | 7 | MPC | | 2006 $WG_{130}$ |
| 2006 $WH_{130}$ | 23.8 | 0.15 | 20060922 | 301.41864 | 18.37770 | 66.99138 | 17.12482 | 0.1820748 | 1.3068193 | 17 | 1 | 3 days | 0.45 | M-v | 7 | MPC | | 2006 $WH_{130}$ |
| 2006 $WJ_{130}$ | 24.1 | 0.15 | 20060922 | 344.96145 | 129.93429 | 244.80590 | 22.36315 | 0.1349005 | 1.1330776 | 18 | 1 | 3 days | 0.36 | M-v | 7 | MPC | | 2006 $WJ_{130}$ |
| 2006 $WK_{130}$ | 22.5 | 0.15 | 20060922 | 353.43808 | 277.23448 | 71.96517 | 13.02155 | 0.6451407 | 1.9241044 | 17 | 1 | 3 days | 0.72 | M-v | 9 | MPC | | 2006 $WK_{130}$ |
| 2006 $WN_{130}$ | 16.5 | 0.15 | 20061121 | 310.57670 | 189.89166 | 288.46408 | 13.16896 | 0.2013128 | 3.1323421 | 10 | 1 | 5 days | 0.58 | | | MPC | | 2006 $WN_{130}$ |
| 2006 $WO_{130}$ | 26.1 | 0.15 | 20061121 | 337.88753 | 230.31956 | 246.43012 | 12.34392 | 0.4559844 | 1.6642182 | 12 | 1 | 0 days | 0.35 | | E | MPC | | 2006 $WO_{130}$ |
| 2006 $WP_{130}$ | 16.1 | 0.15 | 20061101 | 54.78110 | 218.19183 | 121.23065 | 24.02365 | 0.2251019 | 2.3846020 | 16 | 1 | 22 days | 0.83 | | | MPC | | 2006 $WP_{130}$ |
| 2006 $WJ_{137}$ | 17.3 | 0.15 | 20061121 | 53.58280 | 264.95781 | 76.16342 | 6.01452 | 0.2794532 | 2.7482960 | 14 | 1 | 8 days | 0.47 | | | MPC | | 2006 $WJ_{137}$ |
| 2006 $WM_{138}$ | 16.6 | 0.15 | 20061121 | 345.43028 | 182.49101 | 263.44657 | 11.28208 | 0.2118411 | 2.6366147 | 15 | 1 | 8 days | 0.53 | | | MPC | | 2006 $WM_{138}$ |
| 2006 $WV_{142}$ | 17.3 | 0.15 | 20061121 | 358.38587 | 329.18680 | 93.70395 | 7.35403 | 0.2419686 | 2.7497089 | 13 | 1 | 4 days | 0.51 | | | MPC | | 2006 $WV_{142}$ |
| 2006 $WH_{152}$ | 14.2 | 0.15 | 20061121 | 196.34062 | 137.99123 | 95.80490 | 11.68723 | 0.1427960 | 3.0548451 | 15 | 1 | 4 days | 0.17 | | | MPC | | 2006 $WH_{152}$ |
| 2006 $WS_{153}$ | 16.4 | 0.15 | 20061121 | 31.63227 | 305.04253 | 119.57869 | 17.79005 | 0.2395673 | 3.1406334 | 15 | 1 | 6 days | 0.39 | | | MPC | | 2006 $WS_{153}$ |
| 2006 $WV_{153}$ | 17.1 | 0.15 | 20061121 | 265.24086 | 103.84201 | 48.35201 | 5.02901 | 0.1445240 | 2.3084517 | 14 | 1 | 5 days | 0.63 | | | MPC | | 2006 $WV_{153}$ |
| 2006 $WL_{161}$ | 16.7 | 0.15 | 20061121 | 84.41097 | 87.65527 | 233.15136 | 13.84274 | 0.1228051 | 3.1940576 | 13 | 1 | 2 days | 0.30 | | | MPC | | 2006 $WL_{161}$ |
| 2006 $WR_{161}$ | 19.2 | 0.15 | 20061121 | 64.93371 | 241.75295 | 94.54209 | 1.96352 | 0.1617911 | 2.1564992 | 13 | 1 | 4 days | 0.27 | | | MPC | | 2006 $WR_{161}$ |
| 2006 $WS_{161}$ | 16.2 | 0.15 | 20061121 | 262.68187 | 357.16294 | 175.49582 | 1.73450 | 0.1426813 | 2.7760123 | 13 | 1 | 4 days | 0.24 | | | MPC | | 2006 $WS_{161}$ |
| 2006 $WW_{166}$ | 16.4 | 0.15 | 20061121 | 190.39077 | 163.60927 | 74.61008 | 6.11182 | 0.1760702 | 2.6304026 | 13 | 1 | 4 days | 0.33 | | | MPC | | 2006 $WW_{166}$ |
| 2006 $WE_{167}$ | 17.7 | 0.15 | 20061121 | 349.14625 | 215.52733 | 226.86694 | 3.41345 | 0.2294694 | 2.6888804 | 14 | 1 | 4 days | 0.30 | | | MPC | | 2006 $WE_{167}$ |
| 2006 $WA_{177}$ | 15.4 | 0.15 | 20061121 | 122.16456 | 138.35089 | 139.55438 | 7.64605 | 0.2608846 | 2.7624080 | 15 | 1 | 2 days | 0.34 | | | MPC | | 2006 $WA_{177}$ |
| 2006 $WF_{178}$ | 16.0 | 0.15 | 20061121 | 42.15605 | 308.83715 | 124.34836 | 7.13759 | 0.0220131 | 2.7895838 | 15 | 1 | 4 days | 0.34 | | | MPC | | 2006 $WF_{178}$ |
| 2006 $WW_{180}$ | 19.4 | 0.15 | 20061121 | 7.81255 | 323.00712 | 87.76647 | 1.86841 | 0.2284835 | 2.2035824 | 14 | 1 | 4 days | 0.54 | | | MPC | | 2006 $WW_{180}$ |
| 2006 $WB_{183}$ | 17.5 | 0.15 | 20061121 | 64.93063 | 277.87041 | 84.61747 | 24.55741 | 0.0704530 | 1.9190104 | 10 | 1 | 7 days | 0.36 | | | MPC | | 2006 $WB_{183}$ |
| 2006 $WX_{184}$ | 18.5 | 0.15 | 20061121 | 344.67296 | 144.89806 | 296.92340 | 4.99030 | 0.0790094 | 2.3465417 | 9 | 1 | 11 days | 0.24 | | | MPC | | 2006 $WX_{184}$ |
| 2006 $WZ_{184}$ | 25.7 | 0.15 | 20060922 | 342.65352 | 127.30291 | 249.79271 | 0.83842 | 0.3273835 | 1.3621419 | 12 | 1 | 3 days | 0.23 | M-v | 7 | MPC | | 2006 $WZ_{184}$ |
| 2006 XA | 17.2 | 0.15 | 20061121 | 326.54597 | 301.38035 | 252.61301 | 10.17779 | 0.5311875 | 2.1167876 | 15 | 1 | 3 days | 0.50 | | | MPC | | 2006 XA |
| 2045 P-L | 17.3 | 0.15 | 20060922 | 249.23136 | 24.24059 | 3.94234 | 6.73872 | 0.2133543 | 2.2392442 | 22 | 3 | 1960–2005 | 0.65 | M-v | 3 | MPC | 48385 | 2045 P-L |
| 2170 P-L | 16.4 | 0.15 | 20060922 | 312.58707 | 86.90426 | 293.96332 | 2.71641 | 0.2068143 | 2.3344145 | 58 | 4 | 1960–2003 | 0.59 | M-v | 1 | MPC | 57609 | 2170 P-L |
| 2213 P-L | 16.9 | 0.15 | 20060922 | 327.09907 | 175.03838 | 238.49505 | 3.08016 | 0.2539298 | 2.5986021 | 122 | 3 | 1960–2006 | 0.53 | M-v | 2 | MPC | 04418 | 2213 P-L |
| 2220 P-L | 15.3 | 0.15 | 20060922 | 8.14285 | 16.63735 | 1.18629 | 14.24446 | 0.1716581 | 3.1833409 | 54 | 3 | 1960–2006 | 0.56 | M-v | 2 | MPC | 13872 | 2220 P-L |
| 2617 P-L | 17.0 | 0.15 | 20060922 | 319.67535 | 240.54997 | 155.27410 | 2.08718 | 0.2001692 | 2.3282190 | 67 | 4 | 1960–2006 | 0.49 | M-v | 2 | MPC | 04418 | 2617 P-L |
| 2805 P-L | 15.7 | 0.15 | 20060922 | 219.15850 | 178.77700 | 188.72432 | 10.76526 | 0.1338429 | 3.0622566 | 34 | 4 | 1960–2006 | 0.49 | M-v | 1 | MPC | 02377 | 2805 P-L |
| 2834 P-L | 15.9 | 0.15 | 20060922 | 349.49762 | 76.88716 | 354.62372 | 4.53747 | 0.2816898 | 2.5842273 | 61 | 3 | 1960–2006 | 0.40 | M-v | 2 | MPC | 04418 | 2834 P-L |
| 3043 P-L | 16.8 | 0.15 | 20060922 | 55.36364 | 52.52266 | 284.49475 | 6.34428 | 0.1668622 | 2.1999324 | 45 | 4 | 1960–2006 | 0.71 | M-v | 2 | MPC | 62169 | 3043 P-L |
| 4156 P-L | 15.4 | 0.15 | 20060922 | 69.70091 | 112.82279 | 268.53261 | 2.21946 | 0.0882596 | 3.1450490 | 97 | 6 | 1960–2006 | 0.58 | M-v | 1 | MPC | 98186 | 4156 P-L |
| 4188 P-L | 16.3 | 0.15 | 20060922 | 102.71626 | 289.93570 | 352.79633 | 12.46561 | 0.1788426 | 2.5795854 | 16 | 3 | 1960–2004 | 0.63 | M-v | 4 | MPC | *40274* | 4188 P-L |
| 4245 P-L | 17.7 | 0.15 | 20060922 | 48.70744 | 359.69493 | 344.51790 | 2.39250 | 0.2616767 | 2.3098141 | 27 | 4 | 1960–2006 | 0.58 | M-v | 3 | MPC | 35665 | 4245 P-L |
| 4277 P-L | 17.2 | 0.15 | 20060922 | 357.22301 | 171.46390 | 202.39802 | 4.97487 | 0.3229162 | 2.5920912 | 91 | 3 | 1960–2006 | 0.47 | M-v | 2 | MPC | 04418 | 4277 P-L |
| 4547 P-L | 15.8 | 0.15 | 20060922 | 9.07313 | 0.86554 | 6.76111 | 14.40342 | 0.1951263 | 2.5891660 | 61 | 3 | 1960–2006 | 0.60 | M-v | 3 | MPC | 04418 | 4547 P-L |
| 4744 P-L | 17.0 | 0.15 | 20060922 | 24.55897 | 67.29886 | 358.19257 | 1.85232 | 0.1416064 | 2.2980043 | 71 | 8 | 1960–2006 | 0.53 | M-v | 1 | MPC | 90384 | 4744 P-L |
| 4786 P-L | 16.9 | 0.15 | 20060922 | 24.04109 | 237.26246 | 146.51513 | 2.04031 | 0.1133491 | 2.5781215 | 27 | 5 | 1960–2006 | 0.60 | M-v | 1 | MPC | 77912 | 4786 P-L |
| 6025 P-L | 16.5 | 0.15 | 20060922 | 243.31899 | 32.13738 | 342.84631 | 5.52606 | 0.0445063 | 2.2410883 | 48 | 5 | 1960–2006 | 0.63 | M-v | 1 | MPC | 04418 | 6025 P-L |
| 6215 P-L | 17.1 | 0.15 | 20060922 | 325.11905 | 66.73171 | 341.42361 | 6.57518 | 0.1637328 | 2.2099130 | 124 | 3 | 1960–2006 | 0.45 | M-v | 1 | MPC | 04418 | 6215 P-L |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6233 P-L | 17.1 | 0.15 | 20060922 | 276.11254 | 51.93131 | 342.00228 | 6.39166 | 0.1754675 | 2.2277319 | 49 | 3 | 1960–2005 | 0.49 | M-v | 3 | MPC | 97217 | 6233 P-L |
| 6251 P-L | 17.5 | 0.15 | 20060922 | 356.88559 | 358.88896 | 338.41749 | 1.65740 | 0.2384676 | 2.3275000 | 54 | 5 | 1960–2006 | 0.52 | M-v | 1 | MPC | 04419 | 6251 P-L |
| 6256 P-L | 17.1 | 0.15 | 20060922 | 62.91451 | 349.51287 | 355.36736 | 6.17302 | 0.1811668 | 2.5727017 | 24 | 4 | 1960–2004 | 0.65 | M-v | 2 | MPC | 62170 | 6256 P-L |
| 6272 P-L | 15.6 | 0.15 | 20060922 | 304.03320 | 74.29270 | 324.84070 | 3.95341 | 0.1894823 | 3.2117450 | 47 | 6 | 1960–2006 | 0.57 | M-v | 1 | MPC | 48388 | 6272 P-L |
| 6598 P-L | 15.6 | 0.15 | 20060922 | 50.65231 | 316.13413 | 15.73533 | 7.82670 | 0.2399718 | 2.7487326 | 94 | 3 | 1960–2004 | 0.56 | M-v | 2 | MPC | 26182 | 6598 P-L |
| 6620 P-L | 14.9 | 0.15 | 20060922 | 334.20340 | 82.59234 | 10.85067 | 13.44347 | 0.1779883 | 2.7401139 | 211 | 5 | 1960–2006 | 0.54 | M-v | 0 | MPC | 87829 | 6620 P-L |
| 6728 P-L | 17.2 | 0.15 | 20060922 | 33.67505 | 252.69234 | 127.46591 | 2.55223 | 0.2146439 | 2.3062350 | 55 | 5 | 1960–2006 | 0.52 | M-v | 1 | MPC | 50810 | 6728 P-L |
| 6731 P-L | 16.3 | 0.15 | 20060922 | 280.10981 | 326.60350 | 71.46714 | 2.65367 | 0.2116425 | 2.6185466 | 36 | 3 | 1960–2004 | 0.48 | M-v | 3 | MPC | 87829 | 6731 P-L |
| 6740 P-L | 15.3 | 0.15 | 20060922 | 298.71194 | 3.28623 | 23.91829 | 5.48738 | 0.1148023 | 3.2263927 | 92 | 4 | 1960–2004 | 0.59 | M-v | 2 | MPC | 66422 | 6740 P-L |
| 6765 P-L | 17.9 | 0.15 | 20060922 | 29.73687 | 358.17263 | 17.20825 | 3.05691 | 0.1730197 | 2.3086362 | 27 | 4 | 1960–2006 | 0.50 | M-v | 1 | MPC | 38146 | 6765 P-L |
| 6768 P-L | 17.0 | 0.15 | 20060922 | 47.02214 | 310.95043 | 52.55270 | 2.78449 | 0.2290920 | 2.3056222 | 51 | 2 | 1960–2002 | 0.64 | M-v | 4 | MPC | 38146 | 6768 P-L |
| 6781 P-L | 15.7 | 0.15 | 20060922 | 148.08061 | 24.66668 | 25.82558 | 5.68191 | 0.1664609 | 3.0858927 | 39 | 6 | 1960–2006 | 0.60 | M-v | 1 | MPC | 01856 | 6781 P-L |
| 6845 P-L | 15.7 | 0.15 | 20060922 | 59.15433 | 281.53500 | 65.71105 | 3.90616 | 0.1907619 | 3.1580144 | 44 | 5 | 1960–2006 | 0.54 | M-v | 0 | MPC | 87233 | 6845 P-L |
| 6847 P-L | 14.8 | 0.15 | 20060922 | 330.68630 | 213.18612 | 160.15561 | 10.95156 | 0.2219027 | 3.8933258 | 41 | 3 | 1960–2006 | 0.53 | M-v | 2 | MPC | 04419 | 6847 P-L |
| 9568 P-L | 15.4 | 0.15 | 20060922 | 35.44954 | 351.16647 | 34.31526 | 7.70036 | 0.3488941 | 2.5741026 | 36 | 4 | 1960–2006 | 0.58 | M-v | 2 | MPC | 57613 | 9568 P-L |
| 1168 T-1 | 15.6 | 0.15 | 20060922 | 307.68453 | 298.56464 | 202.25292 | 9.17443 | 0.3241014 | 3.0114733 | 43 | 5 | 1971–2006 | 0.54 | M-v | 1 | MPC | 87829 | 1168 T-1 |
| 2040 T-1 | 15.8 | 0.15 | 20060922 | 165.60981 | 1.24495 | 184.86945 | 4.99529 | 0.2240419 | 2.5962403 | 26 | 5 | 1971–2006 | 0.44 | M-v | 1 | MPC | 48389 | 2040 T-1 |
| 1037 T-2 | 17.8 | 0.15 | 20060922 | 339.72570 | 134.96243 | 227.82478 | 1.46456 | 0.2214707 | 2.3868794 | 40 | 3 | 1973–2006 | 0.78 | M-v | 2 | MPC | 04419 | 1037 T-2 |
| 1038 T-2 | 17.3 | 0.15 | 20060922 | 27.69698 | 183.84742 | 210.88635 | 1.58993 | 0.1443297 | 2.1947152 | 71 | 6 | 1960–2006 | 0.59 | M-v | 1 | MPC | 62578 | 1038 T-2 |
| 1084 T-2 | 17.0 | 0.15 | 20060922 | 27.45641 | 101.69717 | 222.32826 | 1.26001 | 0.2250169 | 2.3756422 | 71 | 4 | 1973–2006 | 0.68 | M-v | 3 | MPC | 87829 | 1084 T-2 |
| 1119 T-2 | 16.2 | 0.15 | 20060922 | 44.21809 | 341.97342 | 0.09935 | 4.99743 | 0.1677797 | 2.2039854 | 77 | 5 | 1973–2006 | 0.65 | M-v | 1 | MPC | 87829 | 1119 T-2 |
| 1199 T-2 | 17.2 | 0.15 | 20060922 | 260.32355 | 33.24983 | 315.96569 | 1.61297 | 0.2683020 | 2.6402819 | 68 | 3 | 1973–2003 | 0.68 | M-v | 3 | MPC | 53545 | 1199 T-2 |
| 1208 T-2 | 16.9 | 0.15 | 20060922 | 44.43482 | 329.44642 | 5.32238 | 3.55078 | 0.2482756 | 2.5558343 | 40 | 3 | 1973–2006 | 0.64 | M-v | 3 | MPC | 62171 | 1208 T-2 |
| 1408 T-2 | 17.1 | 0.15 | 20060922 | 286.86104 | 49.95974 | 340.06016 | 4.93685 | 0.2154241 | 2.4042861 | 63 | 3 | 1973–2003 | 0.54 | M-v | 3 | MPC | 58139 | 1408 T-2 |
| 1413 T-2 | 17.8 | 0.15 | 20060922 | 48.22759 | 39.57048 | 297.57538 | 1.47761 | 0.2128275 | 2.3621020 | 67 | 4 | 1973–2006 | 0.58 | M-v | 1 | MPC | 77913 | 1413 T-2 |
| 1447 T-2 | 16.4 | 0.15 | 20060922 | 124.53888 | 309.74984 | 3.42545 | 8.28197 | 0.1788223 | 2.7462981 | 66 | 2 | 1973–2005 | 0.70 | M-v | 4 | MPC | 89987 | 1447 T-2 |
| 2203 T-2 | 16.0 | 0.15 | 20060922 | 355.16341 | 228.75343 | 189.96347 | 7.83720 | 0.1605773 | 2.5520913 | 37 | 5 | 1973–2006 | 0.77 | M-v | 2 | MPC | 41950 | 2203 T-2 |
| 2236 T-2 | 16.8 | 0.15 | 20060922 | 3.98193 | 27.32078 | 356.28532 | 3.39483 | 0.2917504 | 2.5620724 | 101 | 3 | 1973–2006 | 0.54 | M-v | 2 | MPC | 04419 | 2236 T-2 |
| 3094 T-2 | 15.3 | 0.15 | 20060922 | 93.75493 | 259.99130 | 36.74188 | 3.00629 | 0.2117557 | 2.5443602 | 59 | 3 | 1973–2006 | 0.63 | M-v | 4 | MPC | 43314 | 3094 T-2 |
| 3119 T-2 | 16.8 | 0.15 | 20060922 | 217.69595 | 253.76284 | 23.15261 | 9.97598 | 0.2196664 | 2.3027789 | 53 | 3 | 1973–2006 | 0.66 | M-v | 2 | MPC | 48390 | 3119 T-2 |
| 3174 T-2 | 16.7 | 0.15 | 20060922 | 338.42005 | 12.00295 | 33.04084 | 5.91236 | 0.2772090 | 2.5692856 | 146 | 3 | 1973–2006 | 0.49 | M-v | 2 | MPC | 41951 | 3174 T-2 |
| 3301 T-2 | 17.4 | 0.15 | 20060922 | 16.16476 | 164.28079 | 164.60717 | 3.91655 | 0.2139961 | 2.3803691 | 62 | 2 | 1973–2006 | 0.72 | M-v | 4 | MPC | 04055 | 3301 T-2 |
| 3420 T-2 | 15.9 | 0.15 | 20060922 | 0.47757 | 51.23625 | 14.34476 | 13.10173 | 0.1922959 | 2.7766539 | 64 | 5 | 1973–2006 | 0.69 | M-v | 1 | MPC | 87829 | 3420 T-2 |
| 4134 T-2 | 16.9 | 0.15 | 20060922 | 66.12309 | 294.58688 | 35.80154 | 1.97775 | 0.1998795 | 2.3567454 | 55 | 6 | 1973–2006 | 0.59 | M-v | 1 | MPC | 04419 | 4134 T-2 |
| 4226 T-2 | 16.9 | 0.15 | 20060922 | 106.66765 | 185.17648 | 115.52255 | 3.79669 | 0.1734504 | 2.3489515 | 34 | 8 | 1973–2006 | 0.71 | M-v | 1 | MPC | 89987 | 4226 T-2 |
| 4255 T-2 | 14.5 | 0.15 | 20060922 | 321.88616 | 164.86139 | 168.20206 | 11.99888 | 0.1324091 | 3.1835214 | 45 | 4 | 1973–2005 | 0.77 | M-v | 1 | MPC | 21167 | 4255 T-2 |
| 4319 T-2 | 16.9 | 0.15 | 20060922 | 81.31849 | 294.99216 | 54.68237 | 3.03500 | 0.2357797 | 2.3428775 | 60 | 7 | 1973–2006 | 0.71 | M-v | 1 | MPC | 87829 | 4319 T-2 |
| 4427 T-2 | 17.1 | 0.15 | 20060922 | 104.18500 | 298.01679 | 55.63745 | 2.92044 | 0.1632136 | 2.3306283 | 45 | 3 | 1973–2005 | 0.73 | M-v | 3 | MPC | 98187 | 4427 T-2 |
| 4729 T-2 | 16.7 | 0.15 | 20060922 | 55.41283 | 327.88225 | 76.31824 | 4.13416 | 0.1708871 | 2.5233412 | 105 | 5 | 1973–2006 | 0.57 | M-v | 2 | MPC | 87829 | 4729 T-2 |
| 5002 T-2 | 15.5 | 0.15 | 20060922 | 62.84961 | 104.20770 | 215.49186 | 16.69449 | 0.2455001 | 3.0825615 | 52 | 4 | 1973–2006 | 0.67 | M-v | 2 | MPC | 48391 | 5002 T-2 |
| 5086 T-2 | 16.3 | 0.15 | 20060922 | 91.50493 | 52.12986 | 304.52593 | 6.30836 | 0.1190763 | 2.3367234 | 62 | 4 | 1973–2006 | 0.55 | M-v | 2 | MPC | 87829 | 5086 T-2 |
| 5096 T-2 | 15.0 | 0.15 | 20060922 | 19.78431 | 37.88486 | 340.99279 | 16.14319 | 0.2158548 | 2.5545911 | 31 | 4 | 1973–2006 | 0.57 | M-v | 4 | MPC | 50811 | 5096 T-2 |
| 5120 T-2 | 15.2 | 0.15 | 20060922 | 23.82326 | 32.06108 | 341.43705 | 14.09549 | 0.1010042 | 2.5542480 | 59 | 6 | 1973–2006 | 0.57 | M-v | 2 | MPC | 74500 | 5120 T-2 |
| 5213 T-2 | 16.4 | 0.15 | 20060922 | 27.90672 | 47.03490 | 283.68833 | 5.97283 | 0.2110118 | 2.2140008 | 76 | 4 | 1973–2006 | 0.62 | M-v | 3 | MPC | 04419 | 5213 T-2 |
| 1028 T-3 | 14.8 | 0.15 | 20060922 | 219.89380 | 85.98098 | 289.01927 | 8.03206 | 0.1025065 | 2.9945268 | 79 | 4 | 1977–2005 | 0.62 | M-v | 1 | MPC | 58140 | 1028 T-3 |
| 1029 T-3 | 15.9 | 0.15 | 20060922 | 24.35850 | 132.80114 | 229.03817 | 14.46135 | 0.2819235 | 3.1900306 | 46 | 3 | 1977–2006 | 0.51 | M-v | 2 | MPC | 70497 | 1029 T-3 |
| 1049 T-3 | 15.9 | 0.15 | 20060922 | 2.94075 | 42.62587 | 352.15500 | 14.90349 | 0.1536582 | 2.8421874 | 37 | 3 | 1977–2006 | 0.87 | M-v | 3 | MPC | 33738 | 1049 T-3 |
| 1064 T-3 | 16.9 | 0.15 | 20060922 | 28.19061 | 135.76975 | 239.75088 | 8.07686 | 0.2022973 | 2.3423374 | 48 | 4 | 1977–2006 | 0.57 | M-v | 1 | MPC | 38536 | 1064 T-3 |
| 1137 T-3 | 14.8 | 0.15 | 20060922 | 64.06225 | 80.75271 | 339.26256 | 9.31321 | 0.0743650 | 3.1130695 | 46 | 6 | 1977–2006 | 0.57 | M-v | 1 | MPC | 98187 | 1137 T-3 |
| 1209 T-3 | 16.4 | 0.15 | 20060922 | 41.09432 | 81.56631 | 305.57723 | 5.92857 | 0.1355186 | 2.3322062 | 68 | 5 | 1977–2006 | 0.59 | M-v | 1 | MPC | 62579 | 1209 T-3 |
| 2049 T-3 | 16.2 | 0.15 | 20060922 | 40.76074 | 79.14187 | 249.39531 | 2.59298 | 0.3045978 | 3.1862693 | 40 | 4 | 1977–2006 | 0.80 | M-v | 2 | MPC | 58140 | 2049 T-3 |
| 2112 T-3 | 16.7 | 0.15 | 20060922 | 259.75217 | 196.31707 | 260.60968 | 3.30328 | 0.2040768 | 2.6065796 | 50 | 4 | 1977–2006 | 0.57 | M-v | 2 | MPC | 74501 | 2112 T-3 |
| 2136 T-3 | 17.0 | 0.15 | 20060922 | 354.83627 | 118.60111 | 218.44382 | 4.54682 | 0.2264343 | 2.3737473 | 47 | 4 | 1977–2006 | 0.62 | M-v | 1 | MPC | 04419 | 2136 T-3 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2298 T-3 | 16.9 | 0.15 | 20060922 | 354.51842 | 159.22245 | 209.49389 | 4.81635 | 0.2981076 | 2.5817479 | 203 | 3 | 1977–2006 | 0.50 | M-v | 1 | MPC | 04419 | 2298 T-3 |
| 2336 T-3 | 17.0 | 0.15 | 20060922 | 348.65590 | 17.79612 | 334.07554 | 3.15761 | 0.2225122 | 2.3728842 | 59 | 5 | 1977–2006 | 0.79 | M-v | 1 | MPC | 04419 | 2336 T-3 |
| 2408 T-3 | 15.9 | 0.15 | 20060922 | 36.97635 | 41.83337 | 15.91097 | 14.33381 | 0.1500384 | 2.7987966 | 90 | 5 | 1977–2005 | 0.60 | M-v | 1 | MPC | 04419 | 2408 T-3 |
| 2608 T-3 | 16.2 | 0.15 | 20060922 | 115.78106 | 45.96204 | 252.47832 | 5.09486 | 0.2308296 | 2.3251625 | 37 | 5 | 1977–2006 | 0.75 | M-v | 2 | MPC | 87830 | 2608 T-3 |
| 2635 T-3 | 16.7 | 0.15 | 20060922 | 38.59169 | 106.00129 | 231.32586 | 1.82363 | 0.1451845 | 2.5722742 | 53 | 4 | 1977–2006 | 0.62 | M-v | 1 | MPC | 04056 | 2635 T-3 |
| 3007 T-3 | 15.9 | 0.15 | 20060922 | 355.30162 | 349.54387 | 69.23313 | 1.79327 | 0.1357779 | 2.5603217 | 57 | 5 | 1977–2006 | 0.70 | M-v | 1 | MPC | 87830 | 3007 T-3 |
| 3031 T-3 | 16.4 | 0.15 | 20060922 | 330.46645 | 262.20930 | 202.43666 | 2.86899 | 0.1751787 | 2.5530652 | 28 | 3 | 1977–2003 | 0.72 | M-v | 4 | MPC | 41494 | 3031 T-3 |
| 3167 T-3 | 16.4 | 0.15 | 20060922 | 296.43381 | 327.74506 | 40.91483 | 2.13325 | 0.1390780 | 2.6265104 | 32 | 4 | 1977–2005 | 0.72 | M-v | 1 | MPC | 77278 | 3167 T-3 |
| 3199 T-3 | 15.6 | 0.15 | 20060922 | 97.04536 | 177.32397 | 182.86346 | 5.98391 | 0.0908334 | 2.7854767 | 85 | 4 | 1977–2005 | 0.70 | M-v | 2 | MPC | 90385 | 3199 T-3 |
| 3448 T-3 | 16.2 | 0.15 | 20060922 | 58.25186 | 239.99634 | 156.82855 | 2.61117 | 0.1354902 | 2.5279127 | 172 | 6 | 1977–2006 | 0.62 | M-v | 2 | MPC | 87830 | 3448 T-3 |
| 3503 T-3 | 16.4 | 0.15 | 20060922 | 69.53038 | 186.24615 | 177.67860 | 1.32716 | 0.2425640 | 2.3237551 | 63 | 6 | 1977–2006 | 0.69 | M-v | 1 | MPC | 62579 | 3503 T-3 |
| 4021 T-3 | 16.4 | 0.15 | 20060922 | 38.65118 | 317.65000 | 66.91127 | 3.49419 | 0.1773520 | 2.3334404 | 77 | 5 | 1977–2006 | 0.64 | M-v | 1 | MPC | 41952 | 4021 T-3 |
| 4084 T-3 | 17.0 | 0.15 | 20060922 | 19.07087 | 286.97097 | 88.92040 | 3.14643 | 0.1941664 | 2.3472869 | 77 | 4 | 1977–2006 | 0.60 | M-v | 1 | MPC | 62579 | 4084 T-3 |
| 4154 T-3 | 17.2 | 0.15 | 20060922 | 350.21472 | 169.09993 | 177.30925 | 5.85653 | 0.2326064 | 2.3735797 | 31 | 2 | 1977–2006 | 0.72 | M-v | 3 | MPC | 04056 | 4154 T-3 |
| 4162 T-3 | 16.2 | 0.15 | 20060922 | 291.64226 | 304.46861 | 113.10337 | 4.22450 | 0.2147838 | 2.6058119 | 32 | 5 | 1977–2005 | 0.48 | M-v | 1 | MPC | 66425 | 4162 T-3 |
| 4187 T-3 | 15.0 | 0.15 | 20060922 | 80.76713 | 201.98296 | 121.46925 | 5.27797 | 0.1832729 | 2.5492134 | 99 | 6 | 1977–2006 | 0.59 | M-v | 1 | MPC | 77915 | 4187 T-3 |
| 4211 T-3 | 14.8 | 0.15 | 20060922 | 55.57178 | 321.95618 | 52.48241 | 10.18948 | 0.0953511 | 3.1611941 | 55 | 6 | 1977–2006 | 0.67 | M-v | 1 | MPC | 90385 | 4211 T-3 |
| 4219 T-3 | 16.9 | 0.15 | 20060922 | 82.58406 | 207.47358 | 115.34871 | 3.12969 | 0.1863237 | 2.3344027 | 41 | 5 | 1977–2006 | 0.64 | M-v | 1 | MPC | 87830 | 4219 T-3 |
| 4232 T-3 | 16.3 | 0.15 | 20060922 | 112.82839 | 295.06594 | 57.37409 | 6.18570 | 0.0960323 | 2.7775787 | 33 | 5 | 1977–2005 | 0.83 | M-v | 1 | MPC | 97220 | 4232 T-3 |
| 4261 T-3 | 16.5 | 0.15 | 20060922 | 9.90554 | 210.64572 | 159.38741 | 6.05796 | 0.2020161 | 2.5733395 | 57 | 5 | 1977–2006 | 0.59 | M-v | 1 | MPC | 77915 | 4261 T-3 |
| 4262 T-3 | 16.3 | 0.15 | 20060922 | 7.88531 | 329.83993 | 65.73005 | 6.07214 | 0.2117212 | 2.5639089 | 74 | 5 | 1977–2006 | 0.62 | M-v | 1 | MPC | 62579 | 4262 T-3 |
| 4284 T-3 | 15.7 | 0.15 | 20060922 | 8.94428 | 282.91732 | 111.35787 | 4.09192 | 0.1399697 | 2.5632033 | 67 | 5 | 1977–2006 | 0.66 | M-v | 2 | MPC | 62580 | 4284 T-3 |
| 4307 T-3 | 16.8 | 0.15 | 20060922 | 16.85936 | 171.95062 | 137.49614 | 5.90711 | 0.1940698 | 2.3749653 | 57 | 4 | 1977–2006 | 0.60 | M-v | 1 | MPC | 04419 | 4307 T-3 |
| 4330 T-3 | 15.5 | 0.15 | 20060922 | 352.32937 | 227.56988 | 152.66719 | 5.45640 | 0.1578161 | 3.2242166 | 63 | 6 | 1977–2006 | 0.57 | M-v | 1 | MPC | 89988 | 4330 T-3 |
| 4345 T-3 | 16.6 | 0.15 | 20060922 | 109.59704 | 205.40670 | 180.25915 | 6.84525 | 0.1988732 | 2.2966499 | 85 | 6 | 1977–2006 | 0.60 | M-v | 1 | MPC | 98187 | 4345 T-3 |
| 4642 T-3 | 14.5 | 0.15 | 20060922 | 243.43664 | 15.39675 | 166.51929 | 9.57042 | 0.0259394 | 3.1734600 | 73 | 6 | 1977–2006 | 0.70 | M-v | 1 | MPC | 87830 | 4642 T-3 |
| 5156 T-3 | 14.7 | 0.15 | 20060922 | 7.78023 | 345.98332 | 80.66102 | 12.95785 | 0.1080275 | 3.1712581 | 60 | 5 | 1977–2006 | 0.70 | M-v | 1 | MPC | 87830 | 5156 T-3 |
| 5185 T-3 | 15.0 | 0.15 | 20060922 | 12.17420 | 235.84187 | 132.52438 | 8.35403 | 0.1804717 | 3.2086325 | 46 | 3 | 1977–2006 | 0.65 | M-v | 3 | MPC | 13878 | 5185 T-3 |

2002 $RR_{265}$ = 2002 $RV_{188}$ (Minor Planet Center)
2003 $SR_{322}$ = 2003 $SP_{322}$ = 2003 $SS_{322}$ (Minor Planet Center)
2004 $GC_{20}$ = 2004 $FU_{110}$ (Minor Planet Center, *MPO* 62580)
2004 $RA_{84}$ = 2004 $MV_{7}$ (Minor Planet Center, *MPO* 70498)
2005 $JC_{59}$ = 2005 $EG_{154}$ (Minor Planet Center, *MPO* 77916)
2005 $UU_{482}$ = 2005 $WR_{136}$ (Minor Planet Center, *MPO* 98190)
2006 $BD_{118}$ = 2006 $CF_{65}$ (Minor Planet Center)
2006 $QD_{11}$ = 2006 $QW_{10}$ (Minor Planet Center, MPO104420)
2006 $QQ_{17}$ = 2006 $QX_{36}$ (Minor Planet Center)
2006 $QN_{23}$ = 2006 $QX_{181}$ (Minor Planet Center)
2006 $QM_{31}$ = 2006 $QW_{181}$ (Minor Planet Center)
2006 $QO_{60}$ = 2006 $QV_{181}$ (Minor Planet Center)
2006 $QS_{73}$ = 2006 $QZ_{9}$ (Minor Planet Center)
2006 $QM_{78}$ = 2006 RP (Minor Planet Center)
2006 $QF_{120}$ = 2006 $QP_{124}$ (Minor Planet Center)
2006 $QE_{138}$ = 2006 $QW_{15}$ (Minor Planet Center)
2006 $QE_{149}$ = 2006 $RM_{63}$ (Minor Planet Center)
2006 $QP_{161}$ = 2006 $UC_{23}$ (Minor Planet Center)
2006 $QU_{164}$ = 2006 $SQ_{369}$ (Minor Planet Center)
2006 $RX_{11}$ = 2006 $QY_{134}$ (Minor Planet Center)
2006 $RU_{19}$ = 2006 $RV_{3}$ (Minor Planet Center)
2006 $RE_{51}$ = 2006 $TO_{107}$ (Minor Planet Center)
2006 $RB_{56}$ = 2006 $SX_{371}$ (Minor Planet Center)
2006 $RL_{63}$ = 2006 $SZ_{369}$ (Minor Planet Center)
2006 $RX_{68}$ = 2006 $SA_{372}$ (Minor Planet Center)
2006 $RL_{76}$ = 2006 $SO_{148}$ (Minor Planet Center)
2006 $RO_{80}$ = 2006 $SE_{190}$ (Minor Planet Center)
2006 $RS_{98}$ = 2006 $SC_{370}$ (Minor Planet Center)
2006 $RR_{102}$ = 2006 $TK_{107}$ (Minor Planet Center)
2006 SV = 2006 $OU_{6}$ (Minor Planet Center)
2006 $SU_{6}$ = 2006 $UP_{55}$ (Minor Planet Center)
2006 $SV_{13}$ = 2006 $SU_{170}$ (Minor Planet Center)
2006 $SJ_{14}$ = 2006 $QC_{166}$ (Minor Planet Center)
2006 $SZ_{21}$ = 2006 $QE_{166}$ (Minor Planet Center)
2006 $SM_{31}$ = 2006 $QZ_{42}$ (Minor Planet Center)
2006 $SK_{39}$ = 2006 $QB_{169}$ (Minor Planet Center)
2006 $SG_{42}$ = 2006 $SJ_{370}$ (Minor Planet Center)
2006 $SC_{68}$ = 2006 $RX_{77}$ (Minor Planet Center)
2006 $SB_{78}$ = 2006 $SZ_{125}$ (Minor Planet Center)
2006 $SZ_{85}$ = 2006 $RV_{48}$ (Minor Planet Center)
2006 $SQ_{92}$ = 2006 $SO_{298}$ (Minor Planet Center)
2006 $SQ_{95}$ = 2006 $SP_{370}$ (Minor Planet Center)
2006 $SN_{97}$ = 2006 $SR_{369}$ (Minor Planet Center)
2006 $SG_{102}$ = 2006 $SB_{205}$ (Minor Planet Center)
2006 $SS_{102}$ = 2006 $RY_{84}$ (Minor Planet Center)
2006 $SE_{115}$ = 2006 $RR_{86}$ (Minor Planet Center)
2006 $SE_{115}$ = 2006 $SG_{370}$ (Minor Planet Center)
2006 $SN_{116}$ = 2006 $SJ_{197}$ (Minor Planet Center)

2006 $SZ_{124}$ = 2006 $SB_{21}$ (Minor Planet Center)
2006 $SY_{161}$ = 2006 $SH_{370}$ (Minor Planet Center)
2006 $SW_{164}$ = 2006 $SY_{369}$ (Minor Planet Center)
2006 $SX_{170}$ = 2006 $SE_{196}$ (Minor Planet Center)
2006 $SV_{191}$ = 2006 $RB_{74}$ (Minor Planet Center)
2006 $SV_{201}$ = 2006 $SX_{98}$ (Minor Planet Center)
2006 $SV_{205}$ = 2006 $SF_{60}$ = 2006 $ST_{208}$ (Minor Planet Center)
2006 $SM_{223}$ = 2006 $UV_{292}$ (Minor Planet Center)
2006 $SN_{237}$ = 2006 $SE_{48}$ = 2006 $SL_{370}$ (Minor Planet Center)
2006 $SJ_{249}$ = 2006 $RD_{89}$ (Minor Planet Center)
2006 $SF_{262}$ = 2006 $UU_{2}$ (Minor Planet Center)
2006 $SJ_{282}$ = 2006 $SA_{370}$ (Minor Planet Center)
2006 $SM_{285}$ = 2006 $UY_{290}$ (Minor Planet Center)
2006 $SH_{294}$ = 2006 $UX_{292}$ (Minor Planet Center)
2006 $SH_{299}$ = 2006 $UD_{326}$ (Minor Planet Center)
2006 $SJ_{317}$ = 2006 $UY_{292}$ (Minor Planet Center)
2006 $SO_{318}$ = 2006 $UX_{290}$ (Minor Planet Center)
2006 $SL_{323}$ = 2006 $UV_{290}$ (Minor Planet Center)
2006 $SN_{324}$ = 2006 $TJ_{108}$ (Minor Planet Center)
2006 $SW_{325}$ = 2006 $UC_{326}$ (Minor Planet Center)
2006 $ST_{326}$ = 2006 $SY_{71}$ (Minor Planet Center)
2006 $SF_{331}$ = 2006 $SG_{199}$ (Minor Planet Center)
2006 $SY_{331}$ = 2006 $UW_{292}$ (Minor Planet Center)
2006 $SE_{341}$ = 2006 $TL_{107}$ (Minor Planet Center)
2006 $SZ_{360}$ = 2006 $TU_{104}$ = 2006 $TN_{107}$ (Minor Planet Center)
2006 $SA_{361}$ = 2006 $SS_{363}$ (Minor Planet Center)
2006 $TM_{1}$ = 2006 $SX_{370}$ (Minor Planet Center)
2006 $TQ_{28}$ = 2006 $UW_{2}$ (Minor Planet Center)
2006 $TR_{43}$ = 2006 $UO_{290}$ (Minor Planet Center)
2006 $TX_{57}$ = 2006 $TC_{12}$ (Minor Planet Center)
2006 $TF_{65}$ = 2006 $ST_{370}$ (Minor Planet Center)
2006 $TS_{73}$ = 2006 $UY_{1}$ (Minor Planet Center)
2006 $TF_{76}$ = 2006 $UF_{326}$ (Minor Planet Center)
2006 $TY_{85}$ = 2006 $VQ_{95}$ (Minor Planet Center)
2006 $TF_{103}$ = 2006 $TA_{108}$ (Minor Planet Center)
2006 $TA_{107}$ = 2006 $SC_{357}$ (Minor Planet Center)
2006 $US_{10}$ = 2006 $SY_{370}$ (Minor Planet Center)
2006 $UM_{30}$ = 2006 $SF_{186}$ (Minor Planet Center)
2006 $UA_{45}$ = 2006 $TE_{51}$ (Minor Planet Center)
2006 $UJ_{59}$ = 2006 $TB_{108}$ (Minor Planet Center)
2006 $UL_{64}$ = 2006 $SR_{93}$ (Minor Planet Center)
2006 $UY_{80}$ = 2006 $UT_{290}$ (Minor Planet Center)
2006 $UM_{119}$ = 2006 $SV_{371}$ (Minor Planet Center)
2006 $UY_{131}$ = 2006 $ST_{313}$ (Minor Planet Center)
2006 $UY_{134}$ = 2006 $SN_{371}$ (Minor Planet Center)
2006 $UV_{157}$ = 2006 $UD_{76}$ (Minor Planet Center)
2006 $UC_{162}$ = 2006 $SA_{74}$ (Minor Planet Center)
2006 $UJ_{162}$ = 2006 $SD_{372}$ (Minor Planet Center)
2006 $UX_{162}$ = 2006 $TZ_{105}$ (Minor Planet Center)
2006 $UC_{167}$ = 2006 $UP_{67}$ (Minor Planet Center)
2006 $UO_{177}$ = 2006 $SR_{273}$ (Minor Planet Center)
2006 $UD_{193}$ = 2006 $UN_{215}$ (Minor Planet Center)
2006 $US_{208}$ = 2006 $TX_{22}$ (Minor Planet Center)
2006 $UB_{225}$ = 2006 $UU_{244}$ (Minor Planet Center)
2006 $UC_{225}$ = 2006 $UW_{232}$ (Minor Planet Center)
2006 $UK_{227}$ = 2006 $UM_{326}$ (Minor Planet Center)
2006 $UX_{227}$ = 2006 $UG_{326}$ (Minor Planet Center)
2006 $UB_{242}$ = 2006 $RD_{96}$ (Minor Planet Center)
2006 $UH_{242}$ = 2006 $TD_{107}$ (Minor Planet Center)
2006 $UP_{247}$ = 2006 $US_{221}$ (Minor Planet Center)
2006 $US_{248}$ = 2006 $US_{292}$ (Minor Planet Center)
2006 $UY_{254}$ = 2006 $UC_{292}$ (Minor Planet Center)
2006 $UZ_{254}$ = 2006 $UT_{197}$ (Minor Planet Center)
2006 $UB_{257}$ = 2006 $UB_{20}$ (Minor Planet Center)
2006 $UC_{261}$ = 2006 $UL_{285}$ (Minor Planet Center)
2006 $UP_{262}$ = 2006 $UL_{262}$ (Minor Planet Center)
2006 $UJ_{276}$ = 2006 $UP_{292}$ (Minor Planet Center)
2006 $UK_{280}$ = 2006 $VV_{11}$ (Minor Planet Center)
2006 $UV_{285}$ = 2006 $TD_{44}$ (Minor Planet Center)
2006 $VQ_{1}$ = 2006 $UC_{174}$ = 2006 $UM_{292}$ (Minor Planet Center)
2006 $VT_{29}$ = 2006 $SM_{121}$ (Minor Planet Center)
2006 $VM_{32}$ = 2006 $VW_{37}$ (Minor Planet Center)
2006 $VS_{35}$ = 2006 $UP_{201}$ (Minor Planet Center)
2006 $VY_{100}$ = 2006 $VJ_{116}$ (Minor Planet Center)